



## Full wwPDB EM Validation Report ⓘ

Jan 26, 2026 – 10:45 AM EST

PDB ID : 9PGG / pdb\_00009pgg  
EMDB ID : EMD-71631  
Title : Cryo-EM structure of bacteriophage P22 gp1-gp5-gp4 complex at 2.76 angstrom  
Authors : Yu, H.; Liu, J.; Molienux, I.J.  
Deposited on : 2025-07-07  
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](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev129  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.47

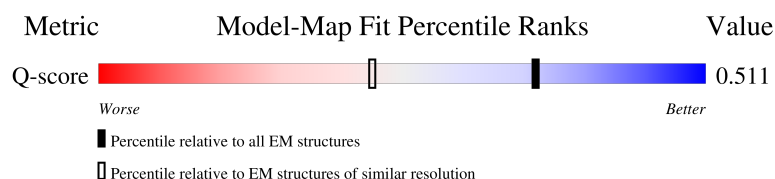
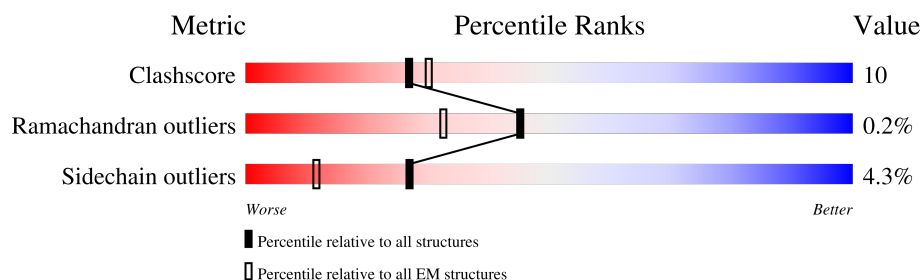
# 1 Overall quality at a glance

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.



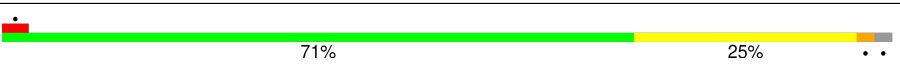
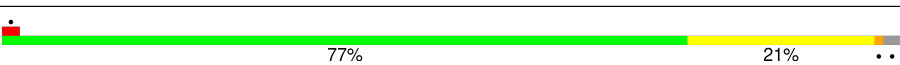
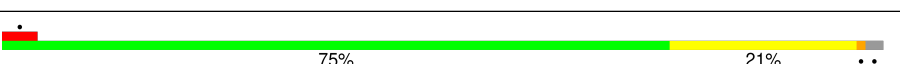
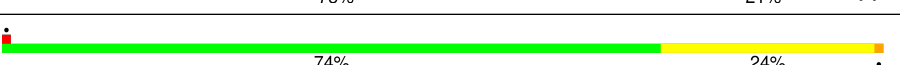
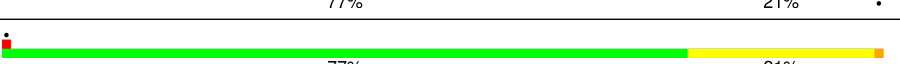
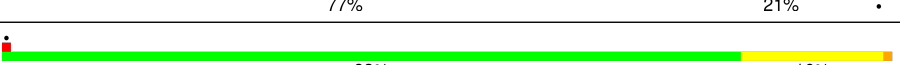
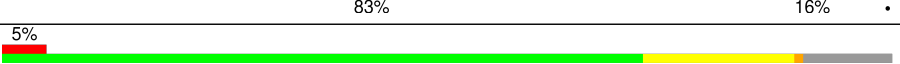
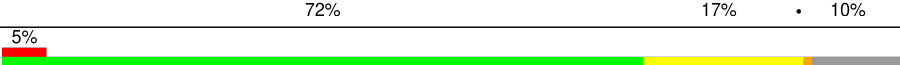
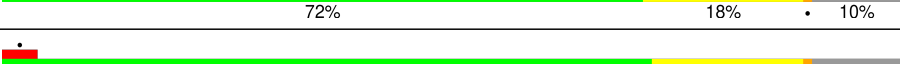
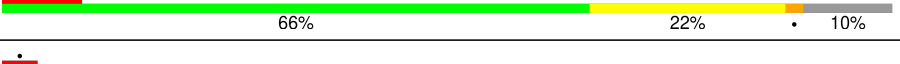
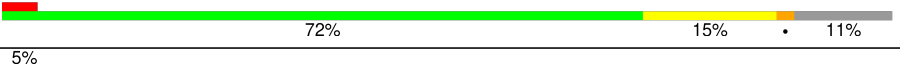
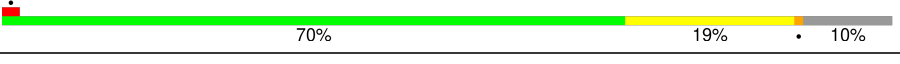
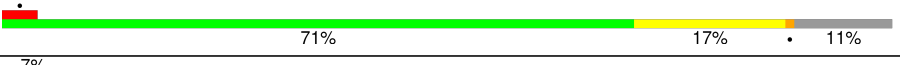
| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) | Similar EM resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-----------------------------|----------------------------------------------------------|
| Clashscore            | 210492                      | 15764                       | -                                                        |
| Ramachandran outliers | 207382                      | 16835                       | -                                                        |
| Sidechain outliers    | 206894                      | 16415                       | -                                                        |
| Q-score               | -                           | 25397                       | 10642 ( 2.26 - 3.26 )                                    |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | Aa    | 430    | <br>72% 27% .    |
| 1   | Ab    | 430    | <br>74% 23% ..   |
| 1   | Ac    | 430    | <br>80% 18% .    |
| 1   | Ad    | 430    | <br>73% 26% .    |

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| Mol | Chain | Length | Quality of chain                                                                     |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 1   | Ae    | 430    |    |
| 1   | Af    | 430    |    |
| 1   | Ag    | 430    |    |
| 1   | Ah    | 430    |    |
| 1   | Ai    | 430    |    |
| 1   | Aj    | 430    |    |
| 1   | Ak    | 430    |    |
| 1   | Al    | 430    |    |
| 1   | Am    | 430    |    |
| 1   | An    | 430    |    |
| 1   | Ao    | 430    |    |
| 2   | Ap    | 166    |    |
| 2   | Aq    | 166    |   |
| 2   | Ar    | 166    |  |
| 2   | As    | 166    |  |
| 2   | At    | 166    |  |
| 2   | Au    | 166    |  |
| 2   | Av    | 166    |  |
| 2   | Aw    | 166    |  |
| 2   | Ax    | 166    |  |
| 2   | Ay    | 166    |  |
| 2   | Az    | 166    |  |
| 2   | Ba    | 166    |  |
| 3   | Bb    | 725    |  |
| 3   | Bd    | 725    |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3   | Bf    | 725    |                  |
| 3   | Bh    | 725    |                  |
| 3   | Bj    | 725    |                  |
| 3   | Bl    | 725    |                  |
| 3   | Bn    | 725    |                  |
| 3   | Bp    | 725    |                  |
| 3   | Br    | 725    |                  |
| 3   | Bt    | 725    |                  |
| 3   | Bv    | 725    |                  |
| 3   | Bx    | 725    |                  |

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 120038 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 Major capsid protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 1   | Aa    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3275  | 2051 | 568 | 643 | 13 |         |       |
| 1   | Ab    | 422      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3226  | 2022 | 559 | 632 | 13 |         |       |
| 1   | Ac    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3277  | 2053 | 568 | 643 | 13 |         |       |
| 1   | Ad    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3275  | 2051 | 568 | 643 | 13 |         |       |
| 1   | Ae    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3275  | 2051 | 568 | 643 | 13 |         |       |
| 1   | Af    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3275  | 2051 | 568 | 643 | 13 |         |       |
| 1   | Ag    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3275  | 2051 | 568 | 643 | 13 |         |       |
| 1   | Ah    | 420      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3212  | 2013 | 557 | 629 | 13 |         |       |
| 1   | Ai    | 423      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3234  | 2028 | 560 | 633 | 13 |         |       |
| 1   | Aj    | 421      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3219  | 2017 | 558 | 631 | 13 |         |       |
| 1   | Ak    | 422      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3226  | 2022 | 559 | 632 | 13 |         |       |
| 1   | Al    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3277  | 2053 | 568 | 643 | 13 |         |       |
| 1   | Am    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3277  | 2053 | 568 | 643 | 13 |         |       |
| 1   | An    | 429      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3277  | 2053 | 568 | 643 | 13 |         |       |
| 1   | Ao    | 428      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3272  | 2050 | 567 | 642 | 13 |         |       |

- Molecule 2 is a protein called Peptidoglycan hydrolase gp4.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2   | Ap    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | Aq    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | Ar    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | As    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | At    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | Au    | 150      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1149  | 721 | 198 | 225 | 5 |         |       |
| 2   | Av    | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1140  | 716 | 196 | 223 | 5 |         |       |
| 2   | Aw    | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1140  | 716 | 196 | 223 | 5 |         |       |
| 2   | Ax    | 148      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1136  | 714 | 195 | 222 | 5 |         |       |
| 2   | Ay    | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1140  | 716 | 196 | 223 | 5 |         |       |
| 2   | Az    | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1140  | 716 | 196 | 223 | 5 |         |       |
| 2   | Ba    | 148      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1136  | 714 | 195 | 222 | 5 |         |       |

- Molecule 3 is a protein called Portal protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | Bb    | 590      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4774  | 3008 | 819 | 926 | 21 |         |       |
| 3   | Bd    | 592      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4791  | 3017 | 822 | 931 | 21 |         |       |
| 3   | Bf    | 591      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4782  | 3012 | 821 | 928 | 21 |         |       |
| 3   | Bh    | 592      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4791  | 3017 | 822 | 931 | 21 |         |       |
| 3   | Bj    | 591      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4783  | 3013 | 820 | 929 | 21 |         |       |
| 3   | Bl    | 592      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4791  | 3017 | 822 | 931 | 21 |         |       |
| 3   | Bn    | 593      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4799  | 3021 | 823 | 934 | 21 |         |       |
| 3   | Bp    | 590      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4774  | 3008 | 819 | 926 | 21 |         |       |

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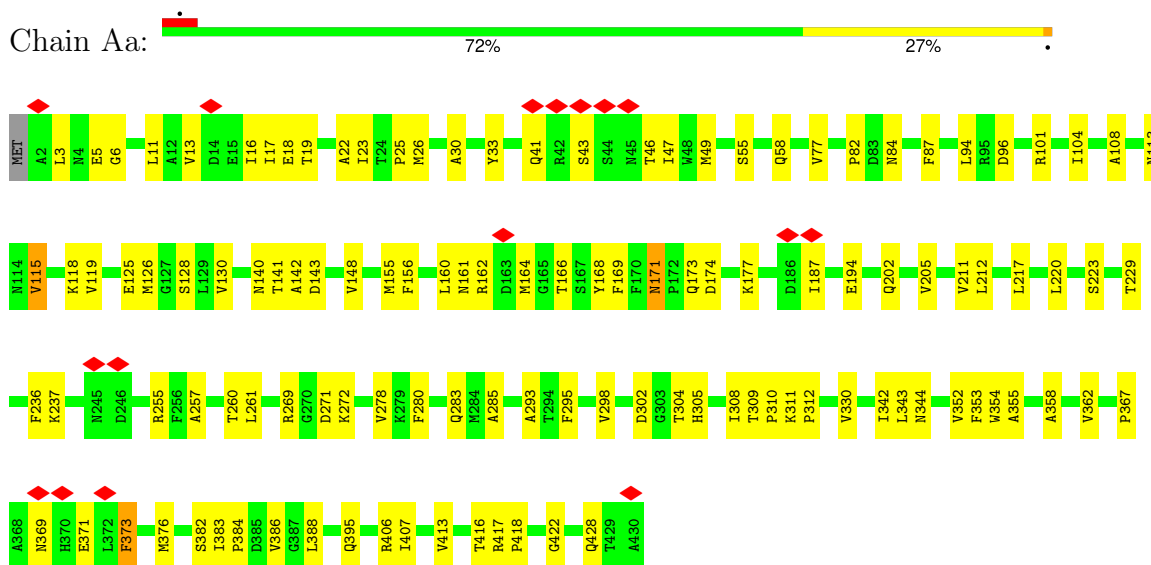
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| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | Br    | 591      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4782  | 3012 | 821 | 928 | 21 |         |       |
| 3   | Bt    | 591      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4783  | 3013 | 820 | 929 | 21 |         |       |
| 3   | Bv    | 591      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4783  | 3013 | 820 | 929 | 21 |         |       |
| 3   | Bx    | 594      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4807  | 3025 | 825 | 936 | 21 |         |       |

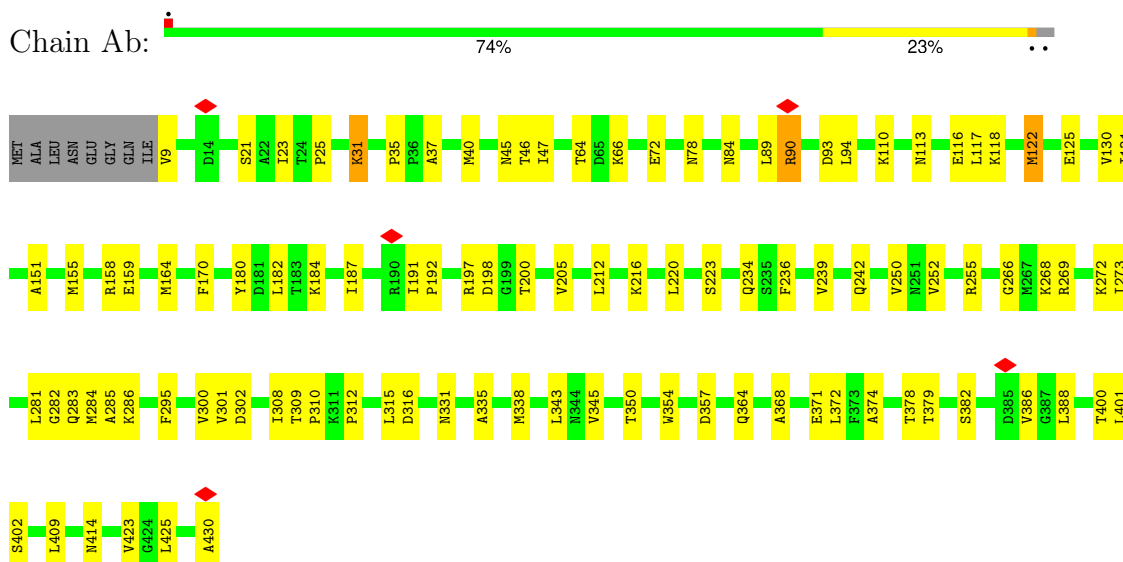
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Major capsid protein



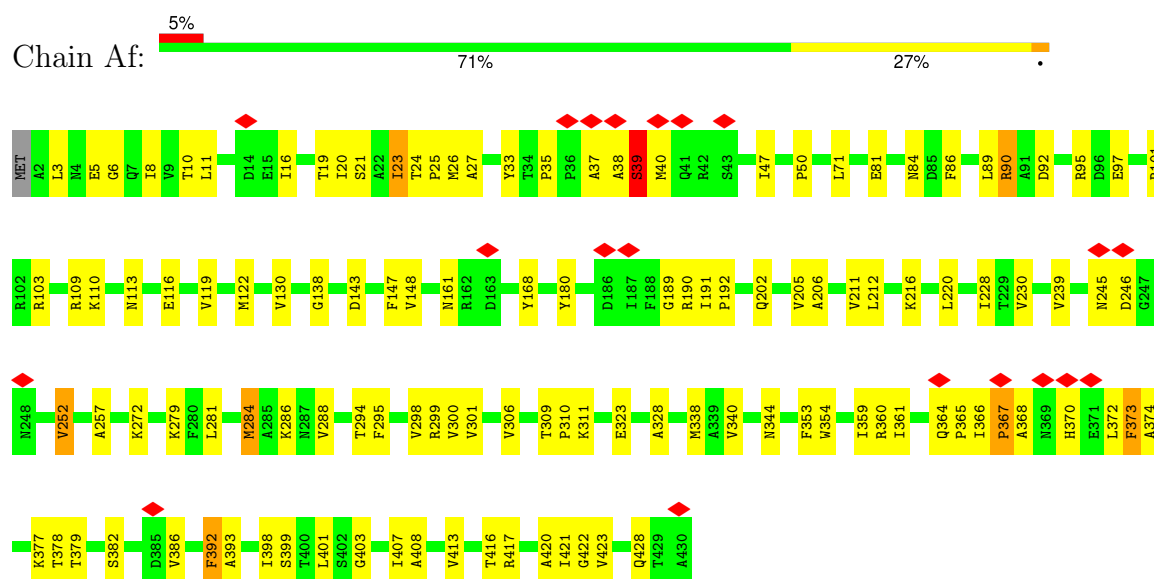
- Molecule 1: Major capsid protein



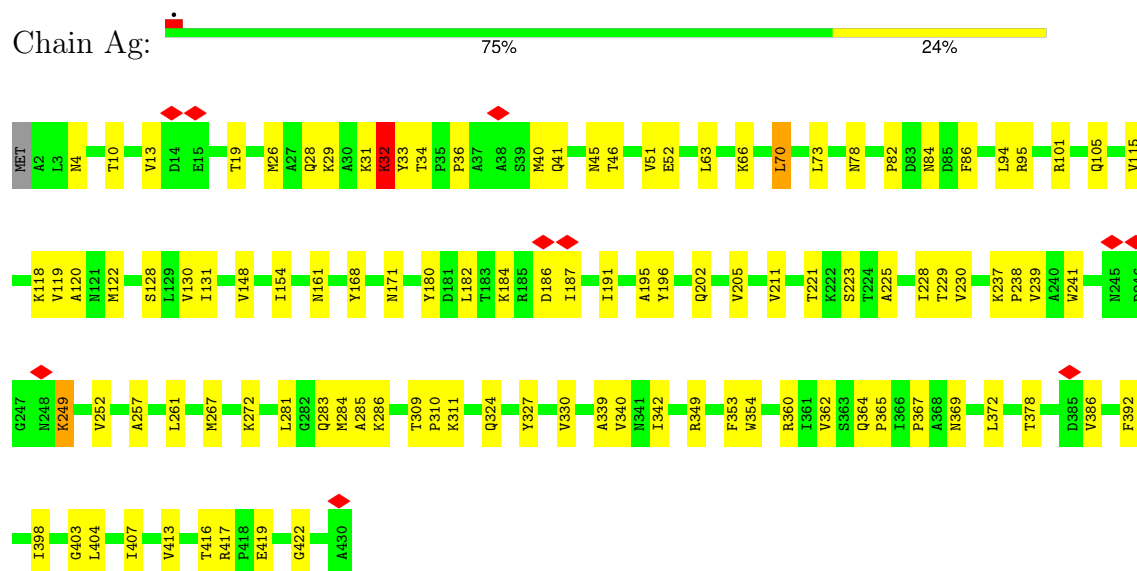
- Molecule 1: Major capsid protein



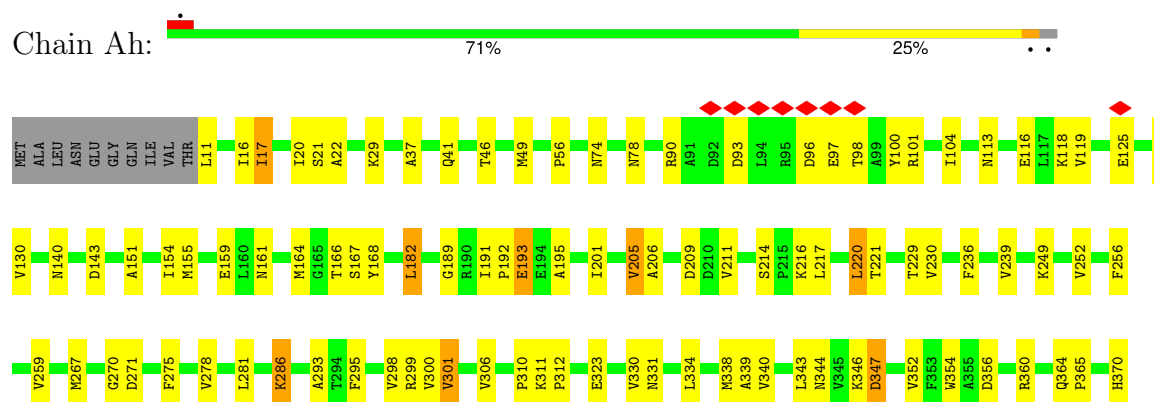


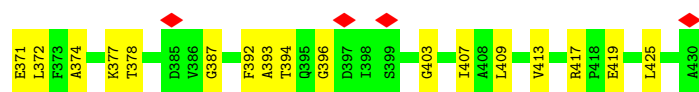


• Molecule 1: Major capsid protein



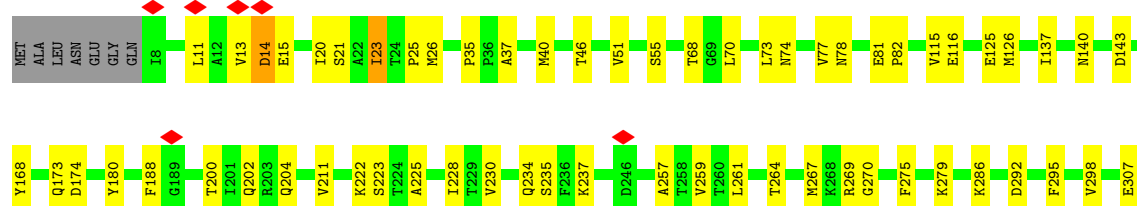
• Molecule 1: Major capsid protein





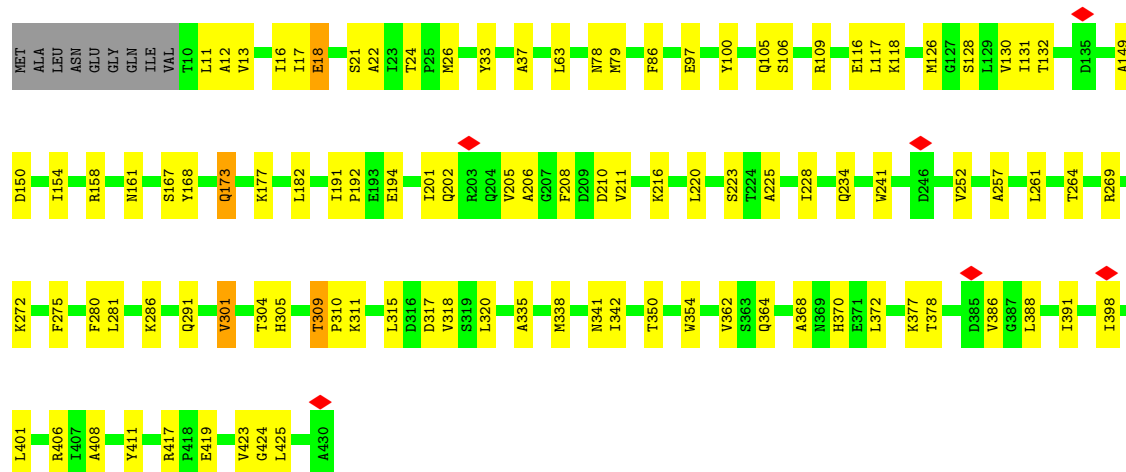
- Molecule 1: Major capsid protein

Chain Ai: 77% 21% ..



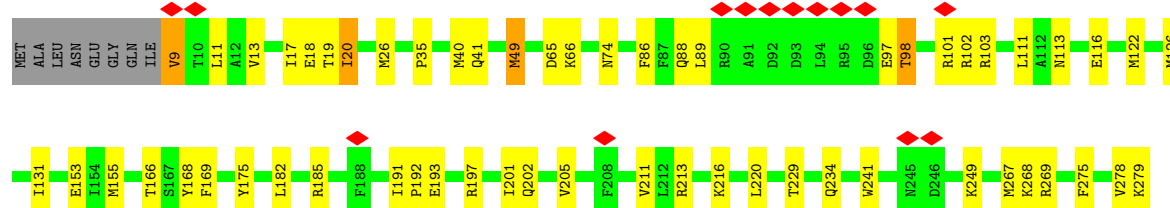
- Molecule 1: Major capsid protein

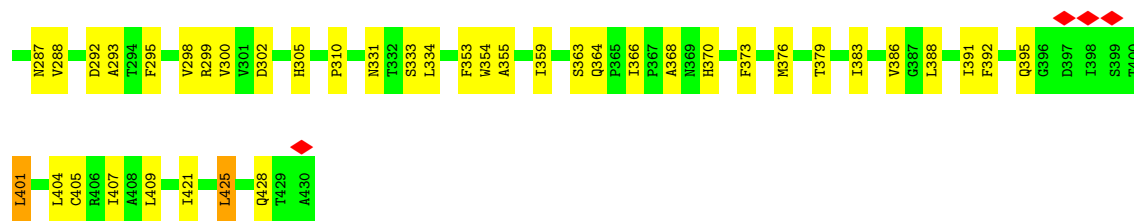
Chain Aj: 74% 23% ..



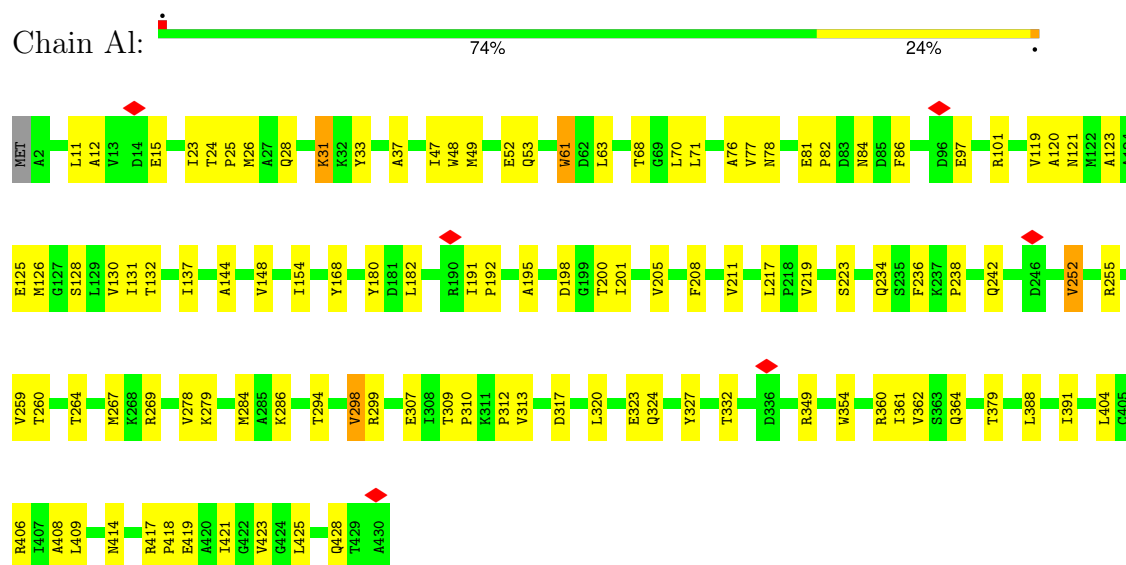
- Molecule 1: Major capsid protein

Chain Ak: 75% 21% ..

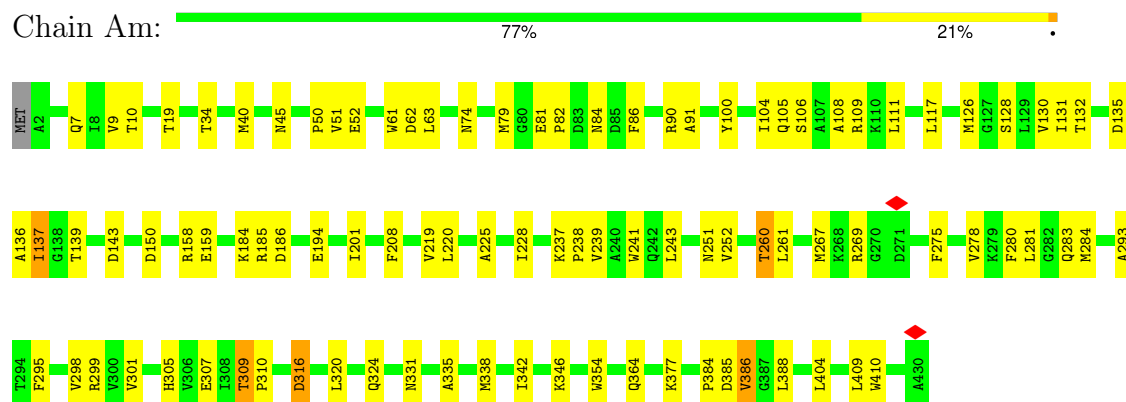




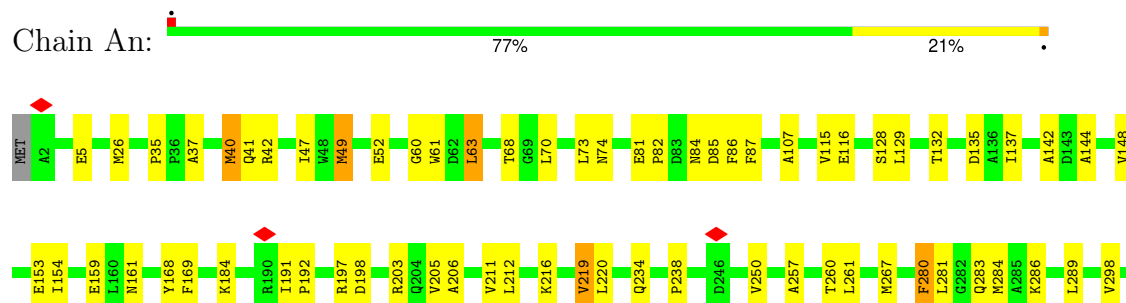
- Molecule 1: Major capsid protein



- Molecule 1: Major capsid protein

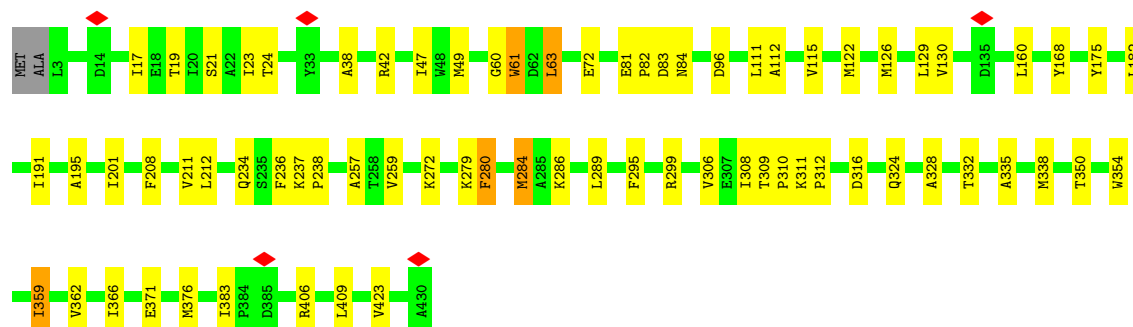
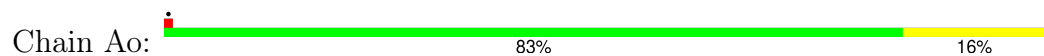


- Molecule 1: Major capsid protein

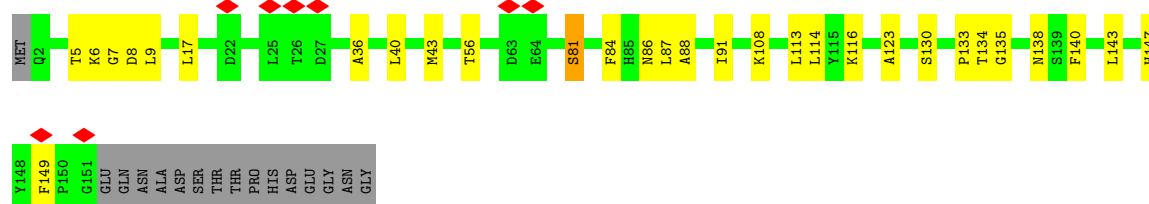
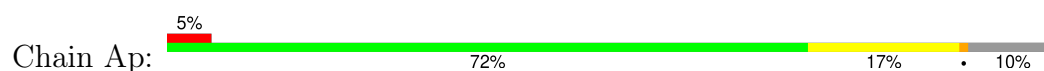




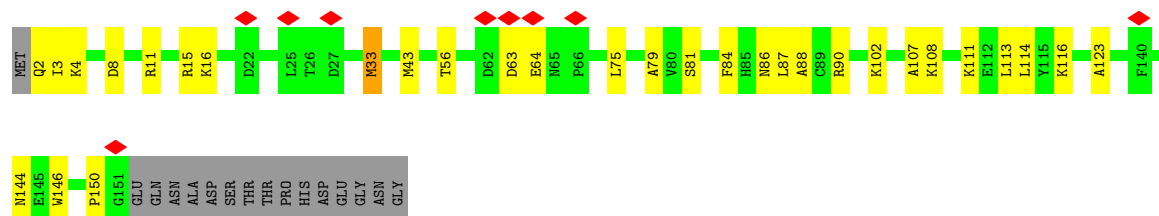
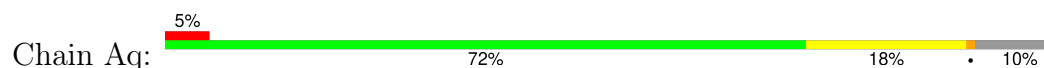
- Molecule 1: Major capsid protein



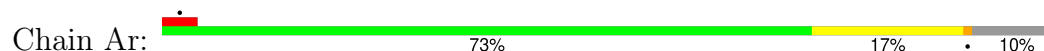
- Molecule 2: Peptidoglycan hydrolase gp4

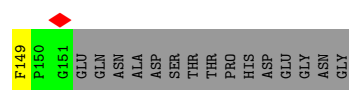


- Molecule 2: Peptidoglycan hydrolase gp4



- Molecule 2: Peptidoglycan hydrolase gp4

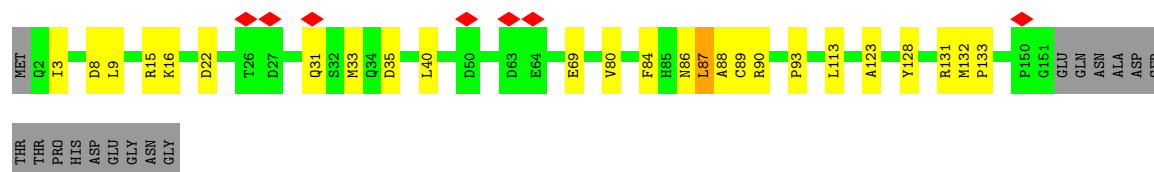
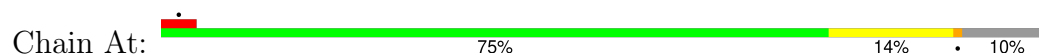




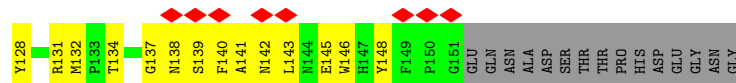
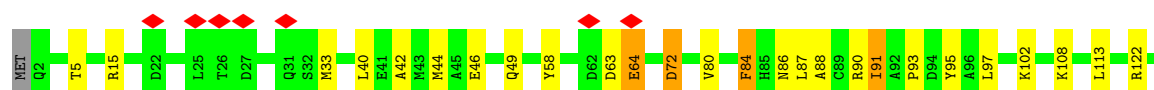
- Molecule 2: Peptidoglycan hydrolase gp4



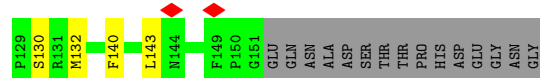
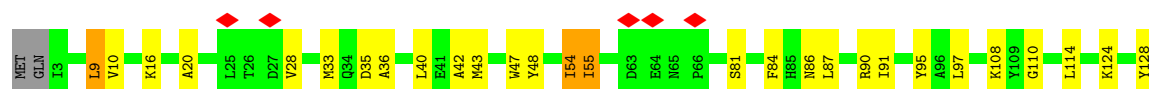
- Molecule 2: Peptidoglycan hydrolase gp4



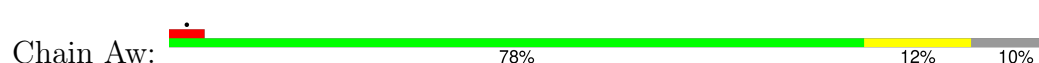
- Molecule 2: Peptidoglycan hydrolase gp4

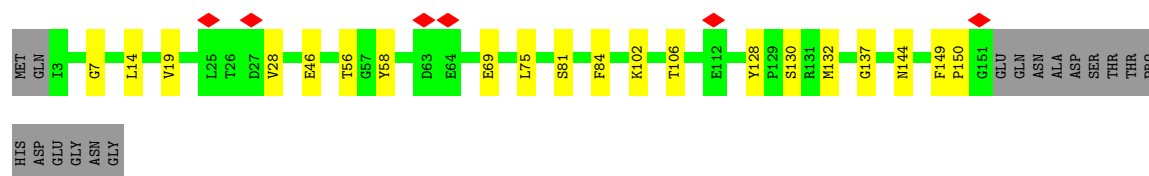


- Molecule 2: Peptidoglycan hydrolase gp4

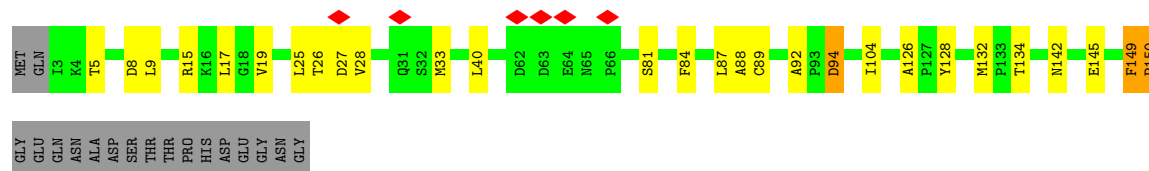


- Molecule 2: Peptidoglycan hydrolase gp4

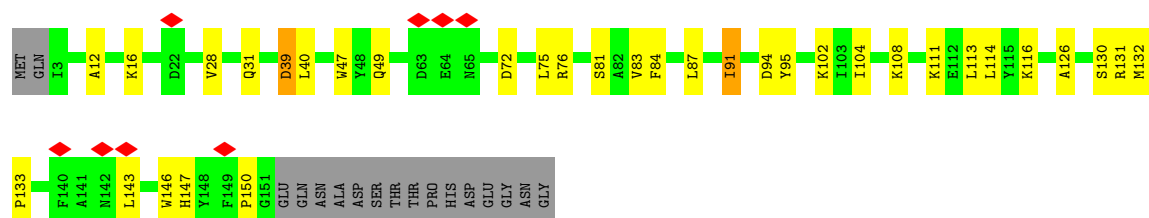




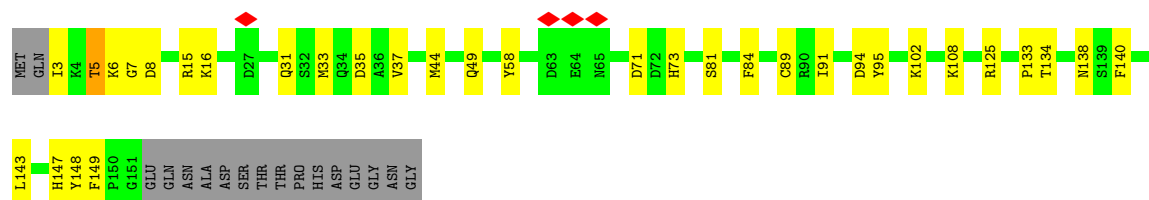
• Molecule 2: Peptidoglycan hydrolase gp4



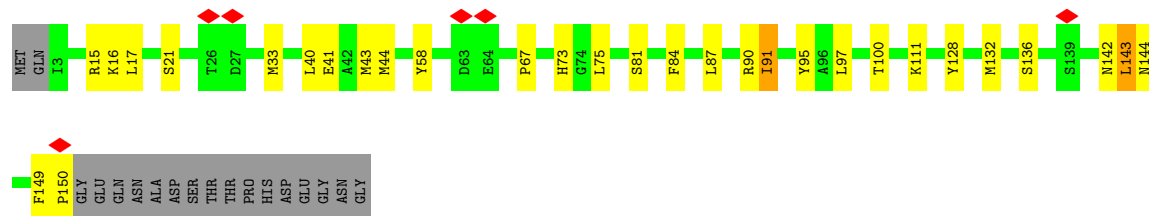
• Molecule 2: Peptidoglycan hydrolase gp4



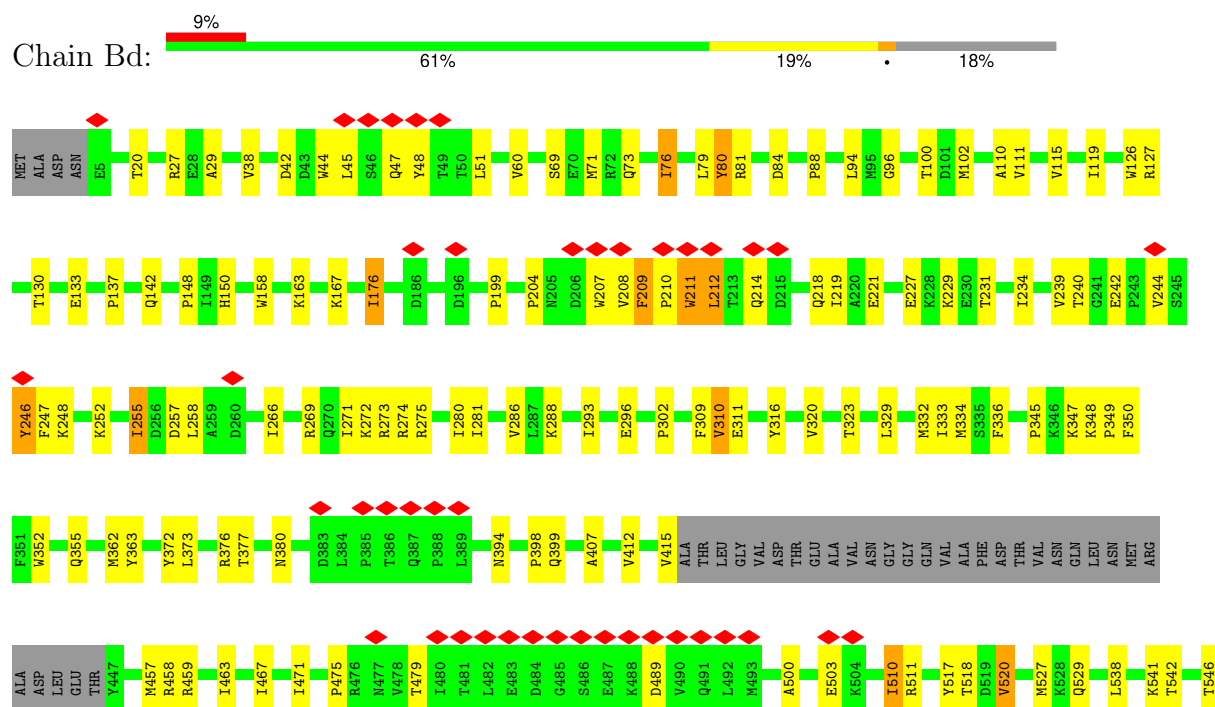
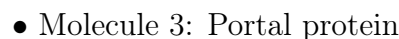
• Molecule 2: Peptidoglycan hydrolase gp4



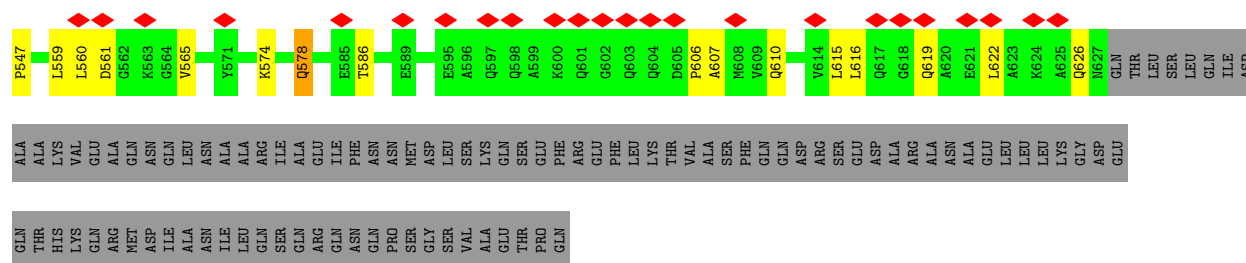
• Molecule 2: Peptidoglycan hydrolase gp4



