



# Full wwPDB X-ray Structure Validation Report ⓘ

Apr 27, 2024 – 01:00 pm BST

PDB ID : 2XQA  
Title : Pentameric ligand gated ion channel GLIC in complex with tetrabutylammonium (TBSb)  
Authors : Hilf, R.J.C.; Bertozzi, C.; Zimmermann, I.; Reiter, A.; Trauner, D.; Dutzler, R.  
Deposited on : 2010-09-01  
Resolution : 3.70 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Xtriage (Phenix) : 1.13  
EDS : 2.36.2  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36.2

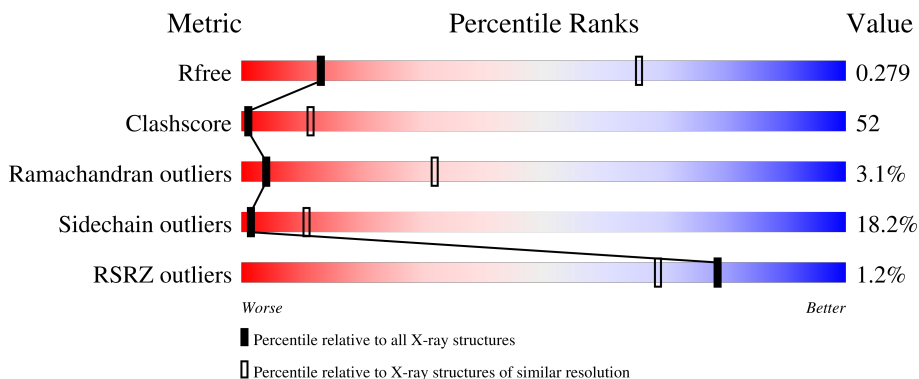
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.70 Å.

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



| Metric                | Whole archive<br>(#Entries) | Similar resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| $R_{free}$            | 130704                      | 1049 (3.88-3.52)                                      |
| Clashscore            | 141614                      | 1027 (3.86-3.54)                                      |
| Ramachandran outliers | 138981                      | 1069 (3.88-3.52)                                      |
| Sidechain outliers    | 138945                      | 1065 (3.88-3.52)                                      |
| RSRZ outliers         | 127900                      | 1578 (3.90-3.50)                                      |

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

| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 1   | A     | 317    | <div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 32%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 53%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;">2% 32% 53% 12% .</p> |
| 1   | B     | 317    | <div style="display: flex; align-items: center;"> <div style="width: 31%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 55%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;">31% 55% 12% .</p>   |
| 1   | C     | 317    | <div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 52%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;">2% 33% 52% 12% .</p> |
| 1   | D     | 317    | <div style="display: flex; align-items: center;"> <div style="width: 1%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 32%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 53%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;">% 32% 53% 12% ..</p> |
| 1   | E     | 317    | <div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 53%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="font-size: small; margin-top: 5px;">2% 33% 53% 12% .</p> |

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 12606 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called GLR4197 PROTEIN.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 1   | A     | 310      | 2521  | 1662 | 403 | 452 | 4 | 0       | 0       | 0     |
| 1   | B     | 310      | 2521  | 1662 | 403 | 452 | 4 | 0       | 0       | 0     |
| 1   | C     | 310      | 2521  | 1662 | 403 | 452 | 4 | 0       | 0       | 0     |
| 1   | D     | 310      | 2521  | 1662 | 403 | 452 | 4 | 0       | 0       | 0     |
| 1   | E     | 310      | 2521  | 1662 | 403 | 452 | 4 | 0       | 0       | 0     |

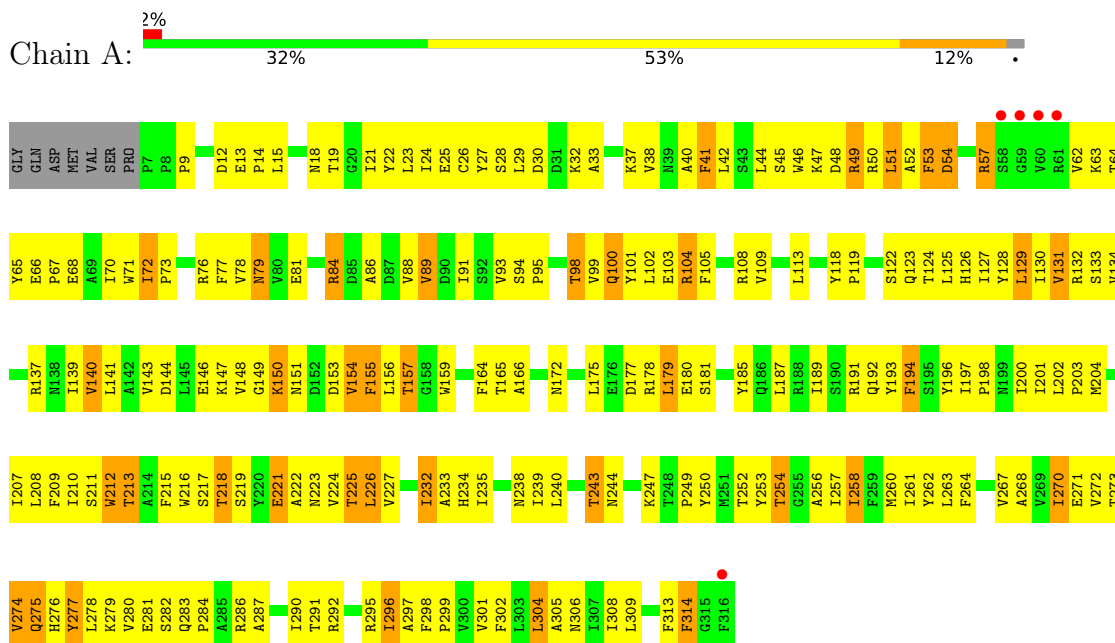
- Molecule 2 is ANTIMONY (III) ION (three-letter code: SB) (formula: Sb).

| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 2   | E     | 1        | Total | Sb | 0       | 0       |
|     |       |          | 1     | 1  |         |         |

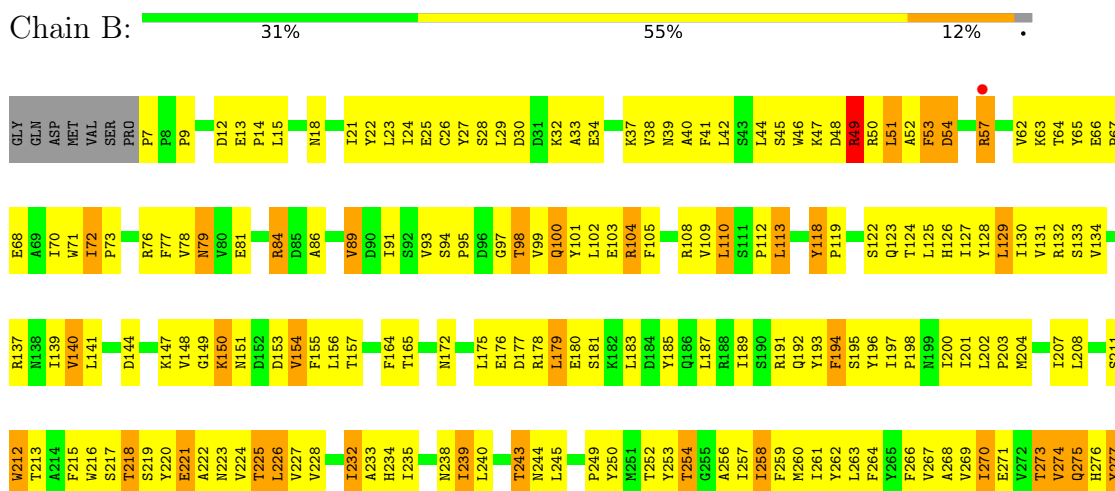
### 3 Residue-property plots

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

#### • Molecule 1: GLR4197 PROTEIN

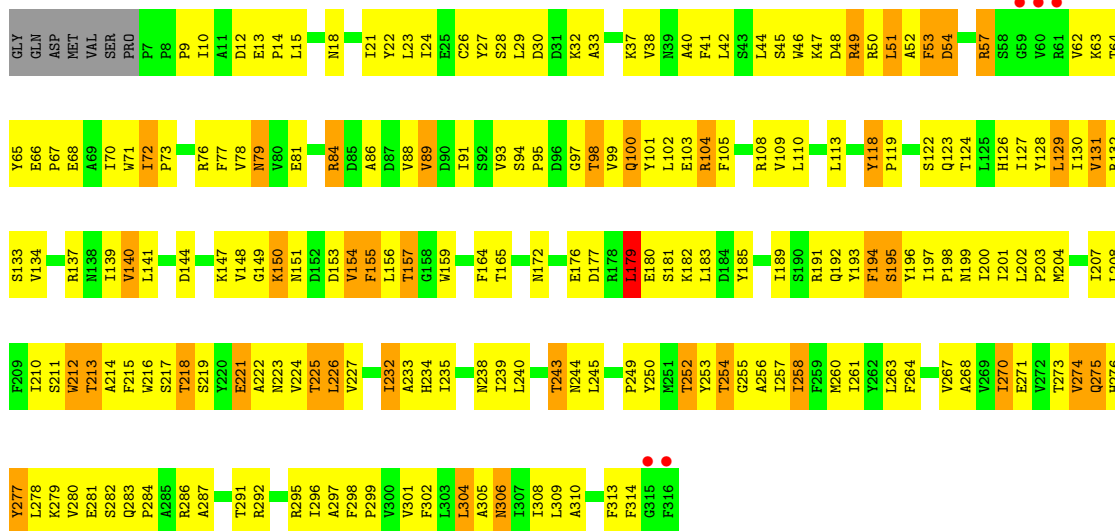


#### • Molecule 1: GLR4197 PROTEIN

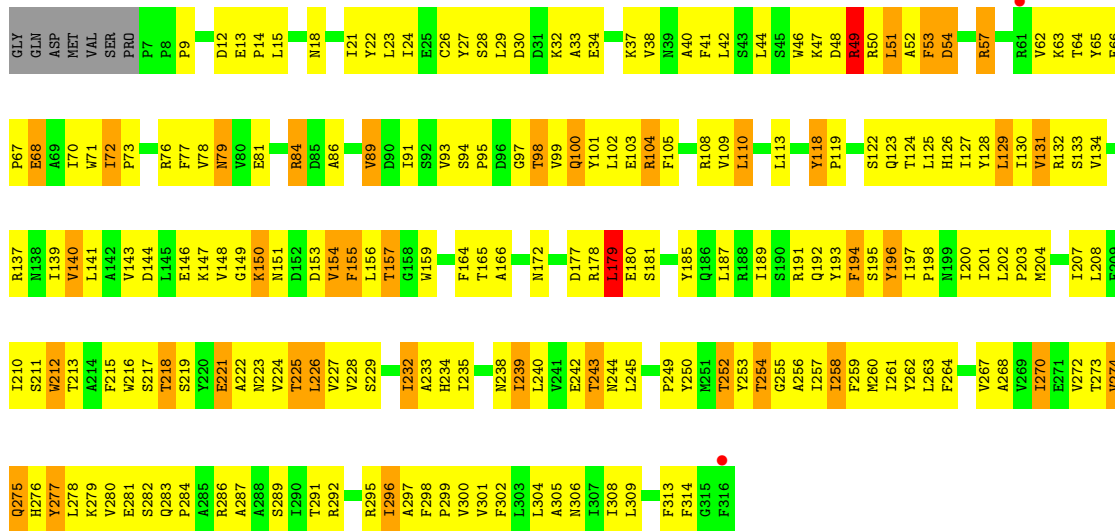




• Molecule 1: GLR4197 PROTEIN



• Molecule 1: GLR4197 PROTEIN



• Molecule 1: GLR4197 PROTEIN



|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Y65  | Y66  | P67  | E68  | A69  | I70  | W71  | I72  | P73  | R76  | F77  | V78  | M79  | V80  | E81  | R84  | D85  | A86  | V89  | D90  | I91  | S92  | V83  | S94  | P95  | D96  | G97  | T98  | V99  | Q100 | Y101 | L102 | E103 | R104 | F105 | R108 | V109 | L110 | S111 | P112 | L113 | Y118 | P119 | S122 | Q123 | T124 | H126 | L127 | Y128 | L129 | I130 | V131 | R132 |      |      |      |
| S133 | V134 | R137 | N138 | I139 | V140 | L141 | A142 | V143 | D144 | K147 | V148 | G149 | K150 | N151 | D152 | D153 | V154 | F155 | L156 | T157 | F164 | T165 | N172 | L175 | E176 | D177 | R178 | L179 | E180 | S181 | Y185 | I189 | S190 | R191 | Q192 | Y193 | F194 | S195 | Y196 | I197 | P198 | W199 | L200 | L201 | L202 | P203 | M204 | I207 | L208 | S211 |      |      |      |      |      |
| W212 | T213 | A214 | F215 | W216 | S217 | T218 | S219 | Y220 | E221 | A222 | N223 | V224 | T225 | L226 | V227 | V228 | I232 | A233 | H234 | N238 | I239 | L240 | T243 | N244 | L245 | P246 | K247 | T248 | P249 | Y250 | M251 | T252 | Y253 | T254 | G255 | A256 | I257 | I258 | F259 | M260 | I261 | Y262 | L263 | F264 | V267 | A268 | V269 | I270 | E271 | V272 | T273 | V274 | Q275 | H276 | Y277 |
| L278 | K279 | V280 | E281 | S282 | Q283 | P284 | A285 | R286 | A287 | T291 | R292 | R295 | I296 | A297 | F298 | P299 | V300 | V301 | F302 | L303 | L304 | A305 | M306 | I307 | I308 | L309 | F313 | F314 | G315 | F316 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | C 1 2 1   | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 183.31Å 128.31Å 164.37Å<br>90.00° 104.04° 90.00°            | Depositor        |
| Resolution (Å)  | 40.20 – 3.70<br>40.20 – 3.60                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 95.7 (40.20-3.70)<br>92.4 (40.20-3.60)                      | Depositor<br>EDS |
| $R_{merge}$   | 0.09  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 1.94 (at 3.57Å)   | Xtrriage         |
| Refinement program  | PHENIX (PHENIX.REFINE)                                      | Depositor        |
| R, $R_{free}$   | 0.256 , 0.274<br>0.259 , 0.279                              | Depositor<br>DCC |
| $R_{free}$ test set   | 2172 reflections (5.04%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 94.3  | Xtrriage         |
| Anisotropy  | 0.399   | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.28 , 100.1  | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.43$ , $\langle L^2 \rangle = 0.26$ | Xtrriage         |
| Estimated twinning fraction   | No twinning to report.                                      | Xtrriage         |
| $F_o, F_c$ correlation  | 0.87  | EDS              |
| Total number of atoms   | 12606   | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 103.0   | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.79% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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     | 0.51         | 0/2589  | 0.73        | 2/3535 (0.1%)   |
| 1   | B     | 0.53         | 0/2589  | 0.73        | 2/3535 (0.1%)   |
| 1   | C     | 0.52         | 0/2589  | 0.74        | 3/3535 (0.1%)   |
| 1   | D     | 0.53         | 0/2589  | 0.73        | 3/3535 (0.1%)   |
| 1   | E     | 0.53         | 0/2589  | 0.73        | 2/3535 (0.1%)   |
| All | All   | 0.53         | 0/12945 | 0.73        | 12/17675 (0.1%) |

There are no bond length outliers.

All (12) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z    | Observed( $^{\circ}$ ) | Ideal( $^{\circ}$ ) |
|-----|-------|-----|------|----------|------|------------------------|---------------------|
| 1   | E     | 129 | LEU  | CA-CB-CG | 5.54 | 128.04                 | 115.30              |
| 1   | A     | 129 | LEU  | CA-CB-CG | 5.53 | 128.02                 | 115.30              |
| 1   | C     | 129 | LEU  | CA-CB-CG | 5.53 | 128.01                 | 115.30              |
| 1   | D     | 129 | LEU  | CA-CB-CG | 5.53 | 128.01                 | 115.30              |
| 1   | B     | 129 | LEU  | CA-CB-CG | 5.53 | 128.01                 | 115.30              |
| 1   | B     | 134 | VAL  | CB-CA-C  | 5.02 | 120.94                 | 111.40              |
| 1   | D     | 134 | VAL  | CB-CA-C  | 5.02 | 120.93                 | 111.40              |
| 1   | E     | 134 | VAL  | CB-CA-C  | 5.01 | 120.92                 | 111.40              |
| 1   | A     | 134 | VAL  | CB-CA-C  | 5.01 | 120.92                 | 111.40              |
| 1   | C     | 179 | LEU  | CA-CB-CG | 5.01 | 126.82                 | 115.30              |
| 1   | C     | 134 | VAL  | CB-CA-C  | 5.01 | 120.91                 | 111.40              |
| 1   | D     | 179 | LEU  | CA-CB-CG | 5.01 | 126.81                 | 115.30              |

There are no chirality outliers.

There are no planarity outliers.



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

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 2521  | 0        | 2537     | 314     | 0            |
| 1   | B     | 2521  | 0        | 2537     | 316     | 0            |
| 1   | C     | 2521  | 0        | 2537     | 270     | 0            |
| 1   | D     | 2521  | 0        | 2537     | 287     | 0            |
| 1   | E     | 2521  | 0        | 2537     | 264     | 0            |
| 2   | E     | 1     | 0        | 0        | 0       | 0            |
| All | All   | 12606 | 0        | 12685    | 1319    | 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 52.

