# Full wwPDB X-ray Structure Validation Report (i)

Aug 5, 2026 – 03:41 PM EDT

| | | |
|---|---|---|
| PDB ID | : | 1WPG / pdb_00001wpg |
| Title | : | Crystal structure of the SR CA2+-ATPase with MGF4 |
| Authors | : | Toyoshima, C.; Nomura, H.; Tsuda, T. |
| Deposited on | : | 2004-09-02 |
| Resolution | : | 2.30 Å(reported) |

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

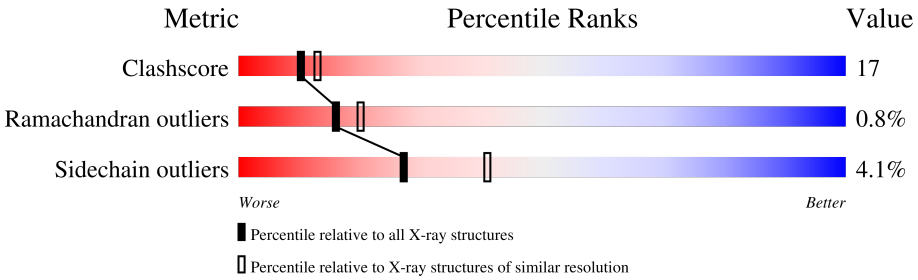
| | | |
|---|---|---|
| MolProbity | : | 4-5-2 with Phenix2.0 |
| Mogul | : | 2022.3.0, CSD as543be (2022) |
| Xtriage (Phenix) | : | NOT EXECUTED |
| EDS | : | NOT EXECUTED |
| Buster-report | : | wwPDB partial adaption of 1.1.7 (2018) |
| Percentile statistics | : | 20250101.v01 (using entries in the PDB archive January 1st 2025) |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.50 |

# 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.30 Å.

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




| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|---|---|---|
| Clashscore | 190562 | 6919 (2.30-2.30) |
| Ramachandran outliers | 187476 | 6854 (2.30-2.30) |
| Sidechain outliers | 187428 | 6854 (2.30-2.30) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | A | 994 | 66% 31% . |
| 1 | B | 994 | 66% 31% . |
| 1 | C | 994 | 66% 31% . |
| 1 | D | 994 | 65% 32% . |

# 2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 31698 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Sarcoplasmic/endoplasmic reticulum calcium ATPase 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 994 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 7671 | 4876 | 1287 | 1451 | 57 | | | |
| 1 | B | 994 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 7671 | 4876 | 1287 | 1451 | 57 | | | |
| 1 | C | 994 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 7671 | 4876 | 1287 | 1451 | 57 | | | |
| 1 | D | 994 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 7671 | 4876 | 1287 | 1451 | 57 | | | |

There are 4 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| A | 994 | GLY | - | SEE REMARK 999 | UNP P04191 |
| B | 994 | GLY | - | SEE REMARK 999 | UNP P04191 |
| C | 994 | GLY | - | SEE REMARK 999 | UNP P04191 |
| D | 994 | GLY | - | SEE REMARK 999 | UNP P04191 |

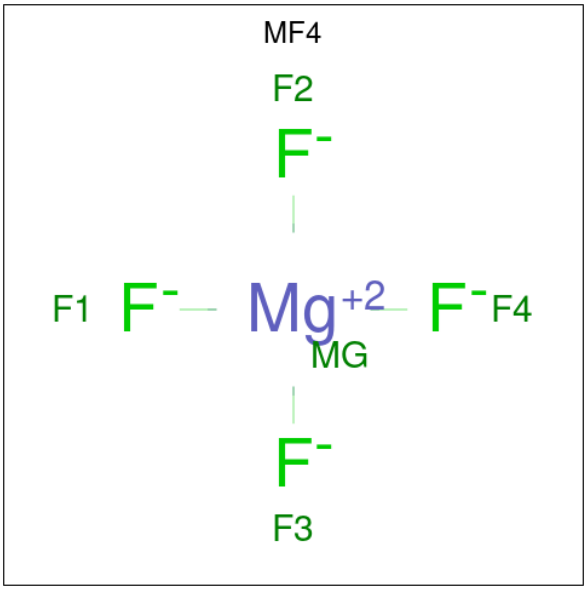
- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|---|---|---|---|---|---|---|
| 2 | A | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 2 | B | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 2 | C | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 2 | D | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

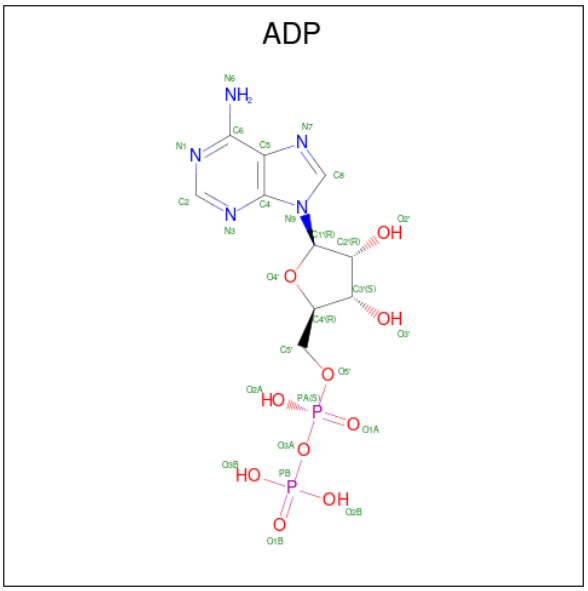
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 3 | A | 1 | Total Na<br>1 1 | 0 | 0 |
| 3 | B | 1 | Total Na<br>1 1 | 0 | 0 |
| 3 | C | 1 | Total Na<br>1 1 | 0 | 0 |
| 3 | D | 1 | Total Na<br>1 1 | 0 | 0 |

- Molecule 4 is TETRAFLUOROMAGNESATE(2-) (CCD ID: MF4) (formula: $F_4Mg$).



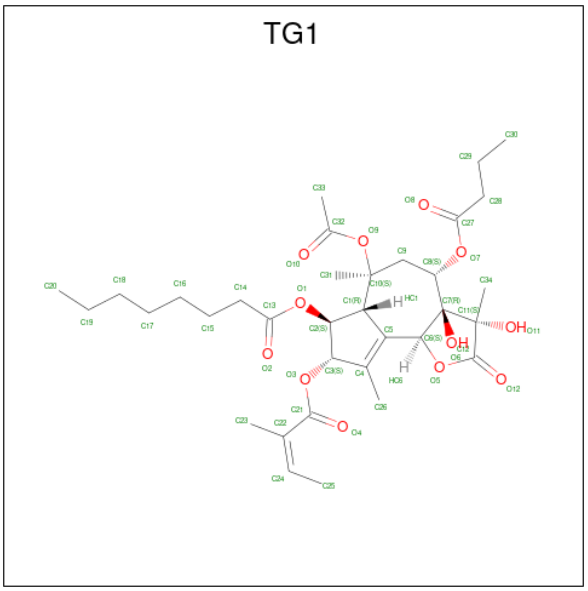

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 4 | A | 1 | Total F Mg<br>5 4 1 | 0 | 0 |
| 4 | B | 1 | Total F Mg<br>5 4 1 | 0 | 0 |
| 4 | C | 1 | Total F Mg<br>5 4 1 | 0 | 0 |
| 4 | D | 1 | Total F Mg<br>5 4 1 | 0 | 0 |

- Molecule 5 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).




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

- Molecule 6 is OCTANOIC ACID [3S-[3ALPHA, 3ABETA, 4ALPHA, 6BETA, 6ABETA, 7BETA, 8ALPHA(Z), 9BALPHA]]-6-(ACETYLOXY)-2,3,-3A,4,5,6,6A,7,8,9B-DECAHYDRO-3,3A-DIHYDROXY-3,6,9-TRIMETHYL-8-[(2-METHYL-1-OXO-2-BUTENYL)OXY]-2-OXO-4-(1-OXOBUTOXY)-AZULENO[4,5-B]FURAN-7-YL ESTER (CCD ID: TG1) (formula: $C_{34}H_{50}O_{12}$).




| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 6 | A | 1 | Total C O<br>46 34 12 | 0 | 0 |
| 6 | B | 1 | Total C O<br>46 34 12 | 0 | 0 |
| 6 | C | 1 | Total C O<br>46 34 12 | 0 | 0 |
| 6 | D | 1 | Total C O<br>46 34 12 | 0 | 0 |

- Molecule 7 is water.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 7 | A | 165 | Total O<br>165 165 | 0 | 0 |
| 7 | B | 180 | Total O<br>180 180 | 0 | 0 |
| 7 | C | 180 | Total O<br>180 180 | 0 | 0 |
| 7 | D | 165 | Total O<br>165 165 | 0 | 0 |

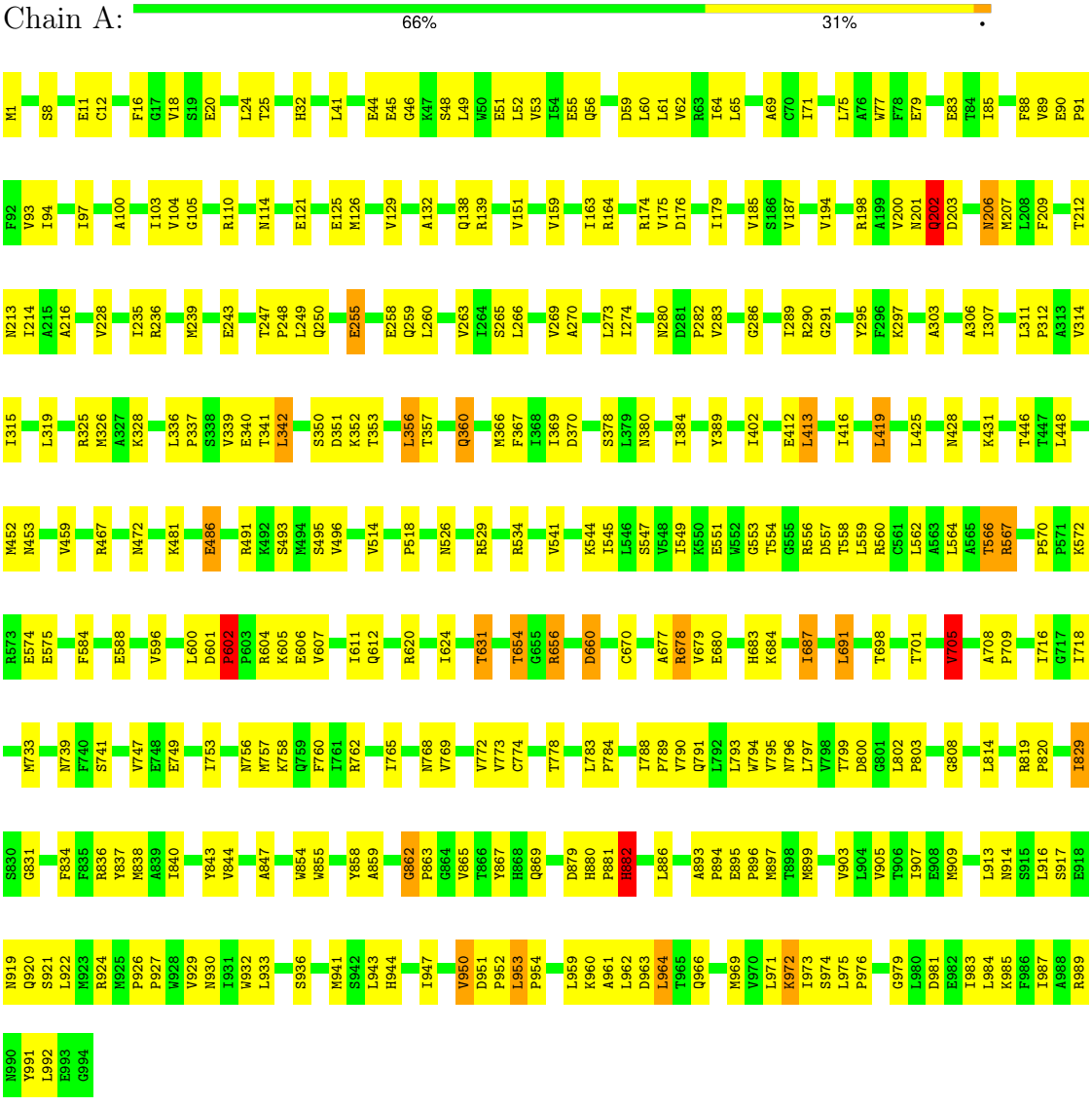
# 3 Residue-property plots (i)

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

Note EDS was not executed.

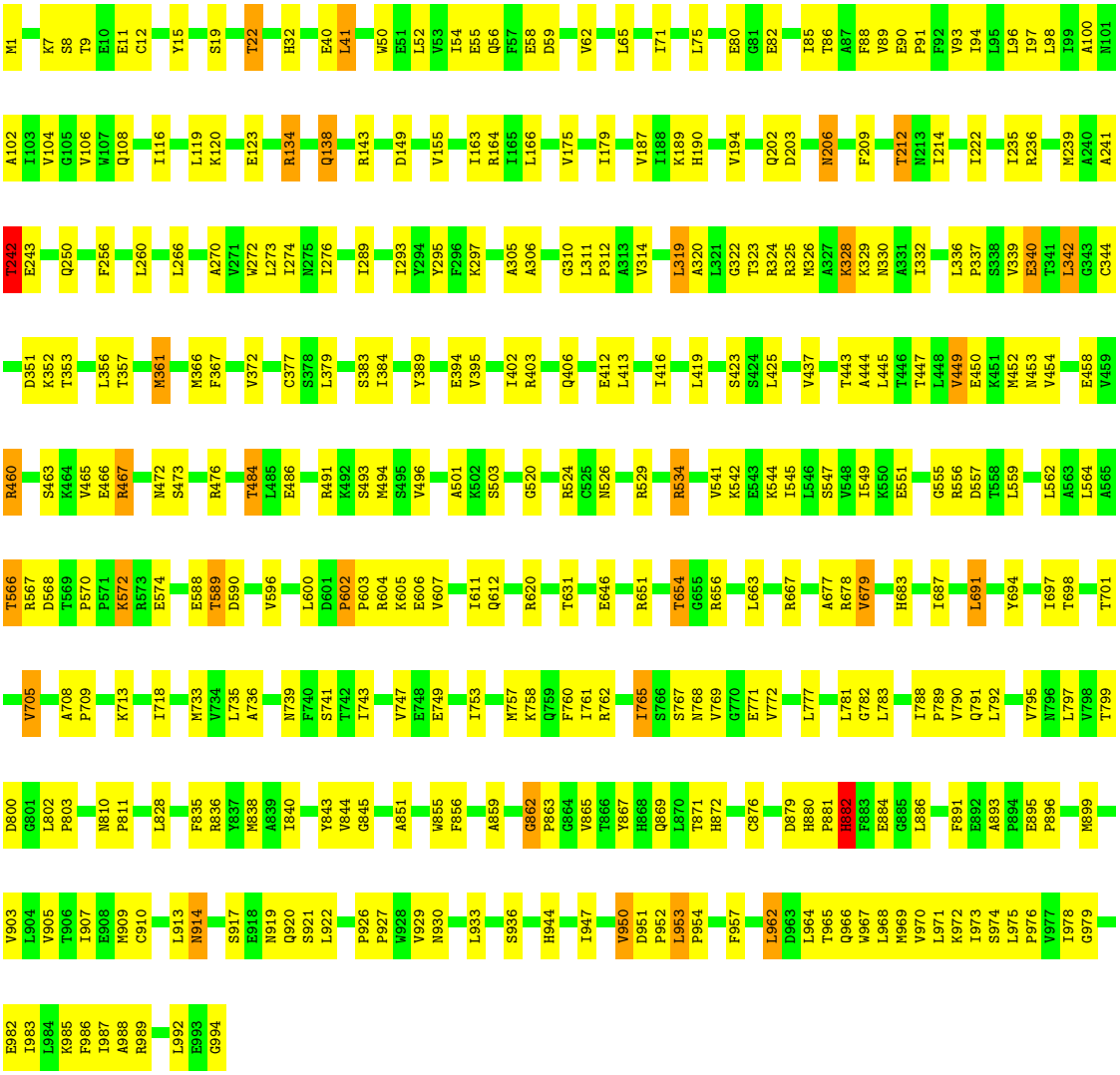
• Molecule 1: Sarcoplasmic/endoplasmic reticulum calcium ATPase 1

Chain A:




• Molecule 1: Sarcoplasmic/endoplasmic reticulum calcium ATPase 1

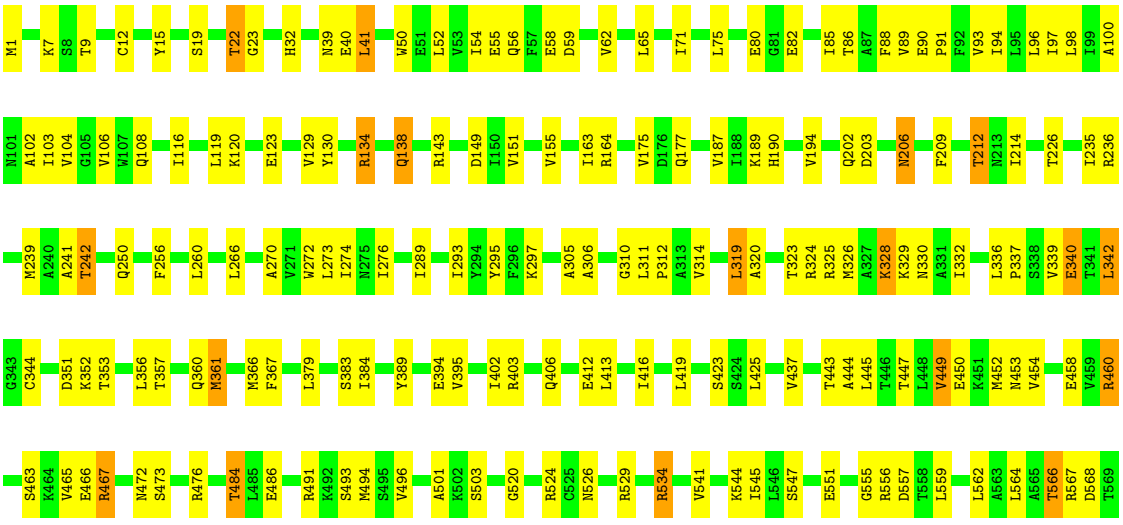
Chain B:

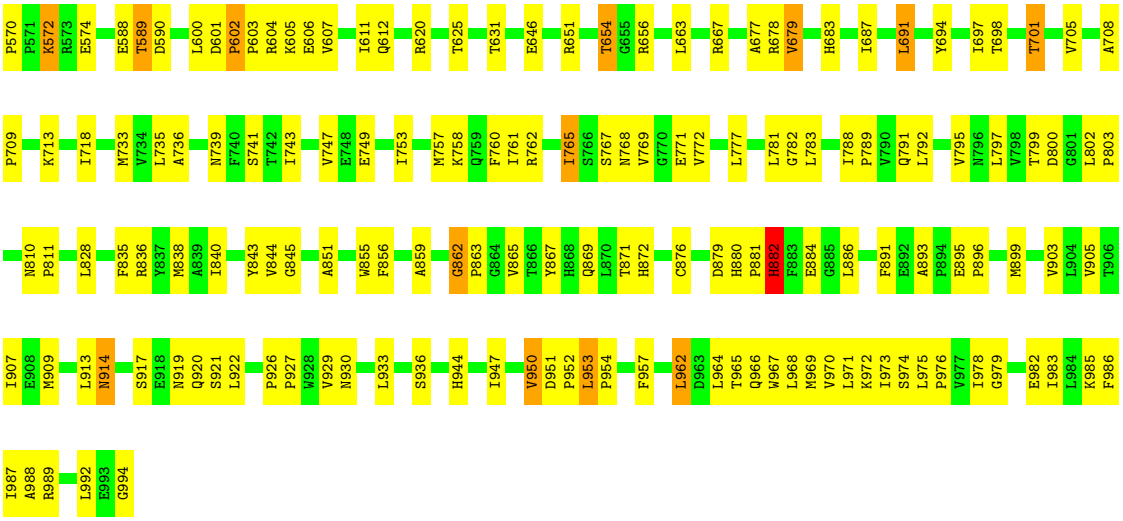


• Molecule 1: Sarcoplasmic/endoplasmic reticulum calcium ATPase 1

Chain C:

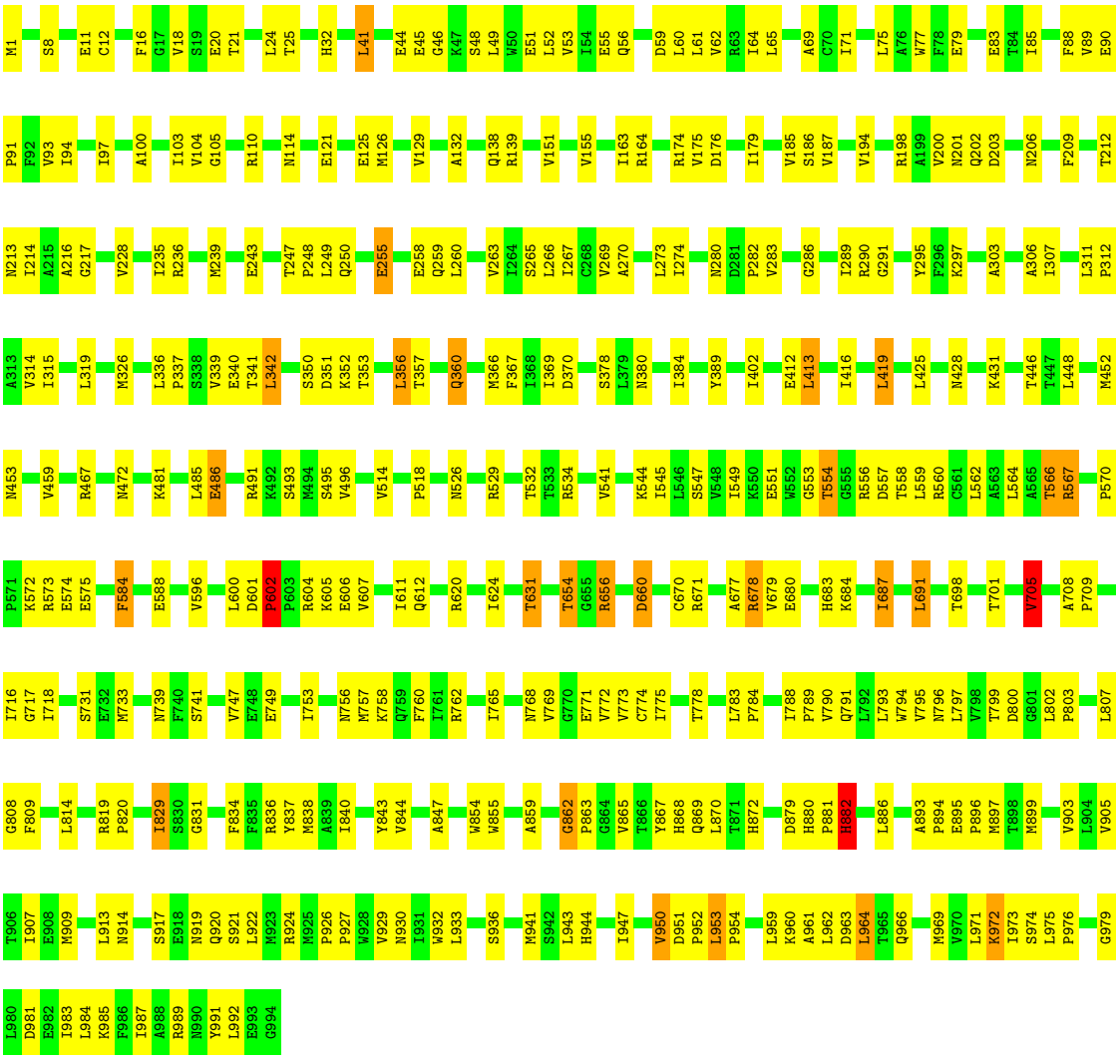




• Molecule 1: Sarcoplasmic/endoplasmic reticulum calcium ATPase 1

Chain D:



# 4 Data and refinement statistics (i)

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

| Property | Value | Source |
|---|---|---|
| Space group | P 1 21 1 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 102.21Å 275.39Å 109.94Å<br>90.00° 90.01° 90.00° | Depositor |
| Resolution (Å) | 15.00 – 2.30 | Depositor |
| % Data completeness<br>(in resolution range) | 93.4 (15.00-2.30) | Depositor |
| $R_{merge}$ | 0.06 | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| Refinement program | CNS | Depositor |
| R, $R_{free}$ | 0.223 , 0.245 | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| Total number of atoms | 31698 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 59.0 | wwPDB-VP |

# 5 Model quality

## 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ADP, MG, TG1, NA, MF4

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #$\|Z\|$ >5 | RMSZ | #$\|Z\|$ >5 |
| 1 | A | 0.46 | 9/7812 (0.1%) | 0.89 | 19/10592 (0.2%) |
| 1 | B | 0.51 | 7/7812 (0.1%) | 0.90 | 15/10592 (0.1%) |
| 1 | C | 0.51 | 8/7812 (0.1%) | 0.91 | 18/10592 (0.2%) |
| 1 | D | 0.47 | 9/7812 (0.1%) | 0.89 | 22/10592 (0.2%) |
| All | All | 0.49 | 33/31248 (0.1%) | 0.90 | 74/42368 (0.2%) |

