



Full wwPDB EM Validation Report ⓘ

Apr 29, 2024 – 12:26 pm BST

PDB ID : 4AAU
EMDB ID : EMD-2001
Title : ATP-triggered molecular mechanics of the chaperonin GroEL
Authors : Clare, D.K.; Vasishtan, D.; Stagg, S.; Quispe, J.; Farr, G.W.; Topf, M.; Horwich, A.L.; Saibil, H.R.
Deposited on : 2011-12-05
Resolution : 8.50 Å(reported)
Based on initial model : 1OEL

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.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

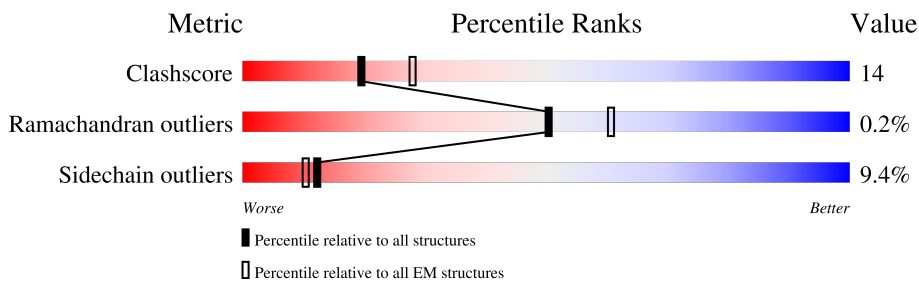
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 8.50 Å.

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



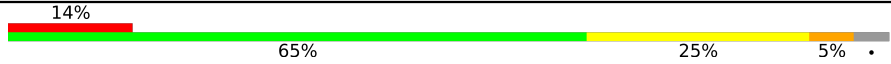

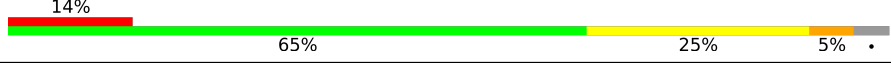


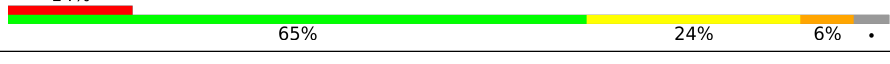
| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore | 158937 | 4297 |
| Ramachandran outliers | 154571 | 4023 |
| Sidechain outliers | 154315 | 3826 |

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 | 548 | |
| 1 | B | 548 | |
| 1 | C | 548 | |
| 1 | D | 548 | |
| 1 | E | 548 | |
| 1 | F | 548 | |
| 1 | G | 548 | |
| 1 | H | 548 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | I | 548 |  |
| 1 | J | 548 |  |
| 1 | K | 548 |  |
| 1 | L | 548 |  |
| 1 | M | 548 |  |
| 1 | N | 548 |  |

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

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 3 | PO4 | A | 1527 | - | - | X | - |
| 3 | PO4 | B | 1527 | - | - | X | - |
| 3 | PO4 | C | 1527 | - | - | X | - |
| 3 | PO4 | D | 1527 | - | - | X | - |
| 3 | PO4 | E | 1527 | - | - | X | - |
| 3 | PO4 | F | 1527 | - | - | X | - |
| 3 | PO4 | G | 1527 | - | - | X | - |
| 3 | PO4 | H | 1526 | - | - | X | - |
| 3 | PO4 | I | 1526 | - | - | X | - |
| 3 | PO4 | J | 1526 | - | - | X | - |
| 3 | PO4 | K | 1526 | - | - | X | - |
| 3 | PO4 | L | 1526 | - | - | X | - |
| 3 | PO4 | M | 1526 | - | - | X | - |
| 3 | PO4 | N | 1526 | - | - | X | - |
| 4 | ATP | M | 1527 | - | - | X | - |

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 54474 atoms, of which 168 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 60 KDA CHAPERONIN.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | B | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | C | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | D | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | E | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | F | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | G | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | H | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | I | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | J | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | K | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | L | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | M | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |
| 1 | N | 524 | 3846 | 2391 | 665 | 770 | 20 | 0 | 1 |

There are 14 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------------------|------------|
| A | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| B | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------------------|------------|
| C | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| D | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| E | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| F | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| G | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| H | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| I | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| J | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| K | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| L | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| M | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |
| N | 398 | ALA | ASP | engineered mutation | UNP P0A6F5 |

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

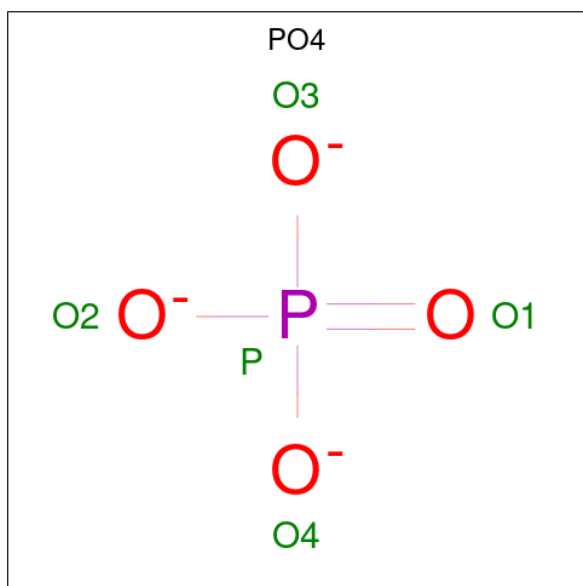
| Mol | Chain | Residues | Atoms | AltConf |
|-----|-------|----------|-----------------|---------|
| 2 | A | 1 | Total Mg 1 1 | 0 |
| 2 | B | 1 | Total Mg 1 1 | 0 |
| 2 | C | 1 | Total Mg 1 1 | 0 |
| 2 | D | 1 | Total Mg 1 1 | 0 |
| 2 | E | 1 | Total Mg 1 1 | 0 |
| 2 | F | 1 | Total Mg 1 1 | 0 |
| 2 | G | 1 | Total Mg 1 1 | 0 |
| 2 | H | 1 | Total Mg 1 1 | 0 |
| 2 | I | 1 | Total Mg 1 1 | 0 |
| 2 | J | 1 | Total Mg 1 1 | 0 |
| 2 | K | 1 | Total Mg 1 1 | 0 |
| 2 | L | 1 | Total Mg 1 1 | 0 |
| 2 | M | 1 | Total Mg 1 1 | 0 |

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| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|----|---------|
| | | | Total | Mg | |
| 2 | N | 1 | 1 | 1 | 0 |

- Molecule 3 is PHOSPHATE ION (three-letter code: PO4) (formula: O₄P).



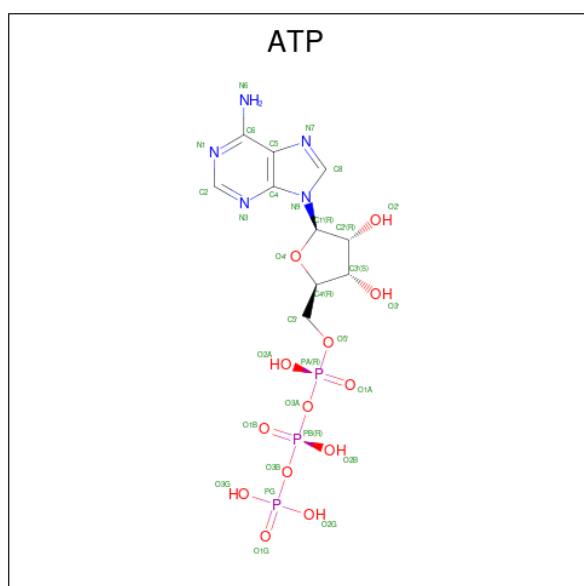
| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|---|---------|
| 3 | A | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | B | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | C | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | D | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | E | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | F | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | G | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | H | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | I | 1 | Total | P | 0 |
| | | | 1 | 1 | |
| 3 | J | 1 | Total | P | 0 |
| | | | 1 | 1 | |

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| Mol | Chain | Residues | Atoms | AltConf |
|-----|-------|----------|----------------|---------|
| 3 | K | 1 | Total P 1 1 | 0 |
| 3 | L | 1 | Total P 1 1 | 0 |
| 3 | M | 1 | Total P 1 1 | 0 |
| 3 | N | 1 | Total P 1 1 | 0 |

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



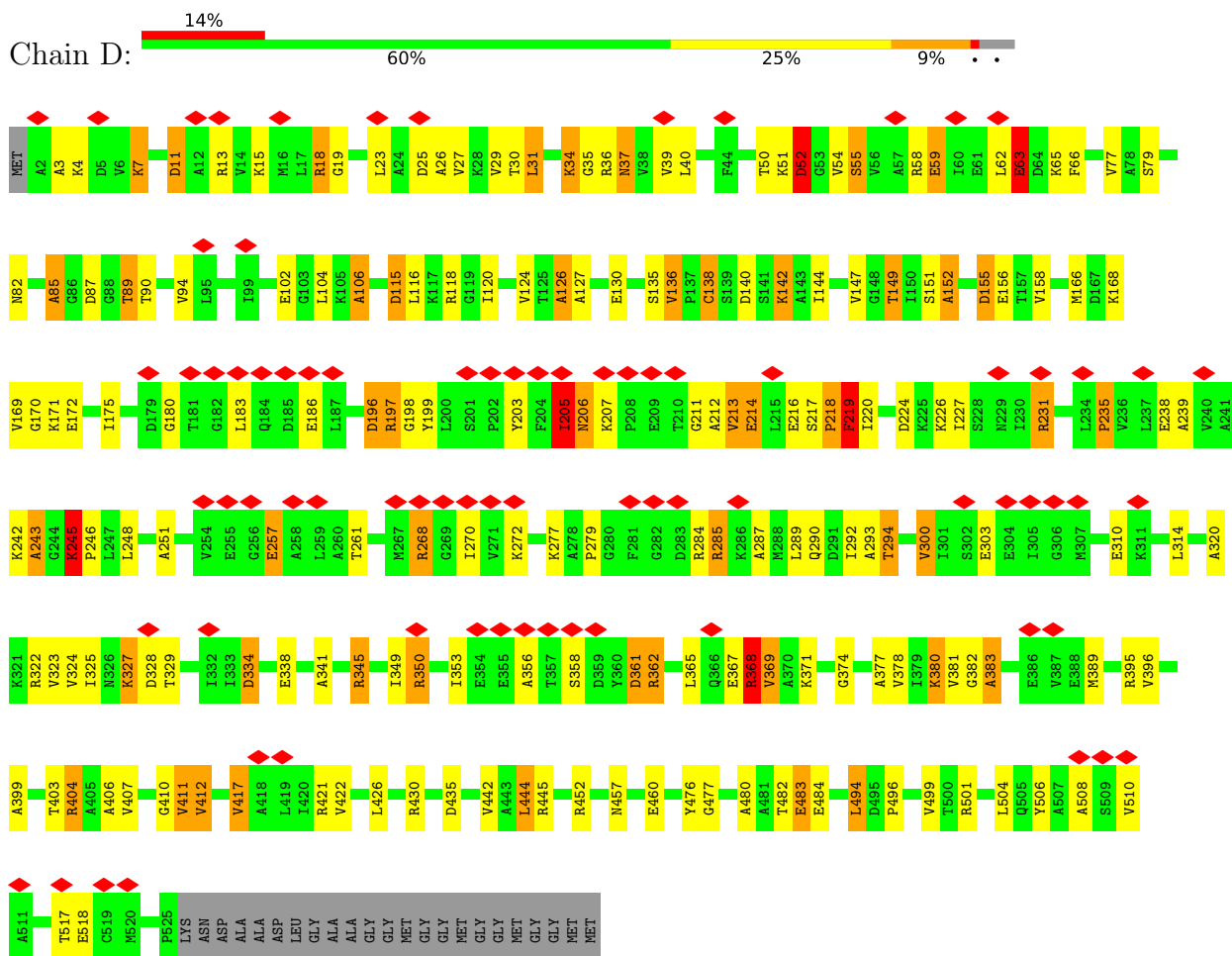
| Mol | Chain | Residues | Atoms | AltConf |
|-----|-------|----------|------------------------------------|---------|
| 4 | A | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | B | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | C | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | D | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | E | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | F | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |
| 4 | G | 1 | Total C H N O P 43 10 12 5 13 3 | 0 |

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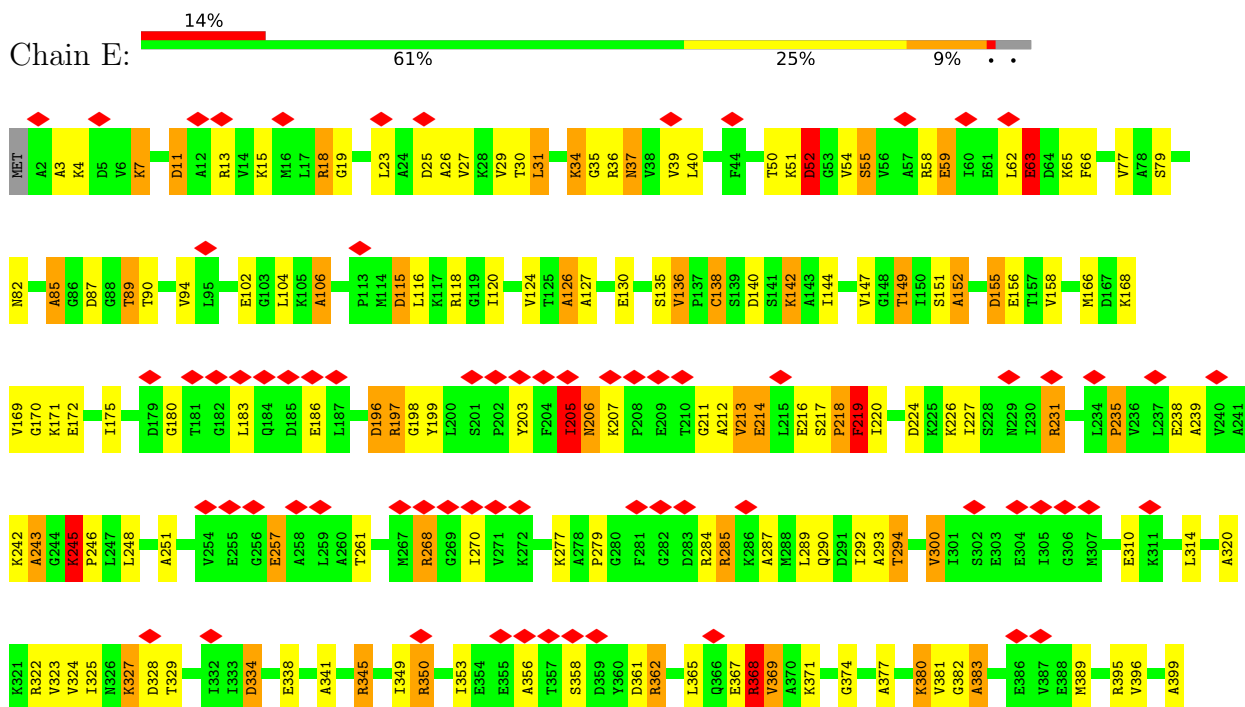
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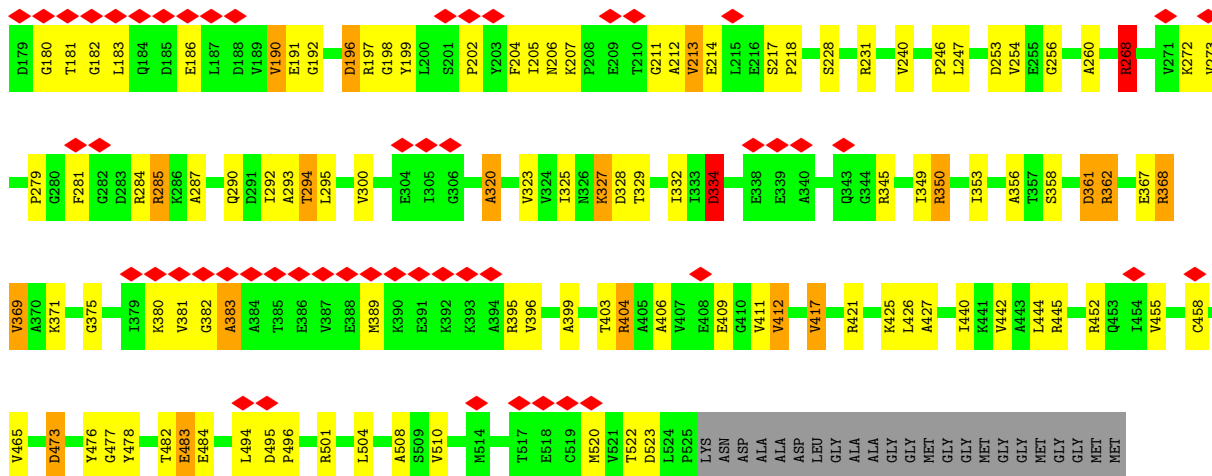
| Mol | Chain | Residues | Atoms | | | | | AltConf | |
|-----|-------|----------|-------------|----|----|---|----|---------|---|
| | | | Total | C | H | N | O | | P |
| 4 | H | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | I | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | J | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | K | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | L | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | M | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |
| 4 | N | 1 | Total 43 | 10 | 12 | 5 | 13 | 3 | 0 |

- Molecule 1: 60 KDA CHAPERONIN

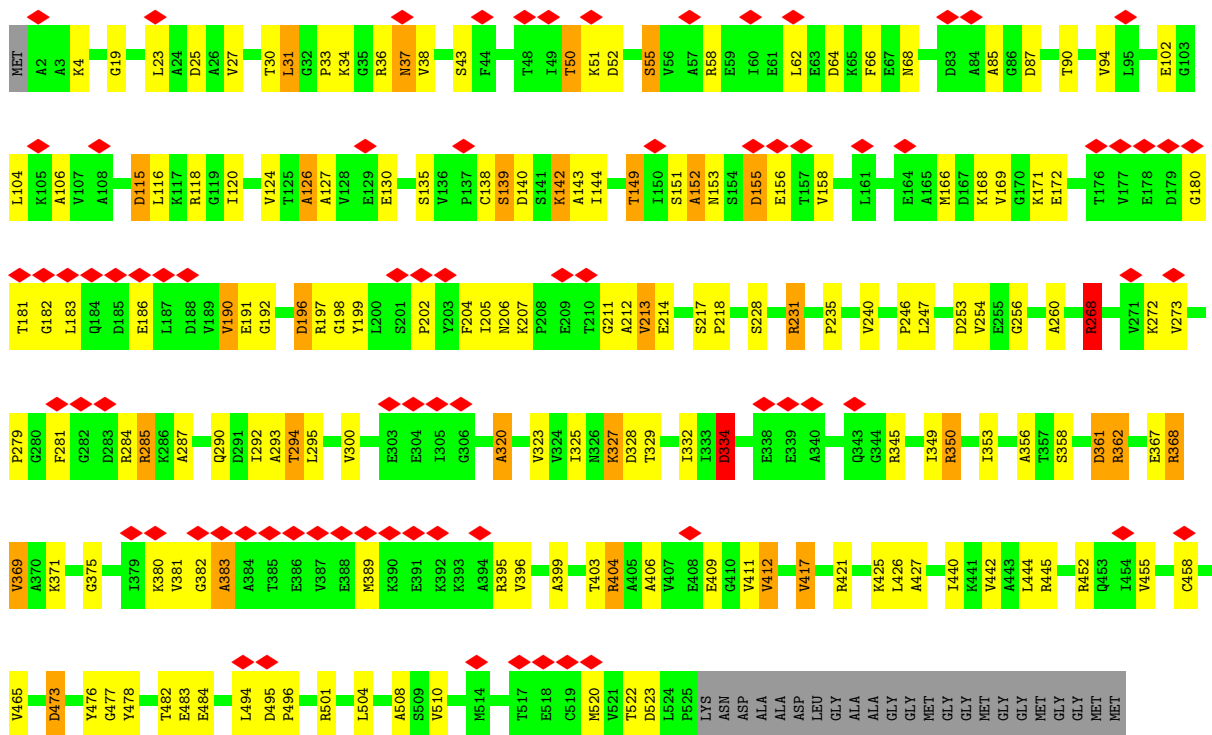


- Molecule 1: 60 KDA CHAPERONIN

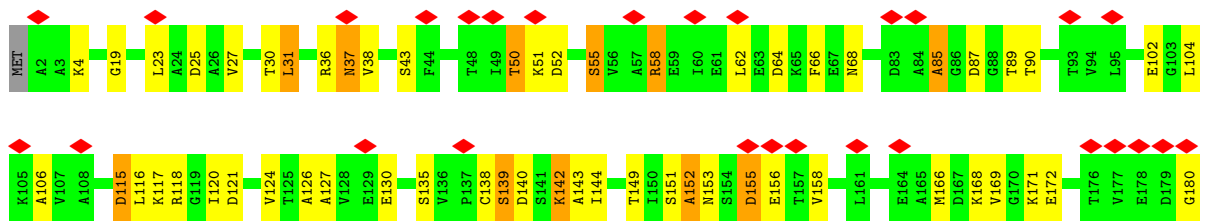


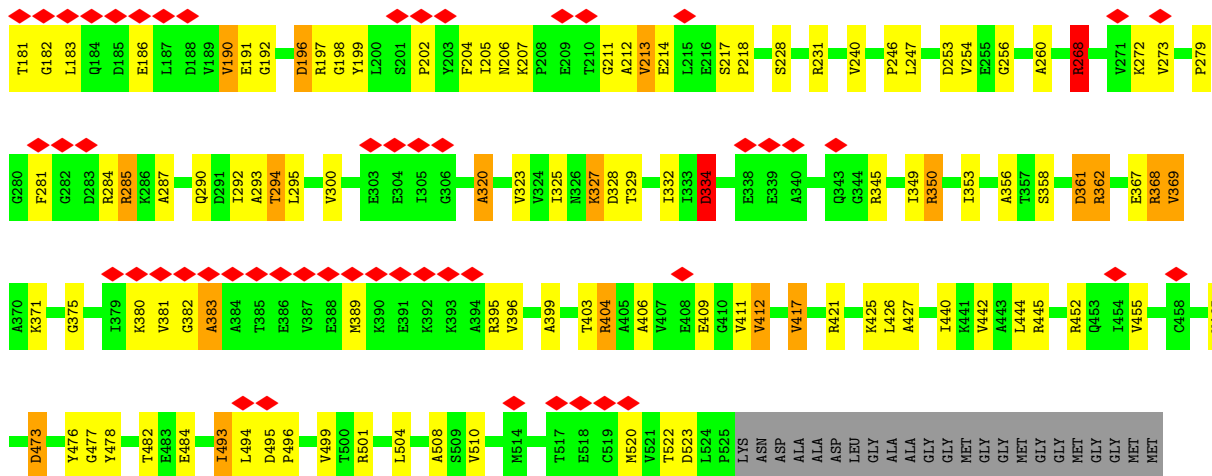


• Molecule 1: 60 KDA CHAPERONIN

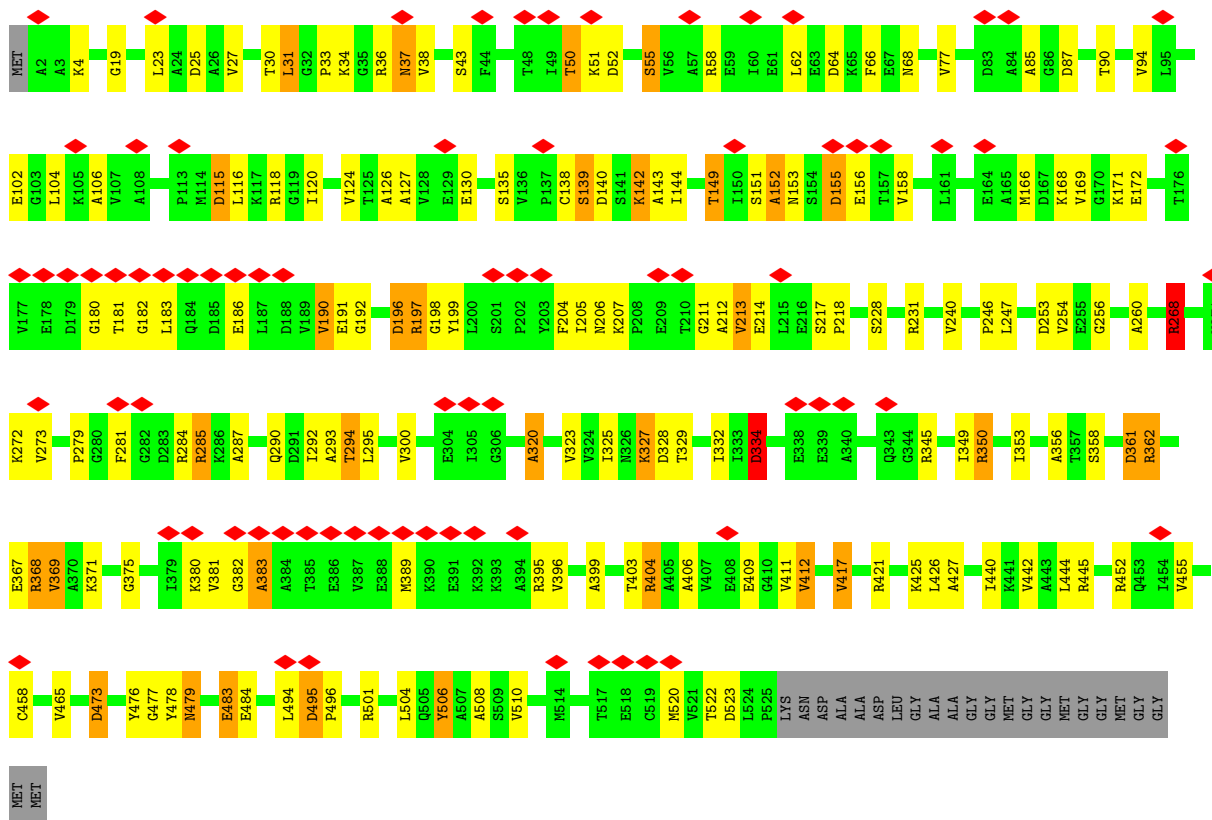


• Molecule 1: 60 KDA CHAPERONIN





• Molecule 1: 60 KDA CHAPERONIN



4 Experimental information

| Property | Value | Source |
|--------------------------------------|---------------------------------|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, D7 | Depositor |
| Number of particles used | 6500 | Depositor |
| Resolution determination method | Not provided | |
| CTF correction method | EACH PARTICLE WAS PHASE FLIPPED | Depositor |
| Microscope | FEI TECNAI F20 | Depositor |
| Voltage (kV) | 120 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 15 | Depositor |
| Minimum defocus (nm) | 700 | Depositor |
| Maximum defocus (nm) | 3500 | Depositor |
| Magnification | 148500 | Depositor |
| Image detector | GATAN ULTRASCAN 4000 (4k x 4k) | Depositor |
| Maximum map value | 2.984 | Depositor |
| Minimum map value | -1.957 | Depositor |
| Average map value | 0.009 | Depositor |
| Map value standard deviation | 0.117 | Depositor |
| Recommended contour level | 0.2 | Depositor |
| Map size (\AA) | 387.84, 387.84, 387.84 | wwPDB |
| Map dimensions | 192, 192, 192 | wwPDB |
| Map angles ($^\circ$) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (\AA) | 2.02, 2.02, 2.02 | Depositor |

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PO4, MG, 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 | 1.01 | 0/3873 | 1.46 | 68/5229 (1.3%) |
| 1 | B | 1.01 | 0/3873 | 1.46 | 67/5229 (1.3%) |
| 1 | C | 1.01 | 0/3873 | 1.46 | 66/5229 (1.3%) |
| 1 | D | 1.01 | 0/3873 | 1.46 | 67/5229 (1.3%) |
| 1 | E | 1.01 | 0/3873 | 1.45 | 67/5229 (1.3%) |
| 1 | F | 1.01 | 0/3873 | 1.46 | 67/5229 (1.3%) |
| 1 | G | 1.01 | 0/3873 | 1.46 | 68/5229 (1.3%) |
| 1 | H | 1.00 | 0/3871 | 1.40 | 57/5223 (1.1%) |
| 1 | I | 1.00 | 0/3871 | 1.39 | 55/5223 (1.1%) |
| 1 | J | 1.00 | 0/3871 | 1.39 | 53/5223 (1.0%) |
| 1 | K | 1.00 | 0/3871 | 1.40 | 55/5223 (1.1%) |
| 1 | L | 1.00 | 0/3871 | 1.39 | 56/5223 (1.1%) |
| 1 | M | 1.08 | 1/3871 (0.0%) | 1.40 | 58/5223 (1.1%) |
| 1 | N | 1.00 | 0/3871 | 1.40 | 57/5223 (1.1%) |
| All | All | 1.01 | 1/54208 (0.0%) | 1.43 | 861/73164 (1.2%) |

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 | 10 |
| 1 | B | 0 | 10 |
| 1 | C | 0 | 10 |
| 1 | D | 0 | 10 |
| 1 | E | 0 | 10 |
| 1 | F | 0 | 10 |
| 1 | G | 0 | 10 |
| 1 | H | 0 | 10 |
| 1 | I | 0 | 10 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | J | 0 | 10 |
| 1 | K | 0 | 10 |
| 1 | L | 0 | 10 |
| 1 | M | 0 | 10 |
| 1 | N | 1 | 10 |
| All | All | 1 | 140 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | M | 493 | ILE | CG1-CD1 | 26.52 | 3.33 | 1.50 |

