# Full wwPDB EM Validation Report

Mar 16, 2026 – 09:41 PM JST

| | | |
|---|---|---|
| PDB ID | : | 9U4R / pdb_00009u4r |
| EMDB ID | : | EMD-63853 |
| Title | : | Structure of the intial complex in filament assembly at 3.23 angstroms resolution, conformation 2. |
| Authors | : | Chen, L.X.; Jiang, W.X.; Cheng, X.Q.; Dong, X.; Xing, Q. |
| Deposited on | : | 2025-03-20 |
| Resolution | : | 3.23 Å(reported) |

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

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

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

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

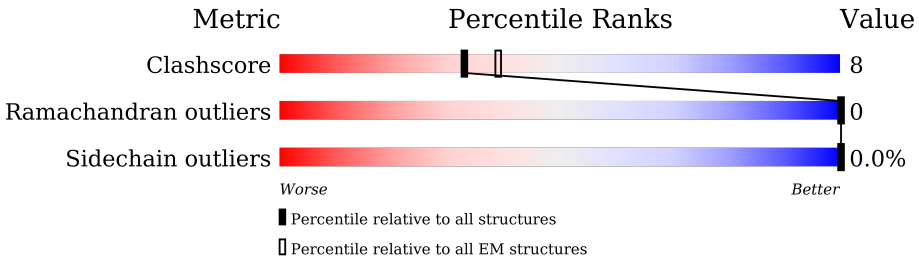
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev132 |
| MolProbity | : | 4-5-2 with Phenix2.0 |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| EM percentile statistics | : | 202505.v01 (Using data in the EMDB archive up until May 2025) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.48.1 |

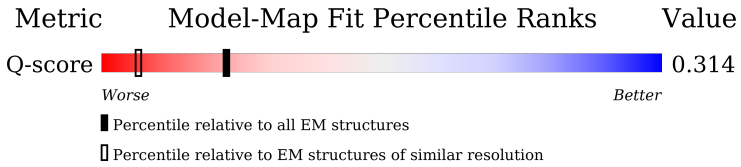
# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.23 Å.

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




| Metric | Whole archive (#Entries) | EM structures (#Entries) | Similar EM resolution (#Entries, resolution range(Å)) |
|---|---|---|---|
| Clashscore | 210492 | 15764 | - |
| Ramachandran outliers | 207382 | 16835 | - |
| Sidechain outliers | 206894 | 16415 | - |
| Q-score | - | 25397 | 14612 ( 2.73 - 3.73 ) |

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

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | AA | 467 | 52% 72% 25% • |
| 1 | AB | 467 | 45% 68% 21% 11% |
| 1 | AD | 467 | 43% 64% 30% • 5% |
| 1 | AE | 467 | 41% 67% 27% 6% |

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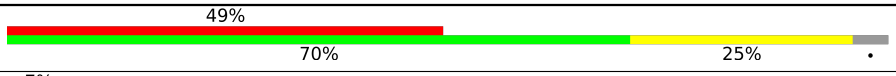
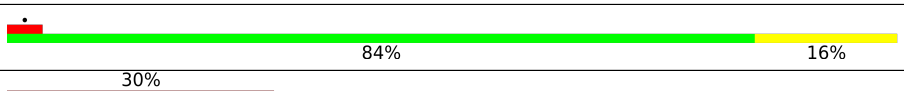
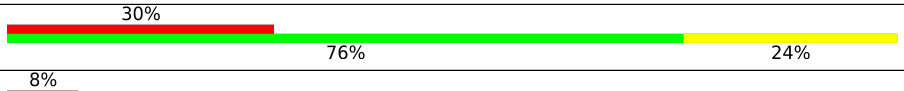
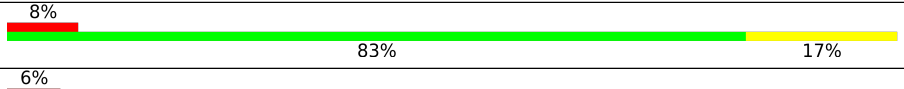
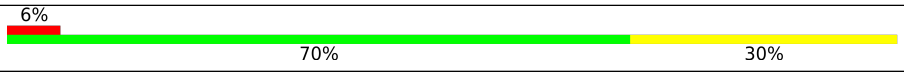
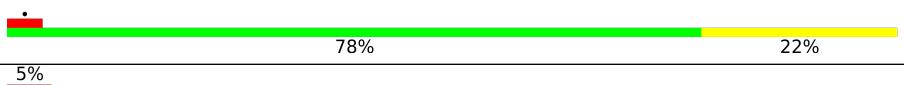
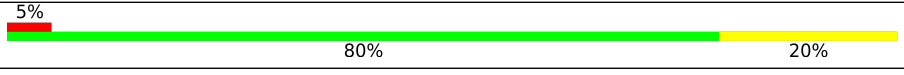
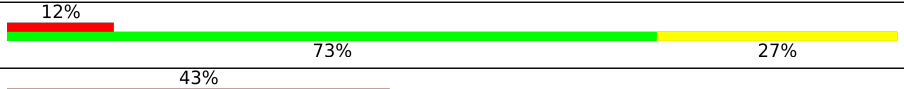
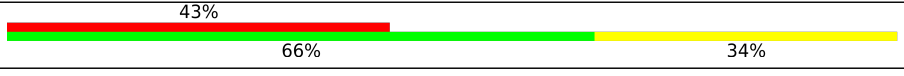
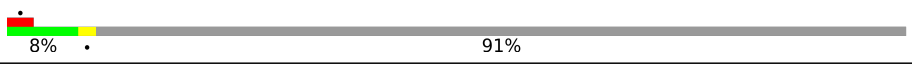
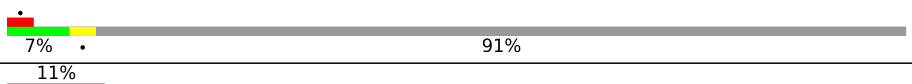
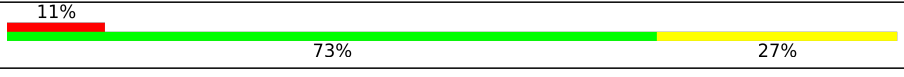
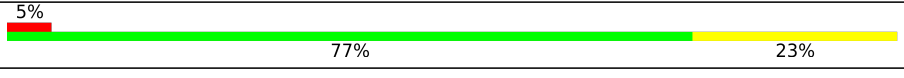
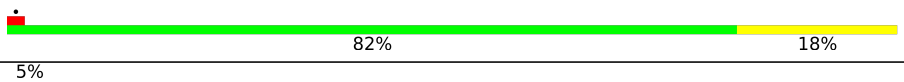
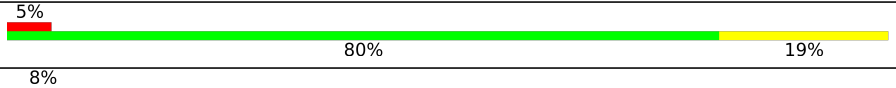
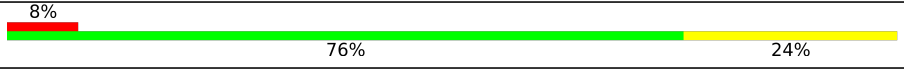
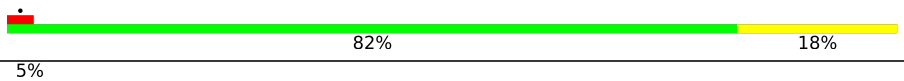
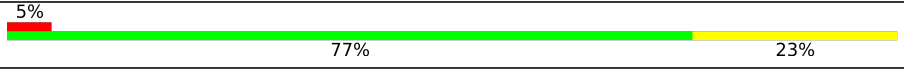
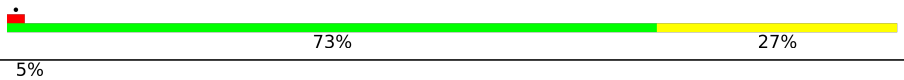
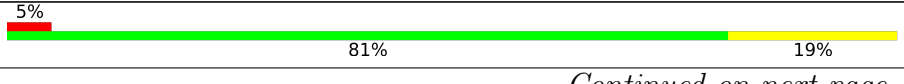
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 2 | AC | 467 |   |
| 3 | BA | 317 | |
| 3 | BB | 317 | |
| 3 | BC | 317 |   |
| 3 | BD | 317 |   |
| 3 | BE | 317 |   |
| 3 | BG | 317 |   |
| 3 | BH | 317 |   |
| 3 | BI | 317 |   |
| 3 | BJ | 317 | |
| 3 | BK | 317 |   |
| 3 | BL | 317 |   |
| 3 | BM | 317 |   |
| 3 | BN | 317 |   |
| 4 | CA | 553 |   |
| 4 | CB | 553 | |
| 4 | CC | 553 |   |
| 4 | CD | 553 | |
| 4 | CE | 553 |   |
| 4 | CF | 553 |   |
| 4 | CG | 553 |   |
| 4 | CH | 553 |   |
| 4 | CI | 553 |   |
| 4 | CJ | 553 |   |
| 4 | CK | 553 |   |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 5 | DA | 403 | 6% 80% 20% |
| 5 | DB | 403 | 79% 20% |
| 5 | DC | 403 | 79% 21% |
| 5 | DD | 403 | 77% 22% |
| 5 | DE | 403 | 83% 17% |
| 5 | DF | 403 | 85% 15% |
| 5 | DG | 403 | 84% 16% |
| 5 | DH | 403 | 86% 14% |
| 5 | DI | 403 | 77% 23% |
| 5 | DJ | 403 | 81% 19% |
| 5 | DK | 403 | 80% 19% |
| 5 | EA | 403 | 86% 13% |
| 5 | EB | 403 | 79% 20% |
| 5 | EC | 403 | 85% 15% |
| 5 | ED | 403 | 80% 20% |
| 5 | EE | 403 | 86% 14% |
| 5 | EF | 403 | 87% 13% |
| 5 | EG | 403 | 82% 18% |
| 5 | EH | 403 | 89% 11% |
| 5 | EI | 403 | 83% 17% |
| 5 | EJ | 403 | 84% 15% |
| 5 | EK | 403 | 86% 14% |
| 5 | FA | 403 | 82% 18% |
| 5 | FB | 403 | 84% 16% |
| 5 | FC | 403 | 87% 13% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 5 | FD | 403 | 88% 12% |
| 5 | FE | 403 | 86% 14% |
| 5 | FF | 403 | 86% 14% |
| 5 | FG | 403 | 84% 15% |
| 5 | FH | 403 | 88% 12% |
| 5 | FI | 403 | 87% 13% |
| 5 | FJ | 403 | 84% 16% |
| 5 | FK | 403 | 86% 14% |
| 5 | GA | 403 | 86% 14% |
| 5 | GB | 403 | 82% 18% |
| 5 | GC | 403 | 87% 13% |
| 5 | GD | 403 | 83% 17% |
| 5 | GE | 403 | 85% 15% |
| 5 | GF | 403 | 87% 12% |
| 5 | GG | 403 | 83% 17% |
| 5 | GH | 403 | 84% 15% |
| 5 | GI | 403 | 87% 13% |
| 5 | GJ | 403 | 87% 13% |
| 5 | GK | 403 | 85% 15% |

# 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 219113 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Flagellar hook-associated protein 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 1 | AA | 452 | Total | C | N | O | S | 0 | 0 |
| | | | 3380 | 2082 | 570 | 722 | 6 | | |
| 1 | AB | 417 | Total | C | N | O | S | 0 | 0 |
| | | | 3112 | 1917 | 524 | 666 | 5 | | |
| 1 | AD | 442 | Total | C | N | O | S | 0 | 0 |
| | | | 3305 | 2035 | 557 | 707 | 6 | | |
| 1 | AE | 438 | Total | C | N | O | S | 0 | 0 |
| | | | 3278 | 2018 | 553 | 701 | 6 | | |

- Molecule 2 is a protein called Flagellar hook-associated protein 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 2 | AC | 447 | Total | C | N | O | S | 0 | 0 |
| | | | 3349 | 2063 | 565 | 715 | 6 | | |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| AC | 47 | PHE | TYR | conflict | UNP P16328 |

- Molecule 3 is a protein called Flagellar hook-associated protein 3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 3 | BA | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BB | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BC | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BD | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BE | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 3 | BG | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BH | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BI | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BJ | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BK | 317 | Total | C | N | O | S | 0 | 0 |
| | | | 2391 | 1463 | 417 | 498 | 13 | | |
| 3 | BL | 316 | Total | C | N | O | S | 0 | 0 |
| | | | 2384 | 1459 | 416 | 496 | 13 | | |
| 3 | BM | 30 | Total | C | N | O | S | 0 | 0 |
| | | | 240 | 150 | 40 | 47 | 3 | | |
| 3 | BN | 30 | Total | C | N | O | S | 0 | 0 |
| | | | 240 | 150 | 40 | 47 | 3 | | |

- Molecule 4 is a protein called Flagellar hook-associated protein 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 4 | CA | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CB | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CC | 552 | Total | C | N | O | S | 0 | 0 |
| | | | 4149 | 2548 | 725 | 870 | 6 | | |
| 4 | CD | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CE | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CF | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CG | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CH | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CI | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CJ | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |
| 4 | CK | 553 | Total | C | N | O | S | 0 | 0 |
| | | | 4157 | 2553 | 726 | 871 | 7 | | |

- Molecule 5 is a protein called Flagellar hook protein FlgE.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 5 | DA | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DB | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DC | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DD | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DE | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DF | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DG | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DH | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DI | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DJ | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | DK | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EA | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EB | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EC | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | ED | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EE | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EF | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EG | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EH | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EI | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | EJ | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 5 | EK | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FA | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FB | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FC | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FD | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FE | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FF | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FG | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FH | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FI | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FJ | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | FK | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GA | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GB | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GC | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GD | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GE | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GF | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GG | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GH | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GI | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |

*Continued on next page...*

*Continued from previous page...*

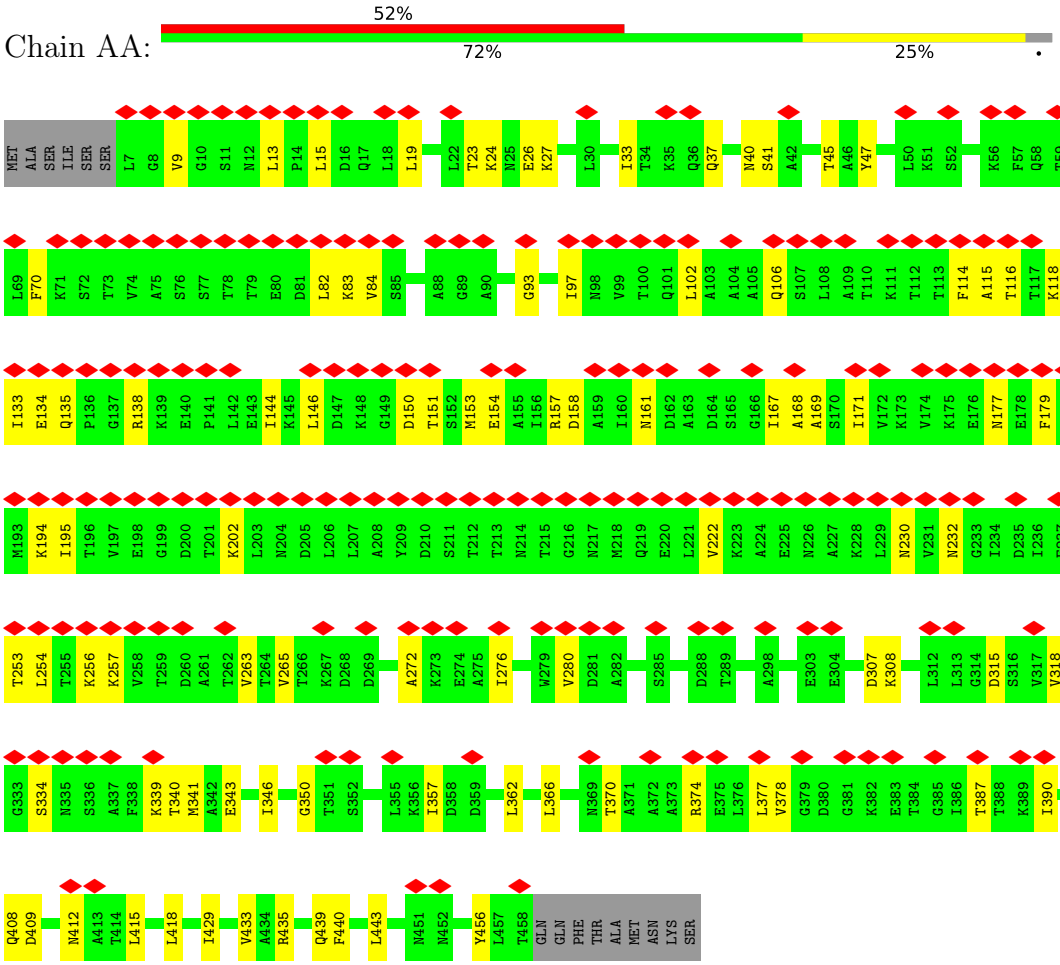
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 5 | GJ | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |
| 5 | GK | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 2959 | 1820 | 511 | 620 | 8 | | |

# 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 and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

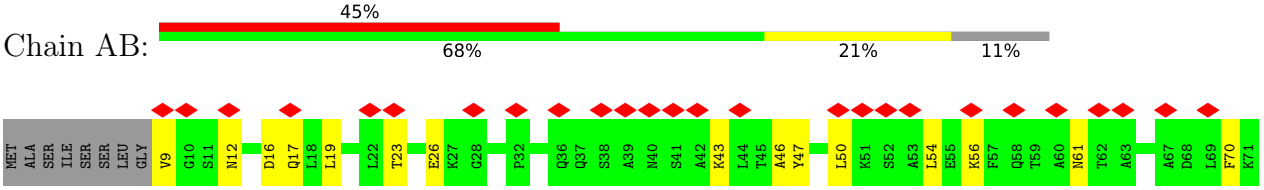
• Molecule 1: Flagellar hook-associated protein 2

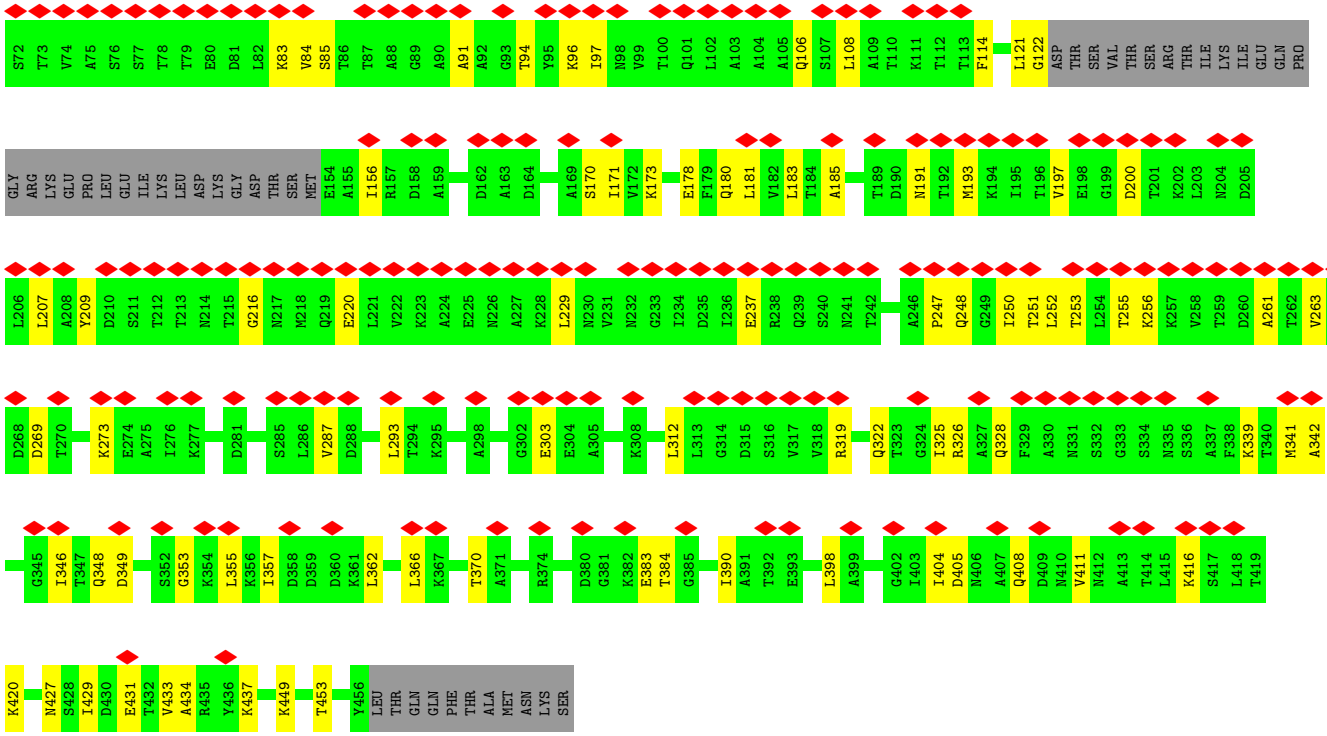
Chain AA:




• Molecule 1: Flagellar hook-associated protein 2

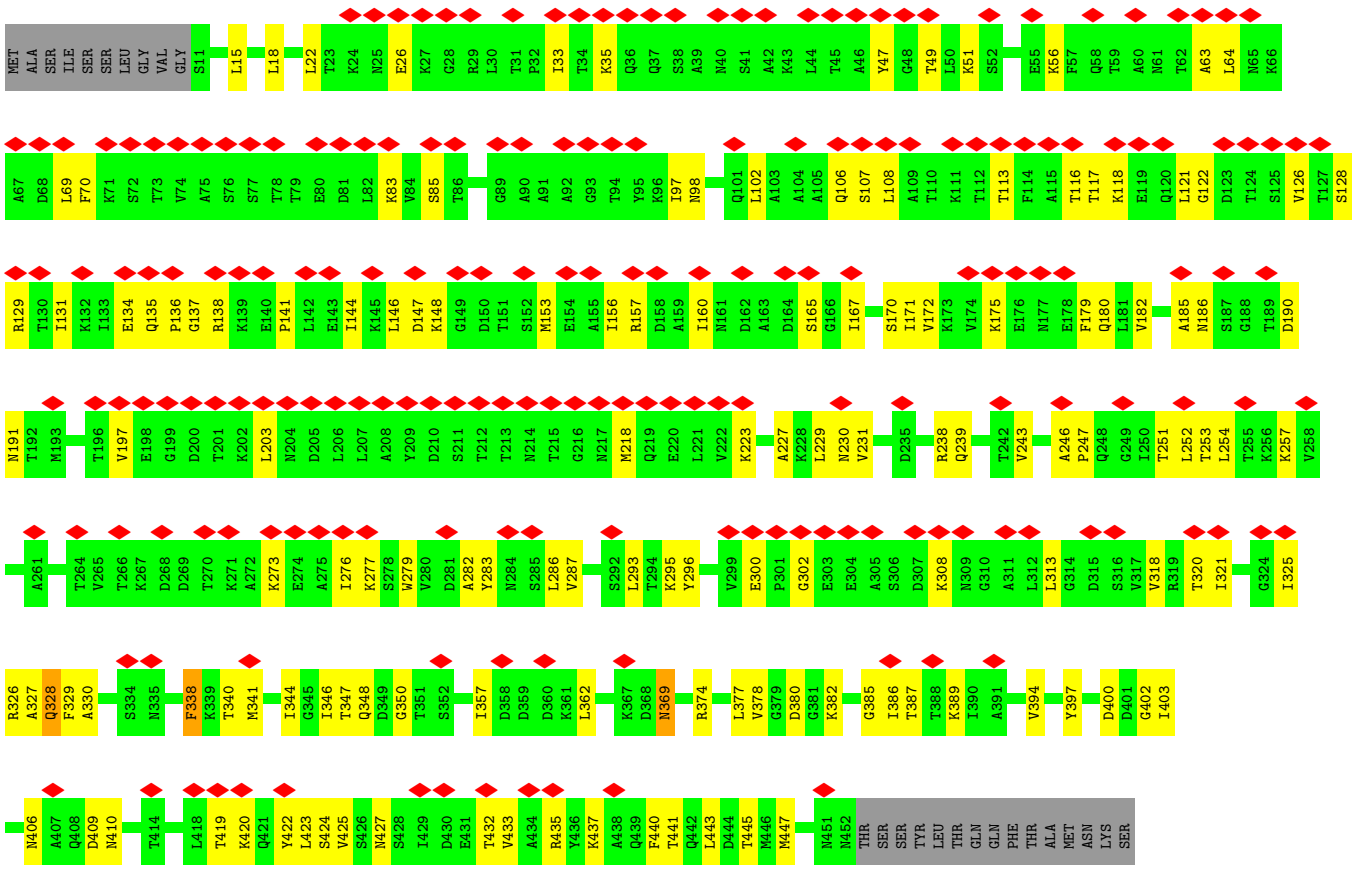
Chain AB:





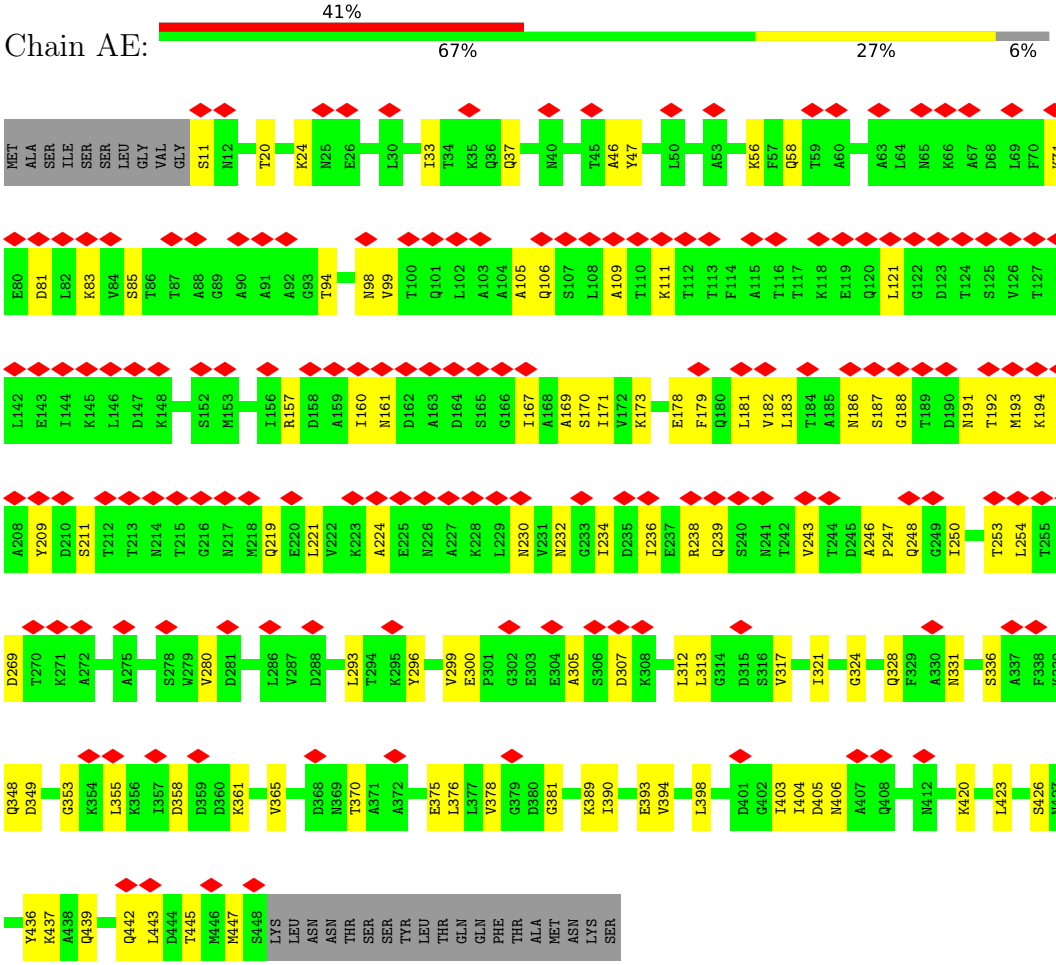
• Molecule 1: Flagellar hook-associated protein 2

Chain AD:



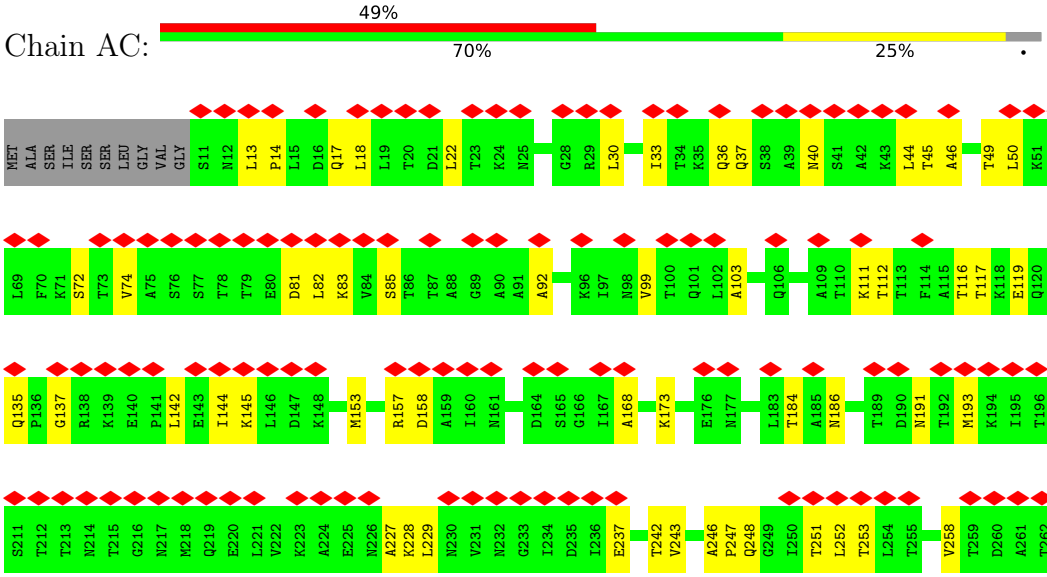
• Molecule 1: Flagellar hook-associated protein 2

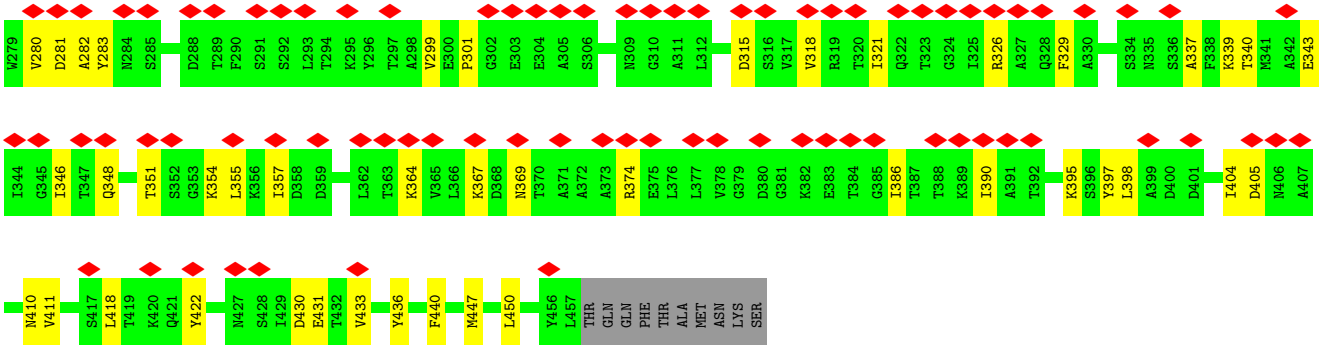
Chain AE:




• Molecule 2: Flagellar hook-associated protein 2

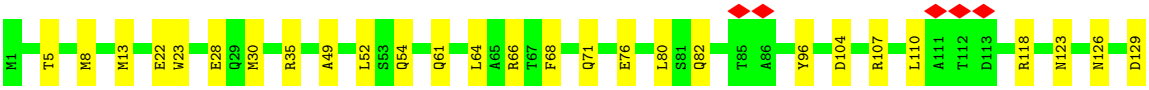
Chain AC:

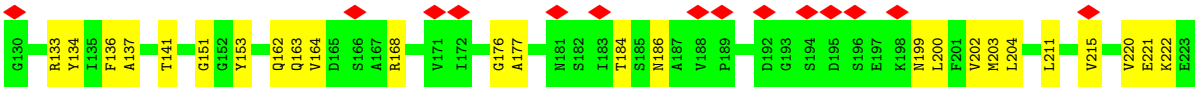


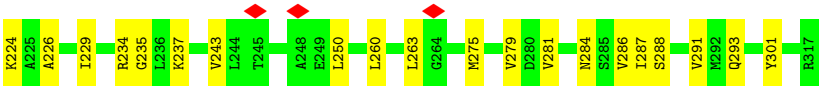



• Molecule 3: Flagellar hook-associated protein 3

Chain BA:

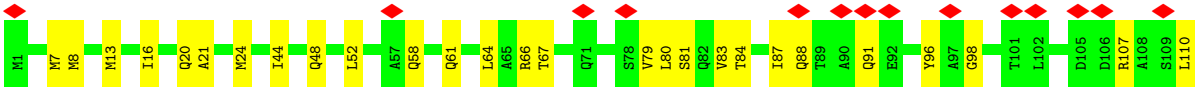


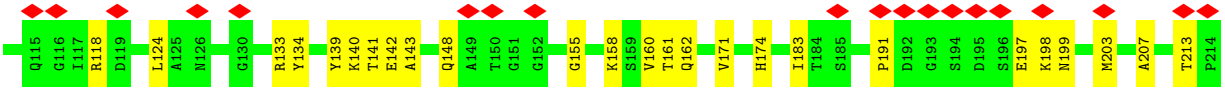




• Molecule 3: Flagellar hook-associated protein 3

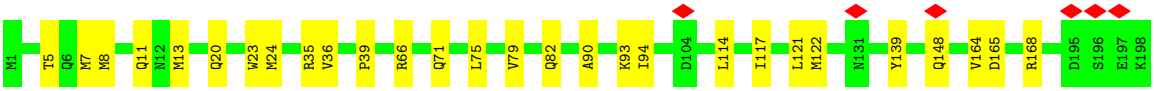
Chain BB:

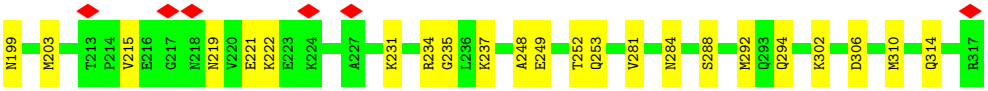


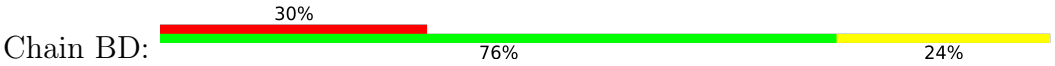
• Molecule 3: Flagellar hook-associated protein 3

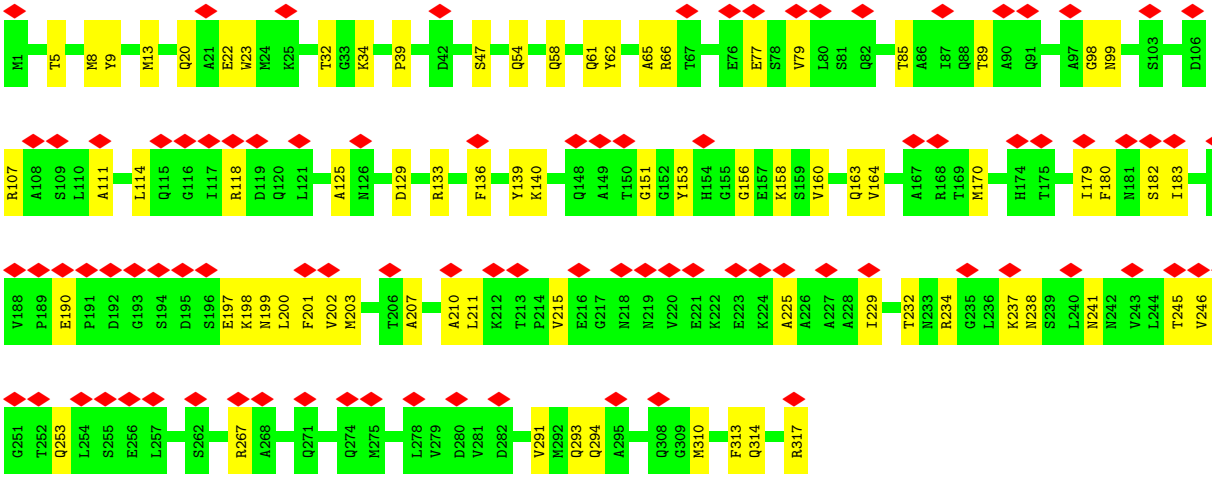
Chain BC:



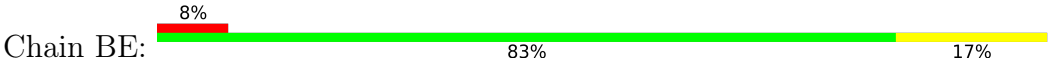


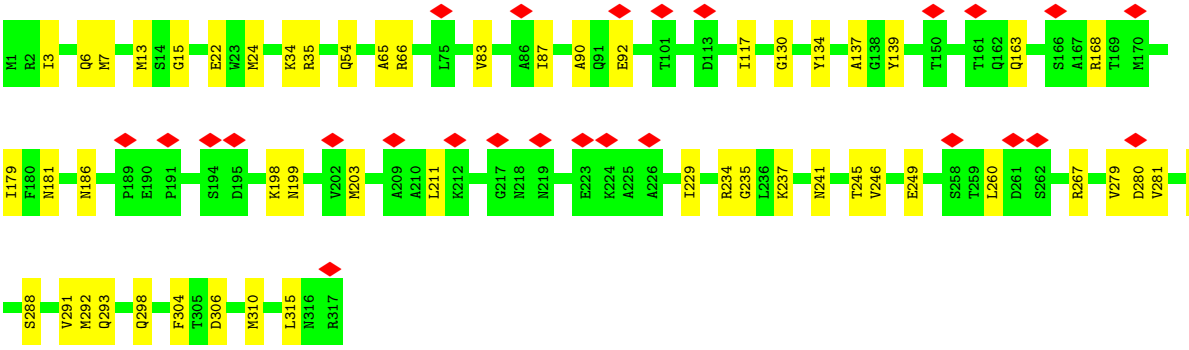

• Molecule 3: Flagellar hook-associated protein 3



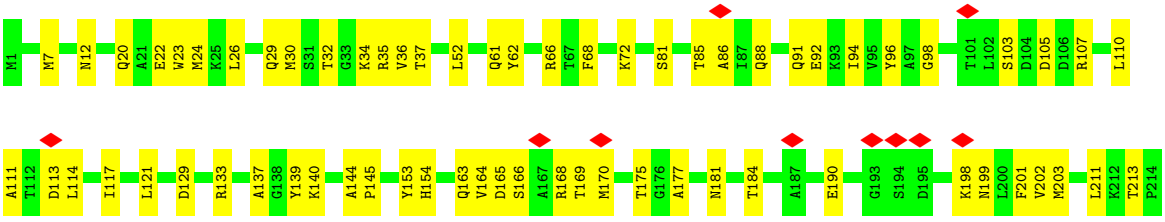



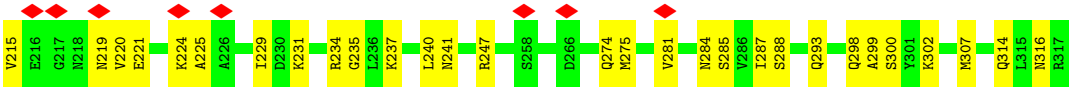

• Molecule 3: Flagellar hook-associated protein 3



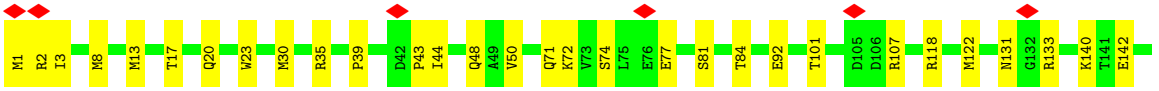

• Molecule 3: Flagellar hook-associated protein 3

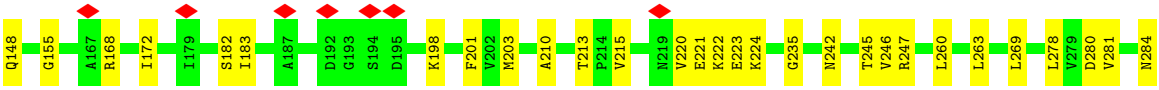


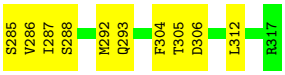



• Molecule 3: Flagellar hook-associated protein 3

Chain BH:

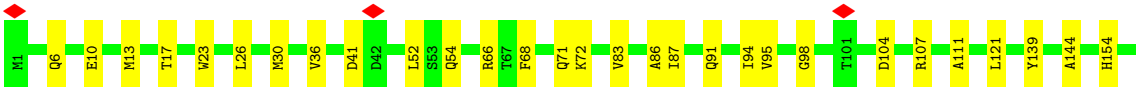


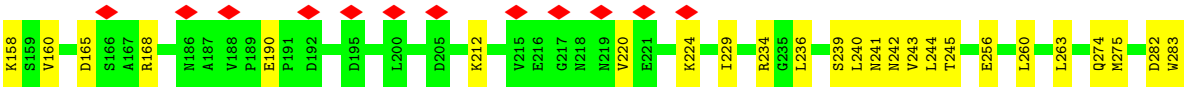



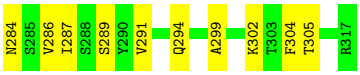




• Molecule 3: Flagellar hook-associated protein 3

Chain BI:

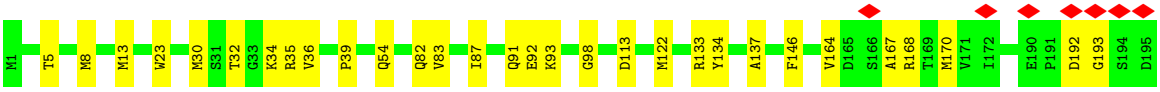


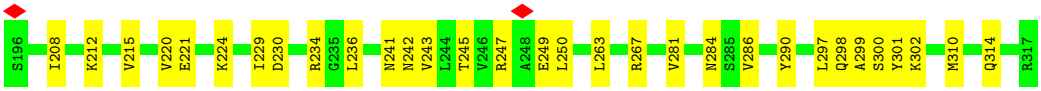




• Molecule 3: Flagellar hook-associated protein 3

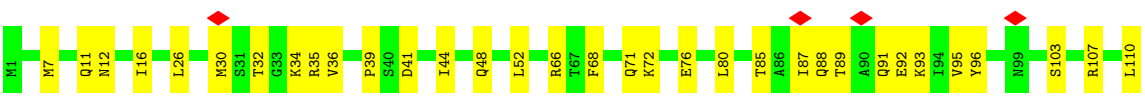
Chain BJ:

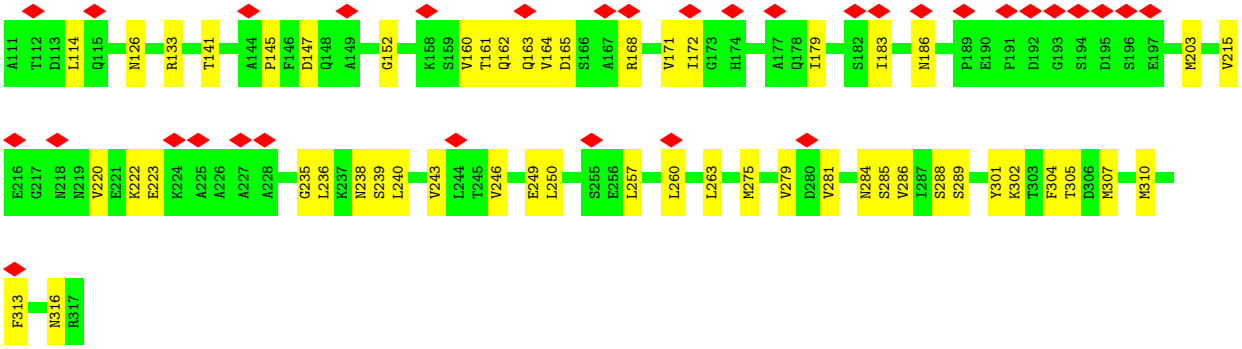



• Molecule 3: Flagellar hook-associated protein 3

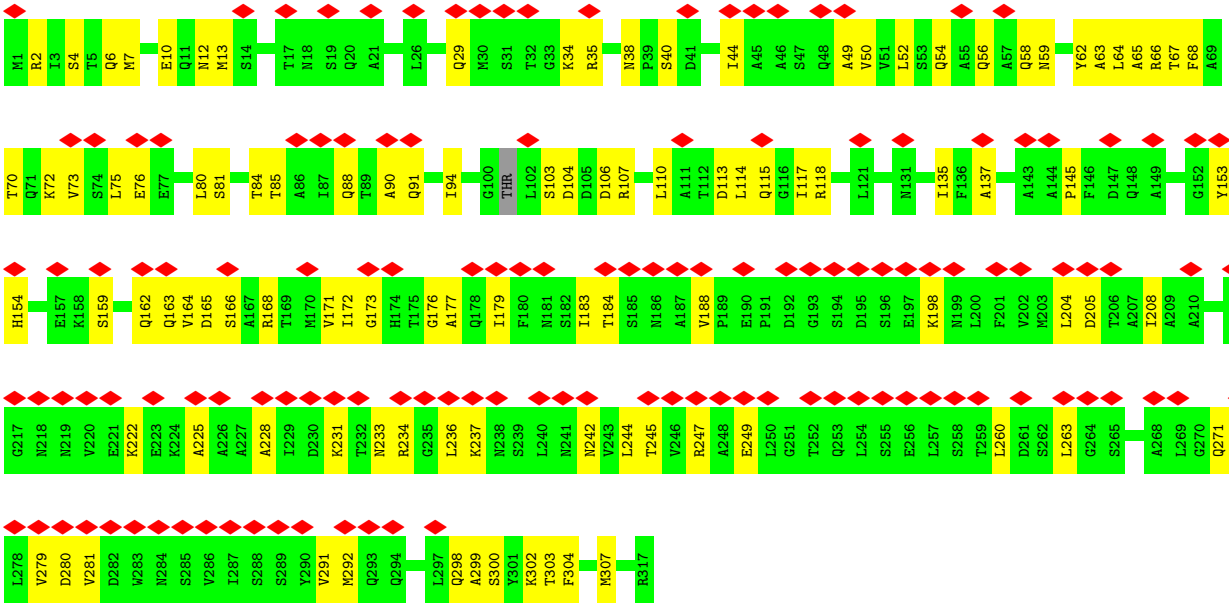
Chain BK:





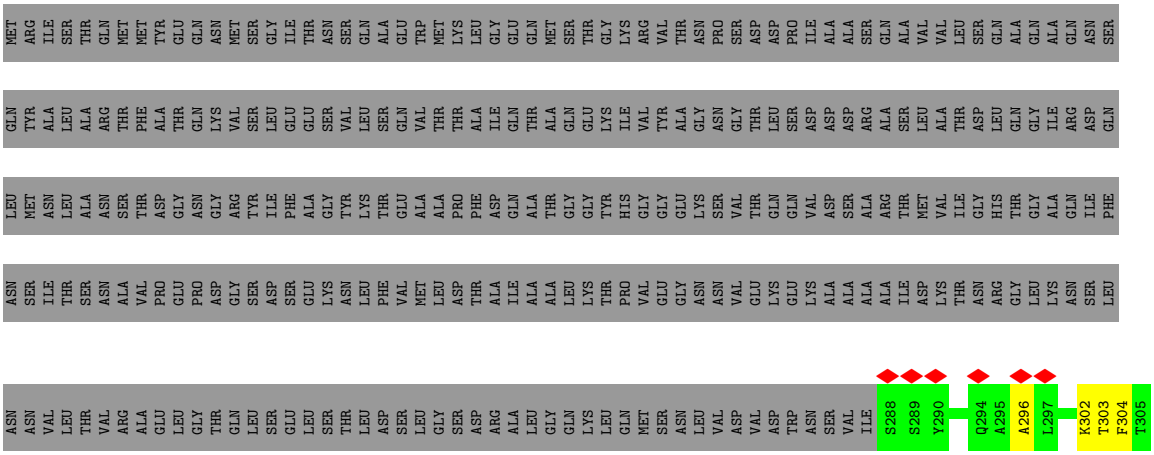

• Molecule 3: Flagellar hook-associated protein 3

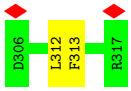
Chain BL:




• Molecule 3: Flagellar hook-associated protein 3

Chain BM:



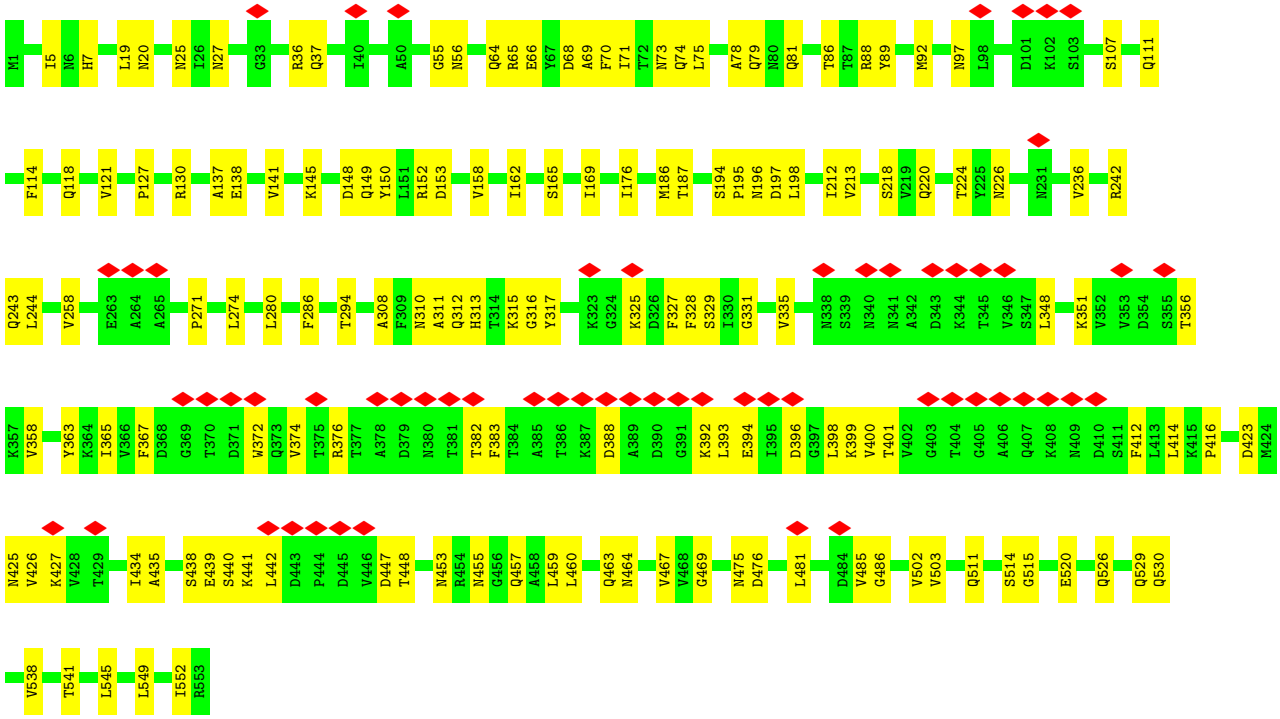



• Molecule 3: Flagellar hook-associated protein 3

Chain BN:

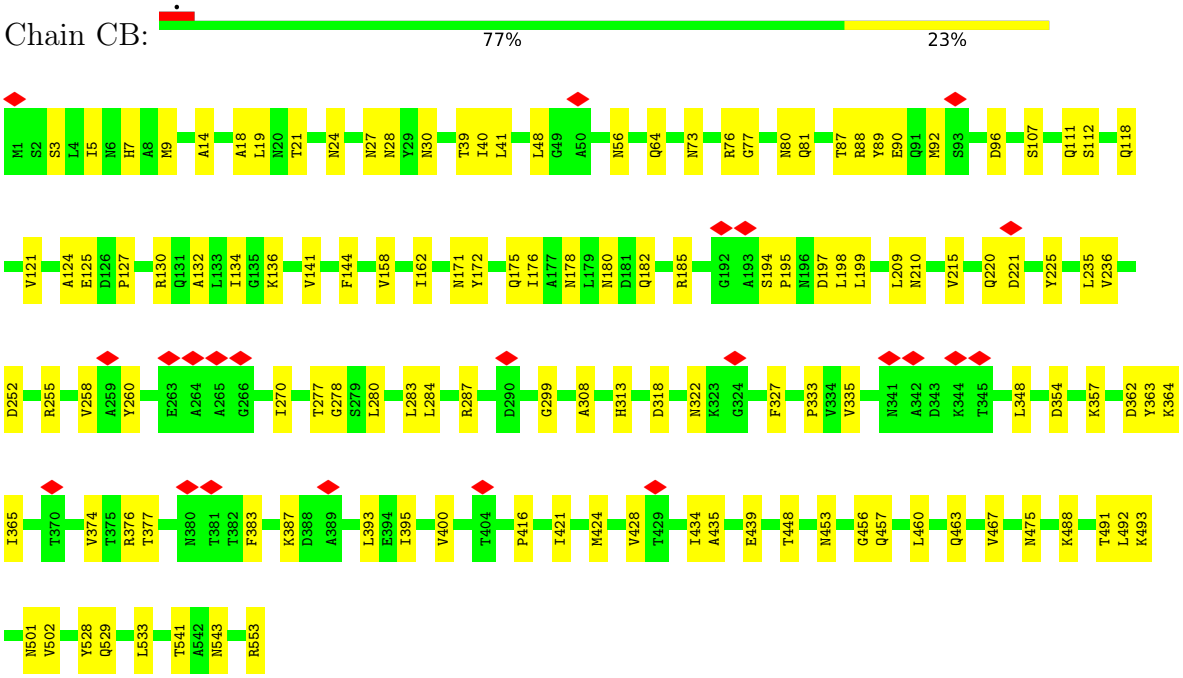
• Molecule 4: Flagellar hook-associated protein 1

Chain CA:



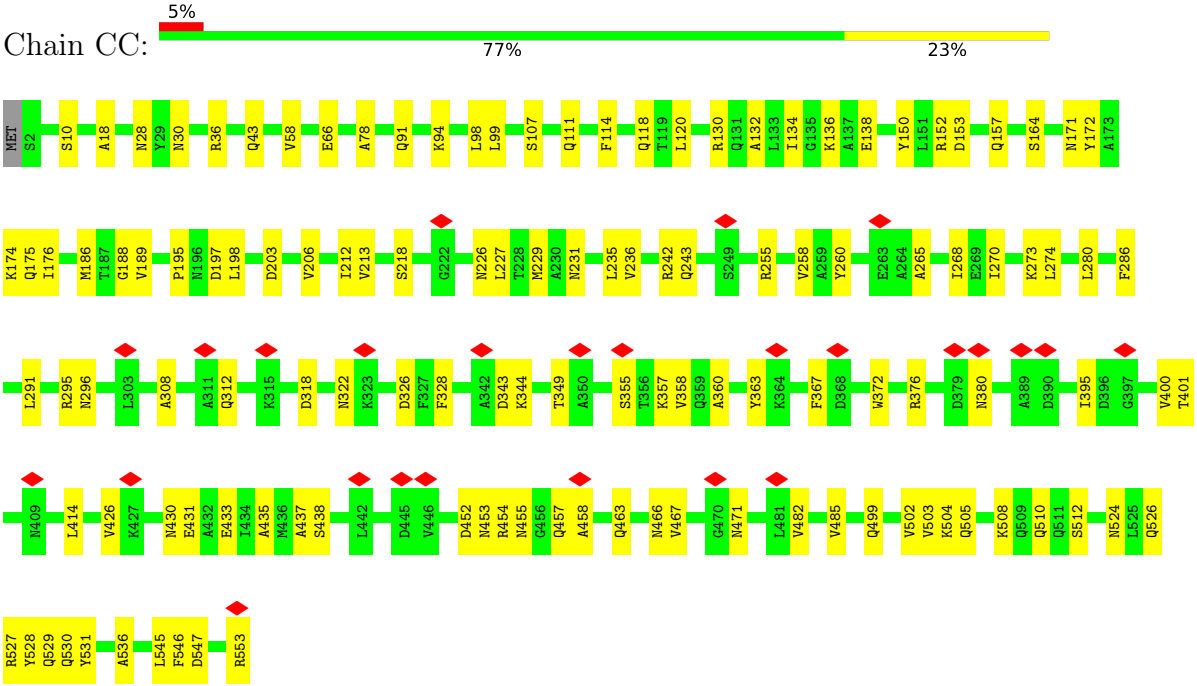

• Molecule 4: Flagellar hook-associated protein 1

Chain CB:



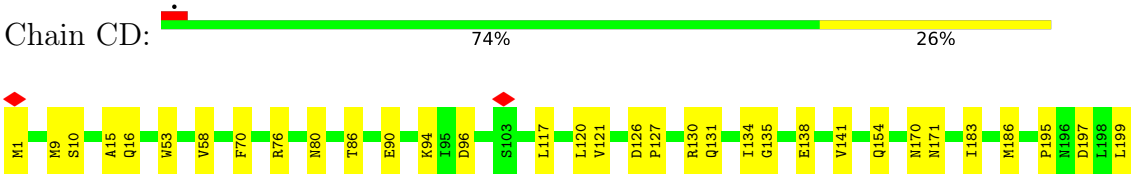

• Molecule 4: Flagellar hook-associated protein 1

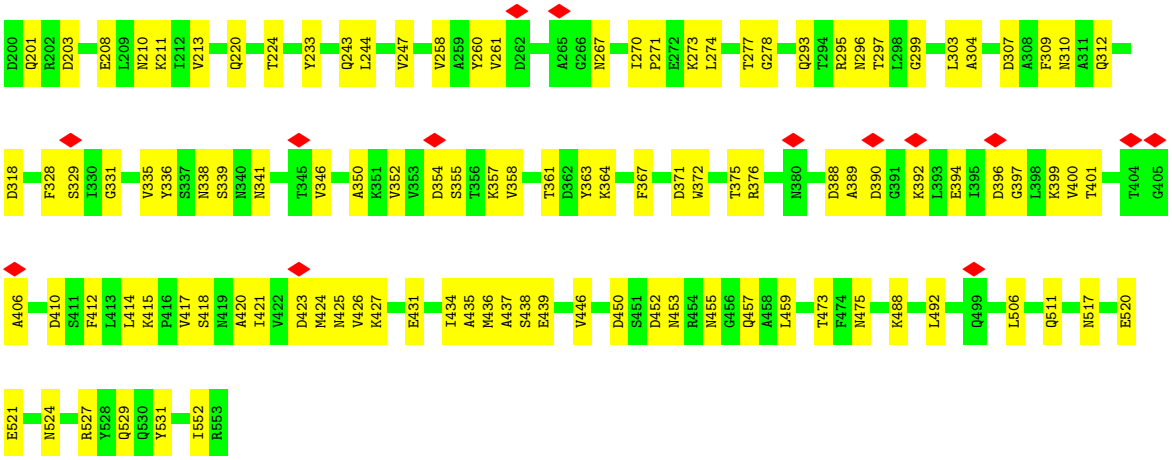
Chain CC:




• Molecule 4: Flagellar hook-associated protein 1

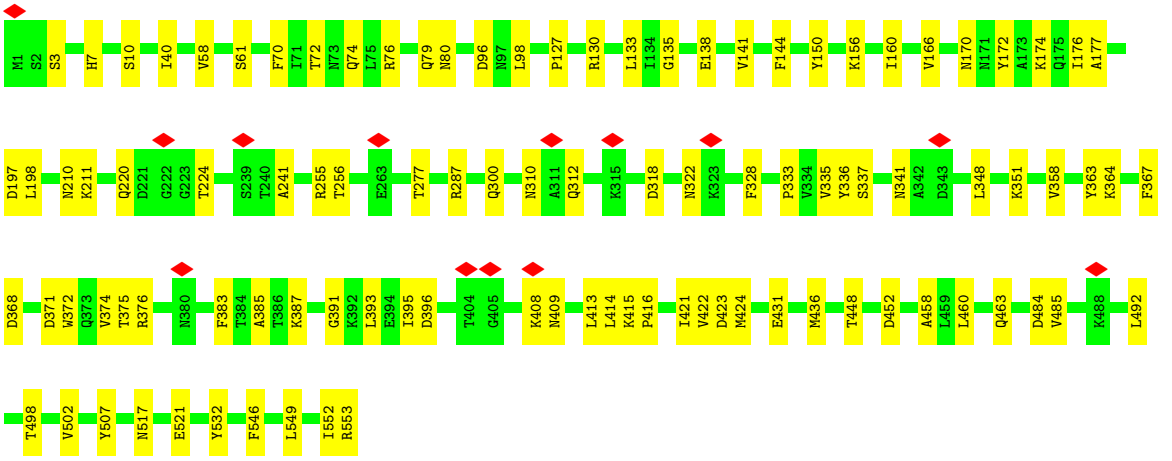
Chain CD:





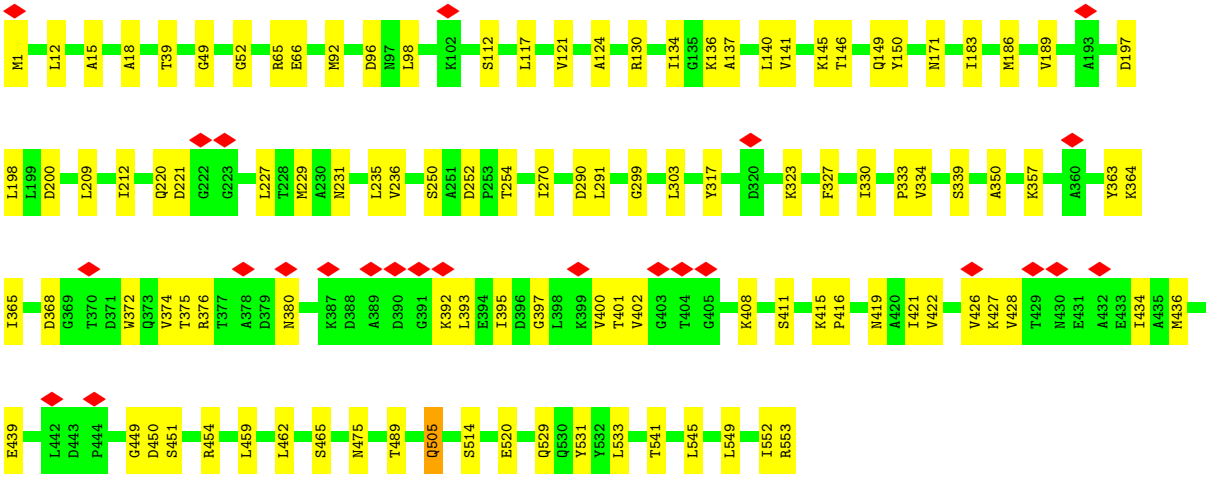

• Molecule 4: Flagellar hook-associated protein 1

Chain CE:



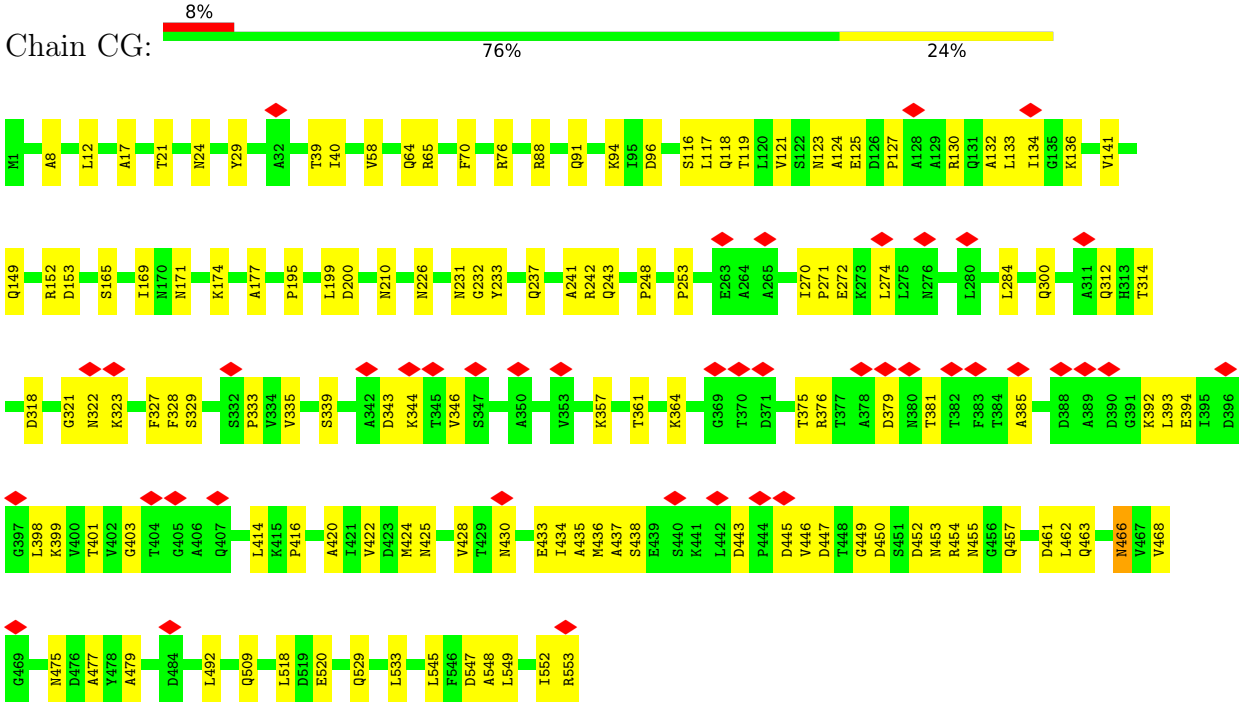

• Molecule 4: Flagellar hook-associated protein 1

Chain CF:



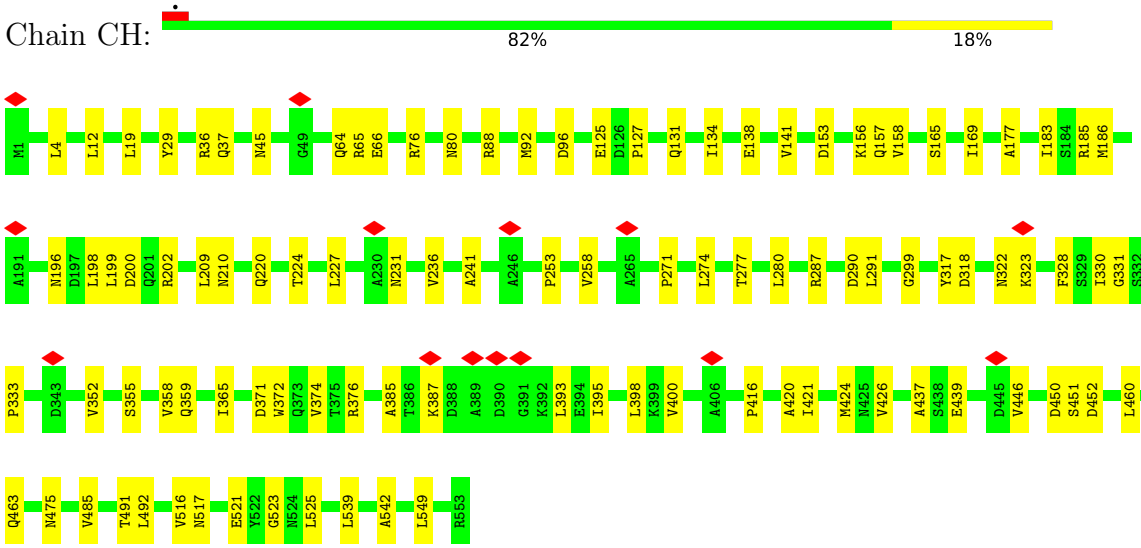
• Molecule 4: Flagellar hook-associated protein 1

Chain CG:



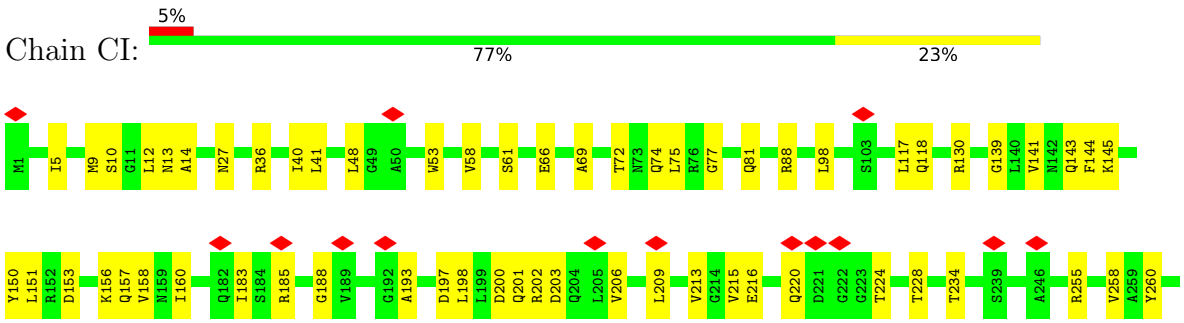

• Molecule 4: Flagellar hook-associated protein 1

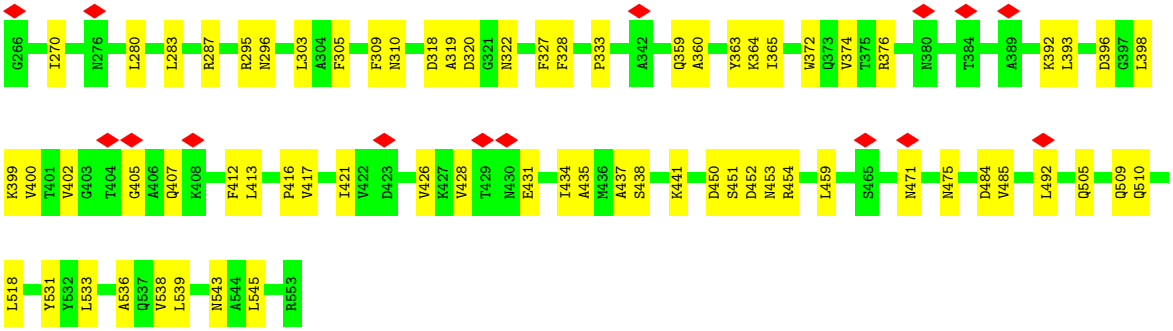
Chain CH:




• Molecule 4: Flagellar hook-associated protein 1

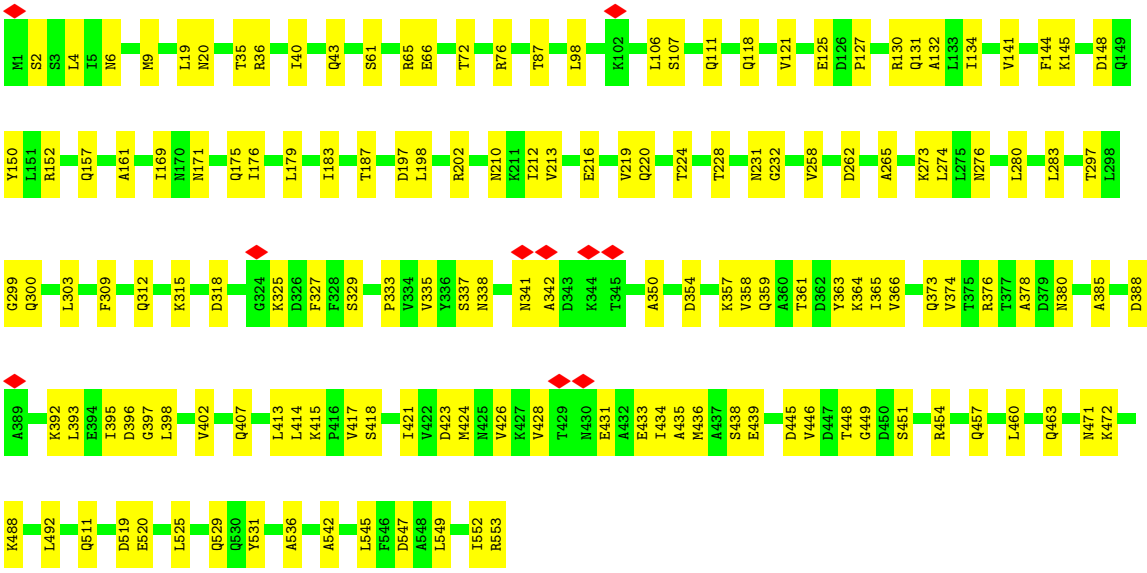
Chain CI:





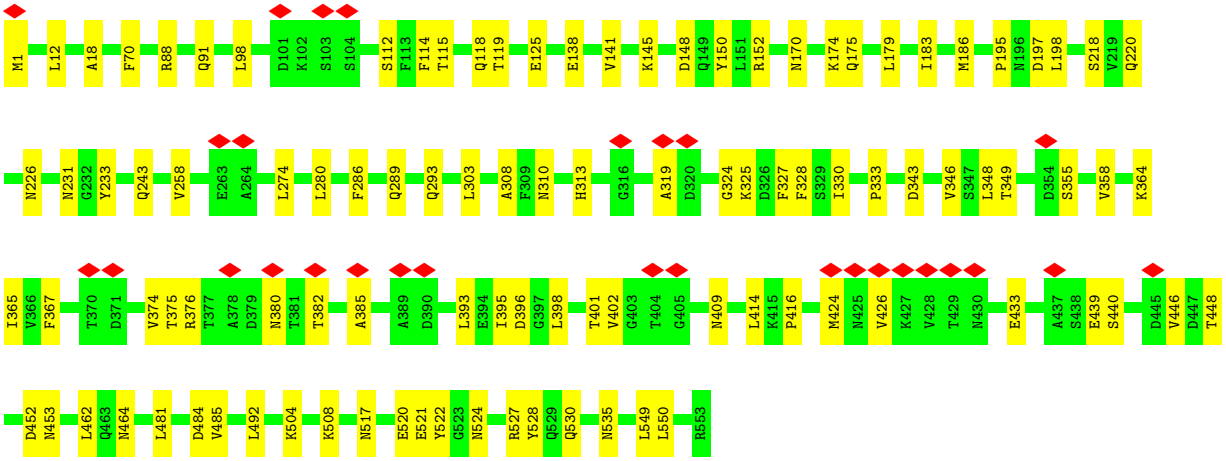
• Molecule 4: Flagellar hook-associated protein 1

