



Full wwPDB EM Validation Report ⓘ

Feb 5, 2026 – 09:57 AM EST

PDB ID : 9E12 / pdb_00009e12
EMDB ID : EMD-47381
Title : Full-length human dynein-1 in phi conformation under Lis1 condition
Authors : Yang, J.; Zhang, K.
Deposited on : 2024-10-21
Resolution : 4.50 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:

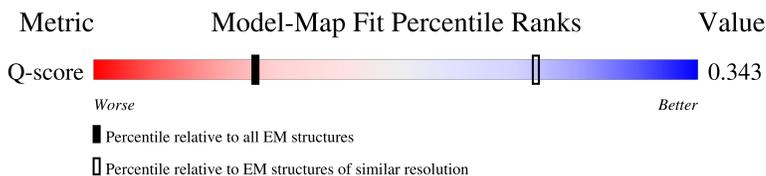
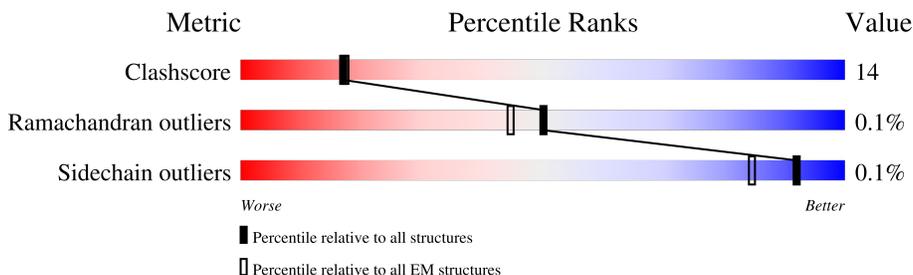
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 4.50 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.



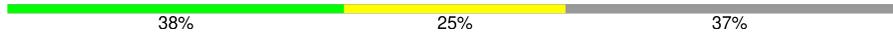
| Metric | Whole archive (#Entries) | EM structures (#Entries) | Similar EM resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-----------------------------|--|
| Clashscore | 210492 | 15764 | - |
| Ramachandran outliers | 207382 | 16835 | - |
| Sidechain outliers | 206894 | 16415 | - |
| Q-score | - | 25397 | 2937 (4.00 - 5.00) |

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 | 4646 | 74% 24% |
| 1 | B | 4646 | 69% 28% |
| 2 | C | 638 | 60% 38% |
| 2 | D | 638 | 35% 27% 38% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 3 | E | 492 |  61% 37% |
| 3 | F | 492 |  38% 25% 37% |
| 4 | G | 96 |  10% 63% 34% |
| 4 | H | 96 |  10% 59% 38% |
| 5 | I | 89 |  25% 57% 43% |
| 5 | J | 89 |  20% 56% 43% |
| 6 | K | 113 |  85% 64% 36% |
| 6 | L | 113 |  75% 72% 28% |

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 89391 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 Cytoplasmic dynein 1 heavy chain 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-------|------|------|-----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 4542 | Total | C | N | O | S | 0 | 0 |
| | | | 36692 | 23323 | 6381 | 6822 | 166 | | |
| 1 | B | 4521 | Total | C | N | O | S | 0 | 0 |
| | | | 36527 | 23221 | 6349 | 6791 | 166 | | |

- Molecule 2 is a protein called Cytoplasmic dynein 1 intermediate chain 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 2 | C | 394 | Total | C | N | O | S | 0 | 0 |
| | | | 3112 | 1962 | 541 | 594 | 15 | | |
| 2 | D | 394 | Total | C | N | O | S | 0 | 0 |
| | | | 3112 | 1962 | 541 | 594 | 15 | | |

- Molecule 3 is a protein called Cytoplasmic dynein 1 light intermediate chain 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 3 | E | 311 | Total | C | N | O | S | 0 | 0 |
| | | | 2518 | 1614 | 425 | 468 | 11 | | |
| 3 | F | 311 | Total | C | N | O | S | 0 | 0 |
| | | | 2518 | 1614 | 425 | 468 | 11 | | |

- Molecule 4 is a protein called Dynein light chain roadblock-type 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 4 | G | 93 | Total | C | N | O | S | 0 | 0 |
| | | | 742 | 468 | 128 | 143 | 3 | | |
| 4 | H | 93 | Total | C | N | O | S | 0 | 0 |
| | | | 742 | 468 | 128 | 143 | 3 | | |

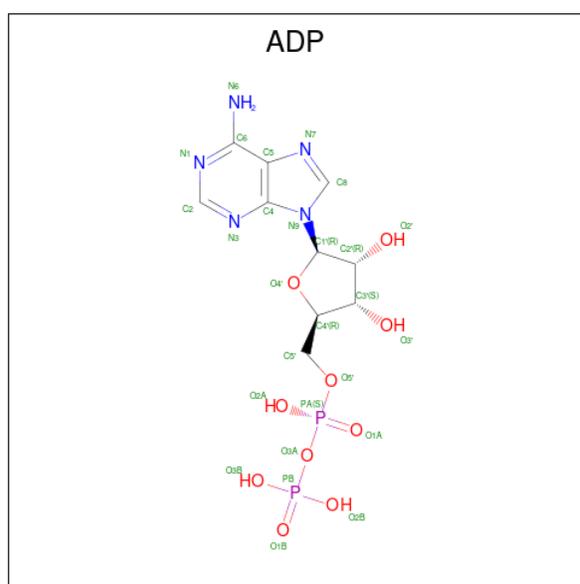
- Molecule 5 is a protein called Dynein light chain 1, cytoplasmic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|-------|
| | | | Total | C | N | O | S | | |
| 5 | I | 89 | Total 728 | C 465 | N 122 | O 135 | S 6 | 0 | 0 |
| 5 | J | 89 | Total 728 | C 465 | N 122 | O 135 | S 6 | 0 | 0 |

- Molecule 6 is a protein called Dynein light chain Tctex-type 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|-------|
| | | | Total | C | N | O | S | | |
| 6 | K | 113 | Total 872 | C 548 | N 142 | O 175 | S 7 | 0 | 0 |
| 6 | L | 113 | Total 872 | C 548 | N 142 | O 175 | S 7 | 0 | 0 |

- Molecule 7 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: C₁₀H₁₅N₅O₁₀P₂) (labeled as "Ligand of Interest" by depositor).



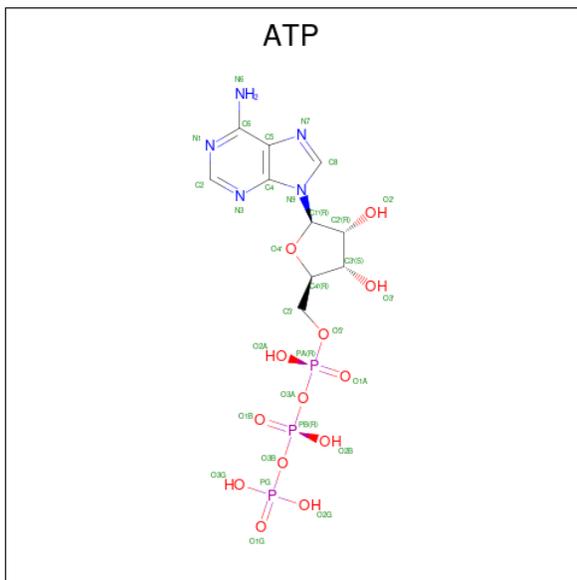
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------------|---------|--------|---------|--------|---------|
| | | | Total | C | N | O | P | |
| 7 | A | 1 | Total 27 | C 10 | N 5 | O 10 | P 2 | 0 |
| 7 | A | 1 | Total 27 | C 10 | N 5 | O 10 | P 2 | 0 |
| 7 | A | 1 | Total 27 | C 10 | N 5 | O 10 | P 2 | 0 |
| 7 | B | 1 | Total 27 | C 10 | N 5 | O 10 | P 2 | 0 |
| 7 | B | 1 | Total 27 | C 10 | N 5 | O 10 | P 2 | 0 |

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| Mol | Chain | Residues | Atoms | | | | AltConf | |
|-----|-------|----------|-------|----|---|----|---------|---|
| | | | Total | C | N | O | | P |
| 7 | B | 1 | 27 | 10 | 5 | 10 | 2 | 0 |

- Molecule 8 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | | AltConf | |
|-----|-------|----------|-------|----|---|----|---------|---|
| | | | Total | C | N | O | | P |
| 8 | A | 1 | 31 | 10 | 5 | 13 | 3 | 0 |
| 8 | B | 1 | 31 | 10 | 5 | 13 | 3 | 0 |

- Molecule 9 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|----|---------|
| | | | Total | Mg | |
| 9 | A | 2 | 2 | 2 | 0 |
| 9 | B | 2 | 2 | 2 | 0 |

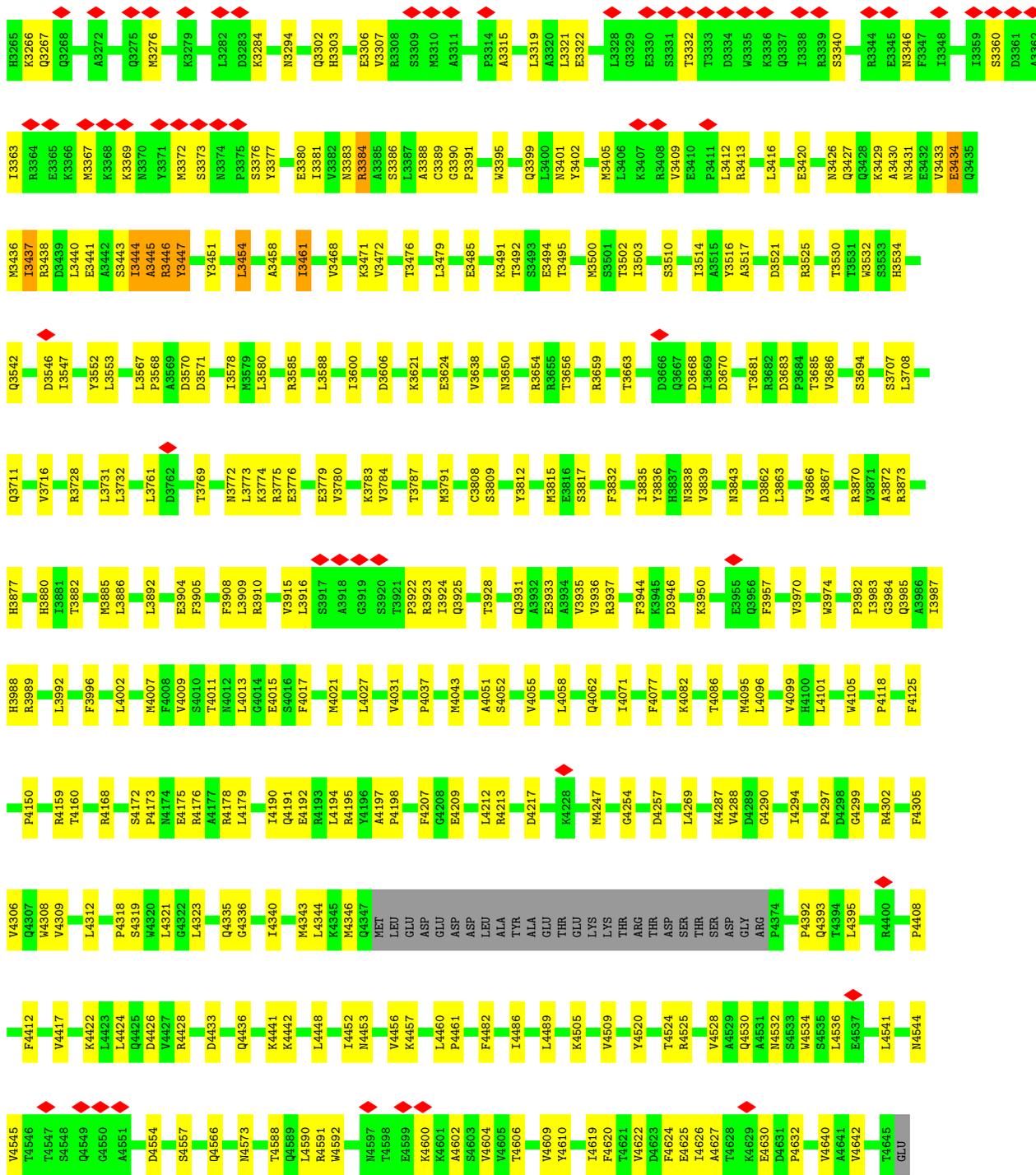
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain A:

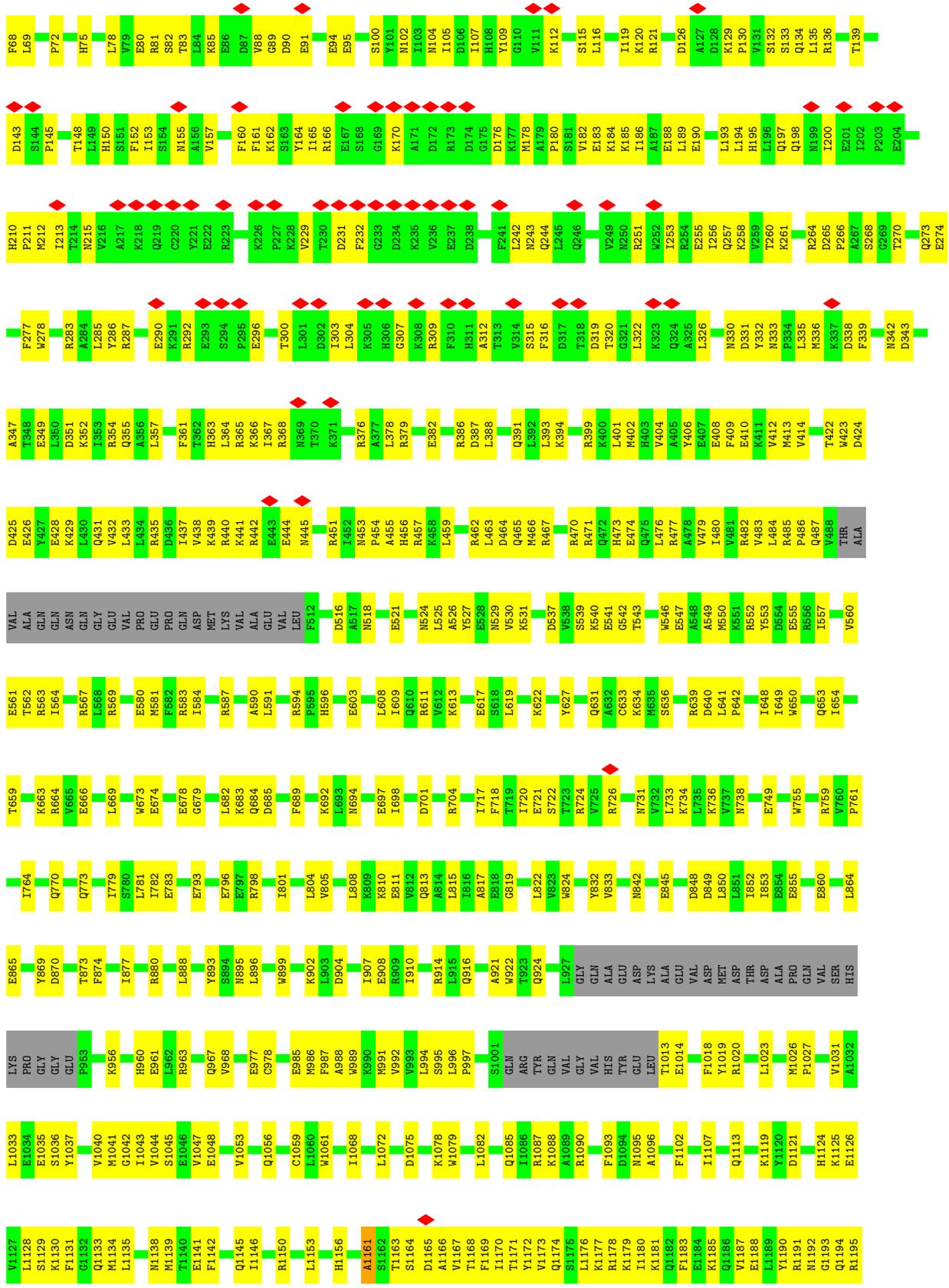


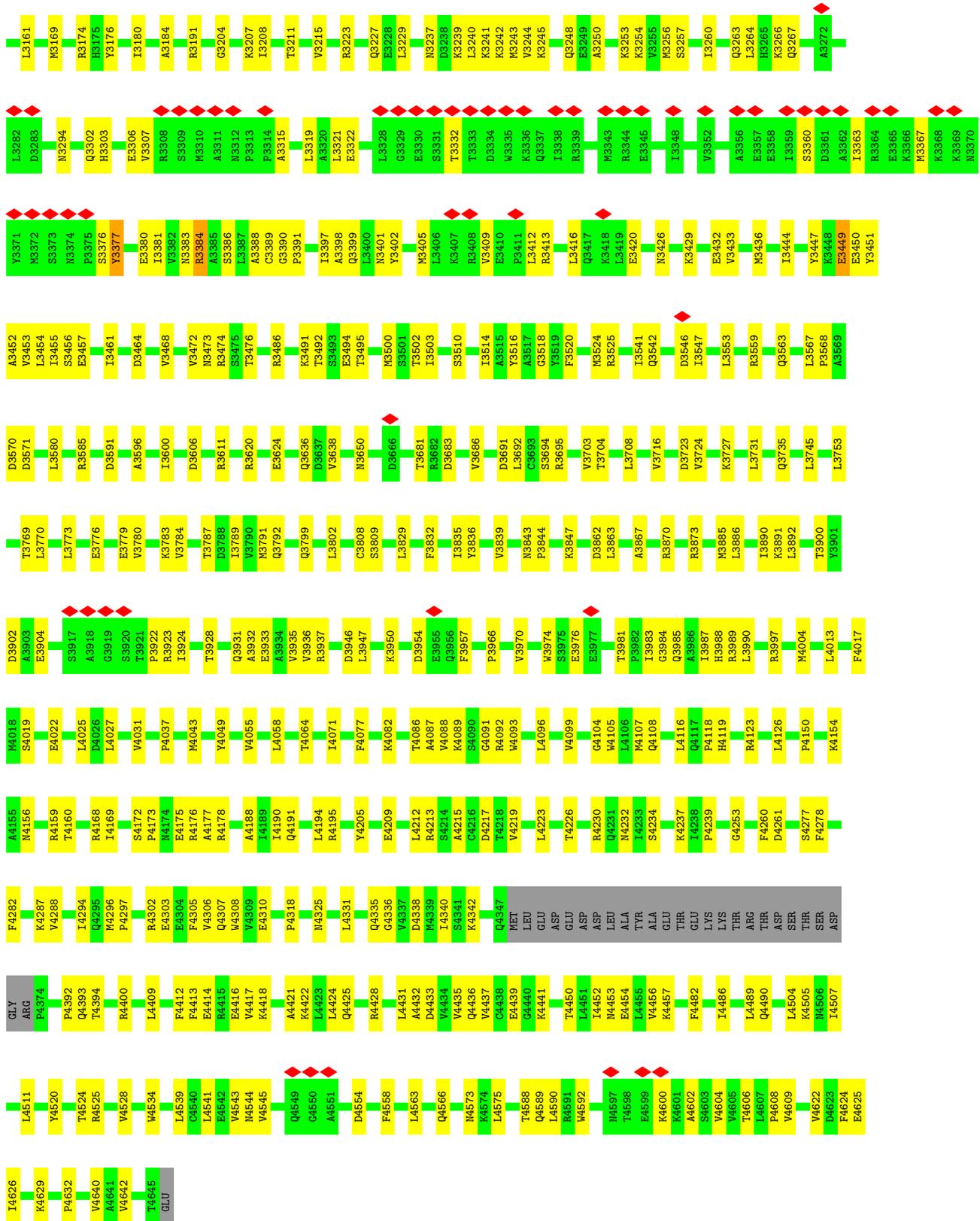


• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:

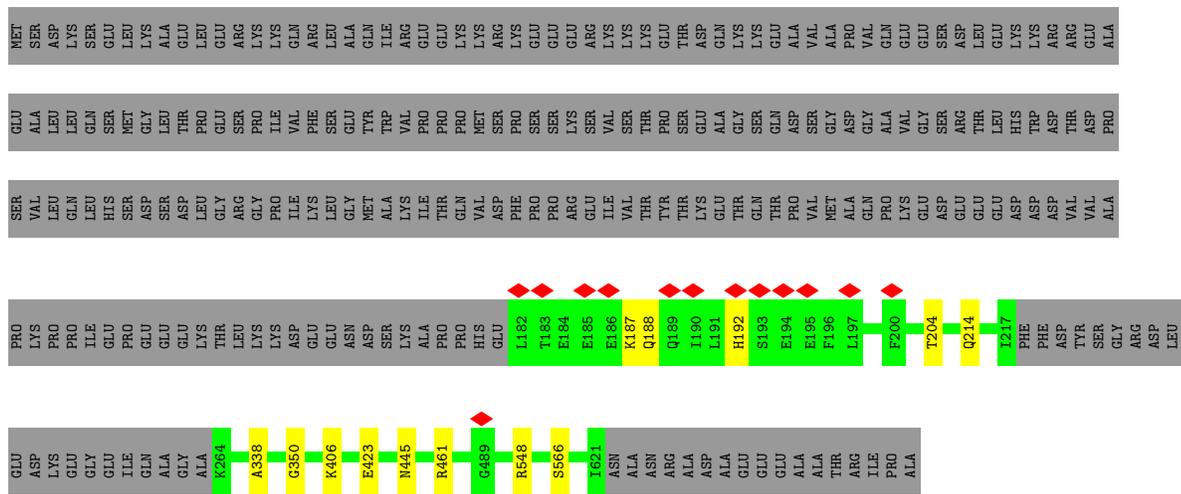




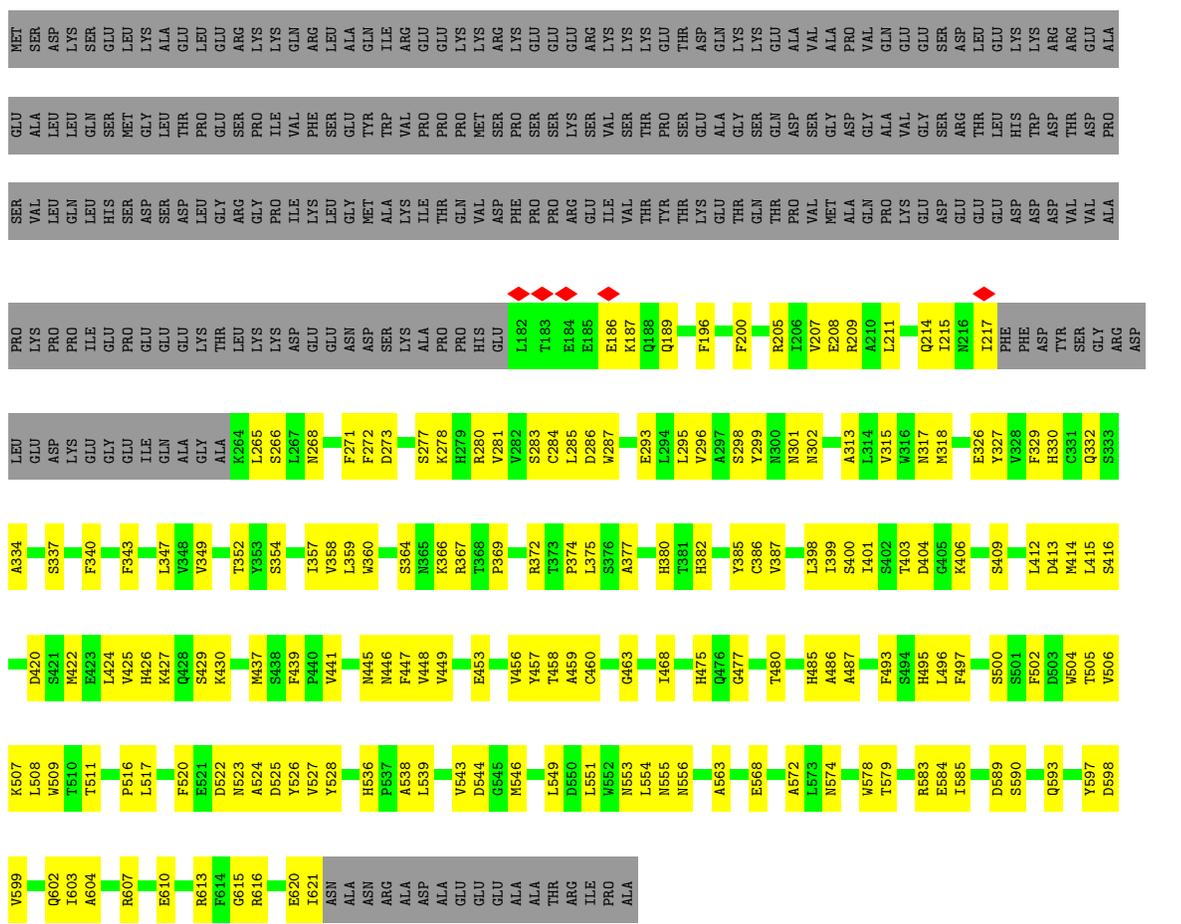


● Molecule 2: Cytoplasmic dynein 1 intermediate chain 2



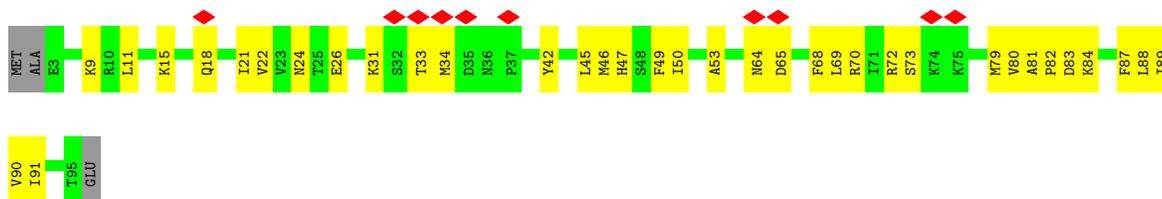


• Molecule 2: Cytoplasmic dynein 1 intermediate chain 2

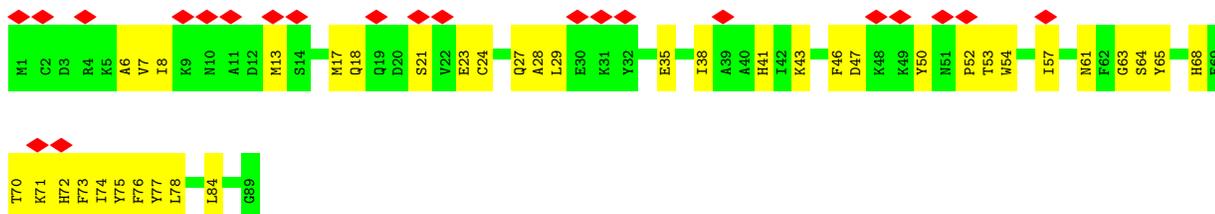


• Molecule 3: Cytoplasmic dynein 1 light intermediate chain 2

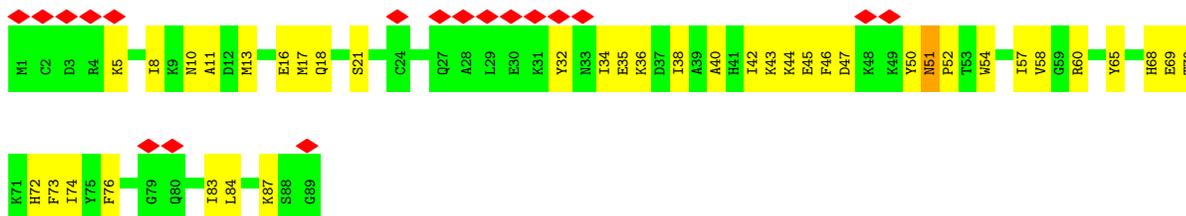




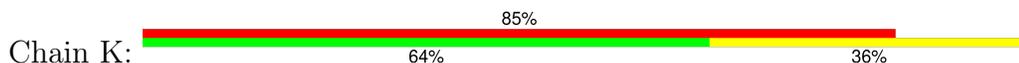
• Molecule 5: Dynein light chain 1, cytoplasmic



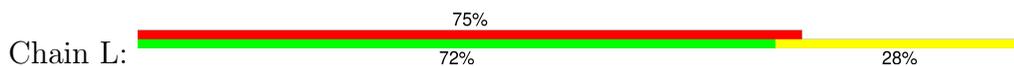
• Molecule 5: Dynein light chain 1, cytoplasmic



• Molecule 6: Dynein light chain Tctex-type 1



• Molecule 6: Dynein light chain Tctex-type 1





4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 103097 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | TFS GLACIOS | Depositor |
| Voltage (kV) | 200 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 40 | Depositor |
| Minimum defocus (nm) | 1200 | Depositor |
| Maximum defocus (nm) | 2600 | Depositor |
| Magnification | 45000 | Depositor |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 2.240 | Depositor |
| Minimum map value | 0.000 | Depositor |
| Average map value | 0.002 | Depositor |
| Map value standard deviation | 0.017 | Depositor |
| Recommended contour level | 0.15 | Depositor |
| Map size (\AA) | 729.12, 729.12, 729.12 | wwPDB |
| Map dimensions | 420, 420, 420 | wwPDB |
| Map angles ($^\circ$) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (\AA) | 1.736, 1.736, 1.736 | 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: MG, ADP, ATP

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 | 0.19 | 0/37419 | 0.42 | 1/50625 (0.0%) |
| 1 | B | 0.15 | 0/37249 | 0.37 | 2/50395 (0.0%) |
| 2 | C | 0.18 | 0/3195 | 0.40 | 0/4351 |
| 2 | D | 0.15 | 0/3195 | 0.41 | 0/4351 |
| 3 | E | 0.16 | 0/2573 | 0.38 | 0/3473 |
| 3 | F | 0.16 | 0/2573 | 0.38 | 0/3473 |
| 4 | G | 0.14 | 0/752 | 0.37 | 0/1017 |
| 4 | H | 0.15 | 0/752 | 0.42 | 0/1017 |
| 5 | I | 0.21 | 0/744 | 0.48 | 0/997 |
| 5 | J | 0.17 | 0/744 | 0.47 | 0/997 |
| 6 | K | 0.15 | 0/888 | 0.40 | 0/1203 |
| 6 | L | 0.15 | 0/888 | 0.38 | 0/1203 |
| All | All | 0.17 | 0/90972 | 0.40 | 3/123102 (0.0%) |

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

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

There are no bond length outliers.

All (3) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 1 | B | 3449 | GLU | CA-C-N | -7.56 | 108.82 | 120.31 |
| 1 | B | 3449 | GLU | C-N-CA | -7.56 | 108.82 | 120.31 |
| 1 | A | 1402 | GLU | N-CA-C | -6.67 | 106.35 | 114.75 |

There are no chirality outliers.

All (1) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 1 | A | 3438 | ARG | Sidechain |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 36692 | 0 | 36962 | 848 | 0 |
| 1 | B | 36527 | 0 | 36809 | 988 | 0 |
| 2 | C | 3112 | 0 | 2964 | 10 | 0 |
| 2 | D | 3112 | 0 | 2964 | 129 | 0 |
| 3 | E | 2518 | 0 | 2525 | 5 | 0 |
| 3 | F | 2518 | 0 | 2525 | 99 | 0 |
| 4 | G | 742 | 0 | 768 | 29 | 0 |
| 4 | H | 742 | 0 | 768 | 32 | 0 |
| 5 | I | 728 | 0 | 714 | 41 | 0 |
| 5 | J | 728 | 0 | 714 | 51 | 0 |
| 6 | K | 872 | 0 | 846 | 37 | 0 |
| 6 | L | 872 | 0 | 846 | 32 | 0 |
| 7 | A | 81 | 0 | 36 | 2 | 0 |
| 7 | B | 81 | 0 | 36 | 2 | 0 |
| 8 | A | 31 | 0 | 12 | 0 | 0 |
| 8 | B | 31 | 0 | 12 | 0 | 0 |
| 9 | A | 2 | 0 | 0 | 0 | 0 |
| 9 | B | 2 | 0 | 0 | 0 | 0 |
| All | All | 89391 | 0 | 89501 | 2182 | 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 14.

