



## Full wwPDB EM Validation Report ⓘ

Sep 23, 2025 – 11:59 am BST

PDB ID : 5ND7 / pdb\_00005nd7  
EMDB ID : EMD-3623  
Title : Microtubule-bound MKLP2 motor domain in the presence of AMPPNP  
Authors : Atherton, J.; Yu, I.-M.; Cook, A.; Muretta, J.M.; Joseph, A.P.; Major, J.; Sourigues, Y.; Clause, J.; Topf, M.; Rosenfeld, S.S.; Houdusse, A.; Moores, C.A.  
Deposited on : 2017-03-07  
Resolution : 7.90 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev129  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4-5-2 with Phenix2.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
EM percentile statistics : **NOT EXECUTED**  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.46

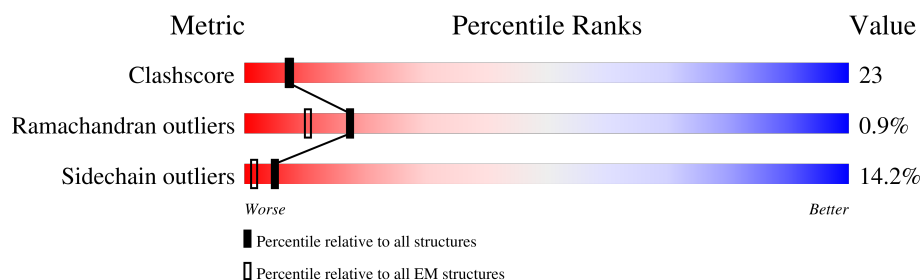
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 7.90 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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  $\leq 5\%$ .

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | 1-C   | 501    | 26% 29% 5% 40%   |
| 1   | 2-C   | 501    | 25% 30% 5% 40%   |
| 1   | 3-C   | 501    | 25% 30% 5% 40%   |
| 1   | 4-C   | 501    | 25% 30% 5% 40%   |
| 1   | 5-C   | 501    | 25% 30% 5% 40%   |
| 2   | 1-A   | 451    | 59% 30% • 9%     |
| 2   | 2-A   | 451    | 59% 30% • 9%     |
| 2   | 3-A   | 451    | 59% 29% • 9%     |
| 2   | 4-A   | 451    | 59% 29% • 9%     |

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| Mol | Chain | Length | Quality of chain                                                                   |
|-----|-------|--------|------------------------------------------------------------------------------------|
| 2   | 5-A   | 451    |  |
| 3   | 1-B   | 445    |  |
| 3   | 2-B   | 445    |  |
| 3   | 3-B   | 445    |  |
| 3   | 4-B   | 445    |  |
| 3   | 5-B   | 445    |  |

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 |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 6   | GTP  | 1-A   | 500 | -         | -        | X       | -                |
| 6   | GTP  | 2-A   | 500 | -         | -        | X       | -                |
| 6   | GTP  | 3-A   | 500 | -         | -        | X       | -                |
| 6   | GTP  | 4-A   | 500 | -         | -        | X       | -                |
| 6   | GTP  | 5-A   | 500 | -         | -        | X       | -                |

## 2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 45700 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Kinesin-like protein KIF20A.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 1   | 1-C   | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2407  | 1531 | 425 | 440 | 11 |         |       |
| 1   | 2-C   | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2407  | 1531 | 425 | 440 | 11 |         |       |
| 1   | 3-C   | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2407  | 1531 | 425 | 440 | 11 |         |       |
| 1   | 4-C   | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2407  | 1531 | 425 | 440 | 11 |         |       |
| 1   | 5-C   | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2407  | 1531 | 425 | 440 | 11 |         |       |

- Molecule 2 is a protein called Tubulin alpha chain.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 2   | 1-A   | 412      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3227  | 2043 | 551 | 613 | 20 |         |       |
| 2   | 2-A   | 412      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3227  | 2043 | 551 | 613 | 20 |         |       |
| 2   | 3-A   | 412      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3227  | 2043 | 551 | 613 | 20 |         |       |
| 2   | 4-A   | 412      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3227  | 2043 | 551 | 613 | 20 |         |       |
| 2   | 5-A   | 412      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3227  | 2043 | 551 | 613 | 20 |         |       |

There are 3 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| A     | 136     | SER      | LEU    | conflict | UNP F2Z4C1 |
| A     | 265     | GLY      | ILE    | conflict | UNP F2Z4C1 |
| A     | 358     | GLU      | GLN    | conflict | UNP F2Z4C1 |

- Molecule 3 is a protein called Tubulin beta-2B chain.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | 1-B   | 426      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3351  | 2105 | 575 | 646 | 25 |         |       |
| 3   | 2-B   | 426      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3351  | 2105 | 575 | 646 | 25 |         |       |
| 3   | 3-B   | 426      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3351  | 2105 | 575 | 646 | 25 |         |       |
| 3   | 4-B   | 426      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3351  | 2105 | 575 | 646 | 25 |         |       |
| 3   | 5-B   | 426      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3351  | 2105 | 575 | 646 | 25 |         |       |

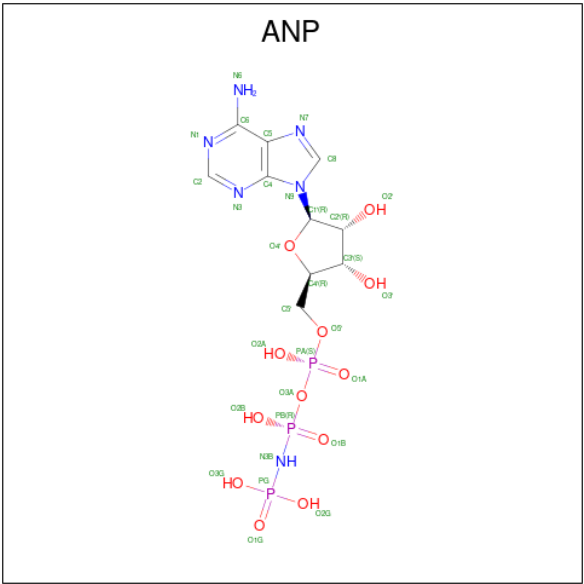
There are 4 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| B     | 57      | ALA      | THR    | conflict | UNP Q6B856 |
| B     | 172     | VAL      | MET    | conflict | UNP Q6B856 |
| B     | 298     | ALA      | SER    | conflict | UNP Q6B856 |
| B     | 318     | VAL      | ILE    | conflict | UNP Q6B856 |

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

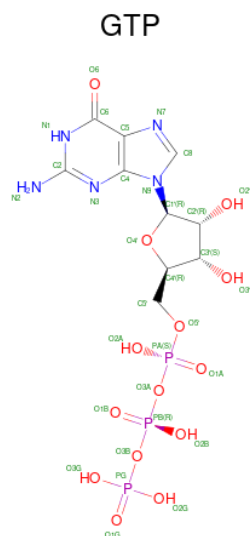
| Mol | Chain | Residues | Atoms |    | AltConf |
|-----|-------|----------|-------|----|---------|
| 4   | 1-C   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 2-C   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 3-C   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 4-C   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 5-C   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 1-A   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 2-A   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 3-A   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 4-A   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |
| 4   | 5-A   | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |

- Molecule 5 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (CCD ID: ANP) (formula: C<sub>10</sub>H<sub>17</sub>N<sub>6</sub>O<sub>12</sub>P<sub>3</sub>).



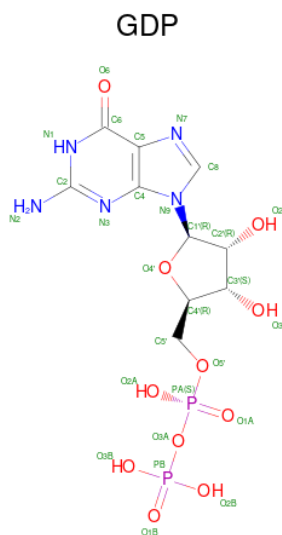
| Mol | Chain | Residues | Atoms |    |   |    |   | AltConf |
|-----|-------|----------|-------|----|---|----|---|---------|
| 5   | 1-C   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 6 | 12 | 3 |         |
| 5   | 2-C   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 6 | 12 | 3 |         |
| 5   | 3-C   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 6 | 12 | 3 |         |
| 5   | 4-C   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 6 | 12 | 3 |         |
| 5   | 5-C   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 31    | 10 | 6 | 12 | 3 |         |

- Molecule 6 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>14</sub>P<sub>3</sub>).



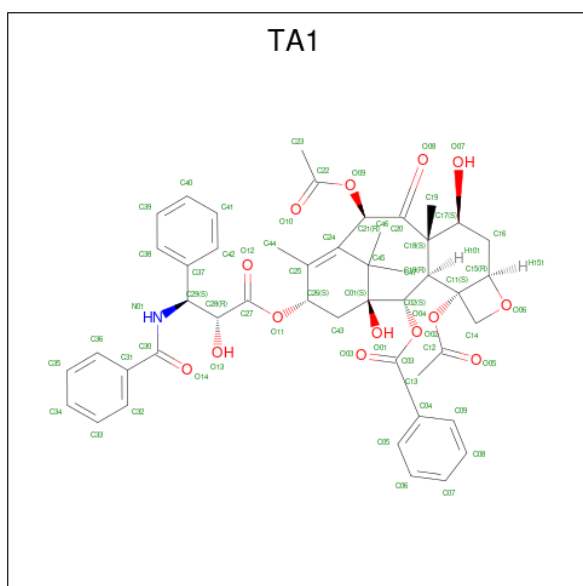
| Mol | Chain | Residues | Atoms       |         |        |         |        | AltConf |
|-----|-------|----------|-------------|---------|--------|---------|--------|---------|
| 6   | 1-A   | 1        | Total<br>32 | C<br>10 | N<br>5 | O<br>14 | P<br>3 | 0       |
| 6   | 2-A   | 1        | Total<br>32 | C<br>10 | N<br>5 | O<br>14 | P<br>3 | 0       |
| 6   | 3-A   | 1        | Total<br>32 | C<br>10 | N<br>5 | O<br>14 | P<br>3 | 0       |
| 6   | 4-A   | 1        | Total<br>32 | C<br>10 | N<br>5 | O<br>14 | P<br>3 | 0       |
| 6   | 5-A   | 1        | Total<br>32 | C<br>10 | N<br>5 | O<br>14 | P<br>3 | 0       |

- Molecule 7 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula:  $C_{10}H_{15}N_5O_{11}P_2$ ).



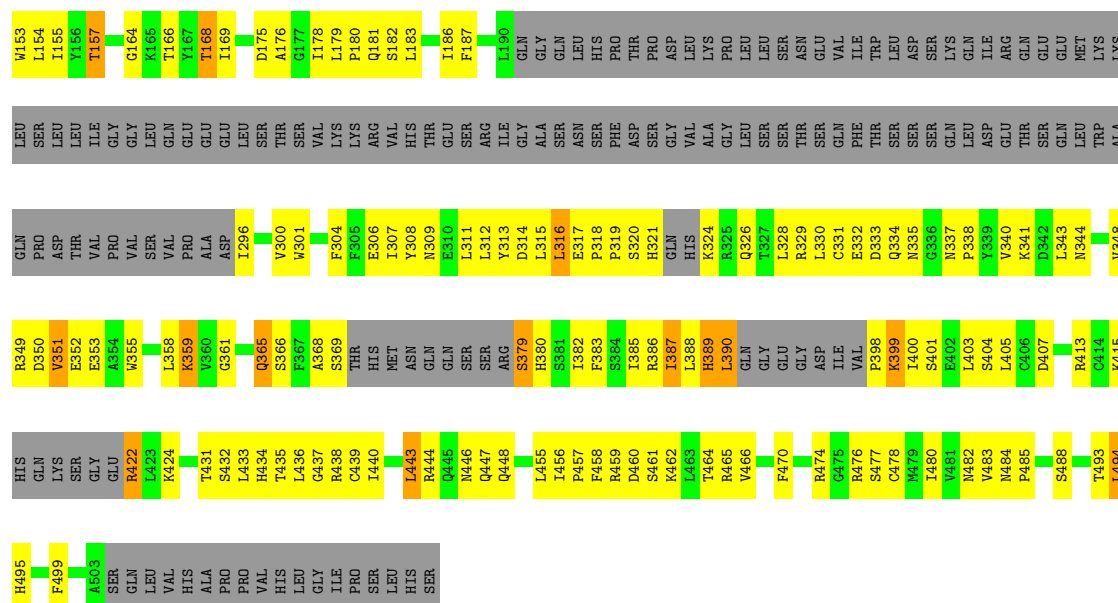
| Mol | Chain | Residues | Atoms |    |   |    |   | AltConf |
|-----|-------|----------|-------|----|---|----|---|---------|
| 7   | 1-B   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |
| 7   | 2-B   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |
| 7   | 3-B   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |
| 7   | 4-B   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |
| 7   | 5-B   | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |

- Molecule 8 is TAXOL (CCD ID: TA1) (formula:  $C_{47}H_{51}NO_{14}$ ).

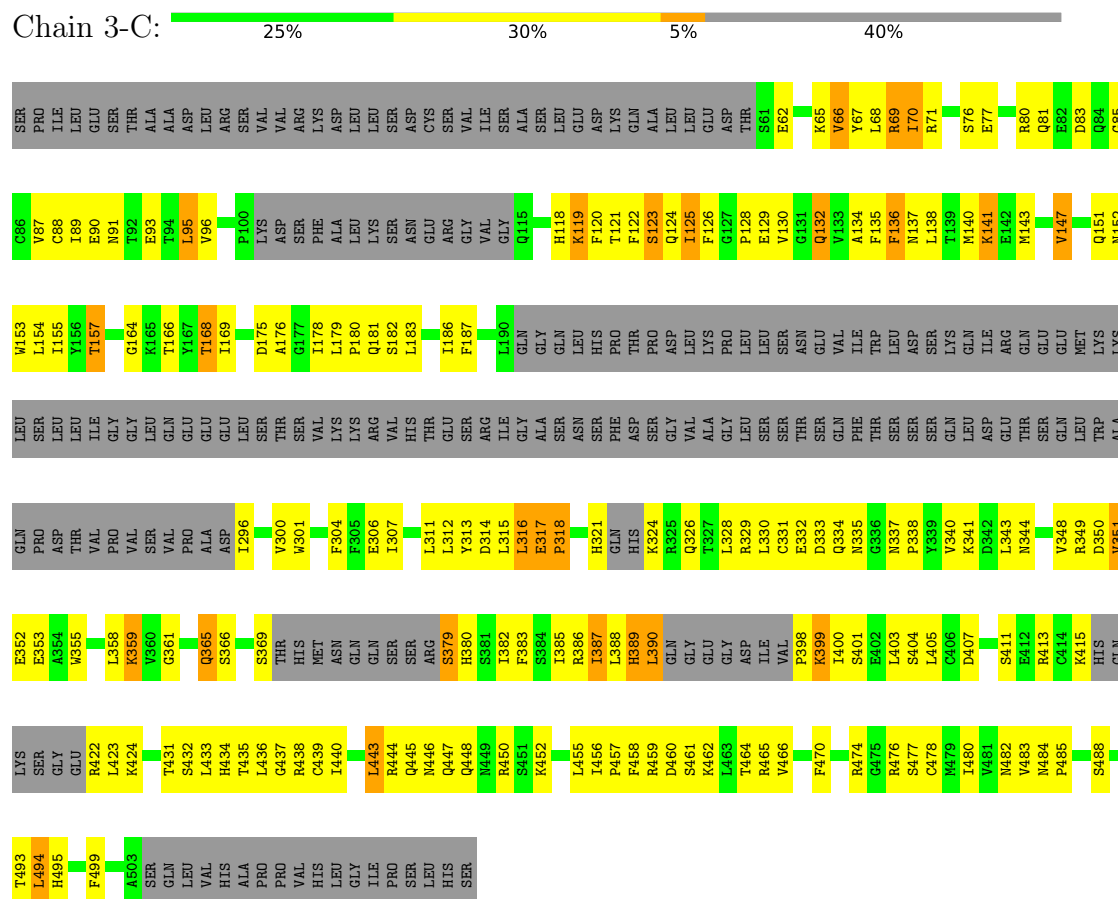


| Mol | Chain | Residues | Atoms |    |   |    | AltConf |
|-----|-------|----------|-------|----|---|----|---------|
| 8   | 1-B   | 1        | Total | C  | N | O  | 0       |
|     |       |          | 62    | 47 | 1 | 14 |         |
| 8   | 2-B   | 1        | Total | C  | N | O  | 0       |
|     |       |          | 62    | 47 | 1 | 14 |         |
| 8   | 3-B   | 1        | Total | C  | N | O  | 0       |
|     |       |          | 62    | 47 | 1 | 14 |         |
| 8   | 4-B   | 1        | Total | C  | N | O  | 0       |
|     |       |          | 62    | 47 | 1 | 14 |         |
| 8   | 5-B   | 1        | Total | C  | N | O  | 0       |
|     |       |          | 62    | 47 | 1 | 14 |         |

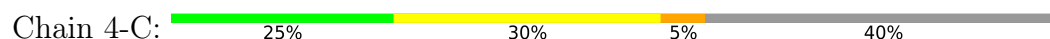


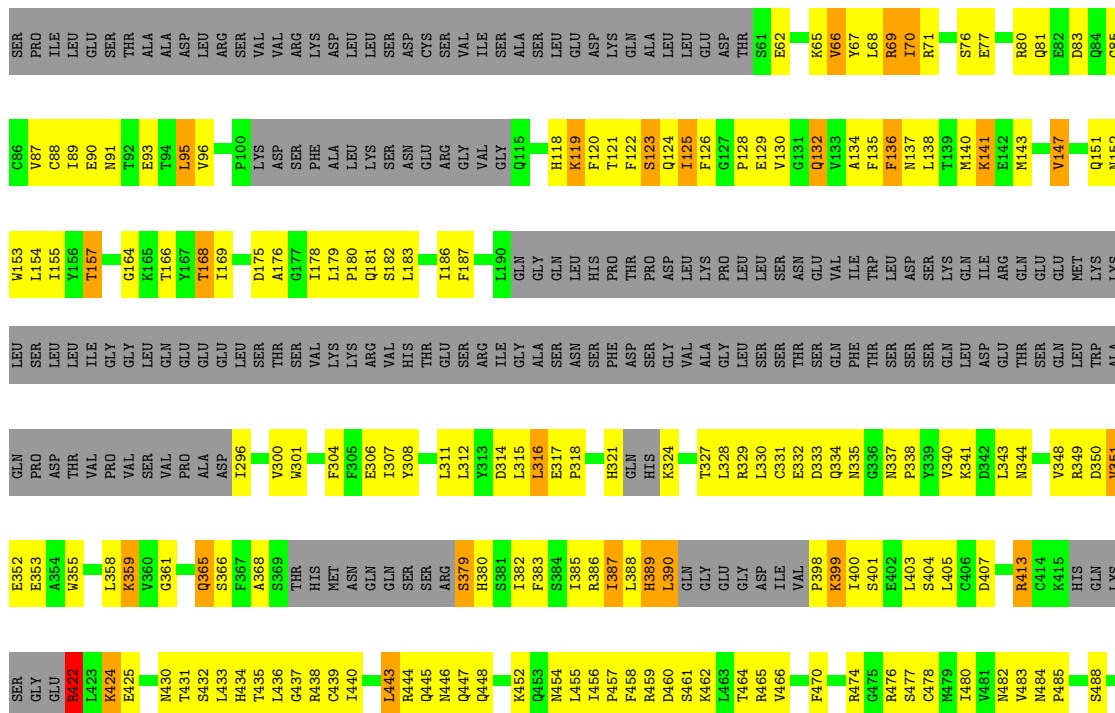
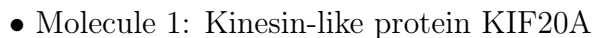


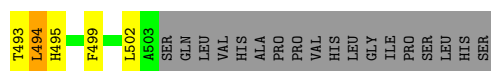
- Molecule 1: Kinesin-like protein KIF20A



- Molecule 1: Kinesin-like protein KIF20A

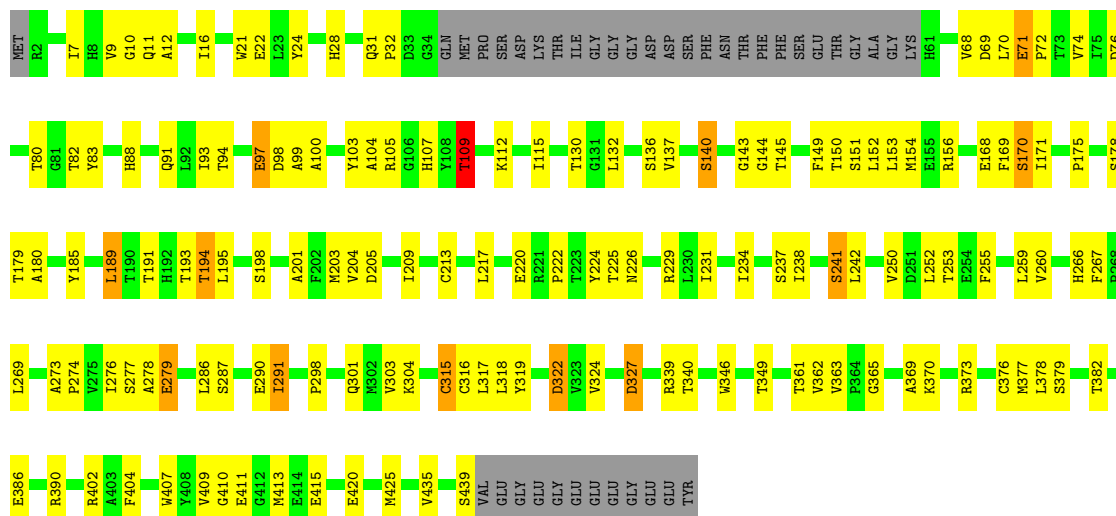






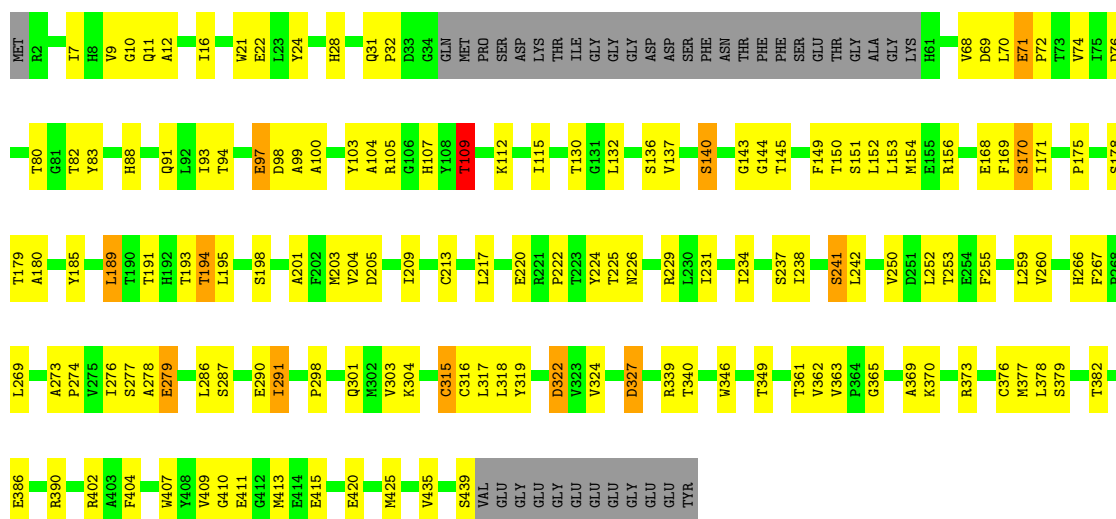
• Molecule 2: Tubulin alpha chain

Chain 1-A: 59% 30% 9%



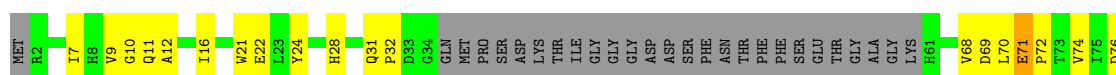
• Molecule 2: Tubulin alpha chain

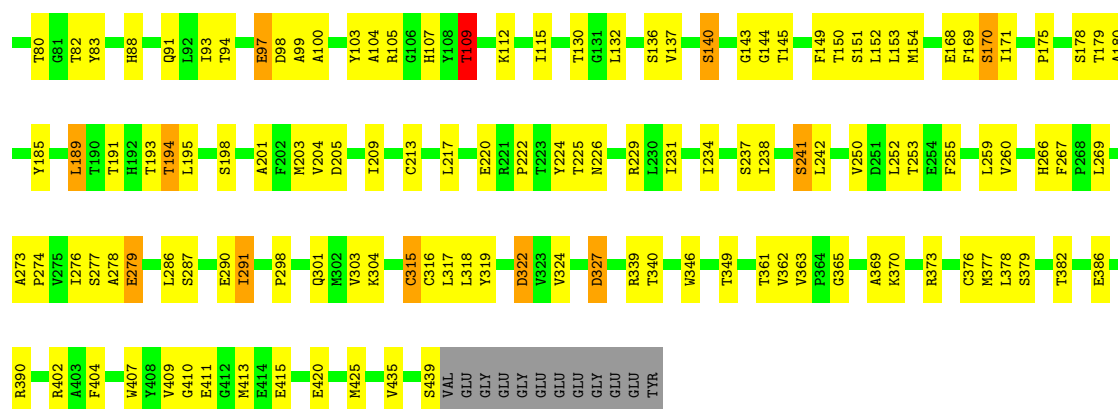
Chain 2-A: 59% 30% 9%



• Molecule 2: Tubulin alpha chain

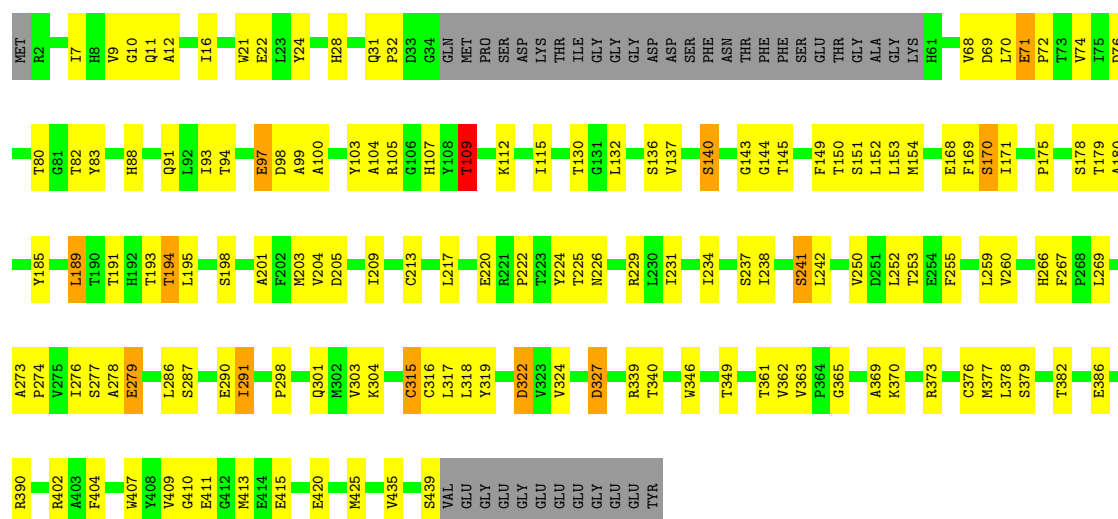
Chain 3-A: 59% 29% 9%





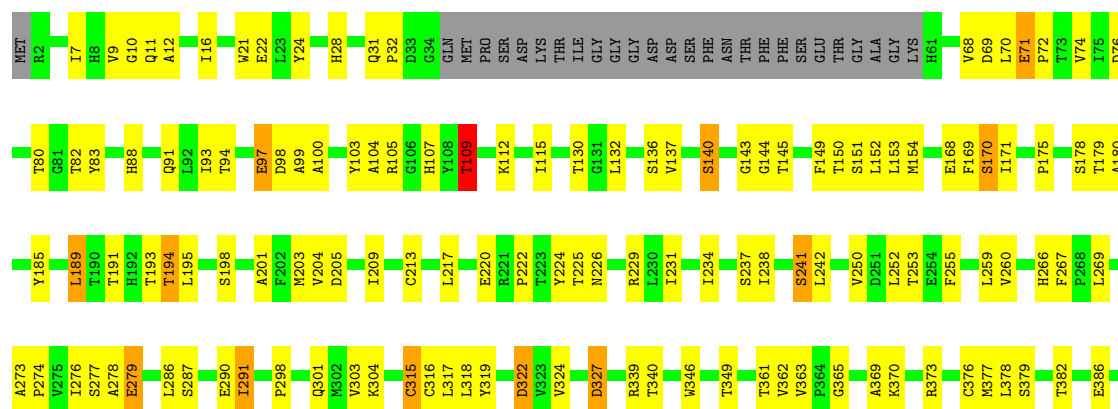
• Molecule 2: Tubulin alpha chain

Chain 4-A: 59% 29% 9%



• Molecule 2: Tubulin alpha chain

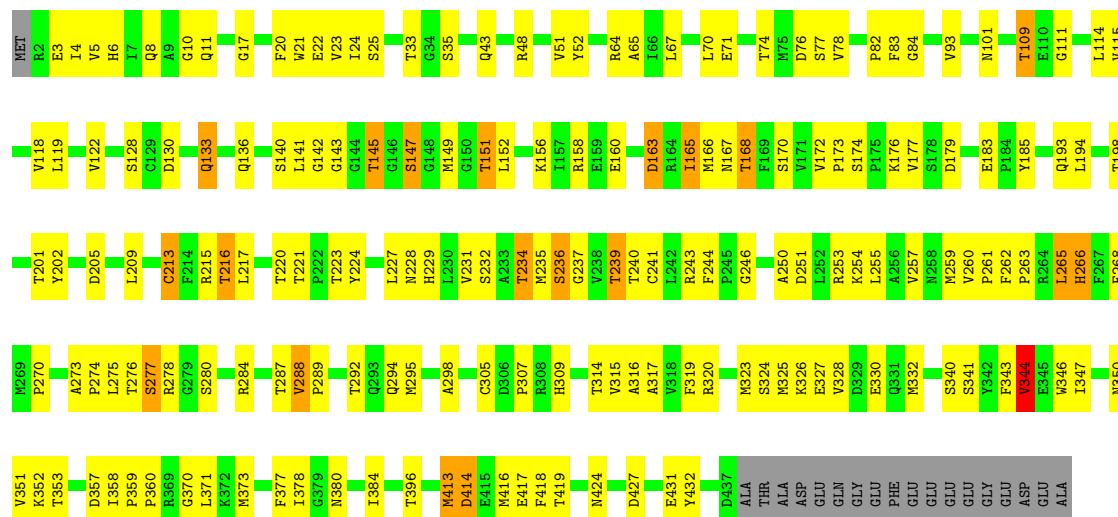
Chain 5-A: 59% 29% 9%





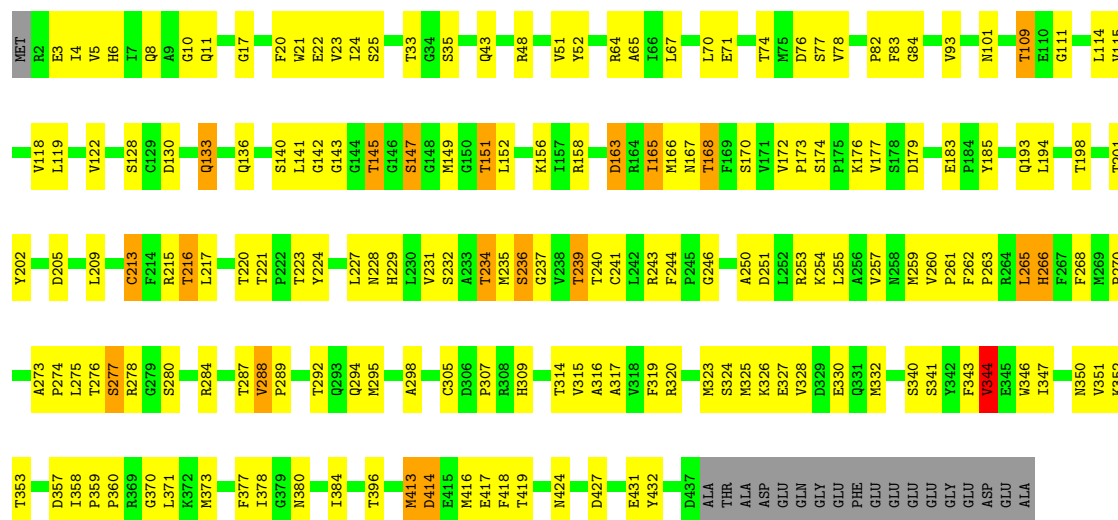
• Molecule 3: Tubulin beta-2B chain

Chain 1-B: 55% 36%



• Molecule 3: Tubulin beta-2B chain

Chain 2-B: 56% 36%

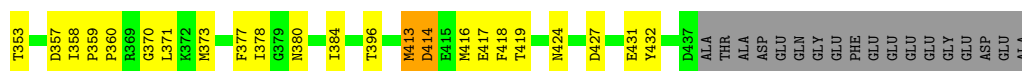


• Molecule 3: Tubulin beta-2B chain

Chain 3-B: 56% 36%







## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|-----------------------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 10858                                   | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | FEI TECNAI F20                          | Depositor |
| Voltage (kV)                         | 200                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 20                                      | Depositor |
| Minimum defocus (nm)                 | Not provided                            |           |
| Maximum defocus (nm)                 | Not provided                            |           |
| Magnification                        | Not provided                            |           |
| Image detector                       | DIRECT ELECTRON DE-20 (5k x 3k)         | Depositor |
| Maximum map value                    | 0.084                                   | Depositor |
| Minimum map value                    | -0.031                                  | Depositor |
| Average map value                    | 0.003                                   | Depositor |
| Map value standard deviation         | 0.011                                   | Depositor |
| Recommended contour level            | 0.0322                                  | Depositor |
| Map size ( $\text{\AA}$ )            | 246.4, 214.06, 247.93999                | wwPDB     |
| Map dimensions                       | 160, 139, 161                           | wwPDB     |
| Map angles ( $^\circ$ )              | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing ( $\text{\AA}$ )       | 1.54, 1.54, 1.54                        | Depositor |

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, GTP, TA1, GDP, ANP

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   | 1-C   | 0.64         | 0/2450      | 0.89        | 1/3299 (0.0%)   |
| 1   | 2-C   | 0.64         | 0/2450      | 0.89        | 1/3299 (0.0%)   |
| 1   | 3-C   | 0.64         | 0/2450      | 0.89        | 1/3299 (0.0%)   |
| 1   | 4-C   | 0.64         | 0/2450      | 0.89        | 1/3299 (0.0%)   |
| 1   | 5-C   | 0.64         | 0/2450      | 0.89        | 1/3299 (0.0%)   |
| 2   | 1-A   | 0.37         | 0/3300      | 0.77        | 0/4482          |
| 2   | 2-A   | 0.37         | 0/3300      | 0.77        | 0/4482          |
| 2   | 3-A   | 0.37         | 0/3300      | 0.77        | 0/4482          |
| 2   | 4-A   | 0.37         | 0/3300      | 0.77        | 0/4482          |
| 2   | 5-A   | 0.37         | 0/3300      | 0.77        | 0/4482          |
| 3   | 1-B   | 0.39         | 0/3426      | 0.78        | 1/4642 (0.0%)   |
| 3   | 2-B   | 0.39         | 0/3426      | 0.78        | 1/4642 (0.0%)   |
| 3   | 3-B   | 0.39         | 0/3426      | 0.78        | 1/4642 (0.0%)   |
| 3   | 4-B   | 0.39         | 0/3426      | 0.78        | 1/4642 (0.0%)   |
| 3   | 5-B   | 0.39         | 0/3426      | 0.78        | 1/4642 (0.0%)   |
| All | All   | 0.47         | 0/45880     | 0.81        | 10/62115 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | 5-C   | 0                   | 2                   |

There are no bond length outliers.

All (10) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|--------|------|-------------|----------|
| 1   | 1-C   | 318 | PRO  | N-CA-C | 5.62 | 117.56      | 110.70   |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1   | 2-C   | 318 | PRO  | N-CA-C  | 5.62  | 117.56      | 110.70   |
| 1   | 3-C   | 318 | PRO  | N-CA-C  | 5.62  | 117.56      | 110.70   |
| 1   | 4-C   | 318 | PRO  | N-CA-C  | 5.62  | 117.56      | 110.70   |
| 1   | 5-C   | 318 | PRO  | N-CA-C  | 5.62  | 117.56      | 110.70   |
| 3   | 1-B   | 414 | ASP  | CB-CA-C | -5.06 | 100.99      | 109.65   |
| 3   | 2-B   | 414 | ASP  | CB-CA-C | -5.06 | 100.99      | 109.65   |
| 3   | 3-B   | 414 | ASP  | CB-CA-C | -5.06 | 100.99      | 109.65   |
| 3   | 4-B   | 414 | ASP  | CB-CA-C | -5.06 | 100.99      | 109.65   |
| 3   | 5-B   | 414 | ASP  | CB-CA-C | -5.06 | 100.99      | 109.65   |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | 5-C   | 413 | ARG  | Sidechain |
| 1   | 5-C   | 422 | ARG  | Sidechain |

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | 1-C   | 2407  | 0        | 2419     | 185     | 0            |
| 1   | 2-C   | 2407  | 0        | 2419     | 195     | 0            |
| 1   | 3-C   | 2407  | 0        | 2419     | 191     | 0            |
| 1   | 4-C   | 2407  | 0        | 2419     | 196     | 0            |
| 1   | 5-C   | 2407  | 0        | 2419     | 186     | 0            |
| 2   | 1-A   | 3227  | 0        | 3141     | 125     | 0            |
| 2   | 2-A   | 3227  | 0        | 3141     | 128     | 0            |
| 2   | 3-A   | 3227  | 0        | 3141     | 124     | 0            |
| 2   | 4-A   | 3227  | 0        | 3141     | 123     | 0            |
| 2   | 5-A   | 3227  | 0        | 3141     | 123     | 0            |
| 3   | 1-B   | 3351  | 0        | 3229     | 153     | 0            |
| 3   | 2-B   | 3351  | 0        | 3229     | 150     | 0            |
| 3   | 3-B   | 3351  | 0        | 3229     | 149     | 0            |
| 3   | 4-B   | 3351  | 0        | 3229     | 150     | 0            |
| 3   | 5-B   | 3351  | 0        | 3229     | 150     | 0            |
| 4   | 1-A   | 1     | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 4   | 1-C   | 1     | 0        | 0        | 0       | 0            |
| 4   | 2-A   | 1     | 0        | 0        | 0       | 0            |
| 4   | 2-C   | 1     | 0        | 0        | 0       | 0            |
| 4   | 3-A   | 1     | 0        | 0        | 0       | 0            |
| 4   | 3-C   | 1     | 0        | 0        | 0       | 0            |
| 4   | 4-A   | 1     | 0        | 0        | 0       | 0            |
| 4   | 4-C   | 1     | 0        | 0        | 0       | 0            |
| 4   | 5-A   | 1     | 0        | 0        | 0       | 0            |
| 4   | 5-C   | 1     | 0        | 0        | 0       | 0            |
| 5   | 1-C   | 31    | 0        | 13       | 2       | 0            |
| 5   | 2-C   | 31    | 0        | 13       | 2       | 0            |
| 5   | 3-C   | 31    | 0        | 13       | 2       | 0            |
| 5   | 4-C   | 31    | 0        | 13       | 2       | 0            |
| 5   | 5-C   | 31    | 0        | 13       | 2       | 0            |
| 6   | 1-A   | 32    | 0        | 12       | 28      | 0            |
| 6   | 2-A   | 32    | 0        | 12       | 28      | 0            |
| 6   | 3-A   | 32    | 0        | 12       | 28      | 0            |
| 6   | 4-A   | 32    | 0        | 12       | 28      | 0            |
| 6   | 5-A   | 32    | 0        | 12       | 28      | 0            |
| 7   | 1-B   | 28    | 0        | 12       | 8       | 0            |
| 7   | 2-B   | 28    | 0        | 12       | 8       | 0            |
| 7   | 3-B   | 28    | 0        | 12       | 8       | 0            |
| 7   | 4-B   | 28    | 0        | 12       | 8       | 0            |
| 7   | 5-B   | 28    | 0        | 12       | 8       | 0            |
| 8   | 1-B   | 62    | 0        | 51       | 14      | 0            |
| 8   | 2-B   | 62    | 0        | 51       | 14      | 0            |
| 8   | 3-B   | 62    | 0        | 51       | 14      | 0            |
| 8   | 4-B   | 62    | 0        | 51       | 14      | 0            |
| 8   | 5-B   | 62    | 0        | 51       | 14      | 0            |
| All | All   | 45700 | 0        | 44385    | 2073    | 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 23.