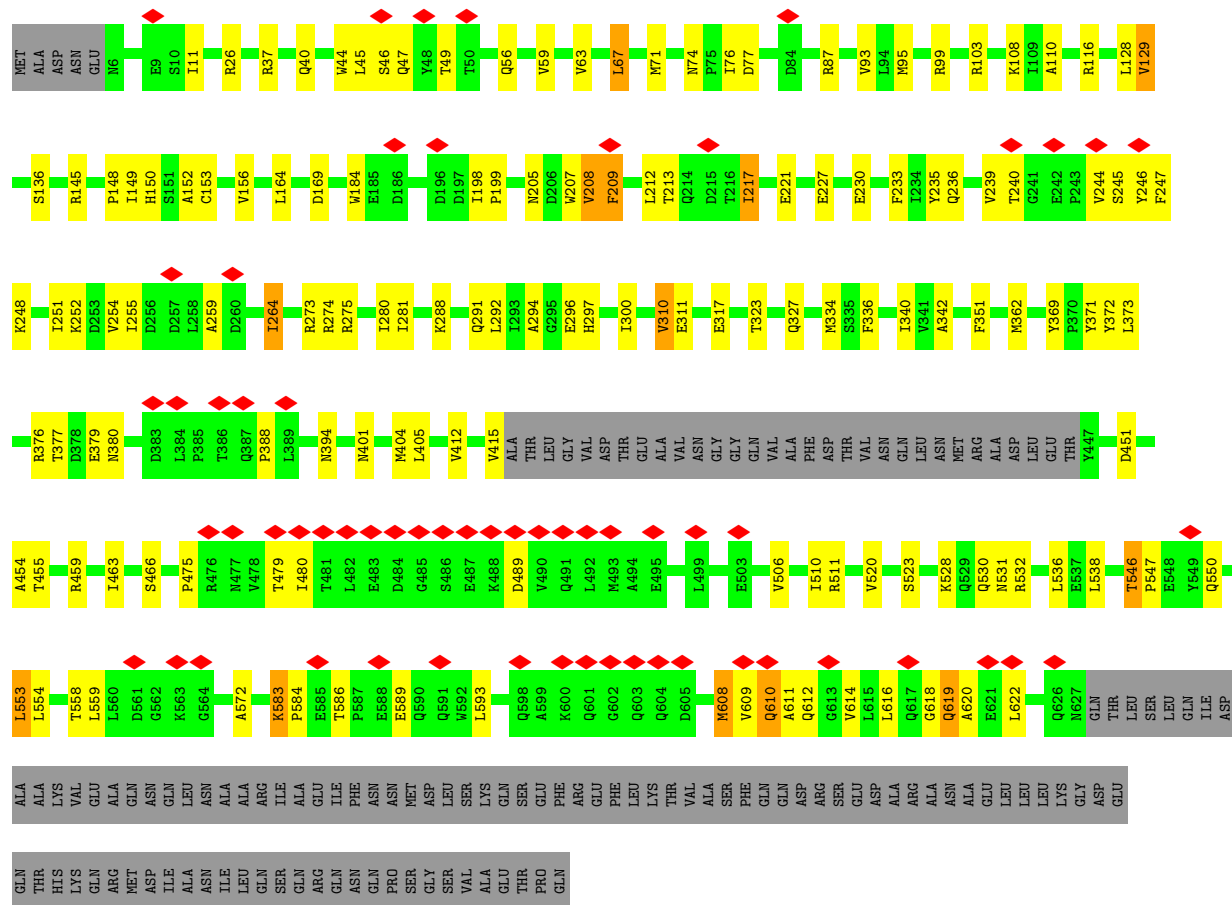
• Molecule 3: Portal protein

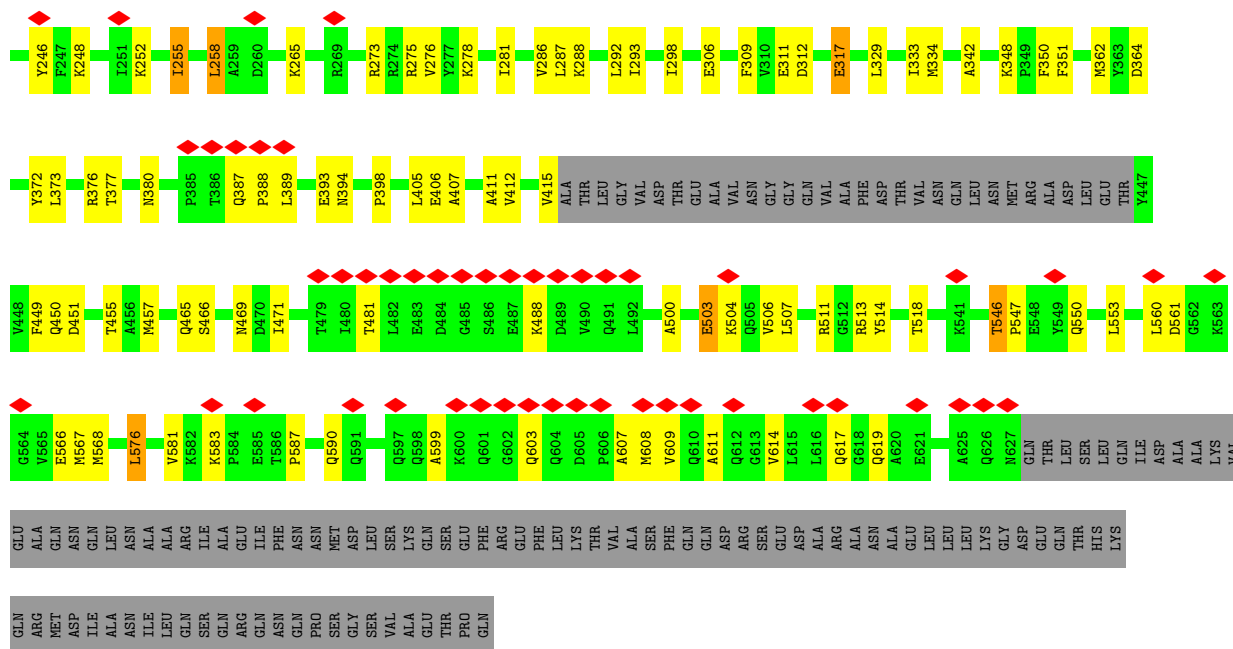




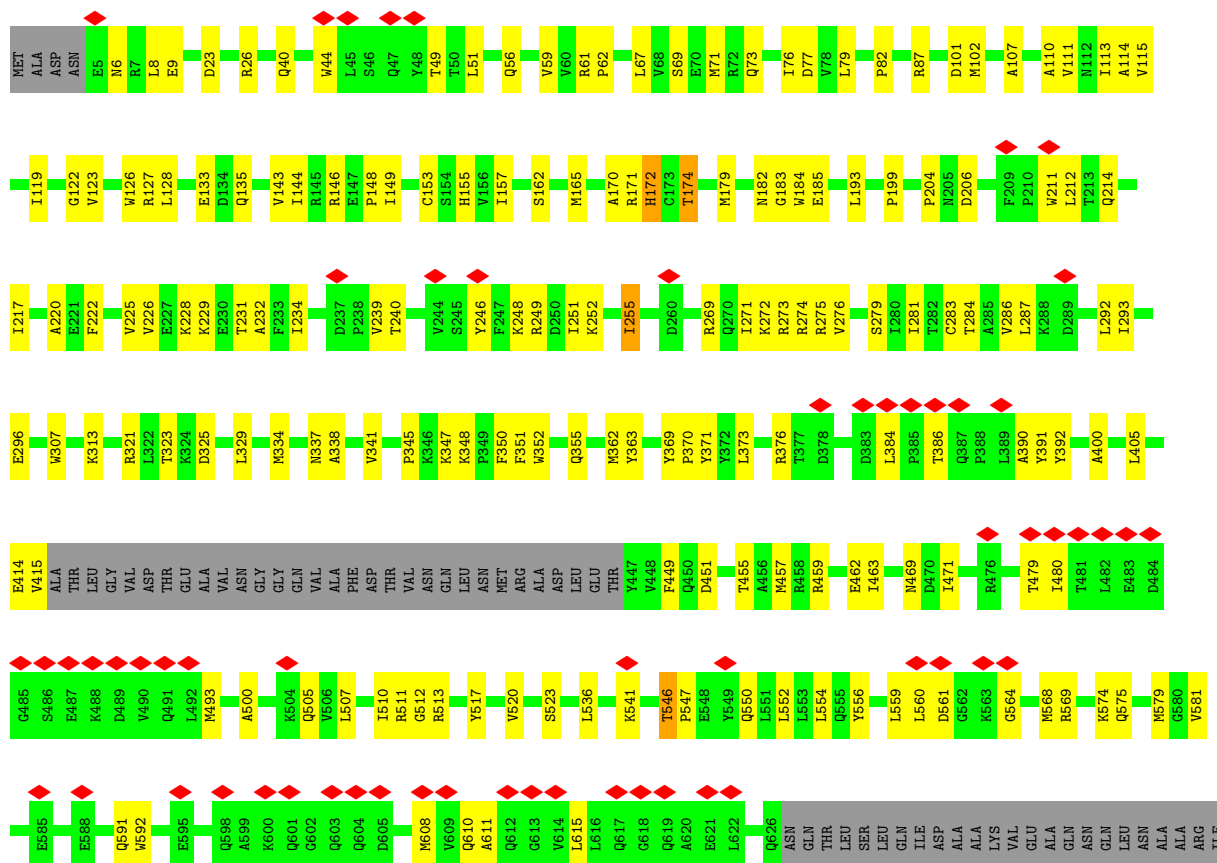


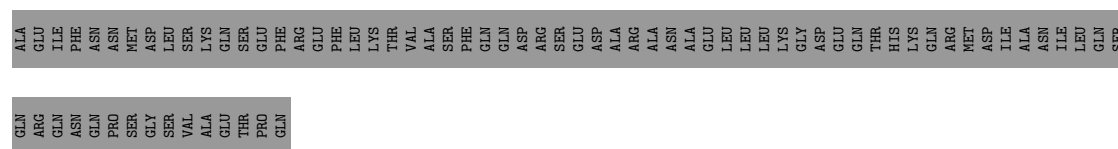
### • Molecule 3: Portal protein



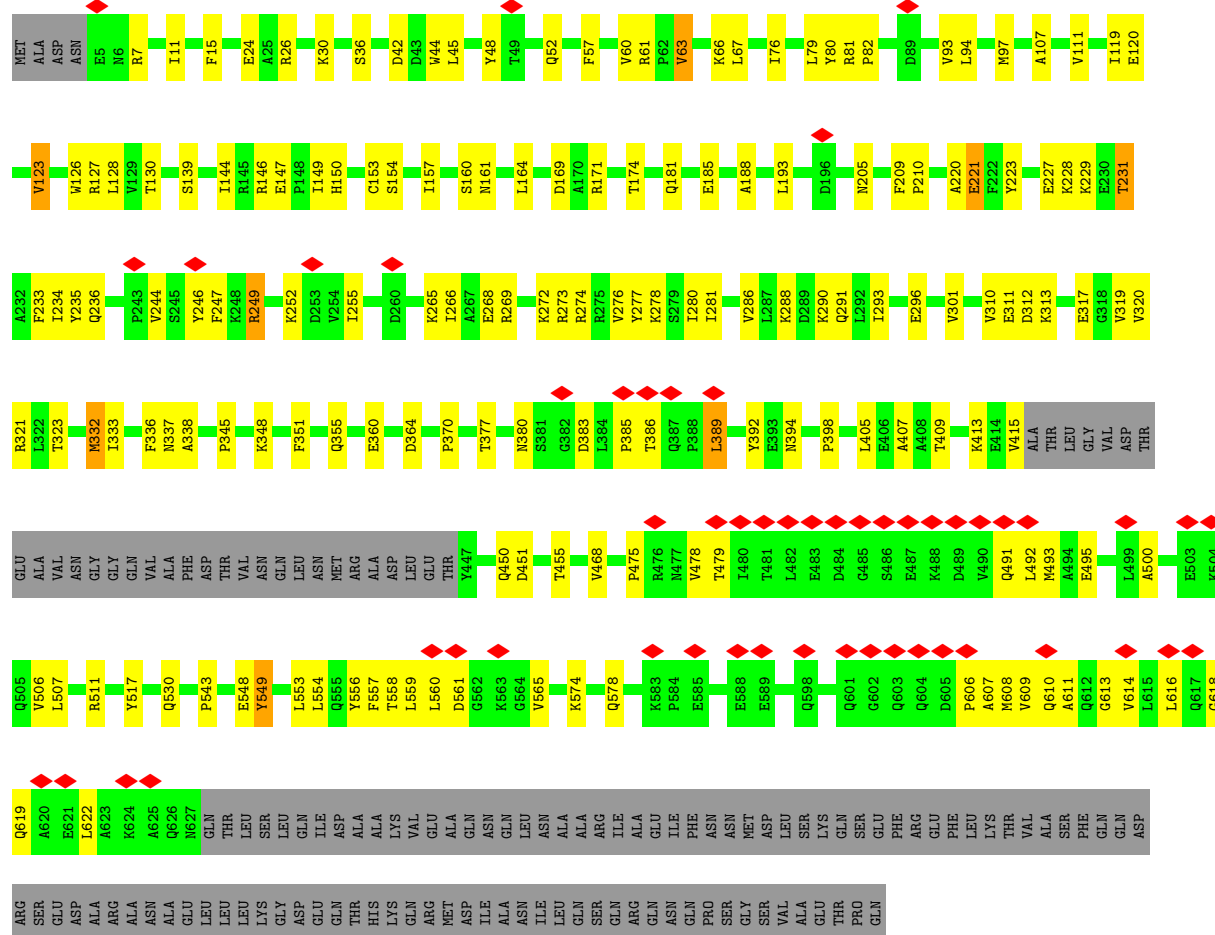


### • Molecule 3: Portal protein

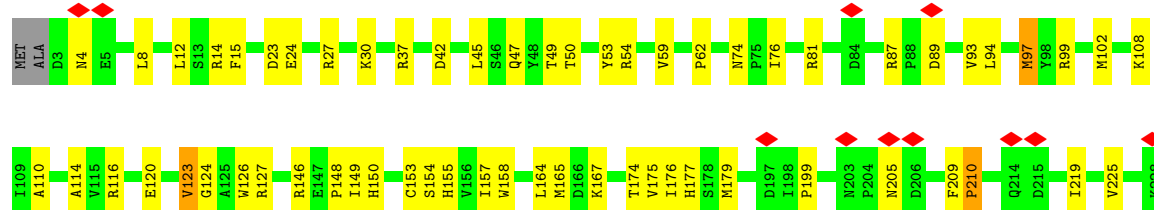


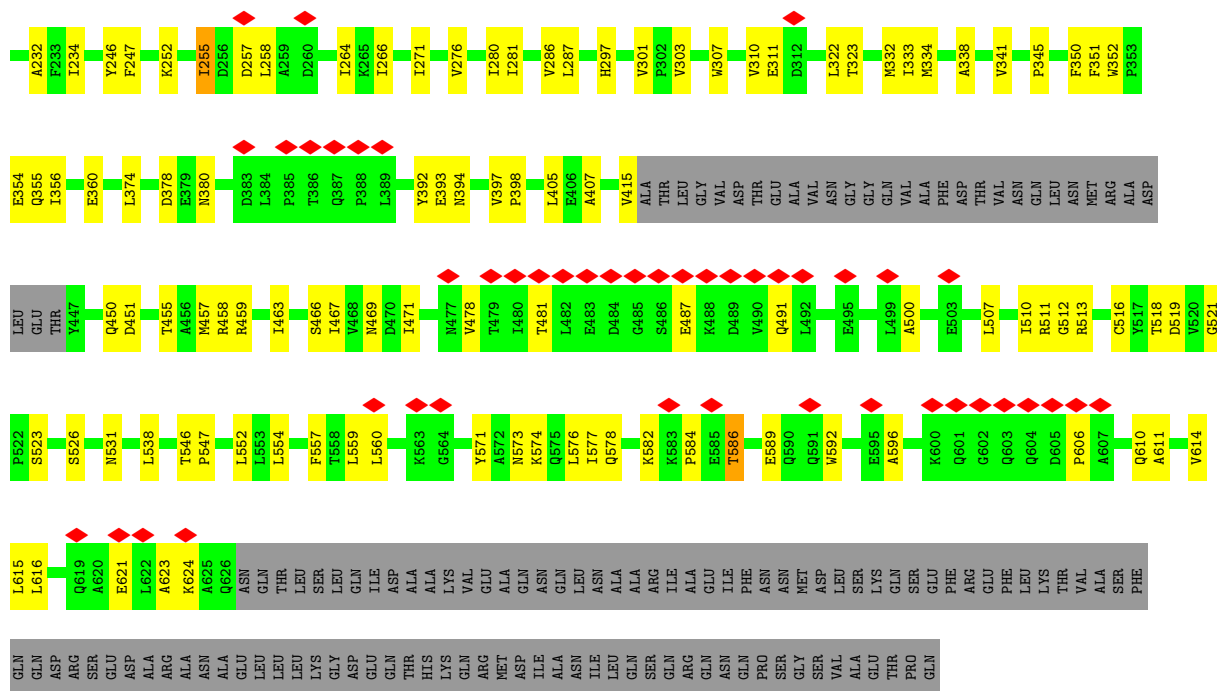


### • Molecule 3: Portal protein

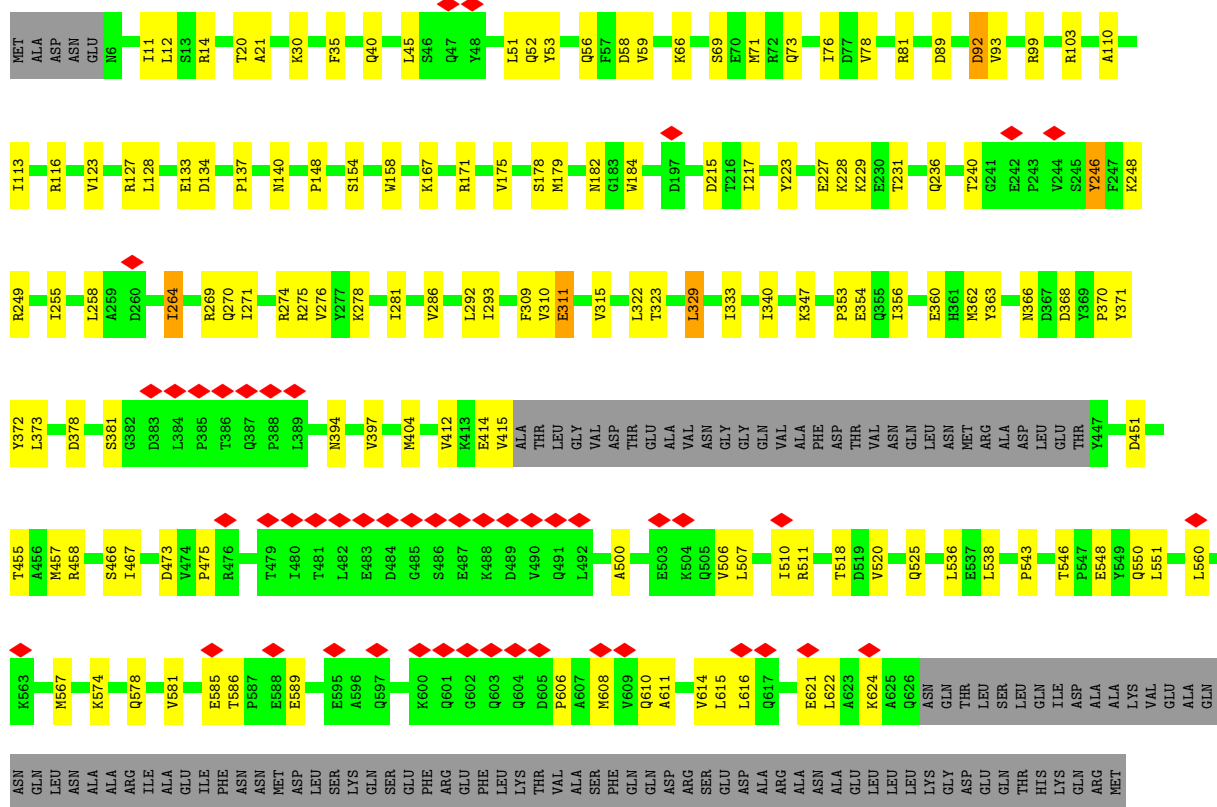


### • Molecule 3: Portal protein



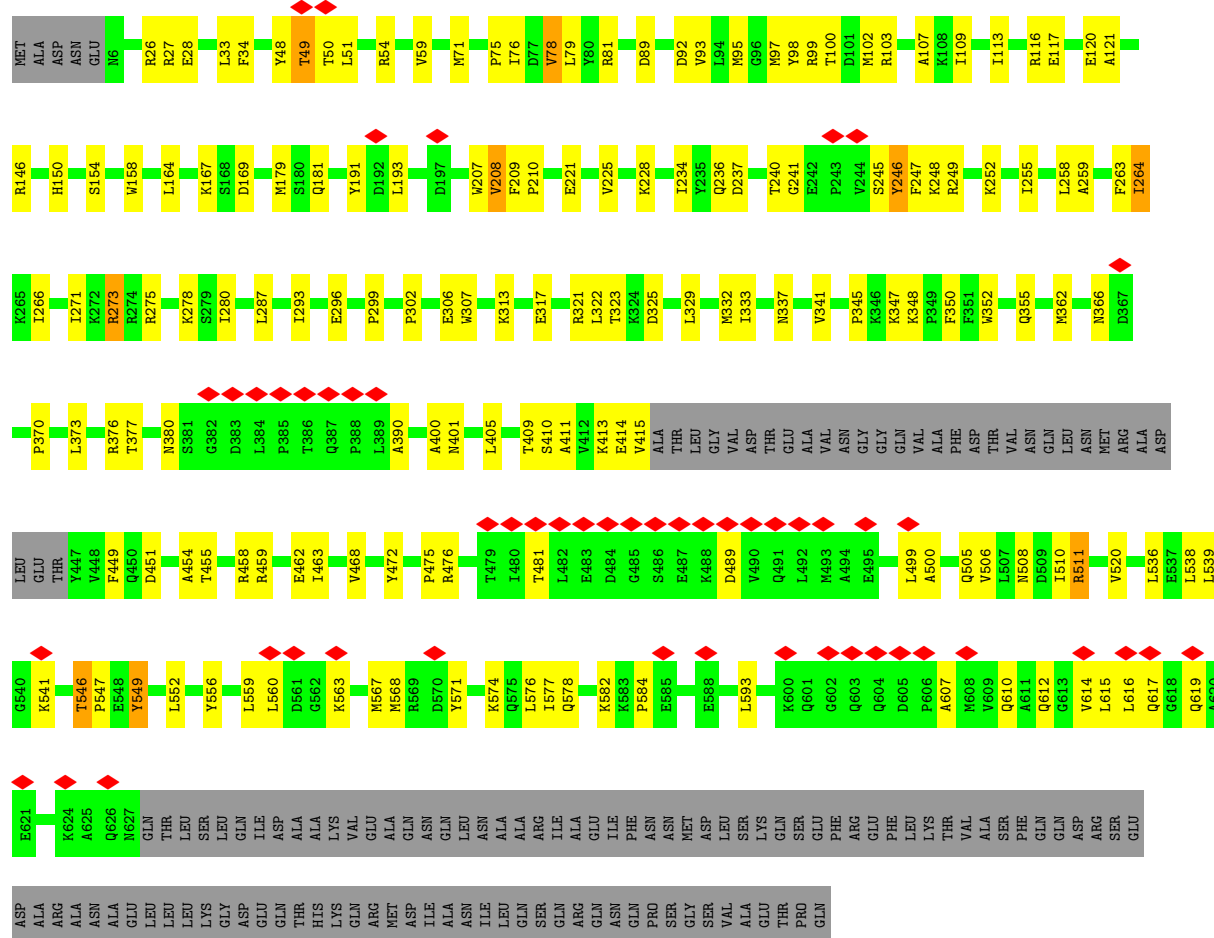


### • Molecule 3: Portal protein

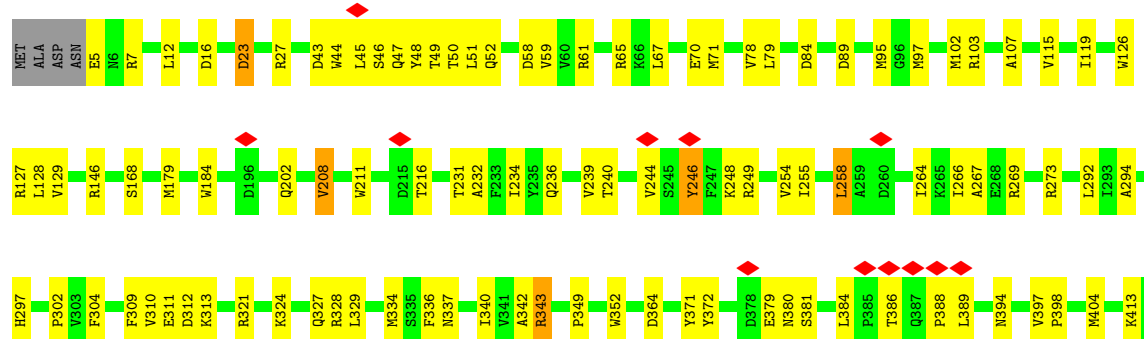


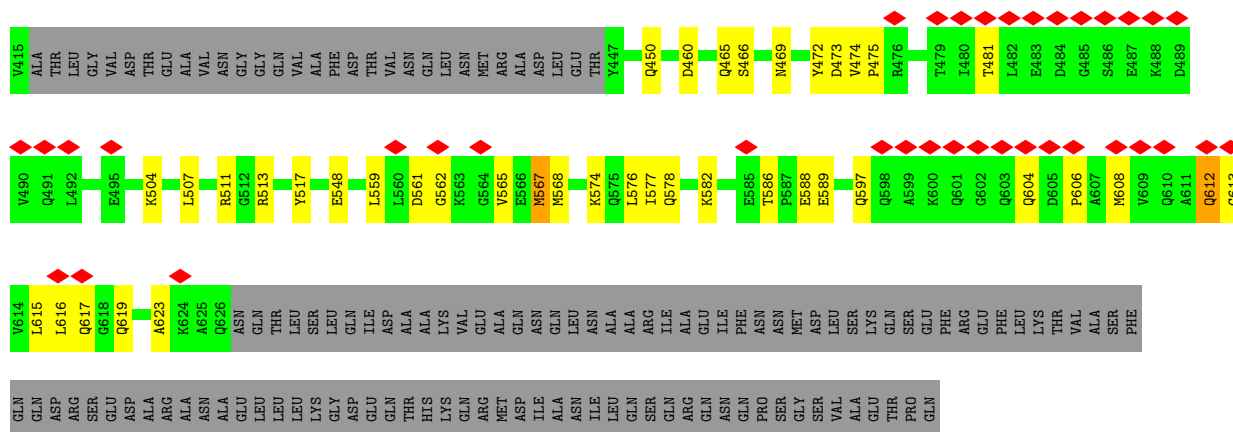
ASP  
ILE  
ALA  
ASN  
ASN  
ILE  
LEU  
GLN  
GLN  
SER  
GLN  
ARG  
GLN  
ASN  
GLN  
PRO  
SER  
GLY  
SER  
VAL  
ALA  
GLU  
THR  
PRO  
GLN

• Molecule 3: Portal protein

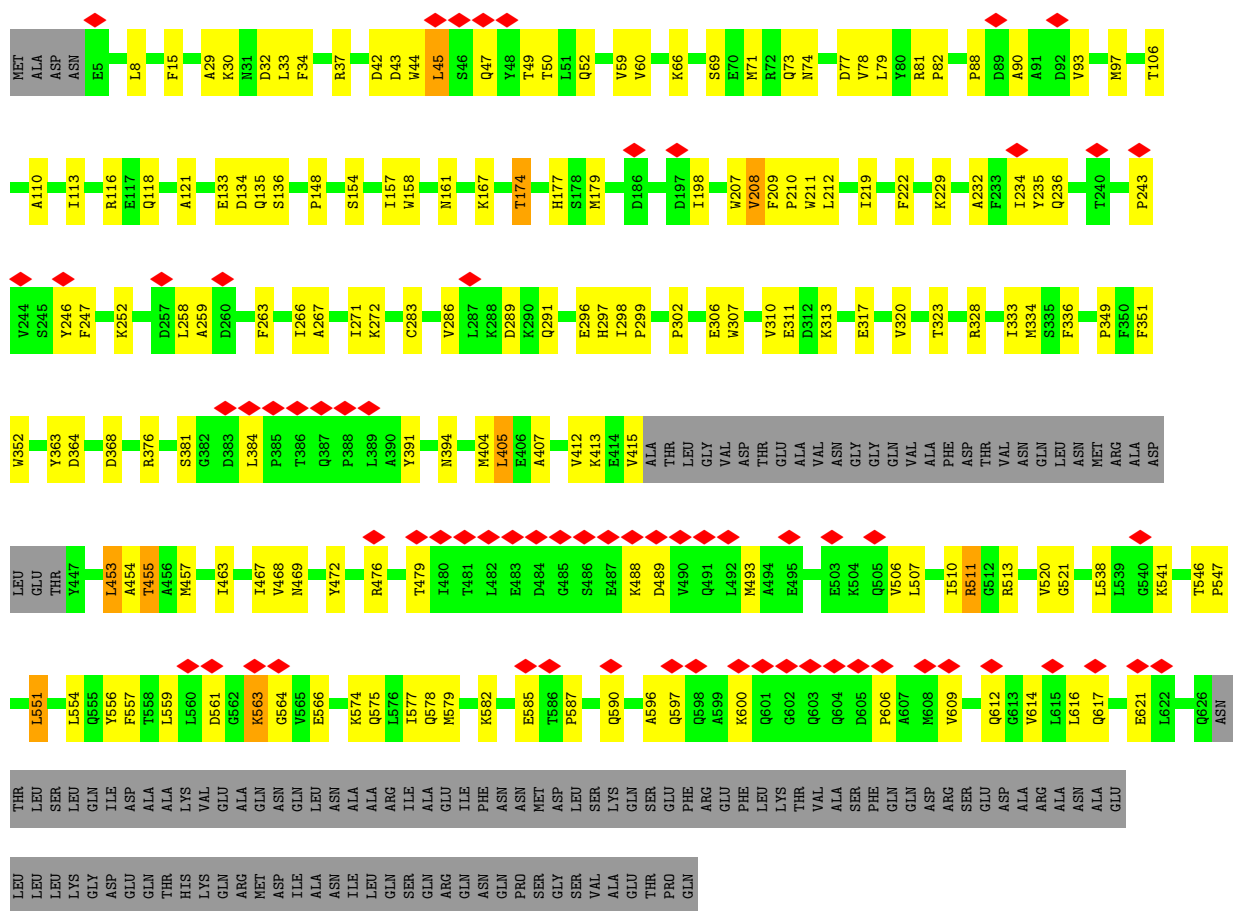


• Molecule 3: Portal protein





### • Molecule 3: Portal protein



### • Molecule 3: Portal protein





## 4 Experimental information

| Property                             | Value                     | Source    |
|--------------------------------------|---------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE           | Depositor |
| Imposed symmetry                     | POINT, Not provided       |           |
| Number of particles used             | 93834                     | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF         | Depositor |
| CTF correction method                | NONE                      | Depositor |
| Microscope                           | TFS KRIOS                 | Depositor |
| Voltage (kV)                         | 300                       | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 30                        | Depositor |
| Minimum defocus (nm)                 | 600                       | Depositor |
| Maximum defocus (nm)                 | 1200                      | Depositor |
| Magnification                        | Not provided              |           |
| Image detector                       | GATAN K3 (6k x 4k)        | Depositor |
| Maximum map value                    | 1.916                     | Depositor |
| Minimum map value                    | -0.005                    | Depositor |
| Average map value                    | 0.005                     | Depositor |
| Map value standard deviation         | 0.053                     | Depositor |
| Recommended contour level            | 0.15                      | Depositor |
| Map size ( $\text{\AA}$ )            | 478.464, 478.464, 478.464 | wwPDB     |
| Map dimensions                       | 448, 448, 448             | wwPDB     |
| Map angles ( $^\circ$ )              | 90.0, 90.0, 90.0          | wwPDB     |
| Pixel spacing ( $\text{\AA}$ )       | 1.068, 1.068, 1.068       | 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   | Aa    | 0.13         | 0/3332      | 0.33        | 1/4530 (0.0%) |
| 1   | Ab    | 0.14         | 0/3284      | 0.36        | 0/4466        |
| 1   | Ac    | 0.15         | 0/3335      | 0.36        | 0/4535        |
| 1   | Ad    | 0.13         | 0/3332      | 0.35        | 1/4530 (0.0%) |
| 1   | Ae    | 0.14         | 0/3332      | 0.35        | 1/4530 (0.0%) |
| 1   | Af    | 0.15         | 0/3332      | 0.46        | 3/4530 (0.1%) |
| 1   | Ag    | 0.14         | 0/3332      | 0.36        | 1/4530 (0.0%) |
| 1   | Ah    | 0.14         | 0/3270      | 0.35        | 0/4446        |
| 1   | Ai    | 0.14         | 0/3292      | 0.35        | 0/4477        |
| 1   | Aj    | 0.14         | 0/3277      | 0.33        | 0/4456        |
| 1   | Ak    | 0.14         | 0/3284      | 0.35        | 0/4466        |
| 1   | Al    | 0.13         | 0/3335      | 0.33        | 0/4535        |
| 1   | Am    | 0.14         | 0/3335      | 0.38        | 0/4535        |
| 1   | An    | 0.14         | 0/3335      | 0.35        | 0/4535        |
| 1   | Ao    | 0.15         | 0/3330      | 0.36        | 0/4528        |
| 2   | Ap    | 0.15         | 0/1174      | 0.35        | 0/1592        |
| 2   | Aq    | 0.14         | 0/1174      | 0.33        | 0/1592        |
| 2   | Ar    | 0.13         | 0/1174      | 0.33        | 0/1592        |
| 2   | As    | 0.14         | 0/1174      | 0.38        | 0/1592        |
| 2   | At    | 0.14         | 0/1174      | 0.36        | 0/1592        |
| 2   | Au    | 0.15         | 0/1174      | 0.42        | 0/1592        |
| 2   | Av    | 0.14         | 0/1165      | 0.34        | 0/1580        |
| 2   | Aw    | 0.14         | 0/1165      | 0.35        | 0/1580        |
| 2   | Ax    | 0.15         | 0/1161      | 0.37        | 0/1575        |
| 2   | Ay    | 0.14         | 0/1165      | 0.32        | 0/1580        |
| 2   | Az    | 0.15         | 0/1165      | 0.36        | 0/1580        |
| 2   | Ba    | 0.14         | 0/1161      | 0.36        | 0/1575        |
| 3   | Bb    | 0.15         | 0/4875      | 0.36        | 1/6610 (0.0%) |
| 3   | Bd    | 0.14         | 0/4892      | 0.35        | 0/6633        |
| 3   | Bf    | 0.14         | 0/4883      | 0.39        | 0/6621        |
| 3   | Bh    | 0.14         | 0/4892      | 0.37        | 0/6633        |
| 3   | Bj    | 0.15         | 0/4884      | 0.37        | 0/6622        |
| 3   | Bl    | 0.14         | 0/4892      | 0.36        | 0/6633        |
| 3   | Bn    | 0.15         | 0/4900      | 0.39        | 1/6644 (0.0%) |

| Mol | Chain | Bond lengths |          | Bond angles |                  |
|-----|-------|--------------|----------|-------------|------------------|
|     |       | RMSZ         | # Z  >5  | RMSZ        | # Z  >5          |
| 3   | Bp    | 0.14         | 0/4875   | 0.35        | 0/6610           |
| 3   | Br    | 0.14         | 0/4883   | 0.36        | 1/6621 (0.0%)    |
| 3   | Bt    | 0.14         | 0/4884   | 0.36        | 0/6622           |
| 3   | Bv    | 0.14         | 0/4884   | 0.35        | 1/6622 (0.0%)    |
| 3   | Bx    | 0.14         | 0/4908   | 0.39        | 0/6655           |
| All | All   | 0.14         | 0/122415 | 0.36        | 11/166177 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | Ag    | 0                   | 1                   |
| 3   | Bf    | 0                   | 1                   |
| 3   | Bl    | 0                   | 1                   |
| All | All   | 0                   | 3                   |

There are no bond length outliers.

All (11) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1   | Af    | 367 | PRO  | N-CA-CB | 12.62 | 111.23      | 102.65   |
| 1   | Ad    | 367 | PRO  | N-CA-CB | 8.01  | 110.32      | 103.35   |
| 1   | Aa    | 367 | PRO  | N-CA-CB | 7.93  | 110.70      | 103.33   |
| 1   | Ag    | 367 | PRO  | N-CA-CB | 7.45  | 109.97      | 103.27   |
| 3   | Bn    | 59  | VAL  | N-CA-C  | -6.94 | 107.12      | 113.71   |
| 1   | Af    | 39  | SER  | CA-C-N  | 6.61  | 134.17      | 121.54   |
| 1   | Af    | 39  | SER  | C-N-CA  | 6.61  | 134.17      | 121.54   |
| 1   | Ae    | 367 | PRO  | N-CA-CB | 6.43  | 110.00      | 103.25   |
| 3   | Bb    | 255 | ILE  | N-CA-C  | -6.05 | 106.52      | 111.91   |
| 3   | Br    | 59  | VAL  | N-CA-C  | -5.87 | 107.56      | 113.20   |
| 3   | Bv    | 208 | VAL  | N-CA-C  | -5.17 | 107.31      | 111.91   |

There are no chirality outliers.

All (3) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 1   | Ag    | 32  | LYS  | Peptide |
| 3   | Bf    | 208 | VAL  | Peptide |
| 3   | Bl    | 57  | PHE  | Peptide |