All (1319) 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:A:155:PHE:CE1  | 1:B:112:PRO:HB3  | 1.83                     | 1.12              |
| 1:B:76:ARG:NH2   | 1:B:130:ILE:HD12 | 1.68                     | 1.08              |
| 1:D:76:ARG:NH2   | 1:D:130:ILE:HD12 | 1.70                     | 1.06              |
| 1:A:76:ARG:NH2   | 1:A:130:ILE:HD12 | 1.73                     | 1.03              |
| 1:A:104:ARG:HH22 | 1:B:78:VAL:HA    | 1.20                     | 1.03              |
| 1:A:222:ALA:HB2  | 1:B:221:GLU:HA   | 1.38                     | 1.02              |
| 1:C:76:ARG:NH2   | 1:C:130:ILE:HD12 | 1.76                     | 1.01              |
| 1:E:76:ARG:NH2   | 1:E:130:ILE:HD12 | 1.76                     | 1.01              |
| 1:C:22:TYR:HA    | 1:C:149:GLY:HA3  | 1.42                     | 0.99              |
| 1:D:22:TYR:HA    | 1:D:149:GLY:HA3  | 1.46                     | 0.98              |
| 1:B:257:ILE:O    | 1:B:261:ILE:HG12 | 1.63                     | 0.97              |
| 1:B:22:TYR:HA    | 1:B:149:GLY:HA3  | 1.46                     | 0.97              |
| 1:D:257:ILE:O    | 1:D:261:ILE:HG12 | 1.65                     | 0.97              |
| 1:A:257:ILE:O    | 1:A:261:ILE:HG12 | 1.63                     | 0.96              |
| 1:D:155:PHE:CE1  | 1:E:112:PRO:HB3  | 1.99                     | 0.96              |
| 1:E:257:ILE:O    | 1:E:261:ILE:HG12 | 1.65                     | 0.96              |
| 1:A:104:ARG:NH2  | 1:B:78:VAL:HA    | 1.80                     | 0.95              |
| 1:A:22:TYR:HA    | 1:A:149:GLY:HA3  | 1.47                     | 0.95              |
| 1:C:257:ILE:O    | 1:C:261:ILE:HG12 | 1.66                     | 0.94              |
| 1:D:104:ARG:HH22 | 1:E:78:VAL:HA    | 1.29                     | 0.94              |
| 1:D:76:ARG:HH22  | 1:D:130:ILE:HD12 | 1.32                     | 0.93              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:225:THR:CG2  | 1:E:224:VAL:HG23 | 1.98                     | 0.93              |
| 1:E:22:TYR:HA    | 1:E:149:GLY:HA3  | 1.49                     | 0.93              |
| 1:C:200:ILE:HD11 | 1:C:240:LEU:HD23 | 1.51                     | 0.93              |
| 1:D:253:TYR:HA   | 1:D:313:PHE:CE2  | 2.03                     | 0.93              |
| 1:A:253:TYR:HA   | 1:A:313:PHE:CE2  | 2.04                     | 0.91              |
| 1:A:226:LEU:CD2  | 1:B:224:VAL:HB   | 2.00                     | 0.91              |
| 1:A:253:TYR:HA   | 1:A:313:PHE:HE2  | 1.36                     | 0.91              |
| 1:C:253:TYR:HA   | 1:C:313:PHE:CE2  | 2.06                     | 0.90              |
| 1:E:253:TYR:HA   | 1:E:313:PHE:CE2  | 2.07                     | 0.90              |
| 1:A:297:ALA:O    | 1:A:301:VAL:HG23 | 1.71                     | 0.90              |
| 1:B:76:ARG:HH22  | 1:B:130:ILE:HD12 | 1.29                     | 0.90              |
| 1:D:210:ILE:HG23 | 1:E:269:VAL:HG11 | 1.54                     | 0.89              |
| 1:C:22:TYR:HA    | 1:C:149:GLY:CA   | 2.02                     | 0.89              |
| 1:C:297:ALA:O    | 1:C:301:VAL:HG23 | 1.72                     | 0.88              |
| 1:A:253:TYR:HD1  | 1:A:313:PHE:HD2  | 1.20                     | 0.88              |
| 1:D:253:TYR:HA   | 1:D:313:PHE:HE2  | 1.36                     | 0.88              |
| 1:B:253:TYR:HA   | 1:B:313:PHE:CE2  | 2.08                     | 0.88              |
| 1:D:253:TYR:HD1  | 1:D:313:PHE:HD2  | 1.17                     | 0.88              |
| 1:C:197:ILE:HB   | 1:C:198:PRO:HD3  | 1.55                     | 0.87              |
| 1:E:200:ILE:HD11 | 1:E:240:LEU:HD23 | 1.56                     | 0.87              |
| 1:C:139:ILE:HG12 | 1:C:172:ASN:HD21 | 1.37                     | 0.87              |
| 1:D:304:LEU:O    | 1:D:308:ILE:HG12 | 1.74                     | 0.87              |
| 1:E:139:ILE:HG12 | 1:E:172:ASN:HD21 | 1.36                     | 0.87              |
| 1:C:253:TYR:HA   | 1:C:313:PHE:HE2  | 1.37                     | 0.87              |
| 1:A:139:ILE:HG12 | 1:A:172:ASN:HD21 | 1.38                     | 0.86              |
| 1:B:22:TYR:HA    | 1:B:149:GLY:CA   | 2.06                     | 0.86              |
| 1:E:197:ILE:HB   | 1:E:198:PRO:HD3  | 1.58                     | 0.86              |
| 1:D:22:TYR:HA    | 1:D:149:GLY:CA   | 2.06                     | 0.85              |
| 1:E:253:TYR:HA   | 1:E:313:PHE:HE2  | 1.40                     | 0.85              |
| 1:E:76:ARG:HH22  | 1:E:130:ILE:HD12 | 1.41                     | 0.85              |
| 1:B:139:ILE:HG12 | 1:B:172:ASN:HD21 | 1.41                     | 0.85              |
| 1:B:253:TYR:HA   | 1:B:313:PHE:HE2  | 1.40                     | 0.85              |
| 1:D:139:ILE:HG12 | 1:D:172:ASN:HD21 | 1.41                     | 0.85              |
| 1:B:79:ASN:H     | 1:B:79:ASN:HD22  | 1.24                     | 0.84              |
| 1:A:22:TYR:HA    | 1:A:149:GLY:CA   | 2.07                     | 0.84              |
| 1:A:221:GLU:HB3  | 1:B:221:GLU:HG2  | 1.59                     | 0.84              |
| 1:E:253:TYR:HD1  | 1:E:313:PHE:HD2  | 1.25                     | 0.84              |
| 1:A:197:ILE:HB   | 1:A:198:PRO:HD3  | 1.60                     | 0.83              |
| 1:B:253:TYR:HD1  | 1:B:313:PHE:HD2  | 1.27                     | 0.83              |
| 1:C:76:ARG:HH22  | 1:C:130:ILE:HD12 | 1.42                     | 0.83              |
| 1:C:234:HIS:CE1  | 1:C:261:ILE:HG21 | 2.14                     | 0.83              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:297:ALA:O    | 1:E:301:VAL:HG23 | 1.78                     | 0.83              |
| 1:A:155:PHE:CZ   | 1:B:112:PRO:HB3  | 2.13                     | 0.82              |
| 1:A:76:ARG:HH22  | 1:A:130:ILE:HD12 | 1.39                     | 0.82              |
| 1:C:253:TYR:HD1  | 1:C:313:PHE:HD2  | 1.26                     | 0.82              |
| 1:D:225:THR:HG21 | 1:E:224:VAL:HG23 | 1.59                     | 0.82              |
| 1:A:27:TYR:CB    | 1:B:110:LEU:HD11 | 2.10                     | 0.81              |
| 1:B:297:ALA:O    | 1:B:301:VAL:HG23 | 1.81                     | 0.81              |
| 1:E:22:TYR:HA    | 1:E:149:GLY:CA   | 2.09                     | 0.81              |
| 1:B:66:GLU:HG3   | 1:B:67:PRO:HD2   | 1.62                     | 0.80              |
| 1:B:197:ILE:HB   | 1:B:198:PRO:HD3  | 1.64                     | 0.80              |
| 1:E:66:GLU:HG3   | 1:E:67:PRO:HD2   | 1.64                     | 0.80              |
| 1:A:260:MET:HE2  | 1:A:309:LEU:HD22 | 1.63                     | 0.80              |
| 1:D:41:PHE:HE2   | 1:E:175:LEU:HD23 | 1.45                     | 0.80              |
| 1:E:304:LEU:O    | 1:E:308:ILE:HG12 | 1.83                     | 0.79              |
| 1:B:304:LEU:O    | 1:B:308:ILE:HG12 | 1.82                     | 0.79              |
| 1:D:297:ALA:O    | 1:D:301:VAL:HG23 | 1.83                     | 0.79              |
| 1:E:89:VAL:HG11  | 1:E:102:LEU:HD23 | 1.64                     | 0.79              |
| 1:A:283:GLN:N    | 1:A:284:PRO:HD3  | 1.98                     | 0.79              |
| 1:C:199:ASN:HB3  | 1:D:242:GLU:CD   | 2.03                     | 0.79              |
| 1:D:197:ILE:HB   | 1:D:198:PRO:HD3  | 1.64                     | 0.79              |
| 1:A:22:TYR:HB3   | 1:A:41:PHE:HB2   | 1.64                     | 0.79              |
| 1:B:260:MET:HE2  | 1:B:309:LEU:HD22 | 1.64                     | 0.79              |
| 1:C:78:VAL:HG22  | 1:C:130:ILE:HG12 | 1.64                     | 0.79              |
| 1:E:79:ASN:HD22  | 1:E:79:ASN:H     | 1.31                     | 0.79              |
| 1:E:147:LYS:O    | 1:E:147:LYS:HG2  | 1.83                     | 0.79              |
| 1:A:226:LEU:HD23 | 1:B:224:VAL:HB   | 1.64                     | 0.78              |
| 1:C:147:LYS:HG2  | 1:C:147:LYS:O    | 1.83                     | 0.78              |
| 1:C:149:GLY:O    | 1:C:164:PHE:HD1  | 1.67                     | 0.78              |
| 1:B:22:TYR:CD1   | 1:B:149:GLY:HA2  | 2.19                     | 0.78              |
| 1:D:22:TYR:CD1   | 1:D:149:GLY:HA2  | 2.19                     | 0.77              |
| 1:D:66:GLU:HG3   | 1:D:67:PRO:HD2   | 1.67                     | 0.77              |
| 1:A:147:LYS:O    | 1:A:147:LYS:HG2  | 1.83                     | 0.77              |
| 1:D:283:GLN:N    | 1:D:284:PRO:HD3  | 2.00                     | 0.77              |
| 1:E:149:GLY:O    | 1:E:164:PHE:HD1  | 1.68                     | 0.77              |
| 1:B:254:THR:O    | 1:B:258:ILE:HB   | 1.84                     | 0.77              |
| 1:B:197:ILE:HA   | 1:B:201:ILE:HB   | 1.67                     | 0.77              |
| 1:E:78:VAL:HG22  | 1:E:130:ILE:HG12 | 1.66                     | 0.77              |
| 1:B:200:ILE:HD11 | 1:B:240:LEU:HD23 | 1.66                     | 0.77              |
| 1:B:283:GLN:N    | 1:B:284:PRO:HD3  | 2.00                     | 0.77              |
| 1:A:89:VAL:HG11  | 1:A:102:LEU:HD23 | 1.67                     | 0.76              |
| 1:A:217:SER:OG   | 1:B:220:TYR:HE2  | 1.67                     | 0.76              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:283:GLN:N    | 1:C:284:PRO:HD3  | 1.99                     | 0.76              |
| 1:A:234:HIS:CE1  | 1:A:261:ILE:HG21 | 2.20                     | 0.76              |
| 1:A:254:THR:O    | 1:A:258:ILE:HB   | 1.86                     | 0.76              |
| 1:D:147:LYS:O    | 1:D:147:LYS:HG2  | 1.83                     | 0.76              |
| 1:D:225:THR:HG22 | 1:E:224:VAL:HG23 | 1.66                     | 0.76              |
| 1:E:234:HIS:CE1  | 1:E:261:ILE:HG21 | 2.20                     | 0.76              |
| 1:A:79:ASN:HD22  | 1:A:79:ASN:H     | 1.34                     | 0.76              |
| 1:B:147:LYS:O    | 1:B:147:LYS:HG2  | 1.83                     | 0.76              |
| 1:E:283:GLN:N    | 1:E:284:PRO:HD3  | 2.00                     | 0.76              |
| 1:A:226:LEU:HD21 | 1:B:224:VAL:HB   | 1.66                     | 0.76              |
| 1:C:260:MET:HE2  | 1:C:309:LEU:HD22 | 1.66                     | 0.76              |
| 1:B:78:VAL:HG22  | 1:B:130:ILE:HG12 | 1.66                     | 0.75              |
| 1:B:234:HIS:CE1  | 1:B:261:ILE:HG21 | 2.22                     | 0.75              |
| 1:D:89:VAL:HG11  | 1:D:102:LEU:HD23 | 1.68                     | 0.75              |
| 1:C:22:TYR:CD1   | 1:C:149:GLY:HA2  | 2.21                     | 0.75              |
| 1:A:66:GLU:HG3   | 1:A:67:PRO:HD2   | 1.69                     | 0.75              |
| 1:D:200:ILE:HD11 | 1:D:240:LEU:HD23 | 1.67                     | 0.75              |
| 1:D:78:VAL:HG22  | 1:D:130:ILE:HG12 | 1.69                     | 0.75              |
| 1:D:197:ILE:HA   | 1:D:201:ILE:HB   | 1.69                     | 0.75              |
| 1:D:234:HIS:CE1  | 1:D:261:ILE:HG21 | 2.22                     | 0.75              |
| 1:E:260:MET:HE2  | 1:E:309:LEU:HD22 | 1.68                     | 0.74              |
| 1:D:254:THR:O    | 1:D:258:ILE:HB   | 1.87                     | 0.74              |
| 1:A:200:ILE:HD11 | 1:A:240:LEU:HD23 | 1.69                     | 0.74              |
| 1:D:104:ARG:NH2  | 1:E:78:VAL:HA    | 2.01                     | 0.74              |
| 1:E:254:THR:O    | 1:E:258:ILE:HB   | 1.87                     | 0.74              |
| 1:D:253:TYR:HD1  | 1:D:313:PHE:CD2  | 2.04                     | 0.74              |
| 1:C:66:GLU:HG3   | 1:C:67:PRO:HD2   | 1.68                     | 0.74              |
| 1:E:147:LYS:O    | 1:E:147:LYS:CG   | 2.35                     | 0.74              |
| 1:A:217:SER:OG   | 1:B:220:TYR:CE2  | 2.39                     | 0.74              |
| 1:B:149:GLY:O    | 1:B:164:PHE:HD1  | 1.70                     | 0.74              |
| 1:C:226:LEU:HD21 | 1:D:224:VAL:HB   | 1.69                     | 0.74              |
| 1:D:147:LYS:O    | 1:D:147:LYS:CG   | 2.35                     | 0.74              |
| 1:B:147:LYS:O    | 1:B:147:LYS:CG   | 2.35                     | 0.73              |
| 1:A:22:TYR:CD1   | 1:A:149:GLY:HA2  | 2.23                     | 0.73              |
| 1:E:22:TYR:CD1   | 1:E:149:GLY:HA2  | 2.22                     | 0.73              |
| 1:C:27:TYR:HB3   | 1:D:110:LEU:HD11 | 1.70                     | 0.73              |
| 1:D:253:TYR:CD1  | 1:D:313:PHE:HD2  | 2.04                     | 0.73              |
| 1:A:155:PHE:CE1  | 1:B:112:PRO:CB   | 2.69                     | 0.73              |
| 1:B:100:GLN:HE21 | 1:B:100:GLN:HA   | 1.54                     | 0.73              |
| 1:D:22:TYR:HB3   | 1:D:41:PHE:HB2   | 1.71                     | 0.73              |
| 1:C:147:LYS:O    | 1:C:147:LYS:CG   | 2.35                     | 0.73              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:100:GLN:HE21 | 1:D:100:GLN:HA   | 1.54                     | 0.72              |
| 1:A:146:GLU:HG3  | 1:B:176:GLU:HG2  | 1.71                     | 0.72              |
| 1:C:254:THR:O    | 1:C:258:ILE:HB   | 1.89                     | 0.72              |
| 1:E:22:TYR:HB3   | 1:E:41:PHE:HB2   | 1.70                     | 0.72              |
| 1:A:100:GLN:HE21 | 1:A:100:GLN:HA   | 1.54                     | 0.72              |
| 1:C:22:TYR:HB3   | 1:C:41:PHE:HB2   | 1.71                     | 0.72              |
| 1:A:149:GLY:O    | 1:A:164:PHE:HD1  | 1.73                     | 0.72              |
| 1:A:253:TYR:CD1  | 1:A:313:PHE:HD2  | 2.06                     | 0.72              |
| 1:C:304:LEU:O    | 1:C:308:ILE:HG12 | 1.89                     | 0.72              |
| 1:B:238:ASN:HA   | 1:B:258:ILE:CD1  | 2.20                     | 0.71              |
| 1:A:147:LYS:O    | 1:A:147:LYS:CG   | 2.35                     | 0.71              |
| 1:B:54:ASP:HB2   | 1:B:57:ARG:HB2   | 1.72                     | 0.71              |
| 1:A:104:ARG:HH22 | 1:B:78:VAL:CA    | 2.01                     | 0.71              |
| 1:A:304:LEU:O    | 1:A:308:ILE:HG12 | 1.90                     | 0.71              |
| 1:A:78:VAL:HG22  | 1:A:130:ILE:HG12 | 1.71                     | 0.71              |
| 1:B:22:TYR:HB3   | 1:B:41:PHE:HB2   | 1.71                     | 0.71              |
| 1:D:54:ASP:HB2   | 1:D:57:ARG:HG3   | 1.72                     | 0.71              |
| 1:A:146:GLU:HG3  | 1:B:176:GLU:CG   | 2.20                     | 0.71              |
| 1:B:89:VAL:HG11  | 1:B:102:LEU:HD23 | 1.73                     | 0.71              |
| 1:D:79:ASN:H     | 1:D:79:ASN:HD22  | 1.36                     | 0.71              |
| 1:D:146:GLU:HG3  | 1:E:176:GLU:HG2  | 1.73                     | 0.71              |
| 1:D:149:GLY:O    | 1:D:164:PHE:HD1  | 1.73                     | 0.71              |
| 1:B:15:LEU:HD11  | 1:B:46:TRP:HB2   | 1.73                     | 0.70              |
| 1:D:54:ASP:HB2   | 1:D:57:ARG:HB2   | 1.73                     | 0.70              |
| 1:D:260:MET:HE2  | 1:D:309:LEU:HD22 | 1.73                     | 0.70              |
| 1:C:157:THR:HG21 | 1:D:34:GLU:HG3   | 1.73                     | 0.70              |
| 1:E:100:GLN:HA   | 1:E:100:GLN:HE21 | 1.55                     | 0.70              |
| 1:A:202:LEU:HD12 | 1:B:259:PHE:CZ   | 2.26                     | 0.70              |
| 1:A:253:TYR:HD1  | 1:A:313:PHE:CD2  | 2.06                     | 0.70              |
| 1:E:54:ASP:HB2   | 1:E:57:ARG:HG3   | 1.74                     | 0.70              |
| 1:A:27:TYR:CG    | 1:B:110:LEU:CD1  | 2.75                     | 0.70              |
| 1:A:51:LEU:CD1   | 1:A:70:ILE:HD12  | 2.22                     | 0.70              |
| 1:E:238:ASN:HA   | 1:E:258:ILE:CD1  | 2.22                     | 0.70              |
| 1:C:79:ASN:HD22  | 1:C:79:ASN:H     | 1.39                     | 0.70              |
| 1:E:15:LEU:HD11  | 1:E:46:TRP:HB2   | 1.74                     | 0.69              |
| 1:B:54:ASP:HB2   | 1:B:57:ARG:HG3   | 1.74                     | 0.69              |
| 1:C:54:ASP:HB2   | 1:C:57:ARG:HB2   | 1.74                     | 0.69              |
| 1:B:51:LEU:CD1   | 1:B:70:ILE:HD12  | 2.22                     | 0.69              |
| 1:E:84:ARG:HB2   | 1:E:84:ARG:NH1   | 2.07                     | 0.69              |
| 1:B:253:TYR:HD1  | 1:B:313:PHE:CD2  | 2.10                     | 0.69              |
| 1:C:193:TYR:O    | 1:C:194:PHE:HB2  | 1.92                     | 0.69              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:197:ILE:HA   | 1:E:201:ILE:HB   | 1.75                     | 0.69              |
| 1:B:29:LEU:HB2   | 1:B:156:LEU:HD11 | 1.74                     | 0.69              |
| 1:E:267:VAL:HA   | 1:E:270:ILE:HB   | 1.74                     | 0.69              |
| 1:D:238:ASN:HA   | 1:D:258:ILE:CD1  | 2.23                     | 0.69              |
| 1:B:253:TYR:CD1  | 1:B:313:PHE:HD2  | 2.11                     | 0.68              |
| 1:C:223:ASN:O    | 1:C:227:VAL:HG23 | 1.93                     | 0.68              |
| 1:D:15:LEU:HD11  | 1:D:46:TRP:HB2   | 1.75                     | 0.68              |
| 1:B:223:ASN:O    | 1:B:227:VAL:HG23 | 1.92                     | 0.68              |
| 1:E:54:ASP:HB2   | 1:E:57:ARG:HB2   | 1.74                     | 0.68              |
| 1:A:238:ASN:HA   | 1:A:258:ILE:CD1  | 2.23                     | 0.68              |
| 1:C:238:ASN:HA   | 1:C:258:ILE:CD1  | 2.23                     | 0.68              |
| 1:A:54:ASP:HB2   | 1:A:57:ARG:HG3   | 1.75                     | 0.68              |
| 1:A:197:ILE:HA   | 1:A:201:ILE:HB   | 1.76                     | 0.68              |
| 1:D:53:PHE:CE1   | 1:D:95:PRO:HA    | 2.29                     | 0.68              |
| 1:C:132:ARG:HA   | 1:C:180:GLU:HG2  | 1.76                     | 0.68              |
| 1:E:84:ARG:HB2   | 1:E:84:ARG:HH11  | 1.58                     | 0.68              |
| 1:B:216:TRP:HA   | 1:B:295:ARG:HH21 | 1.59                     | 0.68              |
| 1:C:118:TYR:CE1  | 1:C:245:LEU:HD11 | 2.29                     | 0.68              |
| 1:C:216:TRP:HA   | 1:C:295:ARG:HH21 | 1.57                     | 0.68              |
| 1:D:94:SER:OG    | 1:D:95:PRO:HD2   | 1.94                     | 0.68              |
| 1:D:216:TRP:HA   | 1:D:295:ARG:HH21 | 1.57                     | 0.68              |
| 1:D:218:THR:HG22 | 1:D:279:LYS:HE2  | 1.76                     | 0.68              |
| 1:C:54:ASP:HB2   | 1:C:57:ARG:HG3   | 1.75                     | 0.67              |
| 1:A:157:THR:CG2  | 1:B:34:GLU:OE1   | 2.42                     | 0.67              |
| 1:A:194:PHE:HE2  | 1:B:250:TYR:O    | 1.77                     | 0.67              |
| 1:C:197:ILE:HA   | 1:C:201:ILE:HB   | 1.75                     | 0.67              |
| 1:E:218:THR:HG22 | 1:E:279:LYS:HE2  | 1.74                     | 0.67              |
| 1:A:27:TYR:CG    | 1:B:110:LEU:HD11 | 2.29                     | 0.67              |
| 1:E:53:PHE:CE1   | 1:E:95:PRO:HA    | 2.29                     | 0.67              |
| 1:B:218:THR:HG22 | 1:B:279:LYS:HE2  | 1.77                     | 0.67              |
| 1:C:94:SER:OG    | 1:C:95:PRO:HD2   | 1.95                     | 0.67              |
| 1:D:65:TYR:CD1   | 1:D:70:ILE:HD11  | 2.30                     | 0.67              |
| 1:A:41:PHE:HE2   | 1:B:175:LEU:HD23 | 1.58                     | 0.67              |