All (2073) 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) |
|----------------|-----------------|--------------------------|-------------------|
| 2:A:179:THR:CB | 6:A:500:GTP:H3' | 1.62                     | 1.27              |
| 2:A:179:THR:CB | 6:A:500:GTP:H3' | 1.62                     | 1.27              |
| 2:A:179:THR:CB | 6:A:500:GTP:H3' | 1.62                     | 1.27              |
| 2:A:179:THR:CB | 6:A:500:GTP:H3' | 1.62                     | 1.27              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 2:A:179:THR:CB  | 6:A:500:GTP:H3'  | 1.62                     | 1.27              |
| 1:C:369:SER:CB  | 1:C:413:ARG:HH12 | 1.46                     | 1.27              |
| 1:C:460:ASP:OD2 | 3:B:263:PRO:HG3  | 1.33                     | 1.26              |
| 1:C:460:ASP:OD2 | 3:B:263:PRO:HG3  | 1.36                     | 1.24              |
| 1:C:460:ASP:OD2 | 3:B:263:PRO:HG3  | 1.37                     | 1.23              |
| 1:C:460:ASP:OD2 | 3:B:263:PRO:HG3  | 1.38                     | 1.23              |
| 1:C:460:ASP:OD2 | 3:B:263:PRO:HG3  | 1.37                     | 1.22              |
| 2:A:11:GLN:HB3  | 6:A:500:GTP:O2B  | 1.53                     | 1.07              |
| 2:A:11:GLN:HB3  | 6:A:500:GTP:O2B  | 1.53                     | 1.07              |
| 2:A:11:GLN:HB3  | 6:A:500:GTP:O2B  | 1.53                     | 1.07              |
| 2:A:11:GLN:HB3  | 6:A:500:GTP:O2B  | 1.53                     | 1.07              |
| 2:A:11:GLN:HB3  | 6:A:500:GTP:O2B  | 1.53                     | 1.07              |
| 1:C:369:SER:OG  | 1:C:422:ARG:NH1  | 1.88                     | 1.07              |
| 1:C:369:SER:O   | 1:C:413:ARG:NE   | 1.88                     | 1.05              |
| 1:C:369:SER:CB  | 1:C:413:ARG:NH1  | 2.19                     | 1.05              |
| 2:A:179:THR:HB  | 6:A:500:GTP:H3'  | 1.34                     | 1.02              |
| 2:A:179:THR:HB  | 6:A:500:GTP:H3'  | 1.34                     | 1.02              |
| 2:A:179:THR:HB  | 6:A:500:GTP:H3'  | 1.34                     | 1.02              |
| 2:A:179:THR:HB  | 6:A:500:GTP:H3'  | 1.34                     | 1.02              |
| 2:A:179:THR:HB  | 6:A:500:GTP:H3'  | 1.34                     | 1.02              |
| 1:C:333:ASP:HA  | 3:B:416:MET:SD   | 2.02                     | 1.00              |
| 2:A:179:THR:CB  | 6:A:500:GTP:C3'  | 2.39                     | 0.99              |
| 2:A:179:THR:CB  | 6:A:500:GTP:C3'  | 2.39                     | 0.99              |
| 2:A:179:THR:CB  | 6:A:500:GTP:C3'  | 2.39                     | 0.99              |
| 2:A:179:THR:CB  | 6:A:500:GTP:C3'  | 2.39                     | 0.99              |
| 2:A:179:THR:CB  | 6:A:500:GTP:C3'  | 2.39                     | 0.99              |
| 1:C:333:ASP:HA  | 3:B:416:MET:SD   | 2.03                     | 0.99              |
| 1:C:333:ASP:HA  | 3:B:416:MET:SD   | 2.03                     | 0.98              |
| 1:C:333:ASP:HA  | 3:B:416:MET:SD   | 2.03                     | 0.98              |
| 1:C:333:ASP:HA  | 3:B:416:MET:SD   | 2.04                     | 0.97              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:C3'  | 2.12                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:C3'  | 2.12                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:C3'  | 2.12                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:C3'  | 2.12                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:C3'  | 2.12                     | 0.96              |
| 1:C:334:GLN:N   | 3:B:416:MET:SD   | 2.38                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:O3'  | 1.82                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:O3'  | 1.82                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:O3'  | 1.82                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:O3'  | 1.82                     | 0.96              |
| 2:A:179:THR:OG1 | 6:A:500:GTP:O3'  | 1.82                     | 0.96              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:334:GLN:N    | 3:B:416:MET:SD   | 2.40                     | 0.94              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:H3'  | 1.98                     | 0.93              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:H3'  | 1.98                     | 0.93              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:H3'  | 1.98                     | 0.93              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:H3'  | 1.98                     | 0.93              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:H3'  | 1.98                     | 0.93              |
| 1:C:334:GLN:N    | 3:B:416:MET:SD   | 2.41                     | 0.93              |
| 1:C:334:GLN:N    | 3:B:416:MET:SD   | 2.41                     | 0.93              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 2:A:11:GLN:CB    | 6:A:500:GTP:O2B  | 2.17                     | 0.92              |
| 3:B:10:GLY:HA2   | 3:B:145:THR:HB   | 1.54                     | 0.90              |
| 3:B:10:GLY:HA2   | 3:B:145:THR:HB   | 1.54                     | 0.90              |
| 3:B:10:GLY:HA2   | 3:B:145:THR:HB   | 1.54                     | 0.90              |
| 3:B:10:GLY:HA2   | 3:B:145:THR:HB   | 1.54                     | 0.90              |
| 3:B:10:GLY:HA2   | 3:B:145:THR:HB   | 1.54                     | 0.90              |
| 1:C:334:GLN:N    | 3:B:416:MET:SD   | 2.44                     | 0.89              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:HG3  | 1.51                     | 0.89              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:HG3  | 1.51                     | 0.89              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:HG3  | 1.51                     | 0.89              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:HG3  | 1.51                     | 0.89              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:HG3  | 1.51                     | 0.89              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:HG12 | 1.53                     | 0.88              |
| 1:C:459:ARG:HD3  | 3:B:427:ASP:OD2  | 1.71                     | 0.88              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:HG12 | 1.54                     | 0.88              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:HG12 | 1.53                     | 0.88              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:HG12 | 1.53                     | 0.88              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:HG12 | 1.53                     | 0.88              |
| 1:C:313:TYR:HA   | 1:C:326:GLN:HE22 | 1.38                     | 0.88              |
| 2:A:278:ALA:HB2  | 2:A:369:ALA:HA   | 1.54                     | 0.87              |
| 2:A:278:ALA:HB2  | 2:A:369:ALA:HA   | 1.54                     | 0.87              |
| 2:A:278:ALA:HB2  | 2:A:369:ALA:HA   | 1.54                     | 0.87              |
| 2:A:278:ALA:HB2  | 2:A:369:ALA:HA   | 1.54                     | 0.87              |
| 2:A:278:ALA:HB2  | 2:A:369:ALA:HA   | 1.54                     | 0.87              |
| 1:C:88:CYS:HB2   | 1:C:96:VAL:HG13  | 1.57                     | 0.86              |
| 1:C:88:CYS:HB2   | 1:C:96:VAL:HG13  | 1.57                     | 0.86              |
| 1:C:88:CYS:HB2   | 1:C:96:VAL:HG13  | 1.57                     | 0.86              |
| 1:C:88:CYS:HB2   | 1:C:96:VAL:HG13  | 1.57                     | 0.86              |
| 1:C:88:CYS:HB2   | 1:C:96:VAL:HG13  | 1.57                     | 0.86              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:C:459:ARG:HD3 | 3:B:427:ASP:OD2  | 1.73                     | 0.86              |
| 1:C:459:ARG:HD3 | 3:B:427:ASP:OD2  | 1.73                     | 0.86              |
| 3:B:173:PRO:HB3 | 3:B:183:GLU:HG2  | 1.55                     | 0.86              |
| 3:B:173:PRO:HB3 | 3:B:183:GLU:HG2  | 1.55                     | 0.86              |
| 3:B:173:PRO:HB3 | 3:B:183:GLU:HG2  | 1.55                     | 0.86              |
| 3:B:173:PRO:HB3 | 3:B:183:GLU:HG2  | 1.55                     | 0.86              |
| 3:B:173:PRO:HB3 | 3:B:183:GLU:HG2  | 1.55                     | 0.86              |
| 1:C:415:LYS:HD3 | 2:A:156:ARG:HH21 | 1.40                     | 0.85              |
| 1:C:460:ASP:CG  | 3:B:263:PRO:HG3  | 2.01                     | 0.85              |
| 1:C:460:ASP:CG  | 3:B:263:PRO:HG3  | 2.02                     | 0.85              |
| 1:C:460:ASP:CG  | 3:B:263:PRO:HG3  | 2.02                     | 0.85              |
| 1:C:369:SER:HB3 | 1:C:413:ARG:NH1  | 1.91                     | 0.85              |
| 1:C:459:ARG:HD3 | 3:B:427:ASP:OD2  | 1.75                     | 0.84              |
| 1:C:460:ASP:CG  | 3:B:263:PRO:HG3  | 2.02                     | 0.84              |
| 3:B:332:MET:HE2 | 3:B:351:VAL:HG11 | 1.59                     | 0.84              |
| 3:B:332:MET:HE2 | 3:B:351:VAL:HG11 | 1.59                     | 0.84              |
| 3:B:332:MET:HE2 | 3:B:351:VAL:HG11 | 1.59                     | 0.84              |
| 3:B:332:MET:HE2 | 3:B:351:VAL:HG11 | 1.59                     | 0.84              |
| 3:B:332:MET:HE2 | 3:B:351:VAL:HG11 | 1.59                     | 0.84              |
| 1:C:460:ASP:CG  | 3:B:263:PRO:HG3  | 2.03                     | 0.84              |
| 2:A:70:LEU:HB2  | 2:A:99:ALA:HB2   | 1.58                     | 0.83              |
| 2:A:70:LEU:HB2  | 2:A:99:ALA:HB2   | 1.58                     | 0.83              |
| 2:A:70:LEU:HB2  | 2:A:99:ALA:HB2   | 1.58                     | 0.83              |
| 2:A:70:LEU:HB2  | 2:A:99:ALA:HB2   | 1.58                     | 0.83              |
| 2:A:70:LEU:HB2  | 2:A:99:ALA:HB2   | 1.58                     | 0.83              |
| 1:C:459:ARG:HD3 | 3:B:427:ASP:OD2  | 1.77                     | 0.83              |
| 3:B:250:ALA:HA  | 3:B:254:LYS:HD2  | 1.60                     | 0.83              |
| 3:B:250:ALA:HA  | 3:B:254:LYS:HD2  | 1.60                     | 0.83              |
| 3:B:250:ALA:HA  | 3:B:254:LYS:HD2  | 1.60                     | 0.83              |
| 3:B:250:ALA:HA  | 3:B:254:LYS:HD2  | 1.60                     | 0.83              |
| 3:B:250:ALA:HA  | 3:B:254:LYS:HD2  | 1.60                     | 0.83              |
| 1:C:308:TYR:HE1 | 1:C:368:ALA:HA   | 1.42                     | 0.83              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HG12 | 2.08                     | 0.82              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HG12 | 2.08                     | 0.82              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HG12 | 2.08                     | 0.82              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HG12 | 2.08                     | 0.82              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HG12 | 2.08                     | 0.82              |
| 1:C:313:TYR:HE1 | 1:C:324:LYS:HE3  | 1.43                     | 0.82              |
| 1:C:424:LYS:NZ  | 3:B:163:ASP:OD1  | 2.13                     | 0.82              |
| 1:C:424:LYS:CG  | 3:B:163:ASP:OD2  | 2.28                     | 0.82              |
| 3:B:246:GLY:HA2 | 3:B:357:ASP:HB2  | 1.62                     | 0.82              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:246:GLY:HA2  | 3:B:357:ASP:HB2  | 1.62                     | 0.82              |
| 3:B:246:GLY:HA2  | 3:B:357:ASP:HB2  | 1.62                     | 0.82              |
| 3:B:246:GLY:HA2  | 3:B:357:ASP:HB2  | 1.62                     | 0.82              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:OD1  | 2.13                     | 0.82              |
| 3:B:246:GLY:HA2  | 3:B:357:ASP:HB2  | 1.62                     | 0.82              |
| 1:C:460:ASP:OD2  | 3:B:263:PRO:CG   | 2.25                     | 0.81              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:OD1  | 2.15                     | 0.80              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:OD1  | 2.14                     | 0.80              |
| 1:C:424:LYS:CG   | 3:B:163:ASP:OD2  | 2.29                     | 0.80              |
| 1:C:424:LYS:HG2  | 3:B:163:ASP:OD2  | 1.82                     | 0.80              |
| 2:A:115:ILE:HD12 | 2:A:152:LEU:HD13 | 1.64                     | 0.80              |
| 2:A:115:ILE:HD12 | 2:A:152:LEU:HD13 | 1.64                     | 0.80              |
| 2:A:115:ILE:HD12 | 2:A:152:LEU:HD13 | 1.64                     | 0.80              |
| 2:A:115:ILE:HD12 | 2:A:152:LEU:HD13 | 1.64                     | 0.80              |
| 2:A:115:ILE:HD12 | 2:A:152:LEU:HD13 | 1.64                     | 0.80              |
| 1:C:424:LYS:CG   | 3:B:163:ASP:OD2  | 2.30                     | 0.80              |
| 1:C:424:LYS:HG2  | 3:B:163:ASP:OD2  | 1.82                     | 0.79              |
| 1:C:308:TYR:CE1  | 1:C:368:ALA:HA   | 2.16                     | 0.79              |
| 1:C:424:LYS:CG   | 3:B:163:ASP:OD2  | 2.30                     | 0.79              |
| 1:C:424:LYS:HG2  | 3:B:163:ASP:OD2  | 1.83                     | 0.79              |
| 1:C:460:ASP:OD2  | 3:B:263:PRO:CG   | 2.27                     | 0.79              |
| 1:C:80:ARG:HG3   | 1:C:81:GLN:HG2   | 1.65                     | 0.79              |
| 1:C:80:ARG:HG3   | 1:C:81:GLN:HG2   | 1.65                     | 0.79              |
| 1:C:80:ARG:HG3   | 1:C:81:GLN:HG2   | 1.65                     | 0.79              |
| 3:B:224:TYR:OH   | 7:B:600:GDP:O2'  | 2.00                     | 0.79              |
| 3:B:224:TYR:OH   | 7:B:600:GDP:O2'  | 2.00                     | 0.79              |
| 3:B:224:TYR:OH   | 7:B:600:GDP:O2'  | 2.00                     | 0.79              |
| 3:B:224:TYR:OH   | 7:B:600:GDP:O2'  | 2.00                     | 0.79              |
| 1:C:460:ASP:OD2  | 3:B:263:PRO:CG   | 2.27                     | 0.79              |
| 3:B:224:TYR:OH   | 7:B:600:GDP:O2'  | 2.00                     | 0.79              |
| 1:C:80:ARG:HG3   | 1:C:81:GLN:HG2   | 1.65                     | 0.78              |
| 1:C:80:ARG:HG3   | 1:C:81:GLN:HG2   | 1.65                     | 0.78              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HA   | 1.97                     | 0.78              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG22 | 2.14                     | 0.78              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:OD1  | 2.17                     | 0.78              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG22 | 2.14                     | 0.78              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG22 | 2.14                     | 0.78              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG22 | 2.14                     | 0.78              |
| 1:C:424:LYS:CG   | 3:B:163:ASP:OD2  | 2.31                     | 0.78              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG22 | 2.14                     | 0.78              |
| 1:C:460:ASP:OD2  | 3:B:263:PRO:CG   | 2.28                     | 0.78              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HA   | 1.99                     | 0.78              |
| 1:C:313:TYR:CE1  | 1:C:324:LYS:HE2  | 2.18                     | 0.77              |
| 1:C:460:ASP:OD2  | 3:B:263:PRO:CG   | 2.28                     | 0.77              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HA   | 1.99                     | 0.77              |
| 1:C:176:ALA:HB3  | 1:C:181:GLN:HG2  | 1.67                     | 0.77              |
| 1:C:176:ALA:HB3  | 1:C:181:GLN:HG2  | 1.67                     | 0.77              |
| 1:C:176:ALA:HB3  | 1:C:181:GLN:HG2  | 1.67                     | 0.77              |
| 1:C:176:ALA:HB3  | 1:C:181:GLN:HG2  | 1.67                     | 0.77              |
| 1:C:424:LYS:HG2  | 3:B:163:ASP:OD2  | 1.84                     | 0.77              |
| 1:C:369:SER:HB2  | 1:C:413:ARG:HH12 | 1.47                     | 0.77              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HA   | 1.99                     | 0.77              |
| 1:C:176:ALA:HB3  | 1:C:181:GLN:HG2  | 1.67                     | 0.77              |
| 1:C:95:LEU:HB2   | 1:C:120:PHE:HB2  | 1.67                     | 0.76              |
| 1:C:95:LEU:HB2   | 1:C:120:PHE:HB2  | 1.67                     | 0.76              |
| 1:C:424:LYS:HG2  | 3:B:163:ASP:OD2  | 1.85                     | 0.76              |
| 1:C:95:LEU:HB2   | 1:C:120:PHE:HB2  | 1.67                     | 0.76              |
| 1:C:95:LEU:HB2   | 1:C:120:PHE:HB2  | 1.68                     | 0.76              |
| 1:C:95:LEU:HB2   | 1:C:120:PHE:HB2  | 1.68                     | 0.76              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HA   | 2.00                     | 0.76              |
| 1:C:313:TYR:CE1  | 1:C:324:LYS:HE3  | 2.20                     | 0.76              |
| 2:A:269:LEU:HD22 | 2:A:303:VAL:HG11 | 1.67                     | 0.76              |
| 2:A:269:LEU:HD22 | 2:A:303:VAL:HG11 | 1.67                     | 0.76              |
| 2:A:269:LEU:HD22 | 2:A:303:VAL:HG11 | 1.67                     | 0.76              |
| 2:A:269:LEU:HD22 | 2:A:303:VAL:HG11 | 1.67                     | 0.76              |
| 2:A:269:LEU:HD22 | 2:A:303:VAL:HG11 | 1.67                     | 0.76              |
| 1:C:333:ASP:CA   | 3:B:416:MET:SD   | 2.74                     | 0.75              |
| 1:C:434:HIS:HB2  | 2:A:409:VAL:HG11 | 1.67                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 2:A:69:ASP:HA    | 2:A:145:THR:HG21 | 1.67                     | 0.75              |
| 2:A:204:VAL:HG11 | 2:A:231:ILE:HD12 | 1.69                     | 0.75              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C32  | 2.17                     | 0.75              |
| 1:C:147:VAL:HG12 | 1:C:387:ILE:HG12 | 1.69                     | 0.75              |
| 1:C:434:HIS:HB2  | 2:A:409:VAL:HG11 | 1.69                     | 0.75              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C32  | 2.17                     | 0.75              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:147:VAL:HG12 | 1:C:387:ILE:HG12 | 1.69                     | 0.75              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C32  | 2.17                     | 0.75              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C32  | 2.17                     | 0.75              |
| 1:C:333:ASP:CA   | 3:B:416:MET:SD   | 2.75                     | 0.75              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C32  | 2.17                     | 0.75              |
| 1:C:147:VAL:HG12 | 1:C:387:ILE:HG12 | 1.69                     | 0.74              |
| 1:C:147:VAL:HG12 | 1:C:387:ILE:HG12 | 1.69                     | 0.74              |
| 1:C:147:VAL:HG12 | 1:C:387:ILE:HG12 | 1.70                     | 0.74              |
| 1:C:333:ASP:CA   | 3:B:416:MET:SD   | 2.75                     | 0.74              |
| 1:C:333:ASP:CA   | 3:B:416:MET:SD   | 2.75                     | 0.74              |
| 1:C:434:HIS:HB2  | 2:A:409:VAL:HG11 | 1.69                     | 0.74              |
| 1:C:434:HIS:HB2  | 2:A:409:VAL:HG11 | 1.69                     | 0.74              |
| 2:A:316:CYS:HB3  | 2:A:378:LEU:HG   | 1.70                     | 0.73              |
| 2:A:316:CYS:HB3  | 2:A:378:LEU:HG   | 1.70                     | 0.73              |
| 2:A:316:CYS:HB3  | 2:A:378:LEU:HG   | 1.70                     | 0.73              |
| 2:A:316:CYS:HB3  | 2:A:378:LEU:HG   | 1.70                     | 0.73              |
| 2:A:316:CYS:HB3  | 2:A:378:LEU:HG   | 1.70                     | 0.73              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H3'  | 1.68                     | 0.73              |
| 3:B:93:VAL:HG11  | 3:B:118:VAL:HG22 | 1.70                     | 0.73              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H3'  | 1.68                     | 0.73              |
| 3:B:93:VAL:HG11  | 3:B:118:VAL:HG22 | 1.70                     | 0.73              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H3'  | 1.68                     | 0.73              |
| 3:B:93:VAL:HG11  | 3:B:118:VAL:HG22 | 1.70                     | 0.73              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H3'  | 1.68                     | 0.73              |
| 3:B:93:VAL:HG11  | 3:B:118:VAL:HG22 | 1.70                     | 0.73              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H3'  | 1.68                     | 0.73              |
| 3:B:93:VAL:HG11  | 3:B:118:VAL:HG22 | 1.70                     | 0.73              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:CD   | 2.12                     | 0.73              |
| 1:C:333:ASP:CA   | 3:B:416:MET:SD   | 2.76                     | 0.73              |
| 1:C:434:HIS:HB2  | 2:A:409:VAL:HG11 | 1.70                     | 0.73              |
| 2:A:242:LEU:HD21 | 2:A:250:VAL:HB   | 1.71                     | 0.73              |
| 2:A:242:LEU:HD21 | 2:A:250:VAL:HB   | 1.71                     | 0.73              |
| 2:A:242:LEU:HD21 | 2:A:250:VAL:HB   | 1.71                     | 0.73              |
| 1:C:314:ASP:HB3  | 1:C:325:ARG:HH12 | 1.54                     | 0.73              |
| 2:A:242:LEU:HD21 | 2:A:250:VAL:HB   | 1.71                     | 0.73              |
| 2:A:242:LEU:HD21 | 2:A:250:VAL:HB   | 1.71                     | 0.73              |
| 3:B:268:PHE:HD1  | 3:B:380:ASN:HB2  | 1.54                     | 0.72              |
| 3:B:268:PHE:HD1  | 3:B:380:ASN:HB2  | 1.54                     | 0.72              |
| 3:B:268:PHE:HD1  | 3:B:380:ASN:HB2  | 1.54                     | 0.72              |
| 3:B:268:PHE:HD1  | 3:B:380:ASN:HB2  | 1.54                     | 0.72              |
| 3:B:268:PHE:HD1  | 3:B:380:ASN:HB2  | 1.54                     | 0.72              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:333:ASP:C    | 3:B:416:MET:SD   | 2.73                     | 0.72              |
| 1:C:321:HIS:CD2  | 1:C:366:SER:OG   | 2.42                     | 0.72              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:HE1  | 1.71                     | 0.72              |
| 1:C:434:HIS:CE1  | 2:A:409:VAL:HG21 | 2.25                     | 0.72              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:CD   | 2.14                     | 0.72              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:HE1  | 1.72                     | 0.71              |
| 2:A:404:PHE:HB3  | 2:A:407:TRP:HD1  | 1.54                     | 0.71              |
| 2:A:404:PHE:HB3  | 2:A:407:TRP:HD1  | 1.54                     | 0.71              |
| 2:A:404:PHE:HB3  | 2:A:407:TRP:HD1  | 1.54                     | 0.71              |
| 2:A:404:PHE:HB3  | 2:A:407:TRP:HD1  | 1.54                     | 0.71              |
| 2:A:404:PHE:HB3  | 2:A:407:TRP:HD1  | 1.54                     | 0.71              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:HE1  | 1.72                     | 0.71              |
| 1:C:333:ASP:C    | 3:B:416:MET:SD   | 2.74                     | 0.71              |
| 1:C:313:TYR:HA   | 1:C:326:GLN:NE2  | 2.06                     | 0.71              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:CD   | 2.14                     | 0.71              |
| 1:C:369:SER:HB2  | 1:C:413:ARG:NH1  | 2.05                     | 0.71              |
| 2:A:260:VAL:HG12 | 2:A:266:HIS:HB2  | 1.71                     | 0.71              |
| 2:A:260:VAL:HG12 | 2:A:266:HIS:HB2  | 1.71                     | 0.71              |
| 2:A:260:VAL:HG12 | 2:A:266:HIS:HB2  | 1.71                     | 0.71              |
| 2:A:260:VAL:HG12 | 2:A:266:HIS:HB2  | 1.71                     | 0.71              |
| 2:A:260:VAL:HG12 | 2:A:266:HIS:HB2  | 1.71                     | 0.71              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:CD   | 2.15                     | 0.70              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:HE1  | 1.73                     | 0.70              |
| 3:B:236:SER:HB2  | 8:B:601:TA1:H401 | 1.74                     | 0.70              |
| 1:C:333:ASP:C    | 3:B:416:MET:SD   | 2.75                     | 0.70              |
| 3:B:236:SER:HB2  | 8:B:601:TA1:H401 | 1.74                     | 0.70              |
| 3:B:236:SER:HB2  | 8:B:601:TA1:H401 | 1.74                     | 0.70              |
| 3:B:236:SER:HB2  | 8:B:601:TA1:H401 | 1.74                     | 0.70              |
| 3:B:236:SER:HB2  | 8:B:601:TA1:H401 | 1.74                     | 0.70              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:CD   | 2.16                     | 0.70              |
| 1:C:434:HIS:CB   | 2:A:409:VAL:HG11 | 2.22                     | 0.70              |
| 1:C:333:ASP:C    | 3:B:416:MET:SD   | 2.75                     | 0.70              |
| 1:C:315:LEU:HB3  | 1:C:361:GLY:HA2  | 1.74                     | 0.69              |
| 1:C:315:LEU:HB3  | 1:C:361:GLY:HA2  | 1.74                     | 0.69              |
| 1:C:315:LEU:HB3  | 1:C:361:GLY:HA2  | 1.74                     | 0.69              |
| 1:C:315:LEU:HB3  | 1:C:361:GLY:HA2  | 1.74                     | 0.69              |
| 1:C:315:LEU:HB3  | 1:C:361:GLY:HA2  | 1.75                     | 0.69              |
| 1:C:330:LEU:HD22 | 1:C:340:VAL:HG22 | 1.74                     | 0.69              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:HE1  | 1.74                     | 0.69              |
| 1:C:176:ALA:HB1  | 1:C:180:PRO:HB2  | 1.75                     | 0.68              |
| 1:C:330:LEU:HD22 | 1:C:340:VAL:HG22 | 1.74                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:330:LEU:HD22 | 1:C:340:VAL:HG22 | 1.74                     | 0.68              |
| 1:C:330:LEU:HD22 | 1:C:340:VAL:HG22 | 1.74                     | 0.68              |
| 1:C:176:ALA:HB1  | 1:C:180:PRO:HB2  | 1.75                     | 0.68              |
| 1:C:176:ALA:HB1  | 1:C:180:PRO:HB2  | 1.75                     | 0.68              |
| 1:C:333:ASP:C    | 3:B:416:MET:SD   | 2.77                     | 0.68              |
| 1:C:176:ALA:HB1  | 1:C:180:PRO:HB2  | 1.75                     | 0.68              |
| 1:C:176:ALA:HB1  | 1:C:180:PRO:HB2  | 1.75                     | 0.68              |
| 1:C:330:LEU:HD22 | 1:C:340:VAL:HG22 | 1.74                     | 0.68              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG13 | 2.23                     | 0.68              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG13 | 2.23                     | 0.68              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG13 | 2.23                     | 0.68              |
| 2:A:11:GLN:HA    | 2:A:74:VAL:HG11  | 1.76                     | 0.68              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:CG   | 2.24                     | 0.68              |
| 2:A:11:GLN:HA    | 2:A:74:VAL:HG11  | 1.76                     | 0.68              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:CG   | 2.24                     | 0.68              |
| 2:A:11:GLN:HA    | 2:A:74:VAL:HG11  | 1.76                     | 0.68              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:CG   | 2.24                     | 0.68              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG13 | 2.24                     | 0.68              |
| 2:A:11:GLN:HA    | 2:A:74:VAL:HG11  | 1.76                     | 0.68              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:CG   | 2.24                     | 0.68              |
| 2:A:11:GLN:HA    | 2:A:74:VAL:HG11  | 1.76                     | 0.68              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:CG   | 2.24                     | 0.68              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CG1  | 2.24                     | 0.68              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HG13 | 2.24                     | 0.68              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CG1  | 2.24                     | 0.68              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CG1  | 2.24                     | 0.68              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CG1  | 2.24                     | 0.68              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CG1  | 2.24                     | 0.68              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C2'  | 2.23                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C2'  | 2.23                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C2'  | 2.23                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C2'  | 2.23                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C2'  | 2.23                     | 0.67              |
| 1:C:434:HIS:CB   | 2:A:409:VAL:HG11 | 2.24                     | 0.67              |
| 1:C:456:ILE:HG13 | 1:C:457:PRO:HD2  | 1.76                     | 0.67              |
| 1:C:456:ILE:HG13 | 1:C:457:PRO:HD2  | 1.76                     | 0.67              |
| 1:C:456:ILE:HG13 | 1:C:457:PRO:HD2  | 1.76                     | 0.67              |
| 1:C:456:ILE:HG13 | 1:C:457:PRO:HD2  | 1.76                     | 0.67              |
| 1:C:456:ILE:HG13 | 1:C:457:PRO:HD2  | 1.76                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C3'  | 2.25                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C3'  | 2.25                     | 0.67              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:179:THR:HG21 | 6:A:500:GTP:C3'  | 2.25                     | 0.67              |
| 1:C:434:HIS:CB   | 2:A:409:VAL:HG11 | 2.24                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C3'  | 2.25                     | 0.67              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:C3'  | 2.25                     | 0.67              |
| 2:A:10:GLY:HA2   | 2:A:145:THR:HB   | 1.77                     | 0.67              |
| 2:A:10:GLY:HA2   | 2:A:145:THR:HB   | 1.77                     | 0.67              |
| 2:A:10:GLY:HA2   | 2:A:145:THR:HB   | 1.77                     | 0.67              |
| 2:A:10:GLY:HA2   | 2:A:145:THR:HB   | 1.77                     | 0.67              |
| 2:A:10:GLY:HA2   | 2:A:145:THR:HB   | 1.77                     | 0.67              |
| 1:C:306:GLU:HA   | 1:C:380:HIS:O    | 1.95                     | 0.67              |
| 1:C:306:GLU:HA   | 1:C:380:HIS:O    | 1.95                     | 0.67              |
| 1:C:308:TYR:OH   | 1:C:368:ALA:HB3  | 1.94                     | 0.67              |
| 1:C:306:GLU:HA   | 1:C:380:HIS:O    | 1.95                     | 0.67              |
| 1:C:334:GLN:HA   | 3:B:416:MET:HE1  | 1.75                     | 0.67              |
| 1:C:306:GLU:HA   | 1:C:380:HIS:O    | 1.95                     | 0.67              |
| 1:C:306:GLU:HA   | 1:C:380:HIS:O    | 1.95                     | 0.67              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C5   | 2.83                     | 0.67              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:H321 | 1.76                     | 0.67              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C5   | 2.83                     | 0.67              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:H321 | 1.76                     | 0.67              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C5   | 2.83                     | 0.67              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:H321 | 1.76                     | 0.67              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C5   | 2.83                     | 0.67              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:H321 | 1.76                     | 0.67              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C5   | 2.83                     | 0.67              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:H321 | 1.76                     | 0.67              |
| 1:C:434:HIS:CE1  | 2:A:409:VAL:HG21 | 2.30                     | 0.66              |
| 1:C:434:HIS:CB   | 2:A:409:VAL:HG11 | 2.25                     | 0.66              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG11 | 2.31                     | 0.66              |
| 1:C:434:HIS:CE1  | 2:A:409:VAL:HG21 | 2.31                     | 0.66              |
| 1:C:434:HIS:CE1  | 2:A:409:VAL:HG21 | 2.31                     | 0.66              |
| 2:A:105:ARG:HA   | 2:A:109:THR:OG1  | 1.96                     | 0.66              |
| 3:B:5:VAL:HG12   | 3:B:64:ARG:HD2   | 1.78                     | 0.66              |
| 2:A:105:ARG:HA   | 2:A:109:THR:OG1  | 1.96                     | 0.66              |
| 3:B:5:VAL:HG12   | 3:B:64:ARG:HD2   | 1.78                     | 0.66              |
| 2:A:105:ARG:HA   | 2:A:109:THR:OG1  | 1.96                     | 0.66              |
| 3:B:5:VAL:HG12   | 3:B:64:ARG:HD2   | 1.78                     | 0.66              |
| 2:A:105:ARG:HA   | 2:A:109:THR:OG1  | 1.96                     | 0.66              |
| 3:B:5:VAL:HG12   | 3:B:64:ARG:HD2   | 1.78                     | 0.66              |
| 2:A:105:ARG:HA   | 2:A:109:THR:OG1  | 1.96                     | 0.66              |
| 3:B:5:VAL:HG12   | 3:B:64:ARG:HD2   | 1.78                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:424:LYS:HG3  | 3:B:163:ASP:OD2  | 1.96                     | 0.66              |
| 3:B:209:LEU:HB3  | 3:B:227:LEU:HD22 | 1.78                     | 0.66              |
| 3:B:209:LEU:HB3  | 3:B:227:LEU:HD22 | 1.78                     | 0.66              |
| 3:B:209:LEU:HB3  | 3:B:227:LEU:HD22 | 1.78                     | 0.66              |
| 3:B:209:LEU:HB3  | 3:B:227:LEU:HD22 | 1.78                     | 0.66              |
| 3:B:209:LEU:HB3  | 3:B:227:LEU:HD22 | 1.78                     | 0.66              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:H442 | 1.77                     | 0.66              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:H442 | 1.77                     | 0.66              |
| 1:C:179:LEU:HB3  | 1:C:180:PRO:HD3  | 1.77                     | 0.66              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:H442 | 1.77                     | 0.66              |
| 1:C:179:LEU:HB3  | 1:C:180:PRO:HD3  | 1.77                     | 0.66              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:H442 | 1.77                     | 0.66              |
| 1:C:179:LEU:HB3  | 1:C:180:PRO:HD3  | 1.77                     | 0.66              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:H442 | 1.77                     | 0.66              |
| 1:C:179:LEU:HB3  | 1:C:180:PRO:HD3  | 1.78                     | 0.65              |
| 1:C:179:LEU:HB3  | 1:C:180:PRO:HD3  | 1.78                     | 0.65              |
| 1:C:434:HIS:CB   | 2:A:409:VAL:HG11 | 2.26                     | 0.65              |
| 3:B:115:VAL:HG21 | 3:B:152:LEU:HD23 | 1.79                     | 0.65              |
| 3:B:209:LEU:HD23 | 3:B:227:LEU:HB3  | 1.77                     | 0.65              |
| 3:B:115:VAL:HG21 | 3:B:152:LEU:HD23 | 1.79                     | 0.65              |
| 3:B:209:LEU:HD23 | 3:B:227:LEU:HB3  | 1.77                     | 0.65              |
| 3:B:115:VAL:HG21 | 3:B:152:LEU:HD23 | 1.79                     | 0.65              |
| 3:B:209:LEU:HD23 | 3:B:227:LEU:HB3  | 1.77                     | 0.65              |
| 3:B:115:VAL:HG21 | 3:B:152:LEU:HD23 | 1.79                     | 0.65              |
| 3:B:209:LEU:HD23 | 3:B:227:LEU:HB3  | 1.77                     | 0.65              |
| 3:B:115:VAL:HG21 | 3:B:152:LEU:HD23 | 1.79                     | 0.65              |
| 3:B:209:LEU:HD23 | 3:B:227:LEU:HB3  | 1.77                     | 0.65              |
| 2:A:273:ALA:HB3  | 2:A:274:PRO:HD3  | 1.79                     | 0.65              |
| 2:A:273:ALA:HB3  | 2:A:274:PRO:HD3  | 1.79                     | 0.65              |
| 2:A:273:ALA:HB3  | 2:A:274:PRO:HD3  | 1.79                     | 0.65              |
| 2:A:273:ALA:HB3  | 2:A:274:PRO:HD3  | 1.79                     | 0.65              |
| 2:A:273:ALA:HB3  | 2:A:274:PRO:HD3  | 1.79                     | 0.65              |
| 1:C:434:HIS:CE1  | 2:A:409:VAL:HG21 | 2.32                     | 0.65              |
| 1:C:307:ILE:HB   | 1:C:380:HIS:HB2  | 1.78                     | 0.65              |
| 1:C:307:ILE:HB   | 1:C:380:HIS:HB2  | 1.78                     | 0.64              |
| 1:C:307:ILE:HB   | 1:C:380:HIS:HB2  | 1.79                     | 0.64              |
| 1:C:307:ILE:HB   | 1:C:380:HIS:HB2  | 1.79                     | 0.64              |
| 1:C:307:ILE:HB   | 1:C:380:HIS:HB2  | 1.79                     | 0.64              |
| 2:A:100:ALA:HB2  | 3:B:253:ARG:HB3  | 1.80                     | 0.64              |
| 2:A:100:ALA:HB2  | 3:B:253:ARG:HB3  | 1.80                     | 0.64              |
| 2:A:100:ALA:HB2  | 3:B:253:ARG:HB3  | 1.80                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:100:ALA:HB2  | 3:B:253:ARG:HB3  | 1.80                     | 0.64              |
| 2:A:100:ALA:HB2  | 3:B:253:ARG:HB3  | 1.80                     | 0.64              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:H261 | 1.80                     | 0.64              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:H261 | 1.80                     | 0.64              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:H261 | 1.80                     | 0.64              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:H261 | 1.80                     | 0.64              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:H261 | 1.80                     | 0.64              |
| 1:C:334:GLN:HA   | 3:B:416:MET:HE1  | 1.78                     | 0.64              |
| 1:C:415:LYS:HD3  | 2:A:156:ARG:NH2  | 2.13                     | 0.64              |
| 1:C:334:GLN:HA   | 3:B:416:MET:HE1  | 1.78                     | 0.64              |
| 1:C:126:PHE:HB3  | 1:C:130:VAL:HG21 | 1.78                     | 0.64              |
| 1:C:126:PHE:HB3  | 1:C:130:VAL:HG21 | 1.78                     | 0.64              |
| 1:C:434:HIS:NE2  | 2:A:409:VAL:HG21 | 2.13                     | 0.63              |
| 1:C:126:PHE:HB3  | 1:C:130:VAL:HG21 | 1.78                     | 0.63              |
| 1:C:126:PHE:HB3  | 1:C:130:VAL:HG21 | 1.78                     | 0.63              |
| 1:C:126:PHE:HB3  | 1:C:130:VAL:HG21 | 1.79                     | 0.63              |
| 1:C:334:GLN:HA   | 3:B:416:MET:HE1  | 1.79                     | 0.63              |
| 1:C:413:ARG:HH12 | 1:C:430:ASN:HD21 | 1.47                     | 0.63              |
| 1:C:328:LEU:HB2  | 1:C:341:LYS:O    | 1.99                     | 0.63              |
| 1:C:328:LEU:HB2  | 1:C:341:LYS:O    | 1.99                     | 0.63              |
| 3:B:228:ASN:CG   | 7:B:600:GDP:HN1  | 2.07                     | 0.63              |
| 3:B:228:ASN:CG   | 7:B:600:GDP:HN1  | 2.07                     | 0.63              |
| 1:C:328:LEU:HB2  | 1:C:341:LYS:O    | 1.99                     | 0.63              |
| 3:B:228:ASN:CG   | 7:B:600:GDP:HN1  | 2.07                     | 0.63              |
| 3:B:228:ASN:CG   | 7:B:600:GDP:HN1  | 2.07                     | 0.63              |
| 1:C:328:LEU:HB2  | 1:C:341:LYS:O    | 1.99                     | 0.63              |
| 3:B:228:ASN:CG   | 7:B:600:GDP:HN1  | 2.07                     | 0.63              |
| 1:C:328:LEU:HB2  | 1:C:341:LYS:O    | 1.99                     | 0.63              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CD   | 2.23                     | 0.63              |
| 3:B:11:GLN:CB    | 7:B:600:GDP:O2B  | 2.47                     | 0.63              |
| 3:B:11:GLN:CB    | 7:B:600:GDP:O2B  | 2.47                     | 0.63              |
| 3:B:11:GLN:CB    | 7:B:600:GDP:O2B  | 2.47                     | 0.63              |
| 3:B:11:GLN:CB    | 7:B:600:GDP:O2B  | 2.47                     | 0.63              |
| 3:B:11:GLN:CB    | 7:B:600:GDP:O2B  | 2.47                     | 0.63              |
| 1:C:334:GLN:CA   | 3:B:416:MET:HE1  | 2.29                     | 0.62              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:HZ   | 1.63                     | 0.62              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:HZ   | 1.63                     | 0.62              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:HZ   | 1.63                     | 0.62              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:HZ   | 1.63                     | 0.62              |
| 3:B:316:ALA:HB3  | 3:B:378:ILE:HB   | 1.80                     | 0.62              |
| 1:C:415:LYS:HE2  | 2:A:112:LYS:NZ   | 2.14                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:316:ALA:HB3  | 3:B:378:ILE:HB   | 1.80                     | 0.62              |
| 3:B:316:ALA:HB3  | 3:B:378:ILE:HB   | 1.80                     | 0.62              |
| 3:B:316:ALA:HB3  | 3:B:378:ILE:HB   | 1.80                     | 0.62              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:HZ   | 1.63                     | 0.62              |
| 3:B:316:ALA:HB3  | 3:B:378:ILE:HB   | 1.80                     | 0.62              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H2'  | 1.80                     | 0.62              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H2'  | 1.80                     | 0.62              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H2'  | 1.80                     | 0.62              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H2'  | 1.80                     | 0.62              |
| 2:A:179:THR:HG21 | 6:A:500:GTP:H2'  | 1.80                     | 0.62              |
| 1:C:434:HIS:CD2  | 2:A:409:VAL:HG21 | 2.34                     | 0.62              |
| 1:C:424:LYS:HG3  | 3:B:163:ASP:OD2  | 2.00                     | 0.61              |
| 1:C:366:SER:HB2  | 1:C:379:SER:OG   | 2.00                     | 0.61              |
| 1:C:126:PHE:HZ   | 1:C:138:LEU:HD22 | 1.65                     | 0.61              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG22 | 1.82                     | 0.61              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG22 | 1.82                     | 0.61              |
| 1:C:126:PHE:HZ   | 1:C:138:LEU:HD22 | 1.65                     | 0.61              |
| 1:C:126:PHE:HZ   | 1:C:138:LEU:HD22 | 1.65                     | 0.61              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG22 | 1.82                     | 0.61              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG22 | 1.82                     | 0.61              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG11 | 2.35                     | 0.61              |
| 1:C:424:LYS:HG3  | 3:B:163:ASP:OD2  | 2.00                     | 0.61              |
| 1:C:126:PHE:HZ   | 1:C:138:LEU:HD22 | 1.65                     | 0.61              |
| 1:C:126:PHE:HZ   | 1:C:138:LEU:HD22 | 1.65                     | 0.61              |
| 1:C:424:LYS:HG3  | 3:B:163:ASP:OD2  | 2.00                     | 0.61              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HG13 | 1.82                     | 0.61              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG22 | 1.82                     | 0.61              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HG13 | 1.82                     | 0.61              |
| 2:A:21:TRP:HA    | 2:A:24:TYR:HB2   | 1.82                     | 0.61              |
| 3:B:10:GLY:CA    | 3:B:145:THR:HB   | 2.28                     | 0.61              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG11 | 2.35                     | 0.61              |
| 2:A:21:TRP:HA    | 2:A:24:TYR:HB2   | 1.82                     | 0.61              |
| 3:B:10:GLY:CA    | 3:B:145:THR:HB   | 2.28                     | 0.61              |
| 2:A:21:TRP:HA    | 2:A:24:TYR:HB2   | 1.82                     | 0.61              |
| 3:B:10:GLY:CA    | 3:B:145:THR:HB   | 2.28                     | 0.61              |
| 2:A:21:TRP:HA    | 2:A:24:TYR:HB2   | 1.82                     | 0.61              |
| 3:B:10:GLY:CA    | 3:B:145:THR:HB   | 2.28                     | 0.61              |
| 2:A:21:TRP:HA    | 2:A:24:TYR:HB2   | 1.82                     | 0.61              |
| 3:B:10:GLY:CA    | 3:B:145:THR:HB   | 2.28                     | 0.61              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HG13 | 1.82                     | 0.61              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HG13 | 1.82                     | 0.61              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HG13 | 1.82                     | 0.61              |
| 2:A:9:VAL:HG21   | 2:A:149:PHE:HB3  | 1.82                     | 0.60              |
| 2:A:9:VAL:HG21   | 2:A:149:PHE:HB3  | 1.82                     | 0.60              |
| 2:A:9:VAL:HG21   | 2:A:149:PHE:HB3  | 1.82                     | 0.60              |
| 1:C:321:HIS:HB3  | 1:C:366:SER:OG   | 2.01                     | 0.60              |
| 2:A:9:VAL:HG21   | 2:A:149:PHE:HB3  | 1.82                     | 0.60              |
| 2:A:9:VAL:HG21   | 2:A:149:PHE:HB3  | 1.82                     | 0.60              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CD   | 2.26                     | 0.60              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG11 | 2.36                     | 0.60              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CD   | 2.26                     | 0.60              |
| 1:C:334:GLN:CA   | 3:B:416:MET:HE1  | 2.32                     | 0.60              |
| 1:C:334:GLN:HA   | 3:B:416:MET:HE1  | 1.82                     | 0.60              |
| 1:C:334:GLN:CA   | 3:B:416:MET:HE1  | 2.32                     | 0.60              |
| 1:C:424:LYS:HG3  | 3:B:163:ASP:OD2  | 2.01                     | 0.60              |
| 1:C:334:GLN:CA   | 3:B:416:MET:HE1  | 2.32                     | 0.60              |
| 1:C:422:ARG:HH11 | 1:C:425:GLU:HB2  | 1.67                     | 0.60              |
| 3:B:142:GLY:HA3  | 3:B:183:GLU:HG3  | 1.84                     | 0.60              |
| 3:B:142:GLY:HA3  | 3:B:183:GLU:HG3  | 1.84                     | 0.60              |
| 3:B:142:GLY:HA3  | 3:B:183:GLU:HG3  | 1.84                     | 0.60              |
| 3:B:142:GLY:HA3  | 3:B:183:GLU:HG3  | 1.84                     | 0.60              |
| 3:B:142:GLY:HA3  | 3:B:183:GLU:HG3  | 1.84                     | 0.60              |
| 1:C:313:TYR:OH   | 1:C:319:PRO:HG2  | 2.01                     | 0.60              |
| 1:C:434:HIS:CD2  | 2:A:409:VAL:HG21 | 2.36                     | 0.60              |
| 1:C:434:HIS:CD2  | 2:A:409:VAL:HG21 | 2.36                     | 0.59              |
| 1:C:434:HIS:NE2  | 2:A:409:VAL:HG21 | 2.17                     | 0.59              |
| 1:C:304:PHE:HB3  | 1:C:316:LEU:HD13 | 1.84                     | 0.59              |
| 1:C:304:PHE:HB3  | 1:C:316:LEU:HD13 | 1.84                     | 0.59              |
| 1:C:304:PHE:HB3  | 1:C:316:LEU:HD13 | 1.84                     | 0.59              |
| 1:C:304:PHE:HB3  | 1:C:316:LEU:HD13 | 1.84                     | 0.59              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG11 | 2.37                     | 0.59              |
| 1:C:70:ILE:HD12  | 1:C:89:ILE:HD11  | 1.83                     | 0.59              |
| 2:A:179:THR:HB   | 6:A:500:GTP:C3'  | 2.17                     | 0.59              |
| 2:A:179:THR:HB   | 6:A:500:GTP:C3'  | 2.17                     | 0.59              |
| 1:C:70:ILE:HD12  | 1:C:89:ILE:HD11  | 1.83                     | 0.59              |
| 2:A:179:THR:HB   | 6:A:500:GTP:C3'  | 2.17                     | 0.59              |
| 2:A:179:THR:HB   | 6:A:500:GTP:C3'  | 2.17                     | 0.59              |
| 1:C:304:PHE:HB3  | 1:C:316:LEU:HD13 | 1.84                     | 0.59              |
| 2:A:179:THR:HB   | 6:A:500:GTP:C3'  | 2.17                     | 0.59              |
| 1:C:70:ILE:HD12  | 1:C:89:ILE:HD11  | 1.83                     | 0.59              |
| 1:C:70:ILE:HD12  | 1:C:89:ILE:HD11  | 1.83                     | 0.59              |
| 1:C:434:HIS:NE2  | 2:A:409:VAL:HG21 | 2.18                     | 0.59              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:70:ILE:HD12  | 1:C:89:ILE:HD11  | 1.83                     | 0.59              |
| 1:C:321:HIS:CG   | 1:C:366:SER:OG   | 2.56                     | 0.58              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CD   | 2.28                     | 0.58              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CD   | 2.28                     | 0.58              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C33  | 2.33                     | 0.58              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C33  | 2.33                     | 0.58              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C33  | 2.33                     | 0.58              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C33  | 2.33                     | 0.58              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C33  | 2.33                     | 0.58              |
| 1:C:437:GLY:HA2  | 1:C:499:PHE:CE1  | 2.39                     | 0.58              |
| 1:C:437:GLY:HA2  | 1:C:499:PHE:CE1  | 2.39                     | 0.58              |
| 1:C:437:GLY:HA2  | 1:C:499:PHE:CE1  | 2.39                     | 0.58              |
| 1:C:437:GLY:HA2  | 1:C:499:PHE:CE1  | 2.39                     | 0.58              |
| 1:C:309:ASN:HD21 | 1:C:422:ARG:HH22 | 1.52                     | 0.58              |
| 1:C:437:GLY:HA2  | 1:C:499:PHE:CE1  | 2.39                     | 0.58              |
| 1:C:434:HIS:CD2  | 2:A:409:VAL:HG21 | 2.38                     | 0.58              |
| 1:C:313:TYR:CE1  | 1:C:324:LYS:HD2  | 2.39                     | 0.58              |
| 1:C:62:GLU:OE2   | 1:C:65:LYS:HE2   | 2.04                     | 0.58              |
| 1:C:434:HIS:NE2  | 2:A:409:VAL:HG21 | 2.19                     | 0.57              |
| 1:C:62:GLU:OE2   | 1:C:65:LYS:HE2   | 2.04                     | 0.57              |
| 1:C:62:GLU:OE2   | 1:C:65:LYS:HE2   | 2.04                     | 0.57              |
| 1:C:62:GLU:OE2   | 1:C:65:LYS:HE2   | 2.04                     | 0.57              |
| 1:C:62:GLU:OE2   | 1:C:65:LYS:HE2   | 2.04                     | 0.57              |
| 1:C:334:GLN:CA   | 3:B:416:MET:HE1  | 2.35                     | 0.57              |
| 2:A:151:SER:HB3  | 2:A:193:THR:HG21 | 1.85                     | 0.57              |
| 2:A:151:SER:HB3  | 2:A:193:THR:HG21 | 1.85                     | 0.57              |
| 1:C:434:HIS:CD2  | 2:A:409:VAL:HG21 | 2.38                     | 0.57              |
| 2:A:151:SER:HB3  | 2:A:193:THR:HG21 | 1.85                     | 0.57              |
| 2:A:151:SER:HB3  | 2:A:193:THR:HG21 | 1.85                     | 0.57              |
| 2:A:151:SER:HB3  | 2:A:193:THR:HG21 | 1.85                     | 0.57              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HD22 | 2.03                     | 0.57              |
| 2:A:7:ILE:HD11   | 2:A:137:VAL:HG22 | 1.86                     | 0.57              |
| 2:A:7:ILE:HD11   | 2:A:137:VAL:HG22 | 1.86                     | 0.57              |
| 2:A:7:ILE:HD11   | 2:A:137:VAL:HG22 | 1.86                     | 0.57              |
| 2:A:7:ILE:HD11   | 2:A:137:VAL:HG22 | 1.86                     | 0.57              |
| 2:A:7:ILE:HD11   | 2:A:137:VAL:HG22 | 1.86                     | 0.57              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:HE2  | 1.69                     | 0.57              |
| 3:B:11:GLN:HB3   | 7:B:600:GDP:O2B  | 2.05                     | 0.57              |
| 3:B:11:GLN:HB3   | 7:B:600:GDP:O2B  | 2.05                     | 0.57              |
| 3:B:11:GLN:HB3   | 7:B:600:GDP:O2B  | 2.05                     | 0.57              |
| 3:B:11:GLN:HB3   | 7:B:600:GDP:O2B  | 2.05                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:11:GLN:HB3   | 7:B:600:GDP:O2B  | 2.05                     | 0.57              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:HE2  | 1.69                     | 0.57              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:HE2  | 1.69                     | 0.57              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:HE2  | 1.69                     | 0.57              |
| 1:C:434:HIS:NE2  | 2:A:409:VAL:HG21 | 2.20                     | 0.57              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:HE2  | 1.69                     | 0.57              |
| 2:A:237:SER:HA   | 2:A:241:SER:OG   | 2.05                     | 0.57              |
| 2:A:237:SER:HA   | 2:A:241:SER:OG   | 2.05                     | 0.57              |
| 2:A:237:SER:HA   | 2:A:241:SER:OG   | 2.05                     | 0.57              |
| 2:A:237:SER:HA   | 2:A:241:SER:OG   | 2.05                     | 0.57              |
| 2:A:237:SER:HA   | 2:A:241:SER:OG   | 2.05                     | 0.57              |
| 1:C:459:ARG:HE   | 1:C:465:ARG:NH1  | 2.02                     | 0.57              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HA   | 2.35                     | 0.56              |
| 3:B:255:LEU:HB3  | 3:B:259:MET:HE2  | 1.87                     | 0.56              |
| 3:B:255:LEU:HB3  | 3:B:259:MET:HE2  | 1.87                     | 0.56              |
| 3:B:255:LEU:HB3  | 3:B:259:MET:HE2  | 1.87                     | 0.56              |
| 1:C:459:ARG:HE   | 1:C:465:ARG:NH1  | 2.02                     | 0.56              |
| 3:B:255:LEU:HB3  | 3:B:259:MET:HE2  | 1.87                     | 0.56              |
| 1:C:459:ARG:HE   | 1:C:465:ARG:NH1  | 2.02                     | 0.56              |
| 3:B:255:LEU:HB3  | 3:B:259:MET:HE2  | 1.87                     | 0.56              |
| 1:C:459:ARG:HE   | 1:C:465:ARG:NH1  | 2.02                     | 0.56              |
| 2:A:104:ALA:HB2  | 2:A:413:MET:HE2  | 1.86                     | 0.56              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HA   | 2.35                     | 0.56              |
| 2:A:104:ALA:HB2  | 2:A:413:MET:HE2  | 1.86                     | 0.56              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HA   | 2.35                     | 0.56              |
| 2:A:104:ALA:HB2  | 2:A:413:MET:HE2  | 1.86                     | 0.56              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HA   | 2.35                     | 0.56              |
| 2:A:104:ALA:HB2  | 2:A:413:MET:HE2  | 1.86                     | 0.56              |
| 2:A:104:ALA:HB2  | 2:A:413:MET:HE2  | 1.86                     | 0.56              |
| 1:C:390:LEU:HG   | 1:C:398:PRO:HB3  | 1.87                     | 0.56              |
| 2:A:100:ALA:O    | 6:A:500:GTP:O1G  | 2.23                     | 0.56              |
| 2:A:191:THR:HA   | 2:A:194:THR:HG22 | 1.87                     | 0.56              |
| 2:A:298:PRO:HA   | 2:A:301:GLN:OE1  | 2.05                     | 0.56              |
| 1:C:390:LEU:HG   | 1:C:398:PRO:HB3  | 1.87                     | 0.56              |
| 2:A:100:ALA:O    | 6:A:500:GTP:O1G  | 2.23                     | 0.56              |
| 2:A:191:THR:HA   | 2:A:194:THR:HG22 | 1.87                     | 0.56              |
| 2:A:298:PRO:HA   | 2:A:301:GLN:OE1  | 2.05                     | 0.56              |
| 1:C:70:ILE:HD11  | 1:C:128:PRO:HD3  | 1.87                     | 0.56              |
| 1:C:390:LEU:HG   | 1:C:398:PRO:HB3  | 1.87                     | 0.56              |
| 1:C:459:ARG:HE   | 1:C:465:ARG:NH1  | 2.02                     | 0.56              |
| 2:A:100:ALA:O    | 6:A:500:GTP:O1G  | 2.23                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:191:THR:HA   | 2:A:194:THR:HG22 | 1.87                     | 0.56              |
| 2:A:298:PRO:HA   | 2:A:301:GLN:OE1  | 2.05                     | 0.56              |
| 1:C:309:ASN:HD21 | 1:C:422:ARG:HH22 | 1.54                     | 0.56              |
| 2:A:100:ALA:O    | 6:A:500:GTP:O1G  | 2.23                     | 0.56              |
| 2:A:191:THR:HA   | 2:A:194:THR:HG22 | 1.87                     | 0.56              |
| 2:A:298:PRO:HA   | 2:A:301:GLN:OE1  | 2.05                     | 0.56              |
| 1:C:70:ILE:HD11  | 1:C:128:PRO:HD3  | 1.87                     | 0.56              |
| 1:C:330:LEU:CD2  | 1:C:340:VAL:HA   | 2.35                     | 0.56              |
| 1:C:390:LEU:HG   | 1:C:398:PRO:HB3  | 1.87                     | 0.56              |
| 2:A:100:ALA:O    | 6:A:500:GTP:O1G  | 2.23                     | 0.56              |
| 2:A:191:THR:HA   | 2:A:194:THR:HG22 | 1.87                     | 0.56              |
| 2:A:298:PRO:HA   | 2:A:301:GLN:OE1  | 2.05                     | 0.56              |
| 1:C:424:LYS:HZ2  | 3:B:163:ASP:CG   | 2.13                     | 0.56              |
| 2:A:234:ILE:O    | 2:A:238:ILE:HG12 | 2.06                     | 0.56              |
| 2:A:234:ILE:O    | 2:A:238:ILE:HG12 | 2.06                     | 0.56              |
| 2:A:234:ILE:O    | 2:A:238:ILE:HG12 | 2.06                     | 0.56              |
| 1:C:390:LEU:HG   | 1:C:398:PRO:HB3  | 1.87                     | 0.56              |
| 2:A:234:ILE:O    | 2:A:238:ILE:HG12 | 2.06                     | 0.56              |
| 2:A:234:ILE:O    | 2:A:238:ILE:HG12 | 2.06                     | 0.56              |
| 1:C:70:ILE:HD11  | 1:C:128:PRO:HD3  | 1.88                     | 0.56              |
| 1:C:70:ILE:HD11  | 1:C:128:PRO:HD3  | 1.88                     | 0.56              |
| 1:C:70:ILE:HD11  | 1:C:128:PRO:HD3  | 1.88                     | 0.56              |
| 3:B:241:CYS:SG   | 3:B:320:ARG:HB3  | 2.46                     | 0.56              |
| 3:B:241:CYS:SG   | 3:B:320:ARG:HB3  | 2.46                     | 0.56              |
| 3:B:241:CYS:SG   | 3:B:320:ARG:HB3  | 2.46                     | 0.56              |
| 3:B:241:CYS:SG   | 3:B:320:ARG:HB3  | 2.46                     | 0.56              |
| 3:B:241:CYS:SG   | 3:B:320:ARG:HB3  | 2.46                     | 0.56              |
| 2:A:112:LYS:HD3  | 2:A:115:ILE:HG21 | 1.88                     | 0.56              |
| 3:B:52:TYR:OH    | 3:B:136:GLN:HG3  | 2.05                     | 0.56              |
| 3:B:424:ASN:O    | 3:B:427:ASP:HB3  | 2.06                     | 0.56              |
| 2:A:112:LYS:HD3  | 2:A:115:ILE:HG21 | 1.88                     | 0.56              |
| 3:B:52:TYR:OH    | 3:B:136:GLN:HG3  | 2.05                     | 0.56              |
| 3:B:424:ASN:O    | 3:B:427:ASP:HB3  | 2.06                     | 0.56              |
| 2:A:112:LYS:HD3  | 2:A:115:ILE:HG21 | 1.88                     | 0.56              |
| 3:B:52:TYR:OH    | 3:B:136:GLN:HG3  | 2.05                     | 0.56              |
| 3:B:424:ASN:O    | 3:B:427:ASP:HB3  | 2.06                     | 0.56              |
| 2:A:112:LYS:HD3  | 2:A:115:ILE:HG21 | 1.88                     | 0.56              |
| 3:B:52:TYR:OH    | 3:B:136:GLN:HG3  | 2.05                     | 0.56              |
| 3:B:424:ASN:O    | 3:B:427:ASP:HB3  | 2.06                     | 0.56              |
| 2:A:112:LYS:HD3  | 2:A:115:ILE:HG21 | 1.88                     | 0.56              |
| 3:B:52:TYR:OH    | 3:B:136:GLN:HG3  | 2.05                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:424:ASN:O    | 3:B:427:ASP:HB3  | 2.06                     | 0.56              |
| 1:C:340:VAL:HB   | 1:C:343:LEU:HD11 | 1.87                     | 0.56              |
| 1:C:340:VAL:HB   | 1:C:343:LEU:HD11 | 1.87                     | 0.56              |
| 1:C:340:VAL:HB   | 1:C:343:LEU:HD11 | 1.87                     | 0.56              |
| 1:C:459:ARG:HH12 | 3:B:424:ASN:HA   | 1.70                     | 0.56              |
| 1:C:157:THR:HA   | 1:C:480:ILE:HB   | 1.88                     | 0.56              |
| 1:C:340:VAL:HB   | 1:C:343:LEU:HD11 | 1.87                     | 0.56              |
| 1:C:340:VAL:HB   | 1:C:343:LEU:HD11 | 1.87                     | 0.56              |
| 2:A:175:PRO:HG3  | 2:A:304:LYS:HG2  | 1.88                     | 0.55              |
| 1:C:157:THR:HA   | 1:C:480:ILE:HB   | 1.88                     | 0.55              |
| 2:A:175:PRO:HG3  | 2:A:304:LYS:HG2  | 1.88                     | 0.55              |
| 2:A:175:PRO:HG3  | 2:A:304:LYS:HG2  | 1.88                     | 0.55              |
| 1:C:157:THR:HA   | 1:C:480:ILE:HB   | 1.88                     | 0.55              |
| 2:A:175:PRO:HG3  | 2:A:304:LYS:HG2  | 1.88                     | 0.55              |
| 1:C:157:THR:HA   | 1:C:480:ILE:HB   | 1.88                     | 0.55              |
| 2:A:175:PRO:HG3  | 2:A:304:LYS:HG2  | 1.88                     | 0.55              |
| 1:C:157:THR:HA   | 1:C:480:ILE:HB   | 1.88                     | 0.55              |
| 1:C:457:PRO:O    | 1:C:460:ASP:HB2  | 2.07                     | 0.55              |
| 1:C:457:PRO:O    | 1:C:460:ASP:HB2  | 2.07                     | 0.55              |
| 1:C:457:PRO:O    | 1:C:460:ASP:HB2  | 2.07                     | 0.55              |
| 1:C:457:PRO:O    | 1:C:460:ASP:HB2  | 2.07                     | 0.55              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:CE2   | 2.41                     | 0.55              |
| 3:B:373:MET:HE3  | 3:B:373:MET:HA   | 1.88                     | 0.55              |
| 1:C:457:PRO:O    | 1:C:460:ASP:HB2  | 2.07                     | 0.55              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:CE2   | 2.41                     | 0.55              |
| 3:B:373:MET:HE3  | 3:B:373:MET:HA   | 1.88                     | 0.55              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:CE2   | 2.41                     | 0.55              |
| 3:B:373:MET:HE3  | 3:B:373:MET:HA   | 1.88                     | 0.55              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:CE2   | 2.41                     | 0.55              |
| 3:B:373:MET:HE3  | 3:B:373:MET:HA   | 1.88                     | 0.55              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:CE2   | 2.41                     | 0.55              |
| 3:B:373:MET:HE3  | 3:B:373:MET:HA   | 1.88                     | 0.55              |
| 1:C:136:PHE:HB2  | 1:C:178:ILE:HA   | 1.89                     | 0.55              |
| 1:C:136:PHE:HB2  | 1:C:178:ILE:HA   | 1.89                     | 0.55              |
| 1:C:136:PHE:HB2  | 1:C:178:ILE:HA   | 1.89                     | 0.55              |
| 1:C:389:HIS:HB3  | 1:C:399:LYS:HG3  | 1.88                     | 0.55              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:HG   | 1.88                     | 0.55              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:HG   | 1.88                     | 0.55              |
| 1:C:333:ASP:HA   | 3:B:416:MET:CG   | 2.36                     | 0.55              |
| 1:C:389:HIS:HB3  | 1:C:399:LYS:HG3  | 1.88                     | 0.55              |
| 1:C:136:PHE:HB2  | 1:C:178:ILE:HA   | 1.89                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:136:PHE:HB2  | 1:C:178:ILE:HA   | 1.89                     | 0.55              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HA   | 1.89                     | 0.55              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:HG   | 1.88                     | 0.55              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HA   | 1.89                     | 0.55              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:HG   | 1.88                     | 0.55              |
| 1:C:389:HIS:HB3  | 1:C:399:LYS:HG3  | 1.88                     | 0.55              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:HG   | 1.88                     | 0.55              |
| 1:C:389:HIS:HB3  | 1:C:399:LYS:HG3  | 1.88                     | 0.55              |
| 1:C:389:HIS:HB3  | 1:C:399:LYS:HG3  | 1.88                     | 0.55              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:NH2   | 2.22                     | 0.55              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:NH2   | 2.22                     | 0.55              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HA   | 1.89                     | 0.55              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:NH2   | 2.22                     | 0.55              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HA   | 1.89                     | 0.55              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:NH2   | 2.22                     | 0.55              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:NH2   | 2.22                     | 0.55              |
| 3:B:3:GLU:HA     | 3:B:51:VAL:HA    | 1.89                     | 0.55              |
| 3:B:3:GLU:HA     | 3:B:51:VAL:HA    | 1.89                     | 0.55              |
| 3:B:3:GLU:HA     | 3:B:51:VAL:HA    | 1.89                     | 0.55              |
| 3:B:3:GLU:HA     | 3:B:51:VAL:HA    | 1.89                     | 0.55              |
| 1:C:330:LEU:HD23 | 1:C:340:VAL:HA   | 1.89                     | 0.55              |
| 3:B:3:GLU:HA     | 3:B:51:VAL:HA    | 1.89                     | 0.55              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HD22 | 2.05                     | 0.55              |
| 1:C:77:GLU:O     | 1:C:80:ARG:HG2   | 2.06                     | 0.54              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:CB   | 2.37                     | 0.54              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HD22 | 2.05                     | 0.54              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:CB   | 2.37                     | 0.54              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:CB   | 2.37                     | 0.54              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:CB   | 2.37                     | 0.54              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:CB   | 2.37                     | 0.54              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C5   | 2.95                     | 0.54              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C5   | 2.95                     | 0.54              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C5   | 2.95                     | 0.54              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C5   | 2.95                     | 0.54              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C5   | 2.95                     | 0.54              |
| 1:C:77:GLU:O     | 1:C:80:ARG:HG2   | 2.06                     | 0.54              |
| 1:C:77:GLU:O     | 1:C:80:ARG:HG2   | 2.06                     | 0.54              |
| 1:C:77:GLU:O     | 1:C:80:ARG:HG2   | 2.06                     | 0.54              |
| 1:C:296:ILE:HG13 | 1:C:390:LEU:O    | 2.06                     | 0.54              |
| 1:C:77:GLU:O     | 1:C:80:ARG:HG2   | 2.06                     | 0.54              |
| 1:C:296:ILE:HG13 | 1:C:390:LEU:O    | 2.06                     | 0.54              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:C:187:PHE:HB2  | 1:C:351:VAL:HB  | 1.89                     | 0.54              |
| 1:C:296:ILE:HG13 | 1:C:390:LEU:O   | 2.06                     | 0.54              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C6  | 2.95                     | 0.54              |
| 3:B:360:PRO:HD2  | 3:B:371:LEU:HB3 | 1.89                     | 0.54              |
| 1:C:187:PHE:HB2  | 1:C:351:VAL:HB  | 1.89                     | 0.54              |
| 1:C:296:ILE:HG13 | 1:C:390:LEU:O   | 2.07                     | 0.54              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C6  | 2.95                     | 0.54              |
| 3:B:360:PRO:HD2  | 3:B:371:LEU:HB3 | 1.89                     | 0.54              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C6  | 2.95                     | 0.54              |
| 3:B:360:PRO:HD2  | 3:B:371:LEU:HB3 | 1.89                     | 0.54              |
| 1:C:187:PHE:HB2  | 1:C:351:VAL:HB  | 1.89                     | 0.54              |
| 1:C:296:ILE:HG13 | 1:C:390:LEU:O   | 2.07                     | 0.54              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C6  | 2.95                     | 0.54              |
| 3:B:360:PRO:HD2  | 3:B:371:LEU:HB3 | 1.89                     | 0.54              |
| 1:C:187:PHE:HB2  | 1:C:351:VAL:HB  | 1.89                     | 0.54              |
| 2:A:224:TYR:CD2  | 6:A:500:GTP:C6  | 2.95                     | 0.54              |
| 3:B:360:PRO:HD2  | 3:B:371:LEU:HB3 | 1.89                     | 0.54              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:CG  | 2.32                     | 0.54              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:CG  | 2.66                     | 0.54              |
| 3:B:111:GLY:HA2  | 3:B:149:MET:HE2 | 1.89                     | 0.54              |
| 3:B:111:GLY:HA2  | 3:B:149:MET:HE2 | 1.89                     | 0.54              |
| 3:B:111:GLY:HA2  | 3:B:149:MET:HE2 | 1.89                     | 0.54              |
| 3:B:111:GLY:HA2  | 3:B:149:MET:HE2 | 1.89                     | 0.54              |
| 3:B:111:GLY:HA2  | 3:B:149:MET:HE2 | 1.89                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 1:C:459:ARG:HH12 | 3:B:424:ASN:HA  | 1.72                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 1:C:187:PHE:HB2  | 1:C:351:VAL:HB  | 1.89                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 3:B:228:ASN:OD1  | 7:B:600:GDP:N1  | 2.34                     | 0.54              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:C44 | 2.36                     | 0.54              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:CG  | 2.32                     | 0.54              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:HG3 | 2.38                     | 0.54              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:C44 | 2.36                     | 0.54              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:CG  | 2.32                     | 0.54              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:C44 | 2.36                     | 0.54              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:CG  | 2.32                     | 0.54              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:C44 | 2.36                     | 0.54              |
| 3:B:371:LEU:HD13 | 8:B:601:TA1:C44 | 2.36                     | 0.54              |
| 2:A:324:VAL:HB   | 2:A:327:ASP:HB2 | 1.89                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:141:LEU:HD22 | 3:B:172:VAL:HG12 | 1.90                     | 0.54              |
| 2:A:324:VAL:HB   | 2:A:327:ASP:HB2  | 1.89                     | 0.54              |
| 3:B:141:LEU:HD22 | 3:B:172:VAL:HG12 | 1.90                     | 0.54              |
| 2:A:324:VAL:HB   | 2:A:327:ASP:HB2  | 1.89                     | 0.54              |
| 3:B:141:LEU:HD22 | 3:B:172:VAL:HG12 | 1.90                     | 0.54              |
| 2:A:324:VAL:HB   | 2:A:327:ASP:HB2  | 1.89                     | 0.54              |
| 3:B:141:LEU:HD22 | 3:B:172:VAL:HG12 | 1.90                     | 0.54              |
| 1:C:301:TRP:HB2  | 1:C:386:ARG:CG   | 2.32                     | 0.54              |
| 2:A:324:VAL:HB   | 2:A:327:ASP:HB2  | 1.89                     | 0.54              |
| 3:B:141:LEU:HD22 | 3:B:172:VAL:HG12 | 1.90                     | 0.54              |
| 1:C:319:PRO:HG2  | 1:C:325:ARG:HH21 | 1.73                     | 0.54              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:HG3  | 2.38                     | 0.54              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:HG3  | 2.38                     | 0.53              |
| 1:C:459:ARG:HH12 | 3:B:424:ASN:HA   | 1.73                     | 0.53              |
| 1:C:333:ASP:HA   | 3:B:416:MET:CG   | 2.38                     | 0.53              |
| 1:C:68:LEU:HD13  | 1:C:95:LEU:HD13  | 1.89                     | 0.53              |
| 1:C:314:ASP:HB3  | 1:C:326:GLN:HE22 | 1.73                     | 0.53              |
| 1:C:68:LEU:HD13  | 1:C:95:LEU:HD13  | 1.90                     | 0.53              |
| 1:C:333:ASP:HA   | 3:B:416:MET:CG   | 2.38                     | 0.53              |
| 1:C:68:LEU:HD13  | 1:C:95:LEU:HD13  | 1.90                     | 0.53              |
| 1:C:438:ARG:HD3  | 2:A:402:ARG:HG3  | 1.90                     | 0.53              |
| 1:C:438:ARG:HD3  | 2:A:402:ARG:HG3  | 1.90                     | 0.53              |
| 1:C:68:LEU:HD13  | 1:C:95:LEU:HD13  | 1.90                     | 0.53              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HD22 | 2.07                     | 0.53              |
| 1:C:68:LEU:HD13  | 1:C:95:LEU:HD13  | 1.90                     | 0.53              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:O    | 2.09                     | 0.53              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE1  | 2.09                     | 0.53              |
| 3:B:262:PHE:HB3  | 3:B:263:PRO:HD2  | 1.90                     | 0.53              |
| 3:B:262:PHE:HB3  | 3:B:263:PRO:HD2  | 1.90                     | 0.53              |
| 3:B:262:PHE:HB3  | 3:B:263:PRO:HD2  | 1.90                     | 0.53              |
| 1:C:369:SER:HG   | 1:C:422:ARG:HH12 | 1.52                     | 0.53              |
| 3:B:262:PHE:HB3  | 3:B:263:PRO:HD2  | 1.90                     | 0.53              |
| 3:B:262:PHE:HB3  | 3:B:263:PRO:HD2  | 1.90                     | 0.53              |
| 1:C:333:ASP:HA   | 3:B:416:MET:CG   | 2.38                     | 0.53              |
| 1:C:369:SER:CB   | 1:C:422:ARG:NH1  | 2.70                     | 0.53              |
| 1:C:459:ARG:HH12 | 3:B:424:ASN:HA   | 1.73                     | 0.53              |
| 2:A:286:LEU:HG   | 2:A:290:GLU:HB2  | 1.91                     | 0.53              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:CE1  | 2.44                     | 0.53              |
| 3:B:119:LEU:HA   | 3:B:122:VAL:HG22 | 1.90                     | 0.53              |
| 3:B:326:LYS:O    | 3:B:330:GLU:HB2  | 2.09                     | 0.53              |
| 2:A:286:LEU:HG   | 2:A:290:GLU:HB2  | 1.91                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:43:GLN:HA    | 3:B:244:PHE:CE1  | 2.44                     | 0.53              |
| 3:B:119:LEU:HA   | 3:B:122:VAL:HG22 | 1.90                     | 0.53              |
| 3:B:326:LYS:O    | 3:B:330:GLU:HB2  | 2.09                     | 0.53              |
| 2:A:286:LEU:HG   | 2:A:290:GLU:HB2  | 1.91                     | 0.53              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:CE1  | 2.44                     | 0.53              |
| 3:B:119:LEU:HA   | 3:B:122:VAL:HG22 | 1.90                     | 0.53              |
| 3:B:326:LYS:O    | 3:B:330:GLU:HB2  | 2.09                     | 0.53              |
| 1:C:438:ARG:HD3  | 2:A:402:ARG:HG3  | 1.90                     | 0.53              |
| 2:A:286:LEU:HG   | 2:A:290:GLU:HB2  | 1.91                     | 0.53              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:CE1  | 2.44                     | 0.53              |
| 3:B:119:LEU:HA   | 3:B:122:VAL:HG22 | 1.90                     | 0.53              |
| 3:B:326:LYS:O    | 3:B:330:GLU:HB2  | 2.09                     | 0.53              |
| 2:A:286:LEU:HG   | 2:A:290:GLU:HB2  | 1.91                     | 0.53              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:CE1  | 2.44                     | 0.53              |
| 3:B:119:LEU:HA   | 3:B:122:VAL:HG22 | 1.90                     | 0.53              |
| 3:B:326:LYS:O    | 3:B:330:GLU:HB2  | 2.09                     | 0.53              |
| 1:C:334:GLN:N    | 3:B:416:MET:CE   | 2.71                     | 0.53              |
| 1:C:321:HIS:ND1  | 1:C:366:SER:OG   | 2.39                     | 0.53              |
| 1:C:348:VAL:HG12 | 1:C:353:GLU:HG2  | 1.91                     | 0.53              |
| 1:C:348:VAL:HG12 | 1:C:353:GLU:HG2  | 1.91                     | 0.53              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:CG   | 2.67                     | 0.52              |
| 1:C:459:ARG:HH12 | 3:B:424:ASN:HA   | 1.74                     | 0.52              |
| 1:C:348:VAL:HG12 | 1:C:353:GLU:HG2  | 1.91                     | 0.52              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:HG3  | 2.39                     | 0.52              |
| 1:C:348:VAL:HG12 | 1:C:353:GLU:HG2  | 1.91                     | 0.52              |
| 1:C:313:TYR:HE1  | 1:C:324:LYS:HD2  | 1.73                     | 0.52              |
| 1:C:348:VAL:HG12 | 1:C:353:GLU:HG2  | 1.91                     | 0.52              |
| 1:C:438:ARG:HD3  | 2:A:402:ARG:HG3  | 1.91                     | 0.52              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:N    | 2.23                     | 0.52              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:N    | 2.23                     | 0.52              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:N    | 2.23                     | 0.52              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:N    | 2.23                     | 0.52              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:N    | 2.23                     | 0.52              |
| 1:C:321:HIS:NE2  | 1:C:366:SER:OG   | 2.43                     | 0.52              |
| 1:C:89:ILE:HD12  | 1:C:125:ILE:HD11 | 1.92                     | 0.52              |
| 1:C:89:ILE:HD12  | 1:C:125:ILE:HD11 | 1.92                     | 0.52              |
| 1:C:89:ILE:HD12  | 1:C:125:ILE:HD11 | 1.92                     | 0.52              |
| 1:C:445:GLN:HB2  | 1:C:450:ARG:NH2  | 2.25                     | 0.52              |
| 1:C:187:PHE:CE1  | 1:C:300:VAL:HG11 | 2.45                     | 0.52              |
| 3:B:315:VAL:HB   | 3:B:351:VAL:HG22 | 1.90                     | 0.52              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE1  | 2.10                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:315:VAL:HB   | 3:B:351:VAL:HG22 | 1.90                     | 0.52              |
| 3:B:315:VAL:HB   | 3:B:351:VAL:HG22 | 1.90                     | 0.52              |
| 3:B:315:VAL:HB   | 3:B:351:VAL:HG22 | 1.90                     | 0.52              |
| 3:B:315:VAL:HB   | 3:B:351:VAL:HG22 | 1.90                     | 0.52              |
| 1:C:382:ILE:HA   | 1:C:405:LEU:O    | 2.10                     | 0.52              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:HE2   | 1.75                     | 0.52              |
| 2:A:88:HIS:HB2   | 2:A:91:GLN:HG3   | 1.92                     | 0.52              |
| 1:C:89:ILE:HD12  | 1:C:125:ILE:HD11 | 1.92                     | 0.52              |
| 1:C:187:PHE:CE1  | 1:C:300:VAL:HG11 | 2.45                     | 0.52              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:HE2   | 1.75                     | 0.52              |
| 2:A:88:HIS:HB2   | 2:A:91:GLN:HG3   | 1.92                     | 0.52              |
| 1:C:187:PHE:CE1  | 1:C:300:VAL:HG11 | 2.45                     | 0.52              |
| 1:C:445:GLN:NE2  | 1:C:452:LYS:HD3  | 2.25                     | 0.52              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:HE2   | 1.75                     | 0.52              |
| 2:A:88:HIS:HB2   | 2:A:91:GLN:HG3   | 1.92                     | 0.52              |
| 1:C:187:PHE:CE1  | 1:C:300:VAL:HG11 | 2.45                     | 0.52              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:HE2   | 1.75                     | 0.52              |
| 2:A:88:HIS:HB2   | 2:A:91:GLN:HG3   | 1.92                     | 0.52              |
| 1:C:89:ILE:HD12  | 1:C:125:ILE:HD11 | 1.92                     | 0.52              |
| 1:C:187:PHE:CE1  | 1:C:300:VAL:HG11 | 2.45                     | 0.52              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:CG   | 2.68                     | 0.52              |
| 2:A:22:GLU:HA    | 2:A:83:TYR:HE2   | 1.75                     | 0.52              |
| 2:A:88:HIS:HB2   | 2:A:91:GLN:HG3   | 1.92                     | 0.52              |
| 2:A:269:LEU:O    | 2:A:378:LEU:HA   | 2.09                     | 0.52              |
| 2:A:269:LEU:O    | 2:A:378:LEU:HA   | 2.09                     | 0.52              |
| 1:C:459:ARG:NH1  | 3:B:424:ASN:HD22 | 2.08                     | 0.52              |
| 2:A:269:LEU:O    | 2:A:378:LEU:HA   | 2.09                     | 0.52              |
| 2:A:269:LEU:O    | 2:A:378:LEU:HA   | 2.09                     | 0.52              |
| 1:C:382:ILE:HA   | 1:C:405:LEU:O    | 2.10                     | 0.52              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:HG3  | 2.40                     | 0.52              |
| 2:A:269:LEU:O    | 2:A:378:LEU:HA   | 2.09                     | 0.52              |
| 1:C:334:GLN:N    | 3:B:416:MET:CE   | 2.73                     | 0.52              |
| 1:C:382:ILE:HA   | 1:C:405:LEU:O    | 2.10                     | 0.52              |
| 1:C:382:ILE:HA   | 1:C:405:LEU:O    | 2.10                     | 0.52              |
| 1:C:382:ILE:HA   | 1:C:405:LEU:O    | 2.10                     | 0.52              |
| 1:C:321:HIS:ND1  | 1:C:366:SER:OG   | 2.42                     | 0.52              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE1  | 2.10                     | 0.52              |
| 1:C:423:LEU:HG   | 1:C:424:LYS:N    | 2.25                     | 0.51              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE1  | 2.10                     | 0.51              |
| 3:B:176:LYS:HG3  | 3:B:177:VAL:HG23 | 1.92                     | 0.51              |
| 3:B:176:LYS:HG3  | 3:B:177:VAL:HG23 | 1.92                     | 0.51              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 3:B:176:LYS:HG3 | 3:B:177:VAL:HG23 | 1.92                     | 0.51              |
| 3:B:176:LYS:HG3 | 3:B:177:VAL:HG23 | 1.92                     | 0.51              |
| 3:B:176:LYS:HG3 | 3:B:177:VAL:HG23 | 1.92                     | 0.51              |
| 3:B:251:ASP:H   | 3:B:254:LYS:HB2  | 1.76                     | 0.51              |
| 1:C:183:LEU:HA  | 1:C:186:ILE:HG22 | 1.92                     | 0.51              |
| 3:B:251:ASP:H   | 3:B:254:LYS:HB2  | 1.76                     | 0.51              |
| 1:C:183:LEU:HA  | 1:C:186:ILE:HG22 | 1.92                     | 0.51              |
| 3:B:251:ASP:H   | 3:B:254:LYS:HB2  | 1.76                     | 0.51              |
| 3:B:251:ASP:H   | 3:B:254:LYS:HB2  | 1.76                     | 0.51              |
| 1:C:135:PHE:CE2 | 1:C:168:THR:HB   | 2.45                     | 0.51              |
| 3:B:251:ASP:H   | 3:B:254:LYS:HB2  | 1.76                     | 0.51              |
| 1:C:183:LEU:HA  | 1:C:186:ILE:HG22 | 1.92                     | 0.51              |
| 2:A:362:VAL:HB  | 2:A:370:LYS:HD3  | 1.93                     | 0.51              |
| 3:B:323:MET:HE2 | 3:B:328:VAL:HG22 | 1.92                     | 0.51              |
| 2:A:362:VAL:HB  | 2:A:370:LYS:HD3  | 1.93                     | 0.51              |
| 3:B:323:MET:HE2 | 3:B:328:VAL:HG22 | 1.92                     | 0.51              |
| 1:C:333:ASP:HA  | 3:B:416:MET:CG   | 2.40                     | 0.51              |
| 2:A:362:VAL:HB  | 2:A:370:LYS:HD3  | 1.93                     | 0.51              |
| 3:B:323:MET:HE2 | 3:B:328:VAL:HG22 | 1.92                     | 0.51              |
| 1:C:183:LEU:HA  | 1:C:186:ILE:HG22 | 1.92                     | 0.51              |
| 2:A:362:VAL:HB  | 2:A:370:LYS:HD3  | 1.93                     | 0.51              |
| 3:B:323:MET:HE2 | 3:B:328:VAL:HG22 | 1.92                     | 0.51              |
| 1:C:183:LEU:HA  | 1:C:186:ILE:HG22 | 1.92                     | 0.51              |
| 2:A:362:VAL:HB  | 2:A:370:LYS:HD3  | 1.93                     | 0.51              |
| 3:B:323:MET:HE2 | 3:B:328:VAL:HG22 | 1.92                     | 0.51              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HA   | 2.40                     | 0.51              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HA   | 2.40                     | 0.51              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HA   | 2.40                     | 0.51              |
| 1:C:314:ASP:HB3 | 1:C:325:ARG:NH1  | 2.25                     | 0.51              |
| 1:C:334:GLN:N   | 3:B:416:MET:CE   | 2.73                     | 0.51              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HA   | 2.40                     | 0.51              |
| 2:A:315:CYS:HA  | 2:A:379:SER:HB3  | 1.92                     | 0.51              |
| 3:B:20:PHE:HA   | 3:B:232:SER:HB2  | 1.91                     | 0.51              |
| 3:B:70:LEU:HG   | 3:B:145:THR:HG23 | 1.93                     | 0.51              |
| 2:A:315:CYS:HA  | 2:A:379:SER:HB3  | 1.92                     | 0.51              |
| 3:B:20:PHE:HA   | 3:B:232:SER:HB2  | 1.91                     | 0.51              |
| 3:B:70:LEU:HG   | 3:B:145:THR:HG23 | 1.93                     | 0.51              |
| 2:A:315:CYS:HA  | 2:A:379:SER:HB3  | 1.92                     | 0.51              |
| 3:B:20:PHE:HA   | 3:B:232:SER:HB2  | 1.91                     | 0.51              |
| 3:B:70:LEU:HG   | 3:B:145:THR:HG23 | 1.93                     | 0.51              |
| 1:C:330:LEU:CD1 | 1:C:466:VAL:HA   | 2.40                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:315:CYS:HA   | 2:A:379:SER:HB3  | 1.92                     | 0.51              |
| 3:B:20:PHE:HA    | 3:B:232:SER:HB2  | 1.91                     | 0.51              |
| 3:B:70:LEU:HG    | 3:B:145:THR:HG23 | 1.93                     | 0.51              |
| 2:A:315:CYS:HA   | 2:A:379:SER:HB3  | 1.92                     | 0.51              |
| 3:B:20:PHE:HA    | 3:B:232:SER:HB2  | 1.91                     | 0.51              |
| 3:B:70:LEU:HG    | 3:B:145:THR:HG23 | 1.93                     | 0.51              |
| 3:B:133:GLN:HG3  | 3:B:165:ILE:HD11 | 1.92                     | 0.51              |
| 1:C:135:PHE:CE2  | 1:C:168:THR:HB   | 2.46                     | 0.51              |
| 1:C:329:ARG:NH1  | 1:C:331:CYS:HB2  | 2.26                     | 0.51              |
| 3:B:133:GLN:HG3  | 3:B:165:ILE:HD11 | 1.92                     | 0.51              |
| 3:B:133:GLN:HG3  | 3:B:165:ILE:HD11 | 1.92                     | 0.51              |
| 3:B:133:GLN:HG3  | 3:B:165:ILE:HD11 | 1.92                     | 0.51              |
| 1:C:329:ARG:NH1  | 1:C:331:CYS:HB2  | 2.26                     | 0.51              |
| 3:B:133:GLN:HG3  | 3:B:165:ILE:HD11 | 1.92                     | 0.51              |
| 1:C:329:ARG:NH1  | 1:C:331:CYS:HB2  | 2.26                     | 0.51              |
| 2:A:191:THR:O    | 2:A:195:LEU:HB2  | 2.10                     | 0.51              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:CG   | 2.69                     | 0.51              |
| 2:A:191:THR:O    | 2:A:195:LEU:HB2  | 2.10                     | 0.51              |
| 2:A:191:THR:O    | 2:A:195:LEU:HB2  | 2.10                     | 0.51              |
| 1:C:329:ARG:NH1  | 1:C:331:CYS:HB2  | 2.26                     | 0.51              |
| 2:A:191:THR:O    | 2:A:195:LEU:HB2  | 2.10                     | 0.51              |
| 2:A:191:THR:O    | 2:A:195:LEU:HB2  | 2.10                     | 0.51              |
| 1:C:85:GLY:HA2   | 1:C:485:PRO:HB3  | 1.92                     | 0.51              |
| 1:C:137:ASN:O    | 1:C:141:LYS:HB2  | 2.11                     | 0.51              |
| 2:A:224:TYR:CG   | 6:A:500:GTP:C6   | 2.98                     | 0.51              |
| 1:C:137:ASN:O    | 1:C:141:LYS:HB2  | 2.11                     | 0.51              |
| 2:A:224:TYR:CG   | 6:A:500:GTP:C6   | 2.98                     | 0.51              |
| 1:C:85:GLY:HA2   | 1:C:485:PRO:HB3  | 1.92                     | 0.51              |
| 1:C:329:ARG:NH1  | 1:C:331:CYS:HB2  | 2.26                     | 0.51              |
| 1:C:443:LEU:HD13 | 1:C:456:ILE:HD12 | 1.93                     | 0.51              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE1  | 2.11                     | 0.51              |
| 2:A:224:TYR:CG   | 6:A:500:GTP:C6   | 2.98                     | 0.51              |
| 2:A:224:TYR:CG   | 6:A:500:GTP:C6   | 2.98                     | 0.51              |
| 2:A:224:TYR:CG   | 6:A:500:GTP:C6   | 2.98                     | 0.51              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:HG12 | 1.93                     | 0.50              |
| 1:C:443:LEU:HD13 | 1:C:456:ILE:HD12 | 1.93                     | 0.50              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:HG12 | 1.93                     | 0.50              |
| 1:C:443:LEU:HD13 | 1:C:456:ILE:HD12 | 1.93                     | 0.50              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:HG12 | 1.93                     | 0.50              |
| 1:C:137:ASN:O    | 1:C:141:LYS:HB2  | 2.11                     | 0.50              |
| 1:C:137:ASN:O    | 1:C:141:LYS:HB2  | 2.11                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:443:LEU:HD13 | 1:C:456:ILE:HD12 | 1.93                     | 0.50              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:HG12 | 1.93                     | 0.50              |
| 1:C:137:ASN:O    | 1:C:141:LYS:HB2  | 2.11                     | 0.50              |
| 1:C:334:GLN:N    | 3:B:416:MET:CE   | 2.73                     | 0.50              |
| 2:A:7:ILE:HG13   | 2:A:137:VAL:HA   | 1.93                     | 0.50              |
| 3:B:11:GLN:HB2   | 7:B:600:GDP:O2B  | 2.11                     | 0.50              |
| 1:C:85:GLY:HA2   | 1:C:485:PRO:HB3  | 1.92                     | 0.50              |
| 2:A:7:ILE:HG13   | 2:A:137:VAL:HA   | 1.93                     | 0.50              |
| 3:B:11:GLN:HB2   | 7:B:600:GDP:O2B  | 2.11                     | 0.50              |
| 1:C:135:PHE:CE2  | 1:C:168:THR:HB   | 2.46                     | 0.50              |
| 2:A:7:ILE:HG13   | 2:A:137:VAL:HA   | 1.93                     | 0.50              |
| 3:B:11:GLN:HB2   | 7:B:600:GDP:O2B  | 2.11                     | 0.50              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:HG12 | 1.94                     | 0.50              |
| 1:C:85:GLY:HA2   | 1:C:485:PRO:HB3  | 1.92                     | 0.50              |
| 2:A:7:ILE:HG13   | 2:A:137:VAL:HA   | 1.93                     | 0.50              |
| 3:B:11:GLN:HB2   | 7:B:600:GDP:O2B  | 2.11                     | 0.50              |
| 1:C:85:GLY:HA2   | 1:C:485:PRO:HB3  | 1.92                     | 0.50              |
| 1:C:443:LEU:HD13 | 1:C:456:ILE:HD12 | 1.93                     | 0.50              |
| 2:A:7:ILE:HG13   | 2:A:137:VAL:HA   | 1.93                     | 0.50              |
| 3:B:11:GLN:HB2   | 7:B:600:GDP:O2B  | 2.11                     | 0.50              |
| 1:C:135:PHE:CE2  | 1:C:168:THR:HB   | 2.46                     | 0.50              |
| 1:C:438:ARG:HD3  | 2:A:402:ARG:HG3  | 1.92                     | 0.50              |
| 3:B:277:SER:O    | 8:B:601:TA1:H191 | 2.11                     | 0.50              |
| 3:B:277:SER:O    | 8:B:601:TA1:H191 | 2.11                     | 0.50              |
| 3:B:277:SER:O    | 8:B:601:TA1:H191 | 2.11                     | 0.50              |
| 3:B:277:SER:O    | 8:B:601:TA1:H191 | 2.11                     | 0.50              |
| 3:B:277:SER:O    | 8:B:601:TA1:H191 | 2.11                     | 0.50              |
| 2:A:140:SER:HA   | 2:A:171:ILE:HB   | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:O2'  | 2.17                     | 0.50              |
| 2:A:286:LEU:HD23 | 2:A:291:ILE:HG23 | 1.93                     | 0.50              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:HH22  | 1.76                     | 0.50              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:HB3  | 1.92                     | 0.50              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:O    | 2.12                     | 0.50              |
| 2:A:140:SER:HA   | 2:A:171:ILE:HB   | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:O2'  | 2.17                     | 0.50              |
| 2:A:286:LEU:HD23 | 2:A:291:ILE:HG23 | 1.93                     | 0.50              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:HH22  | 1.76                     | 0.50              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:HB3  | 1.92                     | 0.50              |
| 2:A:140:SER:HA   | 2:A:171:ILE:HB   | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:O2'  | 2.17                     | 0.50              |
| 2:A:286:LEU:HD23 | 2:A:291:ILE:HG23 | 1.93                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:3:GLU:HB3    | 3:B:64:ARG:HH22  | 1.76                     | 0.50              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:HB3  | 1.92                     | 0.50              |
| 1:C:135:PHE:CE2  | 1:C:168:THR:HB   | 2.46                     | 0.50              |
| 2:A:140:SER:HA   | 2:A:171:ILE:HB   | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:O2'  | 2.17                     | 0.50              |