## 5.2 Too-close contacts ⓘ

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | Aa    | 3275  | 0        | 3241     | 77      | 0            |
| 1   | Ab    | 3226  | 0        | 3197     | 65      | 0            |
| 1   | Ac    | 3277  | 0        | 3247     | 53      | 0            |
| 1   | Ad    | 3275  | 0        | 3241     | 75      | 0            |
| 1   | Ae    | 3275  | 0        | 3241     | 78      | 0            |
| 1   | Af    | 3275  | 0        | 3241     | 93      | 0            |
| 1   | Ag    | 3275  | 0        | 3241     | 81      | 0            |
| 1   | Ah    | 3212  | 0        | 3181     | 77      | 0            |
| 1   | Ai    | 3234  | 0        | 3208     | 55      | 0            |
| 1   | Aj    | 3219  | 0        | 3188     | 61      | 0            |
| 1   | Ak    | 3226  | 0        | 3197     | 71      | 0            |
| 1   | Al    | 3277  | 0        | 3247     | 69      | 0            |
| 1   | Am    | 3277  | 0        | 3247     | 59      | 0            |
| 1   | An    | 3277  | 0        | 3247     | 62      | 0            |
| 1   | Ao    | 3272  | 0        | 3242     | 43      | 0            |
| 2   | Ap    | 1149  | 0        | 1115     | 17      | 0            |
| 2   | Aq    | 1149  | 0        | 1115     | 24      | 0            |
| 2   | Ar    | 1149  | 0        | 1115     | 23      | 0            |
| 2   | As    | 1149  | 0        | 1115     | 27      | 0            |
| 2   | At    | 1149  | 0        | 1115     | 19      | 0            |
| 2   | Au    | 1149  | 0        | 1115     | 41      | 0            |
| 2   | Av    | 1140  | 0        | 1107     | 24      | 0            |
| 2   | Aw    | 1140  | 0        | 1107     | 12      | 0            |
| 2   | Ax    | 1136  | 0        | 1104     | 30      | 0            |
| 2   | Ay    | 1140  | 0        | 1107     | 26      | 0            |
| 2   | Az    | 1140  | 0        | 1107     | 25      | 0            |
| 2   | Ba    | 1136  | 0        | 1104     | 24      | 0            |
| 3   | Bb    | 4774  | 0        | 4636     | 135     | 0            |
| 3   | Bd    | 4791  | 0        | 4648     | 123     | 0            |
| 3   | Bf    | 4782  | 0        | 4642     | 128     | 0            |
| 3   | Bh    | 4791  | 0        | 4648     | 120     | 0            |
| 3   | Bj    | 4783  | 0        | 4642     | 146     | 0            |
| 3   | Bl    | 4791  | 0        | 4648     | 129     | 0            |
| 3   | Bn    | 4799  | 0        | 4652     | 139     | 0            |
| 3   | Bp    | 4774  | 0        | 4636     | 118     | 0            |
| 3   | Br    | 4782  | 0        | 4642     | 130     | 0            |
| 3   | Bt    | 4783  | 0        | 4642     | 119     | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 3   | Bv    | 4783   | 0        | 4642     | 144     | 0            |
| 3   | Bx    | 4807   | 0        | 4658     | 133     | 0            |
| All | All   | 120038 | 0        | 117468   | 2313    | 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 (2313) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bd:255:ILE:HD12 | 3:Bh:506:VAL:HB   | 1.44                     | 0.99              |
| 3:Bn:334:MET:HE3  | 3:Bn:405:LEU:HD11 | 1.52                     | 0.92              |
| 3:Bf:40:GLN:HE22  | 3:Bf:327:GLN:HE21 | 1.16                     | 0.88              |
| 2:Aw:144:ASN:HB3  | 3:Bl:44:TRP:HE1   | 1.38                     | 0.88              |
| 2:Ap:40:LEU:HD13  | 2:Ap:87:LEU:HD22  | 1.57                     | 0.86              |
| 3:Bj:334:MET:HE1  | 3:Bv:407:ALA:HB1  | 1.58                     | 0.86              |
| 1:Ac:35:PRO:HG2   | 1:Ac:40:MET:HE3   | 1.58                     | 0.85              |
| 3:Bj:546:THR:HG23 | 3:Bj:547:PRO:HD3  | 1.58                     | 0.84              |
| 1:Ak:13:VAL:HA    | 2:Av:143:LEU:HD21 | 1.60                     | 0.84              |
| 2:At:132:MET:HE3  | 2:At:133:PRO:HD2  | 1.59                     | 0.83              |
| 1:Al:238:PRO:HD2  | 1:Al:324:GLN:HB3  | 1.62                     | 0.81              |
| 1:Af:298:VAL:HG23 | 1:Af:299:ARG:HG2  | 1.60                     | 0.81              |
| 1:Ad:370:HIS:HB2  | 2:Ax:142:ASN:HD21 | 1.45                     | 0.80              |
| 3:Bj:214:GLN:HG3  | 3:Bv:313:LYS:HZ3  | 1.47                     | 0.80              |
| 1:Af:116:GLU:HG2  | 1:Af:216:LYS:HD2  | 1.64                     | 0.79              |
| 3:Bb:59:VAL:H     | 3:Bb:327:GLN:HE22 | 1.30                     | 0.79              |
| 3:Bt:473:ASP:HB3  | 3:Bt:507:LEU:HD22 | 1.63                     | 0.79              |
| 1:Ae:257:ALA:HB2  | 1:Ae:311:LYS:HG2  | 1.63                     | 0.78              |
| 3:Bh:37:ARG:HE    | 3:Bh:116:ARG:HH12 | 1.31                     | 0.78              |
| 1:Ao:182:LEU:HD21 | 1:Ao:191:ILE:HG22 | 1.63                     | 0.78              |
| 3:Bj:352:TRP:HB2  | 3:Bj:355:GLN:HG3  | 1.65                     | 0.78              |
| 3:Bf:506:VAL:HG11 | 3:Br:255:ILE:HD11 | 1.64                     | 0.78              |
| 3:Bb:255:ILE:HD11 | 3:Bj:500:ALA:HB2  | 1.65                     | 0.77              |
| 3:Bp:538:LEU:HB3  | 3:Bp:551:LEU:HD21 | 1.66                     | 0.77              |
| 2:Aq:43:MET:HE1   | 2:Aq:86:ASN:HB3   | 1.66                     | 0.76              |
| 3:Bt:386:THR:HB   | 3:Bt:388:PRO:HD2  | 1.68                     | 0.76              |
| 1:Ag:36:PRO:HD2   | 1:Ag:364:GLN:HB3  | 1.67                     | 0.76              |
| 1:Am:225:ALA:HB1  | 1:Am:228:ILE:HD11 | 1.68                     | 0.76              |
| 2:Ax:128:TYR:CD1  | 2:Ax:150:PRO:HA   | 2.20                     | 0.76              |
| 3:Bn:457:MET:HE2  | 3:Bv:77:ASP:HA    | 1.68                     | 0.76              |
| 2:Ax:104:ILE:HG23 | 3:Bl:380:ASN:HB3  | 1.66                     | 0.76              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bf:511:ARG:HH21 | 3:Br:248:LYS:HG2  | 1.51                     | 0.76              |
| 3:Bb:273:ARG:HD2  | 3:Bj:511:ARG:HH12 | 1.48                     | 0.75              |
| 3:Bf:334:MET:HE2  | 3:Bf:405:LEU:HD21 | 1.68                     | 0.75              |
| 1:Aj:370:HIS:HD2  | 1:Aj:372:LEU:H    | 1.33                     | 0.75              |
| 3:Bd:407:ALA:HB1  | 3:Bf:334:MET:HE1  | 1.67                     | 0.75              |
| 3:Bh:394:ASN:HB2  | 3:Bl:398:PRO:HB3  | 1.68                     | 0.75              |
| 3:Bl:556:TYR:HA   | 3:Bl:559:LEU:HG   | 1.69                     | 0.75              |
| 1:Ai:228:ILE:HD13 | 1:Ai:267:MET:HE2  | 1.69                     | 0.74              |
| 1:Ab:159:GLU:HG2  | 1:Ab:284:MET:HB2  | 1.69                     | 0.74              |
| 1:Af:89:LEU:HD21  | 1:An:70:LEU:HD23  | 1.68                     | 0.74              |
| 1:Aj:24:THR:HG23  | 1:Aj:116:GLU:HG2  | 1.69                     | 0.74              |
| 1:Aa:205:VAL:HG12 | 1:Aa:211:VAL:HG21 | 1.68                     | 0.74              |
| 2:Ba:132:MET:HG2  | 2:Ba:149:PHE:HD2  | 1.53                     | 0.74              |
| 1:Ac:49:MET:HE3   | 1:Ad:17:ILE:HD11  | 1.70                     | 0.74              |
| 2:At:3:ILE:HB     | 2:At:8:ASP:HB3    | 1.68                     | 0.74              |
| 3:Bd:394:ASN:HB3  | 3:Bh:398:PRO:HB3  | 1.70                     | 0.73              |
| 2:As:43:MET:HE3   | 2:As:90:ARG:HD2   | 1.70                     | 0.73              |
| 3:Bl:252:LYS:HB2  | 3:Bl:255:ILE:HB   | 1.69                     | 0.73              |
| 3:Bb:613:GLY:HA2  | 3:Bb:616:LEU:HD23 | 1.69                     | 0.73              |
| 1:Aj:131:ILE:HG23 | 1:Aj:424:GLY:HA2  | 1.71                     | 0.73              |
| 3:Bd:615:LEU:HA   | 3:Bh:619:GLN:HG3  | 1.71                     | 0.73              |
| 2:As:132:MET:HE3  | 2:As:133:PRO:HD2  | 1.70                     | 0.73              |
| 3:Bj:77:ASP:HA    | 3:Bv:457:MET:HE2  | 1.71                     | 0.73              |
| 1:Ad:161:ASN:HA   | 1:Ah:21:SER:HB3   | 1.70                     | 0.73              |
| 1:Ai:257:ALA:HB2  | 1:Ai:311:LYS:HD3  | 1.70                     | 0.72              |
| 2:Ar:133:PRO:HA   | 2:Ar:147:HIS:HA   | 1.71                     | 0.72              |
| 3:Bt:255:ILE:HA   | 3:Bt:258:LEU:HD12 | 1.71                     | 0.72              |
| 3:Bl:614:VAL:HG11 | 3:Bt:616:LEU:HA   | 1.71                     | 0.72              |
| 3:Bd:362:MET:HE1  | 3:Bd:373:LEU:H    | 1.55                     | 0.72              |
| 3:Bf:274:ARG:HH12 | 3:Bf:297:HIS:CE1  | 2.08                     | 0.72              |
| 3:Bd:209:PHE:CG   | 3:Bd:210:PRO:HD2  | 2.25                     | 0.71              |
| 1:An:205:VAL:HG22 | 1:An:211:VAL:HG21 | 1.72                     | 0.71              |
| 2:Aq:123:ALA:HB1  | 3:Br:370:PRO:HD2  | 1.72                     | 0.71              |
| 3:Bf:323:THR:HB   | 3:Bf:412:VAL:HG13 | 1.70                     | 0.71              |
| 1:Ac:220:LEU:HD13 | 1:Ac:350:THR:HG21 | 1.72                     | 0.71              |
| 1:Ag:281:LEU:HD21 | 1:Ag:286:LYS:HD2  | 1.72                     | 0.71              |
| 2:At:123:ALA:HB1  | 3:Bb:370:PRO:HD2  | 1.73                     | 0.71              |
| 3:Bn:623:ALA:HB1  | 3:Bv:621:GLU:HB2  | 1.71                     | 0.71              |
| 3:Bp:550:GLN:HE22 | 3:Bp:581:VAL:HG21 | 1.55                     | 0.71              |
| 3:Bl:67:LEU:HB3   | 3:Bl:119:ILE:HD12 | 1.72                     | 0.71              |
| 1:Af:161:ASN:HD22 | 1:Aj:18:GLU:HB2   | 1.56                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:Ar:43:MET:HE1   | 2:Ar:86:ASN:HB3   | 1.72                     | 0.70              |
| 3:Bd:511:ARG:HG2  | 3:Bf:246:TYR:HB2  | 1.72                     | 0.70              |
| 1:Ag:34:THR:HB    | 1:Ag:362:VAL:HG12 | 1.71                     | 0.70              |
| 3:Bj:107:ALA:HB1  | 3:Bj:146:ARG:HH21 | 1.56                     | 0.70              |
| 1:Ab:335:ALA:HB3  | 1:Ab:338:MET:HG3  | 1.73                     | 0.70              |
| 3:Bh:225:VAL:HG12 | 3:Bh:276:VAL:HG22 | 1.74                     | 0.70              |
| 1:Am:335:ALA:H    | 1:Am:338:MET:HE3  | 1.55                     | 0.70              |
| 3:Bn:323:THR:HG22 | 3:Bn:415:VAL:HG23 | 1.74                     | 0.70              |
| 1:Ad:35:PRO:HG2   | 1:Ad:364:GLN:HB2  | 1.74                     | 0.70              |
| 3:Bb:500:ALA:HA   | 3:Bt:258:LEU:HD13 | 1.74                     | 0.70              |
| 3:Bf:198:ILE:HG23 | 3:Bf:217:ILE:HD12 | 1.74                     | 0.70              |
| 3:Bn:271:ILE:HG23 | 3:Bv:134:ASP:HB2  | 1.74                     | 0.70              |
| 3:Bj:102:MET:HE1  | 3:Bj:128:LEU:HD21 | 1.72                     | 0.69              |
| 1:Ad:366:ILE:HG13 | 1:Ad:410:TRP:HB2  | 1.74                     | 0.69              |
| 3:Bh:546:THR:HG23 | 3:Bh:547:PRO:HD3  | 1.74                     | 0.69              |
| 3:Bn:407:ALA:HB1  | 3:Bv:334:MET:HE1  | 1.73                     | 0.69              |
| 1:Ae:381:PHE:HB2  | 1:Ae:392:PHE:HB2  | 1.74                     | 0.69              |
| 3:Bt:577:ILE:HD13 | 3:Bt:582:LYS:HB3  | 1.74                     | 0.69              |
| 1:Al:37:ALA:HA    | 1:Al:364:GLN:HE22 | 1.57                     | 0.69              |
| 1:An:148:VAL:HG11 | 1:An:205:VAL:HG23 | 1.73                     | 0.69              |
| 2:Ap:134:THR:HG23 | 2:Ap:138:ASN:HD22 | 1.57                     | 0.69              |
| 1:Ao:272:LYS:HE3  | 1:Ao:423:VAL:HG11 | 1.74                     | 0.69              |
| 3:Br:255:ILE:HG22 | 3:Br:258:LEU:HD12 | 1.74                     | 0.69              |
| 3:Bd:239:VAL:HG23 | 3:Bd:240:THR:HG23 | 1.74                     | 0.69              |
| 3:Bv:234:ILE:HD12 | 3:Bv:267:ALA:HB3  | 1.74                     | 0.69              |
| 1:Ae:272:LYS:HE3  | 1:Ae:423:VAL:HG11 | 1.74                     | 0.69              |
| 1:Af:205:VAL:HG22 | 1:Af:211:VAL:HG21 | 1.74                     | 0.69              |
| 2:Au:138:ASN:CG   | 2:Au:139:SER:H    | 1.99                     | 0.69              |
| 3:Bf:620:ALA:HB1  | 3:Br:617:GLN:HB2  | 1.75                     | 0.69              |
| 3:Bt:102:MET:HE1  | 3:Bt:128:LEU:HD21 | 1.73                     | 0.69              |
| 3:Bx:236:GLN:HB2  | 3:Bx:266:ILE:HD11 | 1.75                     | 0.69              |
| 1:Ac:298:VAL:HG11 | 1:Ac:309:THR:HG23 | 1.74                     | 0.69              |
| 3:Bh:387:GLN:HB3  | 3:Bh:388:PRO:HD2  | 1.75                     | 0.69              |
| 1:An:364:GLN:HE21 | 1:An:365:PRO:HD2  | 1.58                     | 0.68              |
| 2:Au:138:ASN:H    | 3:Bx:54:ARG:HB2   | 1.58                     | 0.68              |
| 2:Ax:128:TYR:CG   | 2:Ax:150:PRO:HA   | 2.28                     | 0.68              |
| 3:Br:323:THR:HG22 | 3:Br:415:VAL:HG23 | 1.74                     | 0.68              |
| 3:Br:538:LEU:HD22 | 3:Br:541:LYS:HZ1  | 1.57                     | 0.68              |
| 1:Ac:47:ILE:HG13  | 1:Ad:10:THR:HG23  | 1.74                     | 0.68              |
| 1:Aj:335:ALA:H    | 1:Aj:338:MET:HE3  | 1.58                     | 0.68              |
| 3:Bj:615:LEU:HB2  | 3:Bv:616:LEU:HD13 | 1.74                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bn:234:ILE:HD13 | 3:Bn:246:TYR:HB3  | 1.75                     | 0.68              |
| 2:Au:40:LEU:HD13  | 2:Au:87:LEU:HD22  | 1.75                     | 0.68              |
| 3:Bh:179:MET:HE1  | 3:Bh:187:PHE:HB2  | 1.74                     | 0.68              |
| 3:Bj:157:ILE:HB   | 3:Bj:174:THR:HG23 | 1.76                     | 0.68              |
| 3:Bn:93:VAL:HG21  | 3:Bx:475:PRO:HD2  | 1.75                     | 0.68              |
| 3:Br:306:GLU:HB3  | 3:Br:317:GLU:HB3  | 1.74                     | 0.68              |
| 1:Al:97:GLU:HG3   | 1:Al:101:ARG:HH22 | 1.57                     | 0.68              |
| 3:Br:333:ILE:HG21 | 3:Br:405:LEU:HB2  | 1.76                     | 0.68              |
| 1:Al:242:GLN:HG2  | 1:Al:252:VAL:HG12 | 1.74                     | 0.68              |
| 3:Bn:246:TYR:HE1  | 3:Bx:511:ARG:HE   | 1.43                     | 0.67              |
| 1:Ah:377:LYS:HE2  | 1:Ah:394:THR:HG23 | 1.77                     | 0.67              |
| 3:Bl:385:PRO:HA   | 3:Bt:352:TRP:HZ2  | 1.58                     | 0.67              |
| 3:Bb:246:TYR:CD1  | 3:Bj:511:ARG:HB3  | 2.28                     | 0.67              |
| 3:Bn:355:GLN:HG2  | 3:Bn:374:LEU:HD22 | 1.76                     | 0.67              |
| 1:Ag:225:ALA:HB1  | 1:Ag:228:ILE:HD12 | 1.76                     | 0.67              |
| 3:Bl:44:TRP:HD1   | 3:Bl:45:LEU:HG    | 1.59                     | 0.67              |
| 1:Ag:191:ILE:HD11 | 1:Ak:197:ARG:HH21 | 1.60                     | 0.67              |
| 2:Au:63:ASP:O     | 2:Au:64:GLU:HG2   | 1.94                     | 0.67              |
| 3:Bd:255:ILE:HG12 | 3:Bd:258:LEU:HD23 | 1.77                     | 0.67              |
| 3:Bp:614:VAL:HG11 | 3:Br:616:LEU:HA   | 1.76                     | 0.67              |
| 1:Af:35:PRO:HB2   | 1:Af:38:ALA:HB2   | 1.77                     | 0.67              |
| 3:Bn:466:SER:HB3  | 3:Bv:296:GLU:HB2  | 1.77                     | 0.67              |
| 1:Ab:281:LEU:HD23 | 1:Ab:286:LYS:HG3  | 1.76                     | 0.66              |
| 1:Ae:33:TYR:HB3   | 3:Bv:212:LEU:HD22 | 1.75                     | 0.66              |
| 3:Bb:140:ASN:ND2  | 3:Bj:507:LEU:HD21 | 2.09                     | 0.66              |
| 3:Bp:371:TYR:HA   | 3:Br:348:LYS:HB3  | 1.78                     | 0.66              |
| 1:Ag:285:ALA:HA   | 1:Ak:113:ASN:HD21 | 1.60                     | 0.66              |
| 3:Bd:234:ILE:HG22 | 3:Bd:266:ILE:HB   | 1.76                     | 0.66              |
| 1:Ah:116:GLU:HG3  | 1:Ah:216:LYS:HG2  | 1.78                     | 0.66              |
| 3:Bb:234:ILE:HG12 | 3:Bb:246:TYR:HB3  | 1.76                     | 0.66              |
| 1:Aj:225:ALA:HB1  | 1:Aj:228:ILE:HD11 | 1.76                     | 0.66              |
| 3:Bf:208:VAL:HG22 | 3:Bf:213:THR:HG22 | 1.76                     | 0.66              |
| 1:Af:361:ILE:HG22 | 1:Af:413:VAL:HB   | 1.77                     | 0.66              |
| 3:Bb:371:TYR:CZ   | 3:Bj:363:TYR:HB3  | 2.31                     | 0.66              |
| 1:Ak:383:ILE:HD13 | 1:Ak:409:LEU:HD13 | 1.78                     | 0.66              |
| 3:Bh:15:PHE:HD2   | 3:Bh:174:THR:HG21 | 1.61                     | 0.65              |
| 3:Bh:71:MET:HE3   | 3:Bl:450:GLN:HG3  | 1.78                     | 0.65              |
| 1:Ad:372:LEU:HD21 | 1:Ad:406:ARG:HH12 | 1.59                     | 0.65              |
| 1:Ag:365:PRO:HG3  | 3:Bf:207:TRP:CD2  | 2.32                     | 0.65              |
| 3:Bt:562:GLY:HA3  | 3:Bt:565:VAL:HG22 | 1.76                     | 0.65              |
| 1:Ae:27:ALA:HB1   | 1:Ae:386:VAL:HG23 | 1.79                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bp:227:GLU:HA   | 3:Bp:274:ARG:HA   | 1.79                     | 0.65              |
| 1:Ai:335:ALA:HB3  | 1:Ai:338:MET:HB3  | 1.77                     | 0.65              |
| 3:Bd:323:THR:HG22 | 3:Bd:415:VAL:HG23 | 1.78                     | 0.65              |
| 3:Bh:334:MET:HE3  | 3:Bh:405:LEU:HD21 | 1.78                     | 0.65              |
| 3:Bp:475:PRO:HD2  | 3:Bx:93:VAL:HG11  | 1.78                     | 0.65              |
| 1:Af:286:LYS:HE3  | 1:Af:328:ALA:HB3  | 1.79                     | 0.65              |
| 1:Af:309:THR:OG1  | 1:Af:310:PRO:HD3  | 1.97                     | 0.65              |
| 3:Bh:93:VAL:HG11  | 3:Bl:475:PRO:HD2  | 1.77                     | 0.65              |
| 1:Ag:161:ASN:HD22 | 1:Ak:18:GLU:HB3   | 1.62                     | 0.65              |
| 2:Av:40:LEU:HD13  | 2:Av:87:LEU:HD22  | 1.79                     | 0.65              |
| 2:Ay:133:PRO:HA   | 2:Ay:147:HIS:HA   | 1.78                     | 0.64              |
| 3:Bp:93:VAL:HG11  | 3:Br:475:PRO:HD2  | 1.79                     | 0.64              |
| 3:Br:234:ILE:HG22 | 3:Br:266:ILE:HB   | 1.79                     | 0.64              |
| 3:Bx:41:TRP:CE2   | 3:Bx:54:ARG:HB3   | 2.31                     | 0.64              |
| 1:Af:161:ASN:HA   | 1:Aj:21:SER:HB2   | 1.79                     | 0.64              |
| 1:Ah:299:ARG:HD2  | 1:Ah:301:VAL:HG12 | 1.79                     | 0.64              |
| 3:Bj:511:ARG:HD3  | 3:Bj:513:ARG:HH21 | 1.61                     | 0.64              |
| 3:Bn:110:ALA:HA   | 3:Bn:148:PRO:HB3  | 1.79                     | 0.64              |
| 1:Af:367:PRO:HA   | 2:Au:143:LEU:HD22 | 1.79                     | 0.64              |
| 3:Bd:79:LEU:HD22  | 3:Bd:81:ARG:HE    | 1.62                     | 0.64              |
| 1:Ac:90:ARG:HG3   | 1:Ac:401:LEU:HD23 | 1.80                     | 0.64              |
| 1:Aj:398:ILE:HD13 | 3:Br:49:THR:HA    | 1.79                     | 0.64              |
| 1:Ak:386:VAL:HG23 | 1:Ak:388:LEU:H    | 1.63                     | 0.64              |
| 3:Bb:242:GLU:H    | 3:Bb:243:PRO:HD2  | 1.62                     | 0.64              |
| 1:Ag:360:ARG:HH11 | 1:Ag:416:THR:HG21 | 1.63                     | 0.64              |
| 3:Bb:363:TYR:HE1  | 3:Bj:350:PHE:HE1  | 1.44                     | 0.64              |
| 3:Bp:356:ILE:HG22 | 3:Bp:360:GLU:HG3  | 1.80                     | 0.64              |
| 3:Bx:248:LYS:HE3  | 3:Bx:273:ARG:HE   | 1.62                     | 0.64              |
| 3:Bd:71:MET:HE3   | 3:Bd:115:VAL:HG13 | 1.79                     | 0.64              |
| 3:Bp:467:ILE:HG23 | 3:Bx:294:ALA:HB1  | 1.79                     | 0.64              |
| 3:Br:273:ARG:HG2  | 3:Br:275:ARG:HG2  | 1.78                     | 0.64              |
| 1:Af:190:ARG:HG3  | 1:Af:190:ARG:HH11 | 1.63                     | 0.64              |
| 3:Bj:123:VAL:HG21 | 3:Bj:153:CYS:HB3  | 1.80                     | 0.63              |
| 1:Ak:111:LEU:HD22 | 1:Ak:409:LEU:HD21 | 1.78                     | 0.63              |
| 3:Bl:93:VAL:HG21  | 3:Bt:475:PRO:HD2  | 1.80                     | 0.63              |
| 3:Bd:269:ARG:HE   | 3:Bd:271:ILE:HD11 | 1.63                     | 0.63              |
| 3:Bf:376:ARG:HG2  | 3:Bf:377:THR:HG23 | 1.80                     | 0.63              |
| 3:Bl:234:ILE:HD11 | 3:Bl:269:ARG:HG2  | 1.81                     | 0.63              |
| 3:Bn:297:HIS:HB2  | 3:Bx:463:ILE:HD13 | 1.80                     | 0.63              |
| 1:Ah:396:GLY:HA2  | 1:Ah:403:GLY:HA2  | 1.79                     | 0.63              |
| 3:Bn:511:ARG:HH11 | 3:Bv:271:ILE:HD11 | 1.63                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Af:284:MET:HG3  | 1:Aj:22:ALA:HB2   | 1.80                     | 0.63              |
| 1:Aj:370:HIS:CD2  | 1:Aj:372:LEU:H    | 2.14                     | 0.63              |
| 1:Ai:261:LEU:HD12 | 1:Ai:267:MET:HE1  | 1.81                     | 0.63              |
| 3:Bd:475:PRO:HD2  | 3:Bf:93:VAL:HG21  | 1.80                     | 0.63              |
| 3:Bj:550:GLN:HE21 | 3:Bj:581:VAL:HG11 | 1.63                     | 0.63              |
| 3:Bv:234:ILE:HG12 | 3:Bv:246:TYR:HE1  | 1.64                     | 0.63              |
| 3:Bx:275:ARG:HD3  | 3:Bx:292:LEU:HD21 | 1.81                     | 0.63              |
| 1:Ag:186:ASP:HA   | 1:Am:185:ARG:HG2  | 1.81                     | 0.63              |
| 3:Bd:376:ARG:HG2  | 3:Bd:377:THR:HG23 | 1.80                     | 0.63              |
| 3:Br:332:MET:HE2  | 3:Br:333:ILE:HD12 | 1.80                     | 0.63              |
| 3:Bt:576:LEU:HB3  | 3:Bt:582:LYS:HB2  | 1.80                     | 0.63              |
| 1:Ae:81:GLU:HB3   | 1:Ao:60:GLY:HA2   | 1.81                     | 0.63              |
| 2:Ar:3:ILE:HG23   | 2:Ar:8:ASP:HB3    | 1.78                     | 0.63              |
| 3:Bb:254:VAL:HG12 | 3:Bb:255:ILE:HD12 | 1.80                     | 0.63              |
| 1:Af:161:ASN:HB3  | 1:Af:417:ARG:HH12 | 1.63                     | 0.63              |
| 2:Ap:5:THR:HG22   | 2:Ap:7:GLY:H      | 1.63                     | 0.63              |
| 3:Bx:324:LYS:HB3  | 3:Bx:328:ARG:HH21 | 1.64                     | 0.63              |
| 1:Ab:23:ILE:HG23  | 1:Ab:25:PRO:HD3   | 1.81                     | 0.62              |
| 2:Az:108:LYS:HD3  | 3:Bv:381:SER:HB3  | 1.81                     | 0.62              |
| 1:Ao:234:GLN:HE22 | 1:Ao:259:VAL:HG13 | 1.63                     | 0.62              |
| 3:Bp:127:ARG:HH22 | 3:Bp:175:VAL:HG11 | 1.64                     | 0.62              |
| 2:Ap:17:LEU:HD13  | 2:Ap:88:ALA:HB1   | 1.80                     | 0.62              |
| 2:Au:139:SER:HB3  | 3:Bx:51:LEU:HD12  | 1.81                     | 0.62              |
| 3:Bx:356:ILE:HG22 | 3:Bx:360:GLU:HG3  | 1.80                     | 0.62              |
| 1:Ag:191:ILE:HD13 | 1:Ak:193:GLU:HG2  | 1.81                     | 0.62              |
| 1:Aj:100:TYR:HD2  | 2:Ba:143:LEU:HD12 | 1.64                     | 0.62              |
| 1:Am:281:LEU:HD21 | 1:Am:331:ASN:HB3  | 1.80                     | 0.62              |
| 2:Au:139:SER:HB3  | 3:Bx:51:LEU:HA    | 1.81                     | 0.62              |
| 2:Ar:32:SER:HA    | 2:Ar:35:ASP:HB3   | 1.81                     | 0.62              |
| 2:Au:128:TYR:HD2  | 2:Au:132:MET:HG3  | 1.65                     | 0.62              |
| 2:Aw:58:TYR:HD1   | 2:Aw:75:LEU:HD21  | 1.65                     | 0.62              |
| 3:Bv:229:LYS:HA   | 3:Bv:272:LYS:HA   | 1.82                     | 0.62              |
| 2:Au:138:ASN:HA   | 3:Bx:54:ARG:H     | 1.65                     | 0.62              |
| 2:Au:137:GLY:HA2  | 2:Au:141:ALA:HB2  | 1.82                     | 0.62              |
| 3:Bd:352:TRP:HB2  | 3:Bd:355:GLN:HG3  | 1.80                     | 0.62              |
| 3:Bn:15:PHE:HD1   | 3:Bn:174:THR:HG21 | 1.64                     | 0.62              |
| 1:An:116:GLU:HG2  | 1:An:216:LYS:HD2  | 1.81                     | 0.62              |
| 2:Aq:11:ARG:HD3   | 2:Aq:33:MET:HE1   | 1.80                     | 0.62              |
| 3:Bb:578:GLN:HE21 | 3:Bb:596:ALA:HB2  | 1.65                     | 0.62              |
| 3:Br:208:VAL:HG13 | 3:Br:209:PHE:H    | 1.65                     | 0.62              |
| 1:An:383:ILE:HG13 | 1:An:409:LEU:HD13 | 1.82                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bl:82:PRO:HG3   | 3:Bl:561:ASP:HB2  | 1.82                     | 0.61              |
| 3:Bn:606:PRO:HD2  | 3:Bn:610:GLN:HB2  | 1.82                     | 0.61              |
| 1:Am:79:MET:HE1   | 1:Am:364:GLN:HG3  | 1.81                     | 0.61              |
| 3:Bp:323:THR:HG22 | 3:Bp:415:VAL:HG13 | 1.82                     | 0.61              |
| 1:Ae:40:MET:HE1   | 1:Ae:410:TRP:HH2  | 1.66                     | 0.61              |
| 1:Af:272:LYS:HE3  | 1:Af:423:VAL:HG11 | 1.83                     | 0.61              |
| 3:Bn:76:ILE:HG22  | 3:Bx:457:MET:HG3  | 1.82                     | 0.61              |
| 1:Ab:400:THR:HG23 | 1:Ab:402:SER:H    | 1.65                     | 0.61              |
| 1:Ae:284:MET:HE2  | 1:Ai:20:ILE:HG21  | 1.82                     | 0.61              |
| 3:Bl:164:LEU:HD12 | 3:Bl:169:ASP:HB2  | 1.82                     | 0.61              |
| 1:Ag:309:THR:HB   | 1:Ag:310:PRO:HD3  | 1.83                     | 0.61              |
| 1:Ag:417:ARG:HE   | 1:Ak:19:THR:HG22  | 1.66                     | 0.61              |
| 1:Ai:13:VAL:HG21  | 3:Bn:45:LEU:HD11  | 1.83                     | 0.61              |
| 1:Ao:81:GLU:HG2   | 1:Ao:82:PRO:HD2   | 1.83                     | 0.61              |
| 2:Au:131:ARG:H    | 2:Au:131:ARG:HD3  | 1.64                     | 0.61              |
| 3:Bb:94:LEU:HA    | 3:Bb:97:MET:HE2   | 1.82                     | 0.61              |
| 3:Bf:254:VAL:HG23 | 3:Bf:255:ILE:HG23 | 1.82                     | 0.61              |
| 3:Bp:134:ASP:HB2  | 3:Br:271:ILE:HG23 | 1.83                     | 0.61              |
| 3:Bx:352:TRP:HB2  | 3:Bx:355:GLN:HG3  | 1.83                     | 0.61              |
| 1:Ac:335:ALA:HB3  | 1:Ac:338:MET:HG3  | 1.83                     | 0.61              |
| 3:Bn:24:GLU:HG3   | 3:Bv:211:TRP:HD1  | 1.66                     | 0.61              |
| 3:Br:247:PHE:HB2  | 3:Br:252:LYS:HE3  | 1.82                     | 0.61              |
| 1:Ac:104:ILE:HD12 | 1:Ac:407:ILE:HD11 | 1.83                     | 0.61              |
| 1:Ak:9:VAL:HB     | 3:Bf:49:THR:HA    | 1.83                     | 0.61              |
| 3:Bd:94:LEU:HD21  | 3:Bh:465:GLN:HG3  | 1.83                     | 0.61              |
| 3:Bf:538:LEU:HD11 | 3:Br:559:LEU:HD21 | 1.82                     | 0.61              |
| 3:Bl:246:TYR:HB2  | 3:Bt:511:ARG:HB3  | 1.83                     | 0.61              |
| 3:Bn:165:MET:O    | 3:Bn:165:MET:HG2  | 1.99                     | 0.61              |
| 1:Ab:374:ALA:HB1  | 1:Ad:377:LYS:HG3  | 1.82                     | 0.60              |
| 3:Bf:221:GLU:HG2  | 3:Bf:280:ILE:HG12 | 1.83                     | 0.60              |
| 3:Bp:40:GLN:HE22  | 3:Bp:58:ASP:HB2   | 1.66                     | 0.60              |
| 1:Aa:295:PHE:HD1  | 1:Aa:310:PRO:HG2  | 1.66                     | 0.60              |
| 2:As:40:LEU:HD13  | 2:As:87:LEU:HD22  | 1.82                     | 0.60              |
| 1:Ad:205:VAL:HG13 | 1:Ad:211:VAL:HG21 | 1.83                     | 0.60              |
| 1:Af:344:ASN:HA   | 1:Af:428:GLN:HE21 | 1.66                     | 0.60              |
| 3:Bb:225:VAL:HG12 | 3:Bb:276:VAL:HG22 | 1.83                     | 0.60              |
| 3:Bn:87:ARG:HG2   | 3:Bn:89:ASP:H     | 1.67                     | 0.60              |
| 3:Bn:332:MET:HE2  | 3:Bn:333:ILE:HD13 | 1.83                     | 0.60              |
| 1:Af:101:ARG:HD2  | 3:Bx:198:ILE:HD11 | 1.82                     | 0.60              |
| 1:Ai:398:ILE:HG13 | 2:Az:149:PHE:HD2  | 1.67                     | 0.60              |
| 3:Bd:574:LYS:O    | 3:Bd:578:GLN:HG2  | 2.02                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bp:269:ARG:HH11 | 3:Bp:271:ILE:HD11 | 1.66                     | 0.60              |
| 1:Af:148:VAL:HG11 | 1:Af:205:VAL:HG23 | 1.84                     | 0.60              |
| 1:Af:366:ILE:HG21 | 1:Af:372:LEU:HD22 | 1.83                     | 0.60              |
| 3:Bj:248:LYS:HD3  | 3:Bv:511:ARG:HE   | 1.64                     | 0.60              |
| 3:Bn:510:ILE:HG23 | 3:Bv:246:TYR:H    | 1.64                     | 0.60              |
| 1:Al:205:VAL:HG12 | 1:Al:211:VAL:HG21 | 1.84                     | 0.60              |
| 2:Az:31:GLN:O     | 2:Az:35:ASP:HB2   | 2.02                     | 0.60              |
| 2:At:128:TYR:HD2  | 2:At:132:MET:HG2  | 1.66                     | 0.60              |
| 2:Au:140:PHE:HB2  | 2:Au:143:LEU:H    | 1.67                     | 0.60              |
| 2:Av:43:MET:HE1   | 2:Av:86:ASN:HB3   | 1.83                     | 0.60              |
| 3:Bh:614:VAL:HG21 | 3:Bl:616:LEU:HA   | 1.84                     | 0.60              |
| 3:Bj:127:ARG:HB2  | 3:Bj:149:ILE:HD11 | 1.83                     | 0.60              |
| 1:Af:23:ILE:HG13  | 1:Af:25:PRO:HD3   | 1.84                     | 0.60              |
| 2:Av:128:TYR:HD2  | 2:Av:132:MET:HG2  | 1.67                     | 0.60              |
| 2:Ax:17:LEU:HD13  | 2:Ax:88:ALA:HB1   | 1.84                     | 0.60              |
| 3:Bf:323:THR:HG22 | 3:Bf:415:VAL:HG23 | 1.83                     | 0.60              |
| 3:Bf:553:LEU:HD23 | 3:Bf:572:ALA:HA   | 1.83                     | 0.60              |
| 3:Bj:225:VAL:HG12 | 3:Bj:276:VAL:HG22 | 1.83                     | 0.60              |
| 3:Bj:248:LYS:HD3  | 3:Bv:511:ARG:NE   | 2.16                     | 0.60              |
| 3:Bt:302:PRO:HB2  | 3:Bt:304:PHE:HE1  | 1.66                     | 0.60              |
| 3:Bv:15:PHE:HD1   | 3:Bv:174:THR:HG21 | 1.67                     | 0.60              |
| 1:Ae:221:THR:HA   | 1:Ae:347:ASP:HB3  | 1.84                     | 0.60              |
| 1:Ag:171:ASN:HB2  | 1:Ag:349:ARG:HH11 | 1.67                     | 0.60              |
| 3:Bf:546:THR:HG23 | 3:Bf:547:PRO:HD3  | 1.84                     | 0.60              |
| 3:Bl:233:PHE:HZ   | 3:Bl:249:ARG:HH21 | 1.48                     | 0.60              |
| 1:Aa:278:VAL:HG13 | 1:Aa:330:VAL:HG13 | 1.84                     | 0.59              |
| 1:Ae:105:GLN:HB3  | 1:Ae:109:ARG:HH12 | 1.67                     | 0.59              |
| 3:Bb:59:VAL:HG13  | 3:Bb:412:VAL:HG11 | 1.84                     | 0.59              |
| 3:Bh:223:TYR:HB3  | 3:Bh:298:ILE:HD12 | 1.82                     | 0.59              |
| 3:Bb:7:ARG:HH11   | 3:Bb:289:ASP:HB2  | 1.66                     | 0.59              |
| 3:Bb:550:GLN:HB3  | 3:Bt:568:MET:HE1  | 1.84                     | 0.59              |
| 3:Bj:281:ILE:HG22 | 3:Bj:286:VAL:HG13 | 1.84                     | 0.59              |
| 1:Ae:405:CYS:HB2  | 1:Ah:372:LEU:HD11 | 1.84                     | 0.59              |
| 1:An:257:ALA:HB2  | 1:An:311:LYS:HG3  | 1.85                     | 0.59              |
| 2:Av:43:MET:HG3   | 2:Av:90:ARG:NE    | 2.18                     | 0.59              |
| 3:Bb:606:PRO:HG2  | 3:Bb:609:VAL:HB   | 1.85                     | 0.59              |
| 1:Ac:164:MET:HG3  | 1:Ac:357:ASP:HB3  | 1.84                     | 0.59              |
| 1:Af:239:VAL:HG23 | 1:Af:252:VAL:HG11 | 1.84                     | 0.59              |
| 3:Bb:246:TYR:HD1  | 3:Bj:511:ARG:HB3  | 1.67                     | 0.59              |
| 3:Bf:466:SER:HB3  | 3:Br:296:GLU:H    | 1.67                     | 0.59              |
| 1:Ab:164:MET:HA   | 1:Ab:164:MET:HE3  | 1.83                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bd:467:ILE:HG23 | 3:Bf:294:ALA:HB1  | 1.84                     | 0.59              |
| 3:Bl:618:GLY:HA2  | 3:Bt:623:ALA:HB2  | 1.84                     | 0.59              |
| 3:Bx:154:SER:HB2  | 3:Bx:204:PRO:HB2  | 1.83                     | 0.59              |
| 3:Bx:231:THR:HG23 | 3:Bx:268:GLU:OE2  | 2.03                     | 0.59              |
| 2:Ar:104:ILE:HG23 | 3:Bh:380:ASN:HB2  | 1.85                     | 0.59              |
| 3:Bn:281:ILE:HG22 | 3:Bn:286:VAL:HG12 | 1.84                     | 0.59              |
| 3:Bp:30:LYS:HD2   | 3:Bp:154:SER:HB3  | 1.84                     | 0.59              |
| 1:Ae:47:ILE:HB    | 1:Ae:77:VAL:HG22  | 1.85                     | 0.59              |
| 1:Af:373:PHE:HZ   | 1:Af:408:ALA:HB3  | 1.68                     | 0.59              |
| 1:Ah:205:VAL:HG12 | 1:Ah:206:ALA:H    | 1.68                     | 0.59              |
| 3:Bf:280:ILE:HD12 | 3:Bf:288:LYS:HD2  | 1.84                     | 0.59              |
| 1:Ao:335:ALA:HB3  | 1:Ao:338:MET:HG3  | 1.85                     | 0.58              |
| 3:Bd:541:LYS:HD3  | 3:Bf:536:LEU:HD21 | 1.84                     | 0.58              |
| 3:Bl:227:GLU:HA   | 3:Bl:274:ARG:HA   | 1.84                     | 0.58              |
| 3:Bv:334:MET:HE2  | 3:Bv:405:LEU:HD11 | 1.84                     | 0.58              |
| 3:Bx:532:ARG:HD3  | 3:Bx:559:LEU:HD23 | 1.84                     | 0.58              |
| 1:Ab:130:VAL:HG21 | 1:Ab:272:LYS:HB3  | 1.84                     | 0.58              |
| 1:Ag:51:VAL:HG22  | 1:Ak:17:ILE:HD11  | 1.85                     | 0.58              |
| 3:Bh:236:GLN:HG3  | 3:Bh:243:PRO:HA   | 1.85                     | 0.58              |
| 3:Bn:518:THR:HG23 | 3:Bv:78:VAL:HG13  | 1.85                     | 0.58              |
| 3:Bt:310:VAL:HG13 | 3:Bt:311:GLU:H    | 1.68                     | 0.58              |
| 3:Bb:248:LYS:HB2  | 3:Bb:251:ILE:HD12 | 1.84                     | 0.58              |
| 3:Bv:157:ILE:HB   | 3:Bv:174:THR:HG23 | 1.85                     | 0.58              |
| 3:Bx:157:ILE:HB   | 3:Bx:174:THR:HG23 | 1.84                     | 0.58              |
| 1:Al:388:LEU:HD23 | 1:Al:409:LEU:HD11 | 1.84                     | 0.58              |
| 2:Ap:113:LEU:HD23 | 2:Ap:116:LYS:HE3  | 1.85                     | 0.58              |
| 1:Ag:205:VAL:HG22 | 1:Ag:211:VAL:HG11 | 1.85                     | 0.58              |
| 3:Bb:527:MET:HE1  | 3:Bb:530:GLN:HE21 | 1.69                     | 0.58              |
| 3:Bf:531:ASN:HB3  | 3:Br:563:LYS:HB2  | 1.85                     | 0.58              |
| 3:Bn:510:ILE:HG22 | 3:Bn:512:GLY:H    | 1.68                     | 0.58              |
| 1:Aj:377:LYS:HG2  | 3:Br:210:PRO:HA   | 1.86                     | 0.58              |
| 1:Am:111:LEU:HD13 | 1:Am:409:LEU:HD22 | 1.85                     | 0.58              |
| 3:Bh:255:ILE:HD13 | 3:Bh:258:LEU:HB2  | 1.86                     | 0.58              |
| 3:Bj:87:ARG:HH11  | 3:Bj:87:ARG:HG3   | 1.67                     | 0.58              |
| 1:Aa:369:ASN:ND2  | 3:Bh:46:SER:H     | 2.01                     | 0.58              |
| 1:Aj:13:VAL:HG22  | 3:Bp:45:LEU:HG    | 1.85                     | 0.58              |
| 3:Bn:458:ARG:HG2  | 3:Bn:518:THR:HG22 | 1.85                     | 0.58              |
| 1:Ae:161:ASN:HA   | 1:Ai:21:SER:HB3   | 1.85                     | 0.58              |
| 1:Af:403:GLY:HA3  | 1:Ai:372:LEU:HG   | 1.85                     | 0.58              |
| 3:Br:221:GLU:HG2  | 3:Br:280:ILE:HD13 | 1.86                     | 0.58              |
| 1:Aa:101:ARG:HG3  | 1:Aa:101:ARG:HH11 | 1.69                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Aa:257:ALA:HB2  | 1:Aa:311:LYS:HG3  | 1.84                     | 0.58              |
| 1:Al:81:GLU:HG2   | 1:Al:82:PRO:HD2   | 1.85                     | 0.58              |
| 2:As:108:LYS:HD2  | 3:Bt:381:SER:HB2  | 1.86                     | 0.58              |
| 3:Bd:158:TRP:CG   | 3:Bd:167:LYS:HD2  | 2.38                     | 0.58              |
| 3:Bp:52:GLN:HG2   | 3:Bp:53:TYR:N     | 2.19                     | 0.58              |
| 1:Aj:191:ILE:HB   | 1:Aj:192:PRO:HD3  | 1.86                     | 0.57              |
| 1:Ao:309:THR:HB   | 1:Ao:310:PRO:HD3  | 1.86                     | 0.57              |
| 3:Bv:33:LEU:HD22  | 3:Bv:37:ARG:HH21  | 1.69                     | 0.57              |
| 3:Bx:333:ILE:HG23 | 3:Bx:401:ASN:HD22 | 1.69                     | 0.57              |
| 1:Aj:309:THR:HG23 | 1:Aj:310:PRO:HD3  | 1.87                     | 0.57              |
| 3:Bh:193:LEU:HD21 | 3:Bh:287:LEU:HB3  | 1.86                     | 0.57              |
| 3:Bj:110:ALA:HA   | 3:Bj:148:PRO:HB3  | 1.86                     | 0.57              |
| 3:Bj:251:ILE:H    | 3:Bj:251:ILE:HD12 | 1.68                     | 0.57              |
| 3:Bj:371:TYR:CE2  | 3:Bv:363:TYR:HB3  | 2.39                     | 0.57              |
| 1:Ac:383:ILE:HD11 | 1:Ac:388:LEU:HB2  | 1.86                     | 0.57              |
| 1:Ah:140:ASN:HB2  | 1:Ah:143:ASP:HB3  | 1.86                     | 0.57              |
| 1:Am:126:MET:HG2  | 1:Am:309:THR:HG21 | 1.87                     | 0.57              |
| 1:Ac:68:THR:H     | 1:Ad:87:PHE:HA    | 1.70                     | 0.57              |
| 1:Ah:281:LEU:HD21 | 1:Ah:331:ASN:HB3  | 1.86                     | 0.57              |
| 2:Av:10:VAL:HB    | 2:Av:33:MET:HE1   | 1.87                     | 0.57              |
| 3:Bf:255:ILE:HD12 | 3:Bf:259:ALA:HB2  | 1.85                     | 0.57              |
| 3:Bf:511:ARG:NH2  | 3:Br:248:LYS:HG2  | 2.19                     | 0.57              |
| 3:Bj:212:LEU:HD22 | 3:Bv:313:LYS:HD2  | 1.85                     | 0.57              |
| 3:Bl:205:ASN:HB3  | 3:Bt:311:GLU:HB3  | 1.86                     | 0.57              |
| 3:Bl:394:ASN:HB2  | 3:Bt:398:PRO:HB3  | 1.85                     | 0.57              |
| 1:Af:130:VAL:HG21 | 1:Af:272:LYS:HB3  | 1.86                     | 0.57              |
| 2:As:89:CYS:HB3   | 2:Ay:102:LYS:HD3  | 1.85                     | 0.57              |
| 3:Bp:466:SER:OG   | 3:Bx:296:GLU:HG3  | 2.04                     | 0.57              |
| 3:Bt:574:LYS:O    | 3:Bt:578:GLN:HG2  | 2.05                     | 0.57              |
| 1:Ag:40:MET:HE2   | 1:Ag:40:MET:O     | 2.05                     | 0.57              |
| 1:Al:121:ASN:O    | 1:Al:125:GLU:HG3  | 2.05                     | 0.57              |
| 3:Bp:614:VAL:HG21 | 3:Br:616:LEU:HD12 | 1.87                     | 0.57              |
| 3:Bv:235:TYR:HE2  | 3:Bv:252:LYS:HZ3  | 1.51                     | 0.57              |
| 1:Ak:89:LEU:HD22  | 3:Bd:44:TRP:HZ2   | 1.70                     | 0.57              |
| 1:Al:131:ILE:HD11 | 1:Al:154:ILE:HG21 | 1.86                     | 0.57              |
| 2:Ba:142:ASN:HB3  | 3:Br:27:ARG:HD2   | 1.87                     | 0.57              |
| 3:Bd:500:ALA:HB3  | 3:Bd:503:GLU:HB2  | 1.86                     | 0.57              |
| 3:Bh:275:ARG:HG2  | 3:Bh:292:LEU:HD11 | 1.87                     | 0.57              |
| 3:Bh:587:PRO:HA   | 3:Bh:590:GLN:NE2  | 2.20                     | 0.57              |
| 1:Aa:166:THR:HG22 | 1:Aa:355:ALA:HA   | 1.86                     | 0.57              |
| 1:An:238:PRO:HD3  | 1:An:313:VAL:HG11 | 1.87                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bf:199:PRO:HD2  | 3:Bf:217:ILE:HD11 | 1.87                     | 0.57              |
| 3:Bj:362:MET:HE1  | 3:Bj:373:LEU:H    | 1.70                     | 0.57              |
| 1:Af:71:LEU:HD22  | 1:Af:323:GLU:HB2  | 1.87                     | 0.56              |
| 1:Af:257:ALA:HB2  | 1:Af:311:LYS:HG3  | 1.87                     | 0.56              |
| 1:Ag:403:GLY:HA3  | 1:Aj:372:LEU:HG   | 1.87                     | 0.56              |
| 2:Aq:3:ILE:HG23   | 2:Aq:8:ASP:HB3    | 1.87                     | 0.56              |
| 1:Af:368:ALA:HB1  | 1:Af:373:PHE:H    | 1.70                     | 0.56              |
| 2:Ap:108:LYS:HD3  | 3:Bp:381:SER:HB2  | 1.87                     | 0.56              |
| 3:Bn:74:ASN:HB2   | 3:Bx:450:GLN:HE22 | 1.70                     | 0.56              |
| 1:Ab:283:GLN:C    | 1:Ab:285:ALA:H    | 2.14                     | 0.56              |
| 1:Ag:372:LEU:HD13 | 1:Am:62:ASP:H     | 1.71                     | 0.56              |
| 1:Ai:398:ILE:HG13 | 2:Az:149:PHE:CD2  | 2.40                     | 0.56              |
| 1:Al:137:ILE:HD11 | 1:Al:144:ALA:HA   | 1.87                     | 0.56              |
| 3:Bb:97:MET:O     | 3:Bb:101:ASP:HB2  | 2.04                     | 0.56              |
| 3:Bd:398:PRO:HB3  | 3:Bf:394:ASN:HB3  | 1.88                     | 0.56              |
| 3:Bd:607:ALA:HB2  | 3:Bh:609:VAL:HA   | 1.88                     | 0.56              |
| 3:Bn:584:PRO:HB3  | 3:Bn:589:GLU:HB3  | 1.88                     | 0.56              |
| 1:Ag:257:ALA:HB2  | 1:Ag:311:LYS:HG3  | 1.86                     | 0.56              |
| 1:Ah:256:PHE:HE1  | 1:Ah:298:VAL:HG11 | 1.70                     | 0.56              |
| 1:Aj:128:SER:HB3  | 1:Aj:419:GLU:HA   | 1.87                     | 0.56              |
| 1:Al:419:GLU:CD   | 1:Al:419:GLU:H    | 2.13                     | 0.56              |
| 1:Am:158:ARG:HH12 | 1:Am:283:GLN:HE21 | 1.53                     | 0.56              |
| 3:Bv:606:PRO:HB2  | 3:Bv:609:VAL:HG12 | 1.88                     | 0.56              |
| 1:Ae:7:GLN:HG3    | 1:Ah:249:LYS:HD3  | 1.86                     | 0.56              |
| 1:Af:360:ARG:HD2  | 1:Af:416:THR:HG21 | 1.88                     | 0.56              |
| 1:Ai:396:GLY:HA3  | 2:Az:143:LEU:HD23 | 1.87                     | 0.56              |
| 3:Bb:107:ALA:HB1  | 3:Bb:146:ARG:HH21 | 1.71                     | 0.56              |
| 3:Bb:527:MET:HA   | 3:Bb:527:MET:HE3  | 1.88                     | 0.56              |
| 3:Bf:511:ARG:HB3  | 3:Br:246:TYR:CE1  | 2.41                     | 0.56              |
| 3:Bv:236:GLN:HA   | 3:Bv:243:PRO:HA   | 1.86                     | 0.56              |
| 2:Az:3:ILE:HG23   | 2:Az:8:ASP:HB2    | 1.86                     | 0.56              |
| 3:Bn:54:ARG:HH11  | 3:Bn:54:ARG:HG3   | 1.70                     | 0.56              |
| 1:Al:219:VAL:HG22 | 1:Al:349:ARG:HD2  | 1.87                     | 0.56              |
| 3:Bf:608:MET:HA   | 3:Bf:611:ALA:HB3  | 1.87                     | 0.56              |
| 3:Bh:550:GLN:HE22 | 3:Bh:581:VAL:HG11 | 1.71                     | 0.56              |
| 3:Bl:221:GLU:HG2  | 3:Bl:278:LYS:HD2  | 1.88                     | 0.56              |
| 3:Bp:615:LEU:HD12 | 3:Br:619:GLN:NE2  | 2.21                     | 0.56              |
| 1:Ae:189:GLY:O    | 1:Ae:193:GLU:HB2  | 2.06                     | 0.56              |
| 1:Ag:70:LEU:HD21  | 1:Ak:103:ARG:HB2  | 1.88                     | 0.55              |
| 1:Al:26:MET:HE3   | 1:Al:120:ALA:HA   | 1.87                     | 0.55              |
| 3:Bd:176:ILE:HD11 | 3:Bd:204:PRO:HB3  | 1.88                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bh:127:ARG:HB2  | 3:Bh:149:ILE:HD11 | 1.88                     | 0.55              |
| 3:Br:546:THR:HG23 | 3:Br:547:PRO:HD3  | 1.89                     | 0.55              |
| 3:Bx:323:THR:HG22 | 3:Bx:415:VAL:HG23 | 1.88                     | 0.55              |
| 3:Bb:376:ARG:HH21 | 3:Bj:384:LEU:HD23 | 1.71                     | 0.55              |
| 3:Bb:397:VAL:HG23 | 3:Bj:400:ALA:HA   | 1.88                     | 0.55              |
| 3:Bl:332:MET:HE2  | 3:Bl:336:PHE:CE2  | 2.41                     | 0.55              |
| 3:Bn:164:LEU:HD11 | 3:Bv:106:THR:HG23 | 1.89                     | 0.55              |
| 3:Bp:258:LEU:HD22 | 3:Br:500:ALA:HA   | 1.87                     | 0.55              |
| 2:Ar:5:THR:HG23   | 2:Ar:8:ASP:H      | 1.70                     | 0.55              |
| 3:Bv:310:VAL:HG12 | 3:Bv:311:GLU:HG3  | 1.87                     | 0.55              |
| 1:Al:47:ILE:HG22  | 1:Al:77:VAL:HB    | 1.88                     | 0.55              |
| 3:Bb:297:HIS:HB2  | 3:Bj:463:ILE:HD13 | 1.88                     | 0.55              |
| 3:Bn:255:ILE:HG13 | 3:Bx:506:VAL:HB   | 1.88                     | 0.55              |
| 1:Ab:301:VAL:HG22 | 1:Ab:302:ASP:OD1  | 2.07                     | 0.55              |
| 1:Ae:152:GLU:HG2  | 1:Ae:206:ALA:O    | 2.06                     | 0.55              |
| 1:Ak:26:MET:HG2   | 1:Ak:354:TRP:CH2  | 2.42                     | 0.55              |
| 1:Am:241:TRP:HZ3  | 1:Am:243:LEU:HG   | 1.71                     | 0.55              |
| 2:Au:138:ASN:HA   | 3:Bx:54:ARG:N     | 2.21                     | 0.55              |
| 2:Av:36:ALA:HB1   | 2:Av:91:ILE:HD11  | 1.88                     | 0.55              |
| 3:Bf:110:ALA:HA   | 3:Bf:148:PRO:HB3  | 1.87                     | 0.55              |
| 1:Aa:376:MET:HB3  | 1:Aa:395:GLN:HB2  | 1.87                     | 0.55              |
| 1:Ai:115:VAL:HG21 | 1:Ai:388:LEU:HD11 | 1.87                     | 0.55              |
| 3:Bd:273:ARG:HD2  | 3:Bd:275:ARG:HG2  | 1.89                     | 0.55              |
| 3:Bl:229:LYS:HG3  | 3:Bl:272:LYS:HG3  | 1.87                     | 0.55              |
| 1:Ai:230:VAL:HG11 | 1:Ai:334:LEU:HD12 | 1.89                     | 0.55              |
| 3:Bb:40:GLN:HE21  | 3:Bb:331:ASN:HD21 | 1.54                     | 0.55              |
| 1:Ab:368:ALA:HB3  | 1:Ab:378:THR:HG21 | 1.88                     | 0.55              |
| 1:Ad:50:PRO:HG2   | 1:Ah:16:ILE:HG22  | 1.89                     | 0.55              |
| 1:Am:128:SER:OG   | 1:Am:310:PRO:HG3  | 2.06                     | 0.55              |
| 2:Aw:130:SER:HB2  | 2:Aw:150:PRO:HB3  | 1.88                     | 0.55              |
| 3:Bf:275:ARG:HD3  | 3:Bf:292:LEU:HD21 | 1.88                     | 0.55              |
| 3:Bp:397:VAL:HG23 | 3:Br:400:ALA:HA   | 1.89                     | 0.55              |
| 1:An:220:LEU:HD23 | 1:An:425:LEU:HD11 | 1.88                     | 0.55              |
| 2:Ax:126:ALA:N    | 3:Bl:364:ASP:HB2  | 2.22                     | 0.55              |
| 2:Ax:128:TYR:CD1  | 3:Bt:343:ARG:HG3  | 2.42                     | 0.55              |
| 3:Bf:523:SER:HB3  | 3:Br:75:PRO:HB2   | 1.89                     | 0.55              |
| 3:Bn:199:PRO:HG3  | 3:Bn:219:ILE:HD12 | 1.89                     | 0.55              |
| 1:Ai:397:ASP:HB3  | 1:Ai:400:THR:HG22 | 1.89                     | 0.55              |
| 2:As:102:LYS:NZ   | 2:Ax:89:CYS:HB3   | 2.22                     | 0.55              |
| 1:Aa:3:LEU:HD11   | 1:Aa:5:GLU:HG3    | 1.88                     | 0.54              |
| 3:Bd:227:GLU:HA   | 3:Bd:274:ARG:HA   | 1.88                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bj:184:TRP:HB2  | 3:Bj:217:ILE:HD11 | 1.88                     | 0.54              |
| 3:Bl:574:LYS:O    | 3:Bl:578:GLN:HG2  | 2.07                     | 0.54              |
| 3:Bn:102:MET:HE3  | 3:Bn:146:ARG:NH2  | 2.22                     | 0.54              |
| 3:Bp:372:TYR:CD2  | 3:Br:348:LYS:HB2  | 2.43                     | 0.54              |
| 3:Br:236:GLN:HB3  | 3:Br:264:ILE:HG13 | 1.89                     | 0.54              |
| 1:Aa:309:THR:HB   | 1:Aa:310:PRO:HD3  | 1.89                     | 0.54              |
| 1:Ac:161:ASN:HD22 | 1:Ad:18:GLU:HB2   | 1.71                     | 0.54              |
| 2:Ax:40:LEU:HD13  | 2:Ax:87:LEU:HD22  | 1.89                     | 0.54              |
| 3:Bj:232:ALA:HB3  | 3:Bj:269:ARG:HG2  | 1.89                     | 0.54              |
| 3:Br:33:LEU:HD21  | 3:Br:117:GLU:HG2  | 1.89                     | 0.54              |
| 3:Bx:244:VAL:HG23 | 3:Bx:246:TYR:CE2  | 2.42                     | 0.54              |
| 1:Ae:281:LEU:HD21 | 1:Ae:315:LEU:HD22 | 1.90                     | 0.54              |
| 1:An:335:ALA:H    | 1:An:338:MET:HE2  | 1.71                     | 0.54              |
| 3:Bh:278:LYS:HE3  | 3:Bh:293:ILE:HD11 | 1.89                     | 0.54              |
| 3:Bj:8:LEU:HD23   | 3:Bj:286:VAL:HG22 | 1.89                     | 0.54              |
| 3:Bn:350:PHE:HE1  | 3:Bv:363:TYR:HE2  | 1.55                     | 0.54              |
| 3:Bp:310:VAL:HG13 | 3:Bp:311:GLU:H    | 1.72                     | 0.54              |
| 3:Bv:82:PRO:HB3   | 3:Bv:90:ALA:HB3   | 1.90                     | 0.54              |
| 3:Bv:574:LYS:O    | 3:Bv:578:GLN:HG2  | 2.08                     | 0.54              |
| 1:Ac:50:PRO:HG2   | 1:Ad:16:ILE:HD13  | 1.88                     | 0.54              |
| 1:Ad:295:PHE:HB3  | 1:Ad:308:ILE:HG23 | 1.90                     | 0.54              |
| 1:Al:23:ILE:HD12  | 1:Al:25:PRO:HD3   | 1.88                     | 0.54              |
| 3:Bb:536:LEU:HD21 | 3:Bj:541:LYS:HE3  | 1.90                     | 0.54              |
| 3:Bh:376:ARG:HG2  | 3:Bh:377:THR:HG23 | 1.89                     | 0.54              |
| 1:Ah:11:LEU:HA    | 3:Bb:48:TYR:HB3   | 1.90                     | 0.54              |
| 1:Ai:223:SER:HB3  | 1:Ai:342:ILE:HG21 | 1.89                     | 0.54              |
| 3:Bn:24:GLU:HG3   | 3:Bv:211:TRP:CD1  | 2.42                     | 0.54              |
| 3:Bt:244:VAL:HG23 | 3:Bt:246:TYR:CZ   | 2.42                     | 0.54              |
| 1:Ak:288:VAL:HG13 | 1:Ak:331:ASN:HD22 | 1.72                     | 0.54              |
| 3:Bb:238:PRO:HD3  | 3:Bb:263:PHE:HD1  | 1.72                     | 0.54              |
| 3:Bf:480:ILE:HD12 | 3:Br:240:THR:HG22 | 1.89                     | 0.54              |
| 3:Bj:234:ILE:HD12 | 3:Bj:246:TYR:CD1  | 2.42                     | 0.54              |
| 3:Bl:355:GLN:NE2  | 3:Bl:386:THR:HB   | 2.22                     | 0.54              |
| 3:Bv:476:ARG:HD2  | 3:Bv:510:ILE:HD13 | 1.90                     | 0.54              |
| 1:Ad:23:ILE:HD12  | 1:Ad:25:PRO:HD3   | 1.89                     | 0.54              |
| 1:Ad:24:THR:HG23  | 1:Ad:116:GLU:HB2  | 1.88                     | 0.54              |
| 1:Ad:228:ILE:HG13 | 1:Ad:340:VAL:HG13 | 1.90                     | 0.54              |
| 1:Ag:398:ILE:HD11 | 1:Aj:406:ARG:HB3  | 1.90                     | 0.54              |
| 1:Aj:257:ALA:HB2  | 1:Aj:311:LYS:HG3  | 1.89                     | 0.54              |
| 1:An:159:GLU:OE1  | 1:An:284:MET:HB3  | 2.07                     | 0.54              |
| 1:Ao:286:LYS:HE3  | 1:Ao:328:ALA:HB3  | 1.89                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bd:29:ALA:HB2   | 3:Bd:316:TYR:HE1  | 1.73                     | 0.54              |
| 3:Bl:618:GLY:HA3  | 3:Bt:619:GLN:HG3  | 1.90                     | 0.54              |
| 3:Bp:231:THR:HG21 | 3:Bp:249:ARG:HH21 | 1.72                     | 0.54              |
| 3:Bp:458:ARG:HG3  | 3:Bp:518:THR:HG22 | 1.89                     | 0.54              |
| 3:Bv:578:GLN:OE1  | 3:Bv:596:ALA:HB2  | 2.08                     | 0.54              |
| 1:Aa:33:TYR:HD1   | 1:Aa:362:VAL:HG22 | 1.73                     | 0.54              |
| 1:Ab:220:LEU:HD23 | 1:Ab:425:LEU:HD11 | 1.89                     | 0.54              |
| 1:Ad:284:MET:HG3  | 1:Ah:113:ASN:HD22 | 1.73                     | 0.54              |
| 1:Ai:14:ASP:HB2   | 3:Bn:27:ARG:NH2   | 2.22                     | 0.54              |
| 1:An:84:ASN:HB3   | 1:An:408:ALA:HB2  | 1.90                     | 0.54              |
| 2:Au:102:LYS:NZ   | 2:Az:89:CYS:HB3   | 2.23                     | 0.54              |
| 3:Bb:227:GLU:HG2  | 3:Bb:274:ARG:HG2  | 1.90                     | 0.54              |
| 3:Bh:255:ILE:HG13 | 3:Bl:506:VAL:HB   | 1.89                     | 0.54              |
| 3:Bh:306:GLU:HB2  | 3:Bh:317:GLU:HG3  | 1.88                     | 0.54              |
| 3:Br:278:LYS:HB2  | 3:Br:293:ILE:HD12 | 1.90                     | 0.54              |
| 3:Br:376:ARG:HG2  | 3:Br:377:THR:HG23 | 1.88                     | 0.54              |
| 1:Ae:96:ASP:HB3   | 1:Ah:41:GLN:NE2   | 2.23                     | 0.54              |
| 2:Az:133:PRO:HA   | 2:Az:147:HIS:HA   | 1.88                     | 0.54              |
| 3:Bb:500:ALA:HB2  | 3:Bt:255:ILE:HD11 | 1.90                     | 0.54              |
| 3:Bd:252:LYS:HB2  | 3:Bd:252:LYS:NZ   | 2.22                     | 0.54              |
| 3:Bj:234:ILE:HD11 | 3:Bj:269:ARG:HD2  | 1.88                     | 0.54              |
| 1:Af:370:HIS:HA   | 1:Af:374:ALA:HB2  | 1.89                     | 0.54              |
| 1:Ag:130:VAL:HG21 | 1:Ag:272:LYS:HB3  | 1.90                     | 0.54              |
| 1:Ah:56:PRO:HG3   | 1:Ah:323:GLU:HA   | 1.90                     | 0.54              |
| 3:Br:26:ARG:HD3   | 3:Br:154:SER:HA   | 1.90                     | 0.54              |
| 1:Aa:115:VAL:HG21 | 1:Aa:388:LEU:HD11 | 1.90                     | 0.53              |
| 1:Aa:161:ASN:HA   | 1:Ab:21:SER:HB3   | 1.89                     | 0.53              |
| 1:Ah:97:GLU:HB2   | 2:As:149:PHE:HZ   | 1.73                     | 0.53              |
| 1:Ah:230:VAL:HG12 | 1:Ah:338:MET:H    | 1.73                     | 0.53              |
| 1:Ah:300:VAL:HG22 | 1:Ah:306:VAL:HG12 | 1.91                     | 0.53              |
