



Full wwPDB EM Validation Report ⓘ

May 26, 2024 – 08:45 AM EDT

PDB ID : 7SFS
EMDB ID : EMD-25101
Title : In situ cryo-EM structure of bacteriophage Sf6 portal:gp7 complex at 2.7Å resolution
Authors : Li, F.; Cingolani, G.; Hou, C.
Deposited on : 2021-10-04
Resolution : 2.76 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.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

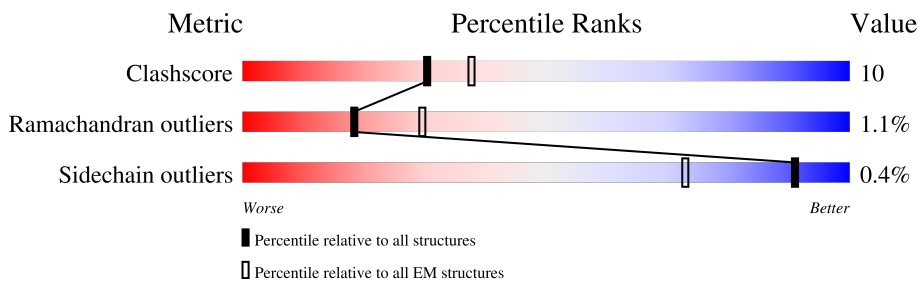
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.76 Å.

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



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

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | A | 708 | |
| 1 | B | 708 | |
| 1 | C | 708 | |
| 1 | D | 708 | |
| 1 | E | 708 | |
| 1 | F | 708 | |
| 1 | G | 708 | |
| 1 | H | 708 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | I | 708 |  69% 19% 12% |
| 1 | J | 708 |  68% 19% 12% |
| 1 | K | 708 |  69% 18% 12% |
| 1 | M | 708 |  69% 19% 12% |
| 2 | L | 160 |  82% 11% 6% |
| 2 | N | 160 |  82% 11% 6% |
| 2 | O | 160 |  81% 13% 6% |
| 2 | P | 160 |  76% 17% 6% |
| 2 | Q | 160 |  74% 16% 9% |
| 2 | R | 160 |  86% 8% 6% |
| 2 | S | 160 |  75% 18% 6% |
| 2 | T | 160 |  78% 14% 6% |
| 2 | U | 160 |  82% 10% 6% |
| 2 | V | 160 |  84% 10% 6% |
| 2 | W | 160 |  79% 14% 6% |
| 2 | X | 160 |  76% 17% 6% |

2 Entry composition i

There are 2 unique types of molecules in this entry. The entry contains 73221 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 Gene 3 protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | M | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | A | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | B | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | C | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | D | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | E | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | F | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | G | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | H | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | I | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | J | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |
| 1 | K | 623 | 4930 | 3084 | 871 | 952 | 23 | 0 | 0 |

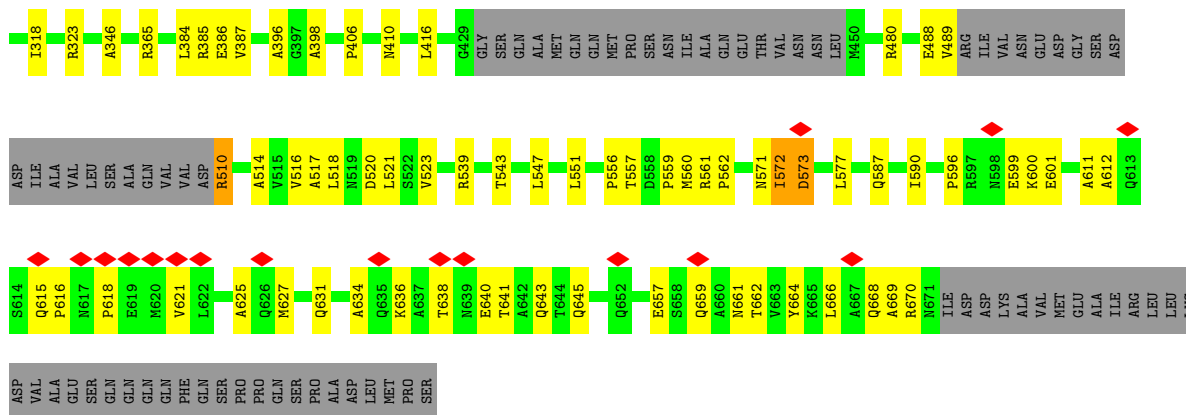
- Molecule 2 is a protein called Gene 7 protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 2 | N | 150 | 1174 | 740 | 193 | 234 | 7 | 0 | 0 |
| 2 | O | 150 | 1174 | 740 | 193 | 234 | 7 | 0 | 0 |
| 2 | P | 150 | 1174 | 740 | 193 | 234 | 7 | 0 | 0 |

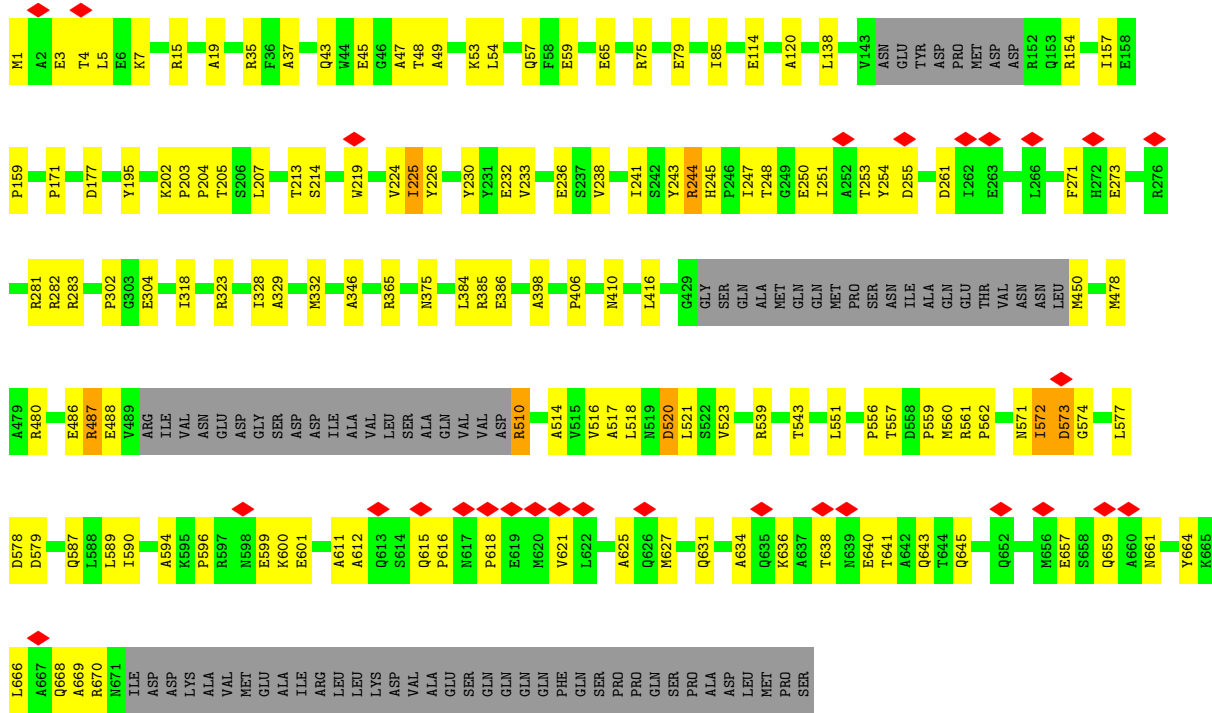
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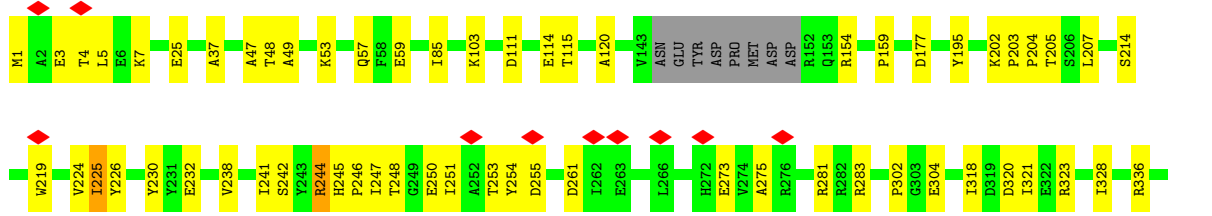
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2 | Q | 146 | Total | C | N | O | S | 0 | 0 |
| | | | 1147 | 723 | 189 | 229 | 6 | | |
| 2 | R | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | S | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | T | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | U | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | V | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | W | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | X | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |
| 2 | L | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1174 | 740 | 193 | 234 | 7 | | |

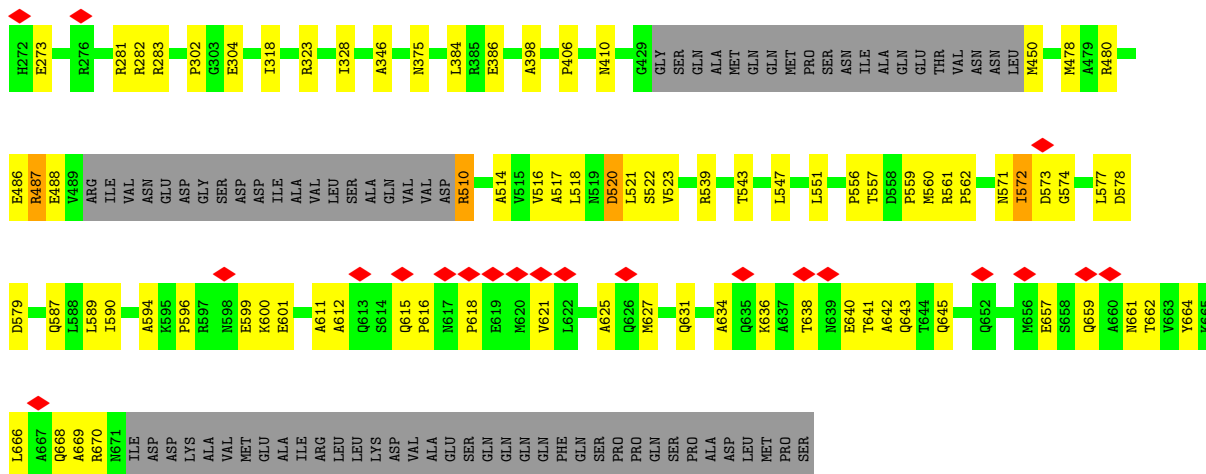


• Molecule 1: Gene 3 protein

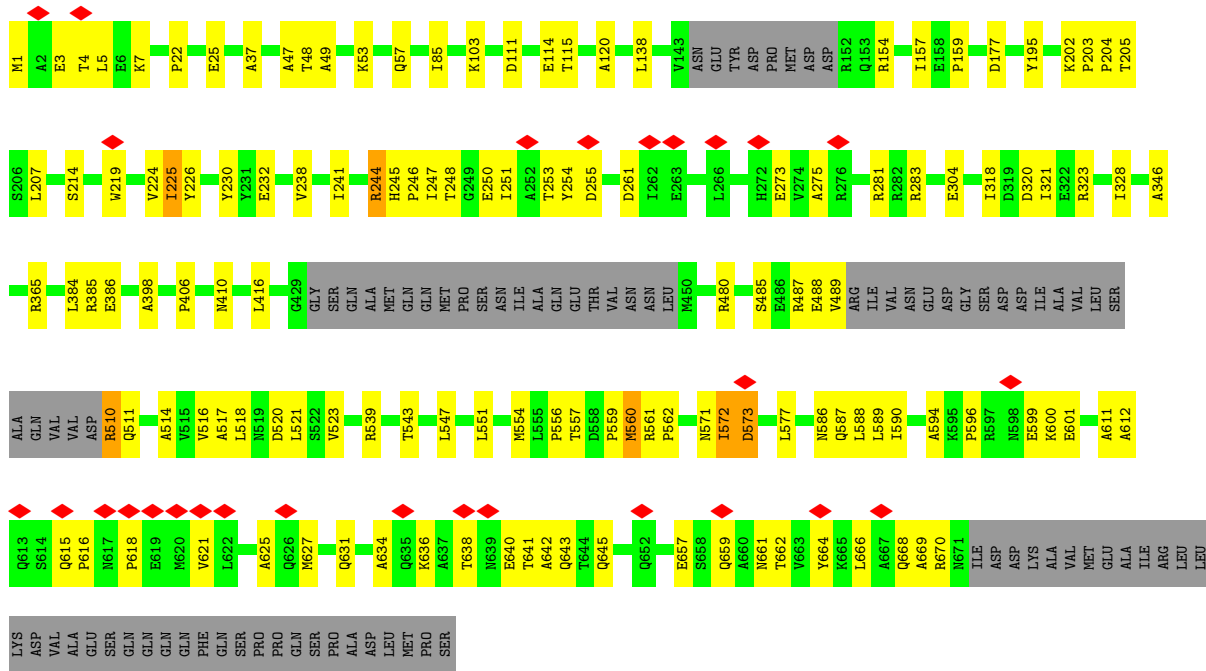


• Molecule 1: Gene 3 protein

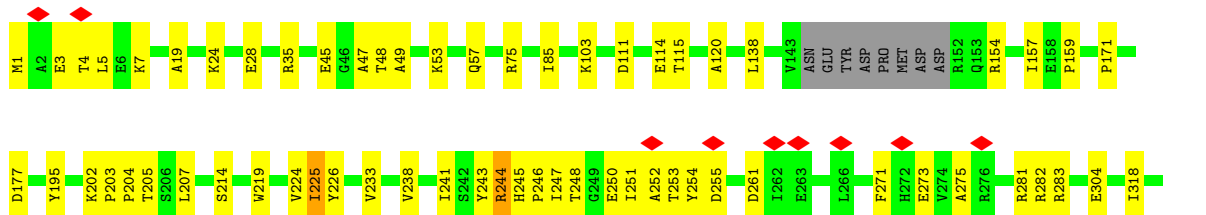


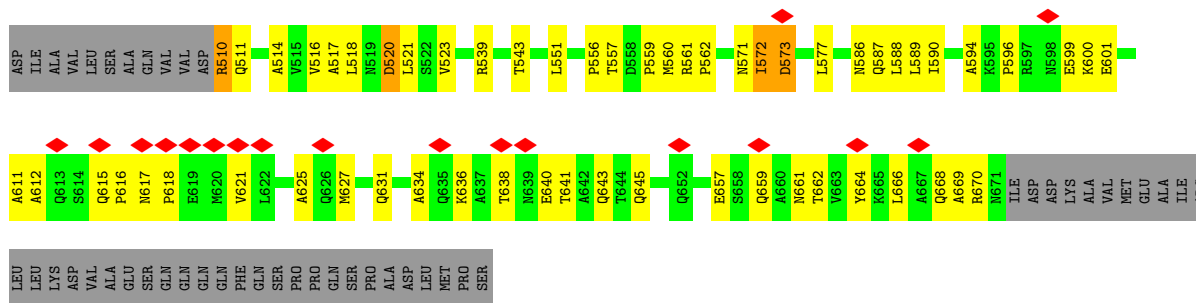


• Molecule 1: Gene 3 protein

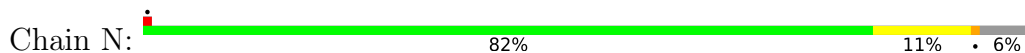


• Molecule 1: Gene 3 protein

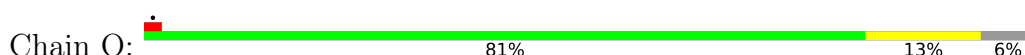




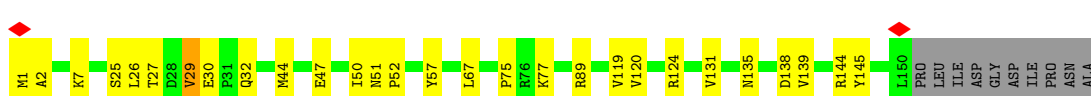
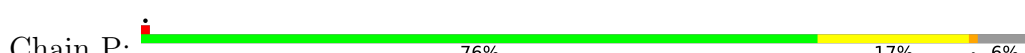
• Molecule 2: Gene 7 protein



• Molecule 2: Gene 7 protein



• Molecule 2: Gene 7 protein



• Molecule 2: Gene 7 protein

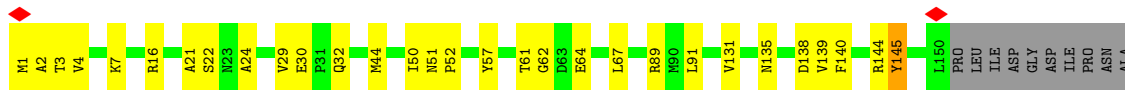
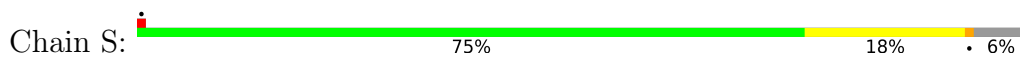


• Molecule 2: Gene 7 protein

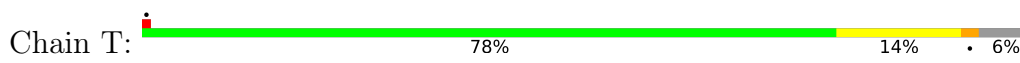


• Molecule 2: Gene 7 protein

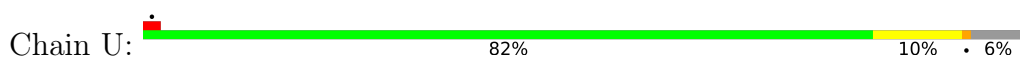
• Molecule 2: Gene 7 protein



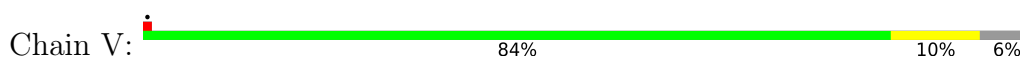
• Molecule 2: Gene 7 protein



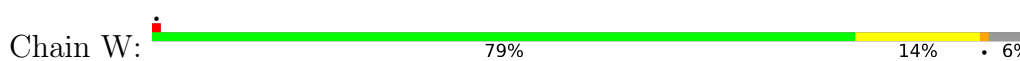
• Molecule 2: Gene 7 protein



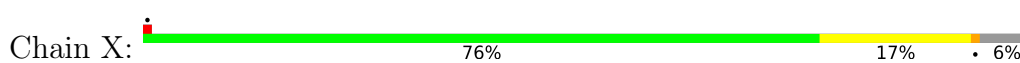
• Molecule 2: Gene 7 protein



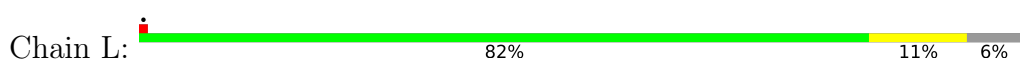
• Molecule 2: Gene 7 protein



• Molecule 2: Gene 7 protein



• Molecule 2: Gene 7 protein





4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C12 | Depositor |
| Number of particles used | 39000 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | TFS KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 50 | Depositor |
| Minimum defocus (nm) | 500 | Depositor |
| Maximum defocus (nm) | 1500 | Depositor |
| Magnification | 81000 | Depositor |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 0.062 | Depositor |
| Minimum map value | -0.022 | Depositor |
| Average map value | -0.000 | Depositor |
| Map value standard deviation | 0.004 | Depositor |
| Recommended contour level | 0.01 | Depositor |
| Map size (Å) | 574.464, 574.464, 574.464 | wwPDB |
| Map dimensions | 512, 512, 512 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.122, 1.122, 1.122 | Depositor |

5 Model quality i

5.1 Standard geometry i

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

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------|-------------|----------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | A | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | B | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | C | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | D | 0.37 | 0/5021 | 0.56 | 0/6787 |
| 1 | E | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | F | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | G | 0.37 | 0/5021 | 0.56 | 0/6787 |
| 1 | H | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | I | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | J | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | K | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 1 | M | 0.37 | 0/5021 | 0.55 | 0/6787 |
| 2 | L | 0.39 | 0/1199 | 0.55 | 0/1628 |
| 2 | N | 0.39 | 0/1199 | 0.52 | 0/1628 |
| 2 | O | 0.39 | 0/1199 | 0.55 | 0/1628 |
| 2 | P | 0.41 | 0/1199 | 0.54 | 0/1628 |
| 2 | Q | 0.46 | 0/1172 | 0.57 | 0/1591 |
| 2 | R | 0.39 | 0/1199 | 0.54 | 0/1628 |
| 2 | S | 0.39 | 0/1199 | 0.53 | 0/1628 |
| 2 | T | 0.41 | 0/1199 | 0.54 | 0/1628 |
| 2 | U | 0.39 | 0/1199 | 0.54 | 0/1628 |
| 2 | V | 0.39 | 0/1199 | 0.55 | 0/1628 |
| 2 | W | 0.39 | 0/1199 | 0.55 | 0/1628 |
| 2 | X | 0.39 | 0/1199 | 0.54 | 0/1628 |
| All | All | 0.37 | 0/74613 | 0.55 | 0/100943 |

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

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 2 | T | 27 | THR | Peptide |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 4930 | 0 | 4842 | 123 | 0 |
| 1 | B | 4930 | 0 | 4842 | 114 | 0 |
| 1 | C | 4930 | 0 | 4842 | 111 | 0 |
| 1 | D | 4930 | 0 | 4842 | 120 | 0 |
| 1 | E | 4930 | 0 | 4842 | 119 | 0 |
| 1 | F | 4930 | 0 | 4842 | 118 | 0 |
| 1 | G | 4930 | 0 | 4842 | 124 | 0 |
| 1 | H | 4930 | 0 | 4842 | 117 | 0 |
| 1 | I | 4930 | 0 | 4842 | 120 | 0 |
| 1 | J | 4930 | 0 | 4842 | 122 | 0 |
| 1 | K | 4930 | 0 | 4842 | 120 | 0 |
| 1 | M | 4930 | 0 | 4842 | 115 | 0 |
| 2 | L | 1174 | 0 | 1139 | 14 | 0 |
| 2 | N | 1174 | 0 | 1139 | 11 | 0 |
| 2 | O | 1174 | 0 | 1139 | 15 | 0 |
| 2 | P | 1174 | 0 | 1139 | 21 | 0 |
| 2 | Q | 1147 | 0 | 1106 | 26 | 0 |
| 2 | R | 1174 | 0 | 1139 | 12 | 0 |
| 2 | S | 1174 | 0 | 1139 | 20 | 0 |
| 2 | T | 1174 | 0 | 1139 | 14 | 0 |
| 2 | U | 1174 | 0 | 1139 | 12 | 0 |
| 2 | V | 1174 | 0 | 1139 | 11 | 0 |
| 2 | W | 1174 | 0 | 1139 | 19 | 0 |
| 2 | X | 1174 | 0 | 1139 | 20 | 0 |
| All | All | 73221 | 0 | 71739 | 1441 | 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 10.