| 2:A:286:LEU:HD23 | 2:A:291:ILE:HG23 | 1.93                     | 0.50              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:HH22  | 1.76                     | 0.50              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:HB3  | 1.92                     | 0.50              |
| 2:A:140:SER:HA   | 2:A:171:ILE:HB   | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:O2'  | 2.17                     | 0.50              |
| 2:A:286:LEU:HD23 | 2:A:291:ILE:HG23 | 1.93                     | 0.50              |
| 3:B:3:GLU:HB3    | 3:B:64:ARG:HH22  | 1.76                     | 0.50              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:HB3  | 1.92                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:C2'  | 2.59                     | 0.50              |
| 3:B:52:TYR:HH    | 3:B:136:GLN:HG3  | 1.76                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:C2'  | 2.59                     | 0.50              |
| 3:B:52:TYR:HH    | 3:B:136:GLN:HG3  | 1.76                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:C2'  | 2.59                     | 0.50              |
| 3:B:52:TYR:HH    | 3:B:136:GLN:HG3  | 1.76                     | 0.50              |
| 2:A:179:THR:OG1  | 6:A:500:GTP:C2'  | 2.59                     | 0.50              |
| 3:B:52:TYR:HH    | 3:B:136:GLN:HG3  | 1.76                     | 0.50              |
| 3:B:232:SER:HA   | 3:B:235:MET:SD   | 2.51                     | 0.50              |
| 3:B:232:SER:HA   | 3:B:235:MET:SD   | 2.51                     | 0.50              |
| 3:B:232:SER:HA   | 3:B:235:MET:SD   | 2.51                     | 0.50              |
| 3:B:232:SER:HA   | 3:B:235:MET:SD   | 2.51                     | 0.50              |
| 3:B:232:SER:HA   | 3:B:235:MET:SD   | 2.51                     | 0.50              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C8   | 2.99                     | 0.50              |
| 3:B:21:TRP:HA    | 3:B:24:ILE:HG22  | 1.93                     | 0.50              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C8   | 2.99                     | 0.50              |
| 3:B:21:TRP:HA    | 3:B:24:ILE:HG22  | 1.93                     | 0.50              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C8   | 2.99                     | 0.50              |
| 3:B:21:TRP:HA    | 3:B:24:ILE:HG22  | 1.93                     | 0.50              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C8   | 2.99                     | 0.50              |
| 3:B:21:TRP:HA    | 3:B:24:ILE:HG22  | 1.93                     | 0.50              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:C8   | 2.99                     | 0.50              |
| 3:B:21:TRP:HA    | 3:B:24:ILE:HG22  | 1.93                     | 0.50              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:HB3  | 1.94                     | 0.50              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:HG3  | 1.92                     | 0.50              |
| 1:C:70:ILE:HD13  | 1:C:70:ILE:H     | 1.77                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:137:VAL:HB   | 2:A:168:GLU:HB3  | 1.94                     | 0.50              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:HG3  | 1.92                     | 0.50              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:HB3  | 1.94                     | 0.50              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:HG3  | 1.92                     | 0.50              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:HB3  | 1.94                     | 0.50              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:HG3  | 1.92                     | 0.50              |
| 2:A:137:VAL:HB   | 2:A:168:GLU:HB3  | 1.94                     | 0.50              |
| 3:B:414:ASP:HB2  | 3:B:417:GLU:HG3  | 1.92                     | 0.50              |
| 1:C:166:THR:HA   | 1:C:169:ILE:HG22 | 1.93                     | 0.49              |
| 3:B:101:ASN:ND2  | 3:B:143:GLY:HA2  | 2.27                     | 0.49              |
| 3:B:198:THR:HG23 | 3:B:265:LEU:HD13 | 1.94                     | 0.49              |
| 3:B:101:ASN:ND2  | 3:B:143:GLY:HA2  | 2.27                     | 0.49              |
| 3:B:198:THR:HG23 | 3:B:265:LEU:HD13 | 1.94                     | 0.49              |
| 1:C:334:GLN:N    | 3:B:416:MET:CE   | 2.75                     | 0.49              |
| 3:B:101:ASN:ND2  | 3:B:143:GLY:HA2  | 2.27                     | 0.49              |
| 3:B:198:THR:HG23 | 3:B:265:LEU:HD13 | 1.94                     | 0.49              |
| 3:B:101:ASN:ND2  | 3:B:143:GLY:HA2  | 2.27                     | 0.49              |
| 3:B:198:THR:HG23 | 3:B:265:LEU:HD13 | 1.94                     | 0.49              |
| 3:B:101:ASN:ND2  | 3:B:143:GLY:HA2  | 2.27                     | 0.49              |
| 3:B:198:THR:HG23 | 3:B:265:LEU:HD13 | 1.94                     | 0.49              |
| 1:C:70:ILE:HD13  | 1:C:70:ILE:H     | 1.77                     | 0.49              |
| 1:C:120:PHE:HB3  | 1:C:122:PHE:CE1  | 2.46                     | 0.49              |
| 1:C:327:THR:HG23 | 1:C:327:THR:O    | 2.12                     | 0.49              |
| 1:C:166:THR:HA   | 1:C:169:ILE:HG22 | 1.93                     | 0.49              |
| 1:C:431:THR:O    | 1:C:435:THR:HG22 | 2.12                     | 0.49              |
| 1:C:120:PHE:HB3  | 1:C:122:PHE:CE1  | 2.46                     | 0.49              |
| 1:C:166:THR:HA   | 1:C:169:ILE:HG22 | 1.93                     | 0.49              |
| 1:C:70:ILE:HD13  | 1:C:70:ILE:H     | 1.77                     | 0.49              |
| 1:C:166:THR:HA   | 1:C:169:ILE:HG22 | 1.93                     | 0.49              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:CE   | 2.41                     | 0.49              |
| 1:C:166:THR:HA   | 1:C:169:ILE:HG22 | 1.93                     | 0.49              |
| 1:C:67:TYR:HA    | 1:C:124:GLN:O    | 2.12                     | 0.49              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:CE   | 2.41                     | 0.49              |
| 1:C:431:THR:O    | 1:C:435:THR:HG22 | 2.12                     | 0.49              |
| 3:B:6:HIS:O      | 3:B:65:ALA:HA    | 2.12                     | 0.49              |
| 3:B:274:PRO:O    | 8:B:601:TA1:H151 | 2.13                     | 0.49              |
| 1:C:120:PHE:HB3  | 1:C:122:PHE:CE1  | 2.46                     | 0.49              |
| 1:C:147:VAL:HG22 | 1:C:403:LEU:HD21 | 1.94                     | 0.49              |
| 1:C:415:LYS:CD   | 2:A:156:ARG:HH21 | 2.19                     | 0.49              |
| 3:B:6:HIS:O      | 3:B:65:ALA:HA    | 2.12                     | 0.49              |
| 3:B:274:PRO:O    | 8:B:601:TA1:H151 | 2.13                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:70:ILE:HD13  | 1:C:70:ILE:H     | 1.77                     | 0.49              |
| 3:B:6:HIS:O      | 3:B:65:ALA:HA    | 2.12                     | 0.49              |
| 3:B:274:PRO:O    | 8:B:601:TA1:H151 | 2.13                     | 0.49              |
| 1:C:120:PHE:HB3  | 1:C:122:PHE:CE1  | 2.46                     | 0.49              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:CG   | 2.70                     | 0.49              |
| 3:B:6:HIS:O      | 3:B:65:ALA:HA    | 2.12                     | 0.49              |
| 3:B:274:PRO:O    | 8:B:601:TA1:H151 | 2.13                     | 0.49              |
| 1:C:67:TYR:HA    | 1:C:124:GLN:O    | 2.12                     | 0.49              |
| 1:C:70:ILE:HD13  | 1:C:70:ILE:H     | 1.77                     | 0.49              |
| 1:C:120:PHE:HB3  | 1:C:122:PHE:CE1  | 2.46                     | 0.49              |
| 1:C:431:THR:O    | 1:C:435:THR:HG22 | 2.12                     | 0.49              |
| 3:B:6:HIS:O      | 3:B:65:ALA:HA    | 2.12                     | 0.49              |
| 3:B:274:PRO:O    | 8:B:601:TA1:H151 | 2.13                     | 0.49              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:N7   | 2.80                     | 0.49              |
| 1:C:67:TYR:HA    | 1:C:124:GLN:O    | 2.12                     | 0.49              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:N7   | 2.80                     | 0.49              |
| 1:C:67:TYR:HA    | 1:C:124:GLN:O    | 2.12                     | 0.49              |
| 1:C:147:VAL:HG22 | 1:C:403:LEU:HD21 | 1.94                     | 0.49              |
| 1:C:431:THR:O    | 1:C:435:THR:HG22 | 2.12                     | 0.49              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:N7   | 2.80                     | 0.49              |
| 1:C:67:TYR:HA    | 1:C:124:GLN:O    | 2.12                     | 0.49              |
| 1:C:431:THR:O    | 1:C:435:THR:HG22 | 2.12                     | 0.49              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:N7   | 2.80                     | 0.49              |
| 2:A:224:TYR:CE2  | 6:A:500:GTP:N7   | 2.80                     | 0.49              |
| 1:C:147:VAL:HG22 | 1:C:403:LEU:HD21 | 1.94                     | 0.49              |
| 1:C:307:ILE:HA   | 1:C:311:LEU:O    | 2.12                     | 0.49              |
| 3:B:259:MET:O    | 3:B:261:PRO:HD3  | 2.13                     | 0.49              |
| 3:B:295:MET:HG2  | 3:B:377:PHE:HB2  | 1.94                     | 0.49              |
| 3:B:259:MET:O    | 3:B:261:PRO:HD3  | 2.13                     | 0.49              |
| 3:B:295:MET:HG2  | 3:B:377:PHE:HB2  | 1.94                     | 0.49              |
| 3:B:259:MET:O    | 3:B:261:PRO:HD3  | 2.13                     | 0.49              |
| 3:B:295:MET:HG2  | 3:B:377:PHE:HB2  | 1.94                     | 0.49              |
| 1:C:147:VAL:HG22 | 1:C:403:LEU:HD21 | 1.94                     | 0.49              |
| 3:B:259:MET:O    | 3:B:261:PRO:HD3  | 2.13                     | 0.49              |
| 3:B:295:MET:HG2  | 3:B:377:PHE:HB2  | 1.94                     | 0.49              |
| 3:B:259:MET:O    | 3:B:261:PRO:HD3  | 2.13                     | 0.49              |
| 3:B:295:MET:HG2  | 3:B:377:PHE:HB2  | 1.94                     | 0.49              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CG   | 2.42                     | 0.49              |
| 3:B:119:LEU:HD11 | 3:B:156:LYS:HD3  | 1.93                     | 0.49              |
| 1:C:307:ILE:HA   | 1:C:311:LEU:O    | 2.12                     | 0.49              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CG   | 2.43                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:119:LEU:HD11 | 3:B:156:LYS:HD3  | 1.93                     | 0.49              |
| 1:C:140:MET:CE   | 1:C:178:ILE:HB   | 2.42                     | 0.49              |
| 3:B:119:LEU:HD11 | 3:B:156:LYS:HD3  | 1.93                     | 0.49              |
| 1:C:140:MET:CE   | 1:C:178:ILE:HB   | 2.42                     | 0.49              |
| 3:B:119:LEU:HD11 | 3:B:156:LYS:HD3  | 1.93                     | 0.49              |
| 1:C:307:ILE:HA   | 1:C:311:LEU:O    | 2.12                     | 0.49              |
| 3:B:119:LEU:HD11 | 3:B:156:LYS:HD3  | 1.93                     | 0.49              |
| 1:C:140:MET:CE   | 1:C:178:ILE:HB   | 2.43                     | 0.49              |
| 2:A:205:ASP:O    | 2:A:209:ILE:HG13 | 2.12                     | 0.49              |
| 1:C:140:MET:CE   | 1:C:178:ILE:HB   | 2.42                     | 0.49              |
| 1:C:495:HIS:HE1  | 2:A:415:GLU:HB3  | 1.76                     | 0.49              |
| 2:A:205:ASP:O    | 2:A:209:ILE:HG13 | 2.12                     | 0.49              |
| 1:C:307:ILE:HA   | 1:C:311:LEU:O    | 2.12                     | 0.49              |
| 2:A:205:ASP:O    | 2:A:209:ILE:HG13 | 2.12                     | 0.49              |
| 1:C:307:ILE:HA   | 1:C:311:LEU:O    | 2.12                     | 0.49              |
| 2:A:205:ASP:O    | 2:A:209:ILE:HG13 | 2.12                     | 0.49              |
| 1:C:140:MET:CE   | 1:C:178:ILE:HB   | 2.43                     | 0.49              |
| 1:C:147:VAL:HG22 | 1:C:403:LEU:HD21 | 1.95                     | 0.49              |
| 1:C:495:HIS:HE1  | 2:A:415:GLU:HB3  | 1.76                     | 0.49              |
| 2:A:205:ASP:O    | 2:A:209:ILE:HG13 | 2.12                     | 0.49              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:OE2  | 2.12                     | 0.49              |
| 1:C:415:LYS:HE2  | 2:A:156:ARG:HH21 | 1.77                     | 0.49              |
| 1:C:68:LEU:HD12  | 1:C:122:PHE:CZ   | 2.48                     | 0.49              |
| 1:C:68:LEU:HD12  | 1:C:122:PHE:CZ   | 2.48                     | 0.49              |
| 1:C:68:LEU:HD12  | 1:C:122:PHE:CZ   | 2.48                     | 0.49              |
| 1:C:68:LEU:HD12  | 1:C:122:PHE:CZ   | 2.48                     | 0.49              |
| 1:C:68:LEU:HD12  | 1:C:122:PHE:CZ   | 2.48                     | 0.48              |
| 1:C:415:LYS:HE2  | 2:A:112:LYS:HZ1  | 1.74                     | 0.48              |
| 1:C:155:ILE:HB   | 1:C:405:LEU:HD13 | 1.95                     | 0.48              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG13 | 1.95                     | 0.48              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:OE2  | 2.13                     | 0.48              |
| 1:C:444:ARG:CZ   | 1:C:502:LEU:HD21 | 2.42                     | 0.48              |
| 1:C:313:TYR:OH   | 1:C:318:PRO:HB2  | 2.13                     | 0.48              |
| 3:B:234:THR:HG21 | 3:B:270:PRO:HB2  | 1.95                     | 0.48              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:CE   | 2.42                     | 0.48              |
| 3:B:234:THR:HG21 | 3:B:270:PRO:HB2  | 1.95                     | 0.48              |
| 3:B:234:THR:HG21 | 3:B:270:PRO:HB2  | 1.95                     | 0.48              |
| 1:C:155:ILE:HB   | 1:C:405:LEU:HD13 | 1.95                     | 0.48              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CG   | 2.43                     | 0.48              |
| 3:B:234:THR:HG21 | 3:B:270:PRO:HB2  | 1.95                     | 0.48              |
| 3:B:234:THR:HG21 | 3:B:270:PRO:HB2  | 1.95                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:183:LEU:HD21 | 1:C:383:PHE:CE2  | 2.48                     | 0.48              |
| 1:C:155:ILE:HB   | 1:C:405:LEU:HD13 | 1.95                     | 0.48              |
| 1:C:317:GLU:HG3  | 1:C:344:ASN:ND2  | 2.29                     | 0.48              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG13 | 1.95                     | 0.48              |
| 1:C:155:ILE:HB   | 1:C:405:LEU:HD13 | 1.95                     | 0.48              |
| 1:C:155:ILE:HB   | 1:C:405:LEU:HD13 | 1.95                     | 0.48              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG13 | 1.95                     | 0.48              |
| 1:C:495:HIS:HE1  | 2:A:415:GLU:HB3  | 1.77                     | 0.48              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG13 | 1.95                     | 0.48              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CG   | 2.43                     | 0.48              |
| 1:C:495:HIS:HE1  | 2:A:415:GLU:HB3  | 1.77                     | 0.48              |
| 1:C:413:ARG:HH22 | 1:C:492:GLU:CG   | 2.26                     | 0.48              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:CE2  | 2.48                     | 0.48              |
| 1:C:330:LEU:HD21 | 1:C:340:VAL:HG13 | 1.95                     | 0.48              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:CE2  | 2.48                     | 0.48              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:CE2  | 2.48                     | 0.48              |
| 1:C:495:HIS:HE1  | 2:A:415:GLU:HB3  | 1.77                     | 0.48              |
| 1:C:332:GLU:O    | 3:B:416:MET:HG3  | 2.13                     | 0.48              |
| 1:C:183:LEU:HD21 | 1:C:383:PHE:CE2  | 2.48                     | 0.48              |
| 1:C:444:ARG:O    | 1:C:448:GLN:HG3  | 2.12                     | 0.48              |
| 1:C:327:THR:HG23 | 1:C:327:THR:O    | 2.14                     | 0.48              |
| 1:C:444:ARG:O    | 1:C:448:GLN:HG3  | 2.12                     | 0.48              |
| 1:C:444:ARG:O    | 1:C:448:GLN:HG3  | 2.12                     | 0.48              |
| 1:C:444:ARG:O    | 1:C:448:GLN:HG3  | 2.12                     | 0.48              |
| 1:C:444:ARG:O    | 1:C:448:GLN:HG3  | 2.12                     | 0.48              |
| 3:B:147:SER:O    | 3:B:151:THR:HB   | 2.14                     | 0.48              |
| 3:B:147:SER:O    | 3:B:151:THR:HB   | 2.14                     | 0.48              |
| 3:B:147:SER:O    | 3:B:151:THR:HB   | 2.14                     | 0.48              |
| 1:C:369:SER:CB   | 1:C:422:ARG:HH11 | 2.26                     | 0.48              |
| 3:B:147:SER:O    | 3:B:151:THR:HB   | 2.14                     | 0.48              |
| 3:B:147:SER:O    | 3:B:151:THR:HB   | 2.14                     | 0.48              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:N    | 2.29                     | 0.48              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:OE2  | 2.14                     | 0.48              |
| 1:C:314:ASP:H    | 1:C:326:GLN:HE22 | 1.62                     | 0.48              |
| 1:C:317:GLU:CB   | 1:C:318:PRO:HD2  | 2.43                     | 0.48              |
| 1:C:332:GLU:O    | 3:B:416:MET:HG3  | 2.14                     | 0.48              |
| 1:C:154:LEU:HD22 | 1:C:470:PHE:HB3  | 1.96                     | 0.48              |
| 1:C:132:GLN:CD   | 1:C:168:THR:HA   | 2.38                     | 0.48              |
| 1:C:154:LEU:HD22 | 1:C:470:PHE:HB3  | 1.96                     | 0.48              |
| 1:C:67:TYR:CE1   | 1:C:69:ARG:HB2   | 2.49                     | 0.47              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:CD   | 2.44                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:154:LEU:HD22 | 1:C:470:PHE:HB3  | 1.96                     | 0.47              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:CD   | 2.44                     | 0.47              |
| 1:C:154:LEU:HD22 | 1:C:470:PHE:HB3  | 1.97                     | 0.47              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:CD   | 2.44                     | 0.47              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:CD   | 2.44                     | 0.47              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:CD   | 2.44                     | 0.47              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:N    | 2.29                     | 0.47              |
| 2:A:180:ALA:HA   | 3:B:352:LYS:HG2  | 1.95                     | 0.47              |
| 2:A:201:ALA:HB3  | 2:A:267:PHE:CD1  | 2.49                     | 0.47              |
| 2:A:346:TRP:HZ2  | 2:A:435:VAL:HG13 | 1.79                     | 0.47              |
| 2:A:407:TRP:CD1  | 3:B:257:VAL:HA   | 2.49                     | 0.47              |
| 3:B:295:MET:HB3  | 3:B:377:PHE:CD1  | 2.50                     | 0.47              |
| 1:C:67:TYR:CE1   | 1:C:69:ARG:HB2   | 2.49                     | 0.47              |
| 1:C:132:GLN:CD   | 1:C:168:THR:HA   | 2.38                     | 0.47              |
| 2:A:180:ALA:HA   | 3:B:352:LYS:HG2  | 1.95                     | 0.47              |
| 2:A:201:ALA:HB3  | 2:A:267:PHE:CD1  | 2.49                     | 0.47              |
| 2:A:346:TRP:HZ2  | 2:A:435:VAL:HG13 | 1.79                     | 0.47              |
| 2:A:407:TRP:CD1  | 3:B:257:VAL:HA   | 2.49                     | 0.47              |
| 3:B:295:MET:HB3  | 3:B:377:PHE:CD1  | 2.50                     | 0.47              |
| 2:A:180:ALA:HA   | 3:B:352:LYS:HG2  | 1.95                     | 0.47              |
| 2:A:201:ALA:HB3  | 2:A:267:PHE:CD1  | 2.49                     | 0.47              |
| 2:A:346:TRP:HZ2  | 2:A:435:VAL:HG13 | 1.79                     | 0.47              |
| 2:A:407:TRP:CD1  | 3:B:257:VAL:HA   | 2.49                     | 0.47              |
| 3:B:295:MET:HB3  | 3:B:377:PHE:CD1  | 2.50                     | 0.47              |
| 1:C:67:TYR:CE1   | 1:C:69:ARG:HB2   | 2.49                     | 0.47              |
| 1:C:154:LEU:HD22 | 1:C:470:PHE:HB3  | 1.97                     | 0.47              |
| 2:A:180:ALA:HA   | 3:B:352:LYS:HG2  | 1.95                     | 0.47              |
| 2:A:201:ALA:HB3  | 2:A:267:PHE:CD1  | 2.49                     | 0.47              |
| 2:A:346:TRP:HZ2  | 2:A:435:VAL:HG13 | 1.79                     | 0.47              |
| 2:A:407:TRP:CD1  | 3:B:257:VAL:HA   | 2.49                     | 0.47              |
| 3:B:295:MET:HB3  | 3:B:377:PHE:CD1  | 2.50                     | 0.47              |
| 2:A:180:ALA:HA   | 3:B:352:LYS:HG2  | 1.95                     | 0.47              |
| 2:A:201:ALA:HB3  | 2:A:267:PHE:CD1  | 2.49                     | 0.47              |
| 2:A:346:TRP:HZ2  | 2:A:435:VAL:HG13 | 1.79                     | 0.47              |
| 2:A:407:TRP:CD1  | 3:B:257:VAL:HA   | 2.49                     | 0.47              |
| 3:B:295:MET:HB3  | 3:B:377:PHE:CD1  | 2.50                     | 0.47              |
| 1:C:67:TYR:CE1   | 1:C:69:ARG:HB2   | 2.49                     | 0.47              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:CE   | 2.43                     | 0.47              |
| 1:C:132:GLN:CD   | 1:C:168:THR:HA   | 2.38                     | 0.47              |
| 1:C:91:ASN:HB3   | 1:C:93:GLU:OE2   | 2.15                     | 0.47              |
| 1:C:67:TYR:CE1   | 1:C:69:ARG:HB2   | 2.49                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:71:ARG:HH22  | 1:C:77:GLU:HG2   | 1.79                     | 0.47              |
| 1:C:321:HIS:NE2  | 1:C:324:LYS:HD3  | 2.30                     | 0.47              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:CG   | 2.44                     | 0.47              |
| 1:C:71:ARG:HH22  | 1:C:77:GLU:HG2   | 1.79                     | 0.47              |
| 1:C:91:ASN:HB3   | 1:C:93:GLU:OE2   | 2.15                     | 0.47              |
| 1:C:335:ASN:HB2  | 1:C:337:ASN:OD1  | 2.13                     | 0.47              |
| 3:B:194:LEU:O    | 3:B:198:THR:HG22 | 2.15                     | 0.47              |
| 1:C:71:ARG:HH22  | 1:C:77:GLU:HG2   | 1.79                     | 0.47              |
| 1:C:91:ASN:HB3   | 1:C:93:GLU:OE2   | 2.15                     | 0.47              |
| 3:B:194:LEU:O    | 3:B:198:THR:HG22 | 2.15                     | 0.47              |
| 1:C:132:GLN:CD   | 1:C:168:THR:HA   | 2.38                     | 0.47              |
| 3:B:194:LEU:O    | 3:B:198:THR:HG22 | 2.15                     | 0.47              |
| 1:C:71:ARG:HH22  | 1:C:77:GLU:HG2   | 1.79                     | 0.47              |
| 1:C:335:ASN:HB2  | 1:C:337:ASN:OD1  | 2.13                     | 0.47              |
| 3:B:194:LEU:O    | 3:B:198:THR:HG22 | 2.15                     | 0.47              |
| 1:C:91:ASN:HB3   | 1:C:93:GLU:OE2   | 2.15                     | 0.47              |
| 1:C:132:GLN:NE2  | 1:C:168:THR:HA   | 2.29                     | 0.47              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CB   | 2.45                     | 0.47              |
| 1:C:335:ASN:HB2  | 1:C:337:ASN:OD1  | 2.13                     | 0.47              |
| 3:B:194:LEU:O    | 3:B:198:THR:HG22 | 2.15                     | 0.47              |
| 1:C:318:PRO:HA   | 1:C:319:PRO:HD3  | 1.73                     | 0.47              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CB   | 2.45                     | 0.47              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:HG12 | 1.97                     | 0.47              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CB   | 2.45                     | 0.47              |
| 1:C:335:ASN:HB2  | 1:C:337:ASN:OD1  | 2.13                     | 0.47              |
| 1:C:71:ARG:HH22  | 1:C:77:GLU:HG2   | 1.79                     | 0.47              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:HG12 | 1.97                     | 0.47              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CB   | 2.45                     | 0.47              |
| 1:C:335:ASN:HB2  | 1:C:337:ASN:OD1  | 2.13                     | 0.47              |
| 1:C:91:ASN:HB3   | 1:C:93:GLU:OE2   | 2.15                     | 0.47              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:HG12 | 1.97                     | 0.47              |
| 1:C:330:LEU:HD11 | 1:C:466:VAL:CB   | 2.45                     | 0.47              |
| 1:C:153:TRP:HZ2  | 1:C:478:CYS:HG   | 1.63                     | 0.47              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:HG12 | 1.97                     | 0.47              |
| 1:C:153:TRP:HZ2  | 1:C:478:CYS:HG   | 1.63                     | 0.47              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:HG12 | 1.97                     | 0.47              |
| 3:B:275:LEU:HD12 | 3:B:275:LEU:HA   | 1.80                     | 0.47              |
| 3:B:324:SER:O    | 3:B:328:VAL:HG23 | 2.14                     | 0.47              |
| 1:C:153:TRP:HZ2  | 1:C:478:CYS:HG   | 1.63                     | 0.47              |
| 1:C:383:PHE:O    | 1:C:404:SER:HA   | 2.15                     | 0.47              |
| 3:B:275:LEU:HD12 | 3:B:275:LEU:HA   | 1.80                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:324:SER:O    | 3:B:328:VAL:HG23 | 2.14                     | 0.47              |
| 3:B:275:LEU:HD12 | 3:B:275:LEU:HA   | 1.80                     | 0.47              |
| 3:B:324:SER:O    | 3:B:328:VAL:HG23 | 2.14                     | 0.47              |
| 1:C:153:TRP:HZ2  | 1:C:478:CYS:HG   | 1.63                     | 0.47              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:CZ   | 2.47                     | 0.47              |
| 3:B:275:LEU:HD12 | 3:B:275:LEU:HA   | 1.80                     | 0.47              |
| 3:B:324:SER:O    | 3:B:328:VAL:HG23 | 2.14                     | 0.47              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:CZ   | 2.47                     | 0.47              |
| 3:B:275:LEU:HD12 | 3:B:275:LEU:HA   | 1.80                     | 0.47              |
| 3:B:324:SER:O    | 3:B:328:VAL:HG23 | 2.14                     | 0.47              |
| 1:C:383:PHE:O    | 1:C:404:SER:HA   | 2.15                     | 0.47              |
| 3:B:229:HIS:NE2  | 8:B:601:TA1:H361 | 2.29                     | 0.47              |
| 3:B:229:HIS:NE2  | 8:B:601:TA1:H361 | 2.29                     | 0.47              |
| 3:B:229:HIS:NE2  | 8:B:601:TA1:H361 | 2.29                     | 0.47              |
| 1:C:383:PHE:O    | 1:C:404:SER:HA   | 2.15                     | 0.47              |
| 3:B:229:HIS:NE2  | 8:B:601:TA1:H361 | 2.29                     | 0.47              |
| 3:B:229:HIS:NE2  | 8:B:601:TA1:H361 | 2.29                     | 0.47              |
| 2:A:70:LEU:HB2   | 2:A:99:ALA:CB    | 2.38                     | 0.47              |
| 2:A:238:ILE:HD13 | 2:A:318:LEU:HD12 | 1.97                     | 0.47              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:CE1  | 2.49                     | 0.47              |
| 2:A:70:LEU:HB2   | 2:A:99:ALA:CB    | 2.38                     | 0.47              |
| 2:A:238:ILE:HD13 | 2:A:318:LEU:HD12 | 1.97                     | 0.47              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:CE1  | 2.49                     | 0.47              |
| 1:C:383:PHE:O    | 1:C:404:SER:HA   | 2.15                     | 0.47              |
| 2:A:70:LEU:HB2   | 2:A:99:ALA:CB    | 2.38                     | 0.47              |
| 2:A:238:ILE:HD13 | 2:A:318:LEU:HD12 | 1.97                     | 0.47              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:CE1  | 2.49                     | 0.47              |
| 2:A:70:LEU:HB2   | 2:A:99:ALA:CB    | 2.38                     | 0.47              |
| 2:A:238:ILE:HD13 | 2:A:318:LEU:HD12 | 1.97                     | 0.47              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:CE1  | 2.49                     | 0.47              |
| 1:C:383:PHE:O    | 1:C:404:SER:HA   | 2.15                     | 0.47              |
| 2:A:70:LEU:HB2   | 2:A:99:ALA:CB    | 2.38                     | 0.47              |
| 2:A:238:ILE:HD13 | 2:A:318:LEU:HD12 | 1.97                     | 0.47              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:CE1  | 2.49                     | 0.47              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:CG   | 2.93                     | 0.47              |
| 3:B:151:THR:HG23 | 3:B:193:GLN:HG2  | 1.97                     | 0.47              |
| 3:B:413:MET:HG2  | 3:B:418:PHE:CE2  | 2.49                     | 0.47              |
| 1:C:132:GLN:NE2  | 1:C:168:THR:HA   | 2.30                     | 0.47              |
| 3:B:151:THR:HG23 | 3:B:193:GLN:HG2  | 1.97                     | 0.47              |
| 3:B:413:MET:HG2  | 3:B:418:PHE:CE2  | 2.49                     | 0.47              |
| 1:C:415:LYS:HE2  | 2:A:112:LYS:HZ1  | 1.78                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:151:THR:HG23 | 3:B:193:GLN:HG2  | 1.97                     | 0.47              |
| 3:B:413:MET:HG2  | 3:B:418:PHE:CE2  | 2.49                     | 0.47              |
| 1:C:334:GLN:CG   | 3:B:416:MET:HE1  | 2.42                     | 0.47              |
| 3:B:151:THR:HG23 | 3:B:193:GLN:HG2  | 1.97                     | 0.47              |
| 3:B:413:MET:HG2  | 3:B:418:PHE:CE2  | 2.49                     | 0.47              |
| 3:B:151:THR:HG23 | 3:B:193:GLN:HG2  | 1.97                     | 0.47              |
| 3:B:413:MET:HG2  | 3:B:418:PHE:CE2  | 2.49                     | 0.47              |
| 1:C:455:LEU:HD22 | 3:B:431:GLU:HB2  | 1.97                     | 0.46              |
| 3:B:326:LYS:HG3  | 3:B:327:GLU:N    | 2.30                     | 0.46              |
| 3:B:326:LYS:HG3  | 3:B:327:GLU:N    | 2.30                     | 0.46              |
| 1:C:332:GLU:O    | 3:B:416:MET:HG3  | 2.15                     | 0.46              |
| 3:B:326:LYS:HG3  | 3:B:327:GLU:N    | 2.30                     | 0.46              |
| 3:B:326:LYS:HG3  | 3:B:327:GLU:N    | 2.30                     | 0.46              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:CB   | 2.45                     | 0.46              |
| 3:B:326:LYS:HG3  | 3:B:327:GLU:N    | 2.30                     | 0.46              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:CB   | 2.45                     | 0.46              |
| 2:A:222:PRO:HD2  | 3:B:326:LYS:HG2  | 1.97                     | 0.46              |
| 2:A:409:VAL:HA   | 2:A:413:MET:O    | 2.14                     | 0.46              |
| 2:A:222:PRO:HD2  | 3:B:326:LYS:HG2  | 1.97                     | 0.46              |
| 2:A:409:VAL:HA   | 2:A:413:MET:O    | 2.14                     | 0.46              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:CB   | 2.45                     | 0.46              |
| 2:A:222:PRO:HD2  | 3:B:326:LYS:HG2  | 1.97                     | 0.46              |
| 2:A:409:VAL:HA   | 2:A:413:MET:O    | 2.14                     | 0.46              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:CB   | 2.45                     | 0.46              |
| 2:A:222:PRO:HD2  | 3:B:326:LYS:HG2  | 1.97                     | 0.46              |
| 2:A:409:VAL:HA   | 2:A:413:MET:O    | 2.14                     | 0.46              |
| 2:A:222:PRO:HD2  | 3:B:326:LYS:HG2  | 1.97                     | 0.46              |
| 2:A:409:VAL:HA   | 2:A:413:MET:O    | 2.14                     | 0.46              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:C3'  | 2.75                     | 0.46              |
| 2:A:213:CYS:HA   | 2:A:217:LEU:HB2  | 1.97                     | 0.46              |
| 3:B:114:LEU:O    | 3:B:118:VAL:HG23 | 2.16                     | 0.46              |
| 3:B:167:ASN:HD21 | 3:B:202:TYR:HE1  | 1.62                     | 0.46              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:CB   | 2.45                     | 0.46              |
| 1:C:332:GLU:O    | 3:B:416:MET:HG3  | 2.15                     | 0.46              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:C3'  | 2.75                     | 0.46              |
| 2:A:213:CYS:HA   | 2:A:217:LEU:HB2  | 1.97                     | 0.46              |
| 3:B:114:LEU:O    | 3:B:118:VAL:HG23 | 2.16                     | 0.46              |
| 3:B:167:ASN:HD21 | 3:B:202:TYR:HE1  | 1.62                     | 0.46              |
| 1:C:153:TRP:HZ2  | 1:C:478:CYS:HG   | 1.64                     | 0.46              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:C3'  | 2.75                     | 0.46              |
| 2:A:213:CYS:HA   | 2:A:217:LEU:HB2  | 1.97                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:114:LEU:O    | 3:B:118:VAL:HG23 | 2.16                     | 0.46              |
| 3:B:167:ASN:HD21 | 3:B:202:TYR:HE1  | 1.62                     | 0.46              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:C3'  | 2.75                     | 0.46              |
| 2:A:213:CYS:HA   | 2:A:217:LEU:HB2  | 1.97                     | 0.46              |
| 3:B:114:LEU:O    | 3:B:118:VAL:HG23 | 2.16                     | 0.46              |
| 3:B:167:ASN:HD21 | 3:B:202:TYR:HE1  | 1.62                     | 0.46              |
| 2:A:179:THR:CG2  | 6:A:500:GTP:C3'  | 2.75                     | 0.46              |
| 2:A:213:CYS:HA   | 2:A:217:LEU:HB2  | 1.97                     | 0.46              |
| 3:B:114:LEU:O    | 3:B:118:VAL:HG23 | 2.16                     | 0.46              |
| 3:B:167:ASN:HD21 | 3:B:202:TYR:HE1  | 1.62                     | 0.46              |
| 1:C:132:GLN:NE2  | 1:C:168:THR:HA   | 2.30                     | 0.46              |
| 1:C:334:GLN:CG   | 3:B:416:MET:HE1  | 2.42                     | 0.46              |
| 1:C:132:GLN:NE2  | 1:C:168:THR:HA   | 2.30                     | 0.46              |
| 2:A:363:VAL:HG12 | 2:A:365:GLY:H    | 1.80                     | 0.46              |
| 1:C:368:ALA:O    | 1:C:422:ARG:NH1  | 2.48                     | 0.46              |
| 2:A:363:VAL:HG12 | 2:A:365:GLY:H    | 1.80                     | 0.46              |
| 1:C:330:LEU:HD12 | 1:C:466:VAL:HG12 | 1.96                     | 0.46              |
| 2:A:363:VAL:HG12 | 2:A:365:GLY:H    | 1.80                     | 0.46              |
| 2:A:363:VAL:HG12 | 2:A:365:GLY:H    | 1.80                     | 0.46              |
| 1:C:330:LEU:HD12 | 1:C:466:VAL:HG12 | 1.96                     | 0.46              |
| 2:A:363:VAL:HG12 | 2:A:365:GLY:H    | 1.80                     | 0.46              |
| 1:C:334:GLN:CG   | 3:B:416:MET:HE1  | 2.42                     | 0.46              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:OE2  | 2.16                     | 0.46              |
| 1:C:132:GLN:CD   | 1:C:168:THR:HA   | 2.40                     | 0.46              |
| 1:C:330:LEU:HD12 | 1:C:466:VAL:HG12 | 1.96                     | 0.46              |
| 1:C:330:LEU:HD12 | 1:C:466:VAL:HG12 | 1.96                     | 0.46              |
| 2:A:276:ILE:HG23 | 2:A:369:ALA:HB3  | 1.97                     | 0.46              |
| 1:C:330:LEU:HD12 | 1:C:466:VAL:HG12 | 1.96                     | 0.46              |
| 2:A:276:ILE:HG23 | 2:A:369:ALA:HB3  | 1.97                     | 0.46              |
| 2:A:276:ILE:HG23 | 2:A:369:ALA:HB3  | 1.97                     | 0.46              |
| 2:A:276:ILE:HG23 | 2:A:369:ALA:HB3  | 1.97                     | 0.46              |
| 2:A:276:ILE:HG23 | 2:A:369:ALA:HB3  | 1.97                     | 0.46              |
| 3:B:288:VAL:H    | 3:B:289:PRO:HD2  | 1.81                     | 0.46              |
| 1:C:369:SER:HB3  | 1:C:413:ARG:CZ   | 2.44                     | 0.46              |
| 3:B:288:VAL:H    | 3:B:289:PRO:HD2  | 1.81                     | 0.46              |
| 1:C:153:TRP:O    | 1:C:403:LEU:HA   | 2.16                     | 0.46              |
| 3:B:288:VAL:H    | 3:B:289:PRO:HD2  | 1.81                     | 0.46              |
| 1:C:153:TRP:O    | 1:C:403:LEU:HA   | 2.16                     | 0.46              |
| 1:C:332:GLU:O    | 3:B:416:MET:HG3  | 2.16                     | 0.46              |
| 3:B:288:VAL:H    | 3:B:289:PRO:HD2  | 1.81                     | 0.46              |
| 1:C:153:TRP:O    | 1:C:403:LEU:HA   | 2.16                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:455:LEU:HD23 | 3:B:431:GLU:OE2  | 2.16                     | 0.46              |
| 3:B:288:VAL:H    | 3:B:289:PRO:HD2  | 1.81                     | 0.46              |
| 1:C:153:TRP:O    | 1:C:403:LEU:HA   | 2.16                     | 0.46              |
| 3:B:265:LEU:HG   | 3:B:266:HIS:N    | 2.31                     | 0.46              |
| 1:C:153:TRP:O    | 1:C:403:LEU:HA   | 2.16                     | 0.46              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:CG   | 2.94                     | 0.46              |
| 3:B:265:LEU:HG   | 3:B:266:HIS:N    | 2.31                     | 0.46              |
| 3:B:265:LEU:HG   | 3:B:266:HIS:N    | 2.31                     | 0.46              |
| 3:B:265:LEU:HG   | 3:B:266:HIS:N    | 2.31                     | 0.46              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE2  | 2.16                     | 0.46              |
| 3:B:265:LEU:HG   | 3:B:266:HIS:N    | 2.31                     | 0.46              |
| 1:C:140:MET:HE2  | 1:C:178:ILE:HB   | 1.97                     | 0.45              |
| 1:C:334:GLN:HG2  | 3:B:416:MET:CE   | 2.45                     | 0.45              |
| 1:C:140:MET:HE2  | 1:C:178:ILE:HB   | 1.97                     | 0.45              |
| 1:C:153:TRP:HA   | 1:C:476:ARG:O    | 2.17                     | 0.45              |
| 1:C:153:TRP:HA   | 1:C:476:ARG:O    | 2.17                     | 0.45              |
| 1:C:140:MET:HE2  | 1:C:178:ILE:HB   | 1.97                     | 0.45              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:CG   | 2.94                     | 0.45              |
| 1:C:153:TRP:HA   | 1:C:476:ARG:O    | 2.17                     | 0.45              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:HD3  | 1.97                     | 0.45              |
| 1:C:140:MET:HE2  | 1:C:178:ILE:HB   | 1.97                     | 0.45              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:HD3  | 1.97                     | 0.45              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:HD3  | 1.97                     | 0.45              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:HD3  | 1.97                     | 0.45              |
| 1:C:153:TRP:HA   | 1:C:476:ARG:O    | 2.17                     | 0.45              |
| 3:B:288:VAL:HB   | 3:B:289:PRO:HD3  | 1.97                     | 0.45              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:HE1  | 1.82                     | 0.45              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:HE1  | 1.82                     | 0.45              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:HE1  | 1.82                     | 0.45              |
| 1:C:153:TRP:HA   | 1:C:476:ARG:O    | 2.17                     | 0.45              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:HE1  | 1.82                     | 0.45              |
| 1:C:140:MET:HE2  | 1:C:178:ILE:HB   | 1.97                     | 0.45              |
| 2:A:317:LEU:HB3  | 2:A:319:TYR:HE1  | 1.82                     | 0.45              |
| 1:C:164:GLY:HA2  | 5:C:602:ANP:O2A  | 2.16                     | 0.45              |
| 1:C:439:CYS:HB3  | 1:C:456:ILE:HD11 | 1.97                     | 0.45              |
| 3:B:305:CYS:SG   | 3:B:384:ILE:HD12 | 2.57                     | 0.45              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:CG1  | 2.46                     | 0.45              |
| 1:C:439:CYS:HB3  | 1:C:456:ILE:HD11 | 1.97                     | 0.45              |
| 3:B:305:CYS:SG   | 3:B:384:ILE:HD12 | 2.57                     | 0.45              |
| 1:C:439:CYS:HB3  | 1:C:456:ILE:HD11 | 1.97                     | 0.45              |
| 3:B:305:CYS:SG   | 3:B:384:ILE:HD12 | 2.57                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:169:ILE:HA   | 1:C:178:ILE:CG1  | 2.46                     | 0.45              |
| 3:B:305:CYS:SG   | 3:B:384:ILE:HD12 | 2.57                     | 0.45              |
| 3:B:305:CYS:SG   | 3:B:384:ILE:HD12 | 2.57                     | 0.45              |
| 1:C:483:VAL:HG21 | 1:C:493:THR:HG23 | 1.98                     | 0.45              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE2  | 2.16                     | 0.45              |
| 1:C:164:GLY:HA2  | 5:C:602:ANP:O2A  | 2.16                     | 0.45              |
| 1:C:164:GLY:HA2  | 5:C:602:ANP:O2A  | 2.16                     | 0.45              |
| 1:C:164:GLY:HA2  | 5:C:602:ANP:O2A  | 2.16                     | 0.45              |
| 1:C:164:GLY:HA2  | 5:C:602:ANP:O2A  | 2.16                     | 0.45              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:CG1  | 2.46                     | 0.45              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:CG1  | 2.46                     | 0.45              |
| 2:A:252:LEU:O    | 2:A:255:PHE:HB2  | 2.16                     | 0.45              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:CZ   | 2.47                     | 0.45              |
| 1:C:483:VAL:HG21 | 1:C:493:THR:HG23 | 1.98                     | 0.45              |
| 2:A:252:LEU:O    | 2:A:255:PHE:HB2  | 2.16                     | 0.45              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:CZ   | 2.47                     | 0.45              |
| 1:C:483:VAL:HG21 | 1:C:493:THR:HG23 | 1.98                     | 0.45              |
| 2:A:252:LEU:O    | 2:A:255:PHE:HB2  | 2.16                     | 0.45              |
| 1:C:483:VAL:HG21 | 1:C:493:THR:HG23 | 1.98                     | 0.45              |
| 2:A:252:LEU:O    | 2:A:255:PHE:HB2  | 2.16                     | 0.45              |
| 1:C:483:VAL:HG21 | 1:C:493:THR:HG23 | 1.98                     | 0.45              |
| 2:A:252:LEU:O    | 2:A:255:PHE:HB2  | 2.16                     | 0.45              |
| 1:C:440:ILE:HD12 | 1:C:499:PHE:CZ   | 2.47                     | 0.45              |
| 3:B:78:VAL:O     | 3:B:84:GLY:HA3   | 2.17                     | 0.45              |
| 3:B:78:VAL:O     | 3:B:84:GLY:HA3   | 2.17                     | 0.45              |
| 1:C:169:ILE:HA   | 1:C:178:ILE:CG1  | 2.47                     | 0.45              |
| 3:B:78:VAL:O     | 3:B:84:GLY:HA3   | 2.17                     | 0.45              |
| 1:C:132:GLN:NE2  | 1:C:168:THR:HA   | 2.32                     | 0.45              |
| 1:C:439:CYS:HB3  | 1:C:456:ILE:HD11 | 1.97                     | 0.45              |
| 3:B:78:VAL:O     | 3:B:84:GLY:HA3   | 2.17                     | 0.45              |
| 1:C:439:CYS:HB3  | 1:C:456:ILE:HD11 | 1.97                     | 0.45              |
| 3:B:78:VAL:O     | 3:B:84:GLY:HA3   | 2.17                     | 0.45              |
| 2:A:205:ASP:CB   | 2:A:303:VAL:HA   | 2.47                     | 0.45              |
| 3:B:347:ILE:HB   | 3:B:350:ASN:OD1  | 2.16                     | 0.45              |
| 2:A:205:ASP:CB   | 2:A:303:VAL:HA   | 2.47                     | 0.45              |
| 3:B:347:ILE:HB   | 3:B:350:ASN:OD1  | 2.16                     | 0.45              |
| 2:A:205:ASP:CB   | 2:A:303:VAL:HA   | 2.47                     | 0.45              |
| 3:B:347:ILE:HB   | 3:B:350:ASN:OD1  | 2.16                     | 0.45              |
| 2:A:205:ASP:CB   | 2:A:303:VAL:HA   | 2.47                     | 0.45              |
| 3:B:347:ILE:HB   | 3:B:350:ASN:OD1  | 2.16                     | 0.45              |
| 2:A:205:ASP:CB   | 2:A:303:VAL:HA   | 2.47                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:347:ILE:HB   | 3:B:350:ASN:OD1  | 2.16                     | 0.45              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:N    | 2.32                     | 0.45              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:CG   | 2.95                     | 0.45              |
| 1:C:435:THR:HG21 | 1:C:461:SER:HB3  | 1.99                     | 0.44              |
| 1:C:321:HIS:CG   | 1:C:366:SER:OG   | 2.71                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:CG1  | 2.47                     | 0.44              |
| 3:B:239:THR:O    | 3:B:243:ARG:HG2  | 2.16                     | 0.44              |
| 3:B:239:THR:O    | 3:B:243:ARG:HG2  | 2.16                     | 0.44              |
| 1:C:317:GLU:HB3  | 1:C:318:PRO:CD   | 2.47                     | 0.44              |
| 3:B:239:THR:O    | 3:B:243:ARG:HG2  | 2.16                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:CG1  | 2.47                     | 0.44              |
| 3:B:239:THR:O    | 3:B:243:ARG:HG2  | 2.16                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:CG1  | 2.47                     | 0.44              |
| 1:C:435:THR:HG21 | 1:C:461:SER:HB3  | 1.99                     | 0.44              |
| 3:B:239:THR:O    | 3:B:243:ARG:HG2  | 2.16                     | 0.44              |
| 1:C:337:ASN:HA   | 1:C:338:PRO:HD3  | 1.87                     | 0.44              |
| 1:C:435:THR:HG21 | 1:C:461:SER:HB3  | 1.99                     | 0.44              |
| 1:C:462:LYS:O    | 1:C:466:VAL:HG13 | 2.17                     | 0.44              |
| 3:B:268:PHE:CD1  | 3:B:380:ASN:HB2  | 2.43                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:CG1  | 2.47                     | 0.44              |
| 1:C:143:MET:SD   | 1:C:155:ILE:HD11 | 2.56                     | 0.44              |
| 1:C:462:LYS:O    | 1:C:466:VAL:HG13 | 2.17                     | 0.44              |
| 3:B:268:PHE:CD1  | 3:B:380:ASN:HB2  | 2.43                     | 0.44              |
| 1:C:70:ILE:HG22  | 1:C:483:VAL:CG1  | 2.47                     | 0.44              |
| 1:C:337:ASN:HA   | 1:C:338:PRO:HD3  | 1.87                     | 0.44              |
| 1:C:435:THR:HG21 | 1:C:461:SER:HB3  | 1.99                     | 0.44              |
| 1:C:462:LYS:O    | 1:C:466:VAL:HG13 | 2.17                     | 0.44              |
| 3:B:268:PHE:CD1  | 3:B:380:ASN:HB2  | 2.43                     | 0.44              |
| 1:C:337:ASN:HA   | 1:C:338:PRO:HD3  | 1.87                     | 0.44              |
| 1:C:435:THR:HG21 | 1:C:461:SER:HB3  | 1.99                     | 0.44              |
| 1:C:462:LYS:O    | 1:C:466:VAL:HG13 | 2.17                     | 0.44              |
| 3:B:268:PHE:CD1  | 3:B:380:ASN:HB2  | 2.43                     | 0.44              |
| 1:C:143:MET:SD   | 1:C:155:ILE:HD11 | 2.56                     | 0.44              |
| 3:B:268:PHE:CD1  | 3:B:380:ASN:HB2  | 2.43                     | 0.44              |
| 1:C:143:MET:SD   | 1:C:155:ILE:HD11 | 2.56                     | 0.44              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE2  | 2.17                     | 0.44              |
| 1:C:143:MET:SD   | 1:C:155:ILE:HD11 | 2.56                     | 0.44              |
| 1:C:334:GLN:CG   | 3:B:416:MET:HE1  | 2.45                     | 0.44              |
| 1:C:143:MET:SD   | 1:C:155:ILE:HD11 | 2.56                     | 0.44              |
| 1:C:308:TYR:CZ   | 1:C:367:PHE:HB2  | 2.52                     | 0.44              |
| 1:C:413:ARG:HH22 | 1:C:492:GLU:CD   | 2.26                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:334:GLN:CG   | 3:B:416:MET:HE1  | 2.44                     | 0.44              |
| 1:C:337:ASN:HA   | 1:C:338:PRO:HD3  | 1.87                     | 0.44              |
| 1:C:462:LYS:O    | 1:C:466:VAL:HG13 | 2.17                     | 0.44              |
| 1:C:317:GLU:CB   | 1:C:318:PRO:HD3  | 2.48                     | 0.44              |
| 1:C:431:THR:OG1  | 2:A:410:GLY:HA2  | 2.18                     | 0.44              |
| 2:A:259:LEU:HD11 | 2:A:378:LEU:HD12 | 1.99                     | 0.44              |
| 1:C:337:ASN:HA   | 1:C:338:PRO:HD3  | 1.87                     | 0.44              |
| 2:A:259:LEU:HD11 | 2:A:378:LEU:HD12 | 1.99                     | 0.44              |
| 2:A:259:LEU:HD11 | 2:A:378:LEU:HD12 | 1.99                     | 0.44              |
| 2:A:259:LEU:HD11 | 2:A:378:LEU:HD12 | 1.99                     | 0.44              |
| 2:A:259:LEU:HD11 | 2:A:378:LEU:HD12 | 1.99                     | 0.44              |
| 2:A:72:PRO:HA    | 2:A:94:THR:CG2   | 2.47                     | 0.44              |
| 1:C:136:PHE:HA   | 1:C:178:ILE:HG22 | 1.98                     | 0.44              |
| 2:A:72:PRO:HA    | 2:A:94:THR:CG2   | 2.47                     | 0.44              |
| 1:C:317:GLU:HB3  | 1:C:318:PRO:HD2  | 1.99                     | 0.44              |
| 2:A:72:PRO:HA    | 2:A:94:THR:CG2   | 2.47                     | 0.44              |
| 1:C:136:PHE:HA   | 1:C:178:ILE:HG22 | 1.98                     | 0.44              |
| 2:A:72:PRO:HA    | 2:A:94:THR:CG2   | 2.47                     | 0.44              |
| 1:C:136:PHE:HA   | 1:C:178:ILE:HG22 | 1.98                     | 0.44              |
| 2:A:72:PRO:HA    | 2:A:94:THR:CG2   | 2.47                     | 0.44              |
| 1:C:136:PHE:HA   | 1:C:178:ILE:HG22 | 1.98                     | 0.44              |
| 2:A:317:LEU:HD21 | 2:A:377:MET:HE2  | 2.00                     | 0.44              |
| 2:A:317:LEU:HD21 | 2:A:377:MET:HE2  | 2.00                     | 0.44              |
| 2:A:317:LEU:HD21 | 2:A:377:MET:HE2  | 2.00                     | 0.44              |
| 2:A:317:LEU:HD21 | 2:A:377:MET:HE2  | 2.00                     | 0.44              |
| 2:A:317:LEU:HD21 | 2:A:377:MET:HE2  | 2.00                     | 0.44              |
| 2:A:104:ALA:HB1  | 2:A:411:GLU:HB2  | 1.99                     | 0.44              |
| 2:A:104:ALA:HB1  | 2:A:411:GLU:HB2  | 1.99                     | 0.44              |
| 1:C:136:PHE:HA   | 1:C:178:ILE:HG22 | 1.99                     | 0.44              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:HG3  | 1.99                     | 0.44              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE2  | 2.18                     | 0.44              |
| 2:A:104:ALA:HB1  | 2:A:411:GLU:HB2  | 1.99                     | 0.44              |
| 2:A:104:ALA:HB1  | 2:A:411:GLU:HB2  | 1.99                     | 0.44              |
| 2:A:104:ALA:HB1  | 2:A:411:GLU:HB2  | 1.99                     | 0.44              |
| 2:A:31:GLN:HB3   | 2:A:32:PRO:HD2   | 1.99                     | 0.44              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C31  | 2.48                     | 0.44              |
| 1:C:62:GLU:CD    | 1:C:476:ARG:HE   | 2.26                     | 0.44              |
| 2:A:31:GLN:HB3   | 2:A:32:PRO:HD2   | 1.99                     | 0.44              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C31  | 2.48                     | 0.44              |
| 2:A:31:GLN:HB3   | 2:A:32:PRO:HD2   | 1.99                     | 0.44              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C31  | 2.48                     | 0.44              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:C:62:GLU:CD    | 1:C:476:ARG:HE  | 2.26                     | 0.44              |
| 1:C:413:ARG:HH22 | 1:C:492:GLU:HG3 | 1.82                     | 0.44              |
| 2:A:31:GLN:HB3   | 2:A:32:PRO:HD2  | 1.99                     | 0.44              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C31 | 2.48                     | 0.44              |
| 1:C:62:GLU:CD    | 1:C:476:ARG:HE  | 2.26                     | 0.44              |
| 2:A:31:GLN:HB3   | 2:A:32:PRO:HD2  | 1.99                     | 0.44              |
| 3:B:23:VAL:HG13  | 8:B:601:TA1:C31 | 2.48                     | 0.44              |
| 1:C:62:GLU:CD    | 1:C:476:ARG:HE  | 2.26                     | 0.43              |
| 2:A:97:GLU:HB3   | 2:A:98:ASP:H    | 1.70                     | 0.43              |
| 2:A:97:GLU:HB3   | 2:A:98:ASP:H    | 1.70                     | 0.43              |
| 1:C:62:GLU:CD    | 1:C:476:ARG:HE  | 2.26                     | 0.43              |
| 2:A:97:GLU:HB3   | 2:A:98:ASP:H    | 1.70                     | 0.43              |
| 2:A:97:GLU:HB3   | 2:A:98:ASP:H    | 1.70                     | 0.43              |
| 1:C:455:LEU:CD2  | 3:B:431:GLU:CG  | 2.96                     | 0.43              |
| 2:A:97:GLU:HB3   | 2:A:98:ASP:H    | 1.70                     | 0.43              |
| 1:C:178:ILE:O    | 1:C:182:SER:HB2 | 2.18                     | 0.43              |
| 3:B:101:ASN:HD21 | 3:B:143:GLY:HA2 | 1.83                     | 0.43              |
| 3:B:101:ASN:HD21 | 3:B:143:GLY:HA2 | 1.83                     | 0.43              |
| 1:C:178:ILE:O    | 1:C:182:SER:HB2 | 2.18                     | 0.43              |
| 3:B:101:ASN:HD21 | 3:B:143:GLY:HA2 | 1.83                     | 0.43              |
| 1:C:178:ILE:O    | 1:C:182:SER:HB2 | 2.18                     | 0.43              |
| 1:C:422:ARG:HH12 | 1:C:425:GLU:CD  | 2.25                     | 0.43              |
| 3:B:101:ASN:HD21 | 3:B:143:GLY:HA2 | 1.83                     | 0.43              |
| 1:C:178:ILE:O    | 1:C:182:SER:HB2 | 2.18                     | 0.43              |
| 3:B:101:ASN:HD21 | 3:B:143:GLY:HA2 | 1.83                     | 0.43              |
| 1:C:325:ARG:HH22 | 3:B:160:GLU:CD  | 2.26                     | 0.43              |
| 3:B:224:TYR:CE1  | 7:B:600:GDP:C2  | 3.06                     | 0.43              |
| 1:C:178:ILE:O    | 1:C:182:SER:HB2 | 2.18                     | 0.43              |
| 3:B:224:TYR:CE1  | 7:B:600:GDP:C2  | 3.06                     | 0.43              |
| 3:B:224:TYR:CE1  | 7:B:600:GDP:C2  | 3.06                     | 0.43              |
| 1:C:431:THR:OG1  | 2:A:410:GLY:HA2 | 2.18                     | 0.43              |
| 3:B:224:TYR:CE1  | 7:B:600:GDP:C2  | 3.06                     | 0.43              |
| 1:C:187:PHE:CB   | 1:C:351:VAL:HB  | 2.48                     | 0.43              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:N   | 2.33                     | 0.43              |
| 3:B:224:TYR:CE1  | 7:B:600:GDP:C2  | 3.06                     | 0.43              |
| 1:C:333:ASP:HA   | 3:B:416:MET:HG2 | 2.00                     | 0.43              |
| 2:A:224:TYR:HB3  | 6:A:500:GTP:O6  | 2.18                     | 0.43              |
| 3:B:213:CYS:HA   | 3:B:217:LEU:HB2 | 2.00                     | 0.43              |
| 3:B:371:LEU:HD12 | 3:B:371:LEU:HA  | 1.82                     | 0.43              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:HG3 | 1.99                     | 0.43              |
| 2:A:224:TYR:HB3  | 6:A:500:GTP:O6  | 2.18                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:213:CYS:HA   | 3:B:217:LEU:HB2  | 2.00                     | 0.43              |
| 3:B:371:LEU:HD12 | 3:B:371:LEU:HA   | 1.82                     | 0.43              |
| 2:A:224:TYR:HB3  | 6:A:500:GTP:O6   | 2.18                     | 0.43              |
| 3:B:213:CYS:HA   | 3:B:217:LEU:HB2  | 2.00                     | 0.43              |
| 3:B:371:LEU:HD12 | 3:B:371:LEU:HA   | 1.82                     | 0.43              |
| 1:C:187:PHE:CB   | 1:C:351:VAL:HB   | 2.48                     | 0.43              |
| 2:A:224:TYR:HB3  | 6:A:500:GTP:O6   | 2.18                     | 0.43              |
| 3:B:213:CYS:HA   | 3:B:217:LEU:HB2  | 2.00                     | 0.43              |
| 3:B:371:LEU:HD12 | 3:B:371:LEU:HA   | 1.82                     | 0.43              |
| 2:A:224:TYR:HB3  | 6:A:500:GTP:O6   | 2.18                     | 0.43              |
| 3:B:213:CYS:HA   | 3:B:217:LEU:HB2  | 2.00                     | 0.43              |
| 3:B:371:LEU:HD12 | 3:B:371:LEU:HA   | 1.82                     | 0.43              |
| 1:C:187:PHE:CB   | 1:C:351:VAL:HB   | 2.48                     | 0.43              |
| 2:A:98:ASP:HB2   | 3:B:253:ARG:HG3  | 2.01                     | 0.43              |
| 2:A:220:GLU:C    | 2:A:222:PRO:HD3  | 2.44                     | 0.43              |
| 3:B:8:GLN:HG2    | 3:B:17:GLY:HA3   | 2.00                     | 0.43              |
| 1:C:187:PHE:CB   | 1:C:351:VAL:HB   | 2.48                     | 0.43              |
| 1:C:431:THR:OG1  | 2:A:410:GLY:HA2  | 2.18                     | 0.43              |
| 2:A:98:ASP:HB2   | 3:B:253:ARG:HG3  | 2.01                     | 0.43              |
| 2:A:220:GLU:C    | 2:A:222:PRO:HD3  | 2.44                     | 0.43              |
| 3:B:8:GLN:HG2    | 3:B:17:GLY:HA3   | 2.00                     | 0.43              |
| 1:C:183:LEU:HB3  | 1:C:351:VAL:HG23 | 2.01                     | 0.43              |
| 2:A:98:ASP:HB2   | 3:B:253:ARG:HG3  | 2.01                     | 0.43              |
| 2:A:220:GLU:C    | 2:A:222:PRO:HD3  | 2.44                     | 0.43              |
| 3:B:8:GLN:HG2    | 3:B:17:GLY:HA3   | 2.00                     | 0.43              |
| 2:A:98:ASP:HB2   | 3:B:253:ARG:HG3  | 2.01                     | 0.43              |
| 2:A:220:GLU:C    | 2:A:222:PRO:HD3  | 2.44                     | 0.43              |
| 3:B:8:GLN:HG2    | 3:B:17:GLY:HA3   | 2.00                     | 0.43              |
| 1:C:502:LEU:N    | 1:C:502:LEU:HD22 | 2.34                     | 0.43              |
| 2:A:98:ASP:HB2   | 3:B:253:ARG:HG3  | 2.01                     | 0.43              |
| 2:A:220:GLU:C    | 2:A:222:PRO:HD3  | 2.44                     | 0.43              |
| 3:B:8:GLN:HG2    | 3:B:17:GLY:HA3   | 2.00                     | 0.43              |
| 3:B:317:ALA:HB1  | 3:B:319:PHE:HE1  | 1.84                     | 0.43              |
| 3:B:317:ALA:HB1  | 3:B:319:PHE:HE1  | 1.84                     | 0.43              |
| 1:C:187:PHE:CB   | 1:C:351:VAL:HB   | 2.48                     | 0.43              |
| 3:B:317:ALA:HB1  | 3:B:319:PHE:HE1  | 1.84                     | 0.43              |
| 3:B:317:ALA:HB1  | 3:B:319:PHE:HE1  | 1.84                     | 0.43              |
| 1:C:183:LEU:HB3  | 1:C:351:VAL:HG23 | 2.01                     | 0.43              |
| 3:B:317:ALA:HB1  | 3:B:319:PHE:HE1  | 1.84                     | 0.43              |
| 2:A:11:GLN:HB2   | 6:A:500:GTP:O2B  | 2.11                     | 0.43              |
| 2:A:339:ARG:HD3  | 2:A:339:ARG:HA   | 1.85                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:183:LEU:HB3  | 1:C:351:VAL:HG23 | 2.01                     | 0.43              |
| 2:A:11:GLN:HB2   | 6:A:500:GTP:O2B  | 2.11                     | 0.43              |
| 2:A:339:ARG:HD3  | 2:A:339:ARG:HA   | 1.85                     | 0.43              |
| 1:C:152:ASN:N    | 1:C:152:ASN:HD22 | 2.17                     | 0.43              |
| 2:A:11:GLN:HB2   | 6:A:500:GTP:O2B  | 2.11                     | 0.43              |
| 2:A:339:ARG:HD3  | 2:A:339:ARG:HA   | 1.85                     | 0.43              |
| 1:C:494:LEU:HD11 | 2:A:420:GLU:OE2  | 2.19                     | 0.43              |
| 2:A:11:GLN:HB2   | 6:A:500:GTP:O2B  | 2.11                     | 0.43              |
| 2:A:339:ARG:HD3  | 2:A:339:ARG:HA   | 1.85                     | 0.43              |
| 2:A:11:GLN:HB2   | 6:A:500:GTP:O2B  | 2.11                     | 0.43              |
| 2:A:339:ARG:HD3  | 2:A:339:ARG:HA   | 1.85                     | 0.43              |
| 1:C:152:ASN:N    | 1:C:152:ASN:HD22 | 2.17                     | 0.43              |
| 1:C:183:LEU:HB3  | 1:C:351:VAL:HG23 | 2.01                     | 0.43              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:HB3  | 1.99                     | 0.43              |
| 1:C:313:TYR:CG   | 1:C:321:HIS:NE2  | 2.82                     | 0.43              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:C26  | 2.46                     | 0.43              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:C26  | 2.46                     | 0.43              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:HB3  | 1.99                     | 0.43              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:C26  | 2.46                     | 0.43              |
| 1:C:152:ASN:N    | 1:C:152:ASN:HD22 | 2.17                     | 0.43              |
| 1:C:183:LEU:HB3  | 1:C:351:VAL:HG23 | 2.01                     | 0.43              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:C26  | 2.46                     | 0.43              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:HB3  | 1.99                     | 0.43              |
| 8:B:601:TA1:H463 | 8:B:601:TA1:C26  | 2.46                     | 0.43              |
| 2:A:225:THR:O    | 2:A:229:ARG:HG2  | 2.19                     | 0.43              |
| 1:C:152:ASN:N    | 1:C:152:ASN:HD22 | 2.17                     | 0.43              |
| 2:A:225:THR:O    | 2:A:229:ARG:HG2  | 2.19                     | 0.43              |
| 2:A:225:THR:O    | 2:A:229:ARG:HG2  | 2.19                     | 0.43              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:HB3  | 1.99                     | 0.43              |
| 2:A:225:THR:O    | 2:A:229:ARG:HG2  | 2.19                     | 0.43              |
| 2:A:225:THR:O    | 2:A:229:ARG:HG2  | 2.19                     | 0.43              |
| 1:C:306:GLU:HB2  | 1:C:379:SER:HB3  | 2.00                     | 0.43              |
| 1:C:152:ASN:N    | 1:C:152:ASN:HD22 | 2.17                     | 0.43              |
| 1:C:314:ASP:H    | 1:C:326:GLN:NE2  | 2.17                     | 0.42              |
| 1:C:183:LEU:HD22 | 1:C:187:PHE:HE2  | 1.84                     | 0.42              |
| 1:C:183:LEU:HD22 | 1:C:187:PHE:HE2  | 1.84                     | 0.42              |
| 1:C:183:LEU:HD22 | 1:C:187:PHE:HE2  | 1.84                     | 0.42              |
| 1:C:183:LEU:HD22 | 1:C:187:PHE:HE2  | 1.85                     | 0.42              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C32  | 2.49                     | 0.42              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C32  | 2.49                     | 0.42              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C32  | 2.49                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:23:VAL:HA    | 8:B:601:TA1:C32  | 2.49                     | 0.42              |
| 3:B:23:VAL:HA    | 8:B:601:TA1:C32  | 2.49                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:122:PHE:HB3  | 2.20                     | 0.42              |
| 1:C:77:GLU:HA    | 1:C:80:ARG:HG2   | 2.01                     | 0.42              |
| 1:C:314:ASP:CG   | 1:C:344:ASN:HD22 | 2.28                     | 0.42              |
| 2:A:12:ALA:O     | 2:A:16:ILE:HG22  | 2.19                     | 0.42              |
| 2:A:107:HIS:HA   | 2:A:152:LEU:HD23 | 2.01                     | 0.42              |
| 3:B:260:VAL:HG12 | 3:B:262:PHE:O    | 2.18                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:122:PHE:HB3  | 2.20                     | 0.42              |
| 2:A:12:ALA:O     | 2:A:16:ILE:HG22  | 2.19                     | 0.42              |
| 2:A:107:HIS:HA   | 2:A:152:LEU:HD23 | 2.01                     | 0.42              |
| 3:B:260:VAL:HG12 | 3:B:262:PHE:O    | 2.18                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:122:PHE:HB3  | 2.20                     | 0.42              |
| 1:C:77:GLU:HA    | 1:C:80:ARG:HG2   | 2.01                     | 0.42              |
| 1:C:314:ASP:CG   | 1:C:344:ASN:HD22 | 2.28                     | 0.42              |
| 1:C:350:ASP:OD2  | 1:C:352:GLU:HB3  | 2.20                     | 0.42              |
| 2:A:12:ALA:O     | 2:A:16:ILE:HG22  | 2.19                     | 0.42              |
| 2:A:107:HIS:HA   | 2:A:152:LEU:HD23 | 2.01                     | 0.42              |
| 3:B:260:VAL:HG12 | 3:B:262:PHE:O    | 2.18                     | 0.42              |
| 1:C:317:GLU:HB2  | 1:C:325:ARG:HH22 | 1.84                     | 0.42              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:HG3  | 2.00                     | 0.42              |
| 2:A:12:ALA:O     | 2:A:16:ILE:HG22  | 2.19                     | 0.42              |
| 2:A:107:HIS:HA   | 2:A:152:LEU:HD23 | 2.01                     | 0.42              |
| 3:B:260:VAL:HG12 | 3:B:262:PHE:O    | 2.18                     | 0.42              |
| 1:C:77:GLU:HA    | 1:C:80:ARG:HG2   | 2.01                     | 0.42              |
| 1:C:183:LEU:HD22 | 1:C:187:PHE:HE2  | 1.85                     | 0.42              |
| 1:C:422:ARG:NH1  | 1:C:425:GLU:HB2  | 2.33                     | 0.42              |
| 2:A:12:ALA:O     | 2:A:16:ILE:HG22  | 2.19                     | 0.42              |
| 2:A:107:HIS:HA   | 2:A:152:LEU:HD23 | 2.01                     | 0.42              |
| 3:B:260:VAL:HG12 | 3:B:262:PHE:O    | 2.18                     | 0.42              |
| 1:C:118:HIS:CD2  | 1:C:119:LYS:H    | 2.38                     | 0.42              |
| 3:B:344:VAL:HG13 | 3:B:346:TRP:H    | 1.83                     | 0.42              |
| 1:C:118:HIS:CD2  | 1:C:119:LYS:H    | 2.38                     | 0.42              |
| 1:C:314:ASP:CG   | 1:C:344:ASN:HD22 | 2.28                     | 0.42              |
| 1:C:350:ASP:OD2  | 1:C:352:GLU:HB3  | 2.20                     | 0.42              |
| 3:B:344:VAL:HG13 | 3:B:346:TRP:H    | 1.83                     | 0.42              |
| 3:B:344:VAL:HG13 | 3:B:346:TRP:H    | 1.83                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:122:PHE:HB3  | 2.20                     | 0.42              |
| 1:C:118:HIS:CD2  | 1:C:119:LYS:H    | 2.38                     | 0.42              |
| 1:C:314:ASP:CG   | 1:C:344:ASN:HD22 | 2.28                     | 0.42              |
| 3:B:344:VAL:HG13 | 3:B:346:TRP:H    | 1.83                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:66:VAL:O     | 1:C:122:PHE:HB3  | 2.20                     | 0.42              |
| 1:C:118:HIS:CD2  | 1:C:119:LYS:H    | 2.38                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:CB   | 2.49                     | 0.42              |
| 3:B:344:VAL:HG13 | 3:B:346:TRP:H    | 1.83                     | 0.42              |
| 1:C:90:GLU:HB2   | 1:C:96:VAL:HG12  | 2.01                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:CB   | 2.50                     | 0.42              |
| 2:A:9:VAL:HA     | 2:A:68:VAL:O     | 2.19                     | 0.42              |
| 3:B:20:PHE:HA    | 3:B:232:SER:CB   | 2.50                     | 0.42              |
| 1:C:77:GLU:HA    | 1:C:80:ARG:HG2   | 2.02                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:CB   | 2.50                     | 0.42              |
| 1:C:312:LEU:HD13 | 1:C:328:LEU:HD11 | 2.01                     | 0.42              |
| 1:C:424:LYS:HZ1  | 3:B:163:ASP:CG   | 2.26                     | 0.42              |
| 2:A:9:VAL:HA     | 2:A:68:VAL:O     | 2.19                     | 0.42              |
| 3:B:20:PHE:HA    | 3:B:232:SER:CB   | 2.50                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:CB   | 2.50                     | 0.42              |
| 2:A:9:VAL:HA     | 2:A:68:VAL:O     | 2.19                     | 0.42              |
| 3:B:20:PHE:HA    | 3:B:232:SER:CB   | 2.50                     | 0.42              |
| 1:C:77:GLU:HA    | 1:C:80:ARG:HG2   | 2.02                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:CB   | 2.50                     | 0.42              |
| 1:C:312:LEU:HD13 | 1:C:328:LEU:HD11 | 2.01                     | 0.42              |
| 1:C:350:ASP:OD2  | 1:C:352:GLU:HB3  | 2.20                     | 0.42              |
| 2:A:9:VAL:HA     | 2:A:68:VAL:O     | 2.19                     | 0.42              |
| 3:B:20:PHE:HA    | 3:B:232:SER:CB   | 2.50                     | 0.42              |
| 1:C:314:ASP:CG   | 1:C:344:ASN:HD22 | 2.28                     | 0.42              |
| 1:C:350:ASP:OD2  | 1:C:352:GLU:HB3  | 2.20                     | 0.42              |
| 2:A:9:VAL:HA     | 2:A:68:VAL:O     | 2.19                     | 0.42              |
| 3:B:20:PHE:HA    | 3:B:232:SER:CB   | 2.50                     | 0.42              |
| 1:C:312:LEU:HD13 | 1:C:328:LEU:HD11 | 2.01                     | 0.42              |
| 1:C:350:ASP:OD2  | 1:C:352:GLU:HB3  | 2.20                     | 0.42              |
| 2:A:144:GLY:H    | 6:A:500:GTP:PG   | 2.43                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:HB3  | 2.01                     | 0.42              |
| 1:C:143:MET:O    | 1:C:147:VAL:HG23 | 2.19                     | 0.42              |
| 1:C:455:LEU:HD22 | 3:B:431:GLU:HB2  | 2.01                     | 0.42              |
| 2:A:144:GLY:H    | 6:A:500:GTP:PG   | 2.43                     | 0.42              |
| 1:C:90:GLU:HB2   | 1:C:96:VAL:HG12  | 2.01                     | 0.42              |
| 1:C:118:HIS:CD2  | 1:C:119:LYS:H    | 2.38                     | 0.42              |
| 1:C:312:LEU:HD13 | 1:C:328:LEU:HD11 | 2.01                     | 0.42              |
| 2:A:144:GLY:H    | 6:A:500:GTP:PG   | 2.43                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:123:SER:HB2  | 2.19                     | 0.42              |
| 2:A:144:GLY:H    | 6:A:500:GTP:PG   | 2.43                     | 0.42              |
| 1:C:90:GLU:HB2   | 1:C:96:VAL:HG12  | 2.01                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:312:LEU:HD13 | 1:C:328:LEU:HD11 | 2.01                     | 0.42              |
| 1:C:431:THR:OG1  | 2:A:410:GLY:HA2  | 2.19                     | 0.42              |
| 1:C:452:LYS:HE3  | 1:C:454:ASN:HD21 | 1.85                     | 0.42              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:HG3  | 2.01                     | 0.42              |
| 2:A:144:GLY:H    | 6:A:500:GTP:PG   | 2.43                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:HB3  | 2.01                     | 0.42              |
| 1:C:143:MET:O    | 1:C:147:VAL:HG23 | 2.19                     | 0.42              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:HE1  | 1.84                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:123:SER:HB2  | 2.19                     | 0.42              |
| 1:C:90:GLU:HB2   | 1:C:96:VAL:HG12  | 2.01                     | 0.42              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:HE1  | 1.84                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:HB3  | 2.01                     | 0.42              |
| 1:C:143:MET:O    | 1:C:147:VAL:HG23 | 2.19                     | 0.42              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:HE1  | 1.84                     | 0.42              |
| 1:C:90:GLU:HB2   | 1:C:96:VAL:HG12  | 2.01                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:HB3  | 2.01                     | 0.42              |
| 1:C:455:LEU:HD22 | 3:B:431:GLU:HB2  | 2.01                     | 0.42              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:HE1  | 1.84                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:123:SER:HB2  | 2.19                     | 0.42              |
| 1:C:130:VAL:HB   | 1:C:134:ALA:HB3  | 2.01                     | 0.42              |
| 3:B:43:GLN:HA    | 3:B:244:PHE:HE1  | 1.84                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:123:SER:HB2  | 2.19                     | 0.42              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:H    | 1.85                     | 0.42              |
| 3:B:298:ALA:HA   | 3:B:307:PRO:HD2  | 2.00                     | 0.42              |
| 1:C:316:LEU:HD12 | 1:C:316:LEU:HA   | 1.89                     | 0.42              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:H    | 1.85                     | 0.42              |
| 3:B:298:ALA:HA   | 3:B:307:PRO:HD2  | 2.00                     | 0.42              |
| 1:C:66:VAL:O     | 1:C:123:SER:HB2  | 2.19                     | 0.42              |
| 1:C:316:LEU:HD12 | 1:C:316:LEU:HA   | 1.89                     | 0.42              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:H    | 1.85                     | 0.42              |
| 3:B:298:ALA:HA   | 3:B:307:PRO:HD2  | 2.00                     | 0.42              |
| 1:C:143:MET:O    | 1:C:147:VAL:HG23 | 2.19                     | 0.42              |
| 1:C:316:LEU:HD12 | 1:C:316:LEU:HA   | 1.89                     | 0.42              |
| 1:C:365:GLN:HG3  | 1:C:366:SER:N    | 2.35                     | 0.42              |
| 1:C:423:LEU:HB3  | 1:C:424:LYS:H    | 1.68                     | 0.42              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:H    | 1.85                     | 0.42              |
| 3:B:298:ALA:HA   | 3:B:307:PRO:HD2  | 2.00                     | 0.42              |
| 1:C:143:MET:O    | 1:C:147:VAL:HG23 | 2.20                     | 0.42              |
| 1:C:316:LEU:HD12 | 1:C:316:LEU:HA   | 1.89                     | 0.42              |
| 3:B:215:ARG:HG3  | 3:B:216:THR:H    | 1.85                     | 0.42              |
| 3:B:298:ALA:HA   | 3:B:307:PRO:HD2  | 2.00                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:71:GLU:HB3   | 2:A:74:VAL:HG23  | 2.01                     | 0.42              |
| 1:C:313:TYR:CE1  | 1:C:324:LYS:HE3  | 2.55                     | 0.42              |
| 2:A:71:GLU:HB3   | 2:A:74:VAL:HG23  | 2.01                     | 0.42              |
| 1:C:314:ASP:CB   | 1:C:326:GLN:HE22 | 2.33                     | 0.42              |
| 2:A:71:GLU:HB3   | 2:A:74:VAL:HG23  | 2.01                     | 0.42              |
| 2:A:71:GLU:HB3   | 2:A:74:VAL:HG23  | 2.01                     | 0.42              |
| 2:A:71:GLU:HB3   | 2:A:74:VAL:HG23  | 2.01                     | 0.42              |
| 2:A:143:GLY:HA3  | 6:A:500:GTP:O1B  | 2.20                     | 0.41              |
| 2:A:179:THR:CB   | 6:A:500:GTP:O3'  | 2.58                     | 0.41              |
| 2:A:143:GLY:HA3  | 6:A:500:GTP:O1B  | 2.20                     | 0.41              |
| 2:A:179:THR:CB   | 6:A:500:GTP:O3'  | 2.58                     | 0.41              |
| 2:A:143:GLY:HA3  | 6:A:500:GTP:O1B  | 2.20                     | 0.41              |
| 2:A:179:THR:CB   | 6:A:500:GTP:O3'  | 2.58                     | 0.41              |
| 2:A:143:GLY:HA3  | 6:A:500:GTP:O1B  | 2.20                     | 0.41              |
| 2:A:179:THR:CB   | 6:A:500:GTP:O3'  | 2.58                     | 0.41              |
| 2:A:143:GLY:HA3  | 6:A:500:GTP:O1B  | 2.20                     | 0.41              |
| 2:A:179:THR:CB   | 6:A:500:GTP:O3'  | 2.58                     | 0.41              |
| 1:C:424:LYS:NZ   | 3:B:163:ASP:OD2  | 2.53                     | 0.41              |
| 1:C:439:CYS:SG   | 1:C:457:PRO:HG2  | 2.61                     | 0.41              |
| 2:A:170:SER:O    | 2:A:203:MET:HA   | 2.21                     | 0.41              |
| 2:A:386:GLU:O    | 2:A:390:ARG:HG2  | 2.20                     | 0.41              |
| 2:A:170:SER:O    | 2:A:203:MET:HA   | 2.21                     | 0.41              |
| 2:A:386:GLU:O    | 2:A:390:ARG:HG2  | 2.20                     | 0.41              |
| 1:C:439:CYS:SG   | 1:C:457:PRO:HG2  | 2.61                     | 0.41              |
| 2:A:170:SER:O    | 2:A:203:MET:HA   | 2.21                     | 0.41              |
| 2:A:386:GLU:O    | 2:A:390:ARG:HG2  | 2.20                     | 0.41              |
| 2:A:170:SER:O    | 2:A:203:MET:HA   | 2.21                     | 0.41              |
| 2:A:386:GLU:O    | 2:A:390:ARG:HG2  | 2.20                     | 0.41              |
| 1:C:439:CYS:SG   | 1:C:457:PRO:HG2  | 2.61                     | 0.41              |
| 2:A:170:SER:O    | 2:A:203:MET:HA   | 2.21                     | 0.41              |
| 2:A:386:GLU:O    | 2:A:390:ARG:HG2  | 2.20                     | 0.41              |
| 1:C:455:LEU:HD23 | 3:B:431:GLU:HG3  | 2.01                     | 0.41              |
| 2:A:205:ASP:HB3  | 2:A:303:VAL:HA   | 2.02                     | 0.41              |
| 3:B:370:GLY:O    | 8:B:601:TA1:H443 | 2.20                     | 0.41              |
| 2:A:205:ASP:HB3  | 2:A:303:VAL:HA   | 2.02                     | 0.41              |
| 3:B:370:GLY:O    | 8:B:601:TA1:H443 | 2.20                     | 0.41              |
| 2:A:205:ASP:HB3  | 2:A:303:VAL:HA   | 2.02                     | 0.41              |
| 3:B:370:GLY:O    | 8:B:601:TA1:H443 | 2.20                     | 0.41              |
| 1:C:169:ILE:HG21 | 1:C:407:ASP:HB2  | 2.02                     | 0.41              |
| 1:C:369:SER:HG   | 1:C:425:GLU:CD   | 2.28                     | 0.41              |
| 1:C:439:CYS:SG   | 1:C:457:PRO:HG2  | 2.61                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:A:205:ASP:HB3  | 2:A:303:VAL:HA   | 2.02                     | 0.41              |
| 3:B:370:GLY:O    | 8:B:601:TA1:H443 | 2.20                     | 0.41              |
| 2:A:205:ASP:HB3  | 2:A:303:VAL:HA   | 2.02                     | 0.41              |
| 3:B:370:GLY:O    | 8:B:601:TA1:H443 | 2.20                     | 0.41              |
| 2:A:152:LEU:HD12 | 2:A:153:LEU:N    | 2.36                     | 0.41              |
| 2:A:154:MET:HE2  | 2:A:198:SER:OG   | 2.19                     | 0.41              |
| 1:C:169:ILE:HG21 | 1:C:407:ASP:HB2  | 2.02                     | 0.41              |
| 1:C:439:CYS:SG   | 1:C:457:PRO:HG2  | 2.61                     | 0.41              |
| 2:A:152:LEU:HD12 | 2:A:153:LEU:N    | 2.36                     | 0.41              |
| 2:A:154:MET:HE2  | 2:A:198:SER:OG   | 2.19                     | 0.41              |
| 1:C:169:ILE:HG21 | 1:C:407:ASP:HB2  | 2.02                     | 0.41              |
| 2:A:152:LEU:HD12 | 2:A:153:LEU:N    | 2.36                     | 0.41              |
| 2:A:154:MET:HE2  | 2:A:198:SER:OG   | 2.19                     | 0.41              |
| 2:A:152:LEU:HD12 | 2:A:153:LEU:N    | 2.36                     | 0.41              |
| 2:A:154:MET:HE2  | 2:A:198:SER:OG   | 2.19                     | 0.41              |
| 1:C:169:ILE:HG21 | 1:C:407:ASP:HB2  | 2.02                     | 0.41              |
| 2:A:152:LEU:HD12 | 2:A:153:LEU:N    | 2.36                     | 0.41              |
| 2:A:154:MET:HE2  | 2:A:198:SER:OG   | 2.19                     | 0.41              |
| 1:C:169:ILE:HG21 | 1:C:407:ASP:HB2  | 2.02                     | 0.41              |
| 2:A:103:TYR:CD1  | 2:A:189:LEU:HD13 | 2.55                     | 0.41              |
| 2:A:322:ASP:O    | 2:A:373:ARG:HD3  | 2.20                     | 0.41              |
| 3:B:273:ALA:O    | 3:B:294:GLN:HG2  | 2.20                     | 0.41              |
| 2:A:103:TYR:CD1  | 2:A:189:LEU:HD13 | 2.55                     | 0.41              |
| 2:A:322:ASP:O    | 2:A:373:ARG:HD3  | 2.20                     | 0.41              |
| 3:B:273:ALA:O    | 3:B:294:GLN:HG2  | 2.20                     | 0.41              |
| 2:A:103:TYR:CD1  | 2:A:189:LEU:HD13 | 2.55                     | 0.41              |
| 2:A:322:ASP:O    | 2:A:373:ARG:HD3  | 2.20                     | 0.41              |
| 3:B:273:ALA:O    | 3:B:294:GLN:HG2  | 2.20                     | 0.41              |
| 2:A:103:TYR:CD1  | 2:A:189:LEU:HD13 | 2.55                     | 0.41              |
| 2:A:322:ASP:O    | 2:A:373:ARG:HD3  | 2.20                     | 0.41              |
| 3:B:273:ALA:O    | 3:B:294:GLN:HG2  | 2.20                     | 0.41              |
| 1:C:136:PHE:CG   | 1:C:181:GLN:HB3  | 2.56                     | 0.41              |
| 1:C:333:ASP:HA   | 3:B:416:MET:HG2  | 2.02                     | 0.41              |
| 1:C:455:LEU:HD22 | 3:B:431:GLU:HB2  | 2.02                     | 0.41              |
| 2:A:103:TYR:CD1  | 2:A:189:LEU:HD13 | 2.55                     | 0.41              |
| 2:A:322:ASP:O    | 2:A:373:ARG:HD3  | 2.20                     | 0.41              |
| 3:B:273:ALA:O    | 3:B:294:GLN:HG2  | 2.20                     | 0.41              |
| 1:C:136:PHE:CG   | 1:C:181:GLN:HB3  | 2.56                     | 0.41              |
| 3:B:4:ILE:HG21   | 3:B:136:GLN:HG2  | 2.01                     | 0.41              |
| 1:C:136:PHE:CG   | 1:C:181:GLN:HB3  | 2.56                     | 0.41              |
| 3:B:4:ILE:HG21   | 3:B:136:GLN:HG2  | 2.01                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:66:VAL:HG23  | 1:C:122:PHE:O    | 2.21                     | 0.41              |
| 1:C:313:TYR:CZ   | 1:C:324:LYS:HE2  | 2.55                     | 0.41              |
| 3:B:4:ILE:HG21   | 3:B:136:GLN:HG2  | 2.01                     | 0.41              |
| 1:C:136:PHE:CG   | 1:C:181:GLN:HB3  | 2.56                     | 0.41              |
| 3:B:4:ILE:HG21   | 3:B:136:GLN:HG2  | 2.01                     | 0.41              |
| 1:C:387:ILE:O    | 1:C:387:ILE:HG13 | 2.20                     | 0.41              |
| 3:B:4:ILE:HG21   | 3:B:136:GLN:HG2  | 2.01                     | 0.41              |
| 1:C:66:VAL:HG23  | 1:C:122:PHE:O    | 2.21                     | 0.41              |
| 1:C:387:ILE:O    | 1:C:387:ILE:HG13 | 2.20                     | 0.41              |
| 1:C:434:HIS:CG   | 2:A:409:VAL:HG21 | 2.56                     | 0.41              |
| 3:B:22:GLU:HG3   | 3:B:83:PHE:CD1   | 2.56                     | 0.41              |
| 3:B:228:ASN:ND2  | 7:B:600:GDP:HN1  | 2.19                     | 0.41              |
| 1:C:313:TYR:CE2  | 1:C:321:HIS:HB2  | 2.56                     | 0.41              |
| 3:B:22:GLU:HG3   | 3:B:83:PHE:CD1   | 2.56                     | 0.41              |
| 3:B:228:ASN:ND2  | 7:B:600:GDP:HN1  | 2.19                     | 0.41              |
| 1:C:136:PHE:CG   | 1:C:181:GLN:HB3  | 2.56                     | 0.41              |
| 3:B:22:GLU:HG3   | 3:B:83:PHE:CD1   | 2.56                     | 0.41              |
| 3:B:228:ASN:ND2  | 7:B:600:GDP:HN1  | 2.19                     | 0.41              |
| 1:C:66:VAL:HG23  | 1:C:122:PHE:O    | 2.21                     | 0.41              |
| 1:C:333:ASP:HA   | 3:B:416:MET:HG2  | 2.02                     | 0.41              |
| 3:B:22:GLU:HG3   | 3:B:83:PHE:CD1   | 2.56                     | 0.41              |
| 3:B:228:ASN:ND2  | 7:B:600:GDP:HN1  | 2.19                     | 0.41              |
| 1:C:66:VAL:HG23  | 1:C:122:PHE:O    | 2.21                     | 0.41              |
| 3:B:22:GLU:HG3   | 3:B:83:PHE:CD1   | 2.56                     | 0.41              |
| 3:B:228:ASN:ND2  | 7:B:600:GDP:HN1  | 2.19                     | 0.41              |
| 3:B:209:LEU:HD21 | 3:B:231:VAL:CG2  | 2.51                     | 0.41              |
| 3:B:358:ILE:HA   | 3:B:359:PRO:HD3  | 1.81                     | 0.41              |
| 1:C:66:VAL:HG23  | 1:C:122:PHE:O    | 2.21                     | 0.41              |
| 3:B:209:LEU:HD21 | 3:B:231:VAL:CG2  | 2.51                     | 0.41              |
| 3:B:358:ILE:HA   | 3:B:359:PRO:HD3  | 1.81                     | 0.41              |
| 1:C:387:ILE:O    | 1:C:387:ILE:HG13 | 2.21                     | 0.41              |
| 3:B:209:LEU:HD21 | 3:B:231:VAL:CG2  | 2.51                     | 0.41              |
| 3:B:358:ILE:HA   | 3:B:359:PRO:HD3  | 1.81                     | 0.41              |
| 1:C:313:TYR:CE2  | 1:C:321:HIS:HB2  | 2.56                     | 0.41              |
| 1:C:387:ILE:O    | 1:C:387:ILE:HG13 | 2.21                     | 0.41              |
| 3:B:209:LEU:HD21 | 3:B:231:VAL:CG2  | 2.51                     | 0.41              |
| 3:B:358:ILE:HA   | 3:B:359:PRO:HD3  | 1.81                     | 0.41              |
| 3:B:209:LEU:HD21 | 3:B:231:VAL:CG2  | 2.51                     | 0.41              |
| 3:B:358:ILE:HA   | 3:B:359:PRO:HD3  | 1.81                     | 0.41              |
| 1:C:143:MET:HG3  | 1:C:153:TRP:CG   | 2.55                     | 0.41              |
| 1:C:164:GLY:CA   | 5:C:602:ANP:H8   | 2.51                     | 0.41              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 2:A:201:ALA:O   | 2:A:267:PHE:HA   | 2.21                     | 0.41              |
| 2:A:203:MET:HE2 | 2:A:267:PHE:CB   | 2.51                     | 0.41              |
| 2:A:213:CYS:HA  | 2:A:217:LEU:CB   | 2.51                     | 0.41              |
| 3:B:320:ARG:HD3 | 3:B:360:PRO:HG3  | 2.02                     | 0.41              |
| 1:C:143:MET:HG3 | 1:C:153:TRP:CG   | 2.55                     | 0.41              |
| 1:C:333:ASP:HA  | 3:B:416:MET:HG2  | 2.02                     | 0.41              |
| 1:C:387:ILE:O   | 1:C:387:ILE:HG13 | 2.21                     | 0.41              |
| 2:A:201:ALA:O   | 2:A:267:PHE:HA   | 2.21                     | 0.41              |
| 2:A:203:MET:HE2 | 2:A:267:PHE:CB   | 2.51                     | 0.41              |
| 2:A:213:CYS:HA  | 2:A:217:LEU:CB   | 2.51                     | 0.41              |
| 3:B:320:ARG:HD3 | 3:B:360:PRO:HG3  | 2.02                     | 0.41              |
| 1:C:313:TYR:HE1 | 1:C:324:LYS:HB3  | 1.86                     | 0.41              |
| 1:C:424:LYS:HZ1 | 3:B:163:ASP:CG   | 2.28                     | 0.41              |
| 1:C:424:LYS:HZ2 | 3:B:163:ASP:CG   | 2.29                     | 0.41              |
| 1:C:431:THR:OG1 | 2:A:410:GLY:HA2  | 2.21                     | 0.41              |
| 2:A:201:ALA:O   | 2:A:267:PHE:HA   | 2.21                     | 0.41              |
| 2:A:203:MET:HE2 | 2:A:267:PHE:CB   | 2.51                     | 0.41              |
| 2:A:213:CYS:HA  | 2:A:217:LEU:CB   | 2.51                     | 0.41              |
| 3:B:320:ARG:HD3 | 3:B:360:PRO:HG3  | 2.02                     | 0.41              |
| 1:C:143:MET:HG3 | 1:C:153:TRP:CG   | 2.55                     | 0.41              |
| 1:C:484:ASN:HA  | 1:C:485:PRO:HD3  | 1.82                     | 0.41              |
| 2:A:201:ALA:O   | 2:A:267:PHE:HA   | 2.21                     | 0.41              |
| 2:A:203:MET:HE2 | 2:A:267:PHE:CB   | 2.51                     | 0.41              |
| 2:A:213:CYS:HA  | 2:A:217:LEU:CB   | 2.51                     | 0.41              |
| 3:B:320:ARG:HD3 | 3:B:360:PRO:HG3  | 2.02                     | 0.41              |
| 2:A:201:ALA:O   | 2:A:267:PHE:HA   | 2.21                     | 0.41              |
| 2:A:203:MET:HE2 | 2:A:267:PHE:CB   | 2.51                     | 0.41              |
| 2:A:213:CYS:HA  | 2:A:217:LEU:CB   | 2.51                     | 0.41              |
| 3:B:320:ARG:HD3 | 3:B:360:PRO:HG3  | 2.02                     | 0.41              |
| 1:C:355:TRP:NE1 | 1:C:359:LYS:HE3  | 2.36                     | 0.41              |
| 1:C:484:ASN:HA  | 1:C:485:PRO:HD3  | 1.82                     | 0.41              |
| 2:A:407:TRP:HZ2 | 3:B:260:VAL:HB   | 1.85                     | 0.41              |
| 3:B:11:GLN:HG3  | 3:B:74:THR:HG21  | 2.03                     | 0.41              |
| 1:C:164:GLY:CA  | 5:C:602:ANP:H8   | 2.51                     | 0.41              |
| 1:C:355:TRP:NE1 | 1:C:359:LYS:HE3  | 2.36                     | 0.41              |
| 2:A:407:TRP:HZ2 | 3:B:260:VAL:HB   | 1.85                     | 0.41              |
| 3:B:11:GLN:HG3  | 3:B:74:THR:HG21  | 2.03                     | 0.41              |
| 1:C:143:MET:HG3 | 1:C:153:TRP:CG   | 2.55                     | 0.41              |
| 1:C:355:TRP:NE1 | 1:C:359:LYS:HE3  | 2.36                     | 0.41              |
| 2:A:407:TRP:HZ2 | 3:B:260:VAL:HB   | 1.85                     | 0.41              |
| 3:B:11:GLN:HG3  | 3:B:74:THR:HG21  | 2.03                     | 0.41              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:C:424:LYS:HZ1  | 3:B:163:ASP:CG  | 2.28                     | 0.41              |
| 2:A:407:TRP:HZ2  | 3:B:260:VAL:HB  | 1.85                     | 0.41              |
| 3:B:11:GLN:HG3   | 3:B:74:THR:HG21 | 2.03                     | 0.41              |
| 1:C:143:MET:HG3  | 1:C:153:TRP:CG  | 2.55                     | 0.41              |
| 1:C:445:GLN:NE2  | 1:C:452:LYS:HE2 | 2.36                     | 0.41              |
| 1:C:484:ASN:HA   | 1:C:485:PRO:HD3 | 1.82                     | 0.41              |
| 2:A:407:TRP:HZ2  | 3:B:260:VAL:HB  | 1.85                     | 0.41              |
| 3:B:11:GLN:HG3   | 3:B:74:THR:HG21 | 2.03                     | 0.41              |
| 1:C:459:ARG:CZ   | 3:B:424:ASN:ND2 | 2.84                     | 0.40              |
| 3:B:115:VAL:O    | 3:B:119:LEU:HG  | 2.20                     | 0.40              |
| 3:B:115:VAL:O    | 3:B:119:LEU:HG  | 2.20                     | 0.40              |
| 1:C:164:GLY:CA   | 5:C:602:ANP:H8  | 2.51                     | 0.40              |
| 1:C:484:ASN:HA   | 1:C:485:PRO:HD3 | 1.82                     | 0.40              |
| 3:B:115:VAL:O    | 3:B:119:LEU:HG  | 2.20                     | 0.40              |
| 1:C:164:GLY:CA   | 5:C:602:ANP:H8  | 2.51                     | 0.40              |
| 1:C:355:TRP:NE1  | 1:C:359:LYS:HE3 | 2.36                     | 0.40              |
| 3:B:115:VAL:O    | 3:B:119:LEU:HG  | 2.20                     | 0.40              |
| 1:C:164:GLY:CA   | 5:C:602:ANP:H8  | 2.51                     | 0.40              |
| 1:C:355:TRP:NE1  | 1:C:359:LYS:HE3 | 2.36                     | 0.40              |
| 1:C:424:LYS:HZ2  | 3:B:163:ASP:CG  | 2.29                     | 0.40              |
| 3:B:115:VAL:O    | 3:B:119:LEU:HG  | 2.20                     | 0.40              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:CG  | 2.51                     | 0.40              |
| 3:B:168:THR:O    | 3:B:201:THR:HA  | 2.21                     | 0.40              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:CB  | 2.50                     | 0.40              |
| 1:C:484:ASN:HA   | 1:C:485:PRO:HD3 | 1.82                     | 0.40              |
| 3:B:168:THR:O    | 3:B:201:THR:HA  | 2.21                     | 0.40              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:CB  | 2.50                     | 0.40              |
| 3:B:168:THR:O    | 3:B:201:THR:HA  | 2.21                     | 0.40              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:CB  | 2.50                     | 0.40              |
| 3:B:168:THR:O    | 3:B:201:THR:HA  | 2.21                     | 0.40              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:CB  | 2.50                     | 0.40              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:CG  | 2.51                     | 0.40              |
| 3:B:168:THR:O    | 3:B:201:THR:HA  | 2.21                     | 0.40              |
| 3:B:237:GLY:HA2  | 3:B:241:CYS:CB  | 2.50                     | 0.40              |
| 2:A:402:ARG:HA   | 2:A:402:ARG:HD3 | 1.93                     | 0.40              |
| 3:B:156:LYS:HE2  | 3:B:156:LYS:HA  | 2.03                     | 0.40              |
| 2:A:402:ARG:HA   | 2:A:402:ARG:HD3 | 1.93                     | 0.40              |
| 3:B:156:LYS:HE2  | 3:B:156:LYS:HA  | 2.03                     | 0.40              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:CG  | 2.51                     | 0.40              |
| 2:A:402:ARG:HA   | 2:A:402:ARG:HD3 | 1.93                     | 0.40              |
| 3:B:156:LYS:HE2  | 3:B:156:LYS:HA  | 2.03                     | 0.40              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:C:179:LEU:HD23 | 1:C:405:LEU:CG  | 2.51                     | 0.40              |
| 2:A:402:ARG:HA   | 2:A:402:ARG:HD3 | 1.93                     | 0.40              |
| 3:B:156:LYS:HE2  | 3:B:156:LYS:HA  | 2.03                     | 0.40              |
| 2:A:402:ARG:HA   | 2:A:402:ARG:HD3 | 1.93                     | 0.40              |
| 3:B:156:LYS:HE2  | 3:B:156:LYS:HA  | 2.03                     | 0.40              |
| 1:C:179:LEU:HD23 | 1:C:405:LEU:CG  | 2.51                     | 0.40              |
| 1:C:179:LEU:HD21 | 1:C:383:PHE:CD2 | 2.56                     | 0.40              |
| 1:C:369:SER:HA   | 1:C:411:SER:CB  | 2.51                     | 0.40              |
| 1:C:179:LEU:HD21 | 1:C:383:PHE:CD2 | 2.56                     | 0.40              |
| 1:C:179:LEU:HD21 | 1:C:383:PHE:CD2 | 2.56                     | 0.40              |
| 1:C:179:LEU:HD21 | 1:C:383:PHE:CD2 | 2.57                     | 0.40              |
| 2:A:362:VAL:HG21 | 2:A:370:LYS:HA  | 2.04                     | 0.40              |
| 1:C:70:ILE:HD11  | 1:C:127:GLY:HA2 | 2.04                     | 0.40              |
| 2:A:362:VAL:HG21 | 2:A:370:LYS:HA  | 2.04                     | 0.40              |
| 1:C:179:LEU:HD21 | 1:C:383:PHE:CD2 | 2.57                     | 0.40              |
| 2:A:362:VAL:HG21 | 2:A:370:LYS:HA  | 2.04                     | 0.40              |
| 2:A:362:VAL:HG21 | 2:A:370:LYS:HA  | 2.04                     | 0.40              |
| 1:C:355:TRP:HA   | 1:C:355:TRP:CE3 | 2.57                     | 0.40              |
| 2:A:362:VAL:HG21 | 2:A:370:LYS:HA  | 2.04                     | 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   | 1-C   | 286/501 (57%) | 273 (96%) | 11 (4%) | 2 (1%)   | 19          | 57 |
| 1   | 2-C   | 286/501 (57%) | 272 (95%) | 12 (4%) | 2 (1%)   | 19          | 57 |
| 1   | 3-C   | 286/501 (57%) | 270 (94%) | 15 (5%) | 1 (0%)   | 37          | 73 |
| 1   | 4-C   | 286/501 (57%) | 270 (94%) | 15 (5%) | 1 (0%)   | 37          | 73 |
| 1   | 5-C   | 286/501 (57%) | 271 (95%) | 13 (4%) | 2 (1%)   | 19          | 57 |

