



## Full wwPDB EM Validation Report ⓘ

Jul 9, 2025 – 08:11 am BST

PDB ID : 9GTP / pdb\_00009gtp  
EMDB ID : EMD-51564  
Title : Cryo-EM structure of a contractile injection system in *Streptomyces coelicolor*, the baseplate complex in extended state applied 6-fold symmetry.  
Authors : Casu, B.; Sallmen, J.W.; Haas, P.E.; Afanasyev, P.; Xu, J.; Schlimpert, S.; Pilhofer, M.  
Deposited on : 2024-09-18  
Resolution : 3.50 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.dev118  
MolProbity : 4-5-2 with Phenix2.0rc1  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.44

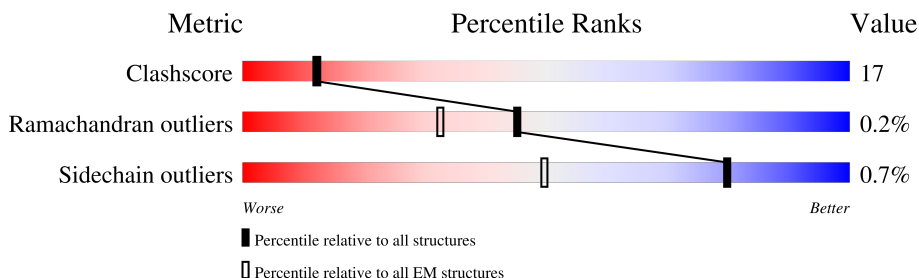
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.50 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.



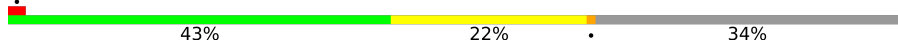
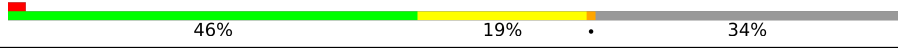
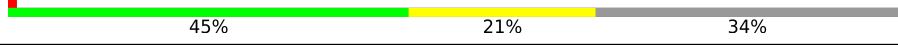
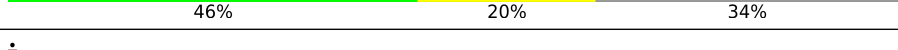
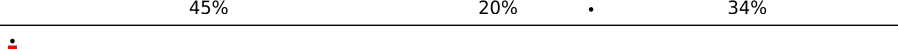
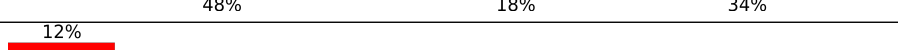
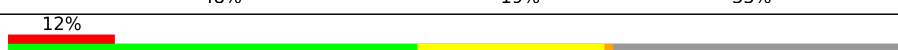
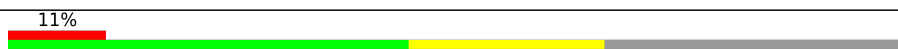
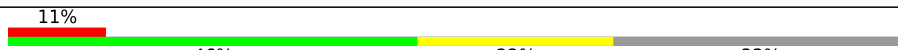
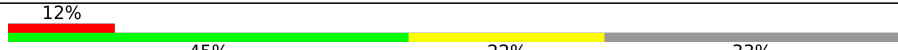
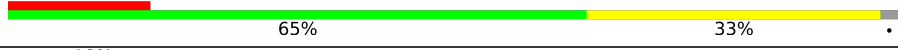
| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) |
|-----------------------|-----------------------------|-----------------------------|
| Clashscore            | 210492                      | 15764                       |
| Ramachandran outliers | 207382                      | 16835                       |
| Sidechain outliers    | 206894                      | 16415                       |

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   | k     | 149    |                  |
| 1   | l     | 149    |                  |
| 1   | m     | 149    |                  |
| 1   | n     | 149    |                  |
| 1   | o     | 149    |                  |
| 1   | p     | 149    |                  |
| 2   | 1e    | 534    |                  |
| 2   | 1f    | 534    |                  |

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| Mol | Chain | Length | Quality of chain                                                                     |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 2   | 1g    | 534    |    |
| 2   | 1h    | 534    |    |
| 2   | 1i    | 534    |    |
| 2   | 1j    | 534    |    |
| 2   | 2e    | 534    |    |
| 2   | 2f    | 534    |    |
| 2   | 2g    | 534    |    |
| 2   | 2h    | 534    |    |
| 2   | 2i    | 534    |    |
| 2   | 2j    | 534    |    |
| 2   | 3e    | 534    |    |
| 2   | 3f    | 534    |  |
| 2   | 3g    | 534    |  |
| 2   | 3h    | 534    |  |
| 2   | 3i    | 534    |  |
| 2   | 3j    | 534    |  |
| 3   | 1G    | 652    |  |
| 3   | 1H    | 652    |  |
| 3   | 1J    | 652    |  |
| 3   | 1K    | 652    |  |
| 3   | 1L    | 652    |  |
| 3   | 1l    | 652    |  |
| 3   | 2G    | 652    |  |
| 3   | 2H    | 652    |  |
| 3   | 2J    | 652    |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3   | 2K    | 652    |                  |
| 3   | 2L    | 652    |                  |
| 3   | 2I    | 652    |                  |
| 4   | M     | 240    |                  |
| 4   | N     | 240    |                  |
| 4   | O     | 240    |                  |
| 4   | P     | 240    |                  |
| 4   | Q     | 240    |                  |
| 4   | R     | 240    |                  |
| 5   | A     | 190    |                  |
| 5   | B     | 190    |                  |
| 5   | C     | 190    |                  |
| 5   | D     | 190    |                  |
| 5   | E     | 190    |                  |
| 5   | F     | 190    |                  |
| 6   | S     | 150    |                  |
| 6   | T     | 150    |                  |
| 6   | U     | 150    |                  |
| 6   | V     | 150    |                  |
| 6   | W     | 150    |                  |
| 6   | X     | 150    |                  |
| 7   | a     | 140    |                  |
| 7   | b     | 140    |                  |
| 7   | c     | 140    |                  |
| 7   | d     | 140    |                  |

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| Mol | Chain | Length | Quality of chain                                                                   |
|-----|-------|--------|------------------------------------------------------------------------------------|
| 7   | e     | 140    |  |
| 7   | f     | 140    |  |

## 2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 140250 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 Phage tail protein.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 1   | o     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |
| 1   | p     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |
| 1   | k     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |
| 1   | l     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |
| 1   | m     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |
| 1   | n     | 149      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1152  | 717 | 200 | 227 | 8 |         |       |

- Molecule 2 is a protein called Phage tail sheath family protein.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 2   | 1h    | 350      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2716  | 1723 | 481 | 505 | 7 |         |       |
| 2   | 2i    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3i    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |
| 2   | 1i    | 351      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2721  | 1726 | 482 | 506 | 7 |         |       |
| 2   | 2j    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3j    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |
| 2   | 1j    | 351      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2721  | 1726 | 482 | 506 | 7 |         |       |
| 2   | 2e    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3e    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |

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| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 2   | 1e    | 351      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2721  | 1726 | 482 | 506 | 7 |         |       |
| 2   | 2f    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3f    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |
| 2   | 1f    | 350      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2714  | 1722 | 481 | 504 | 7 |         |       |
| 2   | 2g    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3g    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |
| 2   | 1g    | 351      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2721  | 1726 | 482 | 506 | 7 |         |       |
| 2   | 2h    | 352      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2725  | 1728 | 483 | 507 | 7 |         |       |
| 2   | 3h    | 359      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2787  | 1774 | 493 | 513 | 7 |         |       |

- Molecule 3 is a protein called Baseplate protein J-like domain-containing protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | 1K    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2K    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4028  | 2504 | 740 | 774 | 10 |         |       |
| 3   | 1L    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2L    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4028  | 2504 | 740 | 774 | 10 |         |       |
| 3   | 1G    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2G    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4028  | 2504 | 740 | 774 | 10 |         |       |
| 3   | 1H    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2H    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4028  | 2504 | 740 | 774 | 10 |         |       |
| 3   | 1I    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2I    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4028  | 2504 | 740 | 774 | 10 |         |       |

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| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | 1J    | 639      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4886  | 3043 | 896 | 937 | 10 |         |       |
| 3   | 2J    | 528      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4022  | 2501 | 737 | 774 | 10 |         |       |

- Molecule 4 is a protein called LysM domain-containing protein.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 4   | P     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |
| 4   | Q     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |
| 4   | R     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |
| 4   | M     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |
| 4   | N     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |
| 4   | O     | 225      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1704  | 1083 | 295 | 318 | 8 |         |       |

- Molecule 5 is a protein called Secreted protein.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 5   | E     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |
| 5   | F     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |
| 5   | A     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |
| 5   | B     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |
| 5   | C     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |
| 5   | D     | 179      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1338  | 849 | 238 | 247 | 4 |         |       |

- Molecule 6 is a protein called IraD/Gp25-like domain-containing protein.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 6   | V     | 122      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 965   | 612 | 169 | 181 | 3 |         |       |

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| Mol | Chain | Residues | Atoms        |          |          |          |        | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|-------|
| 6   | W     | 122      | Total<br>965 | C<br>612 | N<br>169 | O<br>181 | S<br>3 | 0       | 0     |
| 6   | X     | 122      | Total<br>965 | C<br>612 | N<br>169 | O<br>181 | S<br>3 | 0       | 0     |
| 6   | S     | 122      | Total<br>965 | C<br>612 | N<br>169 | O<br>181 | S<br>3 | 0       | 0     |
| 6   | T     | 122      | Total<br>965 | C<br>612 | N<br>169 | O<br>181 | S<br>3 | 0       | 0     |
| 6   | U     | 122      | Total<br>965 | C<br>612 | N<br>169 | O<br>181 | S<br>3 | 0       | 0     |

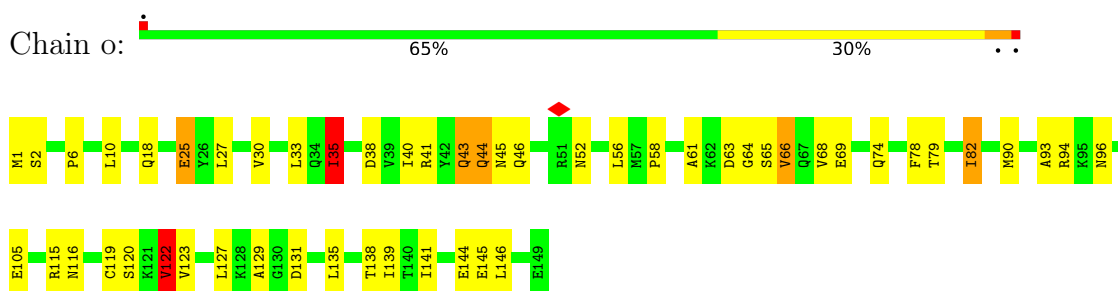
- Molecule 7 is a protein called Phage tail protein.

| Mol | Chain | Residues | Atoms         |          |          |          |        | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|-------|
| 7   | a     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |
| 7   | b     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |
| 7   | c     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |
| 7   | d     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |
| 7   | e     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |
| 7   | f     | 140      | Total<br>1072 | C<br>673 | N<br>189 | O<br>208 | S<br>2 | 0       | 0     |

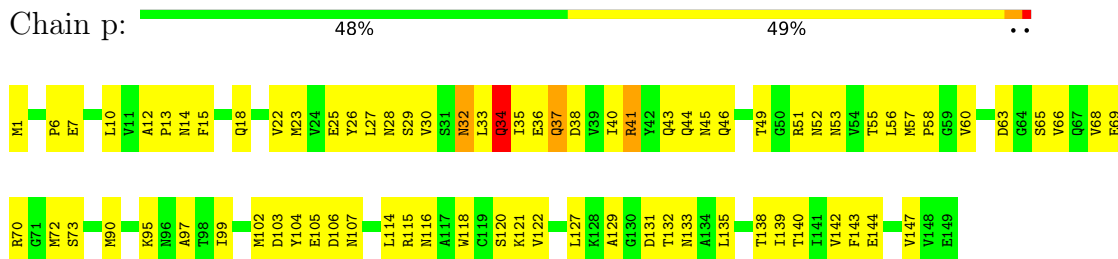
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.

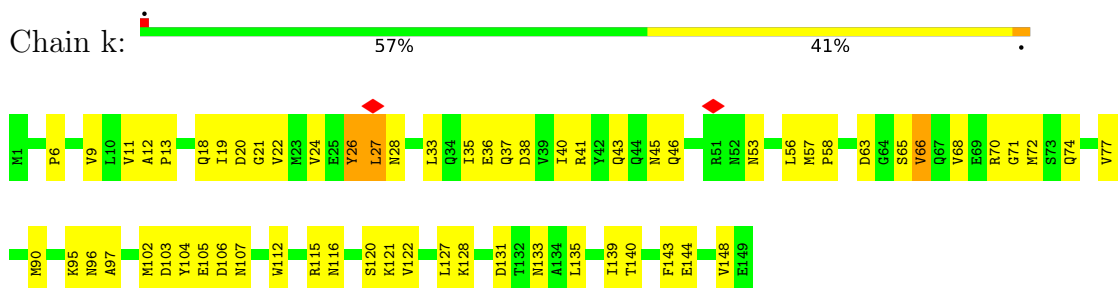
- Molecule 1: Phage tail protein



- Molecule 1: Phage tail protein

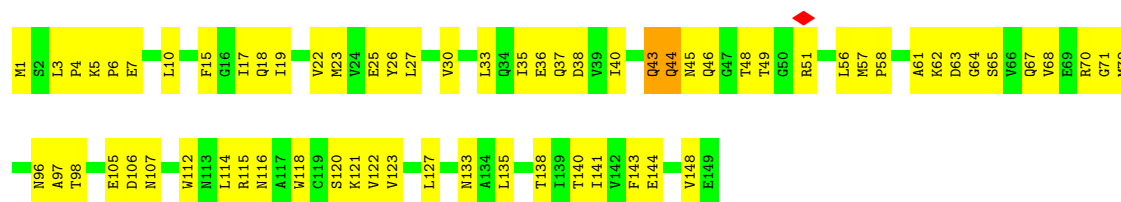


- Molecule 1: Phage tail protein

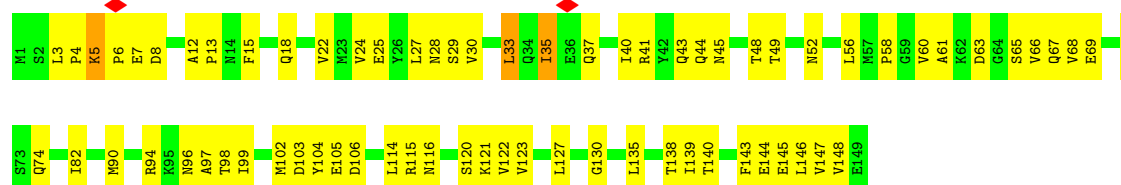


- Molecule 1: Phage tail protein

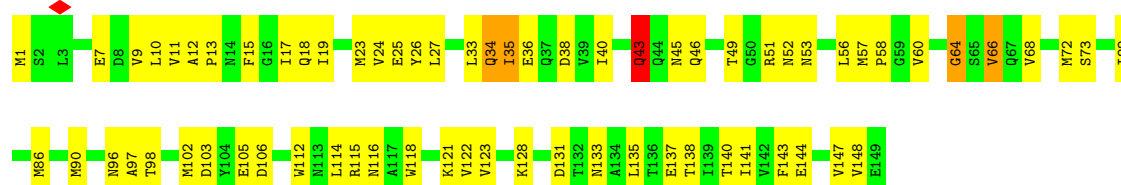




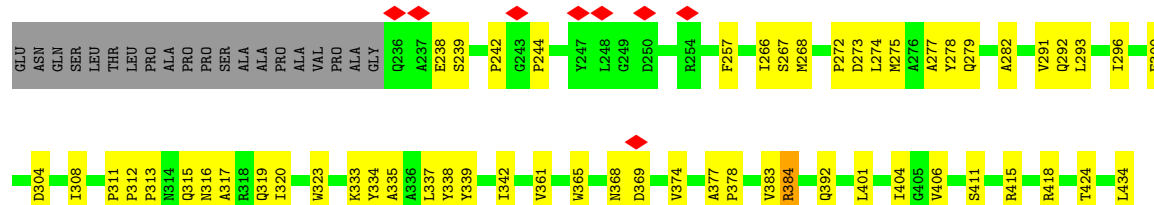
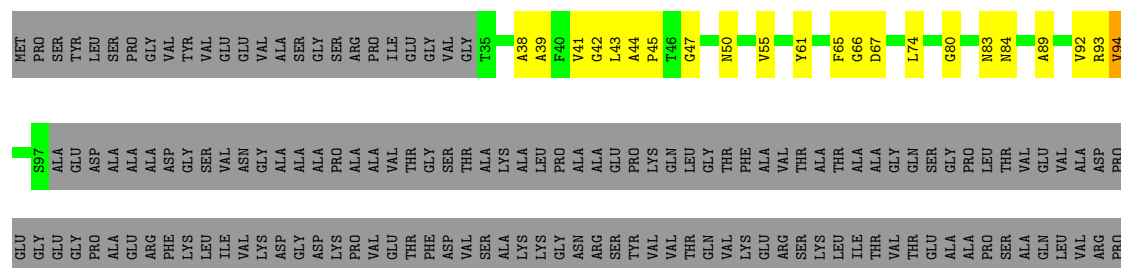
• Molecule 1: Phage tail protein



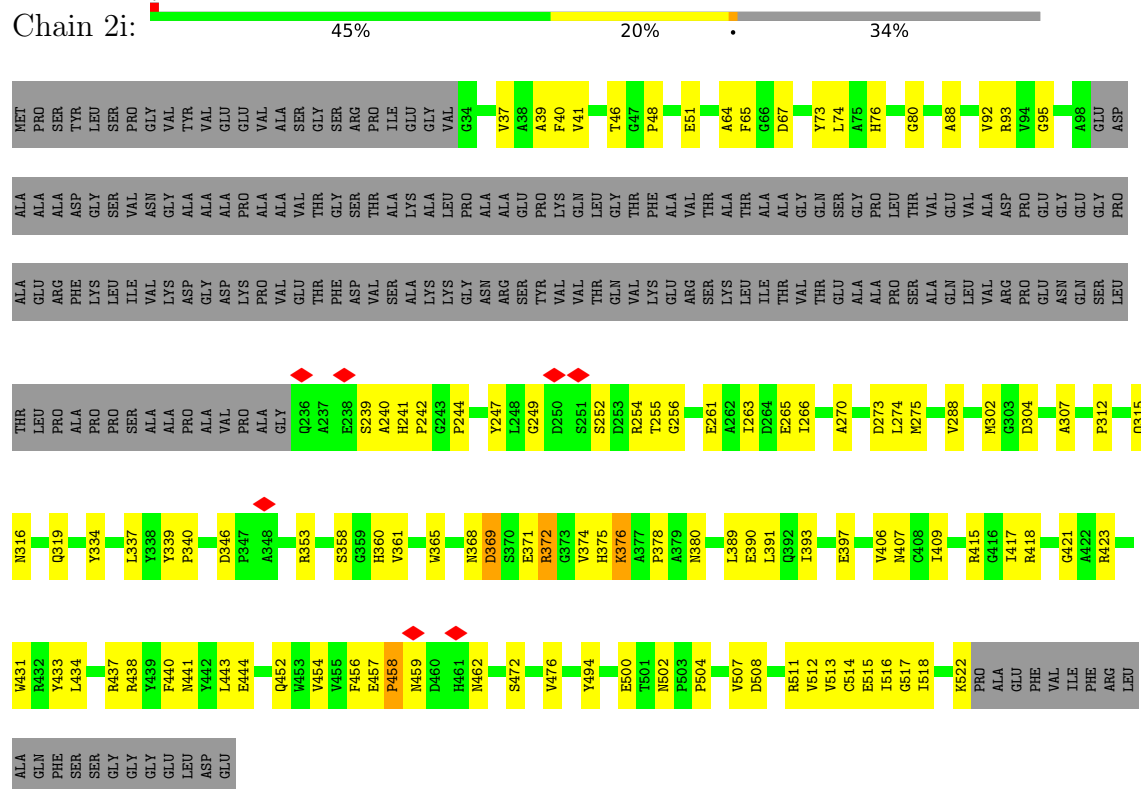
• Molecule 1: Phage tail protein



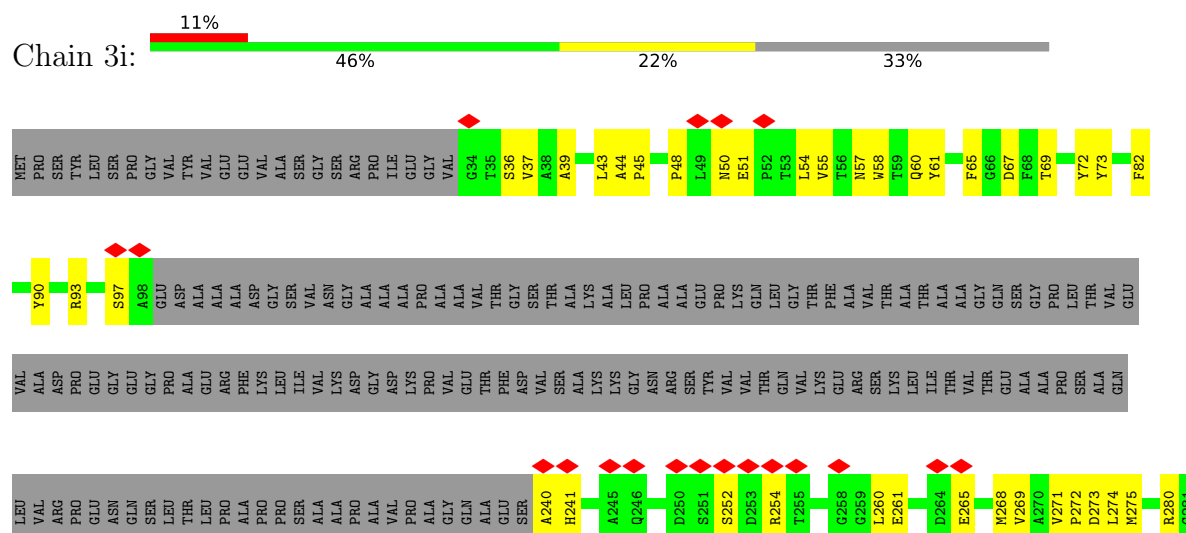
• Molecule 2: Phage tail sheath family protein



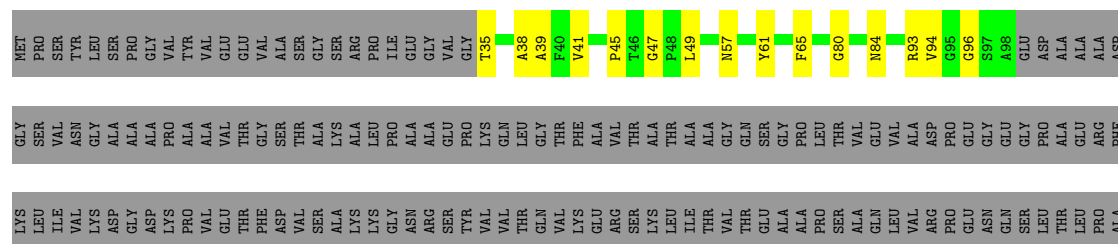
- Molecule 2: Phage tail sheath family protein



