# Full wwPDB EM Validation Report ⓘ

Nov 19, 2026 – 03:16 PM EST

| | | |
|---|---|---|
| PDB ID | : | 9ZKY / pdb_00009zky |
| EMDB ID | : | EMD-74389 |
| Title | : | Cryo-EM Structure of the closed tail complex of Vibrio Phage Peru-2 |
| Authors | : | Yu, H.; Zhao, J.; Robins, W.P.; Liu, J. |
| Deposited on | : | 2025-12-07 |
| Resolution | : | 3.18 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:

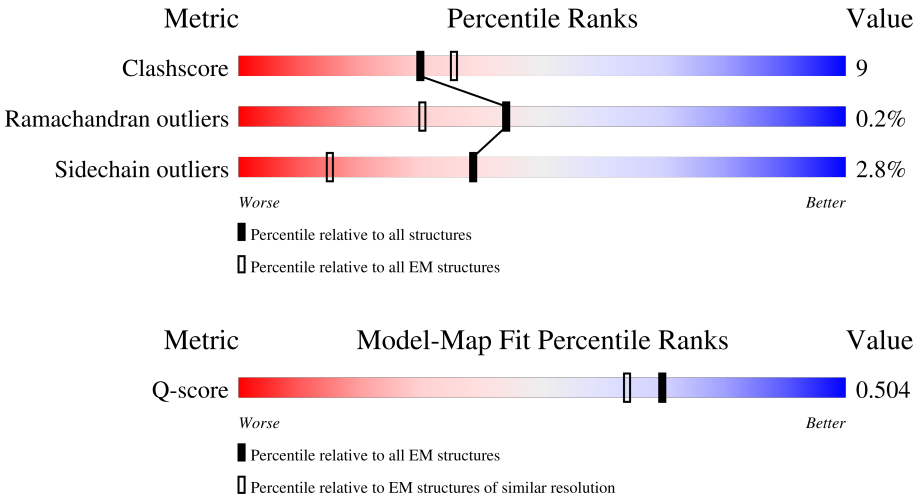
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev133 |
| MolProbity | : | 4-5-2 with Phenix2.2 |
| Percentile statistics | : | 20250101.v01 (using entries in the PDB archive January 1st 2025) |
| EM percentile statistics | : | 202505.v01 (Using data in the EMDB archive up until May 2025) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.51 |

# 1 Overall quality at a glance

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

The reported resolution of this entry is 3.18 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 | 229148 | 23984 | - |
| Ramachandran outliers | 224038 | 23583 | - |
| Sidechain outliers | 223484 | 23102 | - |
| Q-score | - | 25397 | 14470 ( 2.68 - 3.68 ) |

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 | 524 | 18% 70% 15% • 13% |
| 1 | Ab | 524 | 19% 65% 20% • 13% |
| 1 | Ac | 524 | 19% 66% 20% • 13% |
| 1 | Ad | 524 | 20% 68% 19% • 13% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | Ae | 524 | 19% 67% 19% 13% |
| 1 | Af | 524 | 19% 69% 17% 13% |
| 1 | Ag | 524 | 19% 69% 16% 13% |
| 1 | Ah | 524 | 19% 64% 21% 13% |
| 1 | Ai | 524 | 19% 66% 19% 13% |
| 1 | Aj | 524 | 20% 67% 19% 13% |
| 1 | Ak | 524 | 19% 67% 19% 13% |
| 1 | Al | 524 | 20% 70% 15% 13% |
| 2 | Am | 197 | 81% 15% |
| 2 | An | 197 | 82% 14% |
| 2 | Ao | 197 | 80% 16% |
| 2 | Ap | 197 | 80% 16% |
| 2 | Aq | 197 | 83% 14% |
| 2 | Ar | 197 | 80% 16% |
| 2 | As | 197 | 79% 18% |
| 2 | At | 197 | 83% 13% |
| 2 | Au | 197 | 80% 16% |
| 2 | Av | 197 | 5% 80% 17% |
| 2 | Aw | 197 | 81% 16% |
| 2 | Ax | 197 | 80% 16% |
| 3 | Ay | 811 | 6% 73% 26% |
| 3 | Az | 811 | 6% 72% 27% |
| 3 | Ba | 811 | 6% 73% 26% |
| 3 | Bb | 811 | 6% 73% 26% |
| 3 | Bc | 811 | 6% 72% 28% |

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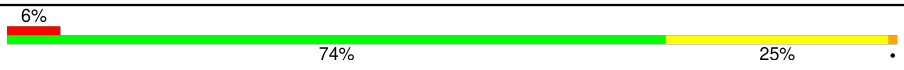
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 3 | Bd | 811 |   |

# 2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 100038 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 Peru-2 portal protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Aa | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ab | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ac | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ad | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ae | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Af | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ag | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ah | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ai | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Aj | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Ak | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |
| 1 | Al | 454 | Total | C | N | O | S | 0 | 0 |
| | | | 3577 | 2264 | 621 | 665 | 27 | | |

- Molecule 2 is a protein called Peru-2 head-tail adaptor protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 2 | Am | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | An | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Ao | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 2 | Ap | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Aq | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Ar | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | As | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | At | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Au | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Av | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Aw | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |
| 2 | Ax | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1553 | 980 | 269 | 293 | 11 | | |

- Molecule 3 is a protein called Peru-2 tail knob protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 3 | Ay | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |
| 3 | Az | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |
| 3 | Ba | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |
| 3 | Bb | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |
| 3 | Bc | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |
| 3 | Bd | 811 | Total | C | N | O | S | 0 | 0 |
| | | | 6413 | 4040 | 1117 | 1233 | 23 | | |

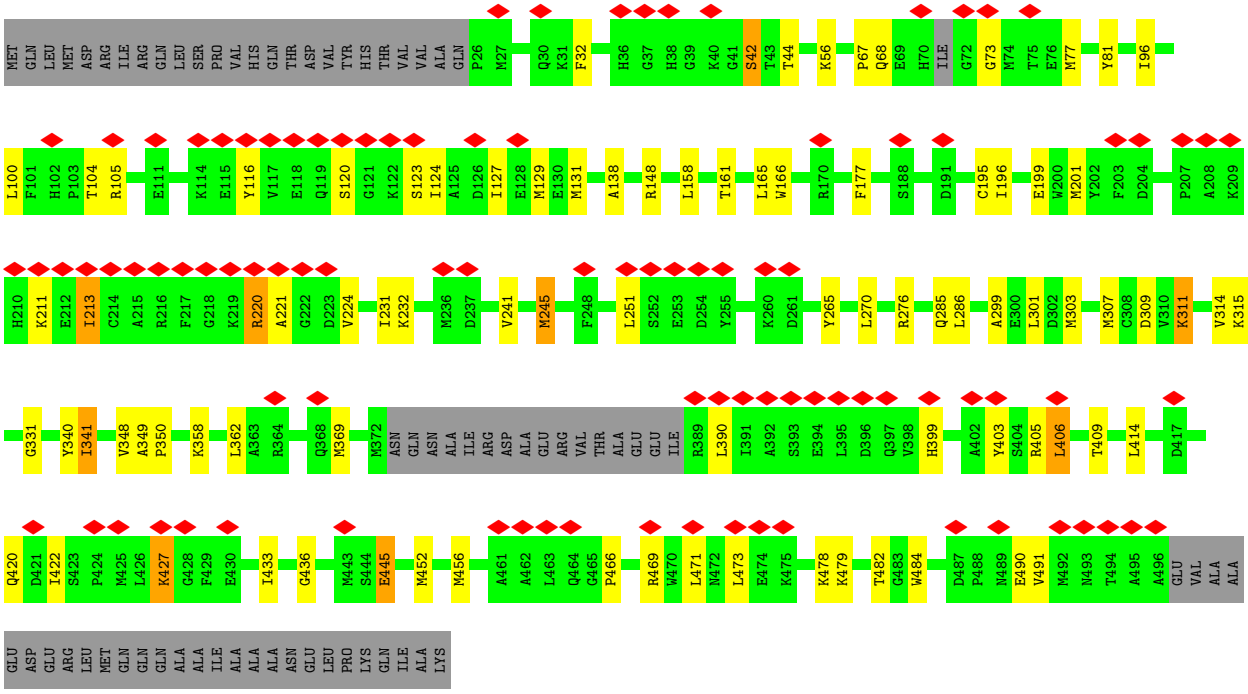
# 3 Residue-property plots (i)

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: Peru-2 portal protein

Chain Aa:

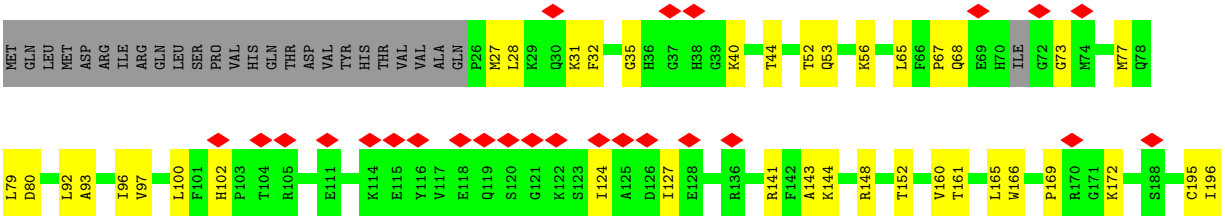


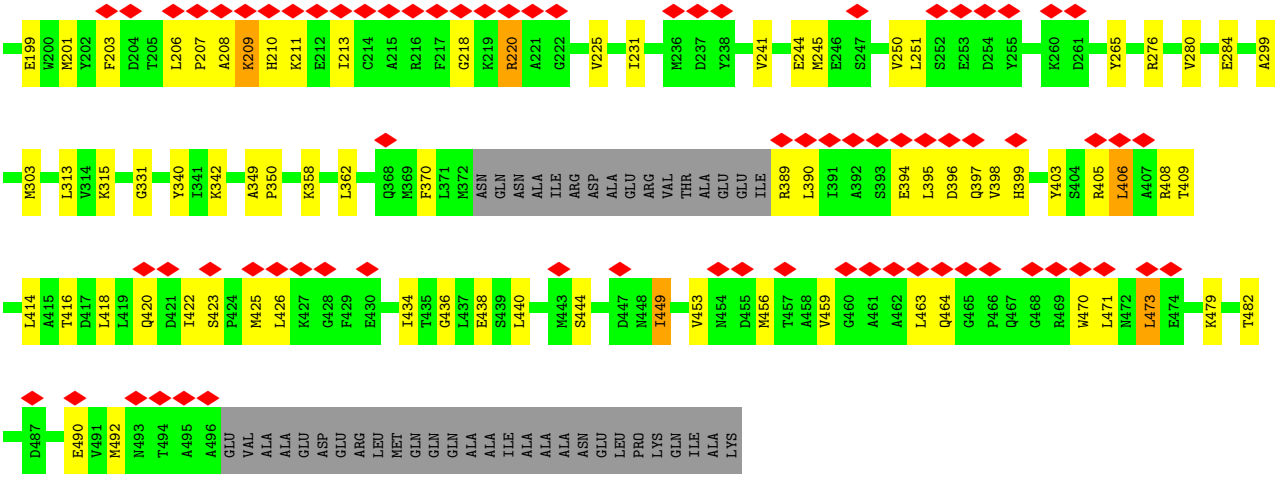



• Molecule 1: Peru-2 portal protein

Chain Ab:



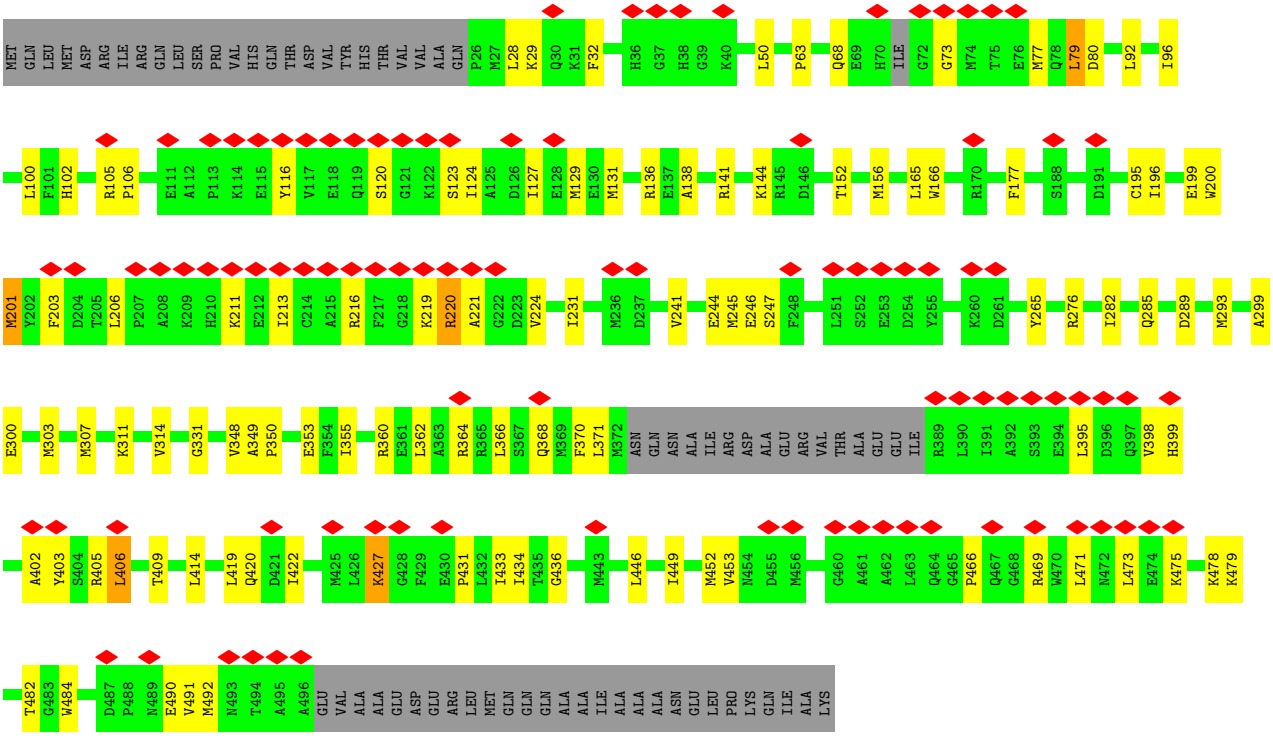





• Molecule 1: Peru-2 portal protein

Chain Ac:

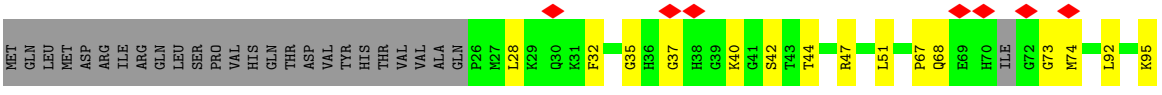


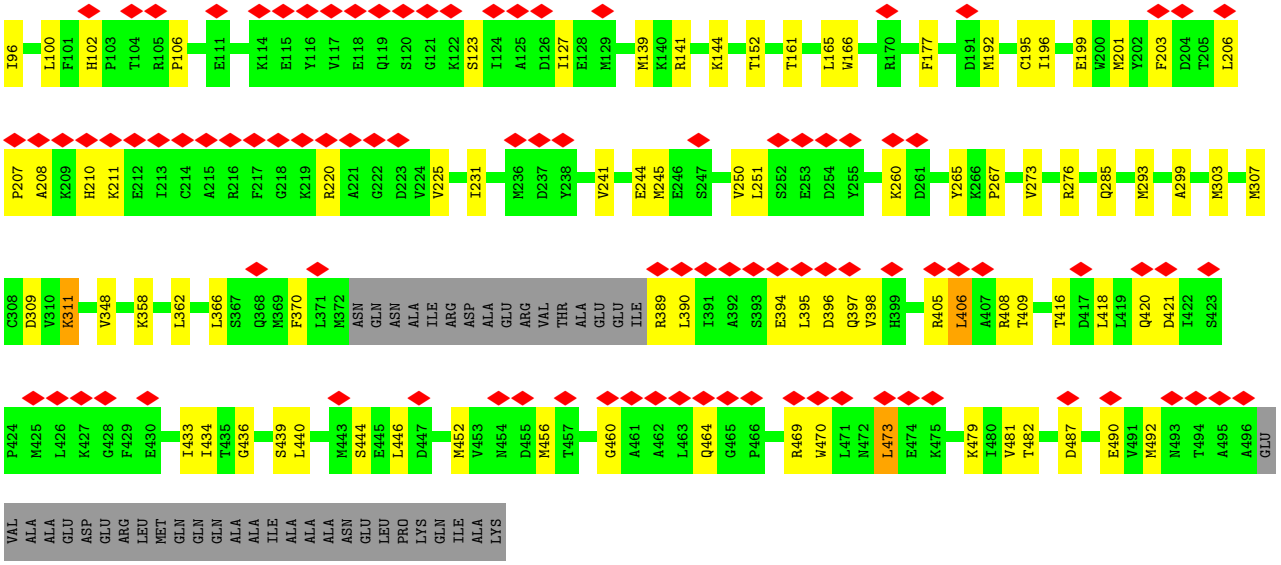



• Molecule 1: Peru-2 portal protein

Chain Ad:



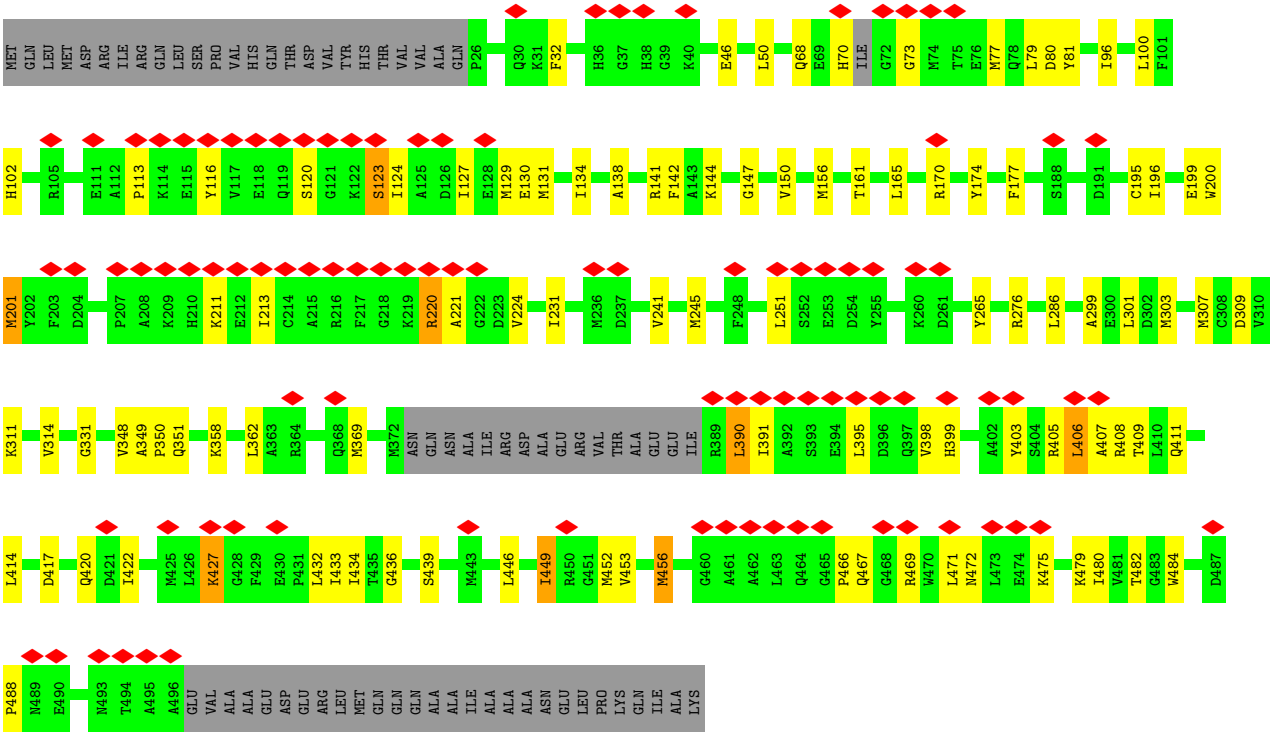





• Molecule 1: Peru-2 portal protein

Chain Ae:

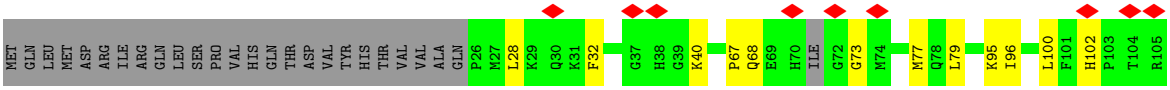


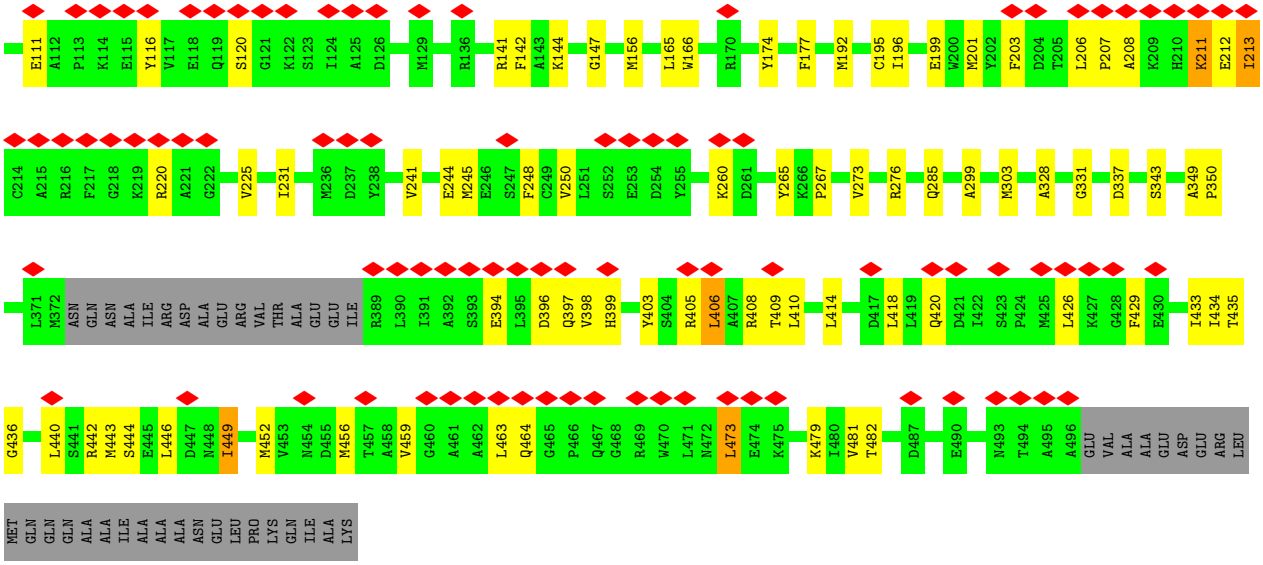



• Molecule 1: Peru-2 portal protein

Chain Af:



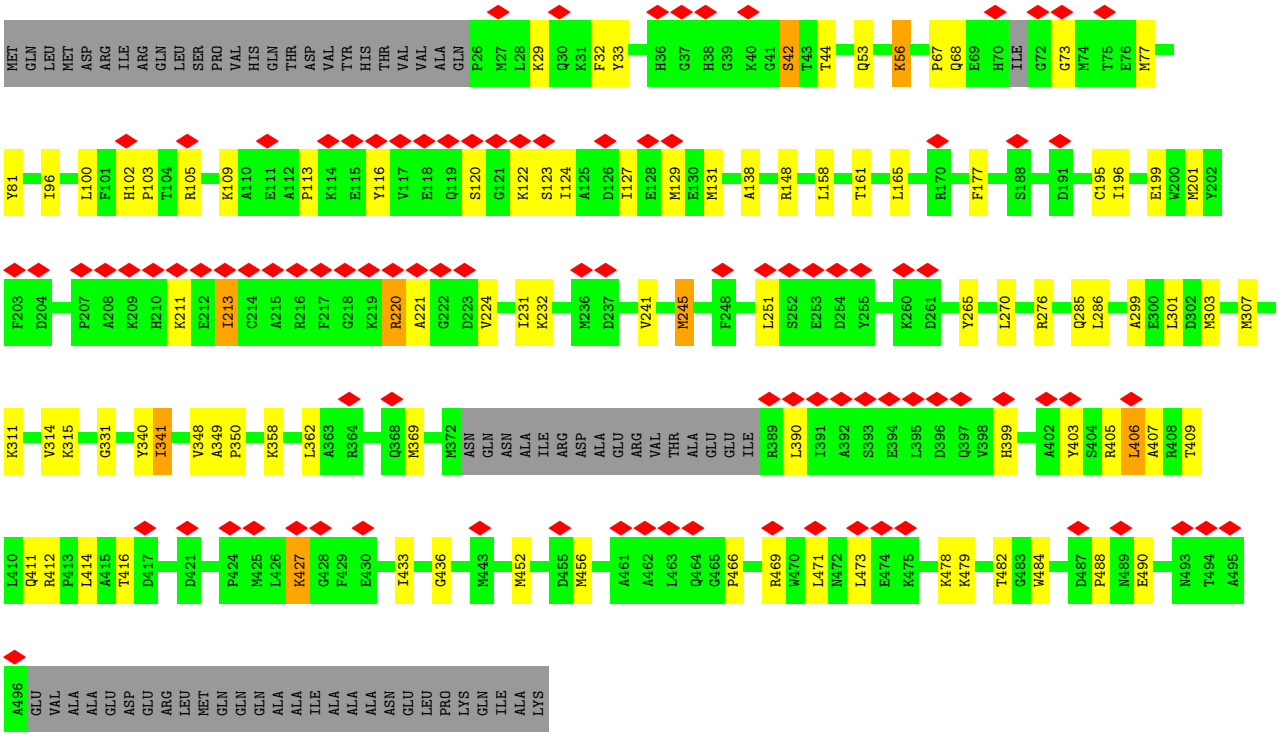






• Molecule 1: Peru-2 portal protein

Chain Ag:

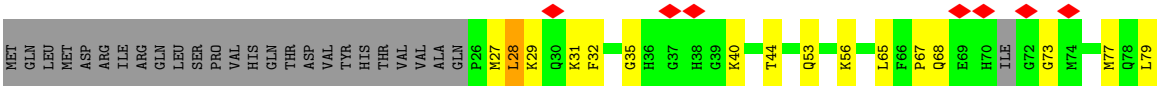


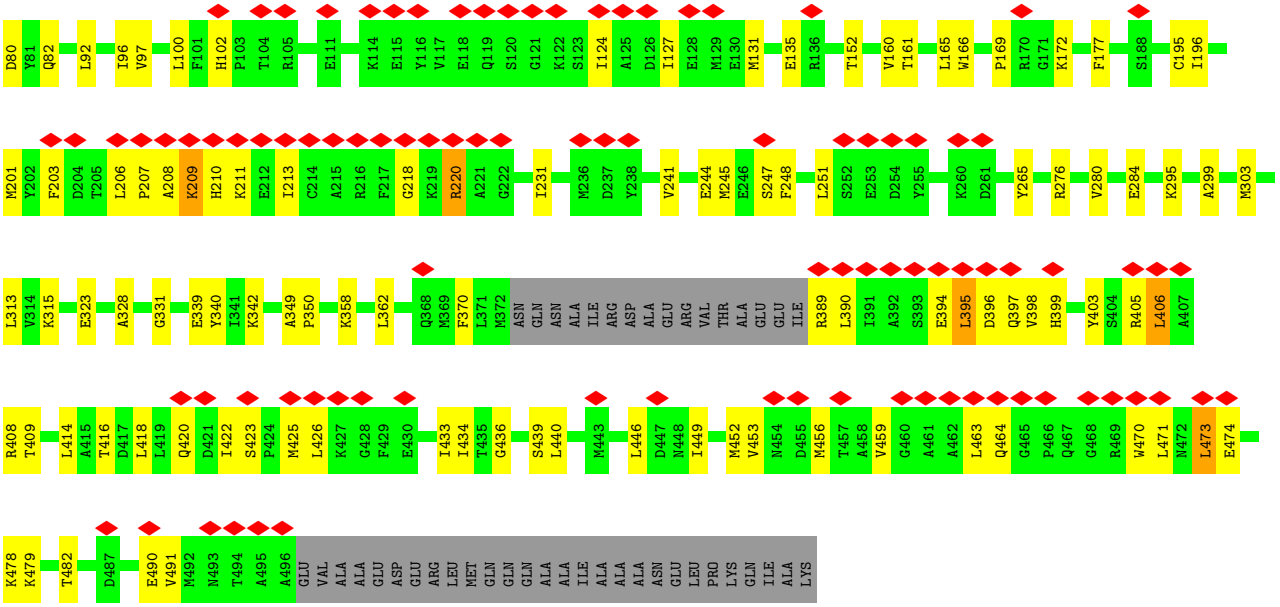




• Molecule 1: Peru-2 portal protein

Chain Ah:



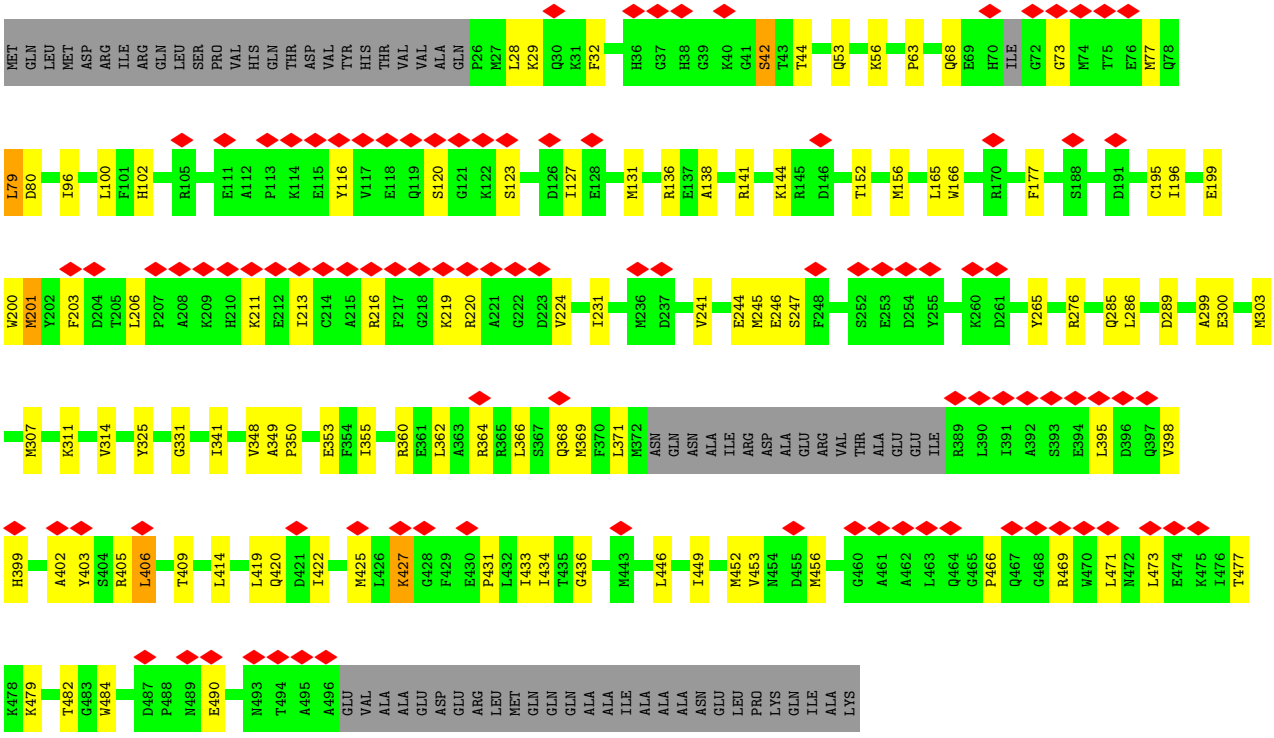





• Molecule 1: Peru-2 portal protein

Chain Ai:

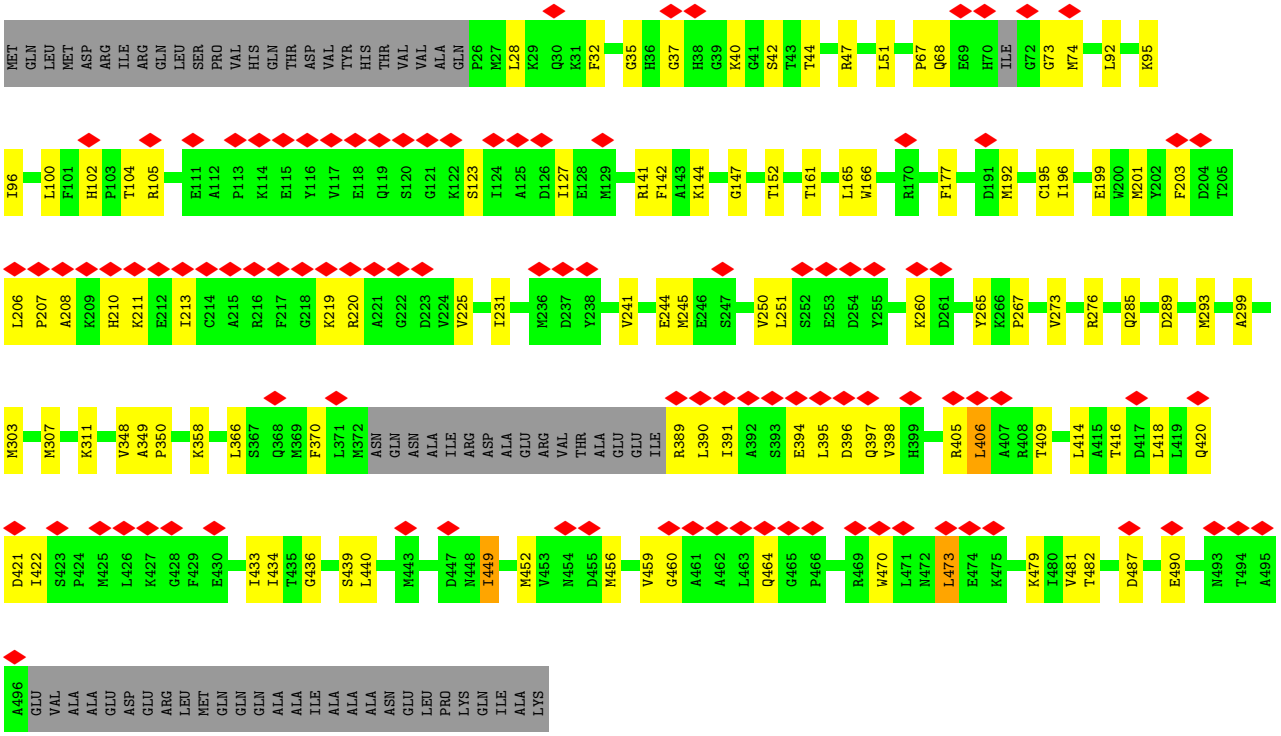


• Molecule 1: Peru-2 portal protein

Chain Aj:

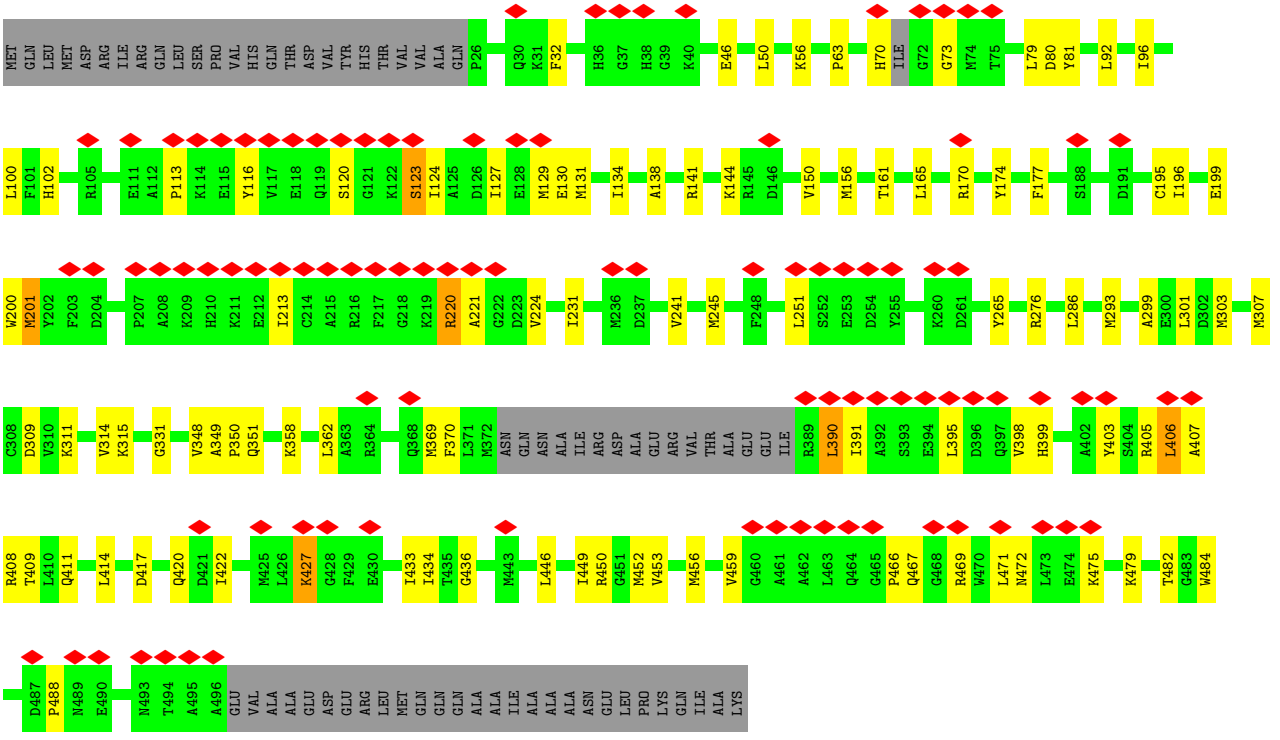




• Molecule 1: Peru-2 portal protein

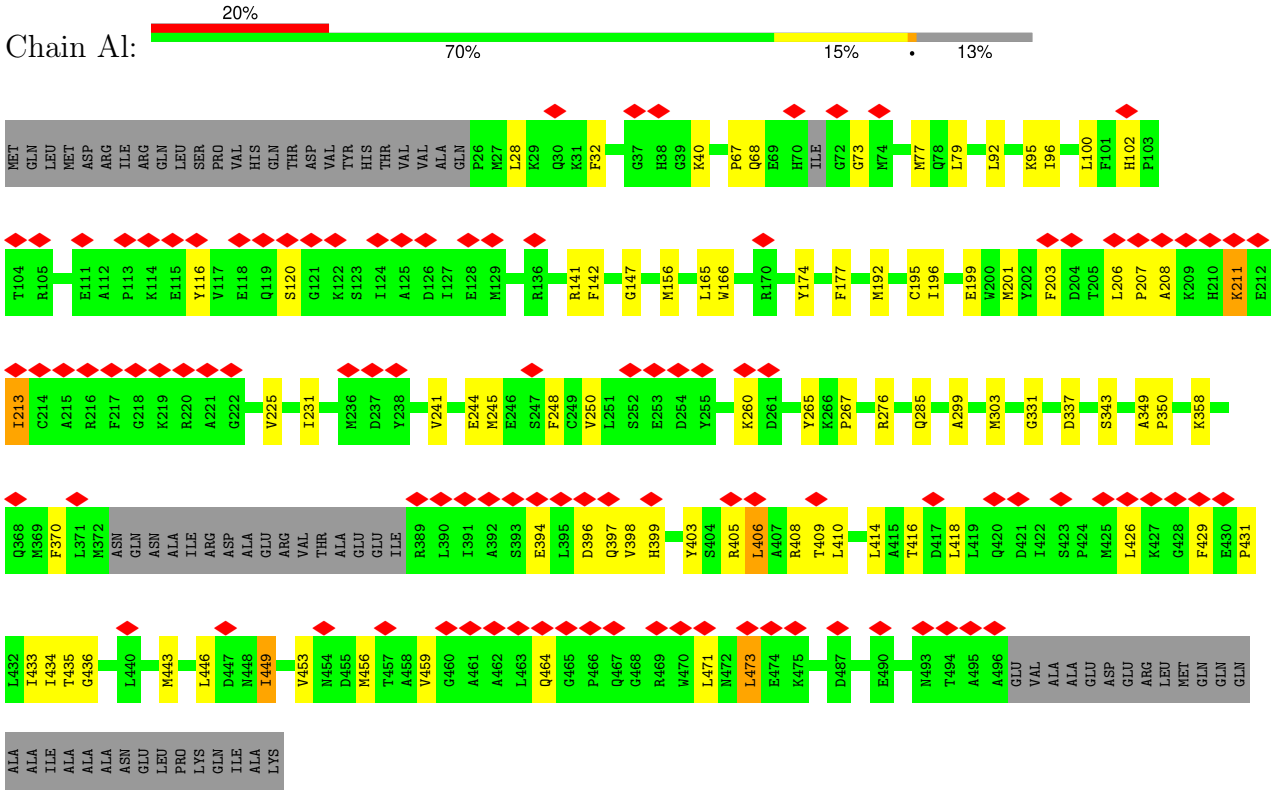
Chain Ak:



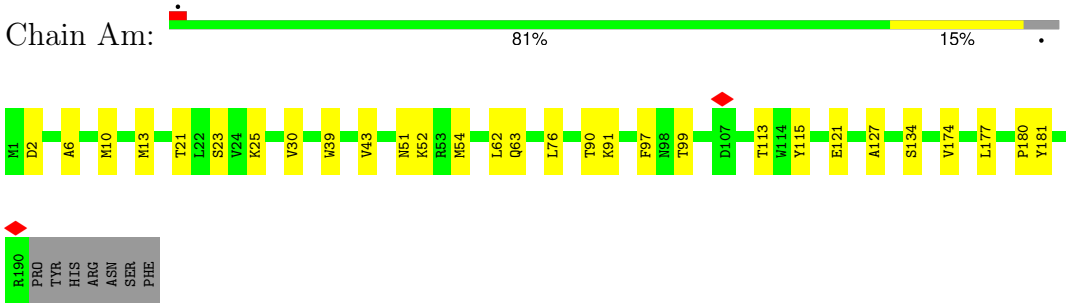
• Molecule 1: Peru-2 portal protein

Chain Al:



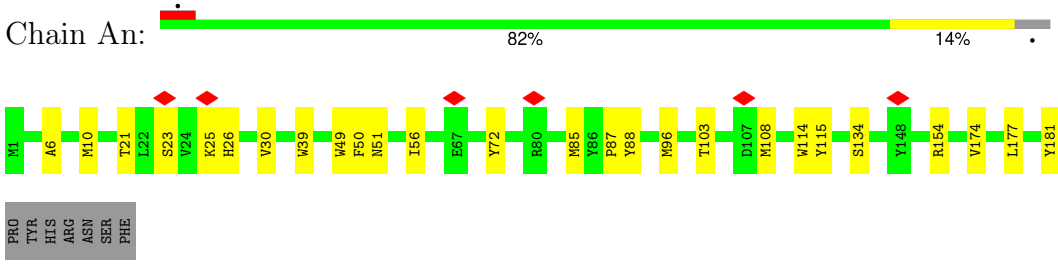

• Molecule 2: Peru-2 head-tail adaptor protein

Chain Am:




• Molecule 2: Peru-2 head-tail adaptor protein

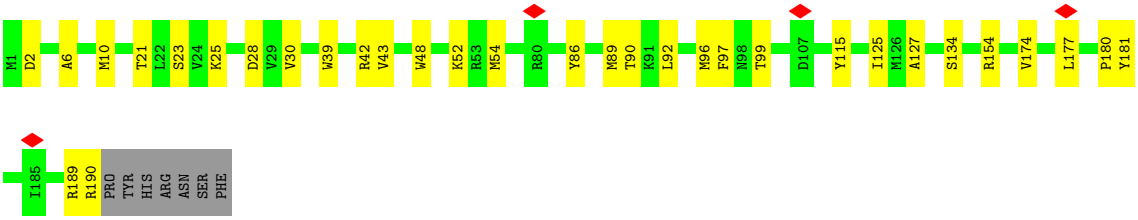
Chain An:




• Molecule 2: Peru-2 head-tail adaptor protein

Chain Ao:

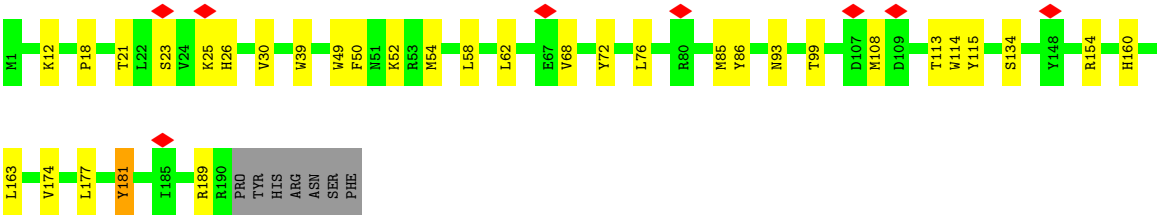





• Molecule 2: Peru-2 head-tail adaptor protein

Chain Ap:

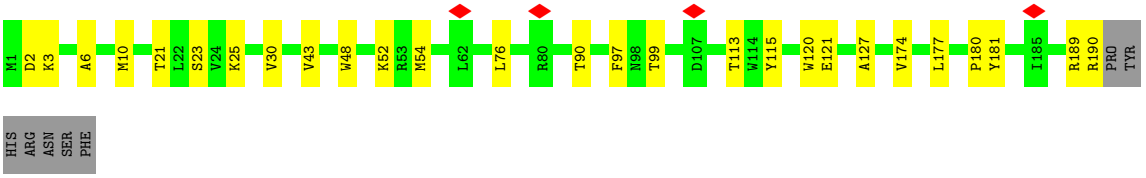



• Molecule 2: Peru-2 head-tail adaptor protein

Chain Aq:

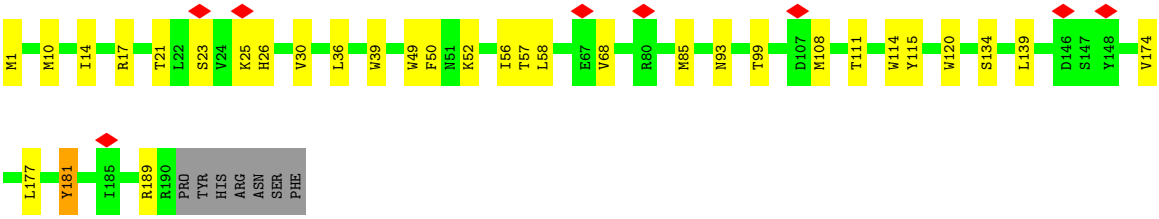



• Molecule 2: Peru-2 head-tail adaptor protein

Chain Ar:

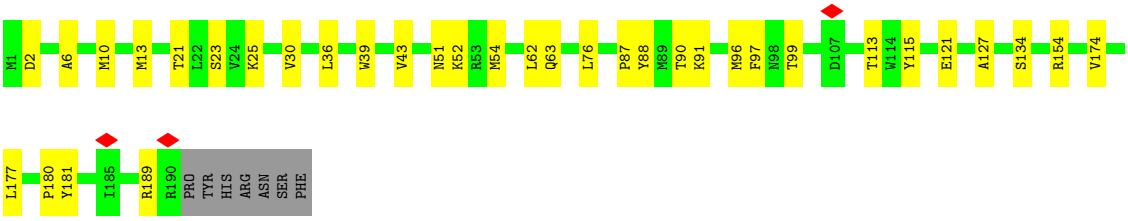



• Molecule 2: Peru-2 head-tail adaptor protein

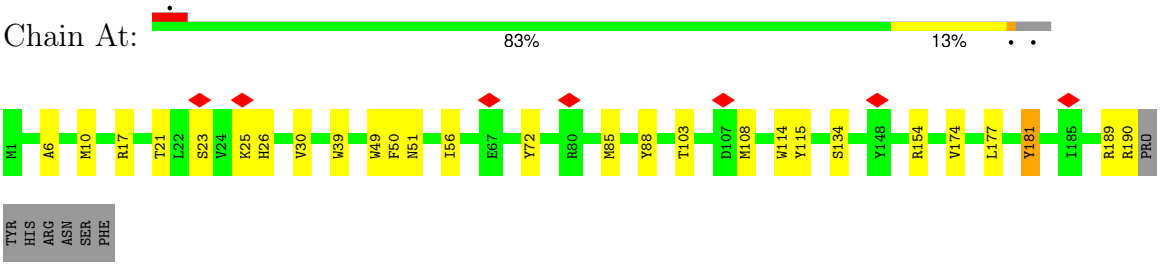
Chain As:



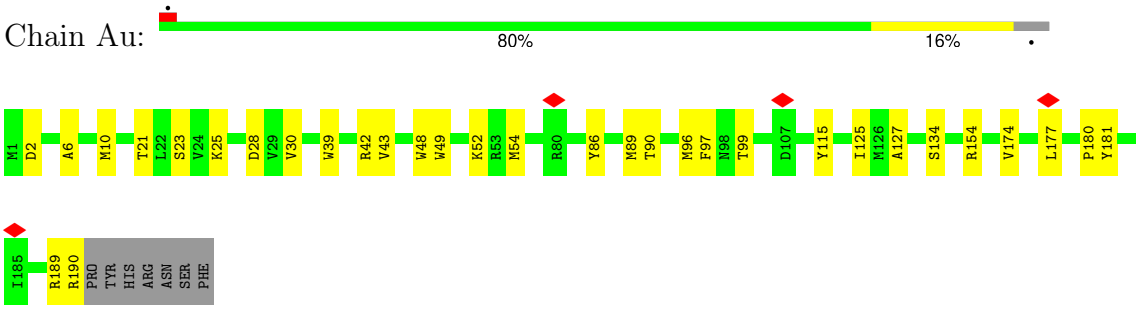
• Molecule 2: Peru-2 head-tail adaptor protein

Chain At:



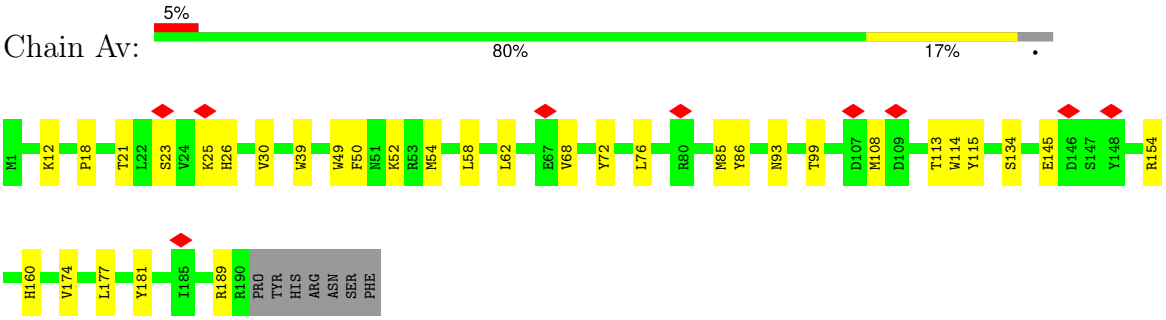

• Molecule 2: Peru-2 head-tail adaptor protein

Chain Au:



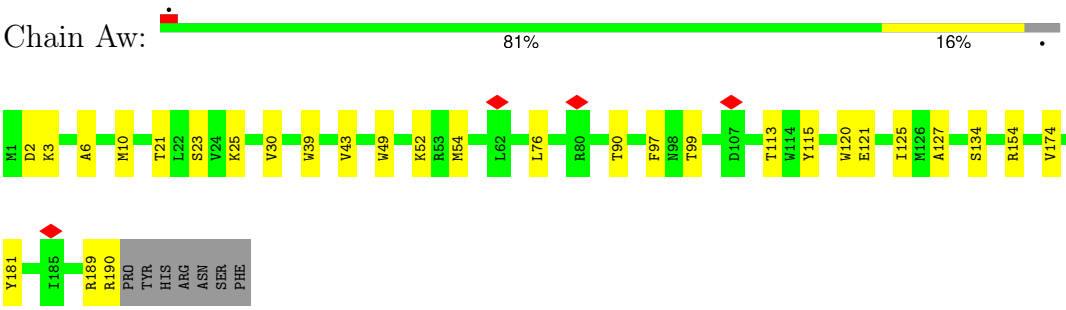

• Molecule 2: Peru-2 head-tail adaptor protein

Chain Av:



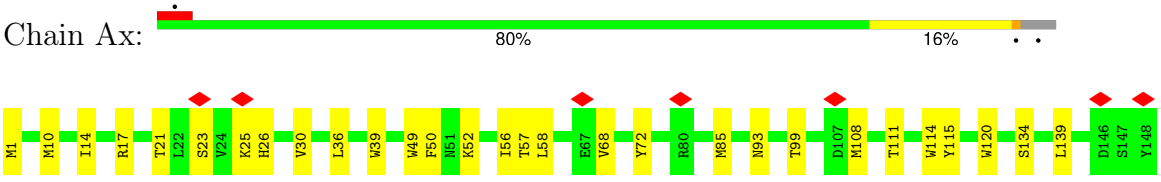

• Molecule 2: Peru-2 head-tail adaptor protein

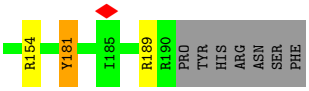
Chain Aw:




• Molecule 2: Peru-2 head-tail adaptor protein

Chain Ax:

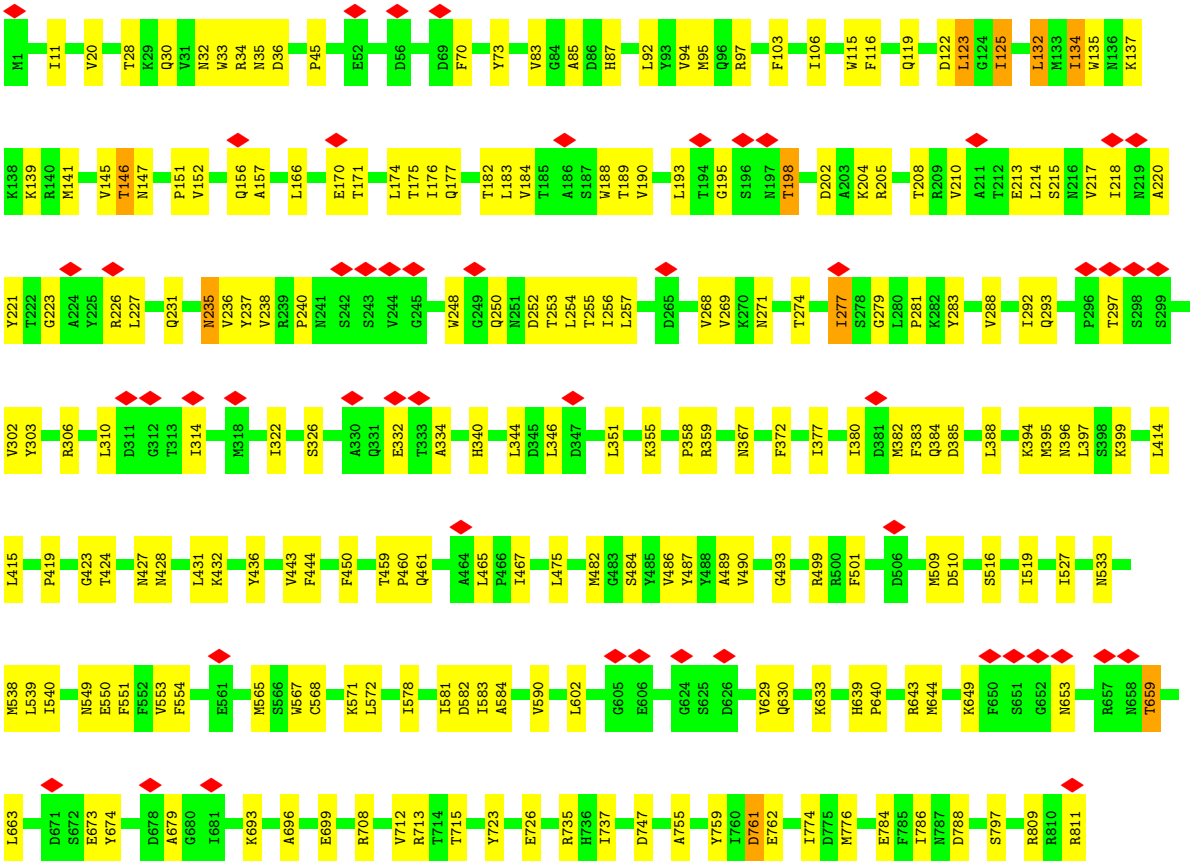





• Molecule 3: Peru-2 tail knob protein

Chain Ay:

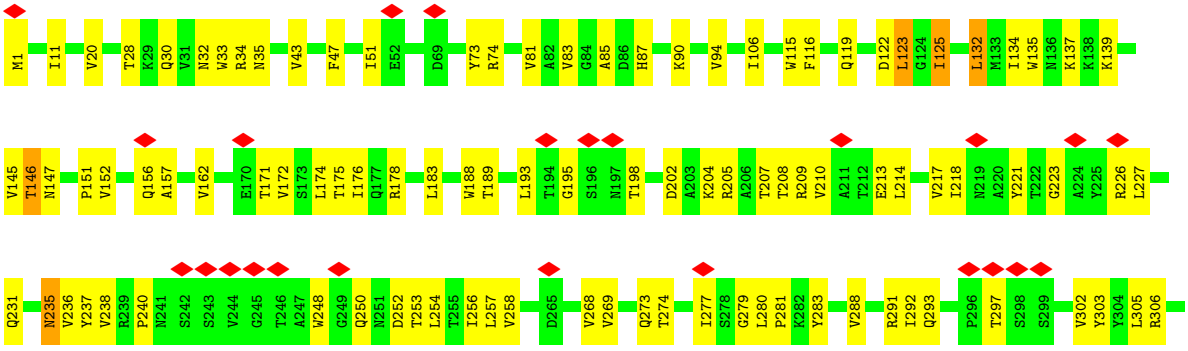


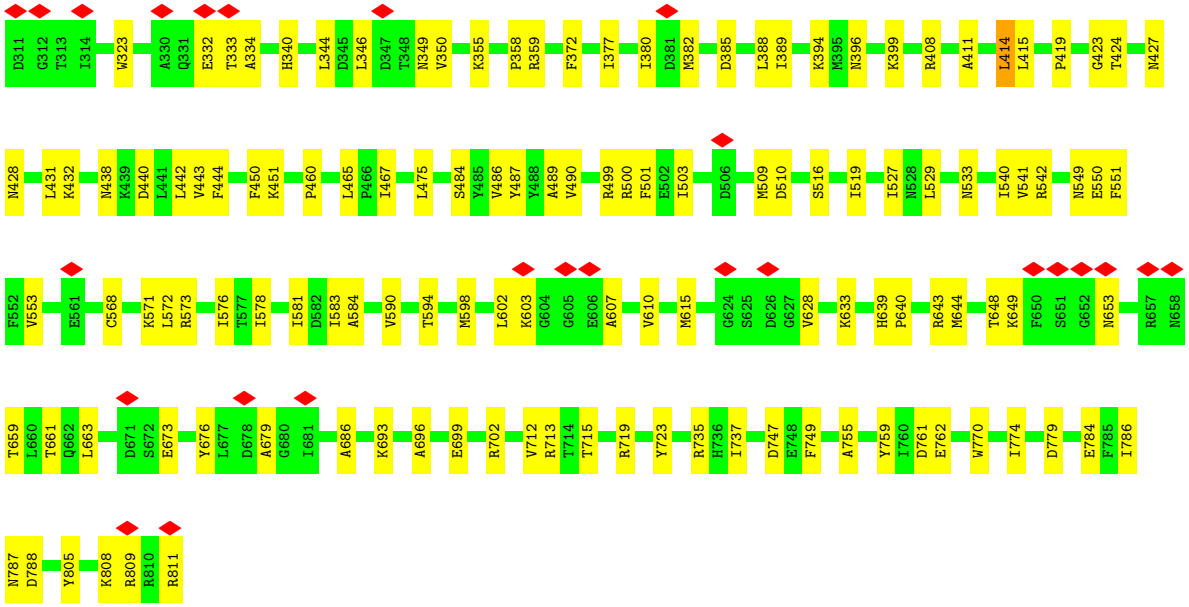




• Molecule 3: Peru-2 tail knob protein

Chain Az:



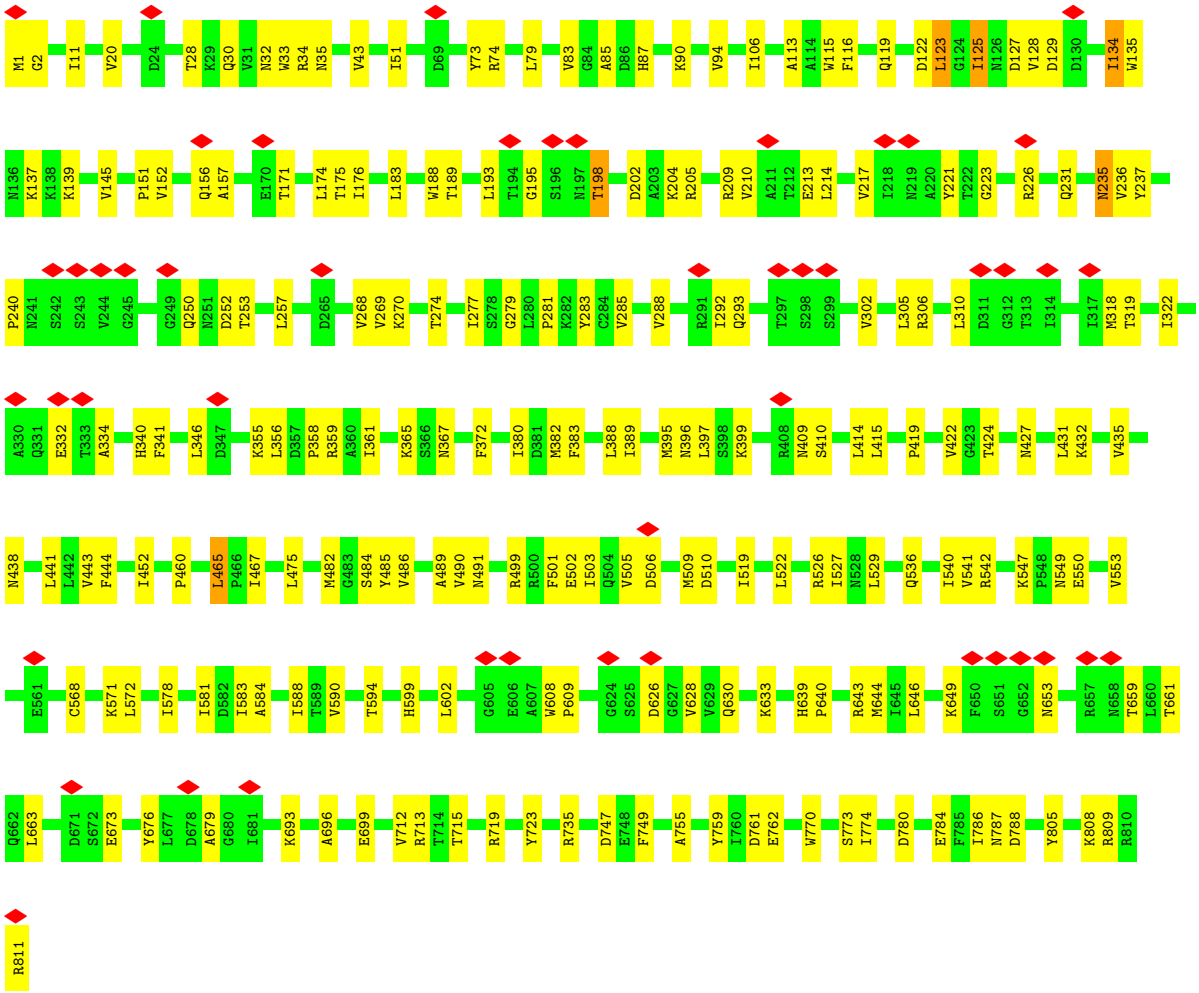





• Molecule 3: Peru-2 tail knob protein

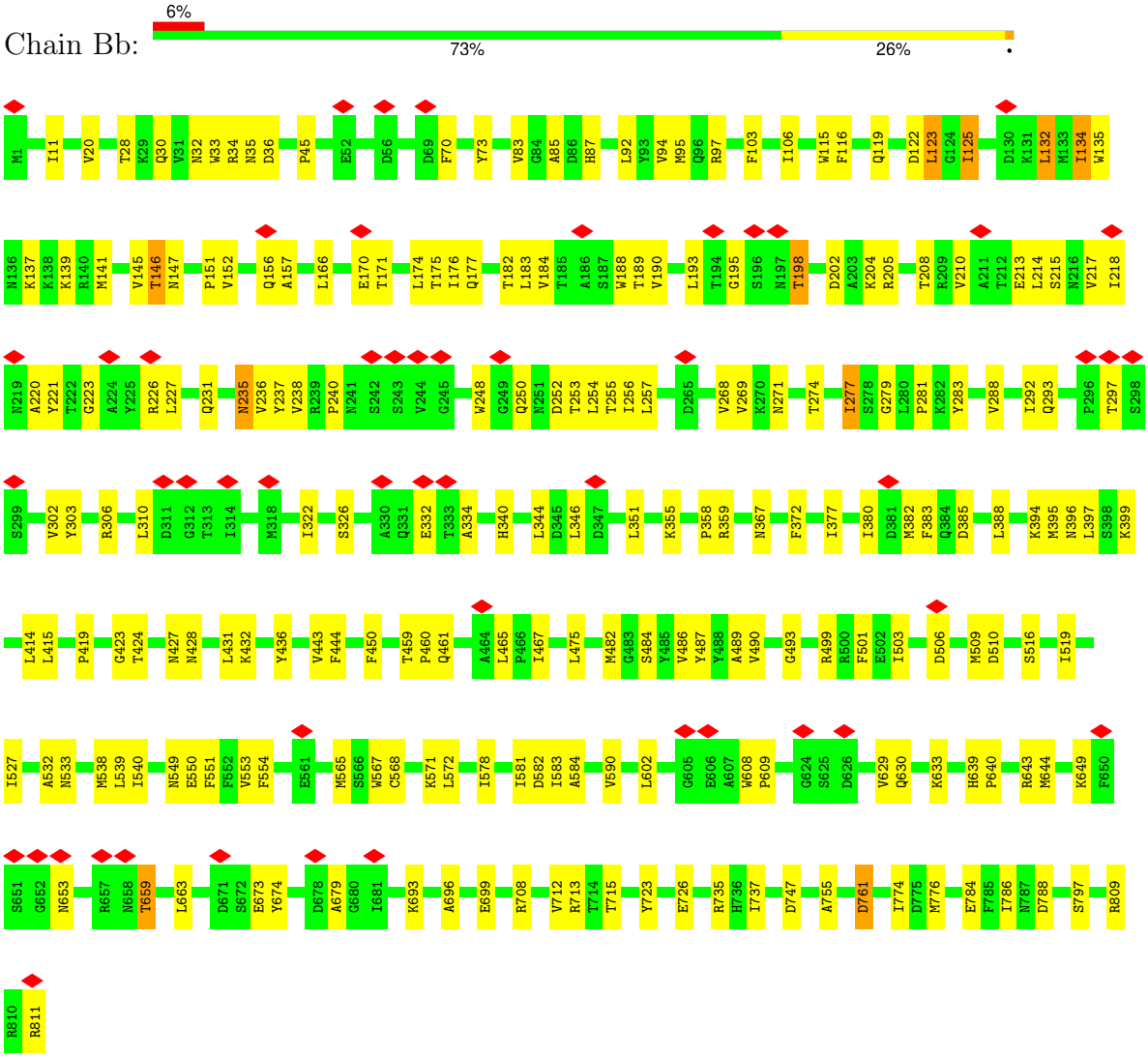
Chain Ba:



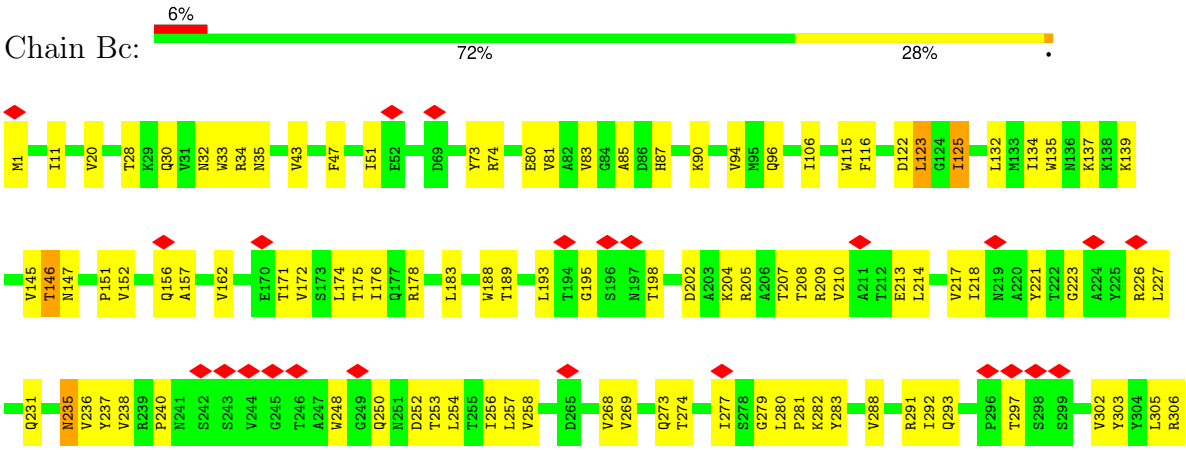
• Molecule 3: Peru-2 tail knob protein

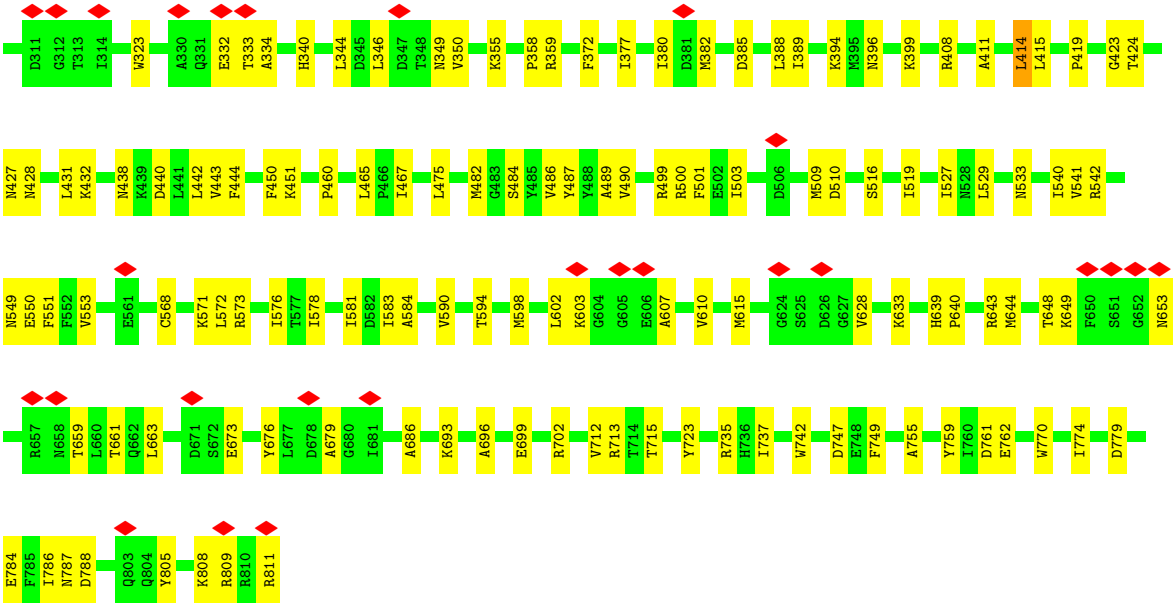
Chain Bb:




• Molecule 3: Peru-2 tail knob protein

Chain Bc:

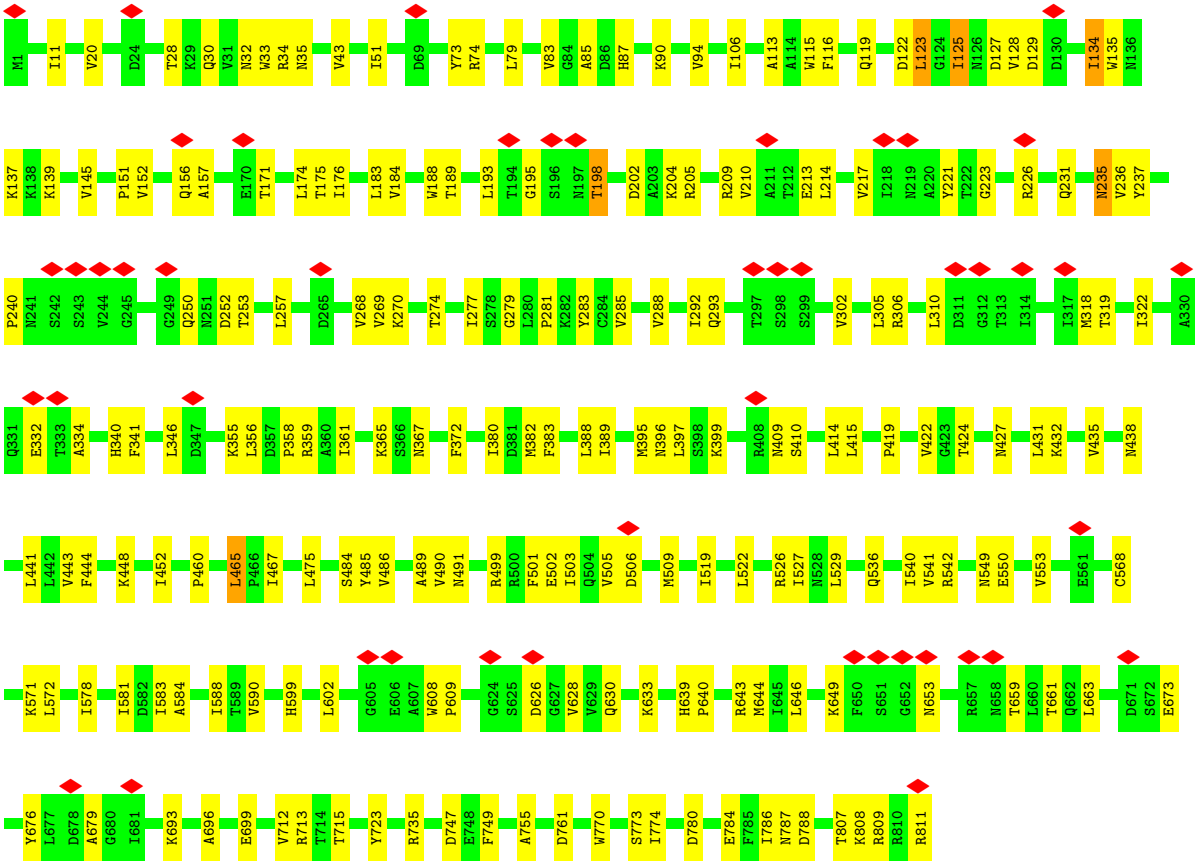





• Molecule 3: Peru-2 tail knob protein

Chain Bd:



# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 33052 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | NONE | Depositor |
| Microscope | TFS KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 50 | Depositor |
| Minimum defocus (nm) | 1600 | Depositor |
| Maximum defocus (nm) | 2000 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 1.313 | Depositor |
| Minimum map value | -0.790 | Depositor |
| Average map value | 0.006 | Depositor |
| Map value standard deviation | 0.052 | Depositor |
| Recommended contour level | 0.25 | Depositor |
| Map size (Å) | 478.464, 478.464, 478.464 | wwPDB |
| Map dimensions | 448, 448, 448 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.068, 1.068, 1.068 | 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 | 0.18 | 0/3653 | 0.46 | 0/4927 |
| 1 | Ab | 0.17 | 0/3653 | 0.47 | 0/4927 |
| 1 | Ac | 0.16 | 0/3653 | 0.47 | 0/4927 |
| 1 | Ad | 0.18 | 0/3653 | 0.47 | 0/4927 |
| 1 | Ae | 0.16 | 0/3653 | 0.46 | 0/4927 |
| 1 | Af | 0.17 | 0/3653 | 0.46 | 0/4927 |
| 1 | Ag | 0.18 | 0/3653 | 0.46 | 0/4927 |
| 1 | Ah | 0.17 | 0/3653 | 0.47 | 0/4927 |
| 1 | Ai | 0.16 | 0/3653 | 0.46 | 0/4927 |
| 1 | Aj | 0.17 | 0/3653 | 0.46 | 0/4927 |
| 1 | Ak | 0.16 | 0/3653 | 0.46 | 0/4927 |
| 1 | Al | 0.18 | 0/3653 | 0.47 | 0/4927 |
| 2 | Am | 0.17 | 0/1588 | 0.43 | 0/2155 |
| 2 | An | 0.17 | 0/1588 | 0.42 | 0/2155 |
| 2 | Ao | 0.17 | 0/1588 | 0.42 | 0/2155 |
| 2 | Ap | 0.16 | 0/1588 | 0.42 | 0/2155 |
| 2 | Aq | 0.17 | 0/1588 | 0.43 | 0/2155 |
| 2 | Ar | 0.16 | 0/1588 | 0.41 | 0/2155 |
| 2 | As | 0.17 | 0/1588 | 0.43 | 0/2155 |
| 2 | At | 0.17 | 0/1588 | 0.42 | 0/2155 |
| 2 | Au | 0.17 | 0/1588 | 0.42 | 0/2155 |
| 2 | Av | 0.16 | 0/1588 | 0.42 | 0/2155 |
| 2 | Aw | 0.16 | 0/1588 | 0.41 | 0/2155 |
| 2 | Ax | 0.16 | 0/1588 | 0.41 | 0/2155 |
| 3 | Ay | 0.16 | 0/6563 | 0.46 | 0/8940 |
| 3 | Az | 0.16 | 0/6563 | 0.47 | 1/8940 (0.0%) |
| 3 | Ba | 0.16 | 0/6563 | 0.46 | 1/8940 (0.0%) |
| 3 | Bb | 0.16 | 0/6563 | 0.46 | 0/8940 |
| 3 | Bc | 0.16 | 0/6563 | 0.47 | 1/8940 (0.0%) |
| 3 | Bd | 0.16 | 0/6563 | 0.46 | 0/8940 |
| All | All | 0.17 | 0/102270 | 0.46 | 3/138624 (0.0%) |

There are no bond length outliers.

All (3) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 3 | Az | 594 | THR | N-CA-C | -5.20 | 108.20 | 114.75 |
| 3 | Bc | 594 | THR | N-CA-C | -5.18 | 108.23 | 114.75 |
| 3 | Ba | 594 | THR | N-CA-C | -5.04 | 108.40 | 114.75 |

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts (i)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | Aa | 3577 | 0 | 3544 | 62 | 0 |
| 1 | Ab | 3577 | 0 | 3544 | 90 | 0 |
| 1 | Ac | 3577 | 0 | 3544 | 80 | 0 |
| 1 | Ad | 3577 | 0 | 3544 | 73 | 0 |
| 1 | Ae | 3577 | 0 | 3544 | 69 | 0 |
| 1 | Af | 3577 | 0 | 3544 | 76 | 0 |
| 1 | Ag | 3577 | 0 | 3544 | 70 | 0 |
| 1 | Ah | 3577 | 0 | 3544 | 88 | 0 |
| 1 | Ai | 3577 | 0 | 3544 | 72 | 0 |
| 1 | Aj | 3577 | 0 | 3544 | 83 | 0 |
| 1 | Ak | 3577 | 0 | 3544 | 75 | 0 |
| 1 | Al | 3577 | 0 | 3544 | 65 | 0 |
| 2 | Am | 1553 | 0 | 1517 | 22 | 0 |
| 2 | An | 1553 | 0 | 1517 | 24 | 0 |
| 2 | Ao | 1553 | 0 | 1517 | 32 | 0 |
| 2 | Ap | 1553 | 0 | 1517 | 26 | 0 |
| 2 | Aq | 1553 | 0 | 1517 | 26 | 0 |
| 2 | Ar | 1553 | 0 | 1517 | 24 | 0 |
| 2 | As | 1553 | 0 | 1517 | 26 | 0 |
| 2 | At | 1553 | 0 | 1517 | 24 | 0 |
| 2 | Au | 1553 | 0 | 1517 | 32 | 0 |
| 2 | Av | 1553 | 0 | 1517 | 24 | 0 |
| 2 | Aw | 1553 | 0 | 1517 | 27 | 0 |
| 2 | Ax | 1553 | 0 | 1517 | 25 | 0 |
| 3 | Ay | 6413 | 0 | 6256 | 139 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 3 | Az | 6413 | 0 | 6256 | 141 | 0 |
| 3 | Ba | 6413 | 0 | 6256 | 144 | 0 |
| 3 | Bb | 6413 | 0 | 6256 | 141 | 0 |
| 3 | Bc | 6413 | 0 | 6256 | 143 | 0 |
| 3 | Bd | 6413 | 0 | 6256 | 136 | 0 |
| All | All | 100038 | 0 | 98268 | 1802 | 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 9.