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| Mol | Chain | Analysed        | Favoured   | Allowed  | Outliers | Percentiles |    |
|-----|-------|-----------------|------------|----------|----------|-------------|----|
| 2   | 1-A   | 408/451 (90%)   | 367 (90%)  | 39 (10%) | 2 (0%)   | 25          | 64 |
| 2   | 2-A   | 408/451 (90%)   | 367 (90%)  | 39 (10%) | 2 (0%)   | 25          | 64 |
| 2   | 3-A   | 408/451 (90%)   | 367 (90%)  | 39 (10%) | 2 (0%)   | 25          | 64 |
| 2   | 4-A   | 408/451 (90%)   | 367 (90%)  | 39 (10%) | 2 (0%)   | 25          | 64 |
| 2   | 5-A   | 408/451 (90%)   | 367 (90%)  | 39 (10%) | 2 (0%)   | 25          | 64 |
| 3   | 1-B   | 424/445 (95%)   | 384 (91%)  | 34 (8%)  | 6 (1%)   | 9           | 41 |
| 3   | 2-B   | 424/445 (95%)   | 384 (91%)  | 34 (8%)  | 6 (1%)   | 9           | 41 |
| 3   | 3-B   | 424/445 (95%)   | 384 (91%)  | 34 (8%)  | 6 (1%)   | 9           | 41 |
| 3   | 4-B   | 424/445 (95%)   | 384 (91%)  | 34 (8%)  | 6 (1%)   | 9           | 41 |
| 3   | 5-B   | 424/445 (95%)   | 384 (91%)  | 34 (8%)  | 6 (1%)   | 9           | 41 |
| All | All   | 5590/6985 (80%) | 5111 (91%) | 431 (8%) | 48 (1%)  | 17          | 52 |