All (33) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 1 | B | 526 | ASN | CG-OD1 | 5.54 | 1.34 | 1.23 |
| 1 | C | 32 | HIS | ND1-CE1 | 5.41 | 1.38 | 1.32 |
| 1 | C | 526 | ASN | CG-OD1 | 5.41 | 1.33 | 1.23 |
| 1 | A | 202 | GLN | CD-OE1 | 5.40 | 1.33 | 1.23 |
| 1 | B | 32 | HIS | ND1-CE1 | 5.34 | 1.37 | 1.32 |
| 1 | B | 872 | HIS | ND1-CE1 | 5.33 | 1.37 | 1.32 |
| 1 | D | 872 | HIS | ND1-CE1 | 5.33 | 1.37 | 1.32 |
| 1 | B | 250 | GLN | CD-OE1 | 5.32 | 1.33 | 1.23 |
| 1 | C | 250 | GLN | CD-OE1 | 5.29 | 1.33 | 1.23 |
| 1 | D | 612 | GLN | CD-OE1 | 5.28 | 1.33 | 1.23 |
| 1 | A | 138 | GLN | CD-OE1 | 5.28 | 1.33 | 1.23 |
| 1 | A | 612 | GLN | CD-OE1 | 5.27 | 1.33 | 1.23 |
| 1 | C | 872 | HIS | ND1-CE1 | 5.26 | 1.37 | 1.32 |
| 1 | D | 32 | HIS | ND1-CE1 | 5.24 | 1.37 | 1.32 |
| 1 | A | 32 | HIS | ND1-CE1 | 5.24 | 1.37 | 1.32 |
| 1 | A | 526 | ASN | CG-OD1 | 5.20 | 1.33 | 1.23 |
| 1 | A | 360 | GLN | CD-OE1 | 5.20 | 1.33 | 1.23 |
| 1 | D | 138 | GLN | CD-OE1 | 5.18 | 1.33 | 1.23 |
| 1 | C | 612 | GLN | CD-OE1 | 5.17 | 1.33 | 1.23 |
| 1 | D | 526 | ASN | CG-OD1 | 5.16 | 1.33 | 1.23 |
| 1 | B | 138 | GLN | CD-OE1 | 5.16 | 1.33 | 1.23 |
| 1 | C | 138 | GLN | CD-OE1 | 5.15 | 1.33 | 1.23 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 1 | C | 206 | ASN | CG-OD1 | 5.13 | 1.33 | 1.23 |
| 1 | B | 206 | ASN | CG-OD1 | 5.13 | 1.33 | 1.23 |
| 1 | B | 612 | GLN | CD-OE1 | 5.13 | 1.33 | 1.23 |
| 1 | A | 114 | ASN | CG-OD1 | 5.11 | 1.33 | 1.23 |
| 1 | D | 114 | ASN | CG-OD1 | 5.11 | 1.33 | 1.23 |
| 1 | A | 202 | GLN | CD-NE2 | -5.09 | 1.22 | 1.33 |
| 1 | A | 380 | ASN | CG-OD1 | 5.08 | 1.33 | 1.23 |
| 1 | D | 206 | ASN | CG-OD1 | 5.06 | 1.33 | 1.23 |
| 1 | D | 380 | ASN | CG-OD1 | 5.06 | 1.33 | 1.23 |
| 1 | C | 360 | GLN | CD-OE1 | 5.04 | 1.33 | 1.23 |
| 1 | D | 360 | GLN | CD-OE1 | 5.04 | 1.33 | 1.23 |

All (74) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 1 | B | 556 | ARG | N-CA-C | -8.97 | 102.35 | 113.20 |
| 1 | C | 556 | ARG | N-CA-C | -8.85 | 102.49 | 113.20 |
| 1 | D | 602 | PRO | N-CA-C | 8.39 | 120.94 | 110.70 |
| 1 | C | 602 | PRO | N-CA-C | 8.37 | 119.54 | 110.58 |
| 1 | A | 602 | PRO | N-CA-C | 8.00 | 120.47 | 110.70 |
| 1 | B | 654 | THR | N-CA-C | -7.74 | 99.06 | 110.52 |
| 1 | C | 654 | THR | N-CA-C | -7.45 | 99.49 | 110.52 |
| 1 | D | 964 | LEU | N-CA-C | -7.06 | 104.14 | 112.89 |
| 1 | C | 194 | VAL | N-CA-C | -7.05 | 101.17 | 108.15 |
| 1 | B | 194 | VAL | N-CA-C | -7.01 | 101.21 | 108.15 |
| 1 | C | 163 | ILE | N-CA-C | 7.00 | 118.57 | 108.48 |
| 1 | A | 964 | LEU | N-CA-C | -6.97 | 104.25 | 112.89 |
| 1 | B | 163 | ILE | N-CA-C | 6.97 | 118.51 | 108.48 |
| 1 | B | 602 | PRO | N-CA-C | 6.89 | 119.10 | 110.70 |
| 1 | D | 601 | ASP | CA-C-N | 6.71 | 127.30 | 120.38 |
| 1 | D | 601 | ASP | C-N-CA | 6.71 | 127.30 | 120.38 |
| 1 | A | 32 | HIS | CB-CG-CD2 | -6.67 | 122.53 | 131.20 |
| 1 | B | 351 | ASP | N-CA-C | -6.64 | 101.77 | 110.53 |
| 1 | D | 32 | HIS | CB-CG-CD2 | -6.63 | 122.58 | 131.20 |
| 1 | D | 194 | VAL | CA-C-N | 6.62 | 128.12 | 119.84 |
| 1 | D | 194 | VAL | C-N-CA | 6.62 | 128.12 | 119.84 |
| 1 | C | 351 | ASP | N-CA-C | -6.61 | 101.80 | 110.53 |
| 1 | A | 194 | VAL | CA-C-N | 6.60 | 128.09 | 119.84 |
| 1 | A | 194 | VAL | C-N-CA | 6.60 | 128.09 | 119.84 |
| 1 | B | 32 | HIS | CB-CG-CD2 | -6.54 | 122.69 | 131.20 |
| 1 | C | 872 | HIS | CB-CG-CD2 | -6.50 | 122.75 | 131.20 |
| 1 | D | 872 | HIS | CB-CG-CD2 | -6.49 | 122.76 | 131.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 1 | B | 872 | HIS | CB-CG-CD2 | -6.48 | 122.77 | 131.20 |
| 1 | C | 32 | HIS | CB-CG-CD2 | -6.45 | 122.81 | 131.20 |
| 1 | A | 601 | ASP | CA-C-N | 6.23 | 126.79 | 120.38 |
| 1 | A | 601 | ASP | C-N-CA | 6.23 | 126.79 | 120.38 |
| 1 | D | 605 | LYS | N-CA-C | 6.20 | 118.54 | 111.11 |
| 1 | A | 605 | LYS | N-CA-C | 6.14 | 118.47 | 111.11 |
| 1 | A | 654 | THR | N-CA-C | -6.04 | 101.83 | 110.59 |
| 1 | C | 601 | ASP | CA-C-N | 6.04 | 124.01 | 119.66 |
| 1 | C | 601 | ASP | C-N-CA | 6.04 | 124.01 | 119.66 |
| 1 | C | 605 | LYS | N-CA-C | 6.01 | 117.50 | 111.07 |
| 1 | A | 159 | VAL | CA-C-N | 5.96 | 125.66 | 119.64 |
| 1 | A | 159 | VAL | C-N-CA | 5.96 | 125.66 | 119.64 |
| 1 | D | 163 | ILE | N-CA-C | 5.93 | 117.01 | 108.48 |
| 1 | C | 419 | LEU | N-CA-C | 5.91 | 118.96 | 111.69 |
| 1 | B | 605 | LYS | N-CA-C | 5.89 | 117.38 | 111.07 |
| 1 | A | 556 | ARG | N-CA-C | -5.88 | 105.37 | 112.54 |
| 1 | A | 163 | ILE | N-CA-C | 5.86 | 116.92 | 108.48 |
| 1 | D | 654 | THR | N-CA-C | -5.78 | 102.21 | 110.59 |
| 1 | A | 32 | HIS | CB-CG-ND1 | 5.77 | 131.36 | 122.70 |
| 1 | D | 32 | HIS | CB-CG-ND1 | 5.75 | 131.32 | 122.70 |
| 1 | D | 556 | ARG | N-CA-C | -5.74 | 105.54 | 112.54 |
| 1 | D | 872 | HIS | CB-CG-ND1 | 5.64 | 131.16 | 122.70 |
| 1 | B | 419 | LEU | N-CA-C | 5.62 | 118.60 | 111.69 |
| 1 | B | 32 | HIS | CB-CG-ND1 | 5.61 | 131.12 | 122.70 |
| 1 | C | 872 | HIS | CB-CG-ND1 | 5.60 | 131.10 | 122.70 |
| 1 | C | 242 | THR | CB-CA-C | -5.59 | 109.02 | 117.07 |
| 1 | B | 872 | HIS | CB-CG-ND1 | 5.58 | 131.06 | 122.70 |
| 1 | D | 350 | SER | N-CA-C | 5.57 | 118.27 | 108.75 |
| 1 | B | 242 | THR | CB-CA-C | -5.55 | 109.08 | 117.07 |
| 1 | C | 32 | HIS | CB-CG-ND1 | 5.53 | 130.99 | 122.70 |
| 1 | A | 350 | SER | N-CA-C | 5.52 | 118.19 | 108.75 |
| 1 | A | 419 | LEU | N-CA-C | 5.50 | 118.45 | 111.69 |
| 1 | D | 419 | LEU | N-CA-C | 5.42 | 118.02 | 111.40 |
| 1 | D | 705 | VAL | N-CA-C | -5.32 | 106.09 | 113.00 |
| 1 | A | 584 | PHE | N-CA-C | 5.31 | 118.55 | 111.75 |
| 1 | A | 351 | ASP | N-CA-C | -5.31 | 103.52 | 110.53 |
| 1 | D | 351 | ASP | N-CA-C | -5.29 | 103.54 | 110.53 |
| 1 | C | 625 | THR | N-CA-C | 5.29 | 117.85 | 109.50 |
| 1 | B | 242 | THR | N-CA-C | 5.28 | 113.11 | 108.78 |
| 1 | D | 584 | PHE | N-CA-C | 5.26 | 118.48 | 111.75 |
| 1 | C | 175 | VAL | N-CA-C | 5.23 | 116.01 | 108.48 |
| 1 | C | 242 | THR | N-CA-C | 5.20 | 113.05 | 108.78 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 1 | A | 705 | VAL | N-CA-C | -5.14 | 106.32 | 113.00 |
| 1 | D | 41 | LEU | CA-C-N | 5.06 | 125.29 | 119.83 |
| 1 | D | 41 | LEU | C-N-CA | 5.06 | 125.29 | 119.83 |
| 1 | B | 175 | VAL | N-CA-C | 5.03 | 115.73 | 108.48 |
| 1 | D | 532 | THR | N-CA-C | -5.02 | 106.58 | 113.30 |

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts (i)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | A | 7671 | 0 | 7764 | 256 | 0 |
| 1 | B | 7671 | 0 | 7764 | 281 | 0 |
| 1 | C | 7671 | 0 | 7764 | 278 | 0 |
| 1 | D | 7671 | 0 | 7764 | 254 | 0 |
| 2 | A | 2 | 0 | 0 | 0 | 0 |
| 2 | B | 2 | 0 | 0 | 0 | 0 |
| 2 | C | 2 | 0 | 0 | 0 | 0 |
| 2 | D | 2 | 0 | 0 | 0 | 0 |
| 3 | A | 1 | 0 | 0 | 0 | 0 |
| 3 | B | 1 | 0 | 0 | 0 | 0 |
| 3 | C | 1 | 0 | 0 | 0 | 0 |
| 3 | D | 1 | 0 | 0 | 0 | 0 |
| 4 | A | 5 | 0 | 0 | 0 | 0 |
| 4 | B | 5 | 0 | 0 | 0 | 0 |
| 4 | C | 5 | 0 | 0 | 0 | 0 |
| 4 | D | 5 | 0 | 0 | 0 | 0 |
| 5 | A | 27 | 0 | 12 | 0 | 0 |
| 5 | B | 27 | 0 | 12 | 2 | 0 |
| 5 | C | 27 | 0 | 12 | 2 | 0 |
| 5 | D | 27 | 0 | 12 | 0 | 0 |
| 6 | A | 46 | 0 | 50 | 0 | 0 |
| 6 | B | 46 | 0 | 50 | 2 | 0 |
| 6 | C | 46 | 0 | 50 | 2 | 0 |
| 6 | D | 46 | 0 | 50 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 7 | A | 165 | 0 | 0 | 5 | 0 |
| 7 | B | 180 | 0 | 0 | 8 | 0 |
| 7 | C | 180 | 0 | 0 | 7 | 0 |
| 7 | D | 165 | 0 | 0 | 6 | 0 |
| All | All | 31698 | 0 | 31304 | 1065 | 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 17.