All (1441) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:Q:12:LEU:HB3 | 2:Q:16:ARG:HH12 | 1.36 | 0.91 |
| 2:P:44:MET:HE2 | 2:P:89:ARG:HD2 | 1.62 | 0.82 |
| 2:Q:12:LEU:HB3 | 2:Q:16:ARG:NH1 | 1.96 | 0.80 |
| 1:J:213:THR:HG22 | 1:J:214:SER:H | 1.48 | 0.77 |
| 2:S:61:THR:HG22 | 2:S:62:GLY:H | 1.50 | 0.77 |
| 1:E:204:PRO:O | 1:E:205:THR:OG1 | 2.03 | 0.76 |
| 1:J:204:PRO:O | 1:J:205:THR:OG1 | 2.03 | 0.76 |
| 1:M:410:ASN:HB3 | 1:K:406:PRO:HB2 | 1.67 | 0.76 |
| 1:A:204:PRO:O | 1:A:205:THR:OG1 | 2.03 | 0.76 |
| 2:P:1:MET:HG3 | 2:P:2:ALA:H | 1.51 | 0.76 |
| 1:K:204:PRO:O | 1:K:205:THR:OG1 | 2.04 | 0.75 |
| 1:B:204:PRO:O | 1:B:205:THR:OG1 | 2.03 | 0.75 |
| 1:B:406:PRO:HB2 | 1:C:410:ASN:HB3 | 1.67 | 0.75 |
| 1:G:657:GLU:HG2 | 1:G:661:ASN:HD21 | 1.52 | 0.75 |
| 1:J:657:GLU:HG2 | 1:J:661:ASN:HD21 | 1.52 | 0.75 |
| 1:G:204:PRO:O | 1:G:205:THR:OG1 | 2.03 | 0.75 |
| 1:A:657:GLU:HG2 | 1:A:661:ASN:HD21 | 1.52 | 0.74 |
| 1:H:204:PRO:O | 1:H:205:THR:OG1 | 2.04 | 0.74 |
| 1:A:406:PRO:HB2 | 1:B:410:ASN:HB3 | 1.70 | 0.74 |
| 1:D:657:GLU:HG2 | 1:D:661:ASN:HD21 | 1.52 | 0.74 |
| 1:F:204:PRO:O | 1:F:205:THR:OG1 | 2.06 | 0.73 |
| 1:I:204:PRO:O | 1:I:205:THR:OG1 | 2.06 | 0.73 |
| 1:C:204:PRO:O | 1:C:205:THR:OG1 | 2.06 | 0.73 |
| 1:D:406:PRO:HB2 | 1:E:410:ASN:HB3 | 1.70 | 0.73 |
| 1:F:54:LEU:O | 2:P:124:ARG:NH1 | 2.21 | 0.72 |
| 1:H:406:PRO:HB2 | 1:I:410:ASN:HB3 | 1.70 | 0.72 |
| 1:E:406:PRO:HB2 | 1:F:410:ASN:HB3 | 1.70 | 0.72 |
| 1:F:488:GLU:OE1 | 1:F:510:ARG:NH1 | 2.22 | 0.72 |
| 1:J:488:GLU:OE1 | 1:J:510:ARG:NH1 | 2.22 | 0.72 |
| 1:M:204:PRO:O | 1:M:205:THR:OG1 | 2.06 | 0.72 |
| 1:C:488:GLU:OE1 | 1:C:510:ARG:NH1 | 2.22 | 0.72 |
| 2:W:29:VAL:HG23 | 2:W:30:GLU:H | 1.54 | 0.72 |
| 1:E:572:ILE:HG12 | 1:E:573:ASP:H | 1.55 | 0.72 |
| 1:H:572:ILE:HG12 | 1:H:573:ASP:H | 1.55 | 0.72 |
| 1:J:406:PRO:HB2 | 1:K:410:ASN:HB3 | 1.70 | 0.72 |
| 2:P:27:THR:HG22 | 2:P:29:VAL:H | 1.55 | 0.71 |
| 1:G:572:ILE:HG12 | 1:G:573:ASP:H | 1.55 | 0.71 |
| 2:W:3:THR:O | 2:W:5:LEU:N | 2.23 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:572:ILE:HG12 | 1:B:573:ASP:H | 1.55 | 0.71 |
| 2:U:61:THR:HG22 | 2:U:62:GLY:H | 1.55 | 0.71 |
| 1:K:572:ILE:HG12 | 1:K:573:ASP:H | 1.55 | 0.71 |
| 1:K:657:GLU:HG2 | 1:K:661:ASN:HD21 | 1.56 | 0.71 |
| 1:D:572:ILE:HG12 | 1:D:573:ASP:H | 1.56 | 0.71 |
| 1:A:236:GLU:OE1 | 1:A:283:ARG:NH2 | 2.24 | 0.71 |
| 1:D:236:GLU:OE1 | 1:D:283:ARG:NH2 | 2.24 | 0.71 |
| 1:G:236:GLU:OE1 | 1:G:283:ARG:NH2 | 2.24 | 0.71 |
| 1:J:236:GLU:OE1 | 1:J:283:ARG:NH2 | 2.24 | 0.70 |
| 1:D:204:PRO:O | 1:D:205:THR:OG1 | 2.07 | 0.70 |
| 1:J:572:ILE:HG12 | 1:J:573:ASP:H | 1.56 | 0.70 |
| 1:A:572:ILE:HG12 | 1:A:573:ASP:H | 1.56 | 0.70 |
| 1:E:657:GLU:HG2 | 1:E:661:ASN:HD21 | 1.56 | 0.70 |
| 1:H:657:GLU:HG2 | 1:H:661:ASN:HD21 | 1.56 | 0.69 |
| 1:I:244:ARG:NH1 | 1:I:250:GLU:O | 2.25 | 0.69 |
| 1:C:572:ILE:HG12 | 1:C:573:ASP:H | 1.58 | 0.69 |
| 1:F:572:ILE:HG12 | 1:F:573:ASP:H | 1.58 | 0.69 |
| 1:B:657:GLU:HG2 | 1:B:661:ASN:HD21 | 1.56 | 0.69 |
| 1:K:488:GLU:OE1 | 1:K:510:ARG:NH1 | 2.26 | 0.69 |
| 1:I:572:ILE:HG12 | 1:I:573:ASP:H | 1.58 | 0.68 |
| 1:E:488:GLU:OE1 | 1:E:510:ARG:NH1 | 2.26 | 0.68 |
| 1:E:559:PRO:O | 1:E:562:PRO:HD2 | 1.93 | 0.68 |
| 2:S:30:GLU:HG2 | 2:S:32:GLN:H | 1.57 | 0.68 |
| 1:F:406:PRO:HB2 | 1:G:410:ASN:HB3 | 1.76 | 0.68 |
| 1:B:488:GLU:OE1 | 1:B:510:ARG:NH1 | 2.26 | 0.68 |
| 1:M:572:ILE:HG12 | 1:M:573:ASP:H | 1.58 | 0.68 |
| 1:H:488:GLU:OE1 | 1:H:510:ARG:NH1 | 2.26 | 0.68 |
| 1:H:559:PRO:O | 1:H:562:PRO:HD2 | 1.93 | 0.68 |
| 1:M:406:PRO:HB2 | 1:A:410:ASN:HB3 | 1.76 | 0.67 |
| 1:C:406:PRO:HB2 | 1:D:410:ASN:HB3 | 1.76 | 0.67 |
| 2:S:51:ASN:HB3 | 2:S:52:PRO:HD3 | 1.76 | 0.67 |
| 2:R:6:THR:HG22 | 2:R:9:GLU:HG3 | 1.77 | 0.67 |
| 2:R:51:ASN:HB3 | 2:R:52:PRO:HD3 | 1.77 | 0.67 |
| 2:U:51:ASN:HB3 | 2:U:52:PRO:HD3 | 1.77 | 0.67 |
| 1:I:636:LYS:HD2 | 1:J:638:THR:HA | 1.77 | 0.67 |
| 1:B:559:PRO:O | 1:B:562:PRO:HD2 | 1.95 | 0.67 |
| 1:M:636:LYS:HD2 | 1:A:638:THR:HA | 1.77 | 0.66 |
| 1:H:207:LEU:HB2 | 1:H:226:TYR:H | 1.60 | 0.66 |
| 1:D:244:ARG:NH1 | 1:D:250:GLU:O | 2.29 | 0.66 |
| 1:G:406:PRO:HB2 | 1:H:410:ASN:HB3 | 1.76 | 0.66 |
| 1:I:406:PRO:HB2 | 1:J:410:ASN:HB3 | 1.75 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:636:LYS:HD2 | 1:K:638:THR:HA | 1.78 | 0.66 |
| 1:K:207:LEU:HB2 | 1:K:226:TYR:H | 1.61 | 0.66 |
| 2:X:51:ASN:HB3 | 2:X:52:PRO:HD3 | 1.78 | 0.66 |
| 1:K:559:PRO:O | 1:K:562:PRO:HD2 | 1.95 | 0.66 |
| 1:M:488:GLU:OE1 | 1:M:510:ARG:NH1 | 2.29 | 0.66 |
| 1:J:244:ARG:NH1 | 1:J:250:GLU:O | 2.29 | 0.66 |
| 1:G:244:ARG:NH1 | 1:G:250:GLU:O | 2.29 | 0.65 |
| 1:M:657:GLU:HG2 | 1:M:661:ASN:HD21 | 1.61 | 0.65 |
| 1:E:207:LEU:HB2 | 1:E:226:TYR:H | 1.61 | 0.65 |
| 1:M:510:ARG:O | 1:M:511:GLN:NE2 | 2.30 | 0.65 |
| 1:M:638:THR:HA | 1:K:636:LYS:HD2 | 1.79 | 0.65 |
| 1:A:636:LYS:HD2 | 1:B:638:THR:HA | 1.78 | 0.65 |
| 1:I:559:PRO:O | 1:I:562:PRO:HD2 | 1.97 | 0.65 |
| 2:P:51:ASN:HB3 | 2:P:52:PRO:HD3 | 1.77 | 0.65 |
| 2:V:51:ASN:HB3 | 2:V:52:PRO:HD3 | 1.77 | 0.65 |
| 1:C:559:PRO:O | 1:C:562:PRO:HD2 | 1.97 | 0.65 |
| 1:F:244:ARG:NH1 | 1:F:250:GLU:O | 2.30 | 0.65 |
| 1:M:244:ARG:NH1 | 1:M:250:GLU:O | 2.30 | 0.65 |
| 1:D:213:THR:HG22 | 1:D:214:SER:H | 1.61 | 0.65 |
| 1:A:244:ARG:NH1 | 1:A:250:GLU:O | 2.29 | 0.65 |
| 1:C:636:LYS:HD2 | 1:D:638:THR:HA | 1.77 | 0.65 |
| 1:I:241:ILE:HG13 | 1:I:255:ASP:OD2 | 1.97 | 0.65 |
| 2:T:51:ASN:HB3 | 2:T:52:PRO:HD3 | 1.78 | 0.65 |
| 1:C:254:TYR:CG | 1:C:520:ASP:HA | 2.32 | 0.65 |
| 1:B:207:LEU:HB2 | 1:B:226:TYR:H | 1.61 | 0.65 |
| 1:I:253:THR:HG22 | 1:I:254:TYR:H | 1.62 | 0.65 |
| 1:F:254:TYR:CG | 1:F:520:ASP:HA | 2.32 | 0.64 |
| 1:F:636:LYS:HD2 | 1:G:638:THR:HA | 1.77 | 0.64 |
| 1:I:488:GLU:OE1 | 1:I:510:ARG:NH1 | 2.29 | 0.64 |
| 1:B:241:ILE:HG13 | 1:B:255:ASP:OD2 | 1.97 | 0.64 |
| 1:F:657:GLU:HG2 | 1:F:661:ASN:HD21 | 1.62 | 0.64 |
| 1:I:510:ARG:O | 1:I:511:GLN:NE2 | 2.30 | 0.64 |
| 1:K:241:ILE:HG13 | 1:K:255:ASP:OD2 | 1.97 | 0.64 |
| 2:Q:51:ASN:HB3 | 2:Q:52:PRO:HD3 | 1.79 | 0.64 |
| 1:M:559:PRO:O | 1:M:562:PRO:HD2 | 1.97 | 0.64 |
| 1:E:241:ILE:HG13 | 1:E:255:ASP:OD2 | 1.98 | 0.64 |
| 1:F:559:PRO:O | 1:F:562:PRO:HD2 | 1.97 | 0.64 |
| 2:L:51:ASN:HB3 | 2:L:52:PRO:HD3 | 1.80 | 0.64 |
| 1:C:657:GLU:HG2 | 1:C:661:ASN:HD21 | 1.61 | 0.64 |
| 1:D:636:LYS:HD2 | 1:E:638:THR:HA | 1.78 | 0.64 |
| 1:I:657:GLU:HG2 | 1:I:661:ASN:HD21 | 1.62 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:J:207:LEU:HB2 | 1:J:226:TYR:H | 1.62 | 0.64 |
| 1:H:636:LYS:HD2 | 1:I:638:THR:HA | 1.79 | 0.64 |
| 1:G:636:LYS:HD2 | 1:H:638:THR:HA | 1.77 | 0.64 |
| 1:H:241:ILE:HG13 | 1:H:255:ASP:OD2 | 1.98 | 0.64 |
| 1:K:244:ARG:N | 1:K:273:GLU:OE2 | 2.31 | 0.64 |
| 2:N:51:ASN:HB3 | 2:N:52:PRO:HD3 | 1.79 | 0.64 |
| 1:F:657:GLU:OE2 | 1:G:659:GLN:HA | 1.98 | 0.64 |
| 1:E:636:LYS:HD2 | 1:F:638:THR:HA | 1.79 | 0.63 |
| 1:G:559:PRO:O | 1:G:562:PRO:HD2 | 1.98 | 0.63 |
| 1:H:657:GLU:OE2 | 1:I:659:GLN:HA | 1.99 | 0.63 |
| 1:C:657:GLU:OE2 | 1:D:659:GLN:HA | 1.98 | 0.63 |
| 2:S:1:MET:SD | 2:S:2:ALA:N | 2.72 | 0.63 |
| 2:L:23:ASN:HA | 2:L:27:THR:HG22 | 1.80 | 0.63 |
| 1:B:657:GLU:OE2 | 1:C:659:GLN:HA | 1.99 | 0.63 |
| 1:A:559:PRO:O | 1:A:562:PRO:HD2 | 1.99 | 0.63 |
| 1:E:657:GLU:OE2 | 1:F:659:GLN:HA | 1.99 | 0.63 |
| 1:B:636:LYS:HD2 | 1:C:638:THR:HA | 1.79 | 0.63 |
| 1:G:207:LEU:HB2 | 1:G:226:TYR:H | 1.63 | 0.63 |
| 1:H:244:ARG:NH1 | 1:H:250:GLU:O | 2.32 | 0.62 |
| 1:M:657:GLU:OE2 | 1:A:659:GLN:HA | 1.99 | 0.62 |
| 1:M:659:GLN:HA | 1:K:657:GLU:OE2 | 1.99 | 0.62 |
| 1:I:657:GLU:OE2 | 1:J:659:GLN:HA | 1.99 | 0.62 |
| 1:J:559:PRO:O | 1:J:562:PRO:HD2 | 2.00 | 0.62 |
| 2:O:51:ASN:HB3 | 2:O:52:PRO:HD3 | 1.80 | 0.62 |
| 1:A:657:GLU:OE2 | 1:B:659:GLN:HA | 1.99 | 0.62 |
| 2:Q:16:ARG:HH11 | 2:Q:83:GLY:HA2 | 1.65 | 0.62 |
| 1:A:207:LEU:HB2 | 1:A:226:TYR:H | 1.63 | 0.62 |
| 1:B:244:ARG:N | 1:B:273:GLU:OE2 | 2.33 | 0.62 |
| 1:F:207:LEU:HB2 | 1:F:226:TYR:H | 1.64 | 0.62 |
| 1:D:559:PRO:O | 1:D:562:PRO:HD2 | 1.99 | 0.62 |
| 2:S:44:MET:HE2 | 2:S:89:ARG:HD2 | 1.81 | 0.62 |
| 1:M:207:LEU:HB2 | 1:M:226:TYR:H | 1.64 | 0.62 |
| 1:J:657:GLU:OE2 | 1:K:659:GLN:HA | 2.00 | 0.62 |
| 1:A:488:GLU:OE1 | 1:A:510:ARG:NH1 | 2.33 | 0.61 |
| 1:B:244:ARG:NH1 | 1:B:250:GLU:O | 2.34 | 0.61 |
| 1:C:244:ARG:NH1 | 1:C:250:GLU:O | 2.33 | 0.61 |
| 2:Q:7:LYS:HE2 | 2:Q:79:LYS:HB3 | 1.82 | 0.61 |
| 1:D:657:GLU:OE2 | 1:E:659:GLN:HA | 2.00 | 0.61 |
| 1:E:244:ARG:N | 1:E:273:GLU:OE2 | 2.33 | 0.61 |
| 2:O:26:LEU:HG | 2:O:28:ASP:H | 1.64 | 0.61 |
| 1:A:244:ARG:N | 1:A:273:GLU:OE2 | 2.34 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:207:LEU:HB2 | 1:C:226:TYR:H | 1.64 | 0.61 |
| 1:H:244:ARG:N | 1:H:273:GLU:OE2 | 2.34 | 0.61 |
| 1:M:241:ILE:HG13 | 1:M:255:ASP:OD2 | 2.01 | 0.61 |
| 1:I:207:LEU:HB2 | 1:I:226:TYR:H | 1.64 | 0.61 |
| 1:D:488:GLU:OE1 | 1:D:510:ARG:NH1 | 2.33 | 0.61 |
| 1:E:244:ARG:NH1 | 1:E:250:GLU:O | 2.34 | 0.61 |
| 1:G:657:GLU:OE2 | 1:H:659:GLN:HA | 2.00 | 0.61 |
| 2:W:51:ASN:HB3 | 2:W:52:PRO:HD3 | 1.82 | 0.61 |
| 1:D:244:ARG:N | 1:D:273:GLU:OE2 | 2.34 | 0.60 |
| 1:A:213:THR:HG22 | 1:A:214:SER:H | 1.66 | 0.60 |
| 1:G:214:SER:HA | 1:G:217:TYR:HB3 | 1.82 | 0.60 |
| 1:D:302:PRO:O | 1:D:478:MET:HG3 | 2.02 | 0.60 |
| 1:G:488:GLU:OE1 | 1:G:510:ARG:NH1 | 2.33 | 0.60 |
| 2:X:64:GLU:HG2 | 2:X:65:GLN:H | 1.66 | 0.60 |
| 1:M:627:MET:O | 1:M:631:GLN:HG3 | 2.02 | 0.60 |
| 1:A:205:THR:HG21 | 1:A:225:ILE:HD13 | 1.84 | 0.60 |
| 1:G:244:ARG:N | 1:G:273:GLU:OE2 | 2.34 | 0.60 |
| 1:J:244:ARG:N | 1:J:273:GLU:OE2 | 2.34 | 0.60 |
| 1:K:302:PRO:O | 1:K:478:MET:HG3 | 2.01 | 0.60 |
| 1:J:627:MET:O | 1:J:631:GLN:HG3 | 2.02 | 0.60 |
| 1:I:627:MET:O | 1:I:631:GLN:HG3 | 2.02 | 0.60 |
| 1:M:214:SER:HB2 | 1:M:219:TRP:CE2 | 2.37 | 0.59 |
| 1:D:207:LEU:HB2 | 1:D:226:TYR:H | 1.67 | 0.59 |
| 1:E:302:PRO:O | 1:E:478:MET:HG3 | 2.01 | 0.59 |
| 1:J:205:THR:HG21 | 1:J:225:ILE:HD13 | 1.84 | 0.59 |
| 1:E:214:SER:HB2 | 1:E:219:TRP:CE2 | 2.37 | 0.59 |
| 1:E:589:LEU:HD12 | 1:E:596:PRO:HG3 | 1.83 | 0.59 |
| 1:E:205:THR:HG21 | 1:E:225:ILE:HD13 | 1.85 | 0.59 |
| 1:G:486:GLU:O | 1:G:487:ARG:HG3 | 2.02 | 0.59 |
| 1:I:254:TYR:CD2 | 1:I:255:ASP:N | 2.70 | 0.59 |
| 1:K:244:ARG:NH1 | 1:K:250:GLU:O | 2.35 | 0.59 |
| 1:A:578:ASP:OD1 | 1:A:579:ASP:N | 2.36 | 0.59 |
| 1:B:205:THR:HG21 | 1:B:225:ILE:HD13 | 1.85 | 0.59 |
| 1:J:578:ASP:OD1 | 1:J:579:ASP:N | 2.36 | 0.59 |
| 2:O:21:ALA:HA | 2:O:26:LEU:HD22 | 1.85 | 0.59 |
| 1:B:589:LEU:HD12 | 1:B:596:PRO:HG3 | 1.83 | 0.59 |
| 1:H:487:ARG:HD3 | 1:H:488:GLU:H | 1.67 | 0.59 |
| 1:K:589:LEU:HD12 | 1:K:596:PRO:HG3 | 1.83 | 0.59 |
| 1:A:214:SER:HA | 1:A:217:TYR:HB3 | 1.85 | 0.58 |
| 1:C:241:ILE:HG13 | 1:C:255:ASP:OD2 | 2.03 | 0.58 |
| 1:G:241:ILE:HG13 | 1:G:255:ASP:OD2 | 2.03 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:578:ASP:OD1 | 1:G:579:ASP:N | 2.36 | 0.58 |
| 2:O:1:MET:SD | 2:O:2:ALA:N | 2.76 | 0.58 |
| 1:A:486:GLU:O | 1:A:487:ARG:HG3 | 2.02 | 0.58 |
| 1:B:214:SER:HB2 | 1:B:219:TRP:CE2 | 2.38 | 0.58 |
| 1:D:486:GLU:O | 1:D:487:ARG:HG3 | 2.02 | 0.58 |
| 1:I:214:SER:HB2 | 1:I:219:TRP:CE2 | 2.39 | 0.58 |
| 1:E:487:ARG:HD3 | 1:E:488:GLU:H | 1.68 | 0.58 |
| 1:H:214:SER:HB2 | 1:H:219:TRP:CE2 | 2.39 | 0.58 |
| 1:J:241:ILE:HG13 | 1:J:255:ASP:OD2 | 2.03 | 0.58 |
| 1:A:241:ILE:HG13 | 1:A:255:ASP:OD2 | 2.03 | 0.58 |
| 1:G:205:THR:HG21 | 1:G:225:ILE:HD13 | 1.84 | 0.58 |
| 2:N:21:ALA:HA | 2:N:27:THR:HB | 1.86 | 0.58 |
| 1:C:214:SER:HB2 | 1:C:219:TRP:CE2 | 2.38 | 0.58 |
| 2:W:30:GLU:OE1 | 2:W:32:GLN:HB2 | 2.02 | 0.58 |
| 1:H:589:LEU:HD12 | 1:H:596:PRO:HG3 | 1.83 | 0.58 |
| 1:I:244:ARG:N | 1:I:273:GLU:OE2 | 2.36 | 0.58 |
| 1:F:214:SER:HB2 | 1:F:219:TRP:CE2 | 2.39 | 0.58 |
| 1:K:487:ARG:HD3 | 1:K:488:GLU:H | 1.68 | 0.58 |
| 2:L:26:LEU:O | 2:L:27:THR:OG1 | 2.15 | 0.58 |
| 1:D:578:ASP:OD1 | 1:D:579:ASP:N | 2.36 | 0.58 |
| 1:F:241:ILE:HG13 | 1:F:255:ASP:OD2 | 2.03 | 0.58 |
| 1:B:487:ARG:HD3 | 1:B:488:GLU:H | 1.68 | 0.57 |
| 1:C:254:TYR:HB3 | 1:C:521:LEU:N | 2.20 | 0.57 |
| 2:Q:13:PHE:HE1 | 2:Q:37:GLY:HA3 | 1.69 | 0.57 |
| 1:I:243:TYR:HD1 | 1:I:271:PHE:O | 1.87 | 0.57 |
| 1:D:241:ILE:HG13 | 1:D:255:ASP:OD2 | 2.03 | 0.57 |
| 1:D:214:SER:HB2 | 1:D:219:TRP:CE2 | 2.40 | 0.57 |
| 1:F:254:TYR:HB3 | 1:F:521:LEU:N | 2.19 | 0.57 |
| 1:M:254:TYR:CG | 1:M:520:ASP:HA | 2.40 | 0.57 |
| 1:F:254:TYR:CG | 1:F:255:ASP:N | 2.73 | 0.57 |
| 2:P:138:ASP:OD1 | 2:P:139:VAL:N | 2.37 | 0.57 |
| 1:I:611:ALA:O | 1:I:615:GLN:N | 2.38 | 0.57 |
| 2:T:138:ASP:OD1 | 2:T:139:VAL:N | 2.38 | 0.56 |
| 1:F:244:ARG:N | 1:F:273:GLU:OE2 | 2.38 | 0.56 |
| 1:H:254:TYR:CG | 1:H:520:ASP:HA | 2.40 | 0.56 |
| 1:K:489:VAL:H | 1:K:510:ARG:NH1 | 2.04 | 0.56 |
| 1:M:254:TYR:HB3 | 1:M:521:LEU:N | 2.19 | 0.56 |
| 1:A:195:TYR:CZ | 1:A:205:THR:HG22 | 2.40 | 0.56 |
| 1:C:244:ARG:N | 1:C:273:GLU:OE2 | 2.39 | 0.56 |
| 1:H:489:VAL:H | 1:H:510:ARG:NH1 | 2.04 | 0.56 |
| 1:J:195:TYR:CZ | 1:J:205:THR:HG22 | 2.41 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:611:ALA:O | 1:M:615:GLN:N | 2.37 | 0.56 |
| 1:G:634:ALA:O | 1:G:638:THR:OG1 | 2.22 | 0.56 |
| 1:M:254:TYR:CG | 1:M:255:ASP:N | 2.73 | 0.56 |
| 1:B:489:VAL:H | 1:B:510:ARG:NH1 | 2.04 | 0.56 |
| 1:E:489:VAL:H | 1:E:510:ARG:NH1 | 2.04 | 0.56 |
| 1:G:302:PRO:O | 1:G:478:MET:HG3 | 2.06 | 0.56 |
| 1:B:254:TYR:CG | 1:B:520:ASP:HA | 2.41 | 0.55 |
| 1:C:611:ALA:O | 1:C:615:GLN:N | 2.39 | 0.55 |
| 1:M:244:ARG:N | 1:M:273:GLU:OE2 | 2.39 | 0.55 |
| 1:D:634:ALA:O | 1:D:638:THR:OG1 | 2.22 | 0.55 |
| 1:E:254:TYR:CG | 1:E:520:ASP:HA | 2.41 | 0.55 |
| 1:G:195:TYR:CZ | 1:G:205:THR:HG22 | 2.41 | 0.55 |
| 1:J:302:PRO:O | 1:J:478:MET:HG3 | 2.06 | 0.55 |
| 2:T:63:ASP:OD1 | 2:T:64:GLU:N | 2.34 | 0.55 |
| 1:G:213:THR:HG22 | 1:G:214:SER:H | 1.71 | 0.55 |
| 1:J:204:PRO:C | 1:J:205:THR:HG1 | 2.08 | 0.55 |
| 2:X:1:MET:HG2 | 2:X:76:ARG:HB3 | 1.87 | 0.55 |
| 1:F:611:ALA:O | 1:F:615:GLN:N | 2.39 | 0.55 |
| 1:K:254:TYR:CD1 | 1:K:520:ASP:HA | 2.41 | 0.55 |
| 1:B:254:TYR:CD1 | 1:B:520:ASP:HA | 2.42 | 0.55 |
| 1:E:611:ALA:O | 1:E:615:GLN:N | 2.40 | 0.55 |
| 1:H:254:TYR:HB3 | 1:H:521:LEU:N | 2.21 | 0.55 |
| 1:H:254:TYR:CD1 | 1:H:520:ASP:HA | 2.41 | 0.55 |
| 1:J:1:MET:HA | 1:J:7:LYS:HE2 | 1.89 | 0.55 |
| 1:K:520:ASP:OD1 | 1:K:521:LEU:N | 2.40 | 0.55 |
| 1:J:488:GLU:HA | 1:J:510:ARG:HH12 | 1.72 | 0.55 |
| 1:K:254:TYR:CG | 1:K:520:ASP:HA | 2.41 | 0.55 |
| 1:H:195:TYR:CZ | 1:H:205:THR:HG22 | 2.42 | 0.55 |
| 1:K:254:TYR:CG | 1:K:255:ASP:N | 2.75 | 0.55 |
| 1:K:556:PRO:O | 1:K:557:THR:OG1 | 2.25 | 0.55 |
| 1:B:254:TYR:HB3 | 1:B:521:LEU:N | 2.22 | 0.54 |
| 1:G:1:MET:HA | 1:G:7:LYS:HE2 | 1.89 | 0.54 |
| 1:G:254:TYR:HB3 | 1:G:521:LEU:N | 2.23 | 0.54 |
| 1:E:254:TYR:CD1 | 1:E:520:ASP:HA | 2.42 | 0.54 |
| 1:E:254:TYR:HB3 | 1:E:521:LEU:N | 2.21 | 0.54 |
| 1:G:611:ALA:O | 1:G:615:GLN:N | 2.41 | 0.54 |
| 1:I:489:VAL:H | 1:I:510:ARG:NH1 | 2.05 | 0.54 |
| 1:M:489:VAL:H | 1:M:510:ARG:NH1 | 2.05 | 0.54 |
| 1:A:302:PRO:O | 1:A:478:MET:HG3 | 2.06 | 0.54 |
| 1:E:254:TYR:CG | 1:E:255:ASP:N | 2.75 | 0.54 |
| 1:D:556:PRO:O | 1:D:557:THR:OG1 | 2.25 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:X:38:VAL:HG21 | 2:X:68:PRO:HB3 | 1.89 | 0.54 |
| 1:G:244:ARG:NH2 | 1:G:251:ILE:HG13 | 2.23 | 0.54 |
| 1:K:195:TYR:CZ | 1:K:205:THR:HG22 | 2.42 | 0.54 |
| 1:K:214:SER:HA | 1:K:217:TYR:HB3 | 1.90 | 0.54 |
| 1:M:238:VAL:HG11 | 1:M:281:ARG:HD3 | 1.90 | 0.54 |
| 1:B:254:TYR:CG | 1:B:255:ASP:N | 2.75 | 0.54 |
| 1:B:520:ASP:OD1 | 1:B:521:LEU:N | 2.40 | 0.54 |
| 1:D:254:TYR:HB3 | 1:D:521:LEU:N | 2.23 | 0.54 |
| 1:G:556:PRO:O | 1:G:557:THR:OG1 | 2.24 | 0.54 |
| 1:K:254:TYR:HB3 | 1:K:521:LEU:N | 2.22 | 0.54 |
| 2:S:21:ALA:HB2 | 2:S:29:VAL:HG23 | 1.89 | 0.54 |
| 1:C:238:VAL:HG11 | 1:C:281:ARG:HD3 | 1.90 | 0.54 |
| 1:E:634:ALA:O | 1:E:638:THR:OG1 | 2.24 | 0.54 |
| 1:H:254:TYR:CG | 1:H:255:ASP:N | 2.76 | 0.54 |
| 1:C:520:ASP:OD1 | 1:C:521:LEU:N | 2.41 | 0.53 |
| 1:D:54:LEU:HD23 | 1:D:59:GLU:HB2 | 1.90 | 0.53 |
| 1:F:245:HIS:HB3 | 1:F:250:GLU:OE1 | 2.09 | 0.53 |
| 1:F:520:ASP:OD1 | 1:F:521:LEU:N | 2.41 | 0.53 |
| 1:I:238:VAL:HG11 | 1:I:281:ARG:HD3 | 1.90 | 0.53 |
| 1:I:520:ASP:OD2 | 1:I:521:LEU:N | 2.41 | 0.53 |
| 2:W:21:ALA:O | 2:W:22:SER:OG | 2.24 | 0.53 |
| 1:F:253:THR:HG22 | 1:F:254:TYR:H | 1.74 | 0.53 |
| 1:J:224:VAL:HG23 | 1:J:225:ILE:H | 1.74 | 0.53 |
| 1:J:254:TYR:HB3 | 1:J:521:LEU:N | 2.22 | 0.53 |
| 1:I:254:TYR:CG | 1:I:255:ASP:N | 2.77 | 0.53 |
| 1:J:634:ALA:O | 1:J:638:THR:OG1 | 2.23 | 0.53 |
| 1:C:254:TYR:CG | 1:C:255:ASP:N | 2.73 | 0.53 |
| 1:D:611:ALA:O | 1:D:615:GLN:N | 2.41 | 0.53 |
| 1:J:244:ARG:NH2 | 1:J:251:ILE:HG13 | 2.23 | 0.53 |
| 1:K:634:ALA:O | 1:K:638:THR:OG1 | 2.24 | 0.53 |
| 1:M:253:THR:HG22 | 1:M:254:TYR:H | 1.74 | 0.53 |
| 1:M:520:ASP:OD1 | 1:M:521:LEU:N | 2.42 | 0.53 |
| 1:A:627:MET:O | 1:A:631:GLN:HG3 | 2.09 | 0.53 |
| 1:C:627:MET:O | 1:C:631:GLN:HG3 | 2.08 | 0.53 |
| 1:D:1:MET:HA | 1:D:7:LYS:HE2 | 1.88 | 0.53 |
| 1:H:611:ALA:O | 1:H:615:GLN:N | 2.41 | 0.53 |
| 1:H:627:MET:O | 1:H:631:GLN:HG3 | 2.09 | 0.53 |
| 1:A:254:TYR:HB3 | 1:A:521:LEU:N | 2.23 | 0.53 |
| 1:A:556:PRO:O | 1:A:557:THR:OG1 | 2.24 | 0.53 |
| 1:G:245:HIS:HB3 | 1:G:250:GLU:OE1 | 2.09 | 0.53 |
| 1:H:224:VAL:HG23 | 1:H:225:ILE:H | 1.74 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:556:PRO:O | 1:I:557:THR:OG1 | 2.26 | 0.53 |
| 1:J:657:GLU:HG2 | 1:J:661:ASN:ND2 | 2.24 | 0.53 |
| 2:W:5:LEU:HD11 | 2:W:79:LYS:HB3 | 1.90 | 0.53 |
| 1:F:627:MET:O | 1:F:631:GLN:HG3 | 2.09 | 0.53 |
| 1:A:224:VAL:HG23 | 1:A:225:ILE:H | 1.74 | 0.53 |
| 1:C:253:THR:HG22 | 1:C:254:TYR:H | 1.74 | 0.53 |
| 1:D:244:ARG:NH2 | 1:D:251:ILE:HG13 | 2.23 | 0.53 |
| 1:I:245:HIS:HB3 | 1:I:250:GLU:OE1 | 2.09 | 0.53 |
| 1:I:596:PRO:HB3 | 1:I:601:GLU:HG2 | 1.91 | 0.53 |
| 1:A:230:TYR:OH | 1:A:232:GLU:OE2 | 2.24 | 0.53 |
| 1:B:556:PRO:O | 1:B:557:THR:OG1 | 2.25 | 0.53 |
| 1:H:572:ILE:CG1 | 1:H:573:ASP:H | 2.22 | 0.53 |
| 2:P:30:GLU:HG2 | 2:P:32:GLN:H | 1.72 | 0.53 |
| 1:M:640:GLU:HA | 1:A:645:GLN:HE21 | 1.74 | 0.52 |
| 1:A:1:MET:HA | 1:A:7:LYS:HE2 | 1.89 | 0.52 |
| 1:B:195:TYR:CZ | 1:B:205:THR:HG22 | 2.44 | 0.52 |
| 1:G:238:VAL:HG11 | 1:G:281:ARG:HD3 | 1.90 | 0.52 |
| 1:H:245:HIS:HB3 | 1:H:250:GLU:OE1 | 2.10 | 0.52 |
| 1:E:627:MET:O | 1:E:631:GLN:HG3 | 2.09 | 0.52 |
| 1:G:572:ILE:CG1 | 1:G:573:ASP:H | 2.22 | 0.52 |
| 1:J:238:VAL:HG11 | 1:J:281:ARG:HD3 | 1.91 | 0.52 |
| 1:M:596:PRO:HB3 | 1:M:601:GLU:HG2 | 1.91 | 0.52 |
| 1:A:244:ARG:NH2 | 1:A:251:ILE:HG13 | 2.23 | 0.52 |
| 1:B:636:LYS:HZ3 | 1:C:641:THR:N | 2.07 | 0.52 |
| 1:D:668:GLN:OE1 | 1:E:670:ARG:NH1 | 2.40 | 0.52 |
| 1:E:520:ASP:OD2 | 1:E:521:LEU:N | 2.42 | 0.52 |
| 1:E:572:ILE:CG1 | 1:E:573:ASP:H | 2.22 | 0.52 |
| 1:M:245:HIS:HB3 | 1:M:250:GLU:OE1 | 2.09 | 0.52 |
| 1:D:195:TYR:CZ | 1:D:205:THR:HG22 | 2.44 | 0.52 |
| 1:I:195:TYR:CE1 | 1:I:205:THR:HG22 | 2.44 | 0.52 |
| 1:J:636:LYS:HZ3 | 1:K:641:THR:N | 2.08 | 0.52 |
| 1:K:320:ASP:O | 1:K:321:ILE:HD13 | 2.09 | 0.52 |
| 1:K:627:MET:O | 1:K:631:GLN:HG3 | 2.09 | 0.52 |
| 1:A:238:VAL:HG11 | 1:A:281:ARG:HD3 | 1.91 | 0.52 |
| 1:G:627:MET:O | 1:G:631:GLN:HG3 | 2.09 | 0.52 |
| 1:J:245:HIS:HB3 | 1:J:250:GLU:OE1 | 2.09 | 0.52 |
| 1:J:556:PRO:O | 1:J:557:THR:OG1 | 2.25 | 0.52 |
| 1:K:365:ARG:O | 1:K:385:ARG:NH1 | 2.41 | 0.52 |
| 1:M:195:TYR:CE1 | 1:M:205:THR:HG22 | 2.44 | 0.52 |
| 1:A:668:GLN:OE1 | 1:B:670:ARG:NH1 | 2.40 | 0.52 |
| 1:B:572:ILE:CG1 | 1:B:573:ASP:H | 2.22 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:245:HIS:HB3 | 1:D:250:GLU:OE1 | 2.09 | 0.52 |
| 1:G:224:VAL:HG23 | 1:G:225:ILE:H | 1.74 | 0.52 |