All (2182) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-------------------|--------------------------|-------------------|
| 1:A:3257:SER:HA | 1:A:3260:ILE:HD12 | 1.20 | 1.10 |
| 1:A:185:LYS:HE3 | 1:B:189:LEU:HD13 | 1.52 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3441:GLU:HA | 1:A:3444:ILE:HD12 | 1.54 | 0.89 |
| 1:B:333:ASN:HA | 1:B:336:MET:HE3 | 1.56 | 0.88 |
| 1:A:457:ARG:O | 1:A:461:ALA:N | 2.08 | 0.87 |
| 1:A:3256:MET:HG2 | 1:A:3433:VAL:HG21 | 1.57 | 0.86 |
| 1:A:1567:ARG:NH1 | 1:B:3043:MET:SD | 2.48 | 0.86 |
| 1:A:4600:LYS:HZ3 | 1:A:4604:VAL:HB | 1.41 | 0.85 |
| 1:A:378:LEU:HD23 | 1:A:450:TRP:CD1 | 2.12 | 0.84 |
| 1:A:1478:VAL:HG21 | 1:A:1488:ARG:HE | 1.44 | 0.83 |
| 1:A:164:TYR:HE1 | 1:B:145:PRO:HG2 | 1.41 | 0.83 |
| 1:A:1174:GLN:HA | 1:A:1177:LYS:HG2 | 1.62 | 0.82 |
| 1:B:3257:SER:HA | 1:B:3260:ILE:HD12 | 1.60 | 0.82 |
| 1:A:2423:MET:HE3 | 1:A:2462:LEU:HD13 | 1.60 | 0.81 |
| 1:B:3044:LEU:HD22 | 1:B:3049:GLU:HG3 | 1.61 | 0.81 |
| 1:A:1222:ASN:HA | 1:A:1225:MET:HE3 | 1.62 | 0.81 |
| 1:B:853:ILE:HG21 | 1:B:888:LEU:HD21 | 1.62 | 0.81 |
| 1:B:2686:MET:HE2 | 1:B:2708:PHE:HZ | 1.45 | 0.81 |
| 1:B:526:ALA:O | 1:B:553:TYR:OH | 1.99 | 0.80 |
| 1:B:4092:ARG:HE | 1:B:4093:TRP:H | 1.26 | 0.80 |
| 4:G:57:VAL:HG21 | 4:G:64:ASN:HD22 | 1.46 | 0.79 |
| 1:A:182:VAL:HA | 1:A:185:LYS:HG2 | 1.65 | 0.78 |
| 1:B:91:GLU:OE1 | 1:B:243:ASN:ND2 | 2.15 | 0.78 |
| 3:F:160:ILE:HA | 3:F:163:MET:HE3 | 1.65 | 0.78 |
| 1:A:441:LYS:HA | 1:A:445:ASN:H | 1.48 | 0.78 |
| 5:I:13:MET:HE2 | 5:I:74:ILE:HB | 1.66 | 0.77 |
| 1:A:285:LEU:HA | 1:A:288:ILE:HG22 | 1.65 | 0.77 |
| 1:A:3970:VAL:HB | 1:A:3989:ARG:HD3 | 1.67 | 0.77 |
| 1:A:1229:ASP:O | 1:A:1233:GLN:NE2 | 2.18 | 0.76 |
| 1:A:3194:LEU:HD12 | 1:A:3197:GLN:HE21 | 1.49 | 0.76 |
| 1:B:874:PHE:HB3 | 1:B:996:LEU:HD21 | 1.68 | 0.76 |
| 1:B:484:LEU:HD13 | 1:B:564:ILE:HG12 | 1.67 | 0.76 |
| 2:D:315:VAL:HB | 2:D:327:TYR:HB2 | 1.66 | 0.76 |
| 1:B:669:LEU:HD22 | 1:B:673:TRP:HB3 | 1.68 | 0.76 |
| 1:B:399:ARG:NH2 | 1:B:408:GLU:OE1 | 2.19 | 0.76 |
| 1:B:1460:GLU:OE1 | 1:B:1464:LYS:NZ | 2.19 | 0.76 |
| 1:B:1514:LYS:HA | 1:B:1517:GLU:HG3 | 1.68 | 0.76 |
| 1:A:314:VAL:O | 1:A:318:THR:N | 2.20 | 0.75 |
| 1:A:147:GLU:HA | 1:A:196:LEU:HD13 | 1.69 | 0.75 |
| 1:A:426:GLU:HA | 1:A:429:LYS:HB2 | 1.68 | 0.75 |
| 1:A:290:GLU:HA | 1:A:321:GLY:HA2 | 1.69 | 0.75 |
| 1:A:1460:GLU:OE1 | 1:A:1464:LYS:NZ | 2.18 | 0.75 |
| 1:B:801:ILE:HD11 | 1:B:850:LEU:HB3 | 1.69 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:684:GLN:NE2 | 1:B:685:ASP:OD1 | 2.21 | 0.74 |
| 1:A:115:SER:H | 1:A:140:LEU:HB3 | 1.51 | 0.74 |
| 3:F:72:THR:HG21 | 3:F:79:HIS:HA | 1.69 | 0.74 |
| 1:B:3970:VAL:HB | 1:B:3989:ARG:HD3 | 1.70 | 0.74 |
| 1:A:378:LEU:HD12 | 1:A:381:VAL:HB | 1.69 | 0.74 |
| 1:A:333:ASN:HD21 | 1:A:366:LYS:HG3 | 1.51 | 0.74 |
| 1:B:78:LEU:HD11 | 1:B:115:SER:HB2 | 1.68 | 0.73 |
| 1:A:132:SER:O | 1:A:136:ARG:NH2 | 2.20 | 0.73 |
| 1:B:4600:LYS:HD3 | 1:B:4602:ALA:H | 1.53 | 0.73 |
| 1:A:160:PHE:HB2 | 1:B:107:ILE:HD12 | 1.70 | 0.73 |
| 1:A:84:LEU:HB3 | 1:A:98:PHE:HB3 | 1.70 | 0.73 |
| 1:B:483:VAL:O | 1:B:567:ARG:NH1 | 2.22 | 0.72 |
| 1:B:4453:ASN:OD1 | 1:B:4457:LYS:NZ | 2.22 | 0.72 |
| 1:B:4541:LEU:HD11 | 1:B:4590:LEU:HB3 | 1.71 | 0.72 |
| 1:A:375:GLN:HA | 1:A:450:TRP:HB3 | 1.71 | 0.72 |
| 1:A:1225:MET:HG3 | 1:A:1226:ARG:HH21 | 1.53 | 0.72 |
| 1:B:266:PRO:HB3 | 1:B:376:ARG:HG3 | 1.72 | 0.72 |
| 1:B:3745:LEU:HD11 | 1:B:3776:GLU:HG2 | 1.71 | 0.72 |
| 1:B:3223:ARG:O | 1:B:3227:GLN:NE2 | 2.23 | 0.72 |
| 1:B:4432:ALA:O | 1:B:4436:GLN:NE2 | 2.23 | 0.72 |
| 1:B:4421:ALA:O | 1:B:4425:GLN:NE2 | 2.23 | 0.72 |
| 1:A:3580:LEU:HD13 | 1:A:3600:ILE:HD11 | 1.71 | 0.71 |
| 1:B:413:MET:HE1 | 1:B:463:LEU:HB3 | 1.70 | 0.71 |
| 1:A:44:ASP:HB2 | 1:B:130:PRO:HB3 | 1.72 | 0.71 |
| 1:B:162:LYS:HG2 | 1:B:166:ARG:HE | 1.56 | 0.71 |
| 1:B:1196:LEU:HD23 | 1:B:1199:LYS:HE2 | 1.72 | 0.71 |
| 1:B:3451:TYR:HA | 1:B:3454:LEU:HG | 1.72 | 0.71 |
| 1:B:649:ILE:O | 1:B:653:GLN:HG2 | 1.90 | 0.71 |
| 1:B:130:PRO:HB2 | 1:B:133:SER:HB2 | 1.70 | 0.71 |
| 2:D:553:ASN:ND2 | 2:D:556:ASN:OD1 | 2.23 | 0.71 |
| 1:A:1623:ARG:NH2 | 1:A:1634:ASP:OD1 | 2.24 | 0.71 |
| 1:B:4303:GLU:O | 1:B:4307:GLN:NE2 | 2.23 | 0.71 |
| 1:A:3510:SER:HB3 | 1:A:3553:LEU:HD21 | 1.72 | 0.71 |
| 1:B:516:ASP:HA | 1:B:563:ARG:HH12 | 1.55 | 0.71 |
| 1:A:81:ARG:HD3 | 1:A:99:ILE:HG13 | 1.73 | 0.71 |
| 6:L:25:ILE:HG23 | 6:L:29:ILE:HD12 | 1.73 | 0.70 |
| 1:A:4052:SER:HA | 1:A:4095:MET:HE1 | 1.73 | 0.70 |
| 5:I:43:LYS:NZ | 5:I:47:ASP:OD2 | 2.24 | 0.70 |
| 1:B:3239:LYS:HG2 | 1:B:3451:TYR:CZ | 2.25 | 0.70 |
| 1:B:1037:TYR:HB3 | 3:F:121:PHE:CZ | 2.27 | 0.70 |
| 1:A:378:LEU:HB3 | 1:A:450:TRP:HB2 | 1.73 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1085:GLN:HE22 | 3:F:39:ILE:HD12 | 1.57 | 0.70 |
| 1:B:1596:GLY:HA2 | 1:B:1599:ARG:HH12 | 1.56 | 0.70 |
| 1:B:119:ILE:O | 1:B:136:ARG:HB3 | 1.91 | 0.70 |
| 1:B:722:SER:HB3 | 1:B:731:ASN:HD21 | 1.56 | 0.70 |
| 1:A:1195:ARG:NH2 | 3:F:96:GLU:O | 2.24 | 0.70 |
| 1:A:378:LEU:HD23 | 1:A:450:TRP:HD1 | 1.57 | 0.69 |
| 1:A:2221:MET:HG2 | 1:A:2343:PHE:HB2 | 1.73 | 0.69 |
| 1:B:243:ASN:OD1 | 1:B:309:ARG:NH2 | 2.25 | 0.69 |
| 1:B:266:PRO:HB2 | 1:B:379:ARG:HB2 | 1.72 | 0.69 |
| 1:B:399:ARG:HH22 | 1:B:404:VAL:HG11 | 1.57 | 0.69 |
| 1:B:150:HIS:HB2 | 1:B:193:LEU:HB3 | 1.74 | 0.69 |
| 1:B:1973:GLN:NE2 | 1:B:1977:CYS:SG | 2.66 | 0.69 |
| 1:A:4168:ARG:NH2 | 1:A:4217:ASP:OD1 | 2.26 | 0.69 |
| 3:F:259:ARG:HH11 | 3:F:323:LEU:HD22 | 1.58 | 0.69 |
| 4:G:54:ARG:HH12 | 4:G:65:ASP:HA | 1.56 | 0.69 |
| 6:L:29:ILE:O | 6:L:32:ASN:ND2 | 2.24 | 0.69 |
| 1:B:639:ARG:HH22 | 2:D:574:ASN:HD21 | 1.41 | 0.69 |
| 1:B:2481:MET:HE1 | 1:B:2485:GLN:HG2 | 1.73 | 0.69 |
| 1:A:4505:LYS:NZ | 1:A:4554:ASP:O | 2.24 | 0.69 |
| 1:B:456:HIS:HA | 1:B:459:LEU:HB2 | 1.73 | 0.69 |
| 1:B:3559:ARG:O | 1:B:3563:GLN:NE2 | 2.25 | 0.69 |
| 4:H:21:ILE:HG12 | 4:H:89:ILE:HD11 | 1.75 | 0.69 |
| 1:A:159:PRO:HD2 | 1:B:107:ILE:HD11 | 1.75 | 0.69 |
| 1:A:4541:LEU:HD11 | 1:A:4590:LEU:HB3 | 1.74 | 0.69 |
| 1:A:193:LEU:HD13 | 1:B:182:VAL:HG11 | 1.75 | 0.68 |
| 1:B:1173:VAL:HG22 | 1:B:1177:LYS:HE3 | 1.75 | 0.68 |
| 1:B:3580:LEU:HD13 | 1:B:3600:ILE:HD11 | 1.73 | 0.68 |
| 1:A:368:ARG:NH2 | 1:A:436:ASP:O | 2.22 | 0.68 |
| 2:D:445:ASN:HD21 | 2:D:463:GLY:H | 1.41 | 0.68 |
| 1:A:2304:ASP:OD1 | 1:A:2726:ARG:NH2 | 2.26 | 0.68 |
| 1:B:386:ARG:NH2 | 1:B:453:ASN:O | 2.27 | 0.68 |
| 1:B:1567:ARG:O | 1:B:1571:ILE:HG12 | 1.93 | 0.68 |
| 1:B:2185:VAL:HG22 | 1:B:2243:ARG:HH21 | 1.58 | 0.68 |
| 1:A:374:ILE:HD11 | 1:A:440:ARG:NH1 | 2.07 | 0.68 |
| 1:A:418:GLU:O | 1:A:422:THR:OG1 | 2.04 | 0.68 |
| 1:A:331:ASP:HA | 1:A:370:THR:HB | 1.76 | 0.68 |
| 1:A:364:LEU:HA | 1:A:367:ILE:HG22 | 1.75 | 0.68 |
| 1:B:466:MET:HE3 | 1:B:470:ARG:HG3 | 1.76 | 0.68 |
| 1:B:798:ARG:HH12 | 1:B:855:GLU:HB3 | 1.59 | 0.68 |
| 1:B:2623:SER:OG | 1:B:3081:THR:O | 2.12 | 0.68 |
| 1:A:1562:PRO:O | 1:A:1566:GLN:NE2 | 2.27 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:761:PRO:HD2 | 1:B:764:ILE:HD12 | 1.76 | 0.67 |
| 2:D:347:LEU:HD23 | 2:D:359:LEU:HD11 | 1.76 | 0.67 |
| 1:A:3872:ALA:HB1 | 1:A:3880:HIS:CD2 | 2.29 | 0.67 |
| 1:B:2000:GLU:OE1 | 1:B:2005:GLN:NE2 | 2.27 | 0.67 |
| 1:B:4150:PRO:O | 1:B:4195:ARG:NH2 | 2.24 | 0.67 |
| 1:B:2816:LEU:HD12 | 1:B:2817:PRO:HD2 | 1.77 | 0.67 |
| 3:F:113:LEU:HD21 | 3:F:151:LYS:HD2 | 1.76 | 0.67 |
| 1:B:482:ARG:O | 1:B:487:GLN:NE2 | 2.28 | 0.67 |
| 1:B:441:LYS:O | 1:B:445:ASN:N | 2.26 | 0.67 |
| 1:B:3360:SER:HA | 1:B:3363:ILE:HD12 | 1.76 | 0.67 |
| 1:B:3638:VAL:HG12 | 1:B:3681:THR:HB | 1.77 | 0.67 |
| 5:I:57:ILE:HD13 | 5:J:57:ILE:HD12 | 1.76 | 0.67 |
| 1:A:195:HIS:CE1 | 1:A:265:ASP:HB2 | 2.30 | 0.67 |
| 1:A:3257:SER:CA | 1:A:3260:ILE:HD12 | 2.12 | 0.67 |
| 1:B:2488:ARG:NH2 | 1:B:2544:GLU:OE2 | 2.27 | 0.67 |
| 5:J:58:VAL:HG22 | 5:J:83:ILE:HG12 | 1.77 | 0.67 |
| 1:B:3983:ILE:O | 1:B:3987:ILE:HD12 | 1.94 | 0.67 |
| 1:A:337:LYS:HZ3 | 1:A:363:HIS:HB3 | 1.60 | 0.67 |
| 1:A:2660:VAL:HG22 | 1:A:2707:GLN:HB3 | 1.77 | 0.67 |
| 1:B:3510:SER:HB3 | 1:B:3553:LEU:HD21 | 1.76 | 0.67 |
| 1:A:2623:SER:OG | 1:A:3081:THR:O | 2.13 | 0.66 |
| 1:B:569:ARG:NH1 | 1:B:603:GLU:OE1 | 2.28 | 0.66 |
| 1:A:42:LEU:HB3 | 1:A:81:ARG:HH21 | 1.58 | 0.66 |
| 1:B:960:HIS:ND1 | 1:B:978:CYS:SG | 2.68 | 0.66 |
| 2:D:349:VAL:HG21 | 2:D:398:LEU:HD11 | 1.75 | 0.66 |
| 1:A:3133:LEU:HD11 | 1:A:3141:GLU:HB3 | 1.76 | 0.66 |
| 1:B:1218:TRP:O | 1:B:1222:ASN:ND2 | 2.28 | 0.66 |
| 1:B:3799:GLN:HA | 1:B:3802:LEU:HD23 | 1.77 | 0.66 |
| 1:B:4037:PRO:HB2 | 1:B:4118:PRO:HG2 | 1.78 | 0.66 |
| 1:B:4511:LEU:HD12 | 1:B:4563:LEU:HD21 | 1.76 | 0.66 |
| 3:F:62:GLU:HG3 | 3:F:65:SER:HB2 | 1.76 | 0.66 |
| 1:A:2138:ILE:HD12 | 1:A:2161:LEU:HD22 | 1.77 | 0.66 |
| 1:B:343:ASP:OD1 | 1:B:352:LYS:NZ | 2.29 | 0.66 |
| 1:B:1769:MET:HE2 | 1:B:1776:ALA:HA | 1.77 | 0.66 |
| 1:A:119:ILE:HD12 | 1:B:155:ASN:HB2 | 1.77 | 0.66 |
| 1:A:2776:PHE:HA | 1:A:2779:MET:HE2 | 1.76 | 0.66 |
| 1:A:2091:ARG:NH2 | 7:A:4701:ADP:O2A | 2.29 | 0.66 |
| 1:A:2672:ASP:OD2 | 1:A:2673:LYS:N | 2.29 | 0.66 |
| 1:B:1486:LEU:HD22 | 1:B:1541:GLN:HG3 | 1.78 | 0.66 |
| 1:B:2447:MET:HE1 | 1:B:2723:LEU:HD12 | 1.76 | 0.66 |
| 1:A:337:LYS:HZ1 | 1:A:364:LEU:N | 1.94 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1680:GLU:OE1 | 1:A:1680:GLU:N | 2.27 | 0.66 |
| 1:B:379:ARG:NH2 | 1:B:451:ARG:O | 2.28 | 0.66 |
| 1:B:2686:MET:HE2 | 1:B:2708:PHE:CZ | 2.28 | 0.66 |
| 1:B:3114:ASP:O | 1:B:3140:ARG:NH2 | 2.28 | 0.66 |
| 1:A:2934:LEU:HD11 | 1:A:3068:MET:HE3 | 1.78 | 0.66 |
| 1:B:195:HIS:O | 1:B:198:GLN:NE2 | 2.29 | 0.66 |
| 1:B:330:ASN:HA | 1:B:333:ASN:HB2 | 1.77 | 0.66 |
| 1:A:285:LEU:HD21 | 1:A:329:VAL:HG11 | 1.77 | 0.66 |
| 1:A:370:THR:O | 1:A:440:ARG:NH2 | 2.29 | 0.66 |
| 1:A:3239:LYS:HG2 | 1:A:3451:TYR:CE2 | 2.31 | 0.66 |
| 1:A:265:ASP:OD1 | 1:A:376:ARG:NH2 | 2.28 | 0.66 |
| 1:A:3257:SER:HA | 1:A:3260:ILE:CD1 | 2.13 | 0.66 |
| 1:A:4037:PRO:HB2 | 1:A:4118:PRO:HG2 | 1.78 | 0.66 |
| 1:B:4104:GLY:HA2 | 1:B:4107:MET:HE3 | 1.77 | 0.66 |
| 1:A:1962:ARG:NH2 | 1:A:2314:ASN:OD1 | 2.30 | 0.65 |
| 1:A:2461:MET:HG2 | 1:A:2583:THR:HG21 | 1.78 | 0.65 |
| 1:A:1191:ARG:NH2 | 1:A:1215:GLU:OE2 | 2.28 | 0.65 |
| 1:A:4541:LEU:HD21 | 1:A:4590:LEU:HD22 | 1.79 | 0.65 |
| 2:D:187:LYS:HE3 | 4:H:24:ASN:H | 1.60 | 0.65 |
| 1:B:365:ARG:NH2 | 1:B:429:LYS:O | 2.29 | 0.65 |
| 1:B:581:MET:HG2 | 1:B:611:ARG:HH21 | 1.62 | 0.65 |
| 2:C:188:GLN:O | 2:C:192:HIS:ND1 | 2.29 | 0.65 |
| 1:A:337:LYS:HE2 | 1:A:363:HIS:HD2 | 1.62 | 0.65 |
| 1:A:350:LEU:HB3 | 1:A:419:VAL:HG21 | 1.79 | 0.65 |
| 1:B:1213:ASN:HB3 | 5:J:11:ALA:HB3 | 1.77 | 0.65 |
| 1:B:2558:GLU:OE1 | 1:B:2561:LYS:NZ | 2.29 | 0.64 |
| 1:B:3256:MET:HG2 | 1:B:3433:VAL:HG21 | 1.78 | 0.64 |
| 1:B:4504:LEU:HA | 1:B:4507:ILE:HD12 | 1.79 | 0.64 |
| 4:G:54:ARG:NH2 | 4:G:64:ASN:O | 2.28 | 0.64 |
| 1:A:2839:GLU:OE1 | 1:A:2839:GLU:N | 2.29 | 0.64 |
| 1:B:88:VAL:HB | 1:B:95:GLU:HA | 1.79 | 0.64 |
| 1:A:3129:VAL:HG21 | 1:A:3149:PHE:HB2 | 1.79 | 0.64 |
| 2:D:313:ALA:HB3 | 2:D:329:PHE:HB3 | 1.79 | 0.64 |
| 5:J:43:LYS:NZ | 5:J:47:ASP:OD2 | 2.29 | 0.64 |
| 1:B:1090:ARG:HH21 | 1:B:1121:ASP:HA | 1.62 | 0.64 |
| 1:B:1133:GLN:OE1 | 1:B:1133:GLN:N | 2.30 | 0.64 |
| 1:B:2149:LEU:HD11 | 1:B:2157:LEU:HD22 | 1.80 | 0.64 |
| 1:B:3057:GLN:OE1 | 1:B:3060:ARG:NH1 | 2.30 | 0.64 |
| 1:B:2304:ASP:OD1 | 1:B:2726:ARG:NH2 | 2.31 | 0.64 |
| 1:B:2590:PRO:HA | 1:B:2708:PHE:O | 1.96 | 0.64 |
| 1:A:2480:PRO:O | 1:A:2482:GLN:NE2 | 2.30 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3360:SER:HA | 1:A:3363:ILE:HD12 | 1.80 | 0.64 |
| 1:B:781:LEU:HD21 | 1:B:833:VAL:HG22 | 1.80 | 0.64 |
| 1:B:1087:ARG:HH21 | 1:B:1200:GLN:HE22 | 1.44 | 0.64 |
| 1:B:3243:MET:HE1 | 1:B:3444:ILE:HA | 1.80 | 0.64 |
| 2:C:445:ASN:O | 2:C:461:ARG:N | 2.28 | 0.64 |
| 3:F:253:PHE:HZ | 3:F:336:TYR:HA | 1.62 | 0.64 |
| 1:A:1839:LEU:O | 1:A:1843:ARG:NH1 | 2.31 | 0.64 |
| 5:I:8:ILE:HG23 | 5:I:76:PHE:HB3 | 1.80 | 0.64 |
| 1:B:3787:THR:O | 1:B:3791:MET:HG2 | 1.99 | 0.63 |
| 2:D:332:GLN:OE1 | 2:D:372:ARG:NH1 | 2.32 | 0.63 |
| 1:A:2453:ARG:NH1 | 1:A:2505:ASP:OD2 | 2.27 | 0.63 |
| 1:B:242:LEU:HB3 | 1:B:309:ARG:HE | 1.63 | 0.63 |
| 1:B:4091:GLY:HA2 | 1:B:4119:HIS:HB3 | 1.80 | 0.63 |
| 1:A:334:PRO:HG3 | 1:A:367:ILE:HD11 | 1.79 | 0.63 |
| 1:A:3839:VAL:HG21 | 1:A:3863:LEU:HA | 1.80 | 0.63 |
| 1:B:916:GLN:HB2 | 1:B:1026:MET:SD | 2.39 | 0.63 |
| 3:F:89:LEU:HG | 3:F:90:TYR:H | 1.62 | 0.63 |
| 1:A:3732:LEU:HD22 | 1:A:3791:MET:HE1 | 1.80 | 0.63 |
| 1:B:285:LEU:HB2 | 1:B:322:LEU:HD11 | 1.80 | 0.63 |
| 1:B:3946:ASP:OD1 | 1:B:3950:LYS:NZ | 2.31 | 0.63 |
| 2:D:377:ALA:O | 2:D:406:LYS:NZ | 2.29 | 0.63 |
| 1:A:3114:ASP:O | 1:A:3140:ARG:NH2 | 2.32 | 0.63 |
| 1:A:4600:LYS:NZ | 1:A:4604:VAL:HB | 2.13 | 0.63 |
| 1:B:2837:LEU:HD13 | 1:B:2842:GLU:HB3 | 1.80 | 0.63 |
| 1:B:3161:LEU:HD21 | 1:B:3524:MET:HE3 | 1.81 | 0.63 |
| 2:D:358:VAL:HG13 | 2:D:369:PRO:HB3 | 1.81 | 0.63 |
| 1:A:1965:GLU:HG2 | 1:A:2026:SER:HB3 | 1.80 | 0.62 |
| 1:A:1647:VAL:HA | 1:A:1650:LEU:HD13 | 1.81 | 0.62 |
| 1:A:2231:SER:HA | 1:A:2234:TRP:CD1 | 2.34 | 0.62 |
| 1:B:1962:ARG:NH2 | 1:B:2314:ASN:OD1 | 2.32 | 0.62 |
| 1:B:3839:VAL:HG21 | 1:B:3863:LEU:HA | 1.81 | 0.62 |
| 1:A:1167:VAL:HA | 1:A:1170:ILE:HG12 | 1.82 | 0.62 |
| 1:B:1170:ILE:O | 1:B:1174:GLN:NE2 | 2.32 | 0.62 |
| 1:A:264:ARG:O | 1:A:376:ARG:NH2 | 2.28 | 0.62 |
| 1:B:1457:MET:HA | 1:B:1460:GLU:HG3 | 1.82 | 0.62 |
| 1:B:3454:LEU:HA | 1:B:3457:GLU:HG2 | 1.80 | 0.62 |
| 2:D:607:ARG:NH1 | 2:D:610:GLU:OE2 | 2.32 | 0.62 |
| 1:A:113:SER:H | 1:A:142:GLU:HG3 | 1.63 | 0.62 |
| 1:A:3933:GLU:HG3 | 1:A:3937:ARG:HE | 1.65 | 0.62 |
| 1:A:3983:ILE:O | 1:A:3987:ILE:HD12 | 1.99 | 0.62 |
| 1:B:88:VAL:HG22 | 1:B:90:ASP:H | 1.64 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:813:GLN:NE2 | 3:F:357:GLU:OE1 | 2.32 | 0.62 |
| 1:B:1126:GLU:OE1 | 1:B:1130:LYS:NZ | 2.33 | 0.62 |
| 1:A:3044:LEU:HD22 | 1:A:3049:GLU:HG3 | 1.82 | 0.62 |
| 4:G:74:LYS:NZ | 4:H:65:ASP:OD1 | 2.31 | 0.62 |
| 5:I:64:SER:H | 5:J:36:LYS:HD3 | 1.65 | 0.62 |
| 1:B:255:GLU:HA | 1:B:258:LYS:HE3 | 1.81 | 0.62 |
| 1:A:401:LEU:HD23 | 1:A:536:LEU:HA | 1.81 | 0.62 |
| 1:A:1724:VAL:HA | 1:A:1727:PHE:HD2 | 1.65 | 0.62 |
| 1:A:3253:LYS:HZ3 | 1:A:3436:MET:HB2 | 1.65 | 0.62 |
| 1:B:343:ASP:O | 1:B:352:LYS:NZ | 2.33 | 0.62 |
| 1:B:613:LYS:HE2 | 1:B:682:LEU:HB2 | 1.81 | 0.62 |
| 1:A:2969:GLY:HA2 | 1:A:3004:PHE:HE1 | 1.65 | 0.61 |
| 1:A:428:GLU:HA | 1:A:431:GLN:HG2 | 1.82 | 0.61 |
| 1:B:260:THR:HG23 | 1:B:261:LYS:HD3 | 1.82 | 0.61 |
| 1:B:530:VAL:HG12 | 1:B:549:ALA:HB1 | 1.83 | 0.61 |
| 1:B:961:GLU:OE2 | 1:B:963:ARG:NH2 | 2.33 | 0.61 |
| 2:D:459:ALA:HB2 | 2:D:468:ILE:HD13 | 1.82 | 0.61 |
| 1:A:264:ARG:HB3 | 1:A:277:PHE:CD2 | 2.35 | 0.61 |
| 1:A:315:SER:O | 1:A:321:GLY:N | 2.28 | 0.61 |
| 1:A:4395:LEU:HD21 | 1:A:4489:LEU:HD22 | 1.81 | 0.61 |
| 1:A:2784:PHE:HB2 | 1:A:2794:TYR:HE2 | 1.65 | 0.61 |
| 1:B:4088:VAL:HG11 | 1:B:4116:LEU:HD21 | 1.81 | 0.61 |
| 1:A:62:LEU:HA | 1:A:65:MET:HE3 | 1.82 | 0.61 |
| 1:A:2589:LYS:HD3 | 1:A:2590:PRO:HD2 | 1.82 | 0.61 |
| 1:B:1965:GLU:OE1 | 1:B:1965:GLU:N | 2.23 | 0.61 |
| 1:B:2961:ILE:HD11 | 1:B:2998:ASN:HB3 | 1.83 | 0.61 |
| 1:A:4393:GLN:HG3 | 1:A:4428:ARG:HH12 | 1.65 | 0.61 |
| 5:I:75:TYR:HD1 | 5:I:84:LEU:HB2 | 1.65 | 0.61 |
| 5:J:40:ALA:HB1 | 5:J:44:LYS:NZ | 2.15 | 0.61 |
| 5:J:50:TYR:HB2 | 5:J:54:TRP:CH2 | 2.36 | 0.61 |
| 6:L:85:TRP:CD1 | 6:L:90:ASP:HB2 | 2.36 | 0.61 |
| 1:A:2382:LEU:O | 1:A:2416:GLN:NE2 | 2.30 | 0.61 |
| 1:A:2967:TYR:OH | 1:A:2975:ASP:OD2 | 2.18 | 0.61 |
| 1:B:3174:ARG:NH1 | 1:B:3650:ASN:OD1 | 2.33 | 0.61 |
| 1:A:3113:MET:HE2 | 1:A:3115:LEU:HD21 | 1.81 | 0.61 |
| 1:B:1041:MET:HE1 | 3:F:121:PHE:CZ | 2.35 | 0.61 |
| 1:B:4414:GLU:HG3 | 1:B:4418:LYS:NZ | 2.16 | 0.61 |
| 1:B:264:ARG:HD3 | 1:B:274:GLU:HG2 | 1.83 | 0.61 |
| 1:B:3253:LYS:HD3 | 1:B:3436:MET:HG3 | 1.83 | 0.61 |
| 1:A:96:LYS:NZ | 1:A:97:GLU:O | 2.33 | 0.61 |
| 1:A:1806:ARG:O | 1:A:1810:HIS:ND1 | 2.34 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3174:ARG:NH1 | 1:A:3650:ASN:OD1 | 2.34 | 0.61 |
| 2:D:583:ARG:NH1 | 2:D:599:VAL:O | 2.21 | 0.61 |
| 1:A:121:ARG:NH1 | 1:B:143:ASP:OD2 | 2.33 | 0.60 |
| 1:A:2481:MET:HE1 | 1:A:2486:LEU:HA | 1.83 | 0.60 |
| 1:B:1959:GLU:HB3 | 1:B:1962:ARG:HD3 | 1.83 | 0.60 |
| 1:B:3242:LYS:HA | 1:B:3245:LYS:HD2 | 1.83 | 0.60 |
| 1:A:4002:LEU:HD11 | 1:A:4335:GLN:HB3 | 1.83 | 0.60 |
| 1:B:1636:ASP:O | 1:B:1640:ILE:HD12 | 2.01 | 0.60 |
| 1:B:4175:GLU:N | 1:B:4175:GLU:OE1 | 2.33 | 0.60 |
| 1:A:210:HIS:NE2 | 1:A:212:MET:HE2 | 2.16 | 0.60 |
| 1:A:3638:VAL:HG12 | 1:A:3681:THR:HB | 1.82 | 0.60 |
| 1:A:4175:GLU:OE1 | 1:A:4175:GLU:N | 2.33 | 0.60 |
| 1:B:3835:ILE:HG12 | 1:B:3870:ARG:HD2 | 1.83 | 0.60 |
| 1:A:1155:GLN:HE22 | 1:A:1157:SER:HB2 | 1.66 | 0.60 |
| 1:A:3016:GLU:OE2 | 1:A:3051:TYR:OH | 2.17 | 0.60 |
| 1:A:3244:VAL:O | 1:A:3248:GLN:HG2 | 2.01 | 0.60 |
| 1:B:1543:ARG:NH1 | 1:B:1612:GLN:OE1 | 2.33 | 0.60 |
| 2:C:187:LYS:HB3 | 4:G:30:ILE:HG13 | 1.82 | 0.60 |
| 1:B:3981:THR:HG23 | 1:B:3984:GLY:H | 1.66 | 0.60 |
| 1:B:869:TYR:HB2 | 1:B:914:ARG:HH21 | 1.67 | 0.60 |
| 1:B:1168:THR:O | 1:B:1171:THR:OG1 | 2.16 | 0.60 |
| 1:B:3386:SER:OG | 1:B:3389:CYS:SG | 2.60 | 0.60 |
| 5:I:46:PHE:HB3 | 5:I:54:TRP:CD1 | 2.37 | 0.60 |
| 1:A:1623:ARG:NH1 | 1:A:1632:VAL:O | 2.35 | 0.60 |
| 1:B:264:ARG:NH2 | 1:B:268:SER:O | 2.34 | 0.60 |
| 1:B:264:ARG:O | 1:B:376:ARG:NH1 | 2.33 | 0.60 |
| 1:B:4099:VAL:HG11 | 1:B:4126:LEU:HD22 | 1.83 | 0.60 |
| 1:A:3817:SER:O | 1:A:4346:MET:HE1 | 2.01 | 0.60 |
| 1:B:251:ARG:NH1 | 1:B:251:ARG:O | 2.34 | 0.60 |
| 1:B:2969:GLY:HA2 | 1:B:3004:PHE:HE1 | 1.67 | 0.60 |
| 1:B:153:ILE:O | 1:B:157:VAL:HG12 | 2.01 | 0.60 |
| 1:B:4400:ARG:HD3 | 1:B:4414:GLU:OE2 | 2.02 | 0.60 |
| 5:I:13:MET:SD | 5:I:17:MET:HG3 | 2.42 | 0.60 |
| 1:A:3835:ILE:HG12 | 1:A:3870:ARG:HD2 | 1.84 | 0.60 |
| 1:A:4150:PRO:O | 1:A:4195:ARG:NH2 | 2.35 | 0.60 |
| 1:B:1455:GLY:HA3 | 1:B:1512:TYR:HE2 | 1.66 | 0.60 |
| 1:B:1519:ASP:OD1 | 1:B:1520:ALA:N | 2.34 | 0.60 |
| 1:B:1721:VAL:HA | 1:B:1724:VAL:HG12 | 1.83 | 0.60 |
| 2:D:543:VAL:HB | 2:D:549:LEU:HD12 | 1.82 | 0.60 |
| 1:A:315:SER:HA | 1:A:319:ASP:H | 1.67 | 0.59 |
| 1:B:1043:ILE:HA | 1:B:1102:PHE:HE2 | 1.66 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:568:GLU:N | 2:D:568:GLU:OE2 | 2.35 | 0.59 |
| 1:B:1756:ILE:O | 1:B:1760:GLU:HG2 | 2.02 | 0.59 |
| 1:B:2974:GLU:OE1 | 1:B:2977:ARG:NH1 | 2.35 | 0.59 |
| 6:K:48:GLU:OE2 | 6:K:49:GLN:NE2 | 2.35 | 0.59 |
| 1:A:386:ARG:NH1 | 1:A:452:ILE:O | 2.35 | 0.59 |
| 1:B:464:ASP:HA | 1:B:467:ARG:HG2 | 1.84 | 0.59 |
| 1:B:1033:LEU:O | 1:B:1036:SER:OG | 2.16 | 0.59 |
| 6:K:73:ASN:HD21 | 6:L:75:ALA:HB2 | 1.67 | 0.59 |
| 1:A:440:ARG:HA | 1:A:443:GLU:HG2 | 1.85 | 0.59 |
| 1:A:2320:ASP:OD1 | 1:A:2321:ASP:N | 2.31 | 0.59 |
| 1:B:442:ARG:O | 1:B:445:ASN:ND2 | 2.35 | 0.59 |
| 1:B:2848:GLU:O | 1:B:2852:THR:HG23 | 2.03 | 0.59 |
| 2:D:357:ILE:HD11 | 2:D:380:HIS:HD2 | 1.66 | 0.59 |
| 5:I:8:ILE:HG21 | 5:I:18:GLN:HE22 | 1.67 | 0.59 |
| 1:A:40:LEU:O | 1:B:132:SER:OG | 2.14 | 0.59 |
| 1:A:2285:ARG:NH1 | 1:A:2331:GLU:OE2 | 2.26 | 0.59 |
| 1:A:2388:ASP:OD1 | 1:A:2389:GLU:N | 2.33 | 0.59 |
| 1:A:3251:GLU:HA | 1:A:3254:LYS:HD2 | 1.84 | 0.59 |
| 1:B:270:THR:HG23 | 1:B:273:GLN:H | 1.67 | 0.59 |
| 1:B:2125:GLY:O | 1:B:2128:ALA:N | 2.35 | 0.59 |
| 1:A:162:LYS:HE2 | 1:A:166:ARG:CZ | 2.33 | 0.59 |
| 1:A:2290:SER:HB2 | 1:A:2295:LEU:HG | 1.83 | 0.59 |
| 1:A:3249:GLU:HA | 1:A:3252:LYS:HD2 | 1.85 | 0.59 |
| 1:B:80:GLU:HB3 | 1:B:102:ASN:HB2 | 1.83 | 0.59 |
| 1:B:3034:LYS:NZ | 1:B:3044:LEU:O | 2.29 | 0.59 |
| 5:I:8:ILE:HG21 | 5:I:18:GLN:NE2 | 2.16 | 0.59 |
| 1:A:1810:HIS:HD2 | 1:A:1878:LYS:HB2 | 1.67 | 0.59 |
| 1:B:717:ILE:HA | 1:B:824:TRP:HE3 | 1.68 | 0.59 |
| 6:K:50:THR:HG21 | 6:K:65:VAL:HG21 | 1.83 | 0.59 |
| 1:A:4436:GLN:HG3 | 1:A:4441:LYS:HE2 | 1.85 | 0.59 |
| 2:D:551:LEU:HB2 | 2:D:563:ALA:HB3 | 1.84 | 0.59 |
| 1:A:4453:ASN:OD1 | 1:A:4457:LYS:NZ | 2.35 | 0.59 |
| 1:B:121:ARG:NH1 | 1:B:133:SER:O | 2.36 | 0.59 |
| 1:B:755:TRP:CG | 2:D:453:GLU:HG3 | 2.38 | 0.59 |
| 1:B:3691:ASP:OD1 | 1:B:3692:LEU:N | 2.36 | 0.59 |
| 1:A:3731:LEU:HB3 | 1:A:3791:MET:HE2 | 1.85 | 0.59 |
| 3:F:38:SER:O | 3:F:40:LEU:N | 2.35 | 0.59 |
| 4:H:33:THR:HG23 | 4:H:34:MET:SD | 2.43 | 0.58 |
| 1:A:292:ARG:HA | 1:A:297:VAL:HG12 | 1.85 | 0.58 |
| 1:A:1946:VAL:HG13 | 1:A:2006:VAL:HG21 | 1.85 | 0.58 |
| 1:A:391:GLN:HA | 1:A:394:LYS:HE2 | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:451:ARG:HE | 1:A:453:ASN:HB3 | 1.67 | 0.58 |
| 1:A:3877:HIS:HA | 1:A:3880:HIS:CE1 | 2.39 | 0.58 |
| 4:H:83:ASP:OD1 | 4:H:84:LYS:N | 2.36 | 0.58 |
| 1:A:3386:SER:OG | 1:A:3389:CYS:SG | 2.61 | 0.58 |
| 6:K:47:VAL:HG21 | 6:L:82:SER:H | 1.67 | 0.58 |
| 1:A:116:LEU:HD22 | 1:A:139:THR:HG22 | 1.86 | 0.58 |
| 1:A:275:ILE:HA | 1:A:278:TRP:HD1 | 1.68 | 0.58 |
| 1:A:1171:THR:HA | 1:A:1174:GLN:HG2 | 1.84 | 0.58 |
| 1:B:185:LYS:O | 1:B:189:LEU:HD23 | 2.03 | 0.58 |
| 1:B:264:ARG:NH1 | 1:B:265:ASP:O | 2.36 | 0.58 |
| 1:B:423:TRP:HH2 | 1:B:454:PRO:HG3 | 1.68 | 0.58 |
| 1:B:1061:TRP:HB2 | 1:B:1119:LYS:NZ | 2.18 | 0.58 |
| 1:B:1188:GLU:O | 1:B:1191:ARG:HG2 | 2.02 | 0.58 |
| 1:A:2848:GLU:O | 1:A:2852:THR:HG23 | 2.03 | 0.58 |
| 1:A:3877:HIS:HA | 1:A:3880:HIS:ND1 | 2.19 | 0.58 |
| 1:B:332:TYR:CD2 | 1:B:336:MET:HE2 | 2.38 | 0.58 |
| 1:B:648:ILE:HD11 | 1:B:698:ILE:HB | 1.86 | 0.58 |
| 1:B:3789:ILE:O | 1:B:3792:GLN:HG3 | 2.02 | 0.58 |
| 6:K:78:HIS:CE1 | 6:L:69:ILE:H | 2.22 | 0.58 |
| 1:A:43:GLU:HG3 | 1:A:81:ARG:HH22 | 1.68 | 0.58 |
| 1:A:415:ALA:O | 1:A:418:GLU:HG3 | 2.04 | 0.58 |
| 2:D:607:ARG:HG2 | 2:D:610:GLU:HG2 | 1.85 | 0.58 |
| 3:F:336:TYR:CZ | 3:F:340:ILE:HD11 | 2.39 | 0.58 |
| 5:I:8:ILE:HD13 | 5:I:18:GLN:HE21 | 1.68 | 0.58 |
| 1:A:164:TYR:CE1 | 1:B:145:PRO:HG2 | 2.30 | 0.58 |
| 1:A:246:GLN:HB2 | 1:A:309:ARG:HE | 1.69 | 0.58 |
| 1:B:1468:GLU:O | 1:B:1472:THR:HG22 | 2.04 | 0.58 |
| 4:G:50:ILE:HD11 | 4:G:82:PRO:HG3 | 1.86 | 0.58 |
| 1:A:93:GLU:HB2 | 1:A:211:PRO:HB2 | 1.86 | 0.58 |
| 1:A:162:LYS:HE2 | 1:A:166:ARG:NE | 2.19 | 0.58 |
| 1:A:1763:GLU:OE2 | 1:A:1838:TRP:NE1 | 2.34 | 0.58 |
| 1:A:3057:GLN:OE1 | 1:A:3060:ARG:NH1 | 2.34 | 0.58 |
| 1:B:1170:ILE:O | 1:B:1173:VAL:HG12 | 2.04 | 0.58 |
| 1:B:3933:GLU:O | 1:B:3937:ARG:HG3 | 2.03 | 0.58 |
| 1:A:264:ARG:NH2 | 1:A:268:SER:O | 2.36 | 0.58 |
| 1:B:2557:VAL:O | 1:B:2757:ARG:NH2 | 2.36 | 0.58 |
| 1:B:3502:THR:HG22 | 1:B:3542:GLN:HB3 | 1.84 | 0.58 |
| 1:B:1211:ILE:O | 1:B:1214:ILE:HG12 | 2.04 | 0.57 |
| 1:B:1850:GLN:HB3 | 1:B:1856:GLN:HG2 | 1.86 | 0.57 |
| 1:B:1914:GLU:HG3 | 7:B:4701:ADP:H2' | 1.86 | 0.57 |
| 1:B:2138:ILE:HD12 | 1:B:2161:LEU:HD22 | 1.85 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:4544:ASN:OD1 | 1:B:4573:ASN:ND2 | 2.31 | 0.57 |
| 1:A:337:LYS:NZ | 1:A:360:ILE:O | 2.37 | 0.57 |
| 1:A:2152:GLU:OE2 | 1:A:2152:GLU:N | 2.28 | 0.57 |
| 1:B:1774:ASP:OD1 | 1:B:1775:ALA:N | 2.35 | 0.57 |
| 1:B:1806:ARG:O | 1:B:1810:HIS:ND1 | 2.31 | 0.57 |
| 1:B:1989:ASN:OD1 | 1:B:1990:TYR:N | 2.37 | 0.57 |
| 1:B:3735:GLN:NE2 | 1:B:3791:MET:HG3 | 2.19 | 0.57 |
| 5:I:24:CYS:HA | 5:I:27:GLN:CD | 2.29 | 0.57 |
| 1:A:264:ARG:NH1 | 1:A:267:ALA:O | 2.35 | 0.57 |
| 1:B:78:LEU:HB3 | 1:B:104:ASN:HB2 | 1.87 | 0.57 |
| 1:B:3322:GLU:OE2 | 1:B:3377:TYR:OH | 2.22 | 0.57 |
| 1:A:181:SER:HA | 1:A:184:LYS:HD2 | 1.86 | 0.57 |
| 1:A:3263:GLN:CD | 1:A:3426:ASN:HB3 | 2.29 | 0.57 |
| 1:A:3433:VAL:HA | 1:A:3436:MET:HG2 | 1.86 | 0.57 |
| 1:B:58:GLU:HG3 | 1:B:61:ALA:H | 1.69 | 0.57 |
| 1:B:1760:GLU:O | 1:B:1764:THR:HG23 | 2.04 | 0.57 |
| 5:J:8:ILE:HG23 | 5:J:76:PHE:HB3 | 1.87 | 0.57 |
| 1:A:1727:PHE:HE1 | 1:A:1737:THR:HG23 | 1.69 | 0.57 |
| 1:A:3904:GLU:OE1 | 1:A:3904:GLU:N | 2.35 | 0.57 |
| 1:A:4544:ASN:OD1 | 1:A:4573:ASN:ND2 | 2.32 | 0.57 |
| 1:B:85:LYS:HE3 | 1:B:95:GLU:HB2 | 1.87 | 0.57 |
| 1:B:530:VAL:HG22 | 1:B:553:TYR:OH | 2.04 | 0.57 |
| 1:B:2290:SER:HB2 | 1:B:2295:LEU:HG | 1.87 | 0.57 |
| 1:A:460:GLN:HA | 1:A:463:LEU:HB2 | 1.86 | 0.57 |
| 4:G:74:LYS:HG3 | 4:G:75:LYS:HD2 | 1.85 | 0.57 |
| 1:A:1751:VAL:O | 1:A:1755:GLN:HG3 | 2.05 | 0.57 |
| 1:B:922:TRP:CH2 | 1:B:986:MET:HB2 | 2.40 | 0.57 |
| 1:B:3886:LEU:O | 1:B:3890:ILE:HG12 | 2.04 | 0.57 |
| 1:B:4287:LYS:HA | 1:B:4287:LYS:HE3 | 1.87 | 0.57 |
| 5:J:50:TYR:HB2 | 5:J:54:TRP:HH2 | 1.70 | 0.57 |
| 1:A:1959:GLU:HB3 | 1:A:1962:ARG:HD3 | 1.86 | 0.57 |
| 1:A:2210:LEU:O | 1:A:2214:THR:HG23 | 2.04 | 0.57 |
| 1:A:2974:GLU:OE1 | 1:A:2977:ARG:NH1 | 2.38 | 0.57 |
| 1:B:170:LYS:NZ | 1:B:176:ASP:O | 2.38 | 0.57 |
| 1:B:2851:ASP:HA | 1:B:2867:MET:HE1 | 1.86 | 0.57 |
| 6:L:22:LYS:HE3 | 6:L:95:VAL:HG11 | 1.85 | 0.57 |
| 1:A:55:ALA:HB3 | 1:A:101:TYR:HD2 | 1.70 | 0.57 |
| 1:A:424:ASP:HA | 1:A:427:TYR:HB3 | 1.87 | 0.57 |
| 1:B:3904:GLU:OE1 | 1:B:3904:GLU:N | 2.36 | 0.57 |
| 5:I:8:ILE:HD13 | 5:I:18:GLN:NE2 | 2.19 | 0.57 |
| 1:B:423:TRP:HZ3 | 1:B:457:ARG:HH12 | 1.51 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1211:ILE:HG13 | 1:B:1212:ASP:N | 2.19 | 0.57 |
| 1:B:3377:TYR:HB3 | 1:B:3397:ILE:HD11 | 1.87 | 0.57 |
| 1:A:438:VAL:HA | 1:A:441:LYS:HG2 | 1.85 | 0.56 |
| 1:A:1810:HIS:CD2 | 1:A:1878:LYS:HB2 | 2.39 | 0.56 |
| 3:F:118:LEU:O | 3:F:121:PHE:HB3 | 2.05 | 0.56 |
| 1:A:3877:HIS:HA | 1:A:3880:HIS:HD1 | 1.68 | 0.56 |
| 1:B:956:LYS:N | 1:B:985:GLU:OE2 | 2.34 | 0.56 |
| 4:H:46:MET:O | 4:H:50:ILE:HG12 | 2.05 | 0.56 |
| 1:A:3191:ARG:HG2 | 1:A:3503:ILE:HD13 | 1.86 | 0.56 |
| 1:B:357:LEU:HD11 | 1:B:423:TRP:HB2 | 1.86 | 0.56 |
| 1:B:1079:TRP:CZ3 | 1:B:1134:MET:HE3 | 2.41 | 0.56 |
| 1:B:1518:GLU:HG2 | 1:B:1519:ASP:N | 2.19 | 0.56 |
| 1:B:2388:ASP:OD1 | 1:B:2389:GLU:N | 2.38 | 0.56 |
| 1:B:2495:VAL:HA | 1:B:2498:ILE:HD12 | 1.87 | 0.56 |
| 1:B:4169:ILE:HG21 | 1:B:4302:ARG:HE | 1.70 | 0.56 |
| 4:G:49:PHE:HA | 4:G:52:LYS:HG2 | 1.87 | 0.56 |
| 1:B:2478:ASP:OD1 | 1:B:2479:PHE:N | 2.37 | 0.56 |
| 2:D:427:LYS:O | 2:D:430:LYS:HG3 | 2.05 | 0.56 |
| 3:F:281:ASP:OD1 | 3:F:282:LEU:N | 2.38 | 0.56 |
| 1:A:189:LEU:HD22 | 1:B:185:LYS:HE2 | 1.87 | 0.56 |
| 1:B:1755:GLN:HG2 | 1:B:1814:GLU:OE2 | 2.04 | 0.56 |
| 1:B:4105:TRP:CD1 | 1:B:4108:GLN:HE21 | 2.24 | 0.56 |
| 1:A:3923:ARG:HH12 | 1:A:3925:GLN:HA | 1.71 | 0.56 |
| 1:B:1174:GLN:OE1 | 1:B:1233:GLN:NE2 | 2.39 | 0.56 |
| 1:B:3923:ARG:NH1 | 1:B:3924:ILE:O | 2.39 | 0.56 |
| 2:D:215:ILE:HG13 | 2:D:217:ILE:H | 1.69 | 0.56 |
| 3:E:147:GLU:O | 3:E:151:LYS:N | 2.38 | 0.56 |
| 6:K:85:TRP:CD1 | 6:K:90:ASP:HB2 | 2.40 | 0.56 |
| 1:A:413:MET:HA | 1:A:416:CYS:SG | 2.46 | 0.56 |
| 1:A:2066:ALA:HA | 1:A:2069:ILE:HG22 | 1.88 | 0.56 |
| 1:B:242:LEU:HB3 | 1:B:309:ARG:NE | 2.21 | 0.56 |
| 1:B:3253:LYS:HB3 | 1:B:3433:VAL:HG13 | 1.87 | 0.56 |
| 1:B:1958:ASP:HA | 1:B:2017:THR:HB | 1.88 | 0.56 |
| 6:K:68:VAL:HG22 | 6:L:79:THR:HG22 | 1.88 | 0.56 |
| 1:A:78:LEU:HB2 | 1:A:107:ILE:HG22 | 1.87 | 0.56 |
| 1:B:148:THR:HG23 | 1:B:152:PHE:CE2 | 2.39 | 0.56 |
| 1:B:2514:LEU:O | 1:B:2518:ILE:HG12 | 2.06 | 0.56 |
| 1:B:2943:LYS:N | 7:B:4704:ADP:O1B | 2.37 | 0.56 |
| 1:A:354:ARG:HD3 | 1:A:419:VAL:HG22 | 1.87 | 0.56 |
| 1:A:368:ARG:HA | 1:A:440:ARG:NH1 | 2.21 | 0.56 |
| 1:A:2478:ASP:OD1 | 1:A:2479:PHE:N | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:718:PHE:HA | 1:B:738:ASN:H | 1.70 | 0.56 |
| 1:B:4505:LYS:NZ | 1:B:4554:ASP:O | 2.35 | 0.56 |
| 1:A:3257:SER:O | 1:A:3260:ILE:HB | 2.06 | 0.55 |
| 1:A:4082:LYS:O | 1:A:4086:THR:HG23 | 2.06 | 0.55 |
| 1:B:80:GLU:O | 1:B:102:ASN:N | 2.39 | 0.55 |
| 1:B:354:ARG:NH1 | 1:B:422:THR:OG1 | 2.40 | 0.55 |
| 1:B:613:LYS:HG3 | 1:B:682:LEU:HD12 | 1.88 | 0.55 |
| 1:B:864:LEU:HB2 | 1:B:877:ILE:HG21 | 1.87 | 0.55 |
| 1:B:987:PHE:HB3 | 1:B:991:MET:HE1 | 1.87 | 0.55 |
| 1:B:2596:PRO:HB2 | 1:B:2738:TYR:CE1 | 2.41 | 0.55 |
| 1:B:3263:GLN:CD | 1:B:3426:ASN:HB3 | 2.30 | 0.55 |
| 2:D:448:VAL:HG21 | 2:D:497:PHE:CZ | 2.40 | 0.55 |
| 2:D:613:ARG:HA | 2:D:616:ARG:HG2 | 1.88 | 0.55 |
| 3:F:59:VAL:HG12 | 3:F:108:ILE:HA | 1.88 | 0.55 |
| 1:A:187:ALA:O | 1:A:191:MET:HG3 | 2.06 | 0.55 |
| 1:A:3124:ASP:OD1 | 1:A:3125:TYR:N | 2.39 | 0.55 |
| 1:A:4173:PRO:HG2 | 1:A:4176:ARG:HH21 | 1.71 | 0.55 |
| 1:B:332:TYR:HD2 | 1:B:336:MET:HE2 | 1.71 | 0.55 |
| 1:B:4082:LYS:O | 1:B:4086:THR:HG23 | 2.06 | 0.55 |
| 2:D:272:PHE:HD2 | 2:D:593:GLN:HB2 | 1.71 | 0.55 |
| 2:D:445:ASN:OD1 | 2:D:446:ASN:N | 2.34 | 0.55 |
| 1:A:202:ILE:HG23 | 1:A:259:VAL:HG12 | 1.88 | 0.55 |
| 1:A:207:LEU:HG | 1:A:209:ILE:HG12 | 1.87 | 0.55 |
| 1:B:994:LEU:HD11 | 1:B:1020:ARG:HA | 1.88 | 0.55 |
| 1:B:2484:GLU:O | 1:B:2488:ARG:HG3 | 2.06 | 0.55 |
| 1:B:3984:GLY:O | 1:B:3988:HIS:ND1 | 2.36 | 0.55 |
| 1:A:2961:ILE:HD11 | 1:A:2998:ASN:HB3 | 1.87 | 0.55 |
| 1:A:4525:ARG:HD3 | 1:A:4536:LEU:HD23 | 1.88 | 0.55 |
| 1:B:312:ALA:O | 1:B:315:SER:OG | 2.20 | 0.55 |
| 1:B:1041:MET:HE1 | 3:F:121:PHE:CE1 | 2.42 | 0.55 |
| 1:B:2437:LEU:HD21 | 1:B:2451:ARG:HG3 | 1.88 | 0.55 |
| 2:D:439:PHE:HB3 | 2:D:447:PHE:CE2 | 2.42 | 0.55 |
| 3:F:87:GLU:HB2 | 3:F:108:ILE:HG23 | 1.88 | 0.55 |
| 1:A:434:LEU:O | 1:A:438:VAL:HG23 | 2.06 | 0.55 |
| 1:A:3026:TYR:O | 1:A:3030:MET:HG2 | 2.06 | 0.55 |
| 5:J:13:MET:SD | 5:J:73:PHE:N | 2.79 | 0.55 |
| 1:A:38:VAL:HG21 | 1:A:52:LEU:HD22 | 1.88 | 0.55 |
| 1:B:1213:ASN:HD22 | 5:J:10:ASN:C | 2.15 | 0.55 |
| 2:D:555:ASN:ND2 | 2:D:610:GLU:OE1 | 2.28 | 0.55 |
| 5:I:70:THR:O | 5:I:72:HIS:ND1 | 2.33 | 0.55 |
| 1:A:325:ALA:O | 1:A:329:VAL:HG12 | 2.07 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2572:LEU:O | 1:A:2576:ARG:HG3 | 2.06 | 0.55 |
| 1:A:453:ASN:OD1 | 1:A:457:ARG:NH2 | 2.40 | 0.55 |
| 1:B:988:ALA:O | 1:B:992:VAL:HG23 | 2.07 | 0.55 |
| 3:F:321:ALA:HA | 3:F:324:HIS:NE2 | 2.22 | 0.55 |
| 1:A:260:THR:HG21 | 1:A:322:LEU:HD21 | 1.89 | 0.55 |
| 1:A:1760:GLU:O | 1:A:1764:THR:HG23 | 2.07 | 0.55 |
| 1:A:2628:PRO:HB3 | 1:A:2682:PHE:CD2 | 2.41 | 0.55 |
| 1:A:4043:MET:HE2 | 1:A:4051:ALA:HB1 | 1.89 | 0.55 |
| 1:A:4566:GLN:O | 1:A:4640:VAL:HA | 2.07 | 0.55 |
| 1:B:242:LEU:HD21 | 1:B:307:GLY:HA3 | 1.89 | 0.55 |
| 1:B:977:GLU:HA | 3:F:90:TYR:OH | 2.06 | 0.55 |
| 1:A:158:ALA:HB3 | 1:A:159:PRO:HD3 | 1.88 | 0.55 |
| 1:A:4031:VAL:HG11 | 1:A:4058:LEU:HD21 | 1.88 | 0.55 |
| 1:B:332:TYR:CE1 | 1:B:335:LEU:HD22 | 2.42 | 0.55 |
| 1:B:336:MET:HA | 1:B:339:PHE:HE2 | 1.72 | 0.55 |
| 1:B:1595:GLN:OE1 | 1:B:1595:GLN:N | 2.38 | 0.55 |
| 1:A:1785:VAL:HG13 | 1:A:1815:LEU:HD12 | 1.89 | 0.54 |
| 1:A:2372:ASP:OD2 | 1:A:2429:SER:OG | 2.25 | 0.54 |
| 1:A:4604:VAL:HG13 | 1:A:4624:PHE:C | 2.32 | 0.54 |
| 1:A:29:VAL:O | 1:A:33:HIS:ND1 | 2.40 | 0.54 |
| 1:B:3158:ASN:ND2 | 1:B:3169:MET:O | 2.41 | 0.54 |
| 1:A:2464:GLN:HG2 | 1:A:2583:THR:HG23 | 1.89 | 0.54 |
| 1:A:3485:GLU:OE2 | 1:A:3774:LYS:NZ | 2.39 | 0.54 |
| 1:A:4557:SER:HB3 | 1:A:4591:ARG:HD3 | 1.90 | 0.54 |
| 1:B:666:GLU:OE1 | 1:B:673:TRP:NE1 | 2.39 | 0.54 |
| 1:B:721:GLU:OE2 | 1:B:736:LYS:NZ | 2.37 | 0.54 |
| 1:B:3723:ASP:OD1 | 1:B:3724:VAL:N | 2.40 | 0.54 |
| 2:D:456:VAL:HG21 | 2:D:509:TRP:HZ2 | 1.72 | 0.54 |
| 3:F:60:PHE:HE2 | 3:F:148:SER:HB2 | 1.71 | 0.54 |
| 1:A:228:LYS:N | 1:A:231:ASP:OD2 | 2.38 | 0.54 |
| 1:A:1774:ASP:OD1 | 1:A:1775:ALA:N | 2.37 | 0.54 |
| 1:A:3872:ALA:HB1 | 1:A:3880:HIS:HD2 | 1.70 | 0.54 |
| 1:B:210:HIS:HB3 | 1:B:213:ILE:HG22 | 1.89 | 0.54 |
| 1:B:257:GLN:NE2 | 1:B:319:ASP:OD1 | 2.40 | 0.54 |
| 1:B:2289:ASP:OD1 | 1:B:2290:SER:N | 2.40 | 0.54 |
| 1:B:2885:ASP:OD1 | 1:B:2886:GLN:N | 2.37 | 0.54 |
| 5:I:35:GLU:HA | 5:I:38:ILE:HD12 | 1.90 | 0.54 |
| 1:A:374:ILE:HG21 | 1:A:437:ILE:HG21 | 1.89 | 0.54 |
| 1:A:420:PHE:CD1 | 1:A:460:GLN:HG3 | 2.42 | 0.54 |
| 1:A:3873:ARG:HD3 | 1:A:4021:MET:HE1 | 1.90 | 0.54 |
| 1:B:724:ARG:HD2 | 1:B:726:ARG:HH21 | 1.72 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1161:ALA:C | 1:B:1163:THR:H | 2.14 | 0.54 |
| 1:B:1810:HIS:HD2 | 1:B:1878:LYS:HB2 | 1.72 | 0.54 |
| 5:J:34:ILE:O | 5:J:38:ILE:HG12 | 2.08 | 0.54 |
| 1:A:3928:THR:HG22 | 1:A:3931:GLN:HG3 | 1.89 | 0.54 |
| 1:B:2839:GLU:OE1 | 1:B:2841:GLU:HB2 | 2.07 | 0.54 |
| 1:A:4417:VAL:HA | 1:A:4489:LEU:HD21 | 1.89 | 0.54 |
| 1:B:186:ILE:O | 1:B:190:GLU:HG2 | 2.08 | 0.54 |
| 1:B:342:ASN:OD1 | 1:B:343:ASP:N | 2.41 | 0.54 |
| 1:B:3028:THR:O | 1:B:3032:GLN:HG3 | 2.08 | 0.54 |
| 1:B:4393:GLN:HG3 | 1:B:4428:ARG:HH12 | 1.73 | 0.54 |
| 2:D:495:HIS:HB2 | 2:D:511:THR:HG22 | 1.90 | 0.54 |
| 1:A:179:ALA:HA | 1:A:182:VAL:HG22 | 1.88 | 0.54 |
| 1:A:438:VAL:O | 1:A:442:ARG:HG2 | 2.08 | 0.54 |
| 1:A:3502:THR:HG22 | 1:A:3542:GLN:HB3 | 1.88 | 0.54 |
| 1:B:720:ILE:HG13 | 3:F:367:GLN:NE2 | 2.23 | 0.54 |
| 1:B:3376:SER:HA | 1:B:3380:GLU:OE1 | 2.08 | 0.54 |
| 3:F:71:MET:HG3 | 3:F:89:LEU:HD23 | 1.89 | 0.54 |
| 1:A:209:ILE:HA | 1:A:248:GLY:HA3 | 1.90 | 0.54 |
| 1:A:329:VAL:C | 1:A:331:ASP:H | 2.15 | 0.54 |
| 1:A:3433:VAL:HG22 | 1:A:3436:MET:HE2 | 1.88 | 0.54 |
| 2:D:386:CYS:HB3 | 2:D:401:ILE:HG22 | 1.89 | 0.54 |
| 5:J:13:MET:HB2 | 5:J:18:GLN:HE21 | 1.72 | 0.54 |
| 5:J:32:TYR:HB2 | 5:J:38:ILE:HD13 | 1.90 | 0.54 |
| 1:A:208:PRO:HG2 | 1:A:251:ARG:HG3 | 1.90 | 0.54 |
| 1:A:347:ALA:HA | 1:A:352:LYS:HD3 | 1.90 | 0.54 |
| 1:B:4031:VAL:HG11 | 1:B:4058:LEU:HD21 | 1.90 | 0.54 |
| 1:A:3239:LYS:HG2 | 1:A:3451:TYR:CZ | 2.43 | 0.53 |
| 1:A:3654:ARG:HG2 | 1:A:3656:THR:HG23 | 1.89 | 0.53 |
| 1:A:3910:ARG:HG2 | 1:A:3910:ARG:O | 2.08 | 0.53 |
| 1:B:1125:LYS:HA | 1:B:1128:LEU:HD12 | 1.89 | 0.53 |
| 1:B:1497:VAL:O | 1:B:1501:ILE:HG13 | 2.07 | 0.53 |
| 1:B:1504:VAL:HG11 | 1:B:1524:GLU:HB2 | 1.89 | 0.53 |
| 1:A:118:PHE:HB3 | 1:A:135:LEU:HD21 | 1.90 | 0.53 |
| 1:B:150:HIS:CE1 | 1:B:194:LEU:HB3 | 2.43 | 0.53 |
| 1:B:1059:CYS:SG | 3:F:44:SER:HB2 | 2.48 | 0.53 |
| 3:F:241:GLU:HA | 3:F:246:TYR:H | 1.73 | 0.53 |
| 1:A:295:PRO:HA | 1:A:298:LEU:HD12 | 1.89 | 0.53 |
| 1:B:129:LYS:HD2 | 1:B:130:PRO:HD2 | 1.89 | 0.53 |
| 1:B:229:VAL:HG12 | 1:B:303:ILE:HG22 | 1.90 | 0.53 |
| 1:B:561:GLU:OE1 | 1:B:594:ARG:NH1 | 2.42 | 0.53 |
| 1:B:2262:ASP:OD1 | 1:B:2263:HIS:N | 2.42 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:3753:LEU:HD11 | 1:B:3770:LEU:HD21 | 1.89 | 0.53 |
| 1:A:1911:GLY:O | 1:A:1915:SER:OG | 2.25 | 0.53 |
| 1:A:1973:GLN:NE2 | 1:A:1977:CYS:SG | 2.80 | 0.53 |
| 1:A:3154:LEU:HG | 1:A:3516:TYR:CD1 | 2.42 | 0.53 |
| 1:A:3276:MET:HE1 | 1:A:3412:LEU:HD13 | 1.89 | 0.53 |
| 1:A:3451:TYR:HA | 1:A:3454:LEU:HG | 1.91 | 0.53 |
| 1:B:908:GLU:HB2 | 1:B:1019:TYR:CZ | 2.43 | 0.53 |
| 2:D:382:HIS:CG | 2:D:404:ASP:HB2 | 2.44 | 0.53 |
| 5:I:13:MET:HA | 5:I:71:LYS:HD2 | 1.89 | 0.53 |
| 1:A:121:ARG:HD2 | 1:A:136:ARG:HG2 | 1.90 | 0.53 |
| 1:A:213:ILE:HB | 1:A:241:PHE:CZ | 2.44 | 0.53 |
| 1:A:1751:VAL:HG11 | 1:A:1878:LYS:HE3 | 1.91 | 0.53 |
| 1:B:904:ASP:HA | 1:B:907:ILE:HG22 | 1.91 | 0.53 |
| 1:B:1085:GLN:HA | 1:B:1088:LYS:HE3 | 1.91 | 0.53 |
| 1:B:3974:TRP:NE1 | 1:B:3976:GLU:OE2 | 2.36 | 0.53 |
| 1:B:4452:ILE:O | 1:B:4456:VAL:HG13 | 2.09 | 0.53 |
| 1:A:4297:PRO:HG3 | 1:A:4308:TRP:CD2 | 2.44 | 0.53 |
| 1:B:1679:ARG:NH2 | 1:B:1680:GLU:OE2 | 2.42 | 0.53 |
| 1:B:2438:GLU:O | 1:B:2442:GLN:NE2 | 2.40 | 0.53 |
| 1:B:2967:TYR:OH | 1:B:2975:ASP:OD2 | 2.22 | 0.53 |
| 1:B:3546:ASP:OD1 | 1:B:3547:ILE:N | 2.41 | 0.53 |
| 1:B:4422:LYS:HE2 | 1:B:4422:LYS:HA | 1.91 | 0.53 |
| 2:D:480:THR:OG1 | 2:D:500:SER:O | 2.19 | 0.53 |
| 1:A:195:HIS:ND1 | 1:A:198:GLN:OE1 | 2.41 | 0.53 |
| 1:A:253:ILE:HA | 1:A:256:ILE:HG12 | 1.89 | 0.53 |
| 1:A:311:HIS:HA | 1:A:314:VAL:HG22 | 1.91 | 0.53 |
| 4:G:14:GLN:NE2 | 4:G:92:GLN:OE1 | 2.41 | 0.53 |
| 6:K:77:LEU:HD12 | 6:K:78:HIS:N | 2.24 | 0.53 |
| 1:A:3043:MET:HG3 | 1:B:1567:ARG:NH1 | 2.24 | 0.53 |
| 1:A:3253:LYS:HE2 | 1:A:3436:MET:HE3 | 1.90 | 0.53 |
| 1:A:3444:ILE:O | 1:A:3445:ALA:C | 2.51 | 0.53 |
| 1:A:4505:LYS:NZ | 1:A:4557:SER:O | 2.39 | 0.53 |
| 1:B:485:ARG:NH1 | 1:B:486:PRO:O | 2.42 | 0.53 |
| 1:B:2453:ARG:NH1 | 1:B:2505:ASP:OD2 | 2.31 | 0.53 |
| 1:A:3229:LEU:HD12 | 1:A:3461:ILE:HG23 | 1.89 | 0.53 |
| 1:A:3783:LYS:O | 1:A:3787:THR:HG23 | 2.09 | 0.53 |
| 1:A:4412:PHE:CZ | 1:A:4520:TYR:HB2 | 2.44 | 0.53 |
| 2:D:287:TRP:CE2 | 2:D:295:LEU:HD12 | 2.44 | 0.53 |
| 5:J:17:MET:HE2 | 5:J:50:TYR:CG | 2.43 | 0.53 |
| 6:K:51:LEU:HD13 | 6:L:84:PHE:CZ | 2.44 | 0.53 |
| 1:A:3241:LYS:HG3 | 1:A:3245:LYS:HE3 | 1.90 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:35:ARG:HD2 | 1:B:56:LEU:HD11 | 1.91 | 0.53 |
| 1:B:689:PHE:HA | 1:B:692:LYS:HE3 | 1.90 | 0.53 |
| 1:A:354:ARG:HD2 | 1:A:422:THR:HB | 1.91 | 0.52 |
| 1:B:480:ILE:HD12 | 1:B:564:ILE:HD13 | 1.92 | 0.52 |
| 3:F:172:GLU:O | 3:F:176:LYS:HG2 | 2.10 | 0.52 |
| 1:A:186:ILE:O | 1:A:190:GLU:HG2 | 2.10 | 0.52 |
| 1:A:1491:ASP:OD1 | 1:A:1492:ASP:N | 2.43 | 0.52 |
| 1:A:4600:LYS:HG3 | 1:A:4602:ALA:H | 1.73 | 0.52 |
| 1:B:674:GLU:HB2 | 1:B:683:LYS:HD3 | 1.91 | 0.52 |
| 1:B:1165:ASP:O | 1:B:1168:THR:HB | 2.09 | 0.52 |
| 2:D:352:THR:HG23 | 2:D:354:SER:H | 1.75 | 0.52 |
| 3:F:120:LYS:HA | 3:F:159:HIS:HE1 | 1.74 | 0.52 |
| 1:A:588:PHE:O | 1:A:590:ALA:N | 2.42 | 0.52 |
| 1:A:2571:THR:H | 1:A:2574:THR:HB | 1.75 | 0.52 |
| 1:A:3409:VAL:HA | 1:A:3412:LEU:HD12 | 1.90 | 0.52 |
| 1:A:4460:LEU:HD12 | 1:A:4461:PRO:HD2 | 1.91 | 0.52 |
| 1:A:4541:LEU:HB2 | 1:A:4592:TRP:CZ3 | 2.45 | 0.52 |
| 1:B:438:VAL:HA | 1:B:441:LYS:HB2 | 1.92 | 0.52 |
| 1:B:2210:LEU:O | 1:B:2214:THR:HG23 | 2.09 | 0.52 |
| 1:A:282:GLU:HA | 1:A:285:LEU:HG | 1.92 | 0.52 |
| 1:A:1153:LEU:HD11 | 1:A:1228:LYS:HG3 | 1.91 | 0.52 |
| 1:A:1196:LEU:HA | 1:A:1199:LYS:HG2 | 1.91 | 0.52 |
| 1:A:1497:VAL:O | 1:A:1501:ILE:HG13 | 2.09 | 0.52 |
| 1:A:3427:GLN:O | 1:A:3431:ASN:ND2 | 2.43 | 0.52 |
| 1:B:349:GLU:OE1 | 1:B:349:GLU:N | 2.43 | 0.52 |
| 2:D:359:LEU:HB2 | 2:D:415:LEU:HD22 | 1.92 | 0.52 |
| 1:B:231:ASP:OD1 | 1:B:232:PHE:N | 2.43 | 0.52 |
| 1:B:552:ARG:O | 1:B:555:GLU:HG2 | 2.10 | 0.52 |
| 1:B:1150:ARG:HG3 | 5:J:70:THR:HG21 | 1.91 | 0.52 |
| 1:B:4450:THR:O | 1:B:4454:GLU:HG3 | 2.09 | 0.52 |
| 2:D:293:GLU:HB3 | 2:D:318:MET:HB2 | 1.92 | 0.52 |
| 6:L:90:ASP:OD1 | 6:L:112:SER:N | 2.30 | 0.52 |
| 1:A:78:LEU:HD22 | 1:A:107:ILE:HA | 1.92 | 0.52 |
| 1:A:151:SER:O | 1:A:154:SER:OG | 2.25 | 0.52 |
| 1:A:256:ILE:O | 1:A:259:VAL:HG22 | 2.09 | 0.52 |
| 1:A:1229:ASP:CG | 1:A:1233:GLN:HE22 | 2.18 | 0.52 |
| 1:B:180:PRO:O | 1:B:184:LYS:NZ | 2.42 | 0.52 |
| 1:B:361:PHE:CD1 | 1:B:426:GLU:HG3 | 2.45 | 0.52 |
| 1:B:1202:PHE:O | 5:J:5:LYS:NZ | 2.43 | 0.52 |
| 4:H:26:GLU:HA | 4:H:87:PHE:HE2 | 1.74 | 0.52 |
| 1:A:107:ILE:HB | 1:B:160:PHE:CE2 | 2.45 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1587:LEU:O | 1:A:1591:VAL:HG23 | 2.09 | 0.52 |
| 1:A:2603:MET:HE1 | 7:A:4703:ADP:N7 | 2.24 | 0.52 |
| 1:A:4509:VAL:HG11 | 1:A:4520:TYR:CZ | 2.44 | 0.52 |
| 1:B:2369:LEU:HD12 | 1:B:2373:MET:HE2 | 1.91 | 0.52 |
| 1:B:3611:ARG:NH1 | 1:B:3636:GLN:OE1 | 2.40 | 0.52 |
| 1:B:3783:LYS:O | 1:B:3787:THR:HG23 | 2.09 | 0.52 |
| 6:L:35:GLN:O | 6:L:39:VAL:HG23 | 2.10 | 0.52 |
| 1:A:40:LEU:CB | 1:B:33:HIS:HE1 | 2.23 | 0.52 |
| 1:A:213:ILE:HG21 | 1:A:245:LEU:HD22 | 1.91 | 0.52 |
| 1:A:296:GLU:O | 1:A:299:LEU:HG | 2.10 | 0.52 |
| 1:A:2879:LYS:HE3 | 1:A:2879:LYS:HA | 1.91 | 0.52 |
| 1:B:391:GLN:O | 1:B:394:LYS:HG2 | 2.10 | 0.52 |
| 1:B:4049:TYR:OH | 1:B:4191:GLN:OE1 | 2.25 | 0.52 |
| 5:I:28:ALA:HB2 | 5:I:41:HIS:HD2 | 1.74 | 0.52 |
| 1:A:1507:MET:O | 1:A:1513:TYR:HB2 | 2.10 | 0.52 |
| 1:B:83:THR:O | 1:B:112:LYS:NZ | 2.41 | 0.52 |
| 1:B:779:ILE:HA | 1:B:782:ILE:HG22 | 1.92 | 0.52 |
| 1:B:2412:MET:O | 1:B:2416:GLN:HG3 | 2.09 | 0.52 |
| 1:B:4178:ARG:NH2 | 1:B:4297:PRO:O | 2.43 | 0.52 |
| 3:F:67:LYS:HB3 | 3:F:136:VAL:HG21 | 1.92 | 0.52 |
| 1:A:4071:ILE:HG13 | 1:A:4099:VAL:HG12 | 1.91 | 0.52 |
| 1:B:35:ARG:NH2 | 1:B:53:GLU:OE2 | 2.42 | 0.52 |
| 1:A:236:VAL:HG13 | 1:A:237:GLU:HG2 | 1.92 | 0.51 |
| 1:A:1734:ASP:HB3 | 1:A:1737:THR:HG22 | 1.91 | 0.51 |
| 1:A:2412:MET:O | 1:A:2416:GLN:HG3 | 2.10 | 0.51 |
| 1:B:1581:LYS:O | 1:B:1584:LYS:HG2 | 2.10 | 0.51 |
| 1:B:1810:HIS:NE2 | 1:B:1876:GLN:O | 2.43 | 0.51 |
| 1:B:2816:LEU:HD11 | 1:B:2820:GLY:HA3 | 1.92 | 0.51 |
| 1:B:3240:LEU:O | 1:B:3244:VAL:HG23 | 2.09 | 0.51 |
| 1:B:378:LEU:HG | 1:B:379:ARG:HH21 | 1.75 | 0.51 |
| 1:B:1493:LEU:O | 1:B:1497:VAL:HG23 | 2.11 | 0.51 |
