



Full wwPDB X-ray Structure Validation Report ⓘ

May 26, 2020 – 04:39 pm BST

PDB ID : 1A81
Title : CRYSTAL STRUCTURE OF THE TANDEM SH2 DOMAIN OF THE SYK KINASE BOUND TO A DUALY TYROSINE-PHOSPHORYLATED ITAM
Authors : Fuetterer, K.; Waksman, G.
Deposited on : 1998-03-31
Resolution : 3.00 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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

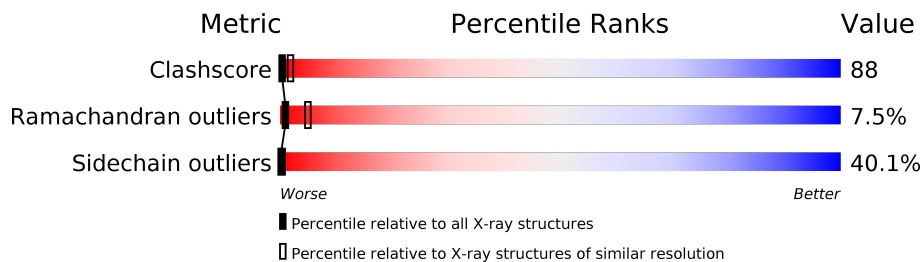
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| Clashscore | 141614 | 2416 (3.00-3.00) |
| Ramachandran outliers | 138981 | 2333 (3.00-3.00) |
| Sidechain outliers | 138945 | 2336 (3.00-3.00) |



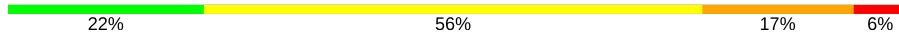
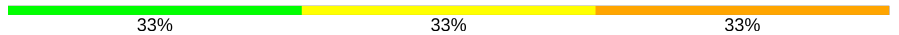
The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively.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

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|-------------------|
| 1 | A | 254 | 19% 45% 33% . |
| 1 | C | 254 | 19% 47% 32% . |
| 1 | E | 254 | 17% 43% 26% . 13% |
| 1 | G | 254 | 19% 39% 26% . 13% |
| 1 | I | 254 | 17% 46% 34% . |
| 1 | K | 254 | 17% 44% 24% . 13% |
| 2 | B | 18 | 22% 44% 22% 11% |
| 2 | D | 18 | 17% 56% 22% 6% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 2 | F | 18 |  |
| 2 | H | 18 |  |
| 2 | J | 18 |  |
| 2 | L | 18 |  |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 2 | PTR | J | 181 | - | - | X | - |

2 Entry composition i

There are 2 unique types of molecules in this entry. The entry contains 12201 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 SYK KINASE.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 1 | A | 254 | 2015 | 1279 | 360 | 370 | 6 | 0 | 0 | 0 |
| 1 | C | 254 | 2015 | 1279 | 360 | 370 | 6 | 0 | 0 | 0 |
| 1 | E | 220 | 1742 | 1106 | 314 | 316 | 6 | 0 | 0 | 0 |
| 1 | G | 220 | 1738 | 1103 | 313 | 316 | 6 | 0 | 0 | 0 |
| 1 | I | 254 | 2011 | 1276 | 359 | 370 | 6 | 0 | 0 | 0 |
| 1 | K | 220 | 1738 | 1103 | 313 | 316 | 6 | 0 | 0 | 0 |

- Molecule 2 is a protein called T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 2 | B | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |
| 2 | D | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |
| 2 | F | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |
| 2 | H | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |
| 2 | J | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |
| 2 | L | 18 | 157 | 93 | 27 | 35 | 2 | 0 | 0 | 0 |

There are 12 discrepancies between the modelled and reference sequences:

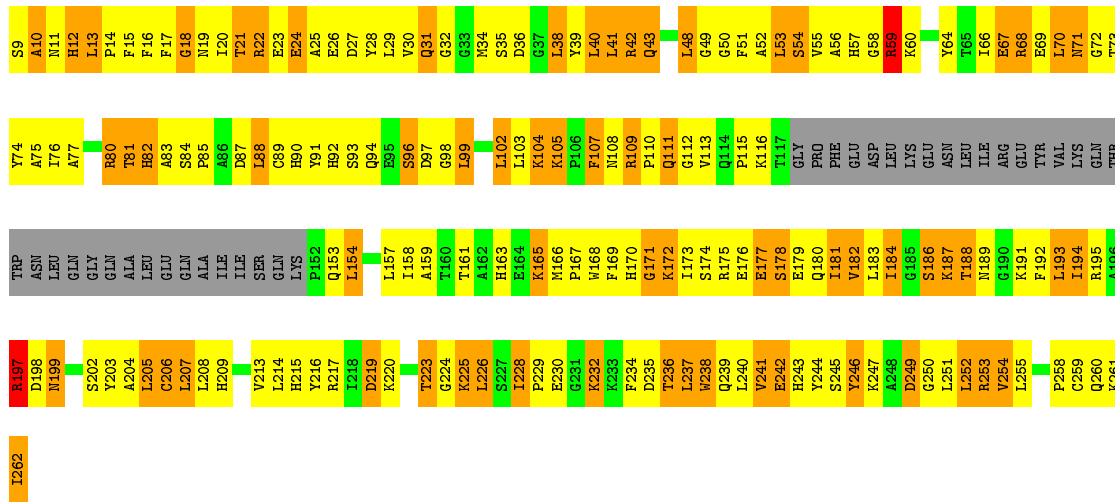
| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| B | 170 | PTR | TYR | CONFLICT | UNP P07766 |

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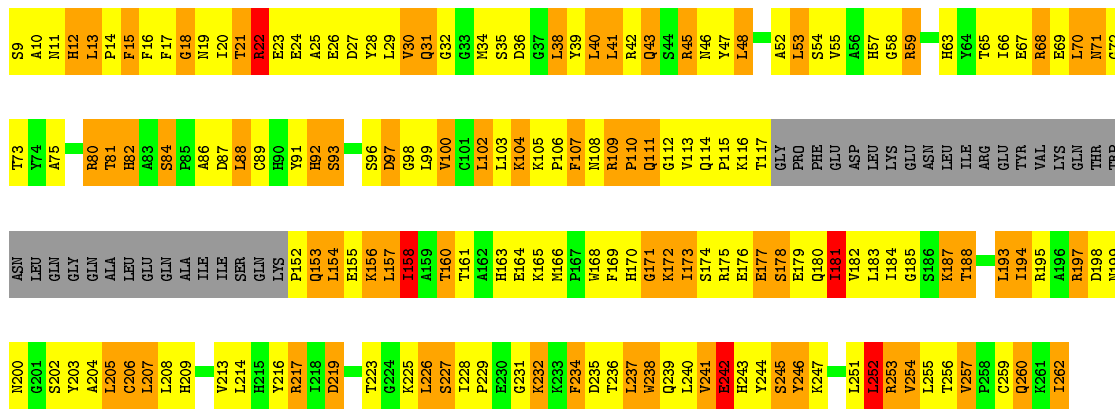
| Chain | Residue | Modelled | Actual | Comment | Reference |
|--------------|----------------|-----------------|---------------|------------------|------------------|
| B | 181 | PTR | TYR | CONFLICT | UNP P07766 |
| D | 170 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| D | 181 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| F | 170 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| F | 181 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| H | 170 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| H | 181 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| J | 170 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| J | 181 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| L | 170 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |
| L | 181 | PTR | TYR | MODIFIED RESIDUE | UNP P07766 |

Chain E: 17% 43% 26% 13%



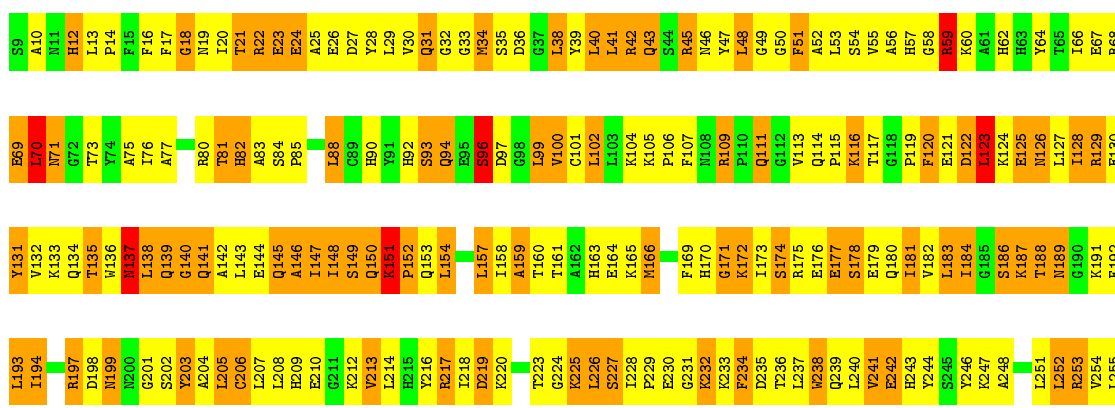
• Molecule 1: SYK KINASE

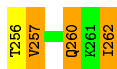
Chain G: 19% 39% 26% 13%



• Molecule 1: SYK KINASE

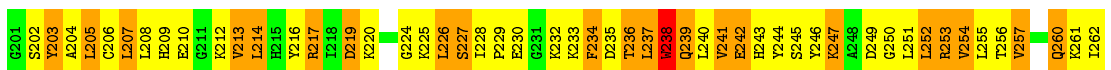
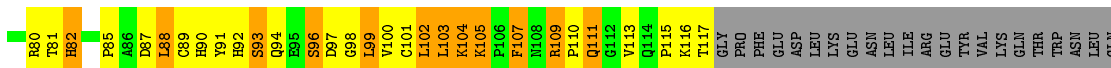
Chain I: 17% 46% 34%





- Molecule 1: SYK KINASE

Chain K: 17% 44% 24% 13%



- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN

Chain B: 22% 44% 22% 11%



- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN

Chain D: 17% 56% 22% 6%



- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN

Chain F: 11% 61% 28%



- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN

Chain H: 17% 44% 39%

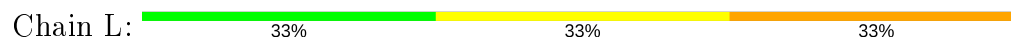


- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN

Chain J: 22% 56% 17% 6%



- Molecule 2: T-CELL SURFACE GLYCOPROTEIN CD3 EPSILON CHAIN



4 Data and refinement statistics

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

| Property | Value | Source |
|--|--|-----------|
| Space group | P 1 21 1 | Depositor |
| Cell constants a, b, c, α , β , γ | 85.50 Å 146.90 Å 91.50 Å 90.00° 97.60° 90.00° | Depositor |
| Resolution (Å) | 30.00 – 3.00 | Depositor |
| % Data completeness (in resolution range) | 89.8 (30.00-3.00) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | 0.05 | Depositor |
| Refinement program | X-PLOR 3.85 | Depositor |
| R, R_{free} | 0.226 , 0.317 | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| Total number of atoms | 12201 | wwPDB-VP |
| Average B, all atoms (Å ²) | 46.0 | wwPDB-VP |

5 Model quality

5.1 Standard geometry

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

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 | 0.85 | 2/2062 (0.1%) | 0.96 | 2/2787 (0.1%) |
| 1 | C | 0.80 | 0/2062 | 0.93 | 2/2787 (0.1%) |
| 1 | E | 0.62 | 0/1783 | 0.80 | 2/2405 (0.1%) |
| 1 | G | 0.84 | 0/1779 | 0.98 | 3/2401 (0.1%) |
| 1 | I | 0.74 | 0/2058 | 0.87 | 1/2783 (0.0%) |
| 1 | K | 0.64 | 1/1779 (0.1%) | 0.79 | 2/2401 (0.1%) |
| 2 | B | 0.62 | 0/124 | 1.09 | 0/161 |
| 2 | D | 0.87 | 0/124 | 1.04 | 0/161 |
| 2 | F | 0.58 | 0/124 | 0.91 | 0/161 |
| 2 | H | 0.79 | 0/124 | 1.19 | 1/161 (0.6%) |
| 2 | J | 0.55 | 0/124 | 0.91 | 0/161 |
| 2 | L | 0.53 | 0/124 | 0.98 | 0/161 |
| All | All | 0.75 | 3/12267 (0.0%) | 0.90 | 13/16530 (0.1%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | A | 0 | 2 |

All (3) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | A | 259 | CYS | CB-SG | -5.32 | 1.73 | 1.81 |
| 1 | K | 89 | CYS | CB-SG | 5.20 | 1.91 | 1.82 |
| 1 | A | 46 | ASN | CG-ND2 | -5.05 | 1.20 | 1.32 |

All (13) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2 | H | 184 | LEU | CA-CB-CG | -6.91 | 99.41 | 115.30 |
| 1 | G | 100 | VAL | CB-CA-C | -6.28 | 99.48 | 111.40 |
| 1 | K | 199 | ASN | N-CA-C | -6.14 | 94.43 | 111.00 |
| 1 | G | 198 | ASP | N-CA-C | 5.89 | 126.89 | 111.00 |
| 1 | A | 109 | ARG | NE-CZ-NH1 | -5.79 | 117.40 | 120.30 |
| 1 | E | 197 | ARG | N-CA-C | -5.77 | 95.43 | 111.00 |
| 1 | C | 121 | GLU | N-CA-C | -5.74 | 95.51 | 111.00 |
| 1 | I | 123 | LEU | CA-CB-CG | 5.70 | 128.42 | 115.30 |
| 1 | G | 22 | ARG | NE-CZ-NH2 | -5.51 | 117.54 | 120.30 |
| 1 | K | 237 | LEU | CA-CB-CG | -5.42 | 102.84 | 115.30 |
| 1 | A | 76 | ILE | N-CA-C | -5.28 | 96.75 | 111.00 |
| 1 | E | 228 | ILE | CB-CA-C | -5.15 | 101.31 | 111.60 |
| 1 | C | 113 | VAL | CB-CA-C | -5.00 | 101.89 | 111.40 |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | A | 28 | TYR | Sidechain |
| 1 | A | 64 | TYR | Sidechain |

5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 2015 | 0 | 1977 | 387 | 0 |
| 1 | C | 2015 | 0 | 1977 | 403 | 0 |
| 1 | E | 1742 | 0 | 1718 | 277 | 0 |
| 1 | G | 1738 | 0 | 1707 | 293 | 0 |
| 1 | I | 2011 | 0 | 1966 | 383 | 0 |
| 1 | K | 1738 | 0 | 1707 | 301 | 0 |
| 2 | B | 157 | 0 | 139 | 25 | 0 |
| 2 | D | 157 | 0 | 139 | 30 | 0 |
| 2 | F | 157 | 0 | 139 | 33 | 0 |
| 2 | H | 157 | 0 | 139 | 33 | 0 |
| 2 | J | 157 | 0 | 139 | 30 | 0 |
| 2 | L | 157 | 0 | 139 | 27 | 0 |
| All | All | 12201 | 0 | 11886 | 2118 | 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 88.

