



Full wwPDB EM Validation Report ⓘ

Sep 25, 2024 – 06:08 PM EDT

PDB ID : 9CJL
EMDB ID : EMD-45635
Title : Molecular basis of TMED9 dodecamer
Authors : Le, X.; Xiong, P.
Deposited on : 2024-07-06
Resolution : 5.50 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev112
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.38.3

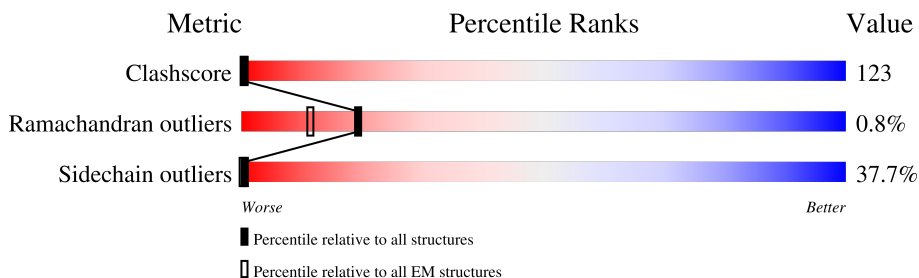
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 5.50 Å.

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



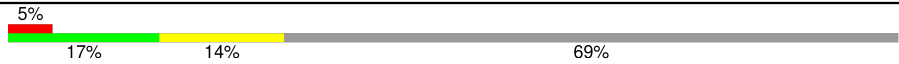

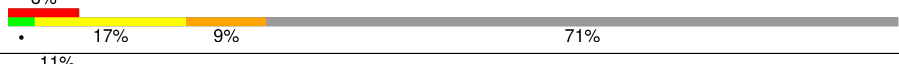

| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore | 210492 | 15764 |
| Ramachandran outliers | 207382 | 16835 |
| Sidechain outliers | 206894 | 16415 |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | A | 235 | <div style="display: flex; align-items: center;"> <div style="width: 17%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 65%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>7% 16% 11% 65%</p> |
| 1 | B | 235 | <div style="display: flex; align-items: center;"> <div style="width: 10%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 65%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>6% 17% 12% 65%</p> |
| 1 | C | 235 | <div style="display: flex; align-items: center;"> <div style="width: 10%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 65%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>8% 11% 16% 65%</p> |
| 1 | D | 235 | <div style="display: flex; align-items: center;"> <div style="width: 17%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 69%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>17% 14% 69%</p> |
| 1 | E | 235 | <div style="display: flex; align-items: center;"> <div style="width: 12%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 69%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>12% 14% 5% 69%</p> |
| 1 | F | 235 | <div style="display: flex; align-items: center;"> <div style="width: 13%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 69%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>13% 18% 69%</p> |
| 1 | G | 235 | <div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 69%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>5% 14% 12% 69%</p> |
| 1 | H | 235 | <div style="display: flex; align-items: center;"> <div style="width: 7%; height: 10px; background: linear-gradient(to right, red, orange, yellow, green);"></div> <div style="width: 69%; height: 10px; background-color: grey; margin-left: 5px;"></div> </div> <p>7% 13% 11% 69%</p> |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | I | 235 |  |
| 1 | J | 235 |  |
| 1 | K | 235 |  |
| 1 | L | 235 |  |

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

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 2 | 9ED | B | 301 | - | - | X | - |
| 2 | 9ED | H | 301 | - | - | X | - |

2 Entry composition [i](#)

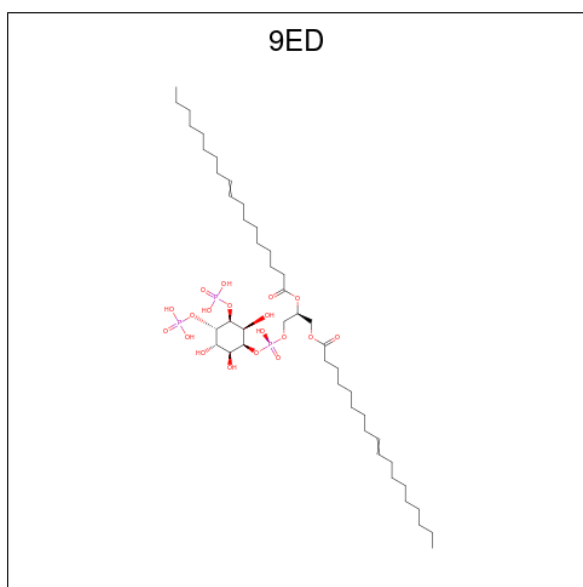
There are 2 unique types of molecules in this entry. The entry contains 7985 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

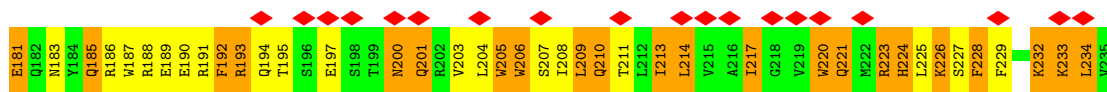
- Molecule 1 is a protein called Transmembrane emp24 domain-containing protein 9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 82 | 709 | 453 | 131 | 124 | 1 | 0 | 0 |
| 1 | B | 82 | 709 | 453 | 131 | 124 | 1 | 0 | 0 |
| 1 | C | 82 | 709 | 453 | 131 | 124 | 1 | 0 | 0 |
| 1 | D | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | E | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | F | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | G | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | H | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | I | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |
| 1 | J | 69 | 607 | 386 | 115 | 105 | 1 | 0 | 0 |
| 1 | K | 67 | 593 | 378 | 113 | 101 | 1 | 0 | 0 |
| 1 | L | 74 | 648 | 414 | 121 | 112 | 1 | 0 | 0 |

- Molecule 2 is [(2R)-2-[(E)-octadec-9-enoyl]oxy-3-[oxidanyl-[(1R,2R,3S,4R,5R,6S)-2,3,6-tris(oxidanyl)-4,5-diphosphonoxy-cyclohexyl]oxy-phosphoryl]oxy-propyl] (E)-octadec-9-enoate (three-letter code: 9ED) (formula: C₄₅H₈₅O₁₉P₃) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
| | | | Total | C | O | P | |
| 2 | B | 1 | 61 | 43 | 16 | 2 | 0 |
| 2 | H | 1 | 61 | 43 | 16 | 2 | 0 |



4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 198652 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 43.2 | Depositor |
| Minimum defocus (nm) | 1200 | Depositor |
| Maximum defocus (nm) | 2000 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 0.041 | Depositor |
| Minimum map value | -0.017 | Depositor |
| Average map value | 0.000 | Depositor |
| Map value standard deviation | 0.001 | Depositor |
| Recommended contour level | 0.008 | Depositor |
| Map size (Å) | 264.0, 264.0, 264.0 | wwPDB |
| Map dimensions | 320, 320, 320 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.825, 0.825, 0.825 | Depositor |

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: 9ED

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 | 0.37 | 0/721 | 0.53 | 0/969 |
| 1 | B | 0.51 | 0/721 | 0.73 | 1/969 (0.1%) |
| 1 | C | 0.35 | 0/721 | 0.50 | 0/969 |
| 1 | D | 0.27 | 0/660 | 0.59 | 0/888 |
| 1 | E | 0.38 | 0/660 | 0.62 | 0/888 |
| 1 | F | 0.26 | 0/660 | 0.58 | 0/888 |
| 1 | G | 0.40 | 0/660 | 0.67 | 0/888 |
| 1 | H | 0.38 | 0/660 | 0.64 | 0/888 |
| 1 | I | 0.26 | 0/660 | 0.56 | 0/888 |
| 1 | J | 0.63 | 0/618 | 0.85 | 2/832 (0.2%) |
| 1 | K | 0.38 | 0/605 | 0.65 | 0/813 |
| 1 | L | 0.35 | 0/660 | 0.62 | 1/888 (0.1%) |
| All | All | 0.39 | 0/8006 | 0.63 | 4/10768 (0.0%) |

There are no bond length outliers.

All (4) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | J | 183 | ASN | CB-CA-C | -5.52 | 99.36 | 110.40 |
| 1 | J | 202 | ARG | N-CA-C | -5.50 | 96.15 | 111.00 |
| 1 | B | 183 | ASN | N-CA-C | 5.32 | 125.36 | 111.00 |
| 1 | L | 224 | HIS | CB-CA-C | 5.07 | 120.53 | 110.40 |

There are no chirality outliers.

There are no planarity outliers.

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 | 709 | 0 | 726 | 257 | 0 |
| 1 | B | 709 | 0 | 727 | 282 | 0 |
| 1 | C | 709 | 0 | 728 | 190 | 0 |
| 1 | D | 648 | 0 | 660 | 180 | 0 |
| 1 | E | 648 | 0 | 660 | 219 | 0 |
| 1 | F | 648 | 0 | 660 | 142 | 0 |
| 1 | G | 648 | 0 | 660 | 333 | 0 |
| 1 | H | 648 | 0 | 660 | 350 | 0 |
| 1 | I | 648 | 0 | 660 | 158 | 0 |
| 1 | J | 607 | 0 | 618 | 402 | 0 |
| 1 | K | 593 | 0 | 594 | 283 | 0 |
| 1 | L | 648 | 0 | 659 | 205 | 0 |
| 2 | B | 61 | 0 | 0 | 58 | 0 |
| 2 | H | 61 | 0 | 0 | 34 | 0 |
| All | All | 7985 | 0 | 8012 | 1973 | 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 123.

