



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 5, 2024 – 03:22 AM EST

PDB ID : 1SPI
Title : CRYSTAL STRUCTURE OF SPINACH CHLOROPLAST FRUCTOSE-1,6-BISPHOSPHATASE AT 2.8 ANGSTROMS RESOLUTION
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Deposited on : 1994-12-14
Resolution : 2.80 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
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

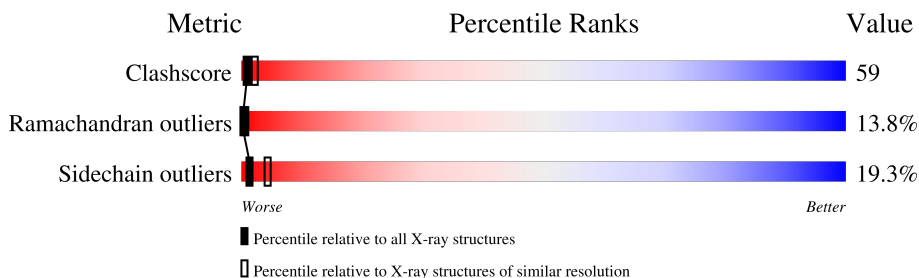
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| Clashscore | 141614 | 3569 (2.80-2.80) |
| Ramachandran outliers | 138981 | 3498 (2.80-2.80) |
| Sidechain outliers | 138945 | 3500 (2.80-2.80) |

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 $\leq 5\%$

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | A | 358 | 27% 46% 18% • 7% |
| 1 | B | 358 | 28% 44% 18% • 8% |
| 1 | C | 358 | 21% 46% 22% • 8% |
| 1 | D | 358 | 24% 47% 18% • 8% |

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 12334 atoms, of which 2181 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 FRUCTOSE 1,6-BISPHOSPHATASE.

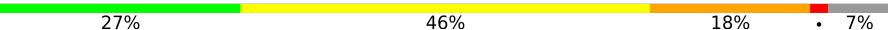
| Mol | Chain | Residues | Atoms | | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|----------|---------|---------|---------|-------|
| | | | Total | C | H | N | O | S | | | |
| 1 | A | 333 | Total 3138 | C 1631 | H 560 | N 422 | O 512 | S 13 | 0 | 0 | 0 |
| 1 | B | 328 | Total 3050 | C 1594 | H 535 | N 409 | O 499 | S 13 | 0 | 0 | 0 |
| 1 | C | 328 | Total 3050 | C 1594 | H 535 | N 409 | O 499 | S 13 | 0 | 0 | 0 |
| 1 | D | 328 | Total 3096 | C 1612 | H 551 | N 416 | O 504 | S 13 | 0 | 0 | 0 |

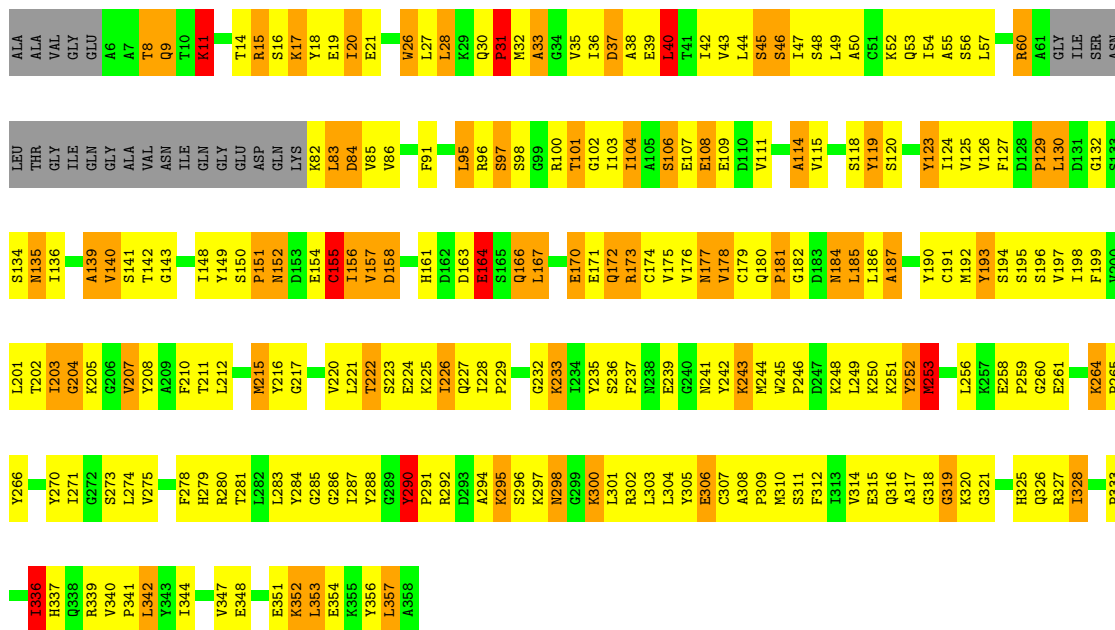
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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.

Note EDS was not executed.

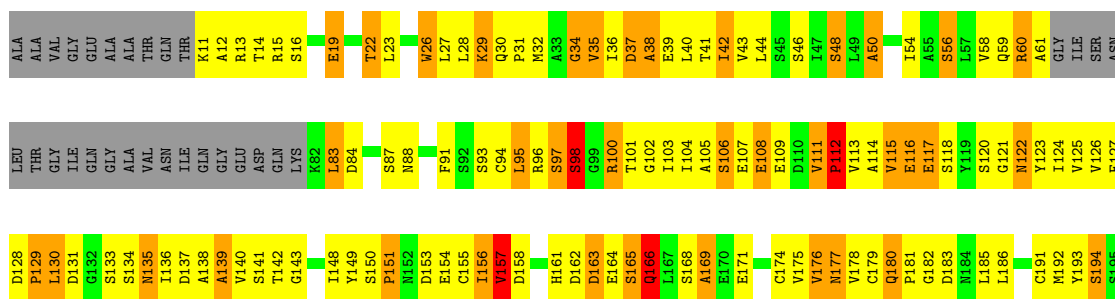
- Molecule 1: FRUCTOSE 1,6-BISPHOSPHATASE

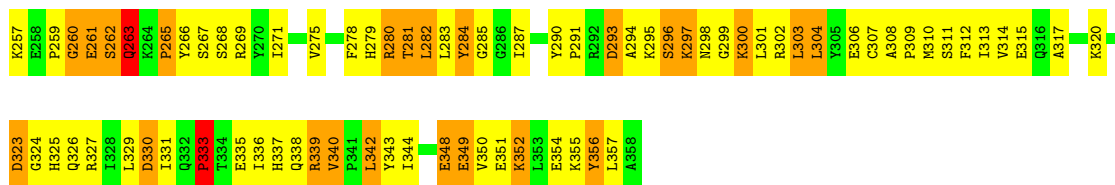
Chain A: 



- Molecule 1: FRUCTOSE 1,6-BISPHOSPHATASE

Chain B: 





4 Data and refinement statistics

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

| Property | Value | Source |
|--|--|-----------|
| Space group | P 1 21 1 | Depositor |
| Cell constants a, b, c, α , β , γ | 76.10Å 85.70Å 105.80Å 90.00° 103.10° 90.00° | Depositor |
| Resolution (Å) | 6.00 – 2.80 | Depositor |
| % Data completeness (in resolution range) | (Not available) (6.00-2.80) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| Refinement program | X-PLOR | Depositor |
| R, R_{free} | 0.203 , (Not available) | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| Total number of atoms | 12334 | wwPDB-VP |
| Average B, all atoms (Å ²) | 28.0 | wwPDB-VP |

5 Model quality i

5.1 Standard geometry i

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 | 0.87 | 4/2626 (0.2%) | 1.06 | 7/3550 (0.2%) |
| 1 | B | 0.87 | 0/2562 | 1.03 | 3/3466 (0.1%) |
| 1 | C | 0.88 | 4/2562 (0.2%) | 1.02 | 5/3466 (0.1%) |
| 1 | D | 0.88 | 3/2593 (0.1%) | 1.02 | 5/3504 (0.1%) |
| All | All | 0.88 | 11/10343 (0.1%) | 1.03 | 20/13986 (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 | 2 |
| 1 | C | 0 | 2 |
| 1 | D | 0 | 4 |
| All | All | 0 | 11 |

All (11) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1 | A | 11 | LYS | CD-CE | 10.50 | 1.77 | 1.51 |
| 1 | C | 13 | ARG | N-CA | 8.97 | 1.64 | 1.46 |
| 1 | D | 155 | CYS | CB-SG | 7.20 | 1.94 | 1.82 |
| 1 | C | 11 | LYS | CB-CG | 6.39 | 1.69 | 1.52 |
| 1 | D | 244 | MET | CG-SD | 6.12 | 1.97 | 1.81 |
| 1 | A | 11 | LYS | CB-CG | 5.86 | 1.68 | 1.52 |
| 1 | A | 155 | CYS | CB-SG | 5.83 | 1.92 | 1.82 |
| 1 | D | 51 | CYS | CB-SG | 5.57 | 1.91 | 1.82 |
| 1 | C | 12 | ALA | C-O | 5.54 | 1.33 | 1.23 |
| 1 | A | 11 | LYS | CA-CB | 5.31 | 1.65 | 1.53 |
| 1 | C | 12 | ALA | CA-CB | -5.21 | 1.41 | 1.52 |

All (20) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | A | 11 | LYS | CD-CE-NZ | 12.37 | 140.16 | 111.70 |
| 1 | C | 11 | LYS | C-N-CA | 7.42 | 140.25 | 121.70 |
| 1 | D | 201 | LEU | CA-CB-CG | 6.87 | 131.09 | 115.30 |
| 1 | A | 11 | LYS | CA-CB-CG | 6.58 | 127.88 | 113.40 |
| 1 | D | 23 | LEU | CA-CB-CG | 6.10 | 129.33 | 115.30 |
| 1 | A | 342 | LEU | CA-CB-CG | 5.63 | 128.24 | 115.30 |
| 1 | C | 221 | LEU | CA-CB-CG | 5.60 | 128.18 | 115.30 |
| 1 | C | 153 | ASP | N-CA-C | -5.57 | 95.97 | 111.00 |
| 1 | A | 167 | LEU | CA-CB-CG | -5.53 | 102.58 | 115.30 |
| 1 | D | 342 | LEU | CA-CB-CG | 5.48 | 127.91 | 115.30 |
| 1 | B | 330 | ASP | CB-CG-OD1 | 5.39 | 123.15 | 118.30 |
| 1 | A | 185 | LEU | CA-CB-CG | 5.38 | 127.68 | 115.30 |
| 1 | D | 119 | TYR | N-CA-C | -5.34 | 96.58 | 111.00 |
| 1 | A | 290 | TYR | N-CA-C | -5.20 | 96.95 | 111.00 |
| 1 | C | 303 | LEU | CA-CB-CG | -5.20 | 103.34 | 115.30 |
| 1 | B | 199 | PHE | N-CA-C | -5.19 | 96.98 | 111.00 |
| 1 | C | 135 | ASN | N-CA-C | 5.03 | 124.57 | 111.00 |
| 1 | D | 22 | THR | N-CA-C | -5.02 | 97.44 | 111.00 |
| 1 | A | 40 | LEU | CA-CB-CG | 5.02 | 126.84 | 115.30 |
| 1 | B | 165 | SER | N-CA-C | 5.02 | 124.55 | 111.00 |

There are no chirality outliers.

All (11) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | A | 193 | TYR | Sidechain |
| 1 | A | 252 | TYR | Sidechain |
| 1 | A | 290 | TYR | Sidechain |
| 1 | B | 266 | TYR | Sidechain |
| 1 | B | 290 | TYR | Sidechain |
| 1 | C | 13 | ARG | Mainchain |
| 1 | C | 193 | TYR | Sidechain |
| 1 | D | 193 | TYR | Sidechain |
| 1 | D | 208 | TYR | Sidechain |
| 1 | D | 235 | TYR | Sidechain |
| 1 | D | 284 | TYR | Sidechain |

5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 2578 | 560 | 2546 | 341 | 0 |
| 1 | B | 2515 | 535 | 2462 | 303 | 0 |
| 1 | C | 2515 | 535 | 2461 | 307 | 0 |
| 1 | D | 2545 | 551 | 2514 | 297 | 0 |
| All | All | 10153 | 2181 | 9983 | 1182 | 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 59.