All (2118) 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:I:21:THR:HG23 | 1:I:24:GLU:OE1 | 1.45 | 1.16 |
| 1:I:128:ILE:HG22 | 1:I:158:ILE:HG12 | 1.26 | 1.15 |
| 1:C:128:ILE:HG22 | 1:C:158:ILE:HG12 | 1.23 | 1.14 |
| 1:E:21:THR:HG23 | 1:E:24:GLU:HB2 | 1.22 | 1.13 |
| 1:A:70:LEU:HD12 | 1:A:70:LEU:H | 1.04 | 1.12 |
| 1:A:170:HIS:ND1 | 1:A:193:LEU:HD12 | 1.66 | 1.10 |
| 1:C:70:LEU:HD12 | 1:C:70:LEU:H | 0.99 | 1.10 |
| 1:C:197:ARG:HH11 | 1:C:197:ARG:HG2 | 1.04 | 1.10 |
| 1:K:226:LEU:HD12 | 1:K:226:LEU:H | 1.17 | 1.09 |
| 1:A:163:HIS:HA | 1:A:166:MET:HG3 | 1.30 | 1.09 |
| 2:L:175:LYS:HD2 | 2:L:176:GLY:H | 1.15 | 1.08 |
| 1:G:226:LEU:H | 1:G:226:LEU:HD12 | 1.06 | 1.08 |
| 2:L:178:ARG:HH11 | 2:L:178:ARG:CB | 1.66 | 1.08 |
| 1:A:194:ILE:HG23 | 1:A:205:LEU:HD23 | 1.33 | 1.08 |
| 1:A:150:GLN:HB3 | 1:A:154:LEU:HD21 | 1.27 | 1.08 |
| 1:I:39:TYR:HB3 | 1:I:55:VAL:HG12 | 1.24 | 1.08 |
| 2:L:178:ARG:NH1 | 2:L:178:ARG:HB3 | 1.67 | 1.07 |
| 1:C:154:LEU:HD23 | 1:C:154:LEU:H | 1.20 | 1.07 |
| 2:L:174:ARG:HG2 | 2:L:174:ARG:HH11 | 1.16 | 1.07 |
| 1:A:217:ARG:HG2 | 1:A:217:ARG:HH11 | 1.20 | 1.06 |
| 1:G:170:HIS:CG | 1:G:193:LEU:HD12 | 1.91 | 1.05 |
| 1:I:128:ILE:HD13 | 1:I:129:ARG:H | 1.21 | 1.05 |
| 1:I:150:GLN:HB3 | 1:I:154:LEU:HD11 | 1.38 | 1.05 |
| 1:G:180:GLN:HE22 | 1:I:59:ARG:HD2 | 0.95 | 1.05 |
| 1:G:217:ARG:HH11 | 1:G:217:ARG:HG2 | 0.91 | 1.04 |
| 1:G:180:GLN:NE2 | 1:I:59:ARG:HD2 | 1.73 | 1.04 |
| 2:F:178:ARG:HH11 | 2:F:178:ARG:HB3 | 1.21 | 1.04 |
| 1:E:75:ALA:HB2 | 1:E:81:THR:HA | 1.39 | 1.03 |
| 2:H:175:LYS:HD2 | 2:H:176:GLY:H | 1.22 | 1.02 |
| 1:K:68:ARG:HH11 | 1:K:72:GLY:HA2 | 1.24 | 1.02 |
| 1:G:70:LEU:H | 1:G:70:LEU:HD12 | 1.24 | 1.01 |
| 1:A:174:SER:OG | 1:A:177:GLU:HB2 | 1.59 | 1.01 |
| 1:C:120:PHE:HB2 | 1:C:238:TRP:CZ3 | 1.95 | 1.00 |
| 1:E:154:LEU:H | 1:E:154:LEU:HD22 | 1.21 | 1.00 |
| 1:C:17:PHE:HE1 | 1:C:109:ARG:HA | 1.22 | 0.99 |
| 1:C:217:ARG:HH11 | 1:C:217:ARG:HG2 | 1.21 | 0.99 |
| 1:C:226:LEU:H | 1:C:226:LEU:HD12 | 1.25 | 0.99 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:158:ILE:H | 1:G:158:ILE:HD13 | 1.26 | 0.99 |
| 2:L:178:ARG:HH11 | 2:L:178:ARG:HB3 | 0.85 | 0.99 |
| 1:I:154:LEU:H | 1:I:154:LEU:HD23 | 1.24 | 0.99 |
| 1:C:39:TYR:HB3 | 1:C:55:VAL:HG12 | 1.44 | 0.99 |
| 1:C:177:GLU:O | 1:C:181:ILE:HG22 | 1.62 | 0.98 |
| 1:C:17:PHE:CD1 | 1:C:109:ARG:HD3 | 1.98 | 0.98 |
| 1:E:236:THR:HG1 | 1:E:238:TRP:HD1 | 1.07 | 0.98 |
| 1:G:217:ARG:NH1 | 1:G:217:ARG:HG2 | 1.71 | 0.98 |
| 1:C:207:LEU:HD23 | 1:C:214:LEU:HB2 | 1.45 | 0.98 |
| 1:C:154:LEU:CD2 | 1:C:154:LEU:H | 1.77 | 0.98 |
| 1:K:75:ALA:HB2 | 1:K:81:THR:HA | 1.46 | 0.98 |
| 1:A:70:LEU:H | 1:A:70:LEU:CD1 | 1.76 | 0.97 |
| 1:A:123:LEU:HD12 | 1:A:124:LYS:N | 1.79 | 0.97 |
| 1:G:197:ARG:HG2 | 1:G:197:ARG:HH11 | 1.29 | 0.97 |
| 1:A:161:THR:HA | 1:A:163:HIS:CE1 | 2.00 | 0.96 |
| 1:C:70:LEU:CD1 | 1:C:70:LEU:H | 1.70 | 0.96 |
| 1:I:88:LEU:HD12 | 1:I:88:LEU:O | 1.66 | 0.96 |
| 2:D:174:ARG:HA | 2:D:175:LYS:HE2 | 1.46 | 0.95 |
| 1:K:197:ARG:HG2 | 1:K:197:ARG:HH11 | 1.29 | 0.95 |
| 1:C:138:LEU:H | 1:C:138:LEU:HD23 | 1.31 | 0.95 |
| 1:C:21:THR:HG23 | 1:C:24:GLU:HB2 | 1.47 | 0.95 |
| 1:K:17:PHE:HE1 | 1:K:109:ARG:HA | 1.29 | 0.95 |
| 1:K:159:ALA:HB1 | 1:K:236:THR:HG21 | 1.45 | 0.95 |
| 1:C:41:LEU:HD23 | 1:C:52:ALA:O | 1.66 | 0.94 |
| 1:K:244:TYR:HE1 | 1:K:249:ASP:HB3 | 1.30 | 0.94 |
| 1:K:154:LEU:HD22 | 1:K:154:LEU:H | 1.32 | 0.94 |
| 1:E:39:TYR:HB3 | 1:E:55:VAL:HG12 | 1.48 | 0.94 |
| 1:C:246:TYR:HE1 | 1:C:247:LYS:HE3 | 1.32 | 0.94 |
| 1:C:202:SER:C | 1:C:203:TYR:HD1 | 1.71 | 0.94 |
| 1:C:70:LEU:N | 1:C:70:LEU:HD12 | 1.83 | 0.93 |
| 1:G:173:ILE:HG23 | 1:G:177:GLU:HB3 | 1.50 | 0.93 |
| 1:C:191:LYS:HG3 | 1:C:257:VAL:HG23 | 1.49 | 0.93 |
| 1:C:17:PHE:HD1 | 1:C:109:ARG:HD3 | 1.30 | 0.93 |
| 2:H:175:LYS:O | 2:H:178:ARG:HD2 | 1.68 | 0.93 |
| 1:K:205:LEU:HD22 | 1:K:206:CYS:N | 1.82 | 0.93 |
| 1:A:163:HIS:HA | 1:A:166:MET:CG | 1.97 | 0.93 |
| 2:F:178:ARG:NH1 | 2:F:178:ARG:HB3 | 1.83 | 0.93 |
| 1:E:228:ILE:HG21 | 2:F:173:ILE:HD11 | 1.49 | 0.93 |
| 1:G:58:GLY:O | 1:G:59:ARG:HG3 | 1.67 | 0.93 |
| 1:G:59:ARG:HD2 | 1:K:180:GLN:NE2 | 1.84 | 0.93 |
| 1:A:132:VAL:HG12 | 1:A:138:LEU:HD21 | 1.51 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:199:ASN:H | 1:K:199:ASN:ND2 | 1.65 | 0.92 |
| 1:C:226:LEU:HD13 | 1:C:234:PHE:O | 1.70 | 0.92 |
| 1:G:154:LEU:H | 1:G:154:LEU:HD23 | 1.35 | 0.92 |
| 1:A:138:LEU:HD23 | 1:A:138:LEU:H | 1.33 | 0.92 |
| 1:K:39:TYR:HB3 | 1:K:55:VAL:HG12 | 1.52 | 0.92 |
| 1:C:170:HIS:HB3 | 1:C:173:ILE:HD11 | 1.50 | 0.91 |
| 1:G:170:HIS:ND1 | 1:G:193:LEU:HD12 | 1.86 | 0.91 |
| 1:C:17:PHE:CE1 | 1:C:109:ARG:HA | 2.06 | 0.91 |
| 1:E:209:HIS:ND1 | 1:E:253:ARG:NH1 | 2.18 | 0.91 |
| 1:I:27:ASP:O | 1:I:30:VAL:HG22 | 1.70 | 0.91 |
| 1:A:123:LEU:HD12 | 1:A:124:LYS:H | 1.33 | 0.91 |
| 2:L:173:ILE:HG22 | 2:L:174:ARG:H | 1.34 | 0.90 |
| 1:C:240:LEU:HD23 | 1:C:240:LEU:C | 1.91 | 0.90 |
| 1:G:260:GLN:HA | 1:G:260:GLN:OE1 | 1.70 | 0.90 |
| 1:K:48:LEU:HD23 | 1:K:235:ASP:HB2 | 1.52 | 0.90 |
| 1:G:240:LEU:C | 1:G:240:LEU:HD23 | 1.92 | 0.90 |
| 1:E:188:THR:O | 1:E:208:LEU:HD23 | 1.70 | 0.90 |
| 1:A:17:PHE:O | 1:A:20:ILE:HD13 | 1.71 | 0.90 |
| 1:G:12:HIS:ND1 | 1:G:13:LEU:HD23 | 1.87 | 0.90 |
| 1:I:154:LEU:HD23 | 1:I:154:LEU:N | 1.87 | 0.90 |
| 1:A:70:LEU:HD12 | 1:A:70:LEU:N | 1.87 | 0.89 |
| 1:I:170:HIS:CG | 1:I:193:LEU:HD12 | 2.06 | 0.89 |
| 1:A:82:HIS:HD2 | 1:A:88:LEU:HA | 1.37 | 0.89 |
| 1:C:28:TYR:HA | 1:C:31:GLN:HG2 | 1.54 | 0.89 |
| 1:C:197:ARG:HG2 | 1:C:197:ARG:NH1 | 1.78 | 0.89 |
| 1:E:226:LEU:CD1 | 1:E:226:LEU:H | 1.85 | 0.89 |
| 1:K:48:LEU:HD23 | 1:K:235:ASP:CB | 2.03 | 0.89 |
| 1:K:236:THR:HG1 | 1:K:238:TRP:HD1 | 0.95 | 0.89 |
| 1:C:187:LYS:H | 1:C:187:LYS:HE3 | 1.36 | 0.88 |
| 1:A:172:LYS:O | 1:A:173:ILE:HG13 | 1.72 | 0.88 |
| 1:A:82:HIS:CD2 | 1:A:88:LEU:HA | 2.08 | 0.88 |
| 1:E:28:TYR:HA | 1:E:31:GLN:HG2 | 1.55 | 0.88 |
| 1:K:158:ILE:CD1 | 1:K:158:ILE:H | 1.87 | 0.88 |
| 1:A:113:VAL:O | 1:A:114:GLN:NE2 | 2.08 | 0.87 |
| 1:C:110:PRO:HD2 | 1:C:113:VAL:HG21 | 1.55 | 0.87 |
| 1:E:83:ALA:HB3 | 1:E:87:ASP:OD2 | 1.75 | 0.87 |
| 1:I:20:ILE:HD12 | 1:I:116:LYS:HB2 | 1.56 | 0.87 |
| 1:K:173:ILE:HG23 | 1:K:177:GLU:HB2 | 1.55 | 0.87 |
| 1:G:154:LEU:N | 1:G:154:LEU:HD23 | 1.89 | 0.87 |
| 1:I:39:TYR:CB | 1:I:55:VAL:HG12 | 2.04 | 0.87 |
| 1:K:240:LEU:HD23 | 1:K:241:VAL:N | 1.89 | 0.87 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:154:LEU:H | 1:A:154:LEU:CD2 | 1.88 | 0.87 |
| 1:G:240:LEU:O | 1:G:240:LEU:HD23 | 1.75 | 0.86 |
| 1:I:30:VAL:HA | 1:I:34:MET:HG2 | 1.57 | 0.86 |
| 1:C:216:TYR:CE1 | 2:D:171:GLU:HB3 | 2.10 | 0.86 |
| 1:A:253:ARG:NH1 | 1:A:253:ARG:HB2 | 1.89 | 0.86 |
| 1:C:260:GLN:OE1 | 1:C:260:GLN:HA | 1.73 | 0.86 |
| 1:E:216:TYR:CE1 | 2:F:171:GLU:HB3 | 2.11 | 0.86 |
| 1:K:194:ILE:HG22 | 1:K:204:ALA:O | 1.76 | 0.86 |
| 1:E:236:THR:OG1 | 1:E:238:TRP:HD1 | 1.57 | 0.86 |
| 1:I:123:LEU:HD12 | 1:I:124:LYS:N | 1.89 | 0.86 |
| 1:I:71:ASN:HB2 | 1:I:73:THR:HG23 | 1.57 | 0.86 |
| 1:I:88:LEU:HD12 | 1:I:88:LEU:C | 1.96 | 0.86 |
| 1:A:217:ARG:HG2 | 1:A:217:ARG:NH1 | 1.89 | 0.86 |
| 2:L:174:ARG:NH1 | 2:L:174:ARG:HG2 | 1.85 | 0.85 |
| 1:A:170:HIS:ND1 | 1:A:193:LEU:CD1 | 2.38 | 0.85 |
| 1:K:199:ASN:H | 1:K:199:ASN:HD22 | 1.22 | 0.85 |
| 1:I:120:PHE:HB2 | 1:I:238:TRP:CZ3 | 2.11 | 0.85 |
| 1:A:253:ARG:HH11 | 1:A:253:ARG:CB | 1.90 | 0.84 |
| 1:E:182:VAL:HG23 | 1:E:259:CYS:SG | 2.17 | 0.84 |
| 1:K:21:THR:HG23 | 1:K:24:GLU:HB2 | 1.57 | 0.84 |
| 1:K:96:SER:O | 1:K:99:LEU:HB2 | 1.78 | 0.84 |
| 1:C:226:LEU:H | 1:C:226:LEU:CD1 | 1.89 | 0.84 |
| 1:G:217:ARG:CG | 1:G:217:ARG:HH11 | 1.84 | 0.84 |
| 1:A:197:ARG:HB3 | 1:A:199:ASN:OD1 | 1.77 | 0.84 |
| 1:A:253:ARG:HH11 | 1:A:253:ARG:HB2 | 1.40 | 0.84 |
| 1:E:30:VAL:HG12 | 1:E:34:MET:SD | 2.17 | 0.84 |
| 1:I:21:THR:CG2 | 1:I:24:GLU:OE1 | 2.24 | 0.84 |
| 1:I:30:VAL:HG23 | 1:I:31:GLN:N | 1.90 | 0.84 |
| 1:I:69:GLU:HB2 | 1:I:73:THR:O | 1.78 | 0.83 |
| 1:I:70:LEU:HD12 | 1:I:70:LEU:H | 1.43 | 0.83 |
| 1:C:187:LYS:N | 1:C:187:LYS:HE3 | 1.92 | 0.83 |
| 1:I:39:TYR:HB3 | 1:I:55:VAL:CG1 | 2.07 | 0.83 |
| 1:E:17:PHE:CD1 | 1:E:109:ARG:HD3 | 2.13 | 0.83 |
| 1:A:245:SER:HA | 1:A:255:LEU:HB2 | 1.61 | 0.83 |
| 1:C:207:LEU:HD21 | 1:C:214:LEU:HD12 | 1.61 | 0.83 |
| 1:A:129:ARG:HH11 | 1:A:129:ARG:CG | 1.92 | 0.82 |
| 1:E:158:ILE:HD12 | 1:E:158:ILE:H | 1.43 | 0.82 |
| 1:I:32:GLY:HA2 | 1:I:107:PHE:HE2 | 1.42 | 0.82 |
| 1:E:154:LEU:H | 1:E:154:LEU:CD2 | 1.91 | 0.82 |
| 1:G:197:ARG:HG2 | 1:G:197:ARG:NH1 | 1.88 | 0.82 |
| 1:A:80:ARG:HH11 | 1:A:80:ARG:CB | 1.92 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:173:ILE:HG22 | 2:B:174:ARG:H | 1.43 | 0.82 |
| 1:G:246:TYR:HE1 | 1:G:247:LYS:HE3 | 1.43 | 0.82 |
| 1:A:128:ILE:HG22 | 1:A:158:ILE:HG12 | 1.58 | 0.82 |
| 1:I:240:LEU:HD23 | 1:I:241:VAL:N | 1.94 | 0.82 |
| 1:K:216:TYR:CE1 | 2:L:171:GLU:HB3 | 2.14 | 0.82 |
| 1:E:32:GLY:HA3 | 1:E:107:PHE:CE2 | 2.14 | 0.82 |
| 1:E:39:TYR:CB | 1:E:55:VAL:HG12 | 2.10 | 0.82 |
| 1:K:236:THR:OG1 | 1:K:238:TRP:HD1 | 1.62 | 0.82 |
| 1:C:21:THR:HG22 | 1:C:24:GLU:OE1 | 1.80 | 0.81 |
| 1:A:158:ILE:CD1 | 1:A:158:ILE:H | 1.93 | 0.81 |
| 1:G:185:GLY:HA3 | 1:I:27:ASP:OD1 | 1.79 | 0.81 |
| 1:K:170:HIS:CG | 1:K:193:LEU:HD12 | 2.16 | 0.81 |
| 1:C:247:LYS:HG2 | 1:C:249:ASP:HB2 | 1.60 | 0.81 |
| 1:E:68:ARG:NH1 | 1:E:72:GLY:HA2 | 1.95 | 0.81 |
| 1:G:194:ILE:HG22 | 1:G:204:ALA:O | 1.80 | 0.81 |
| 1:E:226:LEU:N | 1:E:226:LEU:HD12 | 1.94 | 0.81 |
| 1:E:22:ARG:NH2 | 2:F:180:LEU:O | 2.14 | 0.81 |
| 1:A:187:LYS:H | 1:A:187:LYS:HE2 | 1.42 | 0.81 |
| 1:A:217:ARG:CG | 1:A:217:ARG:HH11 | 1.93 | 0.81 |
| 1:C:123:LEU:C | 1:C:123:LEU:HD12 | 2.01 | 0.81 |
| 2:B:178:ARG:HB3 | 2:B:178:ARG:CZ | 2.07 | 0.81 |
| 1:K:260:GLN:HA | 1:K:260:GLN:OE1 | 1.80 | 0.81 |
| 1:C:203:TYR:N | 1:C:203:TYR:HD1 | 1.79 | 0.81 |
| 2:L:175:LYS:HD2 | 2:L:176:GLY:N | 1.95 | 0.81 |
| 1:A:182:VAL:HG23 | 1:A:259:CYS:SG | 2.21 | 0.80 |
| 1:E:193:LEU:O | 1:E:193:LEU:HD23 | 1.80 | 0.80 |
| 1:C:226:LEU:N | 1:C:226:LEU:HD12 | 1.95 | 0.80 |
| 1:C:246:TYR:CE1 | 1:C:247:LYS:HE3 | 2.17 | 0.80 |
| 1:K:161:THR:HA | 1:K:163:HIS:CE1 | 2.16 | 0.80 |
| 1:G:199:ASN:CG | 1:G:200:ASN:H | 1.82 | 0.80 |
| 1:A:132:VAL:CG1 | 1:A:138:LEU:HD21 | 2.11 | 0.80 |
| 1:A:161:THR:HA | 1:A:163:HIS:HE1 | 1.44 | 0.80 |
| 1:E:206:CYS:HA | 1:E:214:LEU:O | 1.81 | 0.80 |
| 1:A:71:ASN:HD22 | 1:A:73:THR:HG23 | 1.46 | 0.80 |
| 1:C:111:GLN:HE21 | 1:C:112:GLY:N | 1.79 | 0.80 |
| 1:G:92:HIS:CD2 | 1:G:99:LEU:HG | 2.16 | 0.80 |
| 1:K:158:ILE:HD12 | 1:K:158:ILE:N | 1.97 | 0.80 |
| 1:C:170:HIS:CG | 1:C:193:LEU:HD12 | 2.17 | 0.80 |
| 1:E:226:LEU:HD12 | 1:E:226:LEU:H | 1.45 | 0.80 |
| 2:J:178:ARG:HH11 | 2:J:178:ARG:HG3 | 1.47 | 0.80 |
| 1:C:241:VAL:HG12 | 1:C:242:GLU:N | 1.96 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:20:ILE:HD12 | 1:A:116:LYS:HB2 | 1.65 | 0.79 |
| 1:A:174:SER:HG | 1:A:177:GLU:HB2 | 1.43 | 0.79 |
| 1:C:110:PRO:O | 1:C:113:VAL:HG23 | 1.83 | 0.79 |
| 1:I:128:ILE:HD13 | 1:I:129:ARG:N | 1.97 | 0.79 |
| 1:K:234:PHE:CE2 | 1:K:240:LEU:HA | 2.17 | 0.79 |
| 1:K:244:TYR:CE1 | 1:K:249:ASP:HB3 | 2.17 | 0.79 |
| 1:C:17:PHE:HE1 | 1:C:109:ARG:CA | 1.96 | 0.79 |
| 1:K:193:LEU:HD23 | 1:K:193:LEU:O | 1.81 | 0.79 |
| 1:K:234:PHE:HB3 | 1:K:239:GLN:OE1 | 1.83 | 0.79 |
| 1:K:92:HIS:CD2 | 1:K:99:LEU:HG | 2.17 | 0.79 |
| 1:A:226:LEU:HD23 | 1:A:237:LEU:CD2 | 2.12 | 0.79 |
| 1:I:145:GLN:N | 1:I:145:GLN:HE21 | 1.80 | 0.79 |
| 1:I:238:TRP:CD1 | 1:I:239:GLN:N | 2.51 | 0.79 |
| 1:C:120:PHE:HB2 | 1:C:238:TRP:CH2 | 2.17 | 0.79 |
| 1:A:145:GLN:O | 1:A:148:ILE:HD13 | 1.82 | 0.79 |
| 1:G:226:LEU:HD12 | 1:G:226:LEU:N | 1.91 | 0.78 |
| 1:I:48:LEU:HD23 | 1:I:235:ASP:OD2 | 1.82 | 0.78 |
| 1:K:240:LEU:HD23 | 1:K:240:LEU:C | 2.02 | 0.78 |
| 1:C:88:LEU:HD12 | 1:C:88:LEU:C | 2.04 | 0.78 |
| 1:I:20:ILE:HG23 | 1:I:24:GLU:HB3 | 1.66 | 0.78 |
| 1:I:238:TRP:HD1 | 1:I:239:GLN:N | 1.79 | 0.78 |
| 1:G:188:THR:O | 1:G:208:LEU:HD23 | 1.84 | 0.78 |
| 1:I:40:LEU:HD12 | 1:I:40:LEU:C | 2.04 | 0.78 |
| 1:K:158:ILE:HD12 | 1:K:158:ILE:H | 1.46 | 0.78 |
| 1:A:187:LYS:H | 1:A:187:LYS:CE | 1.96 | 0.78 |
| 1:E:170:HIS:O | 1:E:173:ILE:HD12 | 1.84 | 0.78 |
| 1:E:240:LEU:C | 1:E:240:LEU:HD23 | 2.04 | 0.78 |
| 1:A:145:GLN:HE21 | 1:A:145:GLN:HA | 1.47 | 0.78 |
| 1:A:176:GLU:N | 1:A:176:GLU:OE1 | 2.17 | 0.78 |
| 1:A:172:LYS:HE2 | 1:A:173:ILE:N | 1.99 | 0.78 |
| 1:A:68:ARG:O | 1:A:68:ARG:HG3 | 1.83 | 0.78 |
| 1:C:238:TRP:CD1 | 1:C:239:GLN:HG3 | 2.19 | 0.78 |
| 1:I:209:HIS:ND1 | 1:I:253:ARG:NH1 | 2.32 | 0.78 |
| 1:I:40:LEU:HD12 | 1:I:41:LEU:N | 1.99 | 0.77 |
| 1:A:38:LEU:HD23 | 1:A:105:LYS:O | 1.84 | 0.77 |
| 1:G:241:VAL:HG12 | 1:G:242:GLU:N | 1.98 | 0.77 |
| 1:I:240:LEU:C | 1:I:240:LEU:HD23 | 2.05 | 0.77 |
| 1:I:36:ASP:OD1 | 1:I:58:GLY:N | 2.18 | 0.77 |
| 1:A:82:HIS:ND1 | 1:A:82:HIS:N | 2.32 | 0.77 |
| 1:K:217:ARG:HH11 | 1:K:217:ARG:CG | 1.96 | 0.77 |
| 1:A:226:LEU:HD23 | 1:A:237:LEU:HD21 | 1.65 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:203:TYR:N | 1:C:203:TYR:CD1 | 2.48 | 0.77 |
| 1:E:158:ILE:H | 1:E:158:ILE:CD1 | 1.97 | 0.77 |
| 1:A:21:THR:CG2 | 1:A:24:GLU:HG3 | 2.15 | 0.77 |
| 1:C:128:ILE:HD12 | 1:C:129:ARG:N | 1.99 | 0.77 |
| 1:E:108:ASN:O | 1:E:110:PRO:HD3 | 1.84 | 0.77 |
| 1:C:227:SER:HB2 | 1:C:232:LYS:O | 1.84 | 0.77 |
| 1:A:238:TRP:HD1 | 1:A:239:GLN:N | 1.82 | 0.76 |
| 1:A:194:ILE:HG22 | 1:A:204:ALA:O | 1.84 | 0.76 |
| 1:G:253:ARG:HG3 | 1:G:254:VAL:N | 1.98 | 0.76 |
| 1:K:226:LEU:N | 1:K:226:LEU:HD12 | 1.97 | 0.76 |
| 1:C:151:LYS:HG2 | 1:C:152:PRO:HD3 | 1.66 | 0.76 |
| 1:C:187:LYS:H | 1:C:187:LYS:CE | 1.97 | 0.76 |
| 1:E:99:LEU:CD1 | 1:E:103:LEU:HD21 | 2.15 | 0.76 |
| 1:E:241:VAL:HG12 | 1:E:242:GLU:N | 2.00 | 0.76 |
| 1:I:146:ALA:O | 1:I:150:GLN:HB2 | 1.86 | 0.76 |
| 1:A:195:ARG:NH2 | 1:A:215:HIS:ND1 | 2.33 | 0.76 |
| 1:C:39:TYR:HB3 | 1:C:55:VAL:CG1 | 2.15 | 0.76 |
| 1:I:18:GLY:H | 1:I:115:PRO:HB3 | 1.50 | 0.76 |
| 1:A:174:SER:OG | 1:A:177:GLU:N | 2.18 | 0.76 |
| 1:A:80:ARG:HB3 | 1:A:80:ARG:HH11 | 1.50 | 0.76 |
| 1:A:163:HIS:HD2 | 1:A:237:LEU:HD12 | 1.48 | 0.76 |
| 2:H:175:LYS:HD2 | 2:H:176:GLY:N | 1.98 | 0.76 |
| 1:A:163:HIS:CD2 | 1:A:237:LEU:HD12 | 2.20 | 0.76 |
| 1:G:69:GLU:HA | 1:G:69:GLU:OE1 | 1.85 | 0.76 |
| 1:K:172:LYS:HZ3 | 1:K:173:ILE:N | 1.83 | 0.76 |
| 1:K:217:ARG:HG2 | 1:K:217:ARG:HH11 | 1.51 | 0.76 |
| 1:G:163:HIS:CG | 1:G:237:LEU:HD13 | 2.21 | 0.76 |
| 1:K:154:LEU:CD2 | 1:K:154:LEU:H | 1.99 | 0.76 |
| 1:K:182:VAL:HG12 | 1:K:183:LEU:HD22 | 1.66 | 0.76 |
| 1:I:69:GLU:HA | 1:I:69:GLU:OE1 | 1.83 | 0.75 |
| 1:A:48:LEU:HD23 | 1:A:235:ASP:HB3 | 1.68 | 0.75 |
| 1:C:138:LEU:HD12 | 1:C:142:ALA:O | 1.87 | 0.75 |
| 1:E:32:GLY:HA3 | 1:E:107:PHE:HE2 | 1.49 | 0.75 |
| 1:A:128:ILE:CG2 | 1:A:158:ILE:HG12 | 2.17 | 0.75 |
| 1:E:82:HIS:CD2 | 1:E:88:LEU:HA | 2.22 | 0.75 |
| 1:G:58:GLY:C | 1:G:59:ARG:HG3 | 2.06 | 0.75 |
| 1:C:17:PHE:CE2 | 1:C:40:LEU:HD22 | 2.22 | 0.75 |
| 1:C:207:LEU:CD2 | 1:C:214:LEU:HB2 | 2.17 | 0.75 |
| 1:E:228:ILE:CG2 | 2:F:173:ILE:HD11 | 2.16 | 0.75 |
| 1:I:21:THR:HG23 | 1:I:24:GLU:HB2 | 1.69 | 0.75 |
| 1:C:253:ARG:HB3 | 1:C:253:ARG:NH1 | 2.02 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:184:ILE:N | 1:G:184:ILE:HD13 | 2.01 | 0.75 |
| 1:K:237:LEU:O | 1:K:239:GLN:N | 2.20 | 0.74 |
| 1:G:48:LEU:HD22 | 1:G:235:ASP:CB | 2.16 | 0.74 |
| 2:D:184:LEU:O | 2:D:185:ASN:HB3 | 1.86 | 0.74 |
| 1:K:157:LEU:HB3 | 1:K:158:ILE:HD12 | 1.70 | 0.74 |
| 1:K:193:LEU:CD2 | 1:K:206:CYS:HB2 | 2.17 | 0.74 |
| 1:K:226:LEU:H | 1:K:226:LEU:CD1 | 1.98 | 0.74 |
| 1:A:110:PRO:HB2 | 1:A:113:VAL:HG21 | 1.68 | 0.74 |
| 1:I:136:TRP:O | 1:I:138:LEU:HD23 | 1.85 | 0.74 |
| 1:I:70:LEU:HD12 | 1:I:70:LEU:N | 2.01 | 0.74 |
| 1:K:205:LEU:HD22 | 1:K:206:CYS:H | 1.50 | 0.74 |
| 1:A:260:GLN:HA | 1:A:260:GLN:OE1 | 1.86 | 0.74 |
| 1:C:17:PHE:O | 1:C:18:GLY:O | 2.04 | 0.74 |
| 1:K:197:ARG:HG2 | 1:K:197:ARG:NH1 | 1.89 | 0.74 |
| 1:C:132:VAL:HG12 | 1:C:143:LEU:HD11 | 1.70 | 0.74 |
| 1:C:173:ILE:HG22 | 1:C:177:GLU:HB3 | 1.69 | 0.74 |
| 1:G:187:LYS:H | 1:G:187:LYS:HE3 | 1.53 | 0.74 |
| 1:C:150:GLN:HB3 | 1:C:154:LEU:HD21 | 1.69 | 0.74 |
| 1:C:170:HIS:ND1 | 1:C:193:LEU:HD12 | 2.01 | 0.74 |
| 1:I:38:LEU:HD22 | 1:I:39:TYR:N | 2.03 | 0.74 |
| 1:C:17:PHE:HE2 | 1:C:40:LEU:HD22 | 1.53 | 0.74 |
| 1:G:17:PHE:CD1 | 1:G:109:ARG:HD3 | 2.23 | 0.74 |
| 1:I:22:ARG:NH1 | 2:J:181:PTR:O3P | 2.21 | 0.74 |
| 1:K:38:LEU:HD23 | 1:K:105:LYS:O | 1.88 | 0.74 |
| 2:B:174:ARG:HA | 2:B:175:LYS:HE2 | 1.69 | 0.74 |
| 1:K:47:TYR:CE1 | 1:K:225:LYS:NZ | 2.56 | 0.74 |
| 1:A:120:PHE:HB2 | 1:A:238:TRP:CZ3 | 2.23 | 0.73 |
| 1:C:138:LEU:HG | 1:C:143:LEU:HD13 | 1.70 | 0.73 |
| 1:I:58:GLY:C | 1:I:59:ARG:HG3 | 2.08 | 0.73 |
| 1:I:80:ARG:CB | 1:I:80:ARG:HH11 | 2.02 | 0.73 |
| 2:L:173:ILE:HG22 | 2:L:174:ARG:N | 2.02 | 0.73 |
| 1:K:68:ARG:NH1 | 1:K:72:GLY:HA2 | 2.02 | 0.73 |
| 1:A:190:GLY:HA3 | 1:A:256:THR:HG23 | 1.71 | 0.73 |
| 1:G:17:PHE:HD1 | 1:G:109:ARG:HD3 | 1.52 | 0.73 |
| 1:E:99:LEU:HD11 | 1:E:103:LEU:HD21 | 1.71 | 0.73 |
| 1:A:17:PHE:HB3 | 1:A:20:ILE:HD13 | 1.70 | 0.73 |
| 1:G:178:SER:O | 1:G:181:ILE:HG22 | 1.87 | 0.73 |
| 1:I:48:LEU:HB2 | 1:I:235:ASP:OD2 | 1.87 | 0.73 |
| 2:L:184:LEU:O | 2:L:185:ASN:HB3 | 1.89 | 0.73 |
| 1:A:244:TYR:O | 1:A:254:VAL:HG23 | 1.89 | 0.72 |
| 1:E:20:ILE:HG23 | 1:E:24:GLU:HB3 | 1.71 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:226:LEU:CD1 | 1:G:226:LEU:H | 1.89 | 0.72 |
| 1:K:166:MET:HB3 | 1:K:168:TRP:NE1 | 2.03 | 0.72 |
| 1:K:48:LEU:CD2 | 1:K:235:ASP:HB2 | 2.19 | 0.72 |
| 1:C:154:LEU:HD23 | 1:C:154:LEU:N | 2.00 | 0.72 |
| 1:G:29:LEU:HD22 | 1:G:38:LEU:HD13 | 1.70 | 0.72 |
| 1:A:173:ILE:HG23 | 1:A:177:GLU:HB3 | 1.69 | 0.72 |
| 1:E:216:TYR:CD1 | 2:F:171:GLU:HB3 | 2.23 | 0.72 |
| 1:G:39:TYR:HB3 | 1:G:55:VAL:HG12 | 1.70 | 0.72 |
| 1:G:70:LEU:H | 1:G:70:LEU:CD1 | 1.98 | 0.72 |
| 1:A:80:ARG:HG2 | 1:A:81:THR:N | 2.05 | 0.72 |
| 1:I:177:GLU:O | 1:I:181:ILE:HG22 | 1.89 | 0.72 |
| 1:I:188:THR:O | 1:I:208:LEU:HD23 | 1.90 | 0.72 |
| 1:A:20:ILE:HG23 | 1:A:24:GLU:HB2 | 1.71 | 0.72 |
| 1:A:58:GLY:C | 1:A:59:ARG:HG3 | 2.09 | 0.72 |
| 1:K:250:GLY:O | 2:L:174:ARG:HG3 | 1.89 | 0.72 |
| 1:G:39:TYR:CB | 1:G:55:VAL:HG12 | 2.19 | 0.72 |
| 1:E:226:LEU:N | 1:E:226:LEU:CD1 | 2.52 | 0.72 |
| 1:K:172:LYS:O | 1:K:173:ILE:HG13 | 1.89 | 0.72 |
| 2:D:175:LYS:O | 2:D:178:ARG:HD3 | 1.90 | 0.72 |
| 1:A:28:TYR:O | 1:A:107:PHE:HE2 | 1.72 | 0.72 |
| 1:I:123:LEU:HD11 | 1:I:127:LEU:HD22 | 1.71 | 0.72 |
| 1:A:129:ARG:HH11 | 1:A:129:ARG:HG3 | 1.55 | 0.71 |
| 1:E:18:GLY:H | 1:E:115:PRO:HB3 | 1.54 | 0.71 |
| 1:A:150:GLN:HB3 | 1:A:154:LEU:CD2 | 2.16 | 0.71 |
| 1:K:228:ILE:CG2 | 2:L:173:ILE:HD11 | 2.20 | 0.71 |
| 1:A:128:ILE:HG22 | 1:A:158:ILE:CG1 | 2.20 | 0.71 |
| 1:E:172:LYS:O | 1:E:173:ILE:HG13 | 1.89 | 0.71 |
| 1:G:172:LYS:NZ | 1:G:173:ILE:N | 2.37 | 0.71 |
| 1:G:246:TYR:CE1 | 1:G:247:LYS:HE3 | 2.24 | 0.71 |
| 1:G:16:PHE:HA | 1:G:41:LEU:O | 1.89 | 0.71 |
| 1:E:158:ILE:HD12 | 1:E:158:ILE:N | 2.05 | 0.71 |
| 1:I:144:GLU:O | 1:I:148:ILE:HG23 | 1.91 | 0.71 |
| 1:K:10:ALA:HA | 1:K:12:HIS:HE1 | 1.56 | 0.71 |
| 1:A:93:SER:HA | 1:A:103:LEU:HB2 | 1.72 | 0.71 |
| 1:G:42:ARG:NH2 | 1:G:63:HIS:ND1 | 2.38 | 0.71 |
| 1:A:176:GLU:O | 1:A:178:SER:N | 2.22 | 0.71 |
| 1:A:199:ASN:C | 1:A:201:GLY:H | 1.94 | 0.71 |
| 1:I:20:ILE:CD1 | 1:I:116:LYS:HB2 | 2.21 | 0.71 |
| 1:K:39:TYR:CE2 | 1:K:103:LEU:HB3 | 2.25 | 0.71 |
| 1:A:154:LEU:H | 1:A:154:LEU:HD22 | 1.55 | 0.71 |
| 1:E:98:GLY:HA2 | 2:F:185:ASN:O | 1.91 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:21:THR:HG23 | 1:A:24:GLU:HG3 | 1.72 | 0.70 |
| 1:G:234:PHE:CD1 | 1:G:234:PHE:N | 2.57 | 0.70 |
| 1:I:241:VAL:HG12 | 1:I:242:GLU:N | 2.05 | 0.70 |
| 1:A:134:GLN:NE2 | 1:A:135:THR:HG23 | 2.05 | 0.70 |
| 1:A:158:ILE:CD1 | 1:A:158:ILE:N | 2.53 | 0.70 |
| 2:D:175:LYS:HD2 | 2:D:176:GLY:H | 1.57 | 0.70 |
| 1:E:172:LYS:HD3 | 1:E:198:ASP:OD2 | 1.90 | 0.70 |
| 1:K:28:TYR:HA | 1:K:31:GLN:HG2 | 1.73 | 0.70 |
| 1:C:207:LEU:CD2 | 1:C:214:LEU:HD12 | 2.20 | 0.70 |
| 1:C:228:ILE:HG22 | 1:C:229:PRO:HD2 | 1.73 | 0.70 |
| 1:C:82:HIS:CD2 | 1:C:88:LEU:HA | 2.25 | 0.70 |
| 1:I:216:TYR:CE1 | 2:J:171:GLU:HB3 | 2.26 | 0.70 |
| 1:C:138:LEU:CD2 | 1:C:143:LEU:HD13 | 2.21 | 0.70 |
| 1:G:154:LEU:N | 1:G:154:LEU:CD2 | 2.55 | 0.70 |
| 1:K:10:ALA:HA | 1:K:12:HIS:CE1 | 2.26 | 0.70 |
| 1:A:120:PHE:HA | 1:A:123:LEU:HG | 1.74 | 0.70 |
| 1:C:193:LEU:HD23 | 1:C:193:LEU:O | 1.91 | 0.70 |
| 1:G:163:HIS:CD2 | 1:G:237:LEU:HD13 | 2.27 | 0.70 |
| 1:C:217:ARG:HG2 | 1:C:217:ARG:NH1 | 2.00 | 0.70 |
| 1:I:226:LEU:HD13 | 1:I:226:LEU:H | 1.55 | 0.70 |
| 1:A:74:TYR:N | 1:A:74:TYR:CD1 | 2.57 | 0.69 |
| 1:A:12:HIS:ND1 | 1:A:12:HIS:N | 2.34 | 0.69 |
| 1:A:16:PHE:HA | 1:A:41:LEU:O | 1.91 | 0.69 |
| 1:E:193:LEU:CD2 | 1:E:206:CYS:SG | 2.80 | 0.69 |
| 1:G:109:ARG:HG2 | 1:G:109:ARG:HH11 | 1.57 | 0.69 |
| 2:D:179:ASP:N | 2:D:179:ASP:OD1 | 2.23 | 0.69 |
| 1:I:219:ASP:OD1 | 1:I:219:ASP:N | 2.25 | 0.69 |
| 1:K:187:LYS:N | 1:K:187:LYS:HD2 | 2.07 | 0.69 |
| 1:K:39:TYR:CB | 1:K:55:VAL:HG12 | 2.22 | 0.69 |
| 1:I:180:GLN:O | 1:I:184:ILE:HD13 | 1.92 | 0.69 |
| 1:A:133:LYS:O | 1:A:137:ASN:HA | 1.91 | 0.69 |
| 1:A:253:ARG:HG2 | 1:A:254:VAL:N | 2.07 | 0.69 |
| 1:C:138:LEU:N | 1:C:138:LEU:HD23 | 2.06 | 0.69 |
| 1:C:240:LEU:CD2 | 1:C:240:LEU:C | 2.61 | 0.69 |
| 1:I:80:ARG:HB2 | 1:I:80:ARG:NH1 | 2.08 | 0.69 |
| 1:K:154:LEU:HD22 | 1:K:154:LEU:N | 2.07 | 0.69 |
| 1:C:253:ARG:NH1 | 1:C:253:ARG:CB | 2.56 | 0.69 |
| 1:G:244:TYR:HB3 | 1:G:251:LEU:HD11 | 1.74 | 0.69 |
| 1:I:253:ARG:HG3 | 1:I:254:VAL:N | 2.08 | 0.69 |
| 1:G:172:LYS:HZ1 | 1:G:173:ILE:N | 1.90 | 0.69 |
| 1:I:207:LEU:CD2 | 1:I:214:LEU:HB2 | 2.23 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:29:LEU:HD22 | 1:I:38:LEU:HD13 | 1.74 | 0.69 |
| 1:I:48:LEU:HD23 | 1:I:235:ASP:HB3 | 1.74 | 0.69 |
| 1:C:161:THR:HA | 1:C:163:HIS:CE1 | 2.27 | 0.69 |
| 1:I:123:LEU:HD12 | 1:I:123:LEU:C | 2.13 | 0.69 |
| 1:C:68:ARG:O | 1:C:68:ARG:HG3 | 1.91 | 0.68 |
| 1:E:243:HIS:HE1 | 1:E:249:ASP:OD2 | 1.75 | 0.68 |
| 1:E:58:GLY:C | 1:E:59:ARG:HG3 | 2.12 | 0.68 |
| 1:E:82:HIS:HD2 | 1:E:88:LEU:HA | 1.56 | 0.68 |
| 1:C:163:HIS:CE1 | 1:C:164:GLU:HG2 | 2.27 | 0.68 |
| 1:C:46:ASN:O | 1:C:234:PHE:HA | 1.94 | 0.68 |
| 1:G:174:SER:OG | 1:G:177:GLU:HB2 | 1.93 | 0.68 |
| 1:G:209:HIS:ND1 | 1:G:253:ARG:NH1 | 2.29 | 0.68 |
| 1:G:68:ARG:O | 1:G:68:ARG:HG3 | 1.93 | 0.68 |
| 1:I:82:HIS:CD2 | 1:I:88:LEU:HA | 2.29 | 0.68 |
| 1:C:123:LEU:CD1 | 1:C:127:LEU:HB2 | 2.22 | 0.68 |
| 1:G:107:PHE:CD1 | 1:G:107:PHE:C | 2.67 | 0.68 |
| 1:I:243:HIS:O | 1:I:246:TYR:HB3 | 1.94 | 0.68 |
| 1:E:98:GLY:HA3 | 2:F:184:LEU:CD2 | 2.24 | 0.68 |
| 1:A:163:HIS:CE1 | 1:A:164:GLU:HG2 | 2.29 | 0.68 |
| 1:C:12:HIS:N | 1:C:12:HIS:ND1 | 2.40 | 0.68 |
| 1:A:40:LEU:C | 1:A:40:LEU:HD12 | 2.15 | 0.68 |
| 1:C:141:GLN:NE2 | 1:C:141:GLN:H | 1.91 | 0.68 |
| 1:I:194:ILE:HG22 | 1:I:204:ALA:O | 1.93 | 0.68 |
| 1:G:262:ILE:HG22 | 1:I:33:GLY:HA2 | 1.74 | 0.68 |
| 1:I:48:LEU:HD23 | 1:I:235:ASP:CB | 2.23 | 0.68 |
| 1:I:57:HIS:HB3 | 1:I:62:HIS:NE2 | 2.09 | 0.68 |
| 1:K:237:LEU:C | 1:K:239:GLN:N | 2.46 | 0.68 |
| 1:C:119:PRO:HD2 | 1:C:120:PHE:CE1 | 2.28 | 0.68 |
| 1:C:88:LEU:CD1 | 1:C:88:LEU:C | 2.62 | 0.68 |
| 1:G:48:LEU:CD2 | 1:G:235:ASP:HB3 | 2.24 | 0.68 |
| 1:A:128:ILE:HG22 | 1:A:158:ILE:HG21 | 1.74 | 0.68 |
| 1:C:123:LEU:O | 1:C:123:LEU:HD12 | 1.94 | 0.68 |
| 1:E:191:LYS:O | 1:E:207:LEU:HA | 1.94 | 0.68 |
| 1:G:28:TYR:HA | 1:G:31:GLN:HG2 | 1.76 | 0.68 |
| 1:I:197:ARG:HH11 | 1:I:197:ARG:HG2 | 1.59 | 0.68 |
| 1:I:17:PHE:O | 1:I:18:GLY:O | 2.12 | 0.67 |
| 1:I:32:GLY:HA2 | 1:I:107:PHE:CE2 | 2.27 | 0.67 |
| 1:I:17:PHE:HE1 | 1:I:109:ARG:HA | 1.59 | 0.67 |
| 1:A:158:ILE:H | 1:A:158:ILE:HD13 | 1.58 | 0.67 |
| 1:I:22:ARG:NH1 | 2:J:181:PTR:P | 2.68 | 0.67 |
| 1:I:256:THR:OG1 | 1:I:257:VAL:N | 2.20 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:229:PRO:O | 2:J:173:ILE:HD11 | 1.93 | 0.67 |
| 1:C:138:LEU:HD11 | 1:C:146:ALA:HB2 | 1.76 | 0.67 |
| 1:A:172:LYS:HD2 | 1:A:198:ASP:HA | 1.76 | 0.67 |
| 1:A:28:TYR:HA | 1:A:31:GLN:HG2 | 1.75 | 0.67 |
| 1:E:10:ALA:HB1 | 1:E:13:LEU:HG | 1.77 | 0.67 |
| 1:G:14:PRO:HB2 | 1:G:108:ASN:HD22 | 1.60 | 0.67 |
| 1:G:175:ARG:HG3 | 2:H:170:PTR:O3P | 1.95 | 0.67 |
| 1:E:181:ILE:HD11 | 1:E:260:GLN:O | 1.94 | 0.67 |
| 1:I:75:ALA:HB2 | 1:I:81:THR:HA | 1.77 | 0.67 |
| 1:K:17:PHE:CE1 | 1:K:109:ARG:HA | 2.21 | 0.67 |
| 1:K:20:ILE:HD12 | 1:K:116:LYS:HB2 | 1.75 | 0.67 |
| 1:E:199:ASN:ND2 | 1:E:199:ASN:H | 1.92 | 0.67 |
| 1:A:180:GLN:OE1 | 1:C:59:ARG:CZ | 2.43 | 0.67 |
| 1:G:153:GLN:O | 1:G:156:LYS:HB3 | 1.95 | 0.67 |
| 1:G:158:ILE:H | 1:G:158:ILE:CD1 | 1.99 | 0.67 |
| 1:G:245:SER:HA | 1:G:255:LEU:HB2 | 1.75 | 0.67 |
| 1:G:71:ASN:OD1 | 1:G:71:ASN:N | 2.26 | 0.67 |
| 1:I:260:GLN:HA | 1:I:260:GLN:OE1 | 1.94 | 0.67 |
| 1:C:111:GLN:HE21 | 1:C:112:GLY:H | 1.41 | 0.67 |
| 1:C:229:PRO:O | 2:D:173:ILE:HG13 | 1.95 | 0.67 |
| 1:I:172:LYS:O | 1:I:173:ILE:HG13 | 1.95 | 0.67 |
| 1:K:161:THR:HA | 1:K:163:HIS:HE1 | 1.58 | 0.67 |
| 1:K:173:ILE:CG2 | 1:K:177:GLU:HB2 | 2.25 | 0.67 |
| 1:A:154:LEU:O | 1:A:157:LEU:N | 2.27 | 0.66 |
| 1:A:80:ARG:NH1 | 1:A:80:ARG:CB | 2.57 | 0.66 |
| 1:C:133:LYS:CB | 1:C:143:LEU:HD21 | 2.25 | 0.66 |
| 1:C:209:HIS:ND1 | 1:C:253:ARG:NH1 | 2.30 | 0.66 |
| 1:C:253:ARG:HG3 | 1:C:254:VAL:N | 2.09 | 0.66 |
| 1:G:109:ARG:HH11 | 1:G:109:ARG:CG | 2.08 | 0.66 |
| 1:A:170:HIS:CG | 1:A:193:LEU:HD12 | 2.30 | 0.66 |
| 1:C:226:LEU:HD11 | 1:C:235:ASP:O | 1.93 | 0.66 |
| 1:I:23:GLU:HG2 | 1:I:246:TYR:OH | 1.95 | 0.66 |
| 1:A:172:LYS:HE2 | 1:A:173:ILE:H | 1.60 | 0.66 |
| 1:A:22:ARG:NH1 | 2:B:181:PTR:O3P | 2.28 | 0.66 |
| 1:C:252:LEU:HD13 | 2:D:174:ARG:HD2 | 1.75 | 0.66 |
| 2:F:178:ARG:CB | 2:F:178:ARG:HH11 | 2.03 | 0.66 |
| 1:I:22:ARG:HH12 | 2:J:181:PTR:CZ | 2.08 | 0.66 |
| 1:E:74:TYR:CE2 | 1:E:85:PRO:HD3 | 2.30 | 0.66 |
| 1:G:172:LYS:O | 1:G:173:ILE:HG13 | 1.95 | 0.66 |
| 1:G:216:TYR:CE1 | 2:H:171:GLU:HB3 | 2.31 | 0.66 |
| 1:K:41:LEU:HD22 | 1:K:52:ALA:O | 1.96 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:22:ARG:HB2 | 2:H:181:PTR:O3P | 1.95 | 0.66 |
| 1:K:241:VAL:O | 1:K:243:HIS:N | 2.29 | 0.66 |
| 1:I:30:VAL:CG2 | 1:I:31:GLN:N | 2.58 | 0.66 |
| 1:I:96:SER:OG | 1:I:97:ASP:N | 2.24 | 0.66 |
| 1:A:131:TYR:C | 1:A:131:TYR:CD1 | 2.69 | 0.66 |
| 1:A:17:PHE:CD1 | 1:A:109:ARG:HD3 | 2.31 | 0.66 |
| 1:A:180:GLN:O | 1:A:182:VAL:N | 2.29 | 0.66 |
| 1:G:182:VAL:HG23 | 1:G:259:CYS:SG | 2.35 | 0.66 |
| 1:G:253:ARG:NH1 | 1:G:253:ARG:HB3 | 2.11 | 0.66 |
| 1:E:253:ARG:CG | 1:E:253:ARG:HH11 | 2.09 | 0.66 |
| 1:C:241:VAL:CG1 | 1:C:242:GLU:N | 2.59 | 0.66 |
| 1:E:189:ASN:ND2 | 1:E:253:ARG:NH2 | 2.44 | 0.66 |
| 1:G:9:SER:O | 1:G:11:ASN:N | 2.29 | 0.66 |
| 2:J:184:LEU:O | 2:J:185:ASN:CG | 2.34 | 0.66 |
| 1:K:170:HIS:CD2 | 1:K:193:LEU:HD12 | 2.30 | 0.66 |
| 1:K:178:SER:O | 1:K:181:ILE:HG22 | 1.95 | 0.66 |
| 1:G:226:LEU:O | 1:G:227:SER:HB3 | 1.96 | 0.65 |
| 1:G:41:LEU:CD2 | 1:G:52:ALA:O | 2.44 | 0.65 |
| 1:G:98:GLY:HA3 | 2:H:184:LEU:HD22 | 1.78 | 0.65 |
| 1:I:170:HIS:ND1 | 1:I:193:LEU:HD12 | 2.09 | 0.65 |
| 1:A:170:HIS:O | 1:A:171:GLY:O | 2.13 | 0.65 |
| 1:A:238:TRP:CD1 | 1:A:239:GLN:N | 2.63 | 0.65 |
| 1:C:217:ARG:HH11 | 1:C:217:ARG:CG | 2.04 | 0.65 |
| 1:E:9:SER:C | 1:E:11:ASN:H | 2.00 | 0.65 |
| 1:E:22:ARG:O | 1:E:26:GLU:HG3 | 1.96 | 0.65 |
| 1:G:80:ARG:HB3 | 1:G:80:ARG:HH11 | 1.61 | 0.65 |
| 1:A:30:VAL:C | 1:A:32:GLY:N | 2.49 | 0.65 |
| 1:C:178:SER:O | 1:C:179:GLU:C | 2.35 | 0.65 |
| 1:K:243:HIS:O | 1:K:246:TYR:HB3 | 1.96 | 0.65 |
| 1:A:107:PHE:C | 1:A:107:PHE:HD1 | 1.99 | 0.65 |
| 1:A:111:GLN:HE21 | 1:A:112:GLY:N | 1.95 | 0.65 |
| 1:C:30:VAL:CG2 | 1:C:31:GLN:N | 2.60 | 0.65 |
| 1:E:30:VAL:HA | 1:E:34:MET:HB2 | 1.79 | 0.65 |
| 1:G:46:ASN:O | 1:G:47:TYR:HD1 | 1.79 | 0.65 |
| 1:I:209:HIS:CG | 1:I:253:ARG:HH12 | 2.14 | 0.65 |
| 1:K:209:HIS:ND1 | 1:K:253:ARG:NH1 | 2.44 | 0.65 |
| 1:A:154:LEU:N | 1:A:154:LEU:HD22 | 2.10 | 0.65 |
| 1:C:113:VAL:HG12 | 1:C:114:GLN:N | 2.12 | 0.65 |
| 1:K:197:ARG:HH11 | 1:K:197:ARG:CG | 2.04 | 0.65 |
| 1:A:216:TYR:CE2 | 1:A:251:LEU:HD22 | 2.32 | 0.65 |