All (1802) 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) |
|---|---|---|---|
| 3:Bd:332:GLU:HB3 | 3:Bd:359:ARG:HH12 | 1.40 | 0.87 |
| 3:Ay:332:GLU:HB3 | 3:Ay:359:ARG:HH12 | 1.41 | 0.85 |
| 3:Ba:332:GLU:HB3 | 3:Ba:359:ARG:HH12 | 1.40 | 0.85 |
| 3:Bb:332:GLU:HB3 | 3:Bb:359:ARG:HH12 | 1.41 | 0.83 |
| 1:Ab:245:MET:HB2 | 1:Ab:251:LEU:HD11 | 1.61 | 0.83 |
| 1:Aa:68:GLN:H | 2:Am:189:ARG:HH22 | 1.27 | 0.82 |
| 1:Aj:245:MET:HB2 | 1:Aj:251:LEU:HD11 | 1.61 | 0.82 |
| 1:Ak:472:ASN:HD21 | 1:Ak:475:LYS:HB2 | 1.45 | 0.81 |
| 1:Ag:68:GLN:H | 2:As:189:ARG:HH22 | 1.27 | 0.81 |
| 1:Af:68:GLN:HG3 | 2:Ar:189:ARG:HH12 | 1.46 | 0.80 |
| 1:Ah:245:MET:HB2 | 1:Ah:251:LEU:HD11 | 1.63 | 0.80 |
| 3:Ay:629:VAL:HG11 | 3:Ay:644:MET:HE1 | 1.64 | 0.80 |
| 3:Bd:735:ARG:HH21 | 3:Bd:747:ASP:HB2 | 1.46 | 0.80 |
| 3:Bc:332:GLU:HB3 | 3:Bc:359:ARG:HH12 | 1.47 | 0.79 |
| 3:Az:332:GLU:HB3 | 3:Az:359:ARG:HH12 | 1.47 | 0.79 |
| 3:Bb:629:VAL:HG11 | 3:Bb:644:MET:HE1 | 1.63 | 0.79 |
| 3:Ba:735:ARG:HH21 | 3:Ba:747:ASP:HB2 | 1.46 | 0.79 |
| 1:Ad:245:MET:HB2 | 1:Ad:251:LEU:HD11 | 1.63 | 0.79 |
| 1:Ah:79:LEU:HD13 | 1:Ai:285:GLN:HB3 | 1.65 | 0.78 |
| 1:Al:456:MET:HA | 1:Al:459:VAL:HG12 | 1.66 | 0.78 |
| 3:Az:735:ARG:HH21 | 3:Az:747:ASP:HB2 | 1.48 | 0.78 |
| 3:Bc:735:ARG:HH21 | 3:Bc:747:ASP:HB2 | 1.48 | 0.78 |
| 1:Al:68:GLN:HG3 | 2:Ax:189:ARG:HH12 | 1.47 | 0.77 |
| 1:Ab:68:GLN:HG3 | 2:An:189:ARG:HH12 | 1.50 | 0.77 |
| 3:Bd:83:VAL:HG22 | 3:Bd:94:VAL:HG12 | 1.67 | 0.77 |
| 3:Az:644:MET:HB3 | 3:Az:663:LEU:HB2 | 1.66 | 0.77 |
| 3:Az:83:VAL:HG22 | 3:Az:94:VAL:HG12 | 1.66 | 0.76 |
| 3:Ba:83:VAL:HG22 | 3:Ba:94:VAL:HG12 | 1.67 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:399:LYS:HB2 | 3:Bb:419:PRO:HD3 | 1.67 | 0.76 |
| 1:Ab:79:LEU:HD13 | 1:Ac:285:GLN:HB3 | 1.65 | 0.76 |
| 1:Aa:285:GLN:HB3 | 1:Al:79:LEU:HD13 | 1.65 | 0.76 |
| 3:Ay:399:LYS:HB2 | 3:Ay:419:PRO:HD3 | 1.67 | 0.76 |
| 3:Bb:735:ARG:HH21 | 3:Bb:747:ASP:HB2 | 1.49 | 0.76 |
| 3:Ay:83:VAL:HG22 | 3:Ay:94:VAL:HG12 | 1.66 | 0.76 |
| 3:Bb:83:VAL:HG22 | 3:Bb:94:VAL:HG12 | 1.66 | 0.76 |
| 3:Bc:83:VAL:HG22 | 3:Bc:94:VAL:HG12 | 1.66 | 0.76 |
| 3:Bc:644:MET:HB3 | 3:Bc:663:LEU:HB2 | 1.66 | 0.76 |
| 1:Af:79:LEU:HD13 | 1:Ag:285:GLN:HB3 | 1.65 | 0.76 |
| 3:Az:399:LYS:HB2 | 3:Az:419:PRO:HD3 | 1.68 | 0.76 |
| 1:Ac:80:ASP:HB2 | 2:Ao:190:ARG:HH21 | 1.50 | 0.76 |
| 3:Ay:735:ARG:HH21 | 3:Ay:747:ASP:HB2 | 1.49 | 0.76 |
| 3:Ba:310:LEU:HD11 | 3:Ba:322:ILE:HG12 | 1.69 | 0.75 |
| 1:Ah:68:GLN:HG3 | 2:At:189:ARG:HH12 | 1.51 | 0.75 |
| 3:Az:238:VAL:HG11 | 3:Az:256:ILE:HD11 | 1.69 | 0.74 |
| 3:Bc:713:ARG:HH21 | 3:Bc:715:THR:HB | 1.52 | 0.74 |
| 3:Bd:310:LEU:HD11 | 3:Bd:322:ILE:HG12 | 1.69 | 0.74 |
| 3:Ba:399:LYS:HB2 | 3:Ba:419:PRO:HD3 | 1.69 | 0.74 |
| 3:Bc:238:VAL:HG11 | 3:Bc:256:ILE:HD11 | 1.69 | 0.74 |
| 3:Bc:399:LYS:HB2 | 3:Bc:419:PRO:HD3 | 1.68 | 0.74 |
| 3:Bd:399:LYS:HB2 | 3:Bd:419:PRO:HD3 | 1.69 | 0.74 |
| 3:Bb:34:ARG:HH21 | 3:Bb:602:LEU:HD12 | 1.53 | 0.74 |
| 1:Aa:490:GLU:HG3 | 1:Aa:491:VAL:HG23 | 1.70 | 0.73 |
| 1:Ae:479:LYS:HA | 1:Ae:482:THR:HG22 | 1.71 | 0.73 |
| 3:Az:713:ARG:HH21 | 3:Az:715:THR:HB | 1.52 | 0.73 |
| 3:Ba:713:ARG:HH21 | 3:Ba:715:THR:HB | 1.52 | 0.73 |
| 1:Af:442:ARG:HB2 | 1:Ag:105:ARG:HH22 | 1.54 | 0.73 |
| 3:Bd:713:ARG:HH21 | 3:Bd:715:THR:HB | 1.53 | 0.73 |
| 3:Ay:713:ARG:HH21 | 3:Ay:715:THR:HB | 1.54 | 0.72 |
| 3:Ba:359:ARG:HD2 | 3:Ba:367:ASN:HB3 | 1.71 | 0.72 |
| 1:Ai:116:TYR:O | 1:Ai:120:SER:HB3 | 1.90 | 0.72 |
| 3:Bd:359:ARG:HD2 | 3:Bd:367:ASN:HB3 | 1.71 | 0.72 |
| 1:Ak:116:TYR:O | 1:Ak:120:SER:HB3 | 1.90 | 0.72 |
| 3:Bb:713:ARG:HH21 | 3:Bb:715:THR:HB | 1.54 | 0.71 |
| 1:Ac:116:TYR:O | 1:Ac:120:SER:HB3 | 1.90 | 0.71 |
| 1:Ae:116:TYR:O | 1:Ae:120:SER:HB3 | 1.90 | 0.71 |
| 3:Ay:34:ARG:HH21 | 3:Ay:602:LEU:HD12 | 1.53 | 0.70 |
| 1:Ad:68:GLN:HG3 | 2:Ap:189:ARG:HH12 | 1.57 | 0.70 |
| 1:Ae:79:LEU:HD13 | 1:Af:285:GLN:HB3 | 1.72 | 0.70 |
| 1:Ak:79:LEU:HD13 | 1:Al:285:GLN:HB3 | 1.72 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:68:GLN:HG3 | 2:Av:189:ARG:HH12 | 1.57 | 0.70 |
| 3:Ay:188:TRP:HD1 | 3:Ay:210:VAL:HG13 | 1.57 | 0.70 |
| 3:Az:176:ILE:HD13 | 3:Az:218:ILE:HD11 | 1.72 | 0.70 |
| 1:Aj:456:MET:HE1 | 1:Ak:471:LEU:HD21 | 1.74 | 0.70 |
| 3:Bc:85:ALA:HB2 | 3:Bc:123:LEU:HD21 | 1.73 | 0.69 |
| 1:Aa:471:LEU:HD21 | 1:Al:456:MET:HE1 | 1.73 | 0.69 |
| 1:Ai:80:ASP:HB2 | 2:Au:190:ARG:HH21 | 1.56 | 0.69 |
| 1:Aj:449:ILE:HD12 | 1:Ak:479:LYS:HD2 | 1.73 | 0.69 |
| 1:Ah:479:LYS:HA | 1:Ah:482:THR:HG22 | 1.74 | 0.69 |
| 3:Bb:359:ARG:HD2 | 3:Bb:367:ASN:HB3 | 1.75 | 0.69 |
| 3:Ay:359:ARG:HD2 | 3:Ay:367:ASN:HB3 | 1.75 | 0.69 |
| 3:Bb:188:TRP:HD1 | 3:Bb:210:VAL:HG13 | 1.57 | 0.69 |
| 3:Bd:176:ILE:H | 3:Bd:176:ILE:HD12 | 1.56 | 0.69 |
| 3:Ay:380:ILE:HA | 3:Ay:388:LEU:O | 1.93 | 0.69 |
| 3:Ay:310:LEU:HD11 | 3:Ay:322:ILE:HG12 | 1.74 | 0.69 |
| 3:Az:85:ALA:HB2 | 3:Az:123:LEU:HD21 | 1.73 | 0.69 |
| 1:Ah:473:LEU:HD22 | 1:Ai:469:ARG:HH21 | 1.57 | 0.68 |
| 1:Ak:80:ASP:HB2 | 2:Aw:190:ARG:HH21 | 1.58 | 0.68 |
| 3:Bb:257:LEU:HD22 | 3:Bc:283:TYR:HE2 | 1.59 | 0.68 |
| 3:Bc:176:ILE:HD13 | 3:Bc:218:ILE:HD11 | 1.72 | 0.68 |
| 3:Ba:85:ALA:HB2 | 3:Ba:123:LEU:HD21 | 1.74 | 0.68 |
| 3:Ba:176:ILE:H | 3:Ba:176:ILE:HD12 | 1.57 | 0.68 |
| 3:Bb:85:ALA:HB2 | 3:Bb:123:LEU:HD21 | 1.76 | 0.68 |
| 3:Bc:235:ASN:HB3 | 3:Bc:281:PRO:HB3 | 1.74 | 0.68 |
| 3:Az:235:ASN:HB3 | 3:Az:281:PRO:HB3 | 1.74 | 0.68 |
| 1:Ae:68:GLN:H | 2:Aq:189:ARG:HH22 | 1.38 | 0.68 |
| 3:Bc:151:PRO:HB2 | 3:Bc:156:GLN:HG3 | 1.74 | 0.68 |
| 1:Ah:456:MET:HE1 | 1:Ai:471:LEU:HD21 | 1.76 | 0.68 |
| 3:Bb:310:LEU:HD11 | 3:Bb:322:ILE:HG12 | 1.74 | 0.68 |
| 3:Bd:85:ALA:HB2 | 3:Bd:123:LEU:HD21 | 1.74 | 0.68 |
| 3:Bb:380:ILE:HA | 3:Bb:388:LEU:O | 1.94 | 0.67 |
| 3:Az:151:PRO:HB2 | 3:Az:156:GLN:HG3 | 1.74 | 0.67 |
| 3:Ay:257:LEU:HD22 | 3:Az:283:TYR:HE2 | 1.58 | 0.67 |
| 2:Au:90:THR:HG21 | 2:Av:50:PHE:HA | 1.76 | 0.67 |
| 3:Ay:214:LEU:O | 3:Ay:218:ILE:HG12 | 1.95 | 0.67 |
| 3:Ay:85:ALA:HB2 | 3:Ay:123:LEU:HD21 | 1.75 | 0.67 |
| 3:Ay:166:LEU:HD11 | 3:Ay:210:VAL:HG21 | 1.76 | 0.67 |
| 1:Ab:479:LYS:HA | 1:Ab:482:THR:HG22 | 1.78 | 0.66 |
| 1:Ac:63:PRO:HB3 | 2:Ao:190:ARG:HH12 | 1.61 | 0.66 |
| 2:Ao:90:THR:HG21 | 2:Ap:50:PHE:HA | 1.76 | 0.66 |
| 2:As:90:THR:HG21 | 2:At:50:PHE:HA | 1.77 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:214:LEU:O | 3:Bb:218:ILE:HG12 | 1.95 | 0.66 |
| 1:Ae:80:ASP:HB2 | 2:Aq:190:ARG:HH21 | 1.61 | 0.66 |
| 3:Bd:151:PRO:HB2 | 3:Bd:156:GLN:HG3 | 1.78 | 0.66 |
| 3:Ay:28:THR:HB | 3:Ay:699:GLU:HG2 | 1.78 | 0.66 |
| 3:Az:442:LEU:HD13 | 3:Az:451:LYS:HE3 | 1.78 | 0.66 |
| 3:Bc:442:LEU:HD13 | 3:Bc:451:LYS:HE3 | 1.78 | 0.66 |
| 3:Ay:151:PRO:HB2 | 3:Ay:156:GLN:HG3 | 1.78 | 0.66 |
| 3:Bb:151:PRO:HB2 | 3:Bb:156:GLN:HG3 | 1.78 | 0.66 |
| 2:Am:90:THR:HG21 | 2:An:50:PHE:HA | 1.77 | 0.65 |
| 3:Bb:166:LEU:HD11 | 3:Bb:210:VAL:HG21 | 1.76 | 0.65 |
| 3:Ba:151:PRO:HB2 | 3:Ba:156:GLN:HG3 | 1.77 | 0.65 |
| 1:Aa:469:ARG:HH21 | 1:Al:473:LEU:HD22 | 1.59 | 0.65 |
| 1:Ad:473:LEU:HD22 | 1:Ae:469:ARG:HH21 | 1.61 | 0.65 |
| 2:Ao:189:ARG:HH11 | 2:Ao:189:ARG:HG3 | 1.62 | 0.65 |
| 3:Ba:1:MET:HE1 | 3:Ba:805:TYR:HB2 | 1.77 | 0.65 |
| 1:Ai:449:ILE:HD11 | 1:Aj:479:LYS:HD3 | 1.78 | 0.65 |
| 3:Bb:28:THR:HB | 3:Bb:699:GLU:HG2 | 1.78 | 0.65 |
| 1:Aj:473:LEU:HD22 | 1:Ak:469:ARG:HH21 | 1.60 | 0.65 |
| 3:Bc:1:MET:HE1 | 3:Bc:805:TYR:HB2 | 1.78 | 0.65 |
| 1:Ac:68:GLN:H | 2:Ao:189:ARG:HH22 | 1.45 | 0.64 |
| 2:Aq:189:ARG:HG3 | 2:Aq:189:ARG:HH11 | 1.61 | 0.64 |
| 3:Ba:509:MET:HE2 | 3:Bb:503:ILE:HD12 | 1.79 | 0.64 |
| 2:Au:189:ARG:HH11 | 2:Au:189:ARG:HG3 | 1.61 | 0.64 |
| 3:Ay:268:VAL:HG11 | 3:Ay:279:GLY:HA3 | 1.80 | 0.64 |
| 1:Ai:68:GLN:H | 2:Au:189:ARG:HH22 | 1.44 | 0.64 |
| 1:Ai:79:LEU:HD13 | 1:Aj:285:GLN:HB3 | 1.78 | 0.64 |
| 3:Bc:28:THR:HB | 3:Bc:699:GLU:HG2 | 1.79 | 0.64 |
| 1:Al:192:MET:HE2 | 1:Al:267:PRO:HD3 | 1.80 | 0.64 |
| 3:Az:28:THR:HB | 3:Az:699:GLU:HG2 | 1.79 | 0.64 |
| 1:Aj:165:LEU:HD11 | 1:Aj:265:TYR:HB3 | 1.80 | 0.64 |
| 2:As:10:MET:HA | 2:As:13:MET:HG3 | 1.80 | 0.64 |
| 3:Bb:490:VAL:HG21 | 3:Bb:499:ARG:HD2 | 1.80 | 0.64 |
| 1:Ag:116:TYR:O | 1:Ag:120:SER:HB3 | 1.98 | 0.63 |
| 3:Ba:490:VAL:HG21 | 3:Ba:499:ARG:HD2 | 1.79 | 0.63 |
| 1:Ac:79:LEU:HD13 | 1:Ad:285:GLN:HB3 | 1.79 | 0.63 |
| 1:Ac:490:GLU:HG3 | 1:Ac:491:VAL:HG23 | 1.79 | 0.63 |
| 1:Ad:165:LEU:HD11 | 1:Ad:265:TYR:HB3 | 1.80 | 0.63 |
| 1:Ak:299:ALA:O | 1:Ak:303:MET:HG2 | 1.98 | 0.63 |
| 3:Bc:490:VAL:HG21 | 3:Bc:499:ARG:HD2 | 1.79 | 0.63 |
| 1:Ad:32:PHE:HB2 | 1:Ad:196:ILE:HG21 | 1.81 | 0.63 |
| 1:Ah:32:PHE:HB2 | 1:Ah:196:ILE:HG21 | 1.80 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ba:235:ASN:HB3 | 3:Ba:281:PRO:HB3 | 1.80 | 0.63 |
| 1:Ac:32:PHE:HB2 | 1:Ac:196:ILE:HG21 | 1.81 | 0.63 |
| 1:Af:192:MET:HE2 | 1:Af:267:PRO:HD3 | 1.79 | 0.63 |
| 2:Am:10:MET:HA | 2:Am:13:MET:HG3 | 1.80 | 0.63 |
| 3:Az:490:VAL:HG21 | 3:Az:499:ARG:HD2 | 1.79 | 0.63 |
| 1:Aa:116:TYR:O | 1:Aa:120:SER:HB3 | 1.98 | 0.63 |
| 3:Ay:231:GLN:HB2 | 3:Ay:236:VAL:HG13 | 1.81 | 0.63 |
| 3:Bb:231:GLN:HB2 | 3:Bb:236:VAL:HG13 | 1.81 | 0.63 |
| 3:Bd:490:VAL:HG21 | 3:Bd:499:ARG:HD2 | 1.80 | 0.63 |
| 3:Bd:581:ILE:HG12 | 3:Bd:590:VAL:HG22 | 1.81 | 0.63 |
| 3:Bd:28:THR:HB | 3:Bd:699:GLU:HG2 | 1.81 | 0.63 |
| 1:Aa:105:ARG:HD3 | 1:Al:443:MET:HE3 | 1.79 | 0.62 |
| 3:Ay:490:VAL:HG21 | 3:Ay:499:ARG:HD2 | 1.80 | 0.62 |
| 3:Bc:581:ILE:HG12 | 3:Bc:590:VAL:HG22 | 1.81 | 0.62 |
| 3:Bd:380:ILE:HG12 | 3:Bd:389:ILE:HG12 | 1.81 | 0.62 |
| 3:Bb:268:VAL:HG11 | 3:Bb:279:GLY:HA3 | 1.80 | 0.62 |
| 1:Ad:192:MET:HE2 | 1:Ad:267:PRO:HD3 | 1.81 | 0.62 |
| 1:Ab:456:MET:HE1 | 1:Ac:471:LEU:HD21 | 1.80 | 0.62 |
| 1:Af:452:MET:SD | 1:Af:481:VAL:HG12 | 2.39 | 0.62 |
| 1:Aj:192:MET:HE2 | 1:Aj:267:PRO:HD3 | 1.81 | 0.62 |
| 1:Ab:165:LEU:HD11 | 1:Ab:265:TYR:HB3 | 1.81 | 0.62 |
| 3:Ba:257:LEU:HD22 | 3:Bb:283:TYR:HE2 | 1.63 | 0.62 |
| 3:Bc:551:PHE:HE2 | 3:Bc:572:LEU:HD11 | 1.65 | 0.62 |
| 3:Ba:380:ILE:HG12 | 3:Ba:389:ILE:HG12 | 1.81 | 0.62 |
| 1:Ah:165:LEU:HD11 | 1:Ah:265:TYR:HB3 | 1.82 | 0.62 |
| 1:Ak:479:LYS:HA | 1:Ak:482:THR:HG22 | 1.82 | 0.62 |
| 3:Az:581:ILE:HG12 | 3:Az:590:VAL:HG22 | 1.81 | 0.62 |
| 3:Ba:581:ILE:HG12 | 3:Ba:590:VAL:HG22 | 1.81 | 0.62 |
| 3:Bd:235:ASN:HB3 | 3:Bd:281:PRO:HB3 | 1.82 | 0.62 |
| 1:Ae:456:MET:HG3 | 1:Ae:480:ILE:HG21 | 1.83 | 0.61 |
| 1:Ab:423:SER:HB2 | 1:Ab:426:LEU:HD12 | 1.82 | 0.61 |
| 3:Ba:283:TYR:HB3 | 3:Ba:318:MET:HE1 | 1.83 | 0.61 |
| 1:Ag:129:MET:HE3 | 1:Ag:488:PRO:HG3 | 1.81 | 0.61 |
| 3:Ay:283:TYR:HE2 | 3:Bd:257:LEU:HD22 | 1.63 | 0.61 |
| 3:Az:1:MET:HE1 | 3:Az:805:TYR:HB2 | 1.83 | 0.61 |
| 3:Az:551:PHE:HE2 | 3:Az:572:LEU:HD11 | 1.65 | 0.61 |
| 3:Ba:28:THR:HB | 3:Ba:699:GLU:HG2 | 1.81 | 0.61 |
| 1:Ae:32:PHE:HB2 | 1:Ae:196:ILE:HG21 | 1.83 | 0.61 |
| 1:Ah:68:GLN:HG3 | 2:At:189:ARG:NH1 | 2.16 | 0.61 |
| 1:Ab:32:PHE:HB2 | 1:Ab:196:ILE:HG21 | 1.83 | 0.60 |
| 1:Ak:32:PHE:HB2 | 1:Ak:196:ILE:HG21 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:482:MET:HE1 | 3:Bb:539:LEU:HG | 1.83 | 0.60 |
| 1:Ac:422:ILE:HA | 1:Ad:141:ARG:HH12 | 1.65 | 0.60 |
| 1:Ad:479:LYS:HA | 1:Ad:482:THR:HG22 | 1.82 | 0.60 |
| 1:Ah:152:THR:HG21 | 1:Ah:405:ARG:HH11 | 1.64 | 0.60 |
| 3:Bd:175:THR:HB | 3:Bd:257:LEU:HB2 | 1.84 | 0.60 |
| 3:Bd:283:TYR:HB3 | 3:Bd:318:MET:HE1 | 1.82 | 0.60 |
| 1:Aa:127:ILE:O | 1:Aa:131:MET:HG2 | 2.00 | 0.60 |
| 1:Af:418:LEU:HD23 | 1:Ag:138:ALA:HB1 | 1.84 | 0.60 |
| 2:Ao:21:THR:HG22 | 2:Ao:23:SER:H | 1.67 | 0.60 |
| 1:Af:456:MET:HE1 | 1:Ag:471:LEU:HD21 | 1.82 | 0.60 |
| 1:Ah:218:GLY:HA3 | 1:Ah:220:ARG:HH21 | 1.67 | 0.60 |
| 2:As:25:LYS:HE3 | 2:As:30:VAL:HG22 | 1.84 | 0.60 |
| 2:Aw:90:THR:HG21 | 2:Ax:50:PHE:HA | 1.83 | 0.60 |
| 3:Ay:293:GLN:HA | 3:Ay:302:VAL:HG22 | 1.84 | 0.60 |
| 3:Bb:293:GLN:HA | 3:Bb:302:VAL:HG22 | 1.84 | 0.60 |
| 1:Aa:138:ALA:HB1 | 1:Al:418:LEU:HD23 | 1.83 | 0.59 |
| 1:Ah:423:SER:HB2 | 1:Ah:426:LEU:HD12 | 1.83 | 0.59 |
| 2:Aq:90:THR:HG21 | 2:Ar:50:PHE:HA | 1.83 | 0.59 |
| 3:Ay:482:MET:HE1 | 3:Ay:539:LEU:HG | 1.84 | 0.59 |
| 3:Ba:175:THR:HB | 3:Ba:257:LEU:HB2 | 1.84 | 0.59 |
| 1:Aa:32:PHE:HB2 | 1:Aa:196:ILE:HG21 | 1.85 | 0.59 |
| 1:Al:165:LEU:HD11 | 1:Al:265:TYR:HB3 | 1.83 | 0.59 |
| 2:Am:25:LYS:HE3 | 2:Am:30:VAL:HG22 | 1.84 | 0.59 |
| 2:Au:52:LYS:HE3 | 2:Au:54:MET:HE2 | 1.84 | 0.59 |
| 3:Ay:235:ASN:HB3 | 3:Ay:281:PRO:HB3 | 1.84 | 0.59 |
| 1:Ab:152:THR:HG21 | 1:Ab:405:ARG:HH11 | 1.66 | 0.59 |
| 1:Af:443:MET:H | 1:Ag:105:ARG:NH1 | 2.01 | 0.59 |
| 2:Au:177:LEU:HB2 | 2:Au:180:PRO:HD2 | 1.85 | 0.59 |
| 3:Bd:723:TYR:HD2 | 3:Bd:774:ILE:HG13 | 1.68 | 0.59 |
| 1:Ag:127:ILE:O | 1:Ag:131:MET:HG2 | 2.01 | 0.59 |
| 1:Al:244:GLU:HG2 | 1:Al:250:VAL:HG22 | 1.84 | 0.59 |
| 2:Ax:21:THR:HG22 | 2:Ax:23:SER:H | 1.67 | 0.59 |
| 1:Aj:32:PHE:HB2 | 1:Aj:196:ILE:HG21 | 1.85 | 0.59 |
| 2:Av:21:THR:HG22 | 2:Av:23:SER:H | 1.68 | 0.59 |
| 3:Az:293:GLN:HA | 3:Az:302:VAL:HG22 | 1.85 | 0.59 |
| 3:Ba:293:GLN:HA | 3:Ba:302:VAL:HG22 | 1.85 | 0.59 |
| 1:Ab:218:GLY:HA3 | 1:Ab:220:ARG:HH21 | 1.66 | 0.58 |
| 1:Ad:406:LEU:HD21 | 1:Ae:96:ILE:HG23 | 1.85 | 0.58 |
| 1:Ah:299:ALA:O | 1:Ah:303:MET:HG2 | 2.03 | 0.58 |
| 2:Au:21:THR:HG22 | 2:Au:23:SER:H | 1.66 | 0.58 |
| 2:Ao:177:LEU:HB2 | 2:Ao:180:PRO:HD2 | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bc:293:GLN:HA | 3:Bc:302:VAL:HG22 | 1.85 | 0.58 |
| 1:Ab:299:ALA:O | 1:Ab:303:MET:HG2 | 2.03 | 0.58 |
| 1:Ad:307:MET:HE3 | 1:Ae:351:GLN:HE22 | 1.68 | 0.58 |
| 1:Ag:32:PHE:HB2 | 1:Ag:196:ILE:HG21 | 1.84 | 0.58 |
| 2:At:21:THR:HG22 | 2:At:23:SER:H | 1.68 | 0.58 |
| 3:Bd:293:GLN:HA | 3:Bd:302:VAL:HG22 | 1.85 | 0.58 |
| 1:Af:244:GLU:HG2 | 1:Af:250:VAL:HG22 | 1.84 | 0.58 |
| 1:Ai:422:ILE:HA | 1:Aj:141:ARG:HH12 | 1.67 | 0.58 |
| 2:Ar:21:THR:HG22 | 2:Ar:23:SER:H | 1.67 | 0.58 |
| 3:Bb:235:ASN:HB3 | 3:Bb:281:PRO:HB3 | 1.84 | 0.58 |
| 2:Ao:52:LYS:HE3 | 2:Ao:54:MET:HE2 | 1.84 | 0.58 |
| 3:Ay:809:ARG:HG2 | 3:Ay:811:ARG:HH12 | 1.69 | 0.58 |
| 3:Bb:95:MET:HG3 | 3:Bb:103:PHE:CD2 | 2.39 | 0.58 |
| 3:Bd:318:MET:HE3 | 3:Bd:319:THR:N | 2.19 | 0.58 |
| 1:Aj:433:ILE:HG22 | 1:Aj:436:GLY:H | 1.68 | 0.58 |
| 3:Az:193:LEU:HD23 | 3:Ba:198:THR:HG21 | 1.86 | 0.58 |
| 3:Ba:231:GLN:HB2 | 3:Ba:236:VAL:HG13 | 1.86 | 0.58 |
| 3:Ba:723:TYR:HD2 | 3:Ba:774:ILE:HG13 | 1.68 | 0.58 |
| 3:Bc:73:TYR:CE2 | 3:Bc:584:ALA:HB3 | 2.38 | 0.58 |
| 1:Al:96:ILE:O | 1:Al:100:LEU:HB2 | 2.04 | 0.57 |
| 3:Az:431:LEU:HD13 | 3:Az:443:VAL:HG11 | 1.86 | 0.57 |
| 3:Bc:431:LEU:HD13 | 3:Bc:443:VAL:HG11 | 1.86 | 0.57 |
| 3:Az:273:GLN:HG3 | 3:Az:291:ARG:HD2 | 1.86 | 0.57 |
| 3:Az:723:TYR:HD2 | 3:Az:774:ILE:HG13 | 1.69 | 0.57 |
| 3:Bb:809:ARG:HG2 | 3:Bb:811:ARG:HH12 | 1.69 | 0.57 |
| 3:Ba:156:GLN:HE21 | 3:Ba:240:PRO:HG3 | 1.70 | 0.57 |
| 3:Bc:193:LEU:HD23 | 3:Bd:198:THR:HG21 | 1.86 | 0.57 |
| 3:Bd:231:GLN:HB2 | 3:Bd:236:VAL:HG13 | 1.86 | 0.57 |
| 1:Aa:165:LEU:HD11 | 1:Aa:265:TYR:HB3 | 1.86 | 0.57 |
| 1:Aa:479:LYS:HA | 1:Aa:482:THR:HG22 | 1.86 | 0.57 |
| 1:Ag:81:TYR:HD2 | 1:Ag:301:LEU:HD12 | 1.69 | 0.57 |
| 1:Ag:165:LEU:HD11 | 1:Ag:265:TYR:HB3 | 1.86 | 0.57 |
| 1:Al:32:PHE:HB2 | 1:Al:196:ILE:HG21 | 1.86 | 0.57 |
| 1:Ab:68:GLN:HG3 | 2:An:189:ARG:NH1 | 2.17 | 0.57 |
| 1:Aj:406:LEU:HD21 | 1:Ak:96:ILE:HG23 | 1.85 | 0.57 |
| 3:Ba:318:MET:HE3 | 3:Ba:319:THR:N | 2.19 | 0.57 |
| 3:Bb:83:VAL:HG12 | 3:Bb:123:LEU:HD13 | 1.87 | 0.57 |
| 3:Bc:268:VAL:HG11 | 3:Bc:279:GLY:HA3 | 1.86 | 0.57 |
| 3:Bd:128:VAL:HG13 | 3:Bd:382:MET:HB2 | 1.86 | 0.57 |
| 3:Bd:156:GLN:HE21 | 3:Bd:240:PRO:HG3 | 1.69 | 0.57 |
| 2:An:21:THR:HG22 | 2:An:23:SER:H | 1.68 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ay:95:MET:HG3 | 3:Ay:103:PHE:CD2 | 2.39 | 0.57 |
| 2:Ar:26:HIS:O | 2:Ar:30:VAL:HG23 | 2.05 | 0.57 |
| 2:At:26:HIS:O | 2:At:30:VAL:HG23 | 2.05 | 0.57 |
| 3:Bc:723:TYR:HD2 | 3:Bc:774:ILE:HG13 | 1.69 | 0.57 |
| 1:Ah:245:MET:HE2 | 1:Ah:248:PHE:HE1 | 1.70 | 0.57 |
| 1:Ah:406:LEU:HD21 | 1:Ai:96:ILE:HG23 | 1.86 | 0.57 |
| 3:Ba:529:LEU:HB3 | 3:Ba:542:ARG:HB2 | 1.87 | 0.57 |
| 1:Ae:231:ILE:HG23 | 1:Ae:241:VAL:HG22 | 1.87 | 0.57 |
| 1:Ai:490:GLU:OE2 | 1:Aj:479:LYS:HE2 | 2.04 | 0.57 |
| 2:Ar:93:ASN:HD21 | 2:As:121:GLU:HG3 | 1.70 | 0.57 |
| 3:Bd:292:ILE:HD13 | 3:Bd:305:LEU:HD13 | 1.87 | 0.57 |
| 1:Af:406:LEU:HD21 | 1:Ag:96:ILE:HG23 | 1.87 | 0.56 |
| 1:Aj:299:ALA:O | 1:Aj:303:MET:HG2 | 2.05 | 0.56 |
| 1:Al:456:MET:HA | 1:Al:459:VAL:CG1 | 2.35 | 0.56 |
| 3:Ay:156:GLN:HE21 | 3:Ay:240:PRO:HG3 | 1.70 | 0.56 |
| 3:Ba:128:VAL:HG13 | 3:Ba:382:MET:HB2 | 1.86 | 0.56 |
| 3:Bc:257:LEU:HD22 | 3:Bd:283:TYR:HE2 | 1.70 | 0.56 |
| 3:Bd:529:LEU:HB3 | 3:Bd:542:ARG:HB2 | 1.87 | 0.56 |
| 1:Ab:406:LEU:HD21 | 1:Ac:96:ILE:HG23 | 1.88 | 0.56 |
| 1:Ad:433:ILE:HG22 | 1:Ad:436:GLY:H | 1.69 | 0.56 |
| 1:Af:96:ILE:O | 1:Af:100:LEU:HB2 | 2.05 | 0.56 |
| 1:Af:299:ALA:O | 1:Af:303:MET:HG2 | 2.05 | 0.56 |
| 3:Ay:551:PHE:HE2 | 3:Ay:572:LEU:HD11 | 1.70 | 0.56 |
| 3:Az:157:ALA:HB1 | 3:Az:237:TYR:HE1 | 1.70 | 0.56 |
| 3:Az:268:VAL:HG11 | 3:Az:279:GLY:HA3 | 1.86 | 0.56 |
| 3:Ba:1:MET:HE3 | 3:Ba:719:ARG:HH22 | 1.70 | 0.56 |
| 3:Bb:551:PHE:HE2 | 3:Bb:572:LEU:HD11 | 1.70 | 0.56 |
| 3:Bd:135:TRP:CE3 | 3:Bd:380:ILE:HD12 | 2.40 | 0.56 |
| 1:Aa:81:TYR:HD2 | 1:Aa:301:LEU:HD12 | 1.69 | 0.56 |
| 1:Aj:452:MET:SD | 1:Aj:481:VAL:HG12 | 2.46 | 0.56 |
| 2:Am:121:GLU:HG3 | 2:Ax:93:ASN:HD21 | 1.70 | 0.56 |
| 2:An:88:TYR:CG | 2:Ao:54:MET:HE1 | 2.40 | 0.56 |
| 3:Ba:135:TRP:CE3 | 3:Ba:380:ILE:HD12 | 2.40 | 0.56 |
| 1:Aa:96:ILE:HG23 | 1:Al:406:LEU:HD21 | 1.87 | 0.56 |
| 1:Af:32:PHE:HB2 | 1:Af:196:ILE:HG21 | 1.86 | 0.56 |
| 1:Ag:231:ILE:HG23 | 1:Ag:241:VAL:HG22 | 1.87 | 0.56 |
| 1:Ag:479:LYS:HA | 1:Ag:482:THR:HG22 | 1.87 | 0.56 |
| 1:Ah:328:ALA:HB3 | 1:Ai:311:LYS:HE3 | 1.87 | 0.56 |
| 2:An:26:HIS:O | 2:An:30:VAL:HG23 | 2.05 | 0.56 |
| 2:Ap:21:THR:HG22 | 2:Ap:23:SER:H | 1.68 | 0.56 |
| 2:At:88:TYR:CG | 2:Au:54:MET:HE1 | 2.40 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Az:380:ILE:HA | 3:Az:388:LEU:O | 2.05 | 0.56 |
| 3:Bb:156:GLN:HE21 | 3:Bb:240:PRO:HG3 | 1.70 | 0.56 |
| 1:Ak:231:ILE:HG23 | 1:Ak:241:VAL:HG22 | 1.87 | 0.56 |
| 2:Ax:26:HIS:O | 2:Ax:30:VAL:HG23 | 2.05 | 0.56 |
| 3:Ay:83:VAL:HG12 | 3:Ay:123:LEU:HD13 | 1.87 | 0.56 |
| 3:Ay:572:LEU:HD13 | 3:Ay:578:ILE:HD11 | 1.88 | 0.56 |
| 3:Az:209:ARG:O | 3:Az:213:GLU:HG3 | 2.06 | 0.56 |
| 3:Ba:431:LEU:HD13 | 3:Ba:443:VAL:HG11 | 1.88 | 0.56 |
| 3:Bc:157:ALA:HB1 | 3:Bc:237:TYR:HE1 | 1.70 | 0.56 |
| 3:Bd:274:THR:HG23 | 3:Bd:292:ILE:HG13 | 1.87 | 0.56 |
| 1:Ac:77:MET:HE1 | 1:Ad:273:VAL:HG11 | 1.87 | 0.56 |
| 3:Az:175:THR:HB | 3:Az:257:LEU:HB2 | 1.87 | 0.56 |
| 1:Aj:96:ILE:O | 1:Aj:100:LEU:HB2 | 2.06 | 0.56 |
| 1:Aj:464:GLN:HG2 | 1:Ak:466:PRO:HG3 | 1.88 | 0.56 |
| 3:Ay:372:PHE:HB3 | 3:Ay:396:ASN:ND2 | 2.20 | 0.56 |
| 1:Ag:67:PRO:HB3 | 1:Ag:77:MET:HE1 | 1.87 | 0.56 |
| 3:Az:81:VAL:HG21 | 3:Az:132:LEU:HD13 | 1.88 | 0.56 |
| 3:Bb:372:PHE:HB3 | 3:Bb:396:ASN:ND2 | 2.20 | 0.56 |
| 3:Bc:273:GLN:HG3 | 3:Bc:291:ARG:HD2 | 1.85 | 0.56 |
| 3:Bc:380:ILE:HA | 3:Bc:388:LEU:O | 2.05 | 0.56 |
| 1:Ad:299:ALA:O | 1:Ad:303:MET:HG2 | 2.05 | 0.56 |
| 1:Af:165:LEU:HD11 | 1:Af:265:TYR:HB3 | 1.88 | 0.56 |
| 3:Bc:175:THR:HB | 3:Bc:257:LEU:HB2 | 1.87 | 0.56 |
| 1:Ad:434:ILE:HG22 | 1:Ad:439:SER:HB3 | 1.88 | 0.56 |
| 1:Al:394:GLU:O | 1:Al:398:VAL:HG13 | 2.06 | 0.56 |
| 3:Az:174:LEU:HD22 | 3:Az:214:LEU:HD22 | 1.87 | 0.56 |
| 3:Bd:809:ARG:HH21 | 3:Bd:811:ARG:HH22 | 1.54 | 0.56 |
| 1:Aa:129:MET:HE2 | 1:Aa:478:LYS:HG2 | 1.88 | 0.55 |
| 1:Aa:286:LEU:HD21 | 1:Aa:369:MET:HE2 | 1.88 | 0.55 |
| 1:Ad:464:GLN:HG2 | 1:Ae:466:PRO:HG3 | 1.88 | 0.55 |
| 1:Ae:472:ASN:HD21 | 1:Ae:475:LYS:HB2 | 1.71 | 0.55 |
| 1:Af:394:GLU:O | 1:Af:398:VAL:HG13 | 2.06 | 0.55 |
| 1:Ah:416:THR:O | 1:Ah:420:GLN:HG2 | 2.06 | 0.55 |
| 1:Ai:152:THR:HG21 | 1:Ai:405:ARG:HH21 | 1.71 | 0.55 |
| 1:Al:299:ALA:O | 1:Al:303:MET:HG2 | 2.05 | 0.55 |
| 1:Aa:422:ILE:HA | 1:Ab:141:ARG:HH12 | 1.72 | 0.55 |
| 1:Ag:286:LEU:HD21 | 1:Ag:369:MET:HE2 | 1.88 | 0.55 |
| 3:Bc:81:VAL:HG21 | 3:Bc:132:LEU:HD13 | 1.88 | 0.55 |
| 3:Bd:519:ILE:HD12 | 3:Bd:522:LEU:HD23 | 1.88 | 0.55 |
| 1:Ad:96:ILE:O | 1:Ad:100:LEU:HB2 | 2.07 | 0.55 |
| 1:Ad:456:MET:HE1 | 1:Ae:471:LEU:HD21 | 1.86 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:210:HIS:HB3 | 1:Aj:251:LEU:HD23 | 1.89 | 0.55 |
| 2:Ap:26:HIS:O | 2:Ap:30:VAL:HG23 | 2.06 | 0.55 |
| 2:Ap:93:ASN:HD21 | 2:Aq:121:GLU:HG3 | 1.72 | 0.55 |
| 3:Bb:723:TYR:HD2 | 3:Bb:774:ILE:HG13 | 1.71 | 0.55 |
| 3:Az:1:MET:HE3 | 3:Az:719:ARG:HH22 | 1.72 | 0.55 |
| 1:Ah:96:ILE:O | 1:Ah:100:LEU:HB2 | 2.06 | 0.55 |
| 3:Ay:156:GLN:NE2 | 3:Ay:240:PRO:HG3 | 2.22 | 0.55 |
| 3:Ba:519:ILE:HD12 | 3:Ba:522:LEU:HD23 | 1.88 | 0.55 |
| 1:Ai:63:PRO:HB3 | 2:Au:190:ARG:HH12 | 1.72 | 0.55 |
| 3:Bc:183:LEU:HB3 | 3:Bc:221:TYR:OH | 2.07 | 0.55 |
| 3:Bc:209:ARG:O | 3:Bc:213:GLU:HG3 | 2.06 | 0.55 |
| 3:Ba:372:PHE:HB3 | 3:Ba:396:ASN:ND2 | 2.22 | 0.55 |
| 3:Bb:572:LEU:HD13 | 3:Bb:578:ILE:HD11 | 1.88 | 0.55 |
| 1:Af:77:MET:HA | 2:Ar:189:ARG:HG3 | 1.87 | 0.55 |
| 1:Aj:434:ILE:HG22 | 1:Aj:439:SER:HB3 | 1.88 | 0.55 |
| 2:Aw:90:THR:HG22 | 2:Ax:49:TRP:CD1 | 2.42 | 0.55 |
| 3:Ay:723:TYR:HD2 | 3:Ay:774:ILE:HG13 | 1.71 | 0.55 |
| 3:Az:183:LEU:HB3 | 3:Az:221:TYR:OH | 2.07 | 0.55 |
| 1:Aa:67:PRO:HB3 | 1:Aa:77:MET:HE1 | 1.87 | 0.54 |
| 1:Ad:394:GLU:O | 1:Ad:398:VAL:HG13 | 2.07 | 0.54 |
| 2:As:177:LEU:HB2 | 2:As:180:PRO:HD2 | 1.89 | 0.54 |
| 2:Av:26:HIS:O | 2:Av:30:VAL:HG23 | 2.06 | 0.54 |
| 3:Az:257:LEU:HD22 | 3:Ba:283:TYR:HE2 | 1.71 | 0.54 |
| 3:Bd:156:GLN:NE2 | 3:Bd:240:PRO:HG3 | 2.22 | 0.54 |
| 1:Ac:152:THR:HG21 | 1:Ac:405:ARG:HH21 | 1.71 | 0.54 |
| 3:Bb:395:MET:HE3 | 3:Bb:465:LEU:HD21 | 1.88 | 0.54 |
| 1:Aa:96:ILE:O | 1:Aa:100:LEU:HB2 | 2.07 | 0.54 |
| 1:Af:156:MET:HE3 | 1:Af:405:ARG:HH12 | 1.73 | 0.54 |
| 2:Aq:90:THR:HG22 | 2:Ar:49:TRP:CD1 | 2.42 | 0.54 |
| 2:Aq:177:LEU:HB2 | 2:Aq:180:PRO:HD2 | 1.89 | 0.54 |
| 2:Av:93:ASN:HD21 | 2:Aw:121:GLU:HG3 | 1.72 | 0.54 |
| 3:Bd:372:PHE:HB3 | 3:Bd:396:ASN:ND2 | 2.22 | 0.54 |
| 1:Ad:210:HIS:HB3 | 1:Ad:251:LEU:HD23 | 1.88 | 0.54 |
| 1:Aj:244:GLU:HG2 | 1:Aj:250:VAL:HG22 | 1.89 | 0.54 |
| 1:Aj:307:MET:HG2 | 1:Aj:348:VAL:HG23 | 1.89 | 0.54 |
| 1:Aj:394:GLU:O | 1:Aj:398:VAL:HG13 | 2.07 | 0.54 |
| 1:Al:156:MET:HE3 | 1:Al:405:ARG:HH12 | 1.72 | 0.54 |
| 1:Al:211:LYS:HD2 | 1:Al:213:ILE:HD11 | 1.88 | 0.54 |
| 3:Ay:166:LEU:H | 3:Ay:166:LEU:HD12 | 1.73 | 0.54 |
| 3:Bd:157:ALA:HB1 | 3:Bd:237:TYR:HE1 | 1.72 | 0.54 |
| 3:Bc:174:LEU:HD22 | 3:Bc:214:LEU:HD22 | 1.87 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bc:809:ARG:HH21 | 3:Bc:811:ARG:HH22 | 1.56 | 0.54 |
| 3:Ba:157:ALA:HB1 | 3:Ba:237:TYR:HE1 | 1.73 | 0.54 |
| 3:Bc:193:LEU:HG | 3:Bc:195:GLY:H | 1.72 | 0.54 |
| 3:Bd:431:LEU:HD13 | 3:Bd:443:VAL:HG11 | 1.89 | 0.54 |
| 2:Ap:58:LEU:HD13 | 2:Ap:68:VAL:HG12 | 1.89 | 0.54 |
| 3:Ay:395:MET:HE3 | 3:Ay:465:LEU:HD21 | 1.88 | 0.54 |
| 3:Ba:156:GLN:NE2 | 3:Ba:240:PRO:HG3 | 2.22 | 0.54 |
| 1:Af:449:ILE:HA | 1:Af:452:MET:HE2 | 1.90 | 0.54 |
| 1:Ag:96:ILE:O | 1:Ag:100:LEU:HB2 | 2.08 | 0.54 |
| 1:Aa:211:LYS:HG3 | 1:Aa:213:ILE:HG12 | 1.90 | 0.54 |
| 1:Ac:127:ILE:O | 1:Ac:131:MET:HG2 | 2.08 | 0.54 |
| 1:Al:77:MET:HA | 2:Ax:189:ARG:HG3 | 1.89 | 0.54 |
| 3:Bb:166:LEU:H | 3:Bb:166:LEU:HD12 | 1.73 | 0.54 |
| 3:Bd:380:ILE:HA | 3:Bd:388:LEU:O | 2.08 | 0.54 |
| 1:Aa:466:PRO:HG3 | 1:Al:464:GLN:HG2 | 1.89 | 0.53 |
| 1:Ag:211:LYS:HG3 | 1:Ag:213:ILE:HG12 | 1.90 | 0.53 |
| 3:Az:231:GLN:HB2 | 3:Az:236:VAL:HG13 | 1.89 | 0.53 |
| 3:Az:809:ARG:HH21 | 3:Az:811:ARG:HH22 | 1.56 | 0.53 |
| 3:Bb:156:GLN:NE2 | 3:Bb:240:PRO:HG3 | 2.22 | 0.53 |
| 1:Ae:307:MET:HG3 | 1:Ae:348:VAL:HG23 | 1.90 | 0.53 |
| 1:Ae:472:ASN:ND2 | 1:Ae:475:LYS:HD3 | 2.23 | 0.53 |
| 1:Af:211:LYS:HD2 | 1:Af:213:ILE:HD11 | 1.90 | 0.53 |
| 1:Ah:464:GLN:HG2 | 1:Ai:466:PRO:HG3 | 1.90 | 0.53 |
| 1:Ak:456:MET:HE1 | 1:Al:471:LEU:HD21 | 1.90 | 0.53 |
| 3:Bd:268:VAL:HG12 | 3:Bd:270:LYS:HD3 | 1.90 | 0.53 |
| 1:Aj:422:ILE:HA | 1:Ak:141:ARG:HH12 | 1.73 | 0.53 |
| 3:Az:193:LEU:HG | 3:Az:195:GLY:H | 1.72 | 0.53 |
| 3:Ba:380:ILE:HA | 3:Ba:388:LEU:O | 2.08 | 0.53 |
| 3:Bd:361:ILE:HG21 | 3:Bd:410:SER:HA | 1.90 | 0.53 |
| 1:Ak:307:MET:HG3 | 1:Ak:348:VAL:HG23 | 1.91 | 0.53 |
| 2:Ax:58:LEU:HD13 | 2:Ax:68:VAL:HG12 | 1.90 | 0.53 |
| 3:Ba:268:VAL:HG12 | 3:Ba:270:LYS:HD3 | 1.91 | 0.53 |
| 3:Bc:486:VAL:HB | 3:Bc:501:PHE:HB3 | 1.91 | 0.53 |
| 2:Av:58:LEU:HD13 | 2:Av:68:VAL:HG12 | 1.89 | 0.53 |
| 3:Ay:175:THR:HB | 3:Ay:257:LEU:HB2 | 1.91 | 0.53 |
| 3:Ay:630:GLN:HG3 | 3:Ay:674:TYR:HB3 | 1.90 | 0.53 |
| 3:Az:288:VAL:O | 3:Az:306:ARG:HA | 2.09 | 0.53 |
| 3:Ba:809:ARG:HH21 | 3:Ba:811:ARG:HH22 | 1.56 | 0.53 |
| 3:Bc:288:VAL:O | 3:Bc:306:ARG:HA | 2.09 | 0.53 |
| 1:Ai:32:PHE:HB2 | 1:Ai:196:ILE:HG21 | 1.89 | 0.53 |
| 1:Ai:77:MET:HE1 | 1:Aj:273:VAL:HG11 | 1.89 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:630:GLN:HG3 | 3:Bb:674:TYR:HB3 | 1.90 | 0.53 |
| 3:Bc:231:GLN:HB2 | 3:Bc:236:VAL:HG13 | 1.89 | 0.53 |
| 1:Ad:244:GLU:HG2 | 1:Ad:250:VAL:HG22 | 1.91 | 0.53 |
| 2:Aw:177:LEU:HB2 | 2:Aw:180:PRO:HD2 | 1.90 | 0.53 |
| 3:Az:533:ASN:HB2 | 3:Az:583:ILE:HG21 | 1.91 | 0.53 |
| 1:Ab:464:GLN:HG2 | 1:Ac:466:PRO:HG3 | 1.91 | 0.52 |
| 1:Ac:165:LEU:HD11 | 1:Ac:265:TYR:HB3 | 1.91 | 0.52 |
| 1:Ae:80:ASP:HB2 | 2:Aq:190:ARG:NH2 | 2.22 | 0.52 |
| 1:Ai:165:LEU:HD11 | 1:Ai:265:TYR:HB3 | 1.90 | 0.52 |
| 1:Ad:207:PRO:HG2 | 1:Ad:210:HIS:HB2 | 1.90 | 0.52 |
| 1:Aj:307:MET:HE3 | 1:Ak:351:GLN:HE22 | 1.74 | 0.52 |
| 2:Aw:21:THR:HG22 | 2:Aw:23:SER:H | 1.75 | 0.52 |
| 3:Ay:34:ARG:HH11 | 3:Ay:36:ASP:HA | 1.74 | 0.52 |
| 3:Az:486:VAL:HB | 3:Az:501:PHE:HB3 | 1.91 | 0.52 |
| 3:Bb:157:ALA:HB1 | 3:Bb:237:TYR:HE1 | 1.75 | 0.52 |
| 3:Bd:115:TRP:HH2 | 3:Bd:123:LEU:HD23 | 1.74 | 0.52 |
| 2:Ap:85:MET:SD | 2:Ap:108:MET:HE1 | 2.49 | 0.52 |
| 3:Bb:34:ARG:HH11 | 3:Bb:36:ASP:HA | 1.74 | 0.52 |
| 3:Bb:428:ASN:HD21 | 3:Bc:74:ARG:HD2 | 1.74 | 0.52 |
| 1:Ad:487:ASP:OD2 | 1:Ad:490:GLU:HG2 | 2.08 | 0.52 |
| 1:Ai:127:ILE:O | 1:Ai:131:MET:HG2 | 2.09 | 0.52 |
| 2:Am:21:THR:HG22 | 2:Am:23:SER:H | 1.75 | 0.52 |
| 2:Am:177:LEU:HB2 | 2:Am:180:PRO:HD2 | 1.90 | 0.52 |
| 2:Aq:21:THR:HG22 | 2:Aq:23:SER:H | 1.75 | 0.52 |
| 3:Ay:428:ASN:HD21 | 3:Az:74:ARG:HD2 | 1.75 | 0.52 |
| 3:Bb:175:THR:HB | 3:Bb:257:LEU:HB2 | 1.91 | 0.52 |
| 3:Bd:549:ASN:HA | 3:Bd:578:ILE:HG12 | 1.92 | 0.52 |
| 3:Az:372:PHE:HD2 | 3:Az:396:ASN:HD22 | 1.58 | 0.52 |
| 3:Az:663:LEU:HD13 | 3:Az:679:ALA:HB1 | 1.92 | 0.52 |
| 1:Ab:143:ALA:HB1 | 1:Ab:438:GLU:HB3 | 1.92 | 0.52 |
| 1:Af:68:GLN:HG3 | 2:Ar:189:ARG:NH1 | 2.22 | 0.52 |
| 1:Af:442:ARG:N | 1:Ag:105:ARG:HH12 | 2.08 | 0.52 |
| 3:Az:213:GLU:O | 3:Az:217:VAL:HG23 | 2.10 | 0.52 |
| 3:Bb:277:ILE:HG23 | 3:Bb:292:ILE:HG21 | 1.91 | 0.52 |
| 1:Ab:96:ILE:O | 1:Ab:100:LEU:HB2 | 2.09 | 0.52 |
| 1:Ah:245:MET:HE2 | 1:Ah:248:PHE:CE1 | 2.45 | 0.52 |
| 1:Aj:460:GLY:HA3 | 1:Ak:467:GLN:HG2 | 1.92 | 0.52 |
| 2:Ar:99:THR:O | 2:As:54:MET:HB2 | 2.10 | 0.52 |
| 2:As:21:THR:HG22 | 2:As:23:SER:H | 1.75 | 0.52 |
| 3:Ay:115:TRP:HH2 | 3:Ay:123:LEU:HD23 | 1.73 | 0.52 |
| 3:Ay:382:MET:HE3 | 3:Ay:385:ASP:HA | 1.91 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bc:125:ILE:HG23 | 3:Bc:134:ILE:HG23 | 1.91 | 0.52 |
| 3:Bc:178:ARG:HB2 | 3:Bc:183:LEU:HD11 | 1.91 | 0.52 |
| 2:Ao:25:LYS:HE3 | 2:Ao:30:VAL:HG22 | 1.91 | 0.52 |
| 2:Av:85:MET:SD | 2:Av:108:MET:HE1 | 2.49 | 0.52 |
| 3:Ba:540:ILE:HD12 | 3:Ba:583:ILE:HD11 | 1.91 | 0.52 |
| 1:Ah:29:LYS:HB2 | 1:Ah:247:SER:HB3 | 1.92 | 0.52 |
| 1:Ak:407:ALA:O | 1:Ak:411:GLN:HG3 | 2.10 | 0.52 |
| 2:Ar:58:LEU:HD13 | 2:Ar:68:VAL:HG12 | 1.90 | 0.52 |
| 3:Ba:361:ILE:HG21 | 3:Ba:410:SER:HA | 1.90 | 0.52 |
| 3:Bc:372:PHE:HD2 | 3:Bc:396:ASN:HD22 | 1.58 | 0.52 |
| 1:Ah:67:PRO:HA | 2:At:189:ARG:HH22 | 1.75 | 0.52 |
| 1:Al:95:LYS:HG3 | 1:Al:398:VAL:HG12 | 1.92 | 0.52 |
| 3:Az:73:TYR:CE2 | 3:Az:584:ALA:HB3 | 2.45 | 0.52 |
| 3:Bb:115:TRP:HH2 | 3:Bb:123:LEU:HD23 | 1.73 | 0.52 |
| 3:Bd:540:ILE:HD12 | 3:Bd:583:ILE:HD11 | 1.90 | 0.52 |
| 1:Ac:195:CYS:HB3 | 1:Ac:231:ILE:HD12 | 1.92 | 0.51 |
| 1:Ad:293:MET:HE1 | 1:Ad:366:LEU:HD12 | 1.92 | 0.51 |
| 1:Af:95:LYS:HG3 | 1:Af:398:VAL:HG12 | 1.91 | 0.51 |
| 1:Ak:422:ILE:HA | 1:Al:141:ARG:HH12 | 1.74 | 0.51 |
| 2:Aq:90:THR:HG22 | 2:Ar:49:TRP:HD1 | 1.75 | 0.51 |
| 3:Ba:115:TRP:HH2 | 3:Ba:123:LEU:HD23 | 1.74 | 0.51 |
| 3:Bc:30:GLN:HG2 | 3:Bc:33:TRP:HB2 | 1.93 | 0.51 |
| 3:Bd:415:LEU:H | 3:Bd:415:LEU:HD12 | 1.76 | 0.51 |
| 1:Af:328:ALA:HB3 | 1:Ag:311:LYS:HE3 | 1.91 | 0.51 |
| 1:Ah:418:LEU:HD23 | 1:Ai:138:ALA:HB1 | 1.91 | 0.51 |
| 1:Ai:479:LYS:HA | 1:Ai:482:THR:HG22 | 1.92 | 0.51 |
| 2:Ao:42:ARG:HD3 | 2:Ap:160:HIS:NE2 | 2.25 | 0.51 |
| 3:Ay:157:ALA:HB1 | 3:Ay:237:TYR:HE1 | 1.74 | 0.51 |
| 3:Ba:441:LEU:HB3 | 3:Ba:452:ILE:HG23 | 1.92 | 0.51 |
| 3:Bb:288:VAL:O | 3:Bb:306:ARG:HA | 2.11 | 0.51 |
| 3:Bc:649:LYS:HA | 3:Bc:653:ASN:HA | 1.92 | 0.51 |
| 3:Bd:639:HIS:CD2 | 3:Bd:640:PRO:HD2 | 2.45 | 0.51 |
| 3:Ba:549:ASN:HA | 3:Ba:578:ILE:HG12 | 1.92 | 0.51 |
| 3:Ba:639:HIS:CD2 | 3:Ba:640:PRO:HD2 | 2.45 | 0.51 |
| 3:Bb:382:MET:HE3 | 3:Bb:385:ASP:HA | 1.91 | 0.51 |
| 3:Bb:431:LEU:HD13 | 3:Bb:443:VAL:HG11 | 1.93 | 0.51 |
| 3:Bb:639:HIS:CD2 | 3:Bb:640:PRO:HD2 | 2.45 | 0.51 |
| 3:Bc:204:LYS:HD2 | 3:Bc:209:ARG:HE | 1.75 | 0.51 |
| 1:Aa:341:ILE:HD11 | 1:Ab:313:LEU:HD11 | 1.92 | 0.51 |
| 1:Ad:452:MET:SD | 1:Ad:481:VAL:HG12 | 2.51 | 0.51 |
| 1:Af:464:GLN:HG2 | 1:Ag:466:PRO:HG3 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:207:PRO:HG2 | 1:Aj:210:HIS:HB2 | 1.91 | 0.51 |
| 1:Aj:418:LEU:HD23 | 1:Ak:138:ALA:HB1 | 1.92 | 0.51 |
| 2:Ao:89:MET:HE3 | 2:Ao:96:MET:HE3 | 1.92 | 0.51 |
| 3:Az:204:LYS:HD2 | 3:Az:209:ARG:HE | 1.75 | 0.51 |
| 3:Bc:533:ASN:HB2 | 3:Bc:583:ILE:HG21 | 1.91 | 0.51 |
| 3:Bd:441:LEU:HB3 | 3:Bd:452:ILE:HG23 | 1.92 | 0.51 |
| 1:Ad:460:GLY:HA3 | 1:Ae:467:GLN:HG2 | 1.92 | 0.51 |
| 1:Ae:224:VAL:HG21 | 1:Af:40:LYS:HB3 | 1.91 | 0.51 |
| 2:Aw:90:THR:HG22 | 2:Ax:49:TRP:HD1 | 1.75 | 0.51 |
| 3:Bc:639:HIS:CD2 | 3:Bc:640:PRO:HD2 | 2.45 | 0.51 |
| 1:Ab:418:LEU:HD23 | 1:Ac:138:ALA:HB1 | 1.92 | 0.51 |
| 1:Ai:123:SER:O | 1:Ai:127:ILE:HG23 | 2.11 | 0.51 |
| 1:Ak:123:SER:O | 1:Ak:127:ILE:HG23 | 2.11 | 0.51 |
| 2:Au:42:ARG:HD3 | 2:Av:160:HIS:NE2 | 2.25 | 0.51 |
| 3:Ay:92:LEU:HD23 | 3:Ay:351:LEU:HD21 | 1.93 | 0.51 |
| 3:Ay:277:ILE:HG23 | 3:Ay:292:ILE:HG21 | 1.91 | 0.51 |
| 3:Bb:92:LEU:HD23 | 3:Bb:351:LEU:HD21 | 1.93 | 0.51 |
| 1:Ab:416:THR:O | 1:Ab:420:GLN:HG2 | 2.11 | 0.51 |
| 3:Ay:125:ILE:HG23 | 3:Ay:134:ILE:HG23 | 1.93 | 0.51 |
| 1:Ad:307:MET:HG2 | 1:Ad:348:VAL:HG23 | 1.92 | 0.51 |
| 1:Ae:407:ALA:O | 1:Ae:411:GLN:HG3 | 2.10 | 0.51 |
| 1:Ai:419:LEU:HD12 | 1:Ai:431:PRO:HG3 | 1.93 | 0.51 |
| 1:Ak:224:VAL:HG21 | 1:Al:40:LYS:HB3 | 1.91 | 0.51 |
| 3:Bc:213:GLU:O | 3:Bc:217:VAL:HG23 | 2.10 | 0.51 |
| 3:Bd:452:ILE:HB | 3:Bd:465:LEU:HD22 | 1.93 | 0.51 |
| 1:Af:433:ILE:HG22 | 1:Af:436:GLY:H | 1.75 | 0.51 |
| 2:Am:54:MET:HB2 | 2:Ax:99:THR:O | 2.10 | 0.51 |
| 2:Au:25:LYS:HE3 | 2:Au:30:VAL:HG22 | 1.91 | 0.51 |
| 3:Ay:431:LEU:HD13 | 3:Ay:443:VAL:HG11 | 1.93 | 0.51 |
| 3:Ay:639:HIS:CD2 | 3:Ay:640:PRO:HD2 | 2.45 | 0.51 |
| 3:Az:178:ARG:HB2 | 3:Az:183:LEU:HD11 | 1.91 | 0.51 |
| 3:Az:639:HIS:CD2 | 3:Az:640:PRO:HD2 | 2.45 | 0.51 |
| 1:Ac:123:SER:O | 1:Ac:127:ILE:HG23 | 2.11 | 0.51 |
| 1:Ag:341:ILE:HD11 | 1:Ah:313:LEU:HD11 | 1.92 | 0.51 |
| 1:Ak:124:ILE:HD12 | 1:Ak:124:ILE:H | 1.76 | 0.51 |
| 3:Az:125:ILE:HG23 | 3:Az:134:ILE:HG23 | 1.91 | 0.51 |
| 3:Ba:415:LEU:H | 3:Ba:415:LEU:HD12 | 1.76 | 0.51 |
| 1:Aa:433:ILE:HG22 | 1:Aa:436:GLY:H | 1.76 | 0.50 |
| 1:Ae:422:ILE:HA | 1:Af:141:ARG:HH12 | 1.75 | 0.50 |
| 2:Au:89:MET:HE3 | 2:Au:96:MET:HE3 | 1.92 | 0.50 |
| 3:Bc:204:LYS:HA | 3:Bc:209:ARG:HG2 | 1.94 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Ax:85:MET:HE1 | 2:Ax:108:MET:HE3 | 1.94 | 0.50 |
| 3:Bb:649:LYS:HA | 3:Bb:653:ASN:HA | 1.93 | 0.50 |
| 3:Bc:132:LEU:HB2 | 3:Bc:346:LEU:HD21 | 1.92 | 0.50 |
| 3:Bc:663:LEU:HD13 | 3:Bc:679:ALA:HB1 | 1.92 | 0.50 |
| 3:Az:30:GLN:HG2 | 3:Az:33:TRP:HB2 | 1.93 | 0.50 |
| 3:Ba:414:LEU:HD21 | 3:Ba:460:PRO:HB2 | 1.94 | 0.50 |
| 3:Bb:30:GLN:HG2 | 3:Bb:33:TRP:HB2 | 1.94 | 0.50 |
| 3:Bd:30:GLN:HG2 | 3:Bd:33:TRP:HB2 | 1.93 | 0.50 |
| 1:Ac:289:ASP:HB3 | 1:Ac:366:LEU:HD11 | 1.92 | 0.50 |
| 1:Ae:96:ILE:O | 1:Ae:100:LEU:HB2 | 2.11 | 0.50 |
| 1:Ag:433:ILE:HG22 | 1:Ag:436:GLY:H | 1.76 | 0.50 |
| 3:Ba:452:ILE:HB | 3:Ba:465:LEU:HD22 | 1.93 | 0.50 |
| 3:Bc:223:GLY:H | 3:Bc:226:ARG:HH21 | 1.60 | 0.50 |
| 3:Bd:174:LEU:HD22 | 3:Bd:214:LEU:HD22 | 1.92 | 0.50 |
| 3:Bd:183:LEU:HB3 | 3:Bd:221:TYR:OH | 2.12 | 0.50 |
| 1:Aa:124:ILE:H | 1:Aa:124:ILE:HD12 | 1.77 | 0.50 |
| 1:Ad:416:THR:O | 1:Ad:420:GLN:HG2 | 2.12 | 0.50 |
| 1:Ai:289:ASP:HB3 | 1:Ai:366:LEU:HD11 | 1.93 | 0.50 |
| 1:Aj:395:LEU:HA | 1:Aj:398:VAL:HG22 | 1.94 | 0.50 |
| 2:Ar:85:MET:HE1 | 2:Ar:108:MET:HE3 | 1.93 | 0.50 |
| 3:Ay:288:VAL:O | 3:Ay:306:ARG:HA | 2.10 | 0.50 |
| 3:Bd:193:LEU:HG | 3:Bd:195:GLY:H | 1.77 | 0.50 |
| 3:Bd:414:LEU:HD21 | 3:Bd:460:PRO:HB2 | 1.94 | 0.50 |
| 3:Ay:30:GLN:HG2 | 3:Ay:33:TRP:HB2 | 1.94 | 0.50 |
| 3:Ay:135:TRP:CD1 | 3:Ay:377:ILE:HG22 | 2.47 | 0.50 |
| 3:Az:649:LYS:HA | 3:Az:653:ASN:HA | 1.92 | 0.50 |
| 1:Ab:67:PRO:HA | 2:An:189:ARG:HH22 | 1.75 | 0.50 |
| 2:Aw:189:ARG:C | 2:Aw:190:ARG:HG3 | 2.36 | 0.50 |
| 3:Az:204:LYS:HA | 3:Az:209:ARG:HG2 | 1.93 | 0.50 |
| 3:Bb:135:TRP:CE3 | 3:Bb:380:ILE:HD13 | 2.47 | 0.50 |
| 3:Bc:305:LEU:HD23 | 3:Bc:323:TRP:HB3 | 1.94 | 0.50 |
| 3:Bc:438:ASN:HB2 | 3:Bc:503:ILE:HD11 | 1.94 | 0.50 |
| 3:Bd:277:ILE:HG12 | 3:Bd:292:ILE:HG21 | 1.94 | 0.50 |
| 1:Aa:456:MET:HE1 | 1:Ab:471:LEU:HD11 | 1.94 | 0.50 |
| 1:Ac:203:PHE:HA | 1:Ac:206:LEU:HB2 | 1.94 | 0.50 |
| 1:Ad:47:ARG:O | 1:Ad:51:LEU:HG | 2.12 | 0.50 |
| 3:Az:132:LEU:HB2 | 3:Az:346:LEU:HD21 | 1.93 | 0.50 |
| 3:Bb:415:LEU:HD12 | 3:Bb:415:LEU:H | 1.77 | 0.50 |
| 3:Bb:486:VAL:HB | 3:Bb:501:PHE:HB3 | 1.94 | 0.50 |
| 1:Ad:152:THR:HG21 | 1:Ad:405:ARG:HH21 | 1.76 | 0.50 |
| 1:Ag:358:LYS:O | 1:Ag:362:LEU:HG | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ak:414:LEU:HD11 | 1:Al:166:TRP:CH2 | 2.46 | 0.50 |
| 1:Ak:450:ARG:NH1 | 1:Ak:450:ARG:HB2 | 2.27 | 0.50 |
| 3:Az:223:GLY:H | 3:Az:226:ARG:HH21 | 1.60 | 0.50 |
| 1:Ab:280:VAL:HG13 | 1:Ab:284:GLU:HG2 | 1.94 | 0.49 |
| 1:Ac:216:ARG:O | 1:Ac:219:LYS:HD3 | 2.12 | 0.49 |
| 1:Ag:124:ILE:H | 1:Ag:124:ILE:HD12 | 1.77 | 0.49 |
| 3:Az:274:THR:HG23 | 3:Az:292:ILE:HG13 | 1.94 | 0.49 |
| 3:Az:305:LEU:HD23 | 3:Az:323:TRP:HB3 | 1.94 | 0.49 |
| 3:Az:444:PHE:HB3 | 3:Az:475:LEU:HD21 | 1.94 | 0.49 |
| 3:Ba:183:LEU:HB3 | 3:Ba:221:TYR:OH | 2.12 | 0.49 |
| 3:Ba:649:LYS:HA | 3:Ba:653:ASN:HA | 1.93 | 0.49 |
| 3:Ba:808:LYS:HG3 | 3:Ba:809:ARG:HG3 | 1.94 | 0.49 |
| 3:Bc:540:ILE:HG12 | 3:Bc:553:VAL:HG22 | 1.94 | 0.49 |
| 3:Bd:486:VAL:HB | 3:Bd:501:PHE:HB3 | 1.94 | 0.49 |
| 1:Ac:433:ILE:HG22 | 1:Ac:436:GLY:H | 1.77 | 0.49 |
| 1:Ak:96:ILE:O | 1:Ak:100:LEU:HB2 | 2.12 | 0.49 |
| 3:Ay:415:LEU:H | 3:Ay:415:LEU:HD12 | 1.77 | 0.49 |
| 3:Bb:73:TYR:CE2 | 3:Bb:584:ALA:HB3 | 2.47 | 0.49 |
| 3:Bc:274:THR:HG23 | 3:Bc:292:ILE:HG13 | 1.93 | 0.49 |
| 3:Bd:649:LYS:HA | 3:Bd:653:ASN:HA | 1.93 | 0.49 |
| 1:Ab:231:ILE:HG23 | 1:Ab:241:VAL:HG22 | 1.94 | 0.49 |
| 1:Ad:418:LEU:HD23 | 1:Ae:138:ALA:HB1 | 1.94 | 0.49 |
| 1:Ae:390:LEU:HD12 | 1:Ae:391:ILE:HG12 | 1.94 | 0.49 |
| 1:Aj:152:THR:HG21 | 1:Aj:405:ARG:HH21 | 1.77 | 0.49 |
| 3:Az:540:ILE:HG12 | 3:Az:553:VAL:HG22 | 1.94 | 0.49 |
| 3:Ba:30:GLN:HG2 | 3:Ba:33:TRP:HB2 | 1.94 | 0.49 |
| 3:Ba:213:GLU:O | 3:Ba:217:VAL:HG23 | 2.12 | 0.49 |
| 1:Ah:131:MET:O | 1:Ah:135:GLU:HG3 | 2.11 | 0.49 |
| 3:Az:808:LYS:HG3 | 3:Az:809:ARG:HG3 | 1.94 | 0.49 |
| 1:Ac:124:ILE:H | 1:Ac:124:ILE:HD12 | 1.77 | 0.49 |
| 1:Ae:414:LEU:HD11 | 1:Af:166:TRP:CH2 | 2.47 | 0.49 |
| 1:Ai:216:ARG:O | 1:Ai:219:LYS:HD3 | 2.12 | 0.49 |
| 3:Bd:572:LEU:HD22 | 3:Bd:578:ILE:HD11 | 1.95 | 0.49 |
| 1:Ai:195:CYS:HB3 | 1:Ai:231:ILE:HD12 | 1.94 | 0.49 |
| 1:Aj:47:ARG:O | 1:Aj:51:LEU:HG | 2.12 | 0.49 |
| 2:Av:52:LYS:HG3 | 2:Av:115:TYR:CE1 | 2.48 | 0.49 |
| 3:Ay:383:PHE:HD2 | 3:Ay:397:LEU:HD21 | 1.77 | 0.49 |
| 3:Az:438:ASN:HB2 | 3:Az:503:ILE:HD11 | 1.94 | 0.49 |
| 3:Ba:174:LEU:HD22 | 3:Ba:214:LEU:HD22 | 1.92 | 0.49 |
| 3:Bb:125:ILE:HG23 | 3:Bb:134:ILE:HG23 | 1.93 | 0.49 |
| 3:Bb:135:TRP:CD1 | 3:Bb:377:ILE:HG22 | 2.46 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:383:PHE:HD2 | 3:Bb:397:LEU:HD21 | 1.77 | 0.49 |
| 1:Ad:395:LEU:HA | 1:Ad:398:VAL:HG22 | 1.95 | 0.49 |
| 1:Ae:309:ASP:OD2 | 1:Ae:311:LYS:HE3 | 2.12 | 0.49 |
| 1:Ag:412:ARG:O | 1:Ag:416:THR:HG22 | 2.12 | 0.49 |
| 1:Aj:67:PRO:HA | 2:Av:189:ARG:NH2 | 2.27 | 0.49 |
| 3:Ba:486:VAL:HB | 3:Ba:501:PHE:HB3 | 1.94 | 0.49 |
| 1:Ac:427:LYS:H | 1:Ac:427:LYS:HD3 | 1.77 | 0.49 |
| 3:Ba:277:ILE:HG12 | 3:Ba:292:ILE:HG21 | 1.93 | 0.49 |
| 1:Aa:358:LYS:O | 1:Aa:362:LEU:HG | 2.12 | 0.49 |
| 1:Ak:450:ARG:HB2 | 1:Ak:450:ARG:HH11 | 1.78 | 0.49 |
| 3:Ay:444:PHE:HB3 | 3:Ay:475:LEU:HD21 | 1.95 | 0.49 |
| 3:Ay:649:LYS:HA | 3:Ay:653:ASN:HA | 1.93 | 0.49 |
| 3:Ba:572:LEU:HD22 | 3:Ba:578:ILE:HD11 | 1.95 | 0.49 |
| 1:Af:473:LEU:HD22 | 1:Ag:469:ARG:NH2 | 2.28 | 0.49 |
| 1:Aj:416:THR:O | 1:Aj:420:GLN:HG2 | 2.12 | 0.49 |
| 2:Ao:189:ARG:C | 2:Ao:190:ARG:HG3 | 2.38 | 0.49 |
| 2:Au:52:LYS:HG3 | 2:Au:115:TYR:CE1 | 2.48 | 0.49 |
| 3:Ba:193:LEU:HG | 3:Ba:195:GLY:H | 1.77 | 0.49 |
| 3:Ba:659:THR:HB | 3:Ba:661:THR:HG22 | 1.95 | 0.49 |
| 1:Ae:123:SER:O | 1:Ae:127:ILE:HG23 | 2.13 | 0.48 |
| 1:Ak:63:PRO:HB3 | 2:Aw:190:ARG:HH12 | 1.78 | 0.48 |
| 1:Al:206:LEU:HD12 | 1:Al:207:PRO:HD2 | 1.95 | 0.48 |
| 2:Ao:52:LYS:HG3 | 2:Ao:115:TYR:CE1 | 2.48 | 0.48 |
| 3:Ay:135:TRP:CE3 | 3:Ay:380:ILE:HD13 | 2.48 | 0.48 |
| 3:Az:202:ASP:HA | 3:Az:205:ARG:HH11 | 1.78 | 0.48 |
| 3:Bc:344:LEU:HD23 | 3:Bc:346:LEU:HD23 | 1.95 | 0.48 |
| 3:Bc:444:PHE:HB3 | 3:Bc:475:LEU:HD21 | 1.94 | 0.48 |
| 3:Bd:34:ARG:HH21 | 3:Bd:602:LEU:HD22 | 1.78 | 0.48 |
| 1:Ag:307:MET:HG3 | 1:Ag:348:VAL:HG23 | 1.94 | 0.48 |
| 1:Ak:129:MET:HE3 | 1:Ak:488:PRO:HG3 | 1.94 | 0.48 |
| 2:Aq:189:ARG:C | 2:Aq:190:ARG:HG3 | 2.38 | 0.48 |
| 3:Az:382:MET:HE3 | 3:Az:385:ASP:HA | 1.96 | 0.48 |
| 3:Az:737:ILE:HD11 | 3:Az:774:ILE:HD13 | 1.95 | 0.48 |
| 3:Ba:432:LYS:HD3 | 3:Ba:475:LEU:HB2 | 1.95 | 0.48 |
| 3:Bc:487:TYR:CZ | 3:Bc:500:ARG:HD3 | 2.48 | 0.48 |
| 3:Bd:204:LYS:HD2 | 3:Bd:209:ARG:HE | 1.78 | 0.48 |
| 3:Bd:485:TYR:HD1 | 3:Bd:502:GLU:HB3 | 1.79 | 0.48 |
| 1:Ab:206:LEU:HD12 | 1:Ab:207:PRO:HD2 | 1.95 | 0.48 |
| 1:Ad:67:PRO:HA | 2:Ap:189:ARG:NH2 | 2.27 | 0.48 |
| 1:Ae:299:ALA:O | 1:Ae:303:MET:HG2 | 2.13 | 0.48 |
| 1:Ah:280:VAL:HG13 | 1:Ah:284:GLU:HG2 | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ai:96:ILE:O | 1:Ai:100:LEU:HB2 | 2.13 | 0.48 |
| 3:Ay:486:VAL:HB | 3:Ay:501:PHE:HB3 | 1.95 | 0.48 |
| 3:Ay:737:ILE:HG21 | 3:Ay:776:MET:HE1 | 1.95 | 0.48 |
| 3:Bc:145:VAL:HA | 3:Bc:332:GLU:HA | 1.95 | 0.48 |
| 3:Bc:808:LYS:HG3 | 3:Bc:809:ARG:HG3 | 1.95 | 0.48 |
| 1:Ag:245:MET:HE2 | 1:Ag:251:LEU:HD21 | 1.95 | 0.48 |
| 1:Ak:309:ASP:OD2 | 1:Ak:311:LYS:HE3 | 2.13 | 0.48 |
| 2:Ap:52:LYS:HG3 | 2:Ap:115:TYR:CE1 | 2.47 | 0.48 |
| 2:Ax:52:LYS:HG3 | 2:Ax:115:TYR:CE1 | 2.49 | 0.48 |
| 3:Az:146:THR:HG22 | 3:Az:147:ASN:H | 1.78 | 0.48 |
| 3:Az:377:ILE:HG23 | 3:Az:389:ILE:HG23 | 1.95 | 0.48 |
| 3:Bb:450:PHE:HB3 | 3:Bb:465:LEU:HB3 | 1.96 | 0.48 |
| 3:Bd:444:PHE:HB3 | 3:Bd:475:LEU:HD21 | 1.96 | 0.48 |
| 3:Bd:485:TYR:CD1 | 3:Bd:502:GLU:HB3 | 2.49 | 0.48 |
| 1:Aa:399:HIS:HB3 | 1:Aa:403:TYR:HE2 | 1.79 | 0.48 |
| 3:Ay:238:VAL:HG11 | 3:Ay:256:ILE:HD11 | 1.96 | 0.48 |
| 3:Bb:489:ALA:HB1 | 3:Bb:527:ILE:HG13 | 1.95 | 0.48 |
| 3:Bc:571:LYS:HE3 | 3:Bc:571:LYS:HB3 | 1.60 | 0.48 |
| 1:Ac:405:ARG:O | 1:Ac:409:THR:HG23 | 2.14 | 0.48 |
| 1:Ae:124:ILE:HD12 | 1:Ae:124:ILE:H | 1.77 | 0.48 |
| 1:Af:442:ARG:HB2 | 1:Ag:105:ARG:NH2 | 2.25 | 0.48 |
| 1:Ah:395:LEU:HA | 1:Ah:398:VAL:HG22 | 1.95 | 0.48 |
| 1:Ai:405:ARG:O | 1:Ai:409:THR:HG23 | 2.14 | 0.48 |
| 3:Ay:489:ALA:HB1 | 3:Ay:527:ILE:HG13 | 1.95 | 0.48 |
| 3:Ba:34:ARG:HH22 | 3:Ba:536:GLN:NE2 | 2.11 | 0.48 |
| 3:Ba:485:TYR:CD1 | 3:Ba:502:GLU:HB3 | 2.48 | 0.48 |
| 3:Ba:509:MET:SD | 3:Bb:484:SER:HB3 | 2.54 | 0.48 |
| 3:Bc:549:ASN:HA | 3:Bc:578:ILE:HG12 | 1.95 | 0.48 |
| 3:Bd:213:GLU:O | 3:Bd:217:VAL:HG23 | 2.12 | 0.48 |
| 3:Bd:268:VAL:HG11 | 3:Bd:279:GLY:HA3 | 1.95 | 0.48 |
| 3:Bd:808:LYS:HG3 | 3:Bd:809:ARG:HG3 | 1.95 | 0.48 |
| 1:Aa:307:MET:HG3 | 1:Aa:348:VAL:HG23 | 1.94 | 0.48 |
| 1:Ab:244:GLU:HG2 | 1:Ab:250:VAL:HG22 | 1.95 | 0.48 |
| 1:Ab:473:LEU:HD22 | 1:Ac:469:ARG:NH2 | 2.29 | 0.48 |
| 1:Ad:92:LEU:HD22 | 1:Ad:370:PHE:HA | 1.96 | 0.48 |
| 1:Ag:399:HIS:HB3 | 1:Ag:403:TYR:HE2 | 1.79 | 0.48 |
| 3:Ba:268:VAL:HG11 | 3:Ba:279:GLY:HA3 | 1.96 | 0.48 |
| 3:Bb:444:PHE:HB3 | 3:Bb:475:LEU:HD21 | 1.96 | 0.48 |
| 3:Bb:482:MET:HE2 | 3:Bb:487:TYR:CE2 | 2.49 | 0.48 |
| 3:Bd:34:ARG:HH22 | 3:Bd:536:GLN:NE2 | 2.11 | 0.48 |
| 1:Ag:315:LYS:HB3 | 1:Ag:340:TYR:HD1 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:95:LYS:HG3 | 1:Aj:398:VAL:HG12 | 1.95 | 0.48 |
| 1:Aj:421:ASP:HA | 1:Ak:170:ARG:HH12 | 1.78 | 0.48 |
| 1:Ak:390:LEU:HD12 | 1:Ak:391:ILE:HG12 | 1.94 | 0.48 |
| 3:Az:529:LEU:HB3 | 3:Az:542:ARG:HB2 | 1.96 | 0.48 |
| 3:Bc:146:THR:HG22 | 3:Bc:147:ASN:H | 1.78 | 0.48 |
| 3:Bc:382:MET:HE3 | 3:Bc:385:ASP:HA | 1.95 | 0.48 |
| 3:Bc:737:ILE:HD11 | 3:Bc:774:ILE:HD13 | 1.95 | 0.48 |
| 1:Ac:231:ILE:HG12 | 1:Ac:241:VAL:HG13 | 1.95 | 0.48 |
| 1:Af:203:PHE:HB2 | 1:Af:225:VAL:HG13 | 1.96 | 0.48 |
| 1:Af:473:LEU:HD22 | 1:Ag:469:ARG:HH21 | 1.79 | 0.48 |
| 1:Ah:207:PRO:HG2 | 1:Ah:210:HIS:HB2 | 1.94 | 0.48 |
| 1:Ai:203:PHE:HA | 1:Ai:206:LEU:HB2 | 1.94 | 0.48 |
| 3:Bc:202:ASP:HA | 3:Bc:205:ARG:HH11 | 1.78 | 0.48 |
| 3:Bd:341:PHE:CE2 | 3:Bd:356:LEU:HD21 | 2.49 | 0.48 |
| 1:Aa:445:GLU:OE2 | 1:Ab:479:LYS:HE2 | 2.14 | 0.48 |
| 1:Ac:96:ILE:O | 1:Ac:100:LEU:HB2 | 2.13 | 0.48 |
| 1:Ad:195:CYS:HB3 | 1:Ad:231:ILE:HD12 | 1.96 | 0.48 |
| 1:Ai:165:LEU:HB3 | 1:Ai:177:PHE:HB2 | 1.96 | 0.48 |
| 1:Ai:307:MET:HG3 | 1:Ai:348:VAL:HG23 | 1.96 | 0.48 |
| 1:Aj:206:LEU:HD12 | 1:Aj:207:PRO:HD2 | 1.95 | 0.48 |
| 1:Al:203:PHE:HB2 | 1:Al:225:VAL:HG13 | 1.96 | 0.48 |
| 2:Au:189:ARG:C | 2:Au:190:ARG:HG3 | 2.39 | 0.48 |
| 2:Av:86:TYR:CE1 | 2:Av:108:MET:HE3 | 2.49 | 0.48 |
| 2:Av:99:THR:O | 2:Aw:54:MET:HB2 | 2.14 | 0.48 |
| 3:Ay:183:LEU:HB3 | 3:Ay:221:TYR:OH | 2.14 | 0.48 |
| 3:Ba:444:PHE:HB3 | 3:Ba:475:LEU:HD21 | 1.96 | 0.48 |
| 3:Bb:193:LEU:HG | 3:Bb:195:GLY:H | 1.79 | 0.48 |
| 3:Bb:238:VAL:HG11 | 3:Bb:256:ILE:HD11 | 1.96 | 0.48 |
| 1:Ab:395:LEU:HA | 1:Ab:398:VAL:HG22 | 1.94 | 0.47 |
| 1:Ad:35:GLY:HA3 | 1:Ad:44:THR:HG22 | 1.96 | 0.47 |
| 1:Ag:224:VAL:HG21 | 1:Ah:40:LYS:HG2 | 1.95 | 0.47 |
| 1:Ag:427:LYS:H | 1:Ag:427:LYS:HD3 | 1.78 | 0.47 |
| 3:Ay:450:PHE:HB3 | 3:Ay:465:LEU:HB3 | 1.96 | 0.47 |
| 3:Ba:204:LYS:HD2 | 3:Ba:209:ARG:HE | 1.78 | 0.47 |
| 1:Aa:427:LYS:H | 1:Aa:427:LYS:HD3 | 1.78 | 0.47 |
| 1:Ab:65:LEU:HD12 | 1:Ab:160:VAL:HG21 | 1.97 | 0.47 |
| 1:Ab:490:GLU:CD | 1:Ac:479:LYS:HE3 | 2.39 | 0.47 |
| 1:Ac:311:LYS:NZ | 2:Ao:177:LEU:HD22 | 2.30 | 0.47 |
| 1:Ah:195:CYS:HB3 | 1:Ah:231:ILE:HD12 | 1.95 | 0.47 |
| 1:Ak:165:LEU:HB3 | 1:Ak:177:PHE:HB2 | 1.97 | 0.47 |
| 1:Ak:452:MET:HA | 1:Ak:484:TRP:CD1 | 2.49 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Az:549:ASN:HA | 3:Az:578:ILE:HG12 | 1.95 | 0.47 |
| 3:Ba:341:PHE:CE2 | 3:Ba:356:LEU:HD21 | 2.49 | 0.47 |
| 1:Ab:203:PHE:HA | 1:Ab:206:LEU:HB2 | 1.96 | 0.47 |
| 1:Ai:449:ILE:O | 1:Ai:453:VAL:HG22 | 2.15 | 0.47 |
| 2:Ao:43:VAL:HG11 | 2:Ao:127:ALA:HB1 | 1.97 | 0.47 |
| 2:Aq:25:LYS:HE3 | 2:Aq:30:VAL:HG22 | 1.96 | 0.47 |
| 2:Aw:154:ARG:HD2 | 2:Aw:154:ARG:HA | 1.67 | 0.47 |
| 3:Bc:377:ILE:HG23 | 3:Bc:389:ILE:HG23 | 1.95 | 0.47 |
| 1:Aa:315:LYS:HB3 | 1:Aa:340:TYR:HD1 | 1.78 | 0.47 |
| 1:Ae:433:ILE:HG22 | 1:Ae:436:GLY:H | 1.80 | 0.47 |
| 1:Ag:405:ARG:O | 1:Ag:409:THR:HG23 | 2.15 | 0.47 |
| 1:Ah:395:LEU:HD11 | 1:Ai:368:GLN:HE22 | 1.79 | 0.47 |
| 1:Aj:92:LEU:HD22 | 1:Aj:370:PHE:HA | 1.95 | 0.47 |
| 2:Ar:52:LYS:HG3 | 2:Ar:115:TYR:CE1 | 2.49 | 0.47 |
| 2:As:97:PHE:HD2 | 2:As:99:THR:HG22 | 1.79 | 0.47 |
| 2:Aw:25:LYS:HE3 | 2:Aw:30:VAL:HG22 | 1.96 | 0.47 |
| 3:Ay:174:LEU:HD22 | 3:Ay:214:LEU:HD22 | 1.96 | 0.47 |
| 3:Ay:344:LEU:HD23 | 3:Ay:346:LEU:HD23 | 1.96 | 0.47 |
| 3:Az:572:LEU:HD13 | 3:Az:578:ILE:HD11 | 1.96 | 0.47 |
| 3:Bb:183:LEU:HB3 | 3:Bb:221:TYR:OH | 2.14 | 0.47 |
| 3:Bd:204:LYS:HA | 3:Bd:209:ARG:HG2 | 1.96 | 0.47 |
| 1:Ac:419:LEU:HD12 | 1:Ac:431:PRO:HG3 | 1.95 | 0.47 |
| 1:Ad:206:LEU:HD12 | 1:Ad:207:PRO:HD2 | 1.96 | 0.47 |
| 1:Ai:456:MET:HE1 | 1:Ai:477:THR:OG1 | 2.14 | 0.47 |
| 2:Am:90:THR:HG22 | 2:An:49:TRP:HD1 | 1.78 | 0.47 |
| 3:Az:145:VAL:HA | 3:Az:332:GLU:HA | 1.96 | 0.47 |
| 3:Az:344:LEU:HD23 | 3:Az:346:LEU:HD23 | 1.95 | 0.47 |
| 3:Bc:115:TRP:HH2 | 3:Bc:123:LEU:HD23 | 1.79 | 0.47 |
| 3:Bc:572:LEU:HD13 | 3:Bc:578:ILE:HD11 | 1.95 | 0.47 |
| 3:Bd:129:ASP:HB3 | 3:Bd:382:MET:SD | 2.55 | 0.47 |
| 1:Ad:123:SER:O | 1:Ad:127:ILE:HG13 | 2.14 | 0.47 |
| 1:Ah:206:LEU:HD12 | 1:Ah:207:PRO:HD2 | 1.96 | 0.47 |
| 2:Ap:86:TYR:CE1 | 2:Ap:108:MET:HE3 | 2.49 | 0.47 |
| 3:Ay:45:PRO:HG3 | 3:Ay:602:LEU:HD13 | 1.97 | 0.47 |
| 3:Ba:202:ASP:HA | 3:Ba:205:ARG:HH11 | 1.80 | 0.47 |
| 3:Ba:383:PHE:HB3 | 3:Ba:397:LEU:HD21 | 1.96 | 0.47 |
| 3:Bb:174:LEU:HD22 | 3:Bb:214:LEU:HD22 | 1.96 | 0.47 |
| 3:Bb:213:GLU:O | 3:Bb:217:VAL:HG23 | 2.14 | 0.47 |
| 3:Bd:659:THR:HB | 3:Bd:661:THR:HG22 | 1.96 | 0.47 |
| 1:Ab:449:ILE:O | 1:Ab:453:VAL:HG22 | 2.14 | 0.47 |
| 1:Ab:456:MET:HA | 1:Ab:459:VAL:HB | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ac:28:LEU:HD12 | 1:Ac:244:GLU:HG3 | 1.96 | 0.47 |
| 1:Ad:95:LYS:HG3 | 1:Ad:398:VAL:HG12 | 1.95 | 0.47 |
| 1:Ae:127:ILE:O | 1:Ae:131:MET:HG2 | 2.15 | 0.47 |
| 1:Ae:358:LYS:O | 1:Ae:362:LEU:HG | 2.15 | 0.47 |
| 1:Af:206:LEU:HD12 | 1:Af:207:PRO:HD2 | 1.96 | 0.47 |
| 1:Af:456:MET:HA | 1:Af:459:VAL:HB | 1.97 | 0.47 |
| 1:Ag:490:GLU:CD | 1:Ah:479:LYS:HE3 | 2.40 | 0.47 |
| 1:Ai:29:LYS:HB2 | 1:Ai:247:SER:HB3 | 1.97 | 0.47 |
| 1:Ai:427:LYS:H | 1:Ai:427:LYS:HD3 | 1.78 | 0.47 |
| 1:Aj:123:SER:O | 1:Aj:127:ILE:HG13 | 2.15 | 0.47 |
| 1:Ak:358:LYS:O | 1:Ak:362:LEU:HG | 2.15 | 0.47 |
| 2:An:25:LYS:O | 3:Ba:755:ALA:HB1 | 2.14 | 0.47 |
| 2:Ap:25:LYS:O | 3:Bb:755:ALA:HB1 | 2.15 | 0.47 |
| 2:Ap:62:LEU:HD23 | 2:Ap:62:LEU:H | 1.80 | 0.47 |
| 2:Ap:99:THR:O | 2:Aq:54:MET:HB2 | 2.14 | 0.47 |
| 2:As:90:THR:HG22 | 2:At:49:TRP:HD1 | 1.79 | 0.47 |
| 3:Az:115:TRP:HA | 3:Az:139:LYS:HD3 | 1.97 | 0.47 |
| 3:Ba:34:ARG:HH21 | 3:Ba:602:LEU:HD22 | 1.78 | 0.47 |
| 3:Ba:129:ASP:HB3 | 3:Ba:382:MET:SD | 2.55 | 0.47 |
| 1:Ak:113:PRO:HG2 | 1:Ak:116:TYR:HB2 | 1.97 | 0.47 |
| 2:As:6:ALA:O | 2:As:10:MET:HG3 | 2.15 | 0.47 |
| 2:Au:99:THR:O | 2:Av:54:MET:HB2 | 2.15 | 0.47 |
| 2:Av:25:LYS:O | 3:Ay:755:ALA:HB1 | 2.15 | 0.47 |
| 3:Ay:482:MET:HE2 | 3:Ay:487:TYR:CE2 | 2.50 | 0.47 |
| 3:Ba:540:ILE:HG12 | 3:Ba:553:VAL:HG22 | 1.97 | 0.47 |
| 3:Ba:571:LYS:HB3 | 3:Ba:571:LYS:HE3 | 1.61 | 0.47 |
| 3:Bd:202:ASP:HA | 3:Bd:205:ARG:HH11 | 1.80 | 0.47 |
| 1:Ac:299:ALA:O | 1:Ac:303:MET:HG2 | 2.15 | 0.47 |
| 1:Aj:104:THR:HG21 | 1:Aj:105:ARG:HH21 | 1.79 | 0.47 |
| 1:Al:449:ILE:O | 1:Al:453:VAL:HG22 | 2.13 | 0.47 |
| 2:Ao:99:THR:O | 2:Ap:54:MET:HB2 | 2.15 | 0.47 |
| 2:Av:174:VAL:HA | 2:Av:177:LEU:HD21 | 1.97 | 0.47 |
| 3:Ay:533:ASN:HD22 | 3:Ay:538:MET:HE3 | 1.80 | 0.47 |
| 3:Az:432:LYS:HD3 | 3:Az:475:LEU:HB2 | 1.96 | 0.47 |
| 3:Bb:737:ILE:HG21 | 3:Bb:776:MET:HE1 | 1.95 | 0.47 |
| 1:Af:211:LYS:HG2 | 1:Af:212:GLU:N | 2.29 | 0.47 |
| 1:Af:213:ILE:H | 1:Af:213:ILE:HD12 | 1.80 | 0.47 |
| 1:Ah:463:LEU:HD21 | 1:Ah:473:LEU:HD23 | 1.97 | 0.47 |
| 1:Ai:299:ALA:O | 1:Ai:303:MET:HG2 | 2.15 | 0.47 |
| 1:Aj:418:LEU:O | 1:Aj:422:ILE:HG22 | 2.14 | 0.47 |
| 2:Am:6:ALA:O | 2:Am:10:MET:HG3 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Ax:154:ARG:HD2 | 2:Ax:154:ARG:HA | 1.71 | 0.47 |
| 3:Ay:459:THR:OG1 | 3:Ay:461:GLN:HG3 | 2.15 | 0.47 |
| 3:Ba:485:TYR:HD1 | 3:Ba:502:GLU:HB3 | 1.78 | 0.47 |
| 3:Bc:450:PHE:HE1 | 3:Bc:467:ILE:HG12 | 1.80 | 0.47 |
| 1:Ab:395:LEU:HD11 | 1:Ac:368:GLN:HE22 | 1.80 | 0.46 |
| 1:Ac:29:LYS:HB2 | 1:Ac:247:SER:HB3 | 1.97 | 0.46 |
| 1:Ac:165:LEU:HB3 | 1:Ac:177:PHE:HB2 | 1.96 | 0.46 |
| 1:Ae:141:ARG:HD3 | 1:Ae:144:LYS:HD3 | 1.96 | 0.46 |
| 1:Ah:65:LEU:HD12 | 1:Ah:160:VAL:HG21 | 1.97 | 0.46 |
| 1:Ah:479:LYS:HB2 | 1:Ah:479:LYS:HE2 | 1.66 | 0.46 |
| 2:Ap:174:VAL:HA | 2:Ap:177:LEU:HD21 | 1.96 | 0.46 |
| 2:Aq:43:VAL:HG11 | 2:Aq:127:ALA:HB1 | 1.97 | 0.46 |
| 3:Az:372:PHE:H | 3:Az:396:ASN:HD21 | 1.63 | 0.46 |
| 3:Az:450:PHE:HE1 | 3:Az:467:ILE:HG12 | 1.80 | 0.46 |
| 3:Az:487:TYR:CZ | 3:Az:500:ARG:HD3 | 2.48 | 0.46 |
| 3:Ba:424:THR:OG1 | 3:Ba:427:ASN:HB3 | 2.15 | 0.46 |
| 3:Bc:372:PHE:H | 3:Bc:396:ASN:HD21 | 1.63 | 0.46 |
| 3:Bd:383:PHE:HB3 | 3:Bd:397:LEU:HD21 | 1.96 | 0.46 |
| 1:Ae:165:LEU:HB3 | 1:Ae:177:PHE:HB2 | 1.97 | 0.46 |
| 1:Ah:456:MET:HA | 1:Ah:459:VAL:HB | 1.97 | 0.46 |
| 1:Aj:231:ILE:HG23 | 1:Aj:241:VAL:HG22 | 1.97 | 0.46 |
| 3:Az:156:GLN:OE1 | 3:Az:240:PRO:HG3 | 2.15 | 0.46 |
| 3:Az:188:TRP:HD1 | 3:Az:210:VAL:HG13 | 1.80 | 0.46 |
| 3:Ba:489:ALA:HB1 | 3:Ba:527:ILE:HG13 | 1.96 | 0.46 |
| 3:Bb:123:LEU:H | 3:Bb:123:LEU:HG | 1.50 | 0.46 |
| 3:Bc:145:VAL:HG22 | 3:Bc:332:GLU:HG2 | 1.97 | 0.46 |
| 3:Bc:340:HIS:HB3 | 3:Bc:355:LYS:HD3 | 1.97 | 0.46 |
| 3:Bd:527:ILE:HG23 | 3:Bd:541:VAL:HG13 | 1.98 | 0.46 |
| 1:Ab:463:LEU:HD21 | 1:Ab:473:LEU:HD23 | 1.97 | 0.46 |
| 1:Ac:307:MET:HG3 | 1:Ac:348:VAL:HG23 | 1.96 | 0.46 |
| 1:Ae:427:LYS:HD3 | 1:Ae:427:LYS:H | 1.79 | 0.46 |
| 2:Am:97:PHE:HD2 | 2:Am:99:THR:HG22 | 1.79 | 0.46 |
| 3:Az:115:TRP:HH2 | 3:Az:123:LEU:HD23 | 1.79 | 0.46 |
| 3:Bb:202:ASP:HA | 3:Bb:205:ARG:HH11 | 1.80 | 0.46 |
| 3:Bb:554:PHE:HE1 | 3:Bb:565:MET:HB3 | 1.81 | 0.46 |
| 3:Bb:726:GLU:HG3 | 3:Bb:797:SER:HB3 | 1.96 | 0.46 |
| 3:Bc:432:LYS:HD3 | 3:Bc:475:LEU:HB2 | 1.96 | 0.46 |
| 3:Bd:288:VAL:O | 3:Bd:306:ARG:HA | 2.15 | 0.46 |
| 1:Af:67:PRO:HA | 2:Ar:189:ARG:NH2 | 2.31 | 0.46 |
| 2:Av:62:LEU:HD23 | 2:Av:62:LEU:H | 1.80 | 0.46 |
| 3:Ay:193:LEU:HG | 3:Ay:195:GLY:H | 1.79 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ba:482:MET:HE2 | 3:Ba:482:MET:HB2 | 1.84 | 0.46 |
| 3:Bb:509:MET:SD | 3:Bc:484:SER:HB3 | 2.56 | 0.46 |
| 3:Bd:489:ALA:HB1 | 3:Bd:527:ILE:HG13 | 1.97 | 0.46 |
| 3:Bd:540:ILE:HG12 | 3:Bd:553:VAL:HG22 | 1.97 | 0.46 |
| 1:Aa:224:VAL:HG21 | 1:Ab:40:LYS:HB3 | 1.97 | 0.46 |
| 1:Af:399:HIS:HB3 | 1:Af:403:TYR:HE2 | 1.81 | 0.46 |
| 1:Ag:407:ALA:HB1 | 1:Ag:411:GLN:OE1 | 2.15 | 0.46 |
| 1:Ah:449:ILE:O | 1:Ah:453:VAL:HG22 | 2.15 | 0.46 |
