



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 18, 2024 – 03:28 PM EDT

PDB ID : 4FSX
Title : crystal structure of Se-substituted Zea mays ZMET2 in complex with SAH
Authors : Du, J.; Patel, D.J.
Deposited on : 2012-06-27
Resolution : 3.20 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 types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 1.20.1
EDS : 2.37.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

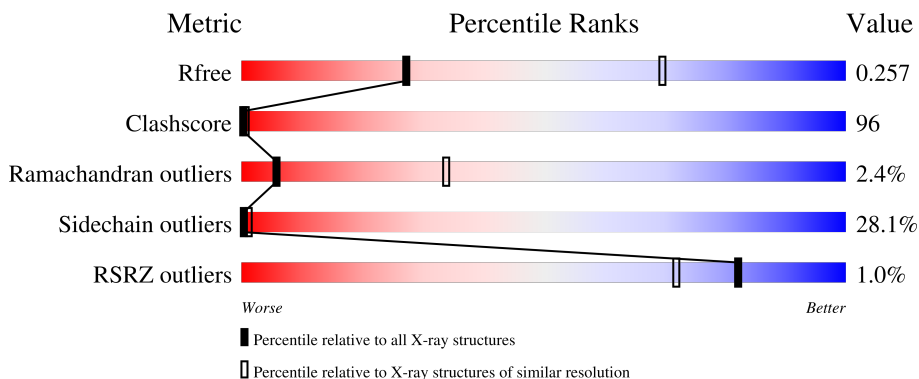
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.20 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)) |
|-----------------------|-----------------------------|---|
| R_{free} | 130704 | 1133 (3.20-3.20) |
| Clashscore | 141614 | 1253 (3.20-3.20) |
| Ramachandran outliers | 138981 | 1234 (3.20-3.20) |
| Sidechain outliers | 138945 | 1233 (3.20-3.20) |
| RSRZ outliers | 127900 | 1095 (3.20-3.20) |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------------|
| 1 | A | 784 | <p>21% 47% 17% • 13%</p> |
| 1 | B | 784 | <p>19% 48% 18% • 14%</p> |

2 Entry composition i

There are 2 unique types of molecules in this entry. The entry contains 10631 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.

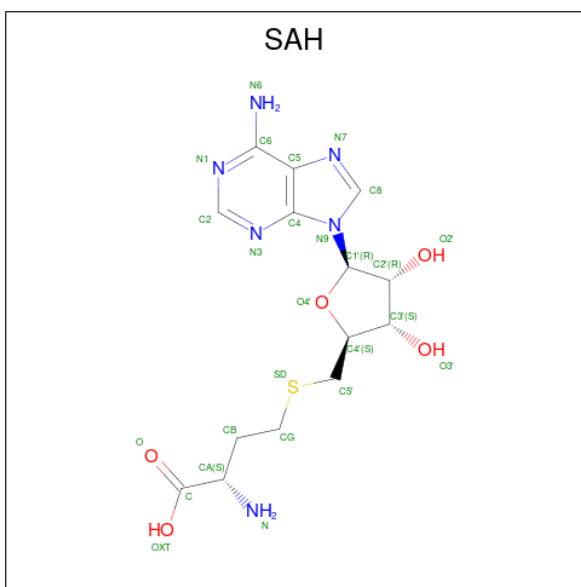
- Molecule 1 is a protein called DNA (cytosine-5)-methyltransferase 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|----|
| | | | Total | C | N | O | S | | | | Se |
| 1 | A | 680 | 5331 | 3401 | 904 | 993 | 18 | 15 | 0 | 0 | 0 |
| 1 | B | 675 | 5248 | 3346 | 893 | 976 | 18 | 15 | 0 | 0 | 0 |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| A | 129 | SER | - | EXPRESSION TAG | UNP Q9AXT8 |
| B | 129 | SER | - | EXPRESSION TAG | UNP Q9AXT8 |

- Molecule 2 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula: $C_{14}H_{20}N_6O_5S$).



| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---|---------|---------|
| | | | Total | C | N | O | S | | |
| 2 | A | 1 | 26 | 14 | 6 | 5 | 1 | 0 | 0 |

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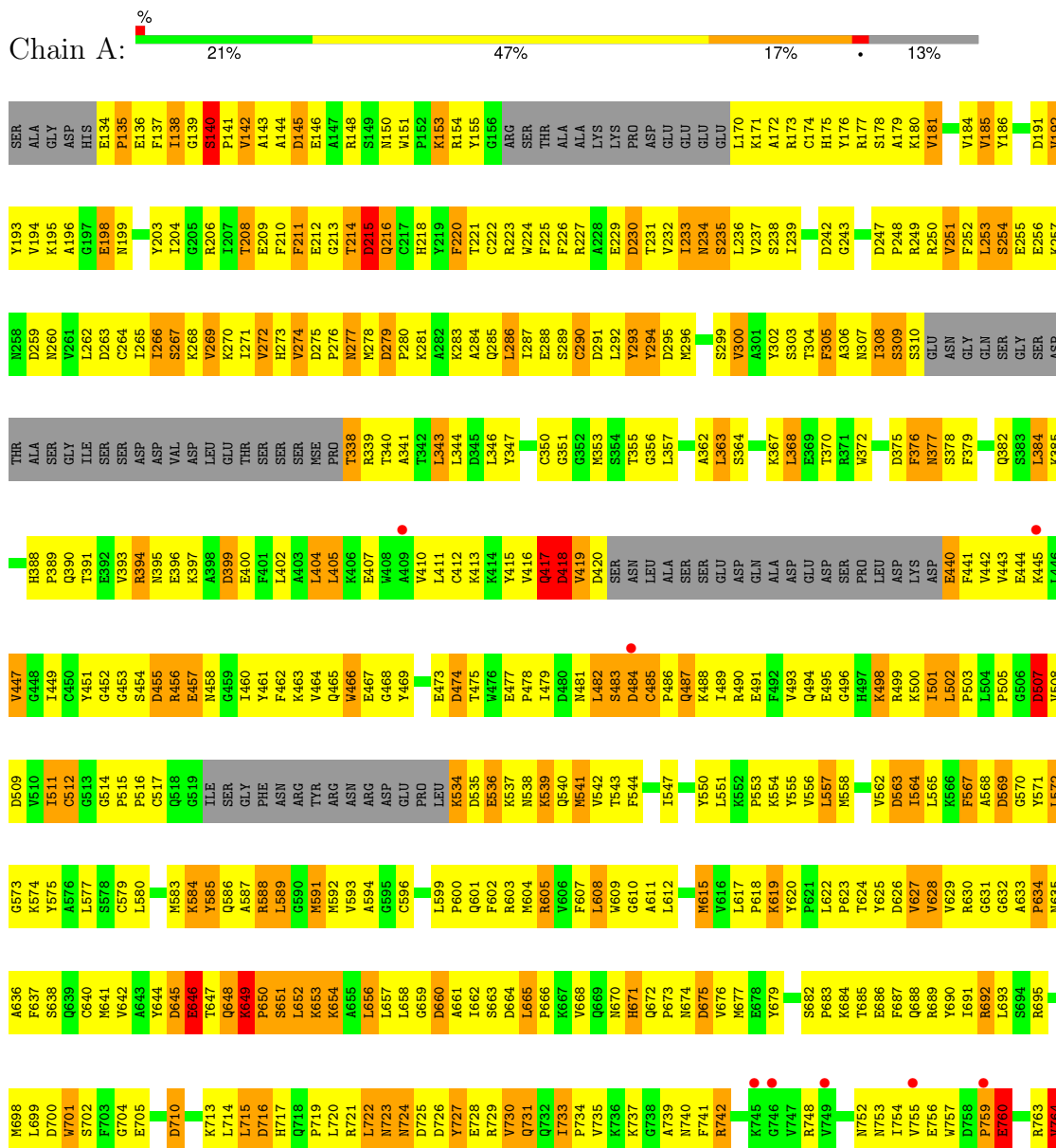
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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---|---------|---------|
| | | | Total | C | N | O | S | | |
| 2 | B | 1 | 26 | 14 | 6 | 5 | 1 | 0 | 0 |

3 Residue-property plots i

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

- Molecule 1: DNA (cytosine-5)-methyltransferase 1



ALA
GLY
GLU
VAL
VAL
GLU
GLN

4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | P 1 | Depositor |
| Cell constants a, b, c, α , β , γ | 64.86Å 88.95Å 113.49Å 93.47° 95.53° 110.41° | Depositor |
| Resolution (Å) | 40.25 – 3.20 48.87 – 3.19 | Depositor EDS |
| % Data completeness (in resolution range) | 97.6 (40.25-3.20) 98.9 (48.87-3.19) | Depositor EDS |
| R_{merge} | 0.17 | Depositor |
| R_{sym} | 0.17 | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 2.07 (at 3.19Å) | Xtrriage |
| Refinement program | PHENIX (phenix.refine: 1.7.1_743) | Depositor |
| R, R_{free} | 0.240 , 0.263 0.232 , 0.257 | Depositor DCC |
| R_{free} test set | 1946 reflections (5.03%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 59.9 | Xtrriage |
| Anisotropy | 0.609 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.28 , 69.4 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.27$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.89 | EDS |
| Total number of atoms | 10631 | wwPDB-VP |
| Average B, all atoms (Å ²) | 70.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.11% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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 | 0.64 | 0/5445 | 0.79 | 5/7358 (0.1%) |
| 1 | B | 0.63 | 1/5362 (0.0%) | 0.82 | 12/7252 (0.2%) |
| All | All | 0.63 | 1/10807 (0.0%) | 0.80 | 17/14610 (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 | 3 |
| 1 | B | 0 | 1 |
| All | All | 0 | 4 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1 | B | 579 | CYS | CB-SG | -5.50 | 1.72 | 1.81 |

All (17) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | B | 535 | ASP | CB-CG-OD1 | -9.04 | 110.17 | 118.30 |
| 1 | A | 632 | GLY | N-CA-C | -8.60 | 91.61 | 113.10 |
| 1 | B | 535 | ASP | N-CA-C | 8.56 | 134.12 | 111.00 |
| 1 | B | 146 | GLU | N-CA-C | -6.83 | 92.56 | 111.00 |
| 1 | B | 746 | GLY | N-CA-C | -6.81 | 96.08 | 113.10 |
| 1 | A | 809 | ASN | N-CA-C | 6.74 | 129.18 | 111.00 |
| 1 | B | 680 | GLY | N-CA-C | -6.54 | 96.76 | 113.10 |
| 1 | B | 699 | LEU | CA-CB-CG | -6.52 | 100.31 | 115.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | B | 810 | GLN | N-CA-C | 6.51 | 128.59 | 111.00 |
| 1 | A | 649 | LYS | N-CA-C | -6.46 | 93.57 | 111.00 |
| 1 | B | 657 | LEU | CA-CB-CG | -6.36 | 100.67 | 115.30 |
| 1 | A | 418 | ASP | N-CA-C | -6.25 | 94.13 | 111.00 |
| 1 | B | 279 | ASP | N-CA-CB | -6.17 | 99.50 | 110.60 |
| 1 | B | 139 | GLY | N-CA-C | -5.96 | 98.19 | 113.10 |
| 1 | B | 279 | ASP | C-N-CD | -5.96 | 107.49 | 120.60 |
| 1 | B | 589 | LEU | CA-CB-CG | 5.08 | 126.98 | 115.30 |
| 1 | A | 879 | LEU | CB-CG-CD2 | -5.05 | 102.41 | 111.00 |

There are no chirality outliers.

All (4) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 1 | A | 145 | ASP | Peptide |
| 1 | A | 455 | ASP | Peptide |
| 1 | A | 507 | ASP | Peptide |
| 1 | B | 504 | LEU | Peptide |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 5331 | 0 | 5166 | 987 | 0 |
| 1 | B | 5248 | 0 | 5023 | 1014 | 0 |
| 2 | A | 26 | 0 | 19 | 6 | 0 |
| 2 | B | 26 | 0 | 19 | 6 | 0 |
| All | All | 10631 | 0 | 10227 | 1998 | 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 96.