All (1065) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:460:ARG:H | 1:C:460:ARG:HD3 | 1.09 | 1.15 |
| 1:B:460:ARG:HD3 | 1:B:460:ARG:H | 1.10 | 1.13 |
| 1:B:1:MET:HE1 | 1:B:12:CYS:HA | 1.38 | 1.03 |
| 1:C:1:MET:HE1 | 1:C:12:CYS:HA | 1.37 | 1.02 |
| 1:D:679:VAL:HG13 | 1:D:683:HIS:HB2 | 1.47 | 0.96 |
| 1:C:921:SER:HB2 | 1:C:989:ARG:HH22 | 1.30 | 0.95 |
| 1:B:921:SER:HB2 | 1:B:989:ARG:HH22 | 1.31 | 0.94 |
| 1:A:679:VAL:HG13 | 1:A:683:HIS:HB2 | 1.49 | 0.93 |
| 1:C:366:MET:HE2 | 1:C:384:ILE:HD11 | 1.47 | 0.93 |
| 1:A:202:GLN:H | 1:A:202:GLN:HE21 | 1.13 | 0.92 |
| 1:D:366:MET:HE2 | 1:D:384:ILE:HD11 | 1.50 | 0.91 |
| 1:B:342:LEU:HD12 | 1:B:733:MET:HE1 | 1.52 | 0.91 |
| 1:B:366:MET:HE2 | 1:B:384:ILE:HD11 | 1.50 | 0.91 |
| 1:D:448:LEU:HG | 1:D:452:MET:HE2 | 1.53 | 0.90 |
| 1:A:366:MET:HE2 | 1:A:384:ILE:HD11 | 1.54 | 0.89 |
| 1:A:448:LEU:HG | 1:A:452:MET:HE2 | 1.54 | 0.89 |
| 1:C:484:THR:HB | 1:C:496:VAL:HG12 | 1.56 | 0.88 |
| 1:C:342:LEU:HD12 | 1:C:733:MET:HE1 | 1.56 | 0.88 |
| 1:B:484:THR:HB | 1:B:496:VAL:HG12 | 1.57 | 0.87 |
| 1:B:494:MET:HE2 | 7:B:3036:HOH:O | 1.75 | 0.86 |
| 1:B:319:LEU:HB3 | 1:B:336:LEU:HD12 | 1.58 | 0.85 |
| 1:C:494:MET:HE2 | 7:C:4036:HOH:O | 1.77 | 0.85 |
| 1:C:319:LEU:HB3 | 1:C:336:LEU:HD12 | 1.59 | 0.84 |
| 1:C:460:ARG:HD3 | 1:C:460:ARG:N | 1.93 | 0.81 |
| 1:A:289:ILE:HG22 | 1:A:290:ARG:HH11 | 1.46 | 0.80 |
| 1:D:289:ILE:HG22 | 1:D:290:ARG:HH11 | 1.46 | 0.80 |
| 1:B:460:ARG:HD3 | 1:B:460:ARG:N | 1.94 | 0.80 |
| 1:D:174:ARG:HG3 | 1:D:216:ALA:HB3 | 1.63 | 0.79 |
| 1:A:260:LEU:HD11 | 1:A:306:ALA:HB1 | 1.65 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:174:ARG:HG3 | 1:A:216:ALA:HB3 | 1.65 | 0.78 |
| 1:A:125:GLU:HG3 | 1:A:126:MET:HG2 | 1.65 | 0.77 |
| 1:D:125:GLU:HG3 | 1:D:126:MET:HG2 | 1.65 | 0.77 |
| 1:D:260:LEU:HD11 | 1:D:306:ALA:HB1 | 1.67 | 0.77 |
| 1:B:865:VAL:HG11 | 1:B:869:GLN:HB2 | 1.67 | 0.76 |
| 1:B:921:SER:H | 1:B:989:ARG:HH12 | 1.29 | 0.76 |
| 1:D:413:LEU:HD22 | 1:D:564:LEU:HD12 | 1.66 | 0.76 |
| 1:A:247:THR:HB | 1:A:248:PRO:HD2 | 1.68 | 0.76 |
| 1:C:865:VAL:HG11 | 1:C:869:GLN:HB2 | 1.68 | 0.76 |
| 1:C:921:SER:H | 1:C:989:ARG:HH12 | 1.29 | 0.75 |
| 1:D:247:THR:HB | 1:D:248:PRO:HD2 | 1.69 | 0.75 |
| 1:A:412:GLU:OE1 | 1:A:529:ARG:HD2 | 1.88 | 0.74 |
| 1:B:972:LYS:HE2 | 1:B:972:LYS:HA | 1.69 | 0.74 |
| 1:C:972:LYS:HA | 1:C:972:LYS:HE2 | 1.70 | 0.74 |
| 1:A:413:LEU:HD22 | 1:A:564:LEU:HD12 | 1.68 | 0.74 |
| 1:B:209:PHE:O | 1:B:212:THR:HB | 1.87 | 0.74 |
| 1:A:553:GLY:O | 1:A:554:THR:CG2 | 2.37 | 0.73 |
| 1:D:412:GLU:OE1 | 1:D:529:ARG:HD2 | 1.88 | 0.73 |
| 1:B:80:GLU:HG3 | 1:B:82:GLU:HG2 | 1.70 | 0.73 |
| 1:C:80:GLU:HG3 | 1:C:82:GLU:HG2 | 1.70 | 0.73 |
| 1:C:458:GLU:HB2 | 1:C:460:ARG:HE | 1.54 | 0.73 |
| 1:B:458:GLU:HB2 | 1:B:460:ARG:HE | 1.54 | 0.72 |
| 1:C:212:THR:HG21 | 7:C:4082:HOH:O | 1.87 | 0.72 |
| 1:B:844:VAL:HG22 | 1:B:907:ILE:HG21 | 1.71 | 0.72 |
| 1:C:844:VAL:HG22 | 1:C:907:ILE:HG21 | 1.71 | 0.72 |
| 1:B:235:ILE:HG22 | 1:B:239:MET:HE2 | 1.71 | 0.72 |
| 1:C:1:MET:HE2 | 1:C:7:LYS:HD2 | 1.69 | 0.71 |
| 1:B:567:ARG:HD3 | 1:B:570:PRO:HA | 1.72 | 0.71 |
| 1:B:212:THR:HG21 | 7:B:3082:HOH:O | 1.88 | 0.71 |
| 1:C:326:MET:HE1 | 1:C:339:VAL:HG22 | 1.72 | 0.71 |
| 1:B:922:LEU:HD23 | 1:B:927:PRO:HG3 | 1.72 | 0.71 |
| 1:C:567:ARG:HD3 | 1:C:570:PRO:HA | 1.72 | 0.71 |
| 1:B:326:MET:HE1 | 1:B:339:VAL:HG22 | 1.72 | 0.71 |
| 1:B:260:LEU:HD11 | 1:B:306:ALA:HB1 | 1.72 | 0.71 |
| 1:C:260:LEU:HD11 | 1:C:306:ALA:HB1 | 1.73 | 0.71 |
| 1:D:319:LEU:HB3 | 1:D:336:LEU:HD12 | 1.71 | 0.71 |
| 1:C:235:ILE:HG22 | 1:C:239:MET:HE2 | 1.72 | 0.70 |
| 1:C:922:LEU:HD23 | 1:C:927:PRO:HG3 | 1.73 | 0.70 |
| 1:C:735:LEU:HD11 | 1:C:743:ILE:HD11 | 1.72 | 0.70 |
| 1:A:984:LEU:HA | 1:A:987:ILE:HD12 | 1.73 | 0.70 |
| 1:B:1:MET:HE3 | 1:B:15:TYR:CB | 2.22 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:319:LEU:HB3 | 1:A:336:LEU:HD12 | 1.72 | 0.70 |
| 1:C:735:LEU:HD21 | 1:C:743:ILE:HD13 | 1.74 | 0.69 |
| 1:D:90:GLU:HB3 | 1:D:91:PRO:HD3 | 1.72 | 0.69 |
| 1:A:90:GLU:HB3 | 1:A:91:PRO:HD3 | 1.72 | 0.69 |
| 1:B:735:LEU:HD21 | 1:B:743:ILE:HD13 | 1.74 | 0.69 |
| 1:B:1:MET:HE2 | 1:B:7:LYS:HD2 | 1.71 | 0.69 |
| 1:C:913:LEU:HD22 | 1:C:927:PRO:HB3 | 1.73 | 0.69 |
| 1:A:202:GLN:H | 1:A:202:GLN:NE2 | 1.90 | 0.69 |
| 1:B:913:LEU:HD22 | 1:B:927:PRO:HB3 | 1.73 | 0.69 |
| 1:D:984:LEU:HA | 1:D:987:ILE:HD12 | 1.75 | 0.69 |
| 1:B:735:LEU:HD11 | 1:B:743:ILE:HD11 | 1.74 | 0.68 |
| 1:D:176:ASP:O | 1:D:212:THR:HG23 | 1.92 | 0.68 |
| 1:A:553:GLY:O | 1:A:554:THR:HG23 | 1.93 | 0.68 |
| 1:C:90:GLU:HB3 | 1:C:91:PRO:HD3 | 1.76 | 0.68 |
| 1:C:209:PHE:O | 1:C:212:THR:HB | 1.94 | 0.68 |
| 1:D:369:ILE:HD11 | 1:D:545:ILE:HD11 | 1.75 | 0.67 |
| 1:D:749:GLU:O | 1:D:753:ILE:HG12 | 1.94 | 0.67 |
| 1:A:61:LEU:HD22 | 1:A:307:ILE:HD12 | 1.75 | 0.67 |
| 1:A:749:GLU:O | 1:A:753:ILE:HG12 | 1.94 | 0.67 |
| 1:B:782:GLY:HA3 | 1:B:871:THR:HG23 | 1.77 | 0.67 |
| 1:A:202:GLN:HE21 | 1:A:202:GLN:N | 1.90 | 0.67 |
| 1:D:413:LEU:CD2 | 1:D:564:LEU:HD12 | 2.25 | 0.67 |
| 1:D:61:LEU:HD22 | 1:D:307:ILE:HD12 | 1.76 | 0.67 |
| 1:A:176:ASP:O | 1:A:212:THR:HG23 | 1.94 | 0.67 |
| 1:B:90:GLU:HB3 | 1:B:91:PRO:HD3 | 1.76 | 0.67 |
| 1:C:1:MET:HE3 | 1:C:15:TYR:CB | 2.25 | 0.67 |
| 1:A:369:ILE:HD11 | 1:A:545:ILE:HD11 | 1.76 | 0.67 |
| 1:D:412:GLU:OE2 | 1:D:566:THR:HG21 | 1.95 | 0.67 |
| 1:C:782:GLY:HA3 | 1:C:871:THR:HG23 | 1.77 | 0.67 |
| 1:D:756:ASN:HB3 | 1:D:808:GLY:HA2 | 1.75 | 0.66 |
| 1:A:567:ARG:HD2 | 1:A:570:PRO:HA | 1.77 | 0.66 |
| 1:B:416:ILE:HD11 | 1:B:566:THR:HG22 | 1.77 | 0.66 |
| 1:B:412:GLU:OE1 | 1:B:529:ARG:HD2 | 1.94 | 0.66 |
| 1:D:567:ARG:HD2 | 1:D:570:PRO:HA | 1.77 | 0.66 |
| 1:C:412:GLU:OE1 | 1:C:529:ARG:HD2 | 1.95 | 0.66 |
| 1:A:65:LEU:HD11 | 1:A:307:ILE:HG13 | 1.77 | 0.66 |
| 1:A:49:LEU:HD12 | 1:A:52:LEU:HD11 | 1.77 | 0.65 |
| 1:A:235:ILE:O | 1:A:239:MET:HG2 | 1.96 | 0.65 |
| 1:C:979:GLY:O | 1:C:983:ILE:HG12 | 1.96 | 0.65 |
| 1:D:708:ALA:HB3 | 1:D:709:PRO:HD3 | 1.78 | 0.65 |
| 1:A:413:LEU:CD2 | 1:A:564:LEU:HD12 | 2.27 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:819:ARG:HG2 | 1:A:820:PRO:HD2 | 1.76 | 0.65 |
| 1:C:412:GLU:OE2 | 1:C:566:THR:HG21 | 1.96 | 0.65 |
| 1:D:65:LEU:HD11 | 1:D:307:ILE:HG13 | 1.78 | 0.65 |
| 1:A:756:ASN:HB3 | 1:A:808:GLY:HA2 | 1.77 | 0.65 |
| 1:D:49:LEU:HD12 | 1:D:52:LEU:HD11 | 1.77 | 0.65 |
| 1:D:126:MET:HG3 | 1:D:139:ARG:NH1 | 2.12 | 0.65 |
| 1:D:235:ILE:O | 1:D:239:MET:HG2 | 1.97 | 0.65 |
| 1:D:8:SER:OG | 1:D:11:GLU:HG3 | 1.97 | 0.65 |
| 1:B:950:VAL:HG12 | 1:B:952:PRO:HD2 | 1.78 | 0.65 |
| 1:D:788:ILE:HG12 | 1:D:791:GLN:NE2 | 2.12 | 0.65 |
| 1:A:788:ILE:HG12 | 1:A:791:GLN:NE2 | 2.12 | 0.64 |
| 1:C:950:VAL:HG12 | 1:C:952:PRO:HD2 | 1.79 | 0.64 |
| 1:C:65:LEU:HD23 | 1:C:98:LEU:HD11 | 1.79 | 0.64 |
| 1:C:416:ILE:HD11 | 1:C:566:THR:HG22 | 1.79 | 0.64 |
| 1:A:412:GLU:OE2 | 1:A:566:THR:HG21 | 1.97 | 0.64 |
| 1:B:1:MET:HE2 | 1:B:7:LYS:CE | 2.27 | 0.64 |
| 1:A:126:MET:HG3 | 1:A:139:ARG:NH1 | 2.13 | 0.64 |
| 1:B:41:LEU:HB2 | 1:B:123:GLU:OE1 | 1.98 | 0.64 |
| 1:A:708:ALA:HB3 | 1:A:709:PRO:HD3 | 1.79 | 0.64 |
| 1:B:384:ILE:HD12 | 1:B:395:VAL:HG22 | 1.80 | 0.64 |
| 1:B:718:ILE:HD13 | 1:B:743:ILE:HD12 | 1.80 | 0.64 |
| 1:B:979:GLY:O | 1:B:983:ILE:HG12 | 1.98 | 0.63 |
| 1:C:1:MET:HE2 | 1:C:7:LYS:CE | 2.27 | 0.63 |
| 1:C:384:ILE:HD12 | 1:C:395:VAL:HG22 | 1.80 | 0.63 |
| 1:D:174:ARG:CG | 1:D:216:ALA:HB3 | 2.29 | 0.63 |
| 1:D:819:ARG:HG2 | 1:D:820:PRO:HD2 | 1.78 | 0.63 |
| 1:B:19:SER:HB3 | 1:B:22:THR:HG23 | 1.80 | 0.63 |
| 1:B:65:LEU:HD23 | 1:B:98:LEU:HD11 | 1.81 | 0.63 |
| 1:B:412:GLU:OE2 | 1:B:566:THR:HG21 | 1.98 | 0.63 |
| 1:D:963:ASP:H | 1:D:966:GLN:HG3 | 1.63 | 0.62 |
| 1:C:342:LEU:HD22 | 1:C:747:VAL:HG22 | 1.82 | 0.62 |
| 1:C:988:ALA:HA | 1:C:992:LEU:HD12 | 1.80 | 0.62 |
| 1:A:894:PRO:HB2 | 1:A:960:LYS:HB2 | 1.81 | 0.62 |
| 1:B:119:LEU:HD22 | 1:B:239:MET:CE | 2.29 | 0.62 |
| 1:B:988:ALA:HA | 1:B:992:LEU:HD12 | 1.80 | 0.62 |
| 1:D:342:LEU:HD22 | 1:D:747:VAL:HG22 | 1.80 | 0.62 |
| 1:D:894:PRO:HB2 | 1:D:960:LYS:HB2 | 1.82 | 0.62 |
| 1:A:963:ASP:H | 1:A:966:GLN:HG3 | 1.63 | 0.62 |
| 1:A:553:GLY:C | 1:A:554:THR:HG23 | 2.25 | 0.62 |
| 1:C:1:MET:HE2 | 1:C:7:LYS:CD | 2.29 | 0.62 |
| 1:C:367:PHE:CE2 | 1:C:379:LEU:HD13 | 2.35 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:326:MET:HG2 | 1:B:749:GLU:HG2 | 1.81 | 0.62 |
| 1:B:367:PHE:CE2 | 1:B:379:LEU:HD13 | 2.35 | 0.62 |
| 1:C:19:SER:HB3 | 1:C:22:THR:HG23 | 1.81 | 0.62 |
| 1:A:802:LEU:HB2 | 1:A:803:PRO:HD3 | 1.81 | 0.61 |
| 1:C:933:LEU:O | 1:C:936:SER:HB3 | 2.00 | 0.61 |
| 1:A:174:ARG:CG | 1:A:216:ALA:HB3 | 2.30 | 0.61 |
| 1:C:119:LEU:HD22 | 1:C:239:MET:CE | 2.29 | 0.61 |
| 1:C:326:MET:HG2 | 1:C:749:GLU:HG2 | 1.81 | 0.61 |
| 1:B:933:LEU:O | 1:B:936:SER:HB3 | 2.00 | 0.61 |
| 1:B:986:PHE:HA | 1:B:989:ARG:HE | 1.65 | 0.61 |
| 1:B:342:LEU:HD12 | 1:B:733:MET:CE | 2.28 | 0.61 |
| 1:A:8:SER:OG | 1:A:11:GLU:HG3 | 2.01 | 0.61 |
| 1:D:802:LEU:HB2 | 1:D:803:PRO:HD3 | 1.82 | 0.61 |
| 1:B:679:VAL:HG13 | 1:B:683:HIS:HB2 | 1.83 | 0.61 |
| 1:C:41:LEU:HB2 | 1:C:123:GLU:OE1 | 2.01 | 0.61 |
| 1:B:1:MET:HE2 | 1:B:7:LYS:CD | 2.30 | 0.61 |
| 1:B:449:VAL:CG2 | 1:B:472:ASN:ND2 | 2.64 | 0.61 |
| 1:C:810:ASN:HA | 1:C:930:ASN:HD22 | 1.66 | 0.60 |
| 1:C:986:PHE:HA | 1:C:989:ARG:HE | 1.65 | 0.60 |
| 1:A:983:ILE:O | 1:A:987:ILE:HG13 | 2.01 | 0.60 |
| 1:D:198:ARG:HH22 | 1:D:660:ASP:HA | 1.64 | 0.60 |
| 1:D:983:ILE:O | 1:D:987:ILE:HG13 | 2.01 | 0.60 |
| 1:C:272:TRP:HA | 1:C:295:TYR:HE2 | 1.67 | 0.60 |
| 1:B:155:VAL:HA | 1:B:214:ILE:HG22 | 1.83 | 0.60 |
| 1:B:691:LEU:HB3 | 1:B:698:THR:HG21 | 1.83 | 0.60 |
| 1:A:270:ALA:O | 1:A:274:ILE:HG13 | 2.02 | 0.60 |
| 1:B:332:ILE:N | 1:B:332:ILE:HD12 | 2.17 | 0.60 |
| 1:B:810:ASN:HA | 1:B:930:ASN:HD22 | 1.66 | 0.60 |
| 1:C:975:LEU:N | 1:C:976:PRO:HD2 | 2.15 | 0.60 |
| 1:A:198:ARG:HH22 | 1:A:660:ASP:HA | 1.65 | 0.60 |
| 1:B:272:TRP:HA | 1:B:295:TYR:HE2 | 1.67 | 0.60 |
| 1:C:449:VAL:CG2 | 1:C:472:ASN:ND2 | 2.65 | 0.60 |
| 1:B:802:LEU:HB2 | 1:B:803:PRO:HD3 | 1.83 | 0.60 |
| 1:B:951:ASP:HB3 | 1:B:952:PRO:HD3 | 1.84 | 0.60 |
| 1:B:975:LEU:N | 1:B:976:PRO:HD2 | 2.15 | 0.60 |
| 1:C:951:ASP:HB3 | 1:C:952:PRO:HD3 | 1.84 | 0.59 |
| 1:C:802:LEU:HB2 | 1:C:803:PRO:HD3 | 1.83 | 0.59 |
| 1:D:270:ALA:O | 1:D:274:ILE:HG13 | 2.02 | 0.59 |
| 1:A:416:ILE:HD11 | 1:A:566:THR:HG22 | 1.83 | 0.59 |
| 1:B:55:GLU:HA | 1:B:58:GLU:HG3 | 1.84 | 0.59 |
| 1:B:342:LEU:HD22 | 1:B:747:VAL:HG22 | 1.85 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:332:ILE:HD12 | 1:C:332:ILE:N | 2.17 | 0.59 |
| 1:D:953:LEU:HB2 | 1:D:954:PRO:HD3 | 1.85 | 0.59 |
| 1:D:963:ASP:H | 1:D:966:GLN:CG | 2.16 | 0.59 |
| 1:A:865:VAL:HG11 | 1:A:869:GLN:HB2 | 1.83 | 0.59 |
| 1:A:953:LEU:HB2 | 1:A:954:PRO:HD3 | 1.85 | 0.59 |
| 1:C:55:GLU:HA | 1:C:58:GLU:HG3 | 1.85 | 0.59 |
| 1:D:865:VAL:HG11 | 1:D:869:GLN:HB2 | 1.83 | 0.59 |
| 1:A:342:LEU:HD22 | 1:A:747:VAL:HG22 | 1.83 | 0.59 |
| 1:B:879:ASP:O | 1:B:882:HIS:HB2 | 2.02 | 0.59 |
| 1:D:691:LEU:HB3 | 1:D:698:THR:HG21 | 1.83 | 0.59 |
| 1:C:718:ILE:HD13 | 1:C:743:ILE:HD12 | 1.85 | 0.58 |
| 1:A:963:ASP:H | 1:A:966:GLN:CG | 2.17 | 0.58 |
| 1:C:342:LEU:HD12 | 1:C:733:MET:CE | 2.31 | 0.58 |
| 1:A:829:ILE:HD12 | 1:A:837:TYR:HD1 | 1.68 | 0.58 |
| 1:C:879:ASP:O | 1:C:882:HIS:HB2 | 2.03 | 0.58 |
| 1:D:979:GLY:O | 1:D:983:ILE:HG12 | 2.04 | 0.58 |
| 1:B:323:THR:HA | 1:B:326:MET:HE3 | 1.84 | 0.58 |
| 1:B:203:ASP:OD1 | 1:B:678:ARG:NH1 | 2.36 | 0.58 |
| 1:B:326:MET:HE1 | 1:B:339:VAL:CG2 | 2.33 | 0.58 |
| 1:C:491:ARG:HD2 | 1:C:588:GLU:OE2 | 2.02 | 0.58 |
| 1:D:416:ILE:HD11 | 1:D:566:THR:HG22 | 1.85 | 0.58 |
| 1:B:855:TRP:HA | 1:B:859:ALA:HB2 | 1.86 | 0.58 |
| 1:C:323:THR:HA | 1:C:326:MET:HE3 | 1.85 | 0.58 |
| 1:C:679:VAL:HG13 | 1:C:683:HIS:HB2 | 1.86 | 0.58 |
| 1:C:855:TRP:HA | 1:C:859:ALA:HB2 | 1.86 | 0.58 |
| 1:D:829:ILE:HD12 | 1:D:837:TYR:HD1 | 1.69 | 0.58 |
| 1:C:691:LEU:HB3 | 1:C:698:THR:HG21 | 1.85 | 0.57 |
| 1:A:969:MET:HE3 | 1:A:969:MET:O | 2.04 | 0.57 |
| 1:A:979:GLY:O | 1:A:983:ILE:HG12 | 2.05 | 0.57 |
| 1:B:491:ARG:HD2 | 1:B:588:GLU:OE2 | 2.03 | 0.57 |
| 1:C:964:LEU:O | 1:C:968:LEU:HG | 2.04 | 0.57 |
| 1:D:969:MET:O | 1:D:969:MET:HE3 | 2.04 | 0.57 |
| 1:C:155:VAL:HA | 1:C:214:ILE:HG22 | 1.85 | 0.57 |
| 1:A:691:LEU:HB3 | 1:A:698:THR:HG21 | 1.85 | 0.57 |
| 1:D:340:GLU:HG3 | 1:D:341:THR:N | 2.20 | 0.57 |
| 1:B:836:ARG:HH22 | 1:B:985:LYS:HE2 | 1.70 | 0.57 |
| 1:B:921:SER:H | 1:B:989:ARG:NH1 | 2.02 | 0.57 |
| 1:C:256:PHE:CZ | 1:C:765:ILE:HD11 | 2.40 | 0.57 |
| 1:C:326:MET:HE1 | 1:C:339:VAL:CG2 | 2.34 | 0.57 |
| 1:C:491:ARG:HG2 | 1:C:493:SER:OG | 2.04 | 0.57 |
| 1:C:708:ALA:HB3 | 1:C:709:PRO:HD3 | 1.86 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:844:VAL:HG22 | 1:D:907:ILE:HG21 | 1.86 | 0.57 |
| 1:C:656:ARG:HG3 | 7:C:4516:HOH:O | 2.05 | 0.57 |
| 1:A:340:GLU:HG3 | 1:A:341:THR:N | 2.20 | 0.56 |
| 1:A:844:VAL:HG22 | 1:A:907:ILE:HG21 | 1.86 | 0.56 |
| 1:B:718:ILE:HG21 | 1:B:743:ILE:CD1 | 2.35 | 0.56 |
| 1:B:953:LEU:H | 1:B:954:PRO:HD2 | 1.69 | 0.56 |
| 1:B:964:LEU:O | 1:B:968:LEU:HG | 2.05 | 0.56 |
| 1:C:921:SER:H | 1:C:989:ARG:NH1 | 2.02 | 0.56 |
| 1:C:953:LEU:H | 1:C:954:PRO:HD2 | 1.69 | 0.56 |
| 1:A:879:ASP:O | 1:A:882:HIS:HB2 | 2.04 | 0.56 |
| 1:B:256:PHE:CZ | 1:B:765:ILE:HD11 | 2.40 | 0.56 |
| 1:B:491:ARG:HG2 | 1:B:493:SER:OG | 2.04 | 0.56 |
| 1:A:90:GLU:HB2 | 1:A:790:VAL:HG22 | 1.86 | 0.56 |
| 1:A:491:ARG:HD2 | 1:A:588:GLU:OE2 | 2.05 | 0.56 |
| 1:B:572:LYS:H | 1:B:572:LYS:HD2 | 1.71 | 0.56 |
| 1:B:944:HIS:O | 1:B:947:ILE:HG22 | 2.04 | 0.56 |
| 1:C:944:HIS:O | 1:C:947:ILE:HG22 | 2.04 | 0.56 |
| 1:D:879:ASP:O | 1:D:882:HIS:HB2 | 2.04 | 0.56 |
| 1:B:656:ARG:HG3 | 7:B:3516:HOH:O | 2.06 | 0.56 |
| 1:C:791:GLN:O | 1:C:795:VAL:HG23 | 2.05 | 0.56 |
| 1:A:311:LEU:N | 1:A:312:PRO:HD2 | 2.20 | 0.56 |
| 1:B:293:ILE:O | 1:B:297:LYS:HB2 | 2.06 | 0.56 |
| 1:B:458:GLU:CB | 1:B:460:ARG:HE | 2.18 | 0.56 |
| 1:C:460:ARG:H | 1:C:460:ARG:CD | 1.96 | 0.56 |
| 1:C:572:LYS:H | 1:C:572:LYS:HD2 | 1.71 | 0.56 |
| 1:D:975:LEU:N | 1:D:976:PRO:HD2 | 2.21 | 0.56 |
| 1:C:458:GLU:CB | 1:C:460:ARG:HE | 2.18 | 0.56 |
| 1:D:90:GLU:HB2 | 1:D:790:VAL:HG22 | 1.87 | 0.56 |
| 1:B:1:MET:HE3 | 1:B:15:TYR:CG | 2.41 | 0.56 |
| 1:B:357:THR:HA | 1:B:603:PRO:HA | 1.86 | 0.56 |
| 1:C:836:ARG:HH22 | 1:C:985:LYS:HE2 | 1.71 | 0.56 |
| 1:A:52:LEU:HD12 | 1:A:53:VAL:HG23 | 1.88 | 0.56 |
| 1:A:975:LEU:N | 1:A:976:PRO:HD2 | 2.21 | 0.56 |
| 1:C:293:ILE:O | 1:C:297:LYS:HB2 | 2.06 | 0.56 |
| 1:C:357:THR:HA | 1:C:603:PRO:HA | 1.87 | 0.56 |
| 1:C:607:VAL:O | 1:C:611:ILE:HG12 | 2.06 | 0.56 |
| 1:D:865:VAL:HG12 | 1:D:867:TYR:H | 1.70 | 0.56 |
| 1:A:247:THR:OG1 | 1:A:250:GLN:HG3 | 2.05 | 0.55 |
| 1:A:788:ILE:HG23 | 1:A:897:MET:HE1 | 1.87 | 0.55 |
| 1:A:865:VAL:HG12 | 1:A:867:TYR:H | 1.69 | 0.55 |
| 1:C:270:ALA:O | 1:C:274:ILE:HG12 | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:718:ILE:HG21 | 1:C:743:ILE:CD1 | 2.36 | 0.55 |
| 1:B:460:ARG:H | 1:B:460:ARG:CD | 1.97 | 0.55 |
| 1:D:972:LYS:HA | 1:D:972:LYS:NZ | 2.22 | 0.55 |
| 1:A:788:ILE:HB | 1:A:789:PRO:HD2 | 1.89 | 0.55 |
| 1:D:52:LEU:HD12 | 1:D:53:VAL:HG23 | 1.88 | 0.55 |
| 1:A:60:LEU:O | 1:A:64:ILE:HG12 | 2.06 | 0.55 |
| 1:B:895:GLU:N | 1:B:896:PRO:HD2 | 2.22 | 0.55 |
| 1:B:962:LEU:HD23 | 1:B:962:LEU:N | 2.22 | 0.55 |
| 1:D:247:THR:OG1 | 1:D:250:GLN:HG3 | 2.05 | 0.55 |
| 1:D:341:THR:HG22 | 1:D:716:ILE:HD11 | 1.87 | 0.55 |
| 1:A:972:LYS:HA | 1:A:972:LYS:NZ | 2.22 | 0.55 |
| 1:D:311:LEU:N | 1:D:312:PRO:HD2 | 2.21 | 0.55 |
| 1:D:788:ILE:HG23 | 1:D:897:MET:HE1 | 1.88 | 0.55 |
| 1:A:794:TRP:NE1 | 1:A:947:ILE:HD11 | 2.22 | 0.55 |
| 1:D:788:ILE:HB | 1:D:789:PRO:HD2 | 1.89 | 0.55 |
| 1:C:895:GLU:N | 1:C:896:PRO:HD2 | 2.22 | 0.55 |
| 1:C:962:LEU:N | 1:C:962:LEU:HD23 | 2.22 | 0.55 |
| 1:D:60:LEU:O | 1:D:64:ILE:HG12 | 2.07 | 0.55 |
| 1:A:206:ASN:ND2 | 1:A:207:MET:HG2 | 2.22 | 0.54 |
| 1:B:270:ALA:O | 1:B:274:ILE:HG12 | 2.07 | 0.54 |
| 1:B:791:GLN:O | 1:B:795:VAL:HG23 | 2.06 | 0.54 |
| 1:D:326:MET:HE1 | 1:D:339:VAL:CG1 | 2.37 | 0.54 |
| 1:D:793:LEU:O | 1:D:797:LEU:HB2 | 2.07 | 0.54 |
| 1:B:607:VAL:O | 1:B:611:ILE:HG12 | 2.07 | 0.54 |
| 1:C:336:LEU:HB2 | 1:C:337:PRO:HD3 | 1.89 | 0.54 |
| 1:A:419:LEU:O | 1:A:481:LYS:HE2 | 2.07 | 0.54 |
| 1:A:774:CYS:O | 1:A:778:THR:HG22 | 2.06 | 0.54 |
| 1:A:793:LEU:O | 1:A:797:LEU:HB2 | 2.08 | 0.54 |
| 1:A:966:GLN:HE21 | 1:A:966:GLN:HA | 1.73 | 0.54 |
| 1:B:104:VAL:HG12 | 1:B:108:GLN:HE21 | 1.72 | 0.54 |
| 1:B:567:ARG:CD | 1:B:570:PRO:HA | 2.37 | 0.54 |
| 1:C:757:MET:HA | 1:C:760:PHE:CE2 | 2.42 | 0.54 |
| 1:A:326:MET:HE1 | 1:A:339:VAL:CG1 | 2.37 | 0.54 |
| 1:B:336:LEU:HB2 | 1:B:337:PRO:HD3 | 1.89 | 0.54 |
| 1:D:794:TRP:NE1 | 1:D:947:ILE:HD11 | 2.23 | 0.54 |
| 1:B:757:MET:HA | 1:B:760:PHE:CE2 | 2.42 | 0.54 |
| 1:C:104:VAL:HG12 | 1:C:108:GLN:HE21 | 1.72 | 0.54 |
| 1:A:93:VAL:O | 1:A:97:ILE:HG12 | 2.07 | 0.54 |
| 1:C:914:ASN:HD22 | 1:C:922:LEU:HD11 | 1.72 | 0.54 |
| 1:D:966:GLN:HE21 | 1:D:966:GLN:HA | 1.73 | 0.54 |
| 1:D:987:ILE:O | 1:D:991:TYR:HB2 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:413:LEU:HG | 1:B:564:LEU:HD12 | 1.90 | 0.54 |
| 1:C:458:GLU:HB3 | 1:C:460:ARG:HH21 | 1.73 | 0.54 |
| 1:D:93:VAL:O | 1:D:97:ILE:HG12 | 2.07 | 0.54 |
| 1:D:353:THR:HA | 1:D:357:THR:OG1 | 2.07 | 0.54 |
| 1:D:491:ARG:HD2 | 1:D:588:GLU:OE2 | 2.08 | 0.54 |
| 1:B:795:VAL:HG12 | 1:B:800:ASP:OD2 | 2.08 | 0.54 |
| 1:B:914:ASN:HD22 | 1:B:922:LEU:HD11 | 1.73 | 0.54 |
| 1:A:265:SER:O | 1:A:269:VAL:HG23 | 2.08 | 0.53 |
| 1:A:557:ASP:HB3 | 1:A:559:LEU:HG | 1.90 | 0.53 |
| 1:A:572:LYS:HB2 | 1:A:575:GLU:HG3 | 1.89 | 0.53 |
| 1:A:670:CYS:SG | 1:A:687:ILE:HG22 | 2.48 | 0.53 |
| 1:A:987:ILE:O | 1:A:991:TYR:HB2 | 2.09 | 0.53 |
| 1:B:917:SER:OG | 1:B:920:GLN:HB2 | 2.07 | 0.53 |
| 1:C:325:ARG:HH12 | 1:C:753:ILE:HD11 | 1.71 | 0.53 |
| 1:C:567:ARG:CD | 1:C:570:PRO:HA | 2.38 | 0.53 |
| 1:D:265:SER:O | 1:D:269:VAL:HG23 | 2.08 | 0.53 |
| 1:B:988:ALA:O | 1:B:992:LEU:HB2 | 2.07 | 0.53 |
| 1:C:203:ASP:OD1 | 1:C:678:ARG:NH1 | 2.41 | 0.53 |
| 1:C:879:ASP:HB3 | 1:C:882:HIS:ND1 | 2.23 | 0.53 |
| 1:D:419:LEU:O | 1:D:481:LYS:HE2 | 2.08 | 0.53 |
| 1:D:557:ASP:HB3 | 1:D:559:LEU:HG | 1.90 | 0.53 |
| 1:C:1:MET:HE3 | 1:C:15:TYR:CG | 2.44 | 0.53 |
| 1:C:795:VAL:HG12 | 1:C:800:ASP:OD2 | 2.09 | 0.53 |
| 1:D:549:ILE:HD11 | 1:D:596:VAL:HG21 | 1.90 | 0.53 |
| 1:B:962:LEU:HB2 | 1:B:966:GLN:CB | 2.38 | 0.53 |
| 1:C:413:LEU:HG | 1:C:564:LEU:HD12 | 1.91 | 0.53 |
| 1:C:800:ASP:C | 1:C:803:PRO:HD2 | 2.33 | 0.53 |
| 1:C:988:ALA:O | 1:C:992:LEU:HB2 | 2.08 | 0.53 |
| 1:B:402:ILE:C | 1:B:402:ILE:HD12 | 2.33 | 0.53 |
| 1:B:449:VAL:HG22 | 1:B:472:ASN:HD21 | 1.74 | 0.53 |
| 1:C:962:LEU:HB2 | 1:C:966:GLN:CB | 2.38 | 0.53 |
| 1:A:624:ILE:CG2 | 1:A:684:LYS:HG2 | 2.38 | 0.53 |
| 1:C:735:LEU:HD21 | 1:C:743:ILE:CD1 | 2.38 | 0.53 |
| 1:A:71:ILE:O | 1:A:75:LEU:HD13 | 2.09 | 0.53 |
| 1:A:847:ALA:HA | 1:A:973:ILE:HD11 | 1.90 | 0.53 |
| 1:B:458:GLU:HB3 | 1:B:460:ARG:HH21 | 1.74 | 0.53 |
| 1:B:879:ASP:HB3 | 1:B:882:HIS:ND1 | 2.24 | 0.53 |
| 1:C:328:LYS:NZ | 1:C:328:LYS:HB3 | 2.24 | 0.53 |
| 1:A:547:SER:O | 1:A:551:GLU:HG3 | 2.09 | 0.53 |
| 1:B:94:ILE:O | 1:B:98:LEU:HD13 | 2.09 | 0.53 |
| 1:B:735:LEU:HD21 | 1:B:743:ILE:CD1 | 2.38 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:774:CYS:O | 1:D:778:THR:HG22 | 2.07 | 0.53 |
| 1:B:325:ARG:HH12 | 1:B:753:ILE:HD11 | 1.72 | 0.52 |
| 1:C:94:ILE:O | 1:C:98:LEU:HD13 | 2.09 | 0.52 |
| 1:C:917:SER:OG | 1:C:920:GLN:HB2 | 2.09 | 0.52 |
| 1:D:572:LYS:HB2 | 1:D:575:GLU:HG3 | 1.90 | 0.52 |
| 1:A:794:TRP:CE2 | 1:A:947:ILE:HD11 | 2.44 | 0.52 |
| 1:C:843:TYR:OH | 1:C:976:PRO:HG2 | 2.09 | 0.52 |
| 1:D:794:TRP:CE2 | 1:D:947:ILE:HD11 | 2.44 | 0.52 |
| 1:A:129:VAL:HG12 | 1:A:151:VAL:HG12 | 1.91 | 0.52 |
| 1:A:341:THR:HG22 | 1:A:716:ILE:HD11 | 1.90 | 0.52 |
| 1:D:175:VAL:CG1 | 1:D:212:THR:HG21 | 2.40 | 0.52 |
| 1:D:847:ALA:HA | 1:D:973:ILE:HD11 | 1.90 | 0.52 |
| 1:A:353:THR:HA | 1:A:357:THR:OG1 | 2.08 | 0.52 |
| 1:D:739:ASN:OD1 | 1:D:741:SER:HB2 | 2.10 | 0.52 |
| 1:D:962:LEU:HB3 | 1:D:966:GLN:HB2 | 1.91 | 0.52 |
| 1:A:1:MET:HE2 | 1:A:16:PHE:HE1 | 1.74 | 0.52 |
| 1:A:175:VAL:CG1 | 1:A:212:THR:HG21 | 2.39 | 0.52 |
| 1:A:624:ILE:HG21 | 1:A:684:LYS:HG2 | 1.92 | 0.52 |
| 1:B:749:GLU:O | 1:B:753:ILE:HG12 | 2.09 | 0.52 |
| 1:B:800:ASP:C | 1:B:803:PRO:HD2 | 2.34 | 0.52 |
| 1:C:449:VAL:HG22 | 1:C:472:ASN:HD21 | 1.75 | 0.52 |
| 1:D:670:CYS:SG | 1:D:687:ILE:HG22 | 2.50 | 0.52 |
| 1:D:800:ASP:C | 1:D:803:PRO:HD2 | 2.34 | 0.52 |
| 1:A:89:VAL:O | 1:A:93:VAL:HG23 | 2.09 | 0.52 |
| 1:A:962:LEU:HB3 | 1:A:966:GLN:HB2 | 1.91 | 0.52 |
| 1:B:843:TYR:OH | 1:B:976:PRO:HG2 | 2.09 | 0.52 |
| 1:A:326:MET:HG3 | 1:A:749:GLU:HG2 | 1.91 | 0.52 |
| 1:D:71:ILE:O | 1:D:75:LEU:HD13 | 2.09 | 0.52 |
| 1:D:212:THR:HG22 | 1:D:213:ASN:N | 2.23 | 0.52 |
| 1:D:547:SER:O | 1:D:551:GLU:HG3 | 2.10 | 0.52 |
| 1:D:972:LYS:HA | 1:D:972:LYS:HZ3 | 1.75 | 0.52 |
| 1:A:739:ASN:OD1 | 1:A:741:SER:HB2 | 2.10 | 0.52 |
| 1:B:328:LYS:HB3 | 1:B:328:LYS:NZ | 2.26 | 0.52 |
| 1:D:326:MET:HG3 | 1:D:749:GLU:HG2 | 1.92 | 0.52 |
| 1:C:749:GLU:O | 1:C:753:ILE:HG12 | 2.10 | 0.51 |
| 1:C:926:PRO:O | 1:C:929:VAL:HG23 | 2.08 | 0.51 |
| 1:A:541:VAL:O | 1:A:545:ILE:HG12 | 2.10 | 0.51 |
| 1:B:718:ILE:HG21 | 1:B:743:ILE:HD11 | 1.90 | 0.51 |
| 1:D:838:MET:HE3 | 1:D:838:MET:HA | 1.92 | 0.51 |
| 1:A:921:SER:H | 1:A:989:ARG:HH12 | 1.58 | 0.51 |
| 1:B:926:PRO:O | 1:B:929:VAL:HG23 | 2.09 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:962:LEU:HD23 | 1:B:962:LEU:H | 1.75 | 0.51 |
| 1:C:85:ILE:HD13 | 1:D:110:ARG:CZ | 2.40 | 0.51 |
| 1:B:572:LYS:HD2 | 1:B:572:LYS:N | 2.26 | 0.51 |
| 1:B:739:ASN:OD1 | 1:B:741:SER:HB2 | 2.10 | 0.51 |
| 1:C:12:CYS:SG | 1:C:164:ARG:HG3 | 2.51 | 0.51 |
| 1:C:273:LEU:O | 1:C:276:ILE:HG13 | 2.09 | 0.51 |
| 1:D:369:ILE:CD1 | 1:D:545:ILE:HD11 | 2.40 | 0.51 |
| 1:D:921:SER:H | 1:D:989:ARG:HH12 | 1.58 | 0.51 |
| 1:A:369:ILE:CD1 | 1:A:545:ILE:HD11 | 2.41 | 0.51 |
| 1:A:921:SER:H | 1:A:989:ARG:NH1 | 2.08 | 0.51 |
| 1:A:795:VAL:HA | 1:A:799:THR:HB | 1.93 | 0.51 |
| 1:B:769:VAL:HG21 | 6:B:1103:TG1:H332 | 1.93 | 0.51 |
| 1:D:89:VAL:O | 1:D:93:VAL:HG23 | 2.10 | 0.51 |
| 1:D:129:VAL:HG12 | 1:D:151:VAL:HG12 | 1.93 | 0.51 |
| 1:A:800:ASP:C | 1:A:803:PRO:HD2 | 2.35 | 0.51 |
| 1:B:893:ALA:O | 1:B:896:PRO:HD2 | 2.11 | 0.51 |
| 1:D:921:SER:H | 1:D:989:ARG:NH1 | 2.08 | 0.51 |
| 1:A:947:ILE:O | 1:A:954:PRO:HG3 | 2.10 | 0.51 |
| 1:B:12:CYS:SG | 1:B:164:ARG:HG3 | 2.51 | 0.51 |
| 1:B:604:ARG:HB2 | 1:B:607:VAL:HG23 | 1.92 | 0.51 |
| 1:D:795:VAL:HA | 1:D:799:THR:HB | 1.93 | 0.51 |
| 1:C:572:LYS:HD2 | 1:C:572:LYS:N | 2.26 | 0.51 |
| 1:C:589:THR:HG23 | 7:C:4006:HOH:O | 2.11 | 0.51 |
| 1:A:48:SER:O | 1:A:52:LEU:HG | 2.11 | 0.51 |
| 1:B:950:VAL:O | 1:B:954:PRO:HD2 | 2.10 | 0.51 |
| 1:C:589:THR:CG2 | 1:C:590:ASP:N | 2.74 | 0.51 |
| 1:C:893:ALA:O | 1:C:896:PRO:HD2 | 2.11 | 0.51 |
| 1:D:340:GLU:HG3 | 1:D:341:THR:H | 1.76 | 0.51 |
| 1:D:947:ILE:O | 1:D:954:PRO:HG3 | 2.10 | 0.51 |
| 1:B:332:ILE:HD13 | 1:B:736:ALA:HB2 | 1.93 | 0.50 |
| 1:B:520:GLY:O | 1:B:524:ARG:HG3 | 2.11 | 0.50 |
| 1:C:962:LEU:HD23 | 1:C:962:LEU:H | 1.76 | 0.50 |
| 1:D:974:SER:C | 1:D:976:PRO:HD2 | 2.36 | 0.50 |
| 1:A:339:VAL:HG23 | 1:A:340:GLU:N | 2.26 | 0.50 |
| 1:A:549:ILE:HD11 | 1:A:596:VAL:HG21 | 1.93 | 0.50 |
| 1:D:757:MET:HA | 1:D:760:PHE:CE2 | 2.47 | 0.50 |
| 1:A:631:THR:HG21 | 7:A:2517:HOH:O | 2.10 | 0.50 |
| 1:A:974:SER:C | 1:A:976:PRO:HD2 | 2.36 | 0.50 |
| 1:B:557:ASP:HB3 | 1:B:559:LEU:HG | 1.93 | 0.50 |
| 1:C:769:VAL:HG21 | 6:C:1203:TG1:H332 | 1.94 | 0.50 |
| 1:C:950:VAL:O | 1:C:954:PRO:HD2 | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:352:LYS:HE2 | 7:D:5068:HOH:O | 2.11 | 0.50 |
| 1:A:249:LEU:HB3 | 1:A:340:GLU:OE2 | 2.12 | 0.50 |
| 1:A:838:MET:HE3 | 1:A:838:MET:HA | 1.93 | 0.50 |
| 1:A:880:HIS:N | 1:A:881:PRO:HD2 | 2.26 | 0.50 |
| 1:B:273:LEU:O | 1:B:276:ILE:HG13 | 2.10 | 0.50 |
| 1:A:25:THR:HA | 1:A:132:ALA:HB3 | 1.93 | 0.50 |
| 1:A:340:GLU:HG3 | 1:A:341:THR:H | 1.77 | 0.50 |
| 1:B:969:MET:HE2 | 1:B:973:ILE:HD11 | 1.93 | 0.50 |
| 1:D:100:ALA:O | 1:D:103:ILE:HG22 | 2.11 | 0.50 |
| 1:D:541:VAL:O | 1:D:545:ILE:HG12 | 2.12 | 0.50 |
| 1:A:212:THR:HG22 | 1:A:213:ASN:N | 2.25 | 0.50 |
| 1:A:757:MET:HA | 1:A:760:PHE:CE2 | 2.47 | 0.50 |
| 1:A:895:GLU:OE2 | 1:A:960:LYS:HD3 | 2.12 | 0.50 |
| 1:A:903:VAL:O | 1:A:907:ILE:HG13 | 2.10 | 0.50 |
| 1:B:326:MET:CG | 1:B:749:GLU:HG2 | 2.42 | 0.50 |
| 1:B:761:ILE:HG21 | 1:B:828:LEU:HD13 | 1.93 | 0.50 |
| 1:D:48:SER:O | 1:D:52:LEU:HG | 2.12 | 0.50 |
| 1:B:449:VAL:HG21 | 1:B:472:ASN:CG | 2.36 | 0.50 |
| 1:B:708:ALA:HB3 | 1:B:709:PRO:HD3 | 1.93 | 0.50 |
| 1:D:339:VAL:HG23 | 1:D:340:GLU:N | 2.26 | 0.50 |
| 1:A:972:LYS:HA | 1:A:972:LYS:HZ3 | 1.77 | 0.50 |
| 1:C:326:MET:CG | 1:C:749:GLU:HG2 | 2.42 | 0.50 |
| 1:D:880:HIS:N | 1:D:881:PRO:HD2 | 2.26 | 0.50 |
| 1:B:85:ILE:HG23 | 1:B:86:THR:HG23 | 1.94 | 0.50 |
| 1:C:795:VAL:HA | 1:C:799:THR:HB | 1.93 | 0.50 |
| 1:D:249:LEU:HB3 | 1:D:340:GLU:OE2 | 2.12 | 0.50 |
| 1:D:428:ASN:OD1 | 1:D:431:LYS:HG3 | 2.12 | 0.50 |
| 1:D:758:LYS:HE3 | 1:D:762:ARG:NH2 | 2.27 | 0.50 |
| 1:A:428:ASN:OD1 | 1:A:431:LYS:HG3 | 2.12 | 0.49 |
| 1:B:93:VAL:O | 1:B:97:ILE:HG13 | 2.11 | 0.49 |
| 1:C:311:LEU:N | 1:C:312:PRO:HD2 | 2.26 | 0.49 |
| 1:C:332:ILE:HD13 | 1:C:736:ALA:HB2 | 1.94 | 0.49 |
| 1:C:520:GLY:O | 1:C:524:ARG:HG3 | 2.12 | 0.49 |
| 1:C:989:ARG:HA | 1:C:994:GLY:HA2 | 1.93 | 0.49 |
| 1:A:88:PHE:C | 1:A:91:PRO:HD2 | 2.37 | 0.49 |
| 1:A:854:TRP:CE3 | 1:A:899:MET:HE2 | 2.46 | 0.49 |
| 1:B:289:ILE:O | 1:B:293:ILE:HG13 | 2.13 | 0.49 |
| 1:B:555:GLY:C | 1:B:557:ASP:H | 2.20 | 0.49 |
| 1:B:989:ARG:HA | 1:B:994:GLY:HA2 | 1.93 | 0.49 |
| 1:C:557:ASP:HB3 | 1:C:559:LEU:HG | 1.93 | 0.49 |
| 1:D:25:THR:HA | 1:D:132:ALA:HB3 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:739:ASN:OD1 | 1:C:741:SER:HB2 | 2.12 | 0.49 |
| 1:D:311:LEU:O | 1:D:314:VAL:HG12 | 2.13 | 0.49 |
| 1:D:402:ILE:C | 1:D:402:ILE:HD12 | 2.36 | 0.49 |
| 1:A:56:GLN:OE1 | 1:A:105:GLY:HA3 | 2.12 | 0.49 |
| 1:A:110:ARG:CZ | 1:B:85:ILE:HD13 | 2.42 | 0.49 |
| 1:A:260:LEU:HD21 | 1:A:307:ILE:HD13 | 1.94 | 0.49 |
| 1:C:402:ILE:HD12 | 1:C:402:ILE:C | 2.36 | 0.49 |
| 1:C:463:SER:OG | 1:C:465:VAL:HG22 | 2.12 | 0.49 |
| 1:D:1:MET:HE2 | 1:D:16:PHE:HE1 | 1.77 | 0.49 |
| 1:D:895:GLU:OE2 | 1:D:960:LYS:HD3 | 2.12 | 0.49 |
| 1:A:895:GLU:N | 1:A:896:PRO:HD2 | 2.27 | 0.49 |
| 1:B:836:ARG:O | 1:B:840:ILE:HG12 | 2.12 | 0.49 |
| 1:C:93:VAL:O | 1:C:97:ILE:HG13 | 2.12 | 0.49 |
| 1:C:353:THR:HA | 1:C:357:THR:OG1 | 2.13 | 0.49 |
| 1:B:880:HIS:N | 1:B:881:PRO:HD2 | 2.27 | 0.49 |
| 1:C:880:HIS:N | 1:C:881:PRO:HD2 | 2.27 | 0.49 |
| 1:C:969:MET:HE2 | 1:C:973:ILE:HD11 | 1.94 | 0.49 |
| 1:D:389:TYR:HB3 | 1:D:425:LEU:HD11 | 1.95 | 0.49 |
| 1:A:389:TYR:HB3 | 1:A:425:LEU:HD11 | 1.95 | 0.49 |
| 1:C:604:ARG:HB2 | 1:C:607:VAL:HG23 | 1.94 | 0.49 |
| 1:D:88:PHE:C | 1:D:91:PRO:HD2 | 2.37 | 0.49 |
| 1:A:402:ILE:C | 1:A:402:ILE:HD12 | 2.37 | 0.49 |
| 1:A:758:LYS:HE3 | 1:A:762:ARG:NH2 | 2.28 | 0.49 |
| 1:B:403:ARG:HG3 | 1:B:403:ARG:HH11 | 1.77 | 0.49 |
| 1:B:795:VAL:HA | 1:B:799:THR:HB | 1.94 | 0.49 |
| 1:C:85:ILE:HG23 | 1:C:86:THR:HG23 | 1.95 | 0.49 |
| 1:C:555:GLY:C | 1:C:557:ASP:H | 2.21 | 0.49 |
| 1:C:769:VAL:HA | 6:C:1203:TG1:H231 | 1.95 | 0.49 |
| 1:D:125:GLU:HG3 | 1:D:126:MET:N | 2.27 | 0.49 |
| 1:D:260:LEU:HD21 | 1:D:307:ILE:HD13 | 1.95 | 0.49 |
| 1:A:100:ALA:O | 1:A:103:ILE:HG22 | 2.13 | 0.49 |
| 1:B:534:ARG:HH21 | 1:B:568:ASP:HB2 | 1.77 | 0.49 |
| 1:B:865:VAL:HG11 | 1:B:869:GLN:CB | 2.41 | 0.49 |
| 1:C:781:LEU:HD23 | 1:C:783:LEU:CD1 | 2.43 | 0.49 |
| 1:D:854:TRP:CE3 | 1:D:899:MET:HE2 | 2.47 | 0.49 |
| 1:D:903:VAL:O | 1:D:907:ILE:HG13 | 2.11 | 0.49 |
| 1:B:134:ARG:HG2 | 1:B:138:GLN:NE2 | 2.27 | 0.49 |
| 1:C:85:ILE:HD13 | 1:D:110:ARG:NH1 | 2.28 | 0.49 |
| 1:A:65:LEU:CD1 | 1:A:307:ILE:HG13 | 2.41 | 0.48 |
| 1:A:311:LEU:O | 1:A:314:VAL:HG12 | 2.13 | 0.48 |
| 1:B:383:SER:O | 1:B:384:ILE:HD13 | 2.12 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:769:VAL:HA | 6:B:1103:TG1:H231 | 1.95 | 0.48 |
| 1:B:974:SER:C | 1:B:976:PRO:HD2 | 2.37 | 0.48 |
| 1:C:761:ILE:HG21 | 1:C:828:LEU:HD13 | 1.94 | 0.48 |
| 1:D:56:GLN:OE1 | 1:D:105:GLY:HA3 | 2.12 | 0.48 |
| 1:D:560:ARG:HG2 | 1:D:560:ARG:HH11 | 1.76 | 0.48 |
| 1:A:553:GLY:C | 1:A:554:THR:CG2 | 2.85 | 0.48 |
| 1:B:311:LEU:N | 1:B:312:PRO:HD2 | 2.27 | 0.48 |
| 1:C:134:ARG:HG2 | 1:C:138:GLN:NE2 | 2.27 | 0.48 |
| 1:C:361:MET:HB3 | 1:C:444:ALA:HB2 | 1.94 | 0.48 |