| 1:Ai:231:ILE:HG12 | 1:Ai:241:VAL:HG13 | 1.96 | 0.46 |
| 2:At:25:LYS:O | 3:Bd:755:ALA:HB1 | 2.15 | 0.46 |
| 3:Ay:340:HIS:HB3 | 3:Ay:355:LYS:HD3 | 1.97 | 0.46 |
| 3:Ay:509:MET:SD | 3:Az:484:SER:HB3 | 2.56 | 0.46 |
| 3:Az:34:ARG:NH2 | 3:Az:602:LEU:HD13 | 2.30 | 0.46 |
| 3:Ba:204:LYS:HA | 3:Ba:209:ARG:HG2 | 1.96 | 0.46 |
| 1:Ab:67:PRO:HA | 2:An:189:ARG:NH2 | 2.30 | 0.46 |
| 1:Ac:449:ILE:O | 1:Ac:453:VAL:HG22 | 2.15 | 0.46 |
| 1:Ah:490:GLU:CD | 1:Ai:479:LYS:HE3 | 2.41 | 0.46 |
| 1:Ai:414:LEU:HD11 | 1:Aj:166:TRP:CH2 | 2.50 | 0.46 |
| 1:Aj:35:GLY:HA3 | 1:Aj:44:THR:HG22 | 1.97 | 0.46 |
| 1:Al:433:ILE:HG22 | 1:Al:436:GLY:H | 1.80 | 0.46 |
| 2:Ap:39:TRP:CE2 | 2:Ap:134:SER:HB3 | 2.51 | 0.46 |
| 3:Ay:202:ASP:HA | 3:Ay:205:ARG:HH11 | 1.80 | 0.46 |
| 3:Ay:213:GLU:O | 3:Ay:217:VAL:HG23 | 2.14 | 0.46 |
| 3:Az:334:ALA:HB2 | 3:Az:358:PRO:HB3 | 1.98 | 0.46 |
| 3:Az:428:ASN:ND2 | 3:Ba:74:ARG:HD2 | 2.31 | 0.46 |
| 3:Ba:223:GLY:H | 3:Ba:226:ARG:HH21 | 1.64 | 0.46 |
| 3:Bc:501:PHE:CZ | 3:Bc:510:ASP:HB3 | 2.51 | 0.46 |
| 3:Bd:571:LYS:HB3 | 3:Bd:571:LYS:HE3 | 1.61 | 0.46 |
| 1:Aa:309:ASP:OD2 | 1:Aa:311:LYS:HE3 | 2.16 | 0.46 |
| 1:Aa:405:ARG:O | 1:Aa:409:THR:HG23 | 2.15 | 0.46 |
| 1:Ab:399:HIS:HB3 | 1:Ab:403:TYR:HE2 | 1.79 | 0.46 |
| 1:Ac:414:LEU:HD11 | 1:Ad:166:TRP:CH2 | 2.51 | 0.46 |
| 1:Ai:403:TYR:HA | 1:Ai:406:LEU:HD23 | 1.98 | 0.46 |
| 1:Ak:165:LEU:HD11 | 1:Ak:265:TYR:HB3 | 1.97 | 0.46 |
| 1:Ak:456:MET:HA | 1:Ak:459:VAL:HB | 1.98 | 0.46 |
| 3:Ay:115:TRP:HA | 3:Ay:139:LYS:HD3 | 1.98 | 0.46 |
| 3:Ay:176:ILE:HG21 | 3:Ay:227:LEU:HD11 | 1.98 | 0.46 |
| 3:Ay:554:PHE:HE1 | 3:Ay:565:MET:HB3 | 1.80 | 0.46 |
| 3:Ay:726:GLU:HG3 | 3:Ay:797:SER:HB3 | 1.97 | 0.46 |
| 3:Az:489:ALA:HB1 | 3:Az:527:ILE:HG13 | 1.97 | 0.46 |
| 3:Ba:145:VAL:HA | 3:Ba:332:GLU:HA | 1.98 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:424:THR:OG1 | 3:Bb:427:ASN:HB3 | 2.16 | 0.46 |
| 3:Bb:459:THR:OG1 | 3:Bb:461:GLN:HG3 | 2.15 | 0.46 |
| 3:Bb:533:ASN:HD22 | 3:Bb:538:MET:HE3 | 1.81 | 0.46 |
| 3:Bc:489:ALA:HB1 | 3:Bc:527:ILE:HG13 | 1.97 | 0.46 |
| 1:Ab:93:ALA:O | 1:Ab:97:VAL:HG23 | 2.16 | 0.46 |
| 1:Ad:490:GLU:HA | 1:Ae:475:LYS:HE3 | 1.98 | 0.46 |
| 1:Ah:67:PRO:HA | 2:At:189:ARG:NH2 | 2.30 | 0.46 |
| 1:Ah:165:LEU:HB3 | 1:Ah:177:PHE:HB2 | 1.98 | 0.46 |
| 2:Aq:189:ARG:N | 2:Aq:190:ARG:HD2 | 2.31 | 0.46 |
| 3:Bc:34:ARG:NH2 | 3:Bc:602:LEU:HD13 | 2.30 | 0.46 |
| 3:Bd:223:GLY:H | 3:Bd:226:ARG:HH21 | 1.64 | 0.46 |
| 1:Ac:403:TYR:HA | 1:Ac:406:LEU:HD23 | 1.98 | 0.46 |
| 1:Ah:169:PRO:HG2 | 1:Ah:172:LYS:HB2 | 1.97 | 0.46 |
| 1:Ai:406:LEU:HD21 | 1:Aj:96:ILE:HG23 | 1.98 | 0.46 |
| 1:Ak:150:VAL:HG21 | 1:Ak:174:TYR:HB2 | 1.98 | 0.46 |
| 2:Ao:189:ARG:HG3 | 2:Ao:189:ARG:O | 2.15 | 0.46 |
| 2:Av:39:TRP:CE2 | 2:Av:134:SER:HB3 | 2.51 | 0.46 |
| 3:Ay:581:ILE:HG12 | 3:Ay:590:VAL:HG22 | 1.97 | 0.46 |
| 3:Az:145:VAL:HG22 | 3:Az:332:GLU:HG2 | 1.97 | 0.46 |
| 3:Az:501:PHE:CZ | 3:Az:510:ASP:HB3 | 2.51 | 0.46 |
| 3:Ba:79:LEU:HD21 | 3:Ba:346:LEU:HD22 | 1.97 | 0.46 |
| 3:Bb:344:LEU:HD23 | 3:Bb:346:LEU:HD23 | 1.97 | 0.46 |
| 3:Bb:581:ILE:HG12 | 3:Bb:590:VAL:HG22 | 1.97 | 0.46 |
| 3:Bb:633:LYS:HG2 | 3:Bb:673:GLU:O | 2.16 | 0.46 |
| 3:Bc:428:ASN:ND2 | 3:Bd:74:ARG:HD2 | 2.31 | 0.46 |
| 3:Bd:432:LYS:HD3 | 3:Bd:475:LEU:HB2 | 1.96 | 0.46 |
| 1:Ae:150:VAL:HG21 | 1:Ae:174:TYR:HB2 | 1.98 | 0.46 |
| 1:Ag:129:MET:SD | 1:Ag:478:LYS:HG2 | 2.56 | 0.46 |
| 1:Ah:339:GLU:HG3 | 1:Ah:339:GLU:O | 2.16 | 0.46 |
| 1:Al:203:PHE:HA | 1:Al:206:LEU:HB2 | 1.97 | 0.46 |
| 2:Ax:25:LYS:O | 3:Az:755:ALA:HB1 | 2.16 | 0.46 |
| 3:Ay:424:THR:OG1 | 3:Ay:427:ASN:HB3 | 2.16 | 0.46 |
| 3:Ay:516:SER:HB2 | 3:Ay:519:ILE:HD11 | 1.98 | 0.46 |
| 3:Ba:663:LEU:HD13 | 3:Ba:679:ALA:HB1 | 1.97 | 0.46 |
| 3:Bc:115:TRP:HA | 3:Bc:139:LYS:HD3 | 1.97 | 0.46 |
| 1:Ad:421:ASP:HA | 1:Ae:170:ARG:HH12 | 1.80 | 0.45 |
| 1:Ae:165:LEU:HD11 | 1:Ae:265:TYR:HB3 | 1.97 | 0.45 |
| 1:Af:203:PHE:HA | 1:Af:206:LEU:HB2 | 1.97 | 0.45 |
| 1:Ah:97:VAL:HG21 | 1:Ah:152:THR:HA | 1.98 | 0.45 |
| 2:Au:43:VAL:HG11 | 2:Au:127:ALA:HB1 | 1.97 | 0.45 |
| 2:Aw:52:LYS:HB3 | 2:Aw:52:LYS:HE2 | 1.80 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ay:334:ALA:HB2 | 3:Ay:358:PRO:HB3 | 1.99 | 0.45 |
| 3:Ba:115:TRP:HA | 3:Ba:139:LYS:HD3 | 1.98 | 0.45 |
| 3:Ba:145:VAL:HG22 | 3:Ba:332:GLU:HG2 | 1.98 | 0.45 |
| 3:Ba:152:VAL:O | 3:Ba:157:ALA:HB2 | 2.17 | 0.45 |
| 3:Ba:288:VAL:O | 3:Ba:306:ARG:HA | 2.16 | 0.45 |
| 3:Bd:79:LEU:HD21 | 3:Bd:346:LEU:HD22 | 1.97 | 0.45 |
| 1:Ad:309:ASP:OD2 | 1:Ad:311:LYS:HE3 | 2.16 | 0.45 |
| 1:Ae:195:CYS:HB3 | 1:Ae:231:ILE:HD12 | 1.99 | 0.45 |
| 1:Ah:408:ARG:HG3 | 1:Ah:436:GLY:HA3 | 1.99 | 0.45 |
| 1:Ah:474:GLU:OE1 | 1:Ah:478:LYS:HE3 | 2.16 | 0.45 |
| 1:Ak:141:ARG:HD3 | 1:Ak:144:LYS:HD3 | 1.97 | 0.45 |
| 1:Al:67:PRO:HA | 2:Ax:189:ARG:NH2 | 2.30 | 0.45 |
| 1:Al:399:HIS:HB3 | 1:Al:403:TYR:HE2 | 1.81 | 0.45 |
| 3:Bb:146:THR:HG22 | 3:Bb:147:ASN:H | 1.81 | 0.45 |
| 3:Bc:156:GLN:OE1 | 3:Bc:240:PRO:HG3 | 2.15 | 0.45 |
| 1:Aa:148:ARG:HE | 1:Aa:148:ARG:HB3 | 1.58 | 0.45 |
| 1:Aa:299:ALA:O | 1:Aa:303:MET:HG2 | 2.16 | 0.45 |
| 1:Ad:231:ILE:HG23 | 1:Ad:241:VAL:HG22 | 1.97 | 0.45 |
| 1:Af:195:CYS:HB3 | 1:Af:231:ILE:HD12 | 1.97 | 0.45 |
| 1:Ai:200:TRP:O | 1:Ai:201:MET:HB2 | 2.16 | 0.45 |
| 1:Ak:81:TYR:HD2 | 1:Ak:301:LEU:HD12 | 1.81 | 0.45 |
| 1:Ak:433:ILE:HG22 | 1:Ak:436:GLY:H | 1.81 | 0.45 |
| 2:Ao:97:PHE:HD2 | 2:Ao:99:THR:HG22 | 1.81 | 0.45 |
| 2:Aw:43:VAL:HG11 | 2:Aw:127:ALA:HB1 | 1.98 | 0.45 |
| 3:Ay:432:LYS:HD3 | 3:Ay:475:LEU:HB2 | 1.97 | 0.45 |
| 3:Az:340:HIS:HB3 | 3:Az:355:LYS:HD3 | 1.97 | 0.45 |
| 3:Ba:274:THR:HG23 | 3:Ba:292:ILE:HG13 | 1.98 | 0.45 |
| 3:Bb:115:TRP:HA | 3:Bb:139:LYS:HD3 | 1.98 | 0.45 |
| 3:Bb:432:LYS:HD3 | 3:Bb:475:LEU:HB2 | 1.97 | 0.45 |
| 1:Ae:81:TYR:HD2 | 1:Ae:301:LEU:HD12 | 1.80 | 0.45 |
| 1:Ag:123:SER:O | 1:Ag:127:ILE:HG23 | 2.17 | 0.45 |
| 2:Am:90:THR:HG22 | 2:An:49:TRP:CD1 | 2.51 | 0.45 |
| 3:Ay:663:LEU:HD13 | 3:Ay:679:ALA:HB1 | 1.99 | 0.45 |
| 3:Az:162:VAL:HB | 3:Az:207:THR:HB | 1.98 | 0.45 |
| 3:Bb:45:PRO:HG3 | 3:Bb:602:LEU:HD13 | 1.97 | 0.45 |
| 3:Bb:516:SER:HB2 | 3:Bb:519:ILE:HD11 | 1.98 | 0.45 |
| 3:Bc:162:VAL:HB | 3:Bc:207:THR:HB | 1.97 | 0.45 |
| 3:Bc:188:TRP:HD1 | 3:Bc:210:VAL:HG13 | 1.80 | 0.45 |
| 3:Bc:573:ARG:HG2 | 3:Bc:576:ILE:HG23 | 1.99 | 0.45 |
| 3:Bd:145:VAL:HA | 3:Bd:332:GLU:HA | 1.98 | 0.45 |
| 3:Bd:145:VAL:HG22 | 3:Bd:332:GLU:HG2 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ab:209:LYS:H | 1:Ab:209:LYS:HG3 | 1.53 | 0.45 |
| 1:Ae:405:ARG:HA | 1:Ae:408:ARG:NH1 | 2.31 | 0.45 |
| 1:Ag:452:MET:HA | 1:Ag:484:TRP:CD1 | 2.51 | 0.45 |
| 1:Ah:203:PHE:HA | 1:Ah:206:LEU:HB2 | 1.98 | 0.45 |
| 1:Ak:195:CYS:HB3 | 1:Ak:231:ILE:HD12 | 1.98 | 0.45 |
| 1:Ak:405:ARG:O | 1:Ak:409:THR:HG23 | 2.17 | 0.45 |
| 2:Au:97:PHE:HD2 | 2:Au:99:THR:HG22 | 1.81 | 0.45 |
| 3:Az:43:VAL:HG21 | 3:Az:787:ASN:OD1 | 2.17 | 0.45 |
| 3:Az:573:ARG:HG2 | 3:Az:576:ILE:HG23 | 1.99 | 0.45 |
| 3:Ba:231:GLN:HG3 | 3:Ba:236:VAL:HG22 | 1.98 | 0.45 |
| 3:Bb:340:HIS:HB3 | 3:Bb:355:LYS:HD3 | 1.97 | 0.45 |
| 3:Bc:32:ASN:HB2 | 3:Bc:696:ALA:HA | 1.99 | 0.45 |
| 3:Bc:334:ALA:HB2 | 3:Bc:358:PRO:HB3 | 1.98 | 0.45 |
| 3:Bd:424:THR:OG1 | 3:Bd:427:ASN:HB3 | 2.16 | 0.45 |
| 1:Aa:195:CYS:HB3 | 1:Aa:231:ILE:HD12 | 1.99 | 0.45 |
| 1:Ac:200:TRP:O | 1:Ac:201:MET:HB2 | 2.16 | 0.45 |
| 1:Ag:299:ALA:O | 1:Ag:303:MET:HG2 | 2.16 | 0.45 |
| 2:Aw:6:ALA:O | 2:Aw:10:MET:HG3 | 2.15 | 0.45 |
| 2:Aw:97:PHE:HD2 | 2:Aw:99:THR:HG22 | 1.82 | 0.45 |
| 3:Ay:132:LEU:HB2 | 3:Ay:346:LEU:HD21 | 1.98 | 0.45 |
| 3:Bb:85:ALA:HB1 | 3:Bb:116:PHE:CE1 | 2.52 | 0.45 |
| 3:Bc:43:VAL:HG21 | 3:Bc:787:ASN:OD1 | 2.17 | 0.45 |
| 3:Bc:529:LEU:HB3 | 3:Bc:542:ARG:HB2 | 1.97 | 0.45 |
| 3:Bc:549:ASN:O | 3:Bc:571:LYS:HA | 2.17 | 0.45 |
| 3:Bd:152:VAL:O | 3:Bd:157:ALA:HB2 | 2.17 | 0.45 |
| 3:Bd:340:HIS:HB3 | 3:Bd:355:LYS:HD3 | 1.99 | 0.45 |
| 3:Bd:663:LEU:HD13 | 3:Bd:679:ALA:HB1 | 1.97 | 0.45 |
| 1:Ae:452:MET:HA | 1:Ae:484:TRP:CD1 | 2.52 | 0.45 |
| 1:Aj:195:CYS:HB3 | 1:Aj:231:ILE:HD12 | 1.98 | 0.45 |
| 1:Ak:303:MET:HE3 | 1:Ak:351:GLN:HG3 | 1.98 | 0.45 |
| 1:Al:231:ILE:HG12 | 1:Al:241:VAL:HG13 | 1.98 | 0.45 |
| 2:Ao:189:ARG:N | 2:Ao:190:ARG:HD2 | 2.32 | 0.45 |
| 3:Ay:699:GLU:HB2 | 3:Ay:784:GLU:HG2 | 1.99 | 0.45 |
| 3:Ba:90:LYS:HE2 | 3:Ba:113:ALA:HA | 1.98 | 0.45 |
| 1:Ah:405:ARG:O | 1:Ah:409:THR:HG23 | 2.17 | 0.45 |
| 2:Au:189:ARG:HG3 | 2:Au:189:ARG:O | 2.16 | 0.45 |
| 3:Ay:119:GLN:H | 3:Ay:119:GLN:HG2 | 1.61 | 0.45 |
| 3:Bc:414:LEU:HD21 | 3:Bc:460:PRO:HB2 | 1.98 | 0.45 |
| 1:Ab:208:ALA:O | 1:Ab:211:LYS:HB3 | 2.17 | 0.45 |
| 1:Ab:473:LEU:HD22 | 1:Ac:469:ARG:HH21 | 1.82 | 0.45 |
| 1:Ab:490:GLU:O | 1:Ac:475:LYS:HB3 | 2.17 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ac:395:LEU:HD13 | 1:Ac:395:LEU:HA | 1.89 | 0.45 |
| 1:Ac:406:LEU:HD21 | 1:Ad:96:ILE:HG23 | 1.98 | 0.45 |
| 1:Ac:452:MET:HA | 1:Ac:484:TRP:CD1 | 2.52 | 0.45 |
| 1:Ad:390:LEU:O | 1:Ad:394:GLU:HB2 | 2.17 | 0.45 |
| 1:Ae:449:ILE:HD13 | 1:Af:479:LYS:HG2 | 1.98 | 0.45 |
| 1:Ag:195:CYS:HB3 | 1:Ag:231:ILE:HD12 | 1.99 | 0.45 |
| 1:Ak:405:ARG:HA | 1:Ak:408:ARG:NH1 | 2.31 | 0.45 |
| 1:Ak:406:LEU:HD21 | 1:Al:96:ILE:HG23 | 1.99 | 0.45 |
| 2:Am:39:TRP:CE2 | 2:Am:134:SER:HB3 | 2.52 | 0.45 |
| 2:Am:91:LYS:HE2 | 2:Am:91:LYS:HB3 | 1.72 | 0.45 |
| 3:Ay:146:THR:HG22 | 3:Ay:147:ASN:H | 1.81 | 0.45 |
| 3:Ay:176:ILE:HG12 | 3:Ay:256:ILE:HG12 | 1.99 | 0.45 |
| 3:Az:152:VAL:O | 3:Az:157:ALA:HB2 | 2.17 | 0.45 |
| 3:Az:414:LEU:HD21 | 3:Az:460:PRO:HB2 | 1.98 | 0.45 |
| 3:Ba:119:GLN:H | 3:Ba:119:GLN:HG2 | 1.61 | 0.45 |
| 1:Ad:203:PHE:HB2 | 1:Ad:225:VAL:HG13 | 1.98 | 0.45 |
| 1:Ad:211:LYS:HE3 | 1:Ad:211:LYS:HB3 | 1.82 | 0.45 |
| 1:Ah:73:GLY:O | 1:Ai:276:ARG:HB2 | 2.16 | 0.45 |
| 1:Ai:42:SER:HG | 1:Ai:44:THR:HG23 | 1.82 | 0.45 |
| 1:Ai:325:TYR:CE1 | 1:Aj:311:LYS:HD2 | 2.51 | 0.45 |
| 1:Ak:293:MET:HE2 | 1:Ak:293:MET:HB3 | 1.74 | 0.45 |
| 1:Ak:427:LYS:HD3 | 1:Ak:427:LYS:H | 1.81 | 0.45 |
| 2:Ao:189:ARG:HG3 | 2:Ao:189:ARG:NH1 | 2.29 | 0.45 |
| 2:As:62:LEU:HD22 | 2:As:62:LEU:H | 1.82 | 0.45 |
| 3:Ba:505:VAL:HG23 | 3:Ba:506:ASP:OD2 | 2.17 | 0.45 |
| 3:Ba:527:ILE:HG23 | 3:Ba:541:VAL:HG13 | 1.98 | 0.45 |
| 3:Bb:20:VAL:HG13 | 3:Bb:712:VAL:HG21 | 1.99 | 0.45 |
| 3:Bb:176:ILE:HG21 | 3:Bb:227:LEU:HD11 | 1.98 | 0.45 |
| 3:Bd:115:TRP:HA | 3:Bd:139:LYS:HD3 | 1.98 | 0.45 |
| 3:Bd:505:VAL:HG23 | 3:Bd:506:ASP:OD2 | 2.17 | 0.45 |
| 1:Ab:35:GLY:HA3 | 1:Ab:44:THR:HG22 | 1.98 | 0.44 |
| 2:Am:62:LEU:HD22 | 2:Am:62:LEU:H | 1.82 | 0.44 |
| 2:An:85:MET:HE1 | 2:An:108:MET:SD | 2.58 | 0.44 |
| 2:Ar:39:TRP:CE2 | 2:Ar:134:SER:HB3 | 2.52 | 0.44 |
| 3:Ay:20:VAL:HG13 | 3:Ay:712:VAL:HG21 | 1.99 | 0.44 |
| 3:Ay:274:THR:HG23 | 3:Ay:292:ILE:HG13 | 1.99 | 0.44 |
| 3:Az:699:GLU:HB2 | 3:Az:784:GLU:HG2 | 1.99 | 0.44 |
| 3:Bb:663:LEU:HD13 | 3:Bb:679:ALA:HB1 | 1.99 | 0.44 |
| 3:Bc:152:VAL:O | 3:Bc:157:ALA:HB2 | 2.17 | 0.44 |
| 1:Aa:165:LEU:HB3 | 1:Aa:177:PHE:HB2 | 1.98 | 0.44 |
| 1:Aa:452:MET:HA | 1:Aa:484:TRP:CD1 | 2.51 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ae:405:ARG:O | 1:Ae:409:THR:HG23 | 2.17 | 0.44 |
| 1:Af:405:ARG:O | 1:Af:409:THR:HG23 | 2.18 | 0.44 |
| 1:Ah:399:HIS:HB3 | 1:Ah:403:TYR:HE2 | 1.81 | 0.44 |
| 1:Al:195:CYS:HB3 | 1:Al:231:ILE:HD12 | 1.98 | 0.44 |
| 2:Am:43:VAL:HG11 | 2:Am:127:ALA:HB1 | 2.00 | 0.44 |
| 2:At:85:MET:HE1 | 2:At:108:MET:SD | 2.58 | 0.44 |
| 3:Bb:145:VAL:HA | 3:Bb:332:GLU:HA | 1.99 | 0.44 |
| 3:Bd:699:GLU:HB2 | 3:Bd:784:GLU:HG2 | 1.99 | 0.44 |
| 1:Aa:73:GLY:O | 1:Ab:276:ARG:HB2 | 2.18 | 0.44 |
| 1:Aa:123:SER:O | 1:Aa:127:ILE:HG23 | 2.17 | 0.44 |
| 1:Ab:96:ILE:HG23 | 1:Ab:100:LEU:HD22 | 1.98 | 0.44 |
| 1:Ab:408:ARG:HG3 | 1:Ab:436:GLY:HA3 | 1.99 | 0.44 |
| 1:Ac:129:MET:SD | 1:Ac:478:LYS:HG2 | 2.58 | 0.44 |
| 1:Ac:360:ARG:O | 1:Ac:364:ARG:HG2 | 2.17 | 0.44 |
| 1:Ae:406:LEU:HD21 | 1:Af:96:ILE:HG23 | 1.99 | 0.44 |
| 1:Ae:432:LEU:HD23 | 1:Ae:439:SER:HB2 | 1.99 | 0.44 |
| 1:Af:231:ILE:HG12 | 1:Af:241:VAL:HG13 | 1.98 | 0.44 |
| 1:Ag:456:MET:HE1 | 1:Ah:471:LEU:HD11 | 2.00 | 0.44 |
| 1:Ah:414:LEU:HD11 | 1:Ai:166:TRP:CH2 | 2.52 | 0.44 |
| 1:Ai:360:ARG:O | 1:Ai:364:ARG:HG2 | 2.17 | 0.44 |
| 1:Ak:245:MET:HE2 | 1:Ak:251:LEU:HD21 | 1.99 | 0.44 |
| 1:Ak:349:ALA:HB3 | 1:Ak:350:PRO:HD3 | 1.99 | 0.44 |
| 2:An:154:ARG:HA | 2:An:154:ARG:HD2 | 1.71 | 0.44 |
| 2:Aw:76:LEU:HB3 | 2:Aw:113:THR:HG23 | 1.99 | 0.44 |
| 3:Ay:145:VAL:HG22 | 3:Ay:332:GLU:HG2 | 1.98 | 0.44 |
| 3:Az:786:ILE:HG22 | 3:Az:788:ASP:H | 1.82 | 0.44 |
| 3:Bc:615:MET:HE1 | 3:Bc:643:ARG:HB2 | 2.00 | 0.44 |
| 3:Bd:122:ASP:O | 3:Bd:137:LYS:HG3 | 2.18 | 0.44 |
| 3:Bd:438:ASN:HB2 | 3:Bd:503:ILE:HD11 | 1.99 | 0.44 |
| 3:Bd:643:ARG:CZ | 3:Bd:693:LYS:HD3 | 2.47 | 0.44 |
| 1:Aa:42:SER:HG | 1:Aa:44:THR:HG23 | 1.82 | 0.44 |
| 1:Aa:104:THR:HG22 | 1:Aa:105:ARG:HG3 | 1.99 | 0.44 |
| 1:Ab:399:HIS:CD2 | 1:Ac:371:LEU:HD22 | 2.52 | 0.44 |
| 1:Ac:473:LEU:HD13 | 1:Ad:470:TRP:CZ3 | 2.52 | 0.44 |
| 1:Ah:231:ILE:HG23 | 1:Ah:241:VAL:HG22 | 1.98 | 0.44 |
| 1:Ai:28:LEU:HD12 | 1:Ai:244:GLU:HG3 | 1.98 | 0.44 |
| 1:Ai:433:ILE:HG22 | 1:Ai:436:GLY:H | 1.82 | 0.44 |
| 2:Aq:52:LYS:HG3 | 2:Aq:115:TYR:CE1 | 2.52 | 0.44 |
| 2:Aq:97:PHE:HD2 | 2:Aq:99:THR:HG22 | 1.82 | 0.44 |
| 2:Ar:25:LYS:O | 3:Bc:755:ALA:HB1 | 2.16 | 0.44 |
| 2:As:43:VAL:HG11 | 2:As:127:ALA:HB1 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Au:189:ARG:HG3 | 2:Au:189:ARG:NH1 | 2.30 | 0.44 |
| 2:Ax:10:MET:HE1 | 2:Ax:36:LEU:HB2 | 1.99 | 0.44 |
| 2:Ax:39:TRP:CE2 | 2:Ax:134:SER:HB3 | 2.52 | 0.44 |
| 3:Ay:85:ALA:HB1 | 3:Ay:116:PHE:CE1 | 2.52 | 0.44 |
| 3:Ay:484:SER:HB3 | 3:Bd:509:MET:SD | 2.57 | 0.44 |
| 3:Bb:32:ASN:HB2 | 3:Bb:696:ALA:HA | 1.99 | 0.44 |
| 3:Bb:699:GLU:HB2 | 3:Bb:784:GLU:HG2 | 1.99 | 0.44 |
| 3:Bc:550:GLU:HG2 | 3:Bc:571:LYS:HG2 | 1.99 | 0.44 |
| 1:Ad:490:GLU:OE1 | 1:Ae:479:LYS:HD3 | 2.17 | 0.44 |
| 1:Ae:211:LYS:HE3 | 1:Ae:211:LYS:HB3 | 1.80 | 0.44 |
| 1:Ag:165:LEU:HB3 | 1:Ag:177:PHE:HB2 | 1.98 | 0.44 |
| 1:Ak:399:HIS:HB3 | 1:Ak:403:TYR:HE2 | 1.83 | 0.44 |
| 2:Au:189:ARG:N | 2:Au:190:ARG:HD2 | 2.32 | 0.44 |
| 3:Ay:32:ASN:HB2 | 3:Ay:696:ALA:HA | 1.99 | 0.44 |
| 3:Ay:177:GLN:HA | 3:Ay:182:THR:HA | 1.99 | 0.44 |
| 3:Ay:533:ASN:HB2 | 3:Ay:583:ILE:HG21 | 2.00 | 0.44 |
| 3:Bc:394:LYS:HA | 3:Bc:423:GLY:HA2 | 1.99 | 0.44 |
| 3:Bc:607:ALA:O | 3:Bc:610:VAL:HG12 | 2.18 | 0.44 |
| 3:Bc:643:ARG:CZ | 3:Bc:693:LYS:HD3 | 2.48 | 0.44 |
| 1:Aa:231:ILE:HG12 | 1:Aa:241:VAL:HG13 | 1.99 | 0.44 |
| 1:Aa:414:LEU:HD11 | 1:Ab:166:TRP:CH2 | 2.53 | 0.44 |
| 2:Au:39:TRP:CE2 | 2:Au:134:SER:HB3 | 2.53 | 0.44 |
| 2:Au:177:LEU:HB2 | 2:Au:180:PRO:CD | 2.47 | 0.44 |
| 2:Aw:52:LYS:HG3 | 2:Aw:115:TYR:CE1 | 2.52 | 0.44 |
| 3:Ay:141:MET:HE2 | 3:Ay:377:ILE:HG13 | 2.00 | 0.44 |
| 3:Az:549:ASN:O | 3:Az:571:LYS:HA | 2.17 | 0.44 |
| 3:Ba:204:LYS:HD2 | 3:Ba:209:ARG:NE | 2.33 | 0.44 |
| 3:Ba:633:LYS:HG2 | 3:Ba:673:GLU:O | 2.18 | 0.44 |
| 3:Bb:334:ALA:HB2 | 3:Bb:358:PRO:HB3 | 1.99 | 0.44 |
| 3:Bd:20:VAL:HG13 | 3:Bd:712:VAL:HG21 | 1.99 | 0.44 |
| 3:Bd:85:ALA:HB1 | 3:Bd:116:PHE:CE1 | 2.53 | 0.44 |
| 3:Bd:90:LYS:HE2 | 3:Bd:113:ALA:HA | 1.98 | 0.44 |
| 1:Aa:231:ILE:HG23 | 1:Aa:241:VAL:HG22 | 1.99 | 0.44 |
| 1:Ab:73:GLY:O | 1:Ac:276:ARG:HB2 | 2.18 | 0.44 |
| 1:Ag:73:GLY:O | 1:Ah:276:ARG:HB2 | 2.17 | 0.44 |
| 1:Ai:473:LEU:HD22 | 1:Aj:470:TRP:CE3 | 2.53 | 0.44 |
| 1:Al:208:ALA:O | 1:Al:211:LYS:HB3 | 2.18 | 0.44 |
| 3:Ay:414:LEU:HD21 | 3:Ay:460:PRO:HB2 | 2.00 | 0.44 |
| 3:Ay:633:LYS:HG2 | 3:Ay:673:GLU:O | 2.16 | 0.44 |
| 3:Az:32:ASN:HB2 | 3:Az:696:ALA:HA | 1.99 | 0.44 |
| 3:Az:292:ILE:HB | 3:Az:303:TYR:CE2 | 2.53 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ba:85:ALA:HB1 | 3:Ba:116:PHE:CE1 | 2.53 | 0.44 |
| 3:Ba:643:ARG:CZ | 3:Ba:693:LYS:HD3 | 2.47 | 0.44 |
| 3:Bb:145:VAL:HG22 | 3:Bb:332:GLU:HG2 | 1.98 | 0.44 |
| 3:Bc:277:ILE:HG12 | 3:Bc:292:ILE:HG21 | 2.00 | 0.44 |
| 3:Bd:43:VAL:HG21 | 3:Bd:787:ASN:OD1 | 2.18 | 0.44 |
| 3:Bd:334:ALA:HB2 | 3:Bd:358:PRO:HB3 | 1.99 | 0.44 |
| 3:Bd:341:PHE:HE2 | 3:Bd:356:LEU:HD21 | 1.83 | 0.44 |
| 1:Ae:73:GLY:O | 1:Af:276:ARG:HB2 | 2.18 | 0.44 |
| 1:Ae:449:ILE:O | 1:Ae:453:VAL:HG22 | 2.18 | 0.44 |
| 1:Ag:42:SER:HG | 1:Ag:44:THR:HG23 | 1.82 | 0.44 |
| 1:Ah:399:HIS:CD2 | 1:Ai:371:LEU:HD22 | 2.52 | 0.44 |
| 1:Aj:165:LEU:HB3 | 1:Aj:177:PHE:HB2 | 2.00 | 0.44 |
| 2:Am:62:LEU:HB2 | 2:Am:63:GLN:NE2 | 2.33 | 0.44 |
| 2:Av:154:ARG:HA | 2:Av:154:ARG:HD2 | 1.72 | 0.44 |
| 3:Az:119:GLN:H | 3:Az:119:GLN:HG2 | 1.61 | 0.44 |
| 3:Az:643:ARG:CZ | 3:Az:693:LYS:HD3 | 2.48 | 0.44 |
| 3:Ba:438:ASN:HB2 | 3:Ba:503:ILE:HD11 | 1.98 | 0.44 |
| 3:Ba:786:ILE:HG22 | 3:Ba:788:ASP:H | 1.83 | 0.44 |
| 3:Bb:549:ASN:O | 3:Bb:571:LYS:HA | 2.18 | 0.44 |
| 3:Bd:231:GLN:HG3 | 3:Bd:236:VAL:HG22 | 1.98 | 0.44 |
| 1:Ab:405:ARG:O | 1:Ab:409:THR:HG23 | 2.16 | 0.44 |
| 1:Ab:434:ILE:CD1 | 1:Ac:105:ARG:HH21 | 2.31 | 0.44 |
| 1:Ah:405:ARG:HA | 1:Ah:408:ARG:NH1 | 2.32 | 0.44 |
| 1:Ai:399:HIS:HB3 | 1:Ai:403:TYR:HE2 | 1.83 | 0.44 |
| 1:Aj:293:MET:HE1 | 1:Aj:366:LEU:HD12 | 2.00 | 0.44 |
| 1:Ak:472:ASN:ND2 | 1:Ak:475:LYS:HD3 | 2.33 | 0.44 |
| 1:Al:416:THR:HG23 | 1:Al:431:PRO:HG2 | 1.99 | 0.44 |
| 3:Az:394:LYS:HA | 3:Az:423:GLY:HA2 | 1.99 | 0.44 |
| 3:Ba:73:TYR:CE2 | 3:Ba:584:ALA:HB3 | 2.53 | 0.44 |
| 1:Aa:245:MET:HE2 | 1:Aa:251:LEU:HD21 | 1.98 | 0.43 |
| 1:Ad:165:LEU:HB3 | 1:Ad:177:PHE:HB2 | 2.00 | 0.43 |
| 1:Af:414:LEU:HD23 | 1:Af:414:LEU:HA | 1.87 | 0.43 |
| 1:Af:479:LYS:HA | 1:Af:482:THR:HG22 | 1.99 | 0.43 |
| 1:Ah:422:ILE:HA | 1:Ai:141:ARG:HH12 | 1.83 | 0.43 |
| 1:Aj:414:LEU:HD23 | 1:Aj:414:LEU:HA | 1.79 | 0.43 |
| 1:Ak:80:ASP:HB2 | 2:Aw:190:ARG:NH2 | 2.27 | 0.43 |
| 2:Ap:154:ARG:HA | 2:Ap:154:ARG:HD2 | 1.72 | 0.43 |
| 3:Az:156:GLN:HG2 | 3:Az:252:ASP:O | 2.18 | 0.43 |
| 3:Az:277:ILE:HG12 | 3:Az:292:ILE:HG21 | 2.00 | 0.43 |
| 3:Az:550:GLU:HG2 | 3:Az:571:LYS:HG2 | 2.00 | 0.43 |
| 3:Az:607:ALA:O | 3:Az:610:VAL:HG12 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Ba:340:HIS:HB3 | 3:Ba:355:LYS:HD3 | 1.99 | 0.43 |
| 3:Bd:588:ILE:O | 3:Bd:599:HIS:HA | 2.18 | 0.43 |
| 1:Aa:315:LYS:HG3 | 1:Al:337:ASP:OD1 | 2.18 | 0.43 |
| 1:Ac:224:VAL:HG21 | 1:Ad:40:LYS:HB3 | 2.00 | 0.43 |
| 1:Af:337:ASP:OD1 | 1:Ag:315:LYS:HG3 | 2.18 | 0.43 |
| 1:Ag:113:PRO:HG2 | 1:Ag:116:TYR:HB2 | 1.99 | 0.43 |
| 1:Aj:456:MET:HA | 1:Aj:459:VAL:HB | 1.99 | 0.43 |
| 2:Ao:39:TRP:CE2 | 2:Ao:134:SER:HB3 | 2.53 | 0.43 |
| 2:Ao:189:ARG:O | 2:Ao:190:ARG:HG3 | 2.18 | 0.43 |
| 2:As:39:TRP:CE2 | 2:As:134:SER:HB3 | 2.52 | 0.43 |
| 2:As:90:THR:HG22 | 2:At:49:TRP:CD1 | 2.51 | 0.43 |
| 3:Ay:122:ASP:O | 3:Ay:137:LYS:HG3 | 2.18 | 0.43 |
| 3:Ba:20:VAL:HG13 | 3:Ba:712:VAL:HG21 | 1.99 | 0.43 |
| 3:Ba:122:ASP:O | 3:Ba:137:LYS:HG3 | 2.18 | 0.43 |
| 3:Ba:699:GLU:HB2 | 3:Ba:784:GLU:HG2 | 1.99 | 0.43 |
| 3:Bb:414:LEU:HD21 | 3:Bb:460:PRO:HB2 | 2.00 | 0.43 |
| 3:Bc:292:ILE:HB | 3:Bc:303:TYR:CE2 | 2.53 | 0.43 |
| 1:Aa:473:LEU:HD22 | 1:Ab:470:TRP:CE3 | 2.53 | 0.43 |
| 1:Ae:77:MET:HE3 | 1:Af:273:VAL:HG11 | 2.00 | 0.43 |
| 1:Ag:232:LYS:HB3 | 1:Ag:232:LYS:HE2 | 1.93 | 0.43 |
| 1:Aj:390:LEU:O | 1:Aj:394:GLU:HB2 | 2.17 | 0.43 |
| 1:Ak:453:VAL:HG11 | 1:Al:459:VAL:HG23 | 1.99 | 0.43 |
| 2:Aq:6:ALA:O | 2:Aq:10:MET:HG3 | 2.18 | 0.43 |
| 3:Ay:171:THR:HG23 | 3:Ay:189:THR:HG22 | 2.01 | 0.43 |
| 3:Ay:188:TRP:HZ2 | 3:Ay:204:LYS:HG2 | 1.83 | 0.43 |
| 3:Bb:141:MET:HE2 | 3:Bb:377:ILE:HG13 | 1.99 | 0.43 |
| 3:Bc:122:ASP:O | 3:Bc:137:LYS:HG3 | 2.18 | 0.43 |
| 3:Bd:786:ILE:HG22 | 3:Bd:788:ASP:H | 1.83 | 0.43 |
| 1:Ab:169:PRO:HG2 | 1:Ab:172:LYS:HB2 | 2.00 | 0.43 |
| 1:Ab:395:LEU:HA | 1:Ab:395:LEU:HD13 | 1.84 | 0.43 |
| 1:Ag:53:GLN:HG2 | 1:Ag:56:LYS:NZ | 2.34 | 0.43 |
| 1:Ag:414:LEU:HD11 | 1:Ah:166:TRP:CH2 | 2.54 | 0.43 |
| 1:Ai:73:GLY:O | 1:Aj:276:ARG:HB2 | 2.18 | 0.43 |
| 1:Aj:225:VAL:HG11 | 1:Aj:245:MET:HE3 | 2.00 | 0.43 |
| 2:Am:76:LEU:HB3 | 2:Am:113:THR:HG23 | 2.00 | 0.43 |
| 2:Aq:3:LYS:HE3 | 2:Aq:120:TRP:HB3 | 1.99 | 0.43 |
| 2:Au:6:ALA:O | 2:Au:10:MET:HG3 | 2.18 | 0.43 |
| 3:Ay:292:ILE:HB | 3:Ay:303:TYR:CE2 | 2.53 | 0.43 |
| 3:Az:615:MET:HE1 | 3:Az:643:ARG:HB2 | 2.00 | 0.43 |
| 3:Ba:43:VAL:HG21 | 3:Ba:787:ASN:OD1 | 2.18 | 0.43 |
| 3:Ba:125:ILE:HG23 | 3:Ba:134:ILE:HG23 | 2.01 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bb:292:ILE:HB | 3:Bb:303:TYR:CE2 | 2.53 | 0.43 |
| 1:Ac:395:LEU:HD12 | 1:Ac:399:HIS:NE2 | 2.33 | 0.43 |
| 1:Ae:113:PRO:HG2 | 1:Ae:116:TYR:HB2 | 1.99 | 0.43 |
| 1:Af:73:GLY:O | 1:Ag:276:ARG:HB2 | 2.18 | 0.43 |
| 1:Ag:158:LEU:HB3 | 1:Ag:270:LEU:HD13 | 2.00 | 0.43 |
| 1:Al:95:LYS:HG2 | 1:Al:397:GLN:HG3 | 2.00 | 0.43 |
| 1:Al:165:LEU:HB3 | 1:Al:177:PHE:HB2 | 2.00 | 0.43 |
| 1:Al:245:MET:HE2 | 1:Al:248:PHE:CZ | 2.54 | 0.43 |
| 1:Al:248:PHE:C | 1:Al:248:PHE:CD1 | 2.96 | 0.43 |
| 2:Ao:6:ALA:O | 2:Ao:10:MET:HG3 | 2.18 | 0.43 |
| 2:Aq:76:LEU:HB3 | 2:Aq:113:THR:HG23 | 2.01 | 0.43 |
| 2:As:154:ARG:HA | 2:As:154:ARG:HD2 | 1.67 | 0.43 |
| 2:Ax:14:ILE:HD13 | 2:Ax:139:LEU:HD23 | 2.00 | 0.43 |
| 3:Ay:540:ILE:HG12 | 3:Ay:553:VAL:HG22 | 2.01 | 0.43 |
| 3:Bb:176:ILE:HG12 | 3:Bb:256:ILE:HG12 | 1.99 | 0.43 |
| 3:Bb:177:GLN:HA | 3:Bb:182:THR:HA | 1.99 | 0.43 |
| 3:Bb:274:THR:HG23 | 3:Bb:292:ILE:HG13 | 1.99 | 0.43 |
| 3:Bc:786:ILE:HG22 | 3:Bc:788:ASP:H | 1.83 | 0.43 |
| 3:Bd:11:ILE:O | 3:Bd:11:ILE:HG13 | 2.19 | 0.43 |
| 1:Ac:473:LEU:HD22 | 1:Ad:470:TRP:CE3 | 2.53 | 0.43 |
| 1:Ai:395:LEU:HD12 | 1:Ai:399:HIS:NE2 | 2.33 | 0.43 |
| 1:Ak:46:GLU:O | 1:Ak:50:LEU:HD12 | 2.19 | 0.43 |
| 1:Ak:130:GLU:O | 1:Ak:134:ILE:HG13 | 2.19 | 0.43 |
| 2:At:181:TYR:HD1 | 2:At:181:TYR:HA | 1.73 | 0.43 |
| 3:Ay:11:ILE:O | 3:Ay:11:ILE:HG13 | 2.18 | 0.43 |
| 3:Ay:549:ASN:O | 3:Ay:571:LYS:HA | 2.18 | 0.43 |
| 3:Ay:571:LYS:HE3 | 3:Ay:571:LYS:HB3 | 1.60 | 0.43 |
| 3:Bc:81:VAL:HG11 | 3:Bc:132:LEU:HD22 | 2.00 | 0.43 |
| 3:Bc:171:THR:HG23 | 3:Bc:189:THR:HG22 | 2.01 | 0.43 |
| 3:Bd:188:TRP:CZ2 | 3:Bd:204:LYS:HE2 | 2.54 | 0.43 |
| 3:Bd:188:TRP:HD1 | 3:Bd:210:VAL:HG13 | 1.83 | 0.43 |
| 3:Bd:204:LYS:HD2 | 3:Bd:209:ARG:NE | 2.33 | 0.43 |
| 1:Aa:276:ARG:HB2 | 1:Al:73:GLY:O | 2.18 | 0.43 |
| 1:Ac:50:LEU:HD23 | 1:Ac:50:LEU:HA | 1.90 | 0.43 |
| 1:Ac:399:HIS:HB3 | 1:Ac:403:TYR:HE2 | 1.83 | 0.43 |
| 1:Af:248:PHE:CD1 | 1:Af:248:PHE:C | 2.96 | 0.43 |
| 1:Ag:331:GLY:O | 2:Au:174:VAL:HG22 | 2.19 | 0.43 |
| 1:Ah:27:MET:HE3 | 1:Ah:31:LYS:HE2 | 1.99 | 0.43 |
| 1:Ai:141:ARG:HD3 | 1:Ai:144:LYS:HD3 | 2.01 | 0.43 |
| 1:Al:405:ARG:O | 1:Al:409:THR:HG23 | 2.18 | 0.43 |
| 2:Ar:10:MET:HE1 | 2:Ar:36:LEU:HB2 | 1.99 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Ar:181:TYR:HD1 | 2:Ar:181:TYR:HA | 1.72 | 0.43 |
| 3:Ay:125:ILE:HG22 | 3:Ay:134:ILE:HG12 | 2.00 | 0.43 |
| 3:Ay:255:THR:HG22 | 3:Ay:271:ASN:HB3 | 2.01 | 0.43 |
| 3:Az:106:ILE:HD12 | 3:Az:106:ILE:H | 1.84 | 0.43 |
| 3:Bb:122:ASP:O | 3:Bb:137:LYS:HG3 | 2.18 | 0.43 |
| 3:Bc:47:PHE:HB3 | 3:Bc:598:MET:HE2 | 2.01 | 0.43 |
| 3:Bc:699:GLU:HB2 | 3:Bc:784:GLU:HG2 | 1.99 | 0.43 |
| 3:Bd:633:LYS:HG2 | 3:Bd:673:GLU:O | 2.18 | 0.43 |
| 1:Ab:27:MET:HE3 | 1:Ab:31:LYS:HE2 | 2.00 | 0.43 |
| 1:Ab:422:ILE:HA | 1:Ac:141:ARG:HH12 | 1.82 | 0.43 |
| 1:Ad:73:GLY:O | 1:Ae:276:ARG:HB2 | 2.19 | 0.43 |
| 1:Ad:225:VAL:HG11 | 1:Ad:245:MET:HE3 | 2.01 | 0.43 |
| 1:Ae:130:GLU:O | 1:Ae:134:ILE:HG13 | 2.18 | 0.43 |
| 1:Ag:103:PRO:HD3 | 1:Ag:148:ARG:HH12 | 1.83 | 0.43 |
| 1:Ah:35:GLY:HA3 | 1:Ah:44:THR:HG22 | 2.00 | 0.43 |
| 2:Ap:12:LYS:HB2 | 2:Ap:12:LYS:HE3 | 1.80 | 0.43 |
| 2:As:52:LYS:HG3 | 2:As:115:TYR:CE1 | 2.54 | 0.43 |
| 2:At:39:TRP:CE2 | 2:At:134:SER:HB3 | 2.54 | 0.43 |
| 2:Au:189:ARG:O | 2:Au:190:ARG:HG3 | 2.18 | 0.43 |
| 3:Az:633:LYS:HG2 | 3:Az:673:GLU:O | 2.19 | 0.43 |
| 1:Aa:158:LEU:HB3 | 1:Aa:270:LEU:HD13 | 2.00 | 0.43 |
| 1:Ab:80:ASP:HB2 | 2:An:190:ARG:HH21 | 1.84 | 0.43 |
| 1:Ae:349:ALA:HB3 | 1:Ae:350:PRO:HD3 | 2.00 | 0.43 |
| 1:Ae:399:HIS:HB3 | 1:Ae:403:TYR:HE2 | 1.83 | 0.43 |
| 1:Af:203:PHE:CD1 | 1:Af:203:PHE:C | 2.96 | 0.43 |
| 1:Ah:28:LEU:HD23 | 1:Ah:244:GLU:CD | 2.44 | 0.43 |
| 1:Ah:92:LEU:HD22 | 1:Ah:370:PHE:HA | 2.01 | 0.43 |
| 1:Ah:124:ILE:HA | 1:Ah:127:ILE:HD12 | 2.01 | 0.43 |
| 1:Ah:433:ILE:HG22 | 1:Ah:436:GLY:H | 1.84 | 0.43 |
| 1:Aj:211:LYS:HE3 | 1:Aj:211:LYS:HB3 | 1.81 | 0.43 |
| 1:Ak:315:LYS:HB2 | 1:Ak:315:LYS:HE2 | 1.90 | 0.43 |
| 2:Ao:86:TYR:HB3 | 2:Ao:89:MET:SD | 2.59 | 0.43 |
| 2:Aw:3:LYS:HE3 | 2:Aw:120:TRP:HB3 | 2.00 | 0.43 |
| 3:Ay:145:VAL:HA | 3:Ay:332:GLU:HA | 1.99 | 0.43 |
| 3:Ba:334:ALA:HB2 | 3:Ba:358:PRO:HB3 | 1.99 | 0.43 |
| 3:Bb:11:ILE:O | 3:Bb:11:ILE:HG13 | 2.18 | 0.43 |
| 3:Bb:106:ILE:H | 3:Bb:106:ILE:HD12 | 1.84 | 0.43 |
| 3:Bb:171:THR:HG23 | 3:Bb:189:THR:HG22 | 2.01 | 0.43 |
| 3:Bc:156:GLN:HG2 | 3:Bc:252:ASP:O | 2.18 | 0.43 |
| 3:Bd:32:ASN:HB2 | 3:Bd:696:ALA:HA | 2.00 | 0.43 |
| 3:Bd:73:TYR:CE2 | 3:Bd:584:ALA:HB3 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ab:77:MET:HA | 2:An:189:ARG:HG3 | 2.00 | 0.43 |
| 1:Ad:208:ALA:O | 1:Ad:211:LYS:HB3 | 2.19 | 0.43 |
| 1:Ai:368:GLN:OE1 | 1:Ai:368:GLN:HA | 2.19 | 0.43 |
| 3:Az:408:ARG:HH21 | 3:Az:411:ALA:HA | 1.84 | 0.43 |
| 3:Ba:106:ILE:H | 3:Ba:106:ILE:HD12 | 1.84 | 0.43 |
| 3:Ba:341:PHE:HE2 | 3:Ba:356:LEU:HD21 | 1.83 | 0.43 |
| 3:Ba:588:ILE:O | 3:Ba:599:HIS:HA | 2.18 | 0.43 |
| 3:Bd:106:ILE:H | 3:Bd:106:ILE:HD12 | 1.84 | 0.43 |
| 3:Bd:365:LYS:HG3 | 3:Bd:365:LYS:O | 2.19 | 0.43 |
| 1:Aa:166:TRP:CH2 | 1:Al:414:LEU:HD11 | 2.54 | 0.42 |
| 1:Aa:232:LYS:HB3 | 1:Aa:232:LYS:HE2 | 1.93 | 0.42 |
| 1:Ab:396:ASP:OD1 | 1:Ab:397:GLN:N | 2.52 | 0.42 |
| 1:Ac:141:ARG:HD3 | 1:Ac:144:LYS:HD3 | 2.00 | 0.42 |
| 1:Ad:396:ASP:OD1 | 1:Ad:397:GLN:N | 2.52 | 0.42 |
| 1:Ae:46:GLU:O | 1:Ae:50:LEU:HD12 | 2.19 | 0.42 |
| 1:Ae:245:MET:HE2 | 1:Ae:251:LEU:HD21 | 1.99 | 0.42 |
| 1:Af:95:LYS:HG2 | 1:Af:397:GLN:HG3 | 2.00 | 0.42 |
| 1:Ag:349:ALA:HB3 | 1:Ag:350:PRO:HD3 | 2.01 | 0.42 |
| 1:Ah:394:GLU:O | 1:Ah:398:VAL:HG13 | 2.18 | 0.42 |
| 1:Ah:440:LEU:HD23 | 1:Ah:440:LEU:HA | 1.85 | 0.42 |
| 1:Aj:487:ASP:OD2 | 1:Aj:490:GLU:HG2 | 2.19 | 0.42 |
| 2:As:51:ASN:O | 2:As:115:TYR:HA | 2.19 | 0.42 |
| 2:As:62:LEU:HB2 | 2:As:63:GLN:NE2 | 2.33 | 0.42 |
| 2:As:189:ARG:O | 2:As:189:ARG:HG3 | 2.19 | 0.42 |
| 3:Ay:156:GLN:HG2 | 3:Ay:252:ASP:O | 2.19 | 0.42 |
| 3:Ay:519:ILE:HD13 | 3:Ay:567:TRP:CG | 2.54 | 0.42 |
| 3:Az:20:VAL:HG13 | 3:Az:712:VAL:HG21 | 2.00 | 0.42 |
| 3:Az:122:ASP:O | 3:Az:137:LYS:HG3 | 2.18 | 0.42 |
| 3:Ba:32:ASN:HB2 | 3:Ba:696:ALA:HA | 2.00 | 0.42 |
| 3:Ba:188:TRP:HD1 | 3:Ba:210:VAL:HG13 | 1.83 | 0.42 |
| 3:Ba:292:ILE:HD13 | 3:Ba:305:LEU:HD13 | 2.00 | 0.42 |
| 3:Ba:491:ASN:HD21 | 3:Ba:526:ARG:HE | 1.66 | 0.42 |
| 3:Ba:646:LEU:HB2 | 3:Ba:663:LEU:HD11 | 2.01 | 0.42 |
| 1:Aa:331:GLY:O | 2:Ao:174:VAL:HG22 | 2.19 | 0.42 |
| 1:Ab:148:ARG:HE | 1:Ab:148:ARG:HB3 | 1.72 | 0.42 |
| 1:Ac:73:GLY:O | 1:Ad:276:ARG:HB2 | 2.19 | 0.42 |
| 1:Af:165:LEU:HB3 | 1:Af:177:PHE:HB2 | 2.00 | 0.42 |
| 1:Af:245:MET:HE2 | 1:Af:248:PHE:CZ | 2.54 | 0.42 |
| 1:Ah:434:ILE:HG22 | 1:Ah:439:SER:HB3 | 2.01 | 0.42 |
| 1:Aj:203:PHE:HA | 1:Aj:206:LEU:HB2 | 2.01 | 0.42 |
| 1:Aj:203:PHE:HB2 | 1:Aj:225:VAL:HG13 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:231:ILE:HG12 | 1:Aj:241:VAL:HG13 | 2.01 | 0.42 |
| 1:Ak:73:GLY:O | 1:Al:276:ARG:HB2 | 2.19 | 0.42 |
| 1:Al:203:PHE:CD1 | 1:Al:203:PHE:C | 2.96 | 0.42 |
| 1:Al:231:ILE:HG23 | 1:Al:241:VAL:HG22 | 2.01 | 0.42 |
| 2:Ao:154:ARG:HD2 | 2:Ao:154:ARG:HA | 1.68 | 0.42 |
| 3:Az:47:PHE:HB3 | 3:Az:598:MET:HE2 | 2.00 | 0.42 |
| 3:Ba:549:ASN:O | 3:Ba:571:LYS:HA | 2.19 | 0.42 |
| 3:Bb:156:GLN:HG2 | 3:Bb:252:ASP:O | 2.19 | 0.42 |
| 3:Bb:519:ILE:HD13 | 3:Bb:567:TRP:CG | 2.54 | 0.42 |
| 3:Bb:550:GLU:HG2 | 3:Bb:571:LYS:HG2 | 2.01 | 0.42 |
| 3:Bc:424:THR:OG1 | 3:Bc:427:ASN:HB3 | 2.20 | 0.42 |
| 3:Bc:633:LYS:HG2 | 3:Bc:673:GLU:O | 2.19 | 0.42 |
| 1:Aa:406:LEU:HG | 1:Ab:100:LEU:HD21 | 2.01 | 0.42 |
| 1:Af:435:THR:HG21 | 1:Ag:100:LEU:HA | 2.02 | 0.42 |
| 1:Af:443:MET:H | 1:Ag:105:ARG:HH12 | 1.65 | 0.42 |
| 1:Ah:211:LYS:HD2 | 1:Ah:213:ILE:HD11 | 2.02 | 0.42 |
| 1:Ai:300:GLU:HB2 | 1:Ai:355:ILE:HG21 | 2.01 | 0.42 |
| 1:Ai:349:ALA:HB3 | 1:Ai:350:PRO:HD3 | 2.01 | 0.42 |
| 1:Aj:73:GLY:O | 1:Ak:276:ARG:HB2 | 2.19 | 0.42 |
| 3:Ay:106:ILE:H | 3:Ay:106:ILE:HD12 | 1.84 | 0.42 |
| 3:Bb:533:ASN:HB2 | 3:Bb:583:ILE:HG21 | 2.01 | 0.42 |
| 3:Bd:119:GLN:H | 3:Bd:119:GLN:HG2 | 1.61 | 0.42 |
| 1:Ab:394:GLU:O | 1:Ab:398:VAL:HG13 | 2.19 | 0.42 |
| 1:Ab:434:ILE:HD11 | 1:Ac:106:PRO:O | 2.18 | 0.42 |
| 1:Aj:396:ASP:OD1 | 1:Aj:397:GLN:N | 2.52 | 0.42 |
| 1:Ak:403:TYR:HA | 1:Ak:406:LEU:HD23 | 2.02 | 0.42 |
| 2:Am:189:ARG:HG3 | 2:Am:189:ARG:O | 2.19 | 0.42 |
| 2:Ap:76:LEU:HB3 | 2:Ap:113:THR:HG23 | 2.02 | 0.42 |
| 3:Az:81:VAL:HG11 | 3:Az:132:LEU:HD22 | 2.01 | 0.42 |
| 3:Bc:11:ILE:HG13 | 3:Bc:11:ILE:O | 2.19 | 0.42 |
| 3:Bc:248:TRP:CH2 | 3:Bc:254:LEU:HD12 | 2.54 | 0.42 |
| 3:Bc:500:ARG:HH11 | 3:Bc:500:ARG:HG2 | 1.85 | 0.42 |
| 3:Bc:527:ILE:HG23 | 3:Bc:541:VAL:HG13 | 2.01 | 0.42 |
| 3:Bd:125:ILE:HG23 | 3:Bd:134:ILE:HG23 | 2.01 | 0.42 |
| 3:Bd:549:ASN:O | 3:Bd:571:LYS:HA | 2.19 | 0.42 |
| 1:Ac:368:GLN:OE1 | 1:Ac:368:GLN:HA | 2.20 | 0.42 |
| 1:Ad:405:ARG:O | 1:Ad:409:THR:HG23 | 2.19 | 0.42 |
| 1:Ah:208:ALA:O | 1:Ah:211:LYS:HB3 | 2.19 | 0.42 |
| 1:Ah:349:ALA:HB3 | 1:Ah:350:PRO:HD3 | 2.01 | 0.42 |
| 1:Ah:396:ASP:OD1 | 1:Ah:397:GLN:N | 2.52 | 0.42 |
| 1:Aj:289:ASP:CB | 1:Aj:366:LEU:HD11 | 2.50 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Al:426:LEU:HD23 | 1:Al:429:PHE:CD1 | 2.55 | 0.42 |
| 2:Am:51:ASN:O | 2:Am:115:TYR:HA | 2.20 | 0.42 |
| 2:Aq:52:LYS:HE3 | 2:Aq:54:MET:HG3 | 2.01 | 0.42 |
| 2:Av:76:LEU:HB3 | 2:Av:113:THR:HG23 | 2.02 | 0.42 |
| 2:Aw:189:ARG:N | 2:Aw:190:ARG:HD2 | 2.34 | 0.42 |
| 3:Ay:659:THR:HG22 | 3:Ay:761:ASP:HB2 | 2.01 | 0.42 |
| 3:Az:218:ILE:HD12 | 3:Az:227:LEU:HD12 | 2.01 | 0.42 |
| 3:Ba:171:THR:HG23 | 3:Ba:189:THR:HG22 | 2.00 | 0.42 |
| 3:Bb:34:ARG:NH1 | 3:Bb:36:ASP:HA | 2.35 | 0.42 |
| 3:Bc:20:VAL:HG13 | 3:Bc:712:VAL:HG21 | 2.00 | 0.42 |
| 3:Bc:482:MET:HE2 | 3:Bc:482:MET:HB2 | 1.84 | 0.42 |
| 1:Ab:97:VAL:HG21 | 1:Ab:152:THR:HA | 2.01 | 0.42 |
| 1:Ab:203:PHE:HB2 | 1:Ab:225:VAL:HG13 | 2.00 | 0.42 |
| 1:Ad:358:LYS:HB2 | 1:Ad:358:LYS:HE2 | 1.88 | 0.42 |
| 1:Ad:479:LYS:HE3 | 1:Ad:479:LYS:HB2 | 1.93 | 0.42 |
| 1:Ah:211:LYS:HB3 | 1:Ah:211:LYS:HE3 | 1.81 | 0.42 |
| 1:Ai:331:GLY:O | 2:Aw:174:VAL:HG22 | 2.20 | 0.42 |
| 1:Aj:208:ALA:O | 1:Aj:211:LYS:HB3 | 2.19 | 0.42 |
| 2:An:56:ILE:HD12 | 2:An:114:TRP:HB2 | 2.02 | 0.42 |
| 2:Ao:28:ASP:OD1 | 3:Ba:773:SER:HB3 | 2.20 | 0.42 |
| 2:As:76:LEU:HB3 | 2:As:113:THR:HG23 | 2.00 | 0.42 |
| 3:Ay:166:LEU:HD23 | 3:Ay:170:GLU:HG2 | 2.02 | 0.42 |
| 3:Az:11:ILE:HG13 | 3:Az:11:ILE:O | 2.19 | 0.42 |
| 3:Az:135:TRP:CE3 | 3:Az:380:ILE:HD12 | 2.55 | 0.42 |
| 3:Az:527:ILE:HG23 | 3:Az:541:VAL:HG13 | 2.02 | 0.42 |
| 3:Az:749:PHE:HB2 | 3:Az:770:TRP:CE2 | 2.55 | 0.42 |
| 3:Bc:90:LYS:HB3 | 3:Bc:116:PHE:CD2 | 2.55 | 0.42 |
| 3:Bd:646:LEU:HB2 | 3:Bd:663:LEU:HD11 | 2.01 | 0.42 |
| 1:Aa:349:ALA:HB3 | 1:Aa:350:PRO:HD3 | 2.01 | 0.42 |
| 1:Aa:399:HIS:HB3 | 1:Aa:403:TYR:CE2 | 2.55 | 0.42 |
| 1:Ab:211:LYS:HB3 | 1:Ab:211:LYS:HE3 | 1.82 | 0.42 |
| 1:Ab:389:ARG:HB3 | 1:Ab:390:LEU:H | 1.50 | 0.42 |
| 1:Ac:331:GLY:O | 2:Aq:174:VAL:HG22 | 2.19 | 0.42 |
| 1:Ad:307:MET:HE3 | 1:Ad:307:MET:HB3 | 1.95 | 0.42 |
| 1:Af:405:ARG:HA | 1:Af:408:ARG:NH1 | 2.35 | 0.42 |
| 1:Ag:122:LYS:HD2 | 1:Ag:122:LYS:HA | 1.88 | 0.42 |
| 1:Ah:53:GLN:HG2 | 1:Ah:56:LYS:NZ | 2.35 | 0.42 |
| 1:Ai:405:ARG:HG3 | 1:Ai:406:LEU:N | 2.34 | 0.42 |
| 1:Aj:452:MET:HE2 | 1:Aj:452:MET:HB3 | 1.93 | 0.42 |
| 2:Ap:12:LYS:HG3 | 2:Ap:18:PRO:HG3 | 2.02 | 0.42 |
| 2:Av:12:LYS:HG3 | 2:Av:18:PRO:HG3 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Aw:52:LYS:HE3 | 2:Aw:54:MET:HG3 | 2.01 | 0.42 |
| 2:Aw:189:ARG:O | 2:Aw:190:ARG:HG3 | 2.19 | 0.42 |
| 3:Ba:188:TRP:CZ2 | 3:Ba:204:LYS:HE2 | 2.54 | 0.42 |
| 3:Bb:188:TRP:HZ2 | 3:Bb:204:LYS:HG2 | 1.83 | 0.42 |
| 3:Bb:255:THR:HG22 | 3:Bb:271:ASN:HB3 | 2.00 | 0.42 |
| 3:Bc:34:ARG:HH21 | 3:Bc:602:LEU:HD13 | 1.85 | 0.42 |
| 3:Bc:749:PHE:HB2 | 3:Bc:770:TRP:CE2 | 2.55 | 0.42 |
| 1:Ac:300:GLU:HB2 | 1:Ac:355:ILE:HG21 | 2.01 | 0.42 |
| 1:Ae:390:LEU:HD12 | 1:Ae:391:ILE:H | 1.85 | 0.42 |
| 1:Af:220:ARG:HE | 1:Af:220:ARG:HB3 | 1.76 | 0.42 |
| 1:Ag:220:ARG:HG2 | 1:Ag:221:ALA:N | 2.35 | 0.42 |
| 1:Ah:80:ASP:HB2 | 2:At:190:ARG:HH21 | 1.83 | 0.42 |
| 1:Aj:358:LYS:HB2 | 1:Aj:358:LYS:HE2 | 1.87 | 0.42 |
| 2:Ar:17:ARG:HB2 | 3:Bb:776:MET:HG3 | 2.02 | 0.42 |
| 2:Au:86:TYR:HB3 | 2:Au:89:MET:SD | 2.59 | 0.42 |
| 3:Az:85:ALA:HB1 | 3:Az:116:PHE:CE1 | 2.55 | 0.42 |
| 3:Az:424:THR:OG1 | 3:Az:427:ASN:HB3 | 2.20 | 0.42 |
| 3:Ba:11:ILE:O | 3:Ba:11:ILE:HG13 | 2.19 | 0.42 |
| 3:Ba:395:MET:HG2 | 3:Ba:422:VAL:HG23 | 2.01 | 0.42 |
| 3:Bb:708:ARG:HD2 | 3:Bb:708:ARG:HA | 1.86 | 0.42 |
| 3:Bc:218:ILE:HD12 | 3:Bc:227:LEU:HD12 | 2.01 | 0.42 |
| 3:Bd:491:ASN:HD21 | 3:Bd:526:ARG:HE | 1.67 | 0.42 |
| 1:Ab:414:LEU:HD11 | 1:Ac:166:TRP:CH2 | 2.54 | 0.42 |
| 1:Af:426:LEU:HD23 | 1:Af:429:PHE:CD1 | 2.54 | 0.42 |
| 1:Ag:399:HIS:HB3 | 1:Ag:403:TYR:CE2 | 2.55 | 0.42 |
| 1:Ah:342:LYS:HD3 | 1:Ah:342:LYS:HA | 1.91 | 0.42 |
| 1:Al:166:TRP:HE1 | 1:Al:174:TYR:HB3 | 1.85 | 0.42 |
| 2:Ar:56:ILE:HD12 | 2:Ar:114:TRP:HB2 | 2.02 | 0.42 |
| 2:Av:145:GLU:OE2 | 3:Bd:807:THR:HG21 | 2.19 | 0.42 |
| 3:Ay:708:ARG:HD2 | 3:Ay:708:ARG:HA | 1.87 | 0.42 |
| 3:Az:34:ARG:HH21 | 3:Az:602:LEU:HD13 | 1.85 | 0.42 |
| 3:Az:248:TRP:CH2 | 3:Az:254:LEU:HD12 | 2.54 | 0.42 |
| 3:Bb:132:LEU:HB2 | 3:Bb:346:LEU:HD21 | 2.00 | 0.42 |
| 3:Bb:166:LEU:HD23 | 3:Bb:170:GLU:HG2 | 2.02 | 0.42 |
| 3:Bb:602:LEU:HD13 | 3:Bb:602:LEU:HA | 1.93 | 0.42 |
| 3:Bc:380:ILE:HG12 | 3:Bc:389:ILE:HG12 | 2.02 | 0.42 |
| 3:Bc:628:VAL:HG21 | 3:Bc:676:TYR:HB3 | 2.01 | 0.42 |
| 3:Bd:34:ARG:NH2 | 3:Bd:602:LEU:HD13 | 2.35 | 0.42 |
| 3:Bd:171:THR:HG23 | 3:Bd:189:THR:HG22 | 2.00 | 0.42 |
| 1:Ab:141:ARG:HD3 | 1:Ab:144:LYS:HE3 | 2.01 | 0.42 |
| 1:Af:231:ILE:HG23 | 1:Af:241:VAL:HG22 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Af:331:GLY:O | 2:At:174:VAL:HG22 | 2.20 | 0.42 |
| 1:Ag:403:TYR:HA | 1:Ag:406:LEU:HD23 | 2.01 | 0.42 |
| 1:Ak:56:LYS:HB3 | 1:Ak:56:LYS:HE3 | 1.92 | 0.42 |
| 2:Au:125:ILE:H | 2:Au:125:ILE:HD12 | 1.85 | 0.42 |
| 3:Ay:152:VAL:O | 3:Ay:157:ALA:HB2 | 2.20 | 0.42 |
| 3:Ay:450:PHE:HE1 | 3:Ay:467:ILE:HG12 | 1.85 | 0.42 |
| 3:Ay:550:GLU:HG2 | 3:Ay:571:LYS:HG2 | 2.01 | 0.42 |
| 3:Ay:643:ARG:CZ | 3:Ay:693:LYS:HD3 | 2.50 | 0.42 |
| 3:Az:90:LYS:HB3 | 3:Az:116:PHE:CD2 | 2.55 | 0.42 |
| 3:Ba:1:MET:HB2 | 3:Ba:2:GLY:H | 1.55 | 0.42 |
| 3:Ba:608:TRP:CG | 3:Ba:609:PRO:HA | 2.55 | 0.42 |
| 3:Bb:659:THR:HG22 | 3:Bb:761:ASP:HB2 | 2.01 | 0.42 |
| 3:Bc:85:ALA:HB1 | 3:Bc:116:PHE:CE1 | 2.55 | 0.42 |
| 3:Bc:231:GLN:HG3 | 3:Bc:236:VAL:HG22 | 2.02 | 0.42 |
| 3:Bc:702:ARG:HH11 | 3:Bc:779:ASP:HA | 1.85 | 0.42 |
| 3:Bd:156:GLN:HG2 | 3:Bd:252:ASP:O | 2.20 | 0.42 |
| 1:Aa:390:LEU:H | 1:Aa:390:LEU:HD23 | 1.85 | 0.41 |
| 1:Ab:399:HIS:HB3 | 1:Ab:403:TYR:CE2 | 2.54 | 0.41 |
| 1:Ab:492:MET:HE3 | 1:Ab:492:MET:HB3 | 1.90 | 0.41 |
| 1:Ae:403:TYR:HA | 1:Ae:406:LEU:HD23 | 2.01 | 0.41 |
| 1:Aj:405:ARG:O | 1:Aj:409:THR:HG23 | 2.19 | 0.41 |
| 1:Ak:331:GLY:O | 2:Am:174:VAL:HG22 | 2.20 | 0.41 |
| 2:Aw:39:TRP:CE2 | 2:Aw:134:SER:HB3 | 2.55 | 0.41 |
| 3:Az:509:MET:SD | 3:Ba:484:SER:HB3 | 2.60 | 0.41 |
| 3:Ba:193:LEU:HD23 | 3:Bb:198:THR:HG21 | 2.02 | 0.41 |
| 3:Ba:467:ILE:HD12 | 3:Bb:436:TYR:CD2 | 2.55 | 0.41 |
| 3:Bc:408:ARG:HH21 | 3:Bc:411:ALA:HA | 1.84 | 0.41 |
| 3:Bc:659:THR:HB | 3:Bc:661:THR:HG22 | 2.00 | 0.41 |
| 3:Bd:135:TRP:HB3 | 3:Bd:341:PHE:CD1 | 2.55 | 0.41 |
| 1:Ab:231:ILE:HG12 | 1:Ab:241:VAL:HG13 | 2.01 | 0.41 |
| 1:Ab:399:HIS:HD2 | 1:Ac:371:LEU:HD22 | 1.85 | 0.41 |
| 1:Ad:106:PRO:HA | 1:Ad:139:MET:HE2 | 2.02 | 0.41 |
| 1:Af:111:GLU:OE1 | 1:Af:111:GLU:HA | 2.20 | 0.41 |
| 1:Ah:358:LYS:O | 1:Ah:362:LEU:HG | 2.20 | 0.41 |
| 1:Aj:37:GLY:HA3 | 1:Aj:42:SER:HB2 | 2.02 | 0.41 |
| 1:Ak:286:LEU:HD21 | 1:Ak:369:MET:HE2 | 2.02 | 0.41 |
| 1:Ak:390:LEU:HD12 | 1:Ak:391:ILE:H | 1.85 | 0.41 |
| 2:Am:52:LYS:HG3 | 2:Am:115:TYR:CE1 | 2.54 | 0.41 |
| 2:Aq:189:ARG:O | 2:Aq:190:ARG:HG3 | 2.20 | 0.41 |
| 2:At:51:ASN:O | 2:At:115:TYR:HA | 2.20 | 0.41 |
| 3:Ay:493:GLY:HA3 | 3:Az:603:LYS:O | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Az:171:THR:HG23 | 3:Az:189:THR:HG22 | 2.01 | 0.41 |
| 3:Az:500:ARG:HG2 | 3:Az:500:ARG:HH11 | 1.84 | 0.41 |
| 3:Az:659:THR:HB | 3:Az:661:THR:HG22 | 2.01 | 0.41 |
| 3:Ba:749:PHE:HB2 | 3:Ba:770:TRP:CE2 | 2.56 | 0.41 |
| 3:Bb:152:VAL:O | 3:Bb:157:ALA:HB2 | 2.20 | 0.41 |
| 3:Bb:493:GLY:HA3 | 3:Bc:603:LYS:O | 2.20 | 0.41 |
| 3:Bd:644:MET:HE2 | 3:Bd:644:MET:HB2 | 1.94 | 0.41 |
| 1:Ac:293:MET:HE2 | 1:Ac:293:MET:HB3 | 1.83 | 0.41 |
| 1:Ac:405:ARG:HG3 | 1:Ac:406:LEU:N | 2.35 | 0.41 |
| 1:Ae:200:TRP:O | 1:Ae:201:MET:HB2 | 2.20 | 0.41 |
| 1:Af:208:ALA:O | 1:Af:211:LYS:HB3 | 2.20 | 0.41 |
| 1:Ah:452:MET:HE1 | 1:Ah:491:VAL:HG21 | 2.02 | 0.41 |
| 1:Al:396:ASP:OD1 | 1:Al:397:GLN:N | 2.53 | 0.41 |
| 2:As:91:LYS:HB3 | 2:As:91:LYS:HE2 | 1.72 | 0.41 |
| 2:At:56:ILE:HD12 | 2:At:114:TRP:HB2 | 2.02 | 0.41 |
| 3:Ay:501:PHE:CZ | 3:Ay:510:ASP:HB3 | 2.56 | 0.41 |
| 3:Az:759:TYR:HB2 | 3:Az:762:GLU:HG3 | 2.03 | 0.41 |
| 3:Ba:644:MET:HE2 | 3:Ba:644:MET:HB2 | 1.94 | 0.41 |
| 3:Bb:223:GLY:H | 3:Bb:226:ARG:HH21 | 1.69 | 0.41 |
| 3:Bc:106:ILE:H | 3:Bc:106:ILE:HD12 | 1.84 | 0.41 |
| 1:Aa:211:LYS:HE2 | 1:Aa:213:ILE:HD11 | 2.03 | 0.41 |
| 1:Ab:195:CYS:HB3 | 1:Ab:231:ILE:HD12 | 2.02 | 0.41 |
| 1:Ab:207:PRO:HG2 | 1:Ab:210:HIS:HB2 | 2.02 | 0.41 |
| 1:Ac:349:ALA:HB3 | 1:Ac:350:PRO:HD3 | 2.01 | 0.41 |
| 1:Ad:408:ARG:HG3 | 1:Ad:436:GLY:HA3 | 2.01 | 0.41 |
| 1:Af:410:LEU:HD23 | 1:Ag:100:LEU:HD23 | 2.03 | 0.41 |
| 1:Ak:449:ILE:O | 1:Ak:453:VAL:HG22 | 2.20 | 0.41 |
| 1:Al:68:GLN:HG3 | 2:Ax:189:ARG:NH1 | 2.25 | 0.41 |
| 2:An:51:ASN:O | 2:An:115:TYR:HA | 2.20 | 0.41 |
| 3:Ay:314:ILE:HD12 | 3:Ay:314:ILE:HA | 1.90 | 0.41 |
| 3:Az:280:LEU:HD13 | 3:Az:323:TRP:CG | 2.55 | 0.41 |
| 3:Ba:34:ARG:NH2 | 3:Ba:602:LEU:HD13 | 2.35 | 0.41 |
| 3:Ba:630:GLN:HB2 | 3:Ba:676:TYR:CE1 | 2.56 | 0.41 |
| 3:Bb:571:LYS:HE3 | 3:Bb:571:LYS:HB3 | 1.60 | 0.41 |
| 3:Bb:735:ARG:NH2 | 3:Bb:747:ASP:HB2 | 2.27 | 0.41 |
| 3:Bc:280:LEU:HD13 | 3:Bc:323:TRP:CG | 2.56 | 0.41 |
| 3:Bd:608:TRP:CG | 3:Bd:609:PRO:HA | 2.55 | 0.41 |
| 1:Ab:92:LEU:HD22 | 1:Ab:370:PHE:HA | 2.03 | 0.41 |
| 1:Ad:28:LEU:HD23 | 1:Ad:244:GLU:CD | 2.46 | 0.41 |
| 1:Ad:492:MET:HE3 | 1:Ad:492:MET:HB3 | 1.90 | 0.41 |
| 1:Af:166:TRP:HE1 | 1:Af:174:TYR:HB3 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ak:358:LYS:HE2 | 1:Ak:358:LYS:HB2 | 1.85 | 0.41 |
| 1:Ak:395:LEU:HA | 1:Ak:398:VAL:HG22 | 2.03 | 0.41 |
| 1:Al:405:ARG:HA | 1:Al:408:ARG:NH1 | 2.35 | 0.41 |
| 2:Ax:56:ILE:O | 2:Ax:111:THR:HA | 2.21 | 0.41 |
| 3:Ay:223:GLY:H | 3:Ay:226:ARG:HH21 | 1.69 | 0.41 |
| 3:Ay:248:TRP:CH2 | 3:Ay:254:LEU:HD12 | 2.56 | 0.41 |
| 3:Ay:436:TYR:CD2 | 3:Bd:467:ILE:HD12 | 2.55 | 0.41 |
| 3:Az:516:SER:HB2 | 3:Az:519:ILE:HD11 | 2.02 | 0.41 |
| 3:Ba:424:THR:HG21 | 3:Ba:431:LEU:HD21 | 2.02 | 0.41 |
| 3:Bb:119:GLN:H | 3:Bb:119:GLN:HG2 | 1.61 | 0.41 |
| 3:Bd:509:MET:HE2 | 3:Bd:509:MET:HB3 | 1.82 | 0.41 |
| 3:Bd:749:PHE:HB2 | 3:Bd:770:TRP:CE2 | 2.56 | 0.41 |
| 1:Aa:100:LEU:HA | 1:Al:435:THR:HG21 | 2.03 | 0.41 |
| 1:Aa:220:ARG:HG2 | 1:Aa:221:ALA:N | 2.36 | 0.41 |
| 1:Ab:349:ALA:HB3 | 1:Ab:350:PRO:HD3 | 2.02 | 0.41 |
| 1:Ac:395:LEU:HA | 1:Ac:398:VAL:HG22 | 2.02 | 0.41 |
| 1:Ae:220:ARG:HG2 | 1:Ae:221:ALA:N | 2.35 | 0.41 |
| 1:Af:440:LEU:HD22 | 1:Af:444:SER:HB2 | 2.02 | 0.41 |
| 1:Af:463:LEU:HD21 | 1:Af:473:LEU:HD23 | 2.03 | 0.41 |
| 1:Ah:399:HIS:HD2 | 1:Ai:371:LEU:HD22 | 1.85 | 0.41 |
| 1:Aj:391:ILE:H | 1:Aj:391:ILE:HG12 | 1.72 | 0.41 |
| 1:Aj:440:LEU:HD23 | 1:Aj:440:LEU:HA | 1.81 | 0.41 |
| 1:Ak:200:TRP:O | 1:Ak:201:MET:HB2 | 2.19 | 0.41 |
| 1:Al:142:PHE:CZ | 1:Al:147:GLY:HA3 | 2.55 | 0.41 |
| 2:Ao:177:LEU:HB2 | 2:Ao:180:PRO:CD | 2.48 | 0.41 |
| 3:Ay:73:TYR:CE2 | 3:Ay:584:ALA:HB3 | 2.55 | 0.41 |
| 3:Ay:198:THR:HG21 | 3:Bd:193:LEU:HD23 | 2.02 | 0.41 |
| 3:Az:380:ILE:HG12 | 3:Az:389:ILE:HG12 | 2.02 | 0.41 |
| 3:Ba:365:LYS:O | 3:Ba:365:LYS:HG3 | 2.20 | 0.41 |
| 3:Bb:540:ILE:HG12 | 3:Bb:553:VAL:HG22 | 2.01 | 0.41 |
| 3:Bd:395:MET:HG2 | 3:Bd:422:VAL:HG23 | 2.01 | 0.41 |
| 3:Bd:448:LYS:HE3 | 3:Bd:448:LYS:HB2 | 1.91 | 0.41 |
| 1:Ab:203:PHE:CD1 | 1:Ab:203:PHE:C | 2.98 | 0.41 |
| 1:Ac:402:ALA:O | 1:Ac:405:ARG:HG2 | 2.21 | 0.41 |
| 1:Ad:358:LYS:O | 1:Ad:362:LEU:HG | 2.21 | 0.41 |
| 1:Ae:129:MET:HE3 | 1:Ae:488:PRO:HG3 | 2.01 | 0.41 |
| 1:Af:142:PHE:CZ | 1:Af:147:GLY:HA3 | 2.55 | 0.41 |
| 1:Af:396:ASP:OD1 | 1:Af:397:GLN:N | 2.54 | 0.41 |
| 1:Ah:82:GLN:H | 1:Ah:82:GLN:HG3 | 1.74 | 0.41 |
| 1:Ah:209:LYS:H | 1:Ah:209:LYS:HG3 | 1.54 | 0.41 |
| 1:Ai:211:LYS:HE3 | 1:Ai:211:LYS:HB3 | 1.81 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Ai:402:ALA:O | 1:Ai:405:ARG:HG2 | 2.21 | 0.41 |
| 1:Ak:127:ILE:O | 1:Ak:131:MET:HG2 | 2.21 | 0.41 |
| 1:Al:349:ALA:HB3 | 1:Al:350:PRO:HD3 | 2.02 | 0.41 |
| 2:An:72:TYR:HB3 | 2:An:114:TRP:CE3 | 2.55 | 0.41 |
| 2:Ap:72:TYR:HB3 | 2:Ap:114:TRP:CE3 | 2.56 | 0.41 |
| 2:At:72:TYR:HB3 | 2:At:114:TRP:CE3 | 2.55 | 0.41 |
| 3:Az:702:ARG:HH11 | 3:Az:779:ASP:HA | 1.85 | 0.41 |
| 3:Az:808:LYS:HE2 | 3:Az:808:LYS:HB2 | 1.87 | 0.41 |
| 3:Bb:582:ASP:OD2 | 3:Bb:582:ASP:N | 2.54 | 0.41 |
| 3:Bc:509:MET:SD | 3:Bd:484:SER:HB3 | 2.60 | 0.41 |
| 3:Bc:509:MET:HE2 | 3:Bd:503:ILE:HD12 | 2.03 | 0.41 |
| 3:Bd:630:GLN:HB2 | 3:Bd:676:TYR:CE1 | 2.56 | 0.41 |
| 1:Ab:53:GLN:HG2 | 1:Ab:56:LYS:NZ | 2.35 | 0.41 |
| 1:Ab:315:LYS:HB3 | 1:Ab:340:TYR:HD2 | 1.86 | 0.41 |
| 1:Ac:136:ARG:CZ | 1:Ac:136:ARG:HB2 | 2.50 | 0.41 |
| 1:Ac:211:LYS:HE3 | 1:Ac:211:LYS:HB3 | 1.81 | 0.41 |
| 1:Ad:37:GLY:HA3 | 1:Ad:42:SER:HB2 | 2.03 | 0.41 |
| 1:Ad:231:ILE:HG12 | 1:Ad:241:VAL:HG13 | 2.02 | 0.41 |
| 1:Aj:142:PHE:CZ | 1:Aj:147:GLY:HA3 | 2.56 | 0.41 |
| 1:Al:331:GLY:O | 2:An:174:VAL:HG22 | 2.20 | 0.41 |
| 2:Ap:181:TYR:HD1 | 2:Ap:181:TYR:HA | 1.74 | 0.41 |
| 2:Aq:189:ARG:HG3 | 2:Aq:189:ARG:NH1 | 2.31 | 0.41 |
| 2:At:17:ARG:HB3 | 3:Bc:742:TRP:NE1 | 2.36 | 0.41 |
| 2:Ax:1:MET:HG3 | 2:Ax:120:TRP:HZ2 | 1.85 | 0.41 |
| 3:Ba:135:TRP:HB3 | 3:Ba:341:PHE:CD1 | 2.55 | 0.41 |
| 3:Ba:501:PHE:CZ | 3:Ba:510:ASP:HB3 | 2.55 | 0.41 |
| 3:Ba:547:LYS:HA | 3:Ba:547:LYS:HD3 | 1.92 | 0.41 |
| 3:Bb:394:LYS:HA | 3:Bb:423:GLY:HA2 | 2.03 | 0.41 |
| 3:Bb:643:ARG:CZ | 3:Bb:693:LYS:HD3 | 2.50 | 0.41 |
| 3:Bc:176:ILE:HG21 | 3:Bc:227:LEU:HD11 | 2.03 | 0.41 |
| 1:Ab:211:LYS:HD2 | 1:Ab:213:ILE:HD11 | 2.03 | 0.41 |
| 1:Ac:492:MET:HE3 | 1:Ac:492:MET:HB3 | 1.88 | 0.41 |
| 1:Ae:286:LEU:HD21 | 1:Ae:369:MET:HE2 | 2.02 | 0.41 |
| 1:Ae:466:PRO:HD2 | 1:Ae:467:GLN:HE21 | 1.85 | 0.41 |
| 1:Af:479:LYS:HE2 | 1:Af:479:LYS:HB2 | 1.92 | 0.41 |
| 1:Ag:211:LYS:HE2 | 1:Ag:213:ILE:HD11 | 2.03 | 0.41 |
| 1:Ag:473:LEU:HD22 | 1:Ah:470:TRP:CE3 | 2.56 | 0.41 |
| 1:Ah:399:HIS:HB3 | 1:Ah:403:TYR:CE2 | 2.56 | 0.41 |
| 1:Ai:224:VAL:HG21 | 1:Aj:40:LYS:HB3 | 2.03 | 0.41 |
| 1:Ai:286:LEU:HD21 | 1:Ai:369:MET:SD | 2.61 | 0.41 |
| 1:Ai:452:MET:HA | 1:Ai:484:TRP:CD1 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Aj:213:ILE:H | 1:Aj:213:ILE:HG13 | 1.72 | 0.41 |
| 1:Aj:389:ARG:HB3 | 1:Aj:390:LEU:H | 1.61 | 0.41 |
| 1:Ak:92:LEU:HD22 | 1:Ak:370:PHE:HA | 2.03 | 0.41 |
| 1:Ak:220:ARG:HG2 | 1:Ak:221:ALA:N | 2.35 | 0.41 |
| 1:Al:116:TYR:O | 1:Al:120:SER:HB3 | 2.21 | 0.41 |
| 2:An:87:PRO:HG2 | 2:An:88:TYR:CD2 | 2.56 | 0.41 |
| 2:Ap:163:LEU:HD23 | 2:Ap:163:LEU:HA | 1.91 | 0.41 |
| 2:Ar:1:MET:HG3 | 2:Ar:120:TRP:HZ2 | 1.86 | 0.41 |
| 2:Ar:56:ILE:O | 2:Ar:111:THR:HA | 2.21 | 0.41 |
| 2:At:154:ARG:HA | 2:At:154:ARG:HD2 | 1.71 | 0.41 |
| 2:Au:90:THR:HG22 | 2:Av:49:TRP:HD1 | 1.86 | 0.41 |
| 2:Aw:49:TRP:H | 2:Aw:49:TRP:HE3 | 1.69 | 0.41 |
| 2:Ax:181:TYR:HD1 | 2:Ax:181:TYR:HA | 1.72 | 0.41 |
| 3:Ay:34:ARG:NH1 | 3:Ay:36:ASP:HA | 2.35 | 0.41 |
| 3:Ay:220:ALA:O | 3:Ay:221:TYR:C | 2.64 | 0.41 |
| 3:Ay:394:LYS:HA | 3:Ay:423:GLY:HA2 | 2.03 | 0.41 |
| 3:Ay:759:TYR:HB2 | 3:Ay:762:GLU:HG3 | 2.03 | 0.41 |
| 3:Az:176:ILE:HG21 | 3:Az:227:LEU:HD11 | 2.03 | 0.41 |
| 3:Az:231:GLN:HG3 | 3:Az:236:VAL:HG22 | 2.02 | 0.41 |
| 3:Az:628:VAL:HG21 | 3:Az:676:TYR:HB3 | 2.01 | 0.41 |
| 3:Ba:156:GLN:HG2 | 3:Ba:252:ASP:O | 2.20 | 0.41 |
| 3:Ba:626:ASP:OD1 | 3:Ba:628:VAL:HG12 | 2.20 | 0.41 |
| 3:Bb:70:PHE:CD2 | 3:Bb:132:LEU:HD11 | 2.55 | 0.41 |
| 3:Bb:450:PHE:HE1 | 3:Bb:467:ILE:HG12 | 1.85 | 0.41 |
| 3:Bc:135:TRP:CE3 | 3:Bc:380:ILE:HD12 | 2.55 | 0.41 |
| 3:Bc:282:LYS:H | 3:Bc:282:LYS:HG2 | 1.70 | 0.41 |
| 3:Bc:440:ASP:HB2 | 3:Bc:451:LYS:HE2 | 2.03 | 0.41 |
| 1:Ac:479:LYS:HA | 1:Ac:482:THR:HG22 | 2.03 | 0.41 |
| 1:Ah:315:LYS:HB3 | 1:Ah:340:TYR:HD2 | 1.84 | 0.41 |
| 1:Ah:389:ARG:HB3 | 1:Ah:390:LEU:H | 1.50 | 0.41 |
| 1:Ai:136:ARG:CZ | 1:Ai:136:ARG:HB2 | 2.50 | 0.41 |
| 1:Ai:395:LEU:HA | 1:Ai:398:VAL:HG22 | 2.02 | 0.41 |
| 1:Aj:28:LEU:HD12 | 1:Aj:196:ILE:HG12 | 2.03 | 0.41 |
| 1:Aj:28:LEU:HD23 | 1:Aj:244:GLU:CD | 2.46 | 0.41 |
| 1:Aj:307:MET:HE3 | 1:Aj:307:MET:HB3 | 1.91 | 0.41 |
| 2:As:96:MET:HE3 | 2:As:96:MET:HB3 | 1.84 | 0.41 |
| 2:Aw:125:ILE:H | 2:Aw:125:ILE:HD12 | 1.86 | 0.41 |
| 3:Ay:737:ILE:HD11 | 3:Ay:774:ILE:HG23 | 2.03 | 0.41 |
| 3:Ay:786:ILE:HG22 | 3:Ay:788:ASP:H | 1.86 | 0.41 |
| 3:Az:258:VAL:HG12 | 3:Ba:283:TYR:OH | 2.21 | 0.41 |
| 3:Bb:482:MET:SD | 3:Bb:532:ALA:HB1 | 2.61 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:Bc:73:TYR:CZ | 3:Bc:584:ALA:HB3 | 2.56 | 0.41 |
| 3:Bc:80:GLU:O | 3:Bc:96:GLN:HA | 2.21 | 0.41 |
| 1:Ac:479:LYS:HE2 | 1:Ac:479:LYS:HB2 | 1.60 | 0.40 |
| 1:Ae:395:LEU:HA | 1:Ae:398:VAL:HG22 | 2.03 | 0.40 |
| 1:Ai:53:GLN:HG2 | 1:Ai:56:LYS:NZ | 2.36 | 0.40 |
| 1:Aj:219:LYS:HE2 | 1:Aj:219:LYS:HB3 | 1.80 | 0.40 |
| 1:Aj:414:LEU:O | 1:Aj:418:LEU:HD13 | 2.22 | 0.40 |
| 2:Ao:48:TRP:O | 2:Ao:52:LYS:HB2 | 2.21 | 0.40 |
| 2:At:174:VAL:HA | 2:At:177:LEU:HD21 | 2.03 | 0.40 |
| 2:Av:72:TYR:HB3 | 2:Av:114:TRP:CE3 | 2.56 | 0.40 |
| 2:Ax:56:ILE:HD12 | 2:Ax:114:TRP:HB2 | 2.02 | 0.40 |
| 3:Ba:759:TYR:HB2 | 3:Ba:762:GLU:HG3 | 2.03 | 0.40 |
| 3:Bb:501:PHE:CZ | 3:Bb:510:ASP:HB3 | 2.56 | 0.40 |
| 1:Ab:28:LEU:HD23 | 1:Ab:244:GLU:OE1 | 2.20 | 0.40 |
| 1:Ab:331:GLY:O | 2:Ap:174:VAL:HG22 | 2.21 | 0.40 |
| 1:Ab:358:LYS:O | 1:Ab:362:LEU:HG | 2.20 | 0.40 |
| 1:Ad:434:ILE:C | 1:Ad:434:ILE:HD12 | 2.46 | 0.40 |
| 1:Ad:469:ARG:HH21 | 1:Ad:470:TRP:HH2 | 1.67 | 0.40 |
| 1:Ae:331:GLY:O | 2:As:174:VAL:HG22 | 2.20 | 0.40 |
| 1:Af:349:ALA:HB3 | 1:Af:350:PRO:HD3 | 2.02 | 0.40 |
| 1:Af:399:HIS:HB3 | 1:Af:403:TYR:CE2 | 2.56 | 0.40 |
| 1:Ag:109:LYS:HB3 | 1:Ag:109:LYS:HE3 | 1.90 | 0.40 |
| 1:Ah:77:MET:HA | 2:At:189:ARG:HG3 | 2.03 | 0.40 |
| 1:Aj:349:ALA:HB3 | 1:Aj:350:PRO:HD3 | 2.04 | 0.40 |
| 1:Ak:466:PRO:HD2 | 1:Ak:467:GLN:HE21 | 1.87 | 0.40 |
| 1:Al:92:LEU:HD22 | 1:Al:370:PHE:HA | 2.04 | 0.40 |
| 1:Al:358:LYS:HB2 | 1:Al:358:LYS:HE2 | 1.79 | 0.40 |
| 2:An:6:ALA:O | 2:An:10:MET:HG3 | 2.21 | 0.40 |
| 2:An:96:MET:HE3 | 2:An:96:MET:HB3 | 1.84 | 0.40 |
| 2:Au:28:ASP:OD1 | 3:Bd:773:SER:HB3 | 2.20 | 0.40 |
| 2:Au:48:TRP:O | 2:Au:52:LYS:HB2 | 2.21 | 0.40 |
| 3:Ay:70:PHE:CD2 | 3:Ay:132:LEU:HD11 | 2.56 | 0.40 |
| 3:Ay:582:ASP:OD2 | 3:Ay:582:ASP:N | 2.54 | 0.40 |
| 1:Ab:440:LEU:HD22 | 1:Ab:444:SER:HB2 | 2.04 | 0.40 |
| 1:Ad:440:LEU:HD22 | 1:Ad:444:SER:HB2 | 2.01 | 0.40 |
| 1:Af:116:TYR:O | 1:Af:120:SER:HB3 | 2.21 | 0.40 |
| 1:Ag:29:LYS:HE2 | 1:Ag:33:TYR:HE2 | 1.86 | 0.40 |
| 1:Ah:203:PHE:C | 1:Ah:203:PHE:CD1 | 3.00 | 0.40 |
| 1:Aj:449:ILE:CD1 | 1:Ak:479:LYS:HD2 | 2.46 | 0.40 |
| 2:An:39:TRP:CE2 | 2:An:134:SER:HB3 | 2.55 | 0.40 |
| 2:Ao:90:THR:HG22 | 2:Ap:49:TRP:HD1 | 1.86 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Aq:10:MET:HE3 | 2:Aq:10:MET:HB3 | 1.95 | 0.40 |
| 2:As:36:LEU:HD12 | 2:As:36:LEU:HA | 1.95 | 0.40 |
| 2:At:6:ALA:O | 2:At:10:MET:HG3 | 2.21 | 0.40 |
| 2:Au:49:TRP:H | 2:Au:49:TRP:HE3 | 1.70 | 0.40 |
| 2:Au:154:ARG:HA | 2:Au:154:ARG:HD2 | 1.68 | 0.40 |
| 2:Ax:72:TYR:HB3 | 2:Ax:114:TRP:CE3 | 2.56 | 0.40 |
| 3:Az:509:MET:HE2 | 3:Ba:503:ILE:HD12 | 2.02 | 0.40 |
| 3:Bb:608:TRP:CG | 3:Bb:609:PRO:HA | 2.57 | 0.40 |
| 3:Bb:786:ILE:HG22 | 3:Bb:788:ASP:H | 1.86 | 0.40 |
| 3:Bc:258:VAL:HG12 | 3:Bd:283:TYR:OH | 2.22 | 0.40 |
| 3:Bd:550:GLU:HG2 | 3:Bd:571:LYS:HG2 | 2.03 | 0.40 |
| 3:Bd:626:ASP:OD1 | 3:Bd:628:VAL:HG12 | 2.20 | 0.40 |
| 1:Aa:100:LEU:HD23 | 1:Al:410:LEU:HD23 | 2.03 | 0.40 |
| 1:Ab:342:LYS:HA | 1:Ab:342:LYS:HD3 | 1.90 | 0.40 |
| 1:Ab:434:ILE:HD12 | 1:Ac:105:ARG:HH21 | 1.87 | 0.40 |
| 1:Ac:92:LEU:HD22 | 1:Ac:370:PHE:HA | 2.03 | 0.40 |
| 1:Ad:389:ARG:HB3 | 1:Ad:390:LEU:H | 1.62 | 0.40 |
| 1:Af:141:ARG:HA | 1:Af:144:LYS:HG2 | 2.03 | 0.40 |
| 1:Ah:331:GLY:O | 2:Av:174:VAL:HG22 | 2.21 | 0.40 |
| 1:Ai:77:MET:CE | 1:Aj:273:VAL:HG11 | 2.52 | 0.40 |
| 1:Al:399:HIS:HB3 | 1:Al:403:TYR:CE2 | 2.56 | 0.40 |
| 1:Al:414:LEU:HD23 | 1:Al:414:LEU:HA | 1.86 | 0.40 |
| 2:An:174:VAL:HA | 2:An:177:LEU:HD21 | 2.03 | 0.40 |
| 2:Aq:48:TRP:O | 2:Aq:52:LYS:HB2 | 2.22 | 0.40 |
| 2:Ar:174:VAL:HA | 2:Ar:177:LEU:HD21 | 2.03 | 0.40 |
| 2:As:87:PRO:HG2 | 2:As:88:TYR:CD1 | 2.56 | 0.40 |
| 3:Ay:85:ALA:HB1 | 3:Ay:116:PHE:HE1 | 1.86 | 0.40 |
| 3:Az:85:ALA:HB1 | 3:Az:116:PHE:HE1 | 1.87 | 0.40 |
| 3:Az:648:THR:HA | 3:Az:686:ALA:HB1 | 2.03 | 0.40 |
| 3:Ba:85:ALA:HB1 | 3:Ba:116:PHE:HE1 | 1.86 | 0.40 |
| 3:Bb:125:ILE:H | 3:Bb:125:ILE:HG12 | 1.55 | 0.40 |
| 3:Bb:220:ALA:O | 3:Bb:221:TYR:C | 2.64 | 0.40 |
| 3:Bc:516:SER:HB2 | 3:Bc:519:ILE:HD11 | 2.02 | 0.40 |
| 3:Bc:648:THR:HA | 3:Bc:686:ALA:HB1 | 2.03 | 0.40 |
| 1:Ab:124:ILE:HA | 1:Ab:127:ILE:HD12 | 2.03 | 0.40 |
| 1:Ac:220:ARG:HG2 | 1:Ac:221:ALA:N | 2.37 | 0.40 |
| 1:Ae:142:PHE:CZ | 1:Ae:147:GLY:HA3 | 2.57 | 0.40 |
| 1:Ag:390:LEU:H | 1:Ag:390:LEU:HD23 | 1.85 | 0.40 |
| 1:Ah:295:LYS:HA | 1:Ah:295:LYS:HD2 | 1.98 | 0.40 |
| 1:Aj:434:ILE:HD12 | 1:Aj:434:ILE:C | 2.46 | 0.40 |
| 2:Ao:125:ILE:HD12 | 2:Ao:125:ILE:H | 1.86 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:Ar:14:ILE:HD13 | 2:Ar:139:LEU:HD23 | 2.02 | 0.40 |
| 2:Ax:17:ARG:HB2 | 3:Ay:776:MET:HG3 | 2.02 | 0.40 |
| 3:Ay:383:PHE:CE1 | 3:Ay:384:GLN:HG3 | 2.57 | 0.40 |
| 3:Az:332:GLU:HB3 | 3:Az:359:ARG:NH1 | 2.25 | 0.40 |
| 3:Az:440:ASP:HB2 | 3:Az:451:LYS:HE2 | 2.03 | 0.40 |
| 3:Ba:501:PHE:CE1 | 3:Ba:510:ASP:HB3 | 2.57 | 0.40 |
| 3:Ba:550:GLU:HG2 | 3:Ba:571:LYS:HG2 | 2.03 | 0.40 |
| 3:Bb:85:ALA:HB1 | 3:Bb:116:PHE:HE1 | 1.86 | 0.40 |
| 3:Bb:248:TRP:CH2 | 3:Bb:254:LEU:HD12 | 2.56 | 0.40 |
| 3:Bc:735:ARG:NH2 | 3:Bc:747:ASP:HB2 | 2.27 | 0.40 |
| 3:Bc:759:TYR:HB2 | 3:Bc:762:GLU:HG3 | 2.03 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles (i)