All (861) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | F | 245 | LYS | N-CA-CB | -14.08 | 85.26 | 110.60 |
| 1 | D | 245 | LYS | N-CA-CB | -14.05 | 85.30 | 110.60 |
| 1 | B | 245 | LYS | N-CA-CB | -14.05 | 85.31 | 110.60 |
| 1 | A | 245 | LYS | N-CA-CB | -14.05 | 85.31 | 110.60 |
| 1 | G | 245 | LYS | N-CA-CB | -14.04 | 85.33 | 110.60 |
| 1 | C | 245 | LYS | N-CA-CB | -14.04 | 85.33 | 110.60 |
| 1 | E | 245 | LYS | N-CA-CB | -14.02 | 85.37 | 110.60 |
| 1 | B | 63 | GLU | N-CA-CB | -13.54 | 86.22 | 110.60 |
| 1 | C | 63 | GLU | N-CA-CB | -13.53 | 86.24 | 110.60 |
| 1 | G | 63 | GLU | N-CA-CB | -13.53 | 86.25 | 110.60 |
| 1 | F | 63 | GLU | N-CA-CB | -13.52 | 86.27 | 110.60 |
| 1 | A | 63 | GLU | N-CA-CB | -13.50 | 86.30 | 110.60 |
| 1 | D | 63 | GLU | N-CA-CB | -13.49 | 86.31 | 110.60 |
| 1 | E | 63 | GLU | N-CA-CB | -13.48 | 86.34 | 110.60 |
| 1 | N | 383 | ALA | N-CA-CB | 11.86 | 126.70 | 110.10 |
| 1 | H | 383 | ALA | N-CA-CB | 11.85 | 126.69 | 110.10 |
| 1 | M | 383 | ALA | N-CA-CB | 11.85 | 126.69 | 110.10 |
| 1 | L | 383 | ALA | N-CA-CB | 11.84 | 126.67 | 110.10 |
| 1 | I | 383 | ALA | N-CA-CB | 11.83 | 126.67 | 110.10 |
| 1 | K | 383 | ALA | N-CA-CB | 11.82 | 126.64 | 110.10 |
| 1 | J | 383 | ALA | N-CA-CB | 11.79 | 126.60 | 110.10 |
| 1 | B | 383 | ALA | N-CA-CB | 11.24 | 125.83 | 110.10 |
| 1 | C | 383 | ALA | N-CA-CB | 11.23 | 125.83 | 110.10 |
| 1 | A | 383 | ALA | N-CA-CB | 11.23 | 125.82 | 110.10 |
| 1 | F | 383 | ALA | N-CA-CB | 11.23 | 125.82 | 110.10 |
| 1 | G | 383 | ALA | N-CA-CB | 11.20 | 125.78 | 110.10 |
| 1 | D | 383 | ALA | N-CA-CB | 11.17 | 125.74 | 110.10 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | E | 383 | ALA | N-CA-CB | 11.15 | 125.71 | 110.10 |
| 1 | K | 231 | ARG | NE-CZ-NH1 | 9.68 | 125.14 | 120.30 |
| 1 | I | 231 | ARG | NE-CZ-NH1 | 9.58 | 125.09 | 120.30 |
| 1 | L | 231 | ARG | NE-CZ-NH1 | 9.55 | 125.08 | 120.30 |
| 1 | J | 231 | ARG | NE-CZ-NH1 | 9.55 | 125.07 | 120.30 |
| 1 | M | 231 | ARG | NE-CZ-NH1 | 9.52 | 125.06 | 120.30 |
| 1 | N | 231 | ARG | NE-CZ-NH1 | 9.49 | 125.05 | 120.30 |
| 1 | H | 231 | ARG | NE-CZ-NH1 | 9.48 | 125.04 | 120.30 |
| 1 | K | 153 | ASN | CB-CA-C | 9.16 | 128.73 | 110.40 |
| 1 | K | 87 | ASP | CB-CG-OD2 | 9.08 | 126.47 | 118.30 |
| 1 | J | 153 | ASN | CB-CA-C | 8.73 | 127.87 | 110.40 |
| 1 | N | 153 | ASN | CB-CA-C | 8.73 | 127.86 | 110.40 |
| 1 | I | 153 | ASN | CB-CA-C | 8.72 | 127.83 | 110.40 |
| 1 | L | 153 | ASN | CB-CA-C | 8.71 | 127.83 | 110.40 |
| 1 | H | 153 | ASN | CB-CA-C | 8.69 | 127.78 | 110.40 |
| 1 | E | 115 | ASP | CB-CA-C | 8.61 | 127.63 | 110.40 |
| 1 | G | 115 | ASP | CB-CA-C | 8.61 | 127.62 | 110.40 |
| 1 | D | 115 | ASP | CB-CA-C | 8.61 | 127.61 | 110.40 |
| 1 | A | 115 | ASP | CB-CA-C | 8.60 | 127.60 | 110.40 |
| 1 | B | 115 | ASP | CB-CA-C | 8.60 | 127.61 | 110.40 |
| 1 | C | 115 | ASP | CB-CA-C | 8.60 | 127.61 | 110.40 |
| 1 | F | 115 | ASP | CB-CA-C | 8.60 | 127.59 | 110.40 |
| 1 | M | 493 | ILE | N-CA-CB | 8.59 | 130.54 | 110.80 |
| 1 | I | 362 | ARG | NE-CZ-NH1 | 8.45 | 124.52 | 120.30 |
| 1 | N | 362 | ARG | NE-CZ-NH1 | 8.35 | 124.48 | 120.30 |
| 1 | M | 362 | ARG | NE-CZ-NH1 | 8.33 | 124.47 | 120.30 |
| 1 | L | 231 | ARG | CB-CA-C | -8.31 | 93.79 | 110.40 |
| 1 | M | 231 | ARG | CB-CA-C | -8.30 | 93.79 | 110.40 |
| 1 | N | 231 | ARG | CB-CA-C | -8.30 | 93.79 | 110.40 |
| 1 | K | 231 | ARG | CB-CA-C | -8.30 | 93.80 | 110.40 |
| 1 | I | 231 | ARG | CB-CA-C | -8.29 | 93.82 | 110.40 |
| 1 | J | 231 | ARG | CB-CA-C | -8.29 | 93.81 | 110.40 |
| 1 | H | 231 | ARG | CB-CA-C | -8.29 | 93.82 | 110.40 |
| 1 | K | 362 | ARG | NE-CZ-NH1 | 8.28 | 124.44 | 120.30 |
| 1 | H | 362 | ARG | NE-CZ-NH1 | 8.24 | 124.42 | 120.30 |
| 1 | J | 362 | ARG | NE-CZ-NH1 | 8.23 | 124.42 | 120.30 |
| 1 | L | 362 | ARG | NE-CZ-NH1 | 8.19 | 124.39 | 120.30 |
| 1 | L | 473 | ASP | N-CA-CB | 8.19 | 125.34 | 110.60 |
| 1 | N | 473 | ASP | N-CA-CB | 8.19 | 125.34 | 110.60 |
| 1 | I | 473 | ASP | N-CA-CB | 8.18 | 125.33 | 110.60 |
| 1 | J | 473 | ASP | N-CA-CB | 8.16 | 125.29 | 110.60 |
| 1 | K | 473 | ASP | N-CA-CB | 8.16 | 125.30 | 110.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | H | 473 | ASP | N-CA-CB | 8.16 | 125.28 | 110.60 |
| 1 | M | 473 | ASP | N-CA-CB | 8.15 | 125.27 | 110.60 |
| 1 | M | 153 | ASN | CB-CA-C | 8.14 | 126.69 | 110.40 |
| 1 | H | 152 | ALA | CB-CA-C | 8.14 | 122.30 | 110.10 |
| 1 | E | 285 | ARG | CB-CA-C | -8.12 | 94.17 | 110.40 |
| 1 | L | 152 | ALA | CB-CA-C | 8.12 | 122.28 | 110.10 |
| 1 | N | 152 | ALA | CB-CA-C | 8.11 | 122.27 | 110.10 |
| 1 | C | 285 | ARG | CB-CA-C | -8.11 | 94.19 | 110.40 |
| 1 | D | 285 | ARG | CB-CA-C | -8.10 | 94.19 | 110.40 |
| 1 | G | 285 | ARG | CB-CA-C | -8.10 | 94.20 | 110.40 |
| 1 | I | 152 | ALA | CB-CA-C | 8.10 | 122.25 | 110.10 |
| 1 | B | 285 | ARG | CB-CA-C | -8.10 | 94.20 | 110.40 |
| 1 | B | 362 | ARG | NE-CZ-NH1 | 8.10 | 124.35 | 120.30 |
| 1 | A | 285 | ARG | CB-CA-C | -8.09 | 94.21 | 110.40 |
| 1 | J | 152 | ALA | CB-CA-C | 8.09 | 122.23 | 110.10 |
| 1 | M | 152 | ALA | CB-CA-C | 8.08 | 122.22 | 110.10 |
| 1 | E | 362 | ARG | NE-CZ-NH1 | 8.07 | 124.33 | 120.30 |
| 1 | F | 285 | ARG | CB-CA-C | -8.07 | 94.27 | 110.40 |
| 1 | F | 362 | ARG | NE-CZ-NH1 | 8.04 | 124.32 | 120.30 |
| 1 | K | 152 | ALA | CB-CA-C | 8.02 | 122.14 | 110.10 |
| 1 | C | 362 | ARG | NE-CZ-NH1 | 8.02 | 124.31 | 120.30 |
| 1 | D | 362 | ARG | NE-CZ-NH1 | 8.02 | 124.31 | 120.30 |
| 1 | A | 362 | ARG | NE-CZ-NH1 | 7.97 | 124.28 | 120.30 |
| 1 | G | 362 | ARG | NE-CZ-NH1 | 7.95 | 124.28 | 120.30 |
| 1 | F | 404 | ARG | NE-CZ-NH2 | -7.76 | 116.42 | 120.30 |
| 1 | C | 404 | ARG | NE-CZ-NH2 | -7.75 | 116.42 | 120.30 |
| 1 | B | 404 | ARG | NE-CZ-NH2 | -7.71 | 116.44 | 120.30 |
| 1 | A | 404 | ARG | NE-CZ-NH2 | -7.71 | 116.45 | 120.30 |
| 1 | C | 37 | ASN | N-CA-CB | -7.71 | 96.73 | 110.60 |
| 1 | D | 404 | ARG | NE-CZ-NH2 | -7.70 | 116.45 | 120.30 |
| 1 | E | 37 | ASN | N-CA-CB | -7.70 | 96.74 | 110.60 |
| 1 | C | 138 | CYS | N-CA-CB | 7.69 | 124.44 | 110.60 |
| 1 | G | 37 | ASN | N-CA-CB | -7.69 | 96.75 | 110.60 |
| 1 | G | 404 | ARG | NE-CZ-NH2 | -7.69 | 116.45 | 120.30 |
| 1 | A | 37 | ASN | N-CA-CB | -7.69 | 96.76 | 110.60 |
| 1 | D | 37 | ASN | N-CA-CB | -7.69 | 96.77 | 110.60 |
| 1 | B | 138 | CYS | N-CA-CB | 7.68 | 124.43 | 110.60 |
| 1 | B | 37 | ASN | N-CA-CB | -7.68 | 96.78 | 110.60 |
| 1 | G | 138 | CYS | N-CA-CB | 7.68 | 124.42 | 110.60 |
| 1 | A | 138 | CYS | N-CA-CB | 7.67 | 124.41 | 110.60 |
| 1 | D | 138 | CYS | N-CA-CB | 7.67 | 124.41 | 110.60 |
| 1 | E | 138 | CYS | N-CA-CB | 7.67 | 124.40 | 110.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | F | 37 | ASN | N-CA-CB | -7.66 | 96.81 | 110.60 |
| 1 | F | 452 | ARG | NE-CZ-NH1 | 7.65 | 124.12 | 120.30 |
| 1 | F | 138 | CYS | N-CA-CB | 7.64 | 124.36 | 110.60 |
| 1 | A | 452 | ARG | NE-CZ-NH1 | 7.63 | 124.12 | 120.30 |
| 1 | G | 452 | ARG | NE-CZ-NH1 | 7.62 | 124.11 | 120.30 |
| 1 | D | 452 | ARG | NE-CZ-NH1 | 7.62 | 124.11 | 120.30 |
| 1 | E | 152 | ALA | CB-CA-C | 7.58 | 121.46 | 110.10 |
| 1 | G | 152 | ALA | CB-CA-C | 7.56 | 121.44 | 110.10 |
| 1 | A | 152 | ALA | CB-CA-C | 7.55 | 121.42 | 110.10 |
| 1 | E | 452 | ARG | NE-CZ-NH1 | 7.55 | 124.08 | 120.30 |
| 1 | D | 152 | ALA | CB-CA-C | 7.55 | 121.42 | 110.10 |
| 1 | B | 152 | ALA | CB-CA-C | 7.54 | 121.41 | 110.10 |
| 1 | F | 152 | ALA | CB-CA-C | 7.53 | 121.39 | 110.10 |
| 1 | H | 404 | ARG | NE-CZ-NH2 | -7.53 | 116.54 | 120.30 |
| 1 | C | 152 | ALA | CB-CA-C | 7.52 | 121.38 | 110.10 |
| 1 | C | 452 | ARG | NE-CZ-NH1 | 7.51 | 124.06 | 120.30 |
| 1 | E | 404 | ARG | NE-CZ-NH2 | -7.51 | 116.54 | 120.30 |
| 1 | M | 404 | ARG | NE-CZ-NH2 | -7.51 | 116.55 | 120.30 |
| 1 | B | 452 | ARG | NE-CZ-NH1 | 7.50 | 124.05 | 120.30 |
| 1 | J | 404 | ARG | NE-CZ-NH2 | -7.50 | 116.55 | 120.30 |
| 1 | L | 404 | ARG | NE-CZ-NH2 | -7.48 | 116.56 | 120.30 |
| 1 | K | 404 | ARG | NE-CZ-NH2 | -7.43 | 116.58 | 120.30 |
| 1 | J | 115 | ASP | CB-CA-C | 7.43 | 125.27 | 110.40 |
| 1 | C | 87 | ASP | CB-CG-OD2 | 7.42 | 124.97 | 118.30 |
| 1 | H | 115 | ASP | CB-CA-C | 7.41 | 125.22 | 110.40 |
| 1 | B | 87 | ASP | CB-CG-OD2 | 7.41 | 124.97 | 118.30 |
| 1 | K | 115 | ASP | CB-CA-C | 7.41 | 125.21 | 110.40 |
| 1 | M | 115 | ASP | CB-CA-C | 7.41 | 125.21 | 110.40 |
| 1 | L | 115 | ASP | CB-CA-C | 7.40 | 125.20 | 110.40 |
| 1 | I | 115 | ASP | CB-CA-C | 7.39 | 125.19 | 110.40 |
| 1 | N | 115 | ASP | CB-CA-C | 7.39 | 125.19 | 110.40 |
| 1 | I | 404 | ARG | NE-CZ-NH2 | -7.38 | 116.61 | 120.30 |
| 1 | E | 87 | ASP | CB-CG-OD2 | 7.36 | 124.93 | 118.30 |
| 1 | D | 87 | ASP | CB-CG-OD2 | 7.35 | 124.91 | 118.30 |
| 1 | G | 87 | ASP | CB-CG-OD2 | 7.34 | 124.91 | 118.30 |
| 1 | A | 87 | ASP | CB-CG-OD2 | 7.33 | 124.89 | 118.30 |
| 1 | F | 87 | ASP | CB-CG-OD2 | 7.33 | 124.89 | 118.30 |
| 1 | A | 59 | GLU | CB-CA-C | 7.32 | 125.05 | 110.40 |
| 1 | C | 59 | GLU | CB-CA-C | 7.32 | 125.05 | 110.40 |
| 1 | F | 59 | GLU | CB-CA-C | 7.32 | 125.04 | 110.40 |
| 1 | D | 59 | GLU | CB-CA-C | 7.32 | 125.03 | 110.40 |
| 1 | B | 59 | GLU | CB-CA-C | 7.31 | 125.03 | 110.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | G | 59 | GLU | CB-CA-C | 7.30 | 125.00 | 110.40 |
| 1 | M | 87 | ASP | CB-CG-OD1 | 7.30 | 124.87 | 118.30 |
| 1 | E | 59 | GLU | CB-CA-C | 7.29 | 124.98 | 110.40 |
| 1 | N | 404 | ARG | NE-CZ-NH2 | -7.23 | 116.69 | 120.30 |
| 1 | G | 268 | ARG | NE-CZ-NH1 | 7.22 | 123.91 | 120.30 |
| 1 | E | 268 | ARG | NE-CZ-NH1 | 7.21 | 123.91 | 120.30 |
| 1 | E | 216 | GLU | N-CA-CB | -7.21 | 97.63 | 110.60 |
| 1 | H | 55 | SER | CB-CA-C | -7.20 | 96.41 | 110.10 |
| 1 | N | 55 | SER | CB-CA-C | -7.20 | 96.42 | 110.10 |
| 1 | K | 55 | SER | CB-CA-C | -7.20 | 96.43 | 110.10 |
| 1 | F | 216 | GLU | N-CA-CB | -7.19 | 97.65 | 110.60 |
| 1 | C | 216 | GLU | N-CA-CB | -7.18 | 97.67 | 110.60 |
| 1 | A | 268 | ARG | NE-CZ-NH1 | 7.18 | 123.89 | 120.30 |
| 1 | B | 216 | GLU | N-CA-CB | -7.18 | 97.68 | 110.60 |
| 1 | L | 55 | SER | CB-CA-C | -7.17 | 96.47 | 110.10 |
| 1 | B | 268 | ARG | NE-CZ-NH1 | 7.17 | 123.89 | 120.30 |
| 1 | G | 216 | GLU | N-CA-CB | -7.17 | 97.69 | 110.60 |
| 1 | I | 55 | SER | CB-CA-C | -7.17 | 96.48 | 110.10 |
| 1 | D | 55 | SER | N-CA-CB | 7.17 | 121.25 | 110.50 |
| 1 | A | 216 | GLU | N-CA-CB | -7.17 | 97.70 | 110.60 |
| 1 | B | 55 | SER | N-CA-CB | 7.16 | 121.23 | 110.50 |
| 1 | D | 216 | GLU | N-CA-CB | -7.16 | 97.72 | 110.60 |
| 1 | D | 268 | ARG | NE-CZ-NH1 | 7.16 | 123.88 | 120.30 |
| 1 | A | 55 | SER | N-CA-CB | 7.13 | 121.20 | 110.50 |
| 1 | G | 55 | SER | N-CA-CB | 7.12 | 121.19 | 110.50 |
| 1 | F | 268 | ARG | NE-CZ-NH1 | 7.12 | 123.86 | 120.30 |
| 1 | J | 55 | SER | CB-CA-C | -7.12 | 96.57 | 110.10 |
| 1 | E | 55 | SER | N-CA-CB | 7.12 | 121.17 | 110.50 |
| 1 | H | 231 | ARG | CA-CB-CG | 7.11 | 129.05 | 113.40 |
| 1 | J | 87 | ASP | CB-CG-OD2 | 7.11 | 124.70 | 118.30 |
| 1 | C | 55 | SER | N-CA-CB | 7.11 | 121.16 | 110.50 |
| 1 | I | 231 | ARG | CA-CB-CG | 7.10 | 129.01 | 113.40 |
| 1 | M | 231 | ARG | CA-CB-CG | 7.10 | 129.01 | 113.40 |
| 1 | N | 231 | ARG | CA-CB-CG | 7.10 | 129.01 | 113.40 |
| 1 | L | 231 | ARG | CA-CB-CG | 7.09 | 129.01 | 113.40 |
| 1 | K | 231 | ARG | CA-CB-CG | 7.09 | 129.00 | 113.40 |
| 1 | J | 231 | ARG | CA-CB-CG | 7.09 | 128.99 | 113.40 |
| 1 | F | 55 | SER | N-CA-CB | 7.08 | 121.13 | 110.50 |
| 1 | I | 87 | ASP | CB-CG-OD2 | 7.08 | 124.67 | 118.30 |
| 1 | L | 87 | ASP | CB-CG-OD2 | 7.06 | 124.65 | 118.30 |
| 1 | C | 268 | ARG | NE-CZ-NH1 | 7.05 | 123.82 | 120.30 |
| 1 | K | 482 | THR | N-CA-CB | 6.98 | 123.56 | 110.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | D | 322 | ARG | NE-CZ-NH1 | 6.97 | 123.78 | 120.30 |
| 1 | D | 483 | GLU | CB-CG-CD | 6.93 | 132.91 | 114.20 |
| 1 | E | 483 | GLU | CB-CG-CD | 6.93 | 132.91 | 114.20 |
| 1 | F | 483 | GLU | CB-CG-CD | 6.92 | 132.89 | 114.20 |
| 1 | A | 483 | GLU | CB-CG-CD | 6.92 | 132.89 | 114.20 |
| 1 | B | 483 | GLU | CB-CG-CD | 6.92 | 132.88 | 114.20 |
| 1 | C | 483 | GLU | CB-CG-CD | 6.91 | 132.87 | 114.20 |
| 1 | G | 483 | GLU | CB-CG-CD | 6.91 | 132.85 | 114.20 |
| 1 | H | 87 | ASP | CB-CG-OD2 | 6.90 | 124.51 | 118.30 |
| 1 | M | 52 | ASP | CB-CA-C | 6.89 | 124.18 | 110.40 |
| 1 | G | 322 | ARG | NE-CZ-NH1 | 6.88 | 123.74 | 120.30 |
| 1 | F | 322 | ARG | NE-CZ-NH1 | 6.87 | 123.74 | 120.30 |
| 1 | J | 482 | THR | N-CA-CB | 6.86 | 123.34 | 110.30 |
| 1 | M | 294 | THR | CA-CB-CG2 | -6.85 | 102.81 | 112.40 |
| 1 | B | 322 | ARG | NE-CZ-NH1 | 6.85 | 123.72 | 120.30 |
| 1 | A | 322 | ARG | NE-CZ-NH1 | 6.84 | 123.72 | 120.30 |
| 1 | H | 294 | THR | CA-CB-CG2 | -6.83 | 102.84 | 112.40 |
| 1 | G | 235 | PRO | N-CA-CB | 6.83 | 111.49 | 103.30 |
| 1 | I | 294 | THR | CA-CB-CG2 | -6.82 | 102.85 | 112.40 |
| 1 | B | 235 | PRO | N-CA-CB | 6.82 | 111.48 | 103.30 |
| 1 | C | 235 | PRO | N-CA-CB | 6.82 | 111.48 | 103.30 |
| 1 | E | 235 | PRO | N-CA-CB | 6.82 | 111.48 | 103.30 |
| 1 | C | 322 | ARG | NE-CZ-NH1 | 6.81 | 123.71 | 120.30 |
| 1 | D | 235 | PRO | N-CA-CB | 6.81 | 111.47 | 103.30 |
| 1 | E | 322 | ARG | NE-CZ-NH1 | 6.81 | 123.70 | 120.30 |
| 1 | J | 294 | THR | CA-CB-CG2 | -6.80 | 102.87 | 112.40 |
| 1 | N | 294 | THR | CA-CB-CG2 | -6.80 | 102.87 | 112.40 |
| 1 | L | 294 | THR | CA-CB-CG2 | -6.80 | 102.88 | 112.40 |
| 1 | K | 294 | THR | CA-CB-CG2 | -6.80 | 102.89 | 112.40 |
| 1 | A | 235 | PRO | N-CA-CB | 6.79 | 111.45 | 103.30 |
| 1 | F | 235 | PRO | N-CA-CB | 6.77 | 111.43 | 103.30 |
| 1 | N | 87 | ASP | CB-CG-OD2 | 6.76 | 124.39 | 118.30 |
| 1 | N | 479 | ASN | CB-CA-C | 6.71 | 123.83 | 110.40 |
| 1 | N | 139 | SER | CB-CA-C | 6.70 | 122.84 | 110.10 |
| 1 | E | 367 | GLU | CB-CA-C | -6.69 | 97.02 | 110.40 |
| 1 | I | 139 | SER | CB-CA-C | 6.69 | 122.81 | 110.10 |
| 1 | C | 367 | GLU | CB-CA-C | -6.69 | 97.03 | 110.40 |
| 1 | A | 367 | GLU | CB-CA-C | -6.69 | 97.03 | 110.40 |
| 1 | B | 367 | GLU | CB-CA-C | -6.68 | 97.03 | 110.40 |
| 1 | J | 139 | SER | CB-CA-C | 6.68 | 122.79 | 110.10 |
| 1 | F | 367 | GLU | CB-CA-C | -6.67 | 97.05 | 110.40 |
| 1 | L | 139 | SER | CB-CA-C | 6.67 | 122.78 | 110.10 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | D | 367 | GLU | CB-CA-C | -6.66 | 97.08 | 110.40 |
| 1 | G | 367 | GLU | CB-CA-C | -6.66 | 97.08 | 110.40 |
| 1 | H | 139 | SER | CB-CA-C | 6.65 | 122.74 | 110.10 |
| 1 | M | 139 | SER | CB-CA-C | 6.65 | 122.73 | 110.10 |
| 1 | K | 139 | SER | CB-CA-C | 6.63 | 122.69 | 110.10 |
| 1 | B | 417 | VAL | CA-CB-CG2 | -6.62 | 100.97 | 110.90 |
| 1 | D | 417 | VAL | CA-CB-CG2 | -6.61 | 100.98 | 110.90 |
| 1 | M | 55 | SER | CB-CA-C | -6.61 | 97.54 | 110.10 |
| 1 | C | 412 | VAL | CB-CA-C | -6.60 | 98.85 | 111.40 |
| 1 | B | 85 | ALA | N-CA-CB | -6.60 | 100.86 | 110.10 |
| 1 | F | 417 | VAL | CA-CB-CG2 | -6.60 | 101.00 | 110.90 |
| 1 | L | 285 | ARG | CB-CA-C | -6.60 | 97.20 | 110.40 |
| 1 | I | 285 | ARG | CB-CA-C | -6.60 | 97.20 | 110.40 |
| 1 | G | 482 | THR | N-CA-CB | 6.59 | 122.82 | 110.30 |
| 1 | E | 85 | ALA | N-CA-CB | -6.59 | 100.88 | 110.10 |
| 1 | G | 412 | VAL | CB-CA-C | -6.59 | 98.88 | 111.40 |
| 1 | M | 285 | ARG | CB-CA-C | -6.59 | 97.22 | 110.40 |
| 1 | C | 417 | VAL | CA-CB-CG2 | -6.59 | 101.02 | 110.90 |
| 1 | G | 417 | VAL | CA-CB-CG2 | -6.59 | 101.02 | 110.90 |
| 1 | B | 412 | VAL | CB-CA-C | -6.58 | 98.89 | 111.40 |
| 1 | E | 417 | VAL | CA-CB-CG2 | -6.58 | 101.02 | 110.90 |
| 1 | E | 482 | THR | N-CA-CB | 6.58 | 122.81 | 110.30 |
| 1 | H | 285 | ARG | CB-CA-C | -6.58 | 97.23 | 110.40 |
| 1 | D | 482 | THR | N-CA-CB | 6.58 | 122.80 | 110.30 |
| 1 | E | 412 | VAL | CB-CA-C | -6.58 | 98.90 | 111.40 |
| 1 | F | 482 | THR | N-CA-CB | 6.58 | 122.80 | 110.30 |
| 1 | A | 412 | VAL | CB-CA-C | -6.58 | 98.91 | 111.40 |
| 1 | N | 285 | ARG | CB-CA-C | -6.58 | 97.25 | 110.40 |
| 1 | C | 482 | THR | N-CA-CB | 6.57 | 122.79 | 110.30 |
| 1 | F | 412 | VAL | CB-CA-C | -6.57 | 98.91 | 111.40 |
| 1 | K | 285 | ARG | CB-CA-C | -6.57 | 97.25 | 110.40 |
| 1 | K | 334 | ASP | CB-CG-OD1 | 6.57 | 124.22 | 118.30 |
| 1 | B | 482 | THR | N-CA-CB | 6.57 | 122.79 | 110.30 |
| 1 | A | 482 | THR | N-CA-CB | 6.57 | 122.78 | 110.30 |
| 1 | D | 412 | VAL | CB-CA-C | -6.57 | 98.92 | 111.40 |
| 1 | G | 85 | ALA | N-CA-CB | -6.57 | 100.91 | 110.10 |
| 1 | J | 285 | ARG | CB-CA-C | -6.57 | 97.27 | 110.40 |
| 1 | F | 85 | ALA | N-CA-CB | -6.54 | 100.94 | 110.10 |
| 1 | N | 334 | ASP | CB-CG-OD1 | 6.54 | 124.18 | 118.30 |
| 1 | A | 417 | VAL | CA-CB-CG2 | -6.53 | 101.10 | 110.90 |
| 1 | I | 334 | ASP | CB-CG-OD1 | 6.53 | 124.18 | 118.30 |
| 1 | H | 334 | ASP | CB-CG-OD1 | 6.52 | 124.17 | 118.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | L | 140 | ASP | N-CA-CB | -6.51 | 98.88 | 110.60 |
| 1 | M | 140 | ASP | N-CA-CB | -6.51 | 98.88 | 110.60 |
| 1 | H | 140 | ASP | N-CA-CB | -6.50 | 98.90 | 110.60 |
| 1 | K | 425 | LYS | CB-CA-C | 6.50 | 123.40 | 110.40 |
| 1 | K | 140 | ASP | N-CA-CB | -6.50 | 98.91 | 110.60 |
| 1 | H | 367 | GLU | CB-CA-C | -6.49 | 97.42 | 110.40 |
| 1 | M | 334 | ASP | CB-CG-OD1 | 6.49 | 124.14 | 118.30 |
| 1 | N | 140 | ASP | N-CA-CB | -6.49 | 98.92 | 110.60 |
| 1 | I | 140 | ASP | N-CA-CB | -6.48 | 98.93 | 110.60 |
| 1 | J | 140 | ASP | N-CA-CB | -6.48 | 98.93 | 110.60 |
| 1 | L | 334 | ASP | CB-CG-OD1 | 6.48 | 124.14 | 118.30 |
| 1 | L | 367 | GLU | CB-CA-C | -6.48 | 97.44 | 110.40 |
| 1 | I | 367 | GLU | CB-CA-C | -6.48 | 97.44 | 110.40 |
| 1 | M | 425 | LYS | CB-CA-C | 6.47 | 123.35 | 110.40 |
| 1 | J | 367 | GLU | CB-CA-C | -6.47 | 97.46 | 110.40 |
| 1 | N | 367 | GLU | CB-CA-C | -6.47 | 97.46 | 110.40 |
| 1 | K | 367 | GLU | CB-CA-C | -6.47 | 97.47 | 110.40 |
| 1 | L | 425 | LYS | CB-CA-C | 6.47 | 123.33 | 110.40 |
| 1 | J | 425 | LYS | CB-CA-C | 6.46 | 123.31 | 110.40 |
| 1 | M | 367 | GLU | CB-CA-C | -6.46 | 97.49 | 110.40 |
| 1 | I | 425 | LYS | CB-CA-C | 6.45 | 123.31 | 110.40 |
| 1 | H | 425 | LYS | CB-CA-C | 6.45 | 123.31 | 110.40 |
| 1 | N | 425 | LYS | CB-CA-C | 6.45 | 123.30 | 110.40 |
| 1 | J | 334 | ASP | CB-CG-OD1 | 6.45 | 124.10 | 118.30 |
| 1 | M | 371 | LYS | CB-CA-C | 6.40 | 123.20 | 110.40 |
| 1 | K | 371 | LYS | CB-CA-C | 6.39 | 123.19 | 110.40 |
| 1 | A | 126 | ALA | CB-CA-C | 6.39 | 119.68 | 110.10 |
| 1 | N | 371 | LYS | CB-CA-C | 6.39 | 123.18 | 110.40 |
| 1 | H | 350 | ARG | NE-CZ-NH1 | 6.38 | 123.49 | 120.30 |
| 1 | H | 371 | LYS | CB-CA-C | 6.38 | 123.16 | 110.40 |
| 1 | I | 371 | LYS | CB-CA-C | 6.38 | 123.16 | 110.40 |
| 1 | L | 371 | LYS | CB-CA-C | 6.37 | 123.15 | 110.40 |
| 1 | J | 371 | LYS | CB-CA-C | 6.37 | 123.14 | 110.40 |
| 1 | F | 444 | LEU | CB-CA-C | -6.37 | 98.10 | 110.20 |
| 1 | C | 126 | ALA | CB-CA-C | 6.37 | 119.65 | 110.10 |
| 1 | B | 126 | ALA | CB-CA-C | 6.37 | 119.65 | 110.10 |
| 1 | E | 126 | ALA | CB-CA-C | 6.37 | 119.65 | 110.10 |
| 1 | L | 482 | THR | N-CA-CB | 6.37 | 122.39 | 110.30 |
| 1 | C | 444 | LEU | CB-CA-C | -6.36 | 98.12 | 110.20 |
| 1 | G | 444 | LEU | CB-CA-C | -6.36 | 98.12 | 110.20 |
| 1 | D | 444 | LEU | CB-CA-C | -6.35 | 98.13 | 110.20 |
| 1 | G | 155 | ASP | CB-CA-C | 6.35 | 123.10 | 110.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | E | 444 | LEU | CB-CA-C | -6.35 | 98.13 | 110.20 |
| 1 | B | 444 | LEU | CB-CA-C | -6.35 | 98.14 | 110.20 |
| 1 | A | 444 | LEU | CB-CA-C | -6.34 | 98.15 | 110.20 |
| 1 | F | 126 | ALA | CB-CA-C | 6.34 | 119.61 | 110.10 |
| 1 | G | 126 | ALA | CB-CA-C | 6.34 | 119.61 | 110.10 |
| 1 | D | 126 | ALA | CB-CA-C | 6.33 | 119.60 | 110.10 |
| 1 | C | 155 | ASP | CB-CA-C | 6.33 | 123.06 | 110.40 |
| 1 | D | 155 | ASP | CB-CA-C | 6.33 | 123.06 | 110.40 |
| 1 | F | 353 | ILE | CB-CA-C | -6.32 | 98.96 | 111.60 |
| 1 | F | 155 | ASP | CB-CA-C | 6.32 | 123.04 | 110.40 |
| 1 | I | 482 | THR | N-CA-CB | 6.32 | 122.31 | 110.30 |
| 1 | A | 155 | ASP | CB-CA-C | 6.32 | 123.03 | 110.40 |
| 1 | C | 353 | ILE | CB-CA-C | -6.32 | 98.97 | 111.60 |
| 1 | B | 155 | ASP | CB-CA-C | 6.31 | 123.03 | 110.40 |
| 1 | E | 353 | ILE | CB-CA-C | -6.30 | 98.99 | 111.60 |
| 1 | B | 353 | ILE | CB-CA-C | -6.30 | 98.99 | 111.60 |
| 1 | E | 155 | ASP | CB-CA-C | 6.30 | 123.01 | 110.40 |
| 1 | G | 353 | ILE | CB-CA-C | -6.30 | 99.00 | 111.60 |
| 1 | D | 353 | ILE | CB-CA-C | -6.30 | 99.01 | 111.60 |
| 1 | A | 85 | ALA | N-CA-CB | -6.29 | 101.29 | 110.10 |
| 1 | C | 85 | ALA | N-CA-CB | -6.29 | 101.29 | 110.10 |
| 1 | N | 350 | ARG | NE-CZ-NH1 | 6.29 | 123.45 | 120.30 |
| 1 | A | 353 | ILE | CB-CA-C | -6.29 | 99.02 | 111.60 |
| 1 | D | 85 | ALA | N-CA-CB | -6.29 | 101.30 | 110.10 |
| 1 | K | 510 | VAL | CB-CA-C | -6.29 | 99.46 | 111.40 |
| 1 | L | 510 | VAL | CB-CA-C | -6.28 | 99.47 | 111.40 |
| 1 | H | 482 | THR | N-CA-CB | 6.27 | 122.22 | 110.30 |
| 1 | L | 350 | ARG | NE-CZ-NH1 | 6.27 | 123.43 | 120.30 |
| 1 | M | 510 | VAL | CB-CA-C | -6.26 | 99.50 | 111.40 |
| 1 | M | 493 | ILE | CB-CG1-CD1 | 6.26 | 131.43 | 113.90 |
| 1 | M | 482 | THR | N-CA-CB | 6.25 | 122.17 | 110.30 |
| 1 | H | 452 | ARG | NE-CZ-NH1 | 6.25 | 123.42 | 120.30 |
| 1 | M | 350 | ARG | NE-CZ-NH1 | 6.23 | 123.41 | 120.30 |
| 1 | I | 350 | ARG | NE-CZ-NH1 | 6.22 | 123.41 | 120.30 |
| 1 | M | 89 | THR | CB-CA-C | -6.22 | 94.80 | 111.60 |
| 1 | H | 510 | VAL | CB-CA-C | -6.22 | 99.58 | 111.40 |
| 1 | I | 510 | VAL | CB-CA-C | -6.22 | 99.58 | 111.40 |
| 1 | J | 510 | VAL | CB-CA-C | -6.22 | 99.58 | 111.40 |
| 1 | N | 510 | VAL | CB-CA-C | -6.21 | 99.60 | 111.40 |
| 1 | I | 452 | ARG | NE-CZ-NH1 | 6.20 | 123.40 | 120.30 |
| 1 | K | 350 | ARG | NE-CZ-NH1 | 6.20 | 123.40 | 120.30 |
| 1 | B | 219 | PHE | CB-CG-CD1 | 6.16 | 125.11 | 120.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | G | 140 | ASP | N-CA-CB | -6.14 | 99.54 | 110.60 |
| 1 | E | 140 | ASP | N-CA-CB | -6.14 | 99.55 | 110.60 |
| 1 | G | 219 | PHE | CB-CG-CD1 | 6.14 | 125.10 | 120.80 |
| 1 | C | 63 | GLU | CA-CB-CG | 6.13 | 126.89 | 113.40 |
| 1 | F | 140 | ASP | N-CA-CB | -6.13 | 99.56 | 110.60 |
| 1 | D | 140 | ASP | N-CA-CB | -6.13 | 99.57 | 110.60 |
| 1 | J | 350 | ARG | NE-CZ-NH1 | 6.12 | 123.36 | 120.30 |
| 1 | B | 140 | ASP | N-CA-CB | -6.12 | 99.58 | 110.60 |
| 1 | C | 140 | ASP | N-CA-CB | -6.12 | 99.58 | 110.60 |
| 1 | A | 140 | ASP | N-CA-CB | -6.12 | 99.58 | 110.60 |
| 1 | G | 206 | ASN | CA-CB-CG | 6.12 | 126.86 | 113.40 |
| 1 | B | 206 | ASN | CA-CB-CG | 6.12 | 126.85 | 113.40 |
| 1 | D | 206 | ASN | CA-CB-CG | 6.11 | 126.85 | 113.40 |
| 1 | D | 219 | PHE | CB-CG-CD1 | 6.11 | 125.08 | 120.80 |
| 1 | F | 510 | VAL | CB-CA-C | -6.11 | 99.80 | 111.40 |
| 1 | G | 63 | GLU | CA-CB-CG | 6.11 | 126.84 | 113.40 |
| 1 | E | 219 | PHE | CB-CG-CD1 | 6.10 | 125.07 | 120.80 |
| 1 | A | 219 | PHE | CB-CG-CD1 | 6.10 | 125.07 | 120.80 |
| 1 | D | 11 | ASP | CB-CA-C | 6.10 | 122.60 | 110.40 |
| 1 | F | 206 | ASN | CA-CB-CG | 6.10 | 126.82 | 113.40 |
| 1 | G | 510 | VAL | CB-CA-C | -6.10 | 99.81 | 111.40 |
| 1 | K | 231 | ARG | NE-CZ-NH2 | -6.10 | 117.25 | 120.30 |
| 1 | B | 63 | GLU | CA-CB-CG | 6.09 | 126.81 | 113.40 |
| 1 | E | 206 | ASN | CA-CB-CG | 6.09 | 126.81 | 113.40 |
| 1 | B | 510 | VAL | CB-CA-C | -6.09 | 99.82 | 111.40 |
| 1 | M | 452 | ARG | NE-CZ-NH1 | 6.09 | 123.35 | 120.30 |
| 1 | F | 63 | GLU | CA-CB-CG | 6.09 | 126.80 | 113.40 |
| 1 | C | 206 | ASN | CA-CB-CG | 6.09 | 126.79 | 113.40 |
| 1 | C | 510 | VAL | CB-CA-C | -6.09 | 99.84 | 111.40 |
| 1 | E | 11 | ASP | CB-CA-C | 6.09 | 122.57 | 110.40 |
| 1 | E | 510 | VAL | CB-CA-C | -6.09 | 99.84 | 111.40 |
| 1 | A | 510 | VAL | CB-CA-C | -6.08 | 99.84 | 111.40 |
| 1 | J | 231 | ARG | NE-CZ-NH2 | -6.08 | 117.26 | 120.30 |
| 1 | C | 11 | ASP | CB-CA-C | 6.08 | 122.56 | 110.40 |
| 1 | D | 63 | GLU | CA-CB-CG | 6.08 | 126.78 | 113.40 |
| 1 | B | 11 | ASP | CB-CA-C | 6.08 | 122.55 | 110.40 |
| 1 | C | 219 | PHE | CB-CG-CD1 | 6.08 | 125.05 | 120.80 |
| 1 | N | 231 | ARG | NE-CZ-NH2 | -6.07 | 117.26 | 120.30 |
| 1 | A | 206 | ASN | CA-CB-CG | 6.07 | 126.76 | 113.40 |
| 1 | K | 452 | ARG | NE-CZ-NH1 | 6.07 | 123.33 | 120.30 |
| 1 | G | 11 | ASP | CB-CA-C | 6.07 | 122.54 | 110.40 |
| 1 | A | 63 | GLU | CA-CB-CG | 6.07 | 126.75 | 113.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | D | 510 | VAL | CB-CA-C | -6.07 | 99.88 | 111.40 |
| 1 | A | 11 | ASP | CB-CA-C | 6.06 | 122.52 | 110.40 |
| 1 | J | 452 | ARG | NE-CZ-NH1 | 6.06 | 123.33 | 120.30 |
| 1 | F | 219 | PHE | CB-CG-CD1 | 6.05 | 125.04 | 120.80 |
| 1 | J | 43 | SER | N-CA-CB | 6.05 | 119.58 | 110.50 |
| 1 | K | 43 | SER | N-CA-CB | 6.05 | 119.58 | 110.50 |
| 1 | F | 11 | ASP | CB-CA-C | 6.05 | 122.50 | 110.40 |
| 1 | F | 34 | LYS | CB-CA-C | 6.05 | 122.50 | 110.40 |
| 1 | I | 43 | SER | N-CA-CB | 6.04 | 119.57 | 110.50 |
| 1 | L | 231 | ARG | NE-CZ-NH2 | -6.04 | 117.28 | 120.30 |
| 1 | A | 34 | LYS | CB-CA-C | 6.04 | 122.49 | 110.40 |
| 1 | G | 34 | LYS | CB-CA-C | 6.04 | 122.48 | 110.40 |
| 1 | H | 43 | SER | N-CA-CB | 6.04 | 119.56 | 110.50 |
| 1 | N | 452 | ARG | NE-CZ-NH1 | 6.04 | 123.32 | 120.30 |
| 1 | C | 34 | LYS | CB-CA-C | 6.03 | 122.47 | 110.40 |
| 1 | J | 181 | THR | N-CA-CB | 6.03 | 121.76 | 110.30 |
| 1 | K | 181 | THR | N-CA-CB | 6.03 | 121.76 | 110.30 |
| 1 | N | 181 | THR | N-CA-CB | 6.03 | 121.76 | 110.30 |
| 1 | D | 34 | LYS | CB-CA-C | 6.03 | 122.46 | 110.40 |
| 1 | K | 89 | THR | CB-CA-C | -6.03 | 95.32 | 111.60 |
| 1 | E | 63 | GLU | CA-CB-CG | 6.02 | 126.65 | 113.40 |
| 1 | K | 52 | ASP | CB-CA-C | 6.02 | 122.45 | 110.40 |
| 1 | H | 181 | THR | N-CA-CB | 6.02 | 121.73 | 110.30 |
| 1 | B | 34 | LYS | CB-CA-C | 6.02 | 122.44 | 110.40 |
| 1 | M | 43 | SER | N-CA-CB | 6.02 | 119.52 | 110.50 |
| 1 | N | 43 | SER | N-CA-CB | 6.01 | 119.52 | 110.50 |
| 1 | L | 181 | THR | N-CA-CB | 6.01 | 121.72 | 110.30 |
| 1 | J | 52 | ASP | CB-CA-C | 6.01 | 122.42 | 110.40 |
| 1 | L | 43 | SER | N-CA-CB | 6.01 | 119.51 | 110.50 |
| 1 | E | 34 | LYS | CB-CA-C | 6.01 | 122.42 | 110.40 |
| 1 | I | 52 | ASP | CB-CA-C | 6.01 | 122.42 | 110.40 |
| 1 | M | 231 | ARG | NE-CZ-NH2 | -6.01 | 117.30 | 120.30 |
| 1 | E | 203 | TYR | CB-CG-CD2 | -5.99 | 117.41 | 121.00 |
| 1 | L | 52 | ASP | CB-CA-C | 5.99 | 122.38 | 110.40 |
| 1 | N | 479 | ASN | N-CA-CB | 5.99 | 121.38 | 110.60 |
| 1 | K | 85 | ALA | N-CA-CB | -5.99 | 101.72 | 110.10 |
| 1 | M | 181 | THR | N-CA-CB | 5.99 | 121.68 | 110.30 |
| 1 | I | 181 | THR | N-CA-CB | 5.99 | 121.67 | 110.30 |
| 1 | H | 231 | ARG | NE-CZ-NH2 | -5.98 | 117.31 | 120.30 |
| 1 | A | 411 | VAL | CB-CA-C | -5.98 | 100.04 | 111.40 |
| 1 | J | 85 | ALA | N-CA-CB | -5.98 | 101.73 | 110.10 |
| 1 | N | 85 | ALA | N-CA-CB | -5.98 | 101.73 | 110.10 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | I | 231 | ARG | NE-CZ-NH2 | -5.98 | 117.31 | 120.30 |
| 1 | F | 411 | VAL | CB-CA-C | -5.97 | 100.05 | 111.40 |
| 1 | H | 52 | ASP | CB-CA-C | 5.97 | 122.34 | 110.40 |
| 1 | E | 411 | VAL | CB-CA-C | -5.96 | 100.07 | 111.40 |
| 1 | L | 85 | ALA | N-CA-CB | -5.96 | 101.75 | 110.10 |
| 1 | L | 452 | ARG | NE-CZ-NH1 | 5.96 | 123.28 | 120.30 |
| 1 | D | 411 | VAL | CB-CA-C | -5.96 | 100.07 | 111.40 |
| 1 | H | 85 | ALA | N-CA-CB | -5.96 | 101.76 | 110.10 |
| 1 | C | 411 | VAL | CB-CA-C | -5.96 | 100.08 | 111.40 |
| 1 | A | 203 | TYR | CB-CG-CD2 | -5.96 | 117.43 | 121.00 |
| 1 | G | 203 | TYR | CB-CG-CD2 | -5.96 | 117.43 | 121.00 |
| 1 | B | 411 | VAL | CB-CA-C | -5.95 | 100.09 | 111.40 |
| 1 | N | 52 | ASP | CB-CA-C | 5.95 | 122.31 | 110.40 |
| 1 | I | 85 | ALA | N-CA-CB | -5.95 | 101.78 | 110.10 |
| 1 | F | 261 | THR | N-CA-CB | 5.94 | 121.59 | 110.30 |
| 1 | G | 411 | VAL | CB-CA-C | -5.94 | 100.11 | 111.40 |
| 1 | F | 203 | TYR | CB-CG-CD2 | -5.93 | 117.44 | 121.00 |
| 1 | C | 261 | THR | N-CA-CB | 5.92 | 121.56 | 110.30 |
| 1 | B | 203 | TYR | CB-CG-CD2 | -5.92 | 117.45 | 121.00 |
| 1 | G | 261 | THR | N-CA-CB | 5.92 | 121.54 | 110.30 |
| 1 | M | 155 | ASP | CB-CA-C | 5.92 | 122.23 | 110.40 |
| 1 | D | 261 | THR | N-CA-CB | 5.91 | 121.54 | 110.30 |
| 1 | J | 353 | ILE | CB-CA-C | -5.91 | 99.77 | 111.60 |
| 1 | K | 353 | ILE | CB-CA-C | -5.90 | 99.81 | 111.60 |
| 1 | M | 353 | ILE | CB-CA-C | -5.89 | 99.82 | 111.60 |
| 1 | B | 261 | THR | N-CA-CB | 5.89 | 121.49 | 110.30 |
| 1 | C | 87 | ASP | OD1-CG-OD2 | -5.89 | 112.11 | 123.30 |
| 1 | A | 261 | THR | N-CA-CB | 5.89 | 121.49 | 110.30 |
| 1 | N | 353 | ILE | CB-CA-C | -5.88 | 99.83 | 111.60 |
| 1 | E | 261 | THR | N-CA-CB | 5.88 | 121.48 | 110.30 |
| 1 | I | 353 | ILE | CB-CA-C | -5.88 | 99.84 | 111.60 |
| 1 | L | 353 | ILE | CB-CA-C | -5.88 | 99.84 | 111.60 |
| 1 | D | 203 | TYR | CB-CG-CD2 | -5.88 | 117.47 | 121.00 |
| 1 | H | 353 | ILE | CB-CA-C | -5.87 | 99.86 | 111.60 |
| 1 | N | 30 | THR | N-CA-CB | 5.87 | 121.46 | 110.30 |
| 1 | B | 87 | ASP | OD1-CG-OD2 | -5.87 | 112.15 | 123.30 |
| 1 | J | 204 | PHE | CB-CG-CD2 | -5.87 | 116.69 | 120.80 |
| 1 | I | 204 | PHE | CB-CG-CD2 | -5.87 | 116.69 | 120.80 |
| 1 | K | 204 | PHE | CB-CG-CD2 | -5.86 | 116.70 | 120.80 |
| 1 | E | 87 | ASP | OD1-CG-OD2 | -5.86 | 112.17 | 123.30 |
| 1 | G | 87 | ASP | OD1-CG-OD2 | -5.86 | 112.17 | 123.30 |
| 1 | C | 203 | TYR | CB-CG-CD2 | -5.85 | 117.49 | 121.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | L | 30 | THR | N-CA-CB | 5.85 | 121.42 | 110.30 |
| 1 | A | 87 | ASP | OD1-CG-OD2 | -5.85 | 112.19 | 123.30 |
| 1 | E | 196 | ASP | N-CA-CB | -5.85 | 100.07 | 110.60 |
| 1 | G | 196 | ASP | N-CA-CB | -5.85 | 100.07 | 110.60 |
| 1 | H | 30 | THR | N-CA-CB | 5.85 | 121.41 | 110.30 |
| 1 | C | 196 | ASP | N-CA-CB | -5.85 | 100.08 | 110.60 |
| 1 | A | 196 | ASP | N-CA-CB | -5.84 | 100.09 | 110.60 |
| 1 | F | 87 | ASP | OD1-CG-OD2 | -5.84 | 112.20 | 123.30 |
| 1 | F | 196 | ASP | N-CA-CB | -5.84 | 100.09 | 110.60 |
| 1 | I | 30 | THR | N-CA-CB | 5.84 | 121.39 | 110.30 |
| 1 | M | 204 | PHE | CB-CG-CD2 | -5.84 | 116.72 | 120.80 |
| 1 | N | 204 | PHE | CB-CG-CD2 | -5.83 | 116.72 | 120.80 |
| 1 | B | 196 | ASP | N-CA-CB | -5.83 | 100.11 | 110.60 |
| 1 | D | 501 | ARG | N-CA-CB | -5.83 | 100.11 | 110.60 |
| 1 | G | 501 | ARG | N-CA-CB | -5.83 | 100.11 | 110.60 |
| 1 | D | 58 | ARG | NE-CZ-NH1 | 5.82 | 123.21 | 120.30 |
| 1 | F | 501 | ARG | N-CA-CB | -5.82 | 100.12 | 110.60 |
| 1 | M | 417 | VAL | CA-CB-CG2 | -5.81 | 102.18 | 110.90 |
| 1 | D | 196 | ASP | N-CA-CB | -5.81 | 100.14 | 110.60 |
| 1 | I | 87 | ASP | OD1-CG-OD2 | -5.81 | 112.26 | 123.30 |
| 1 | M | 87 | ASP | OD1-CG-OD2 | -5.81 | 112.26 | 123.30 |
| 1 | L | 87 | ASP | OD1-CG-OD2 | -5.81 | 112.27 | 123.30 |
| 1 | B | 501 | ARG | N-CA-CB | -5.81 | 100.15 | 110.60 |
| 1 | D | 87 | ASP | OD1-CG-OD2 | -5.80 | 112.27 | 123.30 |
| 1 | K | 417 | VAL | CA-CB-CG2 | -5.80 | 102.19 | 110.90 |
| 1 | I | 155 | ASP | CB-CA-C | 5.80 | 122.00 | 110.40 |
| 1 | N | 417 | VAL | CA-CB-CG2 | -5.80 | 102.19 | 110.90 |
| 1 | E | 501 | ARG | N-CA-CB | -5.80 | 100.16 | 110.60 |
| 1 | I | 149 | THR | N-CA-CB | 5.80 | 121.32 | 110.30 |
| 1 | D | 149 | THR | N-CA-CB | 5.80 | 121.32 | 110.30 |
| 1 | A | 501 | ARG | N-CA-CB | -5.80 | 100.17 | 110.60 |
| 1 | L | 155 | ASP | CB-CA-C | 5.80 | 121.99 | 110.40 |
| 1 | J | 87 | ASP | OD1-CG-OD2 | -5.79 | 112.29 | 123.30 |
| 1 | L | 204 | PHE | CB-CG-CD2 | -5.79 | 116.75 | 120.80 |
| 1 | C | 501 | ARG | N-CA-CB | -5.79 | 100.18 | 110.60 |
| 1 | F | 58 | ARG | NE-CZ-NH1 | 5.79 | 123.19 | 120.30 |
| 1 | F | 149 | THR | N-CA-CB | 5.79 | 121.30 | 110.30 |
| 1 | H | 417 | VAL | CA-CB-CG2 | -5.79 | 102.22 | 110.90 |
| 1 | H | 87 | ASP | OD1-CG-OD2 | -5.78 | 112.32 | 123.30 |
| 1 | J | 417 | VAL | CA-CB-CG2 | -5.78 | 102.23 | 110.90 |
| 1 | L | 149 | THR | N-CA-CB | 5.78 | 121.28 | 110.30 |
| 1 | A | 58 | ARG | NE-CZ-NH1 | 5.78 | 123.19 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | J | 155 | ASP | CB-CA-C | 5.78 | 121.95 | 110.40 |
| 1 | L | 417 | VAL | CA-CB-CG2 | -5.77 | 102.24 | 110.90 |
| 1 | G | 149 | THR | N-CA-CB | 5.77 | 121.26 | 110.30 |
| 1 | A | 149 | THR | N-CA-CB | 5.76 | 121.25 | 110.30 |
| 1 | N | 149 | THR | N-CA-CB | 5.76 | 121.24 | 110.30 |
| 1 | M | 58 | ARG | NE-CZ-NH1 | 5.76 | 123.18 | 120.30 |
| 1 | B | 149 | THR | N-CA-CB | 5.76 | 121.24 | 110.30 |
| 1 | I | 417 | VAL | CA-CB-CG2 | -5.76 | 102.26 | 110.90 |
| 1 | A | 380 | LYS | N-CA-CB | -5.75 | 100.25 | 110.60 |
| 1 | C | 149 | THR | N-CA-CB | 5.75 | 121.22 | 110.30 |
| 1 | C | 380 | LYS | N-CA-CB | -5.75 | 100.25 | 110.60 |
| 1 | B | 380 | LYS | N-CA-CB | -5.75 | 100.26 | 110.60 |
| 1 | H | 149 | THR | N-CA-CB | 5.75 | 121.22 | 110.30 |
| 1 | H | 204 | PHE | CB-CG-CD2 | -5.75 | 116.78 | 120.80 |
| 1 | G | 166 | MET | CG-SD-CE | -5.75 | 91.01 | 100.20 |
| 1 | E | 149 | THR | N-CA-CB | 5.74 | 121.21 | 110.30 |
| 1 | B | 166 | MET | CG-SD-CE | -5.74 | 91.02 | 100.20 |
| 1 | D | 166 | MET | CG-SD-CE | -5.73 | 91.03 | 100.20 |
| 1 | D | 411 | VAL | CA-CB-CG2 | 5.73 | 119.49 | 110.90 |
| 1 | E | 380 | LYS | N-CA-CB | -5.73 | 100.29 | 110.60 |
| 1 | N | 87 | ASP | OD1-CG-OD2 | -5.73 | 112.42 | 123.30 |
| 1 | A | 166 | MET | CG-SD-CE | -5.72 | 91.04 | 100.20 |
| 1 | D | 380 | LYS | N-CA-CB | -5.72 | 100.30 | 110.60 |
| 1 | H | 155 | ASP | CB-CA-C | 5.72 | 121.84 | 110.40 |
| 1 | G | 58 | ARG | NE-CZ-NH1 | 5.71 | 123.16 | 120.30 |
| 1 | G | 380 | LYS | N-CA-CB | -5.71 | 100.32 | 110.60 |
| 1 | N | 155 | ASP | CB-CA-C | 5.71 | 121.82 | 110.40 |
| 1 | C | 166 | MET | CG-SD-CE | -5.71 | 91.07 | 100.20 |
| 1 | C | 411 | VAL | CA-CB-CG2 | 5.71 | 119.46 | 110.90 |
| 1 | F | 166 | MET | CG-SD-CE | -5.70 | 91.08 | 100.20 |
| 1 | E | 166 | MET | CG-SD-CE | -5.70 | 91.08 | 100.20 |
| 1 | F | 380 | LYS | N-CA-CB | -5.70 | 100.34 | 110.60 |
| 1 | L | 285 | ARG | NE-CZ-NH1 | 5.70 | 123.15 | 120.30 |
| 1 | A | 411 | VAL | CA-CB-CG2 | 5.69 | 119.44 | 110.90 |
| 1 | F | 411 | VAL | CA-CB-CG2 | 5.69 | 119.43 | 110.90 |
| 1 | M | 285 | ARG | NE-CZ-NH1 | 5.69 | 123.14 | 120.30 |
| 1 | F | 257 | GLU | N-CA-CB | -5.68 | 100.37 | 110.60 |
| 1 | C | 257 | GLU | N-CA-CB | -5.68 | 100.38 | 110.60 |
| 1 | E | 257 | GLU | N-CA-CB | -5.68 | 100.38 | 110.60 |
| 1 | A | 257 | GLU | N-CA-CB | -5.67 | 100.40 | 110.60 |
| 1 | B | 257 | GLU | N-CA-CB | -5.67 | 100.39 | 110.60 |
| 1 | G | 411 | VAL | CA-CB-CG2 | 5.67 | 119.40 | 110.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | A | 334 | ASP | CB-CG-OD1 | 5.67 | 123.40 | 118.30 |
| 1 | D | 257 | GLU | N-CA-CB | -5.66 | 100.41 | 110.60 |
| 1 | E | 58 | ARG | NE-CZ-NH1 | 5.66 | 123.13 | 120.30 |
| 1 | B | 411 | VAL | CA-CB-CG2 | 5.66 | 119.39 | 110.90 |
| 1 | E | 411 | VAL | CA-CB-CG2 | 5.66 | 119.39 | 110.90 |
| 1 | G | 257 | GLU | N-CA-CB | -5.66 | 100.41 | 110.60 |
| 1 | L | 412 | VAL | CB-CA-C | -5.65 | 100.67 | 111.40 |
| 1 | I | 412 | VAL | CB-CA-C | -5.65 | 100.67 | 111.40 |
| 1 | K | 412 | VAL | CB-CA-C | -5.64 | 100.68 | 111.40 |
| 1 | J | 412 | VAL | CB-CA-C | -5.64 | 100.68 | 111.40 |
| 1 | F | 334 | ASP | CB-CG-OD1 | 5.64 | 123.38 | 118.30 |
| 1 | N | 412 | VAL | CB-CA-C | -5.64 | 100.68 | 111.40 |
| 1 | H | 412 | VAL | CB-CA-C | -5.63 | 100.69 | 111.40 |
| 1 | M | 85 | ALA | N-CA-CB | -5.63 | 102.21 | 110.10 |
| 1 | E | 334 | ASP | CB-CG-OD1 | 5.63 | 123.37 | 118.30 |
| 1 | K | 58 | ARG | NE-CZ-NH1 | 5.63 | 123.11 | 120.30 |
| 1 | M | 412 | VAL | CB-CA-C | -5.61 | 100.74 | 111.40 |
| 1 | B | 58 | ARG | NE-CZ-NH1 | 5.61 | 123.10 | 120.30 |
| 1 | B | 334 | ASP | CB-CG-OD1 | 5.60 | 123.34 | 118.30 |
| 1 | G | 334 | ASP | CB-CG-OD1 | 5.59 | 123.33 | 118.30 |
| 1 | K | 285 | ARG | NE-CZ-NH1 | 5.59 | 123.10 | 120.30 |
| 1 | K | 126 | ALA | CB-CA-C | 5.59 | 118.49 | 110.10 |
| 1 | I | 285 | ARG | NE-CZ-NH1 | 5.59 | 123.09 | 120.30 |
| 1 | J | 126 | ALA | CB-CA-C | 5.59 | 118.48 | 110.10 |
| 1 | M | 30 | THR | N-CA-CB | 5.59 | 120.92 | 110.30 |
| 1 | N | 126 | ALA | CB-CA-C | 5.59 | 118.48 | 110.10 |
| 1 | I | 126 | ALA | CB-CA-C | 5.59 | 118.48 | 110.10 |
| 1 | L | 126 | ALA | CB-CA-C | 5.59 | 118.48 | 110.10 |
| 1 | H | 285 | ARG | NE-CZ-NH1 | 5.58 | 123.09 | 120.30 |
| 1 | N | 285 | ARG | NE-CZ-NH1 | 5.57 | 123.08 | 120.30 |
| 1 | H | 126 | ALA | CB-CA-C | 5.57 | 118.45 | 110.10 |
| 1 | C | 58 | ARG | NE-CZ-NH1 | 5.56 | 123.08 | 120.30 |
| 1 | D | 334 | ASP | CB-CG-OD1 | 5.55 | 123.30 | 118.30 |
| 1 | E | 368 | ARG | NE-CZ-NH1 | 5.55 | 123.08 | 120.30 |
| 1 | M | 126 | ALA | CB-CA-C | 5.55 | 118.43 | 110.10 |
| 1 | C | 334 | ASP | CB-CG-OD1 | 5.54 | 123.29 | 118.30 |
| 1 | J | 166 | MET | CG-SD-CE | -5.53 | 91.36 | 100.20 |
| 1 | I | 166 | MET | CG-SD-CE | -5.50 | 91.39 | 100.20 |
| 1 | I | 58 | ARG | NE-CZ-NH1 | 5.50 | 123.05 | 120.30 |
| 1 | N | 369 | VAL | N-CA-CB | 5.49 | 123.58 | 111.50 |
| 1 | H | 58 | ARG | NE-CZ-NH1 | 5.49 | 123.05 | 120.30 |
| 1 | N | 166 | MET | CG-SD-CE | -5.49 | 91.42 | 100.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | D | 294 | THR | CA-CB-CG2 | -5.49 | 104.72 | 112.40 |
| 1 | J | 285 | ARG | NE-CZ-NH1 | 5.49 | 123.04 | 120.30 |
| 1 | C | 368 | ARG | NE-CZ-NH1 | 5.48 | 123.04 | 120.30 |
| 1 | H | 369 | VAL | N-CA-CB | 5.48 | 123.55 | 111.50 |
| 1 | F | 338 | GLU | N-CA-CB | 5.47 | 120.45 | 110.60 |
| 1 | K | 155 | ASP | CB-CA-C | 5.47 | 121.35 | 110.40 |
| 1 | C | 294 | THR | CA-CB-CG2 | -5.47 | 104.74 | 112.40 |
| 1 | M | 369 | VAL | N-CA-CB | 5.47 | 123.53 | 111.50 |
| 1 | A | 368 | ARG | NE-CZ-NH1 | 5.47 | 123.03 | 120.30 |
| 1 | C | 231 | ARG | NE-CZ-NH1 | 5.47 | 123.03 | 120.30 |
| 1 | J | 58 | ARG | NE-CZ-NH1 | 5.47 | 123.03 | 120.30 |
| 1 | E | 294 | THR | CA-CB-CG2 | -5.46 | 104.75 | 112.40 |
| 1 | F | 368 | ARG | NE-CZ-NH1 | 5.46 | 123.03 | 120.30 |
| 1 | H | 166 | MET | CG-SD-CE | -5.46 | 91.46 | 100.20 |
| 1 | M | 166 | MET | CG-SD-CE | -5.46 | 91.46 | 100.20 |
| 1 | L | 369 | VAL | N-CA-CB | 5.46 | 123.51 | 111.50 |
| 1 | G | 368 | ARG | NE-CZ-NH1 | 5.46 | 123.03 | 120.30 |
| 1 | A | 294 | THR | CA-CB-CG2 | -5.46 | 104.76 | 112.40 |
| 1 | A | 338 | GLU | N-CA-CB | 5.45 | 120.42 | 110.60 |
| 1 | G | 294 | THR | CA-CB-CG2 | -5.45 | 104.76 | 112.40 |
| 1 | J | 369 | VAL | N-CA-CB | 5.45 | 123.50 | 111.50 |
| 1 | B | 294 | THR | CA-CB-CG2 | -5.45 | 104.77 | 112.40 |
| 1 | C | 338 | GLU | N-CA-CB | 5.45 | 120.41 | 110.60 |
| 1 | G | 338 | GLU | N-CA-CB | 5.45 | 120.41 | 110.60 |
| 1 | I | 369 | VAL | N-CA-CB | 5.45 | 123.49 | 111.50 |
| 1 | F | 294 | THR | CA-CB-CG2 | -5.45 | 104.77 | 112.40 |
| 1 | K | 369 | VAL | N-CA-CB | 5.45 | 123.48 | 111.50 |
| 1 | L | 166 | MET | CG-SD-CE | -5.45 | 91.49 | 100.20 |
| 1 | D | 338 | GLU | N-CA-CB | 5.44 | 120.40 | 110.60 |
| 1 | B | 338 | GLU | N-CA-CB | 5.44 | 120.39 | 110.60 |
| 1 | F | 285 | ARG | NE-CZ-NH1 | 5.44 | 123.02 | 120.30 |
| 1 | E | 338 | GLU | N-CA-CB | 5.44 | 120.39 | 110.60 |
| 1 | B | 300 | VAL | CB-CA-C | -5.43 | 101.08 | 111.40 |
| 1 | K | 87 | ASP | OD1-CG-OD2 | -5.43 | 112.98 | 123.30 |
| 1 | G | 285 | ARG | NE-CZ-NH1 | 5.42 | 123.01 | 120.30 |
| 1 | E | 231 | ARG | NE-CZ-NH1 | 5.42 | 123.01 | 120.30 |
| 1 | F | 300 | VAL | CB-CA-C | -5.42 | 101.10 | 111.40 |
| 1 | E | 300 | VAL | CB-CA-C | -5.42 | 101.10 | 111.40 |
| 1 | B | 231 | ARG | NE-CZ-NH1 | 5.42 | 123.01 | 120.30 |
| 1 | H | 409 | GLU | N-CA-CB | 5.42 | 120.35 | 110.60 |
| 1 | C | 226 | LYS | N-CA-CB | -5.41 | 100.86 | 110.60 |
| 1 | A | 231 | ARG | NE-CZ-NH1 | 5.41 | 123.00 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | D | 300 | VAL | CB-CA-C | -5.41 | 101.12 | 111.40 |
| 1 | E | 226 | LYS | N-CA-CB | -5.41 | 100.86 | 110.60 |
| 1 | J | 409 | GLU | N-CA-CB | 5.41 | 120.34 | 110.60 |
| 1 | L | 409 | GLU | N-CA-CB | 5.41 | 120.33 | 110.60 |
| 1 | N | 473 | ASP | CB-CA-C | 5.41 | 121.21 | 110.40 |
| 1 | A | 300 | VAL | CB-CA-C | -5.41 | 101.13 | 111.40 |
| 1 | D | 231 | ARG | NE-CZ-NH1 | 5.41 | 123.00 | 120.30 |
| 1 | G | 300 | VAL | CB-CA-C | -5.41 | 101.13 | 111.40 |
| 1 | C | 300 | VAL | CB-CA-C | -5.40 | 101.14 | 111.40 |
| 1 | B | 285 | ARG | NE-CZ-NH1 | 5.40 | 123.00 | 120.30 |
| 1 | B | 368 | ARG | NE-CZ-NH1 | 5.40 | 123.00 | 120.30 |
| 1 | K | 473 | ASP | CB-CA-C | 5.39 | 121.19 | 110.40 |
| 1 | L | 473 | ASP | CB-CA-C | 5.39 | 121.19 | 110.40 |
| 1 | G | 226 | LYS | N-CA-CB | -5.39 | 100.89 | 110.60 |
| 1 | H | 506 | TYR | CB-CG-CD1 | 5.39 | 124.24 | 121.00 |
| 1 | N | 58 | ARG | NE-CZ-NH1 | 5.39 | 123.00 | 120.30 |
| 1 | N | 409 | GLU | N-CA-CB | 5.39 | 120.31 | 110.60 |
| 1 | I | 473 | ASP | CB-CA-C | 5.39 | 121.18 | 110.40 |
| 1 | H | 473 | ASP | CB-CA-C | 5.38 | 121.17 | 110.40 |
| 1 | I | 409 | GLU | N-CA-CB | 5.38 | 120.29 | 110.60 |
| 1 | K | 409 | GLU | N-CA-CB | 5.38 | 120.28 | 110.60 |
| 1 | M | 473 | ASP | CB-CA-C | 5.38 | 121.16 | 110.40 |
| 1 | J | 473 | ASP | CB-CA-C | 5.38 | 121.15 | 110.40 |
| 1 | F | 226 | LYS | N-CA-CB | -5.37 | 100.93 | 110.60 |
| 1 | D | 368 | ARG | NE-CZ-NH1 | 5.37 | 122.99 | 120.30 |
| 1 | E | 285 | ARG | NE-CZ-NH1 | 5.37 | 122.98 | 120.30 |
| 1 | F | 231 | ARG | NE-CZ-NH1 | 5.37 | 122.98 | 120.30 |
| 1 | M | 409 | GLU | N-CA-CB | 5.37 | 120.26 | 110.60 |
| 1 | A | 226 | LYS | N-CA-CB | -5.36 | 100.95 | 110.60 |
| 1 | E | 369 | VAL | CA-CB-CG2 | 5.36 | 118.93 | 110.90 |
| 1 | B | 369 | VAL | CA-CB-CG2 | 5.34 | 118.92 | 110.90 |
| 1 | M | 140 | ASP | CB-CG-OD1 | 5.34 | 123.11 | 118.30 |
| 1 | F | 369 | VAL | CA-CB-CG2 | 5.34 | 118.91 | 110.90 |
| 1 | G | 369 | VAL | CA-CB-CG2 | 5.34 | 118.91 | 110.90 |
| 1 | D | 285 | ARG | NE-CZ-NH1 | 5.33 | 122.97 | 120.30 |
| 1 | I | 506 | TYR | CB-CG-CD1 | 5.33 | 124.20 | 121.00 |
| 1 | L | 58 | ARG | NE-CZ-NH1 | 5.32 | 122.96 | 120.30 |
| 1 | G | 231 | ARG | NE-CZ-NH1 | 5.31 | 122.96 | 120.30 |
| 1 | N | 506 | TYR | CB-CG-CD1 | 5.31 | 124.19 | 121.00 |
| 1 | K | 166 | MET | CG-SD-CE | -5.31 | 91.71 | 100.20 |
| 1 | A | 369 | VAL | N-CA-CB | 5.30 | 123.16 | 111.50 |
| 1 | B | 226 | LYS | N-CA-CB | -5.30 | 101.06 | 110.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | H | 190 | VAL | CB-CA-C | 5.30 | 121.47 | 111.40 |
| 1 | K | 140 | ASP | CB-CG-OD1 | 5.30 | 123.07 | 118.30 |
| 1 | A | 285 | ARG | NE-CZ-NH1 | 5.30 | 122.95 | 120.30 |
| 1 | G | 369 | VAL | N-CA-CB | 5.30 | 123.15 | 111.50 |
| 1 | A | 369 | VAL | CA-CB-CG2 | 5.29 | 118.84 | 110.90 |
| 1 | D | 369 | VAL | CA-CB-CG2 | 5.29 | 118.84 | 110.90 |
| 1 | L | 140 | ASP | CB-CG-OD1 | 5.29 | 123.06 | 118.30 |
| 1 | D | 369 | VAL | N-CA-CB | 5.29 | 123.13 | 111.50 |
| 1 | L | 196 | ASP | N-CA-CB | -5.28 | 101.09 | 110.60 |
| 1 | C | 369 | VAL | CA-CB-CG2 | 5.28 | 118.82 | 110.90 |
| 1 | J | 506 | TYR | CB-CG-CD1 | 5.28 | 124.17 | 121.00 |
| 1 | M | 368 | ARG | NE-CZ-NH1 | 5.28 | 122.94 | 120.30 |
| 1 | E | 369 | VAL | N-CA-CB | 5.28 | 123.11 | 111.50 |
| 1 | B | 218 | PRO | N-CA-CB | 5.28 | 109.63 | 103.30 |
| 1 | A | 218 | PRO | N-CA-CB | 5.28 | 109.63 | 103.30 |
| 1 | N | 196 | ASP | N-CA-CB | -5.28 | 101.10 | 110.60 |
| 1 | K | 196 | ASP | N-CA-CB | -5.27 | 101.11 | 110.60 |
| 1 | B | 369 | VAL | N-CA-CB | 5.27 | 123.10 | 111.50 |
| 1 | I | 190 | VAL | CB-CA-C | 5.27 | 121.42 | 111.40 |
| 1 | M | 190 | VAL | CB-CA-C | 5.27 | 121.42 | 111.40 |
| 1 | C | 369 | VAL | N-CA-CB | 5.27 | 123.09 | 111.50 |
| 1 | L | 190 | VAL | CB-CA-C | 5.27 | 121.41 | 111.40 |
| 1 | N | 190 | VAL | CB-CA-C | 5.27 | 121.41 | 111.40 |
| 1 | C | 218 | PRO | N-CA-CB | 5.27 | 109.62 | 103.30 |
| 1 | H | 196 | ASP | N-CA-CB | -5.26 | 101.12 | 110.60 |
| 1 | J | 190 | VAL | CB-CA-C | 5.26 | 121.40 | 111.40 |
| 1 | F | 369 | VAL | N-CA-CB | 5.26 | 123.08 | 111.50 |
| 1 | J | 196 | ASP | N-CA-CB | -5.26 | 101.13 | 110.60 |
| 1 | L | 268 | ARG | NE-CZ-NH1 | 5.26 | 122.93 | 120.30 |
| 1 | H | 140 | ASP | CB-CG-OD1 | 5.26 | 123.03 | 118.30 |
| 1 | K | 190 | VAL | CB-CA-C | 5.26 | 121.39 | 111.40 |
| 1 | D | 226 | LYS | N-CA-CB | -5.26 | 101.14 | 110.60 |
| 1 | M | 196 | ASP | N-CA-CB | -5.26 | 101.14 | 110.60 |
| 1 | A | 341 | ALA | N-CA-CB | 5.25 | 117.45 | 110.10 |
| 1 | I | 196 | ASP | N-CA-CB | -5.25 | 101.15 | 110.60 |
| 1 | D | 218 | PRO | N-CA-CB | 5.25 | 109.60 | 103.30 |
| 1 | E | 218 | PRO | N-CA-CB | 5.24 | 109.59 | 103.30 |
| 1 | A | 411 | VAL | CG1-CB-CG2 | -5.24 | 102.51 | 110.90 |
| 1 | F | 218 | PRO | N-CA-CB | 5.24 | 109.59 | 103.30 |
| 1 | D | 203 | TYR | CB-CG-CD1 | 5.24 | 124.14 | 121.00 |
| 1 | G | 203 | TYR | CB-CG-CD1 | 5.24 | 124.14 | 121.00 |
| 1 | G | 218 | PRO | N-CA-CB | 5.24 | 109.58 | 103.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | E | 203 | TYR | CB-CG-CD1 | 5.23 | 124.14 | 121.00 |
| 1 | F | 341 | ALA | N-CA-CB | 5.23 | 117.43 | 110.10 |
| 1 | C | 411 | VAL | CG1-CB-CG2 | -5.23 | 102.53 | 110.90 |
| 1 | D | 411 | VAL | CG1-CB-CG2 | -5.23 | 102.53 | 110.90 |
| 1 | E | 411 | VAL | CG1-CB-CG2 | -5.23 | 102.53 | 110.90 |
| 1 | F | 411 | VAL | CG1-CB-CG2 | -5.23 | 102.53 | 110.90 |
| 1 | J | 368 | ARG | NE-CZ-NH1 | 5.23 | 122.92 | 120.30 |
| 1 | F | 203 | TYR | CB-CG-CD1 | 5.23 | 124.14 | 121.00 |
| 1 | L | 284 | ARG | CB-CA-C | -5.23 | 99.94 | 110.40 |
| 1 | C | 203 | TYR | CB-CG-CD1 | 5.23 | 124.14 | 121.00 |
| 1 | G | 341 | ALA | N-CA-CB | 5.23 | 117.42 | 110.10 |
| 1 | I | 284 | ARG | CB-CA-C | -5.23 | 99.94 | 110.40 |
| 1 | H | 284 | ARG | CB-CA-C | -5.23 | 99.95 | 110.40 |
| 1 | K | 284 | ARG | CB-CA-C | -5.22 | 99.95 | 110.40 |
| 1 | C | 285 | ARG | NE-CZ-NH1 | 5.22 | 122.91 | 120.30 |
| 1 | A | 203 | TYR | CB-CG-CD1 | 5.22 | 124.13 | 121.00 |
| 1 | G | 243 | ALA | N-CA-CB | 5.22 | 117.41 | 110.10 |
| 1 | M | 284 | ARG | CB-CA-C | -5.22 | 99.97 | 110.40 |
| 1 | N | 284 | ARG | CB-CA-C | -5.21 | 99.97 | 110.40 |
| 1 | I | 320 | ALA | N-CA-CB | 5.21 | 117.40 | 110.10 |
| 1 | J | 284 | ARG | CB-CA-C | -5.21 | 99.98 | 110.40 |
| 1 | J | 320 | ALA | N-CA-CB | 5.21 | 117.39 | 110.10 |
| 1 | K | 320 | ALA | N-CA-CB | 5.21 | 117.39 | 110.10 |
| 1 | H | 140 | ASP | CA-CB-CG | 5.21 | 124.85 | 113.40 |
| 1 | L | 320 | ALA | N-CA-CB | 5.21 | 117.39 | 110.10 |
| 1 | B | 411 | VAL | CG1-CB-CG2 | -5.20 | 102.57 | 110.90 |
| 1 | E | 341 | ALA | N-CA-CB | 5.20 | 117.39 | 110.10 |
| 1 | J | 268 | ARG | NE-CZ-NH1 | 5.20 | 122.90 | 120.30 |
| 1 | B | 341 | ALA | N-CA-CB | 5.20 | 117.38 | 110.10 |
| 1 | D | 341 | ALA | N-CA-CB | 5.20 | 117.38 | 110.10 |
| 1 | C | 341 | ALA | N-CA-CB | 5.20 | 117.37 | 110.10 |
| 1 | H | 320 | ALA | N-CA-CB | 5.20 | 117.37 | 110.10 |
| 1 | N | 320 | ALA | N-CA-CB | 5.19 | 117.37 | 110.10 |
| 1 | N | 495 | ASP | CB-CA-C | -5.19 | 100.01 | 110.40 |
| 1 | G | 411 | VAL | CG1-CB-CG2 | -5.19 | 102.60 | 110.90 |
| 1 | A | 284 | ARG | CB-CA-C | -5.19 | 100.02 | 110.40 |
| 1 | M | 320 | ALA | N-CA-CB | 5.18 | 117.36 | 110.10 |
| 1 | H | 368 | ARG | NE-CZ-NH1 | 5.18 | 122.89 | 120.30 |
| 1 | C | 284 | ARG | CB-CA-C | -5.18 | 100.04 | 110.40 |
| 1 | F | 284 | ARG | CB-CA-C | -5.18 | 100.04 | 110.40 |
| 1 | B | 243 | ALA | N-CA-CB | 5.17 | 117.34 | 110.10 |
| 1 | D | 284 | ARG | CB-CA-C | -5.17 | 100.06 | 110.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | E | 284 | ARG | CB-CA-C | -5.17 | 100.06 | 110.40 |
| 1 | G | 284 | ARG | CB-CA-C | -5.17 | 100.06 | 110.40 |
| 1 | H | 268 | ARG | NE-CZ-NH1 | 5.17 | 122.89 | 120.30 |
| 1 | L | 140 | ASP | CA-CB-CG | 5.17 | 124.78 | 113.40 |
| 1 | F | 243 | ALA | N-CA-CB | 5.17 | 117.34 | 110.10 |
| 1 | B | 203 | TYR | CB-CG-CD1 | 5.17 | 124.10 | 121.00 |
| 1 | D | 18 | ARG | NE-CZ-NH1 | 5.17 | 122.88 | 120.30 |
| 1 | K | 140 | ASP | CA-CB-CG | 5.16 | 124.74 | 113.40 |
| 1 | A | 243 | ALA | N-CA-CB | 5.15 | 117.32 | 110.10 |
| 1 | M | 140 | ASP | CA-CB-CG | 5.15 | 124.74 | 113.40 |
| 1 | L | 368 | ARG | NE-CZ-NH1 | 5.15 | 122.88 | 120.30 |
| 1 | A | 205 | ILE | CB-CA-C | 5.15 | 121.90 | 111.60 |
| 1 | K | 368 | ARG | NE-CZ-NH1 | 5.15 | 122.88 | 120.30 |
| 1 | B | 284 | ARG | CB-CA-C | -5.15 | 100.10 | 110.40 |
| 1 | E | 243 | ALA | N-CA-CB | 5.15 | 117.31 | 110.10 |
| 1 | L | 361 | ASP | CB-CA-C | 5.15 | 120.69 | 110.40 |
| 1 | M | 361 | ASP | CB-CA-C | 5.15 | 120.69 | 110.40 |
| 1 | J | 361 | ASP | CB-CA-C | 5.14 | 120.69 | 110.40 |
| 1 | B | 205 | ILE | CB-CA-C | 5.14 | 121.89 | 111.60 |
| 1 | K | 361 | ASP | CB-CA-C | 5.14 | 120.69 | 110.40 |
| 1 | D | 243 | ALA | N-CA-CB | 5.14 | 117.29 | 110.10 |
| 1 | I | 268 | ARG | NE-CZ-NH1 | 5.14 | 122.87 | 120.30 |
| 1 | E | 205 | ILE | CB-CA-C | 5.14 | 121.87 | 111.60 |
| 1 | C | 205 | ILE | CB-CA-C | 5.13 | 121.86 | 111.60 |
| 1 | C | 243 | ALA | N-CA-CB | 5.13 | 117.28 | 110.10 |
| 1 | F | 284 | ARG | NE-CZ-NH1 | 5.13 | 122.86 | 120.30 |
| 1 | G | 205 | ILE | CB-CA-C | 5.13 | 121.86 | 111.60 |
| 1 | N | 361 | ASP | CB-CA-C | 5.13 | 120.66 | 110.40 |
| 1 | F | 205 | ILE | CB-CA-C | 5.13 | 121.86 | 111.60 |
| 1 | N | 268 | ARG | NE-CZ-NH1 | 5.12 | 122.86 | 120.30 |
| 1 | H | 361 | ASP | CB-CA-C | 5.12 | 120.65 | 110.40 |
| 1 | I | 361 | ASP | CB-CA-C | 5.12 | 120.64 | 110.40 |
| 1 | B | 106 | ALA | CB-CA-C | 5.12 | 117.78 | 110.10 |
| 1 | C | 106 | ALA | CB-CA-C | 5.12 | 117.78 | 110.10 |
| 1 | D | 205 | ILE | CB-CA-C | 5.12 | 121.84 | 111.60 |
| 1 | G | 106 | ALA | CB-CA-C | 5.12 | 117.78 | 110.10 |
| 1 | A | 106 | ALA | CB-CA-C | 5.11 | 117.77 | 110.10 |
| 1 | M | 104 | LEU | CB-CA-C | 5.11 | 119.91 | 110.20 |
| 1 | N | 368 | ARG | NE-CZ-NH1 | 5.11 | 122.86 | 120.30 |
| 1 | E | 284 | ARG | NE-CZ-NH1 | 5.11 | 122.85 | 120.30 |
| 1 | E | 106 | ALA | CB-CA-C | 5.11 | 117.76 | 110.10 |
| 1 | L | 104 | LEU | CB-CA-C | 5.11 | 119.90 | 110.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | A | 18 | ARG | NE-CZ-NH1 | 5.09 | 122.85 | 120.30 |
| 1 | F | 106 | ALA | CB-CA-C | 5.09 | 117.74 | 110.10 |
| 1 | M | 268 | ARG | NE-CZ-NH1 | 5.09 | 122.84 | 120.30 |
| 1 | K | 104 | LEU | CB-CA-C | 5.08 | 119.86 | 110.20 |
| 1 | J | 104 | LEU | CB-CA-C | 5.08 | 119.85 | 110.20 |
| 1 | N | 104 | LEU | CB-CA-C | 5.08 | 119.86 | 110.20 |
| 1 | D | 106 | ALA | CB-CA-C | 5.08 | 117.72 | 110.10 |
| 1 | E | 18 | ARG | NE-CZ-NH1 | 5.08 | 122.84 | 120.30 |
| 1 | I | 104 | LEU | CB-CA-C | 5.08 | 119.85 | 110.20 |
| 1 | K | 268 | ARG | NE-CZ-NH1 | 5.07 | 122.84 | 120.30 |
| 1 | J | 204 | PHE | CB-CG-CD1 | 5.07 | 124.35 | 120.80 |
| 1 | H | 104 | LEU | CB-CA-C | 5.07 | 119.83 | 110.20 |
| 1 | N | 369 | VAL | CB-CA-C | -5.07 | 101.77 | 111.40 |
| 1 | G | 18 | ARG | NE-CZ-NH1 | 5.06 | 122.83 | 120.30 |
| 1 | I | 369 | VAL | CB-CA-C | -5.06 | 101.78 | 111.40 |
| 1 | I | 204 | PHE | CB-CG-CD1 | 5.05 | 124.34 | 120.80 |
| 1 | K | 369 | VAL | CB-CA-C | -5.04 | 101.82 | 111.40 |
| 1 | L | 369 | VAL | CB-CA-C | -5.04 | 101.83 | 111.40 |
| 1 | M | 369 | VAL | CB-CA-C | -5.04 | 101.83 | 111.40 |
| 1 | H | 369 | VAL | CB-CA-C | -5.03 | 101.83 | 111.40 |
| 1 | A | 322 | ARG | NE-CZ-NH2 | -5.03 | 117.79 | 120.30 |
| 1 | J | 369 | VAL | CB-CA-C | -5.03 | 101.85 | 111.40 |
| 1 | M | 501 | ARG | N-CA-CB | -5.03 | 101.55 | 110.60 |
| 1 | L | 501 | ARG | N-CA-CB | -5.03 | 101.56 | 110.60 |
| 1 | I | 368 | ARG | NE-CZ-NH1 | 5.02 | 122.81 | 120.30 |
| 1 | G | 322 | ARG | NE-CZ-NH2 | -5.02 | 117.79 | 120.30 |
| 1 | B | 361 | ASP | CB-CA-C | 5.01 | 120.43 | 110.40 |
| 1 | N | 501 | ARG | N-CA-CB | -5.01 | 101.58 | 110.60 |
| 1 | H | 106 | ALA | CB-CA-C | 5.01 | 117.61 | 110.10 |
| 1 | A | 361 | ASP | CB-CA-C | 5.01 | 120.42 | 110.40 |
| 1 | B | 153 | ASN | CB-CA-C | 5.01 | 120.41 | 110.40 |
| 1 | G | 361 | ASP | CB-CA-C | 5.01 | 120.41 | 110.40 |
| 1 | D | 361 | ASP | CB-CA-C | 5.00 | 120.41 | 110.40 |
| 1 | F | 361 | ASP | CB-CA-C | 5.00 | 120.41 | 110.40 |
| 1 | C | 361 | ASP | CB-CA-C | 5.00 | 120.40 | 110.40 |
| 1 | K | 501 | ARG | N-CA-CB | -5.00 | 101.60 | 110.60 |