| 1:D:203:ASP:OD1 | 1:D:678:ARG:NH1 | 2.46 | 0.48 |
| 1:D:553:GLY:O | 1:D:554:THR:HG23 | 2.12 | 0.48 |
| 1:D:895:GLU:N | 1:D:896:PRO:HD2 | 2.27 | 0.48 |
| 1:A:486:GLU:O | 1:A:491:ARG:NH2 | 2.40 | 0.48 |
| 1:B:50:TRP:CD1 | 1:B:54:ILE:HD11 | 2.48 | 0.48 |
| 1:B:463:SER:OG | 1:B:465:VAL:HG22 | 2.13 | 0.48 |
| 1:B:777:LEU:O | 1:B:781:LEU:HB2 | 2.12 | 0.48 |
| 1:C:289:ILE:O | 1:C:293:ILE:HG13 | 2.14 | 0.48 |
| 1:C:777:LEU:O | 1:C:781:LEU:HB2 | 2.12 | 0.48 |
| 1:C:865:VAL:HG11 | 1:C:869:GLN:CB | 2.41 | 0.48 |
| 1:B:606:GLU:HG3 | 1:B:739:ASN:OD1 | 2.14 | 0.48 |
| 1:C:383:SER:O | 1:C:384:ILE:HD13 | 2.13 | 0.48 |
| 1:C:718:ILE:HG21 | 1:C:743:ILE:HD11 | 1.94 | 0.48 |
| 1:A:125:GLU:HG3 | 1:A:126:MET:N | 2.27 | 0.48 |
| 1:A:893:ALA:HB1 | 1:A:895:GLU:OE1 | 2.13 | 0.48 |
| 1:B:40:GLU:CD | 1:B:143:ARG:HE | 2.21 | 0.48 |
| 1:B:452:MET:O | 1:B:453:ASN:C | 2.57 | 0.48 |
| 1:C:458:GLU:CB | 1:C:460:ARG:HH21 | 2.26 | 0.48 |
| 1:C:494:MET:HE1 | 5:C:1202:ADP:HN62 | 1.78 | 0.48 |
| 1:C:899:MET:O | 1:C:903:VAL:HG23 | 2.13 | 0.48 |
| 1:D:65:LEU:CD1 | 1:D:307:ILE:HG13 | 2.41 | 0.48 |
| 1:D:803:PRO:HG2 | 1:D:909:MET:HE1 | 1.95 | 0.48 |
| 1:A:560:ARG:HG2 | 1:A:560:ARG:HH11 | 1.77 | 0.48 |
| 1:B:449:VAL:HG22 | 1:B:472:ASN:ND2 | 2.29 | 0.48 |
| 1:C:836:ARG:O | 1:C:840:ILE:HG12 | 2.14 | 0.48 |
| 1:C:974:SER:C | 1:C:976:PRO:HD2 | 2.38 | 0.48 |
| 1:D:126:MET:HG3 | 1:D:139:ARG:HH12 | 1.77 | 0.48 |
| 1:A:769:VAL:O | 1:A:773:VAL:HG23 | 2.14 | 0.48 |
| 1:A:917:SER:OG | 1:A:920:GLN:HB2 | 2.14 | 0.48 |
| 1:B:600:LEU:O | 1:B:602:PRO:HD3 | 2.14 | 0.48 |
| 1:C:50:TRP:CD1 | 1:C:54:ILE:HD11 | 2.49 | 0.48 |
| 1:C:119:LEU:HD22 | 1:C:239:MET:HE1 | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:486:GLU:O | 1:C:491:ARG:NH2 | 2.41 | 0.48 |
| 1:A:51:GLU:O | 1:A:55:GLU:HG3 | 2.13 | 0.48 |
| 1:A:203:ASP:OD1 | 1:A:678:ARG:NH1 | 2.46 | 0.48 |
| 1:C:403:ARG:HG3 | 1:C:403:ARG:HH11 | 1.78 | 0.48 |
| 1:B:589:THR:CG2 | 1:B:590:ASP:N | 2.77 | 0.48 |
| 1:D:760:PHE:C | 1:D:760:PHE:CD1 | 2.92 | 0.48 |
| 1:A:886:LEU:N | 1:A:886:LEU:HD23 | 2.29 | 0.47 |
| 1:B:119:LEU:HD22 | 1:B:239:MET:HE1 | 1.96 | 0.47 |
| 1:D:917:SER:OG | 1:D:920:GLN:HB2 | 2.14 | 0.47 |
| 1:A:52:LEU:HD12 | 1:A:53:VAL:N | 2.29 | 0.47 |
| 1:B:190:HIS:O | 1:B:206:ASN:HA | 2.14 | 0.47 |
| 1:B:353:THR:HA | 1:B:357:THR:OG1 | 2.15 | 0.47 |
| 1:B:758:LYS:HG3 | 1:B:828:LEU:HD22 | 1.95 | 0.47 |
| 1:C:914:ASN:ND2 | 1:C:922:LEU:HD11 | 2.30 | 0.47 |
| 1:D:52:LEU:HD12 | 1:D:53:VAL:N | 2.29 | 0.47 |
| 1:D:606:GLU:CD | 1:D:606:GLU:H | 2.22 | 0.47 |
| 1:D:893:ALA:HB1 | 1:D:895:GLU:OE1 | 2.13 | 0.47 |
| 1:A:59:ASP:O | 1:A:62:VAL:HG22 | 2.14 | 0.47 |
| 1:A:239:MET:CE | 1:A:708:ALA:HB1 | 2.44 | 0.47 |
| 1:A:259:GLN:O | 1:A:263:VAL:HG23 | 2.14 | 0.47 |
| 1:A:342:LEU:HD12 | 1:A:733:MET:HE1 | 1.96 | 0.47 |
| 1:B:494:MET:CE | 5:B:1102:ADP:HN62 | 2.27 | 0.47 |
| 1:B:899:MET:O | 1:B:903:VAL:HG23 | 2.14 | 0.47 |
| 1:B:914:ASN:ND2 | 1:B:922:LEU:HD11 | 2.30 | 0.47 |
| 1:D:624:ILE:CG2 | 1:D:684:LYS:HG2 | 2.44 | 0.47 |
| 1:A:452:MET:O | 1:A:453:ASN:C | 2.58 | 0.47 |
| 1:A:678:ARG:HB3 | 7:A:2069:HOH:O | 2.13 | 0.47 |
| 1:B:486:GLU:O | 1:B:491:ARG:NH2 | 2.41 | 0.47 |
| 1:B:494:MET:HE1 | 5:B:1102:ADP:HN62 | 1.79 | 0.47 |
| 1:B:547:SER:O | 1:B:551:GLU:HG3 | 2.15 | 0.47 |
| 1:B:458:GLU:CB | 1:B:460:ARG:HH21 | 2.27 | 0.47 |
| 1:B:781:LEU:HD23 | 1:B:783:LEU:CD1 | 2.44 | 0.47 |
| 1:B:803:PRO:HG2 | 1:B:909:MET:HE1 | 1.96 | 0.47 |
| 1:C:449:VAL:HG22 | 1:C:472:ASN:ND2 | 2.29 | 0.47 |
| 1:D:51:GLU:O | 1:D:55:GLU:HG3 | 2.13 | 0.47 |
| 1:D:607:VAL:O | 1:D:611:ILE:HG12 | 2.15 | 0.47 |
| 1:D:836:ARG:NH2 | 1:D:985:LYS:HE2 | 2.29 | 0.47 |
| 1:A:799:THR:HG21 | 1:A:905:VAL:HG22 | 1.96 | 0.47 |
| 1:A:926:PRO:O | 1:A:929:VAL:HG23 | 2.15 | 0.47 |
| 1:B:242:THR:HB | 1:B:243:GLU:H | 1.54 | 0.47 |
| 1:B:361:MET:HB3 | 1:B:444:ALA:HB2 | 1.95 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:97:ILE:HD13 | 1:C:797:LEU:HD11 | 1.97 | 0.47 |
| 1:D:259:GLN:O | 1:D:263:VAL:HG23 | 2.15 | 0.47 |
| 1:A:100:ALA:O | 1:A:104:VAL:HG23 | 2.14 | 0.47 |
| 1:A:607:VAL:O | 1:A:611:ILE:HG12 | 2.15 | 0.47 |
| 1:B:97:ILE:HD13 | 1:B:797:LEU:HD11 | 1.97 | 0.47 |
| 1:C:40:GLU:CD | 1:C:143:ARG:HE | 2.22 | 0.47 |
| 1:C:310:GLY:O | 1:C:314:VAL:HG23 | 2.15 | 0.47 |
| 1:D:687:ILE:O | 1:D:691:LEU:HD22 | 2.14 | 0.47 |
| 1:D:769:VAL:O | 1:D:773:VAL:HG23 | 2.15 | 0.47 |
| 1:D:933:LEU:O | 1:D:936:SER:HB3 | 2.15 | 0.47 |
| 1:A:962:LEU:HB3 | 1:A:966:GLN:CB | 2.44 | 0.47 |
| 1:B:50:TRP:O | 1:B:54:ILE:HG13 | 2.15 | 0.47 |
| 1:B:811:PRO:HG3 | 1:B:929:VAL:CG1 | 2.45 | 0.47 |
| 1:C:758:LYS:HG3 | 1:C:828:LEU:HD22 | 1.96 | 0.47 |
| 1:D:100:ALA:O | 1:D:104:VAL:HG23 | 2.15 | 0.47 |
| 1:D:679:VAL:HG13 | 1:D:683:HIS:CB | 2.33 | 0.47 |
| 1:B:589:THR:HG23 | 7:B:3006:HOH:O | 2.15 | 0.47 |
| 1:B:836:ARG:NH2 | 1:B:985:LYS:HE2 | 2.28 | 0.47 |
| 1:C:449:VAL:HG21 | 1:C:472:ASN:CG | 2.40 | 0.47 |
| 1:C:494:MET:CE | 5:C:1202:ADP:HN62 | 2.27 | 0.47 |
| 1:D:486:GLU:O | 1:D:491:ARG:NH2 | 2.41 | 0.47 |
| 1:D:631:THR:HG21 | 7:D:5517:HOH:O | 2.13 | 0.47 |
| 1:D:962:LEU:HB3 | 1:D:966:GLN:CB | 2.44 | 0.47 |
| 1:A:760:PHE:CD1 | 1:A:760:PHE:C | 2.93 | 0.47 |
| 1:B:501:ALA:C | 1:B:503:SER:H | 2.23 | 0.47 |
| 1:B:667:ARG:HG2 | 1:B:694:TYR:CE1 | 2.49 | 0.47 |
| 1:C:534:ARG:HH21 | 1:C:568:ASP:HB2 | 1.79 | 0.47 |
| 1:C:781:LEU:HD23 | 1:C:783:LEU:HD11 | 1.96 | 0.47 |
| 1:D:452:MET:O | 1:D:453:ASN:C | 2.58 | 0.47 |
| 1:D:624:ILE:HG21 | 1:D:684:LYS:HG2 | 1.97 | 0.47 |
| 1:D:799:THR:HG21 | 1:D:905:VAL:HG22 | 1.97 | 0.47 |
| 1:A:553:GLY:O | 1:A:554:THR:HG22 | 2.14 | 0.46 |
| 1:A:606:GLU:H | 1:A:606:GLU:CD | 2.23 | 0.46 |
| 1:A:803:PRO:HG2 | 1:A:909:MET:HE1 | 1.96 | 0.46 |
| 1:A:836:ARG:NH2 | 1:A:985:LYS:HE2 | 2.29 | 0.46 |
| 1:B:865:VAL:HG12 | 1:B:867:TYR:H | 1.81 | 0.46 |
| 1:C:803:PRO:HG2 | 1:C:909:MET:HE1 | 1.97 | 0.46 |
| 1:D:59:ASP:O | 1:D:62:VAL:HG22 | 2.15 | 0.46 |
| 1:D:239:MET:CE | 1:D:708:ALA:HB1 | 2.45 | 0.46 |
| 1:A:933:LEU:O | 1:A:936:SER:HB3 | 2.16 | 0.46 |
| 1:B:305:ALA:HB2 | 1:B:792:LEU:HD13 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:966:GLN:O | 1:B:969:MET:HB3 | 2.14 | 0.46 |
| 1:C:541:VAL:O | 1:C:545:ILE:HG12 | 2.16 | 0.46 |
| 1:C:683:HIS:O | 1:C:687:ILE:HG13 | 2.15 | 0.46 |
| 1:C:811:PRO:HG3 | 1:C:929:VAL:CG1 | 2.46 | 0.46 |
| 1:C:865:VAL:HG12 | 1:C:867:TYR:H | 1.81 | 0.46 |
| 1:C:947:ILE:HD11 | 1:C:957:PHE:CD2 | 2.50 | 0.46 |
| 1:A:126:MET:HG3 | 1:A:139:ARG:HH12 | 1.79 | 0.46 |
| 1:A:370:ASP:HB3 | 1:A:378:SER:OG | 2.15 | 0.46 |
| 1:C:452:MET:O | 1:C:453:ASN:C | 2.58 | 0.46 |
| 1:D:315:ILE:HG23 | 1:D:757:MET:HE3 | 1.97 | 0.46 |
| 1:D:836:ARG:O | 1:D:840:ILE:HG12 | 2.15 | 0.46 |
| 1:A:200:VAL:CG1 | 1:A:201:ASN:N | 2.78 | 0.46 |
| 1:B:96:LEU:HD23 | 1:B:96:LEU:O | 2.15 | 0.46 |
| 1:B:865:VAL:CG1 | 1:B:869:GLN:HB2 | 2.41 | 0.46 |
| 1:C:606:GLU:HG3 | 1:C:739:ASN:OD1 | 2.16 | 0.46 |
| 1:C:926:PRO:HA | 1:C:927:PRO:HD3 | 1.86 | 0.46 |
| 1:D:428:ASN:CG | 1:D:431:LYS:HG3 | 2.41 | 0.46 |
| 1:D:865:VAL:C | 1:D:867:TYR:H | 2.24 | 0.46 |
| 1:A:428:ASN:CG | 1:A:431:LYS:HG3 | 2.41 | 0.46 |
| 1:A:701:THR:HA | 1:A:718:ILE:O | 2.15 | 0.46 |
| 1:A:829:ILE:HD12 | 1:A:837:TYR:CD1 | 2.50 | 0.46 |
| 1:A:836:ARG:O | 1:A:840:ILE:HG12 | 2.15 | 0.46 |
| 1:B:344:CYS:SG | 1:B:697:ILE:HG13 | 2.55 | 0.46 |
| 1:B:926:PRO:HA | 1:B:927:PRO:HD3 | 1.86 | 0.46 |
| 1:C:667:ARG:HG2 | 1:C:694:TYR:CE1 | 2.50 | 0.46 |
| 1:C:966:GLN:O | 1:C:969:MET:HB3 | 2.15 | 0.46 |
| 1:D:886:LEU:N | 1:D:886:LEU:HD23 | 2.31 | 0.46 |
| 1:A:315:ILE:HG23 | 1:A:757:MET:HE3 | 1.97 | 0.46 |
| 1:A:352:LYS:HE2 | 7:A:2068:HOH:O | 2.16 | 0.46 |
| 1:B:52:LEU:O | 1:B:56:GLN:HG2 | 2.16 | 0.46 |
| 1:B:71:ILE:O | 1:B:75:LEU:HD13 | 2.16 | 0.46 |
| 1:B:947:ILE:HD11 | 1:B:957:PHE:CD2 | 2.51 | 0.46 |
| 1:C:501:ALA:C | 1:C:503:SER:H | 2.23 | 0.46 |
| 1:C:965:THR:HA | 1:C:968:LEU:HD12 | 1.97 | 0.46 |
| 1:A:110:ARG:NH1 | 1:B:85:ILE:HD13 | 2.31 | 0.46 |
| 1:A:495:SER:HB3 | 1:A:514:VAL:HG22 | 1.97 | 0.46 |
| 1:B:337:PRO:O | 1:B:340:GLU:HG3 | 2.16 | 0.46 |
| 1:B:450:GLU:OE1 | 1:B:467:ARG:NH2 | 2.47 | 0.46 |
| 1:C:52:LEU:O | 1:C:56:GLN:HG2 | 2.16 | 0.46 |
| 1:C:71:ILE:O | 1:C:75:LEU:HD13 | 2.16 | 0.46 |
| 1:C:547:SER:O | 1:C:551:GLU:HG3 | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:865:VAL:C | 1:A:867:TYR:H | 2.24 | 0.46 |
| 1:B:310:GLY:O | 1:B:314:VAL:HG23 | 2.16 | 0.46 |
| 1:B:810:ASN:HA | 1:B:930:ASN:ND2 | 2.29 | 0.46 |
| 1:B:893:ALA:HB1 | 1:B:895:GLU:OE1 | 2.16 | 0.46 |
| 1:C:574:GLU:CD | 1:C:574:GLU:H | 2.24 | 0.46 |
| 1:C:810:ASN:HA | 1:C:930:ASN:ND2 | 2.29 | 0.46 |
| 1:A:289:ILE:O | 1:A:290:ARG:HD2 | 2.16 | 0.46 |
| 1:B:574:GLU:CD | 1:B:574:GLU:H | 2.23 | 0.46 |
| 1:C:332:ILE:CD1 | 1:C:736:ALA:HB2 | 2.45 | 0.46 |
| 1:C:865:VAL:CG1 | 1:C:869:GLN:HB2 | 2.42 | 0.46 |
| 1:C:337:PRO:O | 1:C:340:GLU:HG3 | 2.16 | 0.46 |
| 1:D:950:VAL:HB | 1:D:953:LEU:HD12 | 1.97 | 0.46 |
| 1:D:971:LEU:O | 1:D:975:LEU:HB2 | 2.17 | 0.46 |
| 1:A:950:VAL:C | 1:A:952:PRO:HD2 | 2.41 | 0.45 |
| 1:B:541:VAL:O | 1:B:545:ILE:HG12 | 2.16 | 0.45 |
| 1:C:50:TRP:O | 1:C:54:ILE:HG13 | 2.17 | 0.45 |
| 1:C:600:LEU:O | 1:C:602:PRO:HD3 | 2.16 | 0.45 |
| 1:C:757:MET:O | 1:C:761:ILE:HG13 | 2.16 | 0.45 |
| 1:C:967:TRP:O | 1:C:971:LEU:HG | 2.17 | 0.45 |
| 1:D:289:ILE:O | 1:D:290:ARG:HD2 | 2.16 | 0.45 |
| 1:D:518:PRO:HB3 | 1:D:549:ILE:HD13 | 1.98 | 0.45 |
| 1:D:862:GLY:N | 1:D:863:PRO:HD3 | 2.30 | 0.45 |
| 1:D:919:ASN:O | 1:D:989:ARG:HD3 | 2.16 | 0.45 |
| 1:D:950:VAL:C | 1:D:952:PRO:HD2 | 2.41 | 0.45 |
| 1:A:200:VAL:HG13 | 1:A:680:GLU:CG | 2.45 | 0.45 |
| 1:A:919:ASN:O | 1:A:989:ARG:HD3 | 2.15 | 0.45 |
| 1:B:965:THR:HA | 1:B:968:LEU:HD12 | 1.97 | 0.45 |
| 1:C:443:THR:O | 1:C:447:THR:HG23 | 2.16 | 0.45 |
| 1:D:83:GLU:C | 1:D:85:ILE:H | 2.24 | 0.45 |
| 1:D:495:SER:HB3 | 1:D:514:VAL:HG22 | 1.97 | 0.45 |
| 1:A:200:VAL:HG12 | 1:A:202:GLN:HE21 | 1.81 | 0.45 |
| 1:A:971:LEU:O | 1:A:975:LEU:HB2 | 2.17 | 0.45 |
| 1:B:851:ALA:HB1 | 1:B:899:MET:HE3 | 1.97 | 0.45 |
| 1:C:97:ILE:CD1 | 1:C:797:LEU:HD11 | 2.46 | 0.45 |
| 1:D:59:ASP:HB3 | 1:D:62:VAL:HG22 | 1.98 | 0.45 |
| 1:D:913:LEU:HD22 | 1:D:927:PRO:HB3 | 1.97 | 0.45 |
| 1:A:352:LYS:HA | 1:A:356:LEU:HB2 | 1.98 | 0.45 |
| 1:B:768:ASN:O | 1:B:772:VAL:HG23 | 2.16 | 0.45 |
| 1:C:96:LEU:O | 1:C:96:LEU:HD23 | 2.16 | 0.45 |
| 1:C:116:ILE:HD12 | 1:C:236:ARG:HG2 | 1.99 | 0.45 |
| 1:C:836:ARG:NH2 | 1:C:985:LYS:HE2 | 2.30 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:326:MET:HE1 | 1:D:339:VAL:HG12 | 1.99 | 0.45 |
| 1:D:342:LEU:HD12 | 1:D:733:MET:HE1 | 1.98 | 0.45 |
| 1:D:926:PRO:O | 1:D:929:VAL:HG23 | 2.17 | 0.45 |
| 1:A:326:MET:HE1 | 1:A:339:VAL:HG12 | 1.99 | 0.45 |
| 1:A:796:ASN:HA | 7:A:2131:HOH:O | 2.15 | 0.45 |
| 1:A:899:MET:O | 1:A:903:VAL:HG23 | 2.16 | 0.45 |
| 1:B:683:HIS:O | 1:B:687:ILE:HG13 | 2.16 | 0.45 |
| 1:B:886:LEU:N | 1:B:886:LEU:HD23 | 2.31 | 0.45 |
| 1:C:320:ALA:O | 1:C:324:ARG:HG3 | 2.15 | 0.45 |
| 1:C:811:PRO:HG3 | 1:C:929:VAL:HG12 | 1.99 | 0.45 |
| 1:C:851:ALA:HB1 | 1:C:899:MET:HE3 | 1.97 | 0.45 |
| 1:D:77:TRP:C | 1:D:79:GLU:H | 2.25 | 0.45 |
| 1:D:701:THR:HA | 1:D:718:ILE:O | 2.15 | 0.45 |
| 1:D:893:ALA:O | 1:D:896:PRO:HD2 | 2.17 | 0.45 |
| 1:A:269:VAL:O | 1:A:273:LEU:HG | 2.17 | 0.45 |
| 1:A:862:GLY:N | 1:A:863:PRO:HD3 | 2.31 | 0.45 |
| 1:B:116:ILE:HD12 | 1:B:236:ARG:HG2 | 1.99 | 0.45 |
| 1:B:781:LEU:HD23 | 1:B:783:LEU:HD11 | 1.97 | 0.45 |
| 1:B:811:PRO:HG3 | 1:B:929:VAL:HG12 | 1.99 | 0.45 |
| 1:B:967:TRP:O | 1:B:971:LEU:HG | 2.17 | 0.45 |
| 1:C:893:ALA:HB1 | 1:C:895:GLU:OE1 | 2.17 | 0.45 |
| 1:D:829:ILE:HD12 | 1:D:837:TYR:CD1 | 2.51 | 0.45 |
| 1:A:83:GLU:C | 1:A:85:ILE:H | 2.25 | 0.45 |
| 1:A:367:PHE:C | 1:A:367:PHE:CD2 | 2.95 | 0.45 |
| 1:B:329:LYS:O | 1:B:330:ASN:HB2 | 2.16 | 0.45 |
| 1:B:449:VAL:CG2 | 1:B:472:ASN:CG | 2.89 | 0.45 |
| 1:C:305:ALA:HB2 | 1:C:792:LEU:HD13 | 1.98 | 0.45 |
| 1:C:971:LEU:HA | 1:C:975:LEU:HD23 | 1.99 | 0.45 |
| 1:D:914:ASN:HB3 | 1:D:981:ASP:OD2 | 2.17 | 0.45 |
| 1:C:423:SER:HB3 | 1:C:437:VAL:O | 2.17 | 0.45 |
| 1:D:228:VAL:O | 1:D:228:VAL:HG12 | 2.16 | 0.45 |
| 1:D:768:ASN:O | 1:D:772:VAL:HG23 | 2.16 | 0.45 |
| 1:D:950:VAL:HG12 | 1:D:952:PRO:HG2 | 1.99 | 0.45 |
| 1:A:77:TRP:C | 1:A:79:GLU:H | 2.25 | 0.45 |
| 1:A:360:GLN:HG2 | 1:A:389:TYR:CE2 | 2.52 | 0.45 |
| 1:A:893:ALA:O | 1:A:896:PRO:HD2 | 2.17 | 0.45 |
| 1:A:950:VAL:HG12 | 1:A:952:PRO:HG2 | 1.99 | 0.45 |
| 1:B:838:MET:HE3 | 1:B:838:MET:HA | 1.99 | 0.45 |
| 1:B:971:LEU:HA | 1:B:975:LEU:HD23 | 1.99 | 0.45 |
| 1:C:190:HIS:O | 1:C:206:ASN:HA | 2.17 | 0.45 |
| 1:C:768:ASN:O | 1:C:772:VAL:HG23 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:155:VAL:HG22 | 1:D:217:GLY:H | 1.81 | 0.45 |
| 1:D:367:PHE:C | 1:D:367:PHE:CD2 | 2.95 | 0.45 |
| 1:D:899:MET:O | 1:D:903:VAL:HG23 | 2.17 | 0.45 |
| 1:D:943:LEU:O | 1:D:947:ILE:HG13 | 2.16 | 0.45 |
| 1:D:954:PRO:HB3 | 1:D:959:LEU:O | 2.17 | 0.45 |
| 1:A:518:PRO:HB3 | 1:A:549:ILE:HD13 | 1.99 | 0.45 |
| 1:A:950:VAL:HB | 1:A:953:LEU:HD12 | 1.98 | 0.45 |
| 1:B:256:PHE:CE1 | 1:B:765:ILE:HD11 | 2.52 | 0.45 |
| 1:B:767:SER:O | 1:B:771:GLU:HG3 | 2.16 | 0.45 |
| 1:C:59:ASP:OD2 | 1:C:62:VAL:HG23 | 2.16 | 0.45 |
| 1:C:352:LYS:HE2 | 7:C:4068:HOH:O | 2.16 | 0.45 |
| 1:C:760:PHE:CD1 | 1:C:760:PHE:C | 2.95 | 0.45 |
| 1:C:835:PHE:O | 1:C:838:MET:HB3 | 2.17 | 0.45 |
| 1:D:65:LEU:HD11 | 1:D:307:ILE:HG21 | 1.99 | 0.45 |
| 1:A:59:ASP:HB3 | 1:A:62:VAL:HG22 | 1.99 | 0.44 |
| 1:A:913:LEU:HD22 | 1:A:927:PRO:HB3 | 1.98 | 0.44 |
| 1:A:914:ASN:HB3 | 1:A:981:ASP:OD2 | 2.17 | 0.44 |
| 1:B:97:ILE:CD1 | 1:B:797:LEU:HD11 | 2.47 | 0.44 |
| 1:C:177:GLN:NE2 | 1:C:189:LYS:NZ | 2.65 | 0.44 |
| 1:C:701:THR:HA | 1:C:718:ILE:O | 2.17 | 0.44 |
| 1:D:236:ARG:HD3 | 1:D:236:ARG:C | 2.42 | 0.44 |
| 1:D:814:LEU:N | 1:D:814:LEU:HD12 | 2.32 | 0.44 |
| 1:A:303:ALA:O | 1:A:307:ILE:HG12 | 2.17 | 0.44 |
| 1:C:758:LYS:HZ1 | 1:C:828:LEU:HD23 | 1.83 | 0.44 |
| 1:D:186:SER:HB3 | 7:D:5524:HOH:O | 2.17 | 0.44 |
| 1:A:954:PRO:HB3 | 1:A:959:LEU:O | 2.17 | 0.44 |
| 1:C:947:ILE:HD11 | 1:C:957:PHE:CG | 2.52 | 0.44 |
| 1:A:236:ARG:HD3 | 1:A:236:ARG:C | 2.42 | 0.44 |
| 1:A:481:LYS:HG3 | 1:A:496:VAL:HB | 1.99 | 0.44 |
| 1:B:116:ILE:O | 1:B:120:LYS:HG3 | 2.18 | 0.44 |
| 1:B:701:THR:HA | 1:B:718:ILE:O | 2.17 | 0.44 |
| 1:C:329:LYS:O | 1:C:330:ASN:HB2 | 2.17 | 0.44 |
| 1:C:838:MET:HE3 | 1:C:838:MET:HA | 1.99 | 0.44 |
| 1:C:886:LEU:HD23 | 1:C:886:LEU:N | 2.33 | 0.44 |
| 1:D:360:GLN:HG2 | 1:D:389:TYR:CE2 | 2.52 | 0.44 |
| 1:A:206:ASN:C | 1:A:206:ASN:HD22 | 2.24 | 0.44 |
| 1:A:228:VAL:O | 1:A:228:VAL:HG12 | 2.17 | 0.44 |
| 1:A:679:VAL:HG13 | 1:A:683:HIS:CB | 2.35 | 0.44 |
| 1:A:783:LEU:HB3 | 1:A:784:PRO:HD2 | 1.99 | 0.44 |
| 1:B:332:ILE:CD1 | 1:B:736:ALA:HB2 | 2.47 | 0.44 |
| 1:B:367:PHE:C | 1:B:367:PHE:CD2 | 2.95 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:947:ILE:HD11 | 1:B:957:PHE:CG | 2.53 | 0.44 |
| 1:C:116:ILE:O | 1:C:120:LYS:HG3 | 2.18 | 0.44 |
| 1:C:187:VAL:CG2 | 1:C:189:LYS:HE2 | 2.47 | 0.44 |
| 1:C:788:ILE:HG12 | 1:C:791:GLN:OE1 | 2.17 | 0.44 |
| 1:C:856:PHE:CZ | 1:C:891:PHE:HA | 2.53 | 0.44 |
| 1:C:914:ASN:HD22 | 1:C:914:ASN:HA | 1.56 | 0.44 |
| 1:D:783:LEU:HB3 | 1:D:784:PRO:HD2 | 1.98 | 0.44 |
| 1:D:984:LEU:HD23 | 1:D:987:ILE:HD12 | 1.99 | 0.44 |
| 1:A:12:CYS:SG | 1:A:164:ARG:HG3 | 2.57 | 0.44 |
| 1:A:65:LEU:HD11 | 1:A:307:ILE:HG21 | 1.99 | 0.44 |
| 1:A:69:ALA:HB2 | 1:A:94:ILE:HG21 | 2.00 | 0.44 |
| 1:A:336:LEU:N | 1:A:337:PRO:HD2 | 2.33 | 0.44 |
| 1:B:59:ASP:OD2 | 1:B:62:VAL:HG23 | 2.17 | 0.44 |
| 1:B:856:PHE:CZ | 1:B:891:PHE:HA | 2.53 | 0.44 |
| 1:C:89:VAL:O | 1:C:93:VAL:HG23 | 2.18 | 0.44 |
| 1:D:269:VAL:O | 1:D:273:LEU:HG | 2.18 | 0.44 |
| 1:D:855:TRP:HA | 1:D:859:ALA:HB2 | 1.99 | 0.44 |
| 1:A:943:LEU:O | 1:A:947:ILE:HG13 | 2.17 | 0.44 |
| 1:B:835:PHE:O | 1:B:838:MET:HB3 | 2.18 | 0.44 |
| 1:C:344:CYS:SG | 1:C:697:ILE:HG13 | 2.58 | 0.44 |
| 1:C:450:GLU:OE1 | 1:C:467:ARG:NH2 | 2.49 | 0.44 |
| 1:C:646:GLU:OE2 | 1:C:651:ARG:NH1 | 2.51 | 0.44 |
| 1:D:353:THR:HA | 1:D:357:THR:HG1 | 1.83 | 0.44 |
| 1:A:984:LEU:HD23 | 1:A:987:ILE:HD12 | 1.99 | 0.44 |
| 1:B:896:PRO:O | 1:B:899:MET:HB2 | 2.18 | 0.44 |
| 1:C:758:LYS:NZ | 1:C:828:LEU:HD23 | 2.33 | 0.44 |
| 1:C:767:SER:O | 1:C:771:GLU:HG3 | 2.17 | 0.44 |
| 1:C:921:SER:HB2 | 1:C:989:ARG:NH2 | 2.14 | 0.44 |
| 1:D:370:ASP:HB3 | 1:D:378:SER:OG | 2.18 | 0.44 |
| 1:D:573:ARG:HH21 | 1:D:573:ARG:HG3 | 1.83 | 0.44 |
| 1:D:678:ARG:HB3 | 7:D:5069:HOH:O | 2.17 | 0.44 |
| 1:A:814:LEU:HD12 | 1:A:814:LEU:N | 2.33 | 0.44 |
| 1:A:922:LEU:N | 1:A:922:LEU:HD12 | 2.33 | 0.44 |
| 1:C:978:ILE:O | 1:C:982:GLU:HB2 | 2.18 | 0.44 |
| 1:D:69:ALA:HB2 | 1:D:94:ILE:HG21 | 2.00 | 0.44 |
| 1:A:491:ARG:HG2 | 1:A:493:SER:OG | 2.17 | 0.43 |
| 1:A:926:PRO:HA | 1:A:927:PRO:HD3 | 1.83 | 0.43 |
| 1:B:320:ALA:O | 1:B:324:ARG:HG3 | 2.17 | 0.43 |
| 1:D:796:ASN:HA | 7:D:5131:HOH:O | 2.16 | 0.43 |
| 1:A:768:ASN:O | 1:A:772:VAL:HG23 | 2.18 | 0.43 |
| 1:B:454:VAL:HG22 | 7:B:3034:HOH:O | 2.17 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:760:PHE:CD1 | 1:B:760:PHE:C | 2.96 | 0.43 |
| 1:C:328:LYS:HB3 | 1:C:328:LYS:HZ2 | 1.82 | 0.43 |
| 1:D:200:VAL:HG13 | 1:D:680:GLU:CG | 2.48 | 0.43 |
| 1:D:214:ILE:HD12 | 1:D:214:ILE:N | 2.33 | 0.43 |
| 1:A:687:ILE:O | 1:A:691:LEU:HD22 | 2.18 | 0.43 |
| 1:A:855:TRP:HA | 1:A:859:ALA:HB2 | 2.00 | 0.43 |
| 1:B:149:ASP:HB2 | 7:B:3093:HOH:O | 2.19 | 0.43 |
| 1:B:389:TYR:HB3 | 1:B:425:LEU:HD11 | 2.00 | 0.43 |
| 1:D:303:ALA:O | 1:D:307:ILE:HG12 | 2.18 | 0.43 |
| 1:D:862:GLY:H | 1:D:863:PRO:HD3 | 1.83 | 0.43 |
| 1:A:862:GLY:H | 1:A:863:PRO:HD3 | 1.83 | 0.43 |
| 1:B:80:GLU:CG | 1:B:82:GLU:HG2 | 2.45 | 0.43 |
| 1:B:443:THR:O | 1:B:447:THR:HG23 | 2.18 | 0.43 |
| 1:B:921:SER:HB2 | 1:B:989:ARG:NH2 | 2.14 | 0.43 |
| 1:C:1:MET:HE3 | 1:C:15:TYR:HB3 | 2.00 | 0.43 |
| 1:C:129:VAL:HG12 | 1:C:151:VAL:HG22 | 1.98 | 0.43 |
| 1:C:256:PHE:CE1 | 1:C:765:ILE:HD11 | 2.53 | 0.43 |
| 1:C:953:LEU:N | 1:C:954:PRO:HD2 | 2.33 | 0.43 |
| 1:D:336:LEU:N | 1:D:337:PRO:HD2 | 2.34 | 0.43 |
| 1:B:423:SER:HB3 | 1:B:437:VAL:O | 2.19 | 0.43 |
| 1:B:465:VAL:HG23 | 1:B:466:GLU:N | 2.33 | 0.43 |
| 1:C:80:GLU:CG | 1:C:82:GLU:HG2 | 2.45 | 0.43 |
| 1:C:449:VAL:CG2 | 1:C:472:ASN:CG | 2.91 | 0.43 |
| 1:B:549:ILE:HD11 | 1:B:596:VAL:HG21 | 2.00 | 0.43 |
| 1:B:914:ASN:HD22 | 1:B:914:ASN:HA | 1.57 | 0.43 |
| 1:B:919:ASN:HD22 | 1:B:988:ALA:HB3 | 1.83 | 0.43 |
| 1:C:367:PHE:C | 1:C:367:PHE:CD2 | 2.96 | 0.43 |
| 1:C:454:VAL:HG22 | 7:C:4034:HOH:O | 2.18 | 0.43 |
| 1:D:481:LYS:HG3 | 1:D:496:VAL:HB | 2.01 | 0.43 |
| 1:A:20:GLU:HB3 | 7:A:2516:HOH:O | 2.18 | 0.43 |
| 1:A:930:ASN:OD1 | 1:A:932:TRP:HB2 | 2.19 | 0.43 |
| 1:B:352:LYS:HE2 | 7:B:3068:HOH:O | 2.17 | 0.43 |
| 1:C:149:ASP:HB2 | 7:C:4093:HOH:O | 2.19 | 0.43 |
| 1:D:49:LEU:C | 1:D:51:GLU:H | 2.26 | 0.43 |
| 1:A:49:LEU:C | 1:A:51:GLU:H | 2.26 | 0.43 |
| 1:A:283:VAL:HG22 | 1:A:286:GLY:H | 1.84 | 0.43 |
| 1:B:458:GLU:H | 1:B:458:GLU:CD | 2.26 | 0.43 |
| 1:B:555:GLY:C | 1:B:557:ASP:N | 2.74 | 0.43 |
| 1:B:903:VAL:HG22 | 1:B:970:VAL:HG13 | 2.01 | 0.43 |
| 1:C:458:GLU:H | 1:C:458:GLU:CD | 2.26 | 0.43 |
| 1:D:12:CYS:SG | 1:D:164:ARG:HG3 | 2.58 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:926:PRO:HA | 1:D:927:PRO:HD3 | 1.83 | 0.43 |
| 1:A:280:ASN:N | 1:A:280:ASN:HD22 | 2.16 | 0.43 |
| 1:A:459:VAL:HB | 1:A:467:ARG:HD3 | 2.00 | 0.43 |
| 1:A:831:GLY:O | 1:A:834:PHE:HB3 | 2.19 | 0.43 |
| 1:B:953:LEU:N | 1:B:954:PRO:HD2 | 2.33 | 0.43 |
| 1:D:200:VAL:CG1 | 1:D:201:ASN:N | 2.82 | 0.43 |
| 1:D:352:LYS:HA | 1:D:356:LEU:HB2 | 2.00 | 0.43 |
| 1:D:930:ASN:OD1 | 1:D:932:TRP:HB2 | 2.19 | 0.43 |
| 1:A:295:TYR:C | 1:A:297:LYS:H | 2.27 | 0.43 |
| 1:A:600:LEU:O | 1:A:602:PRO:HD3 | 2.19 | 0.43 |
| 1:B:332:ILE:N | 1:B:332:ILE:CD1 | 2.82 | 0.43 |
| 1:B:978:ILE:O | 1:B:982:GLU:HB2 | 2.19 | 0.43 |
| 1:C:788:ILE:HB | 1:C:789:PRO:HD2 | 2.01 | 0.43 |
| 1:C:919:ASN:HD22 | 1:C:988:ALA:HB3 | 1.83 | 0.43 |
| 1:D:21:THR:HG22 | 1:D:21:THR:O | 2.17 | 0.43 |
| 1:D:831:GLY:O | 1:D:834:PHE:HB3 | 2.19 | 0.43 |
| 1:B:104:VAL:O | 1:B:108:GLN:HG3 | 2.19 | 0.42 |
| 1:B:449:VAL:HG21 | 1:B:472:ASN:OD1 | 2.19 | 0.42 |
| 1:B:788:ILE:HB | 1:B:789:PRO:HD2 | 2.01 | 0.42 |
| 1:B:788:ILE:HG12 | 1:B:791:GLN:OE1 | 2.19 | 0.42 |
| 1:C:389:TYR:HB3 | 1:C:425:LEU:HD11 | 2.00 | 0.42 |
| 1:C:758:LYS:HE3 | 1:C:762:ARG:NH2 | 2.34 | 0.42 |
| 1:D:46:GLY:C | 1:D:48:SER:H | 2.27 | 0.42 |
| 1:D:295:TYR:C | 1:D:297:LYS:H | 2.27 | 0.42 |
| 1:D:654:THR:HA | 1:D:677:ALA:O | 2.18 | 0.42 |
| 1:A:336:LEU:O | 1:A:339:VAL:HG22 | 2.19 | 0.42 |
| 1:A:459:VAL:HB | 1:A:467:ARG:CD | 2.49 | 0.42 |
| 1:A:558:THR:HG22 | 1:A:558:THR:O | 2.18 | 0.42 |
| 1:C:555:GLY:C | 1:C:557:ASP:N | 2.74 | 0.42 |
| 1:C:896:PRO:O | 1:C:899:MET:HB2 | 2.19 | 0.42 |
| 1:C:903:VAL:HG22 | 1:C:970:VAL:HG13 | 2.01 | 0.42 |
| 1:D:922:LEU:HD12 | 1:D:922:LEU:N | 2.34 | 0.42 |
| 1:A:18:VAL:HG12 | 1:A:24:LEU:HD23 | 2.02 | 0.42 |
| 1:B:89:VAL:O | 1:B:93:VAL:HG23 | 2.19 | 0.42 |
| 1:B:473:SER:HA | 1:B:476:ARG:NH1 | 2.34 | 0.42 |
| 1:B:757:MET:O | 1:B:761:ILE:HG13 | 2.19 | 0.42 |
| 1:C:104:VAL:O | 1:C:108:GLN:HG3 | 2.19 | 0.42 |
| 1:C:765:ILE:O | 1:C:769:VAL:HG23 | 2.19 | 0.42 |
| 1:D:280:ASN:N | 1:D:280:ASN:HD22 | 2.16 | 0.42 |
| 1:D:558:THR:O | 1:D:558:THR:HG22 | 2.18 | 0.42 |
| 1:A:179:ILE:O | 1:A:705:VAL:HG22 | 2.18 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:840:ILE:O | 1:A:844:VAL:HG23 | 2.19 | 0.42 |
| 1:B:266:LEU:HD13 | 1:B:266:LEU:O | 2.20 | 0.42 |
| 1:B:372:VAL:HG22 | 1:B:377:CYS:HB2 | 2.01 | 0.42 |
| 1:B:413:LEU:C | 1:B:413:LEU:HD23 | 2.44 | 0.42 |
| 1:B:765:ILE:O | 1:B:769:VAL:HG23 | 2.19 | 0.42 |
| 1:D:209:PHE:O | 1:D:212:THR:HB | 2.20 | 0.42 |
| 1:A:185:VAL:HG13 | 1:A:185:VAL:O | 2.19 | 0.42 |
| 1:A:893:ALA:HA | 1:A:894:PRO:HD3 | 1.86 | 0.42 |
| 1:A:951:ASP:O | 1:A:954:PRO:HD2 | 2.18 | 0.42 |
| 1:B:646:GLU:OE2 | 1:B:651:ARG:NH1 | 2.52 | 0.42 |
| 1:D:283:VAL:HG22 | 1:D:286:GLY:H | 1.85 | 0.42 |
| 1:D:717:GLY:O | 1:D:731:SER:HB3 | 2.19 | 0.42 |
| 1:B:542:LYS:HD2 | 7:B:3003:HOH:O | 2.19 | 0.42 |
| 1:D:459:VAL:HB | 1:D:467:ARG:CD | 2.49 | 0.42 |
| 1:B:862:GLY:N | 1:B:863:PRO:HD3 | 2.35 | 0.42 |
| 1:C:325:ARG:NH1 | 1:C:753:ILE:HD11 | 2.35 | 0.42 |
| 1:D:336:LEU:O | 1:D:339:VAL:HG22 | 2.20 | 0.42 |
| 1:D:765:ILE:O | 1:D:769:VAL:HG23 | 2.20 | 0.42 |
| 1:A:446:THR:HG23 | 1:A:472:ASN:ND2 | 2.34 | 0.42 |
| 1:A:604:ARG:HB2 | 1:A:607:VAL:HG23 | 2.02 | 0.42 |
| 1:B:187:VAL:CG2 | 1:B:189:LYS:HE2 | 2.50 | 0.42 |
| 1:B:758:LYS:NZ | 1:B:828:LEU:HD23 | 2.35 | 0.42 |
| 1:C:654:THR:HA | 1:C:677:ALA:O | 2.20 | 0.42 |
| 1:C:862:GLY:N | 1:C:863:PRO:HD3 | 2.35 | 0.42 |
| 1:D:459:VAL:HB | 1:D:467:ARG:HD3 | 2.01 | 0.42 |
| 1:A:46:GLY:C | 1:A:48:SER:H | 2.28 | 0.42 |
| 1:A:200:VAL:HG12 | 1:A:202:GLN:NE2 | 2.34 | 0.42 |
| 1:A:209:PHE:O | 1:A:212:THR:HB | 2.20 | 0.42 |
| 1:A:214:ILE:N | 1:A:214:ILE:HD12 | 2.35 | 0.42 |
| 1:A:606:GLU:HG3 | 1:A:739:ASN:OD1 | 2.20 | 0.42 |
| 1:A:765:ILE:O | 1:A:769:VAL:HG23 | 2.20 | 0.42 |
| 1:C:473:SER:HA | 1:C:476:ARG:HH11 | 1.85 | 0.42 |
| 1:C:876:CYS:SG | 1:C:884:GLU:OE1 | 2.78 | 0.42 |
| 1:D:239:MET:SD | 1:D:708:ALA:HB1 | 2.60 | 0.42 |
| 1:A:175:VAL:CG1 | 1:A:212:THR:CG2 | 2.97 | 0.41 |
| 1:B:473:SER:HA | 1:B:476:ARG:HH11 | 1.85 | 0.41 |
| 1:C:75:LEU:HD23 | 1:C:297:LYS:HD2 | 2.01 | 0.41 |
| 1:C:465:VAL:HG23 | 1:C:466:GLU:N | 2.35 | 0.41 |
| 1:D:18:VAL:HG12 | 1:D:24:LEU:HD23 | 2.02 | 0.41 |
| 1:D:179:ILE:O | 1:D:705:VAL:HG22 | 2.19 | 0.41 |
| 1:B:325:ARG:NH1 | 1:B:753:ILE:HD11 | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:905:VAL:O | 1:C:909:MET:HG2 | 2.19 | 0.41 |
| 1:D:185:VAL:HG13 | 1:D:185:VAL:O | 2.20 | 0.41 |
| 1:D:212:THR:CG2 | 1:D:213:ASN:N | 2.82 | 0.41 |
| 1:D:491:ARG:HG2 | 1:D:493:SER:OG | 2.19 | 0.41 |
| 1:A:206:ASN:HD22 | 1:A:206:ASN:H | 1.68 | 0.41 |
| 1:A:239:MET:SD | 1:A:708:ALA:HB1 | 2.60 | 0.41 |
| 1:C:413:LEU:HD23 | 1:C:413:LEU:C | 2.45 | 0.41 |
| 1:D:412:GLU:OE2 | 1:D:566:THR:CG2 | 2.66 | 0.41 |
| 1:D:604:ARG:HB2 | 1:D:607:VAL:HG23 | 2.03 | 0.41 |
| 1:D:893:ALA:HA | 1:D:894:PRO:HD3 | 1.86 | 0.41 |
| 1:A:624:ILE:HD13 | 1:A:687:ILE:CD1 | 2.51 | 0.41 |
| 1:B:758:LYS:HE3 | 1:B:762:ARG:NH2 | 2.35 | 0.41 |
| 1:C:1:MET:HE2 | 1:C:7:LYS:HE2 | 2.02 | 0.41 |
| 1:C:983:ILE:O | 1:C:987:ILE:HG13 | 2.19 | 0.41 |
| 1:C:100:ALA:O | 1:C:104:VAL:HG23 | 2.20 | 0.41 |
| 1:C:473:SER:HA | 1:C:476:ARG:NH1 | 2.35 | 0.41 |
| 1:D:840:ILE:O | 1:D:844:VAL:HG23 | 2.20 | 0.41 |
| 1:A:567:ARG:HD2 | 1:A:570:PRO:CA | 2.48 | 0.41 |
| 1:A:924:ARG:HA | 1:A:924:ARG:HE | 1.86 | 0.41 |
| 1:C:975:LEU:N | 1:C:976:PRO:CD | 2.82 | 0.41 |
| 1:D:795:VAL:HA | 1:D:799:THR:CB | 2.49 | 0.41 |
| 1:D:843:TYR:OH | 1:D:976:PRO:HG2 | 2.20 | 0.41 |
| 1:A:941:MET:O | 1:A:944:HIS:HB3 | 2.20 | 0.41 |
| 1:B:65:LEU:HG | 1:B:94:ILE:HD11 | 2.03 | 0.41 |
| 1:B:90:GLU:O | 1:B:94:ILE:HG22 | 2.21 | 0.41 |
| 1:B:501:ALA:C | 1:B:503:SER:N | 2.79 | 0.41 |
| 1:B:922:LEU:HD12 | 1:B:922:LEU:N | 2.36 | 0.41 |
| 1:C:23:GLY:HA3 | 1:C:130:TYR:O | 2.20 | 0.41 |
| 1:C:656:ARG:HA | 1:C:656:ARG:HD3 | 1.92 | 0.41 |
| 1:D:198:ARG:HE | 1:D:656:ARG:HH22 | 1.69 | 0.41 |
| 1:B:491:ARG:NH1 | 1:B:588:GLU:OE1 | 2.54 | 0.41 |
| 1:B:975:LEU:N | 1:B:976:PRO:CD | 2.82 | 0.41 |
| 1:D:198:ARG:HE | 1:D:656:ARG:NH2 | 2.18 | 0.41 |
| 1:D:255:GLU:O | 1:D:258:GLU:HB2 | 2.20 | 0.41 |
| 1:D:366:MET:HA | 1:D:596:VAL:O | 2.21 | 0.41 |
| 1:B:1:MET:HE3 | 1:B:15:TYR:HB3 | 2.00 | 0.41 |
| 1:B:88:PHE:C | 1:B:91:PRO:HD2 | 2.46 | 0.41 |
| 1:B:102:ALA:O | 1:B:106:VAL:HG23 | 2.21 | 0.41 |
| 1:B:166:LEU:HD11 | 1:B:222:ILE:HB | 2.02 | 0.41 |
| 1:B:322:GLY:O | 1:B:326:MET:HG3 | 2.20 | 0.41 |
| 1:B:654:THR:HA | 1:B:677:ALA:O | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:656:ARG:HD3 | 1:B:656:ARG:HA | 1.92 | 0.41 |
| 1:B:876:CYS:SG | 1:B:884:GLU:OE1 | 2.79 | 0.41 |
| 1:B:983:ILE:O | 1:B:987:ILE:HG13 | 2.20 | 0.41 |
| 1:C:491:ARG:HH11 | 1:C:588:GLU:CD | 2.29 | 0.41 |
| 1:C:491:ARG:NH1 | 1:C:588:GLU:OE1 | 2.54 | 0.41 |
| 1:D:446:THR:HG23 | 1:D:472:ASN:ND2 | 2.35 | 0.41 |
| 1:D:491:ARG:NH1 | 1:D:588:GLU:OE1 | 2.54 | 0.41 |
| 1:D:567:ARG:HD2 | 1:D:570:PRO:CA | 2.48 | 0.41 |
| 1:D:807:LEU:C | 1:D:809:PHE:H | 2.27 | 0.41 |
| 1:D:924:ARG:HE | 1:D:924:ARG:HA | 1.86 | 0.41 |
| 1:D:941:MET:O | 1:D:944:HIS:HB3 | 2.20 | 0.41 |
| 1:D:951:ASP:O | 1:D:954:PRO:HD2 | 2.20 | 0.41 |
| 1:A:198:ARG:HE | 1:A:656:ARG:NH2 | 2.19 | 0.41 |
| 1:A:325:ARG:O | 1:A:328:LYS:HB3 | 2.21 | 0.41 |
| 1:A:795:VAL:HA | 1:A:799:THR:CB | 2.50 | 0.41 |
| 1:B:90:GLU:HB2 | 1:B:790:VAL:HG22 | 2.03 | 0.41 |
| 1:C:962:LEU:HB2 | 1:C:966:GLN:HB2 | 2.02 | 0.41 |
| 1:D:868:HIS:C | 1:D:870:LEU:H | 2.28 | 0.41 |
| 1:A:654:THR:HA | 1:A:677:ALA:O | 2.21 | 0.40 |
| 1:A:843:TYR:OH | 1:A:976:PRO:HG2 | 2.20 | 0.40 |
| 1:C:88:PHE:C | 1:C:91:PRO:HD2 | 2.46 | 0.40 |
| 1:C:922:LEU:N | 1:C:922:LEU:HD12 | 2.36 | 0.40 |
| 1:A:255:GLU:O | 1:A:258:GLU:HB2 | 2.21 | 0.40 |
| 1:A:366:MET:HA | 1:A:596:VAL:O | 2.21 | 0.40 |
| 1:B:1:MET:HE2 | 1:B:7:LYS:HE2 | 2.03 | 0.40 |
| 1:B:8:SER:OG | 1:B:11:GLU:HG3 | 2.22 | 0.40 |
| 1:B:179:ILE:O | 1:B:705:VAL:HG22 | 2.21 | 0.40 |
| 1:B:905:VAL:O | 1:B:909:MET:HG2 | 2.20 | 0.40 |
| 1:B:910:CYS:HB3 | 1:B:978:ILE:CG1 | 2.51 | 0.40 |
| 1:B:962:LEU:HB2 | 1:B:966:GLN:HB2 | 2.02 | 0.40 |
| 1:C:100:ALA:O | 1:C:103:ILE:HG22 | 2.21 | 0.40 |
| 1:C:102:ALA:O | 1:C:106:VAL:HG23 | 2.22 | 0.40 |
| 1:C:266:LEU:HD13 | 1:C:266:LEU:O | 2.21 | 0.40 |
| 1:C:777:LEU:HD12 | 1:C:845:GLY:O | 2.21 | 0.40 |
| 1:C:962:LEU:HG | 1:C:967:TRP:NE1 | 2.36 | 0.40 |
| 1:A:916:LEU:CD1 | 1:A:927:PRO:HA | 2.52 | 0.40 |
| 1:B:100:ALA:O | 1:B:104:VAL:HG23 | 2.21 | 0.40 |
| 1:B:777:LEU:HD12 | 1:B:845:GLY:O | 2.21 | 0.40 |
| 1:B:962:LEU:HG | 1:B:967:TRP:NE1 | 2.36 | 0.40 |
| 1:C:90:GLU:O | 1:C:94:ILE:HG22 | 2.22 | 0.40 |
| 1:C:389:TYR:HA | 1:C:447:THR:HG21 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:501:ALA:C | 1:C:503:SER:N | 2.80 | 0.40 |
| 1:D:20:GLU:HB3 | 7:D:5516:HOH:O | 2.20 | 0.40 |
| 1:D:485:LEU:HD22 | 1:D:584:PHE:CE2 | 2.56 | 0.40 |
| 1:D:600:LEU:O | 1:D:602:PRO:HD3 | 2.22 | 0.40 |
| 1:D:971:LEU:HA | 1:D:975:LEU:HD23 | 2.02 | 0.40 |
| 1:A:858:TYR:CD1 | 1:A:858:TYR:N | 2.89 | 0.40 |
| 1:A:971:LEU:HA | 1:A:975:LEU:HD23 | 2.02 | 0.40 |
| 1:C:39:ASN:OD1 | 1:C:226:THR:HB | 2.21 | 0.40 |
| 1:D:263:VAL:O | 1:D:267:ILE:HG13 | 2.21 | 0.40 |
| 1:D:771:GLU:O | 1:D:775:ILE:HG12 | 2.22 | 0.40 |
| 1:D:670:CYS:HB3 | 1:D:691:LEU:HD13 | 2.03 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles (i)