### 5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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 | 448/524 (86%) | 431 (96%) | 16 (4%) | 1 (0%) | 43 | 72 |
| 1 | Ab | 448/524 (86%) | 432 (96%) | 15 (3%) | 1 (0%) | 43 | 72 |
| 1 | Ac | 448/524 (86%) | 432 (96%) | 15 (3%) | 1 (0%) | 43 | 72 |
| 1 | Ad | 448/524 (86%) | 432 (96%) | 15 (3%) | 1 (0%) | 43 | 72 |
| 1 | Ae | 448/524 (86%) | 427 (95%) | 20 (4%) | 1 (0%) | 43 | 72 |
| 1 | Af | 448/524 (86%) | 434 (97%) | 13 (3%) | 1 (0%) | 43 | 72 |
| 1 | Ag | 448/524 (86%) | 431 (96%) | 16 (4%) | 1 (0%) | 43 | 72 |
| 1 | Ah | 448/524 (86%) | 431 (96%) | 16 (4%) | 1 (0%) | 43 | 72 |
| 1 | Ai | 448/524 (86%) | 431 (96%) | 16 (4%) | 1 (0%) | 43 | 72 |
| 1 | Aj | 448/524 (86%) | 432 (96%) | 15 (3%) | 1 (0%) | 43 | 72 |
| 1 | Ak | 448/524 (86%) | 429 (96%) | 18 (4%) | 1 (0%) | 43 | 72 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | Al | 448/524 (86%) | 434 (97%) | 13 (3%) | 1 (0%) | 43 | 72 |
| 2 | Am | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | An | 188/197 (95%) | 179 (95%) | 9 (5%) | 0 | 100 | 100 |
| 2 | Ao | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | Ap | 188/197 (95%) | 179 (95%) | 9 (5%) | 0 | 100 | 100 |
| 2 | Aq | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | Ar | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | As | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | At | 188/197 (95%) | 179 (95%) | 9 (5%) | 0 | 100 | 100 |
| 2 | Au | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | Av | 188/197 (95%) | 179 (95%) | 9 (5%) | 0 | 100 | 100 |
| 2 | Aw | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 2 | Ax | 188/197 (95%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 3 | Ay | 809/811 (100%) | 749 (93%) | 58 (7%) | 2 (0%) | 43 | 72 |
| 3 | Az | 809/811 (100%) | 744 (92%) | 63 (8%) | 2 (0%) | 43 | 72 |
| 3 | Ba | 809/811 (100%) | 750 (93%) | 57 (7%) | 2 (0%) | 43 | 72 |
| 3 | Bb | 809/811 (100%) | 752 (93%) | 55 (7%) | 2 (0%) | 43 | 72 |
| 3 | Bc | 809/811 (100%) | 742 (92%) | 65 (8%) | 2 (0%) | 43 | 72 |
| 3 | Bd | 809/811 (100%) | 749 (93%) | 58 (7%) | 2 (0%) | 43 | 72 |
| All | All | 12486/13518 (92%) | 11818 (95%) | 644 (5%) | 24 (0%) | 44 | 72 |