| 1:B:1661:VAL:HG22 | 1:B:1676:ILE:HD12 | 1.92 | 0.51 |
| 1:A:4190:ILE:HG13 | 1:A:4191:GLN:N | 2.26 | 0.51 |
| 1:B:808:LEU:O | 1:B:811:GLU:HG2 | 2.10 | 0.51 |
| 1:B:1220:ALA:O | 1:B:1224:ILE:HG12 | 2.11 | 0.51 |
| 1:B:1835:SER:OG | 1:B:1837:GLU:OE1 | 2.28 | 0.51 |
| 1:B:4105:TRP:HA | 1:B:4108:GLN:HG2 | 1.92 | 0.51 |
| 2:D:268:ASN:OD1 | 2:D:598:ASP:N | 2.37 | 0.51 |
| 2:D:620:GLU:HG3 | 2:D:621:ILE:HG12 | 1.91 | 0.51 |
| 1:A:185:LYS:HE3 | 1:B:189:LEU:HA | 1.92 | 0.51 |
| 1:A:1170:ILE:HA | 1:A:1173:VAL:HG22 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2174:GLU:OE1 | 1:A:2176:THR:OG1 | 2.25 | 0.51 |
| 1:A:3409:VAL:HG12 | 1:A:3413:ARG:HG3 | 1.92 | 0.51 |
| 1:A:3546:ASP:OD1 | 1:A:3547:ILE:N | 2.43 | 0.51 |
| 1:B:38:VAL:HB | 1:B:52:LEU:HD21 | 1.92 | 0.51 |
| 1:B:895:ASN:OD1 | 3:F:353:GLU:HB2 | 2.11 | 0.51 |
| 1:B:2592:VAL:HB | 1:B:2733:VAL:HG22 | 1.93 | 0.51 |
| 3:F:39:ILE:HA | 3:F:42:GLU:HG2 | 1.93 | 0.51 |
| 5:I:64:SER:OG | 5:J:36:LYS:NZ | 2.43 | 0.51 |
| 5:I:68:HIS:CD2 | 5:I:73:PHE:HB2 | 2.46 | 0.51 |
| 5:J:13:MET:HE3 | 5:J:13:MET:HA | 1.91 | 0.51 |
| 1:A:42:LEU:HB3 | 1:A:81:ARG:NH2 | 2.25 | 0.51 |
| 1:A:170:LYS:HG2 | 1:A:179:ALA:HB3 | 1.93 | 0.51 |
| 1:A:213:ILE:HG12 | 1:A:303:ILE:HD12 | 1.93 | 0.51 |
| 1:A:3253:LYS:HD3 | 1:A:3436:MET:HG3 | 1.93 | 0.51 |
| 1:B:25:ALA:HB3 | 1:B:69:LEU:HD21 | 1.92 | 0.51 |
| 1:B:406:TYR:CD2 | 1:B:474:GLU:HG2 | 2.46 | 0.51 |
| 1:B:431:GLN:O | 1:B:435:ARG:HG2 | 2.10 | 0.51 |
| 1:B:819:GLY:HA3 | 1:B:832:TYR:CZ | 2.46 | 0.51 |
| 1:B:1150:ARG:O | 1:B:1153:LEU:HG | 2.10 | 0.51 |
| 1:B:4260:PHE:CE2 | 1:B:4608:PRO:HB3 | 2.45 | 0.51 |
| 1:B:4331:LEU:O | 1:B:4335:GLN:HG3 | 2.10 | 0.51 |
| 2:D:509:TRP:HB3 | 2:D:516:PRO:HA | 1.91 | 0.51 |
| 5:I:46:PHE:HB3 | 5:I:54:TRP:CG | 2.46 | 0.51 |
| 1:A:164:TYR:O | 1:A:168:SER:OG | 2.19 | 0.51 |
| 1:A:284:ALA:O | 1:A:287:ARG:HG2 | 2.11 | 0.51 |
| 1:A:3373:SER:O | 1:A:3376:SER:OG | 2.27 | 0.51 |
| 1:A:4392:PRO:O | 1:A:4428:ARG:NH1 | 2.42 | 0.51 |
| 1:B:1176:LEU:HA | 1:B:1179:LYS:HD3 | 1.93 | 0.51 |
| 1:B:2134:GLN:O | 1:B:2138:ILE:HG12 | 2.11 | 0.51 |
| 1:B:3409:VAL:HG12 | 1:B:3413:ARG:HG3 | 1.93 | 0.51 |
| 1:B:4213:ARG:NH1 | 1:B:4213:ARG:HB2 | 2.26 | 0.51 |
| 1:A:136:ARG:HG3 | 1:B:152:PHE:CZ | 2.46 | 0.51 |
| 1:A:1836:PHE:HA | 1:A:1839:LEU:HB2 | 1.92 | 0.51 |
| 1:A:2671:MET:HE2 | 1:A:2721:LYS:HG2 | 1.93 | 0.51 |
| 1:B:409:PHE:CD2 | 1:B:470:ARG:HD2 | 2.45 | 0.51 |
| 1:B:636:SER:HB2 | 1:B:641:LEU:HB2 | 1.93 | 0.51 |
| 2:D:475:HIS:CE1 | 2:D:477:GLY:H | 2.28 | 0.51 |
| 3:F:91:LEU:HB2 | 3:F:104:CYS:HB3 | 1.91 | 0.51 |
| 3:F:251:LEU:HA | 3:F:254:ILE:HG12 | 1.92 | 0.51 |
| 3:F:257:HIS:CD2 | 3:F:260:ARG:HH12 | 2.29 | 0.51 |
| 1:B:1053:VAL:O | 1:B:1056:GLN:HB3 | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1836:PHE:HA | 1:B:1839:LEU:HB2 | 1.91 | 0.51 |
| 1:B:2066:ALA:HA | 1:B:2069:ILE:HG22 | 1.93 | 0.51 |
| 1:B:3001:ASP:OD1 | 1:B:3002:SER:N | 2.44 | 0.51 |
| 5:J:68:HIS:ND1 | 5:J:69:GLU:O | 2.36 | 0.51 |
| 1:A:1537:TRP:HH2 | 1:A:1582:VAL:HG21 | 1.75 | 0.51 |
| 1:A:4192:GLU:HB3 | 1:A:4321:LEU:HD11 | 1.92 | 0.51 |
| 1:A:4318:PRO:HB2 | 1:A:4323:LEU:HB2 | 1.93 | 0.51 |
| 1:B:161:PHE:O | 1:B:165:ILE:HG12 | 2.11 | 0.51 |
| 1:B:1082:LEU:HD21 | 3:F:39:ILE:HG21 | 1.91 | 0.51 |
| 1:B:1198:GLU:O | 1:B:1201:ARG:NH1 | 2.44 | 0.51 |
| 1:B:1491:ASP:OD1 | 1:B:1492:ASP:N | 2.43 | 0.51 |
| 1:B:1704:LEU:HD13 | 1:B:1707:LYS:HD3 | 1.92 | 0.51 |
| 1:B:2346:GLN:HB3 | 1:B:2726:ARG:HD2 | 1.93 | 0.51 |
| 1:B:2925:ILE:HG13 | 1:B:2933:LEU:HD21 | 1.93 | 0.51 |
| 1:B:4412:PHE:CZ | 1:B:4520:TYR:HB2 | 2.45 | 0.51 |
| 2:D:602:GLN:HG2 | 2:D:603:ILE:HG23 | 1.91 | 0.51 |
| 1:A:1843:ARG:HH12 | 1:A:1862:ALA:H | 1.59 | 0.51 |
| 1:A:2538:GLU:HB3 | 1:A:2548:TRP:CE2 | 2.46 | 0.51 |
| 1:A:3458:ALA:O | 1:A:3461:ILE:HG22 | 2.11 | 0.51 |
| 1:A:3772:ASN:HA | 1:A:3775:ARG:HE | 1.75 | 0.51 |
| 1:B:4168:ARG:NH2 | 1:B:4217:ASP:OD1 | 2.44 | 0.51 |
| 4:H:68:PHE:CE1 | 4:H:79:MET:HE1 | 2.46 | 0.51 |
| 1:A:148:THR:O | 1:A:152:PHE:HD1 | 1.94 | 0.50 |
| 1:A:189:LEU:O | 1:A:193:LEU:HD23 | 2.11 | 0.50 |
| 1:A:333:ASN:ND2 | 1:A:367:ILE:HA | 2.27 | 0.50 |
| 1:A:3430:ALA:O | 1:A:3434:GLU:HB2 | 2.10 | 0.50 |
| 5:I:35:GLU:N | 5:I:35:GLU:OE2 | 2.43 | 0.50 |
| 5:J:21:SER:HA | 5:J:46:PHE:HZ | 1.76 | 0.50 |
| 1:A:164:TYR:CE2 | 1:B:109:TYR:HB3 | 2.45 | 0.50 |
| 1:A:454:PRO:HD2 | 1:A:457:ARG:NH1 | 2.26 | 0.50 |
| 1:A:2042:THR:HG21 | 1:A:4257:ASP:HB2 | 1.94 | 0.50 |
| 1:A:2222:MET:HE1 | 1:A:2234:TRP:CD1 | 2.46 | 0.50 |
| 1:A:3048:GLU:OE2 | 1:A:3048:GLU:N | 2.39 | 0.50 |
| 1:B:278:TRP:CD1 | 1:B:336:MET:HE1 | 2.46 | 0.50 |
| 1:B:387:ASP:OD1 | 1:B:388:LEU:N | 2.45 | 0.50 |
| 1:B:2047:GLN:OE1 | 1:B:2067:ASN:ND2 | 2.44 | 0.50 |
| 1:B:2262:ASP:HB2 | 1:B:2267:THR:HG22 | 1.94 | 0.50 |
| 1:B:2444:GLU:H | 1:B:2510:MET:HE3 | 1.75 | 0.50 |
| 1:A:1219:GLY:HA2 | 1:A:1222:ASN:HD21 | 1.75 | 0.50 |
| 1:A:1850:GLN:HB3 | 1:A:1856:GLN:HG2 | 1.93 | 0.50 |
| 1:A:3154:LEU:HD21 | 1:A:3532:TRP:HZ2 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:734:LYS:HB3 | 1:B:736:LYS:HZ2 | 1.76 | 0.50 |
| 1:B:1211:ILE:O | 1:B:1215:GLU:HG3 | 2.10 | 0.50 |
| 2:D:502:PHE:CE1 | 2:D:526:TYR:HB2 | 2.46 | 0.50 |
| 3:E:95:ASP:O | 3:E:99:ASP:N | 2.45 | 0.50 |
| 3:F:51:LEU:HB3 | 3:F:98:ARG:HE | 1.77 | 0.50 |
| 3:F:151:LYS:O | 3:F:154:SER:OG | 2.27 | 0.50 |
| 1:A:40:LEU:HB3 | 1:B:33:HIS:HE1 | 1.76 | 0.50 |
| 1:A:440:ARG:O | 1:A:444:GLU:N | 2.42 | 0.50 |
| 1:A:3946:ASP:OD1 | 1:A:3950:LYS:NZ | 2.44 | 0.50 |
| 1:B:2411:PRO:O | 1:B:2415:ILE:HG13 | 2.10 | 0.50 |
| 1:B:2671:MET:HG2 | 1:B:2675:GLY:HA2 | 1.93 | 0.50 |
| 1:B:3099:THR:HG23 | 1:B:3148:VAL:HG11 | 1.93 | 0.50 |
| 6:K:70:MET:HB2 | 6:K:103:TYR:HB2 | 1.93 | 0.50 |
| 1:A:376:ARG:O | 1:A:380:LEU:HG | 2.11 | 0.50 |
| 1:A:1721:VAL:HA | 1:A:1724:VAL:HG12 | 1.93 | 0.50 |
| 1:B:486:PRO:HA | 1:B:567:ARG:NH2 | 2.26 | 0.50 |
| 1:B:1090:ARG:HH22 | 1:B:1124:HIS:HB3 | 1.76 | 0.50 |
| 1:B:3017:VAL:HB | 1:B:3020:LEU:HB2 | 1.93 | 0.50 |
| 1:B:3176:TYR:O | 1:B:3180:ILE:HG12 | 2.11 | 0.50 |
| 1:B:4087:ALA:HB1 | 1:B:4092:ARG:O | 2.12 | 0.50 |
| 2:D:317:ASN:O | 2:D:318:MET:HE2 | 2.11 | 0.50 |
| 5:I:29:LEU:HD23 | 5:I:38:ILE:HD13 | 1.93 | 0.50 |
| 1:A:315:SER:HB2 | 1:A:319:ASP:HB2 | 1.93 | 0.50 |
| 1:A:351:ASP:HA | 1:A:354:ARG:NH1 | 2.26 | 0.50 |
| 1:A:1222:ASN:CA | 1:A:1225:MET:HE3 | 2.39 | 0.50 |
| 1:A:1518:GLU:HG2 | 1:A:1519:ASP:N | 2.26 | 0.50 |
| 1:A:2956:LEU:HD22 | 1:A:2989:LYS:HB3 | 1.94 | 0.50 |
| 1:B:848:ASP:OD1 | 1:B:849:ASP:N | 2.45 | 0.50 |
| 1:A:1840:SER:HA | 1:A:1862:ALA:HB2 | 1.93 | 0.50 |
| 1:A:3321:LEU:HD22 | 1:A:3332:THR:HA | 1.93 | 0.50 |
| 1:B:487:GLN:H | 1:B:567:ARG:HH22 | 1.60 | 0.50 |
| 1:B:3691:ASP:O | 1:B:3695:ARG:HG3 | 2.11 | 0.50 |
| 1:B:4609:VAL:HG22 | 1:B:4642:VAL:HB | 1.94 | 0.50 |
| 2:D:281:VAL:HG13 | 2:D:590:SER:HA | 1.93 | 0.50 |
| 2:D:327:TYR:HB3 | 2:D:360:TRP:HH2 | 1.77 | 0.50 |
| 1:A:2855:LEU:HD11 | 1:A:2863:ARG:HE | 1.77 | 0.50 |
| 1:A:3322:GLU:OE2 | 1:A:3377:TYR:OH | 2.29 | 0.50 |
| 1:A:3984:GLY:O | 1:A:3988:HIS:ND1 | 2.43 | 0.50 |
| 1:B:4413:PHE:O | 1:B:4417:VAL:HG23 | 2.11 | 0.50 |
| 6:L:15:ASP:OD1 | 6:L:16:GLU:N | 2.45 | 0.50 |
| 1:A:2181:GLU:HG3 | 1:A:2244:LEU:HB2 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2257:LYS:NZ | 1:A:2308:ASP:OD2 | 2.39 | 0.50 |
| 1:A:3196:GLU:O | 1:A:3199:MET:HG3 | 2.11 | 0.50 |
| 1:B:1191:ARG:O | 1:B:1194:GLN:NE2 | 2.45 | 0.50 |
| 1:B:1798:MET:HG3 | 1:B:1800:GLN:HE21 | 1.77 | 0.50 |
| 1:B:3892:LEU:HD13 | 1:B:3983:ILE:HG21 | 1.94 | 0.50 |
| 1:B:4302:ARG:O | 1:B:4306:VAL:HG23 | 2.12 | 0.50 |
| 1:B:4558:PHE:O | 1:B:4589:GLN:HA | 2.11 | 0.50 |
| 3:F:48:ARG:HD2 | 3:F:49:SER:HB2 | 1.93 | 0.50 |
| 1:A:1728:GLY:O | 1:A:1729:LYS:HG3 | 2.12 | 0.49 |
| 1:A:2592:VAL:HB | 1:A:2733:VAL:HG22 | 1.94 | 0.49 |
| 1:A:2922:ILE:HG23 | 1:A:2933:LEU:HD11 | 1.94 | 0.49 |
| 1:B:4416:GLU:HB3 | 1:B:4489:LEU:HD11 | 1.93 | 0.49 |
| 2:D:301:ASN:OD1 | 2:D:302:ASN:N | 2.44 | 0.49 |
| 4:H:80:VAL:HG22 | 4:H:82:PRO:HD3 | 1.94 | 0.49 |
| 1:A:441:LYS:HB2 | 1:A:445:ASN:HA | 1.93 | 0.49 |
| 1:A:3835:ILE:HD13 | 1:A:3867:ALA:HA | 1.94 | 0.49 |
| 1:A:4015:GLU:N | 1:A:4015:GLU:OE2 | 2.41 | 0.49 |
| 1:B:59:LYS:HZ1 | 1:B:63:GLU:HB2 | 1.76 | 0.49 |
| 1:B:2175:MET:HB3 | 1:B:2178:LEU:HB3 | 1.93 | 0.49 |
| 1:B:2572:LEU:O | 1:B:2576:ARG:HG3 | 2.12 | 0.49 |
| 2:D:374:PRO:HD3 | 2:D:416:SER:HA | 1.94 | 0.49 |
| 2:D:506:VAL:H | 2:D:520:PHE:HB3 | 1.77 | 0.49 |
| 6:L:70:MET:HB2 | 6:L:103:TYR:HB2 | 1.92 | 0.49 |
| 1:A:206:SER:O | 1:A:208:PRO:HD3 | 2.12 | 0.49 |
| 1:A:242:LEU:HD22 | 1:A:307:GLY:O | 2.12 | 0.49 |
| 1:A:285:LEU:O | 1:A:289:GLN:HG2 | 2.12 | 0.49 |
| 1:A:2620:LEU:HD21 | 1:A:2634:THR:OG1 | 2.12 | 0.49 |
| 1:A:3922:PRO:HG2 | 1:A:3924:ILE:HD11 | 1.94 | 0.49 |
| 1:A:4071:ILE:HG23 | 1:A:4077:PHE:HE1 | 1.77 | 0.49 |
| 1:B:386:ARG:HH11 | 1:B:455:ALA:HB2 | 1.75 | 0.49 |
| 1:B:530:VAL:HG13 | 1:B:553:TYR:CE1 | 2.47 | 0.49 |
| 1:B:659:THR:C | 1:B:663:LYS:HZ1 | 2.20 | 0.49 |
| 1:B:3650:ASN:HD21 | 1:B:3695:ARG:HH11 | 1.60 | 0.49 |
| 1:A:209:ILE:HG22 | 1:A:248:GLY:C | 2.37 | 0.49 |
| 1:A:1493:LEU:O | 1:A:1497:VAL:HG23 | 2.13 | 0.49 |
| 1:A:3585:ARG:NH1 | 1:A:3694:SER:O | 2.37 | 0.49 |
| 1:A:4095:MET:HG3 | 1:A:4125:PHE:HB2 | 1.94 | 0.49 |
| 1:A:4433:ASP:HB3 | 1:A:4448:LEU:HD21 | 1.95 | 0.49 |
| 1:B:1663:SER:OG | 1:B:1677:SER:OG | 2.26 | 0.49 |
| 1:B:1752:LEU:O | 1:B:1756:ILE:HG13 | 2.13 | 0.49 |
| 1:B:1934:GLU:OE2 | 1:B:2261:LYS:NZ | 2.33 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:2181:GLU:HG3 | 1:B:2244:LEU:HB2 | 1.93 | 0.49 |
| 1:A:428:GLU:O | 1:A:432:VAL:HG23 | 2.12 | 0.49 |
| 1:A:3001:ASP:OD1 | 1:A:3002:SER:N | 2.46 | 0.49 |
| 1:A:3401:ASN:O | 1:A:3405:MET:HE2 | 2.13 | 0.49 |
| 1:A:4009:VAL:HG13 | 1:A:4013:LEU:HD12 | 1.95 | 0.49 |
| 1:B:68:PHE:O | 1:B:120:LYS:NZ | 2.43 | 0.49 |
| 1:B:633:CYS:SG | 1:B:634:LYS:N | 2.85 | 0.49 |
| 1:B:1513:TYR:CD2 | 1:B:1517:GLU:HG2 | 2.48 | 0.49 |
| 1:B:1707:LYS:O | 1:B:1711:VAL:HG23 | 2.13 | 0.49 |
| 1:B:1734:ASP:HB3 | 1:B:1737:THR:HG22 | 1.93 | 0.49 |
| 1:B:1785:VAL:HG13 | 1:B:1815:LEU:HD12 | 1.95 | 0.49 |
| 1:B:3191:ARG:HD2 | 1:B:3500:MET:HE1 | 1.93 | 0.49 |
| 2:D:527:VAL:HA | 2:D:544:ASP:HA | 1.93 | 0.49 |
| 3:F:248:ASP:OD1 | 3:F:249:GLU:N | 2.45 | 0.49 |
| 4:G:64:ASN:OD1 | 4:H:73:SER:HB3 | 2.12 | 0.49 |
| 4:G:69:LEU:HD11 | 4:H:69:LEU:HD11 | 1.94 | 0.49 |
| 6:L:72:LYS:HE2 | 6:L:103:TYR:CZ | 2.47 | 0.49 |
| 1:A:3369:LYS:HG2 | 1:A:3372:MET:HE2 | 1.95 | 0.49 |
| 1:B:130:PRO:O | 1:B:134:GLN:N | 2.46 | 0.49 |
| 1:B:1128:LEU:HD21 | 1:B:1200:GLN:HG3 | 1.92 | 0.49 |
| 1:B:1187:VAL:O | 1:B:1191:ARG:N | 2.37 | 0.49 |
| 1:B:3922:PRO:HG2 | 1:B:3924:ILE:HD11 | 1.94 | 0.49 |
| 4:G:47:HIS:HA | 4:G:50:ILE:HG22 | 1.93 | 0.49 |
| 5:J:60:ARG:HE | 5:J:60:ARG:C | 2.21 | 0.49 |
| 1:A:189:LEU:HD13 | 1:B:185:LYS:HE2 | 1.94 | 0.49 |
| 1:A:1537:TRP:O | 1:A:1540:VAL:HG22 | 2.12 | 0.49 |
| 1:A:2319:LEU:HD13 | 1:A:2359:CYS:SG | 2.52 | 0.49 |
| 1:A:3294:ASN:HB3 | 1:A:3391:PRO:HB3 | 1.95 | 0.49 |
| 1:B:322:LEU:O | 1:B:326:LEU:N | 2.37 | 0.49 |
| 1:B:399:ARG:HE | 1:B:412:VAL:HG11 | 1.77 | 0.49 |
| 1:B:1460:GLU:HB3 | 1:B:1516:PHE:CZ | 2.47 | 0.49 |
| 1:B:1516:PHE:O | 1:B:1517:GLU:C | 2.56 | 0.49 |
| 1:B:3229:LEU:HD12 | 1:B:3461:ILE:HG23 | 1.94 | 0.49 |
| 1:B:4004:MET:O | 1:B:4004:MET:HE3 | 2.13 | 0.49 |
| 3:F:144:THR:HA | 3:F:147:GLU:OE2 | 2.13 | 0.49 |
| 1:A:1937:ASP:HA | 1:A:1967:MET:HE2 | 1.95 | 0.49 |
| 1:A:2346:GLN:HB3 | 1:A:2726:ARG:HD2 | 1.94 | 0.49 |
| 1:A:2593:LEU:HD11 | 1:A:2605:LEU:HB2 | 1.95 | 0.49 |
| 1:A:4096:LEU:HD13 | 1:A:4105:TRP:HH2 | 1.78 | 0.49 |
| 1:B:286:TYR:O | 1:B:290:GLU:HG2 | 2.12 | 0.49 |
| 1:B:365:ARG:HD3 | 1:B:433:LEU:HD22 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:804:LEU:HD11 | 1:B:899:TRP:CD1 | 2.48 | 0.49 |
| 1:B:1454:GLN:HA | 1:B:1457:MET:HE2 | 1.93 | 0.49 |
| 1:B:2320:ASP:OD1 | 1:B:2321:ASP:N | 2.43 | 0.49 |
| 1:B:3453:VAL:O | 1:B:3456:SER:OG | 2.22 | 0.49 |
| 1:B:3935:VAL:HG13 | 1:B:3947:LEU:HD23 | 1.93 | 0.49 |
| 3:F:62:GLU:OE2 | 3:F:141:ARG:NH2 | 2.42 | 0.49 |
| 4:H:22:VAL:H | 4:H:31:LYS:HZ3 | 1.60 | 0.49 |
| 1:A:35:ARG:HD3 | 1:A:53:GLU:HG2 | 1.93 | 0.49 |
| 1:A:368:ARG:HH12 | 1:A:436:ASP:CB | 2.26 | 0.49 |
| 1:A:1147:SER:O | 1:A:1151:GLN:HG2 | 2.13 | 0.49 |
| 1:A:1966:ARG:HA | 1:A:4101:LEU:HD13 | 1.95 | 0.49 |
| 1:A:2063:GLU:O | 1:A:2067:ASN:ND2 | 2.46 | 0.49 |
| 1:A:2813:LEU:HD13 | 1:A:2816:LEU:HD13 | 1.94 | 0.49 |
| 1:B:1131:PHE:O | 1:B:1135:LEU:HG | 2.12 | 0.49 |
| 1:B:1579:MET:HA | 1:B:1579:MET:HE3 | 1.95 | 0.49 |
| 1:B:2285:ARG:NH1 | 1:B:2331:GLU:OE2 | 2.35 | 0.49 |
| 1:B:2558:GLU:HG3 | 1:B:2560:HIS:CE1 | 2.48 | 0.49 |
| 1:B:2682:PHE:O | 1:B:2686:MET:HG2 | 2.13 | 0.49 |
| 1:B:3383:ASN:O | 1:B:3384:ARG:HB3 | 2.13 | 0.49 |
| 3:F:250:HIS:HD2 | 3:F:340:ILE:HG22 | 1.77 | 0.49 |
| 3:F:321:ALA:HA | 3:F:324:HIS:CD2 | 2.48 | 0.49 |
| 1:A:391:GLN:O | 1:A:395:VAL:HG23 | 2.13 | 0.49 |
| 1:A:1400:VAL:C | 1:A:1402:GLU:H | 2.20 | 0.49 |
| 1:A:1619:LEU:HD11 | 1:A:1638:LEU:HG | 1.93 | 0.49 |
| 1:A:3923:ARG:NH1 | 1:A:3925:GLN:HA | 2.28 | 0.49 |
| 1:B:1079:TRP:HB3 | 1:B:1131:PHE:CZ | 2.48 | 0.49 |
| 1:B:2115:LYS:NZ | 1:B:2126:GLU:OE1 | 2.43 | 0.49 |
| 1:B:2864:GLU:OE1 | 1:B:2864:GLU:N | 2.42 | 0.49 |
| 1:B:2956:LEU:HD22 | 1:B:2989:LYS:HB3 | 1.94 | 0.49 |
| 1:B:3518:GLY:O | 1:B:3525:ARG:NH2 | 2.45 | 0.49 |
| 1:B:3520:PHE:HB3 | 1:B:3524:MET:HB3 | 1.95 | 0.49 |
| 3:F:237:VAL:O | 3:F:241:GLU:HG3 | 2.12 | 0.49 |
| 1:A:1539:ASP:O | 1:A:1543:ARG:HG3 | 2.12 | 0.48 |
| 1:A:2297:LYS:O | 1:A:2338:ASN:ND2 | 2.42 | 0.48 |
| 1:A:3110:THR:O | 1:A:3140:ARG:NH1 | 2.46 | 0.48 |
| 1:A:3135:GLN:O | 1:A:3137:PRO:HD3 | 2.13 | 0.48 |
| 1:B:530:VAL:HG13 | 1:B:553:TYR:CZ | 2.48 | 0.48 |
| 1:B:1041:MET:HA | 1:B:1044:VAL:HG12 | 1.95 | 0.48 |
| 1:B:1218:TRP:CD1 | 1:B:1222:ASN:HD21 | 2.31 | 0.48 |
| 1:B:3451:TYR:CD1 | 1:B:3454:LEU:HD21 | 2.48 | 0.48 |
| 2:D:437:MET:HB3 | 2:D:449:VAL:HG12 | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:485:HIS:NE2 | 2:D:487:ALA:O | 2.45 | 0.48 |
| 1:A:341:LEU:O | 1:A:345:LEU:HG | 2.14 | 0.48 |
| 1:A:413:MET:HE1 | 1:A:463:LEU:O | 2.12 | 0.48 |
| 1:A:1987:ASN:OD1 | 1:A:1990:TYR:HB3 | 2.13 | 0.48 |
| 1:A:2569:VAL:HB | 1:A:2747:ILE:HG23 | 1.94 | 0.48 |
| 1:A:3606:ASP:OD1 | 1:A:3606:ASP:N | 2.45 | 0.48 |
| 1:A:3882:THR:HG23 | 1:A:4343:MET:HG3 | 1.95 | 0.48 |
| 1:B:1161:ALA:HA | 1:B:1163:THR:HG23 | 1.95 | 0.48 |
| 1:B:1810:HIS:CD2 | 1:B:1878:LYS:HB2 | 2.47 | 0.48 |
| 1:B:2320:ASP:OD2 | 1:B:2322:ASN:ND2 | 2.46 | 0.48 |
| 1:B:2446:ILE:HG13 | 1:B:2735:TYR:CD1 | 2.47 | 0.48 |
| 1:B:2844:ARG:O | 1:B:2848:GLU:HG3 | 2.13 | 0.48 |
| 1:B:2892:TYR:O | 1:B:2896:ARG:HG2 | 2.13 | 0.48 |
| 2:D:271:PHE:CZ | 2:D:273:ASP:HB2 | 2.48 | 0.48 |
| 2:D:296:VAL:HG12 | 2:D:315:VAL:HG22 | 1.95 | 0.48 |
| 2:D:456:VAL:HG21 | 2:D:509:TRP:CZ2 | 2.48 | 0.48 |
| 4:H:69:LEU:HB3 | 4:H:80:VAL:HG13 | 1.94 | 0.48 |
| 5:I:7:VAL:HG23 | 5:I:77:TYR:HB2 | 1.94 | 0.48 |
| 6:K:62:LYS:HG3 | 6:K:113:ILE:HG12 | 1.94 | 0.48 |
| 1:A:1513:TYR:CE2 | 1:A:1517:GLU:HG2 | 2.48 | 0.48 |
| 1:A:2094:LYS:O | 1:A:2098:VAL:HG23 | 2.12 | 0.48 |
| 1:A:2248:GLU:OE1 | 1:A:2248:GLU:N | 2.37 | 0.48 |
| 1:A:2411:PRO:O | 1:A:2415:ILE:HG13 | 2.13 | 0.48 |
| 1:A:3240:LEU:O | 1:A:3244:VAL:HG23 | 2.12 | 0.48 |
| 1:B:1169:PHE:O | 1:B:1172:TYR:HB3 | 2.12 | 0.48 |
| 1:B:1619:LEU:HD21 | 1:B:1638:LEU:HD23 | 1.96 | 0.48 |
| 1:B:1987:ASN:OD1 | 1:B:1990:TYR:HB3 | 2.14 | 0.48 |
| 1:B:2784:PHE:HB2 | 1:B:2794:TYR:HE2 | 1.79 | 0.48 |
| 3:F:365:LYS:O | 3:F:368:SER:OG | 2.26 | 0.48 |
| 5:J:54:TRP:CD1 | 5:J:87:LYS:HB2 | 2.48 | 0.48 |
| 1:A:65:MET:O | 1:A:69:LEU:HG | 2.13 | 0.48 |
| 1:A:344:LEU:HD21 | 1:A:388:LEU:HD21 | 1.95 | 0.48 |
| 1:A:426:GLU:O | 1:A:430:LEU:HG | 2.14 | 0.48 |
| 1:A:1987:ASN:ND2 | 1:A:1989:ASN:OD1 | 2.46 | 0.48 |
| 1:B:185:LYS:O | 1:B:188:GLU:HG3 | 2.13 | 0.48 |
| 1:B:557:ILE:HA | 1:B:560:VAL:HG22 | 1.96 | 0.48 |
| 1:B:3135:GLN:O | 1:B:3137:PRO:HD3 | 2.13 | 0.48 |
| 1:B:3447:TYR:O | 1:B:3451:TYR:HD2 | 1.96 | 0.48 |
| 1:B:3606:ASP:N | 1:B:3606:ASP:OD1 | 2.45 | 0.48 |
| 2:D:330:HIS:HB3 | 2:D:367:ARG:HG3 | 1.94 | 0.48 |
| 1:A:322:LEU:HG | 1:A:325:ALA:HB2 | 1.95 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:337:LYS:HA | 1:A:363:HIS:CD2 | 2.48 | 0.48 |
| 1:A:2065:LEU:HB3 | 1:A:2137:LEU:HD11 | 1.95 | 0.48 |
| 1:A:3099:THR:HG23 | 1:A:3148:VAL:HG11 | 1.94 | 0.48 |
| 1:A:3176:TYR:O | 1:A:3180:ILE:HG12 | 2.14 | 0.48 |
| 1:A:3376:SER:HA | 1:A:3380:GLU:OE1 | 2.12 | 0.48 |
| 1:A:4532:ASN:HB3 | 1:A:4534:TRP:CE2 | 2.49 | 0.48 |
| 1:B:89:GLY:HA2 | 1:B:244:GLN:HG2 | 1.95 | 0.48 |
| 1:B:1075:ASP:HB3 | 1:B:1078:LYS:HB3 | 1.95 | 0.48 |
| 1:B:4191:GLN:O | 1:B:4194:LEU:HB2 | 2.13 | 0.48 |
| 3:F:228:LEU:HD23 | 3:F:268:ALA:HB3 | 1.96 | 0.48 |
| 3:F:250:HIS:CD2 | 3:F:340:ILE:HG22 | 2.49 | 0.48 |
| 3:F:345:VAL:HG22 | 3:F:347:LYS:H | 1.79 | 0.48 |
| 5:J:40:ALA:HB1 | 5:J:44:LYS:HZ1 | 1.78 | 0.48 |
| 6:L:34:TYR:HD1 | 6:L:102:MET:SD | 2.36 | 0.48 |
| 1:A:241:PHE:O | 1:A:245:LEU:HG | 2.13 | 0.48 |
| 1:A:1465:GLN:O | 1:A:1469:VAL:HG23 | 2.13 | 0.48 |
| 1:A:3194:LEU:HD23 | 1:A:3500:MET:SD | 2.54 | 0.48 |
| 1:B:1464:LYS:O | 1:B:1467:ARG:N | 2.46 | 0.48 |
| 1:B:2820:GLY:O | 1:B:2824:ILE:HG13 | 2.13 | 0.48 |
| 2:D:268:ASN:HB2 | 2:D:597:TYR:HA | 1.95 | 0.48 |
| 2:D:359:LEU:HD22 | 2:D:415:LEU:HD13 | 1.96 | 0.48 |
| 2:D:504:TRP:CD1 | 2:D:523:ASN:H | 2.32 | 0.48 |
| 3:F:146:MET:HE1 | 3:F:257:HIS:HB3 | 1.95 | 0.48 |
| 5:J:54:TRP:NE1 | 5:J:87:LYS:HB2 | 2.29 | 0.48 |
| 6:K:34:TYR:CE2 | 6:K:71:GLN:HB2 | 2.48 | 0.48 |
| 1:A:300:THR:HA | 1:A:303:ILE:HG12 | 1.96 | 0.48 |
| 1:A:351:ASP:O | 1:A:355:GLN:HG2 | 2.14 | 0.48 |
| 1:A:1861:MET:HE2 | 1:A:1890:LEU:HB2 | 1.96 | 0.48 |
| 1:A:4247:MET:HE2 | 1:A:4269:LEU:HD21 | 1.94 | 0.48 |
| 1:B:253:ILE:HA | 1:B:256:ILE:HG12 | 1.95 | 0.48 |
| 1:B:870:ASP:HB3 | 1:B:873:THR:HG22 | 1.96 | 0.48 |
| 1:B:1469:VAL:O | 1:B:1473:TYR:HB2 | 2.14 | 0.48 |
| 1:B:2629:GLU:O | 1:B:2633:LYS:HG2 | 2.13 | 0.48 |
| 2:D:278:LYS:HG2 | 2:D:280:ARG:NH1 | 2.29 | 0.48 |
| 2:D:422:MET:HE1 | 2:D:424:LEU:HA | 1.96 | 0.48 |
| 3:F:262:CYS:HB2 | 3:F:267:ALA:HB3 | 1.96 | 0.48 |
| 4:G:55:SER:HA | 4:G:58:ARG:HG2 | 1.96 | 0.48 |
| 1:A:333:ASN:HA | 1:A:336:MET:HE2 | 1.96 | 0.48 |
| 1:A:1201:ARG:NH2 | 1:B:967:GLN:O | 2.47 | 0.48 |
| 1:A:3843:ASN:ND2 | 1:A:3862:ASP:OD2 | 2.43 | 0.48 |
| 1:A:4007:MET:O | 1:A:4011:THR:HG23 | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:733:LEU:HD22 | 3:F:367:GLN:HE21 | 1.79 | 0.48 |
| 1:B:3321:LEU:HD22 | 1:B:3332:THR:HA | 1.95 | 0.48 |
| 1:B:3974:TRP:HZ2 | 1:B:3985:GLN:HG3 | 1.77 | 0.48 |
| 2:D:387:VAL:HG12 | 2:D:400:SER:HB2 | 1.95 | 0.48 |
| 5:J:60:ARG:O | 5:J:60:ARG:NE | 2.41 | 0.48 |
| 1:A:250:ASN:O | 1:A:254:ARG:HG2 | 2.14 | 0.48 |
| 1:A:460:GLN:O | 1:A:464:ASP:N | 2.30 | 0.48 |
| 1:A:3254:LYS:HE3 | 1:A:3437:ILE:HD11 | 1.96 | 0.48 |
| 1:A:3255:VAL:HA | 1:A:3258:GLN:CD | 2.39 | 0.48 |
| 1:B:2176:THR:O | 1:B:2180:GLU:HG2 | 2.13 | 0.48 |
| 5:J:8:ILE:HA | 5:J:76:PHE:HA | 1.95 | 0.48 |
| 1:A:136:ARG:NE | 1:B:139:THR:HG23 | 2.29 | 0.48 |
| 1:A:351:ASP:OD1 | 1:A:352:LYS:N | 2.47 | 0.48 |
| 1:A:368:ARG:HH12 | 1:A:436:ASP:HB3 | 1.78 | 0.48 |
| 1:A:405:ALA:O | 1:A:409:PHE:N | 2.46 | 0.48 |
| 1:A:1439:LEU:O | 1:A:1443:GLU:N | 2.46 | 0.48 |
| 1:A:2614:ASP:HA | 1:A:2657:LYS:NZ | 2.28 | 0.48 |
| 1:A:3429:LYS:O | 1:A:3433:VAL:HB | 2.14 | 0.48 |
| 1:A:3885:MET:HE1 | 1:A:3908:PHE:CE2 | 2.49 | 0.48 |
| 1:B:109:TYR:OH | 1:B:145:PRO:HB3 | 2.14 | 0.48 |
| 1:B:1465:GLN:O | 1:B:1469:VAL:HG23 | 2.14 | 0.48 |
| 1:B:2104:LYS:O | 1:B:2108:ILE:HG12 | 2.14 | 0.48 |
| 1:B:4297:PRO:HG3 | 1:B:4308:TRP:CG | 2.49 | 0.48 |
| 2:D:448:VAL:HG22 | 2:D:458:THR:HG23 | 1.96 | 0.48 |
| 3:F:247:ARG:HH22 | 3:F:329:THR:HB | 1.79 | 0.48 |
| 6:K:20:ILE:HD11 | 6:K:53:GLN:CB | 2.44 | 0.48 |
| 1:A:1504:VAL:HG11 | 1:A:1524:GLU:HB2 | 1.95 | 0.47 |
| 1:A:2149:LEU:HD11 | 1:A:2157:LEU:HD22 | 1.96 | 0.47 |
| 1:A:2917:ASP:O | 1:A:2921:ARG:HG3 | 2.12 | 0.47 |
| 1:B:326:LEU:HG | 1:B:330:ASN:HD21 | 1.78 | 0.47 |
| 1:B:1825:LEU:HA | 1:B:1830:ILE:HD13 | 1.95 | 0.47 |
| 1:B:2189:MET:HG3 | 1:B:2191:LEU:HD13 | 1.96 | 0.47 |
| 1:B:3473:ASN:OD1 | 1:B:3474:ARG:N | 2.47 | 0.47 |
| 1:B:3735:GLN:HE21 | 1:B:3791:MET:HG3 | 1.78 | 0.47 |
| 1:B:4288:VAL:HG11 | 1:B:4294:ILE:HG13 | 1.96 | 0.47 |
| 2:D:283:SER:HB2 | 2:D:298:SER:HB2 | 1.96 | 0.47 |
| 2:D:523:ASN:CG | 2:D:524:ALA:H | 2.22 | 0.47 |
| 2:D:599:VAL:HG13 | 2:D:604:ALA:HB2 | 1.95 | 0.47 |
| 1:A:136:ARG:HG3 | 1:B:152:PHE:CE2 | 2.49 | 0.47 |
| 1:A:362:THR:O | 1:A:365:ARG:HB2 | 2.14 | 0.47 |
| 1:A:1798:MET:HG3 | 1:A:1800:GLN:HE21 | 1.79 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2279:LEU:HA | 1:A:2698:GLN:HG2 | 1.95 | 0.47 |
| 1:A:3383:ASN:O | 1:A:3384:ARG:HB3 | 2.13 | 0.47 |
| 1:B:480:ILE:HG23 | 1:B:484:LEU:HB2 | 1.96 | 0.47 |
| 1:B:991:MET:HB3 | 1:B:995:SER:HG | 1.79 | 0.47 |
| 1:B:1174:GLN:O | 1:B:1178:ARG:NH1 | 2.48 | 0.47 |
| 1:B:2863:ARG:O | 1:B:2867:MET:HB2 | 2.14 | 0.47 |
| 1:B:3315:ALA:O | 1:B:3319:LEU:HG | 2.13 | 0.47 |
| 1:B:4604:VAL:HA | 1:B:4625:GLU:HA | 1.96 | 0.47 |
| 3:F:143:TRP:HA | 3:F:336:TYR:HE2 | 1.79 | 0.47 |
| 3:F:152:TRP:HA | 3:F:155:VAL:HB | 1.96 | 0.47 |
| 1:A:395:VAL:O | 1:A:399:ARG:HG2 | 2.15 | 0.47 |
| 1:A:1985:HIS:ND1 | 1:A:1997:ILE:HD13 | 2.30 | 0.47 |
| 1:A:3399:GLN:HA | 1:A:3402:TYR:HD2 | 1.79 | 0.47 |
| 1:B:1042:GLY:O | 1:B:1045:SER:OG | 2.33 | 0.47 |
| 1:B:3780:VAL:O | 1:B:3784:VAL:HG23 | 2.13 | 0.47 |
| 1:B:4545:VAL:HG22 | 1:B:4588:THR:HG22 | 1.96 | 0.47 |
| 6:K:17:VAL:HA | 6:K:20:ILE:HG22 | 1.96 | 0.47 |
| 1:A:22:GLN:HE21 | 1:A:125:ILE:HA | 1.78 | 0.47 |
| 1:A:3031:THR:O | 1:A:3035:GLU:HG2 | 2.14 | 0.47 |
| 1:B:68:PHE:HZ | 1:B:135:LEU:HD11 | 1.78 | 0.47 |
| 1:B:454:PRO:HG2 | 1:B:457:ARG:HG2 | 1.97 | 0.47 |
| 1:B:1861:MET:H | 1:B:1864:ALA:HB3 | 1.79 | 0.47 |
| 2:C:214:GLN:C | 2:D:209:ARG:HH12 | 2.23 | 0.47 |
| 3:F:120:LYS:HA | 3:F:159:HIS:CE1 | 2.50 | 0.47 |
| 1:A:1219:GLY:HA2 | 1:A:1222:ASN:ND2 | 2.29 | 0.47 |
| 1:A:1724:VAL:HA | 1:A:1727:PHE:CD2 | 2.48 | 0.47 |
| 1:A:2053:MET:HE1 | 1:A:2094:LYS:HG3 | 1.96 | 0.47 |
| 1:A:3219:ARG:HH21 | 1:A:3476:THR:HG21 | 1.79 | 0.47 |
| 1:A:3263:GLN:HA | 1:A:3266:LYS:HD2 | 1.95 | 0.47 |
| 1:B:361:PHE:CD1 | 1:B:364:LEU:HD11 | 2.49 | 0.47 |
| 1:B:525:LEU:O | 1:B:529:ASN:HB2 | 2.15 | 0.47 |
| 1:B:770:GLN:HG2 | 1:B:773:GLN:HE21 | 1.78 | 0.47 |
| 1:B:1013:THR:OG1 | 1:B:1014:GLU:N | 2.41 | 0.47 |
| 1:B:1751:VAL:HG11 | 1:B:1878:LYS:HE3 | 1.95 | 0.47 |
| 1:B:2464:GLN:HG2 | 1:B:2583:THR:HG23 | 1.96 | 0.47 |
| 3:F:88:TYR:HD1 | 3:F:107:TRP:CD1 | 2.32 | 0.47 |
| 4:G:53:ALA:O | 4:G:56:THR:HB | 2.15 | 0.47 |
| 6:K:43:THR:HG23 | 6:K:69:ILE:HD12 | 1.96 | 0.47 |
| 1:A:40:LEU:HD23 | 1:A:45:GLY:HA2 | 1.97 | 0.47 |
| 1:A:433:LEU:O | 1:A:437:ILE:HG12 | 2.15 | 0.47 |
| 1:A:1810:HIS:NE2 | 1:A:1876:GLN:O | 2.34 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3256:MET:HB3 | 1:A:3433:VAL:HG11 | 1.97 | 0.47 |
| 1:A:4482:PHE:O | 1:A:4486:ILE:HG12 | 2.14 | 0.47 |
| 1:B:852:ILE:HA | 1:B:855:GLU:CD | 2.39 | 0.47 |
| 1:B:1142:PHE:CE2 | 1:B:1214:ILE:HD12 | 2.50 | 0.47 |
| 1:B:1174:GLN:HA | 1:B:1177:LYS:HG2 | 1.97 | 0.47 |
| 1:B:2422:ILE:HD13 | 1:B:2487:GLU:HA | 1.97 | 0.47 |
| 1:A:146:TYR:OH | 1:B:164:TYR:HB3 | 2.14 | 0.47 |
| 1:A:194:LEU:HD23 | 1:A:194:LEU:H | 1.80 | 0.47 |
| 1:A:268:SER:OG | 1:B:176:ASP:OD2 | 2.22 | 0.47 |
| 1:A:277:PHE:CZ | 1:A:281:LEU:HD22 | 2.49 | 0.47 |
| 1:A:1176:LEU:O | 1:A:1180:ILE:HG13 | 2.15 | 0.47 |
| 1:A:1945:PHE:HB3 | 1:A:1978:ILE:HD11 | 1.95 | 0.47 |
| 1:A:2142:CYS:HA | 1:A:2146:VAL:HG23 | 1.96 | 0.47 |
| 1:B:213:ILE:HD13 | 1:B:300:THR:HG22 | 1.97 | 0.47 |
| 1:B:413:MET:HE2 | 1:B:467:ARG:HD2 | 1.96 | 0.47 |
| 1:B:893:TYR:HB2 | 1:B:896:LEU:HD21 | 1.96 | 0.47 |
| 1:B:1628:ARG:NH1 | 1:B:1657:MET:O | 2.41 | 0.47 |
| 1:B:2569:VAL:HB | 1:B:2747:ILE:HG23 | 1.97 | 0.47 |
| 1:B:2952:TRP:CE3 | 1:B:2953:MET:HG3 | 2.49 | 0.47 |
| 1:B:3240:LEU:HA | 1:B:3243:MET:HG2 | 1.96 | 0.47 |
| 1:B:3250:ALA:O | 1:B:3254:LYS:HG3 | 2.14 | 0.47 |
| 1:B:3452:ALA:O | 1:B:3455:ILE:HG22 | 2.15 | 0.47 |
| 1:B:3843:ASN:ND2 | 1:B:3862:ASP:OD2 | 2.44 | 0.47 |
| 1:B:4093:TRP:CD1 | 1:B:4123:ARG:HB2 | 2.50 | 0.47 |
| 1:B:4173:PRO:HG2 | 1:B:4176:ARG:HH21 | 1.80 | 0.47 |
| 1:B:4282:PHE:HB3 | 1:B:4296:MET:HB3 | 1.97 | 0.47 |
| 1:B:4525:ARG:NH2 | 1:B:4539:LEU:O | 2.47 | 0.47 |
| 2:D:343:PHE:HD2 | 2:D:412:LEU:HD23 | 1.79 | 0.47 |
| 3:F:70:LEU:O | 3:F:74:LEU:HD23 | 2.15 | 0.47 |
| 3:F:146:MET:HG3 | 3:F:336:TYR:CG | 2.50 | 0.47 |
| 4:G:49:PHE:CZ | 4:H:53:ALA:HB2 | 2.50 | 0.47 |
| 5:I:17:MET:HE3 | 5:I:46:PHE:CE2 | 2.49 | 0.47 |
| 5:J:57:ILE:HG22 | 5:J:84:LEU:HB3 | 1.96 | 0.47 |
| 6:K:47:VAL:HG23 | 6:K:65:VAL:HG13 | 1.97 | 0.47 |
| 6:K:111:LEU:HD11 | 6:L:64:ILE:HD11 | 1.96 | 0.47 |
| 1:A:1752:LEU:O | 1:A:1756:ILE:HG13 | 2.14 | 0.47 |
| 1:A:1947:GLY:O | 1:A:1951:VAL:HG12 | 2.15 | 0.47 |
| 1:A:2176:THR:O | 1:A:2180:GLU:HG2 | 2.15 | 0.47 |
| 1:B:292:ARG:HH12 | 1:B:320:THR:HG22 | 1.79 | 0.47 |
| 1:B:296:GLU:O | 1:B:300:THR:HG23 | 2.15 | 0.47 |
| 1:B:1672:VAL:HA | 1:B:1691:SER:HA | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:205:ARG:HH21 | 2:D:327:TYR:HE1 | 1.62 | 0.47 |
| 2:D:296:VAL:HG13 | 2:D:340:PHE:CZ | 2.50 | 0.47 |
| 3:F:248:ASP:O | 3:F:251:LEU:HG | 2.15 | 0.47 |
| 4:G:23:VAL:HA | 4:G:29:PRO:HA | 1.96 | 0.47 |
| 4:H:82:PRO:HB3 | 4:H:87:PHE:HD1 | 1.80 | 0.47 |
| 1:A:31:GLN:HE21 | 1:A:56:LEU:HG | 1.79 | 0.47 |
| 1:A:107:ILE:HB | 1:B:160:PHE:CZ | 2.50 | 0.47 |
| 1:A:3886:LEU:HD11 | 1:A:4346:MET:HG3 | 1.96 | 0.47 |
| 1:A:4191:GLN:O | 1:A:4194:LEU:HB2 | 2.15 | 0.47 |
| 1:B:210:HIS:CE1 | 1:B:212:MET:HG3 | 2.50 | 0.47 |
| 1:B:921:ALA:O | 1:B:924:GLN:HG3 | 2.14 | 0.47 |
| 2:C:548:ARG:HA | 2:C:566:SER:HA | 1.96 | 0.47 |
| 3:F:156:LEU:HD22 | 3:F:223:LEU:HD12 | 1.97 | 0.47 |
| 1:A:55:ALA:HB3 | 1:A:101:TYR:CD2 | 2.50 | 0.47 |
| 1:A:329:VAL:C | 1:A:331:ASP:N | 2.72 | 0.47 |
| 1:A:1661:VAL:HG22 | 1:A:1676:ILE:HD12 | 1.97 | 0.47 |
| 1:A:3707:SER:O | 1:A:3711:GLN:HG3 | 2.16 | 0.47 |
| 1:A:4209:GLU:OE1 | 1:A:4213:ARG:NH1 | 2.48 | 0.47 |
| 1:B:52:LEU:O | 1:B:56:LEU:HG | 2.15 | 0.47 |
| 1:B:1800:GLN:OE1 | 1:B:1804:ARG:NH1 | 2.45 | 0.47 |
| 1:B:3468:VAL:O | 1:B:3472:VAL:HG23 | 2.15 | 0.47 |
| 1:B:4277:SER:HA | 1:B:4282:PHE:CD2 | 2.50 | 0.47 |
| 6:K:77:LEU:HD11 | 6:K:105:ILE:HD12 | 1.96 | 0.47 |
| 1:A:155:ASN:O | 1:B:107:ILE:HD13 | 2.16 | 0.46 |
| 1:A:368:ARG:NH1 | 1:A:436:ASP:HB3 | 2.30 | 0.46 |
| 1:A:402:MET:SD | 1:A:535:GLY:HA3 | 2.55 | 0.46 |
| 1:B:724:ARG:HH11 | 1:B:726:ARG:HE | 1.63 | 0.46 |
| 1:B:1347:LYS:O | 1:B:1432:GLY:N | 2.49 | 0.46 |
| 1:B:2222:MET:HG2 | 1:B:2364:PHE:CE1 | 2.50 | 0.46 |
| 1:B:3377:TYR:O | 1:B:3381:ILE:HG12 | 2.15 | 0.46 |
| 1:B:3399:GLN:HA | 1:B:3402:TYR:HD2 | 1.80 | 0.46 |
| 1:B:3449:GLU:O | 1:B:3453:VAL:HG23 | 2.16 | 0.46 |
| 1:B:4528:VAL:HG11 | 1:B:4592:TRP:HB2 | 1.97 | 0.46 |
| 2:D:504:TRP:NE1 | 2:D:522:ASP:H | 2.13 | 0.46 |
| 6:K:12:PHE:CZ | 6:K:17:VAL:HG21 | 2.50 | 0.46 |
| 6:L:83:CYS:HB2 | 6:L:85:TRP:CZ3 | 2.51 | 0.46 |
| 1:A:285:LEU:CA | 1:A:288:ILE:HG22 | 2.40 | 0.46 |
| 1:A:409:PHE:O | 1:A:413:MET:HG3 | 2.16 | 0.46 |
| 1:A:2039:LEU:HD12 | 1:A:4254:GLY:HA2 | 1.96 | 0.46 |
| 1:A:3008:MET:O | 1:A:3012:LEU:HG | 2.14 | 0.46 |
| 1:A:3892:LEU:HD13 | 1:A:3983:ILE:HG21 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:4422:LYS:NZ | 1:A:4426:ASP:OD2 | 2.46 | 0.46 |
| 1:B:338:ASP:OD1 | 1:B:339:PHE:N | 2.48 | 0.46 |
| 1:B:717:ILE:HG22 | 1:B:718:PHE:CD2 | 2.49 | 0.46 |
| 1:B:1163:THR:O | 1:B:1167:VAL:N | 2.33 | 0.46 |
| 1:B:2070:VAL:HB | 1:B:2071:PRO:HD3 | 1.97 | 0.46 |
| 1:B:3570:ASP:OD1 | 1:B:3571:ASP:N | 2.48 | 0.46 |
| 1:B:3769:THR:O | 1:B:3773:LEU:HG | 2.16 | 0.46 |
| 2:C:338:ALA:HA | 2:C:350:GLY:HA2 | 1.97 | 0.46 |
| 2:D:553:ASN:OD1 | 2:D:554:LEU:N | 2.49 | 0.46 |
| 3:F:270:ILE:HG21 | 3:F:283:LEU:HD13 | 1.97 | 0.46 |
| 6:K:70:MET:O | 6:K:102:MET:HA | 2.14 | 0.46 |
| 6:K:73:ASN:ND2 | 6:L:75:ALA:HB2 | 2.29 | 0.46 |
| 1:A:30:LEU:HD21 | 1:A:69:LEU:HD11 | 1.97 | 0.46 |
| 1:A:1172:TYR:O | 1:A:1175:SER:OG | 2.26 | 0.46 |
| 1:A:2620:LEU:HD22 | 1:A:2630:LEU:HG | 1.97 | 0.46 |
| 1:B:43:GLU:OE2 | 1:B:81:ARG:NH2 | 2.39 | 0.46 |
| 1:B:335:LEU:HD13 | 1:B:367:ILE:HD12 | 1.97 | 0.46 |
| 1:B:2061:THR:OG1 | 1:B:2133:GLU:OE1 | 2.31 | 0.46 |
| 1:B:2481:MET:CE | 1:B:2485:GLN:HG2 | 2.44 | 0.46 |
| 1:B:3237:ASN:O | 1:B:3241:LYS:HG2 | 2.16 | 0.46 |
| 1:B:3294:ASN:HB3 | 1:B:3391:PRO:HB3 | 1.97 | 0.46 |
| 2:D:278:LYS:O | 2:D:280:ARG:HG3 | 2.15 | 0.46 |
| 1:A:374:ILE:HB | 1:A:446:LEU:HD11 | 1.97 | 0.46 |
| 1:A:378:LEU:O | 1:A:452:ILE:HG22 | 2.16 | 0.46 |
| 1:A:2104:LYS:O | 1:A:2108:ILE:HG12 | 2.16 | 0.46 |
| 1:A:2820:GLY:O | 1:A:2824:ILE:HG13 | 2.15 | 0.46 |
| 1:A:3340:SER:O | 1:A:3346:ASN:ND2 | 2.49 | 0.46 |
| 1:A:3547:ILE:HD13 | 1:A:3552:TYR:HD1 | 1.81 | 0.46 |
| 1:A:4172:SER:OG | 1:A:4173:PRO:HD3 | 2.15 | 0.46 |
| 1:B:283:ARG:HG3 | 1:B:287:ARG:HH12 | 1.80 | 0.46 |
| 1:B:1146:ILE:O | 1:B:1150:ARG:HG2 | 2.15 | 0.46 |
| 1:B:2319:LEU:HD13 | 1:B:2359:CYS:SG | 2.55 | 0.46 |
| 1:B:3143:ILE:HD13 | 1:B:3541:ILE:HD13 | 1.98 | 0.46 |
| 2:D:493:PHE:HD1 | 2:D:496:LEU:HD11 | 1.81 | 0.46 |
| 1:A:409:PHE:CZ | 1:A:413:MET:HE3 | 2.49 | 0.46 |
| 1:A:2465:ALA:HB2 | 1:A:2493:TYR:CE1 | 2.50 | 0.46 |
| 1:A:3251:GLU:HG3 | 1:B:3248:GLN:NE2 | 2.31 | 0.46 |
| 1:A:3447:TYR:N | 1:A:3447:TYR:CD1 | 2.83 | 0.46 |
| 1:A:3567:LEU:HD12 | 1:A:3568:PRO:HD2 | 1.98 | 0.46 |
| 1:A:3910:ARG:NH2 | 1:A:4344:LEU:HD11 | 2.29 | 0.46 |
| 1:B:1224:ILE:HD12 | 1:B:1228:LYS:NZ | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1543:ARG:HA | 1:B:1546:TYR:CE2 | 2.50 | 0.46 |
| 1:B:2445:HIS:NE2 | 1:B:2449:LEU:HD22 | 2.31 | 0.46 |
| 1:B:2751:PHE:HB3 | 1:B:2803:VAL:HG11 | 1.96 | 0.46 |
| 1:B:2937:GLY:C | 1:B:3070:PRO:HD3 | 2.41 | 0.46 |
| 1:B:4543:VAL:HG12 | 1:B:4590:LEU:HD22 | 1.97 | 0.46 |
| 6:L:70:MET:O | 6:L:102:MET:HA | 2.15 | 0.46 |
| 1:A:2070:VAL:HB | 1:A:2071:PRO:HD3 | 1.96 | 0.46 |
| 1:A:3177:LEU:HD23 | 1:A:3180:ILE:HD11 | 1.97 | 0.46 |
| 1:A:4288:VAL:HG11 | 1:A:4294:ILE:HG13 | 1.98 | 0.46 |
| 1:A:4606:THR:HA | 1:A:4622:VAL:O | 2.15 | 0.46 |
| 1:B:212:MET:HA | 1:B:215:ASN:HD21 | 1.80 | 0.46 |
| 1:B:581:MET:HG2 | 1:B:611:ARG:NH2 | 2.30 | 0.46 |
| 1:B:1023:LEU:HD12 | 1:B:1033:LEU:HD22 | 1.97 | 0.46 |
| 1:B:1213:ASN:HA | 5:J:11:ALA:H | 1.80 | 0.46 |
| 1:B:1666:LEU:HD23 | 1:B:1673:VAL:HA | 1.98 | 0.46 |
| 1:B:2387:LEU:N | 1:B:2416:GLN:OE1 | 2.33 | 0.46 |
| 1:B:2635:PHE:CZ | 1:B:2686:MET:HE1 | 2.51 | 0.46 |
| 1:B:2643:ARG:NH1 | 1:B:2643:ARG:HB3 | 2.30 | 0.46 |
| 2:D:364:SER:HB2 | 2:D:366:LYS:HE3 | 1.97 | 0.46 |
| 2:D:589:ASP:OD1 | 2:D:590:SER:N | 2.48 | 0.46 |
| 1:A:189:LEU:HD21 | 1:B:185:LYS:HB3 | 1.96 | 0.46 |
| 1:A:373:PRO:O | 1:A:377:ALA:N | 2.38 | 0.46 |
| 1:A:1543:ARG:HA | 1:A:1546:TYR:CE2 | 2.50 | 0.46 |
| 1:A:1806:ARG:NH2 | 1:A:1877:ASP:OD1 | 2.49 | 0.46 |
| 1:A:3922:PRO:HD2 | 1:A:3936:VAL:HG11 | 1.97 | 0.46 |
| 1:B:126:ASP:H | 1:B:134:GLN:HE22 | 1.62 | 0.46 |
| 1:B:526:ALA:C | 1:B:553:TYR:HH | 2.09 | 0.46 |
| 1:B:960:HIS:O | 1:B:1107:ILE:HA | 2.16 | 0.46 |
| 1:B:1037:TYR:O | 1:B:1040:VAL:HB | 2.16 | 0.46 |
| 1:B:4172:SER:OG | 1:B:4173:PRO:HD3 | 2.14 | 0.46 |
| 1:B:4414:GLU:O | 1:B:4418:LYS:HE2 | 2.16 | 0.46 |
| 1:A:360:ILE:O | 1:A:364:LEU:HG | 2.15 | 0.46 |
| 1:A:379:ARG:O | 1:A:382:GLU:HB3 | 2.15 | 0.46 |
| 1:B:335:LEU:HG | 1:B:366:LYS:NZ | 2.31 | 0.46 |
| 1:B:817:ALA:HA | 3:F:366:GLN:NE2 | 2.31 | 0.46 |
| 1:B:2527:PRO:HD3 | 1:B:2545:TRP:CE2 | 2.51 | 0.46 |
| 2:D:211:LEU:HD23 | 4:H:15:LYS:HE3 | 1.98 | 0.46 |
| 2:D:505:THR:HG22 | 2:D:507:LYS:HG3 | 1.98 | 0.46 |
| 6:K:17:VAL:O | 6:K:20:ILE:HG22 | 2.16 | 0.46 |
| 1:A:146:TYR:CZ | 1:B:164:TYR:HD2 | 2.33 | 0.46 |
| 1:A:274:GLU:HG2 | 1:A:380:LEU:HD11 | 1.98 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2837:LEU:O | 1:A:2843:ARG:NH2 | 2.49 | 0.46 |
| 1:A:3553:LEU:HB2 | 1:A:3578:ILE:HD13 | 1.98 | 0.46 |
| 1:A:4436:GLN:HG2 | 1:A:4442:LYS:HG2 | 1.98 | 0.46 |
| 1:B:72:PRO:O | 1:B:75:HIS:NE2 | 2.49 | 0.46 |
| 1:B:195:HIS:CE1 | 1:B:198:GLN:HE21 | 2.34 | 0.46 |
| 1:B:382:GLU:O | 1:B:386:ARG:HG2 | 2.16 | 0.46 |
| 1:B:960:HIS:CE1 | 1:B:1107:ILE:HG22 | 2.51 | 0.46 |
| 1:B:3263:GLN:HA | 1:B:3266:LYS:HD2 | 1.96 | 0.46 |
| 1:B:3716:VAL:HB | 1:B:3836:TYR:OH | 2.15 | 0.46 |
| 1:B:4043:MET:HE1 | 1:B:4055:VAL:HG23 | 1.97 | 0.46 |
| 1:B:4297:PRO:HG3 | 1:B:4308:TRP:CD2 | 2.50 | 0.46 |
| 2:C:406:LYS:HA | 2:C:423:GLU:HA | 1.98 | 0.46 |
| 2:D:207:VAL:HG21 | 4:H:11:LEU:HD11 | 1.98 | 0.46 |
| 2:D:536:HIS:HB3 | 2:D:539:LEU:HB3 | 1.98 | 0.46 |
| 4:G:70:ARG:NH2 | 4:G:72:ARG:HH21 | 2.13 | 0.46 |
| 1:A:29:VAL:HA | 1:A:32:LYS:HE2 | 1.97 | 0.46 |
| 1:A:300:THR:O | 1:A:304:LEU:HG | 2.16 | 0.46 |
| 1:A:3451:TYR:CD1 | 1:A:3454:LEU:HD21 | 2.51 | 0.46 |
| 1:B:1194:GLN:NE2 | 1:B:1195:ARG:HG3 | 2.31 | 0.46 |
| 1:B:2486:LEU:O | 1:B:2490:ILE:HG12 | 2.16 | 0.46 |
| 1:B:2667:ASN:ND2 | 1:B:2712:CYS:HB2 | 2.31 | 0.46 |
| 1:B:2917:ASP:O | 1:B:2921:ARG:HG3 | 2.16 | 0.46 |
| 1:B:3966:PRO:HG3 | 1:B:3997:ARG:NH1 | 2.31 | 0.46 |
| 1:A:372:TYR:CD2 | 1:A:377:ALA:HB2 | 2.51 | 0.45 |
| 1:A:377:ALA:O | 1:A:380:LEU:HB2 | 2.16 | 0.45 |
| 1:A:2554:GLN:HE21 | 1:A:2753:ARG:HH22 | 1.63 | 0.45 |
| 1:A:3514:ILE:HD11 | 1:A:3553:LEU:HD22 | 1.97 | 0.45 |
| 1:A:3812:TYR:O | 1:A:3815:MET:HB2 | 2.16 | 0.45 |
| 1:B:842:ASN:O | 1:B:845:GLU:HG3 | 2.15 | 0.45 |
| 2:D:211:LEU:HA | 4:H:15:LYS:HE3 | 1.98 | 0.45 |
| 2:D:457:TYR:HB3 | 2:D:468:ILE:HD12 | 1.98 | 0.45 |
| 4:H:80:VAL:HA | 4:H:88:LEU:HB2 | 1.98 | 0.45 |
| 5:J:13:MET:HG2 | 5:J:73:PHE:O | 2.16 | 0.45 |
| 1:A:2001:LEU:HD12 | 1:A:2006:VAL:HG11 | 1.97 | 0.45 |
| 1:A:3212:VAL:HA | 1:A:3215:VAL:HG12 | 1.98 | 0.45 |
| 1:A:3377:TYR:O | 1:A:3381:ILE:HG12 | 2.16 | 0.45 |
| 1:A:3443:SER:O | 1:A:3444:ILE:C | 2.59 | 0.45 |
| 1:A:3570:ASP:OD1 | 1:A:3571:ASP:N | 2.48 | 0.45 |
| 1:A:3654:ARG:NH2 | 1:A:3668:ASP:OD1 | 2.49 | 0.45 |
| 1:A:3982:PRO:HA | 1:A:3985:GLN:HG2 | 1.98 | 0.45 |
| 1:B:126:ASP:H | 1:B:134:GLN:NE2 | 2.14 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:365:ARG:HH22 | 1:B:432:VAL:HB | 1.82 | 0.45 |
| 1:B:639:ARG:NH2 | 2:D:574:ASN:HD21 | 2.13 | 0.45 |
| 1:B:1170:ILE:HG22 | 1:B:1174:GLN:HE22 | 1.81 | 0.45 |
| 1:B:1214:ILE:HA | 1:B:1217:GLU:HG2 | 1.97 | 0.45 |
| 1:B:2142:CYS:HA | 1:B:2146:VAL:HG23 | 1.97 | 0.45 |
| 1:B:2231:SER:HA | 1:B:2234:TRP:CD1 | 2.51 | 0.45 |
| 1:B:2918:HIS:O | 1:B:2922:ILE:HG13 | 2.16 | 0.45 |
| 1:B:4606:THR:HA | 1:B:4622:VAL:O | 2.16 | 0.45 |
| 2:C:204:THR:HA | 4:G:10:ARG:NH1 | 2.30 | 0.45 |
| 5:I:43:LYS:HD2 | 5:J:65:TYR:O | 2.16 | 0.45 |
| 1:A:292:ARG:HG2 | 1:A:298:LEU:HD23 | 1.98 | 0.45 |
| 1:A:1457:MET:HE1 | 1:A:1461:GLU:OE2 | 2.16 | 0.45 |
| 1:A:1619:LEU:HD21 | 1:A:1638:LEU:HD23 | 1.99 | 0.45 |
| 1:A:2422:ILE:HD13 | 1:A:2487:GLU:HA | 1.98 | 0.45 |
| 1:A:2665:GLU:HB3 | 1:A:2668:LEU:HD12 | 1.98 | 0.45 |
| 1:A:2892:TYR:O | 1:A:2896:ARG:HG2 | 2.16 | 0.45 |
| 1:B:94:GLU:HB3 | 1:B:251:ARG:HB2 | 1.98 | 0.45 |
| 1:B:464:ASP:OD1 | 1:B:465:GLN:N | 2.50 | 0.45 |
| 1:B:3514:ILE:HD11 | 1:B:3553:LEU:HD22 | 1.97 | 0.45 |
| 1:B:4092:ARG:HG3 | 1:B:4093:TRP:N | 2.31 | 0.45 |
| 1:B:4099:VAL:HG21 | 1:B:4126:LEU:HB3 | 1.97 | 0.45 |
| 3:F:335:ALA:HB3 | 3:F:338:ASP:OD1 | 2.16 | 0.45 |
| 5:I:6:ALA:O | 5:I:8:ILE:HG13 | 2.17 | 0.45 |
| 6:K:77:LEU:HD11 | 6:K:105:ILE:CD1 | 2.46 | 0.45 |
| 1:A:4013:LEU:HD13 | 1:A:4017:PHE:CE2 | 2.51 | 0.45 |
| 1:B:180:PRO:O | 1:B:184:LYS:HG2 | 2.16 | 0.45 |
| 1:B:2538:GLU:HB3 | 1:B:2548:TRP:CE2 | 2.51 | 0.45 |
| 1:B:2944:THR:O | 1:B:2948:ARG:HG3 | 2.16 | 0.45 |
| 1:B:3113:MET:SD | 1:B:3184:ALA:HA | 2.56 | 0.45 |
| 1:B:3703:VAL:HG21 | 1:B:3829:LEU:HD22 | 1.98 | 0.45 |
| 1:B:4096:LEU:HD13 | 1:B:4105:TRP:HH2 | 1.81 | 0.45 |
| 2:D:266:SER:O | 2:D:597:TYR:HB2 | 2.15 | 0.45 |
| 2:D:504:TRP:HA | 2:D:527:VAL:HG12 | 1.98 | 0.45 |
| 3:F:227:VAL:HG13 | 3:F:267:ALA:HB2 | 1.99 | 0.45 |
| 3:F:315:ASP:OD1 | 3:F:316:ASN:N | 2.49 | 0.45 |
| 1:A:27:VAL:O | 1:A:31:GLN:HB2 | 2.16 | 0.45 |
| 1:A:143:ASP:OD1 | 1:A:144:SER:N | 2.46 | 0.45 |
| 1:A:1756:ILE:O | 1:A:1760:GLU:HG2 | 2.16 | 0.45 |
| 1:A:3254:LYS:HG3 | 1:A:3437:ILE:HD11 | 1.97 | 0.45 |
| 1:B:331:ASP:OD1 | 1:B:332:TYR:N | 2.50 | 0.45 |
| 1:B:759:ARG:HG2 | 1:B:759:ARG:HH11 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1090:ARG:NH2 | 1:B:1121:ASP:HA | 2.29 | 0.45 |
| 1:B:4169:ILE:HD11 | 1:B:4177:ALA:HA | 1.97 | 0.45 |
| 1:A:1717:LEU:HB2 | 1:A:1749:LEU:HD22 | 1.98 | 0.45 |
| 1:A:3780:VAL:O | 1:A:3784:VAL:HG23 | 2.16 | 0.45 |
| 1:A:4600:LYS:HZ3 | 1:A:4604:VAL:CB | 2.21 | 0.45 |
| 1:B:304:LEU:HD13 | 1:B:309:ARG:HB3 | 1.99 | 0.45 |
| 1:B:650:TRP:CE2 | 1:B:654:ILE:HD11 | 2.52 | 0.45 |
| 1:B:1194:GLN:OE1 | 1:B:1211:ILE:HD13 | 2.16 | 0.45 |
| 1:B:3585:ARG:NH1 | 1:B:3694:SER:O | 2.42 | 0.45 |
| 2:C:204:THR:HA | 4:G:10:ARG:HH12 | 1.82 | 0.45 |
| 5:I:52:PRO:HA | 5:I:53:THR:HA | 1.69 | 0.45 |
| 1:A:382:GLU:HB2 | 1:A:452:ILE:HA | 1.99 | 0.45 |
| 1:A:2995:ASP:OD1 | 1:A:3067:THR:OG1 | 2.35 | 0.45 |
| 1:A:3008:MET:HE1 | 1:A:3011:LEU:HD23 | 1.99 | 0.45 |
| 1:A:3708:LEU:HD23 | 1:A:3809:SER:HA | 1.98 | 0.45 |
| 1:B:213:ILE:HD12 | 1:B:303:ILE:HD11 | 1.99 | 0.45 |
| 1:B:232:PHE:CE2 | 1:B:303:ILE:HG21 | 2.51 | 0.45 |
| 1:B:987:PHE:CE2 | 3:F:87:GLU:HG2 | 2.52 | 0.45 |
| 1:B:1095:ASN:OD1 | 1:B:1096:ALA:N | 2.50 | 0.45 |
| 1:B:1124:HIS:NE2 | 1:B:1128:LEU:HD11 | 2.32 | 0.45 |
| 1:B:1267:VAL:O | 1:B:1382:SER:N | 2.50 | 0.45 |
| 1:B:4064:THR:HB | 1:B:4092:ARG:NH2 | 2.32 | 0.45 |
| 1:B:4150:PRO:HG3 | 1:B:4159:ARG:HH11 | 1.81 | 0.45 |
| 3:F:142:PRO:HA | 3:F:145:VAL:HG23 | 1.98 | 0.45 |
| 4:G:14:GLN:HB3 | 4:G:17:VAL:HG21 | 1.99 | 0.45 |
| 5:I:17:MET:HE3 | 5:I:46:PHE:HE2 | 1.81 | 0.45 |
| 6:K:99:ASN:OD1 | 6:K:102:MET:N | 2.50 | 0.45 |
| 1:A:215:ASN:C | 1:A:215:ASN:HD22 | 2.24 | 0.45 |
| 1:A:440:ARG:O | 1:A:444:GLU:HG2 | 2.17 | 0.45 |
| 1:A:1765:ALA:O | 1:A:1769:MET:HG2 | 2.17 | 0.45 |
| 1:A:2445:HIS:NE2 | 1:A:2449:LEU:HD22 | 2.31 | 0.45 |
| 1:A:3043:MET:HG3 | 1:A:3043:MET:O | 2.16 | 0.45 |
| 1:A:3315:ALA:O | 1:A:3319:LEU:HG | 2.17 | 0.45 |
| 1:A:4452:ILE:O | 1:A:4456:VAL:HG23 | 2.17 | 0.45 |
| 1:B:584:ILE:HG23 | 1:B:587:ARG:HH21 | 1.82 | 0.45 |
| 1:B:4019:SER:O | 1:B:4022:GLU:HG2 | 2.17 | 0.45 |
| 1:B:4566:GLN:O | 1:B:4640:VAL:HA | 2.17 | 0.45 |
| 2:D:399:ILE:HG21 | 2:D:447:PHE:CZ | 2.52 | 0.45 |
| 3:F:172:GLU:O | 3:F:176:LYS:NZ | 2.34 | 0.45 |
| 1:A:40:LEU:HB3 | 1:B:33:HIS:CE1 | 2.52 | 0.45 |
| 1:A:357:LEU:HD21 | 1:A:388:LEU:HD21 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3284:LYS:O | 1:A:3402:TYR:OH | 2.26 | 0.45 |
| 1:A:3369:LYS:HA | 1:A:3372:MET:HG2 | 1.98 | 0.45 |
| 1:A:3769:THR:O | 1:A:3773:LEU:HG | 2.17 | 0.45 |
| 1:B:145:PRO:HA | 1:B:148:THR:HB | 1.99 | 0.45 |
| 1:B:1724:VAL:HG23 | 1:B:1727:PHE:HD2 | 1.81 | 0.45 |
| 1:B:3154:LEU:HG | 1:B:3516:TYR:CD1 | 2.52 | 0.45 |
| 3:F:48:ARG:HD2 | 3:F:49:SER:N | 2.32 | 0.45 |
| 6:L:72:LYS:HG2 | 6:L:103:TYR:CE2 | 2.51 | 0.45 |
| 1:A:1958:ASP:OD1 | 1:A:1959:GLU:N | 2.49 | 0.45 |
| 1:A:2465:ALA:HB2 | 1:A:2493:TYR:CD1 | 2.52 | 0.45 |
| 1:A:3254:LYS:HG3 | 1:A:3437:ILE:CD1 | 2.47 | 0.45 |
| 1:A:3935:VAL:HG22 | 1:A:3996:PHE:HE2 | 1.82 | 0.45 |
| 1:A:3957:PHE:HZ | 1:A:3996:PHE:CE1 | 2.35 | 0.45 |
| 1:B:2132:PRO:HB2 | 1:B:2135:GLU:HB2 | 1.98 | 0.45 |
| 1:B:3302:GLN:HB3 | 1:B:3388:ALA:HB2 | 1.99 | 0.45 |
| 1:B:3990:LEU:HA | 1:B:4004:MET:HG2 | 1.99 | 0.45 |
| 1:B:4230:ARG:HG2 | 1:B:4232:ASN:O | 2.16 | 0.45 |
| 1:B:4520:TYR:O | 1:B:4524:THR:HG23 | 2.17 | 0.45 |
| 2:D:286:ASP:OD1 | 2:D:287:TRP:N | 2.50 | 0.45 |
| 2:D:299:TYR:OH | 2:D:302:ASN:HA | 2.17 | 0.45 |
| 2:D:504:TRP:CD1 | 2:D:522:ASP:H | 2.34 | 0.45 |
| 3:F:370:LEU:HA | 3:F:373:GLN:HG2 | 1.98 | 0.45 |
| 5:J:32:TYR:HB2 | 5:J:38:ILE:CD1 | 2.47 | 0.45 |
| 1:A:217:ALA:HB2 | 1:A:303:ILE:HD13 | 1.99 | 0.44 |
| 1:A:1209:LEU:HD23 | 1:A:1209:LEU:H | 1.82 | 0.44 |
| 1:A:2944:THR:O | 1:A:2948:ARG:HG3 | 2.16 | 0.44 |
| 1:A:3100:GLU:O | 1:A:3104:GLN:HG3 | 2.17 | 0.44 |