### 5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | A | 992/994 (100%) | 932 (94%) | 51 (5%) | 9 (1%) | 14 | 17 |
| 1 | B | 992/994 (100%) | 934 (94%) | 52 (5%) | 6 (1%) | 21 | 27 |
| 1 | C | 992/994 (100%) | 933 (94%) | 53 (5%) | 6 (1%) | 21 | 27 |
| 1 | D | 992/994 (100%) | 931 (94%) | 52 (5%) | 9 (1%) | 14 | 17 |
| All | All | 3968/3976 (100%) | 3730 (94%) | 208 (5%) | 30 (1%) | 16 | 20 |

All (30) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 882 | HIS |
| 1 | B | 882 | HIS |
| 1 | C | 882 | HIS |
| 1 | D | 882 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 961 | ALA |
| 1 | D | 961 | ALA |
| 1 | A | 992 | LEU |
| 1 | B | 663 | LEU |
| 1 | C | 663 | LEU |
| 1 | D | 992 | LEU |
| 1 | A | 243 | GLU |
| 1 | A | 282 | PRO |
| 1 | B | 241 | ALA |
| 1 | D | 243 | GLU |
| 1 | D | 282 | PRO |
| 1 | A | 862 | GLY |
| 1 | A | 953 | LEU |
| 1 | C | 241 | ALA |
| 1 | C | 950 | VAL |
| 1 | D | 862 | GLY |
| 1 | B | 950 | VAL |
| 1 | B | 953 | LEU |
| 1 | C | 953 | LEU |
| 1 | D | 953 | LEU |
| 1 | A | 291 | GLY |
| 1 | A | 950 | VAL |
| 1 | D | 291 | GLY |
| 1 | B | 862 | GLY |
| 1 | C | 862 | GLY |
| 1 | D | 950 | VAL |