| 1:A:190:GLY:HA3 | 1:A:256:THR:CG2 | 2.25 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:256:THR:OG1 | 1:A:257:VAL:N | 2.30 | 0.65 |
| 1:C:179:GLU:O | 1:C:182:VAL:HG12 | 1.96 | 0.65 |
| 1:E:38:LEU:HD23 | 1:E:105:LYS:HB3 | 1.79 | 0.65 |
| 1:K:250:GLY:HA3 | 2:L:173:ILE:CG2 | 2.26 | 0.65 |
| 1:A:110:PRO:HB2 | 1:A:113:VAL:CG2 | 2.26 | 0.65 |
| 1:C:175:ARG:NH2 | 1:C:215:HIS:HD2 | 1.93 | 0.65 |
| 1:G:107:PHE:HE1 | 1:G:110:PRO:HD3 | 1.61 | 0.65 |
| 1:G:170:HIS:ND1 | 1:G:193:LEU:CD1 | 2.58 | 0.65 |
| 1:A:117:THR:HG22 | 1:A:118:GLY:O | 1.96 | 0.65 |
| 1:A:87:ASP:O | 1:A:88:LEU:C | 2.33 | 0.65 |
| 1:C:148:ILE:HG12 | 1:C:149:SER:N | 2.09 | 0.65 |
| 1:C:188:THR:O | 1:C:208:LEU:HD23 | 1.97 | 0.65 |
| 1:I:134:GLN:HG2 | 1:I:135:THR:N | 2.11 | 0.65 |
| 1:I:194:ILE:HG23 | 1:I:205:LEU:HD23 | 1.78 | 0.65 |
| 1:C:172:LYS:HE3 | 1:C:198:ASP:OD1 | 1.96 | 0.65 |
| 1:C:208:LEU:HD11 | 1:C:211:GLY:HA2 | 1.79 | 0.65 |
| 1:E:82:HIS:N | 1:E:82:HIS:ND1 | 2.44 | 0.65 |
| 2:J:174:ARG:HA | 2:J:175:LYS:HE3 | 1.77 | 0.65 |
| 1:C:123:LEU:HD12 | 1:C:127:LEU:HB2 | 1.79 | 0.64 |
| 1:C:69:GLU:HA | 1:C:69:GLU:OE1 | 1.95 | 0.64 |
| 1:I:203:TYR:N | 1:I:203:TYR:HD1 | 1.94 | 0.64 |
| 1:I:58:GLY:O | 1:I:59:ARG:HG3 | 1.97 | 0.64 |
| 1:A:144:GLU:O | 1:A:148:ILE:HG23 | 1.96 | 0.64 |
| 1:A:80:ARG:NH1 | 1:A:80:ARG:HB2 | 2.12 | 0.64 |
| 1:I:173:ILE:HG23 | 1:I:177:GLU:HB3 | 1.79 | 0.64 |
| 1:I:179:GLU:CD | 1:I:213:VAL:HG11 | 2.18 | 0.64 |
| 1:E:69:GLU:HB2 | 1:E:73:THR:O | 1.97 | 0.64 |
| 1:A:128:ILE:HG13 | 1:A:129:ARG:N | 2.11 | 0.64 |
| 1:C:27:ASP:O | 1:C:30:VAL:HG22 | 1.97 | 0.64 |
| 2:D:174:ARG:CA | 2:D:175:LYS:HE2 | 2.25 | 0.64 |
| 1:E:253:ARG:HG2 | 1:E:253:ARG:HH11 | 1.62 | 0.64 |
| 1:I:163:HIS:O | 1:I:169:PHE:HD2 | 1.81 | 0.64 |
| 1:I:30:VAL:HG23 | 1:I:31:GLN:H | 1.62 | 0.64 |
| 1:A:148:ILE:HD13 | 1:A:149:SER:H | 1.62 | 0.64 |
| 1:C:168:TRP:HE3 | 1:C:194:ILE:HG13 | 1.63 | 0.64 |
| 1:E:159:ALA:HB1 | 1:E:236:THR:HG21 | 1.80 | 0.64 |
| 1:K:41:LEU:CD2 | 1:K:52:ALA:O | 2.44 | 0.64 |
| 1:K:58:GLY:C | 1:K:59:ARG:HG3 | 2.16 | 0.64 |
| 1:C:109:ARG:HH11 | 1:C:109:ARG:HG2 | 1.62 | 0.64 |
| 1:A:107:PHE:C | 1:A:107:PHE:CD1 | 2.70 | 0.64 |
| 1:A:138:LEU:N | 1:A:138:LEU:HD23 | 2.09 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:154:LEU:H | 1:A:154:LEU:HD23 | 1.63 | 0.64 |
| 1:A:207:LEU:CD2 | 1:A:214:LEU:HB2 | 2.28 | 0.64 |
| 1:K:99:LEU:CD1 | 1:K:103:LEU:HD21 | 2.28 | 0.64 |
| 1:A:184:ILE:N | 1:A:184:ILE:HD13 | 2.12 | 0.64 |
| 1:C:200:ASN:N | 1:C:200:ASN:OD1 | 2.31 | 0.64 |
| 1:C:50:GLY:C | 1:C:51:PHE:CD1 | 2.71 | 0.64 |
| 1:K:199:ASN:O | 1:K:202:SER:N | 2.30 | 0.64 |
| 1:A:207:LEU:HD21 | 1:A:214:LEU:HB2 | 1.79 | 0.64 |
| 1:C:186:SER:HB3 | 1:C:188:THR:HG22 | 1.80 | 0.64 |
| 1:I:132:VAL:HG12 | 1:I:143:LEU:HD11 | 1.80 | 0.64 |
| 1:K:207:LEU:HD21 | 1:K:214:LEU:HB2 | 1.80 | 0.64 |
| 1:G:173:ILE:CG2 | 1:G:177:GLU:HB3 | 2.26 | 0.64 |
| 1:K:71:ASN:HB2 | 1:K:73:THR:HG23 | 1.79 | 0.64 |
| 1:C:238:TRP:CD1 | 1:C:239:GLN:N | 2.66 | 0.63 |
| 1:G:253:ARG:NH1 | 1:G:253:ARG:CB | 2.61 | 0.63 |
| 1:I:144:GLU:HB2 | 1:I:145:GLN:NE2 | 2.13 | 0.63 |
| 1:K:22:ARG:O | 1:K:25:ALA:HB3 | 1.98 | 0.63 |
| 1:A:15:PHE:CD1 | 1:A:15:PHE:N | 2.64 | 0.63 |
| 1:G:107:PHE:HD1 | 1:G:107:PHE:C | 2.00 | 0.63 |
| 1:G:199:ASN:ND2 | 1:G:200:ASN:H | 1.96 | 0.63 |
| 1:A:208:LEU:HD11 | 1:A:211:GLY:HA2 | 1.80 | 0.63 |
| 1:C:197:ARG:HD3 | 1:C:202:SER:OG | 1.97 | 0.63 |
| 1:G:202:SER:O | 1:G:203:TYR:HD1 | 1.82 | 0.63 |
| 1:G:237:LEU:C | 1:G:239:GLN:N | 2.49 | 0.63 |
| 1:I:203:TYR:CD1 | 1:I:203:TYR:N | 2.66 | 0.63 |
| 1:I:21:THR:HG1 | 1:I:24:GLU:H | 1.46 | 0.63 |
| 1:K:180:GLN:O | 1:K:182:VAL:N | 2.31 | 0.63 |
| 1:A:260:GLN:CA | 1:A:260:GLN:OE1 | 2.45 | 0.63 |
| 1:E:17:PHE:CE1 | 1:E:109:ARG:HA | 2.33 | 0.63 |
| 1:E:193:LEU:C | 1:E:193:LEU:HD23 | 2.18 | 0.63 |
| 1:G:84:SER:OG | 1:G:86:ALA:HB3 | 1.98 | 0.63 |
| 1:A:122:ASP:N | 1:A:122:ASP:OD1 | 2.27 | 0.63 |
| 2:B:178:ARG:HB3 | 2:B:178:ARG:NH1 | 2.13 | 0.63 |
| 1:C:138:LEU:CG | 1:C:143:LEU:HD13 | 2.29 | 0.63 |
| 1:C:234:PHE:CE2 | 1:C:240:LEU:HA | 2.33 | 0.63 |
| 1:G:158:ILE:N | 1:G:158:ILE:HD13 | 2.06 | 0.63 |
| 1:E:17:PHE:HD1 | 1:E:109:ARG:HD3 | 1.62 | 0.63 |
| 1:E:29:LEU:HD21 | 1:E:40:LEU:HD23 | 1.80 | 0.63 |
| 1:G:17:PHE:CE1 | 1:G:109:ARG:HA | 2.34 | 0.63 |
| 1:I:179:GLU:O | 1:I:182:VAL:HG12 | 1.99 | 0.63 |
| 1:K:199:ASN:N | 1:K:199:ASN:ND2 | 2.43 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:148:ILE:HG12 | 1:A:149:SER:N | 2.14 | 0.63 |
| 1:C:150:GLN:O | 1:C:151:LYS:C | 2.36 | 0.63 |
| 1:C:20:ILE:CG2 | 1:C:21:THR:N | 2.62 | 0.63 |
| 1:C:240:LEU:HD23 | 1:C:240:LEU:O | 1.97 | 0.63 |
| 1:I:205:LEU:HD22 | 1:I:206:CYS:N | 2.13 | 0.63 |
| 1:K:168:TRP:CZ3 | 1:K:194:ILE:HD11 | 2.34 | 0.63 |
| 1:I:189:ASN:OD1 | 1:I:209:HIS:HA | 1.99 | 0.63 |
| 1:A:37:GLY:HA3 | 1:A:104:LYS:HG3 | 1.81 | 0.62 |
| 1:A:151:LYS:O | 1:A:152:PRO:C | 2.36 | 0.62 |
| 1:E:241:VAL:O | 1:E:243:HIS:N | 2.32 | 0.62 |
| 1:I:128:ILE:CG2 | 1:I:158:ILE:HG12 | 2.16 | 0.62 |
| 1:A:240:LEU:HD23 | 1:A:244:TYR:HD2 | 1.63 | 0.62 |
| 1:C:30:VAL:HG23 | 1:C:31:GLN:N | 2.14 | 0.62 |
| 1:E:58:GLY:C | 1:E:60:LYS:H | 2.02 | 0.62 |
| 1:K:227:SER:HB2 | 1:K:232:LYS:O | 1.99 | 0.62 |
| 2:D:184:LEU:O | 2:D:185:ASN:CB | 2.47 | 0.62 |
| 1:G:170:HIS:O | 1:G:173:ILE:HD12 | 1.98 | 0.62 |
| 1:A:120:PHE:C | 1:A:122:ASP:H | 2.03 | 0.62 |
| 2:F:173:ILE:HG22 | 2:F:174:ARG:N | 2.15 | 0.62 |
| 1:C:138:LEU:HD12 | 1:C:142:ALA:C | 2.20 | 0.62 |
| 1:I:138:LEU:O | 1:I:139:GLN:HG3 | 1.98 | 0.62 |
| 1:C:238:TRP:HD1 | 1:C:239:GLN:N | 1.97 | 0.62 |
| 1:C:234:PHE:CD2 | 1:C:240:LEU:HA | 2.34 | 0.62 |
| 1:C:48:LEU:O | 1:C:50:GLY:N | 2.33 | 0.62 |
| 1:I:128:ILE:CD1 | 1:I:129:ARG:H | 2.04 | 0.62 |
| 1:A:189:ASN:HA | 1:A:208:LEU:HD23 | 1.80 | 0.62 |
| 1:A:21:THR:HG22 | 1:A:24:GLU:OE1 | 1.99 | 0.62 |
| 1:C:153:GLN:C | 1:C:153:GLN:NE2 | 2.53 | 0.62 |
| 1:E:154:LEU:O | 1:E:158:ILE:HD13 | 1.99 | 0.62 |
| 1:A:193:LEU:HD23 | 1:A:193:LEU:O | 2.00 | 0.62 |
| 1:A:24:GLU:O | 1:A:27:ASP:HB2 | 2.00 | 0.62 |
| 1:C:241:VAL:HG12 | 1:C:242:GLU:H | 1.63 | 0.62 |
| 1:A:158:ILE:HD12 | 1:A:158:ILE:N | 2.12 | 0.61 |
| 1:I:39:TYR:CZ | 1:I:106:PRO:HB3 | 2.35 | 0.61 |
| 2:L:173:ILE:CG2 | 2:L:174:ARG:H | 2.11 | 0.61 |
| 1:C:154:LEU:N | 1:C:154:LEU:CD2 | 2.52 | 0.61 |
| 1:E:70:LEU:HD12 | 1:E:70:LEU:H | 1.65 | 0.61 |
| 1:I:202:SER:C | 1:I:203:TYR:HD1 | 2.02 | 0.61 |
| 1:I:207:LEU:HD21 | 1:I:214:LEU:HB2 | 1.82 | 0.61 |
| 1:G:216:TYR:CD1 | 2:H:171:GLU:HB3 | 2.35 | 0.61 |
| 1:I:21:THR:OG1 | 1:I:24:GLU:N | 2.32 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:69:GLU:HB2 | 1:G:73:THR:O | 2.00 | 0.61 |
| 1:I:120:PHE:HB2 | 1:I:238:TRP:HZ3 | 1.66 | 0.61 |
| 1:I:16:PHE:HA | 1:I:41:LEU:O | 2.01 | 0.61 |
| 1:K:217:ARG:HG2 | 1:K:217:ARG:NH1 | 2.12 | 0.61 |
| 1:A:180:GLN:NE2 | 1:C:59:ARG:CB | 2.63 | 0.61 |
| 1:I:120:PHE:CG | 1:I:238:TRP:CZ3 | 2.89 | 0.61 |
| 1:K:178:SER:O | 1:K:179:GLU:C | 2.39 | 0.61 |
| 1:K:187:LYS:HD2 | 1:K:187:LYS:H | 1.65 | 0.61 |
| 1:K:16:PHE:HA | 1:K:41:LEU:O | 2.00 | 0.61 |
| 1:G:178:SER:O | 1:G:179:GLU:C | 2.38 | 0.61 |
| 1:C:228:ILE:CG2 | 1:C:229:PRO:HD2 | 2.30 | 0.61 |
| 1:G:197:ARG:CG | 1:G:197:ARG:HH11 | 2.07 | 0.61 |
| 1:A:197:ARG:O | 1:A:199:ASN:N | 2.33 | 0.61 |
| 1:A:30:VAL:HG22 | 1:A:31:GLN:N | 2.15 | 0.61 |
| 1:G:181:ILE:HD13 | 1:G:181:ILE:O | 2.00 | 0.61 |
| 1:C:161:THR:HB | 1:C:164:GLU:HG3 | 1.83 | 0.61 |
| 2:H:174:ARG:HA | 2:H:175:LYS:HE2 | 1.82 | 0.61 |
| 1:I:202:SER:HB2 | 1:I:218:ILE:O | 2.00 | 0.61 |
| 1:A:120:PHE:CB | 1:A:123:LEU:HD11 | 2.31 | 0.60 |
| 1:A:21:THR:CG2 | 1:A:24:GLU:CG | 2.79 | 0.60 |
| 1:A:22:ARG:NH2 | 2:B:180:LEU:O | 2.34 | 0.60 |
| 1:E:21:THR:HG23 | 1:E:24:GLU:CB | 2.15 | 0.60 |
| 1:K:38:LEU:HA | 1:K:105:LYS:O | 2.00 | 0.60 |
| 1:A:163:HIS:ND1 | 1:A:163:HIS:N | 2.49 | 0.60 |
| 1:E:53:LEU:HD22 | 1:E:54:SER:N | 2.16 | 0.60 |
| 1:G:170:HIS:O | 1:G:171:GLY:O | 2.18 | 0.60 |
| 1:G:238:TRP:O | 1:G:242:GLU:HB2 | 2.01 | 0.60 |
| 1:G:80:ARG:HG2 | 1:G:81:THR:N | 2.16 | 0.60 |
| 1:I:151:LYS:HB3 | 1:I:152:PRO:HD2 | 1.84 | 0.60 |
| 1:I:36:ASP:HA | 1:I:56:ALA:O | 2.01 | 0.60 |
| 1:A:182:VAL:HG23 | 1:A:259:CYS:CB | 2.31 | 0.60 |
| 1:A:58:GLY:O | 1:A:59:ARG:HG3 | 2.01 | 0.60 |
| 1:G:180:GLN:HG2 | 1:G:181:ILE:H | 1.66 | 0.60 |
| 1:G:219:ASP:OD1 | 1:G:219:ASP:N | 2.35 | 0.60 |
| 1:I:138:LEU:C | 1:I:139:GLN:HE21 | 2.04 | 0.60 |
| 1:I:48:LEU:CD2 | 1:I:235:ASP:CB | 2.80 | 0.60 |
| 1:K:181:ILE:O | 1:K:181:ILE:CD1 | 2.50 | 0.60 |
| 1:K:253:ARG:HH11 | 1:K:253:ARG:HG2 | 1.65 | 0.60 |
| 1:G:260:GLN:CA | 1:G:260:GLN:OE1 | 2.46 | 0.60 |
| 1:A:260:GLN:OE1 | 1:A:261:LYS:N | 2.31 | 0.60 |
| 1:E:202:SER:C | 1:E:203:TYR:CD1 | 2.75 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:175:LYS:N | 2:F:175:LYS:CD | 2.65 | 0.60 |
| 1:I:197:ARG:O | 1:I:198:ASP:OD1 | 2.19 | 0.60 |
| 1:I:238:TRP:CD1 | 1:I:238:TRP:C | 2.75 | 0.60 |
| 1:K:237:LEU:C | 1:K:239:GLN:H | 2.05 | 0.60 |
| 1:A:176:GLU:C | 1:A:178:SER:N | 2.53 | 0.60 |
| 1:A:30:VAL:O | 1:A:33:GLY:N | 2.33 | 0.60 |
| 1:C:246:TYR:CD1 | 1:C:247:LYS:HB3 | 2.37 | 0.60 |
| 1:C:46:ASN:OD1 | 1:C:46:ASN:N | 2.32 | 0.60 |
| 1:I:120:PHE:HA | 1:I:123:LEU:HB3 | 1.83 | 0.60 |
| 1:I:137:ASN:N | 1:I:137:ASN:OD1 | 2.34 | 0.60 |
| 1:C:210:GLU:OE1 | 1:C:210:GLU:HA | 2.02 | 0.60 |
| 2:F:173:ILE:HG22 | 2:F:174:ARG:H | 1.66 | 0.60 |
| 1:G:12:HIS:CE1 | 1:G:13:LEU:HD23 | 2.36 | 0.60 |
| 1:I:30:VAL:C | 1:I:32:GLY:N | 2.54 | 0.60 |
| 1:A:174:SER:OG | 1:A:177:GLU:CB | 2.42 | 0.60 |
| 1:A:197:ARG:C | 1:A:199:ASN:H | 2.04 | 0.60 |
| 1:C:125:GLU:O | 1:C:128:ILE:HG13 | 2.02 | 0.60 |
| 1:E:181:ILE:HD12 | 1:E:262:ILE:HD13 | 1.84 | 0.60 |
| 1:G:246:TYR:C | 1:G:246:TYR:CD1 | 2.75 | 0.60 |
| 1:I:226:LEU:CD1 | 1:I:226:LEU:H | 2.15 | 0.60 |
| 1:K:253:ARG:HG3 | 1:K:254:VAL:N | 2.17 | 0.60 |
| 1:A:21:THR:HG23 | 1:A:24:GLU:CG | 2.31 | 0.59 |
| 1:C:179:GLU:OE1 | 1:C:213:VAL:HG11 | 2.02 | 0.59 |
| 1:C:253:ARG:CB | 1:C:253:ARG:CZ | 2.79 | 0.59 |
| 1:G:199:ASN:CG | 1:G:200:ASN:N | 2.50 | 0.59 |
| 1:G:207:LEU:O | 1:G:207:LEU:HD23 | 2.02 | 0.59 |
| 1:I:38:LEU:HD23 | 1:I:105:LYS:O | 2.02 | 0.59 |
| 1:K:225:LYS:NZ | 1:K:235:ASP:OD1 | 2.32 | 0.59 |
| 1:K:88:LEU:C | 1:K:88:LEU:HD12 | 2.23 | 0.59 |
| 1:A:172:LYS:HE3 | 1:A:196:ALA:O | 2.02 | 0.59 |
| 2:B:184:LEU:O | 2:B:185:ASN:HB3 | 2.01 | 0.59 |
| 1:G:109:ARG:NH1 | 1:G:109:ARG:HB3 | 2.17 | 0.59 |
| 1:G:172:LYS:HZ1 | 1:G:173:ILE:CA | 2.15 | 0.59 |
| 1:I:80:ARG:HG2 | 1:I:81:THR:N | 2.17 | 0.59 |
| 1:K:199:ASN:N | 1:K:199:ASN:HD22 | 1.96 | 0.59 |
| 1:C:132:VAL:CG1 | 1:C:143:LEU:HD11 | 2.32 | 0.59 |
| 1:I:193:LEU:O | 1:I:193:LEU:HD23 | 2.02 | 0.59 |
| 1:I:236:THR:OG1 | 1:I:238:TRP:CD1 | 2.56 | 0.59 |
| 1:K:234:PHE:CZ | 1:K:240:LEU:HA | 2.36 | 0.59 |
| 1:E:181:ILE:HD12 | 1:E:262:ILE:CD1 | 2.33 | 0.59 |
| 1:A:209:HIS:ND1 | 1:A:253:ARG:NH1 | 2.50 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:119:PRO:HD2 | 1:C:120:PHE:CZ | 2.37 | 0.59 |
| 1:E:9:SER:O | 1:E:11:ASN:N | 2.36 | 0.59 |
| 1:I:120:PHE:CB | 1:I:238:TRP:CZ3 | 2.84 | 0.59 |
| 1:I:21:THR:CG2 | 1:I:24:GLU:HB2 | 2.32 | 0.59 |
| 1:K:17:PHE:CD2 | 1:K:40:LEU:HD13 | 2.37 | 0.59 |
| 1:A:232:LYS:HG3 | 1:A:233:LYS:N | 2.15 | 0.59 |
| 1:A:48:LEU:HD23 | 1:A:235:ASP:CB | 2.32 | 0.59 |
| 1:C:177:GLU:O | 1:C:181:ILE:CG2 | 2.44 | 0.59 |
| 1:C:22:ARG:NH2 | 2:D:180:LEU:O | 2.33 | 0.59 |
| 1:G:93:SER:O | 1:G:102:LEU:HD12 | 2.03 | 0.59 |
| 1:A:145:GLN:CA | 1:A:145:GLN:HE21 | 2.15 | 0.59 |
| 1:A:219:ASP:OD1 | 1:A:219:ASP:N | 2.35 | 0.59 |
| 1:C:158:ILE:H | 1:C:158:ILE:HD12 | 1.66 | 0.59 |
| 1:C:246:TYR:C | 1:C:246:TYR:CD1 | 2.76 | 0.59 |
| 1:C:16:PHE:HA | 1:C:41:LEU:O | 2.02 | 0.59 |
| 1:G:240:LEU:HD21 | 1:G:244:TYR:HD2 | 1.68 | 0.59 |
| 1:I:205:LEU:HD22 | 1:I:206:CYS:H | 1.68 | 0.59 |
| 1:K:17:PHE:O | 1:K:18:GLY:O | 2.20 | 0.59 |
| 1:K:207:LEU:O | 1:K:207:LEU:HD23 | 2.02 | 0.59 |
| 1:A:120:PHE:C | 1:A:122:ASP:N | 2.54 | 0.59 |
| 1:A:124:LYS:O | 1:A:126:ASN:N | 2.35 | 0.59 |
| 1:E:39:TYR:CD1 | 1:E:103:LEU:HB3 | 2.38 | 0.59 |
| 1:G:202:SER:C | 1:G:203:TYR:HD1 | 2.06 | 0.59 |
| 1:K:154:LEU:O | 1:K:158:ILE:HD13 | 2.03 | 0.59 |
| 1:K:234:PHE:CD2 | 1:K:240:LEU:HA | 2.37 | 0.59 |
| 1:A:157:LEU:HB3 | 1:A:158:ILE:HD12 | 1.84 | 0.59 |
| 1:A:229:PRO:O | 2:B:173:ILE:HD11 | 2.03 | 0.59 |
| 1:C:170:HIS:HB3 | 1:C:173:ILE:CD1 | 2.31 | 0.59 |
| 1:I:176:GLU:N | 1:I:176:GLU:OE1 | 2.34 | 0.59 |
| 1:K:39:TYR:CD2 | 1:K:103:LEU:HD13 | 2.38 | 0.59 |
| 1:K:253:ARG:HH11 | 1:K:253:ARG:CG | 2.16 | 0.59 |
| 1:C:138:LEU:HG | 1:C:143:LEU:HA | 1.84 | 0.58 |
| 1:C:198:ASP:HB3 | 1:C:199:ASN:ND2 | 2.18 | 0.58 |
| 1:C:236:THR:HG23 | 1:C:239:GLN:OE1 | 2.03 | 0.58 |
| 1:E:21:THR:CG2 | 1:E:24:GLU:OE1 | 2.51 | 0.58 |
| 1:K:168:TRP:CE3 | 1:K:194:ILE:HD11 | 2.38 | 0.58 |
| 1:K:46:ASN:O | 1:K:47:TYR:HD1 | 1.86 | 0.58 |
| 1:E:205:LEU:O | 1:E:215:HIS:HA | 2.03 | 0.58 |
| 1:E:216:TYR:CE2 | 1:E:251:LEU:HD22 | 2.38 | 0.58 |
| 1:G:158:ILE:CD1 | 1:G:158:ILE:N | 2.64 | 0.58 |
| 1:I:70:LEU:CD1 | 1:I:70:LEU:H | 2.00 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:250:GLY:HA3 | 2:L:173:ILE:HG23 | 1.84 | 0.58 |
| 1:A:173:ILE:HG23 | 1:A:177:GLU:CB | 2.33 | 0.58 |
| 1:C:111:GLN:NE2 | 1:C:112:GLY:N | 2.49 | 0.58 |
| 1:C:144:GLU:HA | 1:C:147:ILE:HD11 | 1.84 | 0.58 |
| 1:I:130:GLU:O | 1:I:131:TYR:C | 2.40 | 0.58 |
| 1:I:27:ASP:O | 1:I:30:VAL:CG2 | 2.48 | 0.58 |
| 1:A:120:PHE:O | 1:A:123:LEU:HD12 | 2.03 | 0.58 |
| 1:A:129:ARG:HG2 | 2:H:168:PRO:HA | 1.83 | 0.58 |
| 1:A:228:ILE:HG23 | 1:A:229:PRO:HD2 | 1.84 | 0.58 |
| 1:C:207:LEU:O | 1:C:214:LEU:N | 2.31 | 0.58 |
| 1:C:21:THR:CG2 | 1:C:24:GLU:HB2 | 2.27 | 0.58 |
| 1:E:10:ALA:HA | 1:E:12:HIS:CE1 | 2.38 | 0.58 |
| 1:E:175:ARG:HH11 | 2:F:168:PRO:HD2 | 1.68 | 0.58 |
| 2:H:171:GLU:OE2 | 2:H:172:PRO:HD2 | 2.02 | 0.58 |
| 1:G:22:ARG:NH1 | 2:H:181:PTR:O3P | 2.36 | 0.58 |
| 1:I:147:ILE:O | 1:I:151:LYS:N | 2.34 | 0.58 |
| 1:K:58:GLY:C | 1:K:60:LYS:H | 2.06 | 0.58 |
| 1:A:129:ARG:NH1 | 1:A:129:ARG:CG | 2.62 | 0.58 |
| 1:C:173:ILE:HG22 | 1:C:177:GLU:CB | 2.33 | 0.58 |
| 1:C:93:SER:O | 1:C:102:LEU:CD1 | 2.52 | 0.58 |
| 1:G:241:VAL:O | 1:G:243:HIS:N | 2.37 | 0.58 |
| 1:I:191:LYS:O | 1:I:207:LEU:HA | 2.03 | 0.58 |
| 1:I:38:LEU:CD2 | 1:I:39:TYR:N | 2.66 | 0.58 |
| 1:I:42:ARG:HH12 | 2:J:181:PTR:P | 2.27 | 0.58 |
| 2:J:173:ILE:HG22 | 2:J:174:ARG:H | 1.69 | 0.58 |
| 1:C:110:PRO:HD2 | 1:C:113:VAL:CG2 | 2.31 | 0.58 |
| 1:C:18:GLY:H | 1:C:115:PRO:HB3 | 1.69 | 0.58 |
| 1:A:17:PHE:O | 1:A:20:ILE:CD1 | 2.48 | 0.58 |
| 1:C:226:LEU:CD1 | 1:C:234:PHE:O | 2.49 | 0.58 |
| 1:K:71:ASN:N | 1:K:71:ASN:OD1 | 2.36 | 0.58 |
| 1:E:223:THR:HB | 1:E:225:LYS:HD3 | 1.85 | 0.58 |
| 1:G:164:GLU:HA | 1:G:169:PHE:CE2 | 2.38 | 0.58 |
| 1:I:176:GLU:C | 1:I:178:SER:N | 2.54 | 0.58 |
| 1:I:206:CYS:HA | 1:I:214:LEU:O | 2.03 | 0.58 |
| 1:I:48:LEU:CD2 | 1:I:235:ASP:HB3 | 2.33 | 0.58 |
| 1:I:131:TYR:CD1 | 1:I:131:TYR:C | 2.76 | 0.58 |
| 1:K:109:ARG:HG2 | 1:K:109:ARG:HH11 | 1.68 | 0.58 |
| 2:L:184:LEU:O | 2:L:185:ASN:CB | 2.52 | 0.58 |
| 1:A:28:TYR:O | 1:A:107:PHE:CE2 | 2.53 | 0.58 |
| 1:C:32:GLY:HA3 | 1:C:107:PHE:CE2 | 2.39 | 0.58 |
| 1:C:144:GLU:O | 1:C:147:ILE:HG13 | 2.04 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:30:VAL:C | 1:E:32:GLY:H | 2.05 | 0.58 |
| 1:C:153:GLN:O | 1:C:154:LEU:C | 2.40 | 0.57 |
| 1:E:17:PHE:CE1 | 1:E:109:ARG:HD3 | 2.38 | 0.57 |
| 1:I:254:VAL:HG22 | 1:I:255:LEU:O | 2.04 | 0.57 |
| 2:J:178:ARG:CG | 2:J:178:ARG:HH11 | 2.14 | 0.57 |
| 1:K:241:VAL:HG12 | 1:K:242:GLU:N | 2.17 | 0.57 |
| 1:A:195:ARG:HH21 | 1:A:215:HIS:CE1 | 2.21 | 0.57 |
| 1:A:234:PHE:HD2 | 1:A:239:GLN:HB3 | 1.69 | 0.57 |
| 1:E:205:LEU:HD22 | 1:E:206:CYS:N | 2.20 | 0.57 |
| 1:I:251:LEU:HB2 | 1:I:253:ARG:O | 2.04 | 0.57 |
| 1:K:182:VAL:HG11 | 1:K:213:VAL:HG23 | 1.86 | 0.57 |
| 1:C:151:LYS:HA | 1:C:154:LEU:HG | 1.85 | 0.57 |
| 1:C:154:LEU:O | 1:C:157:LEU:N | 2.36 | 0.57 |
| 1:G:240:LEU:C | 1:G:240:LEU:CD2 | 2.64 | 0.57 |
| 1:I:226:LEU:CD1 | 1:I:226:LEU:N | 2.67 | 0.57 |
| 1:I:88:LEU:CD1 | 1:I:92:HIS:ND1 | 2.67 | 0.57 |
| 1:G:27:ASP:OD1 | 1:K:185:GLY:HA3 | 2.03 | 0.57 |
| 1:G:163:HIS:CE1 | 1:G:164:GLU:HG2 | 2.38 | 0.57 |
| 1:C:118:GLY:O | 1:C:122:ASP:OD2 | 2.22 | 0.57 |
| 1:G:20:ILE:CD1 | 1:G:116:LYS:HB2 | 2.35 | 0.57 |
| 2:H:178:ARG:CG | 2:H:178:ARG:HH11 | 2.18 | 0.57 |
| 1:I:150:GLN:OE1 | 1:I:150:GLN:HA | 2.03 | 0.57 |
| 1:A:207:LEU:H | 1:A:207:LEU:HD23 | 1.70 | 0.57 |
| 1:C:120:PHE:N | 1:C:122:ASP:OD1 | 2.38 | 0.57 |
| 1:E:177:GLU:O | 1:E:181:ILE:HG22 | 2.05 | 0.57 |
| 1:E:209:HIS:CE1 | 1:E:253:ARG:HH22 | 2.22 | 0.57 |
| 1:I:17:PHE:CE1 | 1:I:109:ARG:HA | 2.37 | 0.57 |
| 1:K:176:GLU:OE1 | 1:K:176:GLU:N | 2.37 | 0.57 |
| 1:C:107:PHE:CD1 | 1:C:107:PHE:C | 2.78 | 0.57 |
| 1:E:193:LEU:HD21 | 1:E:206:CYS:SG | 2.44 | 0.57 |
| 1:G:157:LEU:O | 1:G:158:ILE:C | 2.42 | 0.57 |
| 1:K:24:GLU:O | 1:K:28:TYR:HD2 | 1.87 | 0.57 |
| 1:E:182:VAL:CG2 | 1:E:259:CYS:SG | 2.90 | 0.57 |
| 1:E:207:LEU:HD23 | 1:E:214:LEU:HB2 | 1.87 | 0.57 |
| 1:G:88:LEU:CD1 | 1:G:88:LEU:C | 2.73 | 0.57 |
| 1:I:120:PHE:CD1 | 1:I:238:TRP:CH2 | 2.93 | 0.57 |
| 1:K:22:ARG:NH2 | 2:L:180:LEU:O | 2.38 | 0.57 |
| 1:A:151:LYS:O | 1:A:155:GLU:OE1 | 2.22 | 0.57 |
| 1:C:123:LEU:HG | 1:C:124:LYS:N | 2.19 | 0.57 |
| 2:F:175:LYS:HD2 | 2:F:175:LYS:N | 2.20 | 0.57 |
| 1:G:194:ILE:HG23 | 1:G:205:LEU:HD23 | 1.87 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:241:VAL:O | 1:G:242:GLU:C | 2.43 | 0.57 |
| 2:H:185:ASN:CG | 2:H:185:ASN:O | 2.42 | 0.57 |
| 1:C:128:ILE:CD1 | 1:C:129:ARG:N | 2.68 | 0.57 |
| 1:C:178:SER:HA | 1:C:181:ILE:CG2 | 2.34 | 0.57 |
| 1:G:172:LYS:C | 1:G:172:LYS:HZ3 | 2.08 | 0.57 |
| 1:K:28:TYR:O | 1:K:107:PHE:CE2 | 2.58 | 0.57 |
| 1:A:187:LYS:O | 1:A:208:LEU:HD21 | 2.04 | 0.56 |
| 1:A:41:LEU:CD2 | 1:A:52:ALA:O | 2.53 | 0.56 |
| 1:C:205:LEU:HB3 | 1:C:216:TYR:HB2 | 1.87 | 0.56 |
| 1:E:88:LEU:C | 1:E:88:LEU:HD12 | 2.25 | 0.56 |
| 1:A:262:ILE:HG22 | 1:A:262:ILE:O | 2.05 | 0.56 |
| 1:C:161:THR:HA | 1:C:163:HIS:ND1 | 2.19 | 0.56 |
| 1:C:241:VAL:O | 1:C:242:GLU:C | 2.40 | 0.56 |
| 1:C:88:LEU:HD12 | 1:C:88:LEU:O | 2.04 | 0.56 |
| 1:E:15:PHE:HE2 | 1:E:89:CYS:HG | 1.50 | 0.56 |
| 1:G:80:ARG:CB | 1:G:80:ARG:HH11 | 2.18 | 0.56 |
| 1:I:22:ARG:HB2 | 2:J:181:PTR:O3P | 2.05 | 0.56 |
| 1:C:151:LYS:O | 1:C:153:GLN:N | 2.38 | 0.56 |
| 1:C:252:LEU:CD1 | 2:D:174:ARG:HD2 | 2.35 | 0.56 |
| 1:E:207:LEU:O | 1:E:207:LEU:HD23 | 2.05 | 0.56 |
| 1:G:238:TRP:CD1 | 1:G:239:GLN:N | 2.73 | 0.56 |
| 1:C:253:ARG:HB2 | 1:C:253:ARG:CZ | 2.34 | 0.56 |
| 1:G:173:ILE:HG23 | 1:G:177:GLU:CB | 2.32 | 0.56 |
| 1:G:179:GLU:O | 1:G:183:LEU:HD22 | 2.05 | 0.56 |
| 1:I:123:LEU:HD12 | 1:I:124:LYS:CA | 2.35 | 0.56 |
| 2:J:175:LYS:O | 2:J:178:ARG:HG2 | 2.05 | 0.56 |
| 1:K:182:VAL:HG11 | 1:K:213:VAL:CG2 | 2.35 | 0.56 |
| 1:A:124:LYS:O | 1:A:128:ILE:HG23 | 2.05 | 0.56 |
| 1:A:154:LEU:CD2 | 1:A:154:LEU:N | 2.58 | 0.56 |
| 1:A:237:LEU:O | 1:A:238:TRP:C | 2.43 | 0.56 |
| 1:E:88:LEU:O | 1:E:88:LEU:HD12 | 2.06 | 0.56 |
| 1:G:161:THR:HA | 1:G:163:HIS:CE1 | 2.41 | 0.56 |
| 1:I:120:PHE:C | 1:I:122:ASP:N | 2.54 | 0.56 |
| 1:I:19:ASN:HD21 | 1:I:45:ARG:HG2 | 1.70 | 0.56 |
| 1:A:181:ILE:HD12 | 1:A:262:ILE:CD1 | 2.36 | 0.56 |
| 1:C:238:TRP:HD1 | 1:C:239:GLN:HG3 | 1.70 | 0.56 |
| 1:E:168:TRP:HE3 | 1:E:194:ILE:HG13 | 1.71 | 0.56 |
| 1:E:193:LEU:HD23 | 1:E:206:CYS:SG | 2.44 | 0.56 |
| 1:E:219:ASP:N | 1:E:219:ASP:OD1 | 2.38 | 0.56 |
| 1:E:30:VAL:C | 1:E:32:GLY:N | 2.57 | 0.56 |
| 1:C:12:HIS:O | 1:C:14:PRO:HD3 | 2.06 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:109:ARG:HH11 | 1:E:109:ARG:HG2 | 1.71 | 0.56 |
| 1:E:179:GLU:CD | 1:E:213:VAL:HG11 | 2.26 | 0.56 |
| 1:G:93:SER:O | 1:G:102:LEU:CD1 | 2.53 | 0.56 |
| 1:A:180:GLN:O | 1:A:183:LEU:N | 2.39 | 0.56 |
| 1:I:154:LEU:CD2 | 1:I:154:LEU:N | 2.59 | 0.56 |
| 1:A:128:ILE:HG13 | 1:A:129:ARG:H | 1.71 | 0.56 |
| 1:A:192:PHE:CD2 | 1:A:255:LEU:HD13 | 2.41 | 0.56 |
| 1:G:109:ARG:NH1 | 1:G:109:ARG:CG | 2.68 | 0.56 |
| 1:G:48:LEU:HD22 | 1:G:235:ASP:HB2 | 1.87 | 0.56 |
| 1:I:207:LEU:HD23 | 1:I:214:LEU:HB2 | 1.88 | 0.56 |
| 1:K:54:SER:HA | 1:K:62:HIS:O | 2.06 | 0.56 |
| 1:A:109:ARG:HH11 | 1:A:109:ARG:HG2 | 1.70 | 0.56 |
| 1:A:165:LYS:O | 1:A:165:LYS:HE2 | 2.06 | 0.56 |
| 1:C:168:TRP:CE3 | 1:C:194:ILE:HG13 | 2.41 | 0.56 |
| 1:I:132:VAL:HG12 | 1:I:143:LEU:CD1 | 2.35 | 0.56 |
| 1:K:193:LEU:HD23 | 1:K:206:CYS:HB2 | 1.87 | 0.56 |
| 1:A:30:VAL:C | 1:A:32:GLY:H | 2.09 | 0.56 |
| 1:C:194:ILE:HG23 | 1:C:204:ALA:O | 2.06 | 0.56 |
| 1:C:241:VAL:O | 1:C:243:HIS:N | 2.39 | 0.56 |
| 1:E:166:MET:O | 1:E:169:PHE:HB3 | 2.05 | 0.56 |
| 1:G:241:VAL:CG1 | 1:G:242:GLU:N | 2.67 | 0.56 |
| 1:I:128:ILE:CD1 | 1:I:129:ARG:N | 2.67 | 0.56 |
| 1:I:256:THR:HG1 | 1:I:257:VAL:H | 1.53 | 0.56 |
| 1:I:48:LEU:O | 1:I:50:GLY:N | 2.39 | 0.56 |
| 1:K:234:PHE:HB3 | 1:K:239:GLN:CG | 2.36 | 0.56 |
| 1:K:68:ARG:HG3 | 1:K:68:ARG:O | 2.05 | 0.56 |
| 1:A:123:LEU:CD1 | 1:A:124:LYS:N | 2.64 | 0.55 |
| 1:C:260:GLN:OE1 | 1:C:260:GLN:CA | 2.50 | 0.55 |
| 2:D:175:LYS:O | 2:D:177:GLN:N | 2.38 | 0.55 |
| 1:E:207:LEU:CD2 | 1:E:214:LEU:HB2 | 2.36 | 0.55 |
| 1:E:22:ARG:HG2 | 1:E:23:GLU:N | 2.22 | 0.55 |
| 1:G:114:GLN:HB3 | 1:G:115:PRO:CD | 2.36 | 0.55 |
| 1:I:178:SER:O | 1:I:179:GLU:C | 2.42 | 0.55 |
| 1:K:166:MET:HA | 1:K:166:MET:HE2 | 1.87 | 0.55 |
| 1:K:227:SER:HB2 | 1:K:233:LYS:HA | 1.87 | 0.55 |
| 1:A:199:ASN:OD1 | 1:A:199:ASN:N | 2.38 | 0.55 |
| 1:A:20:ILE:CD1 | 1:A:116:LYS:HB2 | 2.34 | 0.55 |
| 1:G:9:SER:C | 1:G:11:ASN:H | 2.08 | 0.55 |
| 1:K:175:ARG:CZ | 2:L:168:PRO:HD2 | 2.36 | 0.55 |
| 1:A:48:LEU:CD2 | 1:A:235:ASP:HB3 | 2.35 | 0.55 |
| 1:C:154:LEU:O | 1:C:155:GLU:C | 2.44 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:180:GLN:O | 1:C:184:ILE:HD13 | 2.06 | 0.55 |
| 1:C:194:ILE:CG2 | 1:C:204:ALA:O | 2.53 | 0.55 |
| 1:G:30:VAL:CG2 | 1:G:31:GLN:N | 2.69 | 0.55 |
| 1:A:22:ARG:O | 1:A:25:ALA:HB3 | 2.06 | 0.55 |
| 1:C:161:THR:HG22 | 1:C:163:HIS:HE1 | 1.72 | 0.55 |
| 1:E:170:HIS:HE1 | 1:E:260:GLN:O | 1.89 | 0.55 |
| 1:E:96:SER:O | 1:E:99:LEU:HB2 | 2.05 | 0.55 |
| 1:I:234:PHE:CD2 | 1:I:240:LEU:HA | 2.41 | 0.55 |
| 1:I:58:GLY:O | 1:I:60:LYS:N | 2.40 | 0.55 |
| 1:A:17:PHE:O | 1:A:18:GLY:O | 2.24 | 0.55 |
| 1:C:206:CYS:HA | 1:C:214:LEU:O | 2.07 | 0.55 |
| 1:G:161:THR:HB | 1:G:164:GLU:HG3 | 1.89 | 0.55 |
| 1:G:240:LEU:CD2 | 1:G:244:TYR:HD2 | 2.18 | 0.55 |
| 1:I:136:TRP:HB3 | 1:I:138:LEU:CD2 | 2.36 | 0.55 |
| 1:I:163:HIS:HA | 1:I:166:MET:HG3 | 1.89 | 0.55 |
| 1:I:36:ASP:OD1 | 1:I:57:HIS:HA | 2.06 | 0.55 |
| 1:A:168:TRP:HE3 | 1:A:194:ILE:HG13 | 1.72 | 0.55 |
| 1:A:253:ARG:CG | 1:A:254:VAL:N | 2.69 | 0.55 |
| 1:G:15:PHE:N | 1:G:15:PHE:CD1 | 2.75 | 0.55 |
| 1:G:17:PHE:O | 1:G:18:GLY:O | 2.25 | 0.55 |
| 2:J:179:ASP:N | 2:J:179:ASP:OD1 | 2.40 | 0.55 |
| 1:K:237:LEU:O | 1:K:238:TRP:C | 2.43 | 0.55 |
| 1:C:173:ILE:HG21 | 1:C:177:GLU:HG2 | 1.88 | 0.55 |
| 1:C:50:GLY:C | 1:C:51:PHE:HD1 | 2.08 | 0.55 |
| 1:I:128:ILE:HG22 | 1:I:158:ILE:CG1 | 2.18 | 0.55 |
| 1:K:205:LEU:HB3 | 1:K:216:TYR:HB2 | 1.89 | 0.55 |
| 1:K:30:VAL:HG12 | 1:K:34:MET:SD | 2.46 | 0.55 |
| 1:C:228:ILE:HG22 | 1:C:229:PRO:CD | 2.37 | 0.55 |
| 1:E:20:ILE:HD12 | 1:E:116:LYS:HB2 | 1.87 | 0.55 |
| 1:E:229:PRO:O | 1:E:230:GLU:HB2 | 2.06 | 0.55 |
| 1:E:232:LYS:HZ1 | 2:F:181:PTR:HE1 | 1.72 | 0.55 |
| 1:G:109:ARG:CB | 1:G:109:ARG:NH1 | 2.69 | 0.55 |
| 1:G:168:TRP:CZ3 | 1:G:194:ILE:HD11 | 2.42 | 0.55 |
| 1:G:30:VAL:HG22 | 1:G:31:GLN:N | 2.22 | 0.55 |
| 1:K:234:PHE:HB3 | 1:K:239:GLN:CD | 2.27 | 0.55 |
| 1:K:53:LEU:HD22 | 1:K:54:SER:N | 2.21 | 0.55 |
| 1:K:88:LEU:HD12 | 1:K:88:LEU:O | 2.06 | 0.55 |
| 1:A:148:ILE:CG1 | 1:A:149:SER:N | 2.69 | 0.55 |
| 1:A:173:ILE:CG2 | 1:A:177:GLU:HB3 | 2.37 | 0.55 |
| 1:G:170:HIS:CE1 | 1:G:193:LEU:HD12 | 2.40 | 0.55 |
| 1:G:46:ASN:C | 1:G:47:TYR:HD1 | 2.10 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:20:ILE:HG23 | 1:K:24:GLU:HB3 | 1.88 | 0.55 |
| 1:C:175:ARG:CZ | 1:C:215:HIS:CD2 | 2.90 | 0.55 |
| 1:E:75:ALA:CB | 1:E:81:THR:HA | 2.27 | 0.55 |
| 1:A:234:PHE:CE2 | 1:A:240:LEU:HA | 2.43 | 0.54 |
| 1:I:30:VAL:CG2 | 1:I:31:GLN:H | 2.19 | 0.54 |
| 2:B:173:ILE:HG22 | 2:B:174:ARG:N | 2.18 | 0.54 |
| 1:C:191:LYS:HA | 1:C:257:VAL:O | 2.07 | 0.54 |
| 1:I:151:LYS:CB | 1:I:152:PRO:CD | 2.85 | 0.54 |
| 1:K:30:VAL:C | 1:K:32:GLY:H | 2.11 | 0.54 |
| 1:A:246:TYR:CD1 | 1:A:246:TYR:C | 2.80 | 0.54 |
| 1:C:210:GLU:CA | 1:C:210:GLU:OE1 | 2.56 | 0.54 |
| 1:G:41:LEU:HD23 | 1:G:52:ALA:O | 2.07 | 0.54 |
| 1:K:207:LEU:CD2 | 1:K:214:LEU:HB2 | 2.37 | 0.54 |
| 1:K:228:ILE:HG21 | 2:L:173:ILE:HD11 | 1.87 | 0.54 |
| 1:A:145:GLN:HA | 1:A:148:ILE:HD12 | 1.88 | 0.54 |
| 1:C:129:ARG:HG3 | 1:C:129:ARG:HH11 | 1.72 | 0.54 |
| 1:C:202:SER:C | 1:C:203:TYR:CD1 | 2.64 | 0.54 |
| 1:I:161:THR:HA | 1:I:163:HIS:CE1 | 2.43 | 0.54 |
| 1:I:164:GLU:HA | 1:I:169:PHE:CE2 | 2.42 | 0.54 |
| 1:K:30:VAL:CG2 | 1:K:31:GLN:N | 2.69 | 0.54 |
| 1:A:150:GLN:C | 1:A:154:LEU:HD23 | 2.27 | 0.54 |
| 1:A:193:LEU:HG | 1:A:194:ILE:N | 2.21 | 0.54 |
| 1:A:216:TYR:CE1 | 2:B:171:GLU:HB3 | 2.42 | 0.54 |
| 1:C:244:TYR:CG | 1:C:251:LEU:HD11 | 2.42 | 0.54 |
| 1:E:240:LEU:C | 1:E:240:LEU:CD2 | 2.76 | 0.54 |
| 1:G:180:GLN:O | 1:G:182:VAL:N | 2.40 | 0.54 |
| 1:G:262:ILE:CG2 | 1:I:33:GLY:HA2 | 2.37 | 0.54 |
| 1:G:87:ASP:O | 1:G:88:LEU:C | 2.45 | 0.54 |
| 1:I:71:ASN:HB2 | 1:I:73:THR:CG2 | 2.34 | 0.54 |
| 1:K:187:LYS:CD | 1:K:187:LYS:H | 2.19 | 0.54 |
| 1:A:18:GLY:HA3 | 1:A:116:LYS:O | 2.08 | 0.54 |
| 1:C:140:GLY:C | 1:C:142:ALA:H | 2.08 | 0.54 |
| 1:E:99:LEU:CD1 | 1:E:103:LEU:CD2 | 2.85 | 0.54 |
| 1:G:16:PHE:HD1 | 1:G:41:LEU:O | 1.89 | 0.54 |
| 1:G:70:LEU:N | 1:G:70:LEU:HD12 | 2.08 | 0.54 |
| 1:K:93:SER:O | 1:K:102:LEU:HD13 | 2.08 | 0.54 |
| 1:A:243:HIS:O | 1:A:246:TYR:N | 2.39 | 0.54 |
| 1:C:96:SER:O | 1:C:99:LEU:HB2 | 2.07 | 0.54 |
| 1:C:180:GLN:HE22 | 1:E:59:ARG:NH2 | 2.05 | 0.54 |
| 1:G:108:ASN:O | 1:G:110:PRO:HD3 | 2.08 | 0.54 |
| 1:G:253:ARG:CG | 1:G:253:ARG:HH11 | 2.21 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:68:ARG:HH11 | 1:G:72:GLY:HA2 | 1.73 | 0.54 |
| 1:I:230:GLU:HB2 | 2:J:173:ILE:HD12 | 1.89 | 0.54 |
| 2:B:174:ARG:HH11 | 2:B:174:ARG:HG2 | 1.73 | 0.54 |
| 1:C:193:LEU:HD23 | 1:C:206:CYS:HB2 | 1.90 | 0.54 |
| 1:G:187:LYS:H | 1:G:187:LYS:CE | 2.19 | 0.54 |
| 1:I:237:LEU:C | 1:I:239:GLN:N | 2.59 | 0.54 |
| 1:I:39:TYR:HA | 1:I:54:SER:O | 2.07 | 0.54 |
| 2:J:185:ASN:HD22 | 2:J:185:ASN:C | 2.11 | 0.54 |
| 1:K:18:GLY:HA3 | 1:K:116:LYS:O | 2.08 | 0.54 |
| 1:C:141:GLN:HE21 | 1:C:141:GLN:H | 1.55 | 0.54 |
| 1:A:209:HIS:CE1 | 1:A:253:ARG:HH12 | 2.26 | 0.54 |
| 2:B:184:LEU:O | 2:B:185:ASN:CB | 2.56 | 0.54 |
| 1:C:138:LEU:HB2 | 1:C:142:ALA:HB3 | 1.90 | 0.54 |
| 1:C:147:ILE:O | 1:C:151:LYS:N | 2.33 | 0.54 |
| 1:E:181:ILE:HG13 | 1:E:181:ILE:O | 2.08 | 0.54 |
| 1:E:19:ASN:HA | 1:E:43:GLN:HG2 | 1.89 | 0.54 |
| 2:H:171:GLU:CD | 2:H:172:PRO:HD2 | 2.28 | 0.54 |
| 1:A:172:LYS:HE2 | 1:A:172:LYS:CA | 2.37 | 0.53 |
| 1:G:57:HIS:C | 1:G:57:HIS:CD2 | 2.81 | 0.53 |
| 1:I:22:ARG:NH1 | 2:J:181:PTR:O1P | 2.41 | 0.53 |
| 1:K:17:PHE:HD2 | 1:K:40:LEU:HD13 | 1.74 | 0.53 |
| 1:C:113:VAL:HG12 | 1:C:114:GLN:H | 1.73 | 0.53 |
| 1:G:228:ILE:CG2 | 1:G:229:PRO:HD2 | 2.39 | 0.53 |
| 1:K:99:LEU:O | 1:K:101:CYS:N | 2.41 | 0.53 |
| 1:C:151:LYS:N | 1:C:152:PRO:HD2 | 2.22 | 0.53 |
| 1:G:157:LEU:O | 1:G:160:THR:OG1 | 2.22 | 0.53 |
| 1:I:144:GLU:HA | 1:I:147:ILE:HD11 | 1.90 | 0.53 |
| 1:K:176:GLU:C | 1:K:178:SER:N | 2.60 | 0.53 |
| 1:K:237:LEU:O | 1:K:240:LEU:N | 2.42 | 0.53 |
| 1:K:58:GLY:O | 1:K:59:ARG:HG3 | 2.07 | 0.53 |
| 1:C:245:SER:CB | 1:C:255:LEU:HB2 | 2.38 | 0.53 |
| 1:G:237:LEU:O | 1:G:238:TRP:C | 2.47 | 0.53 |
| 1:I:193:LEU:CD2 | 1:I:206:CYS:SG | 2.97 | 0.53 |
| 1:I:209:HIS:HB3 | 1:I:214:LEU:HD12 | 1.90 | 0.53 |
| 1:I:23:GLU:CD | 1:I:23:GLU:H | 2.12 | 0.53 |
| 1:I:244:TYR:O | 1:I:254:VAL:HG23 | 2.08 | 0.53 |
| 1:C:21:THR:CG2 | 1:C:24:GLU:OE1 | 2.56 | 0.53 |
| 1:G:39:TYR:HB2 | 1:G:55:VAL:HG12 | 1.91 | 0.53 |
| 2:J:175:LYS:CD | 2:J:175:LYS:N | 2.72 | 0.53 |
| 1:K:22:ARG:HD2 | 2:L:179:ASP:OD2 | 2.09 | 0.53 |