| 1:A:3873:ARG:HD3 | 1:A:3873:ARG:HA | 1.82 | 0.44 |
| 1:B:200:ILE:HG12 | 1:B:277:PHE:HE1 | 1.83 | 0.44 |
| 1:B:2138:ILE:HD11 | 1:B:2165:PHE:CG | 2.52 | 0.44 |
| 1:B:2758:LEU:HD11 | 1:B:2807:PHE:CE1 | 2.51 | 0.44 |
| 1:B:2930:GLN:HB2 | 1:B:3059:ILE:HG23 | 1.99 | 0.44 |
| 1:B:3191:ARG:HG2 | 1:B:3503:ILE:HD13 | 1.99 | 0.44 |
| 1:B:3208:ILE:HG21 | 1:B:3486:ARG:HD3 | 1.99 | 0.44 |
| 1:B:3570:ASP:OD2 | 1:B:3704:THR:OG1 | 2.34 | 0.44 |
| 1:B:4071:ILE:HG23 | 1:B:4077:PHE:HE1 | 1.80 | 0.44 |
| 1:B:4150:PRO:HG3 | 1:B:4159:ARG:NH1 | 2.33 | 0.44 |
| 3:F:137:ALA:HB1 | 3:F:145:VAL:HG22 | 1.99 | 0.44 |
| 4:G:68:PHE:HD2 | 4:H:72:ARG:HB3 | 1.82 | 0.44 |
| 5:J:40:ALA:HB1 | 5:J:44:LYS:HZ3 | 1.81 | 0.44 |
| 6:K:36:HIS:CD2 | 6:L:76:GLY:HA3 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:K:78:HIS:HE1 | 6:L:69:ILE:HB | 1.82 | 0.44 |
| 1:A:396:LEU:HD21 | 1:A:401:LEU:HD22 | 2.00 | 0.44 |
| 1:A:1229:ASP:O | 1:A:1232:ILE:HG22 | 2.18 | 0.44 |
| 1:A:2179:ARG:NH2 | 1:A:2205:GLU:OE2 | 2.49 | 0.44 |
| 1:A:4055:VAL:HG21 | 1:A:4095:MET:HE3 | 1.99 | 0.44 |
| 1:B:627:TYR:O | 1:B:633:CYS:HB3 | 2.17 | 0.44 |
| 1:B:1626:PHE:HB3 | 1:B:1629:PHE:CD2 | 2.52 | 0.44 |
| 1:B:2563:ALA:HB3 | 1:B:2804:ARG:HD2 | 1.99 | 0.44 |
| 1:B:3650:ASN:HD21 | 1:B:3695:ARG:NH1 | 2.14 | 0.44 |
| 1:B:4392:PRO:O | 1:B:4428:ARG:NH1 | 2.49 | 0.44 |
| 1:B:4629:LYS:HG3 | 1:B:4629:LYS:O | 2.18 | 0.44 |
| 5:I:46:PHE:HD2 | 5:I:54:TRP:CE2 | 2.35 | 0.44 |
| 1:A:170:LYS:HE2 | 1:A:176:ASP:HB3 | 1.99 | 0.44 |
| 1:A:4191:GLN:NE2 | 1:A:4207:PHE:O | 2.49 | 0.44 |
| 1:B:388:LEU:O | 1:B:391:GLN:HG3 | 2.18 | 0.44 |
| 1:B:3207:LYS:HD3 | 1:B:3207:LYS:HA | 1.83 | 0.44 |
| 5:I:28:ALA:HB2 | 5:I:41:HIS:CD2 | 2.51 | 0.44 |
| 1:A:454:PRO:HD2 | 1:A:457:ARG:HH12 | 1.81 | 0.44 |
| 1:A:1417:MET:O | 1:A:1421:HIS:N | 2.48 | 0.44 |
| 1:A:3199:MET:SD | 1:A:3200:HIS:ND1 | 2.90 | 0.44 |
| 1:A:3254:LYS:O | 1:A:3258:GLN:HG3 | 2.18 | 0.44 |
| 1:A:3255:VAL:O | 1:A:3259:GLU:HG3 | 2.17 | 0.44 |
| 1:A:3434:GLU:HA | 1:A:3437:ILE:HG22 | 2.00 | 0.44 |
| 1:A:4627:ALA:HB3 | 1:A:4630:GLU:HG2 | 2.00 | 0.44 |
| 1:B:82:SER:O | 1:B:100:SER:N | 2.43 | 0.44 |
| 1:B:622:LYS:NZ | 2:D:525:ASP:OD2 | 2.29 | 0.44 |
| 1:B:1126:GLU:O | 1:B:1129:SER:OG | 2.23 | 0.44 |
| 1:B:2215:GLN:OE1 | 1:B:2215:GLN:HA | 2.18 | 0.44 |
| 1:A:153:ILE:O | 1:A:157:VAL:HG22 | 2.17 | 0.44 |
| 1:A:270:THR:HG23 | 1:A:273:GLN:H | 1.81 | 0.44 |
| 1:A:372:TYR:H | 1:A:440:ARG:HH22 | 1.64 | 0.44 |
| 1:A:3243:MET:CE | 1:A:3444:ILE:HA | 2.47 | 0.44 |
| 1:A:4604:VAL:HA | 1:A:4625:GLU:HA | 1.99 | 0.44 |
| 1:B:580:GLU:O | 1:B:584:ILE:HG13 | 2.17 | 0.44 |
| 1:B:1204:PHE:H | 5:J:5:LYS:HZ1 | 1.64 | 0.44 |
| 1:B:2242:GLU:HG3 | 1:B:2248:GLU:HA | 1.99 | 0.44 |
| 1:B:3100:GLU:O | 1:B:3104:GLN:HG3 | 2.18 | 0.44 |
| 1:B:3130:TYR:CZ | 1:B:3132:LYS:HB2 | 2.53 | 0.44 |
| 1:B:4424:LEU:O | 1:B:4428:ARG:HG2 | 2.17 | 0.44 |
| 1:B:4439:GLU:HB2 | 1:B:4441:LYS:HG2 | 2.00 | 0.44 |
| 3:F:228:LEU:HD21 | 3:F:286:TYR:CE1 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:F:230:VAL:HA | 3:F:270:ILE:O | 2.17 | 0.44 |
| 1:A:162:LYS:HG2 | 1:A:166:ARG:NH1 | 2.32 | 0.44 |
| 1:A:1580:LYS:O | 1:A:1584:LYS:HG2 | 2.18 | 0.44 |
| 1:A:2666:ILE:HG22 | 1:A:2723:LEU:HD21 | 1.99 | 0.44 |
| 1:B:363:HIS:O | 1:B:366:LYS:HG2 | 2.18 | 0.44 |
| 1:B:425:ASP:HB3 | 1:B:429:LYS:NZ | 2.32 | 0.44 |
| 1:B:439:LYS:O | 1:B:442:ARG:HD3 | 2.17 | 0.44 |
| 1:B:793:GLU:HA | 1:B:796:GLU:HG3 | 2.00 | 0.44 |
| 1:B:967:GLN:HG2 | 1:B:1061:TRP:CD2 | 2.52 | 0.44 |
| 1:B:1230:SER:HA | 1:B:1233:GLN:OE1 | 2.18 | 0.44 |
| 1:B:1658:PHE:HB2 | 1:B:1661:VAL:HB | 2.00 | 0.44 |
| 1:B:2665:GLU:OE2 | 1:B:2665:GLU:HA | 2.17 | 0.44 |
| 1:B:2743:SER:O | 1:B:2747:ILE:HG13 | 2.17 | 0.44 |
| 1:B:3447:TYR:HA | 1:B:3450:GLU:CD | 2.43 | 0.44 |
| 1:B:4190:ILE:HG13 | 1:B:4191:GLN:N | 2.32 | 0.44 |
| 3:F:61:GLY:HA3 | 3:F:67:LYS:HD3 | 2.00 | 0.44 |
| 4:H:70:ARG:HH22 | 4:H:72:ARG:HH11 | 1.66 | 0.44 |
| 1:A:39:PRO:HG3 | 1:A:48:ALA:H | 1.82 | 0.44 |
| 1:A:390:SER:O | 1:A:394:LYS:HG3 | 2.18 | 0.44 |
| 1:A:448:MET:HA | 1:A:450:TRP:CZ3 | 2.53 | 0.44 |
| 1:A:1707:LYS:O | 1:A:1711:VAL:HG23 | 2.18 | 0.44 |
| 1:B:694:ASN:ND2 | 1:B:697:GLU:OE1 | 2.51 | 0.44 |
| 1:B:1043:ILE:HA | 1:B:1102:PHE:CE2 | 2.51 | 0.44 |
| 1:B:1138:ASN:OD1 | 1:B:1139:MET:N | 2.50 | 0.44 |
| 1:B:1156:HIS:NE2 | 1:B:1166:ALA:HA | 2.33 | 0.44 |
| 1:B:1572:SER:O | 1:B:1576:LEU:HD23 | 2.17 | 0.44 |
| 1:B:2348:LEU:HD23 | 1:B:2356:VAL:HG22 | 1.99 | 0.44 |
| 1:B:3808:CYS:HB3 | 1:B:3832:PHE:HZ | 1.82 | 0.44 |
| 1:B:3835:ILE:HD13 | 1:B:3867:ALA:HA | 2.00 | 0.44 |
| 1:B:3891:LYS:HD2 | 1:B:4013:LEU:HD23 | 2.00 | 0.44 |
| 2:D:386:CYS:HB3 | 2:D:401:ILE:CG2 | 2.48 | 0.44 |
| 1:A:275:ILE:HA | 1:A:278:TRP:CD1 | 2.49 | 0.44 |
| 1:A:1803:LEU:HG | 1:A:1807:LYS:HE3 | 2.00 | 0.44 |
| 1:A:2221:MET:SD | 1:A:2361:MET:HE1 | 2.58 | 0.44 |
| 1:A:2590:PRO:O | 1:A:2732:PRO:HD2 | 2.18 | 0.44 |
| 1:A:2896:ARG:HG3 | 1:A:2953:MET:HE1 | 2.00 | 0.44 |
| 1:A:3005:LEU:HD23 | 1:A:3005:LEU:HA | 1.81 | 0.44 |
| 1:A:3363:ILE:O | 1:A:3367:MET:HG2 | 2.17 | 0.44 |
| 1:A:3429:LYS:O | 1:A:3433:VAL:N | 2.39 | 0.44 |
| 1:A:3443:SER:HB2 | 1:A:3447:TYR:CE2 | 2.53 | 0.44 |
| 1:A:3728:ARG:O | 1:A:3732:LEU:HD23 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:4160:THR:HG23 | 1:A:4212:LEU:HD21 | 2.00 | 0.44 |
| 1:B:1687:LYS:HG3 | 1:B:1715:LYS:HD2 | 1.98 | 0.44 |
| 1:B:1945:PHE:HB3 | 1:B:1978:ILE:HD11 | 2.00 | 0.44 |
| 1:B:2458:LEU:O | 1:B:2462:LEU:HG | 2.18 | 0.44 |
| 1:B:2568:VAL:HG22 | 1:B:2603:MET:HG3 | 2.00 | 0.44 |
| 1:B:3110:THR:O | 1:B:3140:ARG:NH1 | 2.51 | 0.44 |
| 6:L:47:VAL:HG13 | 6:L:65:VAL:HB | 2.00 | 0.44 |
| 1:A:154:SER:HB3 | 1:A:190:GLU:OE1 | 2.17 | 0.44 |
| 1:A:1567:ARG:NH1 | 1:B:3043:MET:O | 2.45 | 0.44 |
| 1:A:1847:ASP:OD1 | 1:A:1849:LYS:HG2 | 2.18 | 0.44 |
| 1:A:2224:GLY:O | 1:A:2230:LYS:NZ | 2.39 | 0.44 |
| 1:A:2452:LEU:HD23 | 1:A:2452:LEU:HA | 1.78 | 0.44 |
| 1:A:3319:LEU:HD22 | 1:A:3377:TYR:CD1 | 2.53 | 0.44 |
| 1:A:3381:ILE:HD12 | 1:A:3390:GLY:HA2 | 1.98 | 0.44 |
| 1:A:3468:VAL:O | 1:A:3472:VAL:HG23 | 2.18 | 0.44 |
| 1:A:3905:PHE:CE1 | 1:A:3987:ILE:HG12 | 2.53 | 0.44 |
| 1:A:4545:VAL:HG22 | 1:A:4588:THR:HG22 | 2.00 | 0.44 |
| 1:B:116:LEU:HD23 | 1:B:139:THR:HB | 1.99 | 0.44 |
| 1:B:120:LYS:HA | 1:B:135:LEU:HD13 | 2.00 | 0.44 |
| 1:B:581:MET:HE1 | 1:B:608:LEU:HD12 | 1.98 | 0.44 |
| 1:B:642:PRO:HB2 | 1:B:749:GLU:OE2 | 2.17 | 0.44 |
| 1:B:4160:THR:HG23 | 1:B:4212:LEU:HD21 | 1.99 | 0.44 |
| 1:B:4409:LEU:HD11 | 1:B:4558:PHE:HE2 | 1.83 | 0.44 |
| 3:F:255:GLN:OE1 | 3:F:323:LEU:HD21 | 2.18 | 0.44 |
| 3:F:258:LEU:HD23 | 3:F:269:LEU:HD11 | 1.99 | 0.44 |
| 4:G:75:LYS:HD3 | 4:H:64:ASN:ND2 | 2.33 | 0.44 |
| 1:A:455:ALA:O | 1:A:458:LYS:HG2 | 2.18 | 0.43 |
| 1:A:1190:TYR:HE2 | 1:A:1208:TRP:HH2 | 1.65 | 0.43 |
| 1:A:1628:ARG:NH1 | 1:A:1657:MET:O | 2.41 | 0.43 |
| 1:A:3017:VAL:HB | 1:A:3020:LEU:HB2 | 2.00 | 0.43 |
| 1:B:1457:MET:O | 1:B:1461:GLU:HG2 | 2.17 | 0.43 |
| 1:B:1512:TYR:O | 1:B:1515:VAL:HG22 | 2.18 | 0.43 |
| 1:B:1741:TRP:CH2 | 1:B:1750:VAL:HG13 | 2.53 | 0.43 |
| 1:B:3381:ILE:HD12 | 1:B:3390:GLY:HA2 | 1.99 | 0.43 |
| 1:B:3932:ALA:O | 1:B:3936:VAL:HG13 | 2.18 | 0.43 |
| 1:B:4027:LEU:O | 1:B:4031:VAL:HG12 | 2.17 | 0.43 |
| 1:B:4226:THR:HG21 | 1:B:4239:PRO:HD3 | 1.99 | 0.43 |
| 4:H:81:ALA:HB3 | 4:H:88:LEU:HD23 | 2.00 | 0.43 |
| 6:K:76:GLY:O | 6:L:70:MET:HE1 | 2.18 | 0.43 |
| 1:A:90:ASP:N | 1:A:90:ASP:OD1 | 2.52 | 0.43 |
| 1:A:257:GLN:O | 1:A:261:LYS:HG2 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:280:ASN:HA | 1:A:283:ARG:HG2 | 2.00 | 0.43 |
| 1:A:1777:PRO:O | 1:A:1780:SER:OG | 2.18 | 0.43 |
| 1:A:2937:GLY:C | 1:A:3070:PRO:HD3 | 2.44 | 0.43 |
| 1:A:3944:PHE:CE1 | 1:A:3974:TRP:HB3 | 2.53 | 0.43 |
| 1:B:1830:ILE:HG12 | 1:B:1837:GLU:HB2 | 1.99 | 0.43 |
| 1:B:2174:GLU:OE1 | 1:B:2176:THR:OG1 | 2.24 | 0.43 |
| 1:B:2310:GLU:OE1 | 1:B:2310:GLU:HA | 2.18 | 0.43 |
| 2:D:528:TYR:CD1 | 2:D:528:TYR:C | 2.96 | 0.43 |
| 1:A:195:HIS:CD2 | 1:A:267:ALA:HB3 | 2.53 | 0.43 |
| 1:A:374:ILE:H | 1:A:446:LEU:HD11 | 1.83 | 0.43 |
| 1:A:435:ARG:O | 1:A:438:VAL:HB | 2.18 | 0.43 |
| 1:A:3207:LYS:HA | 1:A:3207:LYS:HD3 | 1.83 | 0.43 |
| 1:B:352:LYS:HA | 1:B:355:GLN:HG3 | 1.99 | 0.43 |
| 1:B:518:ASN:O | 1:B:521:GLU:HG2 | 2.19 | 0.43 |
| 1:B:717:ILE:HG22 | 1:B:718:PHE:HD2 | 1.83 | 0.43 |
| 1:B:1580:LYS:HE2 | 1:B:1580:LYS:HA | 2.00 | 0.43 |
| 1:B:1746:GLN:OE1 | 1:B:1746:GLN:N | 2.52 | 0.43 |
| 1:B:2257:LYS:NZ | 1:B:2308:ASP:OD2 | 2.41 | 0.43 |
| 1:B:2324:LEU:HD23 | 1:B:2334:SER:HA | 1.99 | 0.43 |
| 1:B:3088:ARG:HG2 | 1:B:3088:ARG:HH11 | 1.82 | 0.43 |
| 2:D:208:GLU:HA | 2:D:211:LEU:HG | 2.00 | 0.43 |
| 2:D:493:PHE:CD1 | 2:D:496:LEU:HD11 | 2.53 | 0.43 |
| 6:K:100:LYS:HG2 | 6:K:101:THR:HG23 | 1.99 | 0.43 |
| 1:A:173:ARG:HD2 | 1:B:283:ARG:NH2 | 2.32 | 0.43 |
| 1:A:2206:LYS:HD3 | 1:A:2206:LYS:HA | 1.82 | 0.43 |
| 1:A:2444:GLU:HG2 | 1:A:2510:MET:HE3 | 1.99 | 0.43 |
| 1:A:3621:LYS:HA | 1:A:3624:GLU:HG2 | 1.99 | 0.43 |
| 1:B:368:ARG:HD2 | 1:B:368:ARG:HA | 1.82 | 0.43 |
| 1:B:546:TRP:CD1 | 1:B:550:MET:HE2 | 2.53 | 0.43 |
| 1:B:801:ILE:O | 1:B:805:VAL:HG23 | 2.19 | 0.43 |
| 1:B:1513:TYR:CE2 | 1:B:1517:GLU:HG2 | 2.53 | 0.43 |
| 1:B:2113:ARG:O | 1:B:2116:GLU:HG3 | 2.18 | 0.43 |
| 1:B:2635:PHE:CE2 | 1:B:2686:MET:HE1 | 2.53 | 0.43 |
| 1:B:3473:ASN:HA | 1:B:3476:THR:HG22 | 2.01 | 0.43 |
| 2:D:509:TRP:HA | 2:D:517:LEU:HG | 1.99 | 0.43 |
| 3:F:152:TRP:O | 3:F:155:VAL:HB | 2.18 | 0.43 |
| 6:L:54:LEU:HD13 | 6:L:63:TYR:CD1 | 2.53 | 0.43 |
| 1:A:458:LYS:O | 1:A:462:ARG:HG3 | 2.18 | 0.43 |
| 1:A:2324:LEU:HD23 | 1:A:2334:SER:HA | 2.00 | 0.43 |
| 1:A:3085:LEU:HD23 | 1:A:3085:LEU:HA | 1.89 | 0.43 |
| 1:A:4159:ARG:HE | 1:A:4159:ARG:HB2 | 1.64 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:4433:ASP:O | 1:B:4437:VAL:HG23 | 2.19 | 0.43 |
| 5:I:13:MET:HE3 | 5:I:18:GLN:HA | 2.00 | 0.43 |
| 5:I:76:PHE:HE2 | 5:I:78:LEU:HG | 1.83 | 0.43 |
| 6:K:45:ASN:O | 6:K:46:VAL:C | 2.62 | 0.43 |
| 1:A:220:CYS:O | 1:A:223:ARG:NE | 2.48 | 0.43 |
| 1:A:292:ARG:HA | 1:A:297:VAL:CG1 | 2.48 | 0.43 |
| 1:A:1150:ARG:HG2 | 1:A:1221:PHE:CD1 | 2.52 | 0.43 |
| 1:A:1711:VAL:HG13 | 1:A:1853:VAL:HG21 | 2.00 | 0.43 |
| 1:A:1946:VAL:O | 1:A:1950:GLN:HG3 | 2.18 | 0.43 |
| 1:A:2509:LYS:NZ | 1:A:2513:GLU:OE2 | 2.49 | 0.43 |
| 1:A:2973:ASP:O | 1:A:2977:ARG:HG3 | 2.18 | 0.43 |
| 1:A:3303:HIS:O | 1:A:3307:VAL:HG23 | 2.19 | 0.43 |
| 1:A:3985:GLN:O | 1:A:3989:ARG:HG3 | 2.18 | 0.43 |
| 1:A:4197:ALA:HB3 | 1:A:4198:PRO:HD3 | 2.00 | 0.43 |
| 1:A:4528:VAL:HG11 | 1:A:4592:TRP:HB2 | 1.99 | 0.43 |
| 1:B:1135:LEU:HD22 | 1:B:1190:TYR:CD1 | 2.54 | 0.43 |
| 1:B:2382:LEU:HD23 | 1:B:2420:ALA:HB2 | 2.00 | 0.43 |
| 1:B:2418:ASP:O | 1:B:2422:ILE:HG13 | 2.19 | 0.43 |
| 1:B:2592:VAL:HA | 1:B:2710:GLY:O | 2.18 | 0.43 |
| 1:B:2627:THR:OG1 | 1:B:2629:GLU:OE1 | 2.32 | 0.43 |
| 1:B:3046:SER:HB3 | 1:B:3049:GLU:CD | 2.43 | 0.43 |
| 1:B:4435:VAL:O | 1:B:4439:GLU:HG3 | 2.19 | 0.43 |
| 1:A:1201:ARG:HH21 | 1:B:1061:TRP:HD1 | 1.65 | 0.43 |
| 1:A:1751:VAL:HG12 | 1:A:1755:GLN:HE21 | 1.82 | 0.43 |
| 1:A:2517:TYR:CE1 | 1:A:2521:ILE:HD13 | 2.54 | 0.43 |
| 1:A:2581:LEU:HD11 | 1:A:2593:LEU:HD21 | 2.01 | 0.43 |
| 1:A:2799:MET:HE3 | 1:A:2799:MET:HB3 | 1.79 | 0.43 |
| 1:A:3683:ASP:HB3 | 1:A:3686:VAL:HG13 | 2.01 | 0.43 |
| 1:A:3815:MET:SD | 1:A:3832:PHE:HB2 | 2.59 | 0.43 |
| 1:A:4424:LEU:O | 1:A:4428:ARG:HG2 | 2.19 | 0.43 |
| 1:B:473:HIS:CE1 | 1:B:477:ARG:HD2 | 2.54 | 0.43 |
| 1:B:543:THR:O | 1:B:547:GLU:OE1 | 2.37 | 0.43 |
| 1:B:1350:PRO:HA | 1:B:1429:LEU:O | 2.18 | 0.43 |
| 1:B:2841:GLU:HA | 1:B:2844:ARG:HG2 | 2.01 | 0.43 |
| 5:I:17:MET:HE1 | 5:I:50:TYR:CD2 | 2.53 | 0.43 |
| 1:A:136:ARG:HE | 1:B:139:THR:HG23 | 1.84 | 0.43 |
| 1:A:454:PRO:O | 1:A:457:ARG:NH1 | 2.52 | 0.43 |
| 1:A:3130:TYR:CZ | 1:A:3132:LYS:HB3 | 2.53 | 0.43 |
| 1:A:3253:LYS:NZ | 1:A:3436:MET:HB2 | 2.32 | 0.43 |
| 1:A:3716:VAL:HB | 1:A:3836:TYR:OH | 2.19 | 0.43 |
| 1:B:75:HIS:O | 1:B:119:ILE:HA | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:211:PRO:O | 1:B:215:ASN:ND2 | 2.51 | 0.43 |
| 1:B:476:LEU:HD22 | 1:B:591:LEU:HD11 | 2.00 | 0.43 |
| 1:B:664:ARG:HG2 | 1:B:664:ARG:HH11 | 1.84 | 0.43 |
| 1:B:2444:GLU:CD | 1:B:2507:ARG:HH12 | 2.26 | 0.43 |
| 2:D:504:TRP:NE1 | 2:D:523:ASN:H | 2.17 | 0.43 |
| 1:A:55:ALA:HA | 1:A:58:GLU:HB2 | 1.99 | 0.43 |
| 1:A:440:ARG:O | 1:A:443:GLU:HG2 | 2.19 | 0.43 |
| 1:A:578:ALA:O | 1:A:583:ARG:N | 2.36 | 0.43 |
| 1:B:1497:VAL:HG11 | 1:B:1531:MET:HG2 | 2.01 | 0.43 |
| 1:B:2248:GLU:OE2 | 1:B:2297:LYS:HE2 | 2.19 | 0.43 |
| 1:B:3211:THR:O | 1:B:3215:VAL:HG23 | 2.19 | 0.43 |
| 1:B:4091:GLY:CA | 1:B:4119:HIS:HB3 | 2.47 | 0.43 |
| 1:B:4156:ASN:ND2 | 1:B:4188:ALA:HA | 2.34 | 0.43 |
| 2:D:578:TRP:HA | 2:D:585:ILE:HD12 | 2.01 | 0.43 |
| 2:D:579:THR:HG21 | 2:D:584:GLU:CD | 2.43 | 0.43 |
| 3:F:139:MET:O | 3:F:142:PRO:HD3 | 2.19 | 0.43 |
| 4:G:3:GLU:HG3 | 4:G:6:GLU:H | 1.82 | 0.43 |
| 1:A:177:LYS:HD3 | 1:A:177:LYS:HA | 1.71 | 0.43 |
| 1:A:221:TYR:CG | 1:A:299:LEU:HD22 | 2.54 | 0.43 |
| 1:A:229:VAL:HG22 | 1:A:306:HIS:CG | 2.54 | 0.43 |
| 1:A:250:ASN:O | 1:A:253:ILE:HG22 | 2.19 | 0.43 |
| 1:A:427:TYR:HD1 | 1:A:430:LEU:HD12 | 1.84 | 0.43 |
| 1:A:1537:TRP:CH2 | 1:A:1582:VAL:HG21 | 2.52 | 0.43 |
| 1:A:1746:GLN:N | 1:A:1746:GLN:OE1 | 2.51 | 0.43 |
| 1:A:2073:PHE:HZ | 1:A:2096:VAL:HG21 | 1.83 | 0.43 |
| 1:B:424:ASP:O | 1:B:428:GLU:HG2 | 2.19 | 0.43 |
| 1:B:701:ASP:OD1 | 1:B:704:ARG:NH2 | 2.52 | 0.43 |
| 1:B:1176:LEU:HD13 | 1:B:1179:LYS:HD3 | 2.00 | 0.43 |
| 1:B:1627:PRO:HB3 | 1:B:1950:GLN:HB3 | 2.00 | 0.43 |
| 1:B:1746:GLN:O | 1:B:1750:VAL:HG23 | 2.19 | 0.43 |
| 1:B:4431:LEU:O | 1:B:4435:VAL:HG23 | 2.19 | 0.43 |
| 3:F:168:GLU:HB2 | 3:F:171:ARG:HH21 | 1.84 | 0.43 |
| 3:F:240:LEU:HB3 | 3:F:246:TYR:CD2 | 2.54 | 0.43 |
| 5:J:13:MET:HB2 | 5:J:18:GLN:NE2 | 2.34 | 0.43 |
| 5:J:35:GLU:HB3 | 5:J:58:VAL:O | 2.19 | 0.43 |
| 1:A:1075:ASP:O | 1:A:1076:LEU:C | 2.62 | 0.42 |
| 1:A:1079:TRP:C | 1:A:1081:ALA:H | 2.27 | 0.42 |
| 1:A:1177:LYS:HE3 | 1:A:1226:ARG:HH22 | 1.84 | 0.42 |
| 1:A:2348:LEU:HD13 | 1:A:2356:VAL:HG22 | 2.01 | 0.42 |
| 1:A:3031:THR:OG1 | 1:B:3024:ASP:OD2 | 2.31 | 0.42 |
| 1:A:3530:THR:HG22 | 1:A:3534:HIS:CE1 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:309:ARG:HG2 | 1:B:312:ALA:HB3 | 2.01 | 0.42 |
| 1:B:365:ARG:HA | 1:B:433:LEU:HD22 | 2.01 | 0.42 |
| 1:B:1177:LYS:O | 1:B:1180:ILE:HB | 2.19 | 0.42 |
| 1:B:2562:VAL:O | 1:B:2804:ARG:NH1 | 2.52 | 0.42 |
| 1:B:2578:GLU:OE2 | 1:B:2607:SER:OG | 2.30 | 0.42 |
| 1:B:4105:TRP:HD1 | 1:B:4108:GLN:HE21 | 1.67 | 0.42 |
| 2:D:186:GLU:HA | 2:D:189:GLN:HG2 | 2.01 | 0.42 |
| 2:D:413:ASP:OD1 | 2:D:414:MET:N | 2.52 | 0.42 |
| 1:A:21:VAL:HA | 1:A:124:VAL:HB | 2.01 | 0.42 |
| 1:A:349:GLU:O | 1:A:353:ILE:HG13 | 2.19 | 0.42 |
| 1:A:461:ALA:HA | 1:A:464:ASP:OD2 | 2.18 | 0.42 |
| 1:A:2047:GLN:HA | 1:A:2070:VAL:HG21 | 2.00 | 0.42 |
| 1:A:2134:GLN:O | 1:A:2138:ILE:HG12 | 2.19 | 0.42 |
| 1:A:2487:GLU:O | 1:A:2491:GLN:HG3 | 2.19 | 0.42 |
| 1:A:3416:LEU:O | 1:A:3420:GLU:HG3 | 2.19 | 0.42 |
| 1:A:3447:TYR:O | 1:A:3451:TYR:HD2 | 2.02 | 0.42 |
| 1:A:4336:GLY:O | 1:A:4340:ILE:HG12 | 2.19 | 0.42 |
| 1:B:399:ARG:O | 1:B:399:ARG:NH1 | 2.41 | 0.42 |
| 1:B:583:ARG:O | 1:B:587:ARG:HG3 | 2.19 | 0.42 |
| 1:B:1026:MET:SD | 1:B:1027:PRO:HD2 | 2.59 | 0.42 |
| 1:B:2185:VAL:O | 1:B:2189:MET:HG2 | 2.19 | 0.42 |
| 1:B:2943:LYS:HG2 | 1:B:3094:PHE:CD2 | 2.54 | 0.42 |
| 1:B:3303:HIS:O | 1:B:3307:VAL:HG23 | 2.19 | 0.42 |
| 1:B:3900:THR:OG1 | 1:B:3902:ASP:OD2 | 2.26 | 0.42 |
| 2:D:426:HIS:ND1 | 2:D:427:LYS:HG2 | 2.34 | 0.42 |
| 3:F:228:LEU:CD2 | 3:F:268:ALA:HB3 | 2.49 | 0.42 |
| 3:F:279:ASN:OD1 | 3:F:282:LEU:HD21 | 2.19 | 0.42 |
| 4:H:42:TYR:O | 4:H:46:MET:HG2 | 2.19 | 0.42 |
| 1:A:315:SER:O | 1:A:320:THR:N | 2.52 | 0.42 |
| 1:A:372:TYR:N | 1:A:440:ARG:HH22 | 2.17 | 0.42 |
| 1:A:2458:LEU:O | 1:A:2462:LEU:HG | 2.19 | 0.42 |
| 1:A:3808:CYS:HB3 | 1:A:3832:PHE:HZ | 1.85 | 0.42 |
| 1:B:462:ARG:HH21 | 1:B:537:ASP:HB2 | 1.83 | 0.42 |
| 1:B:467:ARG:O | 1:B:471:ARG:HG3 | 2.19 | 0.42 |
| 1:B:479:VAL:HG11 | 1:B:590:ALA:HB2 | 2.01 | 0.42 |
| 1:B:1135:LEU:O | 1:B:1139:MET:HG2 | 2.19 | 0.42 |
| 1:B:1190:TYR:OH | 1:B:1211:ILE:HG22 | 2.19 | 0.42 |
| 1:B:1204:PHE:HD1 | 5:J:5:LYS:NZ | 2.17 | 0.42 |
| 1:B:2452:LEU:HA | 1:B:2452:LEU:HD23 | 1.76 | 0.42 |
| 1:B:2973:ASP:O | 1:B:2977:ARG:HG3 | 2.19 | 0.42 |
| 1:B:4575:LEU:HD11 | 1:B:4624:PHE:HB2 | 2.00 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 3:E:60:PHE:O | 3:E:135:PHE:HA | 2.19 | 0.42 |
| 3:F:344:PRO:O | 3:F:346:ARG:HD3 | 2.18 | 0.42 |
| 5:I:13:MET:HE1 | 5:I:21:SER:OG | 2.19 | 0.42 |
| 6:K:83:CYS:SG | 6:L:64:ILE:HG23 | 2.58 | 0.42 |
| 1:A:152:PHE:HZ | 1:B:121:ARG:HA | 1.84 | 0.42 |
| 1:A:1155:GLN:NE2 | 1:A:1157:SER:HB2 | 2.33 | 0.42 |
| 1:A:1934:GLU:OE2 | 1:A:2261:LYS:NZ | 2.37 | 0.42 |
| 1:A:2231:SER:O | 1:A:2235:ARG:HG3 | 2.19 | 0.42 |
| 1:A:3214:GLN:O | 1:A:3217:GLU:HG3 | 2.20 | 0.42 |
| 1:A:4305:PHE:O | 1:A:4309:VAL:HG23 | 2.19 | 0.42 |
| 1:B:526:ALA:O | 1:B:529:ASN:N | 2.52 | 0.42 |
| 1:B:1599:ARG:HG3 | 1:B:1599:ARG:HH11 | 1.84 | 0.42 |
| 1:B:1752:LEU:HA | 1:B:1755:GLN:HE21 | 1.84 | 0.42 |
| 1:B:3776:GLU:HA | 1:B:3779:GLU:HG2 | 2.01 | 0.42 |
| 1:B:3844:PRO:O | 1:B:3847:LYS:HG2 | 2.19 | 0.42 |
| 1:B:4336:GLY:O | 1:B:4340:ILE:HG12 | 2.19 | 0.42 |
| 2:C:214:GLN:HB2 | 2:D:209:ARG:NH1 | 2.35 | 0.42 |
| 2:D:334:ALA:O | 2:D:352:THR:OG1 | 2.27 | 0.42 |
| 2:D:493:PHE:HZ | 2:D:615:GLY:HA2 | 1.84 | 0.42 |
| 3:F:156:LEU:O | 3:F:160:ILE:HG12 | 2.17 | 0.42 |
| 1:A:276:SER:HA | 1:A:279:LEU:HD12 | 2.02 | 0.42 |
| 1:A:334:PRO:HA | 1:A:337:LYS:HB3 | 2.00 | 0.42 |
| 1:A:1164:SER:HA | 1:A:1167:VAL:HG12 | 2.02 | 0.42 |
| 1:A:3150:VAL:O | 1:A:3153:THR:HG22 | 2.20 | 0.42 |
| 1:A:3992:LEU:O | 1:A:3996:PHE:HB2 | 2.18 | 0.42 |
| 1:B:562:THR:HA | 1:B:596:HIS:HE1 | 1.84 | 0.42 |
| 1:B:1887:ARG:NH2 | 1:B:4253:GLY:O | 2.53 | 0.42 |
| 1:B:3885:MET:HE2 | 1:B:3885:MET:HB3 | 1.78 | 0.42 |
| 3:E:146:MET:O | 3:E:150:GLN:N | 2.38 | 0.42 |
| 5:I:75:TYR:CD1 | 5:I:84:LEU:HB2 | 2.49 | 0.42 |
| 1:A:146:TYR:OH | 1:B:165:ILE:HG23 | 2.19 | 0.42 |
| 1:A:337:LYS:HE2 | 1:A:363:HIS:CD2 | 2.47 | 0.42 |
| 1:A:1477:LEU:HA | 1:A:1486:LEU:O | 2.19 | 0.42 |
| 1:A:3306:GLU:OE2 | 1:A:3386:SER:HB2 | 2.20 | 0.42 |
| 1:A:3441:GLU:O | 1:A:3444:ILE:HB | 2.20 | 0.42 |
| 1:A:4308:TRP:CH2 | 1:A:4312:LEU:HD21 | 2.55 | 0.42 |
| 1:B:40:LEU:HA | 1:B:45:GLY:H | 1.85 | 0.42 |
| 1:B:1164:SER:HA | 1:B:1167:VAL:HG22 | 2.02 | 0.42 |
| 1:B:1192:ASN:O | 1:B:1195:ARG:HB2 | 2.19 | 0.42 |
| 1:B:1747:ALA:O | 1:B:1751:VAL:HG23 | 2.19 | 0.42 |
| 1:B:2484:GLU:HA | 1:B:2487:GLU:OE1 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:2622:PHE:CD2 | 1:B:2666:ILE:HA | 2.54 | 0.42 |
| 1:B:2665:GLU:HB3 | 1:B:2668:LEU:HD12 | 2.02 | 0.42 |
| 2:D:382:HIS:HB3 | 2:D:403:THR:HG22 | 2.01 | 0.42 |
| 3:E:156:LEU:O | 3:E:160:ILE:N | 2.50 | 0.42 |
| 3:F:241:GLU:HA | 3:F:246:TYR:HB2 | 2.01 | 0.42 |
| 1:A:276:SER:O | 1:A:279:LEU:HB2 | 2.20 | 0.42 |
| 1:A:339:PHE:HB2 | 1:A:340:PRO:HD3 | 2.00 | 0.42 |
| 1:A:400:LYS:HE3 | 1:A:402:MET:HB3 | 2.01 | 0.42 |
| 1:A:438:VAL:HA | 1:A:441:LYS:HE3 | 2.02 | 0.42 |
| 1:A:3167:ARG:NH1 | 1:A:3685:THR:HA | 2.34 | 0.42 |
| 1:A:3446:ARG:H | 1:A:3446:ARG:HG3 | 1.57 | 0.42 |
| 1:B:869:TYR:OH | 1:B:989:TRP:O | 2.37 | 0.42 |
| 1:B:1045:SER:O | 1:B:1048:GLU:HG3 | 2.20 | 0.42 |
| 1:B:1142:PHE:O | 1:B:1146:ILE:HG22 | 2.19 | 0.42 |
| 1:B:3204:GLY:O | 1:B:3208:ILE:HG12 | 2.20 | 0.42 |
| 1:B:3409:VAL:HA | 1:B:3412:LEU:HD12 | 2.01 | 0.42 |
| 1:B:3954:ASP:OD1 | 1:B:3957:PHE:N | 2.52 | 0.42 |
| 3:F:172:GLU:C | 3:F:176:LYS:HZ3 | 2.22 | 0.42 |
| 4:H:79:MET:HB3 | 4:H:90:VAL:HB | 2.01 | 0.42 |
| 5:J:18:GLN:HA | 5:J:74:ILE:HD12 | 2.02 | 0.42 |
| 6:K:35:GLN:H | 6:K:42:TRP:HZ3 | 1.68 | 0.42 |
| 1:A:53:GLU:HA | 1:A:56:LEU:HB3 | 2.00 | 0.42 |
| 1:A:382:GLU:CB | 1:A:452:ILE:HA | 2.50 | 0.42 |
| 1:A:2012:MET:HE3 | 1:A:2012:MET:HB3 | 1.89 | 0.42 |
| 1:A:2663:CYS:HB2 | 1:A:2666:ILE:HD11 | 2.00 | 0.42 |
| 1:A:3243:MET:HE2 | 1:A:3444:ILE:HA | 2.01 | 0.42 |
| 1:B:197:GLN:HG3 | 1:B:273:GLN:OE1 | 2.19 | 0.42 |
| 1:B:402:MET:SD | 1:B:531:LYS:HA | 2.60 | 0.42 |
| 1:B:722:SER:HA | 1:B:733:LEU:HD23 | 2.02 | 0.42 |
| 1:B:987:PHE:HE2 | 3:F:87:GLU:HG2 | 1.85 | 0.42 |
| 1:B:1068:ILE:O | 1:B:1072:LEU:HG | 2.20 | 0.42 |
| 1:B:1213:ASN:HD21 | 5:J:8:ILE:HG22 | 1.85 | 0.42 |
| 1:B:1508:LYS:HA | 1:B:1513:TYR:CG | 2.55 | 0.42 |
| 1:B:1914:GLU:OE1 | 1:B:1914:GLU:HA | 2.20 | 0.42 |
| 1:B:2356:VAL:HG13 | 1:B:2361:MET:HE3 | 2.01 | 0.42 |
| 1:B:3727:LYS:O | 1:B:3731:LEU:HG | 2.20 | 0.42 |
| 1:B:4234:SER:HB3 | 1:B:4237:LYS:HG2 | 2.01 | 0.42 |
| 2:D:401:ILE:HD12 | 2:D:406:LYS:O | 2.19 | 0.42 |
| 3:F:252:ASP:HB3 | 3:F:327:PHE:HE1 | 1.84 | 0.42 |
| 3:F:304:GLU:C | 3:F:305:LYS:HD3 | 2.45 | 0.42 |
| 3:F:368:SER:C | 3:F:372:LYS:HE2 | 2.45 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:G:10:ARG:O | 4:G:13:SER:OG | 2.27 | 0.42 |
| 1:A:171:ALA:HA | 1:A:177:LYS:NZ | 2.35 | 0.42 |
| 1:A:404:VAL:HG22 | 1:A:409:PHE:HB2 | 2.01 | 0.42 |
| 1:A:420:PHE:CZ | 1:A:457:ARG:HG3 | 2.54 | 0.42 |
| 1:A:1746:GLN:O | 1:A:1750:VAL:HG23 | 2.20 | 0.42 |
| 1:A:3260:ILE:HA | 1:A:3263:GLN:CD | 2.45 | 0.42 |
| 1:A:3776:GLU:HA | 1:A:3779:GLU:HG2 | 2.00 | 0.42 |
| 1:A:4178:ARG:NH1 | 1:A:4299:GLY:O | 2.53 | 0.42 |
| 1:B:640:ASP:HB2 | 2:D:385:TYR:OH | 2.20 | 0.42 |
| 1:B:2206:LYS:HA | 1:B:2206:LYS:HD3 | 1.82 | 0.42 |
| 1:B:3260:ILE:O | 1:B:3264:LEU:HG | 2.19 | 0.42 |
| 1:B:4089:LYS:HE3 | 1:B:4089:LYS:HB2 | 1.81 | 0.42 |
| 1:B:4154:LYS:HE3 | 1:B:4310:GLU:HA | 2.01 | 0.42 |
| 1:B:4338:ASP:O | 1:B:4342:LYS:HG3 | 2.20 | 0.42 |
| 1:A:185:LYS:O | 1:A:189:LEU:HD23 | 2.20 | 0.42 |
| 1:A:384:ILE:O | 1:A:388:LEU:HG | 2.19 | 0.42 |
| 1:A:1516:PHE:O | 1:A:1517:GLU:C | 2.63 | 0.42 |
| 1:A:3211:THR:HG21 | 1:A:3479:LEU:HD11 | 2.02 | 0.42 |
| 1:A:3260:ILE:O | 1:A:3264:LEU:HG | 2.19 | 0.42 |
| 1:A:3492:THR:HA | 1:A:3495:THR:HG22 | 2.02 | 0.42 |
| 1:A:3521:ASP:O | 1:A:3525:ARG:HG3 | 2.20 | 0.42 |
| 1:A:3588:LEU:HD21 | 1:A:3638:VAL:HG11 | 2.00 | 0.42 |
| 1:B:368:ARG:NH1 | 1:B:437:ILE:HD13 | 2.35 | 0.42 |
| 1:B:619:LEU:HD21 | 1:B:654:ILE:HG23 | 2.02 | 0.42 |
| 1:B:997:PRO:HA | 1:B:1018:PHE:HA | 2.01 | 0.42 |
| 1:B:1044:VAL:O | 1:B:1047:VAL:HB | 2.20 | 0.42 |
| 1:B:1093:PHE:CZ | 1:B:1113:GLN:HG3 | 2.55 | 0.42 |
| 1:B:2811:ARG:NH1 | 1:B:2811:ARG:HB2 | 2.34 | 0.42 |
| 1:B:3045:ASP:N | 1:B:3045:ASP:OD2 | 2.53 | 0.42 |
| 1:B:3416:LEU:O | 1:B:3420:GLU:HG3 | 2.19 | 0.42 |
| 1:B:3429:LYS:O | 1:B:3433:VAL:HG23 | 2.19 | 0.42 |
| 1:B:3731:LEU:HB2 | 1:B:3791:MET:SD | 2.60 | 0.42 |
| 5:J:16:GLU:HG2 | 5:J:17:MET:N | 2.34 | 0.42 |
| 6:K:45:ASN:O | 6:K:48:GLU:HG3 | 2.20 | 0.42 |
| 1:A:2061:THR:OG1 | 1:A:2133:GLU:OE1 | 2.33 | 0.41 |
| 1:A:2743:SER:O | 1:A:2747:ILE:HG13 | 2.20 | 0.41 |
| 1:A:3302:GLN:HB3 | 1:A:3388:ALA:HB2 | 2.02 | 0.41 |
| 1:A:4609:VAL:HG22 | 1:A:4642:VAL:HB | 2.02 | 0.41 |
| 1:B:292:ARG:NH1 | 1:B:320:THR:HG22 | 2.35 | 0.41 |
| 1:B:2262:ASP:HB2 | 1:B:2267:THR:CG2 | 2.50 | 0.41 |
| 1:B:2976:LEU:HB3 | 1:B:3020:LEU:HD21 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:3363:ILE:O | 1:B:3367:MET:HG2 | 2.20 | 0.41 |
| 1:B:4025:LEU:HG | 1:B:4027:LEU:HD22 | 2.02 | 0.41 |
| 2:D:265:LEU:HD22 | 2:D:597:TYR:HE2 | 1.85 | 0.41 |
| 3:F:75:GLN:NE2 | 3:F:89:LEU:HD11 | 2.34 | 0.41 |
| 1:A:215:ASN:O | 1:A:219:GLN:OE1 | 2.38 | 0.41 |
| 1:A:386:ARG:NH1 | 1:A:454:PRO:HA | 2.34 | 0.41 |
| 1:A:462:ARG:NH1 | 1:A:537:ASP:O | 2.53 | 0.41 |
| 1:A:1680:GLU:H | 1:A:1680:GLU:CD | 2.23 | 0.41 |
| 1:A:2107:ARG:NH2 | 1:A:2135:GLU:OE1 | 2.53 | 0.41 |
| 1:A:3263:GLN:O | 1:A:3267:GLN:HG3 | 2.20 | 0.41 |
| 1:A:3491:LYS:O | 1:A:3494:GLU:HG3 | 2.19 | 0.41 |
| 1:A:4027:LEU:O | 1:A:4031:VAL:HG12 | 2.20 | 0.41 |
| 1:B:1141:GLU:O | 1:B:1145:GLN:HG2 | 2.20 | 0.41 |
| 1:B:2222:MET:HE1 | 1:B:2342:MET:HE2 | 2.02 | 0.41 |
| 1:B:3306:GLU:OE2 | 1:B:3386:SER:HB2 | 2.20 | 0.41 |
| 1:B:3401:ASN:O | 1:B:3405:MET:HE3 | 2.19 | 0.41 |
| 3:F:259:ARG:NE | 3:F:315:ASP:OD2 | 2.52 | 0.41 |
| 6:K:70:MET:HE2 | 6:L:70:MET:HE3 | 2.01 | 0.41 |
| 6:K:78:HIS:CE1 | 6:L:69:ILE:HB | 2.55 | 0.41 |
| 6:K:84:PHE:CE1 | 6:L:51:LEU:HD13 | 2.55 | 0.41 |
| 1:A:1958:ASP:HA | 1:A:2017:THR:HB | 2.02 | 0.41 |
| 1:A:2819:GLU:HG3 | 1:A:2866:ALA:HB2 | 2.02 | 0.41 |
| 1:A:3471:LYS:HE2 | 1:A:3761:LEU:HD23 | 2.02 | 0.41 |
| 1:A:3517:ALA:HB1 | 1:A:3525:ARG:HG2 | 2.03 | 0.41 |
| 1:A:3909:LEU:HD21 | 1:A:4343:MET:HE2 | 2.02 | 0.41 |
| 1:A:4287:LYS:HE3 | 1:A:4290:GLY:HA2 | 2.02 | 0.41 |
| 1:A:4302:ARG:O | 1:A:4306:VAL:HG23 | 2.21 | 0.41 |
| 1:A:4619:ILE:HG22 | 1:A:4620:PHE:HD1 | 1.85 | 0.41 |
| 1:A:4626:ILE:HD13 | 1:A:4632:PRO:HD3 | 2.02 | 0.41 |
| 1:B:1090:ARG:HH22 | 1:B:1124:HIS:CB | 2.33 | 0.41 |
| 1:B:1197:LEU:HD12 | 1:B:1197:LEU:HA | 1.93 | 0.41 |
| 1:B:1209:LEU:HD13 | 5:J:18:GLN:HE22 | 1.84 | 0.41 |
| 1:B:3150:VAL:O | 1:B:3154:LEU:HD23 | 2.19 | 0.41 |
| 1:B:3433:VAL:HG22 | 1:B:3436:MET:HE2 | 2.02 | 0.41 |
| 1:A:80:GLU:OE2 | 1:A:110:GLY:HA3 | 2.20 | 0.41 |
| 1:A:274:GLU:O | 1:A:277:PHE:HB3 | 2.19 | 0.41 |
| 1:A:301:LEU:HG | 1:A:313:THR:HG23 | 2.00 | 0.41 |
| 1:A:1156:HIS:CE1 | 1:A:1228:LYS:HZ2 | 2.39 | 0.41 |
| 1:A:1537:TRP:O | 1:A:1538:ILE:C | 2.63 | 0.41 |
| 1:A:2616:GLU:OE1 | 1:A:2616:GLU:N | 2.53 | 0.41 |
| 1:B:213:ILE:HG13 | 1:B:232:PHE:CE1 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:257:GLN:HA | 1:B:260:THR:HG22 | 2.02 | 0.41 |
| 1:B:717:ILE:HG13 | 1:B:822:LEU:HB2 | 2.02 | 0.41 |
| 1:B:1193:GLY:HA2 | 1:B:1196:LEU:HD12 | 2.03 | 0.41 |
| 1:B:1196:LEU:O | 1:B:1200:GLN:N | 2.51 | 0.41 |
| 1:B:1213:ASN:HA | 5:J:10:ASN:HA | 2.03 | 0.41 |
| 1:B:2445:HIS:ND1 | 1:B:2505:ASP:OD1 | 2.51 | 0.41 |
| 1:B:2499:LEU:HD21 | 1:B:2515:GLY:HA2 | 2.03 | 0.41 |
| 1:B:3432:GLU:O | 1:B:3436:MET:HG2 | 2.20 | 0.41 |
| 1:B:4092:ARG:HE | 1:B:4093:TRP:N | 2.06 | 0.41 |
| 1:B:4205:TYR:OH | 1:B:4261:ASP:OD2 | 2.28 | 0.41 |
| 2:D:284:CYS:HB2 | 2:D:337:SER:HA | 2.02 | 0.41 |
| 2:D:284:CYS:SG | 2:D:285:LEU:N | 2.93 | 0.41 |
| 2:D:538:ALA:HB1 | 2:D:554:LEU:HB2 | 2.01 | 0.41 |
| 4:G:71:ILE:HD13 | 4:H:69:LEU:HD13 | 2.02 | 0.41 |
| 1:A:25:ALA:HB3 | 1:A:69:LEU:HD13 | 2.01 | 0.41 |
| 1:A:195:HIS:NE2 | 1:A:265:ASP:HB2 | 2.35 | 0.41 |
| 1:A:1205:PRO:O | 1:A:1208:TRP:HB3 | 2.20 | 0.41 |
| 1:A:3395:TRP:HE1 | 1:A:3399:GLN:HE22 | 1.69 | 0.41 |
| 1:A:3915:VAL:O | 1:A:3916:LEU:HD23 | 2.20 | 0.41 |
| 1:B:315:SER:O | 1:B:319:ASP:N | 2.41 | 0.41 |
| 1:B:347:ALA:HA | 1:B:352:LYS:HD3 | 2.03 | 0.41 |
| 1:B:414:VAL:HG22 | 1:B:467:ARG:HH22 | 1.86 | 0.41 |
| 1:B:539:SER:O | 1:B:542:GLY:N | 2.53 | 0.41 |
| 1:B:581:MET:HA | 1:B:584:ILE:HD12 | 2.02 | 0.41 |
| 1:B:2224:GLY:O | 1:B:2346:GLN:HA | 2.20 | 0.41 |
| 1:B:2297:LYS:HB2 | 1:B:2299:GLN:HE21 | 1.86 | 0.41 |
| 1:B:3263:GLN:O | 1:B:3267:GLN:HG3 | 2.20 | 0.41 |
| 1:B:3620:ARG:O | 1:B:3624:GLU:HG2 | 2.21 | 0.41 |
| 2:D:446:ASN:HA | 2:D:460:CYS:HA | 2.03 | 0.41 |
| 5:I:65:TYR:CD2 | 5:J:40:ALA:HA | 2.55 | 0.41 |
| 1:A:254:ARG:HA | 1:A:254:ARG:HD3 | 1.78 | 0.41 |
| 1:A:272:LEU:H | 1:A:272:LEU:HD12 | 1.85 | 0.41 |
| 1:A:3193:GLU:O | 1:A:3196:GLU:HG3 | 2.19 | 0.41 |
| 1:A:3243:MET:HA | 1:A:3243:MET:HE3 | 2.02 | 0.41 |
| 1:B:54:ALA:O | 1:B:58:GLU:N | 2.54 | 0.41 |
| 1:B:580:GLU:HA | 1:B:583:ARG:NH2 | 2.36 | 0.41 |
| 1:B:810:LYS:HA | 1:B:810:LYS:HD3 | 1.78 | 0.41 |
| 1:B:1026:MET:HE2 | 1:B:1026:MET:HA | 2.02 | 0.41 |
| 1:B:1205:PRO:O | 1:B:1208:TRP:HB3 | 2.20 | 0.41 |
| 1:B:1213:ASN:HA | 5:J:11:ALA:N | 2.35 | 0.41 |
| 1:B:2465:ALA:HB2 | 1:B:2493:TYR:CD1 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:3524:MET:HE2 | 1:B:3524:MET:HB2 | 1.89 | 0.41 |
| 1:B:3567:LEU:HD12 | 1:B:3568:PRO:HD2 | 2.02 | 0.41 |
| 2:D:426:HIS:HA | 2:D:468:ILE:HB | 2.01 | 0.41 |
| 3:F:149:LEU:HB3 | 3:F:261:PHE:CZ | 2.55 | 0.41 |
| 5:I:23:GLU:O | 5:I:27:GLN:HG3 | 2.20 | 0.41 |
| 6:L:22:LYS:NZ | 6:L:97:TRP:HB2 | 2.35 | 0.41 |
| 1:A:193:LEU:HA | 1:B:178:MET:CE | 2.51 | 0.41 |
| 1:A:270:THR:HG23 | 1:A:272:LEU:HB2 | 2.03 | 0.41 |
| 1:A:371:LYS:HA | 1:A:440:ARG:HH21 | 1.85 | 0.41 |
| 1:A:4610:TYR:N | 1:A:4642:VAL:O | 2.53 | 0.41 |
| 1:B:539:SER:O | 1:B:541:GLU:N | 2.54 | 0.41 |
| 1:B:815:LEU:HD12 | 1:B:815:LEU:HA | 1.84 | 0.41 |
| 1:B:902:LYS:HB2 | 1:B:902:LYS:HE3 | 1.77 | 0.41 |
| 1:B:1031:VAL:O | 1:B:1035:GLU:HG2 | 2.21 | 0.41 |
| 1:B:1991:ASP:OD1 | 1:B:1992:LYS:N | 2.52 | 0.41 |
| 1:B:2107:ARG:O | 1:B:2111:ILE:HG12 | 2.20 | 0.41 |
| 1:B:2284:LEU:O | 1:B:2288:ILE:HG13 | 2.21 | 0.41 |
| 1:B:4169:ILE:CG2 | 1:B:4302:ARG:HE | 2.32 | 0.41 |
| 1:B:4223:LEU:HD12 | 1:B:4223:LEU:HA | 1.88 | 0.41 |
| 1:B:4230:ARG:NH1 | 1:B:4230:ARG:HB2 | 2.36 | 0.41 |
| 3:F:257:HIS:CG | 3:F:260:ARG:HH12 | 2.39 | 0.41 |
| 6:K:85:TRP:HH2 | 6:K:92:SER:HB3 | 1.84 | 0.41 |
| 6:L:85:TRP:HD1 | 6:L:86:ASP:C | 2.28 | 0.41 |
| 1:A:41:LEU:HA | 1:B:132:SER:HB2 | 2.02 | 0.41 |
| 1:A:78:LEU:HD22 | 1:A:108:HIS:H | 1.86 | 0.41 |
| 1:A:118:PHE:HB3 | 1:A:135:LEU:HD11 | 2.02 | 0.41 |
| 1:A:173:ARG:HD2 | 1:B:283:ARG:HH21 | 1.86 | 0.41 |
| 1:A:1201:ARG:CZ | 1:B:968:VAL:HG22 | 2.51 | 0.41 |
| 1:A:1802:PRO:O | 1:A:1806:ARG:HG3 | 2.20 | 0.41 |
| 1:A:1961:ASN:OD1 | 1:A:1961:ASN:N | 2.53 | 0.41 |
| 1:A:2769:LEU:HG | 1:A:2773:MET:HE3 | 2.01 | 0.41 |
| 1:A:3433:VAL:HA | 1:A:3436:MET:CG | 2.49 | 0.41 |
| 1:B:1078:LYS:O | 1:B:1082:LEU:HD23 | 2.21 | 0.41 |
| 1:B:1181:LYS:HG2 | 1:B:1185:LYS:NZ | 2.36 | 0.41 |
| 1:B:1452:VAL:HA | 1:B:1512:TYR:CZ | 2.56 | 0.41 |
| 1:B:2140:SER:O | 1:B:2144:THR:HG23 | 2.20 | 0.41 |
| 1:B:3464:ASP:O | 1:B:3468:VAL:HG23 | 2.21 | 0.41 |
| 1:B:3591:ASP:OD2 | 1:B:3596:ALA:HB3 | 2.21 | 0.41 |
| 1:B:4209:GLU:CD | 1:B:4213:ARG:HH12 | 2.29 | 0.41 |
| 1:B:4626:ILE:HD13 | 1:B:4632:PRO:HD3 | 2.03 | 0.41 |
| 2:D:497:PHE:O | 2:D:508:LEU:HD12 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:F:330:VAL:C | 3:F:331:LYS:HD3 | 2.46 | 0.41 |
| 4:G:70:ARG:HH21 | 4:G:72:ARG:HH21 | 1.69 | 0.41 |
| 4:H:9:LYS:HE2 | 4:H:9:LYS:HA | 2.02 | 0.41 |
| 5:J:42:ILE:O | 5:J:45:GLU:HG3 | 2.21 | 0.41 |
| 5:J:72:HIS:HB3 | 5:J:87:LYS:HB3 | 2.02 | 0.41 |
| 1:A:40:LEU:HD13 | 1:B:33:HIS:CE1 | 2.55 | 0.41 |
| 1:A:85:LYS:HB2 | 1:A:112:LYS:HE3 | 2.02 | 0.41 |
| 1:A:152:PHE:HE2 | 1:B:119:ILE:O | 2.03 | 0.41 |
| 1:A:294:SER:HB2 | 1:A:297:VAL:HG23 | 2.03 | 0.41 |
| 1:A:451:ARG:NE | 1:A:453:ASN:HB3 | 2.34 | 0.41 |
| 1:A:1175:SER:O | 1:A:1178:ARG:HG2 | 2.21 | 0.41 |
| 1:A:1229:ASP:OD2 | 1:A:1233:GLN:NE2 | 2.52 | 0.41 |
| 1:A:1577:ALA:O | 1:A:1581:LYS:HG3 | 2.21 | 0.41 |
| 1:A:1719:GLU:HA | 1:A:1722:THR:HG22 | 2.03 | 0.41 |
| 1:A:1747:ALA:O | 1:A:1751:VAL:HG23 | 2.20 | 0.41 |
| 1:A:2075:LEU:O | 1:A:2079:GLN:HB2 | 2.20 | 0.41 |
| 1:A:3239:LYS:O | 1:A:3243:MET:HG2 | 2.21 | 0.41 |
| 1:A:3440:LEU:O | 1:A:3444:ILE:HG13 | 2.21 | 0.41 |
| 1:A:4408:PRO:HD3 | 1:A:4530:GLN:NE2 | 2.36 | 0.41 |
| 1:B:440:ARG:NH1 | 1:B:444:GLU:HB2 | 2.35 | 0.41 |
| 1:B:613:LYS:O | 1:B:617:GLU:HG3 | 2.21 | 0.41 |
| 1:B:631:GLN:HG3 | 2:D:572:ALA:HB2 | 2.03 | 0.41 |
| 1:B:673:TRP:O | 1:B:679:GLY:HA3 | 2.21 | 0.41 |
| 1:B:755:TRP:CE2 | 2:D:453:GLU:HA | 2.55 | 0.41 |
| 1:B:916:GLN:OE1 | 1:B:1027:PRO:HG2 | 2.21 | 0.41 |
| 1:B:1190:TYR:HE2 | 1:B:1214:ILE:HD11 | 1.86 | 0.41 |
| 1:B:1608:LEU:O | 1:B:1612:GLN:HG3 | 2.21 | 0.41 |
| 1:B:1932:CYS:HB3 | 1:B:1963:LEU:HD11 | 2.01 | 0.41 |
| 1:B:2132:PRO:O | 1:B:2136:ILE:HG13 | 2.21 | 0.41 |
| 1:B:2260:SER:OG | 1:B:2262:ASP:OD1 | 2.24 | 0.41 |
| 1:B:2375:PHE:HE2 | 1:B:2434:THR:HG22 | 1.85 | 0.41 |
| 1:B:2744:LEU:HD22 | 1:B:2748:TYR:HE2 | 1.85 | 0.41 |
| 1:B:3052:LYS:HE2 | 1:B:3052:LYS:HB3 | 1.91 | 0.41 |
| 1:B:3140:ARG:O | 1:B:3144:VAL:HG23 | 2.20 | 0.41 |
| 1:B:3154:LEU:HD11 | 1:B:3516:TYR:HB3 | 2.03 | 0.41 |
| 1:B:3683:ASP:HB3 | 1:B:3686:VAL:HG23 | 2.02 | 0.41 |
| 1:B:3708:LEU:HD23 | 1:B:3809:SER:HA | 2.02 | 0.41 |
| 1:B:3731:LEU:O | 1:B:3735:GLN:HG3 | 2.21 | 0.41 |
| 1:B:4175:GLU:HG3 | 1:B:4278:PHE:CE2 | 2.56 | 0.41 |
| 1:B:4394:THR:O | 1:B:4490:GLN:NE2 | 2.35 | 0.41 |
| 2:D:425:VAL:HG11 | 2:D:429:SER:HA | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:526:TYR:O | 2:D:526:TYR:CG | 2.73 | 0.41 |
| 4:G:21:ILE:HG23 | 4:G:89:ILE:HG13 | 2.02 | 0.41 |
| 5:I:63:GLY:N | 5:J:58:VAL:O | 2.43 | 0.41 |
| 1:A:1374:PRO:O | 1:A:1378:ARG:N | 2.49 | 0.41 |
| 1:A:1523:TRP:HA | 1:A:1526:LYS:HE3 | 2.02 | 0.41 |
| 1:A:1989:ASN:OD1 | 1:A:1989:ASN:N | 2.54 | 0.41 |
| 1:A:2065:LEU:HD22 | 1:A:2137:LEU:HD12 | 2.02 | 0.41 |
| 1:A:2527:PRO:HD3 | 1:A:2545:TRP:CE2 | 2.56 | 0.41 |
| 1:A:3931:GLN:O | 1:A:3935:VAL:HG23 | 2.21 | 0.41 |
| 1:A:4058:LEU:O | 1:A:4062:GLN:HG2 | 2.21 | 0.41 |
| 1:A:4179:LEU:HD23 | 1:A:4179:LEU:HA | 1.94 | 0.41 |
| 1:B:64:GLN:HB3 | 1:B:105:ILE:HD11 | 2.03 | 0.41 |
| 1:B:161:PHE:HE2 | 1:B:183:GLU:HG3 | 1.86 | 0.41 |
| 1:B:865:GLU:HG2 | 1:B:910:ILE:HD13 | 2.03 | 0.41 |
| 1:B:1183:PHE:O | 1:B:1187:VAL:HG23 | 2.21 | 0.41 |
| 1:B:1518:GLU:HG2 | 1:B:1519:ASP:H | 1.85 | 0.41 |
| 1:B:1596:GLY:HA2 | 1:B:1599:ARG:NH1 | 2.32 | 0.41 |
| 1:B:1623:ARG:NH1 | 1:B:1632:VAL:O | 2.54 | 0.41 |
| 1:B:1903:SER:HA | 1:B:2016:ILE:O | 2.21 | 0.41 |
| 1:B:2047:GLN:HA | 1:B:2070:VAL:HG21 | 2.03 | 0.41 |
| 1:B:2457:SER:HB2 | 1:B:2732:PRO:HB3 | 2.03 | 0.41 |
| 1:B:3223:ARG:HH11 | 1:B:3223:ARG:HG3 | 1.86 | 0.41 |
| 1:B:3839:VAL:O | 1:B:3843:ASN:HB2 | 2.21 | 0.41 |
| 1:B:4318:PRO:HG2 | 1:B:4325:ASN:HA | 2.01 | 0.41 |
| 3:F:95:ASP:HB2 | 3:F:294:PHE:CE2 | 2.55 | 0.41 |
| 1:A:119:ILE:HD13 | 1:B:152:PHE:HD1 | 1.86 | 0.40 |
| 1:A:264:ARG:HG2 | 1:A:274:GLU:CD | 2.47 | 0.40 |
| 1:A:365:ARG:HH12 | 1:A:433:LEU:HB2 | 1.86 | 0.40 |
| 1:A:426:GLU:CA | 1:A:429:LYS:HB2 | 2.46 | 0.40 |
| 1:A:1459:LEU:HD22 | 1:A:1507:MET:HB2 | 2.03 | 0.40 |
| 1:A:1907:PRO:HD2 | 1:A:2042:THR:HA | 2.03 | 0.40 |
| 1:A:3284:LYS:HB3 | 1:A:3402:TYR:CE1 | 2.57 | 0.40 |
| 1:B:393:LEU:HD21 | 1:B:459:LEU:HG | 2.02 | 0.40 |
| 1:B:401:LEU:HB2 | 1:B:409:PHE:CE1 | 2.56 | 0.40 |
| 1:B:410:GLU:O | 1:B:414:VAL:HG23 | 2.21 | 0.40 |
| 1:B:1508:LYS:HA | 1:B:1513:TYR:CD1 | 2.56 | 0.40 |
| 1:B:1679:ARG:HB3 | 1:B:1679:ARG:NH1 | 2.36 | 0.40 |
| 1:B:1839:LEU:O | 1:B:1843:ARG:NH1 | 2.55 | 0.40 |
| 1:B:1888:CYS:HA | 1:B:2039:LEU:HD22 | 2.03 | 0.40 |
| 1:B:2231:SER:O | 1:B:2235:ARG:HG3 | 2.20 | 0.40 |
| 1:B:3150:VAL:HA | 1:B:3153:THR:HG22 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:196:PHE:HB3 | 2:D:200:PHE:CD1 | 2.56 | 0.40 |
| 3:F:279:ASN:HD21 | 3:F:307:ALA:HB1 | 1.86 | 0.40 |
| 4:H:26:GLU:HB3 | 4:H:47:HIS:NE2 | 2.36 | 0.40 |
| 4:H:45:LEU:O | 4:H:49:PHE:HD2 | 2.04 | 0.40 |
| 5:I:7:VAL:CG2 | 5:I:77:TYR:HB2 | 2.52 | 0.40 |
| 5:I:24:CYS:O | 5:I:27:GLN:HB2 | 2.21 | 0.40 |
| 1:A:23:ASN:O | 1:A:126:ASP:HB3 | 2.22 | 0.40 |
| 1:A:3838:ASN:HD22 | 1:A:3866:VAL:HG11 | 1.86 | 0.40 |
| 1:A:4288:VAL:O | 1:A:4319:SER:OG | 2.29 | 0.40 |
| 1:B:609:ILE:HG21 | 1:B:678:GLU:HB3 | 2.04 | 0.40 |
| 1:B:860:GLU:OE2 | 1:B:880:ARG:HB2 | 2.21 | 0.40 |
| 1:B:1087:ARG:HH21 | 1:B:1200:GLN:NE2 | 2.13 | 0.40 |
| 1:B:2054:LEU:HD23 | 1:B:2054:LEU:HA | 1.80 | 0.40 |
| 1:B:2507:ARG:O | 1:B:2511:ARG:HG3 | 2.21 | 0.40 |
| 1:B:3928:THR:OG1 | 1:B:3931:GLN:HG3 | 2.21 | 0.40 |
| 1:B:4092:ARG:NE | 1:B:4092:ARG:HA | 2.36 | 0.40 |
| 1:B:4178:ARG:HG3 | 1:B:4305:PHE:HZ | 1.85 | 0.40 |
| 2:D:273:ASP:O | 2:D:277:SER:OG | 2.27 | 0.40 |
| 2:D:409:SER:HB2 | 2:D:420:ASP:HB3 | 2.02 | 0.40 |
| 2:D:426:HIS:CD2 | 2:D:468:ILE:HG21 | 2.56 | 0.40 |
| 2:D:523:ASN:ND2 | 2:D:546:MET:SD | 2.95 | 0.40 |
| 4:G:24:ASN:OD1 | 4:G:30:ILE:HB | 2.21 | 0.40 |
| 4:H:18:GLN:HB2 | 4:H:91:ILE:HG23 | 2.02 | 0.40 |
| 5:J:57:ILE:CG2 | 5:J:84:LEU:HB3 | 2.50 | 0.40 |
| 6:L:22:LYS:HZ3 | 6:L:97:TRP:HB2 | 1.87 | 0.40 |
| 1:A:35:ARG:O | 1:A:39:PRO:HD3 | 2.21 | 0.40 |
| 1:A:344:LEU:HA | 1:A:356:ALA:HB1 | 2.04 | 0.40 |
| 1:A:347:ALA:HB1 | 1:A:353:ILE:HA | 2.04 | 0.40 |
| 1:A:373:PRO:HB2 | 1:A:376:ARG:HB3 | 2.02 | 0.40 |
| 1:A:385:SER:HB2 | 1:A:454:PRO:HG3 | 2.04 | 0.40 |
| 1:A:2257:LYS:HE3 | 1:A:2676:THR:HG21 | 2.02 | 0.40 |
| 1:A:3228:GLU:HA | 1:A:3231:VAL:HG12 | 2.02 | 0.40 |
| 1:A:3659:ARG:NH2 | 1:A:3670:ASP:OD1 | 2.47 | 0.40 |
| 1:A:3663:THR:HG22 | 1:A:3668:ASP:OD2 | 2.21 | 0.40 |
| 1:B:783:GLU:HG2 | 2:D:375:LEU:HD22 | 2.02 | 0.40 |
| 1:B:2485:GLN:HA | 1:B:2488:ARG:HD3 | 2.03 | 0.40 |
| 1:B:2487:GLU:O | 1:B:2491:GLN:HG3 | 2.21 | 0.40 |
| 1:B:3398:ALA:O | 1:B:3399:GLN:HB2 | 2.22 | 0.40 |
| 1:B:3873:ARG:HD3 | 1:B:3873:ARG:HA | 1.79 | 0.40 |
| 1:B:4013:LEU:HD13 | 1:B:4017:PHE:CE2 | 2.56 | 0.40 |
| 2:D:214:GLN:H | 4:H:72:ARG:NH1 | 2.20 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:34:LEU:O | 1:A:38:VAL:HG22 | 2.22 | 0.40 |
| 1:A:170:LYS:HZ2 | 1:A:179:ALA:HB3 | 1.86 | 0.40 |
| 1:A:233:GLY:O | 1:A:236:VAL:HG12 | 2.22 | 0.40 |
| 1:A:316:PHE:HA | 1:A:320:THR:OG1 | 2.21 | 0.40 |
| 1:A:1964:GLU:HB2 | 1:A:1967:MET:HG2 | 2.04 | 0.40 |
| 1:A:2154:ILE:HB | 1:A:2155:PRO:HD3 | 2.03 | 0.40 |
| 1:A:2898:LYS:HE3 | 1:A:2898:LYS:HB3 | 1.92 | 0.40 |
| 1:A:3035:GLU:O | 1:A:3038:GLN:HG3 | 2.22 | 0.40 |
| 1:A:3150:VAL:O | 1:A:3154:LEU:HD23 | 2.22 | 0.40 |
| 1:B:49:PRO:HG3 | 1:B:81:ARG:NH2 | 2.37 | 0.40 |
| 1:B:119:ILE:O | 1:B:136:ARG:CB | 2.64 | 0.40 |
| 1:B:292:ARG:NH2 | 1:B:316:PHE:O | 2.52 | 0.40 |
| 1:B:351:ASP:OD1 | 1:B:352:LYS:N | 2.54 | 0.40 |
| 1:B:627:TYR:CZ | 1:B:633:CYS:HA | 2.57 | 0.40 |
| 1:B:1163:THR:HA | 1:B:1166:ALA:HB3 | 2.03 | 0.40 |
| 1:B:2270:PRO:HA | 1:B:2273:ARG:HH11 | 1.86 | 0.40 |
| 1:B:2279:LEU:HA | 1:B:2698:GLN:HG2 | 2.03 | 0.40 |
| 1:B:2468:ASN:O | 1:B:2471:GLN:HG3 | 2.21 | 0.40 |
| 1:B:2499:LEU:HD23 | 1:B:2499:LEU:HA | 1.88 | 0.40 |
| 1:B:2755:MET:HG3 | 1:B:2807:PHE:HB2 | 2.02 | 0.40 |
| 1:B:3491:LYS:O | 1:B:3494:GLU:HG3 | 2.21 | 0.40 |
| 1:B:4215:ALA:O | 1:B:4219:VAL:HG23 | 2.22 | 0.40 |
| 2:D:412:LEU:HD12 | 2:D:412:LEU:HA | 1.96 | 0.40 |
| 3:F:71:MET:HA | 3:F:71:MET:HE2 | 2.04 | 0.40 |
| 3:F:157:ARG:O | 3:F:160:ILE:HB | 2.22 | 0.40 |
| 5:I:61:ASN:HD21 | 5:J:60:ARG:HB3 | 1.87 | 0.40 |
| 6:K:66:THR:O | 6:K:106:VAL:HA | 2.22 | 0.40 |
| 1:A:415:ALA:O | 1:A:419:VAL:HG23 | 2.22 | 0.40 |
| 1:A:1555:ALA:HA | 1:A:1558:LYS:NZ | 2.36 | 0.40 |
| 1:A:3284:LYS:HE2 | 1:A:3405:MET:HE3 | 2.04 | 0.40 |
| 1:A:3471:LYS:HE2 | 1:A:3761:LEU:HB3 | 2.03 | 0.40 |
| 1:A:4520:TYR:O | 1:A:4524:THR:HG23 | 2.21 | 0.40 |
| 1:A:4604:VAL:HG22 | 1:A:4625:GLU:HB3 | 2.03 | 0.40 |
| 1:B:27:VAL:HA | 1:B:65:MET:HE1 | 2.04 | 0.40 |
| 1:B:524:ASN:O | 1:B:527:TYR:N | 2.54 | 0.40 |
| 1:B:1204:PHE:H | 5:J:5:LYS:CE | 2.35 | 0.40 |
| 1:B:1455:GLY:HA3 | 1:B:1512:TYR:CE2 | 2.50 | 0.40 |
| 1:B:2081:SER:OG | 1:B:2152:GLU:OE2 | 2.29 | 0.40 |
| 1:B:3223:ARG:HG3 | 1:B:3223:ARG:NH1 | 2.37 | 0.40 |
| 1:B:3260:ILE:HA | 1:B:3263:GLN:CD | 2.46 | 0.40 |
| 1:B:3492:THR:HA | 1:B:3495:THR:HG22 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:4482:PHE:O | 1:B:4486:ILE:HG12 | 2.22 | 0.40 |
| 1:B:4534:TRP:HE3 | 1:B:4539:LEU:HD21 | 1.85 | 0.40 |
| 2:D:317:ASN:ND2 | 2:D:326:GLU:OE2 | 2.54 | 0.40 |
| 2:D:441:VAL:HG11 | 2:D:486:ALA:HA | 2.04 | 0.40 |
| 2:D:480:THR:OG1 | 2:D:528:TYR:O | 2.40 | 0.40 |
| 4:G:52:LYS:NZ | 4:H:49:PHE:CD1 | 2.89 | 0.40 |
| 5:J:51:ASN:HA | 5:J:52:PRO:HD3 | 1.90 | 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 | 4530/4646 (98%) | 4360 (96%) | 165 (4%) | 5 (0%) | 48 | 83 |
| 1 | B | 4509/4646 (97%) | 4383 (97%) | 122 (3%) | 4 (0%) | 48 | 83 |
| 2 | C | 390/638 (61%) | 364 (93%) | 26 (7%) | 0 | 100 | 100 |
| 2 | D | 390/638 (61%) | 367 (94%) | 23 (6%) | 0 | 100 | 100 |
| 3 | E | 307/492 (62%) | 292 (95%) | 15 (5%) | 0 | 100 | 100 |
| 3 | F | 307/492 (62%) | 291 (95%) | 14 (5%) | 2 (1%) | 19 | 56 |
| 4 | G | 91/96 (95%) | 87 (96%) | 4 (4%) | 0 | 100 | 100 |
| 4 | H | 91/96 (95%) | 85 (93%) | 6 (7%) | 0 | 100 | 100 |
| 5 | I | 87/89 (98%) | 83 (95%) | 4 (5%) | 0 | 100 | 100 |
| 5 | J | 87/89 (98%) | 82 (94%) | 4 (5%) | 1 (1%) | 12 | 46 |
| 6 | K | 111/113 (98%) | 107 (96%) | 4 (4%) | 0 | 100 | 100 |
| 6 | L | 111/113 (98%) | 109 (98%) | 2 (2%) | 0 | 100 | 100 |
| All | All | 11011/12148 (91%) | 10610 (96%) | 389 (4%) | 12 (0%) | 50 | 83 |

