



## Full wwPDB EM Validation Report ⓘ

Apr 28, 2024 – 02:58 am BST

PDB ID : 2C7E  
EMDB ID : EMD-1047  
Title : REVISED ATOMIC STRUCTURE FITTING INTO A GROEL(D398A)-  
ATP7 CRYO-EM MAP (EMD 1047)  
Authors : Ranson, N.A.; Farr, G.W.; Roseman, A.M.; Gowen, B.; Fenton, W.A.; Hor-  
wich, A.L.; Saibil, H.R.  
Deposited on : 2005-11-22  
Resolution : 14.90 Å(reported)

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  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
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

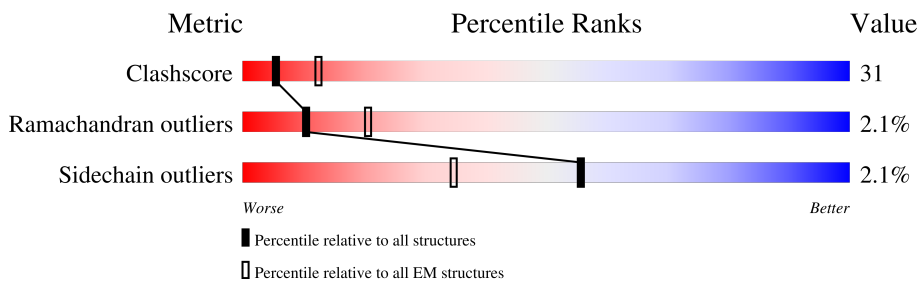
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 14.90 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.



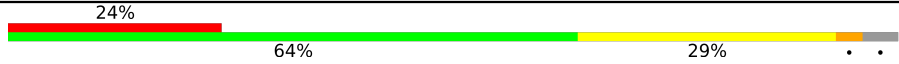
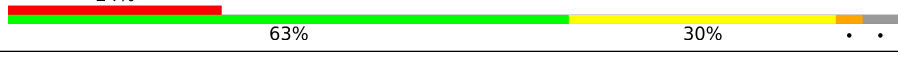
| Metric                | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore            | 158937                   | 4297                     |
| Ramachandran outliers | 154571                   | 4023                     |
| 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     | 547    | 33%<br>59%<br>35%<br>. . |
| 1   | B     | 547    | 33%<br>60%<br>34%<br>. . |
| 1   | C     | 547    | 34%<br>59%<br>34%<br>. . |
| 1   | D     | 547    | 34%<br>59%<br>34%<br>. . |
| 1   | E     | 547    | 33%<br>60%<br>34%<br>. . |
| 1   | F     | 547    | 34%<br>60%<br>33%<br>. . |
| 1   | G     | 547    | 33%<br>60%<br>34%<br>. . |
| 1   | H     | 547    | 24%<br>63%<br>30%<br>. . |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | I     | 547    |  |
| 1   | J     | 547    |  |
| 1   | K     | 547    |  |
| 1   | L     | 547    |  |
| 1   | M     | 547    |  |
| 1   | N     | 547    |  |

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 54243 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 60 KDA CHAPERONIN.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 1   | A     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | B     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | C     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | D     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | E     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | F     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | G     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | H     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | I     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | J     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | K     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | L     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | M     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |
| 1   | N     | 525      | 3855  | 2399 | 664 | 772 | 20 | 0       | 0     |

There are 28 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| A     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| A     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| B     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| B     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| C     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| C     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| D     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| D     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| E     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| E     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| F     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| F     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| G     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| G     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| H     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| H     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| I     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| I     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| J     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| J     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| K     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| K     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| L     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| L     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| M     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| M     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |
| N     | 13      | GLY      | ARG    | engineered mutation | UNP P06139 |
| N     | 126     | VAL      | ALA    | engineered mutation | UNP P06139 |

- Molecule 2 is POTASSIUM ION (three-letter code: K) (formula: K).

| Mol | Chain | Residues | Atoms          | AltConf |
|-----|-------|----------|----------------|---------|
| 2   | A     | 1        | Total K<br>1 1 | 0       |
| 2   | B     | 1        | Total K<br>1 1 | 0       |
| 2   | C     | 1        | Total K<br>1 1 | 0       |
| 2   | D     | 1        | Total K<br>1 1 | 0       |
| 2   | E     | 1        | Total K<br>1 1 | 0       |
| 2   | F     | 1        | Total K<br>1 1 | 0       |

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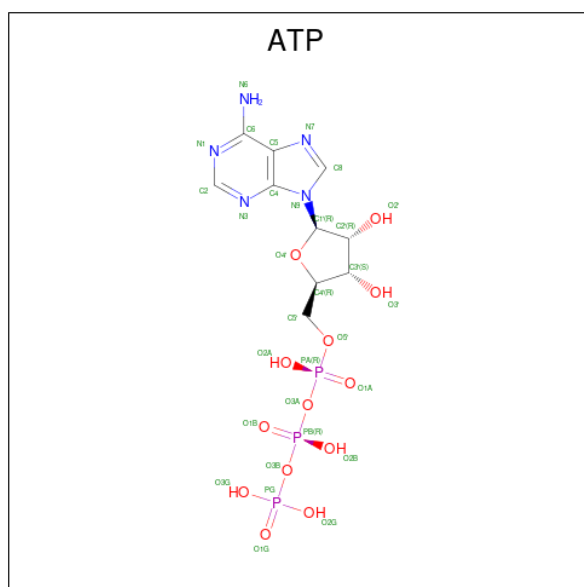
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| Mol | Chain | Residues | Atoms          | AltConf |
|-----|-------|----------|----------------|---------|
| 2   | G     | 1        | Total K<br>1 1 | 0       |

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms           | AltConf |
|-----|-------|----------|-----------------|---------|
| 3   | A     | 1        | Total Mg<br>1 1 | 0       |
| 3   | B     | 1        | Total Mg<br>1 1 | 0       |
| 3   | C     | 1        | Total Mg<br>1 1 | 0       |
| 3   | D     | 1        | Total Mg<br>1 1 | 0       |
| 3   | E     | 1        | Total Mg<br>1 1 | 0       |
| 3   | F     | 1        | Total Mg<br>1 1 | 0       |
| 3   | G     | 1        | Total Mg<br>1 1 | 0       |

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).



| Mol | Chain | Residues | Atoms                         | AltConf |
|-----|-------|----------|-------------------------------|---------|
| 4   | A     | 1        | Total C N O P<br>31 10 5 13 3 | 0       |

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| Mol | Chain | Residues | Atoms |    |   |    |   | AltConf |
|-----|-------|----------|-------|----|---|----|---|---------|
| 4   | B     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |
| 4   | C     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |
| 4   | D     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |
| 4   | E     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |
| 4   | F     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |
| 4   | G     | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 5 | 13 | 3 |         |

- Molecule 5 is water.

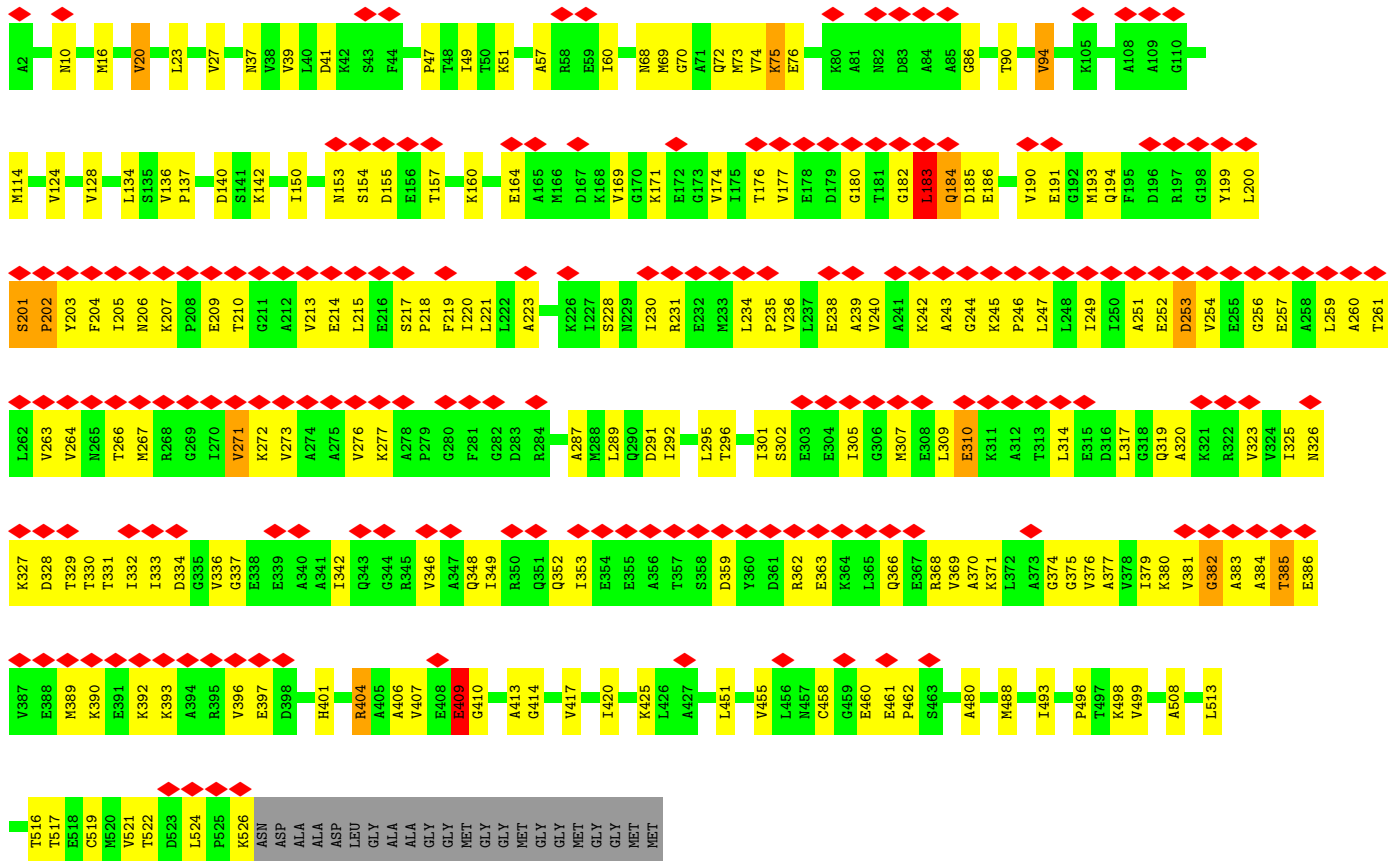
| Mol | Chain | Residues | Atoms |    | AltConf |
|-----|-------|----------|-------|----|---------|
| 5   | A     | 42       | Total | O  | 0       |
|     |       |          | 42    | 42 |         |





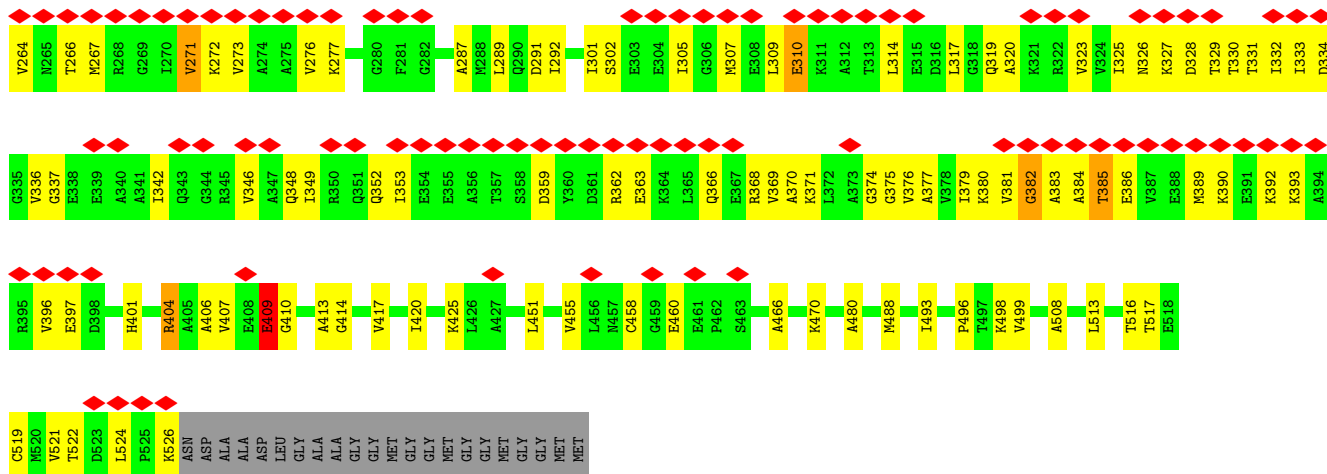


• Molecule 1: 60 KDA CHAPERONIN

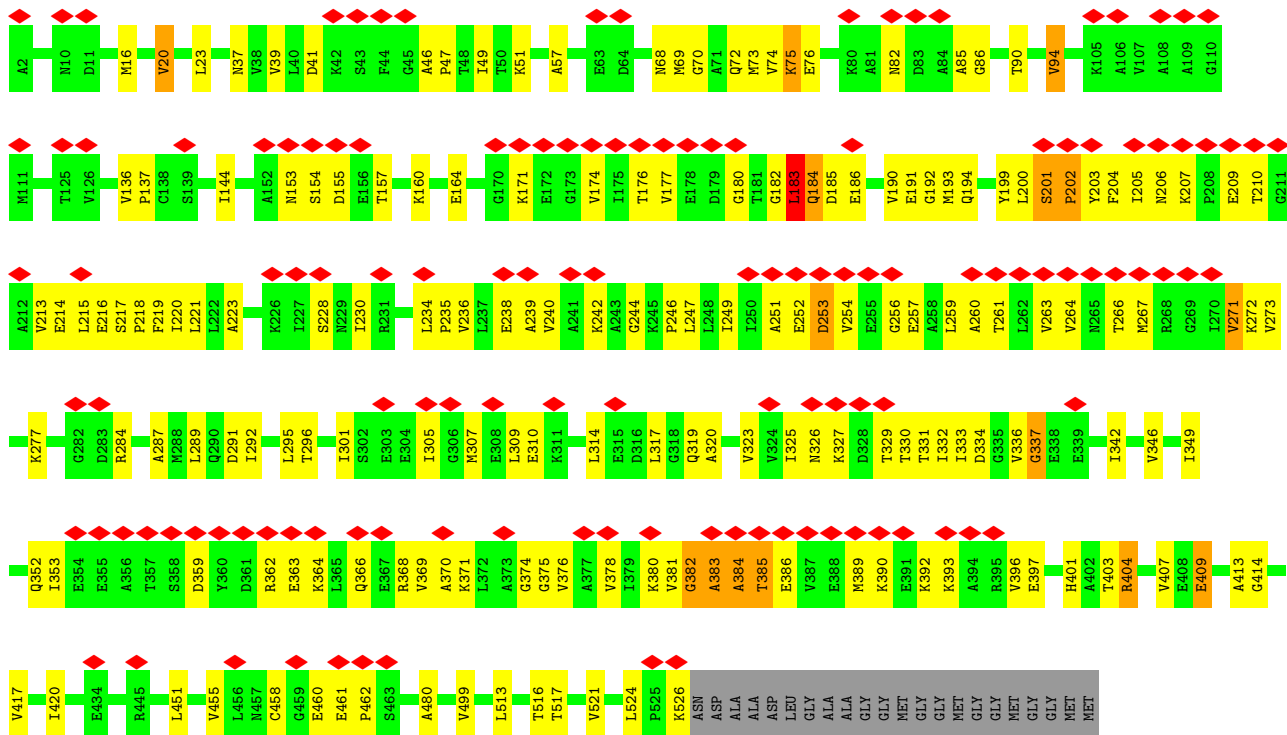




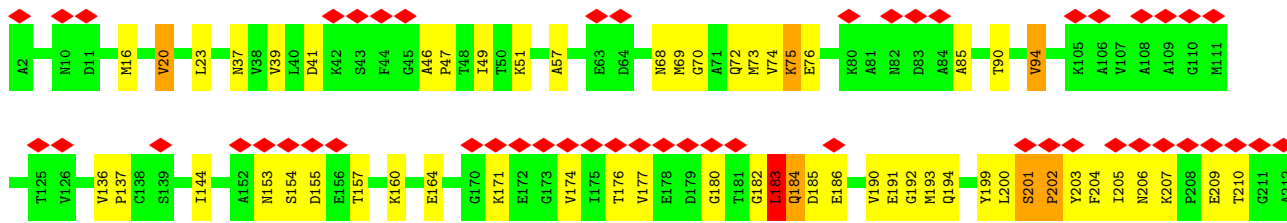


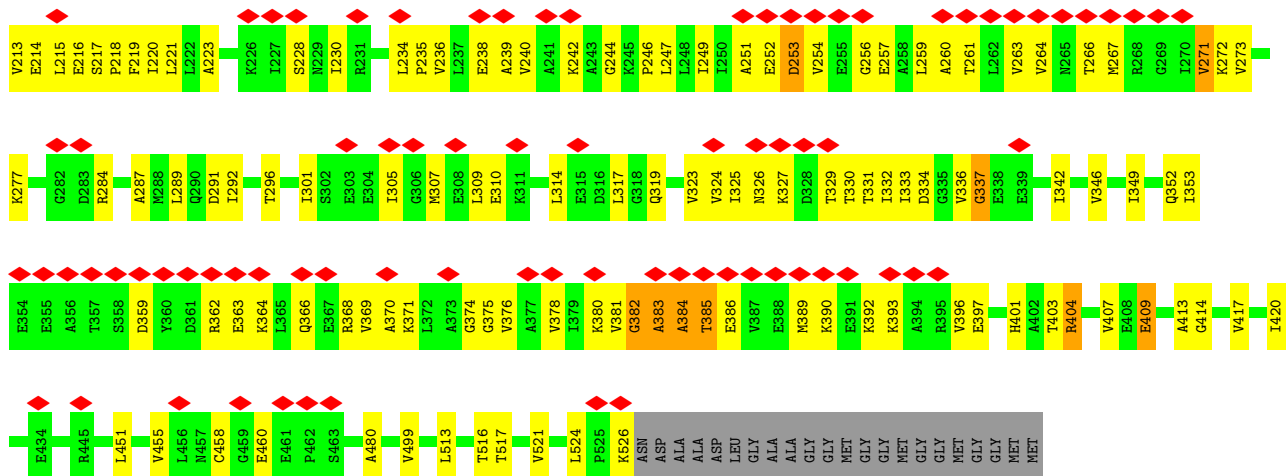


• Molecule 1: 60 KDA CHAPERONIN

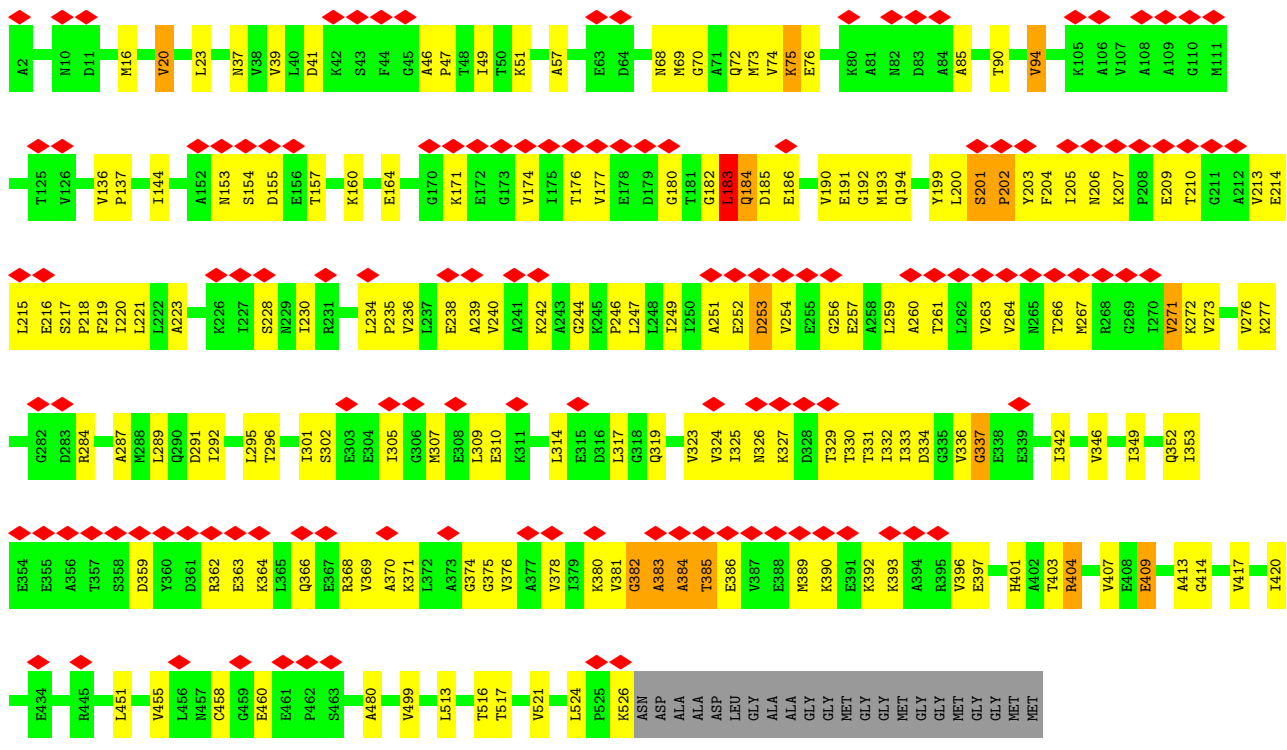


• Molecule 1: 60 KDA CHAPERONIN

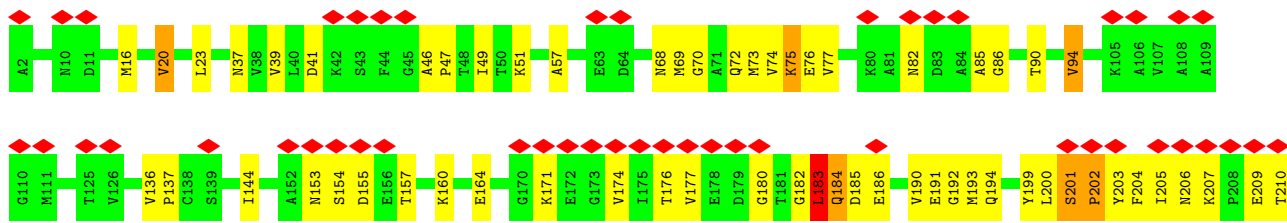


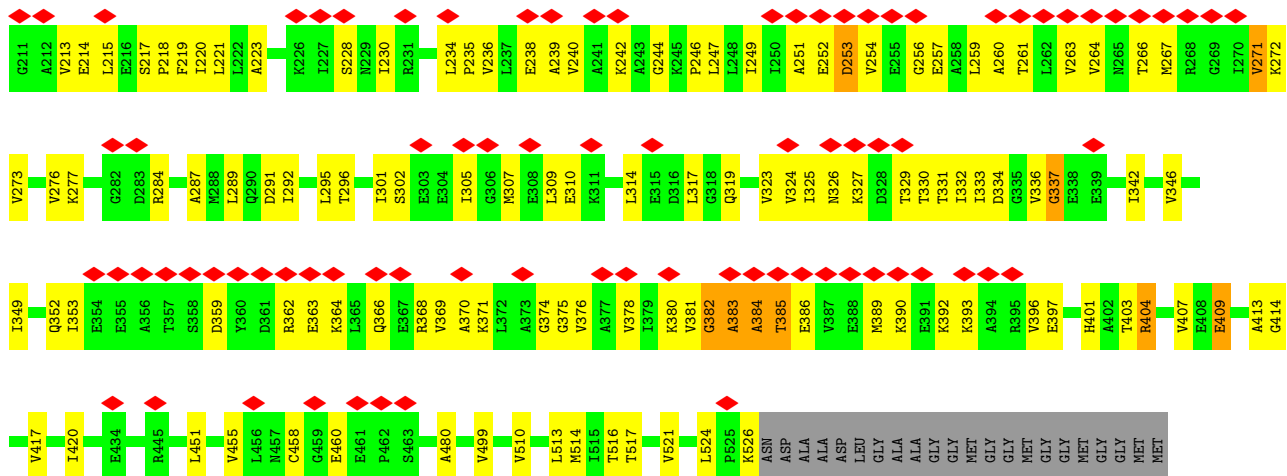


• Molecule 1: 60 KDA CHAPERONIN

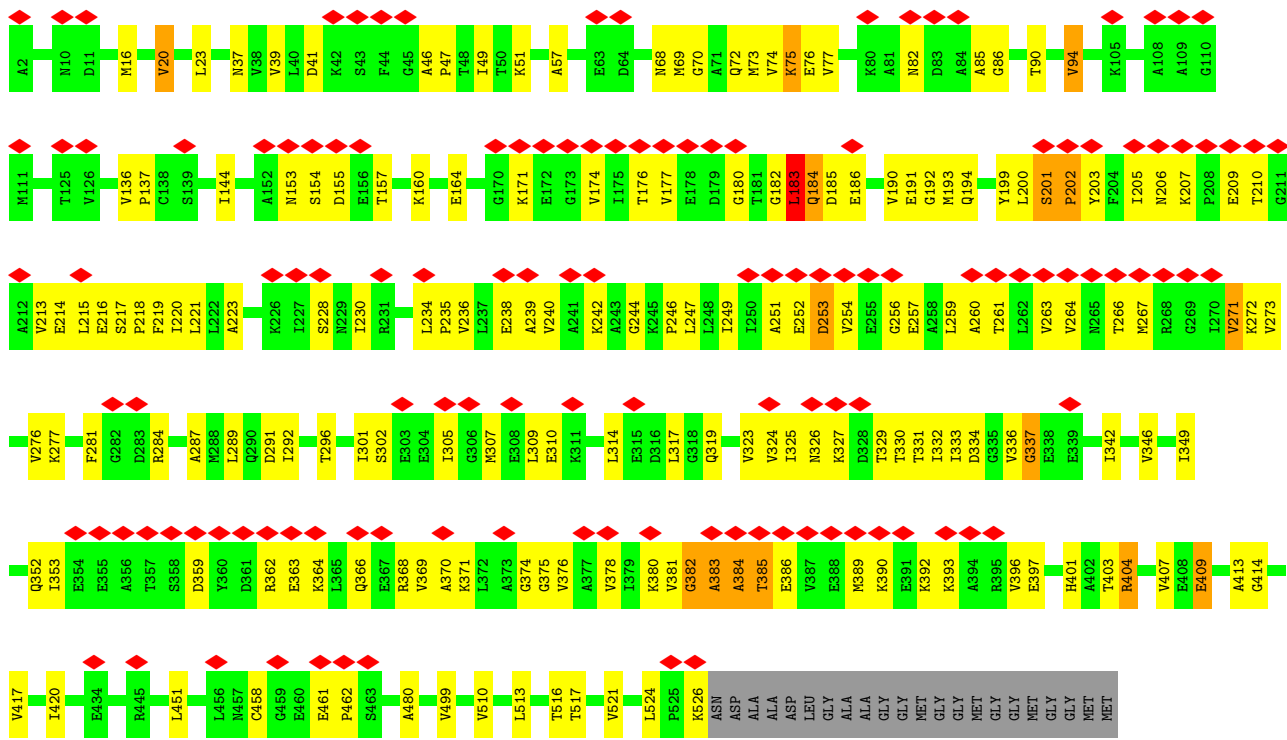


• Molecule 1: 60 KDA CHAPERONIN

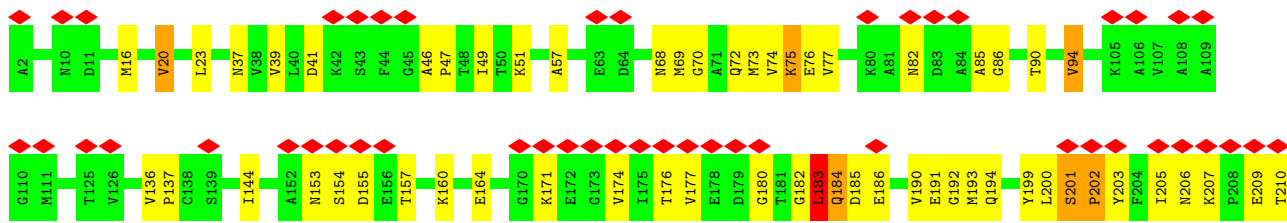


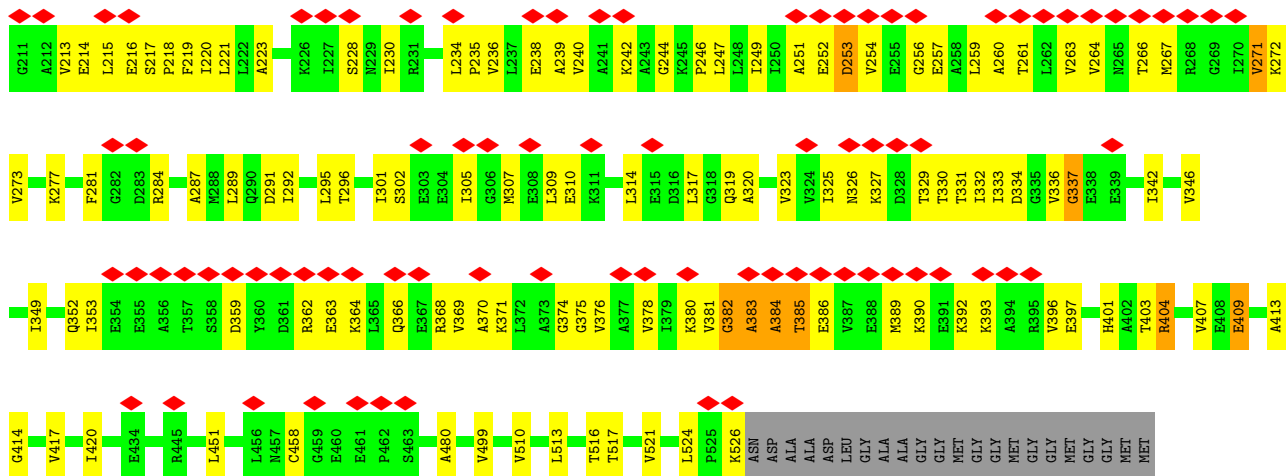


• Molecule 1: 60 KDA CHAPERONIN

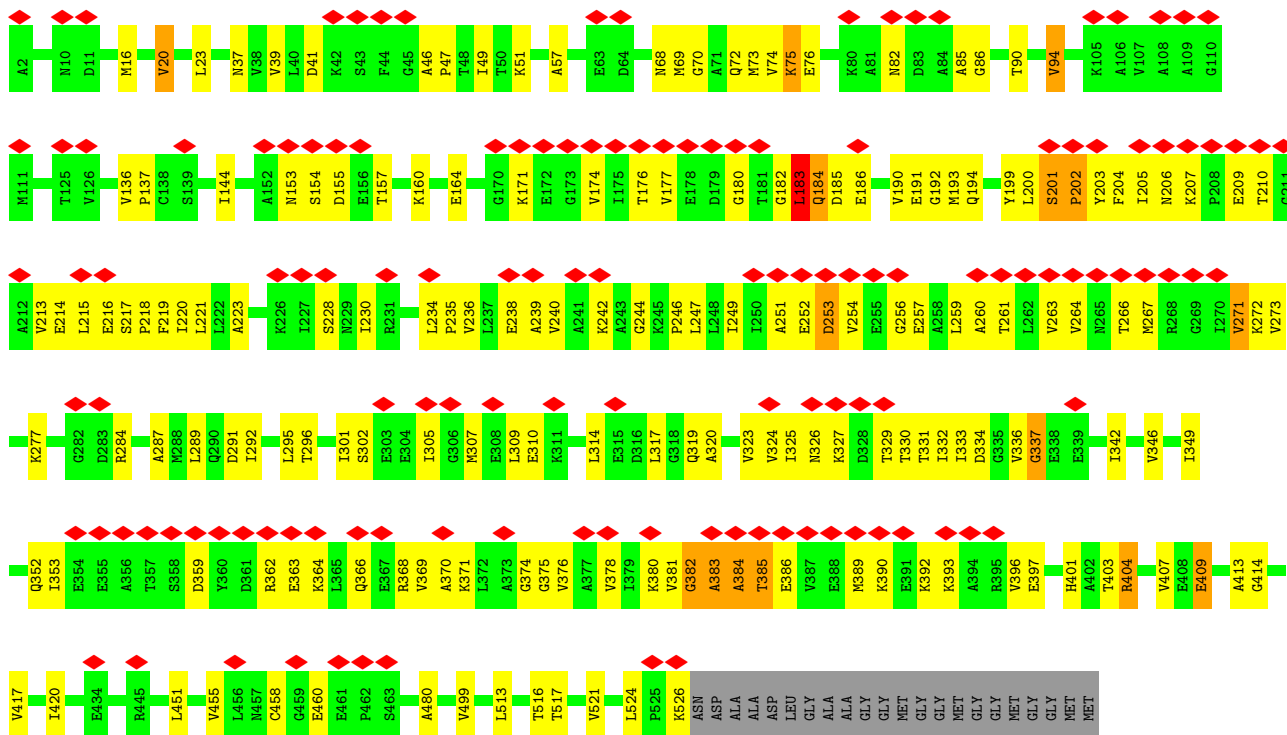


• Molecule 1: 60 KDA CHAPERONIN





• Molecule 1: 60 KDA CHAPERONIN



## 4 Experimental information

| Property                             | Value                                | Source    |
|--------------------------------------|--------------------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE                      | Depositor |
| Imposed symmetry                     | POINT, D7                            | Depositor |
| Number of particles used             | 6404                                 | Depositor |
| Resolution determination method      | FSC 0.5 CUT-OFF                      | Depositor |
| CTF correction method                | FULL CORRECTION ON 2D CLASS AVERAGES | Depositor |
| Microscope                           | FEI/PHILIPS CM200FEG                 | Depositor |
| Voltage (kV)                         | 200                                  | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 20                                   | Depositor |
| Minimum defocus (nm)                 | 1200                                 | Depositor |
| Maximum defocus (nm)                 | 5000                                 | Depositor |
| Magnification                        | 37604                                | Depositor |
| Image detector                       | KODAK SO-163 FILM                    | Depositor |
| Maximum map value                    | 0.142                                | Depositor |
| Minimum map value                    | -0.044                               | Depositor |
| Average map value                    | 0.011                                | Depositor |
| Map value standard deviation         | 0.028                                | Depositor |
| Recommended contour level            | 0.0839                               | Depositor |
| Map size (Å)                         | 248.32, 248.32, 248.32               | wwPDB     |
| Map dimensions                       | 128, 128, 128                        | wwPDB     |
| Map angles (°)                       | 90, 90, 90                           | wwPDB     |
| Pixel spacing (Å)                    | 1.94, 1.94, 1.94                     | Depositor |



## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, MG, K

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     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | B     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | C     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | D     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | E     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | F     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | G     | 0.34         | 1/3880 (0.0%)   | 0.85        | 2/5233 (0.0%)   |
| 1   | H     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | I     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | J     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | K     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | L     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | M     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| 1   | N     | 0.77         | 1/3880 (0.0%)   | 0.81        | 3/5233 (0.1%)   |
| All | All   | 0.60         | 14/54320 (0.0%) | 0.83        | 35/73262 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 0                   | 1                   |
| 1   | B     | 0                   | 1                   |
| 1   | C     | 0                   | 1                   |
| 1   | D     | 0                   | 1                   |
| 1   | E     | 0                   | 1                   |
| 1   | F     | 0                   | 1                   |
| 1   | G     | 0                   | 1                   |
| 1   | H     | 0                   | 1                   |
| 1   | I     | 0                   | 1                   |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | J     | 0                   | 1                   |
| 1   | K     | 0                   | 1                   |
| 1   | L     | 0                   | 1                   |
| 1   | M     | 0                   | 1                   |
| 1   | N     | 0                   | 1                   |
| All | All   | 0                   | 14                  |

All (14) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 1   | J     | 409 | GLU  | C-N   | -43.70 | 0.54        | 1.33     |
| 1   | K     | 409 | GLU  | C-N   | -43.68 | 0.54        | 1.33     |
| 1   | M     | 409 | GLU  | C-N   | -43.66 | 0.54        | 1.33     |
| 1   | H     | 409 | GLU  | C-N   | -43.65 | 0.54        | 1.33     |
| 1   | N     | 409 | GLU  | C-N   | -43.65 | 0.54        | 1.33     |
| 1   | I     | 409 | GLU  | C-N   | -43.65 | 0.54        | 1.33     |
| 1   | L     | 409 | GLU  | C-N   | -43.65 | 0.54        | 1.33     |
| 1   | E     | 409 | GLU  | C-N   | 7.60   | 1.46        | 1.33     |
| 1   | G     | 409 | GLU  | C-N   | 7.58   | 1.46        | 1.33     |
| 1   | A     | 409 | GLU  | C-N   | 7.57   | 1.46        | 1.33     |
| 1   | C     | 409 | GLU  | C-N   | 7.57   | 1.46        | 1.33     |
| 1   | F     | 409 | GLU  | C-N   | 7.57   | 1.46        | 1.33     |
| 1   | D     | 409 | GLU  | C-N   | 7.55   | 1.46        | 1.33     |
| 1   | B     | 409 | GLU  | C-N   | 7.55   | 1.46        | 1.33     |

All (35) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 1   | F     | 409 | GLU  | O-C-N | -45.43 | 45.96       | 123.20   |
| 1   | A     | 409 | GLU  | O-C-N | -45.43 | 45.97       | 123.20   |
| 1   | C     | 409 | GLU  | O-C-N | -45.43 | 45.97       | 123.20   |
| 1   | E     | 409 | GLU  | O-C-N | -45.43 | 45.98       | 123.20   |
| 1   | D     | 409 | GLU  | O-C-N | -45.42 | 45.99       | 123.20   |
| 1   | B     | 409 | GLU  | O-C-N | -45.41 | 45.99       | 123.20   |
| 1   | G     | 409 | GLU  | O-C-N | -45.41 | 46.00       | 123.20   |
| 1   | M     | 409 | GLU  | O-C-N | -30.45 | 71.44       | 123.20   |
| 1   | J     | 409 | GLU  | O-C-N | -30.44 | 71.45       | 123.20   |
| 1   | I     | 409 | GLU  | O-C-N | -30.44 | 71.46       | 123.20   |
| 1   | K     | 409 | GLU  | O-C-N | -30.42 | 71.48       | 123.20   |
| 1   | H     | 409 | GLU  | O-C-N | -30.42 | 71.49       | 123.20   |
| 1   | N     | 409 | GLU  | O-C-N | -30.41 | 71.51       | 123.20   |
| 1   | L     | 409 | GLU  | O-C-N | -30.39 | 71.53       | 123.20   |

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| Mol | Chain | Res | Type | Atoms  | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|--------|--------|-------------|----------|
| 1   | I     | 409 | GLU  | C-N-CA | -22.33 | 75.40       | 122.30   |
| 1   | L     | 409 | GLU  | C-N-CA | -22.33 | 75.40       | 122.30   |
| 1   | H     | 409 | GLU  | C-N-CA | -22.33 | 75.41       | 122.30   |
| 1   | M     | 409 | GLU  | C-N-CA | -22.33 | 75.41       | 122.30   |
| 1   | N     | 409 | GLU  | C-N-CA | -22.31 | 75.44       | 122.30   |
| 1   | K     | 409 | GLU  | C-N-CA | -22.29 | 75.48       | 122.30   |
| 1   | J     | 409 | GLU  | C-N-CA | -22.29 | 75.49       | 122.30   |
| 1   | I     | 409 | GLU  | CA-C-N | -19.00 | 78.19       | 116.20   |
| 1   | M     | 409 | GLU  | CA-C-N | -19.00 | 78.19       | 116.20   |
| 1   | H     | 409 | GLU  | CA-C-N | -18.99 | 78.21       | 116.20   |
| 1   | L     | 409 | GLU  | CA-C-N | -18.99 | 78.22       | 116.20   |
| 1   | N     | 409 | GLU  | CA-C-N | -18.98 | 78.23       | 116.20   |
| 1   | J     | 409 | GLU  | CA-C-N | -18.96 | 78.28       | 116.20   |
| 1   | K     | 409 | GLU  | CA-C-N | -18.95 | 78.29       | 116.20   |
| 1   | C     | 409 | GLU  | CA-C-N | 7.47   | 131.14      | 116.20   |
| 1   | G     | 409 | GLU  | CA-C-N | 7.47   | 131.14      | 116.20   |
| 1   | D     | 409 | GLU  | CA-C-N | 7.47   | 131.14      | 116.20   |
| 1   | B     | 409 | GLU  | CA-C-N | 7.47   | 131.13      | 116.20   |
| 1   | A     | 409 | GLU  | CA-C-N | 7.46   | 131.13      | 116.20   |
| 1   | F     | 409 | GLU  | CA-C-N | 7.46   | 131.12      | 116.20   |
| 1   | E     | 409 | GLU  | CA-C-N | 7.45   | 131.10      | 116.20   |

There are no chirality outliers.

All (14) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | A     | 409 | GLU  | Mainchain |
| 1   | B     | 409 | GLU  | Mainchain |
| 1   | C     | 409 | GLU  | Mainchain |
| 1   | D     | 409 | GLU  | Mainchain |
| 1   | E     | 409 | GLU  | Mainchain |
| 1   | F     | 409 | GLU  | Mainchain |
| 1   | G     | 409 | GLU  | Mainchain |
| 1   | H     | 409 | GLU  | Mainchain |
| 1   | I     | 409 | GLU  | Mainchain |
| 1   | J     | 409 | GLU  | Mainchain |
| 1   | K     | 409 | GLU  | Mainchain |
| 1   | L     | 409 | GLU  | Mainchain |
| 1   | M     | 409 | GLU  | Mainchain |
| 1   | N     | 409 | GLU  | Mainchain |

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 3855  | 0        | 3976     | 329     | 0            |
| 1   | B     | 3855  | 0        | 3976     | 331     | 0            |
| 1   | C     | 3855  | 0        | 3976     | 334     | 0            |
| 1   | D     | 3855  | 0        | 3976     | 331     | 0            |
| 1   | E     | 3855  | 0        | 3976     | 324     | 0            |
| 1   | F     | 3855  | 0        | 3976     | 318     | 0            |
| 1   | G     | 3855  | 0        | 3976     | 325     | 0            |
| 1   | H     | 3855  | 0        | 3970     | 243     | 0            |
| 1   | I     | 3855  | 0        | 3970     | 238     | 0            |
| 1   | J     | 3855  | 0        | 3970     | 241     | 0            |
| 1   | K     | 3855  | 0        | 3970     | 248     | 0            |
| 1   | L     | 3855  | 0        | 3970     | 240     | 0            |
| 1   | M     | 3855  | 0        | 3970     | 239     | 0            |
| 1   | N     | 3855  | 0        | 3970     | 242     | 0            |
| 2   | A     | 1     | 0        | 0        | 0       | 0            |
| 2   | B     | 1     | 0        | 0        | 0       | 0            |
| 2   | C     | 1     | 0        | 0        | 0       | 0            |
| 2   | D     | 1     | 0        | 0        | 0       | 0            |
| 2   | E     | 1     | 0        | 0        | 0       | 0            |
| 2   | F     | 1     | 0        | 0        | 0       | 0            |
| 2   | G     | 1     | 0        | 0        | 0       | 0            |
| 3   | A     | 1     | 0        | 0        | 0       | 0            |
| 3   | B     | 1     | 0        | 0        | 0       | 0            |
| 3   | C     | 1     | 0        | 0        | 0       | 0            |
| 3   | D     | 1     | 0        | 0        | 0       | 0            |
| 3   | E     | 1     | 0        | 0        | 0       | 0            |
| 3   | F     | 1     | 0        | 0        | 0       | 0            |
| 3   | G     | 1     | 0        | 0        | 0       | 0            |
| 4   | A     | 31    | 0        | 12       | 0       | 0            |
| 4   | B     | 31    | 0        | 12       | 0       | 0            |
| 4   | C     | 31    | 0        | 12       | 0       | 0            |
| 4   | D     | 31    | 0        | 12       | 0       | 0            |
| 4   | E     | 31    | 0        | 12       | 0       | 0            |
| 4   | F     | 31    | 0        | 12       | 0       | 0            |
| 4   | G     | 31    | 0        | 12       | 0       | 0            |
| 5   | A     | 42    | 0        | 0        | 0       | 0            |
| All | All   | 54243 | 0        | 55706    | 3419    | 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 31.