All (1998) 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:B:695:ARG:HG2 | 1:B:835:TYR:CD1 | 1.50 | 1.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:656:LEU:C | 1:B:657:LEU:HD12 | 1.33 | 1.45 |
| 1:A:134:GLU:HB3 | 1:A:135:PRO:CD | 1.43 | 1.38 |
| 1:B:883:PRO:CG | 1:B:884:PRO:HD2 | 1.53 | 1.37 |
| 1:B:695:ARG:HG2 | 1:B:835:TYR:CE1 | 1.64 | 1.32 |
| 1:B:699:LEU:HD12 | 1:B:701:TRP:NE1 | 1.44 | 1.31 |
| 1:B:142:VAL:HG11 | 1:B:174:CYS:SG | 1.75 | 1.26 |
| 1:B:883:PRO:HG2 | 1:B:884:PRO:CD | 1.66 | 1.25 |
| 1:B:457:GLU:HB2 | 1:B:461:TYR:OH | 1.35 | 1.24 |
| 1:A:134:GLU:CB | 1:A:135:PRO:HD2 | 1.64 | 1.23 |
| 1:A:784:LYS:C | 1:A:786:LEU:HD12 | 1.58 | 1.23 |
| 1:B:656:LEU:O | 1:B:657:LEU:HD12 | 1.39 | 1.22 |
| 1:A:404:LEU:HD12 | 1:A:404:LEU:O | 1.34 | 1.22 |
| 1:B:142:VAL:CG1 | 1:B:174:CYS:SG | 2.29 | 1.20 |
| 1:A:784:LYS:CA | 1:A:786:LEU:HD12 | 1.72 | 1.20 |
| 1:B:279:ASP:O | 1:B:283:LYS:HG3 | 1.38 | 1.18 |
| 1:A:822:THR:HG22 | 1:A:825:GLU:OE2 | 1.44 | 1.17 |
| 1:B:279:ASP:CB | 1:B:280:PRO:HD3 | 1.74 | 1.17 |
| 1:A:781:ILE:HD13 | 1:A:781:ILE:N | 1.57 | 1.16 |
| 1:A:209:GLU:HB2 | 1:A:221:THR:CG2 | 1.75 | 1.16 |
| 1:A:273:HIS:HB2 | 1:A:294:TYR:CE2 | 1.81 | 1.15 |
| 1:B:699:LEU:HD12 | 1:B:701:TRP:CD1 | 1.82 | 1.15 |
| 1:B:279:ASP:HB3 | 1:B:280:PRO:HD3 | 1.23 | 1.14 |
| 1:A:456:ARG:HG2 | 1:A:456:ARG:HH21 | 1.04 | 1.14 |
| 1:B:604:MSE:SE | 1:B:641:MSE:HE1 | 1.97 | 1.14 |
| 1:B:134:GLU:OE1 | 1:B:135:PRO:HD3 | 1.44 | 1.14 |
| 1:B:695:ARG:CG | 1:B:695:ARG:HH11 | 1.59 | 1.14 |
| 1:A:664:ASP:O | 1:A:664:ASP:OD1 | 1.66 | 1.13 |
| 1:A:780:PHE:HE2 | 1:A:809:ASN:ND2 | 1.45 | 1.13 |
| 1:A:273:HIS:HB2 | 1:A:294:TYR:HE2 | 1.00 | 1.12 |
| 1:B:691:ILE:CD1 | 1:B:833:PRO:HA | 1.78 | 1.12 |
| 1:B:699:LEU:HD11 | 1:B:701:TRP:CD2 | 1.83 | 1.12 |
| 1:A:209:GLU:CB | 1:A:221:THR:HG22 | 1.79 | 1.12 |
| 1:B:691:ILE:HD11 | 1:B:833:PRO:HA | 1.13 | 1.12 |
| 1:A:412:CYS:O | 1:A:416:VAL:HG23 | 1.46 | 1.11 |
| 1:B:148:ARG:HG2 | 1:B:148:ARG:HH11 | 1.07 | 1.11 |
| 1:B:227:ARG:HB2 | 1:B:230:ASP:OD2 | 1.48 | 1.11 |
| 1:B:772:LEU:O | 1:B:773:VAL:HG22 | 1.47 | 1.11 |
| 1:B:837:ARG:HH11 | 1:B:837:ARG:HG3 | 1.14 | 1.11 |
| 1:A:250:ARG:NH1 | 1:A:252:PHE:HE2 | 1.48 | 1.10 |
| 1:B:883:PRO:HB2 | 1:B:884:PRO:HD3 | 1.25 | 1.10 |
| 1:A:879:LEU:HD22 | 1:A:879:LEU:N | 1.67 | 1.10 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:195:LYS:NZ | 1:A:264:CYS:HA | 1.67 | 1.09 |
| 1:A:852:ALA:HA | 2:A:1000:SAH:OXT | 1.49 | 1.09 |
| 1:A:784:LYS:CB | 1:A:786:LEU:CD1 | 2.30 | 1.09 |
| 1:B:206:ARG:HH11 | 1:B:206:ARG:HG3 | 0.98 | 1.09 |
| 1:B:645:ASP:O | 1:B:646:GLU:HB3 | 1.45 | 1.09 |
| 1:A:440:GLU:HG2 | 1:A:441:PHE:H | 1.09 | 1.09 |
| 1:B:667:LYS:HA | 1:B:817:GLN:OE1 | 1.52 | 1.08 |
| 1:A:540:GLN:NE2 | 1:A:540:GLN:HA | 1.47 | 1.08 |
| 1:B:226:PHE:CE2 | 1:B:254:SER:HB2 | 1.89 | 1.08 |
| 1:B:796:GLU:HG3 | 1:B:797:THR:H | 1.19 | 1.08 |
| 1:A:781:ILE:HG12 | 1:A:786:LEU:HD21 | 1.34 | 1.08 |
| 1:A:279:ASP:HB2 | 1:A:280:PRO:HD2 | 1.31 | 1.07 |
| 1:B:143:ALA:O | 1:B:144:ALA:HB3 | 1.54 | 1.07 |
| 1:B:649:LYS:HD2 | 1:B:652:LEU:HD12 | 1.36 | 1.07 |
| 1:A:154:ARG:HH22 | 1:A:209:GLU:CD | 1.55 | 1.07 |
| 1:A:417:GLN:NE2 | 1:A:417:GLN:HA | 1.66 | 1.07 |
| 1:A:592:MSE:HE1 | 1:A:861:LEU:HD21 | 1.11 | 1.06 |
| 1:A:784:LYS:O | 1:A:786:LEU:HD12 | 1.53 | 1.06 |
| 1:B:685:THR:HG22 | 1:B:688:GLN:H | 1.18 | 1.06 |
| 1:B:699:LEU:CD1 | 1:B:701:TRP:CD1 | 2.38 | 1.06 |
| 1:B:883:PRO:CB | 1:B:884:PRO:CD | 2.34 | 1.06 |
| 1:B:852:ALA:HA | 2:B:1000:SAH:OXT | 1.55 | 1.06 |
| 1:B:667:LYS:HG3 | 1:B:817:GLN:OE1 | 1.55 | 1.06 |
| 1:B:820:VAL:HG13 | 1:B:821:LEU:H | 1.01 | 1.06 |
| 1:A:209:GLU:HB3 | 1:A:221:THR:HG22 | 1.38 | 1.05 |
| 1:A:214:THR:O | 1:A:215:ASP:HB2 | 1.55 | 1.05 |
| 1:B:695:ARG:HH11 | 1:B:695:ARG:HG3 | 0.91 | 1.05 |
| 1:A:173:ARG:HH11 | 1:A:212:GLU:CD | 1.56 | 1.05 |
| 1:A:733:ILE:CG2 | 1:A:791:ARG:HH21 | 1.68 | 1.05 |
| 1:A:733:ILE:HG22 | 1:A:791:ARG:HH21 | 1.22 | 1.05 |
| 1:B:134:GLU:OE1 | 1:B:134:GLU:HA | 1.47 | 1.05 |
| 1:B:231:THR:OG1 | 1:B:233:ILE:HG23 | 1.55 | 1.05 |
| 1:A:478:PRO:HG2 | 1:A:481:ASN:HB2 | 1.06 | 1.05 |
| 1:B:278:MSE:HB3 | 1:B:282:ALA:HB3 | 1.39 | 1.05 |
| 1:B:791:ARG:HD2 | 1:B:792:LEU:H | 1.16 | 1.05 |
| 1:A:154:ARG:HB3 | 1:A:170:LEU:HD23 | 1.34 | 1.04 |
| 1:A:250:ARG:NH1 | 1:A:252:PHE:CE2 | 2.24 | 1.04 |
| 1:B:699:LEU:CD1 | 1:B:701:TRP:CE2 | 2.41 | 1.04 |
| 1:B:748:ARG:CB | 1:B:756:GLU:H | 1.71 | 1.04 |
| 1:A:281:LYS:HA | 1:A:284:ALA:HB3 | 1.37 | 1.04 |
| 1:A:652:LEU:O | 1:A:653:LYS:C | 1.96 | 1.03 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:676:VAL:CG1 | 1:B:713:LYS:CE | 2.36 | 1.03 |
| 1:B:685:THR:CG2 | 1:B:688:GLN:H | 1.70 | 1.03 |
| 1:B:656:LEU:C | 1:B:657:LEU:CD1 | 2.27 | 1.03 |
| 1:B:676:VAL:HG13 | 1:B:713:LYS:CE | 1.89 | 1.03 |
| 1:B:723:ASN:OD1 | 1:B:726:ASP:HB2 | 1.58 | 1.03 |
| 1:A:229:GLU:HG3 | 1:A:237:VAL:HG11 | 1.39 | 1.02 |
| 1:A:596:CYS:HB3 | 1:A:623:PRO:HB3 | 1.39 | 1.02 |
| 1:B:676:VAL:HG13 | 1:B:713:LYS:HE2 | 1.41 | 1.02 |
| 1:B:695:ARG:CG | 1:B:835:TYR:CD1 | 2.43 | 1.02 |
| 1:A:273:HIS:CB | 1:A:294:TYR:HE2 | 1.72 | 1.02 |
| 1:A:367:LYS:HE3 | 1:A:701:TRP:CH2 | 1.93 | 1.02 |
| 1:B:793:TRP:HB3 | 1:B:815:PRO:HB3 | 1.42 | 1.02 |
| 1:A:759:PRO:O | 1:A:760:GLU:HB2 | 1.60 | 1.01 |
| 1:B:379:PHE:CD2 | 1:B:844:GLU:HG2 | 1.95 | 1.01 |
| 1:B:646:GLU:O | 1:B:646:GLU:HG2 | 1.60 | 1.01 |
| 1:A:715:LEU:HD22 | 1:A:837:ARG:HG2 | 1.42 | 1.01 |
| 1:A:725:ASP:HA | 1:A:766:LEU:CD1 | 1.90 | 1.00 |
| 1:A:772:LEU:HD13 | 1:A:773:VAL:HG22 | 1.38 | 1.00 |
| 1:B:339:ARG:HG2 | 1:B:339:ARG:HH11 | 1.23 | 1.00 |
| 1:B:772:LEU:C | 1:B:774:PRO:CD | 2.30 | 1.00 |
| 1:B:729:ARG:HH21 | 1:B:772:LEU:HA | 1.25 | 1.00 |
| 1:A:879:LEU:HD22 | 1:A:879:LEU:H | 1.17 | 0.99 |
| 1:B:695:ARG:HG2 | 1:B:835:TYR:HD1 | 1.16 | 0.99 |
| 1:A:541:MSE:SE | 1:A:558:MSE:HE1 | 2.12 | 0.99 |
| 1:A:515:PRO:HG2 | 1:A:558:MSE:HE3 | 1.43 | 0.99 |
| 1:A:646:GLU:OE2 | 1:A:646:GLU:HA | 1.58 | 0.99 |
| 1:B:699:LEU:HD12 | 1:B:701:TRP:CE2 | 1.96 | 0.99 |
| 1:B:549:ALA:HA | 1:B:583:MSE:HE2 | 1.43 | 0.98 |
| 1:B:883:PRO:HB2 | 1:B:884:PRO:CD | 1.90 | 0.98 |
| 1:A:803:THR:HA | 1:A:850:GLY:HA3 | 1.39 | 0.98 |
| 1:A:300:VAL:O | 1:A:300:VAL:HG23 | 1.63 | 0.98 |
| 1:A:784:LYS:CB | 1:A:786:LEU:HD11 | 1.93 | 0.98 |
| 1:B:691:ILE:HD11 | 1:B:833:PRO:CA | 1.93 | 0.98 |
| 1:B:206:ARG:HH11 | 1:B:206:ARG:CG | 1.76 | 0.98 |
| 1:B:820:VAL:HG13 | 1:B:821:LEU:N | 1.78 | 0.97 |
| 1:B:676:VAL:CG1 | 1:B:713:LYS:HE2 | 1.94 | 0.97 |
| 1:A:134:GLU:HB3 | 1:A:135:PRO:HD2 | 0.99 | 0.97 |
| 1:A:784:LYS:H | 1:A:786:LEU:CD1 | 1.76 | 0.97 |
| 1:B:206:ARG:HG3 | 1:B:206:ARG:NH1 | 1.68 | 0.97 |
| 1:B:143:ALA:O | 1:B:144:ALA:CB | 2.12 | 0.97 |
| 1:B:134:GLU:CD | 1:B:135:PRO:HD3 | 1.85 | 0.96 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:665:LEU:HD21 | 1:A:814:HIS:HE1 | 1.29 | 0.96 |
| 1:A:353:MSE:HB2 | 1:A:853:VAL:HG11 | 1.47 | 0.96 |
| 1:A:540:GLN:HA | 1:A:540:GLN:HE21 | 1.25 | 0.96 |
| 1:B:445:LYS:O | 1:B:446:LEU:HD23 | 1.65 | 0.96 |
| 1:B:773:VAL:N | 1:B:774:PRO:HD2 | 1.79 | 0.95 |
| 1:A:502:LEU:HD23 | 1:A:503:PRO:HD2 | 1.45 | 0.95 |
| 1:A:784:LYS:CA | 1:A:786:LEU:CD1 | 2.44 | 0.95 |
| 1:B:773:VAL:N | 1:B:774:PRO:CD | 2.29 | 0.95 |
| 1:B:518:GLN:HB2 | 1:B:537:LYS:HB3 | 1.48 | 0.95 |
| 1:A:787:LYS:N | 1:A:788:PRO:HD3 | 1.81 | 0.95 |
| 1:A:727:TYR:HE2 | 1:A:731:GLN:OE1 | 1.48 | 0.95 |
| 1:B:685:THR:HG22 | 1:B:688:GLN:N | 1.80 | 0.95 |
| 1:B:772:LEU:C | 1:B:774:PRO:HD3 | 1.86 | 0.95 |
| 1:A:209:GLU:CB | 1:A:221:THR:CG2 | 2.41 | 0.95 |
| 1:A:784:LYS:N | 1:A:786:LEU:CD1 | 2.30 | 0.94 |
| 1:B:645:ASP:O | 1:B:645:ASP:OD1 | 1.85 | 0.94 |
| 1:A:879:LEU:N | 1:A:879:LEU:CD2 | 2.30 | 0.94 |
| 1:B:699:LEU:CD1 | 1:B:701:TRP:NE1 | 2.30 | 0.94 |
| 1:A:663:SER:HB3 | 1:A:688:GLN:HE22 | 1.31 | 0.94 |
| 1:B:379:PHE:HD2 | 1:B:844:GLU:HG2 | 1.30 | 0.94 |
| 1:B:814:HIS:CD2 | 1:B:816:THR:H | 1.85 | 0.94 |
| 1:A:220:PHE:H | 1:A:220:PHE:HD2 | 1.14 | 0.94 |
| 1:A:589:LEU:HA | 1:A:620:TYR:OH | 1.68 | 0.94 |
| 1:B:142:VAL:HG13 | 1:B:174:CYS:SG | 2.06 | 0.94 |
| 1:B:279:ASP:CB | 1:B:280:PRO:CD | 2.43 | 0.94 |
| 1:B:226:PHE:HE2 | 1:B:254:SER:HB2 | 1.26 | 0.94 |
| 1:B:699:LEU:O | 1:B:699:LEU:HD23 | 1.68 | 0.93 |
| 1:B:814:HIS:HD2 | 1:B:816:THR:H | 1.10 | 0.93 |
| 1:A:714:LEU:HD21 | 1:A:717:HIS:HB2 | 1.48 | 0.93 |
| 1:A:404:LEU:HD12 | 1:A:404:LEU:C | 1.72 | 0.93 |
| 1:A:772:LEU:O | 1:A:774:PRO:HD3 | 1.68 | 0.93 |
| 1:A:220:PHE:CE2 | 1:A:260:ASN:HB2 | 2.03 | 0.93 |
| 1:A:772:LEU:HD13 | 1:A:773:VAL:H | 1.33 | 0.93 |
| 1:A:764:VAL:HG21 | 1:A:772:LEU:HG | 1.48 | 0.93 |
| 1:B:307:ASN:ND2 | 1:B:586:GLN:CD | 2.22 | 0.93 |
| 1:B:355:THR:HG22 | 1:B:388:HIS:NE2 | 1.83 | 0.92 |
| 1:A:780:PHE:CE2 | 1:A:809:ASN:ND2 | 2.37 | 0.92 |
| 1:A:786:LEU:HB3 | 1:A:788:PRO:HD3 | 1.48 | 0.92 |
| 1:A:605:ARG:HG2 | 1:A:605:ARG:HH11 | 1.31 | 0.92 |
| 1:B:796:GLU:HG3 | 1:B:797:THR:N | 1.79 | 0.92 |
| 1:A:154:ARG:CZ | 1:A:170:LEU:HD21 | 1.98 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:171:LYS:O | 1:A:213:GLY:HA2 | 1.69 | 0.92 |
| 1:B:695:ARG:CG | 1:B:835:TYR:CE1 | 2.53 | 0.92 |
| 1:A:572:LEU:HD22 | 1:A:572:LEU:H | 1.35 | 0.92 |
| 1:A:668:VAL:H | 1:A:817:GLN:HE22 | 1.01 | 0.92 |
| 1:B:814:HIS:HD2 | 1:B:816:THR:N | 1.66 | 0.92 |
| 1:A:279:ASP:HB2 | 1:A:280:PRO:CD | 1.99 | 0.92 |
| 1:B:685:THR:HG23 | 1:B:687:PHE:N | 1.85 | 0.92 |
| 1:B:562:VAL:HG21 | 1:B:604:MSE:HE3 | 1.51 | 0.92 |
| 1:B:833:PRO:HB2 | 1:B:835:TYR:CE2 | 2.04 | 0.92 |
| 1:A:605:ARG:HH11 | 1:A:605:ARG:CG | 1.83 | 0.91 |
| 1:A:648:GLN:OE1 | 1:A:648:GLN:HA | 1.67 | 0.91 |
| 1:A:668:VAL:H | 1:A:817:GLN:NE2 | 1.67 | 0.91 |
| 1:A:781:ILE:N | 1:A:781:ILE:CD1 | 2.30 | 0.91 |
| 1:A:151:TRP:HE1 | 1:A:175:HIS:CE1 | 1.87 | 0.91 |
| 1:A:478:PRO:CG | 1:A:481:ASN:HB2 | 1.99 | 0.91 |
| 1:B:236:LEU:HD13 | 1:B:574:LYS:HB2 | 1.51 | 0.91 |
| 1:B:676:VAL:O | 1:B:676:VAL:HG12 | 1.68 | 0.91 |
| 1:B:599:LEU:HD11 | 1:B:856:PRO:HG2 | 1.50 | 0.91 |
| 1:A:727:TYR:CE2 | 1:A:731:GLN:OE1 | 2.24 | 0.90 |
| 1:A:740:ASN:ND2 | 1:A:742:ARG:HG3 | 1.87 | 0.90 |
| 1:B:820:VAL:CG1 | 1:B:821:LEU:H | 1.85 | 0.90 |
| 1:B:881:GLN:OE1 | 1:B:882:LEU:N | 2.05 | 0.90 |
| 1:A:555:TYR:HE2 | 1:A:618:PRO:HD3 | 1.37 | 0.89 |
| 1:A:781:ILE:CG1 | 1:A:786:LEU:HD21 | 2.02 | 0.89 |
| 1:A:171:LYS:HB2 | 1:A:214:THR:HG23 | 1.54 | 0.89 |
| 1:A:415:TYR:CD2 | 1:A:490:ARG:HG2 | 2.08 | 0.89 |
| 1:A:154:ARG:NH2 | 1:A:209:GLU:CD | 2.26 | 0.89 |
| 1:B:699:LEU:CD1 | 1:B:701:TRP:CG | 2.56 | 0.89 |
| 1:A:784:LYS:CB | 1:A:786:LEU:HD12 | 1.99 | 0.89 |
| 1:A:173:ARG:HH11 | 1:A:212:GLU:CG | 1.86 | 0.89 |
| 1:A:644:TYR:CE2 | 1:A:649:LYS:HG3 | 2.07 | 0.89 |
| 1:B:844:GLU:O | 1:B:847:ILE:HG13 | 1.72 | 0.89 |
| 1:A:444:GLU:O | 1:A:488:LYS:HE3 | 1.73 | 0.88 |
| 1:A:879:LEU:H | 1:A:879:LEU:CD2 | 1.84 | 0.88 |
| 1:B:279:ASP:O | 1:B:283:LYS:CG | 2.20 | 0.88 |
| 1:B:279:ASP:CG | 1:B:280:PRO:HD3 | 1.93 | 0.88 |
| 1:B:279:ASP:HB3 | 1:B:280:PRO:CD | 2.01 | 0.88 |
| 1:B:695:ARG:HG3 | 1:B:695:ARG:NH1 | 1.63 | 0.88 |
| 1:B:748:ARG:CB | 1:B:756:GLU:N | 2.36 | 0.88 |
| 1:A:195:LYS:HZ3 | 1:A:264:CYS:HA | 1.35 | 0.88 |
| 1:A:236:LEU:HD13 | 1:A:574:LYS:HB2 | 1.54 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:379:PHE:CD2 | 1:A:844:GLU:HG2 | 2.09 | 0.88 |
| 1:B:226:PHE:CE2 | 1:B:254:SER:CB | 2.55 | 0.88 |
| 1:B:883:PRO:CB | 1:B:884:PRO:HD3 | 2.01 | 0.88 |
| 1:A:220:PHE:CD2 | 1:A:260:ASN:O | 2.26 | 0.88 |
| 1:A:727:TYR:HD2 | 1:A:727:TYR:O | 1.56 | 0.88 |
| 1:B:554:LYS:HD3 | 1:B:615:MSE:HE3 | 1.55 | 0.88 |
| 1:A:748:ARG:CB | 1:A:755:VAL:HA | 2.03 | 0.88 |
| 1:B:408:TRP:O | 1:B:412:CYS:HB2 | 1.74 | 0.88 |
| 1:A:633:ALA:O | 1:A:634:PRO:O | 1.90 | 0.88 |
| 1:A:554:LYS:HB3 | 1:A:615:MSE:HE3 | 1.55 | 0.87 |
| 1:B:443:VAL:HG12 | 1:B:466:TRP:CE3 | 2.09 | 0.87 |
| 1:B:644:TYR:O | 1:B:645:ASP:HB3 | 1.73 | 0.87 |
| 1:A:215:ASP:O | 1:A:216:GLN:HG3 | 1.73 | 0.87 |
| 1:B:391:THR:CG2 | 1:B:392:GLU:N | 2.37 | 0.87 |
| 1:B:671:HIS:HD2 | 1:B:721:ARG:NH1 | 1.72 | 0.87 |
| 1:B:692:ARG:O | 1:B:693:LEU:HD12 | 1.74 | 0.87 |
| 1:B:814:HIS:ND1 | 1:B:819:ARG:NH2 | 2.23 | 0.87 |
| 1:A:599:LEU:HD11 | 1:A:856:PRO:HG2 | 1.55 | 0.87 |
| 1:B:695:ARG:HD3 | 1:B:700:ASP:CG | 1.94 | 0.87 |
| 1:B:729:ARG:HH21 | 1:B:772:LEU:CA | 1.85 | 0.87 |
| 1:A:577:LEU:HD22 | 1:A:589:LEU:HD21 | 1.54 | 0.87 |
| 1:A:725:ASP:HA | 1:A:766:LEU:HD13 | 1.56 | 0.87 |
| 1:A:728:GLU:OE1 | 1:A:766:LEU:HD21 | 1.74 | 0.87 |
| 1:B:445:LYS:C | 1:B:446:LEU:HD23 | 1.95 | 0.87 |
| 1:A:279:ASP:CB | 1:A:280:PRO:CD | 2.51 | 0.87 |
| 1:B:699:LEU:HD11 | 1:B:701:TRP:CG | 2.08 | 0.87 |
| 1:B:619:LYS:HG3 | 1:B:880:TYR:HB2 | 1.57 | 0.86 |
| 1:B:657:LEU:HD12 | 1:B:657:LEU:N | 1.70 | 0.86 |
| 1:A:714:LEU:HD21 | 1:A:717:HIS:CB | 2.04 | 0.86 |
| 1:B:791:ARG:CD | 1:B:792:LEU:H | 1.88 | 0.86 |
| 1:A:672:GLN:NE2 | 1:A:674:ASN:HB2 | 1.90 | 0.86 |
| 1:B:714:LEU:HD21 | 1:B:717:HIS:HB2 | 1.55 | 0.86 |
| 1:A:351:GLY:O | 1:A:355:THR:HG23 | 1.74 | 0.86 |
| 1:A:822:THR:CG2 | 1:A:825:GLU:OE2 | 2.23 | 0.86 |
| 1:B:699:LEU:CD1 | 1:B:701:TRP:CD2 | 2.56 | 0.86 |
| 1:A:174:CYS:SG | 1:A:212:GLU:OE1 | 2.33 | 0.86 |
| 1:B:339:ARG:HH11 | 1:B:339:ARG:CG | 1.87 | 0.86 |
| 1:A:209:GLU:HB2 | 1:A:221:THR:HG23 | 1.57 | 0.86 |
| 1:B:690:TYR:O | 1:B:693:LEU:HD13 | 1.75 | 0.86 |
| 1:B:729:ARG:HE | 1:B:773:VAL:HG22 | 1.41 | 0.86 |
| 1:B:456:ARG:HH21 | 1:B:456:ARG:HG2 | 1.40 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:596:CYS:HB3 | 1:B:623:PRO:HB3 | 1.56 | 0.86 |
| 1:B:212:GLU:OE1 | 1:B:216:GLN:HG2 | 1.75 | 0.85 |
| 1:A:136:GLU:OE2 | 1:A:137:PHE:HB2 | 1.75 | 0.85 |
| 1:B:140:SER:OG | 1:B:141:PRO:HD3 | 1.77 | 0.85 |
| 1:B:837:ARG:HG3 | 1:B:837:ARG:NH1 | 1.88 | 0.85 |
| 1:B:791:ARG:HD2 | 1:B:792:LEU:N | 1.91 | 0.85 |
| 1:A:154:ARG:HB3 | 1:A:170:LEU:CD2 | 2.06 | 0.85 |
| 1:A:725:ASP:HA | 1:A:766:LEU:HD11 | 1.56 | 0.85 |
| 1:A:772:LEU:CD1 | 1:A:773:VAL:HG22 | 2.06 | 0.85 |
| 1:A:478:PRO:HG2 | 1:A:481:ASN:CB | 2.01 | 0.85 |
| 1:A:588:ARG:NH2 | 1:A:878:PRO:HA | 1.91 | 0.85 |
| 1:A:780:PHE:HE2 | 1:A:809:ASN:CG | 1.80 | 0.85 |
| 1:A:772:LEU:CD1 | 1:A:773:VAL:H | 1.89 | 0.85 |
| 1:B:656:LEU:O | 1:B:657:LEU:CD1 | 2.23 | 0.85 |
| 1:B:695:ARG:HA | 1:B:835:TYR:CE1 | 2.11 | 0.85 |
| 1:B:605:ARG:HG2 | 1:B:605:ARG:HH11 | 1.42 | 0.85 |
| 1:A:236:LEU:HD23 | 1:A:239:ILE:HD11 | 1.58 | 0.84 |
| 1:A:134:GLU:HB3 | 1:A:135:PRO:HD3 | 1.55 | 0.84 |
| 1:A:665:LEU:HD13 | 1:A:665:LEU:O | 1.74 | 0.84 |
| 1:A:787:LYS:HB3 | 1:A:811:VAL:HG12 | 1.59 | 0.84 |
| 1:B:534:LYS:NZ | 1:B:535:ASP:HB2 | 1.91 | 0.84 |
| 1:B:658:LEU:HB3 | 1:B:794:TRP:HA | 1.58 | 0.84 |
| 1:B:814:HIS:CD2 | 1:B:817:GLN:H | 1.95 | 0.84 |
| 1:A:440:GLU:HG2 | 1:A:441:PHE:N | 1.92 | 0.84 |
| 1:B:676:VAL:HG22 | 1:B:713:LYS:HE2 | 1.60 | 0.84 |
| 1:A:353:MSE:HB2 | 1:A:853:VAL:CG1 | 2.06 | 0.84 |
| 1:A:220:PHE:CD2 | 1:A:220:PHE:O | 2.30 | 0.84 |
| 1:A:659:GLY:O | 1:A:663:SER:HB2 | 1.78 | 0.84 |
| 1:B:235:SER:OG | 1:B:236:LEU:N | 2.09 | 0.84 |
| 1:A:764:VAL:HG21 | 1:A:772:LEU:CD1 | 2.08 | 0.84 |
| 1:A:171:LYS:CB | 1:A:214:THR:HG23 | 2.08 | 0.84 |
| 1:A:173:ARG:NH1 | 1:A:212:GLU:CG | 2.40 | 0.84 |
| 1:A:764:VAL:HG21 | 1:A:772:LEU:CG | 2.08 | 0.84 |
| 1:A:186:TYR:CE2 | 1:A:265:ILE:HG21 | 2.13 | 0.83 |
| 1:A:247:ASP:OD1 | 1:A:248:PRO:HD2 | 1.76 | 0.83 |
| 1:A:540:GLN:NE2 | 1:A:540:GLN:CA | 2.30 | 0.83 |
| 1:B:466:TRP:HZ2 | 1:B:475:THR:HG22 | 1.42 | 0.83 |
| 1:A:134:GLU:N | 1:A:180:LYS:HZ2 | 1.76 | 0.83 |
| 1:B:695:ARG:HD3 | 1:B:700:ASP:CB | 2.09 | 0.83 |
| 1:A:668:VAL:HG21 | 1:A:677:MSE:HE1 | 1.61 | 0.83 |
| 1:A:728:GLU:OE1 | 1:A:766:LEU:CD2 | 2.26 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:307:ASN:HD22 | 1:B:586:GLN:CD | 1.79 | 0.83 |
| 1:B:774:PRO:HB3 | 1:B:778:MSE:CE | 2.08 | 0.83 |
| 1:A:173:ARG:NH1 | 1:A:212:GLU:HG2 | 1.91 | 0.83 |
| 1:B:193:TYR:CE1 | 1:B:269:VAL:HG13 | 2.14 | 0.83 |
| 1:A:154:ARG:NH1 | 1:A:211:PHE:CD2 | 2.47 | 0.83 |
| 1:B:676:VAL:CG1 | 1:B:713:LYS:HE3 | 2.08 | 0.83 |
| 1:B:879:LEU:HD22 | 1:B:879:LEU:H | 1.42 | 0.83 |
| 1:B:379:PHE:HA | 1:B:382:GLN:HG3 | 1.59 | 0.82 |
| 1:A:440:GLU:CG | 1:A:441:PHE:H | 1.92 | 0.82 |
| 1:B:774:PRO:HB3 | 1:B:778:MSE:HE2 | 1.58 | 0.82 |
| 1:A:624:THR:O | 1:A:653:LYS:HG3 | 1.79 | 0.82 |
| 1:B:140:SER:CB | 1:B:141:PRO:HD3 | 2.09 | 0.82 |
| 1:A:449:ILE:HD13 | 1:A:462:PHE:CE1 | 2.15 | 0.82 |
| 1:B:695:ARG:CG | 1:B:835:TYR:HD1 | 1.85 | 0.82 |
| 1:B:880:TYR:CE2 | 1:B:881:GLN:O | 2.33 | 0.82 |
| 1:B:236:LEU:O | 1:B:239:ILE:HD11 | 1.79 | 0.82 |
| 1:B:553:PRO:HD2 | 1:B:585:TYR:OH | 1.80 | 0.82 |
| 1:B:667:LYS:CA | 1:B:817:GLN:OE1 | 2.27 | 0.82 |
| 1:B:222:CYS:SG | 1:B:224:TRP:CH2 | 2.73 | 0.81 |
| 1:A:648:GLN:O | 1:A:650:PRO:HD3 | 1.79 | 0.81 |
| 1:B:391:THR:HG23 | 1:B:392:GLU:N | 1.92 | 0.81 |
| 1:A:151:TRP:NE1 | 1:A:175:HIS:CE1 | 2.46 | 0.81 |
| 1:B:685:THR:O | 1:B:689:ARG:HG3 | 1.79 | 0.81 |
| 1:B:274:VAL:HG23 | 1:B:278:MSE:HG3 | 1.61 | 0.81 |
| 1:B:671:HIS:CD2 | 1:B:721:ARG:NH1 | 2.48 | 0.81 |
| 1:A:281:LYS:O | 1:A:285:GLN:HG2 | 1.81 | 0.81 |
| 1:A:412:CYS:O | 1:A:416:VAL:CG2 | 2.29 | 0.81 |
| 1:A:415:TYR:CD2 | 1:A:490:ARG:HA | 2.16 | 0.81 |
| 1:A:484:ASP:OD1 | 1:A:484:ASP:N | 2.11 | 0.81 |
| 1:B:676:VAL:CG2 | 1:B:713:LYS:HE2 | 2.10 | 0.81 |
| 1:B:883:PRO:CG | 1:B:884:PRO:CD | 2.30 | 0.81 |
| 1:A:456:ARG:HG2 | 1:A:456:ARG:NH2 | 1.79 | 0.81 |
| 1:B:134:GLU:CD | 1:B:135:PRO:CD | 2.48 | 0.81 |
| 1:A:220:PHE:HE2 | 1:A:260:ASN:C | 1.84 | 0.81 |
| 1:A:564:ILE:HG22 | 1:A:565:LEU:HD23 | 1.62 | 0.81 |
| 1:A:784:LYS:O | 1:A:786:LEU:CD1 | 2.29 | 0.81 |
| 1:A:291:ASP:O | 1:A:292:LEU:HD23 | 1.81 | 0.80 |
| 1:A:733:ILE:HG22 | 1:A:791:ARG:NH2 | 1.96 | 0.80 |
| 1:B:484:ASP:O | 1:B:486:PRO:HD3 | 1.81 | 0.80 |
| 1:B:817:GLN:HB3 | 1:B:819:ARG:HG2 | 1.63 | 0.80 |
| 1:B:254:SER:OG | 1:B:256:GLU:HB2 | 1.82 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:279:ASP:OD1 | 1:B:280:PRO:N | 2.15 | 0.80 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:CG2 | 2.30 | 0.80 |
| 1:B:487:GLN:OE1 | 1:B:487:GLN:N | 2.15 | 0.80 |
| 1:B:148:ARG:HG2 | 1:B:148:ARG:NH1 | 1.86 | 0.80 |
| 1:B:696:LYS:O | 1:B:696:LYS:CD | 2.30 | 0.80 |
| 1:A:792:LEU:HD23 | 1:A:792:LEU:N | 1.96 | 0.80 |
| 1:B:410:VAL:HG13 | 1:B:411:LEU:H | 1.47 | 0.80 |
| 1:B:828:ARG:HH21 | 1:B:828:ARG:HG3 | 1.46 | 0.80 |
| 1:A:415:TYR:HD2 | 1:A:490:ARG:HG2 | 1.45 | 0.80 |
| 1:B:440:GLU:OE1 | 1:B:440:GLU:CA | 2.30 | 0.80 |
| 1:B:447:VAL:O | 1:B:447:VAL:CG2 | 2.30 | 0.80 |
| 1:B:577:LEU:O | 1:B:581:VAL:HG12 | 1.81 | 0.80 |
| 1:A:273:HIS:NE2 | 1:A:274:VAL:O | 2.15 | 0.80 |
| 1:A:456:ARG:HD2 | 1:A:458:ASN:OD1 | 1.81 | 0.80 |
| 1:B:227:ARG:O | 1:B:230:ASP:HB2 | 1.82 | 0.79 |
| 1:B:656:LEU:N | 1:B:656:LEU:HD23 | 1.95 | 0.79 |
| 1:A:787:LYS:N | 1:A:788:PRO:CD | 2.45 | 0.79 |
| 1:B:362:ALA:CB | 1:B:699:LEU:HD22 | 2.13 | 0.79 |
| 1:B:646:GLU:O | 1:B:646:GLU:CG | 2.30 | 0.79 |
| 1:B:696:LYS:O | 1:B:696:LYS:CE | 2.30 | 0.79 |
| 1:B:278:MSE:O | 1:B:279:ASP:HB3 | 1.80 | 0.79 |
| 1:B:699:LEU:O | 1:B:699:LEU:CD2 | 2.30 | 0.79 |
| 1:A:294:TYR:HD2 | 1:A:294:TYR:O | 1.66 | 0.79 |
| 1:A:355:THR:HG22 | 1:A:388:HIS:NE2 | 1.97 | 0.79 |
| 1:A:417:GLN:HA | 1:A:417:GLN:HE21 | 1.46 | 0.79 |
| 1:A:648:GLN:OE1 | 1:A:648:GLN:CA | 2.30 | 0.79 |
| 1:B:699:LEU:HD11 | 1:B:701:TRP:CE2 | 2.13 | 0.79 |
| 1:B:772:LEU:O | 1:B:773:VAL:CG2 | 2.30 | 0.79 |
| 1:A:204:ILE:O | 1:A:224:TRP:HE3 | 1.65 | 0.79 |
| 1:A:375:ASP:OD2 | 1:A:376:PHE:N | 2.16 | 0.79 |
| 1:A:154:ARG:HD3 | 1:A:172:ALA:HB2 | 1.63 | 0.79 |
| 1:A:671:HIS:HD2 | 1:A:721:ARG:NH1 | 1.80 | 0.78 |
| 1:B:833:PRO:CB | 1:B:835:TYR:HE2 | 1.96 | 0.78 |
| 1:B:134:GLU:HG3 | 1:B:135:PRO:HD2 | 1.63 | 0.78 |
| 1:B:278:MSE:HB3 | 1:B:282:ALA:CB | 2.12 | 0.78 |
| 1:A:730:VAL:HG21 | 1:A:818:ALA:O | 1.82 | 0.78 |
| 1:B:134:GLU:OE1 | 1:B:134:GLU:CA | 2.30 | 0.78 |
| 1:B:667:LYS:CG | 1:B:817:GLN:OE1 | 2.31 | 0.78 |
| 1:B:772:LEU:CB | 1:B:774:PRO:CD | 2.61 | 0.78 |
| 1:A:494:GLN:O | 1:A:498:LYS:HD3 | 1.82 | 0.78 |
| 1:B:239:ILE:HD13 | 1:B:578:SER:HB3 | 1.64 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:657:LEU:CD1 | 1:B:657:LEU:N | 2.41 | 0.78 |
| 1:B:554:LYS:HD3 | 1:B:615:MSE:CE | 2.14 | 0.78 |
| 1:B:676:VAL:HG11 | 1:B:713:LYS:CE | 2.14 | 0.78 |
| 1:B:715:LEU:HD22 | 1:B:837:ARG:HG2 | 1.65 | 0.78 |
| 1:A:646:GLU:OE2 | 1:A:646:GLU:CA | 2.30 | 0.78 |
| 1:A:852:ALA:CA | 2:A:1000:SAH:OXT | 2.32 | 0.78 |
| 1:A:740:ASN:HD22 | 1:A:742:ARG:HG3 | 1.46 | 0.77 |
| 1:B:457:GLU:HB2 | 1:B:461:TYR:HH | 1.49 | 0.77 |
| 1:B:828:ARG:HH22 | 1:B:834:ASP:CG | 1.87 | 0.77 |
| 1:A:300:VAL:O | 1:A:300:VAL:CG2 | 2.30 | 0.77 |
| 1:B:278:MSE:SE | 1:B:282:ALA:HB1 | 2.34 | 0.77 |
| 1:A:569:ASP:OD2 | 1:A:569:ASP:N | 2.17 | 0.77 |
| 1:B:675:ASP:HA | 1:B:718:GLN:NE2 | 1.99 | 0.77 |
| 1:B:723:ASN:OD1 | 1:B:726:ASP:CB | 2.33 | 0.77 |
| 1:A:250:ARG:HH21 | 1:A:584:LYS:HE2 | 1.47 | 0.77 |
| 1:B:549:ALA:HA | 1:B:583:MSE:CE | 2.13 | 0.77 |
| 1:B:772:LEU:C | 1:B:774:PRO:HD2 | 2.00 | 0.77 |
| 1:B:880:TYR:CG | 1:B:881:GLN:N | 2.52 | 0.77 |
| 1:A:671:HIS:CD2 | 1:A:721:ARG:NH1 | 2.53 | 0.77 |
| 1:B:279:ASP:CG | 1:B:280:PRO:CD | 2.52 | 0.77 |
| 1:A:685:THR:O | 1:A:689:ARG:HG3 | 1.85 | 0.77 |
| 1:A:784:LYS:N | 1:A:786:LEU:HD12 | 1.96 | 0.77 |
| 1:A:220:PHE:HD2 | 1:A:260:ASN:O | 1.67 | 0.77 |
| 1:B:220:PHE:CD2 | 1:B:262:LEU:HA | 2.20 | 0.77 |
| 1:A:154:ARG:HD2 | 1:A:175:HIS:NE2 | 2.00 | 0.77 |
| 1:B:142:VAL:CG1 | 1:B:175:HIS:H | 1.98 | 0.77 |
| 1:A:866:GLY:O | 1:A:870:LEU:HD12 | 1.85 | 0.77 |
| 1:A:309:SER:O | 1:A:310:SER:CB | 2.33 | 0.76 |
| 1:B:135:PRO:CG | 1:B:135:PRO:O | 2.30 | 0.76 |
| 1:B:837:ARG:O | 1:B:838:LEU:HD12 | 1.85 | 0.76 |
| 1:A:338:THR:HG21 | 1:A:367:LYS:NZ | 1.99 | 0.76 |
| 1:A:690:TYR:O | 1:A:693:LEU:HD13 | 1.86 | 0.76 |
| 1:A:134:GLU:CB | 1:A:135:PRO:CD | 2.30 | 0.76 |
| 1:A:449:ILE:HD13 | 1:A:462:PHE:CZ | 2.21 | 0.76 |
| 1:A:294:TYR:O | 1:A:294:TYR:CD2 | 2.37 | 0.76 |
| 1:B:659:GLY:CA | 1:B:794:TRP:HB3 | 2.15 | 0.76 |
| 1:B:729:ARG:NH2 | 1:B:772:LEU:HA | 2.00 | 0.76 |
| 1:A:728:GLU:CD | 1:A:766:LEU:HG | 2.06 | 0.76 |
| 1:B:699:LEU:O | 1:B:699:LEU:CG | 2.30 | 0.76 |
| 1:A:883:PRO:HB2 | 1:A:884:PRO:HD3 | 1.67 | 0.76 |
| 1:A:466:TRP:HZ2 | 1:A:475:THR:HG1 | 1.33 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:821:LEU:HG | 1:B:825:GLU:OE1 | 1.84 | 0.76 |
| 1:B:138:ILE:HG12 | 1:B:139:GLY:H | 1.51 | 0.76 |
| 1:B:457:GLU:CB | 1:B:461:TYR:OH | 2.27 | 0.76 |
| 1:A:469:TYR:CE1 | 1:B:806:GLU:OE1 | 2.40 | 0.75 |
| 1:B:227:ARG:CB | 1:B:230:ASP:OD2 | 2.29 | 0.75 |
| 1:A:206:ARG:O | 1:A:222:CYS:HB2 | 1.87 | 0.75 |
| 1:A:487:GLN:HA | 1:A:487:GLN:NE2 | 2.01 | 0.75 |
| 1:B:676:VAL:HG13 | 1:B:713:LYS:HE3 | 1.65 | 0.75 |
| 1:A:748:ARG:CB | 1:A:756:GLU:H | 1.99 | 0.75 |
| 1:A:828:ARG:NH2 | 1:A:834:ASP:OD1 | 2.20 | 0.75 |
| 1:B:671:HIS:ND1 | 1:B:673:PRO:HD3 | 2.00 | 0.75 |
| 1:B:413:LYS:HZ2 | 1:B:414:LYS:HG2 | 1.51 | 0.75 |
| 1:B:535:ASP:O | 1:B:535:ASP:OD1 | 2.04 | 0.75 |
| 1:A:289:SER:O | 1:A:289:SER:OG | 2.00 | 0.75 |
| 1:A:823:ILE:HD13 | 1:A:845:LYS:HG3 | 1.68 | 0.75 |
| 1:A:277:ASN:OD1 | 1:A:277:ASN:N | 2.15 | 0.75 |
| 1:A:717:HIS:CE1 | 1:A:822:THR:HG21 | 2.22 | 0.75 |
| 1:A:728:GLU:OE1 | 1:A:766:LEU:HG | 1.86 | 0.75 |
| 1:B:833:PRO:CG | 1:B:835:TYR:HE2 | 2.00 | 0.75 |
| 1:A:134:GLU:HB2 | 1:A:135:PRO:HD2 | 1.68 | 0.75 |
| 1:A:564:ILE:O | 1:A:570:GLY:HA2 | 1.86 | 0.75 |
| 1:A:781:ILE:HD13 | 1:A:781:ILE:H | 1.52 | 0.75 |
| 1:B:685:THR:HG23 | 1:B:687:PHE:H | 1.51 | 0.74 |
| 1:A:195:LYS:CE | 1:A:264:CYS:HA | 2.15 | 0.74 |
| 1:A:766:LEU:HD23 | 1:A:768:SER:H | 1.50 | 0.74 |
| 1:A:763:ARG:O | 1:A:764:VAL:HG13 | 1.87 | 0.74 |
| 1:B:599:LEU:HD23 | 1:B:829:LEU:O | 1.86 | 0.74 |
| 1:A:141:PRO:O | 1:A:142:VAL:HG22 | 1.85 | 0.74 |
| 1:B:605:ARG:HG2 | 1:B:605:ARG:NH1 | 2.02 | 0.74 |
| 1:B:626:ASP:OD2 | 1:B:655:ALA:N | 2.21 | 0.74 |
| 1:B:774:PRO:O | 1:B:777:ALA:N | 2.21 | 0.74 |
| 1:B:729:ARG:HD3 | 1:B:773:VAL:HG21 | 1.69 | 0.74 |
| 1:A:225:PHE:CE1 | 1:A:294:TYR:CD1 | 2.76 | 0.74 |
| 1:A:811:VAL:HG22 | 1:A:811:VAL:O | 1.86 | 0.74 |
| 1:B:134:GLU:OE1 | 1:B:135:PRO:CD | 2.29 | 0.74 |
| 1:A:780:PHE:HB3 | 1:A:786:LEU:HD22 | 1.69 | 0.74 |
| 1:B:134:GLU:CG | 1:B:135:PRO:HD2 | 2.17 | 0.74 |
| 1:B:696:LYS:O | 1:B:696:LYS:HD2 | 1.86 | 0.74 |
| 1:B:811:VAL:HG22 | 1:B:811:VAL:O | 1.87 | 0.74 |
| 1:A:666:PRO:HG3 | 1:A:679:TYR:O | 1.87 | 0.74 |
| 1:B:502:LEU:HD23 | 1:B:503:PRO:HD2 | 1.67 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:663:SER:CB | 1:A:688:GLN:HE22 | 2.00 | 0.74 |
| 1:A:780:PHE:CE2 | 1:A:809:ASN:CG | 2.61 | 0.74 |
| 1:A:249:ARG:HG3 | 1:A:249:ARG:O | 1.87 | 0.74 |
| 1:A:662:ILE:O | 1:A:665:LEU:HG | 1.88 | 0.74 |
| 1:B:462:PHE:O | 1:B:464:VAL:HG12 | 1.88 | 0.73 |
| 1:B:143:ALA:CB | 1:B:147:ALA:HB2 | 2.18 | 0.73 |
| 1:A:214:THR:O | 1:A:215:ASP:CB | 2.35 | 0.73 |
| 1:A:635:ASN:OD1 | 1:A:636:ALA:N | 2.20 | 0.73 |
| 1:A:692:ARG:O | 1:A:693:LEU:HD12 | 1.89 | 0.73 |
| 1:B:273:HIS:HD2 | 1:B:274:VAL:N | 1.85 | 0.73 |
| 1:B:695:ARG:HG2 | 1:B:835:TYR:HE1 | 1.46 | 0.73 |
| 1:B:820:VAL:CG1 | 1:B:821:LEU:N | 2.44 | 0.73 |
| 1:A:668:VAL:N | 1:A:817:GLN:HE22 | 1.83 | 0.73 |
| 1:B:879:LEU:HD22 | 1:B:879:LEU:N | 2.03 | 0.73 |
| 1:A:883:PRO:HB2 | 1:A:884:PRO:CD | 2.19 | 0.73 |
| 1:B:197:GLY:HA3 | 1:B:200:GLU:OE2 | 1.89 | 0.73 |
| 1:A:276:PRO:HG2 | 1:A:277:ASN:OD1 | 1.88 | 0.73 |
| 1:B:741:PHE:N | 1:B:789:PHE:O | 2.21 | 0.73 |
| 1:A:221:THR:HB | 1:A:259:ASP:OD1 | 1.88 | 0.73 |
| 1:A:557:LEU:HD21 | 1:A:861:LEU:HD13 | 1.69 | 0.73 |
| 1:A:220:PHE:CE2 | 1:A:260:ASN:O | 2.42 | 0.73 |
| 1:B:135:PRO:O | 1:B:135:PRO:HG2 | 1.89 | 0.73 |
| 1:A:677:MSE:HG3 | 1:A:714:LEU:HD22 | 1.71 | 0.72 |
| 1:A:733:ILE:CG2 | 1:A:791:ARG:NH2 | 2.50 | 0.72 |
| 1:A:151:TRP:NE1 | 1:A:175:HIS:ND1 | 2.37 | 0.72 |
| 1:B:454:SER:O | 1:B:456:ARG:HG3 | 1.88 | 0.72 |
| 1:B:484:ASP:OD1 | 1:B:485:CYS:N | 2.22 | 0.72 |
| 1:A:154:ARG:NE | 1:A:170:LEU:HD21 | 2.03 | 0.72 |
| 1:A:557:LEU:HD12 | 1:A:558:MSE:N | 2.05 | 0.72 |
| 1:A:812:ILE:HG23 | 1:A:820:VAL:HG22 | 1.71 | 0.72 |
| 1:A:838:LEU:C | 1:A:839:PHE:HD1 | 1.93 | 0.72 |
| 1:B:218:HIS:CB | 1:B:262:LEU:HD11 | 2.19 | 0.72 |
| 1:A:728:GLU:OE1 | 1:A:766:LEU:CG | 2.37 | 0.72 |
| 1:B:249:ARG:NH2 | 1:B:287:ILE:O | 2.21 | 0.72 |
| 1:B:443:VAL:O | 1:B:488:LYS:HE2 | 1.89 | 0.72 |
| 1:B:791:ARG:CD | 1:B:813:ILE:O | 2.37 | 0.72 |
| 1:B:231:THR:HG1 | 1:B:233:ILE:HG23 | 1.55 | 0.72 |
| 1:A:588:ARG:HH21 | 1:A:878:PRO:HA | 1.52 | 0.72 |
| 1:B:148:ARG:HB3 | 1:B:155:TYR:CD2 | 2.25 | 0.72 |
| 1:A:220:PHE:CE2 | 1:A:260:ASN:C | 2.63 | 0.72 |
| 1:A:515:PRO:HG2 | 1:A:558:MSE:CE | 2.19 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:729:ARG:HD3 | 1:A:772:LEU:O | 1.90 | 0.72 |
| 1:A:837:ARG:HB3 | 1:A:839:PHE:HE1 | 1.54 | 0.72 |
| 1:B:138:ILE:CG1 | 1:B:139:GLY:H | 2.02 | 0.72 |