All (12) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 589 | ASN |
| 1 | A | 3384 | ARG |
| 1 | B | 540 | LYS |
| 1 | B | 3384 | ARG |
| 1 | A | 3444 | ILE |
| 1 | A | 3445 | ALA |
| 1 | B | 1161 | ALA |
| 1 | B | 3377 | TYR |
| 1 | A | 445 | ASN |
| 3 | F | 112 | ASP |
| 5 | J | 51 | ASN |
| 3 | F | 39 | ILE |

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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 | 4044/4125 (98%) | 4038 (100%) | 6 (0%) | 92 | 94 |
| 1 | B | 4028/4125 (98%) | 4028 (100%) | 0 | 100 | 100 |
| 2 | C | 344/557 (62%) | 344 (100%) | 0 | 100 | 100 |
| 2 | D | 344/557 (62%) | 344 (100%) | 0 | 100 | 100 |
| 3 | E | 279/422 (66%) | 279 (100%) | 0 | 100 | 100 |
| 3 | F | 279/422 (66%) | 279 (100%) | 0 | 100 | 100 |
| 4 | G | 87/89 (98%) | 87 (100%) | 0 | 100 | 100 |
| 4 | H | 87/89 (98%) | 87 (100%) | 0 | 100 | 100 |
| 5 | I | 78/78 (100%) | 78 (100%) | 0 | 100 | 100 |
| 5 | J | 78/78 (100%) | 78 (100%) | 0 | 100 | 100 |
| 6 | K | 97/97 (100%) | 97 (100%) | 0 | 100 | 100 |
| 6 | L | 97/97 (100%) | 97 (100%) | 0 | 100 | 100 |
| All | All | 9842/10736 (92%) | 9836 (100%) | 6 (0%) | 92 | 94 |