All (24) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | Ay | 198 | THR |
| 3 | Ay | 250 | GLN |
| 3 | Az | 198 | THR |
| 3 | Az | 250 | GLN |
| 3 | Ba | 198 | THR |
| 3 | Ba | 250 | GLN |
| 3 | Bb | 198 | THR |
| 3 | Bb | 250 | GLN |
| 3 | Bc | 198 | THR |
| 3 | Bc | 250 | GLN |
| 3 | Bd | 198 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | Bd | 250 | GLN |
| 1 | Ad | 201 | MET |
| 1 | Aj | 201 | MET |
| 1 | Af | 201 | MET |
| 1 | Al | 201 | MET |
| 1 | Aa | 201 | MET |
| 1 | Ab | 201 | MET |
| 1 | Ac | 201 | MET |
| 1 | Ae | 201 | MET |
| 1 | Ag | 201 | MET |
| 1 | Ah | 201 | MET |
| 1 | Ai | 201 | MET |
| 1 | Ak | 201 | MET |

### 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 | 380/438 (87%) | 366 (96%) | 14 (4%) | 30 | 59 |
| 1 | Ab | 380/438 (87%) | 370 (97%) | 10 (3%) | 40 | 66 |
| 1 | Ac | 380/438 (87%) | 363 (96%) | 17 (4%) | 24 | 55 |
| 1 | Ad | 380/438 (87%) | 369 (97%) | 11 (3%) | 37 | 64 |
| 1 | Ae | 380/438 (87%) | 362 (95%) | 18 (5%) | 23 | 54 |
| 1 | Af | 380/438 (87%) | 367 (97%) | 13 (3%) | 32 | 61 |
| 1 | Ag | 380/438 (87%) | 368 (97%) | 12 (3%) | 34 | 62 |
| 1 | Ah | 380/438 (87%) | 369 (97%) | 11 (3%) | 37 | 64 |
| 1 | Ai | 380/438 (87%) | 361 (95%) | 19 (5%) | 22 | 52 |
| 1 | Aj | 380/438 (87%) | 369 (97%) | 11 (3%) | 37 | 64 |
| 1 | Ak | 380/438 (87%) | 364 (96%) | 16 (4%) | 26 | 56 |
| 1 | Al | 380/438 (87%) | 368 (97%) | 12 (3%) | 34 | 62 |
| 2 | Am | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | An | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 2 | Ao | 170/177 (96%) | 167 (98%) | 3 (2%) | 51 | 71 |
| 2 | Ap | 170/177 (96%) | 169 (99%) | 1 (1%) | 78 | 82 |
| 2 | Aq | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | Ar | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | As | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | At | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | Au | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | Av | 170/177 (96%) | 169 (99%) | 1 (1%) | 78 | 82 |
| 2 | Aw | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 2 | Ax | 170/177 (96%) | 168 (99%) | 2 (1%) | 63 | 76 |
| 3 | Ay | 699/699 (100%) | 678 (97%) | 21 (3%) | 36 | 63 |
| 3 | Az | 699/699 (100%) | 678 (97%) | 21 (3%) | 36 | 63 |
| 3 | Ba | 699/699 (100%) | 682 (98%) | 17 (2%) | 43 | 67 |
| 3 | Bb | 699/699 (100%) | 677 (97%) | 22 (3%) | 35 | 62 |
| 3 | Bc | 699/699 (100%) | 679 (97%) | 20 (3%) | 37 | 64 |
| 3 | Bd | 699/699 (100%) | 681 (97%) | 18 (3%) | 40 | 66 |
| All | All | 10794/11574 (93%) | 10488 (97%) | 306 (3%) | 38 | 64 |