| 1:K:41:LEU:HD22 | 1:K:42:ARG:H | 1.72 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:98:GLY:HA2 | 2:L:185:ASN:C | 2.28 | 0.53 |
| 1:E:176:GLU:O | 1:E:177:GLU:C | 2.47 | 0.53 |
| 1:E:237:LEU:C | 1:E:239:GLN:N | 2.62 | 0.53 |
| 1:G:15:PHE:CE2 | 1:G:39:TYR:HE1 | 2.27 | 0.53 |
| 1:G:182:VAL:CG2 | 1:G:259:CYS:SG | 2.96 | 0.53 |
| 1:G:184:ILE:N | 1:G:184:ILE:CD1 | 2.69 | 0.53 |
| 1:G:244:TYR:CG | 1:G:251:LEU:HD11 | 2.44 | 0.53 |
| 1:G:197:ARG:NH1 | 2:H:170:PTR:O2P | 2.35 | 0.53 |
| 1:I:176:GLU:C | 1:I:178:SER:H | 2.12 | 0.53 |
| 1:A:208:LEU:HD11 | 1:A:211:GLY:CA | 2.38 | 0.53 |
| 1:G:240:LEU:HD21 | 1:G:244:TYR:CD2 | 2.44 | 0.53 |
| 1:I:38:LEU:CD2 | 1:I:39:TYR:H | 2.22 | 0.53 |
| 1:A:182:VAL:CG2 | 1:A:259:CYS:HB2 | 2.38 | 0.53 |
| 1:A:28:TYR:O | 1:A:32:GLY:N | 2.42 | 0.53 |
| 1:C:172:LYS:HD2 | 1:C:198:ASP:HA | 1.89 | 0.53 |
| 1:G:17:PHE:CD2 | 1:G:40:LEU:HD13 | 2.44 | 0.53 |
| 1:I:17:PHE:HD1 | 1:I:109:ARG:HD3 | 1.73 | 0.53 |
| 1:A:220:LYS:HG3 | 1:A:224:GLY:HA2 | 1.90 | 0.53 |
| 1:E:36:ASP:HA | 1:E:56:ALA:O | 2.08 | 0.53 |
| 1:G:30:VAL:C | 1:G:32:GLY:H | 2.12 | 0.53 |
| 1:I:120:PHE:N | 1:I:120:PHE:CD1 | 2.77 | 0.53 |
| 1:I:133:LYS:O | 1:I:137:ASN:HA | 2.09 | 0.53 |
| 1:K:240:LEU:HD23 | 1:K:241:VAL:CA | 2.38 | 0.53 |
| 1:I:84:SER:HB2 | 1:I:85:PRO:HD2 | 1.91 | 0.53 |
| 1:K:193:LEU:HD23 | 1:K:193:LEU:C | 2.29 | 0.53 |
| 2:D:175:LYS:HA | 2:D:178:ARG:HH11 | 1.73 | 0.52 |
| 1:E:43:GLN:HG3 | 1:E:43:GLN:O | 2.05 | 0.52 |
| 1:I:19:ASN:O | 1:I:116:LYS:HB3 | 2.09 | 0.52 |
| 1:I:20:ILE:CG2 | 1:I:21:THR:N | 2.71 | 0.52 |
| 1:I:48:LEU:CD2 | 1:I:235:ASP:OD2 | 2.55 | 0.52 |
| 1:A:129:ARG:O | 1:A:129:ARG:HG3 | 2.08 | 0.52 |
| 1:C:173:ILE:CG2 | 1:C:177:GLU:HG2 | 2.38 | 0.52 |
| 1:K:230:GLU:HA | 1:K:230:GLU:OE1 | 2.08 | 0.52 |
| 1:A:76:ILE:HG22 | 1:A:77:ALA:N | 2.23 | 0.52 |
| 1:I:174:SER:OG | 1:I:177:GLU:HB2 | 2.09 | 0.52 |
| 1:I:175:ARG:HH11 | 2:J:168:PRO:HD2 | 1.74 | 0.52 |
| 1:K:117:THR:O | 1:K:117:THR:HG22 | 2.10 | 0.52 |
| 1:K:12:HIS:N | 1:K:12:HIS:ND1 | 2.57 | 0.52 |
| 1:A:202:SER:OG | 1:A:217:ARG:NH1 | 2.41 | 0.52 |
| 1:A:20:ILE:HG22 | 1:A:21:THR:O | 2.10 | 0.52 |
| 1:C:158:ILE:HD12 | 1:C:158:ILE:N | 2.24 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:144:GLU:HB2 | 1:I:145:GLN:HE21 | 1.72 | 0.52 |
| 1:A:184:ILE:H | 1:A:184:ILE:HD13 | 1.71 | 0.52 |
| 1:A:40:LEU:HD12 | 1:A:41:LEU:N | 2.24 | 0.52 |
| 1:A:88:LEU:C | 1:A:88:LEU:HD12 | 2.30 | 0.52 |
| 1:C:197:ARG:NH1 | 2:D:170:PTR:OH | 2.43 | 0.52 |
| 1:C:48:LEU:N | 1:C:235:ASP:OD2 | 2.34 | 0.52 |
| 1:C:58:GLY:C | 1:C:60:LYS:H | 2.12 | 0.52 |
| 1:G:17:PHE:O | 1:G:20:ILE:HD13 | 2.09 | 0.52 |
| 1:G:253:ARG:HB3 | 1:G:253:ARG:HH11 | 1.75 | 0.52 |
| 1:I:150:GLN:HB3 | 1:I:154:LEU:CD1 | 2.26 | 0.52 |
| 1:I:238:TRP:CD1 | 1:I:239:GLN:HG3 | 2.45 | 0.52 |
| 1:I:209:HIS:CE1 | 1:I:253:ARG:HH22 | 2.28 | 0.52 |
| 1:A:144:GLU:O | 1:A:147:ILE:HG13 | 2.09 | 0.52 |
| 1:A:176:GLU:CD | 1:A:176:GLU:N | 2.63 | 0.52 |
| 1:A:91:TYR:OH | 1:A:97:ASP:OD2 | 2.25 | 0.52 |
| 1:C:244:TYR:HE1 | 1:C:249:ASP:HB3 | 1.75 | 0.52 |
| 1:G:30:VAL:C | 1:G:32:GLY:N | 2.63 | 0.52 |
| 1:I:38:LEU:HD22 | 1:I:39:TYR:H | 1.75 | 0.52 |
| 1:A:238:TRP:HD1 | 1:A:239:GLN:H | 1.57 | 0.52 |
| 1:A:38:LEU:HD21 | 1:A:107:PHE:HB2 | 1.91 | 0.52 |
| 1:E:170:HIS:O | 1:E:171:GLY:O | 2.26 | 0.52 |
| 1:E:17:PHE:O | 1:E:18:GLY:O | 2.28 | 0.52 |
| 1:G:237:LEU:O | 1:G:240:LEU:N | 2.41 | 0.52 |
| 1:G:197:ARG:HH12 | 2:H:170:PTR:P | 2.32 | 0.52 |
| 1:I:251:LEU:HD23 | 1:I:251:LEU:N | 2.24 | 0.52 |
| 1:K:168:TRP:O | 1:K:193:LEU:HA | 2.09 | 0.52 |
| 1:K:216:TYR:CD1 | 2:L:171:GLU:HB3 | 2.44 | 0.52 |
| 1:K:228:ILE:HG23 | 1:K:229:PRO:HD2 | 1.92 | 0.52 |
| 1:K:80:ARG:HG2 | 1:K:81:THR:N | 2.25 | 0.52 |
| 1:K:96:SER:OG | 1:K:97:ASP:N | 2.43 | 0.52 |
| 1:A:180:GLN:O | 1:A:181:ILE:C | 2.48 | 0.52 |
| 1:C:17:PHE:O | 1:C:18:GLY:C | 2.48 | 0.52 |
| 1:C:20:ILE:HG23 | 1:C:21:THR:N | 2.25 | 0.52 |
| 1:E:12:HIS:ND1 | 1:E:13:LEU:HD23 | 2.25 | 0.52 |
| 1:G:244:TYR:CD1 | 1:G:251:LEU:HD11 | 2.45 | 0.52 |
| 1:I:170:HIS:O | 1:I:173:ILE:HD12 | 2.09 | 0.52 |
| 1:I:209:HIS:O | 1:I:212:LYS:HB3 | 2.09 | 0.52 |
| 1:K:107:PHE:CD1 | 1:K:107:PHE:C | 2.82 | 0.52 |
| 1:K:180:GLN:O | 1:K:183:LEU:N | 2.42 | 0.52 |
| 1:A:111:GLN:CA | 1:A:111:GLN:HE21 | 2.23 | 0.52 |
| 1:C:128:ILE:HG13 | 1:C:129:ARG:H | 1.75 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:170:HIS:O | 1:C:173:ILE:HD11 | 2.08 | 0.52 |
| 1:C:256:THR:OG1 | 1:C:257:VAL:N | 2.42 | 0.52 |
| 1:E:154:LEU:CD2 | 1:E:154:LEU:N | 2.69 | 0.52 |
| 1:K:245:SER:CB | 1:K:255:LEU:HB2 | 2.40 | 0.52 |
| 1:A:39:TYR:HB2 | 1:A:55:VAL:HG12 | 1.90 | 0.52 |
| 1:C:238:TRP:CD1 | 1:C:239:GLN:CG | 2.91 | 0.52 |
| 1:C:30:VAL:C | 1:C:32:GLY:N | 2.63 | 0.52 |
| 1:G:17:PHE:HE1 | 1:G:109:ARG:HA | 1.72 | 0.52 |
| 1:G:217:ARG:NH2 | 1:G:219:ASP:OD2 | 2.43 | 0.52 |
| 1:I:176:GLU:O | 1:I:178:SER:N | 2.43 | 0.52 |
| 2:L:174:ARG:CG | 2:L:174:ARG:HH11 | 2.02 | 0.52 |
| 1:A:129:ARG:HH11 | 1:A:129:ARG:HG2 | 1.71 | 0.51 |
| 1:C:120:PHE:HE2 | 1:C:242:GLU:HG3 | 1.75 | 0.51 |
| 1:C:151:LYS:HG2 | 1:C:152:PRO:CD | 2.39 | 0.51 |
| 1:C:206:CYS:HG | 1:C:215:HIS:CE1 | 2.23 | 0.51 |
| 1:E:217:ARG:HH11 | 1:E:217:ARG:HG3 | 1.75 | 0.51 |
| 1:E:67:GLU:OE2 | 1:E:77:ALA:HB2 | 2.09 | 0.51 |
| 1:I:234:PHE:CD1 | 1:I:234:PHE:N | 2.76 | 0.51 |
| 1:K:216:TYR:CE2 | 1:K:251:LEU:HD22 | 2.45 | 0.51 |
| 1:A:178:SER:O | 1:A:179:GLU:C | 2.47 | 0.51 |
| 1:C:32:GLY:CA | 1:C:107:PHE:HE2 | 2.24 | 0.51 |
| 1:E:172:LYS:C | 1:E:173:ILE:HG13 | 2.30 | 0.51 |
| 1:E:199:ASN:ND2 | 1:E:199:ASN:N | 2.58 | 0.51 |
| 1:E:52:ALA:HA | 1:E:64:TYR:O | 2.10 | 0.51 |
| 1:K:35:SER:O | 1:K:38:LEU:HB2 | 2.10 | 0.51 |
| 1:K:87:ASP:O | 1:K:88:LEU:C | 2.47 | 0.51 |
| 1:A:76:ILE:CG2 | 1:A:77:ALA:N | 2.73 | 0.51 |
| 1:C:199:ASN:C | 1:C:201:GLY:H | 2.12 | 0.51 |
| 1:C:68:ARG:HB2 | 1:C:74:TYR:CE1 | 2.46 | 0.51 |
| 1:E:176:GLU:O | 1:E:178:SER:N | 2.43 | 0.51 |
| 1:E:178:SER:O | 1:E:179:GLU:C | 2.48 | 0.51 |
| 1:I:123:LEU:CD1 | 1:I:127:LEU:HD22 | 2.38 | 0.51 |
| 1:I:145:GLN:O | 1:I:148:ILE:HD13 | 2.10 | 0.51 |
| 1:I:23:GLU:O | 1:I:25:ALA:N | 2.43 | 0.51 |
| 1:K:184:ILE:N | 1:K:184:ILE:HD13 | 2.25 | 0.51 |
| 1:K:30:VAL:HG23 | 1:K:31:GLN:N | 2.24 | 0.51 |
| 1:A:17:PHE:CE1 | 1:A:109:ARG:HA | 2.46 | 0.51 |
| 1:C:197:ARG:CG | 1:C:197:ARG:NH1 | 2.60 | 0.51 |
| 1:C:225:LYS:NZ | 1:C:235:ASP:OD1 | 2.44 | 0.51 |
| 2:D:175:LYS:HA | 2:D:178:ARG:HD3 | 1.92 | 0.51 |
| 1:K:176:GLU:CD | 1:K:176:GLU:N | 2.64 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:21:THR:HG22 | 1:A:24:GLU:CD | 2.31 | 0.51 |
| 1:C:153:GLN:HE21 | 1:C:154:LEU:N | 2.08 | 0.51 |
| 1:C:172:LYS:CE | 1:C:198:ASP:OD1 | 2.59 | 0.51 |
| 1:I:189:ASN:HD21 | 1:I:210:GLU:H | 1.58 | 0.51 |
| 1:I:58:GLY:C | 1:I:60:LYS:H | 2.13 | 0.51 |
| 1:K:21:THR:HG22 | 1:K:24:GLU:OE1 | 2.10 | 0.51 |
| 1:K:47:TYR:CE1 | 1:K:225:LYS:HE3 | 2.45 | 0.51 |
| 1:C:158:ILE:H | 1:C:158:ILE:CD1 | 2.22 | 0.51 |
| 1:E:18:GLY:O | 1:E:43:GLN:HB3 | 2.11 | 0.51 |
| 1:I:124:LYS:O | 1:I:126:ASN:N | 2.44 | 0.51 |
| 1:I:174:SER:CB | 1:I:177:GLU:HB2 | 2.41 | 0.51 |
| 1:I:231:GLY:O | 1:I:232:LYS:O | 2.28 | 0.51 |
| 1:I:31:GLN:HG3 | 1:I:31:GLN:O | 2.10 | 0.51 |
| 1:C:32:GLY:HA3 | 1:C:107:PHE:HE2 | 1.76 | 0.51 |
| 1:C:87:ASP:O | 1:C:90:HIS:HB2 | 2.10 | 0.51 |
| 1:E:165:LYS:HE2 | 1:E:166:MET:HE2 | 1.92 | 0.51 |
| 1:E:189:ASN:HD21 | 1:E:253:ARG:NH2 | 2.09 | 0.51 |
| 1:G:86:ALA:O | 1:G:89:CYS:HB2 | 2.11 | 0.51 |
| 1:I:64:TYR:CE2 | 1:I:99:LEU:HD22 | 2.46 | 0.51 |
| 1:K:189:ASN:HA | 1:K:208:LEU:HD23 | 1.93 | 0.51 |
| 1:E:260:GLN:OE1 | 1:E:260:GLN:HA | 2.09 | 0.51 |
| 1:I:17:PHE:O | 1:I:18:GLY:C | 2.49 | 0.51 |
| 1:I:66:ILE:O | 1:I:66:ILE:HG22 | 2.11 | 0.51 |
| 1:E:187:LYS:C | 1:E:187:LYS:HD2 | 2.32 | 0.51 |
| 1:E:168:TRP:HB3 | 1:E:258:PRO:HB3 | 1.93 | 0.51 |
| 1:I:17:PHE:CE2 | 1:I:40:LEU:HD22 | 2.46 | 0.51 |
| 1:I:30:VAL:C | 1:I:32:GLY:H | 2.13 | 0.51 |
| 1:I:71:ASN:OD1 | 1:I:71:ASN:N | 2.43 | 0.51 |
| 1:K:181:ILE:O | 1:K:181:ILE:HD13 | 2.10 | 0.51 |
| 1:K:47:TYR:HA | 1:K:235:ASP:OD2 | 2.11 | 0.51 |
| 1:K:27:ASP:O | 1:K:30:VAL:HG22 | 2.11 | 0.51 |
| 1:A:30:VAL:CG2 | 1:A:31:GLN:N | 2.73 | 0.50 |
| 1:A:76:ILE:HG22 | 1:A:77:ALA:O | 2.11 | 0.50 |
| 1:I:184:ILE:N | 1:I:184:ILE:CD1 | 2.73 | 0.50 |
| 1:I:192:PHE:HA | 1:I:206:CYS:O | 2.10 | 0.50 |
| 1:I:241:VAL:O | 1:I:243:HIS:N | 2.44 | 0.50 |
| 1:A:145:GLN:O | 1:A:146:ALA:C | 2.50 | 0.50 |
| 1:A:197:ARG:C | 1:A:199:ASN:N | 2.64 | 0.50 |
| 1:C:217:ARG:O | 1:C:228:ILE:HG23 | 2.11 | 0.50 |
| 1:C:190:GLY:C | 1:C:256:THR:HG1 | 2.15 | 0.50 |
| 1:G:53:LEU:HD13 | 1:G:55:VAL:HG13 | 1.92 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:H:185:ASN:ND2 | 2:H:185:ASN:O | 2.44 | 0.50 |
| 1:I:131:TYR:CD1 | 1:I:132:VAL:N | 2.80 | 0.50 |
| 1:K:210:GLU:HA | 1:K:210:GLU:OE1 | 2.11 | 0.50 |
| 1:A:120:PHE:HA | 1:A:123:LEU:CG | 2.40 | 0.50 |
| 1:A:157:LEU:HB3 | 1:A:158:ILE:CD1 | 2.40 | 0.50 |
| 1:A:176:GLU:O | 1:A:179:GLU:N | 2.45 | 0.50 |
| 1:A:187:LYS:N | 1:A:187:LYS:CE | 2.71 | 0.50 |
| 1:A:172:LYS:HD2 | 1:A:198:ASP:CA | 2.42 | 0.50 |
| 1:A:206:CYS:HA | 1:A:214:LEU:O | 2.11 | 0.50 |
| 1:C:110:PRO:CD | 1:C:113:VAL:HG21 | 2.34 | 0.50 |
| 2:D:175:LYS:CA | 2:D:178:ARG:HH11 | 2.23 | 0.50 |
| 1:E:194:ILE:HG22 | 1:E:204:ALA:O | 2.11 | 0.50 |
| 1:G:48:LEU:CD2 | 1:G:235:ASP:CB | 2.83 | 0.50 |
| 1:I:225:LYS:NZ | 1:I:235:ASP:OD1 | 2.40 | 0.50 |
| 1:I:226:LEU:HD23 | 1:I:237:LEU:HD23 | 1.92 | 0.50 |
| 2:J:184:LEU:O | 2:J:185:ASN:OD1 | 2.29 | 0.50 |
| 1:A:59:ARG:NE | 1:E:180:GLN:NE2 | 2.59 | 0.50 |
| 1:E:13:LEU:HD23 | 1:E:13:LEU:H | 1.77 | 0.50 |
| 1:I:126:ASN:CG | 1:I:127:LEU:N | 2.65 | 0.50 |
| 1:K:225:LYS:HZ3 | 1:K:235:ASP:CG | 2.14 | 0.50 |
| 1:C:120:PHE:C | 1:C:122:ASP:N | 2.64 | 0.50 |
| 1:C:220:LYS:CG | 1:C:224:GLY:HA2 | 2.41 | 0.50 |
| 1:E:17:PHE:CD2 | 1:E:40:LEU:HD13 | 2.47 | 0.50 |
| 1:K:28:TYR:HE1 | 1:K:110:PRO:HG2 | 1.77 | 0.50 |
| 1:K:69:GLU:N | 1:K:73:THR:O | 2.44 | 0.50 |
| 1:A:145:GLN:O | 1:A:147:ILE:N | 2.45 | 0.50 |
| 1:A:176:GLU:C | 1:A:178:SER:H | 2.13 | 0.50 |
| 1:C:120:PHE:HA | 1:C:123:LEU:HB3 | 1.93 | 0.50 |
| 1:C:175:ARG:O | 1:C:178:SER:OG | 2.28 | 0.50 |
| 1:C:175:ARG:O | 1:C:179:GLU:HG2 | 2.12 | 0.50 |
| 1:C:238:TRP:C | 1:C:238:TRP:CD1 | 2.84 | 0.50 |
| 1:E:161:THR:HA | 1:E:163:HIS:CE1 | 2.46 | 0.50 |
| 1:G:179:GLU:O | 1:G:183:LEU:CD2 | 2.59 | 0.50 |
| 1:G:75:ALA:HB2 | 1:G:81:THR:HA | 1.92 | 0.50 |
| 1:I:18:GLY:HA3 | 1:I:116:LYS:O | 2.11 | 0.50 |
| 1:I:237:LEU:O | 1:I:238:TRP:C | 2.49 | 0.50 |
| 1:I:39:TYR:CB | 1:I:55:VAL:CG1 | 2.79 | 0.50 |
| 1:K:226:LEU:HD11 | 1:K:235:ASP:O | 2.11 | 0.50 |
| 1:A:199:ASN:C | 1:A:201:GLY:N | 2.64 | 0.50 |
| 1:A:226:LEU:CD1 | 1:A:226:LEU:N | 2.74 | 0.50 |
| 1:A:243:HIS:O | 1:A:246:TYR:HB3 | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:247:LYS:HG2 | 1:E:249:ASP:H | 1.75 | 0.50 |
| 1:G:164:GLU:HA | 1:G:169:PHE:CD2 | 2.46 | 0.50 |
| 1:I:32:GLY:CA | 1:I:107:PHE:CE2 | 2.94 | 0.50 |
| 2:J:184:LEU:O | 2:J:185:ASN:CB | 2.59 | 0.50 |
| 1:A:111:GLN:HE21 | 1:A:111:GLN:C | 2.14 | 0.50 |
| 1:A:237:LEU:HA | 1:A:240:LEU:HB2 | 1.94 | 0.50 |
| 1:C:141:GLN:O | 1:C:145:GLN:HG2 | 2.12 | 0.50 |
| 1:E:176:GLU:CD | 1:E:176:GLU:H | 2.14 | 0.50 |
| 1:E:74:TYR:CD2 | 1:E:85:PRO:HD3 | 2.47 | 0.50 |
| 1:G:105:LYS:HG2 | 1:G:106:PRO:HD2 | 1.93 | 0.50 |
| 1:A:120:PHE:O | 1:A:122:ASP:N | 2.44 | 0.50 |
| 1:A:131:TYR:CE1 | 1:A:135:THR:OG1 | 2.65 | 0.50 |
| 1:C:111:GLN:HE21 | 1:C:111:GLN:CA | 2.24 | 0.50 |
| 1:C:240:LEU:HD21 | 1:C:244:TYR:HD2 | 1.76 | 0.50 |
| 1:G:82:HIS:N | 1:G:82:HIS:ND1 | 2.59 | 0.50 |
| 1:I:17:PHE:O | 1:I:20:ILE:HD13 | 2.12 | 0.50 |
| 1:I:69:GLU:N | 1:I:73:THR:O | 2.43 | 0.50 |
| 1:I:80:ARG:HH11 | 1:I:80:ARG:HB2 | 1.66 | 0.50 |
| 1:A:105:LYS:HG2 | 1:A:106:PRO:HD2 | 1.94 | 0.49 |
| 1:A:18:GLY:H | 1:A:115:PRO:HB3 | 1.77 | 0.49 |
| 1:A:216:TYR:CD2 | 1:A:251:LEU:HD22 | 2.46 | 0.49 |
| 1:C:132:VAL:HG12 | 1:C:133:LYS:N | 2.27 | 0.49 |
| 1:C:170:HIS:CE1 | 1:C:261:LYS:HA | 2.47 | 0.49 |
| 1:I:237:LEU:HA | 1:I:240:LEU:HB3 | 1.93 | 0.49 |
| 1:C:245:SER:HB3 | 1:C:255:LEU:HD12 | 1.93 | 0.49 |
| 1:E:174:SER:OG | 1:E:176:GLU:OE1 | 2.22 | 0.49 |
| 1:E:245:SER:OG | 1:E:255:LEU:HD12 | 2.12 | 0.49 |
| 1:E:70:LEU:N | 1:E:70:LEU:HD12 | 2.26 | 0.49 |
| 1:I:123:LEU:CD1 | 1:I:123:LEU:C | 2.80 | 0.49 |
| 1:A:16:PHE:HD1 | 1:A:41:LEU:O | 1.94 | 0.49 |
| 1:C:168:TRP:O | 1:C:194:ILE:N | 2.40 | 0.49 |
| 1:C:35:SER:O | 1:C:38:LEU:HB2 | 2.12 | 0.49 |
| 1:G:91:TYR:OH | 1:G:97:ASP:OD2 | 2.24 | 0.49 |
| 1:I:182:VAL:HG11 | 1:I:213:VAL:CG2 | 2.42 | 0.49 |
| 1:K:219:ASP:O | 1:K:226:LEU:HA | 2.13 | 0.49 |
| 1:A:91:TYR:C | 1:A:91:TYR:CD1 | 2.85 | 0.49 |
| 1:A:93:SER:O | 1:A:102:LEU:HD13 | 2.11 | 0.49 |
| 1:C:138:LEU:HD11 | 1:C:146:ALA:CB | 2.41 | 0.49 |
| 1:C:153:GLN:NE2 | 1:C:154:LEU:N | 2.60 | 0.49 |
| 1:E:170:HIS:O | 1:E:171:GLY:C | 2.50 | 0.49 |
| 1:E:175:ARG:O | 1:E:178:SER:OG | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:237:LEU:O | 1:G:239:GLN:N | 2.45 | 0.49 |
| 1:G:253:ARG:CB | 1:G:253:ARG:HH11 | 2.23 | 0.49 |
| 1:K:179:GLU:O | 1:K:182:VAL:HG12 | 2.12 | 0.49 |
| 1:K:194:ILE:HG23 | 1:K:205:LEU:HD23 | 1.93 | 0.49 |
| 1:C:123:LEU:HD11 | 1:C:127:LEU:HD22 | 1.93 | 0.49 |
| 1:C:30:VAL:C | 1:C:32:GLY:H | 2.16 | 0.49 |
| 1:E:168:TRP:CE3 | 1:E:194:ILE:HG13 | 2.47 | 0.49 |
| 1:E:243:HIS:CE1 | 1:E:249:ASP:OD2 | 2.62 | 0.49 |
| 1:G:17:PHE:HE1 | 1:G:109:ARG:CA | 2.26 | 0.49 |
| 1:G:109:ARG:CB | 1:G:109:ARG:CZ | 2.87 | 0.49 |
| 1:G:89:CYS:O | 1:G:103:LEU:HD12 | 2.12 | 0.49 |
| 1:I:126:ASN:C | 1:I:126:ASN:OD1 | 2.50 | 0.49 |
| 2:J:178:ARG:NH1 | 2:J:178:ARG:CG | 2.75 | 0.49 |
| 1:K:173:ILE:HG22 | 1:K:174:SER:O | 2.12 | 0.49 |
| 1:C:131:TYR:CD1 | 1:C:131:TYR:C | 2.86 | 0.49 |
| 1:E:18:GLY:HA3 | 1:E:116:LYS:O | 2.13 | 0.49 |
| 1:G:152:PRO:C | 1:G:155:GLU:OE1 | 2.51 | 0.49 |
| 1:G:168:TRP:O | 1:G:193:LEU:HA | 2.12 | 0.49 |
| 1:K:228:ILE:O | 1:K:229:PRO:C | 2.50 | 0.49 |
| 1:K:256:THR:OG1 | 1:K:257:VAL:N | 2.44 | 0.49 |
| 1:K:93:SER:O | 1:K:102:LEU:CD1 | 2.59 | 0.49 |
| 1:A:187:LYS:O | 1:A:208:LEU:CD2 | 2.61 | 0.49 |
| 1:C:138:LEU:CD2 | 1:C:138:LEU:H | 2.15 | 0.49 |
| 1:C:50:GLY:O | 1:C:51:PHE:CD1 | 2.65 | 0.49 |
| 1:E:39:TYR:CE1 | 1:E:103:LEU:HB3 | 2.48 | 0.49 |
| 1:G:39:TYR:CE2 | 1:G:103:LEU:HB3 | 2.48 | 0.49 |
| 1:I:17:PHE:HE2 | 1:I:40:LEU:HD22 | 1.78 | 0.49 |
| 1:I:82:HIS:N | 1:I:82:HIS:ND1 | 2.60 | 0.49 |
| 1:K:176:GLU:O | 1:K:178:SER:N | 2.45 | 0.49 |
| 1:K:203:TYR:CD1 | 1:K:203:TYR:N | 2.81 | 0.49 |
| 1:K:187:LYS:O | 1:K:208:LEU:CD2 | 2.61 | 0.49 |
| 1:A:17:PHE:O | 1:A:18:GLY:C | 2.50 | 0.49 |
| 1:A:199:ASN:O | 1:A:201:GLY:N | 2.43 | 0.49 |
| 1:A:243:HIS:HE1 | 1:A:249:ASP:OD2 | 1.96 | 0.49 |
| 1:C:128:ILE:CG1 | 1:C:129:ARG:N | 2.75 | 0.49 |
| 1:C:39:TYR:CZ | 1:C:106:PRO:HB3 | 2.48 | 0.49 |
| 1:C:71:ASN:N | 1:C:71:ASN:OD1 | 2.46 | 0.49 |
| 1:I:123:LEU:HD12 | 1:I:124:LYS:HA | 1.93 | 0.49 |
| 1:K:169:PHE:HD1 | 1:K:194:ILE:O | 1.96 | 0.49 |
| 1:K:207:LEU:HD21 | 1:K:214:LEU:CB | 2.41 | 0.49 |
| 1:K:236:THR:OG1 | 1:K:237:LEU:N | 2.44 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:69:GLU:HB2 | 1:K:73:THR:O | 2.13 | 0.49 |
| 1:A:202:SER:HG | 1:A:217:ARG:HH12 | 1.58 | 0.49 |
| 1:A:93:SER:O | 1:A:102:LEU:CD1 | 2.60 | 0.49 |
| 1:C:109:ARG:HH11 | 1:C:109:ARG:CG | 2.24 | 0.49 |
| 1:E:53:LEU:N | 1:E:64:TYR:O | 2.34 | 0.49 |
| 1:I:128:ILE:O | 1:I:129:ARG:C | 2.51 | 0.49 |
| 1:I:48:LEU:HD23 | 1:I:235:ASP:CG | 2.33 | 0.49 |
| 1:I:38:LEU:O | 1:I:55:VAL:HA | 2.12 | 0.49 |
| 1:K:22:ARG:HH11 | 1:K:22:ARG:HB2 | 1.76 | 0.49 |
| 1:E:16:PHE:HA | 1:E:41:LEU:O | 2.13 | 0.49 |
| 1:G:194:ILE:HG22 | 1:G:205:LEU:HA | 1.95 | 0.49 |
| 1:I:234:PHE:CE2 | 1:I:240:LEU:HA | 2.48 | 0.49 |
| 1:I:244:TYR:C | 1:I:246:TYR:H | 2.15 | 0.49 |
| 1:K:173:ILE:HG23 | 1:K:177:GLU:CB | 2.36 | 0.49 |
| 1:A:207:LEU:N | 1:A:207:LEU:HD23 | 2.28 | 0.48 |
| 1:A:55:VAL:HG23 | 1:A:55:VAL:O | 2.12 | 0.48 |
| 1:C:203:TYR:CE2 | 1:C:237:LEU:HD11 | 2.48 | 0.48 |
| 1:C:226:LEU:CD2 | 1:C:237:LEU:HG | 2.42 | 0.48 |
| 1:C:38:LEU:HD23 | 1:C:105:LYS:HB3 | 1.95 | 0.48 |
| 1:G:46:ASN:N | 1:G:46:ASN:OD1 | 2.46 | 0.48 |
| 1:I:136:TRP:CD1 | 1:I:136:TRP:N | 2.81 | 0.48 |
| 1:K:175:ARG:NH1 | 2:L:168:PRO:HD2 | 2.28 | 0.48 |
| 1:K:9:SER:C | 1:K:11:ASN:H | 2.17 | 0.48 |
| 1:C:239:GLN:O | 1:C:240:LEU:C | 2.51 | 0.48 |
| 1:E:10:ALA:HA | 1:E:12:HIS:HE1 | 1.78 | 0.48 |
| 1:E:154:LEU:HD22 | 1:E:154:LEU:N | 2.06 | 0.48 |
| 1:E:237:LEU:C | 1:E:239:GLN:H | 2.16 | 0.48 |
| 1:E:23:GLU:O | 1:E:25:ALA:N | 2.46 | 0.48 |
| 1:E:197:ARG:CZ | 2:F:170:PTR:OH | 2.61 | 0.48 |
| 1:G:39:TYR:CD2 | 1:G:103:LEU:HB3 | 2.48 | 0.48 |
| 1:I:147:ILE:O | 1:I:151:LYS:CB | 2.61 | 0.48 |
| 1:K:234:PHE:N | 1:K:234:PHE:CD1 | 2.80 | 0.48 |
| 1:K:46:ASN:N | 1:K:46:ASN:OD1 | 2.45 | 0.48 |
| 1:C:128:ILE:C | 1:C:128:ILE:HD12 | 2.34 | 0.48 |
| 1:C:126:ASN:O | 1:C:129:ARG:N | 2.47 | 0.48 |
| 1:C:199:ASN:ND2 | 1:C:199:ASN:N | 2.60 | 0.48 |
| 1:C:246:TYR:HD1 | 1:C:247:LYS:HB3 | 1.77 | 0.48 |
| 1:C:28:TYR:O | 1:C:32:GLY:N | 2.46 | 0.48 |
| 1:C:88:LEU:CD1 | 1:C:88:LEU:O | 2.59 | 0.48 |
| 1:E:178:SER:O | 1:E:181:ILE:HG22 | 2.13 | 0.48 |
| 1:E:180:GLN:O | 1:E:184:ILE:HD13 | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:141:GLN:HA | 1:I:144:GLU:HG3 | 1.95 | 0.48 |
| 1:C:141:GLN:HE21 | 1:C:141:GLN:N | 2.10 | 0.48 |
| 1:E:182:VAL:HA | 1:E:259:CYS:SG | 2.53 | 0.48 |
| 1:G:21:THR:HG23 | 1:G:24:GLU:HB2 | 1.95 | 0.48 |
| 1:I:105:LYS:HG2 | 1:I:106:PRO:HD2 | 1.95 | 0.48 |
| 1:I:120:PHE:HD1 | 1:I:121:GLU:N | 2.11 | 0.48 |
| 1:I:219:ASP:O | 1:I:226:LEU:HA | 2.13 | 0.48 |
| 1:I:24:GLU:O | 1:I:28:TYR:HD2 | 1.95 | 0.48 |
| 1:I:64:TYR:CE2 | 1:I:99:LEU:CD2 | 2.96 | 0.48 |
| 1:K:179:GLU:O | 1:K:180:GLN:O | 2.32 | 0.48 |
| 1:K:181:ILE:CG2 | 1:K:182:VAL:N | 2.76 | 0.48 |
| 1:A:13:LEU:H | 1:A:13:LEU:HD23 | 1.79 | 0.48 |
| 1:C:124:LYS:O | 1:C:128:ILE:HG23 | 2.13 | 0.48 |
| 1:C:151:LYS:CG | 1:C:152:PRO:HD3 | 2.42 | 0.48 |
| 1:C:205:LEU:O | 1:C:216:TYR:N | 2.39 | 0.48 |
| 2:D:171:GLU:OE1 | 2:D:171:GLU:HA | 2.13 | 0.48 |
| 1:G:228:ILE:HG22 | 1:G:229:PRO:HD2 | 1.95 | 0.48 |
| 1:K:47:TYR:CE1 | 1:K:225:LYS:CE | 2.95 | 0.48 |
| 1:A:191:LYS:O | 1:A:207:LEU:HA | 2.14 | 0.48 |
| 1:C:234:PHE:N | 1:C:234:PHE:CD1 | 2.82 | 0.48 |
| 1:E:51:PHE:HB2 | 1:E:66:ILE:HB | 1.96 | 0.48 |
| 1:G:14:PRO:O | 1:G:109:ARG:N | 2.36 | 0.48 |
| 1:I:93:SER:O | 1:I:102:LEU:HD12 | 2.13 | 0.48 |
| 1:I:128:ILE:C | 1:I:130:GLU:N | 2.61 | 0.48 |
| 1:I:138:LEU:HD13 | 1:I:142:ALA:HB1 | 1.94 | 0.48 |
| 1:K:181:ILE:HD12 | 1:K:181:ILE:O | 2.13 | 0.48 |
| 1:A:161:THR:HB | 1:A:164:GLU:HG3 | 1.95 | 0.48 |
| 2:B:171:GLU:HG3 | 2:B:172:PRO:HD2 | 1.94 | 0.48 |
| 1:C:193:LEU:CD2 | 1:C:206:CYS:HB2 | 2.43 | 0.48 |
| 1:E:64:TYR:CZ | 2:F:182:SER:HB2 | 2.48 | 0.48 |
| 1:G:180:GLN:CG | 1:G:181:ILE:N | 2.77 | 0.48 |
| 2:H:185:ASN:C | 2:H:185:ASN:ND2 | 2.67 | 0.48 |
| 1:I:51:PHE:CD1 | 1:I:51:PHE:N | 2.81 | 0.48 |
| 1:A:217:ARG:NH1 | 1:A:217:ARG:CG | 2.62 | 0.48 |
| 1:A:226:LEU:HD23 | 1:A:237:LEU:HD23 | 1.94 | 0.48 |
| 1:A:39:TYR:CB | 1:A:55:VAL:HG12 | 2.44 | 0.48 |
| 1:C:40:LEU:C | 1:C:40:LEU:HD12 | 2.34 | 0.48 |
| 1:G:38:LEU:HD23 | 1:G:105:LYS:O | 2.13 | 0.48 |
| 1:I:119:PRO:HD2 | 1:I:120:PHE:CE1 | 2.49 | 0.48 |
| 1:I:80:ARG:HB3 | 1:I:80:ARG:HH11 | 1.79 | 0.48 |
| 1:I:90:HIS:O | 1:I:93:SER:HB3 | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:169:PHE:CD1 | 1:K:194:ILE:O | 2.67 | 0.48 |
| 1:C:138:LEU:HG | 1:C:143:LEU:CA | 2.44 | 0.48 |
| 1:C:246:TYR:CE1 | 1:C:247:LYS:CE | 2.95 | 0.48 |
| 1:E:102:LEU:HB3 | 1:E:104:LYS:HE3 | 1.96 | 0.48 |
| 1:E:228:ILE:O | 1:E:229:PRO:C | 2.49 | 0.48 |
| 1:G:226:LEU:HD11 | 1:G:235:ASP:O | 2.14 | 0.48 |
| 1:I:12:HIS:ND1 | 1:I:12:HIS:N | 2.57 | 0.48 |
| 1:I:220:LYS:CG | 1:I:224:GLY:HA2 | 2.43 | 0.48 |
| 1:K:15:PHE:N | 1:K:15:PHE:CD1 | 2.81 | 0.48 |
| 1:K:21:THR:CG2 | 1:K:24:GLU:HB2 | 2.36 | 0.48 |
| 1:A:186:SER:HB3 | 1:A:188:THR:HG22 | 1.94 | 0.48 |
| 1:A:197:ARG:NH1 | 2:B:170:PTR:OH | 2.47 | 0.48 |
| 1:A:87:ASP:O | 1:A:89:CYS:N | 2.47 | 0.48 |
| 2:B:174:ARG:HG2 | 2:B:174:ARG:NH1 | 2.28 | 0.48 |
| 1:C:253:ARG:HG3 | 1:C:254:VAL:O | 2.14 | 0.48 |
| 1:E:178:SER:HA | 1:E:181:ILE:HG22 | 1.96 | 0.48 |
| 1:E:186:SER:OG | 1:E:188:THR:HG22 | 2.13 | 0.48 |
| 1:E:58:GLY:C | 1:E:60:LYS:N | 2.67 | 0.48 |
| 1:G:114:GLN:NE2 | 1:G:114:GLN:HA | 2.29 | 0.48 |
| 1:I:144:GLU:O | 1:I:148:ILE:CG2 | 2.61 | 0.48 |
| 1:I:175:ARG:O | 1:I:178:SER:OG | 2.32 | 0.48 |
| 1:K:187:LYS:O | 1:K:208:LEU:HD21 | 2.13 | 0.48 |
| 1:A:180:GLN:CD | 1:C:59:ARG:NE | 2.68 | 0.47 |
| 1:A:41:LEU:HD22 | 1:A:52:ALA:O | 2.14 | 0.47 |
| 1:C:151:LYS:CG | 1:C:152:PRO:CD | 2.92 | 0.47 |
| 1:C:175:ARG:CZ | 1:C:215:HIS:HD2 | 2.27 | 0.47 |
| 1:C:21:THR:O | 1:C:22:ARG:C | 2.49 | 0.47 |
| 1:C:253:ARG:HH11 | 1:C:253:ARG:CG | 2.27 | 0.47 |
| 1:C:245:SER:HB3 | 1:C:255:LEU:HB2 | 1.95 | 0.47 |
| 1:E:178:SER:HA | 1:E:181:ILE:CG2 | 2.44 | 0.47 |
| 1:E:20:ILE:HG22 | 1:E:42:ARG:HD3 | 1.96 | 0.47 |
| 1:G:180:GLN:O | 1:G:181:ILE:C | 2.52 | 0.47 |
| 2:H:175:LYS:N | 2:H:175:LYS:CD | 2.77 | 0.47 |
| 1:I:202:SER:C | 1:I:203:TYR:CD1 | 2.85 | 0.47 |
| 1:K:107:PHE:C | 1:K:107:PHE:HD1 | 2.17 | 0.47 |
| 1:K:196:ALA:HA | 1:K:203:TYR:HA | 1.95 | 0.47 |
| 1:K:198:ASP:O | 1:K:200:ASN:N | 2.47 | 0.47 |
| 1:K:41:LEU:HD22 | 1:K:42:ARG:N | 2.29 | 0.47 |
| 1:C:173:ILE:CG2 | 1:C:177:GLU:HB3 | 2.40 | 0.47 |
| 1:E:157:LEU:HB3 | 1:E:158:ILE:HD12 | 1.96 | 0.47 |
| 1:E:35:SER:O | 1:E:36:ASP:C | 2.52 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:80:ARG:CB | 1:G:80:ARG:NH1 | 2.76 | 0.47 |
| 1:I:130:GLU:O | 1:I:132:VAL:N | 2.47 | 0.47 |
| 1:I:254:VAL:CG2 | 1:I:255:LEU:N | 2.77 | 0.47 |
| 1:I:42:ARG:HG2 | 1:I:52:ALA:HB3 | 1.96 | 0.47 |
| 1:K:30:VAL:C | 1:K:32:GLY:N | 2.67 | 0.47 |
| 1:G:111:GLN:HE21 | 1:G:112:GLY:N | 2.13 | 0.47 |
| 1:G:173:ILE:HG22 | 1:G:174:SER:O | 2.14 | 0.47 |
| 1:G:176:GLU:C | 1:G:178:SER:N | 2.67 | 0.47 |
| 1:I:151:LYS:CB | 1:I:152:PRO:HD2 | 2.43 | 0.47 |
| 1:I:262:ILE:HG12 | 1:I:262:ILE:H | 1.39 | 0.47 |
| 1:A:17:PHE:HD1 | 1:A:109:ARG:HD3 | 1.77 | 0.47 |
| 1:G:93:SER:C | 1:G:102:LEU:CD1 | 2.83 | 0.47 |
| 1:G:160:THR:HA | 1:G:236:THR:HG22 | 1.96 | 0.47 |
| 1:G:19:ASN:O | 1:G:20:ILE:HD12 | 2.14 | 0.47 |
| 1:A:154:LEU:O | 1:A:158:ILE:HD13 | 2.13 | 0.47 |
| 1:C:216:TYR:CD1 | 2:D:171:GLU:HB3 | 2.47 | 0.47 |
| 1:E:173:ILE:HG23 | 1:E:177:GLU:HB3 | 1.96 | 0.47 |
| 1:E:26:GLU:O | 1:E:29:LEU:HB2 | 2.14 | 0.47 |
| 1:E:43:GLN:CG | 1:E:43:GLN:O | 2.61 | 0.47 |
| 1:G:14:PRO:HB2 | 1:G:108:ASN:ND2 | 2.26 | 0.47 |
| 1:G:202:SER:C | 1:G:203:TYR:CD1 | 2.88 | 0.47 |
| 1:G:22:ARG:CZ | 2:H:179:ASP:HB3 | 2.44 | 0.47 |
| 1:G:22:ARG:NE | 2:H:179:ASP:HB3 | 2.29 | 0.47 |
| 1:G:46:ASN:O | 1:G:234:PHE:HA | 2.13 | 0.47 |
| 1:I:174:SER:HB3 | 1:I:177:GLU:OE1 | 2.14 | 0.47 |
| 1:C:176:GLU:C | 1:C:178:SER:N | 2.67 | 0.47 |
| 1:C:205:LEU:CD2 | 1:C:206:CYS:N | 2.77 | 0.47 |
| 1:C:99:LEU:HD11 | 1:C:103:LEU:HD21 | 1.96 | 0.47 |
| 1:E:13:LEU:HD23 | 1:E:13:LEU:N | 2.28 | 0.47 |
| 1:E:17:PHE:HE1 | 1:E:109:ARG:CB | 2.28 | 0.47 |
| 1:E:236:THR:O | 1:E:239:GLN:HB2 | 2.14 | 0.47 |
| 1:I:151:LYS:HB3 | 1:I:152:PRO:CD | 2.44 | 0.47 |
| 1:A:170:HIS:O | 1:A:171:GLY:C | 2.53 | 0.47 |
| 1:A:226:LEU:HD12 | 1:A:226:LEU:N | 2.30 | 0.47 |
| 1:A:27:ASP:OD2 | 1:E:186:SER:HB3 | 2.14 | 0.47 |
| 2:F:173:ILE:CG2 | 2:F:174:ARG:H | 2.28 | 0.47 |
| 1:G:66:ILE:O | 1:G:66:ILE:HG22 | 2.13 | 0.47 |
| 2:H:178:ARG:CB | 2:H:178:ARG:HH11 | 2.28 | 0.47 |
| 2:H:184:LEU:O | 2:H:185:ASN:HB3 | 2.14 | 0.47 |
| 1:K:97:ASP:C | 1:K:99:LEU:H | 2.18 | 0.47 |
| 1:A:226:LEU:H | 1:A:226:LEU:CD1 | 2.28 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:244:TYR:C | 1:A:246:TYR:H | 2.17 | 0.47 |
| 2:F:171:GLU:HA | 2:F:172:PRO:HD3 | 1.80 | 0.47 |
| 1:G:237:LEU:C | 1:G:239:GLN:H | 2.16 | 0.47 |
| 1:K:237:LEU:HA | 1:K:240:LEU:HB3 | 1.96 | 0.47 |
| 1:K:247:LYS:HG2 | 1:K:249:ASP:N | 2.29 | 0.47 |
| 1:C:88:LEU:HD13 | 1:C:92:HIS:ND1 | 2.30 | 0.47 |
| 1:G:12:HIS:CE1 | 1:G:13:LEU:CD2 | 2.98 | 0.47 |
| 1:I:123:LEU:CD1 | 1:I:127:LEU:HB2 | 2.45 | 0.47 |
| 1:I:18:GLY:H | 1:I:115:PRO:CB | 2.23 | 0.47 |
| 1:K:19:ASN:O | 1:K:116:LYS:HB3 | 2.15 | 0.47 |
| 1:C:228:ILE:CG2 | 2:D:173:ILE:HD11 | 2.45 | 0.47 |
| 1:G:244:TYR:CB | 1:G:251:LEU:HD11 | 2.42 | 0.47 |
| 1:I:213:VAL:HG12 | 1:I:213:VAL:O | 2.15 | 0.47 |
| 1:K:18:GLY:H | 1:K:115:PRO:CB | 2.26 | 0.47 |
| 1:K:235:ASP:N | 1:K:239:GLN:OE1 | 2.43 | 0.47 |
| 1:A:10:ALA:O | 1:A:16:PHE:CD2 | 2.68 | 0.47 |
| 1:A:167:PRO:HB2 | 1:A:258:PRO:HB2 | 1.95 | 0.47 |
| 1:A:75:ALA:HB2 | 1:A:81:THR:HA | 1.97 | 0.47 |
| 1:C:197:ARG:HH11 | 1:C:197:ARG:CG | 1.94 | 0.47 |
| 1:E:176:GLU:C | 1:E:178:SER:N | 2.65 | 0.47 |
| 1:E:203:TYR:N | 1:E:203:TYR:CD1 | 2.82 | 0.47 |
| 1:E:21:THR:HG23 | 1:E:24:GLU:OE1 | 2.15 | 0.47 |
| 1:E:89:CYS:O | 1:E:93:SER:N | 2.48 | 0.47 |
| 1:I:181:ILE:O | 1:I:181:ILE:HG13 | 2.15 | 0.47 |
| 1:K:82:HIS:CD2 | 1:K:88:LEU:HA | 2.50 | 0.47 |
| 1:A:107:PHE:CD1 | 1:A:108:ASN:O | 2.68 | 0.46 |
| 1:C:41:LEU:HD22 | 1:C:42:ARG:N | 2.30 | 0.46 |
| 1:E:246:TYR:C | 1:E:246:TYR:CD1 | 2.89 | 0.46 |
| 1:I:16:PHE:HE1 | 1:I:43:GLN:N | 2.14 | 0.46 |
| 1:K:32:GLY:HA3 | 1:K:107:PHE:CE2 | 2.50 | 0.46 |
| 1:K:180:GLN:C | 1:K:184:ILE:HD11 | 2.35 | 0.46 |
| 1:C:38:LEU:CD2 | 1:C:105:LYS:O | 2.63 | 0.46 |
| 1:C:253:ARG:HH11 | 1:C:253:ARG:CB | 2.27 | 0.46 |
| 1:E:69:GLU:N | 1:E:73:THR:O | 2.46 | 0.46 |
| 1:G:16:PHE:HE1 | 1:G:43:GLN:N | 2.13 | 0.46 |
| 1:G:91:TYR:CD1 | 1:G:91:TYR:C | 2.89 | 0.46 |
| 1:K:166:MET:HA | 1:K:166:MET:CE | 2.45 | 0.46 |
| 1:A:124:LYS:C | 1:A:126:ASN:N | 2.67 | 0.46 |
| 1:A:55:VAL:CG2 | 1:A:55:VAL:O | 2.63 | 0.46 |
| 1:A:70:LEU:N | 1:A:70:LEU:CD1 | 2.57 | 0.46 |
| 1:A:22:ARG:HB2 | 2:B:181:PTR:O3P | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:D:175:LYS:HA | 2:D:178:ARG:CD | 2.45 | 0.46 |
| 2:D:185:ASN:C | 2:D:185:ASN:ND2 | 2.68 | 0.46 |
| 1:E:178:SER:O | 1:E:181:ILE:CG2 | 2.63 | 0.46 |
| 1:I:19:ASN:N | 1:I:116:LYS:O | 2.41 | 0.46 |
| 1:I:136:TRP:CZ3 | 1:I:146:ALA:HB1 | 2.50 | 0.46 |
| 1:A:174:SER:HG | 1:A:177:GLU:N | 2.12 | 0.46 |
| 1:A:191:LYS:HG2 | 1:A:259:CYS:HB2 | 1.97 | 0.46 |
| 1:C:89:CYS:O | 1:C:90:HIS:C | 2.54 | 0.46 |
| 1:E:111:GLN:C | 1:E:111:GLN:HE21 | 2.19 | 0.46 |
| 1:E:241:VAL:C | 1:E:243:HIS:N | 2.69 | 0.46 |
| 1:G:88:LEU:HD13 | 1:G:88:LEU:O | 2.15 | 0.46 |
| 1:I:150:GLN:O | 1:I:151:LYS:C | 2.54 | 0.46 |
| 1:A:172:LYS:HE2 | 1:A:172:LYS:C | 2.36 | 0.46 |
| 1:C:195:ARG:HH21 | 1:C:215:HIS:CE1 | 2.33 | 0.46 |
| 1:G:21:THR:HG23 | 1:G:24:GLU:HG3 | 1.97 | 0.46 |
| 1:G:237:LEU:H | 1:G:237:LEU:HD12 | 1.80 | 0.46 |
| 1:G:58:GLY:C | 1:G:59:ARG:CG | 2.80 | 0.46 |
| 1:I:88:LEU:CD1 | 1:I:88:LEU:C | 2.72 | 0.46 |
| 1:K:109:ARG:CG | 1:K:109:ARG:HH11 | 2.28 | 0.46 |
| 1:K:246:TYR:CD2 | 1:K:247:LYS:HB3 | 2.51 | 0.46 |
| 1:C:124:LYS:O | 1:C:125:GLU:C | 2.54 | 0.46 |
| 1:C:64:TYR:CE2 | 1:C:99:LEU:HD22 | 2.51 | 0.46 |
| 1:E:209:HIS:CE1 | 1:E:253:ARG:NH2 | 2.84 | 0.46 |
| 1:I:128:ILE:CG1 | 1:I:129:ARG:N | 2.78 | 0.46 |
| 1:I:136:TRP:HB3 | 1:I:138:LEU:HD21 | 1.98 | 0.46 |
| 1:I:237:LEU:O | 1:I:239:GLN:N | 2.49 | 0.46 |
| 1:I:58:GLY:C | 1:I:60:LYS:N | 2.69 | 0.46 |
| 1:A:154:LEU:O | 1:A:157:LEU:HB2 | 2.15 | 0.46 |
| 1:A:176:GLU:O | 1:A:177:GLU:C | 2.52 | 0.46 |
| 1:A:17:PHE:CB | 1:A:20:ILE:HD13 | 2.44 | 0.46 |
| 1:A:58:GLY:C | 1:A:60:LYS:H | 2.19 | 0.46 |
| 1:E:170:HIS:HB3 | 1:E:173:ILE:CD1 | 2.45 | 0.46 |
| 1:E:30:VAL:CG2 | 1:E:31:GLN:N | 2.79 | 0.46 |
| 1:G:107:PHE:CD1 | 1:G:108:ASN:O | 2.68 | 0.46 |
| 1:I:39:TYR:OH | 1:I:106:PRO:HB3 | 2.15 | 0.46 |
| 1:A:186:SER:CB | 1:A:188:THR:HG22 | 2.46 | 0.46 |
| 1:A:54:SER:OG | 1:A:63:HIS:ND1 | 2.49 | 0.46 |
| 2:B:171:GLU:HA | 2:B:172:PRO:HD3 | 1.79 | 0.46 |
| 1:C:39:TYR:CB | 1:C:55:VAL:CG1 | 2.92 | 0.46 |
| 1:G:170:HIS:O | 1:G:173:ILE:CD1 | 2.62 | 0.46 |
| 1:G:19:ASN:OD1 | 1:G:45:ARG:NH2 | 2.38 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:159:ALA:O | 1:I:161:THR:N | 2.48 | 0.46 |
| 1:I:193:LEU:HD21 | 1:I:206:CYS:SG | 2.56 | 0.46 |
| 1:I:228:ILE:HG22 | 2:J:173:ILE:HD11 | 1.98 | 0.46 |