All (3419) 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:J:190:VAL:HG11 | 1:J:333:ILE:CG2  | 1.30                     | 1.61              |
| 1:J:190:VAL:CG1  | 1:J:333:ILE:HG22 | 1.20                     | 1.60              |
| 1:N:190:VAL:HG11 | 1:N:333:ILE:CG2  | 1.30                     | 1.60              |
| 1:K:190:VAL:HG11 | 1:K:333:ILE:CG2  | 1.30                     | 1.59              |
| 1:M:190:VAL:CG1  | 1:M:333:ILE:HG22 | 1.20                     | 1.59              |
| 1:N:190:VAL:CG1  | 1:N:333:ILE:HG22 | 1.20                     | 1.58              |
| 1:I:190:VAL:HG11 | 1:I:333:ILE:CG2  | 1.30                     | 1.57              |
| 1:L:190:VAL:HG11 | 1:L:333:ILE:CG2  | 1.30                     | 1.56              |
| 1:M:190:VAL:CG1  | 1:M:333:ILE:CG2  | 1.82                     | 1.56              |
| 1:L:190:VAL:CG1  | 1:L:333:ILE:HG22 | 1.20                     | 1.56              |
| 1:N:190:VAL:CG1  | 1:N:333:ILE:CG2  | 1.82                     | 1.56              |
| 1:H:190:VAL:CG1  | 1:H:333:ILE:HG22 | 1.20                     | 1.56              |
| 1:H:190:VAL:HG11 | 1:H:333:ILE:CG2  | 1.30                     | 1.55              |
| 1:K:190:VAL:CG1  | 1:K:333:ILE:HG22 | 1.20                     | 1.55              |
| 1:F:136:VAL:C    | 1:F:137:PRO:HD3  | 1.21                     | 1.55              |
| 1:I:190:VAL:CG1  | 1:I:333:ILE:HG22 | 1.20                     | 1.54              |
| 1:G:136:VAL:C    | 1:G:137:PRO:HD3  | 1.21                     | 1.54              |
| 1:M:190:VAL:HG11 | 1:M:333:ILE:CG2  | 1.30                     | 1.52              |
| 1:A:86:GLY:HA3   | 1:A:401:HIS:CE1  | 1.46                     | 1.50              |
| 1:C:86:GLY:HA3   | 1:C:401:HIS:CE1  | 1.46                     | 1.50              |
| 1:E:86:GLY:HA3   | 1:E:401:HIS:CE1  | 1.46                     | 1.50              |
| 1:E:136:VAL:C    | 1:E:137:PRO:HD3  | 1.21                     | 1.49              |
| 1:B:86:GLY:HA3   | 1:B:401:HIS:CE1  | 1.46                     | 1.49              |
| 1:D:86:GLY:HA3   | 1:D:401:HIS:CE1  | 1.46                     | 1.49              |
| 1:G:86:GLY:HA3   | 1:G:401:HIS:CE1  | 1.46                     | 1.49              |
| 1:K:190:VAL:CG1  | 1:K:333:ILE:CG2  | 1.82                     | 1.48              |
| 1:C:136:VAL:C    | 1:C:137:PRO:HD3  | 1.21                     | 1.47              |
| 1:D:136:VAL:C    | 1:D:137:PRO:HD3  | 1.21                     | 1.47              |
| 1:A:136:VAL:C    | 1:A:137:PRO:HD3  | 1.21                     | 1.47              |
| 1:F:86:GLY:HA3   | 1:F:401:HIS:CE1  | 1.46                     | 1.46              |
| 1:J:190:VAL:CG1  | 1:J:333:ILE:CG2  | 1.82                     | 1.45              |
| 1:I:190:VAL:CG1  | 1:I:333:ILE:CG2  | 1.82                     | 1.45              |
| 1:B:136:VAL:C    | 1:B:137:PRO:HD3  | 1.21                     | 1.45              |
| 1:F:194:GLN:N    | 1:F:375:GLY:H    | 1.15                     | 1.43              |
| 1:C:245:LYS:HZ1  | 1:D:231:ARG:NH2  | 1.15                     | 1.42              |
| 1:H:190:VAL:CG1  | 1:H:333:ILE:CG2  | 1.82                     | 1.42              |
| 1:B:245:LYS:HZ1  | 1:C:231:ARG:NH2  | 1.14                     | 1.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:L:190:VAL:CG1  | 1:L:333:ILE:CG2  | 1.82                     | 1.41              |
| 1:D:136:VAL:C    | 1:D:137:PRO:CD   | 1.89                     | 1.40              |
| 1:B:194:GLN:N    | 1:B:375:GLY:H    | 1.15                     | 1.40              |
| 1:A:136:VAL:C    | 1:A:137:PRO:CD   | 1.89                     | 1.39              |
| 1:E:136:VAL:C    | 1:E:137:PRO:CD   | 1.89                     | 1.39              |
| 1:F:245:LYS:HZ1  | 1:G:231:ARG:NH2  | 1.14                     | 1.39              |
| 1:A:194:GLN:N    | 1:A:375:GLY:H    | 1.15                     | 1.39              |
| 1:C:39:VAL:CG2   | 1:D:517:THR:HG23 | 1.53                     | 1.39              |
| 1:C:136:VAL:C    | 1:C:137:PRO:CD   | 1.89                     | 1.39              |
| 1:E:245:LYS:HZ1  | 1:F:231:ARG:NH2  | 1.15                     | 1.39              |
| 1:B:136:VAL:C    | 1:B:137:PRO:CD   | 1.89                     | 1.38              |
| 1:D:194:GLN:N    | 1:D:375:GLY:H    | 1.15                     | 1.38              |
| 1:G:136:VAL:C    | 1:G:137:PRO:CD   | 1.89                     | 1.38              |
| 1:B:39:VAL:CG2   | 1:C:517:THR:HG23 | 1.53                     | 1.38              |
| 1:D:39:VAL:CG2   | 1:E:517:THR:HG23 | 1.53                     | 1.38              |
| 1:F:39:VAL:CG2   | 1:G:517:THR:HG23 | 1.53                     | 1.38              |
| 1:K:192:GLY:O    | 1:K:375:GLY:HA2  | 1.24                     | 1.38              |
| 1:G:194:GLN:N    | 1:G:375:GLY:H    | 1.15                     | 1.37              |
| 1:A:517:THR:HG23 | 1:G:39:VAL:CG2   | 1.53                     | 1.37              |
| 1:E:174:VAL:CG2  | 1:E:329:THR:HG21 | 1.54                     | 1.37              |
| 1:F:136:VAL:C    | 1:F:137:PRO:CD   | 1.89                     | 1.37              |
| 1:D:174:VAL:CG2  | 1:D:329:THR:HG21 | 1.54                     | 1.37              |
| 1:E:194:GLN:N    | 1:E:375:GLY:H    | 1.15                     | 1.36              |
| 1:F:174:VAL:CG2  | 1:F:329:THR:HG21 | 1.54                     | 1.36              |
| 1:A:231:ARG:NH2  | 1:G:245:LYS:HZ1  | 1.21                     | 1.36              |
| 1:E:39:VAL:CG2   | 1:F:517:THR:HG23 | 1.53                     | 1.36              |
| 1:A:174:VAL:CG2  | 1:A:329:THR:HG21 | 1.54                     | 1.36              |
| 1:C:174:VAL:CG2  | 1:C:329:THR:HG21 | 1.54                     | 1.36              |
| 1:C:194:GLN:N    | 1:C:375:GLY:H    | 1.15                     | 1.36              |
| 1:G:174:VAL:CG2  | 1:G:329:THR:HG21 | 1.54                     | 1.36              |
| 1:A:39:VAL:CG2   | 1:B:517:THR:HG23 | 1.53                     | 1.35              |
| 1:B:174:VAL:CG2  | 1:B:329:THR:HG21 | 1.54                     | 1.35              |
| 1:J:192:GLY:O    | 1:J:375:GLY:HA2  | 1.24                     | 1.35              |
| 1:D:245:LYS:HZ1  | 1:E:231:ARG:NH2  | 1.21                     | 1.34              |
| 1:L:192:GLY:O    | 1:L:375:GLY:HA2  | 1.24                     | 1.34              |
| 1:N:371:LYS:C    | 1:N:374:GLY:N    | 1.82                     | 1.33              |
| 1:L:371:LYS:C    | 1:L:374:GLY:N    | 1.82                     | 1.33              |
| 1:I:371:LYS:C    | 1:I:374:GLY:N    | 1.82                     | 1.33              |
| 1:G:136:VAL:O    | 1:G:137:PRO:N    | 1.62                     | 1.32              |
| 1:E:136:VAL:O    | 1:E:137:PRO:N    | 1.62                     | 1.32              |
| 1:J:371:LYS:C    | 1:J:374:GLY:N    | 1.82                     | 1.32              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:M:371:LYS:C   | 1:M:374:GLY:N    | 1.82                     | 1.32              |
| 1:C:136:VAL:O   | 1:C:137:PRO:N    | 1.62                     | 1.32              |
| 1:I:192:GLY:O   | 1:I:375:GLY:HA2  | 1.24                     | 1.32              |
| 1:F:136:VAL:O   | 1:F:137:PRO:N    | 1.62                     | 1.31              |
| 1:K:371:LYS:C   | 1:K:374:GLY:N    | 1.82                     | 1.31              |
| 1:H:371:LYS:C   | 1:H:374:GLY:N    | 1.82                     | 1.31              |
| 1:A:517:THR:CG2 | 1:G:39:VAL:CG2   | 2.09                     | 1.31              |
| 1:B:136:VAL:O   | 1:B:137:PRO:N    | 1.62                     | 1.31              |
| 1:A:136:VAL:O   | 1:A:137:PRO:N    | 1.62                     | 1.31              |
| 1:A:245:LYS:HZ1 | 1:B:231:ARG:NH2  | 1.22                     | 1.31              |
| 1:M:192:GLY:O   | 1:M:375:GLY:HA2  | 1.24                     | 1.30              |
| 1:E:39:VAL:CG2  | 1:F:517:THR:CG2  | 2.09                     | 1.30              |
| 1:D:136:VAL:O   | 1:D:137:PRO:N    | 1.62                     | 1.30              |
| 1:D:194:GLN:HB2 | 1:D:375:GLY:O    | 1.31                     | 1.30              |
| 1:C:39:VAL:CG2  | 1:D:517:THR:CG2  | 2.09                     | 1.29              |
| 1:F:39:VAL:CG2  | 1:G:517:THR:CG2  | 2.09                     | 1.29              |
| 1:H:192:GLY:O   | 1:H:375:GLY:HA2  | 1.24                     | 1.29              |
| 1:N:192:GLY:O   | 1:N:375:GLY:HA2  | 1.24                     | 1.29              |
| 1:B:39:VAL:CG2  | 1:C:517:THR:CG2  | 2.09                     | 1.29              |
| 1:C:194:GLN:HB2 | 1:C:375:GLY:O    | 1.31                     | 1.29              |
| 1:E:194:GLN:HB2 | 1:E:375:GLY:O    | 1.31                     | 1.28              |
| 1:A:39:VAL:CG2  | 1:B:517:THR:CG2  | 2.09                     | 1.28              |
| 1:D:39:VAL:CG2  | 1:E:517:THR:CG2  | 2.09                     | 1.28              |
| 1:J:370:ALA:O   | 1:J:374:GLY:N    | 1.67                     | 1.28              |
| 1:F:194:GLN:HB2 | 1:F:375:GLY:O    | 1.31                     | 1.27              |
| 1:G:194:GLN:HB2 | 1:G:375:GLY:O    | 1.31                     | 1.27              |
| 1:N:370:ALA:O   | 1:N:374:GLY:N    | 1.67                     | 1.27              |
| 1:A:191:GLU:HB2 | 1:A:334:ASP:N    | 1.50                     | 1.26              |
| 1:B:191:GLU:HB2 | 1:B:334:ASP:N    | 1.50                     | 1.26              |
| 1:F:191:GLU:HB2 | 1:F:334:ASP:N    | 1.50                     | 1.26              |
| 1:G:191:GLU:HB2 | 1:G:334:ASP:N    | 1.50                     | 1.26              |
| 1:H:370:ALA:O   | 1:H:374:GLY:N    | 1.67                     | 1.26              |
| 1:M:370:ALA:O   | 1:M:374:GLY:N    | 1.67                     | 1.26              |
| 1:A:194:GLN:HB2 | 1:A:375:GLY:O    | 1.31                     | 1.26              |
| 1:K:370:ALA:O   | 1:K:374:GLY:N    | 1.67                     | 1.26              |
| 1:B:194:GLN:HB2 | 1:B:375:GLY:O    | 1.31                     | 1.25              |
| 1:C:191:GLU:HB2 | 1:C:334:ASP:N    | 1.50                     | 1.25              |
| 1:C:245:LYS:NZ  | 1:D:231:ARG:HH22 | 1.33                     | 1.25              |
| 1:I:370:ALA:O   | 1:I:374:GLY:N    | 1.67                     | 1.25              |
| 1:E:191:GLU:HB2 | 1:E:334:ASP:N    | 1.50                     | 1.25              |
| 1:C:41:ASP:HB2  | 1:D:521:VAL:O    | 1.37                     | 1.25              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:245:LYS:NZ   | 1:E:231:ARG:HH22 | 1.33                     | 1.25              |
| 1:B:245:LYS:NZ   | 1:C:231:ARG:HH22 | 1.33                     | 1.25              |
| 1:E:245:LYS:NZ   | 1:F:231:ARG:NH2  | 1.85                     | 1.25              |
| 1:B:194:GLN:CB   | 1:B:375:GLY:O    | 1.85                     | 1.24              |
| 1:D:41:ASP:HB2   | 1:E:521:VAL:O    | 1.37                     | 1.24              |
| 1:A:231:ARG:HH22 | 1:G:245:LYS:NZ   | 1.33                     | 1.24              |
| 1:B:41:ASP:HB2   | 1:C:521:VAL:O    | 1.37                     | 1.24              |
| 1:F:245:LYS:NZ   | 1:G:231:ARG:NH2  | 1.85                     | 1.24              |
| 1:L:370:ALA:O    | 1:L:374:GLY:N    | 1.67                     | 1.24              |
| 1:A:41:ASP:HB2   | 1:B:521:VAL:O    | 1.37                     | 1.24              |
| 1:A:521:VAL:O    | 1:G:41:ASP:HB2   | 1.37                     | 1.24              |
| 1:F:245:LYS:NZ   | 1:G:231:ARG:HH22 | 1.33                     | 1.24              |
| 1:A:245:LYS:NZ   | 1:B:231:ARG:HH22 | 1.33                     | 1.24              |
| 1:E:194:GLN:CB   | 1:E:375:GLY:O    | 1.85                     | 1.24              |
| 1:F:194:GLN:CB   | 1:F:375:GLY:O    | 1.85                     | 1.24              |
| 1:D:245:LYS:NZ   | 1:E:231:ARG:NH2  | 1.85                     | 1.23              |
| 1:E:245:LYS:NZ   | 1:F:231:ARG:HH22 | 1.33                     | 1.23              |
| 1:E:41:ASP:HB2   | 1:F:521:VAL:O    | 1.37                     | 1.23              |
| 1:F:41:ASP:HB2   | 1:G:521:VAL:O    | 1.37                     | 1.23              |
| 1:H:333:ILE:HD13 | 1:H:378:VAL:CG2  | 1.68                     | 1.23              |
| 1:I:333:ILE:HD13 | 1:I:378:VAL:CG2  | 1.68                     | 1.23              |
| 1:C:194:GLN:CB   | 1:C:375:GLY:O    | 1.85                     | 1.23              |
| 1:G:194:GLN:CB   | 1:G:375:GLY:O    | 1.85                     | 1.23              |
| 1:N:333:ILE:HD13 | 1:N:378:VAL:CG2  | 1.68                     | 1.23              |
| 1:A:194:GLN:CB   | 1:A:375:GLY:O    | 1.85                     | 1.23              |
| 1:D:194:GLN:CB   | 1:D:375:GLY:O    | 1.85                     | 1.23              |
| 1:D:331:THR:OG1  | 1:D:376:VAL:HG23 | 1.38                     | 1.23              |
| 1:D:191:GLU:HB2  | 1:D:334:ASP:N    | 1.50                     | 1.22              |
| 1:M:333:ILE:HD13 | 1:M:378:VAL:CG2  | 1.68                     | 1.22              |
| 1:J:333:ILE:HD13 | 1:J:378:VAL:CG2  | 1.68                     | 1.22              |
| 1:L:333:ILE:HD13 | 1:L:378:VAL:CG2  | 1.68                     | 1.22              |
| 1:A:231:ARG:NH2  | 1:G:245:LYS:NZ   | 1.85                     | 1.22              |
| 1:C:39:VAL:HG21  | 1:D:517:THR:CG2  | 1.70                     | 1.21              |
| 1:K:333:ILE:HD13 | 1:K:378:VAL:CG2  | 1.68                     | 1.21              |
| 1:B:331:THR:OG1  | 1:B:376:VAL:HG23 | 1.38                     | 1.21              |
| 1:D:39:VAL:HG21  | 1:E:517:THR:CG2  | 1.70                     | 1.21              |
| 1:C:245:LYS:NZ   | 1:D:231:ARG:NH2  | 1.85                     | 1.21              |
| 1:B:39:VAL:HG21  | 1:C:517:THR:CG2  | 1.70                     | 1.20              |
| 1:F:39:VAL:HG21  | 1:G:517:THR:CG2  | 1.69                     | 1.20              |
| 1:F:174:VAL:HG21 | 1:F:329:THR:CG2  | 1.71                     | 1.20              |
| 1:A:517:THR:CG2  | 1:G:39:VAL:HG21  | 1.70                     | 1.19              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:174:VAL:HG21 | 1:C:329:THR:CG2  | 1.71                     | 1.19              |
| 1:E:39:VAL:HG21  | 1:F:517:THR:CG2  | 1.69                     | 1.19              |
| 1:A:245:LYS:NZ   | 1:B:231:ARG:NH2  | 1.85                     | 1.19              |
| 1:E:174:VAL:HG21 | 1:E:329:THR:CG2  | 1.71                     | 1.19              |
| 1:G:174:VAL:HG21 | 1:G:329:THR:CG2  | 1.71                     | 1.19              |
| 1:B:174:VAL:HG21 | 1:B:329:THR:CG2  | 1.71                     | 1.19              |
| 1:E:47:PRO:HD2   | 1:F:73:MET:CG    | 1.72                     | 1.19              |
| 1:F:47:PRO:HD2   | 1:G:73:MET:CG    | 1.73                     | 1.19              |
| 1:B:245:LYS:NZ   | 1:C:231:ARG:NH2  | 1.85                     | 1.19              |
| 1:D:47:PRO:HD2   | 1:E:73:MET:CG    | 1.72                     | 1.19              |
| 1:H:371:LYS:CA   | 1:H:374:GLY:N    | 2.07                     | 1.18              |
| 1:A:73:MET:CG    | 1:G:47:PRO:HD2   | 1.73                     | 1.18              |
| 1:D:174:VAL:HG21 | 1:D:329:THR:CG2  | 1.71                     | 1.18              |
| 1:A:174:VAL:HG21 | 1:A:329:THR:CG2  | 1.71                     | 1.18              |
| 1:C:331:THR:OG1  | 1:C:376:VAL:HG23 | 1.38                     | 1.18              |
| 1:F:331:THR:OG1  | 1:F:376:VAL:HG23 | 1.38                     | 1.18              |
| 1:I:371:LYS:CA   | 1:I:374:GLY:N    | 2.07                     | 1.18              |
| 1:C:47:PRO:HD2   | 1:D:73:MET:CG    | 1.72                     | 1.17              |
| 1:N:371:LYS:CA   | 1:N:374:GLY:N    | 2.06                     | 1.17              |
| 1:E:331:THR:OG1  | 1:E:376:VAL:HG23 | 1.38                     | 1.17              |
| 1:G:331:THR:OG1  | 1:G:376:VAL:HG23 | 1.38                     | 1.17              |
| 1:A:47:PRO:HD2   | 1:B:73:MET:CG    | 1.73                     | 1.17              |
| 1:F:174:VAL:CG2  | 1:F:329:THR:CG2  | 2.23                     | 1.17              |
| 1:A:39:VAL:HG21  | 1:B:517:THR:CG2  | 1.70                     | 1.17              |
| 1:G:191:GLU:CB   | 1:G:333:ILE:HA   | 1.74                     | 1.17              |
| 1:J:371:LYS:CA   | 1:J:374:GLY:N    | 2.07                     | 1.17              |
| 1:A:331:THR:OG1  | 1:A:376:VAL:HG23 | 1.38                     | 1.16              |
| 1:B:47:PRO:HD2   | 1:C:73:MET:CG    | 1.73                     | 1.16              |
| 1:E:174:VAL:CG2  | 1:E:329:THR:CG2  | 2.22                     | 1.16              |
| 1:K:371:LYS:CA   | 1:K:374:GLY:N    | 2.07                     | 1.16              |
| 1:H:192:GLY:C    | 1:H:375:GLY:HA2  | 1.65                     | 1.16              |
| 1:I:192:GLY:C    | 1:I:375:GLY:HA2  | 1.65                     | 1.16              |
| 1:J:192:GLY:C    | 1:J:375:GLY:HA2  | 1.65                     | 1.16              |
| 1:L:371:LYS:CA   | 1:L:374:GLY:N    | 2.07                     | 1.16              |
| 1:G:174:VAL:CG2  | 1:G:329:THR:CG2  | 2.23                     | 1.16              |
| 1:K:192:GLY:C    | 1:K:375:GLY:HA2  | 1.65                     | 1.16              |
| 1:B:174:VAL:CG2  | 1:B:329:THR:CG2  | 2.23                     | 1.16              |
| 1:N:192:GLY:C    | 1:N:375:GLY:HA2  | 1.65                     | 1.16              |
| 1:M:371:LYS:CA   | 1:M:374:GLY:N    | 2.07                     | 1.15              |
| 1:C:174:VAL:CG2  | 1:C:329:THR:CG2  | 2.23                     | 1.15              |
| 1:L:192:GLY:C    | 1:L:375:GLY:HA2  | 1.65                     | 1.15              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:174:VAL:CG2  | 1:A:329:THR:CG2  | 2.23                     | 1.15              |
| 1:I:191:GLU:C    | 1:I:193:MET:N    | 1.99                     | 1.15              |
| 1:M:192:GLY:C    | 1:M:375:GLY:HA2  | 1.65                     | 1.15              |
| 1:D:174:VAL:CG2  | 1:D:329:THR:CG2  | 2.23                     | 1.14              |
| 1:A:517:THR:CG2  | 1:G:39:VAL:HG23  | 1.75                     | 1.14              |
| 1:D:39:VAL:HG21  | 1:E:517:THR:HG21 | 1.28                     | 1.13              |
| 1:I:192:GLY:O    | 1:I:375:GLY:CA   | 1.97                     | 1.13              |
| 1:H:192:GLY:O    | 1:H:375:GLY:CA   | 1.97                     | 1.13              |
| 1:E:39:VAL:HG23  | 1:F:517:THR:CG2  | 1.75                     | 1.13              |
| 1:J:190:VAL:CG1  | 1:J:333:ILE:HG23 | 1.78                     | 1.13              |
| 1:K:192:GLY:O    | 1:K:375:GLY:CA   | 1.97                     | 1.13              |
| 1:N:192:GLY:O    | 1:N:375:GLY:CA   | 1.97                     | 1.13              |
| 1:H:190:VAL:CG1  | 1:H:333:ILE:HG23 | 1.78                     | 1.13              |
| 1:H:191:GLU:C    | 1:H:193:MET:N    | 1.99                     | 1.13              |
| 1:M:192:GLY:O    | 1:M:375:GLY:CA   | 1.97                     | 1.13              |
| 1:C:39:VAL:HG21  | 1:D:517:THR:HG21 | 1.28                     | 1.12              |
| 1:L:192:GLY:O    | 1:L:375:GLY:CA   | 1.97                     | 1.12              |
| 1:L:191:GLU:C    | 1:L:193:MET:N    | 1.99                     | 1.11              |
| 1:D:39:VAL:HG23  | 1:E:517:THR:CG2  | 1.75                     | 1.11              |
| 1:M:190:VAL:CG1  | 1:M:333:ILE:HG23 | 1.78                     | 1.11              |
| 1:N:191:GLU:C    | 1:N:193:MET:N    | 1.99                     | 1.11              |
| 1:J:192:GLY:O    | 1:J:375:GLY:CA   | 1.97                     | 1.11              |
| 1:M:191:GLU:C    | 1:M:193:MET:N    | 1.99                     | 1.11              |
| 1:J:230:ILE:HD12 | 1:J:261:THR:HG21 | 1.33                     | 1.11              |
| 1:F:86:GLY:CA    | 1:F:401:HIS:CE1  | 2.34                     | 1.11              |
| 1:F:371:LYS:HG2  | 1:F:374:GLY:N    | 1.66                     | 1.11              |
| 1:G:371:LYS:HG2  | 1:G:374:GLY:N    | 1.66                     | 1.11              |
| 1:E:371:LYS:HG2  | 1:E:374:GLY:N    | 1.66                     | 1.10              |
| 1:G:86:GLY:CA    | 1:G:401:HIS:CE1  | 2.34                     | 1.10              |
| 1:A:517:THR:HG21 | 1:G:39:VAL:HG21  | 1.28                     | 1.10              |
| 1:D:371:LYS:HG2  | 1:D:374:GLY:N    | 1.66                     | 1.10              |
| 1:J:191:GLU:C    | 1:J:193:MET:N    | 1.99                     | 1.10              |
| 1:C:371:LYS:HG2  | 1:C:374:GLY:N    | 1.66                     | 1.10              |
| 1:N:190:VAL:CG1  | 1:N:333:ILE:HG23 | 1.78                     | 1.10              |
| 1:A:371:LYS:HG2  | 1:A:374:GLY:N    | 1.66                     | 1.10              |
| 1:B:371:LYS:HG2  | 1:B:374:GLY:N    | 1.66                     | 1.10              |
| 1:F:191:GLU:CB   | 1:F:333:ILE:HA   | 1.74                     | 1.10              |
| 1:I:230:ILE:HD12 | 1:I:261:THR:HG21 | 1.33                     | 1.10              |
| 1:A:191:GLU:HB2  | 1:A:334:ASP:H    | 0.94                     | 1.10              |
| 1:C:191:GLU:HB2  | 1:C:334:ASP:H    | 0.94                     | 1.10              |
| 1:H:230:ILE:HD12 | 1:H:261:THR:HG21 | 1.33                     | 1.10              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:230:ILE:HD12 | 1:M:261:THR:HG21 | 1.33                     | 1.10              |
| 1:B:86:GLY:CA    | 1:B:401:HIS:CE1  | 2.34                     | 1.09              |
| 1:C:174:VAL:HG22 | 1:C:329:THR:HG21 | 1.26                     | 1.09              |
| 1:G:191:GLU:HB2  | 1:G:334:ASP:H    | 0.94                     | 1.09              |
| 1:D:191:GLU:HB2  | 1:D:334:ASP:H    | 0.94                     | 1.09              |
| 1:E:86:GLY:CA    | 1:E:401:HIS:CE1  | 2.34                     | 1.09              |
| 1:K:191:GLU:C    | 1:K:193:MET:N    | 1.99                     | 1.09              |
| 1:C:39:VAL:HG23  | 1:D:517:THR:CG2  | 1.75                     | 1.09              |
| 1:C:86:GLY:CA    | 1:C:401:HIS:CE1  | 2.34                     | 1.09              |
| 1:F:39:VAL:HG23  | 1:G:517:THR:CG2  | 1.75                     | 1.09              |
| 1:F:194:GLN:N    | 1:F:375:GLY:N    | 2.00                     | 1.09              |
| 1:G:194:GLN:N    | 1:G:375:GLY:N    | 2.00                     | 1.09              |
| 1:M:183:LEU:H    | 1:M:383:ALA:HB3  | 1.13                     | 1.09              |
| 1:A:86:GLY:CA    | 1:A:401:HIS:CE1  | 2.34                     | 1.09              |
| 1:A:174:VAL:HG22 | 1:A:329:THR:HG21 | 1.26                     | 1.09              |
| 1:B:194:GLN:N    | 1:B:375:GLY:N    | 2.00                     | 1.09              |
| 1:D:191:GLU:CB   | 1:D:333:ILE:HA   | 1.74                     | 1.09              |
| 1:C:194:GLN:N    | 1:C:375:GLY:N    | 2.00                     | 1.08              |
| 1:E:191:GLU:HB2  | 1:E:334:ASP:H    | 0.94                     | 1.08              |
| 1:I:371:LYS:O    | 1:I:374:GLY:N    | 1.86                     | 1.08              |
| 1:L:371:LYS:O    | 1:L:374:GLY:N    | 1.86                     | 1.08              |
| 1:F:191:GLU:HB2  | 1:F:334:ASP:H    | 0.94                     | 1.08              |
| 1:K:230:ILE:HD12 | 1:K:261:THR:HG21 | 1.33                     | 1.08              |
| 1:C:191:GLU:CB   | 1:C:333:ILE:HA   | 1.74                     | 1.08              |
| 1:D:86:GLY:CA    | 1:D:401:HIS:CE1  | 2.34                     | 1.08              |
| 1:F:39:VAL:HG21  | 1:G:517:THR:HG21 | 1.28                     | 1.08              |
| 1:A:194:GLN:N    | 1:A:375:GLY:N    | 2.00                     | 1.08              |
| 1:A:371:LYS:HG2  | 1:A:374:GLY:CA   | 1.84                     | 1.08              |
| 1:B:39:VAL:HG21  | 1:C:517:THR:HG21 | 1.28                     | 1.08              |
| 1:E:194:GLN:N    | 1:E:375:GLY:N    | 2.00                     | 1.08              |
| 1:G:174:VAL:HG22 | 1:G:329:THR:HG21 | 1.26                     | 1.08              |
| 1:L:230:ILE:HD12 | 1:L:261:THR:HG21 | 1.33                     | 1.08              |
| 1:M:521:VAL:O    | 1:N:41:ASP:HB2   | 1.54                     | 1.08              |
| 1:F:174:VAL:HG22 | 1:F:329:THR:HG21 | 1.26                     | 1.08              |
| 1:H:183:LEU:H    | 1:H:383:ALA:HB3  | 1.13                     | 1.08              |
| 1:H:521:VAL:O    | 1:I:41:ASP:HB2   | 1.54                     | 1.08              |
| 1:I:190:VAL:CG1  | 1:I:333:ILE:HG23 | 1.78                     | 1.08              |
| 1:N:183:LEU:H    | 1:N:383:ALA:HB3  | 1.13                     | 1.08              |
| 1:N:371:LYS:O    | 1:N:374:GLY:N    | 1.86                     | 1.08              |
| 1:A:39:VAL:HG21  | 1:B:517:THR:HG21 | 1.28                     | 1.07              |
| 1:E:39:VAL:HG21  | 1:F:517:THR:HG21 | 1.28                     | 1.07              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:521:VAL:O    | 1:K:41:ASP:HB2   | 1.54                     | 1.07              |
| 1:B:371:LYS:HG2  | 1:B:374:GLY:CA   | 1.84                     | 1.07              |
| 1:L:333:ILE:HD13 | 1:L:378:VAL:HG21 | 1.11                     | 1.07              |
| 1:B:191:GLU:CB   | 1:B:333:ILE:HA   | 1.74                     | 1.07              |
| 1:D:183:LEU:H    | 1:D:383:ALA:HB3  | 1.20                     | 1.07              |
| 1:H:41:ASP:HB2   | 1:N:521:VAL:O    | 1.54                     | 1.07              |
| 1:K:333:ILE:HD13 | 1:K:378:VAL:HG21 | 1.11                     | 1.07              |
| 1:A:174:VAL:HG21 | 1:A:329:THR:HG21 | 1.30                     | 1.07              |
| 1:B:39:VAL:HG23  | 1:C:517:THR:CG2  | 1.75                     | 1.07              |
| 1:B:174:VAL:HG22 | 1:B:329:THR:HG21 | 1.26                     | 1.07              |
| 1:D:47:PRO:CD    | 1:E:73:MET:HG2   | 1.85                     | 1.07              |
| 1:F:371:LYS:HG2  | 1:F:374:GLY:CA   | 1.84                     | 1.07              |
| 1:D:194:GLN:N    | 1:D:375:GLY:N    | 2.00                     | 1.07              |
| 1:E:47:PRO:CD    | 1:F:73:MET:HG2   | 1.85                     | 1.07              |
| 1:I:183:LEU:H    | 1:I:383:ALA:HB3  | 1.13                     | 1.07              |
| 1:C:47:PRO:CD    | 1:D:73:MET:HG2   | 1.85                     | 1.06              |
| 1:D:371:LYS:HG2  | 1:D:374:GLY:CA   | 1.84                     | 1.06              |
| 1:J:371:LYS:O    | 1:J:374:GLY:N    | 1.86                     | 1.06              |
| 1:K:183:LEU:H    | 1:K:383:ALA:HB3  | 1.13                     | 1.06              |
| 1:A:47:PRO:CD    | 1:B:73:MET:HG2   | 1.85                     | 1.06              |
| 1:B:47:PRO:CD    | 1:C:73:MET:HG2   | 1.85                     | 1.06              |
| 1:E:174:VAL:HG22 | 1:E:329:THR:HG21 | 1.26                     | 1.06              |
| 1:E:371:LYS:HG2  | 1:E:374:GLY:CA   | 1.84                     | 1.06              |
| 1:F:47:PRO:CD    | 1:G:73:MET:HG2   | 1.85                     | 1.06              |
| 1:A:73:MET:HG2   | 1:G:47:PRO:CD    | 1.85                     | 1.06              |
| 1:K:371:LYS:O    | 1:K:374:GLY:N    | 1.86                     | 1.06              |
| 1:L:521:VAL:O    | 1:M:41:ASP:HB2   | 1.54                     | 1.06              |
| 1:C:371:LYS:HG2  | 1:C:374:GLY:CA   | 1.84                     | 1.06              |
| 1:G:371:LYS:HG2  | 1:G:374:GLY:CA   | 1.84                     | 1.06              |
| 1:J:333:ILE:HD13 | 1:J:378:VAL:HG21 | 1.11                     | 1.06              |
| 1:M:333:ILE:HD13 | 1:M:378:VAL:HG21 | 1.11                     | 1.06              |
| 1:M:371:LYS:O    | 1:M:374:GLY:N    | 1.86                     | 1.06              |
| 1:A:191:GLU:CB   | 1:A:334:ASP:H    | 1.68                     | 1.06              |
| 1:E:191:GLU:CB   | 1:E:333:ILE:HA   | 1.74                     | 1.06              |
| 1:E:191:GLU:CB   | 1:E:334:ASP:H    | 1.68                     | 1.06              |
| 1:F:174:VAL:HG21 | 1:F:329:THR:HG21 | 1.30                     | 1.06              |
| 1:G:191:GLU:CB   | 1:G:334:ASP:H    | 1.68                     | 1.06              |
| 1:H:333:ILE:HD13 | 1:H:378:VAL:HG21 | 1.11                     | 1.06              |
| 1:N:230:ILE:HD12 | 1:N:261:THR:HG21 | 1.33                     | 1.06              |
| 1:B:183:LEU:H    | 1:B:383:ALA:HB3  | 1.20                     | 1.05              |
| 1:D:191:GLU:CB   | 1:D:334:ASP:H    | 1.68                     | 1.05              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:191:GLU:HB2  | 1:E:333:ILE:HA   | 1.36                     | 1.05              |
| 1:F:331:THR:OG1  | 1:F:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:G:191:GLU:HB2  | 1:G:333:ILE:HA   | 1.36                     | 1.05              |
| 1:G:331:THR:OG1  | 1:G:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:H:371:LYS:O    | 1:H:374:GLY:N    | 1.87                     | 1.05              |
| 1:I:521:VAL:O    | 1:J:41:ASP:HB2   | 1.54                     | 1.05              |
| 1:K:190:VAL:CG1  | 1:K:333:ILE:HG23 | 1.78                     | 1.05              |
| 1:K:521:VAL:O    | 1:L:41:ASP:HB2   | 1.54                     | 1.05              |
| 1:L:183:LEU:H    | 1:L:383:ALA:HB3  | 1.13                     | 1.05              |
| 1:A:230:ILE:HD12 | 1:A:261:THR:HG21 | 1.36                     | 1.05              |
| 1:D:174:VAL:HG22 | 1:D:329:THR:HG21 | 1.26                     | 1.05              |
| 1:E:230:ILE:HD12 | 1:E:261:THR:HG21 | 1.36                     | 1.05              |
| 1:B:230:ILE:HD12 | 1:B:261:THR:HG21 | 1.36                     | 1.05              |
| 1:B:331:THR:OG1  | 1:B:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:C:191:GLU:CB   | 1:C:334:ASP:H    | 1.68                     | 1.05              |
| 1:D:331:THR:OG1  | 1:D:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:A:331:THR:OG1  | 1:A:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:B:191:GLU:CB   | 1:B:334:ASP:H    | 1.68                     | 1.05              |
| 1:E:331:THR:OG1  | 1:E:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:J:183:LEU:H    | 1:J:383:ALA:HB3  | 1.13                     | 1.05              |
| 1:N:333:ILE:HD13 | 1:N:378:VAL:HG21 | 1.11                     | 1.05              |
| 1:C:331:THR:OG1  | 1:C:376:VAL:CG2  | 2.04                     | 1.05              |
| 1:F:191:GLU:CB   | 1:F:334:ASP:H    | 1.68                     | 1.05              |
| 1:A:39:VAL:HG23  | 1:B:517:THR:CG2  | 1.75                     | 1.04              |
| 1:A:183:LEU:H    | 1:A:383:ALA:HB3  | 1.20                     | 1.04              |
| 1:F:183:LEU:H    | 1:F:383:ALA:HB3  | 1.20                     | 1.04              |
| 1:B:191:GLU:HB2  | 1:B:334:ASP:H    | 0.94                     | 1.04              |
| 1:I:333:ILE:HD13 | 1:I:378:VAL:HG21 | 1.11                     | 1.04              |
| 1:C:183:LEU:H    | 1:C:383:ALA:HB3  | 1.20                     | 1.04              |
| 1:E:183:LEU:H    | 1:E:383:ALA:HB3  | 1.20                     | 1.04              |
| 1:C:191:GLU:HB3  | 1:C:332:ILE:O    | 1.58                     | 1.03              |
| 1:F:230:ILE:HD12 | 1:F:261:THR:HG21 | 1.36                     | 1.03              |
| 1:D:230:ILE:HD12 | 1:D:261:THR:HG21 | 1.36                     | 1.03              |
| 1:E:245:LYS:CE   | 1:F:231:ARG:NH2  | 2.22                     | 1.03              |
| 1:G:191:GLU:HB3  | 1:G:332:ILE:O    | 1.58                     | 1.03              |
| 1:B:136:VAL:HG12 | 1:B:137:PRO:CD   | 1.89                     | 1.03              |
| 1:A:231:ARG:NH2  | 1:G:245:LYS:CE   | 2.22                     | 1.03              |
| 1:C:230:ILE:HD12 | 1:C:261:THR:HG21 | 1.36                     | 1.03              |
| 1:F:136:VAL:HG12 | 1:F:137:PRO:CD   | 1.89                     | 1.03              |
| 1:C:136:VAL:HG12 | 1:C:137:PRO:CD   | 1.89                     | 1.02              |
| 1:D:191:GLU:HB3  | 1:D:332:ILE:O    | 1.58                     | 1.02              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:183:LEU:H    | 1:G:383:ALA:HB3  | 1.20                     | 1.02              |
| 1:J:191:GLU:C    | 1:J:193:MET:H    | 1.61                     | 1.02              |
| 1:B:245:LYS:CE   | 1:C:231:ARG:NH2  | 2.22                     | 1.02              |
| 1:D:136:VAL:HG12 | 1:D:137:PRO:CD   | 1.89                     | 1.02              |
| 1:F:191:GLU:HB3  | 1:F:332:ILE:O    | 1.58                     | 1.02              |
| 1:G:136:VAL:HG12 | 1:G:137:PRO:CD   | 1.89                     | 1.02              |
| 1:G:230:ILE:HD12 | 1:G:261:THR:HG21 | 1.36                     | 1.02              |
| 1:M:191:GLU:C    | 1:M:193:MET:H    | 1.61                     | 1.02              |
| 1:A:41:ASP:CB    | 1:B:521:VAL:O    | 2.08                     | 1.02              |
| 1:A:136:VAL:HG12 | 1:A:137:PRO:CD   | 1.89                     | 1.02              |
| 1:A:191:GLU:CB   | 1:A:333:ILE:HA   | 1.74                     | 1.02              |
| 1:B:191:GLU:HB3  | 1:B:332:ILE:O    | 1.58                     | 1.02              |
| 1:D:245:LYS:CE   | 1:E:231:ARG:NH2  | 2.22                     | 1.02              |
| 1:L:190:VAL:CG1  | 1:L:333:ILE:HG23 | 1.78                     | 1.02              |
| 1:L:191:GLU:C    | 1:L:193:MET:H    | 1.61                     | 1.02              |
| 1:A:191:GLU:HB3  | 1:A:332:ILE:O    | 1.58                     | 1.02              |
| 1:A:245:LYS:CE   | 1:B:231:ARG:HH21 | 1.72                     | 1.02              |
| 1:A:521:VAL:O    | 1:G:41:ASP:CB    | 2.08                     | 1.02              |
| 1:B:41:ASP:CB    | 1:C:521:VAL:O    | 2.08                     | 1.02              |
| 1:B:245:LYS:CE   | 1:C:231:ARG:HH21 | 1.72                     | 1.02              |
| 1:C:245:LYS:CE   | 1:D:231:ARG:HH21 | 1.72                     | 1.02              |
| 1:E:136:VAL:HG12 | 1:E:137:PRO:CD   | 1.89                     | 1.02              |
| 1:F:245:LYS:CE   | 1:G:231:ARG:NH2  | 2.22                     | 1.02              |
| 1:I:370:ALA:O    | 1:I:374:GLY:CA   | 2.08                     | 1.02              |
| 1:A:245:LYS:CE   | 1:B:231:ARG:NH2  | 2.22                     | 1.01              |
| 1:K:190:VAL:HG13 | 1:K:333:ILE:CG2  | 1.89                     | 1.01              |
| 1:C:245:LYS:CE   | 1:D:231:ARG:NH2  | 2.22                     | 1.01              |
| 1:C:191:GLU:HB2  | 1:C:333:ILE:HA   | 1.36                     | 1.01              |
| 1:E:191:GLU:HB3  | 1:E:332:ILE:O    | 1.58                     | 1.01              |
| 1:E:245:LYS:CE   | 1:F:231:ARG:HH21 | 1.72                     | 1.01              |
| 1:F:245:LYS:CE   | 1:G:231:ARG:HH21 | 1.72                     | 1.01              |
| 1:J:190:VAL:HG13 | 1:J:333:ILE:CG2  | 1.89                     | 1.01              |
| 1:J:370:ALA:O    | 1:J:374:GLY:CA   | 2.08                     | 1.01              |
| 1:N:190:VAL:HG13 | 1:N:333:ILE:CG2  | 1.89                     | 1.01              |
| 1:A:231:ARG:HH21 | 1:G:245:LYS:CE   | 1.72                     | 1.01              |
| 1:F:41:ASP:CB    | 1:G:521:VAL:O    | 2.08                     | 1.01              |
| 1:F:86:GLY:CA    | 1:F:401:HIS:HE1  | 1.73                     | 1.01              |
| 1:G:174:VAL:HG21 | 1:G:329:THR:HG21 | 1.30                     | 1.01              |
| 1:H:190:VAL:HG13 | 1:H:333:ILE:CG2  | 1.89                     | 1.01              |
| 1:H:370:ALA:O    | 1:H:374:GLY:CA   | 2.08                     | 1.01              |
| 1:N:331:THR:OG1  | 1:N:376:VAL:HG21 | 1.61                     | 1.01              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:86:GLY:CA    | 1:A:401:HIS:HE1  | 1.73                     | 1.00              |
| 1:C:41:ASP:CB    | 1:D:521:VAL:O    | 2.08                     | 1.00              |
| 1:D:41:ASP:CB    | 1:E:521:VAL:O    | 2.08                     | 1.00              |
| 1:D:136:VAL:HG12 | 1:D:137:PRO:HD2  | 1.43                     | 1.00              |
| 1:E:41:ASP:CB    | 1:F:521:VAL:O    | 2.08                     | 1.00              |
| 1:G:136:VAL:HG12 | 1:G:137:PRO:HD2  | 1.43                     | 1.00              |
| 1:K:331:THR:OG1  | 1:K:376:VAL:HG21 | 1.61                     | 1.00              |
| 1:L:331:THR:OG1  | 1:L:376:VAL:HG21 | 1.61                     | 1.00              |
| 1:L:370:ALA:O    | 1:L:374:GLY:CA   | 2.08                     | 1.00              |
| 1:D:245:LYS:CE   | 1:E:231:ARG:HH21 | 1.72                     | 1.00              |
| 1:K:191:GLU:C    | 1:K:193:MET:H    | 1.61                     | 1.00              |
| 1:K:370:ALA:O    | 1:K:374:GLY:CA   | 2.08                     | 1.00              |
| 1:M:370:ALA:O    | 1:M:374:GLY:CA   | 2.08                     | 1.00              |
| 1:B:191:GLU:HB2  | 1:B:333:ILE:HA   | 1.36                     | 1.00              |
| 1:M:331:THR:OG1  | 1:M:376:VAL:HG21 | 1.61                     | 1.00              |
| 1:F:136:VAL:HG12 | 1:F:137:PRO:HD2  | 1.43                     | 1.00              |
| 1:H:331:THR:OG1  | 1:H:376:VAL:HG21 | 1.61                     | 1.00              |
| 1:D:86:GLY:CA    | 1:D:401:HIS:HE1  | 1.73                     | 0.99              |
| 1:D:191:GLU:HB2  | 1:D:333:ILE:HA   | 1.36                     | 0.99              |
| 1:J:331:THR:OG1  | 1:J:376:VAL:HG21 | 1.61                     | 0.99              |
| 1:N:370:ALA:O    | 1:N:374:GLY:CA   | 2.08                     | 0.99              |
| 1:B:331:THR:CB   | 1:B:376:VAL:CG2  | 2.40                     | 0.99              |
| 1:I:331:THR:OG1  | 1:I:376:VAL:HG21 | 1.61                     | 0.99              |
| 1:A:136:VAL:HG12 | 1:A:137:PRO:HD2  | 1.43                     | 0.99              |
| 1:B:86:GLY:CA    | 1:B:401:HIS:HE1  | 1.73                     | 0.99              |
| 1:B:136:VAL:HG12 | 1:B:137:PRO:HD2  | 1.43                     | 0.99              |
| 1:D:331:THR:CB   | 1:D:376:VAL:CG2  | 2.40                     | 0.99              |
| 1:F:331:THR:CB   | 1:F:376:VAL:CG2  | 2.40                     | 0.99              |
| 1:C:86:GLY:CA    | 1:C:401:HIS:HE1  | 1.73                     | 0.99              |
| 1:A:331:THR:CB   | 1:A:376:VAL:CG2  | 2.40                     | 0.98              |
| 1:G:331:THR:CB   | 1:G:376:VAL:CG2  | 2.40                     | 0.98              |
| 1:F:194:GLN:NE2  | 1:F:375:GLY:O    | 1.96                     | 0.98              |
| 1:E:194:GLN:NE2  | 1:E:375:GLY:O    | 1.97                     | 0.98              |
| 1:C:331:THR:CB   | 1:C:376:VAL:CG2  | 2.40                     | 0.98              |
| 1:E:136:VAL:HG12 | 1:E:137:PRO:HD2  | 1.43                     | 0.98              |
| 1:E:331:THR:CB   | 1:E:376:VAL:CG2  | 2.40                     | 0.98              |
| 1:I:331:THR:OG1  | 1:I:376:VAL:HG11 | 1.63                     | 0.98              |
| 1:B:194:GLN:NE2  | 1:B:375:GLY:O    | 1.97                     | 0.98              |
| 1:I:191:GLU:C    | 1:I:193:MET:H    | 1.61                     | 0.98              |
| 1:L:190:VAL:HG13 | 1:L:333:ILE:CG2  | 1.89                     | 0.98              |
| 1:N:331:THR:OG1  | 1:N:376:VAL:HG11 | 1.63                     | 0.98              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:194:GLN:NE2  | 1:D:375:GLY:O    | 1.97                     | 0.98              |
| 1:H:191:GLU:C    | 1:H:193:MET:H    | 1.61                     | 0.98              |
| 1:B:47:PRO:CD    | 1:C:73:MET:CG    | 2.42                     | 0.97              |
| 1:M:190:VAL:HG13 | 1:M:333:ILE:CG2  | 1.89                     | 0.97              |
| 1:F:47:PRO:HD2   | 1:G:73:MET:HG2   | 0.97                     | 0.97              |
| 1:G:194:GLN:NE2  | 1:G:375:GLY:O    | 1.96                     | 0.97              |
| 1:H:331:THR:OG1  | 1:H:376:VAL:HG11 | 1.63                     | 0.97              |
| 1:A:73:MET:HG2   | 1:G:47:PRO:HD2   | 0.98                     | 0.97              |
| 1:C:136:VAL:HG12 | 1:C:137:PRO:HD2  | 1.43                     | 0.97              |
| 1:F:191:GLU:HB2  | 1:F:333:ILE:HA   | 1.36                     | 0.97              |
| 1:E:47:PRO:HD2   | 1:F:73:MET:HG2   | 0.97                     | 0.97              |
| 1:H:49:ILE:HD12  | 1:N:513:LEU:HD13 | 1.45                     | 0.97              |
| 1:K:513:LEU:HD13 | 1:L:49:ILE:HD12  | 1.46                     | 0.97              |
| 1:I:194:GLN:HB2  | 1:I:376:VAL:HG22 | 1.47                     | 0.97              |
| 1:G:86:GLY:CA    | 1:G:401:HIS:HE1  | 1.73                     | 0.97              |
| 1:H:194:GLN:HB2  | 1:H:376:VAL:HG22 | 1.47                     | 0.96              |
| 1:C:194:GLN:NE2  | 1:C:375:GLY:O    | 1.96                     | 0.96              |
| 1:H:513:LEU:HD13 | 1:I:49:ILE:HD12  | 1.45                     | 0.96              |
| 1:B:194:GLN:H    | 1:B:375:GLY:H    | 1.07                     | 0.96              |
| 1:K:331:THR:OG1  | 1:K:376:VAL:HG11 | 1.63                     | 0.96              |
| 1:L:513:LEU:HD13 | 1:M:49:ILE:HD12  | 1.46                     | 0.96              |
| 1:A:47:PRO:HD2   | 1:B:73:MET:HG2   | 0.98                     | 0.96              |
| 1:D:47:PRO:HD2   | 1:E:73:MET:HG2   | 0.97                     | 0.96              |
| 1:E:86:GLY:CA    | 1:E:401:HIS:HE1  | 1.73                     | 0.96              |
| 1:A:191:GLU:HB2  | 1:A:333:ILE:HA   | 1.36                     | 0.96              |
| 1:J:513:LEU:HD13 | 1:K:49:ILE:HD12  | 1.45                     | 0.96              |
| 1:A:194:GLN:H    | 1:A:375:GLY:H    | 1.07                     | 0.96              |
| 1:A:194:GLN:NE2  | 1:A:375:GLY:O    | 1.97                     | 0.96              |
| 1:K:174:VAL:HG21 | 1:K:194:GLN:HB3  | 1.47                     | 0.96              |
| 1:L:331:THR:OG1  | 1:L:376:VAL:HG11 | 1.63                     | 0.96              |
| 1:I:190:VAL:HG13 | 1:I:333:ILE:CG2  | 1.89                     | 0.96              |
| 1:J:331:THR:OG1  | 1:J:376:VAL:HG11 | 1.63                     | 0.96              |
| 1:M:331:THR:OG1  | 1:M:376:VAL:HG11 | 1.63                     | 0.96              |
| 1:A:37:ASN:HB2   | 1:B:516:THR:O    | 1.66                     | 0.95              |
| 1:D:37:ASN:HB2   | 1:E:516:THR:O    | 1.66                     | 0.95              |
| 1:M:513:LEU:HD13 | 1:N:49:ILE:HD12  | 1.45                     | 0.95              |
| 1:B:37:ASN:HB2   | 1:C:516:THR:O    | 1.66                     | 0.95              |
| 1:C:47:PRO:HD2   | 1:D:73:MET:HG2   | 0.98                     | 0.95              |
| 1:D:47:PRO:CD    | 1:E:73:MET:CG    | 2.42                     | 0.95              |
| 1:J:194:GLN:HB2  | 1:J:376:VAL:HG22 | 1.47                     | 0.95              |
| 1:B:47:PRO:HD2   | 1:C:73:MET:HG2   | 0.98                     | 0.95              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:194:GLN:HB2  | 1:N:376:VAL:HG22 | 1.47                     | 0.95              |
| 1:A:516:THR:O    | 1:G:37:ASN:HB2   | 1.66                     | 0.95              |
| 1:F:47:PRO:CD    | 1:G:73:MET:CG    | 2.42                     | 0.95              |
| 1:H:174:VAL:HG21 | 1:H:194:GLN:HB3  | 1.47                     | 0.95              |
| 1:N:174:VAL:HG21 | 1:N:194:GLN:HB3  | 1.47                     | 0.95              |
| 1:N:191:GLU:C    | 1:N:193:MET:H    | 1.61                     | 0.95              |
| 1:C:37:ASN:HB2   | 1:D:516:THR:O    | 1.66                     | 0.95              |
| 1:E:37:ASN:HB2   | 1:F:516:THR:O    | 1.66                     | 0.95              |
| 1:I:513:LEU:HD13 | 1:J:49:ILE:HD12  | 1.45                     | 0.95              |
| 1:E:47:PRO:CD    | 1:F:73:MET:CG    | 2.42                     | 0.95              |
| 1:K:517:THR:HG23 | 1:L:39:VAL:HG23  | 1.49                     | 0.94              |
| 1:A:73:MET:CG    | 1:G:47:PRO:CD    | 2.42                     | 0.94              |
| 1:G:191:GLU:HB2  | 1:G:333:ILE:CA   | 1.98                     | 0.94              |
| 1:H:39:VAL:HG23  | 1:N:517:THR:HG23 | 1.49                     | 0.94              |
| 1:C:331:THR:HG1  | 1:C:376:VAL:HG23 | 1.19                     | 0.94              |
| 1:M:194:GLN:HB2  | 1:M:376:VAL:HG22 | 1.47                     | 0.94              |
| 1:F:37:ASN:HB2   | 1:G:516:THR:O    | 1.66                     | 0.94              |
| 1:I:218:PRO:HB3  | 1:I:246:PRO:HG2  | 1.50                     | 0.94              |
| 1:K:218:PRO:HB3  | 1:K:246:PRO:HG2  | 1.50                     | 0.94              |
| 1:E:191:GLU:HB2  | 1:E:333:ILE:CA   | 1.98                     | 0.94              |
| 1:A:191:GLU:HB2  | 1:A:333:ILE:CA   | 1.98                     | 0.94              |
| 1:D:235:PRO:HG3  | 1:D:310:GLU:HA   | 1.48                     | 0.94              |
| 1:E:235:PRO:HG3  | 1:E:310:GLU:HA   | 1.48                     | 0.94              |
| 1:M:517:THR:HG23 | 1:N:39:VAL:HG23  | 1.49                     | 0.94              |
| 1:H:218:PRO:HB3  | 1:H:246:PRO:HG2  | 1.50                     | 0.94              |
| 1:J:218:PRO:HB3  | 1:J:246:PRO:HG2  | 1.50                     | 0.94              |
| 1:L:517:THR:HG23 | 1:M:39:VAL:HG23  | 1.49                     | 0.94              |
| 1:B:191:GLU:HB2  | 1:B:333:ILE:CA   | 1.98                     | 0.93              |
| 1:J:174:VAL:HG21 | 1:J:194:GLN:HB3  | 1.47                     | 0.93              |
| 1:D:331:THR:HG1  | 1:D:376:VAL:HG23 | 1.25                     | 0.93              |
| 1:I:174:VAL:HG21 | 1:I:194:GLN:HB3  | 1.47                     | 0.93              |
| 1:L:218:PRO:HB3  | 1:L:246:PRO:HG2  | 1.50                     | 0.93              |
| 1:M:174:VAL:HG21 | 1:M:194:GLN:HB3  | 1.47                     | 0.93              |
| 1:C:191:GLU:HB2  | 1:C:333:ILE:CA   | 1.98                     | 0.93              |
| 1:E:191:GLU:C    | 1:E:332:ILE:O    | 2.07                     | 0.93              |
| 1:D:191:GLU:C    | 1:D:332:ILE:O    | 2.07                     | 0.93              |
| 1:A:194:GLN:HB2  | 1:A:375:GLY:C    | 1.89                     | 0.93              |
| 1:C:194:GLN:H    | 1:C:375:GLY:H    | 1.07                     | 0.93              |
| 1:D:191:GLU:HB2  | 1:D:333:ILE:CA   | 1.98                     | 0.93              |
| 1:F:191:GLU:HB2  | 1:F:333:ILE:CA   | 1.98                     | 0.93              |
| 1:C:136:VAL:C    | 1:C:137:PRO:N    | 2.15                     | 0.93              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:191:GLU:C    | 1:F:332:ILE:O    | 2.07                     | 0.93              |
| 1:L:174:VAL:HG21 | 1:L:194:GLN:HB3  | 1.47                     | 0.93              |
| 1:L:194:GLN:HB2  | 1:L:376:VAL:HG22 | 1.47                     | 0.93              |
| 1:A:235:PRO:HG3  | 1:A:310:GLU:HA   | 1.48                     | 0.93              |
| 1:C:235:PRO:HG3  | 1:C:310:GLU:HA   | 1.48                     | 0.93              |
| 1:G:194:GLN:HB2  | 1:G:375:GLY:C    | 1.89                     | 0.93              |
| 1:K:194:GLN:HB2  | 1:K:376:VAL:HG22 | 1.47                     | 0.93              |
| 1:B:194:GLN:HB2  | 1:B:375:GLY:C    | 1.89                     | 0.93              |
| 1:J:517:THR:HG23 | 1:K:39:VAL:HG23  | 1.49                     | 0.93              |
| 1:E:331:THR:HG1  | 1:E:376:VAL:HG23 | 1.23                     | 0.93              |
| 1:F:235:PRO:HG3  | 1:F:310:GLU:HA   | 1.48                     | 0.93              |
| 1:H:521:VAL:O    | 1:I:41:ASP:CB    | 2.17                     | 0.93              |
| 1:A:47:PRO:CD    | 1:B:73:MET:CG    | 2.42                     | 0.92              |
| 1:B:191:GLU:C    | 1:B:332:ILE:O    | 2.07                     | 0.92              |
| 1:E:218:PRO:HB3  | 1:E:246:PRO:HG2  | 1.52                     | 0.92              |
| 1:G:235:PRO:HG3  | 1:G:310:GLU:HA   | 1.48                     | 0.92              |
| 1:I:521:VAL:O    | 1:J:41:ASP:CB    | 2.17                     | 0.92              |
| 1:C:191:GLU:C    | 1:C:332:ILE:O    | 2.07                     | 0.92              |
| 1:E:136:VAL:C    | 1:E:137:PRO:N    | 2.15                     | 0.92              |
| 1:M:235:PRO:HG3  | 1:M:310:GLU:HA   | 1.52                     | 0.92              |
| 1:N:235:PRO:HG3  | 1:N:310:GLU:HA   | 1.52                     | 0.92              |
| 1:C:47:PRO:CD    | 1:D:73:MET:CG    | 2.42                     | 0.92              |
| 1:L:235:PRO:HG3  | 1:L:310:GLU:HA   | 1.52                     | 0.92              |
| 1:A:191:GLU:C    | 1:A:332:ILE:O    | 2.07                     | 0.92              |
| 1:H:41:ASP:CB    | 1:N:521:VAL:O    | 2.17                     | 0.92              |
| 1:B:218:PRO:HB3  | 1:B:246:PRO:HG2  | 1.52                     | 0.92              |
| 1:J:517:THR:HG23 | 1:K:39:VAL:CG2   | 2.00                     | 0.92              |
| 1:M:517:THR:HG23 | 1:N:39:VAL:CG2   | 2.00                     | 0.92              |
| 1:D:194:GLN:H    | 1:D:375:GLY:H    | 1.07                     | 0.92              |
| 1:D:218:PRO:HB3  | 1:D:246:PRO:HG2  | 1.52                     | 0.92              |
| 1:F:194:GLN:HB2  | 1:F:375:GLY:C    | 1.89                     | 0.92              |
| 1:G:194:GLN:H    | 1:G:375:GLY:H    | 1.07                     | 0.92              |
| 1:N:218:PRO:HB3  | 1:N:246:PRO:HG2  | 1.50                     | 0.92              |
| 1:C:194:GLN:HB2  | 1:C:375:GLY:C    | 1.89                     | 0.92              |
| 1:E:194:GLN:H    | 1:E:375:GLY:H    | 1.07                     | 0.92              |
| 1:F:218:PRO:HB3  | 1:F:246:PRO:HG2  | 1.52                     | 0.92              |
| 1:H:39:VAL:CG2   | 1:N:517:THR:HG23 | 2.00                     | 0.92              |
| 1:H:235:PRO:HG3  | 1:H:310:GLU:HA   | 1.52                     | 0.92              |
| 1:I:517:THR:HG23 | 1:J:39:VAL:HG23  | 1.49                     | 0.92              |
| 1:K:517:THR:HG23 | 1:L:39:VAL:CG2   | 2.00                     | 0.92              |
| 1:L:517:THR:HG23 | 1:M:39:VAL:CG2   | 2.00                     | 0.92              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:218:PRO:HB3  | 1:M:246:PRO:HG2  | 1.50                     | 0.92              |
| 1:B:136:VAL:C    | 1:B:137:PRO:N    | 2.15                     | 0.92              |
| 1:G:191:GLU:C    | 1:G:332:ILE:O    | 2.07                     | 0.92              |
| 1:C:218:PRO:HB3  | 1:C:246:PRO:HG2  | 1.52                     | 0.92              |
| 1:E:194:GLN:HB2  | 1:E:375:GLY:C    | 1.89                     | 0.92              |
| 1:A:218:PRO:HB3  | 1:A:246:PRO:HG2  | 1.52                     | 0.91              |
| 1:E:174:VAL:HG21 | 1:E:329:THR:HG21 | 1.30                     | 0.91              |
| 1:F:194:GLN:H    | 1:F:375:GLY:H    | 1.07                     | 0.91              |
| 1:B:235:PRO:HG3  | 1:B:310:GLU:HA   | 1.48                     | 0.91              |
| 1:H:517:THR:HG23 | 1:I:39:VAL:HG23  | 1.49                     | 0.91              |
| 1:I:517:THR:HG23 | 1:J:39:VAL:CG2   | 2.00                     | 0.91              |
| 1:K:235:PRO:HG3  | 1:K:310:GLU:HA   | 1.52                     | 0.91              |
| 1:J:521:VAL:O    | 1:K:41:ASP:CB    | 2.17                     | 0.91              |
| 1:D:194:GLN:HB2  | 1:D:375:GLY:C    | 1.89                     | 0.91              |
| 1:G:218:PRO:HB3  | 1:G:246:PRO:HG2  | 1.52                     | 0.91              |
| 1:B:331:THR:HG21 | 1:B:376:VAL:HG21 | 1.53                     | 0.91              |
| 1:E:331:THR:HG21 | 1:E:376:VAL:HG21 | 1.53                     | 0.91              |
| 1:L:521:VAL:O    | 1:M:41:ASP:CB    | 2.17                     | 0.91              |
| 1:A:49:ILE:CD1   | 1:B:513:LEU:HB3  | 2.01                     | 0.91              |
| 1:D:331:THR:HG21 | 1:D:376:VAL:HG21 | 1.53                     | 0.91              |
| 1:I:235:PRO:HG3  | 1:I:310:GLU:HA   | 1.52                     | 0.91              |
| 1:J:333:ILE:CD1  | 1:J:378:VAL:HG21 | 2.01                     | 0.91              |
| 1:D:136:VAL:C    | 1:D:137:PRO:N    | 2.15                     | 0.91              |
| 1:E:49:ILE:CD1   | 1:F:513:LEU:HB3  | 2.01                     | 0.91              |
| 1:G:136:VAL:C    | 1:G:137:PRO:N    | 2.15                     | 0.91              |
| 1:M:521:VAL:O    | 1:N:41:ASP:CB    | 2.17                     | 0.91              |
| 1:K:521:VAL:O    | 1:L:41:ASP:CB    | 2.17                     | 0.90              |
| 1:A:331:THR:HG21 | 1:A:376:VAL:HG21 | 1.53                     | 0.90              |
| 1:C:49:ILE:CD1   | 1:D:513:LEU:HB3  | 2.01                     | 0.90              |
| 1:H:517:THR:HG23 | 1:I:39:VAL:CG2   | 2.00                     | 0.90              |
| 1:I:190:VAL:HG13 | 1:I:333:ILE:HG23 | 1.52                     | 0.90              |
| 1:J:235:PRO:HG3  | 1:J:310:GLU:HA   | 1.52                     | 0.90              |
| 1:B:49:ILE:CD1   | 1:C:513:LEU:HB3  | 2.01                     | 0.90              |
| 1:C:331:THR:HG21 | 1:C:376:VAL:HG21 | 1.53                     | 0.90              |
| 1:F:331:THR:HG21 | 1:F:376:VAL:HG21 | 1.53                     | 0.90              |
| 1:D:49:ILE:CD1   | 1:E:513:LEU:HB3  | 2.01                     | 0.90              |
| 1:F:136:VAL:C    | 1:F:137:PRO:N    | 2.15                     | 0.90              |
| 1:K:333:ILE:CD1  | 1:K:378:VAL:HG21 | 2.01                     | 0.90              |
| 1:I:194:GLN:HB2  | 1:I:376:VAL:CG2  | 2.03                     | 0.89              |
| 1:M:371:LYS:HA   | 1:M:374:GLY:N    | 1.88                     | 0.89              |
| 1:D:174:VAL:HG21 | 1:D:329:THR:HG21 | 1.30                     | 0.89              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:194:GLN:HB2  | 1:N:376:VAL:CG2  | 2.03                     | 0.89              |
| 1:G:331:THR:HG21 | 1:G:376:VAL:HG21 | 1.53                     | 0.89              |
| 1:I:371:LYS:HA   | 1:I:374:GLY:N    | 1.88                     | 0.89              |
| 1:K:194:GLN:HB2  | 1:K:376:VAL:CG2  | 2.03                     | 0.89              |
| 1:F:49:ILE:CD1   | 1:G:513:LEU:HB3  | 2.01                     | 0.89              |
| 1:H:333:ILE:CD1  | 1:H:378:VAL:HG21 | 2.01                     | 0.89              |
| 1:K:371:LYS:HA   | 1:K:374:GLY:N    | 1.88                     | 0.89              |
| 1:L:333:ILE:CD1  | 1:L:378:VAL:HG21 | 2.01                     | 0.89              |
| 1:C:174:VAL:HG21 | 1:C:329:THR:HG21 | 1.30                     | 0.88              |
| 1:M:194:GLN:HB2  | 1:M:376:VAL:CG2  | 2.03                     | 0.88              |
| 1:A:513:LEU:HB3  | 1:G:49:ILE:CD1   | 2.01                     | 0.88              |
| 1:H:194:GLN:HB2  | 1:H:376:VAL:CG2  | 2.03                     | 0.88              |
| 1:I:333:ILE:HG21 | 1:I:378:VAL:HG21 | 1.55                     | 0.88              |
| 1:J:194:GLN:HB2  | 1:J:376:VAL:CG2  | 2.03                     | 0.88              |
| 1:N:333:ILE:CD1  | 1:N:378:VAL:HG21 | 2.01                     | 0.88              |
| 1:B:174:VAL:HG21 | 1:B:329:THR:HG21 | 1.30                     | 0.88              |
| 1:E:191:GLU:CB   | 1:E:334:ASP:N    | 2.33                     | 0.88              |
| 1:L:194:GLN:HB2  | 1:L:376:VAL:CG2  | 2.03                     | 0.88              |
| 1:H:333:ILE:HG21 | 1:H:378:VAL:HG21 | 1.55                     | 0.88              |
| 1:H:371:LYS:HA   | 1:H:374:GLY:N    | 1.88                     | 0.88              |
| 1:I:333:ILE:CD1  | 1:I:378:VAL:HG21 | 2.01                     | 0.88              |
| 1:H:190:VAL:CB   | 1:H:333:ILE:CG2  | 2.42                     | 0.88              |
| 1:H:404:ARG:HG2  | 1:H:404:ARG:HH11 | 1.39                     | 0.87              |
| 1:I:333:ILE:CD1  | 1:I:378:VAL:CG2  | 2.53                     | 0.87              |
| 1:J:333:ILE:CD1  | 1:J:378:VAL:CG2  | 2.53                     | 0.87              |
| 1:L:333:ILE:CD1  | 1:L:378:VAL:CG2  | 2.53                     | 0.87              |
| 1:L:333:ILE:HG21 | 1:L:378:VAL:HG21 | 1.55                     | 0.87              |
| 1:M:333:ILE:CD1  | 1:M:378:VAL:CG2  | 2.53                     | 0.87              |
| 1:I:404:ARG:HG2  | 1:I:404:ARG:HH11 | 1.39                     | 0.87              |
| 1:N:371:LYS:HA   | 1:N:374:GLY:N    | 1.88                     | 0.87              |
| 1:A:517:THR:HG23 | 1:G:39:VAL:HG23  | 0.87                     | 0.87              |
| 1:C:39:VAL:HG23  | 1:D:517:THR:HG23 | 0.87                     | 0.87              |
| 1:M:333:ILE:CD1  | 1:M:378:VAL:HG21 | 2.01                     | 0.87              |
| 1:D:39:VAL:HG23  | 1:E:517:THR:HG23 | 0.87                     | 0.87              |
| 1:J:371:LYS:HA   | 1:J:374:GLY:N    | 1.88                     | 0.87              |
| 1:L:190:VAL:HG13 | 1:L:333:ILE:HG23 | 1.52                     | 0.87              |
| 1:N:333:ILE:HG21 | 1:N:378:VAL:HG21 | 1.55                     | 0.87              |
| 1:A:39:VAL:HG23  | 1:B:517:THR:HG23 | 0.87                     | 0.86              |
| 1:B:39:VAL:HG23  | 1:C:517:THR:HG23 | 0.87                     | 0.86              |
| 1:C:191:GLU:CB   | 1:C:334:ASP:N    | 2.33                     | 0.86              |
| 1:J:333:ILE:HG21 | 1:J:378:VAL:HG21 | 1.55                     | 0.86              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:333:ILE:HG21 | 1:K:378:VAL:HG21 | 1.55                     | 0.86              |
| 1:A:193:MET:C    | 1:A:375:GLY:H    | 1.78                     | 0.86              |
| 1:F:174:VAL:HG22 | 1:F:329:THR:CG2  | 1.98                     | 0.86              |
| 1:G:193:MET:C    | 1:G:375:GLY:H    | 1.78                     | 0.86              |
| 1:M:190:VAL:HG12 | 1:M:334:ASP:HB2  | 1.58                     | 0.86              |
| 1:M:333:ILE:HG21 | 1:M:378:VAL:HG21 | 1.55                     | 0.86              |
| 1:B:191:GLU:CB   | 1:B:334:ASP:N    | 2.33                     | 0.86              |
| 1:D:191:GLU:CB   | 1:D:334:ASP:N    | 2.33                     | 0.86              |
| 1:H:333:ILE:CD1  | 1:H:378:VAL:CG2  | 2.53                     | 0.86              |
| 1:L:371:LYS:HA   | 1:L:374:GLY:N    | 1.88                     | 0.86              |
| 1:L:404:ARG:HG2  | 1:L:404:ARG:HH11 | 1.39                     | 0.86              |
| 1:C:331:THR:CB   | 1:C:376:VAL:HG21 | 2.05                     | 0.86              |
| 1:G:371:LYS:CG   | 1:G:374:GLY:N    | 2.39                     | 0.86              |
| 1:N:190:VAL:HG12 | 1:N:334:ASP:HB2  | 1.58                     | 0.86              |
| 1:N:404:ARG:HG2  | 1:N:404:ARG:HH11 | 1.40                     | 0.86              |
| 1:B:191:GLU:CB   | 1:B:333:ILE:CA   | 2.54                     | 0.86              |
| 1:D:193:MET:C    | 1:D:375:GLY:H    | 1.78                     | 0.86              |
| 1:D:371:LYS:CG   | 1:D:374:GLY:N    | 2.39                     | 0.86              |
| 1:F:331:THR:CB   | 1:F:376:VAL:HG21 | 2.05                     | 0.86              |
| 1:G:174:VAL:HG22 | 1:G:329:THR:CG2  | 1.98                     | 0.86              |
| 1:K:333:ILE:CD1  | 1:K:378:VAL:CG2  | 2.53                     | 0.86              |
| 1:L:190:VAL:HG12 | 1:L:334:ASP:HB2  | 1.58                     | 0.86              |
| 1:A:136:VAL:C    | 1:A:137:PRO:N    | 2.15                     | 0.85              |
| 1:B:193:MET:C    | 1:B:375:GLY:H    | 1.78                     | 0.85              |
| 1:G:191:GLU:CB   | 1:G:333:ILE:CA   | 2.54                     | 0.85              |
| 1:J:404:ARG:HG2  | 1:J:404:ARG:HH11 | 1.39                     | 0.85              |
| 1:E:331:THR:CB   | 1:E:376:VAL:HG21 | 2.05                     | 0.85              |
| 1:M:69:MET:HE1   | 1:N:41:ASP:HB2   | 1.56                     | 0.85              |
| 1:A:371:LYS:CG   | 1:A:374:GLY:N    | 2.39                     | 0.85              |
| 1:C:371:LYS:CG   | 1:C:374:GLY:N    | 2.39                     | 0.85              |
| 1:E:39:VAL:HG23  | 1:F:517:THR:HG23 | 0.87                     | 0.85              |
| 1:A:49:ILE:HD13  | 1:B:513:LEU:HB3  | 1.58                     | 0.85              |
| 1:F:193:MET:C    | 1:F:375:GLY:H    | 1.78                     | 0.85              |
| 1:I:190:VAL:CB   | 1:I:333:ILE:CG2  | 2.42                     | 0.85              |
| 1:D:49:ILE:HD13  | 1:E:513:LEU:HB3  | 1.59                     | 0.85              |
| 1:G:331:THR:CB   | 1:G:376:VAL:HG21 | 2.05                     | 0.85              |
| 1:K:404:ARG:HG2  | 1:K:404:ARG:HH11 | 1.40                     | 0.85              |
| 1:D:331:THR:CB   | 1:D:376:VAL:HG21 | 2.05                     | 0.85              |
| 1:B:49:ILE:HD13  | 1:C:513:LEU:HB3  | 1.59                     | 0.85              |
| 1:C:193:MET:C    | 1:C:375:GLY:H    | 1.78                     | 0.85              |
| 1:J:190:VAL:HG12 | 1:J:334:ASP:HB2  | 1.58                     | 0.85              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:190:VAL:HG12 | 1:H:334:ASP:HB2  | 1.58                     | 0.85              |
| 1:N:333:ILE:CD1  | 1:N:378:VAL:CG2  | 2.53                     | 0.85              |
| 1:E:191:GLU:CB   | 1:E:333:ILE:CA   | 2.54                     | 0.85              |
| 1:E:174:VAL:HG22 | 1:E:329:THR:CG2  | 1.98                     | 0.84              |
| 1:E:193:MET:C    | 1:E:375:GLY:H    | 1.78                     | 0.84              |
| 1:E:371:LYS:CG   | 1:E:374:GLY:N    | 2.39                     | 0.84              |
| 1:L:349:ILE:HA   | 1:L:352:GLN:HG3  | 1.60                     | 0.84              |
| 1:F:371:LYS:CG   | 1:F:374:GLY:N    | 2.39                     | 0.84              |
| 1:K:349:ILE:HA   | 1:K:352:GLN:HG3  | 1.59                     | 0.84              |
| 1:A:191:GLU:CB   | 1:A:333:ILE:CA   | 2.54                     | 0.84              |
| 1:A:331:THR:CB   | 1:A:376:VAL:HG21 | 2.05                     | 0.84              |
| 1:A:513:LEU:HB3  | 1:G:49:ILE:HD13  | 1.59                     | 0.84              |
| 1:B:371:LYS:CG   | 1:B:374:GLY:N    | 2.39                     | 0.84              |
| 1:K:183:LEU:N    | 1:K:383:ALA:HB3  | 1.93                     | 0.84              |
| 1:K:190:VAL:CB   | 1:K:333:ILE:CG2  | 2.42                     | 0.84              |
| 1:M:349:ILE:HA   | 1:M:352:GLN:HG3  | 1.60                     | 0.84              |
| 1:B:331:THR:CB   | 1:B:376:VAL:HG21 | 2.05                     | 0.84              |
| 1:C:49:ILE:HD13  | 1:D:513:LEU:HB3  | 1.59                     | 0.84              |
| 1:E:49:ILE:HD13  | 1:F:513:LEU:HB3  | 1.59                     | 0.84              |
| 1:E:349:ILE:HA   | 1:E:352:GLN:HG3  | 1.60                     | 0.84              |
| 1:I:190:VAL:HG12 | 1:I:334:ASP:HB2  | 1.58                     | 0.84              |
| 1:B:174:VAL:HG22 | 1:B:329:THR:CG2  | 1.98                     | 0.84              |
| 1:D:349:ILE:HA   | 1:D:352:GLN:HG3  | 1.60                     | 0.84              |
| 1:H:190:VAL:HG13 | 1:H:333:ILE:HG23 | 1.51                     | 0.84              |
| 1:J:183:LEU:N    | 1:J:383:ALA:HB3  | 1.93                     | 0.84              |
| 1:K:190:VAL:HG13 | 1:K:333:ILE:HG23 | 1.51                     | 0.84              |
| 1:L:183:LEU:N    | 1:L:383:ALA:HB3  | 1.93                     | 0.84              |
| 1:M:404:ARG:HG2  | 1:M:404:ARG:HH11 | 1.39                     | 0.84              |
| 1:A:174:VAL:HG22 | 1:A:329:THR:CG2  | 1.98                     | 0.83              |
| 1:A:191:GLU:CB   | 1:A:334:ASP:N    | 2.33                     | 0.83              |
| 1:J:190:VAL:HG13 | 1:J:333:ILE:HG23 | 1.51                     | 0.83              |
| 1:F:39:VAL:HG23  | 1:G:517:THR:HG23 | 0.87                     | 0.83              |
| 1:F:49:ILE:HD13  | 1:G:513:LEU:HB3  | 1.58                     | 0.83              |
| 1:F:349:ILE:HA   | 1:F:352:GLN:HG3  | 1.60                     | 0.83              |
| 1:J:349:ILE:HA   | 1:J:352:GLN:HG3  | 1.59                     | 0.83              |
| 1:N:349:ILE:HA   | 1:N:352:GLN:HG3  | 1.59                     | 0.83              |
| 1:G:349:ILE:HA   | 1:G:352:GLN:HG3  | 1.60                     | 0.83              |
| 1:H:349:ILE:HA   | 1:H:352:GLN:HG3  | 1.60                     | 0.83              |
| 1:I:349:ILE:HA   | 1:I:352:GLN:HG3  | 1.59                     | 0.83              |
| 1:K:190:VAL:HG12 | 1:K:334:ASP:HB2  | 1.58                     | 0.83              |
| 1:C:349:ILE:HA   | 1:C:352:GLN:HG3  | 1.60                     | 0.82              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:190:VAL:HG13 | 1:M:333:ILE:HG23 | 1.51                     | 0.82              |
| 1:D:174:VAL:HG22 | 1:D:329:THR:CG2  | 1.98                     | 0.82              |
| 1:G:371:LYS:HG2  | 1:G:374:GLY:HA2  | 1.62                     | 0.82              |
| 1:C:191:GLU:CB   | 1:C:332:ILE:O    | 2.28                     | 0.82              |
| 1:F:331:THR:CG2  | 1:F:376:VAL:HG21 | 2.10                     | 0.82              |
| 1:G:331:THR:CG2  | 1:G:376:VAL:HG21 | 2.09                     | 0.82              |
| 1:I:183:LEU:N    | 1:I:383:ALA:HB3  | 1.93                     | 0.82              |
| 1:A:41:ASP:CG    | 1:B:69:MET:SD    | 2.58                     | 0.82              |
| 1:E:371:LYS:HG2  | 1:E:374:GLY:HA2  | 1.62                     | 0.82              |
| 1:F:191:GLU:CB   | 1:F:333:ILE:CA   | 2.54                     | 0.82              |
| 1:M:183:LEU:N    | 1:M:383:ALA:HB3  | 1.93                     | 0.82              |
| 1:C:174:VAL:HG22 | 1:C:329:THR:CG2  | 1.98                     | 0.82              |
| 1:A:349:ILE:HA   | 1:A:352:GLN:HG3  | 1.60                     | 0.82              |
| 1:B:41:ASP:CG    | 1:C:69:MET:SD    | 2.58                     | 0.82              |
| 1:G:191:GLU:CB   | 1:G:332:ILE:O    | 2.28                     | 0.82              |
| 1:B:191:GLU:CB   | 1:B:332:ILE:O    | 2.28                     | 0.82              |
| 1:C:191:GLU:HB2  | 1:C:333:ILE:C    | 1.99                     | 0.82              |
| 1:C:371:LYS:HG2  | 1:C:374:GLY:HA2  | 1.62                     | 0.82              |
| 1:D:191:GLU:HB2  | 1:D:333:ILE:C    | 1.99                     | 0.82              |
| 1:D:41:ASP:CG    | 1:E:69:MET:SD    | 2.58                     | 0.82              |
| 1:E:41:ASP:CG    | 1:F:69:MET:SD    | 2.58                     | 0.82              |
| 1:N:370:ALA:C    | 1:N:374:GLY:N    | 2.34                     | 0.82              |
| 1:A:331:THR:CG2  | 1:A:376:VAL:HG21 | 2.09                     | 0.81              |
| 1:E:331:THR:CG2  | 1:E:376:VAL:HG21 | 2.10                     | 0.81              |
| 1:A:191:GLU:CB   | 1:A:332:ILE:O    | 2.28                     | 0.81              |
| 1:F:191:GLU:CB   | 1:F:334:ASP:N    | 2.33                     | 0.81              |
| 1:H:370:ALA:C    | 1:H:374:GLY:N    | 2.34                     | 0.81              |
| 1:A:41:ASP:HB2   | 1:B:69:MET:HE1   | 1.62                     | 0.81              |
| 1:A:69:MET:SD    | 1:G:41:ASP:CG    | 2.58                     | 0.81              |
| 1:A:191:GLU:HB2  | 1:A:333:ILE:C    | 1.99                     | 0.81              |
| 1:C:41:ASP:CG    | 1:D:69:MET:SD    | 2.58                     | 0.81              |
| 1:D:191:GLU:CB   | 1:D:332:ILE:O    | 2.28                     | 0.81              |
| 1:B:331:THR:CG2  | 1:B:376:VAL:HG21 | 2.10                     | 0.81              |
| 1:B:349:ILE:HA   | 1:B:352:GLN:HG3  | 1.60                     | 0.81              |
| 1:F:41:ASP:CG    | 1:G:69:MET:SD    | 2.58                     | 0.81              |
| 1:B:371:LYS:HG2  | 1:B:374:GLY:HA2  | 1.62                     | 0.81              |
| 1:C:331:THR:CG2  | 1:C:376:VAL:HG21 | 2.10                     | 0.81              |
| 1:E:191:GLU:HB2  | 1:E:333:ILE:C    | 1.99                     | 0.81              |
| 1:F:191:GLU:CB   | 1:F:332:ILE:O    | 2.28                     | 0.81              |
| 1:M:370:ALA:C    | 1:M:374:GLY:N    | 2.34                     | 0.81              |
| 1:B:191:GLU:HB2  | 1:B:333:ILE:C    | 1.99                     | 0.81              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:191:GLU:HB2  | 1:G:333:ILE:C    | 1.99                     | 0.81              |
| 1:N:183:LEU:N    | 1:N:383:ALA:HB3  | 1.93                     | 0.81              |
| 1:D:331:THR:CG2  | 1:D:376:VAL:HG21 | 2.09                     | 0.81              |
| 1:F:191:GLU:HB2  | 1:F:333:ILE:C    | 1.99                     | 0.81              |
| 1:H:183:LEU:N    | 1:H:383:ALA:HB3  | 1.93                     | 0.81              |
| 1:I:370:ALA:C    | 1:I:374:GLY:N    | 2.34                     | 0.81              |
| 1:K:370:ALA:C    | 1:K:374:GLY:N    | 2.34                     | 0.81              |
| 1:A:69:MET:HE1   | 1:G:41:ASP:HB2   | 1.62                     | 0.81              |
| 1:D:331:THR:CB   | 1:D:376:VAL:HG23 | 2.09                     | 0.81              |
| 1:E:191:GLU:CB   | 1:E:332:ILE:O    | 2.28                     | 0.81              |
| 1:F:41:ASP:HB2   | 1:G:69:MET:HE1   | 1.61                     | 0.81              |
| 1:F:371:LYS:HG2  | 1:F:374:GLY:HA2  | 1.62                     | 0.80              |
| 1:J:370:ALA:C    | 1:J:374:GLY:N    | 2.33                     | 0.80              |
| 1:C:191:GLU:CB   | 1:C:333:ILE:CA   | 2.54                     | 0.80              |
| 1:D:371:LYS:HG2  | 1:D:374:GLY:HA2  | 1.62                     | 0.80              |
| 1:D:191:GLU:CB   | 1:D:333:ILE:CA   | 2.54                     | 0.80              |
| 1:L:370:ALA:C    | 1:L:374:GLY:N    | 2.34                     | 0.80              |
| 1:B:331:THR:CB   | 1:B:376:VAL:HG23 | 2.09                     | 0.80              |
| 1:G:174:VAL:HG21 | 1:G:329:THR:HG23 | 1.62                     | 0.80              |
| 1:G:191:GLU:CB   | 1:G:334:ASP:N    | 2.33                     | 0.80              |
| 1:E:331:THR:CB   | 1:E:376:VAL:HG23 | 2.09                     | 0.80              |
| 1:J:333:ILE:HD13 | 1:J:378:VAL:HG22 | 1.64                     | 0.80              |
| 1:C:194:GLN:HB3  | 1:C:375:GLY:O    | 1.82                     | 0.80              |
| 1:K:333:ILE:HD13 | 1:K:378:VAL:HG22 | 1.64                     | 0.80              |
| 1:A:174:VAL:HG21 | 1:A:329:THR:HG23 | 1.62                     | 0.80              |
| 1:A:371:LYS:HG2  | 1:A:374:GLY:HA2  | 1.62                     | 0.80              |
| 1:D:191:GLU:C    | 1:D:332:ILE:C    | 2.40                     | 0.79              |
| 1:A:191:GLU:C    | 1:A:332:ILE:C    | 2.40                     | 0.79              |
| 1:A:331:THR:CB   | 1:A:376:VAL:HG23 | 2.09                     | 0.79              |
| 1:F:174:VAL:HG21 | 1:F:329:THR:HG23 | 1.62                     | 0.79              |
| 1:G:194:GLN:HB3  | 1:G:375:GLY:O    | 1.82                     | 0.79              |
| 1:N:190:VAL:CB   | 1:N:333:ILE:CG2  | 2.42                     | 0.79              |
| 1:G:136:VAL:CG1  | 1:G:137:PRO:HD2  | 2.13                     | 0.79              |
| 1:F:191:GLU:C    | 1:F:332:ILE:C    | 2.40                     | 0.79              |
| 1:F:331:THR:CB   | 1:F:376:VAL:HG23 | 2.09                     | 0.79              |
| 1:H:41:ASP:HB2   | 1:N:69:MET:HE1   | 1.63                     | 0.79              |
| 1:A:136:VAL:CG1  | 1:A:137:PRO:HD2  | 2.13                     | 0.79              |
| 1:B:200:LEU:HD21 | 1:B:277:LYS:HG3  | 1.65                     | 0.79              |
| 1:D:136:VAL:CG1  | 1:D:137:PRO:HD2  | 2.13                     | 0.79              |
| 1:E:136:VAL:CG1  | 1:E:137:PRO:HD2  | 2.13                     | 0.79              |
| 1:F:200:LEU:HD21 | 1:F:277:LYS:HG3  | 1.65                     | 0.79              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:41:ASP:HB2   | 1:F:69:MET:HE1   | 1.64                     | 0.79              |
| 1:G:331:THR:CB   | 1:G:376:VAL:HG23 | 2.09                     | 0.79              |
| 1:G:200:LEU:HD21 | 1:G:277:LYS:HG3  | 1.65                     | 0.79              |
| 1:H:69:MET:HE1   | 1:I:41:ASP:HB2   | 1.64                     | 0.79              |
| 1:C:200:LEU:HD21 | 1:C:277:LYS:HG3  | 1.65                     | 0.79              |
| 1:F:194:GLN:HB3  | 1:F:375:GLY:O    | 1.82                     | 0.79              |
| 1:B:174:VAL:HG21 | 1:B:329:THR:HG23 | 1.63                     | 0.78              |
| 1:J:57:ALA:O     | 1:J:75:LYS:HE2   | 1.83                     | 0.78              |
| 1:A:200:LEU:HD21 | 1:A:277:LYS:HG3  | 1.65                     | 0.78              |
| 1:B:136:VAL:CG1  | 1:B:137:PRO:HD2  | 2.13                     | 0.78              |
| 1:C:136:VAL:CG1  | 1:C:137:PRO:HD2  | 2.13                     | 0.78              |
| 1:K:69:MET:HE1   | 1:L:41:ASP:HB2   | 1.63                     | 0.78              |
| 1:A:41:ASP:CB    | 1:B:69:MET:HE1   | 2.14                     | 0.78              |
| 1:F:41:ASP:CB    | 1:G:69:MET:HE1   | 2.12                     | 0.78              |
| 1:G:193:MET:HG3  | 1:G:374:GLY:N    | 1.99                     | 0.78              |
| 1:C:41:ASP:HB2   | 1:D:69:MET:HE1   | 1.65                     | 0.78              |
| 1:C:174:VAL:HG21 | 1:C:329:THR:HG23 | 1.62                     | 0.78              |
| 1:E:200:LEU:HD21 | 1:E:277:LYS:HG3  | 1.65                     | 0.78              |
| 1:J:85:ALA:O     | 1:J:401:HIS:HE1  | 1.67                     | 0.78              |
| 1:D:200:LEU:HD21 | 1:D:277:LYS:HG3  | 1.65                     | 0.78              |
| 1:E:174:VAL:HG21 | 1:E:329:THR:HG23 | 1.62                     | 0.78              |
| 1:I:57:ALA:O     | 1:I:75:LYS:HE2   | 1.83                     | 0.78              |
| 1:I:69:MET:HE1   | 1:J:41:ASP:HB2   | 1.65                     | 0.78              |
| 1:I:85:ALA:O     | 1:I:401:HIS:HE1  | 1.67                     | 0.78              |
| 1:N:57:ALA:O     | 1:N:75:LYS:HE2   | 1.83                     | 0.78              |
| 1:C:193:MET:HG3  | 1:C:374:GLY:N    | 1.99                     | 0.78              |
| 1:D:193:MET:HG3  | 1:D:374:GLY:N    | 1.99                     | 0.78              |
| 1:F:136:VAL:CG1  | 1:F:137:PRO:HD2  | 2.13                     | 0.78              |
| 1:L:57:ALA:O     | 1:L:75:LYS:HE2   | 1.83                     | 0.78              |
| 1:A:194:GLN:HB3  | 1:A:375:GLY:O    | 1.82                     | 0.78              |
| 1:K:85:ALA:O     | 1:K:401:HIS:HE1  | 1.67                     | 0.78              |
| 1:D:194:GLN:HB3  | 1:D:375:GLY:O    | 1.82                     | 0.78              |
| 1:H:57:ALA:O     | 1:H:75:LYS:HE2   | 1.83                     | 0.78              |