All (1) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 1 | N | 479 | ASN | CA |

All (140) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | A | 118 | ARG | Sidechain |
| 1 | A | 18 | ARG | Sidechain |
| 1 | A | 197 | ARG | Sidechain |
| 1 | A | 345 | ARG | Sidechain |
| 1 | A | 350 | ARG | Sidechain |
| 1 | A | 362 | ARG | Sidechain |
| 1 | A | 368 | ARG | Sidechain |
| 1 | A | 395 | ARG | Sidechain |
| 1 | A | 404 | ARG | Sidechain |
| 1 | A | 445 | ARG | Sidechain |
| 1 | B | 118 | ARG | Sidechain |
| 1 | B | 18 | ARG | Sidechain |
| 1 | B | 197 | ARG | Sidechain |
| 1 | B | 345 | ARG | Sidechain |
| 1 | B | 350 | ARG | Sidechain |
| 1 | B | 362 | ARG | Sidechain |
| 1 | B | 368 | ARG | Sidechain |
| 1 | B | 395 | ARG | Sidechain |
| 1 | B | 404 | ARG | Sidechain |
| 1 | B | 445 | ARG | Sidechain |
| 1 | C | 118 | ARG | Sidechain |
| 1 | C | 18 | ARG | Sidechain |
| 1 | C | 197 | ARG | Sidechain |
| 1 | C | 345 | ARG | Sidechain |
| 1 | C | 350 | ARG | Sidechain |
| 1 | C | 362 | ARG | Sidechain |
| 1 | C | 368 | ARG | Sidechain |
| 1 | C | 395 | ARG | Sidechain |
| 1 | C | 404 | ARG | Sidechain |
| 1 | C | 445 | ARG | Sidechain |
| 1 | D | 118 | ARG | Sidechain |
| 1 | D | 18 | ARG | Sidechain |
| 1 | D | 197 | ARG | Sidechain |
| 1 | D | 345 | ARG | Sidechain |
| 1 | D | 350 | ARG | Sidechain |
| 1 | D | 362 | ARG | Sidechain |
| 1 | D | 368 | ARG | Sidechain |
| 1 | D | 395 | ARG | Sidechain |
| 1 | D | 404 | ARG | Sidechain |
| 1 | D | 445 | ARG | Sidechain |
| 1 | E | 118 | ARG | Sidechain |
| 1 | E | 18 | ARG | Sidechain |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|--------------|
| 1 | E | 197 | ARG | Sidechain |
| 1 | E | 345 | ARG | Sidechain |
| 1 | E | 350 | ARG | Sidechain |
| 1 | E | 362 | ARG | Sidechain |
| 1 | E | 368 | ARG | Sidechain |
| 1 | E | 395 | ARG | Sidechain |
| 1 | E | 404 | ARG | Sidechain |
| 1 | E | 445 | ARG | Sidechain |
| 1 | F | 118 | ARG | Sidechain |
| 1 | F | 18 | ARG | Sidechain |
| 1 | F | 197 | ARG | Sidechain |
| 1 | F | 345 | ARG | Sidechain |
| 1 | F | 350 | ARG | Sidechain |
| 1 | F | 362 | ARG | Sidechain |
| 1 | F | 368 | ARG | Sidechain |
| 1 | F | 395 | ARG | Sidechain |
| 1 | F | 404 | ARG | Sidechain |
| 1 | F | 445 | ARG | Sidechain |
| 1 | G | 118 | ARG | Sidechain |
| 1 | G | 18 | ARG | Sidechain |
| 1 | G | 197 | ARG | Sidechain |
| 1 | G | 345 | ARG | Sidechain |
| 1 | G | 350 | ARG | Sidechain |
| 1 | G | 362 | ARG | Sidechain |
| 1 | G | 368 | ARG | Sidechain |
| 1 | G | 395 | ARG | Sidechain |
| 1 | G | 404 | ARG | Sidechain |
| 1 | G | 445 | ARG | Sidechain |
| 1 | H | 118 | ARG | Sidechain |
| 1 | H | 197 | ARG | Sidechain |
| 1 | H | 268 | ARG | Sidechain |
| 1 | H | 36 | ARG | Sidechain |
| 1 | H | 362 | ARG | Sidechain |
| 1 | H | 395 | ARG | Sidechain |
| 1 | H | 404 | ARG | Sidechain |
| 1 | H | 445 | ARG | Sidechain |
| 1 | H | 478 | TYR | Sidechain |
| 1 | H | 483 | GLU | Sidechain |
| 1 | I | 118 | ARG | Sidechain |
| 1 | I | 197 | ARG | Sidechain |
| 1 | I | 268 | ARG | Sidechain |
| 1 | I | 36 | ARG | Sidechain |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|--------------|
| 1 | I | 362 | ARG | Sidechain |
| 1 | I | 395 | ARG | Sidechain |
| 1 | I | 404 | ARG | Sidechain |
| 1 | I | 445 | ARG | Sidechain |
| 1 | I | 478 | TYR | Sidechain |
| 1 | I | 483 | GLU | Sidechain |
| 1 | J | 118 | ARG | Sidechain |
| 1 | J | 197 | ARG | Sidechain |
| 1 | J | 268 | ARG | Sidechain |
| 1 | J | 36 | ARG | Sidechain |
| 1 | J | 362 | ARG | Sidechain |
| 1 | J | 395 | ARG | Sidechain |
| 1 | J | 404 | ARG | Sidechain |
| 1 | J | 445 | ARG | Sidechain |
| 1 | J | 478 | TYR | Sidechain |
| 1 | J | 483 | GLU | Sidechain |
| 1 | K | 118 | ARG | Sidechain |
| 1 | K | 197 | ARG | Sidechain |
| 1 | K | 268 | ARG | Sidechain |
| 1 | K | 36 | ARG | Sidechain |
| 1 | K | 362 | ARG | Sidechain |
| 1 | K | 395 | ARG | Sidechain |
| 1 | K | 404 | ARG | Sidechain |
| 1 | K | 445 | ARG | Sidechain |
| 1 | K | 478 | TYR | Sidechain |
| 1 | K | 483 | GLU | Sidechain |
| 1 | L | 118 | ARG | Sidechain |
| 1 | L | 197 | ARG | Sidechain |
| 1 | L | 268 | ARG | Sidechain |
| 1 | L | 36 | ARG | Sidechain |
| 1 | L | 362 | ARG | Sidechain |
| 1 | L | 395 | ARG | Sidechain |
| 1 | L | 404 | ARG | Sidechain |
| 1 | L | 445 | ARG | Sidechain |
| 1 | L | 478 | TYR | Sidechain |
| 1 | L | 483 | GLU | Sidechain |
| 1 | M | 118 | ARG | Sidechain |
| 1 | M | 197 | ARG | Sidechain |
| 1 | M | 268 | ARG | Sidechain |
| 1 | M | 36 | ARG | Sidechain |
| 1 | M | 362 | ARG | Sidechain |
| 1 | M | 395 | ARG | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | M | 404 | ARG | Sidechain |
| 1 | M | 445 | ARG | Sidechain |
| 1 | M | 478 | TYR | Sidechain |
| 1 | M | 58 | ARG | Sidechain |
| 1 | N | 118 | ARG | Sidechain |
| 1 | N | 197 | ARG | Sidechain |
| 1 | N | 268 | ARG | Sidechain |
| 1 | N | 36 | ARG | Sidechain |
| 1 | N | 362 | ARG | Sidechain |
| 1 | N | 395 | ARG | Sidechain |
| 1 | N | 404 | ARG | Sidechain |
| 1 | N | 445 | ARG | Sidechain |
| 1 | N | 478 | TYR | Sidechain |
| 1 | N | 483 | GLU | 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 | 3846 | 0 | 3970 | 127 | 0 |
| 1 | B | 3846 | 0 | 3970 | 126 | 0 |
| 1 | C | 3846 | 0 | 3970 | 125 | 0 |
| 1 | D | 3846 | 0 | 3970 | 122 | 0 |
| 1 | E | 3846 | 0 | 3970 | 122 | 0 |
| 1 | F | 3846 | 0 | 3970 | 123 | 0 |
| 1 | G | 3846 | 0 | 3970 | 123 | 0 |
| 1 | H | 3846 | 0 | 3968 | 86 | 0 |
| 1 | I | 3846 | 0 | 3968 | 89 | 0 |
| 1 | J | 3846 | 0 | 3968 | 88 | 0 |
| 1 | K | 3846 | 0 | 3968 | 89 | 0 |
| 1 | L | 3846 | 0 | 3968 | 87 | 0 |
| 1 | M | 3846 | 0 | 3968 | 108 | 0 |
| 1 | N | 3846 | 0 | 3968 | 87 | 0 |
| 2 | A | 1 | 0 | 0 | 0 | 0 |
| 2 | B | 1 | 0 | 0 | 0 | 0 |
| 2 | C | 1 | 0 | 0 | 0 | 0 |
| 2 | D | 1 | 0 | 0 | 0 | 0 |
| 2 | E | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2 | F | 1 | 0 | 0 | 0 | 0 |
| 2 | G | 1 | 0 | 0 | 0 | 0 |
| 2 | H | 1 | 0 | 0 | 0 | 0 |
| 2 | I | 1 | 0 | 0 | 0 | 0 |
| 2 | J | 1 | 0 | 0 | 0 | 0 |
| 2 | K | 1 | 0 | 0 | 0 | 0 |
| 2 | L | 1 | 0 | 0 | 0 | 0 |
| 2 | M | 1 | 0 | 0 | 0 | 0 |
| 2 | N | 1 | 0 | 0 | 0 | 0 |
| 3 | A | 1 | 0 | 0 | 5 | 0 |
| 3 | B | 1 | 0 | 0 | 5 | 0 |
| 3 | C | 1 | 0 | 0 | 5 | 0 |
| 3 | D | 1 | 0 | 0 | 5 | 0 |
| 3 | E | 1 | 0 | 0 | 4 | 0 |
| 3 | F | 1 | 0 | 0 | 5 | 0 |
| 3 | G | 1 | 0 | 0 | 4 | 0 |
| 3 | H | 1 | 0 | 0 | 5 | 0 |
| 3 | I | 1 | 0 | 0 | 5 | 0 |
| 3 | J | 1 | 0 | 0 | 5 | 0 |
| 3 | K | 1 | 0 | 0 | 5 | 0 |
| 3 | L | 1 | 0 | 0 | 5 | 0 |
| 3 | M | 1 | 0 | 0 | 5 | 0 |
| 3 | N | 1 | 0 | 0 | 4 | 0 |
| 4 | A | 31 | 12 | 12 | 4 | 0 |
| 4 | B | 31 | 12 | 12 | 4 | 0 |
| 4 | C | 31 | 12 | 12 | 4 | 0 |
| 4 | D | 31 | 12 | 12 | 4 | 0 |
| 4 | E | 31 | 12 | 12 | 3 | 0 |
| 4 | F | 31 | 12 | 12 | 4 | 0 |
| 4 | G | 31 | 12 | 12 | 3 | 0 |
| 4 | H | 31 | 12 | 12 | 4 | 0 |
| 4 | I | 31 | 12 | 12 | 5 | 0 |
| 4 | J | 31 | 12 | 12 | 5 | 0 |
| 4 | K | 31 | 12 | 12 | 5 | 0 |
| 4 | L | 31 | 12 | 12 | 5 | 0 |
| 4 | M | 31 | 12 | 12 | 34 | 0 |
| 4 | N | 31 | 12 | 12 | 5 | 0 |
| All | All | 54306 | 168 | 55734 | 1536 | 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 (1536) 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) |
|-----------------|-----------------|--------------------------|-------------------|
| 4:M:1527:ATP:C5 | 4:M:1527:ATP:C4 | 1.93 | 1.55 |
| 4:M:1527:ATP:C8 | 4:M:1527:ATP:N7 | 1.72 | 1.54 |
| 4:M:1527:ATP:C5 | 4:M:1527:ATP:N7 | 1.93 | 1.37 |
| 4:M:1527:ATP:C8 | 4:M:1527:ATP:N9 | 1.94 | 1.36 |
| 4:M:1527:ATP:C4 | 4:M:1527:ATP:N9 | 2.02 | 1.26 |
| 1:M:493:ILE:CD1 | 4:M:1527:ATP:C4 | 2.28 | 1.17 |
| 1:M:493:ILE:CD1 | 4:M:1527:ATP:C5 | 2.27 | 1.16 |
| 1:M:493:ILE:CG1 | 4:M:1527:ATP:C4 | 2.29 | 1.15 |
| 1:M:493:ILE:CD1 | 4:M:1527:ATP:C8 | 2.31 | 1.13 |
| 1:M:493:ILE:CG1 | 4:M:1527:ATP:C5 | 2.30 | 1.13 |
| 1:M:493:ILE:CG1 | 4:M:1527:ATP:C8 | 2.33 | 1.11 |
| 1:M:27:VAL:HG12 | 1:M:90:THR:HG23 | 1.35 | 1.08 |
| 1:C:27:VAL:HG12 | 1:C:90:THR:HG23 | 1.42 | 1.02 |
| 1:B:27:VAL:HG12 | 1:B:90:THR:HG23 | 1.42 | 1.02 |
| 1:F:27:VAL:HG12 | 1:F:90:THR:HG23 | 1.42 | 1.02 |
| 1:A:27:VAL:HG12 | 1:A:90:THR:HG23 | 1.42 | 1.01 |
| 1:D:27:VAL:HG12 | 1:D:90:THR:HG23 | 1.42 | 1.01 |
| 1:G:27:VAL:HG12 | 1:G:90:THR:HG23 | 1.42 | 1.01 |
| 1:E:27:VAL:HG12 | 1:E:90:THR:HG23 | 1.42 | 1.01 |
| 1:N:27:VAL:HG12 | 1:N:90:THR:HG23 | 1.49 | 0.94 |
| 1:H:27:VAL:HG12 | 1:H:90:THR:HG23 | 1.49 | 0.93 |
| 1:L:27:VAL:HG12 | 1:L:90:THR:HG23 | 1.49 | 0.93 |
| 1:M:493:ILE:CD1 | 4:M:1527:ATP:N9 | 2.32 | 0.93 |
| 1:I:27:VAL:HG12 | 1:I:90:THR:HG23 | 1.49 | 0.92 |
| 1:K:27:VAL:HG12 | 1:K:90:THR:HG23 | 1.50 | 0.91 |
| 1:J:27:VAL:HG12 | 1:J:90:THR:HG23 | 1.51 | 0.91 |
| 1:B:4:LYS:H | 1:C:63:GLU:HB2 | 1.38 | 0.89 |
| 1:A:63:GLU:HB2 | 1:G:4:LYS:H | 1.38 | 0.88 |
| 1:D:4:LYS:H | 1:E:63:GLU:HB2 | 1.38 | 0.88 |
| 1:M:493:ILE:CG1 | 4:M:1527:ATP:N9 | 2.37 | 0.88 |
| 1:C:4:LYS:H | 1:D:63:GLU:HB2 | 1.37 | 0.88 |
| 1:M:493:ILE:CD1 | 4:M:1527:ATP:N7 | 2.36 | 0.88 |
| 1:E:4:LYS:H | 1:F:63:GLU:HB2 | 1.37 | 0.87 |
| 1:I:37:ASN:C | 1:I:50:THR:O | 2.13 | 0.87 |
| 1:N:37:ASN:C | 1:N:50:THR:O | 2.13 | 0.87 |
| 1:H:37:ASN:C | 1:H:50:THR:O | 2.13 | 0.87 |
| 1:A:4:LYS:H | 1:B:63:GLU:HB2 | 1.37 | 0.86 |
| 1:M:37:ASN:C | 1:M:50:THR:O | 2.13 | 0.86 |
| 1:F:4:LYS:H | 1:G:63:GLU:HB2 | 1.38 | 0.86 |
| 1:K:37:ASN:C | 1:K:50:THR:O | 2.13 | 0.86 |
| 1:L:37:ASN:C | 1:L:50:THR:O | 2.13 | 0.86 |
| 1:J:37:ASN:C | 1:J:50:THR:O | 2.13 | 0.85 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:493:ILE:HD12 | 4:M:1527:ATP:C4 | 2.10 | 0.85 |
| 1:M:493:ILE:HG13 | 4:M:1527:ATP:C5 | 2.10 | 0.84 |
| 1:M:493:ILE:HD13 | 4:M:1527:ATP:C8 | 2.12 | 0.83 |
| 1:M:493:ILE:CG1 | 4:M:1527:ATP:N7 | 2.41 | 0.83 |
| 1:C:183:LEU:O | 1:C:382:GLY:HA3 | 1.82 | 0.80 |
| 1:B:183:LEU:O | 1:B:382:GLY:HA3 | 1.82 | 0.80 |
| 1:D:183:LEU:O | 1:D:382:GLY:HA3 | 1.82 | 0.80 |
| 1:A:183:LEU:O | 1:A:382:GLY:HA3 | 1.82 | 0.80 |
| 1:K:183:LEU:O | 1:K:382:GLY:HA3 | 1.82 | 0.80 |
| 1:L:183:LEU:O | 1:L:382:GLY:HA3 | 1.82 | 0.80 |
| 1:F:183:LEU:O | 1:F:382:GLY:HA3 | 1.82 | 0.79 |
| 1:E:183:LEU:O | 1:E:382:GLY:HA3 | 1.82 | 0.79 |
| 1:G:183:LEU:O | 1:G:382:GLY:HA3 | 1.82 | 0.79 |
| 1:J:183:LEU:O | 1:J:382:GLY:HA3 | 1.82 | 0.79 |
| 1:M:183:LEU:O | 1:M:382:GLY:HA3 | 1.82 | 0.79 |
| 1:H:183:LEU:O | 1:H:382:GLY:HA3 | 1.82 | 0.78 |
| 1:L:135:SER:HA | 1:L:412:VAL:HG12 | 1.66 | 0.78 |
| 1:M:493:ILE:HD11 | 4:M:1527:ATP:C5 | 2.16 | 0.78 |
| 1:N:183:LEU:O | 1:N:382:GLY:HA3 | 1.82 | 0.78 |
| 1:I:183:LEU:O | 1:I:382:GLY:HA3 | 1.82 | 0.78 |
| 1:K:135:SER:HA | 1:K:412:VAL:HG12 | 1.66 | 0.78 |
| 1:M:135:SER:HA | 1:M:412:VAL:HG12 | 1.66 | 0.78 |
| 1:N:135:SER:HA | 1:N:412:VAL:HG12 | 1.66 | 0.77 |
| 3:D:1527:PO4:P | 4:D:1528:ATP:O1G | 2.43 | 0.77 |
| 3:F:1527:PO4:P | 4:F:1528:ATP:O1G | 2.43 | 0.77 |
| 3:A:1527:PO4:P | 4:A:1528:ATP:O1G | 2.43 | 0.77 |
| 3:E:1527:PO4:P | 4:E:1528:ATP:O1G | 2.43 | 0.77 |
| 1:J:135:SER:HA | 1:J:412:VAL:HG12 | 1.66 | 0.77 |
| 3:G:1527:PO4:P | 4:G:1528:ATP:O1G | 2.43 | 0.77 |
| 1:H:135:SER:HA | 1:H:412:VAL:HG12 | 1.66 | 0.77 |
| 1:K:199:TYR:CD2 | 1:K:205:ILE:HD11 | 2.21 | 0.76 |
| 1:I:135:SER:HA | 1:I:412:VAL:HG12 | 1.66 | 0.76 |
| 1:K:198:GLY:HA2 | 1:K:327:LYS:O | 1.86 | 0.76 |
| 1:J:199:TYR:CD2 | 1:J:205:ILE:HD11 | 2.21 | 0.76 |
| 1:L:199:TYR:CD2 | 1:L:205:ILE:HD11 | 2.21 | 0.76 |
| 1:M:198:GLY:HA2 | 1:M:327:LYS:O | 1.86 | 0.76 |
| 3:B:1527:PO4:P | 4:B:1528:ATP:O1G | 2.43 | 0.76 |
| 3:C:1527:PO4:P | 4:C:1528:ATP:O1G | 2.43 | 0.76 |
| 1:N:199:TYR:CD2 | 1:N:205:ILE:HD11 | 2.21 | 0.76 |
| 1:M:199:TYR:CD2 | 1:M:205:ILE:HD11 | 2.21 | 0.76 |
| 1:I:199:TYR:CD2 | 1:I:205:ILE:HD11 | 2.21 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:199:TYR:CD2 | 1:H:205:ILE:HD11 | 2.21 | 0.76 |
| 1:D:138:CYS:N | 1:D:410:GLY:HA2 | 2.01 | 0.75 |
| 1:E:138:CYS:N | 1:E:410:GLY:HA2 | 2.01 | 0.75 |
| 1:C:138:CYS:N | 1:C:410:GLY:HA2 | 2.01 | 0.75 |
| 1:A:138:CYS:N | 1:A:410:GLY:HA2 | 2.01 | 0.75 |
| 1:J:198:GLY:HA2 | 1:J:327:LYS:O | 1.86 | 0.75 |
| 1:B:138:CYS:N | 1:B:410:GLY:HA2 | 2.01 | 0.75 |
| 1:G:138:CYS:N | 1:G:410:GLY:HA2 | 2.01 | 0.75 |
| 1:L:198:GLY:HA2 | 1:L:327:LYS:O | 1.86 | 0.75 |
| 1:H:198:GLY:HA2 | 1:H:327:LYS:O | 1.86 | 0.74 |
| 1:I:198:GLY:HA2 | 1:I:327:LYS:O | 1.86 | 0.74 |
| 1:F:138:CYS:N | 1:F:410:GLY:HA2 | 2.01 | 0.74 |
| 1:N:198:GLY:HA2 | 1:N:327:LYS:O | 1.86 | 0.74 |
| 1:F:127:ALA:HB2 | 1:F:426:LEU:HD11 | 1.69 | 0.74 |
| 1:A:127:ALA:HB2 | 1:A:426:LEU:HD11 | 1.69 | 0.74 |
| 1:B:127:ALA:HB2 | 1:B:426:LEU:HD11 | 1.69 | 0.74 |
| 1:C:127:ALA:HB2 | 1:C:426:LEU:HD11 | 1.69 | 0.73 |
| 1:G:127:ALA:HB2 | 1:G:426:LEU:HD11 | 1.69 | 0.73 |
| 1:B:147:VAL:HG22 | 1:B:494:LEU:HD11 | 1.71 | 0.73 |
| 1:D:127:ALA:HB2 | 1:D:426:LEU:HD11 | 1.69 | 0.73 |
| 1:E:147:VAL:HG22 | 1:E:494:LEU:HD11 | 1.71 | 0.73 |
| 1:E:127:ALA:HB2 | 1:E:426:LEU:HD11 | 1.69 | 0.73 |
| 1:F:147:VAL:HG22 | 1:F:494:LEU:HD11 | 1.71 | 0.73 |
| 1:C:147:VAL:HG22 | 1:C:494:LEU:HD11 | 1.71 | 0.73 |
| 3:J:1526:PO4:P | 4:J:1527:ATP:O1G | 2.47 | 0.73 |
| 1:A:147:VAL:HG22 | 1:A:494:LEU:HD11 | 1.71 | 0.73 |
| 1:D:147:VAL:HG22 | 1:D:494:LEU:HD11 | 1.71 | 0.73 |
| 1:G:147:VAL:HG22 | 1:G:494:LEU:HD11 | 1.71 | 0.72 |
| 3:L:1526:PO4:P | 4:L:1527:ATP:O1G | 2.47 | 0.72 |
| 1:B:214:GLU:HA | 1:B:323:VAL:O | 1.90 | 0.72 |
| 1:E:214:GLU:HA | 1:E:323:VAL:O | 1.90 | 0.72 |
| 1:F:214:GLU:HA | 1:F:323:VAL:O | 1.90 | 0.72 |
| 1:B:29:VAL:O | 1:B:35:GLY:HA3 | 1.90 | 0.72 |
| 1:A:214:GLU:HA | 1:A:323:VAL:O | 1.90 | 0.72 |
| 1:D:214:GLU:HA | 1:D:323:VAL:O | 1.90 | 0.72 |
| 3:I:1526:PO4:P | 4:I:1527:ATP:O1G | 2.48 | 0.72 |
| 1:G:214:GLU:HA | 1:G:323:VAL:O | 1.90 | 0.72 |
| 1:D:29:VAL:O | 1:D:35:GLY:HA3 | 1.90 | 0.71 |
| 1:F:138:CYS:HA | 1:F:411:VAL:HG13 | 1.72 | 0.71 |
| 1:G:138:CYS:HA | 1:G:411:VAL:HG13 | 1.73 | 0.71 |
| 1:E:138:CYS:HA | 1:E:411:VAL:HG13 | 1.72 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:138:CYS:HA | 1:A:411:VAL:HG13 | 1.73 | 0.71 |
| 1:E:29:VAL:O | 1:E:35:GLY:HA3 | 1.90 | 0.71 |
| 1:F:29:VAL:O | 1:F:35:GLY:HA3 | 1.90 | 0.71 |
| 1:C:214:GLU:HA | 1:C:323:VAL:O | 1.90 | 0.70 |
| 1:G:29:VAL:O | 1:G:35:GLY:HA3 | 1.90 | 0.70 |
| 1:C:29:VAL:O | 1:C:35:GLY:HA3 | 1.90 | 0.70 |
| 1:L:191:GLU:O | 1:L:334:ASP:HA | 1.92 | 0.70 |
| 1:K:191:GLU:O | 1:K:334:ASP:HA | 1.92 | 0.70 |
| 3:N:1526:PO4:P | 4:N:1527:ATP:O1A | 2.50 | 0.70 |
| 1:M:31:LEU:HB3 | 1:M:90:THR:HG21 | 1.73 | 0.70 |
| 1:B:138:CYS:HA | 1:B:411:VAL:HG13 | 1.73 | 0.70 |
| 1:D:198:GLY:HA2 | 1:D:327:LYS:O | 1.92 | 0.70 |
| 1:M:191:GLU:O | 1:M:334:ASP:HA | 1.92 | 0.70 |
| 1:J:191:GLU:O | 1:J:334:ASP:HA | 1.92 | 0.70 |
| 1:A:29:VAL:O | 1:A:35:GLY:HA3 | 1.90 | 0.69 |
| 1:E:198:GLY:HA2 | 1:E:327:LYS:O | 1.92 | 0.69 |
| 3:H:1526:PO4:P | 4:H:1527:ATP:O1A | 2.50 | 0.69 |
| 3:H:1526:PO4:P | 4:H:1527:ATP:O1G | 2.49 | 0.69 |
| 1:M:493:ILE:HG13 | 4:M:1527:ATP:C4 | 2.26 | 0.69 |
| 1:G:199:TYR:CD2 | 1:G:205:ILE:HD11 | 2.28 | 0.69 |
| 1:A:199:TYR:CD2 | 1:A:205:ILE:HD11 | 2.28 | 0.69 |
| 1:C:198:GLY:HA2 | 1:C:327:LYS:O | 1.92 | 0.69 |
| 1:M:31:LEU:CB | 1:M:90:THR:HG21 | 2.22 | 0.69 |
| 1:D:138:CYS:HA | 1:D:411:VAL:HG13 | 1.73 | 0.69 |
| 1:E:31:LEU:HA | 3:E:1527:PO4:P | 2.32 | 0.69 |
| 1:A:31:LEU:HA | 3:A:1527:PO4:P | 2.32 | 0.69 |
| 1:F:199:TYR:CD2 | 1:F:205:ILE:HD11 | 2.28 | 0.69 |
| 1:G:31:LEU:HA | 3:G:1527:PO4:P | 2.32 | 0.69 |
| 1:N:191:GLU:O | 1:N:334:ASP:HA | 1.92 | 0.69 |
| 3:N:1526:PO4:P | 4:N:1527:ATP:O1G | 2.50 | 0.69 |
| 1:F:198:GLY:HA2 | 1:F:327:LYS:O | 1.92 | 0.69 |
| 1:G:198:GLY:HA2 | 1:G:327:LYS:O | 1.92 | 0.69 |
| 1:B:31:LEU:HA | 3:B:1527:PO4:P | 2.32 | 0.69 |
| 1:B:199:TYR:CD2 | 1:B:205:ILE:HD11 | 2.28 | 0.69 |
| 1:D:31:LEU:HA | 3:D:1527:PO4:P | 2.33 | 0.69 |
| 1:B:198:GLY:HA2 | 1:B:327:LYS:O | 1.92 | 0.69 |
| 1:C:138:CYS:HA | 1:C:411:VAL:HG13 | 1.73 | 0.69 |
| 1:F:31:LEU:HA | 3:F:1527:PO4:P | 2.32 | 0.69 |
| 1:A:198:GLY:HA2 | 1:A:327:LYS:O | 1.92 | 0.68 |
| 3:M:1526:PO4:P | 4:M:1527:ATP:O3G | 2.51 | 0.68 |
| 1:C:31:LEU:HA | 3:C:1527:PO4:P | 2.32 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:199:TYR:CD2 | 1:E:205:ILE:HD11 | 2.28 | 0.68 |
| 1:I:191:GLU:O | 1:I:334:ASP:HA | 1.92 | 0.68 |
| 1:H:191:GLU:O | 1:H:334:ASP:HA | 1.92 | 0.68 |
| 1:C:199:TYR:CD2 | 1:C:205:ILE:HD11 | 2.28 | 0.68 |
| 3:J:1526:PO4:P | 4:J:1527:ATP:O1A | 2.52 | 0.68 |
| 3:L:1526:PO4:P | 4:L:1527:ATP:O1A | 2.52 | 0.68 |
| 3:I:1526:PO4:P | 4:I:1527:ATP:O1A | 2.52 | 0.67 |
| 1:M:493:ILE:HG12 | 4:M:1527:ATP:C8 | 2.27 | 0.67 |
| 1:D:199:TYR:CD2 | 1:D:205:ILE:HD11 | 2.28 | 0.67 |
| 1:D:180:GLY:HA2 | 1:D:380:LYS:HB3 | 1.77 | 0.67 |
| 1:F:180:GLY:HA2 | 1:F:380:LYS:HB3 | 1.77 | 0.67 |
| 1:G:180:GLY:HA2 | 1:G:380:LYS:HB3 | 1.77 | 0.67 |
| 1:C:180:GLY:HA2 | 1:C:380:LYS:HB3 | 1.77 | 0.66 |
| 1:E:180:GLY:HA2 | 1:E:380:LYS:HB3 | 1.77 | 0.66 |
| 1:A:180:GLY:HA2 | 1:A:380:LYS:HB3 | 1.78 | 0.66 |
| 1:B:180:GLY:HA2 | 1:B:380:LYS:HB3 | 1.77 | 0.66 |
| 3:K:1526:PO4:P | 4:K:1527:ATP:O1G | 2.53 | 0.66 |
| 1:C:27:VAL:HG12 | 1:C:90:THR:CG2 | 2.24 | 0.66 |
| 1:D:135:SER:HA | 1:D:412:VAL:HG12 | 1.77 | 0.66 |
| 1:B:135:SER:HA | 1:B:412:VAL:HG12 | 1.77 | 0.65 |
| 1:B:138:CYS:CB | 1:B:407:VAL:HA | 2.26 | 0.65 |
| 1:C:138:CYS:CB | 1:C:407:VAL:HA | 2.27 | 0.65 |
| 1:E:135:SER:HA | 1:E:412:VAL:HG12 | 1.77 | 0.65 |
| 1:L:180:GLY:HA2 | 1:L:380:LYS:HB3 | 1.78 | 0.65 |
| 1:A:135:SER:HA | 1:A:412:VAL:HG12 | 1.77 | 0.65 |
| 1:G:138:CYS:CB | 1:G:407:VAL:HA | 2.27 | 0.65 |
| 3:M:1526:PO4:P | 4:M:1527:ATP:O1A | 2.54 | 0.65 |
| 1:N:37:ASN:C | 1:N:50:THR:C | 2.55 | 0.65 |
| 1:A:138:CYS:CB | 1:A:407:VAL:HA | 2.27 | 0.65 |
| 1:H:37:ASN:C | 1:H:50:THR:C | 2.55 | 0.65 |
| 1:J:37:ASN:C | 1:J:50:THR:C | 2.55 | 0.65 |
| 1:K:180:GLY:HA2 | 1:K:380:LYS:HB3 | 1.78 | 0.65 |
| 1:M:180:GLY:HA2 | 1:M:380:LYS:HB3 | 1.78 | 0.65 |
| 1:F:138:CYS:CB | 1:F:407:VAL:HA | 2.26 | 0.65 |
| 1:C:135:SER:HA | 1:C:412:VAL:HG12 | 1.77 | 0.65 |
| 1:E:138:CYS:CB | 1:E:407:VAL:HA | 2.26 | 0.65 |
| 1:N:180:GLY:HA2 | 1:N:380:LYS:HB3 | 1.78 | 0.65 |
| 1:F:135:SER:HA | 1:F:412:VAL:HG12 | 1.77 | 0.65 |
| 1:I:37:ASN:C | 1:I:50:THR:C | 2.55 | 0.65 |
| 1:L:37:ASN:C | 1:L:50:THR:C | 2.55 | 0.65 |
| 1:K:37:ASN:C | 1:K:50:THR:C | 2.55 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:37:ASN:C | 1:M:50:THR:C | 2.55 | 0.65 |
| 1:B:206:ASN:HB2 | 1:B:213:VAL:HA | 1.79 | 0.65 |
| 1:G:135:SER:HA | 1:G:412:VAL:HG12 | 1.77 | 0.65 |
| 1:A:206:ASN:HB2 | 1:A:213:VAL:HA | 1.79 | 0.65 |
| 1:C:206:ASN:HB2 | 1:C:213:VAL:HA | 1.79 | 0.64 |
| 1:D:138:CYS:CB | 1:D:407:VAL:HA | 2.26 | 0.64 |
| 1:J:180:GLY:HA2 | 1:J:380:LYS:HB3 | 1.78 | 0.64 |
| 1:N:27:VAL:HG12 | 1:N:90:THR:CG2 | 2.26 | 0.64 |
| 1:G:206:ASN:HB2 | 1:G:213:VAL:HA | 1.79 | 0.64 |
| 1:D:27:VAL:HG12 | 1:D:90:THR:CG2 | 2.24 | 0.64 |
| 1:H:180:GLY:HA2 | 1:H:380:LYS:HB3 | 1.78 | 0.64 |
| 1:H:27:VAL:HG12 | 1:H:90:THR:CG2 | 2.26 | 0.64 |
| 1:F:206:ASN:HB2 | 1:F:213:VAL:HA | 1.79 | 0.64 |
| 1:I:180:GLY:HA2 | 1:I:380:LYS:HB3 | 1.78 | 0.64 |
| 1:D:206:ASN:HB2 | 1:D:213:VAL:HA | 1.79 | 0.63 |
| 3:E:1527:PO4:P | 4:E:1528:ATP:O1A | 2.57 | 0.63 |
| 1:I:27:VAL:HG12 | 1:I:90:THR:CG2 | 2.26 | 0.63 |
| 3:C:1527:PO4:P | 4:C:1528:ATP:O1A | 2.57 | 0.63 |
| 1:L:27:VAL:HG12 | 1:L:90:THR:CG2 | 2.26 | 0.63 |
| 1:M:493:ILE:HG12 | 4:M:1527:ATP:N7 | 2.11 | 0.63 |
| 1:J:27:VAL:HG12 | 1:J:90:THR:CG2 | 2.27 | 0.63 |
| 3:B:1527:PO4:P | 4:B:1528:ATP:O1A | 2.57 | 0.63 |
| 3:D:1527:PO4:P | 4:D:1528:ATP:O1A | 2.57 | 0.63 |
| 1:E:206:ASN:HB2 | 1:E:213:VAL:HA | 1.79 | 0.63 |
| 3:A:1527:PO4:P | 4:A:1528:ATP:O1A | 2.57 | 0.62 |
| 3:F:1527:PO4:P | 4:F:1528:ATP:O1A | 2.57 | 0.62 |
| 3:G:1527:PO4:P | 4:G:1528:ATP:O1A | 2.57 | 0.62 |
| 1:E:411:VAL:HG12 | 1:E:494:LEU:HD13 | 1.81 | 0.62 |
| 1:A:149:THR:HA | 1:A:152:ALA:HB3 | 1.82 | 0.62 |
| 1:B:149:THR:HA | 1:B:152:ALA:HB3 | 1.82 | 0.62 |
| 1:E:27:VAL:HG12 | 1:E:90:THR:CG2 | 2.24 | 0.62 |
| 1:C:149:THR:HA | 1:C:152:ALA:HB3 | 1.82 | 0.62 |
| 1:D:411:VAL:HG12 | 1:D:494:LEU:HD13 | 1.81 | 0.62 |
| 1:J:31:LEU:HB3 | 1:J:90:THR:HG21 | 1.82 | 0.62 |
| 1:E:149:THR:HA | 1:E:152:ALA:HB3 | 1.82 | 0.62 |
| 1:G:149:THR:HA | 1:G:152:ALA:HB3 | 1.82 | 0.62 |
| 1:D:149:THR:HA | 1:D:152:ALA:HB3 | 1.82 | 0.62 |
| 1:F:149:THR:HA | 1:F:152:ALA:HB3 | 1.82 | 0.62 |
| 1:F:411:VAL:HG12 | 1:F:494:LEU:HD13 | 1.81 | 0.62 |
| 1:L:37:ASN:O | 1:L:38:VAL:N | 2.33 | 0.62 |
| 1:F:3:ALA:HA | 1:G:63:GLU:CA | 2.31 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:37:ASN:O | 1:I:38:VAL:N | 2.33 | 0.61 |
| 1:N:37:ASN:O | 1:N:38:VAL:N | 2.33 | 0.61 |
| 1:B:411:VAL:HG12 | 1:B:494:LEU:HD13 | 1.81 | 0.61 |
| 1:L:31:LEU:HB3 | 1:L:90:THR:HG21 | 1.82 | 0.61 |
| 1:A:63:GLU:CA | 1:G:3:ALA:HA | 2.31 | 0.61 |
| 1:B:26:ALA:O | 1:B:30:THR:HG23 | 2.00 | 0.61 |
| 1:D:26:ALA:O | 1:D:30:THR:HG23 | 2.01 | 0.61 |
| 1:K:37:ASN:O | 1:K:38:VAL:N | 2.33 | 0.61 |
| 1:F:27:VAL:HG12 | 1:F:90:THR:CG2 | 2.24 | 0.61 |
| 1:I:31:LEU:HB3 | 1:I:90:THR:HG21 | 1.82 | 0.61 |
| 1:A:3:ALA:HA | 1:B:63:GLU:CA | 2.31 | 0.61 |
| 1:C:411:VAL:HG12 | 1:C:494:LEU:HD13 | 1.81 | 0.61 |
| 1:E:3:ALA:HA | 1:F:63:GLU:CA | 2.30 | 0.61 |
| 1:A:411:VAL:HG12 | 1:A:494:LEU:HD13 | 1.81 | 0.61 |
| 1:F:26:ALA:O | 1:F:30:THR:HG23 | 2.01 | 0.61 |
| 1:G:26:ALA:O | 1:G:30:THR:HG23 | 2.01 | 0.61 |
| 1:A:26:ALA:O | 1:A:30:THR:HG23 | 2.01 | 0.61 |
| 1:G:411:VAL:HG12 | 1:G:494:LEU:HD13 | 1.81 | 0.61 |
| 1:A:27:VAL:HG12 | 1:A:90:THR:CG2 | 2.24 | 0.61 |
| 1:M:37:ASN:O | 1:M:38:VAL:N | 2.33 | 0.61 |
| 1:E:26:ALA:O | 1:E:30:THR:HG23 | 2.00 | 0.60 |
| 1:K:27:VAL:HG12 | 1:K:90:THR:CG2 | 2.28 | 0.60 |
| 1:G:130:GLU:HB3 | 1:G:422:VAL:HG12 | 1.83 | 0.60 |
| 1:D:3:ALA:HA | 1:E:63:GLU:CA | 2.31 | 0.60 |
| 1:H:37:ASN:O | 1:H:38:VAL:N | 2.33 | 0.60 |
| 1:J:37:ASN:O | 1:J:38:VAL:N | 2.33 | 0.60 |
| 1:B:3:ALA:HA | 1:C:63:GLU:CA | 2.31 | 0.60 |
| 1:C:26:ALA:O | 1:C:30:THR:HG23 | 2.01 | 0.60 |
| 1:H:31:LEU:HB3 | 1:H:90:THR:HG21 | 1.82 | 0.60 |
| 1:A:63:GLU:HA | 1:G:3:ALA:HA | 1.84 | 0.60 |
| 1:C:3:ALA:HA | 1:D:63:GLU:CA | 2.31 | 0.60 |
| 1:I:417:VAL:HG21 | 1:I:477:GLY:HA3 | 1.84 | 0.60 |
| 1:G:27:VAL:HG12 | 1:G:90:THR:CG2 | 2.24 | 0.60 |
| 1:L:246:PRO:HB3 | 1:L:272:LYS:HB2 | 1.84 | 0.60 |
| 1:B:27:VAL:HG12 | 1:B:90:THR:CG2 | 2.24 | 0.60 |
| 1:F:3:ALA:HA | 1:G:63:GLU:HA | 1.84 | 0.60 |
| 1:F:130:GLU:HB3 | 1:F:422:VAL:HG12 | 1.83 | 0.60 |
| 1:K:417:VAL:HG21 | 1:K:477:GLY:HA3 | 1.84 | 0.60 |
| 1:A:130:GLU:HB3 | 1:A:422:VAL:HG12 | 1.84 | 0.60 |
| 1:H:417:VAL:HG21 | 1:H:477:GLY:HA3 | 1.84 | 0.60 |
| 1:K:246:PRO:HB3 | 1:K:272:LYS:HB2 | 1.84 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:417:VAL:HG21 | 1:M:477:GLY:HA3 | 1.84 | 0.60 |
| 1:N:31:LEU:HB3 | 1:N:90:THR:HG21 | 1.82 | 0.60 |
| 1:J:417:VAL:HG21 | 1:J:477:GLY:HA3 | 1.84 | 0.59 |
| 1:N:417:VAL:HG21 | 1:N:477:GLY:HA3 | 1.84 | 0.59 |
| 1:A:30:THR:HG22 | 1:A:36:ARG:O | 2.03 | 0.59 |
| 1:G:30:THR:HG22 | 1:G:36:ARG:O | 2.03 | 0.59 |
| 1:A:3:ALA:HA | 1:B:63:GLU:HA | 1.84 | 0.59 |
| 1:A:279:PRO:HG3 | 1:A:292:ILE:HD11 | 1.85 | 0.59 |
| 1:L:417:VAL:HG21 | 1:L:477:GLY:HA3 | 1.84 | 0.59 |
| 1:D:30:THR:HG22 | 1:D:36:ARG:O | 2.03 | 0.59 |
| 1:G:279:PRO:HG3 | 1:G:292:ILE:HD11 | 1.85 | 0.59 |
| 1:I:151:SER:HB3 | 1:I:399:ALA:HA | 1.85 | 0.59 |
| 1:B:279:PRO:HG3 | 1:B:292:ILE:HD11 | 1.85 | 0.59 |
| 1:F:30:THR:HG22 | 1:F:36:ARG:O | 2.03 | 0.59 |
| 1:F:31:LEU:HB3 | 1:F:90:THR:HG21 | 1.85 | 0.59 |
| 1:M:151:SER:HB3 | 1:M:399:ALA:HA | 1.84 | 0.59 |
| 1:C:130:GLU:HB3 | 1:C:422:VAL:HG12 | 1.83 | 0.59 |
| 1:E:31:LEU:HB3 | 1:E:90:THR:HG21 | 1.85 | 0.59 |
| 1:F:279:PRO:HG3 | 1:F:292:ILE:HD11 | 1.85 | 0.59 |
| 1:G:31:LEU:HB3 | 1:G:90:THR:HG21 | 1.85 | 0.59 |
| 1:D:130:GLU:HB3 | 1:D:422:VAL:HG12 | 1.84 | 0.59 |
| 1:K:31:LEU:HB2 | 1:K:90:THR:HG21 | 1.84 | 0.59 |
| 1:M:246:PRO:HB3 | 1:M:272:LYS:HB2 | 1.84 | 0.59 |
| 1:A:31:LEU:HB3 | 1:A:90:THR:HG21 | 1.85 | 0.59 |
| 1:E:3:ALA:HA | 1:F:63:GLU:HA | 1.84 | 0.59 |
| 1:E:279:PRO:HG3 | 1:E:292:ILE:HD11 | 1.85 | 0.59 |
| 1:H:246:PRO:HB3 | 1:H:272:LYS:HB2 | 1.84 | 0.59 |
| 1:J:246:PRO:HB3 | 1:J:272:LYS:HB2 | 1.84 | 0.59 |
| 1:B:3:ALA:HA | 1:C:63:GLU:HA | 1.84 | 0.59 |
| 1:K:31:LEU:CB | 1:K:90:THR:HG21 | 2.33 | 0.59 |
| 1:C:30:THR:HG22 | 1:C:36:ARG:O | 2.03 | 0.58 |
| 1:C:31:LEU:HB3 | 1:C:90:THR:HG21 | 1.85 | 0.58 |
| 1:E:130:GLU:HB3 | 1:E:422:VAL:HG12 | 1.83 | 0.58 |
| 1:B:130:GLU:HB3 | 1:B:422:VAL:HG12 | 1.84 | 0.58 |
| 1:D:31:LEU:HB3 | 1:D:90:THR:HG21 | 1.85 | 0.58 |
| 1:E:30:THR:HG22 | 1:E:36:ARG:O | 2.03 | 0.58 |
| 1:H:151:SER:HB3 | 1:H:399:ALA:HA | 1.85 | 0.58 |
| 1:J:151:SER:CB | 1:J:399:ALA:HA | 2.34 | 0.58 |
| 1:L:151:SER:HB3 | 1:L:399:ALA:HA | 1.85 | 0.58 |
| 1:B:30:THR:HG22 | 1:B:36:ARG:O | 2.02 | 0.58 |
| 1:B:31:LEU:HB3 | 1:B:90:THR:HG21 | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:L:151:SER:CB | 1:L:399:ALA:HA | 2.34 | 0.58 |
| 1:N:246:PRO:HB3 | 1:N:272:LYS:HB2 | 1.84 | 0.58 |
| 1:C:279:PRO:HG3 | 1:C:292:ILE:HD11 | 1.85 | 0.58 |
| 1:D:279:PRO:HG3 | 1:D:292:ILE:HD11 | 1.85 | 0.58 |
| 1:I:246:PRO:HB3 | 1:I:272:LYS:HB2 | 1.84 | 0.58 |
| 3:K:1526:PO4:P | 4:K:1527:ATP:O1A | 2.61 | 0.58 |
| 1:I:151:SER:CB | 1:I:399:ALA:HA | 2.34 | 0.58 |
| 1:H:192:GLY:O | 1:H:375:GLY:HA2 | 2.04 | 0.58 |
| 1:J:151:SER:HB3 | 1:J:399:ALA:HA | 1.85 | 0.58 |
| 1:C:3:ALA:HA | 1:D:63:GLU:HA | 1.84 | 0.57 |
| 1:K:214:GLU:HA | 1:K:323:VAL:O | 2.04 | 0.57 |
| 1:M:214:GLU:HA | 1:M:323:VAL:O | 2.04 | 0.57 |
| 1:A:417:VAL:HG21 | 1:A:477:GLY:HA3 | 1.86 | 0.57 |
| 1:D:3:ALA:HA | 1:E:63:GLU:HA | 1.84 | 0.57 |
| 1:H:151:SER:CB | 1:H:399:ALA:HA | 2.34 | 0.57 |
| 1:J:214:GLU:HA | 1:J:323:VAL:O | 2.04 | 0.57 |
| 1:K:127:ALA:HB2 | 1:K:426:LEU:HD11 | 1.86 | 0.57 |
| 1:L:127:ALA:HB2 | 1:L:426:LEU:HD11 | 1.87 | 0.57 |
| 1:M:151:SER:CB | 1:M:399:ALA:HA | 2.34 | 0.57 |
| 1:N:151:SER:HB3 | 1:N:399:ALA:HA | 1.85 | 0.57 |
| 1:B:417:VAL:HG21 | 1:B:477:GLY:HA3 | 1.86 | 0.57 |
| 1:C:417:VAL:HG21 | 1:C:477:GLY:HA3 | 1.86 | 0.57 |
| 1:E:212:ALA:HA | 1:E:325:ILE:O | 2.05 | 0.57 |
| 1:G:417:VAL:HG21 | 1:G:477:GLY:HA3 | 1.86 | 0.57 |
| 1:K:192:GLY:O | 1:K:375:GLY:HA2 | 2.04 | 0.57 |
| 3:K:1526:PO4:P | 4:K:1527:ATP:O3B | 2.63 | 0.57 |
| 1:L:192:GLY:O | 1:L:375:GLY:HA2 | 2.04 | 0.57 |
| 1:G:212:ALA:HA | 1:G:325:ILE:O | 2.05 | 0.57 |
| 1:M:127:ALA:HB2 | 1:M:426:LEU:HD11 | 1.87 | 0.57 |
| 1:C:217:SER:HA | 1:C:320:ALA:O | 2.05 | 0.57 |
| 1:I:192:GLY:O | 1:I:375:GLY:HA2 | 2.04 | 0.57 |
| 1:N:151:SER:CB | 1:N:399:ALA:HA | 2.34 | 0.57 |
| 1:D:217:SER:HA | 1:D:320:ALA:O | 2.05 | 0.57 |
| 1:E:217:SER:HA | 1:E:320:ALA:O | 2.05 | 0.57 |
| 1:F:217:SER:HA | 1:F:320:ALA:O | 2.05 | 0.57 |
| 1:I:214:GLU:HA | 1:I:323:VAL:O | 2.04 | 0.57 |
| 1:A:138:CYS:HB2 | 1:A:407:VAL:HA | 1.87 | 0.57 |
| 1:D:212:ALA:HA | 1:D:325:ILE:O | 2.05 | 0.57 |
| 1:E:169:VAL:HB | 1:E:377:ALA:HB2 | 1.87 | 0.57 |
| 1:F:417:VAL:HG21 | 1:F:477:GLY:HA3 | 1.86 | 0.57 |
| 1:G:217:SER:HA | 1:G:320:ALA:O | 2.05 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:192:GLY:O | 1:N:375:GLY:HA2 | 2.04 | 0.57 |
| 1:B:217:SER:HA | 1:B:320:ALA:O | 2.05 | 0.57 |
| 1:L:214:GLU:HA | 1:L:323:VAL:O | 2.04 | 0.57 |
| 1:C:138:CYS:HB2 | 1:C:407:VAL:HA | 1.87 | 0.56 |
| 1:C:212:ALA:HA | 1:C:325:ILE:O | 2.05 | 0.56 |
| 1:F:169:VAL:HB | 1:F:377:ALA:HB2 | 1.87 | 0.56 |
| 1:H:214:GLU:HA | 1:H:323:VAL:O | 2.04 | 0.56 |
| 1:I:217:SER:HA | 1:I:320:ALA:O | 2.05 | 0.56 |
| 1:J:192:GLY:O | 1:J:375:GLY:HA2 | 2.04 | 0.56 |
| 1:C:169:VAL:HB | 1:C:377:ALA:HB2 | 1.87 | 0.56 |
| 1:F:138:CYS:HB2 | 1:F:407:VAL:HA | 1.87 | 0.56 |
| 1:I:212:ALA:HA | 1:I:325:ILE:O | 2.05 | 0.56 |
| 1:J:127:ALA:HB2 | 1:J:426:LEU:HD11 | 1.87 | 0.56 |
| 1:N:214:GLU:HA | 1:N:323:VAL:O | 2.04 | 0.56 |
| 1:A:212:ALA:HA | 1:A:325:ILE:O | 2.05 | 0.56 |
| 1:A:217:SER:HA | 1:A:320:ALA:O | 2.05 | 0.56 |
| 1:D:169:VAL:HB | 1:D:377:ALA:HB2 | 1.87 | 0.56 |
| 1:D:417:VAL:HG21 | 1:D:477:GLY:HA3 | 1.86 | 0.56 |
| 1:J:217:SER:HA | 1:J:320:ALA:O | 2.05 | 0.56 |
| 1:B:138:CYS:HB2 | 1:B:407:VAL:HA | 1.87 | 0.56 |
| 1:E:138:CYS:HB2 | 1:E:407:VAL:HA | 1.87 | 0.56 |
| 1:F:186:GLU:H | 1:F:380:LYS:HB2 | 1.71 | 0.56 |
| 1:N:212:ALA:HA | 1:N:325:ILE:O | 2.06 | 0.56 |
| 1:A:186:GLU:H | 1:A:380:LYS:HB2 | 1.71 | 0.56 |
| 1:E:417:VAL:HG21 | 1:E:477:GLY:HA3 | 1.86 | 0.56 |
| 1:H:127:ALA:HB2 | 1:H:426:LEU:HD11 | 1.86 | 0.56 |
| 1:M:192:GLY:O | 1:M:375:GLY:HA2 | 2.04 | 0.56 |
| 1:C:186:GLU:H | 1:C:380:LYS:HB2 | 1.71 | 0.56 |
| 1:H:217:SER:HA | 1:H:320:ALA:O | 2.05 | 0.56 |
| 1:J:212:ALA:HA | 1:J:325:ILE:O | 2.06 | 0.56 |
| 1:N:127:ALA:HB2 | 1:N:426:LEU:HD11 | 1.87 | 0.56 |
| 1:N:217:SER:HA | 1:N:320:ALA:O | 2.05 | 0.56 |
| 1:F:212:ALA:HA | 1:F:325:ILE:O | 2.05 | 0.56 |
| 1:G:138:CYS:HB2 | 1:G:407:VAL:HA | 1.87 | 0.56 |
| 1:I:127:ALA:HB2 | 1:I:426:LEU:HD11 | 1.87 | 0.56 |
| 1:M:217:SER:HA | 1:M:320:ALA:O | 2.05 | 0.56 |
| 1:B:169:VAL:HB | 1:B:377:ALA:HB2 | 1.87 | 0.56 |
| 1:B:212:ALA:HA | 1:B:325:ILE:O | 2.05 | 0.56 |
| 1:G:169:VAL:HB | 1:G:377:ALA:HB2 | 1.87 | 0.56 |
| 1:K:212:ALA:HA | 1:K:325:ILE:O | 2.05 | 0.56 |
| 1:M:212:ALA:HA | 1:M:325:ILE:O | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:M:1527:ATP:C5 | 4:M:1527:ATP:C8 | 2.94 | 0.56 |
| 1:E:186:GLU:H | 1:E:380:LYS:HB2 | 1.71 | 0.56 |
| 1:I:206:ASN:HB2 | 1:I:213:VAL:HA | 1.88 | 0.56 |
| 1:K:217:SER:HA | 1:K:320:ALA:O | 2.05 | 0.56 |
| 1:L:217:SER:HA | 1:L:320:ALA:O | 2.05 | 0.56 |
| 1:H:206:ASN:HB2 | 1:H:213:VAL:HA | 1.88 | 0.55 |
| 1:D:186:GLU:H | 1:D:380:LYS:HB2 | 1.71 | 0.55 |
| 1:A:169:VAL:HB | 1:A:377:ALA:HB2 | 1.88 | 0.55 |
| 1:H:212:ALA:HA | 1:H:325:ILE:O | 2.06 | 0.55 |
| 1:L:212:ALA:HA | 1:L:325:ILE:O | 2.06 | 0.55 |
| 1:E:144:ILE:HG23 | 1:E:403:THR:CG2 | 2.37 | 0.55 |
| 1:F:144:ILE:HG23 | 1:F:403:THR:CG2 | 2.37 | 0.55 |
| 1:F:151:SER:CB | 1:F:399:ALA:HA | 2.37 | 0.55 |
| 1:G:186:GLU:H | 1:G:380:LYS:HB2 | 1.71 | 0.55 |
| 1:E:151:SER:CB | 1:E:399:ALA:HA | 2.37 | 0.55 |
| 1:G:151:SER:CB | 1:G:399:ALA:HA | 2.37 | 0.55 |
| 3:I:1526:PO4:P | 4:I:1527:ATP:O3B | 2.65 | 0.55 |
| 1:J:206:ASN:HB2 | 1:J:213:VAL:HA | 1.88 | 0.55 |