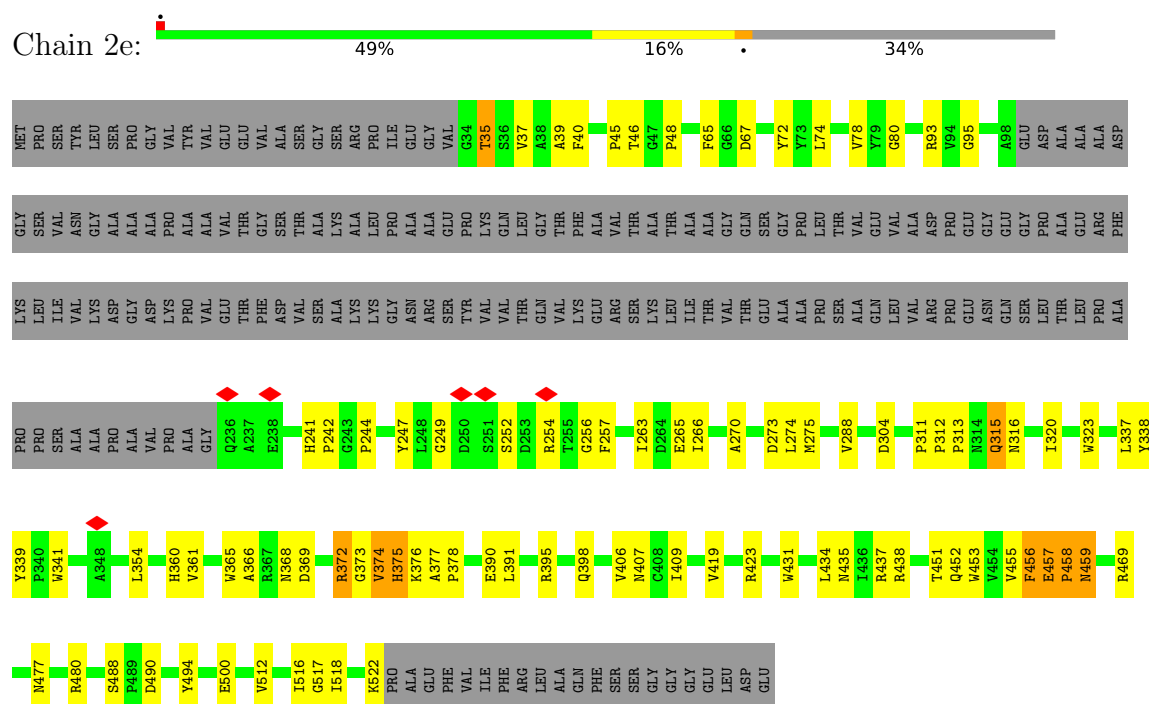
- Molecule 2: Phage tail sheath family protein



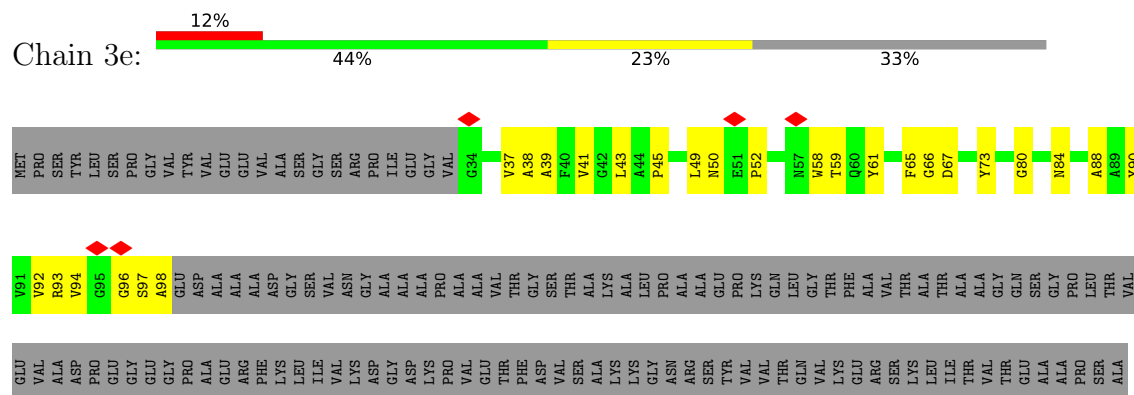


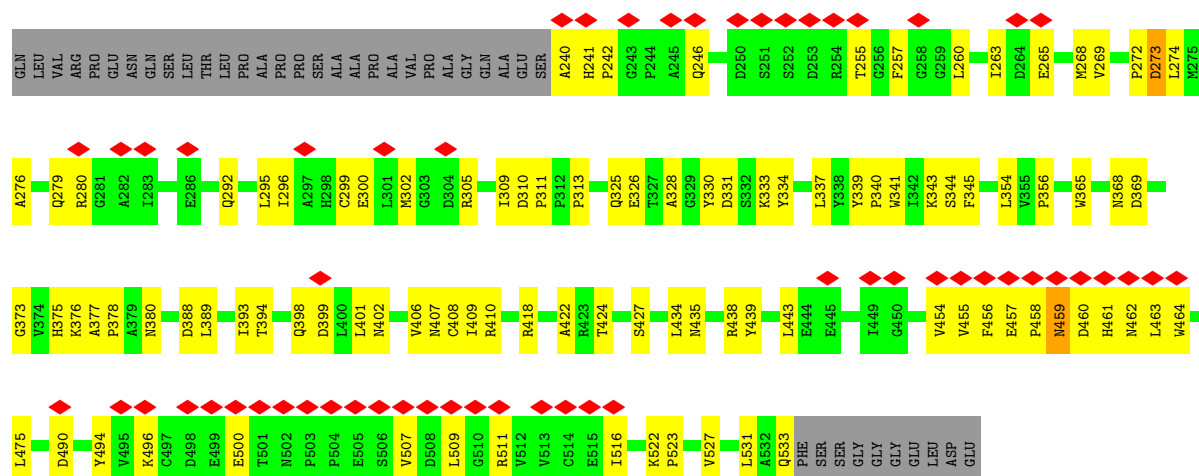


- Molecule 2: Phage tail sheath family protein



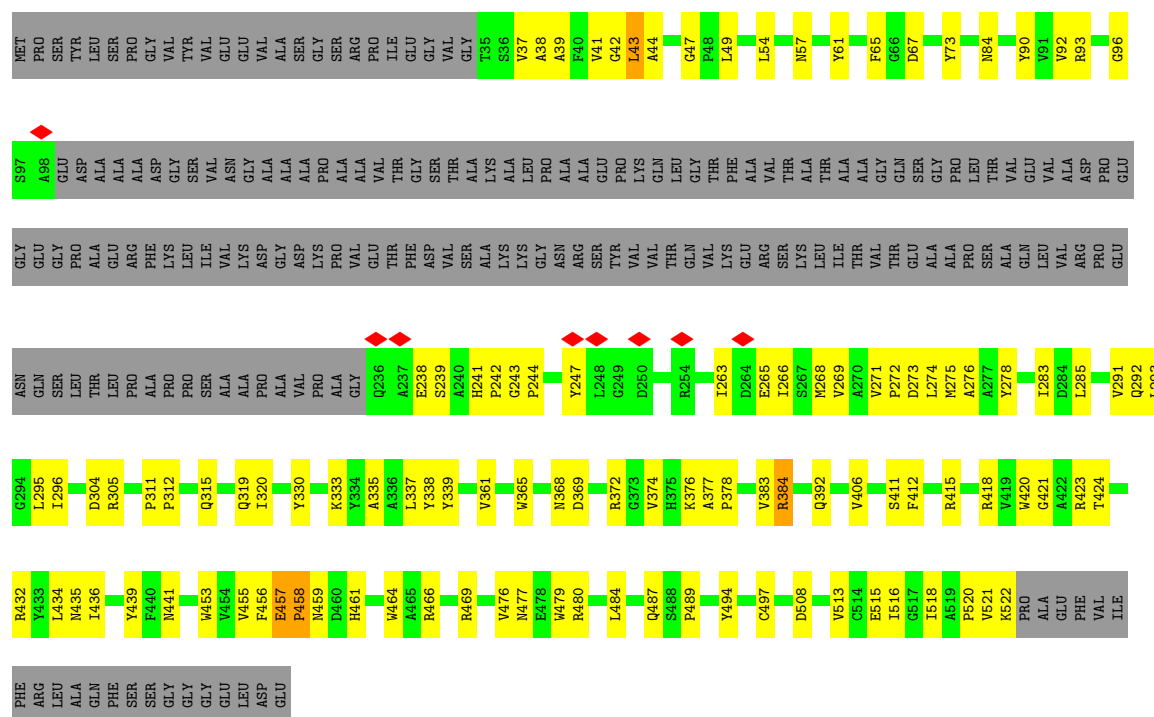
- Molecule 2: Phage tail sheath family protein





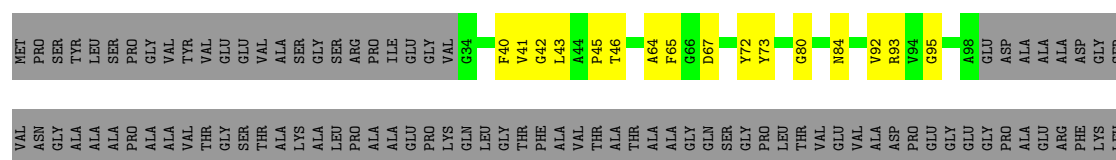
### • Molecule 2: Phage tail sheath family protein

Chain 1e: 45% 20% 34%



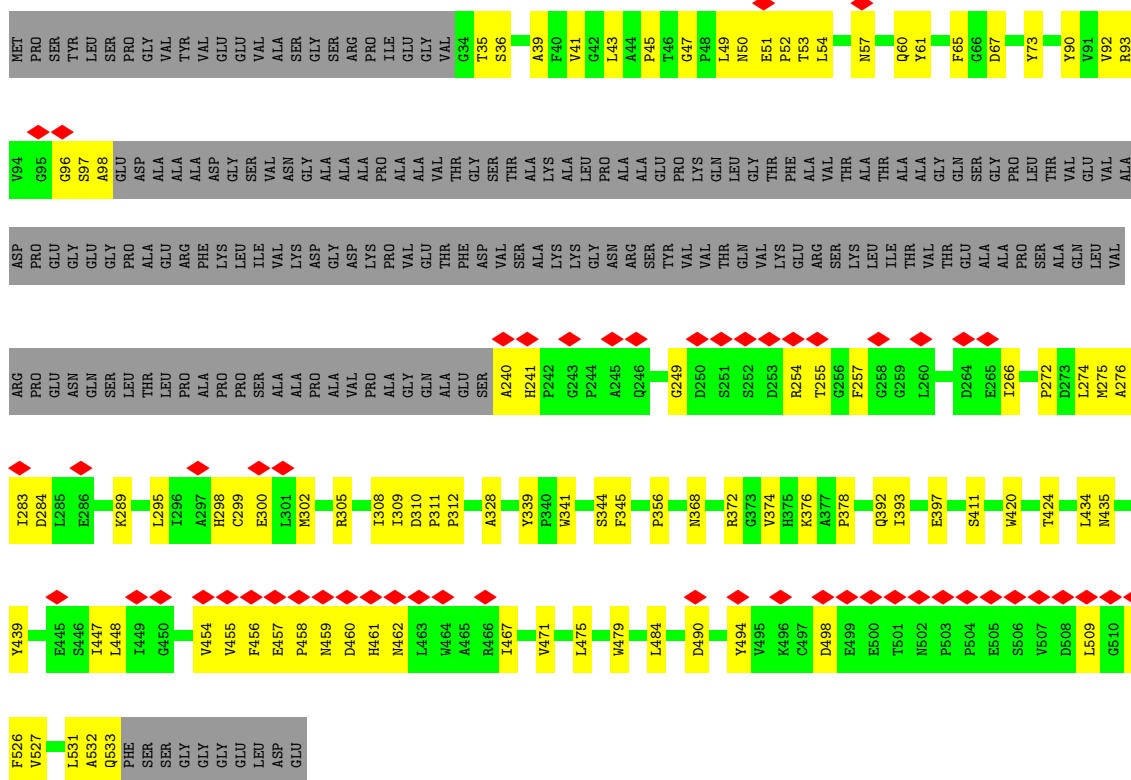
### • Molecule 2: Phage tail sheath family protein

Chain 2f: 47% 18% 34%

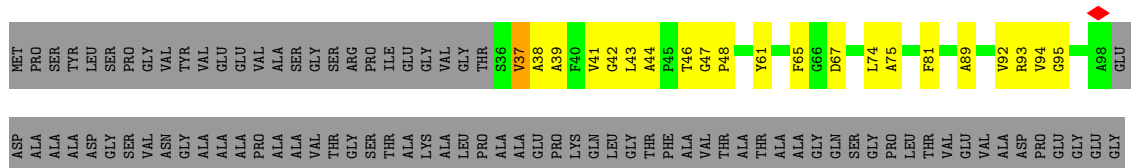




- Molecule 2: Phage tail sheath family protein

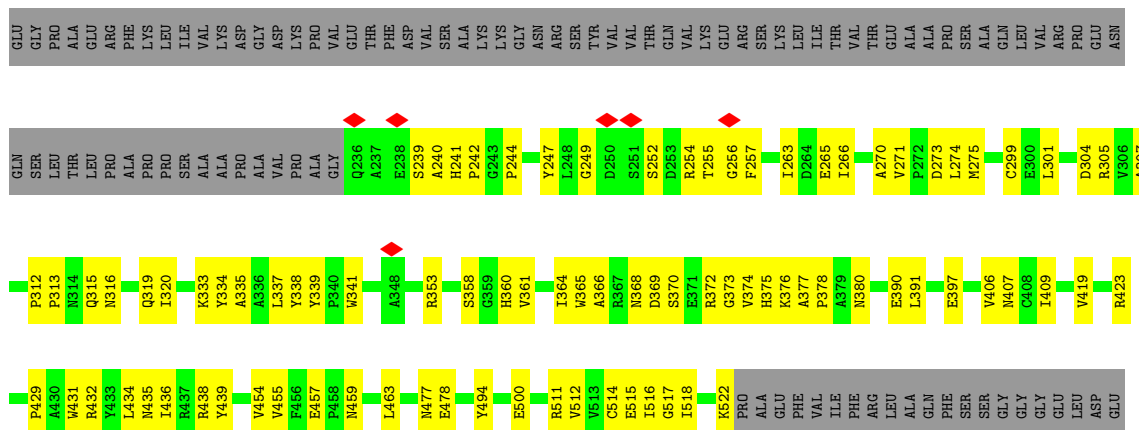


- Molecule 2: Phage tail sheath family protein

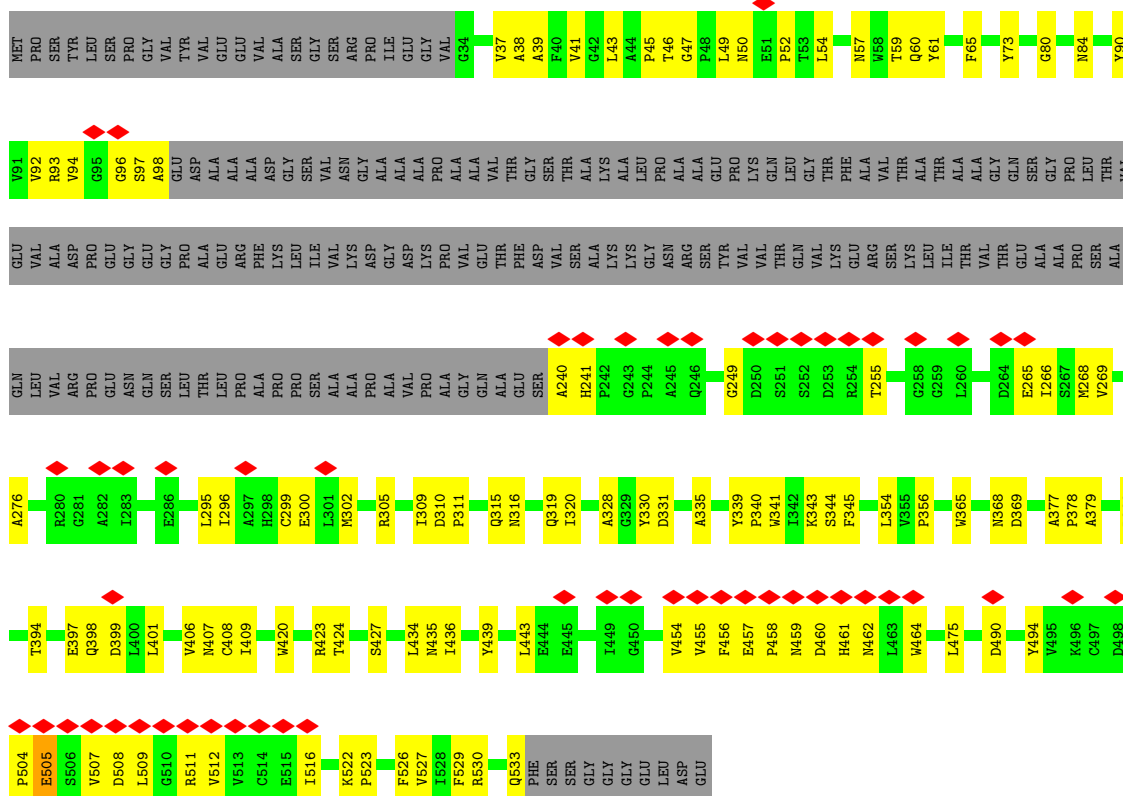






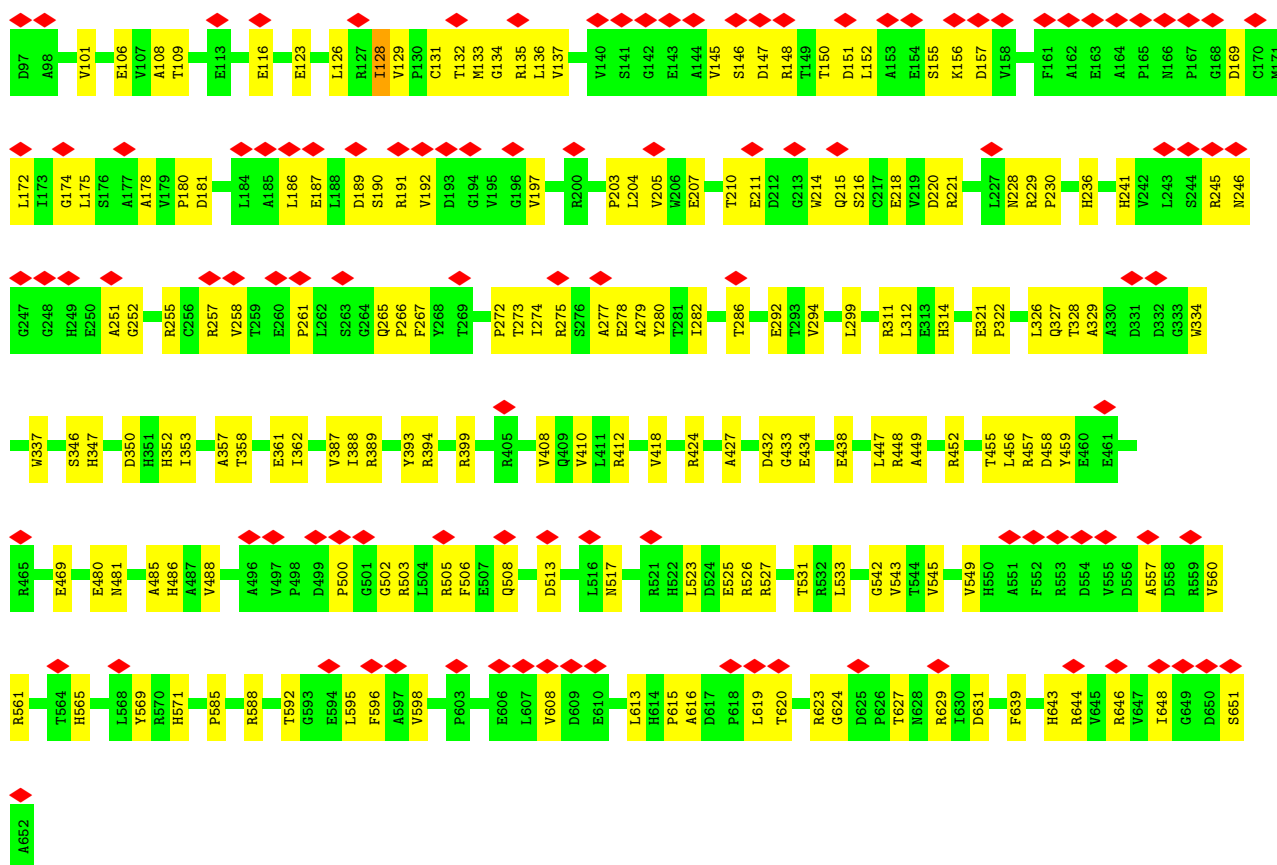


- Molecule 2: Phage tail sheath family protein

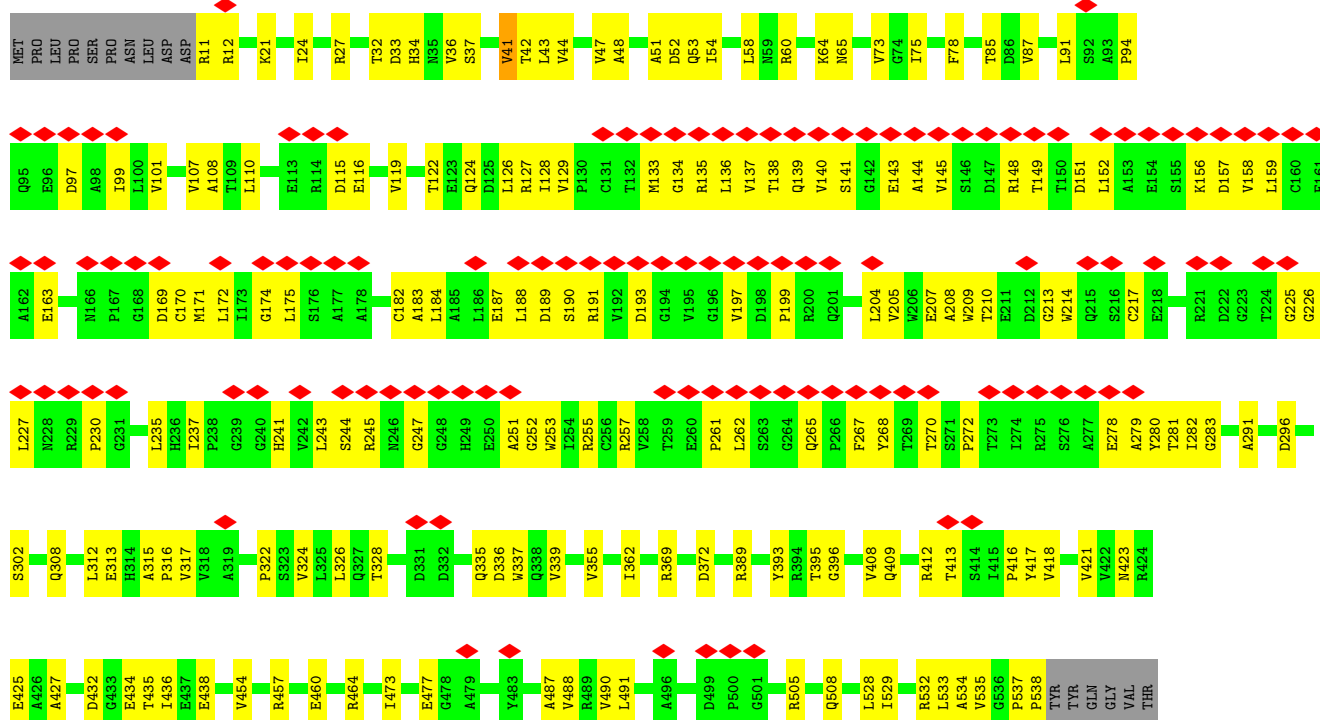


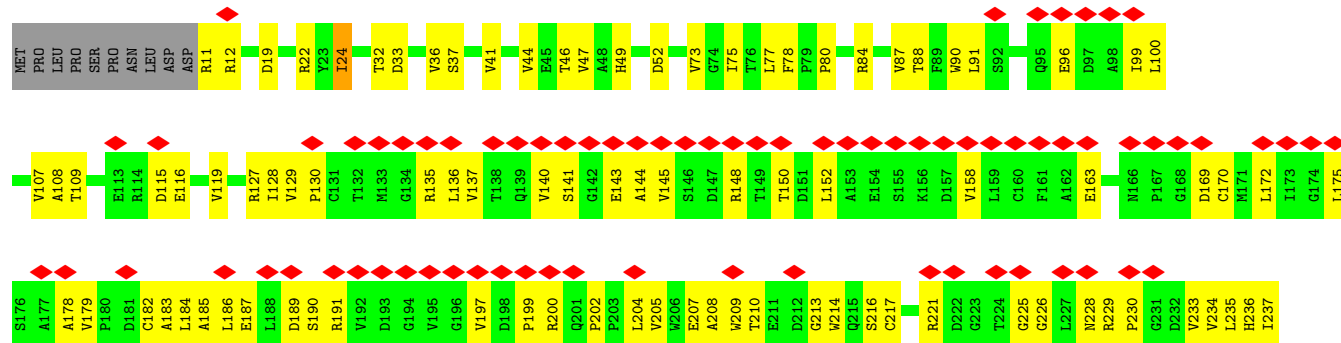
- Molecule 3: Baseplate protein J-like domain-containing protein