### 5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 1 | A | 840/840 (100%) | 808 (96%) | 32 (4%) | 29 | 44 |
| 1 | B | 840/840 (100%) | 804 (96%) | 36 (4%) | 26 | 39 |
| 1 | C | 840/840 (100%) | 803 (96%) | 37 (4%) | 25 | 38 |
| 1 | D | 840/840 (100%) | 807 (96%) | 33 (4%) | 28 | 43 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| All | All | 3360/3360 (100%) | 3222 (96%) | 138 (4%) | 27 41 |

All (138) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 41 | LEU |
| 1 | A | 44 | GLU |
| 1 | A | 45 | GLU |
| 1 | A | 121 | GLU |
| 1 | A | 187 | VAL |
| 1 | A | 202 | GLN |
| 1 | A | 206 | ASN |
| 1 | A | 255 | GLU |
| 1 | A | 266 | LEU |
| 1 | A | 342 | LEU |
| 1 | A | 356 | LEU |
| 1 | A | 413 | LEU |
| 1 | A | 486 | GLU |
| 1 | A | 534 | ARG |
| 1 | A | 544 | LYS |
| 1 | A | 562 | LEU |
| 1 | A | 566 | THR |
| 1 | A | 567 | ARG |
| 1 | A | 574 | GLU |
| 1 | A | 602 | PRO |
| 1 | A | 620 | ARG |
| 1 | A | 631 | THR |
| 1 | A | 656 | ARG |
| 1 | A | 660 | ASP |
| 1 | A | 678 | ARG |
| 1 | A | 687 | ILE |
| 1 | A | 691 | LEU |
| 1 | A | 705 | VAL |
| 1 | A | 829 | ILE |
| 1 | A | 882 | HIS |
| 1 | A | 964 | LEU |
| 1 | A | 972 | LYS |
| 1 | B | 9 | THR |
| 1 | B | 22 | THR |
| 1 | B | 41 | LEU |
| 1 | B | 134 | ARG |
| 1 | B | 202 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | B | 212 | THR |
| 1 | B | 242 | THR |
| 1 | B | 319 | LEU |
| 1 | B | 328 | LYS |
| 1 | B | 340 | GLU |
| 1 | B | 342 | LEU |
| 1 | B | 356 | LEU |
| 1 | B | 361 | MET |
| 1 | B | 394 | GLU |
| 1 | B | 406 | GLN |
| 1 | B | 445 | LEU |
| 1 | B | 449 | VAL |
| 1 | B | 460 | ARG |
| 1 | B | 467 | ARG |
| 1 | B | 484 | THR |
| 1 | B | 534 | ARG |
| 1 | B | 544 | LYS |
| 1 | B | 562 | LEU |
| 1 | B | 566 | THR |
| 1 | B | 572 | LYS |
| 1 | B | 589 | THR |
| 1 | B | 620 | ARG |
| 1 | B | 631 | THR |
| 1 | B | 679 | VAL |
| 1 | B | 691 | LEU |
| 1 | B | 705 | VAL |
| 1 | B | 713 | LYS |
| 1 | B | 765 | ILE |
| 1 | B | 882 | HIS |
| 1 | B | 914 | ASN |
| 1 | B | 962 | LEU |
| 1 | C | 9 | THR |
| 1 | C | 22 | THR |
| 1 | C | 41 | LEU |
| 1 | C | 134 | ARG |
| 1 | C | 202 | GLN |
| 1 | C | 212 | THR |
| 1 | C | 242 | THR |
| 1 | C | 319 | LEU |
| 1 | C | 328 | LYS |
| 1 | C | 340 | GLU |
| 1 | C | 342 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | C | 356 | LEU |
| 1 | C | 361 | MET |
| 1 | C | 394 | GLU |
| 1 | C | 406 | GLN |
| 1 | C | 445 | LEU |
| 1 | C | 449 | VAL |
| 1 | C | 460 | ARG |
| 1 | C | 467 | ARG |
| 1 | C | 484 | THR |
| 1 | C | 534 | ARG |
| 1 | C | 544 | LYS |
| 1 | C | 562 | LEU |
| 1 | C | 566 | THR |
| 1 | C | 572 | LYS |
| 1 | C | 589 | THR |
| 1 | C | 620 | ARG |
| 1 | C | 631 | THR |
| 1 | C | 679 | VAL |
| 1 | C | 691 | LEU |
| 1 | C | 701 | THR |
| 1 | C | 705 | VAL |
| 1 | C | 713 | LYS |
| 1 | C | 765 | ILE |
| 1 | C | 882 | HIS |
| 1 | C | 914 | ASN |
| 1 | C | 962 | LEU |
| 1 | D | 41 | LEU |
| 1 | D | 44 | GLU |
| 1 | D | 45 | GLU |
| 1 | D | 121 | GLU |
| 1 | D | 187 | VAL |
| 1 | D | 202 | GLN |
| 1 | D | 255 | GLU |
| 1 | D | 266 | LEU |
| 1 | D | 342 | LEU |
| 1 | D | 356 | LEU |
| 1 | D | 413 | LEU |
| 1 | D | 486 | GLU |
| 1 | D | 534 | ARG |
| 1 | D | 544 | LYS |
| 1 | D | 554 | THR |
| 1 | D | 562 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | D | 566 | THR |
| 1 | D | 567 | ARG |
| 1 | D | 574 | GLU |
| 1 | D | 602 | PRO |
| 1 | D | 620 | ARG |
| 1 | D | 631 | THR |
| 1 | D | 656 | ARG |
| 1 | D | 660 | ASP |
| 1 | D | 671 | ARG |
| 1 | D | 678 | ARG |
| 1 | D | 687 | ILE |
| 1 | D | 691 | LEU |
| 1 | D | 705 | VAL |
| 1 | D | 829 | ILE |
| 1 | D | 882 | HIS |
| 1 | D | 964 | LEU |
| 1 | D | 972 | LYS |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 114 | ASN |
| 1 | A | 202 | GLN |
| 1 | A | 206 | ASN |
| 1 | A | 280 | ASN |
| 1 | A | 359 | ASN |
| 1 | A | 472 | ASN |
| 1 | A | 869 | GLN |
| 1 | A | 872 | HIS |
| 1 | A | 911 | ASN |
| 1 | A | 914 | ASN |
| 1 | A | 920 | GLN |
| 1 | A | 966 | GLN |
| 1 | B | 38 | HIS |
| 1 | B | 108 | GLN |
| 1 | B | 138 | GLN |
| 1 | B | 275 | ASN |
| 1 | B | 278 | HIS |
| 1 | B | 359 | ASN |
| 1 | B | 406 | GLN |
| 1 | B | 472 | ASN |
| 1 | B | 510 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | B | 768 | ASN |
| 1 | B | 869 | GLN |
| 1 | B | 914 | ASN |
| 1 | B | 919 | ASN |
| 1 | C | 38 | HIS |
| 1 | C | 108 | GLN |
| 1 | C | 138 | GLN |
| 1 | C | 177 | GLN |
| 1 | C | 244 | GLN |
| 1 | C | 275 | ASN |
| 1 | C | 278 | HIS |
| 1 | C | 359 | ASN |
| 1 | C | 406 | GLN |
| 1 | C | 472 | ASN |
| 1 | C | 510 | ASN |
| 1 | C | 914 | ASN |
| 1 | C | 919 | ASN |
| 1 | D | 114 | ASN |
| 1 | D | 238 | GLN |
| 1 | D | 280 | ASN |
| 1 | D | 359 | ASN |
| 1 | D | 472 | ASN |
| 1 | D | 911 | ASN |
| 1 | D | 914 | ASN |
| 1 | D | 920 | GLN |
| 1 | D | 966 | 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