All (1182) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:11:LYS:CE | 1:A:11:LYS:CD | 1.77 | 1.58 |
| 1:C:215:MET:SD | 1:C:215:MET:CE | 2.02 | 1.47 |
| 1:C:100:ARG:HD2 | 1:C:123:TYR:HD2 | 1.10 | 1.09 |
| 1:C:175:VAL:HG11 | 1:C:336:ILE:HD11 | 1.37 | 1.06 |
| 1:B:215:MET:SD | 1:D:215:MET:HG3 | 1.97 | 1.05 |
| 1:A:11:LYS:NZ | 1:C:13:ARG:H | 1.55 | 1.05 |
| 1:D:103:ILE:HB | 1:D:112:PRO:HB2 | 1.39 | 1.04 |
| 1:A:274:LEU:HD11 | 1:A:310:MET:SD | 1.97 | 1.02 |
| 1:B:103:ILE:HG23 | 1:B:114:ALA:HA | 1.39 | 1.01 |
| 1:B:280:ARG:HG3 | 1:B:280:ARG:HH11 | 1.25 | 1.01 |
| 1:C:149:TYR:HE1 | 1:C:185:LEU:HD12 | 1.24 | 1.00 |
| 1:A:191:CYS:SG | 1:A:193:TYR:HE1 | 1.84 | 0.99 |
| 1:D:150:SER:HB3 | 1:D:186:LEU:HD21 | 1.43 | 0.99 |
| 1:B:43:VAL:HB | 1:B:100:ARG:HG2 | 1.42 | 0.98 |
| 1:A:11:LYS:CE | 1:C:13:ARG:H | 1.77 | 0.97 |
| 1:D:30:GLN:HB2 | 1:D:31:PRO:HD3 | 1.44 | 0.97 |
| 1:D:298:ASN:HB3 | 1:D:339:ARG:HB2 | 1.46 | 0.96 |
| 1:D:307:CYS:SG | 1:D:342:LEU:HG | 2.06 | 0.95 |
| 1:C:100:ARG:HD2 | 1:C:123:TYR:CD2 | 2.03 | 0.94 |
| 1:C:248:LYS:H | 1:C:248:LYS:HD3 | 1.30 | 0.94 |
| 1:B:295:LYS:H | 1:B:295:LYS:HZ2 | 1.16 | 0.94 |
| 1:D:17:LYS:HB2 | 1:D:20:ILE:HD11 | 1.51 | 0.93 |
| 1:C:103:ILE:HG12 | 1:C:114:ALA:HA | 1.51 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:319:GLY:HA2 | 1:B:347:VAL:HG23 | 1.50 | 0.91 |
| 1:A:215:MET:SD | 1:C:215:MET:HG3 | 2.11 | 0.91 |
| 1:A:104:ILE:HG13 | 1:A:114:ALA:HB1 | 1.50 | 0.90 |
| 1:B:43:VAL:HG12 | 1:B:100:ARG:NH2 | 1.86 | 0.90 |
| 1:D:300:LYS:O | 1:D:339:ARG:HG2 | 1.72 | 0.90 |
| 1:A:290:TYR:HE2 | 1:A:300:LYS:HG2 | 1.37 | 0.89 |
| 1:B:191:CYS:HG | 1:B:193:TYR:HE1 | 0.93 | 0.88 |
| 1:A:303:LEU:HG | 1:A:333:PRO:HG3 | 1.56 | 0.88 |
| 1:A:11:LYS:HE3 | 1:C:11:LYS:HA | 1.55 | 0.88 |
| 1:A:290:TYR:CE2 | 1:A:300:LYS:HG2 | 2.07 | 0.88 |
| 1:A:245:TRP:CZ3 | 1:A:253:MET:SD | 2.67 | 0.87 |
| 1:A:295:LYS:HE3 | 1:A:300:LYS:HD3 | 1.56 | 0.87 |
| 1:B:40:LEU:HD12 | 1:B:100:ARG:NH2 | 1.90 | 0.87 |
| 1:C:149:TYR:CE1 | 1:C:185:LEU:HD12 | 2.08 | 0.87 |
| 1:D:189:GLY:HA2 | 1:D:313:ILE:HD11 | 1.56 | 0.86 |
| 1:A:304:LEU:HG | 1:A:333:PRO:HG2 | 1.56 | 0.86 |
| 1:D:303:LEU:HD23 | 1:D:333:PRO:HD3 | 1.57 | 0.86 |
| 1:A:210:PHE:HD1 | 1:A:221:LEU:HA | 1.40 | 0.85 |
| 1:D:348:GLU:HG3 | 1:D:352:LYS:NZ | 1.91 | 0.85 |
| 1:D:348:GLU:HG3 | 1:D:352:LYS:HZ3 | 1.40 | 0.85 |
| 1:D:235:TYR:HB2 | 1:D:237:PHE:HE1 | 1.39 | 0.85 |
| 1:A:253:MET:HA | 1:A:253:MET:HE3 | 1.59 | 0.85 |
| 1:B:176:VAL:HG13 | 1:B:178:VAL:HG22 | 1.59 | 0.85 |
| 1:A:320:LYS:HG2 | 1:A:347:VAL:HG22 | 1.59 | 0.84 |
| 1:B:40:LEU:HA | 1:B:100:ARG:CZ | 2.08 | 0.84 |
| 1:A:106:SER:HA | 1:A:127:PHE:O | 1.77 | 0.84 |
| 1:A:307:CYS:SG | 1:A:342:LEU:HD22 | 2.18 | 0.84 |
| 1:A:258:GLU:HA | 1:B:243:LYS:HE2 | 1.60 | 0.83 |
| 1:A:11:LYS:HZ2 | 1:C:13:ARG:H | 1.21 | 0.83 |
| 1:B:101:THR:HA | 1:B:123:TYR:HB2 | 1.58 | 0.83 |
| 1:C:140:VAL:HG12 | 1:C:141:SER:H | 1.42 | 0.83 |
| 1:A:270:TYR:HH | 1:A:290:TYR:HE1 | 1.25 | 0.83 |
| 1:D:101:THR:HA | 1:D:123:TYR:O | 1.77 | 0.83 |
| 1:B:179:CYS:SG | 1:B:180:GLN:NE2 | 2.52 | 0.82 |
| 1:C:278:PHE:CD2 | 1:C:310:MET:SD | 2.73 | 0.82 |
| 1:D:83:LEU:HD12 | 1:D:83:LEU:O | 1.80 | 0.82 |
| 1:C:29:LYS:O | 1:C:32:MET:HB3 | 1.80 | 0.81 |
| 1:D:103:ILE:CB | 1:D:112:PRO:HB2 | 2.11 | 0.81 |
| 1:A:43:VAL:HB | 1:A:100:ARG:HH11 | 1.46 | 0.81 |
| 1:C:60:ARG:HG3 | 1:C:60:ARG:HH11 | 1.46 | 0.81 |
| 1:B:142:THR:HG22 | 1:B:143:GLY:H | 1.47 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:298:ASN:HB2 | 1:C:339:ARG:HB2 | 1.61 | 0.80 |
| 1:A:248:LYS:HG3 | 1:A:249:LEU:HD12 | 1.63 | 0.79 |
| 1:D:235:TYR:HB2 | 1:D:237:PHE:CE1 | 2.16 | 0.79 |
| 1:C:156:ILE:HG12 | 1:C:157:VAL:H | 1.47 | 0.79 |
| 1:D:186:LEU:H | 1:D:186:LEU:HD22 | 1.47 | 0.79 |
| 1:B:43:VAL:HB | 1:B:100:ARG:CG | 2.13 | 0.79 |
| 1:B:324:GLY:O | 1:B:357:LEU:HD22 | 1.83 | 0.79 |
| 1:C:43:VAL:HG21 | 1:C:100:ARG:HH11 | 1.47 | 0.79 |
| 1:C:179:CYS:SG | 1:C:336:ILE:CD1 | 2.71 | 0.79 |
| 1:A:271:ILE:HD11 | 1:A:280:ARG:HH21 | 1.46 | 0.79 |
| 1:A:119:TYR:HD1 | 1:A:119:TYR:H | 1.31 | 0.78 |
| 1:C:271:ILE:HG23 | 1:D:271:ILE:HG12 | 1.64 | 0.78 |
| 1:A:45:SER:O | 1:A:48:SER:HB3 | 1.83 | 0.78 |
| 1:A:49:LEU:HD11 | 1:D:218:GLU:HG3 | 1.64 | 0.78 |
| 1:A:336:ILE:HD13 | 1:A:336:ILE:H | 1.49 | 0.78 |
| 1:A:11:LYS:HE3 | 1:C:12:ALA:N | 1.99 | 0.77 |
| 1:D:39:GLU:O | 1:D:43:VAL:HG12 | 1.85 | 0.77 |
| 1:A:256:LEU:HD12 | 1:A:266:TYR:HD2 | 1.48 | 0.77 |
| 1:D:336:ILE:HG22 | 1:D:337:HIS:CD2 | 2.19 | 0.77 |
| 1:D:330:ASP:O | 1:D:331:ILE:HD13 | 1.83 | 0.77 |
| 1:A:11:LYS:HZ2 | 1:C:13:ARG:N | 1.83 | 0.77 |
| 1:A:325:HIS:HB2 | 1:A:326:GLN:OE1 | 1.83 | 0.77 |
| 1:D:100:ARG:O | 1:D:123:TYR:HB2 | 1.83 | 0.77 |
| 1:B:178:VAL:O | 1:B:304:LEU:HD11 | 1.84 | 0.76 |
| 1:C:243:LYS:NZ | 1:C:243:LYS:H | 1.82 | 0.76 |
| 1:D:39:GLU:HA | 1:D:100:ARG:HH11 | 1.50 | 0.76 |
| 1:A:60:ARG:HG2 | 1:B:12:ALA:HB3 | 1.66 | 0.76 |
| 1:D:107:GLU:HB3 | 1:D:129:PRO:HD2 | 1.65 | 0.76 |
| 1:B:307:CYS:SG | 1:B:342:LEU:CD1 | 2.74 | 0.76 |
| 1:B:299:GLY:N | 1:B:341:PRO:HD3 | 2.00 | 0.76 |
| 1:C:243:LYS:HG2 | 1:C:244:MET:N | 2.01 | 0.76 |
| 1:D:165:SER:O | 1:D:166:GLN:HB2 | 1.86 | 0.76 |
| 1:D:228:ILE:HG22 | 1:D:229:PRO:HD2 | 1.68 | 0.76 |
| 1:D:261:GLU:HG3 | 1:D:263:GLN:OE1 | 1.85 | 0.76 |
| 1:A:280:ARG:HH12 | 1:B:135:ASN:HD22 | 1.33 | 0.75 |
| 1:B:290:TYR:HD1 | 1:B:291:PRO:HD2 | 1.50 | 0.75 |
| 1:C:57:LEU:HD12 | 1:C:57:LEU:O | 1.87 | 0.75 |
| 1:C:140:VAL:HG13 | 1:C:271:ILE:HG22 | 1.66 | 0.75 |
| 1:C:97:SER:HA | 1:C:119:TYR:CD1 | 2.21 | 0.75 |
| 1:C:135:ASN:ND2 | 1:C:273:SER:HB3 | 2.01 | 0.75 |
| 1:A:11:LYS:NZ | 1:C:13:ARG:N | 2.34 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:104:ILE:HG13 | 1:A:114:ALA:CB | 2.17 | 0.74 |
| 1:A:207:VAL:O | 1:A:225:LYS:HA | 1.87 | 0.74 |
| 1:C:36:ILE:HG22 | 1:C:38:ALA:H | 1.53 | 0.74 |
| 1:B:295:LYS:HB2 | 1:B:295:LYS:NZ | 2.02 | 0.74 |
| 1:C:156:ILE:HG12 | 1:C:157:VAL:N | 2.02 | 0.74 |
| 1:A:237:PHE:HB3 | 1:A:245:TRP:HH2 | 1.52 | 0.74 |
| 1:B:50:ALA:HB2 | 1:B:94:CYS:SG | 2.27 | 0.74 |
| 1:B:180:GLN:OE1 | 1:B:180:GLN:N | 2.21 | 0.74 |
| 1:A:96:ARG:HB3 | 1:A:119:TYR:HE2 | 1.51 | 0.74 |
| 1:A:252:TYR:CE1 | 1:A:353:LEU:HB2 | 2.23 | 0.74 |
| 1:A:17:LYS:HD3 | 1:A:17:LYS:N | 2.02 | 0.74 |
| 1:D:215:MET:N | 1:D:215:MET:SD | 2.61 | 0.74 |
| 1:B:210:PHE:HE1 | 1:B:221:LEU:HD13 | 1.53 | 0.73 |
| 1:D:58:VAL:HG21 | 1:D:193:TYR:HD2 | 1.53 | 0.73 |
| 1:B:166:GLN:OE1 | 1:B:166:GLN:HA | 1.86 | 0.73 |
| 1:B:43:VAL:H | 1:B:100:ARG:HH11 | 1.37 | 0.73 |
| 1:B:191:CYS:SG | 1:B:193:TYR:HE1 | 2.10 | 0.72 |
| 1:C:320:LYS:HD2 | 1:C:347:VAL:HG12 | 1.69 | 0.72 |
| 1:A:295:LYS:CE | 1:A:300:LYS:HD3 | 2.18 | 0.72 |
| 1:C:270:TYR:HE2 | 1:D:269:ARG:NH1 | 1.87 | 0.72 |
| 1:A:20:ILE:HG23 | 1:A:20:ILE:O | 1.89 | 0.72 |
| 1:A:173:ARG:HD3 | 1:A:174:CYS:H | 1.54 | 0.72 |
| 1:D:203:ILE:HG22 | 1:D:204:GLY:H | 1.54 | 0.72 |
| 1:A:30:GLN:O | 1:A:32:MET:N | 2.21 | 0.72 |
| 1:B:43:VAL:H | 1:B:100:ARG:NH1 | 1.87 | 0.72 |
| 1:A:100:ARG:NH2 | 1:A:148:ILE:HD13 | 2.05 | 0.72 |
| 1:C:263:GLN:HG2 | 1:C:264:LYS:HG2 | 1.71 | 0.72 |
| 1:C:282:LEU:HD11 | 1:C:317:ALA:CB | 2.20 | 0.72 |
| 1:A:40:LEU:HA | 1:A:100:ARG:CD | 2.20 | 0.72 |
| 1:A:245:TRP:HZ3 | 1:A:253:MET:SD | 2.12 | 0.72 |
| 1:B:307:CYS:SG | 1:B:342:LEU:HD13 | 2.29 | 0.72 |
| 1:A:15:ARG:HG2 | 1:A:15:ARG:HH11 | 1.55 | 0.71 |
| 1:D:103:ILE:HG22 | 1:D:113:VAL:C | 2.11 | 0.71 |
| 1:B:35:VAL:HG22 | 1:B:35:VAL:O | 1.90 | 0.71 |
| 1:B:83:LEU:HD22 | 1:B:130:LEU:HD21 | 1.72 | 0.71 |
| 1:C:82:LYS:O | 1:C:85:VAL:HG12 | 1.91 | 0.71 |
| 1:C:209:ALA:HB3 | 1:C:223:SER:HB2 | 1.72 | 0.71 |
| 1:C:179:CYS:SG | 1:C:336:ILE:HD11 | 2.30 | 0.71 |
| 1:B:150:SER:HB3 | 1:B:186:LEU:HD11 | 1.73 | 0.71 |
| 1:D:295:LYS:O | 1:D:296:SER:HB2 | 1.91 | 0.71 |
| 1:C:243:LYS:H | 1:C:243:LYS:HZ3 | 1.39 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:303:LEU:CD2 | 1:D:333:PRO:HD3 | 2.21 | 0.70 |
| 1:C:257:LYS:O | 1:C:259:PRO:HD3 | 1.91 | 0.70 |
| 1:A:191:CYS:SG | 1:A:193:TYR:CE1 | 2.69 | 0.70 |
| 1:A:210:PHE:CD1 | 1:A:221:LEU:HA | 2.26 | 0.70 |
| 1:C:154:GLU:HG2 | 1:C:155:CYS:H | 1.56 | 0.70 |
| 1:D:181:PRO:HB2 | 1:D:184:ASN:HD21 | 1.56 | 0.70 |
| 1:A:49:LEU:CD1 | 1:D:218:GLU:HG3 | 2.21 | 0.70 |
| 1:B:244:MET:O | 1:B:293:ASP:HB2 | 1.91 | 0.70 |
| 1:D:122:ASN:O | 1:D:123:TYR:CD1 | 2.45 | 0.70 |
| 1:B:245:TRP:O | 1:B:250:LYS:HD2 | 1.92 | 0.70 |
| 1:D:135:ASN:HB2 | 1:D:140:VAL:HG13 | 1.73 | 0.70 |
| 1:A:95:LEU:HB3 | 1:A:101:THR:HG21 | 1.72 | 0.70 |
| 1:B:150:SER:CB | 1:B:186:LEU:HD11 | 2.22 | 0.69 |
| 1:B:43:VAL:N | 1:B:100:ARG:NH1 | 2.40 | 0.69 |
| 1:B:103:ILE:HG23 | 1:B:114:ALA:CA | 2.19 | 0.69 |
| 1:C:140:VAL:HG12 | 1:C:141:SER:N | 2.05 | 0.69 |
| 1:D:82:LYS:HE3 | 1:D:82:LYS:N | 2.07 | 0.69 |
| 1:D:180:GLN:HE22 | 1:D:184:ASN:HB2 | 1.56 | 0.69 |
| 1:D:202:THR:HA | 1:D:206:GLY:O | 1.92 | 0.69 |
| 1:A:28:LEU:HD11 | 1:D:28:LEU:HD21 | 1.75 | 0.69 |
| 1:D:107:GLU:CB | 1:D:129:PRO:HD2 | 2.23 | 0.69 |
| 1:D:297:LYS:HE2 | 1:D:298:ASN:N | 2.08 | 0.69 |
| 1:A:303:LEU:HD22 | 1:A:340:VAL:HG11 | 1.75 | 0.69 |
| 1:D:135:ASN:HA | 1:D:138:ALA:HB3 | 1.73 | 0.69 |
| 1:C:187:ALA:HB2 | 1:C:203:ILE:HD12 | 1.74 | 0.68 |
| 1:D:247:ASP:HA | 1:D:250:LYS:HD3 | 1.75 | 0.68 |
| 1:B:125:VAL:HG22 | 1:B:125:VAL:O | 1.94 | 0.68 |
| 1:D:257:LYS:O | 1:D:259:PRO:HD3 | 1.93 | 0.68 |
| 1:A:15:ARG:HA | 1:A:17:LYS:HE3 | 1.73 | 0.68 |
| 1:C:175:VAL:HG11 | 1:C:179:CYS:SG | 2.34 | 0.68 |
| 1:A:141:SER:HA | 1:A:194:SER:HB2 | 1.74 | 0.68 |
| 1:B:107:GLU:HG3 | 1:B:302:ARG:HH22 | 1.58 | 0.68 |
| 1:B:210:PHE:CE1 | 1:B:221:LEU:HD13 | 2.29 | 0.68 |
| 1:D:190:TYR:OH | 1:D:279:HIS:HD2 | 1.76 | 0.68 |
| 1:A:232:GLY:HA3 | 1:A:286:GLY:H | 1.60 | 0.67 |
| 1:B:106:SER:OG | 1:B:107:GLU:N | 2.28 | 0.67 |
| 1:A:271:ILE:HD11 | 1:A:280:ARG:NH2 | 2.08 | 0.67 |
| 1:A:298:ASN:O | 1:A:340:VAL:HA | 1.95 | 0.67 |
| 1:A:236:SER:HB2 | 1:A:288:TYR:HA | 1.75 | 0.67 |
| 1:A:101:THR:OG1 | 1:A:104:ILE:HG23 | 1.95 | 0.67 |
| 1:C:243:LYS:HG2 | 1:C:244:MET:H | 1.56 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:333:PRO:HB2 | 1:D:338:GLN:OE1 | 1.94 | 0.67 |
| 1:B:177:ASN:C | 1:B:179:CYS:HG | 1.98 | 0.67 |
| 1:A:180:GLN:NE2 | 1:A:184:ASN:O | 2.27 | 0.67 |
| 1:A:300:LYS:HA | 1:A:339:ARG:HD3 | 1.75 | 0.67 |
| 1:C:191:CYS:SG | 1:C:193:TYR:HE1 | 2.17 | 0.67 |
| 1:C:103:ILE:O | 1:C:124:ILE:HA | 1.94 | 0.67 |
| 1:B:43:VAL:HG22 | 1:B:95:LEU:HD11 | 1.77 | 0.66 |
| 1:B:151:PRO:HB2 | 1:B:153:ASP:O | 1.94 | 0.66 |
| 1:C:43:VAL:HG21 | 1:C:100:ARG:NH1 | 2.10 | 0.66 |
| 1:A:284:TYR:CE2 | 1:B:138:ALA:HB2 | 2.30 | 0.66 |
| 1:B:178:VAL:HB | 1:B:304:LEU:CD1 | 2.25 | 0.66 |
| 1:A:11:LYS:CE | 1:C:13:ARG:N | 2.57 | 0.66 |
| 1:A:11:LYS:HE3 | 1:C:11:LYS:CA | 2.23 | 0.66 |
| 1:A:292:ARG:HB3 | 1:A:297:LYS:HA | 1.76 | 0.66 |
| 1:C:191:CYS:SG | 1:C:193:TYR:CE1 | 2.88 | 0.66 |
| 1:D:254:ASP:HA | 1:D:257:LYS:NZ | 2.10 | 0.66 |
| 1:D:298:ASN:ND2 | 1:D:339:ARG:HE | 1.92 | 0.66 |
| 1:B:335:GLU:HG2 | 1:B:336:ILE:H | 1.61 | 0.66 |
| 1:A:157:VAL:HG21 | 1:A:175:VAL:HG23 | 1.77 | 0.66 |
| 1:A:100:ARG:HG3 | 1:A:123:TYR:CD1 | 2.31 | 0.65 |
| 1:A:130:LEU:HA | 1:A:143:GLY:O | 1.96 | 0.65 |
| 1:B:292:ARG:HD3 | 1:B:341:PRO:HG3 | 1.78 | 0.65 |
| 1:D:185:LEU:HD13 | 1:D:185:LEU:O | 1.95 | 0.65 |
| 1:C:140:VAL:HG13 | 1:C:271:ILE:CG2 | 2.25 | 0.65 |
| 1:C:39:GLU:HB3 | 1:C:100:ARG:HB3 | 1.78 | 0.65 |
| 1:D:190:TYR:OH | 1:D:279:HIS:CD2 | 2.48 | 0.65 |
| 1:A:125:VAL:HB | 1:A:148:ILE:HG12 | 1.76 | 0.65 |
| 1:A:242:TYR:CZ | 1:A:250:LYS:HG2 | 2.31 | 0.65 |
| 1:B:114:ALA:CB | 1:B:157:VAL:HG11 | 2.26 | 0.65 |
| 1:B:347:VAL:O | 1:B:351:GLU:HG2 | 1.96 | 0.65 |
| 1:B:84:ASP:HA | 1:B:130:LEU:HD11 | 1.79 | 0.65 |
| 1:B:179:CYS:HA | 1:B:333:PRO:HB2 | 1.78 | 0.65 |
| 1:A:190:TYR:CD2 | 1:A:275:VAL:HG13 | 2.31 | 0.65 |
| 1:A:204:GLY:O | 1:A:205:LYS:HG3 | 1.97 | 0.65 |
| 1:A:223:SER:HB3 | 1:A:226:ILE:HG23 | 1.78 | 0.65 |
| 1:C:175:VAL:CG1 | 1:C:179:CYS:SG | 2.84 | 0.65 |
| 1:D:354:GLU:O | 1:D:357:LEU:HB2 | 1.96 | 0.65 |
| 1:A:40:LEU:HA | 1:A:100:ARG:CZ | 2.26 | 0.65 |
| 1:B:102:GLY:HA2 | 1:B:120:SER:HB2 | 1.78 | 0.65 |
| 1:B:307:CYS:SG | 1:B:342:LEU:HD12 | 2.36 | 0.64 |
| 1:D:14:THR:HA | 1:D:17:LYS:NZ | 2.11 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:215:MET:HE3 | 1:D:215:MET:HA | 1.80 | 0.64 |
| 1:A:43:VAL:HG23 | 1:A:100:ARG:HB3 | 1.79 | 0.64 |
| 1:A:50:ALA:O | 1:A:54:ILE:HG12 | 1.97 | 0.64 |
| 1:D:297:LYS:HE2 | 1:D:298:ASN:H | 1.62 | 0.64 |
| 1:D:312:PHE:HA | 1:D:329:LEU:HD11 | 1.80 | 0.64 |
| 1:D:150:SER:CB | 1:D:186:LEU:HD21 | 2.24 | 0.64 |