| 1:D:155:PHE:HE1  | 1:E:112:PRO:HB3  | 1.52                     | 0.67              |
| 1:D:225:THR:CG2  | 1:E:224:VAL:CG2  | 2.71                     | 0.67              |
| 1:A:94:SER:OG    | 1:A:95:PRO:HD2   | 1.95                     | 0.67              |
| 1:D:51:LEU:CD1   | 1:D:70:ILE:HD12  | 2.25                     | 0.67              |
| 1:A:132:ARG:HA   | 1:A:180:GLU:HG2  | 1.77                     | 0.67              |
| 1:A:202:LEU:HD12 | 1:B:259:PHE:CE1  | 2.30                     | 0.67              |
| 1:C:29:LEU:HB2   | 1:C:156:LEU:HD11 | 1.77                     | 0.67              |
| 1:A:54:ASP:HB2   | 1:A:57:ARG:HB2   | 1.76                     | 0.67              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:218:THR:HG22 | 1:A:279:LYS:HE2  | 1.77                     | 0.67              |
| 1:C:89:VAL:HG11  | 1:C:102:LEU:HD23 | 1.75                     | 0.67              |
| 1:C:216:TRP:HA   | 1:C:295:ARG:NH2  | 2.09                     | 0.67              |
| 1:E:29:LEU:HB2   | 1:E:156:LEU:HD11 | 1.76                     | 0.67              |
| 1:E:193:TYR:O    | 1:E:194:PHE:HB2  | 1.94                     | 0.67              |
| 1:C:267:VAL:HA   | 1:C:270:ILE:HB   | 1.77                     | 0.66              |
| 1:E:253:TYR:HD1  | 1:E:313:PHE:CD2  | 2.10                     | 0.66              |
| 1:A:216:TRP:HA   | 1:A:295:ARG:HH21 | 1.60                     | 0.66              |
| 1:A:223:ASN:O    | 1:A:227:VAL:HG23 | 1.94                     | 0.66              |
| 1:B:267:VAL:HA   | 1:B:270:ILE:HB   | 1.77                     | 0.66              |
| 1:C:218:THR:HG22 | 1:C:279:LYS:HE2  | 1.76                     | 0.66              |
| 1:D:24:ILE:HD13  | 1:D:104:ARG:HE   | 1.60                     | 0.66              |
| 1:D:132:ARG:HA   | 1:D:180:GLU:HG2  | 1.77                     | 0.66              |
| 1:A:15:LEU:HD11  | 1:A:46:TRP:HB2   | 1.76                     | 0.66              |
| 1:C:53:PHE:CE1   | 1:C:95:PRO:HA    | 2.31                     | 0.66              |
| 1:C:118:TYR:CE1  | 1:C:245:LEU:CD1  | 2.78                     | 0.66              |
| 1:A:225:THR:HG21 | 1:B:225:THR:OG1  | 1.96                     | 0.66              |
| 1:B:13:GLU:HB3   | 1:B:14:PRO:HD2   | 1.78                     | 0.66              |
| 1:E:223:ASN:O    | 1:E:227:VAL:HG23 | 1.95                     | 0.66              |
| 1:C:100:GLN:HE21 | 1:C:100:GLN:HA   | 1.61                     | 0.66              |
| 1:B:118:TYR:CE1  | 1:B:245:LEU:CD1  | 2.79                     | 0.66              |
| 1:A:77:PHE:CD1   | 1:A:84:ARG:HD2   | 2.30                     | 0.66              |
| 1:A:137:ARG:HD2  | 1:A:179:LEU:HG   | 1.78                     | 0.66              |
| 1:B:21:ILE:O     | 1:B:149:GLY:HA3  | 1.96                     | 0.66              |
| 1:C:147:LYS:C    | 1:C:149:GLY:H    | 1.99                     | 0.66              |
| 1:E:118:TYR:CE1  | 1:E:245:LEU:CD1  | 2.79                     | 0.66              |
| 1:E:253:TYR:CD1  | 1:E:313:PHE:HD2  | 2.10                     | 0.66              |
| 1:C:199:ASN:HB3  | 1:D:242:GLU:OE1  | 1.96                     | 0.66              |
| 1:C:202:LEU:HD12 | 1:D:259:PHE:HE1  | 1.60                     | 0.66              |
| 1:D:118:TYR:CE1  | 1:D:245:LEU:CD1  | 2.79                     | 0.66              |
| 1:B:53:PHE:CE1   | 1:B:95:PRO:HA    | 2.31                     | 0.66              |
| 1:B:84:ARG:NH1   | 1:B:84:ARG:HB2   | 2.11                     | 0.66              |
| 1:E:47:LYS:HD3   | 1:E:49:ARG:NH2   | 2.10                     | 0.66              |
| 1:E:84:ARG:HH11  | 1:E:84:ARG:CB    | 2.08                     | 0.66              |
| 1:C:253:TYR:HD1  | 1:C:313:PHE:CD2  | 2.10                     | 0.65              |
| 1:C:48:ASP:O     | 1:C:51:LEU:HD23  | 1.96                     | 0.65              |
| 1:A:77:PHE:H     | 1:A:84:ARG:HD3   | 1.60                     | 0.65              |
| 1:C:253:TYR:CD1  | 1:C:313:PHE:HD2  | 2.10                     | 0.65              |
| 1:D:147:LYS:C    | 1:D:149:GLY:H    | 1.99                     | 0.65              |
| 1:E:216:TRP:HA   | 1:E:295:ARG:HH21 | 1.61                     | 0.65              |
| 1:A:84:ARG:NH1   | 1:A:84:ARG:HB2   | 2.11                     | 0.65              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:15:LEU:HD11  | 1:C:46:TRP:HB2   | 1.77                     | 0.65              |
| 1:D:21:ILE:O     | 1:D:149:GLY:HA3  | 1.97                     | 0.65              |
| 1:A:21:ILE:O     | 1:A:149:GLY:HA3  | 1.97                     | 0.65              |
| 1:B:53:PHE:HE2   | 1:B:63:LYS:HB3   | 1.61                     | 0.65              |
| 1:B:216:TRP:HA   | 1:B:295:ARG:NH2  | 2.11                     | 0.65              |
| 1:E:137:ARG:HD2  | 1:E:179:LEU:HG   | 1.79                     | 0.65              |
| 1:E:147:LYS:C    | 1:E:149:GLY:H    | 1.99                     | 0.65              |
| 1:C:84:ARG:HB2   | 1:C:84:ARG:NH1   | 2.11                     | 0.65              |
| 1:A:93:VAL:HG22  | 1:A:99:VAL:HG22  | 1.78                     | 0.65              |
| 1:B:147:LYS:C    | 1:B:149:GLY:H    | 1.99                     | 0.65              |
| 1:C:53:PHE:HE2   | 1:C:63:LYS:HB3   | 1.62                     | 0.65              |
| 1:D:41:PHE:HE2   | 1:E:175:LEU:CD2  | 2.09                     | 0.65              |
| 1:E:132:ARG:HA   | 1:E:180:GLU:HG2  | 1.79                     | 0.65              |
| 1:C:222:ALA:HB2  | 1:D:221:GLU:OE1  | 1.97                     | 0.65              |
| 1:E:118:TYR:CE1  | 1:E:245:LEU:HD11 | 2.31                     | 0.65              |
| 1:A:216:TRP:HA   | 1:A:295:ARG:NH2  | 2.12                     | 0.64              |
| 1:C:51:LEU:CD1   | 1:C:70:ILE:HD12  | 2.27                     | 0.64              |
| 1:C:137:ARG:HD2  | 1:C:179:LEU:HG   | 1.79                     | 0.64              |
| 1:D:84:ARG:NH1   | 1:D:84:ARG:HB2   | 2.12                     | 0.64              |
| 1:E:249:PRO:HD2  | 1:E:250:TYR:CD1  | 2.31                     | 0.64              |
| 1:C:21:ILE:O     | 1:C:149:GLY:HA3  | 1.98                     | 0.64              |
| 1:A:29:LEU:HB2   | 1:A:156:LEU:HD11 | 1.80                     | 0.64              |
| 1:C:128:TYR:O    | 1:C:129:LEU:HB2  | 1.98                     | 0.64              |
| 1:E:89:VAL:CG1   | 1:E:102:LEU:HD23 | 2.28                     | 0.64              |
| 1:A:219:SER:OG   | 1:A:222:ALA:HB3  | 1.98                     | 0.64              |
| 1:A:147:LYS:C    | 1:A:149:GLY:H    | 1.99                     | 0.64              |
| 1:A:203:PRO:HB3  | 1:B:262:TYR:CZ   | 2.33                     | 0.64              |
| 1:D:192:GLN:OE1  | 1:E:249:PRO:HB3  | 1.98                     | 0.64              |
| 1:D:223:ASN:O    | 1:D:227:VAL:HG23 | 1.96                     | 0.64              |
| 1:E:51:LEU:CD1   | 1:E:70:ILE:HD12  | 2.28                     | 0.64              |
| 1:E:128:TYR:O    | 1:E:129:LEU:HB2  | 1.98                     | 0.64              |
| 1:A:193:TYR:O    | 1:A:194:PHE:HB2  | 1.96                     | 0.64              |
| 1:A:221:GLU:HB3  | 1:B:221:GLU:CG   | 2.27                     | 0.64              |
| 1:A:53:PHE:CE1   | 1:A:95:PRO:HA    | 2.32                     | 0.64              |
| 1:A:232:ILE:HG22 | 1:A:233:ALA:N    | 2.12                     | 0.64              |
| 1:A:283:GLN:N    | 1:A:284:PRO:CD   | 2.60                     | 0.64              |
| 1:C:24:ILE:HD13  | 1:C:104:ARG:HE   | 1.63                     | 0.64              |
| 1:D:47:LYS:HD3   | 1:D:49:ARG:NH2   | 2.13                     | 0.64              |
| 1:A:53:PHE:HE2   | 1:A:63:LYS:HB3   | 1.63                     | 0.64              |
| 1:B:132:ARG:HA   | 1:B:180:GLU:HG2  | 1.79                     | 0.64              |
| 1:E:48:ASP:O     | 1:E:51:LEU:HD23  | 1.98                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:139:ILE:HG12 | 1:E:172:ASN:ND2  | 2.12                     | 0.64              |
| 1:C:65:TYR:CG    | 1:C:70:ILE:HD11  | 2.33                     | 0.63              |
| 1:C:222:ALA:HB2  | 1:D:221:GLU:HA   | 1.80                     | 0.63              |
| 1:D:274:VAL:C    | 1:D:276:HIS:H    | 2.02                     | 0.63              |
| 1:A:128:TYR:O    | 1:A:129:LEU:HB2  | 1.98                     | 0.63              |
| 1:B:47:LYS:HD3   | 1:B:49:ARG:NH2   | 2.13                     | 0.63              |
| 1:E:216:TRP:HA   | 1:E:295:ARG:NH2  | 2.13                     | 0.63              |
| 1:A:104:ARG:NH1  | 1:B:77:PHE:O     | 2.29                     | 0.63              |
| 1:B:276:HIS:O    | 1:B:280:VAL:HG22 | 1.98                     | 0.63              |
| 1:D:13:GLU:HB3   | 1:D:14:PRO:HD2   | 1.80                     | 0.63              |
| 1:B:84:ARG:HB2   | 1:B:84:ARG:HH11  | 1.64                     | 0.63              |
| 1:C:274:VAL:C    | 1:C:276:HIS:H    | 2.02                     | 0.63              |
| 1:D:118:TYR:CE1  | 1:D:245:LEU:HD11 | 2.32                     | 0.63              |
| 1:A:267:VAL:HA   | 1:A:270:ILE:HB   | 1.80                     | 0.63              |
| 1:B:274:VAL:C    | 1:B:276:HIS:H    | 2.02                     | 0.63              |
| 1:C:149:GLY:O    | 1:C:164:PHE:CD1  | 2.51                     | 0.63              |
| 1:D:51:LEU:HD11  | 1:D:70:ILE:HD12  | 1.79                     | 0.63              |
| 1:D:77:PHE:H     | 1:D:84:ARG:HD3   | 1.62                     | 0.63              |
| 1:B:193:TYR:O    | 1:B:194:PHE:HB2  | 1.97                     | 0.63              |
| 1:C:47:LYS:HD3   | 1:C:49:ARG:NH2   | 2.14                     | 0.63              |
| 1:C:65:TYR:CD1   | 1:C:70:ILE:HD11  | 2.34                     | 0.63              |
| 1:C:77:PHE:H     | 1:C:84:ARG:HD3   | 1.62                     | 0.63              |
| 1:D:232:ILE:HG22 | 1:D:233:ALA:N    | 2.13                     | 0.63              |
| 1:D:53:PHE:HE2   | 1:D:63:LYS:HB3   | 1.64                     | 0.63              |
| 1:E:53:PHE:HE2   | 1:E:63:LYS:HB3   | 1.61                     | 0.63              |
| 1:A:48:ASP:O     | 1:A:51:LEU:HD23  | 1.99                     | 0.62              |
| 1:E:144:ASP:HA   | 1:E:147:LYS:HB3  | 1.82                     | 0.62              |
| 1:B:128:TYR:O    | 1:B:129:LEU:HB2  | 1.98                     | 0.62              |
| 1:D:216:TRP:HA   | 1:D:295:ARG:NH2  | 2.13                     | 0.62              |
| 1:A:192:GLN:CD   | 1:B:249:PRO:HB3  | 2.19                     | 0.62              |
| 1:B:118:TYR:CE1  | 1:B:245:LEU:HD11 | 2.33                     | 0.62              |
| 1:B:283:GLN:N    | 1:B:284:PRO:CD   | 2.63                     | 0.62              |
| 1:A:194:PHE:HE2  | 1:B:250:TYR:C    | 2.03                     | 0.62              |
| 1:A:274:VAL:C    | 1:A:276:HIS:H    | 2.02                     | 0.62              |
| 1:D:267:VAL:HA   | 1:D:270:ILE:HB   | 1.80                     | 0.62              |
| 1:E:21:ILE:O     | 1:E:149:GLY:HA3  | 1.98                     | 0.62              |
| 1:C:193:TYR:O    | 1:C:194:PHE:CB   | 2.46                     | 0.62              |
| 1:D:84:ARG:CB    | 1:D:84:ARG:HH11  | 2.12                     | 0.62              |
| 1:C:283:GLN:N    | 1:C:284:PRO:CD   | 2.62                     | 0.62              |
| 1:A:13:GLU:HB3   | 1:A:14:PRO:HD2   | 1.81                     | 0.62              |
| 1:B:249:PRO:HD2  | 1:B:250:TYR:CD1  | 2.35                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:249:PRO:HD2  | 1:D:250:TYR:CD1  | 2.35                     | 0.62              |
| 1:C:202:LEU:HD12 | 1:D:259:PHE:CE1  | 2.35                     | 0.61              |
| 1:D:65:TYR:CG    | 1:D:70:ILE:HD11  | 2.35                     | 0.61              |
| 1:E:283:GLN:N    | 1:E:284:PRO:CD   | 2.62                     | 0.61              |
| 1:B:48:ASP:O     | 1:B:51:LEU:HD23  | 2.00                     | 0.61              |
| 1:B:84:ARG:HH11  | 1:B:84:ARG:CB    | 2.13                     | 0.61              |
| 1:D:128:TYR:O    | 1:D:129:LEU:HB2  | 1.98                     | 0.61              |
| 1:D:283:GLN:N    | 1:D:284:PRO:CD   | 2.62                     | 0.61              |
| 1:C:84:ARG:HB2   | 1:C:84:ARG:HH11  | 1.65                     | 0.61              |
| 1:C:219:SER:OG   | 1:C:222:ALA:HB3  | 1.99                     | 0.61              |
| 1:D:29:LEU:HB2   | 1:D:156:LEU:HD11 | 1.81                     | 0.61              |
| 1:A:89:VAL:CG1   | 1:A:102:LEU:HD23 | 2.30                     | 0.61              |
| 1:C:13:GLU:HB3   | 1:C:14:PRO:HD2   | 1.82                     | 0.61              |
| 1:C:93:VAL:HG22  | 1:C:99:VAL:HG22  | 1.83                     | 0.61              |
| 1:D:77:PHE:CD1   | 1:D:84:ARG:HD2   | 2.36                     | 0.61              |
| 1:E:274:VAL:C    | 1:E:276:HIS:H    | 2.02                     | 0.61              |
| 1:A:131:VAL:HG11 | 1:A:140:VAL:HG13 | 1.83                     | 0.61              |
| 1:B:77:PHE:H     | 1:B:84:ARG:HD3   | 1.66                     | 0.61              |
| 1:D:193:TYR:O    | 1:D:194:PHE:HB2  | 1.98                     | 0.61              |
| 1:D:131:VAL:HG11 | 1:D:140:VAL:HG13 | 1.82                     | 0.61              |
| 1:B:51:LEU:HD11  | 1:B:70:ILE:HD12  | 1.82                     | 0.61              |
| 1:B:238:ASN:HA   | 1:B:258:ILE:HD11 | 1.81                     | 0.61              |
| 1:D:137:ARG:HD2  | 1:D:179:LEU:HG   | 1.82                     | 0.61              |
| 1:E:200:ILE:O    | 1:E:204:MET:HB2  | 2.01                     | 0.61              |
| 1:B:131:VAL:HG11 | 1:B:140:VAL:HG13 | 1.81                     | 0.61              |
| 1:B:281:GLU:O    | 1:B:283:GLN:N    | 2.34                     | 0.61              |
| 1:C:77:PHE:CD1   | 1:C:84:ARG:HD2   | 2.35                     | 0.61              |
| 1:D:215:PHE:HZ   | 1:D:298:PHE:CD1  | 2.18                     | 0.61              |
| 1:E:94:SER:OG    | 1:E:95:PRO:HD2   | 2.01                     | 0.61              |
| 1:A:24:ILE:HD13  | 1:A:104:ARG:HE   | 1.64                     | 0.60              |
| 1:A:149:GLY:O    | 1:A:164:PHE:CD1  | 2.54                     | 0.60              |
| 1:B:144:ASP:HA   | 1:B:147:LYS:HB3  | 1.83                     | 0.60              |
| 1:C:215:PHE:HZ   | 1:C:298:PHE:CD1  | 2.17                     | 0.60              |
| 1:C:86:ALA:HB2   | 1:C:105:PHE:HB3  | 1.83                     | 0.60              |
| 1:D:89:VAL:CG1   | 1:D:102:LEU:HD23 | 2.31                     | 0.60              |
| 1:A:157:THR:HG21 | 1:B:34:GLU:HG3   | 1.84                     | 0.60              |
| 1:B:232:ILE:HG22 | 1:B:233:ALA:N    | 2.16                     | 0.60              |
| 1:C:84:ARG:HH11  | 1:C:84:ARG:CB    | 2.14                     | 0.60              |
| 1:A:84:ARG:HB2   | 1:A:84:ARG:HH11  | 1.67                     | 0.60              |
| 1:B:193:TYR:O    | 1:B:194:PHE:CB   | 2.48                     | 0.60              |
| 1:E:193:TYR:O    | 1:E:194:PHE:CB   | 2.49                     | 0.60              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:249:PRO:HD2  | 1:A:250:TYR:CD1  | 2.37                     | 0.60              |
| 1:B:94:SER:OG    | 1:B:95:PRO:HD2   | 2.02                     | 0.60              |
| 1:B:137:ARG:HD2  | 1:B:179:LEU:HG   | 1.83                     | 0.60              |
| 1:A:225:THR:HG22 | 1:B:224:VAL:HG23 | 1.83                     | 0.60              |
| 1:B:77:PHE:CD1   | 1:B:84:ARG:HD2   | 2.36                     | 0.60              |
| 1:A:51:LEU:HD11  | 1:A:70:ILE:HD12  | 1.84                     | 0.60              |
| 1:D:76:ARG:HH22  | 1:D:130:ILE:CD1  | 2.10                     | 0.60              |
| 1:C:144:ASP:HA   | 1:C:147:LYS:HB3  | 1.84                     | 0.59              |
| 1:C:194:PHE:HA   | 1:C:197:ILE:HD12 | 1.84                     | 0.59              |
| 1:D:281:GLU:O    | 1:D:283:GLN:N    | 2.35                     | 0.59              |
| 1:E:13:GLU:HB3   | 1:E:14:PRO:HD2   | 1.83                     | 0.59              |
| 1:E:65:TYR:CD1   | 1:E:70:ILE:HD11  | 2.37                     | 0.59              |
| 1:E:86:ALA:HB2   | 1:E:105:PHE:HB3  | 1.84                     | 0.59              |
| 1:C:194:PHE:C    | 1:C:196:TYR:N    | 2.54                     | 0.59              |
| 1:A:224:VAL:C    | 1:A:226:LEU:N    | 2.56                     | 0.59              |
| 1:B:76:ARG:NH2   | 1:B:130:ILE:CD1  | 2.55                     | 0.59              |
| 1:C:27:TYR:CB    | 1:D:110:LEU:HD11 | 2.31                     | 0.59              |
| 1:A:238:ASN:HA   | 1:A:258:ILE:HD11 | 1.84                     | 0.59              |
| 1:C:200:ILE:CD1  | 1:C:240:LEU:HD23 | 2.30                     | 0.59              |
| 1:E:224:VAL:C    | 1:E:226:LEU:H    | 2.05                     | 0.59              |
| 1:A:193:TYR:O    | 1:A:194:PHE:CB   | 2.49                     | 0.59              |
| 1:B:221:GLU:OE2  | 1:C:221:GLU:CD   | 2.40                     | 0.59              |
| 1:E:65:TYR:CG    | 1:E:70:ILE:HD11  | 2.36                     | 0.59              |
| 1:B:200:ILE:O    | 1:B:204:MET:HB2  | 2.02                     | 0.59              |
| 1:E:24:ILE:HD13  | 1:E:104:ARG:HE   | 1.67                     | 0.59              |
| 1:A:84:ARG:HH11  | 1:A:84:ARG:CB    | 2.14                     | 0.59              |
| 1:B:215:PHE:HZ   | 1:B:298:PHE:CD1  | 2.20                     | 0.59              |
| 1:A:215:PHE:HZ   | 1:A:298:PHE:CD1  | 2.20                     | 0.59              |
| 1:A:226:LEU:HD23 | 1:B:224:VAL:CB   | 2.32                     | 0.59              |
| 1:C:194:PHE:HE2  | 1:D:250:TYR:O    | 1.86                     | 0.59              |
| 1:C:281:GLU:O    | 1:C:283:GLN:N    | 2.36                     | 0.59              |
| 1:B:93:VAL:HG22  | 1:B:99:VAL:HG22  | 1.85                     | 0.59              |
| 1:C:249:PRO:HD2  | 1:C:250:TYR:CD1  | 2.37                     | 0.59              |
| 1:C:139:ILE:HG12 | 1:C:172:ASN:ND2  | 2.14                     | 0.59              |
| 1:D:54:ASP:HB2   | 1:D:57:ARG:CG    | 2.32                     | 0.59              |
| 1:B:139:ILE:HG12 | 1:B:172:ASN:ND2  | 2.16                     | 0.58              |
| 1:C:234:HIS:CE1  | 1:C:261:ILE:CG2  | 2.85                     | 0.58              |
| 1:E:276:HIS:O    | 1:E:280:VAL:HG22 | 2.03                     | 0.58              |
| 1:A:86:ALA:HB2   | 1:A:105:PHE:HB3  | 1.85                     | 0.58              |
| 1:B:54:ASP:HB2   | 1:B:57:ARG:CG    | 2.33                     | 0.58              |
| 1:B:65:TYR:CD1   | 1:B:70:ILE:HD11  | 2.38                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:225:THR:HG22 | 1:E:224:VAL:CG2  | 2.30                     | 0.58              |
| 1:E:194:PHE:HA   | 1:E:197:ILE:HD12 | 1.85                     | 0.58              |
| 1:E:232:ILE:HG22 | 1:E:233:ALA:N    | 2.18                     | 0.58              |
| 1:C:131:VAL:HG11 | 1:C:140:VAL:HG13 | 1.84                     | 0.58              |
| 1:E:131:VAL:HG11 | 1:E:140:VAL:HG13 | 1.86                     | 0.58              |
| 1:A:275:GLN:O    | 1:A:275:GLN:HG2  | 2.04                     | 0.58              |
| 1:C:275:GLN:O    | 1:C:275:GLN:HG2  | 2.04                     | 0.58              |