| 2:T:23:ASN:HB2 | 2:U:32:GLN:HG2 | 1.90 | 0.52 |
| 1:D:572:ILE:CG1 | 1:D:573:ASP:H | 2.22 | 0.52 |
| 1:H:561:ARG:HB3 | 1:H:562:PRO:HD3 | 1.92 | 0.52 |
| 1:K:25:GLU:HG2 | 2:W:139:VAL:HB | 1.91 | 0.52 |
| 1:K:244:ARG:HG2 | 1:K:250:GLU:O | 2.10 | 0.52 |
| 1:D:627:MET:O | 1:D:631:GLN:HG3 | 2.09 | 0.52 |
| 1:G:657:GLU:HG2 | 1:G:661:ASN:ND2 | 2.23 | 0.52 |
| 1:J:214:SER:HB2 | 1:J:219:TRP:CE2 | 2.45 | 0.52 |
| 1:K:572:ILE:CG1 | 1:K:573:ASP:H | 2.22 | 0.52 |
| 1:E:195:TYR:CZ | 1:E:205:THR:HG22 | 2.44 | 0.52 |
| 1:F:195:TYR:CE1 | 1:F:205:THR:HG22 | 2.44 | 0.52 |
| 1:I:668:GLN:OE1 | 1:J:670:ARG:NH1 | 2.39 | 0.52 |
| 2:Q:16:ARG:NE | 2:Q:86:LEU:HD23 | 2.25 | 0.52 |
| 1:A:245:HIS:HB3 | 1:A:250:GLU:OE1 | 2.09 | 0.52 |
| 1:B:224:VAL:HG23 | 1:B:225:ILE:H | 1.75 | 0.52 |
| 1:B:627:MET:O | 1:B:631:GLN:HG3 | 2.09 | 0.52 |
| 1:E:224:VAL:HG23 | 1:E:225:ILE:H | 1.75 | 0.52 |
| 1:I:636:LYS:HZ3 | 1:J:641:THR:N | 2.09 | 0.52 |
| 1:J:572:ILE:CG1 | 1:J:573:ASP:H | 2.22 | 0.52 |
| 1:A:572:ILE:CG1 | 1:A:573:ASP:H | 2.22 | 0.51 |
| 1:B:561:ARG:HB3 | 1:B:562:PRO:HD3 | 1.92 | 0.51 |
| 1:E:561:ARG:HB3 | 1:E:562:PRO:HD3 | 1.92 | 0.51 |
| 1:F:195:TYR:CZ | 1:F:205:THR:HG22 | 2.46 | 0.51 |
| 1:H:668:GLN:OE1 | 1:I:670:ARG:NH1 | 2.40 | 0.51 |
| 1:B:245:HIS:HB3 | 1:B:250:GLU:OE1 | 2.10 | 0.51 |
| 1:B:611:ALA:O | 1:B:615:GLN:N | 2.40 | 0.51 |
| 1:C:561:ARG:HB3 | 1:C:562:PRO:HD3 | 1.93 | 0.51 |
| 1:F:561:ARG:HB3 | 1:F:562:PRO:HD3 | 1.93 | 0.51 |
| 1:F:640:GLU:HA | 1:G:645:GLN:HE21 | 1.75 | 0.51 |
| 1:I:640:GLU:HA | 1:J:645:GLN:HE21 | 1.75 | 0.51 |
| 2:R:75:PRO:HB2 | 2:R:77:LYS:HG2 | 1.91 | 0.51 |
| 1:M:634:ALA:O | 1:M:638:THR:OG1 | 2.26 | 0.51 |
| 1:M:641:THR:N | 1:K:636:LYS:HZ3 | 2.08 | 0.51 |
| 1:C:195:TYR:CE1 | 1:C:205:THR:HG22 | 2.44 | 0.51 |
| 1:D:230:TYR:OH | 1:D:232:GLU:OE2 | 2.24 | 0.51 |
| 1:F:556:PRO:O | 1:F:557:THR:OG1 | 2.26 | 0.51 |
| 1:G:54:LEU:HD23 | 1:G:59:GLU:HB2 | 1.93 | 0.51 |
| 1:H:244:ARG:HG2 | 1:H:250:GLU:O | 2.10 | 0.51 |
| 1:K:245:HIS:HB3 | 1:K:250:GLU:OE1 | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:U:131:VAL:HG12 | 2:U:145:TYR:H | 1.76 | 0.51 |
| 1:C:195:TYR:CZ | 1:C:205:THR:HG22 | 2.46 | 0.51 |
| 1:C:640:GLU:HA | 1:D:645:GLN:HE21 | 1.74 | 0.51 |
| 2:S:138:ASP:OD1 | 2:S:139:VAL:N | 2.43 | 0.51 |
| 1:E:245:HIS:HB3 | 1:E:250:GLU:OE1 | 2.09 | 0.51 |
| 1:F:596:PRO:HB3 | 1:F:601:GLU:HG2 | 1.91 | 0.51 |
| 1:K:561:ARG:HB3 | 1:K:562:PRO:HD3 | 1.92 | 0.51 |
| 2:P:1:MET:O | 2:X:63:ASP:HA | 2.11 | 0.51 |
| 1:A:636:LYS:HZ3 | 1:B:641:THR:N | 2.08 | 0.51 |
| 1:C:596:PRO:HB3 | 1:C:601:GLU:HG2 | 1.91 | 0.51 |
| 1:K:224:VAL:HG23 | 1:K:225:ILE:H | 1.74 | 0.51 |
| 2:Q:16:ARG:HG3 | 2:Q:87:LEU:HB2 | 1.93 | 0.51 |
| 1:D:238:VAL:HG11 | 1:D:281:ARG:HD3 | 1.92 | 0.51 |
| 1:D:636:LYS:HZ3 | 1:E:641:THR:N | 2.07 | 0.51 |
| 1:E:320:ASP:O | 1:E:321:ILE:HD13 | 2.10 | 0.51 |
| 1:I:195:TYR:CZ | 1:I:205:THR:HG22 | 2.45 | 0.51 |
| 1:I:254:TYR:CG | 1:I:520:ASP:HA | 2.46 | 0.51 |
| 1:C:245:HIS:HB3 | 1:C:250:GLU:OE1 | 2.10 | 0.51 |
| 1:M:561:ARG:HB3 | 1:M:562:PRO:HD3 | 1.93 | 0.51 |
| 1:A:611:ALA:O | 1:A:615:GLN:N | 2.41 | 0.51 |
| 1:E:254:TYR:CD2 | 1:E:255:ASP:N | 2.79 | 0.51 |
| 1:H:636:LYS:HZ3 | 1:I:641:THR:N | 2.09 | 0.51 |
| 1:H:640:GLU:HA | 1:I:645:GLN:HE21 | 1.76 | 0.51 |
| 1:A:243:TYR:HD1 | 1:A:271:PHE:O | 1.94 | 0.51 |
| 1:F:572:ILE:CG1 | 1:F:573:ASP:H | 2.24 | 0.51 |
| 1:H:520:ASP:OD2 | 1:H:521:LEU:N | 2.44 | 0.51 |
| 1:I:561:ARG:HB3 | 1:I:562:PRO:HD3 | 1.93 | 0.51 |
| 1:K:611:ALA:O | 1:K:615:GLN:N | 2.41 | 0.51 |
| 1:M:195:TYR:CZ | 1:M:205:THR:HG22 | 2.46 | 0.50 |
| 1:M:636:LYS:HZ3 | 1:A:641:THR:N | 2.08 | 0.50 |
| 1:A:599:GLU:HG2 | 1:A:600:LYS:N | 2.26 | 0.50 |
| 1:B:640:GLU:HA | 1:C:645:GLN:HE21 | 1.76 | 0.50 |
| 1:D:599:GLU:HG2 | 1:D:600:LYS:N | 2.26 | 0.50 |
| 1:F:599:GLU:HG2 | 1:F:600:LYS:N | 2.26 | 0.50 |
| 1:E:230:TYR:OH | 1:E:232:GLU:OE2 | 2.26 | 0.50 |
| 1:G:599:GLU:HG2 | 1:G:600:LYS:N | 2.26 | 0.50 |
| 1:K:205:THR:HG21 | 1:K:225:ILE:HD13 | 1.94 | 0.50 |
| 1:C:244:ARG:NH2 | 1:C:251:ILE:HG13 | 2.26 | 0.50 |
| 1:C:636:LYS:HZ3 | 1:D:641:THR:N | 2.08 | 0.50 |
| 1:D:53:LYS:HD3 | 1:D:57:GLN:O | 2.11 | 0.50 |
| 1:F:244:ARG:NH2 | 1:F:251:ILE:HG13 | 2.27 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:53:LYS:HD3 | 1:G:57:GLN:O | 2.11 | 0.50 |
| 1:C:572:ILE:CG1 | 1:C:573:ASP:H | 2.23 | 0.50 |
| 1:C:599:GLU:HG2 | 1:C:600:LYS:N | 2.27 | 0.50 |
| 1:D:195:TYR:CE1 | 1:D:205:THR:HG22 | 2.47 | 0.50 |
| 1:E:640:GLU:HA | 1:F:645:GLN:HE21 | 1.76 | 0.50 |
| 1:I:572:ILE:CG1 | 1:I:573:ASP:H | 2.24 | 0.50 |
| 1:J:551:LEU:HD11 | 1:J:561:ARG:HG3 | 1.94 | 0.50 |
| 1:J:596:PRO:HB3 | 1:J:601:GLU:HG2 | 1.94 | 0.50 |
| 2:Q:131:VAL:HG12 | 2:Q:145:TYR:H | 1.76 | 0.50 |
| 1:A:551:LEU:HD11 | 1:A:561:ARG:HG3 | 1.94 | 0.50 |
| 1:D:618:PRO:HA | 1:D:621:VAL:HG12 | 1.94 | 0.50 |
| 1:J:599:GLU:HG2 | 1:J:600:LYS:N | 2.26 | 0.50 |
| 1:A:657:GLU:HG2 | 1:A:661:ASN:ND2 | 2.23 | 0.50 |
| 1:B:254:TYR:CD2 | 1:B:255:ASP:N | 2.79 | 0.50 |
| 1:C:634:ALA:O | 1:C:638:THR:OG1 | 2.26 | 0.50 |
| 1:D:243:TYR:HD1 | 1:D:271:PHE:O | 1.94 | 0.50 |
| 1:E:636:LYS:HZ3 | 1:F:641:THR:N | 2.10 | 0.50 |
| 1:G:243:TYR:HD1 | 1:G:271:PHE:O | 1.94 | 0.50 |
| 1:G:561:ARG:HB3 | 1:G:562:PRO:HD3 | 1.94 | 0.50 |
| 1:G:574:GLY:H | 1:G:577:LEU:HD12 | 1.76 | 0.50 |
| 1:H:205:THR:HG21 | 1:H:225:ILE:HD13 | 1.93 | 0.50 |
| 1:H:320:ASP:O | 1:H:321:ILE:HD13 | 2.12 | 0.50 |
| 1:I:244:ARG:NH2 | 1:I:251:ILE:HG13 | 2.27 | 0.50 |
| 1:I:254:TYR:CD1 | 1:I:520:ASP:HA | 2.46 | 0.50 |
| 1:J:574:GLY:H | 1:J:577:LEU:HD12 | 1.77 | 0.50 |
| 1:J:611:ALA:O | 1:J:615:GLN:N | 2.41 | 0.50 |
| 1:J:640:GLU:HA | 1:K:645:GLN:HE21 | 1.77 | 0.50 |
| 1:M:599:GLU:HG2 | 1:M:600:LYS:N | 2.27 | 0.50 |
| 1:B:320:ASP:O | 1:B:321:ILE:HD13 | 2.12 | 0.50 |
| 1:D:574:GLY:H | 1:D:577:LEU:HD12 | 1.77 | 0.50 |
| 1:F:586:ASN:O | 1:F:590:ILE:HG23 | 2.12 | 0.50 |
| 1:K:254:TYR:CD2 | 1:K:255:ASP:N | 2.79 | 0.50 |
| 1:M:645:GLN:HE21 | 1:K:640:GLU:HA | 1.76 | 0.50 |
| 1:B:365:ARG:O | 1:B:385:ARG:NH1 | 2.44 | 0.50 |
| 1:I:599:GLU:HG2 | 1:I:600:LYS:N | 2.27 | 0.50 |
| 1:J:243:TYR:HD1 | 1:J:271:PHE:O | 1.94 | 0.50 |
| 2:N:131:VAL:HG12 | 2:N:145:TYR:H | 1.77 | 0.50 |
| 1:M:254:TYR:CD1 | 1:M:520:ASP:HA | 2.47 | 0.50 |
| 1:M:572:ILE:CG1 | 1:M:573:ASP:H | 2.23 | 0.50 |
| 1:C:556:PRO:O | 1:C:557:THR:OG1 | 2.26 | 0.50 |
| 1:E:599:GLU:HG2 | 1:E:600:LYS:N | 2.27 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:238:VAL:HG11 | 1:F:281:ARG:HD3 | 1.94 | 0.50 |
| 1:F:516:VAL:HG13 | 1:F:517:ALA:H | 1.77 | 0.50 |
| 1:H:53:LYS:HD3 | 1:H:57:GLN:O | 2.12 | 0.50 |
| 1:A:207:LEU:H | 1:A:207:LEU:HD23 | 1.76 | 0.49 |
| 1:A:574:GLY:H | 1:A:577:LEU:HD12 | 1.77 | 0.49 |
| 1:B:254:TYR:OH | 1:B:518:LEU:HD22 | 2.12 | 0.49 |
| 1:B:599:GLU:HG2 | 1:B:600:LYS:N | 2.27 | 0.49 |
| 1:D:207:LEU:HD23 | 1:D:207:LEU:H | 1.76 | 0.49 |
| 1:D:561:ARG:HB3 | 1:D:562:PRO:HD3 | 1.94 | 0.49 |
| 1:E:254:TYR:OH | 1:E:518:LEU:HD22 | 2.13 | 0.49 |
| 1:J:53:LYS:HD3 | 1:J:57:GLN:O | 2.12 | 0.49 |
| 1:A:53:LYS:HD3 | 1:A:57:GLN:O | 2.11 | 0.49 |
| 1:A:596:PRO:HB3 | 1:A:601:GLU:HG2 | 1.94 | 0.49 |
| 1:B:238:VAL:HG11 | 1:B:281:ARG:HD3 | 1.93 | 0.49 |
| 1:D:207:LEU:HD12 | 1:D:226:TYR:HD2 | 1.76 | 0.49 |
| 1:G:207:LEU:HD23 | 1:G:207:LEU:H | 1.76 | 0.49 |
| 1:G:596:PRO:HB3 | 1:G:601:GLU:HG2 | 1.94 | 0.49 |
| 1:G:618:PRO:HA | 1:G:621:VAL:HG12 | 1.95 | 0.49 |
| 1:G:640:GLU:HA | 1:H:645:GLN:HE21 | 1.77 | 0.49 |
| 1:H:599:GLU:HG2 | 1:H:600:LYS:N | 2.27 | 0.49 |
| 1:A:561:ARG:HB3 | 1:A:562:PRO:HD3 | 1.94 | 0.49 |
| 1:B:634:ALA:O | 1:B:638:THR:OG1 | 2.24 | 0.49 |
| 1:E:238:VAL:HG11 | 1:E:281:ARG:HD3 | 1.93 | 0.49 |
| 1:G:636:LYS:HZ3 | 1:H:641:THR:N | 2.10 | 0.49 |
| 1:I:53:LYS:HD3 | 1:I:57:GLN:O | 2.12 | 0.49 |
| 1:J:489:VAL:H | 1:J:510:ARG:NH1 | 2.11 | 0.49 |
| 1:K:53:LYS:HD3 | 1:K:57:GLN:O | 2.12 | 0.49 |
| 1:K:599:GLU:HG2 | 1:K:600:LYS:N | 2.27 | 0.49 |
| 1:M:244:ARG:NH2 | 1:M:251:ILE:HG13 | 2.27 | 0.49 |
| 1:C:25:GLU:HG2 | 2:Q:139:VAL:HB | 1.95 | 0.49 |
| 1:D:551:LEU:HD11 | 1:D:561:ARG:HG3 | 1.94 | 0.49 |
| 1:F:636:LYS:HZ3 | 1:G:641:THR:N | 2.10 | 0.49 |
| 1:H:244:ARG:NH2 | 1:H:251:ILE:HG13 | 2.28 | 0.49 |
| 1:H:365:ARG:O | 1:H:385:ARG:NH1 | 2.42 | 0.49 |
| 1:J:254:TYR:CD1 | 1:J:520:ASP:HA | 2.48 | 0.49 |
| 2:Q:16:ARG:CZ | 2:Q:86:LEU:HD23 | 2.42 | 0.49 |
| 1:B:53:LYS:HD3 | 1:B:57:GLN:O | 2.12 | 0.49 |
| 1:F:25:GLU:HG2 | 2:X:139:VAL:HB | 1.93 | 0.49 |
| 1:F:53:LYS:HD3 | 1:F:57:GLN:O | 2.12 | 0.49 |
| 1:H:254:TYR:OH | 1:H:518:LEU:HD22 | 2.12 | 0.49 |
| 1:H:618:PRO:HA | 1:H:621:VAL:HG12 | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:561:ARG:HB3 | 1:J:562:PRO:HD3 | 1.94 | 0.49 |
| 1:K:378:ARG:NH1 | 2:L:124:ARG:O | 2.45 | 0.49 |
| 1:E:244:ARG:HG2 | 1:E:250:GLU:O | 2.12 | 0.49 |
| 1:G:551:LEU:HD11 | 1:G:561:ARG:HG3 | 1.94 | 0.49 |
| 2:T:7:LYS:HE2 | 2:T:57:TYR:OH | 2.13 | 0.49 |
| 2:W:29:VAL:HG23 | 2:W:30:GLU:N | 2.25 | 0.49 |
| 1:A:634:ALA:O | 1:A:638:THR:OG1 | 2.23 | 0.49 |
| 1:D:640:GLU:HA | 1:E:645:GLN:HE21 | 1.76 | 0.49 |
| 1:F:668:GLN:OE1 | 1:G:670:ARG:NH1 | 2.39 | 0.49 |
| 1:I:668:GLN:NE2 | 1:J:669:ALA:O | 2.46 | 0.49 |
| 1:K:238:VAL:HG11 | 1:K:281:ARG:HD3 | 1.94 | 0.49 |
| 1:A:207:LEU:HD12 | 1:A:226:TYR:HD2 | 1.77 | 0.49 |
| 1:I:207:LEU:HD23 | 1:I:207:LEU:H | 1.77 | 0.49 |
| 1:K:177:ASP:OD1 | 1:K:177:ASP:N | 2.42 | 0.49 |
| 1:K:207:LEU:HD23 | 1:K:207:LEU:H | 1.78 | 0.49 |
| 1:K:254:TYR:OH | 1:K:518:LEU:HD22 | 2.12 | 0.49 |
| 2:P:29:VAL:HG12 | 2:P:30:GLU:N | 2.28 | 0.49 |
| 2:T:144:ARG:O | 2:T:145:TYR:HB2 | 2.13 | 0.49 |
| 1:M:202:LYS:HD2 | 1:M:203:PRO:HD2 | 1.95 | 0.49 |
| 1:C:573:ASP:HB3 | 1:C:577:LEU:HD22 | 1.95 | 0.49 |
| 1:C:668:GLN:NE2 | 1:D:669:ALA:O | 2.45 | 0.49 |
| 1:D:596:PRO:HB3 | 1:D:601:GLU:HG2 | 1.94 | 0.49 |
| 1:J:346:ALA:HA | 1:K:416:LEU:HD11 | 1.94 | 0.49 |
| 1:J:668:GLN:OE1 | 1:K:670:ARG:NH1 | 2.40 | 0.49 |
| 1:K:241:ILE:HG22 | 1:K:275:ALA:O | 2.13 | 0.49 |
| 1:K:244:ARG:NH2 | 1:K:251:ILE:HG13 | 2.27 | 0.49 |
| 2:W:144:ARG:O | 2:W:145:TYR:HB2 | 2.13 | 0.49 |
| 1:M:207:LEU:H | 1:M:207:LEU:HD23 | 1.77 | 0.49 |
| 1:M:668:GLN:NE2 | 1:A:669:ALA:O | 2.46 | 0.49 |
| 1:B:202:LYS:HD2 | 1:B:203:PRO:HD2 | 1.94 | 0.49 |
| 1:B:207:LEU:HD23 | 1:B:207:LEU:H | 1.78 | 0.49 |
| 1:B:244:ARG:HG2 | 1:B:250:GLU:O | 2.12 | 0.49 |
| 1:F:207:LEU:HD12 | 1:F:226:TYR:HD2 | 1.78 | 0.49 |
| 1:J:618:PRO:HA | 1:J:621:VAL:HG12 | 1.94 | 0.49 |
| 1:K:596:PRO:HB3 | 1:K:601:GLU:HG2 | 1.95 | 0.49 |
| 1:A:618:PRO:HA | 1:A:621:VAL:HG12 | 1.94 | 0.48 |
| 1:E:657:GLU:HG2 | 1:E:661:ASN:ND2 | 2.27 | 0.48 |
| 1:H:37:ALA:HB2 | 1:H:328:ILE:HD13 | 1.95 | 0.48 |
| 1:H:202:LYS:HD2 | 1:H:203:PRO:HD2 | 1.95 | 0.48 |
| 1:H:596:PRO:HB3 | 1:H:601:GLU:HG2 | 1.95 | 0.48 |
| 1:J:207:LEU:HD12 | 1:J:226:TYR:HD2 | 1.77 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:O:22:SER:O | 2:O:26:LEU:HB3 | 2.13 | 0.48 |
| 2:P:144:ARG:O | 2:P:145:TYR:HB2 | 2.13 | 0.48 |
| 1:A:254:TYR:CD1 | 1:A:520:ASP:HA | 2.48 | 0.48 |
| 1:A:640:GLU:HA | 1:B:645:GLN:HE21 | 1.77 | 0.48 |
| 1:B:241:ILE:HG22 | 1:B:275:ALA:O | 2.13 | 0.48 |
| 1:C:207:LEU:H | 1:C:207:LEU:HD23 | 1.77 | 0.48 |
| 1:H:103:LYS:NZ | 1:H:511:GLN:O | 2.46 | 0.48 |
| 1:I:207:LEU:HD12 | 1:I:226:TYR:HD2 | 1.78 | 0.48 |
| 1:I:244:ARG:HG2 | 1:I:250:GLU:O | 2.13 | 0.48 |
| 2:O:144:ARG:O | 2:O:145:TYR:HB2 | 2.13 | 0.48 |
| 2:S:144:ARG:O | 2:S:145:TYR:HB2 | 2.14 | 0.48 |
| 1:M:53:LYS:HD3 | 1:M:57:GLN:O | 2.12 | 0.48 |
| 1:B:103:LYS:NZ | 1:B:511:GLN:O | 2.42 | 0.48 |
| 1:D:213:THR:HG22 | 1:D:214:SER:N | 2.28 | 0.48 |
| 1:E:53:LYS:HD3 | 1:E:57:GLN:O | 2.12 | 0.48 |
| 1:H:254:TYR:CD2 | 1:H:255:ASP:N | 2.78 | 0.48 |
| 2:Q:7:LYS:HE2 | 2:Q:79:LYS:CB | 2.42 | 0.48 |
| 1:M:573:ASP:HB3 | 1:M:577:LEU:HD22 | 1.95 | 0.48 |
| 1:M:612:ALA:O | 1:M:616:PRO:HD3 | 2.14 | 0.48 |
| 1:E:241:ILE:HG22 | 1:E:275:ALA:O | 2.13 | 0.48 |
| 1:E:365:ARG:O | 1:E:385:ARG:NH1 | 2.42 | 0.48 |
| 1:E:668:GLN:OE1 | 1:F:670:ARG:NH1 | 2.41 | 0.48 |
| 1:H:238:VAL:HG11 | 1:H:281:ARG:HD3 | 1.93 | 0.48 |
| 1:B:230:TYR:OH | 1:B:232:GLU:OE2 | 2.26 | 0.48 |
| 1:B:302:PRO:O | 1:B:478:MET:HG3 | 2.13 | 0.48 |
| 1:B:596:PRO:HB3 | 1:B:601:GLU:HG2 | 1.95 | 0.48 |
| 1:C:202:LYS:HD2 | 1:C:203:PRO:HD2 | 1.94 | 0.48 |
| 1:G:346:ALA:HA | 1:H:416:LEU:HD11 | 1.95 | 0.48 |
| 1:I:1:MET:HA | 1:I:7:LYS:HE2 | 1.95 | 0.48 |
| 2:T:86:LEU:O | 2:T:90:MET:HG2 | 2.13 | 0.48 |
| 2:V:144:ARG:O | 2:V:145:TYR:HB2 | 2.13 | 0.48 |
| 1:A:202:LYS:HD2 | 1:A:203:PRO:HD2 | 1.96 | 0.48 |
| 1:B:244:ARG:NH2 | 1:B:251:ILE:HG13 | 2.28 | 0.48 |
| 1:D:254:TYR:CD1 | 1:D:520:ASP:HA | 2.49 | 0.48 |
| 1:E:202:LYS:HD2 | 1:E:203:PRO:HD2 | 1.94 | 0.48 |
| 1:F:573:ASP:HB3 | 1:F:577:LEU:HD22 | 1.95 | 0.48 |
| 1:G:207:LEU:HD12 | 1:G:226:TYR:HD2 | 1.77 | 0.48 |
| 1:G:514:ALA:HB1 | 1:G:518:LEU:HG | 1.96 | 0.48 |
| 1:H:573:ASP:HB3 | 1:H:577:LEU:HD12 | 1.96 | 0.48 |
| 1:K:573:ASP:HB3 | 1:K:577:LEU:HD12 | 1.96 | 0.48 |
| 1:K:586:ASN:O | 1:K:590:ILE:HG23 | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:1:MET:HA | 1:M:7:LYS:HE2 | 1.95 | 0.48 |
| 1:A:514:ALA:HB1 | 1:A:518:LEU:HG | 1.96 | 0.48 |
| 1:B:37:ALA:HB2 | 1:B:328:ILE:HD13 | 1.96 | 0.48 |
| 1:B:114:GLU:HB2 | 1:B:154:ARG:NH2 | 2.29 | 0.48 |
| 1:C:53:LYS:HD3 | 1:C:57:GLN:O | 2.12 | 0.48 |
| 1:C:254:TYR:CD2 | 1:C:255:ASP:N | 2.82 | 0.48 |
| 1:H:572:ILE:HG12 | 1:H:573:ASP:N | 2.26 | 0.48 |
| 1:I:202:LYS:HD2 | 1:I:203:PRO:HD2 | 1.94 | 0.48 |
| 2:P:7:LYS:HE2 | 2:P:57:TYR:OH | 2.13 | 0.48 |
| 2:W:64:GLU:HG3 | 2:W:65:GLN:H | 1.78 | 0.48 |
| 1:D:346:ALA:HA | 1:E:416:LEU:HD11 | 1.94 | 0.48 |
| 1:E:37:ALA:HB2 | 1:E:328:ILE:HD13 | 1.96 | 0.48 |
| 1:E:207:LEU:HD23 | 1:E:207:LEU:H | 1.78 | 0.48 |
| 1:E:244:ARG:NH2 | 1:E:251:ILE:HG13 | 2.28 | 0.48 |
| 1:F:207:LEU:HD23 | 1:F:207:LEU:H | 1.77 | 0.48 |
| 1:G:572:ILE:HG12 | 1:G:573:ASP:N | 2.26 | 0.48 |
| 1:I:573:ASP:HB3 | 1:I:577:LEU:HD22 | 1.95 | 0.48 |
| 1:J:202:LYS:HD2 | 1:J:203:PRO:HD2 | 1.96 | 0.48 |
| 1:M:19:ALA:HA | 1:M:171:PRO:HG3 | 1.96 | 0.48 |
| 1:B:668:GLN:OE1 | 1:C:670:ARG:NH1 | 2.40 | 0.48 |
| 1:D:224:VAL:HG23 | 1:D:225:ILE:H | 1.79 | 0.48 |
| 1:D:514:ALA:HB1 | 1:D:518:LEU:HG | 1.96 | 0.48 |
| 1:E:25:GLU:HG2 | 2:R:139:VAL:HB | 1.94 | 0.48 |
| 1:G:254:TYR:CD1 | 1:G:520:ASP:HA | 2.48 | 0.48 |
| 1:I:612:ALA:O | 1:I:616:PRO:HD3 | 2.14 | 0.48 |
| 1:K:37:ALA:HB2 | 1:K:328:ILE:HD13 | 1.96 | 0.48 |
| 1:A:346:ALA:HA | 1:B:416:LEU:HD11 | 1.95 | 0.48 |
| 1:C:114:GLU:HB2 | 1:C:154:ARG:NH2 | 2.29 | 0.48 |
| 1:C:207:LEU:HD12 | 1:C:226:TYR:HD2 | 1.79 | 0.48 |
| 1:F:114:GLU:HB2 | 1:F:154:ARG:NH2 | 2.29 | 0.48 |
| 1:H:177:ASP:OD1 | 1:H:177:ASP:N | 2.43 | 0.48 |
| 1:H:516:VAL:HG13 | 1:H:517:ALA:H | 1.79 | 0.48 |
| 1:I:254:TYR:HB3 | 1:I:521:LEU:N | 2.28 | 0.48 |
| 2:X:144:ARG:O | 2:X:145:TYR:HB2 | 2.14 | 0.48 |
| 1:C:111:ASP:O | 1:C:115:THR:OG1 | 2.32 | 0.47 |
| 1:D:657:GLU:HG2 | 1:D:661:ASN:ND2 | 2.24 | 0.47 |
| 1:F:244:ARG:HG2 | 1:F:250:GLU:O | 2.13 | 0.47 |
| 1:I:241:ILE:HG22 | 1:I:275:ALA:O | 2.14 | 0.47 |
| 1:B:618:PRO:HA | 1:B:621:VAL:HG12 | 1.96 | 0.47 |
| 1:E:378:ARG:NH1 | 2:O:124:ARG:O | 2.47 | 0.47 |
| 1:E:618:PRO:HA | 1:E:621:VAL:HG12 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:202:LYS:HD2 | 1:F:203:PRO:HD2 | 1.94 | 0.47 |
| 1:H:114:GLU:HB2 | 1:H:154:ARG:NH2 | 2.29 | 0.47 |
| 1:H:207:LEU:H | 1:H:207:LEU:HD23 | 1.78 | 0.47 |
| 1:I:114:GLU:HB2 | 1:I:154:ARG:NH2 | 2.29 | 0.47 |
| 1:I:247:ILE:HG22 | 1:I:248:THR:H | 1.79 | 0.47 |
| 1:M:556:PRO:O | 1:M:557:THR:OG1 | 2.26 | 0.47 |
| 1:M:612:ALA:HA | 1:M:615:GLN:HB3 | 1.96 | 0.47 |
| 1:B:516:VAL:HG13 | 1:B:517:ALA:H | 1.79 | 0.47 |
| 2:Q:121:PRO:O | 2:Q:122:SER:HB3 | 2.14 | 0.47 |
| 1:M:207:LEU:HD12 | 1:M:226:TYR:HD2 | 1.78 | 0.47 |
| 1:M:669:ALA:O | 1:K:668:GLN:NE2 | 2.48 | 0.47 |
| 1:A:114:GLU:HB2 | 1:A:154:ARG:NH2 | 2.30 | 0.47 |
| 1:C:516:VAL:HG13 | 1:C:517:ALA:H | 1.80 | 0.47 |
| 1:C:668:GLN:OE1 | 1:D:670:ARG:NH1 | 2.39 | 0.47 |
| 1:D:202:LYS:HD2 | 1:D:203:PRO:HD2 | 1.94 | 0.47 |
| 1:G:114:GLU:HB2 | 1:G:154:ARG:NH2 | 2.30 | 0.47 |
| 1:I:120:ALA:HA | 1:I:159:PRO:HB3 | 1.96 | 0.47 |
| 1:I:634:ALA:O | 1:I:638:THR:OG1 | 2.26 | 0.47 |
| 1:M:114:GLU:HB2 | 1:M:154:ARG:NH2 | 2.29 | 0.47 |
| 1:M:254:TYR:CD2 | 1:M:255:ASP:N | 2.82 | 0.47 |
| 1:A:1:MET:H2 | 1:A:5:LEU:HD12 | 1.80 | 0.47 |
| 1:H:634:ALA:O | 1:H:638:THR:OG1 | 2.24 | 0.47 |
| 1:I:19:ALA:HA | 1:I:171:PRO:HG3 | 1.97 | 0.47 |
| 1:J:207:LEU:HD23 | 1:J:207:LEU:H | 1.78 | 0.47 |
| 2:T:27:THR:HG22 | 2:T:28:ASP:N | 2.30 | 0.47 |
| 1:M:120:ALA:HA | 1:M:159:PRO:HB3 | 1.97 | 0.47 |
| 1:M:244:ARG:HG2 | 1:M:250:GLU:O | 2.14 | 0.47 |
| 1:C:24:LYS:NZ | 1:C:28:GLU:OE2 | 2.44 | 0.47 |
| 1:E:114:GLU:HB2 | 1:E:154:ARG:NH2 | 2.29 | 0.47 |
| 1:E:572:ILE:HG12 | 1:E:573:ASP:N | 2.26 | 0.47 |
| 1:F:572:ILE:HG12 | 1:F:573:ASP:N | 2.27 | 0.47 |
| 1:G:254:TYR:CG | 1:G:255:ASP:N | 2.83 | 0.47 |
| 1:H:230:TYR:OH | 1:H:232:GLU:OE2 | 2.25 | 0.47 |
| 1:H:586:ASN:O | 1:H:590:ILE:HG23 | 2.14 | 0.47 |
| 1:H:643:GLN:HB3 | 1:I:645:GLN:NE2 | 2.30 | 0.47 |
| 2:Q:12:LEU:HB3 | 2:Q:16:ARG:CZ | 2.45 | 0.47 |
| 2:T:1:MET:SD | 2:T:4:VAL:HA | 2.55 | 0.47 |
| 1:A:57:GLN:CG | 2:L:124:ARG:HH22 | 2.27 | 0.47 |
| 1:B:668:GLN:NE2 | 1:C:669:ALA:O | 2.48 | 0.47 |
| 1:C:254:TYR:HB3 | 1:C:521:LEU:H | 1.79 | 0.47 |
| 1:D:572:ILE:HG12 | 1:D:573:ASP:N | 2.26 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:573:ASP:HB3 | 1:E:577:LEU:HD12 | 1.96 | 0.47 |
| 1:E:596:PRO:HB3 | 1:E:601:GLU:HG2 | 1.95 | 0.47 |
| 1:F:254:TYR:HB3 | 1:F:521:LEU:H | 1.78 | 0.47 |
| 1:F:668:GLN:NE2 | 1:G:669:ALA:O | 2.46 | 0.47 |
| 1:G:202:LYS:HD2 | 1:G:203:PRO:HD2 | 1.96 | 0.47 |
| 1:I:111:ASP:O | 1:I:115:THR:OG1 | 2.32 | 0.47 |
| 2:O:77:LYS:HD3 | 2:P:50:ILE:HD11 | 1.96 | 0.47 |
| 2:Q:144:ARG:O | 2:Q:145:TYR:HB2 | 2.14 | 0.47 |
| 2:X:64:GLU:OE1 | 2:X:64:GLU:N | 2.34 | 0.47 |
| 1:M:24:LYS:NZ | 1:M:28:GLU:OE2 | 2.44 | 0.47 |
| 1:C:664:TYR:CD2 | 1:D:666:LEU:HD22 | 2.50 | 0.47 |
| 1:E:643:GLN:HB3 | 1:F:645:GLN:NE2 | 2.30 | 0.47 |
| 1:H:668:GLN:NE2 | 1:I:669:ALA:O | 2.48 | 0.47 |
| 1:J:254:TYR:CD2 | 1:J:255:ASP:N | 2.83 | 0.47 |
| 1:B:573:ASP:HB3 | 1:B:577:LEU:HD12 | 1.96 | 0.47 |
| 1:E:586:ASN:O | 1:E:590:ILE:HG23 | 2.14 | 0.47 |
| 1:F:111:ASP:O | 1:F:115:THR:OG1 | 2.33 | 0.47 |
| 1:H:612:ALA:O | 1:H:616:PRO:HD3 | 2.15 | 0.47 |
| 1:I:177:ASP:N | 1:I:177:ASP:OD1 | 2.45 | 0.47 |
| 1:J:114:GLU:HB2 | 1:J:154:ARG:NH2 | 2.30 | 0.47 |
| 1:J:329:ALA:O | 1:J:332:MET:HG3 | 2.15 | 0.47 |
| 1:J:612:ALA:O | 1:J:616:PRO:HD3 | 2.15 | 0.47 |
| 1:K:516:VAL:HG13 | 1:K:517:ALA:H | 1.79 | 0.47 |
| 1:K:618:PRO:HA | 1:K:621:VAL:HG12 | 1.96 | 0.47 |
| 1:K:657:GLU:HG2 | 1:K:661:ASN:ND2 | 2.27 | 0.47 |
| 1:M:247:ILE:HG22 | 1:M:248:THR:H | 1.80 | 0.47 |
| 1:A:253:THR:HG22 | 1:A:254:TYR:H | 1.80 | 0.47 |
| 1:A:329:ALA:O | 1:A:332:MET:HG3 | 2.15 | 0.47 |
| 1:A:612:ALA:O | 1:A:616:PRO:HD3 | 2.15 | 0.47 |
| 1:F:247:ILE:HG22 | 1:F:248:THR:H | 1.80 | 0.47 |
| 1:H:47:ALA:O | 1:H:49:ALA:N | 2.48 | 0.47 |
| 1:H:514:ALA:HB1 | 1:H:518:LEU:HG | 1.96 | 0.47 |
| 1:H:657:GLU:HG2 | 1:H:661:ASN:ND2 | 2.27 | 0.47 |
| 1:I:618:PRO:HA | 1:I:621:VAL:HG12 | 1.97 | 0.47 |
| 1:K:202:LYS:HD2 | 1:K:203:PRO:HD2 | 1.95 | 0.47 |
| 2:L:25:SER:O | 2:L:26:LEU:HD22 | 2.14 | 0.47 |
| 1:M:670:ARG:NH1 | 1:K:668:GLN:OE1 | 2.41 | 0.46 |
| 1:A:218:ASN:HB2 | 2:L:140:PHE:CE1 | 2.51 | 0.46 |
| 1:B:643:GLN:HB3 | 1:C:645:GLN:NE2 | 2.30 | 0.46 |
| 1:C:612:ALA:O | 1:C:616:PRO:HD3 | 2.15 | 0.46 |
| 1:E:516:VAL:HG13 | 1:E:517:ALA:H | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:612:ALA:HA | 1:F:615:GLN:HB3 | 1.97 | 0.46 |
| 1:H:241:ILE:HG22 | 1:H:275:ALA:O | 2.14 | 0.46 |