| 1:A:486:PRO:HB2 | 1:A:490:ARG:HD2 | 1.71 | 0.72 |
| 1:A:772:LEU:HD13 | 1:A:773:VAL:N | 2.04 | 0.71 |
| 1:B:449:ILE:HG23 | 1:B:449:ILE:O | 1.89 | 0.71 |
| 1:B:549:ALA:HB2 | 1:B:583:MSE:HE1 | 1.71 | 0.71 |
| 1:A:232:VAL:HG12 | 1:A:233:ILE:HG22 | 1.73 | 0.71 |
| 1:A:737:LYS:NZ | 1:A:795:ASP:OD2 | 2.23 | 0.71 |
| 1:B:181:VAL:HG12 | 1:B:186:TYR:OH | 1.90 | 0.71 |
| 1:B:460:ILE:N | 1:B:460:ILE:CD1 | 2.53 | 0.71 |
| 1:B:793:TRP:CB | 1:B:815:PRO:HB3 | 2.19 | 0.71 |
| 1:B:819:ARG:O | 1:B:820:VAL:HG12 | 1.90 | 0.71 |
| 1:A:250:ARG:NH2 | 1:A:295:ASP:OD2 | 2.24 | 0.71 |
| 1:B:273:HIS:HB2 | 1:B:294:TYR:CE1 | 2.26 | 0.71 |
| 1:B:644:TYR:O | 1:B:645:ASP:CB | 2.36 | 0.71 |
| 1:A:605:ARG:HG2 | 1:A:605:ARG:NH1 | 1.99 | 0.71 |
| 1:A:724:ASN:O | 1:A:728:GLU:HG3 | 1.89 | 0.71 |
| 1:B:143:ALA:HB3 | 1:B:147:ALA:HB2 | 1.72 | 0.71 |
| 1:A:442:VAL:HG13 | 1:A:467:GLU:HG3 | 1.71 | 0.71 |
| 1:B:814:HIS:N | 1:B:820:VAL:O | 2.22 | 0.71 |
| 1:A:138:ILE:HG23 | 1:A:139:GLY:N | 2.05 | 0.71 |
| 1:A:215:ASP:C | 1:A:216:GLN:CG | 2.57 | 0.71 |
| 1:A:250:ARG:HH21 | 1:A:584:LYS:CE | 2.04 | 0.71 |
| 1:A:670:ASN:ND2 | 1:A:722:LEU:HD22 | 2.06 | 0.71 |
| 1:B:226:PHE:HE2 | 1:B:254:SER:CB | 1.96 | 0.71 |
| 1:B:413:LYS:NZ | 1:B:414:LYS:HG2 | 2.04 | 0.70 |
| 1:B:518:GLN:HA | 1:B:518:GLN:NE2 | 2.05 | 0.70 |
| 1:A:375:ASP:CG | 2:A:1000:SAH:O2' | 2.28 | 0.70 |
| 1:B:191:ASP:OD1 | 1:B:206:ARG:NH1 | 2.24 | 0.70 |
| 1:B:819:ARG:NH2 | 1:B:825:GLU:OE2 | 2.24 | 0.70 |
| 1:A:136:GLU:HG3 | 1:A:218:HIS:CE1 | 2.25 | 0.70 |
| 1:A:536:GLU:O | 1:A:537:LYS:C | 2.30 | 0.70 |
| 1:A:277:ASN:O | 1:A:278:MSE:HG3 | 1.91 | 0.70 |
| 1:A:648:GLN:O | 1:A:650:PRO:CD | 2.40 | 0.70 |
| 1:B:440:GLU:OE1 | 1:B:440:GLU:C | 2.30 | 0.70 |
| 1:B:603:ARG:CZ | 1:B:830:GLN:HE22 | 2.05 | 0.70 |
| 1:A:644:TYR:CD2 | 1:A:649:LYS:HG3 | 2.25 | 0.70 |
| 1:A:695:ARG:HB3 | 1:A:700:ASP:HB3 | 1.73 | 0.70 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:HG22 | 1.90 | 0.70 |
| 1:A:236:LEU:HD13 | 1:A:574:LYS:CB | 2.22 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:209:GLU:OE1 | 1:A:221:THR:HG21 | 1.92 | 0.70 |
| 1:B:239:ILE:HD13 | 1:B:578:SER:CB | 2.22 | 0.70 |
| 1:B:637:PHE:N | 1:B:637:PHE:CD2 | 2.59 | 0.70 |
| 1:A:220:PHE:HE2 | 1:A:260:ASN:CB | 2.04 | 0.70 |
| 1:A:733:ILE:HG21 | 1:A:791:ARG:HH21 | 1.54 | 0.70 |
| 1:B:774:PRO:O | 1:B:775:ASP:C | 2.30 | 0.70 |
| 1:B:467:GLU:O | 1:B:469:TYR:CE2 | 2.45 | 0.70 |
| 1:A:215:ASP:O | 1:A:216:GLN:CG | 2.40 | 0.70 |
| 1:A:464:VAL:HG11 | 1:A:466:TRP:CH2 | 2.27 | 0.70 |
| 1:A:631:GLY:HA3 | 1:A:641:MSE:HE1 | 1.73 | 0.70 |
| 1:A:780:PHE:C | 1:A:781:ILE:HD13 | 2.13 | 0.70 |
| 1:B:459:GLY:O | 1:B:461:TYR:CD2 | 2.45 | 0.70 |
| 1:B:583:MSE:O | 1:B:584:LYS:HB2 | 1.91 | 0.70 |
| 1:B:771:PRO:C | 1:B:773:VAL:H | 1.95 | 0.70 |
| 1:A:220:PHE:CE2 | 1:A:260:ASN:CB | 2.75 | 0.69 |
| 1:A:279:ASP:CB | 1:A:280:PRO:HD2 | 2.12 | 0.69 |
| 1:A:173:ARG:N | 1:A:212:GLU:O | 2.25 | 0.69 |
| 1:B:376:PHE:O | 1:B:395:ASN:ND2 | 2.24 | 0.69 |
| 1:A:535:ASP:C | 1:A:535:ASP:OD2 | 2.30 | 0.69 |
| 1:A:739:ALA:HB3 | 1:A:791:ARG:HG2 | 1.74 | 0.69 |
| 1:B:592:MSE:SE | 1:B:861:LEU:HD21 | 2.42 | 0.69 |
| 1:B:339:ARG:HG2 | 1:B:339:ARG:NH1 | 1.96 | 0.69 |
| 1:A:649:LYS:O | 1:A:649:LYS:HD3 | 1.93 | 0.69 |
| 1:A:727:TYR:O | 1:A:727:TYR:CD2 | 2.45 | 0.69 |
| 1:A:140:SER:HB3 | 1:A:141:PRO:HD2 | 1.75 | 0.69 |
| 1:A:793:TRP:HB3 | 1:A:795:ASP:OD1 | 1.92 | 0.69 |
| 1:A:793:TRP:CE3 | 1:A:793:TRP:HA | 2.27 | 0.69 |
| 1:B:220:PHE:CE2 | 1:B:262:LEU:HA | 2.27 | 0.69 |
| 1:A:787:LYS:HB2 | 1:A:809:ASN:O | 1.92 | 0.69 |
| 1:A:814:HIS:HD2 | 1:A:816:THR:H | 1.41 | 0.69 |
| 1:B:144:ALA:C | 1:B:145:ASP:OD2 | 2.30 | 0.69 |
| 1:B:440:GLU:OE1 | 1:B:440:GLU:HA | 1.91 | 0.69 |
| 1:B:833:PRO:HB2 | 1:B:835:TYR:HE2 | 1.47 | 0.69 |
| 1:A:145:ASP:OD1 | 1:A:148:ARG:NH1 | 2.26 | 0.69 |
| 1:A:540:GLN:HE21 | 1:A:540:GLN:CA | 1.89 | 0.69 |
| 1:A:274:VAL:HG23 | 1:A:295:ASP:HA | 1.74 | 0.68 |
| 1:A:460:ILE:CG2 | 1:A:462:PHE:CE2 | 2.76 | 0.68 |
| 1:A:211:PHE:C | 1:A:211:PHE:CD1 | 2.67 | 0.68 |
| 1:A:515:PRO:CG | 1:A:558:MSE:HE3 | 2.21 | 0.68 |
| 1:B:273:HIS:CD2 | 1:B:274:VAL:N | 2.60 | 0.68 |
| 1:B:700:ASP:OD1 | 1:B:702:SER:HB2 | 1.94 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:375:ASP:O | 1:A:395:ASN:HA | 1.94 | 0.68 |
| 1:B:404:LEU:HB2 | 1:B:451:TYR:HB3 | 1.75 | 0.68 |
| 1:B:575:TYR:O | 1:B:579:CYS:SG | 2.50 | 0.68 |
| 1:A:154:ARG:HB2 | 1:A:171:LYS:HA | 1.75 | 0.68 |
| 1:A:176:TYR:HE1 | 1:A:212:GLU:HG3 | 1.57 | 0.68 |
| 1:A:225:PHE:HE1 | 1:A:294:TYR:CD1 | 2.10 | 0.68 |
| 1:A:231:THR:OG1 | 1:A:233:ILE:HG23 | 1.93 | 0.68 |
| 1:A:464:VAL:CG1 | 1:A:466:TRP:CZ2 | 2.77 | 0.68 |
| 1:B:729:ARG:NE | 1:B:773:VAL:HG22 | 2.08 | 0.68 |
| 1:A:668:VAL:CG2 | 1:A:677:MSE:HE1 | 2.24 | 0.68 |
| 1:B:215:ASP:O | 1:B:216:GLN:HB2 | 1.94 | 0.68 |
| 1:A:253:LEU:HD12 | 1:A:294:TYR:CE1 | 2.29 | 0.68 |
| 1:A:784:LYS:O | 1:A:785:SER:C | 2.30 | 0.68 |
| 1:B:467:GLU:O | 1:B:469:TYR:CD2 | 2.47 | 0.68 |
| 1:B:802:VAL:HG12 | 1:B:804:ARG:H | 1.59 | 0.68 |
| 1:B:805:ALA:HA | 1:B:810:GLN:NE2 | 2.09 | 0.68 |
| 1:A:227:ARG:HB2 | 1:A:230:ASP:OD2 | 1.94 | 0.68 |
| 1:B:222:CYS:SG | 1:B:224:TRP:CZ3 | 2.87 | 0.68 |
| 1:A:781:ILE:HG12 | 1:A:786:LEU:CD2 | 2.19 | 0.67 |
| 1:B:635:ASN:OD1 | 1:B:636:ALA:N | 2.27 | 0.67 |
| 1:B:658:LEU:O | 1:B:659:GLY:C | 2.30 | 0.67 |
| 1:B:685:THR:HG23 | 1:B:686:GLU:N | 2.06 | 0.67 |
| 1:A:648:GLN:O | 1:A:649:LYS:C | 2.30 | 0.67 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:CA | 2.42 | 0.67 |
| 1:A:641:MSE:HG3 | 1:A:642:VAL:N | 2.08 | 0.67 |
| 1:B:699:LEU:HG | 1:B:701:TRP:CD1 | 2.29 | 0.67 |
| 1:A:142:VAL:HA | 1:A:175:HIS:O | 1.95 | 0.67 |
| 1:A:786:LEU:CB | 1:A:788:PRO:HD3 | 2.22 | 0.67 |
| 1:B:443:VAL:HG12 | 1:B:466:TRP:HE3 | 1.56 | 0.67 |
| 1:A:204:ILE:O | 1:A:224:TRP:CE3 | 2.47 | 0.67 |
| 1:A:714:LEU:HD23 | 1:A:714:LEU:C | 2.15 | 0.67 |
| 1:B:771:PRO:C | 1:B:773:VAL:N | 2.46 | 0.67 |
| 1:A:466:TRP:CD1 | 1:A:466:TRP:N | 2.62 | 0.67 |
| 1:B:218:HIS:HB3 | 1:B:262:LEU:HD11 | 1.76 | 0.67 |
| 1:B:667:LYS:HG3 | 1:B:817:GLN:CD | 2.14 | 0.67 |
| 1:B:791:ARG:HG2 | 1:B:814:HIS:O | 1.95 | 0.67 |
| 1:A:220:PHE:HE2 | 1:A:260:ASN:HB2 | 1.60 | 0.67 |
| 1:A:377:ASN:OD1 | 1:A:379:PHE:N | 2.28 | 0.67 |
| 1:A:691:ILE:HG23 | 1:A:834:ASP:OD1 | 1.95 | 0.67 |
| 1:A:879:LEU:HD23 | 1:A:879:LEU:O | 1.95 | 0.67 |
| 1:A:154:ARG:NH1 | 1:A:175:HIS:CE1 | 2.63 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:599:LEU:HD23 | 1:A:829:LEU:O | 1.95 | 0.67 |
| 1:A:672:GLN:HE21 | 1:A:674:ASN:HB2 | 1.60 | 0.67 |
| 1:B:469:TYR:HB3 | 1:B:473:GLU:HB2 | 1.76 | 0.67 |
| 1:B:696:LYS:O | 1:B:696:LYS:HE3 | 1.95 | 0.67 |
| 1:A:255:GLU:HG3 | 1:A:255:GLU:O | 1.95 | 0.67 |
| 1:B:273:HIS:HB2 | 1:B:294:TYR:CZ | 2.30 | 0.67 |
| 1:B:657:LEU:O | 1:B:660:ASP:HB2 | 1.94 | 0.67 |
| 1:A:651:SER:O | 1:A:652:LEU:C | 2.30 | 0.66 |
| 1:B:279:ASP:CG | 1:B:280:PRO:N | 2.47 | 0.66 |
| 1:B:345:ASP:CG | 1:B:348:SER:HB3 | 2.15 | 0.66 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:HA | 1.96 | 0.66 |
| 1:A:788:PRO:O | 1:A:789:PHE:C | 2.30 | 0.66 |
| 1:B:239:ILE:H | 1:B:239:ILE:HD12 | 1.61 | 0.66 |
| 1:B:599:LEU:HD23 | 1:B:601:GLN:HE21 | 1.59 | 0.66 |
| 1:B:662:ILE:HG21 | 1:B:825:GLU:HB3 | 1.77 | 0.66 |
| 1:B:884:PRO:O | 1:B:885:SER:C | 2.34 | 0.66 |
| 1:A:289:SER:O | 1:A:290:CYS:HB3 | 1.95 | 0.66 |
| 1:A:729:ARG:HH11 | 1:A:729:ARG:HG3 | 1.60 | 0.66 |
| 1:A:171:LYS:HB3 | 1:A:214:THR:CG2 | 2.25 | 0.66 |
| 1:A:671:HIS:HD2 | 1:A:721:ARG:HH12 | 1.42 | 0.66 |
| 1:A:690:TYR:CE1 | 1:A:698:MSE:SE | 2.99 | 0.66 |
| 1:A:220:PHE:CZ | 1:A:260:ASN:HB2 | 2.31 | 0.66 |
| 1:A:449:ILE:HD11 | 1:A:460:ILE:HG23 | 1.77 | 0.66 |
| 1:A:874:GLU:HG3 | 1:A:875:GLY:H | 1.61 | 0.66 |
| 1:B:699:LEU:O | 1:B:699:LEU:HG | 1.94 | 0.66 |
| 1:A:803:THR:CA | 1:A:850:GLY:HA3 | 2.21 | 0.66 |
| 1:B:235:SER:O | 1:B:237:VAL:HG23 | 1.96 | 0.66 |
| 1:B:344:LEU:HD12 | 1:B:372:TRP:HB2 | 1.78 | 0.66 |
| 1:B:447:VAL:O | 1:B:447:VAL:HG22 | 1.96 | 0.66 |
| 1:B:599:LEU:HD11 | 1:B:856:PRO:CG | 2.22 | 0.66 |
| 1:B:648:GLN:O | 1:B:650:PRO:HD3 | 1.96 | 0.66 |
| 1:A:171:LYS:O | 1:A:213:GLY:CA | 2.44 | 0.66 |
| 1:B:290:CYS:HB2 | 1:B:292:LEU:O | 1.96 | 0.66 |
| 1:B:449:ILE:O | 1:B:449:ILE:CG2 | 2.44 | 0.66 |
| 1:A:456:ARG:HH21 | 1:A:456:ARG:CG | 1.93 | 0.66 |
| 1:A:498:LYS:HD3 | 1:A:498:LYS:H | 1.61 | 0.66 |
| 1:B:278:MSE:O | 1:B:280:PRO:HD2 | 1.94 | 0.66 |
| 1:A:495:GLU:OE1 | 1:A:495:GLU:HA | 1.96 | 0.65 |
| 1:B:226:PHE:CD2 | 1:B:254:SER:HB2 | 2.31 | 0.65 |
| 1:B:589:LEU:HA | 1:B:620:TYR:OH | 1.95 | 0.65 |
| 1:B:677:MSE:O | 1:B:714:LEU:HB3 | 1.96 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:154:ARG:CD | 1:A:172:ALA:HB2 | 2.26 | 0.65 |
| 1:A:465:GLN:HG3 | 1:A:474:ASP:OD1 | 1.96 | 0.65 |
| 1:A:478:PRO:O | 1:A:482:LEU:HD23 | 1.97 | 0.65 |
| 1:B:275:ASP:HB2 | 1:B:276:PRO:HD2 | 1.78 | 0.65 |
| 1:B:286:LEU:O | 1:B:289:SER:N | 2.28 | 0.65 |
| 1:B:518:GLN:HB2 | 1:B:537:LYS:CB | 2.24 | 0.65 |
| 1:B:806:GLU:H | 1:B:810:GLN:HE21 | 1.44 | 0.65 |
| 1:A:154:ARG:CD | 1:A:172:ALA:CB | 2.74 | 0.65 |
| 1:A:464:VAL:HG11 | 1:A:466:TRP:CZ2 | 2.30 | 0.65 |
| 1:B:235:SER:O | 1:B:237:VAL:N | 2.29 | 0.65 |
| 1:B:410:VAL:O | 1:B:413:LYS:N | 2.29 | 0.65 |
| 1:B:534:LYS:HZ2 | 1:B:535:ASP:HB2 | 1.60 | 0.65 |
| 1:B:671:HIS:HE1 | 1:B:673:PRO:HB3 | 1.62 | 0.65 |
| 1:B:353:MSE:HE2 | 1:B:512:CYS:HB3 | 1.79 | 0.65 |
| 1:B:676:VAL:HG21 | 1:B:713:LYS:NZ | 2.12 | 0.65 |
| 1:B:272:VAL:CG1 | 1:B:273:HIS:N | 2.60 | 0.65 |
| 1:A:309:SER:O | 1:A:310:SER:HB3 | 1.96 | 0.65 |
| 1:A:752:ASN:C | 1:A:754:ILE:H | 2.00 | 0.65 |
| 1:B:549:ALA:CA | 1:B:583:MSE:CE | 2.75 | 0.65 |
| 1:B:660:ASP:O | 1:B:688:GLN:NE2 | 2.30 | 0.65 |
| 1:B:685:THR:CG2 | 1:B:688:GLN:N | 2.45 | 0.65 |
| 1:A:723:ASN:C | 1:A:723:ASN:HD22 | 2.01 | 0.65 |
| 1:B:564:ILE:HG23 | 1:B:572:LEU:HB2 | 1.77 | 0.65 |
| 1:B:686:GLU:HA | 1:B:689:ARG:NH2 | 2.11 | 0.65 |
| 1:A:557:LEU:HD12 | 1:A:558:MSE:H | 1.60 | 0.64 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:N | 2.30 | 0.64 |
| 1:A:145:ASP:CG | 1:A:148:ARG:NH1 | 2.49 | 0.64 |
| 1:A:541:MSE:HG3 | 1:A:541:MSE:O | 1.95 | 0.64 |
| 1:B:699:LEU:CG | 1:B:701:TRP:CD1 | 2.79 | 0.64 |
| 1:B:347:TYR:CD2 | 1:B:516:PRO:HD3 | 2.32 | 0.64 |
| 1:B:648:GLN:OE1 | 1:B:648:GLN:N | 2.30 | 0.64 |
| 1:B:413:LYS:HZ1 | 1:B:414:LYS:HE2 | 1.62 | 0.64 |
| 1:B:254:SER:HG | 1:B:256:GLU:HB2 | 1.61 | 0.64 |
| 1:B:649:LYS:C | 1:B:651:SER:H | 2.00 | 0.64 |
| 1:A:195:LYS:HG2 | 1:A:266:ILE:HD11 | 1.80 | 0.64 |
| 1:B:388:HIS:HA | 1:B:702:SER:HG | 1.62 | 0.64 |
| 1:B:657:LEU:HB3 | 1:B:794:TRP:O | 1.98 | 0.64 |
| 1:A:585:TYR:CD1 | 1:A:610:GLY:O | 2.50 | 0.64 |
| 1:A:781:ILE:O | 1:A:782:LYS:CB | 2.44 | 0.64 |
| 1:B:626:ASP:OD2 | 1:B:655:ALA:HB2 | 1.98 | 0.64 |
| 1:A:279:ASP:N | 1:A:279:ASP:OD1 | 2.29 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:555:TYR:HE2 | 1:A:618:PRO:CD | 2.10 | 0.64 |
| 1:A:729:ARG:CD | 1:A:772:LEU:O | 2.45 | 0.64 |
| 1:A:838:LEU:C | 1:A:839:PHE:CD1 | 2.71 | 0.64 |
| 1:B:883:PRO:HG2 | 1:B:884:PRO:HD2 | 0.71 | 0.64 |
| 1:A:592:MSE:HE2 | 1:A:620:TYR:CD1 | 2.33 | 0.64 |
| 1:A:631:GLY:CA | 1:A:641:MSE:HE1 | 2.28 | 0.64 |
| 1:B:508:VAL:CG1 | 1:B:511:ILE:HG22 | 2.28 | 0.64 |
| 1:A:376:PHE:CD2 | 1:A:376:PHE:C | 2.70 | 0.64 |
| 1:A:417:GLN:HE21 | 1:A:417:GLN:CA | 2.09 | 0.64 |
| 1:A:490:ARG:O | 1:A:494:GLN:HG3 | 1.98 | 0.64 |
| 1:B:229:GLU:HG3 | 1:B:237:VAL:HG21 | 1.79 | 0.64 |
| 1:A:287:ILE:HD12 | 1:A:288:GLU:N | 2.13 | 0.63 |
| 1:A:603:ARG:CZ | 1:A:830:GLN:HE22 | 2.10 | 0.63 |
| 1:B:804:ARG:O | 1:B:810:GLN:NE2 | 2.30 | 0.63 |
| 1:B:466:TRP:NE1 | 1:B:473:GLU:O | 2.31 | 0.63 |
| 1:A:247:ASP:OD1 | 1:A:248:PRO:CD | 2.46 | 0.63 |
| 1:A:664:ASP:OD1 | 1:A:828:ARG:NH1 | 2.29 | 0.63 |
| 1:A:809:ASN:CG | 1:A:809:ASN:O | 2.35 | 0.63 |
| 1:B:695:ARG:CG | 1:B:835:TYR:HE1 | 2.07 | 0.63 |
| 1:A:665:LEU:O | 1:A:666:PRO:C | 2.37 | 0.63 |
| 1:A:822:THR:HG22 | 1:A:825:GLU:CD | 2.19 | 0.63 |
| 1:A:884:PRO:O | 1:A:885:SER:C | 2.36 | 0.63 |
| 1:B:250:ARG:HH21 | 1:B:295:ASP:CG | 2.01 | 0.63 |
| 1:B:383:SER:HB3 | 1:B:838:LEU:HA | 1.80 | 0.63 |
| 1:B:464:VAL:HG13 | 1:B:475:THR:O | 1.99 | 0.63 |
| 1:B:676:VAL:HG11 | 1:B:713:LYS:HE3 | 1.78 | 0.63 |
| 1:B:791:ARG:HG3 | 1:B:792:LEU:O | 1.97 | 0.63 |
| 1:A:727:TYR:CD2 | 1:A:727:TYR:C | 2.67 | 0.63 |
| 1:B:349:GLY:HA2 | 1:B:380:ALA:HB1 | 1.80 | 0.63 |
| 1:B:469:TYR:HB3 | 1:B:473:GLU:CB | 2.28 | 0.63 |
| 1:B:687:PHE:O | 1:B:690:TYR:N | 2.31 | 0.63 |
| 1:A:757:TRP:HZ3 | 1:A:773:VAL:CG2 | 2.11 | 0.63 |
| 1:A:469:TYR:HB3 | 1:A:473:GLU:HB2 | 1.80 | 0.63 |
| 1:B:540:GLN:OE1 | 1:B:540:GLN:HA | 1.99 | 0.63 |
| 1:B:735:VAL:HG22 | 1:B:735:VAL:O | 1.99 | 0.63 |
| 1:B:828:ARG:HH21 | 1:B:828:ARG:CG | 2.12 | 0.63 |
| 1:B:348:SER:HA | 2:B:1000:SAH:N | 2.13 | 0.63 |
| 1:B:659:GLY:N | 1:B:794:TRP:HB3 | 2.13 | 0.63 |
| 1:A:664:ASP:OD2 | 1:A:692:ARG:NH1 | 2.32 | 0.62 |
| 1:B:609:TRP:CD1 | 1:B:620:TYR:CE1 | 2.86 | 0.62 |
| 1:B:802:VAL:CG1 | 1:B:803:THR:N | 2.62 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:555:TYR:CE2 | 1:A:618:PRO:HD3 | 2.26 | 0.62 |
| 1:A:726:ASP:OD1 | 1:A:729:ARG:NH1 | 2.32 | 0.62 |
| 1:B:448:GLY:O | 1:B:462:PHE:HA | 1.99 | 0.62 |
| 1:B:691:ILE:HD12 | 1:B:691:ILE:O | 1.99 | 0.62 |
| 1:A:137:PHE:CE2 | 1:A:218:HIS:HB3 | 2.34 | 0.62 |
| 1:A:138:ILE:HG21 | 1:A:178:SER:HB2 | 1.79 | 0.62 |
| 1:A:668:VAL:O | 1:A:817:GLN:NE2 | 2.33 | 0.62 |
| 1:B:572:LEU:H | 1:B:572:LEU:HD12 | 1.64 | 0.62 |
| 1:B:578:SER:HA | 1:B:581:VAL:CG1 | 2.29 | 0.62 |
| 1:B:648:GLN:N | 1:B:648:GLN:CD | 2.49 | 0.62 |
| 1:B:847:ILE:HD12 | 1:B:848:GLN:N | 2.13 | 0.62 |
| 1:A:587:ALA:HA | 1:A:609:TRP:O | 1.99 | 0.62 |
| 1:B:364:SER:CB | 1:B:866:GLY:HA3 | 2.29 | 0.62 |
| 1:B:549:ALA:HB2 | 1:B:583:MSE:CE | 2.28 | 0.62 |
| 1:A:171:LYS:CB | 1:A:214:THR:CG2 | 2.77 | 0.62 |
| 1:A:242:ASP:OD1 | 1:A:243:GLY:N | 2.32 | 0.62 |
| 1:B:135:PRO:CD | 1:B:135:PRO:O | 2.48 | 0.62 |
| 1:B:440:GLU:O | 1:B:440:GLU:CG | 2.44 | 0.62 |
| 1:B:714:LEU:HD23 | 1:B:715:LEU:N | 2.15 | 0.62 |
| 1:B:792:LEU:CD2 | 1:B:796:GLU:HB3 | 2.29 | 0.62 |
| 1:A:788:PRO:HA | 1:A:808:HIS:O | 1.98 | 0.62 |
| 1:B:411:LEU:HD23 | 1:B:411:LEU:C | 2.20 | 0.62 |
| 1:B:445:LYS:O | 1:B:446:LEU:CD2 | 2.43 | 0.62 |
| 1:B:464:VAL:HG21 | 1:B:466:TRP:CH2 | 2.35 | 0.62 |
| 1:A:541:MSE:SE | 1:A:558:MSE:CE | 2.94 | 0.62 |
| 1:A:727:TYR:HD2 | 1:A:727:TYR:C | 2.02 | 0.62 |
| 1:A:776:TYR:CD2 | 1:A:777:ALA:N | 2.68 | 0.62 |
| 1:B:733:ILE:HG13 | 1:B:734:PRO:HD2 | 1.82 | 0.62 |
| 1:A:710:ASP:HB3 | 1:A:715:LEU:HD21 | 1.82 | 0.62 |
| 1:B:272:VAL:HG12 | 1:B:273:HIS:N | 2.14 | 0.62 |
| 1:B:772:LEU:O | 1:B:774:PRO:HD3 | 1.98 | 0.62 |
| 1:B:833:PRO:HB2 | 1:B:835:TYR:CD2 | 2.34 | 0.62 |
| 1:A:225:PHE:CE1 | 1:A:294:TYR:HD1 | 2.18 | 0.62 |
| 1:A:449:ILE:HD12 | 1:A:461:TYR:O | 2.00 | 0.62 |
| 1:A:784:LYS:H | 1:A:786:LEU:HD13 | 1.62 | 0.62 |
| 1:B:648:GLN:OE1 | 1:B:648:GLN:CA | 2.48 | 0.62 |
| 1:B:813:ILE:HA | 1:B:820:VAL:HA | 1.82 | 0.62 |
| 1:B:343:LEU:HD12 | 1:B:344:LEU:H | 1.65 | 0.61 |
| 1:A:154:ARG:HD3 | 1:A:172:ALA:CB | 2.29 | 0.61 |
| 1:A:195:LYS:HG2 | 1:A:266:ILE:CD1 | 2.31 | 0.61 |
| 1:A:254:SER:OG | 1:A:256:GLU:HB2 | 1.99 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:579:CYS:O | 1:A:583:MSE:HG3 | 2.00 | 0.61 |
| 1:A:879:LEU:HD23 | 1:A:879:LEU:C | 2.19 | 0.61 |
| 1:A:787:LYS:H | 1:A:788:PRO:HD3 | 1.65 | 0.61 |
| 1:A:249:ARG:O | 1:A:293:TYR:HE2 | 1.82 | 0.61 |
| 1:B:601:GLN:OE1 | 1:B:801:VAL:HG12 | 2.00 | 0.61 |
| 1:B:791:ARG:HD3 | 1:B:813:ILE:O | 2.00 | 0.61 |
| 1:B:805:ALA:HA | 1:B:810:GLN:HE22 | 1.65 | 0.61 |
| 1:B:821:LEU:CG | 1:B:825:GLU:OE1 | 2.48 | 0.61 |
| 1:A:280:PRO:O | 1:A:281:LYS:HB2 | 2.01 | 0.61 |
| 1:A:377:ASN:OD1 | 1:A:377:ASN:C | 2.38 | 0.61 |
| 1:B:570:GLY:O | 1:B:574:LYS:HG2 | 2.01 | 0.61 |
| 1:A:250:ARG:NH1 | 1:A:252:PHE:CZ | 2.67 | 0.61 |
| 1:A:453:GLY:O | 1:A:456:ARG:HB2 | 1.99 | 0.61 |
| 1:A:664:ASP:CG | 1:A:692:ARG:HH11 | 2.03 | 0.61 |
| 1:B:236:LEU:O | 1:B:239:ILE:CD1 | 2.48 | 0.61 |
| 1:B:589:LEU:HD23 | 1:B:608:LEU:HD12 | 1.83 | 0.61 |
| 1:A:272:VAL:O | 1:A:293:TYR:HA | 2.00 | 0.61 |
| 1:B:153:LYS:O | 1:B:171:LYS:NZ | 2.28 | 0.61 |
| 1:B:443:VAL:HG12 | 1:B:466:TRP:CZ3 | 2.35 | 0.61 |
| 1:B:549:ALA:CB | 1:B:583:MSE:CE | 2.79 | 0.61 |
| 1:B:671:HIS:HD2 | 1:B:721:ARG:CZ | 2.13 | 0.61 |
| 1:A:415:TYR:HD2 | 1:A:490:ARG:HA | 1.65 | 0.61 |
| 1:A:726:ASP:HA | 1:A:729:ARG:HH11 | 1.65 | 0.61 |
| 1:A:584:LYS:HB3 | 1:A:584:LYS:HZ3 | 1.65 | 0.61 |
| 1:B:695:ARG:CG | 1:B:695:ARG:NH1 | 2.30 | 0.61 |
| 1:A:407:GLU:O | 1:A:411:LEU:HD13 | 2.01 | 0.60 |
| 1:A:663:SER:OG | 1:A:684:LYS:HE2 | 2.01 | 0.60 |
| 1:B:250:ARG:NH2 | 1:B:295:ASP:OD2 | 2.29 | 0.60 |
| 1:B:714:LEU:CD2 | 1:B:717:HIS:HB2 | 2.28 | 0.60 |
| 1:A:338:THR:HB | 1:A:367:LYS:HD3 | 1.82 | 0.60 |
| 1:A:791:ARG:NH1 | 1:A:815:PRO:O | 2.34 | 0.60 |
| 1:B:181:VAL:CG1 | 1:B:186:TYR:OH | 2.49 | 0.60 |
| 1:B:273:HIS:CD2 | 1:B:273:HIS:C | 2.74 | 0.60 |
| 1:B:675:ASP:OD1 | 1:B:675:ASP:N | 2.34 | 0.60 |
| 1:B:710:ASP:OD2 | 1:B:837:ARG:NH1 | 2.34 | 0.60 |
| 1:B:880:TYR:CZ | 1:B:881:GLN:O | 2.53 | 0.60 |
| 1:A:154:ARG:CZ | 1:A:175:HIS:CE1 | 2.83 | 0.60 |
| 1:A:601:GLN:NE2 | 1:A:830:GLN:OE1 | 2.34 | 0.60 |
| 1:A:700:ASP:O | 1:A:702:SER:N | 2.34 | 0.60 |
| 1:A:580:LEU:HD22 | 1:A:608:LEU:CD2 | 2.31 | 0.60 |
| 1:A:726:ASP:HA | 1:A:729:ARG:NH1 | 2.17 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:443:VAL:O | 1:B:488:LYS:CE | 2.49 | 0.60 |
| 1:A:410:VAL:O | 1:A:413:LYS:HB3 | 2.01 | 0.60 |
| 1:A:652:LEU:O | 1:A:654:LYS:N | 2.34 | 0.60 |
| 1:B:138:ILE:CG1 | 1:B:139:GLY:N | 2.65 | 0.60 |
| 1:B:445:LYS:HB3 | 1:B:465:GLN:HB2 | 1.82 | 0.60 |
| 1:B:772:LEU:CB | 1:B:774:PRO:HD3 | 2.31 | 0.60 |
| 1:A:154:ARG:HH12 | 1:A:211:PHE:HD2 | 1.45 | 0.60 |
| 1:B:649:LYS:O | 1:B:651:SER:N | 2.30 | 0.60 |
| 1:B:740:ASN:HA | 1:B:789:PHE:O | 2.01 | 0.60 |
| 1:A:772:LEU:H | 1:A:772:LEU:HD12 | 1.66 | 0.60 |
| 1:A:792:LEU:HD23 | 1:A:792:LEU:H | 1.67 | 0.60 |
| 1:A:338:THR:HG21 | 1:A:367:LYS:HZ3 | 1.66 | 0.60 |
| 1:A:344:LEU:HD12 | 1:A:372:TRP:HB2 | 1.84 | 0.60 |
| 1:B:405:LEU:HD21 | 1:B:503:PRO:HG2 | 1.84 | 0.60 |
| 1:A:379:PHE:HD2 | 1:A:844:GLU:HG2 | 1.63 | 0.60 |
| 1:A:394:ARG:NE | 1:A:396:GLU:OE1 | 2.34 | 0.60 |
| 1:B:649:LYS:HD2 | 1:B:652:LEU:CD1 | 2.21 | 0.60 |
| 1:A:226:PHE:O | 1:A:251:VAL:HG12 | 2.02 | 0.59 |
| 1:A:384:LEU:HD13 | 1:A:388:HIS:HD2 | 1.67 | 0.59 |
| 1:A:763:ARG:NH1 | 1:A:771:PRO:CB | 2.64 | 0.59 |
| 1:B:604:MSE:O | 1:B:605:ARG:NH1 | 2.35 | 0.59 |
| 1:B:785:SER:O | 1:B:788:PRO:CD | 2.50 | 0.59 |
| 1:B:833:PRO:CB | 1:B:835:TYR:CE2 | 2.76 | 0.59 |
| 1:A:657:LEU:HD23 | 1:A:795:ASP:HA | 1.84 | 0.59 |
| 1:A:698:MSE:C | 1:A:699:LEU:HD12 | 2.22 | 0.59 |
| 1:A:780:PHE:O | 1:A:783:GLY:N | 2.29 | 0.59 |
| 1:B:459:GLY:O | 1:B:461:TYR:CE2 | 2.55 | 0.59 |
| 1:B:646:GLU:OE2 | 1:B:646:GLU:C | 2.41 | 0.59 |
| 1:B:410:VAL:HG13 | 1:B:411:LEU:N | 2.16 | 0.59 |
| 1:B:561:VAL:HG23 | 1:B:563:ASP:H | 1.65 | 0.59 |
| 1:B:676:VAL:CG2 | 1:B:713:LYS:CE | 2.80 | 0.59 |
| 1:B:790:GLY:O | 1:B:811:VAL:HA | 2.01 | 0.59 |
| 1:B:830:GLN:OE1 | 1:B:830:GLN:HA | 2.01 | 0.59 |
| 1:A:469:TYR:HE1 | 1:B:806:GLU:OE1 | 1.85 | 0.59 |
| 1:B:586:GLN:NE2 | 1:B:615:MSE:O | 2.35 | 0.59 |
| 1:B:734:PRO:O | 1:B:735:VAL:CG1 | 2.51 | 0.59 |
| 1:A:498:LYS:HD3 | 1:A:498:LYS:N | 2.17 | 0.59 |
| 1:B:170:LEU:HD21 | 1:B:211:PHE:CE1 | 2.37 | 0.59 |
| 1:A:279:ASP:CB | 1:A:280:PRO:HD3 | 2.32 | 0.59 |
| 1:A:664:ASP:OD2 | 1:A:683:PRO:HA | 2.02 | 0.59 |
| 1:A:737:LYS:HE3 | 1:A:796:GLU:OE1 | 2.02 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:148:ARG:HB3 | 1:B:155:TYR:CE2 | 2.37 | 0.59 |
| 1:B:343:LEU:HD13 | 1:B:510:VAL:HB | 1.85 | 0.59 |
| 1:B:362:ALA:HB1 | 1:B:699:LEU:HD22 | 1.83 | 0.59 |
| 1:B:414:LYS:O | 1:B:415:TYR:HB2 | 2.03 | 0.59 |
| 1:B:788:PRO:CB | 1:B:808:HIS:O | 2.50 | 0.59 |
| 1:B:196:ALA:HB1 | 1:B:203:TYR:CZ | 2.37 | 0.59 |
| 1:B:649:LYS:CD | 1:B:652:LEU:HD12 | 2.24 | 0.59 |
| 1:A:544:PHE:CD1 | 1:A:558:MSE:SE | 3.06 | 0.59 |
| 1:A:752:ASN:C | 1:A:754:ILE:N | 2.53 | 0.59 |
| 1:B:212:GLU:HG3 | 1:B:216:GLN:HA | 1.85 | 0.59 |
| 1:B:246:HIS:CE1 | 1:B:582:ALA:HB2 | 2.36 | 0.59 |
| 1:B:475:THR:HG23 | 1:B:477:GLU:HG2 | 1.84 | 0.59 |
| 1:B:484:ASP:C | 1:B:486:PRO:HD3 | 2.21 | 0.59 |
| 1:B:553:PRO:HD2 | 1:B:585:TYR:HH | 1.67 | 0.59 |
| 1:A:211:PHE:CD1 | 1:A:211:PHE:O | 2.56 | 0.59 |
| 1:A:362:ALA:HB1 | 1:A:699:LEU:HD22 | 1.84 | 0.59 |
| 1:A:580:LEU:HD22 | 1:A:608:LEU:HD21 | 1.84 | 0.59 |
| 1:A:586:GLN:NE2 | 1:A:615:MSE:O | 2.35 | 0.59 |
| 1:A:823:ILE:HD11 | 1:A:842:ILE:HG23 | 1.84 | 0.59 |
| 1:B:227:ARG:N | 1:B:230:ASP:OD2 | 2.29 | 0.59 |
| 1:B:453:GLY:O | 1:B:456:ARG:HG2 | 2.03 | 0.59 |
| 1:B:454:SER:OG | 1:B:455:ASP:N | 2.36 | 0.59 |
| 1:B:686:GLU:HA | 1:B:689:ARG:HH21 | 1.67 | 0.59 |
| 1:B:233:ILE:O | 1:B:233:ILE:CG1 | 2.50 | 0.58 |
| 1:B:285:GLN:O | 1:B:288:GLU:HB2 | 2.02 | 0.58 |
| 1:B:772:LEU:CA | 1:B:774:PRO:HD2 | 2.33 | 0.58 |
| 1:B:830:GLN:HB3 | 1:B:832:PHE:HD2 | 1.68 | 0.58 |
| 1:B:881:GLN:OE1 | 1:B:881:GLN:HA | 2.03 | 0.58 |
| 1:A:280:PRO:O | 1:A:280:PRO:CG | 2.51 | 0.58 |
| 1:A:772:LEU:CD1 | 1:A:773:VAL:N | 2.64 | 0.58 |
| 1:B:209:GLU:HB2 | 1:B:221:THR:CG2 | 2.34 | 0.58 |
| 1:B:278:MSE:CB | 1:B:282:ALA:HB3 | 2.26 | 0.58 |
| 1:B:542:VAL:O | 1:B:546:ASP:OD1 | 2.21 | 0.58 |
| 1:B:791:ARG:HG2 | 1:B:814:HIS:C | 2.23 | 0.58 |
| 1:A:347:TYR:CD1 | 1:A:515:PRO:HA | 2.38 | 0.58 |
| 1:A:562:VAL:HG21 | 1:A:604:MSE:SE | 2.53 | 0.58 |
| 1:B:233:ILE:O | 1:B:233:ILE:HG13 | 2.03 | 0.58 |
| 1:B:648:GLN:CD | 1:B:648:GLN:H | 2.05 | 0.58 |
| 1:A:220:PHE:CD2 | 1:A:220:PHE:N | 2.59 | 0.58 |
| 1:A:413:LYS:CG | 1:A:420:ASP:HB3 | 2.34 | 0.58 |
| 1:A:677:MSE:CG | 1:A:714:LEU:HD22 | 2.33 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:207:ILE:HD11 | 1:B:209:GLU:O | 2.03 | 0.58 |
| 1:B:343:LEU:HD21 | 1:B:512:CYS:SG | 2.43 | 0.58 |
| 1:B:375:ASP:OD1 | 2:B:1000:SAH:O2' | 2.21 | 0.58 |
| 1:B:387:ASN:H | 1:B:387:ASN:HD22 | 1.51 | 0.58 |
| 1:B:728:GLU:HA | 1:B:731:GLN:NE2 | 2.17 | 0.58 |
| 1:A:281:LYS:HA | 1:A:284:ALA:CB | 2.24 | 0.58 |
| 1:A:341:ALA:O | 1:A:368:LEU:HD23 | 2.04 | 0.58 |
| 1:A:364:SER:CB | 1:A:866:GLY:HA3 | 2.34 | 0.58 |
| 1:A:367:LYS:HE3 | 1:A:701:TRP:HH2 | 1.64 | 0.58 |
| 1:A:146:GLU:O | 1:A:150:ASN:N | 2.24 | 0.58 |
| 1:A:195:LYS:CG | 1:A:266:ILE:HD11 | 2.33 | 0.58 |
| 1:A:416:VAL:O | 1:A:417:GLN:NE2 | 2.30 | 0.58 |
| 1:B:342:THR:HB | 1:B:371:ARG:HG3 | 1.85 | 0.58 |
| 1:B:664:ASP:HB2 | 1:B:688:GLN:OE1 | 2.04 | 0.58 |
| 1:A:567:PHE:HD2 | 1:A:572:LEU:HD21 | 1.68 | 0.58 |
| 1:B:649:LYS:C | 1:B:651:SER:N | 2.57 | 0.58 |
| 1:A:572:LEU:H | 1:A:572:LEU:CD2 | 2.11 | 0.58 |
| 1:A:600:PRO:HG2 | 1:A:661:ALA:HB2 | 1.85 | 0.58 |
| 1:A:729:ARG:HG3 | 1:A:729:ARG:NH1 | 2.17 | 0.58 |
| 1:B:504:LEU:O | 1:B:507:ASP:N | 2.29 | 0.58 |
| 1:B:508:VAL:HG21 | 1:B:551:LEU:HD13 | 1.86 | 0.58 |
| 1:B:590:GLY:HA2 | 1:B:640:CYS:HB3 | 1.86 | 0.58 |
| 1:B:142:VAL:HG12 | 1:B:175:HIS:H | 1.68 | 0.58 |
| 1:B:485:CYS:HB3 | 1:B:488:LYS:HD2 | 1.84 | 0.58 |
| 1:B:534:LYS:C | 1:B:534:LYS:HZ3 | 2.07 | 0.58 |
| 1:B:621:PRO:HG3 | 1:B:860:ALA:HB1 | 1.86 | 0.58 |
| 1:A:814:HIS:CD2 | 1:A:816:THR:H | 2.22 | 0.57 |
| 1:B:732:GLN:O | 1:B:732:GLN:HG3 | 2.02 | 0.57 |
| 1:A:154:ARG:HH22 | 1:A:209:GLU:CG | 2.15 | 0.57 |
| 1:A:186:TYR:HE2 | 1:A:265:ILE:HG21 | 1.66 | 0.57 |
| 1:A:215:ASP:C | 1:A:216:GLN:HG3 | 2.20 | 0.57 |
| 1:A:464:VAL:O | 1:A:474:ASP:CG | 2.42 | 0.57 |
| 1:B:599:LEU:CD1 | 1:B:856:PRO:HG2 | 2.27 | 0.57 |
| 1:A:226:PHE:HB2 | 1:A:252:PHE:O | 2.04 | 0.57 |
| 1:A:250:ARG:HG3 | 1:A:293:TYR:CZ | 2.38 | 0.57 |
| 1:B:440:GLU:O | 1:B:440:GLU:CD | 2.42 | 0.57 |
| 1:B:685:THR:HG21 | 1:B:687:PHE:HB3 | 1.85 | 0.57 |
| 1:A:670:ASN:HD21 | 1:A:722:LEU:HD22 | 1.68 | 0.57 |
| 1:A:781:ILE:HG12 | 1:A:786:LEU:HD11 | 1.85 | 0.57 |
| 1:A:786:LEU:HB3 | 1:A:788:PRO:CD | 2.27 | 0.57 |
| 1:B:404:LEU:HB2 | 1:B:451:TYR:CB | 2.33 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:741:PHE:HB3 | 1:B:789:PHE:HB2 | 1.87 | 0.57 |
| 1:A:192:VAL:HA | 1:A:268:LYS:HA | 1.86 | 0.57 |
| 1:A:220:PHE:HE2 | 1:A:260:ASN:CA | 2.18 | 0.57 |
| 1:B:170:LEU:HD21 | 1:B:211:PHE:HE1 | 1.69 | 0.57 |
| 1:B:439:ASP:OD1 | 1:B:440:GLU:N | 2.38 | 0.57 |
| 1:B:456:ARG:HH21 | 1:B:456:ARG:CG | 2.16 | 0.57 |
| 1:B:879:LEU:H | 1:B:879:LEU:CD2 | 2.14 | 0.57 |
| 1:A:170:LEU:HD12 | 1:A:259:ASP:OD2 | 2.05 | 0.57 |
| 1:A:273:HIS:CD2 | 1:A:274:VAL:O | 2.57 | 0.57 |
| 1:A:338:THR:HG21 | 1:A:367:LYS:HZ2 | 1.70 | 0.57 |
| 1:A:541:MSE:CE | 1:A:572:LEU:O | 2.52 | 0.57 |
| 1:B:192:VAL:N | 1:B:269:VAL:HG23 | 2.20 | 0.57 |
| 1:B:302:TYR:HB3 | 1:B:588:ARG:HG3 | 1.85 | 0.57 |
| 1:A:764:VAL:CG2 | 1:A:772:LEU:CD1 | 2.83 | 0.57 |
| 1:A:809:ASN:O | 1:A:809:ASN:OD1 | 2.22 | 0.57 |
| 1:B:513:GLY:HA3 | 1:B:558:MSE:HA | 1.87 | 0.57 |
| 1:B:535:ASP:O | 1:B:535:ASP:CG | 2.43 | 0.57 |
| 1:B:672:GLN:NE2 | 1:B:673:PRO:HD2 | 2.19 | 0.57 |
| 1:A:236:LEU:CD1 | 1:A:574:LYS:HB2 | 2.32 | 0.57 |
| 1:A:792:LEU:N | 1:A:792:LEU:CD2 | 2.64 | 0.57 |
| 1:B:134:GLU:CG | 1:B:135:PRO:CD | 2.80 | 0.57 |
| 1:B:788:PRO:O | 1:B:807:PRO:O | 2.23 | 0.57 |
| 1:B:142:VAL:HG12 | 1:B:143:ALA:H | 1.70 | 0.57 |
| 1:B:622:LEU:HD12 | 1:B:880:TYR:O | 2.05 | 0.57 |
| 1:A:236:LEU:HD23 | 1:A:239:ILE:CD1 | 2.32 | 0.56 |
| 1:A:455:ASP:CB | 1:A:461:TYR:HE2 | 2.18 | 0.56 |
| 1:A:671:HIS:C | 1:A:671:HIS:ND1 | 2.58 | 0.56 |
| 1:B:225:PHE:HE1 | 1:B:294:TYR:CD2 | 2.23 | 0.56 |
| 1:B:472:GLU:O | 1:B:473:GLU:HB2 | 2.05 | 0.56 |
| 1:B:617:LEU:HD12 | 1:B:618:PRO:HD2 | 1.86 | 0.56 |
| 1:B:637:PHE:HB3 | 1:B:640:CYS:SG | 2.44 | 0.56 |
| 1:B:715:LEU:H | 1:B:715:LEU:HD12 | 1.69 | 0.56 |
| 1:A:247:ASP:HB3 | 1:A:250:ARG:HB2 | 1.86 | 0.56 |
| 1:A:460:ILE:HG21 | 1:A:462:PHE:CE2 | 2.39 | 0.56 |
| 1:A:517:CYS:O | 1:A:517:CYS:SG | 2.63 | 0.56 |
| 1:A:670:ASN:ND2 | 1:A:722:LEU:CD2 | 2.68 | 0.56 |
| 1:B:460:ILE:N | 1:B:460:ILE:HD13 | 2.20 | 0.56 |
| 1:B:785:SER:O | 1:B:788:PRO:HD3 | 2.06 | 0.56 |
| 1:A:757:TRP:HZ3 | 1:A:773:VAL:HG21 | 1.70 | 0.56 |
| 1:B:351:GLY:O | 1:B:355:THR:HG23 | 2.06 | 0.56 |
| 1:B:443:VAL:O | 1:B:488:LYS:NZ | 2.37 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:491:GLU:O | 1:B:495:GLU:OE1 | 2.24 | 0.56 |
| 1:A:141:PRO:HB2 | 1:A:143:ALA:H | 1.69 | 0.56 |
| 1:A:154:ARG:O | 1:A:155:TYR:HB2 | 2.05 | 0.56 |
| 1:A:555:TYR:CE1 | 1:A:615:MSE:HG2 | 2.41 | 0.56 |
| 1:A:592:MSE:CE | 1:A:861:LEU:HD21 | 2.07 | 0.56 |
| 1:A:714:LEU:HD11 | 1:A:717:HIS:HD2 | 1.70 | 0.56 |
| 1:A:722:LEU:HD13 | 1:A:722:LEU:N | 2.20 | 0.56 |
| 1:A:803:THR:OG1 | 1:A:847:ILE:HA | 2.05 | 0.56 |
| 1:A:136:GLU:CG | 1:A:218:HIS:CE1 | 2.88 | 0.56 |
| 1:A:136:GLU:HG2 | 1:A:137:PHE:H | 1.71 | 0.56 |
| 1:A:137:PHE:CD2 | 1:A:218:HIS:HB3 | 2.40 | 0.56 |