| 1:Am:237:LYS:HD3  | 1:Am:320:LEU:HD23 | 1.90                     | 0.53              |
| 3:Bp:511:ARG:HH22 | 3:Bx:232:ALA:HB1  | 1.72                     | 0.53              |
| 3:Bt:236:GLN:HB3  | 3:Bt:264:ILE:HG23 | 1.90                     | 0.53              |
| 1:Aa:130:VAL:HG21 | 1:Aa:272:LYS:HB3  | 1.89                     | 0.53              |
| 3:Bd:142:GLN:HE22 | 3:Bh:471:ILE:HD11 | 1.73                     | 0.53              |
| 3:Bj:362:MET:HG2  | 3:Bj:369:TYR:CD1  | 2.43                     | 0.53              |
| 3:Bx:15:PHE:HD1   | 3:Bx:174:THR:HG21 | 1.72                     | 0.53              |
| 1:Ae:320:LEU:HD23 | 1:Ae:325:ARG:HA   | 1.91                     | 0.53              |
| 1:Ak:373:PHE:HB3  | 1:Ak:376:MET:HE2  | 1.89                     | 0.53              |
| 1:Ak:379:THR:HG21 | 3:Bd:212:LEU:HD13 | 1.89                     | 0.53              |
| 1:Al:264:THR:HG23 | 1:Al:267:MET:HE2  | 1.90                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bh:239:VAL:HG22 | 3:Bh:240:THR:HG23 | 1.89                     | 0.53              |
| 3:Bt:239:VAL:HG22 | 3:Bt:240:THR:HG23 | 1.90                     | 0.53              |
| 1:Ad:131:ILE:HD11 | 1:Ad:154:ILE:HG21 | 1.91                     | 0.53              |
| 1:Af:19:THR:HG22  | 1:An:417:ARG:HD3  | 1.91                     | 0.53              |
| 1:Ai:379:THR:HB   | 3:Bx:20:THR:HG23  | 1.90                     | 0.53              |
| 3:Bj:550:GLN:HE22 | 3:Bj:579:MET:HE2  | 1.74                     | 0.53              |
| 3:Bl:123:VAL:HG21 | 3:Bl:153:CYS:HB3  | 1.90                     | 0.53              |
| 1:Aa:171:ASN:HD21 | 1:Aa:173:GLN:HB3  | 1.74                     | 0.53              |
| 1:Ah:125:GLU:O    | 1:Ah:270:GLY:HA2  | 2.09                     | 0.53              |
| 1:Ao:280:PHE:O    | 1:Ao:289:LEU:HB2  | 2.08                     | 0.53              |
| 2:As:73:HIS:ND1   | 2:As:74:GLY:N     | 2.56                     | 0.53              |
| 3:Bb:414:GLU:HG2  | 3:Bt:59:VAL:HG12  | 1.91                     | 0.53              |
| 3:Bj:71:MET:HE3   | 3:Bj:115:VAL:HG13 | 1.90                     | 0.53              |
| 3:Bn:232:ALA:HB2  | 3:Bn:271:ILE:HD12 | 1.90                     | 0.53              |
| 3:Bn:577:ILE:HG21 | 3:Bn:592:TRP:HB3  | 1.90                     | 0.53              |
| 3:Br:109:ILE:O    | 3:Br:113:ILE:HG13 | 2.07                     | 0.53              |
| 3:Bv:59:VAL:HG13  | 3:Bv:412:VAL:HG11 | 1.91                     | 0.53              |
| 3:Bx:92:ASP:OD1   | 3:Bx:562:GLY:HA2  | 2.08                     | 0.53              |
| 1:Ac:278:VAL:HG13 | 1:Ac:338:MET:HE1  | 1.90                     | 0.53              |
| 1:Ah:182:LEU:HD22 | 1:Ah:201:ILE:HD12 | 1.91                     | 0.53              |
| 1:Aj:386:VAL:HG12 | 1:Aj:388:LEU:HG   | 1.90                     | 0.53              |
| 1:Ak:66:LYS:NZ    | 1:Ak:66:LYS:HB3   | 2.24                     | 0.53              |
| 2:At:16:LYS:HE2   | 2:Ay:39:ASP:OD2   | 2.09                     | 0.53              |
| 3:Bb:237:ASP:OD2  | 3:Bb:238:PRO:HD2  | 2.09                     | 0.53              |
| 3:Bb:475:PRO:HB2  | 3:Bb:493:MET:HE3  | 1.91                     | 0.53              |
| 3:Bh:201:PHE:H    | 3:Bh:218:GLN:HB2  | 1.73                     | 0.53              |
| 3:Bv:32:ASP:OD1   | 3:Bv:320:VAL:HG13 | 2.09                     | 0.53              |
| 1:Ao:257:ALA:HB2  | 1:Ao:311:LYS:HG3  | 1.89                     | 0.53              |
| 3:Bb:176:ILE:HD12 | 3:Bb:204:PRO:HG3  | 1.91                     | 0.53              |
| 3:Bd:229:LYS:HD2  | 3:Bd:272:LYS:HG3  | 1.90                     | 0.53              |
| 3:Bn:615:LEU:HB2  | 3:Bx:616:LEU:HD13 | 1.91                     | 0.53              |
| 3:Br:113:ILE:HD13 | 3:Br:150:HIS:CE1  | 2.44                     | 0.53              |
| 1:Ae:364:GLN:HG2  | 1:Ae:365:PRO:HD2  | 1.90                     | 0.53              |
| 1:Ak:425:LEU:HB3  | 1:Ak:428:GLN:HE21 | 1.73                     | 0.53              |
| 2:Au:138:ASN:CG   | 2:Au:139:SER:N    | 2.67                     | 0.53              |
| 3:Bb:379:GLU:OE2  | 3:Bb:379:GLU:HA   | 2.09                     | 0.53              |
| 3:Bd:363:TYR:HE2  | 3:Bh:350:PHE:HE1  | 1.57                     | 0.53              |
| 3:Bf:95:MET:HA    | 3:Bf:95:MET:HE3   | 1.91                     | 0.53              |
| 3:Bl:383:ASP:HB2  | 3:Bl:385:PRO:HG3  | 1.90                     | 0.53              |
| 3:Bp:311:GLU:HG3  | 3:Bx:205:ASN:CG   | 2.33                     | 0.53              |
| 1:Ag:94:LEU:HD11  | 1:Aj:372:LEU:HD23 | 1.91                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ak:89:LEU:HD11  | 1:Ak:405:CYS:SG   | 2.49                     | 0.53              |
| 3:Bd:459:ARG:O    | 3:Bd:463:ILE:HG12 | 2.08                     | 0.53              |
| 3:Bj:229:LYS:HE2  | 3:Bj:272:LYS:HG3  | 1.91                     | 0.53              |
| 3:Bp:71:MET:HE1   | 3:Br:449:PHE:HB3  | 1.90                     | 0.53              |
| 3:Bp:255:ILE:HG21 | 3:Br:506:VAL:HG11 | 1.90                     | 0.53              |
| 3:Bt:604:GLN:HG2  | 3:Bt:606:PRO:HD3  | 1.91                     | 0.53              |
| 3:Bx:35:PHE:CZ    | 3:Bx:40:GLN:HG2   | 2.44                     | 0.53              |
| 1:Ah:334:LEU:HA   | 1:Ah:338:MET:HE1  | 1.91                     | 0.53              |
| 1:Al:12:ALA:HB1   | 1:Al:15:GLU:HG3   | 1.91                     | 0.53              |
| 1:Am:228:ILE:HD13 | 1:Am:267:MET:HE2  | 1.91                     | 0.53              |
| 2:Ax:128:TYR:CE1  | 3:Bt:343:ARG:HG3  | 2.44                     | 0.53              |
| 2:Az:81:SER:HA    | 2:Az:84:PHE:CE2   | 2.44                     | 0.53              |
| 3:Bb:511:ARG:HB2  | 3:Bt:246:TYR:HB2  | 1.90                     | 0.53              |
| 3:Bl:94:LEU:HD21  | 3:Bt:465:GLN:HG3  | 1.89                     | 0.53              |
| 3:Bl:181:GLN:O    | 3:Bl:185:GLU:HG3  | 2.09                     | 0.53              |
| 3:Bp:223:TYR:CZ   | 3:Bp:278:LYS:HD3  | 2.44                     | 0.53              |
| 1:Af:392:PHE:HB2  | 1:Af:407:ILE:HG23 | 1.91                     | 0.52              |
| 1:Ah:364:GLN:HG3  | 1:Ah:365:PRO:HD2  | 1.90                     | 0.52              |
| 1:Am:228:ILE:HD12 | 1:Am:342:ILE:HD11 | 1.91                     | 0.52              |
| 3:Bd:510:ILE:HG13 | 3:Bf:245:SER:HA   | 1.91                     | 0.52              |
| 3:Bd:538:LEU:HD11 | 3:Bf:559:LEU:HD11 | 1.90                     | 0.52              |
| 3:Bn:310:VAL:HG13 | 3:Bn:311:GLU:H    | 1.73                     | 0.52              |
| 3:Bv:37:ARG:HD2   | 3:Bv:116:ARG:HH12 | 1.74                     | 0.52              |
| 1:Ae:54:GLU:HB3   | 1:Ae:326:ALA:HB1  | 1.92                     | 0.52              |
| 1:Ag:26:MET:HE3   | 1:Ag:120:ALA:HA   | 1.90                     | 0.52              |
| 2:Ar:149:PHE:HZ   | 3:Bt:45:LEU:HB2   | 1.75                     | 0.52              |
| 3:Bh:372:TYR:CE2  | 3:Bl:348:LYS:HB2  | 2.44                     | 0.52              |
| 3:Br:584:PRO:HG3  | 3:Br:593:LEU:HD13 | 1.91                     | 0.52              |
| 1:Ab:386:VAL:HG12 | 1:Ab:388:LEU:HD12 | 1.91                     | 0.52              |
| 1:Ac:261:LEU:HD11 | 1:Ac:340:VAL:HG21 | 1.91                     | 0.52              |
| 1:Ad:257:ALA:HB2  | 1:Ad:311:LYS:HG3  | 1.91                     | 0.52              |
| 1:Af:24:THR:HG23  | 1:Af:116:GLU:HB2  | 1.90                     | 0.52              |
| 1:Ag:182:LEU:HD23 | 1:Ag:195:ALA:HB2  | 1.91                     | 0.52              |
| 1:Ah:168:TYR:HB3  | 1:Ah:211:VAL:HG22 | 1.90                     | 0.52              |
| 3:Bb:29:ALA:HB2   | 3:Bb:316:TYR:HE1  | 1.74                     | 0.52              |
| 3:Bb:503:GLU:HB2  | 3:Bb:504:LYS:HG2  | 1.92                     | 0.52              |
| 3:Bj:323:THR:HG22 | 3:Bj:415:VAL:HG23 | 1.90                     | 0.52              |
| 3:Bl:507:LEU:O    | 3:Bl:507:LEU:HD13 | 2.09                     | 0.52              |
| 3:Bn:307:TRP:HZ3  | 3:Bv:113:ILE:HD11 | 1.74                     | 0.52              |
| 3:Bp:255:ILE:HG12 | 3:Br:506:VAL:HB   | 1.91                     | 0.52              |
| 1:Ag:41:GLN:OE1   | 1:Ag:78:ASN:HA    | 2.09                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ak:295:PHE:HA   | 1:Ak:310:PRO:HG2  | 1.91                     | 0.52              |
| 1:An:68:THR:HB    | 1:An:323:GLU:OE1  | 2.09                     | 0.52              |
| 2:Ar:144:ASN:HD21 | 3:Bt:208:VAL:HG22 | 1.74                     | 0.52              |
| 3:Bj:76:ILE:HD11  | 3:Bv:453:LEU:HB3  | 1.91                     | 0.52              |
| 3:Bn:394:ASN:HB3  | 3:Bx:398:PRO:HB3  | 1.92                     | 0.52              |
| 3:Bp:11:ILE:HG21  | 3:Bp:281:ILE:HG21 | 1.92                     | 0.52              |
| 3:Bx:81:ARG:HG2   | 3:Bx:81:ARG:HH11  | 1.73                     | 0.52              |
| 1:Aa:46:THR:HG21  | 1:Ab:9:VAL:HG22   | 1.90                     | 0.52              |
| 1:Ah:278:VAL:HG12 | 1:Ah:293:ALA:HB3  | 1.90                     | 0.52              |
| 3:Bb:310:VAL:HG13 | 3:Bb:315:VAL:HG21 | 1.91                     | 0.52              |
| 3:Bd:96:GLY:O     | 3:Bd:100:THR:HG23 | 2.10                     | 0.52              |
| 3:Bj:255:ILE:HG12 | 3:Bv:506:VAL:HB   | 1.92                     | 0.52              |
| 3:Bl:247:PHE:HB2  | 3:Bl:252:LYS:NZ   | 2.25                     | 0.52              |
| 3:Bp:12:LEU:C     | 3:Bp:14:ARG:H     | 2.17                     | 0.52              |
| 3:Bx:248:LYS:HE3  | 3:Bx:273:ARG:NE   | 2.25                     | 0.52              |
| 1:Ad:354:TRP:HB3  | 1:Ad:421:ILE:HA   | 1.92                     | 0.52              |
| 1:Ae:241:TRP:CD1  | 1:Ae:241:TRP:H    | 2.27                     | 0.52              |
| 1:Ag:187:ILE:HG12 | 1:Am:186:ASP:OD1  | 2.10                     | 0.52              |
| 1:Ak:166:THR:HG22 | 1:Ak:355:ALA:HA   | 1.90                     | 0.52              |
| 3:Bb:255:ILE:HG22 | 3:Bb:255:ILE:O    | 2.09                     | 0.52              |
| 3:Bd:372:TYR:CE2  | 3:Bh:348:LYS:HB2  | 2.44                     | 0.52              |
| 3:Bj:273:ARG:NE   | 3:Bj:275:ARG:HE   | 2.07                     | 0.52              |
| 3:Bl:281:ILE:HG22 | 3:Bl:286:VAL:HG22 | 1.92                     | 0.52              |
| 3:Bt:349:PRO:HB2  | 3:Bt:389:LEU:HD11 | 1.91                     | 0.52              |
| 2:Ax:142:ASN:HB2  | 3:Bt:47:GLN:HE22  | 1.74                     | 0.52              |
| 1:Ac:187:ILE:HD11 | 1:Ac:196:TYR:HB2  | 1.91                     | 0.52              |
| 3:Bj:517:TYR:CD1  | 3:Bt:103:ARG:HD2  | 2.45                     | 0.52              |
| 3:Bp:271:ILE:HD13 | 3:Bx:134:ASP:HB3  | 1.92                     | 0.52              |
| 1:Ag:115:VAL:HG11 | 1:Ag:386:VAL:HG11 | 1.91                     | 0.52              |
| 1:Ai:23:ILE:HG12  | 1:Ai:25:PRO:HD3   | 1.92                     | 0.52              |
| 1:Ao:182:LEU:HD22 | 1:Ao:201:ILE:HD13 | 1.92                     | 0.52              |
| 3:Bb:357:ALA:HB3  | 3:Bb:375:ASN:HD21 | 1.74                     | 0.52              |
| 3:Bb:479:THR:HB   | 3:Bb:489:ASP:HB3  | 1.91                     | 0.52              |
| 3:Bf:510:ILE:HD13 | 3:Br:245:SER:HA   | 1.91                     | 0.52              |
| 3:Bl:310:VAL:HG13 | 3:Bl:311:GLU:H    | 1.74                     | 0.52              |
| 3:Br:410:SER:O    | 3:Br:414:GLU:HG3  | 2.10                     | 0.52              |
| 1:Aa:295:PHE:HB3  | 1:Aa:308:ILE:HG23 | 1.91                     | 0.52              |
| 1:Ae:147:PHE:HE2  | 1:Ae:351:ASN:HD22 | 1.58                     | 0.52              |
| 1:Ah:278:VAL:HG13 | 1:Ah:330:VAL:HG21 | 1.92                     | 0.52              |
| 1:Ao:350:THR:HG23 | 1:Ao:423:VAL:HG23 | 1.91                     | 0.52              |
| 2:Au:108:LYS:HG3  | 3:Bn:380:ASN:HB2  | 1.91                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:Aw:7:GLY:HA3    | 2:Aw:69:GLU:HG3   | 1.92                     | 0.52              |
| 2:Ba:58:TYR:HD2   | 2:Ba:75:LEU:HD21  | 1.75                     | 0.52              |
| 3:Bb:472:TYR:CD2  | 3:Bt:97:MET:HE2   | 2.45                     | 0.52              |
| 3:Bd:69:SER:O     | 3:Bd:73:GLN:HG2   | 2.10                     | 0.52              |
| 3:Bp:248:LYS:HZ2  | 3:Br:511:ARG:NH1  | 2.08                     | 0.52              |
| 1:Ac:122:MET:SD   | 1:Ac:126:MET:HE3  | 2.50                     | 0.51              |
| 1:Ag:19:THR:HG22  | 1:Am:52:GLU:HB3   | 1.92                     | 0.51              |
| 3:Bx:59:VAL:HG23  | 3:Bx:412:VAL:HG11 | 1.93                     | 0.51              |
| 1:Ad:366:ILE:HG21 | 1:Ad:372:LEU:HD23 | 1.91                     | 0.51              |
| 1:Af:110:LYS:HA   | 1:An:284:MET:HE2  | 1.92                     | 0.51              |
| 1:Ai:46:THR:HG22  | 1:Ai:78:ASN:HB3   | 1.91                     | 0.51              |
| 3:Bp:615:LEU:CD2  | 3:Bx:615:LEU:HD22 | 2.40                     | 0.51              |
| 1:Ag:148:VAL:HG11 | 1:Ag:205:VAL:HG23 | 1.91                     | 0.51              |
| 2:As:108:LYS:HB3  | 3:Bl:377:THR:HG21 | 1.91                     | 0.51              |
| 3:Br:28:GLU:HB3   | 3:Br:321:ARG:NH1  | 2.26                     | 0.51              |
| 1:Ae:187:ILE:HG21 | 1:Ai:188:PHE:HB2  | 1.92                     | 0.51              |
| 1:Af:359:ILE:HG12 | 1:Af:421:ILE:HD11 | 1.91                     | 0.51              |
| 1:Aj:149:ALA:HA   | 1:Aj:206:ALA:HB1  | 1.93                     | 0.51              |
| 1:Am:109:ARG:HD3  | 1:Am:109:ARG:H    | 1.75                     | 0.51              |
| 3:Bd:110:ALA:HA   | 3:Bd:148:PRO:HB3  | 1.92                     | 0.51              |
| 3:Bd:323:THR:HB   | 3:Bd:412:VAL:HG13 | 1.93                     | 0.51              |
| 3:Bd:334:MET:HE1  | 3:Bh:407:ALA:HB1  | 1.93                     | 0.51              |
| 3:Bn:511:ARG:CZ   | 3:Bv:232:ALA:HB1  | 2.40                     | 0.51              |
| 1:Ab:159:GLU:HG3  | 1:Ab:159:GLU:O    | 2.10                     | 0.51              |
| 1:Af:416:THR:HB   | 1:Aj:17:ILE:HD13  | 1.91                     | 0.51              |
| 1:Aj:131:ILE:HD11 | 1:Aj:150:ASP:OD1  | 2.11                     | 0.51              |
| 1:Aj:223:SER:OG   | 1:Aj:342:ILE:HG21 | 2.10                     | 0.51              |
| 1:Aj:304:THR:HG23 | 1:Aj:305:HIS:CD2  | 2.45                     | 0.51              |
| 1:Al:299:ARG:HH11 | 1:Al:299:ARG:HG3  | 1.76                     | 0.51              |
| 2:Ay:81:SER:HA    | 2:Ay:84:PHE:CE2   | 2.46                     | 0.51              |
| 3:Br:79:LEU:HA    | 3:Br:95:MET:HE2   | 1.92                     | 0.51              |
| 1:Aa:142:ALA:HB3  | 1:Ab:180:TYR:HE1  | 1.76                     | 0.51              |
| 1:Ad:284:MET:HG3  | 1:Ah:113:ASN:ND2  | 2.24                     | 0.51              |
| 1:Ak:35:PRO:HD2   | 1:Ak:364:GLN:HE21 | 1.75                     | 0.51              |
| 1:Ak:278:VAL:HG13 | 1:Ak:293:ALA:HB3  | 1.92                     | 0.51              |
| 1:An:317:ASP:HB3  | 1:An:320:LEU:HG   | 1.93                     | 0.51              |
| 3:Bj:471:ILE:HA   | 3:Bj:507:LEU:HD13 | 1.92                     | 0.51              |
| 3:Bn:255:ILE:HD13 | 3:Bn:258:LEU:HD22 | 1.93                     | 0.51              |
| 3:Bn:531:ASN:HD22 | 3:Bv:563:LYS:HE3  | 1.76                     | 0.51              |
| 3:Bp:362:MET:HE1  | 3:Bp:373:LEU:H    | 1.76                     | 0.51              |
| 1:Aa:128:SER:O    | 1:Aa:422:GLY:HA2  | 2.10                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Af:27:ALA:HB1   | 1:Af:386:VAL:HG13 | 1.93                     | 0.51              |
| 1:Af:382:SER:HB3  | 3:Bp:20:THR:HG21  | 1.92                     | 0.51              |
| 1:Ah:101:ARG:NH1  | 3:Bj:206:ASP:HB3  | 2.26                     | 0.51              |
| 1:Ak:97:GLU:HB3   | 3:Bd:45:LEU:HD22  | 1.93                     | 0.51              |
| 1:An:234:GLN:HE22 | 1:An:260:THR:HB   | 1.75                     | 0.51              |
| 3:Bh:481:THR:HB   | 3:Bh:488:LYS:HG2  | 1.92                     | 0.51              |
| 1:Ac:78:ASN:H     | 1:Ac:414:ASN:ND2  | 2.08                     | 0.51              |
| 1:Aj:368:ALA:HB3  | 1:Aj:378:THR:HG21 | 1.93                     | 0.51              |
| 3:Bd:133:GLU:O    | 3:Bd:137:PRO:HB3  | 2.11                     | 0.51              |
| 3:Bh:281:ILE:HG22 | 3:Bh:286:VAL:HG13 | 1.93                     | 0.51              |
| 3:Bn:123:VAL:HG21 | 3:Bn:153:CYS:HB3  | 1.93                     | 0.51              |
| 3:Bn:398:PRO:HB3  | 3:Bv:394:ASN:HB3  | 1.93                     | 0.51              |
| 1:Af:398:ILE:HG13 | 1:Ai:395:GLN:HB3  | 1.93                     | 0.51              |
| 1:Ao:130:VAL:HG21 | 1:Ao:272:LYS:HB3  | 1.91                     | 0.51              |
| 2:Ax:132:MET:HE3  | 2:Ax:149:PHE:CZ   | 2.46                     | 0.51              |
| 3:Bd:616:LEU:HD13 | 3:Bd:619:GLN:HE22 | 1.75                     | 0.51              |
| 1:Ae:196:TYR:CE2  | 1:Ao:201:ILE:HD11 | 2.46                     | 0.51              |
| 1:Af:295:PHE:HD1  | 1:Af:310:PRO:HD2  | 1.75                     | 0.51              |
| 2:Ap:133:PRO:HA   | 2:Ap:147:HIS:HA   | 1.92                     | 0.51              |
| 3:Bd:80:TYR:HE1   | 3:Bh:518:THR:HG22 | 1.76                     | 0.51              |
| 3:Bj:61:ARG:HG2   | 3:Bj:61:ARG:HH11  | 1.75                     | 0.51              |
| 3:Bl:128:LEU:HD11 | 3:Bt:460:ASP:OD2  | 2.10                     | 0.51              |
| 3:Bn:158:TRP:CG   | 3:Bn:167:LYS:HD2  | 2.46                     | 0.51              |
| 3:Bx:333:ILE:HG21 | 3:Bx:405:LEU:HB2  | 1.93                     | 0.51              |
| 1:Aa:108:ALA:HB1  | 1:Aa:384:PRO:HD3  | 1.91                     | 0.50              |
| 1:Af:8:ILE:HD13   | 1:Af:10:THR:HG23  | 1.93                     | 0.50              |
| 1:Ag:63:LEU:HA    | 1:Ag:66:LYS:NZ    | 2.26                     | 0.50              |
| 1:Ai:295:PHE:HA   | 1:Ai:310:PRO:HG2  | 1.94                     | 0.50              |
| 1:Ao:126:MET:HG2  | 1:Ao:126:MET:O    | 2.11                     | 0.50              |
| 2:Av:54:ILE:HG12  | 2:Av:114:LEU:HD23 | 1.91                     | 0.50              |
| 3:Bj:561:ASP:HA   | 3:Bj:569:ARG:NH2  | 2.25                     | 0.50              |
| 3:Bl:385:PRO:HA   | 3:Bt:352:TRP:CZ2  | 2.44                     | 0.50              |
| 3:Bl:614:VAL:HG11 | 3:Bt:616:LEU:HD12 | 1.93                     | 0.50              |
| 3:Bn:471:ILE:C    | 3:Bn:507:LEU:HD11 | 2.36                     | 0.50              |
| 3:Bp:246:TYR:HD2  | 3:Br:511:ARG:HB3  | 1.76                     | 0.50              |
| 1:Aa:156:PHE:HD1  | 1:Aa:162:ARG:HH22 | 1.58                     | 0.50              |
| 1:Aa:171:ASN:ND2  | 1:Aa:174:ASP:H    | 2.08                     | 0.50              |
| 3:Bb:255:ILE:HG13 | 3:Bb:258:LEU:HD13 | 1.93                     | 0.50              |
| 3:Bj:199:PRO:HD2  | 3:Bj:217:ILE:HD12 | 1.93                     | 0.50              |
| 3:Bn:54:ARG:HG3   | 3:Bn:54:ARG:NH1   | 2.24                     | 0.50              |
| 1:Af:3:LEU:HD13   | 1:Ai:70:LEU:HB2   | 1.93                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ag:4:ASN:HD21   | 1:Aj:241:TRP:NE1  | 2.10                     | 0.50              |
| 1:Am:299:ARG:NH2  | 1:Am:301:VAL:HG22 | 2.26                     | 0.50              |
| 2:Ap:56:THR:HG22  | 2:Ap:114:LEU:HD22 | 1.94                     | 0.50              |
| 3:Bb:506:VAL:HB   | 3:Bt:255:ILE:HG12 | 1.93                     | 0.50              |
| 3:Bj:345:PRO:HG2  | 3:Bj:392:TYR:CZ   | 2.46                     | 0.50              |
| 3:Bn:94:LEU:HA    | 3:Bn:97:MET:HE2   | 1.93                     | 0.50              |
| 3:Bv:612:GLN:NE2  | 3:Bv:616:LEU:HD11 | 2.26                     | 0.50              |
| 1:Aa:6:GLY:HA3    | 1:Ak:74:ASN:HD21  | 1.77                     | 0.50              |
| 1:Ae:36:PRO:HB3   | 3:Bv:210:PRO:HB2  | 1.93                     | 0.50              |
| 2:Ax:126:ALA:H    | 3:Bl:364:ASP:HB2  | 1.76                     | 0.50              |
| 3:Bb:404:MET:SD   | 3:Bt:337:ASN:HB3  | 2.51                     | 0.50              |
| 3:Bf:37:ARG:HE    | 3:Bf:116:ARG:NH1  | 2.09                     | 0.50              |
| 3:Bj:459:ARG:O    | 3:Bj:463:ILE:HG12 | 2.11                     | 0.50              |
| 3:Bl:619:GLN:HA   | 3:Bl:622:LEU:HD13 | 1.94                     | 0.50              |
| 3:Bp:525:GLN:OE1  | 3:Bx:103:ARG:HB2  | 2.12                     | 0.50              |
| 3:Bv:546:THR:OG1  | 3:Bv:547:PRO:HD3  | 2.11                     | 0.50              |
| 1:Aa:161:ASN:H    | 1:Aa:417:ARG:NH2  | 2.09                     | 0.50              |
| 1:Ab:46:THR:C     | 1:Ab:47:ILE:HD13  | 2.37                     | 0.50              |
| 1:Ab:239:VAL:HG13 | 1:Ab:252:VAL:HG21 | 1.94                     | 0.50              |
| 1:Ai:286:LYS:H    | 1:Ai:286:LYS:HD2  | 1.76                     | 0.50              |
| 1:Aj:182:LEU:HD12 | 1:Aj:201:ILE:HG22 | 1.93                     | 0.50              |
| 1:Al:198:ASP:O    | 1:Al:200:THR:HG22 | 2.11                     | 0.50              |
| 1:Am:309:THR:HB   | 1:Am:310:PRO:HD3  | 1.93                     | 0.50              |
| 3:Bj:341:VAL:HG11 | 3:Bv:333:ILE:HD13 | 1.93                     | 0.50              |
| 1:Ac:70:LEU:HD11  | 1:Ad:89:LEU:HD11  | 1.94                     | 0.50              |
| 1:Ak:363:SER:HB3  | 1:Ak:388:LEU:HD22 | 1.93                     | 0.50              |
| 1:Am:275:PHE:HB3  | 1:Am:338:MET:SD   | 2.51                     | 0.50              |
| 2:At:33:MET:HE2   | 2:At:69:GLU:OE1   | 2.11                     | 0.50              |
| 2:Aw:128:TYR:HD2  | 2:Aw:132:MET:HG2  | 1.77                     | 0.50              |
| 3:Bh:599:ALA:HA   | 3:Bh:603:GLN:HB2  | 1.92                     | 0.50              |
| 3:Bj:79:LEU:HD22  | 3:Bv:521:GLY:HA3  | 1.93                     | 0.50              |
| 1:Ac:345:VAL:HG22 | 1:Ac:428:GLN:HG3  | 1.92                     | 0.50              |
| 1:Ac:383:ILE:HD13 | 1:Ac:386:VAL:HB   | 1.93                     | 0.50              |
| 1:Al:53:GLN:HB2   | 1:Al:327:TYR:OH   | 2.11                     | 0.50              |
| 1:Al:255:ARG:HG2  | 1:Al:418:PRO:HG2  | 1.93                     | 0.50              |
| 1:Aa:130:VAL:HB   | 1:Aa:343:LEU:HD23 | 1.94                     | 0.50              |
| 1:Ad:130:VAL:HG21 | 1:Ad:272:LYS:HB3  | 1.94                     | 0.50              |
| 1:Am:81:GLU:HG2   | 1:Am:82:PRO:HD2   | 1.94                     | 0.50              |
| 3:Bb:259:ALA:HB1  | 3:Bb:263:PHE:HD2  | 1.77                     | 0.50              |
| 3:Bd:281:ILE:HG22 | 3:Bd:286:VAL:HG13 | 1.94                     | 0.50              |
| 3:Bh:88:PRO:HB2   | 3:Bh:561:ASP:OD2  | 2.12                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bn:37:ARG:HH21  | 3:Bn:116:ARG:HG2  | 1.77                     | 0.50              |
| 3:Br:317:GLU:OE2  | 3:Br:321:ARG:HB3  | 2.11                     | 0.50              |
| 3:Bx:231:THR:HG21 | 3:Bx:249:ARG:HD3  | 1.94                     | 0.50              |
| 1:Ac:70:LEU:HG    | 1:Ad:89:LEU:HD21  | 1.93                     | 0.50              |
| 1:Ac:90:ARG:HA    | 1:Ac:401:LEU:HB2  | 1.94                     | 0.50              |
| 1:Ah:221:THR:HA   | 1:Ah:347:ASP:HB3  | 1.94                     | 0.50              |
| 1:Am:346:LYS:HB2  | 1:Am:346:LYS:NZ   | 2.25                     | 0.50              |
| 3:Bn:538:LEU:HD21 | 3:Bv:559:LEU:HD21 | 1.93                     | 0.50              |
| 1:Af:372:LEU:HD11 | 1:An:61:TRP:HE1   | 1.77                     | 0.49              |
| 1:Aj:161:ASN:HB3  | 1:Aj:417:ARG:HH12 | 1.77                     | 0.49              |
| 2:Ar:149:PHE:CZ   | 3:Bt:45:LEU:HB2   | 2.46                     | 0.49              |
| 2:Ax:9:LEU:HD22   | 2:Ax:84:PHE:HB3   | 1.93                     | 0.49              |
| 2:Ay:75:LEU:HD21  | 2:Ay:83:VAL:HG21  | 1.94                     | 0.49              |
| 3:Bf:164:LEU:HD12 | 3:Bf:169:ASP:HB2  | 1.93                     | 0.49              |
| 3:Bh:110:ALA:HA   | 3:Bh:148:PRO:HB3  | 1.93                     | 0.49              |
| 3:Bh:607:ALA:HB1  | 3:Bl:608:MET:HB3  | 1.94                     | 0.49              |
| 3:Bp:363:TYR:CZ   | 3:Bp:372:TYR:HB3  | 2.47                     | 0.49              |
| 3:Br:158:TRP:CD2  | 3:Br:167:LYS:HG2  | 2.47                     | 0.49              |
| 3:Bv:8:LEU:HD23   | 3:Bv:286:VAL:HG13 | 1.94                     | 0.49              |
| 3:Bx:234:ILE:HD11 | 3:Bx:269:ARG:HD3  | 1.94                     | 0.49              |
| 1:Aa:49:MET:HE1   | 1:Aa:77:VAL:HG13  | 1.94                     | 0.49              |
| 1:Aa:255:ARG:HH11 | 1:Aa:416:THR:HA   | 1.78                     | 0.49              |
| 1:Ab:90:ARG:HE    | 1:Ab:93:ASP:HB2   | 1.77                     | 0.49              |
| 1:Af:138:GLY:H    | 1:Af:143:ASP:HB2  | 1.77                     | 0.49              |
| 1:Am:386:VAL:HG22 | 1:Am:388:LEU:HG   | 1.94                     | 0.49              |
| 2:As:133:PRO:HA   | 2:As:147:HIS:HA   | 1.94                     | 0.49              |
| 1:Ah:377:LYS:HD2  | 3:Bj:211:TRP:HA   | 1.93                     | 0.49              |
| 3:Bb:36:SER:HB2   | 3:Bb:320:VAL:HG11 | 1.93                     | 0.49              |
| 3:Bb:246:TYR:CE1  | 3:Bj:511:ARG:HB3  | 2.47                     | 0.49              |
| 3:Bb:362:MET:HE1  | 3:Bb:373:LEU:HB2  | 1.93                     | 0.49              |
| 3:Bl:409:THR:O    | 3:Bl:413:LYS:HG2  | 2.12                     | 0.49              |
| 1:Ae:40:MET:HE1   | 1:Ae:410:TRP:CH2  | 2.46                     | 0.49              |
| 1:Aj:286:LYS:HD2  | 1:Aj:315:LEU:HD13 | 1.94                     | 0.49              |
| 3:Bb:538:LEU:HD11 | 3:Bt:559:LEU:HD21 | 1.93                     | 0.49              |
| 3:Bh:178:SER:HB3  | 3:Bl:312:ASP:OD1  | 2.12                     | 0.49              |
| 3:Bn:334:MET:HA   | 3:Bn:334:MET:HE2  | 1.94                     | 0.49              |
| 3:Bn:478:VAL:O    | 3:Bn:491:GLN:HG3  | 2.13                     | 0.49              |
| 3:Bp:543:PRO:O    | 3:Bp:548:GLU:HB2  | 2.12                     | 0.49              |
| 3:Br:454:ALA:HB1  | 3:Br:520:VAL:HG21 | 1.94                     | 0.49              |
| 1:Aa:168:TYR:CD1  | 1:Aa:353:PHE:HB3  | 2.48                     | 0.49              |
| 1:Ac:90:ARG:HG2   | 1:Ac:92:ASP:OD1   | 2.12                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Af:81:GLU:HB3   | 1:An:60:GLY:HA2   | 1.93                     | 0.49              |
| 1:Ag:349:ARG:HH11 | 1:Ag:349:ARG:HG2  | 1.75                     | 0.49              |
| 1:Am:109:ARG:HG2  | 1:Am:109:ARG:HH11 | 1.77                     | 0.49              |
| 2:Ba:91:ILE:HG23  | 2:Ba:95:TYR:HE1   | 1.77                     | 0.49              |
| 3:Bb:58:ASP:OD1   | 3:Bb:61:ARG:HB2   | 2.12                     | 0.49              |
| 3:Bj:193:LEU:HD22 | 3:Bj:287:LEU:HB3  | 1.94                     | 0.49              |
| 1:Ag:118:LYS:O    | 1:Ag:122:MET:HB2  | 2.13                     | 0.49              |
| 1:Ah:295:PHE:HA   | 1:Ah:310:PRO:HG2  | 1.94                     | 0.49              |
| 1:An:85:ASP:OD2   | 1:An:107:ALA:HB1  | 2.12                     | 0.49              |
| 1:An:281:LEU:HD21 | 1:An:286:LYS:HD2  | 1.94                     | 0.49              |
| 2:Au:122:ARG:HD2  | 3:Bn:360:GLU:OE1  | 2.13                     | 0.49              |
| 3:Bb:110:ALA:HA   | 3:Bb:148:PRO:HB3  | 1.95                     | 0.49              |
| 3:Bh:184:TRP:CE2  | 3:Bh:199:PRO:HD3  | 2.47                     | 0.49              |
| 3:Bj:564:GLY:HA3  | 3:Bv:554:LEU:HD21 | 1.94                     | 0.49              |
| 3:Bv:575:GLN:O    | 3:Bv:579:MET:HG2  | 2.13                     | 0.49              |
| 1:Ac:86:PHE:CD1   | 1:Ac:406:ARG:HB2  | 2.48                     | 0.49              |
| 1:Ad:236:PHE:CZ   | 1:Ad:259:VAL:HG12 | 2.48                     | 0.49              |
| 1:Aj:275:PHE:HB3  | 1:Aj:338:MET:SD   | 2.52                     | 0.49              |
| 1:Ak:302:ASP:OD1  | 1:Ak:305:HIS:HB2  | 2.13                     | 0.49              |
| 1:Ao:112:ALA:O    | 1:Ao:115:VAL:HG12 | 2.13                     | 0.49              |
| 2:Av:20:ALA:HB1   | 2:Av:28:VAL:HG12  | 1.93                     | 0.49              |
| 3:Bh:164:LEU:HD13 | 3:Bh:169:ASP:HB2  | 1.95                     | 0.49              |
| 3:Bh:252:LYS:HB2  | 3:Bh:255:ILE:HG22 | 1.95                     | 0.49              |
| 3:Bj:214:GLN:HG3  | 3:Bv:313:LYS:NZ   | 2.23                     | 0.49              |
| 3:Bn:469:ASN:HB3  | 3:Bn:513:ARG:HD2  | 1.94                     | 0.49              |
| 3:Bx:234:ILE:HG12 | 3:Bx:246:TYR:HD1  | 1.77                     | 0.49              |
| 1:Aa:269:ARG:HG3  | 1:Aa:298:VAL:O    | 2.13                     | 0.49              |
| 1:Ac:239:VAL:HG23 | 1:Ac:252:VAL:HG11 | 1.93                     | 0.49              |
| 3:Bd:27:ARG:HG2   | 3:Bd:27:ARG:HH11  | 1.78                     | 0.49              |
| 3:Bf:511:ARG:CZ   | 3:Bf:511:ARG:HB2  | 2.43                     | 0.49              |
| 3:Bj:255:ILE:HG21 | 3:Bv:506:VAL:HG11 | 1.95                     | 0.49              |
| 3:Bv:252:LYS:O    | 3:Bv:252:LYS:HG3  | 2.11                     | 0.49              |
| 1:Ab:31:LYS:HE2   | 1:Ab:357:ASP:HA   | 1.94                     | 0.49              |
| 1:Ag:34:THR:O     | 1:Ag:36:PRO:HD3   | 2.13                     | 0.49              |
| 1:Ag:86:PHE:CZ    | 1:Ag:404:LEU:HD22 | 2.47                     | 0.49              |
| 1:Ah:220:LEU:HD22 | 1:Ah:425:LEU:HD11 | 1.95                     | 0.49              |
| 1:An:81:GLU:HG2   | 1:An:82:PRO:HD2   | 1.95                     | 0.49              |
| 2:Ay:91:ILE:HG23  | 2:Ay:95:TYR:HE1   | 1.78                     | 0.49              |
| 3:Bb:44:TRP:HB3   | 3:Bb:209:PHE:HD2  | 1.78                     | 0.49              |
| 3:Bf:379:GLU:HG2  | 3:Bf:380:ASN:H    | 1.78                     | 0.49              |
| 1:Ah:96:ASP:HB2   | 1:Ah:98:THR:HG22  | 1.93                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ak:354:TRP:CD1  | 1:Ak:354:TRP:C    | 2.91                     | 0.49              |
| 1:Ao:238:PRO:HD2  | 1:Ao:324:GLN:HB3  | 1.95                     | 0.49              |
| 2:Aq:81:SER:HB2   | 2:Av:42:ALA:HB1   | 1.95                     | 0.49              |
| 2:Ax:26:THR:HG22  | 2:Ax:27:ASP:H     | 1.78                     | 0.49              |
| 3:Bb:114:ALA:HB3  | 3:Bb:126:TRP:HE1  | 1.76                     | 0.49              |
| 3:Bl:543:PRO:O    | 3:Bl:548:GLU:HB2  | 2.13                     | 0.49              |
| 3:Bn:23:ASP:O     | 3:Bn:27:ARG:HG3   | 2.13                     | 0.49              |
| 3:Bn:225:VAL:HG12 | 3:Bn:276:VAL:HG22 | 1.95                     | 0.49              |
| 3:Bt:310:VAL:HG13 | 3:Bt:311:GLU:N    | 2.26                     | 0.49              |
| 1:Ad:121:ASN:O    | 1:Ad:125:GLU:HG3  | 2.13                     | 0.48              |
| 1:Ae:96:ASP:HB3   | 1:Ah:41:GLN:HE22  | 1.78                     | 0.48              |
| 1:Am:269:ARG:HD2  | 1:Am:298:VAL:O    | 2.13                     | 0.48              |
| 3:Bb:310:VAL:HG23 | 3:Bb:311:GLU:H    | 1.78                     | 0.48              |
| 3:Bt:324:LYS:O    | 3:Bt:328:ARG:HG3  | 2.12                     | 0.48              |
| 3:Bv:323:THR:HG22 | 3:Bv:415:VAL:HG23 | 1.95                     | 0.48              |
| 3:Bx:123:VAL:HG11 | 3:Bx:153:CYS:HB3  | 1.95                     | 0.48              |
| 1:Aa:82:PRO:HG2   | 1:Al:61:TRP:HB3   | 1.94                     | 0.48              |
| 1:Aa:126:MET:HG3  | 1:Aa:309:THR:HG23 | 1.95                     | 0.48              |
| 1:Ag:238:PRO:HD2  | 1:Ag:324:GLN:HB3  | 1.94                     | 0.48              |
| 1:Aj:168:TYR:HB2  | 1:Aj:208:PHE:CD2  | 2.48                     | 0.48              |
| 3:Bf:362:MET:HG2  | 3:Bf:369:TYR:CD1  | 2.49                     | 0.48              |
| 3:Bj:313:LYS:HE2  | 3:Bj:313:LYS:HB2  | 1.64                     | 0.48              |
| 3:Bl:15:PHE:HD1   | 3:Bl:174:THR:HG21 | 1.78                     | 0.48              |
| 3:Br:97:MET:HA    | 3:Br:100:THR:HG22 | 1.94                     | 0.48              |
| 3:Br:350:PHE:HB2  | 3:Br:390:ALA:O    | 2.13                     | 0.48              |
| 1:Ab:118:LYS:O    | 1:Ab:122:MET:HB2  | 2.13                     | 0.48              |
| 2:Ar:17:LEU:HD13  | 2:Ar:88:ALA:HB1   | 1.95                     | 0.48              |
| 2:Av:108:LYS:HG3  | 3:Br:380:ASN:HB2  | 1.95                     | 0.48              |
| 3:Bf:404:MET:HE2  | 3:Bf:404:MET:HA   | 1.94                     | 0.48              |
| 3:Bh:342:ALA:HB2  | 3:Bl:332:MET:HE1  | 1.95                     | 0.48              |
| 3:Bh:611:ALA:HA   | 3:Bl:616:LEU:HD21 | 1.95                     | 0.48              |
| 3:Bl:15:PHE:HE1   | 3:Bl:157:ILE:HD13 | 1.79                     | 0.48              |
| 3:Bt:254:VAL:HG23 | 3:Bt:255:ILE:HD13 | 1.95                     | 0.48              |
| 1:Ac:285:ALA:HB2  | 1:Ad:216:LYS:HE3  | 1.96                     | 0.48              |
| 1:Ad:86:PHE:CZ    | 1:Ad:404:LEU:HD22 | 2.48                     | 0.48              |
| 1:Ad:346:LYS:HE3  | 1:Ad:346:LYS:HB2  | 1.59                     | 0.48              |
| 1:Ag:419:GLU:CD   | 1:Ag:419:GLU:H    | 2.22                     | 0.48              |
| 1:Am:74:ASN:ND2   | 1:Am:251:ASN:HD22 | 2.11                     | 0.48              |
| 2:Ax:150:PRO:HD2  | 3:Bt:52:GLN:HA    | 1.95                     | 0.48              |
| 2:Ay:130:SER:HB2  | 2:Ay:150:PRO:HB3  | 1.95                     | 0.48              |
| 2:Ay:150:PRO:HG3  | 3:Bv:49:THR:HG22  | 1.96                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bh:329:LEU:O    | 3:Bh:333:ILE:HG12 | 2.12                     | 0.48              |
| 3:Bn:538:LEU:HD22 | 3:Bv:556:TYR:HE1  | 1.78                     | 0.48              |
| 1:Aa:128:SER:OG   | 1:Aa:310:PRO:HG3  | 2.14                     | 0.48              |
| 1:Aa:202:GLN:HB3  | 1:Ab:197:ARG:HH21 | 1.79                     | 0.48              |
| 1:Ab:345:VAL:HB   | 1:Ab:430:ALA:HB3  | 1.96                     | 0.48              |
| 1:Ag:84:ASN:ND2   | 1:Am:63:LEU:HD11  | 2.28                     | 0.48              |
| 1:Ah:236:PHE:CZ   | 1:Ah:259:VAL:HG22 | 2.49                     | 0.48              |
| 2:Ba:43:MET:HG3   | 2:Ba:90:ARG:CZ    | 2.44                     | 0.48              |
| 3:Bb:530:GLN:OE1  | 3:Bt:79:LEU:HD11  | 2.13                     | 0.48              |
| 3:Bb:608:MET:HE2  | 3:Bb:608:MET:HA   | 1.94                     | 0.48              |
| 3:Bh:157:ILE:HB   | 3:Bh:174:THR:HG23 | 1.95                     | 0.48              |
| 3:Bh:158:TRP:CD2  | 3:Bh:167:LYS:HG2  | 2.48                     | 0.48              |
| 3:Bn:102:MET:HE3  | 3:Bn:146:ARG:HH21 | 1.77                     | 0.48              |
| 3:Bn:586:THR:HG23 | 3:Bn:589:GLU:HG3  | 1.93                     | 0.48              |
| 3:Bn:615:LEU:HA   | 3:Bx:616:LEU:HD22 | 1.96                     | 0.48              |
| 3:Br:236:GLN:HB2  | 3:Br:266:ILE:HD11 | 1.94                     | 0.48              |
| 3:Bx:458:ARG:HH11 | 3:Bx:458:ARG:HG3  | 1.78                     | 0.48              |
| 1:Ae:237:LYS:HE2  | 1:Ae:237:LYS:HB2  | 1.73                     | 0.48              |
| 1:Ae:321:SER:HB3  | 1:Ae:324:GLN:HE21 | 1.78                     | 0.48              |
| 1:Ag:40:MET:HG2   | 3:Bf:47:GLN:HA    | 1.95                     | 0.48              |
| 1:Ag:284:MET:HE2  | 1:Ak:20:ILE:HG21  | 1.96                     | 0.48              |
| 1:Am:159:GLU:OE1  | 1:Am:284:MET:HB2  | 2.12                     | 0.48              |
| 2:Ay:113:LEU:HD23 | 2:Ay:116:LYS:HE2  | 1.95                     | 0.48              |
| 3:Bb:578:GLN:HG3  | 3:Bb:596:ALA:HB2  | 1.94                     | 0.48              |
| 3:Bd:248:LYS:HG3  | 3:Bh:511:ARG:NH2  | 2.29                     | 0.48              |
| 3:Bh:37:ARG:HE    | 3:Bh:116:ARG:NH1  | 2.05                     | 0.48              |
| 3:Bl:278:LYS:HE3  | 3:Bl:293:ILE:HD11 | 1.96                     | 0.48              |
| 3:Bn:15:PHE:CD1   | 3:Bn:174:THR:HG21 | 2.47                     | 0.48              |
| 3:Bn:150:HIS:CD2  | 3:Bx:309:PHE:HB2  | 2.48                     | 0.48              |
| 3:Bv:158:TRP:CG   | 3:Bv:167:LYS:HD2  | 2.49                     | 0.48              |
| 1:Aa:19:THR:HG22  | 1:Al:417:ARG:HD3  | 1.94                     | 0.48              |
| 1:Ac:115:VAL:HG11 | 1:Ac:386:VAL:HG11 | 1.94                     | 0.48              |
| 2:Az:134:THR:HG22 | 2:Az:148:TYR:CZ   | 2.48                     | 0.48              |
| 3:Bh:550:GLN:HE21 | 3:Bh:581:VAL:HG21 | 1.79                     | 0.48              |
| 3:Bl:81:ARG:HB2   | 3:Bt:517:TYR:CZ   | 2.48                     | 0.48              |
| 3:Bn:234:ILE:HG22 | 3:Bn:266:ILE:HB   | 1.96                     | 0.48              |
| 3:Br:347:LYS:O    | 3:Br:348:LYS:HD3  | 2.14                     | 0.48              |
| 3:Br:556:TYR:CE2  | 3:Br:567:MET:HE2  | 2.49                     | 0.48              |
| 1:Ac:172:PRO:HD2  | 1:Ac:349:ARG:HH21 | 1.79                     | 0.48              |
| 2:Ar:43:MET:HE3   | 2:Ar:90:ARG:HD3   | 1.96                     | 0.48              |
| 2:Au:134:THR:HB   | 2:Au:138:ASN:OD1  | 2.14                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bh:94:LEU:HA    | 3:Bh:97:MET:HE2   | 1.96                     | 0.48              |
| 3:Bj:61:ARG:HG2   | 3:Bj:61:ARG:NH1   | 2.29                     | 0.48              |
| 3:Bj:220:ALA:HB3  | 3:Bj:281:ILE:HG13 | 1.95                     | 0.48              |
| 3:Bj:536:LEU:HD21 | 3:Bv:541:LYS:HE2  | 1.95                     | 0.48              |
| 3:Bl:611:ALA:HB1  | 3:Bt:615:LEU:HD12 | 1.95                     | 0.48              |
| 3:Bp:518:THR:HG23 | 3:Bx:78:VAL:HG13  | 1.94                     | 0.48              |
| 1:Af:190:ARG:HG3  | 1:Af:190:ARG:NH1  | 2.29                     | 0.48              |
| 1:Af:299:ARG:HH12 | 1:Af:301:VAL:HG22 | 1.79                     | 0.48              |
| 1:Ao:168:TYR:HB3  | 1:Ao:211:VAL:HG22 | 1.96                     | 0.48              |
| 2:At:15:ARG:HG3   | 2:Ay:94:ASP:OD1   | 2.14                     | 0.48              |
| 2:At:90:ARG:O     | 2:At:93:PRO:HD2   | 2.14                     | 0.48              |
| 3:Bj:376:ARG:HH21 | 3:Bv:384:LEU:HD12 | 1.79                     | 0.48              |
| 3:Bj:469:ASN:HB3  | 3:Bj:513:ARG:HD2  | 1.95                     | 0.48              |
| 3:Bn:47:GLN:HG2   | 3:Bn:50:THR:H     | 1.79                     | 0.48              |
| 1:Al:182:LEU:HD23 | 1:Al:195:ALA:HB2  | 1.96                     | 0.48              |
| 1:An:168:TYR:CD1  | 1:An:353:PHE:HB3  | 2.48                     | 0.48              |
| 3:Bd:45:LEU:HD23  | 3:Bd:45:LEU:H     | 1.79                     | 0.48              |
| 3:Bd:80:TYR:C     | 3:Bd:81:ARG:HD2   | 2.39                     | 0.48              |
| 3:Bd:199:PRO:HG3  | 3:Bd:219:ILE:HD12 | 1.96                     | 0.48              |
| 3:Bj:113:ILE:HD11 | 3:Bv:307:TRP:HZ3  | 1.77                     | 0.48              |
| 3:Bp:309:PHE:HB2  | 3:Bx:150:HIS:ND1  | 2.29                     | 0.48              |
| 3:Bv:259:ALA:HA   | 3:Bv:263:PHE:HD2  | 1.79                     | 0.48              |
| 1:Aa:255:ARG:HD2  | 1:Aa:418:PRO:HG3  | 1.96                     | 0.47              |
| 1:Ab:191:ILE:HB   | 1:Ab:192:PRO:HD3  | 1.96                     | 0.47              |
| 1:Ac:161:ASN:HA   | 1:Ad:21:SER:HB3   | 1.95                     | 0.47              |
| 1:Ad:379:THR:HG23 | 1:Ad:392:PHE:HB3  | 1.95                     | 0.47              |
| 1:Ae:34:THR:HG21  | 1:Ae:362:VAL:HG13 | 1.94                     | 0.47              |
| 1:Ak:354:TRP:HB2  | 1:Ak:421:ILE:HD13 | 1.95                     | 0.47              |
| 1:Al:234:GLN:HE22 | 1:Al:259:VAL:HA   | 1.78                     | 0.47              |
| 1:Am:40:MET:HE2   | 1:Am:45:ASN:HA    | 1.96                     | 0.47              |
| 1:Am:106:SER:HA   | 1:Am:109:ARG:HE   | 1.79                     | 0.47              |
| 2:Ap:36:ALA:HA    | 2:Ap:91:ILE:HD11  | 1.96                     | 0.47              |
| 2:Ar:113:LEU:HD12 | 2:Aw:46:GLU:HG3   | 1.94                     | 0.47              |
| 2:Ay:131:ARG:NH2  | 3:Bv:52:GLN:HB3   | 2.29                     | 0.47              |
| 3:Bn:179:MET:HE2  | 3:Bn:179:MET:HB3  | 1.78                     | 0.47              |
| 3:Bn:571:TYR:HB2  | 3:Bx:581:VAL:HG23 | 1.96                     | 0.47              |
| 3:Bx:127:ARG:HG3  | 3:Bx:300:ILE:HD13 | 1.96                     | 0.47              |
| 1:Ab:295:PHE:HA   | 1:Ab:310:PRO:HG2  | 1.96                     | 0.47              |
| 1:Af:366:ILE:H    | 1:Af:366:ILE:HD12 | 1.78                     | 0.47              |
| 1:Ag:51:VAL:HA    | 1:Ak:17:ILE:HG12  | 1.96                     | 0.47              |
| 1:Ag:95:ARG:HB3   | 1:Aj:37:ALA:HB1   | 1.96                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ag:171:ASN:HB2  | 1:Ag:349:ARG:NH1  | 2.28                     | 0.47              |
| 1:Ak:275:PHE:O    | 1:Ak:278:VAL:HG12 | 2.14                     | 0.47              |
| 1:Al:234:GLN:HE22 | 1:Al:260:THR:H    | 1.62                     | 0.47              |
| 1:Am:295:PHE:CD1  | 1:Am:310:PRO:HB2  | 2.49                     | 0.47              |
| 2:Av:43:MET:CE    | 2:Av:86:ASN:HB3   | 2.44                     | 0.47              |
| 3:Bj:556:TYR:CE1  | 3:Bv:538:LEU:HD13 | 2.50                     | 0.47              |
| 3:Bn:280:ILE:HG22 | 3:Bn:287:LEU:HD23 | 1.96                     | 0.47              |
| 3:Br:79:LEU:HD23  | 3:Br:81:ARG:HD2   | 1.96                     | 0.47              |
| 3:Bt:5:GLU:HG3    | 3:Bt:7:ARG:H      | 1.79                     | 0.47              |
| 1:Ac:379:THR:HG22 | 1:Ac:380:SER:H    | 1.79                     | 0.47              |
| 1:Ac:397:ASP:HB2  | 1:Ac:402:SER:HB2  | 1.96                     | 0.47              |
| 1:Ad:71:LEU:HD21  | 1:Ad:238:PRO:HB2  | 1.96                     | 0.47              |
| 1:Al:286:LYS:HA   | 1:Al:286:LYS:HD3  | 1.69                     | 0.47              |
| 3:Bl:310:VAL:HG13 | 3:Bl:311:GLU:N    | 2.28                     | 0.47              |
| 3:Bl:317:GLU:OE1  | 3:Bl:321:ARG:HG2  | 2.15                     | 0.47              |
| 3:Bv:289:ASP:O    | 3:Bv:291:GLN:HG3  | 2.14                     | 0.47              |
| 3:Bv:468:VAL:HG22 | 3:Bv:472:TYR:HD2  | 1.79                     | 0.47              |
| 1:Af:6:GLY:CA     | 1:Ai:74:ASN:HD21  | 2.27                     | 0.47              |
| 1:Ah:377:LYS:HD3  | 3:Bj:211:TRP:HD1  | 1.80                     | 0.47              |
| 1:Ai:225:ALA:HB1  | 1:Ai:228:ILE:HD11 | 1.96                     | 0.47              |
| 1:An:73:LEU:HD21  | 1:An:238:PRO:HB2  | 1.97                     | 0.47              |
| 2:Ar:134:THR:HG22 | 2:Ar:148:TYR:CZ   | 2.50                     | 0.47              |
| 2:Ay:102:LYS:HE3  | 3:Bt:380:ASN:ND2  | 2.29                     | 0.47              |
| 3:Bh:6:ASN:OD1    | 3:Bh:9:GLU:HB2    | 2.13                     | 0.47              |
| 3:Bh:248:LYS:HZ3  | 3:Bh:273:ARG:HD3  | 1.79                     | 0.47              |
| 3:Bl:610:GLN:HB3  | 3:Bt:612:GLN:HB2  | 1.96                     | 0.47              |
| 3:Bp:611:ALA:HB2  | 3:Br:612:GLN:HB2  | 1.96                     | 0.47              |
| 3:Br:337:ASN:HD21 | 3:Br:401:ASN:HD22 | 1.61                     | 0.47              |
| 3:Bv:79:LEU:HD23  | 3:Bv:81:ARG:HE    | 1.79                     | 0.47              |
| 3:Bv:306:GLU:HB2  | 3:Bv:317:GLU:HG3  | 1.95                     | 0.47              |
| 1:Ab:89:LEU:HD11  | 2:Ar:140:PHE:HE2  | 1.79                     | 0.47              |
| 1:Ac:230:VAL:HA   | 1:Ac:261:LEU:HD13 | 1.96                     | 0.47              |
| 1:Ae:125:GLU:O    | 1:Ae:270:GLY:HA2  | 2.15                     | 0.47              |
| 1:Aj:191:ILE:HD12 | 1:Aj:202:GLN:HG3  | 1.96                     | 0.47              |
| 1:Aj:261:LEU:HD12 | 1:Aj:264:THR:HG22 | 1.95                     | 0.47              |
| 3:Bd:214:GLN:HG2  | 3:Bh:21:ALA:HB2   | 1.94                     | 0.47              |
| 3:Bp:81:ARG:NH1   | 3:Bp:560:LEU:HD21 | 2.29                     | 0.47              |
| 3:Bp:322:LEU:HD12 | 3:Bx:58:ASP:HB2   | 1.96                     | 0.47              |
| 3:Bp:616:LEU:HD13 | 3:Bx:614:VAL:HG11 | 1.96                     | 0.47              |
| 3:Bt:469:ASN:HB3  | 3:Bt:513:ARG:HD3  | 1.97                     | 0.47              |
| 3:Bv:463:ILE:O    | 3:Bv:467:ILE:HG13 | 2.14                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ab:236:PHE:CD2  | 1:Ab:312:PRO:HD2  | 2.50                     | 0.47              |
| 1:Aj:205:VAL:HG12 | 1:Aj:211:VAL:HG11 | 1.97                     | 0.47              |
| 1:An:26:MET:HE1   | 1:An:169:PHE:CD2  | 2.50                     | 0.47              |
| 3:Bb:373:LEU:HA   | 3:Bj:351:PHE:O    | 2.15                     | 0.47              |
| 3:Bb:510:ILE:HD11 | 3:Bt:244:VAL:HG22 | 1.96                     | 0.47              |
| 3:Bd:619:GLN:HG3  | 3:Bf:619:GLN:HG3  | 1.97                     | 0.47              |
| 3:Bf:248:LYS:HB2  | 3:Bf:251:ILE:HG12 | 1.97                     | 0.47              |
| 3:Bl:311:GLU:O    | 3:Bl:313:LYS:HG2  | 2.14                     | 0.47              |
| 3:Bp:248:LYS:HZ2  | 3:Br:511:ARG:HH11 | 1.62                     | 0.47              |
| 3:Bt:79:LEU:HD12  | 3:Bt:79:LEU:HA    | 1.70                     | 0.47              |
| 1:Aa:125:GLU:HB3  | 1:Aa:269:ARG:HE   | 1.79                     | 0.47              |
| 1:Ac:5:GLU:HG2    | 1:Ac:6:GLY:N      | 2.30                     | 0.47              |
| 1:Ac:156:PHE:CE2  | 1:Ad:215:PRO:HB3  | 2.50                     | 0.47              |
| 1:Ae:203:ARG:HG3  | 3:Bn:4:ASN:HB3    | 1.97                     | 0.47              |
| 1:Ae:376:MET:O    | 1:Ae:378:THR:HG23 | 2.14                     | 0.47              |
| 1:Af:97:GLU:O     | 1:Af:101:ARG:HG3  | 2.14                     | 0.47              |
| 1:Af:103:ARG:HB2  | 1:An:70:LEU:HD11  | 1.95                     | 0.47              |
| 1:Af:378:THR:HG22 | 1:Af:393:ALA:HB2  | 1.96                     | 0.47              |
| 1:Ah:275:PHE:HB2  | 1:Ah:278:VAL:HB   | 1.95                     | 0.47              |
| 1:Al:77:VAL:HG11  | 1:Al:362:VAL:HG11 | 1.97                     | 0.47              |
| 1:Al:298:VAL:HG22 | 1:Al:307:GLU:HG2  | 1.97                     | 0.47              |
| 1:Al:309:THR:HB   | 1:Al:310:PRO:HD3  | 1.95                     | 0.47              |
| 2:Au:86:ASN:C     | 2:Au:88:ALA:H     | 2.23                     | 0.47              |
| 2:Ba:44:MET:HA    | 2:Ba:44:MET:HE3   | 1.96                     | 0.47              |
| 3:Bb:322:LEU:HD13 | 3:Bt:58:ASP:OD2   | 2.14                     | 0.47              |
| 3:Bd:60:VAL:HG11  | 3:Bd:320:VAL:HG13 | 1.97                     | 0.47              |
| 3:Bf:184:TRP:CZ2  | 3:Bf:199:PRO:HD3  | 2.50                     | 0.47              |
| 3:Bf:227:GLU:HG3  | 3:Bf:274:ARG:HD3  | 1.96                     | 0.47              |
| 3:Bf:538:LEU:HD22 | 3:Br:556:TYR:HE1  | 1.79                     | 0.47              |
| 3:Bh:100:THR:HG22 | 3:Bh:103:ARG:HH22 | 1.79                     | 0.47              |
| 3:Bj:347:LYS:HG3  | 3:Bj:392:TYR:O    | 2.15                     | 0.47              |
| 3:Bl:44:TRP:CD1   | 3:Bl:45:LEU:HG    | 2.47                     | 0.47              |
| 3:Bl:66:LYS:HB3   | 3:Bl:66:LYS:HE3   | 1.67                     | 0.47              |
| 3:Bp:184:TRP:HB2  | 3:Bp:217:ILE:HG21 | 1.97                     | 0.47              |
| 3:Bp:457:MET:HG3  | 3:Bx:76:ILE:HG23  | 1.96                     | 0.47              |
| 3:Bv:468:VAL:HG22 | 3:Bv:472:TYR:CD2  | 2.50                     | 0.47              |
| 1:Ah:97:GLU:HB2   | 2:As:149:PHE:CZ   | 2.50                     | 0.47              |
| 1:Ak:35:PRO:HB2   | 1:Ak:40:MET:HG3   | 1.96                     | 0.47              |
| 1:Am:298:VAL:HB   | 1:Am:307:GLU:HB3  | 1.97                     | 0.47              |
| 1:An:148:VAL:HG12 | 1:An:206:ALA:HB3  | 1.96                     | 0.47              |
| 2:Au:80:VAL:O     | 2:Au:84:PHE:HB3   | 2.15                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:Au:86:ASN:O     | 2:Au:87:LEU:HB3   | 2.14                     | 0.47              |
| 2:Az:125:ARG:HG2  | 3:Bj:370:PRO:HD3  | 1.95                     | 0.47              |
| 3:Bd:458:ARG:HG2  | 3:Bd:518:THR:HG23 | 1.96                     | 0.47              |
| 3:Bj:275:ARG:NH1  | 3:Bj:292:LEU:HD21 | 2.29                     | 0.47              |
| 3:Bl:130:THR:HG22 | 3:Bl:144:ILE:HG12 | 1.96                     | 0.47              |
| 3:Bp:113:ILE:HD11 | 3:Br:307:TRP:HZ3  | 1.79                     | 0.47              |
| 1:Aa:11:LEU:HD22  | 1:Aa:13:VAL:HG22  | 1.97                     | 0.47              |
| 1:Ac:81:GLU:HG2   | 1:Ac:82:PRO:HD2   | 1.96                     | 0.47              |
| 1:Ae:35:PRO:HB3   | 1:Ai:14:ASP:OD1   | 2.15                     | 0.47              |
| 1:Ag:32:LYS:H     | 1:Ag:32:LYS:HD3   | 1.80                     | 0.47              |
| 1:Ag:378:THR:H    | 2:Ap:143:LEU:HD11 | 1.80                     | 0.47              |
| 1:Ah:378:THR:HG23 | 1:Ah:393:ALA:HB2  | 1.97                     | 0.47              |
| 1:Ao:126:MET:HG3  | 1:Ao:309:THR:HG23 | 1.96                     | 0.47              |
| 3:Bb:362:MET:HE3  | 3:Bb:373:LEU:H    | 1.80                     | 0.47              |
| 3:Bd:457:MET:HG3  | 3:Bf:76:ILE:HG22  | 1.97                     | 0.47              |
| 3:Bf:310:VAL:HG13 | 3:Bf:311:GLU:H    | 1.79                     | 0.47              |
| 3:Bn:150:HIS:CG   | 3:Bx:309:PHE:HB2  | 2.50                     | 0.47              |
| 1:Aa:119:VAL:HA   | 1:Aa:413:VAL:HG11 | 1.96                     | 0.47              |
| 1:Ac:32:LYS:HE2   | 1:Ac:32:LYS:HB2   | 1.71                     | 0.47              |
| 1:Ae:425:LEU:HB3  | 1:Ae:428:GLN:HE21 | 1.80                     | 0.47              |
| 1:Ah:100:TYR:O    | 1:Ah:104:ILE:HG13 | 2.14                     | 0.47              |
| 1:Ah:295:PHE:CE1  | 1:Ah:312:PRO:HG3  | 2.49                     | 0.47              |
| 1:Ai:140:ASN:HB2  | 1:Ai:143:ASP:HB3  | 1.97                     | 0.47              |
| 3:Bf:230:GLU:OE1  | 3:Bf:273:ARG:HB3  | 2.15                     | 0.47              |
| 3:Bh:550:GLN:NE2  | 3:Bh:581:VAL:HG11 | 2.29                     | 0.47              |
| 3:Bj:271:ILE:HG21 | 3:Bv:511:ARG:CZ   | 2.45                     | 0.47              |
| 3:Bn:271:ILE:HG23 | 3:Bv:134:ASP:CB   | 2.41                     | 0.47              |
| 3:Bp:110:ALA:HA   | 3:Bp:148:PRO:HB3  | 1.95                     | 0.47              |
| 1:Aa:406:ARG:HH21 | 1:Al:63:LEU:HB2   | 1.80                     | 0.46              |
| 1:Af:116:GLU:HA   | 1:Af:119:VAL:HG12 | 1.96                     | 0.46              |
| 1:Ah:229:THR:HG22 | 1:Ah:339:ALA:HA   | 1.96                     | 0.46              |
| 1:Al:191:ILE:HB   | 1:Al:192:PRO:HD3  | 1.97                     | 0.46              |
| 3:Bb:40:GLN:NE2   | 3:Bb:331:ASN:HD21 | 2.12                     | 0.46              |
| 3:Bd:517:TYR:CD1  | 3:Br:103:ARG:HD2  | 2.50                     | 0.46              |
| 3:Bf:530:GLN:HB2  | 3:Br:99:ARG:HH12  | 1.80                     | 0.46              |
| 3:Bj:111:VAL:HA   | 3:Bj:126:TRP:NE1  | 2.30                     | 0.46              |
| 3:Bj:113:ILE:HD11 | 3:Bv:307:TRP:CZ3  | 2.50                     | 0.46              |
| 3:Bj:246:TYR:HD2  | 3:Bv:511:ARG:HB3  | 1.80                     | 0.46              |
| 3:Bl:549:TYR:O    | 3:Bl:553:LEU:HG   | 2.15                     | 0.46              |
| 3:Bp:158:TRP:CD2  | 3:Bp:167:LYS:HG2  | 2.51                     | 0.46              |
| 3:Br:259:ALA:O    | 3:Br:263:PHE:HB2  | 2.15                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Br:451:ASP:O    | 3:Br:455:THR:HG23 | 2.15                     | 0.46              |