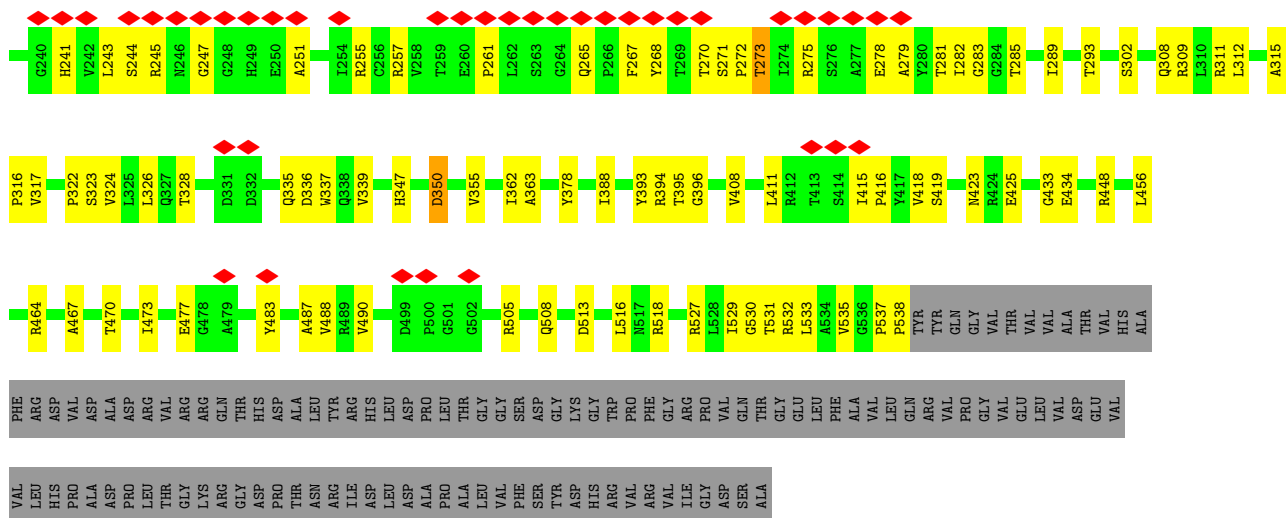




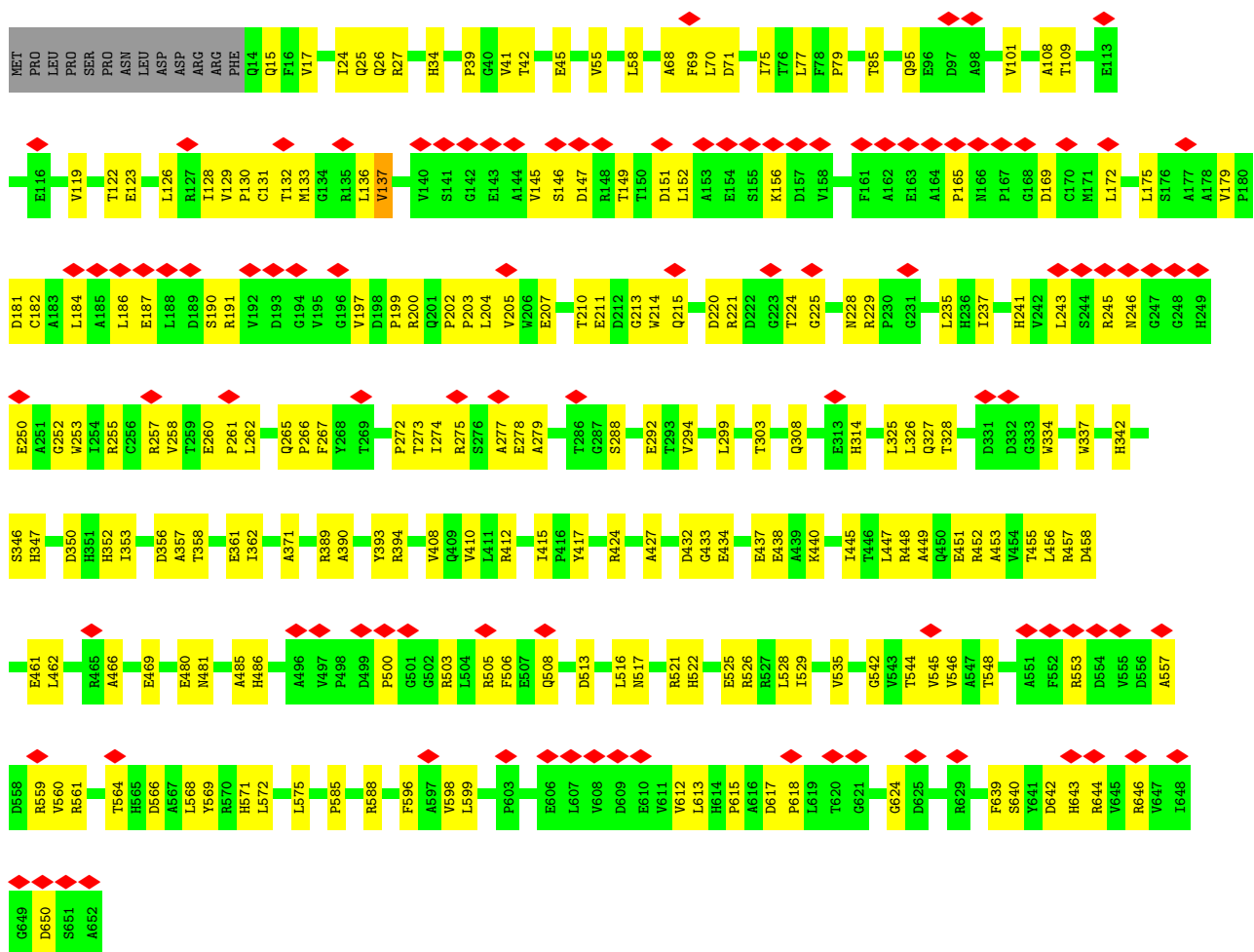
• Molecule 3: Baseplate protein J-like domain-containing protein







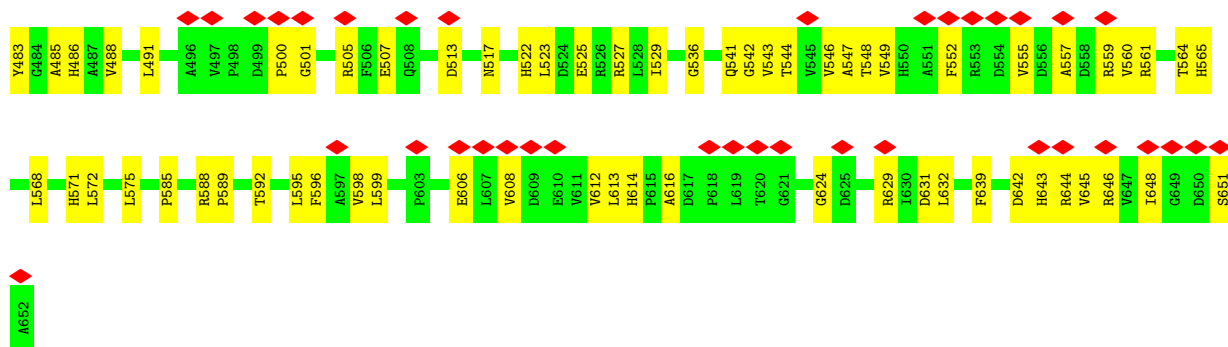
• Molecule 3: Baseplate protein J-like domain-containing protein



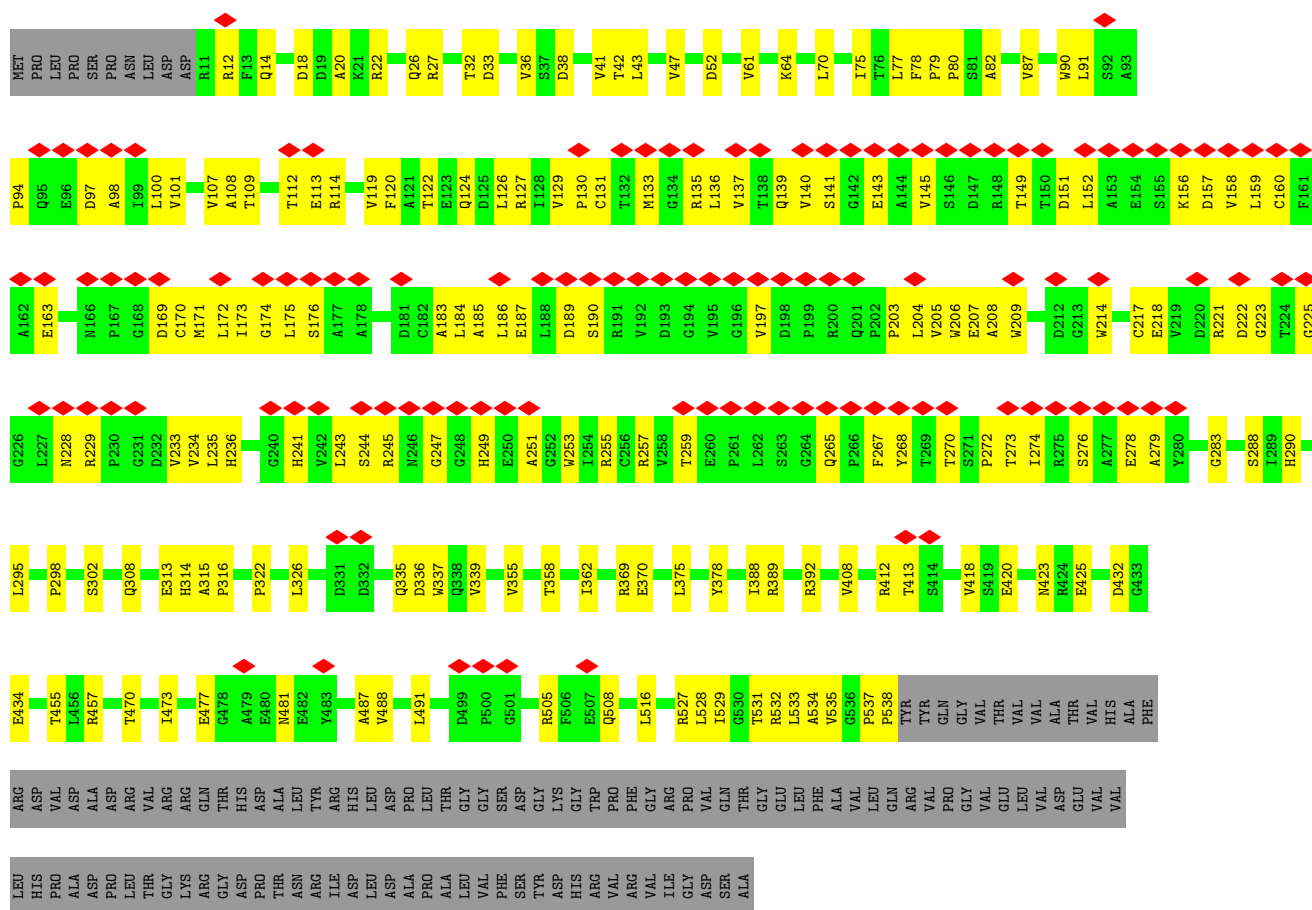
• Molecule 3: Baseplate protein J-like domain-containing protein





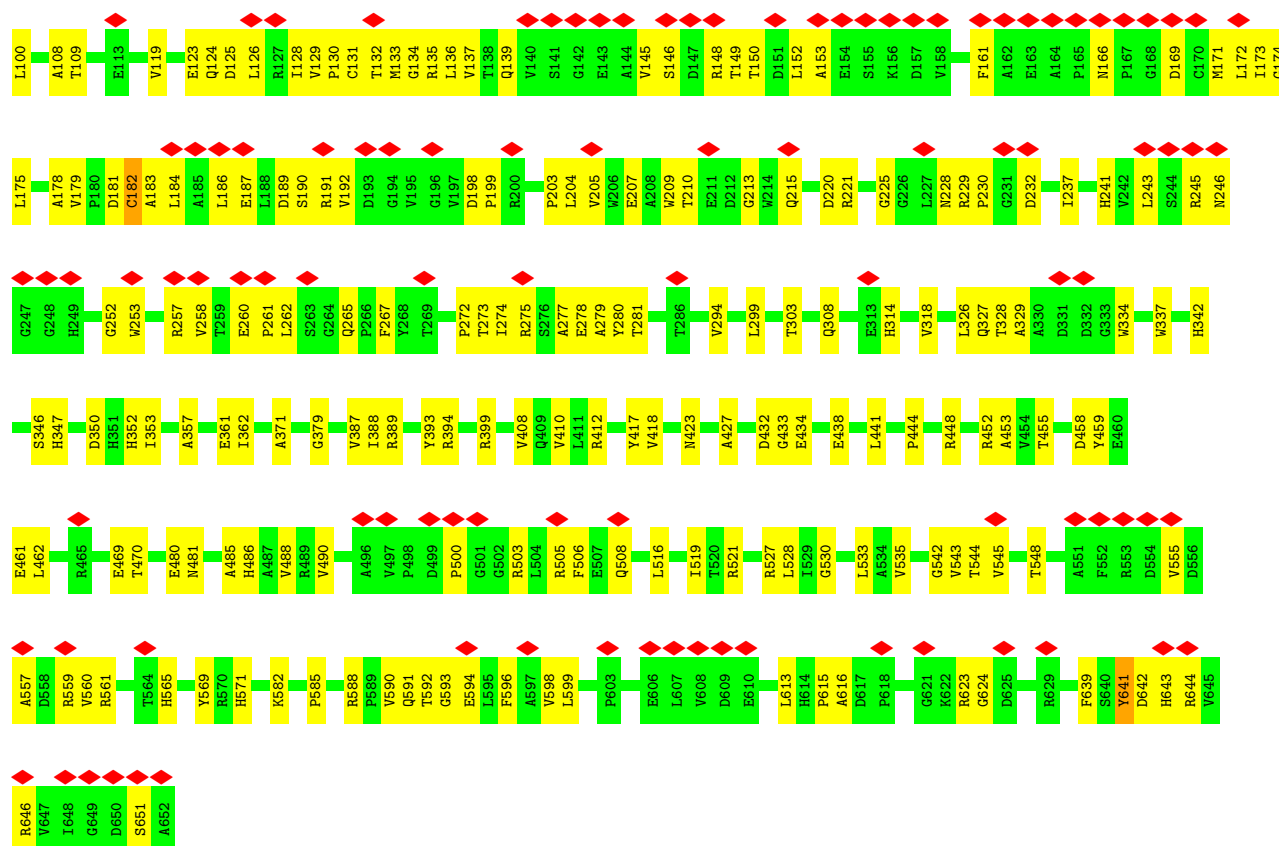


• Molecule 3: Baseplate protein J-like domain-containing protein

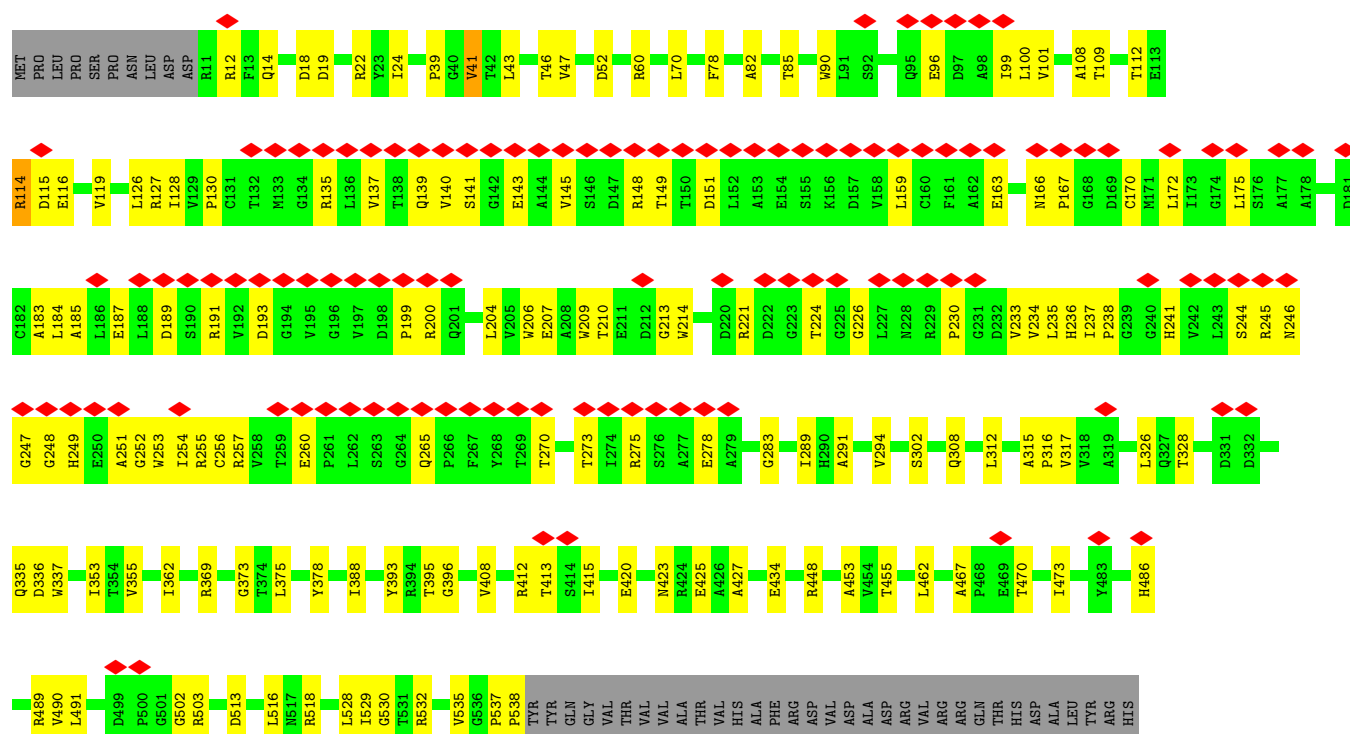


• Molecule 3: Baseplate protein J-like domain-containing protein



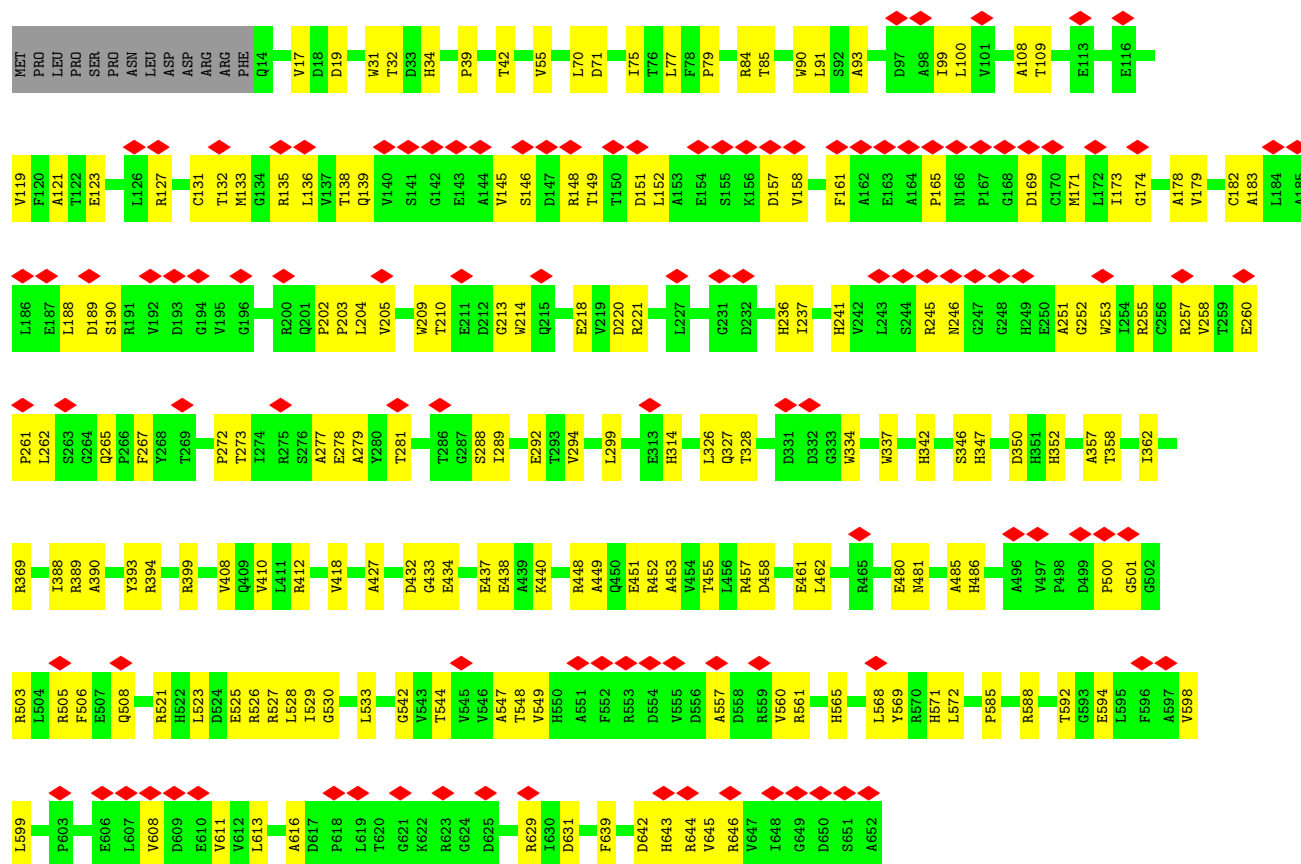


• Molecule 3: Baseplate protein J-like domain-containing protein

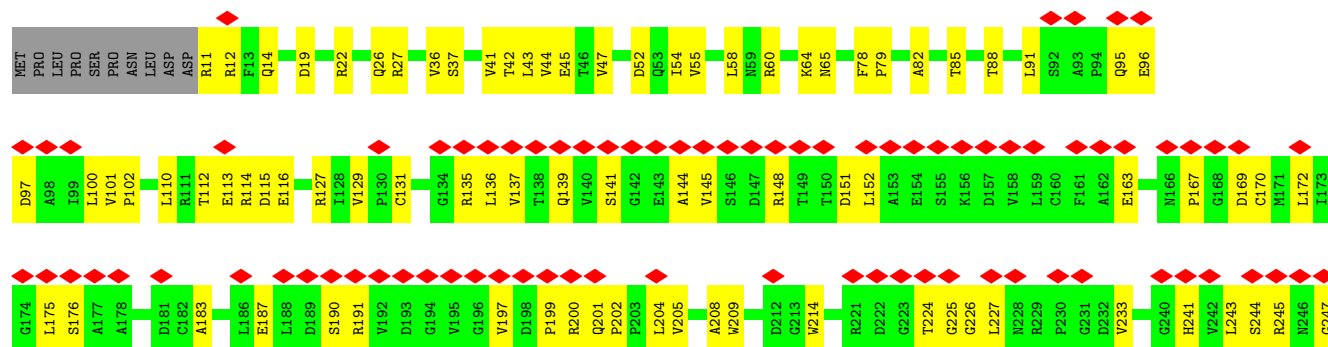


LEU ASP ALA PRO ALA LEU VAL PHE SER TYR ASP HIS ARG VAL ARG VAL ILE GLY ASP SER ALA

Chain 1J: 