| 1:A:839:PHE:HD1 | 1:A:839:PHE:N | 2.03 | 0.56 |
| 1:A:635:ASN:O | 1:A:638:SER:N | 2.36 | 0.56 |
| 1:B:194:VAL:HB | 1:B:203:TYR:HB2 | 1.87 | 0.56 |
| 1:A:609:TRP:CD1 | 1:A:620:TYR:CE1 | 2.93 | 0.56 |
| 1:A:780:PHE:HB3 | 1:A:786:LEU:CD2 | 2.35 | 0.56 |
| 1:B:220:PHE:HD2 | 1:B:262:LEU:HA | 1.69 | 0.56 |
| 1:B:236:LEU:HD23 | 1:B:239:ILE:CG1 | 2.36 | 0.56 |
| 1:B:351:GLY:N | 1:B:384:LEU:HD12 | 2.20 | 0.56 |
| 1:B:695:ARG:HH11 | 1:B:835:TYR:HD1 | 1.53 | 0.56 |
| 1:A:236:LEU:O | 1:A:239:ILE:HD13 | 2.05 | 0.56 |
| 1:A:302:TYR:CD2 | 1:A:878:PRO:HB3 | 2.41 | 0.56 |
| 1:A:541:MSE:HE2 | 1:A:572:LEU:HB3 | 1.88 | 0.56 |
| 1:B:218:HIS:HB2 | 1:B:262:LEU:HD11 | 1.87 | 0.56 |
| 1:B:388:HIS:HA | 1:B:702:SER:OG | 2.06 | 0.56 |
| 1:B:508:VAL:HG11 | 1:B:511:ILE:HG22 | 1.88 | 0.56 |
| 1:A:495:GLU:CG | 1:A:499:ARG:HH21 | 2.19 | 0.56 |
| 1:A:714:LEU:HD21 | 1:A:717:HIS:HB3 | 1.84 | 0.56 |
| 1:B:281:LYS:O | 1:B:284:ALA:HB3 | 2.05 | 0.56 |
| 1:B:675:ASP:HA | 1:B:718:GLN:HE21 | 1.70 | 0.56 |
| 1:A:347:TYR:OH | 1:A:540:GLN:NE2 | 2.39 | 0.56 |
| 1:A:355:THR:HG22 | 1:A:388:HIS:CE1 | 2.41 | 0.56 |
| 1:A:784:LYS:N | 1:A:786:LEU:HD11 | 2.18 | 0.56 |
| 1:B:658:LEU:HD21 | 1:B:791:ARG:NH2 | 2.21 | 0.55 |
| 1:B:374:VAL:HG22 | 1:B:394:ARG:HB2 | 1.88 | 0.55 |
| 1:B:483:SER:O | 1:B:486:PRO:HG3 | 2.06 | 0.55 |
| 1:B:485:CYS:SG | 1:B:488:LYS:NZ | 2.77 | 0.55 |
| 1:A:338:THR:HG22 | 1:A:339:ARG:H | 1.72 | 0.55 |
| 1:A:407:GLU:O | 1:A:410:VAL:HB | 2.06 | 0.55 |
| 1:A:817:GLN:O | 1:A:818:ALA:HB3 | 2.05 | 0.55 |
| 1:B:645:ASP:O | 1:B:645:ASP:CG | 2.45 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:741:PHE:O | 1:B:744:LEU:N | 2.29 | 0.55 |
| 1:A:664:ASP:O | 1:A:664:ASP:CG | 2.44 | 0.55 |
| 1:A:723:ASN:C | 1:A:723:ASN:ND2 | 2.58 | 0.55 |
| 1:B:599:LEU:CD2 | 1:B:601:GLN:HE21 | 2.19 | 0.55 |
| 1:B:664:ASP:HB2 | 1:B:688:GLN:CD | 2.26 | 0.55 |
| 1:B:791:ARG:CG | 1:B:792:LEU:N | 2.69 | 0.55 |
| 1:B:823:ILE:CD1 | 1:B:845:LYS:HD2 | 2.36 | 0.55 |
| 1:A:444:GLU:HG3 | 1:A:445:LYS:N | 2.20 | 0.55 |
| 1:A:511:ILE:CG2 | 1:A:553:PRO:HB3 | 2.36 | 0.55 |
| 1:A:652:LEU:O | 1:A:653:LYS:O | 2.23 | 0.55 |
| 1:A:665:LEU:HD21 | 1:A:814:HIS:CE1 | 2.22 | 0.55 |
| 1:A:735:VAL:O | 1:A:735:VAL:CG1 | 2.55 | 0.55 |
| 1:B:278:MSE:O | 1:B:280:PRO:CD | 2.54 | 0.55 |
| 1:B:391:THR:HG23 | 1:B:392:GLU:H | 1.68 | 0.55 |
| 1:B:879:LEU:N | 1:B:879:LEU:CD2 | 2.70 | 0.55 |
| 1:A:558:MSE:O | 1:A:607:PHE:HA | 2.06 | 0.55 |
| 1:A:631:GLY:HA3 | 1:A:641:MSE:CE | 2.35 | 0.55 |
| 1:A:704:GLY:O | 1:A:705:GLU:HB3 | 2.07 | 0.55 |
| 1:B:176:TYR:O | 1:B:210:PHE:HB2 | 2.07 | 0.55 |
| 1:B:796:GLU:CG | 1:B:797:THR:N | 2.58 | 0.55 |
| 1:B:802:VAL:CG1 | 1:B:803:THR:H | 2.20 | 0.55 |
| 1:B:814:HIS:ND1 | 1:B:819:ARG:CZ | 2.69 | 0.55 |
| 1:A:535:ASP:OD2 | 1:A:536:GLU:N | 2.39 | 0.55 |
| 1:B:147:ALA:O | 1:B:151:TRP:N | 2.39 | 0.55 |
| 1:B:543:THR:O | 1:B:547:ILE:HG12 | 2.07 | 0.55 |
| 1:A:652:LEU:N | 1:A:652:LEU:HD23 | 2.21 | 0.55 |
| 1:A:704:GLY:O | 1:A:705:GLU:CB | 2.55 | 0.55 |
| 1:B:672:GLN:OE1 | 1:B:674:ASN:O | 2.25 | 0.55 |
| 1:B:772:LEU:CB | 1:B:774:PRO:HD2 | 2.35 | 0.55 |
| 1:A:142:VAL:HG12 | 1:A:176:TYR:CE2 | 2.42 | 0.55 |
| 1:A:273:HIS:CB | 1:A:294:TYR:CE2 | 2.62 | 0.55 |
| 1:A:280:PRO:O | 1:A:280:PRO:HG2 | 2.07 | 0.55 |
| 1:A:568:ALA:O | 1:A:569:ASP:C | 2.44 | 0.55 |
| 1:A:596:CYS:O | 1:A:625:TYR:N | 2.40 | 0.55 |
| 1:A:605:ARG:CG | 1:A:605:ARG:NH1 | 2.53 | 0.55 |
| 1:A:780:PHE:C | 1:A:782:LYS:N | 2.60 | 0.55 |
| 1:A:786:LEU:C | 1:A:788:PRO:HD3 | 2.27 | 0.55 |
| 1:B:281:LYS:HG3 | 1:B:282:ALA:N | 2.22 | 0.54 |
| 1:B:349:GLY:O | 1:B:350:CYS:SG | 2.65 | 0.54 |
| 1:B:645:ASP:O | 1:B:646:GLU:CB | 2.30 | 0.54 |
| 1:A:555:TYR:OH | 1:A:868:ALA:HB1 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:838:LEU:C | 1:A:845:LYS:HE2 | 2.27 | 0.54 |
| 1:B:206:ARG:CG | 1:B:206:ARG:NH1 | 2.45 | 0.54 |
| 1:B:239:ILE:HG21 | 1:B:575:TYR:CE1 | 2.43 | 0.54 |
| 1:B:667:LYS:CB | 1:B:817:GLN:OE1 | 2.55 | 0.54 |
| 1:A:234:ASN:O | 1:A:235:SER:HB3 | 2.07 | 0.54 |
| 1:A:394:ARG:NH2 | 1:A:396:GLU:OE1 | 2.38 | 0.54 |
| 1:A:839:PHE:CD1 | 1:A:839:PHE:N | 2.74 | 0.54 |
| 1:A:154:ARG:CZ | 1:A:175:HIS:HE1 | 2.21 | 0.54 |
| 1:A:195:LYS:CG | 1:A:266:ILE:CD1 | 2.85 | 0.54 |
| 1:A:249:ARG:O | 1:A:249:ARG:CG | 2.56 | 0.54 |
| 1:A:269:VAL:HG22 | 1:A:271:ILE:HG13 | 1.90 | 0.54 |
| 1:A:585:TYR:HD1 | 1:A:610:GLY:O | 1.89 | 0.54 |
| 1:B:387:ASN:CB | 1:B:836:TYR:CE2 | 2.90 | 0.54 |
| 1:A:186:TYR:CE2 | 1:A:265:ILE:CG2 | 2.89 | 0.54 |
| 1:A:413:LYS:HG2 | 1:A:420:ASP:HB3 | 1.90 | 0.54 |
| 1:A:415:TYR:CD2 | 1:A:490:ARG:CG | 2.88 | 0.54 |
| 1:A:505:PRO:HD3 | 1:A:550:TYR:CE1 | 2.42 | 0.54 |
| 1:A:772:LEU:HD12 | 1:A:772:LEU:N | 2.22 | 0.54 |
| 1:B:139:GLY:HA3 | 1:B:178:SER:HB3 | 1.88 | 0.54 |
| 1:A:280:PRO:O | 1:A:281:LYS:CB | 2.56 | 0.54 |
| 1:A:599:LEU:HD11 | 1:A:856:PRO:CG | 2.33 | 0.54 |
| 1:A:644:TYR:CE1 | 1:A:649:LYS:HB3 | 2.42 | 0.54 |
| 1:A:727:TYR:CE2 | 1:A:731:GLN:CD | 2.80 | 0.54 |
| 1:B:266:ILE:HG22 | 1:B:267:SER:HB3 | 1.89 | 0.54 |
| 1:B:459:GLY:O | 1:B:461:TYR:HD2 | 1.88 | 0.54 |
| 1:B:690:TYR:C | 1:B:693:LEU:HD13 | 2.27 | 0.54 |
| 1:A:253:LEU:HD12 | 1:A:294:TYR:HE1 | 1.70 | 0.54 |
| 1:A:538:ASN:C | 1:A:540:GLN:N | 2.55 | 0.54 |
| 1:A:716:ASP:OD2 | 1:A:838:LEU:HB2 | 2.08 | 0.54 |
| 1:A:793:TRP:HA | 1:A:793:TRP:HE3 | 1.68 | 0.54 |
| 1:B:151:TRP:CE3 | 1:B:175:HIS:CE1 | 2.96 | 0.54 |
| 1:B:156:GLY:O | 1:B:157:ARG:C | 2.46 | 0.54 |
| 1:B:223:ARG:HA | 1:B:256:GLU:O | 2.08 | 0.54 |
| 1:B:387:ASN:N | 1:B:387:ASN:ND2 | 2.56 | 0.54 |
| 1:B:404:LEU:O | 1:B:404:LEU:HD22 | 2.07 | 0.54 |
| 1:B:685:THR:CG2 | 1:B:687:PHE:N | 2.66 | 0.54 |
| 1:B:691:ILE:HG23 | 1:B:692:ARG:HG3 | 1.89 | 0.54 |
| 1:A:173:ARG:NH1 | 1:A:212:GLU:CD | 2.41 | 0.54 |
| 1:A:405:LEU:HD21 | 1:A:503:PRO:HG2 | 1.89 | 0.54 |
| 1:A:785:SER:O | 1:A:786:LEU:HB2 | 2.06 | 0.54 |
| 1:B:139:GLY:CA | 1:B:178:SER:HB3 | 2.38 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:137:PHE:HE1 | 1:A:210:PHE:HB3 | 1.73 | 0.53 |
| 1:A:449:ILE:CD1 | 1:A:460:ILE:HG23 | 2.36 | 0.53 |
| 1:A:502:LEU:CD2 | 1:A:503:PRO:HD2 | 2.30 | 0.53 |
| 1:A:766:LEU:HD23 | 1:A:767:SER:N | 2.23 | 0.53 |
| 1:B:676:VAL:CB | 1:B:713:LYS:HE2 | 2.38 | 0.53 |
| 1:A:134:GLU:O | 1:A:136:GLU:N | 2.41 | 0.53 |
| 1:A:285:GLN:HA | 1:A:285:GLN:OE1 | 2.08 | 0.53 |
| 1:B:714:LEU:HD23 | 1:B:714:LEU:C | 2.29 | 0.53 |
| 1:A:220:PHE:HD2 | 1:A:220:PHE:N | 1.87 | 0.53 |
| 1:A:227:ARG:N | 1:A:230:ASP:OD2 | 2.38 | 0.53 |
| 1:A:757:TRP:CH2 | 1:A:763:ARG:NH2 | 2.76 | 0.53 |
| 1:B:456:ARG:HG2 | 1:B:456:ARG:NH2 | 2.17 | 0.53 |
| 1:B:834:ASP:C | 1:B:836:TYR:H | 2.10 | 0.53 |
| 1:A:198:GLU:O | 1:A:199:ASN:HB2 | 2.07 | 0.53 |
| 1:A:250:ARG:CZ | 1:A:295:ASP:OD2 | 2.56 | 0.53 |
| 1:A:273:HIS:CE1 | 1:A:274:VAL:O | 2.62 | 0.53 |
| 1:A:715:LEU:HD22 | 1:A:837:ARG:CG | 2.29 | 0.53 |
| 1:B:389:PRO:HD2 | 1:B:702:SER:OG | 2.08 | 0.53 |
| 1:B:447:VAL:O | 1:B:447:VAL:HG23 | 2.06 | 0.53 |
| 1:A:619:LYS:HB3 | 1:A:878:PRO:O | 2.08 | 0.53 |
| 1:A:730:VAL:CG2 | 1:A:818:ALA:O | 2.53 | 0.53 |
| 1:B:247:ASP:C | 1:B:247:ASP:OD1 | 2.47 | 0.53 |
| 1:B:578:SER:O | 1:B:579:CYS:C | 2.44 | 0.53 |
| 1:B:802:VAL:HG13 | 1:B:803:THR:H | 1.72 | 0.53 |
| 1:A:195:LYS:HE2 | 1:A:264:CYS:HA | 1.89 | 0.53 |
| 1:A:367:LYS:HE3 | 1:A:701:TRP:CZ3 | 2.40 | 0.53 |
| 1:A:633:ALA:C | 1:A:634:PRO:O | 2.42 | 0.53 |
| 1:A:148:ARG:CG | 1:A:155:TYR:CD1 | 2.91 | 0.53 |
| 1:A:375:ASP:OD2 | 2:A:1000:SAH:O2' | 2.27 | 0.53 |
| 1:A:814:HIS:CD2 | 1:A:815:PRO:HD2 | 2.42 | 0.53 |
| 1:B:404:LEU:HD11 | 1:B:502:LEU:HD21 | 1.91 | 0.53 |
| 1:B:443:VAL:CG1 | 1:B:466:TRP:CE3 | 2.89 | 0.53 |
| 1:B:622:LEU:HB3 | 1:B:623:PRO:HD2 | 1.90 | 0.53 |
| 1:B:672:GLN:CD | 1:B:674:ASN:H | 2.11 | 0.53 |
| 1:A:136:GLU:CD | 1:A:137:PHE:N | 2.62 | 0.53 |
| 1:A:417:GLN:O | 1:A:418:ASP:C | 2.45 | 0.53 |
| 1:A:617:LEU:HD12 | 1:A:618:PRO:HD2 | 1.91 | 0.53 |
| 1:A:729:ARG:NE | 1:A:772:LEU:O | 2.41 | 0.53 |
| 1:B:209:GLU:HB2 | 1:B:221:THR:HB | 1.90 | 0.53 |
| 1:B:352:GLY:N | 2:B:1000:SAH:O | 2.41 | 0.53 |
| 1:B:602:PHE:O | 1:B:799:PRO:O | 2.27 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:833:PRO:CG | 1:B:835:TYR:CE2 | 2.88 | 0.53 |
| 1:A:140:SER:HB3 | 1:A:141:PRO:CD | 2.38 | 0.53 |
| 1:A:375:ASP:OD2 | 1:A:375:ASP:C | 2.46 | 0.53 |
| 1:B:148:ARG:HH11 | 1:B:148:ARG:CG | 1.97 | 0.53 |
| 1:B:695:ARG:NH1 | 1:B:835:TYR:CD1 | 2.77 | 0.53 |
| 1:A:232:VAL:CG1 | 1:A:233:ILE:HG22 | 2.38 | 0.52 |
| 1:A:622:LEU:HD12 | 1:A:880:TYR:O | 2.09 | 0.52 |
| 1:A:672:GLN:HE22 | 1:A:674:ASN:HB2 | 1.71 | 0.52 |
| 1:A:822:THR:CG2 | 1:A:825:GLU:CD | 2.78 | 0.52 |
| 1:B:828:ARG:NH2 | 1:B:834:ASP:OD1 | 2.42 | 0.52 |
| 1:A:223:ARG:HD2 | 1:A:255:GLU:HA | 1.92 | 0.52 |
| 1:A:399:ASP:N | 1:A:399:ASP:OD1 | 2.35 | 0.52 |
| 1:A:763:ARG:NH1 | 1:A:771:PRO:HB2 | 2.24 | 0.52 |
| 1:A:176:TYR:OH | 1:A:212:GLU:OE2 | 2.28 | 0.52 |
| 1:A:716:ASP:OD1 | 1:A:716:ASP:N | 2.40 | 0.52 |
| 1:A:740:ASN:OD1 | 1:A:740:ASN:N | 2.42 | 0.52 |
| 1:B:347:TYR:HD2 | 1:B:516:PRO:HD3 | 1.72 | 0.52 |
| 1:B:772:LEU:CA | 1:B:774:PRO:CD | 2.87 | 0.52 |
| 1:B:443:VAL:CG1 | 1:B:466:TRP:CZ3 | 2.92 | 0.52 |
| 1:B:605:ARG:HH11 | 1:B:605:ARG:CG | 2.16 | 0.52 |
| 1:B:729:ARG:NH2 | 1:B:771:PRO:O | 2.43 | 0.52 |
| 1:A:284:ALA:HA | 1:A:287:ILE:CG1 | 2.40 | 0.52 |
| 1:A:340:THR:HA | 1:A:367:LYS:O | 2.09 | 0.52 |
| 1:A:464:VAL:HG13 | 1:A:466:TRP:CZ2 | 2.43 | 0.52 |
| 1:A:495:GLU:CG | 1:A:499:ARG:NH2 | 2.73 | 0.52 |
| 1:A:671:HIS:HE1 | 1:A:673:PRO:CG | 2.23 | 0.52 |
| 1:A:714:LEU:HD23 | 1:A:715:LEU:N | 2.24 | 0.52 |
| 1:A:837:ARG:HB3 | 1:A:839:PHE:CE1 | 2.39 | 0.52 |
| 1:B:411:LEU:HD21 | 1:B:493:VAL:CG2 | 2.39 | 0.52 |
| 1:B:534:LYS:HZ1 | 1:B:535:ASP:HB2 | 1.73 | 0.52 |
| 1:B:544:PHE:CE1 | 1:B:558:MSE:HE3 | 2.45 | 0.52 |
| 1:B:549:ALA:CB | 1:B:583:MSE:HE1 | 2.38 | 0.52 |
| 1:B:729:ARG:CZ | 1:B:729:ARG:HB3 | 2.38 | 0.52 |
| 1:B:252:PHE:HD2 | 1:B:296:MSE:HB3 | 1.74 | 0.52 |
| 1:A:148:ARG:HH11 | 1:A:148:ARG:HG3 | 1.75 | 0.52 |
| 1:A:180:LYS:HB2 | 1:A:185:VAL:HG13 | 1.92 | 0.52 |
| 1:A:624:THR:O | 1:A:624:THR:HG22 | 2.09 | 0.52 |
| 1:A:763:ARG:HH11 | 1:A:771:PRO:CB | 2.23 | 0.52 |
| 1:A:384:LEU:HD13 | 1:A:388:HIS:CD2 | 2.44 | 0.52 |
| 1:A:723:ASN:HD21 | 1:A:725:ASP:HB2 | 1.75 | 0.52 |
| 1:B:489:ILE:HG12 | 1:B:490:ARG:N | 2.25 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:455:ASP:HB3 | 1:A:461:TYR:HE2 | 1.75 | 0.52 |
| 1:A:215:ASP:O | 1:A:216:GLN:CB | 2.57 | 0.52 |
| 1:A:391:THR:CG2 | 1:A:393:VAL:HG23 | 2.40 | 0.52 |
| 1:A:601:GLN:HB3 | 1:A:798:VAL:HG23 | 1.91 | 0.52 |
| 1:A:140:SER:O | 1:A:141:PRO:C | 2.48 | 0.51 |
| 1:A:154:ARG:HD2 | 1:A:172:ALA:HB3 | 1.93 | 0.51 |
| 1:B:511:ILE:HD11 | 1:B:548:VAL:HG22 | 1.92 | 0.51 |
| 1:B:766:LEU:C | 1:B:768:SER:O | 2.48 | 0.51 |
| 1:A:136:GLU:CG | 1:A:137:PHE:N | 2.73 | 0.51 |
| 1:A:272:VAL:HG21 | 1:A:286:LEU:CD2 | 2.39 | 0.51 |
| 1:B:209:GLU:HB2 | 1:B:221:THR:HG22 | 1.92 | 0.51 |
| 1:B:619:LYS:HB2 | 1:B:878:PRO:O | 2.10 | 0.51 |
| 1:A:605:ARG:HH11 | 1:A:605:ARG:HG3 | 1.74 | 0.51 |
| 1:A:700:ASP:HB2 | 1:A:835:TYR:OH | 2.10 | 0.51 |
| 1:A:763:ARG:C | 1:A:764:VAL:HG22 | 2.31 | 0.51 |
| 1:B:538:ASN:N | 1:B:538:ASN:ND2 | 2.57 | 0.51 |
| 1:B:555:TYR:HE2 | 1:B:618:PRO:HD3 | 1.74 | 0.51 |
| 1:B:720:LEU:HD12 | 1:B:805:ALA:O | 2.11 | 0.51 |
| 1:A:211:PHE:C | 1:A:211:PHE:HD1 | 2.14 | 0.51 |
| 1:A:273:HIS:CG | 1:A:294:TYR:HE2 | 2.26 | 0.51 |
| 1:A:580:LEU:HD23 | 1:A:587:ALA:CB | 2.41 | 0.51 |
| 1:A:691:ILE:CG2 | 1:A:834:ASP:OD1 | 2.58 | 0.51 |
| 1:A:727:TYR:CE2 | 1:A:731:GLN:NE2 | 2.78 | 0.51 |
| 1:A:764:VAL:HG21 | 1:A:772:LEU:HD12 | 1.89 | 0.51 |
| 1:B:622:LEU:HD11 | 1:B:879:LEU:HB2 | 1.92 | 0.51 |
| 1:B:729:ARG:CD | 1:B:773:VAL:HG21 | 2.38 | 0.51 |
| 1:A:656:LEU:C | 1:A:657:LEU:HD12 | 2.30 | 0.51 |
| 1:B:195:LYS:HE2 | 1:B:264:CYS:HA | 1.92 | 0.51 |
| 1:B:665:LEU:HB3 | 1:B:717:HIS:HE2 | 1.76 | 0.51 |
| 1:A:501:ILE:HG12 | 1:A:502:LEU:N | 2.24 | 0.51 |
| 1:A:596:CYS:HA | 1:A:627:VAL:CG1 | 2.41 | 0.51 |
| 1:B:229:GLU:OE1 | 1:B:229:GLU:N | 2.29 | 0.51 |
| 1:B:404:LEU:C | 1:B:404:LEU:HD13 | 2.30 | 0.51 |
| 1:B:572:LEU:HD12 | 1:B:572:LEU:N | 2.25 | 0.51 |
| 1:A:154:ARG:HD2 | 1:A:172:ALA:CB | 2.40 | 0.51 |
| 1:A:154:ARG:CD | 1:A:172:ALA:HB3 | 2.39 | 0.51 |
| 1:A:172:ALA:HA | 1:A:213:GLY:HA2 | 1.92 | 0.51 |
| 1:B:192:VAL:CA | 1:B:269:VAL:HG23 | 2.41 | 0.51 |
| 1:B:217:CYS:HB2 | 1:B:219:TYR:CE2 | 2.46 | 0.51 |
| 1:B:266:ILE:HG22 | 1:B:267:SER:N | 2.25 | 0.51 |
| 1:A:151:TRP:CD1 | 1:A:175:HIS:CE1 | 2.98 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:234:ASN:O | 1:A:234:ASN:ND2 | 2.43 | 0.51 |
| 1:A:415:TYR:CE2 | 1:A:490:ARG:HG2 | 2.46 | 0.51 |
| 1:B:186:TYR:HD1 | 1:B:268:LYS:HG3 | 1.76 | 0.51 |
| 1:B:362:ALA:HB2 | 1:B:699:LEU:HD22 | 1.90 | 0.51 |
| 1:B:814:HIS:CD2 | 1:B:815:PRO:N | 2.78 | 0.51 |
| 1:A:249:ARG:O | 1:A:293:TYR:CE2 | 2.64 | 0.51 |
| 1:A:564:ILE:HG23 | 1:A:573:GLY:N | 2.26 | 0.51 |
| 1:B:231:THR:OG1 | 1:B:233:ILE:CG2 | 2.44 | 0.51 |
| 1:B:241:VAL:HG21 | 1:B:579:CYS:HB3 | 1.93 | 0.51 |
| 1:B:274:VAL:HA | 1:B:278:MSE:HE3 | 1.93 | 0.51 |
| 1:B:676:VAL:HG21 | 1:B:713:LYS:HZ1 | 1.76 | 0.51 |
| 1:A:575:TYR:CE1 | 1:A:579:CYS:SG | 3.04 | 0.51 |
| 1:A:648:GLN:C | 1:A:649:LYS:O | 2.43 | 0.51 |
| 1:B:304:THR:HG21 | 1:B:588:ARG:NH2 | 2.25 | 0.51 |
| 1:B:671:HIS:CE1 | 1:B:673:PRO:HD3 | 2.46 | 0.51 |
| 1:A:671:HIS:HE1 | 1:A:673:PRO:HG3 | 1.75 | 0.50 |
| 1:B:272:VAL:CG1 | 1:B:273:HIS:H | 2.24 | 0.50 |
| 1:B:460:ILE:N | 1:B:460:ILE:HD12 | 2.26 | 0.50 |
| 1:B:508:VAL:HG11 | 1:B:511:ILE:CG2 | 2.41 | 0.50 |
| 1:A:609:TRP:HD1 | 1:A:620:TYR:CE1 | 2.29 | 0.50 |
| 1:B:154:ARG:HH21 | 1:B:209:GLU:CD | 2.15 | 0.50 |
| 1:B:464:VAL:HG23 | 1:B:465:GLN:N | 2.24 | 0.50 |
| 1:A:675:ASP:OD1 | 1:A:675:ASP:N | 2.43 | 0.50 |
| 1:B:224:TRP:O | 1:B:254:SER:HB3 | 2.11 | 0.50 |
| 1:B:642:VAL:CG2 | 1:B:642:VAL:O | 2.59 | 0.50 |
| 1:B:695:ARG:NE | 1:B:703:PHE:HE2 | 2.08 | 0.50 |
| 1:A:253:LEU:HD22 | 1:A:254:SER:O | 2.11 | 0.50 |
| 1:A:544:PHE:HD1 | 1:A:558:MSE:SE | 2.43 | 0.50 |
| 1:A:715:LEU:HD12 | 1:A:834:ASP:O | 2.11 | 0.50 |
| 1:B:140:SER:CB | 1:B:141:PRO:CD | 2.85 | 0.50 |
| 1:B:411:LEU:HD23 | 1:B:412:CYS:N | 2.26 | 0.50 |
| 1:B:413:LYS:HZ1 | 1:B:414:LYS:CE | 2.23 | 0.50 |
| 1:B:766:LEU:O | 1:B:768:SER:O | 2.29 | 0.50 |
| 1:A:196:ALA:HB2 | 1:A:203:TYR:CE1 | 2.47 | 0.50 |
| 1:A:505:PRO:HD3 | 1:A:550:TYR:HE1 | 1.76 | 0.50 |
| 1:A:557:LEU:HD22 | 1:A:609:TRP:CH2 | 2.47 | 0.50 |
| 1:A:733:ILE:CG2 | 1:A:791:ARG:HE | 2.25 | 0.50 |
| 1:A:757:TRP:CZ3 | 1:A:773:VAL:CG2 | 2.95 | 0.50 |
| 1:A:814:HIS:HD2 | 1:A:816:THR:N | 2.06 | 0.50 |
| 1:B:250:ARG:NH2 | 1:B:295:ASP:OD1 | 2.44 | 0.50 |
| 1:B:307:ASN:ND2 | 1:B:586:GLN:NE2 | 2.60 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:402:LEU:O | 1:B:405:LEU:HB2 | 2.11 | 0.50 |
| 1:B:622:LEU:CD1 | 1:B:879:LEU:HB2 | 2.41 | 0.50 |
| 1:B:685:THR:HG21 | 1:B:688:GLN:H | 1.67 | 0.50 |
| 1:B:821:LEU:CB | 1:B:825:GLU:OE1 | 2.60 | 0.50 |
| 1:A:195:LYS:NZ | 1:A:263:ASP:O | 2.28 | 0.50 |
| 1:A:370:THR:O | 1:A:391:THR:OG1 | 2.24 | 0.50 |
| 1:A:412:CYS:C | 1:A:416:VAL:HG23 | 2.28 | 0.50 |
| 1:A:690:TYR:HE1 | 1:A:698:MSE:SE | 2.45 | 0.50 |
| 1:A:823:ILE:HG12 | 1:A:846:TYR:CE2 | 2.47 | 0.50 |
| 1:B:410:VAL:O | 1:B:413:LYS:HB3 | 2.11 | 0.50 |
| 1:A:136:GLU:CG | 1:A:137:PHE:H | 2.24 | 0.50 |
| 1:A:141:PRO:O | 1:A:142:VAL:HG13 | 2.11 | 0.50 |
| 1:A:148:ARG:HG2 | 1:A:155:TYR:CD1 | 2.46 | 0.50 |
| 1:A:148:ARG:HG2 | 1:A:155:TYR:CG | 2.45 | 0.50 |
| 1:A:154:ARG:NH1 | 1:A:211:PHE:CG | 2.80 | 0.50 |
| 1:A:397:LYS:HB2 | 1:A:400:GLU:OE1 | 2.11 | 0.50 |
| 1:A:456:ARG:NH2 | 1:A:456:ARG:CG | 2.59 | 0.50 |
| 1:A:495:GLU:HG3 | 1:A:499:ARG:NH2 | 2.26 | 0.50 |
| 1:A:584:LYS:HB3 | 1:A:584:LYS:NZ | 2.25 | 0.50 |
| 1:A:665:LEU:O | 1:A:665:LEU:CD1 | 2.53 | 0.50 |
| 1:A:670:ASN:O | 1:A:670:ASN:OD1 | 2.30 | 0.50 |
| 1:B:186:TYR:CZ | 1:B:265:ILE:HG21 | 2.47 | 0.50 |
| 1:B:186:TYR:CD1 | 1:B:268:LYS:HG3 | 2.47 | 0.50 |
| 1:B:413:LYS:NZ | 1:B:414:LYS:CE | 2.75 | 0.50 |
| 1:B:646:GLU:OE2 | 1:B:647:THR:HG23 | 2.09 | 0.50 |
| 1:B:728:GLU:O | 1:B:731:GLN:HG2 | 2.12 | 0.50 |
| 1:B:814:HIS:HA | 1:B:821:LEU:HD13 | 1.93 | 0.50 |
| 1:A:287:ILE:CD1 | 1:A:288:GLU:HG2 | 2.42 | 0.50 |
| 1:A:455:ASP:HB3 | 1:A:461:TYR:CE2 | 2.47 | 0.50 |
| 1:A:591:MSE:HG3 | 1:A:640:CYS:O | 2.12 | 0.50 |
| 1:B:591:MSE:CE | 1:B:640:CYS:HB2 | 2.42 | 0.50 |
| 1:B:774:PRO:O | 1:B:776:TYR:N | 2.45 | 0.50 |
| 1:A:447:VAL:HG13 | 1:A:463:LYS:HG2 | 1.93 | 0.50 |
| 1:A:474:ASP:C | 1:A:475:THR:HG23 | 2.32 | 0.50 |
| 1:B:192:VAL:HG13 | 1:B:193:TYR:N | 2.27 | 0.50 |
| 1:B:375:ASP:OD1 | 1:B:376:PHE:N | 2.45 | 0.50 |
| 1:B:658:LEU:CD2 | 1:B:791:ARG:NH2 | 2.74 | 0.50 |
| 1:B:791:ARG:CG | 1:B:813:ILE:O | 2.59 | 0.50 |
| 1:A:250:ARG:NH2 | 1:A:584:LYS:HE2 | 2.23 | 0.49 |
| 1:A:657:LEU:HD23 | 1:A:795:ASP:CA | 2.42 | 0.49 |
| 1:A:780:PHE:C | 1:A:782:LYS:H | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:865:LEU:O | 1:A:868:ALA:N | 2.45 | 0.49 |
| 1:B:208:THR:OG1 | 1:B:221:THR:CG2 | 2.60 | 0.49 |
| 1:B:378:SER:O | 1:B:382:GLN:CG | 2.60 | 0.49 |
| 1:B:884:PRO:O | 1:B:885:SER:O | 2.30 | 0.49 |
| 1:A:204:ILE:HB | 1:A:225:PHE:HB2 | 1.94 | 0.49 |
| 1:A:242:ASP:CG | 1:A:243:GLY:H | 2.15 | 0.49 |
| 1:A:364:SER:OG | 1:A:863:TYR:O | 2.30 | 0.49 |
| 1:A:823:ILE:HG12 | 1:A:846:TYR:CD2 | 2.46 | 0.49 |
| 1:B:207:ILE:HD12 | 1:B:221:THR:O | 2.12 | 0.49 |
| 1:B:281:LYS:HA | 1:B:284:ALA:HB3 | 1.94 | 0.49 |
| 1:B:535:ASP:OD2 | 1:B:539:LYS:HE3 | 2.12 | 0.49 |
| 1:B:679:TYR:O | 1:B:681:GLY:N | 2.43 | 0.49 |
| 1:B:774:PRO:CB | 1:B:778:MSE:CE | 2.86 | 0.49 |
| 1:B:791:ARG:HG2 | 1:B:813:ILE:O | 2.12 | 0.49 |
| 1:B:810:GLN:O | 1:B:811:VAL:HG13 | 2.11 | 0.49 |
| 1:A:140:SER:CB | 1:A:141:PRO:CD | 2.90 | 0.49 |
| 1:A:389:PRO:CD | 1:A:390:GLN:H | 2.26 | 0.49 |
| 1:B:143:ALA:N | 1:B:175:HIS:O | 2.44 | 0.49 |
| 1:B:413:LYS:NZ | 1:B:414:LYS:NZ | 2.60 | 0.49 |
| 1:B:472:GLU:CD | 1:B:472:GLU:H | 2.16 | 0.49 |
| 1:B:791:ARG:CG | 1:B:792:LEU:H | 2.25 | 0.49 |
| 1:A:174:CYS:O | 1:A:212:GLU:N | 2.26 | 0.49 |
| 1:A:176:TYR:O | 1:A:210:PHE:HB2 | 2.12 | 0.49 |
| 1:A:195:LYS:HB2 | 1:A:264:CYS:HB3 | 1.94 | 0.49 |
| 1:A:206:ARG:O | 1:A:222:CYS:CB | 2.57 | 0.49 |
| 1:A:343:LEU:HD21 | 1:A:512:CYS:SG | 2.52 | 0.49 |
| 1:A:394:ARG:HH21 | 1:A:396:GLU:CD | 2.16 | 0.49 |
| 1:A:536:GLU:O | 1:A:538:ASN:OD1 | 2.30 | 0.49 |
| 1:A:837:ARG:O | 1:A:838:LEU:HD12 | 2.11 | 0.49 |
| 1:B:275:ASP:OD2 | 1:B:277:ASN:HB2 | 2.12 | 0.49 |
| 1:B:387:ASN:HD22 | 1:B:387:ASN:N | 2.10 | 0.49 |
| 1:B:387:ASN:HB2 | 1:B:836:TYR:CE2 | 2.46 | 0.49 |
| 1:B:394:ARG:NH2 | 1:B:396:GLU:OE2 | 2.42 | 0.49 |
| 1:B:696:LYS:C | 1:B:698:MSE:N | 2.64 | 0.49 |
| 1:A:250:ARG:NH2 | 1:A:584:LYS:HD2 | 2.28 | 0.49 |
| 1:B:272:VAL:HG11 | 1:B:286:LEU:HD23 | 1.95 | 0.49 |
| 1:A:874:GLU:HG3 | 1:A:875:GLY:N | 2.26 | 0.49 |
| 1:B:140:SER:HB3 | 1:B:141:PRO:HD3 | 1.91 | 0.49 |
| 1:B:375:ASP:O | 1:B:395:ASN:HA | 2.12 | 0.49 |
| 1:B:672:GLN:HA | 1:B:672:GLN:HE21 | 1.78 | 0.49 |
| 1:B:687:PHE:C | 1:B:687:PHE:CD2 | 2.86 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:179:ALA:O | 1:A:185:VAL:HA | 2.13 | 0.49 |
| 1:A:645:ASP:O | 1:A:646:GLU:OE2 | 2.30 | 0.49 |
| 1:A:843:LYS:O | 1:A:847:ILE:HD12 | 2.13 | 0.49 |
| 1:B:535:ASP:OD1 | 1:B:539:LYS:HE3 | 2.13 | 0.49 |
| 1:B:547:ILE:O | 1:B:548:VAL:C | 2.50 | 0.49 |
| 1:B:679:TYR:C | 1:B:681:GLY:N | 2.65 | 0.49 |
| 1:B:723:ASN:OD1 | 1:B:726:ASP:OD2 | 2.30 | 0.49 |
| 1:A:339:ARG:O | 1:A:367:LYS:HB2 | 2.13 | 0.49 |
| 1:A:376:PHE:C | 1:A:395:ASN:OD1 | 2.51 | 0.49 |
| 1:A:454:SER:C | 1:A:456:ARG:N | 2.66 | 0.49 |
| 1:B:180:LYS:CE | 1:B:183:ASN:HA | 2.42 | 0.49 |
| 1:B:207:ILE:HD13 | 1:B:220:PHE:HB2 | 1.94 | 0.49 |
| 1:B:378:SER:O | 1:B:382:GLN:HG2 | 2.13 | 0.49 |
| 1:B:561:VAL:HG23 | 1:B:563:ASP:HB2 | 1.95 | 0.49 |
| 1:B:622:LEU:CD1 | 1:B:880:TYR:O | 2.60 | 0.49 |
| 1:B:626:ASP:OD2 | 1:B:655:ALA:CB | 2.61 | 0.49 |
| 1:A:537:LYS:C | 1:A:539:LYS:H | 2.15 | 0.49 |
| 1:A:757:TRP:CZ3 | 1:A:773:VAL:HG21 | 2.48 | 0.49 |
| 1:B:343:LEU:HB2 | 1:B:368:LEU:CD2 | 2.43 | 0.49 |
| 1:B:624:THR:HG22 | 1:B:624:THR:O | 2.13 | 0.49 |
| 1:B:668:VAL:O | 1:B:817:GLN:HG2 | 2.13 | 0.49 |
| 1:B:671:HIS:CE1 | 1:B:673:PRO:HB3 | 2.44 | 0.49 |
| 1:B:692:ARG:C | 1:B:693:LEU:HD12 | 2.32 | 0.49 |
| 1:A:151:TRP:CD1 | 1:A:151:TRP:O | 2.66 | 0.49 |
| 1:A:785:SER:OG | 1:A:786:LEU:N | 2.43 | 0.49 |
| 1:B:349:GLY:C | 1:B:351:GLY:H | 2.16 | 0.49 |
| 1:B:361:ALA:CB | 1:B:368:LEU:HB2 | 2.43 | 0.49 |
| 1:B:565:LEU:HD11 | 1:B:606:VAL:HG21 | 1.95 | 0.49 |
| 1:A:413:LYS:HG3 | 1:A:420:ASP:HB3 | 1.95 | 0.48 |
| 1:A:442:VAL:HG11 | 1:A:467:GLU:OE2 | 2.13 | 0.48 |
| 1:A:555:TYR:CE2 | 1:A:618:PRO:CG | 2.95 | 0.48 |
| 1:A:585:TYR:CE1 | 1:A:612:LEU:HG | 2.48 | 0.48 |
| 1:B:349:GLY:CA | 1:B:380:ALA:HB1 | 2.42 | 0.48 |
| 1:B:227:ARG:O | 1:B:230:ASP:CB | 2.58 | 0.48 |
| 1:B:346:LEU:O | 1:B:347:TYR:HB2 | 2.12 | 0.48 |
| 1:B:457:GLU:O | 1:B:461:TYR:OH | 2.30 | 0.48 |
| 1:B:812:ILE:HG12 | 1:B:812:ILE:O | 2.13 | 0.48 |
| 1:A:456:ARG:HG3 | 1:A:456:ARG:O | 2.13 | 0.48 |
| 1:A:464:VAL:HG12 | 1:A:475:THR:O | 2.13 | 0.48 |
| 1:A:728:GLU:CD | 1:A:766:LEU:CG | 2.78 | 0.48 |
| 1:B:553:PRO:O | 1:B:553:PRO:CD | 2.61 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:603:ARG:NH2 | 1:B:830:GLN:HE22 | 2.11 | 0.48 |
| 1:B:603:ARG:NH1 | 1:B:852:ALA:O | 2.45 | 0.48 |
| 1:B:671:HIS:HE1 | 1:B:673:PRO:CB | 2.27 | 0.48 |
| 1:B:802:VAL:HG12 | 1:B:803:THR:N | 2.27 | 0.48 |
| 1:A:465:GLN:CG | 1:A:474:ASP:OD1 | 2.62 | 0.48 |
| 1:A:496:GLY:O | 1:A:501:ILE:HG23 | 2.13 | 0.48 |
| 1:A:733:ILE:HG21 | 1:A:791:ARG:NH2 | 2.22 | 0.48 |
| 1:B:144:ALA:O | 1:B:145:ASP:CB | 2.60 | 0.48 |
| 1:B:235:SER:O | 1:B:236:LEU:C | 2.50 | 0.48 |
| 1:B:621:PRO:HD3 | 1:B:864:CYS:SG | 2.53 | 0.48 |
| 1:B:676:VAL:CG2 | 1:B:713:LYS:NZ | 2.76 | 0.48 |
| 1:B:689:ARG:O | 1:B:693:LEU:CD1 | 2.62 | 0.48 |
| 1:B:717:HIS:C | 1:B:718:GLN:HG3 | 2.32 | 0.48 |
| 1:A:141:PRO:CB | 1:A:143:ALA:H | 2.26 | 0.48 |
| 1:A:347:TYR:HD1 | 1:A:516:PRO:HD3 | 1.77 | 0.48 |
| 1:A:367:LYS:CE | 1:A:701:TRP:CH2 | 2.82 | 0.48 |
| 1:B:170:LEU:CD2 | 1:B:211:PHE:CZ | 2.97 | 0.48 |
| 1:B:562:VAL:HG21 | 1:B:604:MSE:CE | 2.34 | 0.48 |
| 1:B:621:PRO:CG | 1:B:860:ALA:HB1 | 2.43 | 0.48 |
| 1:B:785:SER:O | 1:B:788:PRO:HD2 | 2.12 | 0.48 |
| 1:A:309:SER:O | 1:A:310:SER:OG | 2.30 | 0.48 |
| 1:B:171:LYS:O | 1:B:214:THR:HG23 | 2.13 | 0.48 |
| 1:B:239:ILE:HD12 | 1:B:239:ILE:N | 2.28 | 0.48 |
| 1:B:841:PRO:HB2 | 1:B:843:LYS:HE3 | 1.95 | 0.48 |
| 1:A:248:PRO:HD2 | 1:A:249:ARG:H | 1.78 | 0.48 |
| 1:B:195:LYS:HG3 | 1:B:266:ILE:HD12 | 1.95 | 0.48 |
| 1:B:229:GLU:H | 1:B:229:GLU:CD | 2.13 | 0.48 |
| 1:B:345:ASP:OD2 | 1:B:348:SER:HB3 | 2.13 | 0.48 |
| 1:B:362:ALA:HA | 1:B:366:LEU:O | 2.13 | 0.48 |
| 1:B:814:HIS:CE1 | 1:B:819:ARG:NH2 | 2.80 | 0.48 |
| 1:A:379:PHE:HA | 1:A:382:GLN:HG2 | 1.96 | 0.48 |
| 1:A:757:TRP:HZ3 | 1:A:773:VAL:HG23 | 1.79 | 0.48 |
| 1:A:866:GLY:O | 1:A:870:LEU:CD1 | 2.60 | 0.48 |
| 1:B:345:ASP:HA | 1:B:512:CYS:HB2 | 1.95 | 0.48 |
| 1:B:588:ARG:NH1 | 1:B:618:PRO:O | 2.47 | 0.48 |
| 1:B:607:PHE:CD2 | 1:B:861:LEU:HD11 | 2.49 | 0.48 |
| 1:A:191:ASP:HB2 | 1:A:269:VAL:O | 2.14 | 0.48 |
| 1:B:538:ASN:O | 1:B:541:MSE:HB3 | 2.13 | 0.48 |
| 1:B:601:GLN:OE1 | 1:B:801:VAL:CG1 | 2.62 | 0.48 |
| 1:B:673:PRO:HG2 | 1:B:674:ASN:ND2 | 2.29 | 0.48 |
| 1:B:695:ARG:CD | 1:B:700:ASP:CB | 2.85 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:739:ALA:O | 1:B:790:GLY:HA3 | 2.13 | 0.48 |
| 1:A:175:HIS:HA | 1:A:211:PHE:HA | 1.95 | 0.48 |
| 1:A:415:TYR:HD2 | 1:A:490:ARG:CG | 2.21 | 0.48 |
| 1:A:498:LYS:N | 1:A:498:LYS:CD | 2.76 | 0.48 |
| 1:A:514:GLY:O | 1:A:515:PRO:C | 2.53 | 0.48 |
| 1:A:787:LYS:HB2 | 1:A:809:ASN:C | 2.34 | 0.48 |
| 1:B:387:ASN:HB2 | 1:B:836:TYR:HE2 | 1.78 | 0.48 |
| 1:B:599:LEU:HD12 | 1:B:599:LEU:N | 2.28 | 0.48 |
| 1:B:601:GLN:HB3 | 1:B:798:VAL:O | 2.14 | 0.48 |
| 1:B:689:ARG:O | 1:B:693:LEU:HD11 | 2.14 | 0.48 |
| 1:B:790:GLY:C | 1:B:813:ILE:HG13 | 2.35 | 0.48 |
| 1:A:220:PHE:CD2 | 1:A:220:PHE:C | 2.84 | 0.47 |
| 1:A:811:VAL:O | 1:A:811:VAL:CG2 | 2.58 | 0.47 |
| 1:B:695:ARG:HG2 | 1:B:695:ARG:HH11 | 1.68 | 0.47 |
| 1:B:729:ARG:HD3 | 1:B:773:VAL:CG2 | 2.38 | 0.47 |
| 1:B:741:PHE:CD2 | 1:B:788:PRO:HG2 | 2.49 | 0.47 |
| 1:A:724:ASN:OD1 | 1:A:724:ASN:N | 2.41 | 0.47 |
| 1:A:807:PRO:HA | 1:A:812:ILE:HG22 | 1.96 | 0.47 |
| 1:B:236:LEU:HD23 | 1:B:239:ILE:HG13 | 1.95 | 0.47 |
| 1:B:440:GLU:O | 1:B:440:GLU:HG3 | 2.13 | 0.47 |
| 1:B:834:ASP:C | 1:B:836:TYR:N | 2.68 | 0.47 |
| 1:A:137:PHE:CD1 | 1:A:176:TYR:CD1 | 3.02 | 0.47 |
| 1:A:599:LEU:CD1 | 1:A:856:PRO:HG2 | 2.36 | 0.47 |
| 1:A:763:ARG:HB3 | 1:A:764:VAL:H | 1.37 | 0.47 |
| 1:B:464:VAL:HG21 | 1:B:466:TRP:CZ2 | 2.49 | 0.47 |
| 1:B:729:ARG:H | 1:B:729:ARG:HG2 | 1.51 | 0.47 |
| 1:B:830:GLN:HB3 | 1:B:832:PHE:CD2 | 2.49 | 0.47 |
| 1:A:179:ALA:HB1 | 1:A:262:LEU:CD2 | 2.44 | 0.47 |
| 1:A:404:LEU:C | 1:A:404:LEU:CD1 | 2.49 | 0.47 |
| 1:A:554:LYS:HA | 1:A:612:LEU:HD12 | 1.96 | 0.47 |
| 1:B:225:PHE:CE1 | 1:B:294:TYR:CD2 | 3.03 | 0.47 |
| 1:B:414:LYS:O | 1:B:415:TYR:CB | 2.62 | 0.47 |
| 1:A:220:PHE:CE2 | 1:A:260:ASN:CA | 2.98 | 0.47 |
| 1:A:305:PHE:CD2 | 1:A:305:PHE:N | 2.83 | 0.47 |
| 1:A:544:PHE:CE1 | 1:A:558:MSE:SE | 3.17 | 0.47 |
| 1:A:563:ASP:O | 1:A:564:ILE:C | 2.49 | 0.47 |
| 1:A:619:LYS:CD | 1:A:877:ASP:O | 2.62 | 0.47 |
| 1:B:252:PHE:CD2 | 1:B:296:MSE:HB3 | 2.49 | 0.47 |
| 1:B:274:VAL:HG23 | 1:B:278:MSE:CG | 2.38 | 0.47 |
| 1:B:514:GLY:N | 1:B:515:PRO:CD | 2.78 | 0.47 |
| 1:A:154:ARG:NH2 | 1:A:209:GLU:OE1 | 2.39 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:287:ILE:HD12 | 1:A:288:GLU:HG2 | 1.97 | 0.47 |
| 1:B:364:SER:OG | 1:B:863:TYR:O | 2.32 | 0.47 |
| 1:B:515:PRO:O | 1:B:560:ASN:ND2 | 2.48 | 0.47 |
| 1:A:220:PHE:O | 1:A:220:PHE:CG | 2.68 | 0.47 |
| 1:A:455:ASP:CB | 1:A:461:TYR:CE2 | 2.97 | 0.47 |
| 1:A:641:MSE:HG3 | 1:A:642:VAL:H | 1.78 | 0.47 |
| 1:A:719:PRO:HB3 | 1:A:820:VAL:O | 2.14 | 0.47 |
| 1:B:174:CYS:SG | 1:B:175:HIS:N | 2.87 | 0.47 |
| 1:B:246:HIS:HE1 | 1:B:581:VAL:HG13 | 1.80 | 0.47 |
| 1:B:394:ARG:NE | 1:B:396:GLU:OE2 | 2.42 | 0.47 |
| 1:B:440:GLU:OE1 | 1:B:440:GLU:O | 2.33 | 0.47 |
| 1:B:591:MSE:CG | 1:B:606:VAL:HG22 | 2.44 | 0.47 |
| 1:B:669:GLN:OE1 | 1:B:669:GLN:N | 2.42 | 0.47 |
| 1:B:774:PRO:HB3 | 1:B:778:MSE:HE3 | 1.96 | 0.47 |
| 1:B:774:PRO:CB | 1:B:778:MSE:HE3 | 2.44 | 0.47 |
| 1:B:779:SER:O | 1:B:780:PHE:C | 2.52 | 0.47 |
| 1:A:394:ARG:HE | 1:A:394:ARG:HB3 | 1.53 | 0.47 |
| 1:B:375:ASP:OD1 | 1:B:377:ASN:N | 2.48 | 0.47 |
| 1:B:456:ARG:O | 1:B:457:GLU:C | 2.51 | 0.47 |
| 1:B:565:LEU:HD11 | 1:B:606:VAL:CG2 | 2.45 | 0.47 |
| 1:B:659:GLY:HA2 | 1:B:794:TRP:HB3 | 1.95 | 0.47 |
| 1:A:508:VAL:HG11 | 1:A:551:LEU:HB3 | 1.97 | 0.47 |