| 1:A:278:PHE:HE1 | 1:A:344:ILE:HG12 | 1.62 | 0.64 |
| 1:A:210:PHE:CE1 | 1:A:221:LEU:HD12 | 2.33 | 0.64 |
| 1:A:320:LYS:HD2 | 1:A:327:ARG:CZ | 2.27 | 0.64 |
| 1:A:314:VAL:HG11 | 1:A:344:ILE:HD11 | 1.80 | 0.64 |
| 1:B:216:TYR:CZ | 1:C:53:GLN:HG2 | 2.33 | 0.64 |
| 1:C:100:ARG:HE | 1:C:100:ARG:C | 2.02 | 0.64 |
| 1:A:301:LEU:CD1 | 1:A:342:LEU:HD23 | 2.28 | 0.63 |
| 1:D:98:SER:C | 1:D:100:ARG:HE | 2.01 | 0.63 |
| 1:A:11:LYS:HD2 | 1:C:13:ARG:CB | 2.28 | 0.63 |
| 1:D:356:TYR:N | 1:D:356:TYR:HD1 | 1.97 | 0.63 |
| 1:D:244:MET:SD | 1:D:293:ASP:OD2 | 2.56 | 0.63 |
| 1:C:173:ARG:HH11 | 1:C:173:ARG:HG2 | 1.64 | 0.63 |
| 1:D:243:LYS:O | 1:D:244:MET:HB2 | 1.98 | 0.63 |
| 1:A:253:MET:HA | 1:A:253:MET:CE | 2.27 | 0.63 |
| 1:B:176:VAL:HG12 | 1:B:177:ASN:N | 2.14 | 0.63 |
| 1:B:280:ARG:HH11 | 1:B:280:ARG:CG | 2.07 | 0.63 |
| 1:C:39:GLU:HB3 | 1:C:100:ARG:CB | 2.29 | 0.63 |
| 1:D:246:PRO:O | 1:D:250:LYS:HG3 | 1.98 | 0.63 |
| 1:B:295:LYS:HB2 | 1:B:295:LYS:HZ3 | 1.64 | 0.63 |
| 1:C:61:ALA:HB1 | 1:D:215:MET:SD | 2.39 | 0.63 |
| 1:C:27:LEU:HD11 | 1:C:44:LEU:HD12 | 1.81 | 0.63 |
| 1:C:208:TYR:HE2 | 1:C:225:LYS:HZ2 | 1.46 | 0.63 |
| 1:C:180:GLN:HB3 | 1:C:184:ASN:HD22 | 1.62 | 0.63 |
| 1:B:43:VAL:HG12 | 1:B:100:ARG:CZ | 2.29 | 0.62 |
| 1:C:86:VAL:O | 1:C:89:GLU:HG3 | 1.99 | 0.62 |
| 1:A:114:ALA:O | 1:A:115:VAL:HG13 | 1.99 | 0.62 |
| 1:A:155:CYS:O | 1:A:156:ILE:HG22 | 2.00 | 0.62 |
| 1:D:58:VAL:HG21 | 1:D:193:TYR:CD2 | 2.35 | 0.62 |
| 1:D:342:LEU:CD1 | 1:D:344:ILE:HG13 | 2.28 | 0.62 |
| 1:C:179:CYS:HA | 1:C:304:LEU:HD11 | 1.81 | 0.62 |
| 1:D:215:MET:HB3 | 1:D:216:TYR:CE1 | 2.35 | 0.62 |
| 1:A:260:GLY:O | 1:A:261:GLU:HG3 | 1.99 | 0.62 |
| 1:C:140:VAL:CG1 | 1:C:141:SER:H | 2.07 | 0.62 |
| 1:A:251:LYS:O | 1:A:356:TYR:HE2 | 1.82 | 0.62 |
| 1:B:54:ILE:HD13 | 1:B:87:SER:HB3 | 1.80 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:287:ILE:HB | 1:D:349:GLU:HB3 | 1.80 | 0.62 |
| 1:D:335:GLU:N | 1:D:338:GLN:OE1 | 2.32 | 0.62 |
| 1:A:211:THR:N | 1:A:222:THR:OG1 | 2.32 | 0.62 |
| 1:A:274:LEU:HD21 | 1:A:310:MET:HE3 | 1.81 | 0.62 |
| 1:B:103:ILE:CG2 | 1:B:114:ALA:HA | 2.22 | 0.62 |
| 1:B:216:TYR:CE2 | 1:C:53:GLN:HG2 | 2.34 | 0.62 |
| 1:C:256:LEU:HD22 | 1:C:266:TYR:CD2 | 2.35 | 0.62 |
| 1:A:156:ILE:HG12 | 1:A:156:ILE:O | 2.00 | 0.62 |
| 1:A:164:GLU:OE1 | 1:A:164:GLU:HA | 1.99 | 0.62 |
| 1:B:11:LYS:HB2 | 1:B:15:ARG:CB | 2.29 | 0.62 |
| 1:C:155:CYS:HB2 | 1:C:177:ASN:OD1 | 1.99 | 0.62 |
| 1:C:104:ILE:HG22 | 1:C:105:ALA:N | 2.13 | 0.62 |
| 1:A:96:ARG:HD3 | 1:A:119:TYR:OH | 2.00 | 0.61 |
| 1:C:89:GLU:O | 1:C:92:SER:N | 2.33 | 0.61 |
| 1:B:40:LEU:O | 1:B:100:ARG:NH1 | 2.33 | 0.61 |
| 1:A:198:ILE:HA | 1:A:210:PHE:O | 2.01 | 0.61 |
| 1:A:270:TYR:OH | 1:A:290:TYR:HE1 | 1.83 | 0.61 |
| 1:A:43:VAL:CG2 | 1:A:100:ARG:HB3 | 2.30 | 0.61 |
| 1:A:126:VAL:CG1 | 1:A:149:TYR:HE2 | 2.14 | 0.61 |
| 1:A:253:MET:HE3 | 1:A:253:MET:CA | 2.31 | 0.61 |
| 1:B:42:ILE:CD1 | 1:B:98:SER:HB2 | 2.31 | 0.61 |
| 1:D:103:ILE:HB | 1:D:112:PRO:CB | 2.25 | 0.61 |
| 1:D:298:ASN:ND2 | 1:D:339:ARG:NE | 2.49 | 0.61 |
| 1:B:100:ARG:HG3 | 1:B:101:THR:N | 2.14 | 0.61 |
| 1:A:292:ARG:HD3 | 1:A:297:LYS:HB3 | 1.81 | 0.61 |
| 1:B:42:ILE:HD13 | 1:B:98:SER:HB2 | 1.82 | 0.61 |
| 1:B:107:GLU:HB3 | 1:B:108:GLU:OE2 | 1.99 | 0.61 |
| 1:B:176:VAL:O | 1:B:178:VAL:HG13 | 2.01 | 0.61 |
| 1:B:314:VAL:HG11 | 1:B:344:ILE:CG1 | 2.31 | 0.61 |
| 1:C:138:ALA:HB2 | 1:D:284:TYR:CE2 | 2.35 | 0.61 |
| 1:D:39:GLU:HA | 1:D:100:ARG:HD3 | 1.80 | 0.61 |
| 1:C:30:GLN:HB2 | 1:C:31:PRO:HD3 | 1.83 | 0.61 |
| 1:A:351:GLU:HA | 1:A:354:GLU:OE1 | 2.01 | 0.60 |
| 1:B:102:GLY:CA | 1:B:120:SER:HB2 | 2.31 | 0.60 |
| 1:B:207:VAL:CG2 | 1:B:226:ILE:HB | 2.31 | 0.60 |
| 1:C:115:VAL:HG12 | 1:C:119:TYR:CD2 | 2.36 | 0.60 |
| 1:C:154:GLU:HG2 | 1:C:155:CYS:N | 2.16 | 0.60 |
| 1:C:282:LEU:HD11 | 1:C:317:ALA:HB1 | 1.82 | 0.60 |
| 1:D:103:ILE:CG1 | 1:D:112:PRO:HB2 | 2.31 | 0.60 |
| 1:A:142:THR:HG22 | 1:A:143:GLY:N | 2.16 | 0.60 |
| 1:C:252:TYR:OH | 1:C:256:LEU:HD11 | 2.01 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:172:GLN:HE21 | 1:A:172:GLN:CA | 2.14 | 0.60 |
| 1:C:328:ILE:O | 1:C:330:ASP:N | 2.34 | 0.60 |
| 1:C:83:LEU:H | 1:C:83:LEU:HD12 | 1.65 | 0.60 |
| 1:A:35:VAL:O | 1:A:35:VAL:HG22 | 2.02 | 0.60 |
| 1:A:208:TYR:CD1 | 1:A:224:GLU:HA | 2.36 | 0.60 |
| 1:B:115:VAL:O | 1:B:115:VAL:HG23 | 2.02 | 0.60 |
| 1:A:301:LEU:HD12 | 1:A:342:LEU:HD23 | 1.82 | 0.60 |
| 1:A:172:GLN:HE21 | 1:A:172:GLN:HA | 1.67 | 0.60 |
| 1:B:27:LEU:HB3 | 1:B:41:THR:HG23 | 1.84 | 0.60 |
| 1:A:115:VAL:HB | 1:A:119:TYR:CZ | 2.36 | 0.60 |
| 1:C:175:VAL:O | 1:C:177:ASN:N | 2.35 | 0.59 |
| 1:A:296:SER:HB3 | 1:A:298:ASN:OD1 | 2.02 | 0.59 |
| 1:B:244:MET:SD | 1:B:295:LYS:NZ | 2.67 | 0.59 |
| 1:C:208:TYR:HE2 | 1:C:225:LYS:NZ | 2.00 | 0.59 |
| 1:A:95:LEU:HD23 | 1:A:101:THR:CG2 | 2.32 | 0.59 |
| 1:A:308:ALA:HB3 | 1:A:309:PRO:HD3 | 1.83 | 0.59 |
| 1:D:304:LEU:H | 1:D:304:LEU:HD12 | 1.68 | 0.59 |
| 1:B:142:THR:HG22 | 1:B:143:GLY:N | 2.14 | 0.59 |
| 1:D:356:TYR:N | 1:D:356:TYR:CD1 | 2.70 | 0.59 |
| 1:B:60:ARG:O | 1:B:61:ALA:HB2 | 2.03 | 0.59 |
| 1:B:100:ARG:HH21 | 1:B:148:ILE:HD12 | 1.68 | 0.59 |
| 1:B:354:GLU:HA | 1:B:357:LEU:HD23 | 1.83 | 0.59 |
| 1:C:292:ARG:NH1 | 1:C:297:LYS:O | 2.35 | 0.59 |
| 1:D:165:SER:OG | 1:D:166:GLN:N | 2.35 | 0.59 |
| 1:D:117:GLU:HG2 | 1:D:118:SER:H | 1.66 | 0.59 |
| 1:A:36:ILE:HB | 1:A:123:TYR:OH | 2.03 | 0.59 |
| 1:A:139:ALA:O | 1:A:140:VAL:HG23 | 2.02 | 0.59 |
| 1:D:348:GLU:O | 1:D:350:VAL:N | 2.36 | 0.59 |
| 1:C:101:THR:HA | 1:C:123:TYR:O | 2.03 | 0.59 |
| 1:D:191:CYS:HG | 1:D:193:TYR:HE1 | 1.50 | 0.59 |
| 1:A:264:LYS:HD2 | 1:A:265:PRO:HD2 | 1.85 | 0.59 |
| 1:D:244:MET:CG | 1:D:294:ALA:HB2 | 2.33 | 0.59 |
| 1:A:314:VAL:HA | 1:A:317:ALA:HB3 | 1.83 | 0.58 |
| 1:C:122:ASN:OD1 | 1:C:123:TYR:N | 2.36 | 0.58 |
| 1:D:123:TYR:HA | 1:D:151:PRO:HD2 | 1.83 | 0.58 |
| 1:D:150:SER:O | 1:D:152:ASN:N | 2.36 | 0.58 |
| 1:A:211:THR:N | 1:A:222:THR:HG1 | 2.01 | 0.58 |
| 1:A:280:ARG:HH12 | 1:B:135:ASN:ND2 | 2.01 | 0.58 |
| 1:B:83:LEU:CD2 | 1:B:130:LEU:HD21 | 2.33 | 0.58 |
| 1:C:106:SER:HA | 1:C:127:PHE:O | 2.02 | 0.58 |
| 1:D:282:LEU:HD11 | 1:D:317:ALA:HB1 | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:40:LEU:HA | 1:A:100:ARG:NH1 | 2.18 | 0.58 |
| 1:C:194:SER:O | 1:D:195:SER:HA | 2.02 | 0.58 |
| 1:A:157:VAL:HG13 | 1:A:158:ASP:H | 1.68 | 0.58 |
| 1:B:44:LEU:HD11 | 1:B:201:LEU:CD1 | 2.34 | 0.58 |
| 1:D:26:TRP:HA | 1:D:26:TRP:CE3 | 2.38 | 0.58 |
| 1:D:300:LYS:HZ1 | 1:D:302:ARG:NH2 | 2.01 | 0.58 |
| 1:A:141:SER:HB2 | 1:A:273:SER:OG | 2.03 | 0.58 |
| 1:B:122:ASN:OD1 | 1:B:122:ASN:N | 2.35 | 0.58 |
| 1:D:159:SER:O | 1:D:161:HIS:CE1 | 2.56 | 0.58 |
| 1:B:154:GLU:C | 1:B:155:CYS:SG | 2.82 | 0.58 |
| 1:C:136:ILE:HG12 | 1:C:142:THR:OG1 | 2.03 | 0.58 |
| 1:C:248:LYS:HD3 | 1:C:248:LYS:N | 2.11 | 0.58 |
| 1:A:167:LEU:HD22 | 1:A:171:GLU:HA | 1.84 | 0.58 |
| 1:A:186:LEU:O | 1:A:187:ALA:O | 2.22 | 0.58 |
| 1:B:93:SER:CB | 1:C:18:TYR:HA | 2.33 | 0.58 |
| 1:B:218:GLU:O | 1:B:220:VAL:HG23 | 2.03 | 0.58 |
| 1:C:278:PHE:CE2 | 1:C:310:MET:SD | 2.96 | 0.58 |
| 1:D:351:GLU:O | 1:D:354:GLU:HB2 | 2.03 | 0.58 |
| 1:B:207:VAL:HG21 | 1:B:226:ILE:HB | 1.86 | 0.58 |
| 1:B:280:ARG:HG3 | 1:B:280:ARG:NH1 | 2.05 | 0.58 |
| 1:D:298:ASN:HD22 | 1:D:339:ARG:HE | 1.52 | 0.58 |
| 1:B:19:GLU:HA | 1:B:220:VAL:CG1 | 2.33 | 0.58 |
| 1:C:349:GLU:O | 1:C:350:VAL:HG23 | 2.03 | 0.58 |
| 1:D:311:SER:HA | 1:D:314:VAL:HG12 | 1.86 | 0.58 |
| 1:C:54:ILE:HG13 | 1:C:90:VAL:HG11 | 1.85 | 0.58 |
| 1:C:93:SER:O | 1:C:94:CYS:C | 2.42 | 0.58 |
| 1:C:111:VAL:HG13 | 1:C:175:VAL:HG22 | 1.86 | 0.58 |
| 1:A:211:THR:OG1 | 1:A:222:THR:HG21 | 2.04 | 0.57 |
| 1:C:290:TYR:CE1 | 1:C:300:LYS:HB2 | 2.38 | 0.57 |
| 1:D:300:LYS:NZ | 1:D:302:ARG:NH2 | 2.52 | 0.57 |
| 1:C:93:SER:O | 1:C:95:LEU:N | 2.37 | 0.57 |
| 1:C:103:ILE:HA | 1:C:115:VAL:HG23 | 1.85 | 0.57 |
| 1:C:213:ASP:O | 1:C:215:MET:N | 2.36 | 0.57 |
| 1:B:23:LEU:HD12 | 1:B:219:PHE:CB | 2.34 | 0.57 |
| 1:B:112:PRO:HD2 | 1:B:175:VAL:O | 2.05 | 0.57 |
| 1:A:91:PHE:CZ | 1:A:127:PHE:HB2 | 2.40 | 0.57 |
| 1:A:119:TYR:CD1 | 1:A:119:TYR:N | 2.72 | 0.57 |
| 1:A:154:GLU:HG2 | 1:A:155:CYS:H | 1.70 | 0.57 |
| 1:D:45:SER:O | 1:D:48:SER:N | 2.38 | 0.57 |
| 1:A:243:LYS:O | 1:A:243:LYS:HG2 | 2.04 | 0.57 |
| 1:B:26:TRP:CD1 | 1:B:221:LEU:HD22 | 2.40 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:43:VAL:HG21 | 1:B:101:THR:HG23 | 1.87 | 0.57 |
| 1:D:122:ASN:O | 1:D:123:TYR:HD1 | 1.88 | 0.57 |
| 1:A:40:LEU:HD12 | 1:A:123:TYR:CE2 | 2.39 | 0.57 |
| 1:A:258:GLU:CA | 1:B:243:LYS:HE2 | 2.32 | 0.57 |
| 1:C:138:ALA:HB1 | 1:D:280:ARG:HB3 | 1.87 | 0.57 |
| 1:C:187:ALA:HB2 | 1:C:203:ILE:CD1 | 2.33 | 0.57 |
| 1:C:314:VAL:HA | 1:C:317:ALA:HB3 | 1.87 | 0.57 |
| 1:A:91:PHE:CE2 | 1:A:104:ILE:HG21 | 2.40 | 0.57 |
| 1:A:95:LEU:HD23 | 1:A:101:THR:HG21 | 1.87 | 0.57 |
| 1:A:96:ARG:HD3 | 1:A:115:VAL:HG12 | 1.86 | 0.57 |
| 1:B:136:ILE:HG22 | 1:B:142:THR:OG1 | 2.03 | 0.57 |
| 1:B:178:VAL:HB | 1:B:304:LEU:HD13 | 1.87 | 0.57 |
| 1:D:281:THR:O | 1:D:283:LEU:N | 2.37 | 0.57 |
| 1:A:8:THR:O | 1:A:9:GLN:HG3 | 2.05 | 0.57 |
| 1:B:94:CYS:SG | 1:B:94:CYS:O | 2.62 | 0.57 |
| 1:B:181:PRO:O | 1:B:183:ASP:N | 2.37 | 0.57 |
| 1:B:278:PHE:CD2 | 1:B:310:MET:SD | 2.98 | 0.57 |
| 1:A:101:THR:OG1 | 1:A:104:ILE:HG12 | 2.05 | 0.56 |
| 1:B:278:PHE:HD2 | 1:B:310:MET:SD | 2.27 | 0.56 |
| 1:C:34:GLY:O | 1:C:35:VAL:HB | 2.05 | 0.56 |
| 1:C:173:ARG:O | 1:C:175:VAL:N | 2.37 | 0.56 |
| 1:B:168:SER:O | 1:B:169:ALA:HB2 | 2.04 | 0.56 |
| 1:B:257:LYS:O | 1:B:259:PRO:HD3 | 2.05 | 0.56 |
| 1:D:43:VAL:O | 1:D:43:VAL:HG22 | 2.06 | 0.56 |
| 1:A:16:SER:O | 1:A:18:TYR:HD1 | 1.89 | 0.56 |
| 1:A:252:TYR:CE2 | 1:A:256:LEU:HD13 | 2.40 | 0.56 |
| 1:B:176:VAL:C | 1:B:178:VAL:H | 2.09 | 0.56 |
| 1:B:297:LYS:O | 1:B:297:LYS:HD3 | 2.04 | 0.56 |
| 1:C:13:ARG:O | 1:C:16:SER:N | 2.38 | 0.56 |
| 1:C:112:PRO:HD2 | 1:C:175:VAL:HG22 | 1.87 | 0.56 |
| 1:D:235:TYR:CZ | 1:D:268:SER:HB2 | 2.41 | 0.56 |
| 1:D:271:ILE:HG13 | 1:D:280:ARG:NH2 | 2.21 | 0.56 |
| 1:A:348:GLU:O | 1:A:352:LYS:HB2 | 2.05 | 0.56 |
| 1:C:56:SER:HA | 1:C:59:GLN:OE1 | 2.04 | 0.56 |
| 1:C:166:GLN:HG2 | 1:C:168:SER:H | 1.69 | 0.56 |
| 1:D:104:ILE:HG12 | 1:D:104:ILE:O | 2.03 | 0.56 |
| 1:B:177:ASN:O | 1:B:179:CYS:SG | 2.51 | 0.56 |
| 1:C:39:GLU:HB3 | 1:C:100:ARG:HG2 | 1.86 | 0.56 |
| 1:A:193:TYR:HD1 | 1:A:197:VAL:HG13 | 1.70 | 0.56 |
| 1:A:327:ARG:HH11 | 1:A:327:ARG:HG3 | 1.70 | 0.56 |
| 1:A:37:ASP:O | 1:A:39:GLU:N | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:91:PHE:CG | 1:C:91:PHE:O | 2.59 | 0.56 |
| 1:C:234:ILE:HD11 | 1:C:269:ARG:HD2 | 1.87 | 0.56 |
| 1:B:124:ILE:HG12 | 1:B:151:PRO:HD3 | 1.88 | 0.56 |
| 1:C:61:ALA:HB2 | 1:D:214:PRO:HG2 | 1.88 | 0.56 |
| 1:D:320:LYS:HZ1 | 1:D:327:ARG:CZ | 2.19 | 0.56 |
| 1:C:212:LEU:O | 1:C:214:PRO:HD3 | 2.06 | 0.56 |
| 1:D:88:ASN:O | 1:D:91:PHE:HB3 | 2.06 | 0.56 |
| 1:B:56:SER:HA | 1:B:59:GLN:HB2 | 1.87 | 0.55 |
| 1:D:339:ARG:O | 1:D:340:VAL:HG23 | 2.06 | 0.55 |
| 1:A:303:LEU:CG | 1:A:333:PRO:HG3 | 2.34 | 0.55 |
| 1:B:131:ASP:OD2 | 1:B:275:VAL:HG23 | 2.07 | 0.55 |
| 1:B:290:TYR:CD1 | 1:B:291:PRO:HD2 | 2.39 | 0.55 |
| 1:D:210:PHE:HA | 1:D:220:VAL:O | 2.05 | 0.55 |
| 1:A:91:PHE:HE2 | 1:A:104:ILE:CG2 | 2.18 | 0.55 |
| 1:C:296:SER:HB3 | 1:C:298:ASN:HD21 | 1.72 | 0.55 |
| 1:D:14:THR:HA | 1:D:17:LYS:HZ3 | 1.71 | 0.55 |
| 1:D:325:HIS:CA | 1:D:357:LEU:HD11 | 2.37 | 0.55 |
| 1:D:342:LEU:HD11 | 1:D:344:ILE:HG13 | 1.87 | 0.55 |
| 1:B:44:LEU:H | 1:B:100:ARG:HH12 | 1.53 | 0.55 |
| 1:B:212:LEU:O | 1:B:214:PRO:HD3 | 2.07 | 0.55 |
| 1:B:215:MET:SD | 1:D:215:MET:CE | 2.94 | 0.55 |
| 1:B:351:GLU:HA | 1:B:354:GLU:HB3 | 1.89 | 0.55 |
| 1:D:26:TRP:HA | 1:D:26:TRP:HE3 | 1.71 | 0.55 |
| 1:D:190:TYR:CD2 | 1:D:275:VAL:HG13 | 2.41 | 0.55 |
| 1:B:176:VAL:O | 1:B:178:VAL:N | 2.39 | 0.55 |
| 1:B:299:GLY:H | 1:B:341:PRO:HD3 | 1.71 | 0.55 |
| 1:C:116:GLU:HB2 | 1:C:119:TYR:CE2 | 2.42 | 0.55 |
| 1:C:138:ALA:HB2 | 1:D:284:TYR:HE2 | 1.71 | 0.55 |
| 1:A:100:ARG:HH22 | 1:A:148:ILE:HD13 | 1.71 | 0.55 |
| 1:A:233:LYS:H | 1:A:233:LYS:HD2 | 1.71 | 0.55 |
| 1:A:271:ILE:HG13 | 1:B:271:ILE:HA | 1.88 | 0.55 |
| 1:C:261:GLU:O | 1:C:262:SER:HB3 | 2.07 | 0.55 |
| 1:C:270:TYR:CE2 | 1:D:269:ARG:NH1 | 2.73 | 0.55 |
| 1:C:27:LEU:HD11 | 1:C:44:LEU:CD1 | 2.37 | 0.55 |
| 1:D:192:MET:O | 1:D:197:VAL:HA | 2.07 | 0.55 |
| 1:C:112:PRO:HA | 1:C:178:VAL:HG21 | 1.88 | 0.55 |
| 1:C:173:ARG:HG2 | 1:C:173:ARG:NH1 | 2.22 | 0.54 |
| 1:D:111:VAL:CG2 | 1:D:112:PRO:HD2 | 2.37 | 0.54 |
| 1:D:125:VAL:HG12 | 1:D:148:ILE:HG12 | 1.89 | 0.54 |