| 1:K:114:GLU:HB2 | 1:K:154:ARG:NH2 | 2.29 | 0.46 |
| 2:U:144:ARG:O | 2:U:145:TYR:HB2 | 2.14 | 0.46 |
| 2:L:62:GLY:N | 2:L:64:GLU:OE2 | 2.34 | 0.46 |
| 2:L:144:ARG:O | 2:L:145:TYR:HB2 | 2.14 | 0.46 |
| 1:A:120:ALA:HA | 1:A:159:PRO:HB3 | 1.97 | 0.46 |
| 1:G:612:ALA:O | 1:G:616:PRO:HD3 | 2.15 | 0.46 |
| 1:I:572:ILE:HG12 | 1:I:573:ASP:N | 2.27 | 0.46 |
| 1:J:254:TYR:CG | 1:J:255:ASP:N | 2.83 | 0.46 |
| 1:K:612:ALA:O | 1:K:616:PRO:HD3 | 2.16 | 0.46 |
| 1:B:514:ALA:HB1 | 1:B:518:LEU:HG | 1.97 | 0.46 |
| 1:B:612:ALA:O | 1:B:616:PRO:HD3 | 2.15 | 0.46 |
| 1:F:241:ILE:HG22 | 1:F:275:ALA:O | 2.15 | 0.46 |
| 1:F:244:ARG:NH1 | 1:F:246:PRO:HA | 2.31 | 0.46 |
| 1:F:254:TYR:CD2 | 1:F:255:ASP:N | 2.82 | 0.46 |
| 1:F:612:ALA:O | 1:F:616:PRO:HD3 | 2.15 | 0.46 |
| 1:G:120:ALA:HA | 1:G:159:PRO:HB3 | 1.97 | 0.46 |
| 1:G:253:THR:HG22 | 1:G:254:TYR:H | 1.80 | 0.46 |
| 1:I:612:ALA:HA | 1:I:615:GLN:HB3 | 1.96 | 0.46 |
| 2:V:26:LEU:HD23 | 2:V:26:LEU:O | 2.16 | 0.46 |
| 1:B:47:ALA:O | 1:B:49:ALA:N | 2.49 | 0.46 |
| 1:C:120:ALA:HA | 1:C:159:PRO:HB3 | 1.97 | 0.46 |
| 1:E:1:MET:HA | 1:E:7:LYS:HE2 | 1.95 | 0.46 |
| 1:F:1:MET:HA | 1:F:7:LYS:HE2 | 1.96 | 0.46 |
| 1:G:254:TYR:CD2 | 1:G:255:ASP:N | 2.83 | 0.46 |
| 2:R:144:ARG:O | 2:R:145:TYR:HB2 | 2.16 | 0.46 |
| 1:M:645:GLN:NE2 | 1:K:643:GLN:HB3 | 2.29 | 0.46 |
| 1:A:213:THR:HG22 | 1:A:214:SER:N | 2.28 | 0.46 |
| 1:B:572:ILE:HG12 | 1:B:573:ASP:N | 2.26 | 0.46 |
| 1:C:19:ALA:HA | 1:C:171:PRO:HG3 | 1.96 | 0.46 |
| 1:C:35:ARG:HD3 | 1:C:45:GLU:OE1 | 2.16 | 0.46 |
| 1:C:572:ILE:HG12 | 1:C:573:ASP:N | 2.27 | 0.46 |
| 1:D:120:ALA:HA | 1:D:159:PRO:HB3 | 1.97 | 0.46 |
| 1:D:480:ARG:HH22 | 1:D:523:VAL:HG12 | 1.81 | 0.46 |
| 1:E:612:ALA:O | 1:E:616:PRO:HD3 | 2.15 | 0.46 |
| 1:F:664:TYR:CD2 | 1:G:666:LEU:HD22 | 2.50 | 0.46 |
| 1:I:253:THR:HG22 | 1:I:254:TYR:N | 2.29 | 0.46 |
| 1:K:514:ALA:HB1 | 1:K:518:LEU:HG | 1.96 | 0.46 |
| 1:M:664:TYR:CD2 | 1:A:666:LEU:HD22 | 2.50 | 0.46 |
| 1:M:668:GLN:OE1 | 1:A:670:ARG:NH1 | 2.39 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:1:MET:HA | 1:C:7:LYS:HE2 | 1.96 | 0.46 |
| 1:C:612:ALA:HA | 1:C:615:GLN:HB3 | 1.96 | 0.46 |
| 1:D:516:VAL:HG13 | 1:D:517:ALA:H | 1.81 | 0.46 |
| 1:E:103:LYS:NZ | 1:E:511:GLN:O | 2.44 | 0.46 |
| 1:E:615:GLN:O | 1:E:618:PRO:HD2 | 2.16 | 0.46 |
| 1:F:35:ARG:HD3 | 1:F:45:GLU:OE1 | 2.16 | 0.46 |
| 1:F:230:TYR:OH | 1:F:232:GLU:OE2 | 2.28 | 0.46 |
| 1:G:230:TYR:OH | 1:G:232:GLU:OE2 | 2.24 | 0.46 |
| 1:G:643:GLN:HB3 | 1:H:645:GLN:NE2 | 2.31 | 0.46 |
| 1:G:668:GLN:OE1 | 1:H:670:ARG:NH1 | 2.40 | 0.46 |
| 1:H:214:SER:HB2 | 1:H:219:TRP:CZ2 | 2.50 | 0.46 |
| 1:I:643:GLN:HB3 | 1:J:645:GLN:NE2 | 2.31 | 0.46 |
| 1:J:480:ARG:HH22 | 1:J:523:VAL:HG12 | 1.81 | 0.46 |
| 2:N:144:ARG:O | 2:N:145:TYR:HB2 | 2.15 | 0.46 |
| 1:M:618:PRO:HA | 1:M:621:VAL:HG12 | 1.97 | 0.46 |
| 1:A:480:ARG:HH22 | 1:A:523:VAL:HG12 | 1.81 | 0.46 |
| 1:B:586:ASN:O | 1:B:590:ILE:HG23 | 2.15 | 0.46 |
| 1:G:213:THR:HG22 | 1:G:214:SER:N | 2.30 | 0.46 |
| 1:G:480:ARG:HH22 | 1:G:523:VAL:HG12 | 1.81 | 0.46 |
| 1:G:612:ALA:HA | 1:G:615:GLN:HB3 | 1.98 | 0.46 |
| 1:J:572:ILE:HG12 | 1:J:573:ASP:N | 2.26 | 0.46 |
| 1:K:47:ALA:O | 1:K:49:ALA:N | 2.48 | 0.46 |
| 2:Q:10:ILE:HB | 2:Q:68:PRO:HB2 | 1.98 | 0.46 |
| 2:S:3:THR:HG22 | 2:S:4:VAL:HG22 | 1.98 | 0.46 |
| 1:M:35:ARG:HD3 | 1:M:45:GLU:OE1 | 2.16 | 0.46 |
| 1:B:1:MET:HA | 1:B:7:LYS:HE2 | 1.97 | 0.46 |
| 1:D:253:THR:HG22 | 1:D:254:TYR:H | 1.80 | 0.46 |
| 1:D:329:ALA:O | 1:D:332:MET:HG3 | 2.15 | 0.46 |
| 1:D:612:ALA:O | 1:D:616:PRO:HD3 | 2.15 | 0.46 |
| 1:E:47:ALA:O | 1:E:49:ALA:N | 2.49 | 0.46 |
| 1:G:516:VAL:HG13 | 1:G:517:ALA:H | 1.81 | 0.46 |
| 1:K:615:GLN:O | 1:K:618:PRO:HD2 | 2.16 | 0.46 |
| 1:M:244:ARG:NH1 | 1:M:246:PRO:HA | 2.31 | 0.46 |
| 1:A:254:TYR:CG | 1:A:255:ASP:N | 2.83 | 0.46 |
| 1:B:195:TYR:CE1 | 1:B:205:THR:HG22 | 2.51 | 0.46 |
| 1:B:615:GLN:O | 1:B:618:PRO:HD2 | 2.16 | 0.46 |
| 1:C:618:PRO:HA | 1:C:621:VAL:HG12 | 1.98 | 0.46 |
| 1:E:514:ALA:HB1 | 1:E:518:LEU:HG | 1.98 | 0.46 |
| 1:E:664:TYR:CD2 | 1:F:666:LEU:HD22 | 2.51 | 0.46 |
| 1:E:668:GLN:NE2 | 1:F:669:ALA:O | 2.48 | 0.46 |
| 1:F:615:GLN:O | 1:F:618:PRO:HD2 | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:618:PRO:HA | 1:F:621:VAL:HG12 | 1.98 | 0.46 |
| 1:G:47:ALA:O | 1:G:49:ALA:N | 2.49 | 0.46 |
| 1:G:244:ARG:O | 1:G:244:ARG:HD3 | 2.16 | 0.46 |
| 1:H:247:ILE:HG22 | 1:H:248:THR:H | 1.81 | 0.46 |
| 1:H:556:PRO:O | 1:H:557:THR:OG1 | 2.26 | 0.46 |
| 1:I:516:VAL:HG13 | 1:I:517:ALA:H | 1.81 | 0.46 |
| 1:J:253:THR:HG22 | 1:J:254:TYR:H | 1.80 | 0.46 |
| 1:A:539:ARG:NH1 | 1:A:543:THR:OG1 | 2.49 | 0.45 |
| 1:F:5:LEU:HB3 | 1:F:7:LYS:NZ | 2.31 | 0.45 |
| 1:F:643:GLN:HB3 | 1:G:645:GLN:NE2 | 2.31 | 0.45 |
| 1:G:375:ASN:O | 2:N:126:ARG:NH1 | 2.49 | 0.45 |
| 1:H:244:ARG:NH1 | 1:H:246:PRO:HA | 2.31 | 0.45 |
| 1:I:664:TYR:CD2 | 1:J:666:LEU:HD22 | 2.50 | 0.45 |
| 1:J:57:GLN:CG | 2:W:124:ARG:HH22 | 2.29 | 0.45 |
| 1:J:643:GLN:HB3 | 1:K:645:GLN:NE2 | 2.31 | 0.45 |
| 1:K:111:ASP:O | 1:K:115:THR:OG1 | 2.32 | 0.45 |
| 2:N:32:GLN:HG2 | 2:V:23:ASN:HB2 | 1.98 | 0.45 |
| 2:S:7:LYS:HE2 | 2:S:57:TYR:OH | 2.17 | 0.45 |
| 2:W:41:LEU:HD12 | 2:W:86:LEU:HD22 | 1.98 | 0.45 |
| 2:X:121:PRO:O | 2:X:122:SER:HB3 | 2.15 | 0.45 |
| 1:B:664:TYR:CD2 | 1:C:666:LEU:HD22 | 2.52 | 0.45 |
| 1:C:539:ARG:NH1 | 1:C:543:THR:OG1 | 2.49 | 0.45 |
| 1:C:615:GLN:O | 1:C:618:PRO:HD2 | 2.15 | 0.45 |
| 1:F:120:ALA:HA | 1:F:159:PRO:HB3 | 1.96 | 0.45 |
| 1:F:254:TYR:CD1 | 1:F:520:ASP:HA | 2.51 | 0.45 |
| 1:H:1:MET:HA | 1:H:7:LYS:HE2 | 1.98 | 0.45 |
| 1:H:244:ARG:O | 1:H:244:ARG:HD3 | 2.16 | 0.45 |
| 1:H:664:TYR:CD2 | 1:I:666:LEU:HD22 | 2.52 | 0.45 |
| 2:N:121:PRO:O | 2:N:122:SER:HB3 | 2.16 | 0.45 |
| 2:Q:91:LEU:HD23 | 2:Q:91:LEU:HA | 1.84 | 0.45 |
| 2:L:61:THR:OG1 | 2:L:64:GLU:OE2 | 2.29 | 0.45 |
| 1:M:539:ARG:NH1 | 1:M:543:THR:OG1 | 2.49 | 0.45 |
| 1:A:37:ALA:HB2 | 1:A:328:ILE:HD13 | 1.98 | 0.45 |
| 1:A:612:ALA:HA | 1:A:615:GLN:HB3 | 1.98 | 0.45 |
| 1:C:643:GLN:HB3 | 1:D:645:GLN:NE2 | 2.31 | 0.45 |
| 1:D:643:GLN:HB3 | 1:E:645:GLN:NE2 | 2.31 | 0.45 |
| 1:E:195:TYR:CE1 | 1:E:205:THR:HG22 | 2.51 | 0.45 |
| 1:F:19:ALA:HA | 1:F:171:PRO:HG3 | 1.97 | 0.45 |
| 1:H:5:LEU:HB3 | 1:H:7:LYS:NZ | 2.32 | 0.45 |
| 1:H:554:MET:HE1 | 1:H:560:MET:HB3 | 1.98 | 0.45 |
| 1:H:612:ALA:HA | 1:H:615:GLN:HB3 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:5:LEU:HB3 | 1:I:7:LYS:NZ | 2.32 | 0.45 |
| 1:I:35:ARG:HD3 | 1:I:45:GLU:OE1 | 2.16 | 0.45 |
| 1:I:244:ARG:O | 1:I:244:ARG:HD3 | 2.15 | 0.45 |
| 1:J:120:ALA:HA | 1:J:159:PRO:HB3 | 1.97 | 0.45 |
| 2:U:121:PRO:O | 2:U:122:SER:HB3 | 2.16 | 0.45 |
| 2:L:75:PRO:HB2 | 2:L:77:LYS:HG2 | 1.99 | 0.45 |
| 1:M:643:GLN:HB3 | 1:A:645:GLN:NE2 | 2.31 | 0.45 |
| 1:I:539:ARG:NH1 | 1:I:543:THR:OG1 | 2.50 | 0.45 |
| 2:U:61:THR:HG22 | 2:U:62:GLY:N | 2.28 | 0.45 |
| 1:B:111:ASP:O | 1:B:115:THR:OG1 | 2.32 | 0.45 |
| 1:D:47:ALA:O | 1:D:49:ALA:N | 2.49 | 0.45 |
| 1:F:244:ARG:O | 1:F:244:ARG:HD3 | 2.17 | 0.45 |
| 1:J:213:THR:HG22 | 1:J:214:SER:N | 2.24 | 0.45 |
| 2:P:47:GLU:OE2 | 2:P:89:ARG:NH2 | 2.49 | 0.45 |
| 2:S:61:THR:HG22 | 2:S:62:GLY:N | 2.26 | 0.45 |
| 2:X:19:ALA:O | 2:X:21:ALA:N | 2.49 | 0.45 |
| 1:M:5:LEU:HB3 | 1:M:7:LYS:NZ | 2.32 | 0.45 |
| 1:M:224:VAL:HG23 | 1:M:225:ILE:H | 1.82 | 0.45 |
| 1:A:572:ILE:HG12 | 1:A:573:ASP:N | 2.26 | 0.45 |
| 1:B:214:SER:HB2 | 1:B:219:TRP:CZ2 | 2.52 | 0.45 |
| 1:C:241:ILE:HG22 | 1:C:275:ALA:O | 2.17 | 0.45 |
| 1:D:244:ARG:O | 1:D:244:ARG:HD3 | 2.16 | 0.45 |
| 1:D:254:TYR:CG | 1:D:255:ASP:N | 2.83 | 0.45 |
| 1:D:539:ARG:NH1 | 1:D:543:THR:OG1 | 2.49 | 0.45 |
| 1:E:244:ARG:HD3 | 1:E:244:ARG:O | 2.16 | 0.45 |
| 1:E:409:MET:O | 1:E:409:MET:HG2 | 2.16 | 0.45 |
| 1:F:214:SER:HB2 | 1:F:219:TRP:CZ2 | 2.51 | 0.45 |
| 1:J:103:LYS:NZ | 1:J:511:GLN:O | 2.48 | 0.45 |
| 1:J:539:ARG:NH1 | 1:J:543:THR:OG1 | 2.50 | 0.45 |
| 1:K:587:GLN:HA | 1:K:590:ILE:HG12 | 1.99 | 0.45 |
| 1:M:241:ILE:HG22 | 1:M:275:ALA:O | 2.16 | 0.45 |
| 1:M:514:ALA:HB1 | 1:M:518:LEU:HG | 1.98 | 0.45 |
| 1:A:244:ARG:O | 1:A:244:ARG:HD3 | 2.16 | 0.45 |
| 1:A:643:GLN:HB3 | 1:B:645:GLN:NE2 | 2.31 | 0.45 |
| 1:C:75:ARG:HH22 | 1:D:450:MET:HG3 | 1.82 | 0.45 |
| 1:C:254:TYR:CD1 | 1:C:520:ASP:HA | 2.51 | 0.45 |
| 1:K:230:TYR:OH | 1:K:232:GLU:OE2 | 2.25 | 0.45 |
| 1:K:409:MET:O | 1:K:409:MET:HG2 | 2.17 | 0.45 |
| 2:N:5:LEU:HD12 | 2:N:74:LEU:HB2 | 1.99 | 0.45 |
| 1:M:551:LEU:HD11 | 1:M:561:ARG:HG3 | 1.99 | 0.45 |
| 1:A:254:TYR:CG | 1:A:520:ASP:HA | 2.52 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:516:VAL:HG13 | 1:A:517:ALA:H | 1.81 | 0.45 |
| 1:B:5:LEU:HB3 | 1:B:7:LYS:NZ | 2.32 | 0.45 |
| 1:B:244:ARG:O | 1:B:244:ARG:HD3 | 2.16 | 0.45 |
| 1:I:244:ARG:NH1 | 1:I:246:PRO:HA | 2.31 | 0.45 |
| 1:J:244:ARG:O | 1:J:244:ARG:HD3 | 2.16 | 0.45 |
| 1:B:120:ALA:HA | 1:B:159:PRO:HB3 | 1.98 | 0.45 |
| 1:C:244:ARG:O | 1:C:244:ARG:HD3 | 2.16 | 0.45 |
| 1:C:551:LEU:HD11 | 1:C:561:ARG:HG3 | 1.99 | 0.45 |
| 1:F:489:VAL:H | 1:F:510:ARG:NH1 | 2.15 | 0.45 |
| 1:H:587:GLN:HA | 1:H:590:ILE:HG12 | 1.99 | 0.45 |
| 2:O:75:PRO:HB2 | 2:O:77:LYS:HG2 | 1.99 | 0.45 |
| 2:R:64:GLU:HG2 | 2:X:3:THR:OG1 | 2.16 | 0.45 |
| 1:B:409:MET:O | 1:B:409:MET:HG2 | 2.16 | 0.45 |
| 1:C:5:LEU:HB3 | 1:C:7:LYS:NZ | 2.32 | 0.45 |
| 1:C:214:SER:HB2 | 1:C:219:TRP:CZ2 | 2.51 | 0.45 |
| 1:D:37:ALA:HB2 | 1:D:328:ILE:HD13 | 1.99 | 0.45 |
| 1:D:254:TYR:CG | 1:D:520:ASP:HA | 2.52 | 0.45 |
| 1:E:636:LYS:HZ3 | 1:F:642:ALA:H | 1.65 | 0.45 |
| 1:K:253:THR:HG22 | 1:K:254:TYR:H | 1.82 | 0.45 |
| 1:K:612:ALA:HA | 1:K:615:GLN:HB3 | 1.98 | 0.45 |
| 2:P:25:SER:OG | 2:P:26:LEU:N | 2.49 | 0.45 |
| 1:A:47:ALA:O | 1:A:49:ALA:N | 2.51 | 0.44 |
| 1:B:253:THR:HG22 | 1:B:254:TYR:H | 1.82 | 0.44 |
| 1:D:19:ALA:HA | 1:D:171:PRO:HG3 | 1.99 | 0.44 |
| 1:D:612:ALA:HA | 1:D:615:GLN:HB3 | 1.98 | 0.44 |
| 1:F:539:ARG:NH1 | 1:F:543:THR:OG1 | 2.50 | 0.44 |
| 1:G:539:ARG:NH1 | 1:G:543:THR:OG1 | 2.49 | 0.44 |
| 1:K:5:LEU:HB3 | 1:K:7:LYS:NZ | 2.31 | 0.44 |
| 1:K:244:ARG:O | 1:K:244:ARG:HD3 | 2.17 | 0.44 |
| 1:D:384:LEU:HD23 | 1:D:398:ALA:O | 2.17 | 0.44 |
| 1:E:253:THR:HG22 | 1:E:254:TYR:H | 1.82 | 0.44 |
| 1:F:75:ARG:HH22 | 1:G:450:MET:HG3 | 1.82 | 0.44 |
| 1:G:218:ASN:HB2 | 2:O:140:PHE:CE1 | 2.52 | 0.44 |
| 1:J:571:ASN:O | 1:J:572:ILE:HG22 | 2.17 | 0.44 |
| 1:K:539:ARG:NH1 | 1:K:543:THR:OG1 | 2.51 | 0.44 |
| 1:M:244:ARG:O | 1:M:244:ARG:HD3 | 2.16 | 0.44 |
| 1:M:386:GLU:N | 1:M:386:GLU:OE1 | 2.51 | 0.44 |
| 1:C:386:GLU:N | 1:C:386:GLU:OE1 | 2.51 | 0.44 |
| 1:F:384:LEU:HD23 | 1:F:398:ALA:O | 2.17 | 0.44 |
| 1:G:15:ARG:NH1 | 1:G:232:GLU:OE2 | 2.51 | 0.44 |
| 1:J:612:ALA:HA | 1:J:615:GLN:HB3 | 1.98 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:120:ALA:HA | 1:K:159:PRO:HB3 | 1.99 | 0.44 |
| 1:K:571:ASN:O | 1:K:572:ILE:HG22 | 2.17 | 0.44 |
| 1:K:572:ILE:HG12 | 1:K:573:ASP:N | 2.26 | 0.44 |
| 2:S:131:VAL:HG12 | 2:S:145:TYR:H | 1.81 | 0.44 |
| 1:A:547:LEU:HD23 | 1:A:547:LEU:HA | 1.81 | 0.44 |
| 1:A:668:GLN:NE2 | 1:B:669:ALA:O | 2.51 | 0.44 |
| 1:C:489:VAL:H | 1:C:510:ARG:NH1 | 2.16 | 0.44 |
| 1:D:664:TYR:CD2 | 1:E:666:LEU:HD22 | 2.52 | 0.44 |
| 1:G:571:ASN:O | 1:G:572:ILE:HG22 | 2.18 | 0.44 |
| 1:G:636:LYS:HZ3 | 1:H:642:ALA:H | 1.66 | 0.44 |
| 1:I:47:ALA:O | 1:I:49:ALA:N | 2.51 | 0.44 |
| 1:I:75:ARG:HH22 | 1:J:450:MET:HG3 | 1.82 | 0.44 |
| 1:M:75:ARG:HH22 | 1:A:450:MET:HG3 | 1.82 | 0.44 |
| 1:B:539:ARG:NH1 | 1:B:543:THR:OG1 | 2.51 | 0.44 |
| 1:D:57:GLN:CG | 2:R:124:ARG:HH22 | 2.31 | 0.44 |
| 1:D:254:TYR:CD2 | 1:D:255:ASP:N | 2.83 | 0.44 |
| 1:D:571:ASN:O | 1:D:572:ILE:HG22 | 2.18 | 0.44 |
| 1:F:224:VAL:HG23 | 1:F:225:ILE:H | 1.82 | 0.44 |
| 1:I:384:LEU:HD23 | 1:I:398:ALA:O | 2.17 | 0.44 |
| 1:I:514:ALA:HB1 | 1:I:518:LEU:HG | 1.98 | 0.44 |
| 2:Q:29:VAL:HG12 | 2:Q:29:VAL:O | 2.17 | 0.44 |
| 2:V:50:ILE:HD11 | 2:W:77:LYS:HD3 | 1.98 | 0.44 |
| 1:M:666:LEU:HD22 | 1:K:664:TYR:CD2 | 2.52 | 0.44 |
| 1:A:664:TYR:CD2 | 1:B:666:LEU:HD22 | 2.52 | 0.44 |
| 1:B:386:GLU:OE1 | 1:B:386:GLU:N | 2.51 | 0.44 |
| 1:C:230:TYR:OH | 1:C:232:GLU:OE2 | 2.28 | 0.44 |
| 1:D:138:LEU:HD12 | 1:D:157:ILE:HG12 | 2.00 | 0.44 |
| 1:E:5:LEU:HB3 | 1:E:7:LYS:NZ | 2.32 | 0.44 |
| 1:G:5:LEU:HB3 | 1:G:7:LYS:NZ | 2.33 | 0.44 |
| 1:G:254:TYR:CG | 1:G:520:ASP:HA | 2.52 | 0.44 |
| 1:G:664:TYR:CD2 | 1:H:666:LEU:HD22 | 2.52 | 0.44 |
| 1:H:539:ARG:NH1 | 1:H:543:THR:OG1 | 2.50 | 0.44 |
| 1:H:571:ASN:O | 1:H:572:ILE:HG22 | 2.17 | 0.44 |
| 1:I:244:ARG:HG3 | 1:I:252:ALA:H | 1.82 | 0.44 |
| 1:J:37:ALA:HB2 | 1:J:328:ILE:HD13 | 1.99 | 0.44 |
| 1:J:664:TYR:CD2 | 1:K:666:LEU:HD22 | 2.52 | 0.44 |
| 1:C:547:LEU:HD23 | 1:C:547:LEU:HA | 1.87 | 0.44 |
| 1:F:138:LEU:HD12 | 1:F:157:ILE:HG12 | 1.99 | 0.44 |
| 1:F:551:LEU:HD11 | 1:F:561:ARG:HG3 | 1.99 | 0.44 |
| 1:I:224:VAL:HG23 | 1:I:225:ILE:H | 1.82 | 0.44 |
| 1:J:47:ALA:O | 1:J:49:ALA:N | 2.50 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:195:TYR:CE1 | 1:K:205:THR:HG22 | 2.53 | 0.44 |
| 2:N:91:LEU:HD23 | 2:N:91:LEU:HA | 1.83 | 0.44 |
| 1:M:547:LEU:HD23 | 1:M:547:LEU:HA | 1.87 | 0.44 |
| 1:A:15:ARG:NH1 | 1:A:232:GLU:OE2 | 2.51 | 0.44 |
| 1:D:57:GLN:HG3 | 2:R:124:ARG:HH12 | 1.83 | 0.44 |
| 1:E:571:ASN:O | 1:E:572:ILE:HG22 | 2.17 | 0.44 |
| 1:E:612:ALA:HA | 1:E:615:GLN:HB3 | 1.99 | 0.44 |
| 1:H:547:LEU:HD23 | 1:H:547:LEU:HA | 1.88 | 0.44 |
| 1:J:5:LEU:HB3 | 1:J:7:LYS:NZ | 2.33 | 0.44 |
| 1:J:111:ASP:O | 1:J:115:THR:OG1 | 2.33 | 0.44 |
| 1:K:662:THR:O | 1:K:666:LEU:HG | 2.18 | 0.44 |
| 2:W:75:PRO:HB2 | 2:W:77:LYS:HG2 | 1.99 | 0.44 |
| 1:A:138:LEU:HD12 | 1:A:157:ILE:HG12 | 2.00 | 0.44 |
| 1:B:612:ALA:HA | 1:B:615:GLN:HB3 | 1.99 | 0.44 |
| 1:F:386:GLU:N | 1:F:386:GLU:OE1 | 2.51 | 0.44 |
| 1:D:386:GLU:OE1 | 1:D:386:GLU:N | 2.51 | 0.43 |
| 1:D:621:VAL:O | 1:D:625:ALA:N | 2.51 | 0.43 |
| 1:I:24:LYS:NZ | 1:I:28:GLU:OE2 | 2.44 | 0.43 |
| 1:I:621:VAL:O | 1:I:625:ALA:N | 2.51 | 0.43 |
| 1:J:15:ARG:NH1 | 1:J:232:GLU:OE2 | 2.51 | 0.43 |
| 1:J:668:GLN:NE2 | 1:K:669:ALA:O | 2.51 | 0.43 |
| 2:Q:13:PHE:CZ | 2:Q:38:VAL:HA | 2.53 | 0.43 |
| 2:U:66:PRO:O | 2:U:67:LEU:HB2 | 2.18 | 0.43 |
| 2:V:3:THR:HG22 | 2:V:3:THR:O | 2.18 | 0.43 |
| 1:M:224:VAL:HG23 | 1:M:225:ILE:N | 2.33 | 0.43 |
| 1:M:387:VAL:HB | 1:M:396:ALA:HB3 | 2.00 | 0.43 |
| 1:M:516:VAL:HG13 | 1:M:517:ALA:H | 1.83 | 0.43 |
| 1:B:657:GLU:HG2 | 1:B:661:ASN:ND2 | 2.27 | 0.43 |
| 1:B:662:THR:O | 1:B:666:LEU:HG | 2.18 | 0.43 |
| 1:E:207:LEU:HD12 | 1:E:226:TYR:HD2 | 1.82 | 0.43 |
| 1:E:662:THR:O | 1:E:666:LEU:HG | 2.18 | 0.43 |
| 1:G:386:GLU:N | 1:G:386:GLU:OE1 | 2.51 | 0.43 |
| 1:I:551:LEU:HD11 | 1:I:561:ARG:HG3 | 1.99 | 0.43 |
| 1:J:138:LEU:HD12 | 1:J:157:ILE:HG12 | 2.00 | 0.43 |
| 1:J:254:TYR:OH | 1:J:518:LEU:HD22 | 2.18 | 0.43 |
| 1:J:384:LEU:HD23 | 1:J:398:ALA:O | 2.17 | 0.43 |
| 1:K:386:GLU:N | 1:K:386:GLU:OE1 | 2.51 | 0.43 |
| 1:M:47:ALA:O | 1:M:49:ALA:N | 2.51 | 0.43 |
| 1:M:572:ILE:HG12 | 1:M:573:ASP:N | 2.26 | 0.43 |
| 1:M:615:GLN:O | 1:M:618:PRO:HD2 | 2.18 | 0.43 |
| 1:M:621:VAL:O | 1:M:625:ALA:N | 2.51 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:571:ASN:O | 1:B:572:ILE:HG22 | 2.17 | 0.43 |
| 1:C:47:ALA:O | 1:C:49:ALA:N | 2.51 | 0.43 |
| 1:C:224:VAL:HG23 | 1:C:225:ILE:H | 1.82 | 0.43 |
| 1:C:243:TYR:HD1 | 1:C:271:PHE:O | 2.01 | 0.43 |
| 1:C:244:ARG:HG2 | 1:C:250:GLU:O | 2.18 | 0.43 |
| 1:D:15:ARG:NH1 | 1:D:232:GLU:OE2 | 2.51 | 0.43 |
| 1:E:120:ALA:HA | 1:E:159:PRO:HB3 | 1.99 | 0.43 |
| 1:E:539:ARG:NH1 | 1:E:543:THR:OG1 | 2.51 | 0.43 |
| 1:E:621:VAL:O | 1:E:625:ALA:N | 2.52 | 0.43 |
| 1:F:177:ASP:OD1 | 1:F:177:ASP:N | 2.45 | 0.43 |
| 1:G:384:LEU:HD23 | 1:G:398:ALA:O | 2.17 | 0.43 |
| 1:G:621:VAL:O | 1:G:625:ALA:N | 2.52 | 0.43 |
| 1:I:214:SER:HB2 | 1:I:219:TRP:CZ2 | 2.52 | 0.43 |
| 1:J:19:ALA:HA | 1:J:171:PRO:HG3 | 2.00 | 0.43 |
| 1:K:207:LEU:HD12 | 1:K:226:TYR:HD2 | 1.83 | 0.43 |
| 1:M:384:LEU:HD23 | 1:M:398:ALA:O | 2.17 | 0.43 |
| 1:A:254:TYR:OH | 1:A:518:LEU:HD22 | 2.18 | 0.43 |
| 1:A:386:GLU:N | 1:A:386:GLU:OE1 | 2.51 | 0.43 |
| 1:C:3:GLU:HG3 | 1:C:4:THR:H | 1.84 | 0.43 |
| 1:C:138:LEU:HD12 | 1:C:157:ILE:HG12 | 2.00 | 0.43 |
| 1:D:114:GLU:HB2 | 1:D:154:ARG:NH2 | 2.33 | 0.43 |
| 1:E:556:PRO:O | 1:E:557:THR:OG1 | 2.26 | 0.43 |
| 1:E:587:GLN:HA | 1:E:590:ILE:HG12 | 1.99 | 0.43 |
| 1:F:516:VAL:HG13 | 1:F:517:ALA:N | 2.34 | 0.43 |
| 1:G:138:LEU:HD12 | 1:G:157:ILE:HG12 | 2.00 | 0.43 |
| 1:G:233:VAL:HG21 | 1:G:282:ARG:HE | 1.83 | 0.43 |
| 1:G:254:TYR:OH | 1:G:518:LEU:HD22 | 2.18 | 0.43 |
| 1:I:615:GLN:O | 1:I:618:PRO:HD2 | 2.19 | 0.43 |
| 1:J:516:VAL:HG13 | 1:J:517:ALA:H | 1.82 | 0.43 |
| 1:M:3:GLU:HG3 | 1:M:4:THR:H | 1.83 | 0.43 |
| 1:M:138:LEU:HD12 | 1:M:157:ILE:HG12 | 2.00 | 0.43 |
| 1:A:233:VAL:HG21 | 1:A:282:ARG:HE | 1.83 | 0.43 |
| 1:A:384:LEU:HD23 | 1:A:398:ALA:O | 2.18 | 0.43 |
| 1:B:587:GLN:HA | 1:B:590:ILE:HG12 | 1.99 | 0.43 |
| 1:F:47:ALA:O | 1:F:49:ALA:N | 2.51 | 0.43 |
| 1:H:207:LEU:HD12 | 1:H:226:TYR:HD2 | 1.83 | 0.43 |
| 1:H:384:LEU:HD23 | 1:H:398:ALA:O | 2.19 | 0.43 |
| 1:I:224:VAL:HG23 | 1:I:225:ILE:N | 2.33 | 0.43 |
| 1:J:254:TYR:CG | 1:J:520:ASP:HA | 2.53 | 0.43 |
| 1:J:386:GLU:N | 1:J:386:GLU:OE1 | 2.51 | 0.43 |
| 1:J:621:VAL:O | 1:J:625:ALA:N | 2.51 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:O:22:SER:H | 2:O:26:LEU:HD22 | 1.83 | 0.43 |
| 2:U:30:GLU:OE1 | 2:U:30:GLU:N | 2.52 | 0.43 |
| 1:M:103:LYS:NZ | 1:M:511:GLN:O | 2.48 | 0.43 |
| 1:A:19:ALA:HA | 1:A:171:PRO:HG3 | 1.99 | 0.43 |
| 1:A:571:ASN:O | 1:A:572:ILE:HG22 | 2.17 | 0.43 |
| 1:D:233:VAL:HG21 | 1:D:282:ARG:HE | 1.83 | 0.43 |
| 1:E:318:ILE:HB | 1:E:323:ARG:HE | 1.84 | 0.43 |
| 1:G:195:TYR:CE1 | 1:G:205:THR:HG22 | 2.54 | 0.43 |
| 1:H:386:GLU:N | 1:H:386:GLU:OE1 | 2.51 | 0.43 |
| 1:H:636:LYS:HZ3 | 1:I:642:ALA:H | 1.66 | 0.43 |
| 1:I:254:TYR:HB3 | 1:I:521:LEU:H | 1.84 | 0.43 |
| 1:I:386:GLU:OE1 | 1:I:386:GLU:N | 2.51 | 0.43 |
| 1:J:253:THR:HG22 | 1:J:254:TYR:N | 2.34 | 0.43 |
| 2:W:121:PRO:O | 2:W:122:SER:HB3 | 2.18 | 0.43 |
| 2:X:64:GLU:HG2 | 2:X:65:GLN:N | 2.30 | 0.43 |
| 1:M:214:SER:HB2 | 1:M:219:TRP:CZ2 | 2.53 | 0.43 |
| 1:C:304:GLU:O | 1:C:304:GLU:HG2 | 2.19 | 0.43 |
| 1:D:254:TYR:OH | 1:D:518:LEU:HD22 | 2.18 | 0.43 |
| 1:F:3:GLU:HG3 | 1:F:4:THR:H | 1.84 | 0.43 |
| 1:G:25:GLU:HG2 | 2:P:139:VAL:HB | 2.01 | 0.43 |
| 1:G:247:ILE:HG22 | 1:G:248:THR:H | 1.84 | 0.43 |
| 1:H:195:TYR:CE1 | 1:H:205:THR:HG22 | 2.53 | 0.43 |
| 1:H:253:THR:HG22 | 1:H:254:TYR:H | 1.83 | 0.43 |
| 1:I:3:GLU:HG3 | 1:I:4:THR:H | 1.84 | 0.43 |
| 1:I:138:LEU:HD12 | 1:I:157:ILE:HG12 | 1.99 | 0.43 |
| 1:I:657:GLU:HG2 | 1:I:661:ASN:ND2 | 2.32 | 0.43 |
| 1:K:1:MET:HA | 1:K:7:LYS:HE2 | 1.99 | 0.43 |
| 1:K:318:ILE:HB | 1:K:323:ARG:HE | 1.84 | 0.43 |
| 2:N:7:LYS:HE2 | 2:N:57:TYR:OH | 2.19 | 0.43 |
| 2:T:25:SER:OG | 2:T:26:LEU:N | 2.51 | 0.43 |
| 1:A:111:ASP:O | 1:A:115:THR:OG1 | 2.33 | 0.43 |
| 1:A:253:THR:HG22 | 1:A:254:TYR:N | 2.34 | 0.43 |
| 1:C:224:VAL:HG23 | 1:C:225:ILE:N | 2.33 | 0.43 |
| 1:D:177:ASP:OD1 | 1:D:177:ASP:N | 2.41 | 0.43 |
| 1:G:19:ALA:HA | 1:G:171:PRO:HG3 | 2.00 | 0.43 |
| 1:K:621:VAL:O | 1:K:625:ALA:N | 2.52 | 0.43 |
| 2:T:26:LEU:O | 2:T:27:THR:OG1 | 2.34 | 0.43 |
| 2:V:131:VAL:HG12 | 2:V:145:TYR:H | 1.84 | 0.43 |
| 2:X:67:LEU:O | 2:X:69:ASP:N | 2.52 | 0.43 |
| 1:M:617:ASN:HA | 1:M:620:MET:HG2 | 2.01 | 0.43 |
| 1:B:516:VAL:HG13 | 1:B:517:ALA:N | 2.34 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:5:LEU:HB3 | 1:D:7:LYS:NZ | 2.34 | 0.43 |
| 1:D:480:ARG:HH22 | 1:D:523:VAL:CG1 | 2.32 | 0.43 |
| 1:E:244:ARG:NH1 | 1:E:246:PRO:HA | 2.34 | 0.43 |
| 1:F:514:ALA:HB1 | 1:F:518:LEU:HG | 2.00 | 0.43 |