Chain CJ:



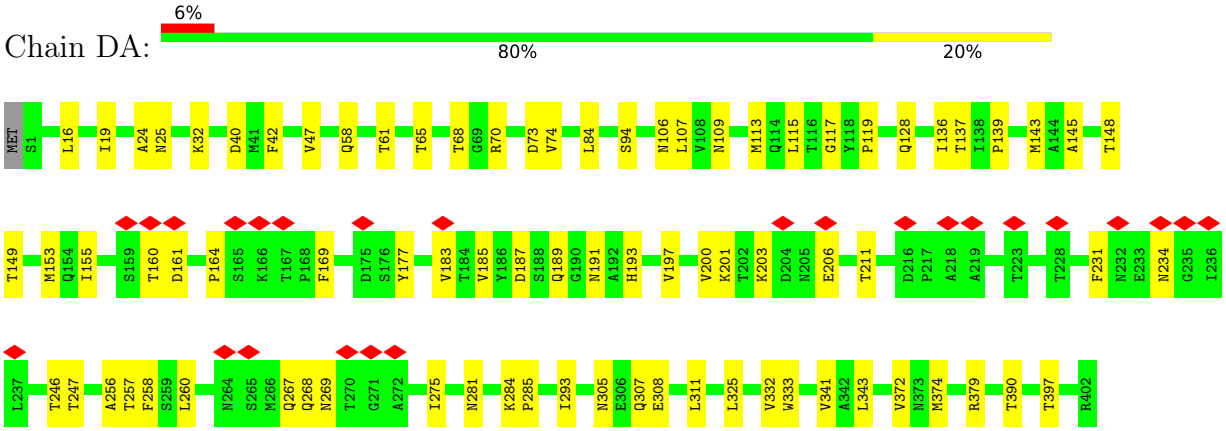
• Molecule 4: Flagellar hook-associated protein 1

Chain CK:



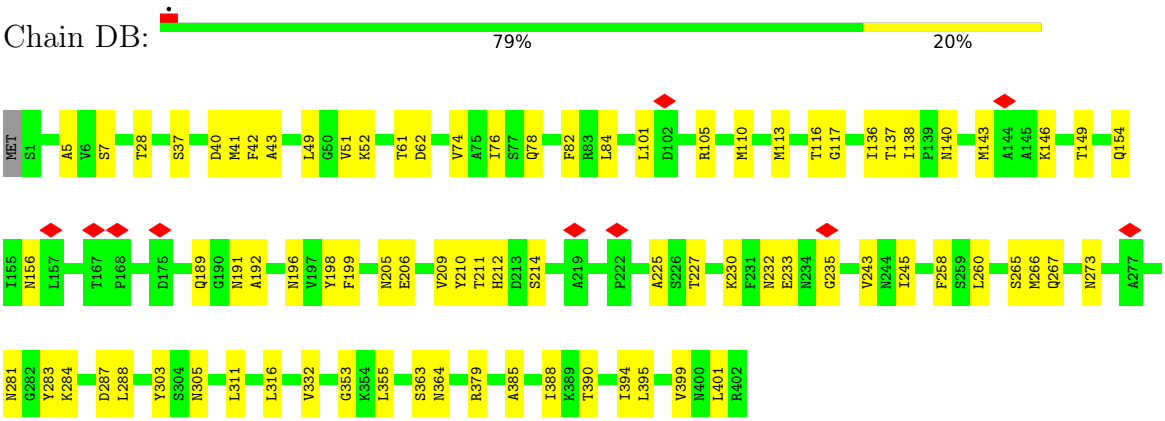
• Molecule 5: Flagellar hook protein FlgE

Chain DA:



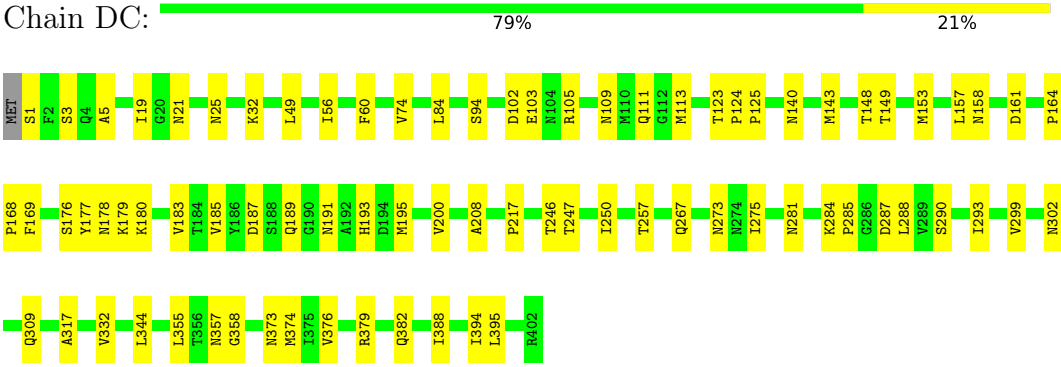

• Molecule 5: Flagellar hook protein FlgE

Chain DB:



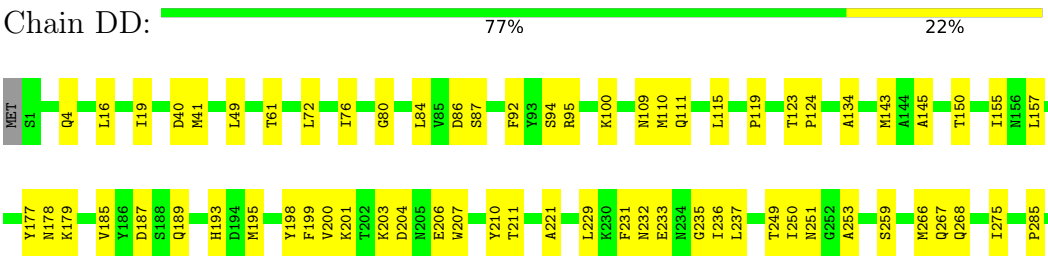

• Molecule 5: Flagellar hook protein FlgE

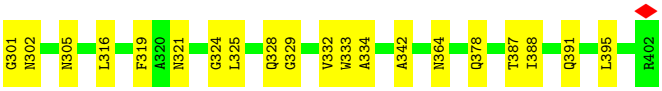
Chain DC:




• Molecule 5: Flagellar hook protein FlgE

Chain DD:



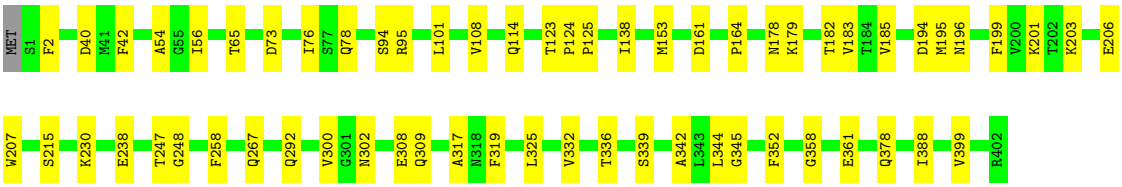



• Molecule 5: Flagellar hook protein FlgE

Chain DE:

• Molecule 5: Flagellar hook protein FlgE

Chain DF:




• Molecule 5: Flagellar hook protein FlgE

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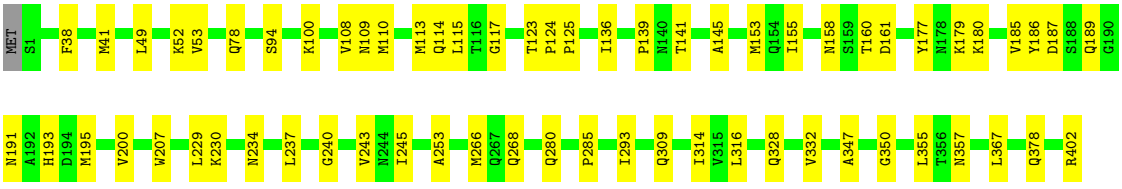
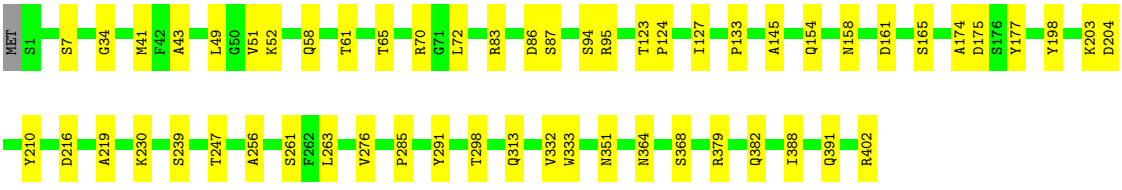


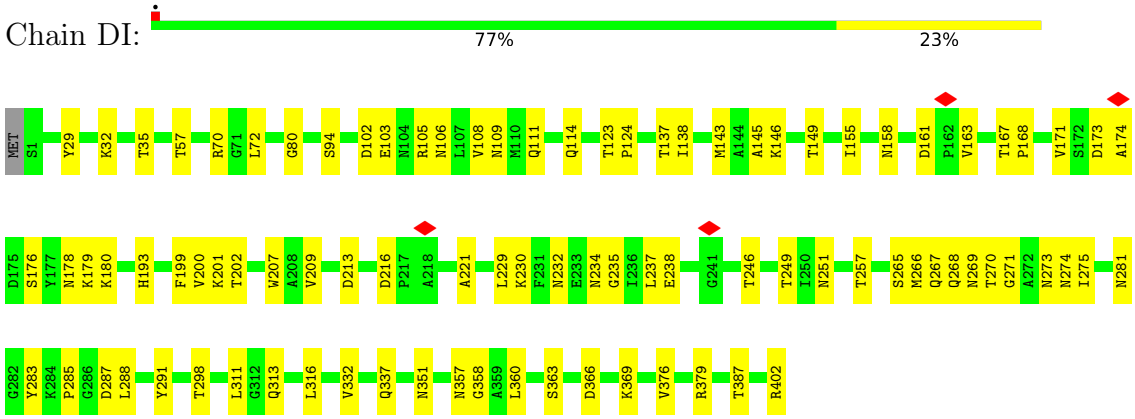

• Molecule 5: Flagellar hook protein FlgE

Chain DH:




• Molecule 5: Flagellar hook protein FlgE

Chain DI:




• Molecule 5: Flagellar hook protein FlgE

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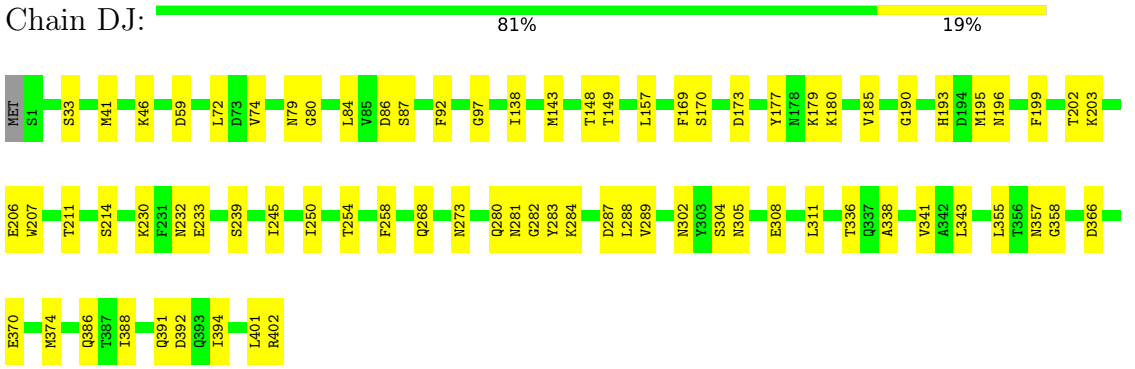
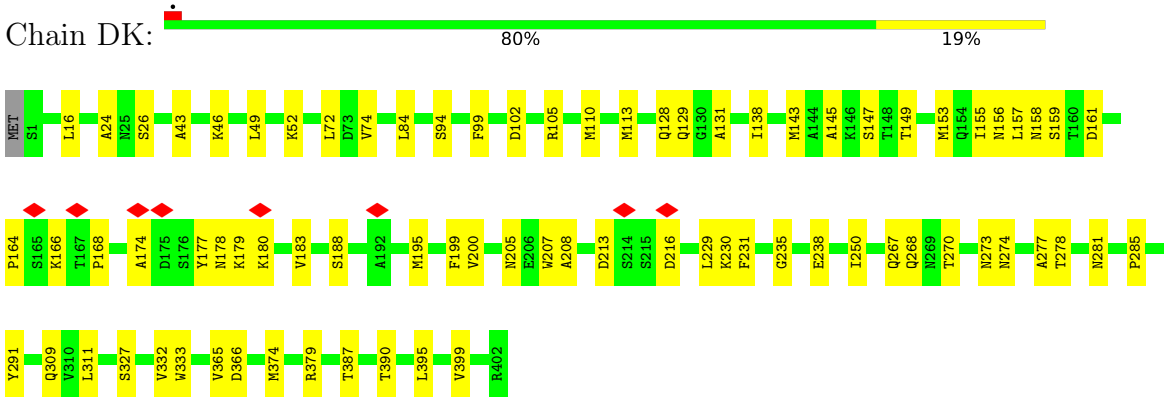



• Molecule 5: Flagellar hook protein FlgE

Chain DK:




• Molecule 5: Flagellar hook protein FlgE

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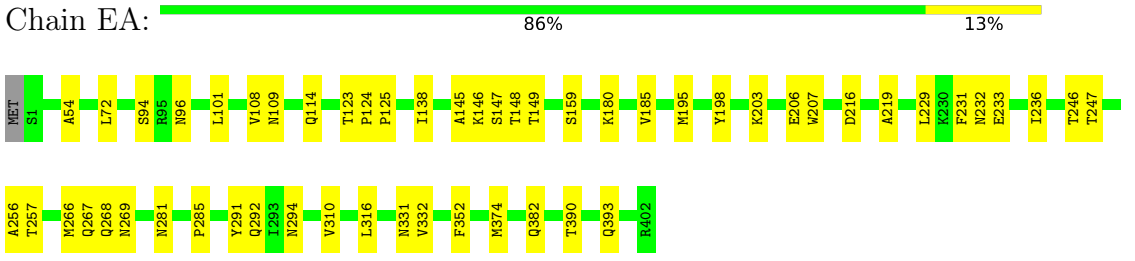
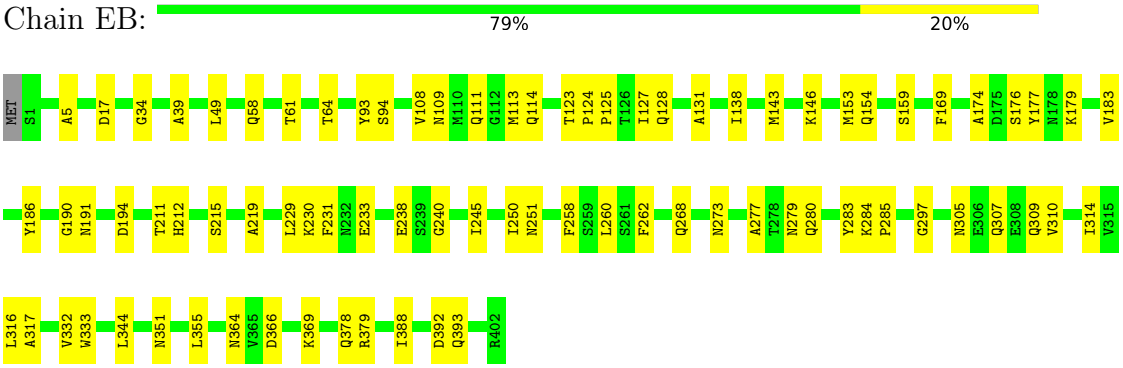


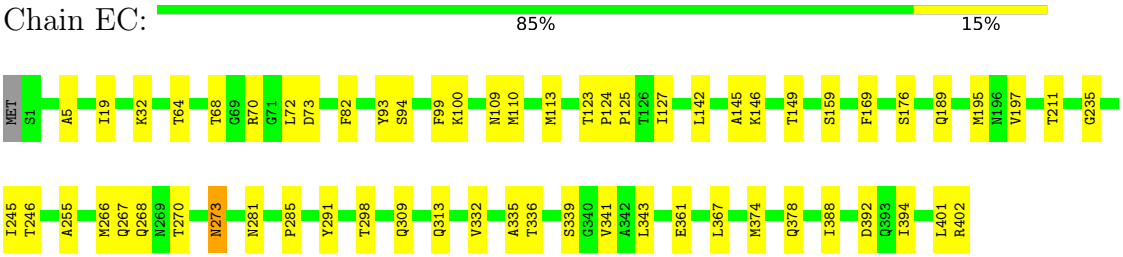
• Molecule 5: Flagellar hook protein FlgE

Chain EB:



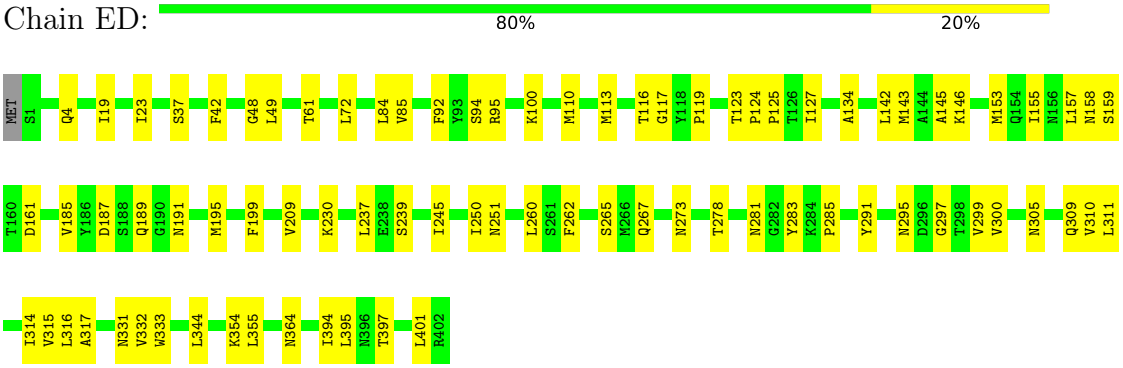

• Molecule 5: Flagellar hook protein FlgE

Chain EC:



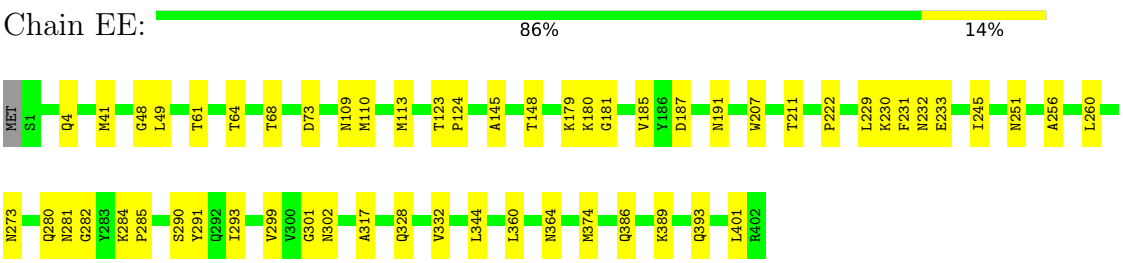

• Molecule 5: Flagellar hook protein FlgE

Chain ED:



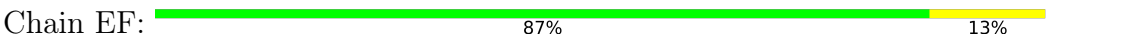

• Molecule 5: Flagellar hook protein FlgE

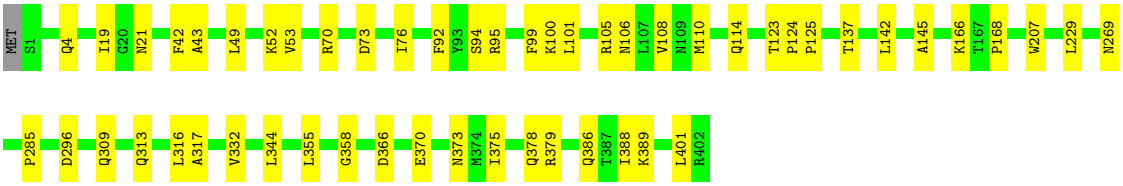
Chain EE:




• Molecule 5: Flagellar hook protein FlgE

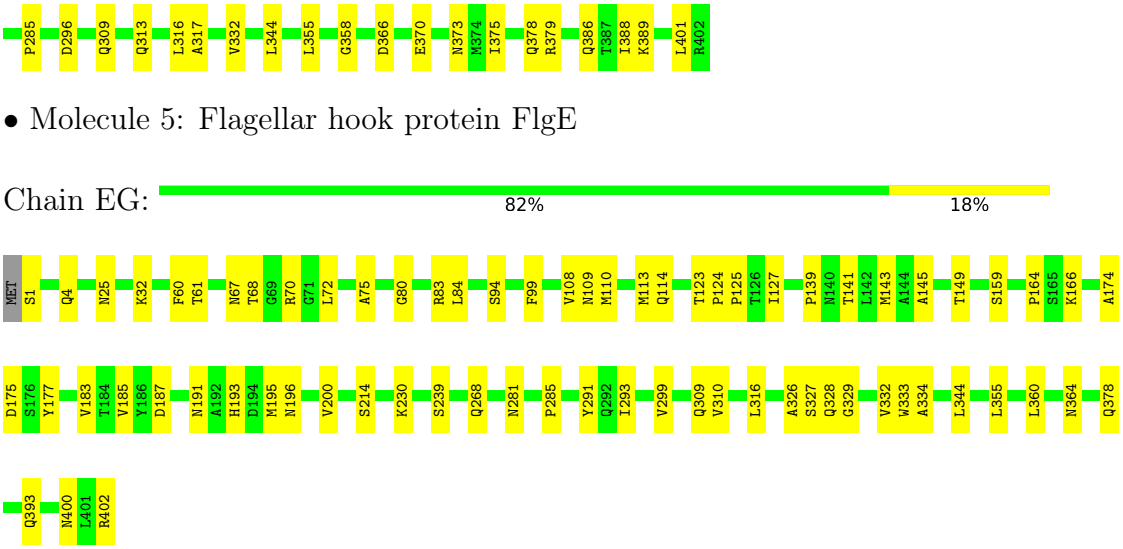
Chain EF:





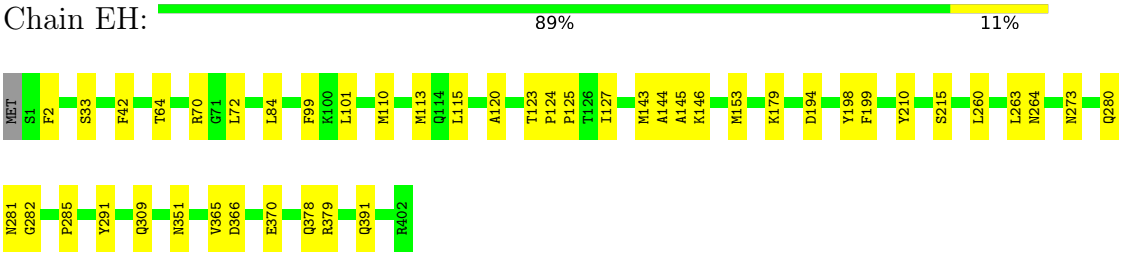

• Molecule 5: Flagellar hook protein FlgE

Chain EG:



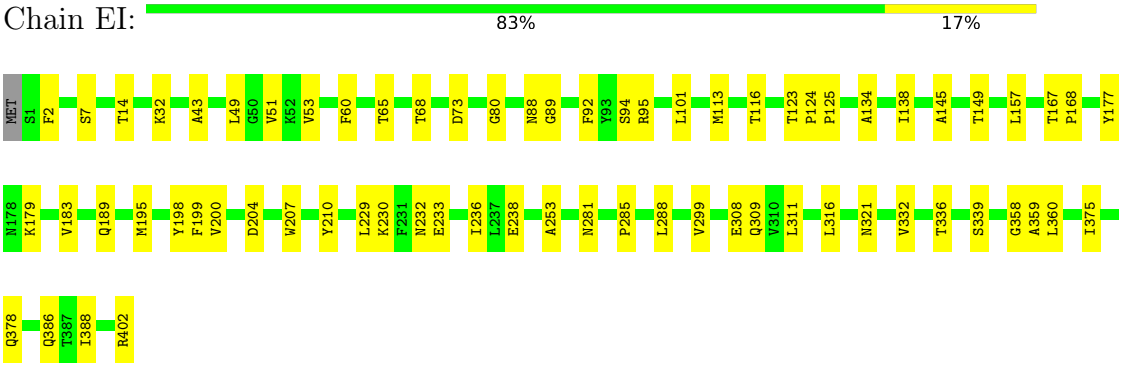

• Molecule 5: Flagellar hook protein FlgE

Chain EH:



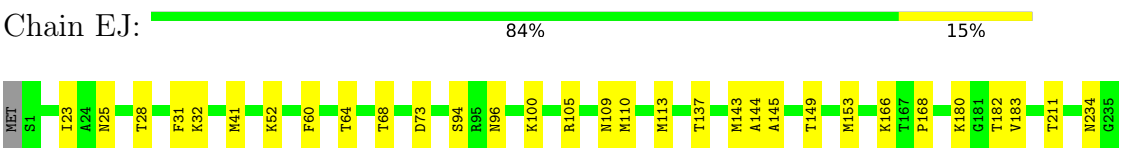

• Molecule 5: Flagellar hook protein FlgE

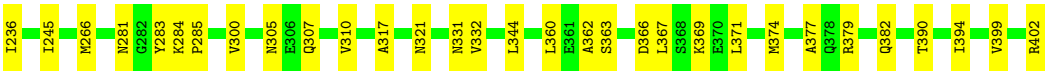
Chain EI:




• Molecule 5: Flagellar hook protein FlgE

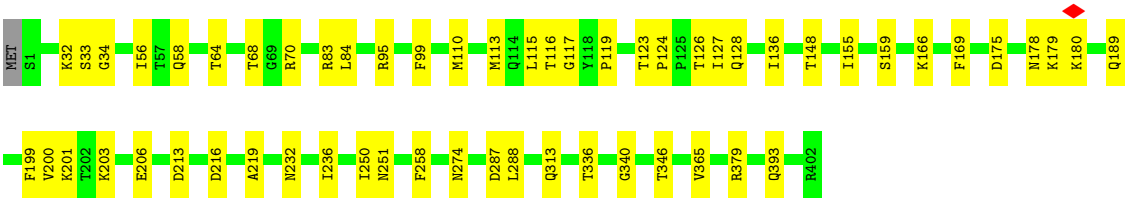
Chain EJ:





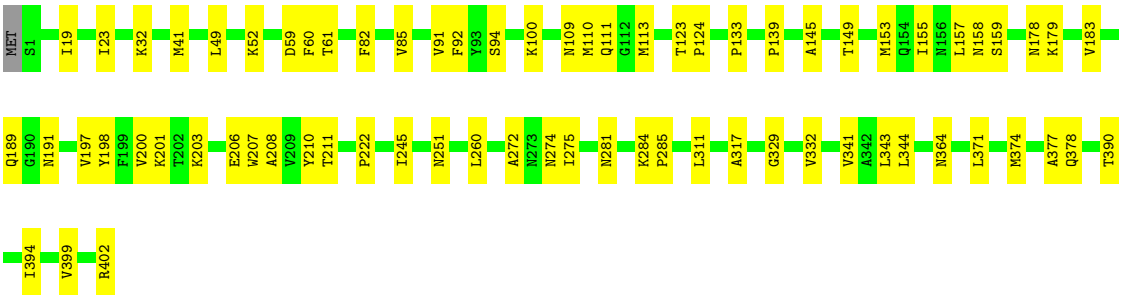

• Molecule 5: Flagellar hook protein FlgE

Chain EK:



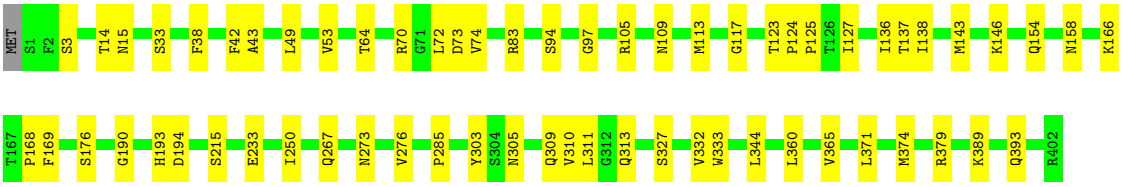

• Molecule 5: Flagellar hook protein FlgE

Chain FA:



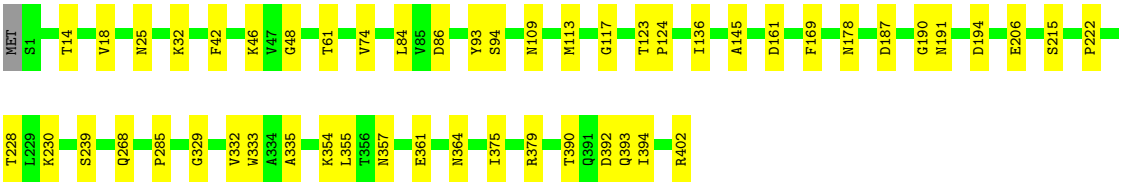

• Molecule 5: Flagellar hook protein FlgE

Chain FB:



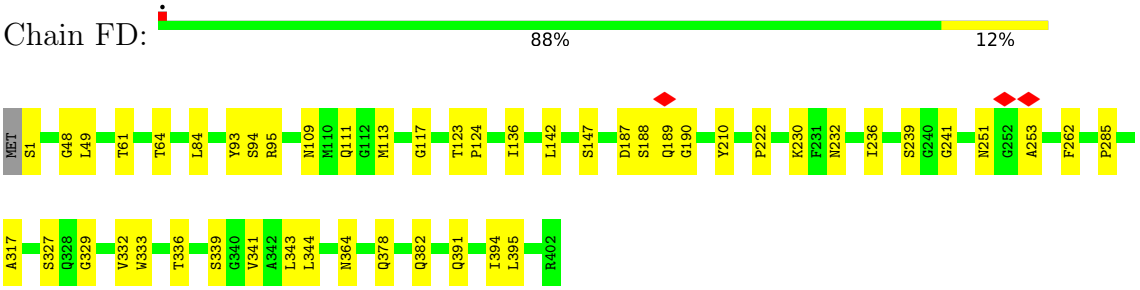

• Molecule 5: Flagellar hook protein FlgE

Chain FC:



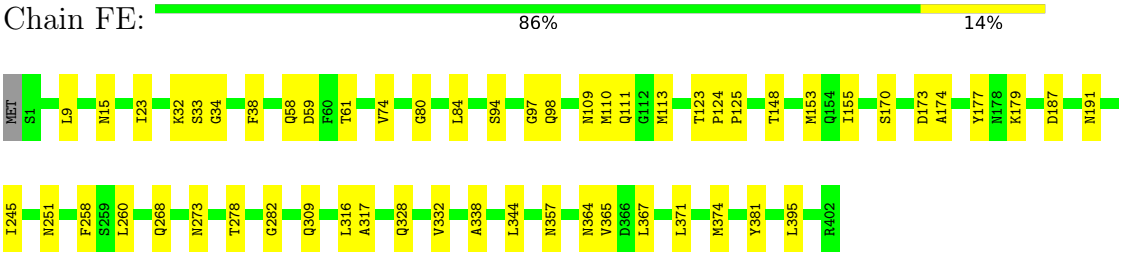

• Molecule 5: Flagellar hook protein FlgE

Chain FD:




• Molecule 5: Flagellar hook protein FlgE

Chain FE:




• Molecule 5: Flagellar hook protein FlgE

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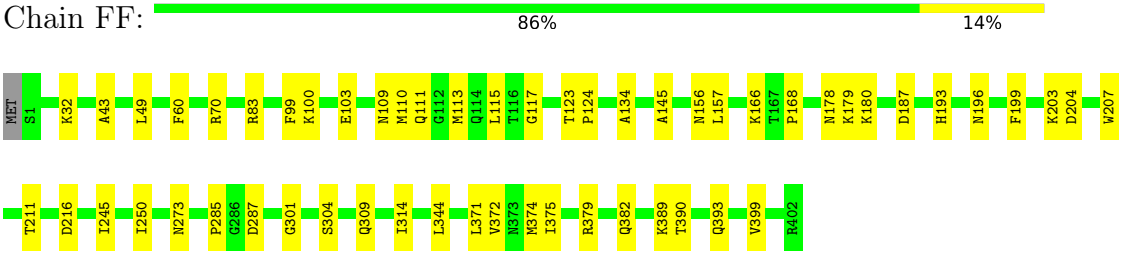
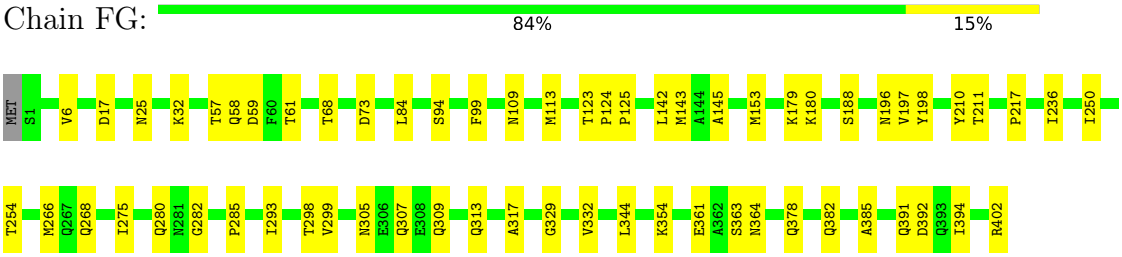



• Molecule 5: Flagellar hook protein FlgE

Chain FG:




• Molecule 5: Flagellar hook protein FlgE

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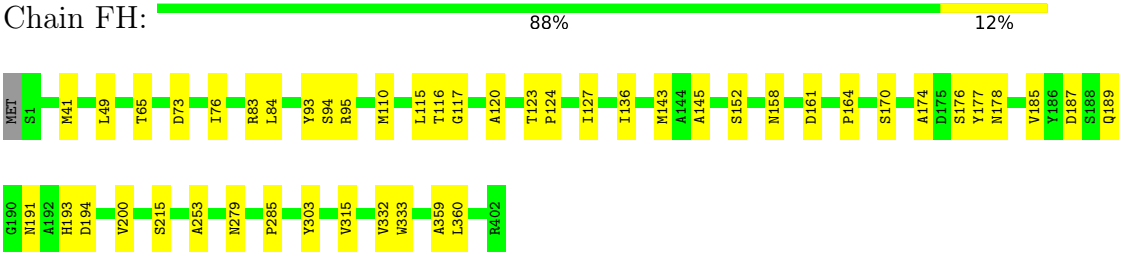

• Molecule 5: Flagellar hook protein FlgE

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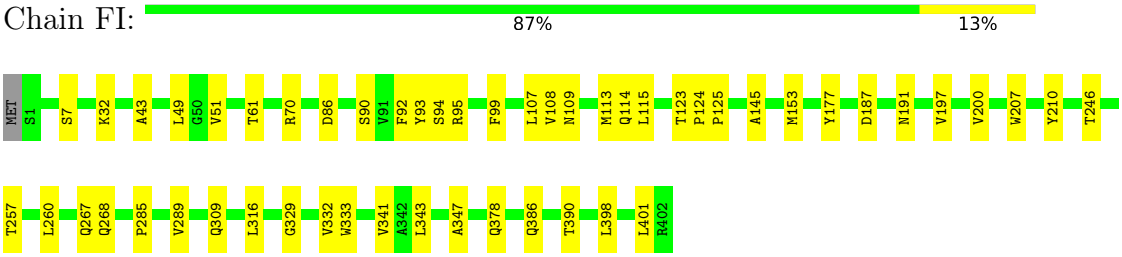
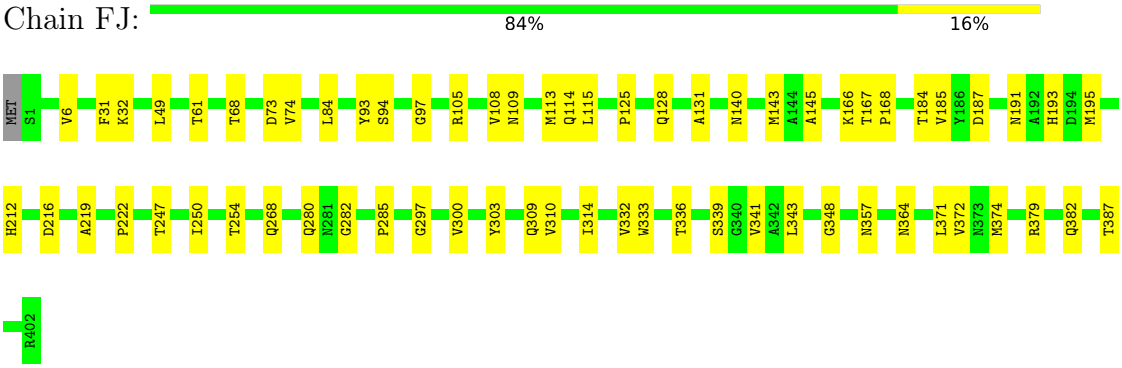



• Molecule 5: Flagellar hook protein FlgE

Chain FJ:




• Molecule 5: Flagellar hook protein FlgE

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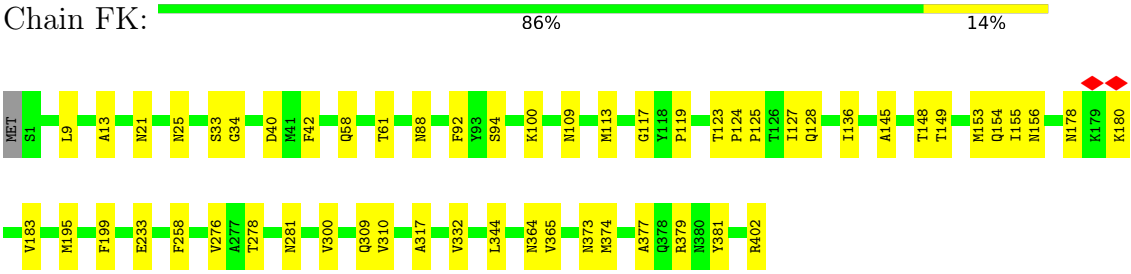
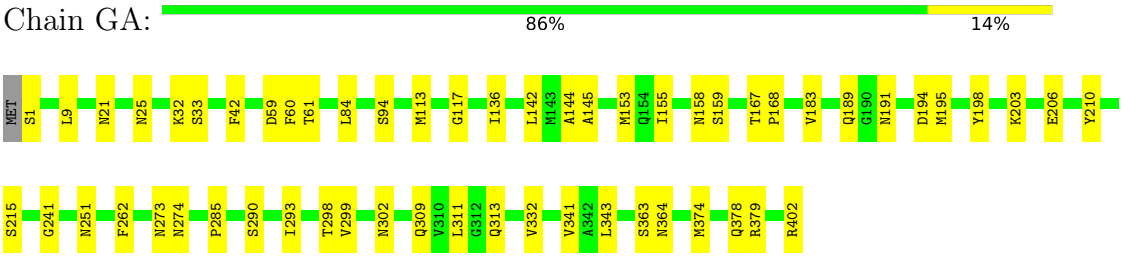


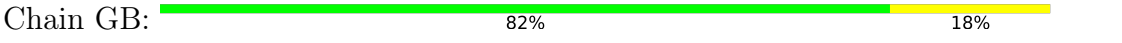

• Molecule 5: Flagellar hook protein FlgE

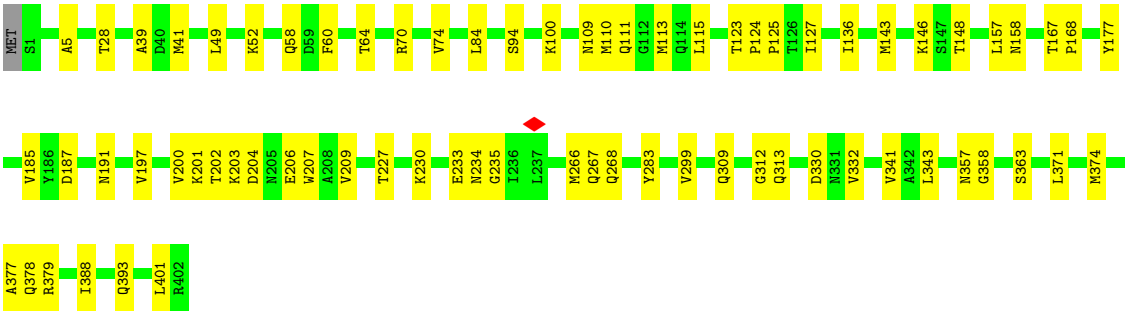
Chain GA:




• Molecule 5: Flagellar hook protein FlgE

Chain GB:






• Molecule 5: Flagellar hook protein FlgE

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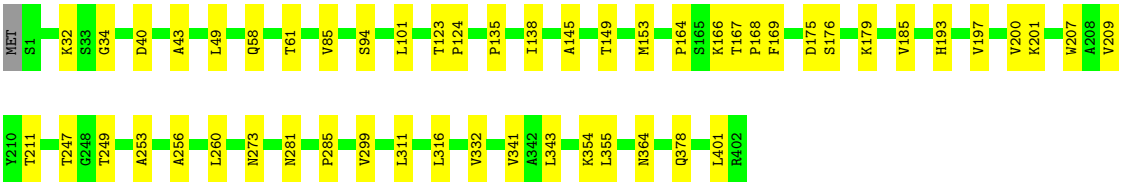
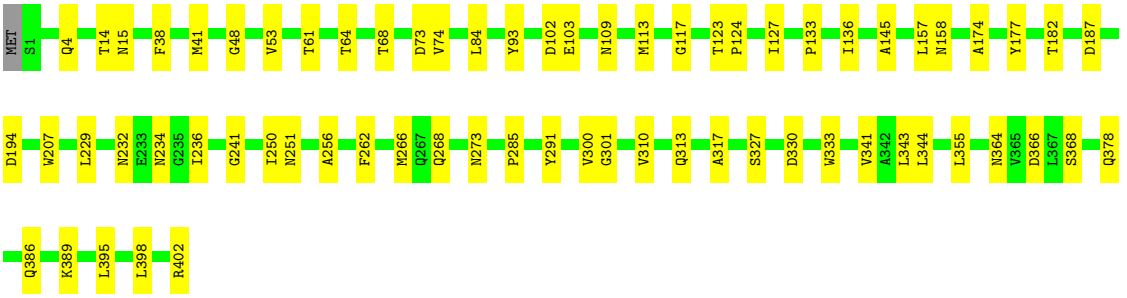


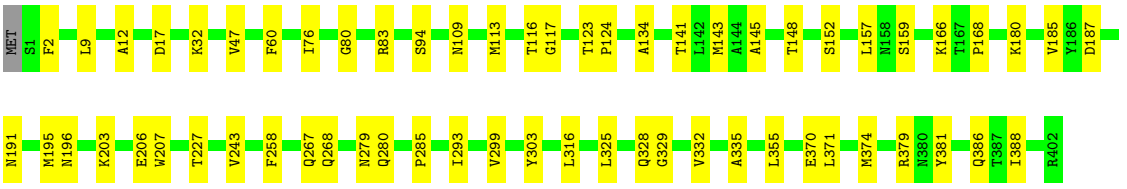

• Molecule 5: Flagellar hook protein FlgE

Chain GD:



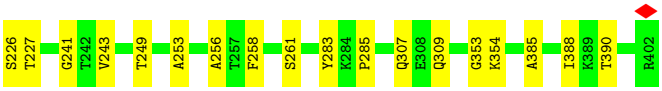

• Molecule 5: Flagellar hook protein FlgE

Chain GE:



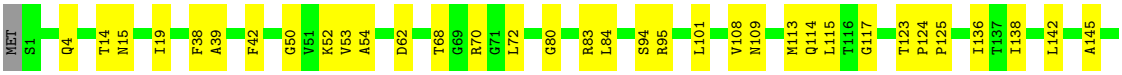

• Molecule 5: Flagellar hook protein FlgE

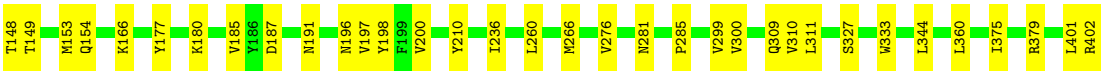
Chain GF:




• Molecule 5: Flagellar hook protein FlgE

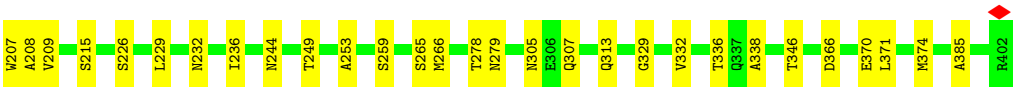
Chain GG:



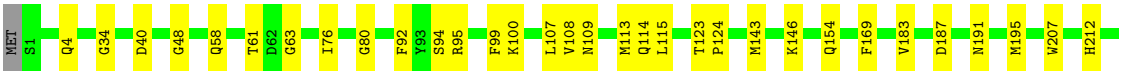

• Molecule 5: Flagellar hook protein FlgE

Chain GH:



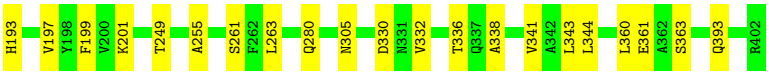

• Molecule 5: Flagellar hook protein FlgE

Chain GI:



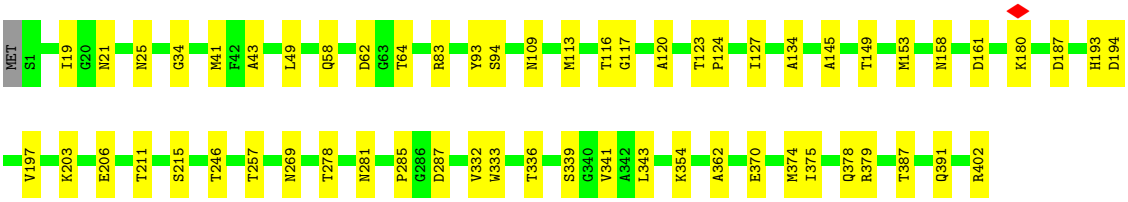
• Molecule 5: Flagellar hook protein FlgE

Chain GJ:




• Molecule 5: Flagellar hook protein FlgE

Chain GK:


MET S1 I19 G20 N21 N25 G34 M41 F42 A43 L49 Q58 D62 G63 T64 R83 Y93 S94 N109 M113 T116 G117 A120 T123 P124 I127 A134 A145 T149 M153 N158 D161 K180 D187 H193 D194
V197 K203 E206 T211 S215 T246 T257 N269 T278 N281 P285 G286 D287 V332 W333 T336 S339 G340 V341 A342 L343 K354 A362 E370 M374 I375 Q378 R379 T387 Q391 R402

# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 254124 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TALOS ARCTICA | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 30 | Depositor |
| Minimum defocus (nm) | 1000 | Depositor |
| Maximum defocus (nm) | 2000 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 0.924 | Depositor |
| Minimum map value | -0.519 | Depositor |
| Average map value | 0.001 | Depositor |
| Map value standard deviation | 0.035 | Depositor |
| Recommended contour level | 0.05 | Depositor |
| Map size (Å) | 510.0, 510.0, 510.0 | wwPDB |
| Map dimensions | 600, 600, 600 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.85, 0.85, 0.85 | Depositor |

# 5 Model quality

## 5.1 Standard geometry

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 | AA | 0.13 | 0/3404 | 0.31 | 0/4609 |
| 1 | AB | 0.12 | 0/3133 | 0.30 | 0/4243 |
| 1 | AD | 0.15 | 0/3328 | 0.40 | 0/4506 |
| 1 | AE | 0.14 | 0/3301 | 0.37 | 1/4469 (0.0%) |
| 2 | AC | 0.15 | 0/3373 | 0.37 | 0/4566 |
| 3 | BA | 0.14 | 0/2417 | 0.33 | 0/3268 |
| 3 | BB | 0.16 | 0/2417 | 0.35 | 0/3268 |
| 3 | BC | 0.14 | 0/2417 | 0.30 | 0/3268 |
| 3 | BD | 0.14 | 0/2417 | 0.32 | 0/3268 |
| 3 | BE | 0.15 | 0/2417 | 0.33 | 0/3268 |
| 3 | BG | 0.15 | 0/2417 | 0.34 | 0/3268 |
| 3 | BH | 0.16 | 0/2417 | 0.38 | 0/3268 |
| 3 | BI | 0.14 | 0/2417 | 0.32 | 0/3268 |
| 3 | BJ | 0.15 | 0/2417 | 0.33 | 0/3268 |
| 3 | BK | 0.14 | 0/2417 | 0.29 | 0/3268 |
| 3 | BL | 0.15 | 0/2409 | 0.38 | 0/3255 |
| 3 | BM | 0.15 | 0/243 | 0.56 | 0/323 |
| 3 | BN | 0.15 | 0/243 | 0.47 | 0/323 |
| 4 | CA | 0.15 | 0/4203 | 0.35 | 0/5706 |
| 4 | CB | 0.13 | 0/4203 | 0.30 | 0/5706 |
| 4 | CC | 0.13 | 0/4195 | 0.30 | 0/5696 |
| 4 | CD | 0.15 | 0/4203 | 0.33 | 0/5706 |
| 4 | CE | 0.13 | 0/4203 | 0.30 | 0/5706 |
| 4 | CF | 0.13 | 0/4203 | 0.32 | 0/5706 |
| 4 | CG | 0.13 | 0/4203 | 0.31 | 0/5706 |
| 4 | CH | 0.13 | 0/4203 | 0.30 | 0/5706 |
| 4 | CI | 0.13 | 0/4203 | 0.31 | 0/5706 |
| 4 | CJ | 0.15 | 0/4203 | 0.33 | 0/5706 |
| 4 | CK | 0.14 | 0/4203 | 0.32 | 0/5706 |
| 5 | DA | 0.13 | 0/3003 | 0.36 | 0/4090 |
| 5 | DB | 0.12 | 0/3003 | 0.33 | 0/4090 |
| 5 | DC | 0.14 | 0/3003 | 0.35 | 2/4090 (0.0%) |
| 5 | DD | 0.12 | 0/3003 | 0.33 | 0/4090 |
| 5 | DE | 0.10 | 0/3003 | 0.30 | 0/4090 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 5 | DF | 0.11 | 0/3003 | 0.31 | 0/4090 |
| 5 | DG | 0.12 | 0/3003 | 0.35 | 0/4090 |
| 5 | DH | 0.11 | 0/3003 | 0.31 | 0/4090 |
| 5 | DI | 0.12 | 0/3003 | 0.35 | 2/4090 (0.0%) |
| 5 | DJ | 0.12 | 0/3003 | 0.34 | 0/4090 |
| 5 | DK | 0.12 | 0/3003 | 0.33 | 0/4090 |
| 5 | EA | 0.11 | 0/3003 | 0.30 | 0/4090 |
| 5 | EB | 0.11 | 0/3003 | 0.30 | 0/4090 |
| 5 | EC | 0.10 | 0/3003 | 0.28 | 0/4090 |
| 5 | ED | 0.12 | 0/3003 | 0.31 | 0/4090 |
| 5 | EE | 0.10 | 0/3003 | 0.29 | 0/4090 |
| 5 | EF | 0.11 | 0/3003 | 0.28 | 0/4090 |
| 5 | EG | 0.11 | 0/3003 | 0.30 | 0/4090 |
| 5 | EH | 0.10 | 0/3003 | 0.28 | 0/4090 |
| 5 | EI | 0.10 | 0/3003 | 0.29 | 0/4090 |
| 5 | EJ | 0.11 | 0/3003 | 0.30 | 0/4090 |
| 5 | EK | 0.11 | 0/3003 | 0.34 | 0/4090 |
| 5 | FA | 0.09 | 0/3003 | 0.27 | 0/4090 |
| 5 | FB | 0.12 | 0/3003 | 0.31 | 0/4090 |
| 5 | FC | 0.10 | 0/3003 | 0.26 | 0/4090 |
| 5 | FD | 0.10 | 0/3003 | 0.28 | 0/4090 |
| 5 | FE | 0.10 | 0/3003 | 0.27 | 0/4090 |
| 5 | FF | 0.10 | 0/3003 | 0.26 | 0/4090 |
| 5 | FG | 0.10 | 0/3003 | 0.26 | 0/4090 |
| 5 | FH | 0.11 | 0/3003 | 0.27 | 0/4090 |
| 5 | FI | 0.09 | 0/3003 | 0.27 | 0/4090 |
| 5 | FJ | 0.09 | 0/3003 | 0.28 | 0/4090 |
| 5 | FK | 0.10 | 0/3003 | 0.30 | 0/4090 |
| 5 | GA | 0.10 | 0/3003 | 0.29 | 0/4090 |
| 5 | GB | 0.11 | 0/3003 | 0.33 | 0/4090 |
| 5 | GC | 0.10 | 0/3003 | 0.25 | 0/4090 |
| 5 | GD | 0.10 | 0/3003 | 0.27 | 1/4090 (0.0%) |
| 5 | GE | 0.09 | 0/3003 | 0.28 | 0/4090 |
| 5 | GF | 0.09 | 0/3003 | 0.26 | 0/4090 |
| 5 | GG | 0.10 | 0/3003 | 0.27 | 0/4090 |
| 5 | GH | 0.10 | 0/3003 | 0.27 | 0/4090 |
| 5 | GI | 0.09 | 0/3003 | 0.27 | 0/4090 |
| 5 | GJ | 0.10 | 0/3003 | 0.27 | 0/4090 |
| 5 | GK | 0.11 | 0/3003 | 0.28 | 0/4090 |
| All | All | 0.12 | 0/221961 | 0.31 | 6/301690 (0.0%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected

by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|---|---|---|---|
| 1 | AD | 0 | 2 |

There are no bond length outliers.

All (6) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 1 | AE | 307 | ASP | N-CA-C | -5.97 | 104.12 | 112.25 |
| 5 | DC | 217 | PRO | CA-N-CD | -5.71 | 104.00 | 112.00 |
| 5 | DI | 363 | SER | CA-C-N | 5.40 | 135.66 | 125.66 |
| 5 | DI | 363 | SER | C-N-CA | 5.40 | 135.66 | 125.66 |
| 5 | GD | 330 | ASP | CB-CA-C | -5.30 | 110.44 | 116.54 |
| 5 | DC | 217 | PRO | N-CD-CG | -5.11 | 95.53 | 103.20 |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 1 | AD | 328 | GLN | Peptide |
| 1 | AD | 338 | PHE | Peptide |

## 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 | AA | 3380 | 0 | 3435 | 78 | 0 |
| 1 | AB | 3112 | 0 | 3150 | 73 | 0 |
| 1 | AD | 3305 | 0 | 3354 | 121 | 0 |
| 1 | AE | 3278 | 0 | 3329 | 98 | 0 |
| 2 | AC | 3349 | 0 | 3402 | 79 | 0 |
| 3 | BA | 2391 | 0 | 2350 | 51 | 0 |
| 3 | BB | 2391 | 0 | 2350 | 72 | 0 |
| 3 | BC | 2391 | 0 | 2350 | 44 | 0 |
| 3 | BD | 2391 | 0 | 2350 | 71 | 0 |
| 3 | BE | 2391 | 0 | 2350 | 40 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 3 | BG | 2391 | 0 | 2350 | 81 | 0 |
| 3 | BH | 2391 | 0 | 2350 | 57 | 0 |
| 3 | BI | 2391 | 0 | 2350 | 51 | 0 |
| 3 | BJ | 2391 | 0 | 2350 | 40 | 0 |
| 3 | BK | 2391 | 0 | 2350 | 64 | 0 |
| 3 | BL | 2384 | 0 | 2342 | 86 | 0 |
| 3 | BM | 240 | 0 | 232 | 8 | 0 |
| 3 | BN | 240 | 0 | 232 | 9 | 0 |
| 4 | CA | 4157 | 0 | 4071 | 116 | 0 |
| 4 | CB | 4157 | 0 | 4071 | 90 | 0 |
| 4 | CC | 4149 | 0 | 4059 | 91 | 0 |
| 4 | CD | 4157 | 0 | 4071 | 107 | 0 |
| 4 | CE | 4157 | 0 | 4071 | 71 | 0 |
| 4 | CF | 4157 | 0 | 4071 | 82 | 0 |
| 4 | CG | 4157 | 0 | 4071 | 101 | 0 |
| 4 | CH | 4157 | 0 | 4071 | 69 | 0 |
| 4 | CI | 4157 | 0 | 4071 | 92 | 0 |
| 4 | CJ | 4157 | 0 | 4071 | 109 | 0 |
| 4 | CK | 4157 | 0 | 4071 | 84 | 0 |
| 5 | DA | 2959 | 0 | 2855 | 53 | 0 |
| 5 | DB | 2959 | 0 | 2855 | 54 | 0 |
| 5 | DC | 2959 | 0 | 2855 | 55 | 0 |
| 5 | DD | 2959 | 0 | 2855 | 65 | 0 |
| 5 | DE | 2959 | 0 | 2855 | 49 | 0 |
| 5 | DF | 2959 | 0 | 2855 | 40 | 0 |
| 5 | DG | 2959 | 0 | 2855 | 43 | 0 |
| 5 | DH | 2959 | 0 | 2855 | 37 | 0 |
| 5 | DI | 2959 | 0 | 2855 | 61 | 0 |
| 5 | DJ | 2959 | 0 | 2855 | 53 | 0 |
| 5 | DK | 2959 | 0 | 2855 | 60 | 0 |
| 5 | EA | 2959 | 0 | 2855 | 33 | 0 |
| 5 | EB | 2959 | 0 | 2855 | 59 | 0 |
| 5 | EC | 2959 | 0 | 2855 | 45 | 0 |
| 5 | ED | 2959 | 0 | 2855 | 52 | 0 |
| 5 | EE | 2959 | 0 | 2855 | 41 | 0 |
| 5 | EF | 2959 | 0 | 2855 | 34 | 0 |
| 5 | EG | 2959 | 0 | 2855 | 47 | 0 |
| 5 | EH | 2959 | 0 | 2855 | 28 | 0 |
| 5 | EI | 2959 | 0 | 2855 | 45 | 0 |
| 5 | EJ | 2959 | 0 | 2855 | 46 | 0 |
| 5 | EK | 2959 | 0 | 2855 | 43 | 0 |
| 5 | FA | 2959 | 0 | 2855 | 52 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 5 | FB | 2959 | 0 | 2855 | 42 | 0 |
| 5 | FC | 2959 | 0 | 2855 | 33 | 0 |
| 5 | FD | 2959 | 0 | 2855 | 36 | 0 |
| 5 | FE | 2959 | 0 | 2855 | 35 | 0 |
| 5 | FF | 2959 | 0 | 2855 | 37 | 0 |
| 5 | FG | 2959 | 0 | 2855 | 42 | 0 |
| 5 | FH | 2959 | 0 | 2855 | 26 | 0 |
| 5 | FI | 2959 | 0 | 2855 | 31 | 0 |
| 5 | FJ | 2959 | 0 | 2855 | 41 | 0 |
| 5 | FK | 2959 | 0 | 2855 | 41 | 0 |
| 5 | GA | 2959 | 0 | 2855 | 37 | 0 |
| 5 | GB | 2959 | 0 | 2855 | 53 | 0 |
| 5 | GC | 2959 | 0 | 2855 | 31 | 0 |
| 5 | GD | 2959 | 0 | 2855 | 42 | 0 |
| 5 | GE | 2959 | 0 | 2855 | 37 | 0 |
| 5 | GF | 2959 | 0 | 2855 | 29 | 0 |
| 5 | GG | 2959 | 0 | 2855 | 41 | 0 |
| 5 | GH | 2959 | 0 | 2855 | 38 | 0 |
| 5 | GI | 2959 | 0 | 2855 | 35 | 0 |
| 5 | GJ | 2959 | 0 | 2855 | 31 | 0 |
| 5 | GK | 2959 | 0 | 2855 | 35 | 0 |
| All | All | 219113 | 0 | 213365 | 3546 | 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 8.