All (6) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 3434 | GLU |
| 1 | A | 3437 | ILE |
| 1 | A | 3446 | ARG |
| 1 | A | 3447 | TYR |
| 1 | A | 3454 | LEU |
| 1 | A | 3461 | ILE |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (94) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 22 | GLN |
| 1 | A | 31 | GLN |
| 1 | A | 244 | GLN |
| 1 | A | 333 | ASN |
| 1 | A | 363 | HIS |
| 1 | A | 1186 | GLN |
| 1 | A | 1213 | ASN |
| 1 | A | 1233 | GLN |
| 1 | A | 1566 | GLN |
| 1 | A | 1755 | GLN |
| 1 | A | 1922 | GLN |
| 1 | A | 1973 | GLN |
| 1 | A | 2005 | GLN |
| 1 | A | 2109 | GLN |
| 1 | A | 2169 | GLN |
| 1 | A | 2217 | ASN |
| 1 | A | 2476 | HIS |
| 1 | A | 2554 | GLN |
| 1 | A | 2621 | ASN |
| 1 | A | 2707 | GLN |
| 1 | A | 3014 | ASN |
| 1 | A | 3063 | HIS |
| 1 | A | 3197 | GLN |
| 1 | A | 3267 | GLN |
| 1 | A | 3399 | GLN |
| 1 | A | 3431 | ASN |
| 1 | A | 3522 | GLN |
| 1 | A | 3711 | GLN |
| 1 | A | 3931 | GLN |
| 1 | A | 4114 | HIS |
| 1 | A | 4131 | ASN |
| 1 | A | 4429 | GLN |
| 1 | A | 4530 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 4549 | GLN |
| 1 | B | 33 | HIS |
| 1 | B | 150 | HIS |
| 1 | B | 155 | ASN |
| 1 | B | 195 | HIS |
| 1 | B | 246 | GLN |
| 1 | B | 280 | ASN |
| 1 | B | 330 | ASN |
| 1 | B | 607 | GLN |
| 1 | B | 676 | HIS |
| 1 | B | 680 | GLN |
| 1 | B | 731 | ASN |
| 1 | B | 871 | HIS |
| 1 | B | 1056 | GLN |
| 1 | B | 1085 | GLN |
| 1 | B | 1113 | GLN |
| 1 | B | 1174 | GLN |
| 1 | B | 1222 | ASN |
| 1 | B | 1233 | GLN |
| 1 | B | 1569 | GLN |
| 1 | B | 1779 | HIS |
| 1 | B | 1973 | GLN |
| 1 | B | 2067 | ASN |
| 1 | B | 2217 | ASN |
| 1 | B | 2476 | HIS |
| 1 | B | 2554 | GLN |
| 1 | B | 2560 | HIS |
| 1 | B | 2588 | HIS |
| 1 | B | 2637 | HIS |
| 1 | B | 2752 | ASN |
| 1 | B | 2834 | GLN |
| 1 | B | 3014 | ASN |
| 1 | B | 3104 | GLN |
| 1 | B | 3227 | GLN |
| 1 | B | 3267 | GLN |
| 1 | B | 3346 | ASN |
| 1 | B | 3378 | ASN |
| 1 | B | 3535 | HIS |
| 1 | B | 3563 | GLN |
| 1 | B | 3985 | GLN |
| 1 | B | 4029 | HIS |
| 1 | B | 4114 | HIS |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | B | 4156 | ASN |
| 1 | B | 4307 | GLN |
| 1 | B | 4335 | GLN |
| 1 | B | 4425 | GLN |
| 1 | B | 4429 | GLN |
| 1 | B | 4436 | GLN |
| 2 | C | 188 | GLN |
| 2 | D | 371 | GLN |
| 2 | D | 380 | HIS |
| 2 | D | 426 | HIS |
| 3 | F | 115 | HIS |
| 3 | F | 257 | HIS |
| 3 | F | 295 | HIS |
| 3 | F | 373 | GLN |
| 4 | G | 18 | GLN |
| 5 | I | 10 | ASN |
| 5 | I | 41 | HIS |
| 5 | J | 18 | GLN |
| 6 | L | 5 | 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](#)