| 1:C:276:HIS:O    | 1:C:280:VAL:HG22 | 2.03                     | 0.58              |
| 1:E:215:PHE:HZ   | 1:E:298:PHE:CD1  | 2.21                     | 0.58              |
| 1:E:281:GLU:O    | 1:E:283:GLN:N    | 2.37                     | 0.58              |
| 1:D:139:ILE:HG12 | 1:D:172:ASN:ND2  | 2.17                     | 0.58              |
| 1:A:65:TYR:CG    | 1:A:70:ILE:HD11  | 2.38                     | 0.58              |
| 1:D:76:ARG:NH2   | 1:D:130:ILE:CD1  | 2.56                     | 0.58              |
| 1:B:65:TYR:CG    | 1:B:70:ILE:HD11  | 2.38                     | 0.58              |
| 1:D:140:VAL:HG22 | 1:D:181:SER:HB3  | 1.86                     | 0.58              |
| 1:E:149:GLY:O    | 1:E:164:PHE:CD1  | 2.53                     | 0.58              |
| 1:E:298:PHE:HB2  | 1:E:299:PRO:HD3  | 1.85                     | 0.58              |
| 1:B:86:ALA:HB2   | 1:B:105:PHE:HB3  | 1.86                     | 0.58              |
| 1:C:200:ILE:O    | 1:C:204:MET:HB2  | 2.04                     | 0.58              |
| 1:D:48:ASP:O     | 1:D:51:LEU:HD23  | 2.04                     | 0.58              |
| 1:E:219:SER:OG   | 1:E:222:ALA:HB3  | 2.04                     | 0.58              |
| 1:C:194:PHE:C    | 1:C:196:TYR:H    | 2.06                     | 0.58              |
| 1:E:77:PHE:H     | 1:E:84:ARG:HD3   | 1.68                     | 0.58              |
| 1:E:224:VAL:C    | 1:E:226:LEU:N    | 2.56                     | 0.58              |
| 1:A:224:VAL:C    | 1:A:226:LEU:H    | 2.05                     | 0.58              |
| 1:D:86:ALA:HB2   | 1:D:105:PHE:HB3  | 1.85                     | 0.57              |
| 1:D:193:TYR:O    | 1:D:194:PHE:CB   | 2.51                     | 0.57              |
| 1:E:47:LYS:CD    | 1:E:49:ARG:HH21  | 2.17                     | 0.57              |
| 1:E:215:PHE:HZ   | 1:E:298:PHE:CE1  | 2.21                     | 0.57              |
| 1:E:275:GLN:O    | 1:E:275:GLN:HG2  | 2.04                     | 0.57              |
| 1:A:281:GLU:O    | 1:A:283:GLN:N    | 2.37                     | 0.57              |
| 1:C:118:TYR:CD1  | 1:C:245:LEU:HD11 | 2.39                     | 0.57              |
| 1:C:215:PHE:HZ   | 1:C:298:PHE:CE1  | 2.22                     | 0.57              |
| 1:E:54:ASP:HB2   | 1:E:57:ARG:CG    | 2.34                     | 0.57              |
| 1:E:194:PHE:C    | 1:E:196:TYR:N    | 2.56                     | 0.57              |
| 1:A:65:TYR:CD1   | 1:A:70:ILE:HD11  | 2.39                     | 0.57              |
| 1:A:140:VAL:HG22 | 1:A:181:SER:HB3  | 1.86                     | 0.57              |
| 1:B:275:GLN:HG2  | 1:B:275:GLN:O    | 2.04                     | 0.57              |
| 1:E:264:PHE:CE2  | 1:E:302:PHE:HB2  | 2.39                     | 0.57              |
| 1:B:194:PHE:C    | 1:B:196:TYR:N    | 2.57                     | 0.57              |
| 1:A:41:PHE:HZ    | 1:B:76:ARG:NH2   | 2.03                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:44:LEU:HD12  | 1:C:101:TYR:CD2  | 2.40                     | 0.57              |
| 1:A:47:LYS:HD3   | 1:A:49:ARG:NH2   | 2.19                     | 0.57              |
| 1:E:93:VAL:HG22  | 1:E:99:VAL:HG22  | 1.86                     | 0.57              |
| 1:B:47:LYS:CD    | 1:B:49:ARG:HH21  | 2.18                     | 0.57              |
| 1:B:224:VAL:C    | 1:B:226:LEU:H    | 2.07                     | 0.57              |
| 1:C:54:ASP:HB2   | 1:C:57:ARG:CG    | 2.34                     | 0.57              |
| 1:E:62:VAL:HG13  | 1:E:93:VAL:O     | 2.05                     | 0.57              |
| 1:B:149:GLY:O    | 1:B:164:PHE:CD1  | 2.56                     | 0.57              |
| 1:B:76:ARG:HH22  | 1:B:130:ILE:CD1  | 2.09                     | 0.57              |
| 1:C:86:ALA:HB2   | 1:C:105:PHE:CB   | 2.35                     | 0.57              |
| 1:D:192:GLN:CD   | 1:E:249:PRO:HB3  | 2.26                     | 0.56              |
| 1:D:276:HIS:O    | 1:D:280:VAL:HG22 | 2.05                     | 0.56              |
| 1:E:29:LEU:C     | 1:E:29:LEU:HD23  | 2.25                     | 0.56              |
| 1:A:139:ILE:HG12 | 1:A:172:ASN:ND2  | 2.14                     | 0.56              |
| 1:B:194:PHE:HA   | 1:B:197:ILE:HD12 | 1.86                     | 0.56              |
| 1:B:276:HIS:C    | 1:B:278:LEU:H    | 2.09                     | 0.56              |
| 1:C:76:ARG:NH2   | 1:C:130:ILE:CD1  | 2.62                     | 0.56              |
| 1:C:89:VAL:CG1   | 1:C:102:LEU:HD23 | 2.35                     | 0.56              |
| 1:C:147:LYS:HE2  | 1:C:165:THR:HA   | 1.87                     | 0.56              |
| 1:D:53:PHE:CD1   | 1:D:95:PRO:HA    | 2.41                     | 0.56              |
| 1:D:215:PHE:HZ   | 1:D:298:PHE:CE1  | 2.23                     | 0.56              |
| 1:E:77:PHE:CD1   | 1:E:84:ARG:HD2   | 2.40                     | 0.56              |
| 1:D:194:PHE:HA   | 1:D:197:ILE:HD12 | 1.86                     | 0.56              |
| 1:A:215:PHE:HZ   | 1:A:298:PHE:CE1  | 2.23                     | 0.56              |
| 1:A:222:ALA:O    | 1:A:226:LEU:HB2  | 2.06                     | 0.56              |
| 1:C:224:VAL:C    | 1:C:226:LEU:H    | 2.08                     | 0.56              |
| 1:D:238:ASN:HA   | 1:D:258:ILE:HD11 | 1.86                     | 0.56              |
| 1:D:37:LYS:HG2   | 1:D:108:ARG:HB3  | 1.88                     | 0.56              |
| 1:D:48:ASP:O     | 1:D:50:ARG:N     | 2.39                     | 0.56              |
| 1:D:149:GLY:O    | 1:D:164:PHE:CD1  | 2.57                     | 0.56              |
| 1:E:238:ASN:HA   | 1:E:258:ILE:HD11 | 1.86                     | 0.56              |
| 1:A:147:LYS:O    | 1:A:147:LYS:HD3  | 2.06                     | 0.56              |
| 1:B:147:LYS:O    | 1:B:147:LYS:HD3  | 2.06                     | 0.56              |
| 1:B:215:PHE:HZ   | 1:B:298:PHE:CE1  | 2.24                     | 0.56              |
| 1:D:275:GLN:O    | 1:D:275:GLN:HG2  | 2.04                     | 0.56              |
| 1:A:76:ARG:NH2   | 1:A:130:ILE:CD1  | 2.60                     | 0.56              |
| 1:A:147:LYS:HE2  | 1:A:165:THR:HA   | 1.86                     | 0.56              |
| 1:C:276:HIS:C    | 1:C:278:LEU:H    | 2.09                     | 0.56              |
| 1:E:70:ILE:HD13  | 1:E:70:ILE:N     | 2.21                     | 0.56              |
| 1:A:25:GLU:HG3   | 1:B:79:ASN:HA    | 1.86                     | 0.56              |
| 1:A:194:PHE:C    | 1:A:196:TYR:N    | 2.58                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:298:PHE:HB2  | 1:B:299:PRO:HD3  | 1.88                     | 0.56              |
| 1:A:54:ASP:HB2   | 1:A:57:ARG:CG    | 2.35                     | 0.56              |
| 1:A:253:TYR:O    | 1:A:256:ALA:HB3  | 2.06                     | 0.56              |
| 1:B:54:ASP:HB2   | 1:B:57:ARG:CB    | 2.36                     | 0.56              |
| 1:E:51:LEU:HD11  | 1:E:70:ILE:HD12  | 1.88                     | 0.56              |
| 1:E:305:ALA:O    | 1:E:309:LEU:HB2  | 2.06                     | 0.56              |
| 1:B:23:LEU:HA    | 1:B:40:ALA:HB2   | 1.87                     | 0.55              |
| 1:B:24:ILE:HD13  | 1:B:104:ARG:HE   | 1.71                     | 0.55              |
| 1:B:140:VAL:HG22 | 1:B:181:SER:HB3  | 1.88                     | 0.55              |
| 1:E:147:LYS:O    | 1:E:147:LYS:HD3  | 2.06                     | 0.55              |
| 1:A:23:LEU:HA    | 1:A:40:ALA:HB2   | 1.87                     | 0.55              |
| 1:B:253:TYR:O    | 1:B:256:ALA:HB3  | 2.06                     | 0.55              |
| 1:C:147:LYS:O    | 1:C:147:LYS:HD3  | 2.06                     | 0.55              |
| 1:C:238:ASN:HA   | 1:C:258:ILE:HD11 | 1.88                     | 0.55              |
| 1:D:23:LEU:HA    | 1:D:40:ALA:HB2   | 1.88                     | 0.55              |
| 1:D:147:LYS:O    | 1:D:147:LYS:HD3  | 2.06                     | 0.55              |
| 1:D:276:HIS:C    | 1:D:278:LEU:H    | 2.09                     | 0.55              |
| 1:C:47:LYS:CD    | 1:C:49:ARG:HH21  | 2.20                     | 0.55              |
| 1:A:42:LEU:HD23  | 1:A:103:GLU:OE1  | 2.06                     | 0.55              |
| 1:B:89:VAL:CG1   | 1:B:102:LEU:HD23 | 2.35                     | 0.55              |
| 1:C:215:PHE:CZ   | 1:C:298:PHE:CD1  | 2.94                     | 0.55              |
| 1:D:118:TYR:CE2  | 1:D:196:TYR:HE2  | 2.25                     | 0.55              |
| 1:D:123:GLN:HA   | 1:D:123:GLN:NE2  | 2.21                     | 0.55              |
| 1:D:298:PHE:HB2  | 1:D:299:PRO:HD3  | 1.88                     | 0.55              |
| 1:E:200:ILE:CD1  | 1:E:240:LEU:HD23 | 2.32                     | 0.55              |
| 1:A:86:ALA:HB2   | 1:A:105:PHE:CB   | 2.37                     | 0.55              |
| 1:A:240:LEU:HD13 | 1:B:239:ILE:CG1  | 2.37                     | 0.55              |
| 1:A:276:HIS:C    | 1:A:278:LEU:H    | 2.09                     | 0.55              |
| 1:D:84:ARG:HB2   | 1:D:84:ARG:HH11  | 1.70                     | 0.55              |
| 1:B:118:TYR:CE2  | 1:B:196:TYR:HE2  | 2.25                     | 0.55              |
| 1:C:29:LEU:C     | 1:C:29:LEU:HD23  | 2.27                     | 0.55              |
| 1:C:298:PHE:HB2  | 1:C:299:PRO:HD3  | 1.88                     | 0.55              |
| 1:A:44:LEU:HD12  | 1:A:101:TYR:CD2  | 2.42                     | 0.55              |
| 1:A:194:PHE:HA   | 1:A:197:ILE:HD12 | 1.88                     | 0.55              |
| 1:B:118:TYR:CE1  | 1:B:245:LEU:HD13 | 2.41                     | 0.55              |
| 1:B:224:VAL:C    | 1:B:226:LEU:N    | 2.57                     | 0.55              |
| 1:D:194:PHE:C    | 1:D:196:TYR:N    | 2.57                     | 0.55              |
| 1:D:215:PHE:CZ   | 1:D:298:PHE:CD1  | 2.95                     | 0.55              |
| 1:D:278:LEU:HD23 | 1:D:287:ALA:HA   | 1.88                     | 0.55              |
| 1:A:276:HIS:O    | 1:A:280:VAL:HG22 | 2.06                     | 0.55              |
| 1:D:41:PHE:CE2   | 1:E:175:LEU:CD2  | 2.90                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:276:HIS:C    | 1:E:278:LEU:H    | 2.09                     | 0.55              |
| 1:E:53:PHE:CD1   | 1:E:95:PRO:HA    | 2.42                     | 0.55              |
| 1:A:157:THR:HG21 | 1:B:34:GLU:OE1   | 2.05                     | 0.54              |
| 1:A:278:LEU:HD23 | 1:A:287:ALA:HA   | 1.89                     | 0.54              |
| 1:B:62:VAL:HG13  | 1:B:93:VAL:O     | 2.07                     | 0.54              |
| 1:A:200:ILE:O    | 1:A:204:MET:HB2  | 2.07                     | 0.54              |
| 1:B:53:PHE:CD1   | 1:B:95:PRO:HA    | 2.42                     | 0.54              |
| 1:C:118:TYR:CE2  | 1:C:196:TYR:HE2  | 2.25                     | 0.54              |
| 1:E:194:PHE:C    | 1:E:196:TYR:H    | 2.10                     | 0.54              |
| 1:C:23:LEU:CD2   | 1:C:38:VAL:HG21  | 2.37                     | 0.54              |
| 1:C:42:LEU:HD23  | 1:C:103:GLU:OE1  | 2.06                     | 0.54              |
| 1:D:118:TYR:CE1  | 1:D:245:LEU:HD13 | 2.41                     | 0.54              |
| 1:E:98:THR:HG22  | 1:E:98:THR:O     | 2.07                     | 0.54              |
| 1:C:224:VAL:C    | 1:C:226:LEU:N    | 2.60                     | 0.54              |
| 1:D:93:VAL:HG22  | 1:D:99:VAL:HG22  | 1.88                     | 0.54              |
| 1:A:194:PHE:CE2  | 1:B:250:TYR:C    | 2.80                     | 0.54              |
| 1:C:215:PHE:O    | 1:C:291:THR:HG22 | 2.08                     | 0.54              |
| 1:A:298:PHE:HB2  | 1:A:299:PRO:HD3  | 1.88                     | 0.54              |
| 1:B:305:ALA:O    | 1:B:309:LEU:HB2  | 2.08                     | 0.54              |
| 1:C:264:PHE:CE2  | 1:C:302:PHE:HB2  | 2.43                     | 0.54              |
| 1:D:18:ASN:O     | 1:D:44:LEU:HA    | 2.08                     | 0.54              |
| 1:D:222:ALA:O    | 1:D:226:LEU:HB2  | 2.08                     | 0.54              |
| 1:E:86:ALA:HB2   | 1:E:105:PHE:CB   | 2.37                     | 0.54              |
| 1:A:37:LYS:HG2   | 1:A:108:ARG:HB3  | 1.89                     | 0.54              |
| 1:B:23:LEU:CD2   | 1:B:38:VAL:HG21  | 2.38                     | 0.54              |
| 1:C:41:PHE:HZ    | 1:D:76:ARG:NH2   | 2.06                     | 0.54              |
| 1:D:144:ASP:HA   | 1:D:147:LYS:HB3  | 1.89                     | 0.54              |
| 1:E:278:LEU:HD23 | 1:E:287:ALA:HA   | 1.89                     | 0.54              |
| 1:B:123:GLN:HA   | 1:B:123:GLN:NE2  | 2.22                     | 0.54              |
| 1:B:267:VAL:HG23 | 1:B:298:PHE:CZ   | 2.42                     | 0.54              |
| 1:B:278:LEU:HD23 | 1:B:287:ALA:HA   | 1.89                     | 0.54              |
| 1:E:54:ASP:HB2   | 1:E:57:ARG:CB    | 2.37                     | 0.54              |
| 1:A:18:ASN:O     | 1:A:44:LEU:HA    | 2.07                     | 0.53              |
| 1:C:155:PHE:HD1  | 1:D:110:LEU:CD2  | 2.22                     | 0.53              |
| 1:C:232:ILE:HG22 | 1:C:233:ALA:N    | 2.22                     | 0.53              |
| 1:D:86:ALA:HB2   | 1:D:105:PHE:CB   | 2.38                     | 0.53              |
| 1:E:118:TYR:CD1  | 1:E:245:LEU:HD11 | 2.43                     | 0.53              |
| 1:A:234:HIS:CE1  | 1:A:261:ILE:CG2  | 2.92                     | 0.53              |
| 1:B:118:TYR:CD1  | 1:B:245:LEU:HD11 | 2.43                     | 0.53              |
| 1:D:47:LYS:CD    | 1:D:49:ARG:HH21  | 2.21                     | 0.53              |
| 1:C:51:LEU:HD11  | 1:C:70:ILE:HD12  | 1.90                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:224:VAL:C    | 1:D:226:LEU:H    | 2.11                     | 0.53              |
| 1:A:240:LEU:HD13 | 1:B:239:ILE:HG12 | 1.91                     | 0.53              |
| 1:B:70:ILE:HG22  | 1:B:71:TRP:N     | 2.24                     | 0.53              |
| 1:B:119:PRO:O    | 1:B:193:TYR:HB3  | 2.09                     | 0.53              |
| 1:B:219:SER:OG   | 1:B:222:ALA:HB3  | 2.09                     | 0.53              |
| 1:C:62:VAL:HG13  | 1:C:93:VAL:O     | 2.08                     | 0.53              |
| 1:C:226:LEU:CD2  | 1:D:224:VAL:HB   | 2.37                     | 0.53              |
| 1:D:54:ASP:HB2   | 1:D:57:ARG:CB    | 2.37                     | 0.53              |
| 1:D:118:TYR:CD1  | 1:D:245:LEU:HD11 | 2.43                     | 0.53              |
| 1:E:215:PHE:CZ   | 1:E:298:PHE:CD1  | 2.96                     | 0.53              |
| 1:A:23:LEU:CD2   | 1:A:38:VAL:HG21  | 2.38                     | 0.53              |
| 1:A:215:PHE:CZ   | 1:A:298:PHE:CD1  | 2.96                     | 0.53              |
| 1:B:86:ALA:HB2   | 1:B:105:PHE:CB   | 2.39                     | 0.53              |
| 1:C:76:ARG:HH22  | 1:C:130:ILE:CD1  | 2.17                     | 0.53              |
| 1:D:98:THR:HG22  | 1:D:98:THR:O     | 2.09                     | 0.53              |
| 1:D:119:PRO:O    | 1:D:193:TYR:HB3  | 2.09                     | 0.53              |
| 1:C:225:THR:HG21 | 1:D:225:THR:OG1  | 2.09                     | 0.53              |
| 1:D:264:PHE:CE2  | 1:D:302:PHE:HB2  | 2.44                     | 0.53              |
| 1:B:147:LYS:HE2  | 1:B:165:THR:HA   | 1.90                     | 0.53              |
| 1:C:22:TYR:HA    | 1:C:149:GLY:HA2  | 1.91                     | 0.53              |
| 1:A:54:ASP:HB2   | 1:A:57:ARG:CB    | 2.39                     | 0.52              |
| 1:B:194:PHE:C    | 1:B:196:TYR:H    | 2.12                     | 0.52              |
| 1:B:215:PHE:O    | 1:B:291:THR:HG22 | 2.09                     | 0.52              |
| 1:C:118:TYR:CE1  | 1:C:245:LEU:HD13 | 2.43                     | 0.52              |
| 1:C:267:VAL:HG23 | 1:C:298:PHE:CZ   | 2.44                     | 0.52              |
| 1:C:54:ASP:HB2   | 1:C:57:ARG:CB    | 2.38                     | 0.52              |
| 1:E:118:TYR:CE2  | 1:E:196:TYR:HE2  | 2.27                     | 0.52              |
| 1:A:144:ASP:HA   | 1:A:147:LYS:HB3  | 1.90                     | 0.52              |
| 1:B:29:LEU:HD23  | 1:B:29:LEU:C     | 2.30                     | 0.52              |
| 1:B:249:PRO:HD2  | 1:B:250:TYR:CE1  | 2.44                     | 0.52              |
| 1:C:140:VAL:HG22 | 1:C:181:SER:HB3  | 1.91                     | 0.52              |
| 1:C:278:LEU:HD23 | 1:C:287:ALA:HA   | 1.90                     | 0.52              |
| 1:D:23:LEU:CD2   | 1:D:38:VAL:HG21  | 2.39                     | 0.52              |
| 1:D:146:GLU:HG3  | 1:E:176:GLU:CG   | 2.39                     | 0.52              |
| 1:D:225:THR:HG21 | 1:E:224:VAL:CG2  | 2.33                     | 0.52              |
| 1:E:47:LYS:HD3   | 1:E:49:ARG:HH21  | 1.73                     | 0.52              |
| 1:E:118:TYR:CE1  | 1:E:245:LEU:HD13 | 2.44                     | 0.52              |
| 1:C:226:LEU:HD23 | 1:D:224:VAL:HG21 | 1.92                     | 0.52              |
| 1:D:29:LEU:HD23  | 1:D:29:LEU:C     | 2.29                     | 0.52              |
| 1:D:219:SER:OG   | 1:D:222:ALA:HB3  | 2.08                     | 0.52              |
| 1:E:23:LEU:CD2   | 1:E:38:VAL:HG21  | 2.39                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:194:PHE:C    | 1:A:196:TYR:H    | 2.12                     | 0.52              |
| 1:B:215:PHE:CZ   | 1:B:298:PHE:CD1  | 2.96                     | 0.52              |
| 1:D:77:PHE:CE2   | 1:D:127:ILE:HG23 | 2.45                     | 0.52              |
| 1:D:215:PHE:O    | 1:D:291:THR:HG22 | 2.09                     | 0.52              |
| 1:E:147:LYS:HE2  | 1:E:165:THR:HA   | 1.91                     | 0.52              |
| 1:E:234:HIS:CE1  | 1:E:261:ILE:CG2  | 2.92                     | 0.52              |
| 1:A:210:ILE:HG23 | 1:B:269:VAL:HG11 | 1.92                     | 0.52              |
| 1:D:224:VAL:C    | 1:D:226:LEU:N    | 2.61                     | 0.52              |
| 1:A:119:PRO:O    | 1:A:193:TYR:HB3  | 2.10                     | 0.52              |
| 1:D:253:TYR:O    | 1:D:256:ALA:HB3  | 2.10                     | 0.52              |
| 1:E:70:ILE:HG22  | 1:E:71:TRP:N     | 2.25                     | 0.52              |
| 1:E:109:VAL:HG11 | 1:E:126:HIS:O    | 2.10                     | 0.52              |
| 1:E:215:PHE:O    | 1:E:291:THR:HG22 | 2.09                     | 0.52              |
| 1:A:305:ALA:O    | 1:A:309:LEU:HB2  | 2.09                     | 0.51              |
| 1:B:222:ALA:O    | 1:B:226:LEU:HB2  | 2.10                     | 0.51              |
| 1:E:140:VAL:HG22 | 1:E:181:SER:HB3  | 1.91                     | 0.51              |
| 1:B:215:PHE:O    | 1:B:291:THR:CG2  | 2.58                     | 0.51              |
| 1:C:109:VAL:HG11 | 1:C:126:HIS:O    | 2.11                     | 0.51              |
| 1:D:123:GLN:HB2  | 1:D:189:ILE:HG13 | 1.92                     | 0.51              |
| 1:E:212:TRP:CZ3  | 1:E:298:PHE:HB3  | 2.45                     | 0.51              |
| 1:A:29:LEU:C     | 1:A:29:LEU:HD23  | 2.29                     | 0.51              |
| 1:A:256:ALA:HB1  | 1:A:309:LEU:HD21 | 1.92                     | 0.51              |