All (3546) 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) |
|---|---|---|---|
| 5:DK:183:VAL:HB | 5:DK:195:MET:HB2 | 1.50 | 0.91 |
| 4:CG:125:GLU:HG2 | 4:CG:450:ASP:HB3 | 1.54 | 0.88 |
| 4:CJ:363:TYR:HB2 | 4:CJ:414:LEU:O | 1.73 | 0.88 |
| 2:AC:348:GLN:HA | 2:AC:355:LEU:HB3 | 1.58 | 0.85 |
| 1:AD:443:LEU:O | 1:AD:447:MET:HB2 | 1.77 | 0.84 |
| 5:DB:149:THR:H | 5:DB:281:ASN:HD21 | 1.25 | 0.83 |
| 3:BI:302:LYS:HE2 | 3:BN:317:ARG:HH21 | 1.44 | 0.82 |
| 3:BB:20:GLN:HG2 | 3:BB:24:MET:HE2 | 1.59 | 0.82 |
| 3:BK:203:MET:HE1 | 3:BK:235:GLY:HA3 | 1.59 | 0.82 |
| 1:AA:120:GLN:HB2 | 1:AA:153:MET:HE2 | 1.63 | 0.81 |
| 1:AD:300:GLU:HG2 | 3:BL:273:LEU:HD13 | 1.63 | 0.80 |
| 4:CC:312:GLN:HE21 | 4:CC:458:ALA:HB1 | 1.45 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DC:374:MET:HE1 | 5:DK:387:THR:HA | 1.62 | 0.80 |
| 4:CG:272:GLU:HB3 | 4:CG:284:LEU:HD21 | 1.62 | 0.80 |
| 4:CJ:4:LEU:HD22 | 4:CJ:542:ALA:HB2 | 1.64 | 0.80 |
| 5:DE:105:ARG:HH12 | 5:DE:140:ASN:HB3 | 1.47 | 0.79 |
| 1:AB:61:ASN:HD21 | 1:AB:390:ILE:HG23 | 1.48 | 0.79 |
| 2:AC:299:VAL:HG13 | 2:AC:301:PRO:HD3 | 1.63 | 0.79 |
| 5:EG:125:PRO:HG2 | 5:EG:309:GLN:HB2 | 1.62 | 0.79 |
| 1:AD:56:LYS:HE2 | 1:AD:282:ALA:HB3 | 1.65 | 0.79 |
| 2:AC:339:LYS:NZ | 2:AC:369:ASN:O | 2.16 | 0.79 |
| 4:CF:117:LEU:HD11 | 4:CF:459:LEU:HD13 | 1.65 | 0.79 |
| 4:CJ:145:LYS:NZ | 4:CJ:424:MET:O | 2.15 | 0.79 |
| 4:CA:138:GLU:HG3 | 4:CA:426:VAL:HG21 | 1.65 | 0.78 |
| 5:GB:235:GLY:HA2 | 5:GB:267:GLN:HB3 | 1.66 | 0.78 |
| 1:AD:98:ASN:HB2 | 1:AD:230:ASN:HB3 | 1.64 | 0.78 |
| 4:CG:392:LYS:HE3 | 4:CG:399:LYS:HB3 | 1.66 | 0.78 |
| 5:EG:149:THR:HB | 5:EG:281:ASN:HD21 | 1.45 | 0.78 |
| 5:GA:142:LEU:HD11 | 5:GD:266:MET:HE1 | 1.65 | 0.78 |
| 3:BA:22:GLU:OE1 | 3:BA:293:GLN:NE2 | 2.17 | 0.77 |
| 3:BD:156:GLY:HA2 | 4:CG:446:VAL:HG12 | 1.66 | 0.77 |
| 4:CA:78:ALA:HB1 | 4:CA:503:VAL:HG22 | 1.66 | 0.77 |
| 4:CJ:141:VAL:HG22 | 4:CJ:424:MET:HB3 | 1.65 | 0.77 |
| 4:CA:541:THR:HG21 | 4:CJ:525:LEU:HD11 | 1.66 | 0.77 |
| 1:AE:299:VAL:HG12 | 1:AE:300:GLU:HG3 | 1.67 | 0.77 |
| 3:BL:94:ILE:HD13 | 3:BL:236:LEU:HD12 | 1.66 | 0.77 |
| 3:BE:54:GLN:HA | 4:CC:111:GLN:HE22 | 1.48 | 0.77 |
| 5:GH:41:MET:HE3 | 5:GH:52:LYS:HB3 | 1.66 | 0.77 |
| 4:CB:178:ASN:OD1 | 4:CB:182:GLN:NE2 | 2.17 | 0.76 |
| 5:GJ:166:LYS:HG3 | 5:GJ:168:PRO:HD2 | 1.68 | 0.76 |
| 3:BB:58:GLN:HE22 | 4:CK:464:ASN:HD22 | 1.33 | 0.76 |
| 5:DF:125:PRO:HG2 | 5:DF:309:GLN:HB2 | 1.67 | 0.76 |
| 3:BH:81:SER:HA | 3:BH:247:ARG:HH22 | 1.49 | 0.76 |
| 3:BB:207:ALA:HB2 | 3:BB:232:THR:HG21 | 1.66 | 0.76 |
| 3:BB:314:GLN:HB2 | 3:BB:317:ARG:HB2 | 1.68 | 0.76 |
| 5:DD:321:ASN:ND2 | 5:EA:101:LEU:O | 2.18 | 0.76 |
| 5:FD:147:SER:HB3 | 5:FD:188:SER:HA | 1.68 | 0.76 |
| 5:GI:371:LEU:HA | 5:GI:374:MET:HE3 | 1.67 | 0.76 |
| 3:BB:203:MET:SD | 3:BB:231:LYS:NZ | 2.57 | 0.75 |
| 3:BD:267:ARG:HH22 | 3:BE:130:GLY:H | 1.34 | 0.75 |
| 3:BH:306:ASP:OD1 | 4:CF:529:GLN:NE2 | 2.20 | 0.75 |
| 5:FJ:254:THR:HG23 | 5:GI:233:GLU:HG2 | 1.67 | 0.75 |
| 4:CF:365:ILE:O | 4:CF:411:SER:HA | 1.87 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CE:127:PRO:HA | 4:CE:130:ARG:HD2 | 1.69 | 0.75 |
| 5:DD:395:LEU:O | 5:EB:379:ARG:NH2 | 2.20 | 0.75 |
| 5:DJ:280:GLN:HG2 | 5:DJ:282:GLY:H | 1.52 | 0.75 |
| 2:AC:58:GLN:HG3 | 2:AC:398:LEU:HD11 | 1.69 | 0.75 |
| 4:CC:229:MET:HE2 | 4:CC:235:LEU:HD21 | 1.69 | 0.75 |
| 5:DH:86:ASP:OD1 | 5:DH:87:SER:N | 2.19 | 0.75 |
| 4:CB:260:TYR:HB2 | 4:CB:270:ILE:HD11 | 1.69 | 0.74 |
| 4:CB:130:ARG:NH1 | 4:CB:434:ILE:O | 2.20 | 0.74 |
| 5:DA:94:SER:HB2 | 5:DA:332:VAL:HG12 | 1.67 | 0.74 |
| 3:BG:12:ASN:HD21 | 3:BG:307:MET:HE3 | 1.52 | 0.74 |
| 4:CD:171:ASN:ND2 | 4:CH:491:THR:OG1 | 2.20 | 0.74 |
| 1:AD:338:PHE:CD1 | 1:AD:386:ILE:HB | 2.22 | 0.74 |
| 4:CI:98:LEU:HD11 | 4:CI:150:TYR:HB3 | 1.68 | 0.74 |
| 5:FE:94:SER:HB3 | 5:FE:332:VAL:HG12 | 1.69 | 0.74 |
| 4:CK:349:THR:HG1 | 4:CK:401:THR:HG1 | 1.32 | 0.74 |
| 3:BD:207:ALA:HB2 | 3:BD:232:THR:HG21 | 1.68 | 0.74 |
| 4:CJ:98:LEU:HD11 | 4:CJ:150:TYR:HB3 | 1.70 | 0.73 |
| 5:DD:178:ASN:H | 5:DD:200:VAL:HG12 | 1.53 | 0.73 |
| 5:DJ:284:LYS:O | 5:DJ:305:ASN:ND2 | 2.21 | 0.73 |
| 5:GB:201:LYS:HG3 | 5:GB:207:TRP:HE1 | 1.52 | 0.73 |
| 4:CC:318:ASP:HA | 4:CC:435:ALA:HA | 1.70 | 0.73 |
| 4:CI:505:GLN:HE22 | 4:CI:509:GLN:HE21 | 1.35 | 0.73 |
| 5:DB:196:ASN:ND2 | 5:DB:214:SER:OG | 2.22 | 0.73 |
| 4:CI:77:GLY:O | 4:CI:81:GLN:NE2 | 2.22 | 0.73 |
| 3:BG:140:LYS:NZ | 3:BG:154:HIS:O | 2.22 | 0.73 |
| 5:DK:166:LYS:HG3 | 5:DK:168:PRO:HD2 | 1.71 | 0.73 |
| 1:AD:329:PHE:HD1 | 3:BG:92:GLU:HG3 | 1.54 | 0.73 |
| 5:EE:393:GLN:OE1 | 5:EF:378:GLN:NE2 | 2.22 | 0.73 |
| 5:GH:313:GLN:NE2 | 5:GH:346:THR:OG1 | 2.22 | 0.73 |
| 5:GI:183:VAL:HB | 5:GI:195:MET:HB2 | 1.71 | 0.72 |
| 3:BG:316:ASN:ND2 | 3:BH:305:THR:OG1 | 2.22 | 0.72 |
| 5:ED:84:LEU:HB3 | 5:ED:113:MET:HE1 | 1.69 | 0.72 |
| 3:BK:52:LEU:HD22 | 3:BK:275:MET:HE2 | 1.70 | 0.72 |
| 4:CB:333:PRO:HB3 | 4:CB:416:PRO:HA | 1.68 | 0.72 |
| 4:CE:367:PHE:O | 4:CE:409:ASN:N | 2.23 | 0.72 |
| 4:CD:363:TYR:OH | 4:CD:396:ASP:OD2 | 2.07 | 0.72 |
| 5:DG:41:MET:HE2 | 5:DG:52:LYS:HB3 | 1.71 | 0.72 |
| 4:CA:186:MET:HE2 | 4:CA:198:LEU:HD12 | 1.71 | 0.72 |
| 1:AA:248:GLN:HG3 | 1:AE:171:ILE:HG13 | 1.72 | 0.72 |
| 4:CA:5:ILE:HG21 | 4:CC:527:ARG:HD2 | 1.72 | 0.72 |
| 4:CK:195:PRO:HB2 | 4:CK:198:LEU:HB2 | 1.71 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:354:ASP:HB3 | 4:CJ:357:LYS:HD3 | 1.72 | 0.72 |
| 5:DD:387:THR:O | 5:DD:391:GLN:NE2 | 2.23 | 0.72 |
| 4:CJ:130:ARG:HB2 | 4:CJ:434:ILE:HD12 | 1.72 | 0.71 |
| 5:FJ:109:ASN:HD21 | 5:FJ:113:MET:HE2 | 1.54 | 0.71 |
| 4:CA:351:LYS:HB3 | 4:CA:399:LYS:HE3 | 1.71 | 0.71 |
| 5:DB:284:LYS:O | 5:DB:305:ASN:ND2 | 2.22 | 0.71 |
| 5:EK:178:ASN:ND2 | 5:EK:199:PHE:O | 2.22 | 0.71 |
| 1:AE:442:GLN:HA | 1:AE:445:THR:HG22 | 1.71 | 0.71 |
| 4:CB:501:ASN:HD21 | 4:CF:197:ASP:HB3 | 1.55 | 0.71 |
| 4:CB:185:ARG:NH2 | 5:DE:350:GLY:O | 2.24 | 0.71 |
| 4:CE:70:PHE:O | 4:CE:74:GLN:NE2 | 2.23 | 0.71 |
| 5:DH:402:ARG:HH21 | 5:EH:379:ARG:HH12 | 1.38 | 0.71 |
| 1:AA:61:ASN:HD21 | 1:AA:390:ILE:HG23 | 1.55 | 0.71 |
| 5:FJ:166:LYS:HG3 | 5:FJ:168:PRO:HD2 | 1.72 | 0.71 |
| 1:AD:56:LYS:HE3 | 1:AD:279:TRP:HE3 | 1.56 | 0.71 |
| 1:AD:433:VAL:HG12 | 1:AD:437:LYS:HE3 | 1.71 | 0.71 |
| 5:DC:395:LEU:HD22 | 5:EK:379:ARG:HD2 | 1.72 | 0.71 |
| 3:BA:199:ASN:HD22 | 3:BA:202:VAL:HG23 | 1.55 | 0.71 |
| 3:BG:81:SER:HA | 3:BG:247:ARG:HH22 | 1.55 | 0.71 |
| 2:AC:72:SER:HB3 | 2:AC:92:ALA:HB3 | 1.73 | 0.70 |
| 5:FC:194:ASP:H | 5:FC:215:SER:HB3 | 1.55 | 0.70 |
| 1:AB:229:LEU:H | 1:AB:237:GLU:HA | 1.55 | 0.70 |
| 4:CI:158:VAL:HB | 4:CI:283:LEU:HD21 | 1.71 | 0.70 |
| 4:CD:318:ASP:HA | 4:CD:435:ALA:HA | 1.73 | 0.70 |
| 4:CI:130:ARG:HD2 | 4:CI:431:GLU:HB2 | 1.73 | 0.70 |
| 5:DA:68:THR:HG23 | 5:DA:70:ARG:H | 1.57 | 0.70 |
| 1:AE:83:LYS:HB3 | 1:AE:253:THR:HB | 1.73 | 0.70 |
| 4:CD:357:LYS:HG3 | 4:CD:396:ASP:HA | 1.73 | 0.70 |
| 5:DD:189:GLN:NE2 | 5:EB:233:GLU:O | 2.19 | 0.70 |
| 5:FG:143:MET:SD | 5:FG:305:ASN:ND2 | 2.63 | 0.70 |
| 1:AD:348:GLN:NE2 | 3:BG:92:GLU:OE1 | 2.24 | 0.70 |
| 1:AE:98:ASN:HB2 | 1:AE:230:ASN:HB3 | 1.74 | 0.70 |
| 5:EJ:371:LEU:HA | 5:EJ:374:MET:HE3 | 1.73 | 0.70 |
| 5:GC:145:ALA:HB2 | 5:GC:285:PRO:HD3 | 1.74 | 0.70 |
| 2:AC:410:ASN:ND2 | 3:BE:92:GLU:OE2 | 2.25 | 0.69 |
| 4:CJ:376:ARG:O | 4:CJ:380:ASN:HA | 1.92 | 0.69 |
| 5:EH:280:GLN:HG2 | 5:EH:282:GLY:H | 1.55 | 0.69 |
| 4:CC:227:LEU:HB2 | 4:CC:236:VAL:HG22 | 1.74 | 0.69 |
| 5:EB:109:ASN:HD21 | 5:EB:113:MET:HE2 | 1.57 | 0.69 |
| 5:GH:305:ASN:O | 5:GH:307:GLN:NE2 | 2.25 | 0.69 |
| 3:BC:11:GLN:NE2 | 4:CG:24:ASN:OD1 | 2.25 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CE:98:LEU:HD11 | 4:CE:150:TYR:HB3 | 1.75 | 0.69 |
| 4:CG:116:SER:O | 4:CG:119:THR:OG1 | 2.10 | 0.69 |
| 4:CH:66:GLU:OE1 | 5:DI:70:ARG:NH1 | 2.26 | 0.69 |
| 5:DK:179:LYS:HD3 | 5:DK:273:ASN:HB3 | 1.74 | 0.69 |
| 5:GH:166:LYS:HG3 | 5:GH:168:PRO:HD2 | 1.73 | 0.69 |
| 4:CD:312:GLN:HG3 | 4:CD:459:LEU:HD22 | 1.74 | 0.69 |
| 5:ED:145:ALA:HB2 | 5:ED:285:PRO:HD3 | 1.73 | 0.69 |
| 5:GB:157:LEU:HD12 | 5:GB:158:ASN:H | 1.56 | 0.69 |
| 1:AA:280:VAL:HG21 | 1:AA:357:ILE:HD11 | 1.73 | 0.69 |
| 3:BL:90:ALA:HB2 | 3:BL:117:ILE:HG21 | 1.74 | 0.69 |
| 5:DD:155:ILE:HG13 | 5:DD:275:ILE:HG13 | 1.75 | 0.69 |
| 5:DH:94:SER:HB2 | 5:DH:332:VAL:HG12 | 1.73 | 0.69 |
| 5:DJ:179:LYS:NZ | 5:DJ:180:LYS:O | 2.24 | 0.69 |
| 5:GA:144:ALA:HB1 | 5:GD:268:GLN:HE22 | 1.58 | 0.69 |
| 5:GE:371:LEU:HA | 5:GE:374:MET:HE3 | 1.75 | 0.69 |
| 3:BL:299:ALA:HA | 3:BL:302:LYS:HB3 | 1.74 | 0.69 |
| 4:CB:24:ASN:OD1 | 4:CB:28:ASN:ND2 | 2.26 | 0.69 |
| 5:EI:299:VAL:HG13 | 5:EI:311:LEU:HB3 | 1.74 | 0.69 |
| 5:FJ:280:GLN:HG2 | 5:FJ:282:GLY:H | 1.57 | 0.69 |
| 5:FA:92:PHE:HB2 | 5:FA:113:MET:HE1 | 1.74 | 0.69 |
| 3:BB:307:MET:HE2 | 3:BC:24:MET:HE1 | 1.75 | 0.69 |
| 3:BE:3:ILE:HD13 | 4:CA:20:ASN:HD22 | 1.57 | 0.69 |
| 3:BL:103:SER:HB3 | 3:BL:106:ASP:HB2 | 1.74 | 0.69 |
| 4:CJ:337:SER:OG | 4:CJ:341:ASN:ND2 | 2.26 | 0.69 |
| 5:DK:159:SER:H | 5:DK:267:GLN:HE21 | 1.41 | 0.69 |
| 3:BJ:230:ASP:OD2 | 3:BJ:234:ARG:NH1 | 2.26 | 0.68 |
| 4:CJ:134:ILE:HG23 | 4:CJ:426:VAL:HG11 | 1.75 | 0.68 |
| 5:EF:125:PRO:HG2 | 5:EF:309:GLN:HG3 | 1.74 | 0.68 |
| 5:FG:61:THR:O | 5:FG:364:ASN:ND2 | 2.26 | 0.68 |
| 1:AA:120:GLN:NE2 | 1:AA:124:THR:OG1 | 2.25 | 0.68 |
| 1:AA:40:ASN:HB3 | 1:AA:415:LEU:HD21 | 1.75 | 0.68 |
| 1:AB:85:SER:HB3 | 1:AB:251:THR:HB | 1.75 | 0.68 |
| 4:CF:145:LYS:HE3 | 4:CF:422:VAL:HA | 1.76 | 0.68 |
| 5:FF:145:ALA:HB2 | 5:FF:285:PRO:HD3 | 1.76 | 0.68 |
| 5:FG:125:PRO:HG2 | 5:FG:309:GLN:HB2 | 1.76 | 0.68 |
| 3:BB:133:ARG:NH1 | 4:CK:125:GLU:OE2 | 2.27 | 0.68 |
| 4:CF:141:VAL:O | 4:CF:145:LYS:HG2 | 1.93 | 0.68 |
| 4:CK:174:LYS:NZ | 4:CK:243:GLN:OE1 | 2.27 | 0.68 |
| 3:BG:35:ARG:HB3 | 3:BG:281:VAL:HB | 1.76 | 0.68 |
| 3:BL:244:LEU:HD23 | 3:BL:247:ARG:HH12 | 1.59 | 0.68 |
| 5:EF:166:LYS:HG3 | 5:EF:168:PRO:HD2 | 1.76 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BB:118:ARG:HG2 | 3:BB:148:GLN:HE22 | 1.59 | 0.68 |
| 4:CA:331:GLY:HA2 | 4:CA:423:ASP:HB2 | 1.76 | 0.68 |
| 4:CH:88:ARG:HE | 4:CH:492:LEU:HD21 | 1.59 | 0.68 |
| 5:DK:49:LEU:HB3 | 5:EK:64:THR:HG22 | 1.75 | 0.68 |
| 5:GC:164:PRO:HG2 | 5:GC:200:VAL:HG13 | 1.75 | 0.68 |
| 4:CF:365:ILE:HD11 | 4:CF:372:TRP:HB3 | 1.74 | 0.68 |
| 5:EE:251:ASN:ND2 | 5:FA:159:SER:O | 2.26 | 0.68 |
| 5:GG:54:ALA:HB1 | 5:GH:110:MET:HE3 | 1.76 | 0.68 |
| 5:GJ:68:THR:HG21 | 5:GJ:360:LEU:HD12 | 1.74 | 0.68 |
| 1:AA:127:THR:HA | 1:AA:151:THR:HB | 1.76 | 0.68 |
| 1:AD:328:GLN:HA | 1:AD:338:PHE:CD2 | 2.28 | 0.68 |
| 4:CB:124:ALA:O | 4:CB:130:ARG:NH2 | 2.27 | 0.68 |
| 5:DG:177:TYR:HA | 5:DG:200:VAL:HG12 | 1.74 | 0.68 |
| 1:AD:170:SER:HB3 | 1:AE:246:ALA:HB1 | 1.76 | 0.67 |
| 1:AD:369:ASN:O | 1:AD:369:ASN:ND2 | 2.27 | 0.67 |
| 4:CA:335:VAL:HG22 | 4:CA:414:LEU:HG | 1.76 | 0.67 |
| 4:CA:435:ALA:O | 4:CA:455:ASN:ND2 | 2.27 | 0.67 |
| 3:BC:165:ASP:HB2 | 3:BC:168:ARG:HB2 | 1.75 | 0.67 |
| 4:CH:299:GLY:HA2 | 4:CH:421:ILE:HD11 | 1.75 | 0.67 |
| 4:CJ:36:ARG:HE | 4:CJ:66:GLU:HG3 | 1.59 | 0.67 |
| 3:BJ:93:LYS:HZ1 | 3:BJ:113:ASP:HB3 | 1.59 | 0.67 |
| 5:DJ:391:GLN:HA | 5:DJ:394:ILE:HB | 1.76 | 0.67 |
| 4:CH:437:ALA:HA | 4:CH:452:ASP:HB2 | 1.75 | 0.67 |
| 5:EJ:94:SER:HB2 | 5:EJ:332:VAL:HG12 | 1.76 | 0.67 |
| 2:AC:283:TYR:HE2 | 2:AC:354:LYS:HZ1 | 1.42 | 0.67 |
| 5:DA:143:MET:HE1 | 5:DA:307:GLN:HB2 | 1.74 | 0.67 |
| 3:BB:220:VAL:HG12 | 3:BB:224:LYS:HE3 | 1.77 | 0.67 |
| 4:CA:75:LEU:HD12 | 4:CA:79:GLN:HE22 | 1.60 | 0.67 |
| 1:AD:238:ARG:HG3 | 1:AD:243:VAL:HG23 | 1.77 | 0.67 |
| 4:CG:127:PRO:HA | 4:CG:130:ARG:HG3 | 1.74 | 0.67 |
| 4:CJ:312:GLN:HA | 4:CJ:315:LYS:HD2 | 1.77 | 0.67 |
| 5:DD:94:SER:HB2 | 5:DD:332:VAL:HG12 | 1.76 | 0.67 |
| 5:EB:49:LEU:HD13 | 5:FB:64:THR:HG22 | 1.77 | 0.67 |
| 5:EG:108:VAL:HG12 | 5:EG:114:GLN:HA | 1.76 | 0.67 |
| 3:BD:179:ILE:HD13 | 3:BD:246:VAL:HG21 | 1.76 | 0.67 |
| 5:DB:43:ALA:HB2 | 5:DB:49:LEU:HD11 | 1.77 | 0.67 |
| 5:EC:100:LYS:HE3 | 5:EC:110:MET:HA | 1.75 | 0.67 |
| 5:DK:143:MET:SD | 5:DK:309:GLN:NE2 | 2.68 | 0.67 |
| 5:GG:125:PRO:HG2 | 5:GG:309:GLN:HB2 | 1.77 | 0.67 |
| 1:AB:121:LEU:HB3 | 1:AB:156:ILE:HG22 | 1.77 | 0.67 |
| 3:BK:36:VAL:HG23 | 3:BK:41:ASP:HB2 | 1.76 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DE:189:GLN:HE21 | 5:EA:269:ASN:HD21 | 1.43 | 0.67 |
| 5:DG:153:MET:HE2 | 5:DG:155:ILE:HD11 | 1.77 | 0.67 |
| 3:BG:234:ARG:HA | 3:BG:237:LYS:HE2 | 1.77 | 0.66 |
| 5:GF:83:ARG:HG3 | 5:GF:93:TYR:HE1 | 1.59 | 0.66 |
| 3:BH:288:SER:HB3 | 3:BI:13:MET:HE3 | 1.76 | 0.66 |
| 4:CB:112:SER:OG | 4:CB:136:LYS:NZ | 2.25 | 0.66 |
| 4:CD:307:ASP:HB3 | 4:CD:355:SER:HB3 | 1.77 | 0.66 |
| 5:GC:61:THR:HB | 5:GC:364:ASN:HD21 | 1.60 | 0.66 |
| 5:DF:361:GLU:OE1 | 5:DF:361:GLU:N | 2.28 | 0.66 |
| 5:DH:145:ALA:HB2 | 5:DH:285:PRO:HD3 | 1.77 | 0.66 |
| 5:FK:119:PRO:O | 5:FK:128:GLN:N | 2.25 | 0.66 |
| 5:EB:179:LYS:HD2 | 5:EB:273:ASN:HB3 | 1.77 | 0.66 |
| 5:GJ:94:SER:HB2 | 5:GJ:332:VAL:HA | 1.77 | 0.66 |
| 1:AA:106:GLN:HG3 | 1:AA:222:VAL:HB | 1.78 | 0.66 |
| 4:CH:220:GLN:HB3 | 4:CH:224:THR:HB | 1.77 | 0.66 |
| 1:AD:229:LEU:HD22 | 1:AD:243:VAL:HG21 | 1.77 | 0.66 |
| 4:CB:220:GLN:HG2 | 4:CB:221:ASP:H | 1.60 | 0.66 |
| 5:ED:157:LEU:HD21 | 5:ED:199:PHE:HD2 | 1.61 | 0.66 |
| 5:FA:371:LEU:HA | 5:FA:374:MET:HE1 | 1.76 | 0.66 |
| 4:CA:149:GLN:NE2 | 4:CA:153:ASP:OD1 | 2.28 | 0.66 |
| 5:EC:189:GLN:NE2 | 5:FK:233:GLU:O | 2.28 | 0.66 |
| 1:AE:267:LYS:HE3 | 1:AE:370:THR:HG21 | 1.78 | 0.66 |
| 3:BH:220:VAL:HG12 | 3:BH:224:LYS:HE3 | 1.77 | 0.66 |
| 4:CJ:212:ILE:HG22 | 4:CJ:213:VAL:HG13 | 1.76 | 0.66 |
| 5:FC:161:ASP:OD2 | 5:FC:178:ASN:ND2 | 2.28 | 0.66 |
| 4:CI:144:PHE:HB3 | 4:CI:421:ILE:HD11 | 1.76 | 0.66 |
| 5:GI:100:LYS:NZ | 5:GI:109:ASN:O | 2.29 | 0.66 |
| 1:AE:238:ARG:HB3 | 1:AE:243:VAL:HG11 | 1.77 | 0.65 |
| 1:AE:331:ASN:HA | 1:AE:389:LYS:HZ1 | 1.61 | 0.65 |
| 3:BG:139:TYR:HB3 | 4:CJ:449:GLY:HA3 | 1.77 | 0.65 |
| 4:CD:331:GLY:HA3 | 4:CD:420:ALA:HA | 1.77 | 0.65 |
| 2:AC:430:ASP:OD1 | 2:AC:431:GLU:N | 2.29 | 0.65 |
| 3:BB:274:GLN:NE2 | 3:BC:71:GLN:OE1 | 2.29 | 0.65 |
| 5:DH:7:SER:OG | 5:DH:51:VAL:O | 2.14 | 0.65 |
| 5:FJ:94:SER:HB2 | 5:FJ:332:VAL:HG12 | 1.79 | 0.65 |
| 3:BC:314:GLN:NE2 | 4:CK:530:GLN:OE1 | 2.30 | 0.65 |
| 3:BK:179:ILE:HD11 | 3:BK:243:VAL:HG23 | 1.77 | 0.65 |
| 5:DH:70:ARG:HG2 | 5:DH:72:LEU:H | 1.61 | 0.65 |
| 5:EC:266:MET:HE2 | 5:EC:268:GLN:HG3 | 1.77 | 0.65 |
| 1:AD:447:MET:HE3 | 3:BM:303:THR:HB | 1.77 | 0.65 |
| 3:BI:36:VAL:HG23 | 3:BI:41:ASP:HB2 | 1.78 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CG:88:ARG:HD3 | 4:CG:492:LEU:HD11 | 1.76 | 0.65 |
| 4:CH:65:ARG:NH2 | 4:CH:200:ASP:OD1 | 2.29 | 0.65 |
| 5:DF:230:LYS:HB2 | 5:DF:238:GLU:HB2 | 1.78 | 0.65 |
| 5:ED:189:GLN:NE2 | 5:FB:233:GLU:O | 2.29 | 0.65 |
| 1:AD:325:ILE:O | 1:AD:328:GLN:HG3 | 1.96 | 0.65 |
| 1:AE:436:TYR:HA | 1:AE:439:GLN:HG3 | 1.79 | 0.65 |
| 3:BI:54:GLN:HB2 | 4:CF:475:ASN:HD22 | 1.60 | 0.65 |
| 3:BK:30:MET:HE2 | 3:BK:286:VAL:HG23 | 1.78 | 0.65 |
| 4:CC:130:ARG:HD2 | 4:CC:431:GLU:HB3 | 1.76 | 0.65 |
| 5:GA:145:ALA:HB2 | 5:GA:285:PRO:HD3 | 1.78 | 0.65 |
| 3:BK:161:THR:O | 4:CD:453:ASN:ND2 | 2.30 | 0.65 |
| 3:BK:313:PHE:HA | 3:BK:316:ASN:HB2 | 1.78 | 0.65 |
| 4:CF:229:MET:HE3 | 4:CF:235:LEU:HD11 | 1.77 | 0.65 |
| 5:GD:127:ILE:HD13 | 5:GD:313:GLN:HB2 | 1.77 | 0.65 |
| 2:AC:280:VAL:HG23 | 2:AC:355:LEU:HD12 | 1.78 | 0.65 |
| 3:BH:215:VAL:HB | 3:BH:222:LYS:HG2 | 1.77 | 0.65 |
| 4:CG:65:ARG:NH1 | 4:CG:200:ASP:OD1 | 2.28 | 0.65 |
| 1:AB:121:LEU:HA | 3:BL:106:ASP:HB3 | 1.78 | 0.65 |
| 3:BA:28:GLU:OE1 | 3:BK:11:GLN:NE2 | 2.29 | 0.65 |
| 4:CH:186:MET:SD | 5:DG:78:GLN:NE2 | 2.58 | 0.65 |
| 5:DF:101:LEU:HD11 | 5:DF:138:ILE:HD11 | 1.79 | 0.65 |
| 5:FE:61:THR:HB | 5:FE:364:ASN:HD21 | 1.60 | 0.65 |
| 1:AD:135:GLN:HB3 | 1:AD:138:ARG:HG2 | 1.79 | 0.65 |
| 3:BB:174:HIS:NE2 | 3:BB:249:GLU:OE1 | 2.30 | 0.65 |
| 3:BE:168:ARG:HH12 | 4:CA:138:GLU:HB3 | 1.62 | 0.65 |
| 3:BI:304:PHE:O | 3:BI:305:THR:OG1 | 2.13 | 0.65 |
| 4:CF:553:ARG:NH2 | 5:DG:378:GLN:OE1 | 2.30 | 0.65 |
| 5:DA:177:TYR:HA | 5:DA:200:VAL:HG22 | 1.77 | 0.65 |
| 5:DE:177:TYR:HA | 5:DE:200:VAL:HG12 | 1.79 | 0.65 |
| 5:FC:25:ASN:HD21 | 5:FK:40:ASP:HB3 | 1.62 | 0.65 |
| 5:GC:149:THR:OG1 | 5:GC:281:ASN:ND2 | 2.29 | 0.65 |
| 2:AC:66:LYS:NZ | 2:AC:67:ALA:O | 2.28 | 0.64 |
| 4:CJ:169:ILE:HD11 | 4:CJ:213:VAL:HG11 | 1.78 | 0.64 |
| 1:AD:121:LEU:HD13 | 1:AD:203:LEU:HD22 | 1.80 | 0.64 |
| 3:BC:219:ASN:HA | 3:BC:222:LYS:HE2 | 1.79 | 0.64 |
| 3:BI:190:GLU:OE1 | 3:BI:234:ARG:NH1 | 2.30 | 0.64 |
| 5:DE:278:THR:HG22 | 5:DE:280:GLN:HE22 | 1.60 | 0.64 |
| 5:EE:180:LYS:NZ | 5:EE:181:GLY:O | 2.29 | 0.64 |
| 5:EI:65:THR:HB | 5:EI:359:ALA:HB1 | 1.80 | 0.64 |
| 1:AE:133:ILE:HG12 | 1:AE:195:ILE:HG12 | 1.79 | 0.64 |
| 3:BI:168:ARG:HH21 | 3:BI:256:GLU:HG2 | 1.62 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DI:337:GLN:NE2 | 5:EI:308:GLU:OE2 | 2.30 | 0.64 |
| 2:AC:135:GLN:HB2 | 2:AC:193:MET:HG2 | 1.78 | 0.64 |
| 1:AD:377:LEU:HD12 | 1:AD:386:ILE:HD11 | 1.80 | 0.64 |
| 3:BC:249:GLU:OE2 | 3:BC:253:GLN:NE2 | 2.31 | 0.64 |
| 4:CH:290:ASP:OD1 | 4:CH:291:LEU:N | 2.30 | 0.64 |
| 4:CK:145:LYS:NZ | 4:CK:424:MET:SD | 2.70 | 0.64 |
| 5:DA:246:THR:HG22 | 5:DA:257:THR:HG22 | 1.77 | 0.64 |
| 1:AD:385:GLY:O | 1:AD:389:LYS:N | 2.30 | 0.64 |
| 1:AE:447:MET:HE3 | 3:BI:291:VAL:HG11 | 1.80 | 0.64 |
| 4:CD:273:LYS:HG3 | 4:CD:274:LEU:HD12 | 1.78 | 0.64 |
| 5:DK:161:ASP:OD1 | 5:DK:178:ASN:ND2 | 2.30 | 0.64 |
| 5:EJ:284:LYS:O | 5:EJ:305:ASN:ND2 | 2.30 | 0.64 |
| 4:CJ:197:ASP:OD1 | 4:CJ:198:LEU:N | 2.31 | 0.64 |
| 5:DD:321:ASN:OD1 | 5:DD:324:GLY:N | 2.30 | 0.64 |
| 5:DK:158:ASN:HB3 | 5:DK:161:ASP:HB2 | 1.78 | 0.64 |
| 5:FJ:31:PHE:O | 5:FJ:364:ASN:ND2 | 2.31 | 0.64 |
| 4:CD:186:MET:O | 4:CD:186:MET:HE3 | 1.98 | 0.64 |
| 4:CD:437:ALA:HA | 4:CD:452:ASP:HB3 | 1.80 | 0.64 |
| 5:DI:35:THR:HG1 | 5:DI:57:THR:HG1 | 1.44 | 0.64 |
| 5:FA:153:MET:HE1 | 5:FA:197:VAL:HG21 | 1.79 | 0.64 |
| 5:GE:148:THR:HB | 5:GE:185:VAL:HG13 | 1.79 | 0.64 |
| 1:AB:54:LEU:HB3 | 1:AB:398:LEU:HD11 | 1.80 | 0.64 |
| 3:BJ:164:VAL:HG11 | 3:BJ:170:MET:HE2 | 1.80 | 0.64 |
| 3:BL:38:ASN:ND2 | 4:CA:97:ASN:OD1 | 2.31 | 0.64 |
| 4:CI:310:ASN:ND2 | 4:CI:328:PHE:O | 2.29 | 0.64 |
| 5:DC:287:ASP:OD1 | 5:DC:288:LEU:N | 2.29 | 0.64 |
| 5:FA:178:ASN:HD21 | 5:FA:207:TRP:HZ3 | 1.46 | 0.64 |
| 5:DA:284:LYS:O | 5:DA:305:ASN:ND2 | 2.30 | 0.64 |
| 5:GC:94:SER:HB2 | 5:GC:332:VAL:HG12 | 1.78 | 0.64 |
| 3:BI:139:TYR:CZ | 4:CF:451:SER:HB3 | 2.33 | 0.64 |
| 3:BL:104:ASP:HB2 | 3:BL:216:GLU:HB3 | 1.80 | 0.64 |
| 4:CI:376:ARG:NH2 | 4:CI:396:ASP:OD2 | 2.31 | 0.64 |
| 5:DK:164:PRO:HG3 | 5:DK:200:VAL:HG13 | 1.80 | 0.64 |
| 3:BD:314:GLN:HB2 | 3:BD:317:ARG:HE | 1.63 | 0.63 |
| 4:CC:36:ARG:HE | 4:CC:66:GLU:HG3 | 1.63 | 0.63 |
| 4:CD:127:PRO:HA | 4:CD:130:ARG:HD3 | 1.80 | 0.63 |
| 4:CE:376:ARG:NH2 | 4:CE:396:ASP:OD2 | 2.31 | 0.63 |
| 4:CF:121:VAL:HA | 4:CF:436:MET:HE1 | 1.80 | 0.63 |
| 5:FB:154:GLN:HB3 | 5:FB:276:VAL:HB | 1.80 | 0.63 |
| 5:FH:152:SER:HB3 | 5:FH:279:ASN:HB2 | 1.80 | 0.63 |
| 5:GC:153:MET:HE1 | 5:GC:197:VAL:HG21 | 1.80 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BL:163:GLN:HE21 | 4:CA:460:LEU:HD23 | 1.63 | 0.63 |
| 5:DA:397:THR:HG21 | 5:DE:382:GLN:HG2 | 1.80 | 0.63 |
| 5:EI:7:SER:OG | 5:EI:51:VAL:O | 2.16 | 0.63 |
| 5:GI:80:GLY:HA3 | 5:GI:316:LEU:HD23 | 1.80 | 0.63 |
| 4:CC:107:SER:O | 4:CC:111:GLN:HG2 | 1.98 | 0.63 |
| 5:DD:235:GLY:HA2 | 5:DD:267:GLN:HB3 | 1.78 | 0.63 |
| 5:DI:235:GLY:HA2 | 5:DI:267:GLN:HG3 | 1.79 | 0.63 |
| 5:FF:399:VAL:O | 5:GE:386:GLN:NE2 | 2.31 | 0.63 |
| 5:GB:187:ASP:OD2 | 5:GB:191:ASN:ND2 | 2.32 | 0.63 |
| 5:GB:401:LEU:HD11 | 5:GD:389:LYS:HB2 | 1.81 | 0.63 |
| 5:GD:61:THR:OG1 | 5:GD:364:ASN:OD1 | 2.16 | 0.63 |
| 1:AD:186:ASN:HB3 | 1:AD:191:ASN:HB3 | 1.81 | 0.63 |
| 4:CE:130:ARG:NH1 | 4:CE:431:GLU:O | 2.31 | 0.63 |
| 5:DA:155:ILE:HD12 | 5:DA:275:ILE:HG12 | 1.80 | 0.63 |
| 5:DC:177:TYR:HA | 5:DC:200:VAL:HG12 | 1.80 | 0.63 |
| 5:DK:216:ASP:HA | 5:DK:250:ILE:HD11 | 1.81 | 0.63 |
| 5:ED:100:LYS:HE3 | 5:ED:110:MET:HA | 1.78 | 0.63 |
| 5:EH:263:LEU:HD12 | 5:EH:264:ASN:H | 1.64 | 0.63 |
| 4:CF:317:TYR:HE1 | 4:CF:323:LYS:HD2 | 1.63 | 0.63 |
| 4:CH:185:ARG:NH2 | 5:DG:350:GLY:O | 2.31 | 0.63 |
| 5:FK:402:ARG:NH2 | 5:GK:378:GLN:OE1 | 2.32 | 0.63 |
| 4:CH:359:GLN:OE1 | 4:CH:376:ARG:NH1 | 2.32 | 0.63 |
| 5:DJ:336:THR:HG23 | 5:DJ:338:ALA:H | 1.63 | 0.63 |
| 5:EC:145:ALA:HB2 | 5:EC:285:PRO:HD3 | 1.81 | 0.63 |
| 1:AB:341:MET:HB3 | 1:AB:346:ILE:HB | 1.79 | 0.63 |
| 4:CF:393:LEU:HD13 | 4:CF:402:VAL:HG21 | 1.79 | 0.63 |
| 5:EA:266:MET:HE3 | 5:EA:268:GLN:HG3 | 1.79 | 0.63 |
| 5:EC:195:MET:HE2 | 5:EC:211:THR:HB | 1.80 | 0.63 |
| 5:ED:189:GLN:OE1 | 5:FB:267:GLN:NE2 | 2.32 | 0.63 |
| 3:BL:260:LEU:HD23 | 3:BL:263:LEU:HD21 | 1.81 | 0.63 |
| 4:CG:333:PRO:HB3 | 4:CG:416:PRO:HA | 1.80 | 0.63 |
| 4:CG:457:GLN:NE2 | 4:CG:461:ASP:OD2 | 2.32 | 0.63 |
| 5:DB:189:GLN:NE2 | 5:DC:267:GLN:O | 2.32 | 0.63 |
| 1:AB:26:GLU:HG3 | 1:AB:429:ILE:HG12 | 1.80 | 0.62 |
| 4:CH:29:TYR:HB2 | 4:CH:516:VAL:HG11 | 1.81 | 0.62 |
| 4:CK:484:ASP:OD1 | 4:CK:485:VAL:N | 2.32 | 0.62 |
| 5:FF:211:THR:HG21 | 5:FF:245:ILE:HD13 | 1.80 | 0.62 |
| 5:GF:166:LYS:HG2 | 5:GF:168:PRO:HD2 | 1.81 | 0.62 |
| 1:AA:47:TYR:HE1 | 1:AA:404:ILE:HB | 1.64 | 0.62 |
| 1:AA:340:THR:OG1 | 1:AA:343:GLU:OE1 | 2.17 | 0.62 |
| 4:CI:258:VAL:HG11 | 4:CI:280:LEU:HD21 | 1.81 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:438:SER:OG | 4:CJ:454:ARG:NH1 | 2.27 | 0.62 |
| 5:FC:145:ALA:HB2 | 5:FC:285:PRO:HD3 | 1.81 | 0.62 |
| 1:AD:329:PHE:CD1 | 3:BG:92:GLU:HG3 | 2.35 | 0.62 |
| 1:AD:397:TYR:HA | 1:AD:402:GLY:HA3 | 1.80 | 0.62 |
| 4:CC:547:ASP:OD2 | 4:CG:553:ARG:NH2 | 2.31 | 0.62 |
| 4:CI:216:GLU:OE2 | 4:CI:228:THR:OG1 | 2.18 | 0.62 |
| 5:DJ:190:GLY:O | 5:DJ:284:LYS:NZ | 2.30 | 0.62 |
| 5:ED:185:VAL:HG22 | 5:ED:195:MET:HE1 | 1.81 | 0.62 |
| 2:AC:321:ILE:HA | 2:AC:397:TYR:CE2 | 2.33 | 0.62 |
| 4:CA:70:PHE:HE1 | 4:CJ:161:ALA:HB2 | 1.64 | 0.62 |
| 4:CH:127:PRO:O | 4:CH:131:GLN:NE2 | 2.32 | 0.62 |
| 5:DA:231:PHE:CD2 | 5:DA:267:GLN:HG2 | 2.34 | 0.62 |
| 1:AD:126:VAL:O | 1:AD:129:ARG:NH2 | 2.32 | 0.62 |
| 1:AD:128:SER:HA | 1:AD:146:LEU:O | 1.98 | 0.62 |
| 4:CH:330:ILE:HD12 | 4:CH:424:MET:HB2 | 1.81 | 0.62 |
| 5:EA:195:MET:HE1 | 5:EA:247:THR:HG22 | 1.81 | 0.62 |
| 5:EC:94:SER:HB2 | 5:EC:332:VAL:HG12 | 1.81 | 0.62 |
| 1:AA:133:ILE:HG23 | 1:AA:195:ILE:HG12 | 1.82 | 0.62 |
| 5:EG:61:THR:O | 5:EG:364:ASN:ND2 | 2.32 | 0.62 |
| 3:BH:183:ILE:HG12 | 3:BH:198:LYS:HE2 | 1.81 | 0.62 |
| 5:GF:109:ASN:OD1 | 5:GF:113:MET:N | 2.30 | 0.62 |
| 1:AA:82:LEU:HD11 | 1:AA:252:LEU:HG | 1.79 | 0.62 |
| 1:AB:303:GLU:HG3 | 3:BB:67:THR:HG21 | 1.81 | 0.62 |
| 2:AC:74:VAL:O | 2:AC:267:LYS:NZ | 2.32 | 0.62 |
| 2:AC:281:ASP:OD1 | 2:AC:282:ALA:N | 2.32 | 0.62 |
| 3:BG:165:ASP:OD1 | 3:BG:166:SER:N | 2.33 | 0.62 |
| 4:CG:339:SER:O | 4:CG:344:LYS:NZ | 2.32 | 0.62 |
| 5:DF:292:GLN:OE1 | 5:DF:302:ASN:ND2 | 2.32 | 0.62 |
| 5:FB:49:LEU:HB3 | 5:GB:64:THR:HG22 | 1.82 | 0.62 |
| 5:FF:83:ARG:HD2 | 5:FF:344:LEU:HD21 | 1.81 | 0.62 |
| 5:GB:74:VAL:HG12 | 5:GB:357:ASN:HA | 1.80 | 0.62 |
| 1:AA:67:ALA:HB2 | 1:AA:378:VAL:HG11 | 1.82 | 0.62 |
| 3:BG:24:MET:HE1 | 3:BL:307:MET:HE1 | 1.82 | 0.62 |
| 5:DD:387:THR:HA | 5:EA:374:MET:HE1 | 1.80 | 0.62 |
| 5:DH:388:ILE:O | 5:DH:391:GLN:NE2 | 2.32 | 0.62 |
| 5:DJ:357:ASN:OD1 | 5:DJ:358:GLY:N | 2.33 | 0.62 |
| 1:AB:255:THR:HG23 | 1:AB:256:LYS:HG3 | 1.82 | 0.61 |
| 3:BH:280:ASP:OD2 | 3:BH:281:VAL:N | 2.33 | 0.61 |
| 4:CD:357:LYS:NZ | 4:CD:396:ASP:OD1 | 2.33 | 0.61 |
| 5:DB:191:ASN:OD1 | 5:DB:192:ALA:N | 2.33 | 0.61 |
| 5:DE:244:ASN:OD1 | 5:DE:257:THR:OG1 | 2.17 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EA:108:VAL:HA | 5:EA:114:GLN:HA | 1.82 | 0.61 |
| 5:EA:159:SER:OG | 5:EA:269:ASN:ND2 | 2.32 | 0.61 |
| 5:EJ:149:THR:H | 5:EJ:281:ASN:HD21 | 1.48 | 0.61 |
| 5:FC:42:PHE:HA | 5:FC:48:GLY:HA2 | 1.82 | 0.61 |
| 5:FK:61:THR:O | 5:FK:364:ASN:ND2 | 2.33 | 0.61 |
| 5:GF:187:ASP:HA | 5:GF:256:ALA:HB2 | 1.82 | 0.61 |
| 3:BL:4:SER:H | 3:BL:7:MET:HE3 | 1.65 | 0.61 |
| 4:CI:365:ILE:HG22 | 4:CI:374:VAL:HG22 | 1.83 | 0.61 |
| 5:DA:203:LYS:HB3 | 5:DA:206:GLU:HB2 | 1.81 | 0.61 |
| 5:EE:148:THR:HG23 | 5:EE:281:ASN:H | 1.63 | 0.61 |
| 5:GH:371:LEU:HD23 | 5:GH:374:MET:HE3 | 1.81 | 0.61 |
| 4:CF:462:LEU:HA | 4:CF:465:SER:HB3 | 1.81 | 0.61 |
| 5:DC:395:LEU:HD11 | 5:EC:367:LEU:HD23 | 1.82 | 0.61 |
| 5:EB:94:SER:HB2 | 5:EB:332:VAL:HG12 | 1.82 | 0.61 |
| 5:EB:251:ASN:ND2 | 5:EC:159:SER:O | 2.34 | 0.61 |
| 5:EF:52:LYS:NZ | 5:EF:53:VAL:O | 2.32 | 0.61 |
| 3:BK:32:THR:HG23 | 3:BK:34:LYS:H | 1.65 | 0.61 |
| 3:BL:188:VAL:O | 3:BL:234:ARG:NH2 | 2.33 | 0.61 |
| 5:DC:21:ASN:OD1 | 5:DC:25:ASN:ND2 | 2.32 | 0.61 |
| 1:AD:340:THR:HB | 1:AD:344:ILE:HB | 1.83 | 0.61 |
| 1:AE:331:ASN:ND2 | 1:AE:376:LEU:O | 2.34 | 0.61 |
| 1:AE:439:GLN:HA | 1:AE:442:GLN:CD | 2.26 | 0.61 |
| 4:CD:76:ARG:NH2 | 4:CD:203:ASP:OD1 | 2.33 | 0.61 |
| 4:CD:473:THR:OG1 | 4:CD:475:ASN:OD1 | 2.18 | 0.61 |
| 5:GA:94:SER:HB2 | 5:GA:332:VAL:HG12 | 1.81 | 0.61 |
| 5:GG:42:PHE:H | 5:GH:329:GLY:HA2 | 1.65 | 0.61 |
| 1:AD:419:THR:HA | 1:AD:422:TYR:CE1 | 2.34 | 0.61 |
| 3:BD:5:THR:HG23 | 3:BD:8:MET:HE2 | 1.82 | 0.61 |
| 3:BG:164:VAL:HG21 | 3:BG:170:MET:HE3 | 1.83 | 0.61 |
| 5:EB:61:THR:HB | 5:EB:364:ASN:HD21 | 1.65 | 0.61 |
| 5:EB:191:ASN:HD22 | 5:EB:250:ILE:HG23 | 1.65 | 0.61 |
| 5:GG:198:TYR:HB2 | 5:GG:210:TYR:HB2 | 1.81 | 0.61 |
| 4:CG:438:SER:HB2 | 4:CG:455:ASN:HB2 | 1.82 | 0.61 |
| 4:CB:73:ASN:OD1 | 4:CB:76:ARG:NH2 | 2.33 | 0.61 |
| 4:CB:362:ASP:H | 4:CB:377:THR:HG22 | 1.65 | 0.61 |
| 3:BA:52:LEU:HD23 | 3:BA:275:MET:HE2 | 1.82 | 0.61 |
| 4:CF:333:PRO:HB3 | 4:CF:416:PRO:HA | 1.82 | 0.61 |
| 5:FK:34:GLY:HA2 | 5:FK:58:GLN:HA | 1.83 | 0.61 |
| 5:GA:241:GLY:HA2 | 5:GA:262:PHE:HB2 | 1.82 | 0.61 |
| 5:GB:127:ILE:HD13 | 5:GB:313:GLN:HB2 | 1.83 | 0.61 |
| 1:AE:94:THR:HA | 1:AE:263:VAL:O | 2.01 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BB:197:GLU:HG3 | 3:BB:199:ASN:H | 1.66 | 0.61 |
| 4:CE:80:ASN:HD21 | 4:CE:277:THR:HB | 1.66 | 0.61 |
| 4:CI:188:GLY:O | 5:DJ:302:ASN:ND2 | 2.33 | 0.61 |
| 5:FH:76:ILE:HB | 5:FH:95:ARG:HH21 | 1.66 | 0.61 |
| 1:AE:443:LEU:HD12 | 3:BI:284:ASN:HA | 1.83 | 0.60 |
| 3:BB:139:TYR:HB3 | 4:CK:448:THR:HB | 1.82 | 0.60 |
| 4:CA:197:ASP:OD1 | 4:CA:198:LEU:N | 2.33 | 0.60 |
| 4:CI:372:TRP:CE2 | 4:CI:393:LEU:HD11 | 2.36 | 0.60 |
| 4:CJ:329:SER:OG | 4:CJ:423:ASP:O | 2.18 | 0.60 |
| 5:DG:41:MET:HB2 | 5:DG:49:LEU:HB2 | 1.83 | 0.60 |
| 5:EG:196:ASN:ND2 | 5:EG:214:SER:OG | 2.34 | 0.60 |
| 5:EJ:109:ASN:OD1 | 5:EJ:113:MET:N | 2.33 | 0.60 |
| 1:AD:326:ARG:O | 1:AD:329:PHE:HB3 | 2.01 | 0.60 |
| 3:BH:1:MET:SD | 3:BH:2:ARG:N | 2.74 | 0.60 |
| 5:FA:284:LYS:HG2 | 5:FA:285:PRO:HD2 | 1.83 | 0.60 |
| 5:FG:32:LYS:HB2 | 5:FG:58:GLN:HE21 | 1.66 | 0.60 |
| 3:BD:140:LYS:NZ | 4:CG:445:ASP:O | 2.35 | 0.60 |
| 5:DI:163:VAL:HG12 | 5:DI:202:THR:HA | 1.83 | 0.60 |
| 5:FH:94:SER:HB3 | 5:FH:332:VAL:HG12 | 1.83 | 0.60 |
| 1:AA:171:ILE:HG13 | 1:AB:248:GLN:HG3 | 1.83 | 0.60 |
| 1:AE:98:ASN:OD1 | 1:AE:260:ASP:N | 2.32 | 0.60 |
| 3:BE:211:LEU:HD21 | 3:BE:229:ILE:HD11 | 1.83 | 0.60 |
| 3:BI:144:ALA:O | 3:BI:154:HIS:NE2 | 2.34 | 0.60 |
| 4:CC:466:ASN:HD21 | 4:CC:471:ASN:HA | 1.67 | 0.60 |
| 4:CD:141:VAL:HG12 | 4:CD:424:MET:HE1 | 1.83 | 0.60 |
| 5:FA:149:THR:OG1 | 5:FA:281:ASN:ND2 | 2.30 | 0.60 |
| 5:GD:4:GLN:NE2 | 5:GD:48:GLY:O | 2.28 | 0.60 |
| 3:BA:184:THR:HG22 | 3:BA:186:ASN:H | 1.66 | 0.60 |
| 3:BD:203:MET:HE2 | 3:BD:232:THR:HA | 1.83 | 0.60 |
| 3:BI:302:LYS:HE2 | 3:BN:317:ARG:NH2 | 2.16 | 0.60 |
| 5:DF:76:ILE:HD12 | 5:DF:95:ARG:HG3 | 1.82 | 0.60 |
| 5:EK:83:ARG:HH11 | 5:EK:116:THR:HG21 | 1.66 | 0.60 |
| 5:EK:123:THR:HB | 5:EK:124:PRO:HD3 | 1.83 | 0.60 |
| 4:CI:438:SER:HB3 | 4:CI:454:ARG:HH11 | 1.66 | 0.60 |
| 5:DH:203:LYS:NZ | 5:DH:204:ASP:O | 2.34 | 0.60 |
| 5:FD:61:THR:OG1 | 5:FD:364:ASN:ND2 | 2.29 | 0.60 |
| 1:AA:97:ILE:HG23 | 1:AA:230:ASN:H | 1.67 | 0.60 |
| 2:AC:18:LEU:HD11 | 2:AC:436:TYR:HB3 | 1.84 | 0.60 |
| 1:AD:172:VAL:HG22 | 1:AE:246:ALA:HB2 | 1.84 | 0.60 |
| 3:BJ:54:GLN:OE1 | 4:CH:475:ASN:ND2 | 2.35 | 0.60 |
| 5:DG:293:ILE:O | 5:DG:357:ASN:ND2 | 2.33 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DI:232:ASN:O | 5:DI:267:GLN:NE2 | 2.35 | 0.60 |
| 5:EA:148:THR:HG21 | 5:EA:185:VAL:HB | 1.82 | 0.60 |
| 5:EH:144:ALA:HA | 5:FG:268:GLN:HE22 | 1.66 | 0.60 |
| 5:EJ:166:LYS:HG3 | 5:EJ:168:PRO:HD2 | 1.84 | 0.60 |
| 5:FG:32:LYS:NZ | 5:FG:361:GLU:OE2 | 2.35 | 0.60 |
| 5:GI:249:THR:OG1 | 5:GI:253:ALA:O | 2.19 | 0.60 |
| 5:GJ:148:THR:HB | 5:GJ:280:GLN:HE21 | 1.65 | 0.60 |
| 1:AB:449:LYS:HE3 | 3:BD:20:GLN:HG3 | 1.83 | 0.60 |
| 1:AD:380:ASP:O | 1:AD:382:LYS:NZ | 2.35 | 0.60 |
| 3:BA:82:GLN:HG3 | 3:BK:263:LEU:HD11 | 1.84 | 0.60 |
| 4:CA:148:ASP:O | 4:CA:152:ARG:HG3 | 2.01 | 0.60 |
| 5:DI:102:ASP:OD1 | 5:DI:103:GLU:N | 2.34 | 0.60 |
| 5:EJ:23:ILE:HD11 | 5:EJ:374:MET:HE1 | 1.82 | 0.60 |
| 5:GB:94:SER:HB3 | 5:GB:332:VAL:HG12 | 1.83 | 0.60 |
| 5:GH:152:SER:H | 5:GH:279:ASN:HB2 | 1.67 | 0.60 |
| 1:AD:117:THR:HA | 1:AD:153:MET:HB2 | 1.83 | 0.60 |
| 5:DD:207:TRP:O | 5:DD:229:LEU:N | 2.32 | 0.60 |
| 5:EA:149:THR:OG1 | 5:EA:281:ASN:ND2 | 2.31 | 0.60 |
| 5:FC:32:LYS:NZ | 5:FC:361:GLU:OE2 | 2.29 | 0.60 |
| 5:GK:94:SER:HB2 | 5:GK:332:VAL:HG12 | 1.84 | 0.60 |
| 1:AD:295:LYS:HG3 | 1:AD:313:LEU:HB2 | 1.82 | 0.60 |
| 3:BE:179:ILE:HG22 | 3:BE:246:VAL:HG11 | 1.84 | 0.60 |
| 4:CA:25:ASN:ND2 | 4:CA:37:GLN:O | 2.34 | 0.60 |
| 4:CB:354:ASP:OD2 | 4:CB:357:LYS:NZ | 2.26 | 0.60 |
| 5:DA:74:VAL:HG21 | 5:DA:293:ILE:HD13 | 1.84 | 0.60 |
| 5:DB:41:MET:HG3 | 5:DB:49:LEU:HB2 | 1.83 | 0.60 |
| 5:DC:102:ASP:OD1 | 5:DC:103:GLU:N | 2.35 | 0.60 |
| 5:DE:61:THR:O | 5:DE:364:ASN:ND2 | 2.35 | 0.60 |
| 5:DH:49:LEU:HD22 | 5:EH:64:THR:HG23 | 1.84 | 0.60 |
| 5:EH:125:PRO:HG2 | 5:EH:309:GLN:HG2 | 1.83 | 0.60 |
| 2:AC:326:ARG:HA | 2:AC:329:PHE:HB2 | 1.83 | 0.59 |
| 3:BL:176:GLY:HA2 | 3:BL:179:ILE:HD12 | 1.84 | 0.59 |
| 4:CK:439:GLU:HG3 | 4:CK:446:VAL:HB | 1.83 | 0.59 |
| 5:DD:195:MET:HE3 | 5:DD:211:THR:HG22 | 1.83 | 0.59 |
| 5:DF:319:PHE:HE2 | 5:DF:342:ALA:HA | 1.67 | 0.59 |
| 5:FK:109:ASN:OD1 | 5:FK:113:MET:N | 2.35 | 0.59 |
| 5:GK:145:ALA:HB2 | 5:GK:285:PRO:HD3 | 1.84 | 0.59 |
| 3:BB:118:ARG:NH2 | 3:BB:148:GLN:O | 2.35 | 0.59 |
| 4:CG:436:MET:HG3 | 4:CG:452:ASP:HB3 | 1.84 | 0.59 |
| 4:CI:484:ASP:OD1 | 4:CI:485:VAL:N | 2.35 | 0.59 |
| 5:DB:206:GLU:HG2 | 5:DB:230:LYS:HA | 1.84 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EC:197:VAL:HG22 | 5:EC:211:THR:HG22 | 1.84 | 0.59 |
| 5:GD:41:MET:HA | 5:GD:41:MET:HE3 | 1.84 | 0.59 |
| 5:GF:125:PRO:HG2 | 5:GF:309:GLN:HG3 | 1.83 | 0.59 |
| 5:GJ:84:LEU:HB3 | 5:GJ:113:MET:SD | 2.43 | 0.59 |
| 1:AD:326:ARG:NH2 | 3:BG:91:GLN:OE1 | 2.34 | 0.59 |
| 3:BA:162:GLN:OE1 | 4:CI:453:ASN:ND2 | 2.31 | 0.59 |
| 4:CA:70:PHE:CE1 | 4:CJ:161:ALA:HB2 | 2.36 | 0.59 |
| 4:CD:376:ARG:NH2 | 4:CD:396:ASP:OD2 | 2.35 | 0.59 |
| 5:DI:155:ILE:O | 5:DI:265:SER:OG | 2.19 | 0.59 |
| 3:BH:13:MET:HE2 | 4:CJ:520:GLU:HA | 1.85 | 0.59 |
| 5:DC:161:ASP:OD2 | 5:DC:178:ASN:ND2 | 2.35 | 0.59 |
| 5:EE:4:GLN:NE2 | 5:EE:48:GLY:O | 2.30 | 0.59 |
| 5:EI:321:ASN:HD21 | 5:EJ:100:LYS:HD2 | 1.66 | 0.59 |
| 5:GJ:109:ASN:ND2 | 5:GJ:111:GLN:OE1 | 2.35 | 0.59 |
| 1:AD:146:LEU:HD11 | 1:AD:156:ILE:HD13 | 1.84 | 0.59 |
| 1:AE:378:VAL:HG22 | 1:AE:381:GLY:HA2 | 1.83 | 0.59 |
| 5:DJ:254:THR:N | 5:EI:233:GLU:OE2 | 2.30 | 0.59 |
| 5:EC:32:LYS:NZ | 5:EC:361:GLU:OE2 | 2.34 | 0.59 |
| 5:FG:145:ALA:HB2 | 5:FG:285:PRO:HD3 | 1.83 | 0.59 |
| 5:GB:201:LYS:HA | 5:GB:207:TRP:CD1 | 2.38 | 0.59 |
| 1:AA:19:LEU:O | 1:AA:23:THR:OG1 | 2.15 | 0.59 |
| 1:AD:144:ILE:HD12 | 1:AD:156:ILE:HD11 | 1.85 | 0.59 |
| 3:BG:7:MET:HE3 | 4:CJ:511:GLN:HG3 | 1.84 | 0.59 |
| 3:BG:22:GLU:HB3 | 3:BG:293:GLN:NE2 | 2.17 | 0.59 |
| 3:BH:131:ASN:ND2 | 4:CB:125:GLU:OE2 | 2.35 | 0.59 |
| 4:CC:545:LEU:HD11 | 5:DA:16:LEU:HD13 | 1.85 | 0.59 |
| 5:DB:287:ASP:OD1 | 5:DB:288:LEU:N | 2.35 | 0.59 |
| 5:DI:402:ARG:NH1 | 5:DJ:392:ASP:OD2 | 2.35 | 0.59 |
| 4:CI:392:LYS:O | 4:CI:399:LYS:NZ | 2.36 | 0.59 |
| 5:DG:109:ASN:OD1 | 5:DG:113:MET:N | 2.35 | 0.59 |
| 5:DI:199:PHE:HB3 | 5:DI:209:VAL:HG22 | 1.85 | 0.59 |
| 5:EI:43:ALA:HB2 | 5:EI:49:LEU:HD11 | 1.85 | 0.59 |
| 5:EI:232:ASN:OD1 | 5:EI:236:ILE:N | 2.36 | 0.59 |
| 5:FI:246:THR:HB | 5:FI:257:THR:HG23 | 1.84 | 0.59 |
| 5:FK:373:ASN:O | 5:FK:377:ALA:N | 2.32 | 0.59 |
| 1:AD:85:SER:HB3 | 1:AD:251:THR:HB | 1.84 | 0.59 |
| 1:AD:156:ILE:O | 1:AD:160:ILE:HG13 | 2.02 | 0.59 |
| 3:BB:161:THR:O | 4:CK:453:ASN:ND2 | 2.36 | 0.59 |
| 3:BD:65:ALA:HB2 | 4:CG:118:GLN:HE21 | 1.66 | 0.59 |
| 4:CA:165:SER:O | 4:CA:169:ILE:HG13 | 2.03 | 0.59 |
| 4:CG:300:GLN:HE22 | 4:CG:468:VAL:HG13 | 1.66 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CK:186:MET:HG2 | 4:CK:195:PRO:HG3 | 1.83 | 0.59 |
| 5:EF:70:ARG:NH1 | 5:EF:99:PHE:O | 2.34 | 0.59 |
| 5:FB:109:ASN:OD1 | 5:FB:113:MET:N | 2.36 | 0.59 |
| 5:FI:32:LYS:NZ | 5:FI:61:THR:O | 2.36 | 0.59 |
| 5:FI:177:TYR:HA | 5:FI:200:VAL:HG12 | 1.85 | 0.59 |
| 3:BB:107:ARG:NH1 | 3:BB:213:THR:O | 2.36 | 0.59 |
| 4:CG:466:ASN:O | 4:CG:466:ASN:ND2 | 2.33 | 0.59 |
| 5:DI:94:SER:HB2 | 5:DI:332:VAL:HG12 | 1.84 | 0.59 |
| 5:GG:68:THR:HG21 | 5:GG:360:LEU:HD12 | 1.83 | 0.59 |
| 1:AD:397:TYR:HD1 | 1:AD:403:ILE:H | 1.51 | 0.59 |
| 3:BH:183:ILE:HG23 | 3:BH:198:LYS:HG2 | 1.85 | 0.59 |
| 3:BL:91:GLN:HA | 3:BL:94:ILE:HG12 | 1.85 | 0.59 |
| 4:CA:358:VAL:HG22 | 4:CA:398:LEU:HD11 | 1.85 | 0.59 |
| 4:CE:484:ASP:OD1 | 4:CE:485:VAL:N | 2.36 | 0.59 |
| 5:EI:125:PRO:HG3 | 5:EI:309:GLN:HG2 | 1.84 | 0.59 |
| 5:GH:232:ASN:HD21 | 5:GH:236:ILE:HB | 1.68 | 0.59 |
| 1:AD:313:LEU:HD11 | 1:AD:318:VAL:HG21 | 1.85 | 0.58 |
| 3:BL:145:PRO:HB2 | 3:BL:154:HIS:H | 1.67 | 0.58 |
| 4:CF:368:ASP:O | 4:CF:408:LYS:NZ | 2.36 | 0.58 |
| 4:CJ:220:GLN:HB3 | 4:CJ:224:THR:HB | 1.84 | 0.58 |
| 5:EG:94:SER:HB2 | 5:EG:332:VAL:HG12 | 1.85 | 0.58 |
| 5:FB:125:PRO:HG3 | 5:FB:309:GLN:HG3 | 1.85 | 0.58 |
| 5:FG:179:LYS:NZ | 5:FG:180:LYS:O | 2.35 | 0.58 |
| 5:FJ:145:ALA:HB2 | 5:FJ:285:PRO:HD3 | 1.84 | 0.58 |
| 2:AC:99:VAL:HA | 2:AC:229:LEU:HA | 1.85 | 0.58 |
| 1:AE:437:LYS:HG2 | 3:BN:295:ALA:HB2 | 1.83 | 0.58 |
| 3:BL:115:GLN:OE1 | 3:BL:118:ARG:NH2 | 2.37 | 0.58 |
| 4:CA:212:ILE:HG22 | 4:CA:213:VAL:HG23 | 1.85 | 0.58 |
| 4:CB:543:ASN:OD1 | 5:DE:379:ARG:NH2 | 2.34 | 0.58 |
| 4:CE:553:ARG:NH2 | 5:DK:390:THR:OG1 | 2.35 | 0.58 |
| 4:CH:183:ILE:HD13 | 4:CH:199:LEU:HD23 | 1.84 | 0.58 |
| 4:CI:296:ASN:HB3 | 4:CI:360:ALA:HB1 | 1.84 | 0.58 |
| 4:CJ:549:LEU:HD12 | 4:CJ:552:ILE:HD12 | 1.85 | 0.58 |
| 5:EC:235:GLY:HA3 | 5:EC:266:MET:HE1 | 1.85 | 0.58 |
| 5:ED:317:ALA:HB2 | 5:ED:344:LEU:HD23 | 1.85 | 0.58 |
| 5:EK:155:ILE:HG13 | 5:EK:179:LYS:HE3 | 1.85 | 0.58 |
| 3:BD:32:THR:HG23 | 3:BD:34:LYS:H | 1.67 | 0.58 |
| 5:EG:1:SER:N | 5:EG:4:GLN:OE1 | 2.36 | 0.58 |
| 2:AC:173:LYS:HD2 | 1:AD:238:ARG:HH12 | 1.66 | 0.58 |
| 1:AE:293:LEU:HB3 | 1:AE:312:LEU:HD21 | 1.85 | 0.58 |
| 3:BH:30:MET:HE2 | 3:BH:286:VAL:HG12 | 1.84 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BH:168:ARG:HH11 | 3:BH:260:LEU:HD11 | 1.68 | 0.58 |
| 4:CA:137:ALA:HB1 | 4:CA:328:PHE:CE1 | 2.38 | 0.58 |
| 4:CJ:547:ASP:OD1 | 5:DA:379:ARG:NH1 | 2.37 | 0.58 |
| 5:DA:153:MET:HE2 | 5:DA:183:VAL:HG23 | 1.85 | 0.58 |
| 5:EC:266:MET:HE3 | 5:EC:267:GLN:N | 2.19 | 0.58 |
| 5:EC:392:ASP:OD1 | 5:FK:379:ARG:NE | 2.30 | 0.58 |
| 5:EI:32:LYS:HD2 | 5:EI:60:PHE:HA | 1.84 | 0.58 |
| 5:FH:117:GLY:HA3 | 5:FH:136:ILE:HD11 | 1.84 | 0.58 |
| 5:GA:158:ASN:H | 5:GA:273:ASN:HD21 | 1.52 | 0.58 |
| 5:GD:182:THR:OG1 | 5:GD:194:ASP:OD1 | 2.21 | 0.58 |
| 5:GI:92:PHE:HB2 | 5:GI:113:MET:HE1 | 1.86 | 0.58 |
| 1:AD:300:GLU:OE2 | 1:AD:308:LYS:NZ | 2.31 | 0.58 |
| 3:BC:24:MET:HA | 3:BC:24:MET:HE3 | 1.85 | 0.58 |
| 4:CA:92:MET:HE3 | 4:CA:485:VAL:HG13 | 1.85 | 0.58 |
| 4:CF:49:GLY:N | 4:CF:52:GLY:O | 2.36 | 0.58 |
| 4:CK:365:ILE:HG22 | 4:CK:374:VAL:HG22 | 1.86 | 0.58 |
| 5:DI:230:LYS:HB2 | 5:DI:238:GLU:HB2 | 1.85 | 0.58 |
| 5:EA:145:ALA:HB2 | 5:EA:285:PRO:HD3 | 1.84 | 0.58 |
| 5:FD:109:ASN:ND2 | 5:FD:111:GLN:OE1 | 2.36 | 0.58 |
| 1:AB:170:SER:HB2 | 2:AC:248:GLN:HB3 | 1.86 | 0.58 |
| 2:AC:18:LEU:O | 2:AC:22:LEU:HG | 2.03 | 0.58 |
| 1:AE:105:ALA:HB2 | 1:AE:187:SER:HA | 1.85 | 0.58 |
| 4:CK:319:ALA:H | 4:CK:440:SER:HB2 | 1.69 | 0.58 |
| 4:CD:338:ASN:OD1 | 4:CD:339:SER:N | 2.36 | 0.58 |
| 4:CE:197:ASP:OD1 | 4:CE:198:LEU:N | 2.37 | 0.58 |
| 4:CH:439:GLU:HG3 | 4:CH:446:VAL:HG11 | 1.84 | 0.58 |
| 5:DC:290:SER:HB2 | 5:DC:302:ASN:HB2 | 1.85 | 0.58 |
| 5:DF:203:LYS:HG2 | 5:DF:206:GLU:HB2 | 1.84 | 0.58 |
| 5:FB:143:MET:SD | 5:FB:305:ASN:ND2 | 2.77 | 0.58 |
| 5:GJ:161:ASP:OD1 | 5:GJ:201:LYS:NZ | 2.36 | 0.58 |
| 5:GK:43:ALA:HB2 | 5:GK:49:LEU:HD11 | 1.85 | 0.58 |
| 5:GK:158:ASN:HB3 | 5:GK:161:ASP:HB2 | 1.83 | 0.58 |
| 1:AA:238:ARG:HE | 1:AA:243:VAL:HG11 | 1.68 | 0.58 |
| 4:CC:231:ASN:HD22 | 4:CC:270:ILE:HG21 | 1.68 | 0.58 |
| 4:CE:336:TYR:HD1 | 4:CE:415:LYS:HZ1 | 1.49 | 0.58 |
| 4:CJ:366:VAL:HG13 | 4:CJ:373:GLN:HB3 | 1.86 | 0.58 |
| 5:DE:100:LYS:NZ | 5:DE:110:MET:SD | 2.74 | 0.58 |
| 5:EC:123:THR:HB | 5:EC:124:PRO:HD3 | 1.84 | 0.58 |
| 5:EH:198:TYR:HB2 | 5:EH:210:TYR:HB2 | 1.86 | 0.58 |
| 5:FB:166:LYS:HG2 | 5:FB:168:PRO:HD2 | 1.86 | 0.58 |
| 4:CA:37:GLN:HG2 | 4:CA:196:ASN:HD22 | 1.67 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:415:LYS:NZ | 4:CJ:417:VAL:O | 2.25 | 0.58 |
| 5:DC:109:ASN:OD1 | 5:DC:113:MET:N | 2.31 | 0.58 |
| 5:EI:88:ASN:OD1 | 5:EI:89:GLY:N | 2.37 | 0.58 |
| 5:FE:251:ASN:ND2 | 5:GA:159:SER:O | 2.36 | 0.58 |
| 5:GG:80:GLY:O | 5:GG:95:ARG:NH1 | 2.36 | 0.58 |
| 3:BC:203:MET:HE1 | 3:BC:235:GLY:HA3 | 1.84 | 0.58 |
| 3:BG:23:TRP:HB3 | 3:BG:293:GLN:HG2 | 1.85 | 0.58 |
| 3:BK:284:ASN:OD1 | 3:BK:285:SER:N | 2.36 | 0.58 |
| 4:CD:438:SER:OG | 4:CD:452:ASP:OD2 | 2.17 | 0.58 |
| 4:CD:531:TYR:OH | 4:CI:27:ASN:O | 2.14 | 0.58 |
| 4:CF:392:LYS:HG2 | 4:CF:401:THR:HA | 1.85 | 0.58 |
| 4:CG:547:ASP:OD1 | 4:CG:548:ALA:N | 2.37 | 0.58 |
| 4:CJ:318:ASP:OD2 | 4:CJ:325:LYS:NZ | 2.37 | 0.58 |
| 5:FC:93:TYR:O | 5:FC:333:TRP:N | 2.27 | 0.58 |
| 5:FH:161:ASP:OD2 | 5:FH:178:ASN:ND2 | 2.30 | 0.58 |
| 5:GK:153:MET:HG3 | 5:GK:278:THR:HG22 | 1.86 | 0.58 |
| 5:GK:197:VAL:HG22 | 5:GK:211:THR:HG22 | 1.85 | 0.58 |
| 3:BA:215:VAL:HG12 | 3:BA:221:GLU:HB3 | 1.86 | 0.57 |
| 3:BB:171:VAL:O | 3:BB:253:GLN:NE2 | 2.34 | 0.57 |
| 3:BG:215:VAL:HG12 | 3:BG:221:GLU:HG3 | 1.86 | 0.57 |
| 4:CC:376:ARG:O | 4:CC:380:ASN:HA | 2.04 | 0.57 |
| 4:CH:393:LEU:HB2 | 4:CH:400:VAL:HB | 1.86 | 0.57 |
| 5:DC:195:MET:HE3 | 5:DC:247:THR:HG22 | 1.85 | 0.57 |
| 5:DH:41:MET:HE2 | 5:DH:52:LYS:HD2 | 1.85 | 0.57 |
| 5:FJ:387:THR:HA | 5:GK:374:MET:HE1 | 1.86 | 0.57 |
| 5:GB:209:VAL:HB | 5:GB:227:THR:HB | 1.85 | 0.57 |
| 2:AC:126:VAL:HG13 | 2:AC:129:ARG:HH11 | 1.69 | 0.57 |
| 3:BK:168:ARG:HG2 | 3:BK:260:LEU:HD11 | 1.86 | 0.57 |
| 4:CH:177:ALA:HB2 | 4:CH:241:ALA:HB2 | 1.87 | 0.57 |
| 4:CI:12:LEU:HD11 | 4:CI:539:LEU:HD11 | 1.85 | 0.57 |
| 4:CK:88:ARG:HH21 | 4:CK:492:LEU:HD21 | 1.68 | 0.57 |
| 5:EH:110:MET:N | 5:EH:110:MET:SD | 2.74 | 0.57 |
| 5:FA:109:ASN:OD1 | 5:FA:113:MET:N | 2.36 | 0.57 |
| 5:GG:300:VAL:HG22 | 5:GG:310:VAL:HG12 | 1.85 | 0.57 |
| 4:CC:206:VAL:HG23 | 4:CC:227:LEU:HD21 | 1.85 | 0.57 |
| 4:CD:346:VAL:HG21 | 4:CD:406:ALA:HA | 1.87 | 0.57 |
| 4:CF:66:GLU:O | 4:CF:514:SER:OG | 2.20 | 0.57 |
| 4:CI:437:ALA:HA | 4:CI:452:ASP:HB2 | 1.85 | 0.57 |
| 4:CJ:171:ASN:OD1 | 4:CJ:175:GLN:NE2 | 2.32 | 0.57 |
| 5:EB:61:THR:O | 5:EB:364:ASN:ND2 | 2.37 | 0.57 |
| 5:GD:84:LEU:HB3 | 5:GD:113:MET:HB3 | 1.85 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CF:549:LEU:HD12 | 4:CF:552:ILE:HD12 | 1.85 | 0.57 |
| 5:DK:268:GLN:OE1 | 5:DK:270:THR:OG1 | 2.16 | 0.57 |
| 5:EG:400:ASN:O | 5:EG:400:ASN:ND2 | 2.36 | 0.57 |
| 5:FD:94:SER:HB3 | 5:FD:332:VAL:HG12 | 1.84 | 0.57 |
| 5:FI:145:ALA:HB2 | 5:FI:285:PRO:HG3 | 1.86 | 0.57 |
| 1:AE:81:ASP:HB3 | 1:AE:256:LYS:HB3 | 1.86 | 0.57 |
| 3:BI:86:ALA:HB1 | 3:BI:121:LEU:HD21 | 1.86 | 0.57 |
| 4:CH:258:VAL:HG11 | 4:CH:280:LEU:HD21 | 1.87 | 0.57 |
| 4:CJ:358:VAL:HG12 | 4:CJ:398:LEU:HD11 | 1.86 | 0.57 |
| 5:DF:336:THR:H | 5:DF:339:SER:HB3 | 1.70 | 0.57 |
| 5:GA:198:TYR:HB2 | 5:GA:210:TYR:HB2 | 1.86 | 0.57 |
| 1:AB:449:LYS:NZ | 1:AB:453:THR:OG1 | 2.36 | 0.57 |
| 4:CI:333:PRO:HB3 | 4:CI:416:PRO:HA | 1.86 | 0.57 |
| 5:EA:246:THR:HG22 | 5:EA:257:THR:HG22 | 1.86 | 0.57 |
| 5:EE:187:ASP:HA | 5:EE:256:ALA:HB2 | 1.86 | 0.57 |
| 5:FG:180:LYS:HE3 | 5:FG:196:ASN:HD21 | 1.69 | 0.57 |
| 5:GA:309:GLN:HG2 | 5:GA:311:LEU:HD22 | 1.86 | 0.57 |
| 2:AC:229:LEU:HD21 | 2:AC:243:VAL:HG21 | 1.86 | 0.57 |
| 4:CC:152:ARG:HH11 | 4:CC:295:ARG:HH12 | 1.52 | 0.57 |
| 4:CG:357:LYS:HB3 | 4:CG:398:LEU:HD13 | 1.87 | 0.57 |
| 4:CI:200:ASP:OD1 | 4:CI:201:GLN:N | 2.38 | 0.57 |
| 5:DA:189:GLN:OE1 | 5:DA:191:ASN:ND2 | 2.38 | 0.57 |
| 5:FI:125:PRO:HG3 | 5:FI:309:GLN:HG2 | 1.87 | 0.57 |
| 5:FJ:32:LYS:NZ | 5:FJ:61:THR:O | 2.38 | 0.57 |
| 1:AD:328:GLN:HA | 1:AD:338:PHE:CE2 | 2.40 | 0.57 |
| 4:CB:5:ILE:O | 4:CB:9:MET:HG2 | 2.04 | 0.57 |
| 4:CD:552:ILE:HG13 | 4:CI:536:ALA:HB1 | 1.86 | 0.57 |
| 5:DC:246:THR:HG22 | 5:DC:257:THR:HG22 | 1.86 | 0.57 |
| 5:DK:213:ASP:OD1 | 5:DK:216:ASP:N | 2.31 | 0.57 |
| 5:EA:203:LYS:HB3 | 5:EA:206:GLU:HB2 | 1.87 | 0.57 |
| 5:GJ:111:GLN:HG2 | 5:GJ:330:ASP:HB3 | 1.86 | 0.57 |
| 1:AB:106:GLN:HG2 | 1:AB:185:ALA:HB2 | 1.87 | 0.57 |
| 3:BE:186:ASN:OD1 | 3:BE:241:ASN:ND2 | 2.38 | 0.57 |
| 3:BJ:133:ARG:HH22 | 4:CH:125:GLU:HB2 | 1.70 | 0.57 |
| 4:CB:541:THR:OG1 | 4:CF:553:ARG:NH1 | 2.38 | 0.57 |
| 4:CI:9:MET:HE1 | 5:DI:369:LYS:HG3 | 1.87 | 0.57 |
| 4:CI:533:LEU:HD23 | 4:CK:550:LEU:HD22 | 1.86 | 0.57 |
| 5:DA:107:LEU:HD13 | 5:DA:115:LEU:HD23 | 1.86 | 0.57 |
| 5:DC:143:MET:SD | 5:DC:305:ASN:ND2 | 2.78 | 0.57 |
| 5:DD:4:GLN:HE21 | 5:DD:49:LEU:HA | 1.69 | 0.57 |
| 5:DG:207:TRP:O | 5:DG:229:LEU:N | 2.31 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DI:149:THR:OG1 | 5:DI:281:ASN:ND2 | 2.37 | 0.57 |
| 5:GB:125:PRO:HG3 | 5:GB:309:GLN:HB2 | 1.87 | 0.57 |
| 5:GG:15:ASN:HB2 | 5:GG:38:PHE:HZ | 1.70 | 0.57 |
| 5:GH:76:ILE:HB | 5:GH:95:ARG:HH21 | 1.70 | 0.57 |
| 1:AB:114:PHE:HB2 | 1:AB:181:LEU:HB2 | 1.87 | 0.57 |
| 1:AE:238:ARG:NE | 1:AE:238:ARG:HA | 2.20 | 0.57 |
| 3:BG:61:GLN:HB3 | 4:CJ:118:GLN:HG2 | 1.86 | 0.57 |
| 3:BI:30:MET:HE1 | 3:BI:287:ILE:HD13 | 1.86 | 0.57 |
| 4:CA:69:ALA:O | 4:CA:73:ASN:ND2 | 2.38 | 0.57 |
| 4:CA:545:LEU:HD11 | 4:CJ:529:GLN:HG2 | 1.87 | 0.57 |
| 4:CG:271:PRO:HB2 | 4:CG:274:LEU:HD13 | 1.87 | 0.57 |
| 5:DI:234:ASN:O | 5:DI:268:GLN:NE2 | 2.38 | 0.57 |
| 5:FB:73:ASP:HB2 | 5:FB:360:LEU:HD21 | 1.86 | 0.57 |
| 5:GA:1:SER:N | 5:GE:17:ASP:OD1 | 2.37 | 0.57 |
| 5:GF:390:THR:OG1 | 5:GG:402:ARG:NH2 | 2.32 | 0.57 |
| 2:AC:242:THR:HA | 2:AC:253:THR:HA | 1.87 | 0.56 |
| 3:BL:56:GLN:NE2 | 4:CA:111:GLN:OE1 | 2.38 | 0.56 |
| 3:BL:58:GLN:NE2 | 4:CA:464:ASN:OD1 | 2.37 | 0.56 |
| 3:BL:65:ALA:HA | 3:BL:68:PHE:CZ | 2.40 | 0.56 |
| 4:CA:187:THR:HA | 4:CA:194:SER:HB3 | 1.86 | 0.56 |
| 4:CC:212:ILE:HG22 | 4:CC:213:VAL:HG23 | 1.87 | 0.56 |
| 4:CC:231:ASN:HB3 | 4:CC:274:LEU:HB3 | 1.86 | 0.56 |
| 4:CE:368:ASP:O | 4:CE:408:LYS:NZ | 2.30 | 0.56 |
| 4:CI:359:GLN:HG3 | 4:CI:376:ARG:HH22 | 1.70 | 0.56 |
| 5:EK:110:MET:HE2 | 5:EK:110:MET:HA | 1.87 | 0.56 |
| 5:FA:153:MET:HE3 | 5:FA:260:LEU:HD11 | 1.86 | 0.56 |
| 5:FK:94:SER:HB3 | 5:FK:332:VAL:HG12 | 1.87 | 0.56 |
| 5:GD:341:VAL:HG23 | 5:GD:343:LEU:HG | 1.87 | 0.56 |
| 2:AC:346:ILE:HG12 | 2:AC:357:ILE:HD11 | 1.86 | 0.56 |
| 3:BJ:310:MET:HE1 | 4:CD:529:GLN:HA | 1.87 | 0.56 |
| 3:BK:93:LYS:HA | 3:BK:96:TYR:HD2 | 1.69 | 0.56 |
| 4:CC:437:ALA:HA | 4:CC:452:ASP:HB2 | 1.87 | 0.56 |
| 4:CE:300:GLN:NE2 | 4:CE:358:VAL:O | 2.37 | 0.56 |
| 4:CH:183:ILE:HG12 | 4:CH:198:LEU:HB3 | 1.86 | 0.56 |
| 4:CJ:460:LEU:O | 4:CJ:463:GLN:HG3 | 2.05 | 0.56 |
| 5:DA:32:LYS:NZ | 5:DA:61:THR:O | 2.37 | 0.56 |
| 5:DG:145:ALA:HB2 | 5:DG:285:PRO:HD3 | 1.86 | 0.56 |
| 5:DH:61:THR:O | 5:DH:364:ASN:ND2 | 2.39 | 0.56 |
| 5:DJ:169:PHE:HE1 | 5:DJ:177:TYR:HB3 | 1.68 | 0.56 |
| 1:AE:406:ASN:HB3 | 3:BJ:92:GLU:HG2 | 1.86 | 0.56 |
| 4:CA:176:ILE:HG22 | 4:CA:236:VAL:HG11 | 1.87 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CB:258:VAL:HG11 | 4:CB:280:LEU:HD21 | 1.86 | 0.56 |
| 4:CJ:318:ASP:HA | 4:CJ:435:ALA:HA | 1.86 | 0.56 |
| 4:CK:452:ASP:OD1 | 4:CK:453:ASN:N | 2.39 | 0.56 |
| 5:DF:123:THR:HB | 5:DF:124:PRO:HD3 | 1.87 | 0.56 |
| 5:EC:273:ASN:HD22 | 5:EC:273:ASN:C | 2.11 | 0.56 |
| 5:EJ:32:LYS:HD2 | 5:EJ:60:PHE:HA | 1.87 | 0.56 |
| 5:GB:266:MET:HE2 | 5:GB:268:GLN:HB2 | 1.86 | 0.56 |
| 5:GG:14:THR:HG21 | 5:GG:53:VAL:HG11 | 1.87 | 0.56 |
| 5:GI:232:ASN:OD1 | 5:GI:236:ILE:N | 2.38 | 0.56 |
| 1:AB:319:ARG:HH12 | 3:BB:248:ALA:HA | 1.70 | 0.56 |
| 1:AE:349:ASP:O | 1:AE:353:GLY:N | 2.39 | 0.56 |
| 4:CI:220:GLN:HB3 | 4:CI:224:THR:HB | 1.87 | 0.56 |
| 5:EE:328:GLN:HB2 | 5:EE:332:VAL:HG23 | 1.88 | 0.56 |
| 3:BG:20:GLN:HA | 3:BG:23:TRP:NE1 | 2.19 | 0.56 |
| 4:CB:252:ASP:HB3 | 4:CB:255:ARG:HD3 | 1.88 | 0.56 |
| 4:CC:395:ILE:HD12 | 4:CC:400:VAL:HG21 | 1.88 | 0.56 |
| 4:CG:392:LYS:NZ | 4:CG:401:THR:OG1 | 2.38 | 0.56 |
| 4:CH:317:TYR:HE1 | 4:CH:323:LYS:HD2 | 1.70 | 0.56 |
| 5:DB:232:ASN:OD1 | 5:DB:233:GLU:N | 2.37 | 0.56 |
| 5:DE:313:GLN:NE2 | 5:DE:346:THR:OG1 | 2.39 | 0.56 |
| 5:FG:109:ASN:HD21 | 5:FG:113:MET:HE3 | 1.70 | 0.56 |
| 5:FG:293:ILE:HG12 | 5:FG:299:VAL:HG22 | 1.86 | 0.56 |
| 5:GF:203:LYS:HG2 | 5:GF:204:ASP:H | 1.70 | 0.56 |
| 3:BH:20:GLN:NE2 | 4:CJ:519:ASP:OD2 | 2.38 | 0.56 |
| 4:CJ:335:VAL:HG23 | 4:CJ:414:LEU:HB3 | 1.86 | 0.56 |
| 4:CK:112:SER:O | 4:CK:115:THR:OG1 | 2.19 | 0.56 |
| 5:DC:84:LEU:HB3 | 5:DC:113:MET:HB3 | 1.88 | 0.56 |
| 5:EJ:379:ARG:O | 5:EJ:382:GLN:NE2 | 2.39 | 0.56 |
| 5:FE:123:THR:HB | 5:FE:124:PRO:HD3 | 1.88 | 0.56 |
| 5:GF:203:LYS:HB3 | 5:GF:206:GLU:HB2 | 1.88 | 0.56 |
| 5:DA:106:ASN:OD1 | 5:DA:137:THR:OG1 | 2.20 | 0.56 |
| 5:GC:166:LYS:HG2 | 5:GC:175:ASP:HB2 | 1.86 | 0.56 |
| 5:GG:145:ALA:HB2 | 5:GG:285:PRO:HD3 | 1.87 | 0.56 |
| 1:AD:22:LEU:HG | 1:AD:432:THR:HB | 1.88 | 0.56 |
| 1:AD:56:LYS:HE3 | 1:AD:279:TRP:CE3 | 2.40 | 0.56 |
| 1:AD:97:ILE:HG23 | 1:AD:231:VAL:HG22 | 1.88 | 0.56 |
| 3:BG:12:ASN:OD1 | 3:BG:307:MET:HG3 | 2.06 | 0.56 |
| 5:DF:399:VAL:O | 5:EE:386:GLN:NE2 | 2.38 | 0.56 |
| 5:EB:285:PRO:HB2 | 5:EC:270:THR:HG22 | 1.86 | 0.56 |
| 5:GB:177:TYR:HA | 5:GB:200:VAL:HG12 | 1.88 | 0.56 |
| 1:AB:191:ASN:HB2 | 1:AB:193:MET:HE2 | 1.88 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AE:194:LYS:NZ | 1:AE:211:SER:HA | 2.21 | 0.56 |
| 3:BB:52:LEU:HD22 | 3:BB:275:MET:HB2 | 1.88 | 0.56 |
| 3:BB:61:GLN:HB3 | 4:CK:118:GLN:HG2 | 1.87 | 0.56 |
| 5:DE:49:LEU:HD22 | 5:EE:64:THR:HG23 | 1.87 | 0.56 |
| 5:DJ:86:ASP:OD1 | 5:DJ:87:SER:N | 2.39 | 0.56 |
| 5:DK:230:LYS:HB3 | 5:DK:238:GLU:HB2 | 1.88 | 0.56 |
| 5:ED:237:LEU:HD11 | 5:ED:265:SER:HB2 | 1.88 | 0.56 |
| 5:EG:68:THR:HG23 | 5:EG:70:ARG:H | 1.70 | 0.56 |
| 5:GK:203:LYS:HB3 | 5:GK:206:GLU:HB3 | 1.88 | 0.56 |
| 1:AA:326:ARG:NH2 | 3:BK:85:THR:O | 2.30 | 0.56 |
| 3:BI:6:GLN:O | 3:BI:10:GLU:HG2 | 2.06 | 0.56 |
| 4:CB:158:VAL:HG13 | 4:CB:283:LEU:HD22 | 1.88 | 0.56 |
| 4:CD:208:GLU:HA | 4:CD:211:LYS:HE3 | 1.86 | 0.56 |
| 5:DF:54:ALA:HB3 | 5:EG:110:MET:HE1 | 1.88 | 0.56 |
| 5:ED:94:SER:HB2 | 5:ED:332:VAL:HG23 | 1.86 | 0.56 |
| 5:ED:250:ILE:HG23 | 5:ED:251:ASN:H | 1.71 | 0.56 |
| 5:EH:120:ALA:HB2 | 5:EH:127:ILE:HD13 | 1.88 | 0.56 |
| 5:FA:198:TYR:HB2 | 5:FA:210:TYR:HB2 | 1.86 | 0.56 |
| 5:FG:188:SER:HG | 5:FG:254:THR:HG1 | 1.53 | 0.56 |
| 5:GE:123:THR:HB | 5:GE:124:PRO:HD3 | 1.88 | 0.56 |
| 5:GF:108:VAL:HG12 | 5:GF:114:GLN:HG2 | 1.87 | 0.56 |
| 5:GI:92:PHE:HB3 | 5:GI:332:VAL:HB | 1.87 | 0.56 |
| 3:BH:133:ARG:HH21 | 3:BH:142:GLU:HA | 1.70 | 0.55 |
| 3:BI:98:GLY:HA2 | 3:BI:229:ILE:HG21 | 1.88 | 0.55 |
| 3:BK:163:GLN:OE1 | 4:CD:457:GLN:NE2 | 2.39 | 0.55 |
| 3:BL:59:ASN:OD1 | 3:BL:271:GLN:NE2 | 2.38 | 0.55 |
| 4:CK:145:LYS:HZ2 | 4:CK:328:PHE:HE1 | 1.52 | 0.55 |
| 5:DJ:138:ILE:HA | 5:DJ:311:LEU:HD21 | 1.88 | 0.55 |
| 5:EB:146:LYS:HZ2 | 5:EB:285:PRO:HD3 | 1.71 | 0.55 |
| 5:FH:95:ARG:HG3 | 5:FH:333:TRP:HZ3 | 1.71 | 0.55 |
| 5:GK:34:GLY:HA2 | 5:GK:58:GLN:HA | 1.87 | 0.55 |
| 2:AC:68:ASP:O | 2:AC:374:ARG:NH1 | 2.39 | 0.55 |
| 3:BE:66:ARG:HD3 | 3:BE:260:LEU:HD23 | 1.87 | 0.55 |
| 3:BE:168:ARG:NH1 | 4:CA:138:GLU:HB3 | 2.21 | 0.55 |
| 3:BI:91:GLN:HG2 | 3:BI:236:LEU:HB3 | 1.87 | 0.55 |
| 3:BL:7:MET:HE2 | 4:CA:511:GLN:HG3 | 1.87 | 0.55 |
| 4:CA:258:VAL:HG21 | 4:CA:280:LEU:HD21 | 1.87 | 0.55 |
| 4:CD:10:SER:OG | 4:CD:58:VAL:O | 2.25 | 0.55 |
| 5:DA:119:PRO:O | 5:DA:128:GLN:NE2 | 2.39 | 0.55 |
| 5:DA:247:THR:HG22 | 5:DA:256:ALA:H | 1.70 | 0.55 |
| 5:DA:325:LEU:HB3 | 5:DA:333:TRP:HB3 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DE:83:ARG:HE | 5:DE:133:PRO:HG2 | 1.71 | 0.55 |
| 5:DF:2:PHE:HD1 | 5:DF:388:ILE:HG12 | 1.72 | 0.55 |
| 5:DJ:268:GLN:NE2 | 5:DK:285:PRO:HB3 | 2.21 | 0.55 |
| 5:EF:43:ALA:HB2 | 5:EF:49:LEU:HD11 | 1.87 | 0.55 |
| 5:FC:123:THR:HB | 5:FC:124:PRO:HD3 | 1.88 | 0.55 |
| 5:FG:32:LYS:HB2 | 5:FG:58:GLN:NE2 | 2.20 | 0.55 |
| 5:GA:341:VAL:HG23 | 5:GA:343:LEU:HG | 1.88 | 0.55 |
| 1:AA:123:ASP:OD1 | 1:AA:129:ARG:NH2 | 2.35 | 0.55 |
| 1:AE:186:ASN:HB3 | 1:AE:191:ASN:HB3 | 1.89 | 0.55 |
| 3:BI:263:LEU:HD21 | 3:BJ:82:GLN:HG3 | 1.88 | 0.55 |
| 4:CD:453:ASN:O | 4:CD:457:GLN:HB2 | 2.05 | 0.55 |
| 4:CK:138:GLU:HG2 | 4:CK:327:PHE:HE2 | 1.70 | 0.55 |
| 5:EC:149:THR:OG1 | 5:EC:281:ASN:ND2 | 2.36 | 0.55 |
| 5:FH:164:PRO:HG3 | 5:FH:200:VAL:HG13 | 1.87 | 0.55 |
| 5:GD:68:THR:OG1 | 5:GD:73:ASP:OD2 | 2.21 | 0.55 |
| 5:GG:142:LEU:HD11 | 5:GG:285:PRO:HB2 | 1.88 | 0.55 |
| 5:GH:158:ASN:HB3 | 5:GH:161:ASP:HB2 | 1.88 | 0.55 |
| 1:AE:135:GLN:HB2 | 1:AE:138:ARG:HG2 | 1.87 | 0.55 |
| 4:CG:430:ASN:HB2 | 4:CG:433:GLU:HG3 | 1.88 | 0.55 |
| 5:DB:154:GLN:HE21 | 5:DB:265:SER:HA | 1.70 | 0.55 |
| 5:DF:161:ASP:HB3 | 5:DF:201:LYS:HD2 | 1.89 | 0.55 |
| 5:ED:123:THR:HB | 5:ED:124:PRO:HD3 | 1.87 | 0.55 |
| 5:FE:328:GLN:HB2 | 5:FE:332:VAL:HG23 | 1.88 | 0.55 |
| 5:FH:189:GLN:HE21 | 5:FH:253:ALA:HB2 | 1.71 | 0.55 |
| 5:FJ:336:THR:H | 5:FJ:339:SER:HB3 | 1.71 | 0.55 |
| 5:GJ:249:THR:HG22 | 5:GJ:255:ALA:H | 1.70 | 0.55 |
| 2:AC:228:LYS:HG2 | 2:AC:237:GLU:HG2 | 1.89 | 0.55 |
| 3:BD:118:ARG:HH21 | 3:BD:201:PHE:HB3 | 1.72 | 0.55 |
| 3:BL:165:ASP:HB3 | 3:BL:168:ARG:HB2 | 1.88 | 0.55 |
| 4:CB:318:ASP:OD1 | 4:CB:322:ASN:N | 2.39 | 0.55 |
| 4:CI:318:ASP:OD1 | 4:CI:322:ASN:N | 2.40 | 0.55 |
| 5:DA:197:VAL:HG22 | 5:DA:211:THR:HG22 | 1.88 | 0.55 |
| 5:DB:28:THR:O | 5:DB:363:SER:OG | 2.24 | 0.55 |
| 5:FH:117:GLY:HA2 | 5:FH:315:VAL:HG12 | 1.88 | 0.55 |
| 5:GB:100:LYS:HE2 | 5:GB:110:MET:HA | 1.87 | 0.55 |
| 5:GF:145:ALA:HB2 | 5:GF:285:PRO:HD3 | 1.89 | 0.55 |
| 5:GK:187:ASP:OD2 | 5:GK:193:HIS:NE2 | 2.39 | 0.55 |
| 2:AC:85:SER:HB3 | 2:AC:251:THR:HB | 1.89 | 0.55 |
| 3:BB:215:VAL:HG12 | 3:BB:221:GLU:HB3 | 1.89 | 0.55 |
| 3:BC:215:VAL:HG12 | 3:BC:221:GLU:HG2 | 1.87 | 0.55 |
| 3:BG:52:LEU:HD22 | 3:BG:275:MET:HB2 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CA:64:GLN:NE2 | 4:CA:65:ARG:O | 2.37 | 0.55 |
| 4:CA:308:ALA:HB2 | 4:CA:467:VAL:HG11 | 1.88 | 0.55 |
| 4:CF:327:PHE:HB3 | 4:CF:428:VAL:HB | 1.87 | 0.55 |
| 4:CG:130:ARG:O | 4:CG:133:LEU:HG | 2.07 | 0.55 |
| 4:CH:333:PRO:HB3 | 4:CH:416:PRO:HA | 1.88 | 0.55 |
| 5:EJ:321:ASN:HD21 | 5:FK:100:LYS:HD2 | 1.72 | 0.55 |
| 3:BA:54:GLN:NE2 | 4:CI:475:ASN:OD1 | 2.37 | 0.55 |
| 4:CA:294:THR:HG23 | 4:CA:481:LEU:HD11 | 1.88 | 0.55 |
| 4:CD:274:LEU:HD22 | 5:DI:174:ALA:HB1 | 1.88 | 0.55 |
| 4:CE:333:PRO:HB3 | 4:CE:416:PRO:HA | 1.89 | 0.55 |
| 4:CG:231:ASN:HB3 | 4:CG:274:LEU:HD23 | 1.88 | 0.55 |
| 4:CJ:445:ASP:OD1 | 4:CJ:446:VAL:N | 2.39 | 0.55 |
| 5:DA:19:ILE:HG21 | 5:DA:374:MET:HB2 | 1.88 | 0.55 |
| 5:DA:169:PHE:HE1 | 5:DA:177:TYR:HB3 | 1.70 | 0.55 |
| 5:DE:46:LYS:HB2 | 5:DF:56:ILE:HD13 | 1.89 | 0.55 |
| 5:EK:84:LEU:HD23 | 5:EK:113:MET:HB2 | 1.89 | 0.55 |
| 5:FA:100:LYS:HE3 | 5:FA:110:MET:HA | 1.88 | 0.55 |
| 5:GD:232:ASN:HD21 | 5:GD:234:ASN:HB2 | 1.71 | 0.55 |
| 5:GD:300:VAL:HG22 | 5:GD:310:VAL:HG22 | 1.88 | 0.55 |
| 5:GK:123:THR:HB | 5:GK:124:PRO:HD3 | 1.87 | 0.55 |
| 5:GK:341:VAL:HG13 | 5:GK:343:LEU:HG | 1.88 | 0.55 |
| 1:AB:247:PRO:HG3 | 1:AB:252:LEU:HD12 | 1.89 | 0.55 |
| 1:AB:287:VAL:HG11 | 1:AB:353:GLY:HA3 | 1.89 | 0.55 |
| 3:BH:312:LEU:HD11 | 4:CF:12:LEU:HD13 | 1.88 | 0.55 |
| 3:BI:104:ASP:OD1 | 3:BI:107:ARG:NH1 | 2.40 | 0.55 |
| 4:CB:14:ALA:HB1 | 4:CB:41:LEU:HD22 | 1.88 | 0.55 |
| 4:CF:541:THR:HG21 | 4:CH:525:LEU:HD11 | 1.89 | 0.55 |
| 4:CG:430:ASN:ND2 | 4:CG:433:GLU:OE2 | 2.35 | 0.55 |
| 5:EG:80:GLY:HA3 | 5:EG:316:LEU:HD23 | 1.89 | 0.55 |
| 5:EI:375:ILE:HA | 5:EI:378:GLN:HE21 | 1.71 | 0.55 |
| 5:EK:70:ARG:NH2 | 5:EK:99:PHE:O | 2.40 | 0.55 |
| 5:FA:157:LEU:HD23 | 5:FA:207:TRP:CD2 | 2.42 | 0.55 |
| 5:GH:194:ASP:H | 5:GH:215:SER:HB3 | 1.70 | 0.55 |
| 1:AD:400:ASP:OD1 | 3:BH:101:THR:OG1 | 2.24 | 0.55 |
| 1:AE:280:VAL:HG13 | 1:AE:355:LEU:HB2 | 1.89 | 0.55 |
| 3:BB:84:THR:HG21 | 3:BB:247:ARG:HD2 | 1.89 | 0.55 |
| 3:BI:52:LEU:HD22 | 3:BI:275:MET:HB2 | 1.89 | 0.55 |
| 4:CC:553:ARG:NH1 | 5:DB:390:THR:OG1 | 2.40 | 0.55 |
| 4:CI:156:LYS:O | 4:CI:160:ILE:HG12 | 2.07 | 0.55 |
| 5:DK:72:LEU:HD11 | 5:DK:291:TYR:HE2 | 1.72 | 0.55 |
| 5:EB:146:LYS:HG3 | 5:EB:283:TYR:H | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:FI:94:SER:HB2 | 5:FI:332:VAL:HG12 | 1.89 | 0.55 |
| 5:GB:393:GLN:OE1 | 5:GD:378:GLN:NE2 | 2.39 | 0.55 |
| 3:BH:182:SER:O | 3:BH:242:ASN:ND2 | 2.38 | 0.55 |
| 4:CJ:376:ARG:HH22 | 4:CJ:396:ASP:HB2 | 1.70 | 0.55 |
| 4:CK:333:PRO:HB3 | 4:CK:416:PRO:HA | 1.88 | 0.55 |
| 5:DB:399:VAL:HG11 | 5:DC:382:GLN:HG2 | 1.88 | 0.55 |
| 5:EG:185:VAL:HG23 | 5:EG:193:HIS:HB2 | 1.89 | 0.55 |
| 5:FE:61:THR:O | 5:FE:364:ASN:ND2 | 2.39 | 0.55 |
| 5:GJ:153:MET:HE1 | 5:GJ:197:VAL:HG21 | 1.88 | 0.55 |
| 5:GK:93:TYR:O | 5:GK:333:TRP:N | 2.33 | 0.55 |
| 3:BD:5:THR:HA | 3:BD:8:MET:HG3 | 1.88 | 0.54 |
| 3:BD:125:ALA:HA | 3:BD:180:PHE:HE2 | 1.72 | 0.54 |
| 3:BG:103:SER:OG | 3:BG:105:ASP:OD1 | 2.23 | 0.54 |
| 3:BI:160:VAL:HG22 | 4:CF:451:SER:HB2 | 1.88 | 0.54 |
| 4:CB:27:ASN:O | 4:CJ:531:TYR:OH | 2.23 | 0.54 |
| 4:CJ:338:ASN:O | 4:CJ:341:ASN:ND2 | 2.40 | 0.54 |
| 5:DD:86:ASP:OD2 | 5:DD:87:SER:N | 2.38 | 0.54 |
| 5:DD:251:ASN:ND2 | 5:EB:159:SER:O | 2.41 | 0.54 |
| 5:DG:117:GLY:HA3 | 5:DG:136:ILE:HD11 | 1.88 | 0.54 |
| 5:EK:232:ASN:OD1 | 5:EK:236:ILE:N | 2.38 | 0.54 |
| 5:GB:136:ILE:HG21 | 5:GB:299:VAL:HG21 | 1.89 | 0.54 |
| 3:BK:163:GLN:NE2 | 4:CD:457:GLN:OE1 | 2.40 | 0.54 |
| 4:CI:372:TRP:CD2 | 4:CI:393:LEU:HD11 | 2.43 | 0.54 |
| 5:DA:160:THR:OG1 | 5:DA:269:ASN:OD1 | 2.25 | 0.54 |
| 5:DA:234:ASN:O | 5:DA:268:GLN:NE2 | 2.40 | 0.54 |
| 5:FE:98:GLN:HG2 | 5:FE:110:MET:HE3 | 1.90 | 0.54 |
| 5:FK:61:THR:HB | 5:FK:364:ASN:HD21 | 1.73 | 0.54 |
| 5:GK:109:ASN:HD21 | 5:GK:113:MET:HE2 | 1.72 | 0.54 |
| 1:AA:168:ALA:HB1 | 1:AB:91:ALA:HB1 | 1.90 | 0.54 |
| 1:AB:97:ILE:HG13 | 1:AB:252:LEU:HD13 | 1.88 | 0.54 |
| 3:BD:107:ARG:HH22 | 3:BD:215:VAL:H | 1.54 | 0.54 |
| 3:BL:67:THR:O | 3:BL:70:THR:OG1 | 2.25 | 0.54 |
| 4:CH:450:ASP:OD1 | 4:CH:451:SER:N | 2.40 | 0.54 |
| 5:DH:351:ASN:ND2 | 5:EI:288:LEU:O | 2.37 | 0.54 |
| 5:ED:395:LEU:C | 5:FB:379:ARG:HH12 | 2.14 | 0.54 |
| 5:EI:80:GLY:HA3 | 5:EI:316:LEU:HD23 | 1.88 | 0.54 |
| 5:GD:109:ASN:OD1 | 5:GD:113:MET:N | 2.38 | 0.54 |
| 1:AB:16:ASP:OD1 | 1:AB:17:GLN:N | 2.39 | 0.54 |
| 1:AB:326:ARG:NH1 | 1:AB:348:GLN:OE1 | 2.35 | 0.54 |
| 1:AB:449:LYS:HD3 | 3:BD:23:TRP:HZ3 | 1.73 | 0.54 |
| 1:AD:197:VAL:HG11 | 1:AD:203:LEU:HB3 | 1.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BD:129:ASP:OD2 | 3:BD:133:ARG:NH2 | 2.37 | 0.54 |
| 3:BL:40:SER:HA | 4:CA:486:GLY:HA2 | 1.89 | 0.54 |
| 4:CB:553:ARG:NH1 | 5:DF:378:GLN:OE1 | 2.40 | 0.54 |
| 4:CF:376:ARG:O | 4:CF:380:ASN:N | 2.40 | 0.54 |
| 4:CF:505:GLN:HA | 4:CF:505:GLN:HE21 | 1.71 | 0.54 |
| 4:CJ:130:ARG:HD2 | 4:CJ:431:GLU:HB2 | 1.88 | 0.54 |
| 4:CJ:131:GLN:HA | 4:CJ:134:ILE:HD12 | 1.88 | 0.54 |
| 5:DD:291:TYR:HA | 5:DD:301:GLY:HA2 | 1.89 | 0.54 |
| 5:EA:125:PRO:HB3 | 5:EA:310:VAL:H | 1.71 | 0.54 |
| 5:FA:155:ILE:HD12 | 5:FA:275:ILE:HG12 | 1.90 | 0.54 |
| 5:FD:1:SER:OG | 5:FD:391:GLN:NE2 | 2.40 | 0.54 |
| 5:FJ:125:PRO:HG2 | 5:FJ:309:GLN:HG2 | 1.88 | 0.54 |
| 5:GD:15:ASN:HB2 | 5:GD:38:PHE:HZ | 1.73 | 0.54 |
| 1:AA:37:GLN:HG2 | 1:AA:418:LEU:HD22 | 1.88 | 0.54 |
| 3:BA:126:ASN:HB3 | 3:BA:134:TYR:HE1 | 1.73 | 0.54 |
| 3:BL:50:VAL:O | 3:BL:54:GLN:HG2 | 2.08 | 0.54 |
| 4:CE:255:ARG:HH21 | 4:CE:287:ARG:HG2 | 1.72 | 0.54 |
| 4:CI:398:LEU:HD21 | 4:CI:416:PRO:HB3 | 1.89 | 0.54 |
| 5:DC:94:SER:HB2 | 5:DC:332:VAL:HG12 | 1.90 | 0.54 |
| 5:FE:109:ASN:ND2 | 5:FE:111:GLN:OE1 | 2.41 | 0.54 |
| 5:GG:149:THR:HB | 5:GG:281:ASN:HD21 | 1.73 | 0.54 |
| 1:AA:9:VAL:HB | 3:BN:300:SER:OG | 2.07 | 0.54 |
| 5:DK:105:ARG:NH1 | 5:DK:138:ILE:O | 2.40 | 0.54 |
| 5:EC:125:PRO:HG2 | 5:EC:309:GLN:HG2 | 1.89 | 0.54 |
| 5:EJ:105:ARG:O | 5:EJ:137:THR:OG1 | 2.20 | 0.54 |
| 5:EJ:402:ARG:HH22 | 5:FI:390:THR:HG22 | 1.73 | 0.54 |
| 3:BG:34:LYS:HE3 | 3:BG:37:THR:HG22 | 1.88 | 0.54 |
| 4:CE:40:ILE:HD12 | 5:DB:110:MET:HG3 | 1.88 | 0.54 |
| 5:DJ:74:VAL:HB | 5:DJ:355:LEU:HD21 | 1.89 | 0.54 |
| 5:DJ:287:ASP:OD1 | 5:DJ:288:LEU:N | 2.41 | 0.54 |
| 5:FA:85:VAL:HG22 | 5:FA:91:VAL:HG22 | 1.89 | 0.54 |
| 5:GG:153:MET:HE1 | 5:GG:197:VAL:HG21 | 1.90 | 0.54 |
| 3:BB:44:ILE:O | 3:BB:48:GLN:HG2 | 2.08 | 0.54 |
| 4:CA:65:ARG:HB3 | 4:CA:196:ASN:ND2 | 2.23 | 0.54 |
| 4:CA:549:LEU:HD12 | 4:CA:552:ILE:HD12 | 1.90 | 0.54 |
| 5:DB:394:ILE:HD11 | 5:DD:378:GLN:HG3 | 1.90 | 0.54 |
| 5:DC:189:GLN:HE21 | 5:EK:159:SER:HB2 | 1.72 | 0.54 |
| 5:DD:86:ASP:HB2 | 5:DD:92:PHE:HE2 | 1.73 | 0.54 |
| 5:EC:70:ARG:NH2 | 5:EC:99:PHE:O | 2.36 | 0.54 |
| 5:FJ:68:THR:OG1 | 5:FJ:73:ASP:OD2 | 2.25 | 0.54 |
| 5:GG:177:TYR:HA | 5:GG:200:VAL:HG12 | 1.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:AC:133:ILE:HD12 | 2:AC:142:LEU:HB3 | 1.89 | 0.54 |
| 4:CC:171:ASN:OD1 | 4:CC:175:GLN:NE2 | 2.41 | 0.54 |
| 4:CC:231:ASN:HA | 4:CC:274:LEU:HD12 | 1.90 | 0.54 |
| 5:EB:211:THR:HG21 | 5:EB:245:ILE:HD13 | 1.89 | 0.54 |
| 5:ED:153:MET:HG3 | 5:ED:278:THR:HG22 | 1.89 | 0.54 |
| 5:FD:210:TYR:HD2 | 5:FD:222:PRO:HB2 | 1.73 | 0.54 |
| 5:GB:203:LYS:HB2 | 5:GB:206:GLU:HG3 | 1.90 | 0.54 |
| 5:GF:43:ALA:HB2 | 5:GF:49:LEU:HG | 1.90 | 0.54 |
| 5:GF:385:ALA:HA | 5:GF:388:ILE:HD12 | 1.90 | 0.54 |
| 3:BA:288:SER:HB2 | 3:BB:13:MET:SD | 2.48 | 0.54 |
| 3:BH:284:ASN:HB2 | 3:BI:13:MET:SD | 2.48 | 0.54 |
| 4:CB:453:ASN:O | 4:CB:457:GLN:N | 2.35 | 0.54 |
| 4:CH:76:ARG:HG2 | 4:CH:210:ASN:HD22 | 1.72 | 0.54 |
| 4:CI:151:LEU:HD23 | 4:CI:295:ARG:HG3 | 1.90 | 0.54 |
| 5:DF:164:PRO:HD3 | 5:DF:178:ASN:HD21 | 1.73 | 0.54 |
| 5:FB:43:ALA:HB2 | 5:FB:49:LEU:HD11 | 1.89 | 0.54 |
| 5:FF:287:ASP:H | 5:FF:304:SER:HB3 | 1.72 | 0.54 |
| 5:GB:371:LEU:HA | 5:GB:374:MET:HE1 | 1.89 | 0.54 |
| 5:GC:61:THR:O | 5:GC:364:ASN:ND2 | 2.41 | 0.54 |
| 5:GJ:105:ARG:HH12 | 5:GJ:140:ASN:HB3 | 1.73 | 0.54 |
| 1:AE:328:GLN:HG3 | 1:AE:393:GLU:HG3 | 1.90 | 0.53 |
| 3:BJ:134:TYR:HB2 | 3:BJ:137:ALA:HB2 | 1.90 | 0.53 |
| 4:CA:244:LEU:HD12 | 4:CA:258:VAL:HG12 | 1.88 | 0.53 |
| 4:CC:120:LEU:HD11 | 4:CC:130:ARG:HG2 | 1.90 | 0.53 |
| 4:CE:371:ASP:OD1 | 4:CE:372:TRP:N | 2.38 | 0.53 |
| 4:CF:186:MET:O | 4:CF:189:VAL:HG12 | 2.08 | 0.53 |
| 4:CG:149:GLN:NE2 | 4:CG:153:ASP:OD1 | 2.41 | 0.53 |
| 5:DC:284:LYS:HG3 | 5:DC:285:PRO:HD2 | 1.90 | 0.53 |
| 5:DH:127:ILE:HG13 | 5:DH:313:GLN:HE21 | 1.73 | 0.53 |
| 5:ED:143:MET:HE3 | 5:ED:305:ASN:HD21 | 1.73 | 0.53 |
| 5:FB:15:ASN:HB2 | 5:FB:38:PHE:HZ | 1.72 | 0.53 |
| 5:FD:109:ASN:OD1 | 5:FD:113:MET:N | 2.28 | 0.53 |
| 5:FD:189:GLN:H | 5:GB:234:ASN:ND2 | 2.06 | 0.53 |
| 2:AC:82:LEU:HD11 | 2:AC:252:LEU:HD13 | 1.91 | 0.53 |
| 1:AD:441:THR:O | 1:AD:445:THR:HG23 | 2.07 | 0.53 |
| 3:BA:203:MET:SD | 3:BA:235:GLY:HA3 | 2.48 | 0.53 |
| 3:BK:91:GLN:O | 3:BK:95:VAL:HG23 | 2.08 | 0.53 |
| 3:BK:215:VAL:HB | 3:BK:222:LYS:HG2 | 1.90 | 0.53 |
| 4:CC:174:LYS:NZ | 4:CC:243:GLN:OE1 | 2.42 | 0.53 |
| 4:CI:543:ASN:OD1 | 5:DI:379:ARG:NH2 | 2.41 | 0.53 |
| 5:DA:145:ALA:HB2 | 5:DA:285:PRO:HD3 | 1.89 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DJ:283:TYR:HB2 | 5:DJ:305:ASN:HD21 | 1.72 | 0.53 |
| 5:EI:145:ALA:HB2 | 5:EI:285:PRO:HG3 | 1.90 | 0.53 |
| 5:GB:341:VAL:HG13 | 5:GB:343:LEU:HG | 1.91 | 0.53 |
| 1:AE:85:SER:O | 1:AE:250:ILE:HA | 2.08 | 0.53 |
| 3:BB:21:ALA:HA | 3:BB:24:MET:HE3 | 1.90 | 0.53 |
| 3:BE:7:MET:HE1 | 4:CC:508:LYS:HG2 | 1.90 | 0.53 |
| 4:CB:118:GLN:O | 4:CB:118:GLN:NE2 | 2.41 | 0.53 |
| 4:CC:188:GLY:O | 5:DD:290:SER:OG | 2.23 | 0.53 |
| 5:DI:246:THR:HG22 | 5:DI:257:THR:HG22 | 1.90 | 0.53 |
| 5:FE:125:PRO:HG2 | 5:FE:309:GLN:HG3 | 1.89 | 0.53 |
| 5:FH:93:TYR:O | 5:FH:333:TRP:N | 2.39 | 0.53 |
| 5:FJ:341:VAL:HG13 | 5:FJ:343:LEU:HG | 1.91 | 0.53 |
| 5:GA:191:ASN:ND2 | 5:GA:251:ASN:OD1 | 2.42 | 0.53 |
| 5:GB:39:ALA:HB3 | 5:GB:52:LYS:HG3 | 1.89 | 0.53 |
| 1:AD:279:TRP:HE1 | 1:AD:377:LEU:HD11 | 1.73 | 0.53 |
| 3:BD:200:LEU:O | 3:BD:203:MET:HG3 | 2.08 | 0.53 |
| 5:DA:185:VAL:HG23 | 5:DA:193:HIS:HB2 | 1.90 | 0.53 |
| 5:DE:68:THR:OG1 | 5:DE:73:ASP:OD2 | 2.26 | 0.53 |
| 5:DE:300:VAL:HG22 | 5:DE:310:VAL:HG12 | 1.89 | 0.53 |
| 5:FA:158:ASN:HD21 | 5:FA:272:ALA:HA | 1.72 | 0.53 |
| 5:FF:379:ARG:NH2 | 5:FG:392:ASP:OD1 | 2.35 | 0.53 |
| 5:FH:145:ALA:HB2 | 5:FH:285:PRO:HD3 | 1.90 | 0.53 |
| 1:AB:61:ASN:ND2 | 1:AB:390:ILE:HG23 | 2.20 | 0.53 |
| 3:BA:136:PHE:O | 3:BA:176:GLY:N | 2.40 | 0.53 |
| 3:BB:314:GLN:NE2 | 4:CK:522:TYR:OH | 2.39 | 0.53 |
| 4:CB:48:LEU:HB2 | 5:DF:78:GLN:HE22 | 1.73 | 0.53 |
| 4:CB:92:MET:HG3 | 4:CB:492:LEU:HD12 | 1.90 | 0.53 |
| 4:CC:318:ASP:OD1 | 4:CC:322:ASN:N | 2.41 | 0.53 |
| 4:CF:439:GLU:HB2 | 4:CF:454:ARG:HH22 | 1.72 | 0.53 |
| 4:CG:130:ARG:O | 4:CG:134:ILE:HG12 | 2.08 | 0.53 |
| 5:DC:149:THR:OG1 | 5:DC:281:ASN:ND2 | 2.37 | 0.53 |
| 5:EI:189:GLN:HG3 | 5:EI:253:ALA:HB2 | 1.90 | 0.53 |
| 5:EJ:399:VAL:O | 5:FI:386:GLN:NE2 | 2.42 | 0.53 |
| 5:GC:123:THR:HB | 5:GC:124:PRO:HD3 | 1.90 | 0.53 |
| 5:GI:154:GLN:O | 5:GI:276:VAL:N | 2.35 | 0.53 |
| 2:AC:200:ASP:HB2 | 2:AC:203:LEU:HB2 | 1.90 | 0.53 |
| 3:BH:284:ASN:OD1 | 3:BH:285:SER:N | 2.41 | 0.53 |
| 5:EB:108:VAL:HG22 | 5:EB:114:GLN:HG2 | 1.90 | 0.53 |
| 5:EF:123:THR:HB | 5:EF:124:PRO:HD3 | 1.90 | 0.53 |
| 5:EG:70:ARG:NH2 | 5:EG:99:PHE:O | 2.40 | 0.53 |
| 5:EK:68:THR:HG23 | 5:EK:70:ARG:H | 1.73 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GA:194:ASP:N | 5:GA:215:SER:OG | 2.35 | 0.53 |
| 5:GB:146:LYS:HB2 | 5:GB:283:TYR:CZ | 2.43 | 0.53 |
| 5:GF:187:ASP:OD1 | 5:GF:191:ASN:N | 2.41 | 0.53 |
| 5:GJ:179:LYS:HB3 | 5:GJ:199:PHE:HB2 | 1.91 | 0.53 |
| 1:AD:49:THR:HG21 | 1:AD:293:LEU:HD22 | 1.90 | 0.53 |
| 1:AE:433:VAL:O | 1:AE:437:LYS:HD2 | 2.08 | 0.53 |
| 3:BE:6:GLN:HE21 | 4:CC:30:ASN:HA | 1.73 | 0.53 |
| 3:BG:129:ASP:OD1 | 3:BG:133:ARG:N | 2.42 | 0.53 |
| 4:CC:197:ASP:OD1 | 4:CC:198:LEU:N | 2.41 | 0.53 |
| 4:CD:331:GLY:HA2 | 4:CD:423:ASP:HB2 | 1.89 | 0.53 |
| 4:CI:365:ILE:HG13 | 4:CI:412:PHE:HB2 | 1.91 | 0.53 |
| 5:DI:145:ALA:HB2 | 5:DI:285:PRO:HG3 | 1.90 | 0.53 |
| 5:DJ:149:THR:OG1 | 5:DJ:281:ASN:ND2 | 2.36 | 0.53 |
| 5:GH:92:PHE:HB3 | 5:GH:332:VAL:HB | 1.91 | 0.53 |
| 1:AE:234:ILE:HG23 | 1:AE:236:ILE:HD11 | 1.91 | 0.53 |
| 3:BI:220:VAL:HG12 | 3:BI:224:LYS:NZ | 2.24 | 0.53 |
| 4:CB:210:ASN:OD1 | 4:CB:215:VAL:N | 2.35 | 0.53 |
| 4:CC:153:ASP:O | 4:CC:157:GLN:HG2 | 2.09 | 0.53 |
| 4:CD:392:LYS:HG2 | 4:CD:401:THR:HA | 1.89 | 0.53 |
| 4:CG:130:ARG:HB3 | 4:CG:434:ILE:HD12 | 1.90 | 0.53 |
| 4:CH:80:ASN:HD21 | 4:CH:277:THR:HB | 1.73 | 0.53 |
| 5:DJ:206:GLU:HG2 | 5:DJ:230:LYS:HG3 | 1.90 | 0.53 |
| 5:FB:194:ASP:H | 5:FB:215:SER:HB3 | 1.73 | 0.53 |
| 5:FC:86:ASP:OD2 | 5:GK:354:LYS:NZ | 2.42 | 0.53 |
| 1:AE:238:ARG:HA | 1:AE:238:ARG:HE | 1.74 | 0.53 |
| 1:AE:312:LEU:HD23 | 1:AE:312:LEU:H | 1.74 | 0.53 |
| 3:BI:299:ALA:HA | 3:BI:302:LYS:HB3 | 1.91 | 0.53 |
| 4:CK:376:ARG:O | 4:CK:380:ASN:N | 2.42 | 0.53 |
| 5:DH:298:THR:HG22 | 5:DH:313:GLN:HG2 | 1.91 | 0.53 |
| 5:EB:127:ILE:HD11 | 5:EB:310:VAL:HG11 | 1.90 | 0.53 |
| 5:EF:108:VAL:HG12 | 5:EF:114:GLN:HA | 1.89 | 0.53 |
| 5:EJ:300:VAL:HG22 | 5:EJ:310:VAL:HG22 | 1.91 | 0.53 |
| 5:FA:189:GLN:HE21 | 5:FA:191:ASN:HB2 | 1.74 | 0.53 |
| 5:FC:61:THR:O | 5:FC:364:ASN:ND2 | 2.42 | 0.53 |
| 5:FC:392:ASP:OD1 | 5:GK:379:ARG:NE | 2.40 | 0.53 |
| 5:FI:398:LEU:HA | 5:FI:401:LEU:HG | 1.91 | 0.53 |
| 5:GD:123:THR:HB | 5:GD:124:PRO:HD3 | 1.91 | 0.53 |
| 3:BD:199:ASN:HD22 | 3:BD:202:VAL:HG23 | 1.74 | 0.53 |
| 3:BL:84:THR:O | 3:BL:88:GLN:HG2 | 2.09 | 0.53 |
| 4:CC:430:ASN:HB3 | 4:CC:433:GLU:HG3 | 1.91 | 0.53 |
| 4:CD:415:LYS:HG2 | 4:CD:418:SER:HB3 | 1.90 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:357:LYS:O | 4:CJ:359:GLN:NE2 | 2.41 | 0.53 |
| 4:CJ:365:ILE:HD12 | 4:CJ:374:VAL:HG22 | 1.90 | 0.53 |
| 4:CK:348:LEU:HG | 4:CK:402:VAL:HA | 1.89 | 0.53 |
| 5:DG:139:PRO:HB2 | 5:DG:141:THR:HG23 | 1.90 | 0.53 |
| 5:DG:207:TRP:HB2 | 5:DG:229:LEU:HB2 | 1.91 | 0.53 |
| 5:FA:145:ALA:HB2 | 5:FA:285:PRO:HD3 | 1.91 | 0.53 |
| 1:AB:434:ALA:O | 1:AB:437:LYS:HG3 | 2.09 | 0.52 |
| 2:AC:329:PHE:CZ | 2:AC:348:GLN:HB2 | 2.44 | 0.52 |
| 4:CG:394:GLU:HB3 | 4:CG:399:LYS:HG3 | 1.90 | 0.52 |
| 5:DB:316:LEU:HD11 | 5:DB:355:LEU:HD11 | 1.91 | 0.52 |
| 5:DE:80:GLY:H | 5:DE:95:ARG:HH21 | 1.57 | 0.52 |
| 5:DF:108:VAL:HG12 | 5:DF:114:GLN:HA | 1.90 | 0.52 |
| 5:EJ:211:THR:HG21 | 5:EJ:245:ILE:HG21 | 1.91 | 0.52 |
| 5:FB:393:GLN:OE1 | 5:FD:378:GLN:NE2 | 2.34 | 0.52 |
| 3:BB:81:SER:HB2 | 3:BB:247:ARG:HH21 | 1.74 | 0.52 |
| 4:CB:141:VAL:HG22 | 4:CB:424:MET:SD | 2.49 | 0.52 |
| 4:CD:170:ASN:ND2 | 4:CD:244:LEU:O | 2.41 | 0.52 |
| 5:FC:117:GLY:HA3 | 5:FC:136:ILE:HD11 | 1.91 | 0.52 |
| 5:FF:100:LYS:HE3 | 5:FF:110:MET:HA | 1.90 | 0.52 |
| 1:AA:157:ARG:NH1 | 1:AA:158:ASP:OD1 | 2.43 | 0.52 |
| 1:AE:188:GLY:HA3 | 1:AE:239:GLN:HG2 | 1.90 | 0.52 |
| 3:BH:74:SER:O | 3:BH:77:GLU:HG3 | 2.09 | 0.52 |
| 3:BL:63:ALA:O | 3:BL:67:THR:HG23 | 2.10 | 0.52 |
| 5:ED:72:LEU:HD21 | 5:ED:291:TYR:HE2 | 1.75 | 0.52 |
| 5:FA:94:SER:HB2 | 5:FA:332:VAL:HG12 | 1.92 | 0.52 |
| 5:FB:193:HIS:HE1 | 5:FB:250:ILE:HG22 | 1.74 | 0.52 |
| 5:FK:125:PRO:HG2 | 5:FK:309:GLN:HG2 | 1.92 | 0.52 |
| 5:GB:123:THR:HB | 5:GB:124:PRO:HD3 | 1.91 | 0.52 |
| 1:AA:33:ILE:O | 1:AA:37:GLN:HG3 | 2.10 | 0.52 |
| 1:AA:114:PHE:HB2 | 1:AA:179:PHE:HB2 | 1.91 | 0.52 |
| 1:AA:334:SER:O | 1:AA:339:LYS:NZ | 2.41 | 0.52 |
| 4:CB:195:PRO:HB2 | 4:CB:198:LEU:HB2 | 1.91 | 0.52 |
| 4:CE:337:SER:OG | 4:CE:341:ASN:ND2 | 2.43 | 0.52 |
| 4:CI:303:LEU:HD13 | 4:CI:417:VAL:HG12 | 1.92 | 0.52 |
| 5:EE:230:LYS:NZ | 5:EE:231:PHE:O | 2.41 | 0.52 |
| 5:FB:3:SER:HB2 | 5:GB:64:THR:HG21 | 1.90 | 0.52 |
| 5:FE:74:VAL:HG12 | 5:FE:357:ASN:HA | 1.90 | 0.52 |
| 5:FK:183:VAL:HB | 5:FK:195:MET:HB2 | 1.90 | 0.52 |
| 5:GC:153:MET:HE2 | 5:GC:260:LEU:HD11 | 1.92 | 0.52 |
| 2:AC:83:LYS:HD3 | 2:AC:253:THR:HB | 1.90 | 0.52 |
| 2:AC:395:LYS:HD2 | 2:AC:398:LEU:HD12 | 1.91 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AD:424:SER:HA | 1:AD:427:ASN:HD21 | 1.74 | 0.52 |
| 3:BE:13:MET:HE2 | 4:CG:520:GLU:HA | 1.92 | 0.52 |
| 3:BJ:83:VAL:O | 3:BJ:87:ILE:HG12 | 2.10 | 0.52 |
| 3:BL:280:ASP:OD1 | 3:BL:281:VAL:N | 2.43 | 0.52 |
| 4:CB:121:VAL:HG13 | 4:CB:453:ASN:HB2 | 1.91 | 0.52 |
| 4:CF:303:LEU:HD12 | 4:CF:330:ILE:HD12 | 1.91 | 0.52 |
| 5:DE:94:SER:HB2 | 5:DE:332:VAL:HG12 | 1.92 | 0.52 |
| 5:EB:283:TYR:HB3 | 5:EB:307:GLN:HG3 | 1.90 | 0.52 |
| 5:FA:210:TYR:HD1 | 5:FA:222:PRO:HB2 | 1.75 | 0.52 |
| 5:FD:123:THR:HB | 5:FD:124:PRO:HD3 | 1.91 | 0.52 |
| 5:FH:120:ALA:HB2 | 5:FH:127:ILE:HD13 | 1.91 | 0.52 |
| 1:AB:408:GLN:HA | 1:AB:411:VAL:HG12 | 1.90 | 0.52 |
| 1:AB:449:LYS:HD3 | 3:BD:23:TRP:CZ3 | 2.44 | 0.52 |
| 2:AC:315:ASP:HB3 | 2:AC:318:VAL:HG12 | 1.92 | 0.52 |
| 1:AD:227:ALA:HB3 | 1:AD:238:ARG:O | 2.09 | 0.52 |
| 3:BD:107:ARG:NH2 | 3:BD:215:VAL:H | 2.08 | 0.52 |
| 4:CC:296:ASN:HB3 | 4:CC:360:ALA:HB1 | 1.91 | 0.52 |
| 5:DG:189:GLN:HG3 | 5:DG:253:ALA:HB2 | 1.92 | 0.52 |
| 5:ED:146:LYS:NZ | 5:ED:281:ASN:O | 2.40 | 0.52 |
| 5:GJ:84:LEU:HD23 | 5:GJ:115:LEU:HA | 1.92 | 0.52 |
| 3:BA:220:VAL:O | 3:BA:224:LYS:HG2 | 2.09 | 0.52 |
| 3:BL:162:GLN:OE1 | 4:CA:453:ASN:ND2 | 2.41 | 0.52 |
| 4:CA:313:HIS:ND1 | 4:CA:325:LYS:O | 2.41 | 0.52 |
| 4:CE:156:LYS:O | 4:CE:160:ILE:HG12 | 2.10 | 0.52 |
| 4:CI:538:VAL:HG22 | 5:DK:374:MET:HE1 | 1.90 | 0.52 |
| 5:DA:42:PHE:HB2 | 5:DE:329:GLY:HA2 | 1.90 | 0.52 |
| 5:DJ:41:MET:HE1 | 5:EJ:64:THR:HG23 | 1.91 | 0.52 |
| 5:EB:153:MET:HE1 | 5:EB:183:VAL:HB | 1.90 | 0.52 |
| 5:EF:207:TRP:O | 5:EF:229:LEU:N | 2.36 | 0.52 |
| 5:EK:34:GLY:HA2 | 5:EK:58:GLN:HA | 1.91 | 0.52 |
| 5:FA:61:THR:OG1 | 5:FA:364:ASN:ND2 | 2.41 | 0.52 |
| 5:FD:142:LEU:HD21 | 5:GB:266:MET:HE3 | 1.92 | 0.52 |
| 5:GE:180:LYS:HE3 | 5:GE:196:ASN:HB3 | 1.91 | 0.52 |
| 1:AA:232:ASN:HB3 | 1:AE:221:LEU:HD13 | 1.91 | 0.52 |
| 3:BC:94:ILE:HD11 | 3:BC:114:LEU:HD21 | 1.91 | 0.52 |
| 4:CD:439:GLU:HG3 | 4:CD:446:VAL:HG11 | 1.92 | 0.52 |
| 4:CJ:2:SER:O | 4:CJ:6:ASN:ND2 | 2.28 | 0.52 |
| 5:DE:187:ASP:OD1 | 5:DE:190:GLY:N | 2.43 | 0.52 |
| 5:EE:123:THR:HB | 5:EE:124:PRO:HD3 | 1.91 | 0.52 |
| 5:GB:109:ASN:OD1 | 5:GB:113:MET:N | 2.42 | 0.52 |
| 4:CA:137:ALA:HB1 | 4:CA:328:PHE:HE1 | 1.74 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CG:165:SER:O | 4:CG:169:ILE:HG12 | 2.09 | 0.52 |
| 4:CG:226:ASN:HD22 | 4:CG:237:GLN:HA | 1.75 | 0.52 |
| 4:CJ:273:LYS:HG3 | 4:CJ:274:LEU:HD22 | 1.91 | 0.52 |
| 5:DA:148:THR:HG21 | 5:DA:185:VAL:HG12 | 1.92 | 0.52 |
| 5:DB:76:ILE:HD11 | 5:DB:82:PHE:CZ | 2.45 | 0.52 |
| 5:DB:143:MET:HE3 | 5:DB:303:TYR:CD2 | 2.44 | 0.52 |
| 5:DC:19:ILE:HG21 | 5:DC:374:MET:HB2 | 1.92 | 0.52 |
| 5:DK:138:ILE:HA | 5:DK:311:LEU:HD13 | 1.92 | 0.52 |
| 5:EB:128:GLN:HG2 | 5:EB:131:ALA:HB2 | 1.90 | 0.52 |
| 5:EE:61:THR:O | 5:EE:364:ASN:ND2 | 2.43 | 0.52 |
| 5:FA:399:VAL:HG11 | 5:FD:382:GLN:HB3 | 1.92 | 0.52 |
| 1:AA:82:LEU:HD13 | 1:AA:254:LEU:HD13 | 1.92 | 0.52 |
| 1:AA:435:ARG:O | 1:AA:439:GLN:HG2 | 2.10 | 0.52 |
| 1:AE:398:LEU:HA | 1:AE:404:ILE:HD11 | 1.91 | 0.52 |
| 3:BB:80:LEU:O | 3:BB:84:THR:HG23 | 2.10 | 0.52 |
| 3:BH:260:LEU:HD23 | 3:BH:263:LEU:HD21 | 1.91 | 0.52 |
| 4:CK:1:MET:N | 5:DK:366:ASP:OD1 | 2.29 | 0.52 |
| 4:CK:310:ASN:HA | 4:CK:313:HIS:ND1 | 2.25 | 0.52 |
| 5:DA:189:GLN:NE2 | 5:DD:233:GLU:O | 2.43 | 0.52 |
| 5:DF:230:LYS:O | 5:DF:238:GLU:N | 2.39 | 0.52 |
| 5:DF:345:GLY:HA3 | 5:DF:352:PHE:HE2 | 1.75 | 0.52 |
| 5:DG:316:LEU:HD11 | 5:DG:355:LEU:HD11 | 1.91 | 0.52 |
| 5:FB:146:LYS:NZ | 5:FB:190:GLY:HA2 | 2.25 | 0.52 |
| 5:FF:285:PRO:HG3 | 5:GE:268:GLN:HG3 | 1.92 | 0.52 |
| 1:AA:120:GLN:HG3 | 1:AA:153:MET:H | 1.75 | 0.51 |
| 1:AE:428:SER:O | 1:AE:431:GLU:HG3 | 2.10 | 0.51 |
| 3:BB:84:THR:O | 3:BB:87:ILE:HG12 | 2.09 | 0.51 |
| 3:BD:85:THR:O | 3:BD:89:THR:HG23 | 2.09 | 0.51 |
| 3:BG:91:GLN:O | 3:BG:94:ILE:HG22 | 2.10 | 0.51 |
| 4:CG:385:ALA:HB3 | 4:CG:393:LEU:HD11 | 1.92 | 0.51 |
| 5:DC:293:ILE:HG12 | 5:DC:299:VAL:HG22 | 1.91 | 0.51 |
| 5:DG:195:MET:HA | 5:DG:195:MET:HE3 | 1.92 | 0.51 |
| 5:DK:147:SER:HB2 | 5:DK:188:SER:HB3 | 1.91 | 0.51 |
| 5:EA:390:THR:OG1 | 5:EE:374:MET:SD | 2.57 | 0.51 |
| 5:GD:117:GLY:HA3 | 5:GD:136:ILE:HD11 | 1.92 | 0.51 |
| 5:GE:157:LEU:HD21 | 5:GE:207:TRP:CZ2 | 2.45 | 0.51 |
| 5:GF:123:THR:HB | 5:GF:124:PRO:HD3 | 1.90 | 0.51 |
| 1:AA:456:TYR:CD1 | 3:BK:302:LYS:HG2 | 2.45 | 0.51 |
| 1:AB:273:LYS:HG3 | 1:AB:362:LEU:HD23 | 1.92 | 0.51 |
| 3:BB:84:THR:O | 3:BB:88:GLN:OE1 | 2.29 | 0.51 |
| 4:CD:303:LEU:HD21 | 4:CD:352:VAL:HG11 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CD:329:SER:OG | 4:CD:425:ASN:N | 2.43 | 0.51 |
| 4:CJ:36:ARG:NH2 | 4:CJ:66:GLU:OE1 | 2.43 | 0.51 |
| 5:DD:178:ASN:HB3 | 5:DD:200:VAL:HA | 1.92 | 0.51 |
| 5:DG:123:THR:HB | 5:DG:124:PRO:HD3 | 1.93 | 0.51 |
| 5:EK:119:PRO:HD2 | 5:EK:128:GLN:HB2 | 1.91 | 0.51 |
| 5:FA:200:VAL:HB | 5:FA:208:ALA:HB3 | 1.92 | 0.51 |
| 5:FK:149:THR:HB | 5:FK:281:ASN:HD21 | 1.75 | 0.51 |
| 5:GE:47:VAL:HG11 | 5:GF:17:ASP:HB3 | 1.91 | 0.51 |
| 1:AB:328:GLN:HE22 | 1:AB:390:ILE:HD12 | 1.75 | 0.51 |
| 3:BH:44:ILE:O | 3:BH:48:GLN:HG2 | 2.10 | 0.51 |
| 4:CI:183:ILE:HG12 | 4:CI:198:LEU:HB3 | 1.92 | 0.51 |
| 5:DB:37:SER:HB2 | 5:DD:110:MET:HE1 | 1.92 | 0.51 |
| 5:DB:211:THR:HG21 | 5:DB:245:ILE:HG12 | 1.92 | 0.51 |
| 5:DD:169:PHE:CE2 | 5:DD:221:ALA:HB1 | 2.46 | 0.51 |
| 5:DD:207:TRP:HB2 | 5:DD:229:LEU:HB2 | 1.92 | 0.51 |
| 5:EH:145:ALA:HB2 | 5:EH:285:PRO:HD3 | 1.92 | 0.51 |
| 1:AE:317:VAL:HG13 | 1:AE:403:ILE:HD12 | 1.92 | 0.51 |
| 3:BA:23:TRP:CH2 | 3:BK:307:MET:HB3 | 2.46 | 0.51 |
| 3:BH:210:ALA:O | 3:BH:213:THR:OG1 | 2.28 | 0.51 |
| 3:BI:13:MET:O | 3:BI:17:THR:HG23 | 2.10 | 0.51 |
| 3:BK:162:GLN:NE2 | 4:CD:453:ASN:OD1 | 2.43 | 0.51 |
| 4:CB:21:THR:HG21 | 4:CB:39:THR:HB | 1.92 | 0.51 |
| 4:CC:114:PHE:CE2 | 4:CC:463:GLN:HB3 | 2.45 | 0.51 |
| 5:DK:159:SER:H | 5:DK:267:GLN:NE2 | 2.09 | 0.51 |
| 5:FD:117:GLY:HA3 | 5:FD:136:ILE:HD11 | 1.91 | 0.51 |
| 5:FK:127:ILE:O | 5:GK:180:LYS:HD3 | 2.10 | 0.51 |
| 1:AE:344:ILE:HG23 | 1:AE:365:VAL:HG11 | 1.93 | 0.51 |
| 3:BD:58:GLN:NE2 | 4:CG:463:GLN:OE1 | 2.43 | 0.51 |
| 3:BE:134:TYR:HB2 | 3:BE:137:ALA:HB2 | 1.92 | 0.51 |
| 3:BH:140:LYS:HD2 | 3:BH:155:GLY:HA2 | 1.93 | 0.51 |
| 3:BJ:215:VAL:HG12 | 3:BJ:221:GLU:HG3 | 1.92 | 0.51 |
| 3:BJ:299:ALA:HA | 3:BJ:302:LYS:HB3 | 1.93 | 0.51 |
| 4:CB:40:ILE:HD13 | 5:DG:110:MET:HG2 | 1.92 | 0.51 |
| 4:CC:242:ARG:NH1 | 4:CC:260:TYR:OH | 2.44 | 0.51 |
| 5:DE:202:THR:OG1 | 5:DE:203:LYS:NZ | 2.42 | 0.51 |
| 5:DF:179:LYS:HB3 | 5:DF:199:PHE:HD2 | 1.74 | 0.51 |
| 5:DJ:341:VAL:HG23 | 5:DJ:343:LEU:HD12 | 1.91 | 0.51 |
| 5:DK:327:SER:HG | 5:DK:333:TRP:CD1 | 2.29 | 0.51 |
| 5:EA:146:LYS:NZ | 5:EA:147:SER:O | 2.44 | 0.51 |
| 5:FB:138:ILE:HA | 5:FB:311:LEU:HD13 | 1.93 | 0.51 |
| 5:FC:94:SER:HB2 | 5:FC:332:VAL:HG12 | 1.91 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GE:143:MET:HE3 | 5:GE:303:TYR:CE2 | 2.45 | 0.51 |
| 2:AC:337:ALA:O | 3:BD:99:ASN:ND2 | 2.32 | 0.51 |
| 1:AE:267:LYS:NZ | 1:AE:269:ASP:OD1 | 2.37 | 0.51 |
| 3:BG:96:TYR:HB3 | 3:BG:110:LEU:HD13 | 1.92 | 0.51 |
| 4:CC:524:ASN:OD1 | 4:CC:527:ARG:NH1 | 2.43 | 0.51 |
| 4:CF:363:TYR:CE1 | 4:CF:376:ARG:HG2 | 2.44 | 0.51 |
| 4:CH:36:ARG:HH21 | 4:CH:66:GLU:HG3 | 1.75 | 0.51 |
| 5:DC:74:VAL:HG11 | 5:DC:355:LEU:HD23 | 1.91 | 0.51 |
| 5:DE:166:LYS:NZ | 5:DE:168:PRO:HG2 | 2.24 | 0.51 |
| 5:EF:401:LEU:HD21 | 5:FG:385:ALA:HB1 | 1.92 | 0.51 |
| 1:AA:341:MET:HG3 | 1:AA:346:ILE:HB | 1.93 | 0.51 |
| 4:CF:459:LEU:HD23 | 4:CF:462:LEU:HD21 | 1.92 | 0.51 |
| 4:CH:318:ASP:OD1 | 4:CH:322:ASN:N | 2.44 | 0.51 |
| 4:CI:88:ARG:HG2 | 4:CI:492:LEU:HD21 | 1.93 | 0.51 |
| 4:CK:376:ARG:NH2 | 4:CK:396:ASP:OD2 | 2.31 | 0.51 |
| 5:DC:187:ASP:OD1 | 5:DC:191:ASN:N | 2.41 | 0.51 |
| 5:EI:386:GLN:NE2 | 5:EJ:371:LEU:HD22 | 2.26 | 0.51 |
| 1:AE:58:GLN:NE2 | 1:AE:394:VAL:HG23 | 2.25 | 0.51 |
| 3:BA:76:GLU:HG2 | 3:BA:250:LEU:HD21 | 1.91 | 0.51 |
| 3:BK:7:MET:HE2 | 4:CD:511:GLN:HB3 | 1.93 | 0.51 |
| 4:CB:127:PRO:HA | 4:CB:130:ARG:HD2 | 1.91 | 0.51 |
| 4:CD:208:GLU:O | 4:CD:211:LYS:HG2 | 2.11 | 0.51 |
| 4:CG:118:GLN:HA | 4:CG:121:VAL:HG23 | 1.92 | 0.51 |
| 5:DE:243:VAL:HG13 | 5:DE:245:ILE:HD11 | 1.93 | 0.51 |
| 5:DH:43:ALA:HB3 | 5:DH:49:LEU:HD11 | 1.93 | 0.51 |
| 5:EI:179:LYS:HB3 | 5:EI:199:PHE:HB2 | 1.92 | 0.51 |
| 5:GK:117:GLY:N | 5:GK:134:ALA:O | 2.44 | 0.51 |
| 3:BH:284:ASN:ND2 | 3:BI:17:THR:HG22 | 2.25 | 0.51 |
| 3:BJ:98:GLY:HA2 | 3:BJ:229:ILE:HG21 | 1.92 | 0.51 |
| 3:BK:35:ARG:HB2 | 3:BK:281:VAL:HB | 1.92 | 0.51 |
| 4:CB:144:PHE:HB3 | 4:CB:421:ILE:HG23 | 1.93 | 0.51 |
| 4:CK:197:ASP:OD1 | 4:CK:198:LEU:N | 2.44 | 0.51 |
| 5:DK:43:ALA:HB2 | 5:DK:49:LEU:HD11 | 1.93 | 0.51 |
| 5:EC:68:THR:OG1 | 5:EC:73:ASP:OD2 | 2.20 | 0.51 |
| 5:EE:207:TRP:HB2 | 5:EE:229:LEU:HB2 | 1.93 | 0.51 |
| 1:AB:383:GLU:HG2 | 1:AB:384:THR:HG23 | 1.93 | 0.51 |
| 1:AD:108:LEU:HB3 | 1:AD:218:MET:HB3 | 1.92 | 0.51 |
| 1:AE:324:GLY:O | 1:AE:328:GLN:HG2 | 2.11 | 0.51 |
| 3:BA:13:MET:HE2 | 4:CD:520:GLU:HA | 1.92 | 0.51 |
| 3:BH:118:ARG:HH21 | 3:BH:201:PHE:HB3 | 1.76 | 0.51 |
| 3:BJ:284:ASN:HD21 | 3:BN:310:MET:HE1 | 1.76 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CA:329:SER:N | 4:CA:425:ASN:O | 2.33 | 0.51 |
| 4:CA:388:ASP:OD1 | 4:CA:392:LYS:N | 2.43 | 0.51 |
| 4:CB:235:LEU:HG | 4:CB:236:VAL:HG23 | 1.93 | 0.51 |
| 4:CF:1:MET:HG3 | 5:DG:367:LEU:HB2 | 1.92 | 0.51 |
| 4:CF:96:ASP:HB2 | 4:CF:489:THR:HG21 | 1.92 | 0.51 |
| 4:CG:242:ARG:O | 4:CG:243:GLN:NE2 | 2.43 | 0.51 |
| 4:CJ:421:ILE:H | 4:CJ:421:ILE:HD12 | 1.75 | 0.51 |
| 5:DD:250:ILE:HG23 | 5:DD:251:ASN:H | 1.76 | 0.51 |
| 5:DG:125:PRO:HG3 | 5:DG:309:GLN:HE21 | 1.75 | 0.51 |
| 5:EE:148:THR:HB | 5:EE:185:VAL:HG13 | 1.93 | 0.51 |
| 5:EJ:73:ASP:HB2 | 5:EJ:360:LEU:HD21 | 1.92 | 0.51 |
| 5:FA:317:ALA:HB2 | 5:FA:344:LEU:HD23 | 1.93 | 0.51 |
| 5:FC:187:ASP:OD1 | 5:FC:191:ASN:N | 2.43 | 0.51 |
| 5:FD:395:LEU:O | 5:GB:379:ARG:NH1 | 2.43 | 0.51 |
| 5:FF:123:THR:HB | 5:FF:124:PRO:HD3 | 1.93 | 0.51 |
| 5:FG:25:ASN:O | 5:FG:363:SER:OG | 2.24 | 0.51 |
| 5:FH:143:MET:HE2 | 5:FH:303:TYR:CG | 2.46 | 0.51 |
| 5:GA:42:PHE:HB2 | 5:GE:329:GLY:HA2 | 1.93 | 0.51 |
| 3:BJ:133:ARG:NH2 | 4:CH:125:GLU:HB2 | 2.26 | 0.50 |
| 4:CD:70:PHE:HE2 | 4:CI:160:ILE:HG22 | 1.76 | 0.50 |
| 4:CD:371:ASP:OD1 | 4:CD:372:TRP:N | 2.44 | 0.50 |
| 4:CH:125:GLU:OE1 | 4:CH:451:SER:OG | 2.28 | 0.50 |
| 4:CK:170:ASN:HB3 | 4:CK:243:GLN:HE22 | 1.75 | 0.50 |
| 5:DD:198:TYR:N | 5:DD:210:TYR:O | 2.44 | 0.50 |
| 5:DK:156:ASN:HD22 | 5:DK:274:ASN:HD21 | 1.59 | 0.50 |
| 5:EB:34:GLY:HA2 | 5:EB:58:GLN:HA | 1.93 | 0.50 |
| 5:ED:127:ILE:HD11 | 5:ED:310:VAL:HG11 | 1.93 | 0.50 |
| 5:FI:187:ASP:OD1 | 5:FI:191:ASN:N | 2.43 | 0.50 |
| 5:GD:241:GLY:HA2 | 5:GD:262:PHE:HB2 | 1.93 | 0.50 |
| 5:GI:169:PHE:HE2 | 5:GI:222:PRO:HG2 | 1.74 | 0.50 |
| 2:AC:22:LEU:HD13 | 2:AC:433:VAL:HG13 | 1.92 | 0.50 |
| 1:AD:350:GLY:HA3 | 3:BG:88:GLN:HE22 | 1.76 | 0.50 |
| 1:AD:403:ILE:HA | 1:AD:406:ASN:HD22 | 1.76 | 0.50 |
| 1:AE:47:TYR:HE1 | 1:AE:404:ILE:HB | 1.76 | 0.50 |
| 3:BG:121:LEU:HB3 | 3:BG:201:PHE:HE1 | 1.76 | 0.50 |
| 4:CE:135:GLY:O | 4:CE:138:GLU:HG3 | 2.10 | 0.50 |
| 4:CG:171:ASN:O | 4:CG:174:LYS:HG2 | 2.12 | 0.50 |
| 4:CH:209:LEU:HD23 | 4:CH:227:LEU:HD21 | 1.93 | 0.50 |
| 4:CK:233:TYR:CE1 | 5:DK:180:LYS:HD2 | 2.46 | 0.50 |
| 5:DB:117:GLY:HA3 | 5:DB:136:ILE:HD11 | 1.93 | 0.50 |
| 5:DD:249:THR:HG23 | 5:DD:253:ALA:H | 1.77 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EI:80:GLY:O | 5:EI:95:ARG:NH1 | 2.45 | 0.50 |
| 5:EJ:145:ALA:HA | 5:EJ:283:TYR:CE2 | 2.46 | 0.50 |
| 5:EK:166:LYS:N | 5:EK:175:ASP:OD2 | 2.36 | 0.50 |
| 5:FD:190:GLY:N | 5:GB:234:ASN:HD21 | 2.09 | 0.50 |
| 5:FE:153:MET:HG3 | 5:FE:278:THR:HG22 | 1.93 | 0.50 |
| 2:AC:364:LYS:HA | 2:AC:367:LYS:HG2 | 1.93 | 0.50 |
| 3:BG:190:GLU:HG3 | 3:BG:231:LYS:HE3 | 1.93 | 0.50 |
| 3:BK:44:ILE:O | 3:BK:48:GLN:HG2 | 2.11 | 0.50 |
| 3:BL:62:TYR:HB3 | 3:BL:66:ARG:HH21 | 1.75 | 0.50 |
| 4:CE:130:ARG:HD3 | 4:CE:431:GLU:HB2 | 1.93 | 0.50 |
| 5:DD:40:ASP:OD1 | 5:DD:41:MET:N | 2.44 | 0.50 |
| 5:EB:229:LEU:HB3 | 5:EB:231:PHE:HE2 | 1.75 | 0.50 |
| 5:ED:37:SER:HB2 | 5:FA:110:MET:HE1 | 1.92 | 0.50 |
| 5:EE:68:THR:HG21 | 5:EE:360:LEU:HD12 | 1.93 | 0.50 |
| 5:EG:316:LEU:HD21 | 5:EG:355:LEU:HD11 | 1.94 | 0.50 |
| 5:EI:402:ARG:NH1 | 5:FI:378:GLN:OE1 | 2.45 | 0.50 |
| 5:EK:99:PHE:CE1 | 5:EK:115:LEU:HB2 | 2.46 | 0.50 |
| 5:FK:13:ALA:HB2 | 5:FK:381:TYR:HE2 | 1.76 | 0.50 |
| 5:GJ:261:SER:HB3 | 5:GJ:263:LEU:HG | 1.92 | 0.50 |
| 1:AA:307:ASP:OD2 | 1:AA:308:LYS:NZ | 2.43 | 0.50 |
| 1:AD:327:ALA:O | 1:AD:330:ALA:N | 2.45 | 0.50 |
| 1:AE:321:ILE:HD11 | 1:AE:403:ILE:HD11 | 1.92 | 0.50 |
| 3:BB:139:TYR:CE2 | 3:BB:158:LYS:HG3 | 2.47 | 0.50 |
| 3:BD:182:SER:HA | 3:BD:198:LYS:HD2 | 1.93 | 0.50 |
| 4:CA:186:MET:SD | 4:CA:195:PRO:HD2 | 2.52 | 0.50 |
| 4:CE:363:TYR:OH | 4:CE:396:ASP:OD2 | 2.29 | 0.50 |
| 4:CJ:364:LYS:HE3 | 4:CJ:413:LEU:HD13 | 1.94 | 0.50 |
| 5:DA:109:ASN:HD21 | 5:DA:113:MET:HE3 | 1.76 | 0.50 |
| 5:DA:149:THR:OG1 | 5:DA:281:ASN:ND2 | 2.39 | 0.50 |
| 5:DC:32:LYS:HD2 | 5:DC:60:PHE:HA | 1.94 | 0.50 |
| 5:DG:108:VAL:HG12 | 5:DG:114:GLN:HA | 1.93 | 0.50 |
| 5:DI:287:ASP:OD2 | 5:DI:288:LEU:N | 2.45 | 0.50 |
| 5:EE:317:ALA:HB2 | 5:EE:344:LEU:HD23 | 1.92 | 0.50 |
| 5:EK:117:GLY:HA3 | 5:EK:136:ILE:HD11 | 1.93 | 0.50 |
| 5:EK:203:LYS:HB2 | 5:EK:206:GLU:HB3 | 1.93 | 0.50 |
| 5:FD:187:ASP:OD1 | 5:GB:234:ASN:ND2 | 2.45 | 0.50 |
| 5:FH:185:VAL:HG23 | 5:FH:193:HIS:HB2 | 1.94 | 0.50 |
| 5:GG:39:ALA:HB3 | 5:GG:52:LYS:HE3 | 1.93 | 0.50 |
| 5:GG:108:VAL:HG12 | 5:GG:114:GLN:HA | 1.93 | 0.50 |
| 1:AA:83:LYS:HE3 | 1:AA:253:THR:HB | 1.94 | 0.50 |
| 1:AA:135:GLN:HB2 | 1:AA:138:ARG:HB3 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AB:43:LYS:HD3 | 1:AB:47:TYR:CZ | 2.46 | 0.50 |
| 1:AB:183:LEU:HD22 | 1:AB:209:TYR:HE2 | 1.77 | 0.50 |
| 1:AB:349:ASP:O | 1:AB:353:GLY:N | 2.38 | 0.50 |
| 1:AD:175:LYS:HA | 1:AE:238:ARG:NH2 | 2.27 | 0.50 |
| 3:BJ:30:MET:HE1 | 3:BJ:286:VAL:HG13 | 1.93 | 0.50 |
| 4:CB:529:GLN:O | 4:CB:533:LEU:HG | 2.12 | 0.50 |
| 4:CK:374:VAL:HG23 | 4:CK:385:ALA:HB2 | 1.93 | 0.50 |
| 5:DG:237:LEU:HD21 | 5:DG:240:GLY:HA3 | 1.92 | 0.50 |
| 5:EB:143:MET:HE3 | 5:EB:283:TYR:CE2 | 2.46 | 0.50 |
| 5:EC:72:LEU:HD11 | 5:EC:291:TYR:HE1 | 1.77 | 0.50 |
| 5:FF:156:ASN:HD22 | 5:FG:142:LEU:HD22 | 1.77 | 0.50 |
| 5:FJ:184:THR:O | 5:FJ:280:GLN:NE2 | 2.44 | 0.50 |
| 5:GG:148:THR:HG21 | 5:GG:185:VAL:HG12 | 1.94 | 0.50 |
| 5:GJ:341:VAL:HG13 | 5:GJ:343:LEU:HG | 1.93 | 0.50 |
| 3:BE:280:ASP:OD2 | 3:BE:281:VAL:N | 2.45 | 0.50 |
| 4:CA:392:LYS:NZ | 4:CA:401:THR:HG22 | 2.27 | 0.50 |
| 4:CE:166:VAL:O | 4:CE:170:ASN:ND2 | 2.45 | 0.50 |
| 4:CF:137:ALA:HB1 | 4:CF:327:PHE:CE2 | 2.47 | 0.50 |
| 4:CH:387:LYS:HA | 4:CH:387:LYS:HE2 | 1.93 | 0.50 |
| 4:CH:395:ILE:O | 4:CH:398:LEU:HB2 | 2.11 | 0.50 |
| 4:CJ:388:ASP:OD1 | 4:CJ:392:LYS:N | 2.45 | 0.50 |
| 5:GH:236:ILE:HG23 | 5:GH:266:MET:HE1 | 1.94 | 0.50 |
| 5:GI:4:GLN:NE2 | 5:GI:48:GLY:O | 2.44 | 0.50 |
| 5:GJ:133:PRO:HG2 | 5:GJ:344:LEU:HD13 | 1.94 | 0.50 |
| 1:AB:183:LEU:HD23 | 1:AB:207:LEU:HD22 | 1.92 | 0.50 |
| 1:AD:64:LEU:HA | 1:AD:70:PHE:HE2 | 1.77 | 0.50 |
| 1:AD:346:ILE:HG12 | 1:AD:357:ILE:HB | 1.94 | 0.50 |
| 3:BK:220:VAL:O | 3:BK:223:GLU:HG3 | 2.11 | 0.50 |
| 3:BL:245:THR:O | 3:BL:249:GLU:HG2 | 2.11 | 0.50 |
| 4:CF:231:ASN:HD22 | 4:CF:270:ILE:HD13 | 1.76 | 0.50 |
| 4:CG:468:VAL:HG11 | 4:CG:477:ALA:HB2 | 1.93 | 0.50 |
| 4:CJ:107:SER:O | 4:CJ:111:GLN:HG3 | 2.11 | 0.50 |
| 4:CJ:262:ASP:HB3 | 4:CJ:265:ALA:HB3 | 1.94 | 0.50 |
| 5:FC:230:LYS:HD2 | 5:FC:239:SER:HB3 | 1.94 | 0.50 |
| 5:GD:174:ALA:HA | 5:GD:177:TYR:CZ | 2.46 | 0.50 |
| 5:GF:209:VAL:HG23 | 5:GF:226:SER:HB2 | 1.93 | 0.50 |
| 3:BG:29:GLN:HA | 3:BG:32:THR:HG22 | 1.93 | 0.50 |
| 3:BG:35:ARG:HG3 | 3:BG:36:VAL:HG23 | 1.94 | 0.50 |
| 3:BH:122:MET:HE3 | 3:BH:148:GLN:HA | 1.94 | 0.50 |
| 3:BL:73:VAL:HA | 3:BL:76:GLU:OE1 | 2.12 | 0.50 |
| 4:CD:126:ASP:N | 4:CD:126:ASP:OD1 | 2.45 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CE:335:VAL:HG22 | 4:CE:414:LEU:HG | 1.94 | 0.50 |
| 5:DJ:401:LEU:HG | 5:DJ:402:ARG:HE | 1.77 | 0.50 |
| 5:EB:146:LYS:HE3 | 5:EB:186:TYR:HB3 | 1.94 | 0.50 |
| 5:EC:19:ILE:HG22 | 5:EC:374:MET:HE2 | 1.94 | 0.50 |
| 5:EF:4:GLN:NE2 | 5:FG:17:ASP:O | 2.32 | 0.50 |
| 5:FC:169:PHE:HE2 | 5:FC:222:PRO:HG2 | 1.76 | 0.50 |
| 5:FD:327:SER:HG | 5:FD:333:TRP:CD1 | 2.30 | 0.50 |
| 5:FE:371:LEU:HD23 | 5:FE:374:MET:HE3 | 1.93 | 0.50 |
| 5:GE:328:GLN:HB2 | 5:GE:332:VAL:HG23 | 1.94 | 0.50 |
| 5:GH:76:ILE:HD12 | 5:GH:95:ARG:HE | 1.76 | 0.50 |
| 1:AB:366:LEU:HD22 | 1:AB:370:THR:HG23 | 1.94 | 0.50 |
| 3:BA:118:ARG:HB2 | 3:BA:204:LEU:HD23 | 1.94 | 0.50 |
| 3:BD:160:VAL:HG13 | 4:CG:453:ASN:HD22 | 1.75 | 0.50 |
| 3:BH:287:ILE:HD13 | 3:BM:313:PHE:CE2 | 2.47 | 0.50 |
| 3:BI:240:LEU:HD23 | 3:BI:244:LEU:HD23 | 1.93 | 0.50 |
| 3:BL:88:GLN:O | 3:BL:91:GLN:HG3 | 2.12 | 0.50 |
| 4:CC:94:LYS:HE2 | 4:CG:509:GLN:HE22 | 1.77 | 0.50 |
| 4:CH:352:VAL:HA | 4:CH:398:LEU:HD13 | 1.93 | 0.50 |
| 4:CI:328:PHE:CE1 | 4:CI:426:VAL:HG22 | 2.47 | 0.50 |
| 4:CK:327:PHE:HB3 | 4:CK:424:MET:HE1 | 1.94 | 0.50 |
| 5:DH:402:ARG:NH2 | 5:EH:378:GLN:OE1 | 2.45 | 0.50 |
| 5:DI:123:THR:HB | 5:DI:124:PRO:HD3 | 1.92 | 0.50 |
| 5:DJ:202:THR:HG22 | 5:DJ:203:LYS:HE3 | 1.93 | 0.50 |
| 5:EB:146:LYS:HG2 | 5:EB:186:TYR:HB2 | 1.94 | 0.50 |
| 5:EF:19:ILE:HD13 | 5:EF:373:ASN:HB3 | 1.92 | 0.50 |
| 5:EF:100:LYS:HE3 | 5:EF:110:MET:HA | 1.94 | 0.50 |
| 5:GD:102:ASP:OD1 | 5:GD:103:GLU:N | 2.38 | 0.50 |
| 5:GE:159:SER:HA | 5:GE:267:GLN:HE21 | 1.76 | 0.50 |
| 5:GG:327:SER:HG | 5:GG:333:TRP:CD1 | 2.30 | 0.50 |
| 5:GI:143:MET:HA | 5:GI:143:MET:HE3 | 1.93 | 0.50 |
| 1:AB:348:GLN:HB2 | 1:AB:355:LEU:HD23 | 1.94 | 0.49 |
| 1:AD:403:ILE:HA | 1:AD:406:ASN:HB2 | 1.94 | 0.49 |
| 1:AD:419:THR:HA | 1:AD:422:TYR:CD1 | 2.47 | 0.49 |
| 3:BK:26:LEU:HD11 | 3:BK:289:SER:HB2 | 1.94 | 0.49 |
| 3:BL:163:GLN:NE2 | 4:CA:457:GLN:HE22 | 2.09 | 0.49 |
| 4:CC:438:SER:OG | 4:CC:454:ARG:NH1 | 2.40 | 0.49 |
| 4:CD:350:ALA:HA | 4:CD:400:VAL:HA | 1.94 | 0.49 |
| 4:CE:256:THR:H | 4:CE:287:ARG:HH12 | 1.59 | 0.49 |
| 4:CI:197:ASP:OD1 | 4:CI:198:LEU:N | 2.44 | 0.49 |
| 4:CI:209:LEU:HG | 4:CI:215:VAL:HG11 | 1.94 | 0.49 |
| 4:CJ:357:LYS:HG3 | 4:CJ:397:GLY:HA3 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DA:341:VAL:HG23 | 5:DA:343:LEU:HG | 1.93 | 0.49 |
| 5:EG:145:ALA:HB2 | 5:EG:285:PRO:HD3 | 1.94 | 0.49 |
| 5:GF:227:THR:HG21 | 5:GF:243:VAL:HG21 | 1.94 | 0.49 |
| 1:AE:328:GLN:HB2 | 1:AE:390:ILE:HG22 | 1.94 | 0.49 |
| 3:BK:304:PHE:O | 3:BK:305:THR:OG1 | 2.24 | 0.49 |
| 4:CF:374:VAL:HG11 | 4:CF:395:ILE:HG12 | 1.94 | 0.49 |
| 5:DF:183:VAL:HG23 | 5:DF:195:MET:HB3 | 1.94 | 0.49 |
| 5:EE:232:ASN:OD1 | 5:EE:233:GLU:N | 2.45 | 0.49 |
| 5:FH:123:THR:HB | 5:FH:124:PRO:HD3 | 1.94 | 0.49 |
| 5:GC:185:VAL:HG23 | 5:GC:193:HIS:HB2 | 1.94 | 0.49 |
| 2:AC:44:LEU:HG | 2:AC:45:THR:HG23 | 1.94 | 0.49 |
| 3:BD:8:MET:HG2 | 3:BE:24:MET:HE1 | 1.94 | 0.49 |
| 4:CD:247:VAL:HG11 | 4:CD:267:ASN:ND2 | 2.27 | 0.49 |
| 4:CF:350:ALA:HA | 4:CF:400:VAL:HA | 1.93 | 0.49 |
| 4:CG:318:ASP:OD1 | 4:CG:322:ASN:N | 2.44 | 0.49 |
| 5:DB:105:ARG:O | 5:DB:137:THR:OG1 | 2.21 | 0.49 |
| 5:DB:401:LEU:HD21 | 5:DD:388:ILE:HB | 1.93 | 0.49 |
| 5:DD:61:THR:O | 5:DD:364:ASN:ND2 | 2.45 | 0.49 |
| 5:DD:123:THR:HB | 5:DD:124:PRO:HD3 | 1.94 | 0.49 |
| 5:EE:284:LYS:HG3 | 5:EE:285:PRO:HD2 | 1.93 | 0.49 |
| 5:EF:316:LEU:HD21 | 5:EF:355:LEU:HD11 | 1.95 | 0.49 |
| 5:EH:72:LEU:HD21 | 5:EH:291:TYR:HE2 | 1.76 | 0.49 |
| 5:FA:203:LYS:HB2 | 5:FA:206:GLU:HB2 | 1.95 | 0.49 |
| 5:FJ:167:THR:HG23 | 5:FJ:168:PRO:HD3 | 1.95 | 0.49 |
| 1:AA:346:ILE:HD11 | 1:AA:362:LEU:HD13 | 1.93 | 0.49 |
| 1:AD:229:LEU:HD21 | 1:AD:254:LEU:HD11 | 1.94 | 0.49 |
| 3:BI:71:GLN:NE2 | 3:BI:72:LYS:HG2 | 2.28 | 0.49 |
| 4:CA:328:PHE:HA | 4:CA:427:LYS:H | 1.76 | 0.49 |
| 4:CE:130:ARG:O | 4:CE:133:LEU:HD23 | 2.12 | 0.49 |
| 4:CG:91:GLN:HA | 4:CG:94:LYS:HZ3 | 1.77 | 0.49 |
| 4:CI:75:LEU:HD13 | 4:CI:510:GLN:OE1 | 2.12 | 0.49 |
| 4:CK:125:GLU:CD | 4:CK:125:GLU:H | 2.20 | 0.49 |
| 5:DA:139:PRO:HD3 | 5:DA:311:LEU:HG | 1.94 | 0.49 |
| 5:DC:153:MET:HE2 | 5:DC:275:ILE:HD12 | 1.94 | 0.49 |
| 5:DD:95:ARG:HB2 | 5:DD:333:TRP:HZ3 | 1.76 | 0.49 |
| 5:FB:14:THR:HG21 | 5:FB:53:VAL:HG11 | 1.95 | 0.49 |
| 5:FG:84:LEU:HD22 | 5:FG:113:MET:HG3 | 1.92 | 0.49 |
| 5:GK:41:MET:HE2 | 5:GK:49:LEU:HB2 | 1.93 | 0.49 |
| 1:AE:194:LYS:HE2 | 1:AE:209:TYR:CZ | 2.47 | 0.49 |
| 1:AE:300:GLU:HB2 | 1:AE:305:ALA:HB2 | 1.94 | 0.49 |
| 3:BC:234:ARG:O | 3:BC:237:LYS:HG2 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BD:133:ARG:HH11 | 4:CG:123:ASN:ND2 | 2.10 | 0.49 |
| 3:BG:107:ARG:NH2 | 3:BG:213:THR:O | 2.39 | 0.49 |
| 3:BI:165:ASP:HB2 | 3:BI:260:LEU:HD21 | 1.94 | 0.49 |
| 3:BI:241:ASN:O | 3:BI:244:LEU:HG | 2.12 | 0.49 |
| 3:BK:103:SER:O | 3:BK:107:ARG:HG3 | 2.12 | 0.49 |
| 3:BL:188:VAL:HB | 3:BL:234:ARG:HH22 | 1.78 | 0.49 |
| 4:CA:511:GLN:O | 4:CA:515:GLY:N | 2.40 | 0.49 |
| 4:CC:308:ALA:HB2 | 4:CC:467:VAL:HG11 | 1.94 | 0.49 |
| 4:CD:367:PHE:HB2 | 4:CD:410:ASP:H | 1.78 | 0.49 |
| 4:CG:346:VAL:HG13 | 4:CG:403:GLY:HA3 | 1.95 | 0.49 |
| 4:CG:364:LYS:HB2 | 4:CG:375:THR:OG1 | 2.13 | 0.49 |
| 5:DI:29:TYR:HB3 | 5:DI:360:LEU:HD21 | 1.94 | 0.49 |
| 5:EE:211:THR:HG21 | 5:EE:245:ILE:HD13 | 1.95 | 0.49 |
| 5:EG:127:ILE:HD11 | 5:EG:310:VAL:HG11 | 1.95 | 0.49 |
| 5:EH:146:LYS:NZ | 5:EH:281:ASN:O | 2.42 | 0.49 |
| 5:FE:84:LEU:HD13 | 5:FE:113:MET:HE3 | 1.94 | 0.49 |
| 5:GI:187:ASP:OD1 | 5:GI:191:ASN:N | 2.45 | 0.49 |
| 1:AD:106:GLN:NE2 | 1:AD:107:SER:O | 2.46 | 0.49 |
| 1:AE:358:ASP:HB3 | 1:AE:361:LYS:HB3 | 1.95 | 0.49 |
| 3:BE:90:ALA:HB2 | 3:BE:117:ILE:HG21 | 1.94 | 0.49 |
| 3:BJ:8:MET:HE1 | 4:CD:16:GLN:CD | 2.37 | 0.49 |
| 3:BJ:297:LEU:HD11 | 3:BJ:301:TYR:CZ | 2.48 | 0.49 |
| 4:CA:127:PRO:HA | 4:CA:130:ARG:HG3 | 1.94 | 0.49 |
| 4:CC:99:LEU:HD23 | 4:CC:485:VAL:HG11 | 1.94 | 0.49 |
| 4:CC:363:TYR:HD2 | 4:CC:414:LEU:HD22 | 1.77 | 0.49 |
| 4:CK:343:ASP:HB3 | 4:CK:346:VAL:HG23 | 1.95 | 0.49 |
| 4:CK:376:ARG:O | 4:CK:380:ASN:HA | 2.13 | 0.49 |
| 5:DE:123:THR:HB | 5:DE:124:PRO:HD3 | 1.95 | 0.49 |
| 5:DF:138:ILE:O | 5:DF:138:ILE:HG13 | 2.13 | 0.49 |
| 5:EB:146:LYS:NZ | 5:EB:190:GLY:HA2 | 2.28 | 0.49 |
| 5:EG:143:MET:HE1 | 5:EG:309:GLN:HB3 | 1.94 | 0.49 |
| 5:EG:293:ILE:HG12 | 5:EG:299:VAL:HG22 | 1.93 | 0.49 |
| 5:EK:159:SER:O | 5:EK:201:LYS:NZ | 2.45 | 0.49 |
| 5:FA:390:THR:O | 5:FA:394:ILE:HG12 | 2.13 | 0.49 |
| 5:FI:70:ARG:NH2 | 5:FI:99:PHE:O | 2.42 | 0.49 |
| 5:GI:123:THR:HB | 5:GI:124:PRO:HD3 | 1.94 | 0.49 |
| 1:AD:33:ILE:HD11 | 1:AD:425:VAL:HG21 | 1.95 | 0.49 |
| 3:BB:96:TYR:HD2 | 3:BB:110:LEU:HD21 | 1.78 | 0.49 |
| 4:CG:152:ARG:HH21 | 4:CG:422:VAL:HG21 | 1.77 | 0.49 |
| 5:DB:74:VAL:HG11 | 5:DB:355:LEU:HD23 | 1.95 | 0.49 |
| 5:DE:76:ILE:HG21 | 5:DE:80:GLY:HA3 | 1.92 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DH:379:ARG:NH1 | 5:DH:382:GLN:OE1 | 2.42 | 0.49 |
| 5:DI:167:THR:HB | 5:DI:168:PRO:HD3 | 1.95 | 0.49 |
| 5:EA:316:LEU:HD23 | 5:EA:352:PHE:HB3 | 1.93 | 0.49 |
| 5:EB:191:ASN:HD21 | 5:EB:251:ASN:HB3 | 1.78 | 0.49 |
| 5:EF:42:PHE:HB2 | 5:FG:329:GLY:HA2 | 1.95 | 0.49 |
| 5:EG:32:LYS:HD2 | 5:EG:60:PHE:HA | 1.94 | 0.49 |
| 5:FH:65:THR:HB | 5:FH:359:ALA:HB1 | 1.95 | 0.49 |
| 1:AA:129:ARG:NH1 | 1:AA:151:THR:O | 2.45 | 0.49 |
| 1:AB:50:LEU:HD22 | 1:AB:404:ILE:HD12 | 1.95 | 0.49 |
| 1:AB:416:LYS:O | 1:AB:420:LYS:HG2 | 2.12 | 0.49 |
| 1:AD:135:GLN:HG2 | 1:AD:137:GLY:H | 1.77 | 0.49 |
| 3:BC:215:VAL:HB | 3:BC:222:LYS:HG2 | 1.94 | 0.49 |
| 3:BG:20:GLN:HA | 3:BG:23:TRP:CD1 | 2.47 | 0.49 |
| 3:BJ:23:TRP:HE1 | 3:BJ:290:TYR:HE1 | 1.61 | 0.49 |
| 3:BJ:122:MET:HE1 | 3:BJ:146:PHE:HB2 | 1.94 | 0.49 |
| 3:BL:113:ASP:O | 3:BL:117:ILE:HG12 | 2.13 | 0.49 |
| 4:CA:374:VAL:O | 4:CA:382:THR:HA | 2.11 | 0.49 |
| 4:CJ:309:PHE:HE2 | 4:CJ:327:PHE:HB3 | 1.76 | 0.49 |
| 5:DD:185:VAL:HG23 | 5:DD:193:HIS:HB2 | 1.94 | 0.49 |
| 5:DH:72:LEU:HD11 | 5:DH:291:TYR:HE1 | 1.76 | 0.49 |
| 5:EB:123:THR:HB | 5:EB:124:PRO:HD3 | 1.95 | 0.49 |
| 5:EJ:68:THR:OG1 | 5:EJ:73:ASP:OD2 | 2.27 | 0.49 |
| 5:FB:105:ARG:O | 5:FB:137:THR:OG1 | 2.27 | 0.49 |
| 5:FB:125:PRO:HB2 | 5:FB:310:VAL:HG22 | 1.95 | 0.49 |
| 5:FG:109:ASN:ND2 | 5:FG:113:MET:HE3 | 2.26 | 0.49 |
| 5:FI:316:LEU:HD13 | 5:FI:347:ALA:HB2 | 1.94 | 0.49 |
| 5:GI:94:SER:HB2 | 5:GI:332:VAL:HG12 | 1.94 | 0.49 |
| 4:CB:180:ASN:HD21 | 4:CB:225:TYR:HD1 | 1.60 | 0.49 |
| 4:CC:363:TYR:HE1 | 4:CC:376:ARG:HG2 | 1.77 | 0.49 |
| 4:CI:531:TYR:OH | 5:DK:24:ALA:O | 2.28 | 0.49 |
| 5:DE:366:ASP:OD1 | 5:DE:366:ASP:N | 2.45 | 0.49 |
| 5:DG:41:MET:HE1 | 5:EG:67:ASN:HB2 | 1.94 | 0.49 |
| 5:DG:243:VAL:HG23 | 5:DG:245:ILE:HG12 | 1.95 | 0.49 |
| 5:DH:198:TYR:HB2 | 5:DH:210:TYR:HB2 | 1.95 | 0.49 |
| 5:EG:326:ALA:O | 5:EG:334:ALA:N | 2.41 | 0.49 |
| 5:GI:107:LEU:HB3 | 5:GI:115:LEU:HD12 | 1.95 | 0.49 |
| 5:GK:120:ALA:HB2 | 5:GK:127:ILE:HD13 | 1.95 | 0.49 |
| 2:AC:14:PRO:HB2 | 2:AC:17:GLN:HB2 | 1.95 | 0.49 |
| 1:AD:113:THR:HG21 | 1:AD:180:GLN:HA | 1.94 | 0.49 |
| 1:AD:296:TYR:HD1 | 1:AD:313:LEU:HD23 | 1.76 | 0.49 |
| 3:BC:66:ARG:HG2 | 3:BC:164:VAL:HB | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BJ:167:ALA:HB3 | 3:BJ:168:ARG:HH11 | 1.77 | 0.49 |
| 3:BK:68:PHE:O | 3:BK:71:GLN:HG3 | 2.12 | 0.49 |
| 4:CC:258:VAL:HG11 | 4:CC:280:LEU:HD21 | 1.95 | 0.49 |
| 4:CF:130:ARG:HB3 | 4:CF:434:ILE:HD12 | 1.93 | 0.49 |
| 5:EE:68:THR:OG1 | 5:EE:73:ASP:OD2 | 2.30 | 0.49 |
| 5:FD:48:GLY:HA3 | 5:GA:21:ASN:ND2 | 2.27 | 0.49 |
| 5:FF:180:LYS:HE3 | 5:FF:196:ASN:HD21 | 1.76 | 0.49 |
| 5:GB:28:THR:O | 5:GB:363:SER:OG | 2.27 | 0.49 |
| 1:AB:122:GLY:HA2 | 3:BL:107:ARG:HA | 1.95 | 0.48 |
| 2:AC:130:THR:HG23 | 2:AC:145:LYS:HE3 | 1.93 | 0.48 |
| 1:AE:406:ASN:HB3 | 3:BJ:92:GLU:CG | 2.43 | 0.48 |
| 3:BB:8:MET:HE3 | 3:BC:24:MET:SD | 2.53 | 0.48 |
| 4:CB:502:VAL:HG22 | 4:CF:198:LEU:HD11 | 1.95 | 0.48 |
| 4:CH:141:VAL:HG22 | 4:CH:424:MET:HE3 | 1.95 | 0.48 |
| 4:CJ:87:THR:HG21 | 4:CJ:283:LEU:HD12 | 1.95 | 0.48 |
| 5:DJ:84:LEU:HD22 | 5:DJ:92:PHE:HB2 | 1.95 | 0.48 |
| 5:FE:33:SER:O | 5:FE:59:ASP:N | 2.41 | 0.48 |
| 5:FF:70:ARG:HH22 | 5:FF:100:LYS:HB3 | 1.78 | 0.48 |
| 1:AA:84:VAL:HG22 | 1:AA:252:LEU:HD12 | 1.94 | 0.48 |
| 1:AD:116:THR:HG22 | 1:AD:118:LYS:H | 1.78 | 0.48 |
| 3:BD:39:PRO:HD2 | 4:CG:96:ASP:OD1 | 2.12 | 0.48 |
| 4:CA:376:ARG:NH2 | 4:CA:396:ASP:OD1 | 2.46 | 0.48 |
| 4:CE:385:ALA:HB3 | 4:CE:393:LEU:HD23 | 1.94 | 0.48 |
| 4:CF:92:MET:HE3 | 4:CF:290:ASP:OD2 | 2.12 | 0.48 |
| 4:CF:183:ILE:HD13 | 4:CF:198:LEU:HB3 | 1.94 | 0.48 |
| 4:CG:132:ALA:O | 4:CG:136:LYS:HG3 | 2.12 | 0.48 |
| 4:CI:228:THR:HG22 | 4:CI:234:THR:HA | 1.95 | 0.48 |
| 5:DI:72:LEU:HD21 | 5:DI:291:TYR:HE1 | 1.77 | 0.48 |
| 5:DI:207:TRP:HB2 | 5:DI:229:LEU:HB2 | 1.93 | 0.48 |
| 5:EH:42:PHE:H | 5:FI:329:GLY:HA2 | 1.78 | 0.48 |
| 5:FF:111:GLN:HB2 | 5:FF:113:MET:HE2 | 1.95 | 0.48 |
| 1:AB:94:THR:HA | 1:AB:263:VAL:O | 2.13 | 0.48 |
| 3:BD:13:MET:HE3 | 3:BD:13:MET:HA | 1.96 | 0.48 |
| 3:BG:284:ASN:OD1 | 3:BG:285:SER:N | 2.46 | 0.48 |
| 3:BH:72:LYS:HD2 | 3:BH:172:ILE:HD12 | 1.95 | 0.48 |
| 4:CA:7:HIS:NE2 | 4:CJ:20:ASN:OD1 | 2.46 | 0.48 |
| 4:CA:158:VAL:O | 4:CA:162:ILE:HG12 | 2.13 | 0.48 |
| 4:CI:10:SER:HA | 4:CI:13:ASN:HD21 | 1.77 | 0.48 |
| 4:CJ:127:PRO:O | 4:CJ:130:ARG:HG2 | 2.13 | 0.48 |
| 4:CJ:144:PHE:HD2 | 4:CJ:424:MET:HG3 | 1.78 | 0.48 |
| 5:DA:187:ASP:OD1 | 5:DA:191:ASN:N | 2.45 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DC:183:VAL:HG23 | 5:DC:195:MET:HB2 | 1.94 | 0.48 |
| 5:DD:290:SER:O | 5:DD:302:ASN:N | 2.41 | 0.48 |
| 5:EB:258:PHE:HE2 | 5:EB:260:LEU:HD12 | 1.78 | 0.48 |
| 5:EG:159:SER:N | 5:EG:268:GLN:O | 2.46 | 0.48 |
| 5:EK:169:PHE:HE1 | 5:EK:200:VAL:HG11 | 1.78 | 0.48 |
| 5:FI:341:VAL:HG23 | 5:FI:343:LEU:HG | 1.95 | 0.48 |
| 1:AA:429:ILE:O | 1:AA:433:VAL:HG23 | 2.13 | 0.48 |
| 1:AE:157:ARG:HG2 | 1:AE:169:ALA:HB3 | 1.95 | 0.48 |
| 4:CC:242:ARG:HD2 | 4:CC:260:TYR:CZ | 2.48 | 0.48 |
| 4:CH:460:LEU:O | 4:CH:463:GLN:HG2 | 2.12 | 0.48 |
| 4:CK:333:PRO:HB2 | 4:CK:414:LEU:HD11 | 1.95 | 0.48 |
| 5:DB:42:PHE:HB2 | 5:DD:329:GLY:HA2 | 1.94 | 0.48 |
| 5:DF:319:PHE:HE1 | 5:DF:325:LEU:HD21 | 1.78 | 0.48 |
| 5:EF:269:ASN:HD22 | 5:EG:191:ASN:HA | 1.77 | 0.48 |
| 5:FI:108:VAL:HG12 | 5:FI:114:GLN:HA | 1.96 | 0.48 |
| 5:FK:300:VAL:HG22 | 5:FK:310:VAL:HG12 | 1.94 | 0.48 |
| 5:GC:101:LEU:HD11 | 5:GC:138:ILE:HD12 | 1.95 | 0.48 |
| 5:GE:166:LYS:HG3 | 5:GE:168:PRO:HD2 | 1.96 | 0.48 |
| 2:AC:111:LYS:HG3 | 2:AC:112:THR:HG23 | 1.96 | 0.48 |
| 3:BH:203:MET:HE1 | 3:BH:235:GLY:HA3 | 1.95 | 0.48 |
| 4:CG:318:ASP:HA | 4:CG:435:ALA:HA | 1.95 | 0.48 |
| 4:CI:363:TYR:OH | 4:CI:396:ASP:OD2 | 2.31 | 0.48 |
| 4:CJ:72:THR:O | 4:CJ:76:ARG:HG3 | 2.14 | 0.48 |
| 4:CJ:145:LYS:HZ2 | 4:CJ:424:MET:HB2 | 1.78 | 0.48 |
| 5:DC:123:THR:HB | 5:DC:124:PRO:HD3 | 1.95 | 0.48 |
| 5:DE:187:ASP:HA | 5:DE:256:ALA:HB2 | 1.95 | 0.48 |
| 5:DK:94:SER:HB2 | 5:DK:332:VAL:HG12 | 1.96 | 0.48 |
| 5:FE:23:ILE:HG23 | 5:FE:367:LEU:HD22 | 1.95 | 0.48 |
| 5:FE:179:LYS:HD3 | 5:FE:273:ASN:HB2 | 1.95 | 0.48 |
| 5:GE:76:ILE:HG21 | 5:GE:80:GLY:HA3 | 1.95 | 0.48 |
| 5:GG:401:LEU:HD11 | 5:GH:385:ALA:HB1 | 1.95 | 0.48 |
| 3:BA:200:LEU:HD12 | 3:BA:203:MET:HE2 | 1.96 | 0.48 |
| 3:BB:183:ILE:HB | 3:BB:198:LYS:NZ | 2.28 | 0.48 |
| 3:BD:61:GLN:HB3 | 4:CG:118:GLN:HG2 | 1.95 | 0.48 |
| 3:BD:65:ALA:HB2 | 4:CG:118:GLN:NE2 | 2.28 | 0.48 |
| 3:BG:137:ALA:HA | 3:BG:145:PRO:HB3 | 1.96 | 0.48 |
| 4:CB:439:GLU:HB3 | 4:CB:448:THR:HG21 | 1.96 | 0.48 |
| 4:CC:376:ARG:O | 4:CC:380:ASN:CA | 2.61 | 0.48 |
| 5:DK:149:THR:H | 5:DK:281:ASN:HD21 | 1.61 | 0.48 |
| 5:EB:284:LYS:O | 5:EB:305:ASN:ND2 | 2.36 | 0.48 |
| 5:ED:354:LYS:HZ3 | 5:ED:355:LEU:H | 1.62 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EE:145:ALA:HB2 | 5:EE:285:PRO:HG3 | 1.96 | 0.48 |
| 5:EE:280:GLN:NE2 | 5:EE:282:GLY:O | 2.44 | 0.48 |
| 5:GC:197:VAL:HG22 | 5:GC:211:THR:HG22 | 1.95 | 0.48 |
| 1:AB:250:ILE:HG21 | 1:AB:265:VAL:HG21 | 1.95 | 0.48 |
| 1:AD:321:ILE:HG13 | 1:AD:403:ILE:HD13 | 1.96 | 0.48 |
| 3:BB:81:SER:O | 3:BB:84:THR:OG1 | 2.24 | 0.48 |
| 3:BC:199:ASN:O | 3:BC:203:MET:HG3 | 2.14 | 0.48 |
| 3:BG:30:MET:HE1 | 3:BG:287:ILE:HA | 1.94 | 0.48 |
| 4:CA:242:ARG:O | 4:CA:243:GLN:NE2 | 2.45 | 0.48 |
| 4:CE:552:ILE:HG21 | 5:DB:385:ALA:HB1 | 1.95 | 0.48 |
| 4:CK:433:GLU:OE1 | 4:CK:433:GLU:N | 2.46 | 0.48 |
| 5:DC:157:LEU:HD23 | 5:DC:273:ASN:HD22 | 1.79 | 0.48 |
| 5:EJ:317:ALA:HB2 | 5:EJ:344:LEU:HD23 | 1.95 | 0.48 |
| 5:FF:180:LYS:HE3 | 5:FF:196:ASN:ND2 | 2.29 | 0.48 |
| 5:GC:85:VAL:HG11 | 5:GC:135:PRO:HG3 | 1.95 | 0.48 |
| 5:GE:145:ALA:HB2 | 5:GE:285:PRO:HD3 | 1.96 | 0.48 |
| 5:GJ:175:ASP:OD1 | 5:GJ:175:ASP:N | 2.45 | 0.48 |
| 1:AD:340:THR:OG1 | 1:AD:346:ILE:HB | 2.14 | 0.48 |
| 3:BG:133:ARG:NH2 | 4:CJ:125:GLU:HB3 | 2.29 | 0.48 |
| 3:BH:220:VAL:O | 3:BH:223:GLU:HG3 | 2.14 | 0.48 |
| 3:BL:204:LEU:HD21 | 3:BL:236:LEU:HD21 | 1.96 | 0.48 |
| 5:DK:183:VAL:HG13 | 5:DK:278:THR:HG21 | 1.96 | 0.48 |
| 5:EA:180:LYS:HG3 | 5:EA:198:TYR:HE1 | 1.78 | 0.48 |
| 5:EB:174:ALA:HA | 5:EB:177:TYR:CZ | 2.49 | 0.48 |
| 5:ED:92:PHE:HB3 | 5:ED:332:VAL:HG21 | 1.94 | 0.48 |
| 5:EI:183:VAL:HG13 | 5:EI:195:MET:HB2 | 1.96 | 0.48 |
| 5:EI:336:THR:HG23 | 5:EI:339:SER:H | 1.78 | 0.48 |
| 5:FA:341:VAL:HG23 | 5:FA:343:LEU:HG | 1.94 | 0.48 |
| 5:FE:15:ASN:HB2 | 5:FE:38:PHE:HZ | 1.78 | 0.48 |
| 5:GE:148:THR:HG21 | 5:GE:280:GLN:HB2 | 1.95 | 0.48 |
| 5:GE:195:MET:HE3 | 5:GE:258:PHE:CZ | 2.49 | 0.48 |
| 1:AB:9:VAL:HB | 1:AB:12:ASN:HD21 | 1.78 | 0.48 |
| 1:AD:302:GLY:HA3 | 1:AD:308:LYS:HE3 | 1.96 | 0.48 |
| 1:AD:386:ILE:HG13 | 1:AD:387:THR:N | 2.29 | 0.48 |
| 3:BC:302:LYS:NZ | 3:BC:306:ASP:OD2 | 2.43 | 0.48 |