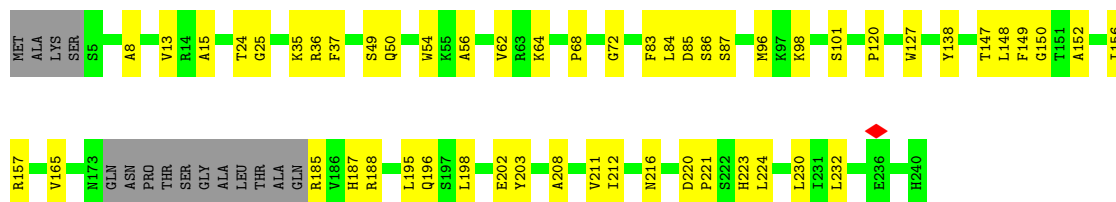


Chain 2J: 



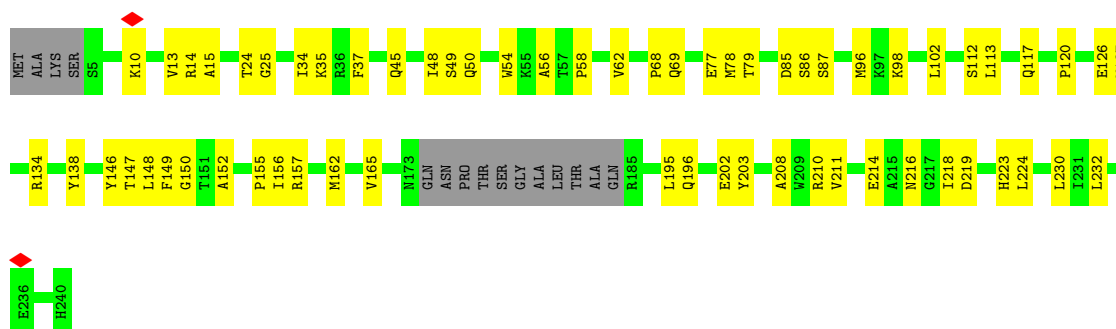


Chain M:  72% 22% 6%



- Molecule 4: LysM domain-containing protein

Chain N:  68% 26% 6%



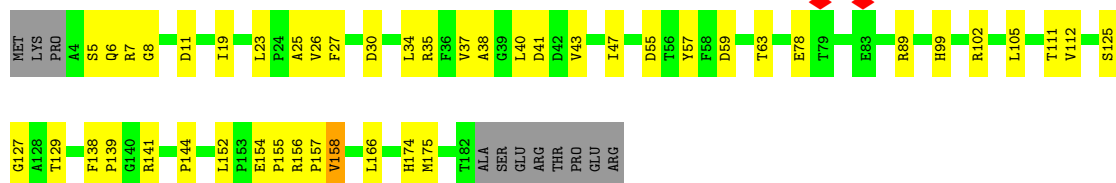
- Molecule 4: LysM domain-containing protein

Chain O:  73% 21% 6%



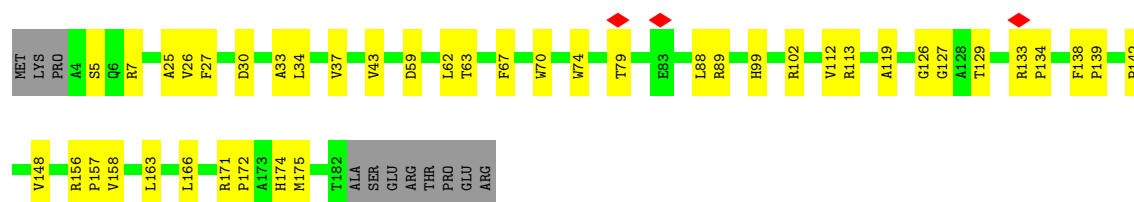
- Molecule 5: Secreted protein

Chain E:  70% 24% 6%

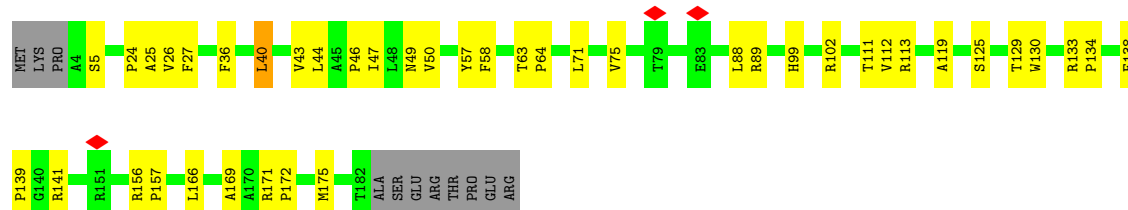


- Molecule 5: Secreted protein

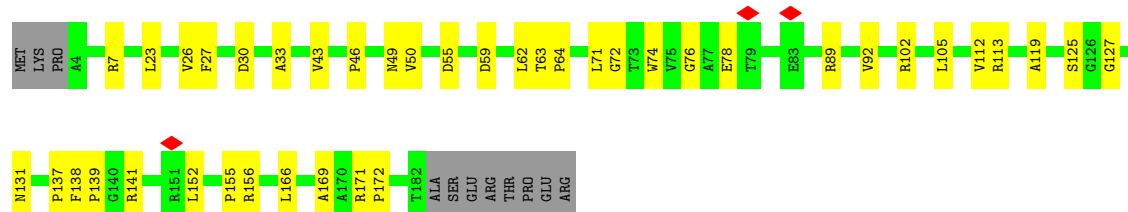
Chain F:  72% 22% 6%



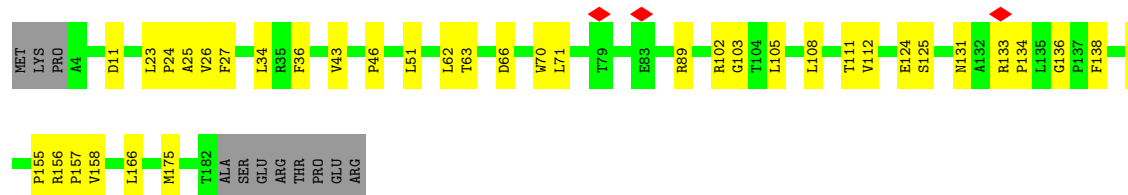
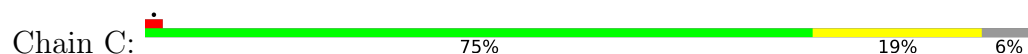
• Molecule 5: Secreted protein



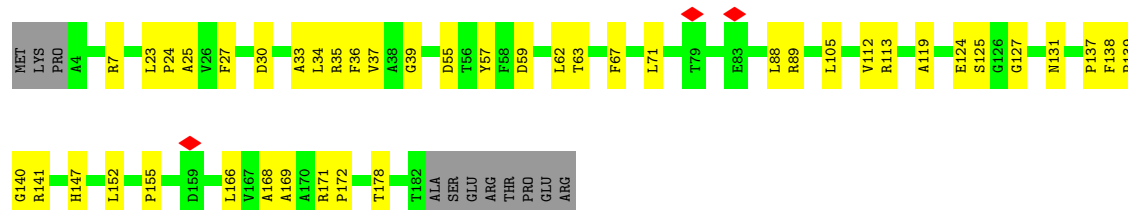
• Molecule 5: Secreted protein



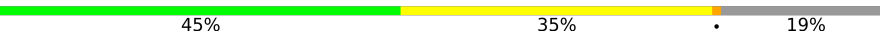
• Molecule 5: Secreted protein

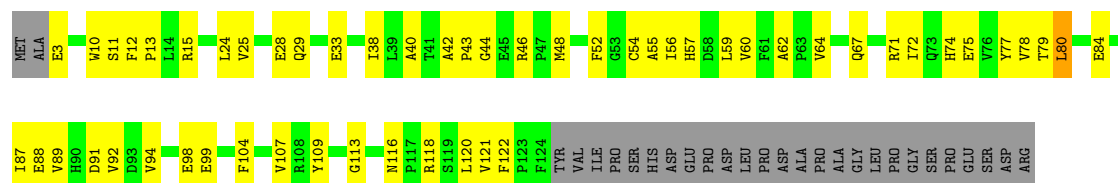


• Molecule 5: Secreted protein



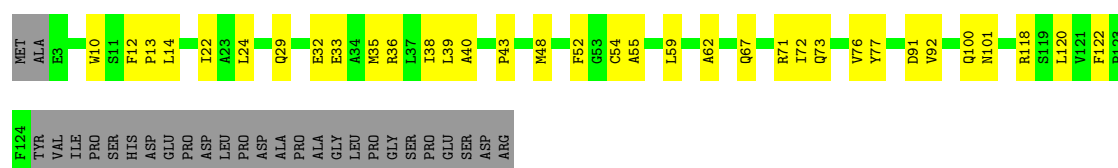
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain V: 



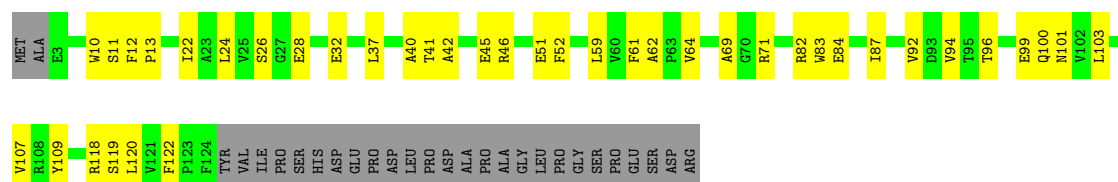
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain W: 



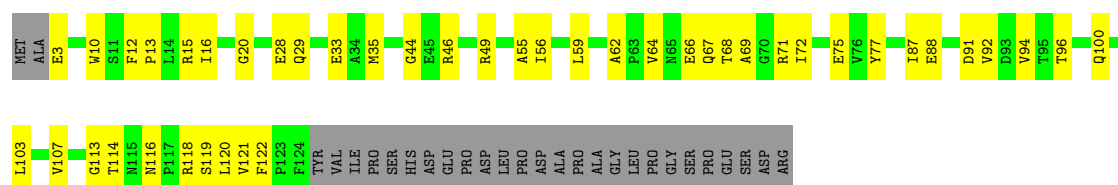
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain X: 



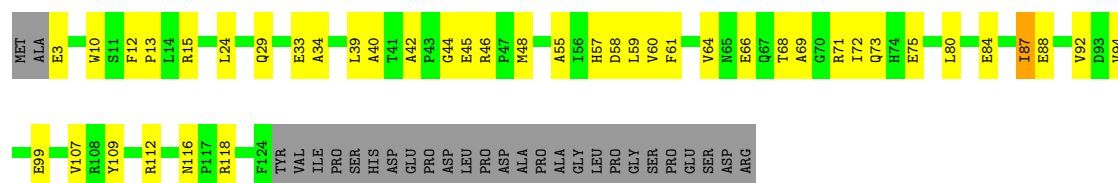
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain S: 



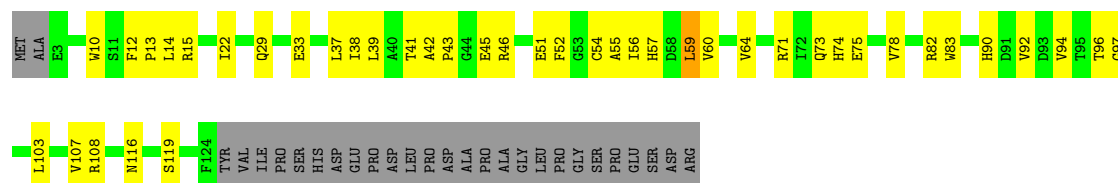
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain T: 



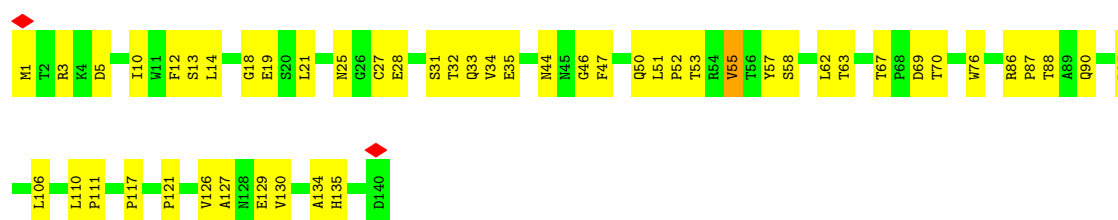
- Molecule 6: IraD/Gp25-like domain-containing protein

Chain U:  53% 27% 19%



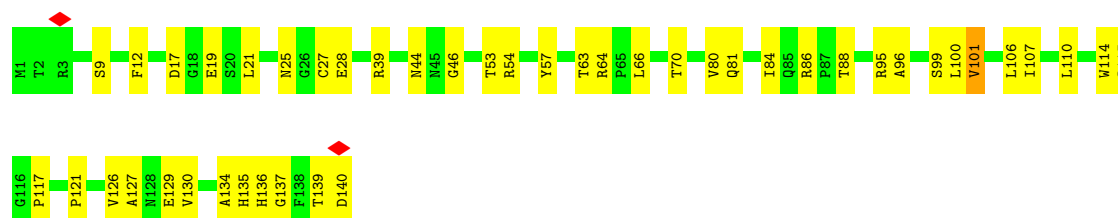
- Molecule 7: Phage tail protein

Chain a:  64% 35%



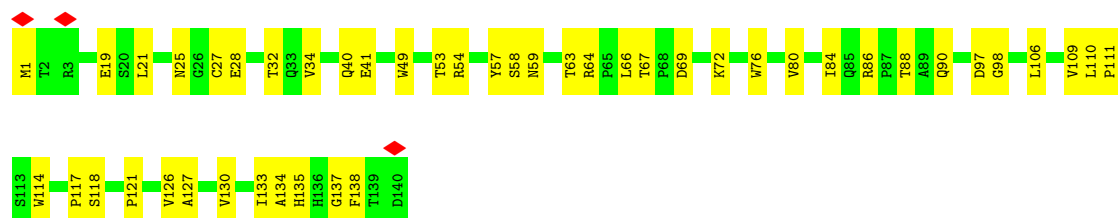
- Molecule 7: Phage tail protein

Chain b:  68% 31%



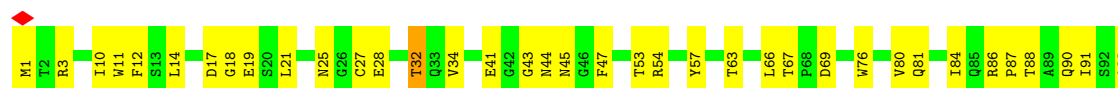
- Molecule 7: Phage tail protein

Chain c:  66% 34%



- Molecule 7: Phage tail protein

Chain d:  64% 36%



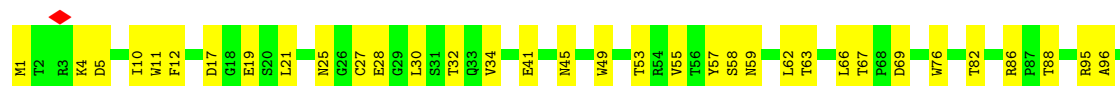




- Molecule 7: Phage tail protein



- Molecule 7: Phage tail protein



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|-----------------------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 22980                                   | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | TFS KRIOS                               | Depositor |
| Voltage (kV)                         | 300                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 60                                      | Depositor |
| Minimum defocus (nm)                 | 1000                                    | Depositor |
| Maximum defocus (nm)                 | 3000                                    | Depositor |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K3 BIOQUANTUM (6k x 4k)           | Depositor |
| Maximum map value                    | 2.965                                   | Depositor |
| Minimum map value                    | -1.225                                  | Depositor |
| Average map value                    | 0.018                                   | Depositor |
| Map value standard deviation         | 0.122                                   | Depositor |
| Recommended contour level            | 0.421                                   | Depositor |
| Map size (Å)                         | 447.30002, 447.30002, 447.30002         | wwPDB     |
| Map dimensions                       | 420, 420, 420                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 1.065, 1.065, 1.065                     | Depositor |

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

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

| Mol | Chain | Bond lengths |               | Bond angles |               |
|-----|-------|--------------|---------------|-------------|---------------|
|     |       | RMSZ         | $\# Z  > 5$   | RMSZ        | $\# Z  > 5$   |
| 1   | k     | 0.31         | 0/1168        | 0.65        | 3/1586 (0.2%) |
| 1   | l     | 0.39         | 0/1168        | 0.66        | 2/1586 (0.1%) |
| 1   | m     | 0.25         | 0/1168        | 0.59        | 1/1586 (0.1%) |
| 1   | n     | 0.29         | 0/1168        | 0.68        | 4/1586 (0.3%) |
| 1   | o     | 0.45         | 0/1168        | 0.79        | 5/1586 (0.3%) |
| 1   | p     | 0.28         | 0/1168        | 0.58        | 1/1586 (0.1%) |
| 2   | 1e    | 0.23         | 0/2793        | 0.41        | 2/3811 (0.1%) |
| 2   | 1f    | 0.25         | 0/2786        | 0.42        | 0/3801        |
| 2   | 1g    | 0.31         | 0/2793        | 0.40        | 1/3811 (0.0%) |
| 2   | 1h    | 0.23         | 0/2788        | 0.41        | 0/3804        |
| 2   | 1i    | 0.23         | 0/2793        | 0.40        | 0/3811        |
| 2   | 1j    | 0.24         | 0/2793        | 0.40        | 1/3811 (0.0%) |
| 2   | 2e    | 0.28         | 0/2797        | 0.50        | 3/3816 (0.1%) |
| 2   | 2f    | 0.28         | 0/2797        | 0.45        | 4/3816 (0.1%) |
| 2   | 2g    | 0.30         | 1/2797 (0.0%) | 0.48        | 2/3816 (0.1%) |
| 2   | 2h    | 0.24         | 0/2797        | 0.40        | 0/3816        |
| 2   | 2i    | 0.26         | 0/2797        | 0.44        | 2/3816 (0.1%) |
| 2   | 2j    | 0.22         | 0/2797        | 0.37        | 1/3816 (0.0%) |
| 2   | 3e    | 0.17         | 0/2862        | 0.36        | 0/3905        |
| 2   | 3f    | 0.17         | 0/2862        | 0.37        | 0/3905        |
| 2   | 3g    | 0.20         | 0/2862        | 0.47        | 3/3905 (0.1%) |
| 2   | 3h    | 0.16         | 0/2862        | 0.37        | 0/3905        |
| 2   | 3i    | 0.17         | 0/2862        | 0.36        | 0/3905        |
| 2   | 3j    | 0.17         | 0/2862        | 0.36        | 0/3905        |
| 3   | 1G    | 0.14         | 0/4994        | 0.34        | 0/6824        |
| 3   | 1H    | 0.14         | 0/4994        | 0.32        | 0/6824        |
| 3   | 1J    | 0.14         | 0/4994        | 0.31        | 0/6824        |
| 3   | 1K    | 0.15         | 0/4994        | 0.33        | 0/6824        |
| 3   | 1L    | 0.14         | 0/4994        | 0.35        | 1/6824 (0.0%) |
| 3   | 1l    | 0.14         | 0/4994        | 0.32        | 0/6824        |
| 3   | 2G    | 0.14         | 0/4114        | 0.37        | 2/5620 (0.0%) |
| 3   | 2H    | 0.15         | 0/4114        | 0.34        | 0/5620        |
| 3   | 2J    | 0.15         | 0/4108        | 0.36        | 0/5613        |
| 3   | 2K    | 0.14         | 0/4114        | 0.33        | 1/5620 (0.0%) |

| Mol | Chain | Bond lengths |                 | Bond angles |                  |
|-----|-------|--------------|-----------------|-------------|------------------|
|     |       | RMSZ         | # Z  >5         | RMSZ        | # Z  >5          |
| 3   | 2L    | 0.15         | 0/4114          | 0.35        | 0/5620           |
| 3   | 2I    | 0.14         | 0/4114          | 0.34        | 1/5620 (0.0%)    |
| 4   | M     | 0.19         | 0/1748          | 0.33        | 0/2378           |
| 4   | N     | 0.20         | 0/1748          | 0.31        | 0/2378           |
| 4   | O     | 0.20         | 0/1748          | 0.34        | 0/2378           |
| 4   | P     | 0.19         | 0/1748          | 0.33        | 0/2378           |
| 4   | Q     | 0.19         | 0/1748          | 0.30        | 0/2378           |
| 4   | R     | 0.19         | 0/1748          | 0.31        | 0/2378           |
| 5   | A     | 0.15         | 0/1372          | 0.30        | 0/1883           |
| 5   | B     | 0.17         | 0/1372          | 0.36        | 0/1883           |
| 5   | C     | 0.14         | 0/1372          | 0.28        | 0/1883           |
| 5   | D     | 0.14         | 0/1372          | 0.29        | 0/1883           |
| 5   | E     | 0.16         | 0/1372          | 0.35        | 1/1883 (0.1%)    |
| 5   | F     | 0.14         | 0/1372          | 0.28        | 0/1883           |
| 6   | S     | 0.20         | 0/989           | 0.47        | 0/1347           |
| 6   | T     | 0.23         | 0/989           | 0.46        | 0/1347           |
| 6   | U     | 0.22         | 0/989           | 0.43        | 0/1347           |
| 6   | V     | 0.20         | 0/989           | 0.46        | 0/1347           |
| 6   | W     | 0.20         | 0/989           | 0.46        | 0/1347           |
| 6   | X     | 0.21         | 0/989           | 0.38        | 0/1347           |
| 7   | a     | 0.31         | 0/1097          | 0.46        | 0/1495           |
| 7   | b     | 0.23         | 0/1097          | 0.36        | 0/1495           |
| 7   | c     | 0.20         | 0/1097          | 0.32        | 0/1495           |
| 7   | d     | 0.23         | 0/1097          | 0.36        | 0/1495           |
| 7   | e     | 0.22         | 0/1097          | 0.34        | 0/1495           |
| 7   | f     | 0.22         | 0/1097          | 0.34        | 0/1495           |
| All | All   | 0.20         | 1/143586 (0.0%) | 0.39        | 41/195966 (0.0%) |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 2   | 2g    | 452 | GLN  | CA-C  | -5.26 | 1.50        | 1.53     |