| 1:H:85:ALA:O     | 1:H:401:HIS:HE1  | 1.67                     | 0.78              |
| 1:J:191:GLU:O    | 1:J:332:ILE:HG22 | 1.85                     | 0.77              |
| 1:E:193:MET:HG3  | 1:E:374:GLY:N    | 1.99                     | 0.77              |
| 1:L:85:ALA:O     | 1:L:401:HIS:HE1  | 1.67                     | 0.77              |
| 1:M:190:VAL:CB   | 1:M:333:ILE:CG2  | 2.42                     | 0.77              |
| 1:M:57:ALA:O     | 1:M:75:LYS:HE2   | 1.83                     | 0.77              |
| 1:M:85:ALA:O     | 1:M:401:HIS:HE1  | 1.67                     | 0.77              |
| 1:N:85:ALA:O     | 1:N:401:HIS:HE1  | 1.67                     | 0.77              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:333:ILE:HD13 | 1:N:378:VAL:HG22 | 1.63                     | 0.77              |
| 1:K:57:ALA:O     | 1:K:75:LYS:HE2   | 1.83                     | 0.77              |
| 1:B:193:MET:HG3  | 1:B:374:GLY:N    | 1.99                     | 0.77              |
| 1:M:333:ILE:HD13 | 1:M:378:VAL:HG22 | 1.64                     | 0.77              |
| 1:C:183:LEU:N    | 1:C:383:ALA:HB3  | 1.99                     | 0.77              |
| 1:C:331:THR:HB   | 1:C:376:VAL:CG2  | 2.15                     | 0.77              |
| 1:E:183:LEU:N    | 1:E:383:ALA:HB3  | 1.99                     | 0.77              |
| 1:L:191:GLU:O    | 1:L:332:ILE:HG22 | 1.85                     | 0.77              |
| 1:A:69:MET:HE1   | 1:G:41:ASP:CB    | 2.14                     | 0.77              |
| 1:A:331:THR:HB   | 1:A:376:VAL:CG2  | 2.15                     | 0.77              |
| 1:H:191:GLU:O    | 1:H:332:ILE:HG22 | 1.85                     | 0.76              |
| 1:N:191:GLU:O    | 1:N:332:ILE:HG22 | 1.85                     | 0.76              |
| 1:A:193:MET:HG3  | 1:A:374:GLY:N    | 1.99                     | 0.76              |
| 1:L:69:MET:HE1   | 1:M:41:ASP:HB2   | 1.66                     | 0.76              |
| 1:B:41:ASP:HB2   | 1:C:69:MET:HE1   | 1.67                     | 0.76              |
| 1:B:191:GLU:C    | 1:B:332:ILE:C    | 2.40                     | 0.76              |
| 1:A:183:LEU:N    | 1:A:383:ALA:HB3  | 1.99                     | 0.76              |
| 1:A:406:ALA:HB2  | 1:A:496:PRO:HG3  | 1.68                     | 0.76              |
| 1:F:331:THR:HB   | 1:F:376:VAL:CG2  | 2.15                     | 0.76              |
| 1:L:333:ILE:HD13 | 1:L:378:VAL:HG22 | 1.64                     | 0.76              |
| 1:M:191:GLU:O    | 1:M:332:ILE:HG22 | 1.85                     | 0.76              |
| 1:N:190:VAL:HG13 | 1:N:333:ILE:HG23 | 1.52                     | 0.76              |
| 1:F:193:MET:HG3  | 1:F:374:GLY:N    | 1.99                     | 0.76              |
| 1:G:406:ALA:HB2  | 1:G:496:PRO:HG3  | 1.68                     | 0.76              |
| 1:D:41:ASP:HB2   | 1:E:69:MET:HE1   | 1.67                     | 0.76              |
| 1:E:194:GLN:HB3  | 1:E:375:GLY:O    | 1.82                     | 0.76              |
| 1:I:191:GLU:O    | 1:I:332:ILE:HG22 | 1.85                     | 0.76              |
| 1:B:406:ALA:HB2  | 1:B:496:PRO:HG3  | 1.68                     | 0.76              |
| 1:D:136:VAL:CG1  | 1:D:137:PRO:CD   | 2.64                     | 0.76              |
| 1:D:174:VAL:HG21 | 1:D:329:THR:HG23 | 1.63                     | 0.76              |
| 1:C:136:VAL:CG1  | 1:C:137:PRO:CD   | 2.64                     | 0.76              |
| 1:C:406:ALA:HB2  | 1:C:496:PRO:HG3  | 1.68                     | 0.76              |
| 1:D:331:THR:HB   | 1:D:376:VAL:CG2  | 2.15                     | 0.76              |
| 1:E:191:GLU:C    | 1:E:332:ILE:C    | 2.40                     | 0.75              |
| 1:M:517:THR:CG2  | 1:N:39:VAL:CG2   | 2.64                     | 0.75              |
| 1:A:69:MET:CE    | 1:G:41:ASP:CB    | 2.65                     | 0.75              |
| 1:E:41:ASP:CB    | 1:F:69:MET:CE    | 2.65                     | 0.75              |
| 1:F:41:ASP:CB    | 1:G:69:MET:CE    | 2.65                     | 0.75              |
| 1:J:517:THR:CG2  | 1:K:39:VAL:CG2   | 2.64                     | 0.75              |
| 1:B:331:THR:HB   | 1:B:376:VAL:CG2  | 2.15                     | 0.75              |
| 1:D:406:ALA:HB2  | 1:D:496:PRO:HG3  | 1.68                     | 0.75              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:183:LEU:N    | 1:F:383:ALA:HB3  | 1.99                     | 0.75              |
| 1:H:359:ASP:O    | 1:H:363:GLU:HG2  | 1.86                     | 0.75              |
| 1:J:359:ASP:O    | 1:J:363:GLU:HG2  | 1.86                     | 0.75              |
| 1:K:191:GLU:O    | 1:K:332:ILE:HG22 | 1.85                     | 0.75              |
| 1:A:136:VAL:CG1  | 1:A:137:PRO:CD   | 2.64                     | 0.75              |
| 1:C:191:GLU:C    | 1:C:332:ILE:C    | 2.40                     | 0.75              |
| 1:G:331:THR:HG1  | 1:G:376:VAL:HG23 | 1.47                     | 0.75              |
| 1:C:331:THR:CB   | 1:C:376:VAL:HG23 | 2.09                     | 0.75              |
| 1:F:406:ALA:HB2  | 1:F:496:PRO:HG3  | 1.68                     | 0.75              |
| 1:H:39:VAL:CG2   | 1:N:517:THR:CG2  | 2.64                     | 0.75              |
| 1:H:183:LEU:H    | 1:H:383:ALA:CB   | 1.98                     | 0.75              |
| 1:J:517:THR:CG2  | 1:K:39:VAL:HG21  | 2.17                     | 0.75              |
| 1:K:359:ASP:O    | 1:K:363:GLU:HG2  | 1.86                     | 0.75              |
| 1:K:517:THR:CG2  | 1:L:39:VAL:HG21  | 2.17                     | 0.75              |
| 1:L:517:THR:CG2  | 1:M:39:VAL:HG21  | 2.17                     | 0.75              |
| 1:M:517:THR:CG2  | 1:N:39:VAL:HG21  | 2.17                     | 0.75              |
| 1:B:194:GLN:HB3  | 1:B:375:GLY:O    | 1.82                     | 0.75              |
| 1:H:517:THR:CG2  | 1:I:39:VAL:HG21  | 2.17                     | 0.75              |
| 1:J:200:LEU:HD21 | 1:J:277:LYS:HG3  | 1.69                     | 0.75              |
| 1:N:359:ASP:O    | 1:N:363:GLU:HG2  | 1.86                     | 0.75              |
| 1:A:41:ASP:CB    | 1:B:69:MET:CE    | 2.65                     | 0.75              |
| 1:K:517:THR:CG2  | 1:L:39:VAL:CG2   | 2.64                     | 0.75              |
| 1:D:41:ASP:CB    | 1:E:69:MET:CE    | 2.65                     | 0.75              |
| 1:E:41:ASP:CB    | 1:F:69:MET:HE1   | 2.17                     | 0.75              |
| 1:B:136:VAL:CG1  | 1:B:137:PRO:CD   | 2.64                     | 0.75              |
| 1:I:517:THR:CG2  | 1:J:39:VAL:CG2   | 2.64                     | 0.75              |
| 1:L:517:THR:CG2  | 1:M:39:VAL:CG2   | 2.64                     | 0.75              |
| 1:G:183:LEU:N    | 1:G:383:ALA:HB3  | 1.99                     | 0.74              |
| 1:I:200:LEU:HD21 | 1:I:277:LYS:HG3  | 1.69                     | 0.74              |
| 1:I:359:ASP:O    | 1:I:363:GLU:HG2  | 1.86                     | 0.74              |
| 1:G:331:THR:HB   | 1:G:376:VAL:CG2  | 2.15                     | 0.74              |
| 1:H:517:THR:CG2  | 1:I:39:VAL:CG2   | 2.64                     | 0.74              |
| 1:K:200:LEU:HD21 | 1:K:277:LYS:HG3  | 1.69                     | 0.74              |
| 1:N:183:LEU:H    | 1:N:383:ALA:CB   | 1.98                     | 0.74              |
| 1:I:333:ILE:HD13 | 1:I:378:VAL:HG22 | 1.64                     | 0.74              |
| 1:I:517:THR:CG2  | 1:J:39:VAL:HG21  | 2.17                     | 0.74              |
| 1:G:191:GLU:C    | 1:G:332:ILE:C    | 2.40                     | 0.74              |
| 1:H:39:VAL:HG21  | 1:N:517:THR:CG2  | 2.17                     | 0.74              |
| 1:H:513:LEU:HB3  | 1:I:49:ILE:HD13  | 1.69                     | 0.74              |
| 1:L:359:ASP:O    | 1:L:363:GLU:HG2  | 1.86                     | 0.74              |
| 1:A:359:ASP:O    | 1:A:363:GLU:HG2  | 1.88                     | 0.74              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:49:ILE:HD13  | 1:N:513:LEU:HB3  | 1.68                     | 0.74              |
| 1:M:381:VAL:HG21 | 1:M:393:LYS:HA   | 1.70                     | 0.74              |
| 1:C:359:ASP:O    | 1:C:363:GLU:HG2  | 1.88                     | 0.74              |
| 1:G:359:ASP:O    | 1:G:363:GLU:HG2  | 1.88                     | 0.74              |
| 1:H:381:VAL:HG21 | 1:H:393:LYS:HA   | 1.70                     | 0.74              |
| 1:M:359:ASP:O    | 1:M:363:GLU:HG2  | 1.86                     | 0.74              |
| 1:F:136:VAL:CG1  | 1:F:137:PRO:CD   | 2.64                     | 0.74              |
| 1:F:359:ASP:O    | 1:F:363:GLU:HG2  | 1.88                     | 0.74              |
| 1:E:331:THR:HB   | 1:E:376:VAL:CG2  | 2.15                     | 0.74              |
| 1:E:359:ASP:O    | 1:E:363:GLU:HG2  | 1.88                     | 0.74              |
| 1:E:406:ALA:HB2  | 1:E:496:PRO:HG3  | 1.68                     | 0.74              |
| 1:F:331:THR:HG1  | 1:F:376:VAL:HG23 | 1.51                     | 0.74              |
| 1:L:183:LEU:H    | 1:L:383:ALA:CB   | 1.98                     | 0.74              |
| 1:M:183:LEU:H    | 1:M:383:ALA:CB   | 1.98                     | 0.74              |
| 1:E:86:GLY:HA3   | 1:E:401:HIS:HE1  | 0.94                     | 0.74              |
| 1:H:200:LEU:HD21 | 1:H:277:LYS:HG3  | 1.69                     | 0.74              |
| 1:J:183:LEU:H    | 1:J:383:ALA:CB   | 1.98                     | 0.74              |
| 1:B:41:ASP:CB    | 1:C:69:MET:CE    | 2.65                     | 0.73              |
| 1:C:41:ASP:CB    | 1:D:69:MET:CE    | 2.65                     | 0.73              |
| 1:H:333:ILE:HD13 | 1:H:378:VAL:HG22 | 1.64                     | 0.73              |
| 1:L:200:LEU:HD21 | 1:L:277:LYS:HG3  | 1.69                     | 0.73              |
| 1:D:359:ASP:O    | 1:D:363:GLU:HG2  | 1.88                     | 0.73              |
| 1:E:136:VAL:CG1  | 1:E:137:PRO:CD   | 2.64                     | 0.73              |
| 1:G:136:VAL:CG1  | 1:G:137:PRO:CD   | 2.64                     | 0.73              |
| 1:L:513:LEU:HB3  | 1:M:49:ILE:HD13  | 1.69                     | 0.73              |
| 1:B:359:ASP:O    | 1:B:363:GLU:HG2  | 1.88                     | 0.73              |
| 1:D:86:GLY:HA3   | 1:D:401:HIS:HE1  | 0.94                     | 0.73              |
| 1:F:86:GLY:HA3   | 1:F:401:HIS:HE1  | 0.94                     | 0.73              |
| 1:I:381:VAL:HG21 | 1:I:393:LYS:HA   | 1.70                     | 0.73              |
| 1:L:381:VAL:HG21 | 1:L:393:LYS:HA   | 1.70                     | 0.73              |
| 1:K:331:THR:OG1  | 1:K:376:VAL:CG2  | 2.36                     | 0.73              |
| 1:K:513:LEU:HB3  | 1:L:49:ILE:HD13  | 1.68                     | 0.73              |
| 1:N:200:LEU:HD21 | 1:N:277:LYS:HG3  | 1.69                     | 0.73              |
| 1:C:41:ASP:CB    | 1:D:69:MET:HE1   | 2.18                     | 0.73              |
| 1:I:513:LEU:HB3  | 1:J:49:ILE:HD13  | 1.69                     | 0.73              |
| 1:M:200:LEU:HD21 | 1:M:277:LYS:HG3  | 1.69                     | 0.73              |
| 1:N:192:GLY:C    | 1:N:375:GLY:CA   | 2.52                     | 0.73              |
| 1:B:57:ALA:O     | 1:B:75:LYS:HE2   | 1.89                     | 0.73              |
| 1:C:57:ALA:O     | 1:C:75:LYS:HE2   | 1.89                     | 0.73              |
| 1:A:57:ALA:O     | 1:A:75:LYS:HE2   | 1.89                     | 0.72              |
| 1:C:86:GLY:HA3   | 1:C:401:HIS:HE1  | 0.94                     | 0.72              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:41:ASP:CG    | 1:E:69:MET:CE    | 2.58                     | 0.72              |
| 1:M:513:LEU:HB3  | 1:N:49:ILE:HD13  | 1.68                     | 0.72              |
| 1:B:86:GLY:HA3   | 1:B:401:HIS:HE1  | 0.94                     | 0.72              |
| 1:B:183:LEU:N    | 1:B:383:ALA:HB3  | 1.99                     | 0.72              |
| 1:G:86:GLY:HA3   | 1:G:401:HIS:HE1  | 0.94                     | 0.72              |
| 1:J:69:MET:HE1   | 1:K:41:ASP:HB2   | 1.70                     | 0.72              |
| 1:A:86:GLY:HA3   | 1:A:401:HIS:HE1  | 0.94                     | 0.72              |
| 1:E:41:ASP:CG    | 1:F:69:MET:CE    | 2.58                     | 0.72              |
| 1:J:513:LEU:HB3  | 1:K:49:ILE:HD13  | 1.69                     | 0.72              |
| 1:N:331:THR:OG1  | 1:N:376:VAL:CG2  | 2.36                     | 0.72              |
| 1:A:41:ASP:CG    | 1:B:69:MET:CE    | 2.58                     | 0.72              |
| 1:D:57:ALA:O     | 1:D:75:LYS:HE2   | 1.89                     | 0.72              |
| 1:F:191:GLU:CA   | 1:F:332:ILE:O    | 2.38                     | 0.72              |
| 1:J:331:THR:OG1  | 1:J:376:VAL:CG2  | 2.36                     | 0.72              |
| 1:K:331:THR:OG1  | 1:K:376:VAL:CG1  | 2.38                     | 0.72              |
| 1:N:331:THR:OG1  | 1:N:376:VAL:CG1  | 2.38                     | 0.72              |
| 1:D:183:LEU:N    | 1:D:383:ALA:HB3  | 1.99                     | 0.72              |
| 1:K:174:VAL:HG21 | 1:K:194:GLN:CB   | 2.12                     | 0.72              |
| 1:K:381:VAL:HG21 | 1:K:393:LYS:HA   | 1.70                     | 0.72              |
| 1:H:174:VAL:HG21 | 1:H:194:GLN:CB   | 2.12                     | 0.72              |
| 1:B:41:ASP:CG    | 1:C:69:MET:CE    | 2.58                     | 0.72              |
| 1:C:414:GLY:O    | 1:C:417:VAL:HG13 | 1.90                     | 0.72              |
| 1:H:331:THR:OG1  | 1:H:376:VAL:CG1  | 2.38                     | 0.72              |
| 1:A:69:MET:CE    | 1:G:41:ASP:CG    | 2.58                     | 0.72              |
| 1:B:191:GLU:CA   | 1:B:332:ILE:O    | 2.38                     | 0.72              |
| 1:D:174:VAL:CG2  | 1:D:329:THR:HG23 | 2.17                     | 0.72              |
| 1:A:191:GLU:CA   | 1:A:332:ILE:O    | 2.38                     | 0.72              |
| 1:C:41:ASP:CG    | 1:D:69:MET:CE    | 2.58                     | 0.72              |
| 1:D:191:GLU:CA   | 1:D:332:ILE:O    | 2.38                     | 0.72              |
| 1:E:245:LYS:HE2  | 1:F:231:ARG:HH21 | 1.55                     | 0.72              |
| 1:F:414:GLY:O    | 1:F:417:VAL:HG13 | 1.90                     | 0.72              |
| 1:G:191:GLU:CA   | 1:G:332:ILE:O    | 2.38                     | 0.72              |
| 1:J:381:VAL:HG21 | 1:J:393:LYS:HA   | 1.70                     | 0.72              |
| 1:N:381:VAL:HG21 | 1:N:393:LYS:HA   | 1.70                     | 0.72              |
| 1:H:331:THR:OG1  | 1:H:376:VAL:CG2  | 2.36                     | 0.72              |
| 1:M:331:THR:OG1  | 1:M:376:VAL:CG2  | 2.36                     | 0.72              |
| 1:A:231:ARG:HH21 | 1:G:245:LYS:HE2  | 1.55                     | 0.71              |
| 1:F:41:ASP:CG    | 1:G:69:MET:CE    | 2.58                     | 0.71              |
| 1:L:331:THR:OG1  | 1:L:376:VAL:CG1  | 2.38                     | 0.71              |
| 1:E:191:GLU:CA   | 1:E:332:ILE:O    | 2.38                     | 0.71              |
| 1:G:57:ALA:O     | 1:G:75:LYS:HE2   | 1.89                     | 0.71              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:331:THR:OG1  | 1:I:376:VAL:CG1  | 2.38                     | 0.71              |
| 1:E:414:GLY:O    | 1:E:417:VAL:HG13 | 1.90                     | 0.71              |
| 1:K:183:LEU:H    | 1:K:383:ALA:CB   | 1.98                     | 0.71              |
| 1:F:245:LYS:HE2  | 1:G:231:ARG:HH21 | 1.55                     | 0.71              |
| 1:B:245:LYS:HE2  | 1:C:231:ARG:HH21 | 1.55                     | 0.71              |
| 1:D:414:GLY:O    | 1:D:417:VAL:HG13 | 1.90                     | 0.71              |
| 1:E:57:ALA:O     | 1:E:75:LYS:HE2   | 1.89                     | 0.71              |
| 1:F:174:VAL:CG2  | 1:F:329:THR:HG23 | 2.17                     | 0.71              |
| 1:C:191:GLU:CA   | 1:C:332:ILE:O    | 2.38                     | 0.71              |
| 1:C:263:VAL:O    | 1:C:267:MET:HB2  | 1.91                     | 0.71              |
| 1:D:263:VAL:O    | 1:D:267:MET:HB2  | 1.91                     | 0.71              |
| 1:D:245:LYS:HE2  | 1:E:231:ARG:HH21 | 1.55                     | 0.71              |
| 1:I:194:GLN:O    | 1:I:371:LYS:HE3  | 1.91                     | 0.71              |
| 1:J:194:GLN:O    | 1:J:371:LYS:HE3  | 1.91                     | 0.71              |
| 1:C:245:LYS:HE2  | 1:D:231:ARG:HH21 | 1.55                     | 0.71              |
| 1:E:263:VAL:O    | 1:E:267:MET:HB2  | 1.91                     | 0.71              |
| 1:C:174:VAL:CG2  | 1:C:329:THR:HG23 | 2.17                     | 0.71              |
| 1:F:263:VAL:O    | 1:F:267:MET:HB2  | 1.91                     | 0.71              |
| 1:A:414:GLY:O    | 1:A:417:VAL:HG13 | 1.90                     | 0.71              |
| 1:B:263:VAL:O    | 1:B:267:MET:HB2  | 1.91                     | 0.71              |
| 1:B:414:GLY:O    | 1:B:417:VAL:HG13 | 1.90                     | 0.70              |
| 1:C:381:VAL:HG21 | 1:C:393:LYS:HA   | 1.73                     | 0.70              |
| 1:D:41:ASP:CB    | 1:E:69:MET:HE1   | 2.21                     | 0.70              |
| 1:G:414:GLY:O    | 1:G:417:VAL:HG13 | 1.90                     | 0.70              |
| 1:M:174:VAL:HG21 | 1:M:194:GLN:CB   | 2.12                     | 0.70              |
| 1:B:381:VAL:HG21 | 1:B:393:LYS:HA   | 1.73                     | 0.70              |
| 1:F:57:ALA:O     | 1:F:75:LYS:HE2   | 1.89                     | 0.70              |
| 1:G:263:VAL:O    | 1:G:267:MET:HB2  | 1.91                     | 0.70              |
| 1:I:331:THR:OG1  | 1:I:376:VAL:CG2  | 2.36                     | 0.70              |
| 1:A:263:VAL:O    | 1:A:267:MET:HB2  | 1.91                     | 0.70              |
| 1:B:41:ASP:CB    | 1:C:69:MET:HE1   | 2.21                     | 0.70              |
| 1:M:85:ALA:O     | 1:M:401:HIS:CE1  | 2.45                     | 0.70              |
| 1:L:85:ALA:O     | 1:L:401:HIS:CE1  | 2.45                     | 0.70              |
| 1:K:85:ALA:O     | 1:K:401:HIS:CE1  | 2.45                     | 0.70              |
| 1:M:331:THR:OG1  | 1:M:376:VAL:CG1  | 2.38                     | 0.70              |
| 1:N:85:ALA:O     | 1:N:401:HIS:CE1  | 2.45                     | 0.70              |
| 1:A:245:LYS:HE2  | 1:B:231:ARG:HH21 | 1.55                     | 0.70              |
| 1:I:263:VAL:O    | 1:I:267:MET:HB2  | 1.92                     | 0.70              |
| 1:H:263:VAL:O    | 1:H:267:MET:HB2  | 1.92                     | 0.70              |
| 1:J:331:THR:OG1  | 1:J:376:VAL:CG1  | 2.38                     | 0.70              |
| 1:L:331:THR:OG1  | 1:L:376:VAL:CG2  | 2.36                     | 0.70              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:177:VAL:HG21 | 1:I:397:GLU:HG3  | 1.74                     | 0.69              |
| 1:D:41:ASP:OD1   | 1:E:69:MET:HE3   | 1.92                     | 0.69              |
| 1:D:381:VAL:HG21 | 1:D:393:LYS:HA   | 1.73                     | 0.69              |
| 1:J:177:VAL:HG21 | 1:J:397:GLU:HG3  | 1.74                     | 0.69              |
| 1:A:381:VAL:HG21 | 1:A:393:LYS:HA   | 1.73                     | 0.69              |
| 1:H:194:GLN:O    | 1:H:371:LYS:HE3  | 1.91                     | 0.69              |
| 1:K:194:GLN:O    | 1:K:371:LYS:HE3  | 1.91                     | 0.69              |
| 1:B:41:ASP:OD1   | 1:C:69:MET:HE3   | 1.92                     | 0.69              |
| 1:K:219:PHE:HB3  | 1:K:317:LEU:HD23 | 1.74                     | 0.69              |
| 1:N:194:GLN:O    | 1:N:371:LYS:HE3  | 1.91                     | 0.69              |
| 1:N:331:THR:HG1  | 1:N:376:VAL:HG11 | 1.57                     | 0.69              |
| 1:K:192:GLY:C    | 1:K:375:GLY:CA   | 2.52                     | 0.69              |
| 1:J:85:ALA:O     | 1:J:401:HIS:CE1  | 2.45                     | 0.69              |
| 1:L:219:PHE:HB3  | 1:L:317:LEU:HD23 | 1.74                     | 0.69              |
| 1:M:194:GLN:O    | 1:M:371:LYS:HE3  | 1.91                     | 0.69              |
| 1:E:213:VAL:HB   | 1:E:325:ILE:CG1  | 2.23                     | 0.69              |
| 1:H:85:ALA:O     | 1:H:401:HIS:CE1  | 2.45                     | 0.69              |
| 1:H:177:VAL:HG21 | 1:H:397:GLU:HG3  | 1.74                     | 0.69              |
| 1:K:177:VAL:HG21 | 1:K:397:GLU:HG3  | 1.74                     | 0.69              |
| 1:L:194:GLN:O    | 1:L:371:LYS:HE3  | 1.91                     | 0.69              |
| 1:A:174:VAL:CG2  | 1:A:329:THR:HG23 | 2.17                     | 0.69              |
| 1:D:213:VAL:HB   | 1:D:325:ILE:CG1  | 2.23                     | 0.69              |
| 1:E:381:VAL:HG21 | 1:E:393:LYS:HA   | 1.73                     | 0.69              |
| 1:F:213:VAL:HB   | 1:F:325:ILE:CG1  | 2.23                     | 0.69              |
| 1:J:263:VAL:O    | 1:J:267:MET:HB2  | 1.92                     | 0.69              |
| 1:L:263:VAL:O    | 1:L:267:MET:HB2  | 1.92                     | 0.69              |
| 1:M:263:VAL:O    | 1:M:267:MET:HB2  | 1.92                     | 0.69              |
| 1:K:263:VAL:O    | 1:K:267:MET:HB2  | 1.92                     | 0.69              |
| 1:I:85:ALA:O     | 1:I:401:HIS:CE1  | 2.45                     | 0.68              |
| 1:I:183:LEU:H    | 1:I:383:ALA:CB   | 1.98                     | 0.68              |
| 1:C:194:GLN:H    | 1:C:375:GLY:N    | 1.79                     | 0.68              |
| 1:F:381:VAL:HG21 | 1:F:393:LYS:HA   | 1.73                     | 0.68              |
| 1:J:219:PHE:HB3  | 1:J:317:LEU:HD23 | 1.74                     | 0.68              |
| 1:M:219:PHE:HB3  | 1:M:317:LEU:HD23 | 1.74                     | 0.68              |
| 1:N:183:LEU:HD23 | 1:N:384:ALA:HB2  | 1.75                     | 0.68              |
| 1:C:213:VAL:HB   | 1:C:325:ILE:CG1  | 2.23                     | 0.68              |
| 1:M:177:VAL:HG21 | 1:M:397:GLU:HG3  | 1.74                     | 0.68              |
| 1:A:213:VAL:HB   | 1:A:325:ILE:CG1  | 2.23                     | 0.68              |
| 1:M:183:LEU:HD23 | 1:M:384:ALA:HB2  | 1.75                     | 0.68              |
| 1:N:174:VAL:HG21 | 1:N:194:GLN:CB   | 2.12                     | 0.68              |
| 1:G:228:SER:O    | 1:G:257:GLU:HB3  | 1.94                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:381:VAL:HG21 | 1:G:393:LYS:HA   | 1.73                     | 0.68              |
| 1:I:219:PHE:HB3  | 1:I:317:LEU:HD23 | 1.74                     | 0.68              |
| 1:K:305:ILE:HD12 | 1:K:307:MET:HE2  | 1.75                     | 0.68              |
| 1:A:194:GLN:H    | 1:A:375:GLY:N    | 1.79                     | 0.68              |
| 1:D:183:LEU:H    | 1:D:383:ALA:CB   | 2.03                     | 0.68              |
| 1:E:228:SER:O    | 1:E:257:GLU:HB3  | 1.94                     | 0.68              |
| 1:H:183:LEU:HD23 | 1:H:384:ALA:HB2  | 1.75                     | 0.68              |
| 1:L:76:GLU:HG3   | 1:M:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:N:263:VAL:O    | 1:N:267:MET:HB2  | 1.92                     | 0.68              |
| 1:A:228:SER:O    | 1:A:257:GLU:HB3  | 1.94                     | 0.68              |
| 1:G:213:VAL:HB   | 1:G:325:ILE:CG1  | 2.23                     | 0.68              |
| 1:G:194:GLN:O    | 1:G:371:LYS:HE3  | 1.94                     | 0.68              |
| 1:H:76:GLU:HG3   | 1:I:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:H:192:GLY:C    | 1:H:375:GLY:CA   | 2.52                     | 0.68              |
| 1:H:219:PHE:HB3  | 1:H:317:LEU:HD23 | 1.74                     | 0.68              |
| 1:I:76:GLU:HG3   | 1:J:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:K:76:GLU:HG3   | 1:L:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:B:213:VAL:HB   | 1:B:325:ILE:CG1  | 2.23                     | 0.68              |
| 1:B:228:SER:O    | 1:B:257:GLU:HB3  | 1.94                     | 0.68              |
| 1:H:46:ALA:HB2   | 1:N:76:GLU:HG3   | 1.76                     | 0.68              |
| 1:J:76:GLU:HG3   | 1:K:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:J:174:VAL:HG21 | 1:J:194:GLN:CB   | 2.12                     | 0.68              |
| 1:M:76:GLU:HG3   | 1:N:46:ALA:HB2   | 1.76                     | 0.68              |
| 1:N:177:VAL:HG21 | 1:N:397:GLU:CG   | 2.24                     | 0.68              |
| 1:D:47:PRO:CD    | 1:E:73:MET:HG3   | 2.24                     | 0.67              |
| 1:J:192:GLY:C    | 1:J:375:GLY:CA   | 2.52                     | 0.67              |
| 1:B:174:VAL:CG2  | 1:B:329:THR:HG23 | 2.17                     | 0.67              |
| 1:E:41:ASP:OD1   | 1:F:69:MET:HE3   | 1.94                     | 0.67              |
| 1:I:177:VAL:HG21 | 1:I:397:GLU:CG   | 2.24                     | 0.67              |
| 1:A:194:GLN:O    | 1:A:371:LYS:HE3  | 1.94                     | 0.67              |
| 1:C:47:PRO:CD    | 1:D:73:MET:HG3   | 2.24                     | 0.67              |
| 1:F:228:SER:O    | 1:F:257:GLU:HB3  | 1.94                     | 0.67              |
| 1:I:183:LEU:HD23 | 1:I:384:ALA:HB2  | 1.75                     | 0.67              |
| 1:F:193:MET:CG   | 1:F:374:GLY:N    | 2.58                     | 0.67              |
| 1:L:192:GLY:C    | 1:L:375:GLY:CA   | 2.52                     | 0.67              |
| 1:N:177:VAL:HG21 | 1:N:397:GLU:HG3  | 1.74                     | 0.67              |
| 1:B:193:MET:CG   | 1:B:374:GLY:N    | 2.58                     | 0.67              |
| 1:D:228:SER:O    | 1:D:257:GLU:HB3  | 1.94                     | 0.67              |
| 1:E:193:MET:CG   | 1:E:374:GLY:N    | 2.58                     | 0.67              |
| 1:J:305:ILE:HD12 | 1:J:307:MET:HE2  | 1.76                     | 0.67              |
| 1:L:177:VAL:HG21 | 1:L:397:GLU:HG3  | 1.74                     | 0.67              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:L:183:LEU:HD23 | 1:L:384:ALA:HB2  | 1.75                     | 0.67              |
| 1:C:228:SER:O    | 1:C:257:GLU:HB3  | 1.94                     | 0.67              |
| 1:D:39:VAL:CG2   | 1:E:517:THR:HG21 | 2.01                     | 0.67              |
| 1:F:194:GLN:O    | 1:F:371:LYS:HE3  | 1.94                     | 0.67              |
| 1:G:193:MET:CG   | 1:G:374:GLY:N    | 2.58                     | 0.67              |
| 1:J:177:VAL:HG21 | 1:J:397:GLU:CG   | 2.25                     | 0.67              |
| 1:L:305:ILE:HD12 | 1:L:307:MET:HE2  | 1.75                     | 0.67              |
| 1:B:194:GLN:O    | 1:B:371:LYS:HE3  | 1.94                     | 0.67              |
| 1:C:41:ASP:OD1   | 1:D:69:MET:HE3   | 1.94                     | 0.67              |
| 1:H:513:LEU:HB3  | 1:I:49:ILE:CD1   | 2.25                     | 0.67              |
| 1:K:177:VAL:HG21 | 1:K:397:GLU:CG   | 2.25                     | 0.67              |
| 1:N:219:PHE:HB3  | 1:N:317:LEU:HD23 | 1.74                     | 0.67              |
| 1:E:47:PRO:CD    | 1:F:73:MET:HG3   | 2.24                     | 0.67              |
| 1:I:513:LEU:HB3  | 1:J:49:ILE:CD1   | 2.25                     | 0.67              |
| 1:K:183:LEU:HD23 | 1:K:384:ALA:HB2  | 1.76                     | 0.67              |
| 1:A:193:MET:CG   | 1:A:374:GLY:N    | 2.58                     | 0.66              |
| 1:C:194:GLN:O    | 1:C:371:LYS:HE3  | 1.94                     | 0.66              |
| 1:M:177:VAL:HG21 | 1:M:397:GLU:CG   | 2.25                     | 0.66              |
| 1:D:41:ASP:HA    | 1:E:69:MET:HE3   | 1.78                     | 0.66              |
| 1:H:177:VAL:HG21 | 1:H:397:GLU:CG   | 2.25                     | 0.66              |
| 1:J:183:LEU:HD23 | 1:J:384:ALA:HB2  | 1.76                     | 0.66              |
| 1:M:305:ILE:HD12 | 1:M:307:MET:HE2  | 1.76                     | 0.66              |
| 1:M:513:LEU:HB3  | 1:N:49:ILE:CD1   | 2.25                     | 0.66              |
| 1:N:305:ILE:HD12 | 1:N:307:MET:HE2  | 1.76                     | 0.66              |
| 1:B:47:PRO:CD    | 1:C:73:MET:HG3   | 2.25                     | 0.66              |
| 1:C:193:MET:CG   | 1:C:374:GLY:N    | 2.58                     | 0.66              |
| 1:D:194:GLN:O    | 1:D:371:LYS:HE3  | 1.94                     | 0.66              |
| 1:H:49:ILE:CD1   | 1:N:513:LEU:HB3  | 2.25                     | 0.66              |
| 1:J:190:VAL:CB   | 1:J:333:ILE:CG2  | 2.42                     | 0.66              |
| 1:L:177:VAL:HG21 | 1:L:397:GLU:CG   | 2.25                     | 0.66              |
| 1:C:41:ASP:OD1   | 1:D:69:MET:HG2   | 1.96                     | 0.66              |
| 1:I:192:GLY:C    | 1:I:375:GLY:CA   | 2.52                     | 0.66              |
| 1:A:41:ASP:OD1   | 1:B:69:MET:HE3   | 1.96                     | 0.66              |
| 1:A:69:MET:HE3   | 1:G:41:ASP:OD1   | 1.96                     | 0.66              |
| 1:B:41:ASP:OD1   | 1:C:69:MET:HG2   | 1.96                     | 0.66              |
| 1:A:183:LEU:H    | 1:A:383:ALA:CB   | 2.03                     | 0.66              |
| 1:F:47:PRO:CD    | 1:G:73:MET:HG3   | 2.25                     | 0.66              |
| 1:H:370:ALA:O    | 1:H:374:GLY:HA2  | 1.96                     | 0.66              |
| 1:M:192:GLY:C    | 1:M:375:GLY:CA   | 2.52                     | 0.66              |
| 1:A:47:PRO:CD    | 1:B:73:MET:HG3   | 2.24                     | 0.66              |
| 1:E:41:ASP:OD1   | 1:F:69:MET:HG2   | 1.96                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:513:LEU:HB3  | 1:K:49:ILE:CD1   | 2.25                     | 0.66              |
| 1:A:73:MET:HG3   | 1:G:47:PRO:CD    | 2.24                     | 0.66              |
| 1:K:370:ALA:O    | 1:K:374:GLY:HA2  | 1.96                     | 0.66              |
| 1:L:513:LEU:HB3  | 1:M:49:ILE:CD1   | 2.25                     | 0.66              |
| 1:B:41:ASP:HA    | 1:C:69:MET:HE3   | 1.78                     | 0.65              |
| 1:D:41:ASP:OD1   | 1:E:69:MET:HG2   | 1.96                     | 0.65              |
| 1:N:370:ALA:O    | 1:N:374:GLY:HA2  | 1.96                     | 0.65              |
| 1:E:194:GLN:O    | 1:E:371:LYS:HE3  | 1.94                     | 0.65              |
| 1:K:513:LEU:HB3  | 1:L:49:ILE:CD1   | 2.25                     | 0.65              |
| 1:M:228:SER:O    | 1:M:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:A:41:ASP:OD2   | 1:B:69:MET:SD    | 2.55                     | 0.65              |
| 1:D:193:MET:CG   | 1:D:374:GLY:N    | 2.58                     | 0.65              |
| 1:I:305:ILE:HD12 | 1:I:307:MET:HE2  | 1.77                     | 0.65              |
| 1:J:69:MET:O     | 1:J:73:MET:HG3   | 1.96                     | 0.65              |
| 1:M:69:MET:O     | 1:M:73:MET:HG3   | 1.96                     | 0.65              |
| 1:J:69:MET:HE3   | 1:K:41:ASP:CG    | 2.17                     | 0.65              |
| 1:J:404:ARG:HH11 | 1:J:404:ARG:CG   | 2.08                     | 0.65              |
| 1:L:331:THR:HG1  | 1:L:376:VAL:HG11 | 1.58                     | 0.65              |
| 1:L:404:ARG:HH11 | 1:L:404:ARG:CG   | 2.08                     | 0.65              |
| 1:M:404:ARG:HH11 | 1:M:404:ARG:CG   | 2.08                     | 0.65              |
| 1:A:41:ASP:OD1   | 1:B:69:MET:HG2   | 1.96                     | 0.65              |
| 1:A:69:MET:SD    | 1:G:41:ASP:OD2   | 2.55                     | 0.65              |
| 1:C:349:ILE:HA   | 1:C:352:GLN:CG   | 2.27                     | 0.65              |
| 1:F:183:LEU:H    | 1:F:383:ALA:CB   | 2.03                     | 0.65              |
| 1:K:404:ARG:HH11 | 1:K:404:ARG:CG   | 2.08                     | 0.65              |
| 1:M:191:GLU:O    | 1:M:332:ILE:CB   | 2.45                     | 0.65              |
| 1:N:191:GLU:O    | 1:N:332:ILE:CB   | 2.44                     | 0.65              |
| 1:N:228:SER:O    | 1:N:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:B:41:ASP:OD2   | 1:C:69:MET:SD    | 2.55                     | 0.65              |
| 1:C:136:VAL:CA   | 1:C:137:PRO:HD3  | 2.25                     | 0.65              |
| 1:E:221:LEU:HD23 | 1:E:249:ILE:HD12 | 1.79                     | 0.65              |
| 1:H:305:ILE:HD12 | 1:H:307:MET:HE2  | 1.77                     | 0.65              |
| 1:K:228:SER:O    | 1:K:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:A:349:ILE:HA   | 1:A:352:GLN:CG   | 2.27                     | 0.65              |
| 1:B:349:ILE:HA   | 1:B:352:GLN:CG   | 2.27                     | 0.65              |
| 1:D:41:ASP:OD2   | 1:E:69:MET:SD    | 2.55                     | 0.65              |
| 1:G:349:ILE:HA   | 1:G:352:GLN:CG   | 2.27                     | 0.65              |
| 1:H:191:GLU:O    | 1:H:332:ILE:CB   | 2.44                     | 0.65              |
| 1:L:69:MET:O     | 1:L:73:MET:HG3   | 1.96                     | 0.65              |
| 1:N:69:MET:O     | 1:N:73:MET:HG3   | 1.97                     | 0.65              |
| 1:C:41:ASP:OD2   | 1:D:69:MET:SD    | 2.55                     | 0.65              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:247:LEU:HB3  | 1:C:273:VAL:HG22 | 1.79                     | 0.65              |
| 1:E:174:VAL:CG2  | 1:E:329:THR:HG23 | 2.17                     | 0.65              |
| 1:N:404:ARG:HH11 | 1:N:404:ARG:CG   | 2.08                     | 0.65              |
| 1:A:69:MET:HG2   | 1:G:41:ASP:OD1   | 1.96                     | 0.65              |
| 1:D:349:ILE:HA   | 1:D:352:GLN:CG   | 2.27                     | 0.65              |
| 1:E:349:ILE:HA   | 1:E:352:GLN:CG   | 2.27                     | 0.65              |
| 1:F:349:ILE:HA   | 1:F:352:GLN:CG   | 2.27                     | 0.65              |
| 1:H:69:MET:O     | 1:H:73:MET:HG3   | 1.96                     | 0.65              |
| 1:I:69:MET:O     | 1:I:73:MET:HG3   | 1.96                     | 0.65              |
| 1:J:191:GLU:O    | 1:J:332:ILE:CB   | 2.44                     | 0.65              |
| 1:J:228:SER:O    | 1:J:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:L:228:SER:O    | 1:L:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:C:221:LEU:HD23 | 1:C:249:ILE:HD12 | 1.79                     | 0.65              |
| 1:D:221:LEU:HD23 | 1:D:249:ILE:HD12 | 1.79                     | 0.65              |
| 1:F:41:ASP:OD1   | 1:G:69:MET:HG2   | 1.96                     | 0.65              |
| 1:F:194:GLN:H    | 1:F:375:GLY:N    | 1.79                     | 0.65              |
| 1:H:228:SER:O    | 1:H:257:GLU:HB3  | 1.97                     | 0.65              |
| 1:I:191:GLU:O    | 1:I:332:ILE:CB   | 2.44                     | 0.65              |
| 1:I:370:ALA:O    | 1:I:374:GLY:HA2  | 1.96                     | 0.65              |
| 1:D:247:LEU:HB3  | 1:D:273:VAL:HG22 | 1.79                     | 0.64              |
| 1:E:41:ASP:OD2   | 1:F:69:MET:SD    | 2.55                     | 0.64              |
| 1:H:404:ARG:HH11 | 1:H:404:ARG:CG   | 2.08                     | 0.64              |
| 1:F:39:VAL:CG2   | 1:G:517:THR:HG21 | 2.01                     | 0.64              |
| 1:F:41:ASP:OD2   | 1:G:69:MET:SD    | 2.55                     | 0.64              |
| 1:B:247:LEU:HB3  | 1:B:273:VAL:HG22 | 1.79                     | 0.64              |
| 1:C:41:ASP:HA    | 1:D:69:MET:HE3   | 1.80                     | 0.64              |
| 1:F:221:LEU:HD23 | 1:F:249:ILE:HD12 | 1.79                     | 0.64              |
| 1:J:331:THR:HG1  | 1:J:376:VAL:HG11 | 1.59                     | 0.64              |
| 1:K:414:GLY:O    | 1:K:417:VAL:HG13 | 1.98                     | 0.64              |
| 1:L:191:GLU:O    | 1:L:332:ILE:CB   | 2.45                     | 0.64              |
| 1:M:414:GLY:O    | 1:M:417:VAL:HG13 | 1.98                     | 0.64              |
| 1:B:191:GLU:CG   | 1:B:334:ASP:H    | 2.11                     | 0.64              |
| 1:C:183:LEU:H    | 1:C:383:ALA:CB   | 2.03                     | 0.64              |
| 1:D:136:VAL:CA   | 1:D:137:PRO:HD3  | 2.25                     | 0.64              |
| 1:F:136:VAL:CA   | 1:F:137:PRO:HD3  | 2.25                     | 0.64              |
| 1:F:191:GLU:CG   | 1:F:334:ASP:H    | 2.11                     | 0.64              |
| 1:J:213:VAL:HB   | 1:J:325:ILE:CG1  | 2.28                     | 0.64              |
| 1:M:333:ILE:CG2  | 1:M:378:VAL:HG21 | 2.26                     | 0.64              |
| 1:I:228:SER:O    | 1:I:257:GLU:HB3  | 1.97                     | 0.64              |
| 1:K:191:GLU:O    | 1:K:332:ILE:CB   | 2.44                     | 0.64              |
| 1:L:370:ALA:O    | 1:L:374:GLY:HA2  | 1.96                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:136:VAL:CA   | 1:E:137:PRO:HD3  | 2.25                     | 0.64              |
| 1:H:414:GLY:O    | 1:H:417:VAL:HG13 | 1.98                     | 0.64              |
| 1:K:69:MET:O     | 1:K:73:MET:HG3   | 1.96                     | 0.64              |
| 1:M:206:ASN:HD21 | 1:M:214:GLU:H    | 1.46                     | 0.64              |
| 1:N:414:GLY:O    | 1:N:417:VAL:HG13 | 1.98                     | 0.64              |
| 1:B:186:GLU:HB2  | 1:B:380:LYS:HB2  | 1.80                     | 0.64              |
| 1:C:186:GLU:HB2  | 1:C:380:LYS:HB2  | 1.80                     | 0.64              |
| 1:D:186:GLU:HB2  | 1:D:380:LYS:HB2  | 1.80                     | 0.64              |
| 1:F:177:VAL:HG21 | 1:F:397:GLU:HG3  | 1.80                     | 0.64              |
| 1:G:174:VAL:CG2  | 1:G:329:THR:HG23 | 2.17                     | 0.64              |
| 1:I:213:VAL:HB   | 1:I:325:ILE:CG1  | 2.28                     | 0.64              |
| 1:I:420:ILE:HD12 | 1:I:451:LEU:HD13 | 1.80                     | 0.64              |
| 1:K:213:VAL:HB   | 1:K:325:ILE:CG1  | 2.28                     | 0.64              |
| 1:L:206:ASN:HD21 | 1:L:214:GLU:H    | 1.46                     | 0.64              |
| 1:N:206:ASN:HD21 | 1:N:214:GLU:H    | 1.46                     | 0.64              |
| 1:A:191:GLU:CG   | 1:A:334:ASP:H    | 2.11                     | 0.64              |
| 1:G:136:VAL:CA   | 1:G:137:PRO:HD3  | 2.25                     | 0.64              |
| 1:G:177:VAL:HG21 | 1:G:397:GLU:HG3  | 1.80                     | 0.64              |
| 1:I:331:THR:HG1  | 1:I:376:VAL:HG11 | 1.63                     | 0.64              |
| 1:A:177:VAL:HG21 | 1:A:397:GLU:HG3  | 1.80                     | 0.64              |
| 1:B:221:LEU:HD23 | 1:B:249:ILE:HD12 | 1.79                     | 0.64              |
| 1:D:191:GLU:CG   | 1:D:334:ASP:H    | 2.11                     | 0.64              |
| 1:E:177:VAL:HG21 | 1:E:397:GLU:HG3  | 1.80                     | 0.64              |
| 1:E:247:LEU:HB3  | 1:E:273:VAL:HG22 | 1.79                     | 0.64              |
| 1:F:41:ASP:OD1   | 1:G:69:MET:HE3   | 1.97                     | 0.64              |
| 1:H:333:ILE:CD1  | 1:H:378:VAL:HG22 | 2.26                     | 0.64              |
| 1:H:349:ILE:HA   | 1:H:352:GLN:CG   | 2.28                     | 0.64              |
| 1:H:420:ILE:HD12 | 1:H:451:LEU:HD13 | 1.80                     | 0.64              |
| 1:D:194:GLN:H    | 1:D:375:GLY:N    | 1.79                     | 0.64              |
| 1:E:186:GLU:HB2  | 1:E:380:LYS:HB2  | 1.80                     | 0.64              |
| 1:G:191:GLU:CG   | 1:G:334:ASP:H    | 2.11                     | 0.64              |
| 1:H:206:ASN:HD21 | 1:H:214:GLU:H    | 1.46                     | 0.64              |
| 1:I:349:ILE:HA   | 1:I:352:GLN:CG   | 2.28                     | 0.64              |
| 1:K:206:ASN:HD21 | 1:K:214:GLU:H    | 1.46                     | 0.64              |
| 1:I:206:ASN:HD21 | 1:I:214:GLU:H    | 1.46                     | 0.63              |
| 1:J:414:GLY:O    | 1:J:417:VAL:HG13 | 1.98                     | 0.63              |
| 1:I:404:ARG:HH11 | 1:I:404:ARG:CG   | 2.08                     | 0.63              |
| 1:I:414:GLY:O    | 1:I:417:VAL:HG13 | 1.98                     | 0.63              |
| 1:J:349:ILE:HA   | 1:J:352:GLN:CG   | 2.28                     | 0.63              |
| 1:J:420:ILE:HD12 | 1:J:451:LEU:HD13 | 1.80                     | 0.63              |
| 1:A:186:GLU:HB2  | 1:A:380:LYS:HB2  | 1.80                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:247:LEU:HB3  | 1:A:273:VAL:HG22 | 1.79                     | 0.63              |
| 1:B:183:LEU:HD23 | 1:B:384:ALA:HB2  | 1.81                     | 0.63              |
| 1:D:183:LEU:HD23 | 1:D:384:ALA:HB2  | 1.81                     | 0.63              |
| 1:J:193:MET:N    | 1:J:375:GLY:HA2  | 2.12                     | 0.63              |
| 1:J:206:ASN:HD21 | 1:J:214:GLU:H    | 1.46                     | 0.63              |
| 1:L:333:ILE:CG2  | 1:L:378:VAL:HG21 | 2.26                     | 0.63              |
| 1:N:349:ILE:HA   | 1:N:352:GLN:CG   | 2.28                     | 0.63              |
| 1:F:247:LEU:HB3  | 1:F:273:VAL:HG22 | 1.79                     | 0.63              |
| 1:L:414:GLY:O    | 1:L:417:VAL:HG13 | 1.98                     | 0.63              |
| 1:N:333:ILE:CG2  | 1:N:378:VAL:HG21 | 2.26                     | 0.63              |
| 1:A:183:LEU:HD23 | 1:A:384:ALA:HB2  | 1.81                     | 0.63              |
| 1:E:183:LEU:HD23 | 1:E:384:ALA:HB2  | 1.81                     | 0.63              |
| 1:F:186:GLU:HB2  | 1:F:380:LYS:HB2  | 1.80                     | 0.63              |
| 1:G:186:GLU:HB2  | 1:G:380:LYS:HB2  | 1.80                     | 0.63              |
| 1:G:221:LEU:HD23 | 1:G:249:ILE:HD12 | 1.79                     | 0.63              |
| 1:A:221:LEU:HD23 | 1:A:249:ILE:HD12 | 1.79                     | 0.63              |
| 1:H:213:VAL:HB   | 1:H:325:ILE:CG1  | 2.28                     | 0.63              |
| 1:K:193:MET:N    | 1:K:375:GLY:HA2  | 2.12                     | 0.63              |
| 1:K:349:ILE:HA   | 1:K:352:GLN:CG   | 2.28                     | 0.63              |
| 1:M:331:THR:HG1  | 1:M:376:VAL:HG11 | 1.61                     | 0.63              |
| 1:F:406:ALA:HA   | 1:F:496:PRO:HB3  | 1.81                     | 0.63              |
| 1:N:191:GLU:O    | 1:N:332:ILE:CG2  | 2.47                     | 0.63              |
| 1:N:420:ILE:HD12 | 1:N:451:LEU:HD13 | 1.80                     | 0.63              |
| 1:C:191:GLU:CG   | 1:C:334:ASP:H    | 2.11                     | 0.63              |
| 1:D:174:VAL:H    | 1:D:194:GLN:NE2  | 1.97                     | 0.63              |
| 1:H:191:GLU:O    | 1:H:332:ILE:CG2  | 2.47                     | 0.63              |
| 1:L:213:VAL:HB   | 1:L:325:ILE:CG1  | 2.28                     | 0.63              |
| 1:M:370:ALA:O    | 1:M:374:GLY:HA2  | 1.96                     | 0.63              |
| 1:C:183:LEU:HD23 | 1:C:384:ALA:HB2  | 1.81                     | 0.63              |
| 1:E:41:ASP:HA    | 1:F:69:MET:HE3   | 1.81                     | 0.63              |
| 1:E:213:VAL:HB   | 1:E:325:ILE:HG12 | 1.81                     | 0.63              |
| 1:I:193:MET:N    | 1:I:375:GLY:HA2  | 2.12                     | 0.63              |
| 1:L:362:ARG:O    | 1:L:366:GLN:HG3  | 1.99                     | 0.63              |
| 1:D:177:VAL:HG21 | 1:D:397:GLU:HG3  | 1.80                     | 0.62              |
| 1:E:174:VAL:H    | 1:E:194:GLN:NE2  | 1.97                     | 0.62              |
| 1:E:191:GLU:CG   | 1:E:334:ASP:H    | 2.11                     | 0.62              |
| 1:J:213:VAL:HB   | 1:J:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:K:333:ILE:CG2  | 1:K:378:VAL:HG21 | 2.26                     | 0.62              |
| 1:M:191:GLU:O    | 1:M:332:ILE:CG2  | 2.47                     | 0.62              |
| 1:F:183:LEU:HD23 | 1:F:384:ALA:HB2  | 1.81                     | 0.62              |
| 1:G:183:LEU:HD23 | 1:G:384:ALA:HB2  | 1.81                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:406:ALA:HA   | 1:G:496:PRO:HB3  | 1.81                     | 0.62              |
| 1:I:174:VAL:HG21 | 1:I:194:GLN:CB   | 2.12                     | 0.62              |
| 1:J:370:ALA:O    | 1:J:374:GLY:HA2  | 1.96                     | 0.62              |
| 1:K:362:ARG:O    | 1:K:366:GLN:HG3  | 1.99                     | 0.62              |
| 1:K:420:ILE:HD12 | 1:K:451:LEU:HD13 | 1.80                     | 0.62              |
| 1:M:349:ILE:HA   | 1:M:352:GLN:CG   | 2.28                     | 0.62              |
| 1:B:177:VAL:HG21 | 1:B:397:GLU:HG3  | 1.80                     | 0.62              |
| 1:B:194:GLN:H    | 1:B:375:GLY:N    | 1.79                     | 0.62              |
| 1:F:69:MET:O     | 1:F:73:MET:HG3   | 2.00                     | 0.62              |
| 1:F:305:ILE:HD12 | 1:F:307:MET:HE2  | 1.81                     | 0.62              |
| 1:L:349:ILE:HA   | 1:L:352:GLN:CG   | 2.28                     | 0.62              |
| 1:M:193:MET:N    | 1:M:375:GLY:HA2  | 2.12                     | 0.62              |
| 1:N:193:MET:N    | 1:N:375:GLY:HA2  | 2.12                     | 0.62              |
| 1:D:213:VAL:HB   | 1:D:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:G:247:LEU:HB3  | 1:G:273:VAL:HG22 | 1.79                     | 0.62              |
| 1:I:213:VAL:HB   | 1:I:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:K:191:GLU:O    | 1:K:332:ILE:CG2  | 2.47                     | 0.62              |
| 1:L:174:VAL:HG21 | 1:L:194:GLN:CB   | 2.12                     | 0.62              |
| 1:M:69:MET:HE1   | 1:N:41:ASP:CB    | 2.28                     | 0.62              |
| 1:B:69:MET:O     | 1:B:73:MET:HG3   | 2.00                     | 0.62              |
| 1:C:69:MET:O     | 1:C:73:MET:HG3   | 2.00                     | 0.62              |
| 1:C:174:VAL:H    | 1:C:194:GLN:NE2  | 1.97                     | 0.62              |
| 1:H:333:ILE:CG2  | 1:H:378:VAL:HG21 | 2.26                     | 0.62              |
| 1:I:191:GLU:O    | 1:I:332:ILE:CG2  | 2.47                     | 0.62              |
| 1:M:213:VAL:HB   | 1:M:325:ILE:CG1  | 2.28                     | 0.62              |
| 1:M:333:ILE:CD1  | 1:M:378:VAL:HG22 | 2.26                     | 0.62              |
| 1:F:213:VAL:HB   | 1:F:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:I:333:ILE:CD1  | 1:I:378:VAL:HG22 | 2.26                     | 0.62              |
| 1:K:213:VAL:HB   | 1:K:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:M:420:ILE:HD12 | 1:M:451:LEU:HD13 | 1.80                     | 0.62              |
| 1:A:69:MET:O     | 1:A:73:MET:HG3   | 2.00                     | 0.62              |
| 1:C:213:VAL:HB   | 1:C:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:G:305:ILE:HD12 | 1:G:307:MET:HE2  | 1.82                     | 0.62              |
| 1:L:191:GLU:O    | 1:L:332:ILE:CG2  | 2.47                     | 0.62              |
| 1:L:420:ILE:HD12 | 1:L:451:LEU:HD13 | 1.80                     | 0.62              |
| 1:M:362:ARG:O    | 1:M:366:GLN:HG3  | 1.99                     | 0.62              |
| 1:A:231:ARG:NH2  | 1:G:245:LYS:HE3  | 2.15                     | 0.62              |
| 1:D:219:PHE:HB3  | 1:D:317:LEU:HD23 | 1.82                     | 0.62              |
| 1:E:219:PHE:HB3  | 1:E:317:LEU:HD23 | 1.82                     | 0.62              |
| 1:G:219:PHE:HB3  | 1:G:317:LEU:HD23 | 1.82                     | 0.62              |
| 1:H:193:MET:N    | 1:H:375:GLY:HA2  | 2.12                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:213:VAL:HB   | 1:B:325:ILE:HG12 | 1.81                     | 0.62              |
| 1:E:406:ALA:HA   | 1:E:496:PRO:HB3  | 1.81                     | 0.62              |
| 1:F:219:PHE:HB3  | 1:F:317:LEU:HD23 | 1.82                     | 0.62              |
| 1:A:174:VAL:H    | 1:A:194:GLN:NE2  | 1.97                     | 0.62              |
| 1:D:69:MET:O     | 1:D:73:MET:HG3   | 2.00                     | 0.62              |
| 1:E:69:MET:O     | 1:E:73:MET:HG3   | 2.00                     | 0.62              |
| 1:J:191:GLU:O    | 1:J:332:ILE:CG2  | 2.47                     | 0.62              |
| 1:N:333:ILE:CD1  | 1:N:378:VAL:HG22 | 2.26                     | 0.62              |
| 1:E:305:ILE:HD12 | 1:E:307:MET:HE2  | 1.82                     | 0.61              |
| 1:L:193:MET:N    | 1:L:375:GLY:HA2  | 2.12                     | 0.61              |
| 1:N:213:VAL:HB   | 1:N:325:ILE:CG1  | 2.28                     | 0.61              |
| 1:C:39:VAL:CG2   | 1:D:517:THR:HG21 | 2.01                     | 0.61              |
| 1:J:186:GLU:HB2  | 1:J:380:LYS:HB2  | 1.82                     | 0.61              |
| 1:A:69:MET:HE3   | 1:G:41:ASP:HA    | 1.83                     | 0.61              |
| 1:A:136:VAL:CA   | 1:A:137:PRO:HD3  | 2.25                     | 0.61              |
| 1:A:213:VAL:HB   | 1:A:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:G:213:VAL:HB   | 1:G:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:L:213:VAL:HB   | 1:L:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:A:219:PHE:HB3  | 1:A:317:LEU:HD23 | 1.82                     | 0.61              |
| 1:A:406:ALA:HA   | 1:A:496:PRO:HB3  | 1.81                     | 0.61              |
| 1:C:219:PHE:HB3  | 1:C:317:LEU:HD23 | 1.82                     | 0.61              |
| 1:F:174:VAL:H    | 1:F:194:GLN:NE2  | 1.97                     | 0.61              |
| 1:H:213:VAL:HB   | 1:H:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:N:362:ARG:O    | 1:N:366:GLN:HG3  | 1.99                     | 0.61              |
| 1:A:177:VAL:HG21 | 1:A:397:GLU:CG   | 2.31                     | 0.61              |
| 1:D:177:VAL:HG21 | 1:D:397:GLU:CG   | 2.31                     | 0.61              |
| 1:G:69:MET:O     | 1:G:73:MET:HG3   | 2.00                     | 0.61              |
| 1:G:174:VAL:H    | 1:G:194:GLN:NE2  | 1.97                     | 0.61              |
| 1:H:362:ARG:O    | 1:H:366:GLN:HG3  | 1.99                     | 0.61              |
| 1:A:41:ASP:HA    | 1:B:69:MET:HE3   | 1.83                     | 0.61              |
| 1:F:177:VAL:HG21 | 1:F:397:GLU:CG   | 2.31                     | 0.61              |
| 1:J:333:ILE:CG2  | 1:J:378:VAL:HG21 | 2.26                     | 0.61              |
| 1:J:362:ARG:O    | 1:J:366:GLN:HG3  | 1.99                     | 0.61              |
| 1:B:219:PHE:HB3  | 1:B:317:LEU:HD23 | 1.82                     | 0.61              |
| 1:C:177:VAL:HG21 | 1:C:397:GLU:HG3  | 1.80                     | 0.61              |
| 1:I:362:ARG:O    | 1:I:366:GLN:HG3  | 1.99                     | 0.61              |
| 1:M:213:VAL:HB   | 1:M:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:G:183:LEU:H    | 1:G:383:ALA:CB   | 2.03                     | 0.61              |
| 1:I:333:ILE:CG2  | 1:I:378:VAL:HG21 | 2.26                     | 0.61              |
| 1:B:174:VAL:H    | 1:B:194:GLN:NE2  | 1.97                     | 0.61              |
| 1:B:406:ALA:HA   | 1:B:496:PRO:HB3  | 1.81                     | 0.61              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:406:ALA:HA   | 1:C:496:PRO:HB3  | 1.81                     | 0.61              |
| 1:L:69:MET:HE3   | 1:M:41:ASP:CG    | 2.21                     | 0.61              |
| 1:N:213:VAL:HB   | 1:N:325:ILE:HG12 | 1.81                     | 0.61              |
| 1:I:186:GLU:HB2  | 1:I:380:LYS:HB2  | 1.82                     | 0.61              |
| 1:H:247:LEU:HB3  | 1:H:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:K:186:GLU:HB2  | 1:K:380:LYS:HB2  | 1.82                     | 0.60              |
| 1:D:41:ASP:CG    | 1:E:69:MET:HE3   | 2.22                     | 0.60              |
| 1:M:186:GLU:HB2  | 1:M:380:LYS:HB2  | 1.82                     | 0.60              |
| 1:M:247:LEU:HB3  | 1:M:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:L:186:GLU:HB2  | 1:L:380:LYS:HB2  | 1.82                     | 0.60              |
| 1:A:305:ILE:HD12 | 1:A:307:MET:HE2  | 1.83                     | 0.60              |
| 1:C:177:VAL:HG21 | 1:C:397:GLU:CG   | 2.31                     | 0.60              |
| 1:C:305:ILE:HD12 | 1:C:307:MET:HE2  | 1.83                     | 0.60              |
| 1:D:245:LYS:HE3  | 1:E:231:ARG:NH2  | 2.15                     | 0.60              |
| 1:L:247:LEU:HB3  | 1:L:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:N:247:LEU:HB3  | 1:N:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:E:183:LEU:H    | 1:E:383:ALA:CB   | 2.03                     | 0.60              |
| 1:F:41:ASP:HA    | 1:G:69:MET:HE3   | 1.84                     | 0.60              |
| 1:B:86:GLY:HA3   | 1:B:401:HIS:NE2  | 2.10                     | 0.60              |
| 1:D:406:ALA:HA   | 1:D:496:PRO:HB3  | 1.81                     | 0.60              |
| 1:I:247:LEU:HB3  | 1:I:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:M:193:MET:HA   | 1:M:375:GLY:HA2  | 1.83                     | 0.60              |
| 1:B:177:VAL:HG21 | 1:B:397:GLU:CG   | 2.31                     | 0.60              |
| 1:E:177:VAL:HG21 | 1:E:397:GLU:CG   | 2.31                     | 0.60              |
| 1:G:177:VAL:HG21 | 1:G:397:GLU:CG   | 2.31                     | 0.60              |
| 1:I:69:MET:HE3   | 1:J:41:ASP:CG    | 2.22                     | 0.60              |
| 1:J:193:MET:HA   | 1:J:375:GLY:HA2  | 1.83                     | 0.60              |
| 1:K:247:LEU:HB3  | 1:K:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:H:186:GLU:HB2  | 1:H:380:LYS:HB2  | 1.82                     | 0.60              |
| 1:N:186:GLU:HB2  | 1:N:380:LYS:HB2  | 1.82                     | 0.60              |
| 1:N:193:MET:HA   | 1:N:375:GLY:HA2  | 1.83                     | 0.60              |
| 1:J:247:LEU:HB3  | 1:J:273:VAL:HG22 | 1.83                     | 0.60              |
| 1:G:23:LEU:HD22  | 1:G:74:VAL:HG13  | 1.85                     | 0.59              |
| 1:K:193:MET:HA   | 1:K:375:GLY:HA2  | 1.83                     | 0.59              |
| 1:C:23:LEU:HD22  | 1:C:74:VAL:HG13  | 1.85                     | 0.59              |
| 1:L:193:MET:HA   | 1:L:375:GLY:HA2  | 1.83                     | 0.59              |
| 1:B:183:LEU:H    | 1:B:383:ALA:CB   | 2.03                     | 0.59              |
| 1:D:23:LEU:HD22  | 1:D:74:VAL:HG13  | 1.85                     | 0.59              |
| 1:I:193:MET:HA   | 1:I:375:GLY:HA2  | 1.83                     | 0.59              |
| 1:B:150:ILE:HD13 | 1:B:493:ILE:HA   | 1.84                     | 0.59              |
| 1:F:23:LEU:HD22  | 1:F:74:VAL:HG13  | 1.84                     | 0.59              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:86:GLY:HA3   | 1:F:401:HIS:NE2  | 2.10                     | 0.59              |
| 1:H:193:MET:HA   | 1:H:375:GLY:HA2  | 1.83                     | 0.59              |
| 1:A:23:LEU:HD22  | 1:A:74:VAL:HG13  | 1.85                     | 0.59              |
| 1:B:23:LEU:HD22  | 1:B:74:VAL:HG13  | 1.84                     | 0.59              |
| 1:B:39:VAL:CG2   | 1:C:517:THR:HG21 | 2.01                     | 0.59              |
| 1:E:150:ILE:HD13 | 1:E:493:ILE:HA   | 1.84                     | 0.59              |
| 1:K:333:ILE:CD1  | 1:K:378:VAL:HG22 | 2.26                     | 0.59              |
| 1:B:305:ILE:HD12 | 1:B:307:MET:HE2  | 1.84                     | 0.59              |
| 1:D:49:ILE:HD12  | 1:E:513:LEU:HB3  | 1.85                     | 0.59              |
| 1:J:218:PRO:CB   | 1:J:246:PRO:HG2  | 2.30                     | 0.59              |
| 1:A:150:ILE:HD13 | 1:A:493:ILE:HA   | 1.84                     | 0.59              |
| 1:E:245:LYS:HE3  | 1:F:231:ARG:NH2  | 2.15                     | 0.59              |
| 1:J:371:LYS:N    | 1:J:374:GLY:N    | 2.51                     | 0.59              |
| 1:D:194:GLN:H    | 1:D:374:GLY:N    | 2.01                     | 0.59              |
| 1:E:23:LEU:HD22  | 1:E:74:VAL:HG13  | 1.85                     | 0.59              |
| 1:G:291:ASP:OD2  | 1:G:368:ARG:HD2  | 2.03                     | 0.59              |
| 1:H:521:VAL:O    | 1:I:41:ASP:HB3   | 2.03                     | 0.59              |
| 1:A:205:ILE:HA   | 1:A:213:VAL:HG22 | 1.85                     | 0.59              |
| 1:B:205:ILE:HA   | 1:B:213:VAL:HG22 | 1.85                     | 0.59              |
| 1:F:205:ILE:HA   | 1:F:213:VAL:HG22 | 1.85                     | 0.59              |
| 1:F:291:ASP:OD2  | 1:F:368:ARG:HD2  | 2.03                     | 0.59              |
| 1:G:150:ILE:HD13 | 1:G:493:ILE:HA   | 1.84                     | 0.59              |
| 1:G:194:GLN:H    | 1:G:374:GLY:N    | 2.01                     | 0.59              |
| 1:G:205:ILE:HA   | 1:G:213:VAL:HG22 | 1.85                     | 0.59              |
| 1:K:69:MET:HE3   | 1:L:41:ASP:CG    | 2.24                     | 0.59              |
| 1:A:291:ASP:OD2  | 1:A:368:ARG:HD2  | 2.03                     | 0.58              |
| 1:B:235:PRO:CG   | 1:B:310:GLU:HA   | 2.29                     | 0.58              |
| 1:C:194:GLN:H    | 1:C:374:GLY:N    | 2.01                     | 0.58              |
| 1:C:291:ASP:OD2  | 1:C:368:ARG:HD2  | 2.03                     | 0.58              |
| 1:D:272:LYS:N    | 1:D:272:LYS:HD2  | 2.18                     | 0.58              |
| 1:F:150:ILE:HD13 | 1:F:493:ILE:HA   | 1.84                     | 0.58              |
| 1:J:183:LEU:O    | 1:J:184:GLN:HB2  | 2.03                     | 0.58              |
| 1:J:193:MET:CA   | 1:J:375:GLY:HA2  | 2.33                     | 0.58              |
| 1:L:193:MET:CA   | 1:L:375:GLY:HA2  | 2.33                     | 0.58              |
| 1:M:193:MET:CA   | 1:M:375:GLY:HA2  | 2.33                     | 0.58              |
| 1:C:205:ILE:HA   | 1:C:213:VAL:HG22 | 1.85                     | 0.58              |
| 1:C:272:LYS:N    | 1:C:272:LYS:HD2  | 2.18                     | 0.58              |
| 1:D:291:ASP:OD2  | 1:D:368:ARG:HD2  | 2.03                     | 0.58              |
| 1:E:272:LYS:HD2  | 1:E:272:LYS:N    | 2.18                     | 0.58              |
| 1:F:200:LEU:O    | 1:F:201:SER:HB3  | 2.04                     | 0.58              |
| 1:M:371:LYS:N    | 1:M:374:GLY:N    | 2.51                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:150:ILE:HD13 | 1:C:493:ILE:HA   | 1.84                     | 0.58              |
| 1:E:194:GLN:H    | 1:E:374:GLY:N    | 2.01                     | 0.58              |
| 1:H:371:LYS:N    | 1:H:374:GLY:N    | 2.51                     | 0.58              |
| 1:I:218:PRO:CB   | 1:I:246:PRO:HG2  | 2.30                     | 0.58              |
| 1:K:218:PRO:CB   | 1:K:246:PRO:HG2  | 2.30                     | 0.58              |
| 1:M:183:LEU:O    | 1:M:184:GLN:HB2  | 2.03                     | 0.58              |
| 1:A:155:ASP:OD1  | 1:A:157:THR:HB   | 2.04                     | 0.58              |
| 1:F:272:LYS:N    | 1:F:272:LYS:HD2  | 2.18                     | 0.58              |
| 1:F:362:ARG:O    | 1:F:366:GLN:HG3  | 2.04                     | 0.58              |
| 1:H:41:ASP:CG    | 1:N:69:MET:HE3   | 2.24                     | 0.58              |
| 1:B:194:GLN:H    | 1:B:374:GLY:N    | 2.01                     | 0.58              |
| 1:D:150:ILE:HD13 | 1:D:493:ILE:HA   | 1.84                     | 0.58              |
| 1:E:205:ILE:HA   | 1:E:213:VAL:HG22 | 1.85                     | 0.58              |
| 1:F:86:GLY:C     | 1:F:401:HIS:CE1  | 2.77                     | 0.58              |
| 1:J:521:VAL:O    | 1:K:41:ASP:HB3   | 2.03                     | 0.58              |
| 1:K:193:MET:CA   | 1:K:375:GLY:HA2  | 2.33                     | 0.58              |
| 1:N:183:LEU:O    | 1:N:184:GLN:HB2  | 2.03                     | 0.58              |
| 1:N:371:LYS:N    | 1:N:374:GLY:N    | 2.51                     | 0.58              |
| 1:B:86:GLY:C     | 1:B:401:HIS:CE1  | 2.77                     | 0.58              |
| 1:B:245:LYS:HE3  | 1:C:231:ARG:NH2  | 2.15                     | 0.58              |
| 1:B:272:LYS:HD2  | 1:B:272:LYS:N    | 2.18                     | 0.58              |
| 1:C:155:ASP:OD1  | 1:C:157:THR:HB   | 2.04                     | 0.58              |
| 1:C:245:LYS:HE3  | 1:D:231:ARG:NH2  | 2.15                     | 0.58              |
| 1:D:404:ARG:HH11 | 1:D:404:ARG:HG2  | 1.69                     | 0.58              |
| 1:E:291:ASP:OD2  | 1:E:368:ARG:HD2  | 2.03                     | 0.58              |
| 1:E:362:ARG:O    | 1:E:366:GLN:HG3  | 2.04                     | 0.58              |
| 1:G:331:THR:OG1  | 1:G:376:VAL:HG21 | 2.00                     | 0.58              |
| 1:L:371:LYS:N    | 1:L:374:GLY:N    | 2.51                     | 0.58              |
| 1:B:291:ASP:OD2  | 1:B:368:ARG:HD2  | 2.03                     | 0.58              |
| 1:C:86:GLY:C     | 1:C:401:HIS:CE1  | 2.77                     | 0.58              |
| 1:E:49:ILE:HD12  | 1:F:513:LEU:HB3  | 1.85                     | 0.58              |
| 1:E:194:GLN:CG   | 1:E:375:GLY:O    | 2.52                     | 0.58              |
| 1:G:86:GLY:C     | 1:G:401:HIS:CE1  | 2.77                     | 0.58              |
| 1:G:404:ARG:HG2  | 1:G:404:ARG:HH11 | 1.69                     | 0.58              |
| 1:K:371:LYS:N    | 1:K:374:GLY:N    | 2.51                     | 0.58              |
| 1:A:16:MET:O     | 1:A:20:VAL:HG13  | 2.04                     | 0.58              |
| 1:B:41:ASP:CG    | 1:C:69:MET:HE3   | 2.22                     | 0.58              |
| 1:C:200:LEU:O    | 1:C:201:SER:HB3  | 2.04                     | 0.58              |
| 1:G:200:LEU:O    | 1:G:201:SER:HB3  | 2.04                     | 0.58              |
| 1:G:272:LYS:HD2  | 1:G:272:LYS:N    | 2.18                     | 0.58              |
| 1:H:69:MET:HE3   | 1:I:41:ASP:CG    | 2.24                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:183:LEU:O    | 1:K:184:GLN:HB2  | 2.03                     | 0.58              |
| 1:L:183:LEU:O    | 1:L:184:GLN:HB2  | 2.03                     | 0.58              |
| 1:N:193:MET:CA   | 1:N:375:GLY:HA2  | 2.33                     | 0.58              |
| 1:B:200:LEU:O    | 1:B:201:SER:HB3  | 2.04                     | 0.58              |
| 1:D:86:GLY:C     | 1:D:401:HIS:CE1  | 2.77                     | 0.58              |
| 1:F:16:MET:O     | 1:F:20:VAL:HG13  | 2.04                     | 0.58              |
| 1:A:272:LYS:N    | 1:A:272:LYS:HD2  | 2.18                     | 0.58              |
| 1:D:16:MET:O     | 1:D:20:VAL:HG13  | 2.04                     | 0.58              |
| 1:D:155:ASP:OD1  | 1:D:157:THR:HB   | 2.04                     | 0.58              |
| 1:D:205:ILE:HA   | 1:D:213:VAL:HG22 | 1.85                     | 0.58              |
| 1:D:305:ILE:HD12 | 1:D:307:MET:HE2  | 1.84                     | 0.58              |
| 1:F:194:GLN:CG   | 1:F:375:GLY:O    | 2.52                     | 0.58              |
| 1:F:404:ARG:HG2  | 1:F:404:ARG:HH11 | 1.69                     | 0.58              |
| 1:H:68:ASN:O     | 1:H:72:GLN:HG2   | 2.04                     | 0.58              |
| 1:B:16:MET:O     | 1:B:20:VAL:HG13  | 2.04                     | 0.57              |
| 1:B:362:ARG:O    | 1:B:366:GLN:HG3  | 2.03                     | 0.57              |
| 1:D:86:GLY:HA3   | 1:D:401:HIS:NE2  | 2.09                     | 0.57              |
| 1:D:362:ARG:O    | 1:D:366:GLN:HG3  | 2.03                     | 0.57              |
| 1:G:155:ASP:OD1  | 1:G:157:THR:HB   | 2.04                     | 0.57              |
| 1:I:183:LEU:O    | 1:I:184:GLN:HB2  | 2.03                     | 0.57              |
| 1:A:39:VAL:CG2   | 1:B:517:THR:HG21 | 2.01                     | 0.57              |
| 1:B:245:LYS:HZ1  | 1:C:231:ARG:HH22 | 0.59                     | 0.57              |
| 1:C:41:ASP:CG    | 1:D:69:MET:HE3   | 2.24                     | 0.57              |
| 1:E:200:LEU:O    | 1:E:201:SER:HB3  | 2.04                     | 0.57              |
| 1:F:420:ILE:HD12 | 1:F:451:LEU:HD13 | 1.87                     | 0.57              |
| 1:G:16:MET:O     | 1:G:20:VAL:HG13  | 2.04                     | 0.57              |
| 1:G:362:ARG:O    | 1:G:366:GLN:HG3  | 2.03                     | 0.57              |
| 1:H:272:LYS:HD2  | 1:H:272:LYS:N    | 2.19                     | 0.57              |
| 1:A:194:GLN:H    | 1:A:374:GLY:N    | 2.01                     | 0.57              |
| 1:B:382:GLY:O    | 1:B:389:MET:HG2  | 2.04                     | 0.57              |
| 1:E:86:GLY:C     | 1:E:401:HIS:CE1  | 2.77                     | 0.57              |
| 1:E:404:ARG:HG2  | 1:E:404:ARG:HH11 | 1.69                     | 0.57              |
| 1:H:193:MET:CA   | 1:H:375:GLY:HA2  | 2.33                     | 0.57              |
| 1:I:205:ILE:HA   | 1:I:213:VAL:HG22 | 1.86                     | 0.57              |
| 1:N:272:LYS:N    | 1:N:272:LYS:HD2  | 2.19                     | 0.57              |
| 1:A:404:ARG:HG2  | 1:A:404:ARG:HH11 | 1.69                     | 0.57              |
| 1:B:136:VAL:CA   | 1:B:137:PRO:HD3  | 2.25                     | 0.57              |
| 1:C:362:ARG:O    | 1:C:366:GLN:HG3  | 2.03                     | 0.57              |
| 1:D:382:GLY:O    | 1:D:389:MET:HG2  | 2.04                     | 0.57              |
| 1:D:420:ILE:HD12 | 1:D:451:LEU:HD13 | 1.87                     | 0.57              |
| 1:E:16:MET:O     | 1:E:20:VAL:HG13  | 2.04                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:406:ALA:CB   | 1:E:496:PRO:HG3  | 2.35                     | 0.57              |
| 1:F:193:MET:C    | 1:F:375:GLY:N    | 2.50                     | 0.57              |
| 1:F:245:LYS:HZ1  | 1:G:231:ARG:HH22 | 0.59                     | 0.57              |
| 1:G:420:ILE:HD12 | 1:G:451:LEU:HD13 | 1.87                     | 0.57              |
| 1:J:69:MET:HE3   | 1:K:41:ASP:OD1   | 2.03                     | 0.57              |
| 1:L:333:ILE:CD1  | 1:L:378:VAL:HG22 | 2.26                     | 0.57              |
| 1:A:331:THR:OG1  | 1:A:376:VAL:HG21 | 2.00                     | 0.57              |
| 1:A:382:GLY:O    | 1:A:389:MET:HG2  | 2.04                     | 0.57              |
| 1:B:404:ARG:HG2  | 1:B:404:ARG:HH11 | 1.69                     | 0.57              |
| 1:C:382:GLY:O    | 1:C:389:MET:HG2  | 2.04                     | 0.57              |
| 1:C:420:ILE:HD12 | 1:C:451:LEU:HD13 | 1.87                     | 0.57              |
| 1:E:420:ILE:HD12 | 1:E:451:LEU:HD13 | 1.87                     | 0.57              |
| 1:F:49:ILE:HD12  | 1:G:513:LEU:HB3  | 1.85                     | 0.57              |
| 1:H:183:LEU:O    | 1:H:184:GLN:HB2  | 2.03                     | 0.57              |
| 1:I:68:ASN:O     | 1:I:72:GLN:HG2   | 2.04                     | 0.57              |
| 1:I:193:MET:CA   | 1:I:375:GLY:HA2  | 2.33                     | 0.57              |
| 1:I:371:LYS:N    | 1:I:374:GLY:N    | 2.51                     | 0.57              |
| 1:J:205:ILE:HA   | 1:J:213:VAL:HG22 | 1.86                     | 0.57              |
| 1:A:86:GLY:C     | 1:A:401:HIS:CE1  | 2.77                     | 0.57              |
| 1:B:155:ASP:OD1  | 1:B:157:THR:HB   | 2.04                     | 0.57              |
| 1:E:193:MET:C    | 1:E:375:GLY:N    | 2.50                     | 0.57              |
| 1:E:382:GLY:O    | 1:E:389:MET:HG2  | 2.04                     | 0.57              |
| 1:G:406:ALA:CB   | 1:G:496:PRO:HG3  | 2.35                     | 0.57              |
| 1:I:272:LYS:N    | 1:I:272:LYS:HD2  | 2.19                     | 0.57              |
| 1:K:68:ASN:O     | 1:K:72:GLN:HG2   | 2.04                     | 0.57              |
| 1:A:513:LEU:HB3  | 1:G:49:ILE:HD12  | 1.85                     | 0.57              |
| 1:B:406:ALA:CB   | 1:B:496:PRO:HG3  | 2.35                     | 0.57              |
| 1:F:235:PRO:CG   | 1:F:310:GLU:HA   | 2.29                     | 0.57              |
| 1:H:218:PRO:CB   | 1:H:246:PRO:HG2  | 2.30                     | 0.57              |
| 1:J:272:LYS:HD2  | 1:J:272:LYS:N    | 2.19                     | 0.57              |
| 1:M:272:LYS:HD2  | 1:M:272:LYS:N    | 2.19                     | 0.57              |
| 1:N:68:ASN:O     | 1:N:72:GLN:HG2   | 2.04                     | 0.57              |
| 1:C:218:PRO:CB   | 1:C:246:PRO:HG2  | 2.32                     | 0.57              |
| 1:D:194:GLN:CG   | 1:D:375:GLY:O    | 2.52                     | 0.57              |
| 1:E:218:PRO:CB   | 1:E:246:PRO:HG2  | 2.32                     | 0.57              |
| 1:F:194:GLN:H    | 1:F:374:GLY:N    | 2.01                     | 0.57              |
| 1:J:333:ILE:CD1  | 1:J:378:VAL:HG22 | 2.26                     | 0.57              |
| 1:K:272:LYS:N    | 1:K:272:LYS:HD2  | 2.19                     | 0.57              |
| 1:L:69:MET:HE3   | 1:M:41:ASP:OD1   | 2.05                     | 0.57              |
| 1:N:190:VAL:HG23 | 1:N:332:ILE:O    | 2.04                     | 0.57              |
| 1:A:49:ILE:HD12  | 1:B:513:LEU:HB3  | 1.85                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:194:GLN:CG   | 1:A:375:GLY:O    | 2.52                     | 0.57              |
| 1:A:200:LEU:O    | 1:A:201:SER:HB3  | 2.04                     | 0.57              |
| 1:C:16:MET:O     | 1:C:20:VAL:HG13  | 2.04                     | 0.57              |
| 1:G:326:ASN:HD22 | 1:G:329:THR:HB   | 1.70                     | 0.57              |
| 1:H:190:VAL:HG23 | 1:H:332:ILE:O    | 2.04                     | 0.57              |
| 1:H:205:ILE:HA   | 1:H:213:VAL:HG22 | 1.86                     | 0.57              |
| 1:G:194:GLN:H    | 1:G:375:GLY:N    | 1.79                     | 0.57              |
| 1:G:194:GLN:CG   | 1:G:375:GLY:O    | 2.52                     | 0.57              |
| 1:K:513:LEU:HD13 | 1:L:49:ILE:CD1   | 2.29                     | 0.57              |
| 1:L:68:ASN:O     | 1:L:72:GLN:HG2   | 2.04                     | 0.57              |
| 1:L:218:PRO:CB   | 1:L:246:PRO:HG2  | 2.30                     | 0.57              |
| 1:L:272:LYS:N    | 1:L:272:LYS:HD2  | 2.19                     | 0.57              |
| 1:A:362:ARG:O    | 1:A:366:GLN:HG3  | 2.03                     | 0.56              |
| 1:A:420:ILE:HD12 | 1:A:451:LEU:HD13 | 1.87                     | 0.56              |
| 1:B:420:ILE:HD12 | 1:B:451:LEU:HD13 | 1.87                     | 0.56              |
| 1:D:200:LEU:O    | 1:D:201:SER:HB3  | 2.04                     | 0.56              |
| 1:F:155:ASP:OD1  | 1:F:157:THR:HB   | 2.04                     | 0.56              |
| 1:K:205:ILE:HA   | 1:K:213:VAL:HG22 | 1.86                     | 0.56              |
| 1:N:242:LYS:C    | 1:N:244:GLY:H    | 2.09                     | 0.56              |
| 1:D:235:PRO:CG   | 1:D:310:GLU:HA   | 2.29                     | 0.56              |
| 1:E:326:ASN:HD22 | 1:E:329:THR:HB   | 1.70                     | 0.56              |
| 1:F:382:GLY:O    | 1:F:389:MET:HG2  | 2.04                     | 0.56              |
| 1:H:73:MET:HG2   | 1:I:47:PRO:HD2   | 1.87                     | 0.56              |
| 1:I:190:VAL:HG23 | 1:I:332:ILE:O    | 2.04                     | 0.56              |
| 1:J:190:VAL:HG23 | 1:J:332:ILE:O    | 2.04                     | 0.56              |
| 1:M:68:ASN:O     | 1:M:72:GLN:HG2   | 2.04                     | 0.56              |
| 1:M:190:VAL:HG23 | 1:M:332:ILE:O    | 2.04                     | 0.56              |
| 1:B:193:MET:C    | 1:B:375:GLY:N    | 2.50                     | 0.56              |
| 1:E:49:ILE:HD12  | 1:F:513:LEU:HD13 | 1.88                     | 0.56              |
| 1:F:245:LYS:HE3  | 1:G:231:ARG:NH2  | 2.15                     | 0.56              |
| 1:G:193:MET:C    | 1:G:375:GLY:N    | 2.50                     | 0.56              |
| 1:G:382:GLY:O    | 1:G:389:MET:HG2  | 2.04                     | 0.56              |
| 1:H:47:PRO:HD2   | 1:N:73:MET:HG2   | 1.87                     | 0.56              |
| 1:I:73:MET:HG2   | 1:J:47:PRO:HD2   | 1.87                     | 0.56              |
| 1:C:326:ASN:HD22 | 1:C:329:THR:HB   | 1.70                     | 0.56              |
| 1:D:218:PRO:CB   | 1:D:246:PRO:HG2  | 2.32                     | 0.56              |
| 1:D:326:ASN:HD22 | 1:D:329:THR:HB   | 1.70                     | 0.56              |
| 1:E:155:ASP:OD1  | 1:E:157:THR:HB   | 2.04                     | 0.56              |
| 1:I:69:MET:HE3   | 1:J:41:ASP:OD1   | 2.06                     | 0.56              |
| 1:J:68:ASN:O     | 1:J:72:GLN:HG2   | 2.04                     | 0.56              |
| 1:B:326:ASN:HD22 | 1:B:329:THR:HB   | 1.70                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:404:ARG:HG2  | 1:C:404:ARG:HH11 | 1.69                     | 0.56              |
| 1:H:41:ASP:HB3   | 1:N:521:VAL:O    | 2.03                     | 0.56              |
| 1:I:242:LYS:C    | 1:I:244:GLY:H    | 2.09                     | 0.56              |
| 1:D:245:LYS:HZ2  | 1:D:319:GLN:HE22 | 1.54                     | 0.56              |
| 1:F:49:ILE:HD12  | 1:G:513:LEU:HD13 | 1.88                     | 0.56              |
| 1:G:183:LEU:O    | 1:G:184:GLN:HB2  | 2.06                     | 0.56              |
| 1:M:205:ILE:HA   | 1:M:213:VAL:HG22 | 1.86                     | 0.56              |
| 1:A:86:GLY:HA3   | 1:A:401:HIS:NE2  | 2.10                     | 0.56              |
| 1:A:326:ASN:HD22 | 1:A:329:THR:HB   | 1.70                     | 0.56              |
| 1:B:194:GLN:CG   | 1:B:375:GLY:O    | 2.52                     | 0.56              |
| 1:D:49:ILE:HD12  | 1:E:513:LEU:HD13 | 1.88                     | 0.56              |
| 1:E:235:PRO:CG   | 1:E:310:GLU:HA   | 2.29                     | 0.56              |
| 1:F:183:LEU:O    | 1:F:184:GLN:HB2  | 2.06                     | 0.56              |
| 1:I:513:LEU:HD13 | 1:J:49:ILE:CD1   | 2.28                     | 0.56              |
| 1:L:69:MET:CE    | 1:M:41:ASP:CG    | 2.74                     | 0.56              |
| 1:L:242:LYS:C    | 1:L:244:GLY:H    | 2.09                     | 0.56              |
| 1:C:206:ASN:HD21 | 1:C:214:GLU:H    | 1.54                     | 0.56              |
| 1:C:406:ALA:CB   | 1:C:496:PRO:HG3  | 2.35                     | 0.56              |
| 1:D:206:ASN:HD21 | 1:D:214:GLU:H    | 1.54                     | 0.56              |
| 1:K:69:MET:CE    | 1:L:41:ASP:CG    | 2.74                     | 0.56              |
| 1:H:242:LYS:C    | 1:H:244:GLY:H    | 2.09                     | 0.56              |
| 1:M:242:LYS:C    | 1:M:244:GLY:H    | 2.09                     | 0.56              |
| 1:A:235:PRO:CG   | 1:A:310:GLU:HA   | 2.29                     | 0.56              |
| 1:A:245:LYS:HZ2  | 1:A:319:GLN:HE22 | 1.52                     | 0.56              |
| 1:I:160:LYS:O    | 1:I:164:GLU:HG3  | 2.06                     | 0.56              |
| 1:L:160:LYS:O    | 1:L:164:GLU:HG3  | 2.06                     | 0.56              |