| 3:BE:267:ARG:HD2 | 4:CA:150:TYR:HE2 | 1.79 | 0.48 |
| 3:BH:81:SER:HB2 | 3:BH:247:ARG:HH12 | 1.79 | 0.48 |
| 3:BK:160:VAL:HG23 | 3:BK:172:ILE:HG23 | 1.96 | 0.48 |
| 4:CB:172:TYR:HB3 | 4:CB:209:LEU:HD12 | 1.95 | 0.48 |
| 4:CD:328:PHE:HE1 | 4:CD:426:VAL:HG12 | 1.79 | 0.48 |
| 4:CI:450:ASP:OD1 | 4:CI:451:SER:N | 2.43 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DD:266:MET:HE3 | 5:DD:268:GLN:H | 1.79 | 0.48 |
| 5:DF:319:PHE:CE1 | 5:DF:325:LEU:HD21 | 2.49 | 0.48 |
| 5:DK:200:VAL:HB | 5:DK:208:ALA:HB3 | 1.96 | 0.48 |
| 5:EF:285:PRO:HG3 | 5:FE:268:GLN:HG3 | 1.96 | 0.48 |
| 5:EG:139:PRO:HB2 | 5:EG:141:THR:HG23 | 1.95 | 0.48 |
| 5:FC:393:GLN:OE1 | 5:GB:378:GLN:NE2 | 2.47 | 0.48 |
| 5:GA:189:GLN:HE21 | 5:GA:191:ASN:HB2 | 1.79 | 0.48 |
| 2:AC:33:ILE:O | 2:AC:37:GLN:HG2 | 2.13 | 0.48 |
| 1:AE:160:ILE:HG23 | 1:AE:167:ILE:HG13 | 1.94 | 0.48 |
| 3:BA:275:MET:O | 3:BA:279:VAL:HG22 | 2.14 | 0.48 |
| 3:BE:65:ALA:HB2 | 4:CC:118:GLN:HE21 | 1.79 | 0.48 |
| 3:BG:86:ALA:HB1 | 3:BG:121:LEU:HD22 | 1.96 | 0.48 |
| 3:BG:314:GLN:HG2 | 4:CA:530:GLN:HE22 | 1.78 | 0.48 |
| 4:CD:76:ARG:HB3 | 4:CD:210:ASN:ND2 | 2.29 | 0.48 |
| 4:CF:363:TYR:HE1 | 4:CF:376:ARG:HG2 | 1.79 | 0.48 |
| 4:CG:549:LEU:O | 4:CG:552:ILE:HG12 | 2.13 | 0.48 |
| 4:CI:36:ARG:HH21 | 4:CI:66:GLU:HG3 | 1.79 | 0.48 |
| 5:DD:387:THR:HG22 | 5:DD:391:GLN:HE22 | 1.77 | 0.48 |
| 5:DH:95:ARG:HG3 | 5:DH:333:TRP:HZ3 | 1.78 | 0.48 |
| 5:ED:155:ILE:HG21 | 5:ED:199:PHE:HE2 | 1.78 | 0.48 |
| 5:FA:211:THR:HG21 | 5:FA:245:ILE:HD13 | 1.95 | 0.48 |
| 5:FD:232:ASN:OD1 | 5:FD:236:ILE:N | 2.46 | 0.48 |
| 5:GA:293:ILE:HG12 | 5:GA:299:VAL:HG22 | 1.96 | 0.48 |
| 1:AB:83:LYS:HB2 | 1:AB:253:THR:HB | 1.96 | 0.47 |
| 3:BD:199:ASN:HD21 | 3:BD:201:PHE:HB2 | 1.79 | 0.47 |
| 3:BK:133:ARG:HB2 | 3:BK:141:THR:HB | 1.96 | 0.47 |
| 4:CC:195:PRO:HG2 | 4:CC:198:LEU:HB2 | 1.95 | 0.47 |
| 4:CD:197:ASP:O | 4:CD:201:GLN:HG2 | 2.14 | 0.47 |
| 4:CE:79:GLN:HE21 | 4:CE:211:LYS:HD3 | 1.78 | 0.47 |
| 4:CE:383:PHE:HE1 | 4:CE:395:ILE:HD11 | 1.78 | 0.47 |
| 4:CE:460:LEU:O | 4:CE:463:GLN:HG3 | 2.14 | 0.47 |
| 4:CF:130:ARG:O | 4:CF:134:ILE:HG12 | 2.14 | 0.47 |
| 4:CG:434:ILE:HG22 | 4:CG:436:MET:H | 1.79 | 0.47 |
| 4:CG:447:ASP:OD1 | 4:CG:447:ASP:N | 2.47 | 0.47 |
| 5:DA:161:ASP:O | 5:DA:201:LYS:NZ | 2.37 | 0.47 |
| 5:DD:150:THR:OG1 | 5:DD:259:SER:O | 2.29 | 0.47 |
| 5:DJ:148:THR:HG21 | 5:DJ:185:VAL:HB | 1.96 | 0.47 |
| 5:EF:317:ALA:HB2 | 5:EF:344:LEU:HD23 | 1.95 | 0.47 |
| 5:EK:189:GLN:NE2 | 5:EK:251:ASN:O | 2.47 | 0.47 |
| 5:FF:287:ASP:O | 5:FF:304:SER:N | 2.43 | 0.47 |
| 5:FF:390:THR:OG1 | 5:FG:402:ARG:NH1 | 2.46 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GE:12:ALA:HB3 | 5:GE:381:TYR:HD2 | 1.79 | 0.47 |
| 5:GG:15:ASN:O | 5:GG:19:ILE:HG12 | 2.14 | 0.47 |
| 1:AA:246:ALA:HA | 1:AE:173:LYS:HB3 | 1.95 | 0.47 |
| 1:AE:121:LEU:H | 1:AE:121:LEU:HD23 | 1.80 | 0.47 |
| 1:AE:437:LYS:HD3 | 3:BN:291:VAL:HB | 1.96 | 0.47 |
| 4:CE:351:LYS:HA | 4:CE:351:LYS:HD3 | 1.69 | 0.47 |
| 4:CI:10:SER:HB2 | 4:CI:58:VAL:O | 2.14 | 0.47 |
| 5:DD:174:ALA:HA | 5:DD:177:TYR:CE1 | 2.49 | 0.47 |
| 5:DJ:302:ASN:HA | 5:DJ:308:GLU:HG3 | 1.96 | 0.47 |
| 5:EJ:110:MET:SD | 5:EJ:110:MET:N | 2.87 | 0.47 |
| 5:FA:178:ASN:OD1 | 5:FA:179:LYS:N | 2.48 | 0.47 |
| 5:FB:117:GLY:HA3 | 5:FB:136:ILE:HD11 | 1.97 | 0.47 |
| 5:FB:143:MET:HE3 | 5:FB:303:TYR:CD1 | 2.49 | 0.47 |
| 5:FB:158:ASN:HD21 | 5:FB:273:ASN:N | 2.12 | 0.47 |
| 5:GG:236:ILE:HG12 | 5:GG:266:MET:HE1 | 1.96 | 0.47 |
| 1:AA:409:ASP:HA | 1:AA:412:ASN:HD21 | 1.79 | 0.47 |
| 1:AB:171:ILE:HG23 | 1:AB:180:GLN:HG2 | 1.95 | 0.47 |
| 1:AB:322:GLN:HA | 1:AB:325:ILE:HG12 | 1.96 | 0.47 |
| 3:BK:52:LEU:HD22 | 3:BK:275:MET:HB2 | 1.96 | 0.47 |
| 4:CD:120:LEU:HD11 | 4:CD:130:ARG:HE | 1.79 | 0.47 |
| 4:CH:153:ASP:O | 4:CH:157:GLN:HG2 | 2.14 | 0.47 |
| 4:CK:303:LEU:HD13 | 4:CK:330:ILE:HG21 | 1.95 | 0.47 |
| 5:EA:94:SER:HB2 | 5:EA:332:VAL:HG12 | 1.96 | 0.47 |
| 5:FD:49:LEU:HD13 | 5:GD:64:THR:HG22 | 1.95 | 0.47 |
| 5:FK:153:MET:HE1 | 5:FK:155:ILE:HB | 1.95 | 0.47 |
| 1:AA:24:LYS:O | 1:AA:27:LYS:HG3 | 2.14 | 0.47 |
| 1:AA:315:ASP:HB3 | 1:AA:318:VAL:HG12 | 1.96 | 0.47 |
| 2:AC:117:THR:HG22 | 2:AC:153:MET:SD | 2.55 | 0.47 |
| 3:BA:96:TYR:HD1 | 3:BA:110:LEU:HD21 | 1.79 | 0.47 |
| 3:BD:111:ALA:HB2 | 3:BD:211:LEU:HB3 | 1.96 | 0.47 |
| 3:BI:283:TRP:O | 3:BI:287:ILE:HG12 | 2.15 | 0.47 |
| 4:CK:258:VAL:HG21 | 4:CK:280:LEU:HD21 | 1.96 | 0.47 |
| 5:DB:61:THR:O | 5:DB:364:ASN:ND2 | 2.39 | 0.47 |
| 5:DE:328:GLN:HG2 | 5:DE:334:ALA:HB2 | 1.97 | 0.47 |
| 5:DG:234:ASN:O | 5:DG:268:GLN:NE2 | 2.47 | 0.47 |
| 5:EJ:41:MET:HE3 | 5:EJ:52:LYS:HE3 | 1.97 | 0.47 |
| 5:GG:123:THR:HB | 5:GG:124:PRO:HD3 | 1.96 | 0.47 |
| 5:GH:336:THR:HG22 | 5:GH:338:ALA:H | 1.78 | 0.47 |
| 1:AB:23:THR:HG22 | 1:AB:433:VAL:HG22 | 1.97 | 0.47 |
| 1:AD:191:ASN:ND2 | 1:AD:239:GLN:OE1 | 2.47 | 0.47 |
| 1:AD:326:ARG:HE | 3:BG:240:LEU:HD22 | 1.80 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AE:183:LEU:HB3 | 1:AE:193:MET:HE1 | 1.96 | 0.47 |
| 3:BB:231:LYS:HA | 3:BB:234:ARG:HH21 | 1.79 | 0.47 |
| 3:BC:93:LYS:NZ | 3:BC:114:LEU:HG | 2.29 | 0.47 |
| 3:BK:164:VAL:HG11 | 3:BK:257:LEU:HD21 | 1.96 | 0.47 |
| 4:CE:72:THR:O | 4:CE:76:ARG:HG3 | 2.13 | 0.47 |
| 4:CG:438:SER:HB3 | 4:CG:454:ARG:HB2 | 1.96 | 0.47 |
| 4:CI:69:ALA:O | 4:CI:72:THR:OG1 | 2.24 | 0.47 |
| 4:CJ:376:ARG:O | 4:CJ:380:ASN:CA | 2.62 | 0.47 |
| 4:CK:355:SER:O | 4:CK:358:VAL:HG22 | 2.13 | 0.47 |
| 5:DE:166:LYS:HZ3 | 5:DE:168:PRO:HG2 | 1.78 | 0.47 |
| 5:DF:42:PHE:HB2 | 5:EG:329:GLY:HA2 | 1.96 | 0.47 |
| 5:DI:179:LYS:HG2 | 5:DI:273:ASN:HB2 | 1.97 | 0.47 |
| 5:DI:249:THR:HG23 | 5:DI:251:ASN:H | 1.80 | 0.47 |
| 5:EA:109:ASN:HD21 | 5:EA:331:ASN:HD21 | 1.62 | 0.47 |
| 5:EB:229:LEU:HD11 | 5:EB:262:PHE:HD2 | 1.79 | 0.47 |
| 5:EJ:285:PRO:HG3 | 5:FI:268:GLN:HB3 | 1.95 | 0.47 |
| 5:FA:374:MET:O | 5:FA:378:GLN:N | 2.32 | 0.47 |
| 5:FJ:372:VAL:HG21 | 5:FK:9:LEU:HD21 | 1.96 | 0.47 |
| 5:GC:341:VAL:HG23 | 5:GC:343:LEU:HG | 1.95 | 0.47 |
| 2:AC:168:ALA:HB3 | 2:AC:184:THR:HB | 1.95 | 0.47 |
| 3:BD:22:GLU:OE2 | 3:BD:293:GLN:HG3 | 2.14 | 0.47 |
| 3:BG:203:MET:HE1 | 3:BG:235:GLY:HA3 | 1.97 | 0.47 |
| 3:BG:225:ALA:O | 3:BG:229:ILE:HG12 | 2.15 | 0.47 |
| 3:BH:35:ARG:NH2 | 3:BH:278:LEU:O | 2.48 | 0.47 |
| 4:CA:545:LEU:HD21 | 4:CJ:19:LEU:HD13 | 1.96 | 0.47 |
| 4:CD:258:VAL:HG23 | 4:CD:270:ILE:HB | 1.97 | 0.47 |
| 4:CF:252:ASP:CG | 4:CF:254:THR:HG1 | 2.20 | 0.47 |
| 4:CG:117:LEU:O | 4:CG:121:VAL:HG23 | 2.14 | 0.47 |
| 4:CG:124:ALA:HB3 | 4:CG:452:ASP:HB2 | 1.96 | 0.47 |
| 4:CH:328:PHE:HB3 | 4:CH:426:VAL:HA | 1.96 | 0.47 |
| 4:CK:367:PHE:O | 4:CK:409:ASN:N | 2.47 | 0.47 |
| 5:DA:32:LYS:HB2 | 5:DA:58:GLN:HE21 | 1.79 | 0.47 |
| 5:DI:80:GLY:HA3 | 5:DI:316:LEU:HD23 | 1.95 | 0.47 |
| 5:EB:138:ILE:O | 5:EB:138:ILE:HG13 | 2.14 | 0.47 |
| 5:EE:179:LYS:HB2 | 5:EE:273:ASN:HD22 | 1.80 | 0.47 |
| 5:EE:291:TYR:HA | 5:EE:301:GLY:HA2 | 1.96 | 0.47 |
| 5:EH:123:THR:HB | 5:EH:124:PRO:HD3 | 1.96 | 0.47 |
| 5:EJ:374:MET:HA | 5:EJ:377:ALA:HB3 | 1.97 | 0.47 |
| 5:EK:213:ASP:OD1 | 5:EK:216:ASP:HB2 | 2.15 | 0.47 |
| 5:FB:146:LYS:HZ1 | 5:FB:190:GLY:HA2 | 1.80 | 0.47 |
| 5:FG:198:TYR:HB2 | 5:FG:210:TYR:HB2 | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:FH:158:ASN:HB3 | 5:FH:161:ASP:HB2 | 1.96 | 0.47 |
| 5:FI:43:ALA:HB2 | 5:FI:49:LEU:HD11 | 1.97 | 0.47 |
| 5:GG:180:LYS:HE3 | 5:GG:196:ASN:HD21 | 1.79 | 0.47 |
| 1:AA:13:LEU:HD11 | 3:BN:297:LEU:HD13 | 1.97 | 0.47 |
| 2:AC:133:ILE:HG23 | 2:AC:193:MET:HB3 | 1.96 | 0.47 |
| 2:AC:351:THR:OG1 | 3:BD:85:THR:HG21 | 2.14 | 0.47 |
| 1:AD:134:GLU:HA | 1:AD:141:PRO:HB3 | 1.95 | 0.47 |
| 1:AD:147:ASP:OD1 | 1:AD:148:LYS:N | 2.44 | 0.47 |
| 3:BB:242:ASN:O | 3:BB:246:VAL:HG23 | 2.15 | 0.47 |
| 3:BI:68:PHE:O | 3:BI:71:GLN:HG3 | 2.14 | 0.47 |
| 3:BK:165:ASP:HB3 | 3:BK:168:ARG:HB2 | 1.96 | 0.47 |
| 3:BL:44:ILE:HG12 | 4:CJ:132:ALA:HB2 | 1.97 | 0.47 |
| 4:CA:138:GLU:HA | 4:CA:141:VAL:HG12 | 1.97 | 0.47 |
| 4:CA:400:VAL:HG21 | 4:CA:414:LEU:HD21 | 1.95 | 0.47 |
| 4:CB:30:ASN:O | 4:CB:30:ASN:ND2 | 2.45 | 0.47 |
| 4:CB:77:GLY:O | 4:CB:81:GLN:HG2 | 2.15 | 0.47 |
| 4:CC:172:TYR:O | 4:CC:176:ILE:HG12 | 2.15 | 0.47 |
| 4:CD:233:TYR:CD1 | 5:DI:180:LYS:HE2 | 2.50 | 0.47 |
| 4:CI:117:LEU:HD21 | 4:CI:459:LEU:HB3 | 1.97 | 0.47 |
| 4:CJ:106:LEU:HD11 | 4:CJ:144:PHE:HE1 | 1.79 | 0.47 |
| 4:CJ:179:LEU:HD11 | 4:CJ:198:LEU:HD22 | 1.95 | 0.47 |
| 4:CK:12:LEU:HD12 | 4:CK:535:ASN:HB3 | 1.97 | 0.47 |
| 4:CK:374:VAL:O | 4:CK:382:THR:HA | 2.15 | 0.47 |
| 5:DG:187:ASP:OD1 | 5:DG:191:ASN:N | 2.47 | 0.47 |
| 5:DJ:46:LYS:HG3 | 5:EK:56:ILE:HD12 | 1.96 | 0.47 |
| 5:EB:366:ASP:HB3 | 5:EB:369:LYS:HG2 | 1.96 | 0.47 |
| 5:ED:159:SER:HA | 5:ED:267:GLN:HE21 | 1.80 | 0.47 |
| 5:EF:366:ASP:O | 5:EF:370:GLU:HG2 | 2.15 | 0.47 |
| 5:EH:33:SER:HB3 | 5:EH:365:VAL:HG22 | 1.96 | 0.47 |
| 5:EH:84:LEU:HD23 | 5:EH:115:LEU:HA | 1.95 | 0.47 |
| 5:FB:94:SER:HB3 | 5:FB:332:VAL:HA | 1.97 | 0.47 |
| 5:FB:327:SER:HA | 5:FB:333:TRP:HD1 | 1.80 | 0.47 |
| 5:FC:329:GLY:HA3 | 5:FK:42:PHE:H | 1.79 | 0.47 |
| 5:FF:180:LYS:HG3 | 5:FF:196:ASN:HD21 | 1.79 | 0.47 |
| 5:FG:99:PHE:HA | 5:FG:109:ASN:HA | 1.96 | 0.47 |
| 5:FH:187:ASP:OD1 | 5:FH:191:ASN:N | 2.47 | 0.47 |
| 5:FJ:49:LEU:HD13 | 5:GJ:64:THR:HG23 | 1.96 | 0.47 |
| 5:FJ:105:ARG:NH1 | 5:FJ:140:ASN:OD1 | 2.47 | 0.47 |
| 5:FJ:300:VAL:HG22 | 5:FJ:310:VAL:HG22 | 1.95 | 0.47 |
| 5:FK:153:MET:HB3 | 5:FK:278:THR:HG23 | 1.95 | 0.47 |
| 5:GD:133:PRO:HG2 | 5:GD:344:LEU:HD13 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GH:187:ASP:OD1 | 5:GH:191:ASN:N | 2.48 | 0.47 |
| 5:GJ:70:ARG:NH1 | 5:GJ:99:PHE:O | 2.34 | 0.47 |
| 2:AC:45:THR:O | 2:AC:49:THR:HG23 | 2.15 | 0.47 |
| 1:AD:440:PHE:CE1 | 3:BM:296:ALA:HA | 2.50 | 0.47 |
| 1:AE:346:ILE:HG22 | 1:AE:355:LEU:HD22 | 1.97 | 0.47 |
| 3:BC:5:THR:HA | 3:BC:8:MET:HE2 | 1.96 | 0.47 |
| 3:BE:34:LYS:HD2 | 3:BE:279:VAL:HG12 | 1.96 | 0.47 |
| 3:BJ:192:ASP:OD1 | 3:BJ:193:GLY:N | 2.48 | 0.47 |
| 3:BL:80:LEU:HD23 | 3:BL:247:ARG:HG3 | 1.97 | 0.47 |
| 4:CD:335:VAL:HG22 | 4:CD:414:LEU:HG | 1.96 | 0.47 |
| 4:CH:183:ILE:HD12 | 4:CH:202:ARG:HD3 | 1.96 | 0.47 |
| 4:CH:371:ASP:OD2 | 4:CH:372:TRP:N | 2.45 | 0.47 |
| 4:CK:395:ILE:O | 4:CK:398:LEU:HB2 | 2.15 | 0.47 |
| 5:DD:203:LYS:HG3 | 5:DD:206:GLU:HB2 | 1.96 | 0.47 |
| 5:EG:123:THR:HB | 5:EG:124:PRO:HD3 | 1.95 | 0.47 |
| 5:EI:138:ILE:HA | 5:EI:311:LEU:HD11 | 1.96 | 0.47 |
| 5:EJ:236:ILE:HD13 | 5:EJ:266:MET:HE1 | 1.96 | 0.47 |
| 5:EK:119:PRO:O | 5:EK:128:GLN:N | 2.48 | 0.47 |
| 5:FD:95:ARG:HG3 | 5:FD:333:TRP:HZ3 | 1.80 | 0.47 |
| 5:FE:113:MET:HE1 | 5:FE:332:VAL:HG11 | 1.96 | 0.47 |
| 5:FI:123:THR:HB | 5:FI:124:PRO:HD3 | 1.97 | 0.47 |
| 5:FJ:185:VAL:HG23 | 5:FJ:193:HIS:HB2 | 1.97 | 0.47 |
| 5:FK:123:THR:HB | 5:FK:124:PRO:HD3 | 1.97 | 0.47 |
| 2:AC:157:ARG:NH2 | 2:AC:158:ASP:OD1 | 2.44 | 0.47 |
| 2:AC:450:LEU:HD22 | 3:BD:291:VAL:HB | 1.97 | 0.47 |
| 1:AD:394:VAL:HA | 1:AD:397:TYR:HD2 | 1.79 | 0.47 |
| 1:AD:409:ASP:HB3 | 3:BH:92:GLU:HG2 | 1.97 | 0.47 |
| 3:BA:30:MET:HE1 | 3:BA:286:VAL:HG13 | 1.97 | 0.47 |
| 3:BE:234:ARG:O | 3:BE:237:LYS:HG3 | 2.14 | 0.47 |
| 3:BL:275:MET:O | 3:BL:279:VAL:HG22 | 2.15 | 0.47 |
| 3:BM:302:LYS:HD2 | 3:BM:303:THR:OG1 | 2.15 | 0.47 |
| 4:CI:319:ALA:O | 4:CI:441:LYS:NZ | 2.43 | 0.47 |
| 5:DD:232:ASN:OD1 | 5:DD:236:ILE:N | 2.48 | 0.47 |
| 5:DD:319:PHE:HE2 | 5:DD:325:LEU:HD21 | 1.80 | 0.47 |
| 5:EC:195:MET:HE1 | 5:EC:245:ILE:HG21 | 1.96 | 0.47 |
| 5:EG:164:PRO:HG3 | 5:EG:200:VAL:HG23 | 1.96 | 0.47 |
| 5:EI:177:TYR:HA | 5:EI:200:VAL:HG12 | 1.97 | 0.47 |
| 5:FC:25:ASN:ND2 | 5:FK:40:ASP:HB3 | 2.28 | 0.47 |
| 5:FK:402:ARG:HH12 | 5:GK:375:ILE:HG23 | 1.80 | 0.47 |
| 5:GD:158:ASN:OD1 | 5:GD:273:ASN:ND2 | 2.47 | 0.47 |
| 1:AD:341:MET:HG2 | 3:BG:96:TYR:CZ | 2.49 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BA:104:ASP:HA | 3:BA:107:ARG:HD3 | 1.97 | 0.47 |
| 3:BB:231:LYS:NZ | 3:BB:231:LYS:O | 2.44 | 0.47 |
| 3:BG:12:ASN:ND2 | 3:BG:307:MET:HE3 | 2.24 | 0.47 |
| 3:BI:94:ILE:HG13 | 3:BI:236:LEU:HD22 | 1.96 | 0.47 |
| 4:CB:176:ILE:HD12 | 4:CB:209:LEU:HD13 | 1.97 | 0.47 |
| 4:CD:358:VAL:HA | 4:CD:396:ASP:HB3 | 1.95 | 0.47 |
| 4:CI:309:PHE:HE2 | 4:CI:327:PHE:CD2 | 2.33 | 0.47 |
| 4:CJ:148:ASP:O | 4:CJ:152:ARG:HG2 | 2.14 | 0.47 |
| 5:DJ:386:GLN:HE22 | 5:DK:399:VAL:HG13 | 1.80 | 0.47 |
| 5:DK:174:ALA:HA | 5:DK:177:TYR:CE1 | 2.50 | 0.47 |
| 5:EC:5:ALA:HB1 | 5:EC:388:ILE:HG13 | 1.97 | 0.47 |
| 5:ED:316:LEU:HD11 | 5:ED:355:LEU:HD11 | 1.97 | 0.47 |
| 5:EF:142:LEU:HD12 | 5:EF:285:PRO:HB2 | 1.97 | 0.47 |
| 5:EK:99:PHE:HE1 | 5:EK:115:LEU:HB2 | 1.79 | 0.47 |
| 5:FD:341:VAL:HG13 | 5:FD:343:LEU:HG | 1.97 | 0.47 |
| 5:GB:5:ALA:HB1 | 5:GB:388:ILE:HG12 | 1.97 | 0.47 |
| 5:GC:179:LYS:HZ2 | 5:GC:273:ASN:HB3 | 1.80 | 0.47 |
| 5:GE:187:ASP:OD1 | 5:GE:191:ASN:N | 2.48 | 0.47 |
| 3:BJ:220:VAL:O | 3:BJ:224:LYS:HG2 | 2.14 | 0.46 |
| 4:CD:213:VAL:HA | 4:CD:278:GLY:HA3 | 1.96 | 0.46 |
| 4:CE:141:VAL:HG22 | 4:CE:424:MET:HE3 | 1.97 | 0.46 |
| 5:DB:227:THR:HG21 | 5:DB:243:VAL:HG22 | 1.96 | 0.46 |
| 5:DF:94:SER:HB2 | 5:DF:332:VAL:HG12 | 1.97 | 0.46 |
| 5:EA:138:ILE:HG13 | 5:EA:138:ILE:O | 2.15 | 0.46 |
| 5:EA:216:ASP:HB3 | 5:EA:219:ALA:HB2 | 1.96 | 0.46 |
| 5:EH:2:PHE:HA | 5:EH:391:GLN:HE22 | 1.80 | 0.46 |
| 5:FC:190:GLY:O | 5:GK:269:ASN:ND2 | 2.47 | 0.46 |
| 5:FI:153:MET:HG2 | 5:FI:260:LEU:HD11 | 1.97 | 0.46 |
| 5:GE:117:GLY:N | 5:GE:134:ALA:O | 2.47 | 0.46 |
| 5:GF:178:ASN:N | 5:GF:199:PHE:O | 2.46 | 0.46 |
| 5:GI:212:HIS:HB2 | 5:GI:222:PRO:HD3 | 1.97 | 0.46 |
| 3:BC:7:MET:HE1 | 4:CE:507:TYR:HE2 | 1.79 | 0.46 |
| 3:BD:197:GLU:HG3 | 3:BD:203:MET:HB3 | 1.96 | 0.46 |
| 3:BJ:32:THR:HG23 | 3:BJ:34:LYS:H | 1.80 | 0.46 |
| 3:BJ:314:GLN:HG2 | 4:CF:533:LEU:HD12 | 1.98 | 0.46 |
| 4:CA:316:GLY:C | 4:CA:435:ALA:HB1 | 2.40 | 0.46 |
| 4:CA:552:ILE:HG12 | 4:CJ:536:ALA:HB1 | 1.97 | 0.46 |
| 4:CG:300:GLN:NE2 | 4:CG:468:VAL:HG13 | 2.29 | 0.46 |
| 4:CG:443:ASP:HB2 | 4:CG:446:VAL:O | 2.15 | 0.46 |
| 5:DA:47:VAL:HG11 | 5:DE:17:ASP:HB3 | 1.96 | 0.46 |
| 5:DC:169:PHE:HA | 5:DC:176:SER:HB2 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DH:165:SER:OG | 5:DH:175:ASP:OD2 | 2.32 | 0.46 |
| 5:DH:230:LYS:HG2 | 5:DH:239:SER:HB2 | 1.97 | 0.46 |
| 5:EC:109:ASN:OD1 | 5:EC:113:MET:N | 2.49 | 0.46 |
| 5:FB:33:SER:HB3 | 5:FB:365:VAL:HG22 | 1.96 | 0.46 |
| 5:FI:107:LEU:HB3 | 5:FI:115:LEU:HD12 | 1.97 | 0.46 |
| 5:GC:169:PHE:HA | 5:GC:176:SER:HB2 | 1.96 | 0.46 |
| 5:GG:154:GLN:O | 5:GG:276:VAL:N | 2.47 | 0.46 |
| 1:AD:136:PRO:HB2 | 1:AD:190:ASP:HA | 1.96 | 0.46 |
| 1:AE:439:GLN:HA | 1:AE:442:GLN:OE1 | 2.15 | 0.46 |
| 4:CA:365:ILE:HD13 | 4:CA:414:LEU:HD13 | 1.97 | 0.46 |
| 4:CC:546:PHE:CD2 | 5:DB:379:ARG:HG2 | 2.51 | 0.46 |
| 4:CD:135:GLY:O | 4:CD:138:GLU:HG3 | 2.15 | 0.46 |
| 4:CE:79:GLN:NE2 | 4:CE:211:LYS:HD3 | 2.30 | 0.46 |
| 4:CF:18:ALA:HA | 4:CF:39:THR:HG21 | 1.95 | 0.46 |
| 4:CF:334:VAL:HG12 | 4:CF:415:LYS:HB2 | 1.97 | 0.46 |
| 4:CJ:299:GLY:HA2 | 4:CJ:421:ILE:HD11 | 1.96 | 0.46 |
| 5:DB:49:LEU:HD13 | 5:EB:64:THR:HA | 1.97 | 0.46 |
| 5:DH:34:GLY:HA2 | 5:DH:58:GLN:HA | 1.96 | 0.46 |
| 5:DI:237:LEU:HD22 | 5:DI:266:MET:HE1 | 1.98 | 0.46 |
| 5:DI:357:ASN:OD1 | 5:DI:358:GLY:N | 2.48 | 0.46 |
| 5:EI:207:TRP:HB2 | 5:EI:229:LEU:HB2 | 1.96 | 0.46 |
| 5:EK:83:ARG:HD3 | 5:EK:116:THR:HG21 | 1.97 | 0.46 |
| 5:EK:113:MET:HE2 | 5:EK:113:MET:N | 2.30 | 0.46 |
| 5:FH:84:LEU:HD23 | 5:FH:115:LEU:HA | 1.97 | 0.46 |
| 5:FJ:6:VAL:HG22 | 5:GI:372:VAL:HG11 | 1.97 | 0.46 |
| 5:GB:109:ASN:HD21 | 5:GB:111:GLN:HB2 | 1.81 | 0.46 |
| 5:GB:143:MET:HE3 | 5:GB:283:TYR:CD2 | 2.51 | 0.46 |
| 5:GG:187:ASP:OD1 | 5:GG:191:ASN:N | 2.49 | 0.46 |
| 5:GJ:143:MET:HG2 | 5:GJ:305:ASN:HD21 | 1.81 | 0.46 |
| 5:GJ:393:GLN:OE1 | 5:GK:402:ARG:NH2 | 2.48 | 0.46 |
| 1:AA:350:GLY:HA3 | 3:BK:89:THR:OG1 | 2.14 | 0.46 |
| 2:AC:131:ILE:HD12 | 2:AC:144:ILE:HB | 1.98 | 0.46 |
| 1:AD:63:ALA:HA | 1:AD:69:LEU:HD23 | 1.96 | 0.46 |
| 1:AD:283:TYR:O | 1:AD:286:LEU:HG | 2.15 | 0.46 |
| 1:AE:194:LYS:HZ2 | 1:AE:211:SER:HA | 1.81 | 0.46 |
| 3:BD:66:ARG:HG2 | 3:BD:164:VAL:HB | 1.97 | 0.46 |
| 3:BE:288:SER:HB3 | 3:BL:13:MET:HE3 | 1.98 | 0.46 |
| 3:BG:85:THR:O | 3:BG:88:GLN:HG3 | 2.15 | 0.46 |
| 3:BI:242:ASN:O | 3:BI:245:THR:HG22 | 2.16 | 0.46 |
| 3:BK:12:ASN:O | 3:BK:16:ILE:HG12 | 2.15 | 0.46 |
| 3:BK:92:GLU:HG2 | 3:BK:96:TYR:CE2 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CC:291:LEU:HG | 4:CC:295:ARG:HD2 | 1.97 | 0.46 |
| 4:CC:355:SER:O | 4:CC:358:VAL:HG12 | 2.15 | 0.46 |
| 4:CG:361:THR:HG21 | 4:CG:376:ARG:HD2 | 1.98 | 0.46 |
| 5:DA:258:PHE:HE2 | 5:DA:260:LEU:HB2 | 1.80 | 0.46 |
| 5:DC:191:ASN:HB3 | 5:DC:250:ILE:HD11 | 1.98 | 0.46 |
| 5:DC:357:ASN:OD1 | 5:DC:358:GLY:N | 2.49 | 0.46 |
| 5:DG:186:TYR:HE1 | 5:DG:280:GLN:HE22 | 1.63 | 0.46 |
| 5:EI:232:ASN:HD21 | 5:EI:236:ILE:HB | 1.81 | 0.46 |
| 5:FA:191:ASN:ND2 | 5:FA:251:ASN:OD1 | 2.48 | 0.46 |
| 5:FE:80:GLY:HA3 | 5:FE:316:LEU:HD23 | 1.97 | 0.46 |
| 5:FF:216:ASP:HA | 5:FF:250:ILE:HD11 | 1.97 | 0.46 |
| 5:GD:109:ASN:HD21 | 5:GD:113:MET:HB2 | 1.80 | 0.46 |
| 5:GD:157:LEU:HA | 5:GD:273:ASN:HD22 | 1.80 | 0.46 |
| 5:GH:106:ASN:HA | 5:GH:137:THR:HA | 1.96 | 0.46 |
| 1:AB:405:ASP:OD1 | 1:AB:408:GLN:NE2 | 2.49 | 0.46 |
| 1:AD:341:MET:SD | 1:AD:347:THR:OG1 | 2.72 | 0.46 |
| 1:AD:374:ARG:O | 1:AD:378:VAL:HG12 | 2.15 | 0.46 |
| 1:AE:420:LYS:O | 1:AE:423:LEU:HG | 2.15 | 0.46 |
| 3:BB:52:LEU:CD2 | 3:BB:275:MET:HB2 | 2.46 | 0.46 |
| 3:BC:7:MET:HE2 | 3:BC:7:MET:HA | 1.96 | 0.46 |
| 3:BG:62:TYR:CZ | 3:BG:166:SER:HA | 2.50 | 0.46 |
| 3:BL:62:TYR:OH | 3:BL:166:SER:OG | 2.29 | 0.46 |
| 4:CA:195:PRO:HG3 | 4:CC:505:GLN:CD | 2.40 | 0.46 |
| 4:CA:218:SER:O | 4:CA:226:ASN:HB2 | 2.16 | 0.46 |
| 4:CD:390:ASP:HB3 | 4:CD:392:LYS:NZ | 2.31 | 0.46 |
| 4:CE:553:ARG:HH22 | 5:DK:390:THR:HG1 | 1.57 | 0.46 |
| 4:CH:331:GLY:HA3 | 4:CH:420:ALA:HA | 1.96 | 0.46 |
| 4:CI:405:GLY:O | 4:CI:407:GLN:NE2 | 2.48 | 0.46 |
| 5:DC:179:LYS:NZ | 5:DC:180:LYS:O | 2.44 | 0.46 |
| 5:DE:328:GLN:HB2 | 5:DE:332:VAL:HG23 | 1.96 | 0.46 |
| 5:DI:109:ASN:OD1 | 5:DI:111:GLN:NE2 | 2.49 | 0.46 |
| 5:DI:379:ARG:HA | 5:DI:379:ARG:HD3 | 1.76 | 0.46 |
| 5:EC:169:PHE:HA | 5:EC:176:SER:HB2 | 1.97 | 0.46 |
| 5:ED:49:LEU:HD22 | 5:FD:64:THR:HG22 | 1.97 | 0.46 |
| 5:EI:198:TYR:HD1 | 5:EI:210:TYR:HB2 | 1.80 | 0.46 |
| 5:EJ:234:ASN:HD21 | 5:EJ:236:ILE:HG12 | 1.80 | 0.46 |
| 5:FC:93:TYR:HE2 | 5:FC:335:ALA:HB2 | 1.81 | 0.46 |
| 5:FC:109:ASN:HD21 | 5:FC:113:MET:HE2 | 1.80 | 0.46 |
| 5:FG:217:PRO:HG3 | 5:FG:250:ILE:HD13 | 1.97 | 0.46 |
| 5:GB:202:THR:O | 5:GB:203:LYS:HE2 | 2.16 | 0.46 |
| 3:BC:23:TRP:NE1 | 3:BC:294:GLN:OE1 | 2.49 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CE:363:TYR:HB2 | 4:CE:414:LEU:HB3 | 1.97 | 0.46 |
| 4:CF:357:LYS:HE2 | 4:CF:397:GLY:N | 2.30 | 0.46 |
| 4:CG:40:ILE:HD11 | 4:CG:64:GLN:HB2 | 1.97 | 0.46 |
| 4:CH:165:SER:O | 4:CH:169:ILE:HG12 | 2.16 | 0.46 |
| 4:CI:48:LEU:HA | 4:CI:53:TRP:H | 1.81 | 0.46 |
| 4:CK:148:ASP:O | 4:CK:152:ARG:HG2 | 2.16 | 0.46 |
| 5:DA:84:LEU:HG | 5:DA:115:LEU:HA | 1.96 | 0.46 |
| 5:DD:198:TYR:O | 5:DD:210:TYR:HB2 | 2.16 | 0.46 |
| 5:DJ:196:ASN:ND2 | 5:DJ:214:SER:HB3 | 2.30 | 0.46 |
| 5:EB:317:ALA:HB2 | 5:EB:344:LEU:HD23 | 1.98 | 0.46 |
| 5:EE:245:ILE:HD12 | 5:EE:260:LEU:HD12 | 1.98 | 0.46 |
| 5:EI:2:PHE:HD2 | 5:EI:388:ILE:HD13 | 1.81 | 0.46 |
| 5:FB:123:THR:HB | 5:FB:124:PRO:HD3 | 1.97 | 0.46 |
| 5:FJ:216:ASP:HB3 | 5:FJ:219:ALA:HB2 | 1.97 | 0.46 |
| 5:FK:148:THR:O | 5:FK:258:PHE:HB3 | 2.16 | 0.46 |
| 5:GA:158:ASN:H | 5:GA:273:ASN:ND2 | 2.12 | 0.46 |
| 5:GB:111:GLN:HG2 | 5:GB:330:ASP:HB3 | 1.97 | 0.46 |
| 5:GB:267:GLN:O | 5:GB:267:GLN:HG3 | 2.15 | 0.46 |
| 5:GH:94:SER:HB3 | 5:GH:332:VAL:HG12 | 1.98 | 0.46 |
| 5:GJ:121:THR:HG22 | 5:GJ:122:GLY:H | 1.79 | 0.46 |
| 1:AA:116:THR:HG22 | 1:AA:118:LYS:H | 1.81 | 0.46 |
| 3:BG:247:ARG:HG3 | 3:BG:247:ARG:HH11 | 1.80 | 0.46 |
| 3:BK:161:THR:HG22 | 3:BK:171:VAL:HA | 1.97 | 0.46 |
| 3:BL:29:GLN:HE21 | 3:BL:35:ARG:HA | 1.81 | 0.46 |
| 4:CB:460:LEU:O | 4:CB:463:GLN:HG2 | 2.16 | 0.46 |
| 4:CD:53:TRP:NE1 | 4:CI:193:ALA:O | 2.48 | 0.46 |
| 4:CD:76:ARG:HB3 | 4:CD:210:ASN:HD22 | 1.80 | 0.46 |
| 4:CF:227:LEU:HB2 | 4:CF:236:VAL:HG22 | 1.98 | 0.46 |
| 4:CH:4:LEU:HD23 | 4:CH:542:ALA:HB2 | 1.98 | 0.46 |
| 4:CI:139:GLY:O | 4:CI:143:GLN:HG2 | 2.16 | 0.46 |
| 4:CI:545:LEU:HD11 | 5:DK:16:LEU:HD13 | 1.98 | 0.46 |
| 5:DB:235:GLY:HA2 | 5:DB:267:GLN:HG3 | 1.98 | 0.46 |
| 5:DC:166:LYS:NZ | 5:DC:168:PRO:O | 2.45 | 0.46 |
| 5:DC:185:VAL:HG23 | 5:DC:193:HIS:HB2 | 1.98 | 0.46 |
| 5:DD:231:PHE:CD2 | 5:DD:267:GLN:HB2 | 2.50 | 0.46 |
| 5:DJ:386:GLN:HE21 | 5:DK:399:VAL:HA | 1.81 | 0.46 |
| 5:FK:374:MET:HE2 | 5:FK:374:MET:N | 2.31 | 0.46 |
| 5:GD:395:LEU:HD23 | 5:GD:398:LEU:HD12 | 1.97 | 0.46 |
| 5:GK:194:ASP:H | 5:GK:215:SER:HB3 | 1.79 | 0.46 |
| 3:BA:137:ALA:HB3 | 3:BA:141:THR:HA | 1.98 | 0.46 |
| 3:BD:79:VAL:HG11 | 3:BD:136:PHE:HE2 | 1.81 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BI:23:TRP:NE1 | 3:BI:294:GLN:HE21 | 2.13 | 0.46 |
| 3:BI:111:ALA:HB3 | 3:BI:212:LYS:HG3 | 1.97 | 0.46 |
| 4:CB:194:SER:HB2 | 4:CB:199:LEU:HD11 | 1.98 | 0.46 |
| 4:CB:255:ARG:HB3 | 4:CB:287:ARG:HH21 | 1.80 | 0.46 |
| 4:CC:98:LEU:HD11 | 4:CC:150:TYR:HB3 | 1.97 | 0.46 |
| 4:CC:435:ALA:O | 4:CC:455:ASN:ND2 | 2.49 | 0.46 |
| 4:CG:8:ALA:O | 4:CG:12:LEU:HD23 | 2.16 | 0.46 |
| 4:CH:271:PRO:HB2 | 4:CH:274:LEU:HD23 | 1.97 | 0.46 |
| 4:CI:471:ASN:N | 4:CI:471:ASN:OD1 | 2.49 | 0.46 |
| 4:CJ:76:ARG:HB3 | 4:CJ:210:ASN:ND2 | 2.31 | 0.46 |
| 5:GE:316:LEU:HD21 | 5:GE:355:LEU:HD11 | 1.98 | 0.46 |
| 5:GF:354:LYS:HE2 | 5:GF:354:LYS:HB3 | 1.78 | 0.46 |
| 5:GG:117:GLY:HA3 | 5:GG:136:ILE:HD11 | 1.97 | 0.46 |
| 3:BD:77:GLU:OE2 | 3:BD:247:ARG:NH2 | 2.34 | 0.46 |
| 3:BD:310:MET:HE1 | 3:BE:298:GLN:HG2 | 1.98 | 0.46 |
| 4:CB:363:TYR:CE1 | 4:CB:376:ARG:HG2 | 2.51 | 0.46 |
| 4:CB:393:LEU:HB2 | 4:CB:400:VAL:HB | 1.98 | 0.46 |
| 4:CG:233:TYR:HE2 | 4:CG:270:ILE:HG21 | 1.81 | 0.46 |
| 5:DD:72:LEU:HD13 | 5:DD:100:LYS:HA | 1.98 | 0.46 |
| 5:DE:177:TYR:HE1 | 5:DE:180:LYS:HB2 | 1.81 | 0.46 |
| 5:EB:316:LEU:HD11 | 5:EB:355:LEU:HD21 | 1.97 | 0.46 |
| 5:ED:92:PHE:HB3 | 5:ED:332:VAL:CG2 | 2.46 | 0.46 |
| 5:FD:394:ILE:HD11 | 5:GA:378:GLN:HG3 | 1.98 | 0.46 |
| 5:FF:371:LEU:HA | 5:FF:374:MET:SD | 2.56 | 0.46 |
| 5:GE:109:ASN:OD1 | 5:GE:113:MET:N | 2.47 | 0.46 |
| 1:AD:283:TYR:O | 1:AD:287:VAL:HG23 | 2.16 | 0.46 |
| 3:BB:242:ASN:O | 3:BB:245:THR:OG1 | 2.28 | 0.46 |
| 3:BG:175:THR:HG22 | 3:BG:177:ALA:H | 1.81 | 0.46 |
| 3:BK:93:LYS:HA | 3:BK:96:TYR:CD2 | 2.50 | 0.46 |
| 3:BK:163:GLN:O | 3:BK:163:GLN:HG2 | 2.15 | 0.46 |
| 3:BL:66:ARG:NH2 | 3:BL:164:VAL:O | 2.48 | 0.46 |
| 4:CC:273:LYS:HG3 | 4:CC:274:LEU:HD22 | 1.96 | 0.46 |
| 4:CD:94:LYS:HE3 | 4:CD:154:GLN:HE22 | 1.80 | 0.46 |
| 4:CD:271:PRO:HG2 | 4:CD:274:LEU:HD13 | 1.98 | 0.46 |
| 5:DD:203:LYS:NZ | 5:DD:204:ASP:O | 2.45 | 0.46 |
| 5:FC:84:LEU:HB3 | 5:FC:113:MET:HB3 | 1.97 | 0.46 |
| 5:FF:117:GLY:N | 5:FF:134:ALA:O | 2.44 | 0.46 |
| 5:GA:117:GLY:HA3 | 5:GA:136:ILE:HD11 | 1.96 | 0.46 |
| 5:GA:183:VAL:HB | 5:GA:195:MET:HB3 | 1.98 | 0.46 |
| 5:GF:249:THR:HG23 | 5:GF:253:ALA:O | 2.16 | 0.46 |
| 5:GF:283:TYR:CG | 5:GF:307:GLN:HG3 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GH:200:VAL:HB | 5:GH:208:ALA:HB3 | 1.98 | 0.46 |
| 1:AD:157:ARG:CZ | 1:AE:248:GLN:HE22 | 2.29 | 0.45 |
| 3:BE:83:VAL:O | 3:BE:87:ILE:HG12 | 2.16 | 0.45 |
| 3:BJ:91:GLN:HG2 | 3:BJ:236:LEU:HG | 1.98 | 0.45 |
| 4:CA:311:ALA:O | 4:CA:315:LYS:HG2 | 2.16 | 0.45 |
| 4:CD:455:ASN:O | 4:CD:459:LEU:HD23 | 2.16 | 0.45 |
| 4:CE:374:VAL:HG11 | 4:CE:395:ILE:HG12 | 1.98 | 0.45 |
| 4:CK:218:SER:OG | 4:CK:226:ASN:HB2 | 2.15 | 0.45 |
| 4:CK:376:ARG:O | 4:CK:380:ASN:CA | 2.64 | 0.45 |
| 5:ED:300:VAL:HG22 | 5:ED:310:VAL:HG22 | 1.97 | 0.45 |
| 5:EI:123:THR:HB | 5:EI:124:PRO:HD3 | 1.98 | 0.45 |
| 5:FC:402:ARG:NH1 | 5:GC:378:GLN:OE1 | 2.49 | 0.45 |
| 5:FJ:379:ARG:NH1 | 5:FJ:382:GLN:OE1 | 2.49 | 0.45 |
| 5:GD:187:ASP:HA | 5:GD:256:ALA:HB2 | 1.99 | 0.45 |
| 5:GE:94:SER:HB3 | 5:GE:332:VAL:HG12 | 1.98 | 0.45 |
| 5:GG:101:LEU:HD21 | 5:GG:138:ILE:HD12 | 1.99 | 0.45 |
| 5:GJ:108:VAL:HG12 | 5:GJ:114:GLN:HG2 | 1.98 | 0.45 |
| 1:AA:70:PHE:HD2 | 1:AA:374:ARG:HG3 | 1.81 | 0.45 |
| 1:AE:340:THR:OG1 | 1:AE:343:GLU:HG3 | 2.16 | 0.45 |
| 3:BA:66:ARG:HG2 | 3:BA:164:VAL:HB | 1.99 | 0.45 |
| 3:BB:13:MET:HE2 | 3:BB:13:MET:HA | 1.98 | 0.45 |
| 3:BC:13:MET:HE2 | 4:CK:520:GLU:HA | 1.97 | 0.45 |
| 3:BC:310:MET:HE1 | 4:CG:529:GLN:HG2 | 1.98 | 0.45 |
| 3:BE:310:MET:HE1 | 4:CA:529:GLN:HG3 | 1.98 | 0.45 |
| 3:BG:163:GLN:HG2 | 3:BG:169:THR:HG22 | 1.97 | 0.45 |
| 3:BI:139:TYR:CZ | 3:BI:158:LYS:HG3 | 2.52 | 0.45 |
| 3:BJ:5:THR:O | 3:BJ:8:MET:HB3 | 2.16 | 0.45 |
| 3:BL:35:ARG:HG2 | 3:BL:281:VAL:HB | 1.97 | 0.45 |
| 4:CB:308:ALA:HB2 | 4:CB:467:VAL:HG11 | 1.98 | 0.45 |
| 4:CB:492:LEU:HD23 | 4:CB:492:LEU:HA | 1.78 | 0.45 |
| 4:CE:310:ASN:ND2 | 4:CE:328:PHE:O | 2.46 | 0.45 |
| 4:CE:436:MET:N | 4:CE:436:MET:SD | 2.89 | 0.45 |
| 4:CF:112:SER:HB3 | 4:CF:136:LYS:NZ | 2.31 | 0.45 |
| 4:CG:314:THR:HB | 4:CG:323:LYS:HE3 | 1.98 | 0.45 |
| 4:CI:260:TYR:HB2 | 4:CI:270:ILE:HD11 | 1.97 | 0.45 |
| 5:DD:187:ASP:OD1 | 5:DD:253:ALA:HB1 | 2.16 | 0.45 |
| 5:DH:285:PRO:HG3 | 5:EG:268:GLN:HB3 | 1.98 | 0.45 |
| 5:DJ:170:SER:HB3 | 5:DJ:173:ASP:HB2 | 1.97 | 0.45 |
| 5:DK:145:ALA:HB2 | 5:DK:285:PRO:HD3 | 1.98 | 0.45 |
| 5:ED:119:PRO:HG3 | 5:ED:134:ALA:HB3 | 1.97 | 0.45 |
| 5:FB:94:SER:HB3 | 5:FB:332:VAL:HG12 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GB:70:ARG:O | 5:GB:358:GLY:HA2 | 2.16 | 0.45 |
| 5:GG:153:MET:HE3 | 5:GG:260:LEU:HD11 | 1.97 | 0.45 |
| 1:AA:366:LEU:O | 1:AA:370:THR:OG1 | 2.25 | 0.45 |
| 3:BD:313:PHE:HE2 | 4:CG:518:LEU:HD13 | 1.80 | 0.45 |
| 3:BE:245:THR:O | 3:BE:249:GLU:HG2 | 2.16 | 0.45 |
| 3:BG:113:ASP:O | 3:BG:117:ILE:HG12 | 2.16 | 0.45 |
| 3:BL:233:ASN:O | 3:BL:237:LYS:HG2 | 2.16 | 0.45 |
| 4:CA:70:PHE:CZ | 4:CJ:157:GLN:HG3 | 2.51 | 0.45 |
| 4:CA:74:GLN:HE21 | 4:CJ:157:GLN:HG2 | 1.80 | 0.45 |
| 4:CA:440:SER:O | 4:CA:448:THR:OG1 | 2.34 | 0.45 |
| 4:CC:349:THR:OG1 | 4:CC:401:THR:HB | 2.17 | 0.45 |
| 4:CE:10:SER:HB2 | 4:CE:58:VAL:O | 2.16 | 0.45 |
| 4:CF:220:GLN:HG2 | 4:CF:221:ASP:H | 1.82 | 0.45 |
| 4:CF:327:PHE:CB | 4:CF:428:VAL:H | 2.29 | 0.45 |
| 4:CI:40:ILE:HB | 4:CI:61:SER:HB3 | 1.98 | 0.45 |
| 4:CJ:361:THR:HG22 | 4:CJ:378:ALA:HB3 | 1.99 | 0.45 |
| 5:DA:40:ASP:OD1 | 5:DA:40:ASP:N | 2.49 | 0.45 |
| 5:DB:40:ASP:OD1 | 5:DB:41:MET:N | 2.48 | 0.45 |
| 5:DB:62:ASP:OD1 | 5:DB:62:ASP:N | 2.50 | 0.45 |
| 5:EB:392:ASP:OD1 | 5:EB:393:GLN:N | 2.49 | 0.45 |
| 5:EC:273:ASN:O | 5:EC:273:ASN:ND2 | 2.45 | 0.45 |
| 5:GH:153:MET:HG3 | 5:GH:155:ILE:HD11 | 1.97 | 0.45 |
| 2:AC:246:ALA:HB3 | 2:AC:247:PRO:HD3 | 1.98 | 0.45 |
| 1:AE:447:MET:SD | 3:BN:302:LYS:HD2 | 2.56 | 0.45 |
| 3:BA:168:ARG:HH12 | 4:CK:138:GLU:HB3 | 1.80 | 0.45 |
| 3:BL:228:ALA:HA | 3:BL:231:LYS:HE3 | 1.99 | 0.45 |
| 4:CA:70:PHE:HD2 | 4:CA:71:ILE:HD13 | 1.80 | 0.45 |
| 4:CJ:428:VAL:HG13 | 4:CJ:433:GLU:HB2 | 1.99 | 0.45 |
| 5:DG:115:LEU:HD21 | 5:DG:314:ILE:HG23 | 1.98 | 0.45 |
| 5:DI:178:ASN:H | 5:DI:200:VAL:HG12 | 1.82 | 0.45 |
| 5:DK:205:ASN:HB3 | 5:DK:230:LYS:HD2 | 1.96 | 0.45 |
| 5:EA:292:GLN:NE2 | 5:EA:294:ASN:OD1 | 2.49 | 0.45 |
| 5:EB:169:PHE:HA | 5:EB:176:SER:HB2 | 1.98 | 0.45 |
| 5:EJ:149:THR:N | 5:EJ:281:ASN:HD21 | 2.14 | 0.45 |
| 5:FB:83:ARG:HD2 | 5:FB:344:LEU:HD21 | 1.97 | 0.45 |
| 5:FE:155:ILE:HD11 | 5:FE:179:LYS:HG2 | 1.98 | 0.45 |
| 5:GC:316:LEU:HD11 | 5:GC:355:LEU:HD11 | 1.99 | 0.45 |
| 5:GH:244:ASN:HA | 5:GH:259:SER:HA | 1.97 | 0.45 |
| 5:GK:62:ASP:N | 5:GK:62:ASP:OD1 | 2.49 | 0.45 |
| 2:AC:121:LEU:HD11 | 2:AC:153:MET:HB3 | 1.98 | 0.45 |
| 1:AD:122:GLY:HA3 | 1:AD:129:ARG:HH12 | 1.80 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AD:153:MET:O | 1:AD:156:ILE:HG22 | 2.16 | 0.45 |
| 3:BB:203:MET:SD | 3:BB:235:GLY:HA3 | 2.56 | 0.45 |
| 3:BC:35:ARG:HB2 | 3:BC:281:VAL:HA | 1.98 | 0.45 |
| 3:BD:153:TYR:OH | 3:BD:156:GLY:O | 2.30 | 0.45 |
| 3:BG:181:ASN:O | 3:BG:198:LYS:HB3 | 2.17 | 0.45 |
| 3:BH:242:ASN:O | 3:BH:245:THR:OG1 | 2.31 | 0.45 |
| 3:BK:186:ASN:O | 3:BK:186:ASN:ND2 | 2.49 | 0.45 |
| 4:CA:81:GLN:OE1 | 4:CA:81:GLN:N | 2.49 | 0.45 |
| 4:CD:363:TYR:HB2 | 4:CD:414:LEU:HB2 | 1.97 | 0.45 |
| 4:CE:517:ASN:O | 4:CE:521:GLU:HG2 | 2.17 | 0.45 |
| 4:CJ:374:VAL:HG23 | 4:CJ:385:ALA:HB2 | 1.99 | 0.45 |
| 5:DD:145:ALA:HB2 | 5:DD:285:PRO:HD3 | 1.99 | 0.45 |
| 5:DH:247:THR:HG22 | 5:DH:256:ALA:H | 1.82 | 0.45 |
| 5:EJ:153:MET:HE2 | 5:EJ:183:VAL:HG21 | 1.97 | 0.45 |
| 5:FA:189:GLN:HE22 | 5:FA:251:ASN:HB2 | 1.82 | 0.45 |
| 5:FE:187:ASP:OD1 | 5:FE:191:ASN:N | 2.46 | 0.45 |
| 5:FG:94:SER:HB2 | 5:FG:332:VAL:HA | 1.98 | 0.45 |
| 5:FG:197:VAL:HG22 | 5:FG:211:THR:HG22 | 1.98 | 0.45 |
| 5:GI:154:GLN:HB2 | 5:GI:276:VAL:HB | 1.98 | 0.45 |
| 1:AA:115:ALA:O | 1:AA:177:ASN:HA | 2.17 | 0.45 |
| 2:AC:404:ILE:HG13 | 2:AC:405:ASP:N | 2.32 | 0.45 |
| 1:AD:22:LEU:O | 1:AD:26:GLU:HG2 | 2.17 | 0.45 |
| 1:AE:170:SER:H | 1:AE:182:VAL:HG22 | 1.82 | 0.45 |
| 3:BA:5:THR:HG22 | 3:BA:8:MET:HE2 | 1.97 | 0.45 |
| 3:BJ:243:VAL:O | 3:BJ:247:ARG:HG3 | 2.17 | 0.45 |
| 4:CC:10:SER:HB2 | 4:CC:58:VAL:O | 2.17 | 0.45 |
| 4:CC:376:ARG:O | 4:CC:380:ASN:N | 2.49 | 0.45 |
| 4:CF:92:MET:HG2 | 4:CF:489:THR:HG22 | 1.99 | 0.45 |
| 4:CH:37:GLN:NE2 | 4:CH:196:ASN:HD22 | 2.15 | 0.45 |
| 4:CH:153:ASP:O | 4:CH:156:LYS:HG2 | 2.16 | 0.45 |
| 5:DB:113:MET:HE1 | 5:DB:332:VAL:HG11 | 1.98 | 0.45 |
| 5:DE:232:ASN:OD1 | 5:DE:233:GLU:N | 2.50 | 0.45 |
| 5:EG:230:LYS:HB2 | 5:EG:239:SER:HB2 | 1.98 | 0.45 |
| 5:EI:375:ILE:O | 5:EI:378:GLN:NE2 | 2.50 | 0.45 |
| 5:FG:57:THR:HG21 | 5:FH:110:MET:HE1 | 1.99 | 0.45 |
| 5:GD:327:SER:HG | 5:GD:333:TRP:CD1 | 2.34 | 0.45 |
| 1:AB:209:TYR:HB3 | 1:AB:216:GLY:HA2 | 1.98 | 0.45 |
| 3:BC:90:ALA:HB2 | 3:BC:117:ILE:HG21 | 1.98 | 0.45 |
| 3:BC:288:SER:O | 3:BC:292:MET:HE3 | 2.16 | 0.45 |
| 4:CA:68:ASP:OD1 | 4:CA:68:ASP:N | 2.48 | 0.45 |
| 4:CB:488:LYS:HE3 | 4:CB:488:LYS:HB3 | 1.69 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CD:233:TYR:HD1 | 5:DI:180:LYS:HE2 | 1.82 | 0.45 |
| 4:CD:392:LYS:HE2 | 4:CD:392:LYS:HB2 | 1.72 | 0.45 |
| 4:CE:549:LEU:O | 4:CE:552:ILE:HG12 | 2.16 | 0.45 |
| 4:CI:255:ARG:HH21 | 4:CI:287:ARG:HG2 | 1.80 | 0.45 |
| 5:DD:16:LEU:HA | 5:DD:19:ILE:HG12 | 1.99 | 0.45 |
| 5:DJ:366:ASP:O | 5:DJ:370:GLU:HG2 | 2.17 | 0.45 |
| 5:FG:123:THR:HB | 5:FG:124:PRO:HD3 | 1.99 | 0.45 |
| 5:FG:153:MET:HE3 | 5:FG:275:ILE:HD12 | 1.98 | 0.45 |
| 5:GD:232:ASN:OD1 | 5:GD:236:ILE:N | 2.50 | 0.45 |
| 5:GJ:32:LYS:NZ | 5:GJ:361:GLU:OE2 | 2.47 | 0.45 |
| 2:AC:30:LEU:HD11 | 2:AC:422:TYR:CE2 | 2.52 | 0.45 |
| 2:AC:99:VAL:HB | 2:AC:258:VAL:H | 1.81 | 0.45 |
| 1:AE:56:LYS:HE2 | 1:AE:56:LYS:HB2 | 1.83 | 0.45 |
| 1:AE:99:VAL:HG22 | 1:AE:254:LEU:HD22 | 1.99 | 0.45 |
| 3:BA:35:ARG:HB2 | 3:BA:281:VAL:HA | 1.99 | 0.45 |
| 3:BB:83:VAL:HG22 | 3:BB:124:LEU:HD13 | 1.99 | 0.45 |
| 3:BB:191:PRO:HD2 | 3:BB:234:ARG:HH11 | 1.81 | 0.45 |
| 3:BH:213:THR:HB | 3:BH:221:GLU:OE1 | 2.17 | 0.45 |
| 3:BK:133:ARG:H | 3:BK:133:ARG:HG2 | 1.62 | 0.45 |
| 4:CB:365:ILE:HG22 | 4:CB:374:VAL:HG22 | 1.97 | 0.45 |
| 4:CE:177:ALA:HB2 | 4:CE:241:ALA:HB2 | 1.98 | 0.45 |
| 4:CE:448:THR:HB | 4:CE:452:ASP:HB2 | 1.98 | 0.45 |
| 4:CK:98:LEU:HD22 | 4:CK:150:TYR:HD1 | 1.82 | 0.45 |
| 5:DB:138:ILE:HA | 5:DB:311:LEU:HD13 | 1.98 | 0.45 |
| 5:DI:108:VAL:HG12 | 5:DI:114:GLN:HA | 1.98 | 0.45 |
| 5:EB:297:GLY:HA3 | 5:EB:314:ILE:HG22 | 1.99 | 0.45 |
| 5:EF:375:ILE:O | 5:EF:379:ARG:HG2 | 2.17 | 0.45 |
| 5:EK:313:GLN:OE1 | 5:EK:346:THR:OG1 | 2.35 | 0.45 |
| 5:FA:123:THR:HB | 5:FA:124:PRO:HD3 | 1.99 | 0.45 |
| 5:GB:197:VAL:HG13 | 5:GB:209:VAL:HG13 | 1.98 | 0.45 |
| 5:GC:32:LYS:HD3 | 5:GC:32:LYS:HA | 1.81 | 0.45 |
| 1:AA:134:GLU:HG2 | 1:AA:194:LYS:HG3 | 1.99 | 0.45 |
| 1:AA:167:ILE:HD12 | 1:AA:183:LEU:HD22 | 1.97 | 0.45 |
| 2:AC:50:LEU:HD21 | 2:AC:321:ILE:HD12 | 1.99 | 0.45 |
| 1:AD:131:ILE:HG23 | 1:AD:197:VAL:HA | 1.98 | 0.45 |
| 1:AE:33:ILE:O | 1:AE:37:GLN:HG3 | 2.17 | 0.45 |
| 1:AE:426:SER:O | 1:AE:429:ILE:HG22 | 2.16 | 0.45 |
| 3:BA:64:LEU:HD11 | 4:CI:118:GLN:HG3 | 1.98 | 0.45 |
| 3:BC:35:ARG:HE | 3:BC:36:VAL:HG23 | 1.82 | 0.45 |
| 3:BC:139:TYR:OH | 4:CE:452:ASP:OD1 | 2.34 | 0.45 |
| 3:BD:183:ILE:HB | 3:BD:198:LYS:HZ2 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CD:1:MET:HG2 | 5:DI:366:ASP:HA | 1.98 | 0.45 |
| 4:CE:3:SER:O | 4:CE:7:HIS:ND1 | 2.50 | 0.45 |
| 4:CJ:121:VAL:HA | 4:CJ:436:MET:HE3 | 1.98 | 0.45 |
| 5:DB:395:LEU:HD22 | 5:DC:379:ARG:HD2 | 1.98 | 0.45 |
| 5:DF:40:ASP:OD1 | 5:EG:25:ASN:ND2 | 2.43 | 0.45 |
| 5:DJ:185:VAL:HG11 | 5:DJ:258:PHE:CZ | 2.52 | 0.45 |
| 5:DK:155:ILE:HG12 | 5:DK:199:PHE:CE2 | 2.52 | 0.45 |
| 5:FJ:74:VAL:HG12 | 5:FJ:357:ASN:HA | 1.99 | 0.45 |
| 5:GD:317:ALA:HB2 | 5:GD:344:LEU:HD23 | 1.99 | 0.45 |
| 5:GE:2:PHE:HD1 | 5:GE:388:ILE:HG12 | 1.81 | 0.45 |
| 2:AC:40:ASN:OD1 | 2:AC:411:VAL:HG13 | 2.17 | 0.45 |
| 3:BA:168:ARG:NH1 | 4:CK:138:GLU:HB3 | 2.32 | 0.45 |
| 3:BB:98:GLY:HA2 | 3:BB:229:ILE:HG21 | 1.99 | 0.45 |
| 3:BB:243:VAL:O | 3:BB:247:ARG:HG3 | 2.17 | 0.45 |
| 3:BC:302:LYS:HG2 | 3:BD:313:PHE:HD1 | 1.82 | 0.45 |
| 3:BE:292:MET:SD | 3:BL:6:GLN:NE2 | 2.90 | 0.45 |
| 3:BJ:35:ARG:HE | 3:BJ:36:VAL:HG23 | 1.81 | 0.45 |
| 3:BJ:245:THR:O | 3:BJ:249:GLU:HG2 | 2.16 | 0.45 |
| 3:BM:312:LEU:HD23 | 3:BM:312:LEU:HA | 1.84 | 0.45 |
| 4:CD:304:ALA:HA | 4:CD:355:SER:HB2 | 1.99 | 0.45 |
| 4:CI:213:VAL:HG22 | 4:CI:280:LEU:HB3 | 1.97 | 0.45 |
| 5:DH:402:ARG:HH12 | 5:EG:393:GLN:NE2 | 2.15 | 0.45 |
| 5:FC:206:GLU:OE2 | 5:FC:228:THR:OG1 | 2.24 | 0.45 |
| 5:GA:298:THR:HG22 | 5:GA:313:GLN:HB2 | 1.98 | 0.45 |
| 5:GB:234:ASN:O | 5:GB:268:GLN:HG2 | 2.17 | 0.45 |
| 5:GD:93:TYR:O | 5:GD:333:TRP:N | 2.37 | 0.45 |
| 5:GF:78:GLN:HB2 | 5:GF:353:GLY:HA3 | 1.98 | 0.45 |
| 1:AA:408:GLN:O | 1:AA:412:ASN:ND2 | 2.50 | 0.44 |
| 1:AB:121:LEU:HB3 | 1:AB:156:ILE:CG2 | 2.46 | 0.44 |
| 1:AB:293:LEU:HD22 | 1:AB:312:LEU:HD12 | 1.99 | 0.44 |
| 1:AD:106:GLN:HB3 | 1:AD:185:ALA:HB3 | 1.99 | 0.44 |
| 1:AE:46:ALA:HB1 | 1:AE:312:LEU:HD22 | 1.98 | 0.44 |
| 1:AE:247:PRO:HG2 | 1:AE:250:ILE:HB | 1.98 | 0.44 |
| 1:AE:336:SER:HB2 | 1:AE:375:GLU:HB3 | 1.99 | 0.44 |
| 3:BB:139:TYR:CE1 | 3:BB:160:VAL:HG22 | 2.52 | 0.44 |
| 3:BH:288:SER:O | 3:BH:292:MET:HE3 | 2.16 | 0.44 |
| 3:BK:147:ASP:HB3 | 3:BK:152:GLY:H | 1.82 | 0.44 |
| 4:CA:118:GLN:HA | 4:CA:121:VAL:HG12 | 1.99 | 0.44 |
| 4:CB:18:ALA:HB1 | 4:CB:528:TYR:CZ | 2.52 | 0.44 |
| 4:CB:89:TYR:CZ | 4:CB:493:LYS:HD3 | 2.51 | 0.44 |
| 4:CG:335:VAL:HG22 | 4:CG:414:LEU:HD13 | 1.98 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CI:327:PHE:CD1 | 4:CI:428:VAL:HB | 2.52 | 0.44 |
| 5:DC:167:THR:OG1 | 5:DC:168:PRO:HD3 | 2.17 | 0.44 |
| 5:DE:173:ASP:OD2 | 5:DE:176:SER:OG | 2.35 | 0.44 |
| 5:DH:402:ARG:HH12 | 5:EG:393:GLN:HE22 | 1.64 | 0.44 |
| 5:DJ:74:VAL:O | 5:DJ:97:GLY:HA3 | 2.17 | 0.44 |
| 5:DK:129:GLN:H | 5:EK:180:LYS:HB2 | 1.81 | 0.44 |
| 5:ED:95:ARG:HG3 | 5:ED:333:TRP:HZ3 | 1.82 | 0.44 |
| 5:ED:142:LEU:HD23 | 5:ED:142:LEU:H | 1.82 | 0.44 |
| 5:EI:94:SER:HB2 | 5:EI:332:VAL:HG12 | 1.99 | 0.44 |
| 5:EJ:379:ARG:HA | 5:EJ:382:GLN:HE21 | 1.81 | 0.44 |
| 5:FK:374:MET:HA | 5:FK:377:ALA:HB3 | 1.98 | 0.44 |
| 5:GI:108:VAL:HG12 | 5:GI:114:GLN:HA | 1.99 | 0.44 |
| 1:AA:84:VAL:HG21 | 1:AA:263:VAL:HG13 | 1.98 | 0.44 |
| 1:AE:348:GLN:HB2 | 1:AE:355:LEU:HD23 | 1.99 | 0.44 |
| 3:BB:263:LEU:HD11 | 3:BC:82:GLN:HG3 | 1.98 | 0.44 |
| 3:BD:5:THR:HB | 4:CG:29:TYR:OH | 2.17 | 0.44 |
| 3:BI:52:LEU:HD12 | 3:BI:274:GLN:HE21 | 1.82 | 0.44 |
| 4:CJ:76:ARG:HB3 | 4:CJ:210:ASN:HD22 | 1.83 | 0.44 |
| 4:CJ:141:VAL:HG13 | 4:CJ:145:LYS:NZ | 2.32 | 0.44 |
| 5:DD:157:LEU:HD21 | 5:DD:199:PHE:HE2 | 1.82 | 0.44 |
| 5:DI:387:THR:HA | 5:DJ:374:MET:HE1 | 1.99 | 0.44 |
| 5:DK:156:ASN:HD22 | 5:DK:274:ASN:ND2 | 2.14 | 0.44 |
| 5:FA:201:LYS:HD3 | 5:FA:207:TRP:CZ2 | 2.52 | 0.44 |
| 5:FE:9:LEU:HD22 | 5:FE:381:TYR:CZ | 2.53 | 0.44 |
| 5:FE:395:LEU:HB3 | 5:GA:379:ARG:HG3 | 1.99 | 0.44 |
| 5:GA:33:SER:O | 5:GA:59:ASP:N | 2.43 | 0.44 |
| 5:GK:387:THR:O | 5:GK:391:GLN:HG2 | 2.18 | 0.44 |
| 1:AB:357:ILE:HD11 | 1:AB:362:LEU:HD13 | 1.98 | 0.44 |
| 1:AB:416:LYS:HE3 | 2:AC:301:PRO:HB3 | 1.98 | 0.44 |
| 1:AD:15:LEU:HD13 | 1:AD:18:LEU:HD22 | 1.99 | 0.44 |
| 1:AD:83:LYS:HG2 | 1:AD:253:THR:HB | 1.98 | 0.44 |
| 3:BC:288:SER:HB3 | 3:BD:13:MET:SD | 2.57 | 0.44 |
| 3:BD:190:GLU:CD | 3:BD:234:ARG:HD2 | 2.43 | 0.44 |
| 3:BD:198:LYS:HD3 | 3:BD:198:LYS:HA | 1.80 | 0.44 |
| 4:CA:313:HIS:CD2 | 4:CA:434:ILE:HD12 | 2.52 | 0.44 |
| 4:CC:357:LYS:HB2 | 4:CC:357:LYS:HE2 | 1.83 | 0.44 |
| 4:CJ:183:ILE:O | 4:CJ:187:THR:HG22 | 2.17 | 0.44 |
| 4:CK:524:ASN:OD1 | 4:CK:527:ARG:NH2 | 2.51 | 0.44 |
| 5:DH:154:GLN:HB3 | 5:DH:276:VAL:HB | 1.99 | 0.44 |
| 5:DJ:143:MET:HE1 | 5:DJ:283:TYR:CE2 | 2.53 | 0.44 |
| 5:DJ:179:LYS:HB3 | 5:DJ:199:PHE:HB2 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DJ:202:THR:O | 5:DJ:203:LYS:HG2 | 2.17 | 0.44 |
| 5:DK:26:SER:HA | 5:DK:365:VAL:HG11 | 1.98 | 0.44 |
| 5:DK:229:LEU:HB3 | 5:DK:231:PHE:CE1 | 2.52 | 0.44 |
| 5:EC:341:VAL:HG23 | 5:EC:343:LEU:HG | 1.99 | 0.44 |
| 5:EI:230:LYS:O | 5:EI:238:GLU:N | 2.43 | 0.44 |
| 5:FG:280:GLN:NE2 | 5:FG:282:GLY:O | 2.50 | 0.44 |
| 5:FJ:268:GLN:HE22 | 5:FK:145:ALA:H | 1.64 | 0.44 |
| 5:GD:74:VAL:HB | 5:GD:355:LEU:HD22 | 1.99 | 0.44 |
| 2:AC:18:LEU:HD22 | 2:AC:440:PHE:CG | 2.53 | 0.44 |
| 1:AD:445:THR:HG22 | 3:BH:269:LEU:HD22 | 2.00 | 0.44 |
| 3:BA:5:THR:HA | 3:BA:8:MET:HE2 | 1.98 | 0.44 |
| 3:BA:68:PHE:O | 3:BA:71:GLN:HG2 | 2.16 | 0.44 |
| 3:BA:123:ASN:HB3 | 3:BK:168:ARG:CZ | 2.47 | 0.44 |
| 4:CD:431:GLU:O | 4:CD:434:ILE:HG12 | 2.18 | 0.44 |
| 4:CH:385:ALA:HB1 | 4:CH:393:LEU:HD12 | 1.98 | 0.44 |
| 5:DE:316:LEU:HD13 | 5:DE:347:ALA:HB2 | 1.98 | 0.44 |
| 5:DI:173:ASP:H | 5:DI:176:SER:HB2 | 1.82 | 0.44 |
| 5:EA:247:THR:HG23 | 5:EA:256:ALA:O | 2.17 | 0.44 |
| 5:EE:109:ASN:ND2 | 5:EE:113:MET:HB2 | 2.32 | 0.44 |
| 5:EG:83:ARG:HD2 | 5:EG:344:LEU:HD21 | 1.99 | 0.44 |
| 5:EI:149:THR:OG1 | 5:EI:281:ASN:ND2 | 2.50 | 0.44 |
| 5:EI:321:ASN:ND2 | 5:EJ:100:LYS:HD2 | 2.32 | 0.44 |
| 5:EI:386:GLN:HE22 | 5:EJ:371:LEU:HD22 | 1.81 | 0.44 |
| 5:GC:43:ALA:HB2 | 5:GC:49:LEU:HD11 | 2.00 | 0.44 |
| 5:GC:299:VAL:HG12 | 5:GC:311:LEU:HD12 | 2.00 | 0.44 |
| 5:GD:207:TRP:O | 5:GD:229:LEU:N | 2.39 | 0.44 |
| 5:GF:180:LYS:HE3 | 5:GF:196:ASN:HB3 | 1.98 | 0.44 |
| 5:GH:109:ASN:HD21 | 5:GH:111:GLN:HB2 | 1.82 | 0.44 |
| 5:GI:207:TRP:HE1 | 5:GI:267:GLN:NE2 | 2.15 | 0.44 |
| 1:AA:131:ILE:HB | 1:AA:144:ILE:HB | 2.00 | 0.44 |
| 1:AB:405:ASP:O | 1:AB:408:GLN:HG3 | 2.18 | 0.44 |
| 1:AD:320:THR:HB | 1:AD:403:ILE:HD11 | 2.00 | 0.44 |
| 3:BB:314:GLN:HG3 | 3:BB:317:ARG:HH11 | 1.83 | 0.44 |
| 3:BC:39:PRO:HD2 | 4:CE:96:ASP:OD1 | 2.17 | 0.44 |
| 3:BD:139:TYR:CE2 | 3:BD:158:LYS:HG3 | 2.53 | 0.44 |
| 3:BE:15:GLY:HA3 | 4:CA:27:ASN:HD21 | 1.82 | 0.44 |
| 3:BG:163:GLN:NE2 | 4:CJ:457:GLN:HB2 | 2.33 | 0.44 |
| 3:BL:75:LEU:HD23 | 3:BL:135:ILE:HD11 | 1.99 | 0.44 |
| 4:CA:271:PRO:HB2 | 4:CA:274:LEU:HD13 | 2.00 | 0.44 |
| 4:CB:87:THR:O | 4:CB:90:GLU:HG3 | 2.17 | 0.44 |
| 4:CC:536:ALA:HB1 | 4:CG:552:ILE:HG21 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CD:293:GLN:NE2 | 4:CD:297:THR:OG1 | 2.50 | 0.44 |
| 4:CH:253:PRO:HB2 | 5:DG:268:GLN:NE2 | 2.32 | 0.44 |
| 5:DJ:283:TYR:HB2 | 5:DJ:305:ASN:ND2 | 2.33 | 0.44 |
| 5:DK:179:LYS:HZ1 | 5:DK:199:PHE:HB2 | 1.83 | 0.44 |
| 5:EF:76:ILE:HD12 | 5:EF:95:ARG:HG2 | 1.99 | 0.44 |
| 5:EG:84:LEU:HD21 | 5:EG:113:MET:HB2 | 2.00 | 0.44 |
| 5:EG:175:ASP:OD1 | 5:EG:175:ASP:N | 2.50 | 0.44 |
| 5:EJ:96:ASN:HD22 | 5:EJ:331:ASN:HD22 | 1.66 | 0.44 |
| 5:EJ:390:THR:O | 5:EJ:394:ILE:HG12 | 2.18 | 0.44 |
| 5:FA:153:MET:HE2 | 5:FA:183:VAL:HG21 | 2.00 | 0.44 |
| 5:FJ:193:HIS:CE1 | 5:FJ:250:ILE:HD12 | 2.52 | 0.44 |
| 5:FJ:268:GLN:NE2 | 5:FK:145:ALA:H | 2.15 | 0.44 |
| 1:AA:82:LEU:HD12 | 1:AA:253:THR:O | 2.18 | 0.44 |
| 1:AE:73:THR:HA | 1:AE:267:LYS:HA | 2.00 | 0.44 |
| 1:AE:296:TYR:HB2 | 1:AE:313:LEU:HD11 | 1.98 | 0.44 |
| 3:BB:8:MET:SD | 3:BC:20:GLN:NE2 | 2.91 | 0.44 |
| 3:BG:284:ASN:HA | 3:BG:287:ILE:HD12 | 2.00 | 0.44 |
| 3:BK:16:ILE:HD12 | 3:BK:301:TYR:HD1 | 1.82 | 0.44 |
| 3:BL:64:LEU:HG | 3:BL:68:PHE:HE2 | 1.83 | 0.44 |
| 4:CB:327:PHE:HA | 4:CB:428:VAL:HG23 | 1.98 | 0.44 |
| 4:CD:295:ARG:HH21 | 4:CD:418:SER:HB2 | 1.82 | 0.44 |
| 4:CE:546:PHE:CD2 | 5:DK:379:ARG:HD2 | 2.53 | 0.44 |
| 4:CF:327:PHE:HA | 4:CF:427:LYS:HB2 | 2.00 | 0.44 |
| 4:CG:21:THR:HG21 | 4:CG:39:THR:HB | 2.00 | 0.44 |
| 4:CH:64:GLN:NE2 | 4:CH:65:ARG:O | 2.50 | 0.44 |
| 4:CJ:342:ALA:HB3 | 4:CJ:407:GLN:HG2 | 1.99 | 0.44 |
| 5:DC:166:LYS:HD2 | 5:DC:168:PRO:HD2 | 2.00 | 0.44 |
| 5:DI:265:SER:O | 5:DI:266:MET:HE2 | 2.18 | 0.44 |
| 5:EA:54:ALA:HB3 | 5:EE:110:MET:HE1 | 1.99 | 0.44 |
| 5:EI:92:PHE:HB3 | 5:EI:332:VAL:HB | 2.00 | 0.44 |
| 5:FA:19:ILE:O | 5:FA:23:ILE:HG13 | 2.18 | 0.44 |
| 5:GA:203:LYS:HB2 | 5:GA:206:GLU:HB2 | 1.99 | 0.44 |
| 5:GB:230:LYS:HA | 5:GB:230:LYS:HD3 | 1.86 | 0.44 |
| 5:GF:174:ALA:HA | 5:GF:177:TYR:CZ | 2.53 | 0.44 |
| 5:GI:382:GLN:O | 5:GI:386:GLN:HG2 | 2.18 | 0.44 |
| 1:AA:120:GLN:HB3 | 1:AA:154:GLU:HG2 | 1.99 | 0.44 |
| 1:AA:326:ARG:NH1 | 3:BK:88:GLN:HB3 | 2.32 | 0.44 |
| 2:AC:116:THR:HB | 2:AC:119:GLU:OE1 | 2.17 | 0.44 |
| 1:AD:171:ILE:HA | 1:AD:180:GLN:O | 2.18 | 0.44 |
| 3:BC:292:MET:HE2 | 3:BD:9:TYR:HB3 | 2.00 | 0.44 |
| 3:BD:313:PHE:CE2 | 4:CG:518:LEU:HD13 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BG:153:TYR:CD2 | 3:BG:177:ALA:HB2 | 2.53 | 0.44 |
| 3:BI:66:ARG:HD3 | 3:BI:260:LEU:HG | 2.00 | 0.44 |
| 3:BK:183:ILE:HG23 | 3:BK:238:ASN:HB3 | 1.99 | 0.44 |
| 4:CA:86:THR:O | 4:CA:89:TYR:HB3 | 2.18 | 0.44 |
| 4:CA:348:LEU:HD13 | 4:CA:412:PHE:CE2 | 2.52 | 0.44 |
| 5:DA:68:THR:HG21 | 5:DA:73:ASP:OD2 | 2.17 | 0.44 |
| 5:DB:78:GLN:HB2 | 5:DB:353:GLY:HA3 | 1.99 | 0.44 |
| 5:DB:198:TYR:HE2 | 5:DB:212:HIS:HB3 | 1.82 | 0.44 |
| 5:DE:308:GLU:N | 5:DE:308:GLU:OE1 | 2.50 | 0.44 |
| 5:DF:182:THR:HG22 | 5:DF:196:ASN:HD22 | 1.81 | 0.44 |
| 5:ED:245:ILE:HD12 | 5:ED:260:LEU:HD12 | 2.00 | 0.44 |
| 5:FA:32:LYS:HD2 | 5:FA:60:PHE:HA | 2.00 | 0.44 |
| 5:FD:230:LYS:HB2 | 5:FD:239:SER:HB3 | 1.98 | 0.44 |
| 5:FF:166:LYS:HG3 | 5:FF:168:PRO:HD2 | 1.99 | 0.44 |
| 5:GH:170:SER:O | 5:GH:176:SER:OG | 2.28 | 0.44 |
| 5:GH:202:THR:HG22 | 5:GH:203:LYS:HG2 | 1.99 | 0.44 |
| 5:GI:76:ILE:HD12 | 5:GI:95:ARG:HG2 | 2.00 | 0.44 |
| 1:AA:146:LEU:HB3 | 1:AA:150:ASP:HB2 | 1.99 | 0.44 |
| 1:AA:167:ILE:HA | 1:AA:184:THR:O | 2.16 | 0.44 |
| 1:AB:326:ARG:HD2 | 3:BB:88:GLN:HG3 | 1.99 | 0.44 |
| 1:AD:243:VAL:HG13 | 1:AD:252:LEU:HB2 | 2.00 | 0.44 |
| 3:BE:203:MET:HE1 | 3:BE:235:GLY:C | 2.43 | 0.44 |
| 3:BK:246:VAL:O | 3:BK:249:GLU:HG3 | 2.18 | 0.44 |
| 3:BL:64:LEU:HG | 3:BL:68:PHE:CE2 | 2.53 | 0.44 |
| 3:BL:303:THR:HG22 | 3:BL:307:MET:HE3 | 2.00 | 0.44 |
| 4:CB:64:GLN:OE1 | 5:DG:100:LYS:NZ | 2.51 | 0.44 |
| 4:CD:296:ASN:HA | 4:CD:417:VAL:HG21 | 2.00 | 0.44 |
| 4:CH:29:TYR:CB | 4:CH:516:VAL:HG11 | 2.47 | 0.44 |
| 5:DB:146:LYS:HD2 | 5:DB:283:TYR:H | 1.82 | 0.44 |
| 5:DG:185:VAL:HG23 | 5:DG:193:HIS:HB2 | 2.00 | 0.44 |
| 5:DK:395:LEU:O | 5:DK:399:VAL:HG23 | 2.17 | 0.44 |
| 5:EA:123:THR:HB | 5:EA:124:PRO:HD3 | 2.00 | 0.44 |
| 5:EB:351:ASN:OD1 | 5:EB:351:ASN:N | 2.50 | 0.44 |
| 5:ED:297:GLY:O | 5:ED:314:ILE:HD12 | 2.17 | 0.44 |
| 5:EG:109:ASN:OD1 | 5:EG:113:MET:N | 2.51 | 0.44 |
| 5:FE:245:ILE:HD12 | 5:FE:260:LEU:HD12 | 1.98 | 0.44 |
| 5:FK:178:ASN:HB2 | 5:FK:199:PHE:H | 1.83 | 0.44 |
| 5:GH:249:THR:OG1 | 5:GH:253:ALA:O | 2.23 | 0.44 |
| 1:AA:346:ILE:HG23 | 1:AA:357:ILE:HG13 | 2.00 | 0.44 |
| 1:AA:443:LEU:HD11 | 3:BK:288:SER:HB2 | 2.00 | 0.44 |
| 2:AC:130:THR:HB | 2:AC:198:GLU:HG2 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AE:317:VAL:O | 1:AE:321:ILE:HG12 | 2.18 | 0.44 |
| 3:BA:260:LEU:HD23 | 3:BA:263:LEU:HD21 | 1.99 | 0.44 |
| 3:BB:142:GLU:HG2 | 3:BB:143:ALA:N | 2.33 | 0.44 |
| 3:BD:114:LEU:HD12 | 3:BD:211:LEU:HD12 | 1.98 | 0.44 |
| 3:BG:26:LEU:HD12 | 3:BG:26:LEU:HA | 1.83 | 0.44 |
| 3:BL:81:SER:O | 3:BL:85:THR:HG23 | 2.17 | 0.44 |
| 4:CA:439:GLU:HB3 | 4:CA:448:THR:HG21 | 2.00 | 0.44 |
| 4:CB:383:PHE:HZ | 4:CB:395:ILE:HG23 | 1.83 | 0.44 |
| 4:CC:326:ASP:OD2 | 4:CC:326:ASP:N | 2.51 | 0.44 |
| 4:CF:65:ARG:NH1 | 4:CF:200:ASP:OD1 | 2.51 | 0.44 |
| 4:CI:10:SER:HA | 4:CI:13:ASN:ND2 | 2.33 | 0.44 |
| 4:CI:130:ARG:HH11 | 4:CI:434:ILE:HG21 | 1.82 | 0.44 |
| 4:CJ:40:ILE:HG13 | 4:CJ:61:SER:HB2 | 2.00 | 0.44 |
| 4:CJ:219:VAL:O | 4:CJ:219:VAL:HG13 | 2.17 | 0.44 |
| 5:DC:200:VAL:HG22 | 5:DC:208:ALA:HB3 | 1.99 | 0.44 |
| 5:DD:285:PRO:HG3 | 5:EB:268:GLN:HG3 | 1.98 | 0.44 |
| 5:DE:254:THR:HG23 | 5:EA:233:GLU:HB2 | 1.99 | 0.44 |
| 5:DF:300:VAL:HG13 | 5:DF:308:GLU:HB2 | 1.99 | 0.44 |
| 5:DH:174:ALA:HA | 5:DH:177:TYR:CE1 | 2.53 | 0.44 |
| 5:DJ:386:GLN:NE2 | 5:DK:399:VAL:HG13 | 2.33 | 0.44 |
| 5:EB:5:ALA:HB1 | 5:EB:388:ILE:HG12 | 2.00 | 0.44 |
| 5:EC:378:GLN:NE2 | 5:EK:393:GLN:HE21 | 2.15 | 0.44 |
| 5:FB:74:VAL:O | 5:FB:97:GLY:HA3 | 2.18 | 0.44 |
| 5:FF:375:ILE:O | 5:FF:379:ARG:HG2 | 2.18 | 0.44 |
| 5:FH:174:ALA:HA | 5:FH:177:TYR:CZ | 2.53 | 0.44 |
| 5:GC:247:THR:HG1 | 5:GC:256:ALA:H | 1.66 | 0.44 |
| 1:AD:406:ASN:O | 1:AD:410:ASN:ND2 | 2.51 | 0.43 |
| 3:BA:49:ALA:HA | 3:BA:275:MET:HE1 | 1.99 | 0.43 |
| 3:BC:284:ASN:HB3 | 3:BD:13:MET:HE2 | 1.99 | 0.43 |
| 3:BD:210:ALA:HB1 | 3:BD:225:ALA:HA | 2.00 | 0.43 |
| 3:BD:234:ARG:HA | 3:BD:237:LYS:HD2 | 1.99 | 0.43 |
| 3:BG:98:GLY:HA2 | 3:BG:229:ILE:HG21 | 2.00 | 0.43 |
| 3:BG:199:ASN:O | 3:BG:203:MET:HG3 | 2.18 | 0.43 |
| 3:BG:288:SER:HA | 3:BM:304:PHE:HE1 | 1.83 | 0.43 |
| 3:BL:2:ARG:HH21 | 4:CA:36:ARG:HD3 | 1.83 | 0.43 |
| 3:BL:34:LYS:HE3 | 3:BL:279:VAL:HB | 1.99 | 0.43 |
| 4:CA:502:VAL:HG21 | 4:CJ:150:TYR:CZ | 2.53 | 0.43 |
| 4:CC:186:MET:HA | 4:CC:189:VAL:HG12 | 2.00 | 0.43 |
| 4:CE:318:ASP:OD1 | 4:CE:322:ASN:N | 2.48 | 0.43 |
| 4:CG:379:ASP:HB3 | 4:CG:381:THR:HG22 | 2.00 | 0.43 |
| 4:CH:92:MET:HE3 | 4:CH:485:VAL:HG23 | 1.99 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:152:ARG:NH1 | 4:CJ:418:SER:O | 2.51 | 0.43 |
| 4:CJ:553:ARG:NH2 | 5:DA:390:THR:OG1 | 2.47 | 0.43 |
| 4:CK:319:ALA:H | 4:CK:440:SER:CB | 2.29 | 0.43 |
| 5:DK:128:GLN:HB3 | 5:DK:131:ALA:HB3 | 1.99 | 0.43 |
| 5:EE:41:MET:HG3 | 5:EE:49:LEU:HB2 | 1.99 | 0.43 |
| 5:EF:73:ASP:O | 5:EF:358:GLY:N | 2.45 | 0.43 |
| 5:EG:183:VAL:HB | 5:EG:195:MET:HB2 | 2.00 | 0.43 |
| 5:EI:157:LEU:HD13 | 5:EI:207:TRP:CD2 | 2.53 | 0.43 |
| 1:AB:319:ARG:HE | 3:BB:247:ARG:NH1 | 2.16 | 0.43 |
| 3:BA:163:GLN:O | 3:BA:163:GLN:HG2 | 2.17 | 0.43 |
| 3:BB:219:ASN:O | 3:BB:223:GLU:HG3 | 2.18 | 0.43 |
| 3:BD:98:GLY:HA2 | 3:BD:229:ILE:HG21 | 2.00 | 0.43 |
| 3:BD:160:VAL:HG13 | 4:CG:453:ASN:ND2 | 2.34 | 0.43 |
| 3:BH:304:PHE:C | 3:BH:306:ASP:H | 2.25 | 0.43 |
| 3:BI:139:TYR:HB3 | 4:CF:450:ASP:H | 1.83 | 0.43 |
| 4:CA:398:LEU:HD21 | 4:CA:416:PRO:HB3 | 2.00 | 0.43 |
| 4:CK:91:GLN:HB3 | 4:CK:286:PHE:CZ | 2.52 | 0.43 |
| 5:DD:143:MET:SD | 5:DD:305:ASN:ND2 | 2.91 | 0.43 |
| 5:DH:123:THR:HB | 5:DH:124:PRO:HD3 | 2.01 | 0.43 |
| 5:EI:68:THR:HG21 | 5:EI:360:LEU:HD12 | 2.00 | 0.43 |
| 5:EJ:25:ASN:O | 5:EJ:363:SER:OG | 2.36 | 0.43 |
| 5:EK:179:LYS:HZ1 | 5:EK:274:ASN:N | 2.15 | 0.43 |
| 5:EK:336:THR:O | 5:EK:340:GLY:N | 2.47 | 0.43 |
| 5:GC:201:LYS:HB2 | 5:GC:207:TRP:CH2 | 2.53 | 0.43 |
| 5:GH:366:ASP:O | 5:GH:370:GLU:HG2 | 2.18 | 0.43 |
| 5:GJ:167:THR:OG1 | 5:GJ:168:PRO:HD3 | 2.18 | 0.43 |
| 3:BK:66:ARG:HG2 | 3:BK:164:VAL:HB | 2.00 | 0.43 |
| 4:CA:441:LYS:HG3 | 4:CA:442:LEU:HD12 | 2.00 | 0.43 |
| 4:CD:450:ASP:N | 4:CD:450:ASP:OD1 | 2.51 | 0.43 |
| 4:CG:327:PHE:HD2 | 4:CG:328:PHE:CE2 | 2.36 | 0.43 |
| 4:CH:365:ILE:HG12 | 4:CH:374:VAL:HG22 | 2.00 | 0.43 |
| 4:CK:481:LEU:O | 4:CK:485:VAL:HG22 | 2.19 | 0.43 |
| 5:EK:32:LYS:HE3 | 5:EK:95:ARG:HD3 | 2.00 | 0.43 |
| 5:GC:401:LEU:HD13 | 5:GD:402:ARG:HH12 | 1.82 | 0.43 |
| 5:GG:70:ARG:HH12 | 5:GG:72:LEU:HD12 | 1.84 | 0.43 |
| 1:AB:342:ALA:HB3 | 3:BB:96:TYR:CD1 | 2.53 | 0.43 |
| 2:AC:36:GLN:HB3 | 2:AC:418:LEU:HD21 | 2.00 | 0.43 |
| 3:BA:80:LEU:HD11 | 3:BA:243:VAL:HG13 | 2.01 | 0.43 |
| 3:BI:54:GLN:HB2 | 4:CF:475:ASN:ND2 | 2.30 | 0.43 |
| 3:BL:52:LEU:HD11 | 3:BL:274:GLN:NE2 | 2.33 | 0.43 |
| 3:BL:110:LEU:O | 3:BL:114:LEU:HD12 | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CA:393:LEU:HB3 | 4:CA:400:VAL:HG12 | 2.00 | 0.43 |
| 4:CB:132:ALA:O | 4:CB:136:LYS:HG2 | 2.18 | 0.43 |
| 4:CC:242:ARG:HG2 | 4:CC:243:GLN:H | 1.83 | 0.43 |
| 4:CE:422:VAL:HG23 | 4:CE:423:ASP:OD1 | 2.18 | 0.43 |
| 4:CF:250:SER:HB2 | 4:CF:339:SER:HB3 | 1.99 | 0.43 |
| 4:CF:299:GLY:HA2 | 4:CF:421:ILE:HD11 | 2.00 | 0.43 |
| 4:CH:12:LEU:HD11 | 4:CH:539:LEU:HD11 | 2.00 | 0.43 |
| 4:CI:320:ASP:HA | 4:CI:441:LYS:NZ | 2.34 | 0.43 |
| 4:CJ:9:MET:SD | 5:DA:372:VAL:HG21 | 2.59 | 0.43 |
| 5:DB:7:SER:HB2 | 5:DB:51:VAL:O | 2.19 | 0.43 |
| 5:DD:84:LEU:HD23 | 5:DD:115:LEU:HA | 2.00 | 0.43 |
| 5:EA:207:TRP:O | 5:EA:229:LEU:N | 2.44 | 0.43 |
| 5:EE:401:LEU:HD11 | 5:EF:388:ILE:HB | 1.99 | 0.43 |
| 5:EH:153:MET:HG2 | 5:EH:260:LEU:HD11 | 1.99 | 0.43 |
| 5:EI:101:LEU:HD11 | 5:EI:138:ILE:HD12 | 1.99 | 0.43 |
| 5:EI:113:MET:HE1 | 5:EI:332:VAL:HG21 | 2.00 | 0.43 |
| 5:FC:354:LYS:HD3 | 5:FC:355:LEU:H | 1.83 | 0.43 |
| 5:FF:179:LYS:NZ | 5:FF:273:ASN:O | 2.44 | 0.43 |
| 5:FG:317:ALA:HB2 | 5:FG:344:LEU:HD23 | 2.00 | 0.43 |
| 1:AB:19:LEU:O | 1:AB:23:THR:HG23 | 2.18 | 0.43 |
| 3:BD:151:GLY:HA3 | 3:BD:201:PHE:HB2 | 1.99 | 0.43 |
| 3:BH:50:VAL:HG12 | 4:CB:475:ASN:ND2 | 2.34 | 0.43 |
| 3:BL:49:ALA:HA | 3:BL:275:MET:HE1 | 2.00 | 0.43 |
| 4:CA:475:ASN:OD1 | 4:CA:476:ASP:N | 2.50 | 0.43 |
| 4:CB:363:TYR:HE1 | 4:CB:376:ARG:HG2 | 1.83 | 0.43 |
| 4:CJ:488:LYS:O | 4:CJ:492:LEU:HD23 | 2.19 | 0.43 |
| 4:CK:186:MET:HE2 | 4:CK:186:MET:HB2 | 1.83 | 0.43 |
| 5:DE:196:ASN:ND2 | 5:DE:214:SER:HB3 | 2.34 | 0.43 |
| 5:DJ:193:HIS:CE1 | 5:DJ:250:ILE:HD12 | 2.53 | 0.43 |
| 5:DJ:211:THR:HG21 | 5:DJ:245:ILE:HG12 | 2.00 | 0.43 |
| 5:EB:39:ALA:HA | 5:ED:331:ASN:HD21 | 1.84 | 0.43 |
| 5:EC:146:LYS:NZ | 5:EC:281:ASN:O | 2.40 | 0.43 |
| 5:ED:394:ILE:HD11 | 5:FA:378:GLN:HA | 1.98 | 0.43 |
| 5:EI:73:ASP:O | 5:EI:358:GLY:N | 2.39 | 0.43 |
| 5:FA:133:PRO:HG2 | 5:FA:344:LEU:HD13 | 2.00 | 0.43 |
| 5:FA:284:LYS:HD3 | 5:FA:285:PRO:O | 2.17 | 0.43 |
| 5:FD:251:ASN:HB3 | 5:GB:204:ASP:OD2 | 2.18 | 0.43 |
| 5:FG:305:ASN:ND2 | 5:FG:307:GLN:HB2 | 2.32 | 0.43 |
| 5:FJ:108:VAL:HG12 | 5:FJ:114:GLN:HA | 2.00 | 0.43 |
| 5:FJ:297:GLY:O | 5:FJ:314:ILE:HG13 | 2.19 | 0.43 |
| 5:GA:402:ARG:NH2 | 5:GD:386:GLN:O | 2.49 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GE:32:LYS:HD2 | 5:GE:60:PHE:HA | 2.00 | 0.43 |
| 5:GE:325:LEU:HD23 | 5:GE:335:ALA:HA | 2.00 | 0.43 |
| 5:GI:146:LYS:HB3 | 5:GI:146:LYS:HE2 | 1.88 | 0.43 |
| 5:GK:149:THR:HB | 5:GK:281:ASN:HD21 | 1.83 | 0.43 |
| 2:AC:186:ASN:HB2 | 2:AC:191:ASN:HB3 | 2.01 | 0.43 |
| 1:AE:344:ILE:O | 1:AE:365:VAL:HG21 | 2.18 | 0.43 |
| 3:BE:6:GLN:NE2 | 4:CC:30:ASN:HA | 2.33 | 0.43 |
| 3:BK:126:ASN:HA | 3:BK:145:PRO:HG2 | 2.00 | 0.43 |
| 3:BL:183:ILE:H | 3:BL:198:LYS:HD2 | 1.84 | 0.43 |
| 4:CC:531:TYR:OH | 5:DA:24:ALA:O | 2.33 | 0.43 |
| 4:CF:505:GLN:HE21 | 4:CF:505:GLN:CA | 2.31 | 0.43 |
| 4:CG:17:ALA:O | 4:CG:21:THR:HG23 | 2.18 | 0.43 |
| 4:CI:14:ALA:HB1 | 4:CI:41:LEU:HD22 | 2.00 | 0.43 |
| 4:CI:310:ASN:HD21 | 4:CI:328:PHE:C | 2.22 | 0.43 |
| 4:CI:318:ASP:HA | 4:CI:435:ALA:HA | 2.01 | 0.43 |
| 4:CI:399:LYS:HD3 | 4:CI:399:LYS:HA | 1.86 | 0.43 |
| 4:CJ:393:LEU:HB2 | 4:CJ:402:VAL:HG12 | 2.00 | 0.43 |
| 5:DA:308:GLU:OE1 | 5:DA:308:GLU:N | 2.52 | 0.43 |
| 5:DC:305:ASN:O | 5:DC:306:GLU:HG3 | 2.19 | 0.43 |
| 5:DG:230:LYS:HD3 | 5:DG:230:LYS:HA | 1.84 | 0.43 |
| 5:DH:158:ASN:HB3 | 5:DH:161:ASP:HB2 | 2.01 | 0.43 |
| 5:DI:155:ILE:HG13 | 5:DI:274:ASN:C | 2.43 | 0.43 |
| 5:DI:179:LYS:HB3 | 5:DI:199:PHE:CE1 | 2.54 | 0.43 |
| 5:DK:84:LEU:HB3 | 5:DK:113:MET:HB3 | 2.00 | 0.43 |
| 5:ED:117:GLY:HA2 | 5:ED:315:VAL:HG13 | 2.00 | 0.43 |
| 5:FA:94:SER:HB2 | 5:FA:332:VAL:HA | 2.00 | 0.43 |
| 5:FJ:212:HIS:HB2 | 5:FJ:222:PRO:HD3 | 2.00 | 0.43 |
| 5:FJ:371:LEU:HA | 5:FJ:374:MET:HE2 | 1.99 | 0.43 |
| 5:GA:183:VAL:N | 5:GA:195:MET:O | 2.31 | 0.43 |
| 1:AA:121:LEU:HD13 | 1:AA:202:LYS:HE3 | 2.00 | 0.43 |
| 3:BK:80:LEU:HD12 | 3:BK:250:LEU:HD12 | 2.01 | 0.43 |
| 4:CA:37:GLN:HG2 | 4:CA:196:ASN:ND2 | 2.33 | 0.43 |
| 4:CA:317:TYR:CD1 | 4:CA:440:SER:HB2 | 2.53 | 0.43 |
| 4:CA:363:TYR:HB2 | 4:CA:365:ILE:HD11 | 1.99 | 0.43 |
| 4:CB:318:ASP:HA | 4:CB:435:ALA:HB3 | 2.00 | 0.43 |
| 4:CD:131:GLN:HA | 4:CD:134:ILE:HD12 | 2.01 | 0.43 |
| 4:CF:98:LEU:HD22 | 4:CF:150:TYR:CD1 | 2.54 | 0.43 |
| 4:CG:312:GLN:HB2 | 4:CG:462:LEU:HD21 | 2.00 | 0.43 |
| 4:CJ:439:GLU:HB2 | 4:CJ:448:THR:HB | 2.00 | 0.43 |
| 4:CK:175:GLN:O | 4:CK:179:LEU:HD23 | 2.18 | 0.43 |
| 5:DB:210:TYR:CE1 | 5:DB:225:ALA:HA | 2.54 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DB:258:PHE:HE2 | 5:DB:260:LEU:HB2 | 1.83 | 0.43 |
| 5:DI:158:ASN:ND2 | 5:DI:271:GLY:HA2 | 2.33 | 0.43 |
| 5:DJ:232:ASN:OD1 | 5:DJ:233:GLU:N | 2.50 | 0.43 |
| 5:DK:157:LEU:HD21 | 5:DK:179:LYS:HZ1 | 1.82 | 0.43 |
| 5:EA:72:LEU:HD21 | 5:EA:291:TYR:HE2 | 1.84 | 0.43 |
| 5:ED:397:THR:O | 5:ED:401:LEU:HD23 | 2.18 | 0.43 |
| 5:FE:34:GLY:HA2 | 5:FE:58:GLN:HA | 1.99 | 0.43 |
| 5:FJ:128:GLN:HE21 | 5:FJ:131:ALA:HB2 | 1.84 | 0.43 |
| 5:GA:32:LYS:HD2 | 5:GA:60:PHE:HA | 1.99 | 0.43 |
| 5:GH:207:TRP:HB2 | 5:GH:229:LEU:HB2 | 2.00 | 0.43 |
| 3:BA:234:ARG:HA | 3:BA:237:LYS:HG2 | 2.01 | 0.43 |
| 3:BB:183:ILE:HG23 | 3:BB:238:ASN:HB3 | 1.99 | 0.43 |
| 3:BG:199:ASN:ND2 | 3:BG:202:VAL:HG23 | 2.34 | 0.43 |
| 3:BG:220:VAL:O | 3:BG:224:LYS:HG3 | 2.19 | 0.43 |
| 3:BJ:13:MET:HE2 | 4:CF:520:GLU:HA | 2.00 | 0.43 |
| 3:BL:7:MET:HB3 | 4:CA:511:GLN:NE2 | 2.34 | 0.43 |
| 4:CE:160:ILE:HG22 | 4:CK:70:PHE:CZ | 2.53 | 0.43 |
| 4:CF:186:MET:HE2 | 4:CF:186:MET:HB2 | 1.91 | 0.43 |
| 4:CG:318:ASP:OD1 | 4:CG:321:GLY:N | 2.51 | 0.43 |
| 4:CI:141:VAL:O | 4:CI:145:LYS:HG2 | 2.19 | 0.43 |
| 5:DC:317:ALA:HB2 | 5:DC:344:LEU:HD23 | 2.01 | 0.43 |
| 5:DD:201:LYS:HD3 | 5:DD:203:LYS:C | 2.44 | 0.43 |
| 5:DJ:33:SER:O | 5:DJ:59:ASP:N | 2.42 | 0.43 |
| 5:EB:153:MET:O | 5:EB:154:GLN:NE2 | 2.52 | 0.43 |
| 5:ED:4:GLN:NE2 | 5:ED:48:GLY:O | 2.44 | 0.43 |
| 5:EE:290:SER:O | 5:EE:302:ASN:N | 2.48 | 0.43 |
| 5:EH:351:ASN:ND2 | 5:FI:289:VAL:HA | 2.33 | 0.43 |
| 5:FI:398:LEU:HG | 5:GI:371:LEU:HD22 | 2.01 | 0.43 |
| 5:GF:158:ASN:ND2 | 5:GF:160:THR:O | 2.51 | 0.43 |
| 5:GF:203:LYS:HG2 | 5:GF:204:ASP:N | 2.34 | 0.43 |
| 1:AB:70:PHE:O | 1:AB:267:LYS:NZ | 2.48 | 0.43 |
| 1:AB:108:LEU:HG | 1:AB:220:GLU:HG3 | 2.01 | 0.43 |
| 2:AC:81:ASP:HB3 | 2:AC:258:VAL:HG22 | 2.01 | 0.43 |
| 1:AD:117:THR:HG23 | 1:AD:179:PHE:CG | 2.54 | 0.43 |
| 1:AD:157:ARG:HD2 | 1:AD:171:ILE:HD12 | 2.00 | 0.43 |
| 1:AD:276:ILE:HD11 | 1:AD:362:LEU:HD11 | 2.01 | 0.43 |
| 3:BA:153:TYR:CD2 | 3:BA:177:ALA:HB2 | 2.54 | 0.43 |
| 3:BC:139:TYR:CE2 | 4:CE:448:THR:HA | 2.53 | 0.43 |
| 4:CB:3:SER:O | 4:CB:7:HIS:ND1 | 2.52 | 0.43 |
| 4:CC:529:GLN:HG3 | 4:CG:545:LEU:HD11 | 2.00 | 0.43 |
| 4:CD:354:ASP:HB3 | 4:CD:397:GLY:HA2 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CD:388:ASP:OD1 | 4:CD:389:ALA:N | 2.52 | 0.43 |
| 4:CG:466:ASN:C | 4:CG:466:ASN:HD22 | 2.13 | 0.43 |
| 4:CK:313:HIS:CD2 | 4:CK:324:GLY:H | 2.36 | 0.43 |
| 5:DD:231:PHE:CZ | 5:DD:237:LEU:HD12 | 2.54 | 0.43 |
| 5:DK:110:MET:HE2 | 5:DK:110:MET:HB3 | 1.86 | 0.43 |
| 5:EC:142:LEU:HD22 | 5:FK:156:ASN:HD21 | 1.84 | 0.43 |
| 5:ED:42:PHE:HB2 | 5:FA:329:GLY:N | 2.34 | 0.43 |
| 5:EF:145:ALA:HB2 | 5:EF:285:PRO:HD3 | 1.99 | 0.43 |
| 5:EG:166:LYS:HA | 5:EG:166:LYS:HD2 | 1.80 | 0.43 |
| 5:FB:169:PHE:HA | 5:FB:176:SER:HB2 | 2.01 | 0.43 |
| 5:FB:371:LEU:O | 5:FB:374:MET:HE3 | 2.19 | 0.43 |
| 5:FI:92:PHE:HB2 | 5:FI:113:MET:HE1 | 1.99 | 0.43 |
| 5:GH:265:SER:O | 5:GH:266:MET:HE2 | 2.19 | 0.43 |
| 1:AA:102:LEU:HD22 | 1:AA:256:LYS:HD2 | 2.00 | 0.43 |
| 1:AE:194:LYS:HG2 | 1:AE:211:SER:HB2 | 2.01 | 0.43 |
| 3:BA:129:ASP:OD1 | 3:BA:133:ARG:N | 2.51 | 0.43 |
| 3:BB:7:MET:HE3 | 4:CK:508:LYS:HD2 | 2.00 | 0.43 |
| 3:BB:84:THR:HA | 3:BB:87:ILE:HG12 | 1.99 | 0.43 |
| 3:BB:87:ILE:HD12 | 3:BB:240:LEU:HA | 2.00 | 0.43 |
| 3:BE:163:GLN:OE1 | 3:BE:163:GLN:N | 2.52 | 0.43 |
| 3:BI:283:TRP:HA | 3:BI:286:VAL:HG12 | 2.01 | 0.43 |
| 4:CC:265:ALA:HB3 | 4:CC:268:ILE:HD11 | 2.00 | 0.43 |
| 4:CD:86:THR:O | 4:CD:90:GLU:HG2 | 2.19 | 0.43 |
| 4:CH:227:LEU:HB3 | 4:CH:236:VAL:HB | 2.01 | 0.43 |
| 4:CJ:231:ASN:OD1 | 4:CJ:232:GLY:N | 2.52 | 0.43 |
| 4:CK:115:THR:O | 4:CK:119:THR:HG23 | 2.19 | 0.43 |
| 5:DA:164:PRO:HG3 | 5:DA:200:VAL:HG13 | 2.01 | 0.43 |
| 5:DD:319:PHE:HE1 | 5:DD:342:ALA:HA | 1.83 | 0.43 |
| 5:DG:266:MET:HA | 5:DG:266:MET:HE2 | 2.00 | 0.43 |
| 5:DI:268:GLN:HG3 | 5:DI:269:ASN:H | 1.84 | 0.43 |
| 5:EB:111:GLN:HB2 | 5:EB:113:MET:HE1 | 2.00 | 0.43 |
| 5:EB:127:ILE:H | 5:EB:127:ILE:HD12 | 1.84 | 0.43 |
| 5:EF:296:ASP:O | 5:EF:313:GLN:NE2 | 2.33 | 0.43 |
| 5:FA:52:LYS:HB2 | 5:FA:52:LYS:HE3 | 1.79 | 0.43 |
| 5:FB:42:PHE:HB2 | 5:FD:329:GLY:HA2 | 2.01 | 0.43 |
| 5:FD:241:GLY:HA2 | 5:FD:262:PHE:HB2 | 2.01 | 0.43 |
| 5:FG:378:GLN:HE21 | 5:FG:382:GLN:NE2 | 2.16 | 0.43 |
| 5:FK:21:ASN:O | 5:FK:25:ASN:ND2 | 2.52 | 0.43 |
| 5:GD:366:ASP:OD2 | 5:GD:368:SER:OG | 2.37 | 0.43 |
| 5:GG:83:ARG:HD2 | 5:GG:344:LEU:HD21 | 2.00 | 0.43 |
| 5:GG:299:VAL:HG12 | 5:GG:311:LEU:HD12 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GJ:25:ASN:O | 5:GJ:363:SER:OG | 2.34 | 0.43 |
| 5:GK:64:THR:O | 5:GK:362:ALA:N | 2.52 | 0.43 |
| 3:BE:22:GLU:OE2 | 3:BE:293:GLN:HB2 | 2.18 | 0.42 |
| 3:BE:284:ASN:HB3 | 3:BL:13:MET:SD | 2.59 | 0.42 |
| 3:BL:275:MET:HE2 | 3:BL:275:MET:HA | 1.99 | 0.42 |
| 3:BL:299:ALA:O | 3:BL:303:THR:OG1 | 2.32 | 0.42 |
| 4:CA:19:LEU:HD23 | 4:CA:19:LEU:HA | 1.93 | 0.42 |
| 4:CA:88:ARG:HG2 | 4:CA:286:PHE:HB2 | 2.01 | 0.42 |
| 4:CA:526:GLN:OE1 | 4:CA:526:GLN:HA | 2.19 | 0.42 |
| 4:CC:312:GLN:NE2 | 4:CC:458:ALA:HB1 | 2.22 | 0.42 |
| 4:CC:363:TYR:CE1 | 4:CC:376:ARG:HG2 | 2.54 | 0.42 |
| 4:CE:532:TYR:OH | 4:CK:549:LEU:HD11 | 2.19 | 0.42 |
| 4:CF:364:LYS:HG2 | 4:CF:375:THR:HB | 2.01 | 0.42 |
| 4:CG:327:PHE:CE1 | 4:CG:428:VAL:HG11 | 2.54 | 0.42 |
| 4:CI:183:ILE:HD12 | 4:CI:202:ARG:HD3 | 2.01 | 0.42 |
| 4:CI:203:ASP:HA | 4:CI:206:VAL:HG12 | 2.01 | 0.42 |
| 4:CI:372:TRP:HZ2 | 4:CI:402:VAL:HG13 | 1.83 | 0.42 |
| 4:CK:18:ALA:HB1 | 4:CK:528:TYR:CE2 | 2.54 | 0.42 |
| 4:CK:364:LYS:HB3 | 4:CK:375:THR:OG1 | 2.18 | 0.42 |
| 5:DD:328:GLN:HB2 | 5:DD:334:ALA:HB2 | 2.01 | 0.42 |
| 5:DI:161:ASP:HB2 | 5:DI:201:LYS:HD3 | 2.00 | 0.42 |
| 5:DI:171:VAL:HG22 | 5:DI:221:ALA:HB2 | 2.01 | 0.42 |
| 5:EB:230:LYS:HB2 | 5:EB:238:GLU:HB3 | 2.00 | 0.42 |
| 5:EF:386:GLN:HA | 5:EF:389:LYS:HD3 | 2.00 | 0.42 |
| 5:EG:327:SER:HG | 5:EG:333:TRP:CD1 | 2.37 | 0.42 |
| 5:EJ:366:ASP:H | 5:EJ:369:LYS:HZ3 | 1.66 | 0.42 |
| 5:EK:216:ASP:OD1 | 5:EK:250:ILE:HG23 | 2.19 | 0.42 |
| 5:FE:174:ALA:HA | 5:FE:177:TYR:CE2 | 2.54 | 0.42 |
| 5:GA:153:MET:HE3 | 5:GA:183:VAL:HG22 | 2.01 | 0.42 |
| 5:GG:42:PHE:N | 5:GH:329:GLY:HA2 | 2.33 | 0.42 |
| 3:BJ:242:ASN:O | 3:BJ:245:THR:HG22 | 2.19 | 0.42 |
| 3:BL:205:ASP:HA | 3:BL:208:ILE:HG12 | 2.01 | 0.42 |
| 4:CB:299:GLY:HA2 | 4:CB:421:ILE:HD11 | 2.01 | 0.42 |
| 4:CD:138:GLU:HA | 4:CD:141:VAL:HG22 | 2.01 | 0.42 |
| 4:CD:310:ASN:ND2 | 4:CD:328:PHE:O | 2.52 | 0.42 |
| 4:CH:36:ARG:NH2 | 4:CH:66:GLU:HG3 | 2.34 | 0.42 |
| 4:CH:125:GLU:OE2 | 4:CH:125:GLU:N | 2.45 | 0.42 |
| 5:DC:105:ARG:NH1 | 5:DC:140:ASN:OD1 | 2.52 | 0.42 |
| 5:DC:125:PRO:HG2 | 5:DC:309:GLN:HG2 | 2.00 | 0.42 |
| 5:DD:179:LYS:HD2 | 5:DD:179:LYS:HA | 1.80 | 0.42 |
| 5:DI:143:MET:HG3 | 5:DI:143:MET:O | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DI:311:LEU:HD12 | 5:DI:311:LEU:HA | 1.93 | 0.42 |
| 5:DK:74:VAL:HG22 | 5:DK:99:PHE:HE2 | 1.83 | 0.42 |
| 5:EB:279:ASN:OD1 | 5:EB:280:GLN:N | 2.52 | 0.42 |
| 5:FF:157:LEU:HD13 | 5:FF:207:TRP:CD2 | 2.53 | 0.42 |
| 5:FI:95:ARG:HG3 | 5:FI:333:TRP:HZ3 | 1.84 | 0.42 |
| 5:FJ:74:VAL:O | 5:FJ:97:GLY:HA3 | 2.19 | 0.42 |
| 5:GB:374:MET:HA | 5:GB:377:ALA:HB3 | 2.00 | 0.42 |
| 5:GD:145:ALA:HB2 | 5:GD:285:PRO:HD3 | 2.01 | 0.42 |
| 5:GE:370:GLU:O | 5:GE:374:MET:HG3 | 2.19 | 0.42 |
| 5:GH:185:VAL:HG23 | 5:GH:193:HIS:HB2 | 2.00 | 0.42 |
| 5:GI:63:GLY:HA2 | 5:GI:364:ASN:OD1 | 2.19 | 0.42 |
| 2:AC:277:LYS:HA | 2:AC:280:VAL:HG12 | 2.01 | 0.42 |
| 1:AD:246:ALA:HB3 | 1:AD:247:PRO:HD3 | 2.00 | 0.42 |
| 1:AD:341:MET:HG2 | 3:BG:96:TYR:OH | 2.19 | 0.42 |
| 3:BA:287:ILE:O | 3:BA:291:VAL:HG23 | 2.19 | 0.42 |
| 3:BB:134:TYR:HD2 | 3:BB:141:THR:O | 2.03 | 0.42 |
| 3:BC:122:MET:HE1 | 3:BC:148:GLN:HA | 2.00 | 0.42 |
| 3:BD:62:TYR:HB3 | 3:BD:66:ARG:NH1 | 2.34 | 0.42 |
| 3:BG:139:TYR:CD2 | 4:CJ:451:SER:HB2 | 2.54 | 0.42 |
| 3:BG:220:VAL:HG12 | 3:BG:224:LYS:HE2 | 2.01 | 0.42 |
| 3:BL:153:TYR:CD2 | 3:BL:177:ALA:HB2 | 2.54 | 0.42 |
| 3:BL:172:ILE:HG13 | 3:BL:173:GLY:N | 2.34 | 0.42 |
| 4:CB:89:TYR:CE1 | 4:CB:493:LYS:HB2 | 2.54 | 0.42 |
| 4:CC:164:SER:HB2 | 4:CG:70:PHE:HZ | 1.84 | 0.42 |
| 4:CI:5:ILE:HG21 | 5:DI:376:VAL:HG22 | 2.00 | 0.42 |
| 4:CJ:471:ASN:OD1 | 4:CJ:471:ASN:N | 2.52 | 0.42 |
| 4:CK:98:LEU:HB2 | 4:CK:150:TYR:CE1 | 2.54 | 0.42 |
| 5:DB:105:ARG:HH12 | 5:DB:140:ASN:HB3 | 1.84 | 0.42 |
| 5:DC:1:SER:OG | 5:EB:17:ASP:OD1 | 2.28 | 0.42 |
| 5:DE:148:THR:HG21 | 5:DE:185:VAL:HG12 | 2.01 | 0.42 |
| 5:DG:94:SER:HB2 | 5:DG:332:VAL:HG12 | 2.00 | 0.42 |
| 5:DG:179:LYS:HD2 | 5:DG:180:LYS:H | 1.85 | 0.42 |
| 5:DG:347:ALA:HB1 | 5:DG:355:LEU:HD13 | 2.01 | 0.42 |
| 5:DH:261:SER:HB3 | 5:DH:263:LEU:HD13 | 2.01 | 0.42 |
| 5:EE:211:THR:O | 5:EE:222:PRO:HG3 | 2.18 | 0.42 |
| 5:EF:101:LEU:HD13 | 5:EF:105:ARG:HG3 | 2.01 | 0.42 |
| 5:EK:287:ASP:OD1 | 5:EK:288:LEU:N | 2.52 | 0.42 |
| 5:FB:113:MET:N | 5:FB:113:MET:HE2 | 2.33 | 0.42 |
| 5:FF:99:PHE:HA | 5:FF:109:ASN:HA | 2.01 | 0.42 |
| 5:GH:32:LYS:HD3 | 5:GH:32:LYS:HA | 1.81 | 0.42 |
| 5:GI:207:TRP:HB2 | 5:GI:229:LEU:HB2 | 2.00 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:26:GLU:OE2 | 1:AA:433:VAL:HG22 | 2.19 | 0.42 |
| 1:AA:403:ILE:HD12 | 1:AA:403:ILE:H | 1.83 | 0.42 |
| 1:AB:46:ALA:HB1 | 1:AB:312:LEU:HG | 2.02 | 0.42 |
| 1:AE:160:ILE:HD13 | 1:AE:183:LEU:HD21 | 2.00 | 0.42 |
| 3:BE:139:TYR:HE2 | 4:CC:452:ASP:HA | 1.84 | 0.42 |
| 3:BG:184:THR:HG21 | 3:BG:241:ASN:ND2 | 2.35 | 0.42 |
| 3:BM:303:THR:HG22 | 3:BM:304:PHE:N | 2.35 | 0.42 |
| 4:CB:88:ARG:HH11 | 4:CB:88:ARG:HG3 | 1.84 | 0.42 |
| 4:CB:171:ASN:O | 4:CB:175:GLN:HG3 | 2.19 | 0.42 |
| 4:CC:499:GLN:HA | 4:CC:502:VAL:HG12 | 2.01 | 0.42 |
| 4:CE:174:LYS:HB2 | 4:CE:174:LYS:HE3 | 1.74 | 0.42 |
| 4:CG:466:ASN:ND2 | 4:CG:466:ASN:C | 2.78 | 0.42 |
| 4:CK:517:ASN:O | 4:CK:521:GLU:HG2 | 2.20 | 0.42 |
| 5:DE:187:ASP:OD1 | 5:DE:191:ASN:N | 2.49 | 0.42 |
| 5:EC:336:THR:H | 5:EC:339:SER:HG | 1.62 | 0.42 |
| 5:ED:157:LEU:HA | 5:ED:273:ASN:HD22 | 1.84 | 0.42 |
| 5:EG:72:LEU:HD21 | 5:EG:291:TYR:HE1 | 1.85 | 0.42 |
| 5:EJ:180:LYS:NZ | 5:EJ:182:THR:OG1 | 2.52 | 0.42 |
| 5:FE:33:SER:HB3 | 5:FE:365:VAL:HG22 | 2.01 | 0.42 |
| 5:FG:298:THR:HG22 | 5:FG:313:GLN:HB2 | 2.00 | 0.42 |
| 5:FK:317:ALA:HB2 | 5:FK:344:LEU:HD23 | 2.00 | 0.42 |
| 2:AC:386:ILE:O | 2:AC:390:ILE:HG12 | 2.20 | 0.42 |
| 1:AE:171:ILE:HD12 | 1:AE:179:PHE:CD1 | 2.55 | 0.42 |
| 3:BB:91:GLN:HE22 | 3:BB:237:LYS:HG3 | 1.83 | 0.42 |
| 3:BC:248:ALA:O | 3:BC:252:THR:HG23 | 2.20 | 0.42 |
| 3:BG:111:ALA:HB2 | 3:BG:211:LEU:HB3 | 2.02 | 0.42 |
| 3:BG:274:GLN:HE22 | 3:BH:71:GLN:HE22 | 1.67 | 0.42 |
| 3:BG:298:GLN:C | 3:BG:300:SER:H | 2.28 | 0.42 |
| 3:BH:8:MET:HE2 | 3:BH:8:MET:HB3 | 1.84 | 0.42 |
| 3:BH:39:PRO:HD2 | 4:CB:96:ASP:OD1 | 2.19 | 0.42 |
| 3:BK:91:GLN:HG2 | 3:BK:236:LEU:HB3 | 2.02 | 0.42 |
| 4:CD:335:VAL:HG13 | 4:CD:412:PHE:HB3 | 2.00 | 0.42 |
| 4:CD:517:ASN:O | 4:CD:521:GLU:HG2 | 2.19 | 0.42 |
| 4:CF:334:VAL:HB | 4:CF:419:ASN:ND2 | 2.35 | 0.42 |
| 4:CG:177:ALA:HB2 | 4:CG:241:ALA:HB2 | 2.01 | 0.42 |
| 4:CG:195:PRO:O | 4:CG:199:LEU:HG | 2.20 | 0.42 |
| 4:CH:45:ASN:HD21 | 5:DH:65:THR:HG21 | 1.84 | 0.42 |
| 4:CH:134:ILE:O | 4:CH:138:GLU:HG2 | 2.19 | 0.42 |
| 5:DF:153:MET:HE3 | 5:DF:153:MET:HB2 | 1.88 | 0.42 |
| 5:EB:93:TYR:O | 5:EB:333:TRP:N | 2.35 | 0.42 |
| 5:EE:109:ASN:HD21 | 5:EE:113:MET:HB2 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EE:187:ASP:OD1 | 5:EE:191:ASN:N | 2.50 | 0.42 |
| 5:EE:207:TRP:O | 5:EE:229:LEU:N | 2.49 | 0.42 |
| 5:EJ:234:ASN:ND2 | 5:EJ:236:ILE:HG12 | 2.34 | 0.42 |
| 5:EK:148:THR:O | 5:EK:258:PHE:HB3 | 2.18 | 0.42 |
| 5:FA:32:LYS:HB3 | 5:FA:59:ASP:O | 2.19 | 0.42 |
| 5:FD:84:LEU:HB3 | 5:FD:113:MET:HB3 | 2.00 | 0.42 |
| 5:FH:73:ASP:HB2 | 5:FH:360:LEU:HG | 2.01 | 0.42 |
| 5:FI:86:ASP:N | 5:FI:90:SER:O | 2.50 | 0.42 |
| 5:FI:197:VAL:HA | 5:FI:210:TYR:O | 2.19 | 0.42 |
| 5:GE:152:SER:HB2 | 5:GE:279:ASN:HB3 | 2.01 | 0.42 |
| 5:GI:34:GLY:HA2 | 5:GI:58:GLN:HA | 2.02 | 0.42 |
| 1:AA:93:GLY:H | 1:AA:265:VAL:HB | 1.85 | 0.42 |
| 2:AC:13:LEU:HB2 | 2:AC:447:MET:HE1 | 2.01 | 0.42 |
| 2:AC:55:GLU:O | 2:AC:59:THR:HG23 | 2.19 | 0.42 |
| 1:AE:135:GLN:HG2 | 1:AE:192:THR:O | 2.19 | 0.42 |
| 3:BG:144:ALA:O | 3:BG:154:HIS:NE2 | 2.47 | 0.42 |
| 3:BI:139:TYR:HB3 | 4:CF:449:GLY:HA3 | 2.02 | 0.42 |
| 3:BK:72:LYS:O | 3:BK:76:GLU:HG2 | 2.20 | 0.42 |
| 4:CA:392:LYS:HZ1 | 4:CA:401:THR:HG22 | 1.83 | 0.42 |
| 4:CB:197:ASP:HA | 4:CJ:43:GLN:NE2 | 2.35 | 0.42 |
| 4:CC:164:SER:HB2 | 4:CG:70:PHE:CZ | 2.54 | 0.42 |
| 4:CD:130:ARG:HH11 | 4:CD:431:GLU:HB2 | 1.84 | 0.42 |
| 4:CE:312:GLN:HE21 | 4:CE:458:ALA:HB1 | 1.84 | 0.42 |
| 4:CF:364:LYS:HZ3 | 4:CF:375:THR:HG21 | 1.84 | 0.42 |
| 4:CG:343:ASP:OD1 | 4:CG:343:ASP:N | 2.44 | 0.42 |
| 4:CK:220:GLN:HE22 | 5:DK:277:ALA:HB1 | 1.84 | 0.42 |
| 5:DE:399:VAL:HG11 | 5:EA:382:GLN:HB3 | 2.01 | 0.42 |
| 5:DK:207:TRP:HB2 | 5:DK:229:LEU:HD12 | 2.02 | 0.42 |
| 5:EB:229:LEU:HD13 | 5:EB:240:GLY:HA3 | 2.02 | 0.42 |
| 5:ED:354:LYS:HA | 5:ED:354:LYS:HD2 | 1.82 | 0.42 |
| 5:EE:293:ILE:HG12 | 5:EE:299:VAL:HG22 | 2.02 | 0.42 |
| 5:FE:338:ALA:HA | 5:FF:103:GLU:HG3 | 2.01 | 0.42 |
| 5:FF:178:ASN:N | 5:FF:199:PHE:O | 2.49 | 0.42 |
| 5:FF:203:LYS:HB2 | 5:FF:203:LYS:HE3 | 1.87 | 0.42 |
| 5:FJ:93:TYR:O | 5:FJ:333:TRP:N | 2.36 | 0.42 |
| 1:AA:272:ALA:O | 1:AA:276:ILE:HG12 | 2.20 | 0.42 |
| 1:AD:35:LYS:HD2 | 1:AD:35:LYS:O | 2.19 | 0.42 |
| 1:AD:423:LEU:O | 1:AD:427:ASN:ND2 | 2.53 | 0.42 |
| 3:BA:5:THR:HG21 | 4:CI:518:LEU:HG | 2.01 | 0.42 |
| 3:BA:222:LYS:HE3 | 3:BA:222:LYS:HB2 | 1.83 | 0.42 |
| 3:BL:12:ASN:ND2 | 3:BL:307:MET:SD | 2.93 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CB:121:VAL:HG22 | 4:CB:456:GLY:HA3 | 2.02 | 0.42 |
| 4:CC:504:LYS:O | 4:CC:508:LYS:HG3 | 2.19 | 0.42 |
| 4:CD:183:ILE:HD13 | 4:CD:199:LEU:HD23 | 2.02 | 0.42 |
| 4:CH:158:VAL:HG11 | 4:CH:287:ARG:HB2 | 2.02 | 0.42 |
| 4:CJ:258:VAL:HG11 | 4:CJ:280:LEU:HD11 | 2.02 | 0.42 |
| 4:CK:183:ILE:HG12 | 4:CK:198:LEU:HB3 | 2.00 | 0.42 |
| 5:DC:49:LEU:HB3 | 5:EC:64:THR:HG22 | 2.01 | 0.42 |
| 5:DD:119:PRO:HG3 | 5:DD:134:ALA:HB3 | 2.02 | 0.42 |
| 5:DF:94:SER:HB2 | 5:DF:332:VAL:HA | 1.99 | 0.42 |
| 5:DH:216:ASP:HB3 | 5:DH:219:ALA:HB2 | 2.00 | 0.42 |
| 5:DJ:72:LEU:HD23 | 5:DJ:72:LEU:HA | 1.94 | 0.42 |
| 5:DJ:230:LYS:H | 5:DJ:239:SER:HB3 | 1.84 | 0.42 |
| 5:ED:19:ILE:O | 5:ED:23:ILE:HG13 | 2.20 | 0.42 |
| 5:EE:48:GLY:HA3 | 5:EF:21:ASN:ND2 | 2.34 | 0.42 |
| 5:EH:179:LYS:HB3 | 5:EH:199:PHE:HB2 | 2.02 | 0.42 |
| 5:FC:74:VAL:HG12 | 5:FC:357:ASN:HA | 2.01 | 0.42 |
| 5:FC:379:ARG:HD3 | 5:FC:379:ARG:HA | 1.88 | 0.42 |
| 5:FF:389:LYS:O | 5:FF:393:GLN:HG3 | 2.20 | 0.42 |
| 5:FK:117:GLY:HA3 | 5:FK:136:ILE:HD11 | 2.02 | 0.42 |
| 5:FK:178:ASN:ND2 | 5:FK:199:PHE:HB2 | 2.34 | 0.42 |
| 5:GE:203:LYS:HG2 | 5:GE:206:GLU:HB2 | 2.02 | 0.42 |
| 5:GK:336:THR:H | 5:GK:339:SER:HB3 | 1.84 | 0.42 |
| 1:AA:62:THR:HA | 1:AA:65:ASN:ND2 | 2.35 | 0.42 |
| 2:AC:273:LYS:O | 2:AC:277:LYS:HG2 | 2.19 | 0.42 |
| 1:AD:377:LEU:HA | 1:AD:386:ILE:HD11 | 2.01 | 0.42 |
| 3:BB:7:MET:HE3 | 4:CK:508:LYS:CD | 2.50 | 0.42 |
| 3:BD:190:GLU:OE1 | 3:BD:234:ARG:NH1 | 2.53 | 0.42 |
| 3:BJ:247:ARG:O | 3:BJ:250:LEU:HG | 2.19 | 0.42 |
| 3:BL:215:VAL:HG11 | 3:BL:225:ALA:HB2 | 2.02 | 0.42 |
| 4:CA:438:SER:HB3 | 4:CA:455:ASN:H | 1.85 | 0.42 |
| 4:CB:284:LEU:HD23 | 4:CB:287:ARG:HH12 | 1.83 | 0.42 |
| 4:CD:421:ILE:O | 4:CD:424:MET:HG3 | 2.20 | 0.42 |
| 4:CF:146:THR:O | 4:CF:149:GLN:HG3 | 2.20 | 0.42 |
| 4:CH:549:LEU:HD21 | 5:DH:368:SER:HA | 2.01 | 0.42 |
| 4:CJ:333:PRO:HB2 | 4:CJ:350:ALA:HB3 | 2.01 | 0.42 |
| 5:DC:148:THR:HG21 | 5:DC:185:VAL:HG12 | 2.02 | 0.42 |
| 5:DD:195:MET:CE | 5:DD:211:THR:HG22 | 2.49 | 0.42 |
| 5:DF:73:ASP:O | 5:DF:358:GLY:N | 2.49 | 0.42 |
| 5:DI:193:HIS:HE2 | 5:DI:249:THR:HB | 1.85 | 0.42 |
| 5:DJ:79:ASN:OD1 | 5:DJ:80:GLY:N | 2.52 | 0.42 |
| 5:EC:378:GLN:HE22 | 5:EK:393:GLN:HE21 | 1.67 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EG:174:ALA:HA | 5:EG:177:TYR:CZ | 2.55 | 0.42 |
| 5:FC:14:THR:O | 5:FC:18:VAL:HG23 | 2.20 | 0.42 |
| 5:FI:109:ASN:OD1 | 5:FI:113:MET:N | 2.52 | 0.42 |
| 5:GD:250:ILE:HG23 | 5:GD:251:ASN:N | 2.35 | 0.42 |
| 5:GH:108:VAL:HG23 | 5:GH:114:GLN:HA | 2.02 | 0.42 |
| 5:GI:92:PHE:CE1 | 5:GI:334:ALA:HB2 | 2.54 | 0.42 |
| 1:AA:326:ARG:CZ | 3:BK:88:GLN:HB3 | 2.50 | 0.42 |
| 2:AC:22:LEU:HD22 | 2:AC:433:VAL:HG13 | 2.01 | 0.42 |
| 1:AD:182:VAL:HG11 | 1:AE:232:ASN:HB3 | 2.01 | 0.42 |
| 1:AD:424:SER:HA | 1:AD:427:ASN:ND2 | 2.35 | 0.42 |
| 3:BA:301:TYR:HE2 | 3:BK:310:MET:HB3 | 1.85 | 0.42 |
| 3:BG:121:LEU:HB3 | 3:BG:201:PHE:CE1 | 2.55 | 0.42 |
| 3:BL:6:GLN:O | 3:BL:10:GLU:HG2 | 2.20 | 0.42 |
| 4:CA:56:ASN:ND2 | 5:DA:65:THR:H | 2.18 | 0.42 |
| 4:CA:312:GLN:HG3 | 4:CA:459:LEU:HG | 2.02 | 0.42 |
| 4:CC:328:PHE:HE1 | 4:CC:426:VAL:HG22 | 1.85 | 0.42 |
| 4:CD:309:PHE:CE1 | 4:CD:459:LEU:HD12 | 2.55 | 0.42 |
| 4:CE:364:LYS:CE | 4:CE:413:LEU:HD13 | 2.50 | 0.42 |
| 4:CE:492:LEU:HD23 | 4:CE:492:LEU:HA | 1.88 | 0.42 |
| 4:CG:141:VAL:HG22 | 4:CG:424:MET:SD | 2.60 | 0.42 |
| 4:CG:329:SER:OG | 4:CG:425:ASN:N | 2.53 | 0.42 |
| 4:CI:305:PHE:CE2 | 4:CI:328:PHE:HE2 | 2.38 | 0.42 |
| 4:CI:393:LEU:HB2 | 4:CI:400:VAL:CG1 | 2.49 | 0.42 |
| 5:DB:199:PHE:HE2 | 5:DB:273:ASN:HD21 | 1.67 | 0.42 |
| 5:DD:95:ARG:HG3 | 5:DD:95:ARG:HH11 | 1.84 | 0.42 |
| 5:DH:83:ARG:HH12 | 5:DH:133:PRO:HG2 | 1.84 | 0.42 |
| 5:DI:106:ASN:HA | 5:DI:137:THR:HA | 2.01 | 0.42 |
| 5:EC:402:ARG:NH2 | 5:FC:375:ILE:HG12 | 2.35 | 0.42 |
| 5:ED:158:ASN:HD21 | 5:ED:161:ASP:HB2 | 1.84 | 0.42 |
| 5:FA:374:MET:HA | 5:FA:377:ALA:HB3 | 2.01 | 0.42 |
| 5:FD:285:PRO:HG3 | 5:GB:268:GLN:HB3 | 2.02 | 0.42 |
| 5:GC:34:GLY:HA2 | 5:GC:58:GLN:HA | 2.01 | 0.42 |
| 5:GC:354:LYS:HD2 | 5:GC:354:LYS:HA | 1.83 | 0.42 |
| 5:GG:109:ASN:OD1 | 5:GG:113:MET:N | 2.52 | 0.42 |
| 1:AE:20:THR:O | 1:AE:24:LYS:HG2 | 2.20 | 0.42 |
| 3:BC:75:LEU:O | 3:BC:79:VAL:HG23 | 2.20 | 0.42 |
| 3:BC:288:SER:C | 3:BC:292:MET:HE3 | 2.45 | 0.42 |
| 3:BH:43:PRO:HG2 | 3:BH:44:ILE:HD12 | 2.01 | 0.42 |
| 3:BH:44:ILE:HD12 | 3:BH:44:ILE:H | 1.85 | 0.42 |
| 3:BK:240:LEU:HA | 3:BK:243:VAL:HG12 | 2.02 | 0.42 |
| 3:BL:103:SER:C | 3:BL:216:GLU:HB2 | 2.45 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CA:114:PHE:CE1 | 4:CA:463:GLN:HB2 | 2.55 | 0.42 |
| 4:CA:141:VAL:O | 4:CA:145:LYS:HG2 | 2.19 | 0.42 |
| 4:CB:364:LYS:NZ | 4:CB:377:THR:HB | 2.35 | 0.42 |
| 4:CD:220:GLN:HB3 | 4:CD:224:THR:HB | 2.01 | 0.42 |
| 4:CD:336:TYR:O | 4:CD:412:PHE:HA | 2.20 | 0.42 |
| 4:CD:364:LYS:CG | 4:CD:375:THR:HB | 2.50 | 0.42 |
| 4:CF:15:ALA:HB2 | 4:CF:531:TYR:CD2 | 2.55 | 0.42 |
| 4:CI:393:LEU:O | 4:CI:399:LYS:HA | 2.20 | 0.42 |
| 5:DB:5:ALA:HB1 | 5:DB:388:ILE:HG13 | 2.02 | 0.42 |
| 5:EB:212:HIS:NE2 | 5:EB:219:ALA:HB1 | 2.35 | 0.42 |
| 5:ED:85:VAL:HG13 | 5:ED:116:THR:HG21 | 2.01 | 0.42 |
| 5:EH:113:MET:HE2 | 5:EH:113:MET:N | 2.35 | 0.42 |
| 5:FG:391:GLN:HA | 5:FG:394:ILE:HG12 | 2.02 | 0.42 |
| 5:FK:92:PHE:HB3 | 5:FK:332:VAL:HB | 2.00 | 0.42 |
| 5:GG:4:GLN:HG2 | 5:GG:50:GLY:N | 2.35 | 0.42 |
| 5:GI:169:PHE:CE2 | 5:GI:222:PRO:HG2 | 2.55 | 0.42 |
| 3:BB:61:GLN:CD | 4:CK:114:PHE:HD2 | 2.28 | 0.41 |
| 3:BB:162:GLN:OE1 | 4:CK:453:ASN:ND2 | 2.46 | 0.41 |
| 3:BJ:241:ASN:C | 3:BJ:241:ASN:HD22 | 2.28 | 0.41 |
| 3:BK:87:ILE:HD11 | 3:BK:239:SER:OG | 2.20 | 0.41 |
| 3:BL:137:ALA:HB1 | 3:BL:159:SER:HA | 2.02 | 0.41 |
| 4:CB:19:LEU:HD13 | 4:CJ:545:LEU:HD11 | 2.02 | 0.41 |
| 4:CB:158:VAL:O | 4:CB:162:ILE:HG13 | 2.20 | 0.41 |
| 4:CB:313:HIS:CE1 | 4:CB:327:PHE:HE2 | 2.38 | 0.41 |
| 4:CC:453:ASN:O | 4:CC:457:GLN:HG2 | 2.20 | 0.41 |
| 4:CC:482:VAL:HA | 4:CC:485:VAL:HG12 | 2.02 | 0.41 |
| 4:CD:9:MET:HE3 | 4:CH:523:GLY:CA | 2.50 | 0.41 |
| 4:CD:117:LEU:O | 4:CD:121:VAL:HG13 | 2.20 | 0.41 |
| 4:CD:243:GLN:HE22 | 4:CD:261:VAL:HG21 | 1.85 | 0.41 |
| 4:CD:361:THR:HG21 | 4:CD:376:ARG:HD3 | 2.01 | 0.41 |
| 5:DE:105:ARG:HH22 | 5:DE:140:ASN:CG | 2.28 | 0.41 |
| 5:EC:93:TYR:HE2 | 5:EC:335:ALA:HB2 | 1.85 | 0.41 |
| 5:ED:84:LEU:CB | 5:ED:113:MET:HE1 | 2.44 | 0.41 |
| 5:EF:19:ILE:HG23 | 5:EF:370:GLU:OE1 | 2.19 | 0.41 |
| 5:EH:101:LEU:HD23 | 5:EH:101:LEU:HA | 1.93 | 0.41 |
| 5:EH:194:ASP:H | 5:EH:215:SER:HB3 | 1.84 | 0.41 |
| 5:EI:204:ASP:OD1 | 5:EI:204:ASP:N | 2.52 | 0.41 |
| 5:EJ:144:ALA:O | 5:EJ:283:TYR:OH | 2.23 | 0.41 |
| 5:EJ:149:THR:H | 5:EJ:281:ASN:ND2 | 2.15 | 0.41 |
| 5:FB:127:ILE:HD13 | 5:FB:313:GLN:HB2 | 2.01 | 0.41 |
| 5:FF:43:ALA:HB2 | 5:FF:49:LEU:HD11 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:FF:204:ASP:N | 5:FF:204:ASP:OD1 | 2.52 | 0.41 |
| 5:FI:207:TRP:HE1 | 5:FI:267:GLN:NE2 | 2.17 | 0.41 |
| 5:FJ:73:ASP:OD1 | 5:FJ:73:ASP:N | 2.53 | 0.41 |
| 5:GD:14:THR:HG21 | 5:GD:53:VAL:HG21 | 2.02 | 0.41 |
| 1:AB:341:MET:HE2 | 1:AB:341:MET:HB2 | 1.97 | 0.41 |
| 1:AD:106:GLN:OE1 | 1:AD:223:LYS:HD2 | 2.20 | 0.41 |
| 3:BB:79:VAL:O | 3:BB:83:VAL:HG23 | 2.20 | 0.41 |
| 3:BG:190:GLU:OE1 | 3:BG:234:ARG:NE | 2.45 | 0.41 |
| 3:BG:307:MET:SD | 3:BH:23:TRP:CZ3 | 3.13 | 0.41 |
| 3:BH:242:ASN:O | 3:BH:246:VAL:HG23 | 2.20 | 0.41 |
| 3:BI:282:ASP:OD1 | 3:BI:282:ASP:N | 2.50 | 0.41 |
| 3:BJ:298:GLN:C | 3:BJ:300:SER:H | 2.27 | 0.41 |
| 3:BK:39:PRO:HD2 | 4:CD:96:ASP:OD1 | 2.20 | 0.41 |
| 3:BL:54:GLN:HE22 | 4:CA:107:SER:HB2 | 1.85 | 0.41 |
| 4:CC:218:SER:HB3 | 4:CC:226:ASN:HB3 | 2.03 | 0.41 |
| 4:CE:172:TYR:O | 4:CE:176:ILE:HG13 | 2.19 | 0.41 |
| 4:CE:220:GLN:HB3 | 4:CE:224:THR:HB | 2.02 | 0.41 |
| 4:CF:124:ALA:O | 4:CF:130:ARG:NH2 | 2.53 | 0.41 |
| 4:CG:76:ARG:HB3 | 4:CG:210:ASN:ND2 | 2.35 | 0.41 |
| 4:CJ:395:ILE:HG23 | 4:CJ:398:LEU:HB2 | 2.02 | 0.41 |
| 4:CK:289:GLN:O | 4:CK:293:GLN:HG2 | 2.20 | 0.41 |
| 5:DA:58:GLN:CD | 5:DA:333:TRP:HE1 | 2.27 | 0.41 |
| 5:DB:41:MET:HE2 | 5:DB:52:LYS:HB3 | 2.02 | 0.41 |
| 5:DE:41:MET:HE2 | 5:DE:41:MET:HB3 | 1.98 | 0.41 |
| 5:DF:194:ASP:H | 5:DF:215:SER:HB3 | 1.85 | 0.41 |
| 5:EC:127:ILE:HD13 | 5:EC:313:GLN:HB2 | 2.02 | 0.41 |
| 5:FE:317:ALA:HB2 | 5:FE:344:LEU:HD23 | 2.01 | 0.41 |
| 5:FG:68:THR:OG1 | 5:FG:73:ASP:OD2 | 2.35 | 0.41 |
| 5:GA:84:LEU:HB3 | 5:GA:113:MET:HG2 | 2.02 | 0.41 |
| 5:GB:41:MET:HB2 | 5:GB:49:LEU:HB2 | 2.02 | 0.41 |
| 5:GB:58:GLN:HB2 | 5:GB:60:PHE:CE2 | 2.56 | 0.41 |
| 5:GB:84:LEU:HD23 | 5:GB:115:LEU:HA | 2.01 | 0.41 |
| 5:GF:241:GLY:O | 5:GF:261:SER:HA | 2.20 | 0.41 |
| 5:GG:375:ILE:O | 5:GG:379:ARG:HG2 | 2.20 | 0.41 |
| 1:AB:427:ASN:O | 1:AB:431:GLU:HG2 | 2.20 | 0.41 |
| 2:AC:44:LEU:O | 2:AC:45:THR:OG1 | 2.34 | 0.41 |
| 2:AC:135:GLN:HG2 | 2:AC:137:GLY:H | 1.85 | 0.41 |
| 1:AD:350:GLY:HA3 | 3:BG:88:GLN:NE2 | 2.35 | 0.41 |
| 3:BA:61:GLN:O | 3:BA:64:LEU:HG | 2.20 | 0.41 |
| 3:BI:139:TYR:CE1 | 4:CF:451:SER:HB3 | 2.55 | 0.41 |
| 3:BJ:208:ILE:O | 3:BJ:212:LYS:HG2 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BK:89:THR:O | 3:BK:93:LYS:HG2 | 2.20 | 0.41 |
| 4:CB:18:ALA:HB1 | 4:CB:528:TYR:CE2 | 2.55 | 0.41 |
| 4:CC:343:ASP:OD1 | 4:CC:344:LYS:N | 2.53 | 0.41 |
| 4:CC:367:PHE:HB2 | 4:CC:372:TRP:CZ3 | 2.55 | 0.41 |
| 4:CD:121:VAL:HG12 | 4:CD:436:MET:HE1 | 2.02 | 0.41 |
| 4:CG:552:ILE:HG13 | 4:CG:553:ARG:N | 2.34 | 0.41 |
| 4:CH:517:ASN:O | 4:CH:521:GLU:HG2 | 2.20 | 0.41 |
| 4:CI:459:LEU:HD23 | 4:CI:459:LEU:HA | 1.93 | 0.41 |
| 5:DB:156:ASN:HB3 | 5:DB:266:MET:HE2 | 2.02 | 0.41 |
| 5:DB:199:PHE:HB3 | 5:DB:209:VAL:HG12 | 2.01 | 0.41 |
| 5:DC:394:ILE:HD13 | 5:DC:394:ILE:HA | 1.91 | 0.41 |
| 5:DJ:388:ILE:HA | 5:DJ:391:GLN:HE22 | 1.85 | 0.41 |
| 5:DK:153:MET:HE1 | 5:DK:155:ILE:HB | 2.01 | 0.41 |
| 5:EB:125:PRO:CG | 5:EB:309:GLN:HB2 | 2.50 | 0.41 |
| 5:EF:92:PHE:HB3 | 5:EF:332:VAL:HB | 2.02 | 0.41 |
| 5:EI:14:THR:HG21 | 5:EI:53:VAL:HG11 | 2.03 | 0.41 |
| 5:FE:148:THR:HG23 | 5:FE:282:GLY:H | 1.85 | 0.41 |
| 5:GE:32:LYS:HA | 5:GE:32:LYS:HD3 | 1.73 | 0.41 |
| 5:GG:62:ASP:N | 5:GG:62:ASP:OD1 | 2.52 | 0.41 |
| 1:AA:41:SER:O | 1:AA:45:THR:HG23 | 2.20 | 0.41 |
| 1:AD:83:LYS:CG | 1:AD:253:THR:HB | 2.50 | 0.41 |
| 1:AD:98:ASN:O | 1:AD:230:ASN:N | 2.39 | 0.41 |
| 1:AE:428:SER:O | 1:AE:432:THR:HG23 | 2.19 | 0.41 |
| 3:BC:231:LYS:HG3 | 3:BC:234:ARG:NH2 | 2.35 | 0.41 |
| 3:BD:241:ASN:O | 3:BD:245:THR:HG23 | 2.20 | 0.41 |
| 3:BE:199:ASN:O | 3:BE:203:MET:HG3 | 2.20 | 0.41 |
| 3:BE:291:VAL:HG11 | 3:BL:304:PHE:HZ | 1.86 | 0.41 |
| 3:BI:239:SER:O | 3:BI:243:VAL:HG23 | 2.20 | 0.41 |
| 3:BK:72:LYS:HE2 | 3:BK:72:LYS:HB2 | 1.89 | 0.41 |
| 3:BL:298:GLN:C | 3:BL:300:SER:H | 2.27 | 0.41 |
| 4:CA:220:GLN:HB3 | 4:CA:224:THR:OG1 | 2.20 | 0.41 |
| 4:CC:510:GLN:C | 4:CC:512:SER:H | 2.29 | 0.41 |
| 4:CE:413:LEU:HG | 4:CE:415:LYS:NZ | 2.35 | 0.41 |
| 4:CF:327:PHE:HD2 | 4:CF:426:VAL:HA | 1.84 | 0.41 |
| 4:CF:421:ILE:HD12 | 4:CF:421:ILE:H | 1.85 | 0.41 |
| 4:CG:231:ASN:OD1 | 4:CG:232:GLY:N | 2.53 | 0.41 |
| 4:CJ:176:ILE:HD11 | 4:CJ:202:ARG:HG3 | 2.01 | 0.41 |
| 4:CJ:366:VAL:CG1 | 4:CJ:373:GLN:HB3 | 2.50 | 0.41 |
| 5:DA:117:GLY:HA3 | 5:DA:136:ILE:HD11 | 2.02 | 0.41 |
| 5:DB:84:LEU:HA | 5:DB:116:THR:HG23 | 2.02 | 0.41 |
| 5:DD:76:ILE:HG21 | 5:DD:95:ARG:NH1 | 2.35 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DG:161:ASP:N | 5:DG:161:ASP:OD1 | 2.54 | 0.41 |
| 5:EA:96:ASN:HD22 | 5:EA:331:ASN:HD22 | 1.68 | 0.41 |
| 5:ED:61:THR:O | 5:ED:364:ASN:ND2 | 2.53 | 0.41 |
| 5:ED:295:ASN:C | 5:ED:354:LYS:HZ1 | 2.27 | 0.41 |
| 5:EG:187:ASP:OD1 | 5:EG:191:ASN:N | 2.53 | 0.41 |
| 5:EJ:64:THR:HB | 5:EJ:362:ALA:HB2 | 2.03 | 0.41 |
| 5:EK:213:ASP:OD2 | 5:EK:219:ALA:HB3 | 2.20 | 0.41 |
| 5:FA:109:ASN:ND2 | 5:FA:111:GLN:HB2 | 2.36 | 0.41 |
| 5:FA:109:ASN:HD21 | 5:FA:111:GLN:HB2 | 1.84 | 0.41 |
| 5:FD:232:ASN:HD21 | 5:FD:236:ILE:HB | 1.84 | 0.41 |
| 5:FE:74:VAL:O | 5:FE:97:GLY:HA3 | 2.21 | 0.41 |
| 5:FF:187:ASP:CG | 5:FF:193:HIS:HE2 | 2.27 | 0.41 |
| 5:FH:194:ASP:H | 5:FH:215:SER:HB3 | 1.85 | 0.41 |
| 5:GC:167:THR:HB | 5:GC:168:PRO:HD3 | 2.01 | 0.41 |
| 5:GG:166:LYS:HD2 | 5:GG:166:LYS:HA | 1.84 | 0.41 |
| 5:GK:246:THR:HB | 5:GK:257:THR:HG22 | 2.02 | 0.41 |
| 1:AE:111:LYS:HB3 | 1:AE:219:GLN:HG2 | 2.02 | 0.41 |
| 3:BG:68:PHE:O | 3:BG:72:LYS:HG2 | 2.21 | 0.41 |
| 3:BG:114:LEU:HD12 | 3:BG:211:LEU:HD12 | 2.02 | 0.41 |
| 3:BH:1:MET:HE1 | 3:BH:3:ILE:HB | 2.01 | 0.41 |
| 3:BJ:39:PRO:HD2 | 4:CH:96:ASP:OD1 | 2.20 | 0.41 |
| 3:BK:110:LEU:HD23 | 3:BK:110:LEU:HA | 1.91 | 0.41 |
| 4:CA:7:HIS:HE1 | 4:CA:55:GLY:O | 2.03 | 0.41 |
| 4:CA:538:VAL:O | 4:CA:541:THR:HG22 | 2.21 | 0.41 |
| 4:CB:107:SER:O | 4:CB:111:GLN:HG2 | 2.20 | 0.41 |
| 4:CB:491:THR:HB | 4:CF:171:ASN:HD21 | 1.85 | 0.41 |
| 4:CD:299:GLY:HA3 | 4:CD:417:VAL:HB | 2.03 | 0.41 |
| 4:CF:357:LYS:HE2 | 4:CF:397:GLY:H | 1.83 | 0.41 |
| 4:CG:171:ASN:HD22 | 4:CG:171:ASN:N | 2.18 | 0.41 |
| 4:CI:364:LYS:HZ3 | 4:CI:413:LEU:HB2 | 1.86 | 0.41 |
| 4:CJ:415:LYS:HE3 | 4:CJ:418:SER:HB2 | 2.01 | 0.41 |
| 4:CK:385:ALA:HB1 | 4:CK:393:LEU:HD12 | 2.03 | 0.41 |
| 5:DC:158:ASN:ND2 | 5:DC:161:ASP:HB2 | 2.35 | 0.41 |
| 5:DE:155:ILE:HD13 | 5:DE:275:ILE:HG13 | 2.02 | 0.41 |
| 5:DG:38:PHE:HE2 | 5:DG:53:VAL:HG22 | 1.86 | 0.41 |
| 5:DG:158:ASN:HD22 | 5:DG:161:ASP:HB3 | 1.84 | 0.41 |
| 5:DI:351:ASN:HA | 5:DJ:289:VAL:HG13 | 2.02 | 0.41 |
| 5:EC:394:ILE:HD13 | 5:EC:394:ILE:HA | 1.92 | 0.41 |
| 5:EJ:367:LEU:O | 5:EJ:371:LEU:HG | 2.20 | 0.41 |
| 5:FA:41:MET:HB3 | 5:FA:49:LEU:HB2 | 2.03 | 0.41 |
| 5:FE:170:SER:HB3 | 5:FE:173:ASP:HB3 | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:FJ:109:ASN:OD1 | 5:FJ:113:MET:N | 2.53 | 0.41 |
| 1:AB:121:LEU:HA | 3:BL:106:ASP:CB | 2.47 | 0.41 |
| 2:AC:103:ALA:HB2 | 2:AC:227:ALA:N | 2.35 | 0.41 |
| 3:BA:284:ASN:HD21 | 3:BB:16:ILE:CG2 | 2.34 | 0.41 |
| 3:BB:231:LYS:HD2 | 3:BB:234:ARG:HH21 | 1.85 | 0.41 |
| 3:BC:117:ILE:O | 3:BC:121:LEU:HD23 | 2.20 | 0.41 |
| 3:BD:54:GLN:OE1 | 4:CG:475:ASN:ND2 | 2.53 | 0.41 |
| 3:BI:91:GLN:O | 3:BI:95:VAL:HG23 | 2.21 | 0.41 |
| 3:BK:114:LEU:HD23 | 3:BK:114:LEU:HA | 1.95 | 0.41 |
| 3:BL:68:PHE:HD1 | 3:BL:72:LYS:NZ | 2.18 | 0.41 |
| 3:BL:291:VAL:HG12 | 3:BL:292:MET:HE2 | 2.02 | 0.41 |
| 4:CA:310:ASN:OD1 | 4:CA:327:PHE:N | 2.53 | 0.41 |
| 4:CA:365:ILE:HG22 | 4:CA:372:TRP:CE3 | 2.55 | 0.41 |
| 4:CB:134:ILE:HD11 | 4:CB:434:ILE:HD11 | 2.02 | 0.41 |
| 4:CB:491:THR:CB | 4:CF:171:ASN:HD21 | 2.34 | 0.41 |
| 4:CD:15:ALA:HB2 | 4:CD:531:TYR:CD2 | 2.56 | 0.41 |
| 4:CI:197:ASP:O | 4:CI:200:ASP:N | 2.53 | 0.41 |
| 4:CJ:471:ASN:OD1 | 4:CJ:472:LYS:NZ | 2.54 | 0.41 |
| 4:CK:310:ASN:O | 4:CK:313:HIS:ND1 | 2.54 | 0.41 |
| 5:DB:154:GLN:NE2 | 5:DB:265:SER:HA | 2.35 | 0.41 |
| 5:DD:80:GLY:HA3 | 5:DD:316:LEU:HD23 | 2.02 | 0.41 |
| 5:DD:207:TRP:NE1 | 5:DD:267:GLN:OE1 | 2.52 | 0.41 |
| 5:DE:402:ARG:NH2 | 5:EA:393:GLN:OE1 | 2.51 | 0.41 |
| 5:DG:328:GLN:HE21 | 5:DG:328:GLN:HB3 | 1.77 | 0.41 |
| 5:DH:402:ARG:NH2 | 5:EG:393:GLN:OE1 | 2.40 | 0.41 |
| 5:ED:187:ASP:OD1 | 5:ED:191:ASN:N | 2.54 | 0.41 |
| 5:EH:366:ASP:O | 5:EH:370:GLU:HG2 | 2.20 | 0.41 |
| 5:FF:379:ARG:HH11 | 5:FF:382:GLN:HE22 | 1.67 | 0.41 |
| 5:FH:170:SER:O | 5:FH:176:SER:OG | 2.31 | 0.41 |
| 5:GB:148:THR:HG21 | 5:GB:185:VAL:HG12 | 2.03 | 0.41 |
| 5:GH:153:MET:HE1 | 5:GH:278:THR:HG22 | 2.02 | 0.41 |
| 5:GH:164:PRO:HG3 | 5:GH:200:VAL:HG13 | 2.03 | 0.41 |
| 5:GH:209:VAL:O | 5:GH:226:SER:N | 2.51 | 0.41 |
| 5:GK:21:ASN:OD1 | 5:GK:25:ASN:ND2 | 2.52 | 0.41 |
| 1:AB:56:LYS:HE3 | 1:AB:56:LYS:HB3 | 1.92 | 0.41 |
| 1:AB:121:LEU:HD12 | 3:BL:106:ASP:HB3 | 2.03 | 0.41 |
| 2:AC:131:ILE:HG12 | 2:AC:197:VAL:HG22 | 2.03 | 0.41 |
| 2:AC:351:THR:H | 2:AC:354:LYS:CD | 2.33 | 0.41 |
| 3:BD:183:ILE:H | 3:BD:198:LYS:NZ | 2.18 | 0.41 |
| 3:BG:199:ASN:HD22 | 3:BG:202:VAL:HG23 | 1.84 | 0.41 |
| 3:BH:287:ILE:HD13 | 3:BM:313:PHE:CZ | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:BK:275:MET:O | 3:BK:279:VAL:HG22 | 2.20 | 0.41 |
| 4:CB:88:ARG:HG3 | 4:CB:88:ARG:NH1 | 2.36 | 0.41 |
| 4:CB:185:ARG:HH22 | 5:DE:350:GLY:N | 2.18 | 0.41 |
| 4:CC:132:ALA:O | 4:CC:136:LYS:HG2 | 2.20 | 0.41 |
| 4:CC:526:GLN:O | 4:CC:530:GLN:HG3 | 2.20 | 0.41 |
| 4:CD:244:LEU:HD12 | 4:CD:260:TYR:HA | 2.03 | 0.41 |
| 4:CD:392:LYS:HE2 | 4:CD:399:LYS:HD3 | 2.02 | 0.41 |
| 4:CE:335:VAL:HG11 | 4:CE:348:LEU:HB2 | 2.01 | 0.41 |
| 4:CF:209:LEU:O | 4:CF:212:ILE:HG22 | 2.21 | 0.41 |
| 4:CI:74:GLN:OE1 | 4:CI:74:GLN:N | 2.53 | 0.41 |
| 4:CJ:35:THR:HG21 | 4:CJ:65:ARG:HH21 | 1.84 | 0.41 |
| 4:CJ:303:LEU:HD23 | 4:CJ:358:VAL:HG21 | 2.03 | 0.41 |
| 5:DI:213:ASP:OD2 | 5:DI:216:ASP:N | 2.50 | 0.41 |
| 5:DJ:179:LYS:HB2 | 5:DJ:273:ASN:ND2 | 2.36 | 0.41 |
| 5:DK:102:ASP:OD1 | 5:DK:105:ARG:N | 2.53 | 0.41 |
| 5:EA:232:ASN:N | 5:EA:236:ILE:O | 2.42 | 0.41 |
| 5:ED:146:LYS:HB3 | 5:ED:283:TYR:CZ | 2.56 | 0.41 |
| 5:EK:127:ILE:HG21 | 5:EK:313:GLN:HE21 | 1.86 | 0.41 |
| 5:FC:46:LYS:H | 5:FC:46:LYS:HG2 | 1.63 | 0.41 |
| 5:GA:167:THR:HB | 5:GA:168:PRO:HD3 | 2.03 | 0.41 |
| 5:GB:299:VAL:N | 5:GB:312:GLY:O | 2.46 | 0.41 |
| 5:GG:84:LEU:HD23 | 5:GG:115:LEU:HA | 2.02 | 0.41 |
| 5:GG:94:SER:OG | 5:GG:95:ARG:N | 2.53 | 0.41 |
| 1:AA:161:ASN:HB2 | 1:AA:169:ALA:HB3 | 2.01 | 0.41 |
| 1:AB:197:VAL:HG12 | 1:AB:200:ASP:H | 1.86 | 0.41 |
| 1:AE:11:SER:HB2 | 3:BN:303:THR:HG23 | 2.02 | 0.41 |
| 3:BD:47:SER:HB2 | 4:CG:479:ALA:HB1 | 2.03 | 0.41 |
| 3:BD:170:MET:HE1 | 3:BD:253:GLN:HB3 | 2.02 | 0.41 |
| 3:BG:66:ARG:HG2 | 3:BG:164:VAL:HB | 2.03 | 0.41 |
| 3:BG:219:ASN:OD1 | 3:BG:219:ASN:N | 2.54 | 0.41 |
| 3:BI:26:LEU:HD21 | 3:BI:289:SER:HB3 | 2.02 | 0.41 |
| 3:BL:222:LYS:HB2 | 3:BL:222:LYS:HE3 | 1.89 | 0.41 |
| 4:CD:341:ASN:HA | 4:CD:410:ASP:HA | 2.03 | 0.41 |
| 4:CD:506:LEU:HD23 | 4:CD:506:LEU:HA | 1.84 | 0.41 |
| 4:CG:248:PRO:HB3 | 4:CG:253:PRO:O | 2.21 | 0.41 |
| 4:CJ:127:PRO:O | 4:CJ:131:GLN:HG2 | 2.21 | 0.41 |
| 4:CK:325:LYS:HB3 | 4:CK:426:VAL:HG23 | 2.02 | 0.41 |
| 5:DE:232:ASN:HB2 | 5:DE:238:GLU:OE2 | 2.21 | 0.41 |
| 5:DG:158:ASN:ND2 | 5:DG:160:THR:O | 2.53 | 0.41 |
| 5:DG:402:ARG:NH2 | 5:EG:378:GLN:OE1 | 2.51 | 0.41 |
| 5:EF:142:LEU:H | 5:EF:142:LEU:HD23 | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:FF:372:VAL:HG21 | 5:FG:6:VAL:HG22 | 2.03 | 0.41 |
| 5:FH:83:ARG:HH11 | 5:FH:116:THR:HG21 | 1.86 | 0.41 |
| 5:FJ:348:GLY:O | 5:FK:88:ASN:ND2 | 2.53 | 0.41 |
| 5:GD:250:ILE:HG23 | 5:GD:251:ASN:H | 1.85 | 0.41 |
| 5:GD:291:TYR:HA | 5:GD:301:GLY:HA2 | 2.01 | 0.41 |
| 5:GE:9:LEU:HD22 | 5:GE:381:TYR:CZ | 2.55 | 0.41 |
| 5:GE:141:THR:O | 5:GE:143:MET:HE2 | 2.21 | 0.41 |
| 5:GI:99:PHE:CE1 | 5:GI:115:LEU:HD21 | 2.56 | 0.41 |
| 5:GI:379:ARG:HD3 | 5:GI:379:ARG:HA | 1.86 | 0.41 |
| 1:AB:173:LYS:HG2 | 1:AB:178:GLU:O | 2.20 | 0.41 |
| 1:AB:269:ASP:N | 1:AB:269:ASP:OD1 | 2.52 | 0.41 |
| 2:AC:44:LEU:C | 2:AC:46:ALA:H | 2.28 | 0.41 |
| 2:AC:321:ILE:HA | 2:AC:397:TYR:HE2 | 1.84 | 0.41 |
| 2:AC:340:THR:HG22 | 2:AC:343:GLU:HB2 | 2.02 | 0.41 |
| 1:AD:420:LYS:HZ1 | 3:BH:84:THR:HG21 | 1.85 | 0.41 |
| 1:AE:106:GLN:N | 1:AE:224:ALA:HB2 | 2.36 | 0.41 |
| 1:AE:157:ARG:HD3 | 1:AE:161:ASN:HD21 | 1.85 | 0.41 |
| 1:AE:173:LYS:HA | 1:AE:178:GLU:O | 2.21 | 0.41 |
| 1:AE:443:LEU:HD21 | 3:BI:287:ILE:HG21 | 2.02 | 0.41 |
| 3:BA:104:ASP:OD1 | 3:BA:107:ARG:NH1 | 2.54 | 0.41 |
| 3:BA:226:ALA:O | 3:BA:229:ILE:HG22 | 2.21 | 0.41 |
| 3:BB:64:LEU:HD21 | 4:CK:119:THR:HG22 | 2.03 | 0.41 |
| 3:BE:35:ARG:HB2 | 3:BE:281:VAL:HA | 2.03 | 0.41 |
| 3:BG:299:ALA:HA | 3:BG:302:LYS:HB3 | 2.02 | 0.41 |
| 3:BJ:263:LEU:HD23 | 3:BJ:267:ARG:HD3 | 2.03 | 0.41 |
| 3:BL:2:ARG:HG3 | 4:CA:520:GLU:OE2 | 2.21 | 0.41 |
| 4:CA:66:GLU:OE2 | 4:CA:514:SER:HA | 2.21 | 0.41 |
| 4:CA:376:ARG:NE | 4:CA:383:PHE:HE2 | 2.19 | 0.41 |
| 4:CB:56:ASN:ND2 | 5:DF:65:THR:H | 2.19 | 0.41 |
| 4:CB:80:ASN:HD21 | 4:CB:277:THR:HB | 1.84 | 0.41 |
| 4:CB:197:ASP:N | 4:CB:197:ASP:OD1 | 2.53 | 0.41 |
| 4:CB:335:VAL:HG11 | 4:CB:348:LEU:O | 2.20 | 0.41 |
| 4:CB:387:LYS:HE2 | 4:CB:387:LYS:HB2 | 1.92 | 0.41 |
| 4:CC:43:GLN:HG3 | 5:DA:25:ASN:HD21 | 1.86 | 0.41 |
| 4:CE:144:PHE:HB3 | 4:CE:421:ILE:HD12 | 2.03 | 0.41 |
| 4:CE:364:LYS:HB2 | 4:CE:375:THR:HB | 2.03 | 0.41 |
| 4:CE:415:LYS:HE2 | 4:CE:415:LYS:HB2 | 1.91 | 0.41 |
| 4:CG:420:ALA:O | 4:CG:424:MET:HB3 | 2.21 | 0.41 |
| 4:CH:317:TYR:CE1 | 4:CH:323:LYS:HD2 | 2.54 | 0.41 |
| 4:CI:185:ARG:HH12 | 5:DJ:304:SER:HB3 | 1.86 | 0.41 |
| 4:CJ:297:THR:O | 4:CJ:300:GLN:HG3 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CK:141:VAL:HA | 4:CK:328:PHE:CZ | 2.56 | 0.41 |
| 4:CK:141:VAL:HG21 | 4:CK:327:PHE:HB2 | 2.03 | 0.41 |
| 4:CK:231:ASN:HB2 | 4:CK:274:LEU:HD13 | 2.03 | 0.41 |
| 4:CK:308:ALA:HB1 | 4:CK:462:LEU:HD21 | 2.03 | 0.41 |
| 5:DI:268:GLN:HB3 | 5:DI:270:THR:HG23 | 2.03 | 0.41 |
| 5:DJ:157:LEU:HD12 | 5:DJ:207:TRP:CH2 | 2.55 | 0.41 |
| 5:EC:82:PHE:N | 5:EC:94:SER:O | 2.51 | 0.41 |
| 5:ED:209:VAL:HG11 | 5:ED:262:PHE:HE1 | 1.85 | 0.41 |
| 5:EF:94:SER:HB3 | 5:EF:332:VAL:HG12 | 2.02 | 0.41 |
| 5:EJ:143:MET:HE1 | 5:EJ:307:GLN:HB2 | 2.02 | 0.41 |
| 5:EK:32:LYS:HA | 5:EK:32:LYS:HD3 | 1.88 | 0.41 |
| 5:FD:93:TYR:O | 5:FD:333:TRP:N | 2.39 | 0.41 |
| 5:FG:32:LYS:HB3 | 5:FG:59:ASP:O | 2.21 | 0.41 |
| 5:FG:236:ILE:HA | 5:FG:266:MET:HE1 | 2.02 | 0.41 |
| 5:FJ:143:MET:HG3 | 5:FJ:303:TYR:CE2 | 2.56 | 0.41 |
| 5:FJ:187:ASP:OD1 | 5:FJ:191:ASN:N | 2.52 | 0.41 |
| 5:FJ:195:MET:HE3 | 5:FJ:247:THR:HG22 | 2.03 | 0.41 |
| 5:GA:61:THR:O | 5:GA:364:ASN:ND2 | 2.54 | 0.41 |
| 5:GA:155:ILE:HG13 | 5:GA:274:ASN:O | 2.21 | 0.41 |
| 5:GC:40:ASP:OD1 | 5:GC:40:ASP:N | 2.50 | 0.41 |
| 5:GC:197:VAL:HG13 | 5:GC:209:VAL:HG13 | 2.02 | 0.41 |
| 5:GE:83:ARG:HH11 | 5:GE:116:THR:HG21 | 1.86 | 0.41 |
| 5:GI:40:ASP:N | 5:GI:40:ASP:OD1 | 2.53 | 0.41 |
| 5:GI:61:THR:O | 5:GI:364:ASN:ND2 | 2.53 | 0.41 |
| 5:GJ:40:ASP:N | 5:GJ:40:ASP:OD1 | 2.51 | 0.41 |
| 5:GJ:109:ASN:HD21 | 5:GJ:111:GLN:HB2 | 1.86 | 0.41 |
| 5:GJ:117:GLY:N | 5:GJ:134:ALA:O | 2.49 | 0.41 |
| 5:GJ:185:VAL:HG23 | 5:GJ:193:HIS:HB2 | 2.02 | 0.41 |
| 5:GJ:336:THR:HG23 | 5:GJ:338:ALA:H | 1.86 | 0.41 |
| 5:GK:83:ARG:HH11 | 5:GK:116:THR:HG21 | 1.86 | 0.41 |
| 1:AA:341:MET:HE2 | 1:AA:341:MET:HB2 | 1.98 | 0.41 |
| 2:AC:395:LYS:HD2 | 2:AC:395:LYS:HA | 1.90 | 0.41 |
| 1:AE:167:ILE:HG22 | 1:AE:193:MET:SD | 2.61 | 0.41 |
| 3:BA:151:GLY:HA3 | 3:BA:199:ASN:HD21 | 1.86 | 0.41 |
| 3:BL:94:ILE:HG22 | 3:BL:114:LEU:HD21 | 2.03 | 0.41 |
| 4:CD:488:LYS:O | 4:CD:492:LEU:HD23 | 2.21 | 0.41 |
| 4:CE:61:SER:OG | 5:DB:110:MET:SD | 2.64 | 0.41 |
| 4:CE:387:LYS:NZ | 4:CE:391:GLY:O | 2.54 | 0.41 |
| 4:CH:231:ASN:HB2 | 4:CH:274:LEU:HD12 | 2.03 | 0.41 |
| 4:CH:355:SER:O | 4:CH:358:VAL:HG12 | 2.21 | 0.41 |
| 4:CI:310:ASN:OD1 | 4:CI:328:PHE:N | 2.45 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:CJ:276:ASN:OD1 | 4:CJ:276:ASN:N | 2.54 | 0.41 |
| 4:CK:141:VAL:HA | 4:CK:328:PHE:HZ | 1.86 | 0.41 |
| 5:DB:205:ASN:OD1 | 5:DB:267:GLN:NE2 | 2.48 | 0.41 |
| 5:DC:56:ILE:HD13 | 5:DK:46:LYS:HB2 | 2.02 | 0.41 |
| 5:DC:373:ASN:HA | 5:DC:376:VAL:HG22 | 2.03 | 0.41 |
| 5:DC:394:ILE:HD11 | 5:EB:378:GLN:HG3 | 2.02 | 0.41 |
| 5:DF:317:ALA:HB2 | 5:DF:344:LEU:HD23 | 2.03 | 0.41 |
| 5:DI:32:LYS:HD3 | 5:DI:32:LYS:HA | 1.71 | 0.41 |
| 5:DK:231:PHE:HB3 | 5:DK:235:GLY:HA2 | 2.03 | 0.41 |
| 5:EE:374:MET:HE3 | 5:EE:374:MET:HB3 | 1.99 | 0.41 |
| 5:EI:116:THR:HG23 | 5:EI:134:ALA:C | 2.45 | 0.41 |
| 5:EK:169:PHE:CE1 | 5:EK:200:VAL:HG11 | 2.55 | 0.41 |
| 5:FB:70:ARG:NH2 | 5:FB:72:LEU:HD23 | 2.35 | 0.41 |
| 5:FC:390:THR:O | 5:FC:394:ILE:HG12 | 2.22 | 0.41 |
| 5:FD:336:THR:H | 5:FD:339:SER:HG | 1.65 | 0.41 |
| 5:FE:32:LYS:HD3 | 5:FE:32:LYS:HA | 1.85 | 0.41 |
| 5:FE:148:THR:O | 5:FE:258:PHE:HB3 | 2.21 | 0.41 |
| 5:FF:301:GLY:N | 5:FF:309:GLN:O | 2.50 | 0.41 |
| 5:FI:93:TYR:O | 5:FI:333:TRP:N | 2.42 | 0.41 |
| 5:FK:33:SER:HB3 | 5:FK:365:VAL:HG22 | 2.02 | 0.41 |
| 1:AA:65:ASN:OD1 | 1:AA:387:THR:OG1 | 2.29 | 0.40 |
| 1:AB:339:LYS:NZ | 3:BB:96:TYR:HA | 2.36 | 0.40 |
| 1:AD:47:TYR:O | 1:AD:51:LYS:HG2 | 2.21 | 0.40 |
| 1:AE:404:ILE:HG13 | 1:AE:405:ASP:N | 2.36 | 0.40 |
| 3:BD:23:TRP:HE1 | 3:BD:294:GLN:HG2 | 1.86 | 0.40 |
| 3:BD:139:TYR:HE2 | 3:BD:158:LYS:HZ3 | 1.69 | 0.40 |
| 3:BE:310:MET:HA | 3:BE:315:LEU:HD22 | 2.03 | 0.40 |
| 3:BH:288:SER:HB3 | 3:BI:13:MET:CE | 2.49 | 0.40 |
| 3:BJ:35:ARG:HB2 | 3:BJ:281:VAL:HA | 2.02 | 0.40 |
| 4:CD:80:ASN:HD21 | 4:CD:277:THR:HB | 1.85 | 0.40 |
| 4:CD:127:PRO:O | 4:CD:130:ARG:N | 2.53 | 0.40 |
| 4:CE:367:PHE:HB2 | 4:CE:372:TRP:CZ3 | 2.57 | 0.40 |
| 5:DE:163:VAL:N | 5:DE:201:LYS:HZ1 | 2.19 | 0.40 |
| 5:EC:273:ASN:C | 5:EC:273:ASN:ND2 | 2.75 | 0.40 |
| 5:EK:126:THR:HG23 | 5:FK:180:LYS:HE2 | 2.03 | 0.40 |
| 5:FB:285:PRO:HG2 | 5:FC:268:GLN:HB3 | 2.02 | 0.40 |
| 5:FF:32:LYS:HD2 | 5:FF:60:PHE:HA | 2.01 | 0.40 |
| 5:FJ:84:LEU:HD23 | 5:FJ:115:LEU:HA | 2.03 | 0.40 |
| 5:GE:227:THR:HB | 5:GE:243:VAL:HG11 | 2.03 | 0.40 |
| 5:GF:185:VAL:HG11 | 5:GF:258:PHE:CE1 | 2.56 | 0.40 |
| 5:GK:19:ILE:HG23 | 5:GK:370:GLU:HB3 | 2.02 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:GK:287:ASP:OD1 | 5:GK:287:ASP:N | 2.53 | 0.40 |
| 1:AA:68:ASP:OD1 | 1:AA:68:ASP:N | 2.54 | 0.40 |
| 1:AD:165:SER:O | 1:AD:167:ILE:HD12 | 2.21 | 0.40 |
| 3:BH:260:LEU:O | 3:BH:263:LEU:HG | 2.22 | 0.40 |
| 3:BI:83:VAL:O | 3:BI:87:ILE:HG12 | 2.21 | 0.40 |
| 3:BL:171:VAL:HG13 | 3:BL:171:VAL:O | 2.22 | 0.40 |
| 4:CA:356:THR:O | 4:CA:469:GLY:HA2 | 2.21 | 0.40 |
| 4:CC:91:GLN:HB3 | 4:CC:286:PHE:CZ | 2.56 | 0.40 |
| 4:CC:255:ARG:HA | 4:CC:255:ARG:HD3 | 1.91 | 0.40 |
| 4:CF:136:LYS:O | 4:CF:140:LEU:HD23 | 2.21 | 0.40 |
| 4:CF:545:LEU:HD11 | 4:CH:19:LEU:HD13 | 2.03 | 0.40 |
| 4:CG:437:ALA:HB1 | 4:CG:449:GLY:HA2 | 2.03 | 0.40 |
| 4:CI:153:ASP:O | 4:CI:157:GLN:HG2 | 2.21 | 0.40 |
| 4:CJ:216:GLU:HG3 | 4:CJ:228:THR:O | 2.20 | 0.40 |
| 4:CK:504:LYS:HB2 | 4:CK:504:LYS:HE3 | 1.86 | 0.40 |
| 5:DC:111:GLN:OE1 | 5:DK:52:LYS:NZ | 2.48 | 0.40 |
| 5:DI:105:ARG:NH1 | 5:DI:138:ILE:O | 2.48 | 0.40 |
| 5:DI:155:ILE:HA | 5:DI:275:ILE:HA | 2.02 | 0.40 |
| 5:DI:158:ASN:HD21 | 5:DI:271:GLY:HA2 | 1.86 | 0.40 |
| 5:EB:194:ASP:H | 5:EB:215:SER:HB2 | 1.86 | 0.40 |
| 5:EC:266:MET:HE3 | 5:EC:267:GLN:H | 1.85 | 0.40 |
| 5:EC:401:LEU:HD11 | 5:FB:389:LYS:HB2 | 2.03 | 0.40 |
| 5:EG:328:GLN:HB2 | 5:EG:334:ALA:HB2 | 2.03 | 0.40 |
| 5:EH:143:MET:HE1 | 5:EH:309:GLN:NE2 | 2.36 | 0.40 |
| 5:EI:167:THR:HB | 5:EI:168:PRO:HD3 | 2.03 | 0.40 |
| 5:EJ:28:THR:HG23 | 5:EJ:31:PHE:HB2 | 2.02 | 0.40 |
| 5:FA:82:PHE:N | 5:FA:94:SER:O | 2.54 | 0.40 |
| 5:FF:115:LEU:HD21 | 5:FF:314:ILE:HG23 | 2.03 | 0.40 |
| 5:FG:354:LYS:HA | 5:FG:354:LYS:HD3 | 1.81 | 0.40 |
| 5:GC:249:THR:HG23 | 5:GC:253:ALA:O | 2.21 | 0.40 |
| 1:AA:377:LEU:O | 1:AA:387:THR:HG22 | 2.21 | 0.40 |
| 1:AD:102:LEU:H | 1:AD:257:LYS:HD3 | 1.86 | 0.40 |
| 1:AD:403:ILE:HA | 1:AD:406:ASN:ND2 | 2.36 | 0.40 |
| 1:AE:132:LYS:O | 1:AE:195:ILE:HA | 2.22 | 0.40 |
| 3:BA:203:MET:HE1 | 3:BA:235:GLY:C | 2.47 | 0.40 |
| 3:BA:211:LEU:HD23 | 3:BA:211:LEU:HA | 1.92 | 0.40 |
| 3:BB:140:LYS:HD2 | 3:BB:155:GLY:HA2 | 2.03 | 0.40 |
| 3:BG:165:ASP:HB3 | 3:BG:168:ARG:HB3 | 2.03 | 0.40 |
| 4:CC:18:ALA:HB1 | 4:CC:528:TYR:CE2 | 2.56 | 0.40 |
| 4:CD:427:LYS:HD3 | 4:CD:427:LYS:HA | 1.90 | 0.40 |
| 4:CF:290:ASP:OD1 | 4:CF:291:LEU:N | 2.55 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DA:42:PHE:HB2 | 5:DE:329:GLY:CA | 2.52 | 0.40 |
| 5:DB:101:LEU:HD21 | 5:DB:105:ARG:HE | 1.87 | 0.40 |
| 5:DC:3:SER:HB2 | 5:EC:64:THR:HG21 | 2.02 | 0.40 |
| 5:DD:109:ASN:HD21 | 5:DD:111:GLN:HB2 | 1.86 | 0.40 |
| 5:DF:185:VAL:HG11 | 5:DF:258:PHE:CE1 | 2.57 | 0.40 |
| 5:DI:298:THR:HG22 | 5:DI:313:GLN:HE21 | 1.87 | 0.40 |
| 5:ED:125:PRO:HG3 | 5:ED:309:GLN:HG3 | 2.03 | 0.40 |
| 5:ED:230:LYS:HD2 | 5:ED:239:SER:HB3 | 2.03 | 0.40 |
| 5:EE:109:ASN:OD1 | 5:EE:113:MET:N | 2.55 | 0.40 |
| 5:EE:389:LYS:O | 5:EE:393:GLN:HG2 | 2.22 | 0.40 |
| 5:EF:106:ASN:HA | 5:EF:137:THR:HA | 2.02 | 0.40 |
| 5:EJ:149:THR:OG1 | 5:EJ:281:ASN:ND2 | 2.55 | 0.40 |
| 5:FA:402:ARG:HH12 | 5:GA:374:MET:HE3 | 1.86 | 0.40 |
| 5:FB:327:SER:HA | 5:FB:333:TRP:CD1 | 2.57 | 0.40 |
| 5:FD:317:ALA:HB2 | 5:FD:344:LEU:HD23 | 2.04 | 0.40 |
| 5:FH:41:MET:HB3 | 5:FH:49:LEU:HD12 | 2.02 | 0.40 |
| 5:FK:154:GLN:HG3 | 5:FK:276:VAL:HB | 2.03 | 0.40 |
| 5:GA:290:SER:O | 5:GA:302:ASN:N | 2.46 | 0.40 |
| 5:GB:167:THR:HB | 5:GB:168:PRO:HD3 | 2.04 | 0.40 |
| 5:GE:379:ARG:HD3 | 5:GE:379:ARG:HA | 1.82 | 0.40 |
| 5:GG:72:LEU:HD23 | 5:GG:72:LEU:HA | 1.97 | 0.40 |
| 1:AA:15:LEU:HD23 | 1:AA:440:PHE:HB3 | 2.04 | 0.40 |
| 1:AA:102:LEU:HB2 | 1:AA:257:LYS:HB3 | 2.03 | 0.40 |
| 1:AA:393:GLU:HG2 | 1:AA:397:TYR:CE2 | 2.56 | 0.40 |
| 1:AB:96:LYS:HA | 1:AB:261:ALA:O | 2.22 | 0.40 |
| 1:AD:33:ILE:H | 1:AD:33:ILE:HG13 | 1.76 | 0.40 |
| 1:AD:432:THR:HG22 | 1:AD:435:ARG:NH2 | 2.36 | 0.40 |
| 1:AE:169:ALA:HB1 | 1:AE:181:LEU:HD11 | 2.02 | 0.40 |
| 3:BD:183:ILE:HG23 | 3:BD:238:ASN:HB3 | 2.04 | 0.40 |
| 3:BE:181:ASN:O | 3:BE:198:LYS:HD3 | 2.20 | 0.40 |
| 3:BG:85:THR:O | 3:BG:88:GLN:NE2 | 2.54 | 0.40 |
| 3:BH:107:ARG:CZ | 3:BH:215:VAL:HG13 | 2.52 | 0.40 |
| 4:CA:367:PHE:HB2 | 4:CA:372:TRP:CZ3 | 2.56 | 0.40 |
| 4:CA:388:ASP:HB3 | 4:CA:394:GLU:OE2 | 2.22 | 0.40 |
| 4:CB:80:ASN:OD1 | 4:CB:278:GLY:N | 2.55 | 0.40 |
| 4:CC:28:ASN:OD1 | 4:CG:58:VAL:HB | 2.21 | 0.40 |
| 4:CD:186:MET:HG3 | 4:CD:195:PRO:HG3 | 2.03 | 0.40 |
| 4:CE:76:ARG:HB3 | 4:CE:210:ASN:ND2 | 2.35 | 0.40 |
| 4:CI:365:ILE:HD12 | 4:CI:372:TRP:HZ3 | 1.86 | 0.40 |
| 4:CK:141:VAL:HG13 | 4:CK:328:PHE:CE1 | 2.56 | 0.40 |
| 5:DC:5:ALA:HB1 | 5:DC:388:ILE:HG12 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:DC:164:PRO:HD3 | 5:DC:178:ASN:HD22 | 1.86 | 0.40 |
| 5:DF:207:TRP:CD1 | 5:DF:267:GLN:HE22 | 2.39 | 0.40 |
| 5:DF:247:THR:OG1 | 5:DF:248:GLY:N | 2.52 | 0.40 |
| 5:DI:146:LYS:HE3 | 5:DI:283:TYR:CE1 | 2.56 | 0.40 |
| 5:DI:193:HIS:NE2 | 5:DI:249:THR:HB | 2.36 | 0.40 |
| 5:EB:146:LYS:HG3 | 5:EB:283:TYR:N | 2.35 | 0.40 |
| 5:EB:229:LEU:HB3 | 5:EB:231:PHE:CE2 | 2.55 | 0.40 |
| 5:ED:299:VAL:HG12 | 5:ED:311:LEU:HD12 | 2.03 | 0.40 |
| 5:EG:402:ARG:NH1 | 5:FG:378:GLN:OE1 | 2.51 | 0.40 |
| 5:EK:33:SER:HB3 | 5:EK:365:VAL:HG22 | 2.02 | 0.40 |
| 5:FD:395:LEU:HB3 | 5:GB:379:ARG:CZ | 2.51 | 0.40 |
| 5:GA:25:ASN:O | 5:GA:363:SER:OG | 2.31 | 0.40 |
| 5:GE:293:ILE:HG12 | 5:GE:299:VAL:HG22 | 2.04 | 0.40 |
| 1:AB:84:VAL:HG11 | 1:AB:263:VAL:HG21 | 2.03 | 0.40 |
| 1:AD:273:LYS:O | 1:AD:277:LYS:HB2 | 2.21 | 0.40 |
| 1:AE:71:LYS:HA | 1:AE:71:LYS:HD2 | 1.87 | 0.40 |
| 1:AE:109:ALA:HB3 | 1:AE:221:LEU:HD21 | 2.04 | 0.40 |
| 3:BB:66:ARG:HD3 | 3:BB:260:LEU:HG | 2.03 | 0.40 |
| 3:BC:231:LYS:HB2 | 3:BC:231:LYS:HE2 | 1.79 | 0.40 |
| 3:BD:98:GLY:CA | 3:BD:229:ILE:HG21 | 2.52 | 0.40 |
| 3:BE:304:PHE:C | 3:BE:306:ASP:H | 2.30 | 0.40 |
| 3:BH:13:MET:O | 3:BH:17:THR:HG23 | 2.21 | 0.40 |
| 3:BH:23:TRP:HD1 | 3:BH:293:GLN:CB | 2.35 | 0.40 |
| 3:BL:184:THR:HG23 | 3:BL:242:ASN:HA | 2.04 | 0.40 |
| 4:CA:394:GLU:OE1 | 4:CA:394:GLU:N | 2.52 | 0.40 |
| 4:CA:447:ASP:OD1 | 4:CA:447:ASP:N | 2.55 | 0.40 |
| 4:CC:78:ALA:HB1 | 4:CC:503:VAL:HG22 | 2.04 | 0.40 |
| 4:CC:134:ILE:O | 4:CC:138:GLU:HG2 | 2.22 | 0.40 |
| 4:CC:203:ASP:HA | 4:CC:206:VAL:HG12 | 2.03 | 0.40 |
| 4:CD:394:GLU:HA | 4:CD:399:LYS:HA | 2.04 | 0.40 |
| 4:CD:524:ASN:OD1 | 4:CD:527:ARG:NH2 | 2.54 | 0.40 |
| 4:CE:498:THR:O | 4:CE:502:VAL:HG23 | 2.21 | 0.40 |
| 4:CG:529:GLN:O | 4:CG:533:LEU:HD23 | 2.21 | 0.40 |
| 5:DJ:195:MET:HG3 | 5:DJ:258:PHE:HZ | 1.86 | 0.40 |
| 5:EA:231:PHE:CD2 | 5:EA:267:GLN:NE2 | 2.89 | 0.40 |
| 5:EB:154:GLN:HB2 | 5:EB:277:ALA:H | 1.86 | 0.40 |
| 5:EC:246:THR:HG22 | 5:EC:255:ALA:HB1 | 2.04 | 0.40 |
| 5:EC:298:THR:HA | 5:EC:313:GLN:HA | 2.03 | 0.40 |
| 5:EE:179:LYS:HD3 | 5:EE:273:ASN:HB2 | 2.03 | 0.40 |
| 5:EG:75:ALA:HB2 | 5:EG:360:LEU:HA | 2.04 | 0.40 |
| 5:EH:70:ARG:HH22 | 5:EH:99:PHE:H | 1.69 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:EH:179:LYS:HD3 | 5:EH:273:ASN:HB2 | 2.04 | 0.40 |
| 5:FA:139:PRO:HD2 | 5:FA:311:LEU:HD22 | 2.02 | 0.40 |
| 5:FA:155:ILE:HG13 | 5:FA:274:ASN:O | 2.22 | 0.40 |
| 5:FD:253:ALA:HB3 | 5:GB:233:GLU:CD | 2.47 | 0.40 |
| 5:FI:7:SER:HB2 | 5:FI:51:VAL:H | 1.86 | 0.40 |
| 5:GA:9:LEU:HD23 | 5:GA:9:LEU:HA | 1.93 | 0.40 |
| 5:GF:109:ASN:OD1 | 5:GF:112:GLY:N | 2.54 | 0.40 |
| 5:GH:167:THR:HB | 5:GH:168:PRO:HD3 | 2.02 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles (i)