| 1:K:489:VAL:H | 1:K:510:ARG:HH12 | 1.67 | 0.43 |
| 1:A:5:LEU:HB3 | 1:A:7:LYS:NZ | 2.34 | 0.43 |
| 1:A:218:ASN:HB2 | 2:L:140:PHE:HE1 | 1.84 | 0.43 |
| 1:A:615:GLN:O | 1:A:618:PRO:HD2 | 2.19 | 0.43 |
| 1:D:253:THR:HG22 | 1:D:254:TYR:N | 2.34 | 0.43 |
| 1:F:571:ASN:O | 1:F:572:ILE:HG22 | 2.19 | 0.43 |
| 1:F:621:VAL:O | 1:F:625:ALA:N | 2.52 | 0.43 |
| 1:F:634:ALA:O | 1:F:638:THR:OG1 | 2.26 | 0.43 |
| 1:G:24:LYS:NZ | 1:G:28:GLU:OE2 | 2.38 | 0.43 |
| 1:G:520:ASP:OD1 | 1:G:521:LEU:N | 2.52 | 0.43 |
| 1:G:668:GLN:NE2 | 1:H:669:ALA:O | 2.51 | 0.43 |
| 1:H:318:ILE:HB | 1:H:323:ARG:HE | 1.84 | 0.43 |
| 1:J:520:ASP:OD1 | 1:J:521:LEU:N | 2.52 | 0.43 |
| 1:K:103:LYS:NZ | 1:K:511:GLN:O | 2.46 | 0.43 |
| 2:V:124:ARG:HH12 | 2:V:150:LEU:HD12 | 1.84 | 0.43 |
| 2:X:131:VAL:HG22 | 2:X:135:ASN:HD22 | 1.83 | 0.43 |
| 1:C:387:VAL:HB | 1:C:396:ALA:HB3 | 2.01 | 0.42 |
| 1:E:384:LEU:HD23 | 1:E:398:ALA:O | 2.19 | 0.42 |
| 1:E:386:GLU:N | 1:E:386:GLU:OE1 | 2.51 | 0.42 |
| 1:F:636:LYS:HZ3 | 1:G:642:ALA:H | 1.66 | 0.42 |
| 1:G:177:ASP:OD1 | 1:G:177:ASP:N | 2.41 | 0.42 |
| 1:H:111:ASP:O | 1:H:115:THR:OG1 | 2.32 | 0.42 |
| 1:H:346:ALA:HA | 1:I:416:LEU:HD11 | 2.01 | 0.42 |
| 2:P:138:ASP:OD1 | 2:P:139:VAL:HG12 | 2.19 | 0.42 |
| 1:A:195:TYR:CE1 | 1:A:205:THR:HG22 | 2.54 | 0.42 |
| 1:B:177:ASP:OD1 | 1:B:177:ASP:N | 2.42 | 0.42 |
| 1:D:213:THR:HB | 1:D:219:TRP:HZ2 | 1.84 | 0.42 |
| 1:D:318:ILE:HB | 1:D:323:ARG:HE | 1.84 | 0.42 |
| 1:D:615:GLN:O | 1:D:618:PRO:HD2 | 2.19 | 0.42 |
| 1:F:24:LYS:NZ | 1:F:28:GLU:OE2 | 2.44 | 0.42 |
| 1:F:261:ASP:N | 1:F:261:ASP:OD1 | 2.52 | 0.42 |
| 1:H:120:ALA:HA | 1:H:159:PRO:HB3 | 2.00 | 0.42 |
| 1:H:662:THR:O | 1:H:666:LEU:HG | 2.18 | 0.42 |
| 1:J:233:VAL:HG21 | 1:J:282:ARG:HE | 1.84 | 0.42 |
| 1:J:318:ILE:HB | 1:J:323:ARG:HE | 1.84 | 0.42 |
| 1:J:615:GLN:O | 1:J:618:PRO:HD2 | 2.19 | 0.42 |
| 2:U:138:ASP:OD1 | 2:U:138:ASP:N | 2.44 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:670:ARG:HG2 | 1:K:664:TYR:OH | 2.19 | 0.42 |
| 1:A:254:TYR:CD2 | 1:A:255:ASP:N | 2.83 | 0.42 |
| 1:B:224:VAL:HG23 | 1:B:225:ILE:N | 2.34 | 0.42 |
| 1:B:318:ILE:HB | 1:B:323:ARG:HE | 1.84 | 0.42 |
| 1:C:236:GLU:OE1 | 1:C:283:ARG:NH2 | 2.42 | 0.42 |
| 1:F:489:VAL:H | 1:F:510:ARG:HH12 | 1.66 | 0.42 |
| 1:G:254:TYR:HB3 | 1:G:520:ASP:HA | 2.01 | 0.42 |
| 1:G:547:LEU:HD23 | 1:G:547:LEU:HA | 1.81 | 0.42 |
| 1:H:615:GLN:O | 1:H:618:PRO:HD2 | 2.18 | 0.42 |
| 1:H:621:VAL:O | 1:H:625:ALA:N | 2.53 | 0.42 |
| 1:H:664:TYR:OH | 1:I:670:ARG:HG2 | 2.19 | 0.42 |
| 1:I:254:TYR:HB3 | 1:I:520:ASP:HA | 2.02 | 0.42 |
| 1:I:571:ASN:O | 1:I:572:ILE:HG22 | 2.19 | 0.42 |
| 1:I:599:GLU:OE1 | 1:I:599:GLU:N | 2.53 | 0.42 |
| 1:J:480:ARG:HH22 | 1:J:523:VAL:CG1 | 2.32 | 0.42 |
| 1:A:589:LEU:HB3 | 1:A:594:ALA:HB3 | 2.02 | 0.42 |
| 1:A:621:VAL:O | 1:A:625:ALA:N | 2.52 | 0.42 |
| 1:C:244:ARG:HA | 1:C:253:THR:OG1 | 2.20 | 0.42 |
| 1:C:384:LEU:HD23 | 1:C:398:ALA:O | 2.18 | 0.42 |
| 1:C:571:ASN:O | 1:C:572:ILE:HG22 | 2.19 | 0.42 |
| 1:F:224:VAL:HG23 | 1:F:225:ILE:N | 2.33 | 0.42 |
| 1:F:599:GLU:OE1 | 1:F:599:GLU:N | 2.53 | 0.42 |
| 1:G:480:ARG:HH22 | 1:G:523:VAL:CG1 | 2.32 | 0.42 |
| 1:J:247:ILE:HG22 | 1:J:248:THR:H | 1.84 | 0.42 |
| 1:K:247:ILE:HG22 | 1:K:248:THR:H | 1.83 | 0.42 |
| 1:K:253:THR:HG22 | 1:K:254:TYR:N | 2.34 | 0.42 |
| 2:S:139:VAL:HG13 | 2:S:140:PHE:N | 2.34 | 0.42 |
| 2:W:91:LEU:HD23 | 2:W:91:LEU:HA | 1.84 | 0.42 |
| 1:M:254:TYR:OH | 1:M:518:LEU:HD22 | 2.19 | 0.42 |
| 1:A:318:ILE:HB | 1:A:323:ARG:HE | 1.84 | 0.42 |
| 1:A:520:ASP:OD1 | 1:A:521:LEU:N | 2.52 | 0.42 |
| 1:D:114:GLU:HB2 | 1:D:154:ARG:HH21 | 1.84 | 0.42 |
| 1:E:664:TYR:OH | 1:F:670:ARG:HG2 | 2.20 | 0.42 |
| 1:H:551:LEU:HD11 | 1:H:561:ARG:HG3 | 2.02 | 0.42 |
| 1:I:617:ASN:HA | 1:I:620:MET:HG2 | 2.01 | 0.42 |
| 1:J:254:TYR:HB3 | 1:J:520:ASP:HA | 2.01 | 0.42 |
| 1:K:1:MET:H2 | 1:K:5:LEU:HD12 | 1.84 | 0.42 |
| 1:K:516:VAL:HG13 | 1:K:517:ALA:N | 2.34 | 0.42 |
| 1:M:177:ASP:N | 1:M:177:ASP:OD1 | 2.44 | 0.42 |
| 1:C:261:ASP:N | 1:C:261:ASP:OD1 | 2.53 | 0.42 |
| 1:C:516:VAL:HG13 | 1:C:517:ALA:N | 2.35 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:253:THR:HG22 | 1:E:254:TYR:N | 2.34 | 0.42 |
| 1:G:318:ILE:HB | 1:G:323:ARG:HE | 1.84 | 0.42 |
| 1:H:25:GLU:HG2 | 2:O:139:VAL:HB | 2.00 | 0.42 |
| 1:H:516:VAL:HG13 | 1:H:517:ALA:N | 2.34 | 0.42 |
| 1:I:662:THR:O | 1:I:666:LEU:HG | 2.19 | 0.42 |
| 1:K:218:ASN:HB2 | 2:U:140:PHE:CE1 | 2.55 | 0.42 |
| 1:M:261:ASP:N | 1:M:261:ASP:OD1 | 2.52 | 0.42 |
| 1:B:207:LEU:HD12 | 1:B:226:TYR:HD2 | 1.83 | 0.42 |
| 1:B:378:ARG:NH1 | 2:R:124:ARG:O | 2.53 | 0.42 |
| 1:D:520:ASP:OD1 | 1:D:521:LEU:N | 2.52 | 0.42 |
| 1:G:253:THR:HG22 | 1:G:254:TYR:N | 2.34 | 0.42 |
| 1:H:485:SER:OG | 1:H:520:ASP:HB3 | 2.19 | 0.42 |
| 1:J:1:MET:H2 | 1:J:5:LEU:HD12 | 1.84 | 0.42 |
| 1:K:384:LEU:HD23 | 1:K:398:ALA:O | 2.19 | 0.42 |
| 1:M:488:GLU:HB2 | 1:M:511:GLN:HE22 | 1.85 | 0.42 |
| 1:A:261:ASP:N | 1:A:261:ASP:OD1 | 2.53 | 0.42 |
| 1:B:244:ARG:NH1 | 1:B:246:PRO:HA | 2.34 | 0.42 |
| 1:B:621:VAL:O | 1:B:625:ALA:N | 2.52 | 0.42 |
| 1:C:514:ALA:HB1 | 1:C:518:LEU:HG | 2.00 | 0.42 |
| 1:D:254:TYR:HB3 | 1:D:520:ASP:HA | 2.00 | 0.42 |
| 1:D:516:VAL:HG13 | 1:D:517:ALA:N | 2.35 | 0.42 |
| 1:E:111:ASP:O | 1:E:115:THR:OG1 | 2.32 | 0.42 |
| 1:F:304:GLU:O | 1:F:304:GLU:HG2 | 2.19 | 0.42 |
| 1:F:387:VAL:HB | 1:F:396:ALA:HB3 | 2.00 | 0.42 |
| 1:H:224:VAL:HG23 | 1:H:225:ILE:N | 2.34 | 0.42 |
| 1:I:254:TYR:OH | 1:I:518:LEU:HD22 | 2.20 | 0.42 |
| 1:J:589:LEU:HB3 | 1:J:594:ALA:HB3 | 2.02 | 0.42 |
| 1:K:485:SER:OG | 1:K:520:ASP:HB3 | 2.19 | 0.42 |
| 2:S:16:ARG:HG3 | 2:S:22:SER:HB3 | 2.00 | 0.42 |
| 1:M:662:THR:O | 1:M:666:LEU:HG | 2.19 | 0.42 |
| 1:A:59:GLU:OE1 | 2:L:125:ARG:HD3 | 2.20 | 0.42 |
| 1:A:480:ARG:HH22 | 1:A:523:VAL:CG1 | 2.32 | 0.42 |
| 1:B:489:VAL:H | 1:B:510:ARG:HH12 | 1.67 | 0.42 |
| 1:C:218:ASN:HB2 | 2:S:140:PHE:HE1 | 1.85 | 0.42 |
| 1:D:589:LEU:HB3 | 1:D:594:ALA:HB3 | 2.02 | 0.42 |
| 1:E:599:GLU:OE1 | 1:E:599:GLU:N | 2.53 | 0.42 |
| 1:G:589:LEU:HB3 | 1:G:594:ALA:HB3 | 2.02 | 0.42 |
| 2:S:61:THR:HB | 2:S:64:GLU:OE1 | 2.20 | 0.42 |
| 2:W:21:ALA:HB2 | 2:W:29:VAL:HG13 | 2.01 | 0.42 |
| 1:M:111:ASP:O | 1:M:115:THR:OG1 | 2.32 | 0.42 |
| 1:M:304:GLU:O | 1:M:304:GLU:HG2 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:416:LEU:HD11 | 1:K:346:ALA:HA | 2.01 | 0.42 |
| 1:M:599:GLU:OE1 | 1:M:599:GLU:N | 2.53 | 0.42 |
| 1:B:304:GLU:HG2 | 1:B:304:GLU:O | 2.20 | 0.42 |
| 1:B:485:SER:OG | 1:B:520:ASP:HB3 | 2.19 | 0.42 |
| 1:C:621:VAL:O | 1:C:625:ALA:N | 2.53 | 0.42 |
| 1:D:599:GLU:OE1 | 1:D:599:GLU:N | 2.53 | 0.42 |
| 1:E:485:SER:OG | 1:E:520:ASP:HB3 | 2.19 | 0.42 |
| 1:F:480:ARG:HH22 | 1:F:523:VAL:CG1 | 2.33 | 0.42 |
| 1:F:657:GLU:HG2 | 1:F:661:ASN:ND2 | 2.32 | 0.42 |
| 1:F:662:THR:O | 1:F:666:LEU:HG | 2.19 | 0.42 |
| 1:G:516:VAL:HG13 | 1:G:517:ALA:N | 2.35 | 0.42 |
| 1:I:103:LYS:NZ | 1:I:511:GLN:O | 2.48 | 0.42 |
| 1:I:387:VAL:HB | 1:I:396:ALA:HB3 | 2.01 | 0.42 |
| 1:I:516:VAL:HG13 | 1:I:517:ALA:N | 2.35 | 0.42 |
| 1:J:587:GLN:HA | 1:J:590:ILE:HG12 | 2.02 | 0.42 |
| 1:K:224:VAL:HG23 | 1:K:225:ILE:N | 2.34 | 0.42 |
| 1:A:244:ARG:HG2 | 1:A:250:GLU:O | 2.20 | 0.41 |
| 1:B:551:LEU:HD11 | 1:B:561:ARG:HG3 | 2.01 | 0.41 |
| 1:C:489:VAL:H | 1:C:510:ARG:HH12 | 1.66 | 0.41 |
| 1:C:662:THR:O | 1:C:666:LEU:HG | 2.19 | 0.41 |
| 1:E:551:LEU:HD11 | 1:E:561:ARG:HG3 | 2.02 | 0.41 |
| 1:G:220:PHE:CE2 | 1:H:22:PRO:HA | 2.55 | 0.41 |
| 1:G:587:GLN:HA | 1:G:590:ILE:HG12 | 2.02 | 0.41 |
| 1:G:615:GLN:O | 1:G:618:PRO:HD2 | 2.19 | 0.41 |
| 1:J:218:ASN:HB2 | 2:W:140:PHE:CE1 | 2.55 | 0.41 |
| 1:J:514:ALA:HB1 | 1:J:518:LEU:HG | 2.02 | 0.41 |
| 1:K:599:GLU:OE1 | 1:K:599:GLU:N | 2.53 | 0.41 |
| 1:K:617:ASN:HB3 | 1:K:618:PRO:HD3 | 2.02 | 0.41 |
| 2:O:126:ARG:HB3 | 2:O:129:PHE:HB2 | 2.02 | 0.41 |
| 2:T:44:MET:HE2 | 2:T:89:ARG:HE | 1.85 | 0.41 |
| 1:M:365:ARG:O | 1:M:385:ARG:NH1 | 2.52 | 0.41 |
| 1:C:480:ARG:HH22 | 1:C:523:VAL:CG1 | 2.33 | 0.41 |
| 1:D:261:ASP:N | 1:D:261:ASP:OD1 | 2.53 | 0.41 |
| 1:I:304:GLU:O | 1:I:304:GLU:HG2 | 2.19 | 0.41 |
| 1:I:365:ARG:O | 1:I:385:ARG:NH1 | 2.50 | 0.41 |
| 1:J:218:ASN:HB2 | 2:W:140:PHE:HE1 | 1.84 | 0.41 |
| 1:K:3:GLU:HG3 | 1:K:4:THR:H | 1.85 | 0.41 |
| 2:S:131:VAL:CG2 | 2:S:135:ASN:HD21 | 2.33 | 0.41 |
| 2:X:30:GLU:O | 2:X:32:GLN:N | 2.53 | 0.41 |
| 2:X:131:VAL:HG22 | 2:X:135:ASN:ND2 | 2.35 | 0.41 |
| 1:M:571:ASN:O | 1:M:572:ILE:HG22 | 2.19 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:587:GLN:HA | 1:A:590:ILE:HG12 | 2.02 | 0.41 |
| 1:B:547:LEU:HD23 | 1:B:547:LEU:HA | 1.87 | 0.41 |
| 1:B:664:TYR:OH | 1:C:670:ARG:HG2 | 2.19 | 0.41 |
| 1:C:318:ILE:HB | 1:C:323:ARG:HE | 1.85 | 0.41 |
| 1:E:261:ASP:OD1 | 1:E:261:ASP:N | 2.54 | 0.41 |
| 1:J:224:VAL:HG23 | 1:J:225:ILE:N | 2.35 | 0.41 |
| 1:J:516:VAL:HG13 | 1:J:517:ALA:N | 2.36 | 0.41 |
| 1:J:599:GLU:OE1 | 1:J:599:GLU:N | 2.53 | 0.41 |
| 1:K:384:LEU:HD12 | 1:K:384:LEU:HA | 1.91 | 0.41 |
| 2:T:91:LEU:HD23 | 2:T:91:LEU:HA | 1.88 | 0.41 |
| 1:A:516:VAL:HG13 | 1:A:517:ALA:N | 2.35 | 0.41 |
| 1:B:346:ALA:HA | 1:C:416:LEU:HD11 | 2.01 | 0.41 |
| 1:B:384:LEU:HD23 | 1:B:398:ALA:O | 2.19 | 0.41 |
| 1:C:218:ASN:HB2 | 2:S:140:PHE:CE1 | 2.55 | 0.41 |
| 1:D:3:GLU:HG3 | 1:D:4:THR:H | 1.86 | 0.41 |
| 1:D:244:ARG:HG2 | 1:D:250:GLU:O | 2.21 | 0.41 |
| 1:D:247:ILE:HG22 | 1:D:248:THR:H | 1.84 | 0.41 |
| 1:D:668:GLN:NE2 | 1:E:669:ALA:O | 2.51 | 0.41 |
| 1:E:346:ALA:HA | 1:F:416:LEU:HD11 | 2.03 | 0.41 |
| 1:G:224:VAL:HG23 | 1:G:225:ILE:N | 2.35 | 0.41 |
| 1:I:488:GLU:HB2 | 1:I:511:GLN:HE22 | 1.85 | 0.41 |
| 1:J:488:GLU:HA | 1:J:510:ARG:NH1 | 2.35 | 0.41 |
| 2:O:5:LEU:O | 2:O:72:SER:OG | 2.31 | 0.41 |
| 1:M:384:LEU:HD12 | 1:M:384:LEU:HA | 1.89 | 0.41 |
| 1:M:587:GLN:HA | 1:M:590:ILE:HG12 | 2.03 | 0.41 |
| 1:A:662:THR:O | 1:A:666:LEU:HG | 2.20 | 0.41 |
| 1:H:599:GLU:OE1 | 1:H:599:GLU:N | 2.53 | 0.41 |
| 1:I:587:GLN:HA | 1:I:590:ILE:HG12 | 2.03 | 0.41 |
| 1:J:261:ASP:OD1 | 1:J:261:ASP:N | 2.53 | 0.41 |
| 1:M:488:GLU:HA | 1:M:510:ARG:HH12 | 1.86 | 0.41 |
| 1:A:224:VAL:HG23 | 1:A:225:ILE:N | 2.35 | 0.41 |
| 1:B:253:THR:HG22 | 1:B:254:TYR:N | 2.34 | 0.41 |
| 1:C:233:VAL:HG21 | 1:C:282:ARG:HE | 1.86 | 0.41 |
| 1:K:551:LEU:HD11 | 1:K:561:ARG:HG3 | 2.01 | 0.41 |
| 2:Q:44:MET:HG3 | 2:Q:89:ARG:HE | 1.86 | 0.41 |
| 2:Q:79:LYS:HE3 | 2:Q:79:LYS:HB2 | 1.88 | 0.41 |
| 1:M:243:TYR:HD1 | 1:M:271:PHE:O | 2.03 | 0.41 |
| 1:M:318:ILE:HB | 1:M:323:ARG:HE | 1.85 | 0.41 |
| 1:M:664:TYR:OH | 1:A:670:ARG:HG2 | 2.21 | 0.41 |
| 1:A:247:ILE:HG22 | 1:A:248:THR:H | 1.84 | 0.41 |
| 1:A:254:TYR:HB3 | 1:A:520:ASP:HA | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:587:GLN:HA | 1:C:590:ILE:HG12 | 2.02 | 0.41 |
| 1:D:244:ARG:HA | 1:D:253:THR:OG1 | 2.21 | 0.41 |
| 1:D:587:GLN:HA | 1:D:590:ILE:HG12 | 2.02 | 0.41 |
| 1:E:224:VAL:HG23 | 1:E:225:ILE:N | 2.34 | 0.41 |
| 1:E:304:GLU:O | 1:E:304:GLU:HG2 | 2.20 | 0.41 |
| 1:E:516:VAL:HG13 | 1:E:517:ALA:N | 2.35 | 0.41 |
| 1:F:318:ILE:HB | 1:F:323:ARG:HE | 1.85 | 0.41 |
| 1:G:244:ARG:HA | 1:G:253:THR:OG1 | 2.21 | 0.41 |
| 1:G:244:ARG:HG2 | 1:G:250:GLU:O | 2.20 | 0.41 |
| 1:G:599:GLU:OE1 | 1:G:599:GLU:N | 2.53 | 0.41 |
| 1:H:261:ASP:OD1 | 1:H:261:ASP:N | 2.54 | 0.41 |
| 2:N:62:GLY:HA3 | 2:V:1:MET:N | 2.35 | 0.41 |
| 2:P:119:VAL:HG23 | 2:P:120:VAL:N | 2.36 | 0.41 |
| 2:R:91:LEU:HD23 | 2:R:91:LEU:HA | 1.81 | 0.41 |
| 1:M:22:PRO:HA | 1:K:220:PHE:CE2 | 2.56 | 0.41 |
| 1:A:244:ARG:HA | 1:A:253:THR:OG1 | 2.21 | 0.41 |
| 1:E:556:PRO:C | 1:E:557:THR:HG1 | 2.19 | 0.41 |
| 1:G:3:GLU:HG3 | 1:G:4:THR:H | 1.86 | 0.41 |
| 1:G:662:THR:O | 1:G:666:LEU:HG | 2.20 | 0.41 |
| 1:J:43:GLN:HG3 | 1:J:65:GLU:OE2 | 2.21 | 0.41 |
| 1:J:116:ASP:OD2 | 1:K:175:LYS:NZ | 2.41 | 0.41 |
| 1:J:662:THR:O | 1:J:666:LEU:HG | 2.20 | 0.41 |
| 2:X:149:ASP:HB3 | 2:X:150:LEU:H | 1.66 | 0.41 |
| 1:M:603:GLN:HG3 | 1:M:604:ILE:HG12 | 2.02 | 0.41 |
| 1:A:3:GLU:HG3 | 1:A:4:THR:H | 1.86 | 0.41 |
| 1:A:384:LEU:HD12 | 1:A:384:LEU:HA | 1.86 | 0.41 |
| 1:B:261:ASP:OD1 | 1:B:261:ASP:N | 2.53 | 0.41 |
| 1:C:253:THR:HG22 | 1:C:254:TYR:N | 2.35 | 0.41 |
| 1:C:365:ARG:O | 1:C:385:ARG:NH1 | 2.51 | 0.41 |
| 1:D:224:VAL:HG23 | 1:D:225:ILE:N | 2.36 | 0.41 |
| 1:E:247:ILE:HG22 | 1:E:248:THR:H | 1.85 | 0.41 |
| 1:F:254:TYR:CZ | 1:F:518:LEU:HD13 | 2.56 | 0.41 |
| 1:F:547:LEU:HD23 | 1:F:547:LEU:HA | 1.87 | 0.41 |
| 1:F:589:LEU:HB3 | 1:F:594:ALA:HB3 | 2.03 | 0.41 |
| 1:F:664:TYR:OH | 1:G:670:ARG:HG2 | 2.21 | 0.41 |
| 1:H:253:THR:HG22 | 1:H:254:TYR:N | 2.35 | 0.41 |
| 1:I:233:VAL:HG21 | 1:I:282:ARG:HE | 1.86 | 0.41 |
| 1:I:346:ALA:HA | 1:J:416:LEU:HD11 | 2.03 | 0.41 |
| 1:I:664:TYR:OH | 1:J:670:ARG:HG2 | 2.21 | 0.41 |
| 1:J:3:GLU:HG3 | 1:J:4:THR:H | 1.86 | 0.41 |
| 1:J:195:TYR:CE1 | 1:J:205:THR:HG22 | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:244:ARG:HG2 | 1:J:250:GLU:O | 2.21 | 0.41 |
| 1:K:304:GLU:O | 1:K:304:GLU:HG2 | 2.20 | 0.41 |
| 2:P:75:PRO:HB2 | 2:P:77:LYS:HG2 | 2.01 | 0.41 |
| 2:Q:13:PHE:HE1 | 2:Q:37:GLY:CA | 2.33 | 0.41 |
| 2:Q:16:ARG:HD2 | 2:Q:83:GLY:HA2 | 2.02 | 0.41 |
| 2:Q:16:ARG:HD2 | 2:Q:83:GLY:O | 2.20 | 0.41 |
| 1:A:43:GLN:HG3 | 1:A:65:GLU:OE2 | 2.21 | 0.41 |
| 1:A:75:ARG:NH1 | 1:A:79:GLU:HG2 | 2.36 | 0.41 |
| 1:A:220:PHE:CE2 | 1:B:22:PRO:HA | 2.56 | 0.41 |
| 1:B:3:GLU:HG3 | 1:B:4:THR:H | 1.85 | 0.41 |
| 1:C:247:ILE:HG22 | 1:C:248:THR:H | 1.85 | 0.41 |
| 1:E:177:ASP:N | 1:E:177:ASP:OD1 | 2.43 | 0.41 |
| 1:F:233:VAL:HG21 | 1:F:282:ARG:HE | 1.86 | 0.41 |
| 1:G:37:ALA:HB2 | 1:G:328:ILE:HD13 | 2.02 | 0.41 |
| 1:G:57:GLN:CG | 2:O:124:ARG:HH22 | 2.34 | 0.41 |
| 1:G:216:GLU:HG2 | 2:P:144:ARG:HH21 | 1.86 | 0.41 |
| 1:G:304:GLU:HG2 | 1:G:304:GLU:O | 2.21 | 0.41 |
| 1:G:521:LEU:HD23 | 1:G:522:SER:N | 2.36 | 0.41 |
| 1:H:304:GLU:O | 1:H:304:GLU:HG2 | 2.21 | 0.41 |
| 1:H:489:VAL:H | 1:H:510:ARG:HH12 | 1.67 | 0.41 |
| 1:I:480:ARG:HH22 | 1:I:523:VAL:CG1 | 2.33 | 0.41 |
| 1:I:625:ALA:HA | 1:I:628:VAL:HB | 2.03 | 0.41 |
| 1:J:375:ASN:O | 2:U:126:ARG:NH1 | 2.53 | 0.41 |
| 2:Q:16:ARG:NH2 | 2:Q:86:LEU:HD23 | 2.36 | 0.41 |
| 2:X:23:ASN:O | 2:X:23:ASN:ND2 | 2.52 | 0.41 |
| 1:M:480:ARG:HH22 | 1:M:523:VAL:CG1 | 2.34 | 0.40 |
| 1:A:304:GLU:O | 1:A:304:GLU:HG2 | 2.21 | 0.40 |
| 1:B:247:ILE:HG22 | 1:B:248:THR:H | 1.85 | 0.40 |
| 1:C:346:ALA:HA | 1:D:416:LEU:HD11 | 2.03 | 0.40 |
| 1:E:1:MET:H2 | 1:E:5:LEU:HD12 | 1.87 | 0.40 |
| 1:F:480:ARG:HH22 | 1:F:523:VAL:HG12 | 1.87 | 0.40 |
| 1:G:111:ASP:O | 1:G:115:THR:OG1 | 2.33 | 0.40 |
| 1:G:261:ASP:OD1 | 1:G:261:ASP:N | 2.53 | 0.40 |
| 1:H:3:GLU:HG3 | 1:H:4:THR:H | 1.86 | 0.40 |
| 1:H:480:ARG:HH22 | 1:H:523:VAL:HG12 | 1.85 | 0.40 |
| 1:H:589:LEU:HB3 | 1:H:594:ALA:HB3 | 2.03 | 0.40 |
| 1:J:244:ARG:HA | 1:J:253:THR:OG1 | 2.20 | 0.40 |
| 1:K:588:LEU:HD12 | 1:K:588:LEU:HA | 1.92 | 0.40 |
| 1:K:589:LEU:HB3 | 1:K:594:ALA:HB3 | 2.03 | 0.40 |
| 2:Q:15:LEU:HD13 | 2:Q:79:LYS:HE2 | 2.03 | 0.40 |
| 1:M:244:ARG:HA | 1:M:253:THR:OG1 | 2.21 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:M:657:GLU:HG2 | 1:M:661:ASN:ND2 | 2.32 | 0.40 |
| 1:C:480:ARG:HH22 | 1:C:523:VAL:HG12 | 1.86 | 0.40 |
| 1:D:43:GLN:HG3 | 1:D:65:GLU:OE2 | 2.21 | 0.40 |
| 1:D:213:THR:CG2 | 1:D:214:SER:H | 2.33 | 0.40 |
| 1:D:304:GLU:O | 1:D:304:GLU:HG2 | 2.21 | 0.40 |
| 1:E:336:ARG:NH1 | 2:R:145:TYR:OH | 2.53 | 0.40 |
| 1:E:617:ASN:HB3 | 1:E:618:PRO:HD3 | 2.02 | 0.40 |
| 1:F:253:THR:HG22 | 1:F:254:TYR:N | 2.35 | 0.40 |
| 1:I:318:ILE:HB | 1:I:323:ARG:HE | 1.85 | 0.40 |
| 1:J:304:GLU:HG2 | 1:J:304:GLU:O | 2.21 | 0.40 |
| 1:K:244:ARG:HA | 1:K:253:THR:OG1 | 2.21 | 0.40 |
| 1:K:480:ARG:HH22 | 1:K:523:VAL:HG12 | 1.85 | 0.40 |
| 2:P:1:MET:HG3 | 2:P:2:ALA:N | 2.27 | 0.40 |
| 1:M:233:VAL:HG21 | 1:M:282:ARG:HE | 1.86 | 0.40 |
| 1:M:346:ALA:HA | 1:A:416:LEU:HD11 | 2.03 | 0.40 |
| 1:A:24:LYS:NZ | 1:A:28:GLU:OE2 | 2.40 | 0.40 |
| 1:B:25:GLU:HG2 | 2:L:139:VAL:HB | 2.03 | 0.40 |
| 1:D:375:ASN:O | 2:X:126:ARG:NH1 | 2.54 | 0.40 |
| 1:E:59:GLU:HG3 | 2:X:124:ARG:HH21 | 1.86 | 0.40 |
| 1:E:489:VAL:H | 1:E:510:ARG:HH12 | 1.67 | 0.40 |
| 1:H:138:LEU:HD12 | 1:H:157:ILE:HG12 | 2.02 | 0.40 |
| 1:I:261:ASP:N | 1:I:261:ASP:OD1 | 2.52 | 0.40 |
| 1:I:488:GLU:HA | 1:I:510:ARG:HH12 | 1.86 | 0.40 |
| 2:R:77:LYS:HD3 | 2:S:50:ILE:HD11 | 2.02 | 0.40 |
| 2:V:137:TYR:CD2 | 2:V:144:ARG:HB3 | 2.56 | 0.40 |
| 1:A:599:GLU:OE1 | 1:A:599:GLU:N | 2.53 | 0.40 |
| 1:B:617:ASN:HB3 | 1:B:618:PRO:HD3 | 2.02 | 0.40 |
| 1:D:35:ARG:HD3 | 1:D:45:GLU:OE1 | 2.21 | 0.40 |
| 1:D:75:ARG:NH1 | 1:D:79:GLU:HG2 | 2.36 | 0.40 |
| 1:D:365:ARG:O | 1:D:385:ARG:NH1 | 2.51 | 0.40 |
| 1:E:254:TYR:HB3 | 1:E:521:LEU:H | 1.86 | 0.40 |
| 1:F:243:TYR:HD1 | 1:F:271:PHE:O | 2.03 | 0.40 |
| 1:F:244:ARG:HA | 1:F:253:THR:OG1 | 2.22 | 0.40 |
| 1:F:588:LEU:HD12 | 1:F:588:LEU:HA | 1.95 | 0.40 |
| 1:H:588:LEU:HD12 | 1:H:588:LEU:HA | 1.92 | 0.40 |
| 1:I:253:THR:CG2 | 1:I:254:TYR:H | 2.30 | 0.40 |
| 1:K:244:ARG:NH1 | 1:K:246:PRO:HA | 2.36 | 0.40 |
| 2:S:91:LEU:HA | 2:S:91:LEU:HD23 | 1.84 | 0.40 |
| 1:B:242:SER:HA | 1:B:255:ASP:HB3 | 2.03 | 0.40 |
| 1:E:3:GLU:HG3 | 1:E:4:THR:H | 1.85 | 0.40 |
| 1:E:242:SER:HA | 1:E:255:ASP:HB3 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:244:ARG:HA | 1:E:253:THR:OG1 | 2.22 | 0.40 |
| 1:F:587:GLN:HA | 1:F:590:ILE:HG12 | 2.03 | 0.40 |
| 1:G:43:GLN:HG3 | 1:G:65:GLU:OE2 | 2.21 | 0.40 |
| 1:I:480:ARG:HH22 | 1:I:523:VAL:HG12 | 1.86 | 0.40 |
| 1:I:603:GLN:HG3 | 1:I:604:ILE:HG12 | 2.04 | 0.40 |
| 1:K:261:ASP:N | 1:K:261:ASP:OD1 | 2.54 | 0.40 |
| 2:P:131:VAL:CG2 | 2:P:135:ASN:HD21 | 2.35 | 0.40 |
| 2:T:119:VAL:HG23 | 2:T:120:VAL:N | 2.37 | 0.40 |
| 2:V:119:VAL:HG23 | 2:V:120:VAL:N | 2.36 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 1 | A | 615/708 (87%) | 546 (89%) | 62 (10%) | 7 (1%) | 14 | 25 |
| 1 | B | 615/708 (87%) | 542 (88%) | 67 (11%) | 6 (1%) | 15 | 27 |
| 1 | C | 615/708 (87%) | 547 (89%) | 62 (10%) | 6 (1%) | 15 | 27 |
| 1 | D | 615/708 (87%) | 550 (89%) | 57 (9%) | 8 (1%) | 12 | 21 |
| 1 | E | 615/708 (87%) | 544 (88%) | 64 (10%) | 7 (1%) | 14 | 25 |
| 1 | F | 615/708 (87%) | 547 (89%) | 62 (10%) | 6 (1%) | 15 | 27 |
| 1 | G | 615/708 (87%) | 548 (89%) | 60 (10%) | 7 (1%) | 14 | 25 |
| 1 | H | 615/708 (87%) | 543 (88%) | 66 (11%) | 6 (1%) | 15 | 27 |
| 1 | I | 615/708 (87%) | 549 (89%) | 60 (10%) | 6 (1%) | 15 | 27 |
| 1 | J | 615/708 (87%) | 548 (89%) | 61 (10%) | 6 (1%) | 15 | 27 |
| 1 | K | 615/708 (87%) | 543 (88%) | 65 (11%) | 7 (1%) | 14 | 25 |
| 1 | M | 615/708 (87%) | 546 (89%) | 63 (10%) | 6 (1%) | 15 | 27 |
| 2 | L | 148/160 (92%) | 121 (82%) | 26 (18%) | 1 (1%) | 22 | 39 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|------------------|------------|------------|----------|-------------|----|
| 2 | N | 148/160 (92%) | 130 (88%) | 16 (11%) | 2 (1%) | 11 | 19 |
| 2 | O | 148/160 (92%) | 119 (80%) | 27 (18%) | 2 (1%) | 11 | 19 |
| 2 | P | 148/160 (92%) | 130 (88%) | 16 (11%) | 2 (1%) | 11 | 19 |
| 2 | Q | 144/160 (90%) | 121 (84%) | 21 (15%) | 2 (1%) | 11 | 19 |
| 2 | R | 148/160 (92%) | 126 (85%) | 20 (14%) | 2 (1%) | 11 | 19 |
| 2 | S | 148/160 (92%) | 126 (85%) | 19 (13%) | 3 (2%) | 7 | 13 |
| 2 | T | 148/160 (92%) | 124 (84%) | 21 (14%) | 3 (2%) | 7 | 13 |
| 2 | U | 148/160 (92%) | 125 (84%) | 19 (13%) | 4 (3%) | 5 | 7 |
| 2 | V | 148/160 (92%) | 124 (84%) | 23 (16%) | 1 (1%) | 22 | 39 |
| 2 | W | 148/160 (92%) | 119 (80%) | 27 (18%) | 2 (1%) | 11 | 19 |
| 2 | X | 148/160 (92%) | 125 (84%) | 21 (14%) | 2 (1%) | 11 | 19 |
| All | All | 9152/10416 (88%) | 8043 (88%) | 1005 (11%) | 104 (1%) | 18 | 25 |