| 1:Aa:55:SER:O     | 1:Ab:110:LYS:HD3  | 2.16                     | 0.46              |
| 1:Aa:148:VAL:HG11 | 1:Aa:205:VAL:HG13 | 1.96                     | 0.46              |
| 2:As:79:ALA:HA    | 2:As:114:LEU:HD11 | 1.97                     | 0.46              |
| 2:Au:44:MET:HA    | 2:Au:44:MET:HE3   | 1.96                     | 0.46              |
| 2:Au:102:LYS:HZ2  | 2:Az:89:CYS:HB3   | 1.80                     | 0.46              |
| 3:Bb:77:ASP:OD1   | 3:Bj:523:SER:HA   | 2.15                     | 0.46              |
| 3:Bb:88:PRO:O     | 3:Bb:561:ASP:HB2  | 2.15                     | 0.46              |
| 3:Bf:351:PHE:CE1  | 3:Bf:388:PRO:HB3  | 2.50                     | 0.46              |
| 3:Bl:333:ILE:HG21 | 3:Bl:405:LEU:HB2  | 1.97                     | 0.46              |
| 3:Bx:184:TRP:CZ2  | 3:Bx:199:PRO:HD3  | 2.50                     | 0.46              |
| 1:Ae:64:THR:HA    | 1:Af:399:SER:HB3  | 1.98                     | 0.46              |
| 1:Af:191:ILE:HB   | 1:Af:192:PRO:HD3  | 1.96                     | 0.46              |
| 1:Ah:151:ALA:O    | 1:Ah:154:ILE:HG22 | 2.15                     | 0.46              |
| 1:Am:238:PRO:HG2  | 1:Am:324:GLN:HB3  | 1.97                     | 0.46              |
| 3:Bb:119:ILE:HA   | 3:Bj:449:PHE:HE2  | 1.80                     | 0.46              |
| 3:Bb:521:GLY:HA3  | 3:Bt:79:LEU:HD22  | 1.98                     | 0.46              |
| 3:Bd:332:MET:HE2  | 3:Bd:336:PHE:CE2  | 2.50                     | 0.46              |
| 3:Bd:373:LEU:HA   | 3:Bh:351:PHE:O    | 2.15                     | 0.46              |
| 3:Bf:152:ALA:O    | 3:Bf:156:VAL:HG12 | 2.15                     | 0.46              |
| 3:Bf:454:ALA:HB1  | 3:Bf:520:VAL:HG21 | 1.97                     | 0.46              |
| 3:Bh:33:LEU:HD22  | 3:Bh:37:ARG:NH1   | 2.31                     | 0.46              |
| 3:Bj:82:PRO:HD2   | 3:Bj:560:LEU:HD11 | 1.97                     | 0.46              |
| 3:Bl:7:ARG:HH21   | 3:Bl:11:ILE:HD11  | 1.80                     | 0.46              |
| 3:Bn:577:ILE:HD11 | 3:Bn:582:LYS:HG2  | 1.97                     | 0.46              |
| 1:Ak:88:GLN:HG3   | 1:Ak:404:LEU:HD12 | 1.97                     | 0.46              |
| 1:Al:182:LEU:HD22 | 1:Al:201:ILE:HG22 | 1.96                     | 0.46              |
| 1:Am:90:ARG:HG2   | 1:Am:91:ALA:H     | 1.80                     | 0.46              |
| 1:An:219:VAL:HA   | 1:An:349:ARG:HA   | 1.98                     | 0.46              |
| 2:Az:125:ARG:HA   | 3:Bv:364:ASP:HB2  | 1.97                     | 0.46              |
| 3:Bd:38:VAL:HG11  | 3:Bd:211:TRP:CH2  | 2.51                     | 0.46              |
| 3:Bl:223:TYR:CE1  | 3:Bl:278:LYS:HD3  | 2.51                     | 0.46              |
| 3:Bp:585:GLU:O    | 3:Bp:589:GLU:HB3  | 2.15                     | 0.46              |
| 3:Br:71:MET:HE2   | 3:Br:71:MET:HB3   | 1.85                     | 0.46              |
| 3:Br:167:LYS:HB2  | 3:Br:302:PRO:HG3  | 1.97                     | 0.46              |
| 1:Aa:295:PHE:CD1  | 1:Aa:310:PRO:HG2  | 2.48                     | 0.46              |
| 1:Ab:94:LEU:HD12  | 3:Bl:48:TYR:CE2   | 2.51                     | 0.46              |
| 1:Ai:26:MET:HB2   | 1:Ai:116:GLU:OE2  | 2.15                     | 0.46              |
| 1:Ak:116:GLU:HG2  | 1:Ak:216:LYS:HD3  | 1.97                     | 0.46              |
| 1:Ak:191:ILE:HB   | 1:Ak:192:PRO:HD3  | 1.98                     | 0.46              |
| 2:Aw:137:GLY:HA3  | 3:Bh:54:ARG:HB2   | 1.97                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:Ba:144:ASN:HD21 | 3:Br:207:TRP:CD1  | 2.34                     | 0.46              |
| 3:Bb:134:ASP:OD2  | 3:Bj:271:ILE:HG23 | 2.14                     | 0.46              |
| 3:Bd:20:THR:HG22  | 3:Bf:212:LEU:HD11 | 1.96                     | 0.46              |
| 3:Bh:177:HIS:HB2  | 3:Bh:219:ILE:HG22 | 1.98                     | 0.46              |
| 3:Bj:67:LEU:HB3   | 3:Bj:119:ILE:HD12 | 1.98                     | 0.46              |
| 3:Bj:211:TRP:CD1  | 3:Bj:212:LEU:H    | 2.34                     | 0.46              |
| 3:Bn:552:LEU:HD11 | 3:Bx:542:THR:HG22 | 1.98                     | 0.46              |
| 3:Bv:587:PRO:HA   | 3:Bv:590:GLN:HB2  | 1.97                     | 0.46              |
| 1:Af:281:LEU:HD23 | 1:Af:288:VAL:HA   | 1.97                     | 0.46              |
| 1:Al:126:MET:HE2  | 1:Al:269:ARG:NH2  | 2.30                     | 0.46              |
| 2:As:134:THR:HG22 | 2:As:148:TYR:CE1  | 2.51                     | 0.46              |
| 3:Bd:348:LYS:HE2  | 3:Bf:369:TYR:O    | 2.16                     | 0.46              |
| 3:Bn:511:ARG:HH21 | 3:Bv:247:PHE:H    | 1.64                     | 0.46              |
| 3:Bp:507:LEU:HD21 | 3:Bx:140:ASN:HD21 | 1.80                     | 0.46              |
| 3:Bp:585:GLU:HG3  | 3:Bp:586:THR:HG23 | 1.97                     | 0.46              |
| 3:Bt:127:ARG:HG2  | 3:Bt:129:VAL:HG23 | 1.97                     | 0.46              |
| 3:Bv:30:LYS:HD2   | 3:Bv:154:SER:HB3  | 1.98                     | 0.46              |
| 3:Bx:352:TRP:HB2  | 3:Bx:355:GLN:HE21 | 1.81                     | 0.46              |
| 3:Bx:363:TYR:N    | 3:Bx:363:TYR:CD1  | 2.84                     | 0.46              |
| 1:Ab:78:ASN:H     | 1:Ab:414:ASN:ND2  | 2.14                     | 0.46              |
| 1:Ag:41:GLN:OE1   | 1:Ag:46:THR:HA    | 2.15                     | 0.46              |
| 1:An:148:VAL:HG22 | 1:An:168:TYR:CE2  | 2.51                     | 0.46              |
| 1:Ao:23:ILE:HD12  | 1:Ao:24:THR:H     | 1.81                     | 0.46              |
| 2:Au:90:ARG:O     | 2:Au:93:PRO:HD2   | 2.15                     | 0.46              |
| 3:Bd:559:LEU:HD12 | 3:Bd:560:LEU:H    | 1.80                     | 0.46              |
| 3:Bh:246:TYR:HB2  | 3:Bl:511:ARG:HB2  | 1.98                     | 0.46              |
| 3:Bh:553:LEU:HD23 | 3:Bh:576:LEU:HD13 | 1.97                     | 0.46              |
| 3:Bh:567:MET:HE2  | 3:Bl:554:LEU:HD22 | 1.97                     | 0.46              |
| 3:Br:33:LEU:HG    | 3:Br:121:ALA:HB2  | 1.98                     | 0.46              |
| 3:Br:98:TYR:CE1   | 3:Br:102:MET:HG3  | 2.51                     | 0.46              |
| 3:Bv:174:THR:HB   | 3:Bv:222:PHE:HD1  | 1.80                     | 0.46              |
| 3:Bv:177:HIS:HB3  | 3:Bv:179:MET:HE1  | 1.98                     | 0.46              |
| 3:Bv:472:TYR:O    | 3:Bv:507:LEU:HD21 | 2.15                     | 0.46              |
| 1:Aa:260:THR:HG22 | 1:Aa:305:HIS:CD2  | 2.50                     | 0.46              |
| 1:Ai:168:TYR:CD1  | 1:Ai:353:PHE:HB3  | 2.51                     | 0.46              |
| 1:Ak:131:ILE:O    | 1:Ak:131:ILE:HG13 | 2.15                     | 0.46              |
| 1:An:298:VAL:HG23 | 1:An:307:GLU:HB3  | 1.98                     | 0.46              |
| 2:Ba:128:TYR:HB2  | 2:Ba:149:PHE:O    | 2.16                     | 0.46              |
| 3:Bd:242:GLU:HB2  | 3:Bd:244:VAL:HG22 | 1.98                     | 0.46              |
| 3:Bd:349:PRO:HG2  | 3:Bf:371:TYR:HB3  | 1.97                     | 0.46              |
| 3:Bj:155:HIS:HE2  | 3:Bj:204:PRO:HG3  | 1.81                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bp:248:LYS:HZ3  | 3:Br:511:ARG:HD2  | 1.81                     | 0.46              |
| 3:Br:615:LEU:HD21 | 3:Br:619:GLN:HE21 | 1.81                     | 0.46              |
| 1:Ad:223:SER:HB2  | 1:Ad:271:ASP:OD1  | 2.16                     | 0.46              |
| 1:Af:37:ALA:O     | 2:Au:145:GLU:HA   | 2.15                     | 0.46              |
| 1:Ag:13:VAL:HA    | 1:Am:50:PRO:HG2   | 1.96                     | 0.46              |
| 2:As:15:ARG:HD2   | 2:Ax:94:ASP:OD2   | 2.16                     | 0.46              |
| 2:At:86:ASN:C     | 2:At:88:ALA:H     | 2.24                     | 0.46              |
| 2:Ay:131:ARG:HD2  | 3:Bv:336:PHE:HE1  | 1.81                     | 0.46              |
| 3:Bp:560:LEU:HA   | 3:Bp:560:LEU:HD23 | 1.75                     | 0.46              |
| 3:Bx:99:ARG:O     | 3:Bx:103:ARG:HB3  | 2.16                     | 0.46              |
| 1:Aa:41:GLN:HG2   | 1:Aa:43:SER:H     | 1.81                     | 0.46              |
| 1:Aa:285:ALA:HB2  | 1:Ab:216:LYS:HZ2  | 1.80                     | 0.46              |
| 1:Ad:401:LEU:HD23 | 1:Ad:401:LEU:HA   | 1.77                     | 0.46              |
| 1:Ae:377:LYS:HG3  | 2:Ay:143:LEU:HD11 | 1.98                     | 0.46              |
| 1:Af:84:ASN:HB3   | 1:Af:408:ALA:HB2  | 1.98                     | 0.46              |
| 1:Af:90:ARG:HE    | 1:Af:92:ASP:CG    | 2.24                     | 0.46              |
| 1:Aj:106:SER:HA   | 1:Aj:109:ARG:HH21 | 1.80                     | 0.46              |
| 1:An:35:PRO:HB2   | 1:An:40:MET:HG3   | 1.97                     | 0.46              |
| 2:Aq:86:ASN:C     | 2:Aq:88:ALA:H     | 2.24                     | 0.46              |
| 2:Au:5:THR:HA     | 2:Au:72:ASP:HA    | 1.97                     | 0.46              |
| 3:Bd:163:LYS:HB3  | 3:Bf:150:HIS:HD2  | 1.80                     | 0.46              |
| 3:Bj:6:ASN:HB3    | 3:Bj:9:GLU:HB2    | 1.96                     | 0.46              |
| 3:Bl:26:ARG:HD3   | 3:Bl:154:SER:HA   | 1.97                     | 0.46              |
| 3:Bn:352:TRP:CE2  | 3:Bv:376:ARG:HG3  | 2.51                     | 0.46              |
| 3:Bn:546:THR:HG23 | 3:Bn:547:PRO:HD3  | 1.97                     | 0.46              |
| 3:Bn:614:VAL:HG11 | 3:Bx:617:GLN:HA   | 1.98                     | 0.46              |
| 3:Bp:275:ARG:HD3  | 3:Bp:292:LEU:HD11 | 1.97                     | 0.46              |
| 3:Bt:234:ILE:HD13 | 3:Bt:246:TYR:HD1  | 1.80                     | 0.46              |
| 3:Bt:248:LYS:HZ3  | 3:Bt:273:ARG:HE   | 1.64                     | 0.46              |
| 3:Bv:167:LYS:HG3  | 3:Bv:302:PRO:HG3  | 1.97                     | 0.46              |
| 3:Bv:469:ASN:CG   | 3:Bv:513:ARG:HD3  | 2.41                     | 0.46              |
| 3:Bx:67:LEU:HB3   | 3:Bx:119:ILE:HD12 | 1.98                     | 0.46              |
| 3:Bx:615:LEU:HD12 | 3:Bx:616:LEU:HG   | 1.98                     | 0.46              |
| 1:Ad:51:VAL:HG13  | 1:Ah:17:ILE:HG13  | 1.97                     | 0.45              |
| 1:Af:6:GLY:HA3    | 1:Ai:74:ASN:HD21  | 1.80                     | 0.45              |
| 1:Af:33:TYR:CE2   | 1:Af:35:PRO:HG3   | 2.52                     | 0.45              |
| 1:Af:300:VAL:HA   | 1:Af:306:VAL:HG23 | 1.97                     | 0.45              |
| 1:Ai:81:GLU:OE1   | 1:Ai:82:PRO:HD2   | 2.15                     | 0.45              |
| 1:Aj:301:VAL:HG22 | 1:Aj:305:HIS:HB2  | 1.98                     | 0.45              |
| 2:Ar:94:ASP:OD2   | 2:Ax:15:ARG:HD3   | 2.16                     | 0.45              |
| 2:At:86:ASN:O     | 2:At:87:LEU:HB3   | 2.15                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:Az:91:ILE:HG23  | 2:Az:95:TYR:HE1   | 1.81                     | 0.45              |
| 2:Ba:17:LEU:HB3   | 2:Ba:97:LEU:HD11  | 1.98                     | 0.45              |
| 3:Bd:51:LEU:HD12  | 3:Bd:51:LEU:HA    | 1.86                     | 0.45              |
| 3:Bd:296:GLU:H    | 3:Bh:466:SER:HB3  | 1.82                     | 0.45              |
| 3:Bf:459:ARG:O    | 3:Bf:463:ILE:HG12 | 2.17                     | 0.45              |
| 3:Bf:528:LYS:HE2  | 3:Bf:558:THR:O    | 2.16                     | 0.45              |
| 3:Br:459:ARG:O    | 3:Br:463:ILE:HG12 | 2.16                     | 0.45              |
| 3:Bt:302:PRO:HB2  | 3:Bt:304:PHE:CE1  | 2.47                     | 0.45              |
| 3:Bv:110:ALA:HA   | 3:Bv:148:PRO:HB3  | 1.98                     | 0.45              |
| 3:Bv:229:LYS:HE2  | 3:Bv:229:LYS:HB2  | 1.77                     | 0.45              |
| 1:Ah:46:THR:HG22  | 1:Ah:78:ASN:HB3   | 1.99                     | 0.45              |
| 1:Ai:126:MET:HE2  | 1:Ai:415:ALA:HB3  | 1.98                     | 0.45              |
| 1:Aj:167:SER:HA   | 1:Aj:210:ASP:O    | 2.17                     | 0.45              |
| 1:Aj:317:ASP:HB3  | 1:Aj:320:LEU:HB2  | 1.98                     | 0.45              |
| 1:Ak:122:MET:SD   | 1:Ak:126:MET:HE3  | 2.57                     | 0.45              |
| 1:Ak:379:THR:HG21 | 3:Bd:212:LEU:CD1  | 2.46                     | 0.45              |
| 1:Ak:392:PHE:CD1  | 1:Ak:407:ILE:HG12 | 2.52                     | 0.45              |
| 3:Bb:376:ARG:HB2  | 3:Bj:352:TRP:CG   | 2.51                     | 0.45              |
| 3:Bf:609:VAL:HG13 | 3:Br:607:ALA:HB2  | 1.97                     | 0.45              |
| 3:Bl:235:TYR:CE2  | 3:Bl:265:LYS:HG3  | 2.51                     | 0.45              |
| 3:Bp:66:LYS:HB3   | 3:Bp:66:LYS:HE2   | 1.75                     | 0.45              |
| 3:Bp:621:GLU:HA   | 3:Bp:624:LYS:HD3  | 1.98                     | 0.45              |
| 3:Bt:58:ASP:HA    | 3:Bt:327:GLN:NE2  | 2.31                     | 0.45              |
| 3:Bx:288:LYS:HE3  | 3:Bx:288:LYS:HB3  | 1.72                     | 0.45              |
| 1:Ac:11:LEU:HD23  | 1:Ac:13:VAL:HG12  | 1.97                     | 0.45              |
| 1:Af:377:LYS:NZ   | 3:Bx:203:ASN:HD22 | 2.13                     | 0.45              |
| 1:Ah:119:VAL:HA   | 1:Ah:413:VAL:HG11 | 1.98                     | 0.45              |
| 1:Ai:200:THR:HG22 | 1:Ai:202:GLN:H    | 1.82                     | 0.45              |
| 1:Aj:12:ALA:O     | 3:Bp:45:LEU:HA    | 2.16                     | 0.45              |
| 1:Am:354:TRP:C    | 1:Am:354:TRP:CD1  | 2.94                     | 0.45              |
| 2:Ap:5:THR:HB     | 2:Ap:8:ASP:OD1    | 2.16                     | 0.45              |
| 2:Ba:150:PRO:HG2  | 3:Bp:51:LEU:HD23  | 1.97                     | 0.45              |
| 3:Bb:349:PRO:HD2  | 3:Bt:371:TYR:HA   | 1.97                     | 0.45              |
| 3:Bf:239:VAL:HG12 | 3:Bf:240:THR:HG23 | 1.97                     | 0.45              |
| 3:Bl:252:LYS:CB   | 3:Bl:255:ILE:HB   | 2.44                     | 0.45              |
| 3:Bn:510:ILE:H    | 3:Bn:510:ILE:HD12 | 1.82                     | 0.45              |
| 3:Bn:574:LYS:O    | 3:Bn:578:GLN:HG2  | 2.17                     | 0.45              |
| 3:Bp:538:LEU:HD21 | 3:Bx:559:LEU:HD11 | 1.98                     | 0.45              |
| 3:Br:99:ARG:O     | 3:Br:103:ARG:HB2  | 2.16                     | 0.45              |
| 3:Bx:254:VAL:C    | 3:Bx:255:ILE:HD13 | 2.42                     | 0.45              |
| 1:Aa:371:GLU:HB3  | 1:Aa:373:PHE:HD1  | 1.81                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ab:236:PHE:HD2  | 1:Ab:312:PRO:HD2  | 1.82                     | 0.45              |
| 1:Ab:379:THR:HG23 | 3:Bt:202:GLN:NE2  | 2.31                     | 0.45              |
| 1:Ad:16:ILE:HD11  | 1:Ad:102:ARG:CZ   | 2.46                     | 0.45              |
| 1:Af:148:VAL:HG12 | 1:Af:206:ALA:HB3  | 1.98                     | 0.45              |
| 2:Aq:81:SER:HA    | 2:Aq:84:PHE:CD2   | 2.51                     | 0.45              |
| 2:Ar:16:LYS:HG3   | 2:Ar:103:ILE:HD11 | 1.98                     | 0.45              |
| 2:Ar:43:MET:CE    | 2:Ar:86:ASN:HB3   | 2.45                     | 0.45              |
| 3:Bb:613:GLY:O    | 3:Bb:616:LEU:HB2  | 2.16                     | 0.45              |
| 3:Bd:332:MET:HE2  | 3:Bd:336:PHE:CZ   | 2.51                     | 0.45              |
| 3:Bd:615:LEU:HD12 | 3:Bd:615:LEU:O    | 2.17                     | 0.45              |
| 3:Bf:59:VAL:HG23  | 3:Bf:412:VAL:HG11 | 1.99                     | 0.45              |
| 3:Bf:247:PHE:HB3  | 3:Bf:252:LYS:HD3  | 1.97                     | 0.45              |
| 3:Bh:33:LEU:O     | 3:Bh:37:ARG:HB2   | 2.17                     | 0.45              |
| 3:Bn:500:ALA:HA   | 3:Bv:258:LEU:HD11 | 1.99                     | 0.45              |
| 3:Bp:69:SER:O     | 3:Bp:73:GLN:HG3   | 2.17                     | 0.45              |
| 1:Ae:241:TRP:H    | 1:Ae:241:TRP:HD1  | 1.64                     | 0.45              |
| 1:Ae:281:LEU:HD12 | 1:Ae:288:VAL:HA   | 1.98                     | 0.45              |
| 1:Ai:269:ARG:HD2  | 1:Ai:298:VAL:O    | 2.17                     | 0.45              |
| 1:An:354:TRP:CD1  | 1:An:354:TRP:C    | 2.95                     | 0.45              |
| 2:Ap:6:LYS:HA     | 2:Ap:9:LEU:HD12   | 1.97                     | 0.45              |
| 2:Aq:56:THR:HG22  | 2:Aq:75:LEU:HD22  | 1.98                     | 0.45              |
| 2:Au:140:PHE:C    | 2:Au:142:ASN:H    | 2.24                     | 0.45              |
| 2:Ax:128:TYR:CE2  | 3:Bt:342:ALA:HB3  | 2.51                     | 0.45              |
| 3:Bd:257:ASP:OD1  | 3:Bd:258:LEU:HD22 | 2.15                     | 0.45              |
| 3:Bh:33:LEU:HG    | 3:Bh:121:ALA:HB2  | 1.97                     | 0.45              |
| 3:Bt:379:GLU:HG2  | 3:Bt:380:ASN:N    | 2.31                     | 0.45              |
| 1:Ac:272:LYS:HE3  | 1:Ac:423:VAL:HG11 | 1.99                     | 0.45              |
| 1:Af:50:PRO:HG2   | 1:Aj:16:ILE:HD13  | 1.99                     | 0.45              |
| 1:Ah:49:MET:HE1   | 1:Ah:360:ARG:CZ   | 2.46                     | 0.45              |
| 1:Ak:122:MET:HE2  | 1:Ak:122:MET:HB2  | 1.83                     | 0.45              |
| 1:Ak:182:LEU:HD12 | 1:Ak:201:ILE:HG22 | 1.98                     | 0.45              |
| 3:Bd:362:MET:CE   | 3:Bd:373:LEU:H    | 2.28                     | 0.45              |
| 3:Bl:607:ALA:HB3  | 3:Bt:608:MET:HE3  | 1.97                     | 0.45              |
| 1:Ab:66:LYS:HB2   | 1:Ab:66:LYS:NZ    | 2.32                     | 0.45              |
| 1:Ac:314:ALA:HB3  | 1:Ac:317:ASP:HB2  | 1.98                     | 0.45              |
| 1:Ag:353:PHE:CZ   | 1:Ag:422:GLY:HA3  | 2.51                     | 0.45              |
| 1:Ah:129:LEU:HD13 | 1:Ah:154:ILE:HG23 | 1.98                     | 0.45              |
| 1:Ak:279:LYS:HD2  | 1:Ak:292:ASP:HA   | 1.97                     | 0.45              |
| 1:An:364:GLN:NE2  | 1:An:365:PRO:HD2  | 2.29                     | 0.45              |
| 1:Ao:316:ASP:OD1  | 1:Ao:332:THR:HA   | 2.16                     | 0.45              |
| 3:Bn:519:ASP:HB3  | 3:Bv:79:LEU:HB3   | 1.97                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bp:127:ARG:NH2  | 3:Bp:175:VAL:HG11 | 2.30                     | 0.45              |
| 3:Bt:61:ARG:O     | 3:Bt:65:ARG:HG3   | 2.17                     | 0.45              |
| 3:Bv:66:LYS:HE3   | 3:Bv:66:LYS:HB3   | 1.72                     | 0.45              |
| 3:Bx:165:MET:HG3  | 3:Bx:307:TRP:CD2  | 2.52                     | 0.45              |
| 3:Bx:459:ARG:O    | 3:Bx:463:ILE:HG12 | 2.16                     | 0.45              |
| 1:Ab:242:GLN:HG3  | 1:Ab:252:VAL:HG11 | 1.99                     | 0.45              |
| 1:Af:122:MET:HG2  | 1:Af:413:VAL:HG22 | 1.98                     | 0.45              |
| 1:Af:344:ASN:HA   | 1:Af:428:GLN:NE2  | 2.30                     | 0.45              |
| 1:Ah:239:VAL:HG23 | 1:Ah:252:VAL:HG11 | 1.98                     | 0.45              |
| 1:Ai:237:LYS:HG3  | 1:Ai:324:GLN:OE1  | 2.16                     | 0.45              |
| 1:Ak:205:VAL:HB   | 1:Ak:211:VAL:HG11 | 1.99                     | 0.45              |
| 2:Ar:126:ALA:HB2  | 3:Bh:364:ASP:CG   | 2.42                     | 0.45              |
| 2:Ax:17:LEU:HB3   | 2:Ax:19:VAL:HG23  | 1.98                     | 0.45              |
| 2:Ay:146:TRP:HZ3  | 3:Bv:45:LEU:HD21  | 1.81                     | 0.45              |
| 3:Bh:59:VAL:HG23  | 3:Bh:412:VAL:HG11 | 1.99                     | 0.45              |
| 3:Bj:133:GLU:HB3  | 3:Bj:143:VAL:HG22 | 1.99                     | 0.45              |
| 3:Bn:30:LYS:HD3   | 3:Bn:154:SER:HB3  | 1.98                     | 0.45              |
| 1:Ak:11:LEU:HB3   | 2:Av:140:PHE:CE2  | 2.52                     | 0.45              |
| 1:Ak:26:MET:HG3   | 1:Ak:169:PHE:CE2  | 2.51                     | 0.45              |
| 1:Ao:61:TRP:CD1   | 1:Ao:61:TRP:H     | 2.34                     | 0.45              |
| 2:Ap:43:MET:HE1   | 2:Ap:86:ASN:HB3   | 1.99                     | 0.45              |
| 2:Az:44:MET:HG3   | 2:Az:58:TYR:CE2   | 2.52                     | 0.45              |
| 3:Bb:105:ASN:ND2  | 3:Bv:455:THR:HG23 | 2.31                     | 0.45              |
| 3:Bb:459:ARG:NH2  | 3:Bt:168:SER:HA   | 2.32                     | 0.45              |
| 3:Bh:233:PHE:CE2  | 3:Bh:265:LYS:HE3  | 2.51                     | 0.45              |
| 3:Bh:550:GLN:OE1  | 3:Bh:550:GLN:HA   | 2.17                     | 0.45              |
| 3:Bj:321:ARG:HG2  | 3:Bj:321:ARG:HH11 | 1.82                     | 0.45              |
| 3:Bl:276:VAL:HG13 | 3:Bl:293:ILE:HB   | 1.99                     | 0.45              |
| 3:Bn:611:ALA:HB1  | 3:Bx:616:LEU:HD12 | 1.99                     | 0.45              |
| 3:Bp:404:MET:SD   | 3:Bx:337:ASN:HB3  | 2.57                     | 0.45              |
| 3:Bt:588:GLU:H    | 3:Bt:588:GLU:HG3  | 1.61                     | 0.45              |
| 3:Bx:451:ASP:O    | 3:Bx:455:THR:HG23 | 2.16                     | 0.45              |
| 3:Bx:458:ARG:HG3  | 3:Bx:458:ARG:NH1  | 2.32                     | 0.45              |
| 1:Aa:271:ASP:HA   | 1:Aa:344:ASN:HD22 | 1.82                     | 0.45              |
| 1:Ab:273:ILE:HD11 | 1:Ab:308:ILE:HG21 | 1.98                     | 0.45              |
| 1:Ad:386:VAL:HG12 | 1:Ad:388:LEU:HG   | 1.99                     | 0.45              |
| 1:Af:24:THR:HA    | 1:Af:116:GLU:OE2  | 2.17                     | 0.45              |
| 1:Aj:161:ASN:HB3  | 1:Aj:417:ARG:NH1  | 2.32                     | 0.45              |
| 1:Am:239:VAL:HG13 | 1:Am:252:VAL:HG11 | 1.99                     | 0.45              |
| 2:Aq:108:LYS:HD3  | 2:Aq:108:LYS:HA   | 1.45                     | 0.45              |
| 2:Ay:40:LEU:HD13  | 2:Ay:87:LEU:HD22  | 1.98                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bb:61:ARG:NH1   | 3:Bb:61:ARG:HG2   | 2.32                     | 0.45              |
| 3:Bb:248:LYS:O    | 3:Bb:252:LYS:HG2  | 2.17                     | 0.45              |
| 3:Bb:623:ALA:HB2  | 3:Bt:617:GLN:HE21 | 1.80                     | 0.45              |
| 3:Bl:15:PHE:CD1   | 3:Bl:174:THR:HG21 | 2.50                     | 0.45              |
| 3:Bl:337:ASN:HB3  | 3:Bt:404:MET:SD   | 2.57                     | 0.45              |
| 3:Bn:114:ALA:HB3  | 3:Bn:126:TRP:HE1  | 1.82                     | 0.45              |
| 3:Br:79:LEU:HA    | 3:Br:95:MET:CE    | 2.47                     | 0.45              |
| 3:Br:179:MET:HE3  | 3:Br:179:MET:HB2  | 1.92                     | 0.45              |
| 3:Br:352:TRP:HB2  | 3:Br:355:GLN:HG3  | 1.99                     | 0.45              |
| 3:Bt:44:TRP:CE3   | 3:Bt:45:LEU:HG    | 2.52                     | 0.45              |
| 3:Bv:93:VAL:O     | 3:Bv:97:MET:HG3   | 2.17                     | 0.45              |
| 1:Aa:18:GLU:HA    | 1:Al:52:GLU:HB2   | 1.99                     | 0.44              |
| 1:Ad:137:ILE:HD13 | 1:Ad:426:PRO:HB3  | 1.98                     | 0.44              |
| 1:Ae:115:VAL:HG11 | 1:Ae:386:VAL:HG21 | 1.98                     | 0.44              |
| 1:Ae:264:THR:HG23 | 1:Ae:267:MET:HE2  | 1.99                     | 0.44              |
| 1:Ae:378:THR:HG22 | 1:Ae:393:ALA:HB2  | 1.98                     | 0.44              |
| 1:Al:71:LEU:HD23  | 1:Al:327:TYR:HE2  | 1.82                     | 0.44              |
| 1:An:129:LEU:HD13 | 1:An:154:ILE:HG23 | 1.99                     | 0.44              |
| 3:Bd:510:ILE:HD11 | 3:Bf:244:VAL:HG23 | 1.99                     | 0.44              |
| 3:Bh:51:LEU:HD12  | 3:Bh:51:LEU:HA    | 1.88                     | 0.44              |
| 3:Bh:211:TRP:HA   | 3:Bl:24:GLU:OE1   | 2.17                     | 0.44              |
| 3:Bl:188:ALA:HA   | 3:Bl:193:LEU:HB2  | 1.99                     | 0.44              |
| 3:Bt:45:LEU:HA    | 3:Bt:48:TYR:CD1   | 2.52                     | 0.44              |
| 3:Bv:349:PRO:HA   | 3:Bv:391:TYR:HA   | 1.97                     | 0.44              |
| 3:Bx:95:MET:HA    | 3:Bx:95:MET:HE3   | 1.99                     | 0.44              |
| 1:Ab:40:MET:HG3   | 1:Ab:45:ASN:HA    | 1.99                     | 0.44              |
| 1:Ad:275:PHE:HB3  | 1:Ad:338:MET:HE3  | 1.98                     | 0.44              |
| 1:Af:113:ASN:ND2  | 1:An:284:MET:HG2  | 2.33                     | 0.44              |
| 1:Af:130:VAL:HB   | 1:Af:294:THR:HG21 | 2.00                     | 0.44              |
| 1:Aj:130:VAL:HG21 | 1:Aj:272:LYS:HB3  | 1.99                     | 0.44              |
| 1:An:40:MET:HG3   | 1:An:364:GLN:OE1  | 2.17                     | 0.44              |
| 2:Aq:111:LYS:HE2  | 2:Aq:111:LYS:HB3  | 1.87                     | 0.44              |
| 2:Ay:133:PRO:HG2  | 3:Bv:328:ARG:HB3  | 1.99                     | 0.44              |
| 3:Bd:329:LEU:O    | 3:Bd:333:ILE:HG12 | 2.17                     | 0.44              |
| 3:Bj:345:PRO:HG2  | 3:Bj:392:TYR:OH   | 2.17                     | 0.44              |
| 3:Bl:221:GLU:HG3  | 3:Bl:280:ILE:HD13 | 1.98                     | 0.44              |
| 3:Bn:234:ILE:HD13 | 3:Bn:246:TYR:CB   | 2.45                     | 0.44              |
| 3:Bn:255:ILE:HG21 | 3:Bx:506:VAL:HG11 | 1.99                     | 0.44              |
| 3:Br:116:ARG:HG2  | 3:Br:120:GLU:OE1  | 2.16                     | 0.44              |
| 3:Br:610:GLN:O    | 3:Br:614:VAL:HG22 | 2.17                     | 0.44              |
| 1:Ae:304:THR:HG23 | 1:Ae:305:HIS:ND1  | 2.32                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ae:366:ILE:HG23 | 1:Ao:61:TRP:HZ3   | 1.81                     | 0.44              |
| 1:Ai:234:GLN:HE22 | 1:Ai:259:VAL:HA   | 1.83                     | 0.44              |
| 2:Ap:149:PHE:CD1  | 3:Bf:46:SER:HA    | 2.51                     | 0.44              |
| 3:Bf:554:LEU:HD23 | 3:Bf:554:LEU:HA   | 1.84                     | 0.44              |
| 3:Bj:550:GLN:NE2  | 3:Bj:581:VAL:HG11 | 2.30                     | 0.44              |
| 3:Bx:298:ILE:HG22 | 3:Bx:300:ILE:HG12 | 2.00                     | 0.44              |
| 1:Aa:49:MET:HE3   | 1:Aa:49:MET:HB2   | 1.83                     | 0.44              |
| 1:Ab:184:LYS:HB2  | 1:Ab:184:LYS:NZ   | 2.33                     | 0.44              |
| 1:Ae:215:PRO:HG2  | 1:Ae:216:LYS:NZ   | 2.32                     | 0.44              |
| 1:Aj:173:GLN:O    | 1:Aj:177:LYS:HG2  | 2.17                     | 0.44              |
| 1:Ak:49:MET:HE3   | 1:Ak:49:MET:HB3   | 1.78                     | 0.44              |
| 1:An:128:SER:OG   | 1:An:310:PRO:HG3  | 2.17                     | 0.44              |
| 2:As:86:ASN:C     | 2:As:88:ALA:H     | 2.24                     | 0.44              |
| 2:As:95:TYR:HB2   | 2:As:97:LEU:HG    | 2.00                     | 0.44              |
| 2:Ax:33:MET:O     | 2:Ax:33:MET:HE3   | 2.16                     | 0.44              |
| 2:Ax:81:SER:HA    | 2:Ax:84:PHE:CE2   | 2.53                     | 0.44              |
| 3:Bb:58:ASP:HA    | 3:Bb:327:GLN:HE22 | 1.83                     | 0.44              |
| 3:Bb:59:VAL:HG23  | 3:Bj:414:GLU:OE1  | 2.17                     | 0.44              |
| 3:Bb:245:SER:HA   | 3:Bj:510:ILE:HD12 | 1.99                     | 0.44              |
| 3:Bb:623:ALA:HB2  | 3:Bt:617:GLN:NE2  | 2.32                     | 0.44              |
| 3:Bd:111:VAL:HA   | 3:Bd:126:TRP:NE1  | 2.31                     | 0.44              |
| 3:Bd:119:ILE:HA   | 3:Bh:449:PHE:HE2  | 1.82                     | 0.44              |
| 3:Bl:97:MET:HE3   | 3:Bt:472:TYR:HD2  | 1.81                     | 0.44              |
| 3:Bp:179:MET:C    | 3:Bp:215:ASP:HB3  | 2.42                     | 0.44              |
| 3:Bp:274:ARG:HG2  | 3:Bp:274:ARG:HH11 | 1.81                     | 0.44              |
| 3:Bt:231:THR:HG21 | 3:Bt:249:ARG:HH21 | 1.81                     | 0.44              |
| 3:Bt:559:LEU:HD12 | 3:Bt:559:LEU:HA   | 1.82                     | 0.44              |
| 3:Bv:198:ILE:HG22 | 3:Bv:198:ILE:O    | 2.17                     | 0.44              |
| 1:Aa:278:VAL:HG12 | 1:Aa:293:ALA:HB3  | 1.98                     | 0.44              |
| 1:Ab:37:ALA:HB1   | 1:Ad:95:ARG:HB3   | 1.99                     | 0.44              |
| 1:Af:39:SER:C     | 1:Af:40:MET:HG2   | 2.42                     | 0.44              |
| 1:Ag:168:TYR:HB3  | 1:Ag:211:VAL:HG12 | 2.00                     | 0.44              |
| 1:Ai:275:PHE:CD2  | 1:Ai:340:VAL:HG12 | 2.53                     | 0.44              |
| 1:Ai:392:PHE:HD2  | 1:Ai:407:ILE:HG12 | 1.83                     | 0.44              |
| 2:Ay:104:ILE:O    | 2:Ay:108:LYS:HG3  | 2.16                     | 0.44              |
| 3:Bd:84:ASP:OD1   | 3:Bd:527:MET:HB2  | 2.17                     | 0.44              |
| 3:Bd:619:GLN:HE21 | 3:Bf:618:GLY:HA3  | 1.81                     | 0.44              |
| 3:Bj:23:ASP:HA    | 3:Bj:26:ARG:NH2   | 2.32                     | 0.44              |
| 3:Bj:69:SER:O     | 3:Bj:73:GLN:HG2   | 2.18                     | 0.44              |
| 3:Bl:236:GLN:HB2  | 3:Bl:266:ILE:HD11 | 1.99                     | 0.44              |
| 3:Bp:248:LYS:H    | 3:Br:511:ARG:HH22 | 1.66                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bp:404:MET:HE1  | 3:Bx:334:MET:HE2  | 1.99                     | 0.44              |
| 3:Bp:451:ASP:O    | 3:Bp:455:THR:HG23 | 2.16                     | 0.44              |
| 3:Br:237:ASP:O    | 3:Br:241:GLY:HA2  | 2.17                     | 0.44              |
| 3:Br:574:LYS:O    | 3:Br:578:GLN:HG2  | 2.17                     | 0.44              |
| 3:Bt:78:VAL:O     | 3:Bt:95:MET:HE1   | 2.17                     | 0.44              |
| 3:Bt:336:PHE:O    | 3:Bt:340:ILE:HG23 | 2.17                     | 0.44              |
| 1:Ab:354:TRP:C    | 1:Ab:354:TRP:CD1  | 2.95                     | 0.44              |
| 1:Ac:295:PHE:CD2  | 1:Ac:310:PRO:HB2  | 2.53                     | 0.44              |
| 1:Ad:286:LYS:HE3  | 1:Ad:328:ALA:HB3  | 1.99                     | 0.44              |
| 1:Af:95:ARG:HB3   | 1:Ai:37:ALA:HB1   | 2.00                     | 0.44              |
| 1:Am:86:PHE:CE2   | 1:Am:404:LEU:HB3  | 2.53                     | 0.44              |
| 1:Am:377:LYS:HB2  | 1:Am:377:LYS:HE2  | 1.60                     | 0.44              |
| 2:Aq:63:ASP:O     | 2:Aq:64:GLU:HG2   | 2.18                     | 0.44              |
| 2:Av:124:LYS:O    | 3:Bp:370:PRO:HD3  | 2.18                     | 0.44              |
| 3:Bd:88:PRO:HB3   | 3:Bd:561:ASP:HB2  | 1.99                     | 0.44              |
| 3:Bd:520:VAL:HG13 | 3:Bf:76:ILE:HG23  | 1.98                     | 0.44              |
| 3:Bd:561:ASP:O    | 3:Bd:565:VAL:HG23 | 2.18                     | 0.44              |
| 3:Bj:536:LEU:HD23 | 3:Bj:536:LEU:HA   | 1.85                     | 0.44              |
| 3:Bn:554:LEU:HD21 | 3:Bv:564:GLY:O    | 2.17                     | 0.44              |
| 3:Bp:178:SER:OG   | 3:Bp:215:ASP:HB2  | 2.17                     | 0.44              |
| 3:Bt:23:ASP:O     | 3:Bt:27:ARG:HG3   | 2.17                     | 0.44              |
| 3:Bt:236:GLN:HB2  | 3:Bt:266:ILE:HD11 | 2.00                     | 0.44              |
| 3:Bv:236:GLN:HB2  | 3:Bv:266:ILE:HD11 | 1.99                     | 0.44              |
| 1:Ab:286:LYS:HG2  | 1:Ab:315:LEU:HD13 | 1.99                     | 0.44              |
| 1:Ac:142:ALA:HB3  | 1:Ad:180:TYR:HE1  | 1.81                     | 0.44              |
| 1:Ad:79:MET:HG2   | 1:Ad:410:TRP:CE2  | 2.53                     | 0.44              |
| 1:Ae:113:ASN:ND2  | 1:Ao:284:MET:HG2  | 2.32                     | 0.44              |
| 1:Ag:40:MET:HG3   | 3:Bf:46:SER:O     | 2.17                     | 0.44              |
| 1:Ag:118:LYS:HE2  | 1:Ag:118:LYS:HB2  | 1.78                     | 0.44              |
| 1:Al:148:VAL:HG11 | 1:Al:205:VAL:HG13 | 1.99                     | 0.44              |
| 2:Aw:14:LEU:HD23  | 2:Aw:14:LEU:HA    | 1.84                     | 0.44              |
| 3:Bb:583:LYS:HD3  | 3:Bb:583:LYS:HA   | 1.87                     | 0.44              |
| 3:Bd:288:LYS:HD3  | 3:Bd:288:LYS:HA   | 1.73                     | 0.44              |
| 3:Bf:209:PHE:HD1  | 3:Bf:209:PHE:HA   | 1.68                     | 0.44              |
| 3:Bv:71:MET:HE1   | 3:Bv:118:GLN:OE1  | 2.17                     | 0.44              |
| 1:Ac:86:PHE:CE2   | 1:Ac:404:LEU:HD22 | 2.53                     | 0.44              |
| 1:Ad:259:VAL:HG22 | 1:Ad:306:VAL:HG12 | 2.00                     | 0.44              |
| 1:Ae:118:LYS:HE3  | 1:Ae:411:TYR:HE1  | 1.81                     | 0.44              |
| 1:Ag:284:MET:HG3  | 1:Ak:113:ASN:ND2  | 2.32                     | 0.44              |
| 1:Ah:118:LYS:HE2  | 1:Ah:118:LYS:HB2  | 1.79                     | 0.44              |
| 2:Ap:135:GLY:HA3  | 3:Br:54:ARG:O     | 2.17                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:As:102:LYS:HZ2  | 2:Ax:89:CYS:HB3   | 1.82                     | 0.44              |
| 2:Au:87:LEU:HD12  | 2:Au:91:ILE:HD13  | 1.99                     | 0.44              |
| 2:Av:9:LEU:HD23   | 2:Av:40:LEU:HD21  | 2.00                     | 0.44              |
| 2:Ay:12:ALA:O     | 2:Ay:16:LYS:HG2   | 2.18                     | 0.44              |
| 3:Bb:127:ARG:HH12 | 3:Bb:175:VAL:HG11 | 1.82                     | 0.44              |
| 3:Bl:107:ALA:HA   | 3:Bl:146:ARG:HB3  | 1.99                     | 0.44              |
| 3:Bl:313:LYS:HB3  | 3:Bl:313:LYS:HE3  | 1.78                     | 0.44              |
| 3:Bl:560:LEU:HA   | 3:Bl:560:LEU:HD23 | 1.82                     | 0.44              |
| 3:Bn:450:GLN:NE2  | 3:Bv:74:ASN:HB2   | 2.32                     | 0.44              |
| 3:Br:468:VAL:HG13 | 3:Br:472:TYR:HB2  | 2.00                     | 0.44              |
| 3:Bv:577:ILE:HD13 | 3:Bv:582:LYS:HB3  | 1.99                     | 0.44              |
| 1:Ac:372:LEU:HD23 | 1:Ac:372:LEU:HA   | 1.85                     | 0.44              |
| 1:Ae:146:ASN:HB2  | 1:Ai:180:TYR:CE2  | 2.53                     | 0.44              |
| 1:Af:354:TRP:CD1  | 1:Af:354:TRP:C    | 2.96                     | 0.44              |
| 1:Ag:354:TRP:CD1  | 1:Ag:354:TRP:C    | 2.96                     | 0.44              |
| 2:Ar:80:VAL:O     | 2:Ar:84:PHE:HB2   | 2.18                     | 0.44              |
| 2:As:63:ASP:O     | 2:As:64:GLU:HG2   | 2.18                     | 0.44              |
| 2:Aw:81:SER:HA    | 2:Aw:84:PHE:CE2   | 2.53                     | 0.44              |
| 2:Ay:131:ARG:HH21 | 3:Bv:52:GLN:HB3   | 1.82                     | 0.44              |
| 3:Bb:449:PHE:CD2  | 3:Bt:119:ILE:HD13 | 2.52                     | 0.44              |
| 3:Bd:510:ILE:HG12 | 3:Bd:511:ARG:N    | 2.33                     | 0.44              |
| 3:Bf:532:ARG:HE   | 3:Bf:558:THR:HG22 | 1.81                     | 0.44              |
| 3:Bh:507:LEU:HG   | 3:Bh:507:LEU:O    | 2.18                     | 0.44              |
| 3:Bj:390:ALA:C    | 3:Bj:391:TYR:HD1  | 2.26                     | 0.44              |
| 3:Bl:79:LEU:HD23  | 3:Bl:81:ARG:NH1   | 2.33                     | 0.44              |
| 3:Bp:59:VAL:HG23  | 3:Bp:412:VAL:HG11 | 2.00                     | 0.44              |
| 3:Bt:71:MET:HE3   | 3:Bt:115:VAL:HG13 | 1.99                     | 0.44              |
| 3:Bx:468:VAL:HG22 | 3:Bx:472:TYR:CD2  | 2.53                     | 0.44              |
| 1:Aa:155:MET:HE3  | 1:Aa:160:LEU:HD12 | 1.99                     | 0.43              |
| 1:Ab:350:THR:HG23 | 1:Ab:423:VAL:HG13 | 2.00                     | 0.43              |
| 1:Ad:284:MET:HE2  | 1:Ah:20:ILE:HG21  | 1.99                     | 0.43              |
| 1:Ag:239:VAL:HG23 | 1:Ag:252:VAL:HG21 | 2.00                     | 0.43              |
| 1:Ag:365:PRO:HB2  | 3:Bf:44:TRP:CZ2   | 2.53                     | 0.43              |
| 1:Ah:354:TRP:CD1  | 1:Ah:354:TRP:C    | 2.96                     | 0.43              |
| 1:Aj:11:LEU:HD12  | 1:Aj:11:LEU:HA    | 1.66                     | 0.43              |
| 1:An:37:ALA:O     | 1:An:41:GLN:HG2   | 2.17                     | 0.43              |
| 1:An:280:PHE:O    | 1:An:289:LEU:HB2  | 2.18                     | 0.43              |
| 2:At:40:LEU:HD13  | 2:At:87:LEU:HD22  | 1.99                     | 0.43              |
| 2:Av:81:SER:HA    | 2:Av:84:PHE:CE2   | 2.53                     | 0.43              |
| 2:Ay:108:LYS:HG2  | 3:Bb:380:ASN:HB2  | 2.00                     | 0.43              |
| 3:Bb:255:ILE:HA   | 3:Bb:258:LEU:HD12 | 1.99                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bd:332:MET:HE1  | 3:Bf:342:ALA:HB2  | 2.00                     | 0.43              |
| 3:Bd:363:TYR:CZ   | 3:Bd:372:TYR:HB3  | 2.53                     | 0.43              |
| 3:Bd:542:THR:HG21 | 3:Bd:547:PRO:HB2  | 2.00                     | 0.43              |
| 3:Bh:99:ARG:HH21  | 3:Bl:530:GLN:HB2  | 1.83                     | 0.43              |
| 3:Bh:145:ARG:NH1  | 3:Bh:145:ARG:HB3  | 2.33                     | 0.43              |
| 3:Bp:116:ARG:NH2  | 3:Br:306:GLU:HG2  | 2.33                     | 0.43              |
| 3:Bt:126:TRP:CD1  | 3:Bt:146:ARG:HG3  | 2.52                     | 0.43              |
| 3:Bv:34:PHE:CE1   | 3:Bv:208:VAL:HG23 | 2.53                     | 0.43              |
| 3:Bv:177:HIS:HB2  | 3:Bv:219:ILE:HG22 | 1.99                     | 0.43              |
| 1:Aa:17:ILE:HD11  | 1:Al:49:MET:HE2   | 2.00                     | 0.43              |
| 1:Aa:223:SER:HB3  | 1:Aa:342:ILE:HG21 | 2.00                     | 0.43              |
| 1:Ac:354:TRP:CD1  | 1:Ac:354:TRP:C    | 2.97                     | 0.43              |
| 1:Ae:95:ARG:HB3   | 1:Ah:37:ALA:HB1   | 2.00                     | 0.43              |
| 1:Ah:90:ARG:HB2   | 1:Ah:93:ASP:HB2   | 1.99                     | 0.43              |
| 1:Ak:241:TRP:CE3  | 1:Ak:249:LYS:HG2  | 2.53                     | 0.43              |
| 1:Al:391:ILE:HD11 | 1:Al:408:ALA:HB3  | 1.99                     | 0.43              |
| 3:Bb:11:ILE:HG21  | 3:Bb:281:ILE:HG21 | 2.00                     | 0.43              |
| 3:Bb:255:ILE:HG23 | 3:Bb:258:LEU:HB2  | 2.00                     | 0.43              |
| 3:Bd:606:PRO:O    | 3:Bd:610:GLN:HG2  | 2.18                     | 0.43              |
| 3:Bh:583:LYS:HE3  | 3:Bh:583:LYS:HB3  | 1.82                     | 0.43              |
| 3:Bj:144:ILE:HG12 | 3:Bv:472:TYR:OH   | 2.18                     | 0.43              |
| 3:Bn:8:LEU:HD13   | 3:Bn:286:VAL:HG13 | 2.00                     | 0.43              |
| 3:Bn:510:ILE:HD12 | 3:Bn:510:ILE:N    | 2.33                     | 0.43              |
| 3:Br:481:THR:HG22 | 3:Br:489:ASP:HB3  | 2.00                     | 0.43              |
| 3:Bt:89:ASP:HA    | 3:Bt:561:ASP:CG   | 2.43                     | 0.43              |
| 3:Bt:311:GLU:O    | 3:Bt:313:LYS:HG2  | 2.18                     | 0.43              |
| 3:Bx:184:TRP:CD1  | 3:Bx:198:ILE:HG22 | 2.53                     | 0.43              |
| 3:Bx:471:ILE:HG13 | 3:Bx:472:TYR:CD1  | 2.53                     | 0.43              |
| 1:Aa:236:PHE:CD1  | 1:Aa:312:PRO:HG2  | 2.53                     | 0.43              |
| 1:Ad:84:ASN:HA    | 1:Ad:407:ILE:O    | 2.18                     | 0.43              |
| 1:Ag:63:LEU:HA    | 1:Ag:66:LYS:HZ3   | 1.83                     | 0.43              |
| 1:Ah:392:PHE:HD1  | 1:Ah:407:ILE:HG13 | 1.82                     | 0.43              |
| 1:Aj:354:TRP:C    | 1:Aj:354:TRP:CD1  | 2.96                     | 0.43              |
| 1:Al:23:ILE:CD1   | 1:Al:25:PRO:HD3   | 2.48                     | 0.43              |
| 2:Aq:146:TRP:CE3  | 3:Bh:42:ASP:HB2   | 2.53                     | 0.43              |
| 2:Av:47:TRP:HB3   | 2:Av:54:ILE:HG23  | 2.00                     | 0.43              |
| 2:Aw:102:LYS:HE3  | 2:Aw:106:THR:OG1  | 2.19                     | 0.43              |
| 2:Ax:25:LEU:HG    | 2:Ax:26:THR:H     | 1.83                     | 0.43              |
| 3:Bd:255:ILE:HA   | 3:Bd:258:LEU:HD23 | 2.00                     | 0.43              |
| 3:Bd:463:ILE:O    | 3:Bd:467:ILE:HG13 | 2.18                     | 0.43              |
| 3:Bj:40:GLN:HG3   | 3:Bj:56:GLN:HG3   | 2.00                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bj:182:ASN:HA   | 3:Bj:185:GLU:HG2  | 2.00                     | 0.43              |
| 3:Bl:277:TYR:CG   | 3:Bl:290:LYS:HE2  | 2.52                     | 0.43              |
| 3:Bl:323:THR:HG22 | 3:Bl:415:VAL:HG23 | 2.01                     | 0.43              |
| 3:Bn:578:GLN:OE1  | 3:Bn:596:ALA:HB2  | 2.19                     | 0.43              |
| 3:Br:549:TYR:HD1  | 3:Br:549:TYR:HA   | 1.70                     | 0.43              |
| 1:Aa:23:ILE:HG12  | 1:Aa:25:PRO:HD3   | 1.99                     | 0.43              |
| 1:Ab:116:GLU:HG2  | 1:Ab:216:LYS:CD   | 2.48                     | 0.43              |
| 1:Ae:10:THR:HG23  | 1:Ao:47:ILE:HG13  | 2.01                     | 0.43              |
| 1:Ai:264:THR:HG22 | 1:Ai:267:MET:HE3  | 2.00                     | 0.43              |
| 1:Ai:295:PHE:CE1  | 1:Ai:312:PRO:HG3  | 2.53                     | 0.43              |
| 1:Al:97:GLU:HB2   | 1:Al:101:ARG:HH12 | 1.84                     | 0.43              |
| 2:Ar:12:ALA:C     | 2:Ar:84:PHE:HE1   | 2.26                     | 0.43              |
| 2:Au:87:LEU:O     | 2:Au:91:ILE:HB    | 2.19                     | 0.43              |
| 2:Av:132:MET:HA   | 3:Bd:332:MET:HE3  | 2.01                     | 0.43              |
| 2:Ax:126:ALA:HB2  | 3:Bl:364:ASP:CG   | 2.43                     | 0.43              |
| 3:Bf:616:LEU:HD13 | 3:Br:615:LEU:HB2  | 2.00                     | 0.43              |
| 3:Bh:77:ASP:OD1   | 3:Bh:77:ASP:N     | 2.52                     | 0.43              |
| 3:Bh:373:LEU:HA   | 3:Bl:351:PHE:O    | 2.18                     | 0.43              |
| 3:Bn:99:ARG:NH1   | 3:Bx:524:PHE:H    | 2.16                     | 0.43              |
| 3:Bn:108:LYS:N    | 3:Bn:108:LYS:HD2  | 2.32                     | 0.43              |
| 3:Bp:35:PHE:CE2   | 3:Bp:40:GLN:HG2   | 2.53                     | 0.43              |
| 3:Bv:597:GLN:HA   | 3:Bv:600:LYS:HG2  | 2.01                     | 0.43              |
| 1:Ad:136:ALA:O    | 1:Ad:139:THR:HG23 | 2.18                     | 0.43              |
| 1:Ad:321:SER:OG   | 1:Ad:323:GLU:HG2  | 2.18                     | 0.43              |
| 1:Ae:191:ILE:HB   | 1:Ae:192:PRO:HD3  | 2.00                     | 0.43              |
| 1:Af:180:TYR:CE2  | 1:An:142:ALA:HB3  | 2.53                     | 0.43              |
| 1:Ag:230:VAL:HA   | 1:Ag:261:LEU:HD23 | 1.99                     | 0.43              |
| 1:Ah:267:MET:HE3  | 1:Ah:306:VAL:HG11 | 2.01                     | 0.43              |
| 2:At:113:LEU:HD22 | 2:Ay:49:GLN:CD    | 2.44                     | 0.43              |
| 2:At:128:TYR:CD2  | 2:At:132:MET:HG2  | 2.50                     | 0.43              |
| 2:Ax:17:LEU:HD21  | 2:Ax:92:ALA:HA    | 2.01                     | 0.43              |
| 2:Az:6:LYS:HD2    | 2:Az:71:ASP:HB2   | 2.00                     | 0.43              |
| 3:Bd:296:GLU:HB2  | 3:Bh:466:SER:OG   | 2.18                     | 0.43              |
| 3:Bd:546:THR:HB   | 3:Bd:547:PRO:HD3  | 2.00                     | 0.43              |
| 3:Bf:108:LYS:HE3  | 3:Bf:108:LYS:HB3  | 1.69                     | 0.43              |
| 3:Bf:401:ASN:OD1  | 3:Br:341:VAL:HG23 | 2.18                     | 0.43              |
| 3:Bh:362:MET:HE1  | 3:Bh:373:LEU:HD12 | 2.00                     | 0.43              |
| 3:Bh:511:ARG:HB2  | 3:Bh:511:ARG:CZ   | 2.49                     | 0.43              |
| 3:Bj:546:THR:CG2  | 3:Bj:547:PRO:HD3  | 2.40                     | 0.43              |
| 3:Bl:273:ARG:HH12 | 3:Bt:513:ARG:HH12 | 1.65                     | 0.43              |
| 3:Bn:127:ARG:HH12 | 3:Bn:177:HIS:CE1  | 2.36                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bv:69:SER:O     | 3:Bv:73:GLN:HG3   | 2.18                     | 0.43              |
| 3:Bv:88:PRO:O     | 3:Bv:561:ASP:HB2  | 2.19                     | 0.43              |
| 1:Aa:261:LEU:O    | 1:Aa:304:THR:HG23 | 2.18                     | 0.43              |
| 1:Aa:383:ILE:HG21 | 1:Aa:386:VAL:HG22 | 1.99                     | 0.43              |
| 1:Ab:89:LEU:HD11  | 2:Ar:140:PHE:CE2  | 2.53                     | 0.43              |
| 1:Ae:17:ILE:HD11  | 1:Ao:49:MET:HB2   | 2.00                     | 0.43              |
| 1:Ae:409:LEU:HG   | 1:Ae:411:TYR:HD2  | 1.84                     | 0.43              |
| 1:Ag:369:ASN:OD1  | 3:Bf:45:LEU:HD13  | 2.19                     | 0.43              |
| 1:Ah:29:LYS:HD3   | 1:Ah:167:SER:OG   | 2.19                     | 0.43              |
| 1:Ah:286:LYS:HB2  | 1:Ah:286:LYS:HE2  | 1.86                     | 0.43              |
| 1:Ai:35:PRO:HB2   | 1:Ai:40:MET:HG3   | 2.00                     | 0.43              |
| 1:Ai:354:TRP:CD1  | 1:Ai:354:TRP:C    | 2.95                     | 0.43              |
| 1:Ak:86:PHE:HZ    | 1:Ak:404:LEU:HD23 | 1.84                     | 0.43              |
| 1:Am:34:THR:HG23  | 1:Am:34:THR:O     | 2.19                     | 0.43              |
| 1:Am:136:ALA:O    | 1:Am:139:THR:HG23 | 2.18                     | 0.43              |
| 1:An:361:ILE:HD12 | 1:An:413:VAL:HG22 | 1.99                     | 0.43              |
| 2:As:128:TYR:CD1  | 2:As:132:MET:HG2  | 2.54                     | 0.43              |
| 2:At:40:LEU:HB2   | 2:At:87:LEU:HD22  | 2.01                     | 0.43              |
| 3:Bb:370:PRO:O    | 3:Bj:348:LYS:HG2  | 2.19                     | 0.43              |
| 3:Bf:475:PRO:HD2  | 3:Br:93:VAL:HG11  | 1.99                     | 0.43              |
| 3:Bh:81:ARG:HB2   | 3:Bl:517:TYR:CZ   | 2.52                     | 0.43              |
| 3:Bj:59:VAL:O     | 3:Bj:62:PRO:HD2   | 2.19                     | 0.43              |
| 3:Bj:214:GLN:HE21 | 3:Bv:313:LYS:HG2  | 1.82                     | 0.43              |
| 3:Bj:373:LEU:HA   | 3:Bv:351:PHE:O    | 2.19                     | 0.43              |
| 3:Bl:277:TYR:CD2  | 3:Bl:290:LYS:HE2  | 2.53                     | 0.43              |
| 3:Bn:451:ASP:O    | 3:Bn:455:THR:HG23 | 2.18                     | 0.43              |
| 3:Bv:209:PHE:CG   | 3:Bv:210:PRO:HD2  | 2.54                     | 0.43              |
| 3:Bx:235:TYR:O    | 3:Bx:245:SER:HB2  | 2.19                     | 0.43              |
| 1:Ab:151:ALA:O    | 1:Ab:155:MET:HG3  | 2.17                     | 0.43              |
| 1:Ab:198:ASP:O    | 1:Ab:200:THR:HG23 | 2.18                     | 0.43              |
| 1:Ad:151:ALA:O    | 1:Ad:155:MET:HG3  | 2.17                     | 0.43              |
| 1:Ad:225:ALA:HB1  | 1:Ad:228:ILE:HD13 | 2.01                     | 0.43              |
| 1:Ah:37:ALA:HA    | 1:Ah:364:GLN:HE21 | 1.82                     | 0.43              |
| 1:Ah:217:LEU:HD11 | 1:Ah:352:VAL:HG22 | 2.00                     | 0.43              |
| 1:Ak:98:THR:O     | 1:Ak:102:ARG:HG3  | 2.18                     | 0.43              |
| 1:Ao:129:LEU:HD11 | 1:Ao:160:LEU:HD11 | 2.01                     | 0.43              |
| 3:Bd:255:ILE:HD11 | 3:Bh:500:ALA:HB2  | 2.01                     | 0.43              |
| 3:Bd:459:ARG:HH12 | 3:Bf:297:HIS:HD2  | 1.66                     | 0.43              |
| 3:Bf:247:PHE:CB   | 3:Bf:252:LYS:HD3  | 2.49                     | 0.43              |
| 3:Bn:155:HIS:HA   | 3:Bn:176:ILE:HD12 | 2.01                     | 0.43              |
| 3:Bp:606:PRO:HB2  | 3:Bp:610:GLN:HB2  | 2.00                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bt:586:THR:HB   | 3:Bt:589:GLU:HG3  | 2.01                     | 0.43              |
| 1:Ab:35:PRO:HG2   | 1:Ab:40:MET:HE1   | 2.00                     | 0.43              |
| 1:Ae:171:ASN:HB2  | 1:Ae:349:ARG:HD3  | 2.01                     | 0.43              |
| 1:Af:86:PHE:CD2   | 1:An:63:LEU:HD13  | 2.54                     | 0.43              |
| 1:Af:368:ALA:HB3  | 3:Bx:209:PHE:CE1  | 2.54                     | 0.43              |
| 1:Ag:223:SER:HB3  | 1:Ag:342:ILE:HG21 | 2.01                     | 0.43              |
| 1:Al:33:TYR:CD1   | 1:Al:360:ARG:HG3  | 2.53                     | 0.43              |
| 1:Al:132:THR:HG22 | 1:Al:425:LEU:HB2  | 2.00                     | 0.43              |
| 1:Al:317:ASP:OD1  | 1:Al:320:LEU:HG   | 2.18                     | 0.43              |
| 1:Am:260:THR:HG22 | 1:Am:305:HIS:CD2  | 2.53                     | 0.43              |
| 1:An:148:VAL:HG13 | 1:An:168:TYR:HD2  | 1.83                     | 0.43              |
| 1:An:261:LEU:HD13 | 1:An:267:MET:HE1  | 1.99                     | 0.43              |
| 2:As:86:ASN:O     | 2:As:87:LEU:HB3   | 2.17                     | 0.43              |
| 3:Bb:614:VAL:HG11 | 3:Bj:615:LEU:HD13 | 2.01                     | 0.43              |
| 3:Bd:310:VAL:CG2  | 3:Bf:37:ARG:HD3   | 2.49                     | 0.43              |
| 3:Bh:411:ALA:O    | 3:Bh:415:VAL:HG12 | 2.18                     | 0.43              |
| 3:Bj:273:ARG:CZ   | 3:Bj:275:ARG:HE   | 2.32                     | 0.43              |
| 3:Bn:616:LEU:HD13 | 3:Bv:614:VAL:HG11 | 2.01                     | 0.43              |
| 3:Bp:81:ARG:HH11  | 3:Bp:560:LEU:HD21 | 1.83                     | 0.43              |
| 3:Bp:362:MET:CE   | 3:Bp:373:LEU:H    | 2.32                     | 0.43              |
| 3:Bp:567:MET:SD   | 3:Br:576:LEU:HD13 | 2.59                     | 0.43              |
| 3:Br:181:GLN:OE1  | 3:Br:181:GLN:HA   | 2.19                     | 0.43              |
| 3:Bx:53:TYR:O     | 3:Bx:335:SER:HB3  | 2.19                     | 0.43              |
| 1:Ab:117:LEU:HD23 | 1:Ab:117:LEU:HA   | 1.82                     | 0.43              |
| 1:Ab:372:LEU:HD13 | 1:Ad:100:TYR:HE1  | 1.83                     | 0.43              |
| 1:Ad:241:TRP:CE3  | 1:Ad:249:LYS:HE2  | 2.53                     | 0.43              |
| 1:Ae:25:PRO:HG2   | 1:Ae:214:SER:HA   | 2.00                     | 0.43              |
| 1:Ah:161:ASN:HB3  | 1:Ah:417:ARG:HH12 | 1.84                     | 0.43              |
| 1:Aj:128:SER:HB2  | 1:Aj:310:PRO:HG3  | 2.00                     | 0.43              |
| 1:Al:123:ALA:HB1  | 1:Al:421:ILE:HG21 | 2.00                     | 0.43              |
| 1:An:115:VAL:HG22 | 1:An:411:TYR:CZ   | 2.54                     | 0.43              |
| 2:Au:140:PHE:C    | 2:Au:142:ASN:N    | 2.77                     | 0.43              |
| 3:Bb:77:ASP:HA    | 3:Bj:457:MET:HE2  | 2.00                     | 0.43              |
| 3:Bb:184:TRP:CE2  | 3:Bb:199:PRO:HD3  | 2.54                     | 0.43              |
| 3:Bb:228:LYS:NZ   | 3:Bb:228:LYS:HB3  | 2.34                     | 0.43              |
| 3:Bb:449:PHE:HD2  | 3:Bt:119:ILE:HD13 | 1.83                     | 0.43              |
| 3:Bd:150:HIS:ND1  | 3:Bh:309:PHE:HB2  | 2.33                     | 0.43              |
| 3:Bh:451:ASP:O    | 3:Bh:455:THR:HG23 | 2.18                     | 0.43              |
| 3:Bj:87:ARG:HG3   | 3:Bj:87:ARG:NH1   | 2.33                     | 0.43              |
| 3:Bj:329:LEU:HD23 | 3:Bj:329:LEU:HA   | 1.91                     | 0.43              |
| 3:Bj:611:ALA:O    | 3:Bj:615:LEU:HB3  | 2.19                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bl:233:PHE:HD1  | 3:Bl:265:LYS:HD2  | 1.84                     | 0.43              |
| 3:Bl:338:ALA:HB2  | 3:Bt:329:LEU:HD21 | 2.00                     | 0.43              |
| 3:Bp:127:ARG:HG2  | 3:Bp:128:LEU:N    | 2.33                     | 0.43              |
| 1:Ae:154:ILE:HD12 | 1:Ae:154:ILE:HA   | 1.82                     | 0.43              |
| 1:Al:320:LEU:HD22 | 1:Al:324:GLN:HB2  | 2.01                     | 0.43              |
| 1:Ao:306:VAL:HG13 | 1:Ao:308:ILE:HD11 | 2.00                     | 0.43              |
| 3:Bb:400:ALA:HA   | 3:Bt:397:VAL:HG23 | 2.01                     | 0.43              |
| 3:Bj:222:PHE:HB3  | 3:Bj:279:SER:OG   | 2.19                     | 0.43              |
| 3:Bn:378:ASP:OD2  | 3:Bn:378:ASP:C    | 2.62                     | 0.43              |
| 1:Ab:125:GLU:HG2  | 1:Ab:269:ARG:HG2  | 2.01                     | 0.42              |
| 1:Ad:126:MET:O    | 1:Ad:126:MET:HG2  | 2.19                     | 0.42              |
| 1:Af:5:GLU:HG3    | 1:An:42:ARG:NH1   | 2.34                     | 0.42              |
| 1:Ah:130:VAL:HG21 | 1:Ah:343:LEU:HD12 | 2.00                     | 0.42              |
| 1:Ak:175:TYR:CD1  | 1:Ak:213:ARG:HB3  | 2.54                     | 0.42              |