| 1:L:205:ILE:HA   | 1:L:213:VAL:HG22 | 1.86                     | 0.56              |
| 1:L:513:LEU:HD13 | 1:M:49:ILE:CD1   | 2.29                     | 0.56              |
| 1:M:69:MET:CE    | 1:N:41:ASP:CG    | 2.74                     | 0.56              |
| 1:N:160:LYS:O    | 1:N:164:GLU:HG3  | 2.06                     | 0.56              |
| 1:N:205:ILE:HA   | 1:N:213:VAL:HG22 | 1.86                     | 0.56              |
| 1:G:86:GLY:HA3   | 1:G:401:HIS:NE2  | 2.10                     | 0.55              |
| 1:J:73:MET:HG2   | 1:K:47:PRO:HD2   | 1.87                     | 0.55              |
| 1:K:190:VAL:HG23 | 1:K:332:ILE:O    | 2.03                     | 0.55              |
| 1:M:23:LEU:CD2   | 1:M:74:VAL:HG13  | 2.37                     | 0.55              |
| 1:N:218:PRO:CB   | 1:N:246:PRO:HG2  | 2.30                     | 0.55              |
| 1:N:386:GLU:O    | 1:N:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:E:41:ASP:CG    | 1:F:69:MET:HE3   | 2.25                     | 0.55              |
| 1:H:160:LYS:O    | 1:H:164:GLU:HG3  | 2.06                     | 0.55              |
| 1:M:218:PRO:CB   | 1:M:246:PRO:HG2  | 2.30                     | 0.55              |
| 1:A:49:ILE:HD12  | 1:B:513:LEU:HD13 | 1.88                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:245:LYS:HE3  | 1:B:231:ARG:NH2  | 2.15                     | 0.55              |
| 1:H:41:ASP:OD1   | 1:N:69:MET:HE3   | 2.06                     | 0.55              |
| 1:H:386:GLU:O    | 1:H:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:K:23:LEU:CD2   | 1:K:74:VAL:HG13  | 2.37                     | 0.55              |
| 1:L:23:LEU:CD2   | 1:L:74:VAL:HG13  | 2.37                     | 0.55              |
| 1:L:73:MET:HG2   | 1:M:47:PRO:HD2   | 1.87                     | 0.55              |
| 1:L:190:VAL:HG23 | 1:L:332:ILE:O    | 2.04                     | 0.55              |
| 1:M:190:VAL:CG1  | 1:M:334:ASP:HB2  | 2.35                     | 0.55              |
| 1:N:190:VAL:CG1  | 1:N:334:ASP:HB2  | 2.35                     | 0.55              |
| 1:B:206:ASN:HD21 | 1:B:214:GLU:H    | 1.54                     | 0.55              |
| 1:E:39:VAL:HB    | 1:F:519:CYS:O    | 2.07                     | 0.55              |
| 1:J:69:MET:CE    | 1:K:41:ASP:CG    | 2.74                     | 0.55              |
| 1:J:386:GLU:O    | 1:J:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:J:513:LEU:HD13 | 1:K:49:ILE:CD1   | 2.29                     | 0.55              |
| 1:K:73:MET:HG2   | 1:L:47:PRO:HD2   | 1.87                     | 0.55              |
| 1:A:39:VAL:HB    | 1:B:519:CYS:O    | 2.07                     | 0.55              |
| 1:A:183:LEU:O    | 1:A:184:GLN:HB2  | 2.06                     | 0.55              |
| 1:B:49:ILE:HD12  | 1:C:513:LEU:HD13 | 1.88                     | 0.55              |
| 1:C:49:ILE:HD12  | 1:D:513:LEU:HD13 | 1.88                     | 0.55              |
| 1:C:194:GLN:CG   | 1:C:375:GLY:O    | 2.52                     | 0.55              |
| 1:F:406:ALA:CB   | 1:F:496:PRO:HG3  | 2.35                     | 0.55              |
| 1:B:49:ILE:HD12  | 1:C:513:LEU:HB3  | 1.85                     | 0.55              |
| 1:E:206:ASN:HD21 | 1:E:214:GLU:H    | 1.54                     | 0.55              |
| 1:F:39:VAL:HB    | 1:G:519:CYS:O    | 2.07                     | 0.55              |
| 1:I:521:VAL:O    | 1:J:41:ASP:HB3   | 2.03                     | 0.55              |
| 1:D:183:LEU:O    | 1:D:184:GLN:HB2  | 2.06                     | 0.55              |
| 1:H:41:ASP:CG    | 1:N:69:MET:CE    | 2.74                     | 0.55              |
| 1:H:69:MET:CE    | 1:I:41:ASP:CG    | 2.74                     | 0.55              |
| 1:I:69:MET:CE    | 1:J:41:ASP:CG    | 2.74                     | 0.55              |
| 1:K:69:MET:HE1   | 1:L:41:ASP:CB    | 2.36                     | 0.55              |
| 1:K:386:GLU:O    | 1:K:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:N:23:LEU:CD2   | 1:N:74:VAL:HG13  | 2.37                     | 0.55              |
| 1:B:183:LEU:O    | 1:B:184:GLN:HB2  | 2.06                     | 0.55              |
| 1:C:39:VAL:HB    | 1:D:519:CYS:O    | 2.07                     | 0.55              |
| 1:D:39:VAL:HB    | 1:E:519:CYS:O    | 2.07                     | 0.55              |
| 1:I:23:LEU:HD22  | 1:I:74:VAL:HG13  | 1.89                     | 0.55              |
| 1:I:386:GLU:O    | 1:I:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:J:160:LYS:O    | 1:J:164:GLU:HG3  | 2.06                     | 0.55              |
| 1:K:176:THR:HG22 | 1:K:177:VAL:N    | 2.22                     | 0.55              |
| 1:L:521:VAL:O    | 1:M:41:ASP:HB3   | 2.03                     | 0.55              |
| 1:M:73:MET:HG2   | 1:N:47:PRO:HD2   | 1.87                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:386:GLU:O    | 1:M:390:LYS:HG2  | 2.07                     | 0.55              |
| 1:A:114:MET:HE1  | 1:G:51:LYS:HZ3   | 1.72                     | 0.55              |
| 1:C:183:LEU:O    | 1:C:184:GLN:HB2  | 2.06                     | 0.55              |
| 1:F:194:GLN:CD   | 1:F:375:GLY:O    | 2.46                     | 0.55              |
| 1:H:49:ILE:CD1   | 1:N:513:LEU:HD13 | 2.28                     | 0.55              |
| 1:J:242:LYS:C    | 1:J:244:GLY:H    | 2.09                     | 0.55              |
| 1:K:16:MET:O     | 1:K:20:VAL:HG13  | 2.07                     | 0.55              |
| 1:K:69:MET:CE    | 1:L:41:ASP:HB2   | 2.36                     | 0.55              |
| 1:L:176:THR:HG22 | 1:L:177:VAL:N    | 2.22                     | 0.55              |
| 1:A:513:LEU:HD13 | 1:G:49:ILE:HD12  | 1.88                     | 0.55              |
| 1:B:39:VAL:HB    | 1:C:519:CYS:O    | 2.07                     | 0.55              |
| 1:H:69:MET:HE3   | 1:I:41:ASP:OD1   | 2.07                     | 0.55              |
| 1:I:176:THR:HG22 | 1:I:177:VAL:N    | 2.22                     | 0.55              |
| 1:K:242:LYS:C    | 1:K:244:GLY:H    | 2.09                     | 0.55              |
| 1:L:69:MET:CE    | 1:M:41:ASP:HB2   | 2.36                     | 0.55              |
| 1:F:326:ASN:HD22 | 1:F:329:THR:HB   | 1.70                     | 0.54              |
| 1:J:23:LEU:HD22  | 1:J:74:VAL:HG13  | 1.89                     | 0.54              |
| 1:L:70:GLY:HA2   | 1:L:73:MET:HE3   | 1.89                     | 0.54              |
| 1:L:386:GLU:O    | 1:L:390:LYS:HG2  | 2.07                     | 0.54              |
| 1:M:160:LYS:O    | 1:M:164:GLU:HG3  | 2.06                     | 0.54              |
| 1:A:41:ASP:CG    | 1:B:69:MET:HE3   | 2.28                     | 0.54              |
| 1:A:160:LYS:O    | 1:A:164:GLU:HG3  | 2.08                     | 0.54              |
| 1:A:194:GLN:CD   | 1:A:375:GLY:O    | 2.46                     | 0.54              |
| 1:A:406:ALA:CB   | 1:A:496:PRO:HG3  | 2.35                     | 0.54              |
| 1:J:23:LEU:CD2   | 1:J:74:VAL:HG13  | 2.37                     | 0.54              |
| 1:J:190:VAL:CG1  | 1:J:334:ASP:HB2  | 2.35                     | 0.54              |
| 1:K:69:MET:HE3   | 1:L:41:ASP:OD1   | 2.07                     | 0.54              |
| 1:K:160:LYS:O    | 1:K:164:GLU:HG3  | 2.06                     | 0.54              |
| 1:M:176:THR:HG22 | 1:M:177:VAL:N    | 2.22                     | 0.54              |
| 1:A:519:CYS:O    | 1:G:39:VAL:HB    | 2.07                     | 0.54              |
| 1:B:194:GLN:CD   | 1:B:375:GLY:O    | 2.46                     | 0.54              |
| 1:C:194:GLN:CD   | 1:C:375:GLY:O    | 2.46                     | 0.54              |
| 1:D:160:LYS:O    | 1:D:164:GLU:HG3  | 2.08                     | 0.54              |
| 1:D:183:LEU:HD12 | 1:D:184:GLN:HG3  | 1.89                     | 0.54              |
| 1:E:183:LEU:O    | 1:E:184:GLN:HB2  | 2.06                     | 0.54              |
| 1:I:16:MET:O     | 1:I:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:M:200:LEU:O    | 1:M:201:SER:HB3  | 2.07                     | 0.54              |
| 1:M:521:VAL:O    | 1:N:41:ASP:HB3   | 2.03                     | 0.54              |
| 1:N:16:MET:O     | 1:N:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:N:176:THR:HG22 | 1:N:177:VAL:N    | 2.22                     | 0.54              |
| 1:A:183:LEU:HD12 | 1:A:184:GLN:HG3  | 1.89                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:206:ASN:HD21 | 1:A:214:GLU:H    | 1.54                     | 0.54              |
| 1:D:194:GLN:CD   | 1:D:375:GLY:O    | 2.46                     | 0.54              |
| 1:F:160:LYS:O    | 1:F:164:GLU:HG3  | 2.08                     | 0.54              |
| 1:G:245:LYS:HZ2  | 1:G:319:GLN:HE22 | 1.54                     | 0.54              |
| 1:H:23:LEU:HD22  | 1:H:74:VAL:HG13  | 1.89                     | 0.54              |
| 1:K:193:MET:CE   | 1:K:292:ILE:HG12 | 2.38                     | 0.54              |
| 1:L:200:LEU:O    | 1:L:201:SER:HB3  | 2.07                     | 0.54              |
| 1:E:183:LEU:HD12 | 1:E:184:GLN:HG3  | 1.89                     | 0.54              |
| 1:E:194:GLN:CD   | 1:E:375:GLY:O    | 2.46                     | 0.54              |
| 1:F:386:GLU:O    | 1:F:390:LYS:HG2  | 2.08                     | 0.54              |
| 1:H:16:MET:O     | 1:H:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:I:69:MET:CE    | 1:J:41:ASP:HB2   | 2.36                     | 0.54              |
| 1:I:160:LYS:HB2  | 1:I:160:LYS:NZ   | 2.23                     | 0.54              |
| 1:I:193:MET:CE   | 1:I:292:ILE:HG12 | 2.38                     | 0.54              |
| 1:J:16:MET:O     | 1:J:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:J:176:THR:HG22 | 1:J:177:VAL:N    | 2.22                     | 0.54              |
| 1:K:200:LEU:O    | 1:K:201:SER:HB3  | 2.07                     | 0.54              |
| 1:N:193:MET:CE   | 1:N:292:ILE:HG12 | 2.38                     | 0.54              |
| 1:G:386:GLU:O    | 1:G:390:LYS:HG2  | 2.08                     | 0.54              |
| 1:J:160:LYS:HB2  | 1:J:160:LYS:NZ   | 2.23                     | 0.54              |
| 1:L:193:MET:CE   | 1:L:292:ILE:HG12 | 2.38                     | 0.54              |
| 1:N:160:LYS:HB2  | 1:N:160:LYS:NZ   | 2.23                     | 0.54              |
| 1:C:235:PRO:CG   | 1:C:310:GLU:HA   | 2.29                     | 0.54              |
| 1:D:406:ALA:CB   | 1:D:496:PRO:HG3  | 2.35                     | 0.54              |
| 1:E:386:GLU:O    | 1:E:390:LYS:HG2  | 2.08                     | 0.54              |
| 1:F:206:ASN:HD21 | 1:F:214:GLU:H    | 1.54                     | 0.54              |
| 1:J:69:MET:CE    | 1:K:41:ASP:HB2   | 2.36                     | 0.54              |
| 1:L:23:LEU:HD22  | 1:L:74:VAL:HG13  | 1.89                     | 0.54              |
| 1:C:49:ILE:HD12  | 1:D:513:LEU:HB3  | 1.84                     | 0.54              |
| 1:C:305:ILE:HG22 | 1:C:305:ILE:O    | 2.08                     | 0.54              |
| 1:G:160:LYS:O    | 1:G:164:GLU:HG3  | 2.08                     | 0.54              |
| 1:H:160:LYS:HB2  | 1:H:160:LYS:NZ   | 2.23                     | 0.54              |
| 1:H:305:ILE:HG22 | 1:H:305:ILE:O    | 2.08                     | 0.54              |
| 1:I:23:LEU:CD2   | 1:I:74:VAL:HG13  | 2.37                     | 0.54              |
| 1:L:191:GLU:O    | 1:L:332:ILE:HB   | 2.08                     | 0.54              |
| 1:M:16:MET:O     | 1:M:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:M:23:LEU:HD22  | 1:M:74:VAL:HG13  | 1.89                     | 0.54              |
| 1:N:136:VAL:HG12 | 1:N:137:PRO:N    | 2.23                     | 0.54              |
| 1:B:183:LEU:HD12 | 1:B:184:GLN:HG3  | 1.89                     | 0.54              |
| 1:C:86:GLY:HA3   | 1:C:401:HIS:NE2  | 2.10                     | 0.54              |
| 1:C:386:GLU:O    | 1:C:390:LYS:HG2  | 2.08                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:235:PRO:CG   | 1:G:310:GLU:HA   | 2.29                     | 0.54              |
| 1:I:191:GLU:O    | 1:I:332:ILE:HB   | 2.08                     | 0.54              |
| 1:N:319:GLN:O    | 1:N:336:VAL:HG23 | 2.08                     | 0.54              |
| 1:A:193:MET:C    | 1:A:375:GLY:N    | 2.50                     | 0.54              |
| 1:C:183:LEU:HD12 | 1:C:184:GLN:HG3  | 1.89                     | 0.54              |
| 1:E:194:GLN:H    | 1:E:375:GLY:N    | 1.79                     | 0.54              |
| 1:L:16:MET:O     | 1:L:20:VAL:HG13  | 2.07                     | 0.54              |
| 1:N:305:ILE:HG22 | 1:N:305:ILE:O    | 2.08                     | 0.54              |
| 1:A:386:GLU:O    | 1:A:390:LYS:HG2  | 2.08                     | 0.53              |
| 1:D:202:PRO:O    | 1:D:203:TYR:HB2  | 2.08                     | 0.53              |
| 1:D:301:ILE:HG21 | 1:D:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:E:160:LYS:O    | 1:E:164:GLU:HG3  | 2.08                     | 0.53              |
| 1:G:183:LEU:HD12 | 1:G:184:GLN:HG3  | 1.89                     | 0.53              |
| 1:G:194:GLN:CD   | 1:G:375:GLY:O    | 2.46                     | 0.53              |
| 1:G:206:ASN:HD21 | 1:G:214:GLU:H    | 1.54                     | 0.53              |
| 1:H:23:LEU:CD2   | 1:H:74:VAL:HG13  | 2.37                     | 0.53              |
| 1:H:190:VAL:CG1  | 1:H:334:ASP:HB2  | 2.35                     | 0.53              |
| 1:I:73:MET:O     | 1:I:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:J:193:MET:CE   | 1:J:292:ILE:HG12 | 2.38                     | 0.53              |
| 1:K:69:MET:CE    | 1:L:41:ASP:CB    | 2.86                     | 0.53              |
| 1:M:305:ILE:O    | 1:M:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:A:69:MET:HE3   | 1:G:41:ASP:CG    | 2.28                     | 0.53              |
| 1:B:160:LYS:O    | 1:B:164:GLU:HG3  | 2.08                     | 0.53              |
| 1:B:305:ILE:O    | 1:B:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:C:301:ILE:HG21 | 1:C:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:H:176:THR:HG22 | 1:H:177:VAL:N    | 2.22                     | 0.53              |
| 1:H:200:LEU:O    | 1:H:201:SER:HB3  | 2.07                     | 0.53              |
| 1:J:73:MET:O     | 1:J:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:J:200:LEU:O    | 1:J:201:SER:HB3  | 2.07                     | 0.53              |
| 1:K:73:MET:O     | 1:K:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:K:160:LYS:HB2  | 1:K:160:LYS:NZ   | 2.23                     | 0.53              |
| 1:M:136:VAL:HG12 | 1:M:137:PRO:N    | 2.23                     | 0.53              |
| 1:M:193:MET:C    | 1:M:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:N:382:GLY:O    | 1:N:389:MET:HG2  | 2.08                     | 0.53              |
| 1:C:160:LYS:O    | 1:C:164:GLU:HG3  | 2.08                     | 0.53              |
| 1:C:202:PRO:O    | 1:C:203:TYR:HB2  | 2.08                     | 0.53              |
| 1:D:305:ILE:O    | 1:D:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:G:301:ILE:HG21 | 1:G:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:H:41:ASP:CB    | 1:N:69:MET:CE    | 2.86                     | 0.53              |
| 1:H:69:MET:CE    | 1:I:41:ASP:CB    | 2.86                     | 0.53              |
| 1:H:136:VAL:HG12 | 1:H:137:PRO:N    | 2.23                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:191:GLU:O    | 1:H:332:ILE:HB   | 2.08                     | 0.53              |
| 1:H:193:MET:CE   | 1:H:292:ILE:HG12 | 2.38                     | 0.53              |
| 1:K:191:GLU:O    | 1:K:332:ILE:HB   | 2.08                     | 0.53              |
| 1:K:193:MET:C    | 1:K:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:K:319:GLN:O    | 1:K:336:VAL:HG23 | 2.08                     | 0.53              |
| 1:K:521:VAL:O    | 1:L:41:ASP:HB3   | 2.03                     | 0.53              |
| 1:L:319:GLN:O    | 1:L:336:VAL:HG23 | 2.08                     | 0.53              |
| 1:M:73:MET:O     | 1:M:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:M:319:GLN:O    | 1:M:336:VAL:HG23 | 2.08                     | 0.53              |
| 1:D:386:GLU:O    | 1:D:390:LYS:HG2  | 2.08                     | 0.53              |
| 1:E:305:ILE:HG22 | 1:E:305:ILE:O    | 2.08                     | 0.53              |
| 1:F:51:LYS:NZ    | 1:G:114:MET:HE1  | 2.23                     | 0.53              |
| 1:F:305:ILE:O    | 1:F:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:H:319:GLN:O    | 1:H:336:VAL:HG23 | 2.08                     | 0.53              |
| 1:H:382:GLY:O    | 1:H:389:MET:HG2  | 2.08                     | 0.53              |
| 1:H:383:ALA:O    | 1:H:384:ALA:HB3  | 2.09                     | 0.53              |
| 1:I:382:GLY:O    | 1:I:389:MET:HG2  | 2.08                     | 0.53              |
| 1:J:193:MET:C    | 1:J:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:J:382:GLY:O    | 1:J:389:MET:HG2  | 2.08                     | 0.53              |
| 1:K:23:LEU:HD22  | 1:K:74:VAL:HG13  | 1.89                     | 0.53              |
| 1:L:193:MET:C    | 1:L:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:B:386:GLU:O    | 1:B:390:LYS:HG2  | 2.08                     | 0.53              |
| 1:E:252:GLU:O    | 1:E:253:ASP:HB2  | 2.09                     | 0.53              |
| 1:F:183:LEU:HD12 | 1:F:184:GLN:HG3  | 1.89                     | 0.53              |
| 1:J:191:GLU:O    | 1:J:332:ILE:HB   | 2.08                     | 0.53              |
| 1:M:513:LEU:HD13 | 1:N:49:ILE:CD1   | 2.28                     | 0.53              |
| 1:N:193:MET:C    | 1:N:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:N:200:LEU:O    | 1:N:201:SER:HB3  | 2.07                     | 0.53              |
| 1:A:194:GLN:HB2  | 1:A:375:GLY:CA   | 2.39                     | 0.53              |
| 1:A:242:LYS:C    | 1:A:244:GLY:H    | 2.12                     | 0.53              |
| 1:C:194:GLN:HB2  | 1:C:375:GLY:CA   | 2.39                     | 0.53              |
| 1:C:252:GLU:O    | 1:C:253:ASP:HB2  | 2.09                     | 0.53              |
| 1:E:242:LYS:C    | 1:E:244:GLY:H    | 2.12                     | 0.53              |
| 1:E:301:ILE:HG21 | 1:E:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:I:193:MET:C    | 1:I:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:I:305:ILE:O    | 1:I:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:I:383:ALA:O    | 1:I:384:ALA:HB3  | 2.09                     | 0.53              |
| 1:K:382:GLY:O    | 1:K:389:MET:HG2  | 2.08                     | 0.53              |
| 1:M:193:MET:CE   | 1:M:292:ILE:HG12 | 2.38                     | 0.53              |
| 1:N:73:MET:O     | 1:N:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:N:183:LEU:HD12 | 1:N:184:GLN:HG3  | 1.91                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:86:GLY:O     | 1:C:401:HIS:CE1  | 2.62                     | 0.53              |
| 1:C:242:LYS:C    | 1:C:244:GLY:H    | 2.12                     | 0.53              |
| 1:D:242:LYS:C    | 1:D:244:GLY:H    | 2.12                     | 0.53              |
| 1:E:86:GLY:O     | 1:E:401:HIS:CE1  | 2.62                     | 0.53              |
| 1:F:41:ASP:CG    | 1:G:69:MET:HE3   | 2.29                     | 0.53              |
| 1:F:301:ILE:HG21 | 1:F:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:G:252:GLU:O    | 1:G:253:ASP:HB2  | 2.09                     | 0.53              |
| 1:I:70:GLY:HA2   | 1:I:73:MET:HE3   | 1.89                     | 0.53              |
| 1:K:136:VAL:HG12 | 1:K:137:PRO:N    | 2.23                     | 0.53              |
| 1:L:160:LYS:HB2  | 1:L:160:LYS:NZ   | 2.23                     | 0.53              |
| 1:L:305:ILE:O    | 1:L:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:M:183:LEU:HD12 | 1:M:184:GLN:HG3  | 1.91                     | 0.53              |
| 1:N:23:LEU:HD22  | 1:N:74:VAL:HG13  | 1.89                     | 0.53              |
| 1:D:193:MET:C    | 1:D:375:GLY:N    | 2.50                     | 0.53              |
| 1:H:73:MET:O     | 1:H:76:GLU:HB2   | 2.09                     | 0.53              |
| 1:M:160:LYS:HB2  | 1:M:160:LYS:NZ   | 2.23                     | 0.53              |
| 1:A:301:ILE:HG21 | 1:A:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:B:86:GLY:O     | 1:B:401:HIS:CE1  | 2.62                     | 0.53              |
| 1:B:301:ILE:HG21 | 1:B:309:LEU:HD23 | 1.90                     | 0.53              |
| 1:G:305:ILE:O    | 1:G:305:ILE:HG22 | 2.08                     | 0.53              |
| 1:H:70:GLY:HA2   | 1:H:73:MET:HE3   | 1.89                     | 0.53              |
| 1:H:193:MET:C    | 1:H:376:VAL:HG23 | 2.29                     | 0.53              |
| 1:I:136:VAL:HG12 | 1:I:137:PRO:N    | 2.23                     | 0.53              |
| 1:I:200:LEU:O    | 1:I:201:SER:HB3  | 2.07                     | 0.53              |
| 1:L:69:MET:CE    | 1:M:41:ASP:CB    | 2.86                     | 0.53              |
| 1:L:136:VAL:HG12 | 1:L:137:PRO:N    | 2.23                     | 0.53              |
| 1:M:70:GLY:HA2   | 1:M:73:MET:HE3   | 1.91                     | 0.53              |
| 1:N:266:THR:CG2  | 1:N:273:VAL:H    | 2.22                     | 0.53              |
| 1:N:383:ALA:O    | 1:N:384:ALA:HB3  | 2.09                     | 0.53              |
| 1:A:86:GLY:O     | 1:A:401:HIS:CE1  | 2.62                     | 0.53              |
| 1:A:252:GLU:O    | 1:A:253:ASP:HB2  | 2.09                     | 0.53              |
| 1:E:194:GLN:HB2  | 1:E:375:GLY:CA   | 2.39                     | 0.53              |
| 1:F:86:GLY:O     | 1:F:401:HIS:CE1  | 2.62                     | 0.53              |
| 1:F:245:LYS:HE3  | 1:G:231:ARG:HH21 | 1.70                     | 0.53              |
| 1:I:69:MET:CE    | 1:J:41:ASP:CB    | 2.86                     | 0.53              |
| 1:J:70:GLY:HA2   | 1:J:73:MET:HE3   | 1.90                     | 0.53              |
| 1:J:136:VAL:HG12 | 1:J:137:PRO:N    | 2.23                     | 0.53              |
| 1:J:319:GLN:O    | 1:J:336:VAL:HG23 | 2.08                     | 0.53              |
| 1:J:383:ALA:O    | 1:J:384:ALA:HB3  | 2.09                     | 0.53              |
| 1:L:382:GLY:O    | 1:L:389:MET:HG2  | 2.08                     | 0.53              |
| 1:M:191:GLU:O    | 1:M:332:ILE:HB   | 2.08                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:266:THR:CG2  | 1:K:273:VAL:H    | 2.22                     | 0.52              |
| 1:L:183:LEU:HD12 | 1:L:184:GLN:HG3  | 1.91                     | 0.52              |
| 1:L:291:ASP:OD2  | 1:L:368:ARG:HD2  | 2.10                     | 0.52              |
| 1:M:69:MET:CE    | 1:N:41:ASP:CB    | 2.86                     | 0.52              |
| 1:M:382:GLY:O    | 1:M:389:MET:HG2  | 2.08                     | 0.52              |
| 1:B:252:GLU:O    | 1:B:253:ASP:HB2  | 2.09                     | 0.52              |
| 1:F:39:VAL:CG2   | 1:G:517:THR:CB   | 2.86                     | 0.52              |
| 1:G:242:LYS:C    | 1:G:244:GLY:H    | 2.12                     | 0.52              |
| 1:K:305:ILE:HG22 | 1:K:305:ILE:O    | 2.08                     | 0.52              |
| 1:M:383:ALA:O    | 1:M:384:ALA:HB3  | 2.09                     | 0.52              |
| 1:N:191:GLU:O    | 1:N:332:ILE:HB   | 2.08                     | 0.52              |
| 1:A:69:MET:CE    | 1:G:41:ASP:CA    | 2.88                     | 0.52              |
| 1:A:305:ILE:O    | 1:A:305:ILE:HG22 | 2.08                     | 0.52              |
| 1:D:86:GLY:O     | 1:D:401:HIS:CE1  | 2.62                     | 0.52              |
| 1:E:41:ASP:CA    | 1:F:69:MET:CE    | 2.88                     | 0.52              |
| 1:F:41:ASP:CA    | 1:G:69:MET:CE    | 2.88                     | 0.52              |
| 1:J:69:MET:CE    | 1:K:41:ASP:CB    | 2.86                     | 0.52              |
| 1:L:73:MET:O     | 1:L:76:GLU:HB2   | 2.09                     | 0.52              |
| 1:N:70:GLY:HA2   | 1:N:73:MET:HE3   | 1.91                     | 0.52              |
| 1:N:183:LEU:CD1  | 1:N:184:GLN:HG3  | 2.40                     | 0.52              |
| 1:D:41:ASP:CA    | 1:E:69:MET:CE    | 2.88                     | 0.52              |
| 1:D:252:GLU:O    | 1:D:253:ASP:HB2  | 2.09                     | 0.52              |
| 1:E:202:PRO:O    | 1:E:203:TYR:HB2  | 2.08                     | 0.52              |
| 1:H:41:ASP:HB2   | 1:N:69:MET:CE    | 2.36                     | 0.52              |
| 1:J:305:ILE:O    | 1:J:305:ILE:HG22 | 2.08                     | 0.52              |
| 1:K:70:GLY:HA2   | 1:K:73:MET:HE3   | 1.91                     | 0.52              |
| 1:K:383:ALA:O    | 1:K:384:ALA:HB3  | 2.09                     | 0.52              |
| 1:L:183:LEU:CD1  | 1:L:184:GLN:HG3  | 2.40                     | 0.52              |
| 1:M:291:ASP:OD2  | 1:M:368:ARG:HD2  | 2.10                     | 0.52              |
| 1:A:41:ASP:HB3   | 1:B:521:VAL:O    | 2.07                     | 0.52              |
| 1:A:41:ASP:CA    | 1:B:69:MET:CE    | 2.88                     | 0.52              |
| 1:A:183:LEU:CD1  | 1:A:184:GLN:HG3  | 2.39                     | 0.52              |
| 1:C:41:ASP:CA    | 1:D:69:MET:CE    | 2.88                     | 0.52              |
| 1:G:86:GLY:O     | 1:G:401:HIS:CE1  | 2.62                     | 0.52              |
| 1:G:183:LEU:CD1  | 1:G:184:GLN:HG3  | 2.39                     | 0.52              |
| 1:G:194:GLN:HB2  | 1:G:375:GLY:CA   | 2.39                     | 0.52              |
| 1:G:202:PRO:O    | 1:G:203:TYR:HB2  | 2.08                     | 0.52              |
| 1:H:41:ASP:CB    | 1:N:69:MET:HE1   | 2.36                     | 0.52              |
| 1:I:266:THR:CG2  | 1:I:273:VAL:H    | 2.22                     | 0.52              |
| 1:M:183:LEU:CD1  | 1:M:184:GLN:HG3  | 2.40                     | 0.52              |
| 1:M:333:ILE:HG21 | 1:M:378:VAL:CG2  | 2.36                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:333:ILE:HG21 | 1:N:378:VAL:CG2  | 2.36                     | 0.52              |
| 1:A:202:PRO:O    | 1:A:203:TYR:HB2  | 2.08                     | 0.52              |
| 1:B:194:GLN:HB2  | 1:B:375:GLY:CA   | 2.39                     | 0.52              |
| 1:C:193:MET:C    | 1:C:375:GLY:N    | 2.50                     | 0.52              |
| 1:D:194:GLN:HB2  | 1:D:375:GLY:CA   | 2.39                     | 0.52              |
| 1:E:183:LEU:CD1  | 1:E:184:GLN:HG3  | 2.39                     | 0.52              |
| 1:H:183:LEU:HD12 | 1:H:184:GLN:HG3  | 1.91                     | 0.52              |
| 1:I:319:GLN:O    | 1:I:336:VAL:HG23 | 2.08                     | 0.52              |
| 1:L:383:ALA:O    | 1:L:384:ALA:HB3  | 2.09                     | 0.52              |
| 1:M:266:THR:CG2  | 1:M:273:VAL:H    | 2.22                     | 0.52              |
| 1:B:183:LEU:CD1  | 1:B:184:GLN:HG3  | 2.39                     | 0.52              |
| 1:F:242:LYS:C    | 1:F:244:GLY:H    | 2.12                     | 0.52              |
| 1:F:252:GLU:O    | 1:F:253:ASP:HB2  | 2.09                     | 0.52              |
| 1:J:291:ASP:OD2  | 1:J:368:ARG:HD2  | 2.10                     | 0.52              |
| 1:K:291:ASP:OD2  | 1:K:368:ARG:HD2  | 2.10                     | 0.52              |
| 1:N:136:VAL:CG1  | 1:N:137:PRO:HD3  | 2.40                     | 0.52              |
| 1:B:242:LYS:C    | 1:B:244:GLY:H    | 2.12                     | 0.52              |
| 1:C:176:THR:HG22 | 1:C:177:VAL:N    | 2.25                     | 0.52              |
| 1:F:183:LEU:CD1  | 1:F:184:GLN:HG3  | 2.39                     | 0.52              |
| 1:F:194:GLN:HB2  | 1:F:375:GLY:CA   | 2.39                     | 0.52              |
| 1:H:301:ILE:HG21 | 1:H:309:LEU:HD23 | 1.92                     | 0.52              |
| 1:I:90:THR:O     | 1:I:94:VAL:HG13  | 2.10                     | 0.52              |
| 1:L:266:THR:CG2  | 1:L:273:VAL:H    | 2.22                     | 0.52              |
| 1:A:114:MET:CE   | 1:G:51:LYS:NZ    | 2.73                     | 0.52              |
| 1:B:41:ASP:CA    | 1:C:69:MET:CE    | 2.88                     | 0.52              |
| 1:D:51:LYS:NZ    | 1:E:114:MET:CE   | 2.73                     | 0.52              |
| 1:E:51:LYS:NZ    | 1:F:114:MET:CE   | 2.73                     | 0.52              |
| 1:H:90:THR:O     | 1:H:94:VAL:HG13  | 2.10                     | 0.52              |
| 1:K:183:LEU:HD12 | 1:K:184:GLN:HG3  | 1.91                     | 0.52              |
| 1:M:90:THR:O     | 1:M:94:VAL:HG13  | 2.10                     | 0.52              |
| 1:N:90:THR:O     | 1:N:94:VAL:HG13  | 2.10                     | 0.52              |
| 1:N:301:ILE:HG21 | 1:N:309:LEU:HD23 | 1.92                     | 0.52              |
| 1:A:245:LYS:HE3  | 1:B:231:ARG:HH21 | 1.70                     | 0.52              |
| 1:B:176:THR:HG22 | 1:B:177:VAL:N    | 2.25                     | 0.52              |
| 1:H:183:LEU:CD1  | 1:H:184:GLN:HG3  | 2.40                     | 0.52              |
| 1:M:301:ILE:HG21 | 1:M:309:LEU:HD23 | 1.92                     | 0.52              |
| 1:A:517:THR:CB   | 1:G:39:VAL:CG2   | 2.86                     | 0.51              |
| 1:B:202:PRO:O    | 1:B:203:TYR:HB2  | 2.08                     | 0.51              |
| 1:C:183:LEU:CD1  | 1:C:184:GLN:HG3  | 2.39                     | 0.51              |
| 1:E:180:GLY:HA3  | 1:E:381:VAL:O    | 2.11                     | 0.51              |
| 1:F:202:PRO:O    | 1:F:203:TYR:HB2  | 2.08                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:183:LEU:CD1  | 1:I:184:GLN:HG3  | 2.40                     | 0.51              |
| 1:J:266:THR:CG2  | 1:J:273:VAL:H    | 2.22                     | 0.51              |
| 1:M:136:VAL:CG1  | 1:M:137:PRO:HD3  | 2.40                     | 0.51              |
| 1:B:180:GLY:HA3  | 1:B:381:VAL:O    | 2.10                     | 0.51              |
| 1:C:51:LYS:NZ    | 1:D:114:MET:CE   | 2.73                     | 0.51              |
| 1:H:69:MET:CE    | 1:I:41:ASP:HB2   | 2.36                     | 0.51              |
| 1:H:266:THR:CG2  | 1:H:273:VAL:H    | 2.22                     | 0.51              |
| 1:I:291:ASP:OD2  | 1:I:368:ARG:HD2  | 2.10                     | 0.51              |
| 1:I:301:ILE:HG21 | 1:I:309:LEU:HD23 | 1.92                     | 0.51              |
| 1:J:136:VAL:CG1  | 1:J:137:PRO:HD3  | 2.40                     | 0.51              |
| 1:B:51:LYS:NZ    | 1:C:114:MET:CE   | 2.73                     | 0.51              |
| 1:D:180:GLY:HA3  | 1:D:381:VAL:O    | 2.10                     | 0.51              |
| 1:D:183:LEU:CD1  | 1:D:184:GLN:HG3  | 2.39                     | 0.51              |
| 1:F:180:GLY:HA3  | 1:F:381:VAL:O    | 2.10                     | 0.51              |
| 1:H:291:ASP:OD2  | 1:H:368:ARG:HD2  | 2.10                     | 0.51              |
| 1:C:160:LYS:HB2  | 1:C:160:LYS:NZ   | 2.26                     | 0.51              |
| 1:D:160:LYS:HB2  | 1:D:160:LYS:NZ   | 2.26                     | 0.51              |
| 1:E:310:GLU:OE1  | 1:E:310:GLU:N    | 2.44                     | 0.51              |
| 1:G:310:GLU:OE1  | 1:G:310:GLU:N    | 2.44                     | 0.51              |
| 1:H:39:VAL:HG21  | 1:N:517:THR:OG1  | 2.11                     | 0.51              |
| 1:J:90:THR:O     | 1:J:94:VAL:HG13  | 2.10                     | 0.51              |
| 1:N:291:ASP:OD2  | 1:N:368:ARG:HD2  | 2.10                     | 0.51              |
| 1:A:371:LYS:CB   | 1:A:374:GLY:N    | 2.74                     | 0.51              |
| 1:B:193:MET:CE   | 1:B:292:ILE:HG12 | 2.41                     | 0.51              |
| 1:E:383:ALA:O    | 1:E:384:ALA:HB3  | 2.11                     | 0.51              |
| 1:F:310:GLU:OE1  | 1:F:310:GLU:N    | 2.44                     | 0.51              |
| 1:G:371:LYS:CB   | 1:G:374:GLY:N    | 2.74                     | 0.51              |
| 1:I:517:THR:OG1  | 1:J:39:VAL:HG21  | 2.11                     | 0.51              |
| 1:K:183:LEU:CD1  | 1:K:184:GLN:HG3  | 2.40                     | 0.51              |
| 1:K:190:VAL:CG1  | 1:K:334:ASP:HB2  | 2.35                     | 0.51              |
| 1:L:517:THR:OG1  | 1:M:39:VAL:HG21  | 2.11                     | 0.51              |
| 1:D:176:THR:HG22 | 1:D:177:VAL:N    | 2.25                     | 0.51              |
| 1:F:193:MET:CE   | 1:F:292:ILE:HG12 | 2.41                     | 0.51              |
| 1:J:73:MET:HG2   | 1:K:47:PRO:CD    | 2.41                     | 0.51              |
| 1:J:183:LEU:CD1  | 1:J:184:GLN:HG3  | 2.40                     | 0.51              |
| 1:J:183:LEU:HD12 | 1:J:184:GLN:HG3  | 1.91                     | 0.51              |
| 1:K:73:MET:HG2   | 1:L:47:PRO:CD    | 2.41                     | 0.51              |
| 1:L:90:THR:O     | 1:L:94:VAL:HG13  | 2.10                     | 0.51              |
| 1:L:301:ILE:HG21 | 1:L:309:LEU:HD23 | 1.92                     | 0.51              |
| 1:A:51:LYS:NZ    | 1:B:114:MET:CE   | 2.73                     | 0.51              |
| 1:A:218:PRO:CB   | 1:A:246:PRO:HG2  | 2.32                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:160:LYS:HB2  | 1:B:160:LYS:NZ   | 2.26                     | 0.51              |
| 1:B:371:LYS:CB   | 1:B:374:GLY:N    | 2.74                     | 0.51              |
| 1:B:458:CYS:SG   | 1:B:480:ALA:HB1  | 2.51                     | 0.51              |
| 1:D:193:MET:CE   | 1:D:292:ILE:HG12 | 2.41                     | 0.51              |
| 1:D:383:ALA:O    | 1:D:384:ALA:HB3  | 2.11                     | 0.51              |
| 1:E:39:VAL:CG2   | 1:F:517:THR:HG21 | 2.01                     | 0.51              |
| 1:F:176:THR:HG22 | 1:F:177:VAL:N    | 2.25                     | 0.51              |
| 1:F:383:ALA:O    | 1:F:384:ALA:HB3  | 2.11                     | 0.51              |
| 1:G:180:GLY:HA3  | 1:G:381:VAL:O    | 2.10                     | 0.51              |
| 1:K:136:VAL:CG1  | 1:K:137:PRO:HD3  | 2.40                     | 0.51              |
| 1:A:114:MET:CE   | 1:G:51:LYS:HZ3   | 2.24                     | 0.51              |
| 1:B:41:ASP:CA    | 1:C:69:MET:HE3   | 2.41                     | 0.51              |
| 1:B:310:GLU:OE1  | 1:B:310:GLU:N    | 2.44                     | 0.51              |
| 1:D:310:GLU:OE1  | 1:D:310:GLU:N    | 2.44                     | 0.51              |
| 1:F:371:LYS:CB   | 1:F:374:GLY:N    | 2.74                     | 0.51              |
| 1:H:136:VAL:CG1  | 1:H:137:PRO:HD3  | 2.40                     | 0.51              |
| 1:H:513:LEU:HD13 | 1:I:49:ILE:CD1   | 2.28                     | 0.51              |
| 1:L:73:MET:HG2   | 1:M:47:PRO:CD    | 2.41                     | 0.51              |
| 1:A:160:LYS:HB2  | 1:A:160:LYS:NZ   | 2.26                     | 0.51              |
| 1:A:176:THR:HG22 | 1:A:177:VAL:N    | 2.25                     | 0.51              |
| 1:A:521:VAL:O    | 1:G:41:ASP:HB3   | 2.07                     | 0.51              |
| 1:B:193:MET:HA   | 1:B:375:GLY:N    | 2.26                     | 0.51              |
| 1:C:287:ALA:HB1  | 1:C:368:ARG:NH1  | 2.26                     | 0.51              |
| 1:E:39:VAL:CG2   | 1:F:517:THR:CB   | 2.86                     | 0.51              |
| 1:E:458:CYS:SG   | 1:E:480:ALA:HB1  | 2.51                     | 0.51              |
| 1:H:69:MET:HE1   | 1:I:41:ASP:CB    | 2.36                     | 0.51              |
| 1:H:193:MET:HA   | 1:H:375:GLY:CA   | 2.41                     | 0.51              |
| 1:H:333:ILE:HG21 | 1:H:378:VAL:CG2  | 2.36                     | 0.51              |
| 1:I:73:MET:HG2   | 1:J:47:PRO:CD    | 2.41                     | 0.51              |
| 1:I:183:LEU:HD12 | 1:I:184:GLN:HG3  | 1.91                     | 0.51              |
| 1:J:301:ILE:HG21 | 1:J:309:LEU:HD23 | 1.92                     | 0.51              |
| 1:N:193:MET:HA   | 1:N:375:GLY:CA   | 2.41                     | 0.51              |
| 1:A:287:ALA:HB1  | 1:A:368:ARG:NH1  | 2.26                     | 0.51              |
| 1:B:287:ALA:HB1  | 1:B:368:ARG:NH1  | 2.26                     | 0.51              |
| 1:C:193:MET:CE   | 1:C:292:ILE:HG12 | 2.41                     | 0.51              |
| 1:C:310:GLU:N    | 1:C:310:GLU:OE1  | 2.44                     | 0.51              |
| 1:C:458:CYS:SG   | 1:C:480:ALA:HB1  | 2.51                     | 0.51              |
| 1:F:209:GLU:OE1  | 1:F:209:GLU:N    | 2.44                     | 0.51              |
| 1:G:193:MET:HA   | 1:G:375:GLY:N    | 2.26                     | 0.51              |
| 1:G:287:ALA:HB1  | 1:G:368:ARG:NH1  | 2.26                     | 0.51              |
| 1:I:136:VAL:CG1  | 1:I:137:PRO:HD3  | 2.40                     | 0.51              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:K:517:THR:OG1 | 1:L:39:VAL:HG21  | 2.11                     | 0.51              |
| 1:L:136:VAL:CG1 | 1:L:137:PRO:HD3  | 2.40                     | 0.51              |
| 1:A:39:VAL:CG2  | 1:B:517:THR:CB   | 2.86                     | 0.50              |
| 1:A:180:GLY:HA3 | 1:A:381:VAL:O    | 2.11                     | 0.50              |
| 1:A:310:GLU:OE1 | 1:A:310:GLU:N    | 2.44                     | 0.50              |
| 1:A:383:ALA:O   | 1:A:384:ALA:HB3  | 2.11                     | 0.50              |
| 1:C:383:ALA:O   | 1:C:384:ALA:HB3  | 2.11                     | 0.50              |
| 1:D:193:MET:HA  | 1:D:375:GLY:N    | 2.26                     | 0.50              |
| 1:D:287:ALA:HB1 | 1:D:368:ARG:NH1  | 2.26                     | 0.50              |
| 1:E:86:GLY:HA3  | 1:E:401:HIS:NE2  | 2.10                     | 0.50              |
| 1:E:193:MET:CE  | 1:E:292:ILE:HG12 | 2.41                     | 0.50              |
| 1:E:193:MET:HA  | 1:E:375:GLY:N    | 2.26                     | 0.50              |
| 1:F:41:ASP:CA   | 1:G:69:MET:HE1   | 2.40                     | 0.50              |
| 1:G:193:MET:CE  | 1:G:292:ILE:HG12 | 2.41                     | 0.50              |
| 1:G:383:ALA:O   | 1:G:384:ALA:HB3  | 2.11                     | 0.50              |
| 1:J:202:PRO:O   | 1:J:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:M:69:MET:HE3  | 1:N:41:ASP:CG    | 2.32                     | 0.50              |
| 1:M:202:PRO:O   | 1:M:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:N:202:PRO:O   | 1:N:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:A:174:VAL:H   | 1:A:194:GLN:HE22 | 1.60                     | 0.50              |
| 1:B:209:GLU:OE1 | 1:B:209:GLU:N    | 2.44                     | 0.50              |
| 1:E:41:ASP:HB3  | 1:F:521:VAL:O    | 2.07                     | 0.50              |
| 1:F:51:LYS:NZ   | 1:G:114:MET:CE   | 2.73                     | 0.50              |
| 1:F:458:CYS:SG  | 1:F:480:ALA:HB1  | 2.51                     | 0.50              |
| 1:G:458:CYS:SG  | 1:G:480:ALA:HB1  | 2.51                     | 0.50              |
| 1:H:517:THR:OG1 | 1:I:39:VAL:HG21  | 2.11                     | 0.50              |
| 1:L:413:ALA:HB3 | 1:L:417:VAL:HG22 | 1.93                     | 0.50              |
| 1:M:404:ARG:CG  | 1:M:404:ARG:NH1  | 2.71                     | 0.50              |
| 1:M:517:THR:OG1 | 1:N:39:VAL:HG21  | 2.11                     | 0.50              |
| 1:N:371:LYS:O   | 1:N:375:GLY:N    | 2.44                     | 0.50              |
| 1:N:413:ALA:HB3 | 1:N:417:VAL:HG22 | 1.93                     | 0.50              |
| 1:A:194:GLN:CB  | 1:A:375:GLY:N    | 2.75                     | 0.50              |
| 1:E:51:LYS:NZ   | 1:F:114:MET:HE1  | 2.26                     | 0.50              |
| 1:E:371:LYS:CB  | 1:E:374:GLY:N    | 2.74                     | 0.50              |
| 1:G:174:VAL:H   | 1:G:194:GLN:HE22 | 1.60                     | 0.50              |
| 1:H:404:ARG:CG  | 1:H:404:ARG:NH1  | 2.71                     | 0.50              |
| 1:H:413:ALA:HB3 | 1:H:417:VAL:HG22 | 1.93                     | 0.50              |
| 1:M:73:MET:HG2  | 1:N:47:PRO:CD    | 2.41                     | 0.50              |
| 1:B:174:VAL:H   | 1:B:194:GLN:HE22 | 1.60                     | 0.50              |
| 1:C:180:GLY:HA3 | 1:C:381:VAL:O    | 2.10                     | 0.50              |
| 1:C:209:GLU:OE1 | 1:C:209:GLU:N    | 2.44                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:194:GLN:CB   | 1:D:375:GLY:N    | 2.75                     | 0.50              |
| 1:D:371:LYS:CB   | 1:D:374:GLY:N    | 2.74                     | 0.50              |
| 1:E:209:GLU:N    | 1:E:209:GLU:OE1  | 2.44                     | 0.50              |
| 1:E:287:ALA:HB1  | 1:E:368:ARG:NH1  | 2.26                     | 0.50              |
| 1:G:176:THR:HG22 | 1:G:177:VAL:N    | 2.25                     | 0.50              |
| 1:I:193:MET:HA   | 1:I:375:GLY:CA   | 2.41                     | 0.50              |
| 1:J:517:THR:OG1  | 1:K:39:VAL:HG21  | 2.11                     | 0.50              |
| 1:K:301:ILE:HG21 | 1:K:309:LEU:HD23 | 1.92                     | 0.50              |
| 1:A:114:MET:HE1  | 1:G:51:LYS:NZ    | 2.27                     | 0.50              |
| 1:A:271:VAL:HG12 | 1:A:273:VAL:HG23 | 1.94                     | 0.50              |
| 1:B:271:VAL:HG12 | 1:B:273:VAL:HG23 | 1.94                     | 0.50              |
| 1:E:194:GLN:CB   | 1:E:375:GLY:N    | 2.75                     | 0.50              |
| 1:F:287:ALA:HB1  | 1:F:368:ARG:NH1  | 2.27                     | 0.50              |
| 1:K:371:LYS:O    | 1:K:375:GLY:N    | 2.44                     | 0.50              |
| 1:M:371:LYS:O    | 1:M:375:GLY:N    | 2.44                     | 0.50              |
| 1:A:319:GLN:O    | 1:A:336:VAL:HG23 | 2.12                     | 0.50              |
| 1:C:371:LYS:CB   | 1:C:374:GLY:N    | 2.74                     | 0.50              |
| 1:E:160:LYS:HB2  | 1:E:160:LYS:NZ   | 2.26                     | 0.50              |
| 1:E:176:THR:HG22 | 1:E:177:VAL:N    | 2.25                     | 0.50              |
| 1:G:194:GLN:CB   | 1:G:375:GLY:N    | 2.75                     | 0.50              |
| 1:G:271:VAL:HG12 | 1:G:273:VAL:HG23 | 1.94                     | 0.50              |
| 1:H:73:MET:HG2   | 1:I:47:PRO:CD    | 2.41                     | 0.50              |
| 1:K:202:PRO:O    | 1:K:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:L:202:PRO:O    | 1:L:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:B:194:GLN:CB   | 1:B:375:GLY:N    | 2.75                     | 0.50              |
| 1:C:193:MET:HA   | 1:C:375:GLY:N    | 2.26                     | 0.50              |
| 1:C:194:GLN:CB   | 1:C:375:GLY:N    | 2.75                     | 0.50              |
| 1:C:319:GLN:O    | 1:C:336:VAL:HG23 | 2.12                     | 0.50              |
| 1:E:319:GLN:O    | 1:E:336:VAL:HG23 | 2.12                     | 0.50              |
| 1:F:193:MET:HA   | 1:F:375:GLY:N    | 2.26                     | 0.50              |
| 1:G:218:PRO:CB   | 1:G:246:PRO:HG2  | 2.32                     | 0.50              |
| 1:H:202:PRO:O    | 1:H:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:L:193:MET:HA   | 1:L:375:GLY:CA   | 2.41                     | 0.50              |
| 1:L:221:LEU:HD23 | 1:L:249:ILE:HD12 | 1.94                     | 0.50              |
| 1:C:174:VAL:H    | 1:C:194:GLN:HE22 | 1.60                     | 0.50              |
| 1:F:174:VAL:H    | 1:F:194:GLN:HE22 | 1.60                     | 0.50              |
| 1:F:271:VAL:HG12 | 1:F:273:VAL:HG23 | 1.94                     | 0.50              |
| 1:G:160:LYS:NZ   | 1:G:160:LYS:HB2  | 2.26                     | 0.50              |
| 1:H:287:ALA:HB1  | 1:H:368:ARG:NH1  | 2.27                     | 0.50              |
| 1:I:202:PRO:O    | 1:I:203:TYR:HB2  | 2.11                     | 0.50              |
| 1:I:371:LYS:O    | 1:I:375:GLY:N    | 2.44                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:193:MET:HA   | 1:M:375:GLY:CA   | 2.41                     | 0.50              |
| 1:M:413:ALA:HB3  | 1:M:417:VAL:HG22 | 1.93                     | 0.50              |
| 1:N:404:ARG:CG   | 1:N:404:ARG:NH1  | 2.71                     | 0.50              |
| 1:A:136:VAL:HG12 | 1:A:137:PRO:N    | 2.27                     | 0.50              |
| 1:A:193:MET:CE   | 1:A:292:ILE:HG12 | 2.41                     | 0.50              |
| 1:B:41:ASP:OD2   | 1:C:522:THR:HB   | 2.12                     | 0.50              |
| 1:B:136:VAL:HG12 | 1:B:137:PRO:N    | 2.27                     | 0.50              |
| 1:D:39:VAL:CG2   | 1:E:517:THR:CB   | 2.86                     | 0.50              |
| 1:E:200:LEU:HG   | 1:E:276:VAL:HA   | 1.93                     | 0.50              |
| 1:F:39:VAL:CG2   | 1:G:517:THR:OG1  | 2.60                     | 0.50              |
| 1:F:319:GLN:O    | 1:F:336:VAL:HG23 | 2.12                     | 0.50              |
| 1:H:221:LEU:HD23 | 1:H:249:ILE:HD12 | 1.94                     | 0.50              |
| 1:H:223:ALA:O    | 1:H:251:ALA:HA   | 2.12                     | 0.50              |
| 1:H:371:LYS:O    | 1:H:375:GLY:N    | 2.44                     | 0.50              |
| 1:J:371:LYS:O    | 1:J:375:GLY:N    | 2.44                     | 0.50              |
| 1:K:193:MET:HA   | 1:K:375:GLY:CA   | 2.41                     | 0.50              |
| 1:K:252:GLU:O    | 1:K:253:ASP:HB2  | 2.12                     | 0.50              |
| 1:L:223:ALA:O    | 1:L:251:ALA:HA   | 2.12                     | 0.50              |
| 1:M:221:LEU:HD23 | 1:M:249:ILE:HD12 | 1.94                     | 0.50              |
| 1:M:310:GLU:OE1  | 1:M:310:GLU:N    | 2.45                     | 0.50              |
| 1:A:41:ASP:OD2   | 1:B:522:THR:HB   | 2.12                     | 0.49              |
| 1:B:383:ALA:O    | 1:B:384:ALA:HB3  | 2.11                     | 0.49              |
| 1:C:234:LEU:O    | 1:C:238:GLU:HG3  | 2.12                     | 0.49              |
| 1:D:458:CYS:SG   | 1:D:480:ALA:HB1  | 2.51                     | 0.49              |
| 1:E:41:ASP:OD2   | 1:F:522:THR:HB   | 2.12                     | 0.49              |
| 1:G:209:GLU:OE1  | 1:G:209:GLU:N    | 2.44                     | 0.49              |
| 1:I:287:ALA:HB1  | 1:I:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:J:310:GLU:OE1  | 1:J:310:GLU:N    | 2.45                     | 0.49              |
| 1:K:90:THR:O     | 1:K:94:VAL:HG13  | 2.10                     | 0.49              |
| 1:L:371:LYS:O    | 1:L:375:GLY:N    | 2.44                     | 0.49              |
| 1:N:221:LEU:HD23 | 1:N:249:ILE:HD12 | 1.94                     | 0.49              |
| 1:N:287:ALA:HB1  | 1:N:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:A:193:MET:HA   | 1:A:375:GLY:N    | 2.26                     | 0.49              |
| 1:A:458:CYS:SG   | 1:A:480:ALA:HB1  | 2.51                     | 0.49              |
| 1:B:234:LEU:O    | 1:B:238:GLU:HG3  | 2.12                     | 0.49              |
| 1:D:319:GLN:O    | 1:D:336:VAL:HG23 | 2.12                     | 0.49              |
| 1:E:234:LEU:O    | 1:E:238:GLU:HG3  | 2.13                     | 0.49              |
| 1:F:194:GLN:CB   | 1:F:375:GLY:N    | 2.75                     | 0.49              |
| 1:F:200:LEU:HG   | 1:F:276:VAL:HA   | 1.93                     | 0.49              |
| 1:H:47:PRO:CD    | 1:N:73:MET:HG2   | 2.41                     | 0.49              |
| 1:I:310:GLU:OE1  | 1:I:310:GLU:N    | 2.45                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:221:LEU:HD23 | 1:K:249:ILE:HD12 | 1.94                     | 0.49              |
| 1:K:384:ALA:O    | 1:K:385:THR:HG23 | 2.13                     | 0.49              |
| 1:K:413:ALA:HB3  | 1:K:417:VAL:HG22 | 1.93                     | 0.49              |
| 1:N:310:GLU:OE1  | 1:N:310:GLU:N    | 2.45                     | 0.49              |
| 1:B:39:VAL:CG2   | 1:C:517:THR:OG1  | 2.60                     | 0.49              |
| 1:C:271:VAL:HG12 | 1:C:273:VAL:HG23 | 1.94                     | 0.49              |
| 1:E:174:VAL:H    | 1:E:194:GLN:HE22 | 1.60                     | 0.49              |
| 1:F:234:LEU:O    | 1:F:238:GLU:HG3  | 2.13                     | 0.49              |
| 1:J:252:GLU:O    | 1:J:253:ASP:HB2  | 2.12                     | 0.49              |
| 1:K:310:GLU:N    | 1:K:310:GLU:OE1  | 2.45                     | 0.49              |
| 1:M:69:MET:HE3   | 1:N:41:ASP:OD1   | 2.12                     | 0.49              |
| 1:A:41:ASP:CA    | 1:B:69:MET:HE1   | 2.42                     | 0.49              |
| 1:B:206:ASN:OD1  | 1:B:207:LYS:HG3  | 2.13                     | 0.49              |
| 1:B:260:ALA:O    | 1:B:264:VAL:HG23 | 2.13                     | 0.49              |
| 1:C:41:ASP:OD2   | 1:D:522:THR:HB   | 2.12                     | 0.49              |
| 1:D:51:LYS:NZ    | 1:E:114:MET:HE1  | 2.27                     | 0.49              |
| 1:D:174:VAL:H    | 1:D:194:GLN:HE22 | 1.60                     | 0.49              |
| 1:D:234:LEU:O    | 1:D:238:GLU:HG3  | 2.12                     | 0.49              |
| 1:E:39:VAL:CG2   | 1:F:517:THR:OG1  | 2.60                     | 0.49              |
| 1:F:218:PRO:CB   | 1:F:246:PRO:HG2  | 2.32                     | 0.49              |
| 1:G:200:LEU:HG   | 1:G:276:VAL:HA   | 1.93                     | 0.49              |
| 1:H:171:LYS:HB2  | 1:H:407:VAL:HG11 | 1.95                     | 0.49              |
| 1:H:310:GLU:N    | 1:H:310:GLU:OE1  | 2.45                     | 0.49              |
| 1:I:223:ALA:O    | 1:I:251:ALA:HA   | 2.12                     | 0.49              |
| 1:J:219:PHE:O    | 1:J:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:J:221:LEU:HD23 | 1:J:249:ILE:HD12 | 1.94                     | 0.49              |
| 1:J:287:ALA:HB1  | 1:J:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:K:223:ALA:O    | 1:K:251:ALA:HA   | 2.12                     | 0.49              |
| 1:L:252:GLU:O    | 1:L:253:ASP:HB2  | 2.12                     | 0.49              |
| 1:M:219:PHE:O    | 1:M:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:M:223:ALA:O    | 1:M:251:ALA:HA   | 2.12                     | 0.49              |
| 1:A:517:THR:OG1  | 1:G:39:VAL:CG2   | 2.60                     | 0.49              |
| 1:C:39:VAL:CG2   | 1:D:517:THR:OG1  | 2.60                     | 0.49              |
| 1:E:206:ASN:OD1  | 1:E:207:LYS:HG3  | 2.13                     | 0.49              |
| 1:I:221:LEU:HD23 | 1:I:249:ILE:HD12 | 1.94                     | 0.49              |
| 1:I:252:GLU:O    | 1:I:253:ASP:HB2  | 2.12                     | 0.49              |
| 1:J:404:ARG:CG   | 1:J:404:ARG:NH1  | 2.71                     | 0.49              |
| 1:L:310:GLU:OE1  | 1:L:310:GLU:N    | 2.45                     | 0.49              |
| 1:L:384:ALA:O    | 1:L:385:THR:HG23 | 2.13                     | 0.49              |
| 1:N:219:PHE:O    | 1:N:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:A:39:VAL:CG2   | 1:B:517:THR:OG1  | 2.60                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:260:ALA:O    | 1:A:264:VAL:HG23 | 2.13                     | 0.49              |
| 1:B:319:GLN:O    | 1:B:336:VAL:HG23 | 2.12                     | 0.49              |
| 1:C:245:LYS:HE3  | 1:D:231:ARG:HH21 | 1.70                     | 0.49              |
| 1:D:41:ASP:HB3   | 1:E:521:VAL:O    | 2.07                     | 0.49              |
| 1:E:271:VAL:HG12 | 1:E:273:VAL:HG23 | 1.94                     | 0.49              |
| 1:G:260:ALA:O    | 1:G:264:VAL:HG23 | 2.13                     | 0.49              |
| 1:H:219:PHE:O    | 1:H:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:I:219:PHE:O    | 1:I:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:J:413:ALA:HB3  | 1:J:417:VAL:HG22 | 1.93                     | 0.49              |
| 1:K:193:MET:HE2  | 1:K:292:ILE:HG12 | 1.93                     | 0.49              |
| 1:M:287:ALA:HB1  | 1:M:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:A:522:THR:HB   | 1:G:41:ASP:OD2   | 2.12                     | 0.49              |
| 1:C:266:THR:CG2  | 1:C:273:VAL:H    | 2.26                     | 0.49              |
| 1:D:39:VAL:CG2   | 1:E:517:THR:OG1  | 2.60                     | 0.49              |
| 1:D:200:LEU:HG   | 1:D:276:VAL:HA   | 1.93                     | 0.49              |
| 1:E:260:ALA:O    | 1:E:264:VAL:HG23 | 2.13                     | 0.49              |
| 1:H:136:VAL:HG12 | 1:H:137:PRO:CD   | 2.43                     | 0.49              |
| 1:J:384:ALA:O    | 1:J:385:THR:HG23 | 2.13                     | 0.49              |
| 1:K:325:ILE:HG22 | 1:K:330:THR:HA   | 1.95                     | 0.49              |
| 1:L:190:VAL:CG1  | 1:L:334:ASP:HB2  | 2.35                     | 0.49              |
| 1:M:193:MET:HE2  | 1:M:292:ILE:HG12 | 1.93                     | 0.49              |
| 1:A:200:LEU:HG   | 1:A:276:VAL:HA   | 1.93                     | 0.49              |
| 1:A:209:GLU:OE1  | 1:A:209:GLU:N    | 2.44                     | 0.49              |
| 1:C:60:ILE:O     | 1:C:75:LYS:HE3   | 2.13                     | 0.49              |
| 1:C:136:VAL:HG12 | 1:C:137:PRO:N    | 2.27                     | 0.49              |
| 1:C:193:MET:HE3  | 1:C:292:ILE:HG12 | 1.94                     | 0.49              |
| 1:C:206:ASN:OD1  | 1:C:207:LYS:HG3  | 2.13                     | 0.49              |
| 1:D:206:ASN:OD1  | 1:D:207:LYS:HG3  | 2.13                     | 0.49              |
| 1:F:41:ASP:OD2   | 1:G:522:THR:HB   | 2.12                     | 0.49              |
| 1:G:266:THR:HG22 | 1:G:271:VAL:O    | 2.13                     | 0.49              |
| 1:G:319:GLN:O    | 1:G:336:VAL:HG23 | 2.12                     | 0.49              |
| 1:H:384:ALA:O    | 1:H:385:THR:HG23 | 2.13                     | 0.49              |
| 1:I:190:VAL:CG1  | 1:I:334:ASP:HB2  | 2.35                     | 0.49              |
| 1:I:384:ALA:O    | 1:I:385:THR:HG23 | 2.13                     | 0.49              |
| 1:I:413:ALA:HB3  | 1:I:417:VAL:HG22 | 1.93                     | 0.49              |
| 1:J:193:MET:HA   | 1:J:375:GLY:CA   | 2.41                     | 0.49              |
| 1:N:384:ALA:O    | 1:N:385:THR:HG23 | 2.13                     | 0.49              |
| 1:A:69:MET:HE1   | 1:G:41:ASP:CA    | 2.42                     | 0.49              |
| 1:A:206:ASN:OD1  | 1:A:207:LYS:HG3  | 2.13                     | 0.49              |
| 1:B:266:THR:HG22 | 1:B:271:VAL:O    | 2.13                     | 0.49              |
| 1:C:239:ALA:O    | 1:C:314:LEU:HD11 | 2.13                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:60:ILE:O     | 1:D:75:LYS:HE3   | 2.13                     | 0.49              |
| 1:D:266:THR:HG22 | 1:D:271:VAL:O    | 2.13                     | 0.49              |
| 1:E:60:ILE:O     | 1:E:75:LYS:HE3   | 2.13                     | 0.49              |
| 1:E:331:THR:OG1  | 1:E:376:VAL:HG21 | 2.00                     | 0.49              |
| 1:F:160:LYS:HB2  | 1:F:160:LYS:NZ   | 2.26                     | 0.49              |
| 1:K:287:ALA:HB1  | 1:K:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:K:331:THR:OG1  | 1:K:376:VAL:CB   | 2.61                     | 0.49              |
| 1:L:325:ILE:HG22 | 1:L:330:THR:HA   | 1.95                     | 0.49              |
| 1:L:404:ARG:CG   | 1:L:404:ARG:NH1  | 2.71                     | 0.49              |
| 1:M:252:GLU:O    | 1:M:253:ASP:HB2  | 2.12                     | 0.49              |
| 1:M:384:ALA:O    | 1:M:385:THR:HG23 | 2.13                     | 0.49              |
| 1:N:136:VAL:HG12 | 1:N:137:PRO:CD   | 2.43                     | 0.49              |
| 1:A:234:LEU:O    | 1:A:238:GLU:HG3  | 2.12                     | 0.49              |
| 1:C:413:ALA:HB3  | 1:C:417:VAL:HG22 | 1.95                     | 0.49              |
| 1:D:41:ASP:CA    | 1:E:69:MET:HE3   | 2.41                     | 0.49              |
| 1:D:271:VAL:HG12 | 1:D:273:VAL:HG23 | 1.94                     | 0.49              |
| 1:E:266:THR:HG22 | 1:E:271:VAL:O    | 2.13                     | 0.49              |
| 1:F:254:VAL:HG12 | 1:F:259:LEU:HB2  | 1.95                     | 0.49              |
| 1:G:234:LEU:O    | 1:G:238:GLU:HG3  | 2.12                     | 0.49              |
| 1:G:254:VAL:HG12 | 1:G:259:LEU:HB2  | 1.95                     | 0.49              |
| 1:G:266:THR:CG2  | 1:G:273:VAL:H    | 2.26                     | 0.49              |
| 1:I:171:LYS:HB2  | 1:I:407:VAL:HG11 | 1.94                     | 0.49              |
| 1:J:171:LYS:HB2  | 1:J:407:VAL:HG11 | 1.94                     | 0.49              |
| 1:J:223:ALA:O    | 1:J:251:ALA:HA   | 2.12                     | 0.49              |
| 1:K:234:LEU:O    | 1:K:238:GLU:HG3  | 2.13                     | 0.49              |
| 1:L:136:VAL:HG12 | 1:L:137:PRO:CD   | 2.43                     | 0.49              |
| 1:L:219:PHE:O    | 1:L:247:LEU:HD12 | 2.13                     | 0.49              |
| 1:L:287:ALA:HB1  | 1:L:368:ARG:NH1  | 2.27                     | 0.49              |
| 1:M:136:VAL:HG12 | 1:M:137:PRO:CD   | 2.43                     | 0.49              |
| 1:B:413:ALA:HB3  | 1:B:417:VAL:HG22 | 1.95                     | 0.48              |
| 1:E:266:THR:CG2  | 1:E:273:VAL:H    | 2.26                     | 0.48              |
| 1:F:206:ASN:OD1  | 1:F:207:LYS:HG3  | 2.13                     | 0.48              |
| 1:G:413:ALA:HB3  | 1:G:417:VAL:HG22 | 1.95                     | 0.48              |
| 1:J:325:ILE:HG22 | 1:J:330:THR:HA   | 1.95                     | 0.48              |
| 1:K:219:PHE:O    | 1:K:247:LEU:HD12 | 2.13                     | 0.48              |
| 1:A:60:ILE:O     | 1:A:75:LYS:HE3   | 2.13                     | 0.48              |
| 1:B:183:LEU:CD2  | 1:B:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:F:60:ILE:O     | 1:F:75:LYS:HE3   | 2.13                     | 0.48              |
| 1:G:60:ILE:O     | 1:G:75:LYS:HE3   | 2.13                     | 0.48              |
| 1:J:331:THR:OG1  | 1:J:376:VAL:CB   | 2.61                     | 0.48              |
| 1:A:239:ALA:O    | 1:A:314:LEU:HD11 | 2.13                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:413:ALA:HB3  | 1:A:417:VAL:HG22 | 1.95                     | 0.48              |
| 1:B:60:ILE:O     | 1:B:75:LYS:HE3   | 2.13                     | 0.48              |
| 1:C:183:LEU:CD2  | 1:C:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:C:200:LEU:HG   | 1:C:276:VAL:HA   | 1.93                     | 0.48              |
| 1:D:183:LEU:CD2  | 1:D:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:F:239:ALA:O    | 1:F:314:LEU:HD11 | 2.13                     | 0.48              |
| 1:F:413:ALA:HB3  | 1:F:417:VAL:HG22 | 1.95                     | 0.48              |
| 1:L:234:LEU:O    | 1:L:238:GLU:HG3  | 2.13                     | 0.48              |
| 1:N:223:ALA:O    | 1:N:251:ALA:HA   | 2.12                     | 0.48              |
| 1:N:252:GLU:O    | 1:N:253:ASP:HB2  | 2.12                     | 0.48              |
| 1:B:200:LEU:HG   | 1:B:276:VAL:HA   | 1.93                     | 0.48              |
| 1:D:41:ASP:OD2   | 1:E:522:THR:HB   | 2.12                     | 0.48              |
| 1:D:413:ALA:HB3  | 1:D:417:VAL:HG22 | 1.95                     | 0.48              |
| 1:E:183:LEU:CD2  | 1:E:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:G:239:ALA:O    | 1:G:314:LEU:HD11 | 2.13                     | 0.48              |
| 1:G:409:GLU:HB2  | 1:G:498:LYS:HB2  | 1.96                     | 0.48              |
| 1:I:325:ILE:HG22 | 1:I:330:THR:HA   | 1.95                     | 0.48              |
| 1:K:404:ARG:CG   | 1:K:404:ARG:NH1  | 2.71                     | 0.48              |
| 1:N:234:LEU:O    | 1:N:238:GLU:HG3  | 2.13                     | 0.48              |
| 1:N:235:PRO:CG   | 1:N:310:GLU:HA   | 2.35                     | 0.48              |
| 1:A:183:LEU:CD2  | 1:A:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:D:260:ALA:O    | 1:D:264:VAL:HG23 | 2.13                     | 0.48              |
| 1:E:239:ALA:O    | 1:E:314:LEU:HD11 | 2.13                     | 0.48              |
| 1:E:254:VAL:HG12 | 1:E:259:LEU:HB2  | 1.95                     | 0.48              |
| 1:F:260:ALA:O    | 1:F:264:VAL:HG23 | 2.13                     | 0.48              |
| 1:F:409:GLU:HB2  | 1:F:498:LYS:HB2  | 1.96                     | 0.48              |
| 1:J:234:LEU:O    | 1:J:238:GLU:HG3  | 2.13                     | 0.48              |
| 1:M:234:LEU:O    | 1:M:238:GLU:HG3  | 2.13                     | 0.48              |
| 1:B:239:ALA:O    | 1:B:314:LEU:HD11 | 2.13                     | 0.48              |
| 1:C:266:THR:HG22 | 1:C:271:VAL:O    | 2.13                     | 0.48              |
| 1:D:331:THR:OG1  | 1:D:376:VAL:HG21 | 2.00                     | 0.48              |
| 1:F:266:THR:HG22 | 1:F:271:VAL:O    | 2.13                     | 0.48              |
| 1:G:70:GLY:HA2   | 1:G:73:MET:HE3   | 1.96                     | 0.48              |
| 1:H:252:GLU:O    | 1:H:253:ASP:HB2  | 2.12                     | 0.48              |
| 1:I:136:VAL:HG12 | 1:I:137:PRO:CD   | 2.43                     | 0.48              |
| 1:A:51:LYS:NZ    | 1:B:114:MET:HE1  | 2.28                     | 0.48              |
| 1:D:70:GLY:HA2   | 1:D:73:MET:HE3   | 1.96                     | 0.48              |
| 1:E:39:VAL:HG21  | 1:F:517:THR:CB   | 2.41                     | 0.48              |
| 1:F:41:ASP:HB3   | 1:G:521:VAL:O    | 2.07                     | 0.48              |
| 1:F:190:VAL:HB   | 1:F:333:ILE:HG23 | 1.96                     | 0.48              |
| 1:H:234:LEU:O    | 1:H:238:GLU:HG3  | 2.13                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:136:VAL:HG12 | 1:K:137:PRO:CD   | 2.43                     | 0.48              |
| 1:K:171:LYS:HB2  | 1:K:407:VAL:HG11 | 1.94                     | 0.48              |
| 1:N:271:VAL:HG12 | 1:N:273:VAL:HG23 | 1.96                     | 0.48              |
| 1:A:409:GLU:HB2  | 1:A:498:LYS:HB2  | 1.96                     | 0.48              |
| 1:B:41:ASP:HB3   | 1:C:521:VAL:O    | 2.07                     | 0.48              |
| 1:B:331:THR:HG1  | 1:B:376:VAL:HG23 | 1.65                     | 0.48              |
| 1:C:51:LYS:NZ    | 1:D:114:MET:HE1  | 2.29                     | 0.48              |
| 1:C:260:ALA:O    | 1:C:264:VAL:HG23 | 2.13                     | 0.48              |
| 1:D:266:THR:CG2  | 1:D:273:VAL:H    | 2.26                     | 0.48              |
| 1:F:183:LEU:CD2  | 1:F:384:ALA:HB2  | 2.44                     | 0.48              |
| 1:G:190:VAL:HB   | 1:G:333:ILE:HG23 | 1.96                     | 0.48              |
| 1:I:193:MET:HE1  | 1:I:292:ILE:HG12 | 1.96                     | 0.48              |
| 1:K:331:THR:HG1  | 1:K:376:VAL:HG11 | 1.73                     | 0.48              |
| 1:L:266:THR:HG22 | 1:L:271:VAL:O    | 2.14                     | 0.48              |
| 1:L:331:THR:OG1  | 1:L:376:VAL:CB   | 2.61                     | 0.48              |
| 1:M:271:VAL:HG12 | 1:M:273:VAL:HG23 | 1.96                     | 0.48              |
| 1:N:331:THR:OG1  | 1:N:376:VAL:CB   | 2.61                     | 0.48              |
| 1:A:41:ASP:HB2   | 1:B:69:MET:CE    | 2.35                     | 0.48              |
| 1:A:254:VAL:HG12 | 1:A:259:LEU:HB2  | 1.95                     | 0.48              |
| 1:A:266:THR:HG22 | 1:A:271:VAL:O    | 2.13                     | 0.48              |
| 1:B:90:THR:O     | 1:B:94:VAL:HG13  | 2.14                     | 0.48              |
| 1:B:218:PRO:CB   | 1:B:246:PRO:HG2  | 2.32                     | 0.48              |
| 1:B:266:THR:CG2  | 1:B:273:VAL:H    | 2.26                     | 0.48              |
| 1:C:51:LYS:HZ1   | 1:D:114:MET:HE3  | 1.78                     | 0.48              |
| 1:D:239:ALA:O    | 1:D:314:LEU:HD11 | 2.13                     | 0.48              |
| 1:E:190:VAL:HB   | 1:E:333:ILE:HG23 | 1.96                     | 0.48              |
| 1:H:266:THR:HG22 | 1:H:271:VAL:O    | 2.14                     | 0.48              |
| 1:L:235:PRO:CG   | 1:L:310:GLU:HA   | 2.35                     | 0.48              |
| 1:A:190:VAL:HB   | 1:A:333:ILE:HG23 | 1.96                     | 0.48              |
| 1:B:39:VAL:CG2   | 1:C:517:THR:CB   | 2.86                     | 0.48              |
| 1:C:39:VAL:CG2   | 1:D:517:THR:CB   | 2.86                     | 0.48              |
| 1:G:206:ASN:OD1  | 1:G:207:LYS:HG3  | 2.13                     | 0.48              |
| 1:J:235:PRO:CG   | 1:J:310:GLU:HA   | 2.35                     | 0.48              |
| 1:L:185:ASP:OD1  | 1:L:382:GLY:N    | 2.46                     | 0.48              |
| 1:N:325:ILE:HG22 | 1:N:330:THR:HA   | 1.95                     | 0.48              |
| 1:A:266:THR:CG2  | 1:A:273:VAL:H    | 2.26                     | 0.47              |
| 1:B:409:GLU:HB2  | 1:B:498:LYS:HB2  | 1.96                     | 0.47              |
| 1:D:51:LYS:HZ1   | 1:E:114:MET:HE3  | 1.79                     | 0.47              |
| 1:D:190:VAL:HB   | 1:D:333:ILE:HG23 | 1.96                     | 0.47              |
| 1:D:305:ILE:HB   | 1:D:307:MET:HE2  | 1.96                     | 0.47              |
| 1:E:409:GLU:HB2  | 1:E:498:LYS:HB2  | 1.96                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:90:THR:O     | 1:G:94:VAL:HG13  | 2.14                     | 0.47              |
| 1:I:185:ASP:OD1  | 1:I:382:GLY:N    | 2.46                     | 0.47              |
| 1:J:136:VAL:HG12 | 1:J:137:PRO:CD   | 2.43                     | 0.47              |
| 1:M:171:LYS:HB2  | 1:M:407:VAL:HG11 | 1.94                     | 0.47              |
| 1:M:325:ILE:HG22 | 1:M:330:THR:HA   | 1.95                     | 0.47              |
| 1:N:171:LYS:HB2  | 1:N:407:VAL:HG11 | 1.94                     | 0.47              |
| 1:A:51:LYS:HZ3   | 1:B:114:MET:HE1  | 1.79                     | 0.47              |
| 1:B:51:LYS:HZ1   | 1:C:114:MET:HE3  | 1.79                     | 0.47              |
| 1:C:254:VAL:HG12 | 1:C:259:LEU:HB2  | 1.95                     | 0.47              |
| 1:F:90:THR:O     | 1:F:94:VAL:HG13  | 2.14                     | 0.47              |
| 1:G:136:VAL:HG12 | 1:G:137:PRO:N    | 2.27                     | 0.47              |
| 1:H:325:ILE:HG22 | 1:H:330:THR:HA   | 1.95                     | 0.47              |
| 1:I:234:LEU:O    | 1:I:238:GLU:HG3  | 2.13                     | 0.47              |
| 1:K:185:ASP:OD1  | 1:K:382:GLY:N    | 2.46                     | 0.47              |
| 1:M:331:THR:OG1  | 1:M:376:VAL:CB   | 2.61                     | 0.47              |
| 1:E:223:ALA:O    | 1:E:251:ALA:HA   | 2.15                     | 0.47              |
| 1:F:266:THR:CG2  | 1:F:273:VAL:H    | 2.26                     | 0.47              |
| 1:I:266:THR:HG22 | 1:I:271:VAL:O    | 2.14                     | 0.47              |
| 1:M:209:GLU:OE1  | 1:M:209:GLU:N    | 2.46                     | 0.47              |
| 1:M:266:THR:HG22 | 1:M:271:VAL:O    | 2.14                     | 0.47              |
| 1:C:41:ASP:CA    | 1:D:69:MET:HE3   | 2.44                     | 0.47              |
| 1:D:136:VAL:HG12 | 1:D:137:PRO:N    | 2.27                     | 0.47              |
| 1:F:51:LYS:HZ3   | 1:G:114:MET:HE1  | 1.79                     | 0.47              |
| 1:F:236:VAL:O    | 1:F:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:H:234:LEU:N    | 1:H:235:PRO:HD2  | 2.30                     | 0.47              |
| 1:H:331:THR:OG1  | 1:H:376:VAL:CB   | 2.61                     | 0.47              |
| 1:J:180:GLY:HA3  | 1:J:381:VAL:O    | 2.14                     | 0.47              |
| 1:M:180:GLY:HA3  | 1:M:381:VAL:O    | 2.14                     | 0.47              |
| 1:N:239:ALA:O    | 1:N:314:LEU:HD11 | 2.14                     | 0.47              |
| 1:A:41:ASP:HA    | 1:B:69:MET:CE    | 2.45                     | 0.47              |
| 1:A:134:LEU:HD21 | 1:A:425:LYS:NZ   | 2.30                     | 0.47              |
| 1:A:182:GLY:HA2  | 1:A:383:ALA:HB3  | 1.97                     | 0.47              |
| 1:A:236:VAL:O    | 1:A:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:B:39:VAL:HG21  | 1:C:517:THR:CB   | 2.41                     | 0.47              |
| 1:C:223:ALA:O    | 1:C:251:ALA:HA   | 2.15                     | 0.47              |
| 1:E:413:ALA:HB3  | 1:E:417:VAL:HG22 | 1.95                     | 0.47              |
| 1:G:183:LEU:CD2  | 1:G:384:ALA:HB2  | 2.44                     | 0.47              |
| 1:I:271:VAL:HG12 | 1:I:273:VAL:HG23 | 1.96                     | 0.47              |
| 1:J:193:MET:HE3  | 1:J:292:ILE:HG12 | 1.95                     | 0.47              |
| 1:K:180:GLY:HA3  | 1:K:381:VAL:O    | 2.14                     | 0.47              |
| 1:K:234:LEU:N    | 1:K:235:PRO:HD2  | 2.30                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:266:THR:HG22 | 1:K:271:VAL:O    | 2.14                     | 0.47              |
| 1:L:136:VAL:HG13 | 1:L:137:PRO:HD3  | 1.97                     | 0.47              |
| 1:L:171:LYS:HB2  | 1:L:407:VAL:HG11 | 1.94                     | 0.47              |
| 1:A:90:THR:O     | 1:A:94:VAL:HG13  | 2.14                     | 0.47              |
| 1:B:41:ASP:HA    | 1:C:69:MET:CE    | 2.45                     | 0.47              |
| 1:G:134:LEU:HD21 | 1:G:425:LYS:NZ   | 2.30                     | 0.47              |
| 1:G:236:VAL:O    | 1:G:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:J:185:ASP:OD1  | 1:J:382:GLY:N    | 2.46                     | 0.47              |
| 1:M:206:ASN:OD1  | 1:M:207:LYS:HG3  | 2.15                     | 0.47              |
| 1:N:209:GLU:OE1  | 1:N:209:GLU:N    | 2.46                     | 0.47              |
| 1:N:266:THR:HG22 | 1:N:271:VAL:O    | 2.14                     | 0.47              |
| 1:A:69:MET:CE    | 1:G:41:ASP:HA    | 2.45                     | 0.47              |
| 1:B:190:VAL:HB   | 1:B:333:ILE:HG23 | 1.96                     | 0.47              |
| 1:B:236:VAL:O    | 1:B:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:B:254:VAL:HG12 | 1:B:259:LEU:HB2  | 1.95                     | 0.47              |
| 1:B:305:ILE:HB   | 1:B:307:MET:HE2  | 1.96                     | 0.47              |
| 1:C:90:THR:O     | 1:C:94:VAL:HG13  | 2.14                     | 0.47              |
| 1:C:190:VAL:HB   | 1:C:333:ILE:HG23 | 1.96                     | 0.47              |
| 1:C:236:VAL:O    | 1:C:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:C:353:ILE:HD13 | 1:C:366:GLN:HG2  | 1.97                     | 0.47              |
| 1:D:209:GLU:OE1  | 1:D:209:GLU:N    | 2.44                     | 0.47              |
| 1:D:236:VAL:O    | 1:D:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:F:182:GLY:HA2  | 1:F:383:ALA:HB3  | 1.97                     | 0.47              |
| 1:G:223:ALA:O    | 1:G:251:ALA:HA   | 2.14                     | 0.47              |
| 1:I:331:THR:OG1  | 1:I:376:VAL:CB   | 2.61                     | 0.47              |
| 1:J:271:VAL:HG12 | 1:J:273:VAL:HG23 | 1.96                     | 0.47              |
| 1:K:206:ASN:ND2  | 1:K:214:GLU:H    | 2.11                     | 0.47              |
| 1:M:136:VAL:HG13 | 1:M:137:PRO:HD3  | 1.97                     | 0.47              |
| 1:M:185:ASP:OD1  | 1:M:382:GLY:N    | 2.46                     | 0.47              |
| 1:N:180:GLY:HA3  | 1:N:381:VAL:O    | 2.14                     | 0.47              |
| 1:N:206:ASN:OD1  | 1:N:207:LYS:HG3  | 2.15                     | 0.47              |
| 1:A:223:ALA:O    | 1:A:251:ALA:HA   | 2.15                     | 0.47              |
| 1:B:51:LYS:HZ3   | 1:C:114:MET:HE1  | 1.80                     | 0.47              |
| 1:B:353:ILE:HD13 | 1:B:366:GLN:HG2  | 1.97                     | 0.47              |
| 1:C:41:ASP:HA    | 1:D:69:MET:CE    | 2.45                     | 0.47              |
| 1:D:90:THR:O     | 1:D:94:VAL:HG13  | 2.14                     | 0.47              |
| 1:D:409:GLU:HB2  | 1:D:498:LYS:HB2  | 1.96                     | 0.47              |
| 1:E:236:VAL:O    | 1:E:240:VAL:HG23 | 2.15                     | 0.47              |
| 1:F:39:VAL:HG21  | 1:G:517:THR:CB   | 2.41                     | 0.47              |
| 1:G:185:ASP:OD1  | 1:G:382:GLY:N    | 2.48                     | 0.47              |
| 1:H:239:ALA:O    | 1:H:314:LEU:HD11 | 2.15                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:271:VAL:HG12 | 1:H:273:VAL:HG23 | 1.96                     | 0.47              |
| 1:I:239:ALA:O    | 1:I:314:LEU:HD11 | 2.15                     | 0.47              |
| 1:M:239:ALA:O    | 1:M:314:LEU:HD11 | 2.15                     | 0.47              |
| 1:C:134:LEU:HD21 | 1:C:425:LYS:NZ   | 2.30                     | 0.47              |
| 1:C:409:GLU:HB2  | 1:C:498:LYS:HB2  | 1.96                     | 0.47              |
| 1:D:169:VAL:HG13 | 1:D:377:ALA:HB2  | 1.97                     | 0.47              |
| 1:D:223:ALA:O    | 1:D:251:ALA:HA   | 2.14                     | 0.47              |
| 1:E:245:LYS:HE3  | 1:F:231:ARG:HH21 | 1.70                     | 0.47              |
| 1:F:185:ASP:OD1  | 1:F:382:GLY:N    | 2.48                     | 0.47              |
| 1:I:69:MET:HE1   | 1:J:41:ASP:CB    | 2.38                     | 0.47              |
| 1:L:180:GLY:HA3  | 1:L:381:VAL:O    | 2.14                     | 0.47              |
| 1:L:206:ASN:OD1  | 1:L:207:LYS:HG3  | 2.15                     | 0.47              |
| 1:L:239:ALA:O    | 1:L:314:LEU:HD11 | 2.15                     | 0.47              |
| 1:D:73:MET:O     | 1:D:76:GLU:HB2   | 2.15                     | 0.47              |
| 1:E:169:VAL:HG13 | 1:E:377:ALA:HB2  | 1.97                     | 0.47              |
| 1:I:180:GLY:HA3  | 1:I:381:VAL:O    | 2.14                     | 0.47              |
| 1:I:206:ASN:ND2  | 1:I:214:GLU:H    | 2.11                     | 0.47              |
| 1:I:234:LEU:N    | 1:I:235:PRO:HD2  | 2.30                     | 0.47              |
| 1:L:209:GLU:OE1  | 1:L:209:GLU:N    | 2.46                     | 0.47              |
| 1:M:234:LEU:N    | 1:M:235:PRO:HD2  | 2.30                     | 0.47              |
| 1:B:223:ALA:O    | 1:B:251:ALA:HA   | 2.14                     | 0.46              |
| 1:C:169:VAL:HG13 | 1:C:377:ALA:HB2  | 1.97                     | 0.46              |
| 1:C:331:THR:OG1  | 1:C:376:VAL:HG21 | 2.00                     | 0.46              |
| 1:C:366:GLN:O    | 1:C:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:E:90:THR:O     | 1:E:94:VAL:HG13  | 2.14                     | 0.46              |
| 1:E:325:ILE:HG22 | 1:E:330:THR:HA   | 1.98                     | 0.46              |
| 1:F:169:VAL:HG13 | 1:F:377:ALA:HB2  | 1.97                     | 0.46              |