### 5.3.1 Protein backbone (i)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | AA | 450/467 (96%) | 440 (98%) | 10 (2%) | 0 | 100 | 100 |
| 1 | AB | 413/467 (88%) | 405 (98%) | 8 (2%) | 0 | 100 | 100 |
| 1 | AD | 440/467 (94%) | 429 (98%) | 11 (2%) | 0 | 100 | 100 |
| 1 | AE | 436/467 (93%) | 427 (98%) | 9 (2%) | 0 | 100 | 100 |
| 2 | AC | 445/467 (95%) | 427 (96%) | 18 (4%) | 0 | 100 | 100 |
| 3 | BA | 315/317 (99%) | 312 (99%) | 3 (1%) | 0 | 100 | 100 |
| 3 | BB | 315/317 (99%) | 311 (99%) | 4 (1%) | 0 | 100 | 100 |
| 3 | BC | 315/317 (99%) | 310 (98%) | 5 (2%) | 0 | 100 | 100 |
| 3 | BD | 315/317 (99%) | 308 (98%) | 7 (2%) | 0 | 100 | 100 |
| 3 | BE | 315/317 (99%) | 311 (99%) | 4 (1%) | 0 | 100 | 100 |
| 3 | BG | 315/317 (99%) | 310 (98%) | 5 (2%) | 0 | 100 | 100 |
| 3 | BH | 315/317 (99%) | 308 (98%) | 7 (2%) | 0 | 100 | 100 |
| 3 | BI | 315/317 (99%) | 309 (98%) | 6 (2%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 3 | BJ | 315/317 (99%) | 307 (98%) | 8 (2%) | 0 | 100 | 100 |
| 3 | BK | 315/317 (99%) | 309 (98%) | 6 (2%) | 0 | 100 | 100 |
| 3 | BL | 312/317 (98%) | 305 (98%) | 7 (2%) | 0 | 100 | 100 |
| 3 | BM | 28/317 (9%) | 26 (93%) | 2 (7%) | 0 | 100 | 100 |
| 3 | BN | 28/317 (9%) | 26 (93%) | 2 (7%) | 0 | 100 | 100 |
| 4 | CA | 551/553 (100%) | 545 (99%) | 6 (1%) | 0 | 100 | 100 |
| 4 | CB | 551/553 (100%) | 545 (99%) | 6 (1%) | 0 | 100 | 100 |
| 4 | CC | 550/553 (100%) | 542 (98%) | 8 (2%) | 0 | 100 | 100 |
| 4 | CD | 551/553 (100%) | 547 (99%) | 4 (1%) | 0 | 100 | 100 |
| 4 | CE | 551/553 (100%) | 546 (99%) | 5 (1%) | 0 | 100 | 100 |
| 4 | CF | 551/553 (100%) | 541 (98%) | 10 (2%) | 0 | 100 | 100 |
| 4 | CG | 551/553 (100%) | 542 (98%) | 9 (2%) | 0 | 100 | 100 |
| 4 | CH | 551/553 (100%) | 545 (99%) | 6 (1%) | 0 | 100 | 100 |
| 4 | CI | 551/553 (100%) | 541 (98%) | 10 (2%) | 0 | 100 | 100 |
| 4 | CJ | 551/553 (100%) | 546 (99%) | 5 (1%) | 0 | 100 | 100 |
| 4 | CK | 551/553 (100%) | 545 (99%) | 6 (1%) | 0 | 100 | 100 |
| 5 | DA | 400/403 (99%) | 390 (98%) | 10 (2%) | 0 | 100 | 100 |
| 5 | DB | 400/403 (99%) | 383 (96%) | 17 (4%) | 0 | 100 | 100 |
| 5 | DC | 400/403 (99%) | 390 (98%) | 10 (2%) | 0 | 100 | 100 |
| 5 | DD | 400/403 (99%) | 391 (98%) | 9 (2%) | 0 | 100 | 100 |
| 5 | DE | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | DF | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | DG | 400/403 (99%) | 391 (98%) | 9 (2%) | 0 | 100 | 100 |
| 5 | DH | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | DI | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | DJ | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | DK | 400/403 (99%) | 393 (98%) | 7 (2%) | 0 | 100 | 100 |
| 5 | EA | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | EB | 400/403 (99%) | 389 (97%) | 11 (3%) | 0 | 100 | 100 |
| 5 | EC | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | ED | 400/403 (99%) | 388 (97%) | 12 (3%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 5 | EE | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | EF | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | EG | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | EH | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | EI | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | EJ | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | EK | 400/403 (99%) | 396 (99%) | 4 (1%) | 0 | 100 | 100 |
| 5 | FA | 400/403 (99%) | 396 (99%) | 4 (1%) | 0 | 100 | 100 |
| 5 | FB | 400/403 (99%) | 393 (98%) | 7 (2%) | 0 | 100 | 100 |
| 5 | FC | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | FD | 400/403 (99%) | 391 (98%) | 9 (2%) | 0 | 100 | 100 |
| 5 | FE | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | FF | 400/403 (99%) | 393 (98%) | 7 (2%) | 0 | 100 | 100 |
| 5 | FG | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | FH | 400/403 (99%) | 396 (99%) | 4 (1%) | 0 | 100 | 100 |
| 5 | FI | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | FJ | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | FK | 400/403 (99%) | 391 (98%) | 9 (2%) | 0 | 100 | 100 |
| 5 | GA | 400/403 (99%) | 396 (99%) | 4 (1%) | 0 | 100 | 100 |
| 5 | GB | 400/403 (99%) | 388 (97%) | 12 (3%) | 0 | 100 | 100 |
| 5 | GC | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | GD | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | GE | 400/403 (99%) | 396 (99%) | 4 (1%) | 0 | 100 | 100 |
| 5 | GF | 400/403 (99%) | 393 (98%) | 7 (2%) | 0 | 100 | 100 |
| 5 | GG | 400/403 (99%) | 392 (98%) | 8 (2%) | 0 | 100 | 100 |
| 5 | GH | 400/403 (99%) | 394 (98%) | 6 (2%) | 0 | 100 | 100 |
| 5 | GI | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | GJ | 400/403 (99%) | 395 (99%) | 5 (1%) | 0 | 100 | 100 |
| 5 | GK | 400/403 (99%) | 389 (97%) | 11 (3%) | 0 | 100 | 100 |
| All | All | 29362/30271 (97%) | 28843 (98%) | 519 (2%) | 0 | 100 | 100 |