All (48) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 1-C   | 123 | SER  |
| 1   | 1-C   | 451 | SER  |
| 1   | 2-C   | 123 | SER  |
| 1   | 3-C   | 123 | SER  |
| 1   | 4-C   | 123 | SER  |
| 1   | 5-C   | 123 | SER  |
| 3   | 1-B   | 109 | THR  |
| 3   | 1-B   | 344 | VAL  |
| 3   | 2-B   | 109 | THR  |
| 3   | 2-B   | 344 | VAL  |
| 3   | 3-B   | 109 | THR  |
| 3   | 3-B   | 344 | VAL  |
| 3   | 4-B   | 109 | THR  |
| 3   | 4-B   | 344 | VAL  |
| 3   | 5-B   | 109 | THR  |
| 3   | 5-B   | 344 | VAL  |
| 2   | 1-A   | 109 | THR  |
| 3   | 1-B   | 82  | PRO  |
| 3   | 1-B   | 288 | VAL  |
| 1   | 2-C   | 320 | SER  |
| 2   | 2-A   | 109 | THR  |
| 3   | 2-B   | 82  | PRO  |
| 3   | 2-B   | 288 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 3-A   | 109 | THR  |
| 3   | 3-B   | 82  | PRO  |
| 3   | 3-B   | 288 | VAL  |
| 2   | 4-A   | 109 | THR  |
| 3   | 4-B   | 82  | PRO  |
| 3   | 4-B   | 288 | VAL  |
| 2   | 5-A   | 109 | THR  |
| 3   | 5-B   | 82  | PRO  |
| 3   | 5-B   | 288 | VAL  |
| 2   | 1-A   | 279 | GLU  |
| 2   | 2-A   | 279 | GLU  |
| 2   | 3-A   | 279 | GLU  |
| 2   | 4-A   | 279 | GLU  |
| 2   | 5-A   | 279 | GLU  |
| 3   | 1-B   | 266 | HIS  |
| 3   | 2-B   | 266 | HIS  |
| 3   | 3-B   | 266 | HIS  |
| 3   | 4-B   | 266 | HIS  |
| 1   | 5-C   | 424 | LYS  |
| 3   | 5-B   | 266 | HIS  |
| 3   | 1-B   | 278 | ARG  |
| 3   | 2-B   | 278 | ARG  |
| 3   | 3-B   | 278 | ARG  |
| 3   | 4-B   | 278 | ARG  |
| 3   | 5-B   | 278 | ARG  |