| 1:B:37:ASP:OD1 | 1:B:39:GLU:HG2 | 2.06 | 0.54 |
| 1:B:149:TYR:CE1 | 1:B:185:LEU:CD2 | 2.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:351:GLU:HA | 1:C:354:GLU:HB3 | 1.88 | 0.54 |
| 1:D:93:SER:O | 1:D:95:LEU:N | 2.39 | 0.54 |
| 1:A:91:PHE:HE2 | 1:A:104:ILE:HG21 | 1.72 | 0.54 |
| 1:A:306:GLU:O | 1:A:310:MET:HG2 | 2.07 | 0.54 |
| 1:B:22:THR:OG1 | 1:B:23:LEU:N | 2.41 | 0.54 |
| 1:B:83:LEU:HD23 | 1:B:83:LEU:O | 2.08 | 0.54 |
| 1:D:35:VAL:HG12 | 1:D:36:ILE:N | 2.22 | 0.54 |
| 1:B:23:LEU:CD1 | 1:B:48:SER:HB3 | 2.37 | 0.54 |
| 1:C:268:SER:C | 1:C:269:ARG:HG2 | 2.28 | 0.54 |
| 1:A:60:ARG:CG | 1:B:12:ALA:HB3 | 2.34 | 0.54 |
| 1:B:314:VAL:HG11 | 1:B:344:ILE:HG13 | 1.90 | 0.54 |
| 1:B:149:TYR:CE1 | 1:B:185:LEU:HD21 | 2.43 | 0.54 |
| 1:D:311:SER:O | 1:D:315:GLU:HB2 | 2.08 | 0.54 |
| 1:A:271:ILE:HD11 | 1:A:280:ARG:HE | 1.73 | 0.54 |
| 1:B:93:SER:HB2 | 1:C:18:TYR:HA | 1.89 | 0.54 |
| 1:D:320:LYS:HZ2 | 1:D:327:ARG:NE | 2.06 | 0.54 |
| 1:A:83:LEU:HD12 | 1:A:83:LEU:H | 1.71 | 0.54 |
| 1:A:124:ILE:HG22 | 1:A:149:TYR:O | 2.06 | 0.54 |
| 1:C:179:CYS:HA | 1:C:304:LEU:CD1 | 2.38 | 0.54 |
| 1:D:180:GLN:NE2 | 1:D:184:ASN:O | 2.41 | 0.54 |
| 1:A:319:GLY:O | 1:A:320:LYS:HD3 | 2.08 | 0.54 |
| 1:C:88:ASN:OD1 | 1:C:129:PRO:HD3 | 2.07 | 0.54 |
| 1:C:228:ILE:HG13 | 1:C:317:ALA:O | 2.08 | 0.54 |
| 1:D:130:LEU:N | 1:D:130:LEU:HD22 | 2.22 | 0.54 |
| 1:A:47:ILE:HD12 | 1:A:91:PHE:HE1 | 1.72 | 0.53 |
| 1:B:114:ALA:HB2 | 1:B:157:VAL:HG11 | 1.90 | 0.53 |
| 1:B:245:TRP:HD1 | 1:B:293:ASP:HB3 | 1.72 | 0.53 |
| 1:C:296:SER:O | 1:C:298:ASN:N | 2.42 | 0.53 |
| 1:D:23:LEU:HD12 | 1:D:27:LEU:HD13 | 1.89 | 0.53 |
| 1:D:185:LEU:C | 1:D:185:LEU:HD22 | 2.28 | 0.53 |
| 1:D:188:ALA:HB3 | 1:D:312:PHE:HD2 | 1.73 | 0.53 |
| 1:B:23:LEU:HD23 | 1:B:27:LEU:HG | 1.90 | 0.53 |
| 1:B:112:PRO:HD2 | 1:B:175:VAL:HG12 | 1.91 | 0.53 |
| 1:C:85:VAL:CG1 | 1:C:86:VAL:N | 2.71 | 0.53 |
| 1:D:301:LEU:HD23 | 1:D:301:LEU:N | 2.23 | 0.53 |
| 1:B:26:TRP:HE3 | 1:B:29:LYS:HB3 | 1.73 | 0.53 |
| 1:B:30:GLN:O | 1:B:34:GLY:N | 2.42 | 0.53 |
| 1:B:125:VAL:HB | 1:B:148:ILE:HD13 | 1.90 | 0.53 |
| 1:C:328:ILE:HA | 1:C:331:ILE:HD12 | 1.91 | 0.53 |
| 1:A:11:LYS:CD | 1:A:11:LYS:HE2 | 2.18 | 0.53 |
| 1:A:26:TRP:CD1 | 1:A:221:LEU:HD22 | 2.44 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:280:ARG:HG3 | 1:C:284:TYR:HD2 | 1.74 | 0.53 |
| 1:C:200:VAL:HG13 | 1:C:209:ALA:HB2 | 1.91 | 0.53 |
| 1:D:100:ARG:CA | 1:D:121:GLY:HA2 | 2.38 | 0.53 |
| 1:D:104:ILE:HG12 | 1:D:106:SER:OG | 2.09 | 0.53 |
| 1:A:256:LEU:HD12 | 1:A:266:TYR:CD2 | 2.36 | 0.53 |
| 1:B:210:PHE:HD1 | 1:B:221:LEU:HA | 1.72 | 0.53 |
| 1:B:269:ARG:HD3 | 1:B:280:ARG:NE | 2.23 | 0.53 |
| 1:D:207:VAL:HG23 | 1:D:207:VAL:O | 2.07 | 0.53 |
| 1:B:23:LEU:HD13 | 1:B:48:SER:HB3 | 1.90 | 0.53 |
| 1:A:11:LYS:HE3 | 1:C:11:LYS:C | 2.29 | 0.53 |
| 1:B:43:VAL:HB | 1:B:100:ARG:CZ | 2.39 | 0.53 |
| 1:B:104:ILE:O | 1:B:113:VAL:HG13 | 2.09 | 0.53 |
| 1:B:244:MET:O | 1:B:244:MET:HG2 | 2.09 | 0.53 |
| 1:C:328:ILE:HA | 1:C:331:ILE:CD1 | 2.38 | 0.53 |
| 1:D:197:VAL:HG12 | 1:D:197:VAL:O | 2.09 | 0.53 |
| 1:D:314:VAL:HG21 | 1:D:344:ILE:CG2 | 2.39 | 0.53 |
| 1:B:312:PHE:CD1 | 1:B:312:PHE:O | 2.62 | 0.52 |
| 1:C:278:PHE:HD2 | 1:C:310:MET:SD | 2.30 | 0.52 |
| 1:A:40:LEU:HA | 1:A:100:ARG:NE | 2.23 | 0.52 |
| 1:A:53:GLN:HG2 | 1:D:216:TYR:CE2 | 2.44 | 0.52 |
| 1:C:175:VAL:HG12 | 1:C:176:VAL:N | 2.23 | 0.52 |
| 1:D:323:ASP:CG | 1:D:323:ASP:O | 2.47 | 0.52 |
| 1:A:314:VAL:O | 1:A:318:GLY:N | 2.41 | 0.52 |
| 1:B:116:GLU:HB3 | 1:B:118:SER:OG | 2.09 | 0.52 |
| 1:D:129:PRO:C | 1:D:130:LEU:HD22 | 2.30 | 0.52 |
| 1:A:246:PRO:HD2 | 1:A:249:LEU:HD13 | 1.91 | 0.52 |
| 1:A:300:LYS:N | 1:A:339:ARG:HB3 | 2.25 | 0.52 |
| 1:B:138:ALA:O | 1:B:139:ALA:HB3 | 2.09 | 0.52 |
| 1:B:181:PRO:HD3 | 1:B:333:PRO:CG | 2.39 | 0.52 |
| 1:C:126:VAL:HG21 | 1:C:149:TYR:CE2 | 2.45 | 0.52 |
| 1:D:205:LYS:HB2 | 1:D:205:LYS:NZ | 2.25 | 0.52 |
| 1:D:263:GLN:O | 1:D:265:PRO:HD3 | 2.09 | 0.52 |
| 1:A:100:ARG:NH2 | 1:A:148:ILE:HG21 | 2.24 | 0.52 |
| 1:B:43:VAL:HG21 | 1:B:95:LEU:HD21 | 1.92 | 0.52 |
| 1:A:203:ILE:N | 1:A:203:ILE:HD13 | 2.25 | 0.52 |
| 1:A:242:TYR:HE2 | 1:A:250:LYS:HD3 | 1.74 | 0.52 |
| 1:C:91:PHE:CE2 | 1:C:104:ILE:HG21 | 2.45 | 0.52 |
| 1:D:204:GLY:O | 1:D:205:LYS:HG3 | 2.10 | 0.52 |
| 1:B:43:VAL:CB | 1:B:100:ARG:HG2 | 2.28 | 0.52 |
| 1:B:109:GLU:C | 1:B:111:VAL:H | 2.12 | 0.52 |
| 1:B:178:VAL:C | 1:B:304:LEU:HD11 | 2.31 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:335:GLU:HG2 | 1:B:336:ILE:HG12 | 1.91 | 0.52 |
| 1:C:231:ALA:O | 1:C:233:LYS:N | 2.43 | 0.52 |
| 1:D:260:GLY:C | 1:D:262:SER:H | 2.12 | 0.52 |
| 1:A:15:ARG:HG2 | 1:A:15:ARG:NH1 | 2.22 | 0.52 |
| 1:A:95:LEU:C | 1:A:97:SER:H | 2.13 | 0.52 |
| 1:A:96:ARG:NH1 | 1:A:115:VAL:HA | 2.25 | 0.52 |
| 1:A:195:SER:HB2 | 1:B:140:VAL:O | 2.09 | 0.52 |
| 1:A:336:ILE:O | 1:A:337:HIS:CD2 | 2.63 | 0.52 |
| 1:B:22:THR:HB | 1:B:218:GLU:OE1 | 2.10 | 0.52 |
| 1:B:203:ILE:O | 1:B:203:ILE:HD12 | 2.10 | 0.52 |
| 1:C:108:GLU:O | 1:C:110:ASP:N | 2.43 | 0.52 |
| 1:C:46:SER:HB3 | 1:C:95:LEU:HD22 | 1.91 | 0.51 |
| 1:D:27:LEU:O | 1:D:31:PRO:HD2 | 2.11 | 0.51 |
| 1:D:99:GLY:N | 1:D:100:ARG:HH21 | 2.09 | 0.51 |
| 1:D:320:LYS:NZ | 1:D:327:ARG:NE | 2.58 | 0.51 |
| 1:B:104:ILE:HG13 | 1:B:113:VAL:HG13 | 1.92 | 0.51 |
| 1:B:176:VAL:HG13 | 1:B:178:VAL:CG2 | 2.36 | 0.51 |
| 1:C:278:PHE:CD1 | 1:C:278:PHE:O | 2.63 | 0.51 |
| 1:D:117:GLU:HG2 | 1:D:118:SER:N | 2.25 | 0.51 |
| 1:D:307:CYS:SG | 1:D:342:LEU:CG | 2.90 | 0.51 |
| 1:B:141:SER:HA | 1:B:194:SER:HB3 | 1.92 | 0.51 |
| 1:D:352:LYS:HE3 | 1:D:352:LYS:N | 2.26 | 0.51 |
| 1:A:43:VAL:HB | 1:A:100:ARG:NH1 | 2.21 | 0.51 |
| 1:A:85:VAL:HG23 | 1:A:108:GLU:HG3 | 1.92 | 0.51 |
| 1:B:234:ILE:HA | 1:B:267:SER:O | 2.10 | 0.51 |
| 1:B:236:SER:HB2 | 1:B:288:TYR:HD1 | 1.74 | 0.51 |
| 1:D:173:ARG:HG3 | 1:D:174:CYS:N | 2.24 | 0.51 |
| 1:A:40:LEU:O | 1:A:43:VAL:N | 2.43 | 0.51 |
| 1:A:111:VAL:O | 1:A:111:VAL:HG13 | 2.10 | 0.51 |
| 1:A:232:GLY:HA3 | 1:A:286:GLY:N | 2.24 | 0.51 |
| 1:B:19:GLU:HA | 1:B:220:VAL:HG11 | 1.92 | 0.51 |
| 1:D:320:LYS:NZ | 1:D:327:ARG:CZ | 2.74 | 0.51 |
| 1:A:11:LYS:CE | 1:C:12:ALA:N | 2.73 | 0.51 |
| 1:A:215:MET:SD | 1:C:215:MET:CG | 2.94 | 0.51 |
| 1:A:242:TYR:CE2 | 1:A:250:LYS:CG | 2.93 | 0.51 |
| 1:C:292:ARG:HD3 | 1:C:297:LYS:C | 2.31 | 0.51 |
| 1:A:82:LYS:O | 1:A:84:ASP:N | 2.43 | 0.51 |
| 1:B:115:VAL:O | 1:B:116:GLU:HB2 | 2.10 | 0.51 |
| 1:C:140:VAL:CG1 | 1:C:141:SER:N | 2.71 | 0.51 |
| 1:C:149:TYR:CD2 | 1:C:180:GLN:HB2 | 2.46 | 0.51 |
| 1:A:21:GLU:HG2 | 1:A:221:LEU:HD22 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:60:ARG:HH11 | 1:C:60:ARG:CG | 2.19 | 0.51 |
| 1:D:17:LYS:HB2 | 1:D:20:ILE:CD1 | 2.33 | 0.51 |
| 1:A:157:VAL:HG21 | 1:A:175:VAL:CG2 | 2.40 | 0.51 |
| 1:B:43:VAL:CG1 | 1:B:100:ARG:CZ | 2.88 | 0.51 |
| 1:B:275:VAL:O | 1:B:279:HIS:HB2 | 2.11 | 0.51 |
| 1:D:148:ILE:HG22 | 1:D:186:LEU:HD23 | 1.92 | 0.51 |
| 1:D:350:VAL:O | 1:D:354:GLU:HG3 | 2.10 | 0.51 |
| 1:B:28:LEU:C | 1:B:31:PRO:HD2 | 2.32 | 0.51 |
| 1:C:85:VAL:HG13 | 1:C:86:VAL:N | 2.24 | 0.51 |
| 1:A:208:TYR:CE1 | 1:A:224:GLU:HA | 2.47 | 0.50 |
| 1:B:39:GLU:C | 1:B:100:ARG:HD3 | 2.32 | 0.50 |
| 1:B:181:PRO:HD3 | 1:B:333:PRO:CD | 2.41 | 0.50 |
| 1:C:198:ILE:HG22 | 1:C:200:VAL:HG22 | 1.92 | 0.50 |
| 1:D:164:GLU:HG3 | 1:D:165:SER:N | 2.26 | 0.50 |
| 1:A:242:TYR:HE1 | 1:A:253:MET:HB2 | 1.76 | 0.50 |
| 1:B:227:GLN:HA | 1:B:317:ALA:O | 2.10 | 0.50 |
| 1:B:328:ILE:CG2 | 1:B:328:ILE:O | 2.59 | 0.50 |
| 1:C:257:LYS:O | 1:C:259:PRO:CD | 2.60 | 0.50 |
| 1:D:194:SER:C | 1:D:196:SER:N | 2.65 | 0.50 |
| 1:A:271:ILE:HG12 | 1:B:271:ILE:HG23 | 1.93 | 0.50 |
| 1:B:202:THR:HG21 | 1:B:316:GLN:HG3 | 1.94 | 0.50 |
| 1:B:296:SER:HB2 | 1:B:299:GLY:O | 2.12 | 0.50 |
| 1:C:305:TYR:O | 1:C:309:PRO:HD2 | 2.11 | 0.50 |
| 1:A:242:TYR:CE2 | 1:A:250:LYS:HD3 | 2.47 | 0.50 |
| 1:B:242:TYR:O | 1:B:250:LYS:HE3 | 2.12 | 0.50 |
| 1:B:249:LEU:HD23 | 1:B:253:MET:SD | 2.51 | 0.50 |
| 1:C:30:GLN:HA | 1:C:30:GLN:OE1 | 2.11 | 0.50 |
| 1:A:210:PHE:CE1 | 1:A:221:LEU:CD1 | 2.95 | 0.50 |
| 1:B:36:ILE:O | 1:B:38:ALA:N | 2.45 | 0.50 |
| 1:B:216:TYR:N | 1:B:216:TYR:CD1 | 2.80 | 0.50 |
| 1:D:106:SER:HB3 | 1:D:127:PHE:O | 2.11 | 0.50 |
| 1:A:115:VAL:HB | 1:A:119:TYR:CE1 | 2.46 | 0.50 |
| 1:A:149:TYR:C | 1:A:151:PRO:HD3 | 2.32 | 0.50 |
| 1:A:245:TRP:N | 1:A:245:TRP:CD1 | 2.79 | 0.50 |
| 1:B:91:PHE:CE2 | 1:B:104:ILE:HB | 2.47 | 0.50 |
| 1:C:100:ARG:HH21 | 1:C:101:THR:HA | 1.75 | 0.50 |
| 1:C:224:GLU:O | 1:C:225:LYS:HB2 | 2.11 | 0.50 |
| 1:C:347:VAL:O | 1:C:348:GLU:C | 2.49 | 0.50 |
| 1:D:26:TRP:CZ3 | 1:D:30:GLN:NE2 | 2.80 | 0.50 |
| 1:D:256:LEU:HD22 | 1:D:266:TYR:CE2 | 2.47 | 0.50 |
| 1:D:325:HIS:HA | 1:D:357:LEU:HD11 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:142:THR:HG22 | 1:A:143:GLY:H | 1.77 | 0.50 |
| 1:A:251:LYS:O | 1:A:251:LYS:HG2 | 2.12 | 0.50 |
| 1:A:274:LEU:HD21 | 1:A:310:MET:CE | 2.42 | 0.50 |
| 1:B:312:PHE:HE1 | 1:B:316:GLN:OE1 | 1.95 | 0.50 |
| 1:D:175:VAL:O | 1:D:177:ASN:N | 2.40 | 0.50 |
| 1:B:215:MET:SD | 1:D:215:MET:HE2 | 2.51 | 0.50 |
| 1:C:61:ALA:CB | 1:D:215:MET:SD | 2.99 | 0.50 |
| 1:C:333:PRO:O | 1:C:335:GLU:N | 2.45 | 0.50 |
| 1:D:199:PHE:O | 1:D:209:ALA:HA | 2.12 | 0.50 |
| 1:A:101:THR:OG1 | 1:A:104:ILE:CG2 | 2.60 | 0.50 |
| 1:A:202:THR:OG1 | 1:A:203:ILE:N | 2.45 | 0.50 |
| 1:D:342:LEU:HD13 | 1:D:344:ILE:HG13 | 1.93 | 0.50 |
| 1:A:284:TYR:HE2 | 1:B:138:ALA:HB2 | 1.74 | 0.49 |
| 1:C:100:ARG:O | 1:C:123:TYR:HB2 | 2.12 | 0.49 |
| 1:C:228:ILE:HG12 | 1:C:282:LEU:HD12 | 1.94 | 0.49 |
| 1:D:227:GLN:HA | 1:D:317:ALA:O | 2.12 | 0.49 |
| 1:A:103:ILE:HD12 | 1:A:114:ALA:HB3 | 1.93 | 0.49 |
| 1:A:318:GLY:O | 1:A:319:GLY:O | 2.29 | 0.49 |
| 1:A:108:GLU:CD | 1:A:109:GLU:N | 2.65 | 0.49 |
| 1:A:126:VAL:HG13 | 1:A:149:TYR:CE2 | 2.48 | 0.49 |
| 1:C:100:ARG:HH21 | 1:C:101:THR:HB | 1.77 | 0.49 |
| 1:C:244:MET:CE | 1:C:294:ALA:HB3 | 2.43 | 0.49 |
| 1:A:154:GLU:CG | 1:A:155:CYS:H | 2.21 | 0.49 |
| 1:B:179:CYS:HG | 1:B:180:GLN:HE22 | 1.58 | 0.49 |
| 1:C:30:GLN:O | 1:C:33:ALA:N | 2.44 | 0.49 |
| 1:C:166:GLN:HG2 | 1:C:168:SER:N | 2.27 | 0.49 |
| 1:D:18:TYR:CD1 | 1:D:19:GLU:N | 2.80 | 0.49 |
| 1:D:194:SER:C | 1:D:196:SER:H | 2.15 | 0.49 |
| 1:D:194:SER:OG | 1:D:195:SER:N | 2.45 | 0.49 |
| 1:D:216:TYR:CD1 | 1:D:216:TYR:N | 2.78 | 0.49 |
| 1:D:348:GLU:O | 1:D:349:GLU:C | 2.51 | 0.49 |
| 1:A:30:GLN:C | 1:A:32:MET:H | 2.14 | 0.49 |
| 1:B:44:LEU:HD11 | 1:B:201:LEU:HD13 | 1.94 | 0.49 |
| 1:B:303:LEU:HD12 | 1:B:340:VAL:HG11 | 1.93 | 0.49 |
| 1:C:143:GLY:HA2 | 1:C:191:CYS:O | 2.12 | 0.49 |
| 1:D:111:VAL:HG22 | 1:D:112:PRO:HD2 | 1.94 | 0.49 |
| 1:D:117:GLU:O | 1:D:118:SER:HB2 | 2.13 | 0.49 |
| 1:A:85:VAL:O | 1:A:85:VAL:HG22 | 2.12 | 0.49 |
| 1:A:96:ARG:O | 1:A:119:TYR:HD2 | 1.96 | 0.49 |
| 1:C:256:LEU:HD22 | 1:C:266:TYR:CE2 | 2.48 | 0.49 |
| 1:D:107:GLU:O | 1:D:109:GLU:N | 2.45 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:157:VAL:HG12 | 1:D:158:ASP:N | 2.27 | 0.49 |
| 1:A:11:LYS:CD | 1:A:11:LYS:HE3 | 2.18 | 0.49 |
| 1:B:43:VAL:HB | 1:B:100:ARG:NH1 | 2.28 | 0.49 |
| 1:C:202:THR:O | 1:C:202:THR:HG23 | 2.13 | 0.49 |
| 1:A:96:ARG:O | 1:A:119:TYR:CD2 | 2.65 | 0.49 |
| 1:A:235:TYR:HD1 | 1:A:237:PHE:HD1 | 1.61 | 0.49 |
| 1:B:215:MET:SD | 1:D:215:MET:CG | 2.87 | 0.49 |
| 1:D:37:ASP:O | 1:D:38:ALA:C | 2.50 | 0.49 |
| 1:D:135:ASN:CB | 1:D:140:VAL:HG13 | 2.41 | 0.49 |
| 1:A:32:MET:O | 1:A:33:ALA:HB2 | 2.13 | 0.49 |
| 1:B:177:ASN:C | 1:B:179:CYS:SG | 2.92 | 0.49 |
| 1:B:241:ASN:ND2 | 1:B:241:ASN:O | 2.45 | 0.49 |
| 1:C:142:THR:O | 1:C:143:GLY:O | 2.30 | 0.49 |
| 1:C:166:GLN:NE2 | 1:C:169:ALA:HB2 | 2.28 | 0.49 |
| 1:C:352:LYS:O | 1:C:355:LYS:HB2 | 2.13 | 0.49 |
| 1:A:104:ILE:HG22 | 1:A:125:VAL:O | 2.13 | 0.48 |
| 1:B:101:THR:O | 1:B:120:SER:HB3 | 2.13 | 0.48 |
| 1:B:357:LEU:HG | 1:B:358:ALA:H | 1.78 | 0.48 |
| 1:C:60:ARG:HG3 | 1:C:60:ARG:NH1 | 2.22 | 0.48 |
| 1:D:103:ILE:HG12 | 1:D:112:PRO:HB2 | 1.95 | 0.48 |
| 1:D:260:GLY:O | 1:D:262:SER:N | 2.45 | 0.48 |
| 1:A:11:LYS:CE | 1:C:11:LYS:HA | 2.37 | 0.48 |
| 1:A:193:TYR:CD1 | 1:A:197:VAL:HG13 | 2.47 | 0.48 |
| 1:A:280:ARG:NH2 | 1:B:271:ILE:O | 2.46 | 0.48 |
| 1:B:117:GLU:HG3 | 1:B:118:SER:N | 2.28 | 0.48 |
| 1:C:59:GLN:HB2 | 1:D:214:PRO:HG3 | 1.95 | 0.48 |
| 1:C:341:PRO:O | 1:C:341:PRO:HG2 | 2.12 | 0.48 |
| 1:A:180:GLN:HG3 | 1:A:181:PRO:N | 2.28 | 0.48 |
| 1:B:40:LEU:C | 1:B:100:ARG:NH1 | 2.66 | 0.48 |
| 1:C:21:GLU:OE1 | 1:C:21:GLU:HA | 2.13 | 0.48 |
| 1:D:100:ARG:HA | 1:D:121:GLY:HA2 | 1.94 | 0.48 |