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

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$ |
| 7 | ADP | A | 4701 | 9 | 24,29,29 | 0.89 | 0 | 29,45,45 | 1.20 | 2 (6%) |
| 7 | ADP | A | 4703 | - | 24,29,29 | 0.88 | 0 | 29,45,45 | 1.22 | 2 (6%) |
| 7 | ADP | B | 4703 | - | 24,29,29 | 0.86 | 0 | 29,45,45 | 1.23 | 2 (6%) |
| 7 | ADP | A | 4704 | - | 24,29,29 | 0.86 | 0 | 29,45,45 | 1.17 | 2 (6%) |
| 8 | ATP | A | 4702 | 9 | 28,33,33 | 0.71 | 0 | 34,52,52 | 0.60 | 1 (2%) |
| 8 | ATP | B | 4702 | 9 | 28,33,33 | 0.71 | 0 | 34,52,52 | 0.59 | 1 (2%) |
| 7 | ADP | B | 4704 | - | 24,29,29 | 0.87 | 0 | 29,45,45 | 1.18 | 2 (6%) |
| 7 | ADP | B | 4701 | 9 | 24,29,29 | 0.88 | 0 | 29,45,45 | 1.18 | 2 (6%) |

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 |
|-----|------|-------|------|------|---------|------------|---------|
| 7 | ADP | A | 4701 | 9 | - | 3/12/32/32 | 0/3/3/3 |
| 7 | ADP | A | 4703 | - | - | 2/12/32/32 | 0/3/3/3 |
| 7 | ADP | B | 4703 | - | - | 0/12/32/32 | 0/3/3/3 |
| 7 | ADP | A | 4704 | - | - | 2/12/32/32 | 0/3/3/3 |
| 8 | ATP | A | 4702 | 9 | - | 6/18/38/38 | 0/3/3/3 |
| 8 | ATP | B | 4702 | 9 | - | 6/18/38/38 | 0/3/3/3 |
| 7 | ADP | B | 4704 | - | - | 3/12/32/32 | 0/3/3/3 |
| 7 | ADP | B | 4701 | 9 | - | 3/12/32/32 | 0/3/3/3 |

There are no bond length outliers.

All (14) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|----------|-------|-------------|----------|
| 7 | B | 4703 | ADP | N3-C2-N1 | -3.74 | 123.60 | 128.67 |
| 7 | A | 4703 | ADP | N3-C2-N1 | -3.72 | 123.63 | 128.67 |
| 7 | A | 4701 | ADP | N3-C2-N1 | -3.64 | 123.73 | 128.67 |
| 7 | B | 4701 | ADP | N3-C2-N1 | -3.64 | 123.74 | 128.67 |
| 7 | B | 4704 | ADP | N3-C2-N1 | -3.58 | 123.81 | 128.67 |
| 7 | A | 4704 | ADP | N3-C2-N1 | -3.58 | 123.82 | 128.67 |
| 7 | A | 4701 | ADP | C4-C5-N7 | -2.50 | 106.70 | 109.34 |
| 7 | B | 4701 | ADP | C4-C5-N7 | -2.48 | 106.72 | 109.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|----------|-------|-------------|----------|
| 7 | B | 4704 | ADP | C4-C5-N7 | -2.46 | 106.73 | 109.34 |
| 7 | A | 4704 | ADP | C4-C5-N7 | -2.46 | 106.73 | 109.34 |
| 7 | B | 4703 | ADP | C4-C5-N7 | -2.45 | 106.75 | 109.34 |
| 7 | A | 4703 | ADP | C4-C5-N7 | -2.37 | 106.83 | 109.34 |
| 8 | A | 4702 | ATP | C5-C6-N6 | 2.30 | 123.82 | 120.31 |
| 8 | B | 4702 | ATP | C5-C6-N6 | 2.27 | 123.76 | 120.31 |

There are no chirality outliers.

All (25) torsion outliers are listed below:

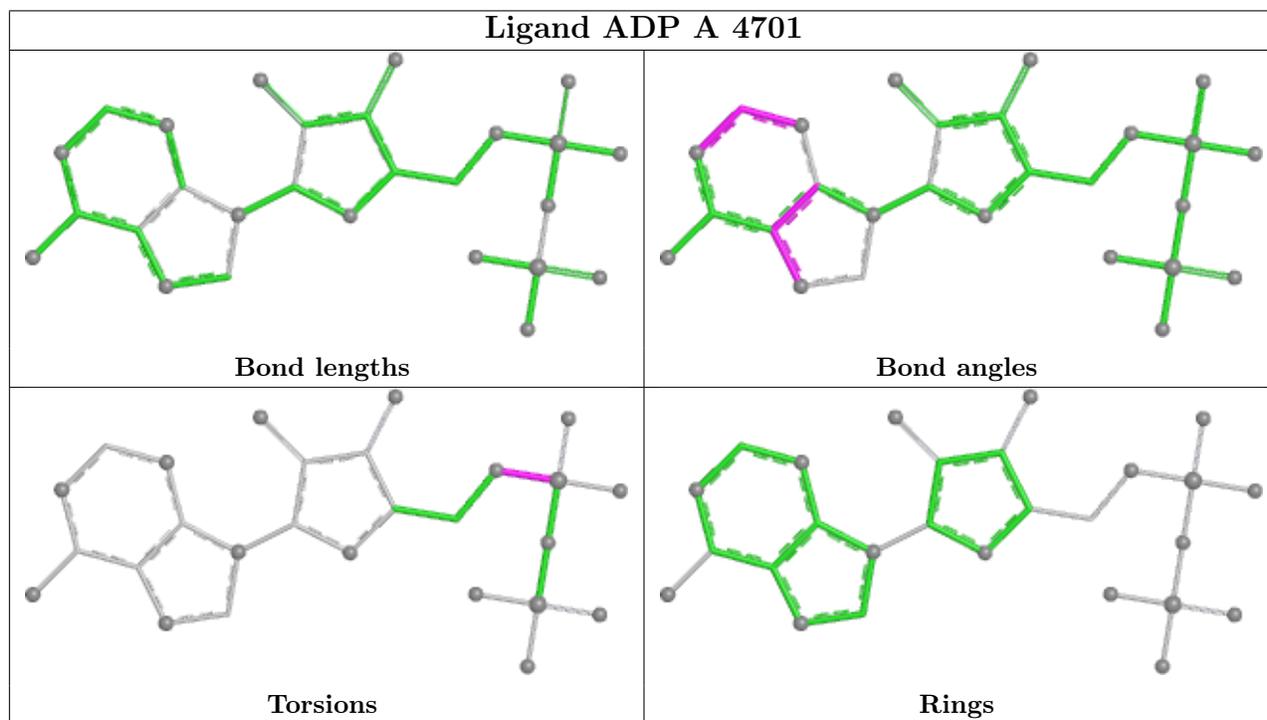
| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|-----------------|
| 7 | A | 4701 | ADP | C5'-O5'-PA-O1A |
| 7 | A | 4701 | ADP | C5'-O5'-PA-O2A |
| 7 | A | 4701 | ADP | C5'-O5'-PA-O3A |
| 7 | A | 4704 | ADP | C5'-O5'-PA-O1A |
| 7 | B | 4701 | ADP | C5'-O5'-PA-O1A |
| 7 | B | 4701 | ADP | C5'-O5'-PA-O2A |
| 7 | B | 4701 | ADP | C5'-O5'-PA-O3A |
| 8 | A | 4702 | ATP | O4'-C4'-C5'-O5' |
| 8 | A | 4702 | ATP | C3'-C4'-C5'-O5' |
| 8 | B | 4702 | ATP | O4'-C4'-C5'-O5' |
| 7 | A | 4703 | ADP | O4'-C4'-C5'-O5' |
| 7 | A | 4703 | ADP | C3'-C4'-C5'-O5' |
| 8 | B | 4702 | ATP | PA-O3A-PB-O1B |
| 7 | B | 4704 | ADP | C5'-O5'-PA-O1A |
| 7 | B | 4704 | ADP | C3'-C4'-C5'-O5' |
| 8 | B | 4702 | ATP | C3'-C4'-C5'-O5' |
| 8 | A | 4702 | ATP | PG-O3B-PB-O2B |
| 7 | B | 4704 | ADP | O4'-C4'-C5'-O5' |
| 8 | A | 4702 | ATP | PG-O3B-PB-O1B |
| 8 | A | 4702 | ATP | PA-O3A-PB-O1B |
| 8 | B | 4702 | ATP | PA-O3A-PB-O2B |
| 8 | A | 4702 | ATP | PA-O3A-PB-O2B |
| 8 | B | 4702 | ATP | PG-O3B-PB-O1B |
| 8 | B | 4702 | ATP | PG-O3B-PB-O2B |
| 7 | A | 4704 | ADP | C3'-C4'-C5'-O5' |

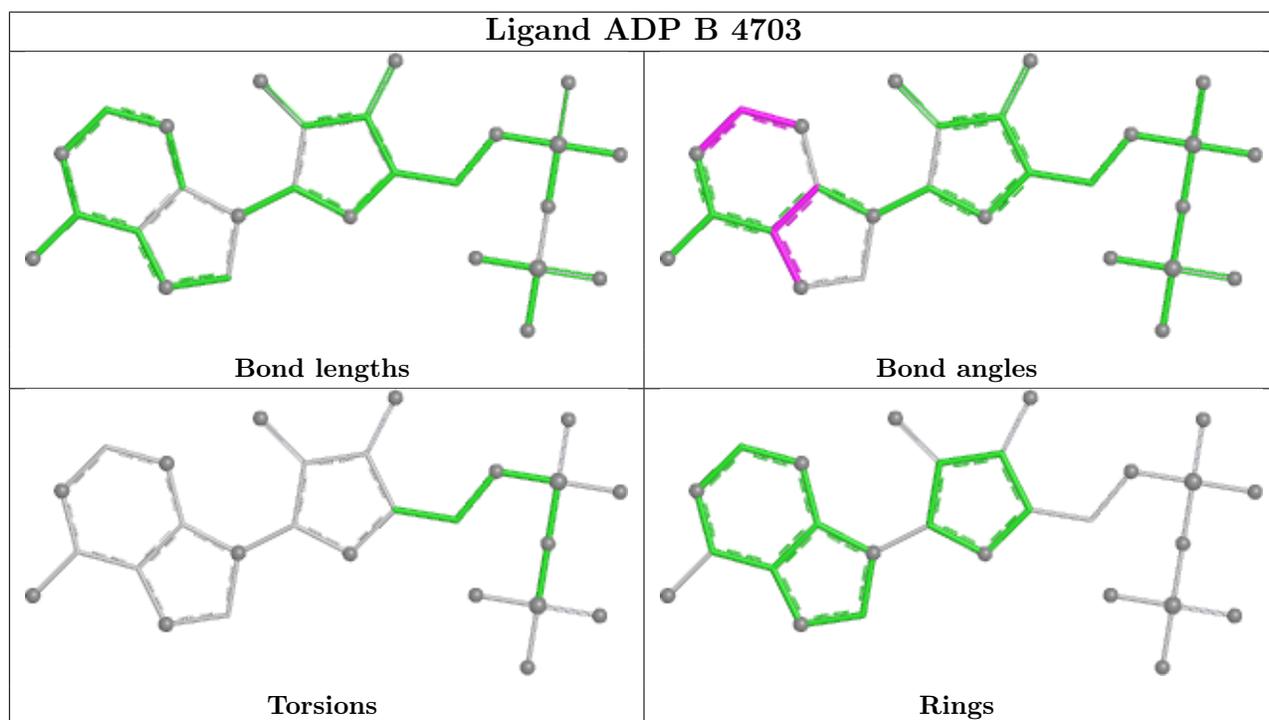
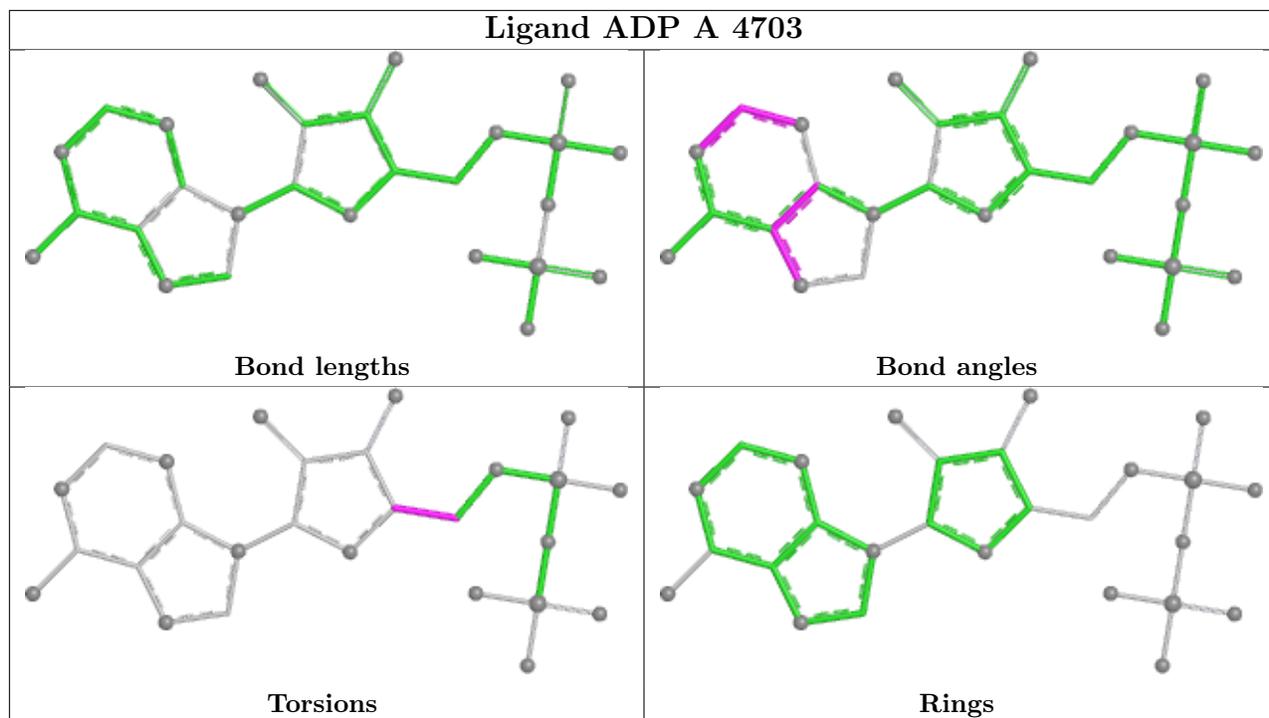
There are no ring outliers.