All (1973) 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:G:225:LEU:HB3 | 1:G:229:PHE:CZ | 1.22 | 1.67 |
| 1:A:220:TRP:CZ3 | 1:J:216:ALA:HB2 | 1.17 | 1.66 |
| 1:A:205:TRP:HH2 | 1:J:205:TRP:CD1 | 1.09 | 1.64 |
| 1:H:168:VAL:CG1 | 1:I:167:ARG:HH11 | 1.06 | 1.64 |
| 1:A:205:TRP:CH2 | 1:J:205:TRP:HD1 | 1.08 | 1.62 |
| 1:B:216:ALA:HA | 2:B:301:9ED:C40 | 1.15 | 1.59 |
| 1:B:172:VAL:HG13 | 1:C:171:LEU:CD1 | 1.17 | 1.59 |
| 1:G:225:LEU:HB3 | 1:G:229:PHE:CE2 | 1.37 | 1.59 |
| 1:C:184:TYR:CD2 | 1:F:187:TRP:CH2 | 1.90 | 1.58 |
| 1:A:205:TRP:CH2 | 1:J:205:TRP:CD1 | 1.85 | 1.58 |
| 1:J:206:TRP:CZ2 | 1:K:212:LEU:CD2 | 1.83 | 1.56 |
| 1:J:206:TRP:CZ2 | 1:K:212:LEU:HD23 | 1.05 | 1.56 |
| 1:B:212:LEU:HD23 | 2:B:301:9ED:C53 | 1.34 | 1.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:206:TRP:HZ2 | 1:K:212:LEU:CD2 | 1.14 | 1.53 |
| 1:B:188:ARG:CZ | 1:J:186:ARG:CD | 1.84 | 1.52 |
| 1:J:191:ARG:CZ | 1:K:193:ARG:HB3 | 1.36 | 1.52 |
| 1:K:216:ALA:HB1 | 1:L:220:TRP:CZ2 | 1.40 | 1.51 |
| 2:H:301:9ED:C6 | 1:I:213:ILE:HG21 | 1.40 | 1.50 |
| 1:A:171:LEU:CD2 | 1:C:169:ARG:HH22 | 1.21 | 1.49 |
| 1:A:210:GLN:NE2 | 1:F:208:ILE:HD11 | 1.22 | 1.49 |
| 1:E:184:TYR:CE1 | 1:G:186:ARG:HD3 | 1.48 | 1.48 |
| 1:D:189:GLU:CB | 1:H:187:TRP:HH2 | 1.20 | 1.48 |
| 1:J:167:ARG:HH21 | 1:K:168:VAL:CG1 | 1.25 | 1.47 |
| 1:J:167:ARG:NH2 | 1:K:168:VAL:CG1 | 1.76 | 1.47 |
| 1:D:188:ARG:NH2 | 1:F:189:GLU:HA | 1.27 | 1.47 |
| 1:K:176:GLU:CG | 1:L:178:ILE:CD1 | 1.91 | 1.46 |
| 1:J:187:TRP:CB | 1:J:191:ARG:HH12 | 1.24 | 1.46 |
| 1:K:176:GLU:HG3 | 1:L:178:ILE:CD1 | 1.40 | 1.45 |
| 1:J:187:TRP:HB3 | 1:J:191:ARG:NH1 | 1.14 | 1.44 |
| 1:K:187:TRP:N | 1:L:188:ARG:NH2 | 1.64 | 1.44 |
| 1:B:188:ARG:CZ | 1:J:186:ARG:HD3 | 0.98 | 1.44 |
| 1:G:175:VAL:HG21 | 1:H:170:GLN:NE2 | 1.14 | 1.44 |
| 1:A:201:GLN:NE2 | 1:J:194:GLN:HG2 | 1.32 | 1.43 |
| 1:B:215:VAL:HG21 | 2:B:301:9ED:C63 | 1.45 | 1.43 |
| 1:K:173:GLU:OE2 | 1:L:174:GLN:CA | 1.65 | 1.43 |
| 1:G:225:LEU:CB | 1:G:229:PHE:CZ | 1.96 | 1.43 |
| 1:A:171:LEU:CD2 | 1:C:169:ARG:NH2 | 1.75 | 1.43 |
| 1:A:171:LEU:O | 1:A:175:VAL:CG2 | 1.67 | 1.43 |
| 1:B:172:VAL:CG1 | 1:C:171:LEU:HD11 | 1.46 | 1.43 |
| 1:B:200:ASN:OD1 | 1:F:200:ASN:CB | 1.64 | 1.43 |
| 1:J:167:ARG:NH2 | 1:K:168:VAL:HG13 | 1.20 | 1.42 |
| 1:J:184:TYR:HA | 1:K:193:ARG:NH2 | 1.18 | 1.42 |
| 1:H:168:VAL:CG1 | 1:I:167:ARG:HD3 | 1.47 | 1.41 |
| 1:E:187:TRP:NE1 | 1:E:191:ARG:NE | 1.68 | 1.41 |
| 1:G:225:LEU:HD12 | 1:G:229:PHE:CZ | 1.55 | 1.40 |
| 1:A:171:LEU:HD23 | 1:C:169:ARG:NH2 | 1.10 | 1.38 |
| 1:B:184:TYR:CZ | 1:J:182:GLN:HB2 | 1.57 | 1.38 |
| 1:H:168:VAL:CG1 | 1:I:167:ARG:NH1 | 1.81 | 1.38 |
| 1:G:175:VAL:CG2 | 1:H:170:GLN:HE22 | 1.34 | 1.38 |
| 1:B:215:VAL:HG11 | 2:B:301:9ED:C63 | 1.54 | 1.38 |
| 1:C:229:PHE:HE1 | 1:G:232:LYS:CE | 1.36 | 1.36 |
| 1:B:230:GLU:O | 1:B:234:LEU:HD22 | 1.21 | 1.36 |
| 1:D:189:GLU:CB | 1:H:187:TRP:CH2 | 2.08 | 1.35 |
| 1:H:188:ARG:CB | 1:I:188:ARG:HH22 | 1.38 | 1.35 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:225:LEU:HD12 | 1:G:229:PHE:CE1 | 1.60 | 1.35 |
| 1:G:210:GLN:HE22 | 1:H:209:LEU:CD2 | 1.40 | 1.35 |
| 1:J:167:ARG:NH1 | 1:K:171:LEU:CD2 | 1.89 | 1.35 |
| 1:B:215:VAL:HB | 2:B:301:9ED:C51 | 1.55 | 1.34 |
| 1:C:184:TYR:CD2 | 1:F:187:TRP:CZ3 | 2.15 | 1.34 |
| 1:B:216:ALA:CA | 2:B:301:9ED:C40 | 2.06 | 1.34 |
| 1:H:172:VAL:O | 1:H:175:VAL:HG13 | 1.25 | 1.34 |
| 1:D:189:GLU:HB3 | 1:H:187:TRP:CH2 | 1.63 | 1.34 |
| 1:J:174:GLN:O | 1:J:177:GLN:HG2 | 1.29 | 1.32 |
| 1:D:168:VAL:HB | 1:E:167:ARG:CD | 1.59 | 1.32 |
| 1:G:165:GLN:O | 1:G:168:VAL:HG22 | 1.30 | 1.32 |
| 1:H:188:ARG:HB2 | 1:I:188:ARG:NH2 | 1.43 | 1.32 |
| 1:B:188:ARG:NH2 | 1:J:186:ARG:HD3 | 1.43 | 1.32 |
| 1:D:225:LEU:CB | 1:E:228:PHE:HZ | 1.43 | 1.32 |
| 1:H:171:LEU:HD22 | 1:I:171:LEU:CD1 | 1.59 | 1.32 |
| 1:K:202:ARG:O | 1:K:205:TRP:CB | 1.77 | 1.32 |
| 1:B:181:GLU:O | 1:B:185:GLN:CG | 1.76 | 1.31 |
| 1:H:172:VAL:O | 1:H:175:VAL:CG1 | 1.77 | 1.31 |
| 1:J:210:GLN:O | 1:J:214:LEU:HG | 1.26 | 1.31 |
| 1:G:225:LEU:CD1 | 1:G:229:PHE:CZ | 2.13 | 1.31 |
| 1:J:206:TRP:CE3 | 1:K:215:VAL:HG21 | 1.66 | 1.31 |
| 1:G:168:VAL:HB | 1:H:167:ARG:CD | 1.61 | 1.30 |
| 1:C:229:PHE:CD2 | 1:G:228:PHE:CE1 | 2.02 | 1.30 |
| 1:A:202:ARG:O | 1:A:206:TRP:N | 1.65 | 1.30 |
| 1:D:188:ARG:NH1 | 1:E:188:ARG:HH21 | 1.29 | 1.30 |
| 1:J:210:GLN:HA | 1:J:213:ILE:CD1 | 1.59 | 1.30 |
| 1:J:210:GLN:CA | 1:J:213:ILE:CD1 | 2.09 | 1.30 |
| 1:A:197:GLU:OE2 | 1:J:194:GLN:HG3 | 1.14 | 1.29 |
| 1:J:173:GLU:HB3 | 1:K:179:GLN:CD | 1.51 | 1.29 |
| 1:B:184:TYR:OH | 1:J:182:GLN:CB | 1.80 | 1.29 |
| 1:E:188:ARG:NH1 | 1:F:185:GLN:HG2 | 1.45 | 1.29 |
| 1:A:203:VAL:HG11 | 1:B:199:THR:CG2 | 1.63 | 1.28 |
| 1:B:212:LEU:CD2 | 2:B:301:9ED:C53 | 2.11 | 1.28 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:CD | 1.64 | 1.28 |
| 1:H:198:SER:O | 1:H:202:ARG:CG | 1.81 | 1.28 |
| 1:A:220:TRP:CZ3 | 1:J:216:ALA:CB | 2.13 | 1.28 |
| 1:D:188:ARG:NH2 | 1:F:192:PHE:HD2 | 1.31 | 1.28 |
| 1:G:192:PHE:CZ | 1:I:192:PHE:CD1 | 2.20 | 1.28 |
| 1:J:184:TYR:HB2 | 1:K:189:GLU:CB | 1.62 | 1.28 |
| 1:K:176:GLU:CG | 1:L:178:ILE:HD12 | 1.52 | 1.28 |
| 1:A:171:LEU:CG | 1:C:169:ARG:HH22 | 1.46 | 1.27 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:172:VAL:CG1 | 1:C:171:LEU:CD1 | 2.06 | 1.27 |
| 1:G:225:LEU:CD1 | 1:G:229:PHE:CE1 | 2.15 | 1.27 |
| 1:J:173:GLU:HB3 | 1:K:179:GLN:OE1 | 1.20 | 1.27 |
| 1:E:165:GLN:O | 1:E:168:VAL:HG12 | 1.33 | 1.27 |
| 1:D:179:GLN:OE1 | 1:H:176:GLU:HG3 | 1.30 | 1.27 |
| 1:K:187:TRP:HA | 1:L:188:ARG:NH1 | 1.48 | 1.27 |
| 1:K:216:ALA:HB1 | 1:L:220:TRP:CH2 | 1.70 | 1.26 |
| 1:C:184:TYR:CE2 | 1:F:187:TRP:CH2 | 2.21 | 1.26 |
| 1:H:168:VAL:O | 1:H:171:LEU:HG | 1.27 | 1.25 |
| 1:A:220:TRP:CH2 | 1:J:212:LEU:O | 1.89 | 1.25 |
| 1:B:215:VAL:CG2 | 2:B:301:9ED:C63 | 2.13 | 1.25 |
| 1:B:220:TRP:HB2 | 2:B:301:9ED:C31 | 1.66 | 1.25 |
| 1:J:170:GLN:CD | 1:K:175:VAL:HB | 1.53 | 1.25 |
| 1:E:165:GLN:HA | 1:F:167:ARG:NH1 | 1.48 | 1.25 |
| 1:G:171:LEU:CD1 | 1:H:171:LEU:HB3 | 1.67 | 1.25 |
| 1:J:191:ARG:HH12 | 1:K:193:ARG:CD | 1.49 | 1.24 |
| 1:A:204:LEU:HD11 | 1:L:206:TRP:CD1 | 1.71 | 1.24 |
| 1:C:184:TYR:CE2 | 1:F:187:TRP:HH2 | 1.55 | 1.24 |
| 1:K:227:SER:O | 1:K:230:GLU:HG2 | 1.32 | 1.24 |
| 1:B:165:GLN:NE2 | 1:C:161:LEU:HD22 | 1.51 | 1.23 |
| 1:G:221:GLN:HB3 | 1:H:220:TRP:NE1 | 1.54 | 1.23 |
| 1:G:192:PHE:CZ | 1:I:192:PHE:HD1 | 1.56 | 1.23 |
| 1:H:171:LEU:CD2 | 1:I:171:LEU:HD12 | 1.67 | 1.22 |
| 1:K:169:ARG:CD | 1:L:167:ARG:O | 1.86 | 1.22 |
| 1:K:173:GLU:OE2 | 1:L:174:GLN:HA | 1.08 | 1.22 |
| 1:H:188:ARG:CB | 1:I:188:ARG:NH2 | 1.98 | 1.22 |
| 1:H:198:SER:O | 1:H:202:ARG:HG2 | 1.12 | 1.22 |
| 1:K:202:ARG:O | 1:K:205:TRP:HB3 | 1.04 | 1.22 |
| 1:K:216:ALA:CB | 1:L:220:TRP:CZ2 | 2.21 | 1.22 |
| 1:H:208:ILE:HG21 | 2:H:301:9ED:C56 | 1.69 | 1.22 |
| 1:E:184:TYR:HE1 | 1:G:186:ARG:CD | 1.54 | 1.21 |
| 1:J:167:ARG:HH11 | 1:K:171:LEU:CD2 | 1.49 | 1.21 |
| 1:D:225:LEU:CB | 1:E:228:PHE:CZ | 2.24 | 1.21 |
| 1:K:200:ASN:O | 1:K:203:VAL:HG12 | 1.36 | 1.20 |
| 1:B:188:ARG:NE | 1:J:186:ARG:HD3 | 1.53 | 1.20 |
| 1:F:183:ASN:OD1 | 1:F:187:TRP:CE2 | 1.94 | 1.20 |
| 1:B:172:VAL:O | 1:B:176:GLU:OE1 | 1.55 | 1.20 |
| 1:B:215:VAL:CG1 | 2:B:301:9ED:C63 | 2.19 | 1.20 |
| 1:J:173:GLU:CB | 1:K:179:GLN:OE1 | 1.89 | 1.19 |
| 1:A:171:LEU:O | 1:A:175:VAL:HG23 | 1.07 | 1.19 |
| 1:J:191:ARG:NH2 | 1:K:193:ARG:HB3 | 1.55 | 1.19 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:209:LEU:HD23 | 1:J:205:TRP:CD2 | 1.78 | 1.19 |
| 1:B:184:TYR:OH | 1:J:182:GLN:C | 1.80 | 1.19 |
| 1:D:164:LEU:HB3 | 1:E:167:ARG:HH22 | 1.08 | 1.18 |
| 1:D:168:VAL:CB | 1:E:167:ARG:CD | 2.20 | 1.18 |
| 1:K:187:TRP:CA | 1:L:188:ARG:NH2 | 2.07 | 1.18 |
| 1:H:174:GLN:HE22 | 1:I:178:ILE:CD1 | 1.57 | 1.18 |
| 1:J:184:TYR:CA | 1:K:193:ARG:NH2 | 2.05 | 1.18 |
| 1:C:229:PHE:CE1 | 1:G:232:LYS:CE | 2.25 | 1.17 |
| 1:J:167:ARG:NH1 | 1:K:171:LEU:HD23 | 1.49 | 1.17 |
| 1:D:188:ARG:HH21 | 1:F:189:GLU:CA | 1.57 | 1.17 |
| 1:A:171:LEU:HD13 | 1:A:174:GLN:OE1 | 1.43 | 1.17 |
| 1:B:184:TYR:CE1 | 1:B:188:ARG:NH1 | 2.13 | 1.17 |
| 1:J:170:GLN:CG | 1:K:175:VAL:HB | 1.73 | 1.17 |
| 1:B:229:PHE:CE1 | 1:E:232:LYS:HD2 | 1.79 | 1.16 |
| 1:B:184:TYR:OH | 1:J:182:GLN:HB2 | 1.37 | 1.16 |
| 1:J:191:ARG:CZ | 1:K:193:ARG:CB | 2.22 | 1.16 |
| 1:B:222:MET:CB | 1:D:220:TRP:HH2 | 1.59 | 1.15 |
| 1:D:225:LEU:HD11 | 1:D:226:LYS:NZ | 1.61 | 1.15 |
| 1:G:164:LEU:CD2 | 1:H:164:LEU:HD22 | 1.77 | 1.15 |
| 1:J:166:LEU:CD1 | 1:L:171:LEU:HD21 | 1.75 | 1.15 |
| 1:C:188:ARG:O | 1:F:191:ARG:CZ | 1.95 | 1.15 |
| 1:G:210:GLN:HE22 | 1:H:209:LEU:HD21 | 1.07 | 1.15 |
| 1:J:184:TYR:CD1 | 1:K:189:GLU:HG3 | 1.81 | 1.14 |
| 1:L:210:GLN:HE22 | 1:L:214:LEU:HD22 | 0.99 | 1.14 |
| 1:J:167:ARG:CG | 1:K:172:VAL:HG22 | 1.77 | 1.14 |
| 1:G:204:LEU:CD2 | 1:H:202:ARG:NH2 | 2.11 | 1.14 |
| 1:H:168:VAL:HG12 | 1:I:167:ARG:NH1 | 1.45 | 1.13 |
| 1:J:166:LEU:HB3 | 1:L:174:GLN:HE22 | 1.01 | 1.13 |
| 1:D:165:GLN:O | 1:D:168:VAL:HG12 | 1.48 | 1.13 |
| 1:E:188:ARG:HH12 | 1:F:185:GLN:CG | 1.60 | 1.13 |
| 1:E:166:LEU:HD23 | 1:H:166:LEU:HD13 | 1.16 | 1.13 |
| 1:B:215:VAL:CB | 2:B:301:9ED:C63 | 2.26 | 1.13 |
| 1:G:232:LYS:HG3 | 1:H:228:PHE:CZ | 1.83 | 1.12 |
| 1:J:209:LEU:C | 1:J:213:ILE:HD11 | 1.69 | 1.12 |
| 1:H:205:TRP:HB3 | 2:H:301:9ED:C58 | 1.79 | 1.12 |
| 1:J:174:GLN:C | 1:J:177:GLN:HG2 | 1.71 | 1.12 |
| 1:B:216:ALA:O | 2:B:301:9ED:O22 | 1.68 | 1.11 |
| 1:C:229:PHE:HE1 | 1:G:232:LYS:HE2 | 1.09 | 1.11 |
| 1:B:222:MET:CG | 1:D:220:TRP:CH2 | 2.34 | 1.11 |
| 1:G:164:LEU:HD22 | 1:H:164:LEU:HD22 | 1.17 | 1.11 |
| 1:J:166:LEU:HD13 | 1:L:171:LEU:HD21 | 1.32 | 1.11 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:181:GLU:O | 1:B:185:GLN:HG2 | 1.47 | 1.10 |
| 1:C:224:HIS:HB3 | 1:I:222:MET:CE | 1.80 | 1.10 |
| 1:C:229:PHE:CE1 | 1:G:232:LYS:CD | 2.34 | 1.10 |
| 1:D:225:LEU:HB3 | 1:E:228:PHE:CZ | 1.86 | 1.10 |
| 1:G:174:GLN:HE21 | 1:I:178:ILE:CD1 | 1.63 | 1.10 |
| 1:J:166:LEU:CB | 1:L:174:GLN:HE22 | 1.64 | 1.10 |
| 1:J:209:LEU:O | 1:J:213:ILE:CD1 | 1.98 | 1.10 |
| 1:K:169:ARG:HD3 | 1:L:167:ARG:O | 1.49 | 1.10 |
| 1:G:168:VAL:CG1 | 1:H:167:ARG:HD2 | 1.81 | 1.10 |
| 1:J:210:GLN:CA | 1:J:213:ILE:HD11 | 1.78 | 1.10 |
| 2:H:301:9ED:C3 | 1:I:217:ILE:CD1 | 2.30 | 1.10 |
| 1:A:210:GLN:NE2 | 1:F:208:ILE:CD1 | 2.15 | 1.09 |
| 1:J:181:GLU:O | 1:J:184:TYR:CD2 | 1.66 | 1.09 |
| 1:A:205:TRP:CZ3 | 1:J:205:TRP:CD1 | 2.39 | 1.09 |
| 1:B:232:LYS:HB3 | 1:E:232:LYS:NZ | 1.68 | 1.09 |
| 1:D:225:LEU:HB3 | 1:E:228:PHE:HZ | 0.94 | 1.09 |
| 1:G:208:ILE:O | 1:G:212:LEU:HG | 1.52 | 1.09 |
| 1:J:167:ARG:HG2 | 1:K:172:VAL:HG22 | 1.12 | 1.09 |
| 1:E:202:ARG:HH22 | 1:G:204:LEU:HD12 | 0.96 | 1.09 |
| 1:C:188:ARG:HB3 | 1:F:191:ARG:HD2 | 1.23 | 1.08 |
| 1:B:210:GLN:HA | 1:B:213:ILE:HD12 | 1.30 | 1.08 |
| 1:B:222:MET:CG | 1:D:220:TRP:HH2 | 1.67 | 1.08 |
| 1:B:222:MET:HG3 | 1:D:220:TRP:CH2 | 1.87 | 1.08 |
| 1:J:184:TYR:HB2 | 1:K:189:GLU:HB3 | 1.12 | 1.08 |
| 1:K:176:GLU:OE1 | 1:L:177:GLN:O | 1.65 | 1.08 |
| 1:A:197:GLU:HG2 | 1:A:201:GLN:HE22 | 0.98 | 1.08 |
| 1:A:224:HIS:HE1 | 1:B:223:ARG:NH1 | 1.52 | 1.08 |
| 1:G:225:LEU:CG | 1:G:229:PHE:CZ | 2.35 | 1.08 |
| 2:H:301:9ED:C4 | 1:I:213:ILE:CG2 | 2.31 | 1.08 |
| 1:D:168:VAL:CG2 | 1:E:167:ARG:HD3 | 1.81 | 1.08 |
| 1:H:168:VAL:HG12 | 1:I:167:ARG:HH11 | 0.91 | 1.08 |
| 1:B:172:VAL:HG13 | 1:C:171:LEU:HD12 | 1.25 | 1.08 |
| 1:C:224:HIS:HB3 | 1:I:222:MET:HE1 | 1.29 | 1.07 |
| 1:G:174:GLN:HE21 | 1:I:178:ILE:HD12 | 1.19 | 1.07 |
| 1:B:181:GLU:O | 1:B:185:GLN:CD | 1.92 | 1.07 |
| 1:D:188:ARG:NH2 | 1:F:192:PHE:CD2 | 2.18 | 1.07 |
| 1:J:210:GLN:HA | 1:J:213:ILE:HD13 | 1.14 | 1.07 |
| 1:A:203:VAL:HG11 | 1:B:199:THR:HG21 | 1.28 | 1.07 |
| 1:A:204:LEU:HB3 | 1:J:202:ARG:HH21 | 1.08 | 1.07 |
| 1:G:174:GLN:NE2 | 1:I:178:ILE:CD1 | 2.17 | 1.07 |
| 1:E:187:TRP:HE1 | 1:E:191:ARG:NE | 1.35 | 1.07 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:230:GLU:O | 1:B:234:LEU:CD2 | 2.03 | 1.07 |
| 1:D:225:LEU:HB2 | 1:E:228:PHE:CZ | 1.88 | 1.06 |
| 1:J:163:GLU:HB2 | 1:L:171:LEU:CD1 | 1.84 | 1.06 |
| 1:K:187:TRP:CA | 1:L:188:ARG:HH12 | 1.67 | 1.06 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:CG | 2.18 | 1.06 |
| 1:K:226:LYS:HD2 | 1:L:228:PHE:CZ | 1.89 | 1.06 |
| 1:D:188:ARG:NH2 | 1:F:189:GLU:CA | 2.17 | 1.06 |
| 1:E:169:ARG:HH22 | 1:H:170:GLN:CB | 1.68 | 1.06 |
| 1:A:201:GLN:NE2 | 1:J:194:GLN:CG | 2.19 | 1.06 |
| 1:A:205:TRP:CZ3 | 1:J:205:TRP:HB2 | 1.90 | 1.06 |
| 1:D:168:VAL:CG2 | 1:E:167:ARG:CD | 2.32 | 1.06 |
| 1:G:232:LYS:HZ2 | 1:G:232:LYS:HA | 1.17 | 1.06 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:NH1 | 1.57 | 1.06 |
| 1:J:163:GLU:CB | 1:L:171:LEU:HD12 | 1.85 | 1.06 |
| 1:J:167:ARG:HA | 1:K:172:VAL:HG13 | 1.35 | 1.06 |
| 1:J:174:GLN:O | 1:J:177:GLN:CG | 2.03 | 1.06 |
| 1:K:202:ARG:HG2 | 1:L:205:TRP:HE1 | 1.19 | 1.06 |
| 1:A:209:LEU:HD21 | 1:J:205:TRP:CH2 | 1.89 | 1.06 |
| 1:B:220:TRP:CB | 2:B:301:9ED:C31 | 2.33 | 1.06 |
| 1:E:187:TRP:CD1 | 1:E:191:ARG:NE | 2.07 | 1.06 |
| 1:J:167:ARG:NH1 | 1:K:171:LEU:HD21 | 1.61 | 1.06 |
| 1:K:176:GLU:HG2 | 1:L:178:ILE:CD1 | 1.70 | 1.06 |
| 1:H:199:THR:HA | 1:H:202:ARG:HG3 | 1.35 | 1.05 |
| 1:E:169:ARG:HH22 | 1:H:170:GLN:HB2 | 1.17 | 1.05 |
| 1:A:213:ILE:O | 1:A:217:ILE:CD1 | 2.05 | 1.05 |
| 1:G:164:LEU:CD2 | 1:H:164:LEU:CD2 | 2.33 | 1.05 |
| 1:G:210:GLN:NE2 | 1:H:209:LEU:CD2 | 2.19 | 1.05 |
| 1:A:201:GLN:HE21 | 1:J:194:GLN:CG | 1.70 | 1.05 |
| 1:B:229:PHE:HE2 | 1:D:232:LYS:HD3 | 1.19 | 1.05 |
| 1:G:164:LEU:HD22 | 1:H:164:LEU:CD2 | 1.86 | 1.05 |
| 1:G:178:ILE:HG21 | 1:I:178:ILE:HD13 | 1.38 | 1.05 |
| 2:H:301:9ED:C3 | 1:I:217:ILE:HD13 | 1.85 | 1.05 |
| 1:E:184:TYR:CE1 | 1:G:186:ARG:CD | 2.35 | 1.04 |
| 2:H:301:9ED:C6 | 1:I:213:ILE:CG2 | 2.34 | 1.04 |
| 1:G:225:LEU:CG | 1:G:229:PHE:HZ | 1.66 | 1.04 |
| 1:K:169:ARG:HD2 | 1:L:167:ARG:O | 1.56 | 1.04 |
| 1:A:171:LEU:HD12 | 1:A:175:VAL:HG22 | 1.39 | 1.04 |
| 1:E:188:ARG:HH12 | 1:F:185:GLN:HG2 | 0.89 | 1.04 |
| 1:D:225:LEU:CD1 | 1:D:226:LYS:NZ | 2.19 | 1.04 |
| 1:H:174:GLN:HE22 | 1:I:178:ILE:HD11 | 1.13 | 1.04 |
| 2:H:301:9ED:C50 | 1:I:217:ILE:HG12 | 1.88 | 1.04 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:206:TRP:HE3 | 1:K:215:VAL:HG21 | 0.90 | 1.04 |
| 1:D:168:VAL:CB | 1:E:167:ARG:HD2 | 1.87 | 1.03 |
| 1:H:168:VAL:HA | 1:H:171:LEU:CD2 | 1.87 | 1.03 |
| 1:J:177:GLN:HG3 | 1:J:178:ILE:HD13 | 1.36 | 1.03 |
| 1:C:155:ILE:HD13 | 1:C:155:ILE:H | 1.21 | 1.03 |
| 1:C:210:GLN:NE2 | 1:G:206:TRP:CZ2 | 2.25 | 1.03 |
| 1:J:167:ARG:HG2 | 1:K:172:VAL:CG2 | 1.89 | 1.03 |
| 1:D:189:GLU:HB2 | 1:H:187:TRP:CH2 | 1.87 | 1.03 |
| 1:G:221:GLN:HB3 | 1:H:220:TRP:HE1 | 1.07 | 1.03 |
| 1:B:229:PHE:HE1 | 1:E:232:LYS:HD2 | 1.11 | 1.03 |
| 1:C:229:PHE:CE1 | 1:G:232:LYS:HE2 | 1.88 | 1.03 |
| 1:D:188:ARG:CZ | 1:E:188:ARG:HH21 | 1.71 | 1.03 |
| 1:G:168:VAL:HB | 1:H:167:ARG:HD3 | 1.06 | 1.03 |
| 1:G:207:SER:HA | 1:H:206:TRP:NE1 | 1.74 | 1.03 |
| 1:J:211:THR:O | 1:J:215:VAL:HG23 | 1.57 | 1.03 |
| 1:J:210:GLN:C | 1:J:213:ILE:CD1 | 2.26 | 1.03 |
| 1:K:226:LYS:HD2 | 1:L:228:PHE:HZ | 1.20 | 1.02 |
| 1:D:179:GLN:OE1 | 1:H:176:GLU:CG | 2.07 | 1.02 |
| 1:D:225:LEU:HD11 | 1:D:226:LYS:HZ3 | 0.92 | 1.02 |
| 1:G:165:GLN:O | 1:G:168:VAL:CG2 | 2.07 | 1.02 |
| 1:J:166:LEU:HB3 | 1:L:174:GLN:NE2 | 1.74 | 1.02 |
| 1:J:184:TYR:CG | 1:K:189:GLU:HG3 | 1.95 | 1.02 |
| 1:K:187:TRP:HB2 | 1:L:188:ARG:NH2 | 1.75 | 1.02 |
| 1:G:175:VAL:CG2 | 1:H:170:GLN:NE2 | 2.04 | 1.02 |
| 1:K:176:GLU:OE1 | 1:L:177:GLN:C | 1.98 | 1.02 |
| 1:A:202:ARG:O | 1:A:206:TRP:HB2 | 1.57 | 1.01 |
| 1:D:189:GLU:HB3 | 1:H:187:TRP:HH2 | 0.86 | 1.01 |
| 1:G:168:VAL:CB | 1:H:167:ARG:CD | 2.37 | 1.01 |
| 2:H:301:9ED:C49 | 1:I:217:ILE:HG12 | 1.89 | 1.01 |
| 1:K:187:TRP:CB | 1:L:188:ARG:NH2 | 2.23 | 1.01 |
| 1:B:184:TYR:CZ | 1:J:182:GLN:CB | 2.38 | 1.01 |
| 1:B:184:TYR:OH | 1:J:183:ASN:N | 1.94 | 1.01 |
| 1:C:188:ARG:O | 1:F:191:ARG:NH2 | 1.92 | 1.01 |
| 1:J:209:LEU:O | 1:J:213:ILE:HD11 | 1.58 | 1.01 |
| 1:C:210:GLN:NE2 | 1:G:206:TRP:CH2 | 2.28 | 1.01 |
| 1:H:188:ARG:HE | 1:I:188:ARG:NH2 | 1.58 | 1.01 |
| 1:A:203:VAL:O | 1:A:207:SER:CB | 2.08 | 1.00 |
| 1:G:171:LEU:HD11 | 1:H:171:LEU:HB3 | 1.36 | 1.00 |
| 1:G:193:ARG:HA | 1:H:191:ARG:NH2 | 1.74 | 1.00 |
| 1:B:229:PHE:CE2 | 1:D:232:LYS:HD3 | 1.96 | 1.00 |
| 1:G:192:PHE:CE2 | 1:H:191:ARG:CZ | 2.44 | 1.00 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:199:THR:O | 1:H:203:VAL:HG22 | 1.59 | 1.00 |
| 1:J:167:ARG:HH11 | 1:K:171:LEU:HD21 | 0.87 | 1.00 |
| 1:J:210:GLN:HG2 | 1:J:214:LEU:CD2 | 1.90 | 1.00 |
| 1:B:200:ASN:CG | 1:F:200:ASN:HB3 | 1.81 | 1.00 |
| 1:B:232:LYS:CB | 1:E:232:LYS:NZ | 2.25 | 1.00 |
| 1:E:165:GLN:O | 1:E:168:VAL:CG1 | 2.09 | 1.00 |
| 1:G:232:LYS:HG3 | 1:H:228:PHE:CE1 | 1.96 | 1.00 |
| 2:H:301:9ED:C50 | 1:I:217:ILE:CD1 | 2.39 | 1.00 |
| 1:J:210:GLN:O | 1:J:213:ILE:CD1 | 2.09 | 1.00 |
| 1:D:168:VAL:HB | 1:E:167:ARG:HD3 | 1.42 | 1.00 |
| 1:K:187:TRP:HA | 1:L:188:ARG:HH12 | 0.87 | 1.00 |
| 1:A:204:LEU:CB | 1:J:202:ARG:HH21 | 1.75 | 1.00 |
| 1:B:184:TYR:OH | 1:J:182:GLN:CA | 2.10 | 1.00 |
| 1:J:173:GLU:HB3 | 1:K:179:GLN:NE2 | 1.77 | 1.00 |
| 1:A:197:GLU:OE2 | 1:J:194:GLN:CG | 2.09 | 0.99 |
| 1:A:220:TRP:CE3 | 1:J:216:ALA:HB2 | 1.97 | 0.99 |
| 1:B:172:VAL:O | 1:B:176:GLU:CD | 2.01 | 0.99 |
| 1:E:169:ARG:NH2 | 1:H:170:GLN:HG3 | 1.77 | 0.99 |
| 1:G:221:GLN:HG2 | 1:H:220:TRP:CD1 | 1.97 | 0.99 |
| 1:H:172:VAL:HA | 1:H:175:VAL:CG1 | 1.92 | 0.99 |
| 1:J:206:TRP:CE2 | 1:K:212:LEU:HD23 | 1.96 | 0.99 |
| 1:J:210:GLN:N | 1:J:213:ILE:HD11 | 1.76 | 0.99 |
| 1:J:199:THR:HG23 | 1:K:204:LEU:HD23 | 1.45 | 0.99 |
| 1:B:215:VAL:CB | 2:B:301:9ED:C51 | 2.39 | 0.98 |
| 1:G:207:SER:HB2 | 1:H:206:TRP:CD1 | 1.98 | 0.98 |
| 1:G:168:VAL:CB | 1:H:167:ARG:HD3 | 1.93 | 0.98 |
| 1:H:219:VAL:CG2 | 2:H:301:9ED:O22 | 2.11 | 0.98 |
| 1:K:173:GLU:CG | 1:L:177:GLN:OE1 | 2.11 | 0.98 |
| 1:B:222:MET:CB | 1:D:220:TRP:CH2 | 2.47 | 0.98 |
| 1:J:210:GLN:O | 1:J:213:ILE:HD12 | 1.62 | 0.98 |
| 1:B:165:GLN:NE2 | 1:C:161:LEU:CD2 | 2.25 | 0.98 |
| 1:B:184:TYR:HH | 1:J:183:ASN:N | 1.62 | 0.98 |
| 1:K:169:ARG:HH11 | 1:L:167:ARG:HB3 | 1.23 | 0.98 |
| 1:A:209:LEU:HD23 | 1:J:205:TRP:CE3 | 1.97 | 0.98 |
| 1:B:172:VAL:HG11 | 1:C:171:LEU:HD11 | 1.41 | 0.98 |
| 1:G:232:LYS:CG | 1:H:228:PHE:CZ | 2.46 | 0.98 |
| 1:K:169:ARG:HD2 | 1:L:167:ARG:C | 1.82 | 0.98 |
| 1:C:184:TYR:CD2 | 1:F:187:TRP:HH2 | 1.48 | 0.98 |
| 1:E:169:ARG:HH22 | 1:H:170:GLN:CG | 1.76 | 0.98 |
| 1:D:188:ARG:NH1 | 1:E:188:ARG:NH2 | 2.12 | 0.97 |
| 1:J:181:GLU:HB3 | 1:J:184:TYR:OH | 1.58 | 0.97 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:184:TYR:HA | 1:K:193:ARG:HH22 | 1.22 | 0.97 |
| 1:A:197:GLU:CG | 1:A:201:GLN:HE22 | 1.76 | 0.97 |
| 1:G:192:PHE:CE1 | 1:I:192:PHE:CD1 | 2.51 | 0.97 |
| 1:A:204:LEU:HB3 | 1:J:202:ARG:NH2 | 1.80 | 0.97 |
| 1:D:168:VAL:HG23 | 1:E:167:ARG:CD | 1.94 | 0.97 |
| 1:D:178:ILE:HD13 | 1:E:178:ILE:HD11 | 1.46 | 0.97 |
| 1:E:165:GLN:CA | 1:F:167:ARG:HH12 | 1.76 | 0.97 |
| 1:A:213:ILE:O | 1:A:217:ILE:HD11 | 1.65 | 0.97 |
| 1:B:208:ILE:HG22 | 2:B:301:9ED:C4 | 1.95 | 0.96 |
| 1:D:168:VAL:HB | 1:E:167:ARG:NE | 1.79 | 0.96 |
| 1:K:200:ASN:O | 1:K:203:VAL:CG1 | 2.12 | 0.96 |
| 1:B:172:VAL:O | 1:B:175:VAL:HG23 | 1.65 | 0.96 |
| 1:J:210:GLN:CA | 1:J:213:ILE:HD13 | 1.83 | 0.96 |
| 1:K:173:GLU:HG3 | 1:L:177:GLN:NE2 | 1.80 | 0.96 |
| 1:C:229:PHE:HD2 | 1:G:228:PHE:HE1 | 1.06 | 0.96 |
| 1:H:214:LEU:HD12 | 1:I:214:LEU:HD23 | 1.47 | 0.96 |
| 1:C:167:ARG:HH11 | 1:C:167:ARG:HB2 | 1.26 | 0.96 |
| 1:A:204:LEU:HD11 | 1:L:206:TRP:HD1 | 1.31 | 0.95 |
| 1:B:184:TYR:HH | 1:J:182:GLN:CA | 1.78 | 0.95 |
| 1:J:191:ARG:HH12 | 1:K:193:ARG:HD2 | 0.81 | 0.95 |
| 1:C:188:ARG:HB3 | 1:F:191:ARG:CD | 1.95 | 0.95 |
| 1:J:181:GLU:O | 1:J:184:TYR:CG | 2.18 | 0.95 |
| 1:E:202:ARG:NH2 | 1:G:204:LEU:HD12 | 1.80 | 0.95 |
| 1:G:171:LEU:HD12 | 1:H:171:LEU:HB3 | 1.48 | 0.95 |
| 1:C:201:GLN:O | 1:C:205:TRP:CB | 2.15 | 0.95 |
| 1:A:197:GLU:HG2 | 1:A:201:GLN:NE2 | 1.81 | 0.95 |
| 1:G:225:LEU:CB | 1:G:229:PHE:CE2 | 2.32 | 0.95 |
| 1:G:211:THR:CG2 | 1:H:209:LEU:HD11 | 1.97 | 0.94 |
| 1:K:187:TRP:CA | 1:L:188:ARG:NH1 | 2.26 | 0.94 |
| 1:L:210:GLN:NE2 | 1:L:214:LEU:HD22 | 1.81 | 0.94 |
| 1:B:172:VAL:O | 1:B:175:VAL:CG2 | 2.15 | 0.94 |
| 1:D:210:GLN:O | 1:D:213:ILE:HG12 | 1.67 | 0.94 |
| 1:D:225:LEU:CD1 | 1:D:226:LYS:HZ3 | 1.77 | 0.94 |
| 1:H:172:VAL:O | 1:H:175:VAL:HG12 | 1.66 | 0.94 |
| 1:J:210:GLN:O | 1:J:214:LEU:CG | 2.16 | 0.94 |
| 1:A:201:GLN:HE22 | 1:J:194:GLN:HG2 | 1.25 | 0.94 |
| 1:A:214:LEU:HD22 | 1:A:214:LEU:H | 1.30 | 0.94 |
| 1:B:172:VAL:HG13 | 1:C:171:LEU:HD11 | 1.01 | 0.94 |
| 1:H:188:ARG:HB3 | 1:I:188:ARG:NH2 | 1.81 | 0.94 |
| 1:A:201:GLN:HE21 | 1:J:194:GLN:HG2 | 1.15 | 0.94 |
| 1:C:229:PHE:CE1 | 1:G:232:LYS:HD3 | 2.03 | 0.94 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:178:ILE:HD13 | 1:E:174:GLN:HE21 | 1.33 | 0.94 |
| 1:D:204:LEU:HD13 | 1:H:205:TRP:CZ2 | 2.01 | 0.94 |
| 1:L:186:ARG:HA | 1:L:186:ARG:CZ | 1.96 | 0.94 |
| 1:A:226:LYS:HZ2 | 1:L:225:LEU:CD2 | 1.79 | 0.94 |
| 1:H:169:ARG:HA | 1:H:169:ARG:HE | 1.31 | 0.93 |
| 1:B:216:ALA:HB1 | 2:B:301:9ED:C37 | 1.97 | 0.93 |
| 1:G:225:LEU:CD1 | 1:G:229:PHE:HE1 | 1.75 | 0.93 |
| 1:D:164:LEU:HB3 | 1:E:167:ARG:NH2 | 1.83 | 0.93 |
| 1:G:225:LEU:HD13 | 1:G:229:PHE:CE1 | 2.01 | 0.93 |
| 1:K:176:GLU:HG2 | 1:L:178:ILE:HD12 | 0.93 | 0.93 |
| 1:A:171:LEU:HD12 | 1:A:175:VAL:CG2 | 1.99 | 0.93 |
| 1:A:204:LEU:CD1 | 1:L:206:TRP:CD1 | 2.52 | 0.93 |
| 1:C:188:ARG:CB | 1:F:191:ARG:HD2 | 1.98 | 0.93 |
| 1:D:196:SER:HG | 1:E:195:THR:HG1 | 1.09 | 0.93 |
| 1:C:184:TYR:CG | 1:F:187:TRP:CZ3 | 2.57 | 0.93 |
| 1:G:232:LYS:NZ | 1:G:235:VAL:HG21 | 1.83 | 0.93 |
| 1:B:215:VAL:HG11 | 2:B:301:9ED:C62 | 1.99 | 0.93 |
| 1:C:229:PHE:CD2 | 1:G:228:PHE:HE1 | 1.66 | 0.93 |
| 1:D:165:GLN:O | 1:D:168:VAL:CG1 | 2.17 | 0.93 |
| 1:D:189:GLU:OE2 | 1:E:188:ARG:HG2 | 1.69 | 0.93 |
| 1:J:210:GLN:HG2 | 1:J:214:LEU:HD23 | 1.48 | 0.93 |
| 1:C:184:TYR:CE2 | 1:F:187:TRP:CZ3 | 2.51 | 0.92 |
| 1:G:210:GLN:OE1 | 1:H:206:TRP:NE1 | 2.01 | 0.92 |
| 1:J:167:ARG:HH22 | 1:K:168:VAL:HG13 | 1.27 | 0.92 |
| 1:E:223:ARG:NE | 2:H:301:9ED:O12 | 2.03 | 0.92 |
| 1:B:216:ALA:O | 2:B:301:9ED:C35 | 2.16 | 0.92 |
| 1:C:210:GLN:HE22 | 1:G:206:TRP:HZ2 | 1.07 | 0.92 |
| 1:G:232:LYS:HA | 1:G:232:LYS:NZ | 1.85 | 0.92 |
| 1:H:202:ARG:HB3 | 1:H:202:ARG:CZ | 2.00 | 0.92 |
| 1:D:168:VAL:CB | 1:E:167:ARG:HD3 | 1.91 | 0.92 |
| 1:G:210:GLN:HE22 | 1:H:209:LEU:HD22 | 1.31 | 0.92 |
| 1:B:220:TRP:HB2 | 2:B:301:9ED:C35 | 2.00 | 0.92 |
| 1:G:187:TRP:HE1 | 1:G:191:ARG:HD2 | 1.32 | 0.92 |
| 1:K:227:SER:O | 1:K:230:GLU:CG | 2.17 | 0.92 |
| 1:B:172:VAL:HG13 | 1:C:171:LEU:HD13 | 1.48 | 0.92 |
| 1:J:184:TYR:CB | 1:K:189:GLU:CB | 2.47 | 0.92 |
| 1:J:206:TRP:CE3 | 1:K:215:VAL:CG2 | 2.52 | 0.92 |
| 1:E:165:GLN:HA | 1:F:167:ARG:HH12 | 1.23 | 0.91 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:CD | 2.18 | 0.91 |
| 1:A:202:ARG:C | 1:A:206:TRP:HB2 | 1.89 | 0.91 |
| 1:B:200:ASN:OD1 | 1:F:200:ASN:HB3 | 0.74 | 0.91 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:173:GLU:OE2 | 1:L:174:GLN:N | 2.02 | 0.91 |
| 1:K:183:ASN:O | 1:L:188:ARG:NH2 | 2.03 | 0.91 |
| 1:J:206:TRP:CZ2 | 1:K:212:LEU:HD22 | 1.97 | 0.91 |
| 1:H:172:VAL:C | 1:H:175:VAL:HG12 | 1.91 | 0.91 |
| 1:J:166:LEU:HD13 | 1:L:171:LEU:CD2 | 2.00 | 0.91 |
| 1:A:205:TRP:CZ3 | 1:J:205:TRP:CG | 2.59 | 0.91 |
| 1:B:188:ARG:NH2 | 1:J:186:ARG:CD | 2.15 | 0.91 |
| 1:B:188:ARG:NH2 | 1:J:186:ARG:CG | 2.34 | 0.91 |
| 1:G:178:ILE:HG21 | 1:H:174:GLN:NE2 | 1.85 | 0.91 |
| 1:A:205:TRP:HZ3 | 1:J:205:TRP:CB | 1.82 | 0.91 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:HD3 | 1.06 | 0.91 |
| 1:J:174:GLN:HA | 1:J:177:GLN:CG | 2.01 | 0.91 |
| 2:H:301:9ED:C50 | 1:I:217:ILE:CG1 | 2.49 | 0.91 |
| 1:G:221:GLN:CB | 1:H:220:TRP:HE1 | 1.84 | 0.91 |
| 1:J:167:ARG:HD2 | 1:K:168:VAL:HG12 | 1.51 | 0.91 |
| 1:K:216:ALA:HB1 | 1:L:220:TRP:HZ2 | 1.23 | 0.91 |
| 1:A:220:TRP:HH2 | 1:J:212:LEU:O | 1.30 | 0.90 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:HA | 2.05 | 0.90 |
| 1:A:221:GLN:OE1 | 1:B:220:TRP:CH2 | 2.24 | 0.90 |
| 1:A:224:HIS:CE1 | 1:B:223:ARG:NH1 | 2.39 | 0.90 |
| 1:J:184:TYR:HA | 1:K:193:ARG:HH21 | 1.28 | 0.90 |
| 1:J:213:ILE:HD12 | 1:J:213:ILE:H | 1.34 | 0.90 |
| 1:B:210:GLN:HA | 1:B:213:ILE:CD1 | 2.00 | 0.90 |
| 2:H:301:9ED:C5 | 1:I:213:ILE:HG21 | 1.99 | 0.90 |
| 1:K:173:GLU:HG3 | 1:L:177:GLN:CD | 1.92 | 0.90 |
| 1:G:221:GLN:CB | 1:H:220:TRP:NE1 | 2.34 | 0.90 |
| 1:J:176:GLU:OE1 | 1:J:179:GLN:NE2 | 2.04 | 0.90 |
| 1:L:232:LYS:HZ2 | 1:L:232:LYS:HA | 1.36 | 0.90 |
| 1:B:210:GLN:CA | 1:B:213:ILE:HD12 | 2.01 | 0.90 |
| 1:B:219:VAL:HB | 2:B:301:9ED:C39 | 2.02 | 0.90 |
| 1:H:174:GLN:NE2 | 1:I:178:ILE:CD1 | 2.34 | 0.90 |
| 2:H:301:9ED:C3 | 1:I:217:ILE:HD11 | 1.99 | 0.90 |
| 1:B:184:TYR:CE1 | 1:J:182:GLN:OE1 | 2.25 | 0.90 |
| 1:E:165:GLN:CA | 1:F:167:ARG:NH1 | 2.32 | 0.90 |
| 1:A:205:TRP:CD1 | 1:J:201:GLN:HB3 | 2.07 | 0.90 |
| 1:A:171:LEU:CD2 | 1:C:169:ARG:CZ | 2.49 | 0.90 |
| 1:E:180:LYS:NZ | 1:G:182:GLN:HB3 | 1.87 | 0.90 |
| 1:G:178:ILE:HG22 | 1:I:178:ILE:HG21 | 1.52 | 0.90 |
| 1:K:203:VAL:O | 1:K:207:SER:N | 2.04 | 0.90 |
| 1:A:180:LYS:NZ | 1:A:180:LYS:HB2 | 1.87 | 0.89 |
| 1:B:232:LYS:HB3 | 1:E:232:LYS:HZ3 | 1.34 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:225:LEU:HB2 | 1:E:228:PHE:CE1 | 2.07 | 0.89 |
| 1:A:171:LEU:O | 1:A:175:VAL:HG22 | 1.73 | 0.89 |
| 1:A:204:LEU:HG | 1:J:202:ARG:HH22 | 1.34 | 0.89 |
| 1:A:154:GLU:HB3 | 1:A:155:ILE:HD12 | 1.52 | 0.89 |
| 1:A:213:ILE:O | 1:A:217:ILE:HD12 | 1.73 | 0.89 |
| 1:A:223:ARG:HG3 | 1:A:223:ARG:HH11 | 1.36 | 0.89 |
| 1:B:184:TYR:CE1 | 1:B:188:ARG:CZ | 2.54 | 0.89 |
| 1:C:184:TYR:HD2 | 1:F:187:TRP:CH2 | 1.66 | 0.89 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:CZ | 2.01 | 0.89 |
| 1:J:167:ARG:HH21 | 1:K:168:VAL:HG11 | 1.36 | 0.89 |
| 1:K:187:TRP:CA | 1:L:188:ARG:CZ | 2.49 | 0.89 |
| 1:A:209:LEU:HD23 | 1:J:205:TRP:CE2 | 2.06 | 0.89 |
| 1:B:220:TRP:HB2 | 2:B:301:9ED:O22 | 1.72 | 0.89 |
| 1:G:174:GLN:NE2 | 1:I:178:ILE:HD12 | 1.83 | 0.89 |
| 1:J:205:TRP:HA | 1:J:208:ILE:HG13 | 1.52 | 0.89 |
| 1:G:214:LEU:HA | 1:G:217:ILE:HD12 | 1.53 | 0.89 |
| 1:J:167:ARG:NH2 | 1:K:168:VAL:HG12 | 1.85 | 0.89 |
| 1:A:205:TRP:CZ3 | 1:J:205:TRP:CB | 2.55 | 0.89 |
| 1:H:171:LEU:HD12 | 1:H:172:VAL:N | 1.88 | 0.89 |
| 1:J:206:TRP:HZ2 | 1:K:212:LEU:HD22 | 1.29 | 0.89 |
| 1:H:172:VAL:HA | 1:H:175:VAL:HG12 | 1.52 | 0.89 |
| 1:J:174:GLN:CA | 1:J:177:GLN:HG2 | 2.03 | 0.89 |
| 1:K:176:GLU:HG3 | 1:L:178:ILE:HD13 | 0.90 | 0.89 |
| 1:B:216:ALA:O | 2:B:301:9ED:C37 | 2.21 | 0.89 |
| 1:B:222:MET:HB3 | 1:D:220:TRP:HH2 | 1.36 | 0.89 |
| 1:B:165:GLN:HE22 | 1:C:161:LEU:CD2 | 1.85 | 0.88 |
| 1:C:188:ARG:HD2 | 1:F:191:ARG:HD2 | 1.54 | 0.88 |
| 1:H:172:VAL:CA | 1:H:175:VAL:HG12 | 2.03 | 0.88 |
| 1:H:172:VAL:C | 1:H:175:VAL:CG1 | 2.42 | 0.88 |
| 1:A:201:GLN:HE21 | 1:J:194:GLN:CB | 1.87 | 0.88 |
| 1:A:209:LEU:CD2 | 1:J:205:TRP:CZ3 | 2.56 | 0.88 |
| 1:A:179:GLN:OE1 | 1:B:175:VAL:HG13 | 1.72 | 0.88 |
| 1:C:154:GLU:HB3 | 1:C:155:ILE:HD13 | 1.54 | 0.88 |
| 1:C:193:ARG:HG3 | 1:C:193:ARG:HH21 | 1.39 | 0.88 |
| 1:K:173:GLU:HG3 | 1:L:177:GLN:OE1 | 1.71 | 0.88 |
| 1:B:188:ARG:NH2 | 1:J:186:ARG:HG3 | 1.88 | 0.88 |
| 1:A:226:LYS:NZ | 1:L:225:LEU:CD2 | 2.37 | 0.88 |
| 1:E:169:ARG:NH2 | 1:H:170:GLN:HB2 | 1.87 | 0.88 |
| 1:H:168:VAL:O | 1:H:171:LEU:CG | 2.18 | 0.88 |
| 1:A:220:TRP:HZ3 | 1:J:216:ALA:CB | 1.66 | 0.87 |
| 1:B:208:ILE:CG2 | 2:B:301:9ED:C4 | 2.52 | 0.87 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:168:VAL:HG23 | 1:E:167:ARG:HD2 | 1.55 | 0.87 |
| 1:J:174:GLN:HA | 1:J:177:GLN:CD | 1.94 | 0.87 |
| 1:A:226:LYS:HZ2 | 1:L:225:LEU:HD23 | 1.38 | 0.87 |
| 1:B:226:LYS:O | 1:B:226:LYS:NZ | 2.07 | 0.87 |
| 1:E:186:ARG:NH1 | 1:E:186:ARG:HA | 1.87 | 0.87 |
| 1:G:207:SER:HB2 | 1:H:206:TRP:HD1 | 1.39 | 0.87 |
| 2:H:301:9ED:C50 | 1:I:217:ILE:HD13 | 2.04 | 0.87 |
| 1:J:170:GLN:OE1 | 1:K:175:VAL:HB | 1.71 | 0.87 |
| 1:A:210:GLN:HE22 | 1:F:208:ILE:HD11 | 1.06 | 0.87 |
| 1:C:169:ARG:HH11 | 1:C:169:ARG:HG3 | 1.40 | 0.87 |
| 1:G:171:LEU:HD12 | 1:I:171:LEU:HD11 | 1.57 | 0.87 |
| 1:A:188:ARG:NH2 | 1:A:188:ARG:HB3 | 1.87 | 0.87 |
| 1:D:204:LEU:HD13 | 1:H:205:TRP:HZ2 | 1.34 | 0.87 |
| 1:J:210:GLN:C | 1:J:213:ILE:HD12 | 1.92 | 0.87 |
| 1:K:222:MET:HA | 1:K:222:MET:CE | 2.04 | 0.87 |
| 1:E:188:ARG:NH1 | 1:F:185:GLN:CG | 2.29 | 0.87 |
| 1:B:212:LEU:HD23 | 2:B:301:9ED:C49 | 2.05 | 0.87 |
| 1:E:192:PHE:CG | 1:F:192:PHE:CE1 | 2.63 | 0.87 |
| 1:J:165:GLN:NE2 | 1:J:165:GLN:HA | 1.88 | 0.87 |
| 1:J:167:ARG:HH21 | 1:K:168:VAL:HG12 | 1.32 | 0.87 |
| 2:H:301:9ED:C4 | 1:I:213:ILE:HG21 | 2.02 | 0.87 |
| 1:G:169:ARG:NE | 1:G:169:ARG:HA | 1.89 | 0.87 |
| 1:G:221:GLN:HE21 | 1:H:221:GLN:HE22 | 1.23 | 0.87 |
| 1:A:220:TRP:CD2 | 2:B:301:9ED:O09 | 2.27 | 0.87 |
| 1:G:204:LEU:CD2 | 1:H:202:ARG:HH21 | 1.87 | 0.87 |
| 1:B:188:ARG:NH1 | 1:J:186:ARG:CD | 2.36 | 0.86 |
| 1:F:183:ASN:OD1 | 1:F:187:TRP:CZ2 | 2.27 | 0.86 |
| 1:H:174:GLN:NE2 | 1:I:178:ILE:HD11 | 1.90 | 0.86 |
| 1:A:203:VAL:O | 1:A:207:SER:N | 2.07 | 0.86 |
| 1:A:224:HIS:HE1 | 1:B:223:ARG:HH12 | 1.15 | 0.86 |
| 1:B:208:ILE:O | 2:B:301:9ED:C4 | 2.22 | 0.86 |
| 1:J:163:GLU:HA | 1:J:166:LEU:HD12 | 1.56 | 0.86 |
| 1:D:189:GLU:C | 1:H:187:TRP:CH2 | 2.49 | 0.86 |
| 1:J:206:TRP:CZ3 | 1:K:212:LEU:HA | 2.11 | 0.86 |
| 1:A:205:TRP:HB2 | 1:J:202:ARG:HG3 | 1.57 | 0.86 |
| 1:D:193:ARG:NH1 | 1:H:190:GLU:OE1 | 2.08 | 0.86 |
| 1:B:233:LYS:O | 1:B:233:LYS:NZ | 2.08 | 0.86 |
| 1:C:166:LEU:HD22 | 1:C:166:LEU:O | 1.76 | 0.86 |
| 1:H:169:ARG:HA | 1:H:169:ARG:NE | 1.89 | 0.86 |
| 1:J:163:GLU:HB2 | 1:L:171:LEU:HD12 | 0.94 | 0.86 |
| 1:A:204:LEU:HG | 1:J:202:ARG:NH2 | 1.90 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:232:LYS:HZ1 | 1:G:235:VAL:HG21 | 1.40 | 0.86 |
| 1:H:178:ILE:HG13 | 1:I:178:ILE:HG12 | 1.57 | 0.86 |
| 1:E:165:GLN:CB | 1:F:167:ARG:HH12 | 1.89 | 0.86 |
| 1:H:188:ARG:HB2 | 1:I:188:ARG:HH22 | 0.70 | 0.86 |
| 1:C:233:LYS:O | 1:C:233:LYS:NZ | 2.08 | 0.85 |
| 1:G:204:LEU:HD21 | 1:H:202:ARG:NH2 | 1.91 | 0.85 |
| 1:J:180:LYS:HB3 | 1:K:186:ARG:HD3 | 1.56 | 0.85 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:CD2 | 2.58 | 0.85 |
| 1:C:210:GLN:HA | 1:C:213:ILE:HD12 | 1.57 | 0.85 |
| 1:K:176:GLU:CG | 1:L:178:ILE:HD13 | 1.80 | 0.85 |
| 1:A:171:LEU:HD23 | 1:C:169:ARG:HH21 | 1.38 | 0.85 |
| 1:H:168:VAL:HG13 | 1:I:167:ARG:HD3 | 1.53 | 0.85 |
| 1:C:158:LYS:HA | 1:C:161:LEU:HD12 | 1.57 | 0.85 |
| 1:A:222:MET:HE2 | 1:A:222:MET:HA | 1.59 | 0.85 |
| 1:J:166:LEU:HD12 | 1:L:171:LEU:HD11 | 1.59 | 0.85 |
| 1:A:220:TRP:CZ2 | 1:J:212:LEU:O | 2.29 | 0.85 |
| 1:G:168:VAL:CG1 | 1:H:167:ARG:CD | 2.54 | 0.85 |
| 1:K:169:ARG:CD | 1:L:167:ARG:C | 2.43 | 0.85 |
| 1:K:210:GLN:HA | 1:K:213:ILE:HD12 | 1.57 | 0.85 |
| 1:L:201:GLN:HA | 1:L:201:GLN:NE2 | 1.92 | 0.85 |
| 1:D:178:ILE:CD1 | 1:E:178:ILE:HD11 | 2.06 | 0.85 |
| 1:H:225:LEU:HD13 | 1:I:225:LEU:HD13 | 1.56 | 0.85 |
| 1:B:184:TYR:CZ | 1:B:188:ARG:CZ | 2.60 | 0.85 |
| 1:H:172:VAL:CA | 1:H:175:VAL:CG1 | 2.55 | 0.85 |
| 1:E:174:GLN:O | 1:E:178:ILE:HG12 | 1.76 | 0.85 |
| 1:B:216:ALA:O | 2:B:301:9ED:C39 | 2.24 | 0.84 |
| 1:H:168:VAL:HA | 1:H:171:LEU:HD23 | 1.59 | 0.84 |
| 1:L:163:GLU:HG3 | 1:L:167:ARG:HH12 | 1.42 | 0.84 |
| 1:B:232:LYS:CB | 1:E:232:LYS:HZ1 | 1.86 | 0.84 |
| 1:B:220:TRP:CG | 2:B:301:9ED:C31 | 2.60 | 0.84 |
| 1:D:210:GLN:HA | 1:D:213:ILE:HG12 | 1.59 | 0.84 |
| 1:G:225:LEU:HD12 | 1:G:229:PHE:HZ | 1.27 | 0.84 |
| 1:H:205:TRP:CB | 2:H:301:9ED:C58 | 2.54 | 0.84 |
| 1:A:209:LEU:CD2 | 1:J:205:TRP:CE3 | 2.60 | 0.84 |
| 1:H:225:LEU:CD1 | 1:I:225:LEU:HD13 | 2.08 | 0.84 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:HD23 | 2.07 | 0.84 |
| 1:C:228:PHE:CE2 | 1:I:222:MET:HE1 | 2.13 | 0.84 |
| 1:D:188:ARG:CZ | 1:F:189:GLU:HA | 2.06 | 0.84 |
| 1:D:189:GLU:C | 1:H:187:TRP:CZ2 | 2.51 | 0.84 |
| 1:G:207:SER:HA | 1:H:206:TRP:HE1 | 1.38 | 0.84 |
| 1:J:167:ARG:HA | 1:K:172:VAL:CG1 | 2.08 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:171:LEU:CD1 | 1:A:175:VAL:HG22 | 2.06 | 0.84 |
| 1:A:226:LYS:CD | 1:L:225:LEU:HD22 | 2.07 | 0.84 |
| 1:C:167:ARG:HH11 | 1:C:167:ARG:CB | 1.90 | 0.84 |
| 1:C:201:GLN:O | 1:C:205:TRP:HB3 | 1.77 | 0.84 |
| 1:E:169:ARG:HH22 | 1:H:170:GLN:HG3 | 1.36 | 0.84 |
| 1:L:210:GLN:HA | 1:L:210:GLN:HE21 | 1.43 | 0.84 |
| 1:G:196:SER:OG | 1:H:191:ARG:NH2 | 2.10 | 0.84 |
| 1:A:203:VAL:HG11 | 1:B:199:THR:HG23 | 1.58 | 0.84 |
| 1:B:184:TYR:HH | 1:J:182:GLN:C | 1.68 | 0.84 |
| 1:G:210:GLN:NE2 | 1:H:209:LEU:HD21 | 1.86 | 0.84 |
| 1:J:170:GLN:HG2 | 1:K:175:VAL:HB | 1.57 | 0.84 |
| 1:J:191:ARG:HD3 | 1:K:196:SER:HB3 | 1.59 | 0.84 |
| 1:A:202:ARG:O | 1:A:206:TRP:CB | 2.25 | 0.84 |
| 1:H:199:THR:CA | 1:H:202:ARG:HG3 | 2.08 | 0.84 |
| 1:B:220:TRP:CB | 2:B:301:9ED:O22 | 2.26 | 0.83 |
| 1:E:202:ARG:HH22 | 1:G:204:LEU:CD1 | 1.88 | 0.83 |
| 1:K:169:ARG:NH1 | 1:L:167:ARG:HB3 | 1.94 | 0.83 |
| 1:B:184:TYR:OH | 1:B:188:ARG:NH2 | 2.10 | 0.83 |
| 1:B:219:VAL:HB | 2:B:301:9ED:C40 | 2.07 | 0.83 |
| 1:J:170:GLN:OE1 | 1:K:175:VAL:CG1 | 2.26 | 0.83 |
| 1:B:164:LEU:O | 1:B:164:LEU:HD22 | 1.77 | 0.83 |
| 1:B:215:VAL:HG21 | 2:B:301:9ED:C57 | 2.07 | 0.83 |
| 1:C:221:GLN:NE2 | 1:I:222:MET:SD | 2.51 | 0.83 |
| 1:B:188:ARG:CZ | 1:J:186:ARG:HD2 | 2.05 | 0.83 |
| 2:H:301:9ED:C4 | 1:I:213:ILE:HG22 | 2.08 | 0.83 |
| 1:K:173:GLU:HG3 | 1:L:177:GLN:HE22 | 1.41 | 0.83 |
| 1:B:181:GLU:O | 1:B:185:GLN:NE2 | 2.11 | 0.83 |
| 1:C:184:TYR:CD2 | 1:F:187:TRP:HZ3 | 1.97 | 0.83 |
| 1:C:200:ASN:O | 1:C:202:ARG:N | 2.11 | 0.83 |
| 1:H:233:LYS:O | 1:H:233:LYS:HD3 | 1.78 | 0.83 |
| 1:A:155:ILE:HD12 | 1:A:155:ILE:H | 1.42 | 0.83 |
| 1:H:219:VAL:HG22 | 2:H:301:9ED:O22 | 1.77 | 0.83 |
| 1:J:170:GLN:CG | 1:K:175:VAL:CB | 2.56 | 0.83 |
| 1:B:184:TYR:HH | 1:J:182:GLN:HB2 | 1.35 | 0.83 |
| 1:J:166:LEU:HD11 | 1:L:171:LEU:HD21 | 1.60 | 0.83 |
| 1:D:225:LEU:CD1 | 1:D:226:LYS:HZ2 | 1.89 | 0.83 |
| 1:J:186:ARG:HB3 | 1:J:186:ARG:CZ | 2.08 | 0.83 |
| 1:A:205:TRP:HZ3 | 1:J:205:TRP:CG | 1.96 | 0.83 |
| 1:G:178:ILE:HG21 | 1:H:174:GLN:HE21 | 1.40 | 0.82 |
| 1:H:208:ILE:HD12 | 2:H:301:9ED:C56 | 2.08 | 0.82 |
| 1:G:168:VAL:HG11 | 1:H:167:ARG:HD2 | 1.61 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:232:LYS:NZ | 1:G:235:VAL:CG2 | 2.40 | 0.82 |
| 1:H:186:ARG:NE | 1:H:186:ARG:HA | 1.94 | 0.82 |
| 1:J:167:ARG:CD | 1:K:168:VAL:HG12 | 2.09 | 0.82 |
| 1:J:180:LYS:HB3 | 1:K:186:ARG:CD | 2.09 | 0.82 |
| 1:L:232:LYS:HA | 1:L:232:LYS:NZ | 1.94 | 0.82 |
| 1:H:210:GLN:HA | 1:H:213:ILE:HD13 | 1.61 | 0.82 |
| 1:J:166:LEU:CD1 | 1:L:171:LEU:CD2 | 2.55 | 0.82 |
| 2:B:301:9ED:C49 | 1:D:213:ILE:HG21 | 2.10 | 0.82 |
| 1:A:209:LEU:HD21 | 1:J:205:TRP:CZ3 | 2.15 | 0.82 |
| 1:B:184:TYR:HE1 | 1:B:188:ARG:NH1 | 1.77 | 0.82 |
| 1:C:224:HIS:CB | 1:I:222:MET:CE | 2.57 | 0.82 |
| 1:J:170:GLN:CD | 1:K:175:VAL:CB | 2.46 | 0.82 |
| 1:A:214:LEU:HA | 1:A:217:ILE:HD12 | 1.60 | 0.82 |
| 1:K:186:ARG:NH1 | 1:L:188:ARG:HD2 | 1.94 | 0.82 |
| 1:G:192:PHE:HE2 | 1:H:191:ARG:CZ | 1.93 | 0.81 |
| 1:G:225:LEU:O | 1:G:229:PHE:CG | 2.32 | 0.81 |
| 1:H:174:GLN:HE22 | 1:I:178:ILE:HD13 | 1.44 | 0.81 |
| 1:H:233:LYS:HA | 1:H:233:LYS:CE | 2.06 | 0.81 |
| 1:A:209:LEU:HD13 | 1:A:209:LEU:C | 2.01 | 0.81 |
| 1:A:226:LYS:NZ | 1:L:225:LEU:HD23 | 1.95 | 0.81 |
| 1:E:168:VAL:HG11 | 1:F:167:ARG:CZ | 2.10 | 0.81 |
| 1:J:210:GLN:HA | 1:J:213:ILE:HD11 | 1.47 | 0.81 |
| 1:L:234:LEU:O | 1:L:234:LEU:HD22 | 1.78 | 0.81 |
| 1:B:210:GLN:O | 1:B:213:ILE:HB | 1.79 | 0.81 |
| 1:H:168:VAL:CG1 | 1:I:167:ARG:CD | 2.34 | 0.81 |
| 1:D:193:ARG:CZ | 1:H:190:GLU:OE1 | 2.28 | 0.81 |
| 1:A:209:LEU:CD2 | 1:J:205:TRP:CH2 | 2.64 | 0.81 |
| 1:H:233:LYS:HA | 1:H:233:LYS:HZ2 | 1.45 | 0.81 |
| 1:I:202:ARG:HE | 1:I:206:TRP:HE1 | 1.26 | 0.81 |
| 1:A:203:VAL:CG1 | 1:B:199:THR:HG21 | 2.11 | 0.81 |