All (41) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1   | o     | 66  | VAL  | N-CA-C | 9.34  | 120.64      | 108.12   |
| 1   | k     | 26  | TYR  | N-CA-C | 8.06  | 120.06      | 111.28   |
| 3   | 2I    | 114 | ARG  | N-CA-C | 7.99  | 119.77      | 111.14   |
| 2   | 3g    | 412 | PHE  | CA-C-N | 7.33  | 129.00      | 119.84   |
| 2   | 3g    | 412 | PHE  | C-N-CA | 7.33  | 129.00      | 119.84   |
| 1   | m     | 33  | LEU  | N-CA-C | -7.28 | 101.70      | 110.44   |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 3   | 2G    | 41  | VAL  | N-CA-C  | -7.22 | 105.48      | 111.91   |
| 2   | 1e    | 457 | GLU  | CA-C-N  | 7.15  | 128.78      | 119.84   |
| 2   | 1e    | 457 | GLU  | C-N-CA  | 7.15  | 128.78      | 119.84   |
| 2   | 2g    | 371 | GLU  | N-CA-C  | 7.05  | 118.76      | 111.14   |
| 2   | 2f    | 376 | LYS  | N-CA-C  | 6.67  | 122.34      | 112.94   |
| 3   | 1L    | 251 | ALA  | N-CA-C  | 6.38  | 118.92      | 108.52   |
| 1   | n     | 43  | GLN  | N-CA-C  | 6.28  | 119.77      | 109.72   |
| 2   | 2i    | 375 | HIS  | CA-C-N  | -6.11 | 114.29      | 122.72   |
| 2   | 2i    | 375 | HIS  | C-N-CA  | -6.11 | 114.29      | 122.72   |
| 2   | 3g    | 376 | LYS  | N-CA-C  | 6.02  | 118.53      | 108.96   |
| 1   | n     | 64  | GLY  | N-CA-C  | -5.99 | 101.62      | 110.97   |
| 2   | 2f    | 457 | GLU  | CA-C-N  | 5.94  | 127.26      | 119.84   |
| 2   | 2f    | 457 | GLU  | C-N-CA  | 5.94  | 127.26      | 119.84   |
| 2   | 2e    | 374 | VAL  | CB-CA-C | -5.70 | 103.33      | 112.16   |
| 1   | l     | 7   | GLU  | CA-C-N  | 5.67  | 132.37      | 121.54   |
| 1   | l     | 7   | GLU  | C-N-CA  | 5.67  | 132.37      | 121.54   |
| 1   | k     | 27  | LEU  | N-CA-C  | 5.62  | 118.22      | 109.52   |
| 1   | n     | 66  | VAL  | N-CA-C  | 5.50  | 116.65      | 108.23   |
| 5   | E     | 158 | VAL  | N-CA-C  | -5.47 | 108.52      | 113.71   |
| 1   | p     | 34  | GLN  | N-CA-C  | 5.46  | 122.42      | 110.80   |
| 1   | o     | 35  | ILE  | CA-C-N  | 5.35  | 131.75      | 121.54   |
| 1   | o     | 35  | ILE  | C-N-CA  | 5.35  | 131.75      | 121.54   |
| 3   | 2G    | 344 | SER  | CB-CA-C | -5.33 | 110.42      | 116.54   |
| 2   | 2g    | 385 | GLY  | N-CA-C  | -5.29 | 107.38      | 115.00   |
| 2   | 1j    | 385 | GLY  | N-CA-C  | -5.26 | 107.75      | 114.85   |
| 1   | o     | 66  | VAL  | CB-CA-C | -5.24 | 105.64      | 111.35   |
| 2   | 2e    | 315 | GLN  | N-CA-C  | -5.24 | 101.63      | 109.95   |
| 2   | 1g    | 385 | GLY  | N-CA-C  | -5.16 | 107.88      | 114.85   |
| 1   | k     | 66  | VAL  | N-CA-C  | 5.10  | 114.83      | 106.72   |
| 1   | n     | 34  | GLN  | N-CA-C  | 5.08  | 117.60      | 110.23   |
| 1   | o     | 25  | GLU  | N-CA-C  | -5.07 | 108.36      | 114.75   |
| 2   | 2e    | 374 | VAL  | N-CA-C  | -5.07 | 104.71      | 111.05   |
| 2   | 2j    | 385 | GLY  | N-CA-C  | -5.06 | 107.82      | 114.95   |
| 3   | 2K    | 416 | PRO  | CA-N-CD | -5.03 | 104.95      | 112.00   |
| 2   | 2f    | 457 | GLU  | N-CA-C  | 5.01  | 120.89      | 109.81   |

There are no chirality outliers.

There are no planarity outliers.

## 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   | k     | 1152  | 0        | 1150     | 117     | 0            |
| 1   | l     | 1152  | 0        | 1150     | 103     | 0            |
| 1   | m     | 1152  | 0        | 1150     | 105     | 0            |
| 1   | n     | 1152  | 0        | 1150     | 91      | 0            |
| 1   | o     | 1152  | 0        | 1150     | 74      | 0            |
| 1   | p     | 1152  | 0        | 1150     | 118     | 0            |
| 2   | 1e    | 2721  | 0        | 2625     | 96      | 0            |
| 2   | 1f    | 2714  | 0        | 2618     | 117     | 0            |
| 2   | 1g    | 2721  | 0        | 2625     | 102     | 0            |
| 2   | 1h    | 2716  | 0        | 2620     | 125     | 0            |
| 2   | 1i    | 2721  | 0        | 2625     | 104     | 0            |
| 2   | 1j    | 2721  | 0        | 2625     | 104     | 0            |
| 2   | 2e    | 2725  | 0        | 2628     | 126     | 0            |
| 2   | 2f    | 2725  | 0        | 2628     | 125     | 0            |
| 2   | 2g    | 2725  | 0        | 2628     | 131     | 0            |
| 2   | 2h    | 2725  | 0        | 2628     | 108     | 0            |
| 2   | 2i    | 2725  | 0        | 2628     | 109     | 0            |
| 2   | 2j    | 2725  | 0        | 2628     | 98      | 0            |
| 2   | 3e    | 2787  | 0        | 2697     | 112     | 0            |
| 2   | 3f    | 2787  | 0        | 2697     | 88      | 0            |
| 2   | 3g    | 2787  | 0        | 2697     | 127     | 0            |
| 2   | 3h    | 2787  | 0        | 2697     | 99      | 0            |
| 2   | 3i    | 2787  | 0        | 2697     | 106     | 0            |
| 2   | 3j    | 2787  | 0        | 2697     | 107     | 0            |
| 3   | 1G    | 4886  | 0        | 4786     | 151     | 0            |
| 3   | 1H    | 4886  | 0        | 4786     | 152     | 0            |
| 3   | 1J    | 4886  | 0        | 4786     | 136     | 0            |
| 3   | 1K    | 4886  | 0        | 4786     | 149     | 0            |
| 3   | 1L    | 4886  | 0        | 4786     | 170     | 0            |
| 3   | 1l    | 4886  | 0        | 4786     | 165     | 0            |
| 3   | 2G    | 4028  | 0        | 3953     | 138     | 0            |
| 3   | 2H    | 4028  | 0        | 3953     | 145     | 0            |
| 3   | 2J    | 4022  | 0        | 3942     | 131     | 0            |
| 3   | 2K    | 4028  | 0        | 3953     | 139     | 0            |
| 3   | 2L    | 4028  | 0        | 3953     | 135     | 0            |
| 3   | 2l    | 4028  | 0        | 3953     | 127     | 0            |
| 4   | M     | 1704  | 0        | 1704     | 43      | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 4   | N     | 1704   | 0        | 1704     | 58      | 0            |
| 4   | O     | 1704   | 0        | 1704     | 43      | 0            |
| 4   | P     | 1704   | 0        | 1704     | 50      | 0            |
| 4   | Q     | 1704   | 0        | 1704     | 41      | 0            |
| 4   | R     | 1704   | 0        | 1704     | 45      | 0            |
| 5   | A     | 1338   | 0        | 1330     | 40      | 0            |
| 5   | B     | 1338   | 0        | 1330     | 41      | 0            |
| 5   | C     | 1338   | 0        | 1330     | 33      | 0            |
| 5   | D     | 1338   | 0        | 1330     | 37      | 0            |
| 5   | E     | 1338   | 0        | 1330     | 41      | 0            |
| 5   | F     | 1338   | 0        | 1330     | 36      | 0            |
| 6   | S     | 965    | 0        | 934      | 48      | 0            |
| 6   | T     | 965    | 0        | 934      | 47      | 0            |
| 6   | U     | 965    | 0        | 934      | 39      | 0            |
| 6   | V     | 965    | 0        | 934      | 49      | 0            |
| 6   | W     | 965    | 0        | 934      | 32      | 0            |
| 6   | X     | 965    | 0        | 934      | 31      | 0            |
| 7   | a     | 1072   | 0        | 1048     | 64      | 0            |
| 7   | b     | 1072   | 0        | 1048     | 45      | 0            |
| 7   | c     | 1072   | 0        | 1048     | 40      | 0            |
| 7   | d     | 1072   | 0        | 1048     | 52      | 0            |
| 7   | e     | 1072   | 0        | 1048     | 41      | 0            |
| 7   | f     | 1072   | 0        | 1048     | 66      | 0            |
| All | All   | 140250 | 0        | 137107   | 4678    | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 17.