| 1:I:216:TYR:CD1 | 2:J:171:GLU:O | 2.68 | 0.46 |
| 1:K:179:GLU:O | 1:K:183:LEU:HD22 | 2.15 | 0.46 |
| 1:K:234:PHE:CB | 1:K:239:GLN:OE1 | 2.60 | 0.46 |
| 1:A:184:ILE:N | 1:A:184:ILE:CD1 | 2.76 | 0.46 |
| 1:A:170:HIS:HB2 | 1:A:193:LEU:HD12 | 1.97 | 0.46 |
| 1:A:84:SER:OG | 1:A:86:ALA:HB3 | 2.16 | 0.46 |
| 1:E:247:LYS:HD2 | 1:E:249:ASP:HB2 | 1.96 | 0.46 |
| 1:E:64:TYR:CE1 | 2:F:182:SER:HB2 | 2.50 | 0.46 |
| 1:I:173:ILE:CG2 | 1:I:174:SER:N | 2.78 | 0.46 |
| 1:K:93:SER:HA | 1:K:103:LEU:HB2 | 1.98 | 0.46 |
| 1:K:38:LEU:HD23 | 1:K:38:LEU:HA | 1.82 | 0.46 |
| 1:A:150:GLN:O | 1:A:154:LEU:HD23 | 2.16 | 0.46 |
| 1:A:154:LEU:O | 1:A:155:GLU:C | 2.55 | 0.46 |
| 1:A:184:ILE:H | 1:A:184:ILE:CD1 | 2.26 | 0.46 |
| 1:A:69:GLU:HB2 | 1:A:73:THR:O | 2.15 | 0.46 |
| 1:C:172:LYS:CD | 1:C:198:ASP:OD1 | 2.63 | 0.46 |
| 1:C:58:GLY:O | 1:C:60:LYS:N | 2.49 | 0.46 |
| 1:E:17:PHE:CZ | 1:E:109:ARG:HA | 2.51 | 0.46 |
| 2:F:184:LEU:O | 2:F:185:ASN:HB3 | 2.15 | 0.46 |
| 1:I:100:VAL:CG2 | 1:I:101:CYS:N | 2.78 | 0.46 |
| 1:I:50:GLY:C | 1:I:51:PHE:CD1 | 2.89 | 0.46 |
| 1:I:93:SER:O | 1:I:102:LEU:CD1 | 2.64 | 0.46 |
| 1:C:150:GLN:C | 1:C:152:PRO:HD2 | 2.37 | 0.45 |
| 1:C:229:PRO:C | 1:C:230:GLU:HG2 | 2.37 | 0.45 |
| 2:D:185:ASN:ND2 | 2:D:185:ASN:O | 2.50 | 0.45 |
| 1:I:227:SER:CB | 1:I:233:LYS:HD3 | 2.46 | 0.45 |
| 1:A:119:PRO:HD2 | 1:A:120:PHE:CE2 | 2.51 | 0.45 |
| 1:A:138:LEU:N | 1:A:138:LEU:CD2 | 2.77 | 0.45 |
| 1:A:189:ASN:O | 1:A:256:THR:HG21 | 2.16 | 0.45 |
| 1:C:138:LEU:HB2 | 1:C:142:ALA:CB | 2.46 | 0.45 |
| 1:C:151:LYS:O | 1:C:155:GLU:HG3 | 2.16 | 0.45 |
| 1:C:198:ASP:C | 1:C:199:ASN:ND2 | 2.69 | 0.45 |
| 1:C:46:ASN:HB2 | 1:C:233:LYS:O | 2.16 | 0.45 |
| 1:K:111:GLN:HA | 1:K:111:GLN:HE21 | 1.80 | 0.45 |
| 1:K:253:ARG:NH1 | 1:K:253:ARG:HB3 | 2.31 | 0.45 |
| 1:A:182:VAL:HG23 | 1:A:259:CYS:HB2 | 1.97 | 0.45 |
| 1:C:38:LEU:HD23 | 1:C:105:LYS:O | 2.16 | 0.45 |
| 1:C:85:PRO:O | 1:C:88:LEU:HB3 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:240:LEU:HD23 | 1:E:241:VAL:N | 2.30 | 0.45 |
| 1:G:177:GLU:O | 1:G:181:ILE:HB | 2.16 | 0.45 |
| 1:I:22:ARG:HH11 | 2:J:181:PTR:P | 2.33 | 0.45 |
| 1:I:175:ARG:NH2 | 2:J:169:ASP:O | 2.40 | 0.45 |
| 1:K:205:LEU:HD22 | 1:K:205:LEU:C | 2.29 | 0.45 |
| 1:C:42:ARG:NH2 | 2:D:181:PTR:O3P | 2.42 | 0.45 |
| 1:G:166:MET:HG3 | 1:G:168:TRP:CZ2 | 2.51 | 0.45 |
| 1:I:123:LEU:CD1 | 1:I:124:LYS:N | 2.72 | 0.45 |
| 1:I:157:LEU:HD12 | 1:I:157:LEU:HA | 1.80 | 0.45 |
| 1:I:197:ARG:CG | 1:I:197:ARG:HH11 | 2.24 | 0.45 |
| 1:K:163:HIS:ND1 | 1:K:163:HIS:N | 2.65 | 0.45 |
| 1:K:82:HIS:ND1 | 1:K:82:HIS:N | 2.64 | 0.45 |
| 1:A:200:ASN:OD1 | 1:A:200:ASN:N | 2.44 | 0.45 |
| 1:C:120:PHE:CE2 | 1:C:242:GLU:HG3 | 2.51 | 0.45 |
| 1:C:203:TYR:HE2 | 1:C:237:LEU:HD11 | 1.81 | 0.45 |
| 1:E:109:ARG:HG2 | 1:E:113:VAL:O | 2.15 | 0.45 |
| 1:E:253:ARG:CG | 1:E:253:ARG:NH1 | 2.73 | 0.45 |
| 1:E:36:ASP:OD1 | 1:E:57:HIS:HA | 2.16 | 0.45 |
| 1:G:180:GLN:O | 1:G:184:ILE:HG12 | 2.15 | 0.45 |
| 2:H:180:LEU:HA | 2:H:180:LEU:HD23 | 1.65 | 0.45 |
| 1:I:100:VAL:HG23 | 1:I:101:CYS:N | 2.31 | 0.45 |
| 2:J:171:GLU:HA | 2:J:172:PRO:HD3 | 1.72 | 0.45 |
| 1:I:42:ARG:NH1 | 2:J:181:PTR:O2P | 2.46 | 0.45 |
| 1:K:170:HIS:O | 1:K:173:ILE:HD12 | 2.16 | 0.45 |
| 1:K:241:VAL:C | 1:K:243:HIS:N | 2.69 | 0.45 |
| 1:K:209:HIS:CG | 1:K:253:ARG:HH12 | 2.33 | 0.45 |
| 1:A:175:ARG:NH1 | 2:B:170:PTR:O3P | 2.49 | 0.45 |
| 1:A:190:GLY:C | 1:A:256:THR:OG1 | 2.55 | 0.45 |
| 1:A:76:ILE:CD1 | 1:A:88:LEU:HD21 | 2.47 | 0.45 |
| 1:E:38:LEU:CD2 | 1:E:105:LYS:O | 2.64 | 0.45 |
| 1:E:48:LEU:O | 1:E:50:GLY:N | 2.50 | 0.45 |
| 1:E:88:LEU:C | 1:E:88:LEU:CD1 | 2.84 | 0.45 |
| 1:G:35:SER:O | 1:G:36:ASP:C | 2.54 | 0.45 |
| 1:I:111:GLN:HA | 1:I:111:GLN:HE21 | 1.80 | 0.45 |
| 1:K:163:HIS:O | 1:K:169:PHE:HD2 | 2.00 | 0.45 |
| 1:A:228:ILE:HG22 | 2:B:173:ILE:HD11 | 1.98 | 0.45 |
| 1:C:123:LEU:CG | 1:C:124:LYS:N | 2.78 | 0.45 |
| 1:C:130:GLU:O | 1:C:131:TYR:C | 2.55 | 0.45 |
| 1:C:166:MET:HA | 1:C:167:PRO:HD2 | 1.66 | 0.45 |
| 1:C:253:ARG:HB3 | 1:C:253:ARG:HH11 | 1.75 | 0.45 |
| 1:E:28:TYR:O | 1:E:107:PHE:CE2 | 2.70 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:220:LYS:CG | 1:K:224:GLY:HA2 | 2.47 | 0.45 |
| 1:A:41:LEU:HD23 | 1:A:41:LEU:HA | 1.74 | 0.45 |
| 1:C:120:PHE:CD1 | 1:C:120:PHE:N | 2.83 | 0.45 |
| 1:C:126:ASN:OD1 | 1:C:127:LEU:N | 2.50 | 0.45 |
| 1:E:205:LEU:HB3 | 1:E:216:TYR:HB2 | 1.97 | 0.45 |
| 1:E:253:ARG:HG3 | 1:E:254:VAL:N | 2.31 | 0.45 |
| 1:E:58:GLY:O | 1:E:60:LYS:N | 2.49 | 0.45 |
| 1:E:84:SER:HB2 | 1:E:85:PRO:HD2 | 1.99 | 0.45 |
| 1:G:93:SER:HA | 1:G:103:LEU:HB2 | 1.98 | 0.45 |
| 1:G:241:VAL:HG22 | 1:G:255:LEU:CD1 | 2.47 | 0.45 |
| 1:I:105:LYS:CG | 1:I:106:PRO:HD2 | 2.47 | 0.45 |
| 1:I:163:HIS:HA | 1:I:166:MET:CG | 2.47 | 0.45 |
| 1:I:17:PHE:HE1 | 1:I:109:ARG:CA | 2.29 | 0.45 |
| 1:C:178:SER:HA | 1:C:181:ILE:HG22 | 1.99 | 0.45 |
| 1:C:66:ILE:HG12 | 1:C:76:ILE:HG13 | 1.98 | 0.45 |
| 1:E:111:GLN:HE21 | 1:E:112:GLY:N | 2.15 | 0.45 |
| 1:E:76:ILE:CD1 | 1:E:88:LEU:HD21 | 2.47 | 0.45 |
| 1:G:262:ILE:HG12 | 1:G:262:ILE:H | 1.35 | 0.45 |
| 1:K:206:CYS:HA | 1:K:214:LEU:O | 2.17 | 0.45 |
| 1:C:111:GLN:NE2 | 1:C:112:GLY:H | 2.12 | 0.45 |
| 1:C:138:LEU:CD2 | 1:C:138:LEU:N | 2.76 | 0.45 |
| 1:C:191:LYS:HG3 | 1:C:257:VAL:CG2 | 2.33 | 0.45 |
| 1:C:205:LEU:HA | 1:C:205:LEU:HD23 | 1.68 | 0.45 |
| 1:A:126:ASN:HB2 | 2:H:168:PRO:O | 2.17 | 0.45 |
| 1:A:118:GLY:HA3 | 1:A:120:PHE:CE1 | 2.52 | 0.44 |
| 1:A:9:SER:C | 1:A:11:ASN:H | 2.19 | 0.44 |
| 1:A:192:PHE:CE2 | 1:A:255:LEU:HD13 | 2.52 | 0.44 |
| 1:E:226:LEU:HD11 | 1:E:235:ASP:O | 2.17 | 0.44 |
| 1:G:246:TYR:CD1 | 1:G:247:LYS:N | 2.85 | 0.44 |
| 1:I:154:LEU:CD2 | 1:I:154:LEU:H | 1.98 | 0.44 |
| 1:K:28:TYR:O | 1:K:107:PHE:HE2 | 1.99 | 0.44 |
| 1:K:91:TYR:C | 1:K:91:TYR:CD1 | 2.90 | 0.44 |
| 1:C:232:LYS:HG2 | 1:C:234:PHE:CZ | 2.51 | 0.44 |
| 1:C:38:LEU:O | 1:C:55:VAL:HA | 2.18 | 0.44 |
| 1:A:141:GLN:HG3 | 1:G:202:SER:HB2 | 1.99 | 0.44 |
| 2:H:178:ARG:CG | 2:H:178:ARG:NH1 | 2.79 | 0.44 |
| 1:A:128:ILE:CG1 | 1:A:129:ARG:N | 2.80 | 0.44 |
| 1:A:12:HIS:O | 1:A:13:LEU:C | 2.54 | 0.44 |
| 1:A:163:HIS:ND1 | 1:A:164:GLU:N | 2.65 | 0.44 |
| 1:C:126:ASN:C | 1:C:126:ASN:OD1 | 2.55 | 0.44 |
| 1:C:206:CYS:SG | 1:C:215:HIS:CE1 | 3.10 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:180:GLN:HE21 | 1:C:59:ARG:HB3 | 1.81 | 0.44 |
| 1:E:32:GLY:CA | 1:E:107:PHE:HE2 | 2.25 | 0.44 |
| 1:E:17:PHE:HE1 | 1:E:109:ARG:CA | 2.31 | 0.44 |
| 1:E:48:LEU:C | 1:E:50:GLY:H | 2.20 | 0.44 |
| 1:G:166:MET:HB2 | 1:G:168:TRP:CZ2 | 2.53 | 0.44 |
| 1:G:170:HIS:CD2 | 1:G:193:LEU:HD12 | 2.47 | 0.44 |
| 1:I:138:LEU:CD1 | 1:I:142:ALA:HB1 | 2.48 | 0.44 |
| 1:I:57:HIS:HB3 | 1:I:62:HIS:HE2 | 1.81 | 0.44 |
| 1:K:102:LEU:HA | 1:K:102:LEU:HD22 | 1.88 | 0.44 |
| 1:K:154:LEU:O | 1:K:155:GLU:C | 2.56 | 0.44 |
| 1:K:58:GLY:O | 1:K:60:LYS:N | 2.50 | 0.44 |
| 1:A:237:LEU:O | 1:A:240:LEU:N | 2.51 | 0.44 |
| 1:A:30:VAL:O | 1:A:32:GLY:N | 2.50 | 0.44 |
| 1:C:107:PHE:HD1 | 1:C:107:PHE:C | 2.19 | 0.44 |
| 1:C:205:LEU:HD22 | 1:C:206:CYS:N | 2.32 | 0.44 |
| 1:C:20:ILE:HA | 1:C:20:ILE:HD12 | 1.57 | 0.44 |
| 1:C:75:ALA:HB2 | 1:C:81:THR:HA | 2.00 | 0.44 |
| 1:G:217:ARG:CZ | 1:G:219:ASP:OD2 | 2.65 | 0.44 |
| 1:G:253:ARG:CB | 1:G:253:ARG:CZ | 2.96 | 0.44 |
| 1:I:164:GLU:HA | 1:I:169:PHE:CD2 | 2.52 | 0.44 |
| 1:K:158:ILE:HD13 | 1:K:158:ILE:H | 1.77 | 0.44 |
| 1:K:217:ARG:CG | 1:K:217:ARG:NH1 | 2.64 | 0.44 |
| 1:K:40:LEU:C | 1:K:40:LEU:HD12 | 2.38 | 0.44 |
| 1:A:21:THR:HG23 | 1:A:24:GLU:H | 1.82 | 0.44 |
| 1:C:126:ASN:O | 1:C:127:LEU:C | 2.54 | 0.44 |
| 2:F:179:ASP:N | 2:F:179:ASP:OD1 | 2.50 | 0.44 |
| 1:G:193:LEU:HD23 | 1:G:206:CYS:SG | 2.58 | 0.44 |
| 1:I:147:ILE:O | 1:I:151:LYS:HB2 | 2.18 | 0.44 |
| 1:I:21:THR:OG1 | 1:I:24:GLU:HB2 | 2.17 | 0.44 |
| 1:I:228:ILE:CG2 | 2:J:173:ILE:HD11 | 2.47 | 0.44 |
| 1:I:231:GLY:C | 1:I:232:LYS:O | 2.54 | 0.44 |
| 1:K:166:MET:HB3 | 1:K:168:TRP:CE2 | 2.53 | 0.44 |
| 1:C:228:ILE:HB | 2:D:173:ILE:HD11 | 1.99 | 0.44 |
| 1:C:232:LYS:HG3 | 1:C:233:LYS:N | 2.33 | 0.44 |
| 1:E:17:PHE:O | 1:E:18:GLY:C | 2.56 | 0.44 |
| 1:E:262:ILE:CD1 | 1:E:262:ILE:H | 2.30 | 0.44 |
| 1:G:21:THR:HG22 | 1:G:24:GLU:OE1 | 2.17 | 0.44 |
| 1:I:187:LYS:O | 1:I:208:LEU:HD21 | 2.18 | 0.44 |
| 1:K:216:TYR:CD2 | 1:K:251:LEU:HD22 | 2.52 | 0.44 |
| 1:A:150:GLN:C | 1:A:154:LEU:CD2 | 2.86 | 0.44 |
| 1:G:183:LEU:C | 1:G:184:ILE:HD13 | 2.38 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:151:LYS:CA | 1:I:154:LEU:HG | 2.48 | 0.44 |
| 1:G:23:GLU:CG | 1:K:186:SER:HA | 2.47 | 0.44 |
| 1:A:128:ILE:C | 1:A:130:GLU:N | 2.68 | 0.44 |
| 1:A:93:SER:C | 1:A:102:LEU:HD13 | 2.37 | 0.44 |
| 1:E:20:ILE:HG23 | 1:E:21:THR:N | 2.33 | 0.44 |
| 1:I:209:HIS:ND1 | 1:I:253:ARG:NH2 | 2.66 | 0.44 |
| 1:K:158:ILE:O | 1:K:162:ALA:HB2 | 2.17 | 0.44 |
| 1:K:21:THR:OG1 | 1:K:22:ARG:N | 2.51 | 0.44 |
| 1:A:172:LYS:CE | 1:A:196:ALA:O | 2.65 | 0.44 |
| 1:A:80:ARG:O | 1:A:82:HIS:CE1 | 2.71 | 0.44 |
| 1:C:170:HIS:O | 1:C:171:GLY:C | 2.56 | 0.44 |
| 1:C:217:ARG:NH1 | 1:C:217:ARG:CG | 2.69 | 0.44 |
| 1:C:217:ARG:NH1 | 1:C:219:ASP:OD2 | 2.51 | 0.44 |
| 1:I:170:HIS:O | 1:I:171:GLY:O | 2.35 | 0.44 |
| 1:I:17:PHE:C | 1:I:20:ILE:HD13 | 2.38 | 0.44 |
| 1:K:14:PRO:HA | 1:K:109:ARG:NH2 | 2.33 | 0.44 |
| 1:K:199:ASN:HB2 | 1:K:202:SER:HB3 | 2.00 | 0.44 |
| 1:A:109:ARG:CG | 1:A:109:ARG:HH11 | 2.30 | 0.43 |
| 2:B:171:GLU:HG3 | 2:B:172:PRO:CD | 2.48 | 0.43 |
| 2:B:173:ILE:C | 2:B:174:ARG:HG3 | 2.37 | 0.43 |
| 1:C:199:ASN:C | 1:C:201:GLY:N | 2.71 | 0.43 |
| 1:C:9:SER:C | 1:C:11:ASN:H | 2.20 | 0.43 |
| 1:E:226:LEU:HD13 | 1:E:226:LEU:H | 1.74 | 0.43 |
| 1:E:228:ILE:CD1 | 1:E:251:LEU:HD21 | 2.48 | 0.43 |
| 1:G:231:GLY:O | 1:G:232:LYS:C | 2.56 | 0.43 |
| 1:I:193:LEU:HD23 | 1:I:193:LEU:C | 2.38 | 0.43 |
| 1:I:248:ALA:O | 1:I:251:LEU:HG | 2.16 | 0.43 |
| 1:I:80:ARG:CB | 1:I:80:ARG:NH1 | 2.68 | 0.43 |
| 1:K:110:PRO:HB2 | 1:K:113:VAL:HG21 | 2.00 | 0.43 |
| 1:K:228:ILE:HG22 | 1:K:229:PRO:N | 2.33 | 0.43 |
| 1:K:253:ARG:CG | 1:K:253:ARG:NH1 | 2.77 | 0.43 |
| 2:L:178:ARG:NH1 | 2:L:178:ARG:CB | 2.50 | 0.43 |
| 1:C:16:PHE:O | 1:C:109:ARG:NE | 2.50 | 0.43 |
| 1:C:237:LEU:C | 1:C:239:GLN:N | 2.71 | 0.43 |
| 1:E:20:ILE:CG2 | 1:E:21:THR:N | 2.81 | 0.43 |
| 1:E:209:HIS:CE1 | 1:E:253:ARG:NH1 | 2.84 | 0.43 |
| 1:E:68:ARG:HH11 | 1:E:72:GLY:HA2 | 1.77 | 0.43 |
| 1:G:21:THR:HG23 | 1:G:24:GLU:CG | 2.48 | 0.43 |
| 1:G:241:VAL:C | 1:G:243:HIS:N | 2.70 | 0.43 |
| 1:G:38:LEU:HA | 1:G:105:LYS:O | 2.18 | 0.43 |
| 1:I:138:LEU:HD12 | 1:I:142:ALA:C | 2.38 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:23:GLU:O | 1:I:26:GLU:N | 2.51 | 0.43 |
| 1:I:69:GLU:HB2 | 1:I:73:THR:OG1 | 2.18 | 0.43 |
| 1:K:241:VAL:O | 1:K:242:GLU:C | 2.57 | 0.43 |
| 2:B:179:ASP:OD1 | 2:B:179:ASP:N | 2.50 | 0.43 |
| 1:C:111:GLN:HE21 | 1:C:111:GLN:C | 2.22 | 0.43 |
| 1:C:17:PHE:HD1 | 1:C:109:ARG:CD | 2.15 | 0.43 |
| 1:C:206:CYS:SG | 1:C:215:HIS:ND1 | 2.78 | 0.43 |
| 1:C:226:LEU:HD23 | 1:C:237:LEU:HG | 2.00 | 0.43 |
| 1:E:241:VAL:O | 1:E:244:TYR:N | 2.51 | 0.43 |
| 1:G:163:HIS:HB2 | 1:G:168:TRP:CZ3 | 2.53 | 0.43 |
| 1:G:252:LEU:O | 1:G:252:LEU:HD12 | 2.18 | 0.43 |
| 1:I:142:ALA:O | 1:I:145:GLN:HG2 | 2.19 | 0.43 |
| 1:I:23:GLU:O | 1:I:24:GLU:C | 2.57 | 0.43 |
| 1:I:240:LEU:HD23 | 1:I:241:VAL:CA | 2.47 | 0.43 |
| 1:A:124:LYS:O | 1:A:125:GLU:C | 2.56 | 0.43 |
| 1:E:173:ILE:CG2 | 1:E:177:GLU:HB3 | 2.49 | 0.43 |
| 1:E:252:LEU:HA | 1:E:252:LEU:HD13 | 1.51 | 0.43 |
| 1:K:170:HIS:O | 1:K:171:GLY:C | 2.54 | 0.43 |
| 1:E:99:LEU:HD12 | 1:E:103:LEU:HD21 | 1.98 | 0.43 |
| 1:E:173:ILE:CG2 | 1:E:174:SER:N | 2.81 | 0.43 |
| 1:E:39:TYR:HB2 | 1:E:55:VAL:HG12 | 1.96 | 0.43 |
| 1:G:107:PHE:CE1 | 1:G:108:ASN:O | 2.72 | 0.43 |
| 1:I:120:PHE:O | 1:I:121:GLU:C | 2.56 | 0.43 |
| 1:I:131:TYR:O | 1:I:135:THR:OG1 | 2.36 | 0.43 |
| 1:E:262:ILE:H | 1:E:262:ILE:HD13 | 1.83 | 0.43 |
| 1:G:17:PHE:O | 1:G:18:GLY:C | 2.57 | 0.43 |
| 1:G:22:ARG:NH2 | 2:H:179:ASP:HB3 | 2.33 | 0.43 |
| 2:H:175:LYS:O | 2:H:177:GLN:N | 2.51 | 0.43 |
| 1:I:128:ILE:O | 1:I:130:GLU:N | 2.52 | 0.43 |
| 1:K:170:HIS:CE1 | 1:K:261:LYS:HA | 2.54 | 0.43 |
| 1:A:178:SER:C | 1:A:180:GLN:N | 2.71 | 0.43 |
| 1:C:126:ASN:O | 1:C:128:ILE:N | 2.52 | 0.43 |
| 1:E:108:ASN:O | 1:E:110:PRO:CD | 2.62 | 0.43 |
| 1:E:244:TYR:CE1 | 1:E:249:ASP:HB3 | 2.53 | 0.43 |
| 1:E:80:ARG:HG2 | 1:E:81:THR:N | 2.34 | 0.43 |
| 1:E:9:SER:C | 1:E:11:ASN:N | 2.68 | 0.43 |
| 1:G:246:TYR:CE1 | 1:G:247:LYS:CE | 3.00 | 0.43 |
| 1:G:69:GLU:N | 1:G:73:THR:O | 2.48 | 0.43 |
| 1:A:129:ARG:NH2 | 2:H:170:PTR:O1P | 2.52 | 0.43 |
| 2:H:178:ARG:HG2 | 2:H:178:ARG:NH1 | 2.32 | 0.43 |
| 1:I:217:ARG:CG | 1:I:217:ARG:HH11 | 2.31 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:155:GLU:HG3 | 1:K:155:GLU:H | 1.38 | 0.43 |
| 1:A:41:LEU:HD22 | 1:A:42:ARG:N | 2.33 | 0.43 |
| 1:A:96:SER:N | 1:A:102:LEU:CD2 | 2.81 | 0.43 |
| 1:A:65:THR:HG22 | 2:B:181:PTR:HD2 | 2.00 | 0.43 |
| 1:E:170:HIS:CE1 | 1:E:261:LYS:HA | 2.53 | 0.43 |
| 1:E:21:THR:HG1 | 1:E:23:GLU:HB2 | 1.84 | 0.43 |
| 1:E:209:HIS:CG | 1:E:253:ARG:HH12 | 2.24 | 0.43 |
| 1:G:219:ASP:O | 1:G:226:LEU:HA | 2.18 | 0.43 |
| 1:I:24:GLU:O | 1:I:28:TYR:CD2 | 2.72 | 0.43 |
| 1:K:92:HIS:CD2 | 1:K:96:SER:O | 2.72 | 0.43 |
| 1:A:128:ILE:HG22 | 1:A:158:ILE:CG2 | 2.44 | 0.43 |
| 1:A:181:ILE:HA | 1:A:184:ILE:HG12 | 1.99 | 0.43 |
| 1:C:69:GLU:HB2 | 1:C:73:THR:O | 2.19 | 0.43 |
| 1:G:107:PHE:CE1 | 1:G:110:PRO:HD3 | 2.48 | 0.43 |
| 1:G:231:GLY:O | 1:G:232:LYS:O | 2.36 | 0.43 |
| 1:G:253:ARG:HG3 | 1:G:254:VAL:O | 2.19 | 0.43 |
| 1:K:13:LEU:N | 1:K:13:LEU:HD23 | 2.33 | 0.43 |
| 1:K:190:GLY:C | 1:K:256:THR:OG1 | 2.57 | 0.43 |
| 1:A:207:LEU:HD23 | 1:A:214:LEU:HB2 | 2.00 | 0.43 |
| 1:C:128:ILE:C | 1:C:130:GLU:N | 2.72 | 0.43 |
| 1:E:186:SER:OG | 1:E:188:THR:CG2 | 2.67 | 0.43 |
| 1:G:170:HIS:HB3 | 1:G:173:ILE:HD13 | 2.01 | 0.43 |
| 1:G:207:LEU:CD2 | 1:G:214:LEU:HB2 | 2.49 | 0.43 |
| 1:I:209:HIS:CB | 1:I:253:ARG:HH12 | 2.32 | 0.43 |
| 1:I:209:HIS:HA | 1:I:253:ARG:NH1 | 2.34 | 0.43 |
| 1:K:110:PRO:HB2 | 1:K:113:VAL:CG2 | 2.49 | 0.43 |
| 1:A:93:SER:CA | 1:A:103:LEU:HB2 | 2.47 | 0.42 |
| 1:A:38:LEU:HA | 1:A:105:LYS:O | 2.18 | 0.42 |
| 1:C:33:GLY:C | 1:C:35:SER:N | 2.72 | 0.42 |
| 1:E:91:TYR:CD1 | 1:E:91:TYR:C | 2.92 | 0.42 |
| 1:G:21:THR:HG23 | 1:G:24:GLU:CB | 2.48 | 0.42 |
| 1:I:231:GLY:O | 1:I:232:LYS:C | 2.56 | 0.42 |
| 1:I:33:GLY:C | 1:I:35:SER:N | 2.72 | 0.42 |
| 1:A:102:LEU:HD22 | 1:A:102:LEU:HA | 1.79 | 0.42 |
| 1:C:126:ASN:CG | 1:C:127:LEU:N | 2.72 | 0.42 |
| 1:C:138:LEU:O | 1:C:143:LEU:HB2 | 2.19 | 0.42 |
| 1:C:150:GLN:O | 1:C:152:PRO:N | 2.52 | 0.42 |
| 1:A:180:GLN:HE21 | 1:C:59:ARG:CB | 2.32 | 0.42 |
| 1:C:197:ARG:NH1 | 2:D:170:PTR:O2P | 2.51 | 0.42 |
| 1:G:170:HIS:CG | 1:G:193:LEU:CD1 | 2.83 | 0.42 |
| 1:G:234:PHE:CD2 | 1:G:240:LEU:HA | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:I:19:ASN:O | 1:I:116:LYS:CB | 2.68 | 0.42 |
| 1:I:145:GLN:C | 1:I:149:SER:HG | 2.22 | 0.42 |
| 1:I:17:PHE:HE1 | 1:I:109:ARG:HG3 | 1.84 | 0.42 |
| 1:I:80:ARG:CG | 1:I:81:THR:N | 2.81 | 0.42 |
| 1:K:99:LEU:HD11 | 1:K:103:LEU:HD21 | 2.01 | 0.42 |
| 1:K:190:GLY:C | 1:K:256:THR:HG1 | 2.22 | 0.42 |
| 2:B:185:ASN:O | 2:B:185:ASN:CG | 2.58 | 0.42 |
| 1:C:228:ILE:CG2 | 1:C:229:PRO:CD | 2.94 | 0.42 |
| 1:C:238:TRP:NE1 | 1:C:239:GLN:HG3 | 2.34 | 0.42 |
| 1:C:70:LEU:C | 1:C:72:GLY:N | 2.72 | 0.42 |
| 1:E:23:GLU:O | 1:E:24:GLU:C | 2.57 | 0.42 |
| 1:G:172:LYS:C | 1:G:172:LYS:NZ | 2.68 | 0.42 |
| 1:G:20:ILE:HG23 | 1:G:24:GLU:HB2 | 2.00 | 0.42 |
| 1:G:41:LEU:HD22 | 1:G:42:ARG:N | 2.34 | 0.42 |
| 1:I:17:PHE:CD2 | 1:I:40:LEU:HD13 | 2.54 | 0.42 |
| 1:I:76:ILE:O | 1:I:77:ALA:C | 2.58 | 0.42 |
| 1:K:168:TRP:CZ3 | 1:K:194:ILE:CD1 | 3.02 | 0.42 |
| 1:K:58:GLY:C | 1:K:60:LYS:N | 2.73 | 0.42 |
| 1:A:19:ASN:O | 1:A:116:LYS:HB3 | 2.19 | 0.42 |
| 1:A:228:ILE:O | 1:A:229:PRO:C | 2.55 | 0.42 |
| 1:A:51:PHE:N | 1:A:51:PHE:CD1 | 2.88 | 0.42 |
| 1:C:179:GLU:OE1 | 1:C:213:VAL:CG1 | 2.66 | 0.42 |
| 1:C:48:LEU:C | 1:C:50:GLY:H | 2.23 | 0.42 |
| 1:G:166:MET:CB | 1:G:168:TRP:CZ2 | 3.01 | 0.42 |
| 1:G:180:GLN:HG2 | 1:G:181:ILE:N | 2.31 | 0.42 |
| 1:I:17:PHE:CD1 | 1:I:109:ARG:HD3 | 2.53 | 0.42 |
| 1:I:186:SER:HB3 | 1:I:188:THR:CG2 | 2.50 | 0.42 |
| 1:C:260:GLN:HB3 | 1:E:30:VAL:HG21 | 2.02 | 0.42 |
| 1:E:14:PRO:O | 1:E:109:ARG:N | 2.50 | 0.42 |
| 1:E:21:THR:OG1 | 1:E:23:GLU:HB2 | 2.19 | 0.42 |
| 1:E:247:LYS:NZ | 2:F:179:ASP:OD2 | 2.53 | 0.42 |
| 1:G:256:THR:OG1 | 1:G:257:VAL:N | 2.47 | 0.42 |
| 1:G:98:GLY:HA2 | 2:H:185:ASN:C | 2.39 | 0.42 |
| 1:I:163:HIS:O | 1:I:169:PHE:CD2 | 2.66 | 0.42 |
| 1:I:25:ALA:O | 1:I:26:GLU:C | 2.58 | 0.42 |
| 1:K:17:PHE:CD1 | 1:K:109:ARG:HD3 | 2.55 | 0.42 |
| 1:A:111:GLN:NE2 | 1:A:112:GLY:N | 2.66 | 0.42 |
| 1:A:120:PHE:CA | 1:A:123:LEU:HD11 | 2.49 | 0.42 |
| 1:A:180:GLN:NE2 | 1:C:59:ARG:HB3 | 2.34 | 0.42 |
| 1:A:88:LEU:HD12 | 1:A:88:LEU:O | 2.19 | 0.42 |
| 1:C:110:PRO:O | 1:C:111:GLN:C | 2.57 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:27:ASP:O | 1:C:28:TYR:C | 2.56 | 0.42 |
| 1:C:43:GLN:HG3 | 1:C:44:SER:O | 2.19 | 0.42 |
| 1:E:109:ARG:HG3 | 1:E:113:VAL:HG12 | 2.01 | 0.42 |
| 1:E:68:ARG:O | 1:E:68:ARG:HG3 | 2.18 | 0.42 |
| 1:I:107:PHE:CD1 | 1:I:107:PHE:C | 2.91 | 0.42 |
| 1:I:120:PHE:CG | 1:I:238:TRP:CH2 | 3.08 | 0.42 |
| 1:K:19:ASN:O | 1:K:116:LYS:HD2 | 2.20 | 0.42 |
| 1:K:228:ILE:HG22 | 2:L:173:ILE:HD11 | 2.01 | 0.42 |
| 1:A:128:ILE:CB | 1:A:158:ILE:HG12 | 2.50 | 0.42 |
| 1:C:46:ASN:O | 1:C:47:TYR:HD1 | 2.03 | 0.42 |
| 1:E:191:LYS:O | 1:E:207:LEU:CA | 2.65 | 0.42 |
| 1:E:29:LEU:CD2 | 1:E:40:LEU:HD23 | 2.48 | 0.42 |
| 1:E:175:ARG:NH1 | 2:F:168:PRO:HD2 | 2.32 | 0.42 |
| 2:F:174:ARG:HA | 2:F:175:LYS:HE2 | 2.01 | 0.42 |
| 2:F:175:LYS:H | 2:F:175:LYS:CD | 2.30 | 0.42 |
| 2:F:175:LYS:HD2 | 2:F:176:GLY:H | 1.85 | 0.42 |
| 1:K:163:HIS:CE1 | 1:K:164:GLU:HG2 | 2.55 | 0.42 |
| 1:K:179:GLU:O | 1:K:183:LEU:CD2 | 2.67 | 0.42 |
| 1:K:260:GLN:CA | 1:K:260:GLN:OE1 | 2.58 | 0.42 |
| 1:A:157:LEU:HA | 1:A:157:LEU:HD13 | 1.82 | 0.42 |
| 1:C:96:SER:N | 1:C:102:LEU:CD2 | 2.83 | 0.42 |
| 1:C:66:ILE:O | 1:C:66:ILE:HG22 | 2.19 | 0.42 |
| 1:C:87:ASP:O | 1:C:88:LEU:C | 2.56 | 0.42 |
| 1:E:163:HIS:ND1 | 1:E:163:HIS:N | 2.68 | 0.42 |
| 1:E:98:GLY:HA2 | 2:F:185:ASN:C | 2.39 | 0.42 |
| 1:G:163:HIS:HA | 1:G:166:MET:HG3 | 2.01 | 0.42 |
| 1:K:207:LEU:CD2 | 1:K:214:LEU:CB | 2.97 | 0.42 |
| 1:A:162:ALA:C | 1:A:164:GLU:N | 2.71 | 0.42 |
| 1:A:181:ILE:HD12 | 1:A:262:ILE:HD11 | 2.02 | 0.42 |
| 1:A:191:LYS:HD2 | 1:A:259:CYS:HB2 | 2.01 | 0.42 |
| 1:C:102:LEU:HA | 1:C:102:LEU:HD22 | 1.92 | 0.42 |
| 1:E:173:ILE:HG22 | 1:E:174:SER:O | 2.19 | 0.42 |
| 1:E:220:LYS:CG | 1:E:224:GLY:HA2 | 2.49 | 0.42 |
| 2:F:173:ILE:CG2 | 2:F:174:ARG:N | 2.81 | 0.42 |
| 1:I:240:LEU:CD2 | 1:I:241:VAL:N | 2.75 | 0.42 |
| 1:I:52:ALA:HA | 1:I:64:TYR:O | 2.20 | 0.42 |
| 1:C:24:GLU:O | 1:C:28:TYR:CD2 | 2.73 | 0.42 |
| 1:C:58:GLY:C | 1:C:60:LYS:N | 2.74 | 0.42 |
| 1:C:67:GLU:OE2 | 1:C:77:ALA:HB2 | 2.20 | 0.42 |
| 1:E:192:PHE:HA | 1:E:206:CYS:O | 2.20 | 0.42 |
| 1:E:21:THR:HG22 | 1:E:24:GLU:OE1 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:16:PHE:HE1 | 1:E:43:GLN:N | 2.17 | 0.42 |
| 2:F:184:LEU:CD2 | 2:F:185:ASN:H | 2.33 | 0.42 |
| 1:G:163:HIS:N | 1:G:163:HIS:ND1 | 2.68 | 0.42 |
| 1:G:175:ARG:O | 1:G:178:SER:OG | 2.38 | 0.42 |
| 1:G:41:LEU:HD22 | 1:G:52:ALA:O | 2.19 | 0.42 |
| 1:I:126:ASN:O | 1:I:127:LEU:C | 2.57 | 0.42 |
| 1:I:13:LEU:HA | 1:I:14:PRO:HD2 | 1.89 | 0.42 |
| 1:I:40:LEU:C | 1:I:40:LEU:CD1 | 2.77 | 0.42 |
| 1:K:159:ALA:C | 1:K:161:THR:N | 2.72 | 0.42 |
| 1:K:80:ARG:HH11 | 1:K:80:ARG:HB2 | 1.85 | 0.42 |
| 1:A:96:SER:N | 1:A:102:LEU:HD21 | 2.35 | 0.41 |
| 1:C:145:GLN:O | 1:C:146:ALA:C | 2.58 | 0.41 |
| 1:E:17:PHE:HE1 | 1:E:109:ARG:HA | 1.83 | 0.41 |
| 1:E:214:LEU:HA | 1:E:214:LEU:HD23 | 1.88 | 0.41 |
| 1:E:228:ILE:HD11 | 1:E:251:LEU:HD21 | 2.02 | 0.41 |
| 1:E:253:ARG:CB | 1:E:253:ARG:NH1 | 2.83 | 0.41 |
| 1:E:250:GLY:HA3 | 2:F:173:ILE:CG2 | 2.49 | 0.41 |
| 1:G:173:ILE:CG2 | 1:G:174:SER:N | 2.83 | 0.41 |
| 1:G:9:SER:C | 1:G:11:ASN:N | 2.73 | 0.41 |
| 1:K:176:GLU:C | 1:K:178:SER:H | 2.22 | 0.41 |
| 1:K:47:TYR:HE1 | 1:K:225:LYS:NZ | 2.11 | 0.41 |
| 1:G:25:ALA:O | 1:G:26:GLU:C | 2.57 | 0.41 |
| 1:I:164:GLU:HA | 1:I:169:PHE:HE2 | 1.84 | 0.41 |
| 1:I:197:ARG:CG | 1:I:197:ARG:NH1 | 2.82 | 0.41 |
| 1:I:21:THR:HG23 | 1:I:24:GLU:CB | 2.44 | 0.41 |
| 1:K:20:ILE:CD1 | 1:K:116:LYS:HB2 | 2.47 | 0.41 |
| 1:A:131:TYR:C | 1:A:131:TYR:HD1 | 2.21 | 0.41 |
| 1:A:180:GLN:C | 1:A:182:VAL:N | 2.73 | 0.41 |
| 1:A:246:TYR:CD1 | 1:A:247:LYS:HB2 | 2.54 | 0.41 |
| 1:E:71:ASN:HB2 | 1:E:73:THR:HG23 | 2.03 | 0.41 |
| 1:I:174:SER:HB3 | 1:I:177:GLU:HB2 | 2.01 | 0.41 |
| 1:I:197:ARG:HG3 | 1:I:197:ARG:H | 1.60 | 0.41 |
| 1:I:252:LEU:HA | 1:I:252:LEU:HD13 | 1.84 | 0.41 |
| 1:K:156:LYS:O | 1:K:156:LYS:HG3 | 2.21 | 0.41 |
| 1:K:33:GLY:C | 1:K:35:SER:N | 2.74 | 0.41 |
| 1:A:53:LEU:HB3 | 1:A:64:TYR:HB2 | 2.02 | 0.41 |
| 1:C:194:ILE:HG22 | 1:C:204:ALA:O | 2.19 | 0.41 |
| 1:E:165:LYS:O | 1:E:165:LYS:HG2 | 2.21 | 0.41 |
| 1:G:21:THR:CG2 | 1:G:24:GLU:HG3 | 2.50 | 0.41 |
| 1:I:94:GLN:CA | 1:I:102:LEU:HD11 | 2.50 | 0.41 |
| 1:I:111:GLN:HE21 | 1:I:111:GLN:CA | 2.33 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:247:LYS:HD2 | 1:K:249:ASP:HB2 | 2.03 | 0.41 |
| 1:A:180:GLN:NE2 | 1:C:59:ARG:CG | 2.83 | 0.41 |
| 1:C:136:TRP:CD1 | 1:C:136:TRP:N | 2.87 | 0.41 |
| 1:C:20:ILE:HG23 | 1:C:21:THR:H | 1.85 | 0.41 |
| 1:E:157:LEU:O | 1:E:158:ILE:C | 2.59 | 0.41 |
| 1:E:18:GLY:H | 1:E:115:PRO:CB | 2.28 | 0.41 |
| 1:G:168:TRP:CE3 | 1:G:194:ILE:HD11 | 2.55 | 0.41 |
| 1:G:252:LEU:HA | 1:G:252:LEU:HD13 | 1.58 | 0.41 |
| 2:H:184:LEU:HA | 2:H:184:LEU:HD23 | 1.28 | 0.41 |
| 1:I:23:GLU:CG | 1:I:246:TYR:OH | 2.67 | 0.41 |
| 2:J:175:LYS:O | 2:J:178:ARG:CG | 2.68 | 0.41 |
| 1:K:252:LEU:HD13 | 1:K:252:LEU:HA | 1.65 | 0.41 |
| 1:A:141:GLN:O | 1:A:145:GLN:HG2 | 2.20 | 0.41 |
| 1:A:195:ARG:NH2 | 1:A:215:HIS:CE1 | 2.85 | 0.41 |
| 1:C:199:ASN:O | 1:C:201:GLY:N | 2.54 | 0.41 |
| 1:C:236:THR:OG1 | 1:C:238:TRP:CD1 | 2.70 | 0.41 |
| 1:C:51:PHE:N | 1:C:51:PHE:CD1 | 2.88 | 0.41 |
| 1:E:237:LEU:O | 1:E:239:GLN:N | 2.54 | 0.41 |
| 2:F:184:LEU:O | 2:F:185:ASN:CB | 2.69 | 0.41 |
| 1:G:241:VAL:HG13 | 1:G:245:SER:OG | 2.21 | 0.41 |
| 1:I:136:TRP:HB3 | 1:I:138:LEU:HD23 | 2.02 | 0.41 |
| 1:I:88:LEU:HD13 | 1:I:92:HIS:CE1 | 2.56 | 0.41 |
| 1:A:234:PHE:N | 1:A:234:PHE:CD1 | 2.89 | 0.41 |
| 1:C:140:GLY:C | 1:C:142:ALA:N | 2.71 | 0.41 |
| 1:C:180:GLN:O | 1:C:182:VAL:N | 2.54 | 0.41 |
| 1:E:260:GLN:OE1 | 1:E:260:GLN:CA | 2.69 | 0.41 |
| 1:G:163:HIS:CB | 1:G:168:TRP:CH2 | 3.04 | 0.41 |
| 1:K:197:ARG:HB3 | 1:K:198:ASP:H | 1.60 | 0.41 |
| 1:K:209:HIS:ND1 | 1:K:253:ARG:NH2 | 2.68 | 0.41 |
| 1:A:147:ILE:O | 1:A:151:LYS:N | 2.40 | 0.41 |
| 1:A:207:LEU:N | 1:A:207:LEU:CD2 | 2.83 | 0.41 |
| 1:C:137:ASN:OD1 | 1:C:139:GLN:NE2 | 2.54 | 0.41 |
| 1:C:145:GLN:O | 1:C:147:ILE:N | 2.53 | 0.41 |
| 2:D:178:ARG:HH21 | 2:D:180:LEU:HD21 | 1.85 | 0.41 |
| 1:E:107:PHE:C | 1:E:107:PHE:CD1 | 2.94 | 0.41 |
| 1:E:38:LEU:CD1 | 1:E:107:PHE:HD2 | 2.33 | 0.41 |
| 1:I:173:ILE:HG22 | 1:I:174:SER:O | 2.21 | 0.41 |
| 1:I:238:TRP:NE1 | 1:I:239:GLN:HG3 | 2.36 | 0.41 |
| 1:K:180:GLN:O | 1:K:181:ILE:C | 2.58 | 0.41 |
| 1:K:47:TYR:HD1 | 1:K:225:LYS:HZ1 | 1.54 | 0.41 |
| 1:K:253:ARG:NH1 | 1:K:253:ARG:CB | 2.83 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:213:VAL:HG13 | 1:A:214:LEU:N | 2.36 | 0.41 |
| 1:A:48:LEU:CD2 | 1:A:235:ASP:CB | 2.98 | 0.41 |
| 1:I:129:ARG:HD2 | 1:I:129:ARG:O | 2.21 | 0.41 |
| 1:I:132:VAL:O | 1:I:133:LYS:C | 2.60 | 0.41 |
| 1:I:246:TYR:HE2 | 1:I:247:LYS:HE3 | 1.85 | 0.41 |
| 1:K:38:LEU:CD2 | 1:K:105:LYS:O | 2.65 | 0.41 |
| 1:K:229:PRO:O | 1:K:230:GLU:HB2 | 2.20 | 0.41 |
| 1:A:172:LYS:C | 1:A:173:ILE:HG13 | 2.39 | 0.41 |
| 1:A:232:LYS:HB2 | 1:A:232:LYS:HE2 | 1.58 | 0.41 |
| 1:C:70:LEU:C | 1:C:72:GLY:H | 2.22 | 0.41 |
| 1:E:226:LEU:HD13 | 1:E:234:PHE:O | 2.21 | 0.41 |
| 1:I:39:TYR:CD1 | 1:I:105:LYS:O | 2.73 | 0.41 |
| 1:K:36:ASP:HA | 1:K:56:ALA:O | 2.21 | 0.41 |
| 1:A:120:PHE:HA | 1:A:123:LEU:CD1 | 2.50 | 0.41 |
| 1:C:172:LYS:HD3 | 1:C:198:ASP:OD1 | 2.21 | 0.41 |
| 1:C:216:TYR:CE2 | 1:C:251:LEU:HD23 | 2.56 | 0.41 |
| 1:G:32:GLY:CA | 1:G:107:PHE:HE2 | 2.34 | 0.41 |
| 1:I:136:TRP:HZ3 | 1:I:146:ALA:HB1 | 1.84 | 0.41 |
| 1:I:174:SER:O | 1:I:178:SER:OG | 2.34 | 0.41 |
| 1:I:38:LEU:HA | 1:I:38:LEU:HD23 | 1.75 | 0.41 |
| 1:I:46:ASN:O | 1:I:47:TYR:HD1 | 2.04 | 0.41 |
| 1:A:28:TYR:HE1 | 1:A:110:PRO:HG2 | 1.86 | 0.40 |
| 1:A:131:TYR:HD1 | 1:A:132:VAL:N | 2.19 | 0.40 |
| 1:A:193:LEU:C | 1:A:193:LEU:HD23 | 2.41 | 0.40 |
| 1:A:93:SER:HG | 1:A:94:GLN:HE21 | 1.69 | 0.40 |
| 1:C:197:ARG:HH12 | 2:D:170:PTR:P | 2.44 | 0.40 |
| 2:D:174:ARG:O | 2:D:175:LYS:C | 2.60 | 0.40 |
| 1:G:172:LYS:HZ1 | 1:G:173:ILE:C | 2.24 | 0.40 |
| 1:G:251:LEU:O | 1:G:253:ARG:N | 2.54 | 0.40 |
| 1:I:88:LEU:CD1 | 1:I:92:HIS:CE1 | 3.04 | 0.40 |
| 1:K:199:ASN:O | 1:K:202:SER:HB3 | 2.20 | 0.40 |
| 1:K:74:TYR:CE2 | 1:K:85:PRO:HD3 | 2.56 | 0.40 |
| 1:A:240:LEU:CD2 | 1:A:244:TYR:HD2 | 2.33 | 0.40 |
| 1:A:38:LEU:CD2 | 1:A:107:PHE:HB2 | 2.51 | 0.40 |
| 1:C:128:ILE:HG22 | 1:C:158:ILE:CG1 | 2.17 | 0.40 |
| 1:C:205:LEU:CD2 | 1:C:205:LEU:C | 2.89 | 0.40 |
| 1:C:42:ARG:HH12 | 2:D:181:PTR:P | 2.44 | 0.40 |
| 1:E:167:PRO:C | 1:E:169:PHE:H | 2.25 | 0.40 |
| 1:G:170:HIS:O | 1:G:171:GLY:C | 2.59 | 0.40 |
| 1:I:159:ALA:C | 1:I:161:THR:N | 2.74 | 0.40 |
| 1:I:183:LEU:HD13 | 1:I:183:LEU:HA | 1.84 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:K:99:LEU:C | 1:K:101:CYS:N | 2.75 | 0.40 |
| 1:K:214:LEU:HA | 1:K:214:LEU:HD23 | 1.78 | 0.40 |
| 1:K:225:LYS:CE | 1:K:235:ASP:OD1 | 2.70 | 0.40 |
| 1:A:126:ASN:O | 1:A:129:ARG:N | 2.53 | 0.40 |
| 1:E:25:ALA:O | 1:E:26:GLU:C | 2.58 | 0.40 |
| 1:E:27:ASP:O | 1:E:28:TYR:C | 2.60 | 0.40 |
| 1:E:70:LEU:H | 1:E:70:LEU:CD1 | 2.19 | 0.40 |
| 1:E:92:HIS:CD2 | 1:E:99:LEU:HG | 2.55 | 0.40 |
| 1:G:109:ARG:HA | 1:G:110:PRO:HD2 | 1.96 | 0.40 |
| 1:G:20:ILE:HD12 | 1:G:116:LYS:HB2 | 2.03 | 0.40 |
| 1:G:27:ASP:O | 1:G:28:TYR:C | 2.60 | 0.40 |
| 1:I:113:VAL:C | 1:I:114:GLN:HE21 | 2.23 | 0.40 |
| 1:I:120:PHE:N | 1:I:122:ASP:OD1 | 2.53 | 0.40 |
| 1:I:136:TRP:CB | 1:I:138:LEU:CD2 | 3.00 | 0.40 |
| 1:A:22:ARG:NH1 | 2:B:181:PTR:P | 2.94 | 0.40 |
| 1:C:132:VAL:CG1 | 1:C:143:LEU:CD1 | 2.98 | 0.40 |
| 1:C:159:ALA:O | 1:C:160:THR:C | 2.59 | 0.40 |
| 1:C:247:LYS:HG3 | 1:C:249:ASP:H | 1.87 | 0.40 |
| 1:C:55:VAL:HG11 | 1:C:103:LEU:HD22 | 2.03 | 0.40 |
| 1:G:227:SER:HB2 | 1:G:232:LYS:O | 2.21 | 0.40 |
| 1:I:139:GLN:HB3 | 1:I:140:GLY:H | 1.63 | 0.40 |
| 1:I:202:SER:HB2 | 1:I:219:ASP:HA | 2.04 | 0.40 |
| 1:I:27:ASP:O | 1:I:28:TYR:C | 2.59 | 0.40 |
| 1:K:92:HIS:HD2 | 1:K:96:SER:O | 2.05 | 0.40 |
| 1:A:232:LYS:HG2 | 1:A:234:PHE:CE1 | 2.57 | 0.40 |
| 1:A:30:VAL:CG2 | 1:E:260:GLN:HB3 | 2.52 | 0.40 |
| 1:A:96:SER:OG | 1:A:97:ASP:N | 2.54 | 0.40 |
| 1:C:183:LEU:HA | 1:C:183:LEU:HD12 | 1.76 | 0.40 |
| 1:I:105:LYS:HA | 1:I:106:PRO:HD3 | 1.87 | 0.40 |
| 1:K:18:GLY:H | 1:K:115:PRO:HB3 | 1.85 | 0.40 |
| 1:K:30:VAL:HA | 1:K:34:MET:HB2 | 2.04 | 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 | 252/254 (99%) | 190 (75%) | 39 (16%) | 23 (9%) | 1 | 3 |
| 1 | C | 252/254 (99%) | 184 (73%) | 51 (20%) | 17 (7%) | 1 | 6 |
| 1 | E | 216/254 (85%) | 164 (76%) | 41 (19%) | 11 (5%) | 2 | 12 |
| 1 | G | 216/254 (85%) | 167 (77%) | 36 (17%) | 13 (6%) | 1 | 9 |
| 1 | I | 252/254 (99%) | 179 (71%) | 47 (19%) | 26 (10%) | 0 | 2 |
| 1 | K | 216/254 (85%) | 158 (73%) | 44 (20%) | 14 (6%) | 1 | 7 |
| 2 | B | 14/18 (78%) | 9 (64%) | 3 (21%) | 2 (14%) | 0 | 1 |
| 2 | D | 14/18 (78%) | 11 (79%) | 1 (7%) | 2 (14%) | 0 | 1 |
| 2 | F | 14/18 (78%) | 8 (57%) | 6 (43%) | 0 | 100 | 100 |
| 2 | H | 14/18 (78%) | 10 (71%) | 3 (21%) | 1 (7%) | 1 | 5 |
| 2 | J | 14/18 (78%) | 9 (64%) | 4 (29%) | 1 (7%) | 1 | 5 |
| 2 | L | 14/18 (78%) | 9 (64%) | 4 (29%) | 1 (7%) | 1 | 5 |
| All | All | 1488/1632 (91%) | 1098 (74%) | 279 (19%) | 111 (8%) | 1 | 5 |