| 1:G:164:LEU:HD21 | 1:H:164:LEU:CG | 2.06 | 0.81 |
| 1:H:219:VAL:HG21 | 2:H:301:9ED:O22 | 1.78 | 0.81 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:HG2 | 1.96 | 0.81 |
| 1:C:188:ARG:HD2 | 1:F:191:ARG:CD | 2.10 | 0.81 |
| 1:G:211:THR:HG22 | 1:H:209:LEU:HD11 | 1.61 | 0.81 |
| 1:D:164:LEU:HD23 | 1:E:163:GLU:OE1 | 1.79 | 0.81 |
| 1:G:192:PHE:CD2 | 1:H:191:ARG:NH2 | 2.49 | 0.80 |
| 1:A:197:GLU:CD | 1:J:194:GLN:HG3 | 2.02 | 0.80 |
| 1:G:232:LYS:CD | 1:H:228:PHE:HZ | 1.92 | 0.80 |
| 1:J:170:GLN:OE1 | 1:K:175:VAL:CB | 2.28 | 0.80 |
| 1:B:173:GLU:O | 1:B:176:GLU:HG2 | 1.81 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:224:HIS:CE1 | 1:B:223:ARG:HH12 | 1.97 | 0.80 |
| 1:E:165:GLN:HB2 | 1:F:167:ARG:HH12 | 1.44 | 0.80 |
| 1:E:166:LEU:HD12 | 1:E:166:LEU:O | 1.80 | 0.80 |
| 1:J:167:ARG:CG | 1:K:172:VAL:CG2 | 2.56 | 0.80 |
| 1:E:192:PHE:CZ | 1:F:192:PHE:HA | 2.17 | 0.80 |
| 1:J:174:GLN:HA | 1:J:177:GLN:HG2 | 1.62 | 0.80 |
| 1:J:177:GLN:OE1 | 1:K:179:GLN:HA | 1.82 | 0.80 |
| 1:J:209:LEU:O | 1:J:213:ILE:HD12 | 1.79 | 0.80 |
| 1:A:203:VAL:O | 1:A:207:SER:OG | 1.99 | 0.80 |
| 1:D:164:LEU:CB | 1:E:167:ARG:HH22 | 1.92 | 0.80 |
| 1:D:188:ARG:HH11 | 1:E:188:ARG:HH21 | 1.29 | 0.80 |
| 1:A:205:TRP:HB2 | 1:J:202:ARG:CG | 2.10 | 0.80 |
| 1:B:184:TYR:CE1 | 1:J:182:GLN:HB2 | 2.17 | 0.80 |
| 1:G:204:LEU:HD22 | 1:H:202:ARG:NH2 | 1.94 | 0.80 |
| 1:H:172:VAL:HA | 1:H:175:VAL:HG11 | 1.64 | 0.80 |
| 1:L:232:LYS:HA | 1:L:232:LYS:CE | 2.11 | 0.80 |
| 1:D:168:VAL:CG2 | 1:E:167:ARG:HD2 | 2.02 | 0.79 |
| 1:F:183:ASN:ND2 | 1:F:187:TRP:CZ2 | 2.50 | 0.79 |
| 1:A:205:TRP:NE1 | 1:J:201:GLN:HB3 | 1.96 | 0.79 |
| 1:C:221:GLN:HE21 | 1:I:222:MET:HB2 | 1.48 | 0.79 |
| 1:C:228:PHE:CZ | 1:I:222:MET:CE | 2.65 | 0.79 |
| 1:D:189:GLU:HB2 | 1:H:187:TRP:CZ3 | 2.17 | 0.79 |
| 1:G:174:GLN:NE2 | 1:I:178:ILE:HD13 | 1.96 | 0.79 |
| 1:A:220:TRP:CZ2 | 1:J:212:LEU:C | 2.56 | 0.79 |
| 1:D:164:LEU:HG | 1:E:164:LEU:HB3 | 1.65 | 0.79 |
| 1:D:210:GLN:O | 1:D:213:ILE:CG1 | 2.29 | 0.79 |
| 1:J:187:TRP:CB | 1:J:191:ARG:NH1 | 2.04 | 0.79 |
| 1:L:163:GLU:HG3 | 1:L:167:ARG:NH1 | 1.98 | 0.79 |
| 1:A:167:ARG:HG2 | 1:A:167:ARG:HH11 | 1.47 | 0.79 |
| 1:B:175:VAL:HA | 1:B:178:ILE:HD12 | 1.65 | 0.79 |
| 1:G:169:ARG:HA | 1:G:169:ARG:HE | 1.46 | 0.79 |
| 1:H:168:VAL:CG1 | 1:I:167:ARG:CZ | 2.60 | 0.78 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:HH11 | 0.96 | 0.78 |
| 1:C:188:ARG:CD | 1:F:191:ARG:HD2 | 2.12 | 0.78 |
| 1:D:165:GLN:C | 1:D:168:VAL:HG12 | 2.03 | 0.78 |
| 1:F:183:ASN:ND2 | 1:F:187:TRP:CH2 | 2.51 | 0.78 |
| 1:G:214:LEU:HG | 1:H:213:ILE:HB | 1.64 | 0.78 |
| 1:K:202:ARG:HG2 | 1:L:205:TRP:NE1 | 1.97 | 0.78 |
| 1:C:201:GLN:O | 1:C:205:TRP:HB2 | 1.81 | 0.78 |
| 1:H:165:GLN:NE2 | 1:H:165:GLN:O | 2.16 | 0.78 |
| 1:H:203:VAL:HG11 | 1:I:203:VAL:HG12 | 1.65 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:187:TRP:HB3 | 1:J:191:ARG:CZ | 2.08 | 0.78 |
| 1:A:180:LYS:HB2 | 1:A:180:LYS:HZ2 | 1.45 | 0.78 |
| 1:E:192:PHE:HB2 | 1:F:192:PHE:CE1 | 2.18 | 0.78 |
| 1:D:188:ARG:HE | 1:F:189:GLU:HG3 | 1.46 | 0.78 |
| 1:J:180:LYS:HB3 | 1:K:186:ARG:NE | 1.98 | 0.78 |
| 1:A:226:LYS:HZ2 | 1:L:225:LEU:HA | 1.46 | 0.78 |
| 1:D:171:LEU:HD11 | 1:E:171:LEU:HB3 | 1.64 | 0.78 |
| 1:G:186:ARG:HA | 1:G:186:ARG:HH11 | 1.47 | 0.78 |
| 1:G:232:LYS:CG | 1:H:228:PHE:HZ | 1.96 | 0.78 |
| 1:C:164:LEU:HD12 | 1:C:164:LEU:O | 1.82 | 0.78 |
| 1:E:166:LEU:CD2 | 1:H:166:LEU:HD13 | 2.06 | 0.77 |
| 1:G:221:GLN:NE2 | 1:H:221:GLN:HE22 | 1.82 | 0.77 |
| 1:G:225:LEU:CD1 | 1:G:229:PHE:HZ | 1.69 | 0.77 |
| 1:C:210:GLN:NE2 | 1:G:206:TRP:HH2 | 1.81 | 0.77 |
| 1:J:211:THR:HA | 1:J:214:LEU:CD2 | 2.15 | 0.77 |
| 1:H:174:GLN:NE2 | 1:I:178:ILE:HD13 | 1.99 | 0.77 |
| 1:J:184:TYR:CA | 1:K:193:ARG:HH22 | 1.83 | 0.77 |
| 1:A:226:LYS:HD2 | 1:L:225:LEU:HD22 | 1.64 | 0.77 |
| 1:B:232:LYS:HB3 | 1:E:232:LYS:HZ1 | 1.41 | 0.77 |
| 1:C:229:PHE:HE1 | 1:G:232:LYS:NZ | 1.82 | 0.77 |
| 1:E:187:TRP:HE1 | 1:E:191:ARG:CD | 1.98 | 0.77 |
| 1:H:199:THR:O | 1:H:203:VAL:CG2 | 2.32 | 0.77 |
| 1:C:188:ARG:HD3 | 1:F:187:TRP:HB3 | 1.66 | 0.77 |
| 1:D:188:ARG:CZ | 1:E:188:ARG:NH2 | 2.45 | 0.77 |
| 1:H:198:SER:O | 1:H:202:ARG:HG3 | 1.82 | 0.77 |
| 1:B:230:GLU:OE1 | 1:B:230:GLU:HA | 1.83 | 0.77 |
| 1:A:224:HIS:CE1 | 1:B:223:ARG:CZ | 2.68 | 0.77 |
| 1:E:189:GLU:OE2 | 1:F:188:ARG:NH1 | 2.18 | 0.77 |
| 1:D:168:VAL:CA | 1:E:167:ARG:HD2 | 2.14 | 0.77 |
| 1:E:176:GLU:O | 1:E:179:GLN:HB3 | 1.84 | 0.77 |
| 1:A:171:LEU:CD1 | 1:A:174:GLN:OE1 | 2.29 | 0.77 |
| 1:C:234:LEU:O | 1:C:234:LEU:HD23 | 1.85 | 0.77 |
| 1:A:203:VAL:O | 1:A:207:SER:HB3 | 1.83 | 0.77 |
| 1:E:186:ARG:HA | 1:E:186:ARG:CZ | 2.14 | 0.77 |
| 1:G:192:PHE:CE1 | 1:I:192:PHE:HD1 | 1.93 | 0.77 |
| 1:B:200:ASN:OD1 | 1:F:200:ASN:CA | 2.33 | 0.76 |
| 1:D:210:GLN:CA | 1:D:213:ILE:HG12 | 2.15 | 0.76 |
| 1:E:169:ARG:NH2 | 1:H:170:GLN:CG | 2.39 | 0.76 |
| 1:K:216:ALA:CB | 1:L:220:TRP:CH2 | 2.60 | 0.76 |
| 1:B:172:VAL:O | 1:B:176:GLU:OE2 | 2.03 | 0.76 |
| 1:D:210:GLN:C | 1:D:213:ILE:HG12 | 2.06 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:171:LEU:HD21 | 1:H:170:GLN:OE1 | 1.85 | 0.76 |
| 1:K:187:TRP:HA | 1:L:188:ARG:CZ | 2.11 | 0.76 |
| 1:B:184:TYR:CE1 | 1:J:182:GLN:CB | 2.67 | 0.76 |
| 1:G:232:LYS:CE | 1:G:232:LYS:HA | 2.15 | 0.76 |
| 1:H:163:GLU:HA | 1:H:166:LEU:HD12 | 1.65 | 0.76 |
| 1:B:188:ARG:NH1 | 1:J:186:ARG:HD2 | 1.98 | 0.76 |
| 1:H:210:GLN:HE21 | 1:I:214:LEU:HD21 | 1.49 | 0.76 |
| 1:J:184:TYR:CB | 1:K:193:ARG:HH22 | 1.97 | 0.76 |
| 1:L:210:GLN:NE2 | 1:L:210:GLN:HA | 2.00 | 0.76 |
| 1:A:171:LEU:HG | 1:C:169:ARG:HH22 | 1.48 | 0.76 |
| 1:A:213:ILE:HG12 | 1:A:214:LEU:HD13 | 1.66 | 0.76 |
| 1:E:184:TYR:HD1 | 1:E:187:TRP:CE3 | 2.03 | 0.76 |
| 1:J:210:GLN:HG2 | 1:J:214:LEU:HD21 | 1.67 | 0.76 |
| 1:C:228:PHE:CZ | 1:I:222:MET:HE1 | 2.21 | 0.76 |
| 1:D:189:GLU:CA | 1:H:187:TRP:HH2 | 1.98 | 0.76 |
| 1:D:171:LEU:HD11 | 1:E:171:LEU:CB | 2.16 | 0.76 |
| 1:D:175:VAL:HG22 | 1:E:174:GLN:HG3 | 1.67 | 0.76 |
| 1:K:179:GLN:CD | 1:L:181:GLU:HG3 | 2.06 | 0.76 |
| 1:G:192:PHE:CE1 | 1:I:192:PHE:HB3 | 2.19 | 0.76 |
| 1:J:170:GLN:HG2 | 1:K:175:VAL:CG2 | 2.16 | 0.76 |
| 1:J:166:LEU:CD1 | 1:L:171:LEU:HD11 | 2.16 | 0.76 |
| 1:J:184:TYR:CD1 | 1:K:189:GLU:CG | 2.65 | 0.76 |
| 1:G:203:VAL:CG1 | 1:H:202:ARG:NH2 | 2.49 | 0.76 |
| 1:H:185:GLN:HE22 | 1:I:184:TYR:HB3 | 1.48 | 0.76 |
| 1:A:220:TRP:CG | 2:B:301:9ED:O09 | 2.39 | 0.75 |
| 1:E:184:TYR:HE1 | 1:G:186:ARG:HD3 | 0.68 | 0.75 |
| 1:E:184:TYR:CD1 | 1:E:187:TRP:CZ3 | 2.74 | 0.75 |
| 1:G:203:VAL:HG12 | 1:H:202:ARG:NH2 | 2.01 | 0.75 |
| 1:J:210:GLN:O | 1:J:213:ILE:HD13 | 1.85 | 0.75 |
| 1:J:220:TRP:CG | 1:J:223:ARG:HD2 | 2.13 | 0.75 |
| 1:B:220:TRP:HB2 | 2:B:301:9ED:O20 | 1.85 | 0.75 |
| 1:A:209:LEU:HD13 | 1:A:209:LEU:O | 1.86 | 0.75 |
| 1:H:168:VAL:HG11 | 1:I:167:ARG:NE | 2.00 | 0.75 |
| 1:C:228:PHE:HZ | 1:I:222:MET:HE3 | 1.50 | 0.75 |
| 1:D:188:ARG:HH21 | 1:F:189:GLU:HA | 0.69 | 0.75 |
| 1:E:192:PHE:HB2 | 1:F:192:PHE:CZ | 2.20 | 0.75 |
| 1:B:184:TYR:HH | 1:J:182:GLN:CB | 1.81 | 0.75 |
| 1:D:178:ILE:HD13 | 1:E:174:GLN:NE2 | 2.02 | 0.75 |
| 1:A:224:HIS:CE1 | 1:B:223:ARG:NH2 | 2.55 | 0.75 |
| 1:B:172:VAL:C | 1:B:176:GLU:OE1 | 2.24 | 0.75 |
| 1:G:208:ILE:HG23 | 1:G:212:LEU:HD11 | 1.68 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:184:TYR:CD1 | 1:E:187:TRP:CE3 | 2.75 | 0.74 |
| 1:K:187:TRP:HB2 | 1:L:188:ARG:CZ | 2.17 | 0.74 |
| 1:A:214:LEU:HD22 | 1:A:214:LEU:N | 2.02 | 0.74 |
| 1:J:163:GLU:HA | 1:L:171:LEU:HD11 | 1.70 | 0.74 |
| 1:B:210:GLN:CB | 1:B:213:ILE:HD12 | 2.17 | 0.74 |
| 1:G:186:ARG:NH1 | 1:G:186:ARG:O | 2.20 | 0.74 |
| 1:H:181:GLU:HA | 1:H:184:TYR:HD2 | 1.53 | 0.74 |
| 1:H:210:GLN:NE2 | 1:I:214:LEU:HD21 | 2.03 | 0.74 |
| 1:H:233:LYS:HA | 1:H:233:LYS:NZ | 2.02 | 0.74 |
| 1:B:214:LEU:HD11 | 1:F:214:LEU:HB3 | 1.68 | 0.74 |
| 1:E:168:VAL:HA | 1:E:171:LEU:HD23 | 1.70 | 0.74 |
| 1:G:207:SER:CB | 1:H:206:TRP:CD1 | 2.69 | 0.74 |
| 1:G:232:LYS:N | 1:G:232:LYS:HD2 | 2.01 | 0.74 |
| 1:J:173:GLU:HG3 | 1:L:181:GLU:OE2 | 1.88 | 0.74 |
| 1:G:171:LEU:CD1 | 1:I:171:LEU:HD11 | 2.17 | 0.74 |
| 1:J:184:TYR:HB2 | 1:K:189:GLU:HB2 | 1.65 | 0.74 |
| 1:J:191:ARG:NH2 | 1:K:193:ARG:CB | 2.45 | 0.74 |
| 1:E:165:GLN:C | 1:E:168:VAL:HG12 | 2.06 | 0.73 |
| 1:G:193:ARG:HA | 1:H:191:ARG:HH21 | 1.49 | 0.73 |
| 1:E:187:TRP:CD1 | 1:E:191:ARG:CD | 2.70 | 0.73 |
| 1:H:168:VAL:HA | 1:H:171:LEU:HD21 | 1.68 | 0.73 |
| 1:B:202:ARG:O | 1:B:206:TRP:HD1 | 1.72 | 0.73 |
| 1:B:232:LYS:HB2 | 1:E:232:LYS:NZ | 2.02 | 0.73 |
| 1:E:166:LEU:HD23 | 1:H:166:LEU:CD1 | 2.08 | 0.73 |
| 1:L:163:GLU:OE2 | 1:L:167:ARG:CZ | 2.37 | 0.73 |
| 1:A:205:TRP:CD1 | 1:J:201:GLN:CB | 2.71 | 0.73 |
| 1:B:233:LYS:HG3 | 1:B:234:LEU:HD13 | 1.70 | 0.73 |
| 1:A:205:TRP:CE2 | 1:J:201:GLN:HB3 | 2.23 | 0.73 |
| 1:C:210:GLN:CD | 1:G:206:TRP:CH2 | 2.60 | 0.73 |
| 1:G:192:PHE:CZ | 1:I:192:PHE:CE1 | 2.77 | 0.73 |
| 1:G:221:GLN:HE21 | 1:H:221:GLN:NE2 | 1.86 | 0.73 |
| 1:B:214:LEU:HB2 | 1:F:215:VAL:HG22 | 1.69 | 0.73 |
| 1:J:178:ILE:HD13 | 1:J:178:ILE:N | 2.03 | 0.73 |
| 1:A:202:ARG:O | 1:A:206:TRP:CA | 2.35 | 0.73 |
| 1:L:163:GLU:CG | 1:L:167:ARG:HH12 | 2.01 | 0.73 |
| 1:B:200:ASN:OD1 | 1:F:200:ASN:C | 2.27 | 0.73 |
| 1:B:215:VAL:CG1 | 2:B:301:9ED:C62 | 2.61 | 0.73 |
| 1:G:168:VAL:HG12 | 1:H:167:ARG:HD2 | 1.69 | 0.73 |
| 1:J:202:ARG:HD2 | 1:K:204:LEU:HD11 | 1.69 | 0.73 |
| 1:J:161:LEU:HD12 | 1:J:161:LEU:N | 2.04 | 0.73 |
| 1:B:202:ARG:O | 1:B:202:ARG:HD2 | 1.88 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:187:TRP:NE1 | 1:E:191:ARG:CD | 2.51 | 0.73 |
| 1:A:226:LYS:NZ | 1:L:225:LEU:HD22 | 2.02 | 0.72 |
| 1:B:158:LYS:HB2 | 1:B:158:LYS:HZ2 | 1.53 | 0.72 |
| 1:C:211:THR:OG1 | 1:G:206:TRP:CZ3 | 2.39 | 0.72 |
| 1:E:209:LEU:O | 1:E:213:ILE:HG12 | 1.89 | 0.72 |
| 1:H:180:LYS:O | 1:H:184:TYR:CD2 | 2.42 | 0.72 |
| 1:H:208:ILE:HG21 | 2:H:301:9ED:C61 | 2.18 | 0.72 |
| 1:B:216:ALA:C | 2:B:301:9ED:C37 | 2.57 | 0.72 |
| 1:B:215:VAL:HG21 | 2:B:301:9ED:C53 | 2.18 | 0.72 |
| 1:C:224:HIS:CB | 1:I:222:MET:HE2 | 2.18 | 0.72 |
| 1:E:192:PHE:CD2 | 1:F:192:PHE:CE1 | 2.77 | 0.72 |
| 1:H:171:LEU:CD2 | 1:I:171:LEU:CD1 | 2.44 | 0.72 |
| 1:K:174:GLN:O | 1:K:174:GLN:NE2 | 2.22 | 0.72 |
| 1:A:221:GLN:OE1 | 1:B:220:TRP:HH2 | 1.70 | 0.72 |
| 1:H:168:VAL:CB | 1:I:167:ARG:HD3 | 2.19 | 0.72 |
| 1:J:173:GLU:HB2 | 1:K:179:GLN:OE1 | 1.89 | 0.72 |
| 1:K:176:GLU:OE1 | 1:L:178:ILE:HA | 1.89 | 0.72 |
| 1:L:163:GLU:OE2 | 1:L:167:ARG:NH1 | 2.22 | 0.72 |
| 1:B:193:ARG:HD2 | 1:F:197:GLU:CD | 2.09 | 0.72 |
| 1:D:222:MET:O | 1:D:225:LEU:HG | 1.88 | 0.72 |
| 1:G:165:GLN:C | 1:G:168:VAL:HG22 | 2.08 | 0.72 |
| 1:H:188:ARG:HB3 | 1:I:188:ARG:HH21 | 1.52 | 0.72 |
| 1:J:180:LYS:CB | 1:K:186:ARG:HD3 | 2.19 | 0.72 |
| 1:D:204:LEU:CD1 | 1:H:205:TRP:CH2 | 2.73 | 0.72 |
| 1:K:227:SER:C | 1:K:230:GLU:HG2 | 2.09 | 0.72 |
| 1:A:160:LYS:HZ2 | 1:A:160:LYS:C | 1.93 | 0.72 |
| 1:B:188:ARG:HH22 | 1:J:186:ARG:HG3 | 1.52 | 0.72 |
| 1:G:181:GLU:HA | 1:G:184:TYR:HD2 | 1.55 | 0.72 |
| 1:K:173:GLU:OE2 | 1:L:174:GLN:CB | 2.37 | 0.72 |
| 1:K:176:GLU:OE2 | 1:K:180:LYS:HE3 | 1.90 | 0.72 |
| 1:A:221:GLN:C | 1:A:221:GLN:HE21 | 1.93 | 0.72 |
| 1:B:226:LYS:HE3 | 1:B:230:GLU:HG2 | 1.70 | 0.72 |
| 1:G:210:GLN:NE2 | 1:H:209:LEU:HD22 | 1.95 | 0.72 |
| 1:H:168:VAL:CG2 | 1:I:167:ARG:HD3 | 2.20 | 0.72 |
| 1:A:210:GLN:CD | 1:F:208:ILE:HD11 | 2.10 | 0.71 |
| 1:G:233:LYS:HA | 1:G:233:LYS:CE | 2.19 | 0.71 |
| 1:J:180:LYS:C | 1:K:186:ARG:HD3 | 2.10 | 0.71 |
| 1:B:226:LYS:C | 1:B:226:LYS:HD3 | 2.11 | 0.71 |
| 1:D:168:VAL:HA | 1:E:167:ARG:HD2 | 1.69 | 0.71 |
| 1:G:212:LEU:HD23 | 1:G:212:LEU:N | 2.04 | 0.71 |
| 1:C:169:ARG:HG3 | 1:C:169:ARG:NH1 | 1.98 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:185:GLN:CG | 1:C:188:ARG:NH1 | 2.52 | 0.71 |
| 1:E:180:LYS:HZ3 | 1:G:182:GLN:HB3 | 1.53 | 0.71 |
| 1:J:186:ARG:HB3 | 1:J:186:ARG:NH2 | 2.05 | 0.71 |
| 1:K:200:ASN:C | 1:K:203:VAL:HG12 | 2.11 | 0.71 |
| 1:A:204:LEU:CB | 1:J:202:ARG:NH2 | 2.45 | 0.71 |
| 1:E:192:PHE:CB | 1:F:192:PHE:CE1 | 2.73 | 0.71 |
| 1:H:171:LEU:HD22 | 1:I:171:LEU:HD12 | 0.79 | 0.71 |
| 1:H:223:ARG:NH1 | 1:H:223:ARG:O | 2.24 | 0.71 |
| 1:C:228:PHE:CE2 | 1:I:222:MET:CE | 2.73 | 0.71 |
| 1:D:204:LEU:CD1 | 1:H:205:TRP:CZ2 | 2.73 | 0.71 |
| 1:K:212:LEU:HD13 | 1:L:217:ILE:HD11 | 1.72 | 0.71 |
| 1:B:181:GLU:C | 1:B:185:GLN:NE2 | 2.44 | 0.71 |
| 1:A:171:LEU:CG | 1:C:169:ARG:NH2 | 2.28 | 0.71 |
| 1:A:188:ARG:HB3 | 1:A:188:ARG:HH21 | 1.54 | 0.71 |
| 1:D:164:LEU:CB | 1:E:167:ARG:NH2 | 2.53 | 0.71 |
| 1:H:202:ARG:HB3 | 1:H:202:ARG:NH1 | 2.06 | 0.71 |
| 1:L:163:GLU:CG | 1:L:167:ARG:NH1 | 2.53 | 0.71 |
| 1:G:233:LYS:N | 1:G:233:LYS:HD2 | 2.04 | 0.71 |
| 1:C:210:GLN:NE2 | 1:G:206:TRP:HZ2 | 1.75 | 0.70 |
| 1:D:190:GLU:HA | 1:H:187:TRP:CZ2 | 2.26 | 0.70 |
| 1:H:168:VAL:C | 1:H:171:LEU:HG | 2.10 | 0.70 |
| 1:K:167:ARG:HD3 | 1:K:168:VAL:H | 1.56 | 0.70 |
| 1:K:220:TRP:CE3 | 1:K:220:TRP:HA | 2.24 | 0.70 |
| 1:A:197:GLU:HB2 | 1:B:192:PHE:CE2 | 2.25 | 0.70 |
| 1:B:206:TRP:HA | 1:B:209:LEU:HD12 | 1.73 | 0.70 |
| 1:A:203:VAL:CG1 | 1:B:199:THR:CG2 | 2.57 | 0.70 |
| 1:G:221:GLN:HG2 | 1:H:220:TRP:HD1 | 1.52 | 0.70 |
| 1:C:171:LEU:N | 1:C:171:LEU:HD23 | 2.06 | 0.70 |
| 1:B:184:TYR:CD1 | 1:J:182:GLN:OE1 | 2.44 | 0.70 |
| 1:A:223:ARG:HH12 | 1:J:217:ILE:HD13 | 1.56 | 0.70 |
| 1:E:184:TYR:HD1 | 1:E:187:TRP:HE3 | 1.36 | 0.70 |
| 1:G:211:THR:CG2 | 1:H:209:LEU:CD1 | 2.69 | 0.70 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:CB | 2.46 | 0.70 |
| 1:B:220:TRP:N | 2:B:301:9ED:O22 | 2.24 | 0.70 |
| 1:G:178:ILE:HG12 | 1:H:174:GLN:HE21 | 1.55 | 0.70 |
| 1:A:209:LEU:CD2 | 1:J:205:TRP:CE2 | 2.75 | 0.70 |
| 1:B:222:MET:SD | 1:D:220:TRP:CZ2 | 2.84 | 0.70 |
| 1:D:190:GLU:N | 1:H:187:TRP:CZ2 | 2.60 | 0.70 |
| 1:K:173:GLU:CD | 1:L:177:GLN:OE1 | 2.29 | 0.70 |
| 1:B:176:GLU:CD | 1:B:176:GLU:H | 1.95 | 0.70 |
| 1:A:220:TRP:HZ3 | 1:J:216:ALA:HB2 | 0.88 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:180:LYS:HZ3 | 1:G:182:GLN:CB | 2.04 | 0.69 |
| 1:A:204:LEU:CG | 1:J:202:ARG:NH2 | 2.55 | 0.69 |
| 1:A:209:LEU:CD2 | 1:J:205:TRP:CZ2 | 2.76 | 0.69 |
| 1:B:208:ILE:HD13 | 1:B:208:ILE:N | 2.06 | 0.69 |
| 1:C:185:GLN:HG2 | 1:C:188:ARG:NH1 | 2.07 | 0.69 |
| 1:A:197:GLU:HB2 | 1:B:192:PHE:HE2 | 1.57 | 0.69 |
| 1:A:209:LEU:HD21 | 1:J:205:TRP:CZ2 | 2.26 | 0.69 |
| 1:C:229:PHE:CE1 | 1:G:232:LYS:NZ | 2.58 | 0.69 |
| 1:D:188:ARG:CZ | 1:F:192:PHE:CD2 | 2.76 | 0.69 |
| 1:J:170:GLN:OE1 | 1:K:175:VAL:HG12 | 1.90 | 0.69 |
| 1:L:232:LYS:N | 1:L:232:LYS:HD2 | 2.06 | 0.69 |
| 1:G:163:GLU:OE1 | 1:G:163:GLU:N | 2.18 | 0.69 |
| 1:G:202:ARG:HH11 | 1:G:202:ARG:HA | 1.58 | 0.69 |
| 1:B:215:VAL:CG1 | 2:B:301:9ED:C51 | 2.71 | 0.69 |
| 1:G:232:LYS:HZ2 | 1:G:235:VAL:CG2 | 2.04 | 0.69 |
| 1:B:229:PHE:HE1 | 1:E:232:LYS:CD | 1.98 | 0.69 |
| 1:K:176:GLU:OE1 | 1:L:178:ILE:CA | 2.41 | 0.69 |
| 1:B:204:LEU:HD23 | 1:B:204:LEU:C | 2.12 | 0.69 |
| 1:D:190:GLU:N | 1:H:187:TRP:CH2 | 2.61 | 0.69 |
| 1:G:178:ILE:CG2 | 1:H:174:GLN:HE21 | 2.05 | 0.69 |
| 1:J:187:TRP:CD1 | 1:K:193:ARG:NE | 2.54 | 0.69 |
| 1:K:187:TRP:N | 1:L:188:ARG:CZ | 2.53 | 0.69 |
| 1:A:155:ILE:HA | 1:A:158:LYS:HD2 | 1.75 | 0.69 |
| 1:D:178:ILE:CD1 | 1:E:174:GLN:HG2 | 2.23 | 0.69 |
| 1:E:221:GLN:HA | 1:E:224:HIS:CD2 | 2.28 | 0.69 |
| 1:G:164:LEU:HD21 | 1:H:164:LEU:HD22 | 1.73 | 0.69 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:HB3 | 2.00 | 0.69 |
| 1:A:210:GLN:HE22 | 1:F:208:ILE:CD1 | 1.94 | 0.68 |
| 1:G:208:ILE:HD13 | 1:G:212:LEU:HD21 | 1.76 | 0.68 |
| 1:D:209:LEU:O | 1:D:213:ILE:HG23 | 1.92 | 0.68 |
| 1:L:163:GLU:OE2 | 1:L:167:ARG:HG3 | 1.93 | 0.68 |
| 1:G:164:LEU:HD12 | 1:G:164:LEU:O | 1.92 | 0.68 |
| 1:G:201:GLN:OE1 | 1:G:201:GLN:HA | 1.94 | 0.68 |
| 1:C:235:VAL:CG2 | 1:I:233:LYS:HE2 | 2.23 | 0.68 |
| 1:G:207:SER:O | 1:G:210:GLN:HB3 | 1.94 | 0.68 |
| 1:J:180:LYS:HB3 | 1:K:186:ARG:HE | 1.57 | 0.68 |
| 1:J:184:TYR:CB | 1:K:189:GLU:HB2 | 2.21 | 0.68 |
| 1:J:220:TRP:HB2 | 1:J:223:ARG:HD2 | 1.74 | 0.68 |
| 1:J:213:ILE:HD12 | 1:J:213:ILE:N | 2.07 | 0.68 |
| 1:A:197:GLU:CG | 1:J:194:GLN:HG2 | 2.23 | 0.68 |
| 1:B:154:GLU:HB3 | 1:B:155:ILE:HD12 | 1.76 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:155:ILE:HD12 | 1:B:155:ILE:N | 2.07 | 0.68 |
| 1:A:221:GLN:OE1 | 1:B:220:TRP:CZ3 | 2.47 | 0.68 |
| 1:G:168:VAL:HB | 1:H:167:ARG:NE | 2.08 | 0.68 |
| 1:J:180:LYS:CA | 1:K:186:ARG:HD3 | 2.23 | 0.68 |
| 1:A:171:LEU:HD21 | 1:C:169:ARG:CZ | 2.24 | 0.68 |
| 1:C:232:LYS:HA | 1:C:235:VAL:HB | 1.75 | 0.68 |
| 1:G:214:LEU:HD22 | 1:G:214:LEU:C | 2.15 | 0.68 |
| 1:C:235:VAL:HG21 | 1:I:233:LYS:HE2 | 1.74 | 0.68 |
| 1:K:169:ARG:NH1 | 1:L:167:ARG:CB | 2.57 | 0.68 |
| 1:L:193:ARG:HH11 | 1:L:193:ARG:HG3 | 1.58 | 0.68 |
| 1:A:215:VAL:HG21 | 1:L:214:LEU:CD2 | 2.24 | 0.67 |
| 1:C:170:GLN:HG3 | 1:C:171:LEU:HD23 | 1.76 | 0.67 |
| 1:E:175:VAL:HB | 1:F:174:GLN:OE1 | 1.95 | 0.67 |
| 1:A:179:GLN:OE1 | 1:B:175:VAL:CG1 | 2.42 | 0.67 |
| 1:B:191:ARG:HG2 | 1:B:191:ARG:HH11 | 1.58 | 0.67 |
| 1:B:165:GLN:HE22 | 1:C:161:LEU:HD21 | 1.59 | 0.67 |
| 1:B:173:GLU:O | 1:B:176:GLU:CG | 2.37 | 0.67 |
| 1:G:221:GLN:CG | 1:H:220:TRP:CD1 | 2.76 | 0.67 |
| 1:B:172:VAL:O | 1:B:175:VAL:HG22 | 1.93 | 0.67 |
| 1:C:232:LYS:HE3 | 1:I:233:LYS:HD3 | 1.75 | 0.67 |
| 1:D:188:ARG:HH22 | 1:F:192:PHE:HD2 | 0.70 | 0.67 |
| 1:J:177:GLN:HG3 | 1:J:178:ILE:CD1 | 2.21 | 0.67 |
| 1:B:184:TYR:CZ | 1:B:188:ARG:NH2 | 2.63 | 0.67 |
| 1:B:216:ALA:CB | 2:B:301:9ED:C37 | 2.72 | 0.67 |
| 1:E:192:PHE:CD2 | 1:F:192:PHE:CD1 | 2.82 | 0.67 |
| 1:H:233:LYS:HZ2 | 1:H:233:LYS:CA | 2.07 | 0.67 |
| 1:L:217:ILE:HD13 | 1:L:217:ILE:N | 2.10 | 0.67 |
| 1:B:210:GLN:HA | 1:B:213:ILE:CG1 | 2.24 | 0.67 |
| 1:G:214:LEU:HD22 | 1:G:214:LEU:O | 1.95 | 0.67 |
| 1:G:231:ALA:O | 1:G:235:VAL:HG22 | 1.95 | 0.67 |
| 1:B:212:LEU:HD22 | 2:B:301:9ED:C53 | 2.23 | 0.67 |
| 1:C:166:LEU:HD22 | 1:C:166:LEU:C | 2.14 | 0.67 |
| 1:G:189:GLU:HA | 1:G:189:GLU:OE2 | 1.91 | 0.67 |
| 1:A:220:TRP:HZ2 | 1:J:212:LEU:HB3 | 1.59 | 0.66 |
| 1:B:188:ARG:HH21 | 1:J:183:ASN:HA | 1.60 | 0.66 |
| 1:G:174:GLN:HE22 | 1:H:174:GLN:NE2 | 1.93 | 0.66 |
| 1:H:214:LEU:HD23 | 1:H:214:LEU:C | 2.14 | 0.66 |
| 1:K:185:GLN:HA | 1:K:185:GLN:NE2 | 2.09 | 0.66 |
| 1:C:210:GLN:OE1 | 1:G:206:TRP:CH2 | 2.48 | 0.66 |
| 1:A:197:GLU:CG | 1:J:194:GLN:CG | 2.74 | 0.66 |
| 1:H:219:VAL:HG21 | 2:H:301:9ED:C35 | 2.25 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:167:ARG:CA | 1:K:172:VAL:HG13 | 2.21 | 0.66 |
| 1:J:170:GLN:HG2 | 1:K:175:VAL:CB | 2.20 | 0.66 |
| 1:B:184:TYR:CE2 | 1:J:179:GLN:O | 2.48 | 0.66 |
| 1:B:222:MET:HB3 | 1:D:220:TRP:CH2 | 2.21 | 0.66 |
| 1:C:185:GLN:HG3 | 1:C:188:ARG:HH12 | 1.59 | 0.66 |
| 1:D:164:LEU:CG | 1:E:164:LEU:HB3 | 2.22 | 0.66 |
| 1:J:174:GLN:HB2 | 1:J:177:GLN:NE2 | 2.10 | 0.66 |
| 1:B:229:PHE:HE2 | 1:D:232:LYS:CD | 2.04 | 0.66 |
| 1:J:166:LEU:CB | 1:L:174:GLN:NE2 | 2.41 | 0.66 |
| 1:J:199:THR:HG23 | 1:K:204:LEU:CD2 | 2.24 | 0.66 |
| 1:J:209:LEU:HD13 | 1:J:212:LEU:HD12 | 1.78 | 0.66 |
| 1:D:165:GLN:OE1 | 1:D:168:VAL:HG11 | 1.96 | 0.66 |
| 1:G:232:LYS:HD3 | 1:H:228:PHE:HZ | 1.59 | 0.66 |
| 1:H:169:ARG:NH2 | 1:I:167:ARG:HH22 | 1.92 | 0.66 |
| 1:J:173:GLU:HG3 | 1:L:181:GLU:CD | 2.16 | 0.66 |
| 1:J:191:ARG:NH1 | 1:K:193:ARG:HD2 | 1.58 | 0.66 |
| 1:L:188:ARG:HD3 | 1:L:191:ARG:HD2 | 1.75 | 0.66 |
| 1:D:189:GLU:CD | 1:E:188:ARG:HG2 | 2.16 | 0.66 |
| 1:D:210:GLN:HA | 1:D:213:ILE:CG1 | 2.25 | 0.66 |
| 1:G:192:PHE:CE2 | 1:H:191:ARG:NH1 | 2.63 | 0.66 |
| 1:J:168:VAL:HA | 1:J:171:LEU:HD22 | 1.77 | 0.66 |
| 1:D:171:LEU:CD1 | 1:E:171:LEU:HB3 | 2.26 | 0.66 |
| 1:G:178:ILE:CG1 | 1:H:174:GLN:HE21 | 2.08 | 0.66 |
| 1:A:171:LEU:HG | 1:C:169:ARG:NH2 | 2.06 | 0.65 |
| 1:B:188:ARG:NE | 1:J:186:ARG:CD | 2.30 | 0.65 |
| 1:J:206:TRP:HE3 | 1:K:215:VAL:CG2 | 1.85 | 0.65 |
| 1:C:228:PHE:CZ | 1:I:222:MET:HE3 | 2.27 | 0.65 |
| 1:D:213:ILE:HG13 | 1:D:214:LEU:HD12 | 1.78 | 0.65 |
| 1:K:171:LEU:HD12 | 1:K:171:LEU:O | 1.96 | 0.65 |
| 1:C:185:GLN:CG | 1:C:188:ARG:HH12 | 2.10 | 0.65 |
| 1:E:180:LYS:HZ3 | 1:G:183:ASN:N | 1.94 | 0.65 |
| 1:H:198:SER:C | 1:H:202:ARG:CG | 2.64 | 0.65 |
| 1:J:211:THR:HA | 1:J:214:LEU:HD21 | 1.76 | 0.65 |
| 1:K:171:LEU:HD12 | 1:K:171:LEU:C | 2.17 | 0.65 |
| 1:B:191:ARG:HD2 | 1:B:191:ARG:C | 2.16 | 0.65 |
| 1:L:178:ILE:HD13 | 1:L:178:ILE:N | 2.10 | 0.65 |
| 1:A:210:GLN:OE1 | 1:B:210:GLN:HG2 | 1.97 | 0.65 |
| 1:G:203:VAL:HG12 | 1:H:202:ARG:HH22 | 1.62 | 0.65 |
| 1:G:204:LEU:HD23 | 1:H:202:ARG:HH21 | 1.61 | 0.65 |
| 1:D:196:SER:OG | 1:E:195:THR:OG1 | 2.02 | 0.65 |
| 1:K:202:ARG:O | 1:K:205:TRP:HB2 | 1.89 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:216:ALA:CB | 1:L:220:TRP:HZ2 | 1.88 | 0.65 |
| 1:L:169:ARG:NH1 | 1:L:169:ARG:HG2 | 2.10 | 0.65 |
| 1:D:168:VAL:HG21 | 1:E:167:ARG:HD3 | 1.75 | 0.65 |
| 1:C:164:LEU:HD12 | 1:C:164:LEU:C | 2.17 | 0.65 |
| 1:G:178:ILE:CG2 | 1:I:178:ILE:HG21 | 2.26 | 0.65 |
| 1:G:192:PHE:CD2 | 1:H:191:ARG:CZ | 2.80 | 0.65 |
| 1:A:212:LEU:HB3 | 1:J:209:LEU:HD21 | 1.77 | 0.65 |
| 1:B:226:LYS:HG2 | 1:D:228:PHE:HE1 | 1.62 | 0.65 |
| 1:J:177:GLN:HB3 | 1:K:179:GLN:HG3 | 1.78 | 0.65 |
| 1:K:226:LYS:HD2 | 1:L:228:PHE:CE1 | 2.32 | 0.65 |
| 1:A:220:TRP:HZ2 | 1:J:212:LEU:C | 2.00 | 0.65 |
| 1:E:166:LEU:HD12 | 1:E:166:LEU:C | 2.15 | 0.65 |
| 1:G:210:GLN:OE1 | 1:H:206:TRP:CE2 | 2.50 | 0.65 |
| 1:L:233:LYS:N | 1:L:233:LYS:HE2 | 2.12 | 0.65 |
| 1:F:183:ASN:OD1 | 1:F:187:TRP:NE1 | 2.29 | 0.64 |
| 1:G:178:ILE:CG2 | 1:I:178:ILE:HD13 | 2.21 | 0.64 |
| 1:H:176:GLU:HA | 1:H:176:GLU:OE1 | 1.97 | 0.64 |
| 1:B:181:GLU:O | 1:B:185:GLN:HG3 | 1.89 | 0.64 |
| 1:B:202:ARG:HD2 | 1:B:202:ARG:C | 2.18 | 0.64 |
| 1:E:168:VAL:HB | 1:F:167:ARG:HD3 | 1.80 | 0.64 |
| 1:G:174:GLN:HE21 | 1:I:178:ILE:HD13 | 1.51 | 0.64 |
| 1:K:169:ARG:CD | 1:L:171:LEU:HB2 | 2.28 | 0.64 |
| 1:E:174:GLN:NE2 | 1:E:178:ILE:HD11 | 2.12 | 0.64 |
| 1:G:164:LEU:HD12 | 1:G:164:LEU:C | 2.18 | 0.64 |
| 1:H:178:ILE:HG13 | 1:I:178:ILE:CG1 | 2.28 | 0.64 |
| 1:E:202:ARG:HH21 | 1:E:205:TRP:HZ2 | 1.45 | 0.64 |
| 1:F:183:ASN:CG | 1:F:187:TRP:CZ2 | 2.71 | 0.64 |
| 1:H:175:VAL:HG23 | 1:I:174:GLN:NE2 | 2.12 | 0.64 |
| 1:J:188:ARG:HG3 | 1:J:188:ARG:NH1 | 2.13 | 0.64 |
| 2:H:301:9ED:C3 | 1:I:213:ILE:CG2 | 2.75 | 0.64 |
| 1:B:184:TYR:OH | 1:J:182:GLN:HB3 | 1.92 | 0.64 |
| 1:G:180:LYS:O | 1:G:184:TYR:CD2 | 2.51 | 0.64 |
| 1:J:199:THR:CG2 | 1:K:204:LEU:HD23 | 2.26 | 0.64 |
| 1:B:167:ARG:HB2 | 1:B:167:ARG:HH11 | 1.62 | 0.64 |
| 1:D:225:LEU:HD12 | 1:D:226:LYS:N | 2.13 | 0.64 |
| 1:H:181:GLU:HA | 1:H:184:TYR:CD2 | 2.31 | 0.64 |
| 1:K:169:ARG:NE | 1:L:168:VAL:HA | 2.13 | 0.64 |
| 1:C:211:THR:HG1 | 1:G:206:TRP:HZ3 | 1.34 | 0.64 |
| 1:J:166:LEU:HD12 | 1:L:171:LEU:CD1 | 2.27 | 0.64 |
| 1:B:214:LEU:HD12 | 1:F:215:VAL:HG22 | 1.79 | 0.63 |
| 1:H:210:GLN:HE21 | 1:I:214:LEU:CD2 | 2.11 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:178:ILE:HD13 | 1:C:178:ILE:N | 2.13 | 0.63 |
| 1:D:189:GLU:CA | 1:H:187:TRP:CH2 | 2.78 | 0.63 |
| 1:H:189:GLU:HB2 | 1:I:188:ARG:NH1 | 2.13 | 0.63 |
| 1:K:169:ARG:HD3 | 1:L:171:LEU:H | 1.62 | 0.63 |
| 1:B:228:PHE:CE2 | 1:F:229:PHE:CD1 | 2.76 | 0.63 |
| 1:G:170:GLN:NE2 | 1:G:170:GLN:O | 2.31 | 0.63 |
| 1:J:174:GLN:CA | 1:J:177:GLN:CD | 2.66 | 0.63 |
| 1:K:172:VAL:HB | 1:L:174:GLN:HG3 | 1.80 | 0.63 |
| 1:L:186:ARG:HA | 1:L:186:ARG:NH1 | 2.12 | 0.63 |
| 1:B:216:ALA:C | 2:B:301:9ED:C40 | 2.66 | 0.63 |
| 1:D:188:ARG:HD3 | 1:E:188:ARG:NH2 | 2.13 | 0.63 |
| 1:C:155:ILE:H | 1:C:155:ILE:CD1 | 1.98 | 0.63 |
| 1:G:181:GLU:HA | 1:G:184:TYR:CD2 | 2.32 | 0.63 |
| 1:J:161:LEU:HD12 | 1:J:161:LEU:H | 1.63 | 0.63 |
| 1:K:203:VAL:O | 1:K:207:SER:HB3 | 1.99 | 0.63 |
| 1:A:226:LYS:NZ | 1:L:225:LEU:HA | 2.14 | 0.63 |
| 1:D:178:ILE:HD11 | 1:E:174:GLN:HG2 | 1.81 | 0.63 |
| 1:L:171:LEU:C | 1:L:171:LEU:HD23 | 2.18 | 0.63 |
| 1:A:224:HIS:CE1 | 1:B:223:ARG:HH22 | 2.16 | 0.62 |
| 1:A:165:GLN:HE22 | 1:A:169:ARG:HH21 | 1.44 | 0.62 |
| 1:D:214:LEU:HD13 | 1:E:213:ILE:HD12 | 1.82 | 0.62 |
| 1:K:187:TRP:CB | 1:L:188:ARG:NH1 | 2.61 | 0.62 |
| 1:C:188:ARG:CG | 1:F:191:ARG:HD2 | 2.29 | 0.62 |
| 1:H:205:TRP:HE3 | 2:H:301:9ED:C58 | 2.12 | 0.62 |
| 1:K:169:ARG:HA | 1:K:172:VAL:HG23 | 1.81 | 0.62 |
| 1:B:215:VAL:CB | 2:B:301:9ED:C62 | 2.77 | 0.62 |
| 1:H:203:VAL:CG1 | 1:I:203:VAL:HG12 | 2.29 | 0.62 |
| 1:B:203:VAL:O | 1:B:203:VAL:HG12 | 2.00 | 0.62 |
| 1:A:221:GLN:CD | 1:B:220:TRP:CH2 | 2.73 | 0.62 |
| 1:G:232:LYS:CD | 1:H:228:PHE:CZ | 2.79 | 0.62 |
| 1:K:179:GLN:NE2 | 1:L:181:GLU:HG3 | 2.14 | 0.62 |
| 1:K:187:TRP:CB | 1:L:188:ARG:CZ | 2.73 | 0.62 |
| 1:B:222:MET:SD | 1:D:220:TRP:CH2 | 2.93 | 0.62 |
| 1:E:184:TYR:CD1 | 1:E:187:TRP:HZ3 | 2.16 | 0.62 |
| 1:H:180:LYS:O | 1:H:184:TYR:HD2 | 1.81 | 0.62 |
| 2:H:301:9ED:C49 | 1:I:217:ILE:CG1 | 2.74 | 0.62 |
| 1:A:193:ARG:HD3 | 1:B:189:GLU:HB2 | 1.81 | 0.62 |
| 1:L:169:ARG:HG2 | 1:L:169:ARG:HH11 | 1.64 | 0.62 |
| 1:L:193:ARG:CZ | 1:L:193:ARG:HB2 | 2.29 | 0.62 |
| 1:F:213:ILE:HG23 | 1:F:217:ILE:HD13 | 1.82 | 0.62 |
| 1:J:167:ARG:CZ | 1:K:171:LEU:HD23 | 2.26 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:215:VAL:HG21 | 1:L:214:LEU:HD21 | 1.81 | 0.61 |
| 1:C:210:GLN:CD | 1:G:206:TRP:CZ2 | 2.74 | 0.61 |
| 1:J:199:THR:HA | 1:K:204:LEU:HD21 | 1.81 | 0.61 |
| 1:K:187:TRP:CB | 1:L:188:ARG:HH12 | 2.11 | 0.61 |
| 1:K:217:ILE:HD13 | 1:K:217:ILE:N | 2.14 | 0.61 |
| 1:F:188:ARG:CZ | 1:F:191:ARG:NH1 | 2.64 | 0.61 |
| 1:J:166:LEU:CD1 | 1:L:171:LEU:CG | 2.78 | 0.61 |
| 1:A:226:LYS:HE3 | 1:L:229:PHE:CE1 | 2.35 | 0.61 |
| 1:D:210:GLN:HA | 1:D:213:ILE:CD1 | 2.30 | 0.61 |
| 1:H:230:GLU:HA | 1:H:230:GLU:OE2 | 1.99 | 0.61 |
| 1:E:188:ARG:HH12 | 1:F:185:GLN:CD | 2.02 | 0.61 |
| 1:J:188:ARG:HH11 | 1:J:188:ARG:CG | 2.14 | 0.61 |
| 1:J:220:TRP:CB | 1:J:223:ARG:HD2 | 2.30 | 0.61 |
| 1:A:160:LYS:O | 1:A:160:LYS:NZ | 2.21 | 0.61 |
| 1:A:214:LEU:HD12 | 1:B:213:ILE:HD13 | 1.83 | 0.61 |
| 1:B:235:VAL:HG23 | 1:B:235:VAL:O | 2.01 | 0.61 |
| 1:L:211:THR:O | 1:L:211:THR:HG22 | 2.01 | 0.61 |
| 1:B:191:ARG:HH11 | 1:B:191:ARG:CG | 2.13 | 0.61 |
| 1:G:225:LEU:CA | 1:G:229:PHE:CZ | 2.79 | 0.61 |
| 1:L:193:ARG:HH11 | 1:L:193:ARG:CG | 2.14 | 0.61 |
| 1:A:223:ARG:HG3 | 1:A:223:ARG:NH1 | 2.11 | 0.61 |
| 1:C:217:ILE:HD13 | 1:C:217:ILE:N | 2.15 | 0.61 |
| 1:J:213:ILE:CD1 | 1:J:213:ILE:H | 1.99 | 0.61 |
| 1:K:176:GLU:OE1 | 1:L:178:ILE:N | 2.32 | 0.61 |
| 1:E:168:VAL:CB | 1:F:167:ARG:HD3 | 2.30 | 0.61 |
| 1:K:194:GLN:HA | 1:K:194:GLN:NE2 | 2.14 | 0.61 |
| 1:A:222:MET:HE2 | 1:A:222:MET:CA | 2.29 | 0.60 |
| 1:K:220:TRP:HA | 1:K:220:TRP:HE3 | 1.66 | 0.60 |
| 1:E:192:PHE:CE2 | 1:F:192:PHE:HA | 2.36 | 0.60 |
| 1:G:232:LYS:HZ2 | 1:G:235:VAL:HG22 | 1.64 | 0.60 |
| 1:I:180:LYS:HA | 1:I:180:LYS:HE3 | 1.83 | 0.60 |
| 1:B:202:ARG:O | 1:B:206:TRP:CD1 | 2.53 | 0.60 |
| 1:D:221:GLN:HB2 | 1:E:220:TRP:CZ3 | 2.37 | 0.60 |
| 1:G:186:ARG:HH22 | 1:G:190:GLU:HG2 | 1.67 | 0.60 |
| 1:A:209:LEU:C | 1:A:209:LEU:CD1 | 2.70 | 0.60 |
| 1:B:168:VAL:HA | 1:B:171:LEU:HG | 1.82 | 0.60 |
| 1:E:175:VAL:O | 1:E:178:ILE:HB | 2.01 | 0.60 |
| 1:J:173:GLU:HB3 | 1:K:179:GLN:HE22 | 1.64 | 0.60 |
| 1:J:202:ARG:NH1 | 1:K:204:LEU:HD12 | 2.16 | 0.60 |
| 1:C:164:LEU:HD13 | 1:C:167:ARG:HH12 | 1.67 | 0.60 |
| 1:F:180:LYS:HA | 1:F:180:LYS:HE3 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:173:GLU:HA | 1:J:173:GLU:OE2 | 2.01 | 0.60 |
| 1:A:221:GLN:O | 1:A:221:GLN:NE2 | 2.25 | 0.60 |
| 1:B:184:TYR:CE1 | 1:J:182:GLN:HB3 | 2.36 | 0.60 |
| 1:B:208:ILE:HG23 | 2:B:301:9ED:C4 | 2.32 | 0.60 |
| 1:G:164:LEU:HD21 | 1:H:164:LEU:CD2 | 2.21 | 0.60 |
| 1:J:167:ARG:CZ | 1:K:168:VAL:CG1 | 2.73 | 0.60 |
| 1:J:191:ARG:NE | 1:K:193:ARG:HB3 | 2.10 | 0.60 |
| 1:A:234:LEU:HD23 | 1:A:234:LEU:N | 2.15 | 0.60 |
| 1:B:184:TYR:HE1 | 1:B:188:ARG:HH12 | 1.50 | 0.60 |
| 1:D:214:LEU:HD11 | 1:E:213:ILE:HG23 | 1.84 | 0.60 |
| 1:E:184:TYR:CZ | 1:G:186:ARG:HD3 | 2.28 | 0.60 |
| 1:G:225:LEU:HD11 | 1:H:224:HIS:HB2 | 1.84 | 0.60 |
| 1:H:175:VAL:HG23 | 1:I:174:GLN:HE21 | 1.65 | 0.60 |
| 1:D:171:LEU:CD1 | 1:E:171:LEU:CB | 2.78 | 0.60 |
| 1:B:179:GLN:HA | 1:B:179:GLN:HE21 | 1.67 | 0.60 |
| 1:E:180:LYS:NZ | 1:G:183:ASN:N | 2.49 | 0.60 |
| 1:G:221:GLN:HG2 | 1:H:220:TRP:NE1 | 2.15 | 0.60 |
| 1:K:227:SER:HA | 1:K:230:GLU:OE2 | 2.01 | 0.60 |
| 1:G:205:TRP:HE3 | 1:G:209:LEU:HD11 | 1.67 | 0.59 |
| 1:K:186:ARG:HH12 | 1:L:188:ARG:HD2 | 1.64 | 0.59 |
| 1:L:171:LEU:O | 1:L:174:GLN:OE1 | 2.20 | 0.59 |
| 1:C:184:TYR:CG | 1:F:187:TRP:HZ3 | 2.11 | 0.59 |
| 1:J:178:ILE:HG22 | 1:J:182:GLN:HE21 | 1.68 | 0.59 |
| 1:J:184:TYR:HB2 | 1:K:189:GLU:CG | 2.31 | 0.59 |
| 1:C:210:GLN:OE1 | 1:G:206:TRP:CZ2 | 2.55 | 0.59 |
| 1:G:163:GLU:H | 1:G:163:GLU:CD | 2.04 | 0.59 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:CA | 2.84 | 0.59 |
| 1:A:205:TRP:HA | 1:A:208:ILE:HB | 1.85 | 0.59 |
| 1:B:232:LYS:CB | 1:E:232:LYS:HZ3 | 2.03 | 0.59 |
| 1:G:206:TRP:HA | 1:G:209:LEU:HD12 | 1.83 | 0.59 |
| 1:A:202:ARG:HB3 | 1:A:206:TRP:CD1 | 2.37 | 0.59 |
| 1:A:171:LEU:C | 1:A:175:VAL:HG23 | 2.12 | 0.59 |
| 1:E:220:TRP:HE1 | 1:E:223:ARG:HH21 | 1.50 | 0.59 |
| 1:G:178:ILE:HD13 | 1:H:178:ILE:HG12 | 1.84 | 0.59 |
| 1:G:168:VAL:HG23 | 1:G:169:ARG:N | 2.17 | 0.59 |
| 1:J:187:TRP:CD1 | 1:K:193:ARG:CZ | 2.86 | 0.59 |
| 1:A:171:LEU:HG | 1:C:169:ARG:HH12 | 1.67 | 0.59 |
| 1:E:168:VAL:HG21 | 1:F:167:ARG:CD | 2.33 | 0.59 |
| 1:J:206:TRP:CZ3 | 1:K:215:VAL:HG21 | 2.33 | 0.59 |
| 1:K:176:GLU:CD | 1:L:177:GLN:C | 2.61 | 0.59 |
| 1:C:185:GLN:HG3 | 1:C:188:ARG:NH1 | 2.17 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:188:ARG:HB3 | 1:F:191:ARG:NE | 2.18 | 0.59 |
| 1:H:168:VAL:HG21 | 1:I:167:ARG:CD | 2.32 | 0.59 |
| 1:K:222:MET:HA | 1:K:222:MET:HE2 | 1.81 | 0.59 |
| 1:K:222:MET:N | 1:K:222:MET:SD | 2.75 | 0.59 |
| 1:J:187:TRP:C | 1:J:191:ARG:NH1 | 2.56 | 0.59 |
| 1:J:210:GLN:CG | 1:J:214:LEU:HD23 | 2.26 | 0.59 |
| 1:G:232:LYS:HZ1 | 1:G:235:VAL:CG2 | 2.11 | 0.58 |
| 1:H:185:GLN:HA | 1:H:188:ARG:HD3 | 1.85 | 0.58 |
| 1:H:225:LEU:HB2 | 1:I:225:LEU:HD11 | 1.83 | 0.58 |
| 1:L:169:ARG:HH11 | 1:L:169:ARG:CG | 2.14 | 0.58 |
| 2:B:301:9ED:C57 | 1:D:213:ILE:HG22 | 2.33 | 0.58 |
| 1:G:221:GLN:NE2 | 1:H:221:GLN:NE2 | 2.47 | 0.58 |
| 1:B:164:LEU:HD22 | 1:B:164:LEU:C | 2.22 | 0.58 |
| 1:B:216:ALA:O | 2:B:301:9ED:C40 | 2.51 | 0.58 |
| 1:C:229:PHE:CZ | 1:G:231:ALA:HB1 | 2.39 | 0.58 |
| 1:G:188:ARG:NH2 | 1:H:188:ARG:HD2 | 2.19 | 0.58 |
| 1:J:170:GLN:CG | 1:K:175:VAL:CG2 | 2.80 | 0.58 |
| 1:J:222:MET:HA | 1:J:225:LEU:HD22 | 1.85 | 0.58 |
| 1:A:222:MET:HA | 1:A:222:MET:CE | 2.31 | 0.58 |
| 1:A:177:GLN:HA | 1:A:177:GLN:HE21 | 1.69 | 0.58 |
| 1:C:221:GLN:NE2 | 1:I:222:MET:HB2 | 2.17 | 0.58 |
| 1:G:186:ARG:HH22 | 1:G:190:GLU:CG | 2.17 | 0.58 |
| 1:G:192:PHE:HZ | 1:I:192:PHE:HD1 | 1.40 | 0.58 |
| 1:J:188:ARG:HD3 | 1:K:189:GLU:OE1 | 2.03 | 0.58 |
| 1:H:234:LEU:HD13 | 1:H:234:LEU:N | 2.17 | 0.58 |
| 1:J:173:GLU:CB | 1:K:179:GLN:NE2 | 2.61 | 0.58 |
| 1:A:203:VAL:O | 1:A:207:SER:CA | 2.52 | 0.58 |
| 1:A:204:LEU:O | 1:A:207:SER:OG | 2.20 | 0.58 |
| 1:A:234:LEU:CD1 | 1:J:227:SER:HB2 | 2.32 | 0.58 |
| 1:A:178:ILE:HG21 | 1:C:175:VAL:HG11 | 1.85 | 0.58 |
| 1:F:187:TRP:O | 1:F:190:GLU:HG3 | 2.03 | 0.58 |
| 1:G:192:PHE:CE2 | 1:I:192:PHE:CE1 | 2.92 | 0.58 |
| 1:H:225:LEU:HD12 | 1:I:225:LEU:HD13 | 1.86 | 0.58 |
| 1:J:163:GLU:HA | 1:L:171:LEU:CD1 | 2.32 | 0.58 |
| 1:K:176:GLU:CG | 1:L:178:ILE:HD11 | 2.20 | 0.58 |
| 1:B:232:LYS:HD3 | 1:F:233:LYS:HB2 | 1.85 | 0.58 |
| 1:C:229:PHE:CD1 | 1:G:232:LYS:HD3 | 2.39 | 0.58 |
| 1:G:225:LEU:C | 1:G:229:PHE:CD2 | 2.77 | 0.58 |
| 1:H:168:VAL:HG22 | 1:H:171:LEU:HD21 | 1.84 | 0.58 |
| 1:G:204:LEU:HD23 | 1:G:204:LEU:N | 2.18 | 0.58 |
| 1:H:178:ILE:HD13 | 1:H:181:GLU:HG3 | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:168:VAL:HG12 | 1:F:169:ARG:HH11 | 1.69 | 0.57 |
| 1:H:210:GLN:NE2 | 1:I:214:LEU:CD2 | 2.67 | 0.57 |
| 1:J:188:ARG:HG3 | 1:J:188:ARG:HH11 | 1.67 | 0.57 |
| 1:C:193:ARG:HH21 | 1:C:193:ARG:CG | 2.14 | 0.57 |
| 1:C:212:LEU:HD13 | 1:C:212:LEU:N | 2.18 | 0.57 |
| 1:D:190:GLU:CA | 1:H:187:TRP:CZ2 | 2.86 | 0.57 |
| 1:G:211:THR:HG21 | 1:H:209:LEU:HD11 | 1.85 | 0.57 |
| 1:H:179:GLN:OE1 | 1:H:179:GLN:HA | 2.05 | 0.57 |
| 1:D:189:GLU:O | 1:H:187:TRP:HZ2 | 1.87 | 0.57 |
| 1:A:223:ARG:HH21 | 1:J:220:TRP:HB3 | 1.69 | 0.57 |
| 1:G:167:ARG:NH2 | 1:G:168:VAL:HG12 | 2.18 | 0.57 |
| 1:C:225:LEU:O | 1:C:225:LEU:HD22 | 2.05 | 0.57 |
| 1:E:189:GLU:HG2 | 1:F:188:ARG:NH1 | 2.19 | 0.57 |
| 1:G:221:GLN:CG | 1:H:220:TRP:NE1 | 2.67 | 0.57 |
| 1:C:193:ARG:HG3 | 1:C:193:ARG:NH2 | 2.12 | 0.57 |
| 1:J:184:TYR:CB | 1:K:193:ARG:NH2 | 2.61 | 0.57 |
| 1:B:222:MET:SD | 1:D:220:TRP:HZ2 | 2.26 | 0.57 |
| 1:G:177:GLN:HE22 | 1:I:178:ILE:HG22 | 1.70 | 0.57 |
| 1:G:188:ARG:NH1 | 1:I:192:PHE:CE2 | 2.70 | 0.57 |
| 1:J:173:GLU:CB | 1:K:179:GLN:CD | 2.46 | 0.57 |
| 1:J:181:GLU:HB3 | 1:J:184:TYR:HH | 1.60 | 0.57 |
| 1:A:205:TRP:CG | 1:J:201:GLN:HB3 | 2.40 | 0.57 |
| 1:B:216:ALA:CA | 2:B:301:9ED:C37 | 2.82 | 0.57 |
| 1:D:164:LEU:O | 1:E:167:ARG:NH2 | 2.38 | 0.57 |
| 1:G:204:LEU:HD21 | 1:H:202:ARG:CZ | 2.34 | 0.57 |
| 1:G:233:LYS:HA | 1:G:233:LYS:NZ | 2.20 | 0.57 |
| 1:E:164:LEU:HD13 | 1:F:164:LEU:HD13 | 1.87 | 0.57 |
| 1:H:198:SER:C | 1:H:202:ARG:HG3 | 2.23 | 0.57 |
| 1:B:158:LYS:HB2 | 1:B:158:LYS:NZ | 2.19 | 0.56 |
| 1:D:193:ARG:NH2 | 1:H:190:GLU:OE1 | 2.38 | 0.56 |
| 1:G:232:LYS:HD3 | 1:H:228:PHE:CZ | 2.40 | 0.56 |
| 1:J:211:THR:N | 1:J:214:LEU:HD21 | 2.20 | 0.56 |
| 1:H:208:ILE:CG2 | 2:H:301:9ED:C61 | 2.83 | 0.56 |
| 2:H:301:9ED:C3 | 1:I:213:ILE:HG23 | 2.34 | 0.56 |
| 1:D:163:GLU:OE1 | 1:D:164:LEU:CD1 | 2.54 | 0.56 |
| 1:G:188:ARG:HH22 | 1:H:188:ARG:NE | 2.03 | 0.56 |
| 1:L:171:LEU:O | 1:L:174:GLN:HB3 | 2.06 | 0.56 |
| 1:L:175:VAL:HG13 | 1:L:179:GLN:HE21 | 1.71 | 0.56 |
| 1:A:205:TRP:HB2 | 1:J:202:ARG:HG2 | 1.86 | 0.56 |
| 1:D:163:GLU:HG2 | 1:D:164:LEU:HD12 | 1.87 | 0.56 |
| 1:G:225:LEU:O | 1:G:229:PHE:CD2 | 2.59 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:214:LEU:HD12 | 1:I:214:LEU:CD2 | 2.30 | 0.56 |
| 1:I:226:LYS:O | 1:I:230:GLU:HG2 | 2.05 | 0.56 |
| 1:A:224:HIS:ND1 | 1:B:224:HIS:HE1 | 2.04 | 0.56 |
| 1:D:165:GLN:HA | 1:D:168:VAL:HG12 | 1.88 | 0.56 |
| 1:L:163:GLU:OE1 | 1:L:163:GLU:HA | 2.05 | 0.56 |
| 1:G:191:ARG:HA | 1:G:194:GLN:HE21 | 1.71 | 0.56 |
| 1:K:216:ALA:HB2 | 1:L:220:TRP:CZ2 | 2.35 | 0.56 |
| 1:G:174:GLN:HG3 | 1:I:175:VAL:HG22 | 1.88 | 0.56 |
| 1:G:232:LYS:HZ2 | 1:G:232:LYS:CA | 2.05 | 0.56 |
| 1:I:187:TRP:O | 1:I:191:ARG:HG3 | 2.05 | 0.56 |
| 1:J:210:GLN:CG | 1:J:214:LEU:CD2 | 2.77 | 0.56 |
| 1:H:164:LEU:HD23 | 1:I:164:LEU:HD11 | 1.88 | 0.55 |
| 1:H:205:TRP:CE3 | 2:H:301:9ED:C58 | 2.89 | 0.55 |
| 1:A:171:LEU:CG | 1:C:169:ARG:HH12 | 2.19 | 0.55 |
| 1:G:193:ARG:HA | 1:H:191:ARG:HH22 | 1.65 | 0.55 |
| 1:G:203:VAL:HG11 | 1:H:202:ARG:NH2 | 2.20 | 0.55 |
| 1:B:155:ILE:HD12 | 1:B:155:ILE:H | 1.71 | 0.55 |
| 1:C:210:GLN:HG3 | 1:I:211:THR:HG21 | 1.88 | 0.55 |
| 1:K:227:SER:HB3 | 1:K:230:GLU:OE2 | 2.06 | 0.55 |
| 1:D:165:GLN:CA | 1:D:168:VAL:HG12 | 2.36 | 0.55 |
| 1:A:171:LEU:HG | 1:C:169:ARG:NH1 | 2.21 | 0.55 |
| 1:C:169:ARG:HH11 | 1:C:169:ARG:CG | 2.13 | 0.55 |
| 1:G:167:ARG:HH22 | 1:H:167:ARG:HB2 | 1.72 | 0.55 |
| 1:G:171:LEU:HD12 | 1:H:171:LEU:CB | 2.28 | 0.55 |
| 1:B:212:LEU:HD23 | 2:B:301:9ED:C50 | 2.36 | 0.55 |
| 1:G:225:LEU:HD13 | 1:G:229:PHE:HE1 | 1.50 | 0.55 |
| 1:J:187:TRP:C | 1:J:191:ARG:HH11 | 2.09 | 0.55 |
| 1:B:179:GLN:HG3 | 1:B:180:LYS:HE3 | 1.88 | 0.55 |
| 1:E:176:GLU:O | 1:E:179:GLN:CB | 2.55 | 0.55 |
| 1:G:167:ARG:HD2 | 1:G:167:ARG:C | 2.27 | 0.55 |
| 1:L:200:ASN:OD1 | 1:L:200:ASN:N | 2.35 | 0.55 |
| 1:F:226:LYS:O | 1:F:230:GLU:HG2 | 2.07 | 0.55 |
| 1:K:185:GLN:HA | 1:K:185:GLN:HE21 | 1.72 | 0.55 |
| 1:L:170:GLN:OE1 | 1:L:170:GLN:HA | 2.07 | 0.55 |
| 1:A:203:VAL:HG21 | 1:B:199:THR:HG21 | 1.88 | 0.55 |
| 1:G:232:LYS:CE | 1:G:232:LYS:CA | 2.85 | 0.55 |
| 1:A:171:LEU:HD21 | 1:C:169:ARG:NH1 | 2.22 | 0.54 |
| 1:E:168:VAL:CG2 | 1:F:167:ARG:HD3 | 2.37 | 0.54 |