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry (i)

Of 24 ligands modelled in this entry, 12 are monoatomic - leaving 12 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 | TG1 | C | 1203 | - | 44,48,48 | 1.77 | 11 (25%) | 47,72,72 | 1.74 | 9 (19%) |
| 6 | TG1 | D | 1303 | - | 44,48,48 | 1.74 | 11 (25%) | 47,72,72 | 1.71 | 11 (23%) |
| 4 | MF4 | C | 1198 | 1 | 0,4,4 | - | - | - | | |
| 4 | MF4 | A | 998 | 1 | 0,4,4 | - | - | - | | |
| 5 | ADP | B | 1102 | 2 | 28,29,29 | 1.61 | 8 (28%) | 43,45,45 | 2.17 | 13 (30%) |
| 5 | ADP | D | 1302 | 2 | 28,29,29 | 1.58 | 7 (25%) | 43,45,45 | 2.21 | 14 (32%) |
| 6 | TG1 | B | 1103 | - | 44,48,48 | 1.76 | 11 (25%) | 47,72,72 | 1.75 | 9 (19%) |
| 6 | TG1 | A | 1003 | - | 44,48,48 | 1.75 | 11 (25%) | 47,72,72 | 1.70 | 10 (21%) |
| 5 | ADP | C | 1202 | 2 | 28,29,29 | 1.57 | 8 (28%) | 43,45,45 | 2.15 | 13 (30%) |
| 4 | MF4 | B | 1098 | 1 | 0,4,4 | - | - | - | | |
| 5 | ADP | A | 1002 | 2 | 28,29,29 | 1.58 | 7 (25%) | 43,45,45 | 2.20 | 14 (32%) |
| 4 | MF4 | D | 1298 | 1 | 0,4,4 | - | - | - | | |

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 | TG1 | C | 1203 | - | - | 12/33/99/99 | 0/3/3/3 |
| 6 | TG1 | D | 1303 | - | - | 9/33/99/99 | 0/3/3/3 |
| 5 | ADP | D | 1302 | 2 | - | 4/16/32/32 | 0/3/3/3 |
| 5 | ADP | B | 1102 | 2 | - | 6/16/32/32 | 0/3/3/3 |
| 6 | TG1 | B | 1103 | - | - | 11/33/99/99 | 0/3/3/3 |
| 6 | TG1 | A | 1003 | - | - | 9/33/99/99 | 0/3/3/3 |
| 5 | ADP | A | 1002 | 2 | - | 4/16/32/32 | 0/3/3/3 |
| 5 | ADP | C | 1202 | 2 | - | 6/16/32/32 | 0/3/3/3 |

All (74) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 6 | C | 1203 | TG1 | O4-C21 | 6.12 | 1.33 | 1.21 |
| 6 | B | 1103 | TG1 | O4-C21 | 5.98 | 1.33 | 1.21 |
| 6 | A | 1003 | TG1 | O4-C21 | 5.70 | 1.33 | 1.21 |
| 6 | D | 1303 | TG1 | O4-C21 | 5.56 | 1.32 | 1.21 |
| 5 | B | 1102 | ADP | C5-N7 | -3.66 | 1.32 | 1.39 |
| 6 | C | 1203 | TG1 | C3-C4 | 3.63 | 1.55 | 1.50 |
| 6 | B | 1103 | TG1 | C3-C4 | 3.59 | 1.54 | 1.50 |
| 5 | C | 1202 | ADP | C5-N7 | -3.53 | 1.32 | 1.39 |
| 6 | D | 1303 | TG1 | C3-C4 | 3.46 | 1.54 | 1.50 |
| 5 | D | 1302 | ADP | C5-N7 | -3.45 | 1.32 | 1.39 |
| 6 | B | 1103 | TG1 | O6-C7 | 3.42 | 1.48 | 1.43 |
| 5 | A | 1002 | ADP | C5-N7 | -3.42 | 1.32 | 1.39 |
| 6 | A | 1003 | TG1 | C3-C4 | 3.38 | 1.54 | 1.50 |
| 6 | B | 1103 | TG1 | C9-C10 | 3.30 | 1.59 | 1.54 |
| 6 | C | 1203 | TG1 | C9-C10 | 3.27 | 1.59 | 1.54 |
| 6 | C | 1203 | TG1 | O6-C7 | 3.26 | 1.48 | 1.43 |
| 6 | D | 1303 | TG1 | O6-C7 | 3.22 | 1.48 | 1.43 |
| 6 | A | 1003 | TG1 | O6-C7 | 3.18 | 1.48 | 1.43 |
| 5 | D | 1302 | ADP | C5-C4 | 3.07 | 1.44 | 1.39 |
| 5 | A | 1002 | ADP | C5-C4 | 3.07 | 1.44 | 1.39 |
| 6 | D | 1303 | TG1 | C1-C2 | 2.98 | 1.59 | 1.54 |
| 6 | D | 1303 | TG1 | C34-C11 | 2.95 | 1.57 | 1.53 |
| 6 | A | 1003 | TG1 | C9-C10 | 2.88 | 1.59 | 1.54 |
| 6 | A | 1003 | TG1 | C1-C2 | 2.88 | 1.59 | 1.54 |
| 6 | D | 1303 | TG1 | C9-C10 | 2.85 | 1.59 | 1.54 |
| 6 | C | 1203 | TG1 | C11-C7 | 2.80 | 1.59 | 1.55 |
| 6 | A | 1003 | TG1 | C34-C11 | 2.79 | 1.57 | 1.53 |
| 5 | B | 1102 | ADP | C5-C4 | 2.79 | 1.44 | 1.39 |
| 6 | B | 1103 | TG1 | C34-C11 | 2.78 | 1.57 | 1.53 |
| 5 | C | 1202 | ADP | C5-C4 | 2.75 | 1.44 | 1.39 |
| 6 | B | 1103 | TG1 | C11-C7 | 2.67 | 1.58 | 1.55 |
| 6 | B | 1103 | TG1 | C9-C8 | 2.66 | 1.55 | 1.52 |
| 6 | C | 1203 | TG1 | C34-C11 | 2.65 | 1.56 | 1.53 |
| 6 | C | 1203 | TG1 | C9-C8 | 2.65 | 1.55 | 1.52 |
| 6 | D | 1303 | TG1 | C11-C7 | 2.64 | 1.58 | 1.55 |
| 5 | A | 1002 | ADP | C4-N3 | 2.61 | 1.39 | 1.34 |
| 5 | B | 1102 | ADP | C4-N3 | 2.57 | 1.39 | 1.34 |
| 5 | C | 1202 | ADP | C4-N3 | 2.53 | 1.39 | 1.34 |
| 5 | D | 1302 | ADP | C4-N9 | -2.46 | 1.32 | 1.37 |
| 5 | D | 1302 | ADP | PB-O2B | 2.45 | 1.63 | 1.54 |
| 5 | A | 1002 | ADP | PB-O2B | 2.45 | 1.63 | 1.54 |
| 5 | D | 1302 | ADP | C4-N3 | 2.45 | 1.39 | 1.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 6 | A | 1003 | TG1 | C11-C7 | 2.40 | 1.58 | 1.55 |
| 6 | C | 1203 | TG1 | C1-C2 | 2.39 | 1.58 | 1.54 |
| 5 | B | 1102 | ADP | PB-O2B | 2.36 | 1.63 | 1.54 |
| 5 | C | 1202 | ADP | PB-O2B | 2.35 | 1.63 | 1.54 |
| 6 | B | 1103 | TG1 | C1-C2 | 2.34 | 1.58 | 1.54 |
| 6 | A | 1003 | TG1 | O3-C3 | 2.34 | 1.49 | 1.44 |
| 5 | A | 1002 | ADP | C4-N9 | -2.29 | 1.32 | 1.37 |
| 5 | B | 1102 | ADP | C2-N1 | 2.27 | 1.38 | 1.33 |
| 6 | C | 1203 | TG1 | C1-C5 | 2.27 | 1.55 | 1.51 |
| 6 | A | 1003 | TG1 | C9-C8 | 2.24 | 1.55 | 1.52 |
| 5 | B | 1102 | ADP | C4-N9 | -2.22 | 1.33 | 1.37 |
| 6 | D | 1303 | TG1 | C9-C8 | 2.20 | 1.55 | 1.52 |
| 6 | A | 1003 | TG1 | C1-C5 | 2.19 | 1.54 | 1.51 |
| 6 | D | 1303 | TG1 | C1-C5 | 2.19 | 1.54 | 1.51 |
| 5 | D | 1302 | ADP | C8-N7 | 2.18 | 1.35 | 1.31 |
| 6 | A | 1003 | TG1 | O7-C27 | 2.15 | 1.40 | 1.34 |
| 5 | C | 1202 | ADP | C4-N9 | -2.14 | 1.33 | 1.37 |
| 6 | C | 1203 | TG1 | C31-C10 | 2.14 | 1.56 | 1.52 |
| 6 | B | 1103 | TG1 | C31-C10 | 2.14 | 1.56 | 1.52 |
| 6 | D | 1303 | TG1 | O7-C27 | 2.13 | 1.40 | 1.34 |
| 5 | C | 1202 | ADP | C2-N1 | 2.12 | 1.37 | 1.33 |
| 5 | B | 1102 | ADP | C2'-C1' | -2.12 | 1.46 | 1.53 |
| 5 | A | 1002 | ADP | C2-N1 | 2.11 | 1.37 | 1.33 |
| 6 | B | 1103 | TG1 | C1-C5 | 2.11 | 1.54 | 1.51 |
| 5 | A | 1002 | ADP | C8-N7 | 2.08 | 1.35 | 1.31 |
| 5 | B | 1102 | ADP | C2-N3 | 2.07 | 1.37 | 1.33 |
| 6 | B | 1103 | TG1 | O1-C13 | 2.06 | 1.40 | 1.34 |
| 5 | C | 1202 | ADP | C2'-C1' | -2.04 | 1.47 | 1.53 |
| 5 | C | 1202 | ADP | C8-N7 | 2.03 | 1.35 | 1.31 |
| 6 | D | 1303 | TG1 | O3-C3 | 2.03 | 1.48 | 1.44 |
| 6 | C | 1203 | TG1 | O1-C13 | 2.02 | 1.40 | 1.34 |
| 5 | D | 1302 | ADP | C2-N1 | 2.00 | 1.37 | 1.33 |

All (93) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 5 | D | 1302 | ADP | N3-C2-N1 | -7.01 | 117.97 | 128.58 |
| 5 | B | 1102 | ADP | N3-C2-N1 | -6.99 | 118.01 | 128.58 |
| 5 | A | 1002 | ADP | N3-C2-N1 | -6.97 | 118.02 | 128.58 |
| 5 | C | 1202 | ADP | N3-C2-N1 | -6.95 | 118.06 | 128.58 |
| 6 | D | 1303 | TG1 | C10-O9-C32 | 5.65 | 134.59 | 121.36 |
| 6 | A | 1003 | TG1 | C10-O9-C32 | 5.64 | 134.58 | 121.36 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 6 | B | 1103 | TG1 | C10-O9-C32 | 5.63 | 134.56 | 121.36 |
| 6 | C | 1203 | TG1 | C10-O9-C32 | 5.57 | 134.42 | 121.36 |
| 5 | A | 1002 | ADP | C5-C4-N3 | -5.14 | 119.64 | 126.72 |
| 5 | D | 1302 | ADP | C5-C4-N3 | -5.11 | 119.68 | 126.72 |
| 5 | B | 1102 | ADP | C5-C4-N3 | -5.00 | 119.83 | 126.72 |
| 5 | C | 1202 | ADP | C5-C4-N3 | -4.99 | 119.85 | 126.72 |
| 5 | D | 1302 | ADP | C2-N3-C4 | 4.78 | 123.50 | 111.83 |
| 5 | A | 1002 | ADP | C2-N3-C4 | 4.76 | 123.46 | 111.83 |
| 5 | C | 1202 | ADP | C2-N3-C4 | 4.67 | 123.23 | 111.83 |
| 5 | B | 1102 | ADP | C2-N3-C4 | 4.62 | 123.12 | 111.83 |
| 6 | B | 1103 | TG1 | C2-O1-C13 | 4.15 | 124.33 | 117.59 |
| 6 | C | 1203 | TG1 | C2-O1-C13 | 4.06 | 124.19 | 117.59 |
| 6 | D | 1303 | TG1 | O12-C12-C11 | -4.01 | 124.22 | 128.28 |
| 6 | A | 1003 | TG1 | O12-C12-C11 | -3.96 | 124.27 | 128.28 |
| 6 | C | 1203 | TG1 | O12-C12-C11 | -3.82 | 124.42 | 128.28 |
| 6 | B | 1103 | TG1 | O12-C12-C11 | -3.81 | 124.42 | 128.28 |
| 5 | A | 1002 | ADP | C4-C5-N7 | -3.65 | 106.41 | 110.58 |
| 6 | D | 1303 | TG1 | O1-C2-C3 | -3.61 | 103.37 | 110.18 |
| 5 | D | 1302 | ADP | C4-C5-N7 | -3.59 | 106.47 | 110.58 |
| 6 | A | 1003 | TG1 | O1-C2-C3 | -3.47 | 103.63 | 110.18 |
| 5 | B | 1102 | ADP | C4-C5-N7 | -3.46 | 106.62 | 110.58 |
| 5 | B | 1102 | ADP | C5-N7-C8 | 3.42 | 108.83 | 103.45 |
| 5 | A | 1002 | ADP | C5-N7-C8 | 3.41 | 108.81 | 103.45 |
| 6 | B | 1103 | TG1 | O3-C21-O4 | 3.34 | 129.64 | 123.40 |
| 6 | C | 1203 | TG1 | O3-C21-O4 | 3.34 | 129.63 | 123.40 |
| 5 | D | 1302 | ADP | C5-N7-C8 | 3.31 | 108.66 | 103.45 |
| 5 | C | 1202 | ADP | C5-N7-C8 | 3.25 | 108.55 | 103.45 |
| 5 | C | 1202 | ADP | C4-C5-N7 | -3.23 | 106.89 | 110.58 |
| 5 | B | 1102 | ADP | N9-C8-N7 | -3.10 | 109.53 | 113.94 |
| 5 | D | 1302 | ADP | N9-C8-N7 | -3.07 | 109.57 | 113.94 |
| 5 | C | 1202 | ADP | O4'-C1'-N9 | 3.07 | 113.98 | 108.09 |
| 5 | C | 1202 | ADP | N3-C4-N9 | 3.07 | 132.38 | 127.17 |
| 5 | B | 1102 | ADP | O4'-C1'-N9 | 3.07 | 113.98 | 108.09 |
| 6 | B | 1103 | TG1 | C7-C6-C5 | 3.06 | 123.44 | 115.41 |
| 6 | C | 1203 | TG1 | C7-C6-C5 | 3.04 | 123.41 | 115.41 |
| 5 | A | 1002 | ADP | N9-C8-N7 | -3.03 | 109.63 | 113.94 |
| 5 | C | 1202 | ADP | N9-C8-N7 | -3.02 | 109.66 | 113.94 |
| 5 | D | 1302 | ADP | N3-C4-N9 | 2.98 | 132.24 | 127.17 |
| 5 | B | 1102 | ADP | N3-C4-N9 | 2.96 | 132.21 | 127.17 |
| 6 | D | 1303 | TG1 | C7-C6-C5 | 2.96 | 123.19 | 115.41 |
| 6 | A | 1003 | TG1 | C7-C6-C5 | 2.96 | 123.18 | 115.41 |
| 5 | A | 1002 | ADP | N3-C4-N9 | 2.94 | 132.16 | 127.17 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 5 | D | 1302 | ADP | O4'-C1'-C2' | 2.84 | 112.69 | 106.62 |
| 5 | A | 1002 | ADP | C6-C5-N7 | 2.81 | 137.50 | 132.09 |
| 5 | A | 1002 | ADP | O4'-C1'-C2' | 2.80 | 112.60 | 106.62 |
| 6 | D | 1303 | TG1 | O3-C21-O4 | 2.79 | 128.60 | 123.40 |
| 6 | A | 1003 | TG1 | O3-C21-O4 | 2.78 | 128.59 | 123.40 |
| 5 | D | 1302 | ADP | C6-C5-N7 | 2.77 | 137.44 | 132.09 |
| 5 | D | 1302 | ADP | O2'-C2'-C1' | 2.73 | 119.52 | 110.10 |
| 6 | B | 1103 | TG1 | C24-C22-C21 | 2.72 | 130.99 | 120.79 |
| 6 | D | 1303 | TG1 | O5-C12-O12 | 2.70 | 125.10 | 121.60 |
| 6 | C | 1203 | TG1 | C24-C22-C21 | 2.70 | 130.93 | 120.79 |
| 5 | D | 1302 | ADP | O4'-C1'-N9 | 2.70 | 113.28 | 108.09 |
| 5 | A | 1002 | ADP | O2'-C2'-C1' | 2.70 | 119.39 | 110.10 |
| 5 | C | 1202 | ADP | O4'-C1'-C2' | 2.69 | 112.37 | 106.62 |
| 5 | B | 1102 | ADP | O4'-C1'-C2' | 2.69 | 112.36 | 106.62 |
| 6 | A | 1003 | TG1 | C24-C22-C21 | 2.66 | 130.79 | 120.79 |
| 6 | A | 1003 | TG1 | O5-C12-O12 | 2.65 | 125.04 | 121.60 |
| 6 | D | 1303 | TG1 | C24-C22-C21 | 2.65 | 130.76 | 120.79 |
| 5 | C | 1202 | ADP | O2'-C2'-C1' | 2.59 | 119.03 | 110.10 |
| 5 | B | 1102 | ADP | O2'-C2'-C1' | 2.59 | 119.01 | 110.10 |
| 5 | B | 1102 | ADP | C6-C5-N7 | 2.56 | 137.03 | 132.09 |
| 5 | A | 1002 | ADP | O4'-C1'-N9 | 2.54 | 112.97 | 108.09 |
| 6 | B | 1103 | TG1 | O5-C12-O12 | 2.52 | 124.86 | 121.60 |
| 6 | B | 1103 | TG1 | O7-C8-C9 | 2.45 | 111.01 | 106.63 |
| 6 | C | 1203 | TG1 | O5-C12-O12 | 2.44 | 124.76 | 121.60 |
| 5 | C | 1202 | ADP | C6-C5-N7 | 2.41 | 136.73 | 132.09 |
| 6 | C | 1203 | TG1 | O7-C8-C9 | 2.37 | 110.87 | 106.63 |
| 5 | D | 1302 | ADP | C2'-C3'-C4' | 2.36 | 107.17 | 102.61 |
| 6 | B | 1103 | TG1 | C23-C22-C21 | -2.36 | 110.07 | 116.12 |
| 5 | D | 1302 | ADP | C2-N1-C6 | 2.35 | 122.59 | 118.73 |
| 6 | C | 1203 | TG1 | C23-C22-C21 | -2.34 | 110.10 | 116.12 |
| 5 | A | 1002 | ADP | C2'-C3'-C4' | 2.33 | 107.11 | 102.61 |
| 6 | A | 1003 | TG1 | O4-C21-C22 | -2.32 | 117.91 | 125.28 |
| 6 | D | 1303 | TG1 | O4-C21-C22 | -2.31 | 117.95 | 125.28 |
| 5 | A | 1002 | ADP | C2-N1-C6 | 2.24 | 122.40 | 118.73 |
| 5 | C | 1202 | ADP | C2-N1-C6 | 2.20 | 122.34 | 118.73 |
| 5 | A | 1002 | ADP | C5-C4-N9 | 2.18 | 108.18 | 105.81 |
| 6 | D | 1303 | TG1 | C2-O1-C13 | 2.10 | 121.00 | 117.59 |
| 5 | C | 1202 | ADP | C2'-C3'-C4' | 2.09 | 106.66 | 102.61 |
| 5 | B | 1102 | ADP | C2-N1-C6 | 2.08 | 122.16 | 118.73 |
| 5 | D | 1302 | ADP | C5-C4-N9 | 2.08 | 108.08 | 105.81 |
| 6 | D | 1303 | TG1 | C8-O7-C27 | 2.06 | 121.79 | 118.03 |
| 6 | D | 1303 | TG1 | C23-C22-C21 | -2.06 | 110.84 | 116.12 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 6 | A | 1003 | TG1 | C8-O7-C27 | 2.06 | 121.78 | 118.03 |
| 5 | B | 1102 | ADP | C2'-C3'-C4' | 2.05 | 106.57 | 102.61 |
| 6 | A | 1003 | TG1 | C23-C22-C21 | -2.05 | 110.86 | 116.12 |

There are no chirality outliers.

All (61) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 5 | B | 1102 | ADP | O4'-C4'-C5'-O5' |
| 5 | C | 1202 | ADP | O4'-C4'-C5'-O5' |
| 6 | A | 1003 | TG1 | O3-C21-C22-C23 |
| 6 | A | 1003 | TG1 | O3-C21-C22-C24 |
| 6 | B | 1103 | TG1 | O3-C21-C22-C23 |
| 6 | C | 1203 | TG1 | O3-C21-C22-C23 |
| 6 | D | 1303 | TG1 | O3-C21-C22-C23 |
| 6 | D | 1303 | TG1 | O3-C21-C22-C24 |
| 5 | A | 1002 | ADP | C3'-C4'-C5'-O5' |
| 5 | B | 1102 | ADP | C3'-C4'-C5'-O5' |
| 5 | C | 1202 | ADP | C3'-C4'-C5'-O5' |
| 5 | D | 1302 | ADP | C3'-C4'-C5'-O5' |
| 6 | A | 1003 | TG1 | O4-C21-C22-C23 |
| 6 | B | 1103 | TG1 | O4-C21-C22-C23 |
| 6 | C | 1203 | TG1 | O4-C21-C22-C23 |
| 6 | D | 1303 | TG1 | O4-C21-C22-C23 |
| 6 | A | 1003 | TG1 | O4-C21-C22-C24 |
| 6 | C | 1203 | TG1 | O4-C21-C22-C24 |
| 6 | D | 1303 | TG1 | O4-C21-C22-C24 |
| 6 | B | 1103 | TG1 | O3-C21-C22-C24 |
| 6 | C | 1203 | TG1 | O3-C21-C22-C24 |
| 6 | A | 1003 | TG1 | C22-C21-O3-C3 |
| 6 | D | 1303 | TG1 | C22-C21-O3-C3 |
| 5 | A | 1002 | ADP | O4'-C4'-C5'-O5' |
| 5 | D | 1302 | ADP | O4'-C4'-C5'-O5' |
| 6 | B | 1103 | TG1 | O4-C21-C22-C24 |
| 6 | B | 1103 | TG1 | C22-C21-O3-C3 |
| 6 | C | 1203 | TG1 | C22-C21-O3-C3 |
| 6 | B | 1103 | TG1 | C14-C15-C16-C17 |
| 6 | C | 1203 | TG1 | C14-C15-C16-C17 |
| 6 | D | 1303 | TG1 | C17-C18-C19-C20 |
| 6 | A | 1003 | TG1 | C17-C18-C19-C20 |
| 6 | A | 1003 | TG1 | C15-C16-C17-C18 |
| 6 | D | 1303 | TG1 | C15-C16-C17-C18 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 6 | B | 1103 | TG1 | C17-C18-C19-C20 |
| 6 | C | 1203 | TG1 | C17-C18-C19-C20 |
| 5 | A | 1002 | ADP | PB-O3A-PA-O5' |
| 5 | B | 1102 | ADP | PB-O3A-PA-O5' |
| 5 | C | 1202 | ADP | PB-O3A-PA-O5' |
| 5 | D | 1302 | ADP | PB-O3A-PA-O5' |
| 5 | C | 1202 | ADP | PA-O3A-PB-O1B |
| 6 | B | 1103 | TG1 | C15-C16-C17-C18 |
| 6 | C | 1203 | TG1 | C15-C16-C17-C18 |
| 5 | B | 1102 | ADP | PA-O3A-PB-O1B |
| 6 | A | 1003 | TG1 | C14-C15-C16-C17 |
| 6 | B | 1103 | TG1 | C16-C17-C18-C19 |
| 6 | C | 1203 | TG1 | C16-C17-C18-C19 |
| 6 | D | 1303 | TG1 | C14-C15-C16-C17 |
| 5 | A | 1002 | ADP | PA-O3A-PB-O2B |
| 5 | B | 1102 | ADP | PA-O3A-PB-O2B |
| 5 | B | 1102 | ADP | PA-O3A-PB-O3B |
| 5 | C | 1202 | ADP | PA-O3A-PB-O2B |
| 5 | C | 1202 | ADP | PA-O3A-PB-O3B |
| 5 | D | 1302 | ADP | PA-O3A-PB-O2B |
| 6 | B | 1103 | TG1 | O1-C13-C14-C15 |
| 6 | C | 1203 | TG1 | O1-C13-C14-C15 |
| 6 | A | 1003 | TG1 | O1-C13-C14-C15 |
| 6 | D | 1303 | TG1 | O1-C13-C14-C15 |
| 6 | C | 1203 | TG1 | O2-C13-C14-C15 |
| 6 | C | 1203 | TG1 | O7-C27-C28-C29 |
| 6 | B | 1103 | TG1 | O2-C13-C14-C15 |

There are no ring outliers.