| 1:D:300:LYS:HD3 | 1:D:300:LYS:C | 2.34 | 0.48 |
| 1:A:353:LEU:O | 1:A:353:LEU:HG | 2.13 | 0.48 |
| 1:C:39:GLU:HB3 | 1:C:100:ARG:CG | 2.42 | 0.48 |
| 1:C:99:GLY:O | 1:C:100:ARG:HB3 | 2.14 | 0.48 |
| 1:C:243:LYS:O | 1:C:245:TRP:N | 2.45 | 0.48 |
| 1:C:291:PRO:HA | 1:C:343:TYR:OH | 2.13 | 0.48 |
| 1:D:103:ILE:HG22 | 1:D:114:ALA:N | 2.28 | 0.48 |
| 1:D:121:GLY:O | 1:D:156:ILE:HD13 | 2.13 | 0.48 |
| 1:A:271:ILE:HD11 | 1:A:280:ARG:NE | 2.28 | 0.48 |
| 1:B:357:LEU:HG | 1:B:358:ALA:N | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:292:ARG:HG3 | 1:C:341:PRO:HG3 | 1.96 | 0.48 |
| 1:D:39:GLU:CA | 1:D:100:ARG:HD3 | 2.44 | 0.48 |
| 1:B:100:ARG:HG3 | 1:B:101:THR:HG23 | 1.94 | 0.48 |
| 1:B:266:TYR:HE2 | 1:B:349:GLU:OE1 | 1.97 | 0.48 |
| 1:C:175:VAL:HG12 | 1:C:179:CYS:SG | 2.53 | 0.48 |
| 1:C:259:PRO:HD2 | 1:D:243:LYS:HD2 | 1.96 | 0.48 |
| 1:D:22:THR:HA | 1:D:219:PHE:O | 2.14 | 0.48 |
| 1:D:299:GLY:O | 1:D:300:LYS:HB2 | 2.13 | 0.48 |
| 1:D:333:PRO:CB | 1:D:338:GLN:HB2 | 2.43 | 0.48 |
| 1:A:36:ILE:HD12 | 1:A:37:ASP:N | 2.29 | 0.48 |
| 1:D:140:VAL:CG2 | 1:D:141:SER:N | 2.77 | 0.48 |
| 1:D:300:LYS:HZ1 | 1:D:302:ARG:HH21 | 1.61 | 0.48 |
| 1:A:17:LYS:N | 1:A:17:LYS:CD | 2.76 | 0.48 |
| 1:A:125:VAL:O | 1:A:125:VAL:HG13 | 2.13 | 0.48 |
| 1:A:163:ASP:O | 1:A:164:GLU:O | 2.32 | 0.48 |
| 1:A:175:VAL:CG1 | 1:A:176:VAL:N | 2.77 | 0.48 |
| 1:A:228:ILE:HG13 | 1:A:229:PRO:HD2 | 1.96 | 0.48 |
| 1:A:243:LYS:HD3 | 1:B:259:PRO:HD2 | 1.95 | 0.48 |
| 1:A:320:LYS:HD2 | 1:A:327:ARG:NH2 | 2.28 | 0.48 |
| 1:B:197:VAL:HG12 | 1:B:197:VAL:O | 2.12 | 0.48 |
| 1:B:262:SER:O | 1:B:263:GLN:HG3 | 2.13 | 0.48 |
| 1:D:170:GLU:HG3 | 1:D:171:GLU:N | 2.28 | 0.48 |
| 1:B:23:LEU:HD12 | 1:B:219:PHE:CG | 2.49 | 0.48 |
| 1:B:39:GLU:O | 1:B:100:ARG:NH1 | 2.46 | 0.48 |
| 1:D:333:PRO:HB3 | 1:D:338:GLN:CB | 2.44 | 0.48 |
| 1:A:354:GLU:HA | 1:A:357:LEU:CD1 | 2.43 | 0.48 |
| 1:B:43:VAL:CA | 1:B:100:ARG:NH1 | 2.76 | 0.48 |
| 1:C:110:ASP:O | 1:C:111:VAL:HB | 2.14 | 0.48 |
| 1:B:210:PHE:CE1 | 1:B:221:LEU:CD1 | 2.96 | 0.47 |
| 1:B:218:GLU:HG3 | 1:C:49:LEU:HD13 | 1.96 | 0.47 |
| 1:C:37:ASP:OD1 | 1:C:39:GLU:HG3 | 2.14 | 0.47 |
| 1:C:91:PHE:CZ | 1:C:104:ILE:HG21 | 2.48 | 0.47 |
| 1:A:26:TRP:HD1 | 1:A:221:LEU:HD22 | 1.79 | 0.47 |
| 1:A:166:GLN:O | 1:A:167:LEU:HG | 2.14 | 0.47 |
| 1:A:242:TYR:CE2 | 1:A:250:LYS:HG2 | 2.49 | 0.47 |
| 1:B:108:GLU:CD | 1:B:108:GLU:H | 2.18 | 0.47 |
| 1:B:354:GLU:O | 1:B:357:LEU:HD23 | 2.13 | 0.47 |
| 1:C:104:ILE:HG23 | 1:C:125:VAL:O | 2.14 | 0.47 |
| 1:C:107:GLU:HG2 | 1:C:108:GLU:N | 2.29 | 0.47 |
| 1:D:26:TRP:CH2 | 1:D:30:GLN:NE2 | 2.81 | 0.47 |
| 1:A:57:LEU:O | 1:A:60:ARG:N | 2.47 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:101:THR:O | 1:A:102:GLY:C | 2.51 | 0.47 |
| 1:B:39:GLU:O | 1:B:100:ARG:HD3 | 2.14 | 0.47 |
| 1:B:44:LEU:HD11 | 1:B:201:LEU:HD11 | 1.95 | 0.47 |
| 1:B:212:LEU:HB2 | 1:B:219:PHE:CE1 | 2.49 | 0.47 |
| 1:C:13:ARG:O | 1:C:14:THR:C | 2.52 | 0.47 |
| 1:D:135:ASN:O | 1:D:138:ALA:N | 2.45 | 0.47 |
| 1:D:261:GLU:CG | 1:D:263:GLN:OE1 | 2.59 | 0.47 |
| 1:D:333:PRO:HB3 | 1:D:338:GLN:HB2 | 1.97 | 0.47 |
| 1:A:134:SER:O | 1:A:136:ILE:N | 2.47 | 0.47 |
| 1:A:292:ARG:HB3 | 1:A:297:LYS:HG2 | 1.95 | 0.47 |
| 1:B:177:ASN:O | 1:B:179:CYS:N | 2.47 | 0.47 |
| 1:C:208:TYR:N | 1:C:208:TYR:CD1 | 2.82 | 0.47 |
| 1:A:26:TRP:CE3 | 1:A:26:TRP:HA | 2.50 | 0.47 |
| 1:D:46:SER:HB3 | 1:D:94:CYS:O | 2.14 | 0.47 |
| 1:A:271:ILE:O | 1:B:280:ARG:NH2 | 2.48 | 0.47 |
| 1:A:312:PHE:O | 1:A:316:GLN:HG2 | 2.15 | 0.47 |
| 1:B:229:PRO:O | 1:B:346:SER:HB2 | 2.14 | 0.47 |
| 1:A:178:VAL:HG22 | 1:A:179:CYS:N | 2.29 | 0.47 |
| 1:A:241:ASN:O | 1:A:245:TRP:CD1 | 2.68 | 0.47 |
| 1:B:28:LEU:HD22 | 1:C:38:ALA:CB | 2.44 | 0.47 |
| 1:B:28:LEU:HD22 | 1:C:38:ALA:HB2 | 1.97 | 0.47 |
| 1:B:136:ILE:HG22 | 1:B:142:THR:HG1 | 1.80 | 0.47 |
| 1:B:248:LYS:HB2 | 1:B:248:LYS:HE3 | 1.52 | 0.47 |
| 1:B:314:VAL:HG22 | 1:B:314:VAL:O | 2.14 | 0.47 |
| 1:C:41:THR:HG22 | 1:C:41:THR:O | 2.14 | 0.47 |
| 1:C:191:CYS:HA | 1:C:198:ILE:O | 2.14 | 0.47 |
| 1:C:292:ARG:HH11 | 1:C:298:ASN:HA | 1.79 | 0.47 |
| 1:D:92:SER:O | 1:D:96:ARG:HG3 | 2.15 | 0.47 |
| 1:D:104:ILE:O | 1:D:104:ILE:CG1 | 2.62 | 0.47 |
| 1:A:180:GLN:NE2 | 1:A:184:ASN:HB2 | 2.30 | 0.47 |
| 1:B:101:THR:HG21 | 1:B:125:VAL:CG1 | 2.45 | 0.47 |
| 1:C:136:ILE:H | 1:C:136:ILE:HG13 | 1.46 | 0.47 |
| 1:C:145:ILE:HG12 | 1:C:310:MET:CE | 2.45 | 0.47 |
| 1:C:199:PHE:HB2 | 1:C:219:PHE:CE1 | 2.50 | 0.47 |
| 1:C:290:TYR:O | 1:C:341:PRO:HA | 2.14 | 0.47 |
| 1:D:30:GLN:CB | 1:D:31:PRO:HD3 | 2.29 | 0.47 |
| 1:D:181:PRO:HB2 | 1:D:184:ASN:ND2 | 2.26 | 0.47 |
| 1:A:279:HIS:CD2 | 1:A:283:LEU:HD23 | 2.50 | 0.47 |
| 1:C:298:ASN:HB2 | 1:C:339:ARG:CB | 2.41 | 0.47 |
| 1:D:207:VAL:HG12 | 1:D:313:ILE:HG23 | 1.97 | 0.47 |
| 1:B:107:GLU:HG3 | 1:B:302:ARG:NH2 | 2.28 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:50:ALA:O | 1:C:54:ILE:HG13 | 2.15 | 0.47 |
| 1:C:117:GLU:OE2 | 1:C:159:SER:HB3 | 2.14 | 0.47 |
| 1:C:280:ARG:HG3 | 1:C:284:TYR:CD2 | 2.50 | 0.47 |
| 1:A:16:SER:H | 1:A:17:LYS:HD3 | 1.79 | 0.46 |
| 1:A:27:LEU:HD12 | 1:A:27:LEU:O | 2.15 | 0.46 |
| 1:B:151:PRO:O | 1:B:151:PRO:HG2 | 2.15 | 0.46 |
| 1:B:178:VAL:O | 1:B:178:VAL:HG23 | 2.14 | 0.46 |
| 1:B:201:LEU:HG | 1:B:202:THR:N | 2.29 | 0.46 |
| 1:D:191:CYS:SG | 1:D:193:TYR:HE1 | 2.37 | 0.46 |
| 1:A:42:ILE:O | 1:A:46:SER:HB2 | 2.16 | 0.46 |
| 1:D:182:GLY:HA3 | 1:D:329:LEU:HD23 | 1.98 | 0.46 |
| 1:A:228:ILE:CG1 | 1:A:229:PRO:HD2 | 2.45 | 0.46 |
| 1:B:154:GLU:O | 1:B:155:CYS:CB | 2.62 | 0.46 |
| 1:B:296:SER:O | 1:B:297:LYS:C | 2.53 | 0.46 |
| 1:B:328:ILE:O | 1:B:328:ILE:HG23 | 2.15 | 0.46 |
| 1:C:93:SER:C | 1:C:95:LEU:N | 2.69 | 0.46 |
| 1:D:249:LEU:O | 1:D:252:TYR:HB3 | 2.16 | 0.46 |
| 1:A:170:GLU:CD | 1:A:170:GLU:N | 2.68 | 0.46 |
| 1:A:215:MET:CE | 1:C:215:MET:HG3 | 2.46 | 0.46 |
| 1:B:43:VAL:CB | 1:B:100:ARG:NH1 | 2.78 | 0.46 |
| 1:C:102:GLY:N | 1:C:123:TYR:O | 2.49 | 0.46 |
| 1:C:243:LYS:O | 1:C:244:MET:C | 2.53 | 0.46 |
| 1:D:107:GLU:C | 1:D:109:GLU:H | 2.18 | 0.46 |
| 1:D:170:GLU:CG | 1:D:171:GLU:H | 2.28 | 0.46 |
| 1:B:241:ASN:O | 1:B:241:ASN:CG | 2.53 | 0.46 |
| 1:C:244:MET:HE3 | 1:C:294:ALA:HB3 | 1.97 | 0.46 |
| 1:D:30:GLN:HB2 | 1:D:31:PRO:CD | 2.31 | 0.46 |
| 1:D:113:VAL:O | 1:D:113:VAL:HG13 | 2.15 | 0.46 |
| 1:C:245:TRP:CE3 | 1:C:249:LEU:HD13 | 2.51 | 0.46 |
| 1:C:323:ASP:O | 1:C:341:PRO:HG2 | 2.16 | 0.46 |
| 1:D:176:VAL:C | 1:D:178:VAL:H | 2.19 | 0.46 |
| 1:A:37:ASP:O | 1:A:39:GLU:HG3 | 2.16 | 0.46 |
| 1:A:60:ARG:HG2 | 1:B:12:ALA:CB | 2.43 | 0.46 |
| 1:A:237:PHE:HB3 | 1:A:245:TRP:CH2 | 2.42 | 0.46 |
| 1:C:151:PRO:C | 1:C:153:ASP:H | 2.17 | 0.46 |
| 1:C:304:LEU:O | 1:C:309:PRO:HD3 | 2.16 | 0.46 |
| 1:D:351:GLU:O | 1:D:354:GLU:N | 2.48 | 0.46 |
| 1:A:126:VAL:HG13 | 1:A:149:TYR:HE2 | 1.80 | 0.46 |
| 1:B:103:ILE:HG23 | 1:B:113:VAL:O | 2.16 | 0.46 |
| 1:B:168:SER:O | 1:B:169:ALA:CB | 2.64 | 0.46 |
| 1:B:154:GLU:O | 1:B:155:CYS:SG | 2.74 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:173:ARG:HH11 | 1:D:174:CYS:H | 1.62 | 0.46 |
| 1:D:173:ARG:HH12 | 1:D:174:CYS:HB3 | 1.80 | 0.46 |
| 1:A:114:ALA:O | 1:A:115:VAL:CG1 | 2.64 | 0.46 |
| 1:A:300:LYS:CA | 1:A:339:ARG:HD3 | 2.45 | 0.46 |
| 1:B:156:ILE:HG13 | 1:B:157:VAL:N | 2.31 | 0.46 |
| 1:C:44:LEU:O | 1:C:47:ILE:HB | 2.16 | 0.46 |
| 1:C:142:THR:O | 1:C:142:THR:HG22 | 2.15 | 0.46 |
| 1:C:175:VAL:HG11 | 1:C:336:ILE:CD1 | 2.27 | 0.46 |
| 1:C:284:TYR:CE2 | 1:D:138:ALA:HA | 2.51 | 0.46 |
| 1:A:242:TYR:C | 1:A:244:MET:H | 2.19 | 0.45 |
| 1:A:249:LEU:HG | 1:A:357:LEU:HD23 | 1.96 | 0.45 |
| 1:B:19:GLU:HA | 1:B:220:VAL:HG13 | 1.98 | 0.45 |
| 1:B:91:PHE:HE2 | 1:B:104:ILE:HB | 1.81 | 0.45 |
| 1:D:170:GLU:CG | 1:D:171:GLU:N | 2.79 | 0.45 |
| 1:D:247:ASP:O | 1:D:251:LYS:HG3 | 2.16 | 0.45 |
| 1:B:54:ILE:HG12 | 1:B:87:SER:HA | 1.97 | 0.45 |
| 1:C:35:VAL:HG22 | 1:C:35:VAL:O | 2.15 | 0.45 |
| 1:C:60:ARG:CG | 1:C:60:ARG:NH1 | 2.79 | 0.45 |
| 1:C:203:ILE:O | 1:C:203:ILE:HG13 | 2.16 | 0.45 |
| 1:D:100:ARG:C | 1:D:121:GLY:HA2 | 2.37 | 0.45 |
| 1:D:188:ALA:HB3 | 1:D:312:PHE:CD2 | 2.51 | 0.45 |
| 1:A:49:LEU:HA | 1:A:49:LEU:HD12 | 1.62 | 0.45 |
| 1:A:83:LEU:H | 1:A:83:LEU:CD1 | 2.29 | 0.45 |
| 1:A:203:ILE:O | 1:A:205:LYS:N | 2.48 | 0.45 |
| 1:A:252:TYR:CD1 | 1:A:353:LEU:HB2 | 2.51 | 0.45 |
| 1:C:128:ASP:HA | 1:C:129:PRO:HD2 | 1.62 | 0.45 |
| 1:C:167:LEU:HG | 1:C:167:LEU:O | 2.16 | 0.45 |
| 1:C:185:LEU:HD21 | 1:C:188:ALA:HB2 | 1.98 | 0.45 |
| 1:C:258:GLU:O | 1:C:260:GLY:N | 2.49 | 0.45 |
| 1:D:104:ILE:HB | 1:D:125:VAL:O | 2.17 | 0.45 |
| 1:D:132:GLY:O | 1:D:134:SER:N | 2.49 | 0.45 |
| 1:D:245:TRP:HB3 | 1:D:246:PRO:HD2 | 1.98 | 0.45 |
| 1:A:36:ILE:HD12 | 1:A:36:ILE:C | 2.37 | 0.45 |
| 1:A:220:VAL:HG12 | 1:A:221:LEU:N | 2.30 | 0.45 |
| 1:A:252:TYR:CG | 1:A:353:LEU:HD12 | 2.51 | 0.45 |
| 1:C:242:TYR:O | 1:C:243:LYS:C | 2.51 | 0.45 |
| 1:C:305:TYR:O | 1:C:309:PRO:CD | 2.65 | 0.45 |
| 1:D:125:VAL:HA | 1:D:147:GLY:O | 2.16 | 0.45 |
| 1:B:91:PHE:CE2 | 1:B:104:ILE:HD12 | 2.51 | 0.45 |
| 1:B:249:LEU:CD2 | 1:B:253:MET:SD | 3.04 | 0.45 |
| 1:C:136:ILE:O | 1:C:138:ALA:N | 2.50 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:166:GLN:NE2 | 1:C:166:GLN:O | 2.50 | 0.45 |
| 1:C:207:VAL:HG12 | 1:C:208:TYR:N | 2.32 | 0.45 |
| 1:C:103:ILE:HD13 | 1:C:113:VAL:O | 2.16 | 0.45 |
| 1:A:96:ARG:CZ | 1:A:114:ALA:O | 2.65 | 0.45 |
| 1:B:194:SER:C | 1:B:196:SER:H | 2.20 | 0.45 |
| 1:B:303:LEU:HD21 | 1:B:331:ILE:O | 2.17 | 0.45 |
| 1:C:93:SER:O | 1:C:95:LEU:O | 2.35 | 0.45 |
| 1:A:14:THR:O | 1:A:16:SER:N | 2.50 | 0.45 |
| 1:A:17:LYS:HB2 | 1:A:17:LYS:NZ | 2.31 | 0.45 |
| 1:A:53:GLN:HG2 | 1:D:216:TYR:CD2 | 2.51 | 0.45 |
| 1:A:194:SER:C | 1:A:196:SER:H | 2.20 | 0.45 |
| 1:B:134:SER:C | 1:B:136:ILE:H | 2.20 | 0.45 |
| 1:B:176:VAL:C | 1:B:178:VAL:N | 2.69 | 0.45 |
| 1:B:201:LEU:HG | 1:B:202:THR:H | 1.82 | 0.45 |
| 1:C:151:PRO:C | 1:C:153:ASP:N | 2.70 | 0.45 |
| 1:C:190:TYR:CD1 | 1:C:275:VAL:HG13 | 2.52 | 0.45 |
| 1:C:229:PRO:HD2 | 1:C:285:GLY:N | 2.32 | 0.45 |
| 1:A:239:GLU:O | 1:A:242:TYR:HB2 | 2.17 | 0.45 |
| 1:A:271:ILE:HD11 | 1:A:280:ARG:CZ | 2.47 | 0.45 |
| 1:B:26:TRP:CE3 | 1:B:29:LYS:HB3 | 2.52 | 0.45 |
| 1:B:252:TYR:CD2 | 1:B:353:LEU:HD12 | 2.52 | 0.45 |
| 1:B:319:GLY:CA | 1:B:347:VAL:HG23 | 2.35 | 0.45 |
| 1:C:336:ILE:HG22 | 1:C:337:HIS:ND1 | 2.32 | 0.45 |
| 1:B:293:ASP:O | 1:B:294:ALA:C | 2.55 | 0.45 |
| 1:C:135:ASN:HD21 | 1:C:273:SER:HB3 | 1.79 | 0.45 |
| 1:C:327:ARG:O | 1:C:331:ILE:HG13 | 2.16 | 0.45 |
| 1:D:282:LEU:CD1 | 1:D:317:ALA:HB1 | 2.47 | 0.45 |
| 1:A:96:ARG:CD | 1:A:115:VAL:HG12 | 2.47 | 0.44 |
| 1:A:101:THR:HG1 | 1:A:104:ILE:HG12 | 1.83 | 0.44 |
| 1:A:192:MET:HB2 | 1:A:275:VAL:CG1 | 2.47 | 0.44 |
| 1:A:290:TYR:CD2 | 1:A:300:LYS:HG2 | 2.48 | 0.44 |
| 1:B:250:LYS:HA | 1:B:253:MET:HG2 | 1.99 | 0.44 |
| 1:C:176:VAL:HG13 | 1:C:177:ASN:N | 2.32 | 0.44 |
| 1:C:270:TYR:HE2 | 1:D:269:ARG:HH11 | 1.62 | 0.44 |
| 1:C:18:TYR:O | 1:C:19:GLU:CB | 2.65 | 0.44 |
| 1:C:100:ARG:HH21 | 1:C:101:THR:CB | 2.30 | 0.44 |
| 1:C:171:GLU:OE1 | 1:C:171:GLU:HA | 2.17 | 0.44 |
| 1:C:292:ARG:CG | 1:C:341:PRO:HG3 | 2.47 | 0.44 |
| 1:D:202:THR:HG23 | 1:D:203:ILE:H | 1.82 | 0.44 |
| 1:A:17:LYS:HD3 | 1:A:17:LYS:H | 1.82 | 0.44 |
| 1:A:252:TYR:CD1 | 1:A:353:LEU:HD12 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:307:CYS:O | 1:A:311:SER:OG | 2.24 | 0.44 |
| 1:B:336:ILE:HG13 | 1:B:337:HIS:H | 1.83 | 0.44 |
| 1:C:163:ASP:O | 1:C:165:SER:N | 2.50 | 0.44 |
| 1:C:332:GLN:HA | 1:C:333:PRO:HD2 | 1.80 | 0.44 |
| 1:D:98:SER:HA | 1:D:100:ARG:HH21 | 1.82 | 0.44 |
| 1:D:351:GLU:HA | 1:D:354:GLU:HB2 | 1.99 | 0.44 |
| 1:B:59:GLN:O | 1:B:60:ARG:HB2 | 2.18 | 0.44 |
| 1:B:165:SER:O | 1:B:166:GLN:HB2 | 2.18 | 0.44 |
| 1:B:207:VAL:HG23 | 1:B:226:ILE:HB | 1.99 | 0.44 |
| 1:D:99:GLY:HA3 | 1:D:119:TYR:HA | 1.99 | 0.44 |
| 1:A:30:GLN:C | 1:A:32:MET:N | 2.71 | 0.44 |
| 1:C:258:GLU:HG3 | 1:D:243:LYS:NZ | 2.33 | 0.44 |
| 1:D:42:ILE:HG13 | 1:D:43:VAL:N | 2.32 | 0.44 |
| 1:D:304:LEU:HA | 1:D:308:ALA:HB3 | 1.99 | 0.44 |
| 1:D:306:GLU:O | 1:D:310:MET:HG2 | 2.17 | 0.44 |
| 1:A:150:SER:O | 1:A:152:ASN:N | 2.50 | 0.44 |
| 1:D:149:TYR:HE1 | 1:D:185:LEU:HG | 1.83 | 0.44 |
| 1:A:18:TYR:N | 1:A:18:TYR:CD1 | 2.86 | 0.44 |
| 1:A:251:LYS:O | 1:A:356:TYR:CE2 | 2.68 | 0.44 |
| 1:B:242:TYR:C | 1:B:244:MET:H | 2.20 | 0.44 |
| 1:D:14:THR:HA | 1:D:17:LYS:HZ1 | 1.83 | 0.44 |
| 1:D:304:LEU:HA | 1:D:308:ALA:CB | 2.48 | 0.44 |
| 1:A:21:GLU:HG2 | 1:A:26:TRP:CD1 | 2.52 | 0.44 |
| 1:A:136:ILE:HA | 1:A:139:ALA:HB2 | 2.00 | 0.44 |
| 1:B:13:ARG:O | 1:B:14:THR:C | 2.55 | 0.44 |