| 1:E:184:TYR:CE1 | 1:G:186:ARG:NE | 2.76 | 0.54 |
| 1:G:225:LEU:O | 1:G:229:PHE:CD1 | 2.60 | 0.54 |
| 1:K:187:TRP:HD1 | 1:L:191:ARG:NE | 2.05 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:161:LEU:C | 1:A:161:LEU:HD12 | 2.27 | 0.54 |
| 1:D:221:GLN:HB2 | 1:E:220:TRP:HZ3 | 1.72 | 0.54 |
| 1:G:178:ILE:HG22 | 1:I:178:ILE:CG2 | 2.29 | 0.54 |
| 1:J:211:THR:CA | 1:J:214:LEU:HD21 | 2.37 | 0.54 |
| 1:A:188:ARG:O | 1:A:192:PHE:CD2 | 2.60 | 0.54 |
| 1:A:221:GLN:CD | 1:B:220:TRP:HH2 | 2.10 | 0.54 |
| 1:B:214:LEU:HD12 | 1:F:215:VAL:CG2 | 2.36 | 0.54 |
| 1:C:160:LYS:O | 1:C:160:LYS:HE2 | 2.07 | 0.54 |
| 1:J:171:LEU:HD13 | 1:J:171:LEU:N | 2.23 | 0.54 |
| 1:B:215:VAL:HB | 2:B:301:9ED:C62 | 2.28 | 0.54 |
| 1:L:179:GLN:OE1 | 1:L:179:GLN:HA | 2.06 | 0.54 |
| 1:B:166:LEU:CD1 | 1:B:169:ARG:HD2 | 2.36 | 0.54 |
| 1:C:187:TRP:C | 1:C:189:GLU:H | 2.08 | 0.54 |
| 1:A:220:TRP:HZ3 | 1:J:216:ALA:CA | 2.19 | 0.54 |
| 1:B:184:TYR:HH | 1:J:183:ASN:H | 1.50 | 0.54 |
| 1:B:232:LYS:HZ3 | 1:F:232:LYS:HG2 | 1.73 | 0.54 |
| 1:K:227:SER:HA | 1:K:230:GLU:CD | 2.28 | 0.54 |
| 1:G:217:ILE:HA | 1:G:220:TRP:CE3 | 2.42 | 0.54 |
| 1:C:199:THR:C | 1:C:201:GLN:H | 2.11 | 0.54 |
| 1:C:235:VAL:HG21 | 1:I:233:LYS:CE | 2.36 | 0.54 |
| 1:G:180:LYS:O | 1:G:184:TYR:HD2 | 1.91 | 0.54 |
| 1:J:170:GLN:HG2 | 1:K:175:VAL:HG23 | 1.90 | 0.54 |
| 1:D:190:GLU:HA | 1:H:187:TRP:CE2 | 2.43 | 0.54 |
| 1:E:168:VAL:HG21 | 1:F:167:ARG:HD3 | 1.89 | 0.54 |
| 1:G:174:GLN:NE2 | 1:H:174:GLN:NE2 | 2.55 | 0.54 |
| 1:B:188:ARG:CD | 1:J:186:ARG:HD3 | 2.34 | 0.54 |
| 1:D:163:GLU:OE1 | 1:D:164:LEU:HD13 | 2.07 | 0.54 |
| 1:G:192:PHE:HE1 | 1:I:192:PHE:HB3 | 1.72 | 0.54 |
| 1:J:163:GLU:CA | 1:L:171:LEU:HD11 | 2.37 | 0.54 |
| 1:J:186:ARG:CG | 1:J:186:ARG:HH21 | 2.21 | 0.54 |
| 1:D:189:GLU:O | 1:H:187:TRP:CZ2 | 2.61 | 0.53 |
| 1:J:169:ARG:CB | 1:J:169:ARG:CZ | 2.86 | 0.53 |
| 1:C:229:PHE:HD2 | 1:G:228:PHE:CE1 | 1.77 | 0.53 |
| 1:G:221:GLN:HB3 | 1:H:220:TRP:CE2 | 2.37 | 0.53 |
| 1:J:210:GLN:C | 1:J:213:ILE:HD13 | 2.12 | 0.53 |
| 1:A:222:MET:CA | 1:A:222:MET:CE | 2.86 | 0.53 |
| 1:A:223:ARG:HH11 | 1:A:223:ARG:CG | 2.13 | 0.53 |
| 1:B:202:ARG:HH22 | 1:B:206:TRP:HB2 | 1.72 | 0.53 |
| 1:D:175:VAL:HA | 1:D:178:ILE:HG12 | 1.91 | 0.53 |
| 1:G:221:GLN:HE22 | 1:H:217:ILE:HG22 | 1.73 | 0.53 |
| 1:G:225:LEU:C | 1:G:229:PHE:CE2 | 2.81 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:163:GLU:CA | 1:L:171:LEU:CD1 | 2.87 | 0.53 |
| 1:A:197:GLU:HG2 | 1:J:194:GLN:HG2 | 1.88 | 0.53 |
| 1:C:209:LEU:HG | 1:C:213:ILE:HD11 | 1.91 | 0.53 |
| 1:E:223:ARG:CD | 2:H:301:9ED:O12 | 2.56 | 0.53 |
| 1:J:167:ARG:CD | 1:K:172:VAL:HG22 | 2.36 | 0.53 |
| 1:B:202:ARG:NH2 | 1:B:206:TRP:HB2 | 2.24 | 0.53 |
| 1:E:221:GLN:HA | 1:E:224:HIS:NE2 | 2.23 | 0.53 |
| 1:A:202:ARG:HA | 1:A:205:TRP:CD1 | 2.44 | 0.53 |
| 1:C:214:LEU:HD11 | 1:I:211:THR:HG23 | 1.91 | 0.53 |
| 1:H:233:LYS:HD3 | 1:H:233:LYS:C | 2.25 | 0.53 |
| 1:J:170:GLN:NE2 | 1:K:176:GLU:HA | 2.22 | 0.53 |
| 1:L:221:GLN:OE1 | 1:L:225:LEU:HG | 2.08 | 0.53 |
| 1:E:165:GLN:HA | 1:F:167:ARG:HH11 | 1.60 | 0.53 |
| 1:A:161:LEU:HD12 | 1:A:161:LEU:O | 2.08 | 0.53 |
| 1:H:219:VAL:CG2 | 2:H:301:9ED:C35 | 2.86 | 0.53 |
| 1:J:174:GLN:CA | 1:J:177:GLN:CG | 2.69 | 0.53 |
| 1:B:188:ARG:NH2 | 1:J:182:GLN:C | 2.61 | 0.52 |
| 1:D:204:LEU:HB3 | 1:E:202:ARG:NH1 | 2.24 | 0.52 |
| 1:G:187:TRP:HE1 | 1:G:191:ARG:CD | 2.13 | 0.52 |
| 1:L:185:GLN:HG2 | 1:L:186:ARG:HE | 1.75 | 0.52 |
| 1:A:167:ARG:HH12 | 1:A:171:LEU:HD23 | 1.73 | 0.52 |
| 1:D:164:LEU:CD2 | 1:E:163:GLU:OE1 | 2.56 | 0.52 |
| 1:G:186:ARG:HA | 1:G:186:ARG:NH1 | 2.19 | 0.52 |
| 1:G:188:ARG:NH1 | 1:I:192:PHE:CD2 | 2.77 | 0.52 |
| 1:A:201:GLN:HE21 | 1:J:194:GLN:CA | 2.22 | 0.52 |
| 1:H:225:LEU:HD23 | 1:H:226:LYS:HG2 | 1.91 | 0.52 |
| 1:J:180:LYS:HD2 | 1:K:186:ARG:NE | 2.24 | 0.52 |
| 1:A:204:LEU:HD11 | 1:L:206:TRP:CG | 2.39 | 0.52 |
| 1:B:203:VAL:HB | 1:F:204:LEU:HD11 | 1.91 | 0.52 |
| 1:F:162:SER:OG | 1:F:163:GLU:N | 2.41 | 0.52 |
| 1:G:178:ILE:HD11 | 1:H:174:GLN:HG2 | 1.91 | 0.52 |
| 1:G:192:PHE:CE2 | 1:I:192:PHE:CD1 | 2.93 | 0.52 |
| 1:G:193:ARG:CA | 1:H:191:ARG:HH21 | 2.19 | 0.52 |
| 1:H:225:LEU:CD1 | 1:I:225:LEU:CD1 | 2.84 | 0.52 |
| 1:J:171:LEU:HD12 | 1:J:174:GLN:HE22 | 1.75 | 0.52 |
| 1:L:209:LEU:O | 1:L:213:ILE:HD13 | 2.09 | 0.52 |
| 1:A:167:ARG:HH11 | 1:A:167:ARG:CG | 2.15 | 0.52 |
| 1:A:215:VAL:HG21 | 1:L:214:LEU:HD23 | 1.92 | 0.52 |
| 1:B:179:GLN:HE21 | 1:B:179:GLN:CA | 2.21 | 0.52 |
| 1:C:212:LEU:N | 1:C:212:LEU:CD1 | 2.73 | 0.52 |
| 1:G:231:ALA:O | 1:G:235:VAL:HG13 | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:233:LYS:N | 1:G:233:LYS:CD | 2.73 | 0.52 |
| 1:H:188:ARG:HH21 | 1:I:188:ARG:CZ | 2.22 | 0.52 |
| 1:J:202:ARG:HD2 | 1:K:204:LEU:CD1 | 2.36 | 0.52 |
| 1:A:160:LYS:HE3 | 1:A:161:LEU:HA | 1.91 | 0.52 |
| 1:D:188:ARG:NH1 | 1:F:192:PHE:CD2 | 2.76 | 0.52 |
| 1:G:233:LYS:HA | 1:G:233:LYS:HE3 | 1.91 | 0.52 |
| 1:G:233:LYS:CE | 1:G:233:LYS:CA | 2.86 | 0.52 |
| 1:E:168:VAL:HG11 | 1:F:167:ARG:NH1 | 2.25 | 0.52 |
| 1:G:187:TRP:HZ2 | 1:G:191:ARG:NH1 | 2.08 | 0.52 |
| 1:G:204:LEU:CD2 | 1:G:204:LEU:N | 2.73 | 0.52 |
| 1:G:207:SER:HA | 1:H:206:TRP:CD1 | 2.42 | 0.52 |
| 1:J:186:ARG:NH2 | 1:J:186:ARG:CB | 2.73 | 0.52 |
| 1:A:171:LEU:O | 1:A:171:LEU:HD12 | 2.10 | 0.52 |
| 1:A:233:LYS:NZ | 1:L:229:PHE:CG | 2.78 | 0.52 |
| 1:A:177:GLN:CA | 1:A:177:GLN:NE2 | 2.73 | 0.52 |
| 1:A:185:GLN:O | 1:A:185:GLN:HG2 | 2.10 | 0.52 |
| 1:B:165:GLN:HA | 1:B:168:VAL:HG13 | 1.90 | 0.52 |
| 1:B:167:ARG:CB | 1:B:167:ARG:NH1 | 2.73 | 0.52 |
| 1:J:210:GLN:C | 1:J:214:LEU:HG | 2.16 | 0.52 |
| 1:B:179:GLN:CA | 1:B:179:GLN:NE2 | 2.73 | 0.52 |
| 1:D:204:LEU:CD1 | 1:H:205:TRP:HH2 | 2.21 | 0.52 |
| 1:H:222:MET:HE2 | 1:H:223:ARG:HA | 1.91 | 0.52 |
| 1:A:171:LEU:CD2 | 1:C:169:ARG:NH1 | 2.73 | 0.51 |
| 1:A:186:ARG:HH12 | 1:A:190:GLU:HB2 | 1.75 | 0.51 |
| 1:L:171:LEU:HD23 | 1:L:171:LEU:O | 2.10 | 0.51 |
| 1:A:167:ARG:NH1 | 1:C:169:ARG:HH21 | 2.07 | 0.51 |
| 1:B:158:LYS:NZ | 1:B:158:LYS:CB | 2.73 | 0.51 |
| 2:B:301:9ED:O06 | 2:B:301:9ED:O13 | 2.28 | 0.51 |
| 1:C:224:HIS:CB | 1:I:222:MET:HE1 | 2.19 | 0.51 |
| 1:E:180:LYS:HZ2 | 1:G:182:GLN:HB3 | 1.73 | 0.51 |
| 1:H:178:ILE:HA | 1:H:181:GLU:HG2 | 1.93 | 0.51 |
| 1:J:174:GLN:O | 1:J:177:GLN:HG3 | 2.05 | 0.51 |
| 1:A:220:TRP:CZ2 | 1:J:212:LEU:HB3 | 2.45 | 0.51 |
| 1:H:233:LYS:HA | 1:H:233:LYS:HE3 | 1.90 | 0.51 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:CB | 2.93 | 0.51 |
| 1:J:220:TRP:CG | 1:J:220:TRP:O | 2.62 | 0.51 |
| 1:G:174:GLN:HE22 | 1:I:178:ILE:CD1 | 2.16 | 0.51 |
| 1:H:209:LEU:HD23 | 1:H:209:LEU:C | 2.31 | 0.51 |
| 2:H:301:9ED:O06 | 2:H:301:9ED:O13 | 2.28 | 0.51 |
| 1:J:166:LEU:HA | 1:J:169:ARG:HH12 | 1.75 | 0.51 |
| 1:K:169:ARG:HD3 | 1:L:171:LEU:HB2 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:168:VAL:CG2 | 1:I:167:ARG:CD | 2.86 | 0.51 |
| 1:H:199:THR:HA | 1:H:202:ARG:CG | 2.24 | 0.51 |
| 1:J:176:GLU:HA | 1:J:176:GLU:OE2 | 2.08 | 0.51 |
| 1:A:204:LEU:HA | 1:A:207:SER:OG | 2.11 | 0.51 |
| 1:A:221:GLN:NE2 | 1:A:221:GLN:CA | 2.73 | 0.51 |
| 1:K:185:GLN:NE2 | 1:K:185:GLN:CA | 2.73 | 0.51 |
| 1:K:212:LEU:HD21 | 1:L:213:ILE:HG13 | 1.92 | 0.51 |
| 1:A:171:LEU:CB | 1:C:169:ARG:HH22 | 2.19 | 0.51 |
| 1:D:188:ARG:NH1 | 1:F:192:PHE:CE2 | 2.73 | 0.51 |
| 1:G:188:ARG:HE | 1:I:185:GLN:NE2 | 2.09 | 0.51 |
| 1:J:191:ARG:CZ | 1:K:193:ARG:HD2 | 2.29 | 0.51 |
| 1:B:167:ARG:HH11 | 1:B:167:ARG:CB | 2.23 | 0.51 |
| 1:C:221:GLN:NE2 | 1:I:222:MET:CB | 2.74 | 0.51 |
| 1:G:196:SER:CB | 1:H:191:ARG:HH12 | 2.23 | 0.51 |
| 1:J:206:TRP:CH2 | 1:K:212:LEU:HD22 | 2.39 | 0.51 |
| 1:A:188:ARG:HB3 | 1:A:188:ARG:CZ | 2.40 | 0.51 |
| 1:B:193:ARG:HG3 | 1:F:197:GLU:HG3 | 1.91 | 0.51 |
| 1:H:212:LEU:HD13 | 1:H:212:LEU:N | 2.25 | 0.51 |
| 1:L:178:ILE:CD1 | 1:L:178:ILE:N | 2.74 | 0.51 |
| 1:B:184:TYR:CZ | 1:J:182:GLN:HB3 | 2.42 | 0.50 |
| 1:D:220:TRP:CE3 | 1:D:221:GLN:HG2 | 2.46 | 0.50 |
| 1:G:193:ARG:CA | 1:H:191:ARG:NH2 | 2.61 | 0.50 |
| 1:H:233:LYS:NZ | 1:H:233:LYS:CB | 2.73 | 0.50 |
| 1:J:166:LEU:CD1 | 1:L:171:LEU:CD1 | 2.84 | 0.50 |
| 1:J:180:LYS:O | 1:K:186:ARG:HD3 | 2.11 | 0.50 |
| 1:L:186:ARG:HA | 1:L:186:ARG:NE | 2.26 | 0.50 |
| 1:B:204:LEU:HD23 | 1:B:204:LEU:O | 2.11 | 0.50 |
| 1:D:165:GLN:OE1 | 1:D:168:VAL:CG1 | 2.58 | 0.50 |
| 1:K:169:ARG:HD2 | 1:L:167:ARG:CA | 2.41 | 0.50 |
| 1:A:226:LYS:HG3 | 1:L:229:PHE:CE1 | 2.46 | 0.50 |
| 1:G:186:ARG:NH1 | 1:G:186:ARG:CA | 2.74 | 0.50 |
| 1:J:206:TRP:HZ3 | 1:K:215:VAL:HB | 1.77 | 0.50 |
| 1:L:221:GLN:O | 1:L:225:LEU:HG | 2.11 | 0.50 |
| 1:A:226:LYS:HG3 | 1:L:229:PHE:CZ | 2.47 | 0.50 |
| 1:D:225:LEU:HD13 | 1:D:226:LYS:HZ2 | 1.71 | 0.50 |
| 1:H:186:ARG:HA | 1:H:186:ARG:HE | 1.73 | 0.50 |
| 1:H:202:ARG:NH1 | 1:H:202:ARG:CB | 2.73 | 0.50 |
| 1:H:234:LEU:N | 1:H:234:LEU:CD1 | 2.74 | 0.50 |
| 1:K:190:GLU:HB2 | 1:K:193:ARG:NH1 | 2.26 | 0.50 |
| 1:L:187:TRP:HB3 | 1:L:191:ARG:HH12 | 1.76 | 0.50 |
| 2:B:301:9ED:C49 | 1:D:213:ILE:CG2 | 2.83 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:178:ILE:CD1 | 1:H:174:GLN:HG2 | 2.42 | 0.50 |
| 1:A:215:VAL:HG11 | 1:L:214:LEU:HG | 1.94 | 0.50 |
| 1:B:229:PHE:CE2 | 1:D:232:LYS:CD | 2.83 | 0.50 |
| 1:G:220:TRP:CD1 | 1:G:220:TRP:C | 2.84 | 0.50 |
| 1:H:169:ARG:HH21 | 1:I:167:ARG:HH22 | 1.58 | 0.50 |
| 1:J:174:GLN:HB2 | 1:J:177:GLN:CD | 2.32 | 0.50 |
| 1:K:167:ARG:CD | 1:K:167:ARG:N | 2.73 | 0.50 |
| 1:L:193:ARG:CG | 1:L:193:ARG:NH1 | 2.73 | 0.50 |
| 1:G:187:TRP:NE1 | 1:G:191:ARG:HD2 | 2.15 | 0.50 |
| 1:G:188:ARG:HH22 | 1:H:188:ARG:HD2 | 1.77 | 0.50 |
| 1:H:192:PHE:CD1 | 1:H:192:PHE:C | 2.85 | 0.50 |
| 1:J:187:TRP:CE3 | 1:J:191:ARG:NH2 | 2.80 | 0.50 |
| 1:K:187:TRP:CH2 | 1:K:191:ARG:HD2 | 2.47 | 0.50 |
| 1:A:221:GLN:HE21 | 1:A:221:GLN:CA | 2.25 | 0.50 |
| 1:J:225:LEU:HD12 | 1:J:228:PHE:CE2 | 2.46 | 0.50 |
| 1:A:167:ARG:HG2 | 1:A:167:ARG:NH1 | 2.22 | 0.50 |
| 1:J:177:GLN:OE1 | 1:K:179:GLN:CA | 2.55 | 0.50 |
| 1:K:167:ARG:HD2 | 1:L:167:ARG:HE | 1.77 | 0.50 |
| 1:B:214:LEU:CD1 | 1:F:214:LEU:HB3 | 2.41 | 0.49 |
| 1:C:229:PHE:HZ | 1:G:231:ALA:HB1 | 1.77 | 0.49 |
| 1:E:187:TRP:CD1 | 1:E:187:TRP:C | 2.85 | 0.49 |
| 1:G:165:GLN:OE1 | 1:G:168:VAL:CG2 | 2.60 | 0.49 |
| 1:J:184:TYR:CG | 1:K:189:GLU:CG | 2.82 | 0.49 |
| 1:A:171:LEU:HG | 1:C:169:ARG:CZ | 2.42 | 0.49 |
| 1:B:229:PHE:HD1 | 1:F:229:PHE:HE2 | 1.60 | 0.49 |
| 1:E:192:PHE:CG | 1:F:192:PHE:CD1 | 3.00 | 0.49 |
| 1:E:201:GLN:HB3 | 1:E:205:TRP:CZ3 | 2.46 | 0.49 |
| 1:K:177:GLN:OE1 | 1:K:177:GLN:HA | 2.11 | 0.49 |
| 1:B:215:VAL:HG13 | 1:D:217:ILE:HD11 | 1.94 | 0.49 |
| 1:D:204:LEU:HB3 | 1:E:202:ARG:HH11 | 1.76 | 0.49 |
| 1:D:220:TRP:HE3 | 1:D:221:GLN:HG2 | 1.77 | 0.49 |
| 1:E:188:ARG:NH1 | 1:F:185:GLN:HE21 | 2.11 | 0.49 |
| 1:J:167:ARG:CZ | 1:K:168:VAL:HG12 | 2.38 | 0.49 |
| 1:J:184:TYR:CD1 | 1:J:185:GLN:N | 2.81 | 0.49 |
| 1:B:187:TRP:CD1 | 1:B:190:GLU:OE1 | 2.64 | 0.49 |
| 1:F:201:GLN:HE22 | 1:F:205:TRP:HE3 | 1.59 | 0.49 |
| 1:G:164:LEU:HD21 | 1:H:164:LEU:CB | 2.42 | 0.49 |
| 1:G:187:TRP:CD1 | 1:G:187:TRP:C | 2.85 | 0.49 |
| 1:H:203:VAL:HG11 | 1:I:203:VAL:CG1 | 2.39 | 0.49 |
| 1:A:205:TRP:CD2 | 1:J:201:GLN:HB3 | 2.48 | 0.49 |
| 1:G:210:GLN:CD | 1:H:209:LEU:HD22 | 2.33 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:167:ARG:HH12 | 1:K:171:LEU:HD23 | 1.65 | 0.49 |
| 1:C:184:TYR:HE2 | 1:F:187:TRP:HH2 | 1.43 | 0.49 |
| 1:E:192:PHE:HZ | 1:F:195:THR:HB | 1.78 | 0.49 |
| 1:J:192:PHE:C | 1:J:192:PHE:CD1 | 2.85 | 0.49 |
| 1:K:187:TRP:CD1 | 1:L:191:ARG:NE | 2.81 | 0.49 |
| 1:L:210:GLN:NE2 | 1:L:210:GLN:CA | 2.73 | 0.49 |
| 1:L:226:LYS:N | 1:L:226:LYS:CD | 2.75 | 0.49 |
| 1:A:210:GLN:CD | 1:F:208:ILE:CD1 | 2.74 | 0.49 |
| 1:A:221:GLN:NE2 | 1:A:221:GLN:HA | 2.27 | 0.49 |
| 1:B:188:ARG:HH22 | 1:J:182:GLN:C | 2.15 | 0.49 |
| 1:B:216:ALA:CB | 2:B:301:9ED:C40 | 2.89 | 0.49 |
| 1:J:191:ARG:HE | 1:K:197:GLU:CD | 2.15 | 0.49 |
| 1:K:169:ARG:HG2 | 1:L:171:LEU:HB2 | 1.94 | 0.49 |
| 1:K:222:MET:HA | 1:K:222:MET:HE3 | 1.93 | 0.49 |
| 1:L:192:PHE:CD1 | 1:L:192:PHE:C | 2.85 | 0.49 |
| 1:B:219:VAL:HG13 | 1:D:220:TRP:CZ2 | 2.48 | 0.49 |
| 1:J:214:LEU:HD12 | 1:J:215:VAL:H | 1.78 | 0.49 |
| 1:A:177:GLN:HA | 1:A:177:GLN:NE2 | 2.27 | 0.49 |
| 1:B:191:ARG:CG | 1:B:191:ARG:NH1 | 2.73 | 0.49 |
| 1:C:193:ARG:CG | 1:C:193:ARG:NH2 | 2.73 | 0.49 |
| 1:C:210:GLN:CD | 1:G:206:TRP:HH2 | 2.08 | 0.49 |
| 1:G:188:ARG:HH22 | 1:H:188:ARG:CD | 2.26 | 0.49 |
| 1:J:166:LEU:HA | 1:J:169:ARG:NH1 | 2.28 | 0.49 |
| 1:A:167:ARG:CG | 1:A:167:ARG:NH1 | 2.73 | 0.48 |
| 1:B:202:ARG:CZ | 1:B:203:VAL:HG22 | 2.43 | 0.48 |
| 1:E:174:GLN:HE21 | 1:E:178:ILE:HD11 | 1.78 | 0.48 |
| 1:G:221:GLN:CG | 1:H:220:TRP:HE1 | 2.25 | 0.48 |
| 1:J:166:LEU:HB2 | 1:L:174:GLN:HE22 | 1.66 | 0.48 |
| 1:J:206:TRP:CZ3 | 1:K:215:VAL:CG2 | 2.94 | 0.48 |
| 1:K:190:GLU:HA | 1:K:193:ARG:CZ | 2.43 | 0.48 |
| 1:D:164:LEU:C | 1:E:167:ARG:NH2 | 2.66 | 0.48 |
| 1:E:225:LEU:HD12 | 1:F:225:LEU:HD22 | 1.95 | 0.48 |
| 1:F:168:VAL:HG12 | 1:F:169:ARG:NH1 | 2.27 | 0.48 |
| 1:G:196:SER:HB3 | 1:H:191:ARG:HH12 | 1.78 | 0.48 |
| 1:J:173:GLU:CB | 1:K:179:GLN:HE22 | 2.25 | 0.48 |
| 1:J:174:GLN:CB | 1:J:177:GLN:NE2 | 2.75 | 0.48 |
| 1:L:163:GLU:CD | 1:L:167:ARG:NH1 | 2.66 | 0.48 |
| 1:J:184:TYR:CA | 1:K:193:ARG:HH21 | 1.97 | 0.48 |
| 1:J:187:TRP:CA | 1:J:191:ARG:NH1 | 2.74 | 0.48 |
| 1:D:205:TRP:HE1 | 1:D:209:LEU:HD11 | 1.79 | 0.48 |
| 1:A:220:TRP:CE2 | 2:B:301:9ED:O09 | 2.64 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:223:ARG:HH12 | 1:J:217:ILE:HA | 1.77 | 0.48 |
| 1:B:171:LEU:HA | 1:B:174:GLN:NE2 | 2.28 | 0.48 |
| 1:C:185:GLN:HB2 | 1:C:186:ARG:HE | 1.77 | 0.48 |
| 1:E:187:TRP:HZ2 | 1:H:187:TRP:CZ3 | 2.32 | 0.48 |
| 1:G:186:ARG:HH11 | 1:G:186:ARG:CA | 2.22 | 0.48 |
| 1:A:188:ARG:CZ | 1:A:188:ARG:CB | 2.91 | 0.48 |
| 1:D:217:ILE:O | 1:D:221:GLN:HG3 | 2.13 | 0.48 |
| 1:E:188:ARG:NH1 | 1:F:185:GLN:NE2 | 2.62 | 0.48 |
| 1:G:181:GLU:CA | 1:G:184:TYR:HD2 | 2.24 | 0.48 |
| 1:G:192:PHE:CE1 | 1:I:192:PHE:CG | 3.02 | 0.48 |
| 1:H:225:LEU:HB2 | 1:I:225:LEU:CD1 | 2.43 | 0.48 |
| 1:J:186:ARG:HH21 | 1:J:186:ARG:HG2 | 1.78 | 0.48 |
| 1:L:163:GLU:HG3 | 1:L:167:ARG:CZ | 2.43 | 0.48 |
| 1:B:193:ARG:HD2 | 1:F:197:GLU:OE2 | 2.14 | 0.48 |
| 1:C:160:LYS:HE2 | 1:C:164:LEU:HB2 | 1.96 | 0.48 |
| 1:D:164:LEU:CA | 1:E:167:ARG:NH2 | 2.77 | 0.48 |
| 1:D:210:GLN:O | 1:D:213:ILE:HG13 | 2.12 | 0.48 |
| 1:E:180:LYS:NZ | 1:G:179:GLN:O | 2.46 | 0.48 |
| 1:G:178:ILE:HG12 | 1:H:174:GLN:CG | 2.44 | 0.48 |
| 1:J:171:LEU:HA | 1:J:174:GLN:NE2 | 2.28 | 0.48 |
| 1:J:211:THR:O | 1:J:215:VAL:CG2 | 2.46 | 0.48 |
| 1:A:186:ARG:HG2 | 1:A:186:ARG:HH11 | 1.79 | 0.48 |
| 1:A:206:TRP:HA | 1:A:206:TRP:CE3 | 2.49 | 0.48 |
| 1:G:171:LEU:HD13 | 1:H:171:LEU:HD23 | 1.96 | 0.48 |
| 1:C:164:LEU:HA | 1:C:167:ARG:NH1 | 2.28 | 0.48 |
| 1:D:204:LEU:HD11 | 1:H:205:TRP:HH2 | 1.78 | 0.48 |
| 1:E:180:LYS:NZ | 1:G:182:GLN:CB | 2.64 | 0.48 |
| 1:L:234:LEU:HD22 | 1:L:234:LEU:C | 2.30 | 0.48 |
| 1:B:222:MET:SD | 1:B:223:ARG:N | 2.87 | 0.47 |
| 1:C:232:LYS:CE | 1:I:233:LYS:HD3 | 2.44 | 0.47 |
| 1:G:204:LEU:HD22 | 1:H:202:ARG:HH22 | 1.77 | 0.47 |
| 1:H:188:ARG:HE | 1:I:188:ARG:CZ | 2.24 | 0.47 |
| 1:L:166:LEU:HG | 1:L:170:GLN:HE21 | 1.79 | 0.47 |
| 1:L:214:LEU:HD12 | 1:L:214:LEU:HA | 1.75 | 0.47 |
| 1:A:171:LEU:C | 1:A:175:VAL:CG2 | 2.68 | 0.47 |
| 1:C:229:PHE:CZ | 1:G:231:ALA:CB | 2.96 | 0.47 |
| 1:C:232:LYS:HE2 | 1:C:232:LYS:HB3 | 1.66 | 0.47 |
| 1:E:168:VAL:HG21 | 1:F:167:ARG:HG2 | 1.96 | 0.47 |
| 1:J:166:LEU:HB2 | 1:L:174:GLN:NE2 | 2.26 | 0.47 |
| 1:J:183:ASN:O | 1:J:187:TRP:CD1 | 2.67 | 0.47 |
| 1:A:226:LYS:HZ3 | 1:L:225:LEU:CD2 | 2.26 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:185:GLN:O | 1:D:189:GLU:HG2 | 2.14 | 0.47 |
| 1:G:210:GLN:HG3 | 1:H:206:TRP:CZ2 | 2.49 | 0.47 |
| 1:J:210:GLN:C | 1:J:214:LEU:CG | 2.81 | 0.47 |
| 1:K:203:VAL:C | 1:K:205:TRP:N | 2.67 | 0.47 |
| 1:B:155:ILE:HA | 1:B:158:LYS:NZ | 2.28 | 0.47 |
| 1:C:221:GLN:HE21 | 1:I:222:MET:CB | 2.24 | 0.47 |
| 1:D:213:ILE:HG13 | 1:D:214:LEU:N | 2.28 | 0.47 |
| 1:G:182:GLN:OE1 | 1:G:182:GLN:HA | 2.14 | 0.47 |
| 1:L:204:LEU:O | 1:L:204:LEU:HD23 | 2.14 | 0.47 |
| 1:A:161:LEU:HD13 | 1:C:158:LYS:HD2 | 1.97 | 0.47 |
| 1:A:226:LYS:CE | 1:L:225:LEU:HD22 | 2.44 | 0.47 |
| 1:I:201:GLN:HE22 | 1:I:205:TRP:HE3 | 1.61 | 0.47 |
| 1:K:209:LEU:HA | 1:K:212:LEU:HD12 | 1.95 | 0.47 |
| 1:C:212:LEU:HD13 | 1:C:212:LEU:H | 1.80 | 0.47 |
| 1:F:183:ASN:OD1 | 1:F:187:TRP:CD2 | 2.62 | 0.47 |
| 1:G:187:TRP:HZ2 | 1:G:191:ARG:HH11 | 1.63 | 0.47 |
| 1:C:190:GLU:HA | 1:C:190:GLU:OE2 | 2.13 | 0.47 |
| 1:E:180:LYS:NZ | 1:G:183:ASN:H | 2.12 | 0.47 |
| 1:G:192:PHE:HE2 | 1:H:191:ARG:NE | 2.13 | 0.47 |
| 1:G:212:LEU:HD23 | 1:G:212:LEU:H | 1.76 | 0.47 |
| 1:H:185:GLN:HA | 1:H:188:ARG:CD | 2.45 | 0.47 |
| 1:J:184:TYR:CB | 1:K:189:GLU:CG | 2.92 | 0.47 |
| 1:A:204:LEU:C | 1:A:207:SER:OG | 2.53 | 0.47 |
| 1:H:171:LEU:HD12 | 1:H:171:LEU:C | 2.34 | 0.47 |
| 1:K:185:GLN:OE1 | 1:K:189:GLU:HG2 | 2.15 | 0.47 |
| 1:C:187:TRP:C | 1:C:187:TRP:CE3 | 2.88 | 0.47 |
| 1:J:199:THR:CG2 | 1:K:204:LEU:CD2 | 2.90 | 0.47 |
| 1:B:205:TRP:CZ3 | 1:B:208:ILE:HB | 2.50 | 0.47 |
| 1:D:193:ARG:NH2 | 1:H:190:GLU:CD | 2.68 | 0.47 |
| 1:E:165:GLN:CA | 1:E:168:VAL:HG12 | 2.44 | 0.47 |
| 1:E:168:VAL:HG13 | 1:E:169:ARG:N | 2.28 | 0.47 |
| 1:G:167:ARG:NH1 | 1:G:168:VAL:HA | 2.30 | 0.47 |
| 1:H:210:GLN:HE21 | 1:I:214:LEU:CG | 2.27 | 0.47 |
| 1:H:221:GLN:HA | 1:H:224:HIS:NE2 | 2.30 | 0.47 |
| 1:H:228:PHE:O | 1:H:228:PHE:HD1 | 1.97 | 0.47 |
| 1:I:162:SER:OG | 1:I:163:GLU:N | 2.48 | 0.47 |
| 1:A:158:LYS:HE3 | 1:A:158:LYS:HB3 | 1.61 | 0.46 |
| 1:B:216:ALA:C | 2:B:301:9ED:C35 | 2.82 | 0.46 |
| 1:C:184:TYR:CE2 | 1:F:187:TRP:HZ3 | 2.17 | 0.46 |
| 1:E:218:GLY:HA2 | 1:E:221:GLN:NE2 | 2.30 | 0.46 |
| 1:I:184:TYR:O | 1:I:188:ARG:HB2 | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:163:GLU:CB | 1:L:171:LEU:CD1 | 2.65 | 0.46 |
| 1:K:225:LEU:HA | 1:K:228:PHE:CD2 | 2.50 | 0.46 |
| 1:E:232:LYS:HB3 | 1:F:232:LYS:NZ | 2.30 | 0.46 |
| 1:F:209:LEU:O | 1:F:213:ILE:HG12 | 2.15 | 0.46 |
| 1:G:164:LEU:HD21 | 1:H:164:LEU:HB2 | 1.96 | 0.46 |
| 1:G:182:GLN:NE2 | 1:H:181:GLU:HB3 | 2.30 | 0.46 |
| 1:B:164:LEU:C | 1:B:164:LEU:HD13 | 2.36 | 0.46 |
| 1:C:167:ARG:HH11 | 1:C:167:ARG:CG | 2.27 | 0.46 |
| 1:C:211:THR:OG1 | 1:G:206:TRP:HZ3 | 1.89 | 0.46 |
| 1:D:178:ILE:CD1 | 1:E:174:GLN:CG | 2.92 | 0.46 |
| 1:G:169:ARG:O | 1:G:169:ARG:HD3 | 2.15 | 0.46 |
| 1:H:225:LEU:HD12 | 1:I:225:LEU:CD1 | 2.45 | 0.46 |
| 1:A:166:LEU:HD13 | 1:A:169:ARG:HD2 | 1.97 | 0.46 |
| 1:C:155:ILE:HD13 | 1:C:155:ILE:N | 2.06 | 0.46 |
| 1:E:198:SER:O | 1:E:202:ARG:HB3 | 2.15 | 0.46 |
| 1:G:202:ARG:HA | 1:G:202:ARG:NH1 | 2.26 | 0.46 |
| 1:J:169:ARG:NH1 | 1:J:169:ARG:HB2 | 2.30 | 0.46 |
| 1:C:225:LEU:HA | 1:C:228:PHE:CD2 | 2.51 | 0.46 |
| 1:F:169:ARG:HH12 | 1:F:172:VAL:HG21 | 1.80 | 0.46 |
| 1:K:169:ARG:HE | 1:L:168:VAL:HA | 1.80 | 0.46 |
| 1:A:223:ARG:NH1 | 1:A:223:ARG:CG | 2.73 | 0.46 |
| 1:B:166:LEU:HD12 | 1:B:169:ARG:HD2 | 1.97 | 0.46 |
| 1:D:226:LYS:HD3 | 1:D:226:LYS:HA | 1.77 | 0.46 |
| 1:G:221:GLN:NE2 | 1:H:217:ILE:HG22 | 2.29 | 0.46 |
| 1:I:188:ARG:HA | 1:I:191:ARG:HG3 | 1.98 | 0.46 |
| 1:A:186:ARG:CZ | 1:A:186:ARG:HB3 | 2.46 | 0.46 |
| 1:A:193:ARG:HD3 | 1:B:189:GLU:CG | 2.45 | 0.46 |
| 1:E:186:ARG:N | 1:E:186:ARG:HD2 | 2.30 | 0.46 |
| 1:I:221:GLN:O | 1:I:225:LEU:HD23 | 2.16 | 0.46 |
| 1:J:180:LYS:O | 1:J:184:TYR:HD2 | 1.98 | 0.46 |
| 1:J:211:THR:CA | 1:J:214:LEU:CG | 2.69 | 0.46 |
| 1:J:183:ASN:O | 1:J:187:TRP:HD1 | 1.98 | 0.46 |
| 1:J:221:GLN:HE22 | 1:K:226:LYS:HG3 | 1.81 | 0.46 |
| 1:L:226:LYS:HA | 1:L:226:LYS:HD2 | 1.74 | 0.46 |
| 1:A:197:GLU:HG3 | 1:J:194:GLN:CG | 2.44 | 0.46 |
| 1:B:203:VAL:HB | 1:F:204:LEU:CD1 | 2.46 | 0.46 |
| 1:B:214:LEU:HA | 1:B:217:ILE:HD12 | 1.98 | 0.46 |
| 1:C:225:LEU:HA | 1:C:225:LEU:HD23 | 1.77 | 0.46 |
| 1:F:188:ARG:NH1 | 1:F:191:ARG:NH1 | 2.63 | 0.46 |
| 1:G:164:LEU:HD13 | 1:H:164:LEU:HD21 | 1.34 | 0.46 |
| 1:J:192:PHE:C | 1:J:192:PHE:HD1 | 2.20 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:223:ARG:NH2 | 1:G:226:LYS:HB3 | 2.31 | 0.45 |
| 1:D:165:GLN:HA | 1:D:168:VAL:CG1 | 2.46 | 0.45 |
| 1:E:188:ARG:HH12 | 1:F:185:GLN:NE2 | 2.14 | 0.45 |
| 1:E:198:SER:O | 1:E:202:ARG:CB | 2.64 | 0.45 |
| 1:F:188:ARG:HE | 1:F:188:ARG:HB2 | 1.59 | 0.45 |
| 1:G:213:ILE:HD12 | 1:G:213:ILE:HA | 1.76 | 0.45 |
| 1:J:167:ARG:HG2 | 1:K:172:VAL:CG1 | 2.46 | 0.45 |
| 1:B:234:LEU:HD13 | 1:B:234:LEU:N | 2.31 | 0.45 |
| 1:E:165:GLN:HA | 1:E:168:VAL:HG12 | 1.99 | 0.45 |
| 1:G:177:GLN:HE22 | 1:I:178:ILE:CG2 | 2.28 | 0.45 |
| 1:G:210:GLN:OE1 | 1:H:209:LEU:HD22 | 2.16 | 0.45 |
| 1:I:188:ARG:HD2 | 1:I:191:ARG:HD3 | 1.99 | 0.45 |
| 1:K:227:SER:CA | 1:K:230:GLU:HG2 | 2.47 | 0.45 |
| 1:D:185:GLN:HG2 | 1:F:185:GLN:HE21 | 1.80 | 0.45 |
| 1:H:212:LEU:N | 1:H:212:LEU:CD1 | 2.79 | 0.45 |
| 1:J:211:THR:HA | 1:J:214:LEU:CG | 2.07 | 0.45 |
| 1:L:234:LEU:C | 1:L:234:LEU:HD13 | 2.37 | 0.45 |
| 1:A:212:LEU:HD23 | 1:J:209:LEU:HD23 | 1.99 | 0.45 |
| 1:B:205:TRP:CE3 | 1:B:205:TRP:O | 2.70 | 0.45 |
| 1:E:187:TRP:HD1 | 1:E:191:ARG:HG3 | 1.81 | 0.45 |
| 1:H:180:LYS:C | 1:H:184:TYR:CD2 | 2.90 | 0.45 |
| 1:K:173:GLU:OE2 | 1:L:174:GLN:HB2 | 2.15 | 0.45 |
| 1:B:233:LYS:CD | 1:B:233:LYS:C | 2.85 | 0.45 |
| 1:C:187:TRP:HZ3 | 1:F:188:ARG:NH2 | 2.14 | 0.45 |
| 1:G:208:ILE:HG23 | 1:G:212:LEU:CD1 | 2.43 | 0.45 |
| 1:L:166:LEU:HD23 | 1:L:166:LEU:C | 2.36 | 0.45 |
| 1:D:171:LEU:CD1 | 1:E:171:LEU:HB2 | 2.47 | 0.45 |
| 1:D:214:LEU:CD1 | 1:E:213:ILE:HD12 | 2.46 | 0.45 |
| 1:B:222:MET:HB2 | 1:D:220:TRP:CH2 | 2.46 | 0.45 |
| 1:G:175:VAL:HG21 | 1:H:170:GLN:HE22 | 0.49 | 0.45 |
| 1:G:207:SER:CA | 1:H:206:TRP:CD1 | 3.00 | 0.45 |
| 1:J:167:ARG:HG2 | 1:K:172:VAL:CB | 2.43 | 0.45 |
| 1:C:187:TRP:CE3 | 1:C:187:TRP:O | 2.70 | 0.45 |
| 1:C:226:LYS:HA | 1:G:228:PHE:CE1 | 2.52 | 0.45 |
| 1:H:217:ILE:HG22 | 1:H:221:GLN:HE22 | 1.82 | 0.45 |
| 1:J:187:TRP:HB3 | 1:J:191:ARG:HH12 | 0.41 | 0.45 |
| 1:K:226:LYS:NZ | 1:L:228:PHE:HE1 | 2.15 | 0.45 |
| 1:L:171:LEU:CD2 | 1:L:171:LEU:C | 2.86 | 0.45 |
| 1:A:197:GLU:HG3 | 1:J:194:GLN:HG2 | 1.97 | 0.45 |
| 1:A:223:ARG:NH1 | 1:J:217:ILE:HD13 | 2.29 | 0.45 |
| 1:C:204:LEU:C | 1:C:204:LEU:CD2 | 2.86 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:178:ILE:HD13 | 1:H:181:GLU:CG | 2.47 | 0.45 |
| 1:J:166:LEU:HD12 | 1:L:171:LEU:CG | 2.47 | 0.45 |
| 1:K:179:GLN:NE2 | 1:L:181:GLU:CG | 2.79 | 0.45 |
| 1:B:228:PHE:O | 1:B:228:PHE:CD1 | 2.70 | 0.44 |
| 1:C:160:LYS:C | 1:C:160:LYS:CD | 2.85 | 0.44 |
| 1:D:182:GLN:NE2 | 1:H:180:LYS:HG2 | 2.32 | 0.44 |
| 1:J:222:MET:SD | 1:J:222:MET:N | 2.90 | 0.44 |
| 1:A:201:GLN:HE21 | 1:J:194:GLN:HA | 1.83 | 0.44 |
| 1:B:212:LEU:HA | 2:B:301:9ED:C53 | 2.48 | 0.44 |
| 1:C:194:GLN:HE21 | 1:C:194:GLN:HB3 | 1.51 | 0.44 |
| 1:C:225:LEU:HD22 | 1:C:225:LEU:C | 2.36 | 0.44 |
| 1:D:167:ARG:HD2 | 1:F:168:VAL:HG22 | 2.00 | 0.44 |
| 1:E:180:LYS:HE2 | 1:G:183:ASN:CA | 2.47 | 0.44 |
| 1:E:185:GLN:NE2 | 1:F:181:GLU:HG3 | 2.32 | 0.44 |
| 1:J:180:LYS:HD2 | 1:K:186:ARG:CZ | 2.48 | 0.44 |
| 1:K:185:GLN:OE1 | 1:K:189:GLU:OE2 | 2.36 | 0.44 |
| 1:A:202:ARG:HB3 | 1:A:206:TRP:HD1 | 1.81 | 0.44 |
| 1:C:184:TYR:HD1 | 1:C:184:TYR:HA | 1.68 | 0.44 |
| 1:C:186:ARG:HA | 1:C:186:ARG:HD3 | 1.76 | 0.44 |
| 1:H:181:GLU:CA | 1:H:184:TYR:HD2 | 2.28 | 0.44 |
| 1:A:224:HIS:ND1 | 1:B:224:HIS:CE1 | 2.85 | 0.44 |
| 1:C:179:GLN:OE1 | 1:C:179:GLN:N | 2.51 | 0.44 |
| 1:D:225:LEU:CA | 1:E:228:PHE:CZ | 2.97 | 0.44 |
| 1:E:164:LEU:HA | 1:E:167:ARG:CZ | 2.48 | 0.44 |
| 1:K:169:ARG:CG | 1:L:171:LEU:HB2 | 2.47 | 0.44 |
| 1:K:189:GLU:HA | 1:K:192:PHE:CD2 | 2.53 | 0.44 |
| 1:E:166:LEU:C | 1:E:166:LEU:CD1 | 2.85 | 0.44 |
| 1:G:192:PHE:CE1 | 1:I:192:PHE:CB | 2.95 | 0.44 |
| 1:H:202:ARG:HA | 1:H:202:ARG:HH11 | 1.82 | 0.44 |
| 1:A:222:MET:C | 1:A:222:MET:SD | 2.96 | 0.44 |
| 1:B:226:LYS:HA | 1:D:228:PHE:CZ | 2.53 | 0.44 |
| 1:C:187:TRP:C | 1:C:189:GLU:N | 2.71 | 0.44 |
| 1:E:192:PHE:CE2 | 1:F:192:PHE:CA | 2.99 | 0.44 |
| 1:G:208:ILE:HD12 | 1:G:212:LEU:HD11 | 1.98 | 0.44 |
| 1:H:165:GLN:HE21 | 1:H:165:GLN:HA | 1.83 | 0.44 |
| 1:L:180:LYS:HA | 1:L:183:ASN:ND2 | 2.32 | 0.44 |
| 1:B:171:LEU:HA | 1:B:174:GLN:HE21 | 1.83 | 0.44 |
| 1:C:186:ARG:CD | 1:C:186:ARG:N | 2.81 | 0.44 |
| 1:G:180:LYS:HA | 1:G:183:ASN:ND2 | 2.32 | 0.44 |
| 1:G:192:PHE:HD2 | 1:H:191:ARG:NH2 | 2.12 | 0.44 |
| 1:G:214:LEU:C | 1:G:214:LEU:CD2 | 2.85 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:228:PHE:CD2 | 1:H:228:PHE:HE2 | 2.36 | 0.44 |
| 1:J:167:ARG:HG2 | 1:K:172:VAL:HG13 | 1.99 | 0.44 |
| 1:B:220:TRP:CA | 2:B:301:9ED:O22 | 2.66 | 0.44 |
| 1:D:188:ARG:NH2 | 1:F:188:ARG:O | 2.50 | 0.44 |
| 1:E:166:LEU:CD1 | 1:E:169:ARG:HD3 | 2.48 | 0.44 |
| 1:G:207:SER:CA | 1:H:206:TRP:NE1 | 2.63 | 0.44 |
| 1:H:222:MET:HE2 | 1:H:226:LYS:HG3 | 1.99 | 0.44 |
| 1:I:168:VAL:HG12 | 1:I:169:ARG:NH1 | 2.33 | 0.44 |
| 1:A:204:LEU:CA | 1:A:207:SER:OG | 2.66 | 0.43 |
| 1:B:232:LYS:NZ | 1:F:232:LYS:HG2 | 2.32 | 0.43 |
| 1:B:233:LYS:HE3 | 1:B:234:LEU:HD12 | 2.00 | 0.43 |
| 1:E:174:GLN:NE2 | 1:E:178:ILE:CD1 | 2.81 | 0.43 |
| 1:G:169:ARG:HH21 | 1:H:167:ARG:HH12 | 1.64 | 0.43 |
| 1:H:186:ARG:HH21 | 1:H:189:GLU:HB2 | 1.83 | 0.43 |
| 1:K:227:SER:HA | 1:K:230:GLU:HG2 | 2.00 | 0.43 |
| 1:E:186:ARG:HH12 | 1:E:189:GLU:HB2 | 1.82 | 0.43 |
| 1:H:180:LYS:C | 1:H:184:TYR:HD2 | 2.22 | 0.43 |
| 1:J:184:TYR:HA | 1:K:193:ARG:CZ | 2.21 | 0.43 |
| 1:D:185:GLN:HG2 | 1:E:188:ARG:NH1 | 2.33 | 0.43 |
| 1:E:168:VAL:HG21 | 1:F:167:ARG:CG | 2.48 | 0.43 |
| 1:K:204:LEU:HD22 | 1:K:204:LEU:HA | 1.78 | 0.43 |
| 1:A:161:LEU:HD22 | 1:C:158:LYS:HD2 | 1.99 | 0.43 |
| 1:B:226:LYS:C | 1:B:226:LYS:CD | 2.84 | 0.43 |
| 1:E:163:GLU:CD | 1:E:163:GLU:H | 2.20 | 0.43 |
| 1:E:168:VAL:HG11 | 1:F:167:ARG:NE | 2.34 | 0.43 |
| 1:J:195:THR:HG21 | 1:K:200:ASN:CB | 2.49 | 0.43 |
| 1:A:226:LYS:HZ2 | 1:L:225:LEU:CA | 2.22 | 0.43 |
| 1:C:194:GLN:OE1 | 1:E:201:GLN:NE2 | 2.51 | 0.43 |
| 1:I:209:LEU:O | 1:I:213:ILE:HG12 | 2.18 | 0.43 |
| 1:B:214:LEU:HB2 | 1:F:215:VAL:CG2 | 2.42 | 0.43 |
| 1:F:221:GLN:HA | 1:F:224:HIS:HB2 | 2.00 | 0.43 |
| 1:G:168:VAL:CG2 | 1:G:169:ARG:N | 2.81 | 0.43 |
| 1:C:202:ARG:HD3 | 1:C:202:ARG:HA | 1.60 | 0.43 |
| 1:D:164:LEU:HD11 | 1:E:164:LEU:HD22 | 1.95 | 0.43 |
| 1:E:181:GLU:HA | 1:E:184:TYR:HD2 | 1.83 | 0.43 |
| 1:H:171:LEU:CG | 1:I:171:LEU:HD12 | 2.41 | 0.43 |
| 1:H:233:LYS:NZ | 1:H:233:LYS:CA | 2.73 | 0.43 |
| 1:B:158:LYS:HZ2 | 1:B:158:LYS:CB | 2.27 | 0.43 |
| 1:E:166:LEU:HD21 | 1:H:166:LEU:HB3 | 2.01 | 0.43 |
| 1:E:192:PHE:CE2 | 1:F:192:PHE:N | 2.87 | 0.43 |
| 1:H:233:LYS:HZ2 | 1:H:233:LYS:CB | 2.31 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:233:LYS:HD3 | 1:L:233:LYS:HE3 | 2.01 | 0.43 |
| 1:B:172:VAL:CG1 | 1:C:171:LEU:HD12 | 2.13 | 0.43 |
| 1:B:228:PHE:CD1 | 1:B:228:PHE:C | 2.90 | 0.43 |
| 1:B:233:LYS:O | 1:B:233:LYS:HD2 | 2.19 | 0.43 |
| 1:C:188:ARG:HD2 | 1:F:191:ARG:CG | 2.49 | 0.43 |
| 1:C:228:PHE:HE2 | 1:I:222:MET:CE | 2.28 | 0.43 |
| 1:D:178:ILE:HD13 | 1:E:174:GLN:CG | 2.49 | 0.43 |
| 1:G:186:ARG:NH1 | 1:G:186:ARG:C | 2.72 | 0.43 |
| 1:G:190:GLU:HA | 1:G:193:ARG:NE | 2.33 | 0.43 |
| 1:G:206:TRP:NE1 | 1:H:206:TRP:CH2 | 2.85 | 0.43 |
| 1:A:193:ARG:HD3 | 1:B:189:GLU:CB | 2.47 | 0.43 |
| 1:E:187:TRP:HB2 | 1:G:193:ARG:HH22 | 1.84 | 0.43 |
| 1:J:188:ARG:NE | 1:K:189:GLU:OE1 | 2.51 | 0.43 |
| 1:K:212:LEU:HD11 | 1:L:213:ILE:HB | 2.00 | 0.43 |
| 1:A:197:GLU:OE2 | 1:J:190:GLU:O | 2.36 | 0.42 |
| 1:D:189:GLU:OE2 | 1:E:188:ARG:CG | 2.56 | 0.42 |
| 1:G:180:LYS:C | 1:G:184:TYR:CD2 | 2.92 | 0.42 |
| 1:J:174:GLN:CB | 1:J:177:GLN:CD | 2.88 | 0.42 |
| 1:K:226:LYS:NZ | 1:L:228:PHE:CE1 | 2.81 | 0.42 |
| 1:E:181:GLU:HA | 1:E:184:TYR:CD2 | 2.54 | 0.42 |
| 1:A:180:LYS:HZ2 | 1:A:180:LYS:CB | 2.25 | 0.42 |
| 1:F:163:GLU:OE1 | 1:F:167:ARG:NE | 2.53 | 0.42 |
| 1:H:189:GLU:HB2 | 1:I:188:ARG:HH12 | 1.81 | 0.42 |
| 1:J:186:ARG:CG | 1:J:186:ARG:NH2 | 2.79 | 0.42 |
| 1:K:167:ARG:HD3 | 1:K:168:VAL:HG23 | 2.01 | 0.42 |
| 1:L:186:ARG:HH22 | 1:L:189:GLU:HB2 | 1.83 | 0.42 |
| 1:B:188:ARG:CD | 1:J:186:ARG:HE | 2.32 | 0.42 |
| 1:C:222:MET:SD | 1:C:223:ARG:N | 2.92 | 0.42 |
| 1:F:219:VAL:O | 1:F:222:MET:HB3 | 2.19 | 0.42 |
| 1:J:164:LEU:HD13 | 1:J:164:LEU:HA | 1.81 | 0.42 |
| 1:D:189:GLU:OE1 | 1:E:191:ARG:HD2 | 2.20 | 0.42 |
| 1:G:170:GLN:NE2 | 1:G:170:GLN:C | 2.73 | 0.42 |
| 1:H:178:ILE:CG1 | 1:I:178:ILE:HG12 | 2.39 | 0.42 |
| 1:K:200:ASN:CA | 1:K:203:VAL:HG12 | 2.50 | 0.42 |
| 1:I:217:ILE:O | 1:I:221:GLN:HG2 | 2.19 | 0.42 |
| 1:J:188:ARG:CD | 1:K:189:GLU:OE1 | 2.66 | 0.42 |
| 1:K:174:GLN:NE2 | 1:K:174:GLN:C | 2.73 | 0.42 |
| 1:L:186:ARG:NE | 1:L:186:ARG:CA | 2.83 | 0.42 |
| 1:L:233:LYS:N | 1:L:233:LYS:CE | 2.81 | 0.42 |
| 1:A:220:TRP:HZ2 | 1:J:212:LEU:CB | 2.29 | 0.42 |
| 1:G:233:LYS:HA | 1:G:233:LYS:HZ1 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:226:LYS:HD2 | 1:I:226:LYS:C | 2.40 | 0.42 |
| 1:K:216:ALA:CA | 1:L:220:TRP:HZ2 | 2.31 | 0.42 |
| 1:A:186:ARG:C | 1:A:186:ARG:NH1 | 2.73 | 0.42 |
| 1:A:205:TRP:O | 1:A:205:TRP:CE3 | 2.72 | 0.42 |
| 1:B:188:ARG:HH21 | 1:J:183:ASN:CA | 2.32 | 0.42 |
| 1:B:202:ARG:NH2 | 1:B:206:TRP:CB | 2.83 | 0.42 |
| 1:D:214:LEU:HD21 | 1:E:213:ILE:HG23 | 2.02 | 0.42 |
| 1:G:212:LEU:H | 1:G:212:LEU:CD2 | 2.32 | 0.42 |
| 1:H:169:ARG:HH21 | 1:I:167:ARG:HH12 | 1.66 | 0.42 |
| 1:H:199:THR:N | 1:H:202:ARG:HG3 | 2.35 | 0.42 |
| 1:K:183:ASN:ND2 | 1:K:183:ASN:C | 2.73 | 0.42 |
| 1:B:165:GLN:CD | 1:C:161:LEU:HD22 | 2.31 | 0.42 |
| 1:B:229:PHE:CZ | 1:D:232:LYS:HD3 | 2.49 | 0.42 |
| 1:C:229:PHE:CD1 | 1:G:232:LYS:HE2 | 2.48 | 0.42 |
| 1:E:163:GLU:CD | 1:E:163:GLU:N | 2.73 | 0.42 |
| 1:E:184:TYR:CD1 | 1:E:187:TRP:HE3 | 2.21 | 0.42 |
| 1:G:196:SER:OG | 1:H:191:ARG:CZ | 2.68 | 0.42 |
| 1:G:214:LEU:HG | 1:H:213:ILE:CB | 2.43 | 0.42 |
| 1:J:205:TRP:CE3 | 1:J:208:ILE:HB | 2.55 | 0.42 |
| 1:L:206:TRP:C | 1:L:206:TRP:CE3 | 2.93 | 0.42 |
| 1:B:205:TRP:CE3 | 1:B:208:ILE:HB | 2.54 | 0.41 |
| 1:B:208:ILE:N | 1:B:208:ILE:CD1 | 2.72 | 0.41 |
| 1:D:178:ILE:CD1 | 1:E:178:ILE:CD1 | 2.88 | 0.41 |
| 1:D:193:ARG:CZ | 1:H:190:GLU:CD | 2.87 | 0.41 |
| 1:G:221:GLN:CB | 1:H:220:TRP:CD1 | 3.03 | 0.41 |
| 1:K:174:GLN:NE2 | 1:K:174:GLN:CA | 2.82 | 0.41 |
| 1:B:214:LEU:CD1 | 1:F:214:LEU:CB | 2.99 | 0.41 |
| 1:D:225:LEU:HD12 | 1:D:225:LEU:C | 2.41 | 0.41 |
| 1:G:193:ARG:HE | 1:G:193:ARG:HB3 | 1.43 | 0.41 |
| 1:A:171:LEU:CG | 1:C:169:ARG:NH1 | 2.80 | 0.41 |
| 1:A:232:LYS:HA | 1:A:235:VAL:HG22 | 2.01 | 0.41 |
| 1:C:211:THR:HG23 | 1:G:206:TRP:CH2 | 2.55 | 0.41 |
| 1:G:168:VAL:CB | 1:H:167:ARG:NE | 2.77 | 0.41 |
| 1:H:221:GLN:HA | 1:H:224:HIS:CD2 | 2.55 | 0.41 |
| 1:K:200:ASN:HA | 1:K:203:VAL:HG12 | 2.02 | 0.41 |
| 1:K:205:TRP:HE3 | 1:K:206:TRP:N | 2.19 | 0.41 |
| 1:B:232:LYS:HB2 | 1:E:232:LYS:HZ1 | 1.70 | 0.41 |
| 2:B:301:9ED:O06 | 2:B:301:9ED:P02 | 2.79 | 0.41 |
| 1:D:169:ARG:NE | 1:D:169:ARG:HA | 2.35 | 0.41 |
| 1:D:232:LYS:HA | 1:D:235:VAL:HG22 | 2.01 | 0.41 |
| 1:G:202:ARG:HA | 1:G:202:ARG:HD3 | 1.37 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:205:TRP:CE3 | 1:G:209:LEU:HD11 | 2.52 | 0.41 |
| 1:H:168:VAL:HA | 1:H:171:LEU:CG | 2.46 | 0.41 |
| 1:H:220:TRP:HD1 | 1:H:221:GLN:OE1 | 2.04 | 0.41 |
| 2:H:301:9ED:O06 | 2:H:301:9ED:P02 | 2.79 | 0.41 |
| 1:K:176:GLU:HG3 | 1:L:178:ILE:N | 2.36 | 0.41 |
| 1:B:188:ARG:NE | 1:J:186:ARG:NE | 2.68 | 0.41 |
| 1:E:182:GLN:NE2 | 1:E:186:ARG:HD3 | 2.36 | 0.41 |
| 1:E:205:TRP:CE2 | 1:G:208:ILE:HG13 | 2.55 | 0.41 |
| 1:H:163:GLU:HA | 1:H:166:LEU:CD1 | 2.45 | 0.41 |
| 1:J:177:GLN:HG3 | 1:J:178:ILE:N | 2.35 | 0.41 |
| 1:L:178:ILE:HD13 | 1:L:178:ILE:H | 1.83 | 0.41 |
| 1:C:155:ILE:CD1 | 1:C:155:ILE:N | 2.74 | 0.41 |
| 1:E:169:ARG:NH2 | 1:H:170:GLN:CB | 2.50 | 0.41 |
| 1:H:168:VAL:HG21 | 1:I:167:ARG:HD2 | 2.02 | 0.41 |
| 1:H:223:ARG:NH1 | 1:H:223:ARG:C | 2.73 | 0.41 |
| 1:J:167:ARG:HH12 | 1:K:171:LEU:CD2 | 2.15 | 0.41 |
| 1:G:165:GLN:CA | 1:G:168:VAL:HG22 | 2.51 | 0.41 |
| 1:G:204:LEU:HD23 | 1:G:204:LEU:H | 1.84 | 0.41 |
| 1:H:168:VAL:HG21 | 1:I:167:ARG:HD3 | 1.94 | 0.41 |
| 1:J:171:LEU:N | 1:J:171:LEU:CD1 | 2.83 | 0.41 |
| 1:A:222:MET:SD | 1:A:222:MET:O | 2.79 | 0.41 |
| 1:D:178:ILE:HD12 | 1:E:178:ILE:HD11 | 1.96 | 0.41 |
| 1:F:206:TRP:O | 1:F:210:GLN:HG2 | 2.21 | 0.41 |
| 1:F:226:LYS:HD2 | 1:F:226:LYS:C | 2.40 | 0.41 |
| 1:H:171:LEU:CD1 | 1:H:172:VAL:HG12 | 2.51 | 0.41 |
| 1:H:212:LEU:HD13 | 1:H:212:LEU:H | 1.86 | 0.41 |
| 1:I:169:ARG:HA | 1:I:169:ARG:NE | 2.36 | 0.41 |
| 1:J:177:GLN:HE21 | 1:J:178:ILE:HD11 | 1.86 | 0.41 |
| 1:A:208:ILE:HA | 1:A:208:ILE:HD13 | 1.75 | 0.41 |
| 1:C:222:MET:SD | 1:C:222:MET:C | 2.99 | 0.41 |
| 1:F:171:LEU:O | 1:F:175:VAL:HG23 | 2.21 | 0.41 |
| 1:H:165:GLN:NE2 | 1:H:165:GLN:C | 2.73 | 0.41 |
| 1:H:221:GLN:HA | 1:H:221:GLN:OE1 | 2.21 | 0.41 |
| 1:J:205:TRP:CE2 | 1:J:208:ILE:HD12 | 2.56 | 0.41 |
| 1:J:210:GLN:C | 1:J:214:LEU:HD21 | 2.40 | 0.41 |
| 1:J:210:GLN:C | 1:J:214:LEU:CD2 | 2.89 | 0.41 |
| 1:J:221:GLN:HE21 | 1:K:226:LYS:HB2 | 1.85 | 0.41 |
| 1:K:172:VAL:HG11 | 1:L:174:GLN:HE21 | 1.86 | 0.41 |
| 1:A:216:ALA:O | 1:A:220:TRP:CD1 | 2.74 | 0.41 |
| 1:A:220:TRP:CE3 | 1:J:216:ALA:CB | 2.79 | 0.41 |
| 1:C:188:ARG:HB3 | 1:F:191:ARG:CZ | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:235:VAL:HG22 | 1:I:233:LYS:HE2 | 2.02 | 0.41 |
| 1:E:168:VAL:CA | 1:E:171:LEU:HD23 | 2.46 | 0.41 |
| 1:E:168:VAL:HG23 | 1:E:171:LEU:HD23 | 2.03 | 0.41 |
| 1:G:223:ARG:HH21 | 1:G:226:LYS:HB3 | 1.85 | 0.41 |
| 1:J:191:ARG:CD | 1:K:196:SER:HB3 | 2.41 | 0.41 |
| 1:J:195:THR:HG21 | 1:K:200:ASN:HB3 | 2.02 | 0.41 |
| 1:B:191:ARG:HD2 | 1:B:191:ARG:O | 2.21 | 0.40 |
| 1:B:214:LEU:HA | 1:B:217:ILE:CD1 | 2.50 | 0.40 |
| 1:C:164:LEU:C | 1:C:164:LEU:CD1 | 2.86 | 0.40 |
| 1:C:182:GLN:N | 1:C:182:GLN:OE1 | 2.53 | 0.40 |
| 1:E:180:LYS:HZ3 | 1:G:182:GLN:C | 2.24 | 0.40 |
| 1:G:180:LYS:C | 1:G:184:TYR:HD2 | 2.24 | 0.40 |
| 1:J:184:TYR:HB3 | 1:K:189:GLU:HB2 | 2.01 | 0.40 |
| 1:L:223:ARG:HD2 | 1:L:223:ARG:HA | 1.62 | 0.40 |
| 1:B:173:GLU:N | 1:B:173:GLU:OE2 | 2.54 | 0.40 |
| 1:H:202:ARG:CZ | 1:H:202:ARG:CB | 2.85 | 0.40 |
| 1:J:177:GLN:HB2 | 1:K:182:GLN:HB2 | 2.03 | 0.40 |
| 1:K:195:THR:O | 1:K:199:THR:OG1 | 2.29 | 0.40 |
| 1:A:221:GLN:NE2 | 1:A:224:HIS:HB3 | 2.36 | 0.40 |
| 1:C:167:ARG:NH1 | 1:C:167:ARG:CG | 2.82 | 0.40 |
| 1:H:202:ARG:HB2 | 1:H:203:VAL:H | 1.64 | 0.40 |
| 1:J:190:GLU:HB3 | 1:J:194:GLN:NE2 | 2.37 | 0.40 |
| 1:K:227:SER:CA | 1:K:230:GLU:OE2 | 2.68 | 0.40 |
| 1:C:222:MET:HG2 | 1:G:224:HIS:CD2 | 2.56 | 0.40 |
| 1:D:188:ARG:HE | 1:F:189:GLU:CG | 2.26 | 0.40 |
| 1:E:175:VAL:CB | 1:F:174:GLN:OE1 | 2.68 | 0.40 |
| 1:G:178:ILE:HG12 | 1:H:174:GLN:NE2 | 2.29 | 0.40 |
| 1:A:204:LEU:HA | 1:A:204:LEU:HD12 | 1.65 | 0.40 |
| 1:B:216:ALA:CA | 2:B:301:9ED:C39 | 2.91 | 0.40 |
| 1:E:192:PHE:HE2 | 1:F:192:PHE:N | 2.18 | 0.40 |
| 1:E:218:GLY:O | 1:E:221:GLN:HG2 | 2.22 | 0.40 |
| 1:H:178:ILE:HD13 | 1:H:178:ILE:HA | 1.74 | 0.40 |
| 1:J:165:GLN:HA | 1:J:165:GLN:HE21 | 1.76 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|----------------|-----------|---------|----------|-------------|-----|
| 1 | A | 80/235 (34%) | 78 (98%) | 1 (1%) | 1 (1%) | 10 | 42 |
| 1 | B | 80/235 (34%) | 77 (96%) | 1 (1%) | 2 (2%) | 4 | 26 |
| 1 | C | 80/235 (34%) | 70 (88%) | 8 (10%) | 2 (2%) | 4 | 26 |
| 1 | D | 72/235 (31%) | 72 (100%) | 0 | 0 | 100 | 100 |
| 1 | E | 72/235 (31%) | 71 (99%) | 1 (1%) | 0 | 100 | 100 |
| 1 | F | 72/235 (31%) | 72 (100%) | 0 | 0 | 100 | 100 |
| 1 | G | 72/235 (31%) | 68 (94%) | 3 (4%) | 1 (1%) | 9 | 40 |
| 1 | H | 72/235 (31%) | 69 (96%) | 2 (3%) | 1 (1%) | 9 | 40 |
| 1 | I | 72/235 (31%) | 72 (100%) | 0 | 0 | 100 | 100 |
| 1 | J | 67/235 (28%) | 67 (100%) | 0 | 0 | 100 | 100 |
| 1 | K | 65/235 (28%) | 62 (95%) | 3 (5%) | 0 | 100 | 100 |
| 1 | L | 72/235 (31%) | 71 (99%) | 1 (1%) | 0 | 100 | 100 |
| All | All | 876/2820 (31%) | 849 (97%) | 20 (2%) | 7 (1%) | 19 | 55 |