All (111) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 18 | GLY |
| 1 | A | 137 | ASN |
| 1 | A | 140 | GLY |
| 1 | A | 171 | GLY |
| 1 | A | 177 | GLU |
| 1 | C | 18 | GLY |
| 1 | C | 198 | ASP |
| 1 | E | 18 | GLY |
| 1 | G | 10 | ALA |
| 1 | G | 18 | GLY |
| 1 | G | 171 | GLY |
| 1 | I | 10 | ALA |
| 1 | I | 18 | GLY |
| 1 | I | 59 | ARG |
| 1 | I | 151 | LYS |
| 1 | I | 199 | ASN |
| 2 | J | 175 | LYS |
| 1 | K | 18 | GLY |
| 1 | K | 180 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | K | 181 | ILE |
| 1 | K | 197 | ARG |
| 1 | K | 242 | GLU |
| 1 | A | 10 | ALA |
| 1 | A | 49 | GLY |
| 1 | A | 113 | VAL |
| 1 | A | 125 | GLU |
| 1 | A | 146 | ALA |
| 1 | A | 181 | ILE |
| 1 | A | 198 | ASP |
| 2 | B | 175 | LYS |
| 1 | C | 49 | GLY |
| 1 | C | 120 | PHE |
| 1 | C | 137 | ASN |
| 1 | C | 146 | ALA |
| 1 | C | 200 | ASN |
| 2 | D | 176 | GLY |
| 1 | E | 10 | ALA |
| 1 | E | 49 | GLY |
| 1 | E | 97 | ASP |
| 1 | E | 171 | GLY |
| 1 | E | 241 | VAL |
| 1 | E | 242 | GLU |
| 1 | E | 249 | ASP |
| 1 | G | 158 | ILE |
| 1 | G | 181 | ILE |
| 1 | G | 232 | LYS |
| 1 | I | 24 | GLU |
| 1 | I | 49 | GLY |
| 1 | I | 83 | ALA |
| 1 | I | 125 | GLU |
| 1 | I | 137 | ASN |
| 1 | I | 140 | GLY |
| 1 | I | 146 | ALA |
| 1 | I | 152 | PRO |
| 1 | I | 171 | GLY |
| 1 | I | 201 | GLY |
| 1 | I | 232 | LYS |
| 1 | I | 242 | GLU |
| 1 | K | 49 | GLY |
| 1 | K | 100 | VAL |
| 1 | K | 171 | GLY |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | K | 200 | ASN |
| 1 | K | 238 | TRP |
| 2 | L | 176 | GLY |
| 1 | C | 152 | PRO |
| 1 | C | 180 | GLN |
| 1 | C | 249 | ASP |
| 1 | E | 24 | GLU |
| 1 | G | 104 | LYS |
| 1 | G | 110 | PRO |
| 1 | G | 242 | GLU |
| 1 | I | 34 | MET |
| 1 | I | 70 | LEU |
| 1 | I | 160 | THR |
| 1 | K | 10 | ALA |
| 1 | A | 59 | ARG |
| 1 | A | 88 | LEU |
| 1 | A | 180 | GLN |
| 1 | A | 200 | ASN |
| 1 | C | 155 | GLU |
| 1 | C | 232 | LYS |
| 2 | D | 175 | LYS |
| 1 | E | 59 | ARG |
| 1 | G | 97 | ASP |
| 1 | G | 227 | SER |
| 1 | G | 252 | LEU |
| 2 | H | 176 | GLY |
| 1 | I | 131 | TYR |
| 1 | K | 59 | ARG |
| 1 | A | 145 | GLN |
| 1 | C | 151 | LYS |
| 1 | E | 177 | GLU |
| 1 | I | 96 | SER |
| 1 | I | 177 | GLU |
| 1 | K | 104 | LYS |
| 1 | A | 110 | PRO |
| 1 | A | 124 | LYS |
| 1 | A | 211 | GLY |
| 1 | A | 222 | LYS |
| 1 | A | 232 | LYS |
| 1 | C | 242 | GLU |
| 1 | I | 159 | ALA |
| 1 | I | 241 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | K | 241 | VAL |
| 1 | C | 147 | ILE |
| 1 | A | 201 | GLY |
| 1 | C | 181 | ILE |
| 2 | B | 173 | ILE |
| 1 | I | 100 | VAL |
| 1 | G | 113 | VAL |
| 1 | C | 119 | PRO |