All (4678) 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) |
|-------------------|------------------|--------------------------|-------------------|
| 3:2l:41:VAL:CG1   | 6:T:10:TRP:HB2   | 1.33                     | 1.52              |
| 2:2f:457:GLU:HG3  | 2:2f:458:PRO:CD  | 1.50                     | 1.37              |
| 2:2e:457:GLU:CB   | 2:2e:458:PRO:HD3 | 1.54                     | 1.36              |
| 1:k:27:LEU:CB     | 1:k:68:VAL:HB    | 1.54                     | 1.35              |
| 2:2e:457:GLU:HB3  | 2:2e:458:PRO:CD  | 1.58                     | 1.31              |
| 1:p:40:ILE:HG22   | 7:f:126:VAL:CG1  | 1.62                     | 1.29              |
| 2:3h:503:PRO:HB2  | 2:3h:504:PRO:CD  | 1.57                     | 1.28              |
| 3:1L:172:LEU:HD23 | 3:1L:253:TRP:CZ3 | 1.69                     | 1.27              |
| 2:2e:457:GLU:CG   | 2:2e:458:PRO:HD3 | 1.65                     | 1.25              |
| 2:1h:368:ASN:ND2  | 2:1h:378:PRO:HB3 | 1.55                     | 1.19              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1L:172:LEU:CD2  | 3:1L:253:TRP:CZ3  | 2.26                     | 1.18              |
| 2:2g:312:PRO:HB2  | 2:2g:315:GLN:NE2  | 1.56                     | 1.18              |
| 1:m:122:VAL:HG13  | 1:n:33:LEU:HD23   | 1.27                     | 1.17              |
| 2:2f:457:GLU:CG   | 2:2f:458:PRO:HD3  | 1.74                     | 1.17              |
| 2:1h:453:TRP:HB3  | 2:1h:457:GLU:OE2  | 1.41                     | 1.17              |
| 1:k:27:LEU:CD2    | 1:k:68:VAL:HG21   | 1.75                     | 1.16              |
| 1:m:82:ILE:CD1    | 1:n:35:ILE:HD12   | 1.74                     | 1.16              |
| 3:2l:41:VAL:CG1   | 6:T:10:TRP:CB     | 2.24                     | 1.15              |
| 2:2i:376:LYS:HA   | 2:2i:376:LYS:HE3  | 1.23                     | 1.15              |
| 2:2e:457:GLU:O    | 2:3e:522:LYS:HB2  | 1.44                     | 1.15              |
| 1:m:3:LEU:HB3     | 1:m:4:PRO:HD2     | 1.19                     | 1.14              |
| 1:k:122:VAL:CG1   | 1:l:33:LEU:HD13   | 1.77                     | 1.14              |
| 3:2l:41:VAL:HG13  | 6:T:10:TRP:HB2    | 1.20                     | 1.14              |
| 3:2L:178:ALA:HB1  | 3:2L:241:HIS:CE1  | 1.80                     | 1.13              |
| 2:2e:368:ASN:CB   | 2:2e:378:PRO:HB3  | 1.79                     | 1.13              |
| 1:p:40:ILE:CG2    | 7:f:126:VAL:HB    | 1.76                     | 1.13              |
| 2:1e:368:ASN:ND2  | 2:1e:378:PRO:HB3  | 1.63                     | 1.12              |
| 2:2f:376:LYS:HD2  | 2:1f:457:GLU:HA   | 1.12                     | 1.11              |
| 3:1L:175:LEU:H    | 3:1L:251:ALA:HB1  | 0.98                     | 1.11              |
| 2:3j:369:ASP:CG   | 2:3j:374:VAL:HG23 | 1.74                     | 1.10              |
| 7:d:12:PHE:HE1    | 1:n:43:GLN:HG3    | 1.14                     | 1.10              |
| 7:a:12:PHE:CZ     | 1:k:43:GLN:HG3    | 1.86                     | 1.10              |
| 2:2g:458:PRO:HD3  | 2:3g:523:PRO:HD3  | 1.32                     | 1.10              |
| 2:1g:365:TRP:CH2  | 2:1g:434:LEU:HD21 | 1.87                     | 1.09              |
| 1:p:40:ILE:HG22   | 7:f:126:VAL:HG11  | 1.10                     | 1.09              |
| 2:2i:456:PHE:O    | 2:3i:523:PRO:HD3  | 1.49                     | 1.09              |
| 1:l:15:PHE:CZ     | 1:l:67:GLN:NE2    | 2.21                     | 1.08              |
| 3:2L:179:VAL:HB   | 3:2L:182:CYS:HB2  | 1.31                     | 1.08              |
| 1:k:74:GLN:HG2    | 1:l:1:MET:HE1     | 1.14                     | 1.08              |
| 1:k:27:LEU:CB     | 1:k:68:VAL:CB     | 2.32                     | 1.08              |
| 2:2h:312:PRO:HB2  | 2:2h:315:GLN:NE2  | 1.69                     | 1.08              |
| 1:o:43:GLN:HG2    | 7:e:12:PHE:CE1    | 1.89                     | 1.07              |
| 1:m:82:ILE:HD11   | 1:n:35:ILE:HD12   | 1.10                     | 1.07              |
| 2:1h:453:TRP:HB3  | 2:1h:457:GLU:CD   | 1.79                     | 1.07              |
| 2:2f:457:GLU:CG   | 2:2f:458:PRO:CD   | 2.28                     | 1.07              |
| 2:1h:368:ASN:HD21 | 2:1h:378:PRO:CB   | 1.67                     | 1.07              |
| 2:2e:376:LYS:HE2  | 2:2e:376:LYS:HA   | 1.36                     | 1.06              |
| 1:k:27:LEU:HB2    | 1:k:68:VAL:HB     | 1.07                     | 1.06              |
| 2:1h:369:ASP:CG   | 2:1h:374:VAL:HG22 | 1.81                     | 1.05              |
| 3:2J:190:SER:HB2  | 3:2J:272:PRO:HB2  | 1.37                     | 1.05              |
| 2:1h:369:ASP:OD2  | 2:1h:374:VAL:HG22 | 1.57                     | 1.05              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2g:374:VAL:HG11 | 2:2g:442:TYR:CD2  | 1.90                     | 1.05              |
| 1:k:122:VAL:HG13  | 1:l:33:LEU:HD13   | 1.05                     | 1.05              |
| 2:3g:372:ARG:NH1  | 2:3g:376:LYS:HE3  | 1.72                     | 1.04              |
| 1:m:3:LEU:HB3     | 1:m:4:PRO:CD      | 1.88                     | 1.04              |
| 2:1h:457:GLU:OE1  | 2:1h:463:LEU:HD11 | 1.58                     | 1.03              |
| 1:p:40:ILE:CG2    | 7:f:126:VAL:CB    | 2.36                     | 1.03              |
| 2:3j:369:ASP:OD2  | 2:3j:374:VAL:HG23 | 1.57                     | 1.03              |
| 1:k:27:LEU:HB2    | 1:k:68:VAL:CB     | 1.88                     | 1.02              |
| 2:2g:476:VAL:HG11 | 1:n:115:ARG:HH12  | 1.23                     | 1.02              |
| 2:3e:368:ASN:HD22 | 2:3e:378:PRO:HA   | 1.20                     | 1.02              |
| 2:1i:368:ASN:HD21 | 2:1i:378:PRO:HA   | 1.21                     | 1.02              |
| 3:1L:172:LEU:HB3  | 3:1L:253:TRP:HZ3  | 1.23                     | 1.02              |
| 2:1g:361:VAL:CG1  | 2:1g:365:TRP:HE1  | 1.72                     | 1.02              |
| 2:1e:453:TRP:HB3  | 2:1e:457:GLU:OE1  | 1.60                     | 1.02              |
| 2:3h:503:PRO:HB2  | 2:3h:504:PRO:HD2  | 1.02                     | 1.01              |
| 3:2l:41:VAL:HG11  | 6:T:10:TRP:HB2    | 1.40                     | 1.01              |
| 2:1g:453:TRP:HB3  | 2:1g:457:GLU:CD   | 1.85                     | 1.01              |
| 2:2j:458:PRO:HG2  | 2:3j:520:PRO:HB2  | 1.39                     | 1.01              |
| 2:1j:412:PHE:CE1  | 2:1j:420:TRP:CZ3  | 2.48                     | 1.01              |
| 3:1L:175:LEU:N    | 3:1L:251:ALA:HB1  | 1.76                     | 1.01              |
| 2:2j:367:ARG:NH2  | 2:2j:381:GLU:CG   | 2.24                     | 1.01              |
| 1:k:27:LEU:HD22   | 1:k:68:VAL:HG21   | 1.42                     | 1.00              |
| 1:o:123:VAL:HG22  | 1:p:32:ASN:HB3    | 1.41                     | 1.00              |
| 2:1h:368:ASN:HD21 | 2:1h:378:PRO:HB3  | 1.10                     | 1.00              |
| 1:k:27:LEU:HD23   | 1:k:68:VAL:CG2    | 1.92                     | 1.00              |
| 2:2f:457:GLU:HG3  | 2:2f:458:PRO:HD3  | 1.00                     | 1.00              |
| 2:2i:456:PHE:HE1  | 2:3i:372:ARG:HH22 | 1.00                     | 1.00              |
| 3:1L:175:LEU:H    | 3:1L:251:ALA:CB   | 1.74                     | 0.99              |
| 2:1e:368:ASN:HD21 | 2:1e:378:PRO:CA   | 1.75                     | 0.99              |
| 2:2e:453:TRP:CB   | 2:2e:456:PHE:HD1  | 1.74                     | 0.99              |
| 2:2g:452:GLN:HA   | 2:2g:452:GLN:HE21 | 1.28                     | 0.99              |
| 1:o:43:GLN:HG2    | 7:e:12:PHE:HE1    | 1.22                     | 0.99              |
| 7:a:32:THR:HG22   | 7:a:57:TYR:CD2    | 1.97                     | 0.99              |
| 2:3f:368:ASN:ND2  | 2:3f:378:PRO:HA   | 1.76                     | 0.99              |
| 1:l:64:GLY:HA2    | 1:l:141:ILE:O     | 1.63                     | 0.98              |
| 1:k:122:VAL:HG13  | 1:l:33:LEU:CD1    | 1.92                     | 0.98              |
| 2:2e:457:GLU:CB   | 2:2e:458:PRO:CD   | 2.25                     | 0.97              |
| 2:2f:457:GLU:HG3  | 2:2f:458:PRO:HD2  | 1.43                     | 0.97              |
| 2:2g:372:ARG:HH11 | 2:2g:372:ARG:HG3  | 1.30                     | 0.97              |
| 7:d:12:PHE:CE1    | 1:n:43:GLN:HG3    | 1.99                     | 0.96              |
| 1:k:27:LEU:HB3    | 1:k:68:VAL:CB     | 1.95                     | 0.96              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2e:372:ARG:CZ   | 2:2e:372:ARG:HA   | 1.95                     | 0.96              |
| 1:k:74:GLN:HG2    | 1:l:1:MET:CE      | 1.95                     | 0.96              |
| 3:2J:190:SER:CB   | 3:2J:272:PRO:HB2  | 1.95                     | 0.96              |
| 2:3g:377:ALA:HB2  | 2:3g:522:LYS:CE   | 1.96                     | 0.95              |
| 1:o:120:SER:HA    | 1:p:35:ILE:HD12   | 1.46                     | 0.95              |
| 1:l:122:VAL:O     | 1:m:33:LEU:HD23   | 1.66                     | 0.95              |
| 2:1e:368:ASN:ND2  | 2:1e:378:PRO:CB   | 2.29                     | 0.95              |
| 2:2e:453:TRP:HB2  | 2:2e:456:PHE:CD1  | 2.02                     | 0.95              |
| 2:1e:368:ASN:HD21 | 2:1e:378:PRO:HA   | 1.29                     | 0.95              |
| 2:2e:457:GLU:HB3  | 2:2e:458:PRO:HD3  | 1.15                     | 0.95              |
| 1:k:26:TYR:HB2    | 1:k:70:ARG:HA     | 1.48                     | 0.95              |
| 1:k:27:LEU:CD2    | 1:k:68:VAL:CG2    | 2.44                     | 0.94              |
| 2:3e:368:ASN:HD22 | 2:3e:378:PRO:CA   | 1.80                     | 0.94              |
| 2:1g:361:VAL:O    | 2:1g:365:TRP:HD1  | 1.51                     | 0.94              |
| 2:2h:65:PHE:HB3   | 2:2h:93:ARG:HH12  | 1.33                     | 0.94              |
| 2:1g:453:TRP:HB3  | 2:1g:457:GLU:OE2  | 1.68                     | 0.94              |
| 3:2l:41:VAL:HG12  | 6:T:10:TRP:HB2    | 1.48                     | 0.93              |
| 2:3h:503:PRO:CB   | 2:3h:504:PRO:HD2  | 1.97                     | 0.93              |
| 3:2J:271:SER:HB2  | 3:2J:272:PRO:HD2  | 1.48                     | 0.93              |
| 2:1i:457:GLU:HB3  | 2:1i:458:PRO:CD   | 1.99                     | 0.93              |
| 2:2g:374:VAL:HG11 | 2:2g:442:TYR:CG   | 2.05                     | 0.92              |
| 2:1j:412:PHE:CE1  | 2:1j:420:TRP:CE3  | 2.58                     | 0.92              |
| 2:3g:416:GLY:O    | 2:3g:418:ARG:HG3  | 1.70                     | 0.92              |
| 2:3g:377:ALA:HB2  | 2:3g:522:LYS:HE3  | 1.49                     | 0.92              |
| 3:1L:172:LEU:HD23 | 3:1L:253:TRP:CE3  | 2.04                     | 0.92              |
| 3:1L:172:LEU:HB3  | 3:1L:253:TRP:CZ3  | 2.04                     | 0.92              |
| 1:k:74:GLN:CG     | 1:l:1:MET:HE1     | 1.99                     | 0.92              |
| 2:2e:241:HIS:HB3  | 2:2e:242:PRO:HD3  | 1.49                     | 0.92              |
| 2:2j:367:ARG:NH2  | 2:2j:381:GLU:HG2  | 1.82                     | 0.92              |
| 7:a:51:LEU:HD13   | 4:N:85:ASP:OD2    | 1.68                     | 0.92              |
| 2:2g:458:PRO:CD   | 2:3g:523:PRO:HD3  | 2.00                     | 0.91              |
| 1:p:40:ILE:CG2    | 7:f:126:VAL:CG1   | 2.48                     | 0.91              |
| 2:2e:368:ASN:HB3  | 2:2e:378:PRO:HB3  | 1.52                     | 0.91              |
| 2:2e:457:GLU:HG2  | 2:2e:458:PRO:HD3  | 1.53                     | 0.91              |
| 2:1e:368:ASN:HD21 | 2:1e:378:PRO:CB   | 1.84                     | 0.91              |
| 2:2g:464:TRP:HD1  | 2:2g:511:ARG:HH22 | 1.17                     | 0.91              |
| 1:m:82:ILE:HD11   | 1:n:35:ILE:CD1    | 2.01                     | 0.91              |
| 2:2j:369:ASP:CG   | 2:2j:374:VAL:HG12 | 1.96                     | 0.91              |
| 2:2j:372:ARG:HA   | 2:2j:372:ARG:HH11 | 1.34                     | 0.91              |
| 2:3e:368:ASN:ND2  | 2:3e:378:PRO:HA   | 1.85                     | 0.91              |
| 2:3h:503:PRO:CB   | 2:3h:504:PRO:CD   | 2.43                     | 0.91              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3g:454:VAL:O    | 2:3g:456:PHE:CD1  | 2.25                     | 0.90              |
| 2:2i:456:PHE:CE1  | 2:3i:372:ARG:NH2  | 2.38                     | 0.90              |
| 2:3i:457:GLU:HB2  | 2:3i:458:PRO:HD3  | 1.54                     | 0.90              |
| 2:2h:275:MET:HE1  | 2:2h:312:PRO:HA   | 1.52                     | 0.90              |
| 1:m:66:VAL:HG13   | 1:m:138:THR:CG2   | 2.00                     | 0.90              |
| 1:m:122:VAL:O     | 1:n:33:LEU:HD23   | 1.72                     | 0.90              |
| 2:2g:476:VAL:HG11 | 1:n:115:ARG:NH1   | 1.87                     | 0.90              |
| 1:p:40:ILE:HG21   | 7:f:126:VAL:HB    | 1.54                     | 0.89              |
| 1:l:122:VAL:O     | 1:m:33:LEU:CD2    | 2.20                     | 0.89              |
| 2:3j:368:ASN:HD22 | 2:3j:378:PRO:CA   | 1.85                     | 0.89              |
| 1:k:26:TYR:HB2    | 1:k:70:ARG:CA     | 2.01                     | 0.89              |
| 2:3g:312:PRO:HD2  | 2:3g:315:GLN:HE22 | 1.35                     | 0.89              |
| 2:3i:315:GLN:OE1  | 2:3i:319:GLN:HB3  | 1.71                     | 0.89              |
| 2:2f:376:LYS:CD   | 2:1f:457:GLU:HA   | 2.00                     | 0.89              |
| 1:m:66:VAL:CG1    | 1:m:138:THR:CG2   | 2.51                     | 0.89              |
| 2:2g:312:PRO:CB   | 2:2g:315:GLN:NE2  | 2.35                     | 0.89              |
| 2:2i:456:PHE:HE1  | 2:3i:372:ARG:NH2  | 1.69                     | 0.89              |
| 2:1e:480:ARG:NH1  | 7:d:47:PHE:CZ     | 2.41                     | 0.89              |
| 1:p:122:VAL:HG13  | 1:k:33:LEU:HD23   | 1.55                     | 0.89              |
| 2:1f:37:VAL:HG21  | 2:1f:265:GLU:O    | 1.73                     | 0.89              |
| 1:p:103:ASP:OD1   | 1:p:104:TYR:N     | 2.06                     | 0.89              |
| 1:m:122:VAL:HG13  | 1:n:33:LEU:CD2    | 2.03                     | 0.89              |
| 2:1h:369:ASP:CG   | 2:1h:374:VAL:CG2  | 2.46                     | 0.88              |
| 7:a:52:PRO:HB3    | 7:f:110:LEU:HD21  | 1.55                     | 0.88              |
| 1:m:58:PRO:HB3    | 1:n:49:THR:HG21   | 1.54                     | 0.88              |
| 3:2l:39:PRO:HB2   | 6:T:34:ALA:HB1    | 1.51                     | 0.88              |
| 2:2e:456:PHE:O    | 2:3e:376:LYS:CD   | 2.22                     | 0.88              |
| 2:2f:518:ILE:HD11 | 2:3f:533:GLN:HE21 | 1.38                     | 0.88              |
| 2:2g:275:MET:HE1  | 2:2g:312:PRO:HA   | 1.53                     | 0.88              |
| 3:2l:41:VAL:HG11  | 6:T:10:TRP:CB     | 1.99                     | 0.88              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CZ2  | 2.61                     | 0.88              |
| 2:1j:412:PHE:HZ   | 2:1j:420:TRP:CE2  | 1.92                     | 0.88              |
| 2:2e:65:PHE:HB3   | 2:2e:93:ARG:HH21  | 1.39                     | 0.88              |
| 3:1K:101:VAL:HG21 | 3:1K:126:LEU:H    | 1.38                     | 0.87              |
| 2:2j:369:ASP:CG   | 2:2j:374:VAL:CG1  | 2.47                     | 0.87              |
| 1:k:27:LEU:HB3    | 1:k:68:VAL:CG2    | 2.03                     | 0.87              |
| 2:2e:453:TRP:CB   | 2:2e:456:PHE:CD1  | 2.57                     | 0.87              |
| 2:2e:457:GLU:O    | 2:3e:522:LYS:CB   | 2.23                     | 0.87              |
| 2:2i:372:ARG:NH1  | 2:1i:456:PHE:HE2  | 1.72                     | 0.86              |
| 1:o:35:ILE:HD11   | 1:n:86:MET:HG3    | 1.56                     | 0.86              |
| 2:2e:456:PHE:O    | 2:3e:376:LYS:CE   | 2.23                     | 0.86              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3h:454:VAL:O    | 2:3h:456:PHE:CD1  | 2.29                     | 0.86              |
| 4:P:148:LEU:HD23  | 7:c:53:THR:HG23   | 1.58                     | 0.86              |
| 2:2j:367:ARG:NH2  | 2:2j:381:GLU:HG3  | 1.90                     | 0.86              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CE2  | 2.64                     | 0.86              |
| 2:2e:453:TRP:HB2  | 2:2e:456:PHE:HB2  | 1.55                     | 0.86              |
| 2:2e:456:PHE:O    | 2:3e:376:LYS:HE2  | 1.74                     | 0.86              |
| 2:1h:369:ASP:OD1  | 2:1h:374:VAL:HA   | 1.75                     | 0.86              |
| 1:m:103:ASP:OD1   | 1:m:104:TYR:N     | 2.09                     | 0.86              |
| 7:a:12:PHE:CE1    | 1:k:43:GLN:HG3    | 2.10                     | 0.86              |
| 1:k:122:VAL:HG11  | 1:l:33:LEU:HD22   | 1.57                     | 0.86              |
| 2:2g:368:ASN:HD22 | 2:2g:378:PRO:HG3  | 1.41                     | 0.86              |
| 7:a:33:GLN:HG2    | 7:f:113:SER:HB2   | 1.56                     | 0.86              |
| 1:o:43:GLN:CG     | 7:e:12:PHE:HE1    | 1.88                     | 0.85              |
| 2:1i:368:ASN:ND2  | 2:1i:378:PRO:HA   | 1.91                     | 0.85              |
| 2:1h:455:VAL:HA   | 2:2h:522:LYS:O    | 1.76                     | 0.85              |
| 6:W:35:MET:HE3    | 6:W:120:LEU:HD12  | 1.58                     | 0.85              |
| 2:2f:494:TYR:CD2  | 2:2f:516:ILE:HD13 | 2.10                     | 0.85              |
| 2:1e:480:ARG:CZ   | 7:d:47:PHE:CZ     | 2.59                     | 0.85              |
| 1:n:72:MET:HE2    | 1:n:135:LEU:HD23  | 1.57                     | 0.85              |
| 1:k:27:LEU:HD23   | 1:k:68:VAL:HG21   | 1.51                     | 0.85              |
| 2:1j:368:ASN:ND2  | 2:1j:378:PRO:HA   | 1.92                     | 0.85              |
| 2:2e:457:GLU:HB3  | 2:2e:458:PRO:HD2  | 1.56                     | 0.85              |
| 3:2l:41:VAL:HG13  | 6:T:10:TRP:CB     | 1.98                     | 0.85              |
| 3:2H:114:ARG:HH22 | 6:T:15:ARG:HD2    | 1.39                     | 0.84              |
| 2:3g:372:ARG:HH12 | 2:3g:376:LYS:HG3  | 1.40                     | 0.84              |
| 2:1h:453:TRP:CB   | 2:1h:457:GLU:OE2  | 2.23                     | 0.84              |
| 2:2g:467:ILE:HG13 | 2:2g:511:ARG:HH11 | 1.42                     | 0.84              |
| 2:2e:516:ILE:HG12 | 2:3e:531:LEU:HD22 | 1.58                     | 0.84              |
| 2:1e:368:ASN:ND2  | 2:1e:378:PRO:CA   | 2.40                     | 0.84              |
| 2:3f:368:ASN:HD22 | 2:3f:378:PRO:HA   | 1.42                     | 0.84              |
| 3:1L:172:LEU:HD22 | 3:1L:253:TRP:CZ3  | 2.13                     | 0.84              |
| 1:p:40:ILE:HG22   | 7:f:126:VAL:CB    | 2.00                     | 0.83              |
| 2:3j:368:ASN:ND2  | 2:3j:378:PRO:HA   | 1.92                     | 0.83              |
| 2:2h:65:PHE:HB3   | 2:2h:93:ARG:NH1   | 1.93                     | 0.83              |
| 1:p:41:ARG:HE     | 1:p:52:ASN:HB3    | 1.41                     | 0.83              |
| 4:M:203:TYR:HE2   | 4:M:212:ILE:HD11  | 1.43                     | 0.83              |
| 2:2f:494:TYR:HD2  | 2:2f:516:ILE:HD13 | 1.42                     | 0.83              |
| 1:k:90:MET:HE1    | 1:l:56:LEU:HD21   | 1.59                     | 0.83              |
| 2:2g:368:ASN:HD22 | 2:2g:378:PRO:CG   | 1.90                     | 0.83              |
| 1:o:33:LEU:HD13   | 1:n:122:VAL:HG13  | 1.59                     | 0.83              |
| 3:1l:17:VAL:HG21  | 3:1l:55:VAL:HB    | 1.59                     | 0.83              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2e:453:TRP:HB2  | 2:2e:456:PHE:HD1  | 1.36                     | 0.82              |
| 3:1J:220:ASP:OD1  | 3:1J:221:ARG:N    | 2.12                     | 0.82              |
| 2:2g:464:TRP:CD1  | 2:2g:511:ARG:HH22 | 1.96                     | 0.82              |
| 2:1f:368:ASN:HD21 | 2:1f:378:PRO:HA   | 1.42                     | 0.82              |
| 3:2L:179:VAL:HG11 | 3:2L:182:CYS:SG   | 2.20                     | 0.82              |
| 1:k:27:LEU:CB     | 1:k:68:VAL:CG2    | 2.56                     | 0.82              |
| 2:1h:368:ASN:HD21 | 2:1h:378:PRO:CA   | 1.93                     | 0.82              |
| 2:2g:244:PRO:HB2  | 2:2g:274:LEU:HA   | 1.62                     | 0.82              |
| 2:2g:368:ASN:HD22 | 2:2g:378:PRO:CB   | 1.93                     | 0.81              |
| 2:1i:368:ASN:HD21 | 2:1i:378:PRO:CA   | 1.92                     | 0.81              |
| 1:o:64:GLY:HA2    | 1:o:141:ILE:O     | 1.79                     | 0.81              |
| 2:2f:372:ARG:CZ   | 2:2f:372:ARG:HA   | 2.11                     | 0.81              |
| 7:f:86:ARG:NH1    | 7:f:110:LEU:HD22  | 1.93                     | 0.81              |
| 2:2h:312:PRO:CB   | 2:2h:315:GLN:NE2  | 2.43                     | 0.81              |
| 2:3i:454:VAL:O    | 2:3i:456:PHE:CD1  | 2.34                     | 0.81              |
| 2:1i:239:SER:HB2  | 2:1i:242:PRO:HG2  | 1.63                     | 0.81              |
| 2:2e:368:ASN:CG   | 2:2e:378:PRO:HB3  | 2.05                     | 0.81              |
| 2:2g:452:GLN:HA   | 2:2g:452:GLN:NE2  | 1.93                     | 0.81              |
| 2:1i:457:GLU:OE1  | 2:1i:463:LEU:HD12 | 1.80                     | 0.81              |
| 1:p:40:ILE:HG13   | 1:p:53:ASN:HB3    | 1.61                     | 0.81              |
| 2:2i:376:LYS:HA   | 2:2i:376:LYS:CE   | 2.07                     | 0.81              |
| 4:P:13:VAL:HG21   | 6:W:67:GLN:HB2    | 1.61                     | 0.80              |
| 1:k:26:TYR:HD2    | 1:k:68:VAL:CG1    | 1.94                     | 0.80              |
| 2:2g:458:PRO:HD3  | 2:3g:523:PRO:CD   | 2.11                     | 0.80              |