| 1:F:223:ALA:O    | 1:F:251:ALA:HA   | 2.15                     | 0.46              |
| 1:H:206:ASN:OD1  | 1:H:207:LYS:HG3  | 2.15                     | 0.46              |
| 1:H:517:THR:HG21 | 1:I:39:VAL:HG21  | 1.97                     | 0.46              |
| 1:K:254:VAL:HG12 | 1:K:259:LEU:HB2  | 1.98                     | 0.46              |
| 1:L:271:VAL:HG12 | 1:L:273:VAL:HG23 | 1.96                     | 0.46              |
| 1:N:206:ASN:ND2  | 1:N:214:GLU:H    | 2.11                     | 0.46              |
| 1:B:41:ASP:HB2   | 1:C:69:MET:CE    | 2.35                     | 0.46              |
| 1:C:73:MET:O     | 1:C:76:GLU:HB2   | 2.15                     | 0.46              |
| 1:F:73:MET:O     | 1:F:76:GLU:HB2   | 2.15                     | 0.46              |
| 1:G:366:GLN:O    | 1:G:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:J:254:VAL:HG12 | 1:J:259:LEU:HB2  | 1.98                     | 0.46              |
| 1:L:199:TYR:CZ   | 1:L:327:LYS:HA   | 2.50                     | 0.46              |
| 1:L:234:LEU:N    | 1:L:235:PRO:HD2  | 2.30                     | 0.46              |
| 1:A:325:ILE:HG22 | 1:A:330:THR:HA   | 1.98                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:524:LEU:O    | 1:A:526:LYS:N    | 2.48                     | 0.46              |
| 1:B:182:GLY:HA2  | 1:B:383:ALA:HB3  | 1.97                     | 0.46              |
| 1:B:524:LEU:O    | 1:B:526:LYS:N    | 2.49                     | 0.46              |
| 1:C:215:LEU:HB2  | 1:C:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:C:524:LEU:O    | 1:C:526:LYS:N    | 2.48                     | 0.46              |
| 1:D:254:VAL:HG12 | 1:D:259:LEU:HB2  | 1.95                     | 0.46              |
| 1:D:524:LEU:O    | 1:D:526:LYS:N    | 2.48                     | 0.46              |
| 1:E:182:GLY:HA2  | 1:E:383:ALA:HB3  | 1.97                     | 0.46              |
| 1:E:524:LEU:O    | 1:E:526:LYS:N    | 2.48                     | 0.46              |
| 1:F:136:VAL:HG12 | 1:F:137:PRO:N    | 2.27                     | 0.46              |
| 1:F:325:ILE:HG22 | 1:F:330:THR:HA   | 1.98                     | 0.46              |
| 1:F:366:GLN:O    | 1:F:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:J:239:ALA:O    | 1:J:314:LEU:HD11 | 2.15                     | 0.46              |
| 1:J:266:THR:HG22 | 1:J:271:VAL:O    | 2.14                     | 0.46              |
| 1:J:524:LEU:O    | 1:J:526:LYS:N    | 2.49                     | 0.46              |
| 1:L:193:MET:HE1  | 1:L:292:ILE:HG12 | 1.95                     | 0.46              |
| 1:B:68:ASN:O     | 1:B:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:B:215:LEU:HB2  | 1:B:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:D:134:LEU:HD21 | 1:D:425:LYS:NZ   | 2.30                     | 0.46              |
| 1:E:41:ASP:CA    | 1:F:69:MET:HE1   | 2.44                     | 0.46              |
| 1:E:73:MET:O     | 1:E:76:GLU:HB2   | 2.15                     | 0.46              |
| 1:E:134:LEU:HD21 | 1:E:425:LYS:NZ   | 2.30                     | 0.46              |
| 1:E:171:LYS:HB2  | 1:E:407:VAL:HG11 | 1.98                     | 0.46              |
| 1:F:134:LEU:HD21 | 1:F:425:LYS:NZ   | 2.30                     | 0.46              |
| 1:F:331:THR:OG1  | 1:F:376:VAL:HG21 | 2.00                     | 0.46              |
| 1:G:325:ILE:HG22 | 1:G:330:THR:HA   | 1.98                     | 0.46              |
| 1:J:199:TYR:CZ   | 1:J:327:LYS:HA   | 2.51                     | 0.46              |
| 1:J:206:ASN:ND2  | 1:J:214:GLU:H    | 2.11                     | 0.46              |
| 1:J:206:ASN:OD1  | 1:J:207:LYS:HG3  | 2.15                     | 0.46              |
| 1:K:271:VAL:HG12 | 1:K:273:VAL:HG23 | 1.96                     | 0.46              |
| 1:L:76:GLU:CG    | 1:M:46:ALA:HB2   | 2.45                     | 0.46              |
| 1:A:70:GLY:HA2   | 1:A:73:MET:HE3   | 1.97                     | 0.46              |
| 1:B:41:ASP:CB    | 1:C:69:MET:HE3   | 2.46                     | 0.46              |
| 1:B:325:ILE:HG22 | 1:B:330:THR:HA   | 1.98                     | 0.46              |
| 1:C:199:TYR:CZ   | 1:C:327:LYS:HA   | 2.51                     | 0.46              |
| 1:D:325:ILE:HG22 | 1:D:330:THR:HA   | 1.98                     | 0.46              |
| 1:I:333:ILE:HG21 | 1:I:378:VAL:CG2  | 2.36                     | 0.46              |
| 1:J:234:LEU:N    | 1:J:235:PRO:HD2  | 2.30                     | 0.46              |
| 1:K:199:TYR:CZ   | 1:K:327:LYS:HA   | 2.51                     | 0.46              |
| 1:M:199:TYR:CZ   | 1:M:327:LYS:HA   | 2.51                     | 0.46              |
| 1:M:217:SER:N    | 1:M:218:PRO:CD   | 2.79                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:199:TYR:CZ   | 1:N:327:LYS:HA   | 2.50                     | 0.46              |
| 1:N:234:LEU:N    | 1:N:235:PRO:HD2  | 2.30                     | 0.46              |
| 1:A:73:MET:O     | 1:A:76:GLU:HB2   | 2.15                     | 0.46              |
| 1:C:68:ASN:O     | 1:C:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:D:199:TYR:CZ   | 1:D:327:LYS:HA   | 2.51                     | 0.46              |
| 1:D:215:LEU:HB2  | 1:D:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:E:51:LYS:HZ3   | 1:F:114:MET:HE1  | 1.81                     | 0.46              |
| 1:E:185:ASP:OD1  | 1:E:382:GLY:N    | 2.48                     | 0.46              |
| 1:F:41:ASP:HA    | 1:G:69:MET:CE    | 2.45                     | 0.46              |
| 1:F:171:LYS:HB2  | 1:F:407:VAL:HG11 | 1.98                     | 0.46              |
| 1:F:215:LEU:HB2  | 1:F:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:F:353:ILE:HD13 | 1:F:366:GLN:HG2  | 1.97                     | 0.46              |
| 1:G:524:LEU:O    | 1:G:526:LYS:N    | 2.48                     | 0.46              |
| 1:H:180:GLY:HA3  | 1:H:381:VAL:O    | 2.14                     | 0.46              |
| 1:H:199:TYR:CZ   | 1:H:327:LYS:HA   | 2.50                     | 0.46              |
| 1:H:209:GLU:OE1  | 1:H:209:GLU:N    | 2.46                     | 0.46              |
| 1:H:353:ILE:HD13 | 1:H:366:GLN:HG2  | 1.98                     | 0.46              |
| 1:I:199:TYR:CZ   | 1:I:327:LYS:HA   | 2.50                     | 0.46              |
| 1:K:136:VAL:HG13 | 1:K:137:PRO:HD3  | 1.97                     | 0.46              |
| 1:K:236:VAL:O    | 1:K:240:VAL:HG23 | 2.16                     | 0.46              |
| 1:A:39:VAL:HG21  | 1:B:517:THR:CB   | 2.41                     | 0.46              |
| 1:B:134:LEU:HD21 | 1:B:425:LYS:NZ   | 2.30                     | 0.46              |
| 1:E:68:ASN:O     | 1:E:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:G:73:MET:O     | 1:G:76:GLU:HB2   | 2.15                     | 0.46              |
| 1:H:136:VAL:HG13 | 1:H:137:PRO:HD3  | 1.97                     | 0.46              |
| 1:I:524:LEU:O    | 1:I:526:LYS:N    | 2.49                     | 0.46              |
| 1:J:236:VAL:O    | 1:J:240:VAL:HG23 | 2.16                     | 0.46              |
| 1:K:524:LEU:O    | 1:K:526:LYS:N    | 2.49                     | 0.46              |
| 1:A:68:ASN:O     | 1:A:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:C:41:ASP:CA    | 1:D:69:MET:HE1   | 2.46                     | 0.46              |
| 1:C:325:ILE:HG22 | 1:C:330:THR:HA   | 1.98                     | 0.46              |
| 1:D:68:ASN:O     | 1:D:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:E:215:LEU:HB2  | 1:E:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:F:68:ASN:O     | 1:F:72:GLN:HG2   | 2.15                     | 0.46              |
| 1:F:524:LEU:O    | 1:F:526:LYS:N    | 2.49                     | 0.46              |
| 1:I:236:VAL:O    | 1:I:240:VAL:HG23 | 2.16                     | 0.46              |
| 1:K:206:ASN:OD1  | 1:K:207:LYS:HG3  | 2.15                     | 0.46              |
| 1:K:239:ALA:O    | 1:K:314:LEU:HD11 | 2.15                     | 0.46              |
| 1:L:217:SER:N    | 1:L:218:PRO:CD   | 2.79                     | 0.46              |
| 1:L:236:VAL:O    | 1:L:240:VAL:HG23 | 2.16                     | 0.46              |
| 1:L:254:VAL:HG12 | 1:L:259:LEU:HB2  | 1.98                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:236:VAL:O    | 1:M:240:VAL:HG23 | 2.16                     | 0.46              |
| 1:N:353:ILE:HD13 | 1:N:366:GLN:HG2  | 1.98                     | 0.46              |
| 1:A:215:LEU:HB2  | 1:A:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:A:366:GLN:O    | 1:A:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:B:199:TYR:CZ   | 1:B:327:LYS:HA   | 2.51                     | 0.46              |
| 1:D:171:LYS:HB2  | 1:D:407:VAL:HG11 | 1.98                     | 0.46              |
| 1:D:353:ILE:HD13 | 1:D:366:GLN:HG2  | 1.97                     | 0.46              |
| 1:E:136:VAL:HG12 | 1:E:137:PRO:N    | 2.27                     | 0.46              |
| 1:E:366:GLN:O    | 1:E:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:I:206:ASN:OD1  | 1:I:207:LYS:HG3  | 2.15                     | 0.46              |
| 1:I:254:VAL:HG12 | 1:I:259:LEU:HB2  | 1.98                     | 0.46              |
| 1:N:136:VAL:HG13 | 1:N:137:PRO:HD3  | 1.97                     | 0.46              |
| 1:A:353:ILE:HD13 | 1:A:366:GLN:HG2  | 1.97                     | 0.46              |
| 1:B:169:VAL:HG13 | 1:B:377:ALA:HB2  | 1.97                     | 0.46              |
| 1:D:366:GLN:O    | 1:D:369:VAL:HG22 | 2.15                     | 0.46              |
| 1:E:384:ALA:O    | 1:E:385:THR:HG23 | 2.16                     | 0.46              |
| 1:G:171:LYS:HB2  | 1:G:407:VAL:HG11 | 1.98                     | 0.46              |
| 1:G:182:GLY:HA2  | 1:G:383:ALA:HB3  | 1.97                     | 0.46              |
| 1:G:215:LEU:HB2  | 1:G:323:VAL:HG22 | 1.98                     | 0.46              |
| 1:N:85:ALA:C     | 1:N:401:HIS:HE1  | 2.19                     | 0.46              |
| 1:A:182:GLY:HA2  | 1:A:383:ALA:CB   | 2.46                     | 0.45              |
| 1:B:51:LYS:NZ    | 1:C:114:MET:HE1  | 2.31                     | 0.45              |
| 1:B:366:GLN:O    | 1:B:369:VAL:HG22 | 2.15                     | 0.45              |
| 1:D:41:ASP:HB2   | 1:E:69:MET:CE    | 2.35                     | 0.45              |
| 1:D:193:MET:HE1  | 1:D:292:ILE:HG12 | 1.97                     | 0.45              |
| 1:E:182:GLY:HA2  | 1:E:383:ALA:CB   | 2.46                     | 0.45              |
| 1:E:199:TYR:CZ   | 1:E:327:LYS:HA   | 2.51                     | 0.45              |
| 1:G:169:VAL:HG13 | 1:G:377:ALA:HB2  | 1.97                     | 0.45              |
| 1:G:353:ILE:HD13 | 1:G:366:GLN:HG2  | 1.97                     | 0.45              |
| 1:I:85:ALA:C     | 1:I:401:HIS:HE1  | 2.19                     | 0.45              |
| 1:J:136:VAL:HG13 | 1:J:137:PRO:HD3  | 1.97                     | 0.45              |
| 1:J:284:ARG:HH12 | 1:J:364:LYS:NZ   | 2.14                     | 0.45              |
| 1:L:69:MET:HE1   | 1:M:41:ASP:CB    | 2.39                     | 0.45              |
| 1:L:206:ASN:ND2  | 1:L:214:GLU:H    | 2.12                     | 0.45              |
| 1:N:236:VAL:O    | 1:N:240:VAL:HG23 | 2.16                     | 0.45              |
| 1:D:182:GLY:HA2  | 1:D:383:ALA:HB3  | 1.97                     | 0.45              |
| 1:D:404:ARG:HH11 | 1:D:404:ARG:CG   | 2.30                     | 0.45              |
| 1:H:236:VAL:O    | 1:H:240:VAL:HG23 | 2.16                     | 0.45              |
| 1:I:217:SER:N    | 1:I:218:PRO:CD   | 2.79                     | 0.45              |
| 1:M:516:THR:O    | 1:N:37:ASN:HB2   | 2.17                     | 0.45              |
| 1:N:183:LEU:CD2  | 1:N:384:ALA:HB2  | 2.45                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:524:LEU:O    | 1:N:526:LYS:N    | 2.49                     | 0.45              |
| 1:B:182:GLY:HA2  | 1:B:383:ALA:CB   | 2.46                     | 0.45              |
| 1:C:182:GLY:HA2  | 1:C:383:ALA:HB3  | 1.97                     | 0.45              |
| 1:D:182:GLY:HA2  | 1:D:383:ALA:CB   | 2.46                     | 0.45              |
| 1:D:384:ALA:O    | 1:D:385:THR:HG23 | 2.16                     | 0.45              |
| 1:E:353:ILE:HD13 | 1:E:366:GLN:HG2  | 1.97                     | 0.45              |
| 1:H:193:MET:HE3  | 1:H:292:ILE:HG12 | 1.98                     | 0.45              |
| 1:I:136:VAL:HG13 | 1:I:137:PRO:HD3  | 1.97                     | 0.45              |
| 1:L:190:VAL:HG22 | 1:L:333:ILE:HG23 | 1.51                     | 0.45              |
| 1:A:169:VAL:HG13 | 1:A:377:ALA:HB2  | 1.97                     | 0.45              |
| 1:C:404:ARG:HH11 | 1:C:404:ARG:CG   | 2.29                     | 0.45              |
| 1:H:46:ALA:HB2   | 1:N:76:GLU:CG    | 2.45                     | 0.45              |
| 1:I:517:THR:HG21 | 1:J:39:VAL:HG21  | 1.97                     | 0.45              |
| 1:J:217:SER:N    | 1:J:218:PRO:CD   | 2.79                     | 0.45              |
| 1:J:242:LYS:C    | 1:J:244:GLY:N    | 2.70                     | 0.45              |
| 1:J:516:THR:O    | 1:K:37:ASN:HB2   | 2.17                     | 0.45              |
| 1:K:209:GLU:OE1  | 1:K:209:GLU:N    | 2.46                     | 0.45              |
| 1:K:516:THR:O    | 1:L:37:ASN:HB2   | 2.17                     | 0.45              |
| 1:M:76:GLU:CG    | 1:N:46:ALA:HB2   | 2.45                     | 0.45              |
| 1:N:185:ASP:OD1  | 1:N:382:GLY:N    | 2.46                     | 0.45              |
| 1:N:217:SER:N    | 1:N:218:PRO:CD   | 2.79                     | 0.45              |
| 1:A:193:MET:HE2  | 1:A:292:ILE:HG12 | 1.98                     | 0.45              |
| 1:B:73:MET:O     | 1:B:76:GLU:HB2   | 2.15                     | 0.45              |
| 1:C:39:VAL:HG21  | 1:D:517:THR:CB   | 2.41                     | 0.45              |
| 1:C:182:GLY:HA2  | 1:C:383:ALA:CB   | 2.46                     | 0.45              |
| 1:K:242:LYS:C    | 1:K:244:GLY:N    | 2.70                     | 0.45              |
| 1:N:254:VAL:HG12 | 1:N:259:LEU:HB2  | 1.98                     | 0.45              |
| 1:A:199:TYR:CZ   | 1:A:327:LYS:HA   | 2.51                     | 0.45              |
| 1:B:51:LYS:HZ3   | 1:C:114:MET:CE   | 2.29                     | 0.45              |
| 1:D:185:ASP:OD1  | 1:D:382:GLY:N    | 2.48                     | 0.45              |
| 1:D:392:LYS:O    | 1:D:396:VAL:HG23 | 2.17                     | 0.45              |
| 1:E:245:LYS:HZ1  | 1:F:231:ARG:HH22 | 0.52                     | 0.45              |
| 1:F:182:GLY:HA2  | 1:F:383:ALA:CB   | 2.46                     | 0.45              |
| 1:H:524:LEU:O    | 1:H:526:LYS:N    | 2.49                     | 0.45              |
| 1:K:190:VAL:HG22 | 1:K:333:ILE:HG23 | 1.51                     | 0.45              |
| 1:K:217:SER:N    | 1:K:218:PRO:CD   | 2.79                     | 0.45              |
| 1:M:183:LEU:CD2  | 1:M:384:ALA:HB2  | 2.45                     | 0.45              |
| 1:A:369:VAL:HG23 | 1:A:370:ALA:N    | 2.32                     | 0.45              |
| 1:A:404:ARG:HH11 | 1:A:404:ARG:CG   | 2.29                     | 0.45              |
| 1:B:392:LYS:O    | 1:B:396:VAL:HG23 | 2.17                     | 0.45              |
| 1:C:41:ASP:HB3   | 1:D:521:VAL:O    | 2.07                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:369:VAL:HG23 | 1:F:370:ALA:N    | 2.32                     | 0.45              |
| 1:F:392:LYS:O    | 1:F:396:VAL:HG23 | 2.17                     | 0.45              |
| 1:G:68:ASN:O     | 1:G:72:GLN:HG2   | 2.15                     | 0.45              |
| 1:G:369:VAL:HG23 | 1:G:370:ALA:N    | 2.32                     | 0.45              |
| 1:I:353:ILE:HD13 | 1:I:366:GLN:HG2  | 1.98                     | 0.45              |
| 1:M:85:ALA:C     | 1:M:401:HIS:HE1  | 2.19                     | 0.45              |
| 1:A:217:SER:N    | 1:A:218:PRO:HD3  | 2.32                     | 0.45              |
| 1:B:217:SER:N    | 1:B:218:PRO:HD3  | 2.32                     | 0.45              |
| 1:B:384:ALA:O    | 1:B:385:THR:HG23 | 2.16                     | 0.45              |
| 1:B:404:ARG:HH11 | 1:B:404:ARG:CG   | 2.29                     | 0.45              |
| 1:C:384:ALA:O    | 1:C:385:THR:HG23 | 2.16                     | 0.45              |
| 1:F:384:ALA:O    | 1:F:385:THR:HG23 | 2.16                     | 0.45              |
| 1:H:85:ALA:C     | 1:H:401:HIS:HE1  | 2.19                     | 0.45              |
| 1:H:217:SER:N    | 1:H:218:PRO:CD   | 2.79                     | 0.45              |
| 1:I:209:GLU:OE1  | 1:I:209:GLU:N    | 2.46                     | 0.45              |
| 1:A:217:SER:N    | 1:A:218:PRO:CD   | 2.80                     | 0.45              |
| 1:A:231:ARG:HH21 | 1:G:245:LYS:HE3  | 1.70                     | 0.45              |
| 1:F:404:ARG:HH11 | 1:F:404:ARG:CG   | 2.30                     | 0.45              |
| 1:G:234:LEU:N    | 1:G:235:PRO:HD2  | 2.32                     | 0.45              |
| 1:I:284:ARG:HH12 | 1:I:364:LYS:NZ   | 2.14                     | 0.45              |
| 1:J:176:THR:HG22 | 1:J:177:VAL:H    | 1.82                     | 0.45              |
| 1:K:284:ARG:HH12 | 1:K:364:LYS:NZ   | 2.14                     | 0.45              |
| 1:L:353:ILE:HD13 | 1:L:366:GLN:HG2  | 1.98                     | 0.45              |
| 1:M:524:LEU:O    | 1:M:526:LYS:N    | 2.49                     | 0.45              |
| 1:A:171:LYS:HB2  | 1:A:407:VAL:HG11 | 1.98                     | 0.45              |
| 1:A:234:LEU:N    | 1:A:235:PRO:HD2  | 2.32                     | 0.45              |
| 1:A:305:ILE:HB   | 1:A:307:MET:HE2  | 1.99                     | 0.45              |
| 1:A:392:LYS:O    | 1:A:396:VAL:HG23 | 2.17                     | 0.45              |
| 1:B:217:SER:N    | 1:B:218:PRO:CD   | 2.80                     | 0.45              |
| 1:B:369:VAL:HG23 | 1:B:370:ALA:N    | 2.32                     | 0.45              |
| 1:C:171:LYS:HB2  | 1:C:407:VAL:HG11 | 1.98                     | 0.45              |
| 1:C:217:SER:N    | 1:C:218:PRO:CD   | 2.80                     | 0.45              |
| 1:C:392:LYS:O    | 1:C:396:VAL:HG23 | 2.17                     | 0.45              |
| 1:E:348:GLN:O    | 1:E:352:GLN:HG2  | 2.17                     | 0.45              |
| 1:E:369:VAL:HG23 | 1:E:370:ALA:N    | 2.32                     | 0.45              |
| 1:F:70:GLY:HA2   | 1:F:73:MET:HE3   | 1.99                     | 0.45              |
| 1:G:182:GLY:HA2  | 1:G:383:ALA:CB   | 2.46                     | 0.45              |
| 1:G:217:SER:N    | 1:G:218:PRO:CD   | 2.80                     | 0.45              |
| 1:G:404:ARG:HH11 | 1:G:404:ARG:CG   | 2.30                     | 0.45              |
| 1:H:37:ASN:HB2   | 1:N:516:THR:O    | 2.17                     | 0.45              |
| 1:I:242:LYS:C    | 1:I:244:GLY:N    | 2.70                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:85:ALA:C     | 1:J:401:HIS:HE1  | 2.19                     | 0.45              |
| 1:J:144:ILE:HG23 | 1:J:403:THR:HG21 | 1.99                     | 0.45              |
| 1:K:302:SER:H    | 1:K:307:MET:HE1  | 1.82                     | 0.45              |
| 1:L:242:LYS:C    | 1:L:244:GLY:N    | 2.70                     | 0.45              |
| 1:L:284:ARG:HH12 | 1:L:364:LYS:NZ   | 2.14                     | 0.45              |
| 1:M:206:ASN:ND2  | 1:M:214:GLU:H    | 2.11                     | 0.45              |
| 1:A:218:PRO:HD2  | 1:A:320:ALA:O    | 2.17                     | 0.44              |
| 1:A:384:ALA:O    | 1:A:385:THR:HG23 | 2.16                     | 0.44              |
| 1:C:185:ASP:OD1  | 1:C:382:GLY:N    | 2.48                     | 0.44              |
| 1:C:218:PRO:HD2  | 1:C:320:ALA:O    | 2.17                     | 0.44              |
| 1:C:234:LEU:N    | 1:C:235:PRO:HD2  | 2.32                     | 0.44              |
| 1:F:199:TYR:CZ   | 1:F:327:LYS:HA   | 2.51                     | 0.44              |
| 1:F:234:LEU:N    | 1:F:235:PRO:HD2  | 2.32                     | 0.44              |
| 1:G:217:SER:N    | 1:G:218:PRO:HD3  | 2.32                     | 0.44              |
| 1:G:348:GLN:O    | 1:G:352:GLN:HG2  | 2.17                     | 0.44              |
| 1:G:392:LYS:O    | 1:G:396:VAL:HG23 | 2.17                     | 0.44              |
| 1:H:76:GLU:CG    | 1:I:46:ALA:HB2   | 2.45                     | 0.44              |
| 1:H:183:LEU:CD2  | 1:H:384:ALA:HB2  | 2.45                     | 0.44              |
| 1:J:209:GLU:OE1  | 1:J:209:GLU:N    | 2.46                     | 0.44              |
| 1:J:517:THR:HG21 | 1:K:39:VAL:HG21  | 1.97                     | 0.44              |
| 1:L:516:THR:O    | 1:M:37:ASN:HB2   | 2.17                     | 0.44              |
| 1:M:176:THR:HG22 | 1:M:177:VAL:H    | 1.82                     | 0.44              |
| 1:M:353:ILE:HD13 | 1:M:366:GLN:HG2  | 1.98                     | 0.44              |
| 1:E:41:ASP:HA    | 1:F:69:MET:CE    | 2.45                     | 0.44              |
| 1:E:70:GLY:HA2   | 1:E:73:MET:HE3   | 1.99                     | 0.44              |
| 1:G:384:ALA:O    | 1:G:385:THR:HG23 | 2.16                     | 0.44              |
| 1:H:155:ASP:OD1  | 1:H:157:THR:HB   | 2.18                     | 0.44              |
| 1:J:333:ILE:HG21 | 1:J:378:VAL:CG2  | 2.36                     | 0.44              |
| 1:K:155:ASP:OD1  | 1:K:157:THR:HB   | 2.18                     | 0.44              |
| 1:K:353:ILE:HD13 | 1:K:366:GLN:HG2  | 1.98                     | 0.44              |
| 1:L:302:SER:H    | 1:L:307:MET:HE1  | 1.82                     | 0.44              |
| 1:C:217:SER:N    | 1:C:218:PRO:HD3  | 2.32                     | 0.44              |
| 1:C:369:VAL:HG23 | 1:C:370:ALA:N    | 2.32                     | 0.44              |
| 1:D:234:LEU:N    | 1:D:235:PRO:HD2  | 2.32                     | 0.44              |
| 1:G:199:TYR:CZ   | 1:G:327:LYS:HA   | 2.51                     | 0.44              |
| 1:H:254:VAL:HG12 | 1:H:259:LEU:HB2  | 1.98                     | 0.44              |
| 1:I:371:LYS:HA   | 1:I:374:GLY:CA   | 2.47                     | 0.44              |
| 1:K:144:ILE:HG23 | 1:K:403:THR:HG21 | 1.99                     | 0.44              |
| 1:K:176:THR:HG22 | 1:K:177:VAL:H    | 1.82                     | 0.44              |
| 1:N:144:ILE:HG23 | 1:N:403:THR:HG21 | 1.99                     | 0.44              |
| 1:N:217:SER:N    | 1:N:218:PRO:HD3  | 2.33                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:234:LEU:N    | 1:B:235:PRO:HD2  | 2.32                     | 0.44              |
| 1:D:369:VAL:HG23 | 1:D:370:ALA:N    | 2.32                     | 0.44              |
| 1:E:218:PRO:HD2  | 1:E:320:ALA:O    | 2.17                     | 0.44              |
| 1:E:234:LEU:N    | 1:E:235:PRO:HD2  | 2.32                     | 0.44              |
| 1:F:217:SER:N    | 1:F:218:PRO:HD3  | 2.32                     | 0.44              |
| 1:F:348:GLN:O    | 1:F:352:GLN:HG2  | 2.17                     | 0.44              |
| 1:J:353:ILE:HD13 | 1:J:366:GLN:HG2  | 1.98                     | 0.44              |
| 1:L:336:VAL:O    | 1:L:337:GLY:C    | 2.56                     | 0.44              |
| 1:M:242:LYS:C    | 1:M:244:GLY:N    | 2.70                     | 0.44              |
| 1:M:254:VAL:HG12 | 1:M:259:LEU:HB2  | 1.98                     | 0.44              |
| 1:N:155:ASP:OD1  | 1:N:157:THR:HB   | 2.18                     | 0.44              |
| 1:A:210:THR:O    | 1:A:210:THR:HG22 | 2.18                     | 0.44              |
| 1:B:218:PRO:HD2  | 1:B:320:ALA:O    | 2.17                     | 0.44              |
| 1:C:348:GLN:O    | 1:C:352:GLN:HG2  | 2.17                     | 0.44              |
| 1:E:217:SER:N    | 1:E:218:PRO:HD3  | 2.32                     | 0.44              |
| 1:H:217:SER:N    | 1:H:218:PRO:HD3  | 2.33                     | 0.44              |
| 1:H:392:LYS:O    | 1:H:396:VAL:HG23 | 2.18                     | 0.44              |
| 1:I:155:ASP:OD1  | 1:I:157:THR:HB   | 2.18                     | 0.44              |
| 1:I:217:SER:N    | 1:I:218:PRO:HD3  | 2.33                     | 0.44              |
| 1:I:516:THR:O    | 1:J:37:ASN:HB2   | 2.17                     | 0.44              |
| 1:J:155:ASP:OD1  | 1:J:157:THR:HB   | 2.18                     | 0.44              |
| 1:K:336:VAL:O    | 1:K:337:GLY:C    | 2.56                     | 0.44              |
| 1:L:524:LEU:O    | 1:L:526:LYS:N    | 2.49                     | 0.44              |
| 1:M:392:LYS:O    | 1:M:396:VAL:HG23 | 2.18                     | 0.44              |
| 1:N:284:ARG:HH12 | 1:N:364:LYS:NZ   | 2.14                     | 0.44              |
| 1:N:392:LYS:O    | 1:N:396:VAL:HG23 | 2.18                     | 0.44              |
| 1:C:245:LYS:HZ1  | 1:D:231:ARG:HH22 | 0.52                     | 0.44              |
| 1:D:193:MET:CA   | 1:D:375:GLY:N    | 2.81                     | 0.44              |
| 1:D:210:THR:O    | 1:D:210:THR:HG22 | 2.18                     | 0.44              |
| 1:F:210:THR:O    | 1:F:210:THR:HG22 | 2.18                     | 0.44              |
| 1:H:144:ILE:HG23 | 1:H:403:THR:HG21 | 1.99                     | 0.44              |
| 1:H:176:THR:HG22 | 1:H:177:VAL:H    | 1.82                     | 0.44              |
| 1:H:242:LYS:C    | 1:H:244:GLY:N    | 2.70                     | 0.44              |
| 1:H:284:ARG:HH12 | 1:H:364:LYS:NZ   | 2.14                     | 0.44              |
| 1:H:371:LYS:HA   | 1:H:374:GLY:CA   | 2.47                     | 0.44              |
| 1:I:144:ILE:HG23 | 1:I:403:THR:HG21 | 1.99                     | 0.44              |
| 1:J:217:SER:N    | 1:J:218:PRO:HD3  | 2.33                     | 0.44              |
| 1:L:176:THR:HG22 | 1:L:177:VAL:H    | 1.82                     | 0.44              |
| 1:L:260:ALA:O    | 1:L:264:VAL:HG23 | 2.18                     | 0.44              |
| 1:M:284:ARG:HH12 | 1:M:364:LYS:NZ   | 2.14                     | 0.44              |
| 1:N:193:MET:HE1  | 1:N:292:ILE:HG12 | 2.00                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:240:VAL:HG11 | 1:B:247:LEU:HB2  | 2.00                     | 0.44              |
| 1:C:193:MET:CA   | 1:C:375:GLY:N    | 2.81                     | 0.44              |
| 1:C:461:GLU:HA   | 1:C:462:PRO:HD3  | 1.89                     | 0.44              |
| 1:D:217:SER:N    | 1:D:218:PRO:HD3  | 2.32                     | 0.44              |
| 1:D:348:GLN:O    | 1:D:352:GLN:HG2  | 2.17                     | 0.44              |
| 1:E:193:MET:CA   | 1:E:375:GLY:N    | 2.81                     | 0.44              |
| 1:E:392:LYS:O    | 1:E:396:VAL:HG23 | 2.17                     | 0.44              |
| 1:F:218:PRO:HD2  | 1:F:320:ALA:O    | 2.17                     | 0.44              |
| 1:H:206:ASN:ND2  | 1:H:214:GLU:H    | 2.11                     | 0.44              |
| 1:H:516:THR:O    | 1:I:37:ASN:HB2   | 2.17                     | 0.44              |
| 1:H:524:LEU:HD12 | 1:H:524:LEU:HA   | 1.87                     | 0.44              |
| 1:I:215:LEU:HB2  | 1:I:323:VAL:HG22 | 2.00                     | 0.44              |
| 1:K:183:LEU:HD13 | 1:K:184:GLN:N    | 2.33                     | 0.44              |
| 1:L:155:ASP:OD1  | 1:L:157:THR:HB   | 2.18                     | 0.44              |
| 1:L:183:LEU:HD13 | 1:L:184:GLN:N    | 2.33                     | 0.44              |
| 1:L:215:LEU:HB2  | 1:L:323:VAL:HG22 | 2.00                     | 0.44              |
| 1:L:392:LYS:O    | 1:L:396:VAL:HG23 | 2.18                     | 0.44              |
| 1:M:217:SER:N    | 1:M:218:PRO:HD3  | 2.33                     | 0.44              |
| 1:M:260:ALA:O    | 1:M:264:VAL:HG23 | 2.18                     | 0.44              |
| 1:N:242:LYS:C    | 1:N:244:GLY:N    | 2.70                     | 0.44              |
| 1:A:240:VAL:HG11 | 1:A:247:LEU:HB2  | 2.00                     | 0.44              |
| 1:B:185:ASP:OD1  | 1:B:382:GLY:N    | 2.48                     | 0.44              |
| 1:D:217:SER:N    | 1:D:218:PRO:CD   | 2.80                     | 0.44              |
| 1:E:217:SER:N    | 1:E:218:PRO:CD   | 2.80                     | 0.44              |
| 1:F:240:VAL:HG11 | 1:F:247:LEU:HB2  | 2.00                     | 0.44              |
| 1:G:240:VAL:HG11 | 1:G:247:LEU:HB2  | 2.00                     | 0.44              |
| 1:K:215:LEU:HB2  | 1:K:323:VAL:HG22 | 2.00                     | 0.44              |
| 1:K:517:THR:HG21 | 1:L:39:VAL:HG21  | 1.97                     | 0.44              |
| 1:L:144:ILE:HG23 | 1:L:403:THR:HG21 | 1.99                     | 0.44              |
| 1:L:217:SER:N    | 1:L:218:PRO:HD3  | 2.33                     | 0.44              |
| 1:L:333:ILE:CG2  | 1:L:378:VAL:CG2  | 2.96                     | 0.44              |
| 1:N:260:ALA:O    | 1:N:264:VAL:HG23 | 2.18                     | 0.44              |
| 1:A:51:LYS:HZ3   | 1:B:114:MET:CE   | 2.31                     | 0.44              |
| 1:A:51:LYS:HZ1   | 1:B:114:MET:HE3  | 1.82                     | 0.44              |
| 1:B:171:LYS:HB2  | 1:B:407:VAL:HG11 | 1.98                     | 0.44              |
| 1:B:348:GLN:O    | 1:B:352:GLN:HG2  | 2.17                     | 0.44              |
| 1:C:210:THR:O    | 1:C:210:THR:HG22 | 2.18                     | 0.44              |
| 1:C:240:VAL:HG11 | 1:C:247:LEU:HB2  | 2.00                     | 0.44              |
| 1:D:218:PRO:HD2  | 1:D:320:ALA:O    | 2.17                     | 0.44              |
| 1:H:215:LEU:HB2  | 1:H:323:VAL:HG22 | 2.00                     | 0.44              |
| 1:I:333:ILE:CG2  | 1:I:378:VAL:CG2  | 2.96                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:392:LYS:O    | 1:I:396:VAL:HG23 | 2.18                     | 0.44              |
| 1:J:215:LEU:HB2  | 1:J:323:VAL:HG22 | 2.00                     | 0.44              |
| 1:J:260:ALA:O    | 1:J:264:VAL:HG23 | 2.18                     | 0.44              |
| 1:J:371:LYS:HA   | 1:J:374:GLY:CA   | 2.47                     | 0.44              |
| 1:L:183:LEU:CD2  | 1:L:384:ALA:HB2  | 2.45                     | 0.44              |
| 1:M:144:ILE:HG23 | 1:M:403:THR:HG21 | 1.99                     | 0.44              |
| 1:M:183:LEU:HD13 | 1:M:184:GLN:N    | 2.33                     | 0.44              |
| 1:M:336:VAL:O    | 1:M:337:GLY:C    | 2.56                     | 0.44              |
| 1:N:176:THR:HG22 | 1:N:177:VAL:H    | 1.82                     | 0.44              |
| 1:A:348:GLN:O    | 1:A:352:GLN:HG2  | 2.17                     | 0.43              |
| 1:A:517:THR:HG21 | 1:G:39:VAL:CG2   | 2.01                     | 0.43              |
| 1:D:39:VAL:HG21  | 1:E:517:THR:CB   | 2.41                     | 0.43              |
| 1:G:210:THR:O    | 1:G:210:THR:HG22 | 2.18                     | 0.43              |
| 1:J:336:VAL:O    | 1:J:337:GLY:C    | 2.56                     | 0.43              |
| 1:K:85:ALA:C     | 1:K:401:HIS:HE1  | 2.19                     | 0.43              |
| 1:K:217:SER:N    | 1:K:218:PRO:HD3  | 2.33                     | 0.43              |
| 1:L:85:ALA:C     | 1:L:401:HIS:HE1  | 2.19                     | 0.43              |
| 1:B:193:MET:HG2  | 1:B:374:GLY:N    | 2.33                     | 0.43              |
| 1:B:366:GLN:HA   | 1:B:369:VAL:HG22 | 2.00                     | 0.43              |
| 1:B:51:LYS:NZ    | 1:C:114:MET:HE3  | 2.32                     | 0.43              |
| 1:B:193:MET:CA   | 1:B:375:GLY:N    | 2.81                     | 0.43              |
| 1:D:193:MET:HG2  | 1:D:374:GLY:N    | 2.34                     | 0.43              |
| 1:H:260:ALA:O    | 1:H:264:VAL:HG23 | 2.18                     | 0.43              |
| 1:I:524:LEU:HD12 | 1:I:524:LEU:HA   | 1.87                     | 0.43              |
| 1:J:183:LEU:HD13 | 1:J:184:GLN:N    | 2.33                     | 0.43              |
| 1:K:260:ALA:O    | 1:K:264:VAL:HG23 | 2.18                     | 0.43              |
| 1:A:191:GLU:HA   | 1:A:192:GLY:HA3  | 1.25                     | 0.43              |
| 1:A:366:GLN:HA   | 1:A:369:VAL:HG22 | 2.00                     | 0.43              |
| 1:E:193:MET:HE1  | 1:E:292:ILE:HG12 | 2.00                     | 0.43              |
| 1:G:218:PRO:HD2  | 1:G:320:ALA:O    | 2.17                     | 0.43              |
| 1:H:333:ILE:CG2  | 1:H:378:VAL:CG2  | 2.96                     | 0.43              |
| 1:H:336:VAL:O    | 1:H:337:GLY:C    | 2.56                     | 0.43              |
| 1:I:183:LEU:CD2  | 1:I:384:ALA:HB2  | 2.45                     | 0.43              |
| 1:I:336:VAL:O    | 1:I:337:GLY:C    | 2.56                     | 0.43              |
| 1:J:384:ALA:C    | 1:J:385:THR:HG23 | 2.39                     | 0.43              |
| 1:K:392:LYS:O    | 1:K:396:VAL:HG23 | 2.18                     | 0.43              |
| 1:M:325:ILE:HA   | 1:M:329:THR:O    | 2.19                     | 0.43              |
| 1:C:366:GLN:HA   | 1:C:369:VAL:HG22 | 2.00                     | 0.43              |
| 1:E:51:LYS:HZ1   | 1:F:114:MET:HE3  | 1.82                     | 0.43              |
| 1:F:217:SER:N    | 1:F:218:PRO:CD   | 2.80                     | 0.43              |
| 1:I:76:GLU:CG    | 1:J:46:ALA:HB2   | 2.45                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:404:ARG:CG   | 1:I:404:ARG:NH1  | 2.71                     | 0.43              |
| 1:M:333:ILE:CG2  | 1:M:378:VAL:CG2  | 2.96                     | 0.43              |
| 1:M:384:ALA:C    | 1:M:385:THR:HG23 | 2.39                     | 0.43              |
| 1:N:371:LYS:HA   | 1:N:374:GLY:CA   | 2.47                     | 0.43              |
| 1:C:51:LYS:HZ3   | 1:D:114:MET:HE1  | 1.83                     | 0.43              |
| 1:C:305:ILE:HB   | 1:C:307:MET:HE2  | 2.01                     | 0.43              |
| 1:F:41:ASP:HB2   | 1:G:69:MET:CE    | 2.35                     | 0.43              |
| 1:H:235:PRO:CG   | 1:H:310:GLU:HA   | 2.35                     | 0.43              |
| 1:J:392:LYS:O    | 1:J:396:VAL:HG23 | 2.18                     | 0.43              |
| 1:K:333:ILE:HG21 | 1:K:378:VAL:CG2  | 2.36                     | 0.43              |
| 1:M:215:LEU:HB2  | 1:M:323:VAL:HG22 | 2.00                     | 0.43              |
| 1:N:183:LEU:HD13 | 1:N:184:GLN:N    | 2.33                     | 0.43              |
| 1:B:124:VAL:HG21 | 1:B:508:ALA:CB   | 2.49                     | 0.43              |
| 1:B:190:VAL:HG23 | 1:B:333:ILE:HG12 | 2.01                     | 0.43              |
| 1:B:210:THR:HG22 | 1:B:210:THR:O    | 2.18                     | 0.43              |
| 1:C:124:VAL:HG21 | 1:C:508:ALA:CB   | 2.49                     | 0.43              |
| 1:D:41:ASP:HA    | 1:E:69:MET:CE    | 2.45                     | 0.43              |
| 1:D:253:ASP:OD1  | 1:D:277:LYS:HE2  | 2.19                     | 0.43              |
| 1:F:183:LEU:HD13 | 1:F:184:GLN:N    | 2.34                     | 0.43              |
| 1:G:183:LEU:HD13 | 1:G:184:GLN:N    | 2.34                     | 0.43              |
| 1:G:193:MET:CA   | 1:G:375:GLY:N    | 2.81                     | 0.43              |
| 1:G:366:GLN:HA   | 1:G:369:VAL:HG22 | 2.00                     | 0.43              |
| 1:I:176:THR:HG22 | 1:I:177:VAL:H    | 1.82                     | 0.43              |
| 1:I:369:VAL:HG23 | 1:I:370:ALA:N    | 2.34                     | 0.43              |
| 1:J:325:ILE:HA   | 1:J:329:THR:O    | 2.19                     | 0.43              |
| 1:J:369:VAL:HG23 | 1:J:370:ALA:N    | 2.34                     | 0.43              |
| 1:K:319:GLN:HB3  | 1:K:336:VAL:HG21 | 2.01                     | 0.43              |
| 1:K:384:ALA:C    | 1:K:385:THR:HG23 | 2.39                     | 0.43              |
| 1:L:319:GLN:HB3  | 1:L:336:VAL:HG21 | 2.01                     | 0.43              |
| 1:A:124:VAL:HG21 | 1:A:508:ALA:CB   | 2.49                     | 0.43              |
| 1:C:70:GLY:HA2   | 1:C:73:MET:HE3   | 2.01                     | 0.43              |
| 1:C:183:LEU:HD13 | 1:C:184:GLN:N    | 2.34                     | 0.43              |
| 1:C:253:ASP:OD1  | 1:C:277:LYS:HE2  | 2.19                     | 0.43              |
| 1:F:417:VAL:HG11 | 1:F:488:MET:HG3  | 2.01                     | 0.43              |
| 1:G:524:LEU:HD12 | 1:G:524:LEU:HA   | 1.89                     | 0.43              |
| 1:H:342:ILE:O    | 1:H:346:VAL:HG23 | 2.19                     | 0.43              |
| 1:I:37:ASN:ND2   | 1:I:51:LYS:HE3   | 2.34                     | 0.43              |
| 1:L:384:ALA:C    | 1:L:385:THR:HG23 | 2.39                     | 0.43              |
| 1:N:215:LEU:HB2  | 1:N:323:VAL:HG22 | 2.00                     | 0.43              |
| 1:N:333:ILE:CG2  | 1:N:378:VAL:CG2  | 2.96                     | 0.43              |
| 1:A:193:MET:CA   | 1:A:375:GLY:N    | 2.81                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:183:LEU:HD13 | 1:B:184:GLN:N    | 2.34                     | 0.43              |
| 1:B:253:ASP:OD1  | 1:B:277:LYS:HE2  | 2.19                     | 0.43              |
| 1:C:190:VAL:HG23 | 1:C:333:ILE:HG12 | 2.01                     | 0.43              |
| 1:E:177:VAL:HA   | 1:E:379:ILE:O    | 2.19                     | 0.43              |
| 1:E:210:THR:HG22 | 1:E:210:THR:O    | 2.18                     | 0.43              |
| 1:F:366:GLN:HA   | 1:F:369:VAL:HG22 | 2.00                     | 0.43              |
| 1:G:417:VAL:HG11 | 1:G:488:MET:HG3  | 2.01                     | 0.43              |
| 1:I:240:VAL:HG11 | 1:I:247:LEU:HB2  | 2.01                     | 0.43              |
| 1:J:37:ASN:ND2   | 1:J:51:LYS:HE3   | 2.34                     | 0.43              |
| 1:J:342:ILE:O    | 1:J:346:VAL:HG23 | 2.19                     | 0.43              |
| 1:K:37:ASN:ND2   | 1:K:51:LYS:HE3   | 2.34                     | 0.43              |
| 1:K:369:VAL:HG23 | 1:K:370:ALA:N    | 2.34                     | 0.43              |
| 1:N:46:ALA:HA    | 1:N:47:PRO:HD3   | 1.91                     | 0.43              |
| 1:N:384:ALA:C    | 1:N:385:THR:HG23 | 2.39                     | 0.43              |
| 1:B:41:ASP:CA    | 1:C:69:MET:HE1   | 2.49                     | 0.43              |
| 1:D:240:VAL:HG11 | 1:D:247:LEU:HB2  | 2.00                     | 0.43              |
| 1:E:253:ASP:OD1  | 1:E:277:LYS:HE2  | 2.19                     | 0.43              |
| 1:G:153:ASN:O    | 1:G:154:SER:HB2  | 2.19                     | 0.43              |
| 1:H:240:VAL:HG11 | 1:H:247:LEU:HB2  | 2.01                     | 0.43              |
| 1:H:331:THR:HG1  | 1:H:376:VAL:HG11 | 1.73                     | 0.43              |
| 1:I:260:ALA:O    | 1:I:264:VAL:HG23 | 2.18                     | 0.43              |
| 1:I:325:ILE:HA   | 1:I:329:THR:O    | 2.19                     | 0.43              |
| 1:I:384:ALA:C    | 1:I:385:THR:HG23 | 2.39                     | 0.43              |
| 1:J:333:ILE:CG2  | 1:J:378:VAL:CG2  | 2.96                     | 0.43              |
| 1:K:514:MET:HE3  | 1:K:514:MET:HB3  | 1.93                     | 0.43              |
| 1:L:342:ILE:O    | 1:L:346:VAL:HG23 | 2.19                     | 0.43              |
| 1:M:155:ASP:OD1  | 1:M:157:THR:HB   | 2.18                     | 0.43              |
| 1:M:319:GLN:HB3  | 1:M:336:VAL:HG21 | 2.01                     | 0.43              |
| 1:N:336:VAL:O    | 1:N:337:GLY:C    | 2.56                     | 0.43              |
| 1:C:41:ASP:CB    | 1:D:69:MET:HE3   | 2.49                     | 0.42              |
| 1:D:124:VAL:HG21 | 1:D:508:ALA:CB   | 2.49                     | 0.42              |
| 1:D:366:GLN:HA   | 1:D:369:VAL:HG22 | 2.00                     | 0.42              |
| 1:H:37:ASN:ND2   | 1:H:51:LYS:HE3   | 2.34                     | 0.42              |
| 1:I:183:LEU:HD13 | 1:I:184:GLN:N    | 2.33                     | 0.42              |
| 1:I:342:ILE:O    | 1:I:346:VAL:HG23 | 2.19                     | 0.42              |
| 1:J:319:GLN:HB3  | 1:J:336:VAL:HG21 | 2.01                     | 0.42              |
| 1:K:371:LYS:HA   | 1:K:374:GLY:CA   | 2.47                     | 0.42              |
| 1:N:342:ILE:O    | 1:N:346:VAL:HG23 | 2.19                     | 0.42              |
| 1:A:153:ASN:O    | 1:A:154:SER:HB2  | 2.19                     | 0.42              |
| 1:A:190:VAL:HG23 | 1:A:333:ILE:HG12 | 2.01                     | 0.42              |
| 1:E:240:VAL:HG11 | 1:E:247:LEU:HB2  | 2.00                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:417:VAL:HG11 | 1:E:488:MET:HG3  | 2.01                     | 0.42              |
| 1:F:176:THR:HG22 | 1:F:177:VAL:H    | 1.84                     | 0.42              |
| 1:F:253:ASP:OD1  | 1:F:277:LYS:HE2  | 2.19                     | 0.42              |
| 1:H:185:ASP:OD1  | 1:H:382:GLY:N    | 2.46                     | 0.42              |
| 1:H:305:ILE:HB   | 1:H:307:MET:HE2  | 2.02                     | 0.42              |
| 1:J:240:VAL:HG11 | 1:J:247:LEU:HB2  | 2.01                     | 0.42              |
| 1:K:325:ILE:HA   | 1:K:329:THR:O    | 2.19                     | 0.42              |
| 1:A:185:ASP:OD1  | 1:A:382:GLY:N    | 2.48                     | 0.42              |
| 1:A:253:ASP:OD1  | 1:A:277:LYS:HE2  | 2.19                     | 0.42              |
| 1:E:124:VAL:HG21 | 1:E:508:ALA:CB   | 2.49                     | 0.42              |
| 1:F:177:VAL:HA   | 1:F:379:ILE:O    | 2.19                     | 0.42              |
| 1:H:369:VAL:HG23 | 1:H:370:ALA:N    | 2.34                     | 0.42              |
| 1:L:37:ASN:ND2   | 1:L:51:LYS:HE3   | 2.34                     | 0.42              |
| 1:L:461:GLU:HA   | 1:L:462:PRO:HD3  | 1.88                     | 0.42              |
| 1:B:153:ASN:O    | 1:B:154:SER:HB2  | 2.19                     | 0.42              |
| 1:D:190:VAL:HG23 | 1:D:333:ILE:HG12 | 2.01                     | 0.42              |
| 1:D:406:ALA:HA   | 1:D:496:PRO:CB   | 2.50                     | 0.42              |
| 1:E:366:GLN:HA   | 1:E:369:VAL:HG22 | 2.00                     | 0.42              |
| 1:F:193:MET:HE2  | 1:F:292:ILE:HG12 | 2.00                     | 0.42              |
| 1:G:124:VAL:HG21 | 1:G:508:ALA:CB   | 2.49                     | 0.42              |
| 1:H:384:ALA:C    | 1:H:385:THR:HG23 | 2.39                     | 0.42              |
| 1:I:305:ILE:HB   | 1:I:307:MET:HE2  | 2.02                     | 0.42              |
| 1:N:193:MET:HE2  | 1:N:292:ILE:HG12 | 2.00                     | 0.42              |
| 1:N:240:VAL:HG11 | 1:N:247:LEU:HB2  | 2.01                     | 0.42              |
| 1:B:325:ILE:HA   | 1:B:329:THR:O    | 2.20                     | 0.42              |
| 1:C:193:MET:HG2  | 1:C:374:GLY:N    | 2.34                     | 0.42              |
| 1:E:190:VAL:HG23 | 1:E:333:ILE:HG12 | 2.01                     | 0.42              |
| 1:F:193:MET:CA   | 1:F:375:GLY:N    | 2.81                     | 0.42              |
| 1:H:39:VAL:HG21  | 1:N:517:THR:HG21 | 1.97                     | 0.42              |
| 1:H:220:ILE:HD12 | 1:H:296:THR:HG21 | 2.02                     | 0.42              |
| 1:H:325:ILE:HA   | 1:H:329:THR:O    | 2.19                     | 0.42              |
| 1:J:183:LEU:CD2  | 1:J:384:ALA:HB2  | 2.45                     | 0.42              |
| 1:K:381:VAL:O    | 1:K:382:GLY:O    | 2.38                     | 0.42              |
| 1:L:210:THR:O    | 1:L:210:THR:HG22 | 2.20                     | 0.42              |
| 1:A:183:LEU:HD13 | 1:A:184:GLN:N    | 2.34                     | 0.42              |
| 1:A:325:ILE:HA   | 1:A:329:THR:O    | 2.20                     | 0.42              |
| 1:B:245:LYS:HE3  | 1:C:231:ARG:HH21 | 1.70                     | 0.42              |
| 1:C:51:LYS:NZ    | 1:D:114:MET:HE3  | 2.35                     | 0.42              |
| 1:C:177:VAL:HA   | 1:C:379:ILE:O    | 2.19                     | 0.42              |
| 1:F:153:ASN:O    | 1:F:154:SER:HB2  | 2.19                     | 0.42              |
| 1:F:191:GLU:HA   | 1:F:192:GLY:HA3  | 1.25                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:176:THR:HG22 | 1:G:177:VAL:H    | 1.84                     | 0.42              |
| 1:L:220:ILE:HD12 | 1:L:296:THR:HG21 | 2.02                     | 0.42              |
| 1:M:371:LYS:HA   | 1:M:374:GLY:CA   | 2.47                     | 0.42              |
| 1:M:381:VAL:O    | 1:M:382:GLY:O    | 2.38                     | 0.42              |
| 1:N:37:ASN:ND2   | 1:N:51:LYS:HE3   | 2.34                     | 0.42              |
| 1:B:193:MET:HE3  | 1:B:292:ILE:HG12 | 2.01                     | 0.42              |
| 1:C:325:ILE:HA   | 1:C:329:THR:O    | 2.20                     | 0.42              |
| 1:D:219:PHE:O    | 1:D:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:E:183:LEU:HD13 | 1:E:184:GLN:N    | 2.34                     | 0.42              |
| 1:F:124:VAL:HG21 | 1:F:508:ALA:CB   | 2.49                     | 0.42              |
| 1:G:325:ILE:HA   | 1:G:329:THR:O    | 2.20                     | 0.42              |
| 1:H:210:THR:O    | 1:H:210:THR:HG22 | 2.20                     | 0.42              |
| 1:H:319:GLN:HB3  | 1:H:336:VAL:HG21 | 2.01                     | 0.42              |
| 1:H:381:VAL:O    | 1:H:382:GLY:O    | 2.38                     | 0.42              |
| 1:I:235:PRO:CG   | 1:I:310:GLU:HA   | 2.35                     | 0.42              |
| 1:J:76:GLU:CG    | 1:K:46:ALA:HB2   | 2.45                     | 0.42              |
| 1:K:240:VAL:HG11 | 1:K:247:LEU:HB2  | 2.01                     | 0.42              |
| 1:K:342:ILE:O    | 1:K:346:VAL:HG23 | 2.19                     | 0.42              |
| 1:L:369:VAL:HG23 | 1:L:370:ALA:N    | 2.34                     | 0.42              |
| 1:L:371:LYS:HA   | 1:L:374:GLY:CA   | 2.47                     | 0.42              |
| 1:M:210:THR:HG22 | 1:M:210:THR:O    | 2.20                     | 0.42              |
| 1:N:220:ILE:HD12 | 1:N:296:THR:HG21 | 2.02                     | 0.42              |
| 1:N:524:LEU:HD12 | 1:N:524:LEU:HA   | 1.87                     | 0.42              |
| 1:B:194:GLN:HG3  | 1:B:331:THR:HB   | 2.02                     | 0.42              |
| 1:E:153:ASN:O    | 1:E:154:SER:HB2  | 2.19                     | 0.42              |
| 1:F:219:PHE:O    | 1:F:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:F:242:LYS:C    | 1:F:244:GLY:N    | 2.73                     | 0.42              |
| 1:G:190:VAL:HG23 | 1:G:333:ILE:HG12 | 2.01                     | 0.42              |
| 1:H:183:LEU:HD13 | 1:H:184:GLN:N    | 2.33                     | 0.42              |
| 1:I:153:ASN:O    | 1:I:154:SER:HB2  | 2.20                     | 0.42              |
| 1:J:381:VAL:O    | 1:J:382:GLY:O    | 2.38                     | 0.42              |
| 1:K:192:GLY:O    | 1:K:375:GLY:HA3  | 2.07                     | 0.42              |
| 1:K:220:ILE:HD12 | 1:K:296:THR:HG21 | 2.02                     | 0.42              |
| 1:L:325:ILE:HA   | 1:L:329:THR:O    | 2.19                     | 0.42              |
| 1:M:182:GLY:HA2  | 1:M:383:ALA:HB3  | 2.02                     | 0.42              |
| 1:M:220:ILE:HD12 | 1:M:296:THR:HG21 | 2.02                     | 0.42              |
| 1:N:381:VAL:O    | 1:N:382:GLY:O    | 2.38                     | 0.42              |
| 1:A:177:VAL:HA   | 1:A:379:ILE:O    | 2.19                     | 0.42              |
| 1:A:194:GLN:HG3  | 1:A:331:THR:HB   | 2.02                     | 0.42              |
| 1:A:417:VAL:HG11 | 1:A:488:MET:HG3  | 2.00                     | 0.42              |
| 1:A:517:THR:CB   | 1:G:39:VAL:HG21  | 2.41                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:302:SER:O    | 1:B:307:MET:HE3  | 2.20                     | 0.42              |
| 1:C:153:ASN:O    | 1:C:154:SER:HB2  | 2.19                     | 0.42              |
| 1:C:219:PHE:O    | 1:C:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:C:417:VAL:HG11 | 1:C:488:MET:HG3  | 2.01                     | 0.42              |
| 1:D:183:LEU:HD13 | 1:D:184:GLN:N    | 2.34                     | 0.42              |
| 1:E:219:PHE:O    | 1:E:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:F:325:ILE:HA   | 1:F:329:THR:O    | 2.20                     | 0.42              |
| 1:G:305:ILE:HB   | 1:G:307:MET:HE2  | 2.02                     | 0.42              |
| 1:I:210:THR:O    | 1:I:210:THR:HG22 | 2.20                     | 0.42              |
| 1:J:182:GLY:HA2  | 1:J:383:ALA:HB3  | 2.02                     | 0.42              |
| 1:K:177:VAL:HG21 | 1:K:397:GLU:HG2  | 2.00                     | 0.42              |
| 1:M:37:ASN:ND2   | 1:M:51:LYS:HE3   | 2.34                     | 0.42              |
| 1:M:153:ASN:O    | 1:M:154:SER:HB2  | 2.20                     | 0.42              |
| 1:M:240:VAL:HG11 | 1:M:247:LEU:HB2  | 2.01                     | 0.42              |
| 1:N:153:ASN:O    | 1:N:154:SER:HB2  | 2.20                     | 0.42              |
| 1:N:325:ILE:HA   | 1:N:329:THR:O    | 2.19                     | 0.42              |
| 1:A:219:PHE:O    | 1:A:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:B:177:VAL:HA   | 1:B:379:ILE:O    | 2.19                     | 0.42              |
| 1:B:219:PHE:O    | 1:B:247:LEU:HD12 | 2.20                     | 0.42              |
| 1:B:417:VAL:HG11 | 1:B:488:MET:HG3  | 2.01                     | 0.42              |
| 1:D:51:LYS:HZ3   | 1:E:114:MET:HE1  | 1.84                     | 0.42              |
| 1:D:177:VAL:HA   | 1:D:379:ILE:O    | 2.19                     | 0.42              |
| 1:E:384:ALA:O    | 1:E:385:THR:OG1  | 2.33                     | 0.42              |
| 1:F:190:VAL:HG23 | 1:F:333:ILE:HG12 | 2.01                     | 0.42              |
| 1:G:194:GLN:HG3  | 1:G:331:THR:HB   | 2.02                     | 0.42              |
| 1:G:242:LYS:C    | 1:G:244:GLY:N    | 2.73                     | 0.42              |
| 1:I:319:GLN:HB3  | 1:I:336:VAL:HG21 | 2.01                     | 0.42              |
| 1:I:381:VAL:O    | 1:I:382:GLY:O    | 2.38                     | 0.42              |
| 1:J:210:THR:HG22 | 1:J:210:THR:O    | 2.20                     | 0.42              |
| 1:K:46:ALA:HA    | 1:K:47:PRO:HD3   | 1.91                     | 0.42              |
| 1:K:183:LEU:CD2  | 1:K:384:ALA:HB2  | 2.45                     | 0.42              |
| 1:L:153:ASN:O    | 1:L:154:SER:HB2  | 2.20                     | 0.42              |
| 1:L:381:VAL:O    | 1:L:382:GLY:O    | 2.38                     | 0.42              |
| 1:M:302:SER:H    | 1:M:307:MET:HE1  | 1.85                     | 0.42              |
| 1:M:342:ILE:O    | 1:M:346:VAL:HG23 | 2.19                     | 0.42              |
| 1:B:70:GLY:HA2   | 1:B:73:MET:HE3   | 2.02                     | 0.41              |
| 1:B:331:THR:OG1  | 1:B:376:VAL:HG21 | 2.00                     | 0.41              |
| 1:C:220:ILE:HD12 | 1:C:296:THR:HG21 | 2.02                     | 0.41              |
| 1:D:41:ASP:CA    | 1:E:69:MET:HE1   | 2.49                     | 0.41              |
| 1:D:153:ASN:O    | 1:D:154:SER:HB2  | 2.19                     | 0.41              |
| 1:E:242:LYS:C    | 1:E:244:GLY:N    | 2.73                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:514:MET:HE3  | 1:E:514:MET:HB3  | 1.93                     | 0.41              |
| 1:F:194:GLN:HG3  | 1:F:331:THR:HB   | 2.02                     | 0.41              |
| 1:H:153:ASN:O    | 1:H:154:SER:HB2  | 2.20                     | 0.41              |
| 1:I:220:ILE:HD12 | 1:I:296:THR:HG21 | 2.02                     | 0.41              |
| 1:I:458:CYS:SG   | 1:I:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:J:302:SER:H    | 1:J:307:MET:HE1  | 1.85                     | 0.41              |
| 1:J:524:LEU:HD12 | 1:J:524:LEU:HA   | 1.87                     | 0.41              |
| 1:K:210:THR:O    | 1:K:210:THR:HG22 | 2.20                     | 0.41              |
| 1:N:182:GLY:HA2  | 1:N:383:ALA:HB3  | 2.02                     | 0.41              |
| 1:N:319:GLN:HB3  | 1:N:336:VAL:HG21 | 2.01                     | 0.41              |
| 1:A:193:MET:HG2  | 1:A:374:GLY:N    | 2.34                     | 0.41              |
| 1:B:409:GLU:OE2  | 1:B:498:LYS:HD2  | 2.21                     | 0.41              |
| 1:C:41:ASP:HB2   | 1:D:69:MET:CE    | 2.35                     | 0.41              |
| 1:D:417:VAL:HG11 | 1:D:488:MET:HG3  | 2.00                     | 0.41              |
| 1:E:193:MET:HG2  | 1:E:374:GLY:N    | 2.34                     | 0.41              |
| 1:E:325:ILE:HA   | 1:E:329:THR:O    | 2.20                     | 0.41              |
| 1:G:219:PHE:O    | 1:G:247:LEU:HD12 | 2.20                     | 0.41              |
| 1:I:455:VAL:HG13 | 1:I:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:J:458:CYS:SG   | 1:J:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:K:458:CYS:SG   | 1:K:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:M:458:CYS:SG   | 1:M:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:N:369:VAL:HG23 | 1:N:370:ALA:N    | 2.34                     | 0.41              |
| 1:C:194:GLN:HG3  | 1:C:331:THR:HB   | 2.02                     | 0.41              |
| 1:D:325:ILE:HA   | 1:D:329:THR:O    | 2.20                     | 0.41              |
| 1:E:220:ILE:HD12 | 1:E:296:THR:HG21 | 2.02                     | 0.41              |
| 1:F:51:LYS:HZ1   | 1:G:114:MET:HE3  | 1.85                     | 0.41              |
| 1:G:253:ASP:OD1  | 1:G:277:LYS:HE2  | 2.19                     | 0.41              |
| 1:H:266:THR:HG21 | 1:H:273:VAL:H    | 1.85                     | 0.41              |
| 1:J:220:ILE:HD12 | 1:J:296:THR:HG21 | 2.02                     | 0.41              |
| 1:C:409:GLU:OE2  | 1:C:498:LYS:HD2  | 2.21                     | 0.41              |
| 1:D:182:GLY:O    | 1:D:183:LEU:O    | 2.38                     | 0.41              |
| 1:D:220:ILE:HD12 | 1:D:296:THR:HG21 | 2.02                     | 0.41              |
| 1:E:406:ALA:HA   | 1:E:496:PRO:CB   | 2.50                     | 0.41              |
| 1:J:153:ASN:O    | 1:J:154:SER:HB2  | 2.20                     | 0.41              |
| 1:A:23:LEU:CD2   | 1:A:74:VAL:HG13  | 2.50                     | 0.41              |
| 1:A:266:THR:HG21 | 1:A:273:VAL:H    | 1.86                     | 0.41              |
| 1:A:409:GLU:OE2  | 1:A:498:LYS:HD2  | 2.21                     | 0.41              |
| 1:B:140:ASP:OD2  | 1:B:142:LYS:HB3  | 2.21                     | 0.41              |
| 1:C:266:THR:HG21 | 1:C:273:VAL:H    | 1.86                     | 0.41              |
| 1:D:41:ASP:CB    | 1:E:69:MET:HE3   | 2.46                     | 0.41              |
| 1:E:51:LYS:HZ3   | 1:F:114:MET:CE   | 2.33                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:177:VAL:HA   | 1:G:379:ILE:O    | 2.19                     | 0.41              |
| 1:H:455:VAL:HG13 | 1:H:460:GLU:HB2  | 2.02                     | 0.41              |
| 1:I:202:PRO:C    | 1:I:204:PHE:H    | 2.24                     | 0.41              |
| 1:J:455:VAL:HG13 | 1:J:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:M:369:VAL:HG23 | 1:M:370:ALA:N    | 2.34                     | 0.41              |
| 1:N:458:CYS:SG   | 1:N:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:A:384:ALA:C    | 1:A:385:THR:HG23 | 2.41                     | 0.41              |
| 1:A:455:VAL:HG13 | 1:A:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:B:23:LEU:CD2   | 1:B:74:VAL:HG13  | 2.50                     | 0.41              |
| 1:B:220:ILE:HD12 | 1:B:296:THR:HG21 | 2.02                     | 0.41              |
| 1:B:242:LYS:C    | 1:B:244:GLY:N    | 2.73                     | 0.41              |
| 1:B:342:ILE:O    | 1:B:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:B:384:ALA:C    | 1:B:385:THR:HG23 | 2.41                     | 0.41              |
| 1:B:455:VAL:HG13 | 1:B:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:C:176:THR:HG22 | 1:C:177:VAL:H    | 1.84                     | 0.41              |
| 1:D:342:ILE:O    | 1:D:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:E:182:GLY:O    | 1:E:183:LEU:O    | 2.38                     | 0.41              |
| 1:E:194:GLN:HG3  | 1:E:331:THR:HB   | 2.02                     | 0.41              |
| 1:F:342:ILE:O    | 1:F:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:G:193:MET:HE1  | 1:G:292:ILE:HG12 | 2.01                     | 0.41              |
| 1:H:193:MET:HE1  | 1:H:292:ILE:HG12 | 2.02                     | 0.41              |
| 1:I:182:GLY:HA2  | 1:I:383:ALA:HB3  | 2.02                     | 0.41              |
| 1:J:324:VAL:O    | 1:J:331:THR:HG22 | 2.21                     | 0.41              |
| 1:K:76:GLU:CG    | 1:L:46:ALA:HB2   | 2.45                     | 0.41              |
| 1:N:202:PRO:C    | 1:N:204:PHE:H    | 2.24                     | 0.41              |
| 1:A:51:LYS:NZ    | 1:B:114:MET:HE3  | 2.36                     | 0.41              |
| 1:A:140:ASP:OD2  | 1:A:142:LYS:HB3  | 2.21                     | 0.41              |
| 1:B:406:ALA:HA   | 1:B:496:PRO:CB   | 2.50                     | 0.41              |
| 1:C:202:PRO:C    | 1:C:204:PHE:H    | 2.24                     | 0.41              |
| 1:D:176:THR:HG22 | 1:D:177:VAL:H    | 1.84                     | 0.41              |
| 1:D:202:PRO:C    | 1:D:204:PHE:H    | 2.24                     | 0.41              |
| 1:D:295:LEU:O    | 1:D:295:LEU:HD13 | 2.21                     | 0.41              |
| 1:D:302:SER:O    | 1:D:307:MET:HE3  | 2.20                     | 0.41              |
| 1:G:191:GLU:HB3  | 1:G:332:ILE:C    | 2.37                     | 0.41              |
| 1:G:302:SER:O    | 1:G:307:MET:HE3  | 2.21                     | 0.41              |
| 1:H:177:VAL:HG21 | 1:H:397:GLU:HG2  | 2.00                     | 0.41              |
| 1:I:177:VAL:HG21 | 1:I:397:GLU:HG2  | 2.00                     | 0.41              |
| 1:J:190:VAL:HG22 | 1:J:333:ILE:HG23 | 1.51                     | 0.41              |
| 1:K:324:VAL:O    | 1:K:331:THR:HG22 | 2.21                     | 0.41              |
| 1:L:82:ASN:O     | 1:L:86:GLY:N     | 2.52                     | 0.41              |
| 1:L:182:GLY:HA2  | 1:L:383:ALA:HB3  | 2.02                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:L:240:VAL:HG11 | 1:L:247:LEU:HB2  | 2.01                     | 0.41              |
| 1:L:458:CYS:SG   | 1:L:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:M:177:VAL:HG21 | 1:M:397:GLU:HG2  | 2.00                     | 0.41              |
| 1:N:210:THR:O    | 1:N:210:THR:HG22 | 2.20                     | 0.41              |
| 1:N:216:GLU:C    | 1:N:218:PRO:HD3  | 2.41                     | 0.41              |
| 1:A:41:ASP:OD2   | 1:B:522:THR:CB   | 2.69                     | 0.41              |
| 1:A:202:PRO:C    | 1:A:204:PHE:H    | 2.24                     | 0.41              |
| 1:C:140:ASP:OD2  | 1:C:142:LYS:HB3  | 2.21                     | 0.41              |
| 1:C:182:GLY:O    | 1:C:183:LEU:O    | 2.38                     | 0.41              |
| 1:D:242:LYS:C    | 1:D:244:GLY:N    | 2.73                     | 0.41              |
| 1:E:46:ALA:HA    | 1:E:47:PRO:HD3   | 1.93                     | 0.41              |
| 1:F:51:LYS:HZ3   | 1:G:114:MET:CE   | 2.33                     | 0.41              |
| 1:H:46:ALA:HA    | 1:H:47:PRO:HD3   | 1.91                     | 0.41              |
| 1:H:182:GLY:HA2  | 1:H:383:ALA:HB3  | 2.02                     | 0.41              |
| 1:J:216:GLU:C    | 1:J:218:PRO:HD3  | 2.41                     | 0.41              |
| 1:K:153:ASN:O    | 1:K:154:SER:HB2  | 2.20                     | 0.41              |
| 1:K:333:ILE:CG2  | 1:K:378:VAL:CG2  | 2.96                     | 0.41              |
| 1:M:82:ASN:O     | 1:M:86:GLY:N     | 2.52                     | 0.41              |
| 1:M:216:GLU:C    | 1:M:218:PRO:HD3  | 2.41                     | 0.41              |
| 1:A:69:MET:CE    | 1:G:41:ASP:HB2   | 2.35                     | 0.41              |
| 1:A:182:GLY:O    | 1:A:183:LEU:O    | 2.38                     | 0.41              |
| 1:A:242:LYS:C    | 1:A:244:GLY:N    | 2.73                     | 0.41              |
| 1:A:302:SER:O    | 1:A:307:MET:HE3  | 2.20                     | 0.41              |
| 1:A:342:ILE:O    | 1:A:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:A:522:THR:CB   | 1:G:41:ASP:OD2   | 2.69                     | 0.41              |
| 1:B:27:VAL:HG12  | 1:B:90:THR:HG23  | 2.03                     | 0.41              |
| 1:B:41:ASP:OD2   | 1:C:522:THR:CB   | 2.69                     | 0.41              |
| 1:B:47:PRO:HD3   | 1:C:73:MET:HG3   | 2.03                     | 0.41              |
| 1:C:27:VAL:HG12  | 1:C:90:THR:HG23  | 2.03                     | 0.41              |
| 1:C:295:LEU:HD13 | 1:C:295:LEU:O    | 2.21                     | 0.41              |
| 1:C:302:SER:O    | 1:C:307:MET:HE3  | 2.21                     | 0.41              |
| 1:C:342:ILE:O    | 1:C:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:C:455:VAL:HG13 | 1:C:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:D:41:ASP:OD2   | 1:E:522:THR:CB   | 2.69                     | 0.41              |
| 1:D:47:PRO:HD3   | 1:E:73:MET:HG3   | 2.02                     | 0.41              |
| 1:D:194:GLN:HG3  | 1:D:331:THR:HB   | 2.02                     | 0.41              |
| 1:D:266:THR:HG21 | 1:D:273:VAL:H    | 1.85                     | 0.41              |
| 1:D:384:ALA:C    | 1:D:385:THR:HG23 | 2.41                     | 0.41              |
| 1:D:466:ALA:O    | 1:D:470:LYS:HG3  | 2.21                     | 0.41              |
| 1:E:41:ASP:OD1   | 1:F:69:MET:CG    | 2.68                     | 0.41              |
| 1:E:176:THR:HG22 | 1:E:177:VAL:H    | 1.84                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:302:SER:O    | 1:E:307:MET:HE3  | 2.21                     | 0.41              |
| 1:E:342:ILE:O    | 1:E:346:VAL:HG23 | 2.21                     | 0.41              |
| 1:F:220:ILE:HD12 | 1:F:296:THR:HG21 | 2.02                     | 0.41              |
| 1:G:23:LEU:CD2   | 1:G:74:VAL:HG13  | 2.50                     | 0.41              |
| 1:G:193:MET:HG2  | 1:G:374:GLY:N    | 2.33                     | 0.41              |
| 1:G:202:PRO:C    | 1:G:204:PHE:H    | 2.24                     | 0.41              |
| 1:G:336:VAL:O    | 1:G:337:GLY:C    | 2.59                     | 0.41              |
| 1:G:384:ALA:C    | 1:G:385:THR:HG23 | 2.41                     | 0.41              |
| 1:G:406:ALA:HA   | 1:G:496:PRO:CB   | 2.50                     | 0.41              |
| 1:G:455:VAL:HG13 | 1:G:460:GLU:HB2  | 2.03                     | 0.41              |
| 1:H:82:ASN:O     | 1:H:86:GLY:N     | 2.52                     | 0.41              |
| 1:H:295:LEU:HD13 | 1:H:295:LEU:C    | 2.41                     | 0.41              |
| 1:H:458:CYS:SG   | 1:H:480:ALA:HB1  | 2.60                     | 0.41              |
| 1:H:461:GLU:HA   | 1:H:462:PRO:HD3  | 1.88                     | 0.41              |
| 1:I:266:THR:HG21 | 1:I:273:VAL:H    | 1.85                     | 0.41              |
| 1:J:144:ILE:HG23 | 1:J:403:THR:CG2  | 2.51                     | 0.41              |
| 1:J:182:GLY:O    | 1:J:183:LEU:O    | 2.39                     | 0.41              |
| 1:K:182:GLY:HA2  | 1:K:383:ALA:HB3  | 2.02                     | 0.41              |
| 1:K:200:LEU:HG   | 1:K:276:VAL:HA   | 2.02                     | 0.41              |
| 1:K:235:PRO:CG   | 1:K:310:GLU:HA   | 2.35                     | 0.41              |
| 1:K:326:ASN:HD22 | 1:K:329:THR:HB   | 1.86                     | 0.41              |
| 1:L:77:VAL:HG23  | 1:L:510:VAL:HG21 | 2.03                     | 0.41              |
| 1:L:192:GLY:O    | 1:L:375:GLY:HA3  | 2.07                     | 0.41              |
| 1:L:333:ILE:HG21 | 1:L:378:VAL:CG2  | 2.36                     | 0.41              |
| 1:L:517:THR:HG21 | 1:M:39:VAL:HG21  | 1.97                     | 0.41              |
| 1:L:524:LEU:HD12 | 1:L:524:LEU:HA   | 1.87                     | 0.41              |
| 1:A:193:MET:C    | 1:A:375:GLY:HA2  | 2.42                     | 0.41              |
| 1:A:336:VAL:O    | 1:A:337:GLY:C    | 2.59                     | 0.41              |
| 1:B:176:THR:HG22 | 1:B:177:VAL:H    | 1.84                     | 0.41              |
| 1:C:41:ASP:OD2   | 1:D:522:THR:CB   | 2.69                     | 0.41              |
| 1:C:336:VAL:O    | 1:C:337:GLY:C    | 2.59                     | 0.41              |
| 1:D:140:ASP:OD2  | 1:D:142:LYS:HB3  | 2.21                     | 0.41              |
| 1:D:193:MET:C    | 1:D:375:GLY:HA2  | 2.42                     | 0.41              |
| 1:D:242:LYS:O    | 1:D:243:ALA:HB3  | 2.21                     | 0.41              |
| 1:E:27:VAL:HG12  | 1:E:90:THR:HG23  | 2.03                     | 0.41              |
| 1:E:295:LEU:O    | 1:E:295:LEU:HD13 | 2.21                     | 0.41              |
| 1:G:140:ASP:OD2  | 1:G:142:LYS:HB3  | 2.20                     | 0.41              |
| 1:G:409:GLU:OE2  | 1:G:498:LYS:HD2  | 2.21                     | 0.41              |
| 1:G:466:ALA:O    | 1:G:470:LYS:HG3  | 2.21                     | 0.41              |
| 1:H:37:ASN:HD21  | 1:H:51:LYS:HE3   | 1.86                     | 0.41              |
| 1:I:182:GLY:O    | 1:I:183:LEU:O    | 2.39                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:326:ASN:HD22 | 1:I:329:THR:HB   | 1.86                     | 0.41              |
| 1:J:200:LEU:HG   | 1:J:276:VAL:HA   | 2.02                     | 0.41              |
| 1:K:37:ASN:HD21  | 1:K:51:LYS:HE3   | 1.86                     | 0.41              |
| 1:K:182:GLY:O    | 1:K:183:LEU:O    | 2.39                     | 0.41              |
| 1:K:455:VAL:HG13 | 1:K:460:GLU:HB2  | 2.02                     | 0.41              |
| 1:L:324:VAL:O    | 1:L:331:THR:HG22 | 2.21                     | 0.41              |
| 1:L:326:ASN:HD22 | 1:L:329:THR:HB   | 1.86                     | 0.41              |
| 1:M:37:ASN:HD21  | 1:M:51:LYS:HE3   | 1.86                     | 0.41              |
| 1:M:326:ASN:HD22 | 1:M:329:THR:HB   | 1.86                     | 0.41              |
| 1:N:326:ASN:HD22 | 1:N:329:THR:HB   | 1.86                     | 0.41              |
| 1:A:104:LEU:HD23 | 1:A:104:LEU:HA   | 1.94                     | 0.40              |
| 1:A:461:GLU:HA   | 1:A:462:PRO:HD3  | 1.89                     | 0.40              |
| 1:C:242:LYS:O    | 1:C:243:ALA:HB3  | 2.21                     | 0.40              |
| 1:C:384:ALA:C    | 1:C:385:THR:HG23 | 2.41                     | 0.40              |
| 1:D:27:VAL:HG12  | 1:D:90:THR:HG23  | 2.03                     | 0.40              |
| 1:F:466:ALA:O    | 1:F:470:LYS:HG3  | 2.21                     | 0.40              |
| 1:J:202:PRO:C    | 1:J:204:PHE:H    | 2.24                     | 0.40              |
| 1:K:182:GLY:HA2  | 1:K:383:ALA:CB   | 2.52                     | 0.40              |
| 1:K:295:LEU:HD13 | 1:K:295:LEU:C    | 2.41                     | 0.40              |
| 1:L:216:GLU:C    | 1:L:218:PRO:HD3  | 2.41                     | 0.40              |
| 1:L:281:PHE:CE2  | 1:M:183:LEU:HB3  | 2.56                     | 0.40              |
| 1:M:77:VAL:HG23  | 1:M:510:VAL:HG21 | 2.03                     | 0.40              |
| 1:M:266:THR:HG21 | 1:M:273:VAL:H    | 1.85                     | 0.40              |
| 1:M:295:LEU:HD13 | 1:M:295:LEU:C    | 2.41                     | 0.40              |
| 1:M:517:THR:HG21 | 1:N:39:VAL:HG21  | 1.97                     | 0.40              |
| 1:N:302:SER:H    | 1:N:307:MET:HE1  | 1.86                     | 0.40              |
| 1:A:73:MET:HG3   | 1:G:47:PRO:HD3   | 2.03                     | 0.40              |
| 1:B:179:ASP:HB3  | 1:B:389:MET:CE   | 2.52                     | 0.40              |
| 1:D:409:GLU:OE2  | 1:D:498:LYS:HD2  | 2.21                     | 0.40              |
| 1:E:41:ASP:OD2   | 1:F:522:THR:CB   | 2.69                     | 0.40              |
| 1:E:202:PRO:C    | 1:E:204:PHE:H    | 2.24                     | 0.40              |
| 1:F:193:MET:C    | 1:F:375:GLY:HA2  | 2.42                     | 0.40              |
| 1:F:302:SER:O    | 1:F:307:MET:HE3  | 2.21                     | 0.40              |
| 1:H:218:PRO:HD2  | 1:H:320:ALA:O    | 2.21                     | 0.40              |
| 1:H:266:THR:HG22 | 1:H:273:VAL:H    | 1.87                     | 0.40              |
| 1:I:216:GLU:C    | 1:I:218:PRO:HD3  | 2.41                     | 0.40              |
| 1:J:326:ASN:HD22 | 1:J:329:THR:HB   | 1.86                     | 0.40              |
| 1:K:144:ILE:HG23 | 1:K:403:THR:CG2  | 2.51                     | 0.40              |
| 1:K:160:LYS:HB2  | 1:K:160:LYS:HZ2  | 1.85                     | 0.40              |
| 1:K:524:LEU:HD12 | 1:K:524:LEU:HA   | 1.87                     | 0.40              |
| 1:M:69:MET:CE    | 1:N:41:ASP:HB2   | 2.36                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:82:ASN:O     | 1:N:86:GLY:N     | 2.52                     | 0.40              |
| 1:N:302:SER:H    | 1:N:307:MET:CE   | 2.35                     | 0.40              |
| 1:B:182:GLY:O    | 1:B:183:LEU:O    | 2.38                     | 0.40              |
| 1:B:242:LYS:O    | 1:B:243:ALA:HB3  | 2.21                     | 0.40              |
| 1:B:336:VAL:O    | 1:B:337:GLY:C    | 2.59                     | 0.40              |
| 1:E:242:LYS:O    | 1:E:243:ALA:HB3  | 2.21                     | 0.40              |
| 1:F:182:GLY:O    | 1:F:183:LEU:O    | 2.39                     | 0.40              |
| 1:F:384:ALA:C    | 1:F:385:THR:HG23 | 2.41                     | 0.40              |
| 1:G:179:ASP:HB3  | 1:G:389:MET:CE   | 2.52                     | 0.40              |
| 1:H:216:GLU:C    | 1:H:218:PRO:HD3  | 2.41                     | 0.40              |
| 1:I:324:VAL:O    | 1:I:331:THR:HG22 | 2.21                     | 0.40              |
| 1:K:202:PRO:C    | 1:K:204:PHE:H    | 2.24                     | 0.40              |
| 1:K:517:THR:OG1  | 1:L:39:VAL:CG2   | 2.69                     | 0.40              |
| 1:M:218:PRO:HD2  | 1:M:320:ALA:O    | 2.21                     | 0.40              |
| 1:M:266:THR:HG22 | 1:M:273:VAL:H    | 1.87                     | 0.40              |
| 1:M:281:PHE:CE2  | 1:N:183:LEU:HB3  | 2.56                     | 0.40              |
| 1:N:218:PRO:HD2  | 1:N:320:ALA:O    | 2.21                     | 0.40              |
| 1:N:295:LEU:HD13 | 1:N:295:LEU:C    | 2.41                     | 0.40              |
| 1:A:27:VAL:HG12  | 1:A:90:THR:HG23  | 2.03                     | 0.40              |
| 1:A:41:ASP:CA    | 1:B:69:MET:HE3   | 2.48                     | 0.40              |
| 1:A:112:ASN:HA   | 1:A:113:PRO:HD3  | 1.98                     | 0.40              |
| 1:B:124:VAL:O    | 1:B:128:VAL:HG23 | 2.22                     | 0.40              |
| 1:B:295:LEU:HD13 | 1:B:295:LEU:O    | 2.21                     | 0.40              |
| 1:C:242:LYS:C    | 1:C:244:GLY:N    | 2.73                     | 0.40              |
| 1:D:455:VAL:HG13 | 1:D:460:GLU:HB2  | 2.03                     | 0.40              |
| 1:E:179:ASP:HB3  | 1:E:389:MET:CE   | 2.52                     | 0.40              |
| 1:E:193:MET:C    | 1:E:375:GLY:HA2  | 2.42                     | 0.40              |
| 1:F:27:VAL:HG12  | 1:F:90:THR:HG23  | 2.03                     | 0.40              |
| 1:F:41:ASP:OD2   | 1:G:522:THR:CB   | 2.69                     | 0.40              |
| 1:F:140:ASP:OD2  | 1:F:142:LYS:HB3  | 2.21                     | 0.40              |
| 1:H:202:PRO:C    | 1:H:204:PHE:H    | 2.24                     | 0.40              |
| 1:J:136:VAL:HG12 | 1:J:137:PRO:HD3  | 2.03                     | 0.40              |
| 1:J:295:LEU:C    | 1:J:295:LEU:HD13 | 2.41                     | 0.40              |
| 1:K:266:THR:HG21 | 1:K:273:VAL:H    | 1.85                     | 0.40              |
| 1:L:182:GLY:O    | 1:L:183:LEU:O    | 2.39                     | 0.40              |
| 1:L:200:LEU:HG   | 1:L:276:VAL:HA   | 2.02                     | 0.40              |
| 1:N:324:VAL:O    | 1:N:331:THR:HG22 | 2.21                     | 0.40              |
| 1:N:455:VAL:HG13 | 1:N:460:GLU:HB2  | 2.03                     | 0.40              |
| 1:A:124:VAL:O    | 1:A:128:VAL:HG23 | 2.22                     | 0.40              |
| 1:A:179:ASP:HB3  | 1:A:389:MET:CE   | 2.52                     | 0.40              |
| 1:A:220:ILE:HD12 | 1:A:296:THR:HG21 | 2.02                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:23:LEU:CD2   | 1:C:74:VAL:HG13  | 2.50                     | 0.40              |
| 1:C:124:VAL:O    | 1:C:128:VAL:HG23 | 2.22                     | 0.40              |
| 1:C:295:LEU:HD13 | 1:C:295:LEU:C    | 2.42                     | 0.40              |
| 1:D:179:ASP:HB3  | 1:D:389:MET:CE   | 2.52                     | 0.40              |
| 1:D:336:VAL:O    | 1:D:337:GLY:C    | 2.59                     | 0.40              |
| 1:E:124:VAL:O    | 1:E:128:VAL:HG23 | 2.22                     | 0.40              |
| 1:E:455:VAL:HG13 | 1:E:460:GLU:HB2  | 2.03                     | 0.40              |
| 1:G:112:ASN:HA   | 1:G:113:PRO:HD3  | 1.98                     | 0.40              |
| 1:G:342:ILE:O    | 1:G:346:VAL:HG23 | 2.21                     | 0.40              |
| 1:H:326:ASN:HD22 | 1:H:329:THR:HB   | 1.86                     | 0.40              |
| 1:H:517:THR:OG1  | 1:I:39:VAL:CG2   | 2.69                     | 0.40              |
| 1:I:517:THR:OG1  | 1:J:39:VAL:CG2   | 2.69                     | 0.40              |
| 1:J:266:THR:HG21 | 1:J:273:VAL:H    | 1.85                     | 0.40              |
| 1:J:517:THR:OG1  | 1:K:39:VAL:CG2   | 2.69                     | 0.40              |
| 1:K:77:VAL:HG23  | 1:K:510:VAL:HG21 | 2.03                     | 0.40              |
| 1:K:82:ASN:O     | 1:K:86:GLY:N     | 2.52                     | 0.40              |
| 1:L:266:THR:HG21 | 1:L:273:VAL:H    | 1.85                     | 0.40              |
| 1:M:235:PRO:CG   | 1:M:310:GLU:HA   | 2.35                     | 0.40              |
| 1:N:144:ILE:HG23 | 1:N:403:THR:CG2  | 2.51                     | 0.40              |
| 1:N:177:VAL:HG21 | 1:N:397:GLU:HG2  | 2.00                     | 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     | 517/547 (94%) | 480 (93%) | 27 (5%) | 10 (2%)  | 8 38        |
| 1   | B     | 517/547 (94%) | 480 (93%) | 27 (5%) | 10 (2%)  | 8 38        |
| 1   | C     | 517/547 (94%) | 480 (93%) | 27 (5%) | 10 (2%)  | 8 38        |
| 1   | D     | 517/547 (94%) | 480 (93%) | 27 (5%) | 10 (2%)  | 8 38        |