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains (i)

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 1 | AA | 378/391 (97%) | 378 (100%) | 0 | 100 | 100 |
| 1 | AB | 346/391 (88%) | 346 (100%) | 0 | 100 | 100 |
| 1 | AD | 369/391 (94%) | 368 (100%) | 1 (0%) | 91 | 95 |
| 1 | AE | 366/391 (94%) | 366 (100%) | 0 | 100 | 100 |
| 2 | AC | 375/391 (96%) | 375 (100%) | 0 | 100 | 100 |
| 3 | BA | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BB | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BC | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BD | 261/261 (100%) | 260 (100%) | 1 (0%) | 89 | 93 |
| 3 | BE | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BG | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BH | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BI | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BJ | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BK | 261/261 (100%) | 261 (100%) | 0 | 100 | 100 |
| 3 | BL | 260/261 (100%) | 260 (100%) | 0 | 100 | 100 |
| 3 | BM | 26/261 (10%) | 26 (100%) | 0 | 100 | 100 |
| 3 | BN | 26/261 (10%) | 26 (100%) | 0 | 100 | 100 |
| 4 | CA | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CB | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CC | 452/453 (100%) | 452 (100%) | 0 | 100 | 100 |
| 4 | CD | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CE | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CF | 453/453 (100%) | 452 (100%) | 1 (0%) | 92 | 96 |
| 4 | CG | 453/453 (100%) | 452 (100%) | 1 (0%) | 92 | 96 |
| 4 | CH | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 4 | CI | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CJ | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 4 | CK | 453/453 (100%) | 453 (100%) | 0 | 100 | 100 |
| 5 | DA | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DB | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DC | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DD | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DE | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DF | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DG | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DH | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DI | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DJ | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | DK | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EA | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EB | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EC | 322/323 (100%) | 321 (100%) | 1 (0%) | 91 | 95 |
| 5 | ED | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EE | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EF | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EG | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EH | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EI | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EJ | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | EK | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FA | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FB | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FC | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FD | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FE | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FF | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 5 | FG | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FH | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FI | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FJ | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | FK | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GA | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GB | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GC | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GD | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GE | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GF | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GG | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GH | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GI | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GJ | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| 5 | GK | 322/323 (100%) | 322 (100%) | 0 | 100 | 100 |
| All | All | 23906/24543 (97%) | 23901 (100%) | 5 (0%) | 100 | 100 |