| 1:Ak:366:ILE:O    | 1:Ak:391:ILE:HD12 | 2.19                     | 0.42              |
| 2:Au:113:LEU:HD22 | 2:Az:49:GLN:CD    | 2.44                     | 0.42              |
| 3:Bb:165:MET:HG3  | 3:Bb:307:TRP:CE3  | 2.54                     | 0.42              |
| 3:Bb:274:ARG:HB2  | 3:Bb:296:GLU:HG3  | 2.01                     | 0.42              |
| 3:Bd:309:PHE:HB2  | 3:Bf:150:HIS:ND1  | 2.33                     | 0.42              |
| 3:Bf:11:ILE:HG21  | 3:Bf:281:ILE:HG21 | 1.99                     | 0.42              |
| 3:Bf:236:GLN:HB3  | 3:Bf:264:ILE:HG13 | 2.00                     | 0.42              |
| 3:Bf:610:GLN:O    | 3:Bf:614:VAL:HG22 | 2.19                     | 0.42              |
| 3:Bn:81:ARG:HD3   | 3:Bx:517:TYR:OH   | 2.18                     | 0.42              |
| 3:Bn:507:LEU:HD23 | 3:Bn:507:LEU:HA   | 1.78                     | 0.42              |
| 3:Br:107:ALA:HA   | 3:Br:146:ARG:HB3  | 2.01                     | 0.42              |
| 3:Bt:67:LEU:O     | 3:Bt:70:GLU:HG3   | 2.18                     | 0.42              |
| 3:Bx:244:VAL:HG13 | 3:Bx:244:VAL:O    | 2.19                     | 0.42              |
| 3:Bx:384:LEU:HG   | 3:Bx:385:PRO:HD3  | 2.01                     | 0.42              |
| 1:Aa:220:LEU:HD23 | 1:Aa:220:LEU:HA   | 1.90                     | 0.42              |
| 1:Ad:179:GLY:HA2  | 1:Ad:201:ILE:HD11 | 2.01                     | 0.42              |
| 1:Ae:365:PRO:HD3  | 3:Bv:207:TRP:CZ2  | 2.54                     | 0.42              |
| 1:An:308:ILE:HD11 | 1:An:312:PRO:HD3  | 2.00                     | 0.42              |
| 1:Ao:126:MET:O    | 1:Ao:309:THR:HG21 | 2.20                     | 0.42              |
| 3:Bb:345:PRO:HB3  | 3:Bt:372:TYR:OH   | 2.18                     | 0.42              |
| 3:Bd:347:LYS:HE3  | 3:Bh:393:GLU:OE2  | 2.18                     | 0.42              |
| 3:Bf:71:MET:HE3   | 3:Bf:71:MET:HB3   | 1.88                     | 0.42              |
| 3:Bl:235:TYR:CZ   | 3:Bl:265:LYS:HG3  | 2.53                     | 0.42              |
| 3:Bn:257:ASP:OD1  | 3:Bn:258:LEU:HD12 | 2.20                     | 0.42              |
| 3:Bt:179:MET:HE3  | 3:Bt:179:MET:HB2  | 1.81                     | 0.42              |
| 3:Bx:8:LEU:HG     | 3:Bx:12:LEU:HD22  | 2.01                     | 0.42              |
| 3:Bx:181:GLN:O    | 3:Bx:185:GLU:HG2  | 2.18                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bx:290:LYS:H    | 3:Bx:290:LYS:HG2  | 1.60                     | 0.42              |
| 1:Ab:66:LYS:HB2   | 1:Ab:66:LYS:HZ3   | 1.84                     | 0.42              |
| 1:Ab:116:GLU:HG2  | 1:Ab:216:LYS:HD2  | 2.01                     | 0.42              |
| 1:Ab:281:LEU:HD11 | 1:Ab:331:ASN:HB3  | 2.01                     | 0.42              |
| 1:Ab:316:ASP:OD2  | 1:Ab:316:ASP:C    | 2.62                     | 0.42              |
| 1:Ah:182:LEU:HD23 | 1:Ah:195:ALA:HB2  | 2.01                     | 0.42              |
| 1:Al:354:TRP:CD1  | 1:Al:354:TRP:C    | 2.97                     | 0.42              |
| 1:Am:74:ASN:HD21  | 1:Am:251:ASN:HD22 | 1.67                     | 0.42              |
| 1:Am:220:LEU:HD12 | 1:Am:220:LEU:HA   | 1.92                     | 0.42              |
| 1:Ao:182:LEU:HD23 | 1:Ao:195:ALA:HB2  | 2.00                     | 0.42              |
| 2:Ap:123:ALA:HB1  | 3:Bx:370:PRO:HD2  | 2.00                     | 0.42              |
| 2:Ay:132:MET:HE1  | 3:Bj:338:ALA:HB1  | 2.01                     | 0.42              |
| 2:Ba:149:PHE:CD1  | 2:Ba:149:PHE:C    | 2.97                     | 0.42              |
| 3:Bb:134:ASP:HA   | 3:Bb:141:ASN:HB3  | 2.02                     | 0.42              |
| 3:Bj:162:SER:HB2  | 3:Bj:170:ALA:HB2  | 2.00                     | 0.42              |
| 3:Bj:568:MET:HE3  | 3:Bv:551:LEU:HD13 | 2.01                     | 0.42              |
| 3:Bp:347:LYS:HB2  | 3:Bp:394:ASN:OD1  | 2.19                     | 0.42              |
| 3:Bp:581:VAL:O    | 3:Bx:567:MET:HG3  | 2.18                     | 0.42              |
| 3:Br:476:ARG:HE   | 3:Br:510:ILE:HD13 | 1.84                     | 0.42              |
| 3:Bt:234:ILE:HB   | 3:Bt:267:ALA:H    | 1.83                     | 0.42              |
| 1:Aa:94:LEU:HD23  | 1:Ak:370:HIS:CG   | 2.54                     | 0.42              |
| 1:Ag:73:LEU:HG    | 1:Ag:327:TYR:HE2  | 1.84                     | 0.42              |
| 1:Ag:372:LEU:H    | 1:Ag:372:LEU:HG   | 1.68                     | 0.42              |
| 1:Ah:191:ILE:HB   | 1:Ah:192:PRO:HD3  | 2.00                     | 0.42              |
| 1:Ak:269:ARG:HD2  | 1:Ak:298:VAL:O    | 2.20                     | 0.42              |
| 2:Au:95:TYR:HB2   | 2:Au:97:LEU:HG    | 2.00                     | 0.42              |
| 2:Av:48:TYR:HE1   | 2:Av:55:ILE:HG23  | 1.84                     | 0.42              |
| 2:Ba:58:TYR:CD2   | 2:Ba:75:LEU:HD21  | 2.54                     | 0.42              |
| 3:Bd:258:LEU:HG   | 3:Bh:500:ALA:HA   | 2.00                     | 0.42              |
| 3:Bh:97:MET:HE1   | 3:Bl:468:VAL:HG11 | 2.00                     | 0.42              |
| 3:Bh:179:MET:N    | 3:Bh:215:ASP:HB3  | 2.34                     | 0.42              |
| 3:Bj:172:HIS:HB3  | 3:Bj:222:PHE:CE1  | 2.54                     | 0.42              |
| 3:Bj:574:LYS:HG3  | 3:Bj:592:TRP:CD2  | 2.54                     | 0.42              |
| 3:Bl:60:VAL:O     | 3:Bl:63:VAL:HG22  | 2.19                     | 0.42              |
| 3:Bl:296:GLU:HG2  | 3:Bt:466:SER:OG   | 2.20                     | 0.42              |
| 3:Bp:622:LEU:HB3  | 3:Bx:622:LEU:HD11 | 2.00                     | 0.42              |
| 3:Br:49:THR:HG22  | 3:Br:50:THR:H     | 1.84                     | 0.42              |
| 3:Br:313:LYS:HB3  | 3:Br:313:LYS:HE3  | 1.70                     | 0.42              |
| 3:Bv:60:VAL:HG21  | 3:Bv:320:VAL:HG23 | 2.01                     | 0.42              |
| 3:Bv:88:PRO:C     | 3:Bv:561:ASP:HB2  | 2.44                     | 0.42              |
| 3:Bx:23:ASP:O     | 3:Bx:27:ARG:HG3   | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ae:241:TRP:HB2  | 1:Ae:249:LYS:HG3  | 2.02                     | 0.42              |
| 1:Af:11:LEU:HD13  | 1:An:74:ASN:HD22  | 1.84                     | 0.42              |
| 1:Af:37:ALA:HB1   | 2:Au:145:GLU:H    | 1.84                     | 0.42              |
| 1:Af:230:VAL:HG12 | 1:Af:338:MET:HG2  | 2.02                     | 0.42              |
| 1:Ag:241:TRP:CZ3  | 1:Ag:249:LYS:HD2  | 2.55                     | 0.42              |
| 1:Ak:111:LEU:HD22 | 1:Ak:409:LEU:CD2  | 2.48                     | 0.42              |
| 1:Al:119:VAL:HG21 | 1:Al:361:ILE:HD11 | 2.00                     | 0.42              |
| 2:Aq:43:MET:HE3   | 2:Aq:90:ARG:HG3   | 2.02                     | 0.42              |
| 2:As:123:ALA:HB1  | 3:Bl:370:PRO:HD2  | 2.01                     | 0.42              |
| 2:Ax:134:THR:HB   | 2:Ax:145:GLU:HA   | 2.01                     | 0.42              |
| 2:Az:138:ASN:HD21 | 3:Bn:53:TYR:HA    | 1.84                     | 0.42              |
| 2:Ba:33:MET:HB2   | 2:Ba:33:MET:HE2   | 1.87                     | 0.42              |
| 2:Ba:136:SER:HB2  | 3:Br:325:ASP:OD2  | 2.20                     | 0.42              |
| 3:Bb:45:LEU:HD12  | 3:Bb:45:LEU:HA    | 1.85                     | 0.42              |
| 3:Bb:472:TYR:N    | 3:Bb:507:LEU:HD21 | 2.33                     | 0.42              |
| 3:Bf:99:ARG:O     | 3:Bf:103:ARG:HB2  | 2.20                     | 0.42              |
| 3:Bj:337:ASN:HB3  | 3:Bv:404:MET:SD   | 2.58                     | 0.42              |
| 3:Bn:345:PRO:HG2  | 3:Bn:392:TYR:CZ   | 2.54                     | 0.42              |
| 3:Bp:507:LEU:HD21 | 3:Bx:140:ASN:ND2  | 2.34                     | 0.42              |
| 1:Ac:283:GLN:HG3  | 1:Ad:20:ILE:HD11  | 2.02                     | 0.42              |
| 1:Ae:354:TRP:C    | 1:Ae:354:TRP:CD1  | 2.97                     | 0.42              |
| 1:Af:417:ARG:HH21 | 1:Af:420:ALA:HB2  | 1.84                     | 0.42              |
| 1:Ag:131:ILE:HD11 | 1:Ag:154:ILE:HG21 | 2.02                     | 0.42              |
| 1:Aj:26:MET:HE3   | 1:Aj:354:TRP:CH2  | 2.54                     | 0.42              |
| 1:Aj:154:ILE:HG13 | 1:Aj:291:GLN:OE1  | 2.19                     | 0.42              |
| 1:Ak:175:TYR:CD2  | 1:Ak:213:ARG:HD3  | 2.54                     | 0.42              |
| 1:An:280:PHE:HD1  | 1:An:280:PHE:HA   | 1.69                     | 0.42              |
| 2:Aq:79:ALA:HA    | 2:Aq:114:LEU:HD11 | 2.02                     | 0.42              |
| 2:At:35:ASP:OD2   | 2:Az:15:ARG:HD2   | 2.20                     | 0.42              |
| 3:Bf:156:VAL:HG21 | 3:Bf:300:ILE:HG21 | 2.01                     | 0.42              |
| 3:Bf:227:GLU:HG3  | 3:Bf:274:ARG:HB2  | 2.01                     | 0.42              |
| 3:Bj:165:MET:HB2  | 3:Bj:307:TRP:CE3  | 2.54                     | 0.42              |
| 3:Bj:229:LYS:HG2  | 3:Bj:272:LYS:HG2  | 2.02                     | 0.42              |
| 3:Bl:231:THR:HG23 | 3:Bl:249:ARG:HG2  | 2.01                     | 0.42              |
| 3:Bp:71:MET:CE    | 3:Br:449:PHE:HB3  | 2.48                     | 0.42              |
| 3:Bp:356:ILE:HD12 | 3:Bp:363:TYR:CE2  | 2.55                     | 0.42              |
| 3:Br:34:PHE:C     | 3:Br:34:PHE:CD2   | 2.97                     | 0.42              |
| 3:Br:567:MET:HE3  | 3:Br:571:TYR:HB3  | 2.00                     | 0.42              |
| 3:Bt:107:ALA:HA   | 3:Bt:146:ARG:HB3  | 2.02                     | 0.42              |
| 1:Ag:283:GLN:OE1  | 1:Ag:283:GLN:HA   | 2.19                     | 0.42              |
| 1:Ak:155:MET:HE1  | 1:Ak:166:THR:HG21 | 2.02                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ak:185:ARG:H    | 1:Ak:185:ARG:HG2  | 1.63                     | 0.42              |
| 2:Ax:5:THR:HG23   | 2:Ax:8:ASP:H      | 1.85                     | 0.42              |
| 3:Bb:525:GLN:O    | 3:Bt:103:ARG:HD3  | 2.19                     | 0.42              |
| 3:Bd:209:PHE:CD1  | 3:Bd:210:PRO:HD2  | 2.55                     | 0.42              |
| 3:Bd:541:LYS:HE3  | 3:Bd:541:LYS:HB2  | 1.84                     | 0.42              |
| 3:Bf:129:VAL:HG22 | 3:Bf:145:ARG:HG2  | 2.00                     | 0.42              |
| 3:Bf:451:ASP:O    | 3:Bf:455:THR:HG23 | 2.20                     | 0.42              |
| 3:Bj:252:LYS:HA   | 3:Bv:506:VAL:HG21 | 2.01                     | 0.42              |
| 3:Bj:371:TYR:CZ   | 3:Bv:363:TYR:HB3  | 2.54                     | 0.42              |
| 3:Bl:288:LYS:HD2  | 3:Bl:291:GLN:NE2  | 2.34                     | 0.42              |
| 3:Bl:492:LEU:C    | 3:Bl:493:MET:HG2  | 2.44                     | 0.42              |
| 3:Bn:165:MET:HB2  | 3:Bn:307:TRP:CD2  | 2.55                     | 0.42              |
| 3:Bn:457:MET:HE3  | 3:Bn:457:MET:HB3  | 1.84                     | 0.42              |
| 3:Br:458:ARG:HG3  | 3:Br:520:VAL:HG23 | 2.02                     | 0.42              |
| 3:Br:539:LEU:HD23 | 3:Br:539:LEU:HA   | 1.86                     | 0.42              |
| 3:Bt:43:ASP:O     | 3:Bt:46:SER:HB3   | 2.20                     | 0.42              |
| 3:Bt:179:MET:HE1  | 3:Bt:184:TRP:HE3  | 1.85                     | 0.42              |
| 3:Bx:177:HIS:HB3  | 3:Bx:179:MET:HE1  | 2.02                     | 0.42              |
| 1:Ab:223:SER:HB2  | 1:Ab:266:GLY:O    | 2.20                     | 0.42              |
| 1:Ad:309:THR:HB   | 1:Ad:310:PRO:HD3  | 2.02                     | 0.42              |
| 1:Ag:228:ILE:HD13 | 1:Ag:267:MET:HE2  | 2.01                     | 0.42              |
| 1:Aj:11:LEU:HD11  | 3:Bp:45:LEU:O     | 2.20                     | 0.42              |
| 1:Al:234:GLN:NE2  | 1:Al:260:THR:H    | 2.17                     | 0.42              |
| 1:Al:278:VAL:HG12 | 1:Al:332:THR:HG23 | 2.01                     | 0.42              |
| 2:Aq:150:PRO:HG2  | 3:Bh:47:GLN:C     | 2.45                     | 0.42              |
| 2:Au:46:GLU:O     | 2:Au:49:GLN:HG2   | 2.20                     | 0.42              |
| 2:Ba:81:SER:HA    | 2:Ba:84:PHE:CE2   | 2.55                     | 0.42              |
| 3:Bb:557:PHE:CE2  | 3:Bb:582:LYS:HE3  | 2.55                     | 0.42              |
| 3:Bd:81:ARG:HH12  | 3:Bd:529:GLN:HE21 | 1.68                     | 0.42              |
| 3:Bd:167:LYS:HG3  | 3:Bd:302:PRO:HG3  | 2.02                     | 0.42              |
| 3:Bd:246:TYR:H    | 3:Bd:246:TYR:HD1  | 1.66                     | 0.42              |
| 3:Bf:336:PHE:O    | 3:Bf:340:ILE:HG23 | 2.19                     | 0.42              |
| 3:Bf:586:THR:HB   | 3:Bf:589:GLU:HG3  | 2.01                     | 0.42              |
| 3:Bh:550:GLN:NE2  | 3:Bh:581:VAL:HG21 | 2.35                     | 0.42              |
| 3:Bl:127:ARG:HG2  | 3:Bl:147:GLU:HG3  | 2.01                     | 0.42              |
| 3:Bn:351:PHE:HZ   | 3:Bx:350:PHE:HZ   | 1.67                     | 0.42              |
| 3:Bp:269:ARG:HD2  | 3:Bp:271:ILE:HD11 | 2.00                     | 0.42              |
| 3:Bt:49:THR:HG22  | 3:Bt:50:THR:N     | 2.35                     | 0.42              |
| 3:Bv:454:ALA:HB1  | 3:Bv:520:VAL:HG21 | 2.02                     | 0.42              |
| 3:Bx:81:ARG:HG2   | 3:Bx:560:LEU:HD13 | 2.00                     | 0.42              |
| 3:Bx:278:LYS:HE2  | 3:Bx:278:LYS:HB3  | 1.78                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Aa:217:LEU:HD11 | 1:Aa:352:VAL:HG13 | 2.02                     | 0.42              |
| 1:Ab:268:LYS:HA   | 1:Ab:300:VAL:HG21 | 2.02                     | 0.42              |
| 1:Ad:137:ILE:HG22 | 1:Ad:177:LYS:HB3  | 2.01                     | 0.42              |
| 1:Ae:317:ASP:OD1  | 1:Ae:320:LEU:HD13 | 2.20                     | 0.42              |
| 1:Af:189:GLY:C    | 1:Af:192:PRO:HD2  | 2.44                     | 0.42              |
| 1:Ag:229:THR:HG22 | 1:Ag:339:ALA:HA   | 2.02                     | 0.42              |
| 1:Am:316:ASP:OD1  | 1:Am:316:ASP:C    | 2.63                     | 0.42              |
| 1:Ao:354:TRP:CD1  | 1:Ao:354:TRP:C    | 2.97                     | 0.42              |
| 2:Aq:108:LYS:NZ   | 3:Bf:380:ASN:HB2  | 2.34                     | 0.42              |
| 3:Bb:61:ARG:HG2   | 3:Bb:61:ARG:HH11  | 1.84                     | 0.42              |
| 3:Bb:171:ARG:NH1  | 3:Bb:171:ARG:HB2  | 2.35                     | 0.42              |
| 3:Bb:238:PRO:HD3  | 3:Bb:263:PHE:CD1  | 2.54                     | 0.42              |
| 3:Bd:130:THR:HG21 | 3:Bh:471:ILE:HG12 | 2.01                     | 0.42              |
| 3:Bd:247:PHE:HB3  | 3:Bd:252:LYS:HD3  | 2.02                     | 0.42              |
| 3:Bj:183:GLY:HA2  | 3:Bv:161:ASN:ND2  | 2.34                     | 0.42              |
| 3:Bj:510:ILE:HG12 | 3:Bj:512:GLY:H    | 1.85                     | 0.42              |
| 3:Bp:248:LYS:NZ   | 3:Br:511:ARG:HD2  | 2.35                     | 0.42              |
| 1:Ac:273:ILE:HD11 | 1:Ac:308:ILE:HG21 | 2.01                     | 0.42              |
| 1:Ad:126:MET:HG2  | 1:Ad:418:PRO:HB3  | 2.01                     | 0.42              |
| 1:Af:21:SER:HB2   | 1:An:161:ASN:HA   | 2.01                     | 0.42              |
| 1:Ah:164:MET:HE3  | 1:Ah:356:ASP:OD1  | 2.19                     | 0.42              |
| 1:Ai:396:GLY:HA2  | 1:Ai:403:GLY:HA2  | 2.02                     | 0.42              |
| 1:Aj:391:ILE:HG12 | 1:Aj:408:ALA:HB3  | 2.01                     | 0.42              |
| 1:Al:130:VAL:HG23 | 1:Al:294:THR:HB   | 2.01                     | 0.42              |
| 1:Ao:38:ALA:O     | 1:Ao:42:ARG:HG2   | 2.19                     | 0.42              |
| 2:At:31:GLN:O     | 2:At:35:ASP:HB2   | 2.19                     | 0.42              |
| 2:Ba:40:LEU:HD13  | 2:Ba:87:LEU:HD22  | 2.00                     | 0.42              |
| 3:Bd:309:PHE:HB2  | 3:Bf:150:HIS:CG   | 2.55                     | 0.42              |
| 3:Bd:616:LEU:HD21 | 3:Bf:614:VAL:HG23 | 2.01                     | 0.42              |
| 3:Bj:239:VAL:HG22 | 3:Bj:240:THR:HG23 | 2.01                     | 0.42              |
| 3:Bl:451:ASP:O    | 3:Bl:455:THR:HG23 | 2.20                     | 0.42              |
| 3:Bn:338:ALA:HA   | 3:Bn:341:VAL:HG12 | 2.02                     | 0.42              |
| 3:Bp:329:LEU:O    | 3:Bp:333:ILE:HG12 | 2.19                     | 0.42              |
| 3:Bv:493:MET:HE3  | 3:Bv:493:MET:HB2  | 1.95                     | 0.42              |
| 1:Aa:104:ILE:HD13 | 1:Aa:407:ILE:HD11 | 2.02                     | 0.41              |
| 1:Ac:5:GLU:HG2    | 1:Ac:6:GLY:H      | 1.85                     | 0.41              |
| 1:Ad:175:TYR:CD2  | 1:Ad:213:ARG:HD3  | 2.55                     | 0.41              |
| 1:Ad:275:PHE:CE1  | 1:Ad:340:VAL:HB   | 2.55                     | 0.41              |
| 1:Ag:148:VAL:HA   | 1:Ag:168:TYR:CE2  | 2.55                     | 0.41              |
| 1:Ak:298:VAL:HG12 | 1:Ak:299:ARG:HG2  | 2.02                     | 0.41              |
| 1:Al:84:ASN:HD22  | 1:Al:406:ARG:NH1  | 2.18                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Al:97:GLU:HG3   | 1:Al:101:ARG:NH2  | 2.31                     | 0.41              |
| 1:Am:137:ILE:HG22 | 1:Am:143:ASP:HB3  | 2.02                     | 0.41              |
| 1:An:368:ALA:HB1  | 1:An:378:THR:HG21 | 2.01                     | 0.41              |
| 2:As:4:LYS:HD2    | 2:As:4:LYS:HA     | 1.87                     | 0.41              |
| 2:Aw:14:LEU:HD22  | 2:Aw:19:VAL:CG1   | 2.50                     | 0.41              |
| 3:Bb:223:TYR:HB2  | 3:Bb:298:ILE:HD11 | 2.02                     | 0.41              |
| 3:Bb:332:MET:HE2  | 3:Bb:333:ILE:HG13 | 2.02                     | 0.41              |
| 3:Bf:136:SER:HB3  | 3:Bh:514:TYR:HB2  | 2.01                     | 0.41              |
| 3:Bh:255:ILE:HG12 | 3:Bl:500:ALA:HB2  | 2.02                     | 0.41              |
| 3:Bj:114:ALA:HB3  | 3:Bj:126:TRP:HE1  | 1.85                     | 0.41              |
| 3:Bn:15:PHE:HE1   | 3:Bn:157:ILE:HD13 | 1.85                     | 0.41              |
| 3:Bn:87:ARG:NH2   | 3:Bx:479:THR:HG21 | 2.34                     | 0.41              |
| 3:Bn:356:ILE:O    | 3:Bn:360:GLU:HG3  | 2.20                     | 0.41              |
| 3:Bp:370:PRO:HG2  | 3:Bp:371:TYR:CE2  | 2.54                     | 0.41              |
| 3:Br:164:LEU:HD12 | 3:Br:169:ASP:HB2  | 2.02                     | 0.41              |
| 3:Br:411:ALA:O    | 3:Br:415:VAL:HG22 | 2.20                     | 0.41              |
| 1:Aa:84:ASN:HA    | 1:Aa:407:ILE:O    | 2.20                     | 0.41              |
| 1:Ae:401:LEU:HD23 | 1:Ae:401:LEU:HA   | 1.85                     | 0.41              |
| 1:Af:168:TYR:CD2  | 1:Af:353:PHE:HB3  | 2.55                     | 0.41              |
| 1:Af:228:ILE:HG22 | 1:Af:340:VAL:HB   | 2.02                     | 0.41              |
| 1:Ag:196:TYR:OH   | 1:Am:201:ILE:HG23 | 2.20                     | 0.41              |
| 1:Aj:118:LYS:HD2  | 1:Aj:411:TYR:HE1  | 1.85                     | 0.41              |
| 1:Aj:132:THR:HG22 | 1:Aj:425:LEU:HB2  | 2.02                     | 0.41              |
| 1:Ak:182:LEU:HD23 | 1:Ak:185:ARG:HH11 | 1.85                     | 0.41              |
| 1:An:364:GLN:HE21 | 1:An:364:GLN:HA   | 1.84                     | 0.41              |
| 2:Au:44:MET:HG3   | 2:Au:58:TYR:CD2   | 2.55                     | 0.41              |
| 2:Aw:56:THR:HG23  | 2:Aw:58:TYR:H     | 1.85                     | 0.41              |
| 3:Bd:622:LEU:HB2  | 3:Bf:622:LEU:HD11 | 2.01                     | 0.41              |
| 3:Bh:334:MET:HE1  | 3:Bl:407:ALA:HB1  | 2.03                     | 0.41              |
| 3:Bl:479:THR:HG22 | 3:Bl:491:GLN:HG2  | 2.01                     | 0.41              |
| 3:Bl:613:GLY:O    | 3:Bl:616:LEU:HB2  | 2.20                     | 0.41              |
| 3:Bn:264:ILE:HD12 | 3:Bn:264:ILE:O    | 2.20                     | 0.41              |
| 3:Bn:481:THR:O    | 3:Bn:487:GLU:HB2  | 2.20                     | 0.41              |
| 3:Bn:573:ASN:O    | 3:Bn:577:ILE:HD13 | 2.20                     | 0.41              |
| 3:Bn:621:GLU:O    | 3:Bn:624:LYS:HG2  | 2.20                     | 0.41              |
| 3:Bp:353:PRO:HG3  | 3:Bx:373:LEU:HD22 | 2.02                     | 0.41              |
| 3:Bp:372:TYR:OH   | 3:Br:345:PRO:HB3  | 2.19                     | 0.41              |
| 3:Bp:506:VAL:HG11 | 3:Bx:255:ILE:HG21 | 2.01                     | 0.41              |
| 3:Bp:567:MET:HE2  | 3:Bp:567:MET:HB3  | 1.88                     | 0.41              |
| 3:Bp:608:MET:HE1  | 3:Bx:608:MET:HB3  | 2.02                     | 0.41              |
| 1:Ad:176:LYS:HB3  | 1:Ad:176:LYS:HE2  | 1.91                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ae:153:GLU:OE1  | 1:Ai:173:GLN:NE2  | 2.47                     | 0.41              |
| 1:Ai:125:GLU:O    | 1:Ai:270:GLY:HA2  | 2.20                     | 0.41              |
| 1:Ak:191:ILE:HD13 | 1:Ak:202:GLN:HG3  | 2.02                     | 0.41              |
| 1:Am:82:PRO:HG3   | 1:Am:410:TRP:CD1  | 2.55                     | 0.41              |
| 1:Am:100:TYR:O    | 1:Am:104:ILE:HG12 | 2.20                     | 0.41              |
| 1:Am:184:LYS:HD3  | 1:Am:184:LYS:HA   | 1.95                     | 0.41              |
| 1:An:191:ILE:HB   | 1:An:192:PRO:HD3  | 2.02                     | 0.41              |
| 1:Ao:96:ASP:C     | 1:Ao:96:ASP:OD1   | 2.63                     | 0.41              |
| 3:Bb:77:ASP:OD1   | 3:Bb:77:ASP:N     | 2.53                     | 0.41              |
| 3:Bb:361:HIS:O    | 3:Bb:364:ASP:HB3  | 2.20                     | 0.41              |
| 3:Bb:576:LEU:HD13 | 3:Bt:567:MET:HE1  | 2.01                     | 0.41              |
| 3:Bh:81:ARG:HH21  | 3:Bh:560:LEU:HD21 | 1.86                     | 0.41              |
| 3:Bj:231:THR:HB   | 3:Bj:249:ARG:HB2  | 2.03                     | 0.41              |
| 3:Bj:479:THR:C    | 3:Bj:480:ILE:HD12 | 2.44                     | 0.41              |
| 3:Bn:62:PRO:HD3   | 3:Bx:415:VAL:HG12 | 2.02                     | 0.41              |
| 3:Bn:523:SER:HA   | 3:Bv:77:ASP:CG    | 2.45                     | 0.41              |
| 3:Bn:557:PHE:HE2  | 3:Bv:563:LYS:HZ3  | 1.64                     | 0.41              |
| 3:Bp:140:ASN:CG   | 3:Br:505:GLN:HE21 | 2.29                     | 0.41              |
| 3:Bp:366:ASN:HB3  | 3:Bp:368:ASP:OD2  | 2.21                     | 0.41              |
| 3:Bx:574:LYS:HE3  | 3:Bx:592:TRP:CE2  | 2.54                     | 0.41              |
| 1:Aa:30:ALA:HA    | 1:Aa:354:TRP:HH2  | 1.85                     | 0.41              |
| 1:Aa:126:MET:HG3  | 1:Aa:309:THR:CG2  | 2.50                     | 0.41              |
| 1:Aa:140:ASN:HB2  | 1:Aa:143:ASP:HB2  | 2.02                     | 0.41              |
| 1:Ae:264:THR:O    | 1:Ae:264:THR:HG22 | 2.20                     | 0.41              |
| 1:Af:191:ILE:HD13 | 1:Af:202:GLN:HG3  | 2.02                     | 0.41              |
| 1:Ag:392:PHE:HD1  | 1:Ag:407:ILE:HG22 | 1.85                     | 0.41              |
| 1:Ah:372:LEU:HD12 | 1:Ah:372:LEU:HA   | 1.84                     | 0.41              |
| 1:Ai:77:VAL:HG11  | 1:Ai:362:VAL:HG21 | 2.02                     | 0.41              |
| 1:Aj:33:TYR:O     | 1:Aj:362:VAL:HA   | 2.20                     | 0.41              |
| 1:Al:168:TYR:HB3  | 1:Al:211:VAL:HG22 | 2.02                     | 0.41              |
| 1:An:219:VAL:HB   | 1:An:349:ARG:HG2  | 2.01                     | 0.41              |
| 2:Aq:102:LYS:HA   | 2:Aq:102:LYS:HD2  | 1.86                     | 0.41              |
| 3:Bb:24:GLU:HG2   | 3:Bt:211:TRP:NE1  | 2.36                     | 0.41              |
| 3:Bd:209:PHE:HD1  | 3:Bd:209:PHE:HA   | 1.77                     | 0.41              |
| 3:Bd:350:PHE:CE1  | 3:Bf:388:PRO:HG3  | 2.56                     | 0.41              |
| 3:Bf:212:LEU:HD13 | 3:Bf:212:LEU:O    | 2.20                     | 0.41              |
| 3:Bf:479:THR:OG1  | 3:Bf:489:ASP:HB3  | 2.20                     | 0.41              |
| 3:Bf:583:LYS:HG3  | 3:Bf:584:PRO:HD2  | 2.02                     | 0.41              |
| 3:Bh:223:TYR:CE1  | 3:Bh:278:LYS:HD3  | 2.55                     | 0.41              |
| 3:Bj:226:VAL:O    | 3:Bj:274:ARG:HA   | 2.20                     | 0.41              |
| 3:Bj:451:ASP:O    | 3:Bj:455:THR:HG23 | 2.21                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:Bj:552:LEU:HD23 | 3:Bj:552:LEU:HA   | 1.79                     | 0.41              |
| 3:Bl:111:VAL:HA   | 3:Bl:126:TRP:CZ3  | 2.56                     | 0.41              |
| 3:Bl:185:GLU:HG3  | 3:Bl:185:GLU:H    | 1.70                     | 0.41              |
| 3:Bn:577:ILE:HD11 | 3:Bn:589:GLU:OE1  | 2.21                     | 0.41              |
| 3:Bp:21:ALA:HB1   | 3:Bx:214:GLN:HE22 | 1.85                     | 0.41              |
| 3:Bp:236:GLN:HB3  | 3:Bp:264:ILE:HG12 | 2.02                     | 0.41              |
| 3:Br:252:LYS:HB3  | 3:Br:252:LYS:NZ   | 2.36                     | 0.41              |
| 3:Bv:198:ILE:HD13 | 3:Bv:198:ILE:HA   | 1.81                     | 0.41              |
| 3:Bx:133:GLU:O    | 3:Bx:137:PRO:HB3  | 2.20                     | 0.41              |
| 3:Bx:275:ARG:HB3  | 3:Bx:292:LEU:HD11 | 2.02                     | 0.41              |
| 1:Aa:33:TYR:CD1   | 1:Aa:362:VAL:HG22 | 2.54                     | 0.41              |
| 1:Ae:377:LYS:HB3  | 1:Ah:374:ALA:HB1  | 2.02                     | 0.41              |
| 1:Aj:126:MET:HE2  | 1:Aj:269:ARG:HH22 | 1.86                     | 0.41              |
| 1:Al:128:SER:HB3  | 1:Al:419:GLU:HA   | 2.02                     | 0.41              |
| 1:Am:158:ARG:HD3  | 1:Am:280:PHE:HB3  | 2.03                     | 0.41              |
| 2:At:22:ASP:HB3   | 2:Ay:31:GLN:HE21  | 1.83                     | 0.41              |
| 2:At:89:CYS:SG    | 2:Az:102:LYS:HD3  | 2.60                     | 0.41              |
| 2:Ax:150:PRO:HG2  | 3:Bt:52:GLN:HA    | 2.02                     | 0.41              |
| 2:Ay:47:TRP:CZ2   | 2:Ay:111:LYS:HD3  | 2.55                     | 0.41              |
| 2:Az:5:THR:HG23   | 2:Az:7:GLY:H      | 1.86                     | 0.41              |
| 3:Bb:579:MET:HE2  | 3:Bb:579:MET:HB2  | 1.87                     | 0.41              |
| 3:Bf:26:ARG:HG3   | 3:Bf:153:CYS:O    | 2.20                     | 0.41              |
| 3:Bj:273:ARG:O    | 3:Bj:296:GLU:HG3  | 2.20                     | 0.41              |
| 3:Bj:386:THR:HB   | 3:Bv:352:TRP:HZ2  | 1.85                     | 0.41              |
| 3:Bl:209:PHE:CG   | 3:Bl:210:PRO:HD2  | 2.55                     | 0.41              |
| 3:Bn:94:LEU:HD21  | 3:Bx:465:GLN:HG3  | 2.02                     | 0.41              |
| 3:Bn:247:PHE:CE1  | 3:Bx:510:ILE:HG22 | 2.55                     | 0.41              |
| 3:Br:78:VAL:HG22  | 3:Br:98:TYR:CE2   | 2.55                     | 0.41              |
| 3:Bv:136:SER:HB2  | 3:Bx:514:TYR:HB2  | 2.02                     | 0.41              |
| 3:Bv:612:GLN:HE22 | 3:Bv:616:LEU:HD11 | 1.85                     | 0.41              |
| 1:Aa:302:ASP:OD2  | 1:Aa:302:ASP:C    | 2.63                     | 0.41              |
| 1:Ae:309:THR:HB   | 1:Ae:310:PRO:HD3  | 2.02                     | 0.41              |
| 1:Af:220:LEU:HD12 | 1:Af:220:LEU:HA   | 1.79                     | 0.41              |
| 1:Af:245:ASN:HB3  | 1:Af:246:ASP:H    | 1.62                     | 0.41              |
| 1:Af:353:PHE:CZ   | 1:Af:422:GLY:HA3  | 2.55                     | 0.41              |
| 1:Af:364:GLN:OE1  | 1:Af:365:PRO:HD2  | 2.21                     | 0.41              |
| 1:Af:401:LEU:HD23 | 1:Af:401:LEU:HA   | 1.89                     | 0.41              |
| 1:Ag:180:TYR:O    | 1:Ag:184:LYS:HG3  | 2.20                     | 0.41              |
| 1:Ah:41:GLN:HE21  | 1:Ah:41:GLN:HB3   | 1.63                     | 0.41              |
| 1:Ah:151:ALA:O    | 1:Ah:155:MET:HG3  | 2.21                     | 0.41              |
| 1:Aj:350:THR:HB   | 1:Aj:423:VAL:HG23 | 2.02                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Al:217:LEU:HB2  | 1:Al:349:ARG:HH21 | 1.86                     | 0.41              |
| 1:Am:261:LEU:HD12 | 1:Am:267:MET:HE1  | 2.01                     | 0.41              |
| 2:Aq:86:ASN:O     | 2:Aq:87:LEU:HB3   | 2.20                     | 0.41              |
| 2:Ar:35:ASP:OD1   | 2:Ar:35:ASP:C     | 2.63                     | 0.41              |
| 2:As:128:TYR:CE1  | 3:Bb:343:ARG:HD2  | 2.56                     | 0.41              |
| 2:Av:110:GLY:O    | 2:Av:114:LEU:HB2  | 2.20                     | 0.41              |
| 2:Ax:134:THR:HA   | 2:Ax:149:PHE:CE2  | 2.56                     | 0.41              |
| 2:Az:33:MET:O     | 2:Az:37:VAL:HG23  | 2.20                     | 0.41              |
| 3:Bd:221:GLU:HG2  | 3:Bd:280:ILE:HD13 | 2.03                     | 0.41              |
| 3:Bf:233:PHE:HD2  | 3:Bf:235:TYR:HE2  | 1.68                     | 0.41              |
| 3:Bf:608:MET:HB3  | 3:Bf:612:GLN:HG2  | 2.02                     | 0.41              |
| 3:Bh:179:MET:HE1  | 3:Bh:187:PHE:CB   | 2.46                     | 0.41              |
| 3:Bj:610:GLN:H    | 3:Bj:610:GLN:HG3  | 1.57                     | 0.41              |
| 3:Bl:345:PRO:HG2  | 3:Bl:392:TYR:CZ   | 2.55                     | 0.41              |
| 3:Bp:329:LEU:HD12 | 3:Bp:329:LEU:HA   | 1.83                     | 0.41              |
| 3:Bv:29:ALA:HB1   | 3:Bv:121:ALA:HB1  | 2.03                     | 0.41              |
| 3:Bx:254:VAL:O    | 3:Bx:255:ILE:HD13 | 2.20                     | 0.41              |
| 3:Bx:313:LYS:HB2  | 3:Bx:313:LYS:HE3  | 1.78                     | 0.41              |
| 3:Bx:576:LEU:HD23 | 3:Bx:576:LEU:HA   | 1.89                     | 0.41              |
| 1:Aa:18:GLU:HG3   | 1:Al:52:GLU:HG2   | 2.01                     | 0.41              |
| 1:Aa:87:PHE:CD1   | 1:Al:70:LEU:HD11  | 2.56                     | 0.41              |
| 1:Ae:38:ALA:HB2   | 3:Bv:44:TRP:CZ3   | 2.55                     | 0.41              |
| 1:Ae:215:PRO:HG2  | 1:Ae:216:LYS:HZ3  | 1.86                     | 0.41              |
| 1:Ag:119:VAL:HA   | 1:Ag:413:VAL:HG11 | 2.03                     | 0.41              |
| 1:Ag:128:SER:HB2  | 1:Ag:419:GLU:HA   | 2.02                     | 0.41              |
| 1:Ai:369:ASN:HA   | 1:Ai:378:THR:HG21 | 2.02                     | 0.41              |
| 1:Ak:168:TYR:CD1  | 1:Ak:353:PHE:HB3  | 2.56                     | 0.41              |
| 1:Am:131:ILE:HD12 | 1:Am:150:ASP:HB3  | 2.03                     | 0.41              |
| 2:Aq:16:LYS:HA    | 2:Aq:16:LYS:HD3   | 1.82                     | 0.41              |
| 2:Ba:41:GLU:HG3   | 2:Ba:67:PRO:HG3   | 2.02                     | 0.41              |
| 2:Ba:132:MET:HG2  | 2:Ba:149:PHE:CD2  | 2.42                     | 0.41              |
| 3:Bb:58:ASP:HA    | 3:Bb:327:GLN:NE2  | 2.36                     | 0.41              |
| 3:Bd:111:VAL:HA   | 3:Bd:126:TRP:HE1  | 1.85                     | 0.41              |
| 3:Bf:87:ARG:HB3   | 3:Bf:87:ARG:CZ    | 2.51                     | 0.41              |
| 3:Bf:463:ILE:HG21 | 3:Br:299:PRO:HA   | 2.03                     | 0.41              |
| 3:Bh:158:TRP:CG   | 3:Bh:167:LYS:HG2  | 2.55                     | 0.41              |
| 3:Bh:481:THR:HA   | 3:Bh:488:LYS:HB3  | 2.03                     | 0.41              |
| 3:Bl:475:PRO:HG3  | 3:Bl:495:GLU:OE2  | 2.20                     | 0.41              |
| 3:Bp:133:GLU:O    | 3:Bp:137:PRO:HB3  | 2.21                     | 0.41              |
| 3:Bp:507:LEU:HA   | 3:Bp:507:LEU:HD23 | 1.76                     | 0.41              |
| 3:Bp:574:LYS:O    | 3:Bp:578:GLN:HG2  | 2.20                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ab:130:VAL:C    | 1:Ab:131:ILE:HD13 | 2.46                     | 0.41              |
| 1:Ab:182:LEU:HD23 | 1:Ab:182:LEU:HA   | 1.90                     | 0.41              |
| 1:Ae:94:LEU:HG    | 1:Ah:370:HIS:NE2  | 2.35                     | 0.41              |
| 1:Ae:127:GLY:H    | 1:Ae:272:LYS:NZ   | 2.19                     | 0.41              |
| 1:Ag:33:TYR:CE1   | 3:Bf:212:LEU:HD23 | 2.56                     | 0.41              |
| 1:Ah:311:LYS:O    | 1:Ah:311:LYS:HG3  | 2.20                     | 0.41              |
| 1:Ai:353:PHE:CE2  | 1:Ai:422:GLY:HA3  | 2.56                     | 0.41              |
| 1:Ai:388:LEU:HB3  | 1:Ai:409:LEU:HD21 | 2.02                     | 0.41              |
| 1:Am:109:ARG:HG2  | 1:Am:109:ARG:NH1  | 2.35                     | 0.41              |
| 1:Am:130:VAL:HG12 | 1:Am:132:THR:HG23 | 2.02                     | 0.41              |
| 1:Ao:84:ASN:ND2   | 1:Ao:406:ARG:HH21 | 2.18                     | 0.41              |
| 2:Ar:91:ILE:HD13  | 2:Ar:91:ILE:HA    | 1.91                     | 0.41              |
| 2:As:33:MET:CE    | 2:As:69:GLU:HG3   | 2.51                     | 0.41              |
| 2:As:118:THR:O    | 2:As:122:ARG:HG3  | 2.21                     | 0.41              |
| 2:Au:42:ALA:HB1   | 2:Ba:81:SER:HB2   | 2.02                     | 0.41              |
| 2:Ba:111:LYS:HD2  | 3:Bx:379:GLU:OE2  | 2.21                     | 0.41              |
| 3:Bb:235:TYR:HE2  | 3:Bb:252:LYS:HE2  | 1.85                     | 0.41              |
| 3:Bf:77:ASP:OD1   | 3:Bf:77:ASP:N     | 2.53                     | 0.41              |
| 3:Bf:248:LYS:HE2  | 3:Bf:273:ARG:HB2  | 2.03                     | 0.41              |
| 3:Bj:559:LEU:HD11 | 3:Bv:538:LEU:HD21 | 2.03                     | 0.41              |
| 3:Bl:139:SER:HB3  | 3:Bt:472:TYR:CG   | 2.55                     | 0.41              |
| 3:Bl:233:PHE:CD1  | 3:Bl:265:LYS:HD2  | 2.56                     | 0.41              |
| 3:Bn:322:LEU:HD23 | 3:Bn:322:LEU:HA   | 1.83                     | 0.41              |
| 3:Bn:393:GLU:HG3  | 3:Bv:391:TYR:CZ   | 2.55                     | 0.41              |
| 3:Bn:397:VAL:HG11 | 3:Bx:403:TYR:CD2  | 2.56                     | 0.41              |
| 3:Bp:246:TYR:CD2  | 3:Br:511:ARG:HB3  | 2.54                     | 0.41              |
| 3:Bp:500:ALA:HB2  | 3:Bx:255:ILE:HD11 | 2.02                     | 0.41              |
| 3:Bp:506:VAL:HB   | 3:Bx:255:ILE:HG13 | 2.02                     | 0.41              |
| 3:Br:78:VAL:O     | 3:Br:95:MET:HE1   | 2.21                     | 0.41              |
| 3:Bt:321:ARG:HE   | 3:Bt:321:ARG:HB2  | 1.65                     | 0.41              |
| 1:Aa:96:ASP:HB3   | 1:Ak:41:GLN:OE1   | 2.21                     | 0.41              |
| 1:Aa:113:ASN:CG   | 1:Al:284:MET:HE3  | 2.46                     | 0.41              |
| 1:Ab:158:ARG:HA   | 1:Ab:282:GLY:HA2  | 2.03                     | 0.41              |
| 1:Ab:255:ARG:HE   | 1:Ab:255:ARG:HB2  | 1.57                     | 0.41              |
| 1:Ad:86:PHE:CD1   | 1:Ad:406:ARG:HD2  | 2.55                     | 0.41              |
| 1:Ae:121:ASN:O    | 1:Ae:125:GLU:HG3  | 2.20                     | 0.41              |
| 1:Ae:365:PRO:HB3  | 3:Bv:207:TRP:NE1  | 2.36                     | 0.41              |
| 1:Ag:101:ARG:O    | 1:Ag:105:GLN:HG3  | 2.21                     | 0.41              |
| 1:Ag:365:PRO:HG3  | 3:Bf:207:TRP:CE3  | 2.56                     | 0.41              |
| 1:Ai:279:LYS:HE2  | 1:Ai:292:ASP:HA   | 2.02                     | 0.41              |
| 1:Ak:401:LEU:HD12 | 1:Ak:401:LEU:HA   | 1.83                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Al:24:THR:O     | 1:Al:28:GLN:HG3   | 2.21                     | 0.41              |
| 1:Al:68:THR:HB    | 1:Al:323:GLU:OE2  | 2.19                     | 0.41              |
| 1:Al:236:PHE:CD1  | 1:Al:312:PRO:HG2  | 2.56                     | 0.41              |
| 1:Al:299:ARG:HG3  | 1:Al:299:ARG:NH1  | 2.35                     | 0.41              |
| 1:Al:404:LEU:HD23 | 1:Al:404:LEU:HA   | 1.81                     | 0.41              |
| 1:Am:278:VAL:HG23 | 1:Am:293:ALA:HB3  | 2.01                     | 0.41              |
| 1:An:184:LYS:HD2  | 1:An:184:LYS:HA   | 1.95                     | 0.41              |
| 1:An:203:ARG:H    | 1:An:203:ARG:HG2  | 1.73                     | 0.41              |
| 1:Ao:17:ILE:HG13  | 1:Ao:19:THR:HG23  | 2.03                     | 0.41              |
| 2:At:131:ARG:O    | 3:Bn:332:MET:HG3  | 2.21                     | 0.41              |
| 2:Av:43:MET:HE3   | 2:Av:90:ARG:HD3   | 2.03                     | 0.41              |
| 2:Az:140:PHE:CZ   | 3:Bn:49:THR:HG23  | 2.56                     | 0.41              |
| 2:Ba:15:ARG:HG3   | 2:Ba:21:SER:HB3   | 2.02                     | 0.41              |
| 3:Bb:317:GLU:OE2  | 3:Bb:321:ARG:HG2  | 2.20                     | 0.41              |
| 3:Bb:519:ASP:HB3  | 3:Bt:79:LEU:HB3   | 2.02                     | 0.41              |
| 3:Bd:76:ILE:HG22  | 3:Bh:457:MET:HG3  | 2.03                     | 0.41              |
| 3:Bd:578:GLN:HG2  | 3:Bd:578:GLN:H    | 1.68                     | 0.41              |
| 3:Bf:63:VAL:O     | 3:Bf:67:LEU:HD13  | 2.21                     | 0.41              |
| 3:Bh:80:TYR:HB2   | 3:Bh:95:MET:HG2   | 2.03                     | 0.41              |
| 3:Bh:127:ARG:HH22 | 3:Bh:177:HIS:CE1  | 2.38                     | 0.41              |
| 3:Bh:248:LYS:HD3  | 3:Bl:511:ARG:CZ   | 2.51                     | 0.41              |
| 3:Bj:228:LYS:HB2  | 3:Bj:228:LYS:HE2  | 1.71                     | 0.41              |
| 3:Bj:591:GLN:OE1  | 3:Bv:488:LYS:HE2  | 2.21                     | 0.41              |
| 3:Bl:150:HIS:CD2  | 3:Bt:309:PHE:HB2  | 2.56                     | 0.41              |
| 3:Bn:155:HIS:O    | 3:Bn:175:VAL:HA   | 2.20                     | 0.41              |
| 3:Bn:463:ILE:HG22 | 3:Bn:467:ILE:HD12 | 2.02                     | 0.41              |
| 3:Br:81:ARG:NH1   | 3:Br:560:LEU:HD11 | 2.35                     | 0.41              |
| 3:Br:322:LEU:HA   | 3:Br:322:LEU:HD23 | 1.83                     | 0.41              |
| 3:Br:329:LEU:O    | 3:Br:333:ILE:HD13 | 2.20                     | 0.41              |
| 3:Br:536:LEU:HD23 | 3:Br:536:LEU:HA   | 1.87                     | 0.41              |
| 3:Bt:613:GLY:O    | 3:Bt:616:LEU:HB3  | 2.20                     | 0.41              |
| 3:Bx:10:SER:O     | 3:Bx:14:ARG:HD3   | 2.21                     | 0.41              |
| 3:Bx:528:LYS:HB2  | 3:Bx:528:LYS:HE3  | 1.86                     | 0.41              |
| 3:Bx:559:LEU:HD23 | 3:Bx:559:LEU:HA   | 1.83                     | 0.41              |
| 1:Ad:241:TRP:HZ3  | 1:Ad:243:LEU:HD22 | 1.86                     | 0.41              |
| 1:Ad:261:LEU:HD12 | 1:Ad:267:MET:HE1  | 2.03                     | 0.41              |
| 1:Ad:284:MET:HG2  | 1:Ah:22:ALA:HB2   | 2.02                     | 0.41              |
| 1:Ae:203:ARG:O    | 1:Ae:211:VAL:HG22 | 2.20                     | 0.41              |
| 1:Ag:52:GLU:HG2   | 1:Ak:19:THR:H     | 1.86                     | 0.41              |
| 1:Ag:191:ILE:HA   | 1:Ag:202:GLN:HE21 | 1.86                     | 0.41              |
| 1:Aj:158:ARG:HD3  | 1:Aj:280:PHE:CG   | 2.55                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ak:376:MET:HG2  | 1:Ak:395:GLN:HB2  | 2.02                     | 0.41              |
| 2:Ap:81:SER:HA    | 2:Ap:84:PHE:CE2   | 2.56                     | 0.41              |
| 3:Bb:236:GLN:HB2  | 3:Bb:266:ILE:HD11 | 2.03                     | 0.41              |
| 3:Bb:468:VAL:HG22 | 3:Bb:472:TYR:CD2  | 2.55                     | 0.41              |
| 3:Bb:506:VAL:HG11 | 3:Bt:255:ILE:HG21 | 2.03                     | 0.41              |
| 3:Bb:567:MET:SD   | 3:Bj:554:LEU:HD13 | 2.61                     | 0.41              |
| 3:Bd:479:THR:HB   | 3:Bd:489:ASP:HB3  | 2.03                     | 0.41              |
| 3:Bh:568:MET:HE2  | 3:Bh:568:MET:HB2  | 1.75                     | 0.41              |
| 3:Bl:36:SER:HB3   | 3:Bl:120:GLU:OE2  | 2.21                     | 0.41              |
| 3:Bp:89:ASP:OD1   | 3:Bp:92:ASP:HB2   | 2.21                     | 0.41              |
| 3:Bp:269:ARG:HG2  | 3:Bp:270:GLN:N    | 2.36                     | 0.41              |
| 3:Br:362:MET:HE1  | 3:Br:373:LEU:H    | 1.85                     | 0.41              |
| 3:Br:409:THR:O    | 3:Br:413:LYS:HD3  | 2.21                     | 0.41              |
| 3:Bx:479:THR:HG22 | 3:Bx:490:VAL:O    | 2.21                     | 0.41              |
| 1:Ac:371:GLU:H    | 1:Ac:371:GLU:HG3  | 1.57                     | 0.40              |
| 1:Ad:278:VAL:HG13 | 1:Ad:330:VAL:HB   | 2.02                     | 0.40              |
| 1:Ad:380:SER:HB2  | 3:Bb:23:ASP:OD2   | 2.20                     | 0.40              |
| 1:Ai:235:SER:HB2  | 1:Ai:317:ASP:OD2  | 2.21                     | 0.40              |
| 2:Aq:144:ASN:HB2  | 3:Bh:45:LEU:HD12  | 2.03                     | 0.40              |
| 2:Au:140:PHE:HB2  | 2:Au:143:LEU:N    | 2.33                     | 0.40              |
| 2:Au:146:TRP:HA   | 2:Au:146:TRP:CE3  | 2.56                     | 0.40              |
| 2:Av:95:TYR:HB2   | 2:Av:97:LEU:HG    | 2.03                     | 0.40              |
| 3:Bb:6:ASN:ND2    | 3:Bb:8:LEU:HB3    | 2.36                     | 0.40              |
| 3:Bd:345:PRO:HB3  | 3:Bf:372:TYR:OH   | 2.22                     | 0.40              |
| 3:Bf:362:MET:SD   | 3:Bf:373:LEU:HD12 | 2.61                     | 0.40              |
| 3:Bj:248:LYS:HB2  | 3:Bj:251:ILE:CD1  | 2.51                     | 0.40              |
| 3:Bl:30:LYS:HB3   | 3:Bl:30:LYS:HE3   | 1.86                     | 0.40              |
| 3:Bl:606:PRO:HB2  | 3:Bl:609:VAL:HG12 | 2.03                     | 0.40              |
| 3:Bn:209:PHE:HB3  | 3:Bn:210:PRO:HD3  | 2.03                     | 0.40              |
| 3:Bn:459:ARG:NH2  | 3:Bv:297:HIS:HB3  | 2.35                     | 0.40              |
| 3:Bn:511:ARG:HH11 | 3:Bv:271:ILE:CD1  | 2.30                     | 0.40              |
| 3:Bn:521:GLY:HA3  | 3:Bv:79:LEU:HD22  | 2.01                     | 0.40              |
| 3:Bp:310:VAL:HG13 | 3:Bp:311:GLU:N    | 2.35                     | 0.40              |
| 3:Br:191:TYR:HB2  | 3:Br:193:LEU:HD12 | 2.03                     | 0.40              |
| 3:Br:193:LEU:HD22 | 3:Br:287:LEU:HD13 | 2.03                     | 0.40              |
| 3:Bv:298:ILE:HA   | 3:Bv:299:PRO:HD3  | 1.93                     | 0.40              |
| 3:Bv:479:THR:HB   | 3:Bv:489:ASP:HB2  | 2.03                     | 0.40              |
| 1:Aa:141:THR:OG1  | 1:Ab:184:LYS:HG3  | 2.21                     | 0.40              |
| 1:Ab:37:ALA:HA    | 1:Ab:364:GLN:HE22 | 1.86                     | 0.40              |
| 1:Ab:309:THR:HB   | 1:Ab:310:PRO:HD3  | 2.04                     | 0.40              |
| 1:Ab:382:SER:HB3  | 3:Bt:16:ASP:OD2   | 2.21                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ad:274:SER:HB2  | 1:Ad:343:LEU:HD21 | 2.03                     | 0.40              |
| 1:Ad:278:VAL:HG12 | 1:Ad:293:ALA:HB3  | 2.02                     | 0.40              |
| 1:Ae:119:VAL:HA   | 1:Ae:413:VAL:HG11 | 2.03                     | 0.40              |
| 1:Af:8:ILE:C      | 1:Af:8:ILE:HD12   | 2.46                     | 0.40              |
| 1:Ag:82:PRO:HG3   | 1:Am:61:TRP:CE2   | 2.56                     | 0.40              |
| 1:Ah:166:THR:O    | 1:Ah:209:ASP:HB2  | 2.21                     | 0.40              |
| 1:Aj:117:LEU:HD23 | 1:Aj:216:LYS:HB3  | 2.03                     | 0.40              |
| 1:Ak:279:LYS:HB2  | 1:Ak:331:ASN:ND2  | 2.36                     | 0.40              |
| 1:Al:31:LYS:H     | 1:Al:31:LYS:HG2   | 1.46                     | 0.40              |
| 1:Al:48:TRP:CH2   | 1:Al:76:ALA:HB2   | 2.57                     | 0.40              |
| 1:An:26:MET:HB2   | 1:An:116:GLU:OE1  | 2.21                     | 0.40              |
| 1:An:197:ARG:O    | 1:An:198:ASP:C    | 2.65                     | 0.40              |
| 1:Ao:83:ASP:OD1   | 1:Ao:409:LEU:HB3  | 2.21                     | 0.40              |
| 1:Ao:383:ILE:HD13 | 1:Ao:409:LEU:HD22 | 2.03                     | 0.40              |
| 2:Aq:113:LEU:HD13 | 2:Aq:116:LYS:HE2  | 2.02                     | 0.40              |
| 2:Au:102:LYS:HD2  | 2:Au:102:LYS:HA   | 1.76                     | 0.40              |
| 2:Au:128:TYR:HB2  | 2:Au:148:TYR:CD2  | 2.56                     | 0.40              |
| 3:Bb:404:MET:HE1  | 3:Bt:334:MET:HE2  | 2.03                     | 0.40              |
| 3:Bf:235:TYR:O    | 3:Bf:245:SER:HB3  | 2.21                     | 0.40              |
| 3:Bh:387:GLN:HB3  | 3:Bh:388:PRO:CD   | 2.49                     | 0.40              |
| 3:Bh:469:ASN:HB3  | 3:Bh:513:ARG:HD3  | 2.02                     | 0.40              |
| 3:Bh:614:VAL:O    | 3:Bh:617:GLN:HG3  | 2.20                     | 0.40              |
| 3:Bj:211:TRP:O    | 3:Bj:212:LEU:HB3  | 2.22                     | 0.40              |
| 3:Bj:575:GLN:O    | 3:Bj:579:MET:HG3  | 2.22                     | 0.40              |
| 3:Bl:220:ALA:HB3  | 3:Bl:281:ILE:HG13 | 2.03                     | 0.40              |
| 3:Bn:124:GLY:HA3  | 3:Bn:303:VAL:HG12 | 2.04                     | 0.40              |
| 3:Bn:177:HIS:HB3  | 3:Bn:179:MET:HE3  | 2.04                     | 0.40              |
| 3:Bn:459:ARG:O    | 3:Bn:463:ILE:HG13 | 2.20                     | 0.40              |
| 3:Bp:99:ARG:O     | 3:Bp:103:ARG:HB3  | 2.21                     | 0.40              |
| 3:Br:337:ASN:ND2  | 3:Br:401:ASN:HD22 | 2.18                     | 0.40              |
| 3:Bt:232:ALA:HB3  | 3:Bt:269:ARG:HG2  | 2.04                     | 0.40              |
| 3:Bx:185:GLU:HG2  | 3:Bx:185:GLU:H    | 1.65                     | 0.40              |
| 3:Bx:247:PHE:CD2  | 3:Bx:252:LYS:HE2  | 2.56                     | 0.40              |
| 3:Bx:290:LYS:HE2  | 3:Bx:290:LYS:HB3  | 1.93                     | 0.40              |
| 3:Bx:332:MET:HE2  | 3:Bx:332:MET:HB3  | 1.96                     | 0.40              |
| 1:Aa:358:ALA:HA   | 1:Aa:417:ARG:HB2  | 2.03                     | 0.40              |
| 1:Ac:225:ALA:HB1  | 1:Ac:228:ILE:HD12 | 2.02                     | 0.40              |
| 1:Ae:264:THR:HG21 | 1:Ae:300:VAL:HG13 | 2.03                     | 0.40              |
| 1:Ah:189:GLY:O    | 1:Ah:193:GLU:HB2  | 2.21                     | 0.40              |
| 1:Ah:220:LEU:HD21 | 1:Ah:344:ASN:OD1  | 2.20                     | 0.40              |
| 1:Aj:79:MET:HE1   | 1:Aj:364:GLN:HG2  | 2.03                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Ao:279:LYS:HD2  | 1:Ao:279:LYS:HA   | 1.88                     | 0.40              |
| 2:Aq:15:ARG:HD2   | 2:Av:35:ASP:OD1   | 2.22                     | 0.40              |
| 2:As:126:ALA:HB2  | 3:Bt:364:ASP:OD2  | 2.21                     | 0.40              |
| 2:Ay:126:ALA:HB2  | 3:Bb:364:ASP:OD2  | 2.21                     | 0.40              |
| 2:Az:3:ILE:HG22   | 2:Az:73:HIS:HE2   | 1.86                     | 0.40              |
| 2:Ba:149:PHE:HA   | 2:Ba:150:PRO:HD3  | 1.91                     | 0.40              |
| 3:Bb:97:MET:HE2   | 3:Bb:97:MET:HB2   | 1.85                     | 0.40              |
| 3:Bb:234:ILE:HG12 | 3:Bb:246:TYR:CB   | 2.46                     | 0.40              |
| 3:Bb:398:PRO:HB3  | 3:Bt:394:ASN:HB3  | 2.03                     | 0.40              |
| 3:Bb:463:ILE:HG12 | 3:Bt:297:HIS:HB2  | 2.03                     | 0.40              |
| 3:Bd:363:TYR:CE2  | 3:Bd:372:TYR:HB3  | 2.56                     | 0.40              |
| 3:Bf:296:GLU:HA   | 3:Bf:296:GLU:OE1  | 2.22                     | 0.40              |
| 3:Bf:536:LEU:HD23 | 3:Bf:536:LEU:HA   | 1.82                     | 0.40              |
| 3:Bf:559:LEU:HD23 | 3:Bf:559:LEU:HA   | 1.84                     | 0.40              |
| 3:Bp:276:VAL:HG13 | 3:Bp:293:ILE:HB   | 2.04                     | 0.40              |
| 3:Bv:578:GLN:OE1  | 3:Bv:578:GLN:HA   | 2.21                     | 0.40              |
| 1:Aa:22:ALA:HB2   | 1:Al:284:MET:HE1  | 2.04                     | 0.40              |
| 1:Aa:173:GLN:O    | 1:Aa:177:LYS:HG3  | 2.21                     | 0.40              |
| 1:Ac:234:GLN:HE22 | 1:Ac:260:THR:H    | 1.68                     | 0.40              |
| 1:Ad:35:PRO:HA    | 1:Ad:36:PRO:HD3   | 1.90                     | 0.40              |
| 1:Ad:185:ARG:HD3  | 1:Ad:185:ARG:HA   | 1.79                     | 0.40              |
| 1:Ae:205:VAL:HG12 | 1:Ae:211:VAL:HG11 | 2.04                     | 0.40              |
| 1:Af:20:ILE:HD11  | 1:An:283:GLN:HG3  | 2.04                     | 0.40              |
| 1:Ah:78:ASN:OD1   | 1:Ah:78:ASN:N     | 2.54                     | 0.40              |
| 1:Ak:9:VAL:N      | 3:Bf:49:THR:HB    | 2.37                     | 0.40              |
| 1:Am:108:ALA:HB1  | 1:Am:384:PRO:HD3  | 2.03                     | 0.40              |
| 1:An:49:MET:HE2   | 1:An:49:MET:HB3   | 1.82                     | 0.40              |
| 1:An:144:ALA:O    | 1:An:148:VAL:HG23 | 2.20                     | 0.40              |
| 1:Ao:175:TYR:CZ   | 1:Ao:201:ILE:HG22 | 2.57                     | 0.40              |
| 1:Ao:236:PHE:HB2  | 1:Ao:312:PRO:O    | 2.21                     | 0.40              |
| 1:Ao:295:PHE:HD2  | 1:Ao:310:PRO:HD2  | 1.86                     | 0.40              |
| 1:Ao:359:ILE:HD13 | 1:Ao:359:ILE:HA   | 1.92                     | 0.40              |
| 2:Aq:2:GLN:HG3    | 2:Aq:4:LYS:HG2    | 2.03                     | 0.40              |
| 2:Aq:107:ALA:HB1  | 3:Bf:380:ASN:ND2  | 2.36                     | 0.40              |
| 2:Ba:16:LYS:HA    | 2:Ba:16:LYS:HD3   | 1.79                     | 0.40              |
| 3:Bf:128:LEU:HD23 | 3:Bf:128:LEU:HA   | 1.93                     | 0.40              |
| 3:Bl:80:TYR:CE2   | 3:Bl:94:LEU:HG    | 2.57                     | 0.40              |
| 3:Bl:389:LEU:HD23 | 3:Bl:389:LEU:HA   | 1.98                     | 0.40              |
| 3:Bl:557:PHE:CD2  | 3:Bl:558:THR:HG23 | 2.56                     | 0.40              |
| 3:Bp:323:THR:HB   | 3:Bp:412:VAL:HG13 | 2.04                     | 0.40              |
| 3:Br:93:VAL:O     | 3:Br:97:MET:HG3   | 2.22                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:Aa:26:MET:HE2   | 1:Aa:169:PHE:CG   | 2.56                     | 0.40              |
| 1:Aa:187:ILE:HD12 | 1:Aa:187:ILE:HA   | 1.87                     | 0.40              |
| 1:Ac:24:THR:O     | 1:Ac:24:THR:HG22  | 2.21                     | 0.40              |
| 1:Ac:309:THR:OG1  | 1:Ac:310:PRO:HD3  | 2.21                     | 0.40              |
| 1:Ad:384:PRO:C    | 1:Ad:386:VAL:H    | 2.30                     | 0.40              |
| 1:Ae:86:PHE:CD2   | 1:Ao:63:LEU:HD13  | 2.57                     | 0.40              |
| 1:Ae:384:PRO:C    | 1:Ae:386:VAL:H    | 2.28                     | 0.40              |
| 1:Af:161:ASN:HB3  | 1:Af:417:ARG:NH1  | 2.34                     | 0.40              |
| 1:Ag:40:MET:HE1   | 1:Ag:45:ASN:CG    | 2.47                     | 0.40              |
| 1:Ah:387:GLY:N    | 3:Bj:284:THR:HG21 | 2.36                     | 0.40              |
| 1:Ai:137:ILE:HD12 | 1:Ai:174:ASP:OD2  | 2.21                     | 0.40              |
| 1:Ak:368:ALA:HB3  | 1:Ak:391:ILE:HD13 | 2.03                     | 0.40              |
| 1:Al:78:ASN:H     | 1:Al:414:ASN:HD21 | 1.70                     | 0.40              |
| 1:Al:425:LEU:HB3  | 1:Al:428:GLN:NE2  | 2.37                     | 0.40              |
| 1:Am:117:LEU:HD23 | 1:Am:117:LEU:HA   | 1.94                     | 0.40              |
| 1:An:364:GLN:NE2  | 1:An:364:GLN:HA   | 2.37                     | 0.40              |
| 2:As:136:SER:HB3  | 3:Bj:325:ASP:OD2  | 2.21                     | 0.40              |
| 2:Au:15:ARG:HG3   | 2:Az:94:ASP:OD1   | 2.21                     | 0.40              |
| 2:Av:43:MET:HE2   | 2:Av:47:TRP:CZ2   | 2.57                     | 0.40              |
| 3:Bd:247:PHE:C    | 3:Bh:511:ARG:HH22 | 2.29                     | 0.40              |
| 3:Bf:351:PHE:O    | 3:Br:373:LEU:HA   | 2.22                     | 0.40              |
| 3:Bh:255:ILE:HG21 | 3:Bl:506:VAL:HG11 | 2.03                     | 0.40              |
| 3:Bj:184:TRP:CZ2  | 3:Bj:199:PRO:HD3  | 2.56                     | 0.40              |
| 3:Bl:360:GLU:H    | 3:Bl:360:GLU:HG2  | 1.52                     | 0.40              |
| 3:Bl:559:LEU:HA   | 3:Bl:559:LEU:HD23 | 1.82                     | 0.40              |
| 3:Bn:246:TYR:CZ   | 3:Bx:511:ARG:HB3  | 2.57                     | 0.40              |
| 3:Bx:586:THR:O    | 3:Bx:589:GLU:HG2  | 2.22                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