| 1:E:222:ALA:O    | 1:E:226:LEU:HB2  | 2.11                     | 0.51              |
| 1:B:77:PHE:CE2   | 1:B:127:ILE:HG23 | 2.46                     | 0.51              |
| 1:C:155:PHE:CD1  | 1:D:110:LEU:CD2  | 2.93                     | 0.51              |
| 1:C:222:ALA:CB   | 1:D:221:GLU:OE1  | 2.59                     | 0.51              |
| 1:E:23:LEU:HA    | 1:E:40:ALA:HB2   | 1.93                     | 0.51              |
| 1:B:191:ARG:HG3  | 1:B:192:GLN:N    | 2.26                     | 0.51              |
| 1:C:53:PHE:CD1   | 1:C:95:PRO:HA    | 2.45                     | 0.51              |
| 1:D:249:PRO:HD2  | 1:D:250:TYR:CE1  | 2.46                     | 0.51              |
| 1:A:9:PRO:HD3    | 1:A:71:TRP:CE3   | 2.45                     | 0.51              |
| 1:B:81:GLU:HG3   | 1:B:108:ARG:HG3  | 1.93                     | 0.51              |
| 1:B:264:PHE:CE2  | 1:B:302:PHE:HB2  | 2.45                     | 0.51              |
| 1:A:215:PHE:O    | 1:A:291:THR:HG22 | 2.09                     | 0.51              |
| 1:C:256:ALA:HB1  | 1:C:309:LEU:HD21 | 1.92                     | 0.51              |
| 1:E:37:LYS:HG2   | 1:E:108:ARG:HB3  | 1.91                     | 0.51              |
| 1:A:53:PHE:CD1   | 1:A:95:PRO:HA    | 2.46                     | 0.51              |
| 1:A:147:LYS:O    | 1:A:147:LYS:CD   | 2.59                     | 0.51              |
| 1:E:133:SER:HB2  | 1:E:137:ARG:NH1  | 2.25                     | 0.51              |
| 1:A:62:VAL:HG13  | 1:A:93:VAL:O     | 2.10                     | 0.51              |
| 1:B:147:LYS:O    | 1:B:147:LYS:CD   | 2.59                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:37:LYS:HG2   | 1:C:108:ARG:HB3  | 1.92                     | 0.51              |
| 1:C:77:PHE:CE2   | 1:C:127:ILE:HG23 | 2.46                     | 0.51              |
| 1:D:305:ALA:O    | 1:D:309:LEU:HB2  | 2.10                     | 0.51              |
| 1:E:77:PHE:CE2   | 1:E:127:ILE:HG23 | 2.46                     | 0.51              |
| 1:A:18:ASN:HB2   | 1:A:45:SER:OG    | 2.11                     | 0.51              |
| 1:A:215:PHE:O    | 1:A:291:THR:CG2  | 2.59                     | 0.51              |
| 1:B:44:LEU:HD12  | 1:B:101:TYR:CD2  | 2.46                     | 0.51              |
| 1:B:119:PRO:HB3  | 1:B:196:TYR:CD2  | 2.46                     | 0.51              |
| 1:D:119:PRO:HB3  | 1:D:196:TYR:CD2  | 2.46                     | 0.51              |
| 1:D:215:PHE:O    | 1:D:291:THR:CG2  | 2.58                     | 0.51              |
| 1:E:147:LYS:O    | 1:E:147:LYS:CD   | 2.59                     | 0.51              |
| 1:A:119:PRO:HB3  | 1:A:196:TYR:CD2  | 2.45                     | 0.50              |
| 1:A:217:SER:CB   | 1:B:220:TYR:HE2  | 2.23                     | 0.50              |
| 1:A:226:LEU:HD23 | 1:B:224:VAL:CG2  | 2.42                     | 0.50              |
| 1:C:240:LEU:HD22 | 1:D:239:ILE:HD11 | 1.92                     | 0.50              |
| 1:C:305:ALA:O    | 1:C:309:LEU:HB2  | 2.10                     | 0.50              |
| 1:A:27:TYR:HB3   | 1:B:110:LEU:HD11 | 1.90                     | 0.50              |
| 1:B:70:ILE:HG22  | 1:B:71:TRP:O     | 2.11                     | 0.50              |
| 1:E:253:TYR:HA   | 1:E:313:PHE:CD2  | 2.46                     | 0.50              |
| 1:B:197:ILE:CG2  | 1:B:202:LEU:HG   | 2.41                     | 0.50              |
| 1:C:98:THR:O     | 1:C:98:THR:HG22  | 2.10                     | 0.50              |
| 1:C:215:PHE:O    | 1:C:291:THR:CG2  | 2.59                     | 0.50              |
| 1:B:48:ASP:O     | 1:B:50:ARG:N     | 2.44                     | 0.50              |
| 1:D:253:TYR:HA   | 1:D:313:PHE:CD2  | 2.46                     | 0.50              |
| 1:A:209:PHE:HB2  | 1:B:266:PHE:HE1  | 1.76                     | 0.50              |
| 1:C:18:ASN:O     | 1:C:44:LEU:HA    | 2.12                     | 0.50              |
| 1:D:42:LEU:HD23  | 1:D:103:GLU:OE1  | 2.11                     | 0.50              |
| 1:E:44:LEU:HD12  | 1:E:101:TYR:CD2  | 2.47                     | 0.50              |
| 1:E:249:PRO:HD2  | 1:E:250:TYR:CE1  | 2.46                     | 0.50              |
| 1:C:123:GLN:HA   | 1:C:123:GLN:NE2  | 2.26                     | 0.50              |
| 1:C:253:TYR:HA   | 1:C:313:PHE:CD2  | 2.47                     | 0.50              |
| 1:D:194:PHE:C    | 1:D:196:TYR:H    | 2.14                     | 0.50              |
| 1:A:22:TYR:HA    | 1:A:149:GLY:HA2  | 1.94                     | 0.50              |
| 1:B:79:ASN:H     | 1:B:79:ASN:ND2   | 2.02                     | 0.50              |
| 1:C:215:PHE:HB2  | 1:C:216:TRP:CE3  | 2.47                     | 0.50              |
| 1:C:226:LEU:HD23 | 1:D:224:VAL:CG2  | 2.42                     | 0.50              |
| 1:D:234:HIS:CE1  | 1:D:261:ILE:CG2  | 2.93                     | 0.50              |
| 1:A:253:TYR:HA   | 1:A:313:PHE:CD2  | 2.47                     | 0.50              |
| 1:D:44:LEU:HD12  | 1:D:101:TYR:CD2  | 2.46                     | 0.50              |
| 1:D:52:ALA:HA    | 1:D:95:PRO:O     | 2.11                     | 0.50              |
| 1:D:256:ALA:HB1  | 1:D:309:LEU:HD21 | 1.94                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:76:ARG:HH22  | 1:A:130:ILE:CD1  | 2.16                     | 0.50              |
| 1:A:267:VAL:HG23 | 1:A:298:PHE:CZ   | 2.46                     | 0.50              |
| 1:D:197:ILE:CG2  | 1:D:202:LEU:HG   | 2.42                     | 0.49              |
| 1:D:147:LYS:O    | 1:D:147:LYS:CD   | 2.59                     | 0.49              |
| 1:E:268:ALA:HA   | 1:E:298:PHE:HE1  | 1.77                     | 0.49              |
| 1:C:253:TYR:O    | 1:C:256:ALA:HB3  | 2.12                     | 0.49              |
| 1:D:78:VAL:HB    | 1:D:128:TYR:HB2  | 1.94                     | 0.49              |
| 1:E:215:PHE:O    | 1:E:291:THR:CG2  | 2.60                     | 0.49              |
| 1:B:217:SER:HB3  | 1:B:223:ASN:OD1  | 2.12                     | 0.49              |
| 1:C:78:VAL:CG2   | 1:C:130:ILE:HG12 | 2.39                     | 0.49              |
| 1:D:78:VAL:CG2   | 1:D:130:ILE:HG12 | 2.41                     | 0.49              |
| 1:D:200:ILE:O    | 1:D:204:MET:HB2  | 2.11                     | 0.49              |
| 1:C:238:ASN:HA   | 1:C:258:ILE:HD13 | 1.95                     | 0.49              |
| 1:D:153:ASP:O    | 1:D:154:VAL:C    | 2.51                     | 0.49              |
| 1:A:77:PHE:CE2   | 1:A:127:ILE:HG23 | 2.47                     | 0.49              |
| 1:B:13:GLU:HB3   | 1:B:14:PRO:CD    | 2.42                     | 0.49              |
| 1:C:27:TYR:CD1   | 1:D:81:GLU:OE2   | 2.65                     | 0.49              |
| 1:D:147:LYS:HE2  | 1:D:165:THR:HA   | 1.94                     | 0.49              |
| 1:E:127:ILE:HB   | 1:E:185:TYR:HB2  | 1.95                     | 0.49              |
| 1:C:119:PRO:HB3  | 1:C:196:TYR:CD2  | 2.48                     | 0.49              |
| 1:E:196:TYR:O    | 1:E:200:ILE:HB   | 2.13                     | 0.49              |
| 1:A:240:LEU:HD22 | 1:B:239:ILE:HD11 | 1.94                     | 0.49              |
| 1:A:283:GLN:H    | 1:A:284:PRO:HD3  | 1.78                     | 0.49              |
| 1:C:119:PRO:O    | 1:C:193:TYR:HB3  | 2.13                     | 0.49              |
| 1:C:147:LYS:O    | 1:C:147:LYS:CD   | 2.59                     | 0.49              |
| 1:C:153:ASP:O    | 1:C:154:VAL:C    | 2.51                     | 0.49              |
| 1:E:238:ASN:HA   | 1:E:258:ILE:HD13 | 1.93                     | 0.49              |
| 1:A:274:VAL:C    | 1:A:276:HIS:N    | 2.66                     | 0.49              |
| 1:B:42:LEU:HD23  | 1:B:103:GLU:OE1  | 2.13                     | 0.49              |
| 1:B:47:LYS:HD2   | 1:B:49:ARG:HH21  | 1.77                     | 0.49              |
| 1:C:53:PHE:CE2   | 1:C:63:LYS:HB3   | 2.47                     | 0.49              |
| 1:E:76:ARG:HH22  | 1:E:130:ILE:CD1  | 2.18                     | 0.49              |
| 1:E:217:SER:HB3  | 1:E:223:ASN:OD1  | 2.12                     | 0.49              |
| 1:E:274:VAL:C    | 1:E:276:HIS:N    | 2.66                     | 0.49              |
| 1:A:27:TYR:HB2   | 1:B:110:LEU:HD11 | 1.94                     | 0.49              |
| 1:A:155:PHE:HE1  | 1:B:112:PRO:CA   | 2.26                     | 0.49              |
| 1:B:212:TRP:CZ3  | 1:B:298:PHE:HB3  | 2.48                     | 0.49              |
| 1:B:253:TYR:HA   | 1:B:313:PHE:CD2  | 2.48                     | 0.49              |
| 1:D:217:SER:HB3  | 1:D:223:ASN:OD1  | 2.12                     | 0.49              |
| 1:D:274:VAL:C    | 1:D:276:HIS:N    | 2.66                     | 0.49              |
| 1:D:196:TYR:N    | 1:D:196:TYR:HD1  | 2.11                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:52:ALA:HA    | 1:B:95:PRO:O     | 2.14                     | 0.48              |
| 1:B:70:ILE:N     | 1:B:70:ILE:HD13  | 2.27                     | 0.48              |
| 1:C:207:ILE:HG13 | 1:C:208:LEU:N    | 2.28                     | 0.48              |
| 1:C:217:SER:HB3  | 1:C:223:ASN:OD1  | 2.13                     | 0.48              |
| 1:D:53:PHE:HE2   | 1:D:63:LYS:CB    | 2.26                     | 0.48              |
| 1:D:196:TYR:N    | 1:D:196:TYR:CD1  | 2.80                     | 0.48              |
| 1:B:119:PRO:HB3  | 1:B:196:TYR:HD2  | 1.78                     | 0.48              |
| 1:D:81:GLU:HG3   | 1:D:108:ARG:HG3  | 1.95                     | 0.48              |
| 1:E:207:ILE:HG13 | 1:E:208:LEU:N    | 2.28                     | 0.48              |
| 1:A:48:ASP:O     | 1:A:50:ARG:N     | 2.46                     | 0.48              |
| 1:A:202:LEU:CD1  | 1:B:259:PHE:CZ   | 2.97                     | 0.48              |
| 1:C:194:PHE:O    | 1:C:196:TYR:N    | 2.46                     | 0.48              |
| 1:D:66:GLU:HG3   | 1:D:67:PRO:CD    | 2.40                     | 0.48              |
| 1:E:226:LEU:HD22 | 1:E:226:LEU:HA   | 1.67                     | 0.48              |
| 1:A:19:THR:HG22  | 1:A:44:LEU:CD2   | 2.44                     | 0.48              |
| 1:A:137:ARG:HD3  | 1:A:137:ARG:HA   | 1.53                     | 0.48              |
| 1:D:215:PHE:HB2  | 1:D:216:TRP:CE3  | 2.48                     | 0.48              |
| 1:A:47:LYS:CD    | 1:A:49:ARG:HH21  | 2.27                     | 0.48              |
| 1:A:123:GLN:HB2  | 1:A:189:ILE:HG13 | 1.96                     | 0.48              |
| 1:C:133:SER:HB2  | 1:C:137:ARG:NH1  | 2.29                     | 0.48              |
| 1:D:261:ILE:O    | 1:D:262:TYR:C    | 2.52                     | 0.48              |
| 1:A:198:PRO:HA   | 1:B:259:PHE:CD1  | 2.49                     | 0.48              |
| 1:B:238:ASN:HA   | 1:B:258:ILE:HD13 | 1.94                     | 0.48              |
| 1:D:48:ASP:C     | 1:D:50:ARG:N     | 2.67                     | 0.48              |
| 1:D:194:PHE:O    | 1:D:198:PRO:HD2  | 2.13                     | 0.48              |
| 1:D:226:LEU:HD22 | 1:D:226:LEU:HA   | 1.63                     | 0.48              |
| 1:D:296:ILE:HD13 | 1:D:296:ILE:HA   | 1.76                     | 0.48              |
| 1:E:42:LEU:HD23  | 1:E:103:GLU:OE1  | 2.14                     | 0.48              |
| 1:E:119:PRO:O    | 1:E:193:TYR:HB3  | 2.13                     | 0.48              |
| 1:E:224:VAL:O    | 1:E:226:LEU:N    | 2.47                     | 0.48              |
| 1:A:197:ILE:CG2  | 1:A:202:LEU:HG   | 2.44                     | 0.48              |
| 1:A:215:PHE:HB2  | 1:A:216:TRP:CE3  | 2.49                     | 0.48              |
| 1:A:264:PHE:CE2  | 1:A:302:PHE:HB2  | 2.49                     | 0.48              |
| 1:B:215:PHE:HB2  | 1:B:216:TRP:CE3  | 2.48                     | 0.48              |
| 1:C:27:TYR:CE1   | 1:D:81:GLU:CD    | 2.87                     | 0.48              |
| 1:E:70:ILE:HG22  | 1:E:71:TRP:O     | 2.13                     | 0.48              |
| 1:B:37:LYS:HG2   | 1:B:108:ARG:HB3  | 1.96                     | 0.48              |
| 1:D:48:ASP:C     | 1:D:50:ARG:H     | 2.17                     | 0.48              |
| 1:D:221:GLU:OE2  | 1:E:221:GLU:CD   | 2.52                     | 0.48              |
| 1:A:70:ILE:HG22  | 1:A:71:TRP:O     | 2.14                     | 0.48              |
| 1:B:200:ILE:O    | 1:B:204:MET:CB   | 2.62                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:70:ILE:HG22  | 1:C:71:TRP:N     | 2.29                     | 0.48              |
| 1:C:197:ILE:HB   | 1:C:198:PRO:CD   | 2.37                     | 0.48              |
| 1:B:18:ASN:O     | 1:B:44:LEU:HA    | 2.13                     | 0.47              |
| 1:B:79:ASN:HD22  | 1:B:79:ASN:N     | 2.01                     | 0.47              |
| 1:D:261:ILE:HD13 | 1:D:302:PHE:HE1  | 1.79                     | 0.47              |
| 1:E:261:ILE:HD13 | 1:E:302:PHE:HE1  | 1.79                     | 0.47              |
| 1:B:48:ASP:C     | 1:B:50:ARG:N     | 2.68                     | 0.47              |
| 1:B:261:ILE:HD13 | 1:B:302:PHE:HE1  | 1.79                     | 0.47              |
| 1:B:274:VAL:C    | 1:B:276:HIS:N    | 2.66                     | 0.47              |
| 1:C:28:SER:HB2   | 1:C:37:LYS:HD2   | 1.97                     | 0.47              |
| 1:A:119:PRO:HB3  | 1:A:196:TYR:HD2  | 1.79                     | 0.47              |
| 1:A:221:GLU:OE2  | 1:B:221:GLU:CD   | 2.53                     | 0.47              |
| 1:A:224:VAL:O    | 1:A:226:LEU:N    | 2.47                     | 0.47              |
| 1:A:226:LEU:HA   | 1:A:226:LEU:HD22 | 1.59                     | 0.47              |
| 1:B:76:ARG:HH12  | 1:B:130:ILE:HD11 | 1.80                     | 0.47              |
| 1:B:98:THR:HG22  | 1:B:98:THR:O     | 2.14                     | 0.47              |
| 1:B:133:SER:HB2  | 1:B:137:ARG:NH1  | 2.29                     | 0.47              |
| 1:B:278:LEU:HD21 | 1:B:286:ARG:HB3  | 1.96                     | 0.47              |
| 1:C:268:ALA:HA   | 1:C:298:PHE:HE1  | 1.77                     | 0.47              |
| 1:A:217:SER:HB3  | 1:A:223:ASN:OD1  | 2.14                     | 0.47              |
| 1:A:225:THR:CG2  | 1:B:224:VAL:HG23 | 2.43                     | 0.47              |
| 1:B:234:HIS:CE1  | 1:B:261:ILE:CG2  | 2.93                     | 0.47              |
| 1:B:296:ILE:O    | 1:B:300:VAL:HG23 | 2.13                     | 0.47              |
| 1:C:202:LEU:HD23 | 1:C:202:LEU:HA   | 1.56                     | 0.47              |
| 1:D:62:VAL:HG13  | 1:D:93:VAL:O     | 2.14                     | 0.47              |
| 1:A:53:PHE:HE2   | 1:A:63:LYS:CB    | 2.26                     | 0.47              |
| 1:A:221:GLU:OE2  | 1:B:221:GLU:OE2  | 2.33                     | 0.47              |
| 1:B:22:TYR:HA    | 1:B:149:GLY:HA2  | 1.93                     | 0.47              |
| 1:B:78:VAL:CG2   | 1:B:130:ILE:HG12 | 2.38                     | 0.47              |
| 1:B:254:THR:HA   | 1:B:257:ILE:HG12 | 1.97                     | 0.47              |
| 1:B:270:ILE:HD13 | 1:B:270:ILE:HA   | 1.67                     | 0.47              |
| 1:C:53:PHE:HE2   | 1:C:63:LYS:CB    | 2.26                     | 0.47              |
| 1:C:222:ALA:O    | 1:C:226:LEU:HB2  | 2.14                     | 0.47              |
| 1:C:270:ILE:HD13 | 1:C:270:ILE:HA   | 1.64                     | 0.47              |
| 1:B:9:PRO:HD3    | 1:B:71:TRP:CE3   | 2.49                     | 0.47              |
| 1:B:207:ILE:HG13 | 1:B:208:LEU:N    | 2.29                     | 0.47              |
| 1:C:23:LEU:HA    | 1:C:40:ALA:HB2   | 1.95                     | 0.47              |
| 1:C:46:TRP:HH2   | 1:C:72:ILE:HG23  | 1.79                     | 0.47              |
| 1:C:123:GLN:HB2  | 1:C:189:ILE:HG13 | 1.97                     | 0.47              |
| 1:C:278:LEU:HD21 | 1:C:286:ARG:HB3  | 1.96                     | 0.47              |
| 1:D:67:PRO:HG3   | 1:D:91:ILE:HD11  | 1.95                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:261:ILE:CD1  | 1:D:302:PHE:HE1  | 2.27                     | 0.47              |
| 1:E:123:GLN:NE2  | 1:E:123:GLN:HA   | 2.30                     | 0.47              |
| 1:E:264:PHE:HE2  | 1:E:302:PHE:HB2  | 1.79                     | 0.47              |
| 1:A:13:GLU:HB3   | 1:A:14:PRO:CD    | 2.45                     | 0.47              |
| 1:A:70:ILE:HG22  | 1:A:71:TRP:N     | 2.29                     | 0.47              |
| 1:B:67:PRO:HG3   | 1:B:91:ILE:HD11  | 1.95                     | 0.47              |
| 1:B:123:GLN:HB2  | 1:B:189:ILE:HG13 | 1.95                     | 0.47              |
| 1:B:196:TYR:N    | 1:B:196:TYR:CD1  | 2.83                     | 0.47              |
| 1:D:89:VAL:CG1   | 1:E:132:ARG:HD3  | 2.45                     | 0.47              |
| 1:D:119:PRO:HB3  | 1:D:196:TYR:HD2  | 1.78                     | 0.47              |
| 1:D:238:ASN:HA   | 1:D:258:ILE:HD13 | 1.95                     | 0.47              |
| 1:E:76:ARG:NH2   | 1:E:130:ILE:CD1  | 2.62                     | 0.47              |
| 1:E:278:LEU:HD21 | 1:E:286:ARG:HB3  | 1.97                     | 0.47              |
| 1:A:254:THR:HA   | 1:A:257:ILE:HG12 | 1.97                     | 0.47              |
| 1:A:278:LEU:HD21 | 1:A:286:ARG:HB3  | 1.96                     | 0.47              |
| 1:B:53:PHE:CE2   | 1:B:63:LYS:HB3   | 2.46                     | 0.47              |
| 1:C:274:VAL:C    | 1:C:276:HIS:N    | 2.66                     | 0.47              |
| 1:D:70:ILE:HG22  | 1:D:71:TRP:N     | 2.30                     | 0.47              |
| 1:E:9:PRO:HD3    | 1:E:71:TRP:CE3   | 2.50                     | 0.47              |
| 1:E:253:TYR:O    | 1:E:256:ALA:HB3  | 2.15                     | 0.47              |
| 1:B:18:ASN:HB2   | 1:B:45:SER:OG    | 2.15                     | 0.47              |
| 1:B:153:ASP:O    | 1:B:154:VAL:C    | 2.53                     | 0.47              |
| 1:B:202:LEU:HD23 | 1:B:202:LEU:HA   | 1.65                     | 0.47              |
| 1:D:191:ARG:HG3  | 1:D:192:GLN:N    | 2.29                     | 0.47              |
| 1:D:278:LEU:HD21 | 1:D:286:ARG:HB3  | 1.96                     | 0.47              |
| 1:E:53:PHE:CE2   | 1:E:63:LYS:HB3   | 2.46                     | 0.47              |
| 1:E:147:LYS:C    | 1:E:149:GLY:N    | 2.68                     | 0.47              |
| 1:A:70:ILE:HD13  | 1:A:70:ILE:N     | 2.29                     | 0.47              |
| 1:C:21:ILE:HA    | 1:C:41:PHE:O     | 2.15                     | 0.47              |
| 1:E:48:ASP:O     | 1:E:50:ARG:N     | 2.48                     | 0.47              |
| 1:E:81:GLU:HG3   | 1:E:108:ARG:HG3  | 1.97                     | 0.47              |
| 1:A:76:ARG:CZ    | 1:A:130:ILE:HD12 | 2.44                     | 0.46              |
| 1:A:194:PHE:O    | 1:A:198:PRO:HD2  | 2.14                     | 0.46              |
| 1:B:194:PHE:O    | 1:B:196:TYR:N    | 2.49                     | 0.46              |
| 1:E:196:TYR:N    | 1:E:196:TYR:CD1  | 2.84                     | 0.46              |
| 1:E:261:ILE:CD1  | 1:E:302:PHE:HE1  | 2.27                     | 0.46              |
| 1:A:143:VAL:HG12 | 1:A:143:VAL:O    | 2.15                     | 0.46              |
| 1:A:196:TYR:N    | 1:A:196:TYR:CD1  | 2.82                     | 0.46              |