| 1:A:591:MSE:HE1 | 1:A:634:PRO:HD2 | 1.96 | 0.47 |
| 1:B:235:SER:O | 1:B:237:VAL:CG2 | 2.63 | 0.47 |
| 1:B:250:ARG:NH2 | 1:B:295:ASP:CG | 2.68 | 0.47 |
| 1:B:771:PRO:HB2 | 1:B:773:VAL:H | 1.80 | 0.47 |
| 1:B:806:GLU:HA | 1:B:807:PRO:HD3 | 1.72 | 0.47 |
| 1:A:464:VAL:HG13 | 1:A:466:TRP:CE2 | 2.50 | 0.47 |
| 1:A:550:TYR:HD1 | 1:A:551:LEU:HG | 1.80 | 0.47 |
| 1:A:664:ASP:HB3 | 1:A:688:GLN:OE1 | 2.15 | 0.47 |
| 1:A:717:HIS:ND1 | 1:A:822:THR:HG21 | 2.29 | 0.47 |
| 1:B:301:ALA:C | 1:B:302:TYR:CD2 | 2.88 | 0.47 |
| 1:B:387:ASN:CB | 1:B:836:TYR:HE2 | 2.28 | 0.47 |
| 1:A:208:THR:OG1 | 1:A:221:THR:O | 2.24 | 0.46 |
| 1:A:280:PRO:CD | 1:A:280:PRO:O | 2.62 | 0.46 |
| 1:A:468:GLY:HA3 | 1:B:808:HIS:CE1 | 2.50 | 0.46 |
| 1:A:483:SER:OG | 1:A:484:ASP:N | 2.48 | 0.46 |
| 1:A:589:LEU:HA | 1:A:620:TYR:HH | 1.78 | 0.46 |
| 1:A:787:LYS:HG3 | 1:A:809:ASN:O | 2.16 | 0.46 |
| 1:B:349:GLY:O | 1:B:351:GLY:N | 2.46 | 0.46 |
| 1:B:558:MSE:HE3 | 1:B:558:MSE:HB2 | 1.49 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:819:ARG:O | 1:B:820:VAL:CG1 | 2.62 | 0.46 |
| 1:A:150:ASN:HB3 | 1:A:151:TRP:CE3 | 2.50 | 0.46 |
| 1:A:384:LEU:C | 1:A:384:LEU:HD12 | 2.36 | 0.46 |
| 1:A:389:PRO:HD2 | 1:A:390:GLN:H | 1.80 | 0.46 |
| 1:B:346:LEU:HB3 | 1:B:347:TYR:HD1 | 1.80 | 0.46 |
| 1:B:561:VAL:CG2 | 1:B:563:ASP:HB2 | 2.46 | 0.46 |
| 1:B:695:ARG:HA | 1:B:835:TYR:CD1 | 2.48 | 0.46 |
| 1:A:404:LEU:O | 1:A:404:LEU:CD1 | 2.30 | 0.46 |
| 1:A:542:VAL:HG12 | 1:A:543:THR:N | 2.28 | 0.46 |
| 1:A:555:TYR:CZ | 1:A:615:MSE:HG2 | 2.49 | 0.46 |
| 1:A:700:ASP:C | 1:A:702:SER:H | 2.18 | 0.46 |
| 1:A:741:PHE:CD1 | 1:A:741:PHE:C | 2.88 | 0.46 |
| 1:B:411:LEU:HD21 | 1:B:493:VAL:HG21 | 1.97 | 0.46 |
| 1:A:296:MSE:HE3 | 1:A:306:ALA:HA | 1.97 | 0.46 |
| 1:A:413:LYS:O | 1:A:420:ASP:HB2 | 2.15 | 0.46 |
| 1:A:487:GLN:O | 1:A:491:GLU:HB3 | 2.16 | 0.46 |
| 1:A:659:GLY:HA2 | 1:A:794:TRP:HE3 | 1.81 | 0.46 |
| 1:A:725:ASP:OD2 | 1:A:766:LEU:HD22 | 2.15 | 0.46 |
| 1:A:829:LEU:HD12 | 1:A:829:LEU:HA | 1.74 | 0.46 |
| 1:B:716:ASP:N | 1:B:716:ASP:OD1 | 2.49 | 0.46 |
| 1:A:233:ILE:O | 1:A:234:ASN:C | 2.54 | 0.46 |
| 1:A:347:TYR:CD1 | 1:A:516:PRO:HD3 | 2.50 | 0.46 |
| 1:A:486:PRO:HB2 | 1:A:490:ARG:CD | 2.45 | 0.46 |
| 1:A:670:ASN:HD21 | 1:A:722:LEU:CD2 | 2.28 | 0.46 |
| 1:A:727:TYR:O | 1:A:730:VAL:HG13 | 2.15 | 0.46 |
| 1:B:353:MSE:HE2 | 1:B:512:CYS:CB | 2.45 | 0.46 |
| 1:B:676:VAL:HG22 | 1:B:713:LYS:CE | 2.39 | 0.46 |
| 1:A:233:ILE:O | 1:A:233:ILE:CG1 | 2.63 | 0.46 |
| 1:A:252:PHE:HA | 1:A:296:MSE:O | 2.15 | 0.46 |
| 1:A:284:ALA:HA | 1:A:287:ILE:HD11 | 1.97 | 0.46 |
| 1:A:303:SER:OG | 1:A:640:CYS:SG | 2.68 | 0.46 |
| 1:B:202:ASP:O | 1:B:227:ARG:NH2 | 2.49 | 0.46 |
| 1:B:241:VAL:O | 1:B:242:ASP:C | 2.53 | 0.46 |
| 1:B:477:GLU:HB2 | 1:B:482:LEU:HD21 | 1.98 | 0.46 |
| 1:B:715:LEU:N | 1:B:715:LEU:HD12 | 2.31 | 0.46 |
| 1:B:788:PRO:HG2 | 1:B:789:PHE:H | 1.79 | 0.46 |
| 1:B:817:GLN:O | 1:B:818:ALA:HB3 | 2.15 | 0.46 |
| 1:B:345:ASP:C | 1:B:346:LEU:HD13 | 2.35 | 0.46 |
| 1:B:684:LYS:HB2 | 1:B:688:GLN:OE1 | 2.16 | 0.46 |
| 1:B:695:ARG:CD | 1:B:700:ASP:HB3 | 2.46 | 0.46 |
| 1:B:729:ARG:CD | 1:B:773:VAL:CG2 | 2.93 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:831:GLY:HA3 | 1:B:856:PRO:HD3 | 1.97 | 0.46 |
| 1:A:339:ARG:O | 1:A:367:LYS:N | 2.32 | 0.46 |
| 1:A:644:TYR:CD1 | 1:A:649:LYS:HB3 | 2.50 | 0.46 |
| 1:B:215:ASP:HB2 | 1:B:217:CYS:SG | 2.56 | 0.46 |
| 1:B:221:THR:HG22 | 1:B:221:THR:O | 2.16 | 0.46 |
| 1:B:231:THR:HB | 1:B:298:TYR:CE1 | 2.51 | 0.46 |
| 1:B:535:ASP:OD1 | 1:B:539:LYS:CE | 2.64 | 0.46 |
| 1:B:583:MSE:O | 1:B:584:LYS:CB | 2.61 | 0.46 |
| 1:B:729:ARG:HH21 | 1:B:772:LEU:C | 2.18 | 0.46 |
| 1:A:344:LEU:HD21 | 1:A:346:LEU:HD21 | 1.96 | 0.46 |
| 1:A:509:ASP:N | 1:A:509:ASP:OD1 | 2.46 | 0.46 |
| 1:A:511:ILE:HG23 | 1:A:553:PRO:CB | 2.46 | 0.46 |
| 1:A:593:VAL:HG11 | 1:A:602:PHE:CD1 | 2.50 | 0.46 |
| 1:A:687:PHE:O | 1:A:690:TYR:N | 2.47 | 0.46 |
| 1:A:725:ASP:CA | 1:A:766:LEU:HD13 | 2.38 | 0.46 |
| 1:B:547:ILE:HG12 | 1:B:547:ILE:H | 1.49 | 0.46 |
| 1:B:589:LEU:CD1 | 1:B:589:LEU:C | 2.84 | 0.46 |
| 1:B:828:ARG:NH2 | 1:B:834:ASP:OD2 | 2.29 | 0.46 |
| 1:A:505:PRO:HA | 1:A:551:LEU:HD23 | 1.97 | 0.46 |
| 1:A:653:LYS:HA | 1:A:653:LYS:HE3 | 1.97 | 0.46 |
| 1:B:209:GLU:HB2 | 1:B:221:THR:CB | 2.45 | 0.46 |
| 1:B:464:VAL:CG2 | 1:B:466:TRP:CZ2 | 2.98 | 0.46 |
| 1:B:343:LEU:HB2 | 1:B:368:LEU:HD22 | 1.97 | 0.45 |
| 1:B:699:LEU:HG | 1:B:701:TRP:CG | 2.51 | 0.45 |
| 1:B:783:GLY:O | 1:B:784:LYS:C | 2.54 | 0.45 |
| 1:B:805:ALA:HB1 | 1:B:812:ILE:HD13 | 1.97 | 0.45 |
| 1:A:411:LEU:N | 1:A:411:LEU:CD1 | 2.80 | 0.45 |
| 1:A:642:VAL:HG23 | 1:A:642:VAL:O | 2.15 | 0.45 |
| 1:A:663:SER:CB | 1:A:688:GLN:NE2 | 2.75 | 0.45 |
| 1:B:279:ASP:H | 1:B:283:LYS:HD3 | 1.81 | 0.45 |
| 1:B:460:ILE:HD13 | 1:B:460:ILE:H | 1.80 | 0.45 |
| 1:A:415:TYR:CD1 | 1:A:415:TYR:N | 2.85 | 0.45 |
| 1:B:144:ALA:O | 1:B:145:ASP:HB2 | 2.17 | 0.45 |
| 1:B:580:LEU:HD22 | 1:B:608:LEU:HD21 | 1.98 | 0.45 |
| 1:A:186:TYR:CD1 | 1:A:268:LYS:HD2 | 2.51 | 0.45 |
| 1:A:233:ILE:O | 1:A:233:ILE:HG13 | 2.16 | 0.45 |
| 1:A:449:ILE:HD13 | 1:A:462:PHE:CD1 | 2.51 | 0.45 |
| 1:A:626:ASP:C | 1:A:626:ASP:OD1 | 2.55 | 0.45 |
| 1:A:686:GLU:HA | 1:A:689:ARG:CZ | 2.46 | 0.45 |
| 1:B:180:LYS:HE3 | 1:B:183:ASN:HA | 1.97 | 0.45 |
| 1:B:670:ASN:HD21 | 1:B:722:LEU:H | 1.64 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:729:ARG:NE | 1:B:773:VAL:CG2 | 2.76 | 0.45 |
| 1:B:733:ILE:CG1 | 1:B:734:PRO:HD2 | 2.46 | 0.45 |
| 1:B:779:SER:O | 1:B:782:LYS:N | 2.48 | 0.45 |
| 1:B:805:ALA:O | 1:B:806:GLU:HG3 | 2.15 | 0.45 |
| 1:A:145:ASP:OD2 | 1:A:148:ARG:NH1 | 2.50 | 0.45 |
| 1:A:174:CYS:C | 1:A:175:HIS:HD2 | 2.20 | 0.45 |
| 1:A:723:ASN:ND2 | 1:A:723:ASN:O | 2.50 | 0.45 |
| 1:A:810:GLN:O | 1:A:811:VAL:CG1 | 2.64 | 0.45 |
| 1:B:307:ASN:HD21 | 1:B:586:GLN:CD | 2.12 | 0.45 |
| 1:B:535:ASP:CG | 1:B:539:LYS:HE3 | 2.36 | 0.45 |
| 1:B:687:PHE:O | 1:B:690:TYR:HB3 | 2.17 | 0.45 |
| 1:B:739:ALA:HB3 | 1:B:791:ARG:H | 1.81 | 0.45 |
| 1:B:805:ALA:HB2 | 1:B:846:TYR:CE1 | 2.51 | 0.45 |
| 1:A:619:LYS:HD3 | 1:A:877:ASP:O | 2.15 | 0.45 |
| 1:A:741:PHE:HD2 | 1:A:788:PRO:HB2 | 1.82 | 0.45 |
| 1:A:772:LEU:HD12 | 1:A:773:VAL:H | 1.78 | 0.45 |
| 1:B:170:LEU:CD2 | 1:B:211:PHE:CE1 | 2.98 | 0.45 |
| 1:B:734:PRO:O | 1:B:735:VAL:HG13 | 2.16 | 0.45 |
| 1:A:285:GLN:O | 1:A:286:LEU:C | 2.55 | 0.45 |
| 1:A:347:TYR:CD2 | 1:A:347:TYR:N | 2.83 | 0.45 |
| 1:A:787:LYS:CB | 1:A:809:ASN:O | 2.62 | 0.45 |
| 1:A:801:VAL:HG21 | 1:A:829:LEU:HB3 | 1.99 | 0.45 |
| 1:B:223:ARG:HD2 | 1:B:253:LEU:HD22 | 1.98 | 0.45 |
| 1:B:469:TYR:HD1 | 1:B:473:GLU:HB3 | 1.82 | 0.45 |
| 1:B:740:ASN:CA | 1:B:789:PHE:O | 2.64 | 0.45 |
| 1:B:776:TYR:O | 1:B:779:SER:N | 2.49 | 0.45 |
| 1:B:811:VAL:O | 1:B:811:VAL:CG2 | 2.58 | 0.45 |
| 1:A:660:ASP:OD2 | 1:A:660:ASP:N | 2.50 | 0.45 |
| 1:A:676:VAL:HA | 1:A:714:LEU:O | 2.17 | 0.45 |
| 1:A:683:PRO:HB2 | 1:A:689:ARG:HA | 1.99 | 0.45 |
| 1:B:171:LYS:HE2 | 1:B:171:LYS:HA | 1.99 | 0.45 |
| 1:B:218:HIS:O | 1:B:262:LEU:HG | 2.17 | 0.45 |
| 1:B:446:LEU:HD23 | 1:B:446:LEU:N | 2.22 | 0.45 |
| 1:B:730:VAL:O | 1:B:733:ILE:HB | 2.17 | 0.45 |
| 1:B:823:ILE:O | 1:B:826:ASN:N | 2.49 | 0.45 |
| 1:A:363:LEU:HB3 | 1:A:863:TYR:CD1 | 2.52 | 0.45 |
| 1:A:447:VAL:O | 1:A:447:VAL:CG2 | 2.64 | 0.45 |
| 1:A:553:PRO:HB2 | 1:A:555:TYR:O | 2.16 | 0.45 |
| 1:A:555:TYR:CE2 | 1:A:618:PRO:CD | 2.94 | 0.45 |
| 1:A:672:GLN:HG3 | 1:A:672:GLN:O | 2.16 | 0.45 |
| 1:A:787:LYS:HB3 | 1:A:811:VAL:CG1 | 2.41 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:343:LEU:HD12 | 1:B:344:LEU:N | 2.30 | 0.45 |
| 1:B:349:GLY:C | 1:B:350:CYS:SG | 2.96 | 0.45 |
| 1:B:375:ASP:CG | 2:B:1000:SAH:HO2' | 2.21 | 0.45 |
| 1:B:565:LEU:HB3 | 1:B:637:PHE:CE2 | 2.52 | 0.45 |
| 1:B:691:ILE:HD11 | 1:B:832:PHE:O | 2.17 | 0.45 |
| 1:B:718:GLN:N | 1:B:822:THR:HB | 2.32 | 0.45 |
| 1:B:791:ARG:CD | 1:B:792:LEU:N | 2.64 | 0.45 |
| 1:A:281:LYS:O | 1:A:285:GLN:CG | 2.60 | 0.45 |
| 1:A:596:CYS:HB3 | 1:A:623:PRO:CB | 2.28 | 0.45 |
| 1:B:287:ILE:HD11 | 1:B:293:TYR:CE2 | 2.52 | 0.45 |
| 1:B:646:GLU:C | 1:B:646:GLU:CD | 2.74 | 0.45 |
| 1:B:791:ARG:NE | 1:B:813:ILE:O | 2.50 | 0.45 |
| 1:B:793:TRP:HB2 | 1:B:794:TRP:CD1 | 2.52 | 0.45 |
| 1:B:823:ILE:HD13 | 1:B:845:LYS:CB | 2.47 | 0.45 |
| 1:A:173:ARG:NH2 | 1:A:216:GLN:HA | 2.32 | 0.44 |
| 1:A:451:TYR:HD1 | 1:A:460:ILE:HD12 | 1.81 | 0.44 |
| 1:A:483:SER:C | 1:A:485:CYS:H | 2.21 | 0.44 |
| 1:A:484:ASP:O | 1:A:485:CYS:C | 2.55 | 0.44 |
| 1:A:487:GLN:O | 1:A:491:GLU:CB | 2.65 | 0.44 |
| 1:A:570:GLY:O | 1:A:571:TYR:C | 2.54 | 0.44 |
| 1:A:653:LYS:H | 1:A:653:LYS:HD2 | 1.83 | 0.44 |
| 1:B:364:SER:HA | 1:B:863:TYR:HE1 | 1.83 | 0.44 |
| 1:B:395:ASN:C | 1:B:395:ASN:HD22 | 2.20 | 0.44 |
| 1:B:557:LEU:HD21 | 1:B:861:LEU:HD13 | 1.99 | 0.44 |
| 1:B:793:TRP:CD1 | 1:B:793:TRP:N | 2.84 | 0.44 |
| 1:B:820:VAL:O | 1:B:821:LEU:HD13 | 2.17 | 0.44 |
| 1:A:516:PRO:O | 1:A:517:CYS:C | 2.56 | 0.44 |
| 1:A:596:CYS:N | 1:A:627:VAL:HG11 | 2.32 | 0.44 |
| 1:B:186:TYR:HD1 | 1:B:268:LYS:CG | 2.29 | 0.44 |
| 1:B:670:ASN:C | 1:B:670:ASN:OD1 | 2.55 | 0.44 |
| 1:B:675:ASP:CA | 1:B:718:GLN:NE2 | 2.75 | 0.44 |
| 1:A:143:ALA:CB | 1:A:177:ARG:HH21 | 2.30 | 0.44 |
| 1:A:278:MSE:C | 1:A:279:ASP:OD1 | 2.55 | 0.44 |
| 1:A:376:PHE:CD2 | 1:A:377:ASN:N | 2.86 | 0.44 |
| 1:A:602:PHE:O | 1:A:799:PRO:O | 2.35 | 0.44 |
| 1:A:752:ASN:O | 1:A:753:ASN:CB | 2.66 | 0.44 |
| 1:A:780:PHE:HD2 | 1:A:786:LEU:CD2 | 2.30 | 0.44 |
| 1:B:142:VAL:HG12 | 1:B:175:HIS:O | 2.17 | 0.44 |
| 1:B:577:LEU:HD12 | 1:B:577:LEU:HA | 1.77 | 0.44 |
| 1:A:355:THR:OG1 | 1:A:356:GLY:N | 2.51 | 0.44 |
| 1:A:792:LEU:O | 1:A:815:PRO:HG3 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:157:ARG:HE | 1:B:157:ARG:HB3 | 1.42 | 0.44 |
| 1:B:589:LEU:HD12 | 1:B:589:LEU:O | 2.18 | 0.44 |
| 1:B:591:MSE:HE2 | 1:B:640:CYS:HB2 | 2.00 | 0.44 |
| 1:B:718:GLN:C | 1:B:822:THR:HB | 2.38 | 0.44 |
| 1:A:173:ARG:CB | 1:A:212:GLU:O | 2.66 | 0.44 |
| 1:A:479:ILE:O | 1:A:482:LEU:HB2 | 2.18 | 0.44 |
| 1:A:653:LYS:HD2 | 1:A:653:LYS:N | 2.32 | 0.44 |
| 1:A:812:ILE:CG2 | 1:A:820:VAL:HG22 | 2.45 | 0.44 |
| 1:B:338:THR:O | 1:B:338:THR:CG2 | 2.66 | 0.44 |
| 1:B:549:ALA:CA | 1:B:583:MSE:HE1 | 2.48 | 0.44 |
| 1:B:616:VAL:O | 1:B:868:ALA:HB1 | 2.17 | 0.44 |
| 1:A:193:TYR:CE1 | 1:A:269:VAL:HB | 2.53 | 0.44 |
| 1:A:279:ASP:HB3 | 1:A:280:PRO:HD3 | 1.98 | 0.44 |
| 1:A:542:VAL:HG22 | 1:A:575:TYR:OH | 2.17 | 0.44 |
| 1:B:298:TYR:HD1 | 1:B:305:PHE:CE1 | 2.35 | 0.44 |
| 1:B:496:GLY:CA | 1:B:501:ILE:HD13 | 2.46 | 0.44 |
| 1:B:579:CYS:O | 1:B:583:MSE:HB2 | 2.18 | 0.44 |
| 1:B:772:LEU:N | 1:B:774:PRO:HD2 | 2.32 | 0.44 |
| 1:A:302:TYR:O | 1:A:303:SER:C | 2.50 | 0.44 |
| 1:A:757:TRP:CD2 | 1:A:778:MSE:HE3 | 2.53 | 0.44 |
| 1:B:304:THR:HG23 | 1:B:588:ARG:HB2 | 2.00 | 0.44 |
| 1:B:391:THR:HG22 | 1:B:393:VAL:HG23 | 2.00 | 0.44 |
| 1:B:451:TYR:CD2 | 1:B:452:GLY:N | 2.86 | 0.44 |
| 1:B:589:LEU:CD1 | 1:B:640:CYS:SG | 3.05 | 0.44 |
| 1:B:821:LEU:HD12 | 1:B:821:LEU:HA | 1.80 | 0.44 |
| 1:B:837:ARG:NH1 | 1:B:837:ARG:CG | 2.65 | 0.44 |
| 1:A:456:ARG:HA | 1:A:456:ARG:HD3 | 1.78 | 0.44 |
| 1:A:557:LEU:HD22 | 1:A:609:TRP:CZ2 | 2.52 | 0.44 |
| 1:B:457:GLU:CB | 1:B:461:TYR:HH | 2.17 | 0.44 |
| 1:B:657:LEU:HD23 | 1:B:795:ASP:O | 2.18 | 0.44 |
| 1:B:686:GLU:CA | 1:B:689:ARG:NH2 | 2.79 | 0.44 |
| 1:B:791:ARG:HB2 | 1:B:813:ILE:HG13 | 2.00 | 0.44 |
| 1:B:812:ILE:HG23 | 1:B:820:VAL:HG22 | 1.99 | 0.44 |
| 1:A:179:ALA:O | 1:A:185:VAL:HG12 | 2.18 | 0.44 |
| 1:A:232:VAL:HG12 | 1:A:233:ILE:CG2 | 2.46 | 0.44 |
| 1:A:593:VAL:CG1 | 1:A:602:PHE:CD1 | 3.01 | 0.44 |
| 1:A:787:LYS:CG | 1:A:809:ASN:O | 2.66 | 0.44 |
| 1:B:143:ALA:HB1 | 1:B:147:ALA:HB2 | 1.96 | 0.44 |
| 1:B:207:ILE:HD12 | 1:B:209:GLU:H | 1.83 | 0.44 |
| 1:B:233:ILE:HD12 | 1:B:578:SER:OG | 2.18 | 0.44 |
| 1:B:663:SER:HB2 | 1:B:688:GLN:HE22 | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:784:LYS:O | 1:B:785:SER:C | 2.55 | 0.43 |
| 1:B:828:ARG:CG | 1:B:828:ARG:NH2 | 2.73 | 0.43 |
| 1:A:444:GLU:CG | 1:A:445:LYS:N | 2.81 | 0.43 |
| 1:A:722:LEU:HB3 | 1:A:726:ASP:HB2 | 1.99 | 0.43 |
| 1:A:737:LYS:HZ1 | 1:A:795:ASP:CG | 2.21 | 0.43 |
| 1:B:142:VAL:CG1 | 1:B:175:HIS:N | 2.76 | 0.43 |
| 1:B:184:VAL:CG1 | 1:B:186:TYR:CE1 | 3.00 | 0.43 |
| 1:B:554:LYS:O | 1:B:611:ALA:HA | 2.17 | 0.43 |
| 1:B:603:ARG:CZ | 1:B:830:GLN:NE2 | 2.79 | 0.43 |
| 1:A:194:VAL:HG12 | 1:A:195:LYS:N | 2.33 | 0.43 |
| 1:A:733:ILE:HD12 | 1:A:739:ALA:HB1 | 2.00 | 0.43 |
| 1:B:386:TYR:HB2 | 1:B:839:PHE:CE2 | 2.53 | 0.43 |
| 1:B:781:ILE:O | 1:B:782:LYS:C | 2.55 | 0.43 |
| 1:A:254:SER:OG | 1:A:256:GLU:N | 2.51 | 0.43 |
| 1:A:347:TYR:O | 2:A:1000:SAH:HG1 | 2.18 | 0.43 |
| 1:A:384:LEU:C | 1:A:384:LEU:CD1 | 2.87 | 0.43 |
| 1:A:645:ASP:OD1 | 1:A:645:ASP:N | 2.29 | 0.43 |
| 1:B:139:GLY:O | 1:B:140:SER:HB3 | 2.17 | 0.43 |
| 1:B:580:LEU:O | 1:B:585:TYR:HB2 | 2.17 | 0.43 |
| 1:B:589:LEU:C | 1:B:589:LEU:HD12 | 2.39 | 0.43 |
| 1:B:719:PRO:HB3 | 1:B:820:VAL:HG12 | 1.99 | 0.43 |
| 1:B:790:GLY:N | 1:B:813:ILE:HD11 | 2.33 | 0.43 |
| 1:A:143:ALA:O | 1:A:144:ALA:C | 2.56 | 0.43 |
| 1:A:154:ARG:NH2 | 1:A:170:LEU:HD21 | 2.33 | 0.43 |
| 1:A:308:ILE:HG23 | 1:A:309:SER:N | 2.32 | 0.43 |
| 1:A:343:LEU:HB3 | 1:A:370:THR:HA | 2.00 | 0.43 |
| 1:A:586:GLN:N | 1:A:611:ALA:O | 2.51 | 0.43 |
| 1:A:763:ARG:HH11 | 1:A:771:PRO:HB3 | 1.82 | 0.43 |
| 1:B:227:ARG:O | 1:B:230:ASP:N | 2.51 | 0.43 |
| 1:B:391:THR:CG2 | 1:B:393:VAL:HG23 | 2.49 | 0.43 |
| 1:B:446:LEU:HD22 | 1:B:446:LEU:HA | 1.71 | 0.43 |
| 1:B:734:PRO:O | 1:B:735:VAL:HG12 | 2.16 | 0.43 |
| 1:B:772:LEU:CB | 1:B:774:PRO:CG | 2.97 | 0.43 |
| 1:A:274:VAL:HG23 | 1:A:295:ASP:CA | 2.47 | 0.43 |
| 1:A:615:MSE:HE2 | 1:A:615:MSE:HB2 | 1.83 | 0.43 |
| 1:B:175:HIS:HE1 | 1:B:209:GLU:HG2 | 1.83 | 0.43 |
| 1:B:439:ASP:O | 1:B:440:GLU:HB3 | 2.19 | 0.43 |
| 1:B:546:ASP:O | 1:B:549:ALA:HB3 | 2.19 | 0.43 |
| 1:B:703:PHE:N | 1:B:703:PHE:CD2 | 2.87 | 0.43 |
| 1:A:151:TRP:O | 1:A:151:TRP:HD1 | 2.01 | 0.43 |
| 1:A:564:ILE:CG2 | 1:A:573:GLY:CA | 2.97 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:229:GLU:O | 1:B:234:ASN:OD1 | 2.37 | 0.43 |
| 1:B:237:VAL:HG13 | 1:B:246:HIS:CD2 | 2.53 | 0.43 |
| 1:B:286:LEU:HA | 1:B:289:SER:OG | 2.17 | 0.43 |
| 1:B:694:SER:OG | 1:B:697:ASP:OD2 | 2.37 | 0.43 |
| 1:B:740:ASN:C | 1:B:789:PHE:O | 2.57 | 0.43 |
| 1:B:806:GLU:O | 1:B:810:GLN:HG2 | 2.18 | 0.43 |
| 1:A:155:TYR:CE2 | 1:A:172:ALA:HB3 | 2.54 | 0.43 |
| 1:A:172:ALA:CB | 1:A:175:HIS:NE2 | 2.82 | 0.43 |
| 1:A:247:ASP:HA | 1:A:248:PRO:HD3 | 1.72 | 0.43 |
| 1:A:556:VAL:HB | 1:A:610:GLY:HA3 | 2.00 | 0.43 |
| 1:A:635:ASN:O | 1:A:637:PHE:N | 2.51 | 0.43 |
| 1:A:806:GLU:O | 1:A:810:GLN:HG2 | 2.19 | 0.43 |
| 1:B:413:LYS:NZ | 1:B:414:LYS:CG | 2.80 | 0.43 |
| 1:B:498:LYS:HA | 1:B:498:LYS:HD3 | 1.50 | 0.43 |
| 1:B:504:LEU:HB3 | 1:B:505:PRO:CD | 2.49 | 0.43 |
| 1:B:672:GLN:NE2 | 1:B:674:ASN:H | 2.15 | 0.43 |
| 1:B:672:GLN:HE21 | 1:B:673:PRO:HD2 | 1.84 | 0.43 |
| 1:A:155:TYR:OH | 1:A:175:HIS:CD2 | 2.72 | 0.43 |
| 1:A:580:LEU:HD23 | 1:A:587:ALA:HB1 | 2.01 | 0.43 |
| 1:B:621:PRO:HG3 | 1:B:860:ALA:CB | 2.48 | 0.43 |
| 1:B:817:GLN:HE21 | 1:B:817:GLN:HB2 | 1.57 | 0.43 |
| 1:A:278:MSE:HB2 | 1:A:283:LYS:HE3 | 2.01 | 0.43 |
| 1:A:389:PRO:CG | 1:A:390:GLN:N | 2.81 | 0.43 |
| 1:A:452:GLY:HA3 | 1:A:455:ASP:HB2 | 2.01 | 0.43 |
| 1:A:482:LEU:CD2 | 1:A:482:LEU:N | 2.82 | 0.43 |
| 1:A:625:TYR:HA | 1:A:653:LYS:HB2 | 2.01 | 0.43 |
| 1:B:249:ARG:O | 1:B:293:TYR:CE2 | 2.71 | 0.43 |
| 1:B:658:LEU:O | 1:B:660:ASP:N | 2.52 | 0.43 |
| 1:A:186:TYR:HE2 | 1:A:265:ILE:CG2 | 2.29 | 0.42 |
| 1:B:237:VAL:CG1 | 1:B:246:HIS:HD2 | 2.31 | 0.42 |
| 1:B:300:VAL:O | 1:B:300:VAL:HG23 | 2.19 | 0.42 |
| 1:B:559:GLU:OE2 | 1:B:605:ARG:HD2 | 2.19 | 0.42 |
| 1:A:658:LEU:HD11 | 1:A:662:ILE:HD13 | 2.00 | 0.42 |
| 1:B:221:THR:CG2 | 1:B:221:THR:O | 2.63 | 0.42 |
| 1:B:237:VAL:CG1 | 1:B:246:HIS:CD2 | 3.02 | 0.42 |
| 1:B:656:LEU:N | 1:B:656:LEU:CD2 | 2.69 | 0.42 |
| 1:B:675:ASP:O | 1:B:715:LEU:HA | 2.19 | 0.42 |
| 1:A:376:PHE:HD2 | 1:A:377:ASN:N | 2.16 | 0.42 |
| 1:A:474:ASP:C | 1:A:475:THR:CG2 | 2.87 | 0.42 |
| 1:B:302:TYR:CD2 | 1:B:878:PRO:HB3 | 2.55 | 0.42 |
| 1:B:574:LYS:HG2 | 1:B:574:LYS:H | 1.50 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:699:LEU:CG | 1:B:701:TRP:CG | 3.00 | 0.42 |
| 1:B:814:HIS:CD2 | 1:B:815:PRO:HD2 | 2.54 | 0.42 |
| 1:A:493:VAL:O | 1:A:494:GLN:C | 2.55 | 0.42 |
| 1:A:588:ARG:HH11 | 1:A:617:LEU:HG | 1.85 | 0.42 |
| 1:A:624:THR:O | 1:A:653:LYS:CG | 2.60 | 0.42 |
| 1:A:665:LEU:CD2 | 1:A:814:HIS:HE1 | 2.17 | 0.42 |
| 1:B:186:TYR:CD2 | 1:B:186:TYR:N | 2.87 | 0.42 |
| 1:B:410:VAL:CG1 | 1:B:411:LEU:H | 2.26 | 0.42 |
| 1:B:750:GLY:O | 1:B:751:ALA:C | 2.58 | 0.42 |
| 1:A:249:ARG:HB2 | 1:A:292:LEU:CD2 | 2.49 | 0.42 |
| 1:A:537:LYS:C | 1:A:539:LYS:N | 2.72 | 0.42 |
| 1:A:603:ARG:NH1 | 1:A:852:ALA:O | 2.52 | 0.42 |
| 1:B:138:ILE:CD1 | 1:B:139:GLY:H | 2.32 | 0.42 |
| 1:B:170:LEU:HD22 | 1:B:211:PHE:HZ | 1.85 | 0.42 |
| 1:B:790:GLY:H | 1:B:813:ILE:HD11 | 1.84 | 0.42 |
| 1:A:343:LEU:HD22 | 1:A:344:LEU:N | 2.33 | 0.42 |
| 1:A:411:LEU:N | 1:A:411:LEU:HD12 | 2.35 | 0.42 |
| 1:A:589:LEU:N | 1:A:589:LEU:HD23 | 2.34 | 0.42 |
| 1:A:653:LYS:O | 1:A:654:LYS:C | 2.58 | 0.42 |
| 1:A:759:PRO:O | 1:A:760:GLU:CB | 2.43 | 0.42 |
| 1:A:786:LEU:C | 1:A:788:PRO:CD | 2.88 | 0.42 |
| 1:B:589:LEU:HD12 | 1:B:640:CYS:SG | 2.59 | 0.42 |
| 1:B:624:THR:O | 1:B:624:THR:CG2 | 2.68 | 0.42 |
| 1:A:137:PHE:C | 1:A:138:ILE:O | 2.55 | 0.42 |
| 1:A:211:PHE:HD1 | 1:A:213:GLY:N | 2.17 | 0.42 |
| 1:A:375:ASP:OD1 | 2:A:1000:SAH:O2' | 2.36 | 0.42 |
| 1:A:580:LEU:HD12 | 1:A:580:LEU:HA | 1.76 | 0.42 |
| 1:A:628:VAL:O | 1:A:628:VAL:CG1 | 2.67 | 0.42 |
| 1:A:757:TRP:CE3 | 1:A:778:MSE:HE3 | 2.55 | 0.42 |
| 1:A:763:ARG:NH1 | 1:A:773:VAL:O | 2.44 | 0.42 |
| 1:B:250:ARG:HH22 | 1:B:296:MSE:HE2 | 1.84 | 0.42 |
| 1:B:586:GLN:O | 1:B:610:GLY:HA2 | 2.19 | 0.42 |
| 1:B:735:VAL:O | 1:B:735:VAL:CG2 | 2.65 | 0.42 |
| 1:B:737:LYS:HA | 1:B:793:TRP:CE2 | 2.55 | 0.42 |
| 1:A:181:VAL:CG2 | 1:A:186:TYR:CE2 | 3.02 | 0.42 |
| 1:A:272:VAL:HG21 | 1:A:286:LEU:HD23 | 2.02 | 0.42 |
| 1:A:343:LEU:CD2 | 1:A:344:LEU:N | 2.83 | 0.42 |
| 1:A:734:PRO:O | 1:A:791:ARG:NE | 2.52 | 0.42 |
| 1:A:764:VAL:CG2 | 1:A:772:LEU:HD12 | 2.49 | 0.42 |
| 1:A:880:TYR:HD1 | 1:A:881:GLN:H | 1.68 | 0.42 |
| 1:B:347:TYR:OH | 1:B:540:GLN:OE1 | 2.35 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:658:LEU:HD21 | 1:B:791:ARG:HH21 | 1.85 | 0.42 |
| 1:B:727:TYR:O | 1:B:730:VAL:CG1 | 2.68 | 0.42 |
| 1:A:139:GLY:O | 1:A:140:SER:HB2 | 2.19 | 0.42 |
| 1:A:141:PRO:O | 1:A:142:VAL:CG2 | 2.62 | 0.42 |
| 1:A:575:TYR:CD1 | 1:A:575:TYR:C | 2.93 | 0.42 |
| 1:A:812:ILE:O | 1:A:812:ILE:HG13 | 2.20 | 0.42 |
| 1:B:198:GLU:O | 1:B:199:ASN:C | 2.57 | 0.42 |
| 1:B:832:PHE:CZ | 1:B:852:ALA:CB | 3.02 | 0.42 |
| 1:A:272:VAL:CG1 | 1:A:286:LEU:HD22 | 2.50 | 0.42 |
| 1:A:273:HIS:ND1 | 1:A:294:TYR:CE2 | 2.88 | 0.42 |
| 1:A:447:VAL:O | 1:A:447:VAL:HG22 | 2.20 | 0.42 |
| 1:A:477:GLU:OE1 | 1:A:481:ASN:ND2 | 2.52 | 0.42 |
| 1:A:500:LYS:NZ | 1:A:507:ASP:OD2 | 2.38 | 0.42 |
| 1:B:229:GLU:O | 1:B:234:ASN:CG | 2.58 | 0.42 |
| 1:B:822:THR:H | 1:B:825:GLU:CD | 2.23 | 0.42 |
| 1:B:838:LEU:C | 1:B:839:PHE:CD2 | 2.94 | 0.42 |
| 1:A:225:PHE:CZ | 1:A:294:TYR:CD1 | 3.08 | 0.41 |
| 1:B:247:ASP:O | 1:B:249:ARG:N | 2.53 | 0.41 |
| 1:B:596:CYS:O | 1:B:624:THR:N | 2.53 | 0.41 |
| 1:B:633:ALA:HA | 1:B:634:PRO:HD3 | 1.86 | 0.41 |
| 1:B:741:PHE:HB3 | 1:B:789:PHE:CB | 2.49 | 0.41 |
| 1:A:148:ARG:HG3 | 1:A:155:TYR:CD1 | 2.55 | 0.41 |
| 1:A:338:THR:CG2 | 1:A:367:LYS:HZ3 | 2.31 | 0.41 |
| 1:A:419:VAL:O | 1:A:419:VAL:HG12 | 2.20 | 0.41 |
| 1:A:440:GLU:CG | 1:A:441:PHE:N | 2.64 | 0.41 |
| 1:A:635:ASN:O | 1:A:636:ALA:C | 2.58 | 0.41 |
| 1:A:793:TRP:N | 1:A:796:GLU:OE2 | 2.36 | 0.41 |
| 1:B:180:LYS:HE2 | 1:B:182:ASP:O | 2.20 | 0.41 |
| 1:B:391:THR:HG22 | 1:B:392:GLU:N | 2.20 | 0.41 |
| 1:A:737:LYS:NZ | 1:A:795:ASP:CG | 2.73 | 0.41 |
| 1:B:278:MSE:SE | 1:B:282:ALA:CB | 3.13 | 0.41 |
| 1:B:659:GLY:H | 1:B:794:TRP:HB3 | 1.85 | 0.41 |
| 1:A:180:LYS:HB2 | 1:A:185:VAL:CG1 | 2.51 | 0.41 |
| 1:A:302:TYR:O | 1:A:303:SER:HB2 | 2.20 | 0.41 |
| 1:A:512:CYS:HA | 1:A:557:LEU:O | 2.20 | 0.41 |
| 1:A:692:ARG:C | 1:A:693:LEU:HD12 | 2.39 | 0.41 |
| 1:A:757:TRP:CH2 | 1:A:763:ARG:CZ | 3.04 | 0.41 |
| 1:A:803:THR:OG1 | 1:A:847:ILE:HG13 | 2.21 | 0.41 |
| 1:B:154:ARG:NE | 1:B:209:GLU:OE1 | 2.52 | 0.41 |
| 1:B:353:MSE:O | 1:B:357:LEU:HB2 | 2.20 | 0.41 |
| 1:B:386:TYR:CD2 | 1:B:837:ARG:HB2 | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:793:TRP:HA | 1:B:815:PRO:HG3 | 2.02 | 0.41 |
| 1:A:402:LEU:HD22 | 1:A:547:ILE:HG12 | 2.02 | 0.41 |
| 1:A:447:VAL:HG13 | 1:A:463:LYS:HB3 | 2.01 | 0.41 |
| 1:A:555:TYR:CE2 | 1:A:618:PRO:HG3 | 2.56 | 0.41 |
| 1:A:656:LEU:HD22 | 1:A:656:LEU:HA | 1.90 | 0.41 |
| 1:A:735:VAL:O | 1:A:735:VAL:HG12 | 2.19 | 0.41 |
| 1:B:280:PRO:CG | 1:B:281:LYS:N | 2.84 | 0.41 |
| 1:B:513:GLY:N | 1:B:557:LEU:O | 2.53 | 0.41 |
| 1:B:545:MSE:HE3 | 1:B:576:ALA:HA | 2.01 | 0.41 |
| 1:B:695:ARG:CA | 1:B:835:TYR:CE1 | 2.96 | 0.41 |
| 1:B:772:LEU:C | 1:B:773:VAL:HG22 | 2.31 | 0.41 |
| 1:B:814:HIS:CD2 | 1:B:816:THR:N | 2.55 | 0.41 |
| 1:B:841:PRO:HG2 | 1:B:843:LYS:HE3 | 2.02 | 0.41 |
| 1:A:154:ARG:NE | 1:A:170:LEU:CD2 | 2.80 | 0.41 |
| 1:A:486:PRO:O | 1:A:487:GLN:C | 2.58 | 0.41 |
| 1:A:781:ILE:CD1 | 1:A:786:LEU:HD21 | 2.49 | 0.41 |
| 1:A:838:LEU:O | 1:A:845:LYS:HE2 | 2.19 | 0.41 |
| 1:A:865:LEU:C | 1:A:865:LEU:CD2 | 2.88 | 0.41 |
| 1:A:876:SER:O | 1:A:876:SER:OG | 2.30 | 0.41 |
| 1:B:154:ARG:O | 1:B:171:LYS:HE2 | 2.21 | 0.41 |
| 1:B:617:LEU:HD12 | 1:B:618:PRO:CD | 2.51 | 0.41 |
| 1:B:810:GLN:O | 1:B:811:VAL:CG1 | 2.69 | 0.41 |
| 1:A:266:ILE:H | 1:A:266:ILE:HG12 | 1.31 | 0.41 |
| 1:A:267:SER:OG | 1:A:268:LYS:N | 2.52 | 0.41 |
| 1:A:269:VAL:CG2 | 1:A:270:LYS:N | 2.84 | 0.41 |
| 1:A:543:THR:O | 1:A:544:PHE:C | 2.57 | 0.41 |
| 1:A:557:LEU:HD11 | 1:A:607:PHE:HB3 | 2.03 | 0.41 |
| 1:A:593:VAL:HG21 | 1:A:602:PHE:HE1 | 1.85 | 0.41 |
| 1:A:652:LEU:HD23 | 1:A:652:LEU:H | 1.85 | 0.41 |
| 1:A:739:ALA:HB3 | 1:A:791:ARG:CG | 2.47 | 0.41 |
| 1:B:134:GLU:CD | 1:B:135:PRO:HD2 | 2.29 | 0.41 |
| 1:B:180:LYS:HE2 | 1:B:183:ASN:HA | 2.03 | 0.41 |
| 1:B:445:LYS:HB3 | 1:B:465:GLN:OE1 | 2.19 | 0.41 |
| 1:B:462:PHE:HE2 | 1:B:479:ILE:HD13 | 1.85 | 0.41 |
| 1:B:554:LYS:HD3 | 1:B:615:MSE:HE2 | 1.99 | 0.41 |
| 1:B:571:TYR:C | 1:B:571:TYR:CD2 | 2.94 | 0.41 |
| 1:B:659:GLY:O | 1:B:663:SER:OG | 2.37 | 0.41 |
| 1:B:806:GLU:N | 1:B:810:GLN:HE21 | 2.13 | 0.41 |
| 1:B:819:ARG:CZ | 1:B:825:GLU:OE2 | 2.69 | 0.41 |
| 1:A:822:THR:HG23 | 1:A:825:GLU:CG | 2.50 | 0.41 |
| 1:B:144:ALA:O | 1:B:145:ASP:OD2 | 2.38 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:218:HIS:HB2 | 1:B:262:LEU:CD1 | 2.48 | 0.41 |
| 1:B:510:VAL:HG12 | 1:B:511:ILE:N | 2.35 | 0.41 |
| 1:B:604:MSE:SE | 1:B:641:MSE:CE | 2.92 | 0.41 |
| 1:A:204:ILE:HD13 | 1:A:204:ILE:HG21 | 1.78 | 0.41 |
| 1:A:249:ARG:HB2 | 1:A:292:LEU:HD22 | 2.02 | 0.41 |
| 1:A:541:MSE:HE3 | 1:A:572:LEU:O | 2.21 | 0.41 |
| 1:A:580:LEU:HD23 | 1:A:587:ALA:HB2 | 2.03 | 0.41 |
| 1:A:657:LEU:HD23 | 1:A:795:ASP:C | 2.42 | 0.41 |
| 1:A:686:GLU:HA | 1:A:689:ARG:NH1 | 2.36 | 0.41 |
| 1:A:814:HIS:CD2 | 1:A:815:PRO:N | 2.89 | 0.41 |
| 1:B:135:PRO:HD2 | 1:B:135:PRO:O | 2.19 | 0.41 |
| 1:B:138:ILE:HG12 | 1:B:139:GLY:N | 2.24 | 0.41 |
| 1:B:223:ARG:HD2 | 1:B:253:LEU:CD2 | 2.50 | 0.41 |
| 1:B:343:LEU:HD12 | 1:B:511:ILE:HA | 2.03 | 0.41 |
| 1:B:400:GLU:H | 1:B:400:GLU:HG3 | 1.70 | 0.41 |
| 1:B:455:ASP:O | 1:B:456:ARG:HB2 | 2.21 | 0.41 |
| 1:B:457:GLU:O | 1:B:461:TYR:CE2 | 2.74 | 0.41 |
| 1:B:855:VAL:N | 1:B:856:PRO:CD | 2.84 | 0.41 |
| 1:A:153:LYS:HE3 | 1:A:153:LYS:HB2 | 1.40 | 0.41 |
| 1:A:307:ASN:ND2 | 1:A:586:GLN:NE2 | 2.69 | 0.41 |
| 1:A:629:VAL:HG23 | 1:A:629:VAL:O | 2.21 | 0.41 |
| 1:A:776:TYR:CD2 | 1:A:776:TYR:C | 2.95 | 0.41 |
| 1:B:353:MSE:N | 2:B:1000:SAH:O | 2.47 | 0.41 |
| 1:B:491:GLU:O | 1:B:494:GLN:HB2 | 2.21 | 0.41 |
| 1:B:733:ILE:HA | 1:B:734:PRO:HD3 | 1.92 | 0.41 |
| 1:B:842:ILE:N | 1:B:842:ILE:HD12 | 2.36 | 0.41 |
| 1:A:284:ALA:O | 1:A:288:GLU:HG2 | 2.21 | 0.40 |
| 1:A:454:SER:C | 1:A:456:ARG:H | 2.22 | 0.40 |
| 1:A:457:GLU:O | 1:A:458:ASN:C | 2.56 | 0.40 |
| 1:A:714:LEU:C | 1:A:714:LEU:CD2 | 2.87 | 0.40 |
| 1:B:145:ASP:O | 1:B:148:ARG:HG3 | 2.21 | 0.40 |
| 1:B:272:VAL:HG13 | 1:B:273:HIS:H | 1.84 | 0.40 |
| 1:B:362:ALA:HB2 | 1:B:699:LEU:CD2 | 2.51 | 0.40 |
| 1:B:404:LEU:HD13 | 1:B:405:LEU:N | 2.36 | 0.40 |
| 1:B:622:LEU:HB3 | 1:B:623:PRO:CD | 2.51 | 0.40 |
| 1:B:637:PHE:N | 1:B:637:PHE:HD2 | 2.13 | 0.40 |
| 1:B:865:LEU:HD12 | 1:B:865:LEU:O | 2.20 | 0.40 |
| 1:A:184:VAL:HG22 | 1:A:185:VAL:N | 2.35 | 0.40 |
| 1:A:273:HIS:CD2 | 1:A:273:HIS:C | 2.92 | 0.40 |
| 1:A:534:LYS:HB3 | 1:A:534:LYS:HE2 | 1.64 | 0.40 |
| 1:A:568:ALA:C | 1:A:569:ASP:OD2 | 2.60 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:695:ARG:O | 1:A:699:LEU:N | 2.54 | 0.40 |
| 1:A:763:ARG:HA | 1:A:763:ARG:HD3 | 1.93 | 0.40 |
| 1:B:244:HIS:CE1 | 1:B:552:LYS:NZ | 2.89 | 0.40 |
| 1:B:347:TYR:CD1 | 1:B:347:TYR:N | 2.89 | 0.40 |
| 1:B:733:ILE:HG13 | 1:B:739:ALA:HB1 | 2.03 | 0.40 |
| 1:B:798:VAL:HG21 | 1:B:829:LEU:HD21 | 2.02 | 0.40 |
| 1:B:819:ARG:O | 1:B:820:VAL:CB | 2.68 | 0.40 |
| 1:A:176:TYR:OH | 1:A:212:GLU:CD | 2.60 | 0.40 |
| 1:A:495:GLU:OE1 | 1:A:495:GLU:CA | 2.66 | 0.40 |
| 1:A:594:ALA:HA | 1:A:857:VAL:CG2 | 2.51 | 0.40 |
| 1:A:814:HIS:CD2 | 1:A:815:PRO:CD | 3.05 | 0.40 |
| 1:B:287:ILE:HD11 | 1:B:293:TYR:CZ | 2.56 | 0.40 |
| 1:B:399:ASP:OD1 | 1:B:399:ASP:N | 2.50 | 0.40 |
| 1:B:466:TRP:HZ2 | 1:B:475:THR:CG2 | 2.24 | 0.40 |
| 1:B:794:TRP:CD1 | 1:B:794:TRP:N | 2.83 | 0.40 |
| 1:B:803:THR:HG22 | 1:B:847:ILE:HA | 2.03 | 0.40 |
| 1:A:296:MSE:HE2 | 1:A:305:PHE:HB3 | 2.02 | 0.40 |
| 1:A:486:PRO:HG2 | 1:A:487:GLN:H | 1.87 | 0.40 |
| 1:A:580:LEU:HD22 | 1:A:608:LEU:HD23 | 2.02 | 0.40 |
| 1:B:231:THR:C | 1:B:233:ILE:N | 2.75 | 0.40 |
| 1:B:723:ASN:OD1 | 1:B:726:ASP:CG | 2.58 | 0.40 |
| 1:A:173:ARG:HH22 | 1:A:216:GLN:HA | 1.87 | 0.40 |
| 1:A:659:GLY:HA3 | 1:A:794:TRP:HB3 | 2.03 | 0.40 |
| 1:A:741:PHE:O | 1:A:742:ARG:C | 2.59 | 0.40 |
| 1:A:865:LEU:O | 1:A:866:GLY:C | 2.60 | 0.40 |
| 1:B:534:LYS:NZ | 1:B:534:LYS:C | 2.73 | 0.40 |
| 1:B:722:LEU:O | 1:B:723:ASN:C | 2.60 | 0.40 |
| 1:B:728:GLU:OE2 | 1:B:767:SER:CB | 2.69 | 0.40 |
| 1:B:791:ARG:HG3 | 1:B:792:LEU:N | 2.37 | 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 | 670/784 (86%) | 591 (88%) | 62 (9%) | 17 (2%) | 5 | 32 |
| 1 | B | 665/784 (85%) | 607 (91%) | 43 (6%) | 15 (2%) | 6 | 34 |
| All | All | 1335/1568 (85%) | 1198 (90%) | 105 (8%) | 32 (2%) | 6 | 34 |