| 2:2j:369:ASP:OD2  | 2:2j:374:VAL:HG12 | 1.82                     | 0.80              |
| 1:m:66:VAL:CG1    | 1:m:138:THR:HG23  | 2.10                     | 0.80              |
| 2:1h:369:ASP:OD1  | 2:1h:374:VAL:HG22 | 1.82                     | 0.80              |
| 3:2l:412:ARG:HG3  | 3:2l:413:THR:HG23 | 1.63                     | 0.80              |
| 2:3i:368:ASN:ND2  | 2:3i:378:PRO:HA   | 1.97                     | 0.80              |
| 2:2j:369:ASP:OD2  | 2:2j:374:VAL:CG1  | 2.30                     | 0.80              |
| 1:k:38:ASP:OD1    | 1:k:57:MET:HE1    | 1.81                     | 0.79              |
| 2:1h:369:ASP:OD1  | 2:1h:374:VAL:CA   | 2.31                     | 0.79              |
| 2:1i:244:PRO:HB3  | 2:1i:274:LEU:HD13 | 1.62                     | 0.79              |
| 2:3i:36:SER:HB3   | 2:3i:369:ASP:OD2  | 1.81                     | 0.79              |
| 2:2e:369:ASP:HB2  | 2:2e:374:VAL:CG2  | 2.11                     | 0.79              |
| 2:1i:437:ARG:HD3  | 2:1i:441:ASN:HD21 | 1.48                     | 0.79              |
| 1:k:27:LEU:HB3    | 1:k:68:VAL:HG23   | 1.65                     | 0.79              |
| 7:a:53:THR:HB     | 4:N:157:ARG:HH12  | 1.46                     | 0.79              |
| 2:3h:407:ASN:HD21 | 2:3h:423:ARG:H    | 1.28                     | 0.79              |
| 2:2j:458:PRO:HA   | 2:3j:523:PRO:HD3  | 1.64                     | 0.79              |
| 2:1e:368:ASN:ND2  | 2:1e:378:PRO:HA   | 1.97                     | 0.79              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1j:412:PHE:HE1  | 2:1j:420:TRP:CE3  | 2.01                     | 0.78              |
| 2:1g:35:THR:HG22  | 2:1g:369:ASP:OD2  | 1.83                     | 0.78              |
| 2:1e:369:ASP:OD1  | 2:1e:374:VAL:HG22 | 1.82                     | 0.78              |
| 1:m:43:GLN:OE1    | 1:m:43:GLN:N      | 2.15                     | 0.78              |
| 7:b:53:THR:HG1    | 4:O:157:ARG:HH12  | 1.28                     | 0.78              |
| 1:p:36:GLU:C      | 1:p:57:MET:HG2    | 2.08                     | 0.78              |
| 1:k:122:VAL:CG1   | 1:l:33:LEU:HD22   | 2.14                     | 0.78              |
| 3:2G:221:ARG:HB2  | 3:2G:234:VAL:HG22 | 1.65                     | 0.78              |
| 2:1e:480:ARG:NH2  | 7:d:47:PHE:CE2    | 2.51                     | 0.78              |
| 7:d:12:PHE:HE1    | 1:n:43:GLN:CG     | 1.93                     | 0.78              |
| 2:3g:312:PRO:HD2  | 2:3g:315:GLN:NE2  | 1.97                     | 0.78              |
| 2:1e:480:ARG:CZ   | 7:d:47:PHE:CE2    | 2.67                     | 0.78              |
| 1:m:22:VAL:HG11   | 1:m:69:GLU:HG3    | 1.64                     | 0.78              |
| 7:a:50:GLN:HE21   | 7:a:50:GLN:HA     | 1.48                     | 0.78              |
| 2:2g:511:ARG:HG2  | 2:2g:511:ARG:HH21 | 1.49                     | 0.78              |
| 1:n:43:GLN:HA     | 1:n:43:GLN:NE2    | 1.99                     | 0.78              |
| 3:1L:243:LEU:HD23 | 3:1L:243:LEU:H    | 1.46                     | 0.78              |
| 3:1G:190:SER:HB2  | 3:1G:272:PRO:HB2  | 1.66                     | 0.77              |
| 2:1g:361:VAL:HG12 | 2:1g:365:TRP:HE1  | 1.47                     | 0.77              |
| 2:3j:368:ASN:HD22 | 2:3j:378:PRO:HA   | 1.47                     | 0.77              |
| 1:m:74:GLN:NE2    | 1:n:1:MET:SD      | 2.53                     | 0.77              |
| 2:2f:457:GLU:CB   | 2:2f:458:PRO:HD3  | 2.13                     | 0.77              |
| 1:k:26:TYR:HB3    | 1:k:68:VAL:O      | 1.84                     | 0.77              |
| 1:n:115:ARG:HH21  | 1:n:148:VAL:HG21  | 1.48                     | 0.77              |
| 3:2L:190:SER:HA   | 3:2L:273:THR:O    | 1.85                     | 0.77              |
| 1:k:36:GLU:HG2    | 1:k:57:MET:HE2    | 1.67                     | 0.77              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CH2  | 2.72                     | 0.77              |
| 3:1H:101:VAL:HG21 | 3:1H:126:LEU:H    | 1.48                     | 0.77              |
| 3:2l:24:ILE:HD11  | 6:T:48:MET:HE1    | 1.67                     | 0.77              |
| 2:2g:374:VAL:CG1  | 2:2g:442:TYR:CD2  | 2.68                     | 0.77              |
| 2:1h:456:PHE:CE2  | 2:2h:372:ARG:NH2  | 2.53                     | 0.77              |
| 2:3j:35:THR:HG22  | 2:3j:36:SER:H     | 1.49                     | 0.77              |
| 2:1e:368:ASN:HD22 | 2:1e:378:PRO:HB3  | 1.51                     | 0.76              |
| 2:2g:458:PRO:HD2  | 2:3g:521:VAL:O    | 1.85                     | 0.76              |
| 1:p:65:SER:O      | 1:p:140:THR:HA    | 1.85                     | 0.76              |
| 2:2i:372:ARG:HG2  | 2:2i:372:ARG:HH21 | 1.49                     | 0.76              |
| 2:2g:368:ASN:ND2  | 2:2g:378:PRO:HG3  | 2.00                     | 0.76              |
| 1:k:27:LEU:HD23   | 1:k:68:VAL:HG23   | 1.65                     | 0.76              |
| 3:1H:181:ASP:OD1  | 3:1H:182:CYS:N    | 2.17                     | 0.76              |
| 2:3g:522:LYS:NZ   | 2:3g:522:LYS:HB3  | 1.99                     | 0.76              |
| 2:1f:457:GLU:OE1  | 2:1f:463:LEU:HD12 | 1.84                     | 0.76              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:N:48:ILE:HD11   | 4:N:78:MET:HE2    | 1.66                     | 0.76              |
| 2:3j:454:VAL:O    | 2:3j:456:PHE:CD1  | 2.39                     | 0.76              |
| 2:3f:454:VAL:O    | 2:3f:456:PHE:CD2  | 2.38                     | 0.76              |
| 2:1i:368:ASN:ND2  | 2:1i:378:PRO:HB3  | 2.01                     | 0.76              |
| 1:l:62:LYS:HG3    | 1:m:37:GLN:HE22   | 1.50                     | 0.76              |
| 4:N:134:ARG:HH22  | 6:U:71:ARG:HA     | 1.50                     | 0.76              |
| 2:2e:369:ASP:HB2  | 2:2e:374:VAL:HG22 | 1.67                     | 0.76              |
| 2:3g:522:LYS:HB3  | 2:3g:522:LYS:HZ3  | 1.51                     | 0.76              |
| 2:1h:369:ASP:OD2  | 2:1h:374:VAL:CG2  | 2.34                     | 0.76              |
| 1:k:27:LEU:HB3    | 1:k:68:VAL:HB     | 1.48                     | 0.76              |
| 3:2G:114:ARG:HH22 | 6:S:15:ARG:HD2    | 1.50                     | 0.76              |
| 2:2j:458:PRO:HG2  | 2:3j:520:PRO:CB   | 2.16                     | 0.76              |
| 3:1G:326:LEU:HD11 | 3:1G:362:ILE:HD13 | 1.68                     | 0.76              |
| 2:3h:368:ASN:OD1  | 2:3h:378:PRO:HA   | 1.86                     | 0.76              |
| 2:1h:459:ASN:HB2  | 2:2h:522:LYS:HB2  | 1.68                     | 0.75              |
| 2:2i:372:ARG:HG2  | 2:2i:372:ARG:NH2  | 2.01                     | 0.75              |
| 3:2L:129:VAL:HB   | 3:2L:179:VAL:HG21 | 1.68                     | 0.75              |
| 2:2f:457:GLU:CG   | 2:2f:458:PRO:HD2  | 2.03                     | 0.75              |
| 1:p:66:VAL:HG13   | 1:p:138:THR:HG23  | 1.69                     | 0.75              |
| 1:k:26:TYR:CB     | 1:k:70:ARG:HA     | 2.17                     | 0.75              |
| 6:X:61:PHE:HE2    | 2:1e:421:GLY:H    | 1.32                     | 0.75              |
| 2:2f:376:LYS:HD2  | 2:1f:457:GLU:CA   | 2.06                     | 0.75              |
| 1:o:66:VAL:HG13   | 1:o:139:ILE:O     | 1.86                     | 0.75              |
| 2:3i:302:MET:SD   | 2:3i:305:ARG:NH2  | 2.59                     | 0.75              |
| 1:o:10:LEU:HD12   | 1:n:131:ASP:HB3   | 1.67                     | 0.75              |
| 2:3g:457:GLU:HB2  | 2:3g:458:PRO:HD3  | 1.67                     | 0.75              |
| 2:1g:453:TRP:HB3  | 2:1g:457:GLU:OE1  | 1.87                     | 0.75              |
| 1:l:64:GLY:CA     | 1:l:141:ILE:O     | 2.34                     | 0.75              |
| 6:U:14:LEU:HD23   | 6:U:14:LEU:H      | 1.51                     | 0.75              |
| 2:2i:457:GLU:OE2  | 2:3i:375:HIS:HD2  | 1.68                     | 0.74              |
| 2:1i:368:ASN:ND2  | 2:1i:378:PRO:CA   | 2.48                     | 0.74              |
| 7:a:32:THR:HG22   | 7:a:57:TYR:HD2    | 1.51                     | 0.74              |
| 2:2e:518:ILE:HD11 | 2:3e:533:GLN:HG2  | 1.68                     | 0.74              |
| 2:3e:49:LEU:HG    | 2:3e:50:ASN:H     | 1.52                     | 0.74              |
| 6:T:92:VAL:HG12   | 6:T:107:VAL:HG12  | 1.67                     | 0.74              |
| 3:2L:179:VAL:HB   | 3:2L:182:CYS:CB   | 2.15                     | 0.74              |
| 2:3h:454:VAL:O    | 2:3h:456:PHE:HD1  | 1.67                     | 0.74              |
| 2:1h:369:ASP:OD1  | 2:1h:374:VAL:CG2  | 2.35                     | 0.74              |
| 4:R:157:ARG:HH12  | 7:e:53:THR:HG1    | 1.32                     | 0.74              |
| 2:2e:241:HIS:HB3  | 2:2e:242:PRO:CD   | 2.17                     | 0.74              |
| 1:o:123:VAL:HG22  | 1:p:32:ASN:CB     | 2.17                     | 0.74              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3j:368:ASN:ND2  | 2:3j:378:PRO:CA   | 2.49                     | 0.74              |
| 4:M:203:TYR:CE2   | 4:M:212:ILE:HD11  | 2.22                     | 0.74              |
| 3:1l:189:ASP:HB3  | 3:1l:275:ARG:HB2  | 1.70                     | 0.74              |
| 2:3g:372:ARG:NH1  | 2:3g:376:LYS:HG3  | 2.02                     | 0.74              |
| 2:1g:361:VAL:CG1  | 2:1g:365:TRP:NE1  | 2.49                     | 0.74              |
| 1:m:43:GLN:HB2    | 1:m:48:THR:O      | 1.87                     | 0.74              |
| 2:1h:518:ILE:HG22 | 2:1h:519:ALA:H    | 1.52                     | 0.74              |
| 1:p:36:GLU:O      | 1:p:57:MET:HE3    | 1.86                     | 0.74              |
| 2:1f:436:ILE:HD11 | 2:1f:520:PRO:HB3  | 1.69                     | 0.74              |
| 3:1L:190:SER:HB3  | 3:1L:272:PRO:HB2  | 1.68                     | 0.73              |
| 3:2J:199:PRO:O    | 3:2J:202:PRO:HD2  | 1.88                     | 0.73              |
| 3:2H:114:ARG:NH2  | 6:T:15:ARG:HD2    | 2.03                     | 0.73              |
| 2:2j:522:LYS:NZ   | 2:1j:454:VAL:HA   | 2.04                     | 0.73              |
| 6:X:62:ALA:O      | 2:1e:522:LYS:NZ   | 2.21                     | 0.73              |
| 7:d:12:PHE:CE1    | 1:n:43:GLN:CG     | 2.70                     | 0.73              |
| 2:1g:361:VAL:HG12 | 2:1g:365:TRP:NE1  | 2.02                     | 0.73              |
| 2:3h:503:PRO:HB2  | 2:3h:504:PRO:HD3  | 1.70                     | 0.73              |
| 3:2J:14:GLN:OE1   | 3:2J:14:GLN:N     | 2.22                     | 0.73              |
| 7:a:34:VAL:HG22   | 7:a:55:VAL:CG1    | 2.18                     | 0.73              |
| 3:1L:100:LEU:HD13 | 3:1L:418:VAL:HG11 | 1.71                     | 0.73              |
| 2:1i:457:GLU:HB3  | 2:1i:458:PRO:HD2  | 1.71                     | 0.73              |
| 4:R:203:TYR:CE2   | 4:R:212:ILE:HD11  | 2.23                     | 0.73              |
| 1:m:27:LEU:HB3    | 1:m:68:VAL:HB     | 1.69                     | 0.73              |
| 2:2e:376:LYS:HE2  | 2:2e:376:LYS:CA   | 2.12                     | 0.73              |
| 3:1H:399:ARG:HH21 | 3:1H:432:ASP:H    | 1.38                     | 0.72              |
| 1:p:40:ILE:CG2    | 7:f:126:VAL:HG11  | 2.05                     | 0.72              |
| 1:p:40:ILE:HG21   | 7:f:126:VAL:CB    | 2.14                     | 0.72              |
| 1:o:52:ASN:ND2    | 1:n:60:VAL:O      | 2.22                     | 0.72              |
| 3:1K:619:LEU:HD22 | 3:1K:620:THR:HG23 | 1.72                     | 0.72              |
| 4:M:157:ARG:NH1   | 7:f:53:THR:OG1    | 2.20                     | 0.72              |
| 2:3g:377:ALA:CB   | 2:3g:522:LYS:HE3  | 2.19                     | 0.72              |
| 7:f:27:CYS:SG     | 7:f:28:GLU:N      | 2.63                     | 0.72              |
| 7:d:19:GLU:N      | 7:d:19:GLU:OE2    | 2.23                     | 0.72              |
| 1:m:3:LEU:CB      | 1:m:4:PRO:HD2     | 2.11                     | 0.72              |
| 2:2g:458:PRO:HG3  | 2:3g:523:PRO:HG3  | 1.71                     | 0.72              |
| 2:3j:458:PRO:O    | 2:3j:460:ASP:N    | 2.23                     | 0.72              |
| 2:2f:247:TYR:OH   | 2:2f:250:ASP:CG   | 2.32                     | 0.72              |
| 2:1j:39:ALA:HB2   | 2:1j:266:ILE:HD13 | 1.72                     | 0.72              |
| 4:R:203:TYR:HE2   | 4:R:212:ILE:HD11  | 1.53                     | 0.72              |
| 1:p:26:TYR:HE1    | 1:p:70:ARG:HB2    | 1.54                     | 0.72              |
| 2:1j:457:GLU:OE1  | 2:1j:463:LEU:CD1  | 2.38                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:522:LYS:HZ1  | 2:1f:459:ASN:CG   | 1.97                     | 0.72              |
| 2:2f:522:LYS:HB2  | 2:1f:459:ASN:HB2  | 1.70                     | 0.72              |
| 3:1K:73:VAL:HG11  | 3:1K:447:LEU:HD21 | 1.72                     | 0.71              |
| 2:3f:49:LEU:HG    | 2:3f:50:ASN:H     | 1.54                     | 0.71              |
| 7:f:19:GLU:N      | 7:f:19:GLU:OE2    | 2.23                     | 0.71              |
| 5:E:112:VAL:HA    | 5:E:166:LEU:HD21  | 1.72                     | 0.71              |
| 6:T:61:PHE:HE2    | 2:1g:421:GLY:H    | 1.36                     | 0.71              |
| 2:3g:458:PRO:O    | 2:3g:460:ASP:N    | 2.24                     | 0.71              |
| 6:X:69:ALA:HB1    | 6:X:94:VAL:HG21   | 1.71                     | 0.71              |
| 2:2e:453:TRP:HB2  | 2:2e:456:PHE:CB   | 2.19                     | 0.71              |
| 1:l:121:LYS:HB3   | 1:l:140:THR:HB    | 1.72                     | 0.71              |
| 2:1e:84:ASN:ND2   | 2:1e:384:ARG:O    | 2.23                     | 0.71              |
| 2:1h:368:ASN:ND2  | 2:1h:378:PRO:CB   | 2.34                     | 0.71              |
| 3:2K:110:LEU:HD21 | 3:2K:409:GLN:HB2  | 1.71                     | 0.71              |
| 3:2H:197:VAL:O    | 3:2H:228:ASN:ND2  | 2.24                     | 0.71              |
| 4:O:196:GLN:OE1   | 4:O:196:GLN:N     | 2.23                     | 0.71              |
| 7:a:126:VAL:HG21  | 1:k:40:ILE:HG12   | 1.72                     | 0.71              |
| 2:2i:522:LYS:HB2  | 2:1i:459:ASN:HB2  | 1.70                     | 0.71              |
| 2:2j:244:PRO:HB2  | 2:2j:274:LEU:HA   | 1.71                     | 0.71              |
| 2:2e:477:ASN:ND2  | 7:d:1:MET:SD      | 2.59                     | 0.71              |
| 2:3h:457:GLU:HB2  | 2:3h:458:PRO:HD3  | 1.70                     | 0.71              |
| 7:a:12:PHE:HZ     | 1:k:43:GLN:HG3    | 1.55                     | 0.71              |
| 7:a:19:GLU:N      | 7:a:19:GLU:OE2    | 2.23                     | 0.71              |
| 6:U:13:PRO:O      | 6:U:15:ARG:NH1    | 2.23                     | 0.71              |
| 1:o:27:LEU:HG     | 1:n:128:LYS:HG3   | 1.73                     | 0.71              |
| 3:1G:15:GLN:NE2   | 5:A:5:SER:OG      | 2.24                     | 0.71              |
| 1:l:15:PHE:CE2    | 1:l:67:GLN:NE2    | 2.58                     | 0.71              |
| 7:d:57:TYR:CE2    | 7:d:137:GLY:HA2   | 2.26                     | 0.71              |
| 7:d:67:THR:HG23   | 7:d:69:ASP:H      | 1.55                     | 0.71              |
| 2:3g:49:LEU:HG    | 2:3g:50:ASN:H     | 1.55                     | 0.71              |
| 3:1L:157:ASP:OD2  | 3:1L:191:ARG:NH1  | 2.23                     | 0.71              |
| 1:l:62:LYS:HG3    | 1:m:37:GLN:NE2    | 2.06                     | 0.71              |
| 2:2j:458:PRO:CG   | 2:3j:520:PRO:HB2  | 2.18                     | 0.71              |
| 3:1G:500:PRO:HD3  | 3:1G:505:ARG:HB2  | 1.73                     | 0.71              |
| 3:2H:38:ASP:OD2   | 6:S:49:ARG:NH1    | 2.24                     | 0.71              |
| 2:3h:458:PRO:O    | 2:3h:460:ASP:N    | 2.24                     | 0.71              |
| 3:2K:163:GLU:HB3  | 3:2K:270:THR:HA   | 1.73                     | 0.70              |
| 2:1i:415:ARG:HB3  | 2:1i:418:ARG:HH21 | 1.54                     | 0.70              |
| 2:1h:436:ILE:HD11 | 2:1h:520:PRO:HB3  | 1.72                     | 0.70              |
| 7:a:27:CYS:SG     | 7:a:28:GLU:N      | 2.64                     | 0.70              |
| 2:2i:372:ARG:HG3  | 2:2i:376:LYS:HG2  | 1.72                     | 0.70              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2e:453:TRP:HB3  | 2:2e:456:PHE:HD1  | 1.54                     | 0.70              |
| 3:2H:163:GLU:HB3  | 3:2H:270:THR:HA   | 1.73                     | 0.70              |
| 1:m:66:VAL:HG12   | 1:m:138:THR:HG23  | 1.71                     | 0.70              |
| 2:1f:37:VAL:CG2   | 2:1f:265:GLU:O    | 2.39                     | 0.70              |
| 3:1l:500:PRO:HD3  | 3:1l:505:ARG:HB2  | 1.73                     | 0.70              |
| 2:3g:368:ASN:ND2  | 2:3g:378:PRO:HA   | 2.06                     | 0.70              |
| 2:3g:454:VAL:O    | 2:3g:456:PHE:HD1  | 1.67                     | 0.70              |
| 6:U:92:VAL:HG12   | 6:U:107:VAL:HG12  | 1.71                     | 0.70              |
| 1:k:26:TYR:CD2    | 1:k:68:VAL:CG1    | 2.73                     | 0.70              |
| 2:2e:522:LYS:HB2  | 2:1e:459:ASN:HB2  | 1.72                     | 0.70              |
| 2:1g:271:VAL:O    | 2:1g:271:VAL:HG23 | 1.90                     | 0.70              |
| 2:1g:415:ARG:HB3  | 2:1g:418:ARG:HH21 | 1.56                     | 0.70              |
| 2:3i:454:VAL:O    | 2:3i:456:PHE:HD1  | 1.73                     | 0.70              |
| 4:Q:196:GLN:N     | 4:Q:196:GLN:OE1   | 2.23                     | 0.70              |
| 1:m:63:ASP:HB3    | 1:m:143:PHE:CD2   | 2.26                     | 0.70              |
| 3:1G:101:VAL:HG21 | 3:1G:126:LEU:H    | 1.56                     | 0.70              |
| 2:3e:457:GLU:HB2  | 2:3e:458:PRO:HD3  | 1.74                     | 0.70              |
| 5:B:112:VAL:HA    | 5:B:166:LEU:HD21  | 1.71                     | 0.70              |
| 7:e:110:LEU:HD12  | 7:e:111:PRO:HD2   | 1.74                     | 0.70              |
| 3:2J:91:LEU:HB2   | 3:2J:418:VAL:HG11 | 1.72                     | 0.70              |
| 2:2h:65:PHE:CB    | 2:2h:93:ARG:HH12  | 2.03                     | 0.70              |
| 7:a:67:THR:HG23   | 7:a:69:ASP:H      | 1.55                     | 0.70              |
| 3:2L:179:VAL:CB   | 3:2L:182:CYS:HB2  | 2.19                     | 0.70              |
| 7:c:27:CYS:SG     | 7:c:28:GLU:N      | 2.64                     | 0.70              |
| 3:2l:184:LEU:N    | 3:2l:235:LEU:O    | 2.24                     | 0.70              |
| 2:3g:368:ASN:HD22 | 2:3g:378:PRO:HA   | 1.57                     | 0.70              |
| 1:k:26:TYR:CD2    | 1:k:68:VAL:HG11   | 2.27                     | 0.70              |
| 2:3f:457:GLU:HB2  | 2:3f:458:PRO:HD3  | 1.73                     | 0.70              |
| 2:1g:365:TRP:CZ2  | 2:1g:434:LEU:HD21 | 2.26                     | 0.70              |
| 3:2l:529:ILE:HD13 | 5:C:105:LEU:HD22  | 1.72                     | 0.70              |
| 2:3i:50:ASN:O     | 2:3i:50:ASN:ND2   | 2.25                     | 0.69              |
| 4:R:196:GLN:OE1   | 4:R:196:GLN:N     | 2.23                     | 0.69              |
| 1:l:58:PRO:HB3    | 1:m:49:THR:HG21   | 1.74                     | 0.69              |
| 3:2H:94:PRO:HB2   | 3:2H:130:PRO:HB3  | 1.74                     | 0.69              |
| 2:1f:457:GLU:HB3  | 2:1f:458:PRO:CD   | 2.21                     | 0.69              |
| 3:1J:71:ASP:OD2   | 3:2J:11:ARG:NH1   | 2.24                     | 0.69              |
| 4:O:37:PHE:HE1    | 4:O:98:LYS:HG2    | 1.57                     | 0.69              |
| 3:2J:490:VAL:HB   | 3:2J:535:VAL:HG12 | 1.74                     | 0.69              |
| 1:k:122:VAL:HG12  | 1:l:33:LEU:HB2    | 1.73                     | 0.69              |
| 3:2G:308:GLN:C    | 3:2G:309:ARG:HD3  | 2.17                     | 0.69              |
| 2:2j:372:ARG:HH11 | 2:2j:372:ARG:CA   | 2.04                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2K:532:ARG:HH21 | 5:E:129:THR:HB    | 1.57                     | 0.69              |
| 2:3i:421:GLY:O    | 2:3i:522:LYS:NZ   | 2.24                     | 0.69              |
| 4:Q:157:ARG:NH1   | 7:d:53:THR:OG1    | 2.21                     | 0.69              |
| 2:3j:50:ASN:HD22  | 2:3j:255:THR:H    | 1.37                     | 0.69              |
| 2:1j:415:ARG:HB3  | 2:1j:418:ARG:HH21 | 1.57                     | 0.69              |
| 6:V:64:VAL:HG22   | 2:1i:522:LYS:HZ3  | 1.58                     | 0.69              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CD2  | 2.80                     | 0.69              |
| 2:1e:497:CYS:HB2  | 2:1e:513:VAL:HG23 | 1.74                     | 0.69              |
| 3:1K:245:ARG:HH12 | 3:1L:642:ASP:HB3  | 1.57                     | 0.69              |
| 3:2K:138:THR:OG1  | 3:2K:148:ARG:NH1  | 2.26                     | 0.69              |
| 2:1e:274:LEU:HD11 | 2:1e:291:VAL:HG11 | 1.74                     | 0.69              |
| 2:1h:497:CYS:HB2  | 2:1h:513:VAL:HG23 | 1.74                     | 0.69              |
| 3:1L:458:ASP:OD1  | 5:F:102:ARG:NH2   | 2.26                     | 0.69              |
| 1:m:12:ALA:HB1    | 1:m:102:MET:HB2   | 1.74                     | 0.69              |
| 3:1l:596:PHE:HA   | 3:1l:599:LEU:HD12 | 1.74                     | 0.69              |
| 2:1g:361:VAL:O    | 2:1g:365:TRP:CD1  | 2.40                     | 0.69              |
| 2:2h:366:ALA:O    | 2:2h:370:SER:HB3  | 1.92                     | 0.69              |
| 2:3i:48:PRO:HB2   | 2:3i:51:GLU:HB3   | 1.75                     | 0.69              |
| 3:2l:167:PRO:HG3  | 3:2l:260:GLU:HA   | 1.74                     | 0.69              |