| 1:K:186:GLU:H | 1:K:380:LYS:HB2 | 1.72 | 0.55 |
| 1:N:206:ASN:HB2 | 1:N:213:VAL:HA | 1.88 | 0.55 |
| 1:A:151:SER:CB | 1:A:399:ALA:HA | 2.37 | 0.55 |
| 1:D:151:SER:CB | 1:D:399:ALA:HA | 2.37 | 0.55 |
| 1:L:206:ASN:HB2 | 1:L:213:VAL:HA | 1.88 | 0.55 |
| 1:B:151:SER:CB | 1:B:399:ALA:HA | 2.37 | 0.55 |
| 1:D:235:PRO:HB2 | 1:D:310:GLU:HA | 1.89 | 0.55 |
| 1:M:186:GLU:H | 1:M:380:LYS:HB2 | 1.72 | 0.55 |
| 1:D:138:CYS:HB2 | 1:D:407:VAL:HA | 1.87 | 0.55 |
| 1:E:235:PRO:HB2 | 1:E:310:GLU:HA | 1.89 | 0.55 |
| 1:K:151:SER:CB | 1:K:399:ALA:HA | 2.36 | 0.55 |
| 1:C:151:SER:CB | 1:C:399:ALA:HA | 2.37 | 0.54 |
| 3:L:1526:PO4:P | 4:L:1527:ATP:O3B | 2.65 | 0.54 |
| 1:N:218:PRO:HG2 | 1:N:320:ALA:HB3 | 1.90 | 0.54 |
| 1:E:31:LEU:CB | 1:E:90:THR:HG21 | 2.37 | 0.54 |
| 1:F:235:PRO:HB2 | 1:F:310:GLU:HA | 1.89 | 0.54 |
| 1:G:144:ILE:HG23 | 1:G:403:THR:CG2 | 2.37 | 0.54 |
| 1:B:144:ILE:HG23 | 1:B:403:THR:CG2 | 2.37 | 0.54 |
| 1:C:235:PRO:HB2 | 1:C:310:GLU:HA | 1.89 | 0.54 |
| 1:D:31:LEU:CB | 1:D:90:THR:HG21 | 2.37 | 0.54 |
| 1:J:186:GLU:H | 1:J:380:LYS:HB2 | 1.72 | 0.54 |
| 1:J:218:PRO:HG2 | 1:J:320:ALA:HB3 | 1.90 | 0.54 |
| 1:K:206:ASN:HB2 | 1:K:213:VAL:HA | 1.88 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:144:ILE:HG23 | 1:A:403:THR:CG2 | 2.37 | 0.54 |
| 1:B:186:GLU:H | 1:B:380:LYS:HB2 | 1.71 | 0.54 |
| 1:F:31:LEU:CB | 1:F:90:THR:HG21 | 2.37 | 0.54 |
| 1:G:31:LEU:CB | 1:G:90:THR:HG21 | 2.37 | 0.54 |
| 1:K:218:PRO:HG2 | 1:K:320:ALA:HB3 | 1.90 | 0.54 |
| 1:H:218:PRO:HG2 | 1:H:320:ALA:HB3 | 1.90 | 0.54 |
| 1:L:186:GLU:H | 1:L:380:LYS:HB2 | 1.72 | 0.54 |
| 1:M:218:PRO:HG2 | 1:M:320:ALA:HB3 | 1.90 | 0.54 |
| 1:A:31:LEU:CB | 1:A:90:THR:HG21 | 2.37 | 0.54 |
| 1:B:31:LEU:CB | 1:B:90:THR:HG21 | 2.37 | 0.54 |
| 1:M:206:ASN:HB2 | 1:M:213:VAL:HA | 1.88 | 0.54 |
| 1:C:31:LEU:CB | 1:C:90:THR:HG21 | 2.37 | 0.54 |
| 1:H:186:GLU:H | 1:H:380:LYS:HB2 | 1.72 | 0.54 |
| 1:C:239:ALA:HB1 | 1:C:314:LEU:HG | 1.90 | 0.54 |
| 1:D:144:ILE:HG23 | 1:D:403:THR:CG2 | 2.37 | 0.54 |
| 1:I:218:PRO:HG2 | 1:I:320:ALA:HB3 | 1.90 | 0.54 |
| 1:L:218:PRO:HG2 | 1:L:320:ALA:HB3 | 1.90 | 0.54 |
| 1:B:239:ALA:HB1 | 1:B:314:LEU:HG | 1.90 | 0.54 |
| 1:D:239:ALA:HB1 | 1:D:314:LEU:HG | 1.90 | 0.54 |
| 3:N:1526:PO4:P | 4:N:1527:ATP:O3B | 2.65 | 0.54 |
| 1:A:239:ALA:HB1 | 1:A:314:LEU:HG | 1.90 | 0.54 |
| 1:I:186:GLU:H | 1:I:380:LYS:HB2 | 1.72 | 0.54 |
| 1:C:144:ILE:HG23 | 1:C:403:THR:CG2 | 2.37 | 0.53 |
| 1:D:147:VAL:CG2 | 1:D:494:LEU:HD11 | 2.38 | 0.53 |
| 1:G:235:PRO:HB2 | 1:G:310:GLU:HA | 1.89 | 0.53 |
| 3:H:1526:PO4:P | 4:H:1527:ATP:O3B | 2.66 | 0.53 |
| 3:J:1526:PO4:P | 4:J:1527:ATP:O3B | 2.67 | 0.53 |
| 1:N:31:LEU:CB | 1:N:90:THR:HG21 | 2.38 | 0.53 |
| 1:C:106:ALA:CB | 1:C:116:LEU:HD21 | 2.39 | 0.53 |
| 1:D:106:ALA:CB | 1:D:116:LEU:HD21 | 2.39 | 0.53 |
| 1:F:151:SER:HB3 | 1:F:399:ALA:HA | 1.91 | 0.53 |
| 1:A:235:PRO:HB2 | 1:A:310:GLU:HA | 1.89 | 0.53 |
| 1:N:186:GLU:H | 1:N:380:LYS:HB2 | 1.72 | 0.53 |
| 1:B:235:PRO:HB2 | 1:B:310:GLU:HA | 1.89 | 0.53 |
| 1:G:239:ALA:HB1 | 1:G:314:LEU:HG | 1.90 | 0.53 |
| 1:A:206:ASN:CB | 1:A:213:VAL:HA | 2.38 | 0.53 |
| 1:D:151:SER:HB3 | 1:D:399:ALA:HA | 1.91 | 0.53 |
| 1:E:106:ALA:CB | 1:E:116:LEU:HD21 | 2.39 | 0.53 |
| 1:E:239:ALA:HB1 | 1:E:314:LEU:HG | 1.90 | 0.53 |
| 1:J:411:VAL:HB | 1:J:494:LEU:HB3 | 1.91 | 0.53 |
| 1:B:106:ALA:CB | 1:B:116:LEU:HD21 | 2.39 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:206:ASN:CB | 1:B:213:VAL:HA | 2.38 | 0.53 |
| 1:C:172:GLU:CD | 1:C:172:GLU:H | 2.12 | 0.53 |
| 1:E:147:VAL:CG2 | 1:E:494:LEU:HD11 | 2.38 | 0.53 |
| 1:F:239:ALA:HB1 | 1:F:314:LEU:HG | 1.90 | 0.53 |
| 1:G:151:SER:HB3 | 1:G:399:ALA:HA | 1.91 | 0.53 |
| 1:H:411:VAL:HB | 1:H:494:LEU:HB3 | 1.91 | 0.53 |
| 1:F:172:GLU:H | 1:F:172:GLU:CD | 2.12 | 0.53 |
| 1:K:411:VAL:HB | 1:K:494:LEU:HB3 | 1.91 | 0.53 |
| 1:B:147:VAL:CG2 | 1:B:494:LEU:HD11 | 2.38 | 0.53 |
| 1:C:151:SER:HB3 | 1:C:399:ALA:HA | 1.91 | 0.53 |
| 1:G:172:GLU:CD | 1:G:172:GLU:H | 2.13 | 0.53 |
| 1:B:172:GLU:CD | 1:B:172:GLU:H | 2.13 | 0.52 |
| 1:D:206:ASN:CB | 1:D:213:VAL:HA | 2.38 | 0.52 |
| 1:G:106:ALA:CB | 1:G:116:LEU:HD21 | 2.39 | 0.52 |
| 1:H:31:LEU:CB | 1:H:90:THR:HG21 | 2.38 | 0.52 |
| 1:I:31:LEU:CB | 1:I:90:THR:HG21 | 2.38 | 0.52 |
| 1:J:205:ILE:HD12 | 1:J:211:GLY:O | 2.10 | 0.52 |
| 1:L:31:LEU:CB | 1:L:90:THR:HG21 | 2.38 | 0.52 |
| 1:A:251:ALA:O | 1:A:277:LYS:HA | 2.09 | 0.52 |
| 1:D:172:GLU:CD | 1:D:172:GLU:H | 2.12 | 0.52 |
| 1:H:144:ILE:HG23 | 1:H:403:THR:CG2 | 2.40 | 0.52 |
| 1:M:205:ILE:HD12 | 1:M:211:GLY:O | 2.10 | 0.52 |
| 1:A:172:GLU:H | 1:A:172:GLU:CD | 2.12 | 0.52 |
| 3:D:1527:PO4:P | 4:D:1528:ATP:O3B | 2.68 | 0.52 |
| 3:E:1527:PO4:P | 4:E:1528:ATP:O3B | 2.68 | 0.52 |
| 1:F:206:ASN:CB | 1:F:213:VAL:HA | 2.38 | 0.52 |
| 1:G:206:ASN:CB | 1:G:213:VAL:HA | 2.38 | 0.52 |
| 1:I:411:VAL:HB | 1:I:494:LEU:HB3 | 1.91 | 0.52 |
| 1:J:31:LEU:CB | 1:J:90:THR:HG21 | 2.39 | 0.52 |
| 1:L:144:ILE:HG23 | 1:L:403:THR:CG2 | 2.39 | 0.52 |
| 1:L:205:ILE:HD12 | 1:L:211:GLY:O | 2.09 | 0.52 |
| 1:M:152:ALA:HB1 | 1:M:155:ASP:HB3 | 1.92 | 0.52 |
| 1:N:205:ILE:HD12 | 1:N:211:GLY:O | 2.09 | 0.52 |
| 3:B:1527:PO4:P | 4:B:1528:ATP:O3B | 2.68 | 0.52 |
| 3:C:1527:PO4:P | 4:C:1528:ATP:O3B | 2.68 | 0.52 |
| 1:E:151:SER:HB3 | 1:E:399:ALA:HA | 1.91 | 0.52 |
| 1:E:206:ASN:CB | 1:E:213:VAL:HA | 2.38 | 0.52 |
| 1:G:251:ALA:O | 1:G:277:LYS:HA | 2.09 | 0.52 |
| 1:M:144:ILE:HG23 | 1:M:403:THR:CG2 | 2.40 | 0.52 |
| 1:N:411:VAL:HB | 1:N:494:LEU:HB3 | 1.91 | 0.52 |
| 3:A:1527:PO4:P | 4:A:1528:ATP:O3B | 2.68 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:206:ASN:CB | 1:C:213:VAL:HA | 2.38 | 0.52 |
| 1:E:172:GLU:CD | 1:E:172:GLU:H | 2.13 | 0.52 |
| 1:I:144:ILE:HG23 | 1:I:403:THR:CG2 | 2.40 | 0.52 |
| 1:A:151:SER:HB3 | 1:A:399:ALA:HA | 1.91 | 0.52 |
| 1:A:206:ASN:HB2 | 1:A:213:VAL:CB | 2.40 | 0.52 |
| 1:B:206:ASN:HB2 | 1:B:213:VAL:CB | 2.40 | 0.52 |
| 1:B:251:ALA:O | 1:B:277:LYS:HA | 2.09 | 0.52 |
| 1:N:144:ILE:HG23 | 1:N:403:THR:CG2 | 2.40 | 0.52 |
| 1:B:151:SER:HB3 | 1:B:399:ALA:HA | 1.91 | 0.52 |
| 1:F:218:PRO:HG2 | 1:F:320:ALA:HB3 | 1.92 | 0.52 |
| 1:H:205:ILE:HD12 | 1:H:211:GLY:O | 2.09 | 0.52 |
| 1:A:106:ALA:CB | 1:A:116:LEU:HD21 | 2.39 | 0.52 |
| 1:C:147:VAL:CG2 | 1:C:494:LEU:HD11 | 2.38 | 0.52 |
| 1:E:152:ALA:HB1 | 1:E:155:ASP:HB3 | 1.92 | 0.52 |
| 1:E:218:PRO:HG2 | 1:E:320:ALA:HB3 | 1.92 | 0.52 |
| 1:E:251:ALA:O | 1:E:277:LYS:HA | 2.09 | 0.52 |
| 1:F:106:ALA:CB | 1:F:116:LEU:HD21 | 2.39 | 0.52 |
| 1:F:206:ASN:HB2 | 1:F:213:VAL:CB | 2.40 | 0.52 |
| 1:D:251:ALA:O | 1:D:277:LYS:HA | 2.09 | 0.52 |
| 1:L:152:ALA:HB1 | 1:L:155:ASP:HB3 | 1.92 | 0.52 |
| 3:M:1526:PO4:P | 4:M:1527:ATP:PA | 3.07 | 0.52 |
| 1:N:152:ALA:HB1 | 1:N:155:ASP:HB3 | 1.92 | 0.52 |
| 1:C:124:VAL:HG21 | 1:C:508:ALA:CB | 2.40 | 0.52 |
| 1:F:147:VAL:CG2 | 1:F:494:LEU:HD11 | 2.38 | 0.52 |
| 1:I:247:LEU:O | 1:I:273:VAL:HA | 2.10 | 0.52 |
| 1:L:411:VAL:HB | 1:L:494:LEU:HB3 | 1.91 | 0.52 |
| 1:M:31:LEU:HB2 | 1:M:90:THR:HG21 | 1.91 | 0.52 |
| 1:A:152:ALA:HB1 | 1:A:155:ASP:HB3 | 1.92 | 0.51 |
| 1:B:124:VAL:HG21 | 1:B:508:ALA:CB | 2.40 | 0.51 |
| 1:C:206:ASN:HB2 | 1:C:213:VAL:CB | 2.40 | 0.51 |
| 1:D:152:ALA:HB1 | 1:D:155:ASP:HB3 | 1.92 | 0.51 |
| 1:D:218:PRO:HG2 | 1:D:320:ALA:HB3 | 1.92 | 0.51 |
| 1:G:147:VAL:CG2 | 1:G:494:LEU:HD11 | 2.38 | 0.51 |
| 1:G:206:ASN:HB2 | 1:G:213:VAL:CB | 2.40 | 0.51 |
| 1:H:142:LYS:H | 1:H:142:LYS:HD2 | 1.75 | 0.51 |
| 1:I:31:LEU:HA | 3:I:1526:PO4:P | 2.50 | 0.51 |
| 1:K:205:ILE:HD12 | 1:K:211:GLY:O | 2.10 | 0.51 |
| 1:M:247:LEU:O | 1:M:273:VAL:HA | 2.10 | 0.51 |
| 1:C:251:ALA:O | 1:C:277:LYS:HA | 2.09 | 0.51 |
| 1:D:206:ASN:HB2 | 1:D:213:VAL:CB | 2.40 | 0.51 |
| 1:G:218:PRO:HG2 | 1:G:320:ALA:HB3 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:G:1527:PO4:P | 4:G:1528:ATP:O3B | 2.68 | 0.51 |
| 1:J:144:ILE:HG23 | 1:J:403:THR:CG2 | 2.40 | 0.51 |
| 1:B:152:ALA:HB1 | 1:B:155:ASP:HB3 | 1.92 | 0.51 |
| 1:C:152:ALA:HB1 | 1:C:155:ASP:HB3 | 1.91 | 0.51 |
| 1:D:124:VAL:HG21 | 1:D:508:ALA:CB | 2.40 | 0.51 |
| 1:F:251:ALA:O | 1:F:277:LYS:HA | 2.09 | 0.51 |
| 3:F:1527:PO4:P | 4:F:1528:ATP:O3B | 2.68 | 0.51 |
| 1:H:247:LEU:O | 1:H:273:VAL:HA | 2.10 | 0.51 |
| 1:K:144:ILE:HG23 | 1:K:403:THR:CG2 | 2.40 | 0.51 |
| 1:L:142:LYS:H | 1:L:142:LYS:HD2 | 1.75 | 0.51 |
| 1:N:247:LEU:O | 1:N:273:VAL:HA | 2.10 | 0.51 |
| 1:B:127:ALA:N | 1:B:426:LEU:HD21 | 2.25 | 0.51 |
| 1:C:169:VAL:HG13 | 1:C:170:GLY:O | 2.11 | 0.51 |
| 1:L:247:LEU:O | 1:L:273:VAL:HA | 2.10 | 0.51 |
| 1:M:411:VAL:HB | 1:M:494:LEU:HB3 | 1.91 | 0.51 |
| 1:A:124:VAL:HG21 | 1:A:508:ALA:CB | 2.40 | 0.51 |
| 1:E:206:ASN:HB2 | 1:E:213:VAL:CB | 2.40 | 0.51 |
| 1:F:127:ALA:N | 1:F:426:LEU:HD21 | 2.26 | 0.51 |
| 1:F:152:ALA:HB1 | 1:F:155:ASP:HB3 | 1.91 | 0.51 |
| 1:K:247:LEU:O | 1:K:273:VAL:HA | 2.10 | 0.51 |
| 1:A:147:VAL:CG2 | 1:A:494:LEU:HD11 | 2.38 | 0.51 |
| 1:G:152:ALA:HB1 | 1:G:155:ASP:HB3 | 1.92 | 0.51 |
| 1:I:205:ILE:HD12 | 1:I:211:GLY:O | 2.10 | 0.51 |
| 1:L:31:LEU:HA | 3:L:1526:PO4:P | 2.50 | 0.51 |
| 1:M:142:LYS:H | 1:M:142:LYS:HD2 | 1.76 | 0.51 |
| 1:A:127:ALA:N | 1:A:426:LEU:HD21 | 2.26 | 0.51 |
| 1:E:411:VAL:HB | 1:E:494:LEU:HB2 | 1.93 | 0.51 |
| 1:G:124:VAL:HG21 | 1:G:508:ALA:CB | 2.40 | 0.51 |
| 1:M:493:ILE:HG21 | 4:M:1527:ATP:H2' | 1.92 | 0.51 |
| 1:C:127:ALA:N | 1:C:426:LEU:HD21 | 2.25 | 0.51 |
| 1:D:411:VAL:HB | 1:D:494:LEU:HB2 | 1.93 | 0.51 |
| 1:E:124:VAL:HG21 | 1:E:508:ALA:CB | 2.40 | 0.51 |
| 1:E:127:ALA:N | 1:E:426:LEU:HD21 | 2.26 | 0.51 |
| 1:J:247:LEU:O | 1:J:273:VAL:HA | 2.10 | 0.51 |
| 1:F:411:VAL:HB | 1:F:494:LEU:HB2 | 1.93 | 0.51 |
| 1:H:149:THR:HA | 1:H:152:ALA:HB3 | 1.93 | 0.51 |
| 1:M:493:ILE:CG2 | 4:M:1527:ATP:H2' | 2.40 | 0.51 |
| 1:C:411:VAL:HB | 1:C:494:LEU:HB2 | 1.93 | 0.51 |
| 1:D:127:ALA:N | 1:D:426:LEU:HD21 | 2.26 | 0.51 |
| 1:D:169:VAL:HG13 | 1:D:170:GLY:O | 2.11 | 0.51 |
| 1:G:180:GLY:HA3 | 1:G:381:VAL:O | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:152:ALA:HB1 | 1:H:155:ASP:HB3 | 1.92 | 0.51 |
| 1:I:149:THR:HA | 1:I:152:ALA:HB3 | 1.93 | 0.51 |
| 1:M:149:THR:HA | 1:M:152:ALA:HB3 | 1.93 | 0.51 |
| 1:G:127:ALA:N | 1:G:426:LEU:HD21 | 2.26 | 0.50 |
| 3:K:1526:PO4:P | 4:K:1527:ATP:PG | 3.09 | 0.50 |
| 1:A:169:VAL:HG13 | 1:A:170:GLY:O | 2.11 | 0.50 |
| 1:C:218:PRO:HG2 | 1:C:320:ALA:HB3 | 1.92 | 0.50 |
| 1:F:169:VAL:HG13 | 1:F:170:GLY:O | 2.11 | 0.50 |
| 1:L:149:THR:HA | 1:L:152:ALA:HB3 | 1.93 | 0.50 |
| 3:M:1526:PO4:P | 4:M:1527:ATP:O2A | 2.69 | 0.50 |
| 1:N:149:THR:HA | 1:N:152:ALA:HB3 | 1.93 | 0.50 |
| 1:A:218:PRO:HG2 | 1:A:320:ALA:HB3 | 1.92 | 0.50 |
| 1:B:169:VAL:HG13 | 1:B:170:GLY:O | 2.11 | 0.50 |
| 1:B:411:VAL:HB | 1:B:494:LEU:HB2 | 1.93 | 0.50 |
| 1:D:180:GLY:HA3 | 1:D:381:VAL:O | 2.11 | 0.50 |
| 1:F:124:VAL:HG21 | 1:F:508:ALA:CB | 2.40 | 0.50 |
| 1:G:411:VAL:HB | 1:G:494:LEU:HB2 | 1.93 | 0.50 |
| 1:A:135:SER:HA | 1:A:412:VAL:CG1 | 2.42 | 0.50 |
| 1:C:180:GLY:HA3 | 1:C:381:VAL:O | 2.11 | 0.50 |
| 1:J:152:ALA:HB1 | 1:J:155:ASP:HB3 | 1.92 | 0.50 |
| 1:K:142:LYS:H | 1:K:142:LYS:HD2 | 1.75 | 0.50 |
| 1:E:169:VAL:HG13 | 1:E:170:GLY:O | 2.11 | 0.50 |
| 1:E:180:GLY:HA3 | 1:E:381:VAL:O | 2.11 | 0.50 |
| 1:F:206:ASN:HB2 | 1:F:213:VAL:HB | 1.94 | 0.50 |
| 1:G:206:ASN:HB2 | 1:G:213:VAL:HB | 1.94 | 0.50 |
| 1:B:135:SER:HA | 1:B:412:VAL:CG1 | 2.42 | 0.50 |
| 1:B:218:PRO:HG2 | 1:B:320:ALA:HB3 | 1.92 | 0.50 |
| 1:J:149:THR:HA | 1:J:152:ALA:HB3 | 1.94 | 0.50 |
| 1:A:206:ASN:HB2 | 1:A:213:VAL:HB | 1.94 | 0.50 |
| 1:A:411:VAL:HB | 1:A:494:LEU:HB2 | 1.93 | 0.50 |
| 1:C:206:ASN:HB2 | 1:C:213:VAL:HB | 1.94 | 0.50 |
| 1:E:206:ASN:HB2 | 1:E:213:VAL:HB | 1.94 | 0.50 |
| 1:B:142:LYS:H | 1:B:142:LYS:HD2 | 1.76 | 0.50 |
| 1:B:206:ASN:HB2 | 1:B:213:VAL:HB | 1.94 | 0.50 |
| 1:D:517:THR:HG23 | 1:E:39:VAL:HB | 1.94 | 0.50 |
| 1:E:517:THR:HG23 | 1:F:39:VAL:HB | 1.94 | 0.50 |
| 1:F:180:GLY:HA3 | 1:F:381:VAL:O | 2.11 | 0.50 |
| 1:J:172:GLU:CD | 1:J:172:GLU:H | 2.14 | 0.50 |
| 1:D:206:ASN:HB2 | 1:D:213:VAL:HB | 1.94 | 0.50 |
| 1:F:293:ALA:HB2 | 1:F:300:VAL:CG2 | 2.42 | 0.50 |
| 1:G:169:VAL:HG13 | 1:G:170:GLY:O | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:152:ALA:HB1 | 1:I:155:ASP:HB3 | 1.92 | 0.50 |
| 1:K:138:CYS:HA | 1:K:411:VAL:HG22 | 1.94 | 0.50 |
| 1:F:169:VAL:HG11 | 1:F:175:ILE:CG1 | 2.42 | 0.49 |
| 1:J:138:CYS:HA | 1:J:411:VAL:HG22 | 1.94 | 0.49 |
| 1:K:152:ALA:HB1 | 1:K:155:ASP:HB3 | 1.93 | 0.49 |
| 1:N:33:PRO:HG3 | 4:N:1527:ATP:C5 | 2.47 | 0.49 |
| 1:A:90:THR:HG22 | 1:A:94:VAL:HG23 | 1.95 | 0.49 |
| 1:A:142:LYS:HD2 | 1:A:142:LYS:H | 1.76 | 0.49 |
| 1:A:349:ILE:HG22 | 1:A:369:VAL:HG13 | 1.95 | 0.49 |
| 1:D:349:ILE:HG22 | 1:D:369:VAL:HG13 | 1.95 | 0.49 |
| 1:G:293:ALA:HB2 | 1:G:300:VAL:CG2 | 2.42 | 0.49 |
| 1:K:149:THR:HA | 1:K:152:ALA:HB3 | 1.94 | 0.49 |
| 1:L:172:GLU:CD | 1:L:172:GLU:H | 2.16 | 0.49 |
| 1:N:172:GLU:CD | 1:N:172:GLU:H | 2.14 | 0.49 |
| 1:B:169:VAL:HG11 | 1:B:175:ILE:CG1 | 2.43 | 0.49 |
| 1:B:180:GLY:HA3 | 1:B:381:VAL:O | 2.11 | 0.49 |
| 1:C:169:VAL:HG11 | 1:C:175:ILE:CG1 | 2.43 | 0.49 |
| 1:C:349:ILE:HG22 | 1:C:369:VAL:HG13 | 1.95 | 0.49 |
| 1:C:517:THR:HG23 | 1:D:39:VAL:HB | 1.94 | 0.49 |
| 1:D:169:VAL:HG11 | 1:D:175:ILE:CG1 | 2.42 | 0.49 |
| 1:D:224:ASP:HA | 1:D:289:LEU:CD1 | 2.43 | 0.49 |
| 1:E:90:THR:HG22 | 1:E:94:VAL:HG23 | 1.95 | 0.49 |
| 1:F:90:THR:HG22 | 1:F:94:VAL:HG23 | 1.95 | 0.49 |
| 1:F:142:LYS:H | 1:F:142:LYS:HD2 | 1.77 | 0.49 |
| 1:F:517:THR:HG23 | 1:G:39:VAL:HB | 1.94 | 0.49 |
| 1:N:138:CYS:HA | 1:N:411:VAL:HG22 | 1.94 | 0.49 |
| 1:A:224:ASP:HA | 1:A:289:LEU:CD1 | 2.43 | 0.49 |
| 1:E:142:LYS:H | 1:E:142:LYS:HD2 | 1.76 | 0.49 |
| 1:E:349:ILE:HG22 | 1:E:369:VAL:HG13 | 1.94 | 0.49 |
| 1:F:224:ASP:HA | 1:F:289:LEU:CD1 | 2.43 | 0.49 |
| 1:G:90:THR:HG22 | 1:G:94:VAL:HG23 | 1.95 | 0.49 |
| 1:G:349:ILE:HG22 | 1:G:369:VAL:HG13 | 1.95 | 0.49 |
| 1:H:106:ALA:HB3 | 1:H:116:LEU:HD21 | 1.95 | 0.49 |
| 1:L:106:ALA:HB3 | 1:L:116:LEU:HD21 | 1.95 | 0.49 |
| 1:M:172:GLU:H | 1:M:172:GLU:CD | 2.16 | 0.49 |
| 1:N:106:ALA:HB3 | 1:N:116:LEU:HD21 | 1.95 | 0.49 |
| 1:A:39:VAL:HB | 1:G:517:THR:HG23 | 1.94 | 0.49 |
| 1:B:349:ILE:HG22 | 1:B:369:VAL:HG13 | 1.95 | 0.49 |
| 1:G:169:VAL:HG11 | 1:G:175:ILE:CG1 | 2.42 | 0.49 |
| 1:I:106:ALA:HB3 | 1:I:116:LEU:HD21 | 1.95 | 0.49 |
| 1:I:138:CYS:HA | 1:I:411:VAL:HG22 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:106:ALA:HB3 | 1:M:116:LEU:HD21 | 1.95 | 0.49 |
| 1:A:180:GLY:HA3 | 1:A:381:VAL:O | 2.11 | 0.49 |
| 1:D:90:THR:HG22 | 1:D:94:VAL:HG23 | 1.95 | 0.49 |
| 1:D:142:LYS:H | 1:D:142:LYS:HD2 | 1.77 | 0.49 |
| 1:F:349:ILE:HG22 | 1:F:369:VAL:HG13 | 1.94 | 0.49 |
| 1:F:406:ALA:HB2 | 1:F:496:PRO:HG3 | 1.95 | 0.49 |
| 1:C:293:ALA:HB2 | 1:C:300:VAL:CG2 | 2.42 | 0.49 |
| 1:E:169:VAL:HG11 | 1:E:175:ILE:CG1 | 2.43 | 0.49 |
| 1:K:106:ALA:HB3 | 1:K:116:LEU:HD21 | 1.95 | 0.49 |
| 1:K:172:GLU:H | 1:K:172:GLU:CD | 2.16 | 0.49 |
| 1:E:293:ALA:HB2 | 1:E:300:VAL:CG2 | 2.42 | 0.49 |
| 1:I:172:GLU:CD | 1:I:172:GLU:H | 2.14 | 0.49 |
| 1:K:151:SER:HB3 | 1:K:399:ALA:HA | 1.94 | 0.49 |
| 1:L:138:CYS:HA | 1:L:411:VAL:HG22 | 1.94 | 0.49 |
| 1:A:169:VAL:HG11 | 1:A:175:ILE:CG1 | 2.42 | 0.48 |
| 1:B:90:THR:HG22 | 1:B:94:VAL:HG23 | 1.95 | 0.48 |
| 1:D:293:ALA:HB2 | 1:D:300:VAL:CG2 | 2.42 | 0.48 |
| 1:G:135:SER:HA | 1:G:412:VAL:CG1 | 2.42 | 0.48 |
| 1:G:142:LYS:H | 1:G:142:LYS:HD2 | 1.76 | 0.48 |
| 1:J:106:ALA:HB3 | 1:J:116:LEU:HD21 | 1.95 | 0.48 |
| 1:J:142:LYS:H | 1:J:142:LYS:HD2 | 1.78 | 0.48 |
| 1:B:224:ASP:HA | 1:B:289:LEU:CD1 | 2.43 | 0.48 |
| 1:N:142:LYS:H | 1:N:142:LYS:HD2 | 1.78 | 0.48 |
| 1:B:293:ALA:HB2 | 1:B:300:VAL:CG2 | 2.42 | 0.48 |
| 1:B:517:THR:HG23 | 1:C:39:VAL:HB | 1.94 | 0.48 |
| 1:D:406:ALA:HB2 | 1:D:496:PRO:HG3 | 1.95 | 0.48 |
| 1:E:135:SER:HA | 1:E:412:VAL:CG1 | 2.42 | 0.48 |
| 1:C:142:LYS:H | 1:C:142:LYS:HD2 | 1.76 | 0.48 |
| 1:C:224:ASP:HA | 1:C:289:LEU:CD1 | 2.43 | 0.48 |
| 1:E:224:ASP:HA | 1:E:289:LEU:CD1 | 2.43 | 0.48 |
| 1:H:138:CYS:HA | 1:H:411:VAL:HG22 | 1.94 | 0.48 |
| 1:I:142:LYS:H | 1:I:142:LYS:HD2 | 1.78 | 0.48 |
| 1:M:138:CYS:HA | 1:M:411:VAL:HG22 | 1.94 | 0.48 |
| 1:G:224:ASP:HA | 1:G:289:LEU:CD1 | 2.43 | 0.48 |
| 1:H:172:GLU:H | 1:H:172:GLU:CD | 2.16 | 0.48 |
| 1:M:206:ASN:HB2 | 1:M:213:VAL:CB | 2.44 | 0.48 |
| 1:A:158:VAL:HG22 | 1:A:396:VAL:HG22 | 1.96 | 0.48 |
| 1:A:293:ALA:HB2 | 1:A:300:VAL:CG2 | 2.42 | 0.48 |
| 1:D:135:SER:HA | 1:D:412:VAL:CG1 | 2.42 | 0.48 |
| 1:L:206:ASN:HB2 | 1:L:213:VAL:CB | 2.44 | 0.48 |
| 1:A:517:THR:HG23 | 1:B:39:VAL:HB | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:206:ASN:HB2 | 1:J:213:VAL:CB | 2.44 | 0.48 |
| 1:D:158:VAL:HG22 | 1:D:396:VAL:HG22 | 1.96 | 0.48 |
| 1:E:205:ILE:HD12 | 1:E:211:GLY:O | 2.14 | 0.48 |
| 1:N:206:ASN:HB2 | 1:N:213:VAL:CB | 2.44 | 0.48 |
| 1:A:205:ILE:HD12 | 1:A:211:GLY:O | 2.14 | 0.48 |
| 1:F:135:SER:HA | 1:F:412:VAL:CG1 | 2.42 | 0.48 |
| 1:A:144:ILE:HG23 | 1:A:403:THR:HG21 | 1.96 | 0.48 |
| 1:C:144:ILE:HG23 | 1:C:403:THR:HG21 | 1.96 | 0.48 |
| 1:D:205:ILE:HD12 | 1:D:211:GLY:O | 2.14 | 0.48 |
| 1:G:205:ILE:HD12 | 1:G:211:GLY:O | 2.14 | 0.48 |
| 1:I:206:ASN:HB2 | 1:I:213:VAL:CB | 2.43 | 0.48 |
| 1:M:496:PRO:HB2 | 1:M:499:VAL:HG13 | 1.94 | 0.48 |
| 1:B:144:ILE:HG23 | 1:B:403:THR:HG21 | 1.96 | 0.47 |
| 1:C:158:VAL:HG22 | 1:C:396:VAL:HG22 | 1.96 | 0.47 |
| 1:H:206:ASN:HB2 | 1:H:213:VAL:CB | 2.44 | 0.47 |
| 1:K:27:VAL:CG1 | 1:K:90:THR:HG23 | 2.34 | 0.47 |
| 1:B:158:VAL:HG22 | 1:B:396:VAL:HG22 | 1.96 | 0.47 |
| 1:E:144:ILE:HG23 | 1:E:403:THR:HG21 | 1.96 | 0.47 |
| 1:F:144:ILE:HG23 | 1:F:403:THR:HG21 | 1.96 | 0.47 |
| 1:F:205:ILE:HD12 | 1:F:211:GLY:O | 2.14 | 0.47 |
| 1:G:158:VAL:HG22 | 1:G:396:VAL:HG22 | 1.96 | 0.47 |
| 1:K:206:ASN:HB2 | 1:K:213:VAL:CB | 2.43 | 0.47 |
| 1:B:205:ILE:HD12 | 1:B:211:GLY:O | 2.14 | 0.47 |
| 1:C:90:THR:HG22 | 1:C:94:VAL:HG23 | 1.95 | 0.47 |
| 1:D:496:PRO:HB2 | 1:D:499:VAL:HG13 | 1.96 | 0.47 |
| 1:E:406:ALA:HB2 | 1:E:496:PRO:HG3 | 1.95 | 0.47 |
| 1:G:144:ILE:HG23 | 1:G:403:THR:HG21 | 1.96 | 0.47 |
| 1:G:406:ALA:HB2 | 1:G:496:PRO:HG3 | 1.95 | 0.47 |
| 1:B:383:ALA:HB3 | 1:B:389:MET:HB2 | 1.97 | 0.47 |
| 1:C:406:ALA:HB2 | 1:C:496:PRO:HG3 | 1.95 | 0.47 |
| 1:D:383:ALA:HB3 | 1:D:389:MET:HB2 | 1.97 | 0.47 |
| 1:K:158:VAL:HG22 | 1:K:396:VAL:HG22 | 1.96 | 0.47 |
| 1:A:126:ALA:HB3 | 1:A:426:LEU:HD22 | 1.97 | 0.47 |
| 1:H:106:ALA:CB | 1:H:116:LEU:HD21 | 2.45 | 0.47 |
| 1:M:106:ALA:CB | 1:M:116:LEU:HD21 | 2.45 | 0.47 |
| 1:M:158:VAL:HG22 | 1:M:396:VAL:HG22 | 1.96 | 0.47 |
| 1:A:496:PRO:HB2 | 1:A:499:VAL:HG13 | 1.96 | 0.47 |
| 1:A:383:ALA:HB3 | 1:A:389:MET:HB2 | 1.97 | 0.47 |
| 1:B:126:ALA:HB3 | 1:B:426:LEU:HD22 | 1.97 | 0.47 |
| 1:B:406:ALA:HB2 | 1:B:496:PRO:HG3 | 1.95 | 0.47 |
| 1:D:144:ILE:HG23 | 1:D:403:THR:HG21 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:158:VAL:HG22 | 1:F:396:VAL:HG22 | 1.96 | 0.47 |
| 1:H:158:VAL:HG22 | 1:H:396:VAL:HG22 | 1.97 | 0.47 |
| 1:B:136:VAL:O | 1:B:410:GLY:HA3 | 2.15 | 0.47 |
| 1:C:199:TYR:CE2 | 1:C:327:LYS:HB3 | 2.50 | 0.47 |
| 1:C:496:PRO:HB2 | 1:C:499:VAL:HG13 | 1.96 | 0.47 |
| 1:E:136:VAL:O | 1:E:410:GLY:HA3 | 2.15 | 0.47 |
| 1:M:493:ILE:CB | 4:M:1527:ATP:N9 | 2.77 | 0.47 |
| 1:C:135:SER:HA | 1:C:412:VAL:CG1 | 2.42 | 0.47 |
| 1:C:426:LEU:HB2 | 1:C:444:LEU:HD22 | 1.97 | 0.47 |
| 1:D:126:ALA:HB3 | 1:D:426:LEU:HD22 | 1.97 | 0.47 |
| 1:F:426:LEU:HB2 | 1:F:444:LEU:HD22 | 1.97 | 0.47 |
| 1:G:126:ALA:HB3 | 1:G:426:LEU:HD22 | 1.97 | 0.47 |
| 1:L:27:VAL:CG1 | 1:L:90:THR:HG23 | 2.34 | 0.47 |
| 1:L:427:ALA:HA | 1:L:444:LEU:CD1 | 2.45 | 0.47 |
| 1:A:199:TYR:CE2 | 1:A:327:LYS:HB3 | 2.50 | 0.47 |
| 1:A:371:LYS:O | 1:A:374:GLY:HA3 | 2.15 | 0.47 |
| 1:B:199:TYR:CE2 | 1:B:327:LYS:HB3 | 2.50 | 0.47 |
| 1:D:199:TYR:CE2 | 1:D:327:LYS:HB3 | 2.50 | 0.47 |
| 1:D:426:LEU:HB2 | 1:D:444:LEU:HD22 | 1.97 | 0.47 |
| 1:E:158:VAL:HG22 | 1:E:396:VAL:HG22 | 1.96 | 0.47 |
| 1:E:426:LEU:HB2 | 1:E:444:LEU:HD22 | 1.97 | 0.47 |
| 1:F:199:TYR:CE2 | 1:F:327:LYS:HB3 | 2.50 | 0.47 |
| 1:I:158:VAL:HG22 | 1:I:396:VAL:HG22 | 1.97 | 0.47 |
| 1:J:158:VAL:HG22 | 1:J:396:VAL:HG22 | 1.97 | 0.47 |
| 1:L:144:ILE:HG23 | 1:L:403:THR:HG21 | 1.97 | 0.47 |
| 1:M:196:ASP:HA | 1:M:329:THR:HA | 1.97 | 0.47 |
| 1:N:158:VAL:HG22 | 1:N:396:VAL:HG22 | 1.97 | 0.47 |
| 1:A:406:ALA:HB2 | 1:A:496:PRO:HG3 | 1.95 | 0.46 |
| 1:B:34:LYS:HB2 | 1:B:457:ASN:HB3 | 1.97 | 0.46 |
| 1:B:371:LYS:O | 1:B:374:GLY:HA3 | 2.15 | 0.46 |
| 1:C:126:ALA:HB3 | 1:C:426:LEU:HD22 | 1.97 | 0.46 |
| 1:C:371:LYS:O | 1:C:374:GLY:HA3 | 2.15 | 0.46 |
| 1:D:136:VAL:O | 1:D:410:GLY:HA3 | 2.15 | 0.46 |
| 1:E:126:ALA:HB3 | 1:E:426:LEU:HD22 | 1.97 | 0.46 |
| 1:E:199:TYR:CE2 | 1:E:327:LYS:HB3 | 2.50 | 0.46 |
| 1:F:136:VAL:O | 1:F:410:GLY:HA3 | 2.15 | 0.46 |
| 1:I:106:ALA:CB | 1:I:116:LEU:HD21 | 2.45 | 0.46 |
| 1:K:196:ASP:HA | 1:K:329:THR:HA | 1.97 | 0.46 |
| 1:C:136:VAL:O | 1:C:410:GLY:HA3 | 2.15 | 0.46 |
| 1:D:371:LYS:O | 1:D:374:GLY:HA3 | 2.15 | 0.46 |
| 1:E:383:ALA:HB3 | 1:E:389:MET:HB2 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:371:LYS:O | 1:F:374:GLY:HA3 | 2.15 | 0.46 |
| 1:G:136:VAL:O | 1:G:410:GLY:HA3 | 2.15 | 0.46 |
| 1:G:199:TYR:CE2 | 1:G:327:LYS:HB3 | 2.50 | 0.46 |
| 1:I:27:VAL:CG1 | 1:I:90:THR:HG23 | 2.34 | 0.46 |
| 1:K:106:ALA:CB | 1:K:116:LEU:HD21 | 2.45 | 0.46 |
| 1:L:106:ALA:CB | 1:L:116:LEU:HD21 | 2.45 | 0.46 |
| 1:L:158:VAL:HG22 | 1:L:396:VAL:HG22 | 1.97 | 0.46 |
| 1:L:196:ASP:HA | 1:L:329:THR:HA | 1.97 | 0.46 |
| 1:N:427:ALA:HA | 1:N:444:LEU:CD1 | 2.45 | 0.46 |
| 1:B:426:LEU:HB2 | 1:B:444:LEU:HD22 | 1.97 | 0.46 |
| 1:H:124:VAL:HG21 | 1:H:508:ALA:CB | 2.46 | 0.46 |
| 1:J:27:VAL:CG1 | 1:J:90:THR:HG23 | 2.35 | 0.46 |
| 1:K:287:ALA:HB1 | 1:K:368:ARG:CZ | 2.45 | 0.46 |
| 1:M:427:ALA:HA | 1:M:444:LEU:CD1 | 2.45 | 0.46 |
| 1:A:120:ILE:O | 1:A:124:VAL:HG23 | 2.16 | 0.46 |
| 1:C:205:ILE:HD12 | 1:C:211:GLY:O | 2.14 | 0.46 |
| 1:G:120:ILE:O | 1:G:124:VAL:HG23 | 2.16 | 0.46 |
| 1:G:371:LYS:O | 1:G:374:GLY:HA3 | 2.15 | 0.46 |
| 1:G:426:LEU:HB2 | 1:G:444:LEU:HD22 | 1.97 | 0.46 |
| 1:H:240:VAL:HG11 | 1:H:247:LEU:HB2 | 1.96 | 0.46 |
| 1:H:287:ALA:HB1 | 1:H:368:ARG:CZ | 2.45 | 0.46 |
| 1:H:427:ALA:HA | 1:H:444:LEU:CD1 | 2.45 | 0.46 |
| 1:L:120:ILE:O | 1:L:124:VAL:HG23 | 2.16 | 0.46 |
| 1:N:124:VAL:HG21 | 1:N:508:ALA:CB | 2.46 | 0.46 |
| 1:N:139:SER:HB3 | 1:N:143:ALA:HB2 | 1.98 | 0.46 |
| 1:N:196:ASP:HA | 1:N:329:THR:HA | 1.97 | 0.46 |
| 1:N:240:VAL:HG11 | 1:N:247:LEU:HB2 | 1.97 | 0.46 |
| 1:N:287:ALA:HB1 | 1:N:368:ARG:CZ | 2.45 | 0.46 |
| 1:C:34:LYS:HB2 | 1:C:457:ASN:HB3 | 1.97 | 0.46 |
| 1:C:383:ALA:HB3 | 1:C:389:MET:HB2 | 1.97 | 0.46 |
| 1:D:219:PHE:CE2 | 1:D:314:LEU:HD22 | 2.51 | 0.46 |
| 1:E:371:LYS:O | 1:E:374:GLY:HA3 | 2.15 | 0.46 |
| 1:F:120:ILE:O | 1:F:124:VAL:HG23 | 2.15 | 0.46 |
| 1:H:120:ILE:O | 1:H:124:VAL:HG23 | 2.16 | 0.46 |
| 1:J:106:ALA:CB | 1:J:116:LEU:HD21 | 2.45 | 0.46 |
| 1:K:124:VAL:HG21 | 1:K:508:ALA:CB | 2.46 | 0.46 |
| 1:M:240:VAL:HG11 | 1:M:247:LEU:HB2 | 1.97 | 0.46 |
| 1:M:493:ILE:HD11 | 4:M:1527:ATP:N7 | 2.29 | 0.46 |
| 1:A:219:PHE:CE2 | 1:A:314:LEU:HD22 | 2.51 | 0.46 |
| 1:C:120:ILE:O | 1:C:124:VAL:HG23 | 2.15 | 0.46 |
| 1:C:219:PHE:CE2 | 1:C:314:LEU:HD22 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:427:ALA:HA | 1:I:444:LEU:CD1 | 2.45 | 0.46 |
| 1:J:120:ILE:O | 1:J:124:VAL:HG23 | 2.16 | 0.46 |
| 1:J:240:VAL:HG11 | 1:J:247:LEU:HB2 | 1.97 | 0.46 |
| 1:K:120:ILE:O | 1:K:124:VAL:HG23 | 2.16 | 0.46 |
| 1:L:287:ALA:HB1 | 1:L:368:ARG:CZ | 2.45 | 0.46 |
| 1:M:406:ALA:HB2 | 1:M:496:PRO:HG3 | 1.98 | 0.46 |
| 1:N:106:ALA:CB | 1:N:116:LEU:HD21 | 2.45 | 0.46 |
| 1:A:136:VAL:O | 1:A:410:GLY:HA3 | 2.15 | 0.46 |
| 1:B:219:PHE:CE2 | 1:B:314:LEU:HD22 | 2.51 | 0.46 |
| 1:J:287:ALA:HB1 | 1:J:368:ARG:CZ | 2.45 | 0.46 |
| 1:J:427:ALA:HA | 1:J:444:LEU:CD1 | 2.45 | 0.46 |
| 1:K:51:LYS:O | 3:K:1526:PO4:P | 2.74 | 0.46 |
| 1:K:427:ALA:HA | 1:K:444:LEU:CD1 | 2.45 | 0.46 |
| 1:L:139:SER:HB3 | 1:L:143:ALA:HB2 | 1.98 | 0.46 |
| 1:A:34:LYS:HB2 | 1:A:457:ASN:HB3 | 1.98 | 0.46 |
| 1:A:426:LEU:HB2 | 1:A:444:LEU:HD22 | 1.97 | 0.46 |
| 1:G:219:PHE:CE2 | 1:G:314:LEU:HD22 | 2.51 | 0.46 |
| 1:I:144:ILE:HG23 | 1:I:403:THR:HG21 | 1.97 | 0.46 |
| 1:I:240:VAL:HG11 | 1:I:247:LEU:HB2 | 1.97 | 0.46 |
| 1:J:196:ASP:HA | 1:J:329:THR:HA | 1.97 | 0.46 |
| 1:K:139:SER:HB3 | 1:K:143:ALA:HB2 | 1.98 | 0.46 |
| 1:K:240:VAL:HG11 | 1:K:247:LEU:HB2 | 1.97 | 0.46 |
| 1:M:139:SER:HB3 | 1:M:143:ALA:HB2 | 1.98 | 0.46 |
| 1:A:345:ARG:HD3 | 1:A:345:ARG:HA | 1.96 | 0.46 |
| 1:B:120:ILE:O | 1:B:124:VAL:HG23 | 2.15 | 0.46 |
| 1:C:411:VAL:CG1 | 1:C:494:LEU:HD22 | 2.46 | 0.46 |
| 1:E:219:PHE:CE2 | 1:E:314:LEU:HD22 | 2.51 | 0.46 |
| 1:H:27:VAL:CG1 | 1:H:90:THR:HG23 | 2.34 | 0.46 |
| 1:H:139:SER:HB3 | 1:H:143:ALA:HB2 | 1.98 | 0.46 |
| 1:H:196:ASP:HA | 1:H:329:THR:HA | 1.97 | 0.46 |
| 1:H:356:ALA:HB1 | 1:H:361:ASP:HB2 | 1.97 | 0.46 |
| 1:K:356:ALA:HB1 | 1:K:361:ASP:HB2 | 1.98 | 0.46 |
| 1:K:383:ALA:HB3 | 1:K:389:MET:HB2 | 1.98 | 0.46 |
| 1:L:240:VAL:HG21 | 1:L:247:LEU:HD13 | 1.98 | 0.46 |
| 1:L:356:ALA:HB1 | 1:L:361:ASP:HB2 | 1.98 | 0.46 |
| 1:M:124:VAL:HG21 | 1:M:508:ALA:CB | 2.46 | 0.46 |
| 1:M:144:ILE:HG23 | 1:M:403:THR:HG21 | 1.98 | 0.46 |
| 1:N:27:VAL:CG1 | 1:N:90:THR:HG23 | 2.34 | 0.46 |
| 1:N:356:ALA:HB1 | 1:N:361:ASP:HB2 | 1.97 | 0.46 |
| 1:E:345:ARG:HD3 | 1:E:345:ARG:HA | 1.96 | 0.46 |
| 1:E:411:VAL:CG1 | 1:E:494:LEU:HD22 | 2.46 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:34:LYS:HB2 | 1:F:457:ASN:HB3 | 1.97 | 0.46 |
| 1:F:126:ALA:HB3 | 1:F:426:LEU:HD22 | 1.97 | 0.46 |
| 1:L:383:ALA:HB3 | 1:L:389:MET:HB2 | 1.98 | 0.46 |
| 1:M:240:VAL:HG21 | 1:M:247:LEU:HD13 | 1.98 | 0.46 |
| 1:M:287:ALA:HB1 | 1:M:368:ARG:CZ | 2.45 | 0.46 |
| 1:E:34:LYS:HB2 | 1:E:457:ASN:HB3 | 1.97 | 0.45 |
| 1:E:120:ILE:O | 1:E:124:VAL:HG23 | 2.16 | 0.45 |
| 1:I:287:ALA:HB1 | 1:I:368:ARG:CZ | 2.45 | 0.45 |
| 1:J:124:VAL:HG21 | 1:J:508:ALA:CB | 2.46 | 0.45 |
| 1:K:349:ILE:HG22 | 1:K:369:VAL:HG13 | 1.99 | 0.45 |
| 1:L:124:VAL:HG21 | 1:L:508:ALA:CB | 2.46 | 0.45 |
| 1:N:127:ALA:CB | 1:N:426:LEU:HD11 | 2.47 | 0.45 |
| 1:A:411:VAL:CG1 | 1:A:494:LEU:HD22 | 2.46 | 0.45 |
| 1:D:417:VAL:HG13 | 1:D:476:TYR:O | 2.17 | 0.45 |
| 1:F:383:ALA:HB3 | 1:F:389:MET:HB2 | 1.97 | 0.45 |
| 1:H:127:ALA:CB | 1:H:426:LEU:HD11 | 2.46 | 0.45 |
| 1:I:124:VAL:HG21 | 1:I:508:ALA:CB | 2.46 | 0.45 |
| 1:I:427:ALA:HA | 1:I:444:LEU:HD11 | 1.98 | 0.45 |
| 1:J:139:SER:HB3 | 1:J:143:ALA:HB2 | 1.97 | 0.45 |
| 1:J:349:ILE:HG22 | 1:J:369:VAL:HG13 | 1.99 | 0.45 |
| 1:J:383:ALA:HB3 | 1:J:389:MET:HB2 | 1.98 | 0.45 |
| 1:L:240:VAL:HG11 | 1:L:247:LEU:HB2 | 1.96 | 0.45 |
| 1:E:169:VAL:HG11 | 1:E:175:ILE:HG13 | 1.99 | 0.45 |
| 1:F:169:VAL:HG11 | 1:F:175:ILE:HG13 | 1.99 | 0.45 |
| 1:F:287:ALA:HB1 | 1:F:368:ARG:CZ | 2.47 | 0.45 |
| 1:G:383:ALA:HB3 | 1:G:389:MET:HB2 | 1.97 | 0.45 |
| 1:H:144:ILE:HG23 | 1:H:403:THR:HG21 | 1.97 | 0.45 |
| 1:I:383:ALA:HB3 | 1:I:389:MET:HB2 | 1.98 | 0.45 |
| 1:K:150:ILE:HA | 4:K:1527:ATP:C8 | 2.52 | 0.45 |
| 1:B:287:ALA:HB1 | 1:B:368:ARG:CZ | 2.47 | 0.45 |
| 1:D:34:LYS:HB2 | 1:D:457:ASN:HB3 | 1.97 | 0.45 |
| 1:D:169:VAL:HG11 | 1:D:175:ILE:HG13 | 1.98 | 0.45 |
| 1:I:127:ALA:CB | 1:I:426:LEU:HD11 | 2.47 | 0.45 |
| 1:I:196:ASP:HA | 1:I:329:THR:HA | 1.97 | 0.45 |
| 1:I:356:ALA:HB1 | 1:I:361:ASP:HB2 | 1.97 | 0.45 |
| 1:K:240:VAL:HG21 | 1:K:247:LEU:HD13 | 1.98 | 0.45 |
| 1:L:127:ALA:CB | 1:L:426:LEU:HD11 | 2.47 | 0.45 |
| 1:D:411:VAL:CG1 | 1:D:494:LEU:HD22 | 2.46 | 0.45 |
| 1:F:345:ARG:HD3 | 1:F:345:ARG:HA | 1.96 | 0.45 |
| 1:G:169:VAL:HG11 | 1:G:175:ILE:HG13 | 1.99 | 0.45 |
| 1:G:411:VAL:HG11 | 1:G:494:LEU:HD22 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:240:VAL:HG21 | 1:H:247:LEU:HD13 | 1.98 | 0.45 |
| 1:I:120:ILE:O | 1:I:124:VAL:HG23 | 2.16 | 0.45 |
| 1:I:139:SER:HB3 | 1:I:143:ALA:HB2 | 1.98 | 0.45 |
| 1:I:240:VAL:HG21 | 1:I:247:LEU:HD13 | 1.98 | 0.45 |
| 1:I:349:ILE:HG22 | 1:I:369:VAL:HG13 | 1.99 | 0.45 |
| 1:J:427:ALA:HA | 1:J:444:LEU:HD11 | 1.99 | 0.45 |
| 1:K:406:ALA:HB2 | 1:K:496:PRO:HG3 | 1.99 | 0.45 |
| 1:L:349:ILE:HG22 | 1:L:369:VAL:HG13 | 1.99 | 0.45 |
| 1:N:144:ILE:HG23 | 1:N:403:THR:HG21 | 1.97 | 0.45 |
| 1:A:287:ALA:HB1 | 1:A:368:ARG:CZ | 2.47 | 0.45 |
| 1:C:417:VAL:HG13 | 1:C:476:TYR:O | 2.17 | 0.45 |
| 1:G:34:LYS:HB2 | 1:G:457:ASN:HB3 | 1.97 | 0.45 |
| 1:K:127:ALA:CB | 1:K:426:LEU:HD11 | 2.46 | 0.45 |
| 1:M:120:ILE:O | 1:M:124:VAL:HG23 | 2.16 | 0.45 |
| 1:N:120:ILE:O | 1:N:124:VAL:HG23 | 2.16 | 0.45 |
| 1:B:417:VAL:HG13 | 1:B:476:TYR:O | 2.17 | 0.45 |
| 1:C:287:ALA:HB1 | 1:C:368:ARG:CZ | 2.47 | 0.45 |
| 1:D:120:ILE:O | 1:D:124:VAL:HG23 | 2.16 | 0.45 |
| 1:J:127:ALA:CB | 1:J:426:LEU:HD11 | 2.46 | 0.45 |
| 1:A:411:VAL:HG11 | 1:A:494:LEU:HD22 | 1.99 | 0.45 |
| 1:C:51:LYS:O | 1:C:55:SER:HB2 | 2.17 | 0.45 |
| 1:D:127:ALA:CB | 1:D:426:LEU:HD11 | 2.44 | 0.45 |
| 1:F:219:PHE:CE2 | 1:F:314:LEU:HD22 | 2.51 | 0.45 |
| 1:F:411:VAL:CG1 | 1:F:494:LEU:HD22 | 2.46 | 0.45 |
| 1:F:411:VAL:HG11 | 1:F:494:LEU:HD22 | 1.99 | 0.45 |
| 1:F:417:VAL:HG13 | 1:F:476:TYR:O | 2.17 | 0.45 |
| 1:G:417:VAL:HG13 | 1:G:476:TYR:O | 2.17 | 0.45 |
| 1:J:406:ALA:HB2 | 1:J:496:PRO:HG3 | 1.99 | 0.45 |
| 1:L:406:ALA:HB2 | 1:L:496:PRO:HG3 | 1.99 | 0.45 |
| 1:M:349:ILE:HG22 | 1:M:369:VAL:HG13 | 1.99 | 0.45 |
| 1:B:127:ALA:CB | 1:B:426:LEU:HD11 | 2.44 | 0.45 |
| 1:C:23:LEU:O | 1:C:27:VAL:HG23 | 2.17 | 0.45 |
| 1:E:23:LEU:O | 1:E:27:VAL:HG23 | 2.17 | 0.45 |
| 1:E:287:ALA:HB1 | 1:E:368:ARG:CZ | 2.47 | 0.45 |
| 1:G:411:VAL:CG1 | 1:G:494:LEU:HD22 | 2.46 | 0.45 |
| 1:H:34:LYS:HE2 | 1:H:458:CYS:HA | 1.99 | 0.45 |
| 1:H:406:ALA:HB2 | 1:H:496:PRO:HG3 | 1.99 | 0.45 |
| 1:M:383:ALA:HB3 | 1:M:389:MET:HB2 | 1.98 | 0.45 |
| 1:A:23:LEU:O | 1:A:27:VAL:HG23 | 2.17 | 0.45 |
| 1:B:411:VAL:CG1 | 1:B:494:LEU:HD22 | 2.46 | 0.45 |
| 1:C:127:ALA:CB | 1:C:426:LEU:HD11 | 2.44 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:51:LYS:O | 1:D:55:SER:HB2 | 2.17 | 0.45 |
| 1:E:217:SER:O | 1:E:245:LYS:HG2 | 2.17 | 0.45 |
| 1:F:51:LYS:O | 1:F:55:SER:HB2 | 2.17 | 0.45 |
| 1:G:51:LYS:O | 1:G:55:SER:HB2 | 2.17 | 0.45 |
| 1:M:356:ALA:HB1 | 1:M:361:ASP:HB2 | 1.98 | 0.45 |