### 5.3.2 Protein sidechains ⓘ

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   | 1-C   | 268/447 (60%) | 219 (82%) | 49 (18%) | 1           | 8 |
| 1   | 2-C   | 268/447 (60%) | 219 (82%) | 49 (18%) | 1           | 8 |
| 1   | 3-C   | 268/447 (60%) | 219 (82%) | 49 (18%) | 1           | 8 |
| 1   | 4-C   | 268/447 (60%) | 219 (82%) | 49 (18%) | 1           | 8 |
| 1   | 5-C   | 268/447 (60%) | 219 (82%) | 49 (18%) | 1           | 8 |

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| Mol | Chain | Analysed        | Rotameric  | Outliers  | Percentiles |    |
|-----|-------|-----------------|------------|-----------|-------------|----|
| 2   | 1-A   | 347/377 (92%)   | 311 (90%)  | 36 (10%)  | 5           | 19 |
| 2   | 2-A   | 347/377 (92%)   | 311 (90%)  | 36 (10%)  | 5           | 19 |
| 2   | 3-A   | 347/377 (92%)   | 311 (90%)  | 36 (10%)  | 5           | 19 |
| 2   | 4-A   | 347/377 (92%)   | 311 (90%)  | 36 (10%)  | 5           | 19 |
| 2   | 5-A   | 347/377 (92%)   | 311 (90%)  | 36 (10%)  | 5           | 19 |
| 3   | 1-B   | 367/381 (96%)   | 313 (85%)  | 54 (15%)  | 2           | 12 |
| 3   | 2-B   | 367/381 (96%)   | 313 (85%)  | 54 (15%)  | 2           | 12 |
| 3   | 3-B   | 367/381 (96%)   | 313 (85%)  | 54 (15%)  | 2           | 12 |
| 3   | 4-B   | 367/381 (96%)   | 313 (85%)  | 54 (15%)  | 2           | 12 |
| 3   | 5-B   | 367/381 (96%)   | 313 (85%)  | 54 (15%)  | 2           | 12 |
| All | All   | 4910/6025 (82%) | 4215 (86%) | 695 (14%) | 5           | 12 |

All (695) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 1-C   | 66  | VAL  |
| 1   | 1-C   | 69  | ARG  |
| 1   | 1-C   | 70  | ILE  |
| 1   | 1-C   | 76  | SER  |
| 1   | 1-C   | 83  | ASP  |
| 1   | 1-C   | 87  | VAL  |
| 1   | 1-C   | 95  | LEU  |
| 1   | 1-C   | 119 | LYS  |
| 1   | 1-C   | 121 | THR  |
| 1   | 1-C   | 125 | ILE  |
| 1   | 1-C   | 129 | GLU  |
| 1   | 1-C   | 132 | GLN  |
| 1   | 1-C   | 136 | PHE  |
| 1   | 1-C   | 141 | LYS  |
| 1   | 1-C   | 147 | VAL  |
| 1   | 1-C   | 151 | GLN  |
| 1   | 1-C   | 157 | THR  |
| 1   | 1-C   | 168 | THR  |
| 1   | 1-C   | 175 | ASP  |
| 1   | 1-C   | 316 | LEU  |
| 1   | 1-C   | 317 | GLU  |
| 1   | 1-C   | 349 | ARG  |
| 1   | 1-C   | 351 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 1-C   | 358 | LEU  |
| 1   | 1-C   | 359 | LYS  |
| 1   | 1-C   | 365 | GLN  |
| 1   | 1-C   | 379 | SER  |
| 1   | 1-C   | 385 | ILE  |
| 1   | 1-C   | 387 | ILE  |
| 1   | 1-C   | 388 | LEU  |
| 1   | 1-C   | 389 | HIS  |
| 1   | 1-C   | 390 | LEU  |
| 1   | 1-C   | 399 | LYS  |
| 1   | 1-C   | 400 | ILE  |
| 1   | 1-C   | 401 | SER  |
| 1   | 1-C   | 422 | ARG  |
| 1   | 1-C   | 432 | SER  |
| 1   | 1-C   | 433 | LEU  |
| 1   | 1-C   | 436 | LEU  |
| 1   | 1-C   | 443 | LEU  |
| 1   | 1-C   | 446 | ASN  |
| 1   | 1-C   | 447 | GLN  |
| 1   | 1-C   | 458 | PHE  |
| 1   | 1-C   | 464 | THR  |
| 1   | 1-C   | 474 | ARG  |
| 1   | 1-C   | 477 | SER  |
| 1   | 1-C   | 482 | ASN  |
| 1   | 1-C   | 488 | SER  |
| 1   | 1-C   | 494 | LEU  |
| 2   | 1-A   | 28  | HIS  |
| 2   | 1-A   | 71  | GLU  |
| 2   | 1-A   | 76  | ASP  |
| 2   | 1-A   | 80  | THR  |
| 2   | 1-A   | 82  | THR  |
| 2   | 1-A   | 93  | ILE  |
| 2   | 1-A   | 97  | GLU  |
| 2   | 1-A   | 109 | THR  |
| 2   | 1-A   | 130 | THR  |
| 2   | 1-A   | 132 | LEU  |
| 2   | 1-A   | 136 | SER  |
| 2   | 1-A   | 140 | SER  |
| 2   | 1-A   | 150 | THR  |
| 2   | 1-A   | 169 | PHE  |
| 2   | 1-A   | 170 | SER  |
| 2   | 1-A   | 178 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 1-A   | 185 | TYR  |
| 2   | 1-A   | 189 | LEU  |
| 2   | 1-A   | 194 | THR  |
| 2   | 1-A   | 226 | ASN  |
| 2   | 1-A   | 241 | SER  |
| 2   | 1-A   | 253 | THR  |
| 2   | 1-A   | 277 | SER  |
| 2   | 1-A   | 279 | GLU  |
| 2   | 1-A   | 287 | SER  |
| 2   | 1-A   | 291 | ILE  |
| 2   | 1-A   | 315 | CYS  |
| 2   | 1-A   | 322 | ASP  |
| 2   | 1-A   | 327 | ASP  |
| 2   | 1-A   | 340 | THR  |
| 2   | 1-A   | 349 | THR  |
| 2   | 1-A   | 361 | THR  |
| 2   | 1-A   | 376 | CYS  |
| 2   | 1-A   | 382 | THR  |
| 2   | 1-A   | 425 | MET  |
| 2   | 1-A   | 439 | SER  |
| 3   | 1-B   | 25  | SER  |
| 3   | 1-B   | 33  | THR  |
| 3   | 1-B   | 35  | SER  |
| 3   | 1-B   | 48  | ARG  |
| 3   | 1-B   | 67  | LEU  |
| 3   | 1-B   | 71  | GLU  |
| 3   | 1-B   | 76  | ASP  |
| 3   | 1-B   | 77  | SER  |
| 3   | 1-B   | 109 | THR  |
| 3   | 1-B   | 128 | SER  |
| 3   | 1-B   | 130 | ASP  |
| 3   | 1-B   | 133 | GLN  |
| 3   | 1-B   | 140 | SER  |
| 3   | 1-B   | 145 | THR  |
| 3   | 1-B   | 147 | SER  |
| 3   | 1-B   | 151 | THR  |
| 3   | 1-B   | 158 | ARG  |
| 3   | 1-B   | 163 | ASP  |
| 3   | 1-B   | 165 | ILE  |
| 3   | 1-B   | 166 | MET  |
| 3   | 1-B   | 168 | THR  |
| 3   | 1-B   | 170 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 1-B   | 174 | SER  |
| 3   | 1-B   | 179 | ASP  |
| 3   | 1-B   | 185 | TYR  |
| 3   | 1-B   | 205 | ASP  |
| 3   | 1-B   | 213 | CYS  |
| 3   | 1-B   | 216 | THR  |
| 3   | 1-B   | 220 | THR  |
| 3   | 1-B   | 221 | THR  |
| 3   | 1-B   | 223 | THR  |
| 3   | 1-B   | 234 | THR  |
| 3   | 1-B   | 236 | SER  |
| 3   | 1-B   | 239 | THR  |
| 3   | 1-B   | 240 | THR  |
| 3   | 1-B   | 265 | LEU  |
| 3   | 1-B   | 276 | THR  |
| 3   | 1-B   | 277 | SER  |
| 3   | 1-B   | 280 | SER  |
| 3   | 1-B   | 284 | ARG  |
| 3   | 1-B   | 287 | THR  |
| 3   | 1-B   | 292 | THR  |
| 3   | 1-B   | 309 | HIS  |
| 3   | 1-B   | 314 | THR  |
| 3   | 1-B   | 325 | MET  |
| 3   | 1-B   | 340 | SER  |
| 3   | 1-B   | 341 | SER  |
| 3   | 1-B   | 343 | PHE  |
| 3   | 1-B   | 344 | VAL  |
| 3   | 1-B   | 353 | THR  |
| 3   | 1-B   | 396 | THR  |
| 3   | 1-B   | 413 | MET  |
| 3   | 1-B   | 419 | THR  |
| 3   | 1-B   | 432 | TYR  |
| 1   | 2-C   | 66  | VAL  |
| 1   | 2-C   | 69  | ARG  |
| 1   | 2-C   | 70  | ILE  |
| 1   | 2-C   | 76  | SER  |
| 1   | 2-C   | 83  | ASP  |
| 1   | 2-C   | 87  | VAL  |
| 1   | 2-C   | 95  | LEU  |
| 1   | 2-C   | 119 | LYS  |
| 1   | 2-C   | 121 | THR  |
| 1   | 2-C   | 125 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 2-C   | 129 | GLU  |
| 1   | 2-C   | 132 | GLN  |
| 1   | 2-C   | 136 | PHE  |
| 1   | 2-C   | 141 | LYS  |
| 1   | 2-C   | 147 | VAL  |
| 1   | 2-C   | 151 | GLN  |
| 1   | 2-C   | 157 | THR  |
| 1   | 2-C   | 168 | THR  |
| 1   | 2-C   | 175 | ASP  |
| 1   | 2-C   | 316 | LEU  |
| 1   | 2-C   | 317 | GLU  |
| 1   | 2-C   | 349 | ARG  |
| 1   | 2-C   | 351 | VAL  |
| 1   | 2-C   | 358 | LEU  |
| 1   | 2-C   | 359 | LYS  |
| 1   | 2-C   | 365 | GLN  |
| 1   | 2-C   | 379 | SER  |
| 1   | 2-C   | 385 | ILE  |
| 1   | 2-C   | 387 | ILE  |
| 1   | 2-C   | 388 | LEU  |
| 1   | 2-C   | 389 | HIS  |
| 1   | 2-C   | 390 | LEU  |
| 1   | 2-C   | 399 | LYS  |
| 1   | 2-C   | 400 | ILE  |
| 1   | 2-C   | 401 | SER  |
| 1   | 2-C   | 422 | ARG  |
| 1   | 2-C   | 432 | SER  |
| 1   | 2-C   | 433 | LEU  |
| 1   | 2-C   | 436 | LEU  |
| 1   | 2-C   | 443 | LEU  |
| 1   | 2-C   | 446 | ASN  |
| 1   | 2-C   | 447 | GLN  |
| 1   | 2-C   | 458 | PHE  |
| 1   | 2-C   | 464 | THR  |
| 1   | 2-C   | 474 | ARG  |
| 1   | 2-C   | 477 | SER  |
| 1   | 2-C   | 482 | ASN  |
| 1   | 2-C   | 488 | SER  |
| 1   | 2-C   | 494 | LEU  |
| 2   | 2-A   | 28  | HIS  |
| 2   | 2-A   | 71  | GLU  |
| 2   | 2-A   | 76  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 2-A   | 80  | THR  |
| 2   | 2-A   | 82  | THR  |
| 2   | 2-A   | 93  | ILE  |
| 2   | 2-A   | 97  | GLU  |
| 2   | 2-A   | 109 | THR  |
| 2   | 2-A   | 130 | THR  |
| 2   | 2-A   | 132 | LEU  |
| 2   | 2-A   | 136 | SER  |
| 2   | 2-A   | 140 | SER  |
| 2   | 2-A   | 150 | THR  |
| 2   | 2-A   | 169 | PHE  |
| 2   | 2-A   | 170 | SER  |
| 2   | 2-A   | 178 | SER  |
| 2   | 2-A   | 185 | TYR  |
| 2   | 2-A   | 189 | LEU  |
| 2   | 2-A   | 194 | THR  |
| 2   | 2-A   | 226 | ASN  |
| 2   | 2-A   | 241 | SER  |
| 2   | 2-A   | 253 | THR  |
| 2   | 2-A   | 277 | SER  |
| 2   | 2-A   | 279 | GLU  |
| 2   | 2-A   | 287 | SER  |
| 2   | 2-A   | 291 | ILE  |
| 2   | 2-A   | 315 | CYS  |
| 2   | 2-A   | 322 | ASP  |
| 2   | 2-A   | 327 | ASP  |
| 2   | 2-A   | 340 | THR  |
| 2   | 2-A   | 349 | THR  |
| 2   | 2-A   | 361 | THR  |
| 2   | 2-A   | 376 | CYS  |
| 2   | 2-A   | 382 | THR  |
| 2   | 2-A   | 425 | MET  |
| 2   | 2-A   | 439 | SER  |
| 3   | 2-B   | 25  | SER  |
| 3   | 2-B   | 33  | THR  |
| 3   | 2-B   | 35  | SER  |
| 3   | 2-B   | 48  | ARG  |
| 3   | 2-B   | 67  | LEU  |
| 3   | 2-B   | 71  | GLU  |
| 3   | 2-B   | 76  | ASP  |
| 3   | 2-B   | 77  | SER  |
| 3   | 2-B   | 109 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 2-B   | 128 | SER  |
| 3   | 2-B   | 130 | ASP  |
| 3   | 2-B   | 133 | GLN  |
| 3   | 2-B   | 140 | SER  |
| 3   | 2-B   | 145 | THR  |
| 3   | 2-B   | 147 | SER  |
| 3   | 2-B   | 151 | THR  |
| 3   | 2-B   | 158 | ARG  |
| 3   | 2-B   | 163 | ASP  |
| 3   | 2-B   | 165 | ILE  |
| 3   | 2-B   | 166 | MET  |
| 3   | 2-B   | 168 | THR  |
| 3   | 2-B   | 170 | SER  |
| 3   | 2-B   | 174 | SER  |
| 3   | 2-B   | 179 | ASP  |
| 3   | 2-B   | 185 | TYR  |
| 3   | 2-B   | 205 | ASP  |
| 3   | 2-B   | 213 | CYS  |
| 3   | 2-B   | 216 | THR  |
| 3   | 2-B   | 220 | THR  |
| 3   | 2-B   | 221 | THR  |
| 3   | 2-B   | 223 | THR  |
| 3   | 2-B   | 234 | THR  |
| 3   | 2-B   | 236 | SER  |
| 3   | 2-B   | 239 | THR  |
| 3   | 2-B   | 240 | THR  |
| 3   | 2-B   | 265 | LEU  |
| 3   | 2-B   | 276 | THR  |
| 3   | 2-B   | 277 | SER  |
| 3   | 2-B   | 280 | SER  |
| 3   | 2-B   | 284 | ARG  |
| 3   | 2-B   | 287 | THR  |
| 3   | 2-B   | 292 | THR  |
| 3   | 2-B   | 309 | HIS  |
| 3   | 2-B   | 314 | THR  |
| 3   | 2-B   | 325 | MET  |
| 3   | 2-B   | 340 | SER  |
| 3   | 2-B   | 341 | SER  |
| 3   | 2-B   | 343 | PHE  |
| 3   | 2-B   | 344 | VAL  |
| 3   | 2-B   | 353 | THR  |
| 3   | 2-B   | 396 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 2-B   | 413 | MET  |
| 3   | 2-B   | 419 | THR  |
| 3   | 2-B   | 432 | TYR  |
| 1   | 3-C   | 66  | VAL  |
| 1   | 3-C   | 69  | ARG  |
| 1   | 3-C   | 70  | ILE  |
| 1   | 3-C   | 76  | SER  |
| 1   | 3-C   | 83  | ASP  |
| 1   | 3-C   | 87  | VAL  |
| 1   | 3-C   | 95  | LEU  |
| 1   | 3-C   | 119 | LYS  |
| 1   | 3-C   | 121 | THR  |
| 1   | 3-C   | 125 | ILE  |
| 1   | 3-C   | 129 | GLU  |
| 1   | 3-C   | 132 | GLN  |
| 1   | 3-C   | 136 | PHE  |
| 1   | 3-C   | 141 | LYS  |
| 1   | 3-C   | 147 | VAL  |
| 1   | 3-C   | 151 | GLN  |
| 1   | 3-C   | 157 | THR  |
| 1   | 3-C   | 168 | THR  |
| 1   | 3-C   | 175 | ASP  |
| 1   | 3-C   | 316 | LEU  |
| 1   | 3-C   | 317 | GLU  |
| 1   | 3-C   | 349 | ARG  |
| 1   | 3-C   | 351 | VAL  |
| 1   | 3-C   | 358 | LEU  |
| 1   | 3-C   | 359 | LYS  |
| 1   | 3-C   | 365 | GLN  |
| 1   | 3-C   | 379 | SER  |
| 1   | 3-C   | 385 | ILE  |
| 1   | 3-C   | 387 | ILE  |
| 1   | 3-C   | 388 | LEU  |
| 1   | 3-C   | 389 | HIS  |
| 1   | 3-C   | 390 | LEU  |
| 1   | 3-C   | 399 | LYS  |
| 1   | 3-C   | 400 | ILE  |
| 1   | 3-C   | 401 | SER  |
| 1   | 3-C   | 422 | ARG  |
| 1   | 3-C   | 432 | SER  |
| 1   | 3-C   | 433 | LEU  |
| 1   | 3-C   | 436 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 3-C   | 443 | LEU  |
| 1   | 3-C   | 446 | ASN  |
| 1   | 3-C   | 447 | GLN  |
| 1   | 3-C   | 458 | PHE  |
| 1   | 3-C   | 464 | THR  |
| 1   | 3-C   | 474 | ARG  |
| 1   | 3-C   | 477 | SER  |
| 1   | 3-C   | 482 | ASN  |
| 1   | 3-C   | 488 | SER  |
| 1   | 3-C   | 494 | LEU  |
| 2   | 3-A   | 28  | HIS  |
| 2   | 3-A   | 71  | GLU  |
| 2   | 3-A   | 76  | ASP  |
| 2   | 3-A   | 80  | THR  |
| 2   | 3-A   | 82  | THR  |
| 2   | 3-A   | 93  | ILE  |
| 2   | 3-A   | 97  | GLU  |
| 2   | 3-A   | 109 | THR  |
| 2   | 3-A   | 130 | THR  |
| 2   | 3-A   | 132 | LEU  |
| 2   | 3-A   | 136 | SER  |
| 2   | 3-A   | 140 | SER  |
| 2   | 3-A   | 150 | THR  |
| 2   | 3-A   | 169 | PHE  |
| 2   | 3-A   | 170 | SER  |
| 2   | 3-A   | 178 | SER  |
| 2   | 3-A   | 185 | TYR  |
| 2   | 3-A   | 189 | LEU  |
| 2   | 3-A   | 194 | THR  |
| 2   | 3-A   | 226 | ASN  |
| 2   | 3-A   | 241 | SER  |
| 2   | 3-A   | 253 | THR  |
| 2   | 3-A   | 277 | SER  |
| 2   | 3-A   | 279 | GLU  |
| 2   | 3-A   | 287 | SER  |
| 2   | 3-A   | 291 | ILE  |
| 2   | 3-A   | 315 | CYS  |
| 2   | 3-A   | 322 | ASP  |
| 2   | 3-A   | 327 | ASP  |
| 2   | 3-A   | 340 | THR  |
| 2   | 3-A   | 349 | THR  |
| 2   | 3-A   | 361 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 3-A   | 376 | CYS  |
| 2   | 3-A   | 382 | THR  |
| 2   | 3-A   | 425 | MET  |
| 2   | 3-A   | 439 | SER  |
| 3   | 3-B   | 25  | SER  |
| 3   | 3-B   | 33  | THR  |
| 3   | 3-B   | 35  | SER  |
| 3   | 3-B   | 48  | ARG  |
| 3   | 3-B   | 67  | LEU  |
| 3   | 3-B   | 71  | GLU  |
| 3   | 3-B   | 76  | ASP  |
| 3   | 3-B   | 77  | SER  |
| 3   | 3-B   | 109 | THR  |
| 3   | 3-B   | 128 | SER  |
| 3   | 3-B   | 130 | ASP  |
| 3   | 3-B   | 133 | GLN  |
| 3   | 3-B   | 140 | SER  |
| 3   | 3-B   | 145 | THR  |
| 3   | 3-B   | 147 | SER  |
| 3   | 3-B   | 151 | THR  |
| 3   | 3-B   | 158 | ARG  |
| 3   | 3-B   | 163 | ASP  |
| 3   | 3-B   | 165 | ILE  |
| 3   | 3-B   | 166 | MET  |
| 3   | 3-B   | 168 | THR  |
| 3   | 3-B   | 170 | SER  |
| 3   | 3-B   | 174 | SER  |
| 3   | 3-B   | 179 | ASP  |
| 3   | 3-B   | 185 | TYR  |
| 3   | 3-B   | 205 | ASP  |
| 3   | 3-B   | 213 | CYS  |
| 3   | 3-B   | 216 | THR  |
| 3   | 3-B   | 220 | THR  |
| 3   | 3-B   | 221 | THR  |
| 3   | 3-B   | 223 | THR  |
| 3   | 3-B   | 234 | THR  |
| 3   | 3-B   | 236 | SER  |
| 3   | 3-B   | 239 | THR  |
| 3   | 3-B   | 240 | THR  |
| 3   | 3-B   | 265 | LEU  |
| 3   | 3-B   | 276 | THR  |
| 3   | 3-B   | 277 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 3-B   | 280 | SER  |
| 3   | 3-B   | 284 | ARG  |
| 3   | 3-B   | 287 | THR  |
| 3   | 3-B   | 292 | THR  |
| 3   | 3-B   | 309 | HIS  |
| 3   | 3-B   | 314 | THR  |
| 3   | 3-B   | 325 | MET  |
| 3   | 3-B   | 340 | SER  |
| 3   | 3-B   | 341 | SER  |
| 3   | 3-B   | 343 | PHE  |
| 3   | 3-B   | 344 | VAL  |
| 3   | 3-B   | 353 | THR  |
| 3   | 3-B   | 396 | THR  |
| 3   | 3-B   | 413 | MET  |
| 3   | 3-B   | 419 | THR  |
| 3   | 3-B   | 432 | TYR  |
| 1   | 4-C   | 66  | VAL  |
| 1   | 4-C   | 69  | ARG  |
| 1   | 4-C   | 70  | ILE  |
| 1   | 4-C   | 76  | SER  |
| 1   | 4-C   | 83  | ASP  |
| 1   | 4-C   | 87  | VAL  |
| 1   | 4-C   | 95  | LEU  |
| 1   | 4-C   | 119 | LYS  |
| 1   | 4-C   | 121 | THR  |
| 1   | 4-C   | 125 | ILE  |
| 1   | 4-C   | 129 | GLU  |
| 1   | 4-C   | 132 | GLN  |
| 1   | 4-C   | 136 | PHE  |
| 1   | 4-C   | 141 | LYS  |
| 1   | 4-C   | 147 | VAL  |
| 1   | 4-C   | 151 | GLN  |
| 1   | 4-C   | 157 | THR  |
| 1   | 4-C   | 168 | THR  |
| 1   | 4-C   | 175 | ASP  |
| 1   | 4-C   | 316 | LEU  |
| 1   | 4-C   | 317 | GLU  |
| 1   | 4-C   | 349 | ARG  |
| 1   | 4-C   | 351 | VAL  |
| 1   | 4-C   | 358 | LEU  |
| 1   | 4-C   | 359 | LYS  |
| 1   | 4-C   | 365 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 4-C   | 379 | SER  |
| 1   | 4-C   | 385 | ILE  |
| 1   | 4-C   | 387 | ILE  |
| 1   | 4-C   | 388 | LEU  |
| 1   | 4-C   | 389 | HIS  |
| 1   | 4-C   | 390 | LEU  |
| 1   | 4-C   | 399 | LYS  |
| 1   | 4-C   | 400 | ILE  |
| 1   | 4-C   | 401 | SER  |
| 1   | 4-C   | 422 | ARG  |
| 1   | 4-C   | 432 | SER  |
| 1   | 4-C   | 433 | LEU  |
| 1   | 4-C   | 436 | LEU  |
| 1   | 4-C   | 443 | LEU  |
| 1   | 4-C   | 446 | ASN  |
| 1   | 4-C   | 447 | GLN  |
| 1   | 4-C   | 458 | PHE  |
| 1   | 4-C   | 464 | THR  |
| 1   | 4-C   | 474 | ARG  |
| 1   | 4-C   | 477 | SER  |
| 1   | 4-C   | 482 | ASN  |
| 1   | 4-C   | 488 | SER  |
| 1   | 4-C   | 494 | LEU  |
| 2   | 4-A   | 28  | HIS  |
| 2   | 4-A   | 71  | GLU  |
| 2   | 4-A   | 76  | ASP  |
| 2   | 4-A   | 80  | THR  |
| 2   | 4-A   | 82  | THR  |
| 2   | 4-A   | 93  | ILE  |
| 2   | 4-A   | 97  | GLU  |
| 2   | 4-A   | 109 | THR  |
| 2   | 4-A   | 130 | THR  |
| 2   | 4-A   | 132 | LEU  |
| 2   | 4-A   | 136 | SER  |
| 2   | 4-A   | 140 | SER  |
| 2   | 4-A   | 150 | THR  |
| 2   | 4-A   | 169 | PHE  |
| 2   | 4-A   | 170 | SER  |
| 2   | 4-A   | 178 | SER  |
| 2   | 4-A   | 185 | TYR  |
| 2   | 4-A   | 189 | LEU  |
| 2   | 4-A   | 194 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 4-A   | 226 | ASN  |
| 2   | 4-A   | 241 | SER  |
| 2   | 4-A   | 253 | THR  |
| 2   | 4-A   | 277 | SER  |
| 2   | 4-A   | 279 | GLU  |
| 2   | 4-A   | 287 | SER  |
| 2   | 4-A   | 291 | ILE  |
| 2   | 4-A   | 315 | CYS  |
| 2   | 4-A   | 322 | ASP  |
| 2   | 4-A   | 327 | ASP  |
| 2   | 4-A   | 340 | THR  |
| 2   | 4-A   | 349 | THR  |
| 2   | 4-A   | 361 | THR  |
| 2   | 4-A   | 376 | CYS  |
| 2   | 4-A   | 382 | THR  |
| 2   | 4-A   | 425 | MET  |
| 2   | 4-A   | 439 | SER  |
| 3   | 4-B   | 25  | SER  |
| 3   | 4-B   | 33  | THR  |
| 3   | 4-B   | 35  | SER  |
| 3   | 4-B   | 48  | ARG  |
| 3   | 4-B   | 67  | LEU  |
| 3   | 4-B   | 71  | GLU  |
| 3   | 4-B   | 76  | ASP  |
| 3   | 4-B   | 77  | SER  |
| 3   | 4-B   | 109 | THR  |
| 3   | 4-B   | 128 | SER  |
| 3   | 4-B   | 130 | ASP  |
| 3   | 4-B   | 133 | GLN  |
| 3   | 4-B   | 140 | SER  |
| 3   | 4-B   | 145 | THR  |
| 3   | 4-B   | 147 | SER  |
| 3   | 4-B   | 151 | THR  |
| 3   | 4-B   | 158 | ARG  |
| 3   | 4-B   | 163 | ASP  |
| 3   | 4-B   | 165 | ILE  |
| 3   | 4-B   | 166 | MET  |
| 3   | 4-B   | 168 | THR  |
| 3   | 4-B   | 170 | SER  |
| 3   | 4-B   | 174 | SER  |
| 3   | 4-B   | 179 | ASP  |
| 3   | 4-B   | 185 | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 4-B   | 205 | ASP  |
| 3   | 4-B   | 213 | CYS  |
| 3   | 4-B   | 216 | THR  |
| 3   | 4-B   | 220 | THR  |
| 3   | 4-B   | 221 | THR  |
| 3   | 4-B   | 223 | THR  |
| 3   | 4-B   | 234 | THR  |
| 3   | 4-B   | 236 | SER  |
| 3   | 4-B   | 239 | THR  |
| 3   | 4-B   | 240 | THR  |
| 3   | 4-B   | 265 | LEU  |
| 3   | 4-B   | 276 | THR  |
| 3   | 4-B   | 277 | SER  |
| 3   | 4-B   | 280 | SER  |
| 3   | 4-B   | 284 | ARG  |
| 3   | 4-B   | 287 | THR  |
| 3   | 4-B   | 292 | THR  |
| 3   | 4-B   | 309 | HIS  |
| 3   | 4-B   | 314 | THR  |
| 3   | 4-B   | 325 | MET  |
| 3   | 4-B   | 340 | SER  |
| 3   | 4-B   | 341 | SER  |
| 3   | 4-B   | 343 | PHE  |
| 3   | 4-B   | 344 | VAL  |
| 3   | 4-B   | 353 | THR  |
| 3   | 4-B   | 396 | THR  |
| 3   | 4-B   | 413 | MET  |
| 3   | 4-B   | 419 | THR  |
| 3   | 4-B   | 432 | TYR  |
| 1   | 5-C   | 66  | VAL  |
| 1   | 5-C   | 69  | ARG  |
| 1   | 5-C   | 70  | ILE  |
| 1   | 5-C   | 76  | SER  |
| 1   | 5-C   | 83  | ASP  |
| 1   | 5-C   | 87  | VAL  |
| 1   | 5-C   | 95  | LEU  |
| 1   | 5-C   | 119 | LYS  |
| 1   | 5-C   | 121 | THR  |
| 1   | 5-C   | 125 | ILE  |
| 1   | 5-C   | 129 | GLU  |
| 1   | 5-C   | 132 | GLN  |
| 1   | 5-C   | 136 | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 5-C   | 141 | LYS  |
| 1   | 5-C   | 147 | VAL  |
| 1   | 5-C   | 151 | GLN  |
| 1   | 5-C   | 157 | THR  |
| 1   | 5-C   | 168 | THR  |
| 1   | 5-C   | 175 | ASP  |
| 1   | 5-C   | 316 | LEU  |
| 1   | 5-C   | 317 | GLU  |
| 1   | 5-C   | 349 | ARG  |
| 1   | 5-C   | 351 | VAL  |
| 1   | 5-C   | 358 | LEU  |
| 1   | 5-C   | 359 | LYS  |
| 1   | 5-C   | 365 | GLN  |
| 1   | 5-C   | 379 | SER  |
| 1   | 5-C   | 385 | ILE  |
| 1   | 5-C   | 387 | ILE  |
| 1   | 5-C   | 388 | LEU  |
| 1   | 5-C   | 389 | HIS  |
| 1   | 5-C   | 390 | LEU  |
| 1   | 5-C   | 399 | LYS  |
| 1   | 5-C   | 400 | ILE  |
| 1   | 5-C   | 401 | SER  |
| 1   | 5-C   | 422 | ARG  |
| 1   | 5-C   | 432 | SER  |
| 1   | 5-C   | 433 | LEU  |
| 1   | 5-C   | 436 | LEU  |
| 1   | 5-C   | 443 | LEU  |
| 1   | 5-C   | 446 | ASN  |
| 1   | 5-C   | 447 | GLN  |
| 1   | 5-C   | 458 | PHE  |
| 1   | 5-C   | 464 | THR  |
| 1   | 5-C   | 474 | ARG  |
| 1   | 5-C   | 477 | SER  |
| 1   | 5-C   | 482 | ASN  |
| 1   | 5-C   | 488 | SER  |
| 1   | 5-C   | 494 | LEU  |
| 2   | 5-A   | 28  | HIS  |
| 2   | 5-A   | 71  | GLU  |
| 2   | 5-A   | 76  | ASP  |
| 2   | 5-A   | 80  | THR  |
| 2   | 5-A   | 82  | THR  |
| 2   | 5-A   | 93  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 5-A   | 97  | GLU  |
| 2   | 5-A   | 109 | THR  |
| 2   | 5-A   | 130 | THR  |
| 2   | 5-A   | 132 | LEU  |
| 2   | 5-A   | 136 | SER  |
| 2   | 5-A   | 140 | SER  |
| 2   | 5-A   | 150 | THR  |
| 2   | 5-A   | 169 | PHE  |
| 2   | 5-A   | 170 | SER  |
| 2   | 5-A   | 178 | SER  |
| 2   | 5-A   | 185 | TYR  |
| 2   | 5-A   | 189 | LEU  |
| 2   | 5-A   | 194 | THR  |
| 2   | 5-A   | 226 | ASN  |
| 2   | 5-A   | 241 | SER  |
| 2   | 5-A   | 253 | THR  |
| 2   | 5-A   | 277 | SER  |
| 2   | 5-A   | 279 | GLU  |
| 2   | 5-A   | 287 | SER  |
| 2   | 5-A   | 291 | ILE  |
| 2   | 5-A   | 315 | CYS  |
| 2   | 5-A   | 322 | ASP  |
| 2   | 5-A   | 327 | ASP  |
| 2   | 5-A   | 340 | THR  |
| 2   | 5-A   | 349 | THR  |
| 2   | 5-A   | 361 | THR  |
| 2   | 5-A   | 376 | CYS  |
| 2   | 5-A   | 382 | THR  |
| 2   | 5-A   | 425 | MET  |
| 2   | 5-A   | 439 | SER  |
| 3   | 5-B   | 25  | SER  |
| 3   | 5-B   | 33  | THR  |
| 3   | 5-B   | 35  | SER  |
| 3   | 5-B   | 48  | ARG  |
| 3   | 5-B   | 67  | LEU  |
| 3   | 5-B   | 71  | GLU  |
| 3   | 5-B   | 76  | ASP  |
| 3   | 5-B   | 77  | SER  |
| 3   | 5-B   | 109 | THR  |
| 3   | 5-B   | 128 | SER  |
| 3   | 5-B   | 130 | ASP  |
| 3   | 5-B   | 133 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 5-B   | 140 | SER  |
| 3   | 5-B   | 145 | THR  |
| 3   | 5-B   | 147 | SER  |
| 3   | 5-B   | 151 | THR  |
| 3   | 5-B   | 158 | ARG  |
| 3   | 5-B   | 163 | ASP  |
| 3   | 5-B   | 165 | ILE  |
| 3   | 5-B   | 166 | MET  |
| 3   | 5-B   | 168 | THR  |
| 3   | 5-B   | 170 | SER  |
| 3   | 5-B   | 174 | SER  |
| 3   | 5-B   | 179 | ASP  |
| 3   | 5-B   | 185 | TYR  |
| 3   | 5-B   | 205 | ASP  |
| 3   | 5-B   | 213 | CYS  |
| 3   | 5-B   | 216 | THR  |
| 3   | 5-B   | 220 | THR  |
| 3   | 5-B   | 221 | THR  |
| 3   | 5-B   | 223 | THR  |
| 3   | 5-B   | 234 | THR  |
| 3   | 5-B   | 236 | SER  |
| 3   | 5-B   | 239 | THR  |
| 3   | 5-B   | 240 | THR  |
| 3   | 5-B   | 265 | LEU  |
| 3   | 5-B   | 276 | THR  |
| 3   | 5-B   | 277 | SER  |
| 3   | 5-B   | 280 | SER  |
| 3   | 5-B   | 284 | ARG  |
| 3   | 5-B   | 287 | THR  |
| 3   | 5-B   | 292 | THR  |
| 3   | 5-B   | 309 | HIS  |
| 3   | 5-B   | 314 | THR  |
| 3   | 5-B   | 325 | MET  |
| 3   | 5-B   | 340 | SER  |
| 3   | 5-B   | 341 | SER  |
| 3   | 5-B   | 343 | PHE  |
| 3   | 5-B   | 344 | VAL  |
| 3   | 5-B   | 353 | THR  |
| 3   | 5-B   | 396 | THR  |
| 3   | 5-B   | 413 | MET  |
| 3   | 5-B   | 419 | THR  |
| 3   | 5-B   | 432 | TYR  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (116) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 1-C   | 118 | HIS  |
| 1   | 1-C   | 132 | GLN  |
| 1   | 1-C   | 151 | GLN  |
| 1   | 1-C   | 152 | ASN  |
| 1   | 1-C   | 170 | GLN  |
| 1   | 1-C   | 309 | ASN  |
| 1   | 1-C   | 344 | ASN  |
| 1   | 1-C   | 430 | ASN  |
| 1   | 1-C   | 495 | HIS  |
| 2   | 1-A   | 192 | HIS  |
| 2   | 1-A   | 206 | ASN  |
| 2   | 1-A   | 233 | GLN  |
| 2   | 1-A   | 256 | GLN  |
| 2   | 1-A   | 283 | HIS  |
| 3   | 1-B   | 11  | GLN  |
| 3   | 1-B   | 167 | ASN  |
| 3   | 1-B   | 193 | GLN  |
| 3   | 1-B   | 300 | ASN  |
| 3   | 1-B   | 337 | ASN  |
| 3   | 1-B   | 380 | ASN  |
| 3   | 1-B   | 385 | GLN  |
| 3   | 1-B   | 424 | ASN  |
| 3   | 1-B   | 433 | GLN  |
| 1   | 2-C   | 118 | HIS  |
| 1   | 2-C   | 132 | GLN  |
| 1   | 2-C   | 151 | GLN  |
| 1   | 2-C   | 152 | ASN  |
| 1   | 2-C   | 162 | ASN  |
| 1   | 2-C   | 170 | GLN  |
| 1   | 2-C   | 309 | ASN  |
| 1   | 2-C   | 326 | GLN  |
| 1   | 2-C   | 449 | ASN  |
| 1   | 2-C   | 495 | HIS  |
| 2   | 2-A   | 192 | HIS  |
| 2   | 2-A   | 206 | ASN  |
| 2   | 2-A   | 233 | GLN  |
| 2   | 2-A   | 256 | GLN  |
| 2   | 2-A   | 283 | HIS  |
| 3   | 2-B   | 11  | GLN  |
| 3   | 2-B   | 167 | ASN  |
| 3   | 2-B   | 193 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 2-B   | 300 | ASN  |
| 3   | 2-B   | 337 | ASN  |
| 3   | 2-B   | 380 | ASN  |
| 3   | 2-B   | 385 | GLN  |
| 3   | 2-B   | 424 | ASN  |
| 3   | 2-B   | 433 | GLN  |
| 1   | 3-C   | 118 | HIS  |
| 1   | 3-C   | 132 | GLN  |
| 1   | 3-C   | 151 | GLN  |
| 1   | 3-C   | 152 | ASN  |
| 1   | 3-C   | 170 | GLN  |
| 1   | 3-C   | 309 | ASN  |
| 1   | 3-C   | 344 | ASN  |
| 1   | 3-C   | 449 | ASN  |
| 1   | 3-C   | 495 | HIS  |
| 2   | 3-A   | 192 | HIS  |
| 2   | 3-A   | 206 | ASN  |
| 2   | 3-A   | 233 | GLN  |
| 2   | 3-A   | 256 | GLN  |
| 2   | 3-A   | 283 | HIS  |
| 3   | 3-B   | 11  | GLN  |
| 3   | 3-B   | 167 | ASN  |
| 3   | 3-B   | 193 | GLN  |
| 3   | 3-B   | 300 | ASN  |
| 3   | 3-B   | 337 | ASN  |
| 3   | 3-B   | 380 | ASN  |
| 3   | 3-B   | 385 | GLN  |
| 3   | 3-B   | 424 | ASN  |
| 3   | 3-B   | 433 | GLN  |
| 1   | 4-C   | 118 | HIS  |
| 1   | 4-C   | 132 | GLN  |
| 1   | 4-C   | 151 | GLN  |
| 1   | 4-C   | 152 | ASN  |
| 1   | 4-C   | 170 | GLN  |
| 1   | 4-C   | 309 | ASN  |
| 1   | 4-C   | 344 | ASN  |
| 1   | 4-C   | 449 | ASN  |
| 1   | 4-C   | 495 | HIS  |
| 2   | 4-A   | 192 | HIS  |
| 2   | 4-A   | 206 | ASN  |
| 2   | 4-A   | 233 | GLN  |
| 2   | 4-A   | 256 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 4-A   | 283 | HIS  |
| 3   | 4-B   | 11  | GLN  |
| 3   | 4-B   | 167 | ASN  |
| 3   | 4-B   | 193 | GLN  |
| 3   | 4-B   | 300 | ASN  |
| 3   | 4-B   | 337 | ASN  |
| 3   | 4-B   | 380 | ASN  |
| 3   | 4-B   | 385 | GLN  |
| 3   | 4-B   | 424 | ASN  |
| 3   | 4-B   | 433 | GLN  |
| 1   | 5-C   | 118 | HIS  |
| 1   | 5-C   | 132 | GLN  |
| 1   | 5-C   | 151 | GLN  |
| 1   | 5-C   | 152 | ASN  |
| 1   | 5-C   | 170 | GLN  |
| 1   | 5-C   | 344 | ASN  |
| 1   | 5-C   | 430 | ASN  |
| 1   | 5-C   | 449 | ASN  |
| 1   | 5-C   | 495 | HIS  |
| 2   | 5-A   | 192 | HIS  |
| 2   | 5-A   | 206 | ASN  |
| 2   | 5-A   | 233 | GLN  |
| 2   | 5-A   | 256 | GLN  |
| 2   | 5-A   | 283 | HIS  |
| 3   | 5-B   | 11  | GLN  |
| 3   | 5-B   | 167 | ASN  |
| 3   | 5-B   | 193 | GLN  |
| 3   | 5-B   | 300 | ASN  |
| 3   | 5-B   | 337 | ASN  |
| 3   | 5-B   | 380 | ASN  |
| 3   | 5-B   | 385 | GLN  |
| 3   | 5-B   | 424 | ASN  |
| 3   | 5-B   | 433 | GLN  |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 30 ligands modelled in this entry, 10 are monoatomic - leaving 20 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 |
| 6   | GTP  | 5-A   | 500 | 4    | 26,34,34     | 1.33 | 4 (15%)  | 32,54,54    | 1.02 | 2 (6%)   |
| 5   | ANP  | 2-C   | 602 | 4    | 29,33,33     | 2.09 | 9 (31%)  | 31,52,52    | 3.42 | 15 (48%) |
| 8   | TA1  | 4-B   | 601 | -    | 68,68,68     | 2.01 | 19 (27%) | 105,105,105 | 1.39 | 11 (10%) |
| 7   | GDP  | 1-B   | 600 | -    | 24,30,30     | 2.58 | 9 (37%)  | 30,47,47    | 2.92 | 8 (26%)  |
| 7   | GDP  | 4-B   | 600 | -    | 24,30,30     | 2.58 | 9 (37%)  | 30,47,47    | 2.92 | 8 (26%)  |
| 6   | GTP  | 4-A   | 500 | 4    | 26,34,34     | 1.33 | 4 (15%)  | 32,54,54    | 1.02 | 2 (6%)   |
| 5   | ANP  | 4-C   | 602 | 4    | 29,33,33     | 2.10 | 9 (31%)  | 31,52,52    | 3.42 | 15 (48%) |
| 6   | GTP  | 1-A   | 500 | 4    | 26,34,34     | 1.33 | 4 (15%)  | 32,54,54    | 1.02 | 2 (6%)   |
| 8   | TA1  | 2-B   | 601 | -    | 68,68,68     | 2.01 | 19 (27%) | 105,105,105 | 1.39 | 11 (10%) |
| 5   | ANP  | 3-C   | 602 | 4    | 29,33,33     | 2.09 | 8 (27%)  | 31,52,52    | 3.42 | 15 (48%) |
| 6   | GTP  | 3-A   | 500 | 4    | 26,34,34     | 1.33 | 4 (15%)  | 32,54,54    | 1.02 | 2 (6%)   |
| 8   | TA1  | 1-B   | 601 | -    | 68,68,68     | 2.01 | 19 (27%) | 105,105,105 | 1.39 | 11 (10%) |
| 8   | TA1  | 3-B   | 601 | -    | 68,68,68     | 2.01 | 19 (27%) | 105,105,105 | 1.39 | 11 (10%) |
| 7   | GDP  | 3-B   | 600 | -    | 24,30,30     | 2.58 | 9 (37%)  | 30,47,47    | 2.92 | 8 (26%)  |
| 8   | TA1  | 5-B   | 601 | -    | 68,68,68     | 2.01 | 19 (27%) | 105,105,105 | 1.39 | 11 (10%) |
| 7   | GDP  | 2-B   | 600 | -    | 24,30,30     | 2.58 | 9 (37%)  | 30,47,47    | 2.92 | 8 (26%)  |
| 6   | GTP  | 2-A   | 500 | 4    | 26,34,34     | 1.33 | 4 (15%)  | 32,54,54    | 1.02 | 2 (6%)   |
| 7   | GDP  | 5-B   | 600 | -    | 24,30,30     | 2.58 | 9 (37%)  | 30,47,47    | 2.92 | 8 (26%)  |
| 5   | ANP  | 5-C   | 602 | 4    | 29,33,33     | 2.10 | 8 (27%)  | 31,52,52    | 3.42 | 15 (48%) |
| 5   | ANP  | 1-C   | 602 | 4    | 29,33,33     | 2.10 | 9 (31%)  | 31,52,52    | 3.42 | 15 (48%) |