| 1:C:20:ILE:HG22 | 1:C:220:VAL:HG13 | 1.98 | 0.44 |
| 1:C:253:MET:HA | 1:C:253:MET:CE | 2.48 | 0.44 |
| 1:C:302:ARG:NH2 | 1:C:339:ARG:NH2 | 2.66 | 0.44 |
| 1:D:101:THR:N | 1:D:121:GLY:HA3 | 2.33 | 0.44 |
| 1:D:173:ARG:NH1 | 1:D:174:CYS:HB3 | 2.32 | 0.44 |
| 1:A:166:GLN:OE1 | 1:A:167:LEU:N | 2.51 | 0.44 |
| 1:A:167:LEU:CD2 | 1:A:171:GLU:HA | 2.48 | 0.44 |
| 1:C:103:ILE:CG2 | 1:C:104:ILE:N | 2.80 | 0.44 |
| 1:C:190:TYR:OH | 1:C:279:HIS:HD2 | 2.01 | 0.44 |
| 1:D:174:CYS:SG | 1:D:175:VAL:N | 2.90 | 0.44 |
| 1:A:40:LEU:HA | 1:A:100:ARG:HD3 | 1.95 | 0.43 |
| 1:A:175:VAL:HG12 | 1:A:176:VAL:N | 2.33 | 0.43 |
| 1:C:152:ASN:OD1 | 1:C:152:ASN:N | 2.51 | 0.43 |
| 1:D:109:GLU:OE2 | 1:D:112:PRO:HA | 2.18 | 0.43 |
| 1:D:211:THR:O | 1:D:212:LEU:C | 2.56 | 0.43 |
| 1:D:304:LEU:H | 1:D:304:LEU:CD1 | 2.29 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:309:PRO:O | 1:D:310:MET:C | 2.57 | 0.43 |
| 1:B:95:LEU:HD22 | 1:B:104:ILE:HG21 | 1.99 | 0.43 |
| 1:C:351:GLU:O | 1:C:354:GLU:HB3 | 2.18 | 0.43 |
| 1:D:202:THR:CA | 1:D:206:GLY:O | 2.63 | 0.43 |
| 1:A:52:LYS:HE3 | 1:D:216:TYR:O | 2.18 | 0.43 |
| 1:C:323:ASP:HB3 | 1:C:328:ILE:HG12 | 2.00 | 0.43 |
| 1:C:351:GLU:CA | 1:C:354:GLU:HB3 | 2.49 | 0.43 |
| 1:D:14:THR:CA | 1:D:17:LYS:HZ3 | 2.31 | 0.43 |
| 1:D:45:SER:C | 1:D:47:ILE:H | 2.21 | 0.43 |
| 1:D:278:PHE:CD2 | 1:D:310:MET:SD | 3.11 | 0.43 |
| 1:D:281:THR:O | 1:D:282:LEU:C | 2.57 | 0.43 |
| 1:A:244:MET:SD | 1:A:294:ALA:HB2 | 2.58 | 0.43 |
| 1:A:318:GLY:O | 1:A:320:LYS:HE3 | 2.18 | 0.43 |
| 1:B:40:LEU:HA | 1:B:100:ARG:NH1 | 2.32 | 0.43 |
| 1:C:228:ILE:HG22 | 1:C:229:PRO:HD2 | 2.00 | 0.43 |
| 1:D:307:CYS:HB3 | 1:D:342:LEU:HD23 | 2.01 | 0.43 |
| 1:A:54:ILE:O | 1:A:55:ALA:C | 2.54 | 0.43 |
| 1:B:104:ILE:CG1 | 1:B:113:VAL:HG13 | 2.49 | 0.43 |
| 1:C:86:VAL:O | 1:C:89:GLU:N | 2.48 | 0.43 |
| 1:C:136:ILE:HG23 | 1:C:142:THR:OG1 | 2.18 | 0.43 |
| 1:D:31:PRO:HB3 | 1:D:36:ILE:HG13 | 2.01 | 0.43 |
| 1:D:43:VAL:O | 1:D:43:VAL:CG2 | 2.65 | 0.43 |
| 1:D:214:PRO:HG2 | 1:D:215:MET:SD | 2.58 | 0.43 |
| 1:D:291:PRO:HB3 | 1:D:343:TYR:OH | 2.18 | 0.43 |
| 1:A:199:PHE:N | 1:A:210:PHE:O | 2.47 | 0.43 |
| 1:B:157:VAL:HB | 1:B:158:ASP:H | 1.64 | 0.43 |
| 1:B:312:PHE:CE1 | 1:B:316:GLN:OE1 | 2.71 | 0.43 |
| 1:B:322:SER:HA | 1:B:328:ILE:H | 1.84 | 0.43 |
| 1:C:184:ASN:O | 1:C:185:LEU:C | 2.56 | 0.43 |
| 1:A:242:TYR:OH | 1:A:250:LYS:HG2 | 2.18 | 0.43 |
| 1:C:83:LEU:H | 1:C:83:LEU:CD1 | 2.29 | 0.43 |
| 1:A:28:LEU:HD13 | 1:A:28:LEU:HA | 1.81 | 0.43 |
| 1:A:135:ASN:O | 1:A:139:ALA:HB2 | 2.19 | 0.43 |
| 1:A:253:MET:H | 1:A:253:MET:HG2 | 1.69 | 0.43 |
| 1:B:258:GLU:O | 1:B:259:PRO:O | 2.36 | 0.43 |
| 1:C:195:SER:O | 1:C:196:SER:HB3 | 2.19 | 0.43 |
| 1:A:46:SER:O | 1:A:49:LEU:N | 2.51 | 0.43 |
| 1:A:292:ARG:CZ | 1:A:341:PRO:HG3 | 2.48 | 0.43 |
| 1:B:93:SER:OG | 1:C:18:TYR:HA | 2.19 | 0.43 |
| 1:C:104:ILE:CG2 | 1:C:105:ALA:N | 2.79 | 0.43 |
| 1:C:211:THR:O | 1:C:219:PHE:HA | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:212:LEU:HD12 | 1:D:213:ASP:N | 2.33 | 0.43 |
| 1:D:279:HIS:O | 1:D:283:LEU:HD23 | 2.19 | 0.43 |
| 1:D:320:LYS:HB2 | 1:D:320:LYS:HE2 | 1.84 | 0.43 |
| 1:B:192:MET:SD | 1:B:279:HIS:ND1 | 2.91 | 0.43 |
| 1:C:51:CYS:O | 1:C:55:ALA:N | 2.48 | 0.43 |
| 1:A:305:TYR:CD1 | 1:A:305:TYR:N | 2.87 | 0.42 |
| 1:B:34:GLY:O | 1:B:36:ILE:N | 2.52 | 0.42 |
| 1:B:263:GLN:N | 1:B:263:GLN:OE1 | 2.52 | 0.42 |
| 1:C:38:ALA:O | 1:C:42:ILE:HG13 | 2.19 | 0.42 |
| 1:C:190:TYR:OH | 1:C:279:HIS:CD2 | 2.72 | 0.42 |
| 1:C:293:ASP:OD1 | 1:C:295:LYS:HG2 | 2.19 | 0.42 |
| 1:D:352:LYS:HD3 | 1:D:352:LYS:HA | 1.84 | 0.42 |
| 1:A:115:VAL:HG23 | 1:A:115:VAL:O | 2.19 | 0.42 |
| 1:A:172:GLN:CA | 1:A:172:GLN:NE2 | 2.82 | 0.42 |
| 1:A:279:HIS:CD2 | 1:A:283:LEU:CD2 | 3.03 | 0.42 |
| 1:B:228:ILE:HG21 | 1:B:228:ILE:HD13 | 1.73 | 0.42 |
| 1:C:308:ALA:HB3 | 1:C:309:PRO:HD3 | 2.00 | 0.42 |
| 1:D:259:PRO:O | 1:D:260:GLY:O | 2.37 | 0.42 |
| 1:A:173:ARG:HD3 | 1:A:174:CYS:N | 2.28 | 0.42 |
| 1:B:130:LEU:HA | 1:B:143:GLY:O | 2.19 | 0.42 |
| 1:B:295:LYS:NZ | 1:B:295:LYS:CB | 2.77 | 0.42 |
| 1:C:234:ILE:HG22 | 1:C:285:GLY:O | 2.20 | 0.42 |
| 1:C:315:GLU:OE1 | 1:C:329:LEU:HD22 | 2.19 | 0.42 |
| 1:D:131:ASP:O | 1:D:133:SER:N | 2.52 | 0.42 |
| 1:D:159:SER:OG | 1:D:176:VAL:CG1 | 2.67 | 0.42 |
| 1:A:248:LYS:O | 1:A:251:LYS:HB3 | 2.19 | 0.42 |
| 1:A:281:THR:O | 1:A:285:GLY:N | 2.52 | 0.42 |
| 1:C:138:ALA:HB3 | 1:C:140:VAL:HG23 | 2.00 | 0.42 |
| 1:A:190:TYR:CE2 | 1:A:275:VAL:HG13 | 2.54 | 0.42 |
| 1:B:228:ILE:N | 1:B:317:ALA:O | 2.51 | 0.42 |
| 1:C:160:ASP:O | 1:C:161:HIS:HB3 | 2.20 | 0.42 |
| 1:D:45:SER:O | 1:D:47:ILE:N | 2.53 | 0.42 |
| 1:A:27:LEU:O | 1:A:31:PRO:CD | 2.68 | 0.42 |
| 1:A:148:ILE:O | 1:A:186:LEU:O | 2.37 | 0.42 |
| 1:A:227:GLN:HG3 | 1:A:317:ALA:O | 2.20 | 0.42 |
| 1:A:327:ARG:HG3 | 1:A:327:ARG:NH1 | 2.34 | 0.42 |
| 1:B:43:VAL:CB | 1:B:100:ARG:CZ | 2.97 | 0.42 |
| 1:B:43:VAL:CG1 | 1:B:100:ARG:NH2 | 2.70 | 0.42 |
| 1:B:202:THR:OG1 | 1:B:207:VAL:HA | 2.19 | 0.42 |
| 1:A:284:TYR:HE2 | 1:B:138:ALA:CB | 2.32 | 0.42 |
| 1:B:180:GLN:N | 1:B:180:GLN:CD | 2.73 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:280:ARG:CG | 1:B:280:ARG:NH1 | 2.73 | 0.42 |
| 1:C:28:LEU:O | 1:C:31:PRO:HD2 | 2.20 | 0.42 |
| 1:C:98:SER:O | 1:C:101:THR:HG22 | 2.19 | 0.42 |
| 1:C:151:PRO:HB2 | 1:C:154:GLU:HB2 | 2.02 | 0.42 |
| 1:D:149:TYR:HE2 | 1:D:304:LEU:HD23 | 1.84 | 0.42 |
| 1:A:242:TYR:HA | 1:A:245:TRP:CD1 | 2.54 | 0.42 |
| 1:A:303:LEU:HB2 | 1:A:340:VAL:CG1 | 2.50 | 0.42 |
| 1:B:211:THR:OG1 | 1:B:222:THR:HG21 | 2.20 | 0.42 |
| 1:B:343:TYR:CE2 | 1:B:353:LEU:HD11 | 2.55 | 0.42 |
| 1:C:192:MET:O | 1:C:192:MET:HG2 | 2.19 | 0.42 |
| 1:C:244:MET:HE3 | 1:C:244:MET:HB3 | 1.95 | 0.42 |
| 1:C:303:LEU:HD13 | 1:C:340:VAL:HG21 | 2.01 | 0.42 |
| 1:D:228:ILE:HG22 | 1:D:285:GLY:HA2 | 2.01 | 0.42 |
| 1:D:348:GLU:O | 1:D:351:GLU:N | 2.52 | 0.42 |
| 1:A:20:ILE:O | 1:A:20:ILE:CG2 | 2.59 | 0.42 |
| 1:A:123:TYR:CD1 | 1:A:123:TYR:N | 2.88 | 0.42 |
| 1:A:142:THR:CG2 | 1:A:143:GLY:N | 2.83 | 0.42 |
| 1:A:178:VAL:HG22 | 1:A:179:CYS:H | 1.85 | 0.42 |
| 1:B:111:VAL:O | 1:B:112:PRO:C | 2.57 | 0.42 |
| 1:B:252:TYR:O | 1:B:253:MET:C | 2.58 | 0.42 |
| 1:B:262:SER:C | 1:B:263:GLN:HG3 | 2.40 | 0.42 |
| 1:B:351:GLU:O | 1:B:354:GLU:HG2 | 2.20 | 0.42 |
| 1:C:100:ARG:HH21 | 1:C:101:THR:CA | 2.33 | 0.42 |
| 1:C:199:PHE:HD1 | 1:C:210:PHE:CE1 | 2.37 | 0.42 |
| 1:C:263:GLN:HG2 | 1:C:264:LYS:N | 2.35 | 0.42 |
| 1:C:294:ALA:C | 1:C:296:SER:H | 2.22 | 0.42 |
| 1:C:296:SER:O | 1:C:298:ASN:ND2 | 2.53 | 0.42 |
| 1:A:32:MET:O | 1:A:33:ALA:CB | 2.68 | 0.41 |
| 1:A:149:TYR:O | 1:A:151:PRO:HD3 | 2.20 | 0.41 |
| 1:A:210:PHE:HE1 | 1:A:221:LEU:CD1 | 2.31 | 0.41 |
| 1:C:117:GLU:O | 1:C:119:TYR:N | 2.53 | 0.41 |
| 1:D:85:VAL:O | 1:D:86:VAL:C | 2.58 | 0.41 |
| 1:D:256:LEU:HD22 | 1:D:266:TYR:CZ | 2.55 | 0.41 |
| 1:D:298:ASN:HB3 | 1:D:339:ARG:CB | 2.34 | 0.41 |
| 1:A:100:ARG:HH21 | 1:A:148:ILE:HG21 | 1.83 | 0.41 |
| 1:A:304:LEU:CG | 1:A:333:PRO:HG2 | 2.40 | 0.41 |
| 1:B:93:SER:C | 1:B:95:LEU:H | 2.23 | 0.41 |
| 1:B:196:SER:OG | 1:B:198:ILE:HG13 | 2.20 | 0.41 |
| 1:C:95:LEU:O | 1:C:96:ARG:HB3 | 2.20 | 0.41 |
| 1:C:253:MET:HA | 1:C:253:MET:HE3 | 2.02 | 0.41 |
| 1:D:315:GLU:OE1 | 1:D:315:GLU:HA | 2.19 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:135:ASN:HD21 | 1:A:273:SER:HB3 | 1.85 | 0.41 |
| 1:A:208:TYR:HD1 | 1:A:224:GLU:HA | 1.84 | 0.41 |
| 1:B:179:CYS:O | 1:B:333:PRO:HD2 | 2.20 | 0.41 |
| 1:B:181:PRO:HD3 | 1:B:333:PRO:HD3 | 2.02 | 0.41 |
| 1:C:58:VAL:C | 1:C:60:ARG:H | 2.24 | 0.41 |
| 1:C:323:ASP:HB2 | 1:C:340:VAL:CG1 | 2.50 | 0.41 |
| 1:D:47:ILE:HD13 | 1:D:47:ILE:HA | 1.67 | 0.41 |
| 1:D:355:LYS:C | 1:D:356:TYR:HD1 | 2.23 | 0.41 |
| 1:A:126:VAL:HG11 | 1:A:149:TYR:HE2 | 1.85 | 0.41 |
| 1:C:328:ILE:C | 1:C:330:ASP:H | 2.24 | 0.41 |
| 1:D:299:GLY:O | 1:D:300:LYS:CB | 2.68 | 0.41 |
| 1:A:17:LYS:HB2 | 1:A:17:LYS:HZ2 | 1.86 | 0.41 |
| 1:A:52:LYS:NZ | 1:D:218:GLU:HG2 | 2.36 | 0.41 |
| 1:B:103:ILE:HG22 | 1:B:104:ILE:N | 2.35 | 0.41 |
| 1:B:351:GLU:C | 1:B:354:GLU:H | 2.24 | 0.41 |
| 1:C:228:ILE:HG22 | 1:C:229:PRO:CD | 2.50 | 0.41 |
| 1:B:40:LEU:HD12 | 1:B:100:ARG:CZ | 2.46 | 0.41 |
| 1:B:105:ALA:HB3 | 1:B:126:VAL:HG12 | 2.02 | 0.41 |
| 1:B:207:VAL:HG23 | 1:B:207:VAL:O | 2.20 | 0.41 |
| 1:C:57:LEU:HD12 | 1:C:57:LEU:C | 2.40 | 0.41 |
| 1:C:103:ILE:HG23 | 1:C:113:VAL:O | 2.21 | 0.41 |
| 1:C:124:ILE:HD12 | 1:C:151:PRO:HG3 | 2.02 | 0.41 |
| 1:D:84:ASP:O | 1:D:87:SER:N | 2.53 | 0.41 |
| 1:D:101:THR:C | 1:D:121:GLY:HA3 | 2.40 | 0.41 |
| 1:D:194:SER:O | 1:D:196:SER:N | 2.53 | 0.41 |
| 1:D:215:MET:HE3 | 1:D:215:MET:CA | 2.49 | 0.41 |
| 1:A:177:ASN:ND2 | 1:A:178:VAL:H | 2.19 | 0.41 |
| 1:C:191:CYS:HG | 1:C:193:TYR:HE1 | 1.38 | 0.41 |
| 1:C:338:GLN:HE21 | 1:C:340:VAL:CG2 | 2.33 | 0.41 |
| 1:D:34:GLY:O | 1:D:36:ILE:N | 2.54 | 0.41 |
| 1:D:202:THR:HB | 1:D:207:VAL:HG12 | 2.02 | 0.41 |
| 1:D:263:GLN:O | 1:D:265:PRO:CD | 2.69 | 0.41 |
| 1:D:281:THR:HG22 | 1:D:282:LEU:N | 2.35 | 0.41 |
| 1:A:43:VAL:O | 1:A:44:LEU:C | 2.58 | 0.41 |
| 1:A:108:GLU:OE2 | 1:A:109:GLU:HB3 | 2.20 | 0.41 |
| 1:A:320:LYS:HD3 | 1:A:320:LYS:HA | 1.77 | 0.41 |
| 1:B:39:GLU:HB2 | 1:B:100:ARG:HB2 | 2.01 | 0.41 |
| 1:B:42:ILE:HG13 | 1:B:43:VAL:N | 2.35 | 0.41 |
| 1:B:127:PHE:O | 1:B:129:PRO:HD3 | 2.21 | 0.41 |
| 1:B:331:ILE:O | 1:B:332:GLN:C | 2.59 | 0.41 |
| 1:C:177:ASN:O | 1:C:180:GLN:HG2 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:19:GLU:O | 1:A:21:GLU:N | 2.54 | 0.41 |
| 1:A:21:GLU:CG | 1:A:26:TRP:CD1 | 3.04 | 0.41 |
| 1:A:98:SER:O | 1:A:101:THR:HG22 | 2.20 | 0.41 |
| 1:B:31:PRO:HG2 | 1:B:32:MET:H | 1.85 | 0.41 |
| 1:B:40:LEU:CA | 1:B:100:ARG:NH1 | 2.84 | 0.41 |
| 1:B:95:LEU:C | 1:B:97:SER:N | 2.73 | 0.41 |
| 1:C:20:ILE:CG2 | 1:C:220:VAL:HG13 | 2.51 | 0.41 |
| 1:C:99:GLY:O | 1:C:100:ARG:CB | 2.69 | 0.41 |
| 1:C:149:TYR:HE1 | 1:C:185:LEU:CD1 | 2.11 | 0.41 |
| 1:D:213:ASP:HA | 1:D:214:PRO:HD2 | 1.89 | 0.41 |
| 1:A:132:GLY:O | 1:A:135:ASN:HB3 | 2.20 | 0.41 |
| 1:A:157:VAL:HG13 | 1:A:158:ASP:N | 2.36 | 0.41 |
| 1:B:202:THR:HG23 | 1:B:204:GLY:H | 1.86 | 0.41 |
| 1:C:352:LYS:NZ | 1:C:352:LYS:HB2 | 2.35 | 0.41 |
| 1:C:356:TYR:CD1 | 1:C:356:TYR:N | 2.88 | 0.41 |
| 1:D:135:ASN:OD1 | 1:D:136:ILE:N | 2.54 | 0.41 |
| 1:D:154:GLU:O | 1:D:155:CYS:HB2 | 2.21 | 0.41 |
| 1:D:229:PRO:O | 1:D:230:LYS:HB3 | 2.21 | 0.41 |
| 1:D:314:VAL:HG21 | 1:D:344:ILE:HG22 | 2.03 | 0.41 |
| 1:D:323:ASP:OD1 | 1:D:326:GLN:O | 2.38 | 0.41 |
| 1:A:95:LEU:C | 1:A:97:SER:N | 2.74 | 0.40 |
| 1:A:321:GLY:O | 1:A:328:ILE:HG13 | 2.21 | 0.40 |
| 1:C:104:ILE:O | 1:C:113:VAL:HB | 2.20 | 0.40 |
| 1:C:314:VAL:O | 1:C:315:GLU:C | 2.60 | 0.40 |
| 1:D:278:PHE:CZ | 1:D:314:VAL:HB | 2.56 | 0.40 |
| 1:D:283:LEU:N | 1:D:283:LEU:CD2 | 2.84 | 0.40 |
| 1:A:151:PRO:HB2 | 1:A:154:GLU:OE1 | 2.21 | 0.40 |
| 1:A:239:GLU:O | 1:A:242:TYR:N | 2.54 | 0.40 |
| 1:B:41:THR:HG22 | 1:B:41:THR:O | 2.21 | 0.40 |
| 1:B:42:ILE:CG1 | 1:B:100:ARG:HB3 | 2.51 | 0.40 |
| 1:B:115:VAL:O | 1:B:115:VAL:CG2 | 2.67 | 0.40 |
| 1:B:214:PRO:O | 1:B:215:MET:C | 2.59 | 0.40 |
| 1:B:249:LEU:O | 1:B:252:TYR:HB3 | 2.21 | 0.40 |
| 1:C:174:CYS:O | 1:C:174:CYS:SG | 2.79 | 0.40 |
| 1:C:228:ILE:HG12 | 1:C:282:LEU:O | 2.21 | 0.40 |
| 1:D:325:HIS:CB | 1:D:357:LEU:HD11 | 2.51 | 0.40 |
| 1:A:142:THR:O | 1:A:193:TYR:N | 2.54 | 0.40 |
| 1:B:28:LEU:HD23 | 1:B:28:LEU:HA | 1.89 | 0.40 |
| 1:B:235:TYR:CZ | 1:B:268:SER:HB2 | 2.57 | 0.40 |
| 1:B:353:LEU:HG | 1:B:353:LEU:O | 2.21 | 0.40 |
| 1:D:38:ALA:O | 1:D:39:GLU:C | 2.59 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:D:177:ASN:C | 1:D:179:CYS:N | 2.73 | 0.40 |
| 1:D:324:GLY:O | 1:D:354:GLU:HG2 | 2.21 | 0.40 |
| 1:A:52:LYS:HD2 | 1:A:217:GLY:O | 2.20 | 0.40 |
| 1:A:95:LEU:CD2 | 1:A:101:THR:HG21 | 2.51 | 0.40 |
| 1:B:216:TYR:O | 1:B:218:GLU:N | 2.54 | 0.40 |
| 1:D:236:SER:HB3 | 1:D:269:ARG:O | 2.21 | 0.40 |
| 1:A:357:LEU:H | 1:A:357:LEU:HD12 | 1.85 | 0.40 |
| 1:C:167:LEU:H | 1:C:167:LEU:HD23 | 1.87 | 0.40 |
| 1:D:54:ILE:O | 1:D:55:ALA:C | 2.60 | 0.40 |
| 1:D:320:LYS:HZ2 | 1:D:327:ARG:CD | 2.35 | 0.40 |
| 1:D:352:LYS:HE3 | 1:D:352:LYS:H | 1.86 | 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 | 329/358 (92%) | 211 (64%) | 77 (23%) | 41 (12%) | 0 | 1 |
| 1 | B | 324/358 (90%) | 210 (65%) | 73 (22%) | 41 (13%) | 0 | 1 |
| 1 | C | 324/358 (90%) | 195 (60%) | 73 (22%) | 56 (17%) | 0 | 0 |
| 1 | D | 324/358 (90%) | 199 (61%) | 83 (26%) | 42 (13%) | 0 | 1 |
| All | All | 1301/1432 (91%) | 815 (63%) | 306 (24%) | 180 (14%) | 0 | 0 |