All (32) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 142 | VAL |
| 1 | A | 634 | PRO |
| 1 | A | 646 | GLU |
| 1 | B | 140 | SER |
| 1 | B | 279 | ASP |
| 1 | B | 773 | VAL |
| 1 | B | 775 | ASP |
| 1 | B | 883 | PRO |
| 1 | A | 764 | VAL |
| 1 | B | 646 | GLU |
| 1 | B | 820 | VAL |
| 1 | A | 135 | PRO |
| 1 | A | 417 | GLN |
| 1 | A | 567 | PHE |
| 1 | A | 650 | PRO |
| 1 | A | 760 | GLU |
| 1 | A | 883 | PRO |
| 1 | A | 653 | LYS |
| 1 | A | 781 | ILE |
| 1 | B | 144 | ALA |
| 1 | B | 350 | CYS |
| 1 | A | 140 | SER |
| 1 | B | 236 | LEU |
| 1 | B | 884 | PRO |
| 1 | A | 215 | ASP |
| 1 | A | 290 | CYS |
| 1 | B | 138 | ILE |
| 1 | B | 788 | PRO |
| 1 | A | 759 | PRO |
| 1 | A | 787 | LYS |
| 1 | B | 142 | VAL |
| 1 | B | 266 | ILE |

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 | 564/652 (86%) | 413 (73%) | 151 (27%) | 0 | 2 |
| 1 | B | 544/652 (83%) | 384 (71%) | 160 (29%) | 0 | 1 |
| All | All | 1108/1304 (85%) | 797 (72%) | 311 (28%) | 0 | 1 |