All (306) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Aa | 42 | SER |
| 1 | Aa | 56 | LYS |
| 1 | Aa | 161 | THR |
| 1 | Aa | 199 | GLU |
| 1 | Aa | 213 | ILE |
| 1 | Aa | 220 | ARG |
| 1 | Aa | 245 | MET |
| 1 | Aa | 311 | LYS |
| 1 | Aa | 314 | VAL |
| 1 | Aa | 341 | ILE |
| 1 | Aa | 406 | LEU |
| 1 | Aa | 420 | GLN |
| 1 | Aa | 427 | LYS |
| 1 | Aa | 445 | GLU |
| 1 | Ab | 52 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Ab | 102 | HIS |
| 1 | Ab | 161 | THR |
| 1 | Ab | 199 | GLU |
| 1 | Ab | 209 | LYS |
| 1 | Ab | 220 | ARG |
| 1 | Ab | 406 | LEU |
| 1 | Ab | 425 | MET |
| 1 | Ab | 449 | ILE |
| 1 | Ab | 473 | LEU |
| 1 | Ac | 79 | LEU |
| 1 | Ac | 102 | HIS |
| 1 | Ac | 156 | MET |
| 1 | Ac | 199 | GLU |
| 1 | Ac | 213 | ILE |
| 1 | Ac | 220 | ARG |
| 1 | Ac | 245 | MET |
| 1 | Ac | 246 | GLU |
| 1 | Ac | 282 | ILE |
| 1 | Ac | 314 | VAL |
| 1 | Ac | 353 | GLU |
| 1 | Ac | 362 | LEU |
| 1 | Ac | 406 | LEU |
| 1 | Ac | 420 | GLN |
| 1 | Ac | 427 | LYS |
| 1 | Ac | 434 | ILE |
| 1 | Ac | 446 | LEU |
| 1 | Ad | 74 | MET |
| 1 | Ad | 102 | HIS |
| 1 | Ad | 144 | LYS |
| 1 | Ad | 161 | THR |
| 1 | Ad | 199 | GLU |
| 1 | Ad | 220 | ARG |
| 1 | Ad | 260 | LYS |
| 1 | Ad | 311 | LYS |
| 1 | Ad | 406 | LEU |
| 1 | Ad | 446 | LEU |
| 1 | Ad | 473 | LEU |
| 1 | Ae | 70 | HIS |
| 1 | Ae | 102 | HIS |
| 1 | Ae | 123 | SER |
| 1 | Ae | 156 | MET |
| 1 | Ae | 161 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Ae | 199 | GLU |
| 1 | Ae | 213 | ILE |
| 1 | Ae | 220 | ARG |
| 1 | Ae | 314 | VAL |
| 1 | Ae | 390 | LEU |
| 1 | Ae | 406 | LEU |
| 1 | Ae | 417 | ASP |
| 1 | Ae | 420 | GLN |
| 1 | Ae | 427 | LYS |
| 1 | Ae | 434 | ILE |
| 1 | Ae | 446 | LEU |
| 1 | Ae | 449 | ILE |
| 1 | Ae | 456 | MET |
| 1 | Af | 28 | LEU |
| 1 | Af | 102 | HIS |
| 1 | Af | 199 | GLU |
| 1 | Af | 211 | LYS |
| 1 | Af | 213 | ILE |
| 1 | Af | 260 | LYS |
| 1 | Af | 343 | SER |
| 1 | Af | 406 | LEU |
| 1 | Af | 420 | GLN |
| 1 | Af | 434 | ILE |
| 1 | Af | 446 | LEU |
| 1 | Af | 449 | ILE |
| 1 | Af | 473 | LEU |
| 1 | Ag | 42 | SER |
| 1 | Ag | 56 | LYS |
| 1 | Ag | 102 | HIS |
| 1 | Ag | 161 | THR |
| 1 | Ag | 199 | GLU |
| 1 | Ag | 213 | ILE |
| 1 | Ag | 220 | ARG |
| 1 | Ag | 245 | MET |
| 1 | Ag | 314 | VAL |
| 1 | Ag | 341 | ILE |
| 1 | Ag | 406 | LEU |
| 1 | Ag | 427 | LYS |
| 1 | Ah | 28 | LEU |
| 1 | Ah | 102 | HIS |
| 1 | Ah | 161 | THR |
| 1 | Ah | 209 | LYS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Ah | 220 | ARG |
| 1 | Ah | 323 | GLU |
| 1 | Ah | 395 | LEU |
| 1 | Ah | 406 | LEU |
| 1 | Ah | 425 | MET |
| 1 | Ah | 446 | LEU |
| 1 | Ah | 473 | LEU |
| 1 | Ai | 42 | SER |
| 1 | Ai | 79 | LEU |
| 1 | Ai | 102 | HIS |
| 1 | Ai | 156 | MET |
| 1 | Ai | 199 | GLU |
| 1 | Ai | 213 | ILE |
| 1 | Ai | 220 | ARG |
| 1 | Ai | 245 | MET |
| 1 | Ai | 246 | GLU |
| 1 | Ai | 314 | VAL |
| 1 | Ai | 341 | ILE |
| 1 | Ai | 353 | GLU |
| 1 | Ai | 362 | LEU |
| 1 | Ai | 406 | LEU |
| 1 | Ai | 420 | GLN |
| 1 | Ai | 425 | MET |
| 1 | Ai | 427 | LYS |
| 1 | Ai | 434 | ILE |
| 1 | Ai | 446 | LEU |
| 1 | Aj | 74 | MET |
| 1 | Aj | 102 | HIS |
| 1 | Aj | 144 | LYS |
| 1 | Aj | 161 | THR |
| 1 | Aj | 199 | GLU |
| 1 | Aj | 220 | ARG |
| 1 | Aj | 260 | LYS |
| 1 | Aj | 406 | LEU |
| 1 | Aj | 449 | ILE |
| 1 | Aj | 473 | LEU |
| 1 | Aj | 482 | THR |
| 1 | Ak | 70 | HIS |
| 1 | Ak | 102 | HIS |
| 1 | Ak | 123 | SER |
| 1 | Ak | 156 | MET |
| 1 | Ak | 161 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Ak | 199 | GLU |
| 1 | Ak | 213 | ILE |
| 1 | Ak | 220 | ARG |
| 1 | Ak | 314 | VAL |
| 1 | Ak | 390 | LEU |
| 1 | Ak | 406 | LEU |
| 1 | Ak | 417 | ASP |
| 1 | Ak | 420 | GLN |
| 1 | Ak | 427 | LYS |
| 1 | Ak | 434 | ILE |
| 1 | Ak | 446 | LEU |
| 1 | Al | 28 | LEU |
| 1 | Al | 102 | HIS |
| 1 | Al | 199 | GLU |
| 1 | Al | 211 | LYS |
| 1 | Al | 213 | ILE |
| 1 | Al | 260 | LYS |
| 1 | Al | 343 | SER |
| 1 | Al | 406 | LEU |
| 1 | Al | 434 | ILE |
| 1 | Al | 446 | LEU |
| 1 | Al | 449 | ILE |
| 1 | Al | 473 | LEU |
| 2 | Am | 2 | ASP |
| 2 | Am | 181 | TYR |
| 2 | An | 103 | THR |
| 2 | An | 181 | TYR |
| 2 | Ao | 2 | ASP |
| 2 | Ao | 92 | LEU |
| 2 | Ao | 181 | TYR |
| 2 | Ap | 181 | TYR |
| 2 | Aq | 2 | ASP |
| 2 | Aq | 181 | TYR |
| 2 | Ar | 57 | THR |
| 2 | Ar | 181 | TYR |
| 2 | As | 2 | ASP |
| 2 | As | 181 | TYR |
| 2 | At | 103 | THR |
| 2 | At | 181 | TYR |
| 2 | Au | 2 | ASP |
| 2 | Au | 181 | TYR |
| 2 | Av | 181 | TYR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | Aw | 2 | ASP |
| 2 | Aw | 181 | TYR |
| 2 | Ax | 57 | THR |
| 2 | Ax | 181 | TYR |
| 3 | Ay | 35 | ASN |
| 3 | Ay | 87 | HIS |
| 3 | Ay | 97 | ARG |
| 3 | Ay | 123 | LEU |
| 3 | Ay | 125 | ILE |
| 3 | Ay | 132 | LEU |
| 3 | Ay | 134 | ILE |
| 3 | Ay | 146 | THR |
| 3 | Ay | 184 | VAL |
| 3 | Ay | 190 | VAL |
| 3 | Ay | 208 | THR |
| 3 | Ay | 215 | SER |
| 3 | Ay | 235 | ASN |
| 3 | Ay | 253 | THR |
| 3 | Ay | 269 | VAL |
| 3 | Ay | 277 | ILE |
| 3 | Ay | 297 | THR |
| 3 | Ay | 326 | SER |
| 3 | Ay | 568 | CYS |
| 3 | Ay | 659 | THR |
| 3 | Ay | 761 | ASP |
| 3 | Az | 35 | ASN |
| 3 | Az | 51 | ILE |
| 3 | Az | 87 | HIS |
| 3 | Az | 123 | LEU |
| 3 | Az | 125 | ILE |
| 3 | Az | 132 | LEU |
| 3 | Az | 146 | THR |
| 3 | Az | 172 | VAL |
| 3 | Az | 208 | THR |
| 3 | Az | 235 | ASN |
| 3 | Az | 253 | THR |
| 3 | Az | 269 | VAL |
| 3 | Az | 297 | THR |
| 3 | Az | 333 | THR |
| 3 | Az | 349 | ASN |
| 3 | Az | 350 | VAL |
| 3 | Az | 414 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | Az | 415 | LEU |
| 3 | Az | 465 | LEU |
| 3 | Az | 568 | CYS |
| 3 | Az | 761 | ASP |
| 3 | Ba | 35 | ASN |
| 3 | Ba | 51 | ILE |
| 3 | Ba | 87 | HIS |
| 3 | Ba | 123 | LEU |
| 3 | Ba | 125 | ILE |
| 3 | Ba | 127 | ASP |
| 3 | Ba | 134 | ILE |
| 3 | Ba | 235 | ASN |
| 3 | Ba | 253 | THR |
| 3 | Ba | 269 | VAL |
| 3 | Ba | 285 | VAL |
| 3 | Ba | 409 | ASN |
| 3 | Ba | 435 | VAL |
| 3 | Ba | 465 | LEU |
| 3 | Ba | 568 | CYS |
| 3 | Ba | 761 | ASP |
| 3 | Ba | 780 | ASP |
| 3 | Bb | 35 | ASN |
| 3 | Bb | 87 | HIS |
| 3 | Bb | 97 | ARG |
| 3 | Bb | 123 | LEU |
| 3 | Bb | 125 | ILE |
| 3 | Bb | 132 | LEU |
| 3 | Bb | 134 | ILE |
| 3 | Bb | 146 | THR |
| 3 | Bb | 184 | VAL |
| 3 | Bb | 190 | VAL |
| 3 | Bb | 208 | THR |
| 3 | Bb | 215 | SER |
| 3 | Bb | 235 | ASN |
| 3 | Bb | 253 | THR |
| 3 | Bb | 269 | VAL |
| 3 | Bb | 277 | ILE |
| 3 | Bb | 297 | THR |
| 3 | Bb | 326 | SER |
| 3 | Bb | 506 | ASP |
| 3 | Bb | 568 | CYS |
| 3 | Bb | 659 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | Bb | 761 | ASP |
| 3 | Bc | 35 | ASN |
| 3 | Bc | 51 | ILE |
| 3 | Bc | 87 | HIS |
| 3 | Bc | 123 | LEU |
| 3 | Bc | 125 | ILE |
| 3 | Bc | 146 | THR |
| 3 | Bc | 172 | VAL |
| 3 | Bc | 208 | THR |
| 3 | Bc | 235 | ASN |
| 3 | Bc | 253 | THR |
| 3 | Bc | 269 | VAL |
| 3 | Bc | 297 | THR |
| 3 | Bc | 333 | THR |
| 3 | Bc | 349 | ASN |
| 3 | Bc | 350 | VAL |
| 3 | Bc | 414 | LEU |
| 3 | Bc | 415 | LEU |
| 3 | Bc | 465 | LEU |
| 3 | Bc | 568 | CYS |
| 3 | Bc | 761 | ASP |
| 3 | Bd | 35 | ASN |
| 3 | Bd | 51 | ILE |
| 3 | Bd | 87 | HIS |
| 3 | Bd | 123 | LEU |
| 3 | Bd | 125 | ILE |
| 3 | Bd | 127 | ASP |
| 3 | Bd | 134 | ILE |
| 3 | Bd | 184 | VAL |
| 3 | Bd | 235 | ASN |
| 3 | Bd | 253 | THR |
| 3 | Bd | 269 | VAL |
| 3 | Bd | 285 | VAL |
| 3 | Bd | 409 | ASN |
| 3 | Bd | 435 | VAL |
| 3 | Bd | 465 | LEU |
| 3 | Bd | 568 | CYS |
| 3 | Bd | 761 | ASP |
| 3 | Bd | 780 | ASP |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (104) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Aa | 53 | GLN |
| 1 | Aa | 70 | HIS |
| 1 | Aa | 87 | GLN |
| 1 | Aa | 344 | HIS |
| 1 | Aa | 397 | GLN |
| 1 | Ab | 53 | GLN |
| 1 | Ab | 157 | GLN |
| 1 | Ab | 291 | HIS |
| 1 | Ab | 344 | HIS |
| 1 | Ab | 399 | HIS |
| 1 | Ac | 344 | HIS |
| 1 | Ac | 368 | GLN |
| 1 | Ac | 397 | GLN |
| 1 | Ad | 53 | GLN |
| 1 | Ad | 68 | GLN |
| 1 | Ad | 344 | HIS |
| 1 | Ad | 464 | GLN |
| 1 | Ae | 38 | HIS |
| 1 | Ae | 210 | HIS |
| 1 | Ae | 344 | HIS |
| 1 | Ae | 467 | GLN |
| 1 | Ae | 472 | ASN |
| 1 | Af | 53 | GLN |
| 1 | Af | 291 | HIS |
| 1 | Af | 344 | HIS |
| 1 | Af | 420 | GLN |
| 1 | Ag | 53 | GLN |
| 1 | Ag | 344 | HIS |
| 1 | Ag | 397 | GLN |
| 1 | Ag | 420 | GLN |
| 1 | Ah | 53 | GLN |
| 1 | Ah | 102 | HIS |
| 1 | Ah | 157 | GLN |
| 1 | Ah | 291 | HIS |
| 1 | Ah | 344 | HIS |
| 1 | Ai | 70 | HIS |
| 1 | Ai | 344 | HIS |
| 1 | Ai | 397 | GLN |
| 1 | Aj | 53 | GLN |
| 1 | Aj | 291 | HIS |
| 1 | Aj | 344 | HIS |
| 1 | Aj | 464 | GLN |
| 1 | Ak | 291 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | Ak | 344 | HIS |
| 1 | Ak | 467 | GLN |
| 1 | Ak | 472 | ASN |
| 1 | Al | 53 | GLN |
| 1 | Al | 291 | HIS |
| 1 | Al | 344 | HIS |
| 2 | Am | 63 | GLN |
| 2 | Ao | 168 | GLN |
| 2 | As | 63 | GLN |
| 2 | Au | 168 | GLN |
| 2 | Av | 46 | HIS |
| 2 | Av | 93 | ASN |
| 2 | Ax | 46 | HIS |
| 2 | Ax | 93 | ASN |
| 3 | Ay | 30 | GLN |
| 3 | Ay | 77 | GLN |
| 3 | Ay | 161 | ASN |
| 3 | Ay | 471 | ASN |
| 3 | Ay | 492 | HIS |
| 3 | Ay | 535 | ASN |
| 3 | Ay | 653 | ASN |
| 3 | Ay | 757 | GLN |
| 3 | Az | 396 | ASN |
| 3 | Az | 409 | ASN |
| 3 | Az | 471 | ASN |
| 3 | Az | 492 | HIS |
| 3 | Az | 535 | ASN |
| 3 | Az | 757 | GLN |
| 3 | Ba | 30 | GLN |
| 3 | Ba | 32 | ASN |
| 3 | Ba | 161 | ASN |
| 3 | Ba | 379 | HIS |
| 3 | Ba | 409 | ASN |
| 3 | Ba | 471 | ASN |
| 3 | Ba | 492 | HIS |
| 3 | Ba | 535 | ASN |
| 3 | Ba | 757 | GLN |
| 3 | Bb | 32 | ASN |
| 3 | Bb | 77 | GLN |
| 3 | Bb | 161 | ASN |
| 3 | Bb | 471 | ASN |
| 3 | Bb | 492 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | Bb | 535 | ASN |
| 3 | Bb | 653 | ASN |
| 3 | Bb | 757 | GLN |
| 3 | Bc | 396 | ASN |
| 3 | Bc | 409 | ASN |
| 3 | Bc | 471 | ASN |
| 3 | Bc | 492 | HIS |
| 3 | Bc | 653 | ASN |
| 3 | Bc | 757 | GLN |
| 3 | Bd | 32 | ASN |
| 3 | Bd | 161 | ASN |
| 3 | Bd | 379 | HIS |
| 3 | Bd | 409 | ASN |
| 3 | Bd | 471 | ASN |
| 3 | Bd | 492 | HIS |
| 3 | Bd | 504 | GLN |
| 3 | Bd | 535 | ASN |
| 3 | Bd | 722 | HIS |
| 3 | Bd | 757 | GLN |

#### 5.3.3 RNA

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry

There are no ligands in this entry.