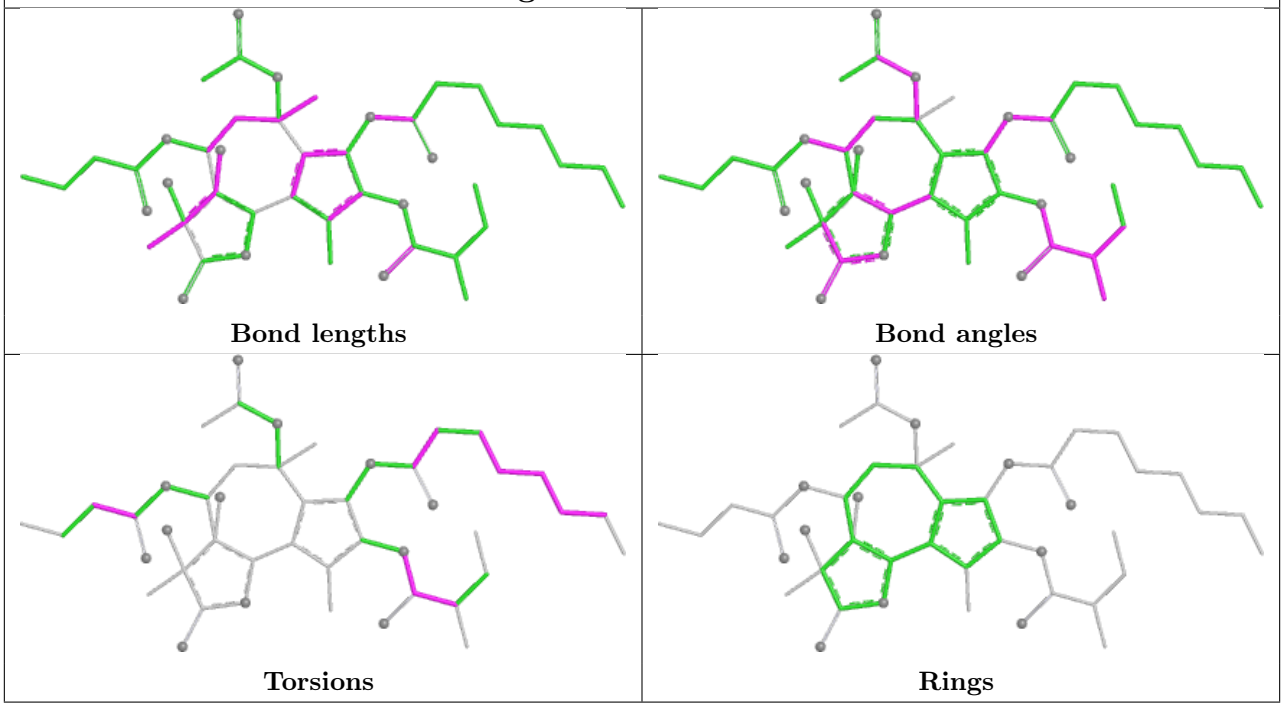
4 monomers are involved in 8 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 6 | C | 1203 | TG1 | 2 | 0 |
| 5 | B | 1102 | ADP | 2 | 0 |
| 6 | B | 1103 | TG1 | 2 | 0 |
| 5 | C | 1202 | ADP | 2 | 0 |

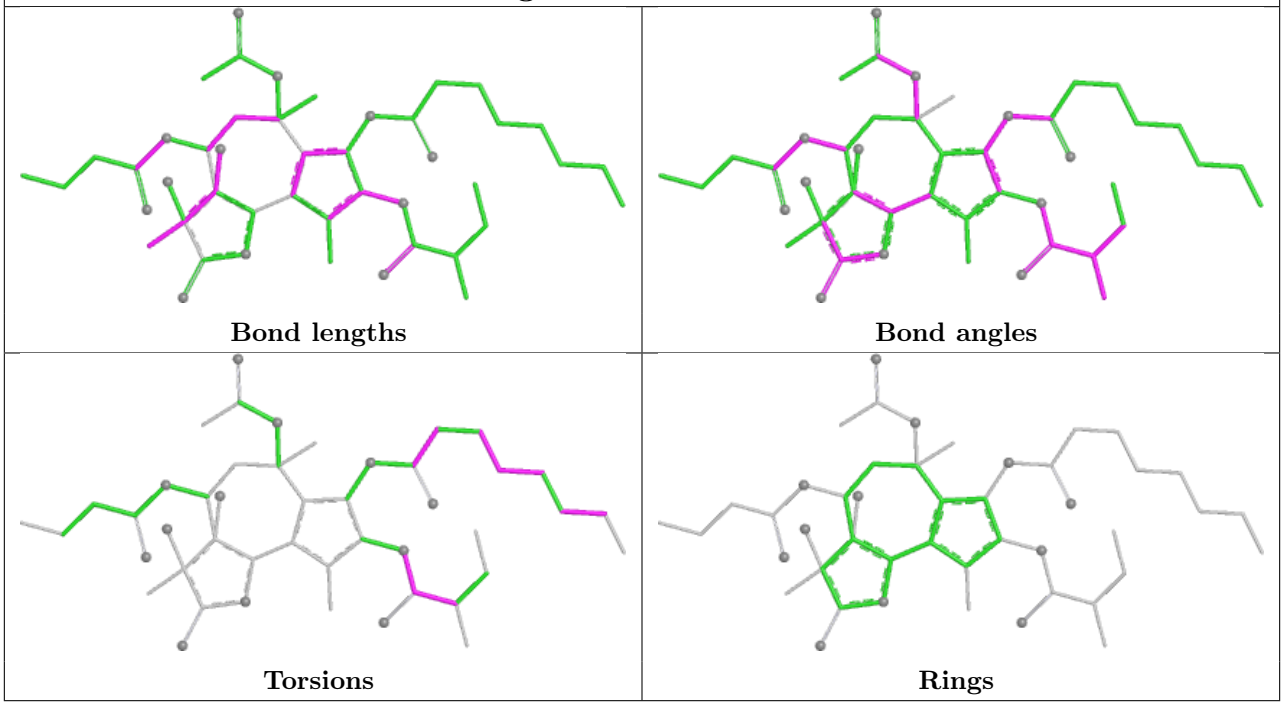
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

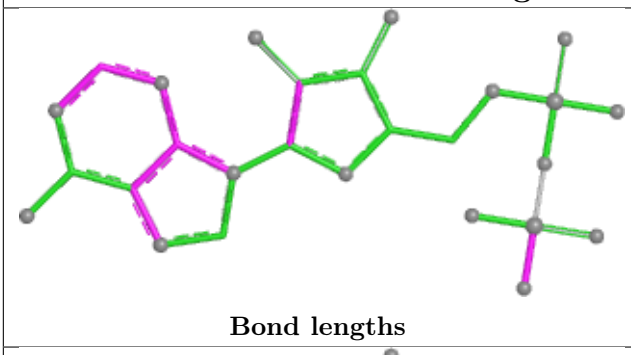
**Ligand TG1 C 1203**



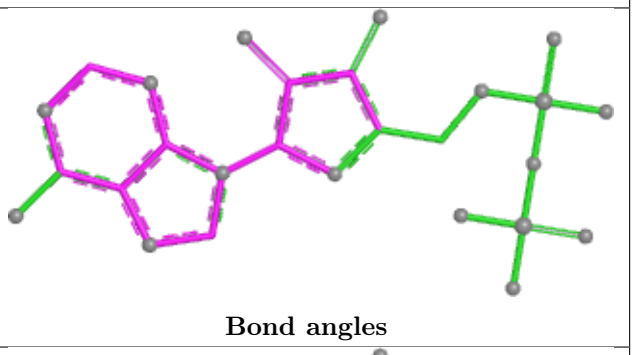

**Ligand TG1 D 1303**



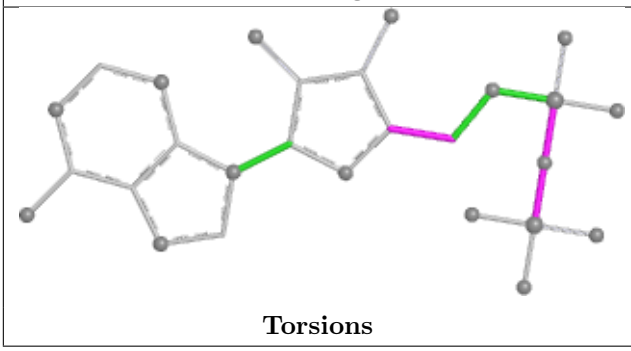
### Ligand ADP B 1102



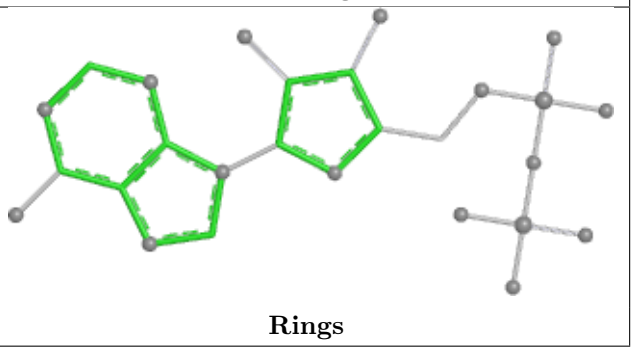
Bond lengths



Bond angles

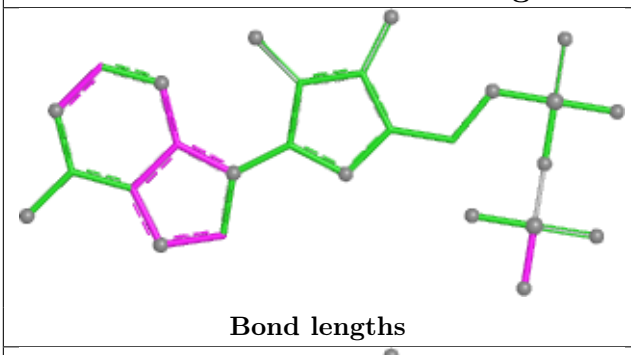


Torsions

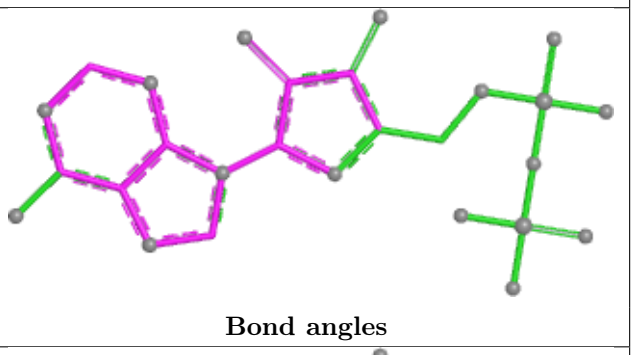


Rings

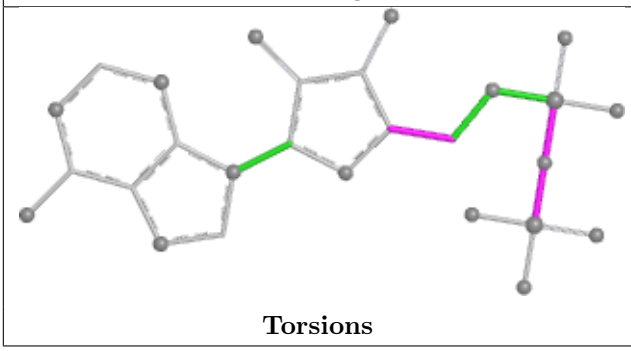
### Ligand ADP D 1302



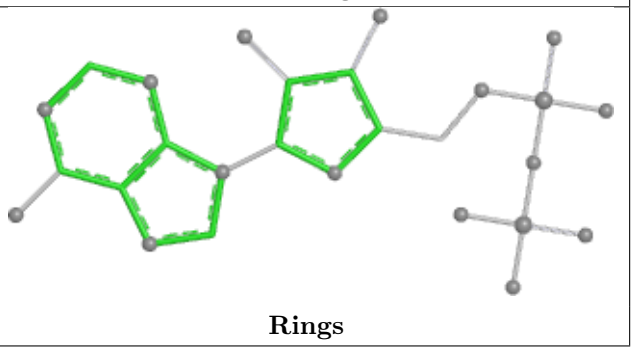
Bond lengths



Bond angles

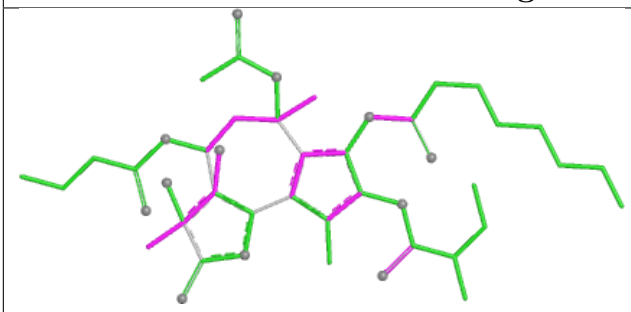


Torsions

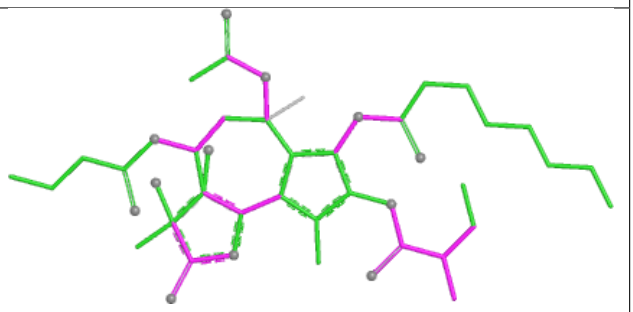


Rings

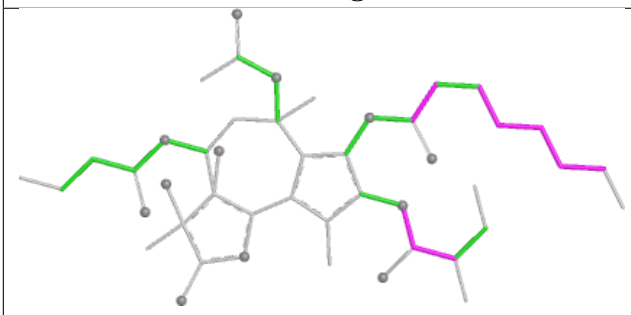
**Ligand TG1 B 1103**



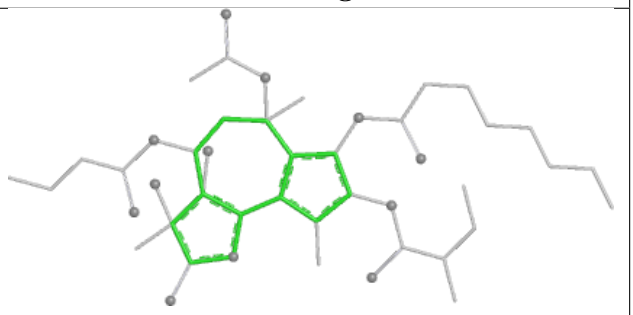
Bond lengths



Bond angles

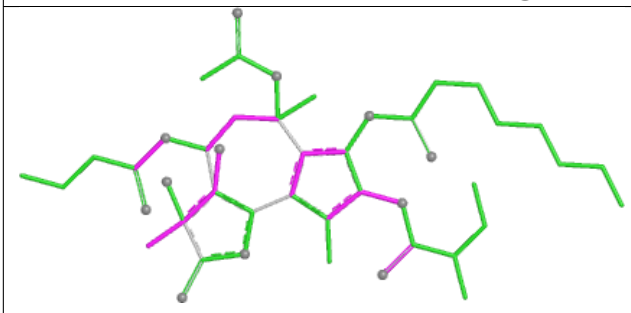


Torsions

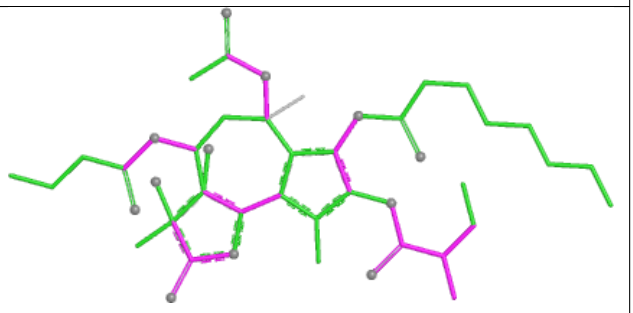


Rings

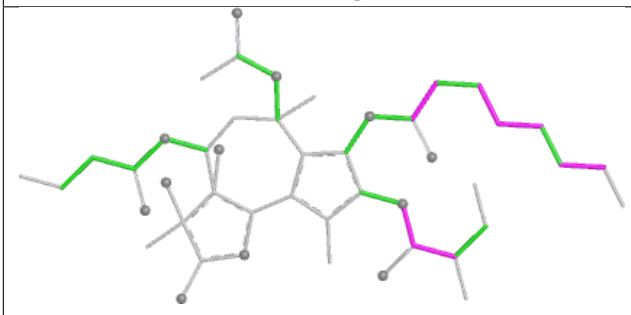
**Ligand TG1 A 1003**



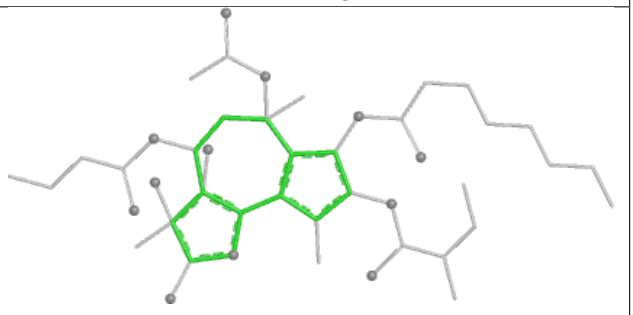
Bond lengths



Bond angles

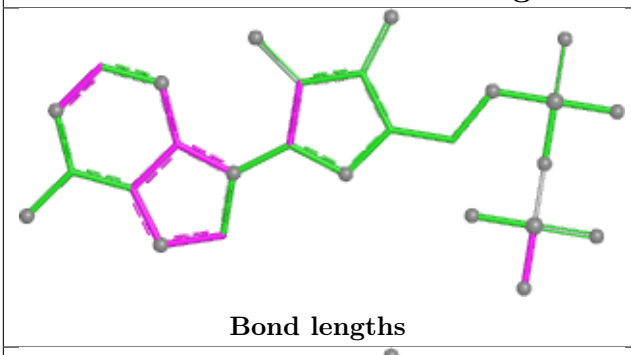


Torsions

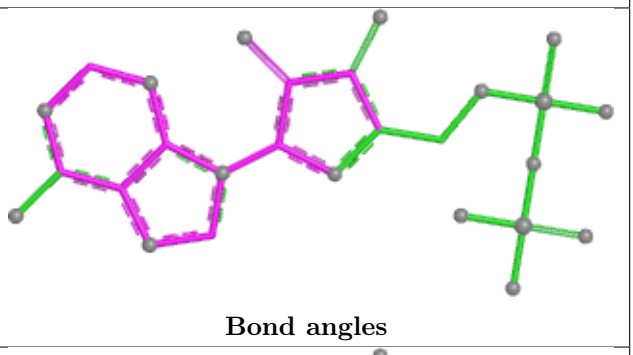


Rings

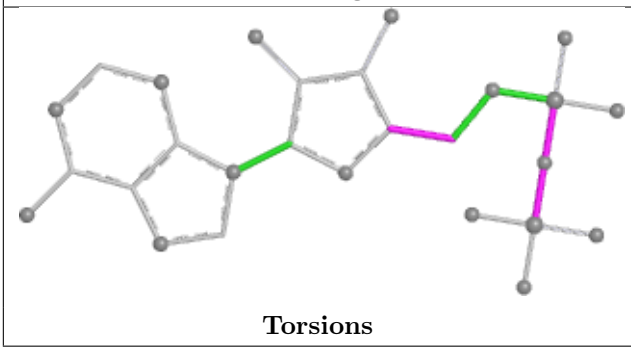
**Ligand ADP C 1202**



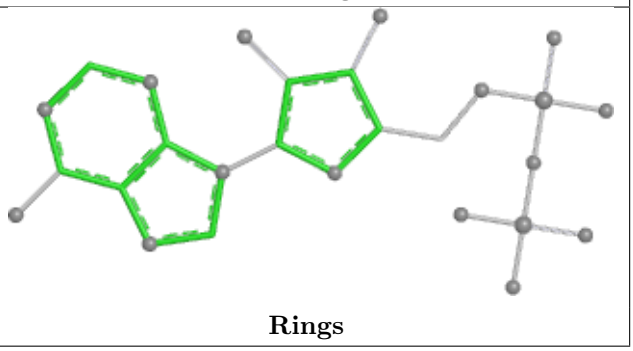
Bond lengths



Bond angles

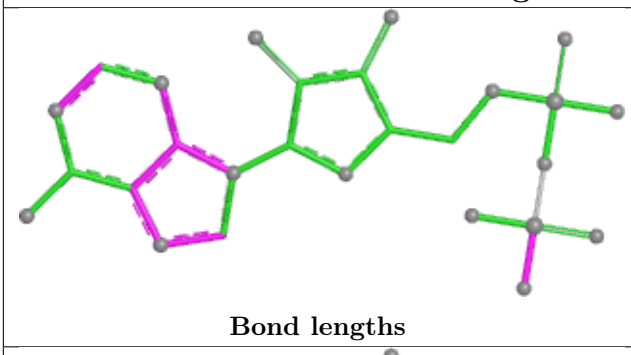


Torsions

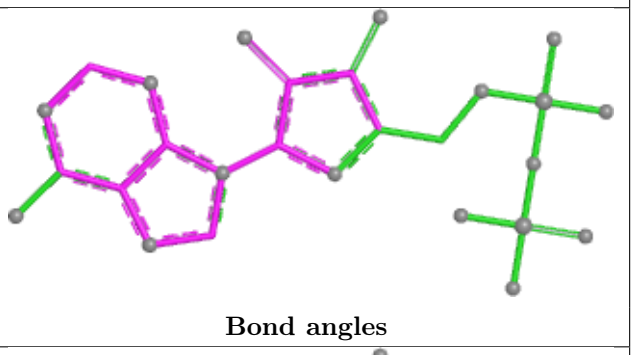


Rings

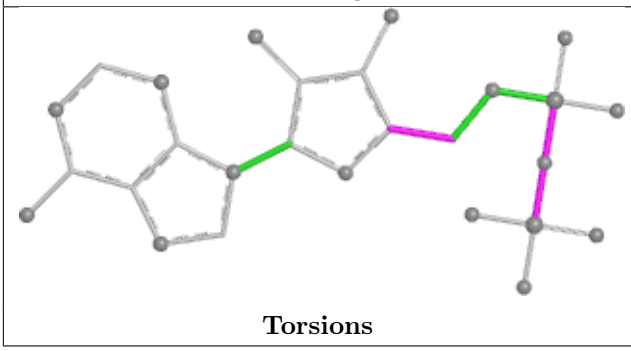
**Ligand ADP A 1002**



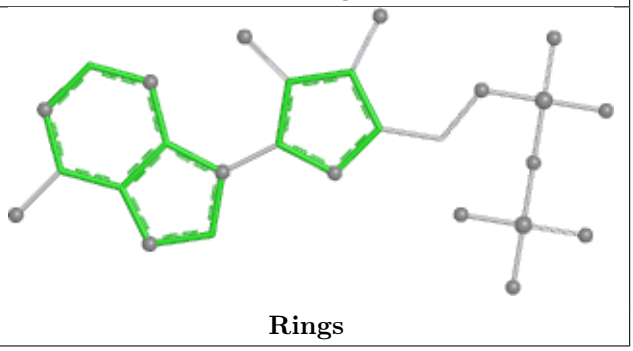
Bond lengths



Bond angles



Torsions



Rings

## 5.7 Other polymers (i)

There are no such residues in this entry.

## 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

# 6 Fit of model and data

## 6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

## 6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

## 6.4 Ligands

EDS was not executed - this section is therefore empty.

## 6.5 Other polymers

EDS was not executed - this section is therefore empty.