All (104) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | M | 85 | ILE |
| 1 | M | 225 | ILE |
| 1 | M | 560 | MET |
| 1 | M | 572 | ILE |
| 1 | A | 85 | ILE |
| 1 | A | 225 | ILE |
| 1 | A | 560 | MET |
| 1 | A | 572 | ILE |
| 1 | B | 85 | ILE |
| 1 | B | 225 | ILE |
| 1 | B | 560 | MET |
| 1 | B | 572 | ILE |
| 1 | C | 85 | ILE |
| 1 | C | 225 | ILE |
| 1 | C | 560 | MET |
| 1 | C | 572 | ILE |
| 1 | D | 85 | ILE |
| 1 | D | 225 | ILE |
| 1 | D | 560 | MET |
| 1 | D | 572 | ILE |
| 1 | E | 85 | ILE |
| 1 | E | 225 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | E | 560 | MET |
| 1 | E | 572 | ILE |
| 1 | F | 85 | ILE |
| 1 | F | 225 | ILE |
| 1 | F | 560 | MET |
| 1 | F | 572 | ILE |
| 1 | G | 85 | ILE |
| 1 | G | 225 | ILE |
| 1 | G | 560 | MET |
| 1 | G | 572 | ILE |
| 1 | H | 85 | ILE |
| 1 | H | 225 | ILE |
| 1 | H | 560 | MET |
| 1 | H | 572 | ILE |
| 1 | I | 85 | ILE |
| 1 | I | 225 | ILE |
| 1 | I | 560 | MET |
| 1 | I | 572 | ILE |
| 1 | J | 85 | ILE |
| 1 | J | 225 | ILE |
| 1 | J | 560 | MET |
| 1 | J | 572 | ILE |
| 1 | K | 85 | ILE |
| 1 | K | 225 | ILE |
| 1 | K | 560 | MET |
| 1 | K | 572 | ILE |
| 2 | S | 24 | ALA |
| 2 | T | 64 | GLU |
| 1 | M | 48 | THR |
| 1 | A | 48 | THR |
| 1 | B | 48 | THR |
| 1 | C | 48 | THR |
| 1 | D | 48 | THR |
| 1 | E | 48 | THR |
| 1 | F | 48 | THR |
| 1 | G | 48 | THR |
| 1 | H | 48 | THR |
| 1 | I | 48 | THR |
| 1 | J | 48 | THR |
| 1 | K | 48 | THR |
| 2 | X | 20 | ILE |
| 2 | P | 29 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | W | 22 | SER |
| 1 | A | 487 | ARG |
| 1 | D | 487 | ARG |
| 1 | G | 487 | ARG |
| 2 | N | 6 | THR |
| 2 | N | 122 | SER |
| 2 | U | 4 | VAL |
| 2 | W | 122 | SER |
| 2 | X | 122 | SER |
| 2 | O | 64 | GLU |
| 2 | Q | 122 | SER |
| 2 | R | 64 | GLU |
| 2 | S | 145 | TYR |
| 2 | T | 4 | VAL |
| 2 | T | 67 | LEU |
| 2 | U | 122 | SER |
| 2 | V | 4 | VAL |
| 1 | M | 573 | ASP |
| 1 | A | 520 | ASP |
| 1 | B | 573 | ASP |
| 1 | C | 573 | ASP |
| 1 | D | 520 | ASP |
| 1 | D | 573 | ASP |
| 1 | E | 520 | ASP |
| 1 | E | 573 | ASP |
| 1 | F | 573 | ASP |
| 1 | G | 520 | ASP |
| 1 | H | 573 | ASP |
| 1 | I | 573 | ASP |
| 1 | J | 520 | ASP |
| 1 | K | 520 | ASP |
| 1 | K | 573 | ASP |
| 2 | U | 2 | ALA |
| 2 | R | 67 | LEU |
| 2 | O | 67 | LEU |
| 2 | S | 67 | LEU |
| 2 | P | 67 | LEU |
| 2 | Q | 67 | LEU |
| 2 | U | 67 | LEU |
| 2 | L | 67 | LEU |