All (7) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 155 | ILE |
| 1 | C | 201 | GLN |
| 1 | B | 183 | ASN |
| 1 | H | 202 | ARG |
| 1 | B | 205 | TRP |
| 1 | C | 200 | ASN |
| 1 | G | 210 | GLN |

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|-----------|-------------|----|
| 1 | A | 77/207 (37%) | 35 (46%) | 42 (54%) | 0 | 0 |
| 1 | B | 77/207 (37%) | 39 (51%) | 38 (49%) | 0 | 0 |
| 1 | C | 77/207 (37%) | 27 (35%) | 50 (65%) | 0 | 0 |
| 1 | D | 71/207 (34%) | 69 (97%) | 2 (3%) | 38 | 57 |
| 1 | E | 71/207 (34%) | 53 (75%) | 18 (25%) | 0 | 3 |
| 1 | F | 71/207 (34%) | 70 (99%) | 1 (1%) | 62 | 75 |
| 1 | G | 71/207 (34%) | 35 (49%) | 36 (51%) | 0 | 0 |
| 1 | H | 71/207 (34%) | 38 (54%) | 33 (46%) | 0 | 0 |
| 1 | I | 71/207 (34%) | 70 (99%) | 1 (1%) | 62 | 75 |
| 1 | J | 67/207 (32%) | 35 (52%) | 32 (48%) | 0 | 0 |
| 1 | K | 64/207 (31%) | 33 (52%) | 31 (48%) | 0 | 0 |
| 1 | L | 71/207 (34%) | 31 (44%) | 40 (56%) | 0 | 0 |
| All | All | 859/2484 (35%) | 535 (62%) | 324 (38%) | 0 | 0 |