5.3.2 Protein sidechains [i](#)

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|-----------|-----------|-------------|---|
| 1 | A | 211/216 (98%) | 124 (59%) | 87 (41%) | 0 | 0 |
| 1 | C | 211/216 (98%) | 125 (59%) | 86 (41%) | 0 | 0 |
| 1 | E | 183/216 (85%) | 118 (64%) | 65 (36%) | 0 | 1 |
| 1 | G | 182/216 (84%) | 105 (58%) | 77 (42%) | 0 | 0 |
| 1 | I | 210/216 (97%) | 123 (59%) | 87 (41%) | 0 | 0 |
| 1 | K | 182/216 (84%) | 116 (64%) | 66 (36%) | 0 | 1 |
| 2 | B | 14/14 (100%) | 6 (43%) | 8 (57%) | 0 | 0 |
| 2 | D | 14/14 (100%) | 8 (57%) | 6 (43%) | 0 | 0 |
| 2 | F | 14/14 (100%) | 8 (57%) | 6 (43%) | 0 | 0 |
| 2 | H | 14/14 (100%) | 8 (57%) | 6 (43%) | 0 | 0 |
| 2 | J | 14/14 (100%) | 8 (57%) | 6 (43%) | 0 | 0 |
| 2 | L | 14/14 (100%) | 8 (57%) | 6 (43%) | 0 | 0 |
| All | All | 1263/1380 (92%) | 757 (60%) | 506 (40%) | 0 | 0 |

All (506) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 12 | HIS |
| 1 | A | 13 | LEU |

Continued on next page...