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   |
|-----|------|-------|-----|------|---------|--------------|---------|
| 6   | GTP  | 5-A   | 500 | 4    | -       | 3/18/38/38   | 0/3/3/3 |
| 5   | ANP  | 2-C   | 602 | 4    | -       | 9/14/38/38   | 0/3/3/3 |
| 8   | TA1  | 4-B   | 601 | -    | -       | 9/41/127/127 | 0/7/7/7 |
| 7   | GDP  | 1-B   | 600 | -    | -       | 4/12/32/32   | 0/3/3/3 |
| 7   | GDP  | 4-B   | 600 | -    | -       | 4/12/32/32   | 0/3/3/3 |
| 6   | GTP  | 4-A   | 500 | 4    | -       | 3/18/38/38   | 0/3/3/3 |
| 5   | ANP  | 4-C   | 602 | 4    | -       | 9/14/38/38   | 0/3/3/3 |
| 6   | GTP  | 1-A   | 500 | 4    | -       | 3/18/38/38   | 0/3/3/3 |
| 8   | TA1  | 2-B   | 601 | -    | -       | 9/41/127/127 | 0/7/7/7 |
| 5   | ANP  | 3-C   | 602 | 4    | -       | 9/14/38/38   | 0/3/3/3 |
| 6   | GTP  | 3-A   | 500 | 4    | -       | 3/18/38/38   | 0/3/3/3 |
| 8   | TA1  | 1-B   | 601 | -    | -       | 9/41/127/127 | 0/7/7/7 |
| 8   | TA1  | 3-B   | 601 | -    | -       | 9/41/127/127 | 0/7/7/7 |
| 7   | GDP  | 3-B   | 600 | -    | -       | 4/12/32/32   | 0/3/3/3 |
| 8   | TA1  | 5-B   | 601 | -    | -       | 9/41/127/127 | 0/7/7/7 |
| 7   | GDP  | 2-B   | 600 | -    | -       | 4/12/32/32   | 0/3/3/3 |
| 6   | GTP  | 2-A   | 500 | 4    | -       | 3/18/38/38   | 0/3/3/3 |
| 7   | GDP  | 5-B   | 600 | -    | -       | 4/12/32/32   | 0/3/3/3 |
| 5   | ANP  | 5-C   | 602 | 4    | -       | 9/14/38/38   | 0/3/3/3 |
| 5   | ANP  | 1-C   | 602 | 4    | -       | 9/14/38/38   | 0/3/3/3 |

All (203) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 5   | 4-C   | 602 | ANP  | PB-O2B  | -6.23 | 1.40        | 1.56     |
| 5   | 2-C   | 602 | ANP  | PB-O2B  | -6.21 | 1.40        | 1.56     |
| 5   | 5-C   | 602 | ANP  | PB-O2B  | -6.21 | 1.40        | 1.56     |
| 5   | 1-C   | 602 | ANP  | PB-O2B  | -6.19 | 1.40        | 1.56     |
| 7   | 1-B   | 600 | GDP  | O4'-C1' | 6.18  | 1.49        | 1.41     |
| 7   | 2-B   | 600 | GDP  | O4'-C1' | 6.18  | 1.49        | 1.41     |
| 7   | 3-B   | 600 | GDP  | O4'-C1' | 6.18  | 1.49        | 1.41     |
| 7   | 4-B   | 600 | GDP  | O4'-C1' | 6.18  | 1.49        | 1.41     |
| 7   | 5-B   | 600 | GDP  | O4'-C1' | 6.18  | 1.49        | 1.41     |
| 5   | 3-C   | 602 | ANP  | PB-O2B  | -6.15 | 1.40        | 1.56     |
| 7   | 1-B   | 600 | GDP  | O6-C6   | 5.66  | 1.34        | 1.23     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 7   | 2-B   | 600 | GDP  | O6-C6   | 5.66  | 1.34        | 1.23     |
| 7   | 3-B   | 600 | GDP  | O6-C6   | 5.66  | 1.34        | 1.23     |
| 7   | 4-B   | 600 | GDP  | O6-C6   | 5.66  | 1.34        | 1.23     |
| 7   | 5-B   | 600 | GDP  | O6-C6   | 5.66  | 1.34        | 1.23     |
| 8   | 1-B   | 601 | TA1  | C06-C05 | 5.27  | 1.50        | 1.38     |
| 8   | 2-B   | 601 | TA1  | C06-C05 | 5.27  | 1.50        | 1.38     |
| 8   | 3-B   | 601 | TA1  | C06-C05 | 5.27  | 1.50        | 1.38     |
| 8   | 4-B   | 601 | TA1  | C06-C05 | 5.27  | 1.50        | 1.38     |
| 8   | 5-B   | 601 | TA1  | C06-C05 | 5.27  | 1.50        | 1.38     |
| 8   | 1-B   | 601 | TA1  | C18-C10 | 5.11  | 1.69        | 1.57     |
| 8   | 2-B   | 601 | TA1  | C18-C10 | 5.11  | 1.69        | 1.57     |
| 8   | 3-B   | 601 | TA1  | C18-C10 | 5.11  | 1.69        | 1.57     |
| 8   | 4-B   | 601 | TA1  | C18-C10 | 5.11  | 1.69        | 1.57     |
| 8   | 5-B   | 601 | TA1  | C18-C10 | 5.11  | 1.69        | 1.57     |
| 5   | 1-C   | 602 | ANP  | PB-O3A  | 5.00  | 1.65        | 1.59     |
| 5   | 4-C   | 602 | ANP  | PB-O3A  | 4.96  | 1.65        | 1.59     |
| 5   | 5-C   | 602 | ANP  | PB-O3A  | 4.93  | 1.65        | 1.59     |
| 5   | 2-C   | 602 | ANP  | PB-O3A  | 4.91  | 1.65        | 1.59     |
| 5   | 3-C   | 602 | ANP  | PB-O3A  | 4.88  | 1.65        | 1.59     |
| 7   | 1-B   | 600 | GDP  | C2-N1   | 4.64  | 1.49        | 1.37     |
| 7   | 2-B   | 600 | GDP  | C2-N1   | 4.64  | 1.49        | 1.37     |
| 7   | 3-B   | 600 | GDP  | C2-N1   | 4.64  | 1.49        | 1.37     |
| 7   | 4-B   | 600 | GDP  | C2-N1   | 4.64  | 1.49        | 1.37     |
| 7   | 5-B   | 600 | GDP  | C2-N1   | 4.64  | 1.49        | 1.37     |
| 8   | 1-B   | 601 | TA1  | C08-C07 | -4.63 | 1.25        | 1.38     |
| 8   | 2-B   | 601 | TA1  | C08-C07 | -4.63 | 1.25        | 1.38     |
| 8   | 3-B   | 601 | TA1  | C08-C07 | -4.63 | 1.25        | 1.38     |
| 8   | 4-B   | 601 | TA1  | C08-C07 | -4.63 | 1.25        | 1.38     |
| 8   | 5-B   | 601 | TA1  | C08-C07 | -4.63 | 1.25        | 1.38     |
| 8   | 1-B   | 601 | TA1  | C05-C04 | 4.33  | 1.46        | 1.39     |
| 8   | 2-B   | 601 | TA1  | C05-C04 | 4.33  | 1.46        | 1.39     |
| 8   | 3-B   | 601 | TA1  | C05-C04 | 4.33  | 1.46        | 1.39     |
| 8   | 4-B   | 601 | TA1  | C05-C04 | 4.33  | 1.46        | 1.39     |
| 8   | 5-B   | 601 | TA1  | C05-C04 | 4.33  | 1.46        | 1.39     |
| 8   | 1-B   | 601 | TA1  | C45-C24 | 3.99  | 1.61        | 1.54     |
| 8   | 2-B   | 601 | TA1  | C45-C24 | 3.99  | 1.61        | 1.54     |
| 8   | 3-B   | 601 | TA1  | C45-C24 | 3.99  | 1.61        | 1.54     |
| 8   | 4-B   | 601 | TA1  | C45-C24 | 3.99  | 1.61        | 1.54     |
| 8   | 5-B   | 601 | TA1  | C45-C24 | 3.99  | 1.61        | 1.54     |
| 5   | 5-C   | 602 | ANP  | PG-O2G  | -3.77 | 1.46        | 1.56     |
| 5   | 1-C   | 602 | ANP  | PG-O2G  | -3.76 | 1.46        | 1.56     |
| 7   | 1-B   | 600 | GDP  | PB-O2B  | -3.76 | 1.40        | 1.54     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 7   | 2-B   | 600 | GDP  | PB-O2B  | -3.76 | 1.40        | 1.54     |
| 7   | 3-B   | 600 | GDP  | PB-O2B  | -3.76 | 1.40        | 1.54     |
| 7   | 4-B   | 600 | GDP  | PB-O2B  | -3.76 | 1.40        | 1.54     |
| 7   | 5-B   | 600 | GDP  | PB-O2B  | -3.76 | 1.40        | 1.54     |
| 5   | 2-C   | 602 | ANP  | PG-O2G  | -3.74 | 1.46        | 1.56     |
| 5   | 4-C   | 602 | ANP  | PG-O2G  | -3.74 | 1.46        | 1.56     |
| 5   | 3-C   | 602 | ANP  | PG-O2G  | -3.74 | 1.46        | 1.56     |
| 6   | 1-A   | 500 | GTP  | C5-C6   | -3.72 | 1.39        | 1.47     |
| 6   | 2-A   | 500 | GTP  | C5-C6   | -3.72 | 1.39        | 1.47     |
| 6   | 3-A   | 500 | GTP  | C5-C6   | -3.72 | 1.39        | 1.47     |
| 6   | 4-A   | 500 | GTP  | C5-C6   | -3.72 | 1.39        | 1.47     |
| 6   | 5-A   | 500 | GTP  | C5-C6   | -3.72 | 1.39        | 1.47     |
| 8   | 1-B   | 601 | TA1  | O02-C03 | 3.55  | 1.41        | 1.34     |
| 8   | 2-B   | 601 | TA1  | O02-C03 | 3.55  | 1.41        | 1.34     |
| 8   | 3-B   | 601 | TA1  | O02-C03 | 3.55  | 1.41        | 1.34     |
| 8   | 4-B   | 601 | TA1  | O02-C03 | 3.55  | 1.41        | 1.34     |
| 8   | 5-B   | 601 | TA1  | O02-C03 | 3.55  | 1.41        | 1.34     |
| 7   | 1-B   | 600 | GDP  | C8-N7   | 3.50  | 1.41        | 1.35     |
| 7   | 2-B   | 600 | GDP  | C8-N7   | 3.50  | 1.41        | 1.35     |
| 7   | 3-B   | 600 | GDP  | C8-N7   | 3.50  | 1.41        | 1.35     |
| 7   | 4-B   | 600 | GDP  | C8-N7   | 3.50  | 1.41        | 1.35     |
| 7   | 5-B   | 600 | GDP  | C8-N7   | 3.50  | 1.41        | 1.35     |
| 8   | 1-B   | 601 | TA1  | C36-C31 | 3.41  | 1.45        | 1.39     |
| 8   | 2-B   | 601 | TA1  | C36-C31 | 3.41  | 1.45        | 1.39     |
| 8   | 3-B   | 601 | TA1  | C36-C31 | 3.41  | 1.45        | 1.39     |
| 8   | 4-B   | 601 | TA1  | C36-C31 | 3.41  | 1.45        | 1.39     |
| 8   | 5-B   | 601 | TA1  | C36-C31 | 3.41  | 1.45        | 1.39     |
| 8   | 1-B   | 601 | TA1  | C25-C24 | 3.24  | 1.39        | 1.34     |
| 8   | 2-B   | 601 | TA1  | C25-C24 | 3.24  | 1.39        | 1.34     |
| 8   | 3-B   | 601 | TA1  | C25-C24 | 3.24  | 1.39        | 1.34     |
| 8   | 4-B   | 601 | TA1  | C25-C24 | 3.24  | 1.39        | 1.34     |
| 8   | 5-B   | 601 | TA1  | C25-C24 | 3.24  | 1.39        | 1.34     |
| 8   | 1-B   | 601 | TA1  | C46-C45 | 3.14  | 1.60        | 1.53     |
| 8   | 2-B   | 601 | TA1  | C46-C45 | 3.14  | 1.60        | 1.53     |
| 8   | 3-B   | 601 | TA1  | C46-C45 | 3.14  | 1.60        | 1.53     |
| 8   | 4-B   | 601 | TA1  | C46-C45 | 3.14  | 1.60        | 1.53     |
| 8   | 5-B   | 601 | TA1  | C46-C45 | 3.14  | 1.60        | 1.53     |
| 8   | 1-B   | 601 | TA1  | C43-C01 | 3.12  | 1.61        | 1.54     |
| 8   | 2-B   | 601 | TA1  | C43-C01 | 3.12  | 1.61        | 1.54     |
| 8   | 3-B   | 601 | TA1  | C43-C01 | 3.12  | 1.61        | 1.54     |
| 8   | 4-B   | 601 | TA1  | C43-C01 | 3.12  | 1.61        | 1.54     |
| 8   | 5-B   | 601 | TA1  | C43-C01 | 3.12  | 1.61        | 1.54     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | 1-B   | 601 | TA1  | C11-C10 | 2.98  | 1.61        | 1.54     |
| 8   | 2-B   | 601 | TA1  | C11-C10 | 2.98  | 1.61        | 1.54     |
| 8   | 3-B   | 601 | TA1  | C11-C10 | 2.98  | 1.61        | 1.54     |
| 8   | 4-B   | 601 | TA1  | C11-C10 | 2.98  | 1.61        | 1.54     |
| 8   | 5-B   | 601 | TA1  | C11-C10 | 2.98  | 1.61        | 1.54     |
| 7   | 1-B   | 600 | GDP  | C5-C6   | -2.84 | 1.41        | 1.47     |
| 7   | 2-B   | 600 | GDP  | C5-C6   | -2.84 | 1.41        | 1.47     |
| 7   | 3-B   | 600 | GDP  | C5-C6   | -2.84 | 1.41        | 1.47     |
| 7   | 4-B   | 600 | GDP  | C5-C6   | -2.84 | 1.41        | 1.47     |
| 7   | 5-B   | 600 | GDP  | C5-C6   | -2.84 | 1.41        | 1.47     |
| 5   | 3-C   | 602 | ANP  | C2-N1   | 2.79  | 1.39        | 1.33     |
| 5   | 3-C   | 602 | ANP  | PG-O1G  | 2.76  | 1.50        | 1.46     |
| 5   | 5-C   | 602 | ANP  | PG-O1G  | 2.76  | 1.50        | 1.46     |
| 5   | 5-C   | 602 | ANP  | C2-N1   | 2.74  | 1.39        | 1.33     |
| 5   | 4-C   | 602 | ANP  | PG-O1G  | 2.74  | 1.50        | 1.46     |
| 5   | 1-C   | 602 | ANP  | C2-N1   | 2.73  | 1.39        | 1.33     |
| 5   | 2-C   | 602 | ANP  | PG-O1G  | 2.73  | 1.50        | 1.46     |
| 5   | 4-C   | 602 | ANP  | C2-N1   | 2.71  | 1.39        | 1.33     |
| 8   | 1-B   | 601 | TA1  | C43-C26 | 2.71  | 1.58        | 1.52     |
| 8   | 2-B   | 601 | TA1  | C43-C26 | 2.71  | 1.58        | 1.52     |
| 8   | 3-B   | 601 | TA1  | C43-C26 | 2.71  | 1.58        | 1.52     |
| 8   | 4-B   | 601 | TA1  | C43-C26 | 2.71  | 1.58        | 1.52     |
| 8   | 5-B   | 601 | TA1  | C43-C26 | 2.71  | 1.58        | 1.52     |
| 5   | 1-C   | 602 | ANP  | PG-O1G  | 2.70  | 1.50        | 1.46     |
| 5   | 2-C   | 602 | ANP  | C2-N1   | 2.70  | 1.38        | 1.33     |
| 6   | 1-A   | 500 | GTP  | C6-N1   | 2.61  | 1.41        | 1.37     |
| 6   | 2-A   | 500 | GTP  | C6-N1   | 2.61  | 1.41        | 1.37     |
| 6   | 3-A   | 500 | GTP  | C6-N1   | 2.61  | 1.41        | 1.37     |
| 6   | 4-A   | 500 | GTP  | C6-N1   | 2.61  | 1.41        | 1.37     |
| 6   | 5-A   | 500 | GTP  | C6-N1   | 2.61  | 1.41        | 1.37     |
| 8   | 1-B   | 601 | TA1  | C26-C25 | 2.48  | 1.56        | 1.51     |
| 8   | 2-B   | 601 | TA1  | C26-C25 | 2.48  | 1.56        | 1.51     |
| 8   | 3-B   | 601 | TA1  | C26-C25 | 2.48  | 1.56        | 1.51     |
| 8   | 4-B   | 601 | TA1  | C26-C25 | 2.48  | 1.56        | 1.51     |
| 8   | 5-B   | 601 | TA1  | C26-C25 | 2.48  | 1.56        | 1.51     |
| 5   | 1-C   | 602 | ANP  | PG-O3G  | -2.43 | 1.50        | 1.56     |
| 7   | 1-B   | 600 | GDP  | C2-N3   | -2.41 | 1.27        | 1.33     |
| 7   | 2-B   | 600 | GDP  | C2-N3   | -2.41 | 1.27        | 1.33     |
| 7   | 3-B   | 600 | GDP  | C2-N3   | -2.41 | 1.27        | 1.33     |
| 7   | 4-B   | 600 | GDP  | C2-N3   | -2.41 | 1.27        | 1.33     |
| 7   | 5-B   | 600 | GDP  | C2-N3   | -2.41 | 1.27        | 1.33     |
| 5   | 3-C   | 602 | ANP  | PG-O3G  | -2.41 | 1.50        | 1.56     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 5   | 2-C   | 602 | ANP  | PG-O3G  | -2.41 | 1.50        | 1.56     |
| 8   | 1-B   | 601 | TA1  | C18-C20 | 2.41  | 1.62        | 1.55     |
| 8   | 2-B   | 601 | TA1  | C18-C20 | 2.41  | 1.62        | 1.55     |
| 8   | 3-B   | 601 | TA1  | C18-C20 | 2.41  | 1.62        | 1.55     |
| 8   | 4-B   | 601 | TA1  | C18-C20 | 2.41  | 1.62        | 1.55     |
| 8   | 5-B   | 601 | TA1  | C18-C20 | 2.41  | 1.62        | 1.55     |
| 5   | 5-C   | 602 | ANP  | PG-O3G  | -2.40 | 1.50        | 1.56     |
| 5   | 4-C   | 602 | ANP  | PG-O3G  | -2.40 | 1.50        | 1.56     |
| 7   | 1-B   | 600 | GDP  | PB-O3B  | 2.38  | 1.64        | 1.54     |
| 7   | 2-B   | 600 | GDP  | PB-O3B  | 2.38  | 1.64        | 1.54     |
| 7   | 3-B   | 600 | GDP  | PB-O3B  | 2.38  | 1.64        | 1.54     |
| 7   | 4-B   | 600 | GDP  | PB-O3B  | 2.38  | 1.64        | 1.54     |
| 7   | 5-B   | 600 | GDP  | PB-O3B  | 2.38  | 1.64        | 1.54     |
| 6   | 1-A   | 500 | GTP  | C8-N7   | -2.36 | 1.31        | 1.35     |
| 6   | 2-A   | 500 | GTP  | C8-N7   | -2.36 | 1.31        | 1.35     |
| 6   | 3-A   | 500 | GTP  | C8-N7   | -2.36 | 1.31        | 1.35     |
| 6   | 4-A   | 500 | GTP  | C8-N7   | -2.36 | 1.31        | 1.35     |
| 6   | 5-A   | 500 | GTP  | C8-N7   | -2.36 | 1.31        | 1.35     |
| 8   | 1-B   | 601 | TA1  | C04-C03 | -2.35 | 1.44        | 1.50     |
| 8   | 2-B   | 601 | TA1  | C04-C03 | -2.35 | 1.44        | 1.50     |
| 8   | 3-B   | 601 | TA1  | C04-C03 | -2.35 | 1.44        | 1.50     |
| 8   | 4-B   | 601 | TA1  | C04-C03 | -2.35 | 1.44        | 1.50     |
| 8   | 5-B   | 601 | TA1  | C04-C03 | -2.35 | 1.44        | 1.50     |
| 8   | 1-B   | 601 | TA1  | C01-C45 | 2.33  | 1.66        | 1.56     |
| 8   | 2-B   | 601 | TA1  | C01-C45 | 2.33  | 1.66        | 1.56     |
| 8   | 3-B   | 601 | TA1  | C01-C45 | 2.33  | 1.66        | 1.56     |
| 8   | 4-B   | 601 | TA1  | C01-C45 | 2.33  | 1.66        | 1.56     |
| 8   | 5-B   | 601 | TA1  | C01-C45 | 2.33  | 1.66        | 1.56     |
| 5   | 1-C   | 602 | ANP  | C5'-C4' | 2.33  | 1.58        | 1.51     |
| 5   | 3-C   | 602 | ANP  | C5'-C4' | 2.30  | 1.58        | 1.51     |
| 5   | 4-C   | 602 | ANP  | C5'-C4' | 2.29  | 1.58        | 1.51     |
| 5   | 5-C   | 602 | ANP  | C5'-C4' | 2.28  | 1.58        | 1.51     |
| 5   | 2-C   | 602 | ANP  | C5'-C4' | 2.27  | 1.58        | 1.51     |
| 8   | 1-B   | 601 | TA1  | C16-C15 | 2.26  | 1.56        | 1.52     |
| 8   | 2-B   | 601 | TA1  | C16-C15 | 2.26  | 1.56        | 1.52     |
| 8   | 3-B   | 601 | TA1  | C16-C15 | 2.26  | 1.56        | 1.52     |
| 8   | 4-B   | 601 | TA1  | C16-C15 | 2.26  | 1.56        | 1.52     |
| 8   | 5-B   | 601 | TA1  | C16-C15 | 2.26  | 1.56        | 1.52     |
| 6   | 1-A   | 500 | GTP  | O4'-C1' | 2.14  | 1.44        | 1.41     |
| 6   | 2-A   | 500 | GTP  | O4'-C1' | 2.14  | 1.44        | 1.41     |
| 6   | 3-A   | 500 | GTP  | O4'-C1' | 2.14  | 1.44        | 1.41     |
| 6   | 4-A   | 500 | GTP  | O4'-C1' | 2.14  | 1.44        | 1.41     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 6   | 5-A   | 500 | GTP  | O4'-C1' | 2.14  | 1.44        | 1.41     |
| 8   | 1-B   | 601 | TA1  | C10-C02 | 2.11  | 1.62        | 1.57     |
| 8   | 2-B   | 601 | TA1  | C10-C02 | 2.11  | 1.62        | 1.57     |
| 8   | 3-B   | 601 | TA1  | C10-C02 | 2.11  | 1.62        | 1.57     |
| 8   | 4-B   | 601 | TA1  | C10-C02 | 2.11  | 1.62        | 1.57     |
| 8   | 5-B   | 601 | TA1  | C10-C02 | 2.11  | 1.62        | 1.57     |
| 8   | 1-B   | 601 | TA1  | C37-C29 | 2.10  | 1.54        | 1.52     |
| 8   | 2-B   | 601 | TA1  | C37-C29 | 2.10  | 1.54        | 1.52     |
| 8   | 3-B   | 601 | TA1  | C37-C29 | 2.10  | 1.54        | 1.52     |
| 8   | 4-B   | 601 | TA1  | C37-C29 | 2.10  | 1.54        | 1.52     |
| 8   | 5-B   | 601 | TA1  | C37-C29 | 2.10  | 1.54        | 1.52     |
| 5   | 4-C   | 602 | ANP  | C2'-C1' | -2.09 | 1.50        | 1.53     |
| 5   | 3-C   | 602 | ANP  | C6-N6   | -2.05 | 1.26        | 1.34     |
| 5   | 2-C   | 602 | ANP  | C2'-C1' | -2.03 | 1.50        | 1.53     |
| 5   | 2-C   | 602 | ANP  | C6-N6   | -2.03 | 1.26        | 1.34     |
| 5   | 5-C   | 602 | ANP  | C6-N6   | -2.03 | 1.26        | 1.34     |
| 5   | 4-C   | 602 | ANP  | C6-N6   | -2.02 | 1.26        | 1.34     |
| 7   | 1-B   | 600 | GDP  | O3'-C3' | 2.02  | 1.47        | 1.43     |
| 7   | 2-B   | 600 | GDP  | O3'-C3' | 2.02  | 1.47        | 1.43     |
| 7   | 3-B   | 600 | GDP  | O3'-C3' | 2.02  | 1.47        | 1.43     |
| 7   | 4-B   | 600 | GDP  | O3'-C3' | 2.02  | 1.47        | 1.43     |
| 7   | 5-B   | 600 | GDP  | O3'-C3' | 2.02  | 1.47        | 1.43     |
| 5   | 1-C   | 602 | ANP  | C6-N6   | -2.02 | 1.26        | 1.34     |
| 5   | 1-C   | 602 | ANP  | C2'-C1' | -2.01 | 1.50        | 1.53     |

All (180) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 7   | 1-B   | 600 | GDP  | C8-N7-C5   | 9.26  | 120.62      | 102.99   |
| 7   | 2-B   | 600 | GDP  | C8-N7-C5   | 9.26  | 120.62      | 102.99   |
| 7   | 3-B   | 600 | GDP  | C8-N7-C5   | 9.26  | 120.62      | 102.99   |
| 7   | 4-B   | 600 | GDP  | C8-N7-C5   | 9.26  | 120.62      | 102.99   |
| 7   | 5-B   | 600 | GDP  | C8-N7-C5   | 9.26  | 120.62      | 102.99   |
| 5   | 3-C   | 602 | ANP  | O2B-PB-O1B | 8.81  | 128.39      | 109.92   |
| 5   | 1-C   | 602 | ANP  | O2B-PB-O1B | 8.78  | 128.33      | 109.92   |
| 5   | 5-C   | 602 | ANP  | O2B-PB-O1B | 8.78  | 128.33      | 109.92   |
| 5   | 4-C   | 602 | ANP  | O2B-PB-O1B | 8.78  | 128.32      | 109.92   |
| 5   | 2-C   | 602 | ANP  | O2B-PB-O1B | 8.75  | 128.26      | 109.92   |
| 5   | 5-C   | 602 | ANP  | O5'-PA-O1A | -8.05 | 77.61       | 109.07   |
| 5   | 1-C   | 602 | ANP  | O5'-PA-O1A | -8.05 | 77.62       | 109.07   |
| 5   | 4-C   | 602 | ANP  | O5'-PA-O1A | -8.05 | 77.62       | 109.07   |
| 5   | 2-C   | 602 | ANP  | O5'-PA-O1A | -8.04 | 77.64       | 109.07   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 5   | 3-C   | 602 | ANP  | O5'-PA-O1A  | -8.03 | 77.68       | 109.07   |
| 7   | 1-B   | 600 | GDP  | N2-C2-N3    | 6.28  | 131.96      | 119.74   |
| 7   | 2-B   | 600 | GDP  | N2-C2-N3    | 6.28  | 131.96      | 119.74   |
| 7   | 3-B   | 600 | GDP  | N2-C2-N3    | 6.28  | 131.96      | 119.74   |
| 7   | 4-B   | 600 | GDP  | N2-C2-N3    | 6.28  | 131.96      | 119.74   |
| 7   | 5-B   | 600 | GDP  | N2-C2-N3    | 6.28  | 131.96      | 119.74   |
| 5   | 2-C   | 602 | ANP  | O2B-PB-O3A  | -6.25 | 83.79       | 104.64   |
| 5   | 1-C   | 602 | ANP  | O2B-PB-O3A  | -6.24 | 83.81       | 104.64   |
| 5   | 3-C   | 602 | ANP  | O2B-PB-O3A  | -6.23 | 83.84       | 104.64   |
| 5   | 5-C   | 602 | ANP  | O2B-PB-O3A  | -6.23 | 83.85       | 104.64   |
| 5   | 4-C   | 602 | ANP  | O2B-PB-O3A  | -6.22 | 83.88       | 104.64   |
| 5   | 5-C   | 602 | ANP  | O3A-PB-N3B  | -6.10 | 89.66       | 106.59   |
| 5   | 1-C   | 602 | ANP  | O3A-PB-N3B  | -6.10 | 89.67       | 106.59   |
| 5   | 3-C   | 602 | ANP  | O3A-PB-N3B  | -6.09 | 89.68       | 106.59   |
| 5   | 2-C   | 602 | ANP  | O3A-PB-N3B  | -6.09 | 89.70       | 106.59   |
| 5   | 4-C   | 602 | ANP  | O3A-PB-N3B  | -6.08 | 89.73       | 106.59   |
| 5   | 2-C   | 602 | ANP  | O2A-PA-O5'  | -6.07 | 79.53       | 107.75   |
| 5   | 4-C   | 602 | ANP  | O2A-PA-O5'  | -6.07 | 79.54       | 107.75   |
| 5   | 1-C   | 602 | ANP  | O2A-PA-O5'  | -6.07 | 79.55       | 107.75   |
| 5   | 5-C   | 602 | ANP  | O2A-PA-O5'  | -6.07 | 79.57       | 107.75   |
| 7   | 1-B   | 600 | GDP  | C5-C6-N1    | 6.06  | 124.66      | 113.95   |
| 7   | 2-B   | 600 | GDP  | C5-C6-N1    | 6.06  | 124.66      | 113.95   |
| 7   | 3-B   | 600 | GDP  | C5-C6-N1    | 6.06  | 124.66      | 113.95   |
| 7   | 4-B   | 600 | GDP  | C5-C6-N1    | 6.06  | 124.66      | 113.95   |
| 7   | 5-B   | 600 | GDP  | C5-C6-N1    | 6.06  | 124.66      | 113.95   |
| 5   | 3-C   | 602 | ANP  | O2A-PA-O5'  | -6.06 | 79.59       | 107.75   |
| 8   | 1-B   | 601 | TA1  | C06-C05-C04 | -4.83 | 114.62      | 120.34   |
| 8   | 2-B   | 601 | TA1  | C06-C05-C04 | -4.83 | 114.62      | 120.34   |
| 8   | 3-B   | 601 | TA1  | C06-C05-C04 | -4.83 | 114.62      | 120.34   |
| 8   | 4-B   | 601 | TA1  | C06-C05-C04 | -4.83 | 114.62      | 120.34   |
| 8   | 5-B   | 601 | TA1  | C06-C05-C04 | -4.83 | 114.62      | 120.34   |
| 5   | 2-C   | 602 | ANP  | C5-C6-N6    | 4.79  | 127.63      | 120.35   |
| 5   | 5-C   | 602 | ANP  | C5-C6-N6    | 4.78  | 127.62      | 120.35   |
| 5   | 1-C   | 602 | ANP  | C5-C6-N6    | 4.77  | 127.60      | 120.35   |
| 5   | 4-C   | 602 | ANP  | C5-C6-N6    | 4.74  | 127.56      | 120.35   |
| 5   | 3-C   | 602 | ANP  | C5-C6-N6    | 4.74  | 127.56      | 120.35   |
| 8   | 1-B   | 601 | TA1  | C07-C08-C09 | 4.72  | 127.38      | 120.19   |
| 8   | 2-B   | 601 | TA1  | C07-C08-C09 | 4.72  | 127.38      | 120.19   |
| 8   | 3-B   | 601 | TA1  | C07-C08-C09 | 4.72  | 127.38      | 120.19   |
| 8   | 4-B   | 601 | TA1  | C07-C08-C09 | 4.72  | 127.38      | 120.19   |
| 8   | 5-B   | 601 | TA1  | C07-C08-C09 | 4.72  | 127.38      | 120.19   |
| 7   | 1-B   | 600 | GDP  | O6-C6-C5    | -4.24 | 116.09      | 124.37   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 7   | 2-B   | 600 | GDP  | O6-C6-C5    | -4.24 | 116.09      | 124.37   |
| 7   | 3-B   | 600 | GDP  | O6-C6-C5    | -4.24 | 116.09      | 124.37   |
| 7   | 4-B   | 600 | GDP  | O6-C6-C5    | -4.24 | 116.09      | 124.37   |
| 7   | 5-B   | 600 | GDP  | O6-C6-C5    | -4.24 | 116.09      | 124.37   |
| 7   | 1-B   | 600 | GDP  | N2-C2-N1    | -4.19 | 107.80      | 116.71   |
| 7   | 2-B   | 600 | GDP  | N2-C2-N1    | -4.19 | 107.80      | 116.71   |
| 7   | 3-B   | 600 | GDP  | N2-C2-N1    | -4.19 | 107.80      | 116.71   |
| 7   | 4-B   | 600 | GDP  | N2-C2-N1    | -4.19 | 107.80      | 116.71   |
| 7   | 5-B   | 600 | GDP  | N2-C2-N1    | -4.19 | 107.80      | 116.71   |
| 8   | 1-B   | 601 | TA1  | C05-C04-C03 | -3.93 | 111.53      | 120.40   |
| 8   | 2-B   | 601 | TA1  | C05-C04-C03 | -3.93 | 111.53      | 120.40   |
| 8   | 3-B   | 601 | TA1  | C05-C04-C03 | -3.93 | 111.53      | 120.40   |
| 8   | 4-B   | 601 | TA1  | C05-C04-C03 | -3.93 | 111.53      | 120.40   |
| 8   | 5-B   | 601 | TA1  | C05-C04-C03 | -3.93 | 111.53      | 120.40   |
| 7   | 1-B   | 600 | GDP  | C2-N1-C6    | -3.71 | 118.26      | 125.10   |
| 7   | 2-B   | 600 | GDP  | C2-N1-C6    | -3.71 | 118.26      | 125.10   |
| 7   | 3-B   | 600 | GDP  | C2-N1-C6    | -3.71 | 118.26      | 125.10   |
| 7   | 4-B   | 600 | GDP  | C2-N1-C6    | -3.71 | 118.26      | 125.10   |
| 7   | 5-B   | 600 | GDP  | C2-N1-C6    | -3.71 | 118.26      | 125.10   |
| 5   | 4-C   | 602 | ANP  | N3-C2-N1    | -3.58 | 123.08      | 128.68   |
| 5   | 2-C   | 602 | ANP  | N3-C2-N1    | -3.56 | 123.12      | 128.68   |
| 5   | 5-C   | 602 | ANP  | N3-C2-N1    | -3.55 | 123.14      | 128.68   |
| 5   | 1-C   | 602 | ANP  | N3-C2-N1    | -3.53 | 123.15      | 128.68   |
| 5   | 2-C   | 602 | ANP  | C5-C6-N1    | -3.53 | 112.34      | 120.35   |
| 5   | 3-C   | 602 | ANP  | N3-C2-N1    | -3.52 | 123.17      | 128.68   |
| 5   | 5-C   | 602 | ANP  | C5-C6-N1    | -3.52 | 112.38      | 120.35   |
| 5   | 3-C   | 602 | ANP  | C5-C6-N1    | -3.51 | 112.39      | 120.35   |
| 8   | 1-B   | 601 | TA1  | C09-C04-C03 | 3.51  | 128.33      | 120.40   |
| 8   | 2-B   | 601 | TA1  | C09-C04-C03 | 3.51  | 128.33      | 120.40   |
| 8   | 3-B   | 601 | TA1  | C09-C04-C03 | 3.51  | 128.33      | 120.40   |
| 8   | 4-B   | 601 | TA1  | C09-C04-C03 | 3.51  | 128.33      | 120.40   |
| 8   | 5-B   | 601 | TA1  | C09-C04-C03 | 3.51  | 128.33      | 120.40   |
| 5   | 4-C   | 602 | ANP  | C5-C6-N1    | -3.50 | 112.41      | 120.35   |
| 5   | 1-C   | 602 | ANP  | C5-C6-N1    | -3.49 | 112.44      | 120.35   |
| 7   | 1-B   | 600 | GDP  | C2'-C3'-C4' | 3.38  | 109.22      | 102.64   |
| 7   | 2-B   | 600 | GDP  | C2'-C3'-C4' | 3.38  | 109.22      | 102.64   |
| 7   | 3-B   | 600 | GDP  | C2'-C3'-C4' | 3.38  | 109.22      | 102.64   |
| 7   | 4-B   | 600 | GDP  | C2'-C3'-C4' | 3.38  | 109.22      | 102.64   |
| 7   | 5-B   | 600 | GDP  | C2'-C3'-C4' | 3.38  | 109.22      | 102.64   |
| 5   | 2-C   | 602 | ANP  | C2-N1-C6    | 3.22  | 124.26      | 118.75   |
| 5   | 4-C   | 602 | ANP  | C2-N1-C6    | 3.22  | 124.26      | 118.75   |
| 5   | 1-C   | 602 | ANP  | C2-N1-C6    | 3.20  | 124.22      | 118.75   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 5   | 5-C   | 602 | ANP  | C2-N1-C6    | 3.19  | 124.21      | 118.75   |
| 5   | 3-C   | 602 | ANP  | C2-N1-C6    | 3.19  | 124.21      | 118.75   |
| 8   | 1-B   | 601 | TA1  | C17-C18-C20 | 3.13  | 109.82      | 102.59   |
| 8   | 2-B   | 601 | TA1  | C17-C18-C20 | 3.13  | 109.82      | 102.59   |
| 8   | 3-B   | 601 | TA1  | C17-C18-C20 | 3.13  | 109.82      | 102.59   |
| 8   | 4-B   | 601 | TA1  | C17-C18-C20 | 3.13  | 109.82      | 102.59   |
| 8   | 5-B   | 601 | TA1  | C17-C18-C20 | 3.13  | 109.82      | 102.59   |
| 8   | 1-B   | 601 | TA1  | C45-C01-C02 | 3.06  | 115.25      | 111.91   |
| 8   | 2-B   | 601 | TA1  | C45-C01-C02 | 3.06  | 115.25      | 111.91   |
| 8   | 3-B   | 601 | TA1  | C45-C01-C02 | 3.06  | 115.25      | 111.91   |
| 8   | 4-B   | 601 | TA1  | C45-C01-C02 | 3.06  | 115.25      | 111.91   |
| 8   | 5-B   | 601 | TA1  | C45-C01-C02 | 3.06  | 115.25      | 111.91   |
| 5   | 2-C   | 602 | ANP  | O4'-C4'-C3' | -2.98 | 99.21       | 105.11   |
| 5   | 5-C   | 602 | ANP  | O4'-C4'-C3' | -2.98 | 99.22       | 105.11   |
| 5   | 1-C   | 602 | ANP  | O4'-C4'-C3' | -2.98 | 99.22       | 105.11   |
| 5   | 3-C   | 602 | ANP  | O4'-C4'-C3' | -2.96 | 99.25       | 105.11   |
| 5   | 4-C   | 602 | ANP  | O4'-C4'-C3' | -2.95 | 99.27       | 105.11   |
| 8   | 1-B   | 601 | TA1  | O04-C11-C14 | -2.93 | 101.69      | 108.09   |
| 8   | 2-B   | 601 | TA1  | O04-C11-C14 | -2.93 | 101.69      | 108.09   |
| 8   | 3-B   | 601 | TA1  | O04-C11-C14 | -2.93 | 101.69      | 108.09   |
| 8   | 4-B   | 601 | TA1  | O04-C11-C14 | -2.93 | 101.69      | 108.09   |
| 8   | 5-B   | 601 | TA1  | O04-C11-C14 | -2.93 | 101.69      | 108.09   |
| 8   | 1-B   | 601 | TA1  | O01-C01-C43 | 2.52  | 113.34      | 107.03   |
| 8   | 2-B   | 601 | TA1  | O01-C01-C43 | 2.52  | 113.34      | 107.03   |
| 8   | 3-B   | 601 | TA1  | O01-C01-C43 | 2.52  | 113.34      | 107.03   |
| 8   | 4-B   | 601 | TA1  | O01-C01-C43 | 2.52  | 113.34      | 107.03   |
| 8   | 5-B   | 601 | TA1  | O01-C01-C43 | 2.52  | 113.34      | 107.03   |
| 5   | 2-C   | 602 | ANP  | O1B-PB-N3B  | 2.39  | 115.29      | 111.77   |
| 5   | 3-C   | 602 | ANP  | O1B-PB-N3B  | 2.39  | 115.29      | 111.77   |
| 5   | 5-C   | 602 | ANP  | O1B-PB-N3B  | 2.38  | 115.27      | 111.77   |
| 5   | 1-C   | 602 | ANP  | O1B-PB-N3B  | 2.36  | 115.25      | 111.77   |
| 5   | 4-C   | 602 | ANP  | O5'-C5'-C4' | -2.36 | 100.86      | 108.99   |
| 5   | 3-C   | 602 | ANP  | O2A-PA-O1A  | 2.36  | 123.91      | 112.24   |
| 5   | 4-C   | 602 | ANP  | O1B-PB-N3B  | 2.35  | 115.23      | 111.77   |
| 5   | 2-C   | 602 | ANP  | O5'-C5'-C4' | -2.35 | 100.89      | 108.99   |
| 5   | 5-C   | 602 | ANP  | O2A-PA-O1A  | 2.35  | 123.86      | 112.24   |
| 5   | 5-C   | 602 | ANP  | O5'-C5'-C4' | -2.35 | 100.90      | 108.99   |
| 5   | 1-C   | 602 | ANP  | O5'-C5'-C4' | -2.35 | 100.91      | 108.99   |
| 5   | 1-C   | 602 | ANP  | O2A-PA-O1A  | 2.35  | 123.83      | 112.24   |
| 5   | 3-C   | 602 | ANP  | O5'-C5'-C4' | -2.34 | 100.92      | 108.99   |
| 5   | 2-C   | 602 | ANP  | O2A-PA-O1A  | 2.34  | 123.81      | 112.24   |
| 5   | 4-C   | 602 | ANP  | O2A-PA-O1A  | 2.34  | 123.80      | 112.24   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 7   | 1-B   | 600 | GDP  | O2'-C2'-C3' | 2.27  | 119.18      | 111.82   |
| 7   | 2-B   | 600 | GDP  | O2'-C2'-C3' | 2.27  | 119.18      | 111.82   |
| 7   | 3-B   | 600 | GDP  | O2'-C2'-C3' | 2.27  | 119.18      | 111.82   |
| 7   | 4-B   | 600 | GDP  | O2'-C2'-C3' | 2.27  | 119.18      | 111.82   |
| 7   | 5-B   | 600 | GDP  | O2'-C2'-C3' | 2.27  | 119.18      | 111.82   |
| 8   | 1-B   | 601 | TA1  | C14-C11-C15 | -2.22 | 83.04       | 85.40    |
| 8   | 2-B   | 601 | TA1  | C14-C11-C15 | -2.22 | 83.04       | 85.40    |
| 8   | 3-B   | 601 | TA1  | C14-C11-C15 | -2.22 | 83.04       | 85.40    |
| 8   | 4-B   | 601 | TA1  | C14-C11-C15 | -2.22 | 83.04       | 85.40    |
| 8   | 5-B   | 601 | TA1  | C14-C11-C15 | -2.22 | 83.04       | 85.40    |
| 5   | 4-C   | 602 | ANP  | O3G-PG-O1G  | -2.20 | 107.92      | 113.45   |
| 5   | 3-C   | 602 | ANP  | O2G-PG-O1G  | -2.18 | 107.97      | 113.45   |
| 5   | 3-C   | 602 | ANP  | O3G-PG-O1G  | -2.18 | 107.98      | 113.45   |
| 5   | 1-C   | 602 | ANP  | O3G-PG-O1G  | -2.18 | 107.98      | 113.45   |
| 5   | 2-C   | 602 | ANP  | O3G-PG-O1G  | -2.17 | 107.99      | 113.45   |
| 5   | 5-C   | 602 | ANP  | O3G-PG-O1G  | -2.17 | 107.99      | 113.45   |
| 5   | 2-C   | 602 | ANP  | O2G-PG-O1G  | -2.17 | 108.01      | 113.45   |
| 8   | 1-B   | 601 | TA1  | C10-C18-C17 | -2.17 | 102.33      | 106.54   |
| 8   | 2-B   | 601 | TA1  | C10-C18-C17 | -2.17 | 102.33      | 106.54   |
| 8   | 3-B   | 601 | TA1  | C10-C18-C17 | -2.17 | 102.33      | 106.54   |
| 8   | 4-B   | 601 | TA1  | C10-C18-C17 | -2.17 | 102.33      | 106.54   |
| 8   | 5-B   | 601 | TA1  | C10-C18-C17 | -2.17 | 102.33      | 106.54   |
| 5   | 5-C   | 602 | ANP  | O2G-PG-O1G  | -2.16 | 108.01      | 113.45   |
| 5   | 4-C   | 602 | ANP  | O2G-PG-O1G  | -2.16 | 108.02      | 113.45   |
| 8   | 1-B   | 601 | TA1  | O06-C15-C11 | 2.16  | 93.01       | 90.58    |
| 8   | 2-B   | 601 | TA1  | O06-C15-C11 | 2.16  | 93.01       | 90.58    |
| 8   | 3-B   | 601 | TA1  | O06-C15-C11 | 2.16  | 93.01       | 90.58    |
| 8   | 4-B   | 601 | TA1  | O06-C15-C11 | 2.16  | 93.01       | 90.58    |
| 8   | 5-B   | 601 | TA1  | O06-C15-C11 | 2.16  | 93.01       | 90.58    |
| 5   | 1-C   | 602 | ANP  | O2G-PG-O1G  | -2.16 | 108.03      | 113.45   |
| 6   | 1-A   | 500 | GTP  | O5'-C5'-C4' | 2.11  | 116.24      | 108.99   |
| 6   | 2-A   | 500 | GTP  | O5'-C5'-C4' | 2.11  | 116.24      | 108.99   |
| 6   | 3-A   | 500 | GTP  | O5'-C5'-C4' | 2.11  | 116.24      | 108.99   |
| 6   | 4-A   | 500 | GTP  | O5'-C5'-C4' | 2.11  | 116.24      | 108.99   |
| 6   | 5-A   | 500 | GTP  | O5'-C5'-C4' | 2.11  | 116.24      | 108.99   |
| 6   | 1-A   | 500 | GTP  | O3G-PG-O3B  | 2.03  | 111.43      | 104.64   |
| 6   | 2-A   | 500 | GTP  | O3G-PG-O3B  | 2.03  | 111.43      | 104.64   |
| 6   | 3-A   | 500 | GTP  | O3G-PG-O3B  | 2.03  | 111.43      | 104.64   |
| 6   | 4-A   | 500 | GTP  | O3G-PG-O3B  | 2.03  | 111.43      | 104.64   |
| 6   | 5-A   | 500 | GTP  | O3G-PG-O3B  | 2.03  | 111.43      | 104.64   |