| 1:N:240:VAL:HG21 | 1:N:247:LEU:HD13 | 1.98 | 0.45 |
| 1:B:411:VAL:HG11 | 1:B:494:LEU:HD22 | 1.99 | 0.44 |
| 1:F:37:ASN:HB2 | 1:F:50:THR:O | 2.18 | 0.44 |
| 1:G:287:ALA:HB1 | 1:G:368:ARG:CZ | 2.47 | 0.44 |
| 1:H:349:ILE:HG22 | 1:H:369:VAL:HG13 | 1.99 | 0.44 |
| 1:A:417:VAL:HG13 | 1:A:476:TYR:O | 2.17 | 0.44 |
| 1:D:23:LEU:O | 1:D:27:VAL:HG23 | 2.17 | 0.44 |
| 1:D:287:ALA:HB1 | 1:D:368:ARG:CZ | 2.47 | 0.44 |
| 1:H:383:ALA:HB3 | 1:H:389:MET:HB2 | 1.98 | 0.44 |
| 1:J:31:LEU:HA | 3:J:1526:PO4:P | 2.57 | 0.44 |
| 1:J:356:ALA:HB1 | 1:J:361:ASP:HB2 | 1.97 | 0.44 |
| 1:C:217:SER:O | 1:C:245:LYS:HG2 | 2.17 | 0.44 |
| 1:D:54:VAL:HG13 | 1:D:89:THR:HG21 | 1.99 | 0.44 |
| 1:D:217:SER:O | 1:D:245:LYS:HG2 | 2.17 | 0.44 |
| 1:E:54:VAL:HG13 | 1:E:89:THR:HG21 | 1.99 | 0.44 |
| 1:E:102:GLU:HB2 | 1:E:442:VAL:HG13 | 1.99 | 0.44 |
| 1:G:37:ASN:HB2 | 1:G:50:THR:O | 2.18 | 0.44 |
| 1:G:106:ALA:HB3 | 1:G:116:LEU:HD21 | 1.99 | 0.44 |
| 1:G:217:SER:O | 1:G:245:LYS:HG2 | 2.17 | 0.44 |
| 1:J:144:ILE:HG23 | 1:J:403:THR:HG21 | 1.98 | 0.44 |
| 1:K:206:ASN:CB | 1:K:213:VAL:HA | 2.48 | 0.44 |
| 1:M:27:VAL:CG1 | 1:M:90:THR:HG23 | 2.25 | 0.44 |
| 1:N:349:ILE:HG22 | 1:N:369:VAL:HG13 | 1.99 | 0.44 |
| 1:N:383:ALA:HB3 | 1:N:389:MET:HB2 | 1.98 | 0.44 |
| 1:A:217:SER:O | 1:A:245:LYS:HG2 | 2.17 | 0.44 |
| 1:B:51:LYS:O | 1:B:55:SER:HB2 | 2.17 | 0.44 |
| 1:E:127:ALA:CB | 1:E:426:LEU:HD11 | 2.44 | 0.44 |
| 1:E:417:VAL:HG13 | 1:E:476:TYR:O | 2.17 | 0.44 |
| 1:F:23:LEU:O | 1:F:27:VAL:HG23 | 2.17 | 0.44 |
| 1:H:427:ALA:HA | 1:H:444:LEU:HD11 | 1.98 | 0.44 |
| 1:J:240:VAL:HG21 | 1:J:247:LEU:HD13 | 1.98 | 0.44 |
| 1:K:34:LYS:HE2 | 1:K:458:CYS:HA | 1.99 | 0.44 |
| 1:L:279:PRO:HG3 | 1:L:292:ILE:HD11 | 2.00 | 0.44 |
| 1:L:427:ALA:HA | 1:L:444:LEU:HD11 | 1.99 | 0.44 |
| 1:M:127:ALA:CB | 1:M:426:LEU:HD11 | 2.47 | 0.44 |
| 1:M:279:PRO:HG3 | 1:M:292:ILE:HD11 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:N:417:VAL:HG13 | 1:N:476:TYR:O | 2.18 | 0.44 |
| 1:C:37:ASN:HB2 | 1:C:50:THR:O | 2.18 | 0.44 |
| 1:C:106:ALA:HB3 | 1:C:116:LEU:HD21 | 1.99 | 0.44 |
| 1:D:102:GLU:HB2 | 1:D:442:VAL:HG13 | 1.99 | 0.44 |
| 1:E:411:VAL:HG11 | 1:E:494:LEU:HD22 | 1.99 | 0.44 |
| 1:F:54:VAL:HG13 | 1:F:89:THR:HG21 | 1.99 | 0.44 |
| 1:K:427:ALA:HA | 1:K:444:LEU:HD11 | 1.98 | 0.44 |
| 1:L:206:ASN:CB | 1:L:213:VAL:HA | 2.48 | 0.44 |
| 1:M:427:ALA:HA | 1:M:444:LEU:HD11 | 1.98 | 0.44 |
| 1:N:279:PRO:HG3 | 1:N:292:ILE:HD11 | 2.00 | 0.44 |
| 1:B:37:ASN:HB2 | 1:B:50:THR:O | 2.18 | 0.44 |
| 1:C:169:VAL:HG11 | 1:C:175:ILE:HG13 | 1.99 | 0.44 |
| 1:C:411:VAL:HG11 | 1:C:494:LEU:HD22 | 1.99 | 0.44 |
| 1:F:217:SER:O | 1:F:245:LYS:HG2 | 2.17 | 0.44 |
| 1:B:217:SER:O | 1:B:245:LYS:HG2 | 2.17 | 0.44 |
| 1:D:37:ASN:HB2 | 1:D:50:THR:O | 2.18 | 0.44 |
| 1:F:102:GLU:HB2 | 1:F:442:VAL:HG13 | 1.99 | 0.44 |
| 1:H:279:PRO:HG3 | 1:H:292:ILE:HD11 | 2.00 | 0.44 |
| 1:K:440:ILE:O | 1:K:444:LEU:HG | 2.18 | 0.44 |
| 1:L:412:VAL:HG22 | 1:L:495:ASP:O | 2.18 | 0.44 |
| 1:A:51:LYS:O | 1:A:55:SER:HB2 | 2.17 | 0.44 |
| 1:C:54:VAL:HG13 | 1:C:89:THR:HG21 | 1.99 | 0.44 |
| 1:C:213:VAL:O | 1:C:324:VAL:HA | 2.18 | 0.44 |
| 1:E:106:ALA:HB3 | 1:E:116:LEU:HD21 | 1.99 | 0.44 |
| 1:F:106:ALA:HB3 | 1:F:116:LEU:HD21 | 1.99 | 0.44 |
| 1:G:152:ALA:HB1 | 1:G:155:ASP:O | 2.18 | 0.44 |
| 1:H:417:VAL:HG13 | 1:H:476:TYR:O | 2.18 | 0.44 |
| 1:H:455:VAL:HG11 | 1:H:465:VAL:HG21 | 2.00 | 0.44 |
| 1:I:440:ILE:O | 1:I:444:LEU:HG | 2.18 | 0.44 |
| 1:J:206:ASN:CB | 1:J:213:VAL:HA | 2.48 | 0.44 |
| 1:M:417:VAL:HG13 | 1:M:476:TYR:O | 2.18 | 0.44 |
| 1:N:406:ALA:HB2 | 1:N:496:PRO:HG3 | 1.99 | 0.44 |
| 1:A:169:VAL:HG11 | 1:A:175:ILE:HG13 | 1.99 | 0.44 |
| 1:B:213:VAL:O | 1:B:324:VAL:HA | 2.18 | 0.44 |
| 1:B:356:ALA:HB1 | 1:B:361:ASP:HB2 | 2.00 | 0.44 |
| 1:E:37:ASN:HB2 | 1:E:50:THR:O | 2.18 | 0.44 |
| 1:H:256:GLY:O | 1:H:260:ALA:HB3 | 2.18 | 0.44 |
| 1:H:440:ILE:O | 1:H:444:LEU:HG | 2.18 | 0.44 |
| 1:I:406:ALA:HB2 | 1:I:496:PRO:HG3 | 1.99 | 0.44 |
| 1:I:455:VAL:HG11 | 1:I:465:VAL:HG21 | 2.00 | 0.44 |
| 1:J:90:THR:HG22 | 1:J:94:VAL:HG23 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:417:VAL:HG13 | 1:J:476:TYR:O | 2.18 | 0.44 |
| 1:K:279:PRO:HG3 | 1:K:292:ILE:HD11 | 2.00 | 0.44 |
| 1:M:412:VAL:HG22 | 1:M:495:ASP:O | 2.18 | 0.44 |
| 1:N:455:VAL:HG11 | 1:N:465:VAL:HG21 | 2.00 | 0.44 |
| 1:A:54:VAL:HG13 | 1:A:89:THR:HG21 | 1.99 | 0.43 |
| 1:C:102:GLU:HB2 | 1:C:442:VAL:HG13 | 1.99 | 0.43 |
| 1:F:152:ALA:HB1 | 1:F:155:ASP:O | 2.18 | 0.43 |
| 1:G:23:LEU:O | 1:G:27:VAL:HG23 | 2.17 | 0.43 |
| 1:H:31:LEU:HA | 3:H:1526:PO4:P | 2.58 | 0.43 |
| 1:J:440:ILE:O | 1:J:444:LEU:HG | 2.18 | 0.43 |
| 1:L:440:ILE:O | 1:L:444:LEU:HG | 2.18 | 0.43 |
| 1:M:64:ASP:O | 1:M:68:ASN:HB2 | 2.18 | 0.43 |
| 1:M:206:ASN:HB2 | 1:M:213:VAL:HB | 2.00 | 0.43 |
| 1:M:206:ASN:CB | 1:M:213:VAL:HA | 2.48 | 0.43 |
| 1:M:256:GLY:O | 1:M:260:ALA:HB3 | 2.18 | 0.43 |
| 1:B:23:LEU:O | 1:B:27:VAL:HG23 | 2.17 | 0.43 |
| 1:B:169:VAL:HG11 | 1:B:175:ILE:HG13 | 1.99 | 0.43 |
| 1:D:411:VAL:HG11 | 1:D:494:LEU:HD22 | 1.99 | 0.43 |
| 1:F:196:ASP:HA | 1:F:329:THR:HA | 2.00 | 0.43 |
| 1:H:412:VAL:HG22 | 1:H:495:ASP:O | 2.18 | 0.43 |
| 1:I:256:GLY:O | 1:I:260:ALA:HB3 | 2.18 | 0.43 |
| 1:I:412:VAL:HG22 | 1:I:495:ASP:O | 2.18 | 0.43 |
| 1:J:412:VAL:HG22 | 1:J:495:ASP:O | 2.18 | 0.43 |
| 3:M:1526:PO4:P | 4:M:1527:ATP:O1B | 2.76 | 0.43 |
| 1:N:412:VAL:HG22 | 1:N:495:ASP:O | 2.18 | 0.43 |
| 1:A:102:GLU:HB2 | 1:A:442:VAL:HG13 | 1.99 | 0.43 |
| 1:E:51:LYS:O | 1:E:55:SER:HB2 | 2.17 | 0.43 |
| 1:E:196:ASP:HA | 1:E:329:THR:HA | 2.01 | 0.43 |
| 1:G:127:ALA:CB | 1:G:426:LEU:HD11 | 2.44 | 0.43 |
| 1:G:183:LEU:C | 1:G:382:GLY:HA3 | 2.38 | 0.43 |
| 1:I:206:ASN:CB | 1:I:213:VAL:HA | 2.48 | 0.43 |
| 1:J:455:VAL:HG11 | 1:J:465:VAL:HG21 | 2.00 | 0.43 |
| 1:K:417:VAL:HG13 | 1:K:476:TYR:O | 2.18 | 0.43 |
| 1:A:213:VAL:O | 1:A:324:VAL:HA | 2.18 | 0.43 |
| 1:D:196:ASP:HA | 1:D:329:THR:HA | 2.01 | 0.43 |
| 1:E:152:ALA:HB1 | 1:E:155:ASP:O | 2.18 | 0.43 |
| 1:H:383:ALA:HB3 | 1:H:389:MET:N | 2.34 | 0.43 |
| 1:L:256:GLY:O | 1:L:260:ALA:HB3 | 2.18 | 0.43 |
| 3:L:1526:PO4:P | 4:L:1527:ATP:PG | 3.17 | 0.43 |
| 1:N:34:LYS:HE2 | 1:N:458:CYS:HA | 2.01 | 0.43 |
| 1:A:152:ALA:HB1 | 1:A:155:ASP:O | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:356:ALA:HB1 | 1:C:361:ASP:HB2 | 2.00 | 0.43 |
| 1:I:383:ALA:HB3 | 1:I:389:MET:N | 2.34 | 0.43 |
| 1:J:102:GLU:HB2 | 1:J:442:VAL:HG13 | 2.01 | 0.43 |
| 1:J:279:PRO:HG3 | 1:J:292:ILE:HD11 | 2.00 | 0.43 |
| 3:J:1526:PO4:P | 4:J:1527:ATP:PG | 3.16 | 0.43 |
| 1:L:455:VAL:HG11 | 1:L:465:VAL:HG21 | 2.00 | 0.43 |
| 1:M:383:ALA:HB3 | 1:M:389:MET:N | 2.34 | 0.43 |
| 1:N:383:ALA:HB3 | 1:N:389:MET:N | 2.34 | 0.43 |
| 1:N:427:ALA:HA | 1:N:444:LEU:HD11 | 1.99 | 0.43 |
| 1:N:440:ILE:O | 1:N:444:LEU:HG | 2.18 | 0.43 |
| 1:A:37:ASN:HB2 | 1:A:50:THR:O | 2.18 | 0.43 |
| 1:G:54:VAL:HG13 | 1:G:89:THR:HG21 | 1.99 | 0.43 |
| 1:H:102:GLU:HB2 | 1:H:442:VAL:HG13 | 2.01 | 0.43 |
| 1:H:206:ASN:CB | 1:H:213:VAL:HA | 2.48 | 0.43 |
| 1:I:279:PRO:HG3 | 1:I:292:ILE:HD11 | 2.00 | 0.43 |
| 1:J:34:LYS:HE2 | 1:J:458:CYS:HA | 2.01 | 0.43 |
| 1:K:64:ASP:O | 1:K:68:ASN:HB2 | 2.18 | 0.43 |
| 1:L:206:ASN:HB2 | 1:L:213:VAL:HB | 2.00 | 0.43 |
| 1:L:417:VAL:HG13 | 1:L:476:TYR:O | 2.18 | 0.43 |
| 1:N:34:LYS:HZ1 | 1:N:483:GLU:CD | 2.21 | 0.43 |
| 1:N:180:GLY:HA3 | 1:N:381:VAL:O | 2.19 | 0.43 |
| 1:A:106:ALA:HB3 | 1:A:116:LEU:HD21 | 1.99 | 0.43 |
| 1:A:356:ALA:HB1 | 1:A:361:ASP:HB2 | 2.00 | 0.43 |
| 1:D:106:ALA:HB3 | 1:D:116:LEU:HD21 | 1.99 | 0.43 |
| 1:D:356:ALA:HB1 | 1:D:361:ASP:HB2 | 2.00 | 0.43 |
| 1:E:227:ILE:H | 1:E:251:ALA:HB1 | 1.84 | 0.43 |
| 1:G:213:VAL:O | 1:G:324:VAL:HA | 2.18 | 0.43 |
| 1:G:227:ILE:H | 1:G:251:ALA:HB1 | 1.84 | 0.43 |
| 1:G:345:ARG:HD3 | 1:G:345:ARG:HA | 1.96 | 0.43 |
| 1:I:34:LYS:HE2 | 1:I:458:CYS:HA | 2.01 | 0.43 |
| 1:I:182:GLY:O | 1:I:382:GLY:HA2 | 2.19 | 0.43 |
| 1:J:383:ALA:HB3 | 1:J:389:MET:N | 2.34 | 0.43 |
| 1:M:493:ILE:HG21 | 4:M:1527:ATP:C8 | 2.52 | 0.43 |
| 1:N:206:ASN:HB2 | 1:N:213:VAL:HB | 2.00 | 0.43 |
| 1:C:220:ILE:HD12 | 1:C:248:LEU:HD23 | 2.01 | 0.43 |
| 1:F:152:ALA:HB1 | 1:F:155:ASP:CA | 2.49 | 0.43 |
| 1:F:356:ALA:HB1 | 1:F:361:ASP:HB2 | 2.00 | 0.43 |
| 1:G:102:GLU:HB2 | 1:G:442:VAL:HG13 | 1.99 | 0.43 |
| 1:G:152:ALA:HB1 | 1:G:155:ASP:CA | 2.49 | 0.43 |
| 1:H:182:GLY:O | 1:H:382:GLY:HA2 | 2.19 | 0.43 |
| 1:I:34:LYS:HZ1 | 1:I:483:GLU:CD | 2.22 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:90:THR:HG22 | 1:I:94:VAL:HG23 | 2.01 | 0.43 |
| 1:I:102:GLU:HB2 | 1:I:442:VAL:HG13 | 2.01 | 0.43 |
| 1:I:417:VAL:HG13 | 1:I:476:TYR:O | 2.18 | 0.43 |
| 1:K:102:GLU:HB2 | 1:K:442:VAL:HG13 | 2.01 | 0.43 |
| 1:K:182:GLY:O | 1:K:382:GLY:HA2 | 2.19 | 0.43 |
| 1:K:213:VAL:HG13 | 1:K:325:ILE:HB | 2.01 | 0.43 |
| 1:K:455:VAL:HG11 | 1:K:465:VAL:HG21 | 2.01 | 0.43 |
| 1:L:90:THR:HG22 | 1:L:94:VAL:HG23 | 2.01 | 0.43 |
| 1:L:102:GLU:HB2 | 1:L:442:VAL:HG13 | 2.01 | 0.43 |
| 1:M:180:GLY:HA3 | 1:M:381:VAL:O | 2.19 | 0.43 |
| 1:M:440:ILE:O | 1:M:444:LEU:HG | 2.18 | 0.43 |
| 1:N:102:GLU:HB2 | 1:N:442:VAL:HG13 | 2.01 | 0.43 |
| 1:B:54:VAL:HG13 | 1:B:89:THR:HG21 | 1.99 | 0.43 |
| 1:D:183:LEU:C | 1:D:382:GLY:HA3 | 2.38 | 0.43 |
| 1:D:213:VAL:O | 1:D:324:VAL:HA | 2.18 | 0.43 |
| 1:D:227:ILE:H | 1:D:251:ALA:HB1 | 1.84 | 0.43 |
| 1:G:196:ASP:HA | 1:G:329:THR:HA | 2.00 | 0.43 |
| 1:H:180:GLY:HA3 | 1:H:381:VAL:O | 2.19 | 0.43 |
| 1:I:206:ASN:HB2 | 1:I:213:VAL:HB | 2.00 | 0.43 |
| 1:J:180:GLY:HA3 | 1:J:381:VAL:O | 2.19 | 0.43 |
| 1:J:206:ASN:HB2 | 1:J:213:VAL:HB | 2.00 | 0.43 |
| 1:K:31:LEU:HB3 | 1:K:90:THR:HG21 | 2.00 | 0.43 |
| 1:K:180:GLY:HA3 | 1:K:381:VAL:O | 2.19 | 0.43 |
| 1:K:293:ALA:HB2 | 1:K:300:VAL:CG2 | 2.49 | 0.43 |
| 1:L:293:ALA:HB2 | 1:L:300:VAL:CG2 | 2.49 | 0.43 |
| 1:L:383:ALA:HB3 | 1:L:389:MET:N | 2.34 | 0.43 |
| 1:M:213:VAL:HG13 | 1:M:325:ILE:HB | 2.01 | 0.43 |
| 1:N:182:GLY:O | 1:N:382:GLY:HA2 | 2.19 | 0.43 |
| 1:N:206:ASN:CB | 1:N:213:VAL:HA | 2.48 | 0.43 |
| 1:E:152:ALA:HB1 | 1:E:155:ASP:CA | 2.49 | 0.43 |
| 1:E:356:ALA:HB1 | 1:E:361:ASP:HB2 | 2.00 | 0.43 |
| 1:I:64:ASP:O | 1:I:68:ASN:HB2 | 2.19 | 0.43 |
| 1:I:180:GLY:HA3 | 1:I:381:VAL:O | 2.19 | 0.43 |
| 1:K:206:ASN:HB2 | 1:K:213:VAL:HB | 2.00 | 0.43 |
| 1:L:213:VAL:HG13 | 1:L:325:ILE:HB | 2.01 | 0.43 |
| 1:M:182:GLY:O | 1:M:382:GLY:HA2 | 2.19 | 0.43 |
| 1:A:480:ALA:O | 1:A:483:GLU:CG | 2.67 | 0.42 |
| 1:B:102:GLU:HB2 | 1:B:442:VAL:HG13 | 2.00 | 0.42 |
| 1:B:220:ILE:HD12 | 1:B:248:LEU:HD23 | 2.01 | 0.42 |
| 1:C:196:ASP:HA | 1:C:329:THR:HA | 2.01 | 0.42 |
| 1:C:480:ALA:O | 1:C:483:GLU:CG | 2.67 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:147:VAL:HG22 | 1:F:494:LEU:CD1 | 2.46 | 0.42 |
| 1:F:213:VAL:O | 1:F:324:VAL:HA | 2.18 | 0.42 |
| 1:H:206:ASN:HB2 | 1:H:213:VAL:HB | 2.00 | 0.42 |
| 1:H:213:VAL:HG13 | 1:H:325:ILE:HB | 2.01 | 0.42 |
| 1:J:293:ALA:HB2 | 1:J:300:VAL:CG2 | 2.49 | 0.42 |
| 1:K:256:GLY:O | 1:K:260:ALA:HB3 | 2.18 | 0.42 |
| 1:K:383:ALA:HB3 | 1:K:389:MET:N | 2.34 | 0.42 |
| 1:M:102:GLU:HB2 | 1:M:442:VAL:HG13 | 2.01 | 0.42 |
| 1:N:293:ALA:HB2 | 1:N:300:VAL:CG2 | 2.49 | 0.42 |
| 1:A:152:ALA:HB1 | 1:A:155:ASP:CA | 2.49 | 0.42 |
| 1:A:183:LEU:C | 1:A:382:GLY:HA3 | 2.38 | 0.42 |
| 1:B:152:ALA:HB1 | 1:B:155:ASP:CA | 2.49 | 0.42 |
| 1:C:183:LEU:C | 1:C:382:GLY:HA3 | 2.38 | 0.42 |
| 1:D:106:ALA:HB1 | 1:D:116:LEU:HD21 | 2.01 | 0.42 |
| 1:D:349:ILE:HB | 1:D:369:VAL:HG12 | 2.02 | 0.42 |
| 1:F:227:ILE:H | 1:F:251:ALA:HB1 | 1.84 | 0.42 |
| 1:H:64:ASP:O | 1:H:68:ASN:HB2 | 2.19 | 0.42 |
| 1:H:90:THR:HG22 | 1:H:94:VAL:HG23 | 2.01 | 0.42 |
| 1:I:293:ALA:HB2 | 1:I:300:VAL:CG2 | 2.49 | 0.42 |
| 1:J:256:GLY:O | 1:J:260:ALA:HB3 | 2.18 | 0.42 |
| 1:K:50:THR:HG1 | 1:K:51:LYS:N | 2.16 | 0.42 |
| 1:K:144:ILE:HG23 | 1:K:403:THR:HG21 | 2.01 | 0.42 |
| 1:L:34:LYS:HE2 | 1:L:458:CYS:HA | 2.01 | 0.42 |
| 1:L:182:GLY:O | 1:L:382:GLY:HA2 | 2.19 | 0.42 |
| 1:L:294:THR:HG21 | 1:L:345:ARG:HG3 | 2.01 | 0.42 |
| 1:C:106:ALA:HB1 | 1:C:116:LEU:HD21 | 2.01 | 0.42 |
| 1:C:152:ALA:HB1 | 1:C:155:ASP:O | 2.18 | 0.42 |
| 1:C:152:ALA:HB1 | 1:C:155:ASP:CA | 2.49 | 0.42 |
| 1:D:152:ALA:HB1 | 1:D:155:ASP:O | 2.18 | 0.42 |
| 1:D:220:ILE:HD12 | 1:D:248:LEU:HD23 | 2.01 | 0.42 |
| 1:D:480:ALA:O | 1:D:483:GLU:CG | 2.67 | 0.42 |
| 1:J:64:ASP:O | 1:J:68:ASN:HB2 | 2.18 | 0.42 |
| 1:K:23:LEU:O | 1:K:27:VAL:HG23 | 2.20 | 0.42 |
| 1:K:294:THR:HG21 | 1:K:345:ARG:HG3 | 2.01 | 0.42 |
| 1:K:412:VAL:HG22 | 1:K:495:ASP:O | 2.18 | 0.42 |
| 1:M:455:VAL:HG11 | 1:M:465:VAL:HG21 | 2.01 | 0.42 |
| 1:N:213:VAL:HG13 | 1:N:325:ILE:HB | 2.01 | 0.42 |
| 1:N:256:GLY:O | 1:N:260:ALA:HB3 | 2.18 | 0.42 |
| 1:B:15:LYS:HB3 | 1:B:66:PHE:HB3 | 2.02 | 0.42 |
| 1:B:106:ALA:HB3 | 1:B:116:LEU:HD21 | 1.99 | 0.42 |
| 1:B:227:ILE:H | 1:B:251:ALA:HB1 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:349:ILE:HB | 1:C:369:VAL:HG12 | 2.01 | 0.42 |
| 1:C:349:ILE:HG23 | 1:C:365:LEU:CD1 | 2.50 | 0.42 |
| 1:E:213:VAL:O | 1:E:324:VAL:HA | 2.18 | 0.42 |
| 1:E:349:ILE:HG23 | 1:E:365:LEU:CD1 | 2.50 | 0.42 |
| 1:G:356:ALA:HB1 | 1:G:361:ASP:HB2 | 2.00 | 0.42 |
| 3:I:1526:PO4:P | 4:I:1527:ATP:PG | 3.17 | 0.42 |
| 1:L:19:GLY:HA2 | 1:L:62:LEU:CD1 | 2.50 | 0.42 |
| 1:L:64:ASP:O | 1:L:68:ASN:HB2 | 2.20 | 0.42 |
| 1:B:152:ALA:HB1 | 1:B:155:ASP:O | 2.18 | 0.42 |
| 1:C:15:LYS:HB3 | 1:C:66:PHE:HB3 | 2.02 | 0.42 |
| 1:C:285:ARG:HG3 | 1:C:285:ARG:HH11 | 1.85 | 0.42 |
| 1:I:23:LEU:O | 1:I:27:VAL:HG23 | 2.20 | 0.42 |
| 1:J:182:GLY:O | 1:J:382:GLY:HA2 | 2.19 | 0.42 |
| 1:K:202:PRO:O | 1:K:205:ILE:HB | 2.20 | 0.42 |
| 1:M:293:ALA:HB2 | 1:M:300:VAL:CG2 | 2.49 | 0.42 |
| 1:N:90:THR:HG22 | 1:N:94:VAL:HG23 | 2.01 | 0.42 |
| 1:A:147:VAL:HG22 | 1:A:494:LEU:CD1 | 2.46 | 0.42 |
| 1:A:349:ILE:HB | 1:A:369:VAL:HG12 | 2.02 | 0.42 |
| 1:C:227:ILE:H | 1:C:251:ALA:HB1 | 1.84 | 0.42 |
| 1:D:152:ALA:HB1 | 1:D:155:ASP:CA | 2.49 | 0.42 |
| 1:D:349:ILE:HG23 | 1:D:365:LEU:CD1 | 2.49 | 0.42 |
| 1:E:349:ILE:HB | 1:E:369:VAL:HG12 | 2.02 | 0.42 |
| 1:F:138:CYS:SG | 1:F:407:VAL:HA | 2.60 | 0.42 |
| 1:F:206:ASN:ND2 | 1:F:214:GLU:H | 2.18 | 0.42 |
| 1:H:34:LYS:HZ1 | 1:H:483:GLU:CD | 2.22 | 0.42 |
| 1:I:383:ALA:HB3 | 1:I:389:MET:CA | 2.50 | 0.42 |
| 1:M:19:GLY:HA2 | 1:M:62:LEU:CD1 | 2.50 | 0.42 |
| 1:M:294:THR:HG21 | 1:M:345:ARG:HG3 | 2.02 | 0.42 |
| 1:B:19:GLY:HA2 | 1:B:62:LEU:CD1 | 2.50 | 0.42 |
| 1:B:480:ALA:O | 1:B:483:GLU:CG | 2.67 | 0.42 |
| 1:C:19:GLY:HA2 | 1:C:62:LEU:CD1 | 2.50 | 0.42 |
| 1:C:206:ASN:ND2 | 1:C:214:GLU:H | 2.18 | 0.42 |
| 1:C:378:VAL:HG11 | 1:C:380:LYS:HZ2 | 1.85 | 0.42 |
| 1:D:138:CYS:SG | 1:D:407:VAL:HA | 2.60 | 0.42 |
| 1:E:7:LYS:HB2 | 1:E:11:ASP:HB3 | 2.01 | 0.42 |
| 1:F:127:ALA:CB | 1:F:426:LEU:HD11 | 2.44 | 0.42 |
| 1:F:213:VAL:CG1 | 1:F:325:ILE:HB | 2.50 | 0.42 |
| 1:G:220:ILE:HD12 | 1:G:248:LEU:HD23 | 2.01 | 0.42 |
| 1:I:213:VAL:HG13 | 1:I:325:ILE:HB | 2.01 | 0.42 |
| 1:J:50:THR:HG1 | 1:J:51:LYS:N | 2.18 | 0.42 |
| 1:J:213:VAL:HG13 | 1:J:325:ILE:HB | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:268:ARG:HA | 1:J:268:ARG:NE | 2.35 | 0.42 |
| 1:K:19:GLY:HA2 | 1:K:62:LEU:CD1 | 2.50 | 0.42 |
| 1:L:180:GLY:HA3 | 1:L:381:VAL:O | 2.19 | 0.42 |
| 1:M:135:SER:CA | 1:M:412:VAL:HG12 | 2.45 | 0.42 |
| 1:N:23:LEU:O | 1:N:27:VAL:HG23 | 2.20 | 0.42 |
| 1:N:64:ASP:O | 1:N:68:ASN:HB2 | 2.19 | 0.42 |
| 1:A:50:THR:HG21 | 1:A:59:GLU:HB2 | 2.01 | 0.42 |
| 1:A:138:CYS:SG | 1:A:407:VAL:HA | 2.60 | 0.42 |
| 1:B:138:CYS:SG | 1:B:407:VAL:HA | 2.60 | 0.42 |
| 1:C:138:CYS:SG | 1:C:407:VAL:HA | 2.60 | 0.42 |
| 1:D:213:VAL:CG1 | 1:D:325:ILE:HB | 2.50 | 0.42 |
| 1:E:183:LEU:C | 1:E:382:GLY:HA3 | 2.38 | 0.42 |
| 1:F:7:LYS:HB2 | 1:F:11:ASP:HB3 | 2.02 | 0.42 |
| 1:G:19:GLY:HA2 | 1:G:62:LEU:CD1 | 2.50 | 0.42 |
| 1:G:213:VAL:CG1 | 1:G:325:ILE:HB | 2.50 | 0.42 |
| 1:H:293:ALA:HB2 | 1:H:300:VAL:CG2 | 2.49 | 0.42 |
| 1:H:383:ALA:HB3 | 1:H:389:MET:CA | 2.50 | 0.42 |
| 1:I:66:PHE:CZ | 1:I:522:THR:HG22 | 2.55 | 0.42 |
| 1:J:202:PRO:O | 1:J:205:ILE:HB | 2.20 | 0.42 |
| 1:K:268:ARG:NE | 1:K:268:ARG:HA | 2.35 | 0.42 |
| 1:L:23:LEU:O | 1:L:27:VAL:HG23 | 2.20 | 0.42 |
| 1:A:227:ILE:H | 1:A:251:ALA:HB1 | 1.84 | 0.42 |
| 1:A:285:ARG:HH11 | 1:A:285:ARG:HG3 | 1.85 | 0.42 |
| 1:B:183:LEU:C | 1:B:382:GLY:HA3 | 2.38 | 0.42 |
| 1:B:196:ASP:HA | 1:B:329:THR:HA | 2.00 | 0.42 |
| 1:D:15:LYS:HB3 | 1:D:66:PHE:HB3 | 2.02 | 0.42 |
| 1:E:106:ALA:HB1 | 1:E:116:LEU:HD21 | 2.01 | 0.42 |
| 1:E:213:VAL:CG1 | 1:E:325:ILE:HB | 2.50 | 0.42 |
| 1:F:220:ILE:HD12 | 1:F:248:LEU:HD23 | 2.01 | 0.42 |
| 1:G:50:THR:HG21 | 1:G:59:GLU:HB2 | 2.01 | 0.42 |
| 1:G:349:ILE:HG23 | 1:G:365:LEU:CD1 | 2.50 | 0.42 |
| 1:G:480:ALA:O | 1:G:483:GLU:CG | 2.67 | 0.42 |
| 1:J:294:THR:HG21 | 1:J:345:ARG:HG3 | 2.01 | 0.42 |
| 1:J:383:ALA:HB3 | 1:J:389:MET:CA | 2.50 | 0.42 |
| 1:L:202:PRO:O | 1:L:205:ILE:HB | 2.20 | 0.42 |
| 1:M:23:LEU:O | 1:M:27:VAL:HG23 | 2.20 | 0.42 |
| 4:M:1527:ATP:C4 | 4:M:1527:ATP:C8 | 3.07 | 0.42 |
| 1:A:15:LYS:HB3 | 1:A:66:PHE:HB3 | 2.02 | 0.42 |
| 1:A:19:GLY:HA2 | 1:A:62:LEU:CD1 | 2.50 | 0.42 |
| 1:A:196:ASP:HA | 1:A:329:THR:HA | 2.01 | 0.42 |
| 1:A:220:ILE:HD12 | 1:A:248:LEU:HD23 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:349:ILE:HG23 | 1:B:365:LEU:CD1 | 2.49 | 0.42 |
| 1:E:480:ALA:O | 1:E:483:GLU:CG | 2.67 | 0.42 |
| 1:F:349:ILE:HB | 1:F:369:VAL:HG12 | 2.02 | 0.42 |
| 1:G:294:THR:HG21 | 1:G:345:ARG:HG3 | 2.02 | 0.42 |
| 1:H:66:PHE:CZ | 1:H:522:THR:HG22 | 2.55 | 0.42 |
| 1:H:152:ALA:HB1 | 1:H:155:ASP:CA | 2.50 | 0.42 |
| 1:I:33:PRO:HG3 | 4:I:1527:ATP:C4 | 2.55 | 0.42 |
| 1:I:268:ARG:HA | 1:I:268:ARG:NE | 2.35 | 0.42 |
| 1:J:19:GLY:HA2 | 1:J:62:LEU:CD1 | 2.50 | 0.42 |
| 1:J:23:LEU:O | 1:J:27:VAL:HG23 | 2.20 | 0.42 |
| 1:J:66:PHE:CZ | 1:J:522:THR:HG22 | 2.55 | 0.42 |
| 1:M:152:ALA:HB1 | 1:M:155:ASP:CA | 2.50 | 0.42 |
| 1:B:106:ALA:HB1 | 1:B:116:LEU:HD21 | 2.01 | 0.41 |
| 1:B:294:THR:HG21 | 1:B:345:ARG:HG3 | 2.02 | 0.41 |
| 1:F:77:VAL:HG12 | 1:F:506:TYR:HB3 | 2.02 | 0.41 |
| 1:F:218:PRO:HG2 | 1:F:323:VAL:HG23 | 2.02 | 0.41 |
| 1:F:349:ILE:HG23 | 1:F:365:LEU:CD1 | 2.49 | 0.41 |
| 1:F:383:ALA:HB3 | 1:F:389:MET:N | 2.35 | 0.41 |
| 1:G:240:VAL:HA | 1:G:243:ALA:HB3 | 2.03 | 0.41 |
| 1:G:285:ARG:HG3 | 1:G:285:ARG:HH11 | 1.85 | 0.41 |
| 1:H:323:VAL:HG22 | 1:H:332:ILE:HA | 2.02 | 0.41 |
| 1:L:268:ARG:HA | 1:L:268:ARG:NE | 2.35 | 0.41 |
| 1:N:19:GLY:HA2 | 1:N:62:LEU:CD1 | 2.50 | 0.41 |
| 1:N:152:ALA:HB1 | 1:N:155:ASP:CA | 2.50 | 0.41 |
| 1:N:294:THR:HG21 | 1:N:345:ARG:HG3 | 2.02 | 0.41 |
| 1:N:323:VAL:HG22 | 1:N:332:ILE:HA | 2.02 | 0.41 |
| 1:B:50:THR:HG21 | 1:B:59:GLU:HB2 | 2.01 | 0.41 |
| 1:B:285:ARG:HG3 | 1:B:285:ARG:HH11 | 1.85 | 0.41 |
| 1:B:378:VAL:HG11 | 1:B:380:LYS:HZ2 | 1.85 | 0.41 |
| 1:C:218:PRO:HG2 | 1:C:323:VAL:HG23 | 2.02 | 0.41 |
| 1:D:19:GLY:HA2 | 1:D:62:LEU:CD1 | 2.50 | 0.41 |
| 1:D:218:PRO:HG2 | 1:D:323:VAL:HG23 | 2.02 | 0.41 |
| 1:E:199:TYR:CD2 | 1:E:327:LYS:HA | 2.56 | 0.41 |
| 1:F:19:GLY:HA2 | 1:F:62:LEU:CD1 | 2.50 | 0.41 |
| 1:F:50:THR:HG21 | 1:F:59:GLU:HB2 | 2.01 | 0.41 |
| 1:F:480:ALA:O | 1:F:483:GLU:CG | 2.67 | 0.41 |
| 1:G:349:ILE:HB | 1:G:369:VAL:HG12 | 2.02 | 0.41 |
| 1:G:383:ALA:HB3 | 1:G:389:MET:N | 2.35 | 0.41 |
| 1:I:323:VAL:HG22 | 1:I:332:ILE:HA | 2.02 | 0.41 |
| 1:K:383:ALA:HB3 | 1:K:389:MET:CA | 2.50 | 0.41 |
| 1:L:50:THR:HG1 | 1:L:51:LYS:N | 2.18 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:L:152:ALA:HB1 | 1:L:155:ASP:CA | 2.50 | 0.41 |
| 1:A:106:ALA:HB1 | 1:A:116:LEU:HD21 | 2.01 | 0.41 |
| 1:A:294:THR:HG21 | 1:A:345:ARG:HG3 | 2.03 | 0.41 |
| 1:A:349:ILE:HG23 | 1:A:365:LEU:CD1 | 2.49 | 0.41 |
| 1:B:51:LYS:HG2 | 1:B:52:ASP:H | 1.85 | 0.41 |
| 1:B:147:VAL:HG22 | 1:B:494:LEU:CD1 | 2.46 | 0.41 |
| 1:D:13:ARG:CG | 1:D:104:LEU:HD22 | 2.51 | 0.41 |
| 1:D:77:VAL:HG12 | 1:D:506:TYR:HB3 | 2.02 | 0.41 |
| 1:D:199:TYR:CD2 | 1:D:327:LYS:HA | 2.56 | 0.41 |
| 1:E:138:CYS:SG | 1:E:407:VAL:HA | 2.60 | 0.41 |
| 1:F:199:TYR:CD2 | 1:F:327:LYS:HA | 2.55 | 0.41 |
| 1:F:240:VAL:HA | 1:F:243:ALA:HB3 | 2.02 | 0.41 |
| 1:G:7:LYS:HB2 | 1:G:11:ASP:HB3 | 2.01 | 0.41 |
| 1:G:106:ALA:HB1 | 1:G:116:LEU:HD21 | 2.01 | 0.41 |
| 1:K:152:ALA:HB1 | 1:K:155:ASP:CA | 2.50 | 0.41 |
| 1:M:50:THR:HG1 | 1:M:51:LYS:N | 2.18 | 0.41 |
| 1:M:268:ARG:HA | 1:M:268:ARG:NE | 2.35 | 0.41 |
| 1:M:383:ALA:HB3 | 1:M:389:MET:CA | 2.50 | 0.41 |
| 1:N:50:THR:HG1 | 1:N:51:LYS:N | 2.18 | 0.41 |
| 1:N:383:ALA:HB3 | 1:N:389:MET:CA | 2.50 | 0.41 |
| 1:A:206:ASN:ND2 | 1:A:214:GLU:H | 2.18 | 0.41 |
| 1:A:213:VAL:CG1 | 1:A:325:ILE:HB | 2.50 | 0.41 |
| 1:A:240:VAL:HA | 1:A:243:ALA:HB3 | 2.02 | 0.41 |
| 1:C:13:ARG:CG | 1:C:104:LEU:HD22 | 2.51 | 0.41 |
| 1:C:199:TYR:CD2 | 1:C:327:LYS:HA | 2.56 | 0.41 |
| 1:C:294:THR:HG21 | 1:C:345:ARG:HG3 | 2.02 | 0.41 |
| 1:C:383:ALA:HB3 | 1:C:389:MET:N | 2.35 | 0.41 |
| 1:D:285:ARG:HG3 | 1:D:285:ARG:HH11 | 1.85 | 0.41 |
| 1:D:378:VAL:HG11 | 1:D:380:LYS:HZ2 | 1.84 | 0.41 |
| 1:E:218:PRO:HG2 | 1:E:323:VAL:HG23 | 2.03 | 0.41 |
| 1:F:13:ARG:CG | 1:F:104:LEU:HD22 | 2.51 | 0.41 |
| 1:F:294:THR:HG21 | 1:F:345:ARG:HG3 | 2.03 | 0.41 |
| 1:G:13:ARG:CG | 1:G:104:LEU:HD22 | 2.51 | 0.41 |
| 1:H:19:GLY:HA2 | 1:H:62:LEU:CD1 | 2.50 | 0.41 |
| 1:I:152:ALA:HB1 | 1:I:155:ASP:CA | 2.51 | 0.41 |
| 1:L:33:PRO:HG3 | 4:L:1527:ATP:C4 | 2.55 | 0.41 |
| 1:A:85:ALA:HB1 | 1:A:499:VAL:HA | 2.03 | 0.41 |
| 1:A:383:ALA:HB3 | 1:A:389:MET:N | 2.35 | 0.41 |
| 1:B:218:PRO:HG2 | 1:B:323:VAL:HG23 | 2.03 | 0.41 |
| 1:C:50:THR:HG21 | 1:C:59:GLU:HB2 | 2.01 | 0.41 |
| 1:C:51:LYS:HG2 | 1:C:52:ASP:H | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:77:VAL:HG12 | 1:C:506:TYR:HB3 | 2.02 | 0.41 |
| 1:D:7:LYS:HB2 | 1:D:11:ASP:HB3 | 2.02 | 0.41 |
| 1:D:50:THR:HG21 | 1:D:59:GLU:HB2 | 2.01 | 0.41 |
| 1:D:206:ASN:ND2 | 1:D:214:GLU:H | 2.18 | 0.41 |
| 1:E:50:THR:HG21 | 1:E:59:GLU:HB2 | 2.01 | 0.41 |
| 1:E:77:VAL:HG12 | 1:E:506:TYR:HB3 | 2.03 | 0.41 |
| 1:E:220:ILE:HD12 | 1:E:248:LEU:HD23 | 2.01 | 0.41 |
| 1:E:285:ARG:HG3 | 1:E:285:ARG:HH11 | 1.85 | 0.41 |
| 1:F:183:LEU:C | 1:F:382:GLY:HA3 | 2.38 | 0.41 |
| 1:G:77:VAL:HG12 | 1:G:506:TYR:HB3 | 2.02 | 0.41 |
| 1:G:206:ASN:ND2 | 1:G:214:GLU:H | 2.18 | 0.41 |
| 1:G:218:PRO:HG2 | 1:G:323:VAL:HG23 | 2.03 | 0.41 |
| 1:H:268:ARG:HA | 1:H:268:ARG:NE | 2.35 | 0.41 |
| 1:I:205:ILE:HD13 | 1:I:205:ILE:HA | 1.91 | 0.41 |
| 1:K:117:LYS:HZ2 | 1:K:121:ASP:CG | 2.24 | 0.41 |
| 1:L:383:ALA:HB3 | 1:L:389:MET:CA | 2.50 | 0.41 |
| 1:M:117:LYS:HZ2 | 1:M:121:ASP:CG | 2.24 | 0.41 |
| 1:B:213:VAL:CG1 | 1:B:325:ILE:HB | 2.50 | 0.41 |
| 1:B:383:ALA:HB3 | 1:B:389:MET:N | 2.35 | 0.41 |
| 1:C:213:VAL:CG1 | 1:C:325:ILE:HB | 2.50 | 0.41 |
| 1:D:51:LYS:HG2 | 1:D:52:ASP:H | 1.85 | 0.41 |
| 1:E:13:ARG:CG | 1:E:104:LEU:HD22 | 2.51 | 0.41 |
| 1:G:15:LYS:HB3 | 1:G:66:PHE:HB3 | 2.01 | 0.41 |
| 1:G:147:VAL:HG22 | 1:G:494:LEU:CD1 | 2.46 | 0.41 |
| 1:H:202:PRO:O | 1:H:205:ILE:HB | 2.20 | 0.41 |
| 1:J:126:ALA:HB3 | 1:J:426:LEU:HD22 | 2.03 | 0.41 |
| 1:K:34:LYS:HZ1 | 1:K:483:GLU:CD | 2.23 | 0.41 |
| 1:M:66:PHE:CZ | 1:M:522:THR:HG22 | 2.55 | 0.41 |
| 1:M:202:PRO:O | 1:M:205:ILE:HB | 2.20 | 0.41 |
| 1:A:51:LYS:HG2 | 1:A:52:ASP:H | 1.85 | 0.41 |
| 1:A:218:PRO:HG2 | 1:A:323:VAL:HG23 | 2.03 | 0.41 |
| 1:B:349:ILE:HB | 1:B:369:VAL:HG12 | 2.01 | 0.41 |
| 1:C:85:ALA:HB1 | 1:C:499:VAL:HA | 2.03 | 0.41 |
| 1:F:106:ALA:HB1 | 1:F:116:LEU:HD21 | 2.01 | 0.41 |
| 1:G:383:ALA:HB3 | 1:G:389:MET:CA | 2.51 | 0.41 |
| 1:I:19:GLY:HA2 | 1:I:62:LEU:CD1 | 2.50 | 0.41 |
| 1:I:50:THR:HG1 | 1:I:51:LYS:N | 2.18 | 0.41 |
| 1:I:294:THR:HG21 | 1:I:345:ARG:HG3 | 2.02 | 0.41 |
| 1:J:152:ALA:HB1 | 1:J:155:ASP:CA | 2.50 | 0.41 |
| 1:J:323:VAL:HG22 | 1:J:332:ILE:HA | 2.02 | 0.41 |
| 1:K:126:ALA:HB3 | 1:K:426:LEU:HD22 | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:323:VAL:HG22 | 1:M:332:ILE:HA | 2.02 | 0.41 |
| 1:N:66:PHE:CZ | 1:N:522:THR:HG22 | 2.55 | 0.41 |
| 3:N:1526:PO4:P | 4:N:1527:ATP:PG | 3.19 | 0.41 |
| 1:A:166:MET:HA | 1:A:175:ILE:HD11 | 2.03 | 0.41 |
| 1:A:383:ALA:HB3 | 1:A:389:MET:CA | 2.51 | 0.41 |
| 1:B:199:TYR:CD2 | 1:B:327:LYS:HA | 2.55 | 0.41 |
| 1:B:383:ALA:HB3 | 1:B:389:MET:CA | 2.51 | 0.41 |
| 1:D:85:ALA:HB1 | 1:D:499:VAL:HA | 2.03 | 0.41 |
| 1:D:294:THR:HG21 | 1:D:345:ARG:HG3 | 2.02 | 0.41 |
| 1:E:147:VAL:HG22 | 1:E:494:LEU:CD1 | 2.46 | 0.41 |
| 1:E:206:ASN:ND2 | 1:E:214:GLU:H | 2.18 | 0.41 |
| 1:E:294:THR:HG21 | 1:E:345:ARG:HG3 | 2.03 | 0.41 |
| 1:F:15:LYS:HB3 | 1:F:66:PHE:HB3 | 2.01 | 0.41 |
| 1:F:85:ALA:O | 1:F:499:VAL:HG12 | 2.21 | 0.41 |
| 1:F:383:ALA:HB3 | 1:F:389:MET:CA | 2.51 | 0.41 |
| 1:G:138:CYS:SG | 1:G:407:VAL:HA | 2.60 | 0.41 |
| 1:H:23:LEU:O | 1:H:27:VAL:HG23 | 2.20 | 0.41 |
| 1:H:281:PHE:HA | 1:H:285:ARG:HB2 | 2.03 | 0.41 |
| 1:I:77:VAL:HG12 | 1:I:506:TYR:HB3 | 2.03 | 0.41 |
| 1:A:206:ASN:HB2 | 1:A:213:VAL:CA | 2.49 | 0.41 |
| 1:B:13:ARG:CG | 1:B:104:LEU:HD22 | 2.51 | 0.41 |
| 1:B:166:MET:HA | 1:B:175:ILE:HD11 | 2.03 | 0.41 |
| 1:B:206:ASN:ND2 | 1:B:214:GLU:H | 2.18 | 0.41 |
| 1:E:19:GLY:HA2 | 1:E:62:LEU:CD1 | 2.50 | 0.41 |
| 1:E:51:LYS:HG2 | 1:E:52:ASP:H | 1.85 | 0.41 |
| 1:E:85:ALA:O | 1:E:499:VAL:HG12 | 2.21 | 0.41 |
| 1:E:383:ALA:HB3 | 1:E:389:MET:N | 2.36 | 0.41 |
| 3:F:1527:PO4:P | 4:F:1528:ATP:PG | 3.19 | 0.41 |
| 1:G:199:TYR:CD2 | 1:G:327:LYS:HA | 2.56 | 0.41 |
| 1:H:294:THR:HG21 | 1:H:345:ARG:HG3 | 2.02 | 0.41 |
| 3:H:1526:PO4:P | 4:H:1527:ATP:PG | 3.19 | 0.41 |
| 1:I:126:ALA:HB3 | 1:I:426:LEU:HD22 | 2.03 | 0.41 |
| 1:I:202:PRO:O | 1:I:205:ILE:HB | 2.20 | 0.41 |
| 1:J:77:VAL:HG12 | 1:J:506:TYR:HB3 | 2.03 | 0.41 |
| 1:L:281:PHE:HA | 1:L:285:ARG:HB2 | 2.03 | 0.41 |
| 1:M:281:PHE:HA | 1:M:285:ARG:HB2 | 2.03 | 0.41 |
| 1:N:268:ARG:HA | 1:N:268:ARG:NE | 2.35 | 0.41 |
| 1:N:281:PHE:HA | 1:N:285:ARG:HB2 | 2.03 | 0.41 |
| 1:A:13:ARG:CG | 1:A:104:LEU:HD22 | 2.51 | 0.41 |
| 1:A:197:ARG:HD2 | 1:A:277:LYS:HB2 | 2.03 | 0.41 |
| 1:B:7:LYS:HB2 | 1:B:11:ASP:HB3 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:206:ASN:HB2 | 1:B:213:VAL:CA | 2.49 | 0.41 |
| 1:B:240:VAL:HA | 1:B:243:ALA:HB3 | 2.02 | 0.41 |
| 1:B:426:LEU:HB2 | 1:B:444:LEU:CD2 | 2.51 | 0.41 |
| 3:B:1527:PO4:P | 4:B:1528:ATP:PG | 3.19 | 0.41 |
| 1:C:166:MET:HA | 1:C:175:ILE:HD11 | 2.03 | 0.41 |
| 1:D:197:ARG:HD2 | 1:D:277:LYS:HB2 | 2.03 | 0.41 |
| 1:E:197:ARG:HD2 | 1:E:277:LYS:HB2 | 2.03 | 0.41 |
| 1:F:285:ARG:HH11 | 1:F:285:ARG:HG3 | 1.85 | 0.41 |
| 1:G:197:ARG:HD2 | 1:G:277:LYS:HB2 | 2.03 | 0.41 |
| 1:G:378:VAL:HG11 | 1:G:380:LYS:HZ2 | 1.85 | 0.41 |
| 1:H:77:VAL:HG12 | 1:H:506:TYR:HB3 | 2.03 | 0.41 |
| 1:L:66:PHE:CZ | 1:L:522:THR:HG22 | 2.55 | 0.41 |
| 1:L:126:ALA:HB3 | 1:L:426:LEU:HD22 | 2.03 | 0.41 |
| 1:M:205:ILE:HG23 | 1:M:211:GLY:HA2 | 2.03 | 0.41 |
| 1:N:77:VAL:HG12 | 1:N:506:TYR:HB3 | 2.03 | 0.41 |
| 1:A:378:VAL:HG11 | 1:A:380:LYS:HZ2 | 1.85 | 0.40 |
| 1:B:77:VAL:HG12 | 1:B:506:TYR:HB3 | 2.03 | 0.40 |
| 1:B:85:ALA:O | 1:B:499:VAL:HG12 | 2.21 | 0.40 |
| 1:B:197:ARG:HD2 | 1:B:277:LYS:HB2 | 2.03 | 0.40 |
| 1:C:197:ARG:HD2 | 1:C:277:LYS:HB2 | 2.03 | 0.40 |
| 1:C:226:LYS:HA | 1:C:252:GLU:H | 1.86 | 0.40 |
| 3:C:1527:PO4:P | 4:C:1528:ATP:PG | 3.19 | 0.40 |
| 1:I:281:PHE:HA | 1:I:285:ARG:HB2 | 2.03 | 0.40 |
| 1:L:323:VAL:HG22 | 1:L:332:ILE:HA | 2.02 | 0.40 |
| 1:A:199:TYR:CD2 | 1:A:327:LYS:HA | 2.56 | 0.40 |
| 3:A:1527:PO4:P | 4:A:1528:ATP:PG | 3.19 | 0.40 |
| 1:E:15:LYS:HB3 | 1:E:66:PHE:HB3 | 2.02 | 0.40 |
| 1:F:197:ARG:HD2 | 1:F:277:LYS:HB2 | 2.03 | 0.40 |
| 1:J:117:LYS:HZ2 | 1:J:121:ASP:CG | 2.25 | 0.40 |
| 1:K:66:PHE:CZ | 1:K:522:THR:HG22 | 2.55 | 0.40 |
| 1:K:323:VAL:HG22 | 1:K:332:ILE:HA | 2.02 | 0.40 |
| 1:N:197:ARG:HD3 | 1:N:197:ARG:HA | 1.95 | 0.40 |
| 1:A:7:LYS:HB2 | 1:A:11:ASP:HB3 | 2.01 | 0.40 |
| 1:C:7:LYS:HB2 | 1:C:11:ASP:HB3 | 2.02 | 0.40 |
| 1:C:383:ALA:HB3 | 1:C:389:MET:CA | 2.51 | 0.40 |
| 1:C:426:LEU:HB2 | 1:C:444:LEU:CD2 | 2.52 | 0.40 |
| 1:D:383:ALA:HB3 | 1:D:389:MET:CA | 2.51 | 0.40 |
| 1:D:383:ALA:HB3 | 1:D:389:MET:N | 2.35 | 0.40 |
| 3:D:1527:PO4:P | 4:D:1528:ATP:PG | 3.19 | 0.40 |
| 1:E:383:ALA:HB3 | 1:E:389:MET:CA | 2.51 | 0.40 |
| 1:F:426:LEU:HB2 | 1:F:444:LEU:CD2 | 2.52 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:51:LYS:HG2 | 1:G:52:ASP:H | 1.85 | 0.40 |
| 1:J:205:ILE:HG23 | 1:J:211:GLY:HA2 | 2.04 | 0.40 |
| 1:N:205:ILE:HG23 | 1:N:211:GLY:HA2 | 2.04 | 0.40 |
| 1:A:77:VAL:HG12 | 1:A:506:TYR:HB3 | 2.03 | 0.40 |
| 1:H:50:THR:HG1 | 1:H:51:LYS:N | 2.18 | 0.40 |
| 1:H:205:ILE:HG23 | 1:H:211:GLY:HA2 | 2.03 | 0.40 |
| 1:I:205:ILE:HG23 | 1:I:211:GLY:HA2 | 2.03 | 0.40 |
| 1:J:33:PRO:HG3 | 4:J:1527:ATP:C4 | 2.57 | 0.40 |
| 1:K:205:ILE:HG23 | 1:K:211:GLY:HA2 | 2.03 | 0.40 |
| 1:K:281:PHE:HA | 1:K:285:ARG:HB2 | 2.03 | 0.40 |
| 1:L:206:ASN:HD22 | 1:L:214:GLU:H | 1.70 | 0.40 |
| 1:M:206:ASN:HD22 | 1:M:214:GLU:H | 1.70 | 0.40 |
| 1:A:19:GLY:HA2 | 1:A:62:LEU:HD13 | 2.04 | 0.40 |
| 1:J:166:MET:HA | 1:J:175:ILE:HD11 | 2.04 | 0.40 |
| 1:K:166:MET:HA | 1:K:175:ILE:HD11 | 2.04 | 0.40 |
| 1:L:231:ARG:O | 1:L:235:PRO:HD2 | 2.22 | 0.40 |
| 1:M:85:ALA:HB1 | 1:M:499:VAL:HA | 2.02 | 0.40 |
| 1:N:206:ASN:HD22 | 1:N:214:GLU:H | 1.70 | 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 | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | B | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | C | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | D | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | E | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | F | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|---------|----------|-------------|-----|
| 1 | G | 522/548 (95%) | 518 (99%) | 2 (0%) | 2 (0%) | 34 | 72 |
| 1 | H | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | I | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | J | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | K | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | L | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | M | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| 1 | N | 518/548 (94%) | 513 (99%) | 5 (1%) | 0 | 100 | 100 |
| All | All | 7280/7672 (95%) | 7217 (99%) | 49 (1%) | 14 (0%) | 50 | 81 |