All (180) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 20 | ILE |
| 1 | A | 31 | PRO |
| 1 | A | 33 | ALA |
| 1 | A | 38 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 83 | LEU |
| 1 | A | 129 | PRO |
| 1 | A | 155 | CYS |
| 1 | A | 170 | GLU |
| 1 | A | 177 | ASN |
| 1 | A | 181 | PRO |
| 1 | A | 187 | ALA |
| 1 | A | 291 | PRO |
| 1 | B | 22 | THR |
| 1 | B | 97 | SER |
| 1 | B | 157 | VAL |
| 1 | B | 163 | ASP |
| 1 | B | 169 | ALA |
| 1 | B | 177 | ASN |
| 1 | B | 217 | GLY |
| 1 | B | 259 | PRO |
| 1 | B | 305 | TYR |
| 1 | B | 336 | ILE |
| 1 | C | 19 | GLU |
| 1 | C | 35 | VAL |
| 1 | C | 100 | ARG |
| 1 | C | 103 | ILE |
| 1 | C | 107 | GLU |
| 1 | C | 112 | PRO |
| 1 | C | 129 | PRO |
| 1 | C | 139 | ALA |
| 1 | C | 143 | GLY |
| 1 | C | 164 | GLU |
| 1 | C | 175 | VAL |
| 1 | C | 260 | GLY |
| 1 | C | 262 | SER |
| 1 | C | 296 | SER |
| 1 | C | 297 | LYS |
| 1 | C | 305 | TYR |
| 1 | C | 329 | LEU |
| 1 | C | 334 | THR |
| 1 | C | 338 | GLN |
| 1 | C | 347 | VAL |
| 1 | D | 39 | GLU |
| 1 | D | 108 | GLU |
| 1 | D | 131 | ASP |
| 1 | D | 132 | GLY |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 133 | SER |
| 1 | D | 151 | PRO |
| 1 | D | 166 | GLN |
| 1 | D | 176 | VAL |
| 1 | D | 203 | ILE |
| 1 | D | 205 | LYS |
| 1 | D | 300 | LYS |
| 1 | A | 15 | ARG |
| 1 | A | 135 | ASN |
| 1 | A | 139 | ALA |
| 1 | A | 140 | VAL |
| 1 | A | 157 | VAL |
| 1 | A | 215 | MET |
| 1 | A | 295 | LYS |
| 1 | A | 300 | LYS |
| 1 | A | 319 | GLY |
| 1 | B | 16 | SER |
| 1 | B | 35 | VAL |
| 1 | B | 38 | ALA |
| 1 | B | 121 | GLY |
| 1 | B | 156 | ILE |
| 1 | B | 161 | HIS |
| 1 | B | 176 | VAL |
| 1 | B | 215 | MET |
| 1 | B | 260 | GLY |
| 1 | B | 328 | ILE |
| 1 | C | 14 | THR |
| 1 | C | 17 | LYS |
| 1 | C | 120 | SER |
| 1 | C | 136 | ILE |
| 1 | C | 137 | ASP |
| 1 | C | 138 | ALA |
| 1 | C | 156 | ILE |
| 1 | C | 161 | HIS |
| 1 | C | 174 | CYS |
| 1 | C | 176 | VAL |
| 1 | C | 179 | CYS |
| 1 | C | 185 | LEU |
| 1 | C | 232 | GLY |
| 1 | C | 259 | PRO |
| 1 | C | 350 | VAL |
| 1 | D | 35 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 38 | ALA |
| 1 | D | 94 | CYS |
| 1 | D | 116 | GLU |
| 1 | D | 123 | TYR |
| 1 | D | 129 | PRO |
| 1 | D | 134 | SER |
| 1 | D | 155 | CYS |
| 1 | D | 163 | ASP |
| 1 | D | 225 | LYS |
| 1 | D | 244 | MET |
| 1 | D | 260 | GLY |
| 1 | D | 261 | GLU |
| 1 | D | 282 | LEU |
| 1 | D | 330 | ASP |
| 1 | D | 349 | GLU |
| 1 | A | 11 | LYS |
| 1 | A | 114 | ALA |
| 1 | A | 118 | SER |
| 1 | A | 164 | GLU |
| 1 | A | 178 | VAL |
| 1 | A | 216 | TYR |
| 1 | A | 253 | MET |
| 1 | B | 19 | GLU |
| 1 | B | 112 | PRO |
| 1 | B | 116 | GLU |
| 1 | B | 166 | GLN |
| 1 | B | 182 | GLY |
| 1 | B | 194 | SER |
| 1 | C | 16 | SER |
| 1 | C | 97 | SER |
| 1 | C | 109 | GLU |
| 1 | C | 122 | ASN |
| 1 | C | 151 | PRO |
| 1 | D | 37 | ASP |
| 1 | D | 263 | GLN |
| 1 | D | 265 | PRO |
| 1 | A | 8 | THR |
| 1 | A | 152 | ASN |
| 1 | A | 156 | ILE |
| 1 | A | 243 | LYS |
| 1 | A | 306 | GLU |
| 1 | B | 37 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 98 | SER |
| 1 | B | 133 | SER |
| 1 | B | 139 | ALA |
| 1 | B | 300 | LYS |
| 1 | C | 111 | VAL |
| 1 | C | 118 | SER |
| 1 | C | 140 | VAL |
| 1 | C | 181 | PRO |
| 1 | C | 196 | SER |
| 1 | C | 214 | PRO |
| 1 | C | 298 | ASN |
| 1 | D | 281 | THR |
| 1 | D | 303 | LEU |
| 1 | D | 333 | PRO |
| 1 | D | 348 | GLU |
| 1 | A | 9 | GLN |
| 1 | A | 60 | ARG |
| 1 | A | 106 | SER |
| 1 | B | 60 | ARG |
| 1 | B | 83 | LEU |
| 1 | B | 174 | CYS |
| 1 | B | 243 | LYS |
| 1 | B | 294 | ALA |
| 1 | C | 20 | ILE |
| 1 | C | 21 | GLU |
| 1 | C | 37 | ASP |
| 1 | C | 94 | CYS |
| 1 | C | 225 | LYS |
| 1 | C | 242 | TYR |
| 1 | C | 258 | GLU |
| 1 | D | 32 | MET |
| 1 | D | 99 | GLY |
| 1 | D | 213 | ASP |
| 1 | D | 232 | GLY |
| 1 | D | 262 | SER |
| 1 | D | 296 | SER |
| 1 | A | 182 | GLY |
| 1 | A | 259 | PRO |
| 1 | B | 50 | ALA |
| 1 | B | 135 | ASN |
| 1 | C | 108 | GLU |
| 1 | D | 139 | ALA |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | D | 140 | VAL |
| 1 | B | 115 | VAL |
| 1 | B | 331 | ILE |
| 1 | A | 151 | PRO |
| 1 | B | 34 | GLY |
| 1 | C | 213 | ASP |
| 1 | A | 204 | GLY |
| 1 | A | 336 | 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 | 285/302 (94%) | 237 (83%) | 48 (17%) | 2 | 6 |
| 1 | B | 275/302 (91%) | 213 (78%) | 62 (22%) | 1 | 2 |
| 1 | C | 275/302 (91%) | 219 (80%) | 56 (20%) | 1 | 4 |
| 1 | D | 282/302 (93%) | 232 (82%) | 50 (18%) | 2 | 5 |
| All | All | 1117/1208 (92%) | 901 (81%) | 216 (19%) | 1 | 4 |