5.3.2 Protein sidechains [i](#)

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|-------------|----------|-------------|-----|
| 1 | A | 516/592 (87%) | 514 (100%) | 2 (0%) | 91 | 93 |
| 1 | B | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | C | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | D | 516/592 (87%) | 514 (100%) | 2 (0%) | 91 | 93 |
| 1 | E | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | F | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | G | 516/592 (87%) | 514 (100%) | 2 (0%) | 91 | 93 |
| 1 | H | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | I | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | J | 516/592 (87%) | 514 (100%) | 2 (0%) | 91 | 93 |
| 1 | K | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 1 | M | 516/592 (87%) | 513 (99%) | 3 (1%) | 86 | 90 |
| 2 | L | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | N | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | O | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | P | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | Q | 126/137 (92%) | 125 (99%) | 1 (1%) | 81 | 88 |
| 2 | R | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | S | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | T | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | U | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | V | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | W | 129/137 (94%) | 129 (100%) | 0 | 100 | 100 |
| 2 | X | 129/137 (94%) | 128 (99%) | 1 (1%) | 81 | 88 |
| All | All | 7737/8748 (88%) | 7703 (100%) | 34 (0%) | 91 | 93 |

All (34) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | M | 244 | ARG |
| 1 | M | 283 | ARG |
| 1 | M | 510 | ARG |
| 1 | A | 244 | ARG |
| 1 | A | 510 | ARG |
| 1 | B | 244 | ARG |
| 1 | B | 283 | ARG |
| 1 | B | 510 | ARG |
| 1 | C | 244 | ARG |
| 1 | C | 283 | ARG |
| 1 | C | 510 | ARG |
| 1 | D | 244 | ARG |
| 1 | D | 510 | ARG |
| 1 | E | 244 | ARG |
| 1 | E | 283 | ARG |
| 1 | E | 510 | ARG |
| 1 | F | 244 | ARG |
| 1 | F | 283 | ARG |
| 1 | F | 510 | ARG |
| 1 | G | 244 | ARG |
| 1 | G | 510 | ARG |
| 1 | H | 244 | ARG |
| 1 | H | 283 | ARG |
| 1 | H | 510 | ARG |
| 1 | I | 244 | ARG |
| 1 | I | 283 | ARG |
| 1 | I | 510 | ARG |
| 1 | J | 244 | ARG |
| 1 | J | 510 | ARG |
| 1 | K | 244 | ARG |
| 1 | K | 283 | ARG |
| 1 | K | 510 | ARG |
| 2 | Q | 80 | HIS |
| 2 | X | 23 | ASN |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | M | 511 | GLN |
| 1 | M | 645 | GLN |
| 1 | M | 661 | ASN |
| 1 | A | 645 | GLN |
| 1 | A | 652 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 661 | ASN |
| 1 | B | 645 | GLN |
| 1 | B | 661 | ASN |
| 1 | C | 645 | GLN |
| 1 | C | 661 | ASN |
| 1 | D | 645 | GLN |
| 1 | D | 652 | GLN |
| 1 | D | 661 | ASN |
| 1 | E | 645 | GLN |
| 1 | E | 661 | ASN |
| 1 | F | 645 | GLN |
| 1 | F | 661 | ASN |
| 1 | G | 645 | GLN |
| 1 | G | 652 | GLN |
| 1 | G | 661 | ASN |
| 1 | H | 645 | GLN |
| 1 | H | 661 | ASN |
| 1 | I | 645 | GLN |
| 1 | I | 661 | ASN |
| 1 | J | 645 | GLN |
| 1 | J | 652 | GLN |
| 1 | J | 661 | ASN |
| 1 | K | 645 | GLN |
| 1 | K | 661 | ASN |
| 2 | R | 23 | ASN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

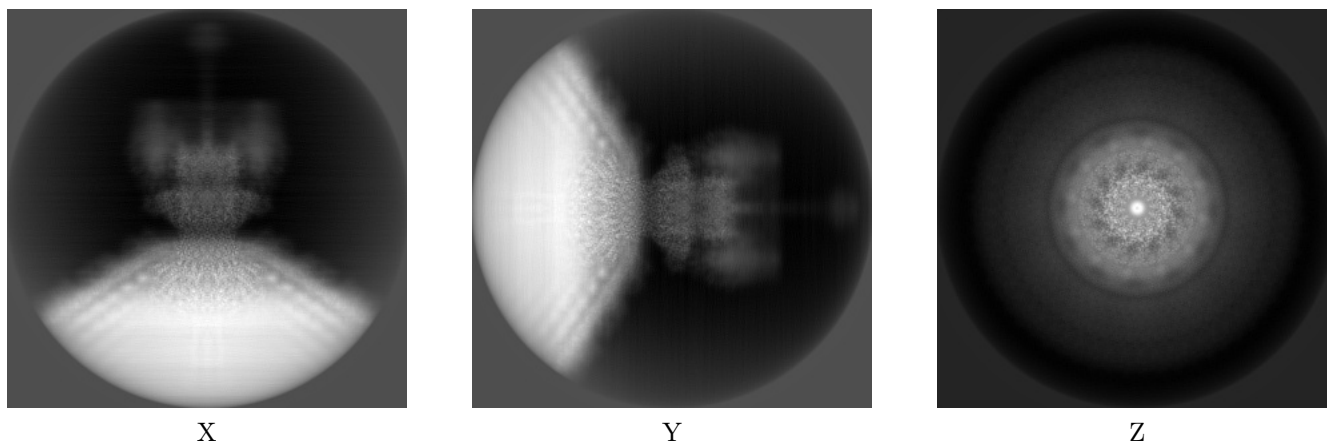
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25101. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

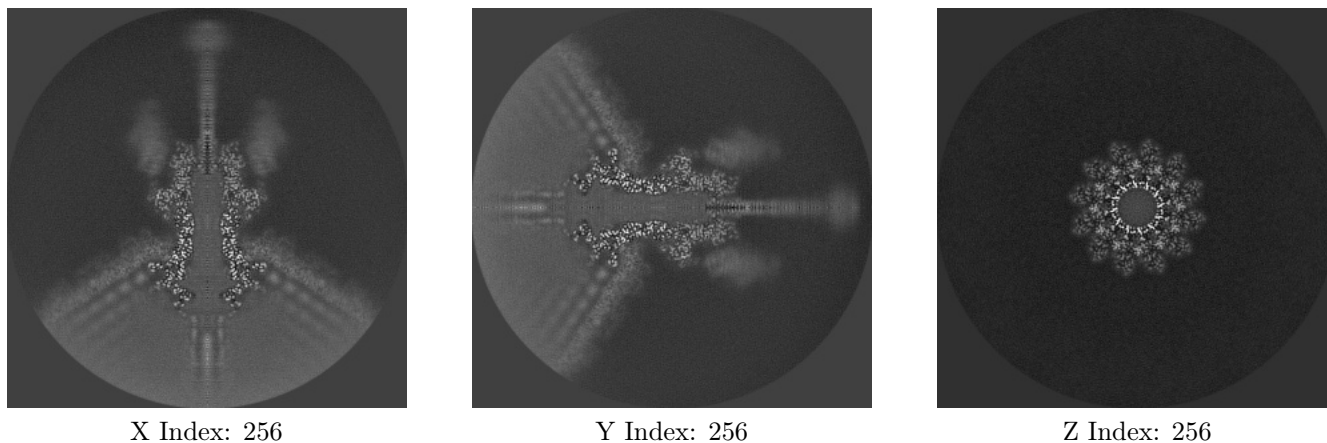
6.1.1 Primary map



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

6.2 Central slices [i](#)

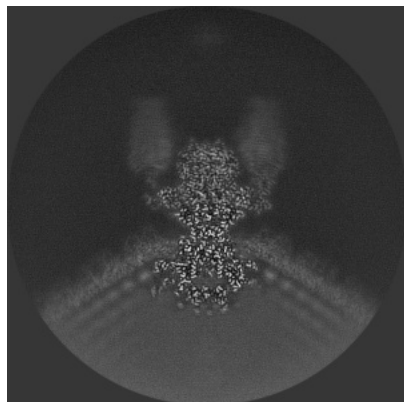
6.2.1 Primary map



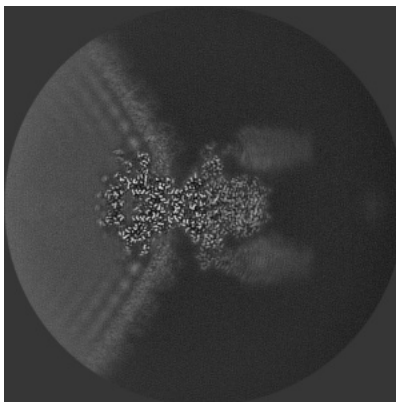
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

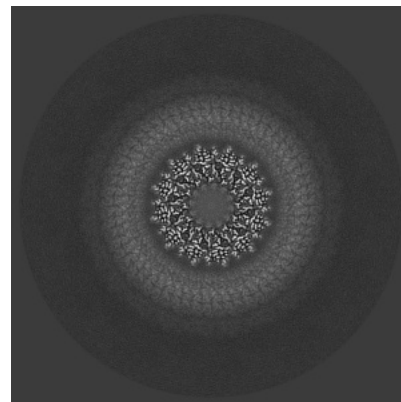
6.3.1 Primary map



X Index: 227



Y Index: 227

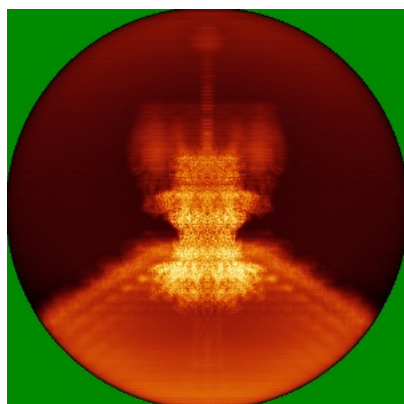


Z Index: 178

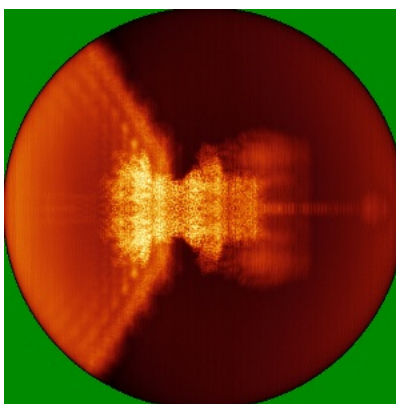
The images above show the largest variance slices of the map in three orthogonal directions.