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| Mol | Chain | Analysed        | Favoured   | Allowed  | Outliers | Percentiles |    |
|-----|-------|-----------------|------------|----------|----------|-------------|----|
| 1   | E     | 517/547 (94%)   | 480 (93%)  | 27 (5%)  | 10 (2%)  | 8           | 38 |
| 1   | F     | 517/547 (94%)   | 480 (93%)  | 27 (5%)  | 10 (2%)  | 8           | 38 |
| 1   | G     | 517/547 (94%)   | 480 (93%)  | 27 (5%)  | 10 (2%)  | 8           | 38 |
| 1   | H     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | I     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | J     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | K     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | L     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | M     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| 1   | N     | 517/547 (94%)   | 480 (93%)  | 25 (5%)  | 12 (2%)  | 6           | 34 |
| All | All   | 7238/7658 (94%) | 6720 (93%) | 364 (5%) | 154 (2%) | 10          | 36 |

All (154) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 410 | GLY  |
| 1   | B     | 410 | GLY  |
| 1   | C     | 410 | GLY  |
| 1   | D     | 410 | GLY  |
| 1   | E     | 410 | GLY  |
| 1   | F     | 410 | GLY  |
| 1   | G     | 410 | GLY  |
| 1   | A     | 183 | LEU  |
| 1   | A     | 256 | GLY  |
| 1   | A     | 271 | VAL  |
| 1   | B     | 183 | LEU  |
| 1   | B     | 256 | GLY  |
| 1   | B     | 271 | VAL  |
| 1   | C     | 183 | LEU  |
| 1   | C     | 256 | GLY  |
| 1   | C     | 271 | VAL  |
| 1   | D     | 183 | LEU  |
| 1   | D     | 256 | GLY  |
| 1   | D     | 271 | VAL  |
| 1   | E     | 183 | LEU  |
| 1   | E     | 256 | GLY  |
| 1   | E     | 271 | VAL  |
| 1   | F     | 183 | LEU  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | F            | 256        | GLY         |
| 1          | F            | 271        | VAL         |
| 1          | G            | 183        | LEU         |
| 1          | G            | 256        | GLY         |
| 1          | G            | 271        | VAL         |
| 1          | H            | 183        | LEU         |
| 1          | H            | 256        | GLY         |
| 1          | H            | 382        | GLY         |
| 1          | I            | 183        | LEU         |
| 1          | I            | 256        | GLY         |
| 1          | I            | 382        | GLY         |
| 1          | J            | 183        | LEU         |
| 1          | J            | 256        | GLY         |
| 1          | J            | 382        | GLY         |
| 1          | K            | 183        | LEU         |
| 1          | K            | 256        | GLY         |
| 1          | K            | 382        | GLY         |
| 1          | L            | 183        | LEU         |
| 1          | L            | 256        | GLY         |
| 1          | L            | 382        | GLY         |
| 1          | M            | 183        | LEU         |
| 1          | M            | 256        | GLY         |
| 1          | M            | 382        | GLY         |
| 1          | N            | 183        | LEU         |
| 1          | N            | 256        | GLY         |
| 1          | N            | 382        | GLY         |
| 1          | A            | 202        | PRO         |
| 1          | A            | 385        | THR         |
| 1          | B            | 202        | PRO         |
| 1          | B            | 385        | THR         |
| 1          | C            | 202        | PRO         |
| 1          | C            | 385        | THR         |
| 1          | D            | 202        | PRO         |
| 1          | D            | 385        | THR         |
| 1          | E            | 202        | PRO         |
| 1          | E            | 385        | THR         |
| 1          | F            | 202        | PRO         |
| 1          | F            | 385        | THR         |
| 1          | G            | 202        | PRO         |
| 1          | G            | 385        | THR         |
| 1          | H            | 202        | PRO         |
| 1          | H            | 271        | VAL         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | H            | 385        | THR         |
| 1          | I            | 202        | PRO         |
| 1          | I            | 271        | VAL         |
| 1          | I            | 385        | THR         |
| 1          | J            | 202        | PRO         |
| 1          | J            | 271        | VAL         |
| 1          | J            | 385        | THR         |
| 1          | K            | 202        | PRO         |
| 1          | K            | 271        | VAL         |
| 1          | K            | 385        | THR         |
| 1          | L            | 202        | PRO         |
| 1          | L            | 271        | VAL         |
| 1          | L            | 385        | THR         |
| 1          | M            | 202        | PRO         |
| 1          | M            | 271        | VAL         |
| 1          | M            | 385        | THR         |
| 1          | N            | 202        | PRO         |
| 1          | N            | 271        | VAL         |
| 1          | N            | 385        | THR         |
| 1          | A            | 253        | ASP         |
| 1          | B            | 253        | ASP         |
| 1          | C            | 253        | ASP         |
| 1          | D            | 253        | ASP         |
| 1          | E            | 253        | ASP         |
| 1          | F            | 253        | ASP         |
| 1          | G            | 253        | ASP         |
| 1          | H            | 337        | GLY         |
| 1          | H            | 383        | ALA         |
| 1          | I            | 337        | GLY         |
| 1          | I            | 383        | ALA         |
| 1          | J            | 337        | GLY         |
| 1          | J            | 383        | ALA         |
| 1          | K            | 337        | GLY         |
| 1          | K            | 383        | ALA         |
| 1          | L            | 337        | GLY         |
| 1          | L            | 383        | ALA         |
| 1          | M            | 337        | GLY         |
| 1          | M            | 383        | ALA         |
| 1          | N            | 337        | GLY         |
| 1          | N            | 383        | ALA         |
| 1          | A            | 184        | GLN         |
| 1          | A            | 201        | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | B            | 184        | GLN         |
| 1          | B            | 201        | SER         |
| 1          | C            | 184        | GLN         |
| 1          | C            | 201        | SER         |
| 1          | D            | 184        | GLN         |
| 1          | D            | 201        | SER         |
| 1          | E            | 184        | GLN         |
| 1          | E            | 201        | SER         |
| 1          | F            | 184        | GLN         |
| 1          | F            | 201        | SER         |
| 1          | G            | 184        | GLN         |
| 1          | G            | 201        | SER         |
| 1          | H            | 184        | GLN         |
| 1          | H            | 253        | ASP         |
| 1          | H            | 384        | ALA         |
| 1          | I            | 184        | GLN         |
| 1          | I            | 253        | ASP         |
| 1          | I            | 384        | ALA         |
| 1          | J            | 184        | GLN         |
| 1          | J            | 253        | ASP         |
| 1          | J            | 384        | ALA         |
| 1          | K            | 184        | GLN         |
| 1          | K            | 253        | ASP         |
| 1          | K            | 384        | ALA         |
| 1          | L            | 184        | GLN         |
| 1          | L            | 253        | ASP         |
| 1          | L            | 384        | ALA         |
| 1          | M            | 184        | GLN         |
| 1          | M            | 253        | ASP         |
| 1          | M            | 384        | ALA         |
| 1          | N            | 184        | GLN         |
| 1          | N            | 253        | ASP         |
| 1          | N            | 384        | ALA         |
| 1          | A            | 382        | GLY         |
| 1          | B            | 382        | GLY         |
| 1          | C            | 382        | GLY         |
| 1          | D            | 382        | GLY         |
| 1          | E            | 382        | GLY         |
| 1          | F            | 382        | GLY         |
| 1          | G            | 382        | GLY         |
| 1          | N            | 201        | SER         |
| 1          | H            | 201        | SER         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | I     | 201 | SER  |
| 1   | J     | 201 | SER  |
| 1   | K     | 201 | SER  |
| 1   | L     | 201 | SER  |
| 1   | M     | 201 | SER  |