| 1:A:207:ILE:HG13 | 1:A:208:LEU:N    | 2.30                     | 0.46              |
| 1:E:153:ASP:O    | 1:E:154:VAL:C    | 2.53                     | 0.46              |
| 1:E:194:PHE:O    | 1:E:196:TYR:N    | 2.49                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:78:VAL:CG2   | 1:A:130:ILE:HG12 | 2.42                     | 0.46              |
| 1:A:268:ALA:HA   | 1:A:298:PHE:HE1  | 1.80                     | 0.46              |
| 1:A:277:TYR:O    | 1:A:281:GLU:HG3  | 2.16                     | 0.46              |
| 1:C:261:ILE:HD13 | 1:C:302:PHE:HE1  | 1.80                     | 0.46              |
| 1:E:137:ARG:HD3  | 1:E:137:ARG:HA   | 1.58                     | 0.46              |
| 1:E:215:PHE:HB2  | 1:E:216:TRP:CE3  | 2.50                     | 0.46              |
| 1:A:41:PHE:CZ    | 1:B:76:ARG:NH2   | 2.82                     | 0.46              |
| 1:A:202:LEU:HD23 | 1:A:202:LEU:HA   | 1.62                     | 0.46              |
| 1:A:249:PRO:HD2  | 1:A:250:TYR:CE1  | 2.50                     | 0.46              |
| 1:C:13:GLU:HB3   | 1:C:14:PRO:CD    | 2.46                     | 0.46              |
| 1:C:197:ILE:CB   | 1:C:198:PRO:HD3  | 2.36                     | 0.46              |
| 1:C:249:PRO:HD2  | 1:C:250:TYR:CE1  | 2.51                     | 0.46              |
| 1:C:252:THR:HB   | 1:C:255:GLY:H    | 1.79                     | 0.46              |
| 1:D:76:ARG:HH12  | 1:D:130:ILE:HD11 | 1.79                     | 0.46              |
| 1:D:95:PRO:C     | 1:D:97:GLY:H     | 2.17                     | 0.46              |
| 1:D:207:ILE:HG13 | 1:D:208:LEU:N    | 2.31                     | 0.46              |
| 1:D:277:TYR:O    | 1:D:281:GLU:HG3  | 2.16                     | 0.46              |
| 1:E:256:ALA:HB1  | 1:E:309:LEU:HD21 | 1.96                     | 0.46              |
| 1:A:153:ASP:O    | 1:A:154:VAL:C    | 2.51                     | 0.46              |
| 1:A:194:PHE:CE2  | 1:B:250:TYR:O    | 2.63                     | 0.46              |
| 1:A:196:TYR:N    | 1:A:196:TYR:HD1  | 2.14                     | 0.46              |
| 1:A:202:LEU:HD12 | 1:B:259:PHE:HZ   | 1.78                     | 0.46              |
| 1:B:268:ALA:HA   | 1:B:298:PHE:HE1  | 1.80                     | 0.46              |
| 1:B:277:TYR:O    | 1:B:281:GLU:HG3  | 2.16                     | 0.46              |
| 1:C:104:ARG:NH2  | 1:D:77:PHE:O     | 2.40                     | 0.46              |
| 1:C:277:TYR:O    | 1:C:281:GLU:HG3  | 2.16                     | 0.46              |
| 1:D:267:VAL:HG23 | 1:D:298:PHE:CZ   | 2.50                     | 0.46              |
| 1:E:67:PRO:HG3   | 1:E:91:ILE:HD11  | 1.97                     | 0.46              |
| 1:A:98:THR:O     | 1:A:98:THR:HG22  | 2.14                     | 0.46              |
| 1:B:9:PRO:HB3    | 1:B:48:ASP:OD1   | 2.15                     | 0.46              |
| 1:A:123:GLN:HA   | 1:A:123:GLN:NE2  | 2.31                     | 0.46              |
| 1:C:48:ASP:O     | 1:C:50:ARG:N     | 2.48                     | 0.46              |
| 1:D:119:PRO:HD3  | 1:D:254:THR:OG1  | 2.15                     | 0.46              |
| 1:E:78:VAL:CG2   | 1:E:130:ILE:HG12 | 2.42                     | 0.46              |
| 1:B:48:ASP:C     | 1:B:50:ARG:H     | 2.18                     | 0.46              |
| 1:C:191:ARG:HG3  | 1:C:192:GLN:N    | 2.31                     | 0.46              |
| 1:C:306:ASN:O    | 1:C:310:ALA:N    | 2.44                     | 0.46              |
| 1:D:70:ILE:HG22  | 1:D:71:TRP:O     | 2.16                     | 0.46              |
| 1:E:47:LYS:HD2   | 1:E:49:ARG:HH21  | 1.81                     | 0.46              |
| 1:E:123:GLN:HB2  | 1:E:189:ILE:HG13 | 1.97                     | 0.46              |
| 1:A:78:VAL:HB    | 1:A:128:TYR:HB2  | 1.97                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:137:ARG:HA   | 1:B:137:ARG:HD3  | 1.59                     | 0.46              |
| 1:B:196:TYR:N    | 1:B:196:TYR:HD1  | 2.13                     | 0.46              |
| 1:C:254:THR:HA   | 1:C:257:ILE:HG12 | 1.98                     | 0.46              |
| 1:D:84:ARG:NH1   | 1:D:84:ARG:CB    | 2.76                     | 0.46              |
| 1:D:222:ALA:HA   | 1:D:225:THR:HB   | 1.97                     | 0.46              |
| 1:E:202:LEU:HB2  | 1:E:203:PRO:HD3  | 1.97                     | 0.46              |
| 1:D:13:GLU:HB3   | 1:D:14:PRO:CD    | 2.44                     | 0.46              |
| 1:E:119:PRO:HB3  | 1:E:196:TYR:CD2  | 2.51                     | 0.46              |
| 1:A:48:ASP:C     | 1:A:50:ARG:N     | 2.70                     | 0.45              |
| 1:B:245:LEU:HD12 | 1:B:245:LEU:HA   | 1.83                     | 0.45              |
| 1:C:70:ILE:HD13  | 1:C:70:ILE:N     | 2.31                     | 0.45              |
| 1:D:30:ASP:HB3   | 1:D:33:ALA:HB3   | 1.98                     | 0.45              |
| 1:D:77:PHE:CE2   | 1:D:127:ILE:CG2  | 2.99                     | 0.45              |
| 1:A:155:PHE:HE1  | 1:B:112:PRO:CB   | 2.23                     | 0.45              |
| 1:D:268:ALA:HA   | 1:D:298:PHE:HE1  | 1.80                     | 0.45              |
| 1:D:275:GLN:HG3  | 1:D:291:THR:OG1  | 2.16                     | 0.45              |
| 1:A:19:THR:HG22  | 1:A:44:LEU:HD23  | 1.99                     | 0.45              |
| 1:A:88:VAL:HG12  | 1:A:89:VAL:N     | 2.31                     | 0.45              |
| 1:A:202:LEU:CD1  | 1:B:259:PHE:HZ   | 2.30                     | 0.45              |
| 1:A:243:THR:HG22 | 1:A:244:ASN:N    | 2.32                     | 0.45              |
| 1:C:52:ALA:HA    | 1:C:95:PRO:O     | 2.16                     | 0.45              |
| 1:C:196:TYR:O    | 1:C:200:ILE:HB   | 2.17                     | 0.45              |
| 1:C:261:ILE:CD1  | 1:C:302:PHE:HE1  | 2.30                     | 0.45              |
| 1:A:175:LEU:HA   | 1:A:175:LEU:HD12 | 1.67                     | 0.45              |
| 1:A:261:ILE:O    | 1:A:262:TYR:C    | 2.54                     | 0.45              |
| 1:B:28:SER:HB2   | 1:B:37:LYS:HD2   | 1.99                     | 0.45              |
| 1:C:197:ILE:CG2  | 1:C:202:LEU:HG   | 2.47                     | 0.45              |
| 1:E:77:PHE:CE2   | 1:E:127:ILE:CG2  | 3.00                     | 0.45              |
| 1:E:252:THR:HB   | 1:E:255:GLY:H    | 1.82                     | 0.45              |
| 1:E:270:ILE:HD13 | 1:E:270:ILE:HA   | 1.65                     | 0.45              |
| 1:A:21:ILE:HA    | 1:A:41:PHE:O     | 2.17                     | 0.45              |
| 1:A:28:SER:HB2   | 1:A:37:LYS:HD2   | 1.99                     | 0.45              |
| 1:A:67:PRO:HG3   | 1:A:91:ILE:HD11  | 1.98                     | 0.45              |
| 1:E:27:TYR:CE1   | 1:E:37:LYS:HB2   | 2.52                     | 0.45              |
| 1:E:66:GLU:HG3   | 1:E:67:PRO:CD    | 2.41                     | 0.45              |
| 1:E:76:ARG:CZ    | 1:E:130:ILE:HD12 | 2.45                     | 0.45              |
| 1:E:243:THR:HG22 | 1:E:244:ASN:N    | 2.31                     | 0.45              |
| 1:A:30:ASP:HB3   | 1:A:33:ALA:HB3   | 1.99                     | 0.45              |
| 1:A:223:ASN:HD22 | 1:A:272:VAL:HG12 | 1.82                     | 0.45              |
| 1:B:127:ILE:HB   | 1:B:185:TYR:HB2  | 1.99                     | 0.45              |
| 1:B:256:ALA:HB1  | 1:B:309:LEU:HD21 | 1.97                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:47:LYS:HD2   | 1:C:49:ARG:HH21  | 1.82                     | 0.45              |
| 1:C:212:TRP:CZ3  | 1:C:298:PHE:HB3  | 2.51                     | 0.45              |
| 1:A:27:TYR:CB    | 1:B:110:LEU:CD1  | 2.90                     | 0.45              |
| 1:A:53:PHE:CE2   | 1:A:63:LYS:HB3   | 2.47                     | 0.45              |
| 1:A:240:LEU:HD22 | 1:B:239:ILE:CD1  | 2.47                     | 0.45              |
| 1:E:52:ALA:HA    | 1:E:95:PRO:O     | 2.17                     | 0.45              |
| 1:E:277:TYR:O    | 1:E:281:GLU:HG3  | 2.16                     | 0.45              |
| 1:A:191:ARG:HG3  | 1:A:192:GLN:N    | 2.31                     | 0.45              |
| 1:C:147:LYS:C    | 1:C:149:GLY:N    | 2.68                     | 0.45              |
| 1:C:179:LEU:C    | 1:C:179:LEU:HD12 | 2.38                     | 0.45              |
| 1:E:298:PHE:CB   | 1:E:299:PRO:HD3  | 2.46                     | 0.45              |
| 1:A:27:TYR:CD1   | 1:B:81:GLU:OE2   | 2.70                     | 0.45              |
| 1:A:275:GLN:HG3  | 1:A:291:THR:OG1  | 2.17                     | 0.45              |
| 1:C:119:PRO:HB3  | 1:C:196:TYR:HD2  | 1.82                     | 0.45              |
| 1:D:229:SER:HB3  | 1:E:228:VAL:HG11 | 1.98                     | 0.45              |
| 1:E:197:ILE:CG2  | 1:E:202:LEU:HG   | 2.47                     | 0.45              |
| 1:A:89:VAL:CG1   | 1:B:132:ARG:HD3  | 2.47                     | 0.44              |
| 1:A:179:LEU:C    | 1:A:179:LEU:HD12 | 2.38                     | 0.44              |
| 1:A:260:MET:CE   | 1:A:309:LEU:HD22 | 2.41                     | 0.44              |
| 1:B:78:VAL:HB    | 1:B:128:TYR:HB2  | 1.99                     | 0.44              |
| 1:B:147:LYS:C    | 1:B:149:GLY:N    | 2.68                     | 0.44              |
| 1:C:44:LEU:HD12  | 1:C:101:TYR:CE2  | 2.51                     | 0.44              |
| 1:C:215:PHE:HB2  | 1:C:216:TRP:CZ3  | 2.52                     | 0.44              |
| 1:C:216:TRP:HE3  | 1:C:216:TRP:H    | 1.65                     | 0.44              |
| 1:D:104:ARG:HH22 | 1:E:78:VAL:CA    | 2.15                     | 0.44              |
| 1:D:198:PRO:O    | 1:E:259:PHE:HD1  | 2.00                     | 0.44              |
| 1:E:243:THR:HG22 | 1:E:244:ASN:HD22 | 1.82                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:71:TRP:O     | 2.17                     | 0.44              |
| 1:C:79:ASN:OD1   | 1:C:109:VAL:HG12 | 2.18                     | 0.44              |
| 1:D:53:PHE:CE2   | 1:D:63:LYS:HB3   | 2.49                     | 0.44              |
| 1:D:254:THR:HA   | 1:D:257:ILE:HG12 | 1.99                     | 0.44              |
| 1:E:18:ASN:O     | 1:E:44:LEU:HA    | 2.17                     | 0.44              |
| 1:A:147:LYS:C    | 1:A:149:GLY:N    | 2.68                     | 0.44              |
| 1:A:261:ILE:CD1  | 1:A:302:PHE:HE1  | 2.30                     | 0.44              |
| 1:C:213:THR:HG22 | 1:C:226:LEU:CD1  | 2.48                     | 0.44              |
| 1:D:22:TYR:HA    | 1:D:149:GLY:HA2  | 1.94                     | 0.44              |
| 1:E:118:TYR:CD1  | 1:E:245:LEU:HD21 | 2.53                     | 0.44              |
| 1:E:133:SER:HB3  | 1:E:137:ARG:HA   | 1.98                     | 0.44              |
| 1:E:179:LEU:C    | 1:E:179:LEU:HD12 | 2.38                     | 0.44              |
| 1:B:53:PHE:HE2   | 1:B:63:LYS:CB    | 2.27                     | 0.44              |
| 1:B:179:LEU:HD12 | 1:B:179:LEU:C    | 2.38                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:21:ILE:HA    | 1:E:41:PHE:O     | 2.16                     | 0.44              |
| 1:E:53:PHE:HE2   | 1:E:63:LYS:CB    | 2.29                     | 0.44              |
| 1:A:109:VAL:HG11 | 1:A:126:HIS:O    | 2.17                     | 0.44              |
| 1:A:127:ILE:HB   | 1:A:185:TYR:HB2  | 1.99                     | 0.44              |
| 1:A:212:TRP:CZ3  | 1:A:298:PHE:HB3  | 2.52                     | 0.44              |
| 1:A:217:SER:CB   | 1:B:220:TYR:CE2  | 3.00                     | 0.44              |
| 1:A:270:ILE:HG22 | 1:A:271:GLU:N    | 2.31                     | 0.44              |
| 1:B:125:LEU:HB2  | 1:B:187:LEU:HB3  | 2.00                     | 0.44              |
| 1:C:9:PRO:HD3    | 1:C:71:TRP:CE3   | 2.52                     | 0.44              |
| 1:C:76:ARG:CZ    | 1:C:130:ILE:HD12 | 2.46                     | 0.44              |
| 1:C:196:TYR:N    | 1:C:196:TYR:CD1  | 2.86                     | 0.44              |
| 1:E:197:ILE:CB   | 1:E:198:PRO:HD3  | 2.40                     | 0.44              |
| 1:A:23:LEU:HA    | 1:A:40:ALA:CB    | 2.48                     | 0.44              |
| 1:B:261:ILE:CD1  | 1:B:302:PHE:HE1  | 2.31                     | 0.44              |
| 1:B:314:PHE:N    | 1:B:314:PHE:CD1  | 2.85                     | 0.44              |
| 1:C:27:TYR:CE1   | 1:D:81:GLU:OE1   | 2.71                     | 0.44              |
| 1:C:203:PRO:HB3  | 1:D:262:TYR:CZ   | 2.53                     | 0.44              |
| 1:D:212:TRP:CZ3  | 1:D:298:PHE:HB3  | 2.52                     | 0.44              |
| 1:C:240:LEU:HD22 | 1:D:239:ILE:CG1  | 2.48                     | 0.44              |
| 1:C:274:VAL:O    | 1:C:278:LEU:HB3  | 2.18                     | 0.44              |
| 1:D:147:LYS:C    | 1:D:149:GLY:N    | 2.68                     | 0.44              |
| 1:D:210:ILE:CG2  | 1:E:269:VAL:HG11 | 2.37                     | 0.44              |
| 1:E:9:PRO:HB3    | 1:E:48:ASP:OD1   | 2.18                     | 0.44              |
| 1:E:274:VAL:O    | 1:E:278:LEU:HB3  | 2.18                     | 0.44              |
| 1:E:276:HIS:C    | 1:E:278:LEU:N    | 2.71                     | 0.44              |
| 1:A:290:ILE:HG22 | 1:A:291:THR:N    | 2.31                     | 0.44              |
| 1:B:77:PHE:CE2   | 1:B:127:ILE:CG2  | 3.00                     | 0.44              |
| 1:C:264:PHE:HE2  | 1:C:302:PHE:HB2  | 1.83                     | 0.44              |
| 1:D:296:ILE:O    | 1:D:300:VAL:HG23 | 2.17                     | 0.44              |
| 1:A:46:TRP:HH2   | 1:A:72:ILE:HG23  | 1.82                     | 0.44              |
| 1:A:296:ILE:HD13 | 1:A:296:ILE:HA   | 1.78                     | 0.44              |
| 1:B:95:PRO:C     | 1:B:97:GLY:H     | 2.21                     | 0.44              |
| 1:B:150:LYS:HG3  | 1:B:154:VAL:HG21 | 2.00                     | 0.44              |
| 1:B:274:VAL:O    | 1:B:278:LEU:HB3  | 2.18                     | 0.44              |
| 1:D:150:LYS:HG3  | 1:D:154:VAL:HG21 | 2.00                     | 0.44              |
| 1:D:179:LEU:HD12 | 1:D:179:LEU:C    | 2.38                     | 0.44              |
| 1:E:13:GLU:HB3   | 1:E:14:PRO:CD    | 2.47                     | 0.44              |
| 1:E:275:GLN:HG3  | 1:E:291:THR:OG1  | 2.18                     | 0.44              |
| 1:A:52:ALA:HA    | 1:A:95:PRO:O     | 2.18                     | 0.43              |
| 1:A:119:PRO:HD3  | 1:A:254:THR:OG1  | 2.18                     | 0.43              |
| 1:A:133:SER:HB2  | 1:A:137:ARG:NH1  | 2.33                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:109:VAL:HG11 | 1:B:126:HIS:O    | 2.17                     | 0.43              |
| 1:C:77:PHE:CE2   | 1:C:127:ILE:CG2  | 3.01                     | 0.43              |
| 1:C:132:ARG:CA   | 1:C:180:GLU:HG2  | 2.48                     | 0.43              |
| 1:C:200:ILE:O    | 1:C:204:MET:CB   | 2.64                     | 0.43              |
| 1:D:9:PRO:HB3    | 1:D:48:ASP:OD1   | 2.18                     | 0.43              |
| 1:D:49:ARG:HB3   | 1:D:49:ARG:NH1   | 2.33                     | 0.43              |
| 1:E:150:LYS:HG3  | 1:E:154:VAL:HG21 | 2.00                     | 0.43              |
| 1:E:194:PHE:O    | 1:E:198:PRO:HD2  | 2.17                     | 0.43              |
| 1:E:200:ILE:O    | 1:E:204:MET:CB   | 2.66                     | 0.43              |
| 1:E:216:TRP:HE3  | 1:E:216:TRP:H    | 1.66                     | 0.43              |
| 1:A:150:LYS:HG3  | 1:A:154:VAL:HG21 | 2.00                     | 0.43              |
| 1:A:197:ILE:CB   | 1:A:198:PRO:HD3  | 2.39                     | 0.43              |
| 1:B:66:GLU:HG3   | 1:B:67:PRO:CD    | 2.41                     | 0.43              |
| 1:B:76:ARG:NH1   | 1:B:130:ILE:HD11 | 2.33                     | 0.43              |
| 1:C:150:LYS:HG3  | 1:C:154:VAL:HG21 | 2.00                     | 0.43              |
| 1:C:195:SER:O    | 1:C:199:ASN:HB2  | 2.19                     | 0.43              |
| 1:D:53:PHE:CE1   | 1:D:95:PRO:CA    | 3.01                     | 0.43              |
| 1:D:76:ARG:NH1   | 1:D:130:ILE:HD11 | 2.33                     | 0.43              |
| 1:A:81:GLU:HG3   | 1:A:108:ARG:HG3  | 2.00                     | 0.43              |
| 1:A:155:PHE:CZ   | 1:B:112:PRO:CB   | 2.95                     | 0.43              |
| 1:D:157:THR:HG21 | 1:E:34:GLU:OE1   | 2.18                     | 0.43              |
| 1:B:132:ARG:NH2  | 1:B:178:ARG:HB2  | 2.33                     | 0.43              |
| 1:C:23:LEU:HB2   | 1:C:150:LYS:HA   | 2.00                     | 0.43              |
| 1:C:76:ARG:HH12  | 1:C:130:ILE:HD11 | 1.84                     | 0.43              |
| 1:E:72:ILE:HA    | 1:E:73:PRO:HD3   | 1.87                     | 0.43              |
| 1:E:196:TYR:N    | 1:E:196:TYR:HD1  | 2.16                     | 0.43              |
| 1:E:223:ASN:HD22 | 1:E:272:VAL:HG12 | 1.83                     | 0.43              |
| 1:A:27:TYR:CD2   | 1:B:110:LEU:HD13 | 2.54                     | 0.43              |
| 1:A:200:ILE:CD1  | 1:A:240:LEU:HD23 | 2.45                     | 0.43              |
| 1:A:233:ALA:HB2  | 1:B:232:ILE:HG12 | 2.01                     | 0.43              |
| 1:B:224:VAL:O    | 1:B:228:VAL:HB   | 2.19                     | 0.43              |
| 1:B:275:GLN:HG3  | 1:B:291:THR:OG1  | 2.18                     | 0.43              |
| 1:C:81:GLU:HG3   | 1:C:108:ARG:HG3  | 1.99                     | 0.43              |
| 1:C:275:GLN:HG3  | 1:C:291:THR:OG1  | 2.17                     | 0.43              |
| 1:E:46:TRP:HH2   | 1:E:72:ILE:HG23  | 1.83                     | 0.43              |
| 1:E:212:TRP:HB2  | 1:E:215:PHE:CE1  | 2.53                     | 0.43              |
| 1:A:125:LEU:HB2  | 1:A:187:LEU:HB3  | 2.00                     | 0.43              |
| 1:A:225:THR:HG22 | 1:A:225:THR:O    | 2.18                     | 0.43              |
| 1:B:76:ARG:CZ    | 1:B:130:ILE:HD12 | 2.40                     | 0.43              |
| 1:B:232:ILE:O    | 1:B:235:ILE:HB   | 2.19                     | 0.43              |
| 1:C:119:PRO:HD3  | 1:C:254:THR:OG1  | 2.19                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:194:PHE:O    | 1:D:196:TYR:N    | 2.51                     | 0.43              |
| 1:D:201:ILE:HD13 | 1:D:201:ILE:HA   | 1.86                     | 0.43              |
| 1:D:298:PHE:CB   | 1:D:299:PRO:HD3  | 2.48                     | 0.43              |
| 1:E:48:ASP:C     | 1:E:50:ARG:N     | 2.71                     | 0.43              |
| 1:E:283:GLN:H    | 1:E:284:PRO:HD3  | 1.82                     | 0.43              |
| 1:A:274:VAL:O    | 1:A:278:LEU:HB3  | 2.18                     | 0.43              |
| 1:A:276:HIS:C    | 1:A:278:LEU:N    | 2.71                     | 0.43              |
| 1:B:212:TRP:HB2  | 1:B:215:PHE:CE1  | 2.53                     | 0.43              |
| 1:C:88:VAL:HG12  | 1:C:89:VAL:N     | 2.34                     | 0.43              |
| 1:C:194:PHE:O    | 1:C:198:PRO:HD2  | 2.19                     | 0.43              |
| 1:E:225:THR:HG22 | 1:E:225:THR:O    | 2.18                     | 0.43              |
| 1:A:44:LEU:HD12  | 1:A:101:TYR:CE2  | 2.54                     | 0.43              |