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

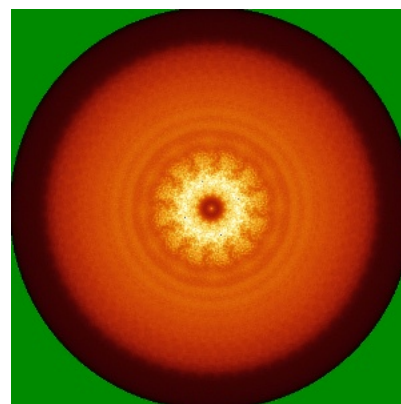
6.4.1 Primary map



X



Y

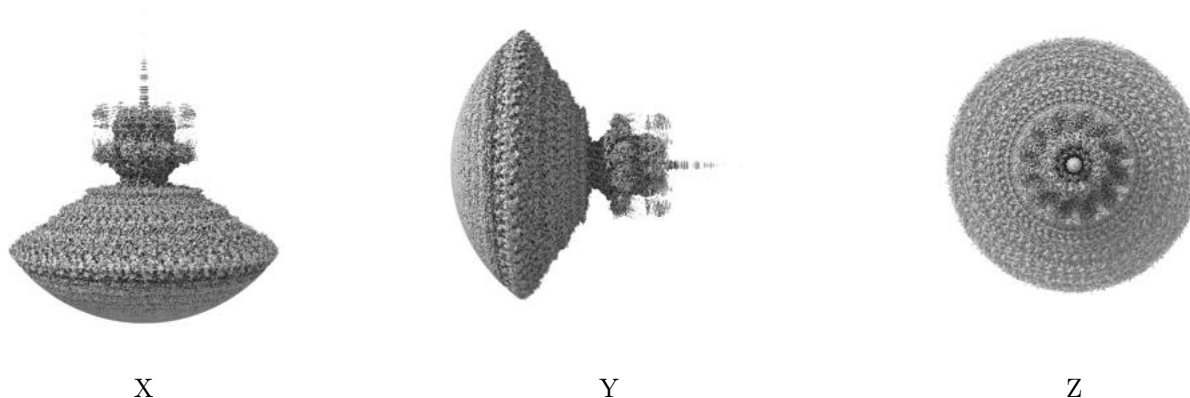


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

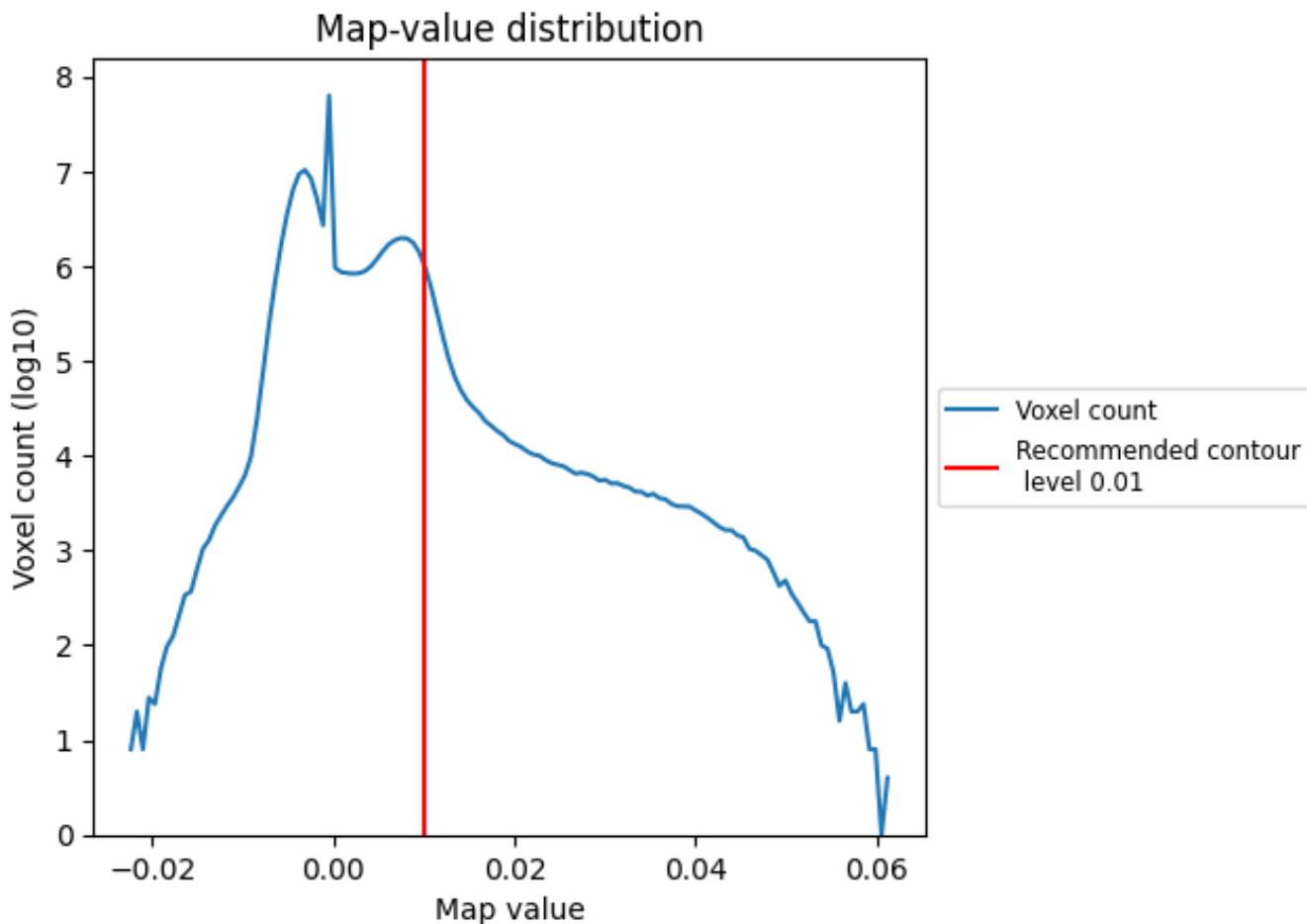
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

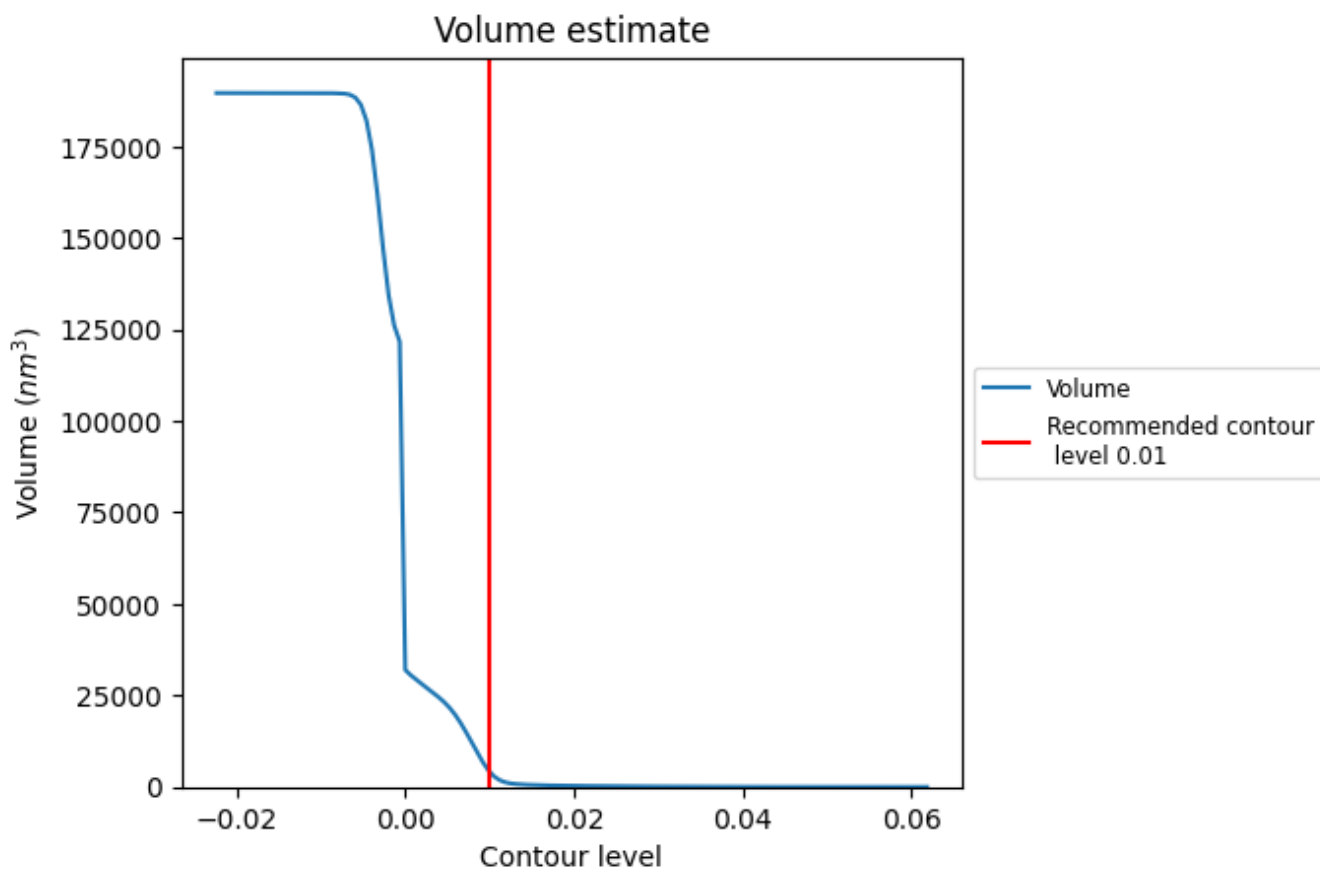
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

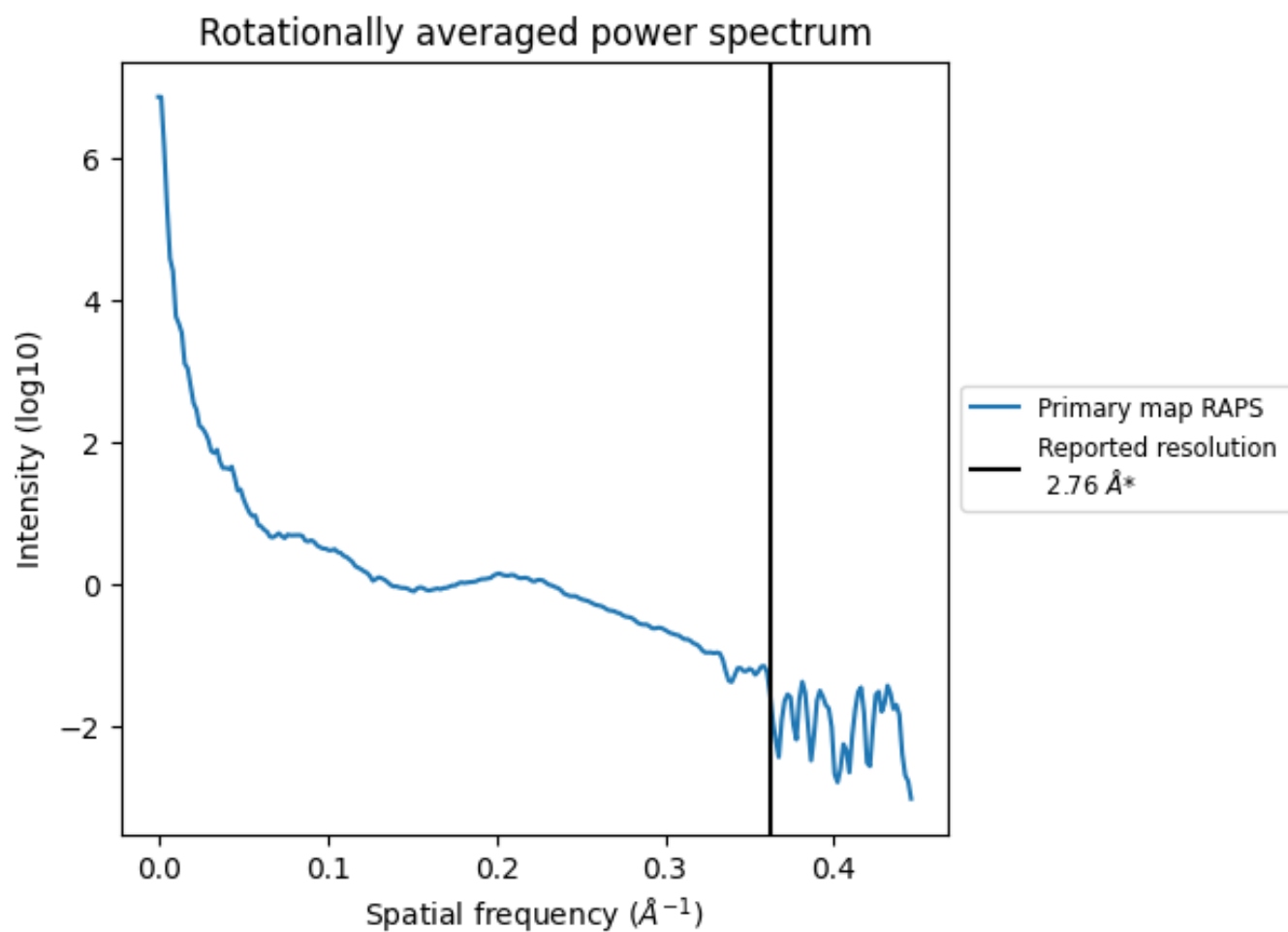
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 4196 nm^3 ; this corresponds to an approximate mass of 3790 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

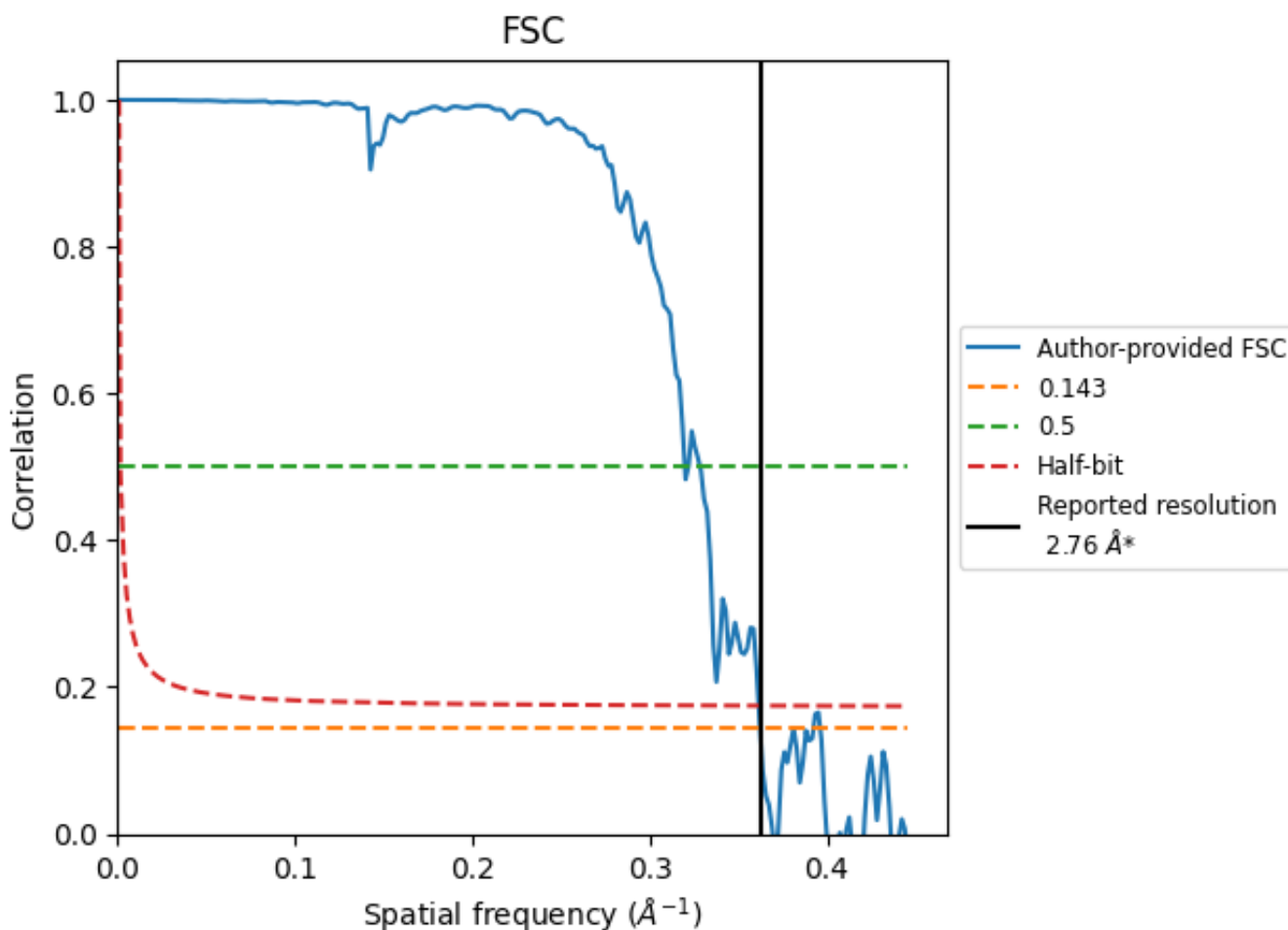


*Reported resolution corresponds to spatial frequency of 0.362 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.362 Å⁻¹

8.2 Resolution estimates [i](#)

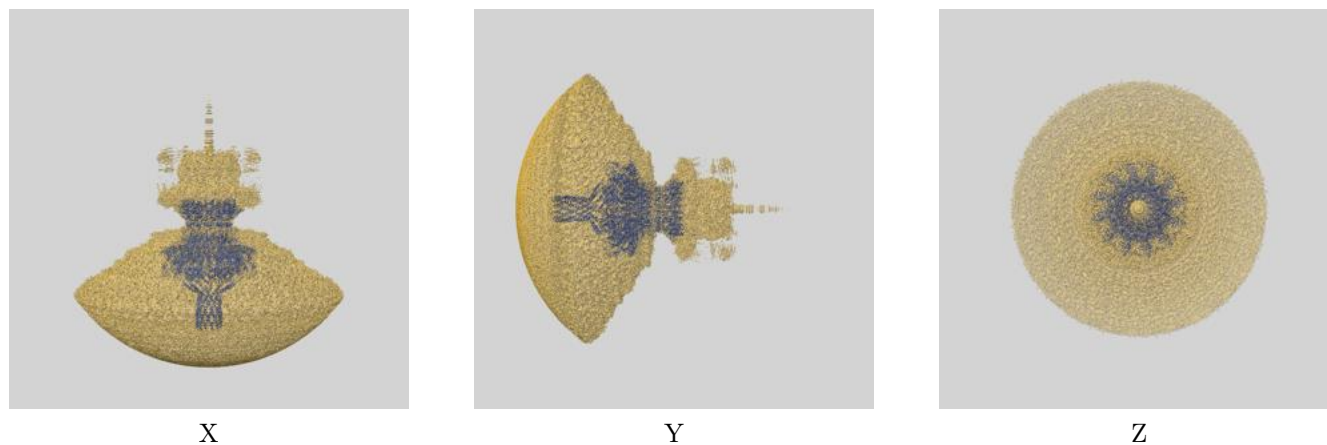
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---------------------------|------------------------------------|------|----------|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 2.76 | - | - |
| Author-provided FSC curve | 2.76 | 3.13 | 2.77 |
| Unmasked-calculated* | - | - | - |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

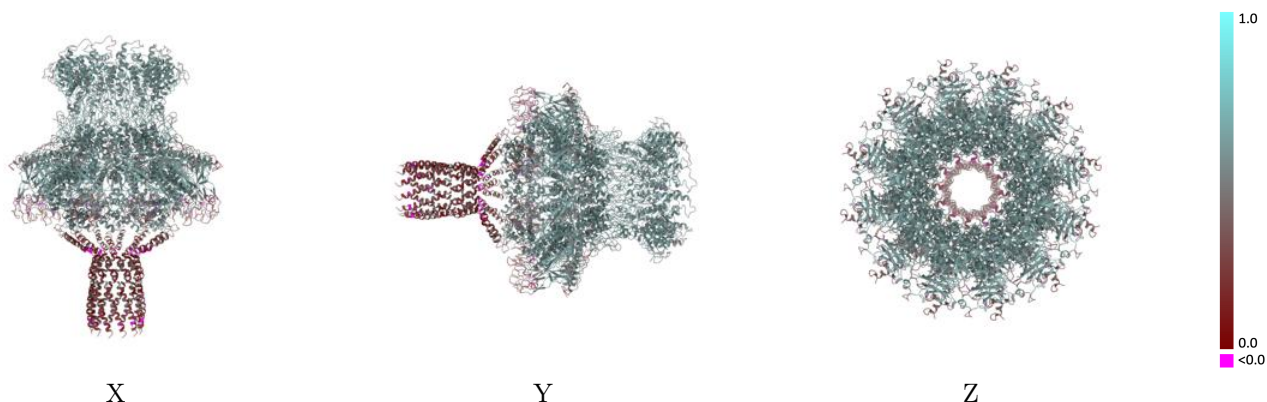
This section contains information regarding the fit between EMDB map EMD-25101 and PDB model 7SFS. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



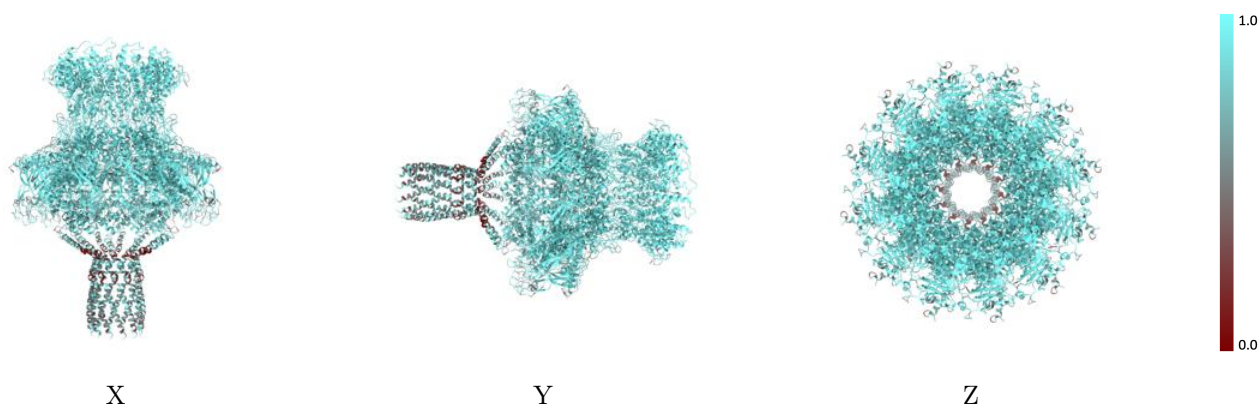
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



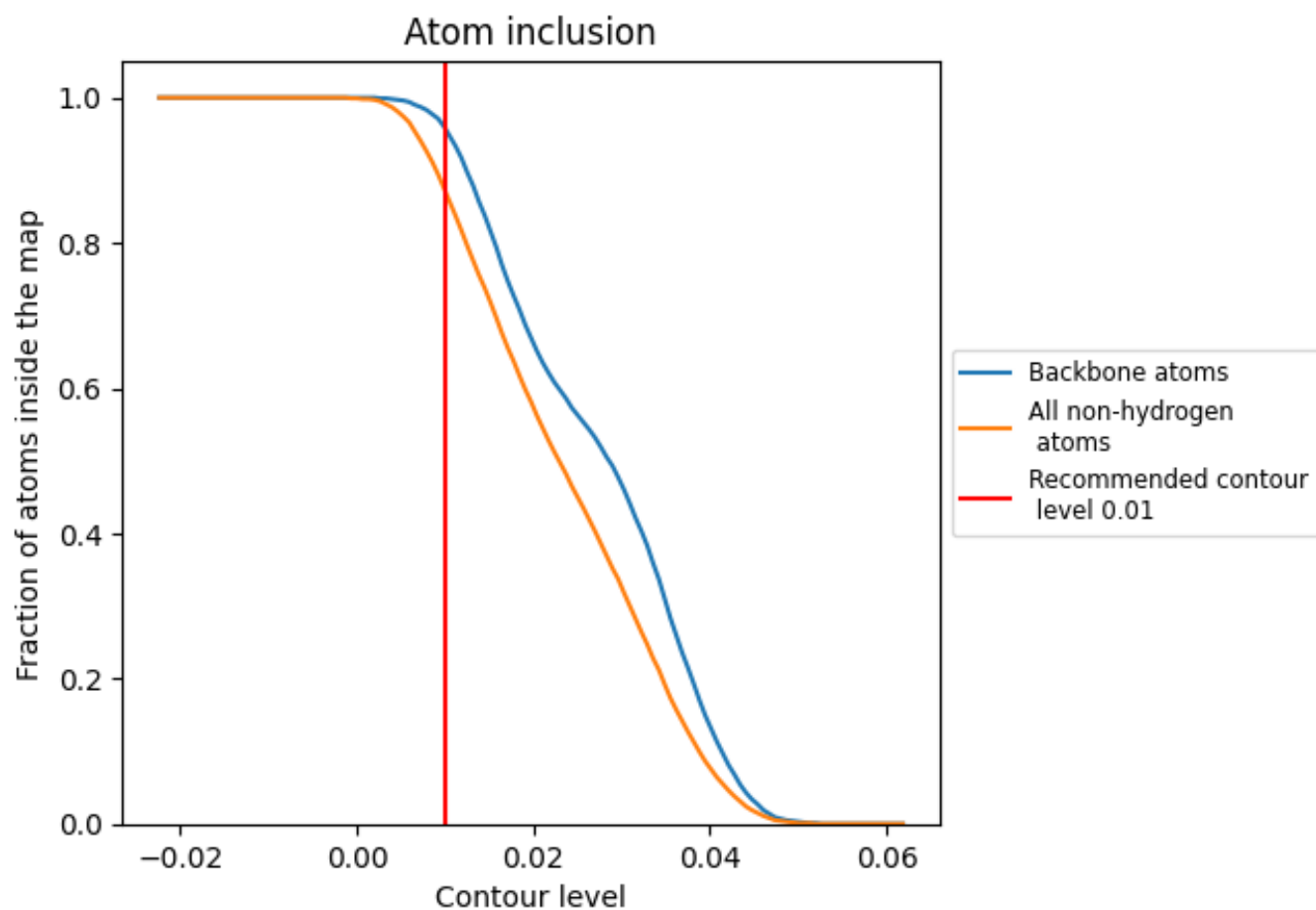
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).



















































9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 87% 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 (0.01) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|--|
| All |  0.8710 |  0.5180 |
| A |  0.8560 |  0.5070 |
| B |  0.8570 |  0.5080 |
| C |  0.8610 |  0.5080 |
| D |  0.8580 |  0.5070 |
| E |  0.8570 |  0.5060 |
| F |  0.8590 |  0.5070 |
| G |  0.8560 |  0.5070 |
| H |  0.8570 |  0.5070 |
| I |  0.8590 |  0.5070 |
| J |  0.8560 |  0.5070 |
| K |  0.8580 |  0.5080 |
| L |  0.9270 |  0.5610 |
| M |  0.8590 |  0.5080 |
| N |  0.9260 |  0.5640 |
| O |  0.9250 |  0.5580 |
| P |  0.9240 |  0.5610 |
| Q |  0.9180 |  0.5520 |
| R |  0.9180 |  0.5670 |
| S |  0.9250 |  0.5590 |
| T |  0.9290 |  0.5650 |
| U |  0.9300 |  0.5650 |
| V |  0.9290 |  0.5700 |
| W |  0.9180 |  0.5600 |
| X |  0.9310 |  0.5670 |