All (14) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 243 | ALA |
| 1 | B | 243 | ALA |
| 1 | C | 243 | ALA |
| 1 | D | 243 | ALA |
| 1 | E | 243 | ALA |
| 1 | F | 243 | ALA |
| 1 | G | 243 | ALA |
| 1 | A | 52 | ASP |
| 1 | B | 52 | ASP |
| 1 | C | 52 | ASP |
| 1 | D | 52 | ASP |
| 1 | E | 52 | ASP |
| 1 | F | 52 | ASP |
| 1 | G | 52 | ASP |

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 | 402/414 (97%) | 358 (89%) | 44 (11%) | 6 | 23 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|------------|----------|-------------|----|
| 1 | B | 402/414 (97%) | 358 (89%) | 44 (11%) | 6 | 23 |
| 1 | C | 402/414 (97%) | 359 (89%) | 43 (11%) | 6 | 23 |
| 1 | D | 402/414 (97%) | 357 (89%) | 45 (11%) | 6 | 22 |
| 1 | E | 402/414 (97%) | 359 (89%) | 43 (11%) | 6 | 23 |
| 1 | F | 402/414 (97%) | 359 (89%) | 43 (11%) | 6 | 23 |
| 1 | G | 402/414 (97%) | 359 (89%) | 43 (11%) | 6 | 23 |
| 1 | H | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | I | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | J | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | K | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | L | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | M | 402/414 (97%) | 370 (92%) | 32 (8%) | 12 | 35 |
| 1 | N | 402/414 (97%) | 369 (92%) | 33 (8%) | 11 | 34 |
| All | All | 5628/5796 (97%) | 5098 (91%) | 530 (9%) | 12 | 28 |