### 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     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | B     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | C     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | D     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | E     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | F     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | G     | 404/414 (98%)   | 394 (98%)  | 10 (2%)  | 47 68       |
| 1   | H     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | I     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | J     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | K     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | L     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | M     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| 1   | N     | 404/414 (98%)   | 397 (98%)  | 7 (2%)   | 60 78       |
| All | All   | 5656/5796 (98%) | 5537 (98%) | 119 (2%) | 56 72       |

All (119) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 10  | ASN  |
| 1   | A     | 20  | VAL  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 75         | LYS         |
| 1          | A            | 94         | VAL         |
| 1          | A            | 183        | LEU         |
| 1          | A            | 289        | LEU         |
| 1          | A            | 310        | GLU         |
| 1          | A            | 328        | ASP         |
| 1          | A            | 404        | ARG         |
| 1          | A            | 499        | VAL         |
| 1          | B            | 10         | ASN         |
| 1          | B            | 20         | VAL         |
| 1          | B            | 75         | LYS         |
| 1          | B            | 94         | VAL         |
| 1          | B            | 183        | LEU         |
| 1          | B            | 289        | LEU         |
| 1          | B            | 310        | GLU         |
| 1          | B            | 328        | ASP         |
| 1          | B            | 404        | ARG         |
| 1          | B            | 499        | VAL         |
| 1          | C            | 10         | ASN         |
| 1          | C            | 20         | VAL         |
| 1          | C            | 75         | LYS         |
| 1          | C            | 94         | VAL         |
| 1          | C            | 183        | LEU         |
| 1          | C            | 289        | LEU         |
| 1          | C            | 310        | GLU         |
| 1          | C            | 328        | ASP         |
| 1          | C            | 404        | ARG         |
| 1          | C            | 499        | VAL         |
| 1          | D            | 10         | ASN         |
| 1          | D            | 20         | VAL         |
| 1          | D            | 75         | LYS         |
| 1          | D            | 94         | VAL         |
| 1          | D            | 183        | LEU         |
| 1          | D            | 289        | LEU         |
| 1          | D            | 310        | GLU         |
| 1          | D            | 328        | ASP         |
| 1          | D            | 404        | ARG         |
| 1          | D            | 499        | VAL         |
| 1          | E            | 10         | ASN         |
| 1          | E            | 20         | VAL         |
| 1          | E            | 75         | LYS         |
| 1          | E            | 94         | VAL         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 183        | LEU         |
| 1          | E            | 289        | LEU         |
| 1          | E            | 310        | GLU         |
| 1          | E            | 328        | ASP         |
| 1          | E            | 404        | ARG         |
| 1          | E            | 499        | VAL         |
| 1          | F            | 10         | ASN         |
| 1          | F            | 20         | VAL         |
| 1          | F            | 75         | LYS         |
| 1          | F            | 94         | VAL         |
| 1          | F            | 183        | LEU         |
| 1          | F            | 289        | LEU         |
| 1          | F            | 310        | GLU         |
| 1          | F            | 328        | ASP         |
| 1          | F            | 404        | ARG         |
| 1          | F            | 499        | VAL         |
| 1          | G            | 10         | ASN         |
| 1          | G            | 20         | VAL         |
| 1          | G            | 75         | LYS         |
| 1          | G            | 94         | VAL         |
| 1          | G            | 183        | LEU         |
| 1          | G            | 289        | LEU         |
| 1          | G            | 310        | GLU         |
| 1          | G            | 328        | ASP         |
| 1          | G            | 404        | ARG         |
| 1          | G            | 499        | VAL         |
| 1          | H            | 20         | VAL         |
| 1          | H            | 75         | LYS         |
| 1          | H            | 94         | VAL         |
| 1          | H            | 183        | LEU         |
| 1          | H            | 289        | LEU         |
| 1          | H            | 404        | ARG         |
| 1          | H            | 499        | VAL         |
| 1          | I            | 20         | VAL         |
| 1          | I            | 75         | LYS         |
| 1          | I            | 94         | VAL         |
| 1          | I            | 183        | LEU         |
| 1          | I            | 289        | LEU         |
| 1          | I            | 404        | ARG         |
| 1          | I            | 499        | VAL         |
| 1          | J            | 20         | VAL         |
| 1          | J            | 75         | LYS         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | J     | 94  | VAL  |
| 1   | J     | 183 | LEU  |
| 1   | J     | 289 | LEU  |
| 1   | J     | 404 | ARG  |
| 1   | J     | 499 | VAL  |
| 1   | K     | 20  | VAL  |
| 1   | K     | 75  | LYS  |
| 1   | K     | 94  | VAL  |
| 1   | K     | 183 | LEU  |
| 1   | K     | 289 | LEU  |
| 1   | K     | 404 | ARG  |
| 1   | K     | 499 | VAL  |
| 1   | L     | 20  | VAL  |
| 1   | L     | 75  | LYS  |
| 1   | L     | 94  | VAL  |
| 1   | L     | 183 | LEU  |
| 1   | L     | 289 | LEU  |
| 1   | L     | 404 | ARG  |
| 1   | L     | 499 | VAL  |
| 1   | M     | 20  | VAL  |
| 1   | M     | 75  | LYS  |
| 1   | M     | 94  | VAL  |
| 1   | M     | 183 | LEU  |
| 1   | M     | 289 | LEU  |
| 1   | M     | 404 | ARG  |
| 1   | M     | 499 | VAL  |
| 1   | N     | 20  | VAL  |
| 1   | N     | 75  | LYS  |
| 1   | N     | 94  | VAL  |
| 1   | N     | 183 | LEU  |
| 1   | N     | 289 | LEU  |
| 1   | N     | 404 | ARG  |
| 1   | N     | 499 | VAL  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (119) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 146 | GLN  |
| 1   | A     | 265 | ASN  |
| 1   | A     | 319 | GLN  |
| 1   | A     | 326 | ASN  |
| 1   | A     | 348 | GLN  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 351        | GLN         |
| 1          | A            | 401        | HIS         |
| 1          | A            | 453        | GLN         |
| 1          | B            | 146        | GLN         |
| 1          | B            | 265        | ASN         |
| 1          | B            | 319        | GLN         |
| 1          | B            | 326        | ASN         |
| 1          | B            | 348        | GLN         |
| 1          | B            | 351        | GLN         |
| 1          | B            | 401        | HIS         |
| 1          | B            | 453        | GLN         |
| 1          | C            | 146        | GLN         |
| 1          | C            | 265        | ASN         |
| 1          | C            | 319        | GLN         |
| 1          | C            | 326        | ASN         |
| 1          | C            | 348        | GLN         |
| 1          | C            | 351        | GLN         |
| 1          | C            | 401        | HIS         |
| 1          | C            | 453        | GLN         |
| 1          | D            | 146        | GLN         |
| 1          | D            | 265        | ASN         |
| 1          | D            | 319        | GLN         |
| 1          | D            | 326        | ASN         |
| 1          | D            | 348        | GLN         |
| 1          | D            | 351        | GLN         |
| 1          | D            | 401        | HIS         |
| 1          | D            | 453        | GLN         |
| 1          | E            | 146        | GLN         |
| 1          | E            | 265        | ASN         |
| 1          | E            | 319        | GLN         |
| 1          | E            | 326        | ASN         |
| 1          | E            | 348        | GLN         |
| 1          | E            | 351        | GLN         |
| 1          | E            | 401        | HIS         |
| 1          | E            | 453        | GLN         |
| 1          | F            | 146        | GLN         |
| 1          | F            | 265        | ASN         |
| 1          | F            | 319        | GLN         |
| 1          | F            | 326        | ASN         |
| 1          | F            | 348        | GLN         |
| 1          | F            | 351        | GLN         |
| 1          | F            | 401        | HIS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | F            | 453        | GLN         |
| 1          | G            | 146        | GLN         |
| 1          | G            | 265        | ASN         |
| 1          | G            | 319        | GLN         |
| 1          | G            | 326        | ASN         |
| 1          | G            | 348        | GLN         |
| 1          | G            | 351        | GLN         |
| 1          | G            | 401        | HIS         |
| 1          | G            | 453        | GLN         |
| 1          | H            | 37         | ASN         |
| 1          | H            | 146        | GLN         |
| 1          | H            | 265        | ASN         |
| 1          | H            | 319        | GLN         |
| 1          | H            | 326        | ASN         |
| 1          | H            | 348        | GLN         |
| 1          | H            | 351        | GLN         |
| 1          | H            | 401        | HIS         |
| 1          | H            | 453        | GLN         |
| 1          | I            | 37         | ASN         |
| 1          | I            | 146        | GLN         |
| 1          | I            | 265        | ASN         |
| 1          | I            | 319        | GLN         |
| 1          | I            | 326        | ASN         |
| 1          | I            | 348        | GLN         |
| 1          | I            | 351        | GLN         |
| 1          | I            | 401        | HIS         |
| 1          | I            | 453        | GLN         |
| 1          | J            | 37         | ASN         |
| 1          | J            | 146        | GLN         |
| 1          | J            | 265        | ASN         |
| 1          | J            | 319        | GLN         |
| 1          | J            | 326        | ASN         |
| 1          | J            | 348        | GLN         |
| 1          | J            | 351        | GLN         |
| 1          | J            | 401        | HIS         |
| 1          | J            | 453        | GLN         |
| 1          | K            | 37         | ASN         |
| 1          | K            | 146        | GLN         |
| 1          | K            | 265        | ASN         |
| 1          | K            | 319        | GLN         |
| 1          | K            | 326        | ASN         |
| 1          | K            | 348        | GLN         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | K     | 351 | GLN  |
| 1   | K     | 401 | HIS  |
| 1   | K     | 453 | GLN  |
| 1   | L     | 37  | ASN  |
| 1   | L     | 146 | GLN  |
| 1   | L     | 265 | ASN  |
| 1   | L     | 319 | GLN  |
| 1   | L     | 326 | ASN  |
| 1   | L     | 348 | GLN  |
| 1   | L     | 351 | GLN  |
| 1   | L     | 401 | HIS  |
| 1   | L     | 453 | GLN  |
| 1   | M     | 37  | ASN  |
| 1   | M     | 146 | GLN  |
| 1   | M     | 265 | ASN  |
| 1   | M     | 319 | GLN  |
| 1   | M     | 326 | ASN  |
| 1   | M     | 348 | GLN  |
| 1   | M     | 351 | GLN  |
| 1   | M     | 401 | HIS  |
| 1   | M     | 453 | GLN  |
| 1   | N     | 37  | ASN  |
| 1   | N     | 146 | GLN  |
| 1   | N     | 265 | ASN  |
| 1   | N     | 319 | GLN  |
| 1   | N     | 326 | ASN  |
| 1   | N     | 348 | GLN  |
| 1   | N     | 351 | GLN  |
| 1   | N     | 401 | HIS  |
| 1   | N     | 453 | 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](#)