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

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 1   | Aa    | 427/430 (99%) | 411 (96%) | 15 (4%)  | 1 (0%)   | 44          | 63  |
| 1   | Ab    | 420/430 (98%) | 400 (95%) | 20 (5%)  | 0        | 100         | 100 |
| 1   | Ac    | 427/430 (99%) | 417 (98%) | 10 (2%)  | 0        | 100         | 100 |
| 1   | Ad    | 427/430 (99%) | 409 (96%) | 17 (4%)  | 1 (0%)   | 44          | 63  |
| 1   | Ae    | 427/430 (99%) | 406 (95%) | 20 (5%)  | 1 (0%)   | 44          | 63  |
| 1   | Af    | 427/430 (99%) | 398 (93%) | 28 (7%)  | 1 (0%)   | 44          | 63  |
| 1   | Ag    | 427/430 (99%) | 405 (95%) | 22 (5%)  | 0        | 100         | 100 |
| 1   | Ah    | 418/430 (97%) | 396 (95%) | 22 (5%)  | 0        | 100         | 100 |
| 1   | Ai    | 421/430 (98%) | 405 (96%) | 16 (4%)  | 0        | 100         | 100 |
| 1   | Aj    | 419/430 (97%) | 406 (97%) | 13 (3%)  | 0        | 100         | 100 |
| 1   | Ak    | 420/430 (98%) | 394 (94%) | 26 (6%)  | 0        | 100         | 100 |
| 1   | Al    | 427/430 (99%) | 414 (97%) | 13 (3%)  | 0        | 100         | 100 |
| 1   | Am    | 427/430 (99%) | 407 (95%) | 19 (4%)  | 1 (0%)   | 44          | 63  |
| 1   | An    | 427/430 (99%) | 408 (96%) | 19 (4%)  | 0        | 100         | 100 |
| 1   | Ao    | 426/430 (99%) | 407 (96%) | 19 (4%)  | 0        | 100         | 100 |
| 2   | Ap    | 148/166 (89%) | 141 (95%) | 7 (5%)   | 0        | 100         | 100 |
| 2   | Aq    | 148/166 (89%) | 140 (95%) | 8 (5%)   | 0        | 100         | 100 |
| 2   | Ar    | 148/166 (89%) | 139 (94%) | 9 (6%)   | 0        | 100         | 100 |
| 2   | As    | 148/166 (89%) | 139 (94%) | 8 (5%)   | 1 (1%)   | 19          | 32  |
| 2   | At    | 148/166 (89%) | 136 (92%) | 12 (8%)  | 0        | 100         | 100 |
| 2   | Au    | 148/166 (89%) | 131 (88%) | 17 (12%) | 0        | 100         | 100 |
| 2   | Av    | 147/166 (89%) | 141 (96%) | 6 (4%)   | 0        | 100         | 100 |
| 2   | Aw    | 147/166 (89%) | 141 (96%) | 6 (4%)   | 0        | 100         | 100 |
| 2   | Ax    | 146/166 (88%) | 139 (95%) | 7 (5%)   | 0        | 100         | 100 |
| 2   | Ay    | 147/166 (89%) | 144 (98%) | 3 (2%)   | 0        | 100         | 100 |
| 2   | Az    | 147/166 (89%) | 142 (97%) | 5 (3%)   | 0        | 100         | 100 |
| 2   | Ba    | 146/166 (88%) | 138 (94%) | 8 (6%)   | 0        | 100         | 100 |
| 3   | Bb    | 586/725 (81%) | 544 (93%) | 40 (7%)  | 2 (0%)   | 37          | 55  |
| 3   | Bd    | 588/725 (81%) | 535 (91%) | 49 (8%)  | 4 (1%)   | 19          | 32  |
| 3   | Bf    | 587/725 (81%) | 529 (90%) | 57 (10%) | 1 (0%)   | 44          | 63  |
| 3   | Bh    | 588/725 (81%) | 544 (92%) | 43 (7%)  | 1 (0%)   | 44          | 63  |
| 3   | Bj    | 587/725 (81%) | 539 (92%) | 47 (8%)  | 1 (0%)   | 44          | 63  |

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| Mol | Chain | Analysed          | Favoured    | Allowed  | Outliers | Percentiles |    |
|-----|-------|-------------------|-------------|----------|----------|-------------|----|
| 3   | Bl    | 588/725 (81%)     | 531 (90%)   | 56 (10%) | 1 (0%)   | 44          | 63 |
| 3   | Bn    | 589/725 (81%)     | 524 (89%)   | 64 (11%) | 1 (0%)   | 44          | 63 |
| 3   | Bp    | 586/725 (81%)     | 530 (90%)   | 55 (9%)  | 1 (0%)   | 44          | 63 |
| 3   | Br    | 587/725 (81%)     | 544 (93%)   | 42 (7%)  | 1 (0%)   | 44          | 63 |
| 3   | Bt    | 587/725 (81%)     | 543 (92%)   | 41 (7%)  | 3 (0%)   | 25          | 41 |
| 3   | Bv    | 587/725 (81%)     | 552 (94%)   | 34 (6%)  | 1 (0%)   | 44          | 63 |
| 3   | Bx    | 590/725 (81%)     | 549 (93%)   | 40 (7%)  | 1 (0%)   | 44          | 63 |
| All | All   | 15185/17142 (89%) | 14218 (94%) | 943 (6%) | 24 (0%)  | 45          | 63 |

All (24) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | As    | 124 | LYS  |
| 3   | Bl    | 389 | LEU  |
| 3   | Br    | 208 | VAL  |
| 3   | Bt    | 23  | ASP  |
| 1   | Af    | 39  | SER  |
| 3   | Bb    | 242 | GLU  |
| 3   | Bt    | 84  | ASP  |
| 3   | Bv    | 47  | GLN  |
| 1   | Ad    | 370 | HIS  |
| 3   | Bb    | 44  | TRP  |
| 3   | Bd    | 80  | TYR  |
| 3   | Bd    | 207 | TRP  |
| 1   | Am    | 385 | ASP  |
| 3   | Bh    | 503 | GLU  |
| 3   | Bx    | 216 | THR  |
| 1   | Ae    | 43  | SER  |
| 3   | Bp    | 228 | LYS  |
| 3   | Bd    | 208 | VAL  |
| 3   | Bd    | 380 | ASN  |
| 3   | Bt    | 294 | ALA  |
| 1   | Aa    | 47  | ILE  |
| 3   | Bf    | 583 | LYS  |
| 3   | Bj    | 122 | GLY  |
| 3   | Bn    | 210 | PRO  |

### 5.3.2 Protein sidechains ⓘ

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

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

| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 1   | Aa    | 350/352 (99%)  | 335 (96%) | 15 (4%)  | 25          | 44 |
| 1   | Ab    | 346/352 (98%)  | 329 (95%) | 17 (5%)  | 21          | 38 |
| 1   | Ac    | 351/352 (100%) | 337 (96%) | 14 (4%)  | 27          | 47 |
| 1   | Ad    | 350/352 (99%)  | 329 (94%) | 21 (6%)  | 16          | 29 |
| 1   | Ae    | 350/352 (99%)  | 333 (95%) | 17 (5%)  | 21          | 38 |
| 1   | Af    | 350/352 (99%)  | 336 (96%) | 14 (4%)  | 27          | 47 |
| 1   | Ag    | 350/352 (99%)  | 339 (97%) | 11 (3%)  | 35          | 56 |
| 1   | Ah    | 344/352 (98%)  | 327 (95%) | 17 (5%)  | 21          | 38 |
| 1   | Ai    | 347/352 (99%)  | 332 (96%) | 15 (4%)  | 25          | 44 |
| 1   | Aj    | 345/352 (98%)  | 328 (95%) | 17 (5%)  | 21          | 38 |
| 1   | Ak    | 346/352 (98%)  | 327 (94%) | 19 (6%)  | 18          | 33 |
| 1   | Al    | 351/352 (100%) | 338 (96%) | 13 (4%)  | 29          | 50 |
| 1   | Am    | 351/352 (100%) | 335 (95%) | 16 (5%)  | 23          | 41 |
| 1   | An    | 351/352 (100%) | 331 (94%) | 20 (6%)  | 17          | 32 |
| 1   | Ao    | 351/352 (100%) | 334 (95%) | 17 (5%)  | 21          | 39 |
| 2   | Ap    | 118/131 (90%)  | 115 (98%) | 3 (2%)   | 42          | 64 |
| 2   | Aq    | 118/131 (90%)  | 117 (99%) | 1 (1%)   | 79          | 88 |
| 2   | Ar    | 118/131 (90%)  | 115 (98%) | 3 (2%)   | 42          | 64 |
| 2   | As    | 118/131 (90%)  | 109 (92%) | 9 (8%)   | 11          | 19 |
| 2   | At    | 118/131 (90%)  | 114 (97%) | 4 (3%)   | 32          | 54 |
| 2   | Au    | 118/131 (90%)  | 113 (96%) | 5 (4%)   | 25          | 44 |
| 2   | Av    | 117/131 (89%)  | 112 (96%) | 5 (4%)   | 25          | 44 |
| 2   | Aw    | 117/131 (89%)  | 115 (98%) | 2 (2%)   | 56          | 74 |
| 2   | Ax    | 117/131 (89%)  | 113 (97%) | 4 (3%)   | 32          | 54 |
| 2   | Ay    | 117/131 (89%)  | 111 (95%) | 6 (5%)   | 20          | 36 |
| 2   | Az    | 117/131 (89%)  | 115 (98%) | 2 (2%)   | 56          | 74 |

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| Mol | Chain | Analysed          | Rotameric   | Outliers | Percentiles |    |
|-----|-------|-------------------|-------------|----------|-------------|----|
| 2   | Ba    | 117/131 (89%)     | 113 (97%)   | 4 (3%)   | 32          | 54 |
| 3   | Bb    | 517/630 (82%)     | 494 (96%)   | 23 (4%)  | 24          | 43 |
| 3   | Bd    | 519/630 (82%)     | 495 (95%)   | 24 (5%)  | 23          | 41 |
| 3   | Bf    | 518/630 (82%)     | 499 (96%)   | 19 (4%)  | 29          | 50 |
| 3   | Bh    | 519/630 (82%)     | 495 (95%)   | 24 (5%)  | 23          | 41 |
| 3   | Bj    | 518/630 (82%)     | 499 (96%)   | 19 (4%)  | 29          | 50 |
| 3   | Bl    | 519/630 (82%)     | 496 (96%)   | 23 (4%)  | 24          | 43 |
| 3   | Bn    | 520/630 (82%)     | 502 (96%)   | 18 (4%)  | 31          | 52 |
| 3   | Bp    | 517/630 (82%)     | 493 (95%)   | 24 (5%)  | 23          | 41 |
| 3   | Br    | 518/630 (82%)     | 494 (95%)   | 24 (5%)  | 23          | 41 |
| 3   | Bt    | 518/630 (82%)     | 499 (96%)   | 19 (4%)  | 29          | 50 |
| 3   | Bv    | 518/630 (82%)     | 498 (96%)   | 20 (4%)  | 27          | 48 |
| 3   | Bx    | 521/630 (83%)     | 495 (95%)   | 26 (5%)  | 20          | 37 |
| All | All   | 12865/14412 (89%) | 12311 (96%) | 554 (4%) | 27          | 44 |

All (554) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Aa    | 16  | ILE  |
| 1   | Aa    | 58  | GLN  |
| 1   | Aa    | 115 | VAL  |
| 1   | Aa    | 118 | LYS  |
| 1   | Aa    | 164 | MET  |
| 1   | Aa    | 171 | ASN  |
| 1   | Aa    | 194 | GLU  |
| 1   | Aa    | 212 | LEU  |
| 1   | Aa    | 229 | THR  |
| 1   | Aa    | 237 | LYS  |
| 1   | Aa    | 280 | PHE  |
| 1   | Aa    | 283 | GLN  |
| 1   | Aa    | 373 | PHE  |
| 1   | Aa    | 382 | SER  |
| 1   | Aa    | 428 | GLN  |
| 1   | Ab    | 31  | LYS  |
| 1   | Ab    | 64  | THR  |
| 1   | Ab    | 72  | GLU  |
| 1   | Ab    | 84  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Ab    | 90  | ARG  |
| 1   | Ab    | 113 | ASN  |
| 1   | Ab    | 122 | MET  |
| 1   | Ab    | 170 | PHE  |
| 1   | Ab    | 187 | ILE  |
| 1   | Ab    | 205 | VAL  |
| 1   | Ab    | 212 | LEU  |
| 1   | Ab    | 234 | GLN  |
| 1   | Ab    | 250 | VAL  |
| 1   | Ab    | 343 | LEU  |
| 1   | Ab    | 371 | GLU  |
| 1   | Ab    | 401 | LEU  |
| 1   | Ab    | 409 | LEU  |
| 1   | Ac    | 26  | MET  |
| 1   | Ac    | 84  | ASN  |
| 1   | Ac    | 117 | LEU  |
| 1   | Ac    | 153 | GLU  |
| 1   | Ac    | 219 | VAL  |
| 1   | Ac    | 245 | ASN  |
| 1   | Ac    | 252 | VAL  |
| 1   | Ac    | 260 | THR  |
| 1   | Ac    | 280 | PHE  |
| 1   | Ac    | 298 | VAL  |
| 1   | Ac    | 309 | THR  |
| 1   | Ac    | 333 | SER  |
| 1   | Ac    | 372 | LEU  |
| 1   | Ac    | 423 | VAL  |
| 1   | Ad    | 18  | GLU  |
| 1   | Ad    | 33  | TYR  |
| 1   | Ad    | 51  | VAL  |
| 1   | Ad    | 53  | GLN  |
| 1   | Ad    | 55  | SER  |
| 1   | Ad    | 118 | LYS  |
| 1   | Ad    | 161 | ASN  |
| 1   | Ad    | 186 | ASP  |
| 1   | Ad    | 197 | ARG  |
| 1   | Ad    | 205 | VAL  |
| 1   | Ad    | 221 | THR  |
| 1   | Ad    | 251 | ASN  |
| 1   | Ad    | 252 | VAL  |
| 1   | Ad    | 260 | THR  |
| 1   | Ad    | 264 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Ad    | 301 | VAL  |
| 1   | Ad    | 306 | VAL  |
| 1   | Ad    | 307 | GLU  |
| 1   | Ad    | 340 | VAL  |
| 1   | Ad    | 359 | ILE  |
| 1   | Ad    | 382 | SER  |
| 1   | Ae    | 54  | GLU  |
| 1   | Ae    | 63  | LEU  |
| 1   | Ae    | 77  | VAL  |
| 1   | Ae    | 84  | ASN  |
| 1   | Ae    | 94  | LEU  |
| 1   | Ae    | 130 | VAL  |
| 1   | Ae    | 177 | LYS  |
| 1   | Ae    | 214 | SER  |
| 1   | Ae    | 216 | LYS  |
| 1   | Ae    | 234 | GLN  |
| 1   | Ae    | 280 | PHE  |
| 1   | Ae    | 281 | LEU  |
| 1   | Ae    | 318 | VAL  |
| 1   | Ae    | 320 | LEU  |
| 1   | Ae    | 340 | VAL  |
| 1   | Ae    | 416 | THR  |
| 1   | Ae    | 423 | VAL  |
| 1   | Af    | 16  | ILE  |
| 1   | Af    | 23  | ILE  |
| 1   | Af    | 26  | MET  |
| 1   | Af    | 47  | ILE  |
| 1   | Af    | 90  | ARG  |
| 1   | Af    | 109 | ARG  |
| 1   | Af    | 147 | PHE  |
| 1   | Af    | 212 | LEU  |
| 1   | Af    | 252 | VAL  |
| 1   | Af    | 279 | LYS  |
| 1   | Af    | 284 | MET  |
| 1   | Af    | 373 | PHE  |
| 1   | Af    | 379 | THR  |
| 1   | Af    | 392 | PHE  |
| 1   | Ag    | 10  | THR  |
| 1   | Ag    | 28  | GLN  |
| 1   | Ag    | 29  | LYS  |
| 1   | Ag    | 31  | LYS  |
| 1   | Ag    | 32  | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Ag    | 70  | LEU  |
| 1   | Ag    | 221 | THR  |
| 1   | Ag    | 237 | LYS  |
| 1   | Ag    | 249 | LYS  |
| 1   | Ag    | 330 | VAL  |
| 1   | Ag    | 340 | VAL  |
| 1   | Ah    | 17  | ILE  |
| 1   | Ah    | 74  | ASN  |
| 1   | Ah    | 159 | GLU  |
| 1   | Ah    | 182 | LEU  |
| 1   | Ah    | 193 | GLU  |
| 1   | Ah    | 205 | VAL  |
| 1   | Ah    | 214 | SER  |
| 1   | Ah    | 220 | LEU  |
| 1   | Ah    | 271 | ASP  |
| 1   | Ah    | 286 | LYS  |
| 1   | Ah    | 301 | VAL  |
| 1   | Ah    | 340 | VAL  |
| 1   | Ah    | 346 | LYS  |
| 1   | Ah    | 347 | ASP  |
| 1   | Ah    | 371 | GLU  |
| 1   | Ah    | 409 | LEU  |
| 1   | Ah    | 419 | GLU  |
| 1   | Ai    | 11  | LEU  |
| 1   | Ai    | 14  | ASP  |
| 1   | Ai    | 15  | GLU  |
| 1   | Ai    | 23  | ILE  |
| 1   | Ai    | 51  | VAL  |
| 1   | Ai    | 55  | SER  |
| 1   | Ai    | 68  | THR  |
| 1   | Ai    | 73  | LEU  |
| 1   | Ai    | 204 | GLN  |
| 1   | Ai    | 211 | VAL  |
| 1   | Ai    | 222 | LYS  |
| 1   | Ai    | 307 | GLU  |
| 1   | Ai    | 338 | MET  |
| 1   | Ai    | 351 | ASN  |
| 1   | Ai    | 359 | ILE  |
| 1   | Aj    | 18  | GLU  |
| 1   | Aj    | 63  | LEU  |
| 1   | Aj    | 78  | ASN  |
| 1   | Aj    | 86  | PHE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Aj    | 97  | GLU  |
| 1   | Aj    | 105 | GLN  |
| 1   | Aj    | 173 | GLN  |
| 1   | Aj    | 194 | GLU  |
| 1   | Aj    | 220 | LEU  |
| 1   | Aj    | 234 | GLN  |
| 1   | Aj    | 252 | VAL  |
| 1   | Aj    | 281 | LEU  |
| 1   | Aj    | 301 | VAL  |
| 1   | Aj    | 309 | THR  |
| 1   | Aj    | 318 | VAL  |
| 1   | Aj    | 341 | ASN  |
| 1   | Aj    | 401 | LEU  |
| 1   | Ak    | 9   | VAL  |
| 1   | Ak    | 20  | ILE  |
| 1   | Ak    | 49  | MET  |
| 1   | Ak    | 65  | ASP  |
| 1   | Ak    | 98  | THR  |
| 1   | Ak    | 101 | ARG  |
| 1   | Ak    | 153 | GLU  |
| 1   | Ak    | 220 | LEU  |
| 1   | Ak    | 229 | THR  |
| 1   | Ak    | 234 | GLN  |
| 1   | Ak    | 267 | MET  |
| 1   | Ak    | 268 | LYS  |
| 1   | Ak    | 287 | ASN  |
| 1   | Ak    | 300 | VAL  |
| 1   | Ak    | 333 | SER  |
| 1   | Ak    | 334 | LEU  |
| 1   | Ak    | 359 | ILE  |
| 1   | Ak    | 401 | LEU  |
| 1   | Ak    | 425 | LEU  |
| 1   | Al    | 11  | LEU  |
| 1   | Al    | 31  | LYS  |
| 1   | Al    | 61  | TRP  |
| 1   | Al    | 86  | PHE  |
| 1   | Al    | 180 | TYR  |
| 1   | Al    | 208 | PHE  |
| 1   | Al    | 223 | SER  |
| 1   | Al    | 252 | VAL  |
| 1   | Al    | 279 | LYS  |
| 1   | Al    | 298 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Al    | 313 | VAL  |
| 1   | Al    | 379 | THR  |
| 1   | Al    | 423 | VAL  |
| 1   | Am    | 7   | GLN  |
| 1   | Am    | 9   | VAL  |
| 1   | Am    | 10  | THR  |
| 1   | Am    | 19  | THR  |
| 1   | Am    | 51  | VAL  |
| 1   | Am    | 84  | ASN  |
| 1   | Am    | 105 | GLN  |
| 1   | Am    | 135 | ASP  |
| 1   | Am    | 137 | ILE  |
| 1   | Am    | 194 | GLU  |
| 1   | Am    | 208 | PHE  |
| 1   | Am    | 219 | VAL  |
| 1   | Am    | 260 | THR  |
| 1   | Am    | 309 | THR  |
| 1   | Am    | 316 | ASP  |
| 1   | Am    | 386 | VAL  |
| 1   | An    | 5   | GLU  |
| 1   | An    | 40  | MET  |
| 1   | An    | 47  | ILE  |
| 1   | An    | 49  | MET  |
| 1   | An    | 52  | GLU  |
| 1   | An    | 63  | LEU  |
| 1   | An    | 86  | PHE  |
| 1   | An    | 87  | PHE  |
| 1   | An    | 132 | THR  |
| 1   | An    | 135 | ASP  |
| 1   | An    | 137 | ILE  |
| 1   | An    | 153 | GLU  |
| 1   | An    | 212 | LEU  |
| 1   | An    | 219 | VAL  |
| 1   | An    | 250 | VAL  |
| 1   | An    | 280 | PHE  |
| 1   | An    | 309 | THR  |
| 1   | An    | 379 | THR  |
| 1   | An    | 401 | LEU  |
| 1   | An    | 428 | GLN  |
| 1   | Ao    | 21  | SER  |
| 1   | Ao    | 61  | TRP  |
| 1   | Ao    | 63  | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Ao    | 72  | GLU  |
| 1   | Ao    | 111 | LEU  |
| 1   | Ao    | 122 | MET  |
| 1   | Ao    | 208 | PHE  |
| 1   | Ao    | 212 | LEU  |
| 1   | Ao    | 237 | LYS  |
| 1   | Ao    | 280 | PHE  |
| 1   | Ao    | 284 | MET  |
| 1   | Ao    | 299 | ARG  |
| 1   | Ao    | 359 | ILE  |
| 1   | Ao    | 362 | VAL  |
| 1   | Ao    | 366 | ILE  |
| 1   | Ao    | 371 | GLU  |
| 1   | Ao    | 376 | MET  |
| 2   | Ap    | 81  | SER  |
| 2   | Ap    | 130 | SER  |
| 2   | Ap    | 140 | PHE  |
| 2   | Aq    | 33  | MET  |
| 2   | Ar    | 77  | SER  |
| 2   | Ar    | 117 | GLN  |
| 2   | Ar    | 140 | PHE  |
| 2   | As    | 26  | THR  |
| 2   | As    | 28  | VAL  |
| 2   | As    | 54  | ILE  |
| 2   | As    | 73  | HIS  |
| 2   | As    | 84  | PHE  |
| 2   | As    | 91  | ILE  |
| 2   | As    | 114 | LEU  |
| 2   | As    | 142 | ASN  |
| 2   | As    | 145 | GLU  |
| 2   | At    | 9   | LEU  |
| 2   | At    | 80  | VAL  |
| 2   | At    | 84  | PHE  |
| 2   | At    | 87  | LEU  |
| 2   | Au    | 33  | MET  |
| 2   | Au    | 64  | GLU  |
| 2   | Au    | 72  | ASP  |
| 2   | Au    | 84  | PHE  |
| 2   | Au    | 91  | ILE  |
| 2   | Av    | 9   | LEU  |
| 2   | Av    | 16  | LYS  |
| 2   | Av    | 54  | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | Av    | 55  | ILE  |
| 2   | Av    | 130 | SER  |
| 2   | Aw    | 28  | VAL  |
| 2   | Aw    | 149 | PHE  |
| 2   | Ax    | 28  | VAL  |
| 2   | Ax    | 94  | ASP  |
| 2   | Ax    | 149 | PHE  |
| 2   | Ax    | 150 | PRO  |
| 2   | Ay    | 28  | VAL  |
| 2   | Ay    | 39  | ASP  |
| 2   | Ay    | 72  | ASP  |
| 2   | Ay    | 76  | ARG  |
| 2   | Ay    | 91  | ILE  |
| 2   | Ay    | 114 | LEU  |
| 2   | Az    | 5   | THR  |
| 2   | Az    | 16  | LYS  |
| 2   | Ba    | 73  | HIS  |
| 2   | Ba    | 91  | ILE  |
| 2   | Ba    | 100 | THR  |
| 2   | Ba    | 143 | LEU  |
| 3   | Bb    | 12  | LEU  |
| 3   | Bb    | 50  | THR  |
| 3   | Bb    | 74  | ASN  |
| 3   | Bb    | 78  | VAL  |
| 3   | Bb    | 97  | MET  |
| 3   | Bb    | 147 | GLU  |
| 3   | Bb    | 149 | ILE  |
| 3   | Bb    | 171 | ARG  |
| 3   | Bb    | 231 | THR  |
| 3   | Bb    | 269 | ARG  |
| 3   | Bb    | 272 | LYS  |
| 3   | Bb    | 301 | VAL  |
| 3   | Bb    | 350 | PHE  |
| 3   | Bb    | 414 | GLU  |
| 3   | Bb    | 474 | VAL  |
| 3   | Bb    | 495 | GLU  |
| 3   | Bb    | 503 | GLU  |
| 3   | Bb    | 504 | LYS  |
| 3   | Bb    | 510 | ILE  |
| 3   | Bb    | 515 | GLU  |
| 3   | Bb    | 542 | THR  |
| 3   | Bb    | 546 | THR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bb    | 593 | LEU  |
| 3   | Bd    | 42  | ASP  |
| 3   | Bd    | 47  | GLN  |
| 3   | Bd    | 48  | TYR  |
| 3   | Bd    | 76  | ILE  |
| 3   | Bd    | 102 | MET  |
| 3   | Bd    | 127 | ARG  |
| 3   | Bd    | 176 | ILE  |
| 3   | Bd    | 209 | PHE  |
| 3   | Bd    | 211 | TRP  |
| 3   | Bd    | 212 | LEU  |
| 3   | Bd    | 218 | GLN  |
| 3   | Bd    | 231 | THR  |
| 3   | Bd    | 246 | TYR  |
| 3   | Bd    | 255 | ILE  |
| 3   | Bd    | 293 | ILE  |
| 3   | Bd    | 310 | VAL  |
| 3   | Bd    | 311 | GLU  |
| 3   | Bd    | 399 | GLN  |
| 3   | Bd    | 471 | ILE  |
| 3   | Bd    | 510 | ILE  |
| 3   | Bd    | 520 | VAL  |
| 3   | Bd    | 578 | GLN  |
| 3   | Bd    | 586 | THR  |
| 3   | Bd    | 626 | GLN  |
| 3   | Bf    | 56  | GLN  |
| 3   | Bf    | 67  | LEU  |
| 3   | Bf    | 74  | ASN  |
| 3   | Bf    | 129 | VAL  |
| 3   | Bf    | 149 | ILE  |
| 3   | Bf    | 205 | ASN  |
| 3   | Bf    | 209 | PHE  |
| 3   | Bf    | 217 | ILE  |
| 3   | Bf    | 264 | ILE  |
| 3   | Bf    | 291 | GLN  |
| 3   | Bf    | 310 | VAL  |
| 3   | Bf    | 317 | GLU  |
| 3   | Bf    | 546 | THR  |
| 3   | Bf    | 550 | GLN  |
| 3   | Bf    | 553 | LEU  |
| 3   | Bf    | 593 | LEU  |
| 3   | Bf    | 608 | MET  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bf    | 610 | GLN  |
| 3   | Bf    | 619 | GLN  |
| 3   | Bh    | 8   | LEU  |
| 3   | Bh    | 24  | GLU  |
| 3   | Bh    | 42  | ASP  |
| 3   | Bh    | 45  | LEU  |
| 3   | Bh    | 47  | GLN  |
| 3   | Bh    | 48  | TYR  |
| 3   | Bh    | 70  | GLU  |
| 3   | Bh    | 160 | SER  |
| 3   | Bh    | 233 | PHE  |
| 3   | Bh    | 255 | ILE  |
| 3   | Bh    | 258 | LEU  |
| 3   | Bh    | 288 | LYS  |
| 3   | Bh    | 311 | GLU  |
| 3   | Bh    | 312 | ASP  |
| 3   | Bh    | 317 | GLU  |
| 3   | Bh    | 389 | LEU  |
| 3   | Bh    | 406 | GLU  |
| 3   | Bh    | 450 | GLN  |
| 3   | Bh    | 503 | GLU  |
| 3   | Bh    | 504 | LYS  |
| 3   | Bh    | 546 | THR  |
| 3   | Bh    | 566 | GLU  |
| 3   | Bh    | 576 | LEU  |
| 3   | Bh    | 608 | MET  |
| 3   | Bj    | 44  | TRP  |
| 3   | Bj    | 49  | THR  |
| 3   | Bj    | 51  | LEU  |
| 3   | Bj    | 101 | ASP  |
| 3   | Bj    | 135 | GLN  |
| 3   | Bj    | 171 | ARG  |
| 3   | Bj    | 172 | HIS  |
| 3   | Bj    | 174 | THR  |
| 3   | Bj    | 179 | MET  |
| 3   | Bj    | 255 | ILE  |
| 3   | Bj    | 283 | CYS  |
| 3   | Bj    | 293 | ILE  |
| 3   | Bj    | 405 | LEU  |
| 3   | Bj    | 462 | GLU  |
| 3   | Bj    | 493 | MET  |
| 3   | Bj    | 505 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bj    | 520 | VAL  |
| 3   | Bj    | 546 | THR  |
| 3   | Bj    | 608 | MET  |
| 3   | Bl    | 42  | ASP  |
| 3   | Bl    | 52  | GLN  |
| 3   | Bl    | 61  | ARG  |
| 3   | Bl    | 63  | VAL  |
| 3   | Bl    | 76  | ILE  |
| 3   | Bl    | 123 | VAL  |
| 3   | Bl    | 149 | ILE  |
| 3   | Bl    | 160 | SER  |
| 3   | Bl    | 161 | ASN  |
| 3   | Bl    | 171 | ARG  |
| 3   | Bl    | 221 | GLU  |
| 3   | Bl    | 228 | LYS  |
| 3   | Bl    | 231 | THR  |
| 3   | Bl    | 244 | VAL  |
| 3   | Bl    | 249 | ARG  |
| 3   | Bl    | 268 | GLU  |
| 3   | Bl    | 301 | VAL  |
| 3   | Bl    | 319 | VAL  |
| 3   | Bl    | 320 | VAL  |
| 3   | Bl    | 332 | MET  |
| 3   | Bl    | 478 | VAL  |
| 3   | Bl    | 549 | TYR  |
| 3   | Bl    | 565 | VAL  |
| 3   | Bn    | 12  | LEU  |
| 3   | Bn    | 14  | ARG  |
| 3   | Bn    | 42  | ASP  |
| 3   | Bn    | 97  | MET  |
| 3   | Bn    | 120 | GLU  |
| 3   | Bn    | 123 | VAL  |
| 3   | Bn    | 149 | ILE  |
| 3   | Bn    | 205 | ASN  |
| 3   | Bn    | 252 | LYS  |
| 3   | Bn    | 255 | ILE  |
| 3   | Bn    | 301 | VAL  |
| 3   | Bn    | 354 | GLU  |
| 3   | Bn    | 516 | CYS  |
| 3   | Bn    | 526 | SER  |
| 3   | Bn    | 559 | LEU  |
| 3   | Bn    | 560 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bn    | 576 | LEU  |
| 3   | Bn    | 586 | THR  |
| 3   | Bp    | 56  | GLN  |
| 3   | Bp    | 76  | ILE  |
| 3   | Bp    | 78  | VAL  |
| 3   | Bp    | 92  | ASP  |
| 3   | Bp    | 123 | VAL  |
| 3   | Bp    | 171 | ARG  |
| 3   | Bp    | 182 | ASN  |
| 3   | Bp    | 229 | LYS  |
| 3   | Bp    | 240 | THR  |
| 3   | Bp    | 246 | TYR  |
| 3   | Bp    | 264 | ILE  |
| 3   | Bp    | 286 | VAL  |
| 3   | Bp    | 311 | GLU  |
| 3   | Bp    | 315 | VAL  |
| 3   | Bp    | 329 | LEU  |
| 3   | Bp    | 340 | ILE  |
| 3   | Bp    | 354 | GLU  |
| 3   | Bp    | 378 | ASP  |
| 3   | Bp    | 414 | GLU  |
| 3   | Bp    | 473 | ASP  |
| 3   | Bp    | 510 | ILE  |
| 3   | Bp    | 520 | VAL  |
| 3   | Bp    | 536 | LEU  |
| 3   | Bp    | 546 | THR  |
| 3   | Br    | 48  | TYR  |
| 3   | Br    | 49  | THR  |
| 3   | Br    | 51  | LEU  |
| 3   | Br    | 76  | ILE  |
| 3   | Br    | 78  | VAL  |
| 3   | Br    | 89  | ASP  |
| 3   | Br    | 92  | ASP  |
| 3   | Br    | 225 | VAL  |
| 3   | Br    | 228 | LYS  |
| 3   | Br    | 246 | TYR  |
| 3   | Br    | 249 | ARG  |
| 3   | Br    | 264 | ILE  |
| 3   | Br    | 273 | ARG  |
| 3   | Br    | 366 | ASN  |
| 3   | Br    | 462 | GLU  |
| 3   | Br    | 499 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Br    | 508 | ASN  |
| 3   | Br    | 511 | ARG  |
| 3   | Br    | 546 | THR  |
| 3   | Br    | 549 | TYR  |
| 3   | Br    | 552 | LEU  |
| 3   | Br    | 568 | MET  |
| 3   | Br    | 577 | ILE  |
| 3   | Br    | 582 | LYS  |
| 3   | Bt    | 12  | LEU  |
| 3   | Bt    | 51  | LEU  |
| 3   | Bt    | 208 | VAL  |
| 3   | Bt    | 216 | THR  |
| 3   | Bt    | 246 | TYR  |
| 3   | Bt    | 258 | LEU  |
| 3   | Bt    | 292 | LEU  |
| 3   | Bt    | 312 | ASP  |
| 3   | Bt    | 343 | ARG  |
| 3   | Bt    | 384 | LEU  |
| 3   | Bt    | 413 | LYS  |
| 3   | Bt    | 450 | GLN  |
| 3   | Bt    | 474 | VAL  |
| 3   | Bt    | 481 | THR  |
| 3   | Bt    | 504 | LYS  |
| 3   | Bt    | 548 | GLU  |
| 3   | Bt    | 567 | MET  |
| 3   | Bt    | 597 | GLN  |
| 3   | Bt    | 612 | GLN  |
| 3   | Bv    | 42  | ASP  |
| 3   | Bv    | 43  | ASP  |
| 3   | Bv    | 45  | LEU  |
| 3   | Bv    | 50  | THR  |
| 3   | Bv    | 133 | GLU  |
| 3   | Bv    | 135 | GLN  |
| 3   | Bv    | 174 | THR  |
| 3   | Bv    | 283 | CYS  |
| 3   | Bv    | 368 | ASP  |
| 3   | Bv    | 405 | LEU  |
| 3   | Bv    | 413 | LYS  |
| 3   | Bv    | 453 | LEU  |
| 3   | Bv    | 455 | THR  |
| 3   | Bv    | 511 | ARG  |
| 3   | Bv    | 551 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bv    | 557 | PHE  |
| 3   | Bv    | 563 | LYS  |
| 3   | Bv    | 566 | GLU  |
| 3   | Bv    | 585 | GLU  |
| 3   | Bv    | 617 | GLN  |
| 3   | Bx    | 60  | VAL  |
| 3   | Bx    | 72  | ARG  |
| 3   | Bx    | 134 | ASP  |
| 3   | Bx    | 141 | ASN  |
| 3   | Bx    | 174 | THR  |
| 3   | Bx    | 206 | ASP  |
| 3   | Bx    | 217 | ILE  |
| 3   | Bx    | 221 | GLU  |
| 3   | Bx    | 248 | LYS  |
| 3   | Bx    | 264 | ILE  |
| 3   | Bx    | 270 | GLN  |
| 3   | Bx    | 350 | PHE  |
| 3   | Bx    | 393 | GLU  |
| 3   | Bx    | 473 | ASP  |
| 3   | Bx    | 505 | GLN  |
| 3   | Bx    | 510 | ILE  |
| 3   | Bx    | 511 | ARG  |
| 3   | Bx    | 520 | VAL  |
| 3   | Bx    | 525 | GLN  |
| 3   | Bx    | 548 | GLU  |
| 3   | Bx    | 549 | TYR  |
| 3   | Bx    | 560 | LEU  |
| 3   | Bx    | 563 | LYS  |
| 3   | Bx    | 566 | GLU  |
| 3   | Bx    | 569 | ARG  |
| 3   | Bx    | 577 | ILE  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (154) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Aa    | 4   | ASN  |
| 1   | Aa    | 283 | GLN  |
| 1   | Aa    | 341 | ASN  |
| 1   | Ab    | 291 | GLN  |
| 1   | Ac    | 121 | ASN  |
| 1   | Ac    | 364 | GLN  |
| 1   | Ac    | 395 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Ac    | 414 | ASN  |
| 1   | Ae    | 7   | GLN  |
| 1   | Ae    | 45  | ASN  |
| 1   | Ae    | 88  | GLN  |
| 1   | Ae    | 113 | ASN  |
| 1   | Ae    | 351 | ASN  |
| 1   | Af    | 173 | GLN  |
| 1   | Af    | 202 | GLN  |
| 1   | Af    | 242 | GLN  |
| 1   | Af    | 291 | GLN  |
| 1   | Af    | 341 | ASN  |
| 1   | Af    | 414 | ASN  |
| 1   | Ag    | 4   | ASN  |
| 1   | Ag    | 28  | GLN  |
| 1   | Ag    | 84  | ASN  |
| 1   | Ah    | 45  | ASN  |
| 1   | Ah    | 53  | GLN  |
| 1   | Ah    | 113 | ASN  |
| 1   | Ah    | 114 | ASN  |
| 1   | Ai    | 248 | ASN  |
| 1   | Ai    | 291 | GLN  |
| 1   | Ai    | 305 | HIS  |
| 1   | Aj    | 114 | ASN  |
| 1   | Aj    | 204 | GLN  |
| 1   | Aj    | 254 | ASN  |
| 1   | Aj    | 341 | ASN  |
| 1   | Aj    | 369 | ASN  |
| 1   | Aj    | 370 | HIS  |
| 1   | Ak    | 41  | GLN  |
| 1   | Ak    | 113 | ASN  |
| 1   | Ak    | 146 | ASN  |
| 1   | Ak    | 324 | GLN  |
| 1   | Al    | 45  | ASN  |
| 1   | Al    | 78  | ASN  |
| 1   | Al    | 84  | ASN  |
| 1   | Al    | 105 | GLN  |
| 1   | Al    | 234 | GLN  |
| 1   | Al    | 245 | ASN  |
| 1   | Al    | 324 | GLN  |
| 1   | Am    | 78  | ASN  |
| 1   | Am    | 84  | ASN  |
| 1   | Am    | 113 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | Am    | 251 | ASN  |
| 1   | Am    | 283 | GLN  |
| 1   | Am    | 414 | ASN  |
| 1   | An    | 74  | ASN  |
| 1   | An    | 364 | GLN  |
| 1   | Ao    | 58  | GLN  |
| 1   | Ao    | 84  | ASN  |
| 1   | Ao    | 341 | ASN  |
| 2   | Ap    | 34  | GLN  |
| 2   | Ap    | 85  | HIS  |
| 2   | Ap    | 86  | ASN  |
| 2   | Ap    | 138 | ASN  |
| 2   | As    | 34  | GLN  |
| 2   | As    | 138 | ASN  |
| 2   | At    | 31  | GLN  |
| 2   | Au    | 49  | GLN  |
| 2   | Aw    | 49  | GLN  |
| 2   | Aw    | 147 | HIS  |
| 2   | Ay    | 144 | ASN  |
| 2   | Ba    | 117 | GLN  |
| 2   | Ba    | 142 | ASN  |
| 3   | Bb    | 6   | ASN  |
| 3   | Bb    | 40  | GLN  |
| 3   | Bb    | 142 | GLN  |
| 3   | Bb    | 155 | HIS  |
| 3   | Bb    | 327 | GLN  |
| 3   | Bb    | 394 | ASN  |
| 3   | Bb    | 578 | GLN  |
| 3   | Bb    | 610 | GLN  |
| 3   | Bd    | 142 | GLN  |
| 3   | Bd    | 399 | GLN  |
| 3   | Bd    | 525 | GLN  |
| 3   | Bd    | 591 | GLN  |
| 3   | Bd    | 619 | GLN  |
| 3   | Bf    | 40  | GLN  |
| 3   | Bf    | 56  | GLN  |
| 3   | Bf    | 135 | GLN  |
| 3   | Bf    | 142 | GLN  |
| 3   | Bf    | 181 | GLN  |
| 3   | Bf    | 270 | GLN  |
| 3   | Bf    | 297 | HIS  |
| 3   | Bh    | 135 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Bh    | 177 | HIS  |
| 3   | Bh    | 505 | GLN  |
| 3   | Bh    | 508 | ASN  |
| 3   | Bh    | 550 | GLN  |
| 3   | Bh    | 598 | GLN  |
| 3   | Bh    | 604 | GLN  |
| 3   | Bh    | 626 | GLN  |
| 3   | Bj    | 104 | HIS  |
| 3   | Bj    | 140 | ASN  |
| 3   | Bj    | 161 | ASN  |
| 3   | Bj    | 214 | GLN  |
| 3   | Bj    | 508 | ASN  |
| 3   | Bj    | 525 | GLN  |
| 3   | Bj    | 550 | GLN  |
| 3   | Bj    | 601 | GLN  |
| 3   | Bl    | 40  | GLN  |
| 3   | Bl    | 140 | ASN  |
| 3   | Bl    | 155 | HIS  |
| 3   | Bl    | 177 | HIS  |
| 3   | Bl    | 205 | ASN  |
| 3   | Bl    | 327 | GLN  |
| 3   | Bl    | 508 | ASN  |
| 3   | Bl    | 612 | GLN  |
| 3   | Bn    | 531 | ASN  |
| 3   | Bn    | 598 | GLN  |
| 3   | Bp    | 142 | GLN  |
| 3   | Bp    | 172 | HIS  |
| 3   | Bp    | 205 | ASN  |
| 3   | Bp    | 270 | GLN  |
| 3   | Bp    | 337 | ASN  |
| 3   | Bp    | 387 | GLN  |
| 3   | Bp    | 401 | ASN  |
| 3   | Bp    | 531 | ASN  |
| 3   | Bp    | 550 | GLN  |
| 3   | Br    | 104 | HIS  |
| 3   | Br    | 141 | ASN  |
| 3   | Br    | 218 | GLN  |
| 3   | Br    | 291 | GLN  |
| 3   | Br    | 337 | ASN  |
| 3   | Br    | 366 | ASN  |
| 3   | Br    | 477 | ASN  |
| 3   | Br    | 505 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | Br    | 619 | GLN  |
| 3   | Bt    | 47  | GLN  |
| 3   | Bt    | 150 | HIS  |
| 3   | Bt    | 380 | ASN  |
| 3   | Bt    | 529 | GLN  |
| 3   | Bt    | 544 | GLN  |
| 3   | Bt    | 578 | GLN  |
| 3   | Bt    | 603 | GLN  |
| 3   | Bv    | 291 | GLN  |
| 3   | Bv    | 375 | ASN  |
| 3   | Bv    | 469 | ASN  |
| 3   | Bv    | 491 | GLN  |
| 3   | Bv    | 591 | GLN  |
| 3   | Bv    | 598 | GLN  |
| 3   | Bv    | 612 | GLN  |
| 3   | Bx    | 31  | ASN  |
| 3   | Bx    | 52  | GLN  |
| 3   | Bx    | 135 | GLN  |
| 3   | Bx    | 355 | GLN  |
| 3   | Bx    | 477 | ASN  |
| 3   | Bx    | 505 | GLN  |