All (311) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 138 | ILE |
| 1 | A | 140 | SER |
| 1 | A | 153 | LYS |
| 1 | A | 181 | VAL |
| 1 | A | 185 | VAL |
| 1 | A | 192 | VAL |
| 1 | A | 198 | GLU |
| 1 | A | 208 | THR |
| 1 | A | 211 | PHE |
| 1 | A | 214 | THR |
| 1 | A | 215 | ASP |
| 1 | A | 216 | GLN |
| 1 | A | 220 | PHE |
| 1 | A | 230 | ASP |
| 1 | A | 233 | ILE |
| 1 | A | 234 | ASN |
| 1 | A | 235 | SER |
| 1 | A | 238 | SER |
| 1 | A | 251 | VAL |
| 1 | A | 253 | LEU |
| 1 | A | 254 | SER |
| 1 | A | 257 | LYS |
| 1 | A | 266 | ILE |
| 1 | A | 267 | SER |
| 1 | A | 269 | VAL |
| 1 | A | 272 | VAL |
| 1 | A | 274 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 275 | ASP |
| 1 | A | 277 | ASN |
| 1 | A | 279 | ASP |
| 1 | A | 286 | LEU |
| 1 | A | 293 | TYR |
| 1 | A | 294 | TYR |
| 1 | A | 299 | SER |
| 1 | A | 300 | VAL |
| 1 | A | 304 | THR |
| 1 | A | 305 | PHE |
| 1 | A | 308 | ILE |
| 1 | A | 309 | SER |
| 1 | A | 338 | THR |
| 1 | A | 343 | LEU |
| 1 | A | 350 | CYS |
| 1 | A | 357 | LEU |
| 1 | A | 363 | LEU |
| 1 | A | 368 | LEU |
| 1 | A | 376 | PHE |
| 1 | A | 377 | ASN |
| 1 | A | 378 | SER |
| 1 | A | 384 | LEU |
| 1 | A | 385 | LYS |
| 1 | A | 394 | ARG |
| 1 | A | 399 | ASP |
| 1 | A | 404 | LEU |
| 1 | A | 405 | LEU |
| 1 | A | 417 | GLN |
| 1 | A | 418 | ASP |
| 1 | A | 419 | VAL |
| 1 | A | 440 | GLU |
| 1 | A | 443 | VAL |
| 1 | A | 447 | VAL |
| 1 | A | 456 | ARG |
| 1 | A | 457 | GLU |
| 1 | A | 466 | TRP |
| 1 | A | 474 | ASP |
| 1 | A | 482 | LEU |
| 1 | A | 483 | SER |
| 1 | A | 484 | ASP |
| 1 | A | 485 | CYS |
| 1 | A | 487 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 489 | ILE |
| 1 | A | 498 | LYS |
| 1 | A | 501 | ILE |
| 1 | A | 502 | LEU |
| 1 | A | 507 | ASP |
| 1 | A | 511 | ILE |
| 1 | A | 512 | CYS |
| 1 | A | 534 | LYS |
| 1 | A | 536 | GLU |
| 1 | A | 539 | LYS |
| 1 | A | 541 | MSE |
| 1 | A | 557 | LEU |
| 1 | A | 563 | ASP |
| 1 | A | 564 | ILE |
| 1 | A | 569 | ASP |
| 1 | A | 572 | LEU |
| 1 | A | 584 | LYS |
| 1 | A | 585 | TYR |
| 1 | A | 588 | ARG |
| 1 | A | 589 | LEU |
| 1 | A | 591 | MSE |
| 1 | A | 605 | ARG |
| 1 | A | 608 | LEU |
| 1 | A | 615 | MSE |
| 1 | A | 619 | LYS |
| 1 | A | 627 | VAL |
| 1 | A | 628 | VAL |
| 1 | A | 630 | ARG |
| 1 | A | 645 | ASP |
| 1 | A | 646 | GLU |
| 1 | A | 647 | THR |
| 1 | A | 648 | GLN |
| 1 | A | 649 | LYS |
| 1 | A | 651 | SER |
| 1 | A | 652 | LEU |
| 1 | A | 654 | LYS |
| 1 | A | 656 | LEU |
| 1 | A | 660 | ASP |
| 1 | A | 665 | LEU |
| 1 | A | 671 | HIS |
| 1 | A | 675 | ASP |
| 1 | A | 682 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 692 | ARG |
| 1 | A | 701 | TRP |
| 1 | A | 710 | ASP |
| 1 | A | 713 | LYS |
| 1 | A | 715 | LEU |
| 1 | A | 716 | ASP |
| 1 | A | 720 | LEU |
| 1 | A | 722 | LEU |
| 1 | A | 723 | ASN |
| 1 | A | 724 | ASN |
| 1 | A | 727 | TYR |
| 1 | A | 730 | VAL |
| 1 | A | 731 | GLN |
| 1 | A | 733 | ILE |
| 1 | A | 742 | ARG |
| 1 | A | 760 | GLU |
| 1 | A | 764 | VAL |
| 1 | A | 772 | LEU |
| 1 | A | 773 | VAL |
| 1 | A | 781 | ILE |
| 1 | A | 785 | SER |
| 1 | A | 786 | LEU |
| 1 | A | 787 | LYS |
| 1 | A | 791 | ARG |
| 1 | A | 792 | LEU |
| 1 | A | 793 | TRP |
| 1 | A | 796 | GLU |
| 1 | A | 797 | THR |
| 1 | A | 800 | THR |
| 1 | A | 813 | ILE |
| 1 | A | 821 | LEU |
| 1 | A | 822 | THR |
| 1 | A | 837 | ARG |
| 1 | A | 839 | PHE |
| 1 | A | 846 | TYR |
| 1 | A | 849 | VAL |
| 1 | A | 865 | LEU |
| 1 | A | 870 | LEU |
| 1 | A | 879 | LEU |
| 1 | A | 880 | TYR |
| 1 | B | 133 | HIS |
| 1 | B | 134 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 136 | GLU |
| 1 | B | 138 | ILE |
| 1 | B | 145 | ASP |
| 1 | B | 148 | ARG |
| 1 | B | 149 | SER |
| 1 | B | 157 | ARG |
| 1 | B | 175 | HIS |
| 1 | B | 181 | VAL |
| 1 | B | 184 | VAL |
| 1 | B | 185 | VAL |
| 1 | B | 186 | TYR |
| 1 | B | 187 | CYS |
| 1 | B | 192 | VAL |
| 1 | B | 206 | ARG |
| 1 | B | 207 | ILE |
| 1 | B | 215 | ASP |
| 1 | B | 221 | THR |
| 1 | B | 223 | ARG |
| 1 | B | 227 | ARG |
| 1 | B | 231 | THR |
| 1 | B | 233 | ILE |
| 1 | B | 234 | ASN |
| 1 | B | 235 | SER |
| 1 | B | 236 | LEU |
| 1 | B | 238 | SER |
| 1 | B | 239 | ILE |
| 1 | B | 245 | LYS |
| 1 | B | 249 | ARG |
| 1 | B | 251 | VAL |
| 1 | B | 253 | LEU |
| 1 | B | 254 | SER |
| 1 | B | 255 | GLU |
| 1 | B | 256 | GLU |
| 1 | B | 262 | LEU |
| 1 | B | 269 | VAL |
| 1 | B | 270 | LYS |
| 1 | B | 273 | HIS |
| 1 | B | 274 | VAL |
| 1 | B | 281 | LYS |
| 1 | B | 283 | LYS |
| 1 | B | 299 | SER |
| 1 | B | 300 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 303 | SER |
| 1 | B | 308 | ILE |
| 1 | B | 338 | THR |
| 1 | B | 339 | ARG |
| 1 | B | 342 | THR |
| 1 | B | 346 | LEU |
| 1 | B | 354 | SER |
| 1 | B | 367 | LYS |
| 1 | B | 368 | LEU |
| 1 | B | 370 | THR |
| 1 | B | 376 | PHE |
| 1 | B | 382 | GLN |
| 1 | B | 383 | SER |
| 1 | B | 387 | ASN |
| 1 | B | 390 | GLN |
| 1 | B | 391 | THR |
| 1 | B | 392 | GLU |
| 1 | B | 395 | ASN |
| 1 | B | 399 | ASP |
| 1 | B | 404 | LEU |
| 1 | B | 407 | GLU |
| 1 | B | 411 | LEU |
| 1 | B | 412 | CYS |
| 1 | B | 440 | GLU |
| 1 | B | 441 | PHE |
| 1 | B | 442 | VAL |
| 1 | B | 443 | VAL |
| 1 | B | 444 | GLU |
| 1 | B | 445 | LYS |
| 1 | B | 446 | LEU |
| 1 | B | 447 | VAL |
| 1 | B | 451 | TYR |
| 1 | B | 460 | ILE |
| 1 | B | 461 | TYR |
| 1 | B | 466 | TRP |
| 1 | B | 473 | GLU |
| 1 | B | 489 | ILE |
| 1 | B | 498 | LYS |
| 1 | B | 499 | ARG |
| 1 | B | 502 | LEU |
| 1 | B | 511 | ILE |
| 1 | B | 518 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 534 | LYS |
| 1 | B | 538 | ASN |
| 1 | B | 546 | ASP |
| 1 | B | 547 | ILE |
| 1 | B | 552 | LYS |
| 1 | B | 558 | MSE |
| 1 | B | 563 | ASP |
| 1 | B | 574 | LYS |
| 1 | B | 577 | LEU |
| 1 | B | 580 | LEU |
| 1 | B | 583 | MSE |
| 1 | B | 589 | LEU |
| 1 | B | 601 | GLN |
| 1 | B | 605 | ARG |
| 1 | B | 608 | LEU |
| 1 | B | 614 | SER |
| 1 | B | 619 | LYS |
| 1 | B | 626 | ASP |
| 1 | B | 629 | VAL |
| 1 | B | 635 | ASN |
| 1 | B | 637 | PHE |
| 1 | B | 638 | SER |
| 1 | B | 639 | GLN |
| 1 | B | 642 | VAL |
| 1 | B | 646 | GLU |
| 1 | B | 648 | GLN |
| 1 | B | 651 | SER |
| 1 | B | 654 | LYS |
| 1 | B | 656 | LEU |
| 1 | B | 658 | LEU |
| 1 | B | 660 | ASP |
| 1 | B | 668 | VAL |
| 1 | B | 672 | GLN |
| 1 | B | 677 | MSE |
| 1 | B | 682 | SER |
| 1 | B | 685 | THR |
| 1 | B | 691 | ILE |
| 1 | B | 694 | SER |
| 1 | B | 695 | ARG |
| 1 | B | 696 | LYS |
| 1 | B | 697 | ASP |
| 1 | B | 698 | MSE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | B | 699 | LEU |
| 1 | B | 715 | LEU |
| 1 | B | 716 | ASP |
| 1 | B | 717 | HIS |
| 1 | B | 720 | LEU |
| 1 | B | 724 | ASN |
| 1 | B | 727 | TYR |
| 1 | B | 729 | ARG |
| 1 | B | 732 | GLN |
| 1 | B | 789 | PHE |
| 1 | B | 792 | LEU |
| 1 | B | 793 | TRP |
| 1 | B | 794 | TRP |
| 1 | B | 796 | GLU |
| 1 | B | 798 | VAL |
| 1 | B | 801 | VAL |
| 1 | B | 803 | THR |
| 1 | B | 809 | ASN |
| 1 | B | 811 | VAL |
| 1 | B | 813 | ILE |
| 1 | B | 817 | GLN |
| 1 | B | 819 | ARG |
| 1 | B | 820 | VAL |
| 1 | B | 821 | LEU |
| 1 | B | 825 | GLU |
| 1 | B | 828 | ARG |
| 1 | B | 835 | TYR |
| 1 | B | 836 | TYR |
| 1 | B | 837 | ARG |
| 1 | B | 843 | LYS |
| 1 | B | 844 | GLU |
| 1 | B | 879 | LEU |