All (324) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 154 | GLU |
| 1 | A | 158 | LYS |
| 1 | A | 159 | ASP |
| 1 | A | 160 | LYS |
| 1 | A | 161 | LEU |
| 1 | A | 163 | GLU |
| 1 | A | 164 | LEU |
| 1 | A | 166 | LEU |
| 1 | A | 167 | ARG |
| 1 | A | 170 | GLN |
| 1 | A | 171 | LEU |
| 1 | A | 175 | VAL |
| 1 | A | 176 | GLU |
| 1 | A | 177 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 178 | ILE |
| 1 | A | 180 | LYS |
| 1 | A | 181 | GLU |
| 1 | A | 184 | TYR |
| 1 | A | 185 | GLN |
| 1 | A | 186 | ARG |
| 1 | A | 188 | ARG |
| 1 | A | 189 | GLU |
| 1 | A | 194 | GLN |
| 1 | A | 196 | SER |
| 1 | A | 198 | SER |
| 1 | A | 199 | THR |
| 1 | A | 204 | LEU |
| 1 | A | 205 | TRP |
| 1 | A | 206 | TRP |
| 1 | A | 208 | ILE |
| 1 | A | 211 | THR |
| 1 | A | 212 | LEU |
| 1 | A | 213 | ILE |
| 1 | A | 214 | LEU |
| 1 | A | 215 | VAL |
| 1 | A | 221 | GLN |
| 1 | A | 222 | MET |
| 1 | A | 223 | ARG |
| 1 | A | 225 | LEU |
| 1 | A | 229 | PHE |
| 1 | A | 230 | GLU |
| 1 | A | 232 | LYS |
| 1 | B | 155 | ILE |
| 1 | B | 158 | LYS |
| 1 | B | 160 | LYS |
| 1 | B | 161 | LEU |
| 1 | B | 163 | GLU |
| 1 | B | 164 | LEU |
| 1 | B | 166 | LEU |
| 1 | B | 168 | VAL |
| 1 | B | 170 | GLN |
| 1 | B | 173 | GLU |
| 1 | B | 175 | VAL |
| 1 | B | 177 | GLN |
| 1 | B | 179 | GLN |
| 1 | B | 180 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 182 | GLN |
| 1 | B | 184 | TYR |
| 1 | B | 185 | GLN |
| 1 | B | 186 | ARG |
| 1 | B | 191 | ARG |
| 1 | B | 192 | PHE |
| 1 | B | 196 | SER |
| 1 | B | 197 | GLU |
| 1 | B | 200 | ASN |
| 1 | B | 202 | ARG |
| 1 | B | 204 | LEU |
| 1 | B | 210 | GLN |
| 1 | B | 214 | LEU |
| 1 | B | 221 | GLN |
| 1 | B | 222 | MET |
| 1 | B | 223 | ARG |
| 1 | B | 224 | HIS |
| 1 | B | 225 | LEU |
| 1 | B | 226 | LYS |
| 1 | B | 230 | GLU |
| 1 | B | 232 | LYS |
| 1 | B | 233 | LYS |
| 1 | B | 234 | LEU |
| 1 | B | 235 | VAL |
| 1 | C | 154 | GLU |
| 1 | C | 155 | ILE |
| 1 | C | 158 | LYS |
| 1 | C | 160 | LYS |
| 1 | C | 162 | SER |
| 1 | C | 163 | GLU |
| 1 | C | 164 | LEU |
| 1 | C | 165 | GLN |
| 1 | C | 166 | LEU |
| 1 | C | 167 | ARG |
| 1 | C | 169 | ARG |
| 1 | C | 170 | GLN |
| 1 | C | 173 | GLU |
| 1 | C | 177 | GLN |
| 1 | C | 179 | GLN |
| 1 | C | 180 | LYS |
| 1 | C | 182 | GLN |
| 1 | C | 184 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 186 | ARG |
| 1 | C | 187 | TRP |
| 1 | C | 191 | ARG |
| 1 | C | 192 | PHE |
| 1 | C | 193 | ARG |
| 1 | C | 194 | GLN |
| 1 | C | 195 | THR |
| 1 | C | 196 | SER |
| 1 | C | 197 | GLU |
| 1 | C | 198 | SER |
| 1 | C | 199 | THR |
| 1 | C | 202 | ARG |
| 1 | C | 204 | LEU |
| 1 | C | 206 | TRP |
| 1 | C | 209 | LEU |
| 1 | C | 210 | GLN |
| 1 | C | 211 | THR |
| 1 | C | 212 | LEU |
| 1 | C | 214 | LEU |
| 1 | C | 217 | ILE |
| 1 | C | 220 | TRP |
| 1 | C | 221 | GLN |
| 1 | C | 222 | MET |
| 1 | C | 223 | ARG |
| 1 | C | 224 | HIS |
| 1 | C | 225 | LEU |
| 1 | C | 226 | LYS |
| 1 | C | 227 | SER |
| 1 | C | 229 | PHE |
| 1 | C | 232 | LYS |
| 1 | C | 233 | LYS |
| 1 | C | 235 | VAL |
| 1 | D | 179 | GLN |
| 1 | D | 180 | LYS |
| 1 | E | 163 | GLU |
| 1 | E | 164 | LEU |
| 1 | E | 165 | GLN |
| 1 | E | 166 | LEU |
| 1 | E | 169 | ARG |
| 1 | E | 170 | GLN |
| 1 | E | 171 | LEU |
| 1 | E | 172 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | E | 177 | GLN |
| 1 | E | 182 | GLN |
| 1 | E | 185 | GLN |
| 1 | E | 187 | TRP |
| 1 | E | 189 | GLU |
| 1 | E | 190 | GLU |
| 1 | E | 192 | PHE |
| 1 | E | 194 | GLN |
| 1 | E | 196 | SER |
| 1 | E | 198 | SER |
| 1 | F | 226 | LYS |
| 1 | G | 164 | LEU |
| 1 | G | 165 | GLN |
| 1 | G | 166 | LEU |
| 1 | G | 167 | ARG |
| 1 | G | 169 | ARG |
| 1 | G | 171 | LEU |
| 1 | G | 173 | GLU |
| 1 | G | 177 | GLN |
| 1 | G | 178 | ILE |
| 1 | G | 181 | GLU |
| 1 | G | 185 | GLN |
| 1 | G | 187 | TRP |
| 1 | G | 189 | GLU |
| 1 | G | 190 | GLU |
| 1 | G | 193 | ARG |
| 1 | G | 196 | SER |
| 1 | G | 197 | GLU |
| 1 | G | 199 | THR |
| 1 | G | 201 | GLN |
| 1 | G | 202 | ARG |
| 1 | G | 204 | LEU |
| 1 | G | 205 | TRP |
| 1 | G | 208 | ILE |
| 1 | G | 211 | THR |
| 1 | G | 212 | LEU |
| 1 | G | 213 | ILE |
| 1 | G | 214 | LEU |
| 1 | G | 220 | TRP |
| 1 | G | 221 | GLN |
| 1 | G | 222 | MET |
| 1 | G | 223 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | G | 227 | SER |
| 1 | G | 228 | PHE |
| 1 | G | 230 | GLU |
| 1 | G | 232 | LYS |
| 1 | G | 233 | LYS |
| 1 | H | 163 | GLU |
| 1 | H | 165 | GLN |
| 1 | H | 169 | ARG |
| 1 | H | 172 | VAL |
| 1 | H | 173 | GLU |
| 1 | H | 175 | VAL |
| 1 | H | 178 | ILE |
| 1 | H | 179 | GLN |
| 1 | H | 180 | LYS |
| 1 | H | 181 | GLU |
| 1 | H | 185 | GLN |
| 1 | H | 188 | ARG |
| 1 | H | 191 | ARG |
| 1 | H | 193 | ARG |
| 1 | H | 202 | ARG |
| 1 | H | 203 | VAL |
| 1 | H | 204 | LEU |
| 1 | H | 205 | TRP |
| 1 | H | 208 | ILE |
| 1 | H | 211 | THR |
| 1 | H | 212 | LEU |
| 1 | H | 213 | ILE |
| 1 | H | 217 | ILE |
| 1 | H | 221 | GLN |
| 1 | H | 222 | MET |
| 1 | H | 223 | ARG |
| 1 | H | 225 | LEU |
| 1 | H | 228 | PHE |
| 1 | H | 230 | GLU |
| 1 | H | 232 | LYS |
| 1 | H | 233 | LYS |
| 1 | H | 234 | LEU |
| 1 | H | 235 | VAL |
| 1 | I | 226 | LYS |
| 1 | J | 160 | LYS |
| 1 | J | 161 | LEU |
| 1 | J | 163 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | J | 164 | LEU |
| 1 | J | 165 | GLN |
| 1 | J | 169 | ARG |
| 1 | J | 170 | GLN |
| 1 | J | 171 | LEU |
| 1 | J | 173 | GLU |
| 1 | J | 174 | GLN |
| 1 | J | 176 | GLU |
| 1 | J | 179 | GLN |
| 1 | J | 185 | GLN |
| 1 | J | 186 | ARG |
| 1 | J | 188 | ARG |
| 1 | J | 189 | GLU |
| 1 | J | 192 | PHE |
| 1 | J | 199 | THR |
| 1 | J | 200 | ASN |
| 1 | J | 203 | VAL |
| 1 | J | 204 | LEU |
| 1 | J | 206 | TRP |
| 1 | J | 208 | ILE |
| 1 | J | 209 | LEU |
| 1 | J | 210 | GLN |
| 1 | J | 211 | THR |
| 1 | J | 213 | ILE |
| 1 | J | 214 | LEU |
| 1 | J | 221 | GLN |
| 1 | J | 222 | MET |
| 1 | J | 225 | LEU |
| 1 | J | 226 | LYS |
| 1 | K | 167 | ARG |
| 1 | K | 170 | GLN |
| 1 | K | 171 | LEU |
| 1 | K | 172 | VAL |
| 1 | K | 173 | GLU |
| 1 | K | 174 | GLN |
| 1 | K | 175 | VAL |
| 1 | K | 176 | GLU |
| 1 | K | 177 | GLN |
| 1 | K | 178 | ILE |
| 1 | K | 181 | GLU |
| 1 | K | 183 | ASN |
| 1 | K | 185 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | K | 190 | GLU |
| 1 | K | 191 | ARG |
| 1 | K | 194 | GLN |
| 1 | K | 201 | GLN |
| 1 | K | 204 | LEU |
| 1 | K | 208 | ILE |
| 1 | K | 214 | LEU |
| 1 | K | 217 | ILE |
| 1 | K | 219 | VAL |
| 1 | K | 220 | TRP |
| 1 | K | 222 | MET |
| 1 | K | 224 | HIS |
| 1 | K | 225 | LEU |
| 1 | K | 226 | LYS |
| 1 | K | 227 | SER |
| 1 | K | 229 | PHE |
| 1 | K | 232 | LYS |
| 1 | K | 233 | LYS |
| 1 | L | 162 | SER |
| 1 | L | 163 | GLU |
| 1 | L | 164 | LEU |
| 1 | L | 169 | ARG |
| 1 | L | 170 | GLN |
| 1 | L | 172 | VAL |
| 1 | L | 174 | GLN |
| 1 | L | 176 | GLU |
| 1 | L | 178 | ILE |
| 1 | L | 179 | GLN |
| 1 | L | 181 | GLU |
| 1 | L | 185 | GLN |
| 1 | L | 190 | GLU |
| 1 | L | 192 | PHE |
| 1 | L | 193 | ARG |
| 1 | L | 194 | GLN |
| 1 | L | 195 | THR |
| 1 | L | 197 | GLU |
| 1 | L | 200 | ASN |
| 1 | L | 201 | GLN |
| 1 | L | 203 | VAL |
| 1 | L | 205 | TRP |
| 1 | L | 206 | TRP |
| 1 | L | 207 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | L | 208 | ILE |
| 1 | L | 209 | LEU |
| 1 | L | 210 | GLN |
| 1 | L | 213 | ILE |
| 1 | L | 214 | LEU |
| 1 | L | 217 | ILE |
| 1 | L | 220 | TRP |
| 1 | L | 221 | GLN |
| 1 | L | 223 | ARG |
| 1 | L | 224 | HIS |
| 1 | L | 226 | LYS |
| 1 | L | 227 | SER |
| 1 | L | 228 | PHE |
| 1 | L | 232 | LYS |
| 1 | L | 233 | LYS |
| 1 | L | 234 | LEU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (53) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 177 | GLN |
| 1 | A | 182 | GLN |
| 1 | A | 185 | GLN |
| 1 | A | 201 | GLN |
| 1 | A | 221 | GLN |
| 1 | A | 224 | HIS |
| 1 | B | 165 | GLN |
| 1 | B | 170 | GLN |
| 1 | B | 174 | GLN |
| 1 | B | 177 | GLN |
| 1 | B | 179 | GLN |
| 1 | B | 183 | ASN |
| 1 | B | 185 | GLN |
| 1 | B | 210 | GLN |
| 1 | B | 224 | HIS |
| 1 | C | 194 | GLN |
| 1 | C | 210 | GLN |
| 1 | C | 224 | HIS |
| 1 | E | 165 | GLN |
| 1 | E | 174 | GLN |
| 1 | E | 185 | GLN |
| 1 | E | 201 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | E | 221 | GLN |
| 1 | F | 185 | GLN |
| 1 | G | 170 | GLN |
| 1 | G | 174 | GLN |
| 1 | G | 177 | GLN |
| 1 | G | 194 | GLN |
| 1 | G | 210 | GLN |
| 1 | G | 221 | GLN |
| 1 | H | 165 | GLN |
| 1 | H | 170 | GLN |
| 1 | H | 174 | GLN |
| 1 | H | 177 | GLN |
| 1 | H | 185 | GLN |
| 1 | H | 210 | GLN |
| 1 | I | 174 | GLN |
| 1 | J | 165 | GLN |
| 1 | J | 174 | GLN |
| 1 | J | 179 | GLN |
| 1 | J | 182 | GLN |
| 1 | J | 194 | GLN |
| 1 | J | 200 | ASN |
| 1 | J | 201 | GLN |
| 1 | K | 174 | GLN |
| 1 | K | 185 | GLN |
| 1 | K | 194 | GLN |
| 1 | K | 201 | GLN |
| 1 | L | 174 | GLN |
| 1 | L | 179 | GLN |
| 1 | L | 183 | ASN |
| 1 | L | 194 | GLN |
| 1 | L | 210 | GLN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides 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 | 9ED | H | 301 | - | 61,61,67 | 1.62 | 11 (18%) | 73,76,85 | 2.28 | 13 (17%) |
| 2 | 9ED | B | 301 | - | 61,61,67 | 1.62 | 10 (16%) | 73,76,85 | 2.28 | 13 (17%) |