### 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

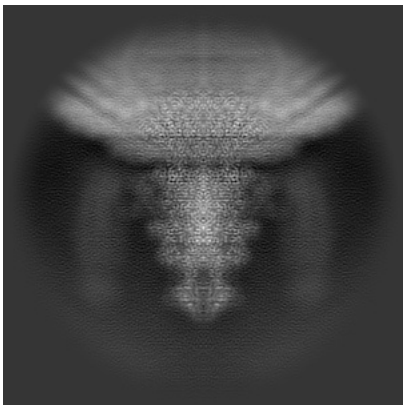
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-74389. These allow visual inspection of the internal detail of the map and identification of artifacts.

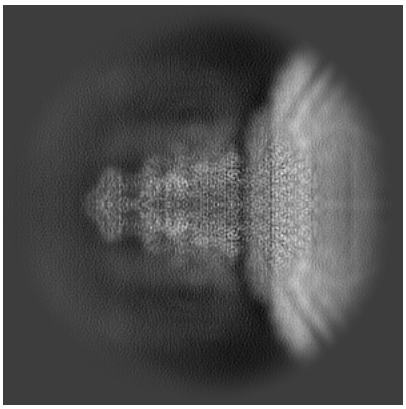
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

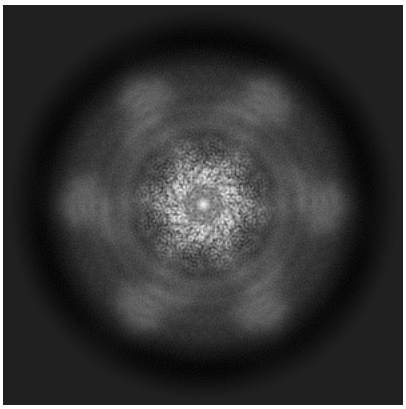
### 6.1.1 Primary map



X

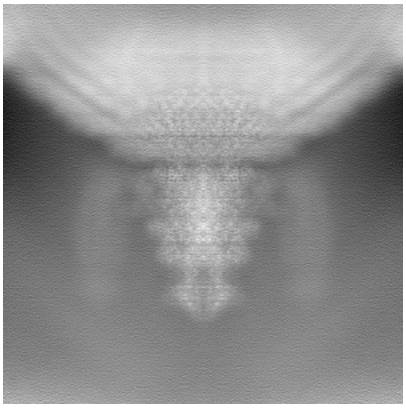


Y

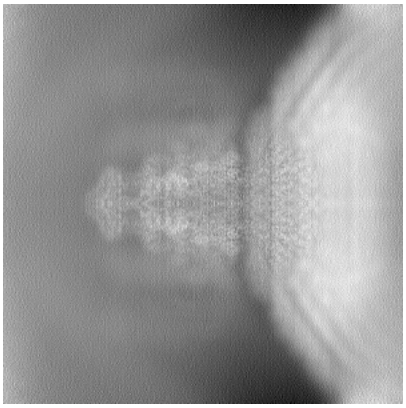


Z

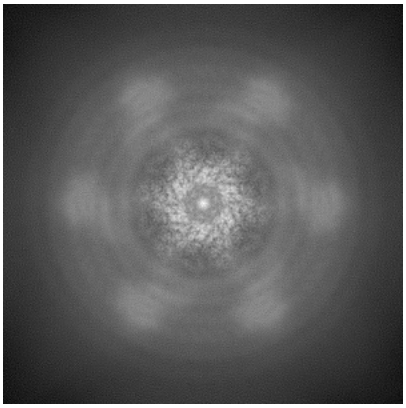
### 6.1.2 Raw map



X



Y

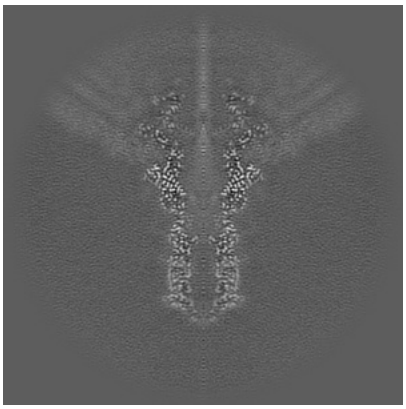


Z

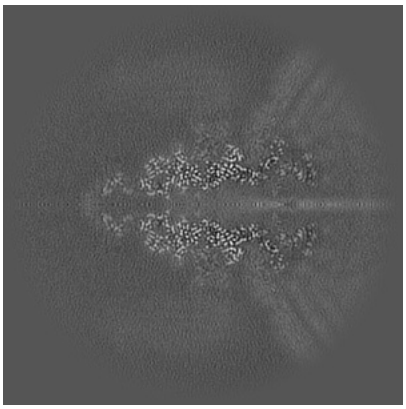
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

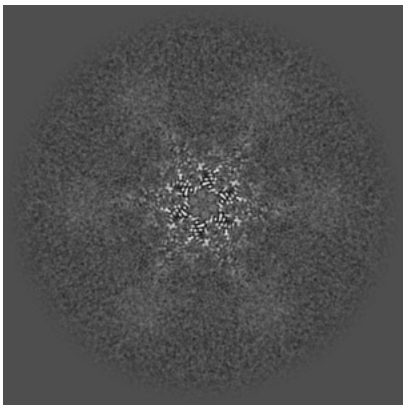
### 6.2.1 Primary map



X Index: 224

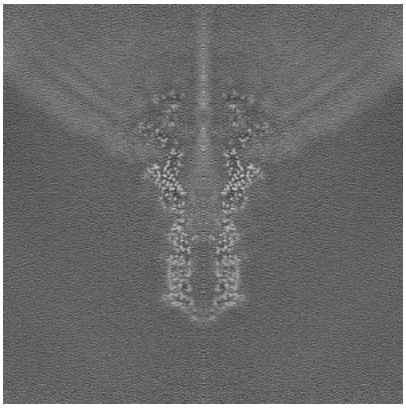


Y Index: 224

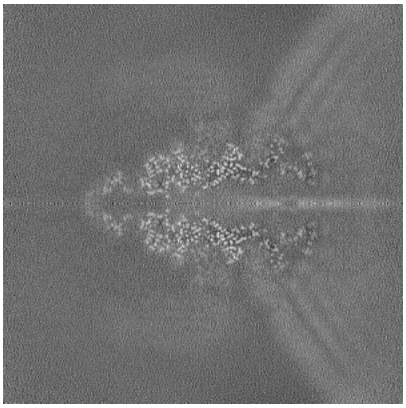


Z Index: 224

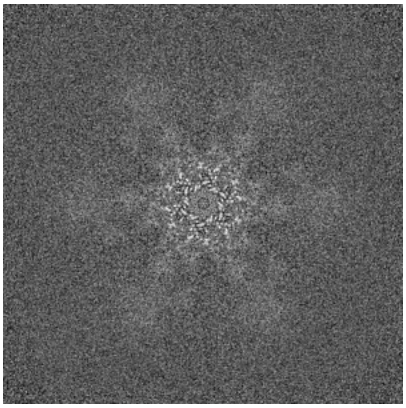
### 6.2.2 Raw map



X Index: 224



Y Index: 224

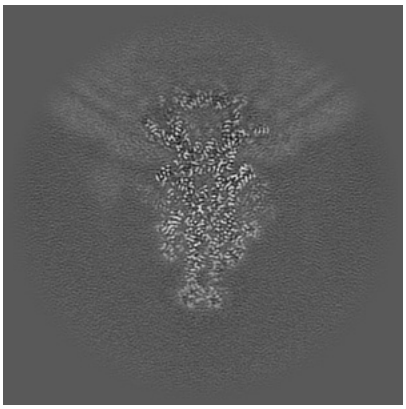


Z Index: 224

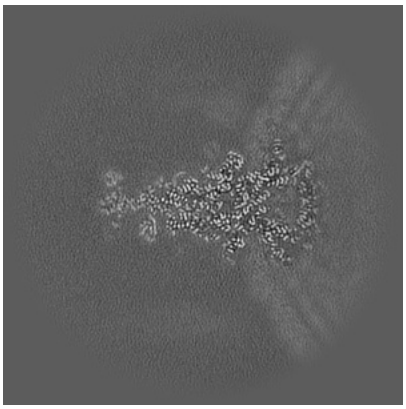
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

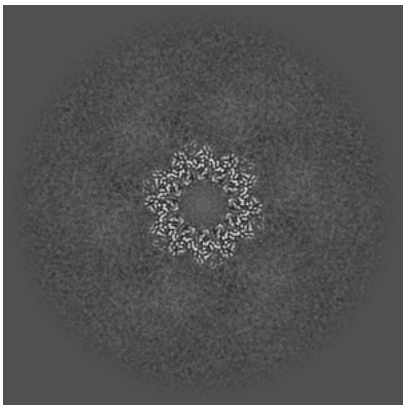
### 6.3.1 Primary map



X Index: 198

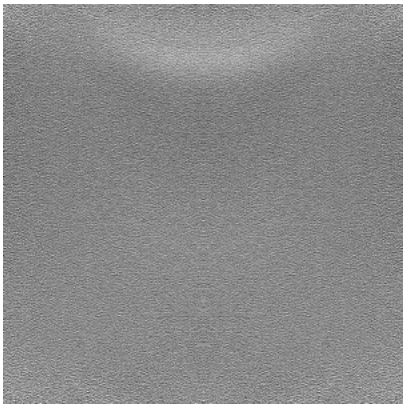


Y Index: 251

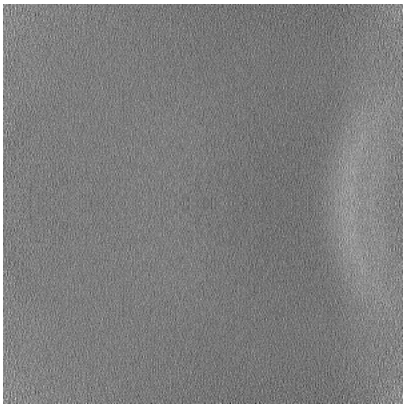


Z Index: 256

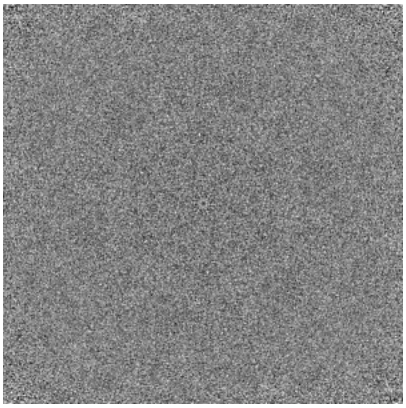
### 6.3.2 Raw map



X Index: 0



Y Index: 0

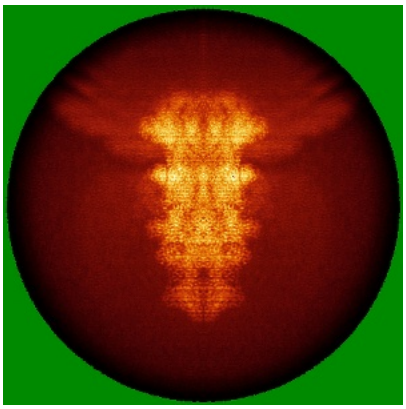


Z Index: 447

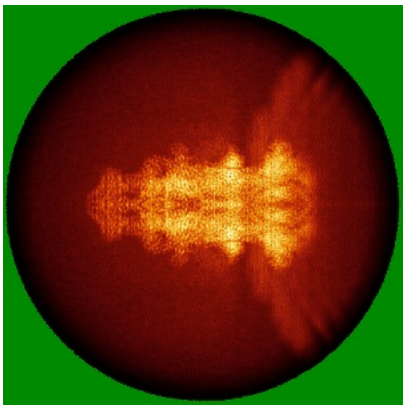
The images above show the largest variance slices of the map in three orthogonal directions.

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

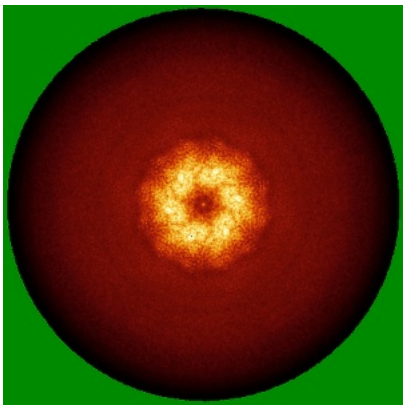
### 6.4.1 Primary map



X

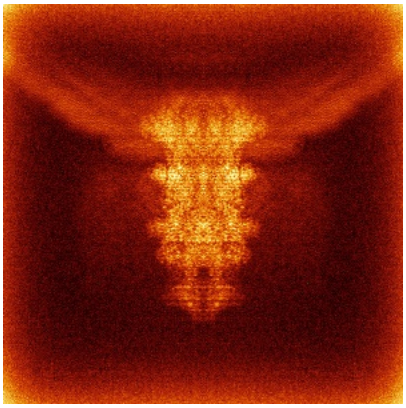


Y

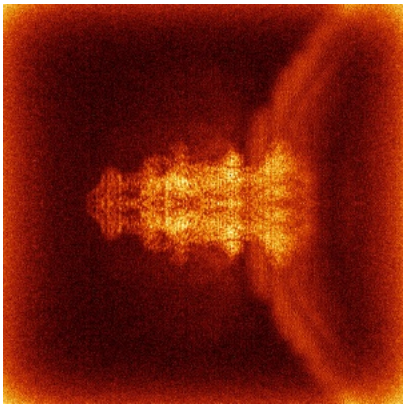


Z

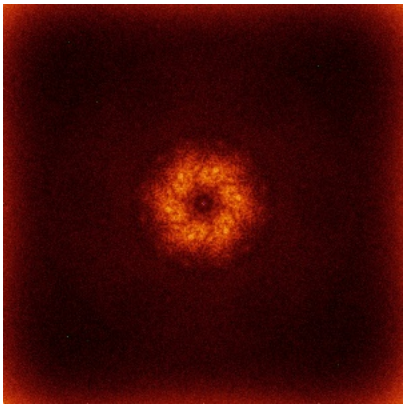
### 6.4.2 Raw map



X



Y

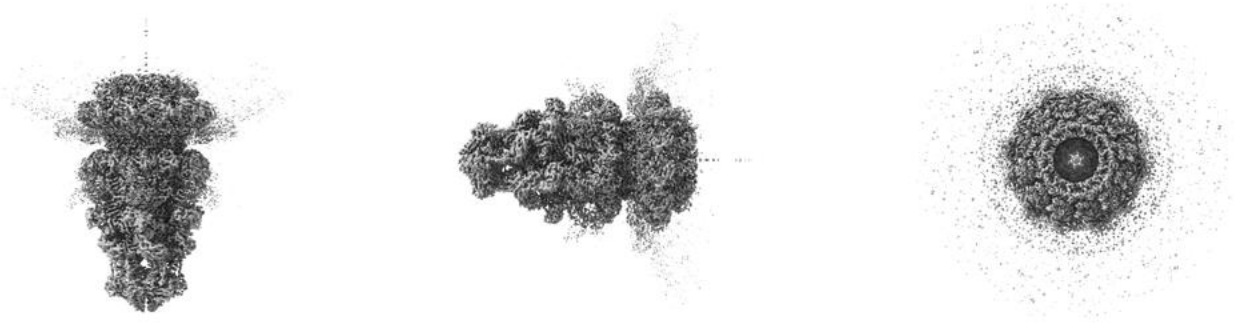


Z

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)

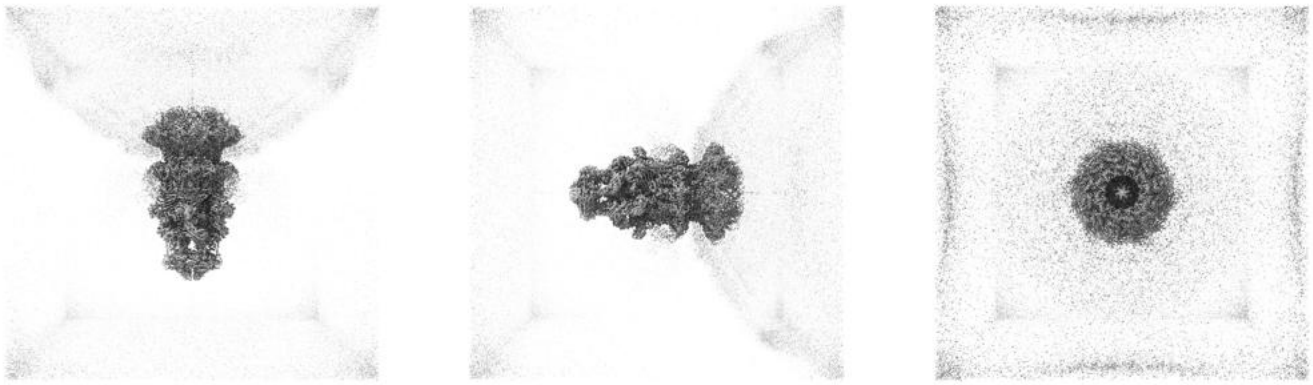
### 6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.25. 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.

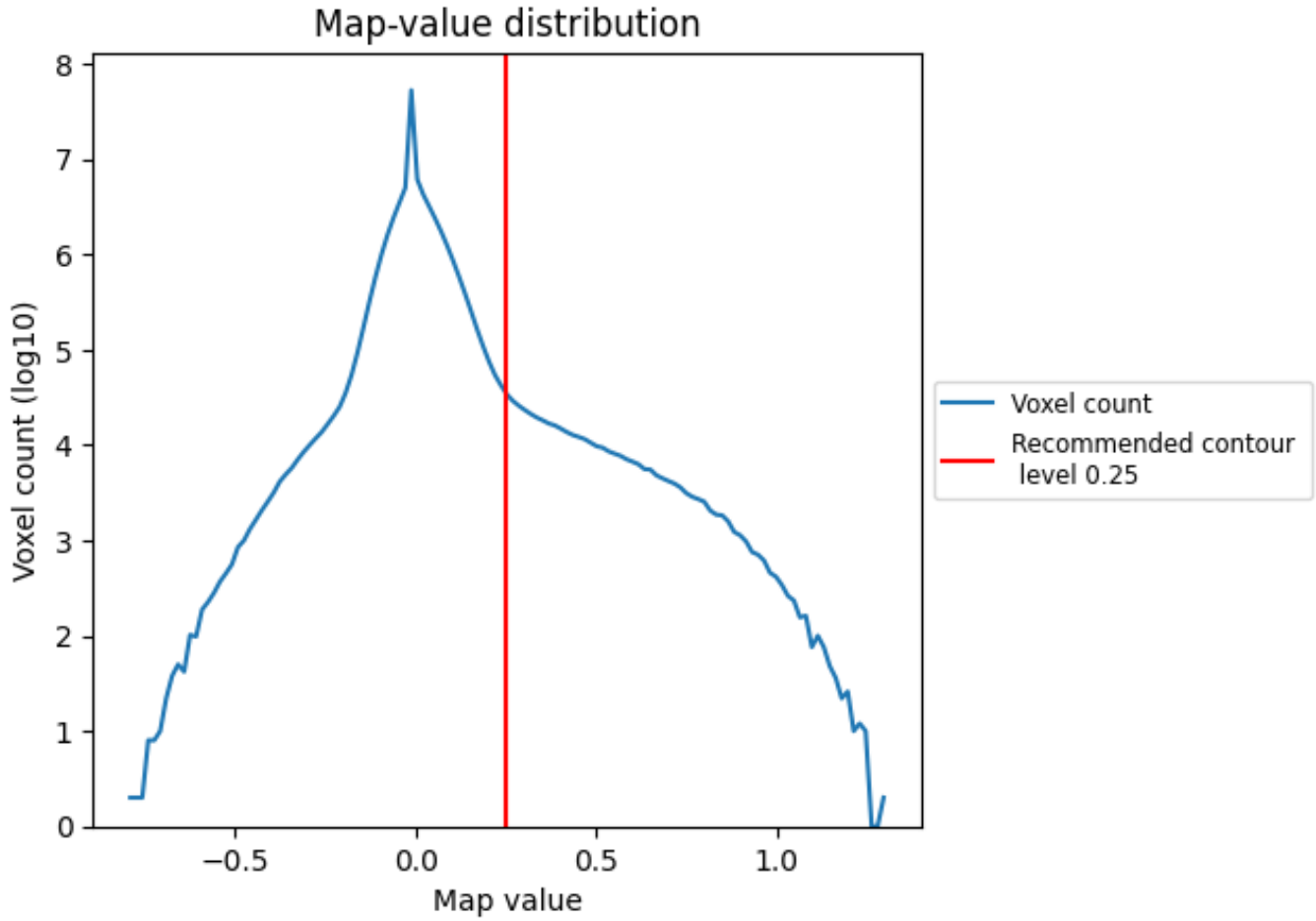
## 6.6 Mask visualisation (i)

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

# 7 Map analysis

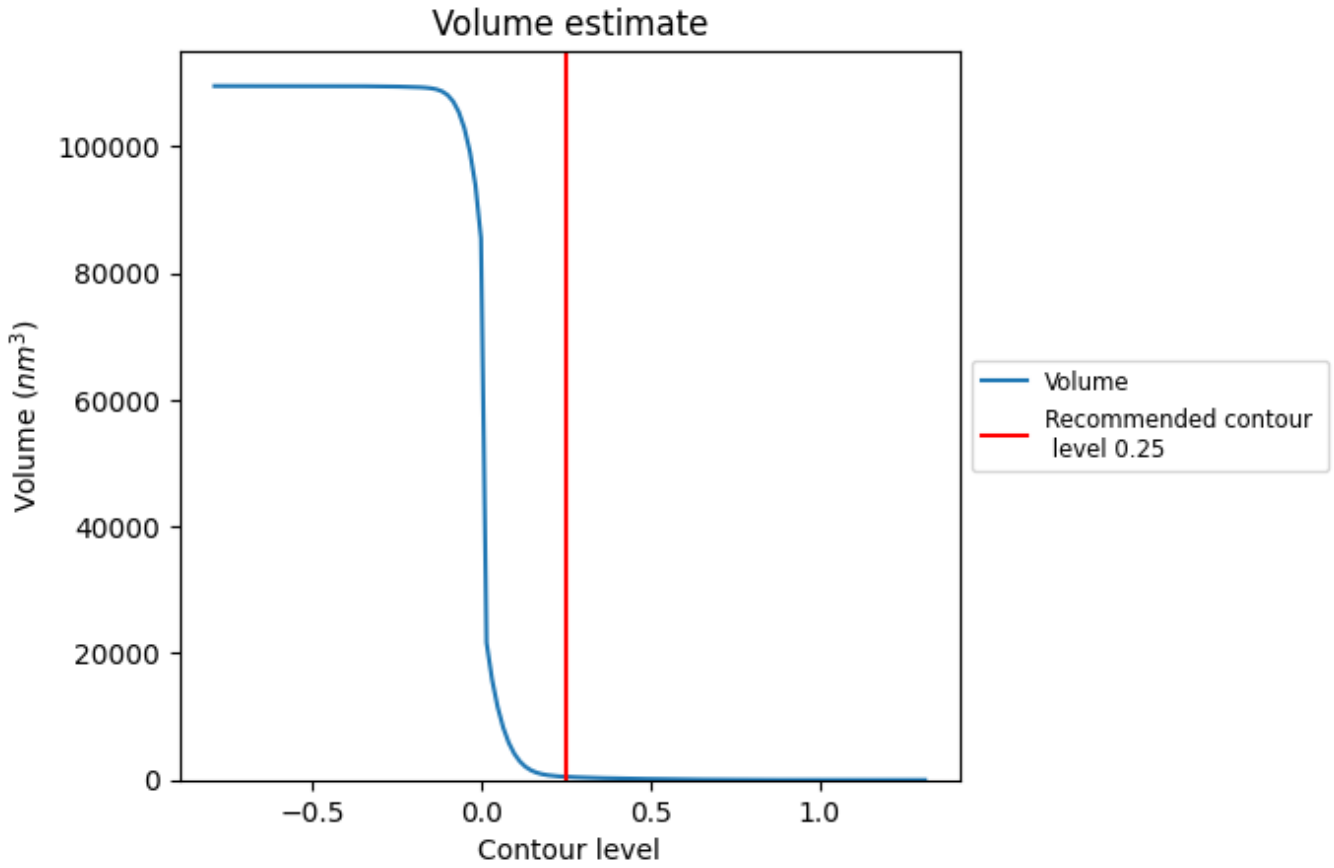
This section contains the results of statistical analysis of the map.

## 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.

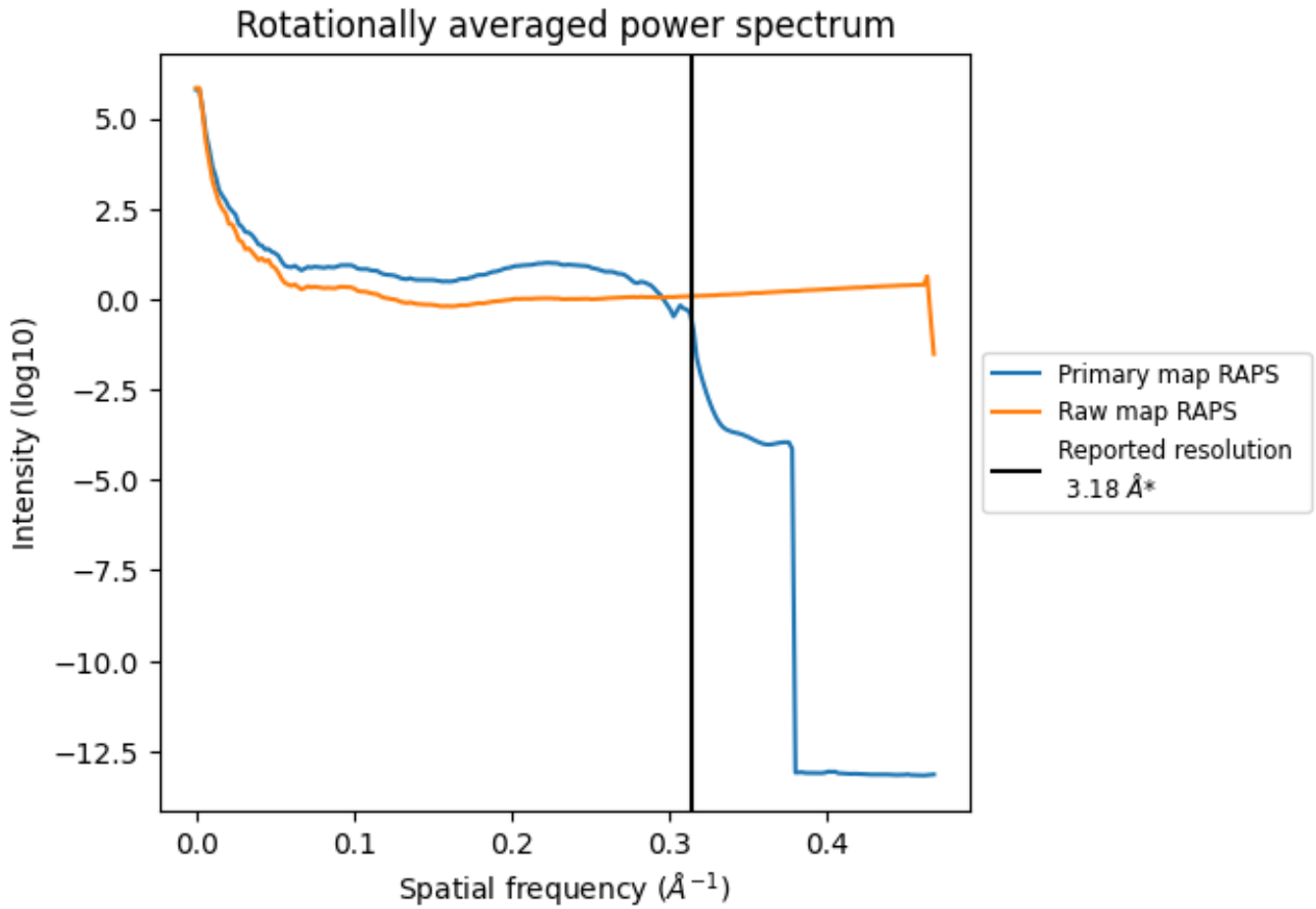
## 7.2 Volume estimate




The volume at the recommended contour level is 500 $nm^3$; this corresponds to an approximate mass of 452 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)

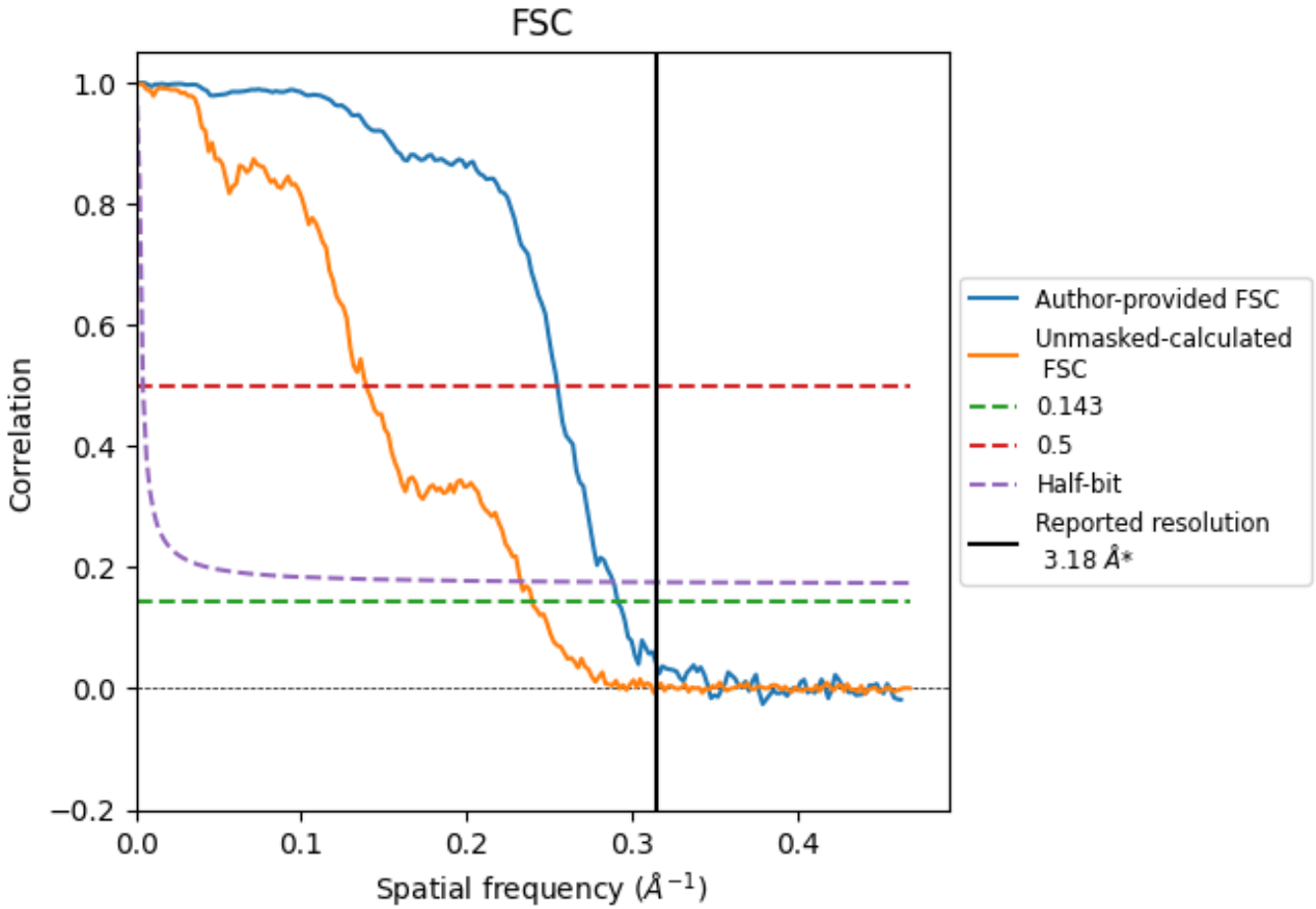



*Reported resolution corresponds to spatial frequency of 0.314 $Å^{-1}$

# 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 0.314 Å$^{-1}$

## 8.2 Resolution estimates (i)

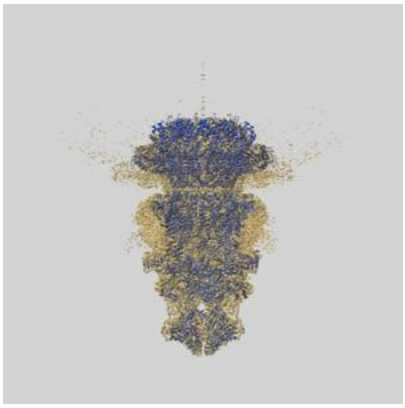
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.18 | - | - |
| Author-provided FSC curve | 3.43 | 3.92 | 3.46 |
| Unmasked-calculated* | 4.17 | 7.18 | 4.30 |

*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 4.17 differs from the reported value 3.18 by more than 10 %

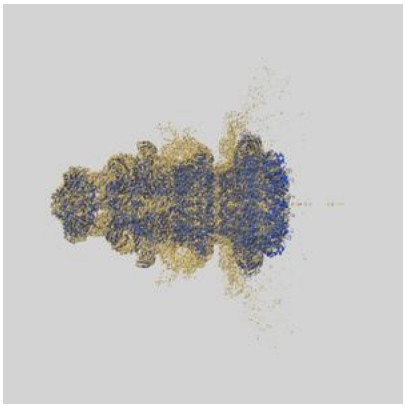
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-74389 and PDB model 9ZKY. Per-residue inclusion information can be found in section 3 on page 7.

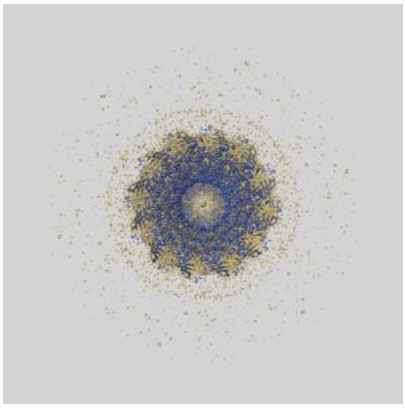
## 9.1 Map-model overlay



X



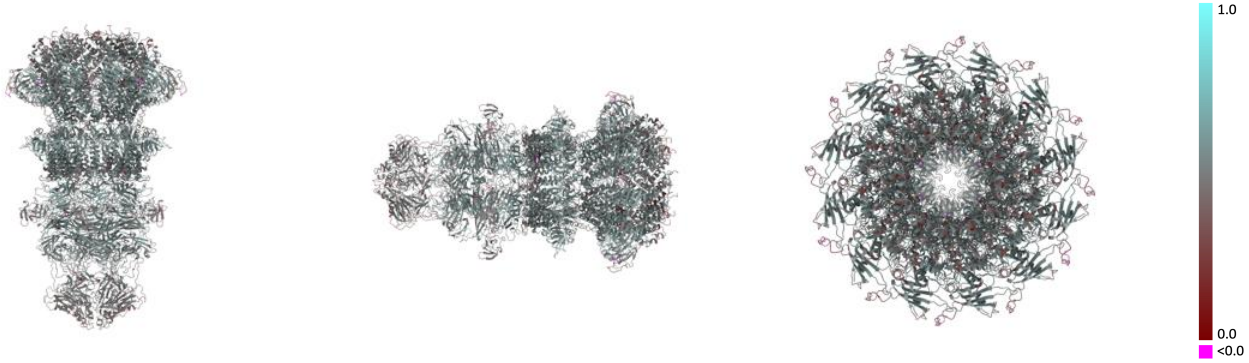
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.25 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.

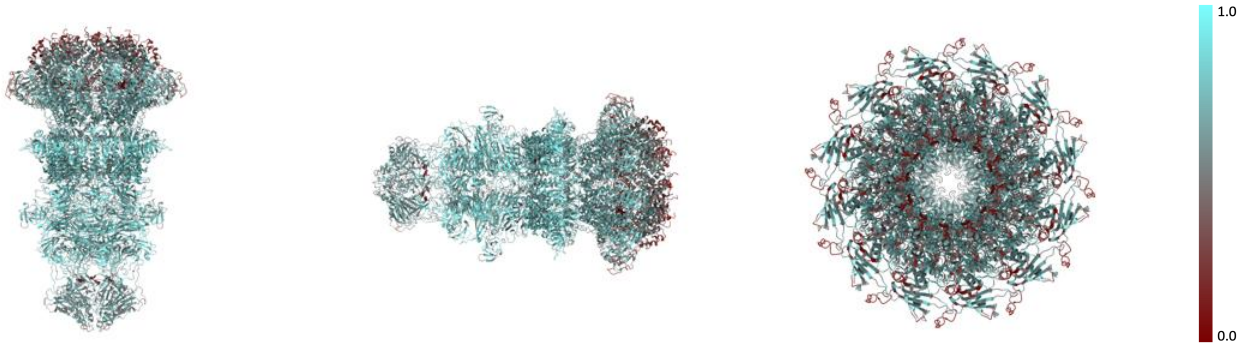
## 9.2 Q-score mapped to coordinate model (i)




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.

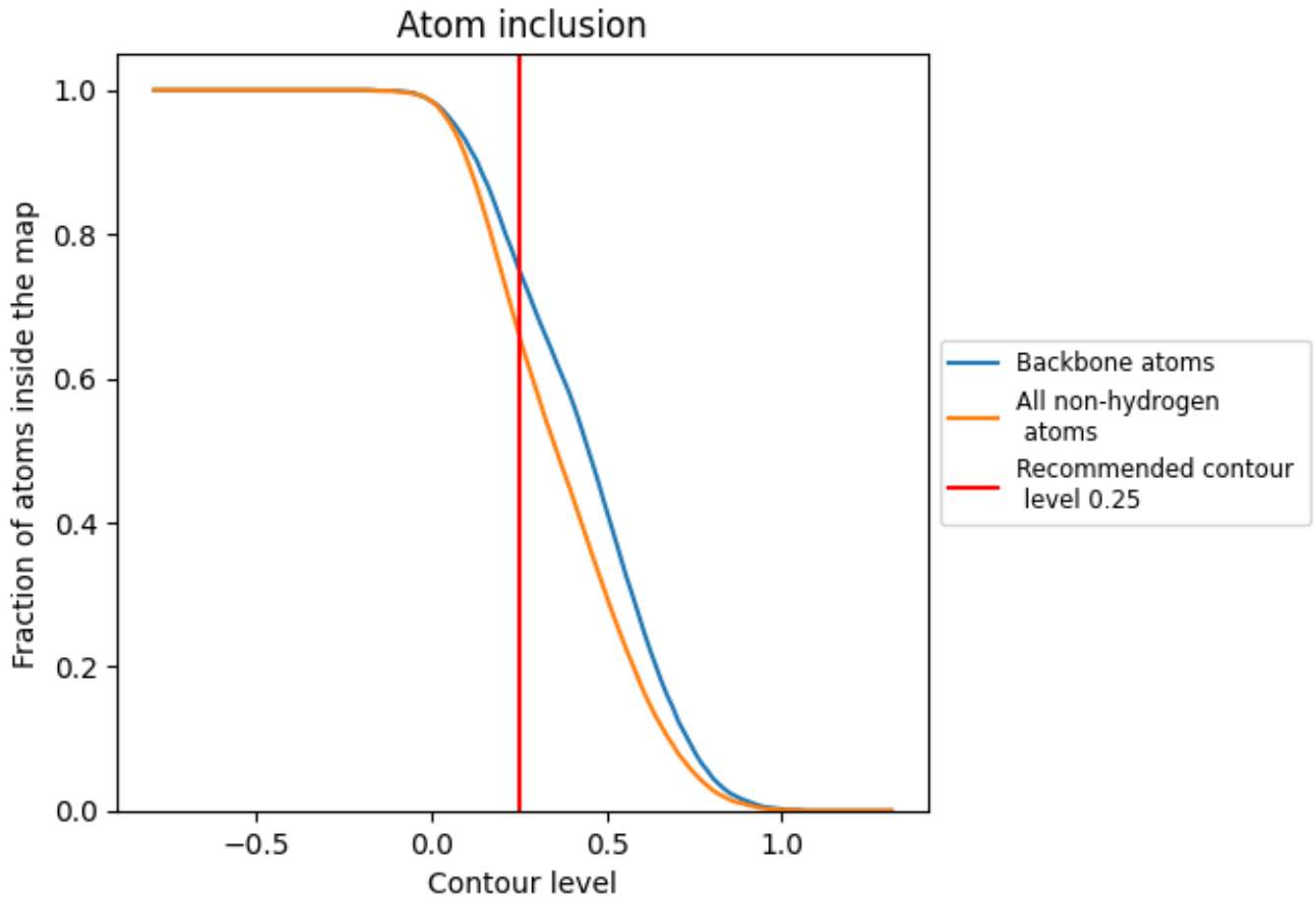
## 9.3 Atom inclusion mapped to coordinate model (i)




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 (0.25).

## 9.4 Atom inclusion (i)




At the recommended contour level, 75% of all backbone atoms, 66% 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 (0.25) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.6610 | 0.5040 |
| Aa | 0.5740 | 0.5080 |
| Ab | 0.5720 | 0.4990 |
| Ac | 0.5710 | 0.5070 |
| Ad | 0.5700 | 0.4970 |
| Ae | 0.5750 | 0.5070 |
| Af | 0.5670 | 0.4980 |
| Ag | 0.5730 | 0.5070 |
| Ah | 0.5720 | 0.5000 |
| Ai | 0.5690 | 0.5060 |
| Aj | 0.5700 | 0.4980 |
| Ak | 0.5750 | 0.5080 |
| Al | 0.5680 | 0.4970 |
| Am | 0.7730 | 0.5310 |
| An | 0.7570 | 0.4970 |
| Ao | 0.7720 | 0.5310 |
| Ap | 0.7560 | 0.4980 |
| Aq | 0.7750 | 0.5280 |
| Ar | 0.7580 | 0.5000 |
| As | 0.7720 | 0.5290 |
| At | 0.7540 | 0.4990 |
| Au | 0.7740 | 0.5310 |
| Av | 0.7570 | 0.4990 |
| Aw | 0.7770 | 0.5310 |
| Ax | 0.7590 | 0.5000 |
| Ay | 0.7130 | 0.4990 |
| Az | 0.7120 | 0.5000 |
| Ba | 0.7080 | 0.5010 |
| Bb | 0.7130 | 0.5000 |
| Bc | 0.7120 | 0.5020 |
| Bd | 0.7080 | 0.5010 |