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

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 216 | GLN |
| 1 | A | 234 | ASN |
| 1 | A | 540 | GLN |
| 1 | A | 586 | GLN |
| 1 | A | 670 | ASN |
| 1 | A | 671 | HIS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 672 | GLN |
| 1 | A | 674 | ASN |
| 1 | A | 717 | HIS |
| 1 | A | 723 | ASN |
| 1 | A | 814 | HIS |
| 1 | A | 817 | GLN |
| 1 | B | 175 | HIS |
| 1 | B | 183 | ASN |
| 1 | B | 244 | HIS |
| 1 | B | 246 | HIS |
| 1 | B | 273 | HIS |
| 1 | B | 307 | ASN |
| 1 | B | 395 | ASN |
| 1 | B | 518 | GLN |
| 1 | B | 671 | HIS |
| 1 | B | 674 | ASN |
| 1 | B | 810 | GLN |
| 1 | B | 814 | HIS |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|------|------|--------------|------|-------------|-------------|------|-------------|
| | | | | | Counts | RMSZ | # $ Z > 2$ | Counts | RMSZ | # $ Z > 2$ |
| 2 | SAH | B | 1000 | - | 23,28,28 | 1.63 | 4 (17%) | 22,40,40 | 2.39 | 4 (18%) |
| 2 | SAH | A | 1000 | - | 23,28,28 | 1.63 | 4 (17%) | 22,40,40 | 2.41 | 4 (18%) |

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 | SAH | B | 1000 | - | - | 5/11/31/31 | 0/3/3/3 |
| 2 | SAH | A | 1000 | - | - | 7/11/31/31 | 0/3/3/3 |

All (8) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 2 | A | 1000 | SAH | C2-N3 | 5.23 | 1.40 | 1.32 |
| 2 | B | 1000 | SAH | C2-N3 | 5.17 | 1.40 | 1.32 |
| 2 | B | 1000 | SAH | C2-N1 | 3.41 | 1.40 | 1.33 |
| 2 | A | 1000 | SAH | C2-N1 | 3.40 | 1.40 | 1.33 |
| 2 | A | 1000 | SAH | C6-C5 | -2.64 | 1.33 | 1.43 |
| 2 | B | 1000 | SAH | C6-C5 | -2.64 | 1.33 | 1.43 |
| 2 | B | 1000 | SAH | O4'-C1' | 2.36 | 1.44 | 1.40 |
| 2 | A | 1000 | SAH | O4'-C1' | 2.31 | 1.43 | 1.40 |

All (8) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 2 | A | 1000 | SAH | N3-C2-N1 | -7.78 | 118.11 | 128.67 |
| 2 | B | 1000 | SAH | N3-C2-N1 | -7.73 | 118.18 | 128.67 |
| 2 | A | 1000 | SAH | C4'-O4'-C1' | -6.61 | 103.87 | 109.92 |
| 2 | B | 1000 | SAH | C4'-O4'-C1' | -6.54 | 103.93 | 109.92 |
| 2 | B | 1000 | SAH | C5-C6-N6 | -2.66 | 116.26 | 120.31 |
| 2 | A | 1000 | SAH | C5-C6-N6 | -2.65 | 116.27 | 120.31 |
| 2 | B | 1000 | SAH | C5'-C4'-C3' | -2.22 | 109.50 | 115.06 |
| 2 | A | 1000 | SAH | C5'-C4'-C3' | -2.21 | 109.52 | 115.06 |

There are no chirality outliers.

All (12) torsion outliers are listed below:

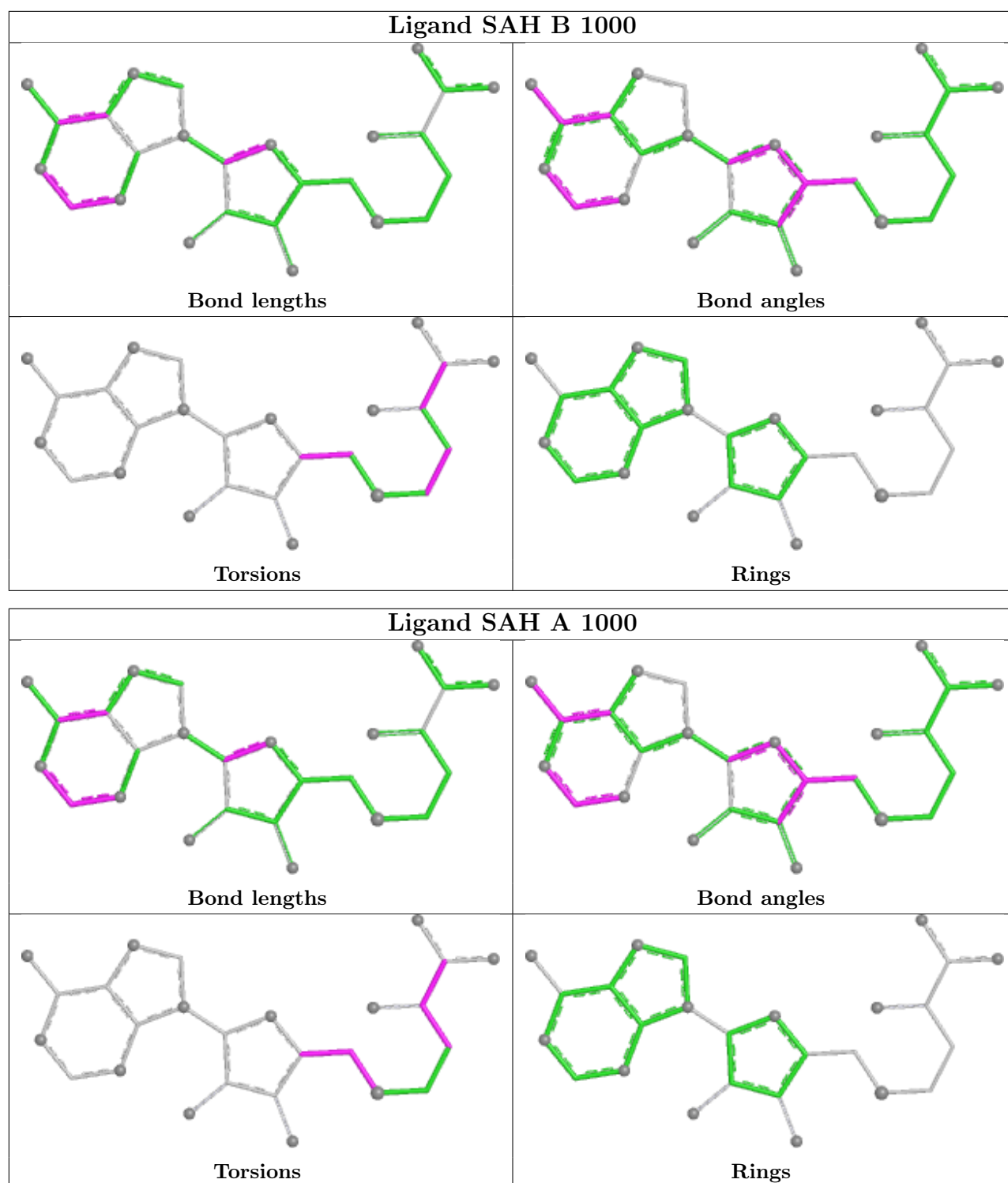
| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|----------------|
| 2 | A | 1000 | SAH | N-CA-CB-CG |
| 2 | A | 1000 | SAH | O-C-CA-N |
| 2 | A | 1000 | SAH | O4'-C4'-C5'-SD |
| 2 | A | 1000 | SAH | C3'-C4'-C5'-SD |
| 2 | B | 1000 | SAH | O4'-C4'-C5'-SD |
| 2 | A | 1000 | SAH | OXT-C-CA-N |
| 2 | A | 1000 | SAH | C-CA-CB-CG |
| 2 | B | 1000 | SAH | O-C-CA-CB |
| 2 | B | 1000 | SAH | OXT-C-CA-CB |
| 2 | B | 1000 | SAH | CA-CB-CG-SD |
| 2 | B | 1000 | SAH | C3'-C4'-C5'-SD |
| 2 | A | 1000 | SAH | C4'-C5'-SD-CG |

There are no ring outliers.

2 monomers are involved in 12 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 2 | B | 1000 | SAH | 6 | 0 |
| 2 | A | 1000 | SAH | 6 | 0 |

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



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

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

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

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

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

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1 | A | 665/784 (84%) | -0.17 | 9 (1%) 75 63 | 21, 62, 129, 200 | 0 |
| 1 | B | 660/784 (84%) | -0.25 | 4 (0%) 89 83 | 17, 69, 134, 285 | 0 |
| All | All | 1325/1568 (84%) | -0.21 | 13 (0%) 82 72 | 17, 65, 132, 285 | 0 |

All (13) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | A | 759 | PRO | 3.8 |
| 1 | A | 746 | GLY | 3.3 |
| 1 | A | 484 | ASP | 3.1 |
| 1 | A | 445 | LYS | 2.6 |
| 1 | B | 729 | ARG | 2.5 |
| 1 | A | 409 | ALA | 2.4 |
| 1 | A | 755 | VAL | 2.3 |
| 1 | B | 497 | HIS | 2.2 |
| 1 | B | 732 | GLN | 2.1 |
| 1 | A | 809 | ASN | 2.1 |
| 1 | A | 749 | VAL | 2.1 |
| 1 | B | 279 | ASP | 2.1 |
| 1 | A | 745 | LYS | 2.0 |

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

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

6.3 Carbohydrates [i](#)

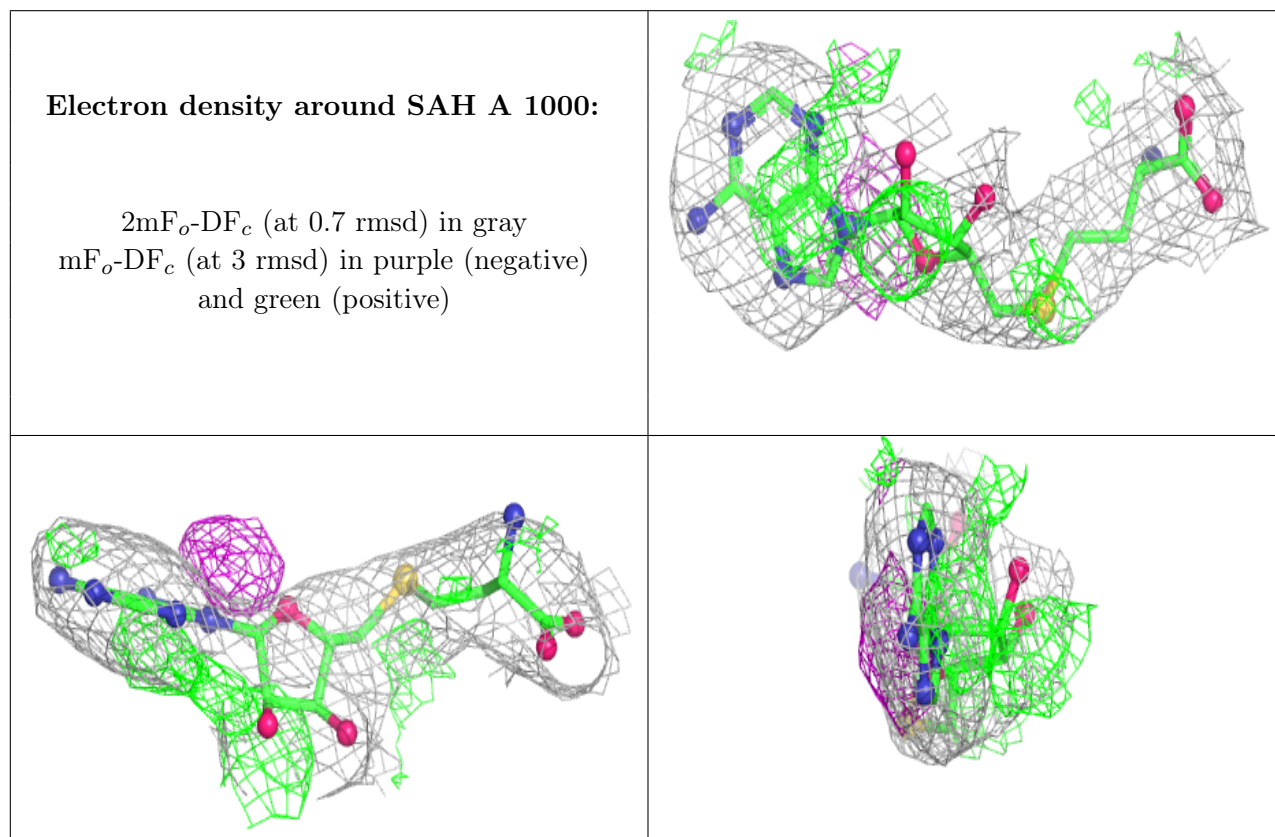
There are no monosaccharides in this entry.

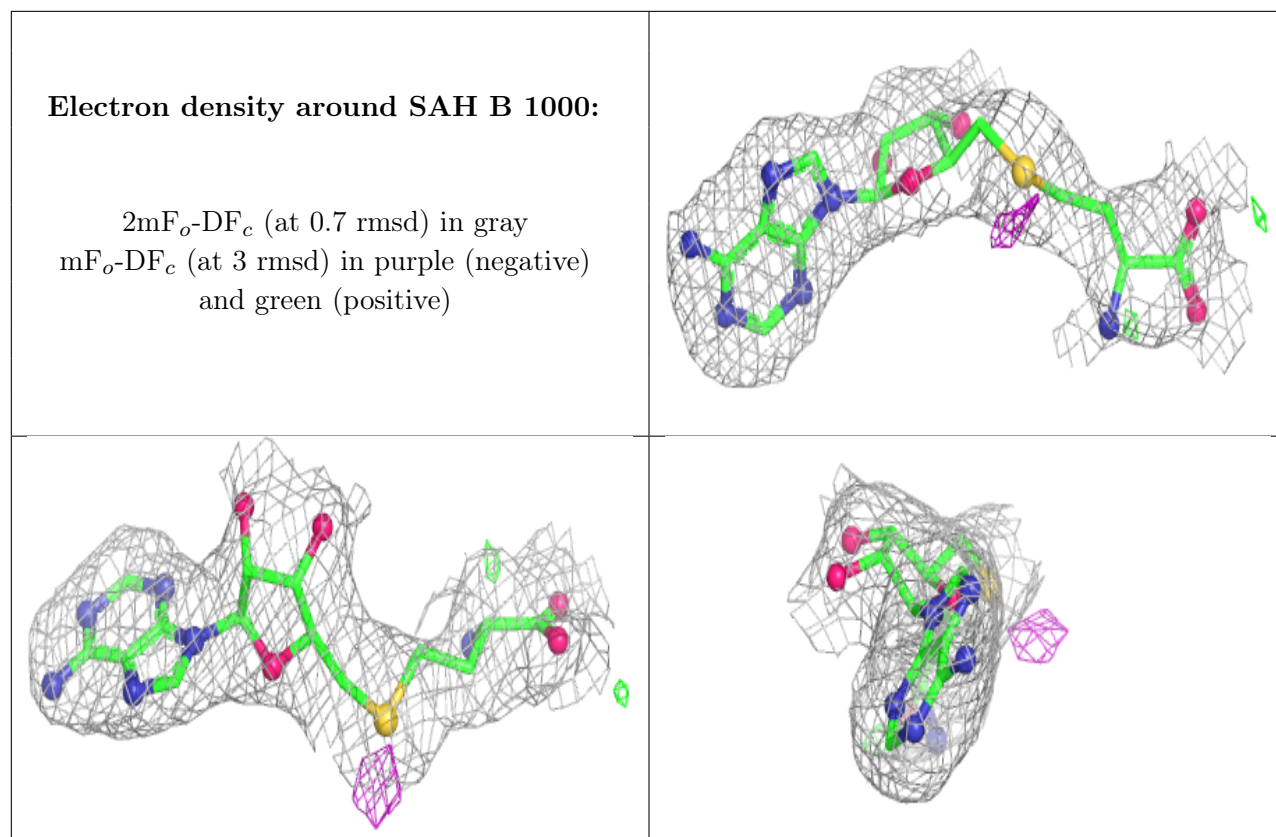
6.4 Ligands [i](#)

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

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 2 | SAH | A | 1000 | 26/26 | 0.91 | 0.29 | 42,53,71,112 | 0 |
| 2 | SAH | B | 1000 | 26/26 | 0.95 | 0.19 | 31,55,87,93 | 0 |

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.





6.5 Other polymers [i](#)

There are no such residues in this entry.