| 1:A:192:GLN:OE1  | 1:B:249:PRO:HB3  | 2.19                     | 0.43              |
| 1:A:194:PHE:O    | 1:A:196:TYR:N    | 2.51                     | 0.43              |
| 1:A:261:ILE:HD13 | 1:A:302:PHE:HE1  | 1.83                     | 0.43              |
| 1:A:298:PHE:CB   | 1:A:299:PRO:HD3  | 2.49                     | 0.43              |
| 1:C:226:LEU:HA   | 1:C:226:LEU:HD22 | 1.64                     | 0.43              |
| 1:C:283:GLN:H    | 1:C:284:PRO:HD3  | 1.80                     | 0.43              |
| 1:D:28:SER:HB2   | 1:D:37:LYS:HD2   | 2.01                     | 0.43              |
| 1:D:274:VAL:O    | 1:D:278:LEU:HB3  | 2.18                     | 0.43              |
| 1:D:296:ILE:HG22 | 1:D:297:ALA:N    | 2.33                     | 0.43              |
| 1:A:48:ASP:HB3   | 1:A:51:LEU:CD2   | 2.49                     | 0.43              |
| 1:A:314:PHE:CD1  | 1:A:314:PHE:N    | 2.87                     | 0.43              |
| 1:C:72:ILE:HG22  | 1:C:73:PRO:HD2   | 2.00                     | 0.43              |
| 1:D:127:ILE:HB   | 1:D:185:TYR:HB2  | 2.01                     | 0.43              |
| 1:D:155:PHE:CZ   | 1:E:112:PRO:HB3  | 2.50                     | 0.43              |
| 1:E:76:ARG:HH12  | 1:E:130:ILE:HD11 | 1.84                     | 0.43              |
| 1:B:215:PHE:HB2  | 1:B:216:TRP:CZ3  | 2.54                     | 0.43              |
| 1:B:276:HIS:C    | 1:B:278:LEU:N    | 2.71                     | 0.43              |
| 1:C:118:TYR:CD1  | 1:C:245:LEU:HD21 | 2.53                     | 0.43              |
| 1:C:127:ILE:HB   | 1:C:185:TYR:HB2  | 2.01                     | 0.43              |
| 1:C:194:PHE:CE2  | 1:D:250:TYR:O    | 2.70                     | 0.43              |
| 1:C:243:THR:HG22 | 1:C:244:ASN:HD22 | 1.84                     | 0.43              |
| 1:D:27:TYR:CE1   | 1:D:37:LYS:HB2   | 2.54                     | 0.43              |
| 1:D:68:GLU:CD    | 1:D:68:GLU:H     | 2.22                     | 0.43              |
| 1:E:179:LEU:HD12 | 1:E:179:LEU:O    | 2.19                     | 0.43              |
| 1:E:270:ILE:HG22 | 1:E:271:GLU:N    | 2.34                     | 0.43              |
| 1:A:192:GLN:CG   | 1:B:249:PRO:HB3  | 2.49                     | 0.42              |
| 1:A:202:LEU:HB2  | 1:A:203:PRO:HD3  | 2.01                     | 0.42              |
| 1:B:23:LEU:HA    | 1:B:40:ALA:CB    | 2.49                     | 0.42              |
| 1:B:119:PRO:HD3  | 1:B:254:THR:OG1  | 2.19                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:66:GLU:HG3   | 1:C:67:PRO:CD    | 2.45                     | 0.42              |
| 1:C:243:THR:HG22 | 1:C:244:ASN:N    | 2.34                     | 0.42              |
| 1:E:48:ASP:C     | 1:E:50:ARG:H     | 2.22                     | 0.42              |
| 1:A:53:PHE:O     | 1:A:54:ASP:C     | 2.58                     | 0.42              |
| 1:A:238:ASN:HA   | 1:A:258:ILE:HD13 | 1.97                     | 0.42              |
| 1:A:247:LYS:HA   | 1:A:247:LYS:HD3  | 1.80                     | 0.42              |
| 1:B:27:TYR:CE1   | 1:B:37:LYS:HB2   | 2.54                     | 0.42              |
| 1:B:30:ASP:HB3   | 1:B:33:ALA:HB3   | 2.01                     | 0.42              |
| 1:B:225:THR:O    | 1:B:225:THR:HG22 | 2.18                     | 0.42              |
| 1:D:276:HIS:C    | 1:D:278:LEU:N    | 2.71                     | 0.42              |
| 1:E:22:TYR:HA    | 1:E:149:GLY:HA2  | 1.95                     | 0.42              |
| 1:E:119:PRO:HD3  | 1:E:254:THR:OG1  | 2.19                     | 0.42              |
| 1:A:76:ARG:HH12  | 1:A:130:ILE:HD11 | 1.84                     | 0.42              |
| 1:A:179:LEU:HD12 | 1:A:179:LEU:O    | 2.19                     | 0.42              |
| 1:C:67:PRO:HG3   | 1:C:91:ILE:HD11  | 2.00                     | 0.42              |
| 1:C:212:TRP:HB2  | 1:C:215:PHE:CE1  | 2.54                     | 0.42              |
| 1:C:298:PHE:CB   | 1:C:299:PRO:HD3  | 2.48                     | 0.42              |
| 1:D:260:MET:CE   | 1:D:309:LEU:HD22 | 2.45                     | 0.42              |
| 1:E:133:SER:HB2  | 1:E:137:ARG:HH11 | 1.82                     | 0.42              |
| 1:E:291:THR:O    | 1:E:295:ARG:HG3  | 2.19                     | 0.42              |
| 1:A:155:PHE:HE1  | 1:B:112:PRO:HB3  | 1.63                     | 0.42              |
| 1:A:212:TRP:HB2  | 1:A:215:PHE:CE1  | 2.54                     | 0.42              |
| 1:B:232:ILE:HA   | 1:B:235:ILE:HD12 | 2.01                     | 0.42              |
| 1:B:243:THR:HG22 | 1:B:244:ASN:HD22 | 1.84                     | 0.42              |
| 1:C:133:SER:HB3  | 1:C:137:ARG:HA   | 2.01                     | 0.42              |
| 1:C:210:ILE:HG21 | 1:D:228:VAL:HG22 | 2.00                     | 0.42              |
| 1:C:225:THR:O    | 1:C:225:THR:HG22 | 2.18                     | 0.42              |
| 1:D:286:ARG:O    | 1:D:289:SER:N    | 2.45                     | 0.42              |
| 1:E:143:VAL:O    | 1:E:143:VAL:HG12 | 2.20                     | 0.42              |
| 1:E:191:ARG:HG3  | 1:E:192:GLN:N    | 2.34                     | 0.42              |
| 1:A:159:TRP:CE3  | 1:A:189:ILE:HD12 | 2.55                     | 0.42              |
| 1:B:202:LEU:HB2  | 1:B:203:PRO:HD3  | 2.01                     | 0.42              |
| 1:C:183:LEU:HD23 | 1:C:183:LEU:HA   | 1.88                     | 0.42              |
| 1:E:28:SER:HB2   | 1:E:37:LYS:HD2   | 2.02                     | 0.42              |
| 1:E:53:PHE:CD1   | 1:E:53:PHE:O     | 2.72                     | 0.42              |
| 1:E:53:PHE:O     | 1:E:54:ASP:C     | 2.58                     | 0.42              |
| 1:E:197:ILE:HB   | 1:E:198:PRO:CD   | 2.40                     | 0.42              |
| 1:E:267:VAL:HG23 | 1:E:298:PHE:CZ   | 2.54                     | 0.42              |
| 1:A:53:PHE:CD1   | 1:A:53:PHE:O     | 2.72                     | 0.42              |
| 1:B:53:PHE:O     | 1:B:54:ASP:C     | 2.58                     | 0.42              |
| 1:B:226:LEU:HD22 | 1:B:226:LEU:HA   | 1.74                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:53:PHE:O     | 1:D:54:ASP:C     | 2.58                     | 0.42              |
| 1:D:225:THR:HG22 | 1:D:225:THR:O    | 2.19                     | 0.42              |
| 1:E:243:THR:CG2  | 1:E:244:ASN:N    | 2.81                     | 0.42              |
| 1:A:240:LEU:HD13 | 1:B:239:ILE:HG13 | 2.00                     | 0.42              |
| 1:C:53:PHE:CD1   | 1:C:53:PHE:O     | 2.72                     | 0.42              |
| 1:C:95:PRO:C     | 1:C:97:GLY:H     | 2.23                     | 0.42              |
| 1:C:156:LEU:HD12 | 1:C:156:LEU:HA   | 1.73                     | 0.42              |
| 1:D:78:VAL:HB    | 1:D:128:TYR:CB   | 2.48                     | 0.42              |
| 1:D:212:TRP:HB2  | 1:D:215:PHE:CE1  | 2.55                     | 0.42              |
| 1:E:95:PRO:C     | 1:E:97:GLY:H     | 2.23                     | 0.42              |
| 1:B:7:PRO:O      | 1:B:50:ARG:NH1   | 2.50                     | 0.42              |
| 1:B:13:GLU:OE1   | 1:B:14:PRO:HD3   | 2.20                     | 0.42              |
| 1:B:21:ILE:HA    | 1:B:41:PHE:O     | 2.20                     | 0.42              |
| 1:B:197:ILE:CB   | 1:B:198:PRO:HD3  | 2.44                     | 0.42              |
| 1:C:30:ASP:HB3   | 1:C:33:ALA:HB3   | 2.01                     | 0.42              |
| 1:C:201:ILE:HD13 | 1:C:201:ILE:HA   | 1.91                     | 0.42              |
| 1:D:53:PHE:CD1   | 1:D:53:PHE:O     | 2.72                     | 0.42              |
| 1:D:143:VAL:O    | 1:D:143:VAL:HG12 | 2.19                     | 0.42              |
| 1:D:243:THR:HG22 | 1:D:244:ASN:N    | 2.35                     | 0.42              |
| 1:E:254:THR:HA   | 1:E:257:ILE:HG12 | 2.01                     | 0.42              |
| 1:A:23:LEU:HB2   | 1:A:150:LYS:HA   | 2.01                     | 0.42              |
| 1:B:53:PHE:CD1   | 1:B:53:PHE:O     | 2.72                     | 0.42              |
| 1:B:179:LEU:HD12 | 1:B:179:LEU:O    | 2.19                     | 0.42              |
| 1:D:21:ILE:HA    | 1:D:41:PHE:O     | 2.20                     | 0.42              |
| 1:A:27:TYR:CE1   | 1:A:37:LYS:HB2   | 2.55                     | 0.42              |
| 1:A:42:LEU:HB3   | 1:A:103:GLU:HG3  | 2.02                     | 0.42              |
| 1:A:213:THR:HG22 | 1:A:226:LEU:CD1  | 2.49                     | 0.42              |
| 1:B:270:ILE:HG22 | 1:B:271:GLU:N    | 2.35                     | 0.42              |
| 1:C:132:ARG:HH22 | 1:C:176:GLU:HB2  | 1.85                     | 0.42              |
| 1:C:133:SER:HB2  | 1:C:137:ARG:HH11 | 1.85                     | 0.42              |
| 1:C:314:PHE:CD1  | 1:C:314:PHE:N    | 2.87                     | 0.42              |
| 1:D:72:ILE:HA    | 1:D:73:PRO:HD3   | 1.91                     | 0.42              |
| 1:D:77:PHE:HE2   | 1:D:127:ILE:CG2  | 2.33                     | 0.42              |
| 1:D:179:LEU:HD12 | 1:D:179:LEU:O    | 2.19                     | 0.42              |
| 1:D:202:LEU:HB2  | 1:D:203:PRO:HD3  | 2.02                     | 0.42              |
| 1:A:233:ALA:HB1  | 1:B:235:ILE:HD13 | 2.02                     | 0.41              |
| 1:D:76:ARG:CZ    | 1:D:130:ILE:HD12 | 2.43                     | 0.41              |
| 1:D:95:PRO:O     | 1:D:97:GLY:N     | 2.53                     | 0.41              |
| 1:D:159:TRP:CE3  | 1:D:189:ILE:HD12 | 2.54                     | 0.41              |
| 1:E:30:ASP:HB3   | 1:E:33:ALA:HB3   | 2.02                     | 0.41              |
| 1:A:47:LYS:HD3   | 1:A:49:ARG:HH21  | 1.85                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:46:TRP:HH2   | 1:B:72:ILE:HG23  | 1.86                     | 0.41              |
| 1:B:49:ARG:HB3   | 1:B:49:ARG:NH1   | 2.35                     | 0.41              |
| 1:C:53:PHE:O     | 1:C:54:ASP:C     | 2.58                     | 0.41              |
| 1:D:232:ILE:HA   | 1:D:235:ILE:HD12 | 2.01                     | 0.41              |
| 1:E:222:ALA:HA   | 1:E:225:THR:HB   | 2.02                     | 0.41              |
| 1:B:34:GLU:OE2   | 1:B:113:LEU:N    | 2.49                     | 0.41              |
| 1:B:78:VAL:HB    | 1:B:128:TYR:CB   | 2.51                     | 0.41              |
| 1:B:243:THR:HG22 | 1:B:244:ASN:N    | 2.35                     | 0.41              |
| 1:C:48:ASP:C     | 1:C:50:ARG:N     | 2.72                     | 0.41              |
| 1:C:179:LEU:HD12 | 1:C:179:LEU:O    | 2.19                     | 0.41              |
| 1:C:232:ILE:HA   | 1:C:235:ILE:HD12 | 2.02                     | 0.41              |
| 1:C:276:HIS:C    | 1:C:278:LEU:N    | 2.71                     | 0.41              |
| 1:D:77:PHE:HE2   | 1:D:127:ILE:HG23 | 1.85                     | 0.41              |
| 1:D:223:ASN:HD22 | 1:D:272:VAL:HG12 | 1.85                     | 0.41              |
| 1:E:42:LEU:HB3   | 1:E:103:GLU:HG3  | 2.01                     | 0.41              |
| 1:A:166:ALA:HB2  | 1:A:185:TYR:CD2  | 2.55                     | 0.41              |
| 1:A:201:ILE:HD13 | 1:A:201:ILE:HA   | 1.88                     | 0.41              |
| 1:A:232:ILE:CG2  | 1:A:233:ALA:N    | 2.81                     | 0.41              |
| 1:B:222:ALA:HA   | 1:B:225:THR:HB   | 2.02                     | 0.41              |
| 1:B:298:PHE:CB   | 1:B:299:PRO:HD3  | 2.50                     | 0.41              |
| 1:C:270:ILE:HG22 | 1:C:271:GLU:N    | 2.35                     | 0.41              |
| 1:D:232:ILE:O    | 1:D:235:ILE:HB   | 2.21                     | 0.41              |
| 1:D:264:PHE:HE2  | 1:D:302:PHE:HB2  | 1.84                     | 0.41              |
| 1:E:300:VAL:O    | 1:E:304:LEU:HB2  | 2.20                     | 0.41              |
| 1:A:41:PHE:CE2   | 1:B:175:LEU:HD23 | 2.46                     | 0.41              |
| 1:A:79:ASN:H     | 1:A:79:ASN:ND2   | 2.10                     | 0.41              |
| 1:A:88:VAL:CG1   | 1:A:89:VAL:N     | 2.83                     | 0.41              |
| 1:A:232:ILE:HA   | 1:A:235:ILE:HD12 | 2.02                     | 0.41              |
| 1:B:175:LEU:HD12 | 1:B:175:LEU:HA   | 1.67                     | 0.41              |
| 1:C:194:PHE:O    | 1:C:197:ILE:N    | 2.43                     | 0.41              |
| 1:D:41:PHE:CE2   | 1:E:175:LEU:HD23 | 2.36                     | 0.41              |
| 1:E:296:ILE:HG22 | 1:E:297:ALA:N    | 2.35                     | 0.41              |
| 1:A:77:PHE:CE2   | 1:A:127:ILE:CG2  | 3.03                     | 0.41              |
| 1:A:78:VAL:HB    | 1:A:128:TYR:CB   | 2.51                     | 0.41              |
| 1:C:224:VAL:O    | 1:C:226:LEU:N    | 2.53                     | 0.41              |
| 1:D:109:VAL:HG11 | 1:D:126:HIS:O    | 2.20                     | 0.41              |
| 1:D:215:PHE:HB2  | 1:D:216:TRP:CZ3  | 2.56                     | 0.41              |
| 1:D:252:THR:HB   | 1:D:255:GLY:H    | 1.85                     | 0.41              |
| 1:E:314:PHE:N    | 1:E:314:PHE:CD1  | 2.89                     | 0.41              |
| 1:A:133:SER:HB3  | 1:A:137:ARG:HA   | 2.01                     | 0.41              |
| 1:B:72:ILE:HA    | 1:B:73:PRO:HD3   | 1.85                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:183:LEU:HD23 | 1:B:183:LEU:HA   | 1.83                     | 0.41              |
| 1:B:194:PHE:O    | 1:B:198:PRO:HD2  | 2.21                     | 0.41              |
| 1:B:224:VAL:O    | 1:B:226:LEU:N    | 2.53                     | 0.41              |
| 1:D:132:ARG:NH2  | 1:D:178:ARG:HB2  | 2.35                     | 0.41              |
| 1:E:119:PRO:HB3  | 1:E:196:TYR:HD2  | 1.84                     | 0.41              |
| 1:E:296:ILE:HD13 | 1:E:296:ILE:HA   | 1.83                     | 0.41              |
| 1:A:48:ASP:C     | 1:A:50:ARG:H     | 2.22                     | 0.41              |
| 1:A:216:TRP:HE3  | 1:A:216:TRP:H    | 1.68                     | 0.41              |
| 1:A:240:LEU:HD22 | 1:B:239:ILE:HG13 | 2.02                     | 0.41              |
| 1:B:243:THR:CG2  | 1:B:244:ASN:N    | 2.84                     | 0.41              |
| 1:E:221:GLU:O    | 1:E:221:GLU:OE1  | 2.39                     | 0.41              |
| 1:E:261:ILE:O    | 1:E:262:TYR:C    | 2.59                     | 0.41              |
| 1:A:9:PRO:HB3    | 1:A:48:ASP:OD1   | 2.20                     | 0.41              |
| 1:A:140:VAL:HG22 | 1:A:181:SER:CB   | 2.51                     | 0.41              |
| 1:A:157:THR:HG21 | 1:B:34:GLU:CG    | 2.49                     | 0.41              |
| 1:A:200:ILE:O    | 1:A:204:MET:CB   | 2.68                     | 0.41              |
| 1:A:226:LEU:HD22 | 1:B:228:VAL:HG21 | 2.01                     | 0.41              |
| 1:B:25:GLU:HB2   | 1:B:39:ASN:HB3   | 2.03                     | 0.41              |
| 1:B:278:LEU:HD23 | 1:B:287:ALA:CA   | 2.51                     | 0.41              |
| 1:B:314:PHE:N    | 1:B:314:PHE:HD1  | 2.19                     | 0.41              |
| 1:C:10:ILE:H     | 1:C:10:ILE:HG13  | 1.70                     | 0.41              |
| 1:C:48:ASP:C     | 1:C:50:ARG:H     | 2.24                     | 0.41              |
| 1:C:72:ILE:HA    | 1:C:73:PRO:HD3   | 1.85                     | 0.41              |
| 1:C:137:ARG:HA   | 1:C:137:ARG:HD3  | 1.54                     | 0.41              |
| 1:C:159:TRP:CE3  | 1:C:189:ILE:HD12 | 2.56                     | 0.41              |
| 1:C:222:ALA:HA   | 1:C:225:THR:HB   | 2.02                     | 0.41              |
| 1:D:132:ARG:CA   | 1:D:180:GLU:HG2  | 2.48                     | 0.41              |
| 1:D:278:LEU:HD23 | 1:D:287:ALA:CA   | 2.51                     | 0.41              |
| 1:E:72:ILE:HG22  | 1:E:73:PRO:HD2   | 2.03                     | 0.41              |
| 1:E:79:ASN:H     | 1:E:79:ASN:ND2   | 2.08                     | 0.41              |
| 1:A:27:TYR:CE1   | 1:B:81:GLU:CD    | 2.95                     | 0.41              |
| 1:A:48:ASP:HB3   | 1:A:51:LEU:HD21  | 2.02                     | 0.41              |
| 1:A:76:ARG:NH1   | 1:A:130:ILE:HD11 | 2.35                     | 0.41              |
| 1:A:147:LYS:CE   | 1:A:165:THR:HA   | 2.51                     | 0.41              |
| 1:B:44:LEU:HD12  | 1:B:101:TYR:CE2  | 2.56                     | 0.41              |
| 1:B:48:ASP:HB3   | 1:B:51:LEU:HD21  | 2.03                     | 0.41              |
| 1:B:260:MET:CE   | 1:B:309:LEU:HD22 | 2.43                     | 0.41              |
| 1:D:229:SER:CB   | 1:E:228:VAL:HG11 | 2.51                     | 0.41              |
| 1:A:132:ARG:NH2  | 1:A:178:ARG:HB2  | 2.36                     | 0.40              |
| 1:B:301:VAL:O    | 1:B:301:VAL:HG12 | 2.21                     | 0.40              |
| 1:C:78:VAL:HB    | 1:C:128:TYR:HB2  | 2.03                     | 0.40              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:C:130:ILE:CG2 | 1:C:182:LYS:HB2  | 2.51                     | 0.40              |
| 1:D:41:PHE:HD1  | 1:D:41:PHE:HA    | 1.80                     | 0.40              |
| 1:D:47:LYS:HD2  | 1:D:49:ARG:HH21  | 1.84                     | 0.40              |
| 1:D:125:LEU:HB2 | 1:D:187:LEU:HB3  | 2.03                     | 0.40              |
| 1:A:72:ILE:HG22 | 1:A:73:PRO:HD2   | 2.03                     | 0.40              |
| 1:B:269:VAL:O   | 1:B:273:THR:HB   | 2.21                     | 0.40              |
| 1:C:18:ASN:HB2  | 1:C:45:SER:OG    | 2.21                     | 0.40              |
| 1:C:27:TYR:CE1  | 1:C:37:LYS:HB2   | 2.56                     | 0.40              |
| 1:C:76:ARG:NH1  | 1:C:130:ILE:HD11 | 2.36                     | 0.40              |
| 1:D:9:PRO:HD3   | 1:D:71:TRP:CE3   | 2.57                     | 0.40              |
| 1:D:166:ALA:HB2 | 1:D:185:TYR:CD2  | 2.56                     | 0.40              |
| 1:D:314:PHE:CD1 | 1:D:314:PHE:N    | 2.89                     | 0.40              |
| 1:E:76:ARG:NH1  | 1:E:130:ILE:HD11 | 2.36                     | 0.40              |
| 1:E:202:LEU:HA  | 1:E:202:LEU:HD23 | 1.59                     | 0.40              |
| 1:E:215:PHE:HB2 | 1:E:216:TRP:CZ3  | 2.56                     | 0.40              |
| 1:E:247:LYS:HD3 | 1:E:247:LYS:HA   | 1.89                     | 0.40              |
| 1:A:215:PHE:HB2 | 1:A:216:TRP:CZ3  | 2.55                     | 0.40              |
| 1:B:77:PHE:HE2  | 1:B:127:ILE:HG23 | 1.87                     | 0.40              |
| 1:C:23:LEU:HD23 | 1:C:38:VAL:HG21  | 2.02                     | 0.40              |
| 1:C:202:LEU:HB2 | 1:C:203:PRO:HD3  | 2.02                     | 0.40              |
| 1:A:94:SER:HB3  | 1:A:98:THR:HB    | 2.02                     | 0.40              |
| 1:A:243:THR:CG2 | 1:A:244:ASN:N    | 2.84                     | 0.40              |
| 1:C:218:THR:HA  | 1:C:275:GLN:HE22 | 1.86                     | 0.40              |
| 1:E:175:LEU:HA  | 1:E:175:LEU:HD12 | 1.67                     | 0.40              |
| 1:A:27:TYR:OH   | 1:B:81:GLU:HA    | 2.22                     | 0.40              |
| 1:D:133:SER:HB2 | 1:D:137:ARG:NH1  | 2.37                     | 0.40              |
| 1:D:243:THR:CG2 | 1:D:244:ASN:N    | 2.83                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