All (5) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AD | 369 | ASN |
| 3 | BD | 163 | GLN |
| 4 | CF | 505 | GLN |
| 4 | CG | 466 | ASN |
| 5 | EC | 273 | ASN |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (423) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 61 | ASN |
| 1 | AA | 106 | GLN |
| 1 | AA | 120 | GLN |
| 1 | AA | 408 | GLN |
| 1 | AB | 58 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AB | 61 | ASN |
| 1 | AB | 65 | ASN |
| 1 | AB | 101 | GLN |
| 1 | AB | 180 | GLN |
| 1 | AB | 248 | GLN |
| 1 | AB | 406 | ASN |
| 2 | AC | 226 | ASN |
| 2 | AC | 406 | ASN |
| 2 | AC | 410 | ASN |
| 1 | AD | 120 | GLN |
| 1 | AD | 219 | GLN |
| 1 | AD | 369 | ASN |
| 1 | AD | 406 | ASN |
| 1 | AD | 427 | ASN |
| 1 | AE | 239 | GLN |
| 1 | AE | 331 | ASN |
| 1 | AE | 421 | GLN |
| 1 | AE | 439 | GLN |
| 3 | BA | 6 | GLN |
| 3 | BA | 61 | GLN |
| 3 | BA | 99 | ASN |
| 3 | BA | 199 | ASN |
| 3 | BA | 238 | ASN |
| 3 | BA | 242 | ASN |
| 3 | BB | 91 | GLN |
| 3 | BB | 199 | ASN |
| 3 | BC | 29 | GLN |
| 3 | BC | 298 | GLN |
| 3 | BC | 314 | GLN |
| 3 | BD | 58 | GLN |
| 3 | BE | 6 | GLN |
| 3 | BE | 11 | GLN |
| 3 | BE | 241 | ASN |
| 3 | BE | 294 | GLN |
| 3 | BG | 11 | GLN |
| 3 | BG | 12 | ASN |
| 3 | BG | 88 | GLN |
| 3 | BG | 163 | GLN |
| 3 | BG | 233 | ASN |
| 3 | BG | 274 | GLN |
| 3 | BG | 308 | GLN |
| 3 | BG | 316 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | BH | 91 | GLN |
| 3 | BH | 131 | ASN |
| 3 | BH | 163 | GLN |
| 3 | BI | 11 | GLN |
| 3 | BI | 29 | GLN |
| 3 | BI | 294 | GLN |
| 3 | BJ | 54 | GLN |
| 3 | BJ | 271 | GLN |
| 3 | BJ | 294 | GLN |
| 3 | BK | 88 | GLN |
| 3 | BK | 131 | ASN |
| 3 | BL | 11 | GLN |
| 3 | BL | 38 | ASN |
| 3 | BL | 120 | GLN |
| 3 | BL | 163 | GLN |
| 3 | BL | 233 | ASN |
| 3 | BM | 298 | GLN |
| 4 | CA | 37 | GLN |
| 4 | CA | 74 | GLN |
| 4 | CA | 196 | ASN |
| 4 | CA | 511 | GLN |
| 4 | CB | 6 | ASN |
| 4 | CB | 27 | ASN |
| 4 | CB | 30 | ASN |
| 4 | CB | 43 | GLN |
| 4 | CB | 81 | GLN |
| 4 | CB | 475 | ASN |
| 4 | CB | 501 | ASN |
| 4 | CB | 505 | GLN |
| 4 | CC | 27 | ASN |
| 4 | CC | 91 | GLN |
| 4 | CC | 142 | ASN |
| 4 | CC | 175 | GLN |
| 4 | CC | 312 | GLN |
| 4 | CC | 455 | ASN |
| 4 | CC | 511 | GLN |
| 4 | CD | 56 | ASN |
| 4 | CD | 168 | GLN |
| 4 | CD | 171 | ASN |
| 4 | CD | 267 | ASN |
| 4 | CD | 293 | GLN |
| 4 | CE | 74 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | CE | 220 | GLN |
| 4 | CE | 341 | ASN |
| 4 | CE | 505 | GLN |
| 4 | CF | 91 | GLN |
| 4 | CF | 171 | ASN |
| 4 | CF | 175 | GLN |
| 4 | CF | 196 | ASN |
| 4 | CF | 464 | ASN |
| 4 | CF | 475 | ASN |
| 4 | CF | 505 | GLN |
| 4 | CG | 28 | ASN |
| 4 | CG | 79 | GLN |
| 4 | CG | 80 | ASN |
| 4 | CG | 91 | GLN |
| 4 | CG | 171 | ASN |
| 4 | CG | 220 | GLN |
| 4 | CG | 296 | ASN |
| 4 | CH | 27 | ASN |
| 4 | CH | 131 | GLN |
| 4 | CH | 154 | GLN |
| 4 | CH | 196 | ASN |
| 4 | CH | 312 | GLN |
| 4 | CH | 453 | ASN |
| 4 | CH | 455 | ASN |
| 4 | CH | 475 | ASN |
| 4 | CI | 7 | HIS |
| 4 | CI | 81 | GLN |
| 4 | CI | 97 | ASN |
| 4 | CI | 149 | GLN |
| 4 | CI | 182 | GLN |
| 4 | CI | 373 | GLN |
| 4 | CI | 463 | GLN |
| 4 | CI | 505 | GLN |
| 4 | CJ | 24 | ASN |
| 4 | CJ | 43 | GLN |
| 4 | CJ | 45 | ASN |
| 4 | CJ | 81 | GLN |
| 4 | CJ | 157 | GLN |
| 4 | CJ | 182 | GLN |
| 4 | CJ | 226 | ASN |
| 4 | CJ | 313 | HIS |
| 4 | CJ | 338 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | CJ | 341 | ASN |
| 4 | CJ | 409 | ASN |
| 4 | CJ | 466 | ASN |
| 4 | CJ | 510 | GLN |
| 4 | CJ | 530 | GLN |
| 4 | CK | 118 | GLN |
| 4 | CK | 157 | GLN |
| 4 | CK | 267 | ASN |
| 4 | CK | 293 | GLN |
| 4 | CK | 322 | ASN |
| 4 | CK | 455 | ASN |
| 4 | CK | 464 | ASN |
| 4 | CK | 475 | ASN |
| 5 | DA | 114 | GLN |
| 5 | DA | 274 | ASN |
| 5 | DA | 295 | ASN |
| 5 | DA | 313 | GLN |
| 5 | DA | 328 | GLN |
| 5 | DA | 357 | ASN |
| 5 | DA | 378 | GLN |
| 5 | DA | 393 | GLN |
| 5 | DB | 106 | ASN |
| 5 | DB | 154 | GLN |
| 5 | DB | 196 | ASN |
| 5 | DB | 295 | ASN |
| 5 | DB | 313 | GLN |
| 5 | DC | 25 | ASN |
| 5 | DC | 154 | GLN |
| 5 | DC | 178 | ASN |
| 5 | DC | 189 | GLN |
| 5 | DC | 328 | GLN |
| 5 | DD | 58 | GLN |
| 5 | DD | 67 | ASN |
| 5 | DD | 106 | ASN |
| 5 | DD | 114 | GLN |
| 5 | DD | 128 | GLN |
| 5 | DD | 268 | GLN |
| 5 | DD | 391 | GLN |
| 5 | DD | 396 | ASN |
| 5 | DE | 128 | GLN |
| 5 | DE | 212 | HIS |
| 5 | DE | 280 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | DE | 313 | GLN |
| 5 | DE | 328 | GLN |
| 5 | DE | 378 | GLN |
| 5 | DF | 25 | ASN |
| 5 | DF | 128 | GLN |
| 5 | DF | 191 | ASN |
| 5 | DF | 196 | ASN |
| 5 | DF | 279 | ASN |
| 5 | DF | 292 | GLN |
| 5 | DF | 302 | ASN |
| 5 | DF | 380 | ASN |
| 5 | DG | 158 | ASN |
| 5 | DG | 191 | ASN |
| 5 | DG | 268 | GLN |
| 5 | DG | 280 | GLN |
| 5 | DG | 309 | GLN |
| 5 | DH | 156 | ASN |
| 5 | DH | 205 | ASN |
| 5 | DH | 212 | HIS |
| 5 | DH | 251 | ASN |
| 5 | DH | 267 | GLN |
| 5 | DH | 302 | ASN |
| 5 | DH | 313 | GLN |
| 5 | DH | 351 | ASN |
| 5 | DI | 96 | ASN |
| 5 | DI | 111 | GLN |
| 5 | DI | 178 | ASN |
| 5 | DI | 212 | HIS |
| 5 | DI | 268 | GLN |
| 5 | DI | 279 | ASN |
| 5 | DI | 309 | GLN |
| 5 | DI | 321 | ASN |
| 5 | DI | 331 | ASN |
| 5 | DI | 378 | GLN |
| 5 | DI | 382 | GLN |
| 5 | DJ | 21 | ASN |
| 5 | DJ | 178 | ASN |
| 5 | DJ | 189 | GLN |
| 5 | DJ | 268 | GLN |
| 5 | DJ | 305 | ASN |
| 5 | DJ | 382 | GLN |
| 5 | DK | 78 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | DK | 156 | ASN |
| 5 | DK | 212 | HIS |
| 5 | DK | 267 | GLN |
| 5 | DK | 309 | GLN |
| 5 | EA | 4 | GLN |
| 5 | EA | 25 | ASN |
| 5 | EA | 128 | GLN |
| 5 | EA | 196 | ASN |
| 5 | EA | 269 | ASN |
| 5 | EA | 292 | GLN |
| 5 | EA | 331 | ASN |
| 5 | EB | 22 | ASN |
| 5 | EB | 25 | ASN |
| 5 | EB | 129 | GLN |
| 5 | EB | 191 | ASN |
| 5 | EB | 205 | ASN |
| 5 | EB | 267 | GLN |
| 5 | EB | 364 | ASN |
| 5 | EC | 212 | HIS |
| 5 | EC | 302 | ASN |
| 5 | EC | 328 | GLN |
| 5 | EC | 400 | ASN |
| 5 | ED | 88 | ASN |
| 5 | ED | 98 | GLN |
| 5 | ED | 191 | ASN |
| 5 | ED | 273 | ASN |
| 5 | ED | 302 | ASN |
| 5 | ED | 364 | ASN |
| 5 | EE | 21 | ASN |
| 5 | EE | 25 | ASN |
| 5 | EE | 193 | HIS |
| 5 | EE | 309 | GLN |
| 5 | EE | 364 | ASN |
| 5 | EF | 21 | ASN |
| 5 | EF | 189 | GLN |
| 5 | EF | 191 | ASN |
| 5 | EF | 269 | ASN |
| 5 | EF | 382 | GLN |
| 5 | EG | 58 | GLN |
| 5 | EG | 96 | ASN |
| 5 | EG | 128 | GLN |
| 5 | EG | 196 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | EG | 205 | ASN |
| 5 | EG | 280 | GLN |
| 5 | EH | 4 | GLN |
| 5 | EH | 191 | ASN |
| 5 | EH | 251 | ASN |
| 5 | EH | 309 | GLN |
| 5 | EH | 321 | ASN |
| 5 | EH | 331 | ASN |
| 5 | EI | 58 | GLN |
| 5 | EI | 78 | GLN |
| 5 | EI | 274 | ASN |
| 5 | EI | 380 | ASN |
| 5 | EI | 386 | GLN |
| 5 | EJ | 96 | ASN |
| 5 | EJ | 281 | ASN |
| 5 | EJ | 321 | ASN |
| 5 | EJ | 382 | GLN |
| 5 | EK | 78 | GLN |
| 5 | EK | 128 | GLN |
| 5 | EK | 129 | GLN |
| 5 | EK | 156 | ASN |
| 5 | EK | 178 | ASN |
| 5 | EK | 269 | ASN |
| 5 | EK | 393 | GLN |
| 5 | FA | 78 | GLN |
| 5 | FA | 189 | GLN |
| 5 | FA | 268 | GLN |
| 5 | FB | 158 | ASN |
| 5 | FB | 196 | ASN |
| 5 | FB | 267 | GLN |
| 5 | FB | 373 | ASN |
| 5 | FC | 25 | ASN |
| 5 | FC | 128 | GLN |
| 5 | FC | 191 | ASN |
| 5 | FC | 193 | HIS |
| 5 | FC | 196 | ASN |
| 5 | FC | 212 | HIS |
| 5 | FC | 328 | GLN |
| 5 | FC | 391 | GLN |
| 5 | FC | 396 | ASN |
| 5 | FD | 25 | ASN |
| 5 | FD | 132 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | FD | 328 | GLN |
| 5 | FD | 396 | ASN |
| 5 | FE | 21 | ASN |
| 5 | FE | 25 | ASN |
| 5 | FE | 104 | ASN |
| 5 | FE | 158 | ASN |
| 5 | FE | 280 | GLN |
| 5 | FE | 281 | ASN |
| 5 | FE | 328 | GLN |
| 5 | FE | 364 | ASN |
| 5 | FF | 25 | ASN |
| 5 | FF | 128 | GLN |
| 5 | FF | 156 | ASN |
| 5 | FF | 178 | ASN |
| 5 | FF | 189 | GLN |
| 5 | FF | 191 | ASN |
| 5 | FF | 196 | ASN |
| 5 | FG | 21 | ASN |
| 5 | FG | 25 | ASN |
| 5 | FG | 67 | ASN |
| 5 | FG | 109 | ASN |
| 5 | FG | 196 | ASN |
| 5 | FG | 212 | HIS |
| 5 | FG | 234 | ASN |
| 5 | FG | 268 | GLN |
| 5 | FH | 4 | GLN |
| 5 | FH | 98 | GLN |
| 5 | FH | 111 | GLN |
| 5 | FH | 191 | ASN |
| 5 | FH | 251 | ASN |
| 5 | FH | 268 | GLN |
| 5 | FI | 25 | ASN |
| 5 | FI | 58 | GLN |
| 5 | FI | 78 | GLN |
| 5 | FI | 104 | ASN |
| 5 | FI | 212 | HIS |
| 5 | FI | 267 | GLN |
| 5 | FI | 302 | ASN |
| 5 | FI | 357 | ASN |
| 5 | FJ | 96 | ASN |
| 5 | FJ | 98 | GLN |
| 5 | FJ | 205 | ASN |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | FJ | 357 | ASN |
| 5 | FK | 21 | ASN |
| 5 | FK | 294 | ASN |
| 5 | FK | 351 | ASN |
| 5 | FK | 357 | ASN |
| 5 | FK | 364 | ASN |
| 5 | FK | 391 | GLN |
| 5 | GA | 189 | GLN |
| 5 | GA | 244 | ASN |
| 5 | GA | 273 | ASN |
| 5 | GA | 384 | ASN |
| 5 | GB | 10 | ASN |
| 5 | GB | 21 | ASN |
| 5 | GB | 88 | ASN |
| 5 | GB | 128 | GLN |
| 5 | GB | 205 | ASN |
| 5 | GB | 212 | HIS |
| 5 | GB | 234 | ASN |
| 5 | GB | 251 | ASN |
| 5 | GB | 273 | ASN |
| 5 | GB | 295 | ASN |
| 5 | GB | 331 | ASN |
| 5 | GB | 373 | ASN |
| 5 | GC | 21 | ASN |
| 5 | GC | 178 | ASN |
| 5 | GC | 267 | GLN |
| 5 | GC | 328 | GLN |
| 5 | GC | 364 | ASN |
| 5 | GC | 391 | GLN |
| 5 | GD | 21 | ASN |
| 5 | GD | 106 | ASN |
| 5 | GD | 132 | ASN |
| 5 | GD | 154 | GLN |
| 5 | GD | 212 | HIS |
| 5 | GD | 268 | GLN |
| 5 | GD | 273 | ASN |
| 5 | GE | 111 | GLN |
| 5 | GE | 156 | ASN |
| 5 | GE | 212 | HIS |
| 5 | GE | 267 | GLN |
| 5 | GF | 25 | ASN |
| 5 | GF | 106 | ASN |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | GF | 154 | GLN |
| 5 | GF | 191 | ASN |
| 5 | GF | 196 | ASN |
| 5 | GF | 279 | ASN |
| 5 | GF | 313 | GLN |
| 5 | GG | 106 | ASN |
| 5 | GG | 269 | ASN |
| 5 | GG | 328 | GLN |
| 5 | GH | 111 | GLN |
| 5 | GH | 268 | GLN |
| 5 | GH | 313 | GLN |
| 5 | GH | 321 | ASN |
| 5 | GH | 331 | ASN |
| 5 | GI | 21 | ASN |
| 5 | GI | 58 | GLN |
| 5 | GI | 106 | ASN |
| 5 | GI | 212 | HIS |
| 5 | GI | 268 | GLN |
| 5 | GI | 274 | ASN |
| 5 | GI | 302 | ASN |
| 5 | GI | 318 | ASN |
| 5 | GI | 378 | GLN |
| 5 | GJ | 158 | ASN |
| 5 | GJ | 178 | ASN |
| 5 | GJ | 189 | GLN |
| 5 | GJ | 191 | ASN |
| 5 | GJ | 234 | ASN |
| 5 | GJ | 280 | GLN |
| 5 | GJ | 302 | ASN |
| 5 | GJ | 328 | GLN |
| 5 | GJ | 357 | ASN |
| 5 | GJ | 382 | GLN |
| 5 | GK | 25 | ASN |
| 5 | GK | 58 | GLN |
| 5 | GK | 128 | GLN |
| 5 | GK | 212 | HIS |
| 5 | GK | 309 | GLN |
| 5 | GK | 351 | ASN |
| 5 | GK | 380 | ASN |
| 5 | GK | 384 | ASN |