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 | 9ED | H | 301 | - | - | 28/57/81/88 | 0/1/1/1 |
| 2 | 9ED | B | 301 | - | - | 27/57/81/88 | 0/1/1/1 |

All (21) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 2 | B | 301 | 9ED | C63-C62 | 4.27 | 1.56 | 1.31 |
| 2 | H | 301 | 9ED | C63-C62 | 4.27 | 1.55 | 1.31 |
| 2 | B | 301 | 9ED | C61-C60 | 4.18 | 1.55 | 1.31 |
| 2 | H | 301 | 9ED | C61-C60 | 4.17 | 1.55 | 1.31 |
| 2 | B | 301 | 9ED | P02-O05 | 3.78 | 1.66 | 1.59 |
| 2 | H | 301 | 9ED | P02-O05 | 3.76 | 1.66 | 1.59 |
| 2 | B | 301 | 9ED | P01-O04 | 3.47 | 1.69 | 1.59 |
| 2 | H | 301 | 9ED | P01-O04 | 3.46 | 1.69 | 1.59 |
| 2 | H | 301 | 9ED | C43-C41 | -3.33 | 1.35 | 1.51 |
| 2 | B | 301 | 9ED | C43-C41 | -3.30 | 1.35 | 1.51 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 2 | B | 301 | 9ED | O19-C32 | 3.14 | 1.43 | 1.34 |
| 2 | H | 301 | 9ED | O19-C32 | 3.13 | 1.43 | 1.34 |
| 2 | H | 301 | 9ED | O20-C35 | 3.13 | 1.42 | 1.33 |
| 2 | B | 301 | 9ED | O20-C35 | 3.11 | 1.42 | 1.33 |
| 2 | B | 301 | 9ED | C24-C23 | 2.60 | 1.59 | 1.52 |
| 2 | H | 301 | 9ED | C24-C23 | 2.58 | 1.59 | 1.52 |
| 2 | B | 301 | 9ED | P01-O10 | 2.13 | 1.67 | 1.59 |
| 2 | H | 301 | 9ED | P01-O10 | 2.12 | 1.67 | 1.59 |
| 2 | H | 301 | 9ED | C33-C32 | 2.04 | 1.56 | 1.50 |
| 2 | B | 301 | 9ED | C33-C32 | 2.03 | 1.56 | 1.50 |
| 2 | H | 301 | 9ED | C27-C28 | 2.01 | 1.57 | 1.52 |

All (26) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2 | H | 301 | 9ED | C47-C52-C56 | -7.44 | 78.11 | 113.86 |
| 2 | B | 301 | 9ED | C47-C52-C56 | -7.44 | 78.11 | 113.86 |
| 2 | B | 301 | 9ED | O07-C26-C25 | -7.10 | 91.75 | 109.94 |
| 2 | H | 301 | 9ED | O07-C26-C25 | -7.08 | 91.78 | 109.94 |
| 2 | B | 301 | 9ED | O07-C26-C23 | -7.01 | 91.97 | 109.94 |
| 2 | H | 301 | 9ED | O07-C26-C23 | -7.01 | 91.98 | 109.94 |
| 2 | H | 301 | 9ED | C28-C27-C24 | -6.38 | 99.63 | 110.83 |
| 2 | B | 301 | 9ED | C28-C27-C24 | -6.38 | 99.64 | 110.83 |
| 2 | H | 301 | 9ED | C26-C23-C24 | -5.65 | 103.02 | 110.86 |
| 2 | B | 301 | 9ED | C26-C23-C24 | -5.65 | 103.02 | 110.86 |
| 2 | B | 301 | 9ED | C36-C34-C33 | 5.29 | 132.57 | 113.13 |
| 2 | H | 301 | 9ED | C36-C34-C33 | 5.28 | 132.54 | 113.13 |
| 2 | H | 301 | 9ED | O04-C25-C28 | 4.00 | 117.20 | 108.73 |
| 2 | B | 301 | 9ED | O04-C25-C28 | 4.00 | 117.19 | 108.73 |
| 2 | B | 301 | 9ED | O08-C27-C28 | 3.94 | 119.67 | 110.38 |
| 2 | H | 301 | 9ED | O08-C27-C28 | 3.94 | 119.67 | 110.38 |
| 2 | B | 301 | 9ED | C25-C26-C23 | 3.77 | 116.75 | 109.11 |
| 2 | H | 301 | 9ED | C25-C26-C23 | 3.77 | 116.75 | 109.11 |
| 2 | B | 301 | 9ED | O19-C32-C33 | 3.60 | 119.27 | 111.48 |
| 2 | H | 301 | 9ED | O19-C32-C33 | 3.59 | 119.24 | 111.48 |
| 2 | B | 301 | 9ED | C43-C41-C38 | 3.28 | 130.95 | 114.37 |
| 2 | H | 301 | 9ED | C43-C41-C38 | 3.28 | 130.95 | 114.37 |
| 2 | H | 301 | 9ED | O20-C35-C37 | 2.69 | 120.04 | 111.83 |
| 2 | B | 301 | 9ED | O20-C35-C37 | 2.69 | 120.03 | 111.83 |
| 2 | B | 301 | 9ED | C52-C47-C48 | 2.31 | 126.05 | 114.37 |
| 2 | H | 301 | 9ED | C52-C47-C48 | 2.31 | 126.03 | 114.37 |

There are no chirality outliers.

All (55) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-----------------|
| 2 | B | 301 | 9ED | C29-O10-P01-O04 |
| 2 | B | 301 | 9ED | C29-O10-P01-O11 |
| 2 | B | 301 | 9ED | C24-C23-O05-P02 |
| 2 | B | 301 | 9ED | C26-C23-O05-P02 |
| 2 | H | 301 | 9ED | C29-O10-P01-O04 |
| 2 | H | 301 | 9ED | C29-O10-P01-O11 |
| 2 | H | 301 | 9ED | C24-C23-O05-P02 |
| 2 | H | 301 | 9ED | C26-C23-O05-P02 |
| 2 | B | 301 | 9ED | C38-C41-C43-C46 |
| 2 | B | 301 | 9ED | O21-C32-O19-C30 |
| 2 | H | 301 | 9ED | C38-C41-C43-C46 |
| 2 | B | 301 | 9ED | C33-C32-O19-C30 |
| 2 | H | 301 | 9ED | C33-C32-O19-C30 |
| 2 | H | 301 | 9ED | O21-C32-O19-C30 |
| 2 | B | 301 | 9ED | C35-C37-C39-C40 |
| 2 | H | 301 | 9ED | C35-C37-C39-C40 |
| 2 | B | 301 | 9ED | C53-C49-C50-C3 |
| 2 | H | 301 | 9ED | C53-C49-C50-C3 |
| 2 | B | 301 | 9ED | C49-C53-C57-C63 |
| 2 | H | 301 | 9ED | C49-C53-C57-C63 |
| 2 | H | 301 | 9ED | C52-C47-C48-C54 |
| 2 | B | 301 | 9ED | C52-C47-C48-C54 |
| 2 | B | 301 | 9ED | C44-C45-C51-C62 |
| 2 | H | 301 | 9ED | C44-C45-C51-C62 |
| 2 | B | 301 | 9ED | C51-C62-C63-C57 |
| 2 | H | 301 | 9ED | C51-C62-C63-C57 |
| 2 | B | 301 | 9ED | C36-C38-C41-C43 |
| 2 | H | 301 | 9ED | C36-C38-C41-C43 |
| 2 | H | 301 | 9ED | C37-C39-C40-C42 |
| 2 | B | 301 | 9ED | C37-C39-C40-C42 |
| 2 | H | 301 | 9ED | C50-C3-C4-C5 |
| 2 | B | 301 | 9ED | C41-C43-C46-C60 |
| 2 | H | 301 | 9ED | C41-C43-C46-C60 |
| 2 | B | 301 | 9ED | C47-C48-C54-C58 |
| 2 | B | 301 | 9ED | C39-C40-C42-C44 |
| 2 | H | 301 | 9ED | C39-C40-C42-C44 |
| 2 | H | 301 | 9ED | C4-C3-C50-C49 |
| 2 | B | 301 | 9ED | C48-C54-C58-C1 |
| 2 | B | 301 | 9ED | C42-C44-C45-C51 |
| 2 | H | 301 | 9ED | C42-C44-C45-C51 |

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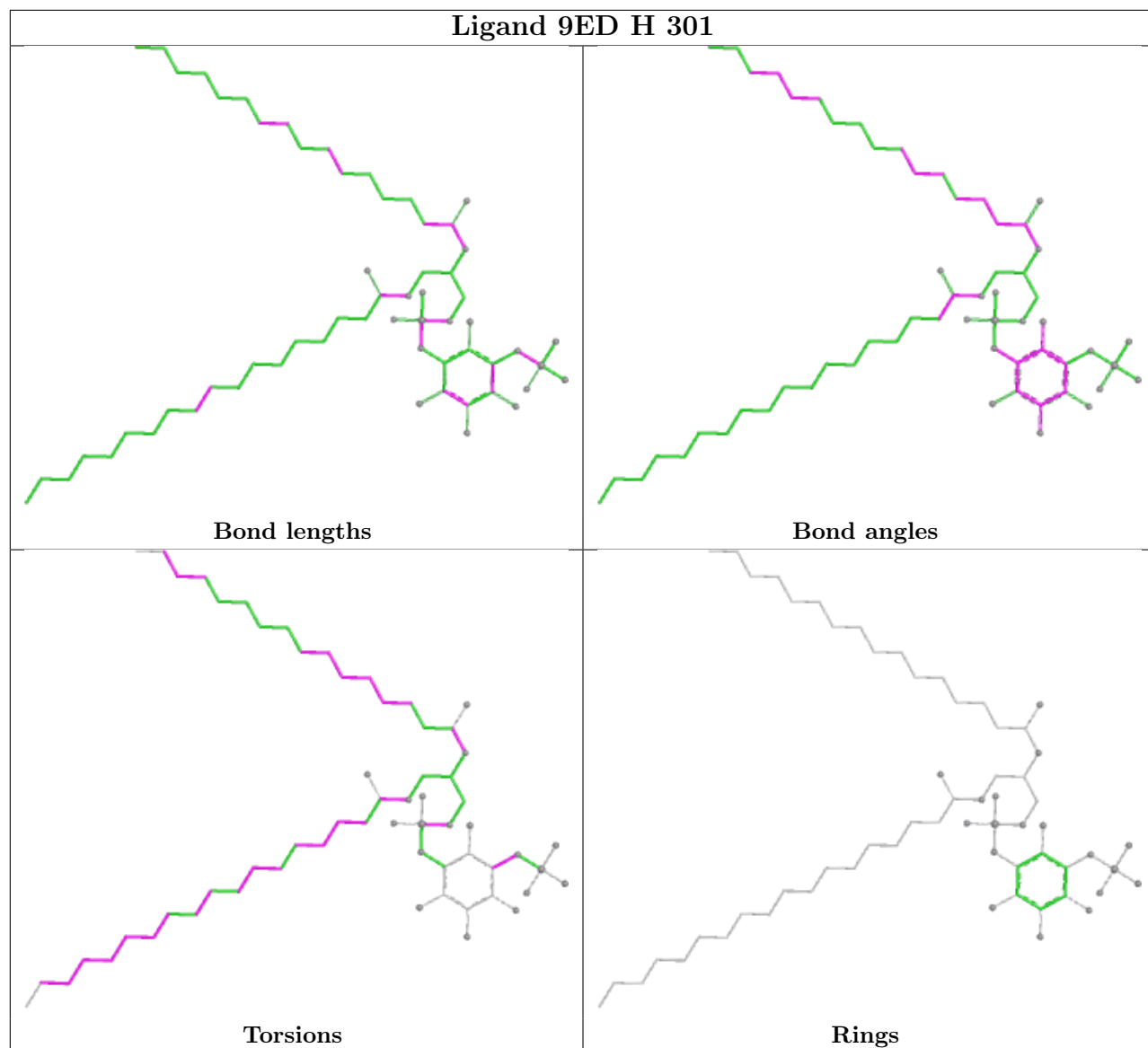
| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-----------------|
| 2 | H | 301 | 9ED | C3-C4-C5-C6 |
| 2 | H | 301 | 9ED | C47-C48-C54-C58 |
| 2 | B | 301 | 9ED | C29-O10-P01-O16 |
| 2 | H | 301 | 9ED | C29-O10-P01-O16 |
| 2 | B | 301 | 9ED | C37-C35-O20-C31 |
| 2 | H | 301 | 9ED | C37-C35-O20-C31 |
| 2 | B | 301 | 9ED | O22-C35-O20-C31 |
| 2 | H | 301 | 9ED | O22-C35-O20-C31 |
| 2 | B | 301 | 9ED | C4-C3-C50-C49 |
| 2 | B | 301 | 9ED | C50-C49-C53-C57 |
| 2 | H | 301 | 9ED | C50-C49-C53-C57 |
| 2 | H | 301 | 9ED | C34-C36-C38-C41 |
| 2 | B | 301 | 9ED | C34-C36-C38-C41 |
| 2 | H | 301 | 9ED | C33-C34-C36-C38 |
| 2 | B | 301 | 9ED | C33-C34-C36-C38 |

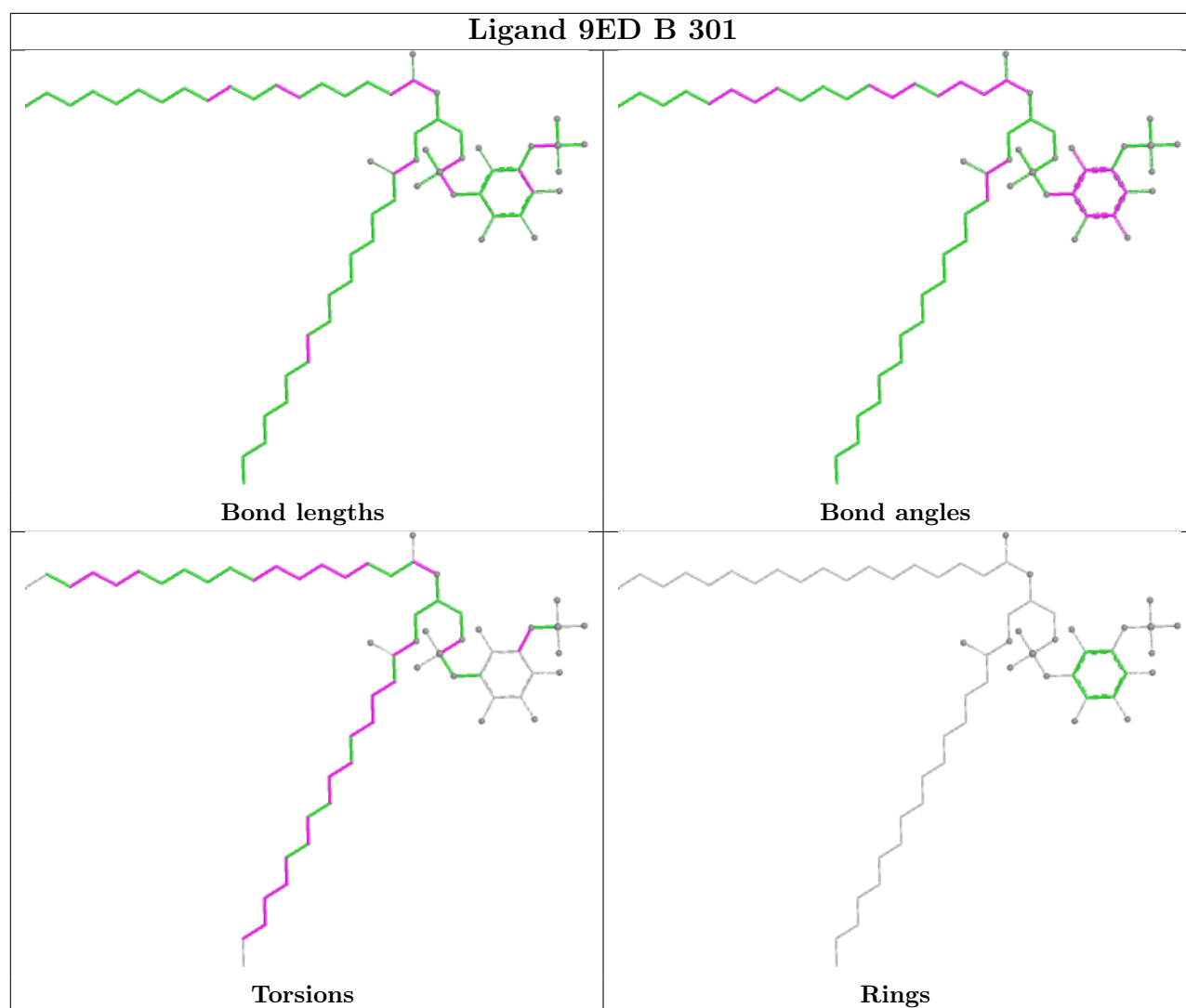
There are no ring outliers.