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 15 | PHE |
| 1 | A | 20 | ILE |
| 1 | A | 21 | THR |
| 1 | A | 22 | ARG |
| 1 | A | 31 | GLN |
| 1 | A | 38 | LEU |
| 1 | A | 41 | LEU |
| 1 | A | 43 | GLN |
| 1 | A | 59 | ARG |
| 1 | A | 65 | THR |
| 1 | A | 68 | ARG |
| 1 | A | 70 | LEU |
| 1 | A | 71 | ASN |
| 1 | A | 74 | TYR |
| 1 | A | 80 | ARG |
| 1 | A | 81 | THR |
| 1 | A | 82 | HIS |
| 1 | A | 84 | SER |
| 1 | A | 88 | LEU |
| 1 | A | 94 | GLN |
| 1 | A | 96 | SER |
| 1 | A | 99 | LEU |
| 1 | A | 101 | CYS |
| 1 | A | 102 | LEU |
| 1 | A | 104 | LYS |
| 1 | A | 105 | LYS |
| 1 | A | 107 | PHE |
| 1 | A | 109 | ARG |
| 1 | A | 111 | GLN |
| 1 | A | 116 | LYS |
| 1 | A | 120 | PHE |
| 1 | A | 121 | GLU |
| 1 | A | 122 | ASP |
| 1 | A | 123 | LEU |
| 1 | A | 126 | ASN |
| 1 | A | 128 | ILE |
| 1 | A | 129 | ARG |
| 1 | A | 131 | TYR |
| 1 | A | 134 | GLN |
| 1 | A | 138 | LEU |
| 1 | A | 141 | GLN |
| 1 | A | 143 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 145 | GLN |
| 1 | A | 147 | ILE |
| 1 | A | 148 | ILE |
| 1 | A | 149 | SER |
| 1 | A | 150 | GLN |
| 1 | A | 151 | LYS |
| 1 | A | 153 | GLN |
| 1 | A | 154 | LEU |
| 1 | A | 157 | LEU |
| 1 | A | 158 | ILE |
| 1 | A | 160 | THR |
| 1 | A | 163 | HIS |
| 1 | A | 165 | LYS |
| 1 | A | 166 | MET |
| 1 | A | 172 | LYS |
| 1 | A | 175 | ARG |
| 1 | A | 178 | SER |
| 1 | A | 182 | VAL |
| 1 | A | 183 | LEU |
| 1 | A | 184 | ILE |
| 1 | A | 187 | LYS |
| 1 | A | 188 | THR |
| 1 | A | 193 | LEU |
| 1 | A | 194 | ILE |
| 1 | A | 198 | ASP |
| 1 | A | 199 | ASN |
| 1 | A | 200 | ASN |
| 1 | A | 202 | SER |
| 1 | A | 205 | LEU |
| 1 | A | 212 | LYS |
| 1 | A | 213 | VAL |
| 1 | A | 217 | ARG |
| 1 | A | 219 | ASP |
| 1 | A | 223 | THR |
| 1 | A | 226 | LEU |
| 1 | A | 232 | LYS |
| 1 | A | 238 | TRP |
| 1 | A | 242 | GLU |
| 1 | A | 246 | TYR |
| 1 | A | 252 | LEU |
| 1 | A | 253 | ARG |
| 1 | A | 259 | CYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 262 | ILE |
| 2 | B | 173 | ILE |
| 2 | B | 174 | ARG |
| 2 | B | 175 | LYS |
| 2 | B | 177 | GLN |
| 2 | B | 178 | ARG |
| 2 | B | 179 | ASP |
| 2 | B | 182 | SER |
| 2 | B | 185 | ASN |
| 1 | C | 12 | HIS |
| 1 | C | 20 | ILE |
| 1 | C | 21 | THR |
| 1 | C | 31 | GLN |
| 1 | C | 34 | MET |
| 1 | C | 38 | LEU |
| 1 | C | 41 | LEU |
| 1 | C | 43 | GLN |
| 1 | C | 48 | LEU |
| 1 | C | 53 | LEU |
| 1 | C | 55 | VAL |
| 1 | C | 59 | ARG |
| 1 | C | 68 | ARG |
| 1 | C | 70 | LEU |
| 1 | C | 71 | ASN |
| 1 | C | 81 | THR |
| 1 | C | 82 | HIS |
| 1 | C | 84 | SER |
| 1 | C | 88 | LEU |
| 1 | C | 93 | SER |
| 1 | C | 94 | GLN |
| 1 | C | 96 | SER |
| 1 | C | 99 | LEU |
| 1 | C | 102 | LEU |
| 1 | C | 104 | LYS |
| 1 | C | 105 | LYS |
| 1 | C | 107 | PHE |
| 1 | C | 109 | ARG |
| 1 | C | 111 | GLN |
| 1 | C | 117 | THR |
| 1 | C | 120 | PHE |
| 1 | C | 122 | ASP |
| 1 | C | 123 | LEU |

Continued on next page...

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 126 | ASN |
| 1 | C | 129 | ARG |
| 1 | C | 134 | GLN |
| 1 | C | 135 | THR |
| 1 | C | 138 | LEU |
| 1 | C | 141 | GLN |
| 1 | C | 143 | LEU |
| 1 | C | 148 | ILE |
| 1 | C | 150 | GLN |
| 1 | C | 151 | LYS |
| 1 | C | 153 | GLN |
| 1 | C | 154 | LEU |
| 1 | C | 160 | THR |
| 1 | C | 165 | LYS |
| 1 | C | 166 | MET |
| 1 | C | 172 | LYS |
| 1 | C | 173 | ILE |
| 1 | C | 175 | ARG |
| 1 | C | 177 | GLU |
| 1 | C | 178 | SER |
| 1 | C | 183 | LEU |
| 1 | C | 184 | ILE |
| 1 | C | 186 | SER |
| 1 | C | 187 | LYS |
| 1 | C | 188 | THR |
| 1 | C | 193 | LEU |
| 1 | C | 194 | ILE |
| 1 | C | 197 | ARG |
| 1 | C | 199 | ASN |
| 1 | C | 200 | ASN |
| 1 | C | 202 | SER |
| 1 | C | 203 | TYR |
| 1 | C | 205 | LEU |
| 1 | C | 207 | LEU |
| 1 | C | 210 | GLU |
| 1 | C | 213 | VAL |
| 1 | C | 217 | ARG |
| 1 | C | 219 | ASP |
| 1 | C | 223 | THR |
| 1 | C | 226 | LEU |
| 1 | C | 227 | SER |
| 1 | C | 232 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 234 | PHE |
| 1 | C | 236 | THR |
| 1 | C | 237 | LEU |
| 1 | C | 238 | TRP |
| 1 | C | 241 | VAL |
| 1 | C | 242 | GLU |
| 1 | C | 246 | TYR |
| 1 | C | 252 | LEU |
| 1 | C | 253 | ARG |
| 1 | C | 260 | GLN |
| 1 | C | 262 | ILE |
| 2 | D | 169 | ASP |
| 2 | D | 173 | ILE |
| 2 | D | 175 | LYS |
| 2 | D | 179 | ASP |
| 2 | D | 182 | SER |
| 2 | D | 185 | ASN |
| 1 | E | 12 | HIS |
| 1 | E | 13 | LEU |
| 1 | E | 21 | THR |
| 1 | E | 22 | ARG |
| 1 | E | 31 | GLN |
| 1 | E | 38 | LEU |
| 1 | E | 40 | LEU |
| 1 | E | 41 | LEU |
| 1 | E | 42 | ARG |
| 1 | E | 43 | GLN |
| 1 | E | 48 | LEU |
| 1 | E | 53 | LEU |
| 1 | E | 54 | SER |
| 1 | E | 59 | ARG |
| 1 | E | 67 | GLU |
| 1 | E | 68 | ARG |
| 1 | E | 70 | LEU |
| 1 | E | 71 | ASN |
| 1 | E | 80 | ARG |
| 1 | E | 81 | THR |
| 1 | E | 82 | HIS |
| 1 | E | 88 | LEU |
| 1 | E | 90 | HIS |
| 1 | E | 94 | GLN |
| 1 | E | 96 | SER |

Continued on next page...

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | E | 99 | LEU |
| 1 | E | 102 | LEU |
| 1 | E | 104 | LYS |
| 1 | E | 105 | LYS |
| 1 | E | 107 | PHE |
| 1 | E | 109 | ARG |
| 1 | E | 111 | GLN |
| 1 | E | 153 | GLN |
| 1 | E | 154 | LEU |
| 1 | E | 165 | LYS |
| 1 | E | 172 | LYS |
| 1 | E | 178 | SER |
| 1 | E | 181 | ILE |
| 1 | E | 182 | VAL |
| 1 | E | 183 | LEU |
| 1 | E | 184 | ILE |
| 1 | E | 186 | SER |
| 1 | E | 187 | LYS |
| 1 | E | 188 | THR |
| 1 | E | 193 | LEU |
| 1 | E | 194 | ILE |
| 1 | E | 195 | ARG |
| 1 | E | 197 | ARG |
| 1 | E | 199 | ASN |
| 1 | E | 205 | LEU |
| 1 | E | 206 | CYS |
| 1 | E | 207 | LEU |
| 1 | E | 219 | ASP |
| 1 | E | 223 | THR |
| 1 | E | 225 | LYS |
| 1 | E | 226 | LEU |
| 1 | E | 232 | LYS |
| 1 | E | 236 | THR |
| 1 | E | 237 | LEU |
| 1 | E | 238 | TRP |
| 1 | E | 246 | TYR |
| 1 | E | 252 | LEU |
| 1 | E | 253 | ARG |
| 1 | E | 254 | VAL |
| 1 | E | 262 | ILE |
| 2 | F | 173 | ILE |
| 2 | F | 175 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | F | 177 | GLN |
| 2 | F | 178 | ARG |
| 2 | F | 179 | ASP |
| 2 | F | 182 | SER |
| 1 | G | 12 | HIS |
| 1 | G | 13 | LEU |
| 1 | G | 15 | PHE |
| 1 | G | 21 | THR |
| 1 | G | 22 | ARG |
| 1 | G | 30 | VAL |
| 1 | G | 31 | GLN |
| 1 | G | 34 | MET |
| 1 | G | 38 | LEU |
| 1 | G | 40 | LEU |
| 1 | G | 41 | LEU |
| 1 | G | 43 | GLN |
| 1 | G | 45 | ARG |
| 1 | G | 48 | LEU |
| 1 | G | 53 | LEU |
| 1 | G | 54 | SER |
| 1 | G | 59 | ARG |
| 1 | G | 65 | THR |
| 1 | G | 67 | GLU |
| 1 | G | 68 | ARG |
| 1 | G | 70 | LEU |
| 1 | G | 71 | ASN |
| 1 | G | 80 | ARG |
| 1 | G | 81 | THR |
| 1 | G | 82 | HIS |
| 1 | G | 84 | SER |
| 1 | G | 88 | LEU |
| 1 | G | 92 | HIS |
| 1 | G | 93 | SER |
| 1 | G | 96 | SER |
| 1 | G | 100 | VAL |
| 1 | G | 102 | LEU |
| 1 | G | 104 | LYS |
| 1 | G | 107 | PHE |
| 1 | G | 109 | ARG |
| 1 | G | 111 | GLN |
| 1 | G | 117 | THR |
| 1 | G | 153 | GLN |

Continued on next page...

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | G | 154 | LEU |
| 1 | G | 156 | LYS |
| 1 | G | 157 | LEU |
| 1 | G | 158 | ILE |
| 1 | G | 160 | THR |
| 1 | G | 165 | LYS |
| 1 | G | 172 | LYS |
| 1 | G | 173 | ILE |
| 1 | G | 177 | GLU |
| 1 | G | 178 | SER |
| 1 | G | 181 | ILE |
| 1 | G | 187 | LYS |
| 1 | G | 188 | THR |
| 1 | G | 193 | LEU |
| 1 | G | 194 | ILE |
| 1 | G | 195 | ARG |
| 1 | G | 197 | ARG |
| 1 | G | 205 | LEU |
| 1 | G | 206 | CYS |
| 1 | G | 207 | LEU |
| 1 | G | 213 | VAL |
| 1 | G | 217 | ARG |
| 1 | G | 219 | ASP |
| 1 | G | 223 | THR |
| 1 | G | 225 | LYS |
| 1 | G | 226 | LEU |
| 1 | G | 234 | PHE |
| 1 | G | 237 | LEU |
| 1 | G | 238 | TRP |
| 1 | G | 241 | VAL |
| 1 | G | 242 | GLU |
| 1 | G | 245 | SER |
| 1 | G | 246 | TYR |
| 1 | G | 252 | LEU |
| 1 | G | 253 | ARG |
| 1 | G | 254 | VAL |
| 1 | G | 257 | VAL |
| 1 | G | 260 | GLN |
| 1 | G | 262 | ILE |
| 2 | H | 174 | ARG |
| 2 | H | 175 | LYS |
| 2 | H | 177 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | H | 178 | ARG |
| 2 | H | 182 | SER |
| 2 | H | 185 | ASN |
| 1 | I | 12 | HIS |
| 1 | I | 21 | THR |
| 1 | I | 22 | ARG |
| 1 | I | 23 | GLU |
| 1 | I | 31 | GLN |
| 1 | I | 38 | LEU |
| 1 | I | 40 | LEU |
| 1 | I | 41 | LEU |
| 1 | I | 42 | ARG |
| 1 | I | 43 | GLN |
| 1 | I | 45 | ARG |
| 1 | I | 48 | LEU |
| 1 | I | 51 | PHE |
| 1 | I | 53 | LEU |
| 1 | I | 59 | ARG |
| 1 | I | 67 | GLU |
| 1 | I | 68 | ARG |
| 1 | I | 69 | GLU |
| 1 | I | 70 | LEU |
| 1 | I | 71 | ASN |
| 1 | I | 81 | THR |
| 1 | I | 82 | HIS |
| 1 | I | 88 | LEU |
| 1 | I | 93 | SER |
| 1 | I | 94 | GLN |
| 1 | I | 96 | SER |
| 1 | I | 99 | LEU |
| 1 | I | 102 | LEU |
| 1 | I | 104 | LYS |
| 1 | I | 109 | ARG |
| 1 | I | 111 | GLN |
| 1 | I | 116 | LYS |
| 1 | I | 117 | THR |
| 1 | I | 120 | PHE |
| 1 | I | 122 | ASP |
| 1 | I | 123 | LEU |
| 1 | I | 125 | GLU |
| 1 | I | 126 | ASN |
| 1 | I | 128 | ILE |

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Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | I | 129 | ARG |
| 1 | I | 135 | THR |
| 1 | I | 137 | ASN |
| 1 | I | 138 | LEU |
| 1 | I | 139 | GLN |
| 1 | I | 141 | GLN |
| 1 | I | 145 | GLN |
| 1 | I | 147 | ILE |
| 1 | I | 148 | ILE |
| 1 | I | 149 | SER |
| 1 | I | 150 | GLN |
| 1 | I | 151 | LYS |
| 1 | I | 153 | GLN |
| 1 | I | 154 | LEU |
| 1 | I | 157 | LEU |
| 1 | I | 165 | LYS |
| 1 | I | 166 | MET |
| 1 | I | 172 | LYS |
| 1 | I | 174 | SER |
| 1 | I | 178 | SER |
| 1 | I | 181 | ILE |
| 1 | I | 183 | LEU |
| 1 | I | 184 | ILE |
| 1 | I | 186 | SER |
| 1 | I | 187 | LYS |
| 1 | I | 188 | THR |
| 1 | I | 189 | ASN |
| 1 | I | 193 | LEU |
| 1 | I | 194 | ILE |
| 1 | I | 197 | ARG |
| 1 | I | 199 | ASN |
| 1 | I | 203 | TYR |
| 1 | I | 205 | LEU |
| 1 | I | 206 | CYS |
| 1 | I | 213 | VAL |
| 1 | I | 217 | ARG |
| 1 | I | 219 | ASP |
| 1 | I | 223 | THR |
| 1 | I | 225 | LYS |
| 1 | I | 226 | LEU |
| 1 | I | 227 | SER |
| 1 | I | 234 | PHE |

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Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | I | 238 | TRP |
| 1 | I | 252 | LEU |
| 1 | I | 253 | ARG |
| 1 | I | 257 | VAL |
| 1 | I | 260 | GLN |
| 1 | I | 262 | ILE |
| 2 | J | 173 | ILE |
| 2 | J | 175 | LYS |
| 2 | J | 177 | GLN |
| 2 | J | 179 | ASP |
| 2 | J | 182 | SER |
| 2 | J | 185 | ASN |
| 1 | K | 12 | HIS |
| 1 | K | 15 | PHE |
| 1 | K | 21 | THR |
| 1 | K | 22 | ARG |
| 1 | K | 31 | GLN |
| 1 | K | 38 | LEU |
| 1 | K | 41 | LEU |
| 1 | K | 53 | LEU |
| 1 | K | 54 | SER |
| 1 | K | 59 | ARG |
| 1 | K | 68 | ARG |
| 1 | K | 70 | LEU |
| 1 | K | 71 | ASN |
| 1 | K | 82 | HIS |
| 1 | K | 88 | LEU |
| 1 | K | 90 | HIS |
| 1 | K | 93 | SER |
| 1 | K | 94 | GLN |
| 1 | K | 96 | SER |
| 1 | K | 99 | LEU |
| 1 | K | 102 | LEU |
| 1 | K | 103 | LEU |
| 1 | K | 104 | LYS |
| 1 | K | 105 | LYS |
| 1 | K | 107 | PHE |
| 1 | K | 109 | ARG |
| 1 | K | 111 | GLN |
| 1 | K | 153 | GLN |
| 1 | K | 155 | GLU |
| 1 | K | 157 | LEU |

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Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | K | 158 | ILE |
| 1 | K | 165 | LYS |
| 1 | K | 172 | LYS |
| 1 | K | 178 | SER |
| 1 | K | 181 | ILE |
| 1 | K | 182 | VAL |
| 1 | K | 184 | ILE |
| 1 | K | 187 | LYS |
| 1 | K | 188 | THR |
| 1 | K | 193 | LEU |
| 1 | K | 194 | ILE |
| 1 | K | 195 | ARG |
| 1 | K | 197 | ARG |
| 1 | K | 198 | ASP |
| 1 | K | 199 | ASN |
| 1 | K | 203 | TYR |
| 1 | K | 205 | LEU |
| 1 | K | 207 | LEU |
| 1 | K | 212 | LYS |
| 1 | K | 213 | VAL |
| 1 | K | 214 | LEU |
| 1 | K | 217 | ARG |
| 1 | K | 219 | ASP |
| 1 | K | 226 | LEU |
| 1 | K | 227 | SER |
| 1 | K | 234 | PHE |
| 1 | K | 236 | THR |
| 1 | K | 238 | TRP |
| 1 | K | 239 | GLN |
| 1 | K | 247 | LYS |
| 1 | K | 252 | LEU |
| 1 | K | 253 | ARG |
| 1 | K | 254 | VAL |
| 1 | K | 257 | VAL |
| 1 | K | 260 | GLN |
| 1 | K | 262 | ILE |
| 2 | L | 173 | ILE |
| 2 | L | 174 | ARG |
| 2 | L | 175 | LYS |
| 2 | L | 178 | ARG |
| 2 | L | 182 | SER |
| 2 | L | 185 | ASN |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 71 | ASN |
| 1 | A | 111 | GLN |
| 1 | A | 137 | ASN |
| 1 | A | 141 | GLN |
| 1 | A | 145 | GLN |
| 1 | A | 153 | GLN |
| 1 | A | 180 | GLN |
| 1 | A | 243 | HIS |
| 2 | B | 177 | GLN |
| 2 | B | 185 | ASN |
| 1 | C | 43 | GLN |
| 1 | C | 111 | GLN |
| 1 | C | 139 | GLN |
| 1 | C | 141 | GLN |
| 1 | C | 145 | GLN |
| 1 | C | 153 | GLN |
| 1 | C | 180 | GLN |
| 1 | C | 199 | ASN |
| 2 | D | 185 | ASN |
| 1 | E | 111 | GLN |
| 1 | E | 153 | GLN |
| 1 | E | 170 | HIS |
| 1 | E | 180 | GLN |
| 1 | E | 243 | HIS |
| 2 | F | 185 | ASN |
| 1 | G | 43 | GLN |
| 1 | G | 57 | HIS |
| 1 | G | 108 | ASN |
| 1 | G | 111 | GLN |
| 1 | G | 114 | GLN |
| 1 | G | 153 | GLN |
| 1 | G | 180 | GLN |
| 1 | G | 199 | ASN |
| 2 | H | 177 | GLN |
| 2 | H | 185 | ASN |
| 1 | I | 43 | GLN |
| 1 | I | 111 | GLN |
| 1 | I | 139 | GLN |
| 1 | I | 145 | GLN |
| 1 | I | 180 | GLN |
| 1 | I | 200 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | J | 185 | ASN |
| 1 | K | 111 | GLN |
| 1 | K | 153 | GLN |
| 1 | K | 180 | GLN |
| 1 | K | 199 | ASN |
| 2 | L | 185 | ASN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 2 | PTR | B | 170 | 2 | 15,16,17 | 2.86 | 1 (6%) | 19,22,24 | 1.12 | 3 (15%) |
| 2 | PTR | D | 170 | 2 | 15,16,17 | 0.91 | 1 (6%) | 19,22,24 | 0.76 | 0 |
| 2 | PTR | F | 170 | 2 | 15,16,17 | 1.99 | 1 (6%) | 19,22,24 | 0.85 | 1 (5%) |
| 2 | PTR | H | 170 | 2 | 15,16,17 | 0.96 | 2 (13%) | 19,22,24 | 1.20 | 2 (10%) |
| 2 | PTR | D | 181 | 2 | 15,16,17 | 0.92 | 1 (6%) | 19,22,24 | 1.81 | 5 (26%) |
| 2 | PTR | F | 181 | 2 | 15,16,17 | 0.88 | 0 | 19,22,24 | 1.11 | 3 (15%) |
| 2 | PTR | L | 170 | 2 | 15,16,17 | 1.24 | 1 (6%) | 19,22,24 | 1.08 | 1 (5%) |
| 2 | PTR | B | 181 | 2 | 15,16,17 | 1.35 | 1 (6%) | 19,22,24 | 1.99 | 3 (15%) |
| 2 | PTR | H | 181 | 2 | 15,16,17 | 1.22 | 1 (6%) | 19,22,24 | 1.63 | 5 (26%) |
| 2 | PTR | J | 170 | 2 | 15,16,17 | 1.02 | 1 (6%) | 19,22,24 | 0.79 | 1 (5%) |
| 2 | PTR | J | 181 | 2 | 15,16,17 | 2.08 | 1 (6%) | 19,22,24 | 1.13 | 2 (10%) |
| 2 | PTR | L | 181 | 2 | 15,16,17 | 1.00 | 0 | 19,22,24 | 0.92 | 1 (5%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|------------|---------|
| 2 | PTR | B | 170 | 2 | - | 0/10/11/13 | 0/1/1/1 |
| 2 | PTR | D | 170 | 2 | - | 1/10/11/13 | 0/1/1/1 |
| 2 | PTR | F | 170 | 2 | - | 0/10/11/13 | 0/1/1/1 |
| 2 | PTR | H | 170 | 2 | - | 0/10/11/13 | 0/1/1/1 |
| 2 | PTR | D | 181 | 2 | - | 2/10/11/13 | 0/1/1/1 |
| 2 | PTR | F | 181 | 2 | - | 2/10/11/13 | 0/1/1/1 |
| 2 | PTR | L | 170 | 2 | - | 0/10/11/13 | 0/1/1/1 |
| 2 | PTR | B | 181 | 2 | - | 2/10/11/13 | 0/1/1/1 |
| 2 | PTR | H | 181 | 2 | - | 3/10/11/13 | 0/1/1/1 |
| 2 | PTR | J | 170 | 2 | - | 1/10/11/13 | 0/1/1/1 |
| 2 | PTR | J | 181 | 2 | - | 0/10/11/13 | 0/1/1/1 |
| 2 | PTR | L | 181 | 2 | - | 0/10/11/13 | 0/1/1/1 |

All (11) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 2 | B | 170 | PTR | P-OH | 10.78 | 1.76 | 1.59 |
| 2 | J | 181 | PTR | P-OH | -7.33 | 1.47 | 1.59 |
| 2 | F | 170 | PTR | P-OH | 7.24 | 1.70 | 1.59 |
| 2 | B | 181 | PTR | P-OH | -3.96 | 1.53 | 1.59 |
| 2 | H | 181 | PTR | P-OH | -3.35 | 1.53 | 1.59 |
| 2 | L | 170 | PTR | P-OH | 2.97 | 1.63 | 1.59 |
| 2 | J | 170 | PTR | P-OH | 2.57 | 1.63 | 1.59 |
| 2 | D | 181 | PTR | OH-CZ | -2.39 | 1.35 | 1.40 |
| 2 | D | 170 | PTR | P-OH | 2.26 | 1.62 | 1.59 |
| 2 | H | 170 | PTR | CB-CA | -2.17 | 1.49 | 1.53 |
| 2 | H | 170 | PTR | CB-CG | -2.05 | 1.46 | 1.51 |

All (27) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2 | B | 181 | PTR | O2P-P-OH | -5.32 | 88.61 | 105.24 |
| 2 | B | 181 | PTR | O3P-P-OH | 4.58 | 119.57 | 105.24 |
| 2 | D | 181 | PTR | OH-P-O1P | -4.51 | 92.30 | 109.31 |
| 2 | D | 181 | PTR | O3P-P-OH | 4.05 | 117.91 | 105.24 |
| 2 | B | 181 | PTR | O2P-P-O1P | 3.99 | 126.32 | 110.68 |
| 2 | L | 170 | PTR | P-OH-CZ | 3.92 | 136.30 | 123.75 |
| 2 | H | 181 | PTR | O3P-P-OH | 3.81 | 117.16 | 105.24 |
| 2 | H | 181 | PTR | O2P-P-OH | -3.06 | 95.67 | 105.24 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2 | H | 170 | PTR | OH-P-O1P | -2.97 | 98.10 | 109.31 |
| 2 | B | 170 | PTR | O3P-P-OH | 2.96 | 114.50 | 105.24 |
| 2 | F | 181 | PTR | O3P-P-O2P | 2.76 | 118.19 | 107.64 |
| 2 | H | 181 | PTR | O3P-P-O2P | 2.64 | 117.71 | 107.64 |
| 2 | H | 181 | PTR | O2P-P-O1P | 2.62 | 120.95 | 110.68 |
| 2 | J | 181 | PTR | O3P-P-OH | 2.60 | 113.37 | 105.24 |
| 2 | J | 170 | PTR | O3P-P-OH | 2.58 | 113.32 | 105.24 |
| 2 | H | 181 | PTR | O3P-P-O1P | -2.52 | 100.83 | 110.68 |
| 2 | D | 181 | PTR | O3P-P-O1P | -2.51 | 100.87 | 110.68 |
| 2 | D | 181 | PTR | O2P-P-OH | 2.45 | 112.92 | 105.24 |
| 2 | J | 181 | PTR | O3P-P-O2P | 2.38 | 116.75 | 107.64 |
| 2 | F | 181 | PTR | O2P-P-O1P | -2.36 | 101.46 | 110.68 |
| 2 | D | 181 | PTR | O3P-P-O2P | 2.34 | 116.58 | 107.64 |
| 2 | B | 170 | PTR | OH-P-O1P | -2.30 | 100.64 | 109.31 |
| 2 | H | 170 | PTR | O3P-P-OH | 2.29 | 112.41 | 105.24 |
| 2 | F | 170 | PTR | O3P-P-OH | 2.29 | 112.39 | 105.24 |
| 2 | B | 170 | PTR | O2P-P-OH | 2.25 | 112.28 | 105.24 |
| 2 | F | 181 | PTR | CG-CB-CA | -2.17 | 109.70 | 114.10 |
| 2 | L | 181 | PTR | O2P-P-OH | 2.13 | 111.90 | 105.24 |

There are no chirality outliers.

All (11) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 2 | D | 170 | PTR | O-C-CA-CB |
| 2 | D | 181 | PTR | CZ-OH-P-O1P |
| 2 | F | 181 | PTR | O-C-CA-CB |
| 2 | B | 181 | PTR | C-CA-CB-CG |
| 2 | H | 181 | PTR | O-C-CA-CB |
| 2 | H | 181 | PTR | C-CA-CB-CG |
| 2 | J | 170 | PTR | O-C-CA-CB |
| 2 | B | 181 | PTR | N-CA-CB-CG |
| 2 | H | 181 | PTR | N-CA-CB-CG |
| 2 | F | 181 | PTR | CZ-OH-P-O3P |
| 2 | D | 181 | PTR | CZ-OH-P-O2P |

There are no ring outliers.

9 monomers are involved in 27 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | B | 170 | PTR | 2 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | D | 170 | PTR | 3 | 0 |
| 2 | F | 170 | PTR | 1 | 0 |
| 2 | H | 170 | PTR | 4 | 0 |
| 2 | D | 181 | PTR | 2 | 0 |
| 2 | F | 181 | PTR | 1 | 0 |
| 2 | B | 181 | PTR | 4 | 0 |
| 2 | H | 181 | PTR | 2 | 0 |
| 2 | J | 181 | PTR | 8 | 0 |

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.