All (216) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 17 | LYS |
| 1 | A | 26 | TRP |
| 1 | A | 28 | LEU |
| 1 | A | 31 | PRO |
| 1 | A | 37 | ASP |
| 1 | A | 40 | LEU |
| 1 | A | 45 | SER |
| 1 | A | 46 | SER |
| 1 | A | 56 | SER |
| 1 | A | 84 | ASP |
| 1 | A | 86 | VAL |
| 1 | A | 95 | LEU |
| 1 | A | 97 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 101 | THR |
| 1 | A | 104 | ILE |
| 1 | A | 107 | GLU |
| 1 | A | 108 | GLU |
| 1 | A | 119 | TYR |
| 1 | A | 120 | SER |
| 1 | A | 123 | TYR |
| 1 | A | 129 | PRO |
| 1 | A | 130 | LEU |
| 1 | A | 158 | ASP |
| 1 | A | 161 | HIS |
| 1 | A | 164 | GLU |
| 1 | A | 166 | GLN |
| 1 | A | 172 | GLN |
| 1 | A | 173 | ARG |
| 1 | A | 184 | ASN |
| 1 | A | 185 | LEU |
| 1 | A | 201 | LEU |
| 1 | A | 203 | ILE |
| 1 | A | 207 | VAL |
| 1 | A | 212 | LEU |
| 1 | A | 222 | THR |
| 1 | A | 226 | ILE |
| 1 | A | 233 | LYS |
| 1 | A | 253 | MET |
| 1 | A | 264 | LYS |
| 1 | A | 287 | ILE |
| 1 | A | 298 | ASN |
| 1 | A | 302 | ARG |
| 1 | A | 315 | GLU |
| 1 | A | 328 | ILE |
| 1 | A | 336 | ILE |
| 1 | A | 352 | LYS |
| 1 | A | 353 | LEU |
| 1 | A | 357 | LEU |
| 1 | B | 26 | TRP |
| 1 | B | 29 | LYS |
| 1 | B | 42 | ILE |
| 1 | B | 46 | SER |
| 1 | B | 48 | SER |
| 1 | B | 56 | SER |
| 1 | B | 58 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 88 | ASN |
| 1 | B | 95 | LEU |
| 1 | B | 96 | ARG |
| 1 | B | 98 | SER |
| 1 | B | 100 | ARG |
| 1 | B | 106 | SER |
| 1 | B | 108 | GLU |
| 1 | B | 111 | VAL |
| 1 | B | 112 | PRO |
| 1 | B | 117 | GLU |
| 1 | B | 122 | ASN |
| 1 | B | 128 | ASP |
| 1 | B | 129 | PRO |
| 1 | B | 130 | LEU |
| 1 | B | 137 | ASP |
| 1 | B | 151 | PRO |
| 1 | B | 157 | VAL |
| 1 | B | 162 | ASP |
| 1 | B | 163 | ASP |
| 1 | B | 164 | GLU |
| 1 | B | 166 | GLN |
| 1 | B | 171 | GLU |
| 1 | B | 180 | GLN |
| 1 | B | 201 | LEU |
| 1 | B | 202 | THR |
| 1 | B | 212 | LEU |
| 1 | B | 216 | TYR |
| 1 | B | 218 | GLU |
| 1 | B | 222 | THR |
| 1 | B | 229 | PRO |
| 1 | B | 233 | LYS |
| 1 | B | 241 | ASN |
| 1 | B | 242 | TYR |
| 1 | B | 243 | LYS |
| 1 | B | 251 | LYS |
| 1 | B | 256 | LEU |
| 1 | B | 263 | GLN |
| 1 | B | 267 | SER |
| 1 | B | 268 | SER |
| 1 | B | 269 | ARG |
| 1 | B | 274 | LEU |
| 1 | B | 280 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 284 | TYR |
| 1 | B | 287 | ILE |
| 1 | B | 290 | TYR |
| 1 | B | 291 | PRO |
| 1 | B | 295 | LYS |
| 1 | B | 297 | LYS |
| 1 | B | 303 | LEU |
| 1 | B | 306 | GLU |
| 1 | B | 316 | GLN |
| 1 | B | 336 | ILE |
| 1 | B | 340 | VAL |
| 1 | B | 353 | LEU |
| 1 | B | 357 | LEU |
| 1 | C | 29 | LYS |
| 1 | C | 32 | MET |
| 1 | C | 42 | ILE |
| 1 | C | 53 | GLN |
| 1 | C | 57 | LEU |
| 1 | C | 58 | VAL |
| 1 | C | 84 | ASP |
| 1 | C | 89 | GLU |
| 1 | C | 97 | SER |
| 1 | C | 100 | ARG |
| 1 | C | 118 | SER |
| 1 | C | 125 | VAL |
| 1 | C | 126 | VAL |
| 1 | C | 130 | LEU |
| 1 | C | 136 | ILE |
| 1 | C | 148 | ILE |
| 1 | C | 156 | ILE |
| 1 | C | 160 | ASP |
| 1 | C | 164 | GLU |
| 1 | C | 165 | SER |
| 1 | C | 166 | GLN |
| 1 | C | 170 | GLU |
| 1 | C | 172 | GLN |
| 1 | C | 173 | ARG |
| 1 | C | 181 | PRO |
| 1 | C | 200 | VAL |
| 1 | C | 201 | LEU |
| 1 | C | 202 | THR |
| 1 | C | 208 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 210 | PHE |
| 1 | C | 222 | THR |
| 1 | C | 224 | GLU |
| 1 | C | 243 | LYS |
| 1 | C | 248 | LYS |
| 1 | C | 249 | LEU |
| 1 | C | 250 | LYS |
| 1 | C | 258 | GLU |
| 1 | C | 261 | GLU |
| 1 | C | 264 | LYS |
| 1 | C | 269 | ARG |
| 1 | C | 271 | ILE |
| 1 | C | 287 | ILE |
| 1 | C | 300 | LYS |
| 1 | C | 304 | LEU |
| 1 | C | 306 | GLU |
| 1 | C | 315 | GLU |
| 1 | C | 322 | SER |
| 1 | C | 323 | ASP |
| 1 | C | 326 | GLN |
| 1 | C | 329 | LEU |
| 1 | C | 346 | SER |
| 1 | C | 347 | VAL |
| 1 | C | 350 | VAL |
| 1 | C | 352 | LYS |
| 1 | C | 356 | TYR |
| 1 | C | 357 | LEU |
| 1 | D | 14 | THR |
| 1 | D | 15 | ARG |
| 1 | D | 18 | TYR |
| 1 | D | 20 | ILE |
| 1 | D | 26 | TRP |
| 1 | D | 27 | LEU |
| 1 | D | 40 | LEU |
| 1 | D | 44 | LEU |
| 1 | D | 54 | ILE |
| 1 | D | 60 | ARG |
| 1 | D | 82 | LYS |
| 1 | D | 95 | LEU |
| 1 | D | 100 | ARG |
| 1 | D | 103 | ILE |
| 1 | D | 104 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 122 | ASN |
| 1 | D | 131 | ASP |
| 1 | D | 137 | ASP |
| 1 | D | 140 | VAL |
| 1 | D | 155 | CYS |
| 1 | D | 160 | ASP |
| 1 | D | 171 | GLU |
| 1 | D | 176 | VAL |
| 1 | D | 180 | GLN |
| 1 | D | 184 | ASN |
| 1 | D | 185 | LEU |
| 1 | D | 186 | LEU |
| 1 | D | 203 | ILE |
| 1 | D | 211 | THR |
| 1 | D | 215 | MET |
| 1 | D | 222 | THR |
| 1 | D | 226 | ILE |
| 1 | D | 227 | GLN |
| 1 | D | 228 | ILE |
| 1 | D | 237 | PHE |
| 1 | D | 241 | ASN |
| 1 | D | 247 | ASP |
| 1 | D | 263 | GLN |
| 1 | D | 267 | SER |
| 1 | D | 280 | ARG |
| 1 | D | 290 | TYR |
| 1 | D | 293 | ASP |
| 1 | D | 297 | LYS |
| 1 | D | 304 | LEU |
| 1 | D | 323 | ASP |
| 1 | D | 333 | PRO |
| 1 | D | 339 | ARG |
| 1 | D | 340 | VAL |
| 1 | D | 352 | LYS |
| 1 | D | 356 | TYR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 122 | ASN |
| 1 | A | 172 | GLN |
| 1 | A | 180 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 238 | ASN |
| 1 | A | 241 | ASN |
| 1 | A | 325 | HIS |
| 1 | A | 337 | HIS |
| 1 | B | 53 | GLN |
| 1 | B | 88 | ASN |
| 1 | B | 135 | ASN |
| 1 | B | 180 | GLN |
| 1 | B | 241 | ASN |
| 1 | B | 316 | GLN |
| 1 | B | 337 | HIS |
| 1 | C | 135 | ASN |
| 1 | C | 166 | GLN |
| 1 | C | 172 | GLN |
| 1 | C | 279 | HIS |
| 1 | C | 298 | ASN |
| 1 | C | 316 | GLN |
| 1 | C | 338 | GLN |
| 1 | D | 53 | GLN |
| 1 | D | 59 | GLN |
| 1 | D | 88 | ASN |
| 1 | D | 180 | GLN |
| 1 | D | 184 | ASN |
| 1 | D | 227 | GLN |
| 1 | D | 279 | 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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.