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

| Mol | Chain | Analysed        | Favoured   | Allowed   | Outliers | Percentiles |    |
|-----|-------|-----------------|------------|-----------|----------|-------------|----|
| 1   | A     | 308/317 (97%)   | 244 (79%)  | 55 (18%)  | 9 (3%)   | 4           | 32 |
| 1   | B     | 308/317 (97%)   | 245 (80%)  | 55 (18%)  | 8 (3%)   | 5           | 34 |
| 1   | C     | 308/317 (97%)   | 246 (80%)  | 51 (17%)  | 11 (4%)  | 3           | 29 |
| 1   | D     | 308/317 (97%)   | 248 (80%)  | 51 (17%)  | 9 (3%)   | 4           | 32 |
| 1   | E     | 308/317 (97%)   | 243 (79%)  | 54 (18%)  | 11 (4%)  | 3           | 29 |
| All | All   | 1540/1585 (97%) | 1226 (80%) | 266 (17%) | 48 (3%)  | 4           | 32 |

All (48) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 194 | PHE  |
| 1   | B     | 118 | TYR  |
| 1   | B     | 194 | PHE  |
| 1   | C     | 118 | TYR  |
| 1   | C     | 194 | PHE  |
| 1   | D     | 118 | TYR  |
| 1   | D     | 194 | PHE  |
| 1   | E     | 118 | TYR  |
| 1   | E     | 194 | PHE  |
| 1   | A     | 118 | TYR  |
| 1   | A     | 150 | LYS  |
| 1   | B     | 150 | LYS  |
| 1   | C     | 150 | LYS  |
| 1   | D     | 49  | ARG  |
| 1   | D     | 150 | LYS  |
| 1   | E     | 150 | LYS  |
| 1   | A     | 49  | ARG  |
| 1   | A     | 225 | THR  |
| 1   | A     | 275 | GLN  |
| 1   | A     | 277 | TYR  |
| 1   | B     | 49  | ARG  |
| 1   | B     | 225 | THR  |
| 1   | B     | 275 | GLN  |
| 1   | B     | 277 | TYR  |
| 1   | C     | 49  | ARG  |
| 1   | C     | 195 | SER  |
| 1   | C     | 225 | THR  |
| 1   | C     | 275 | GLN  |
| 1   | C     | 277 | TYR  |
| 1   | D     | 275 | GLN  |
| 1   | D     | 277 | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | E     | 195 | SER  |
| 1   | E     | 225 | THR  |
| 1   | E     | 275 | GLN  |
| 1   | E     | 277 | TYR  |
| 1   | A     | 148 | VAL  |
| 1   | B     | 148 | VAL  |
| 1   | C     | 148 | VAL  |
| 1   | D     | 148 | VAL  |
| 1   | D     | 225 | THR  |
| 1   | E     | 49  | ARG  |
| 1   | E     | 148 | VAL  |
| 1   | E     | 214 | ALA  |
| 1   | C     | 131 | VAL  |
| 1   | C     | 214 | ALA  |
| 1   | E     | 131 | VAL  |
| 1   | D     | 131 | VAL  |
| 1   | A     | 131 | VAL  |

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

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

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

| Mol | Chain | Analysed        | Rotameric  | Outliers  | Percentiles |    |
|-----|-------|-----------------|------------|-----------|-------------|----|
| 1   | A     | 278/284 (98%)   | 228 (82%)  | 50 (18%)  | 1           | 11 |
| 1   | B     | 278/284 (98%)   | 227 (82%)  | 51 (18%)  | 1           | 10 |
| 1   | C     | 278/284 (98%)   | 229 (82%)  | 49 (18%)  | 2           | 12 |
| 1   | D     | 278/284 (98%)   | 227 (82%)  | 51 (18%)  | 1           | 10 |
| 1   | E     | 278/284 (98%)   | 226 (81%)  | 52 (19%)  | 1           | 10 |
| All | All   | 1390/1420 (98%) | 1137 (82%) | 253 (18%) | 1           | 11 |

All (253) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 12  | ASP  |
| 1   | A     | 26  | CYS  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 32         | LYS         |
| 1          | A            | 41         | PHE         |
| 1          | A            | 51         | LEU         |
| 1          | A            | 53         | PHE         |
| 1          | A            | 54         | ASP         |
| 1          | A            | 57         | ARG         |
| 1          | A            | 64         | THR         |
| 1          | A            | 68         | GLU         |
| 1          | A            | 72         | ILE         |
| 1          | A            | 79         | ASN         |
| 1          | A            | 84         | ARG         |
| 1          | A            | 89         | VAL         |
| 1          | A            | 98         | THR         |
| 1          | A            | 100        | GLN         |
| 1          | A            | 104        | ARG         |
| 1          | A            | 113        | LEU         |
| 1          | A            | 122        | SER         |
| 1          | A            | 124        | THR         |
| 1          | A            | 140        | VAL         |
| 1          | A            | 141        | LEU         |
| 1          | A            | 151        | ASN         |
| 1          | A            | 154        | VAL         |
| 1          | A            | 155        | PHE         |
| 1          | A            | 157        | THR         |
| 1          | A            | 177        | ASP         |
| 1          | A            | 179        | LEU         |
| 1          | A            | 211        | SER         |
| 1          | A            | 212        | TRP         |
| 1          | A            | 213        | THR         |
| 1          | A            | 218        | THR         |
| 1          | A            | 221        | GLU         |
| 1          | A            | 226        | LEU         |
| 1          | A            | 232        | ILE         |
| 1          | A            | 239        | ILE         |
| 1          | A            | 243        | THR         |
| 1          | A            | 252        | THR         |
| 1          | A            | 254        | THR         |
| 1          | A            | 258        | ILE         |
| 1          | A            | 263        | LEU         |
| 1          | A            | 270        | ILE         |
| 1          | A            | 273        | THR         |
| 1          | A            | 274        | VAL         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 282        | SER         |
| 1          | A            | 292        | ARG         |
| 1          | A            | 296        | ILE         |
| 1          | A            | 304        | LEU         |
| 1          | A            | 306        | ASN         |
| 1          | A            | 314        | PHE         |
| 1          | B            | 12         | ASP         |
| 1          | B            | 26         | CYS         |
| 1          | B            | 32         | LYS         |
| 1          | B            | 49         | ARG         |
| 1          | B            | 51         | LEU         |
| 1          | B            | 53         | PHE         |
| 1          | B            | 54         | ASP         |
| 1          | B            | 57         | ARG         |
| 1          | B            | 64         | THR         |
| 1          | B            | 68         | GLU         |
| 1          | B            | 72         | ILE         |
| 1          | B            | 79         | ASN         |
| 1          | B            | 84         | ARG         |
| 1          | B            | 89         | VAL         |
| 1          | B            | 98         | THR         |
| 1          | B            | 100        | GLN         |
| 1          | B            | 104        | ARG         |
| 1          | B            | 110        | LEU         |
| 1          | B            | 113        | LEU         |
| 1          | B            | 122        | SER         |
| 1          | B            | 124        | THR         |
| 1          | B            | 140        | VAL         |
| 1          | B            | 141        | LEU         |
| 1          | B            | 151        | ASN         |
| 1          | B            | 154        | VAL         |
| 1          | B            | 155        | PHE         |
| 1          | B            | 157        | THR         |
| 1          | B            | 177        | ASP         |
| 1          | B            | 179        | LEU         |
| 1          | B            | 195        | SER         |
| 1          | B            | 211        | SER         |
| 1          | B            | 212        | TRP         |
| 1          | B            | 213        | THR         |
| 1          | B            | 218        | THR         |
| 1          | B            | 221        | GLU         |
| 1          | B            | 226        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | B            | 232        | ILE         |
| 1          | B            | 239        | ILE         |
| 1          | B            | 243        | THR         |
| 1          | B            | 252        | THR         |
| 1          | B            | 254        | THR         |
| 1          | B            | 258        | ILE         |
| 1          | B            | 263        | LEU         |
| 1          | B            | 270        | ILE         |
| 1          | B            | 273        | THR         |
| 1          | B            | 274        | VAL         |
| 1          | B            | 282        | SER         |
| 1          | B            | 292        | ARG         |
| 1          | B            | 296        | ILE         |
| 1          | B            | 304        | LEU         |
| 1          | B            | 306        | ASN         |
| 1          | C            | 12         | ASP         |
| 1          | C            | 26         | CYS         |
| 1          | C            | 32         | LYS         |
| 1          | C            | 51         | LEU         |
| 1          | C            | 53         | PHE         |
| 1          | C            | 54         | ASP         |
| 1          | C            | 57         | ARG         |
| 1          | C            | 64         | THR         |
| 1          | C            | 68         | GLU         |
| 1          | C            | 72         | ILE         |
| 1          | C            | 79         | ASN         |
| 1          | C            | 84         | ARG         |
| 1          | C            | 89         | VAL         |
| 1          | C            | 98         | THR         |
| 1          | C            | 100        | GLN         |
| 1          | C            | 104        | ARG         |
| 1          | C            | 110        | LEU         |
| 1          | C            | 113        | LEU         |
| 1          | C            | 122        | SER         |
| 1          | C            | 124        | THR         |
| 1          | C            | 140        | VAL         |
| 1          | C            | 141        | LEU         |
| 1          | C            | 151        | ASN         |
| 1          | C            | 154        | VAL         |
| 1          | C            | 155        | PHE         |
| 1          | C            | 157        | THR         |
| 1          | C            | 177        | ASP         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 179        | LEU         |
| 1          | C            | 211        | SER         |
| 1          | C            | 212        | TRP         |
| 1          | C            | 213        | THR         |
| 1          | C            | 218        | THR         |
| 1          | C            | 221        | GLU         |
| 1          | C            | 226        | LEU         |
| 1          | C            | 232        | ILE         |
| 1          | C            | 239        | ILE         |
| 1          | C            | 243        | THR         |
| 1          | C            | 252        | THR         |
| 1          | C            | 254        | THR         |
| 1          | C            | 258        | ILE         |
| 1          | C            | 263        | LEU         |
| 1          | C            | 270        | ILE         |
| 1          | C            | 273        | THR         |
| 1          | C            | 274        | VAL         |
| 1          | C            | 282        | SER         |
| 1          | C            | 292        | ARG         |
| 1          | C            | 296        | ILE         |
| 1          | C            | 304        | LEU         |
| 1          | C            | 306        | ASN         |
| 1          | D            | 12         | ASP         |
| 1          | D            | 26         | CYS         |
| 1          | D            | 32         | LYS         |
| 1          | D            | 49         | ARG         |
| 1          | D            | 51         | LEU         |
| 1          | D            | 53         | PHE         |
| 1          | D            | 54         | ASP         |
| 1          | D            | 57         | ARG         |
| 1          | D            | 64         | THR         |
| 1          | D            | 68         | GLU         |
| 1          | D            | 72         | ILE         |
| 1          | D            | 79         | ASN         |
| 1          | D            | 84         | ARG         |
| 1          | D            | 89         | VAL         |
| 1          | D            | 98         | THR         |
| 1          | D            | 100        | GLN         |
| 1          | D            | 104        | ARG         |
| 1          | D            | 110        | LEU         |
| 1          | D            | 113        | LEU         |
| 1          | D            | 122        | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | D            | 124        | THR         |
| 1          | D            | 140        | VAL         |
| 1          | D            | 141        | LEU         |
| 1          | D            | 151        | ASN         |
| 1          | D            | 154        | VAL         |
| 1          | D            | 155        | PHE         |
| 1          | D            | 157        | THR         |
| 1          | D            | 177        | ASP         |
| 1          | D            | 179        | LEU         |
| 1          | D            | 195        | SER         |
| 1          | D            | 196        | TYR         |
| 1          | D            | 211        | SER         |
| 1          | D            | 212        | TRP         |
| 1          | D            | 213        | THR         |
| 1          | D            | 218        | THR         |
| 1          | D            | 221        | GLU         |
| 1          | D            | 226        | LEU         |
| 1          | D            | 232        | ILE         |
| 1          | D            | 239        | ILE         |
| 1          | D            | 243        | THR         |
| 1          | D            | 252        | THR         |
| 1          | D            | 254        | THR         |
| 1          | D            | 258        | ILE         |
| 1          | D            | 263        | LEU         |
| 1          | D            | 270        | ILE         |
| 1          | D            | 273        | THR         |
| 1          | D            | 274        | VAL         |
| 1          | D            | 282        | SER         |
| 1          | D            | 292        | ARG         |
| 1          | D            | 296        | ILE         |
| 1          | D            | 306        | ASN         |
| 1          | E            | 12         | ASP         |
| 1          | E            | 26         | CYS         |
| 1          | E            | 32         | LYS         |
| 1          | E            | 49         | ARG         |
| 1          | E            | 51         | LEU         |
| 1          | E            | 53         | PHE         |
| 1          | E            | 54         | ASP         |
| 1          | E            | 57         | ARG         |
| 1          | E            | 64         | THR         |
| 1          | E            | 68         | GLU         |
| 1          | E            | 72         | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 79         | ASN         |
| 1          | E            | 84         | ARG         |
| 1          | E            | 89         | VAL         |
| 1          | E            | 98         | THR         |
| 1          | E            | 100        | GLN         |
| 1          | E            | 104        | ARG         |
| 1          | E            | 110        | LEU         |
| 1          | E            | 113        | LEU         |
| 1          | E            | 122        | SER         |
| 1          | E            | 124        | THR         |
| 1          | E            | 140        | VAL         |
| 1          | E            | 141        | LEU         |
| 1          | E            | 151        | ASN         |
| 1          | E            | 154        | VAL         |
| 1          | E            | 155        | PHE         |
| 1          | E            | 157        | THR         |
| 1          | E            | 177        | ASP         |
| 1          | E            | 179        | LEU         |
| 1          | E            | 195        | SER         |
| 1          | E            | 211        | SER         |
| 1          | E            | 212        | TRP         |
| 1          | E            | 213        | THR         |
| 1          | E            | 218        | THR         |
| 1          | E            | 221        | GLU         |
| 1          | E            | 226        | LEU         |
| 1          | E            | 232        | ILE         |
| 1          | E            | 239        | ILE         |
| 1          | E            | 243        | THR         |
| 1          | E            | 252        | THR         |
| 1          | E            | 254        | THR         |
| 1          | E            | 258        | ILE         |
| 1          | E            | 260        | MET         |
| 1          | E            | 263        | LEU         |
| 1          | E            | 270        | ILE         |
| 1          | E            | 273        | THR         |
| 1          | E            | 274        | VAL         |
| 1          | E            | 282        | SER         |
| 1          | E            | 292        | ARG         |
| 1          | E            | 296        | ILE         |
| 1          | E            | 304        | LEU         |
| 1          | E            | 306        | ASN         |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30)

such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 79  | ASN  |
| 1   | A     | 100 | GLN  |
| 1   | A     | 151 | ASN  |
| 1   | A     | 172 | ASN  |
| 1   | A     | 244 | ASN  |
| 1   | B     | 79  | ASN  |
| 1   | B     | 100 | GLN  |
| 1   | B     | 151 | ASN  |
| 1   | B     | 172 | ASN  |
| 1   | B     | 244 | ASN  |
| 1   | B     | 275 | GLN  |
| 1   | C     | 79  | ASN  |
| 1   | C     | 100 | GLN  |
| 1   | C     | 151 | ASN  |
| 1   | C     | 172 | ASN  |
| 1   | C     | 244 | ASN  |
| 1   | C     | 275 | GLN  |
| 1   | D     | 79  | ASN  |
| 1   | D     | 100 | GLN  |
| 1   | D     | 123 | GLN  |
| 1   | D     | 151 | ASN  |
| 1   | D     | 172 | ASN  |
| 1   | D     | 244 | ASN  |
| 1   | D     | 275 | GLN  |
| 1   | E     | 79  | ASN  |
| 1   | E     | 100 | GLN  |
| 1   | E     | 151 | ASN  |
| 1   | E     | 172 | ASN  |
| 1   | E     | 244 | ASN  |
| 1   | E     | 275 | 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 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1   | A     | 310/317 (97%)   | -0.25  | 5 (1%) 72 61  | 57, 98, 154, 227      | 0     |
| 1   | B     | 310/317 (97%)   | -0.37  | 1 (0%) 94 90  | 59, 98, 154, 227      | 0     |
| 1   | C     | 310/317 (97%)   | -0.26  | 5 (1%) 72 61  | 58, 98, 154, 227      | 0     |
| 1   | D     | 310/317 (97%)   | -0.36  | 2 (0%) 89 83  | 59, 98, 154, 227      | 0     |
| 1   | E     | 310/317 (97%)   | -0.31  | 6 (1%) 66 55  | 58, 99, 154, 227      | 0     |
| All | All   | 1550/1585 (97%) | -0.31  | 19 (1%) 79 69 | 57, 98, 154, 227      | 0     |

All (19) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | C     | 316 | PHE  | 4.3  |
| 1   | A     | 316 | PHE  | 4.1  |
| 1   | E     | 59  | GLY  | 3.8  |
| 1   | A     | 59  | GLY  | 3.0  |
| 1   | E     | 315 | GLY  | 2.8  |
| 1   | C     | 315 | GLY  | 2.8  |
| 1   | E     | 316 | PHE  | 2.7  |
| 1   | A     | 61  | ARG  | 2.7  |
| 1   | A     | 58  | SER  | 2.6  |
| 1   | E     | 58  | SER  | 2.6  |
| 1   | D     | 316 | PHE  | 2.5  |
| 1   | C     | 59  | GLY  | 2.3  |
| 1   | D     | 61  | ARG  | 2.2  |
| 1   | E     | 57  | ARG  | 2.2  |
| 1   | E     | 60  | VAL  | 2.1  |
| 1   | A     | 60  | VAL  | 2.1  |
| 1   | B     | 57  | ARG  | 2.1  |
| 1   | C     | 61  | ARG  | 2.1  |
| 1   | C     | 60  | VAL  | 2.0  |

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 2   | SB   | E     | 1316 | 1/1   | 0.95 | 0.44 | 151,151,151,151             | 0     |

## 6.5 Other polymers [i](#)

There are no such residues in this entry.