2 monomers are involved in 92 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | H | 301 | 9ED | 34 | 0 |
| 2 | B | 301 | 9ED | 58 | 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 [i](#)

There are no chain breaks in this entry.

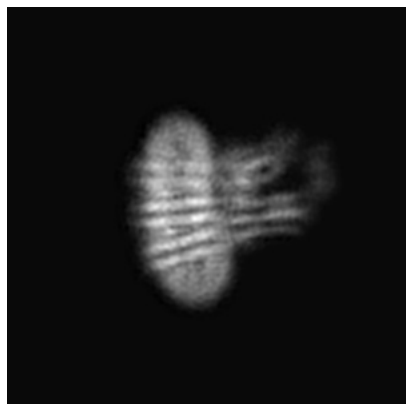
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-45635. These allow visual inspection of the internal detail of the map and identification of artifacts.

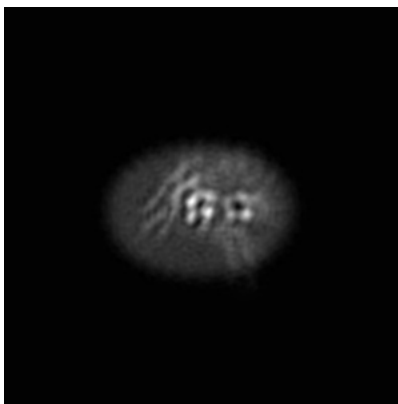
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

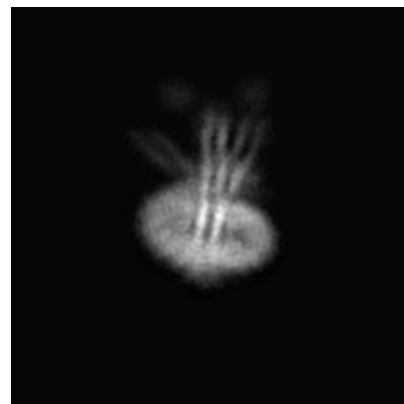
6.1.1 Primary map



X

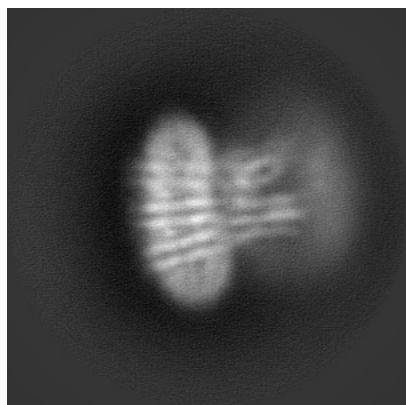


Y

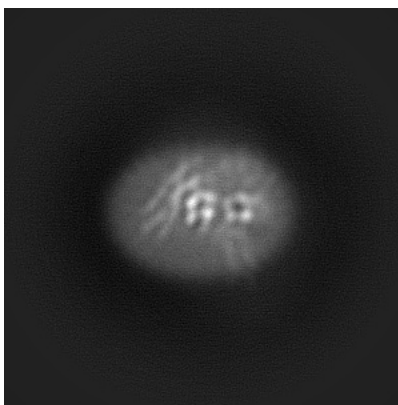


Z

6.1.2 Raw map



X



Y

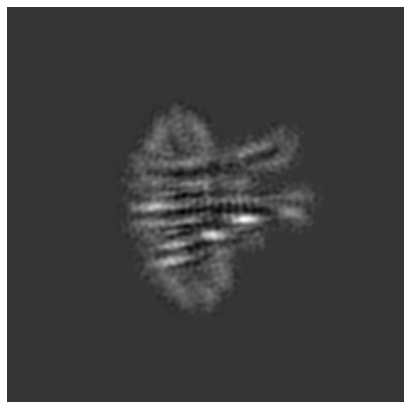


Z

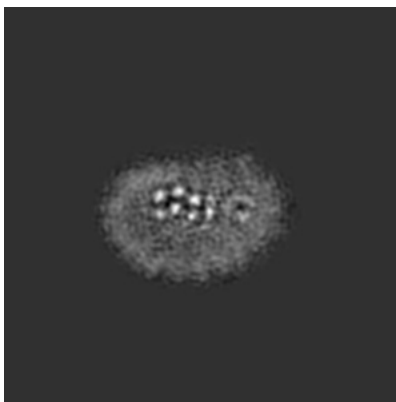
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

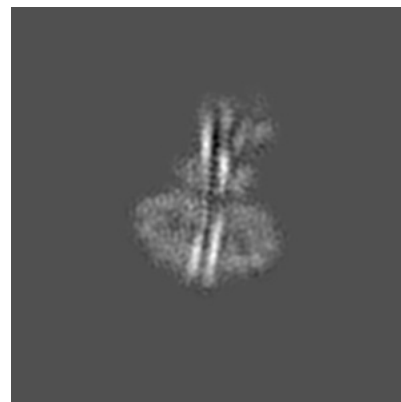
6.2.1 Primary map



X Index: 160

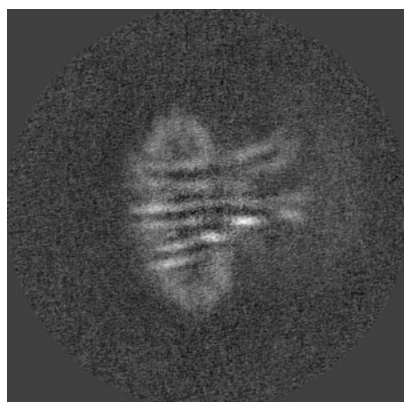


Y Index: 160

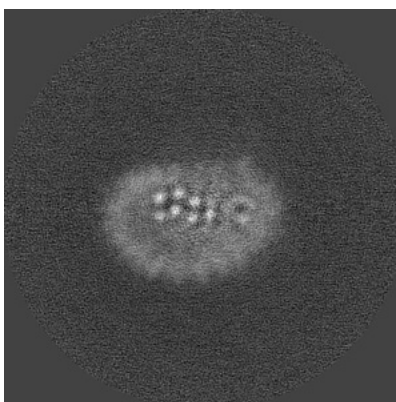


Z Index: 160

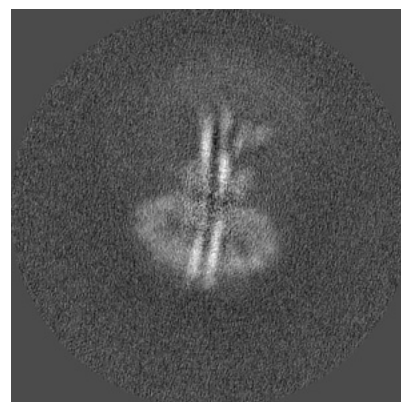
6.2.2 Raw map



X Index: 160



Y Index: 160



Z Index: 160

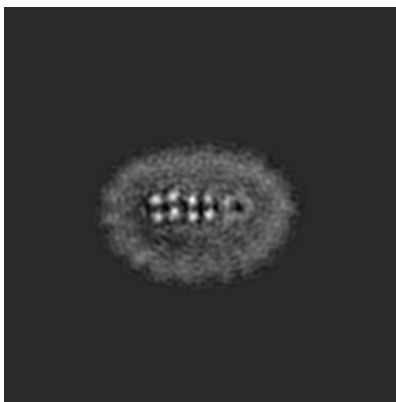
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

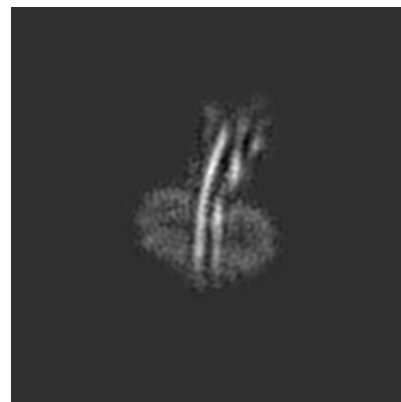
6.3.1 Primary map



X Index: 166

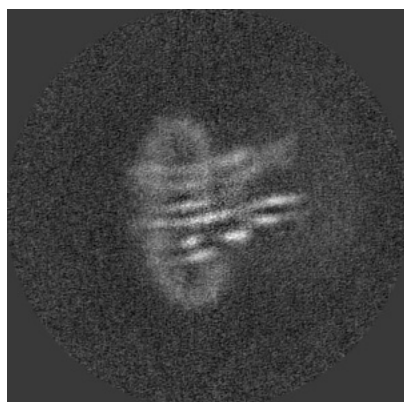


Y Index: 151

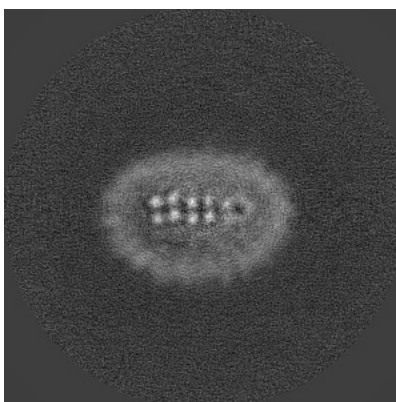


Z Index: 150

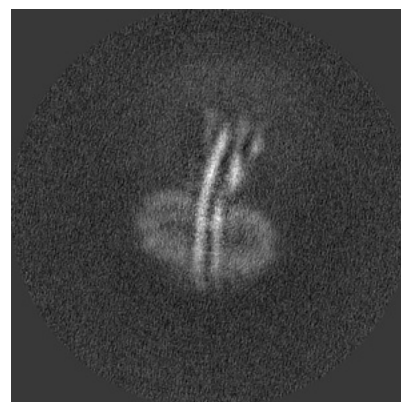
6.3.2 Raw map



X Index: 166



Y Index: 151



Z Index: 150

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

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

6.4.1 Primary map



X

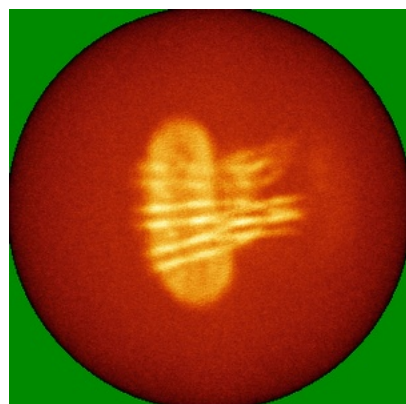


Y

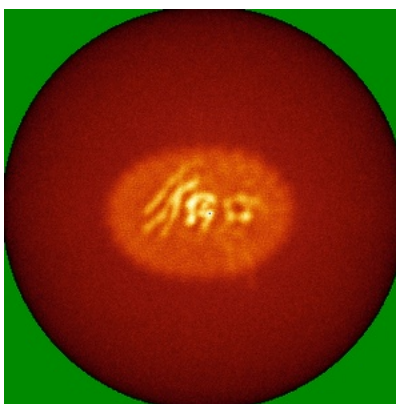


Z

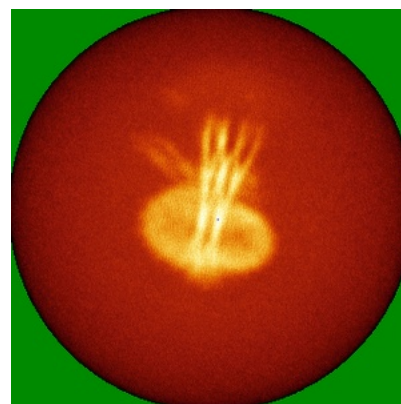
6.4.2 Raw map



X



Y

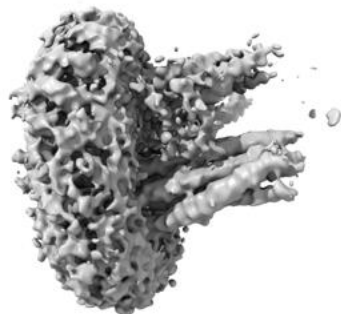


Z

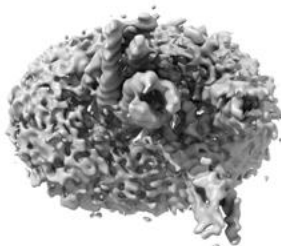
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

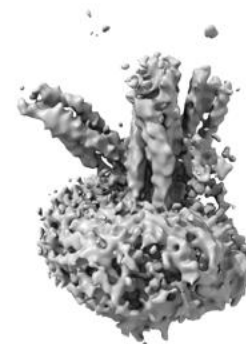
6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.008. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

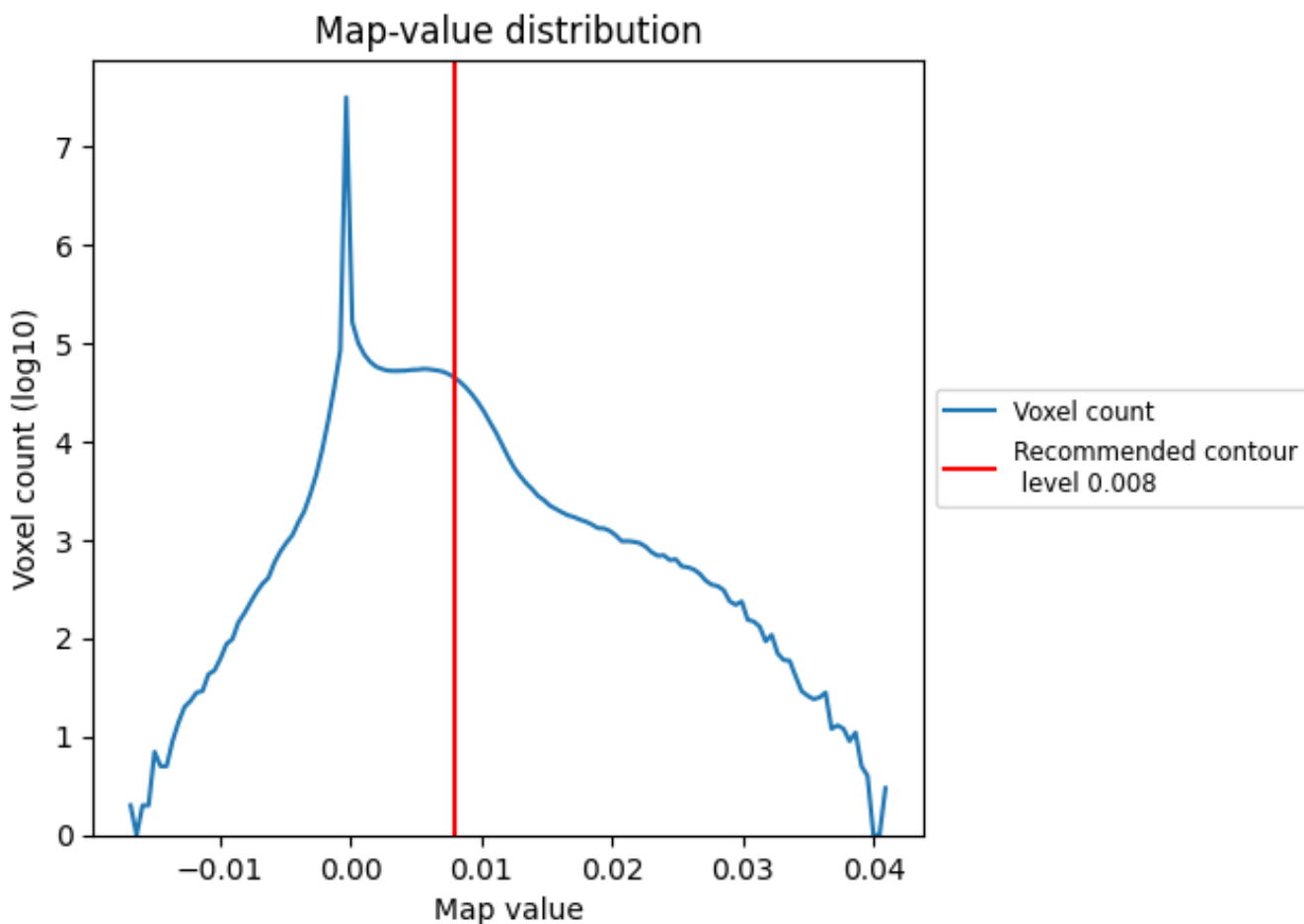
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

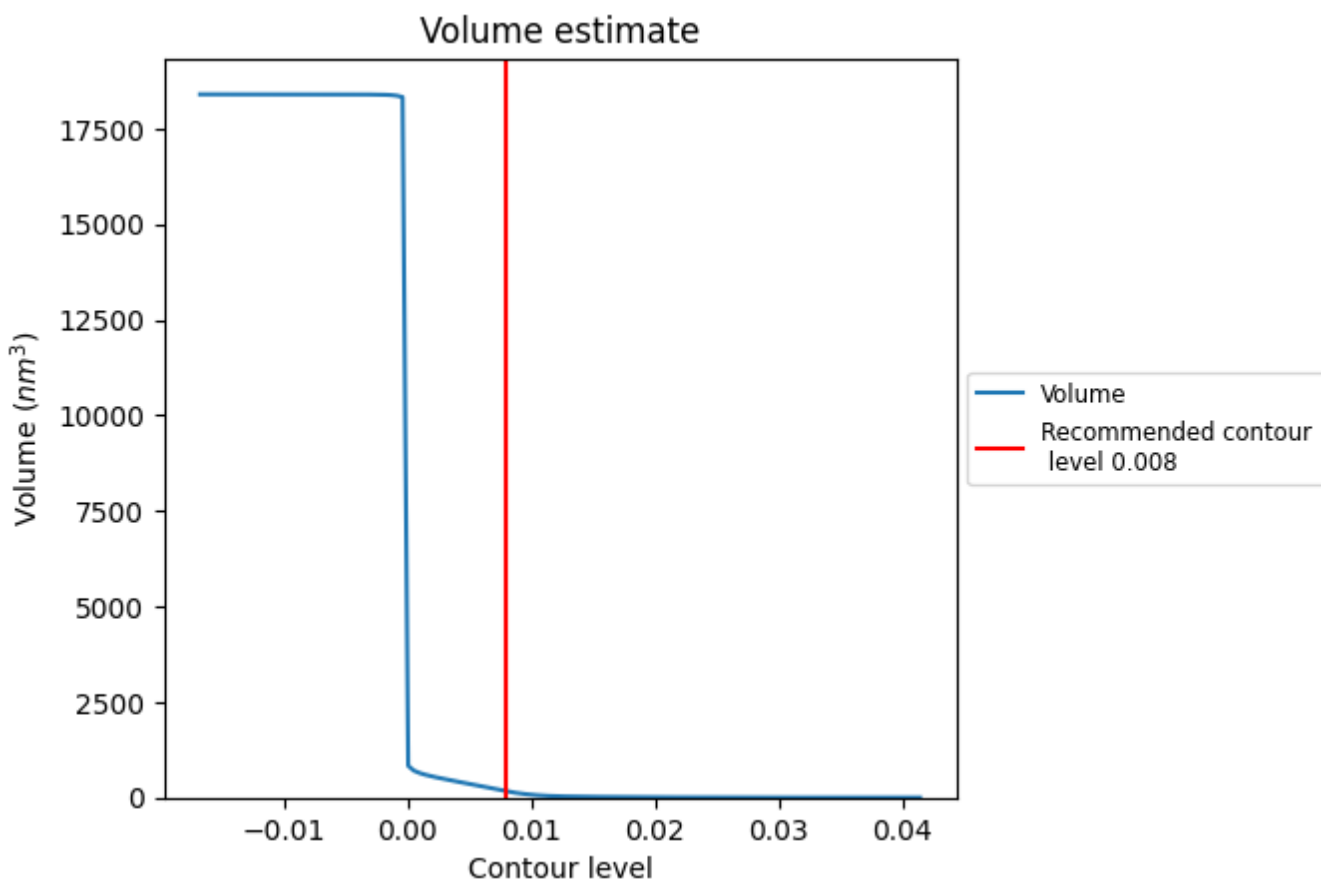
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

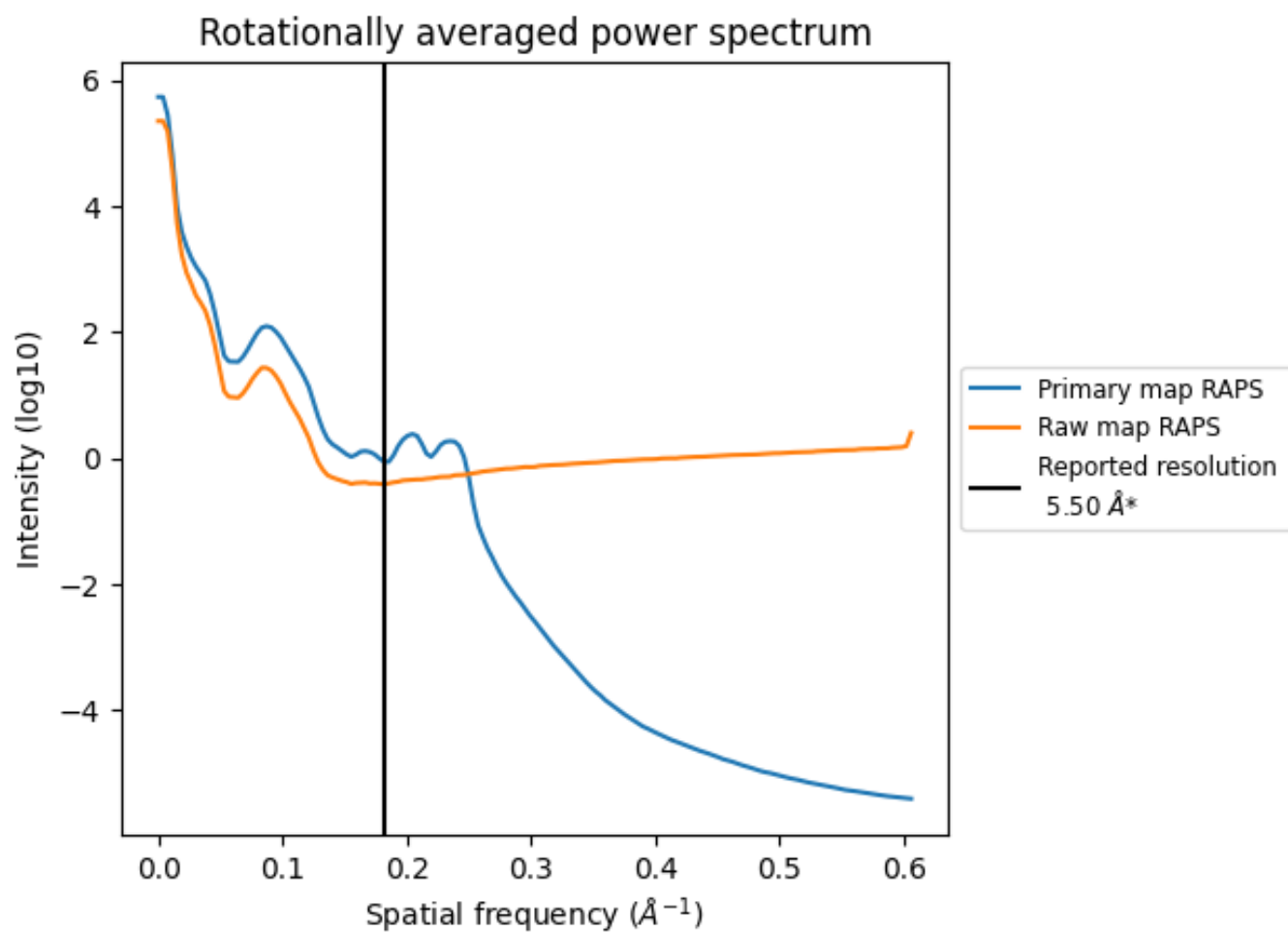
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 162 nm³; this corresponds to an approximate mass of 147 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

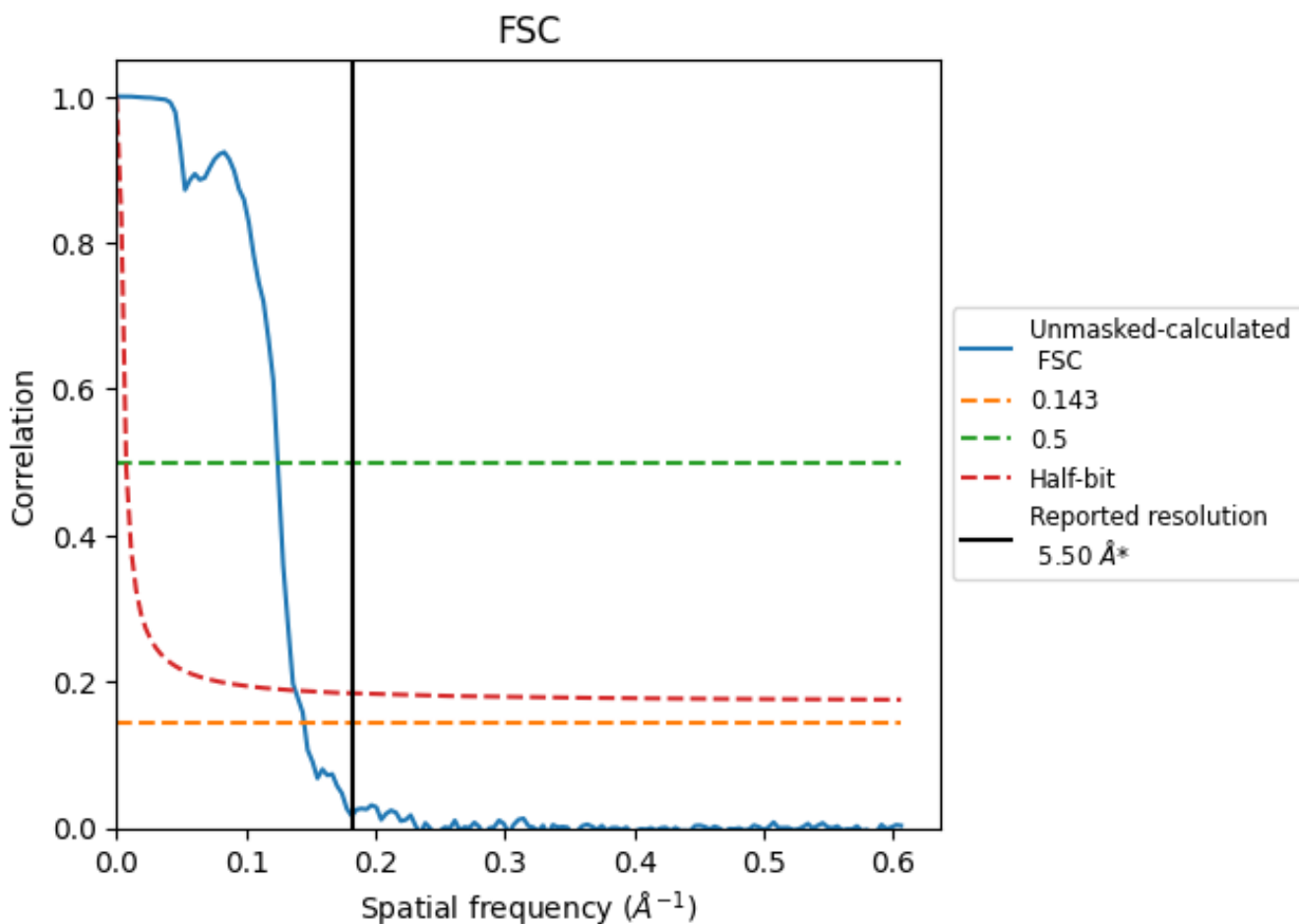


*Reported resolution corresponds to spatial frequency of 0.182 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.182 Å⁻¹

8.2 Resolution estimates [i](#)

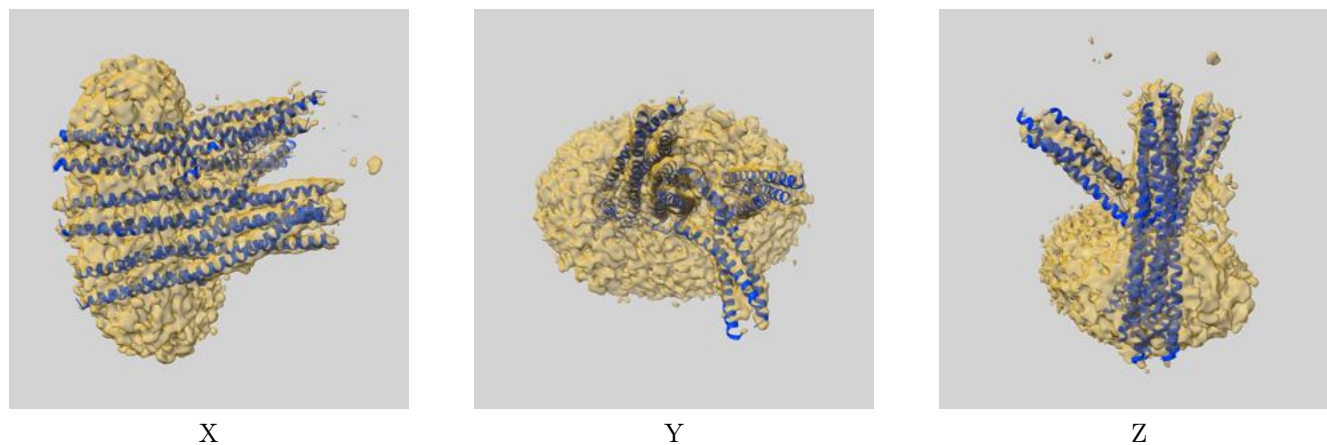
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---------------------------|------------------------------------|------|----------|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 5.50 | - | - |
| Author-provided FSC curve | - | - | - |
| Unmasked-calculated* | 6.90 | 8.03 | 7.24 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.90 differs from the reported value 5.5 by more than 10 %

9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-45635 and PDB model 9CJL. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.008 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



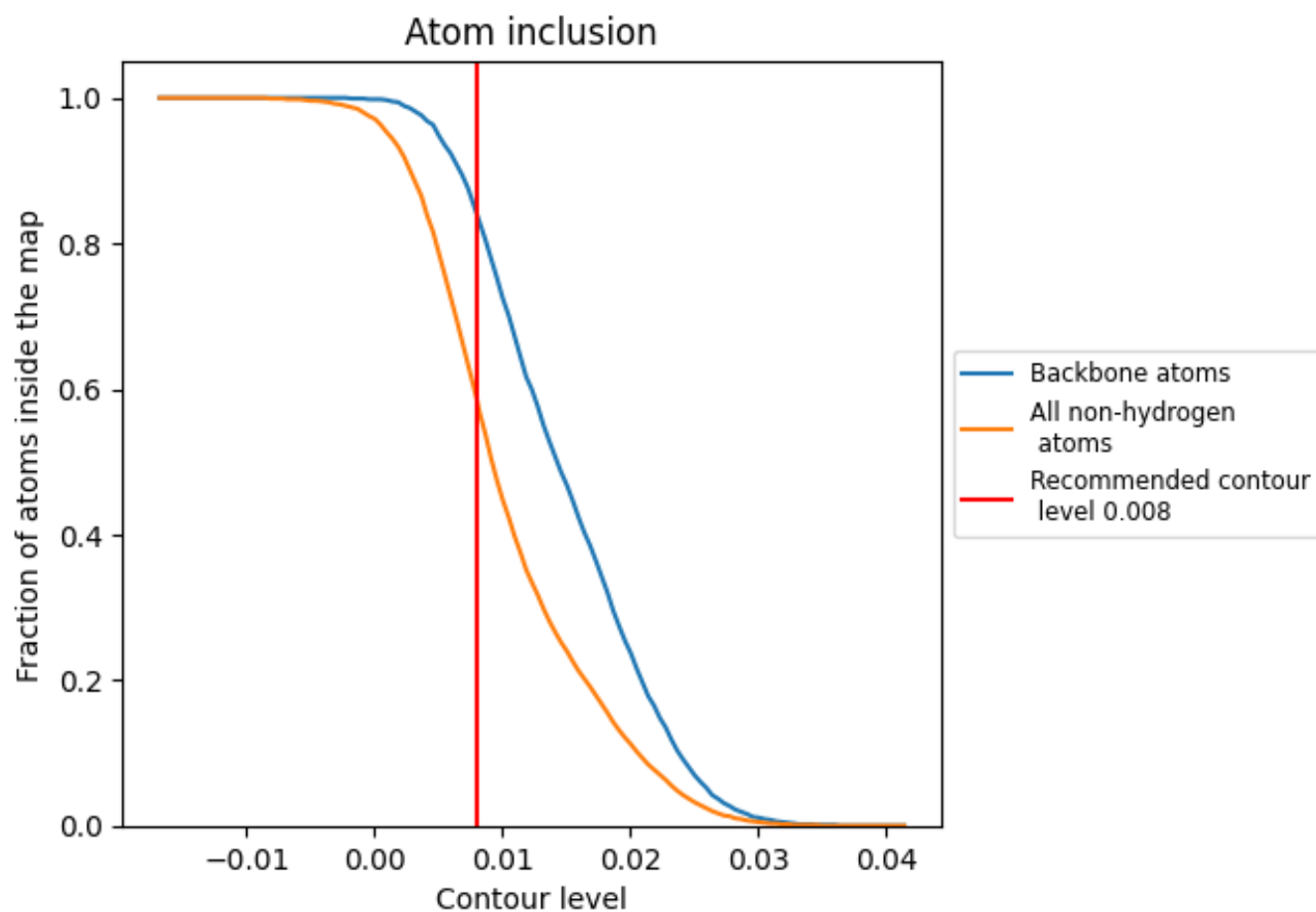
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.008).



























9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 59% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.008) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|--|
| All |  0.5860 |  0.1280 |
| A |  0.4260 |  0.0950 |
| B |  0.5300 |  0.1240 |
| C |  0.5700 |  0.1890 |
| D |  0.6510 |  0.1300 |
| E |  0.6490 |  0.1240 |
| F |  0.6300 |  0.1020 |
| G |  0.6670 |  0.1740 |
| H |  0.6550 |  0.1450 |
| I |  0.5820 |  0.1160 |
| J |  0.6040 |  0.1260 |
| K |  0.5610 |  0.1170 |
| L |  0.5230 |  0.0910 |