There are no chirality outliers.

All (125) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms          |
|-----|-------|-----|------|----------------|
| 5   | 1-C   | 602 | ANP  | PG-N3B-PB-O1B  |
| 5   | 1-C   | 602 | ANP  | PA-O3A-PB-O1B  |
| 5   | 1-C   | 602 | ANP  | PA-O3A-PB-O2B  |
| 5   | 1-C   | 602 | ANP  | C5'-O5'-PA-O1A |
| 5   | 1-C   | 602 | ANP  | C5'-O5'-PA-O2A |
| 5   | 1-C   | 602 | ANP  | C5'-O5'-PA-O3A |
| 5   | 2-C   | 602 | ANP  | PG-N3B-PB-O1B  |
| 5   | 2-C   | 602 | ANP  | PA-O3A-PB-O1B  |
| 5   | 2-C   | 602 | ANP  | PA-O3A-PB-O2B  |
| 5   | 2-C   | 602 | ANP  | C5'-O5'-PA-O1A |
| 5   | 2-C   | 602 | ANP  | C5'-O5'-PA-O2A |
| 5   | 2-C   | 602 | ANP  | C5'-O5'-PA-O3A |
| 5   | 3-C   | 602 | ANP  | PG-N3B-PB-O1B  |
| 5   | 3-C   | 602 | ANP  | PA-O3A-PB-O1B  |
| 5   | 3-C   | 602 | ANP  | PA-O3A-PB-O2B  |
| 5   | 3-C   | 602 | ANP  | C5'-O5'-PA-O1A |
| 5   | 3-C   | 602 | ANP  | C5'-O5'-PA-O2A |
| 5   | 3-C   | 602 | ANP  | C5'-O5'-PA-O3A |
| 5   | 4-C   | 602 | ANP  | PG-N3B-PB-O1B  |
| 5   | 4-C   | 602 | ANP  | PA-O3A-PB-O1B  |
| 5   | 4-C   | 602 | ANP  | PA-O3A-PB-O2B  |
| 5   | 4-C   | 602 | ANP  | C5'-O5'-PA-O1A |
| 5   | 4-C   | 602 | ANP  | C5'-O5'-PA-O2A |
| 5   | 4-C   | 602 | ANP  | C5'-O5'-PA-O3A |
| 5   | 5-C   | 602 | ANP  | PG-N3B-PB-O1B  |
| 5   | 5-C   | 602 | ANP  | PA-O3A-PB-O1B  |
| 5   | 5-C   | 602 | ANP  | PA-O3A-PB-O2B  |
| 5   | 5-C   | 602 | ANP  | C5'-O5'-PA-O1A |
| 5   | 5-C   | 602 | ANP  | C5'-O5'-PA-O2A |
| 5   | 5-C   | 602 | ANP  | C5'-O5'-PA-O3A |
| 7   | 1-B   | 600 | GDP  | PA-O3A-PB-O2B  |
| 7   | 1-B   | 600 | GDP  | C5'-O5'-PA-O3A |
| 7   | 1-B   | 600 | GDP  | C5'-O5'-PA-O1A |
| 7   | 2-B   | 600 | GDP  | PA-O3A-PB-O2B  |
| 7   | 2-B   | 600 | GDP  | C5'-O5'-PA-O3A |
| 7   | 2-B   | 600 | GDP  | C5'-O5'-PA-O1A |
| 7   | 3-B   | 600 | GDP  | PA-O3A-PB-O2B  |
| 7   | 3-B   | 600 | GDP  | C5'-O5'-PA-O3A |
| 7   | 3-B   | 600 | GDP  | C5'-O5'-PA-O1A |
| 7   | 4-B   | 600 | GDP  | PA-O3A-PB-O2B  |
| 7   | 4-B   | 600 | GDP  | C5'-O5'-PA-O3A |
| 7   | 4-B   | 600 | GDP  | C5'-O5'-PA-O1A |

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| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 7   | 5-B   | 600 | GDP  | PA-O3A-PB-O2B   |
| 7   | 5-B   | 600 | GDP  | C5'-O5'-PA-O3A  |
| 7   | 5-B   | 600 | GDP  | C5'-O5'-PA-O1A  |
| 8   | 1-B   | 601 | TA1  | O02-C03-C04-C05 |
| 8   | 2-B   | 601 | TA1  | O02-C03-C04-C05 |
| 8   | 3-B   | 601 | TA1  | O02-C03-C04-C05 |
| 8   | 4-B   | 601 | TA1  | O02-C03-C04-C05 |
| 8   | 5-B   | 601 | TA1  | O02-C03-C04-C05 |
| 8   | 1-B   | 601 | TA1  | O02-C03-C04-C09 |
| 8   | 2-B   | 601 | TA1  | O02-C03-C04-C09 |
| 8   | 3-B   | 601 | TA1  | O02-C03-C04-C09 |
| 8   | 4-B   | 601 | TA1  | O02-C03-C04-C09 |
| 8   | 5-B   | 601 | TA1  | O02-C03-C04-C09 |
| 8   | 1-B   | 601 | TA1  | O03-C03-C04-C09 |
| 8   | 2-B   | 601 | TA1  | O03-C03-C04-C09 |
| 8   | 3-B   | 601 | TA1  | O03-C03-C04-C09 |
| 8   | 4-B   | 601 | TA1  | O03-C03-C04-C09 |
| 8   | 5-B   | 601 | TA1  | O03-C03-C04-C09 |
| 5   | 1-C   | 602 | ANP  | C3'-C4'-C5'-O5' |
| 5   | 2-C   | 602 | ANP  | C3'-C4'-C5'-O5' |
| 5   | 3-C   | 602 | ANP  | C3'-C4'-C5'-O5' |
| 5   | 4-C   | 602 | ANP  | C3'-C4'-C5'-O5' |
| 5   | 5-C   | 602 | ANP  | C3'-C4'-C5'-O5' |
| 8   | 1-B   | 601 | TA1  | O03-C03-C04-C05 |
| 8   | 2-B   | 601 | TA1  | O03-C03-C04-C05 |
| 8   | 3-B   | 601 | TA1  | O03-C03-C04-C05 |
| 8   | 4-B   | 601 | TA1  | O03-C03-C04-C05 |
| 8   | 5-B   | 601 | TA1  | O03-C03-C04-C05 |
| 8   | 1-B   | 601 | TA1  | N01-C30-C31-C36 |
| 8   | 2-B   | 601 | TA1  | N01-C30-C31-C36 |
| 8   | 3-B   | 601 | TA1  | N01-C30-C31-C36 |
| 8   | 4-B   | 601 | TA1  | N01-C30-C31-C36 |
| 8   | 5-B   | 601 | TA1  | N01-C30-C31-C36 |
| 8   | 1-B   | 601 | TA1  | O14-C30-C31-C36 |
| 8   | 2-B   | 601 | TA1  | O14-C30-C31-C36 |
| 8   | 3-B   | 601 | TA1  | O14-C30-C31-C36 |
| 8   | 4-B   | 601 | TA1  | O14-C30-C31-C36 |
| 8   | 5-B   | 601 | TA1  | O14-C30-C31-C36 |
| 5   | 1-C   | 602 | ANP  | O4'-C4'-C5'-O5' |
| 5   | 2-C   | 602 | ANP  | O4'-C4'-C5'-O5' |
| 5   | 3-C   | 602 | ANP  | O4'-C4'-C5'-O5' |
| 5   | 4-C   | 602 | ANP  | O4'-C4'-C5'-O5' |

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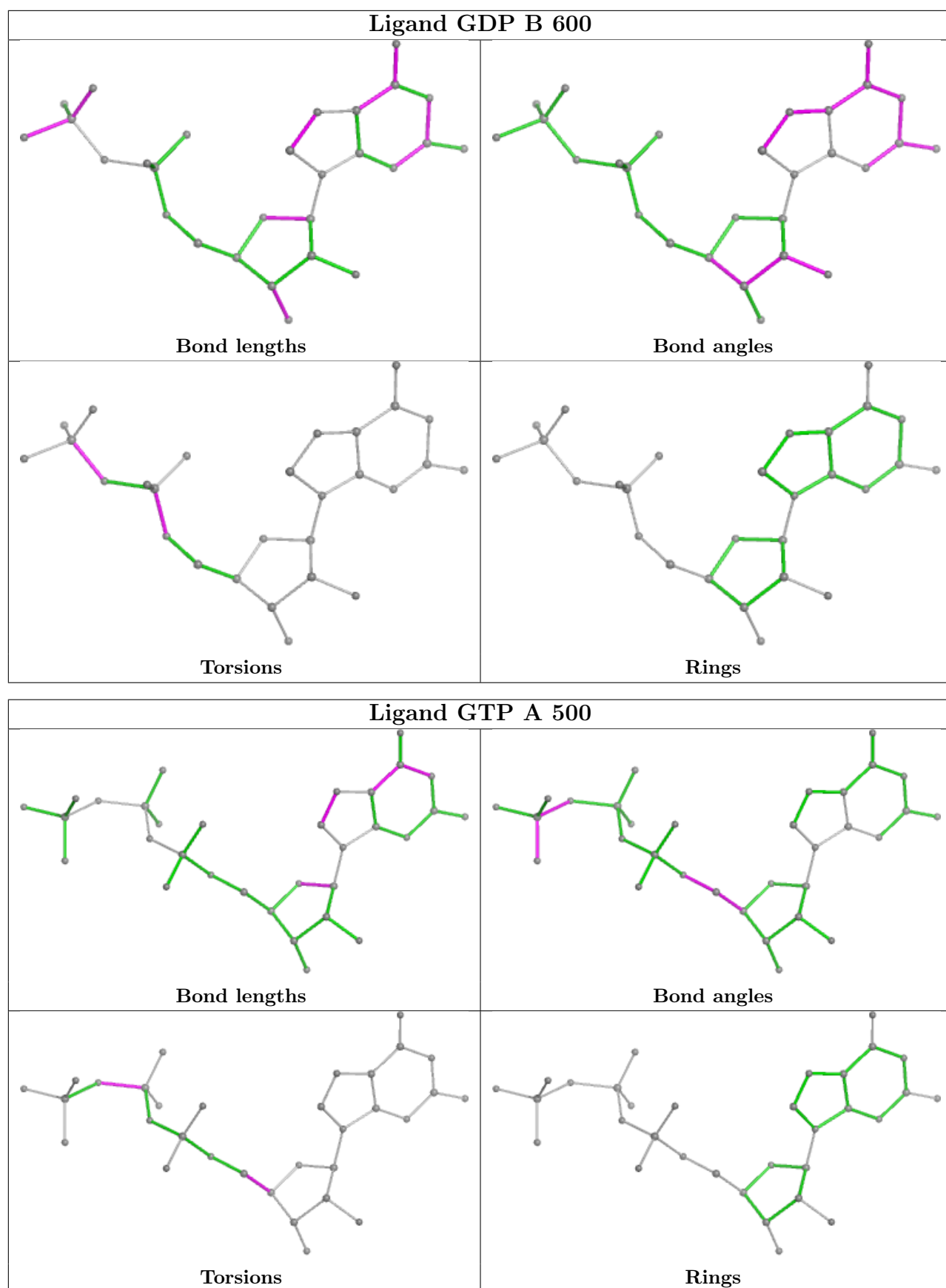
| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 5   | 5-C   | 602 | ANP  | O4'-C4'-C5'-O5' |
| 8   | 1-B   | 601 | TA1  | N01-C30-C31-C32 |
| 8   | 2-B   | 601 | TA1  | N01-C30-C31-C32 |
| 8   | 3-B   | 601 | TA1  | N01-C30-C31-C32 |
| 8   | 4-B   | 601 | TA1  | N01-C30-C31-C32 |
| 8   | 5-B   | 601 | TA1  | N01-C30-C31-C32 |
| 8   | 1-B   | 601 | TA1  | O14-C30-C31-C32 |
| 8   | 2-B   | 601 | TA1  | O14-C30-C31-C32 |
| 8   | 3-B   | 601 | TA1  | O14-C30-C31-C32 |
| 8   | 4-B   | 601 | TA1  | O14-C30-C31-C32 |
| 8   | 5-B   | 601 | TA1  | O14-C30-C31-C32 |
| 6   | 1-A   | 500 | GTP  | C3'-C4'-C5'-O5' |
| 6   | 2-A   | 500 | GTP  | C3'-C4'-C5'-O5' |
| 6   | 3-A   | 500 | GTP  | C3'-C4'-C5'-O5' |
| 6   | 4-A   | 500 | GTP  | C3'-C4'-C5'-O5' |
| 6   | 5-A   | 500 | GTP  | C3'-C4'-C5'-O5' |
| 6   | 1-A   | 500 | GTP  | O4'-C4'-C5'-O5' |
| 6   | 2-A   | 500 | GTP  | O4'-C4'-C5'-O5' |
| 6   | 3-A   | 500 | GTP  | O4'-C4'-C5'-O5' |
| 6   | 4-A   | 500 | GTP  | O4'-C4'-C5'-O5' |
| 6   | 5-A   | 500 | GTP  | O4'-C4'-C5'-O5' |
| 7   | 1-B   | 600 | GDP  | PA-O3A-PB-O3B   |
| 7   | 2-B   | 600 | GDP  | PA-O3A-PB-O3B   |
| 7   | 3-B   | 600 | GDP  | PA-O3A-PB-O3B   |
| 7   | 4-B   | 600 | GDP  | PA-O3A-PB-O3B   |
| 7   | 5-B   | 600 | GDP  | PA-O3A-PB-O3B   |
| 5   | 1-C   | 602 | ANP  | PB-O3A-PA-O1A   |
| 5   | 2-C   | 602 | ANP  | PB-O3A-PA-O1A   |
| 5   | 3-C   | 602 | ANP  | PB-O3A-PA-O1A   |
| 5   | 4-C   | 602 | ANP  | PB-O3A-PA-O1A   |
| 5   | 5-C   | 602 | ANP  | PB-O3A-PA-O1A   |
| 6   | 1-A   | 500 | GTP  | PG-O3B-PB-O1B   |
| 6   | 2-A   | 500 | GTP  | PG-O3B-PB-O1B   |
| 6   | 3-A   | 500 | GTP  | PG-O3B-PB-O1B   |
| 6   | 4-A   | 500 | GTP  | PG-O3B-PB-O1B   |
| 6   | 5-A   | 500 | GTP  | PG-O3B-PB-O1B   |
| 8   | 1-B   | 601 | TA1  | C15-C11-O04-C12 |
| 8   | 2-B   | 601 | TA1  | C15-C11-O04-C12 |
| 8   | 3-B   | 601 | TA1  | C15-C11-O04-C12 |
| 8   | 4-B   | 601 | TA1  | C15-C11-O04-C12 |
| 8   | 5-B   | 601 | TA1  | C15-C11-O04-C12 |

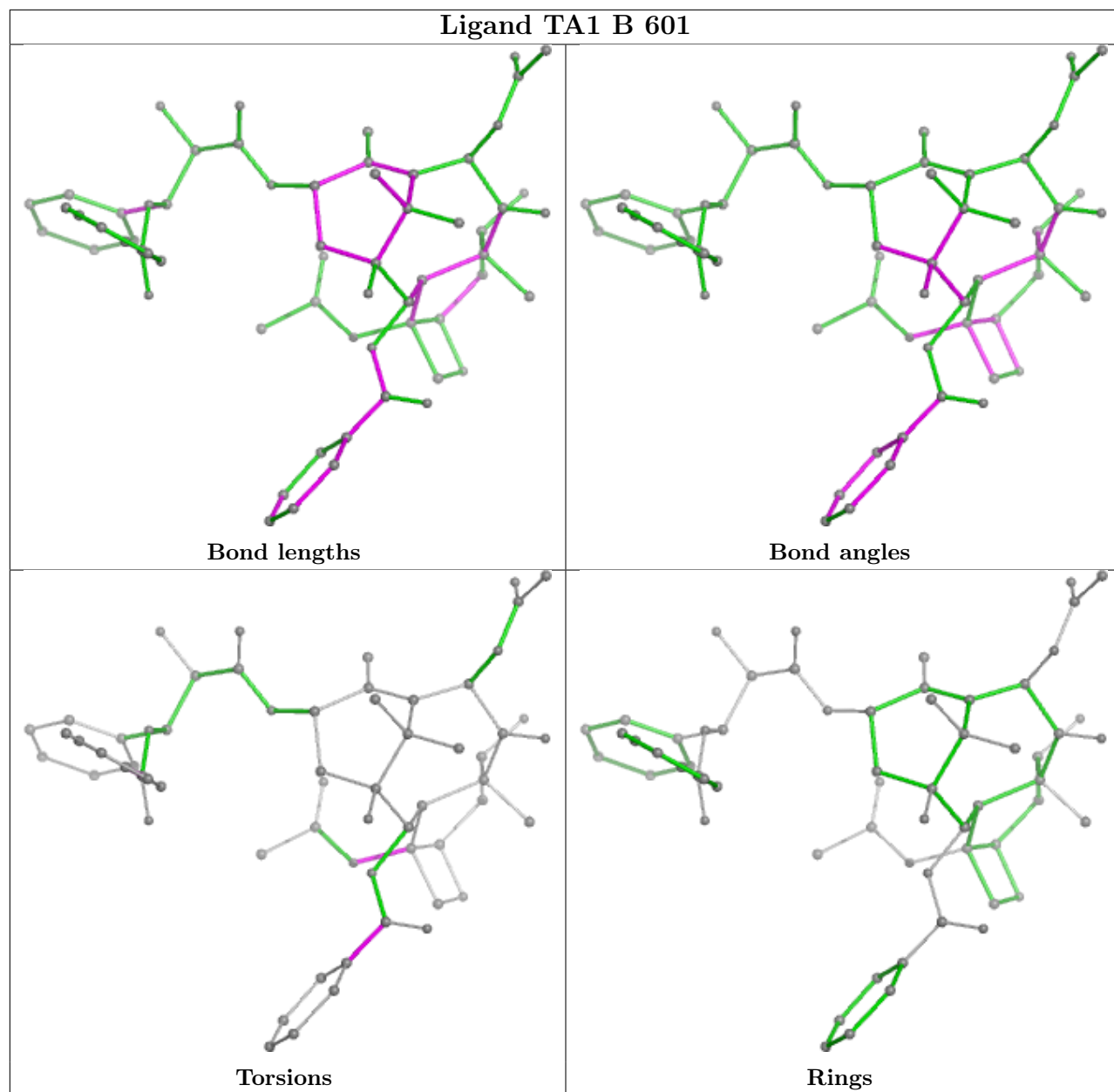
There are no ring outliers.

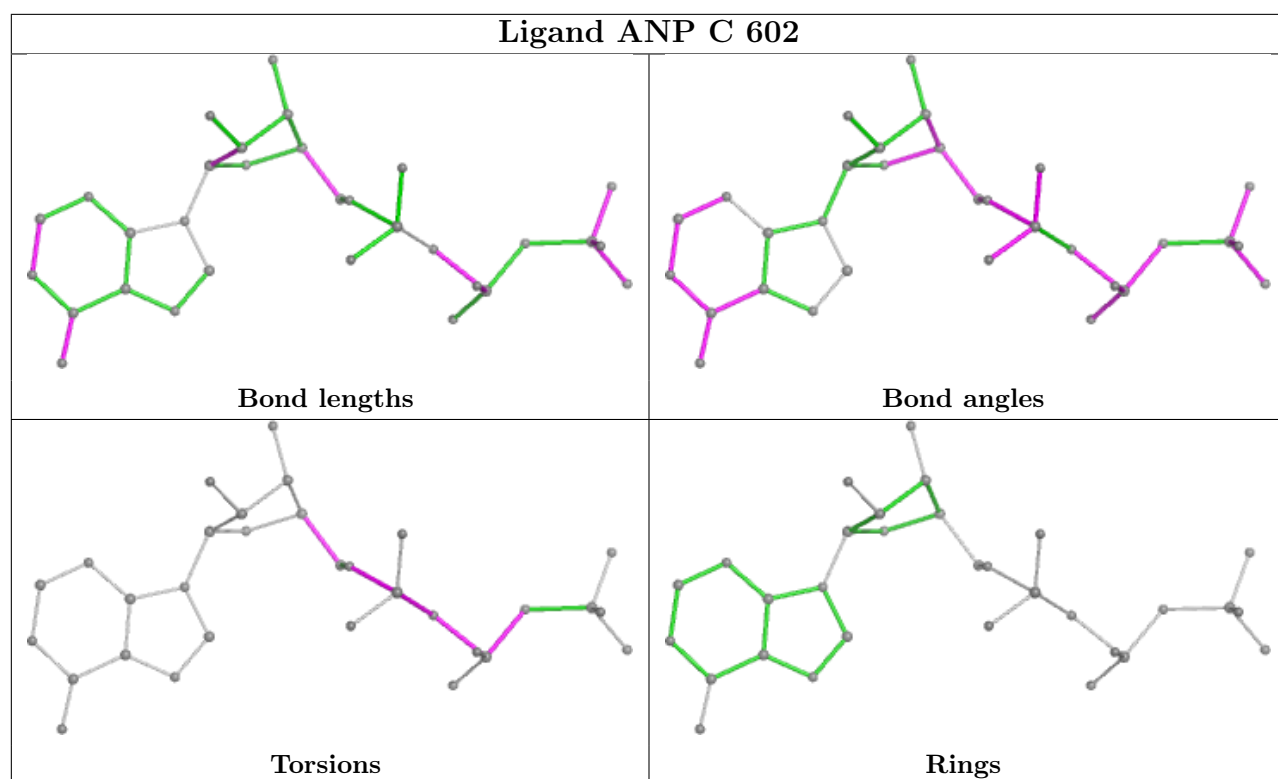
20 monomers are involved in 260 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 6   | 5-A   | 500 | GTP  | 28      | 0            |
| 5   | 2-C   | 602 | ANP  | 2       | 0            |
| 8   | 4-B   | 601 | TA1  | 14      | 0            |
| 7   | 1-B   | 600 | GDP  | 8       | 0            |
| 7   | 4-B   | 600 | GDP  | 8       | 0            |
| 6   | 4-A   | 500 | GTP  | 28      | 0            |
| 5   | 4-C   | 602 | ANP  | 2       | 0            |
| 6   | 1-A   | 500 | GTP  | 28      | 0            |
| 8   | 2-B   | 601 | TA1  | 14      | 0            |
| 5   | 3-C   | 602 | ANP  | 2       | 0            |
| 6   | 3-A   | 500 | GTP  | 28      | 0            |
| 8   | 1-B   | 601 | TA1  | 14      | 0            |
| 8   | 3-B   | 601 | TA1  | 14      | 0            |
| 7   | 3-B   | 600 | GDP  | 8       | 0            |
| 8   | 5-B   | 601 | TA1  | 14      | 0            |
| 7   | 2-B   | 600 | GDP  | 8       | 0            |
| 6   | 2-A   | 500 | GTP  | 28      | 0            |
| 7   | 5-B   | 600 | GDP  | 8       | 0            |
| 5   | 5-C   | 602 | ANP  | 2       | 0            |
| 5   | 1-C   | 602 | ANP  | 2       | 0            |

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







## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

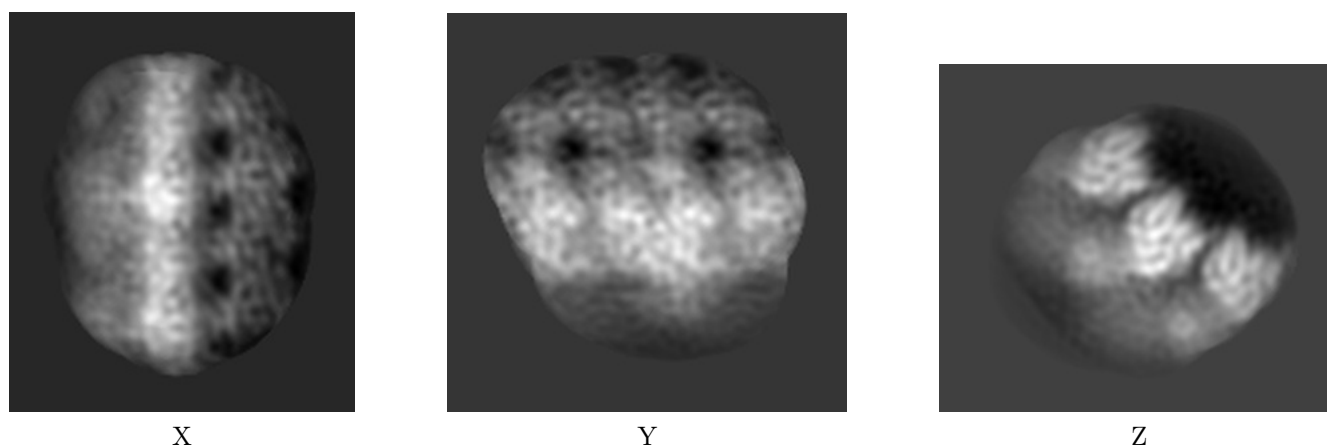
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3623. 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](#)

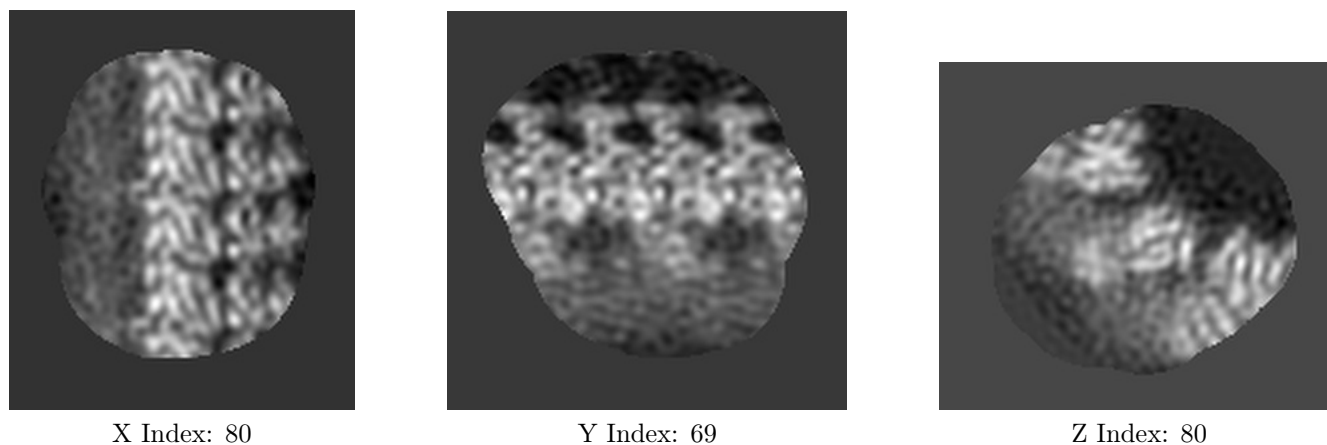
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

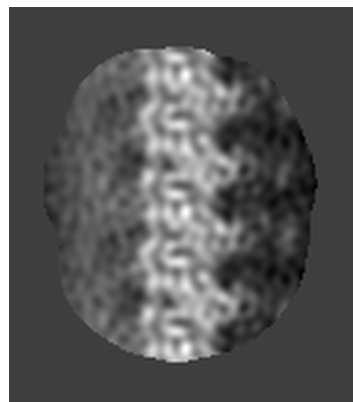
#### 6.2.1 Primary map



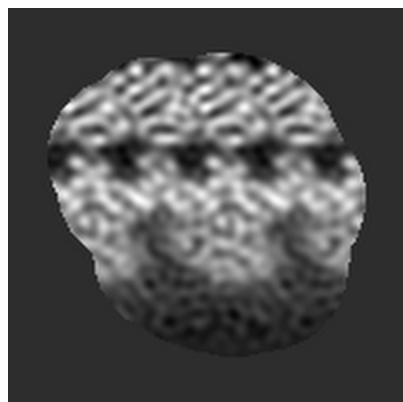
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

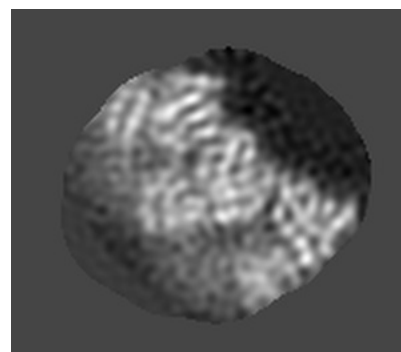
### 6.3.1 Primary map



X Index: 85



Y Index: 57

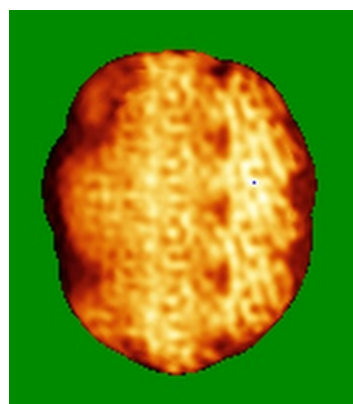


Z Index: 92

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

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

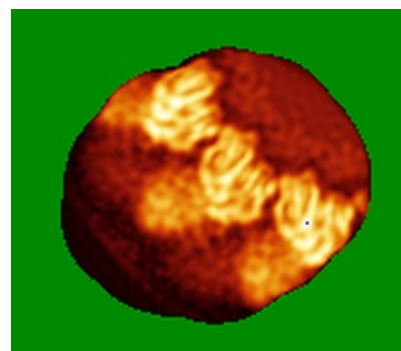
### 6.4.1 Primary map



X



Y

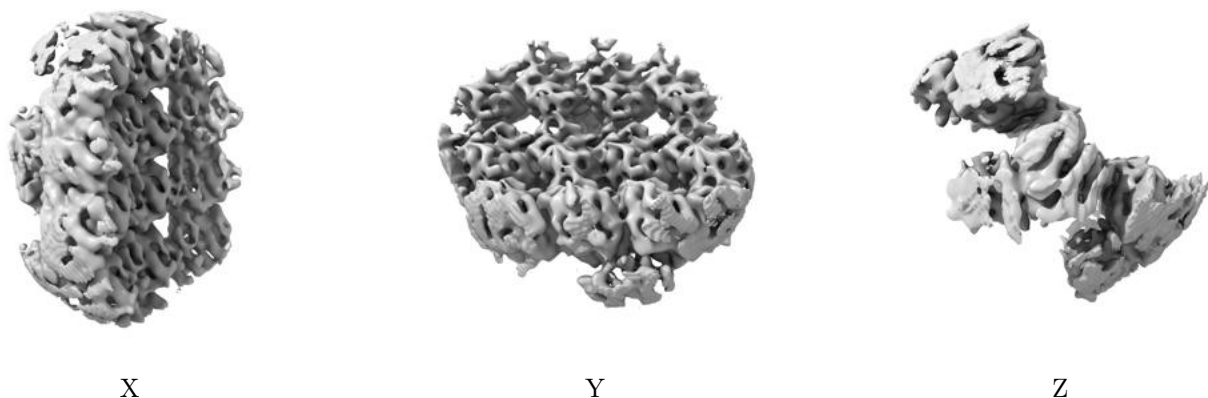


Z

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 0.0322. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

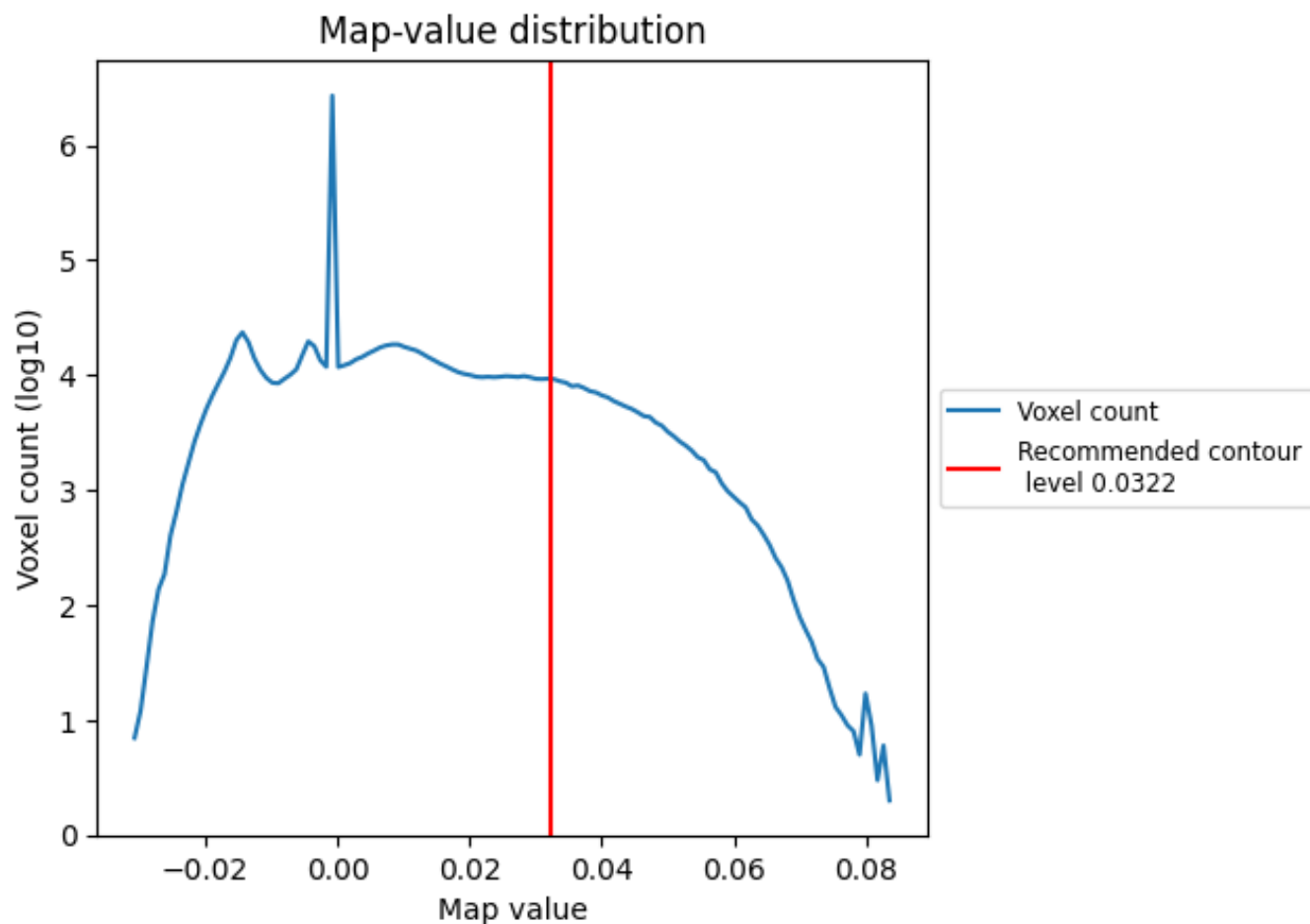
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

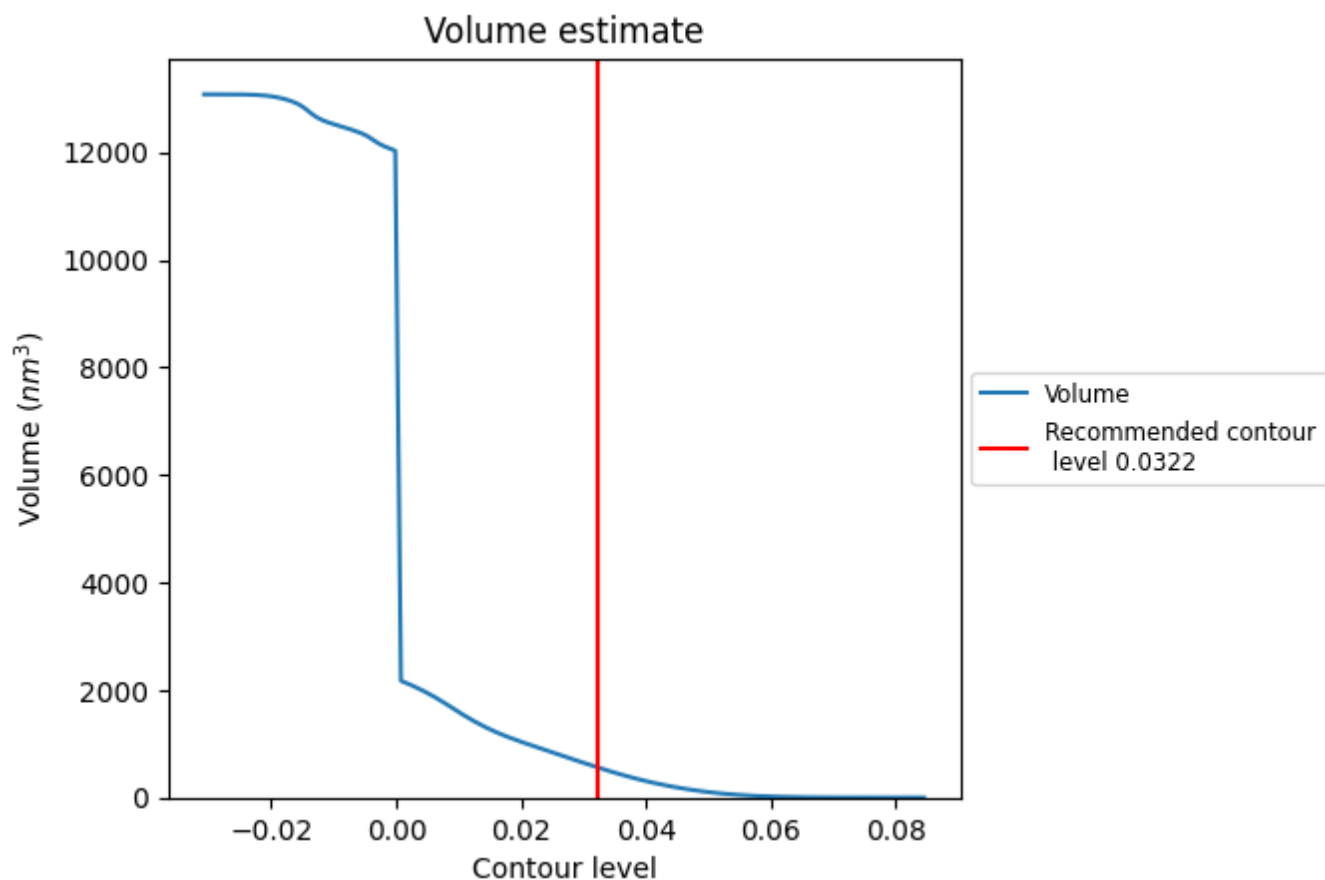
This section contains the results of statistical analysis of the map.

### 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 563 nm<sup>3</sup>; this corresponds to an approximate mass of 509 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](#)

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

## 8 Fourier-Shell correlation

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

## 9 Map-model fit

This section was not generated.