All (530) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 7 | LYS |
| 1 | A | 25 | ASP |
| 1 | A | 31 | LEU |
| 1 | A | 40 | LEU |
| 1 | A | 52 | ASP |
| 1 | A | 63 | GLU |
| 1 | A | 65 | LYS |
| 1 | A | 79 | SER |
| 1 | A | 82 | ASN |
| 1 | A | 89 | THR |
| 1 | A | 115 | ASP |
| 1 | A | 136 | VAL |
| 1 | A | 142 | LYS |
| 1 | A | 156 | GLU |
| 1 | A | 168 | LYS |
| 1 | A | 171 | LYS |
| 1 | A | 205 | ILE |
| 1 | A | 207 | LYS |
| 1 | A | 213 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 214 | GLU |
| 1 | A | 219 | PHE |
| 1 | A | 231 | ARG |
| 1 | A | 238 | GLU |
| 1 | A | 242 | LYS |
| 1 | A | 245 | LYS |
| 1 | A | 246 | PRO |
| 1 | A | 257 | GLU |
| 1 | A | 268 | ARG |
| 1 | A | 270 | ILE |
| 1 | A | 272 | LYS |
| 1 | A | 290 | GLN |
| 1 | A | 327 | LYS |
| 1 | A | 328 | ASP |
| 1 | A | 334 | ASP |
| 1 | A | 350 | ARG |
| 1 | A | 358 | SER |
| 1 | A | 421 | ARG |
| 1 | A | 430 | ARG |
| 1 | A | 435 | ASP |
| 1 | A | 460 | GLU |
| 1 | A | 484 | GLU |
| 1 | A | 494 | LEU |
| 1 | A | 504 | LEU |
| 1 | A | 518 | GLU |
| 1 | B | 7 | LYS |
| 1 | B | 25 | ASP |
| 1 | B | 31 | LEU |
| 1 | B | 40 | LEU |
| 1 | B | 52 | ASP |
| 1 | B | 63 | GLU |
| 1 | B | 65 | LYS |
| 1 | B | 79 | SER |
| 1 | B | 82 | ASN |
| 1 | B | 89 | THR |
| 1 | B | 115 | ASP |
| 1 | B | 136 | VAL |
| 1 | B | 142 | LYS |
| 1 | B | 156 | GLU |
| 1 | B | 168 | LYS |
| 1 | B | 171 | LYS |
| 1 | B | 205 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 207 | LYS |
| 1 | B | 213 | VAL |
| 1 | B | 214 | GLU |
| 1 | B | 219 | PHE |
| 1 | B | 231 | ARG |
| 1 | B | 238 | GLU |
| 1 | B | 242 | LYS |
| 1 | B | 245 | LYS |
| 1 | B | 246 | PRO |
| 1 | B | 257 | GLU |
| 1 | B | 268 | ARG |
| 1 | B | 270 | ILE |
| 1 | B | 290 | GLN |
| 1 | B | 303 | GLU |
| 1 | B | 327 | LYS |
| 1 | B | 328 | ASP |
| 1 | B | 334 | ASP |
| 1 | B | 350 | ARG |
| 1 | B | 358 | SER |
| 1 | B | 421 | ARG |
| 1 | B | 430 | ARG |
| 1 | B | 435 | ASP |
| 1 | B | 460 | GLU |
| 1 | B | 484 | GLU |
| 1 | B | 494 | LEU |
| 1 | B | 504 | LEU |
| 1 | B | 518 | GLU |
| 1 | C | 7 | LYS |
| 1 | C | 25 | ASP |
| 1 | C | 31 | LEU |
| 1 | C | 40 | LEU |
| 1 | C | 52 | ASP |
| 1 | C | 63 | GLU |
| 1 | C | 65 | LYS |
| 1 | C | 79 | SER |
| 1 | C | 82 | ASN |
| 1 | C | 89 | THR |
| 1 | C | 115 | ASP |
| 1 | C | 136 | VAL |
| 1 | C | 142 | LYS |
| 1 | C | 156 | GLU |
| 1 | C | 168 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 171 | LYS |
| 1 | C | 205 | ILE |
| 1 | C | 207 | LYS |
| 1 | C | 213 | VAL |
| 1 | C | 214 | GLU |
| 1 | C | 219 | PHE |
| 1 | C | 231 | ARG |
| 1 | C | 238 | GLU |
| 1 | C | 242 | LYS |
| 1 | C | 245 | LYS |
| 1 | C | 246 | PRO |
| 1 | C | 257 | GLU |
| 1 | C | 268 | ARG |
| 1 | C | 270 | ILE |
| 1 | C | 290 | GLN |
| 1 | C | 327 | LYS |
| 1 | C | 328 | ASP |
| 1 | C | 334 | ASP |
| 1 | C | 350 | ARG |
| 1 | C | 358 | SER |
| 1 | C | 421 | ARG |
| 1 | C | 430 | ARG |
| 1 | C | 435 | ASP |
| 1 | C | 460 | GLU |
| 1 | C | 484 | GLU |
| 1 | C | 494 | LEU |
| 1 | C | 504 | LEU |
| 1 | C | 518 | GLU |
| 1 | D | 7 | LYS |
| 1 | D | 25 | ASP |
| 1 | D | 31 | LEU |
| 1 | D | 40 | LEU |
| 1 | D | 52 | ASP |
| 1 | D | 63 | GLU |
| 1 | D | 65 | LYS |
| 1 | D | 79 | SER |
| 1 | D | 82 | ASN |
| 1 | D | 89 | THR |
| 1 | D | 115 | ASP |
| 1 | D | 136 | VAL |
| 1 | D | 142 | LYS |
| 1 | D | 156 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 168 | LYS |
| 1 | D | 171 | LYS |
| 1 | D | 205 | ILE |
| 1 | D | 207 | LYS |
| 1 | D | 213 | VAL |
| 1 | D | 214 | GLU |
| 1 | D | 219 | PHE |
| 1 | D | 231 | ARG |
| 1 | D | 238 | GLU |
| 1 | D | 242 | LYS |
| 1 | D | 245 | LYS |
| 1 | D | 246 | PRO |
| 1 | D | 257 | GLU |
| 1 | D | 268 | ARG |
| 1 | D | 270 | ILE |
| 1 | D | 272 | LYS |
| 1 | D | 290 | GLN |
| 1 | D | 303 | GLU |
| 1 | D | 327 | LYS |
| 1 | D | 328 | ASP |
| 1 | D | 334 | ASP |
| 1 | D | 350 | ARG |
| 1 | D | 358 | SER |
| 1 | D | 421 | ARG |
| 1 | D | 430 | ARG |
| 1 | D | 435 | ASP |
| 1 | D | 460 | GLU |
| 1 | D | 484 | GLU |
| 1 | D | 494 | LEU |
| 1 | D | 504 | LEU |
| 1 | D | 518 | GLU |
| 1 | E | 7 | LYS |
| 1 | E | 25 | ASP |
| 1 | E | 31 | LEU |
| 1 | E | 40 | LEU |
| 1 | E | 52 | ASP |
| 1 | E | 63 | GLU |
| 1 | E | 65 | LYS |
| 1 | E | 79 | SER |
| 1 | E | 82 | ASN |
| 1 | E | 89 | THR |
| 1 | E | 115 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | E | 136 | VAL |
| 1 | E | 142 | LYS |
| 1 | E | 156 | GLU |
| 1 | E | 168 | LYS |
| 1 | E | 171 | LYS |
| 1 | E | 205 | ILE |
| 1 | E | 207 | LYS |
| 1 | E | 213 | VAL |
| 1 | E | 214 | GLU |
| 1 | E | 219 | PHE |
| 1 | E | 231 | ARG |
| 1 | E | 238 | GLU |
| 1 | E | 242 | LYS |
| 1 | E | 245 | LYS |
| 1 | E | 246 | PRO |
| 1 | E | 257 | GLU |
| 1 | E | 268 | ARG |
| 1 | E | 270 | ILE |
| 1 | E | 290 | GLN |
| 1 | E | 327 | LYS |
| 1 | E | 328 | ASP |
| 1 | E | 334 | ASP |
| 1 | E | 350 | ARG |
| 1 | E | 358 | SER |
| 1 | E | 421 | ARG |
| 1 | E | 430 | ARG |
| 1 | E | 435 | ASP |
| 1 | E | 460 | GLU |
| 1 | E | 484 | GLU |
| 1 | E | 494 | LEU |
| 1 | E | 504 | LEU |
| 1 | E | 518 | GLU |
| 1 | F | 7 | LYS |
| 1 | F | 25 | ASP |
| 1 | F | 31 | LEU |
| 1 | F | 40 | LEU |
| 1 | F | 52 | ASP |
| 1 | F | 63 | GLU |
| 1 | F | 65 | LYS |
| 1 | F | 79 | SER |
| 1 | F | 82 | ASN |
| 1 | F | 89 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | F | 115 | ASP |
| 1 | F | 136 | VAL |
| 1 | F | 142 | LYS |
| 1 | F | 156 | GLU |
| 1 | F | 168 | LYS |
| 1 | F | 171 | LYS |
| 1 | F | 205 | ILE |
| 1 | F | 207 | LYS |
| 1 | F | 213 | VAL |
| 1 | F | 214 | GLU |
| 1 | F | 219 | PHE |
| 1 | F | 231 | ARG |
| 1 | F | 238 | GLU |
| 1 | F | 242 | LYS |
| 1 | F | 245 | LYS |
| 1 | F | 246 | PRO |
| 1 | F | 257 | GLU |
| 1 | F | 268 | ARG |
| 1 | F | 270 | ILE |
| 1 | F | 290 | GLN |
| 1 | F | 327 | LYS |
| 1 | F | 328 | ASP |
| 1 | F | 334 | ASP |
| 1 | F | 350 | ARG |
| 1 | F | 358 | SER |
| 1 | F | 421 | ARG |
| 1 | F | 430 | ARG |
| 1 | F | 435 | ASP |
| 1 | F | 460 | GLU |
| 1 | F | 484 | GLU |
| 1 | F | 494 | LEU |
| 1 | F | 504 | LEU |
| 1 | F | 518 | GLU |
| 1 | G | 7 | LYS |
| 1 | G | 25 | ASP |
| 1 | G | 31 | LEU |
| 1 | G | 40 | LEU |
| 1 | G | 52 | ASP |
| 1 | G | 63 | GLU |
| 1 | G | 65 | LYS |
| 1 | G | 79 | SER |
| 1 | G | 82 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | G | 89 | THR |
| 1 | G | 115 | ASP |
| 1 | G | 136 | VAL |
| 1 | G | 142 | LYS |
| 1 | G | 156 | GLU |
| 1 | G | 168 | LYS |
| 1 | G | 171 | LYS |
| 1 | G | 205 | ILE |
| 1 | G | 207 | LYS |
| 1 | G | 213 | VAL |
| 1 | G | 214 | GLU |
| 1 | G | 219 | PHE |
| 1 | G | 231 | ARG |
| 1 | G | 238 | GLU |
| 1 | G | 242 | LYS |
| 1 | G | 245 | LYS |
| 1 | G | 246 | PRO |
| 1 | G | 257 | GLU |
| 1 | G | 268 | ARG |
| 1 | G | 270 | ILE |
| 1 | G | 290 | GLN |
| 1 | G | 327 | LYS |
| 1 | G | 328 | ASP |
| 1 | G | 334 | ASP |
| 1 | G | 350 | ARG |
| 1 | G | 358 | SER |
| 1 | G | 421 | ARG |
| 1 | G | 430 | ARG |
| 1 | G | 435 | ASP |
| 1 | G | 460 | GLU |
| 1 | G | 484 | GLU |
| 1 | G | 494 | LEU |
| 1 | G | 504 | LEU |
| 1 | G | 518 | GLU |
| 1 | H | 4 | LYS |
| 1 | H | 25 | ASP |
| 1 | H | 31 | LEU |
| 1 | H | 37 | ASN |
| 1 | H | 50 | THR |
| 1 | H | 55 | SER |
| 1 | H | 115 | ASP |
| 1 | H | 130 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | H | 142 | LYS |
| 1 | H | 156 | GLU |
| 1 | H | 168 | LYS |
| 1 | H | 169 | VAL |
| 1 | H | 171 | LYS |
| 1 | H | 190 | VAL |
| 1 | H | 207 | LYS |
| 1 | H | 213 | VAL |
| 1 | H | 228 | SER |
| 1 | H | 253 | ASP |
| 1 | H | 254 | VAL |
| 1 | H | 290 | GLN |
| 1 | H | 295 | LEU |
| 1 | H | 327 | LYS |
| 1 | H | 328 | ASP |
| 1 | H | 334 | ASP |
| 1 | H | 350 | ARG |
| 1 | H | 358 | SER |
| 1 | H | 421 | ARG |
| 1 | H | 473 | ASP |
| 1 | H | 484 | GLU |
| 1 | H | 504 | LEU |
| 1 | H | 520 | MET |
| 1 | H | 523 | ASP |
| 1 | I | 4 | LYS |
| 1 | I | 25 | ASP |
| 1 | I | 31 | LEU |
| 1 | I | 37 | ASN |
| 1 | I | 50 | THR |
| 1 | I | 55 | SER |
| 1 | I | 115 | ASP |
| 1 | I | 130 | GLU |
| 1 | I | 142 | LYS |
| 1 | I | 156 | GLU |
| 1 | I | 168 | LYS |
| 1 | I | 169 | VAL |
| 1 | I | 171 | LYS |
| 1 | I | 190 | VAL |
| 1 | I | 207 | LYS |
| 1 | I | 213 | VAL |
| 1 | I | 228 | SER |
| 1 | I | 253 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | I | 254 | VAL |
| 1 | I | 290 | GLN |
| 1 | I | 295 | LEU |
| 1 | I | 327 | LYS |
| 1 | I | 328 | ASP |
| 1 | I | 334 | ASP |
| 1 | I | 350 | ARG |
| 1 | I | 358 | SER |
| 1 | I | 421 | ARG |
| 1 | I | 473 | ASP |
| 1 | I | 484 | GLU |
| 1 | I | 504 | LEU |
| 1 | I | 520 | MET |
| 1 | I | 523 | ASP |
| 1 | J | 4 | LYS |
| 1 | J | 25 | ASP |
| 1 | J | 31 | LEU |
| 1 | J | 37 | ASN |
| 1 | J | 50 | THR |
| 1 | J | 55 | SER |
| 1 | J | 115 | ASP |
| 1 | J | 130 | GLU |
| 1 | J | 142 | LYS |
| 1 | J | 156 | GLU |
| 1 | J | 168 | LYS |
| 1 | J | 169 | VAL |
| 1 | J | 171 | LYS |
| 1 | J | 190 | VAL |
| 1 | J | 207 | LYS |
| 1 | J | 213 | VAL |
| 1 | J | 228 | SER |
| 1 | J | 253 | ASP |
| 1 | J | 254 | VAL |
| 1 | J | 290 | GLN |
| 1 | J | 295 | LEU |
| 1 | J | 327 | LYS |
| 1 | J | 328 | ASP |
| 1 | J | 334 | ASP |
| 1 | J | 350 | ARG |
| 1 | J | 358 | SER |
| 1 | J | 421 | ARG |
| 1 | J | 473 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | J | 484 | GLU |
| 1 | J | 504 | LEU |
| 1 | J | 520 | MET |
| 1 | J | 523 | ASP |
| 1 | K | 4 | LYS |
| 1 | K | 25 | ASP |
| 1 | K | 31 | LEU |
| 1 | K | 37 | ASN |
| 1 | K | 50 | THR |
| 1 | K | 55 | SER |
| 1 | K | 115 | ASP |
| 1 | K | 130 | GLU |
| 1 | K | 142 | LYS |
| 1 | K | 156 | GLU |
| 1 | K | 168 | LYS |
| 1 | K | 169 | VAL |
| 1 | K | 171 | LYS |
| 1 | K | 190 | VAL |
| 1 | K | 207 | LYS |
| 1 | K | 213 | VAL |
| 1 | K | 228 | SER |
| 1 | K | 253 | ASP |
| 1 | K | 254 | VAL |
| 1 | K | 290 | GLN |
| 1 | K | 295 | LEU |
| 1 | K | 327 | LYS |
| 1 | K | 328 | ASP |
| 1 | K | 334 | ASP |
| 1 | K | 350 | ARG |
| 1 | K | 358 | SER |
| 1 | K | 421 | ARG |
| 1 | K | 473 | ASP |
| 1 | K | 484 | GLU |
| 1 | K | 504 | LEU |
| 1 | K | 520 | MET |
| 1 | K | 523 | ASP |
| 1 | L | 4 | LYS |
| 1 | L | 25 | ASP |
| 1 | L | 31 | LEU |
| 1 | L | 37 | ASN |
| 1 | L | 50 | THR |
| 1 | L | 55 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | L | 115 | ASP |
| 1 | L | 130 | GLU |
| 1 | L | 142 | LYS |
| 1 | L | 156 | GLU |
| 1 | L | 168 | LYS |
| 1 | L | 169 | VAL |
| 1 | L | 171 | LYS |
| 1 | L | 190 | VAL |
| 1 | L | 207 | LYS |
| 1 | L | 213 | VAL |
| 1 | L | 228 | SER |
| 1 | L | 253 | ASP |
| 1 | L | 254 | VAL |
| 1 | L | 290 | GLN |
| 1 | L | 295 | LEU |
| 1 | L | 327 | LYS |
| 1 | L | 328 | ASP |
| 1 | L | 334 | ASP |
| 1 | L | 350 | ARG |
| 1 | L | 358 | SER |
| 1 | L | 421 | ARG |
| 1 | L | 473 | ASP |
| 1 | L | 484 | GLU |
| 1 | L | 504 | LEU |
| 1 | L | 520 | MET |
| 1 | L | 523 | ASP |
| 1 | M | 4 | LYS |
| 1 | M | 25 | ASP |
| 1 | M | 31 | LEU |
| 1 | M | 37 | ASN |
| 1 | M | 50 | THR |
| 1 | M | 55 | SER |
| 1 | M | 115 | ASP |
| 1 | M | 130 | GLU |
| 1 | M | 142 | LYS |
| 1 | M | 156 | GLU |
| 1 | M | 168 | LYS |
| 1 | M | 169 | VAL |
| 1 | M | 171 | LYS |
| 1 | M | 190 | VAL |
| 1 | M | 207 | LYS |
| 1 | M | 213 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | M | 228 | SER |
| 1 | M | 253 | ASP |
| 1 | M | 254 | VAL |
| 1 | M | 290 | GLN |
| 1 | M | 295 | LEU |
| 1 | M | 327 | LYS |
| 1 | M | 328 | ASP |
| 1 | M | 334 | ASP |
| 1 | M | 350 | ARG |
| 1 | M | 358 | SER |
| 1 | M | 421 | ARG |
| 1 | M | 473 | ASP |
| 1 | M | 484 | GLU |
| 1 | M | 504 | LEU |
| 1 | M | 520 | MET |
| 1 | M | 523 | ASP |
| 1 | N | 4 | LYS |
| 1 | N | 25 | ASP |
| 1 | N | 31 | LEU |
| 1 | N | 37 | ASN |
| 1 | N | 50 | THR |
| 1 | N | 55 | SER |
| 1 | N | 115 | ASP |
| 1 | N | 130 | GLU |
| 1 | N | 142 | LYS |
| 1 | N | 156 | GLU |
| 1 | N | 168 | LYS |
| 1 | N | 169 | VAL |
| 1 | N | 171 | LYS |
| 1 | N | 190 | VAL |
| 1 | N | 207 | LYS |
| 1 | N | 213 | VAL |
| 1 | N | 228 | SER |
| 1 | N | 253 | ASP |
| 1 | N | 254 | VAL |
| 1 | N | 290 | GLN |
| 1 | N | 295 | LEU |
| 1 | N | 327 | LYS |
| 1 | N | 328 | ASP |
| 1 | N | 334 | ASP |
| 1 | N | 350 | ARG |
| 1 | N | 358 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | N | 421 | ARG |
| 1 | N | 473 | ASP |
| 1 | N | 479 | ASN |
| 1 | N | 484 | GLU |
| 1 | N | 504 | LEU |
| 1 | N | 520 | MET |
| 1 | N | 523 | ASP |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 453 | GLN |
| 1 | B | 453 | GLN |
| 1 | C | 453 | GLN |
| 1 | D | 453 | GLN |
| 1 | E | 453 | GLN |
| 1 | F | 453 | GLN |
| 1 | G | 453 | GLN |
| 1 | H | 453 | GLN |
| 1 | I | 453 | GLN |
| 1 | J | 453 | GLN |
| 1 | K | 453 | GLN |
| 1 | L | 453 | GLN |
| 1 | M | 453 | GLN |
| 1 | N | 453 | 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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 42 ligands modelled in this entry, 14 are monoatomic and 14 are modelled with single atom - leaving 14 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 |
| 4 | ATP | D | 1528 | 2 | 26,33,33 | 0.93 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |
| 4 | ATP | J | 1527 | 2 | 26,33,33 | 0.87 | 1 (3%) | 31,52,52 | 1.76 | 5 (16%) |
| 4 | ATP | M | 1527 | 2 | 26,33,33 | 6.48 | 5 (19%) | 31,52,52 | 2.27 | 9 (29%) |
| 4 | ATP | F | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.82 | 5 (16%) |
| 4 | ATP | A | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |
| 4 | ATP | E | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |
| 4 | ATP | H | 1527 | 2 | 26,33,33 | 1.02 | 1 (3%) | 31,52,52 | 1.77 | 5 (16%) |
| 4 | ATP | B | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |
| 4 | ATP | G | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |
| 4 | ATP | K | 1527 | 2 | 26,33,33 | 0.93 | 1 (3%) | 31,52,52 | 1.67 | 5 (16%) |
| 4 | ATP | I | 1527 | 2 | 26,33,33 | 0.86 | 1 (3%) | 31,52,52 | 1.74 | 5 (16%) |
| 4 | ATP | L | 1527 | 2 | 26,33,33 | 0.86 | 1 (3%) | 31,52,52 | 1.74 | 5 (16%) |
| 4 | ATP | N | 1527 | 2 | 26,33,33 | 1.04 | 1 (3%) | 31,52,52 | 1.77 | 6 (19%) |
| 4 | ATP | C | 1528 | 2 | 26,33,33 | 0.94 | 1 (3%) | 31,52,52 | 1.83 | 5 (16%) |

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 |
|-----|------|-------|------|------|---------|------------|---------|
| 4 | ATP | D | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | J | 1527 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | M | 1527 | 2 | - | 5/18/38/38 | 0/3/3/3 |
| 4 | ATP | F | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | A | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | E | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|------|------|---------|------------|---------|
| 4 | ATP | H | 1527 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | B | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | G | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | K | 1527 | 2 | - | 2/18/38/38 | 0/3/3/3 |
| 4 | ATP | I | 1527 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | L | 1527 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | N | 1527 | 2 | - | 0/18/38/38 | 0/3/3/3 |
| 4 | ATP | C | 1528 | 2 | - | 0/18/38/38 | 0/3/3/3 |

All (18) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 4 | M | 1527 | ATP | C8-N7 | 21.34 | 1.72 | 1.34 |
| 4 | M | 1527 | ATP | C5-C4 | 19.67 | 1.93 | 1.40 |
| 4 | M | 1527 | ATP | C5-N7 | 14.73 | 1.93 | 1.39 |
| 4 | N | 1527 | ATP | C2'-C1' | -3.71 | 1.48 | 1.53 |
| 4 | H | 1527 | ATP | C2'-C1' | -3.50 | 1.48 | 1.53 |
| 4 | C | 1528 | ATP | C2'-C1' | -2.99 | 1.49 | 1.53 |
| 4 | F | 1528 | ATP | C2'-C1' | -2.98 | 1.49 | 1.53 |
| 4 | E | 1528 | ATP | C2'-C1' | -2.98 | 1.49 | 1.53 |
| 4 | G | 1528 | ATP | C2'-C1' | -2.96 | 1.49 | 1.53 |
| 4 | B | 1528 | ATP | C2'-C1' | -2.95 | 1.49 | 1.53 |
| 4 | A | 1528 | ATP | C2'-C1' | -2.95 | 1.49 | 1.53 |
| 4 | D | 1528 | ATP | C2'-C1' | -2.93 | 1.49 | 1.53 |
| 4 | M | 1527 | ATP | C4-N3 | -2.33 | 1.32 | 1.35 |
| 4 | L | 1527 | ATP | C2'-C1' | -2.22 | 1.50 | 1.53 |
| 4 | J | 1527 | ATP | C2'-C1' | -2.19 | 1.50 | 1.53 |
| 4 | M | 1527 | ATP | C5'-C4' | 2.17 | 1.58 | 1.51 |
| 4 | I | 1527 | ATP | C2'-C1' | -2.17 | 1.50 | 1.53 |
| 4 | K | 1527 | ATP | C2'-C1' | -2.05 | 1.50 | 1.53 |

All (75) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 4 | C | 1528 | ATP | PA-O3A-PB | -6.28 | 111.28 | 132.83 |
| 4 | D | 1528 | ATP | PA-O3A-PB | -6.27 | 111.30 | 132.83 |
| 4 | A | 1528 | ATP | PA-O3A-PB | -6.26 | 111.33 | 132.83 |
| 4 | E | 1528 | ATP | PA-O3A-PB | -6.26 | 111.35 | 132.83 |
| 4 | F | 1528 | ATP | PA-O3A-PB | -6.26 | 111.35 | 132.83 |
| 4 | G | 1528 | ATP | PA-O3A-PB | -6.26 | 111.36 | 132.83 |
| 4 | B | 1528 | ATP | PA-O3A-PB | -6.25 | 111.38 | 132.83 |
| 4 | I | 1527 | ATP | PA-O3A-PB | -5.89 | 112.61 | 132.83 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 4 | L | 1527 | ATP | PA-O3A-PB | -5.87 | 112.67 | 132.83 |
| 4 | J | 1527 | ATP | PA-O3A-PB | -5.87 | 112.69 | 132.83 |
| 4 | H | 1527 | ATP | PA-O3A-PB | -5.78 | 112.99 | 132.83 |
| 4 | N | 1527 | ATP | PA-O3A-PB | -5.47 | 114.06 | 132.83 |
| 4 | M | 1527 | ATP | N3-C2-N1 | 5.29 | 136.95 | 128.68 |
| 4 | M | 1527 | ATP | C1'-N9-C4 | 5.19 | 135.77 | 126.64 |
| 4 | M | 1527 | ATP | PA-O3A-PB | -5.11 | 115.30 | 132.83 |
| 4 | K | 1527 | ATP | PA-O3A-PB | -5.06 | 115.47 | 132.83 |
| 4 | J | 1527 | ATP | PB-O3B-PG | -4.93 | 115.92 | 132.83 |
| 4 | K | 1527 | ATP | PB-O3B-PG | -4.91 | 115.97 | 132.83 |
| 4 | L | 1527 | ATP | PB-O3B-PG | -4.83 | 116.27 | 132.83 |
| 4 | I | 1527 | ATP | PB-O3B-PG | -4.81 | 116.34 | 132.83 |
| 4 | B | 1528 | ATP | PB-O3B-PG | -4.76 | 116.50 | 132.83 |
| 4 | H | 1527 | ATP | PB-O3B-PG | -4.76 | 116.50 | 132.83 |
| 4 | C | 1528 | ATP | PB-O3B-PG | -4.75 | 116.51 | 132.83 |
| 4 | D | 1528 | ATP | PB-O3B-PG | -4.75 | 116.51 | 132.83 |
| 4 | A | 1528 | ATP | PB-O3B-PG | -4.74 | 116.55 | 132.83 |
| 4 | E | 1528 | ATP | PB-O3B-PG | -4.74 | 116.55 | 132.83 |
| 4 | G | 1528 | ATP | PB-O3B-PG | -4.73 | 116.58 | 132.83 |
| 4 | F | 1528 | ATP | PB-O3B-PG | -4.73 | 116.61 | 132.83 |
| 4 | N | 1527 | ATP | PB-O3B-PG | -4.71 | 116.68 | 132.83 |
| 4 | M | 1527 | ATP | PB-O3B-PG | -4.22 | 118.33 | 132.83 |
| 4 | M | 1527 | ATP | C2-N1-C6 | 3.73 | 125.13 | 118.75 |
| 4 | M | 1527 | ATP | O3G-PG-O2G | -3.69 | 93.53 | 107.64 |
| 4 | D | 1528 | ATP | C5-C6-N6 | 2.91 | 124.77 | 120.35 |
| 4 | G | 1528 | ATP | C5-C6-N6 | 2.90 | 124.76 | 120.35 |
| 4 | E | 1528 | ATP | C5-C6-N6 | 2.90 | 124.75 | 120.35 |
| 4 | A | 1528 | ATP | C5-C6-N6 | 2.88 | 124.72 | 120.35 |
| 4 | B | 1528 | ATP | C5-C6-N6 | 2.87 | 124.71 | 120.35 |
| 4 | F | 1528 | ATP | C5-C6-N6 | 2.86 | 124.70 | 120.35 |
| 4 | C | 1528 | ATP | C5-C6-N6 | 2.85 | 124.69 | 120.35 |
| 4 | N | 1527 | ATP | C5-C6-N6 | 2.74 | 124.52 | 120.35 |
| 4 | K | 1527 | ATP | C5-C6-N6 | 2.63 | 124.35 | 120.35 |
| 4 | H | 1527 | ATP | C5-C6-N6 | 2.59 | 124.28 | 120.35 |
| 4 | N | 1527 | ATP | O3B-PG-O1G | -2.57 | 96.95 | 111.19 |
| 4 | H | 1527 | ATP | O3B-PG-O1G | -2.50 | 97.34 | 111.19 |
| 4 | K | 1527 | ATP | O3B-PG-O1G | -2.46 | 97.53 | 111.19 |
| 4 | J | 1527 | ATP | C5-C6-N6 | 2.43 | 124.05 | 120.35 |
| 4 | I | 1527 | ATP | O3G-PG-O2G | 2.40 | 116.81 | 107.64 |
| 4 | L | 1527 | ATP | O3G-PG-O2G | 2.39 | 116.79 | 107.64 |
| 4 | L | 1527 | ATP | O3B-PG-O1G | -2.39 | 97.94 | 111.19 |
| 4 | I | 1527 | ATP | O3B-PG-O1G | -2.39 | 97.94 | 111.19 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 4 | J | 1527 | ATP | O3G-PG-O2G | 2.39 | 116.76 | 107.64 |
| 4 | J | 1527 | ATP | O3B-PG-O1G | -2.38 | 97.97 | 111.19 |
| 4 | I | 1527 | ATP | C5-C6-N6 | 2.35 | 123.92 | 120.35 |
| 4 | L | 1527 | ATP | C5-C6-N6 | 2.34 | 123.91 | 120.35 |
| 4 | M | 1527 | ATP | O3G-PG-O1G | 2.34 | 119.83 | 110.68 |
| 4 | D | 1528 | ATP | O3B-PG-O1G | -2.33 | 98.27 | 111.19 |
| 4 | C | 1528 | ATP | O3B-PG-O1G | -2.33 | 98.28 | 111.19 |
| 4 | A | 1528 | ATP | O3B-PG-O1G | -2.32 | 98.30 | 111.19 |
| 4 | B | 1528 | ATP | O3B-PG-O1G | -2.32 | 98.30 | 111.19 |
| 4 | E | 1528 | ATP | O3B-PG-O1G | -2.32 | 98.32 | 111.19 |
| 4 | F | 1528 | ATP | O3B-PG-O1G | -2.32 | 98.33 | 111.19 |
| 4 | G | 1528 | ATP | O3B-PG-O1G | -2.31 | 98.36 | 111.19 |
| 4 | K | 1527 | ATP | O3G-PG-O2G | 2.30 | 116.43 | 107.64 |
| 4 | H | 1527 | ATP | O3G-PG-O2G | 2.28 | 116.34 | 107.64 |
| 4 | C | 1528 | ATP | O3G-PG-O2G | 2.22 | 116.12 | 107.64 |
| 4 | B | 1528 | ATP | O3G-PG-O2G | 2.22 | 116.11 | 107.64 |
| 4 | E | 1528 | ATP | O3G-PG-O2G | 2.22 | 116.11 | 107.64 |
| 4 | M | 1527 | ATP | O2G-PG-O3B | 2.22 | 112.07 | 104.64 |
| 4 | N | 1527 | ATP | O3G-PG-O2G | 2.21 | 116.09 | 107.64 |
| 4 | F | 1528 | ATP | O3G-PG-O2G | 2.21 | 116.07 | 107.64 |
| 4 | D | 1528 | ATP | O3G-PG-O2G | 2.20 | 116.05 | 107.64 |
| 4 | A | 1528 | ATP | O3G-PG-O2G | 2.20 | 116.04 | 107.64 |
| 4 | G | 1528 | ATP | O3G-PG-O2G | 2.20 | 116.03 | 107.64 |
| 4 | N | 1527 | ATP | O3'-C3'-C4' | 2.10 | 117.11 | 111.05 |
| 4 | M | 1527 | ATP | C5-C6-N1 | -2.01 | 115.80 | 120.35 |

There are no chirality outliers.

All (7) torsion outliers are listed below:

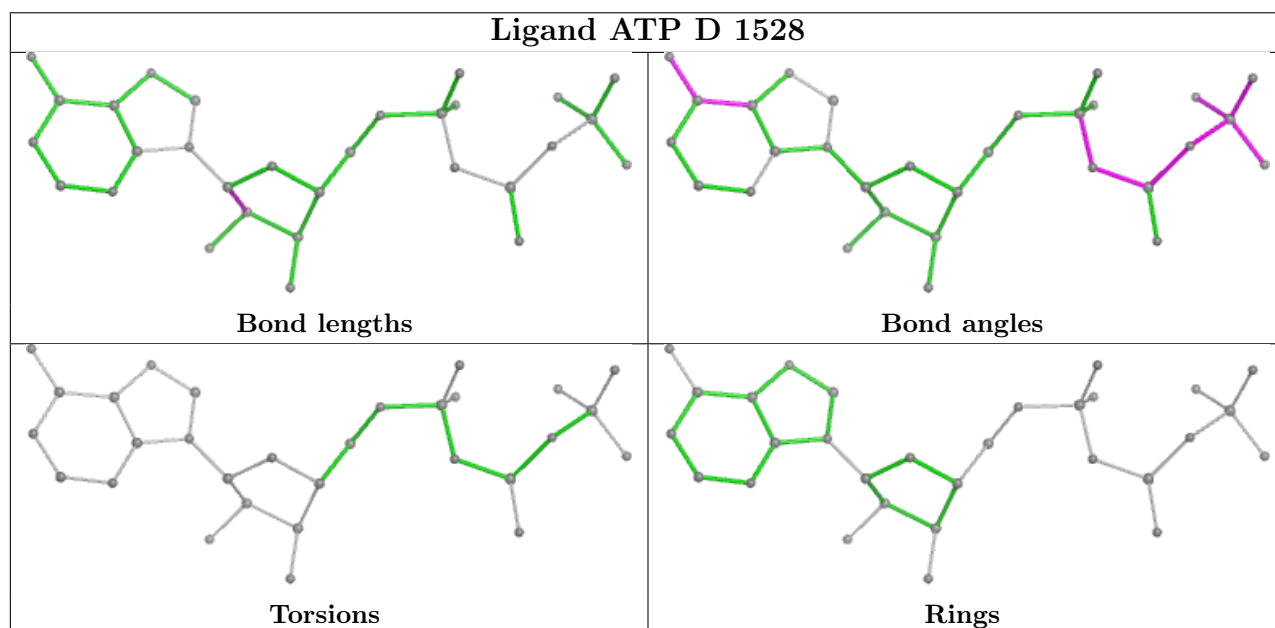
| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|-----------------|
| 4 | M | 1527 | ATP | C5'-O5'-PA-O1A |
| 4 | M | 1527 | ATP | C5'-O5'-PA-O2A |
| 4 | M | 1527 | ATP | O4'-C4'-C5'-O5' |
| 4 | M | 1527 | ATP | C3'-C4'-C5'-O5' |
| 4 | M | 1527 | ATP | C5'-O5'-PA-O3A |
| 4 | K | 1527 | ATP | PB-O3A-PA-O1A |
| 4 | K | 1527 | ATP | PB-O3A-PA-O2A |

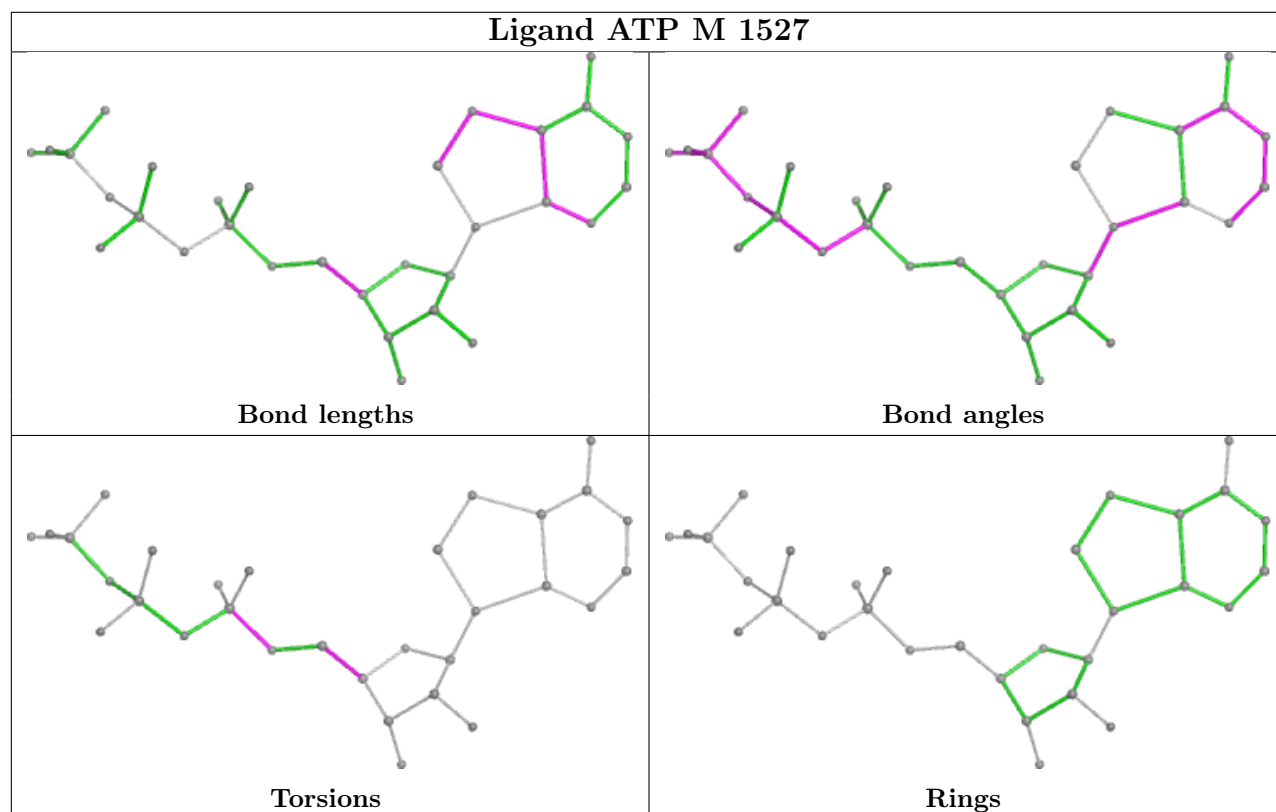
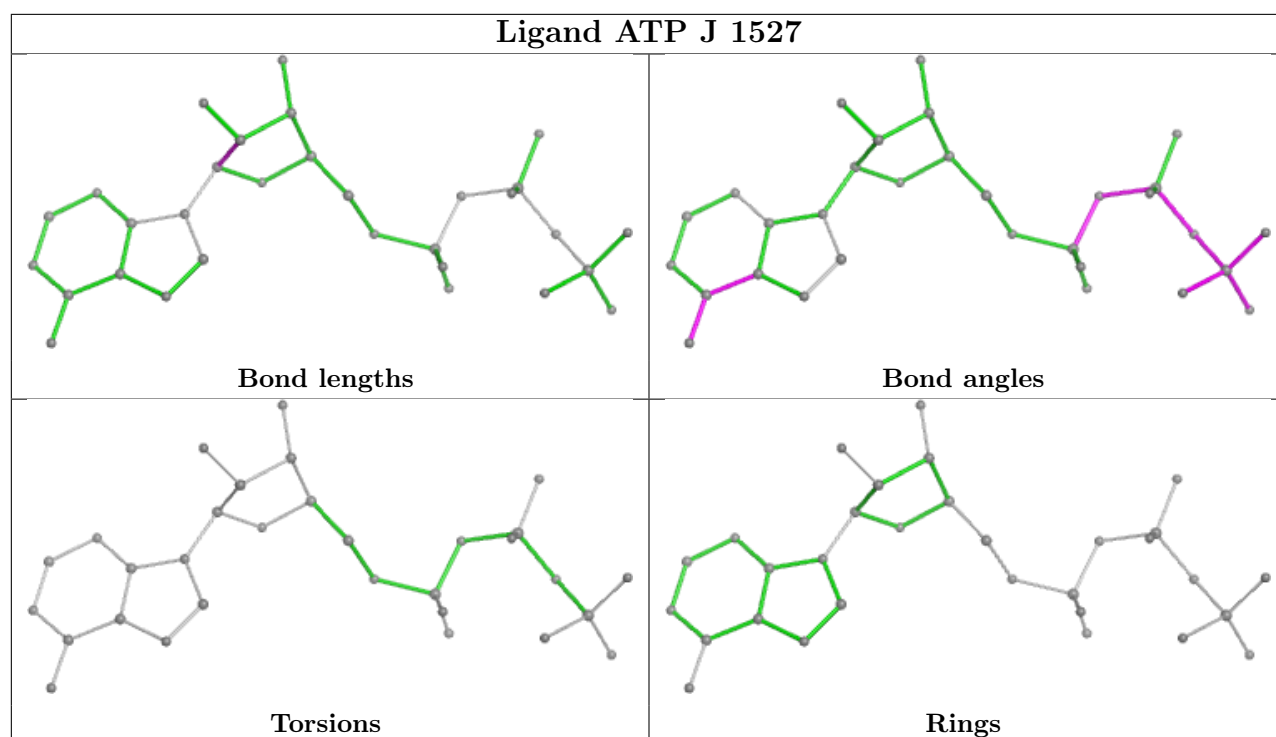
There are no ring outliers.