### 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 oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

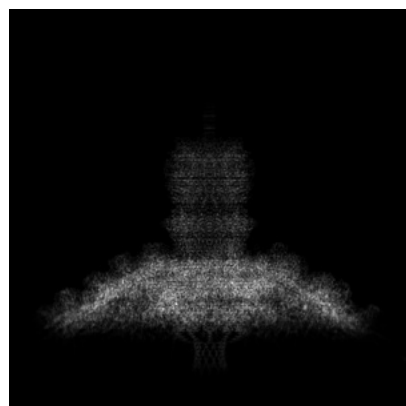
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71631. These allow visual inspection of the internal detail of the map and identification of artifacts.

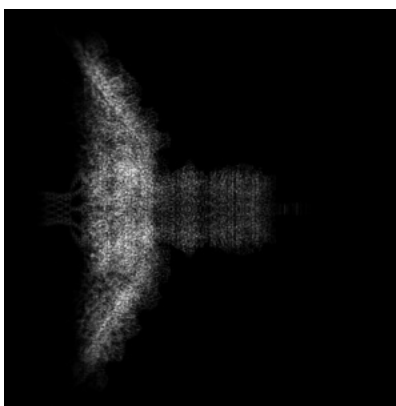
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

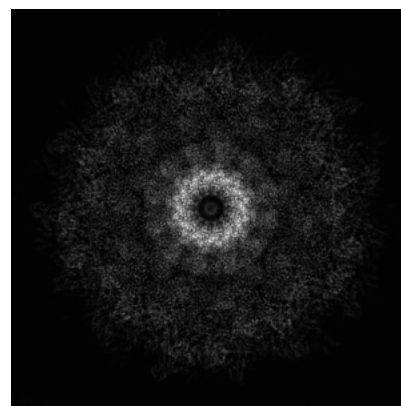
#### 6.1.1 Primary map



X

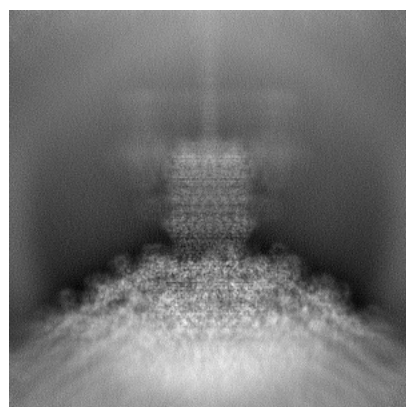


Y

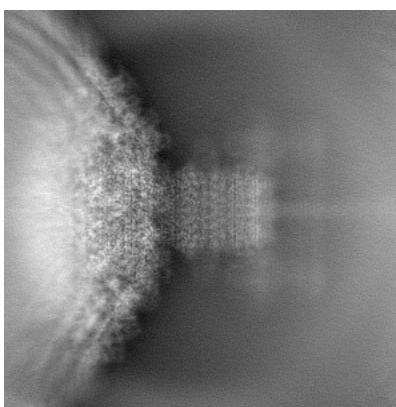


Z

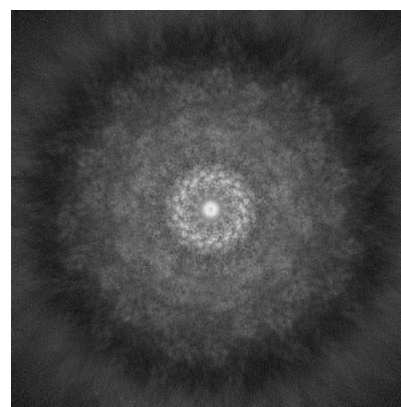
#### 6.1.2 Raw map



X



Y

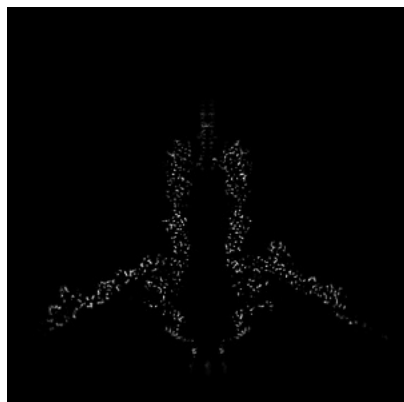


Z

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

## 6.2 Central slices [i](#)

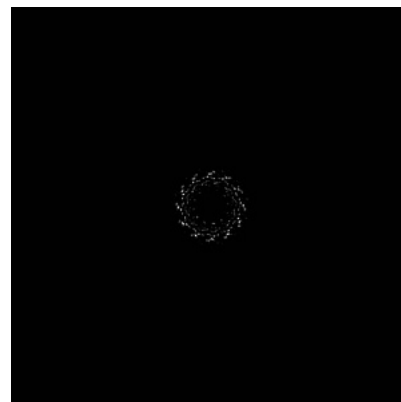
### 6.2.1 Primary map



X Index: 224

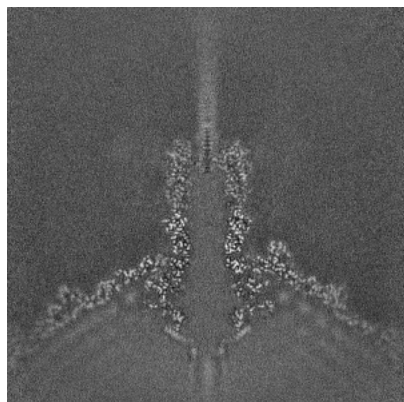


Y Index: 224

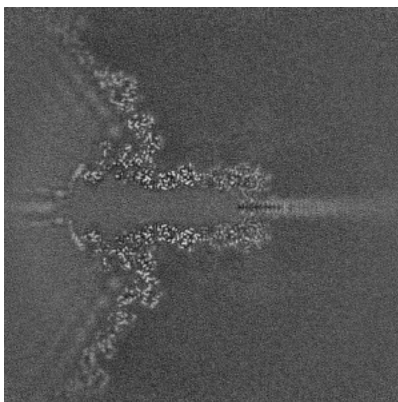


Z Index: 224

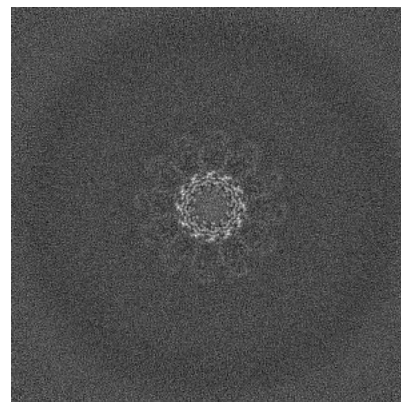
### 6.2.2 Raw map



X Index: 224



Y Index: 224

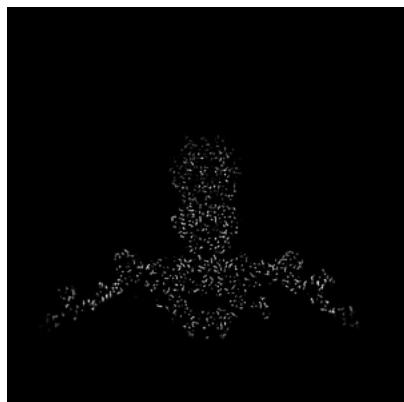


Z Index: 224

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

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

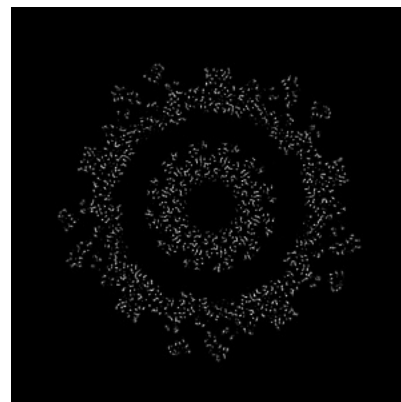
### 6.3.1 Primary map



X Index: 192

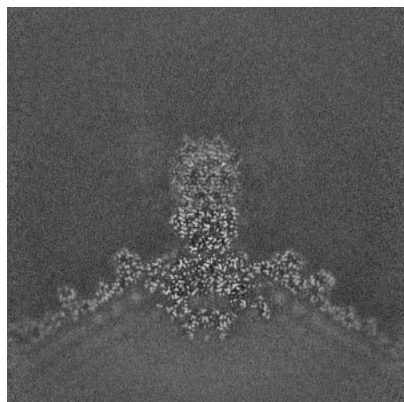


Y Index: 253

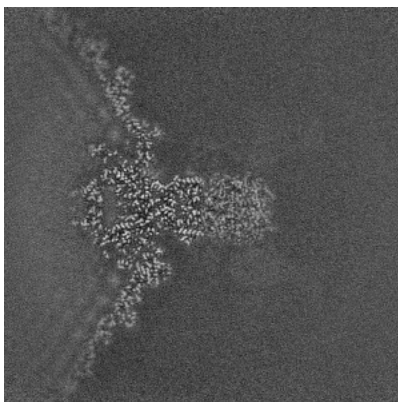


Z Index: 128

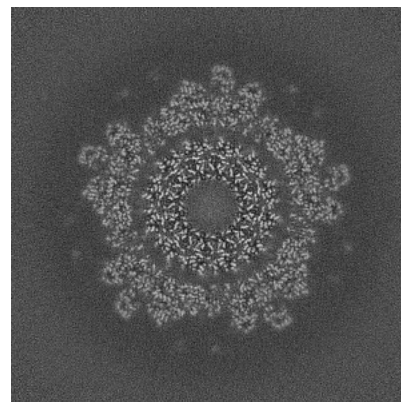
### 6.3.2 Raw map



X Index: 193



Y Index: 253



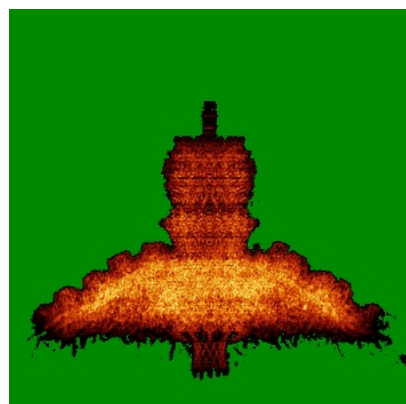
Z Index: 137

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

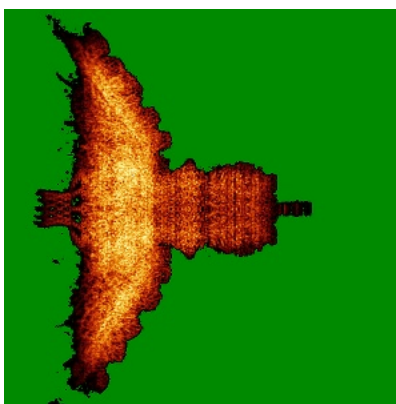


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

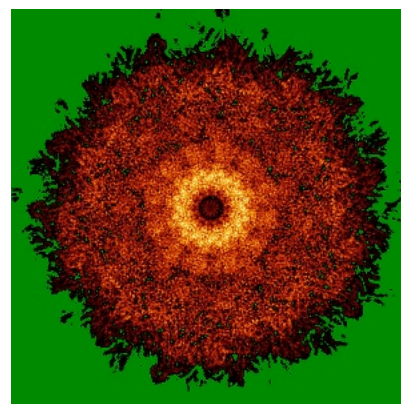
### 6.4.1 Primary map



X

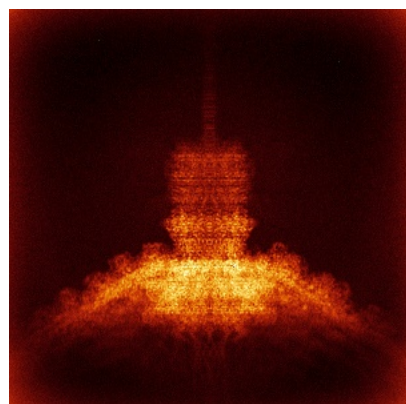


Y

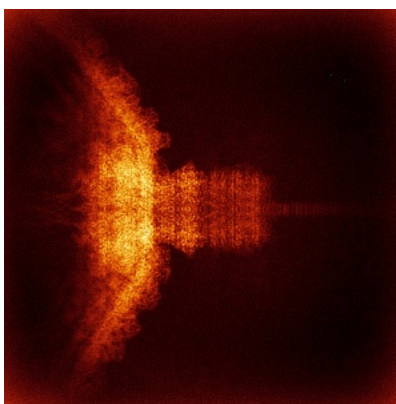


Z

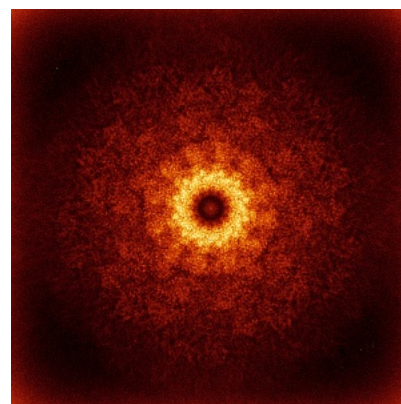
### 6.4.2 Raw map



X



Y

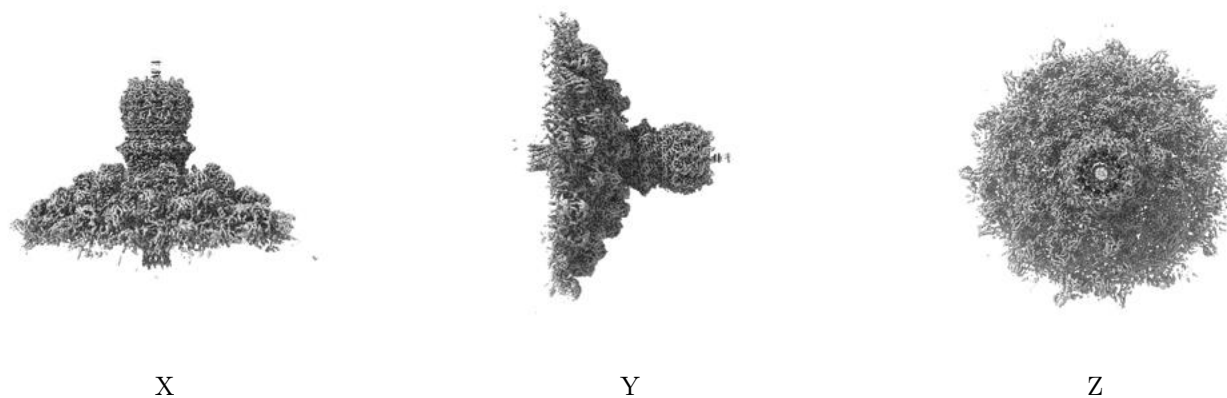


Z

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

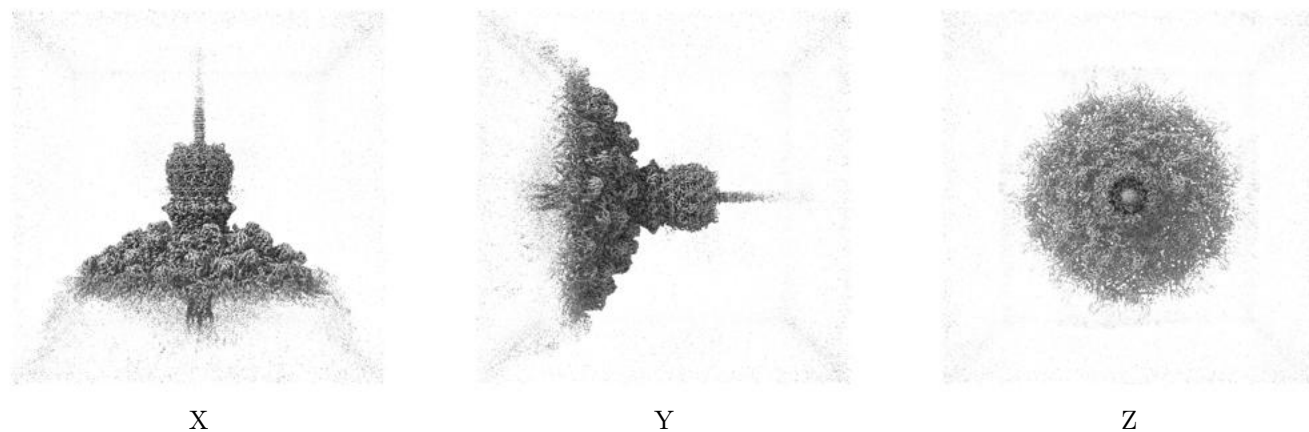
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



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

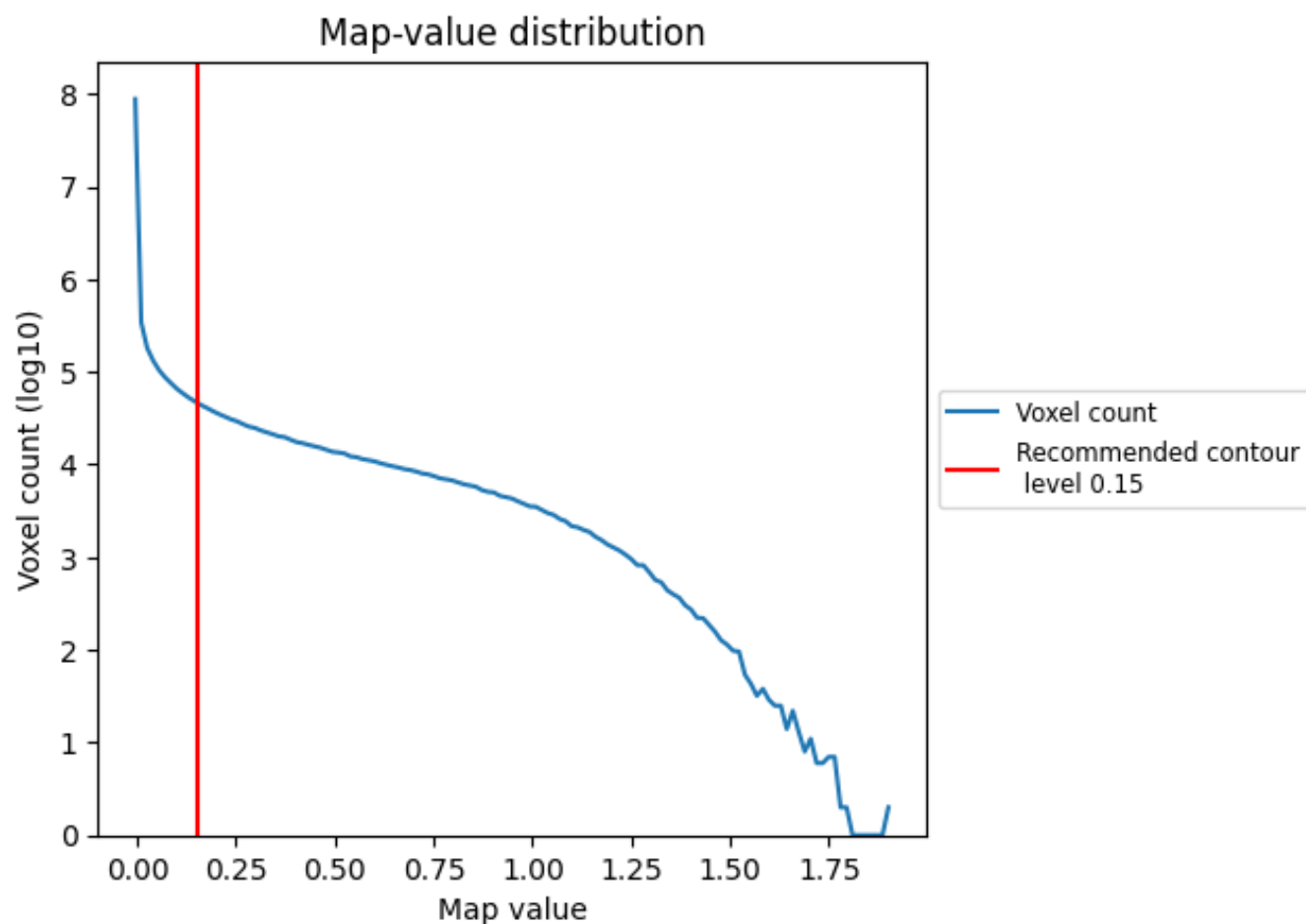
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

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

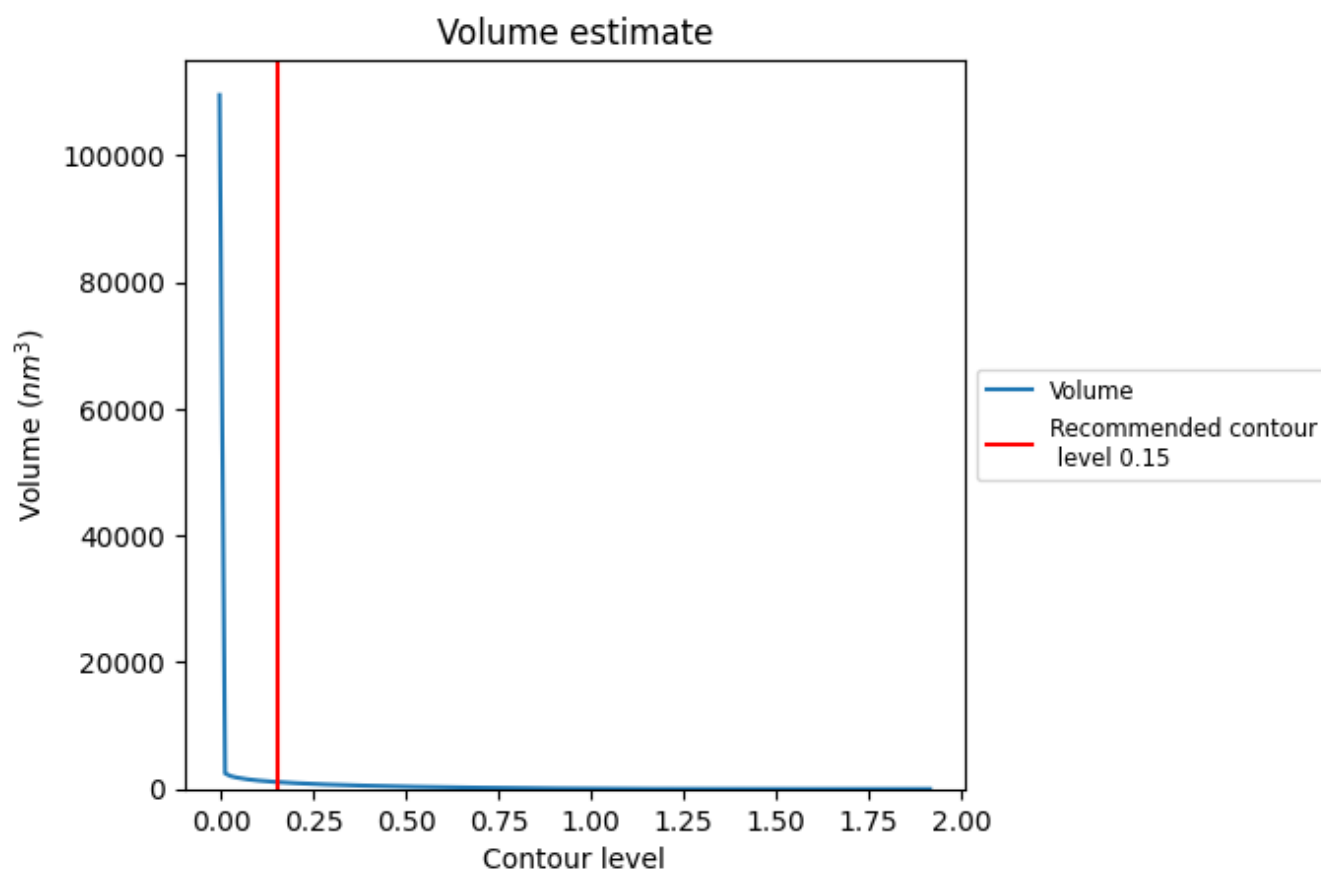
### 7.1 Map-value distribution [i](#)



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.



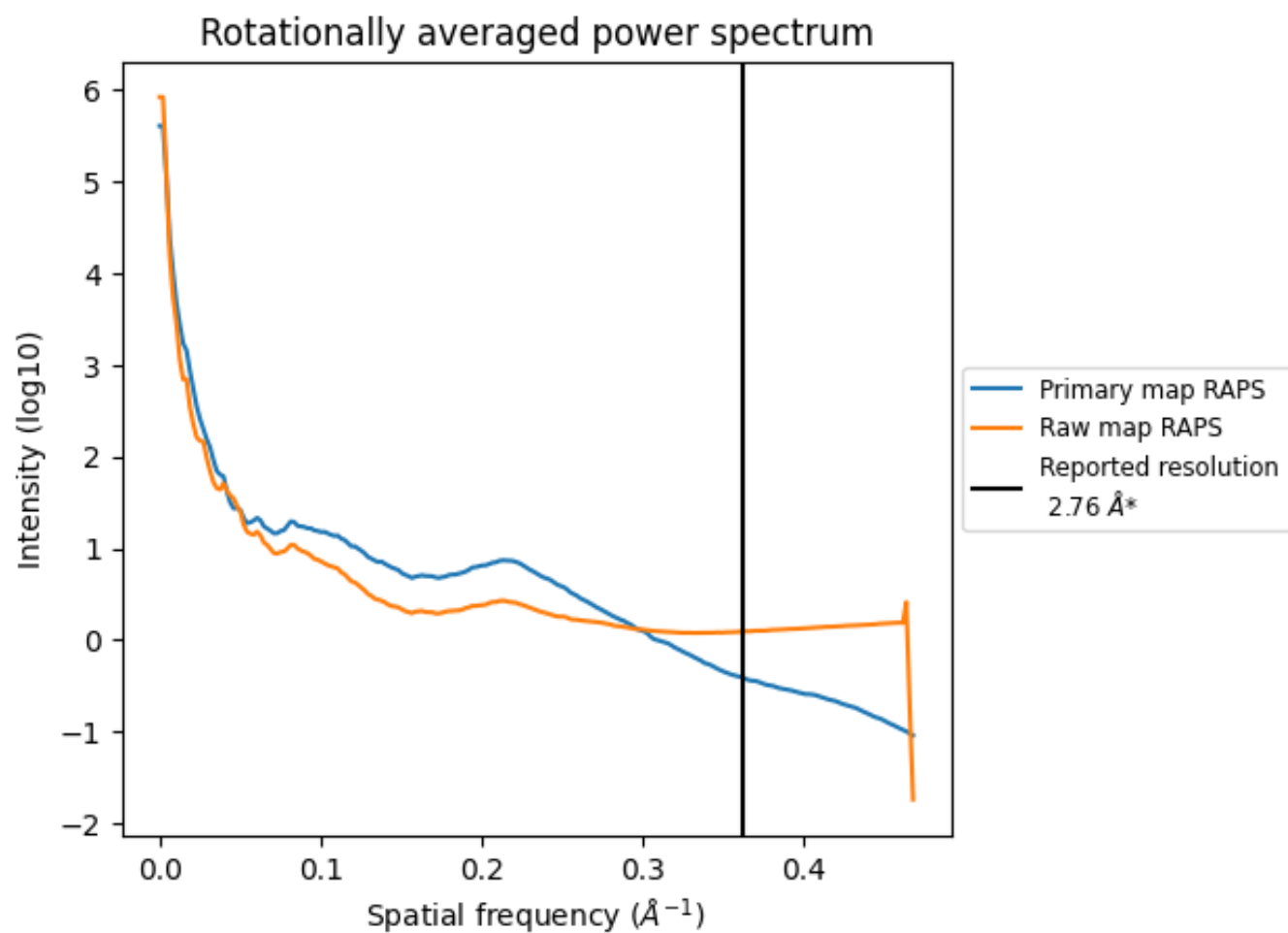
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1095  $\text{nm}^3$ ; this corresponds to an approximate mass of 989 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 ⓘ

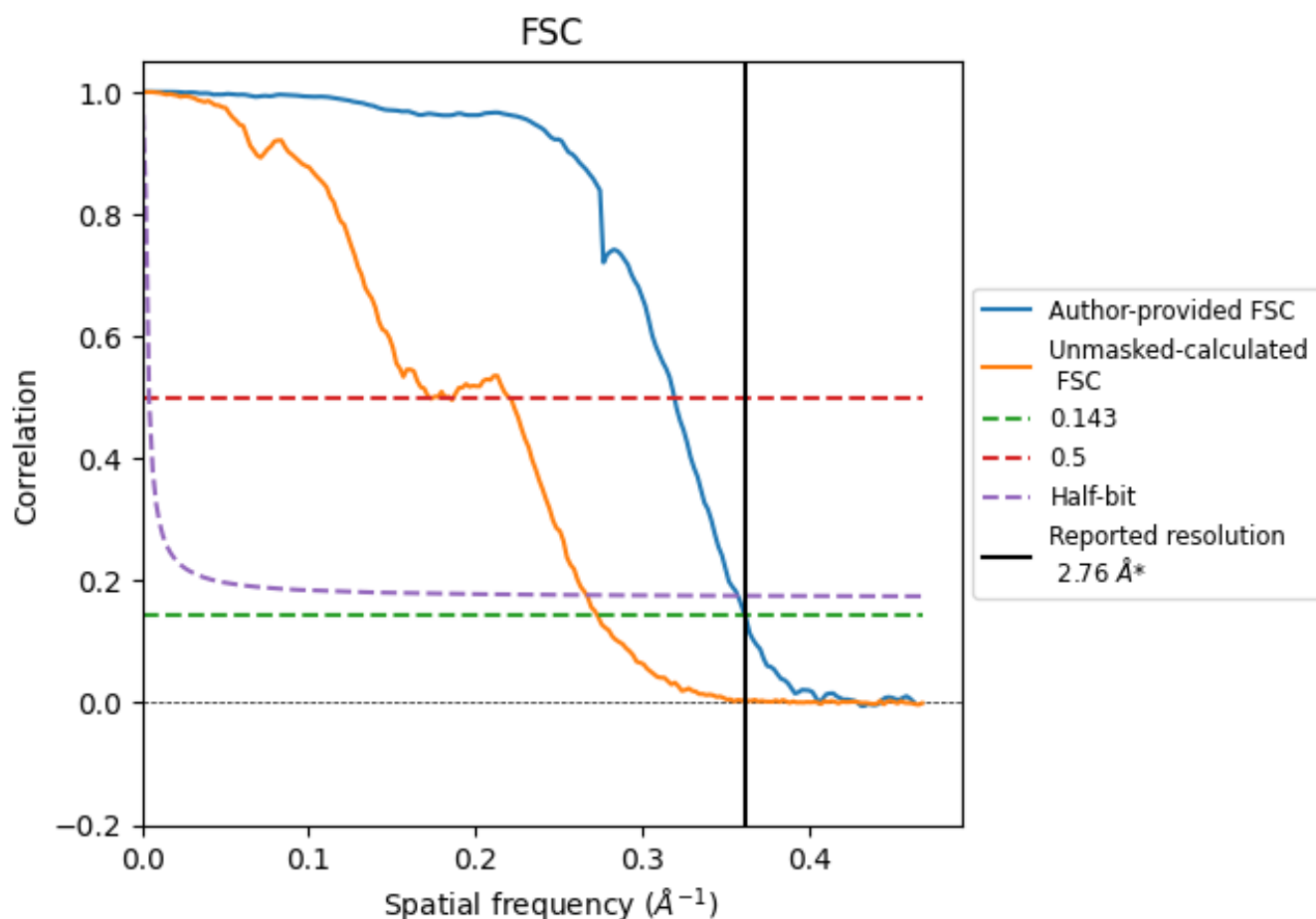


\*Reported resolution corresponds to spatial frequency of 0.362 Å<sup>-1</sup>

## 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  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

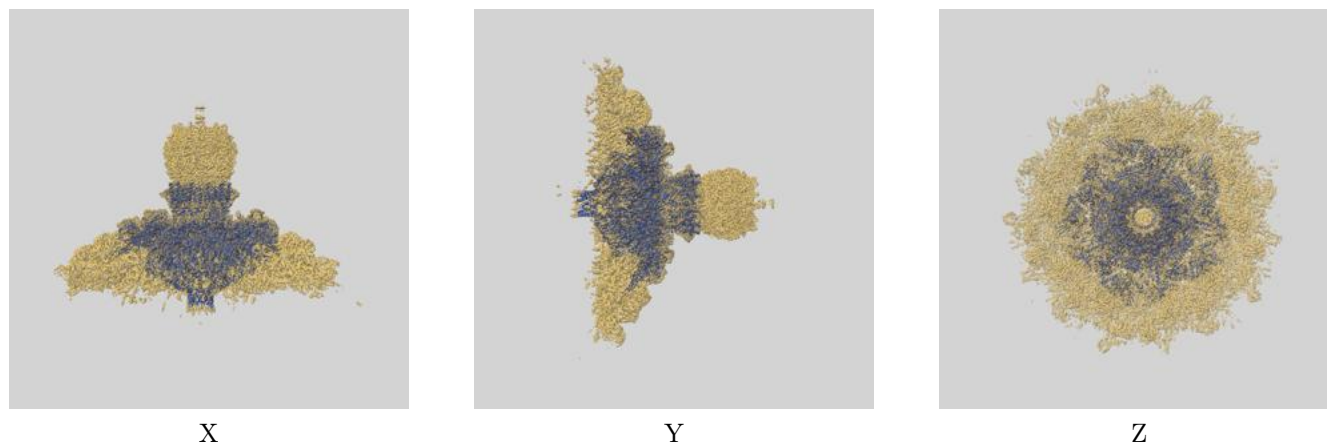
| Resolution estimate (Å)   | Estimation criterion (FSC cut-off) |      |          |
|---------------------------|------------------------------------|------|----------|
|                           | 0.143                              | 0.5  | Half-bit |
| Reported by author        | 2.76                               | -    | -        |
| Author-provided FSC curve | 2.76                               | 3.13 | 2.80     |
| Unmasked-calculated*      | 3.66                               | 5.80 | 3.75     |

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.66 differs from the reported value 2.76 by more than 10 %

## 9 Map-model fit [i](#)

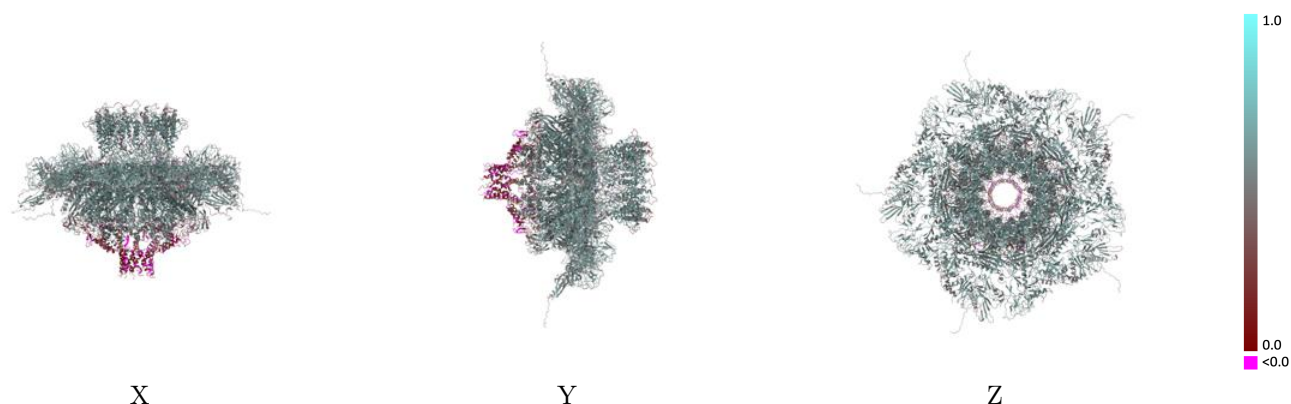
This section contains information regarding the fit between EMDB map EMD-71631 and PDB model 9PGG. Per-residue inclusion information can be found in [section 3](#) on [page 8](#).

### 9.1 Map-model overlay [i](#)



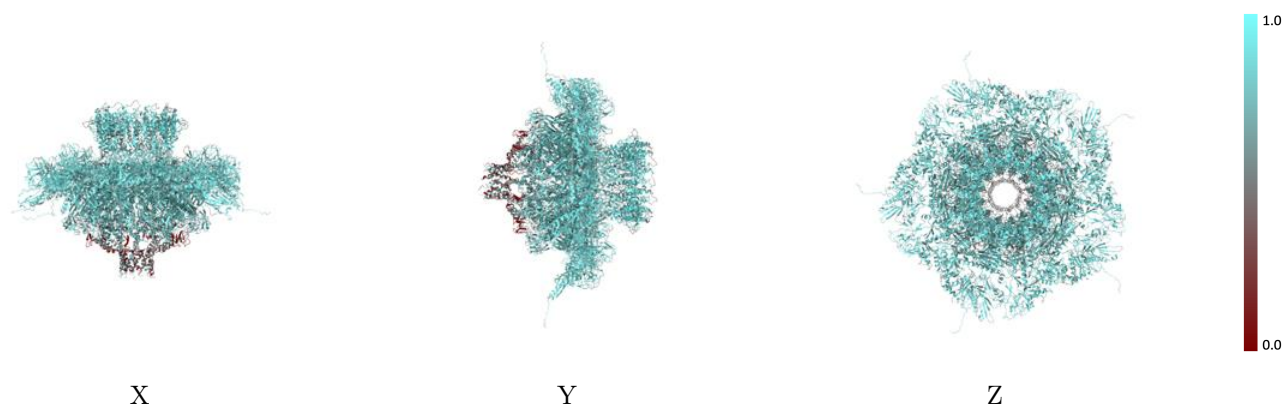
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



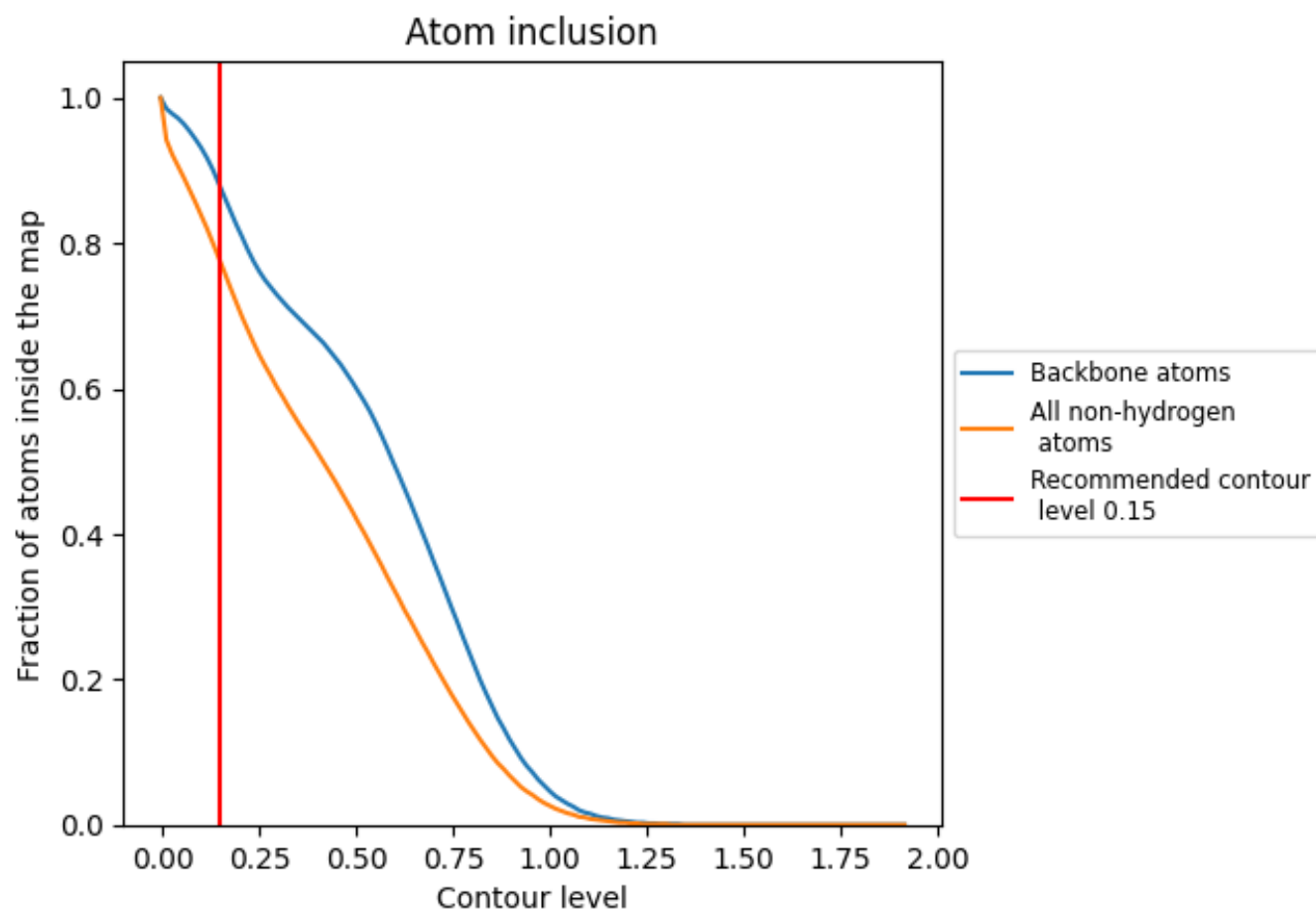
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.15).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 77% 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 (0.15) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion                                                                             | Q-score                                                                                    |
|-------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| All   |  0.7730   |  0.5110   |
| Aa    |  0.7910   |  0.5330   |
| Ab    |  0.8080   |  0.5460   |
| Ac    |  0.7970   |  0.5270   |
| Ad    |  0.8090   |  0.5610   |
| Ae    |  0.7960   |  0.5280   |
| Af    |  0.7910   |  0.5380   |
| Ag    |  0.8010   |  0.5380   |
| Ah    |  0.7890   |  0.5170   |
| Ai    |  0.8050   |  0.5320   |
| Aj    |  0.8020   |  0.5410   |
| Ak    |  0.7770   |  0.5130   |
| Al    |  0.7800   |  0.5140   |
| Am    |  0.7990   |  0.5340   |
| An    |  0.7960  |  0.5260  |
| Ao    |  0.7880 |  0.5110 |
| Ap    |  0.7960 |  0.5280 |
| Aq    |  0.7870 |  0.5180 |
| Ar    |  0.8050 |  0.5180 |
| As    |  0.7740 |  0.5090 |
| At    |  0.8020 |  0.5180 |
| Au    |  0.7540 |  0.4810 |
| Av    |  0.8220 |  0.5350 |
| Aw    |  0.8210 |  0.5300 |
| Ax    |  0.8200 |  0.5220 |
| Ay    |  0.8100 |  0.5280 |
| Az    |  0.8230 |  0.5290 |
| Ba    |  0.8080 |  0.5190 |
| Bb    |  0.7500 |  0.4890 |
| Bd    |  0.7320 |  0.4850 |
| Bf    |  0.7360 |  0.4840 |
| Bh    |  0.7490 |  0.4940 |
| Bj    |  0.7360 |  0.4810 |
| Bl    |  0.7520 |  0.4990 |
| Bn    |  0.7450 |  0.4830 |



*Continued on next page...*



*Continued from previous page...*

| Chain | Atom inclusion                                                                           | Q-score                                                                                  |
|-------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Bp    |  0.7550 |  0.4990 |
| Br    |  0.7500 |  0.5010 |
| Bt    |  0.7570 |  0.5040 |
| Bv    |  0.7460 |  0.4930 |
| Bx    |  0.7490 |  0.4950 |