Of 21 ligands modelled in this entry, 14 are monoatomic - leaving 7 for Mogul analysis.

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

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 4   | ATP  | E     | 551 | 2,3  | 26,33,33     | 0.92 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | F     | 551 | 2,3  | 26,33,33     | 0.93 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | A     | 551 | 2,3  | 26,33,33     | 0.92 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | G     | 551 | 2,3  | 26,33,33     | 0.92 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | B     | 551 | 2,3  | 26,33,33     | 0.92 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | D     | 551 | 2,3  | 26,33,33     | 0.93 | 0        | 31,52,52    | 1.26 | 3 (9%)   |
| 4   | ATP  | C     | 551 | 2,3  | 26,33,33     | 0.93 | 0        | 31,52,52    | 1.26 | 3 (9%)   |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions   | Rings   |
|-----|------|-------|-----|------|---------|------------|---------|
| 4   | ATP  | E     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | F     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | A     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | G     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | B     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | D     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |
| 4   | ATP  | C     | 551 | 2,3  | -       | 3/18/38/38 | 0/3/3/3 |

There are no bond length outliers.

All (21) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 4   | A     | 551 | ATP  | C5-C6-N6    | 2.97  | 124.86      | 120.35   |
| 4   | B     | 551 | ATP  | C5-C6-N6    | 2.96  | 124.86      | 120.35   |
| 4   | F     | 551 | ATP  | C5-C6-N6    | 2.96  | 124.86      | 120.35   |
| 4   | G     | 551 | ATP  | C5-C6-N6    | 2.96  | 124.86      | 120.35   |
| 4   | D     | 551 | ATP  | C5-C6-N6    | 2.96  | 124.85      | 120.35   |
| 4   | E     | 551 | ATP  | C5-C6-N6    | 2.96  | 124.84      | 120.35   |
| 4   | C     | 551 | ATP  | C5-C6-N6    | 2.95  | 124.84      | 120.35   |
| 4   | F     | 551 | ATP  | O4'-C1'-C2' | -2.56 | 103.18      | 106.93   |
| 4   | C     | 551 | ATP  | O4'-C1'-C2' | -2.56 | 103.19      | 106.93   |
| 4   | A     | 551 | ATP  | O4'-C1'-C2' | -2.55 | 103.19      | 106.93   |
| 4   | E     | 551 | ATP  | O4'-C1'-C2' | -2.55 | 103.21      | 106.93   |
| 4   | G     | 551 | ATP  | O4'-C1'-C2' | -2.54 | 103.21      | 106.93   |
| 4   | D     | 551 | ATP  | O4'-C1'-C2' | -2.53 | 103.22      | 106.93   |
| 4   | B     | 551 | ATP  | O4'-C1'-C2' | -2.52 | 103.24      | 106.93   |
| 4   | D     | 551 | ATP  | PB-O3B-PG   | -2.03 | 125.87      | 132.83   |
| 4   | F     | 551 | ATP  | PB-O3B-PG   | -2.03 | 125.88      | 132.83   |
| 4   | C     | 551 | ATP  | PB-O3B-PG   | -2.02 | 125.89      | 132.83   |
| 4   | A     | 551 | ATP  | PB-O3B-PG   | -2.02 | 125.90      | 132.83   |
| 4   | E     | 551 | ATP  | PB-O3B-PG   | -2.01 | 125.91      | 132.83   |
| 4   | G     | 551 | ATP  | PB-O3B-PG   | -2.01 | 125.92      | 132.83   |
| 4   | B     | 551 | ATP  | PB-O3B-PG   | -2.01 | 125.92      | 132.83   |

There are no chirality outliers.

All (21) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms         |
|-----|-------|-----|------|---------------|
| 4   | A     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | B     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | C     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | D     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | E     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | F     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | G     | 551 | ATP  | PB-O3B-PG-O3G |
| 4   | A     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | B     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | C     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | D     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | E     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | F     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | G     | 551 | ATP  | PA-O3A-PB-O1B |
| 4   | A     | 551 | ATP  | PB-O3B-PG-O2G |

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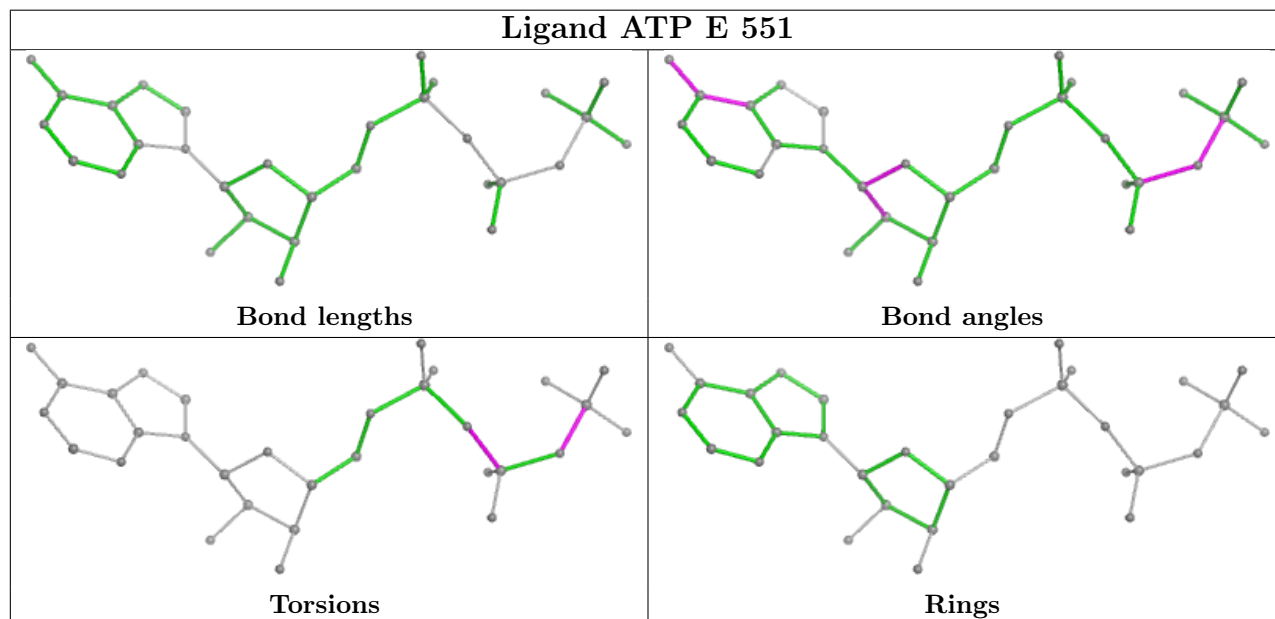
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| Mol | Chain | Res | Type | Atoms         |
|-----|-------|-----|------|---------------|
| 4   | B     | 551 | ATP  | PB-O3B-PG-O2G |
| 4   | C     | 551 | ATP  | PB-O3B-PG-O2G |
| 4   | D     | 551 | ATP  | PB-O3B-PG-O2G |
| 4   | E     | 551 | ATP  | PB-O3B-PG-O2G |
| 4   | F     | 551 | ATP  | PB-O3B-PG-O2G |
| 4   | G     | 551 | ATP  | PB-O3B-PG-O2G |

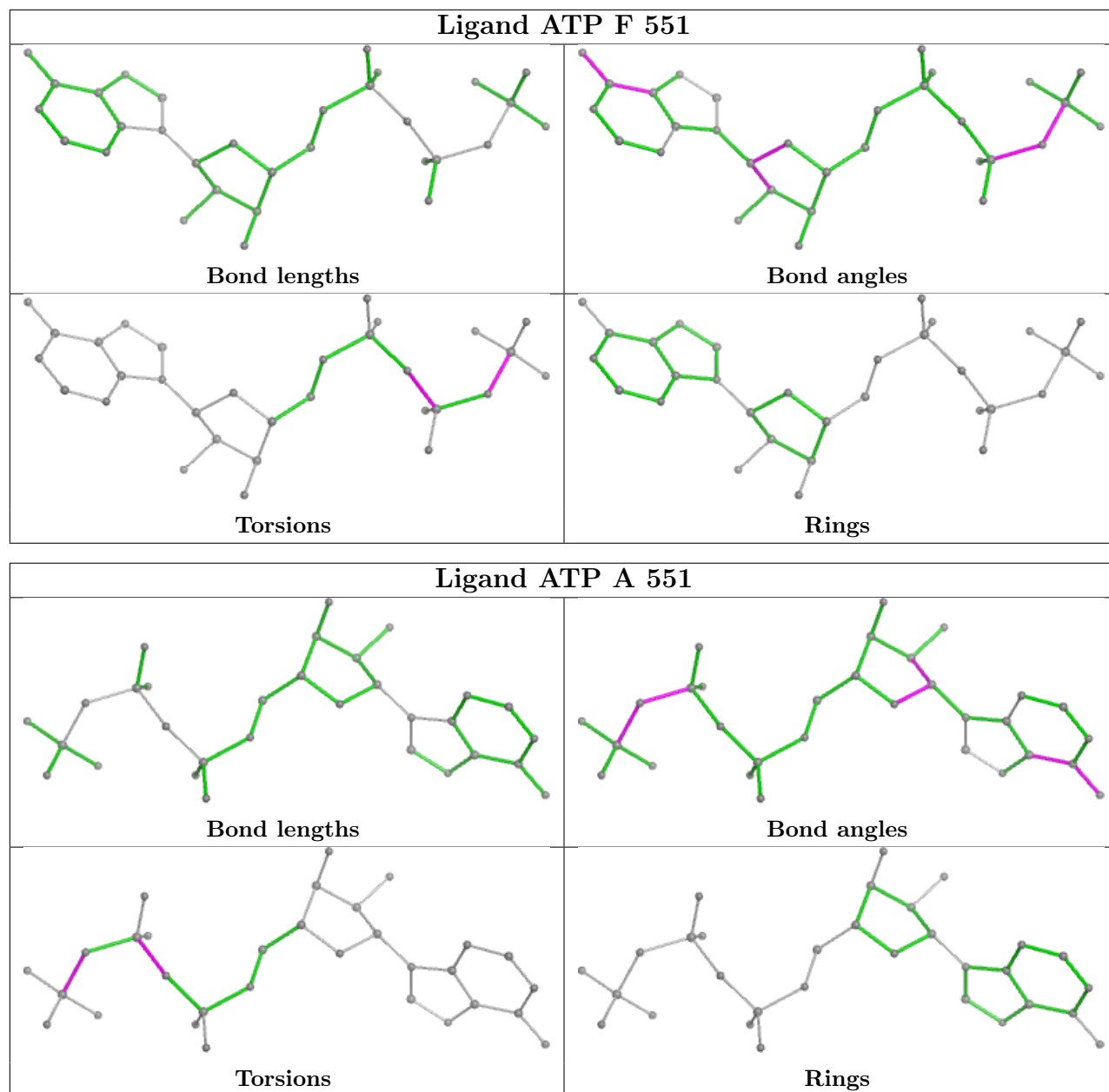
There are no ring outliers.

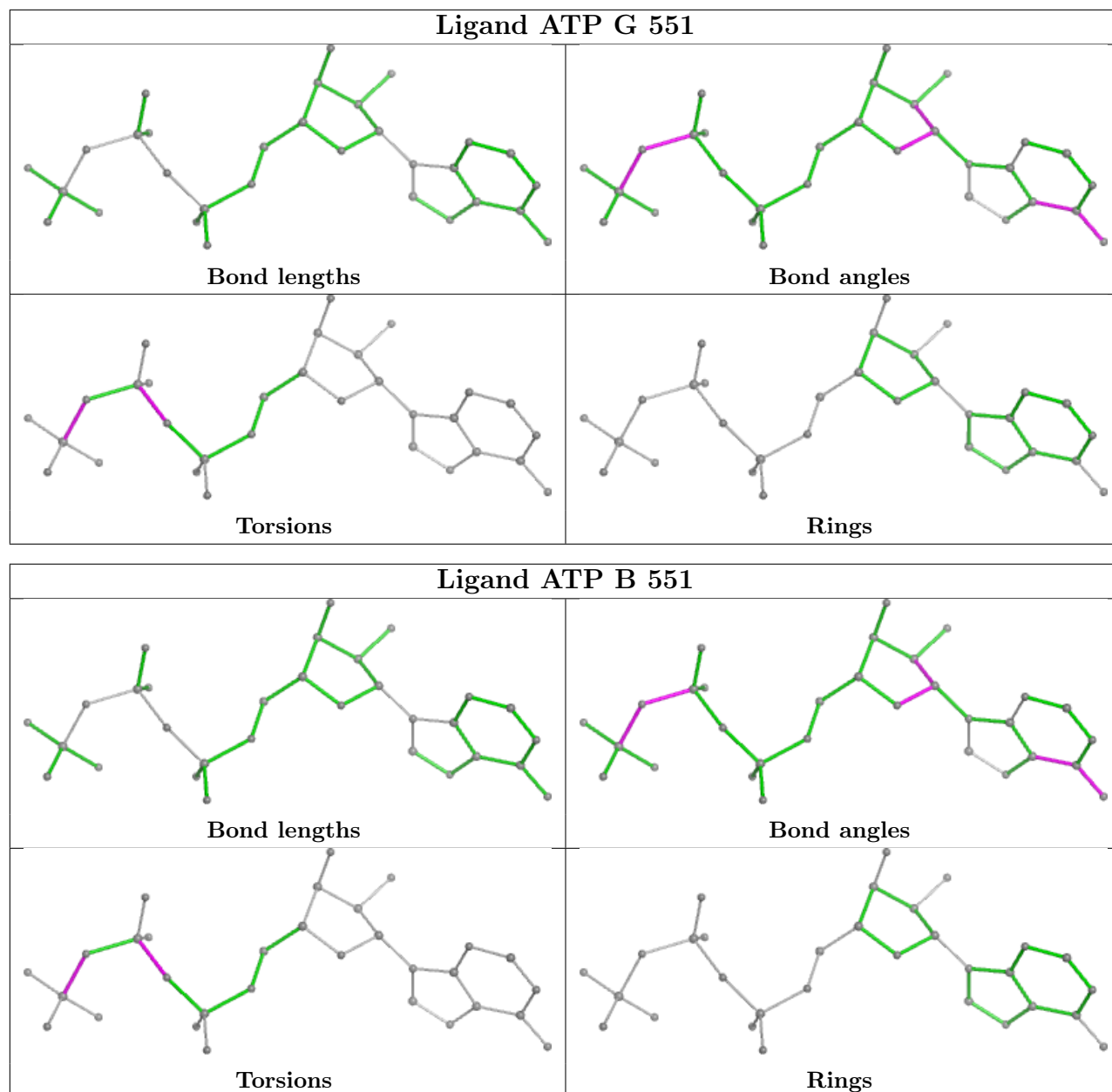
No monomer is involved in short contacts.

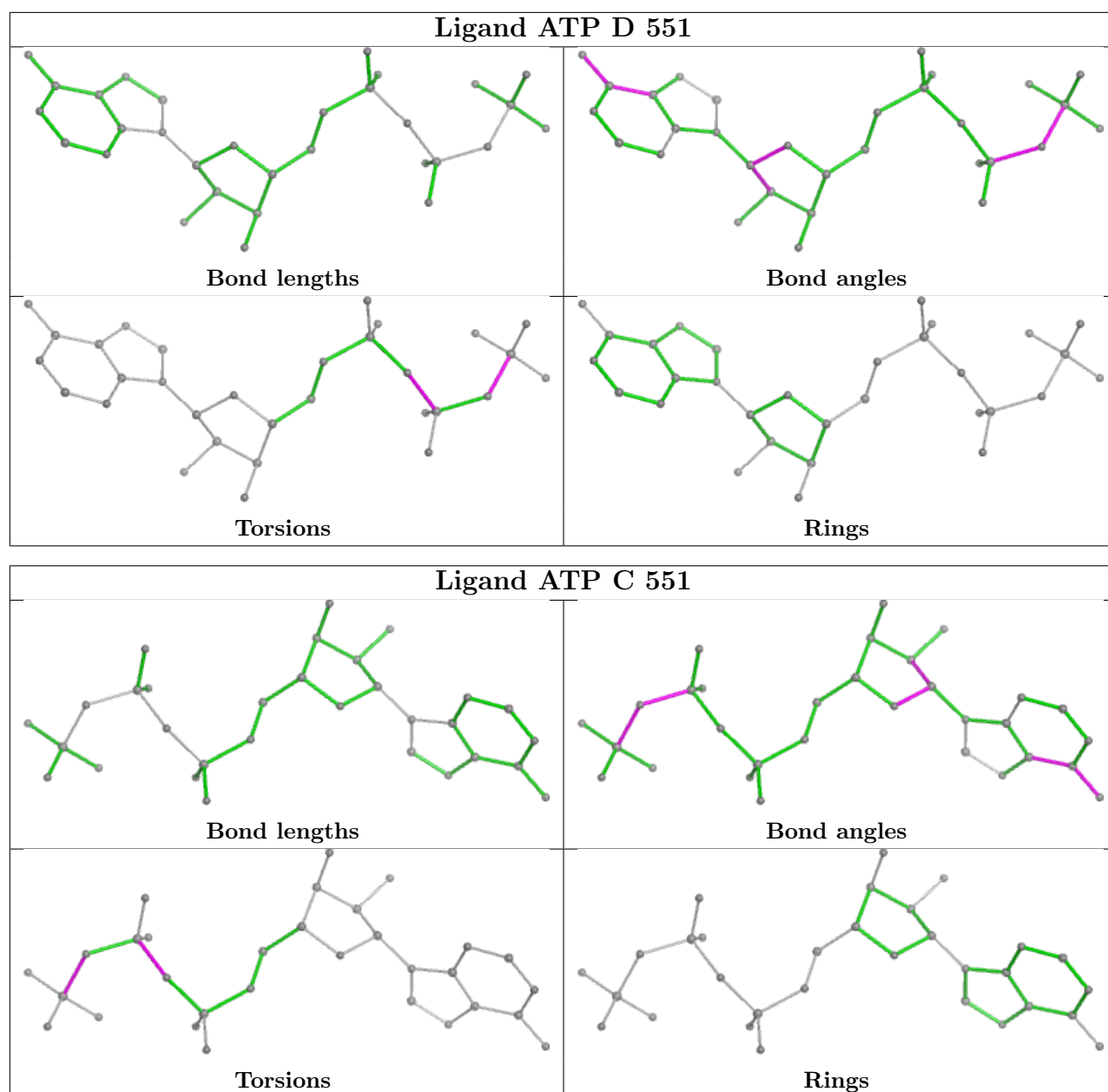
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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











## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1   | H     | 4                |
| 1   | I     | 4                |

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| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1   | J     | 4                |
| 1   | K     | 4                |
| 1   | L     | 4                |
| 1   | M     | 4                |
| 1   | N     | 4                |
| 1   | A     | 3                |
| 1   | B     | 3                |
| 1   | C     | 3                |
| 1   | D     | 3                |
| 1   | E     | 3                |
| 1   | F     | 3                |
| 1   | G     | 3                |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | A     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | B     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | C     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | D     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | E     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | F     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | G     | 373:ALA   | C      | 374:GLY   | N      | 8.15         |
| 1     | A     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | B     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | C     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | D     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | E     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | F     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | G     | 191:GLU   | C      | 192:GLY   | N      | 4.94         |
| 1     | H     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | I     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | J     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | K     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | L     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | M     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | N     | 373:ALA   | C      | 374:GLY   | N      | 3.86         |
| 1     | H     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | I     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | J     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | K     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | L     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | M     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |

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| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | N     | 191:GLU   | C      | 192:GLY   | N      | 3.30         |
| 1     | H     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | I     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | J     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | K     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | L     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | M     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | N     | 136:VAL   | C      | 137:PRO   | N      | 3.13         |
| 1     | A     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | B     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | C     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | D     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | E     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | F     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | G     | 136:VAL   | C      | 137:PRO   | N      | 2.15         |
| 1     | H     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | I     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | J     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | K     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | L     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | M     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |
| 1     | N     | 409:GLU   | C      | 410:GLY   | N      | 0.54         |

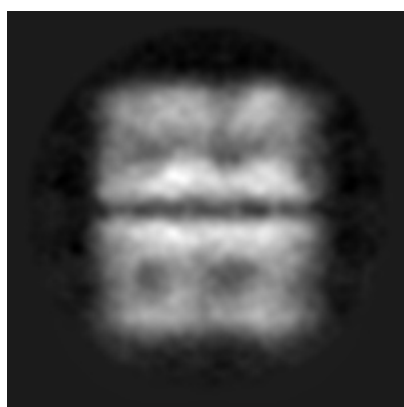
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-1047. These allow visual inspection of the internal detail of the map and identification of artifacts.

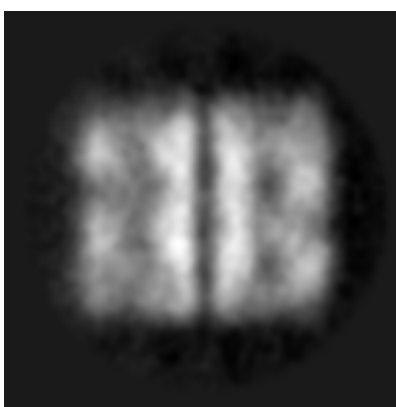
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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

#### 6.1.1 Primary map



X



Y

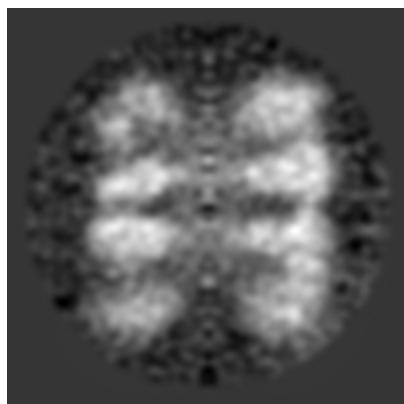


Z

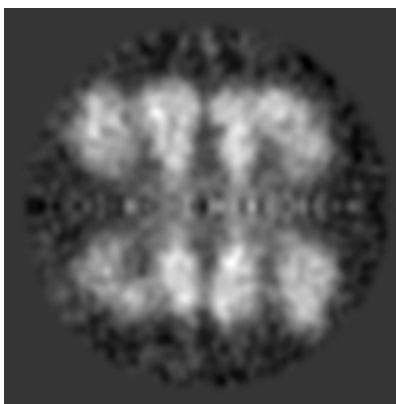
The images above show the map projected in three orthogonal directions.

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

#### 6.2.1 Primary map



X Index: 64



Y Index: 64

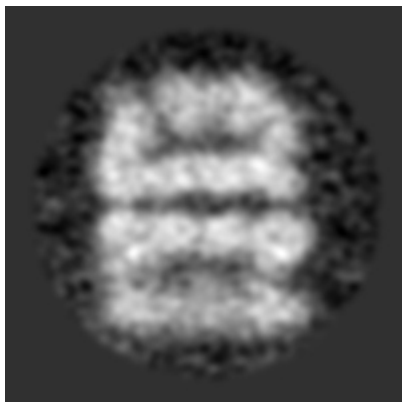


Z Index: 64

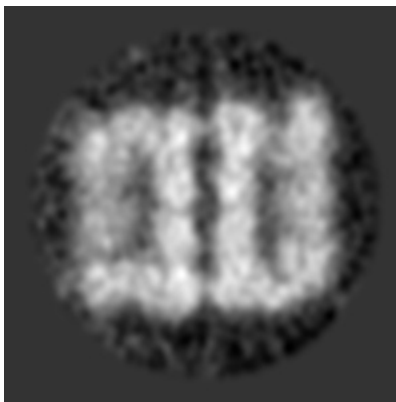
The images above show central slices of the map in three orthogonal directions.

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

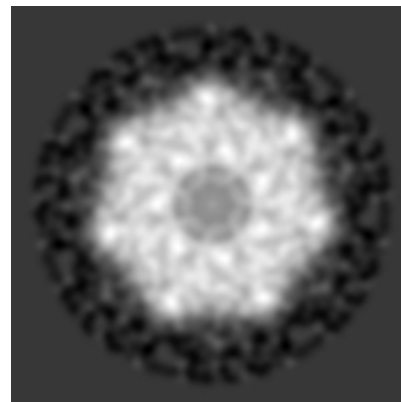
### 6.3.1 Primary map



X Index: 82



Y Index: 81

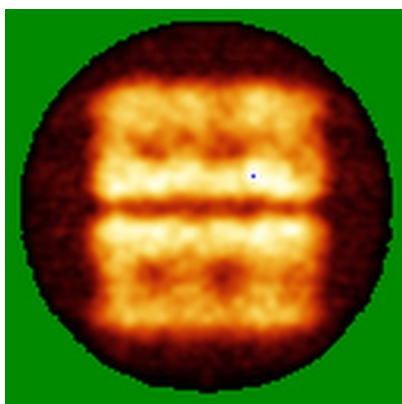


Z Index: 73

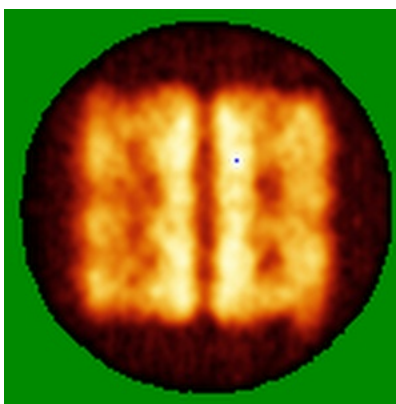
The images above show the largest variance slices of the map in three orthogonal directions.

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

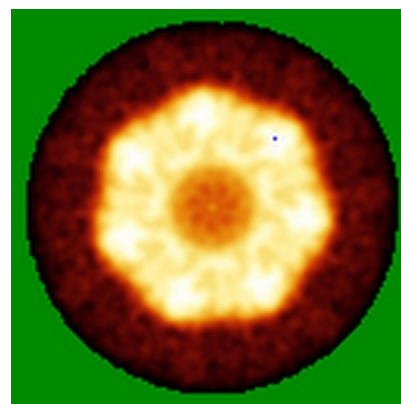
### 6.4.1 Primary map



X



Y

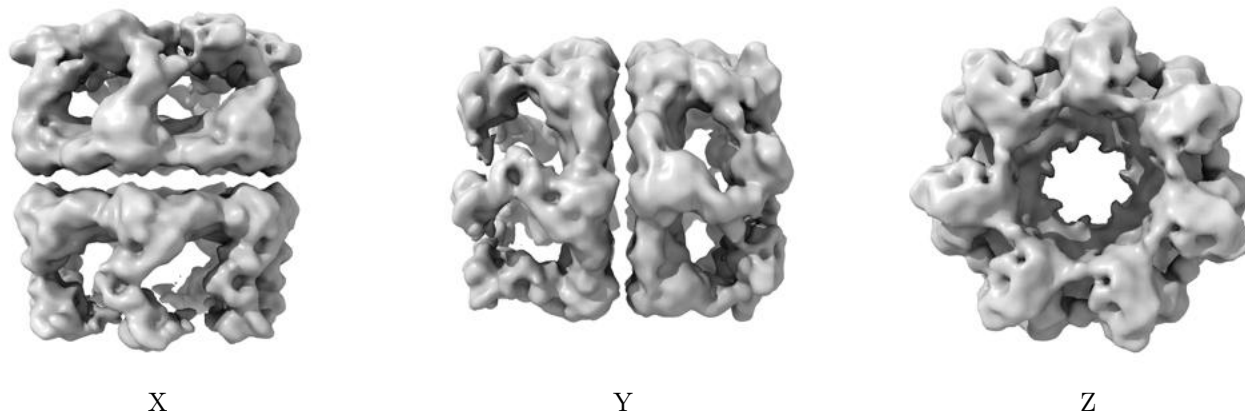


Z

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 0.0839. 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](#)

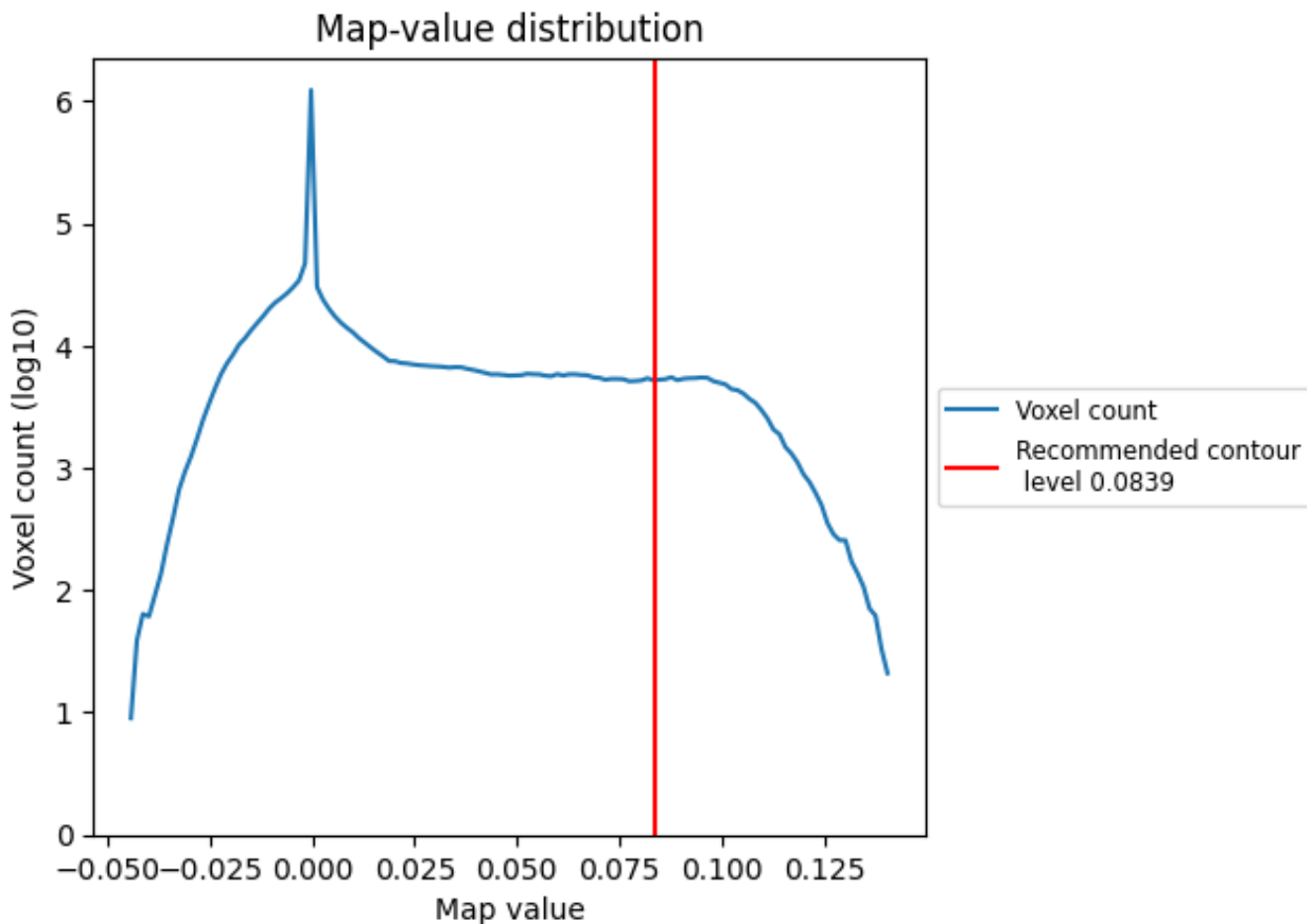
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

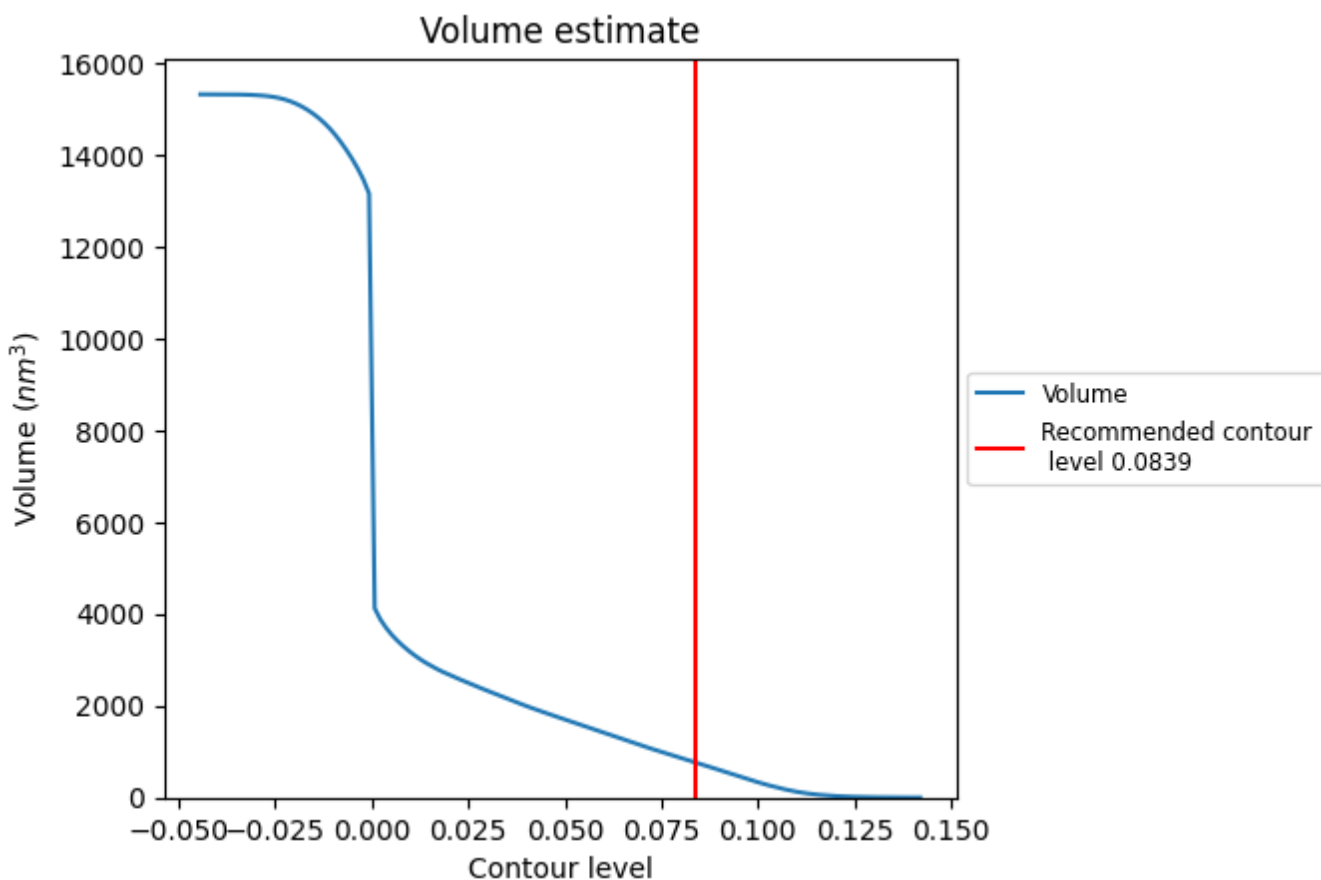
This section contains the results of statistical analysis of the map.

### 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.

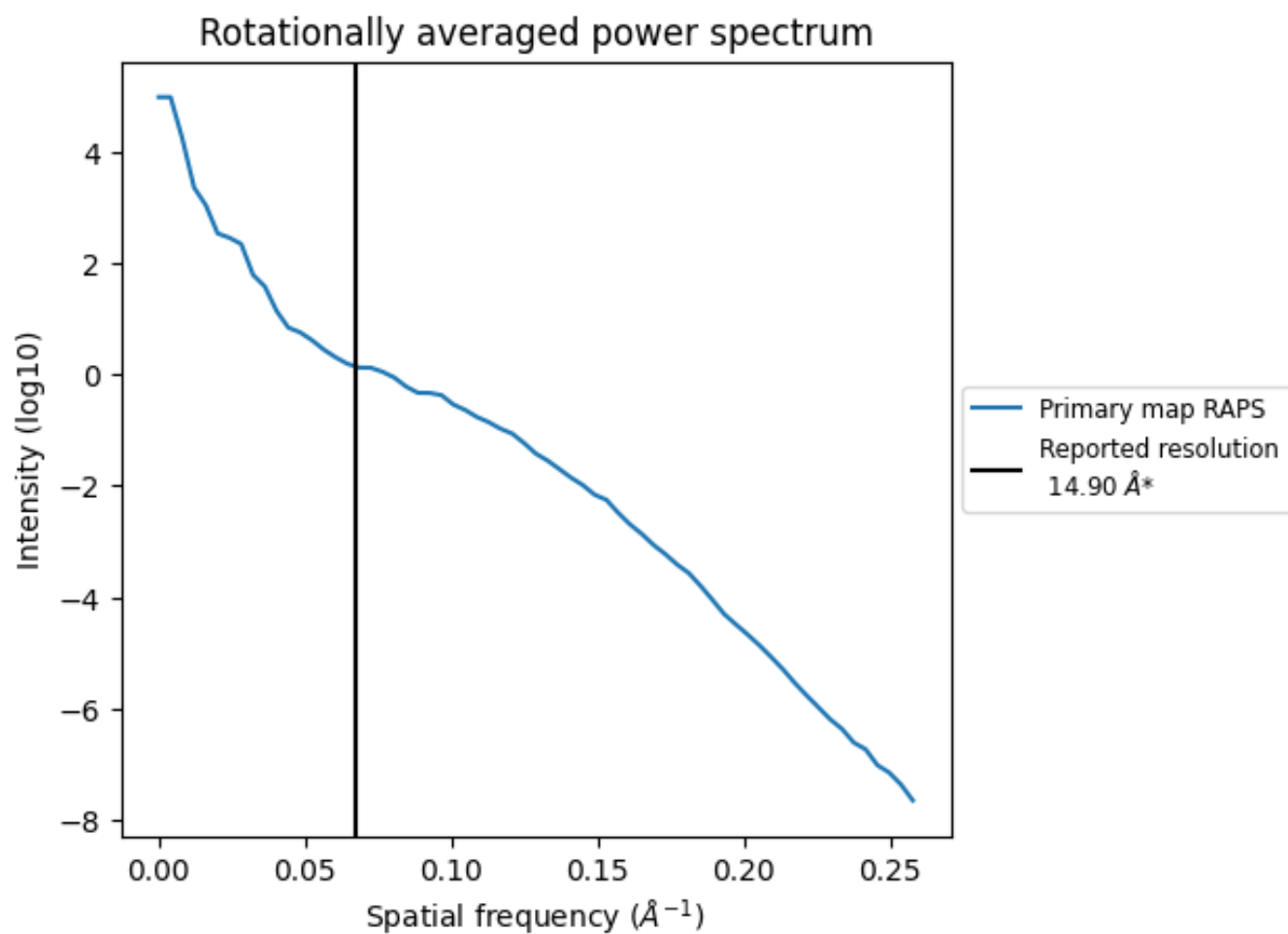
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 762 nm<sup>3</sup>; this corresponds to an approximate mass of 688 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 0.067 Å<sup>-1</sup>

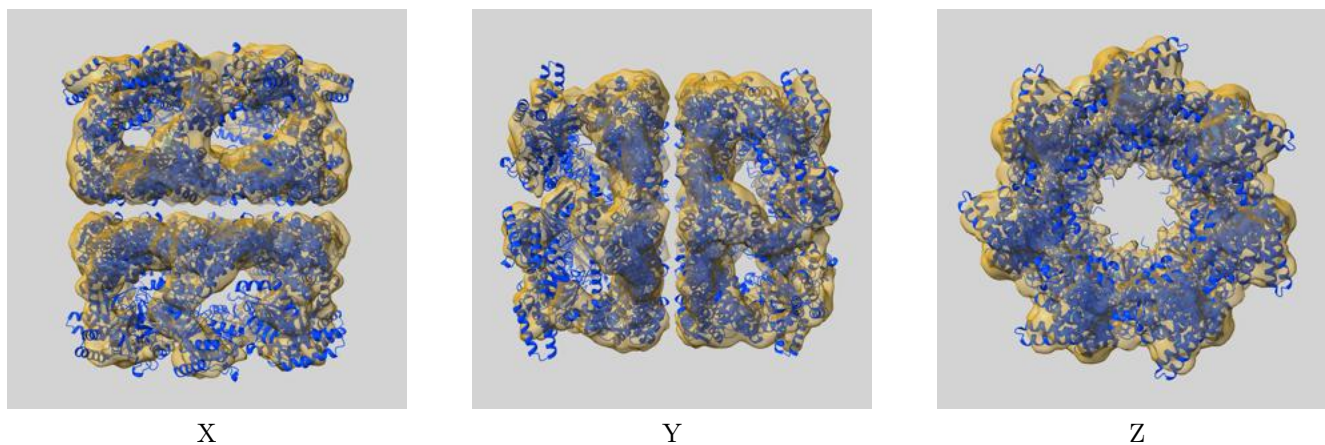
## 8 Fourier-Shell correlation

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

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

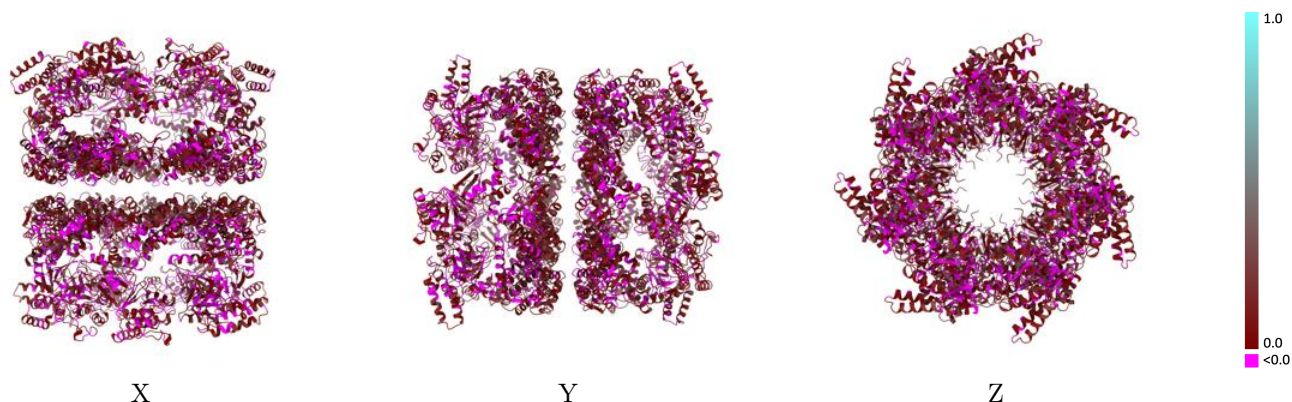
This section contains information regarding the fit between EMDB map EMD-1047 and PDB model 2C7E. Per-residue inclusion information can be found in section 3 on page 8.

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



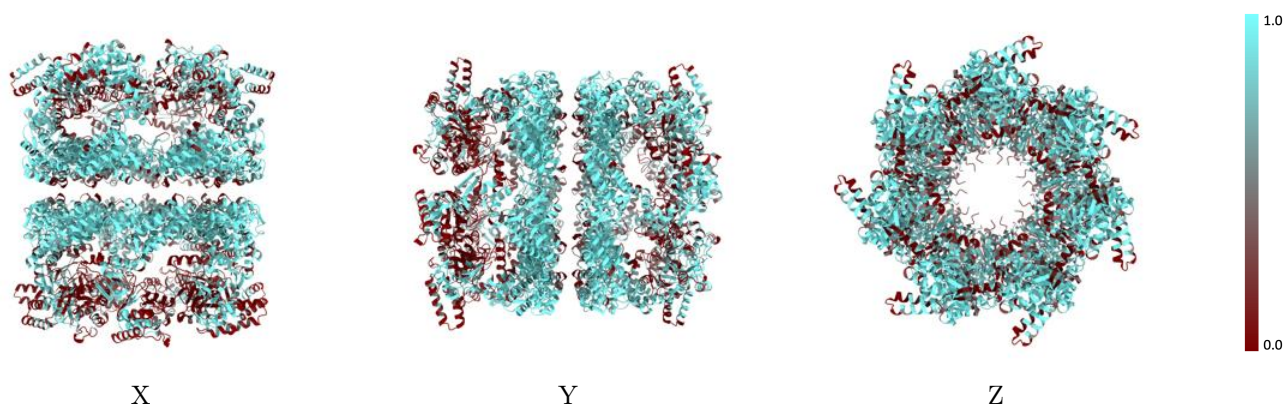
The images above show the 3D surface view of the map at the recommended contour level 0.0839 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



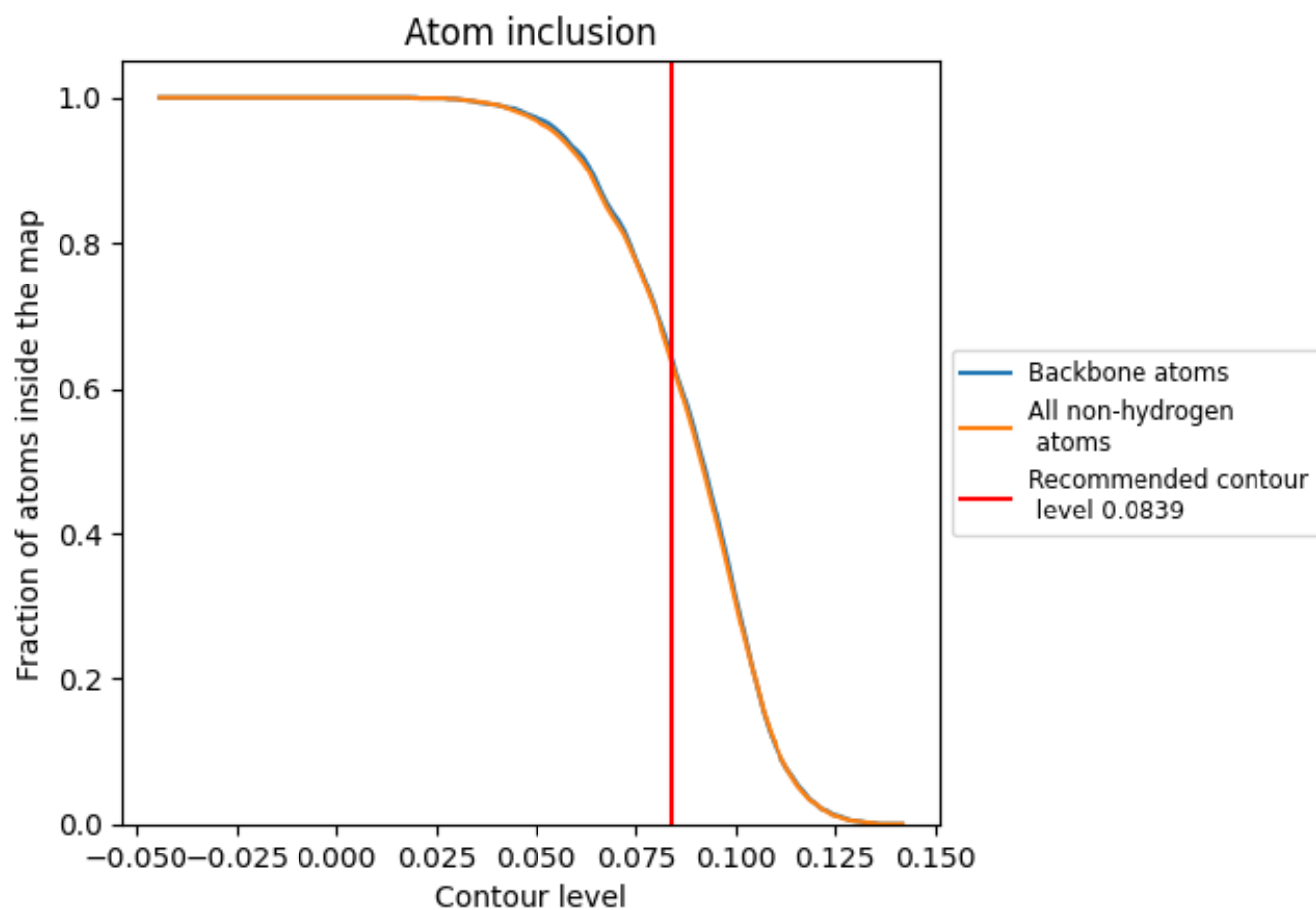
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0839).































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 65% of all backbone atoms, 64% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.0839) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion  | Q-score   |
|-------|---|---|
| All   |  0.6410  |  0.0680  |
| A     |  0.6010  |  0.0650  |
| B     |  0.6030  |  0.0670  |
| C     |  0.6010  |  0.0650  |
| D     |  0.6010  |  0.0660  |
| E     |  0.6010  |  0.0660  |
| F     |  0.5990  |  0.0650  |
| G     |  0.6020  |  0.0650  |
| H     |  0.6890  |  0.0700  |
| I     |  0.6880  |  0.0700  |
| J     |  0.6880  |  0.0710  |
| K     |  0.6900  |  0.0690  |
| L     |  0.6890  |  0.0690  |
| M     |  0.6900  |  0.0690  |
| N     |  0.6880 |  0.0700 |