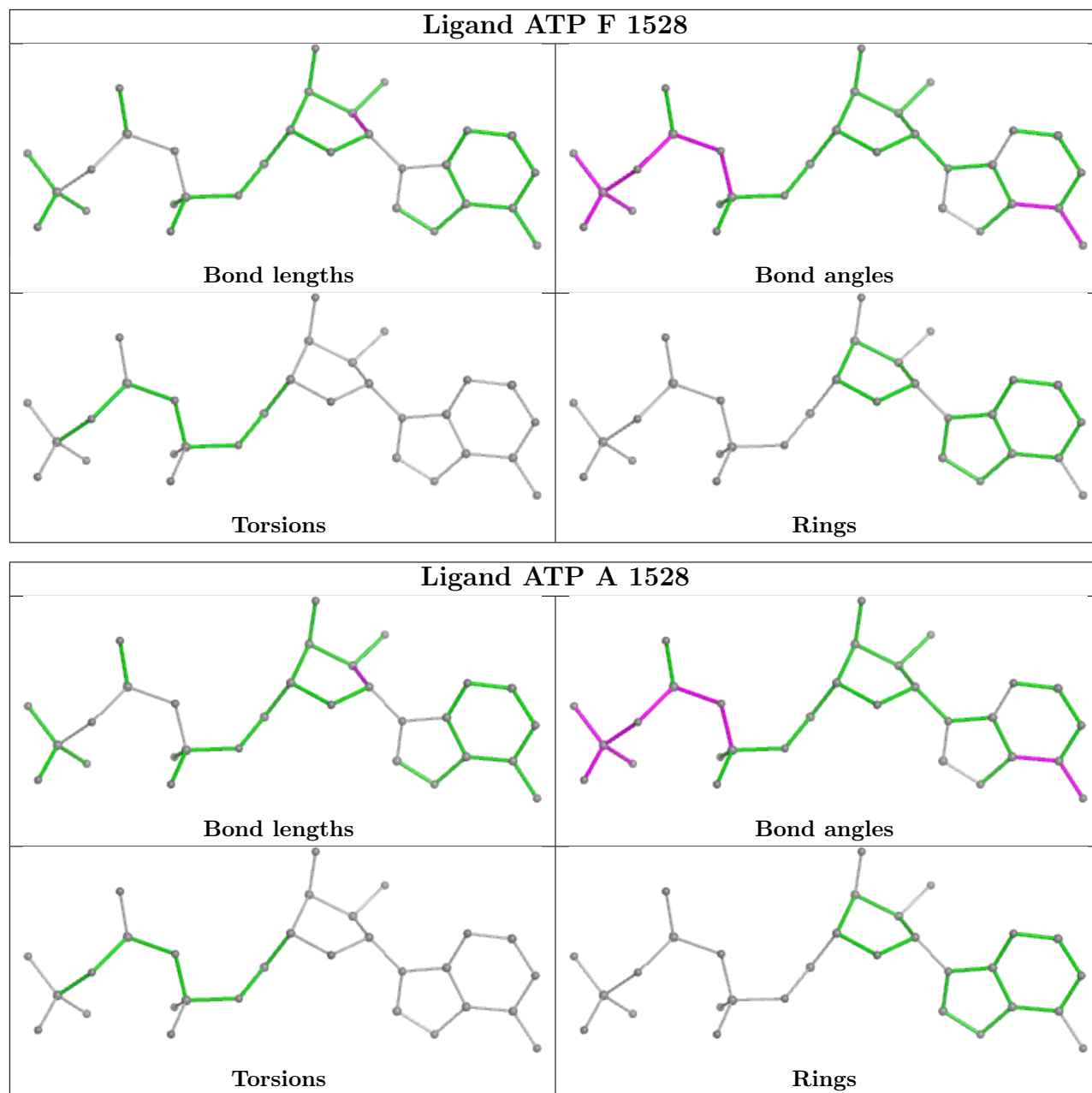
14 monomers are involved in 89 short contacts:

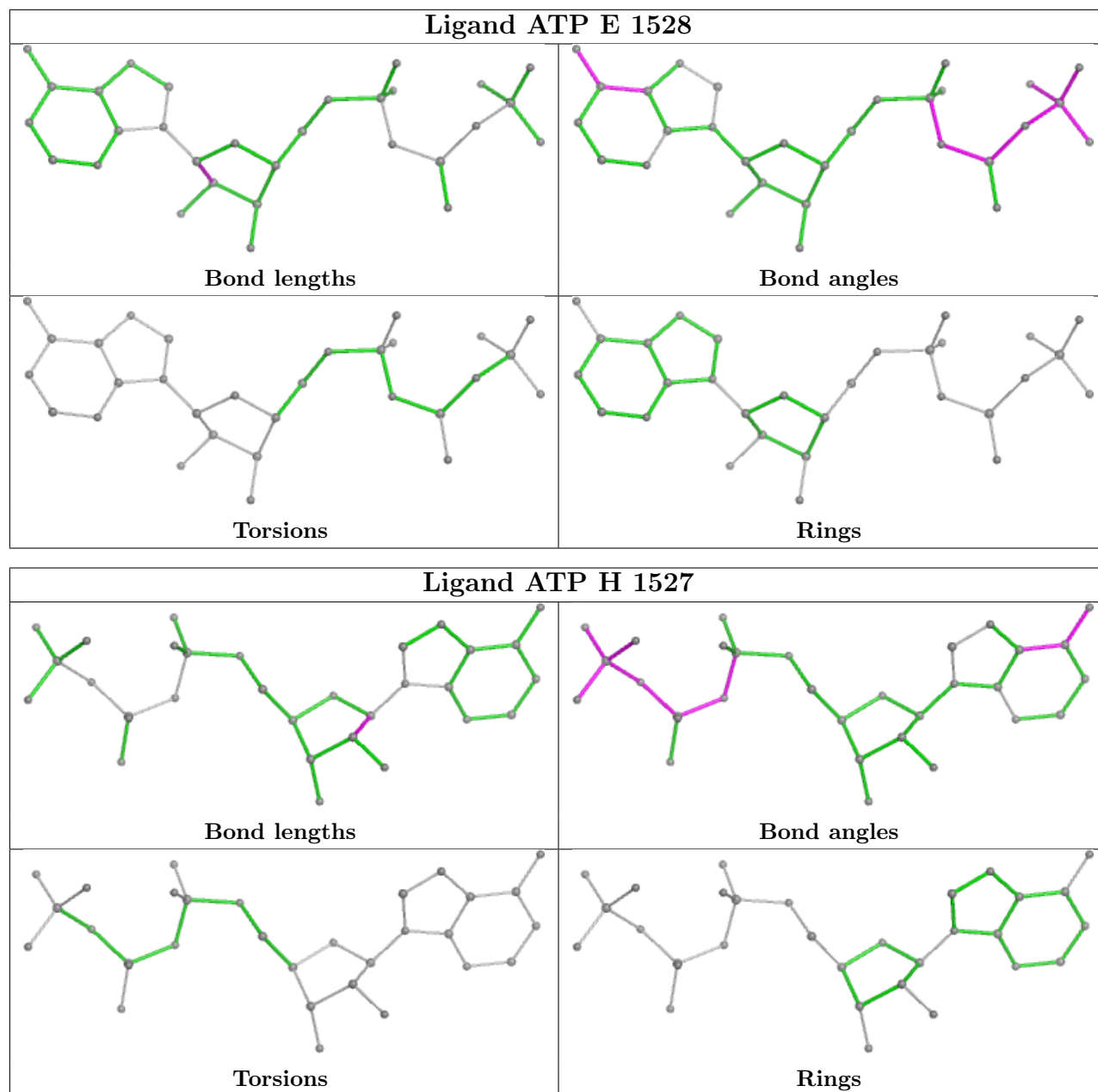
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 4 | D | 1528 | ATP | 4 | 0 |
| 4 | J | 1527 | ATP | 5 | 0 |
| 4 | M | 1527 | ATP | 34 | 0 |
| 4 | F | 1528 | ATP | 4 | 0 |
| 4 | A | 1528 | ATP | 4 | 0 |
| 4 | E | 1528 | ATP | 3 | 0 |
| 4 | H | 1527 | ATP | 4 | 0 |
| 4 | B | 1528 | ATP | 4 | 0 |
| 4 | G | 1528 | ATP | 3 | 0 |
| 4 | K | 1527 | ATP | 5 | 0 |
| 4 | I | 1527 | ATP | 5 | 0 |
| 4 | L | 1527 | ATP | 5 | 0 |
| 4 | N | 1527 | ATP | 5 | 0 |
| 4 | C | 1528 | ATP | 4 | 0 |

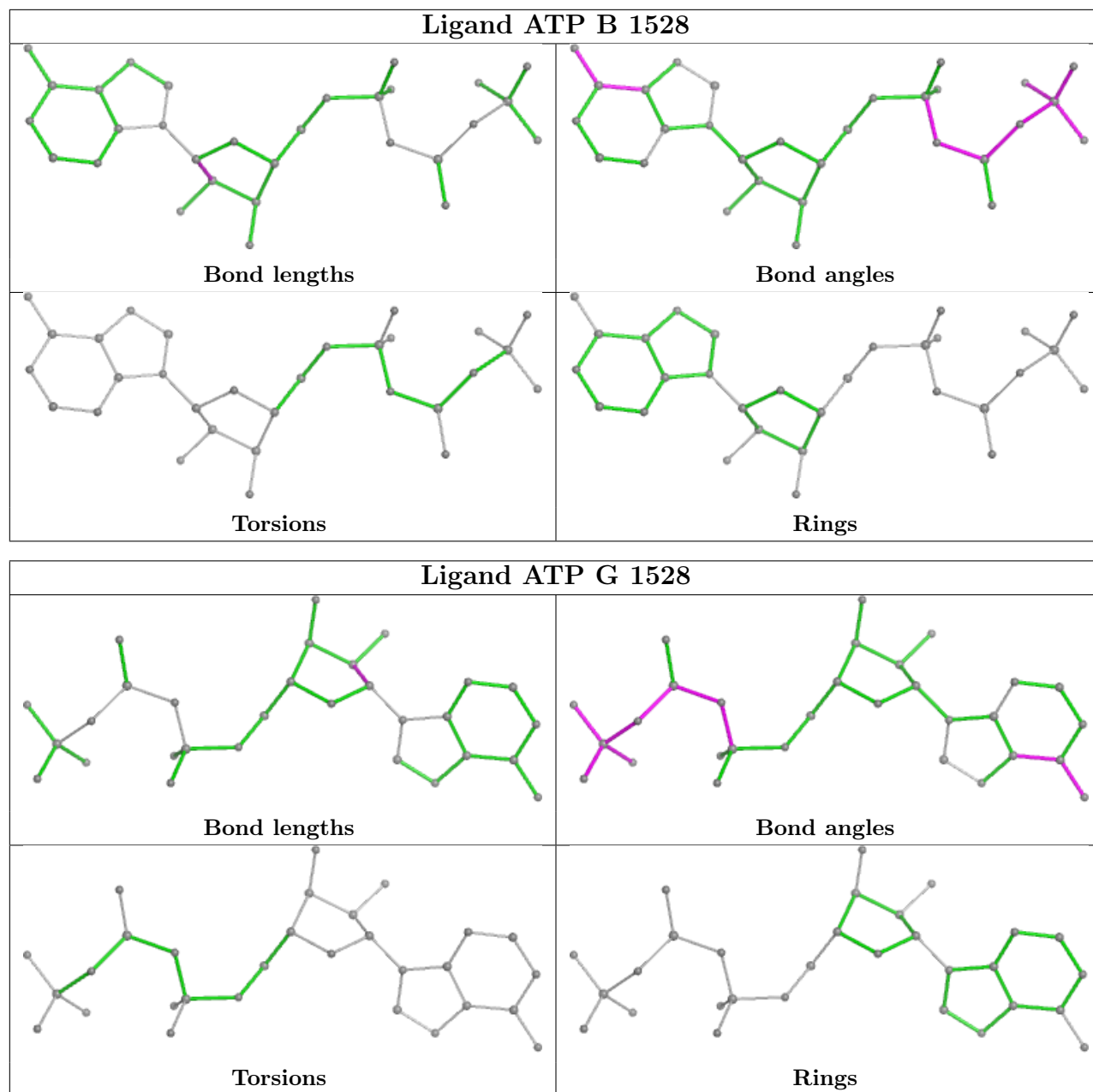
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

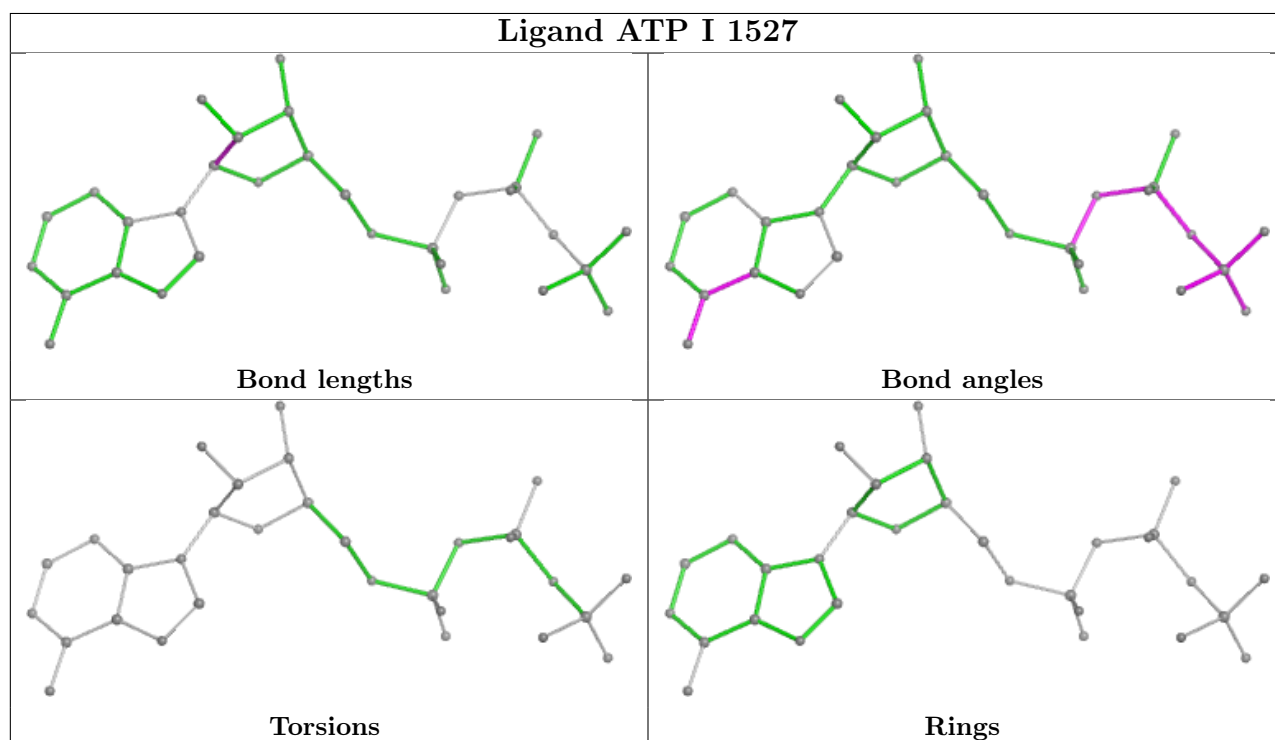
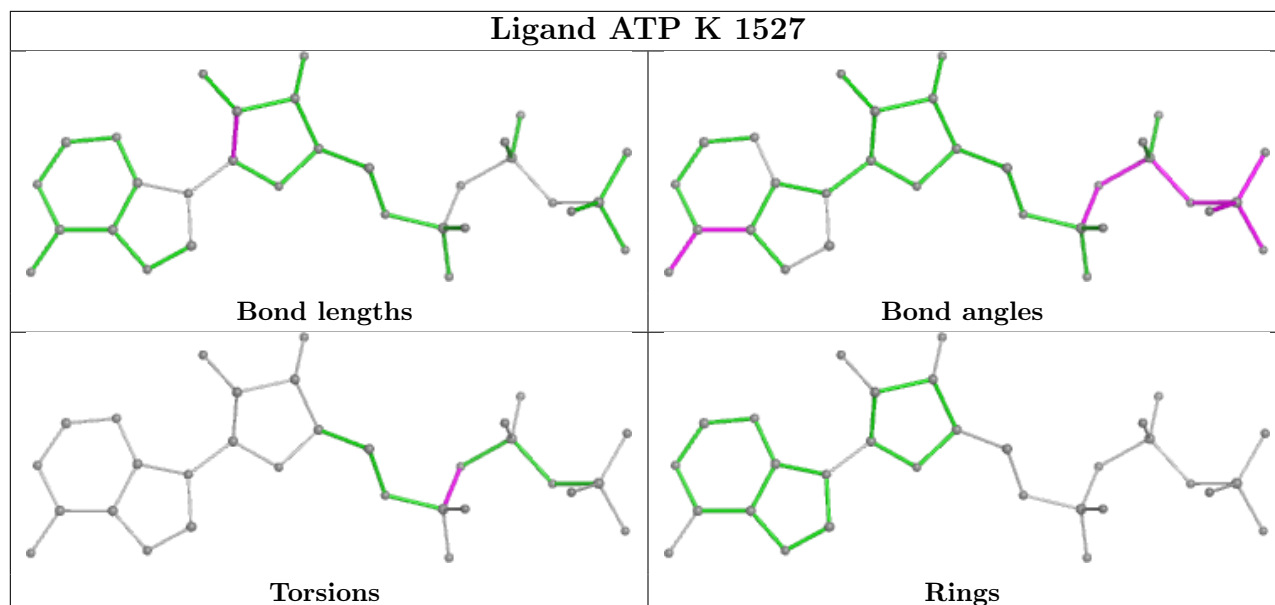


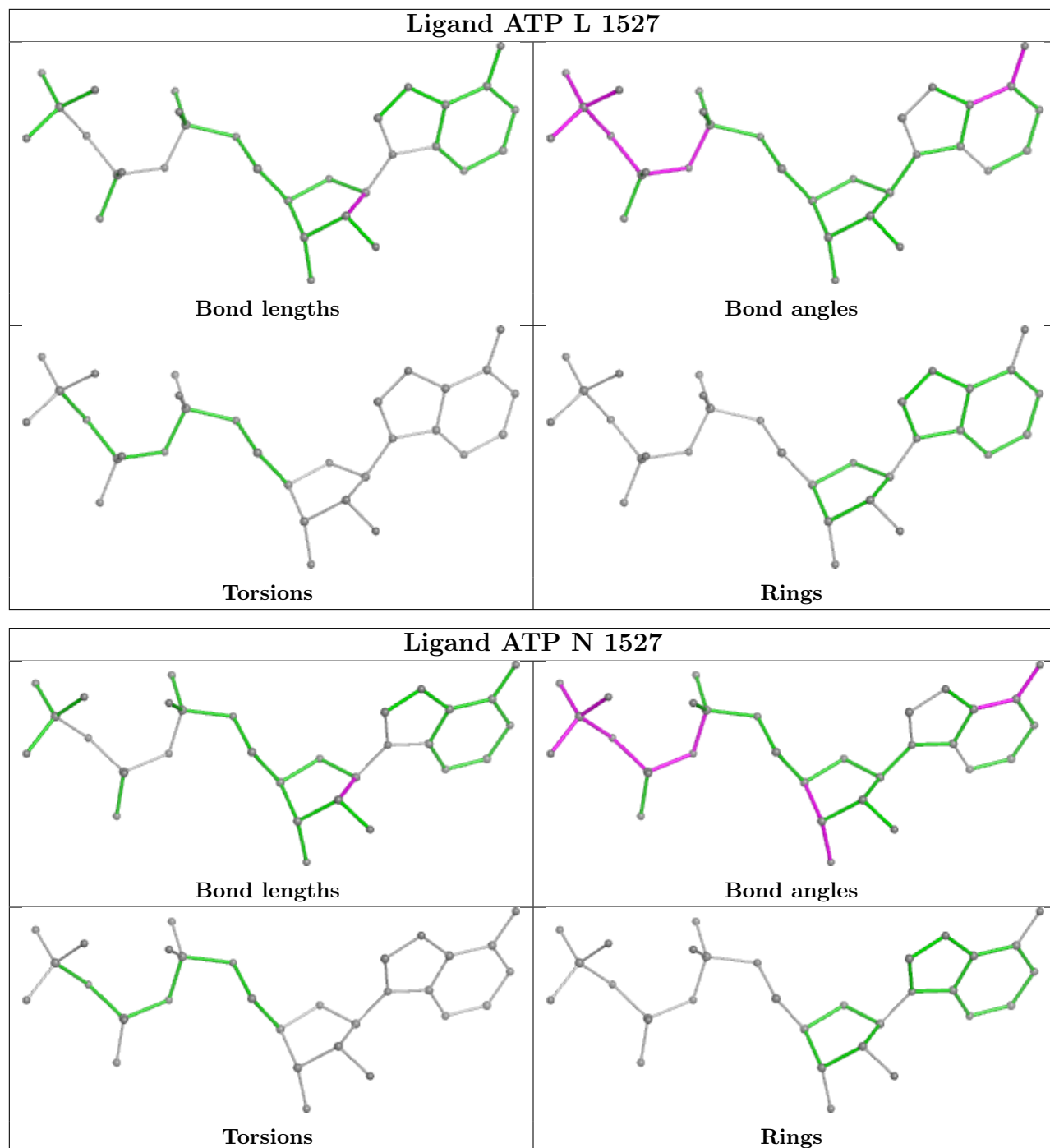


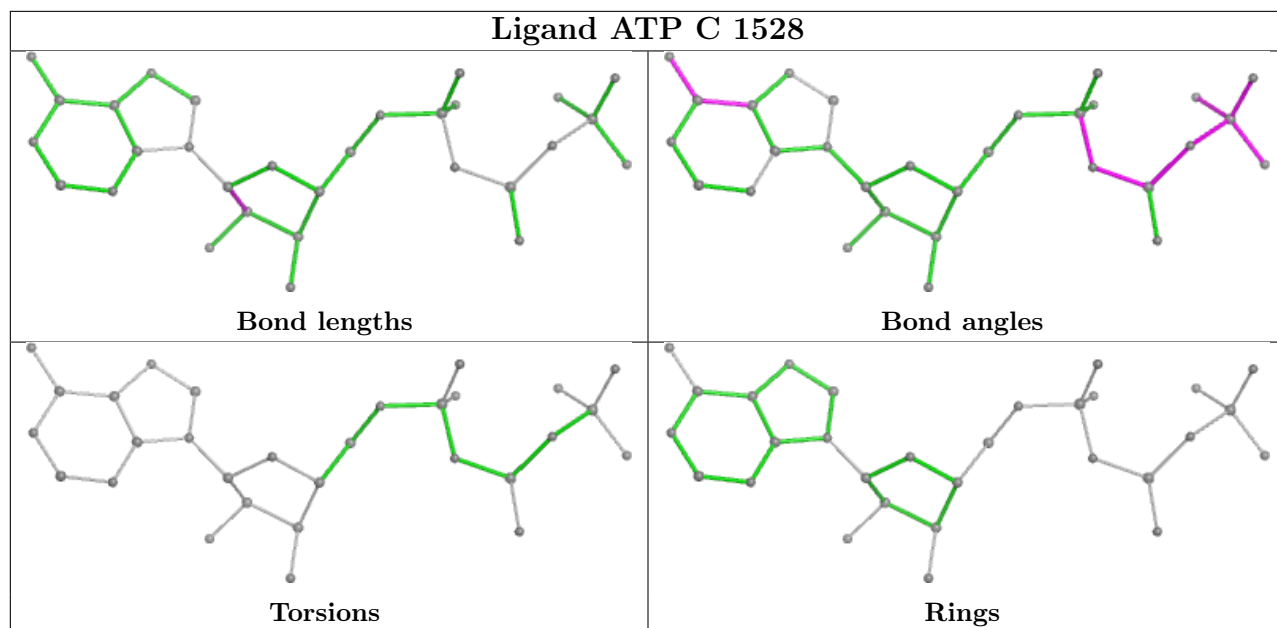












5.7 Other polymers [i](#)

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 | H | 2 |
| 1 | I | 2 |
| 1 | L | 2 |
| 1 | N | 2 |
| 1 | J | 2 |
| 1 | K | 2 |
| 1 | M | 2 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | H | 50:THR | C | 51:LYS | N | 4.25 |
| 1 | I | 50:THR | C | 51:LYS | N | 4.25 |
| 1 | L | 50:THR | C | 51:LYS | N | 4.25 |
| 1 | N | 50:THR | C | 51:LYS | N | 4.25 |
| 1 | J | 50:THR | C | 51:LYS | N | 4.24 |
| 1 | K | 50:THR | C | 51:LYS | N | 4.24 |
| 1 | M | 50:THR | C | 51:LYS | N | 4.24 |

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| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | H | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | I | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | J | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | K | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | L | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | M | 37:ASN | C | 38:VAL | N | 3.11 |
| 1 | N | 37:ASN | C | 38:VAL | N | 3.11 |

6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2001. 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: 96



Y Index: 96



Z Index: 96

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: 73



Y Index: 79

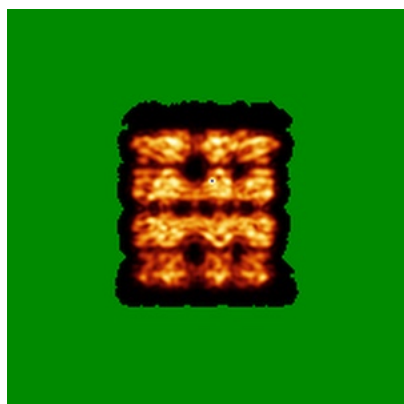


Z Index: 128

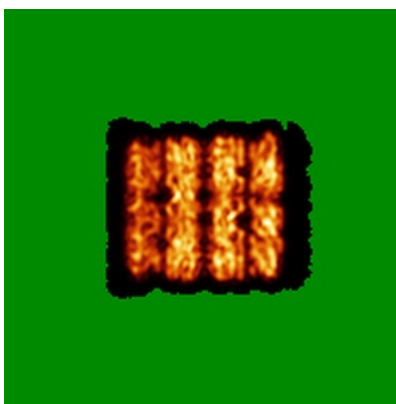
The images above show the largest variance slices of the map in three orthogonal directions.

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

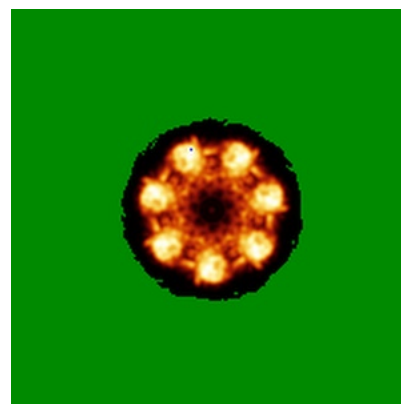
6.4.1 Primary map



X



Y

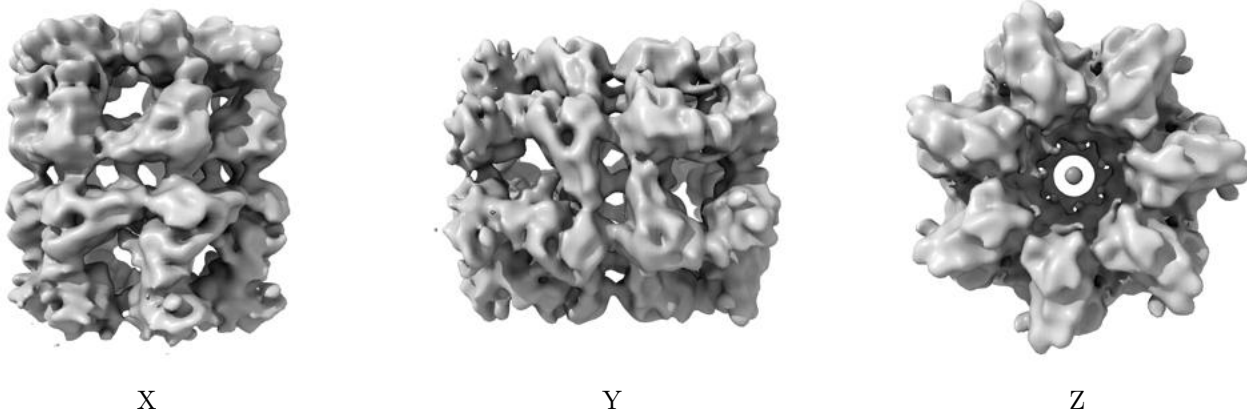


Z

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 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

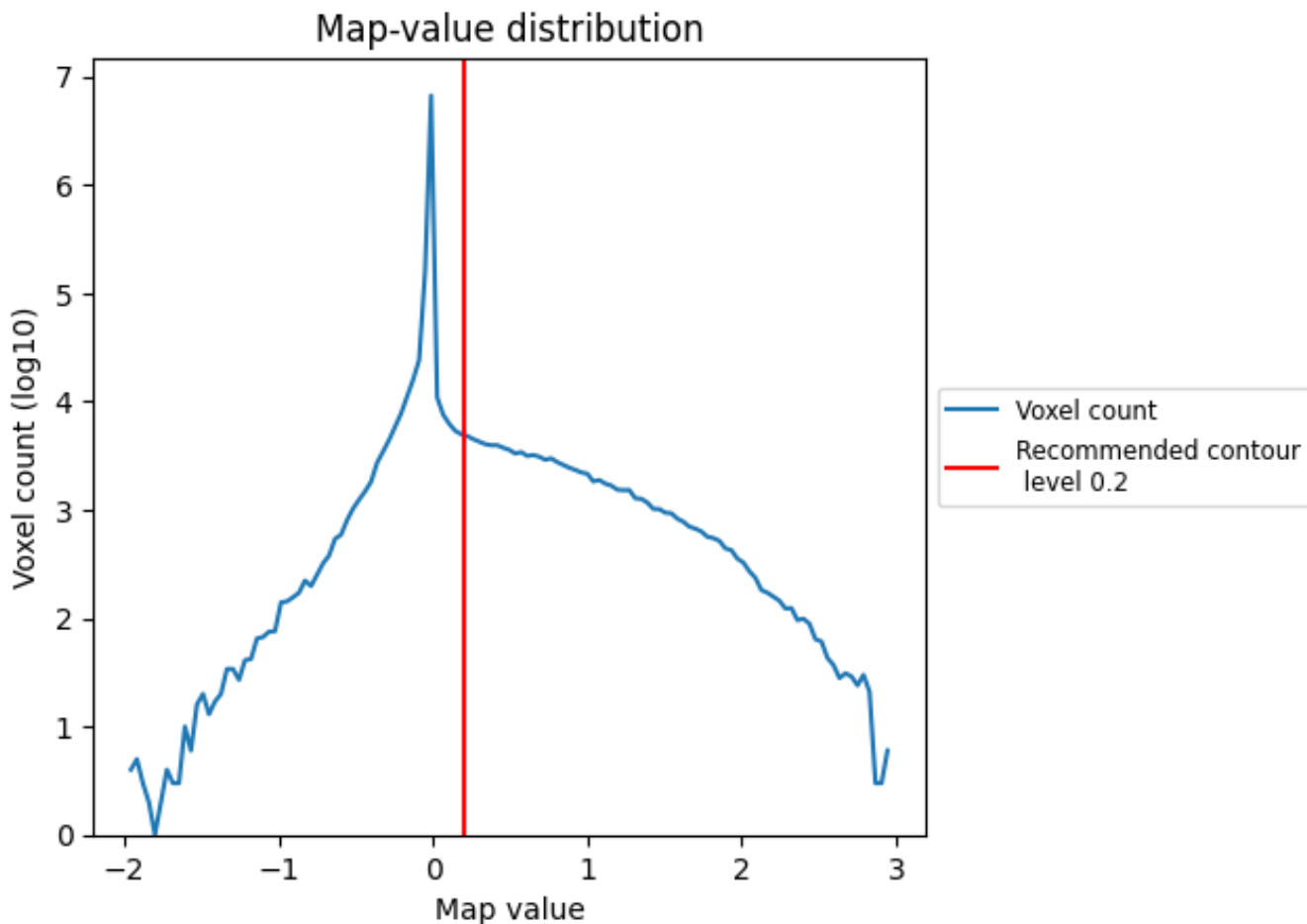
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

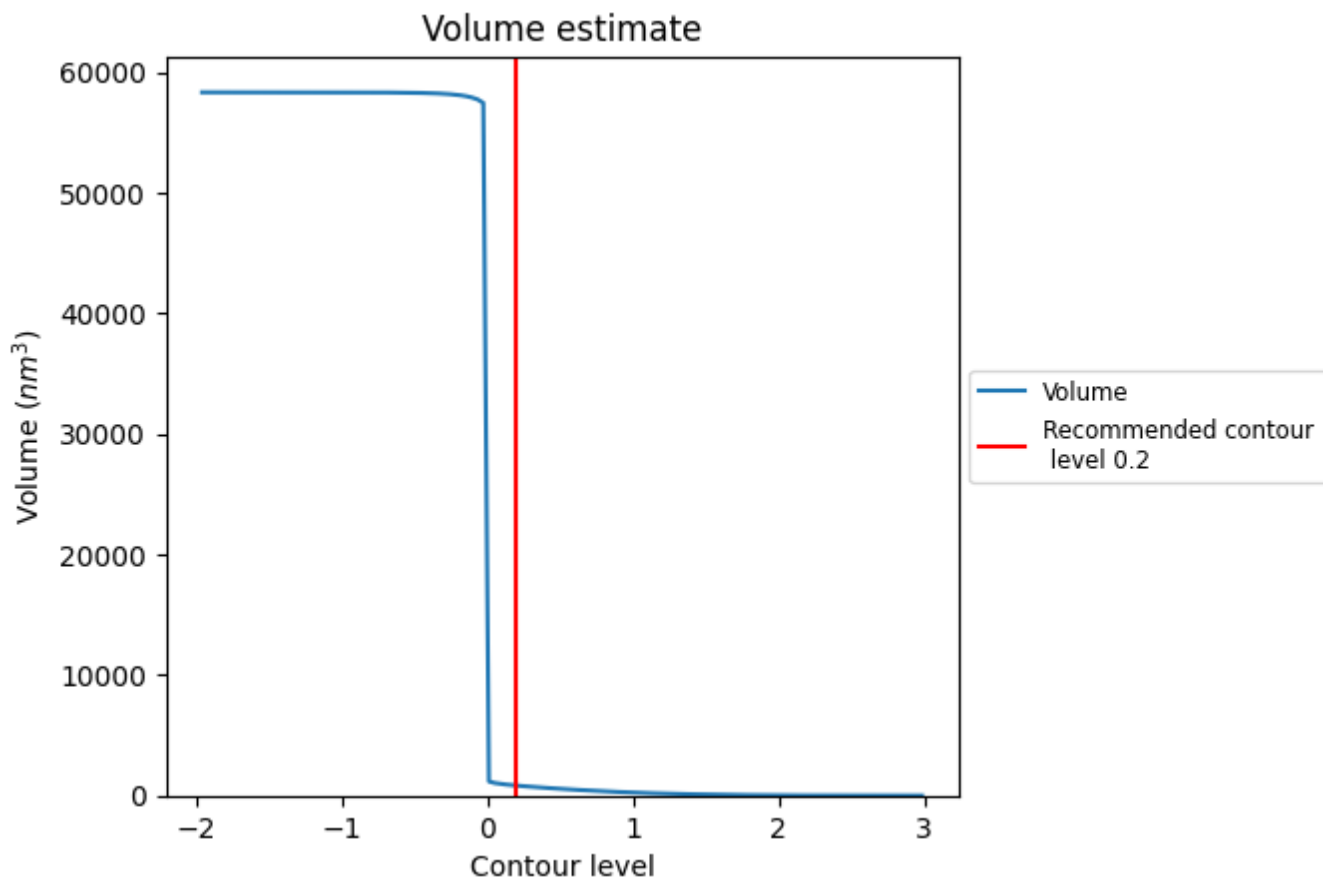
This section contains the results of statistical analysis of the map.

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.

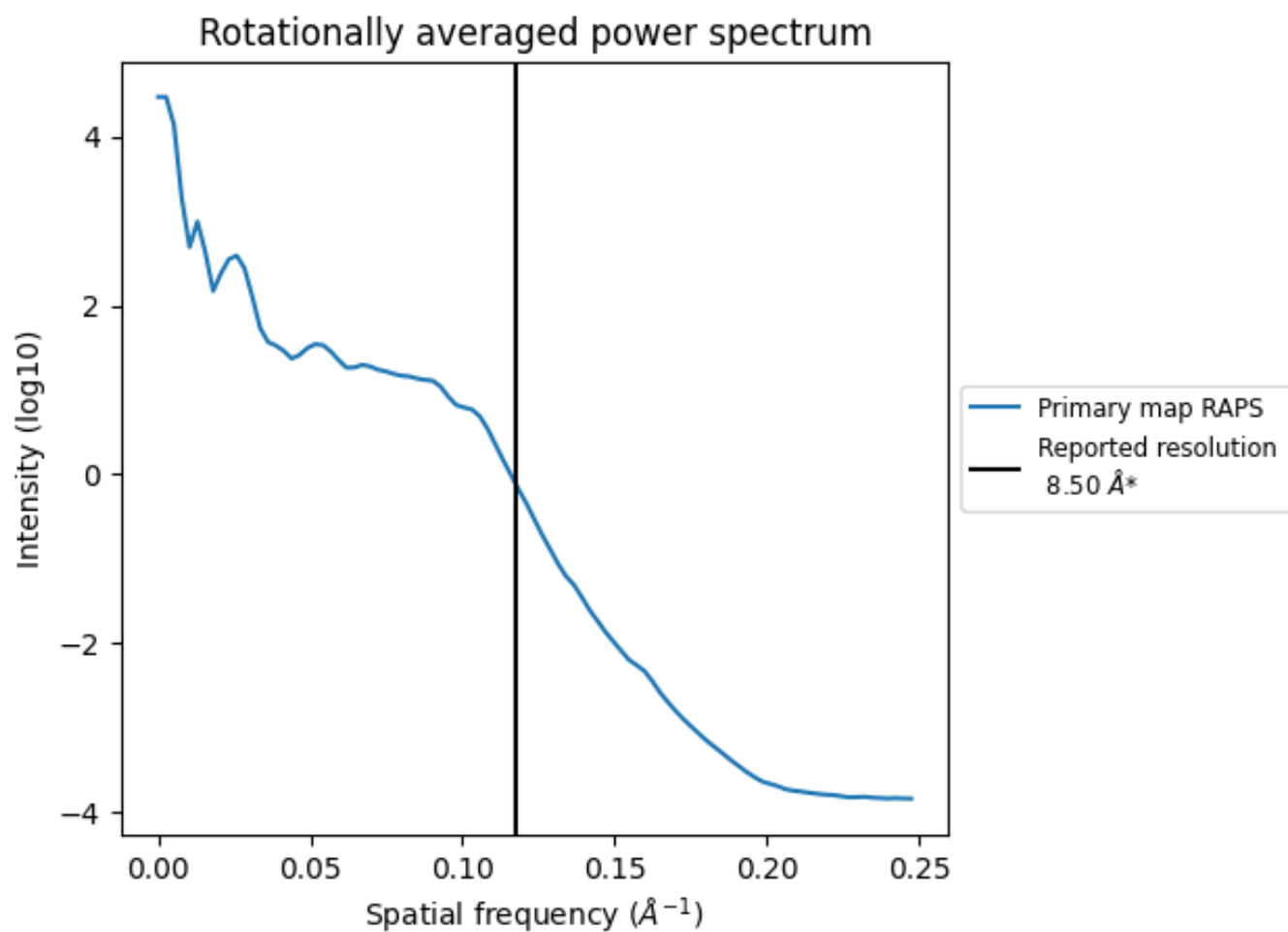
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 831 nm³; this corresponds to an approximate mass of 751 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 0.118\AA^{-1}

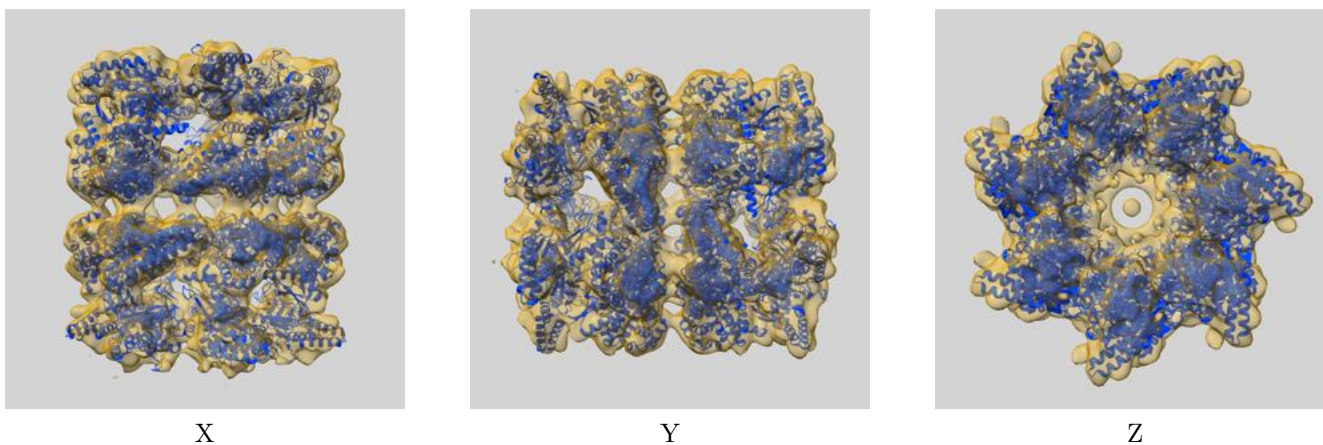
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

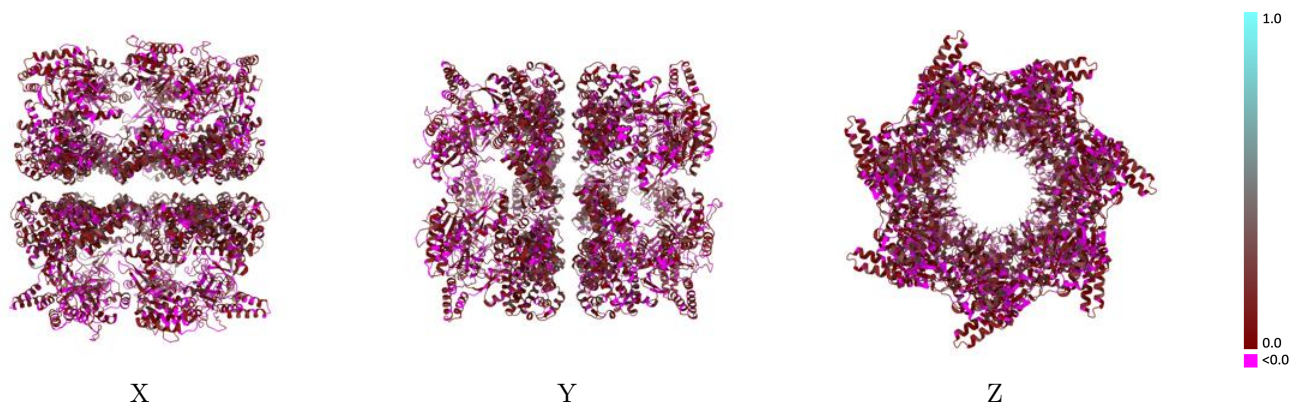
This section contains information regarding the fit between EMDB map EMD-2001 and PDB model 4AAU. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



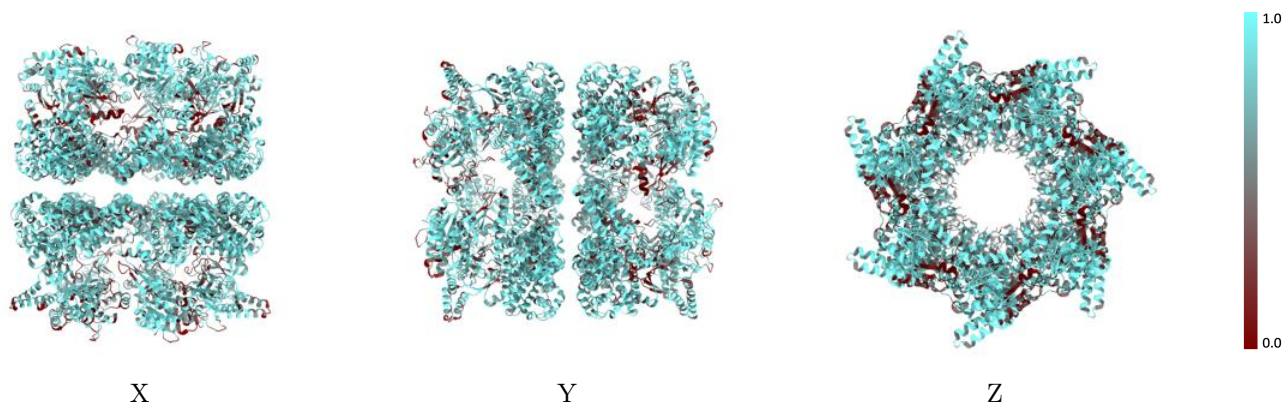
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



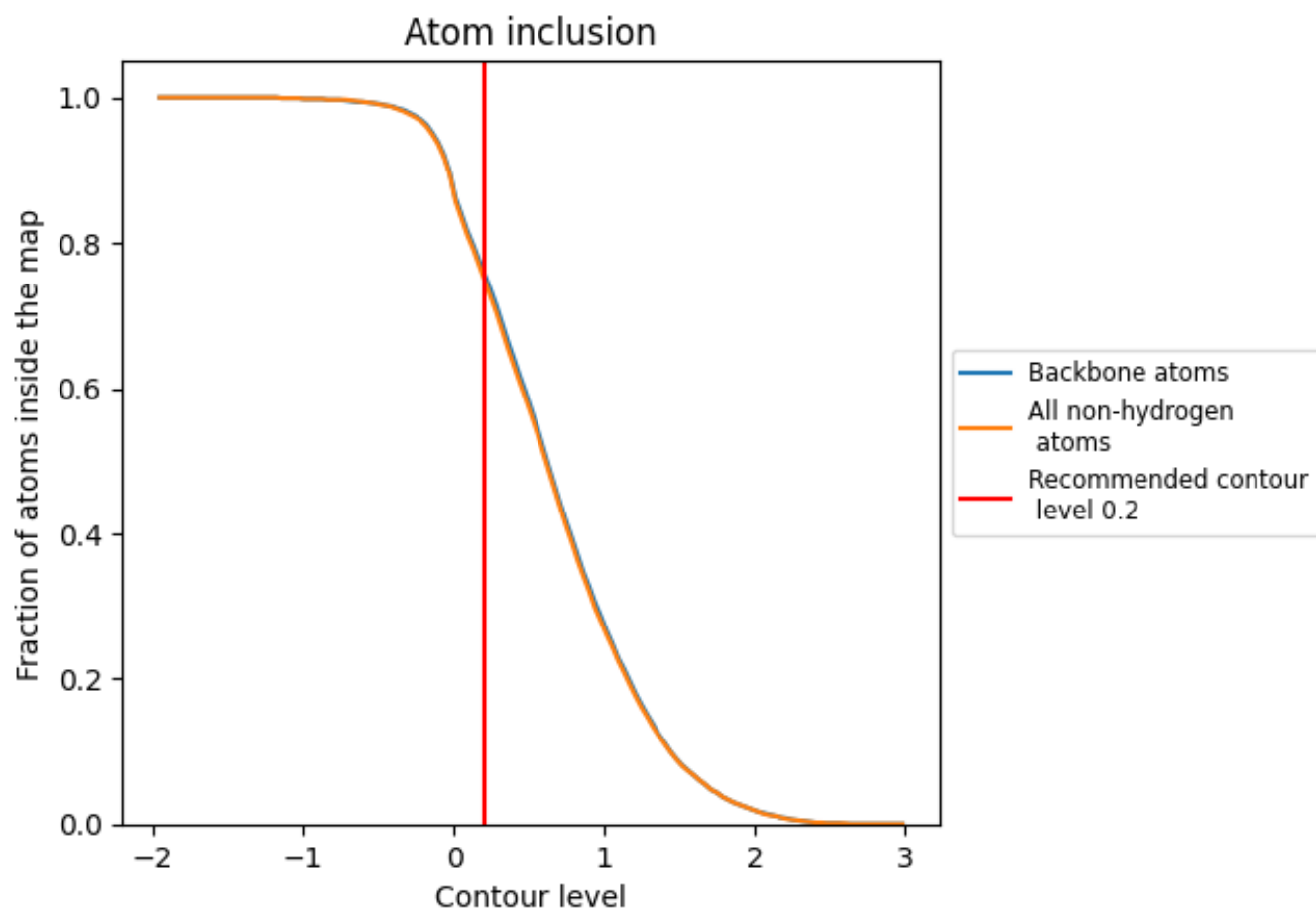
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).































9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 75% 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 (0.2) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|---|---|
| All |  0.7510 |  0.0880 |
| A |  0.7550 |  0.0840 |
| B |  0.7510 |  0.0840 |
| C |  0.7540 |  0.0830 |
| D |  0.7540 |  0.0840 |
| E |  0.7530 |  0.0840 |
| F |  0.7530 |  0.0850 |
| G |  0.7520 |  0.0850 |
| H |  0.7560 |  0.0920 |
| I |  0.7590 |  0.0920 |
| J |  0.7560 |  0.0910 |
| K |  0.7540 |  0.0900 |
| L |  0.7570 |  0.0910 |
| M |  0.7540 |  0.0910 |
| N |  0.7550 |  0.0910 |