#### 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

There are no ligands in this entry.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

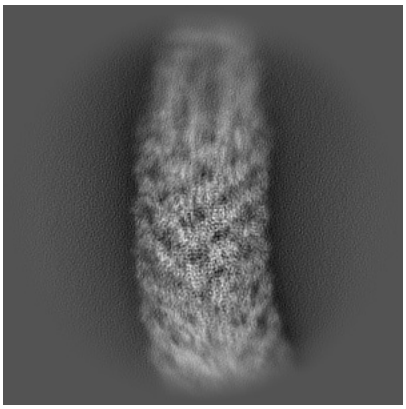
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-63853. These allow visual inspection of the internal detail of the map and identification of artifacts.

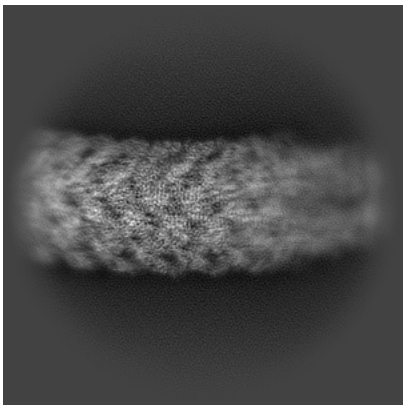
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

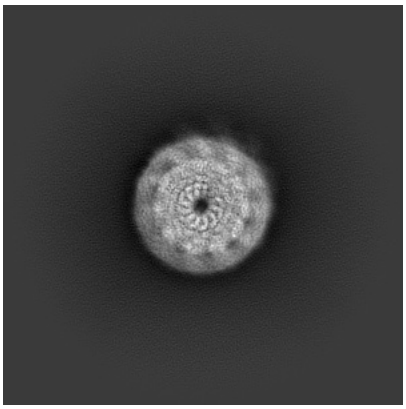
### 6.1.1 Primary map



X

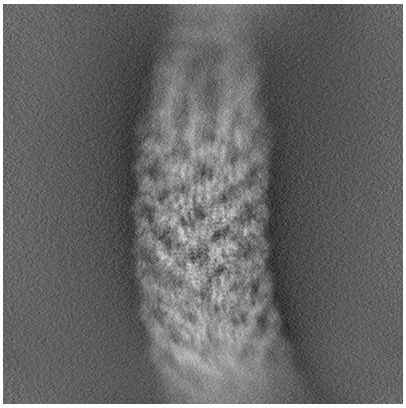


Y

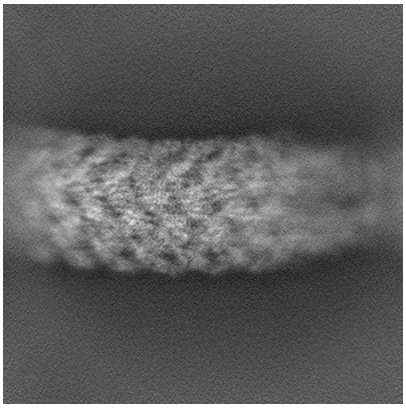


Z

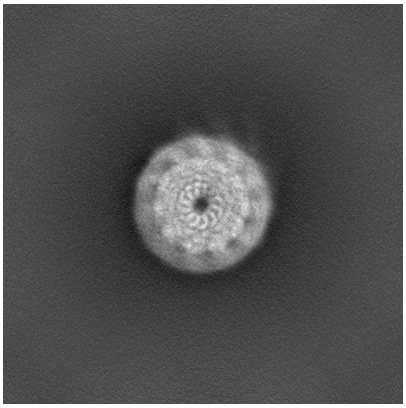
### 6.1.2 Raw map



X



Y

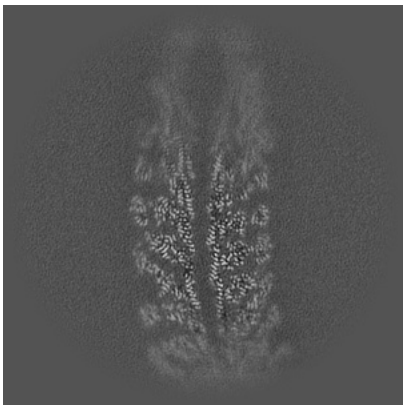


Z

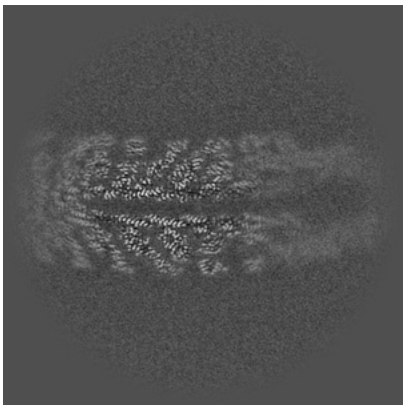
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

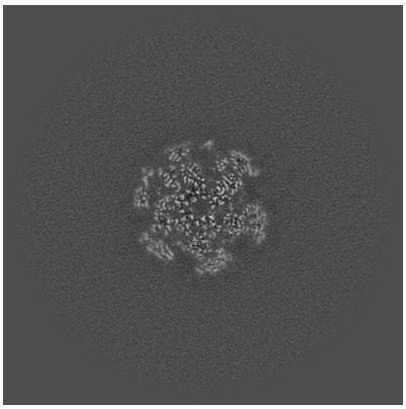
### 6.2.1 Primary map



X Index: 300

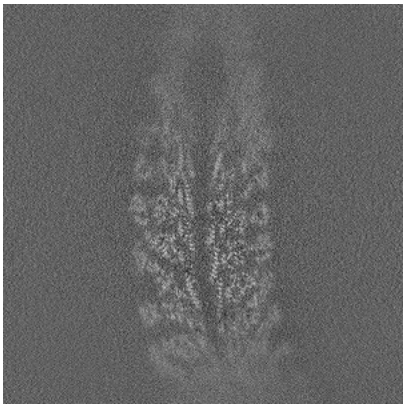


Y Index: 300

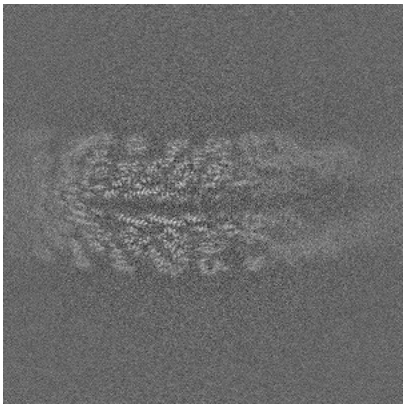


Z Index: 300

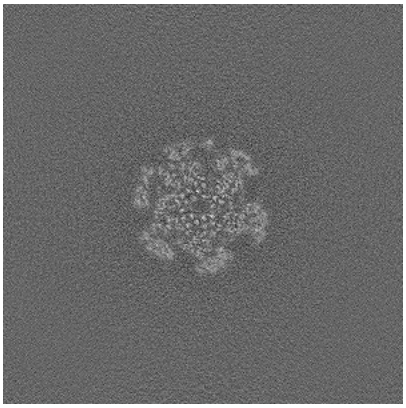
### 6.2.2 Raw map



X Index: 300



Y Index: 300

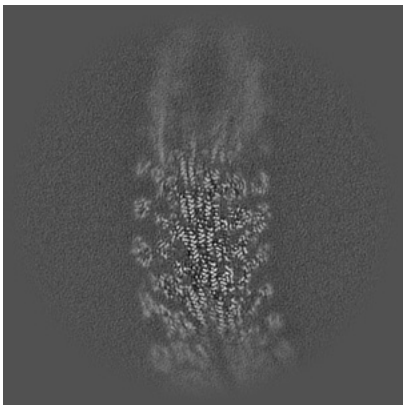


Z Index: 300

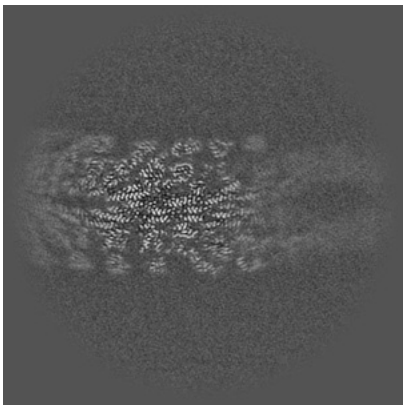
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

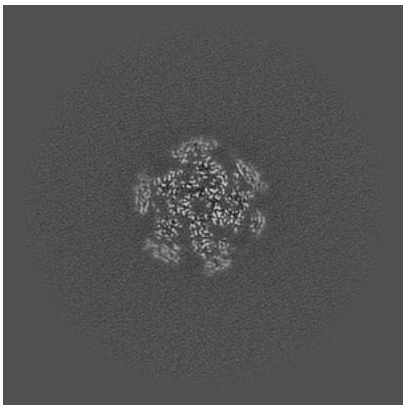
### 6.3.1 Primary map



X Index: 314

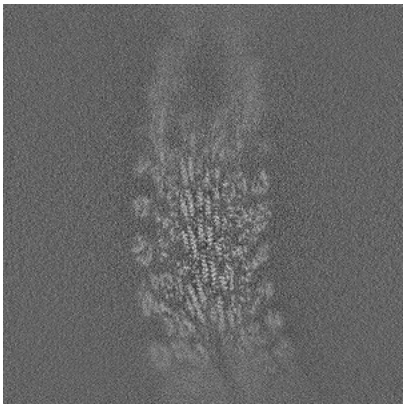


Y Index: 315

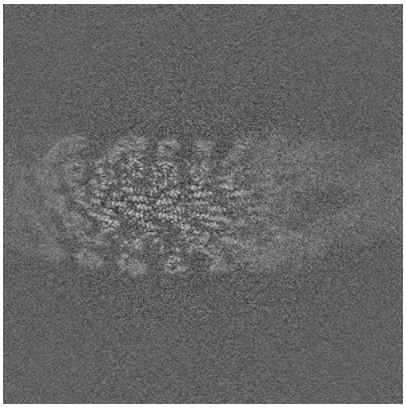


Z Index: 235

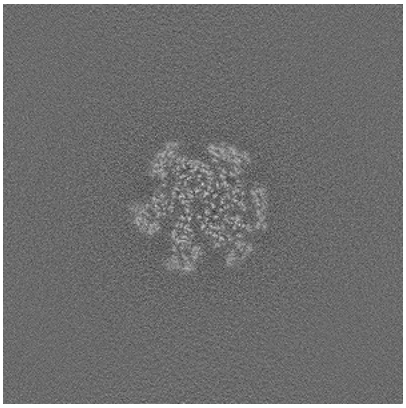
### 6.3.2 Raw map



X Index: 315



Y Index: 281

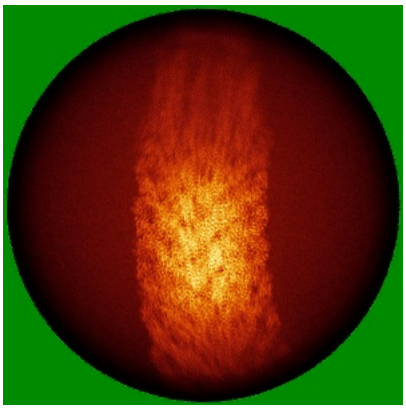


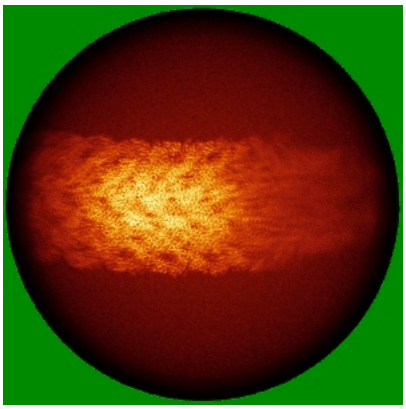
Z Index: 261

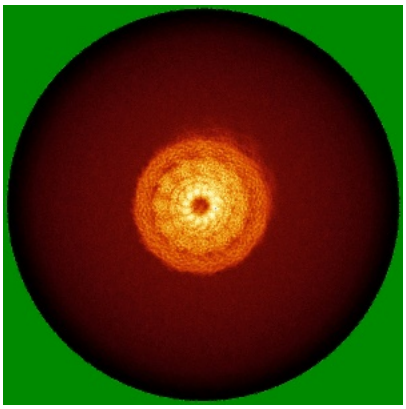
The images above show the largest variance slices of the map in three orthogonal directions.

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

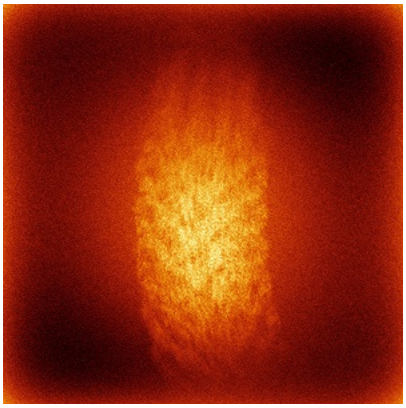
### 6.4.1 Primary map

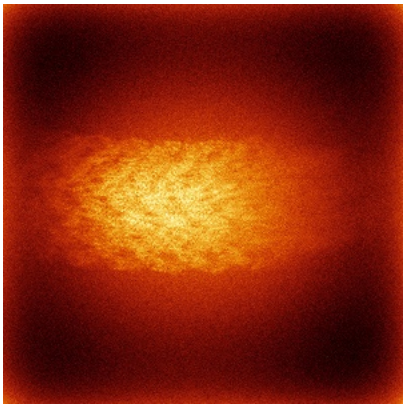

X

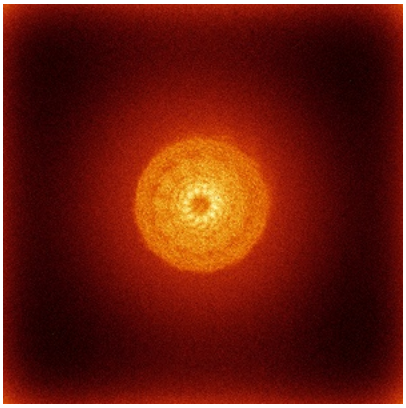

Y


Z

### 6.4.2 Raw map


X


Y


Z

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

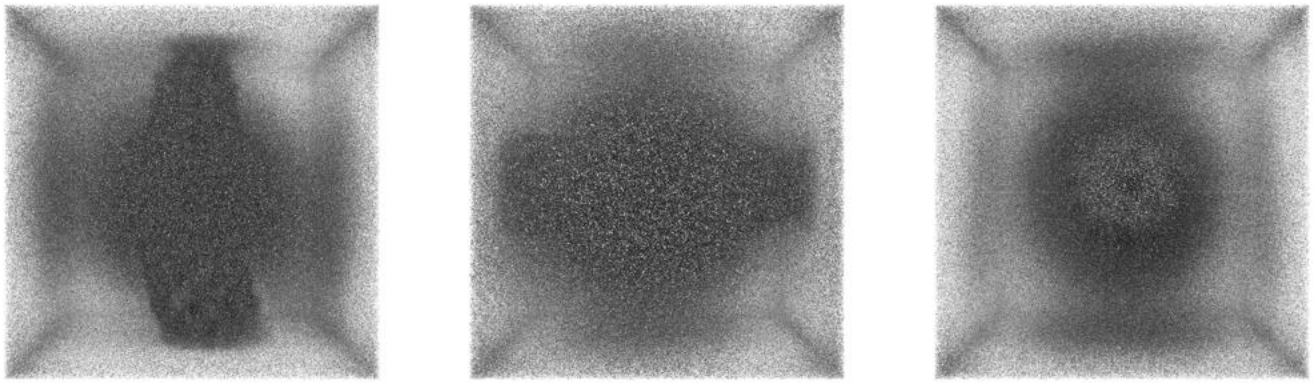
## 6.5 Orthogonal surface views (i)

### 6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



X Y Z

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

## 6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

### 6.6.1 emd_63853_msk_1.map (i)

X

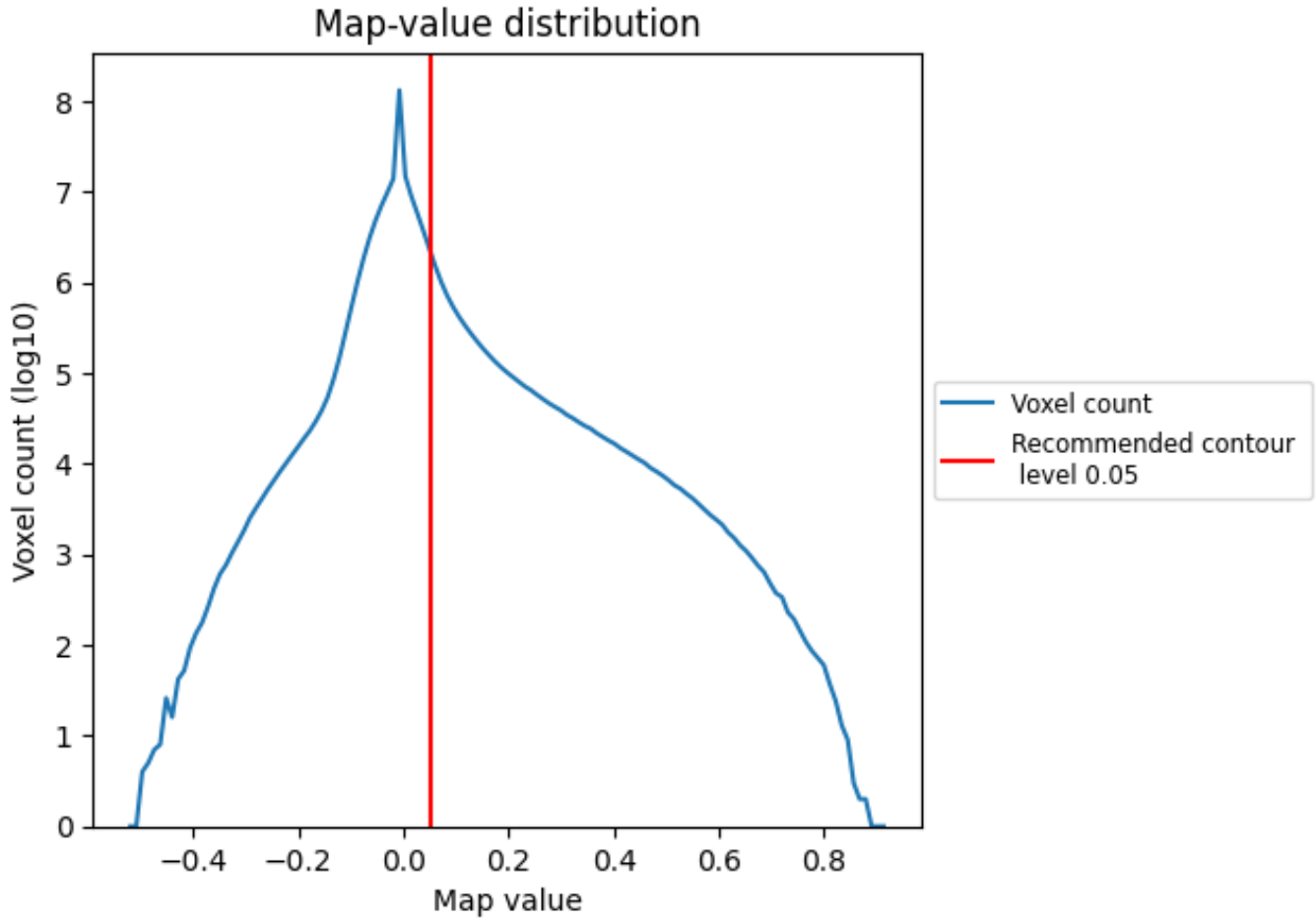
Y

Z

# 7 Map analysis

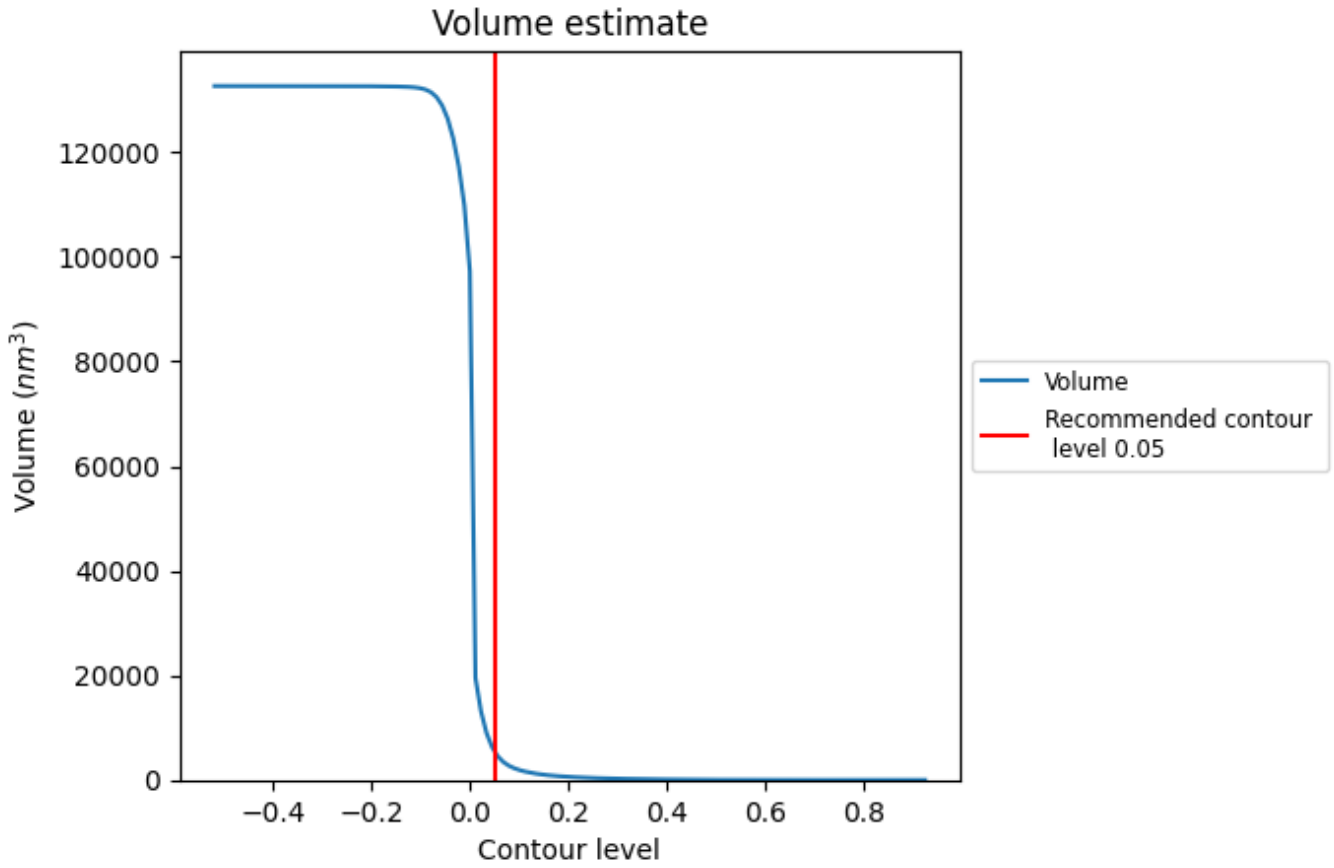
This section contains the results of statistical analysis of the map.

## 7.1 Map-value distribution




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

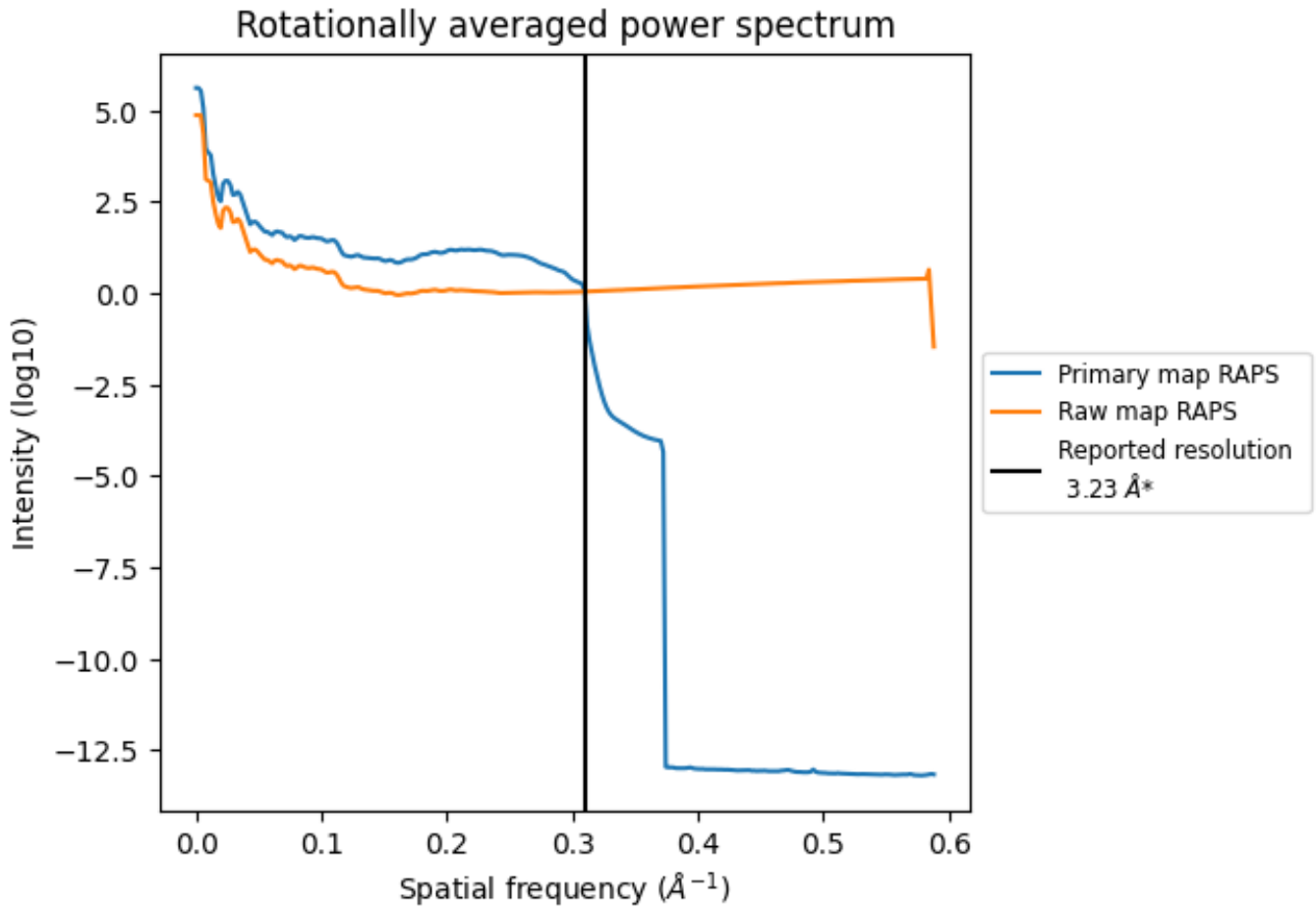
## 7.2 Volume estimate




The volume at the recommended contour level is 5481 $nm^3$; this corresponds to an approximate mass of 4951 kDa.

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

## 7.3 Rotationally averaged power spectrum (i)

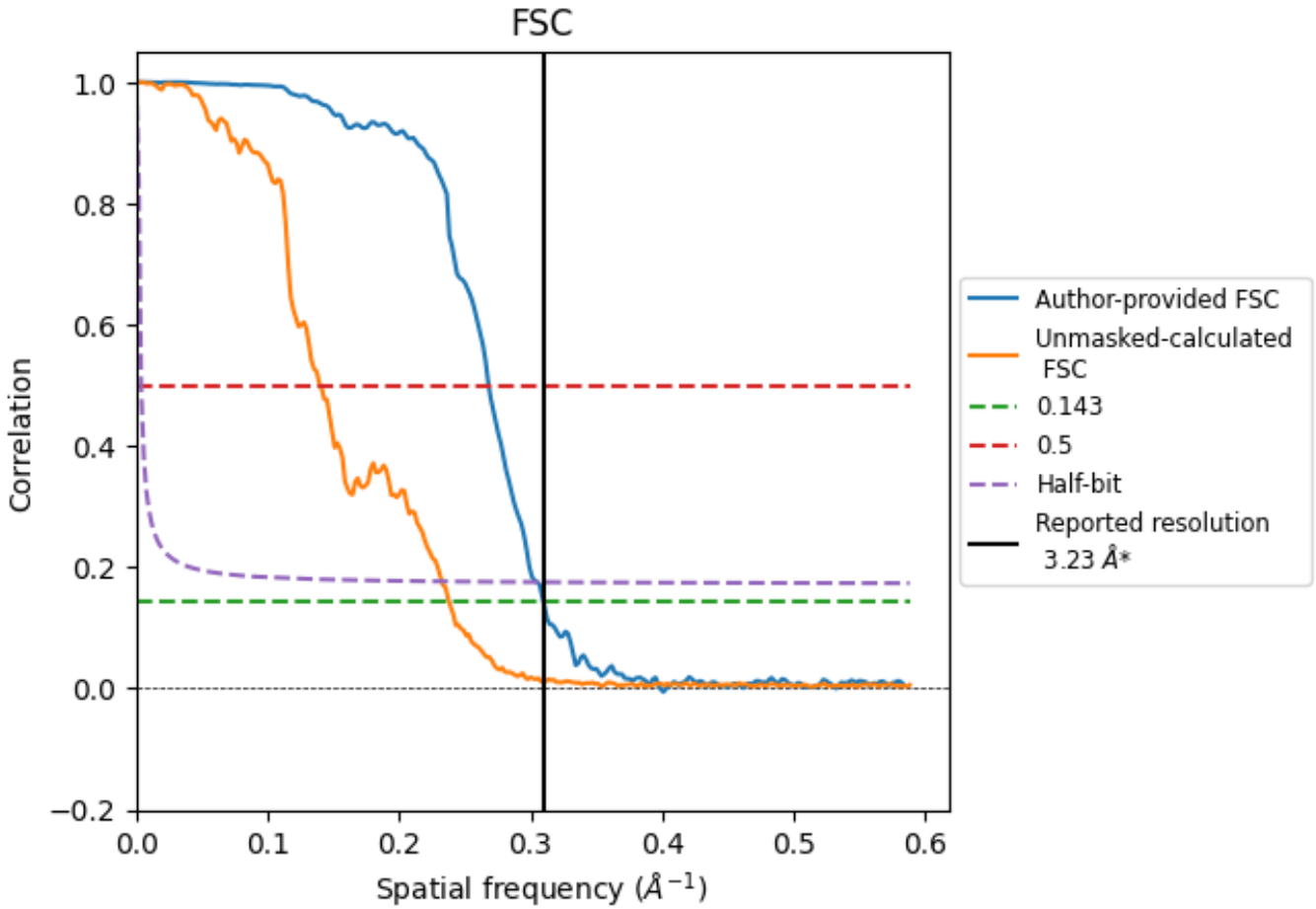



*Reported resolution corresponds to spatial frequency of 0.310 $Å^{-1}$

# 8 Fourier-Shell correlation

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

## 8.1 FSC




*Reported resolution corresponds to spatial frequency of 0.310 Å$^{-1}$

## 8.2 Resolution estimates (i)

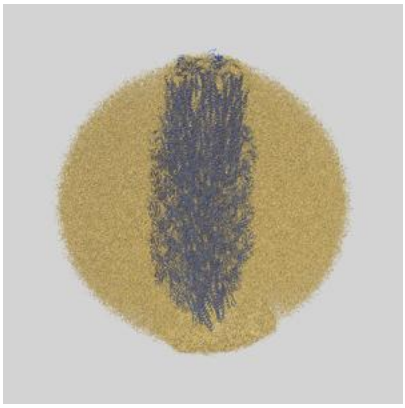
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.23 | - | - |
| Author-provided FSC curve | 3.23 | 3.73 | 3.28 |
| Unmasked-calculated* | 4.20 | 7.14 | 4.30 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.20 differs from the reported value 3.23 by more than 10 %

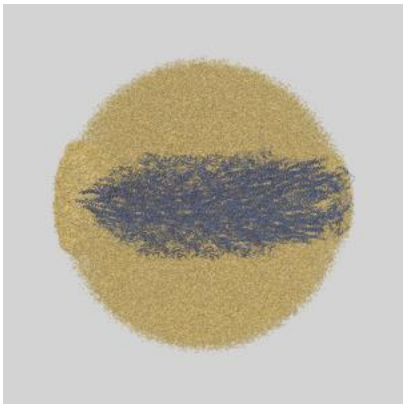
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-63853 and PDB model 9U4R. Per-residue inclusion information can be found in section 3 on page 11.

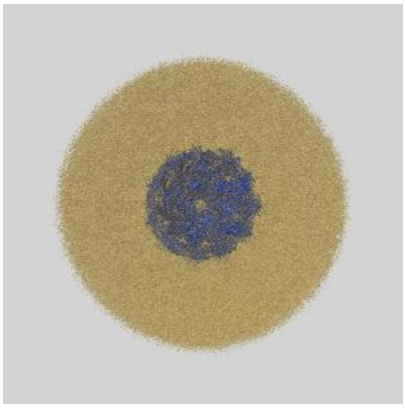
## 9.1 Map-model overlay



X



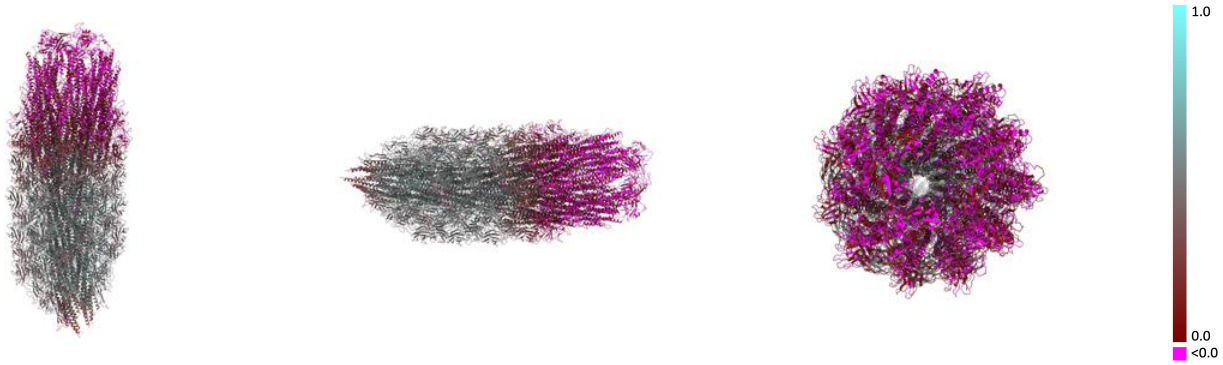
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

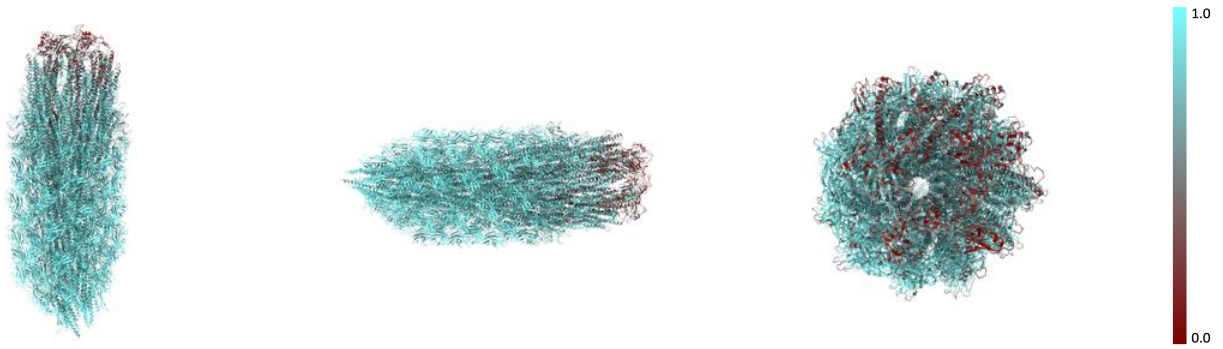
## 9.2 Q-score mapped to coordinate model (i)




X Y Z

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

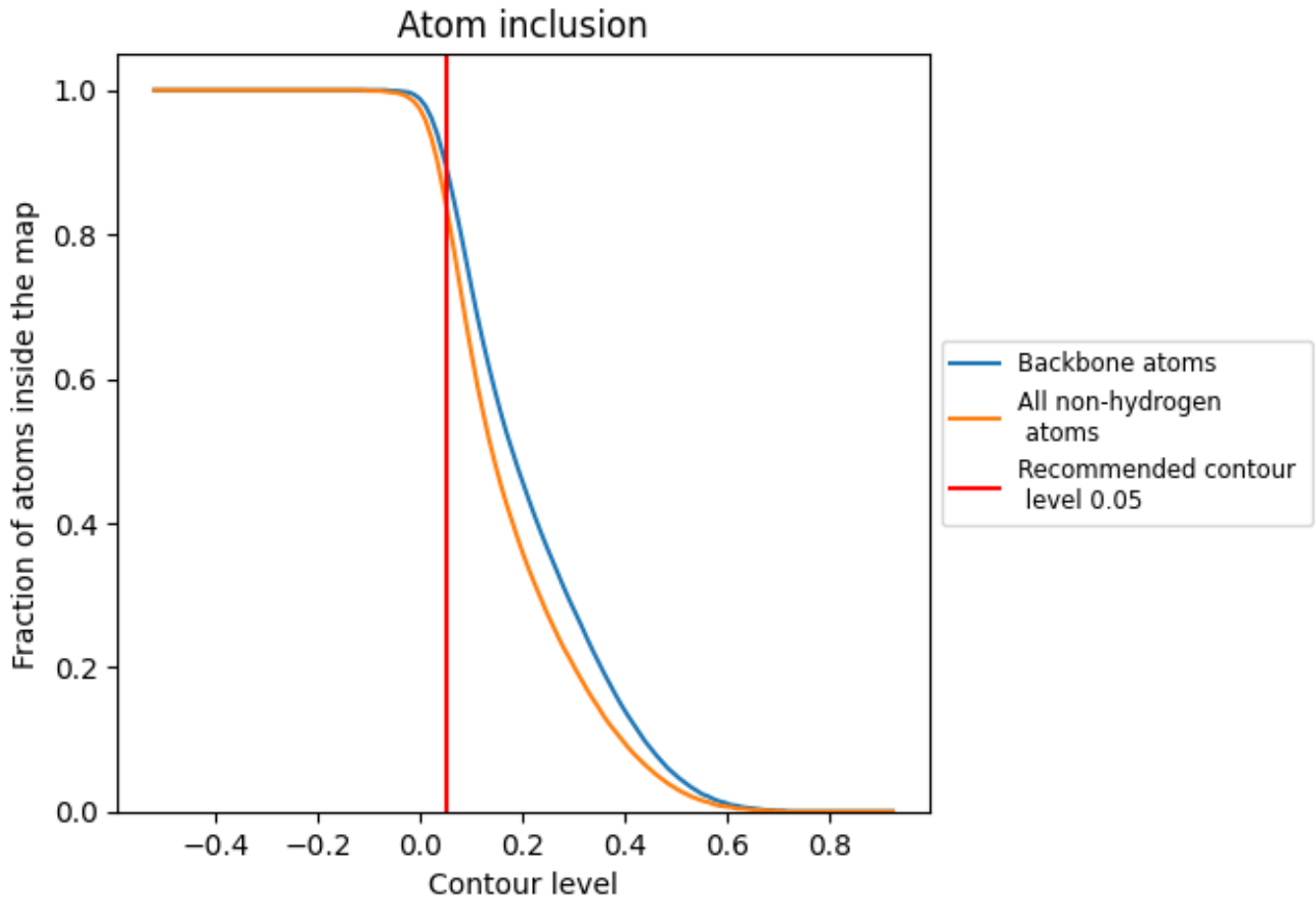
## 9.3 Atom inclusion mapped to coordinate model (i)




X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).

## 9.4 Atom inclusion (i)




At the recommended contour level, 90% of all backbone atoms, 84% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.05) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.8450 | 0.3140 |
| AA | 0.3960 | 0.0380 |
| AB | 0.4110 | 0.0140 |
| AC | 0.4080 | 0.0120 |
| AD | 0.4420 | 0.0300 |
| AE | 0.4440 | 0.0430 |
| BA | 0.7710 | 0.1250 |
| BB | 0.6740 | 0.0710 |
| BC | 0.7910 | 0.0910 |
| BD | 0.5840 | 0.0410 |
| BE | 0.7640 | 0.0860 |
| BG | 0.7520 | 0.1000 |
| BH | 0.8110 | 0.1290 |
| BI | 0.7690 | 0.1010 |
| BJ | 0.8110 | 0.1390 |
| BK | 0.6930 | 0.0880 |
| BL | 0.4750 | 0.0380 |
| BM | 0.5810 | 0.1060 |
| BN | 0.5380 | 0.0760 |
| CA | 0.7580 | 0.1110 |
| CB | 0.8240 | 0.2350 |
| CC | 0.8360 | 0.2100 |
| CD | 0.8360 | 0.1910 |
| CE | 0.8450 | 0.2320 |
| CF | 0.8350 | 0.2070 |
| CG | 0.7870 | 0.1380 |
| CH | 0.8420 | 0.2560 |
| CI | 0.8100 | 0.2020 |
| CJ | 0.8490 | 0.2160 |
| CK | 0.8060 | 0.1750 |
| DA | 0.8200 | 0.2810 |
| DB | 0.8640 | 0.3150 |
| DC | 0.9340 | 0.4280 |
| DD | 0.9240 | 0.4070 |
| DE | 0.9370 | 0.4040 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Atom inclusion | Q-score |
|---|---|---|
| DF | 0.9370 | 0.4410 |
| DG | 0.9270 | 0.3730 |
| DH | 0.9410 | 0.4210 |
| DI | 0.9020 | 0.3700 |
| DJ | 0.9310 | 0.4140 |
| DK | 0.8990 | 0.3620 |
| EA | 0.9410 | 0.4610 |
| EB | 0.9320 | 0.4540 |
| EC | 0.9480 | 0.4830 |
| ED | 0.9440 | 0.4830 |
| EE | 0.9450 | 0.4750 |
| EF | 0.9520 | 0.4830 |
| EG | 0.9500 | 0.4680 |
| EH | 0.9520 | 0.4760 |
| EI | 0.9410 | 0.4450 |
| EJ | 0.9450 | 0.4700 |
| EK | 0.9270 | 0.4390 |
| FA | 0.9460 | 0.4930 |
| FB | 0.9360 | 0.4760 |
| FC | 0.9440 | 0.4900 |
| FD | 0.9380 | 0.4770 |
| FE | 0.9560 | 0.4860 |
| FF | 0.9460 | 0.4620 |
| FG | 0.9500 | 0.4660 |
| FH | 0.9540 | 0.4590 |
| FI | 0.9500 | 0.4820 |
| FJ | 0.9530 | 0.4890 |
| FK | 0.9310 | 0.4690 |
| GA | 0.9410 | 0.4680 |
| GB | 0.9280 | 0.4510 |
| GC | 0.9280 | 0.4390 |
| GD | 0.9290 | 0.4320 |
| GE | 0.9350 | 0.4060 |
| GF | 0.9240 | 0.3460 |
| GG | 0.9460 | 0.4200 |
| GH | 0.9430 | 0.3840 |
| GI | 0.9490 | 0.4370 |
| GJ | 0.9250 | 0.3960 |
| GK | 0.9350 | 0.4590 |