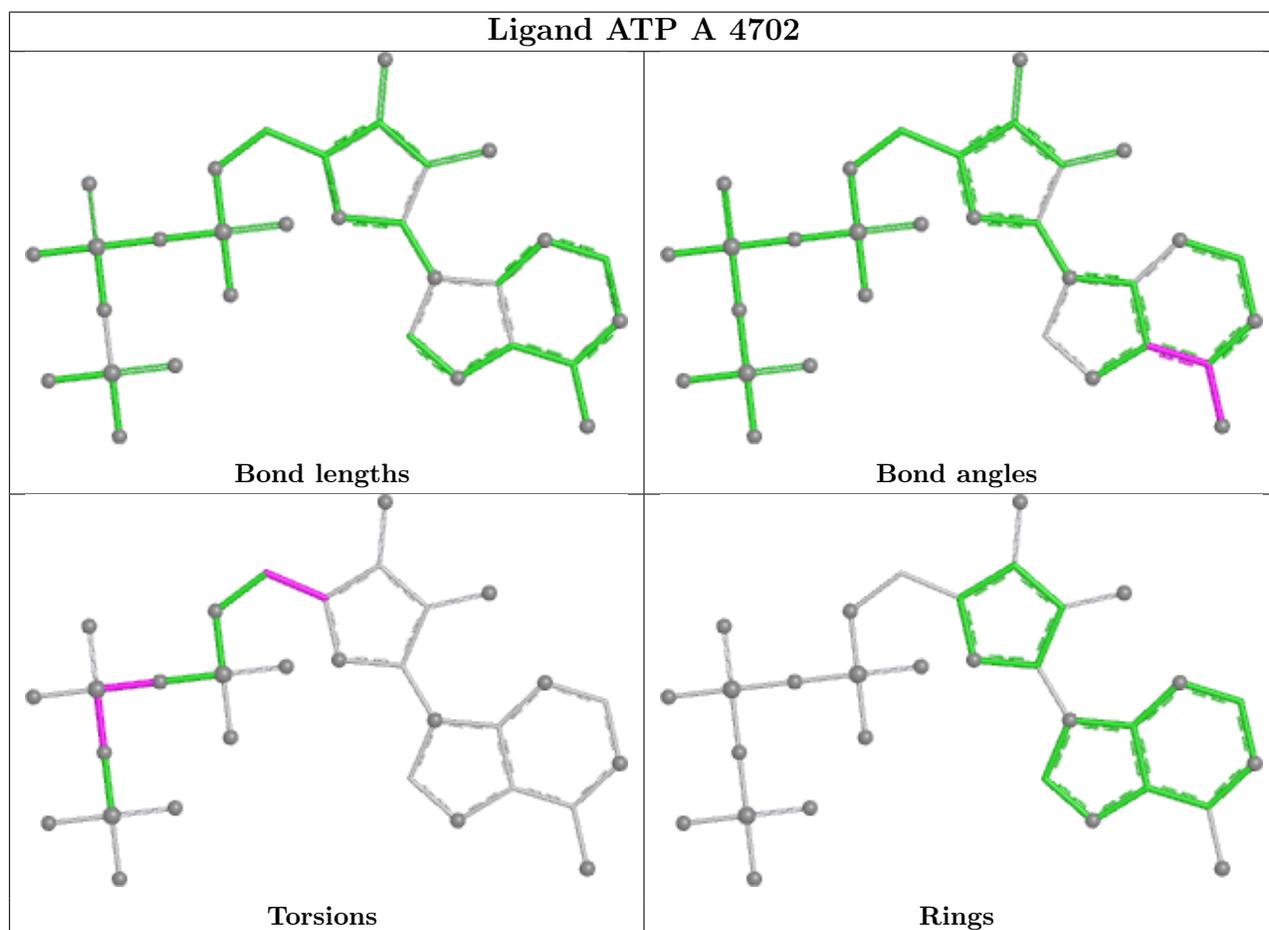
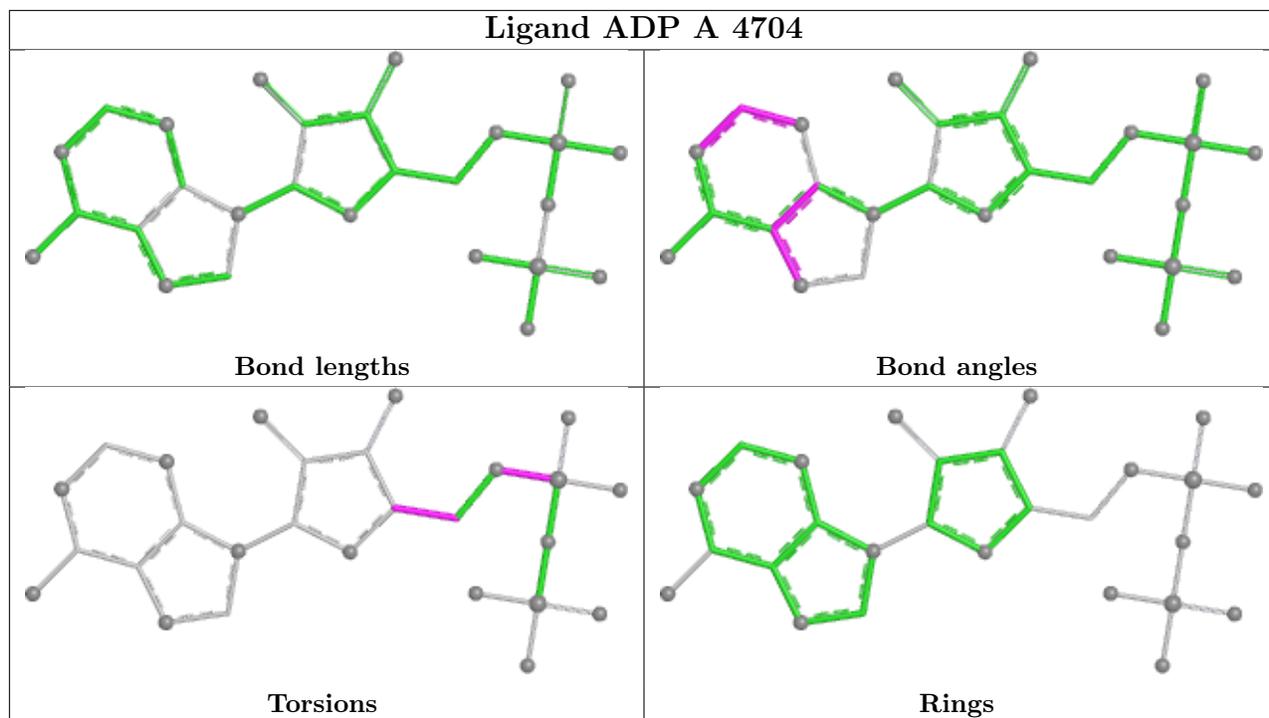
4 monomers are involved in 4 short contacts:

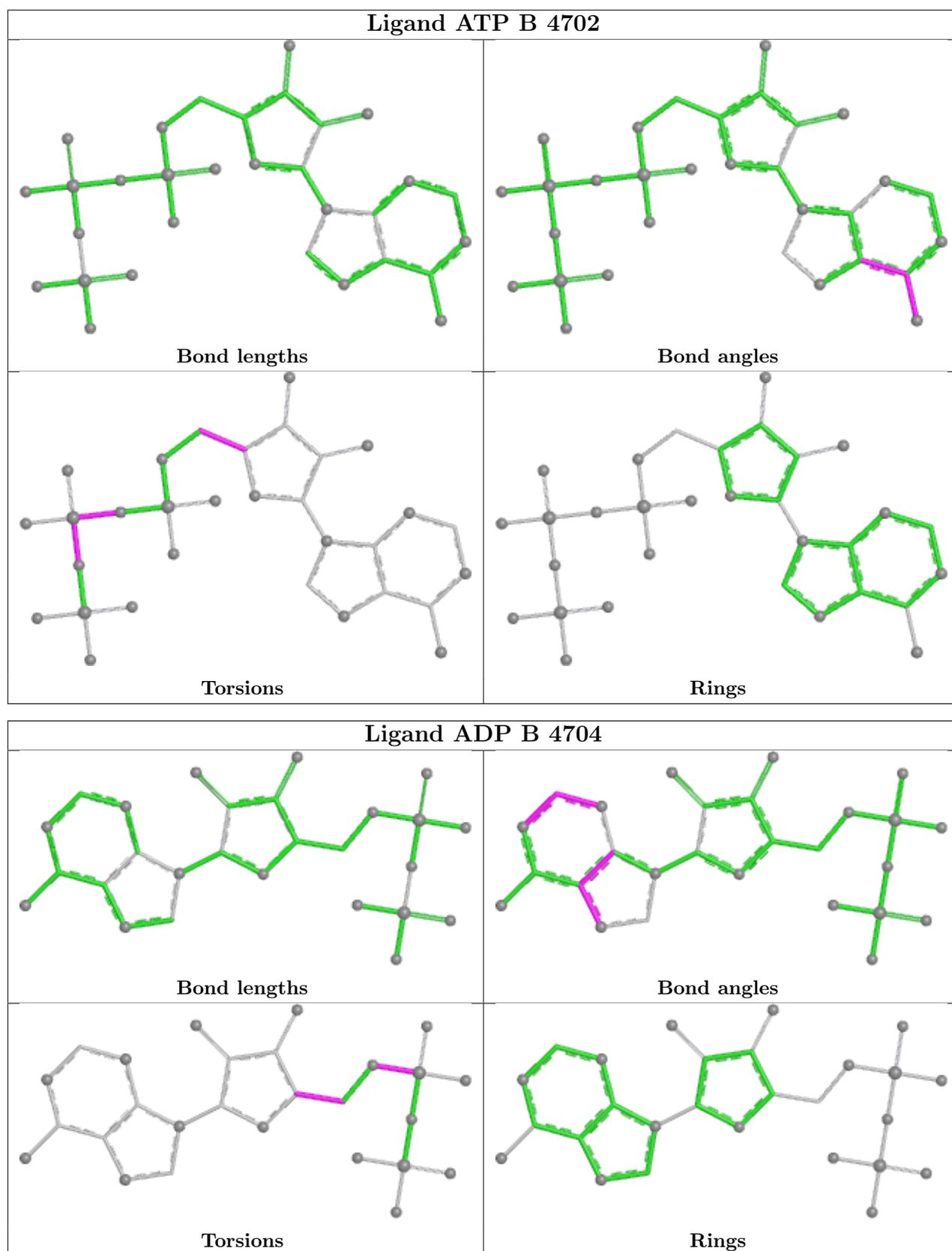
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 7 | A | 4701 | ADP | 1 | 0 |
| 7 | A | 4703 | ADP | 1 | 0 |
| 7 | B | 4704 | ADP | 1 | 0 |
| 7 | B | 4701 | ADP | 1 | 0 |

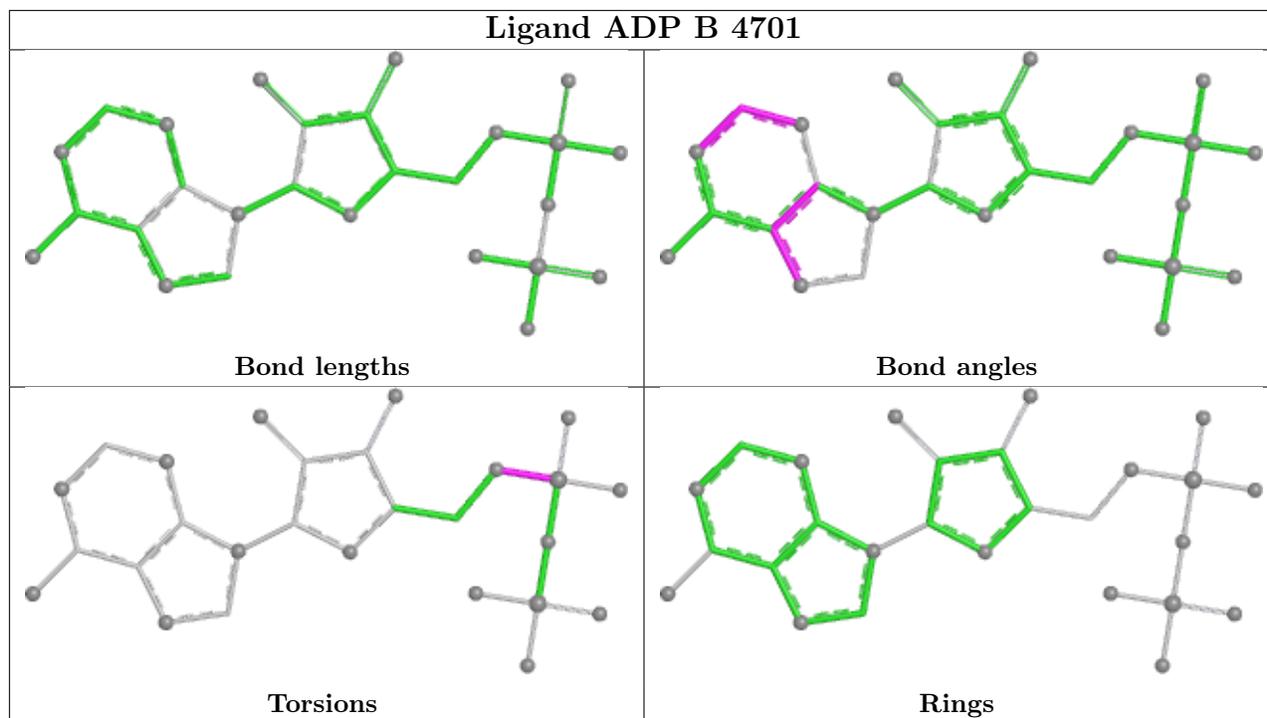
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1 | A | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | A | 1456:GLU | C | 1457:MET | N | 2.96 |

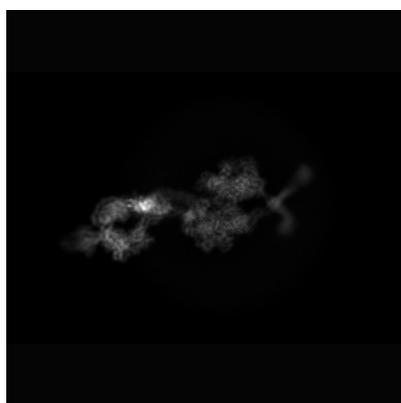
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-47381. These allow visual inspection of the internal detail of the map and identification of artifacts.

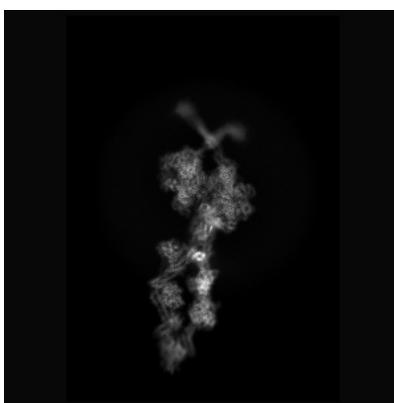
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

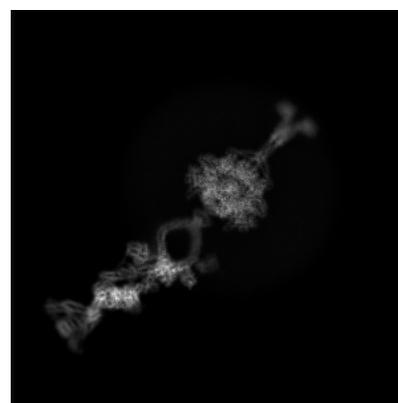
6.1.1 Primary map



X



Y

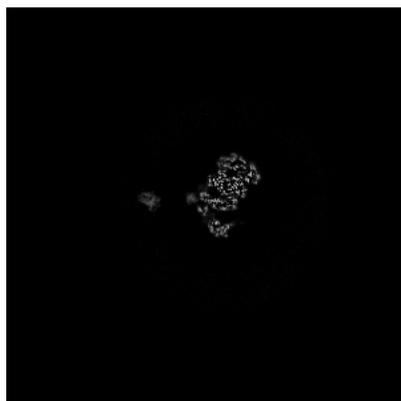


Z

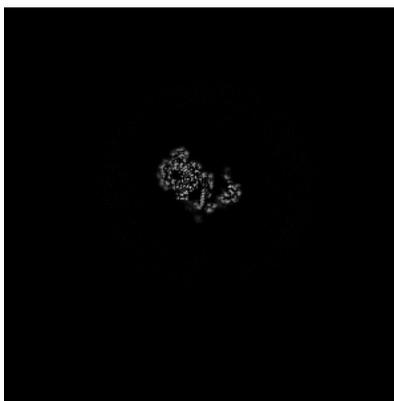
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 210



Y Index: 210

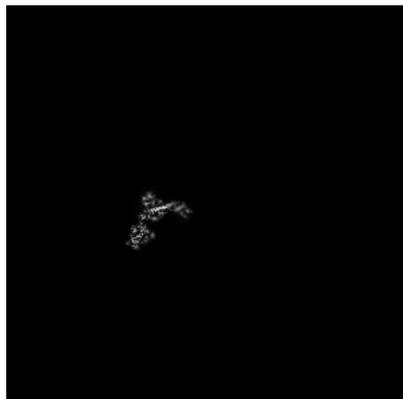


Z Index: 210

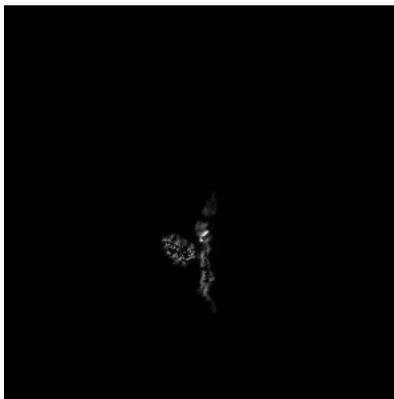
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 162



Y Index: 144

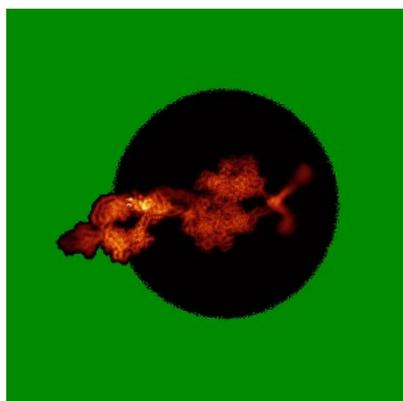


Z Index: 212

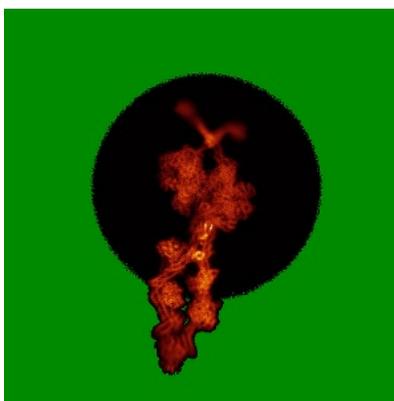
The images above show the largest variance slices of the map in three orthogonal directions.

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

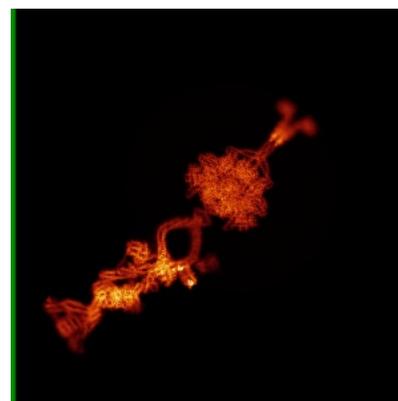
6.4.1 Primary map



X



Y

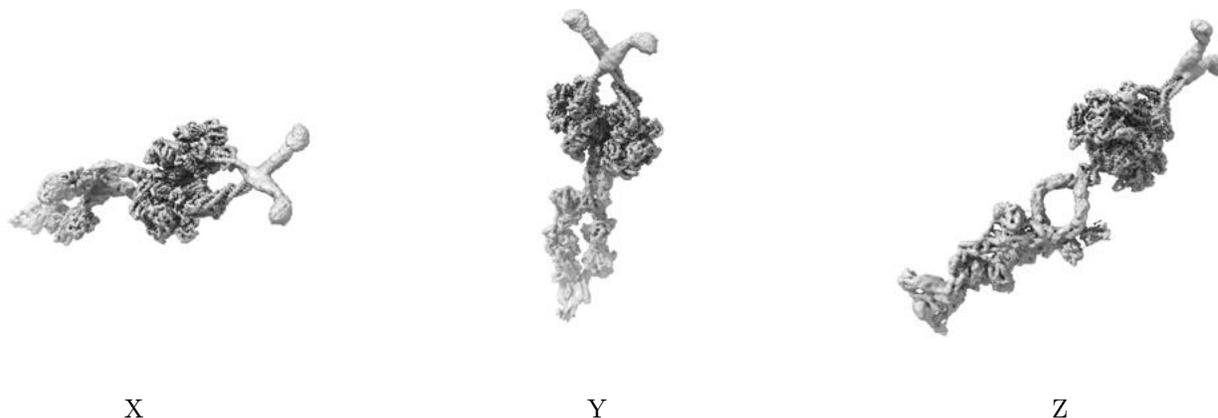


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

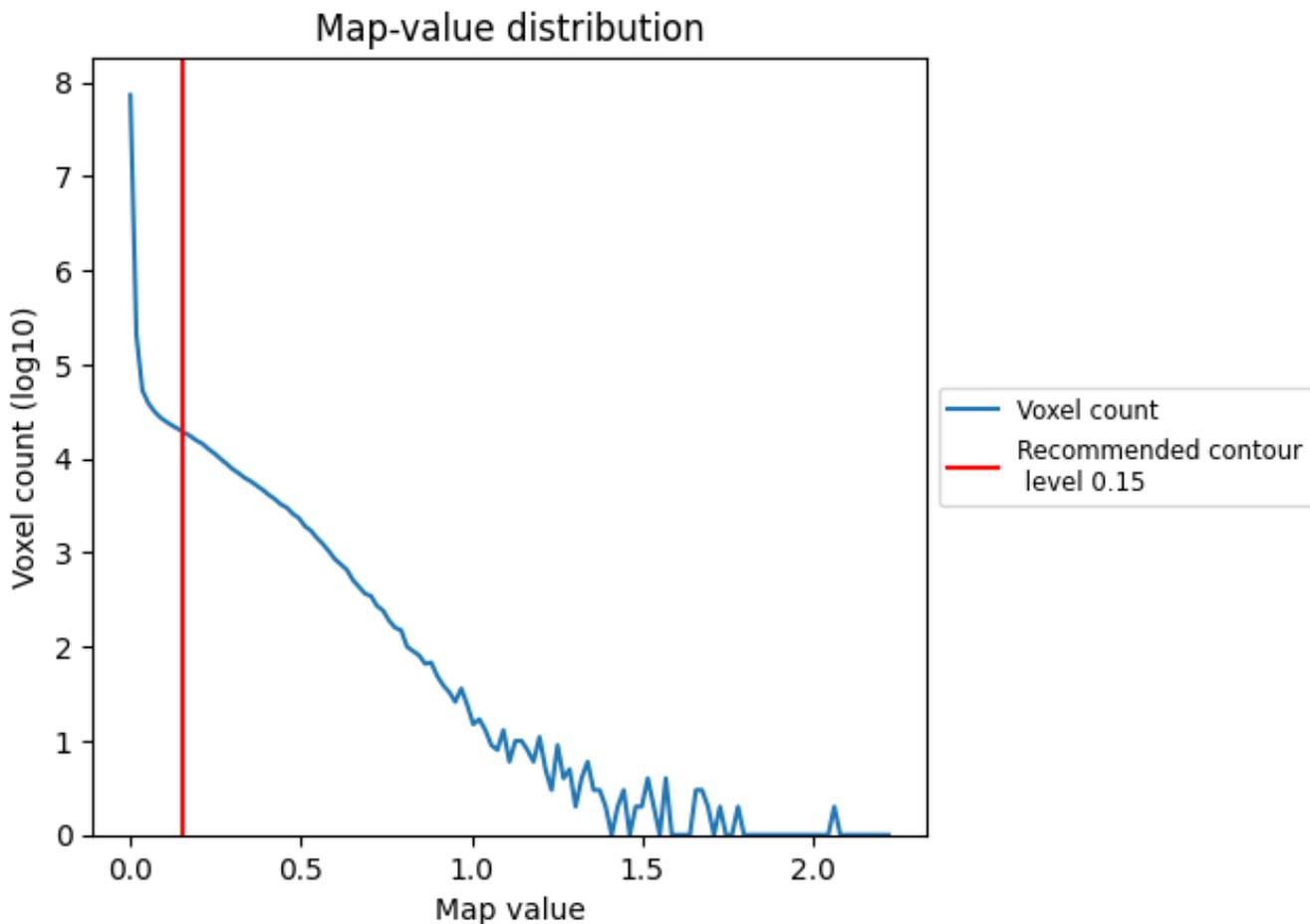
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

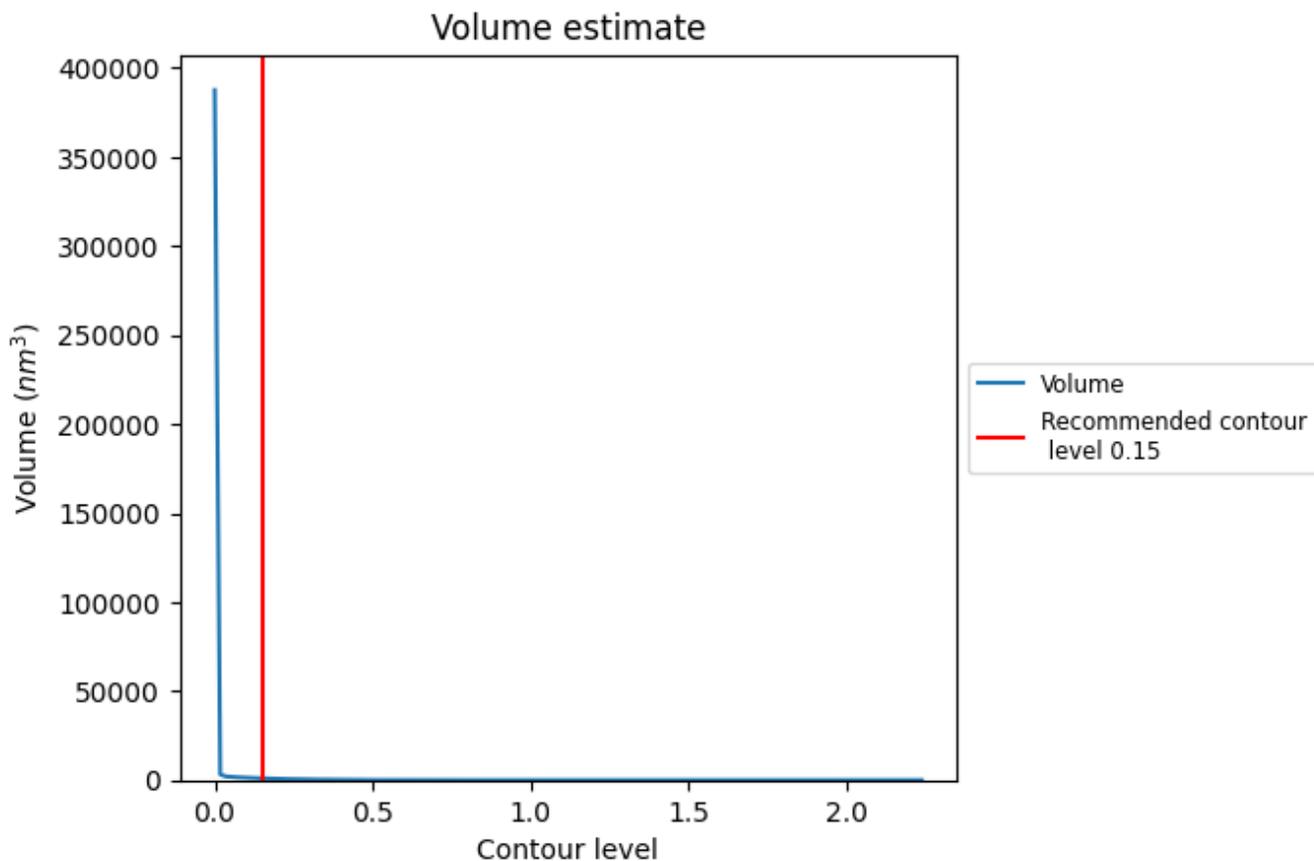
This section contains the results of statistical analysis of the map.

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.

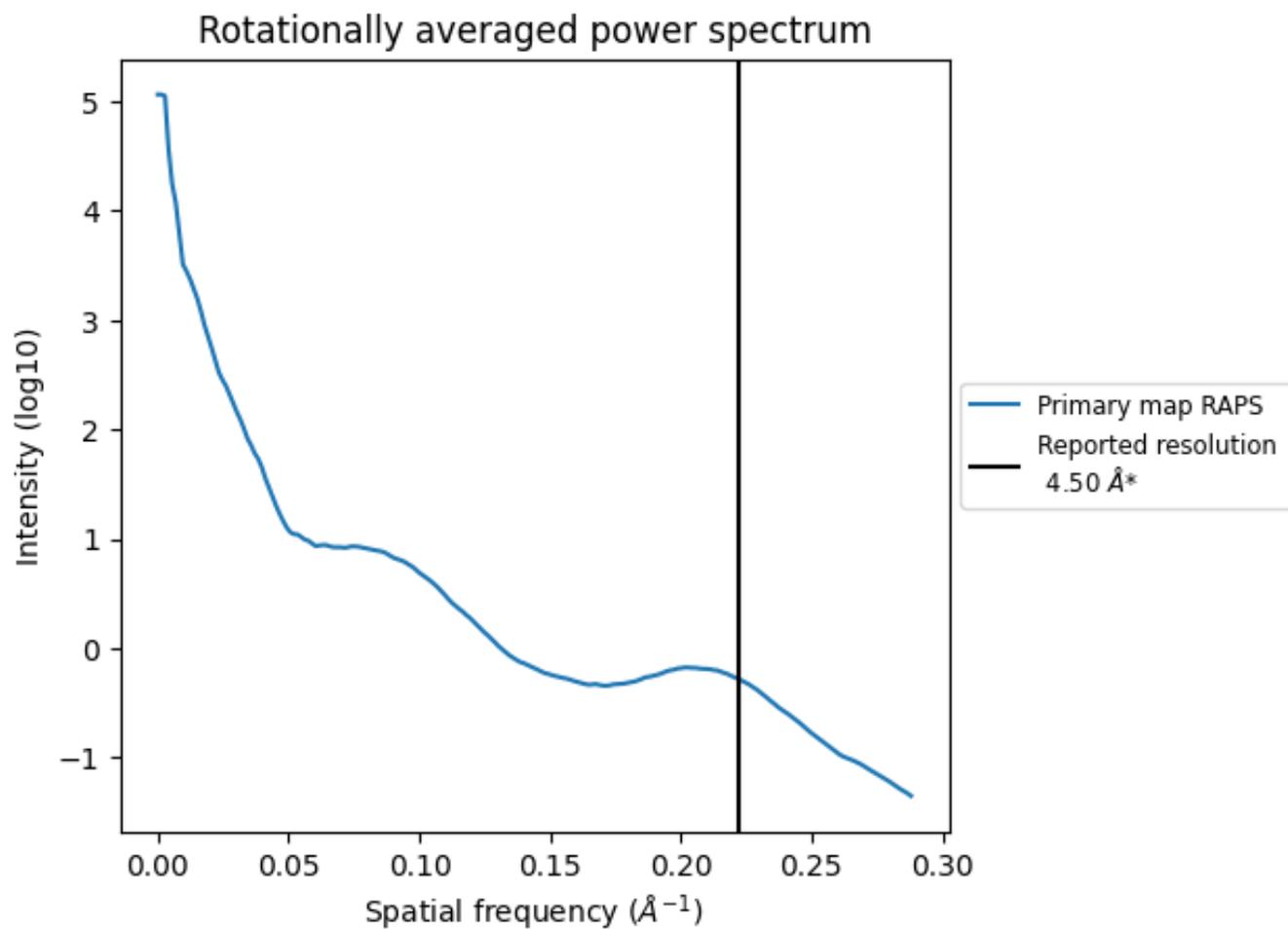
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 984 nm^3 ; this corresponds to an approximate mass of 888 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 0.222 Å⁻¹

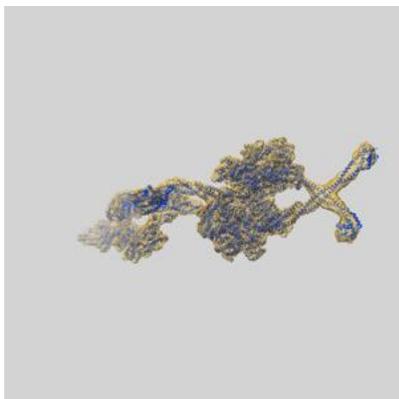
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

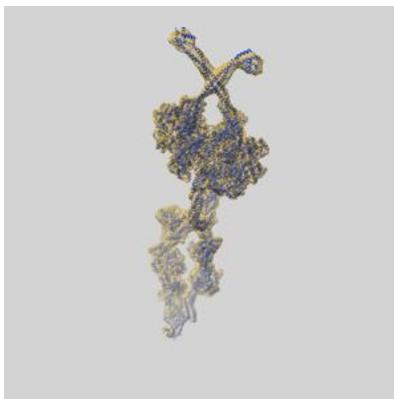
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-47381 and PDB model 9E12. Per-residue inclusion information can be found in section 3 on page 7.

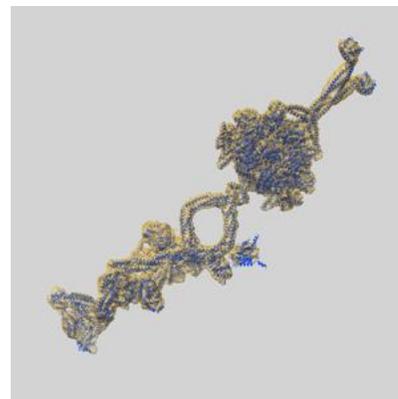
9.1 Map-model overlay [i](#)



X



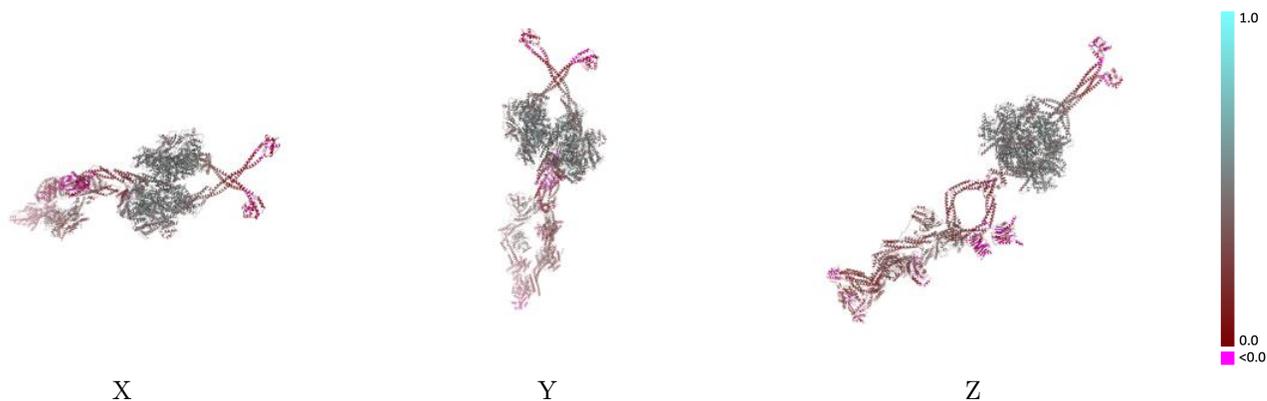
Y



Z

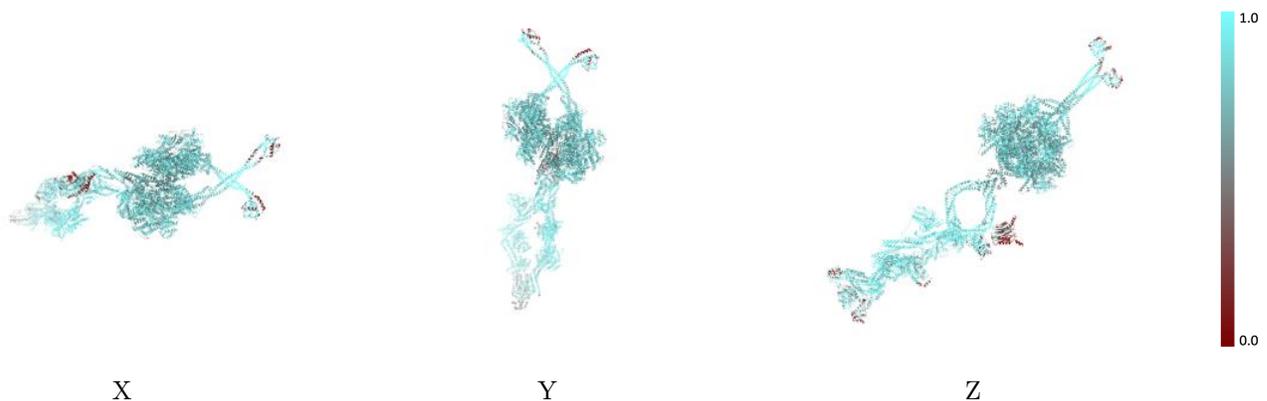
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



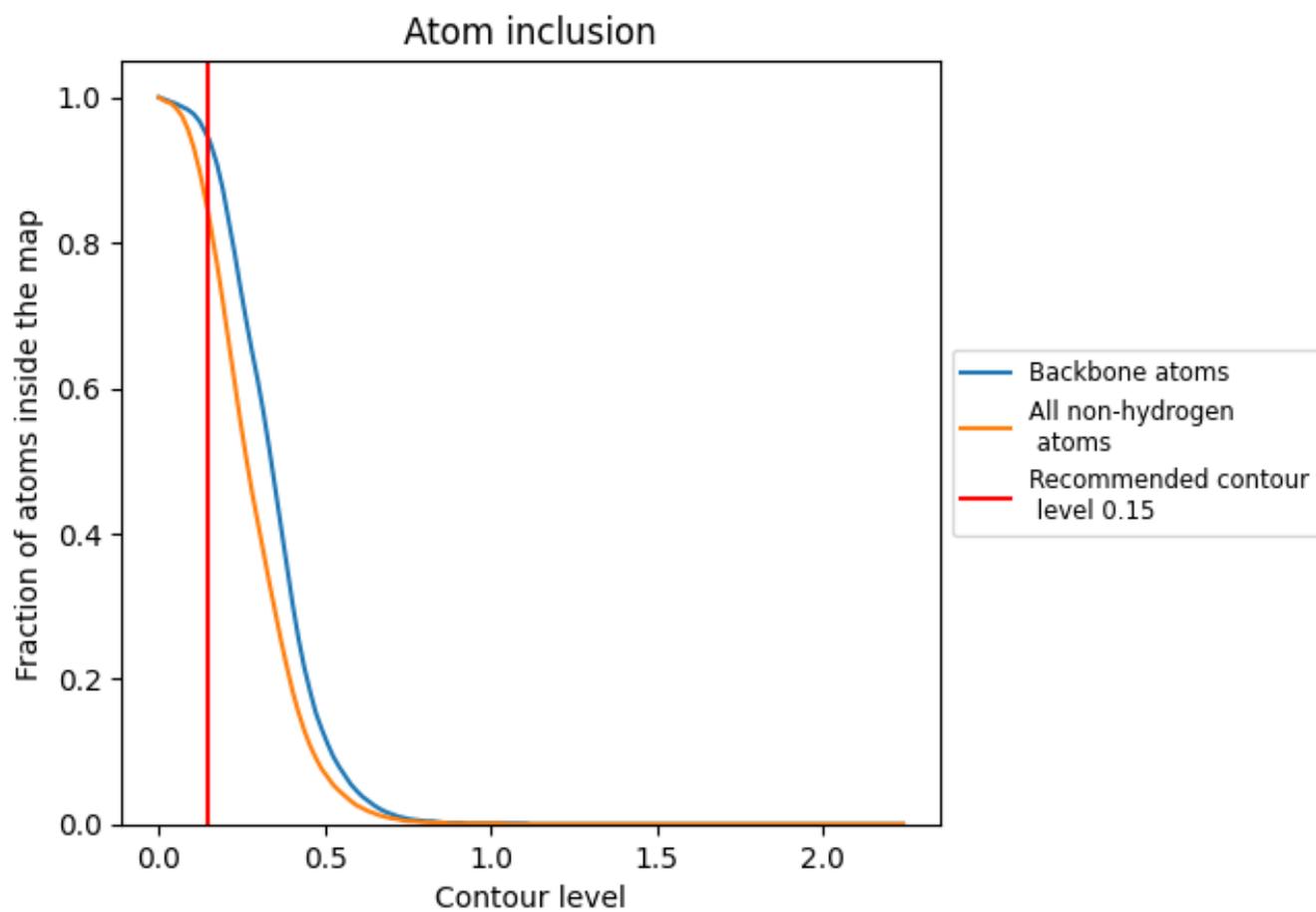
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.15).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 84% 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 (0.15) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|--|
| All |  0.8380 |  0.3430 |
| A |  0.8390 |  0.3700 |
| B |  0.8430 |  0.3640 |
| C |  0.9250 |  0.3340 |
| D |  0.9340 |  0.2750 |
| E |  0.9430 |  0.3160 |
| F |  0.9380 |  0.2850 |
| G |  0.7930 |  0.1060 |
| H |  0.7960 |  0.1400 |
| I |  0.6740 |  0.0410 |
| J |  0.7800 |  0.0680 |
| K |  0.1630 |  0.0320 |
| L |  0.2470 |  0.0410 |