| 1:n:121:LYS:HB2   | 1:n:140:THR:HB    | 1.74                     | 0.69              |
| 3:1L:243:LEU:HD23 | 3:1L:243:LEU:N    | 2.08                     | 0.69              |
| 3:2L:532:ARG:HD2  | 5:F:129:THR:HG22  | 1.74                     | 0.69              |
| 2:3e:458:PRO:O    | 2:3e:460:ASP:N    | 2.26                     | 0.69              |
| 3:1l:190:SER:HB3  | 3:1l:272:PRO:HB2  | 1.74                     | 0.69              |
| 3:1l:469:GLU:OE1  | 3:1l:469:GLU:N    | 2.24                     | 0.69              |
| 3:2K:170:CYS:SG   | 3:2K:255:ARG:NH1  | 2.67                     | 0.68              |
| 3:2L:99:ILE:HA    | 3:2L:127:ARG:HG3  | 1.74                     | 0.68              |
| 2:2g:498:ASP:OD1  | 2:2g:499:GLU:N    | 2.27                     | 0.68              |
| 2:3i:455:VAL:HG23 | 2:3i:457:GLU:HG3  | 1.76                     | 0.68              |
| 1:p:43:GLN:NE2    | 7:f:12:PHE:O      | 2.26                     | 0.68              |
| 3:1G:123:GLU:OE2  | 3:1G:394:ARG:NH1  | 2.27                     | 0.68              |
| 1:l:127:LEU:HB2   | 1:m:28:ASN:HB3    | 1.75                     | 0.68              |
| 7:f:86:ARG:HH11   | 7:f:110:LEU:HD22  | 1.54                     | 0.68              |
| 6:V:59:LEU:HD21   | 6:V:71:ARG:HG2    | 1.76                     | 0.68              |
| 3:2G:114:ARG:HH22 | 6:S:15:ARG:HH11   | 1.40                     | 0.68              |
| 1:o:27:LEU:HB2    | 1:o:68:VAL:HB     | 1.75                     | 0.68              |
| 2:2e:372:ARG:HA   | 2:2e:372:ARG:NE   | 2.08                     | 0.68              |
| 3:1H:189:ASP:HB3  | 3:1H:275:ARG:HB2  | 1.75                     | 0.68              |
| 2:3g:372:ARG:HH11 | 2:3g:376:LYS:HE3  | 1.58                     | 0.68              |
| 1:n:36:GLU:OE1    | 1:n:36:GLU:N      | 2.24                     | 0.68              |
| 2:2i:376:LYS:HE3  | 2:2i:376:LYS:CA   | 2.05                     | 0.68              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3f:458:PRO:O    | 2:3f:460:ASP:N    | 2.26                     | 0.68              |
| 7:a:50:GLN:HA     | 7:a:50:GLN:NE2    | 2.07                     | 0.68              |
| 2:2j:367:ARG:HH22 | 2:2j:381:GLU:CG   | 2.06                     | 0.68              |
| 1:k:26:TYR:HD2    | 1:k:68:VAL:HG11   | 1.59                     | 0.68              |
| 3:2H:135:ARG:HB3  | 3:2H:149:THR:HG23 | 1.74                     | 0.68              |
| 3:2K:133:MET:HE2  | 3:2K:279:ALA:H    | 1.57                     | 0.68              |
| 2:2g:374:VAL:HG11 | 2:2g:442:TYR:CE2  | 2.27                     | 0.68              |
| 2:2j:254:ARG:HH22 | 2:3j:394:THR:H    | 1.39                     | 0.68              |
| 2:1e:415:ARG:HB3  | 2:1e:418:ARG:HH21 | 1.59                     | 0.68              |
| 3:2H:203:PRO:HD2  | 3:2H:267:PHE:HE1  | 1.58                     | 0.68              |
| 2:1f:263:ILE:HG22 | 2:1f:265:GLU:H    | 1.57                     | 0.68              |
| 1:o:105:GLU:N     | 1:o:105:GLU:OE2   | 2.27                     | 0.68              |
| 3:1K:71:ASP:OD2   | 3:2K:11:ARG:NH1   | 2.25                     | 0.68              |
| 1:p:27:LEU:HD23   | 1:p:68:VAL:HG21   | 1.76                     | 0.68              |
| 2:3j:496:LYS:NZ   | 2:3j:498:ASP:OD2  | 2.22                     | 0.68              |
| 2:1h:415:ARG:HB3  | 2:1h:418:ARG:HH21 | 1.58                     | 0.68              |
| 2:2j:367:ARG:HH22 | 2:2j:381:GLU:HG3  | 1.58                     | 0.68              |
| 1:k:121:LYS:HB3   | 1:k:140:THR:HB    | 1.76                     | 0.68              |
| 2:3e:454:VAL:O    | 2:3e:456:PHE:CD2  | 2.46                     | 0.68              |
| 2:1f:37:VAL:HG23  | 2:1f:266:ILE:HA   | 1.76                     | 0.68              |
| 3:2L:423:ASN:ND2  | 3:2L:425:GLU:O    | 2.27                     | 0.68              |
| 2:2i:459:ASN:CG   | 2:2i:507:VAL:HG11 | 2.19                     | 0.67              |
| 3:1L:210:THR:HG21 | 3:1L:215:GLN:HE22 | 1.59                     | 0.67              |
| 1:k:35:ILE:HG12   | 1:k:57:MET:HG2    | 1.74                     | 0.67              |
| 7:c:67:THR:HG23   | 7:c:69:ASP:H      | 1.58                     | 0.67              |
| 2:2f:469:ARG:NH1  | 1:m:98:THR:OG1    | 2.27                     | 0.67              |
| 3:1L:243:LEU:H    | 3:1L:243:LEU:CD2  | 2.07                     | 0.67              |
| 3:2L:178:ALA:HB1  | 3:2L:241:HIS:HE1  | 1.57                     | 0.67              |
| 6:S:64:VAL:HA     | 2:1f:522:LYS:NZ   | 2.08                     | 0.67              |
| 3:1l:100:LEU:HD13 | 3:1l:418:VAL:HG11 | 1.76                     | 0.67              |
| 7:e:67:THR:HG23   | 7:e:69:ASP:H      | 1.57                     | 0.67              |
| 1:o:66:VAL:CG1    | 1:o:138:THR:CG2   | 2.73                     | 0.67              |
| 6:V:15:ARG:HH21   | 3:2J:114:ARG:HH22 | 1.42                     | 0.67              |
| 2:2e:275:MET:HE1  | 2:2e:312:PRO:HA   | 1.75                     | 0.67              |
| 1:p:36:GLU:HB3    | 1:p:57:MET:HG2    | 1.77                     | 0.67              |
| 2:1i:38:ALA:HB2   | 2:1i:268:MET:HE3  | 1.75                     | 0.67              |
| 3:1H:17:VAL:HG21  | 3:1H:55:VAL:HB    | 1.76                     | 0.67              |
| 2:3i:44:ALA:H     | 2:3i:93:ARG:HG3   | 1.59                     | 0.67              |
| 2:1i:437:ARG:O    | 2:1i:441:ASN:ND2  | 2.27                     | 0.67              |
| 6:S:64:VAL:HA     | 2:1f:522:LYS:HZ1  | 1.59                     | 0.67              |
| 7:d:126:VAL:HG21  | 1:n:40:ILE:HG12   | 1.76                     | 0.67              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:169:ASP:HB3  | 3:1l:258:VAL:HB   | 1.75                     | 0.67              |
| 2:3g:37:VAL:HG21  | 2:3g:265:GLU:HG2  | 1.76                     | 0.67              |
| 3:1J:327:GLN:OE1  | 3:1J:389:ARG:NH2  | 2.27                     | 0.67              |
| 3:1L:172:LEU:CD2  | 3:1L:253:TRP:CH2  | 2.78                     | 0.67              |
| 1:k:9:VAL:HG12    | 1:k:11:VAL:H      | 1.60                     | 0.67              |
| 3:1H:70:LEU:HD22  | 3:1H:75:ILE:HD11  | 1.76                     | 0.67              |
| 6:S:69:ALA:HB1    | 6:S:94:VAL:HG21   | 1.77                     | 0.67              |
| 4:N:214:GLU:OE1   | 3:2l:60:ARG:NH1   | 2.27                     | 0.67              |
| 2:2g:467:ILE:CG1  | 2:2g:511:ARG:HH11 | 2.05                     | 0.67              |
| 1:o:40:ILE:HG12   | 7:e:126:VAL:HG21  | 1.75                     | 0.67              |
| 3:1K:561:ARG:O    | 3:1K:565:HIS:ND1  | 2.28                     | 0.67              |
| 3:1H:525:GLU:OE2  | 3:2H:457:ARG:NH1  | 2.27                     | 0.67              |
| 1:m:122:VAL:O     | 1:n:33:LEU:CD2    | 2.41                     | 0.67              |
| 7:a:32:THR:CG2    | 7:a:57:TYR:CD2    | 2.77                     | 0.67              |
| 1:p:66:VAL:HG13   | 1:p:138:THR:CG2   | 2.25                     | 0.67              |
| 2:1f:244:PRO:HB3  | 2:1f:274:LEU:HB3  | 1.76                     | 0.67              |
| 3:1L:172:LEU:HD22 | 3:1L:253:TRP:CH2  | 2.29                     | 0.67              |
| 3:2L:137:VAL:HG11 | 3:2L:145:VAL:HG23 | 1.76                     | 0.67              |
| 2:1g:476:VAL:HG12 | 2:1g:489:PRO:HB3  | 1.76                     | 0.67              |
| 2:1j:412:PHE:HZ   | 2:1j:420:TRP:CD2  | 2.13                     | 0.67              |
| 3:2G:355:VAL:HG23 | 3:2G:362:ILE:HG12 | 1.76                     | 0.67              |
| 7:c:19:GLU:OE1    | 7:c:19:GLU:N      | 2.28                     | 0.67              |
| 2:3g:302:MET:HE2  | 2:3g:305:ARG:HH12 | 1.60                     | 0.67              |
| 3:2K:184:LEU:O    | 3:2K:235:LEU:N    | 2.26                     | 0.66              |
| 2:2i:393:ILE:HD11 | 2:2i:397:GLU:HB2  | 1.77                     | 0.66              |
| 3:1H:190:SER:HB3  | 3:1H:272:PRO:HB2  | 1.76                     | 0.66              |
| 3:2H:36:VAL:HG11  | 3:2H:42:THR:HG21  | 1.76                     | 0.66              |
| 3:2H:423:ASN:ND2  | 3:2H:425:GLU:O    | 2.26                     | 0.66              |
| 3:1H:173:ILE:HG21 | 3:1H:186:LEU:HD21 | 1.77                     | 0.66              |
| 3:1H:229:ARG:HE   | 3:1H:230:PRO:HD2  | 1.58                     | 0.66              |
| 2:1h:437:ARG:NH1  | 2:1h:441:ASN:OD1  | 2.29                     | 0.66              |
| 2:1h:453:TRP:O    | 2:1h:511:ARG:NH1  | 2.28                     | 0.66              |
| 3:1K:312:LEU:HD21 | 3:1K:362:ILE:HD13 | 1.78                     | 0.66              |
| 2:3i:365:TRP:O    | 2:3i:369:ASP:CG   | 2.38                     | 0.66              |
| 3:2G:44:VAL:HA    | 3:2G:47:VAL:HG22  | 1.77                     | 0.66              |
| 2:2e:469:ARG:NH1  | 1:l:98:THR:OG1    | 2.29                     | 0.66              |
| 2:1h:45:PRO:O     | 2:1h:93:ARG:NH2   | 2.28                     | 0.66              |
| 7:f:67:THR:HG23   | 7:f:69:ASP:H      | 1.58                     | 0.66              |
| 7:a:34:VAL:HG22   | 7:a:55:VAL:HG12   | 1.77                     | 0.66              |
| 2:3j:490:ASP:OD1  | 2:3j:491:GLN:N    | 2.29                     | 0.66              |
| 4:M:196:GLN:OE1   | 4:M:196:GLN:N     | 2.28                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:457:GLU:CB   | 2:2f:458:PRO:CD   | 2.63                     | 0.66              |
| 6:T:69:ALA:HB1    | 6:T:94:VAL:HG21   | 1.78                     | 0.66              |
| 2:2g:458:PRO:CG   | 2:3g:523:PRO:HD3  | 2.24                     | 0.66              |
| 1:n:72:MET:HG2    | 1:n:137:GLU:HB2   | 1.78                     | 0.66              |
| 3:1J:327:GLN:HB3  | 3:1J:334:TRP:HB3  | 1.78                     | 0.66              |
| 3:1J:453:ALA:HB2  | 3:1J:462:LEU:HD23 | 1.76                     | 0.66              |
| 3:2J:302:SER:HB3  | 3:2J:388:ILE:HD11 | 1.78                     | 0.66              |
| 3:1L:469:GLU:N    | 3:1L:469:GLU:OE2  | 2.24                     | 0.66              |
| 1:k:122:VAL:CG1   | 1:l:33:LEU:CD1    | 2.63                     | 0.66              |
| 2:2e:377:ALA:HB2  | 2:2e:435:ASN:HB2  | 1.76                     | 0.66              |
| 2:1e:263:ILE:HG22 | 2:1e:265:GLU:H    | 1.58                     | 0.66              |
| 2:2g:45:PRO:HD2   | 2:2g:65:PHE:HE1   | 1.61                     | 0.66              |
| 3:2J:532:ARG:HD3  | 5:D:139:PRO:HG2   | 1.77                     | 0.66              |
| 2:3h:455:VAL:HG23 | 2:3h:457:GLU:HG3  | 1.77                     | 0.66              |
| 3:1G:260:GLU:HG2  | 3:1G:262:LEU:H    | 1.58                     | 0.66              |
| 3:2G:114:ARG:NH2  | 6:S:15:ARG:HD2    | 2.10                     | 0.66              |
| 2:2e:368:ASN:CB   | 2:2e:378:PRO:CB   | 2.68                     | 0.66              |
| 3:2H:302:SER:HA   | 3:2H:308:GLN:HE22 | 1.60                     | 0.66              |
| 2:2f:372:ARG:HB3  | 2:2f:372:ARG:HH21 | 1.60                     | 0.66              |
| 3:1G:327:GLN:OE1  | 3:1G:389:ARG:NH2  | 2.29                     | 0.66              |
| 3:2G:163:GLU:HB3  | 3:2G:270:THR:HA   | 1.78                     | 0.66              |
| 4:M:148:LEU:HD12  | 4:M:157:ARG:NH1   | 2.09                     | 0.66              |
| 3:1l:123:GLU:OE1  | 3:1l:394:ARG:NH1  | 2.28                     | 0.66              |
| 2:3i:73:TYR:HE1   | 2:3i:353:ARG:HH21 | 1.42                     | 0.66              |
| 1:p:38:ASP:CB     | 1:p:55:THR:OG1    | 2.44                     | 0.66              |
| 7:c:88:THR:HG21   | 2:1e:469:ARG:HB3  | 1.78                     | 0.66              |
| 1:l:36:GLU:HG2    | 1:l:57:MET:HG3    | 1.77                     | 0.66              |
| 7:e:106:LEU:HD23  | 7:e:135:HIS:CE1   | 2.31                     | 0.66              |
| 2:2g:512:VAL:HG23 | 2:3g:527:VAL:HG23 | 1.78                     | 0.66              |
| 1:l:46:GLN:HE22   | 1:l:48:THR:HB     | 1.61                     | 0.66              |
| 2:3f:454:VAL:O    | 2:3f:456:PHE:HD2  | 1.78                     | 0.66              |
| 1:m:29:SER:OG     | 1:m:30:VAL:N      | 2.28                     | 0.66              |
| 3:1K:327:GLN:OE1  | 3:1K:389:ARG:NH2  | 2.29                     | 0.65              |
| 3:1K:629:ARG:NH2  | 3:1K:631:ASP:OD1  | 2.29                     | 0.65              |
| 3:1G:136:LEU:HD11 | 3:1G:277:ALA:HB2  | 1.78                     | 0.65              |
| 2:2h:457:GLU:HG2  | 2:2h:463:LEU:HD13 | 1.77                     | 0.65              |
| 4:P:88:MET:CE     | 7:b:86:ARG:HD2    | 2.26                     | 0.65              |
| 2:2f:43:LEU:HD13  | 2:2f:244:PRO:HB3  | 1.78                     | 0.65              |
| 1:m:97:ALA:HB3    | 1:m:114:LEU:HD12  | 1.78                     | 0.65              |
| 2:3g:35:THR:HG22  | 2:3g:36:SER:H     | 1.61                     | 0.65              |
| 4:O:126:GLU:OE2   | 4:O:134:ARG:NH1   | 2.29                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3j:454:VAL:O    | 2:3j:456:PHE:HD1  | 1.78                     | 0.65              |
| 3:2G:136:LEU:HD22 | 3:2G:152:LEU:HD23 | 1.78                     | 0.65              |
| 1:l:15:PHE:CZ     | 1:l:25:GLU:HG2    | 2.31                     | 0.65              |
| 3:1H:642:ASP:OD1  | 3:1H:644:ARG:NH1  | 2.28                     | 0.65              |
| 3:1J:544:THR:HG23 | 3:1J:643:HIS:HB3  | 1.77                     | 0.65              |
| 2:3e:455:VAL:HG23 | 2:3e:457:GLU:HG3  | 1.78                     | 0.65              |
| 4:N:196:GLN:OE1   | 4:N:196:GLN:N     | 2.26                     | 0.65              |
| 2:3g:455:VAL:HG23 | 2:3g:457:GLU:HG3  | 1.78                     | 0.65              |
| 2:3h:49:LEU:HG    | 2:3h:50:ASN:H     | 1.61                     | 0.65              |
| 3:2H:139:GLN:NE2  | 3:2H:170:CYS:SG   | 2.69                     | 0.65              |
| 3:1K:39:PRO:HD2   | 3:1K:43:LEU:HB2   | 1.78                     | 0.65              |
| 7:b:88:THR:HG21   | 2:1j:469:ARG:HB3  | 1.79                     | 0.65              |
| 2:3j:49:LEU:HG    | 2:3j:50:ASN:H     | 1.59                     | 0.65              |
| 1:l:122:VAL:C     | 1:m:33:LEU:HD23   | 2.21                     | 0.65              |
| 3:1L:172:LEU:CB   | 3:1L:253:TRP:HZ3  | 2.04                     | 0.65              |
| 2:3j:37:VAL:HG21  | 2:3j:265:GLU:HG3  | 1.78                     | 0.65              |
| 1:l:118:TRP:HZ2   | 1:m:56:LEU:HD23   | 1.62                     | 0.65              |
| 2:2f:254:ARG:NH2  | 2:3f:397:GLU:OE2  | 2.24                     | 0.65              |
| 2:2g:372:ARG:HG3  | 2:2g:372:ARG:NH1  | 2.04                     | 0.65              |
| 2:3h:507:VAL:O    | 2:3h:509:LEU:N    | 2.29                     | 0.65              |
| 6:V:92:VAL:HG12   | 6:V:107:VAL:HG12  | 1.77                     | 0.65              |
| 7:a:33:GLN:HG2    | 7:f:113:SER:CB    | 2.24                     | 0.65              |
| 3:1H:327:GLN:OE1  | 3:1H:389:ARG:NH2  | 2.30                     | 0.65              |
| 7:d:117:PRO:HB3   | 7:d:127:ALA:HB1   | 1.77                     | 0.65              |
| 3:2l:139:GLN:NE2  | 3:2l:170:CYS:SG   | 2.70                     | 0.65              |
| 2:3i:457:GLU:HB2  | 2:3i:458:PRO:CD   | 2.25                     | 0.65              |
| 3:1L:561:ARG:O    | 3:1L:565:HIS:ND1  | 2.30                     | 0.65              |
| 3:1J:123:GLU:OE2  | 3:1J:394:ARG:NH1  | 2.30                     | 0.65              |
| 3:2K:24:ILE:H     | 3:2K:24:ILE:HD12  | 1.61                     | 0.65              |
| 6:S:59:LEU:HD21   | 6:S:71:ARG:HG2    | 1.77                     | 0.65              |
| 2:3f:368:ASN:HD22 | 2:3f:378:PRO:CA   | 2.10                     | 0.65              |
| 3:1K:525:GLU:OE2  | 3:2K:457:ARG:NH2  | 2.29                     | 0.64              |
| 1:p:45:ASN:OD1    | 1:p:46:GLN:NE2    | 2.29                     | 0.64              |
| 3:1L:500:PRO:HD3  | 3:1L:505:ARG:HB2  | 1.78                     | 0.64              |
| 2:1j:457:GLU:OE1  | 2:1j:463:LEU:HD11 | 1.96                     | 0.64              |
| 3:2H:172:LEU:C    | 3:2H:173:ILE:HD13 | 2.21                     | 0.64              |
| 3:2H:470:THR:HB   | 3:2H:473:ILE:HD11 | 1.79                     | 0.64              |
| 3:1l:16:PHE:O     | 3:2l:369:ARG:NH2  | 2.28                     | 0.64              |
| 7:f:34:VAL:HG22   | 7:f:55:VAL:HG22   | 1.79                     | 0.64              |
| 2:1i:46:THR:HA    | 2:1i:93:ARG:HH21  | 1.62                     | 0.64              |
| 6:S:100:GLN:HE22  | 2:1f:520:PRO:HD2  | 1.61                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:327:GLN:OE1  | 3:1l:389:ARG:NH2  | 2.29                     | 0.64              |
| 3:2J:97:ASP:HB2   | 3:2J:129:VAL:HB   | 1.78                     | 0.64              |
| 3:1K:399:ARG:HH21 | 3:1K:432:ASP:H    | 1.46                     | 0.64              |
| 3:1K:619:LEU:HD23 | 3:1K:619:LEU:C    | 2.21                     | 0.64              |
| 1:n:112:TRP:O     | 1:n:114:LEU:HD13  | 1.97                     | 0.64              |
| 3:2J:137:VAL:HB   | 3:2J:172:LEU:HD12 | 1.78                     | 0.64              |
| 1:p:40:ILE:HG23   | 7:f:126:VAL:HB    | 1.78                     | 0.64              |
| 2:1e:436:ILE:HD11 | 2:1e:520:PRO:HB3  | 1.80                     | 0.64              |
| 3:1H:294:VAL:HB   | 3:1H:393:TYR:HB2  | 1.79                     | 0.64              |
| 6:S:12:PHE:HB3    | 6:S:13:PRO:HD3    | 1.80                     | 0.64              |
| 2:1h:457:GLU:OE1  | 2:1h:463:LEU:CD1  | 2.41                     | 0.64              |
| 2:2i:376:LYS:HD3  | 2:1i:457:GLU:HA   | 1.79                     | 0.64              |
| 3:1L:66:HIS:HA    | 5:F:74:TRP:HZ2    | 1.62                     | 0.64              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CZ3  | 2.86                     | 0.64              |
| 2:2e:451:THR:O    | 2:2e:452:GLN:NE2  | 2.30                     | 0.64              |
| 7:d:27:CYS:SG     | 7:d:28:GLU:N      | 2.70                     | 0.64              |
| 2:2f:522:LYS:HE3  | 2:1f:459:ASN:HB2  | 1.78                     | 0.64              |
| 3:2l:43:LEU:HD11  | 6:T:46:ARG:CZ     | 2.26                     | 0.64              |
| 2:2g:511:ARG:HH21 | 2:2g:511:ARG:CG   | 2.10                     | 0.64              |
| 2:2h:457:GLU:OE2  | 2:2h:463:LEU:N    | 2.30                     | 0.64              |
| 3:2K:302:SER:HA   | 3:2K:308:GLN:HE22 | 1.63                     | 0.64              |
| 3:1L:571:HIS:HB2  | 3:1L:598:VAL:HG21 | 1.80                     | 0.64              |
| 3:2G:328:THR:OG1  | 3:2G:337:TRP:NE1  | 2.28                     | 0.64              |
| 2:3e:368:ASN:ND2  | 2:3e:378:PRO:CA   | 2.52                     | 0.64              |
| 1:l:44:GLN:N      | 1:l:44:GLN:OE1    | 2.28                     | 0.64              |
| 2:1h:50:ASN:ND2   | 2:1h:94:VAL:HG23  | 2.12                     | 0.64              |
| 6:W:12:PHE:HB3    | 6:W:13:PRO:HD3    | 1.79                     | 0.64              |
| 2:1i:368:ASN:ND2  | 2:1i:378:PRO:CB   | 2.60                     | 0.64              |
| 4:Q:56:ALA:HB2    | 4:Q:68:PRO:HB3    | 1.80                     | 0.64              |
| 2:3j:337:LEU:HB3  | 2:3j:406:VAL:HG23 | 1.80                     | 0.64              |
| 2:3e:302:MET:SD   | 2:3e:305:ARG:NH2  | 2.70                     | 0.64              |
| 3:1G:528:LEU:HD23 | 3:1G:528:LEU:H    | 1.60                     | 0.64              |
| 2:3e:507:VAL:HG22 | 2:3e:509:LEU:H    | 1.61                     | 0.64              |
| 3:1H:123:GLU:OE2  | 3:1H:394:ARG:NH1  | 2.30                     | 0.64              |
| 4:N:195:LEU:HD11  | 4:N:218:ILE:HD11  | 1.79                     | 0.64              |
| 3:2l:24:ILE:H     | 3:2l:24:ILE:HD12  | 1.62                     | 0.64              |
| 2:1g:361:VAL:HG13 | 2:1g:365:TRP:HE1  | 1.59                     | 0.64              |
| 2:1g:454:VAL:HG22 | 2:1g:455:VAL:HG23 | 1.80                     | 0.64              |
| 3:2J:423:ASN:ND2  | 3:2J:425:GLU:O    | 2.30                     | 0.64              |
| 2:1h:466:ARG:NH1  | 7:f:17:ASP:OD1    | 2.27                     | 0.64              |
| 2:1h:515:GLU:C    | 2:1h:516:ILE:HD12 | 2.22                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1K:175:LEU:H    | 3:1K:251:ALA:HB1  | 1.62                     | 0.64              |
| 2:3i:368:ASN:HD22 | 2:3i:378:PRO:HA   | 1.62                     | 0.64              |
| 1:p:120:SER:O     | 1:k:35:ILE:HG22   | 1.98                     | 0.64              |
| 7:c:80:VAL:HG22   | 7:c:84:ILE:HD11   | 1.80                     | 0.64              |
| 3:1H:204:LEU:HD23 | 3:1H:258:VAL:HG22 | 1.80                     | 0.64              |
| 2:1h:239:SER:HB2  | 2:1h:242:PRO:HG2  | 1.80                     | 0.63              |
| 2:1i:437:ARG:HD3  | 2:1i:441:ASN:ND2  | 2.13                     | 0.63              |
| 3:2L:137:VAL:HB   | 3:2L:172:LEU:HD12 | 1.80                     | 0.63              |
| 7:d:54:ARG:NH1    | 7:e:40:GLN:OE1    | 2.32                     | 0.63              |
| 2:1f:38:ALA:HB2   | 2:1f:268:MET:HE3  | 1.79                     | 0.63              |
| 2:2h:241:HIS:CG   | 2:2h:242:PRO:HD3  | 2.34                     | 0.63              |
| 1:p:66:VAL:HA     | 1:p:139:ILE:O     | 1.98                     | 0.63              |
| 2:2e:456:PHE:O    | 2:3e:376:LYS:HD3  | 1.97                     | 0.63              |
| 2:1e:304:ASP:O    | 2:1e:441:ASN:ND2  | 2.31                     | 0.63              |
| 3:2H:184:LEU:HD11 | 3:2H:279:ALA:HB1  | 1.80                     | 0.63              |
| 6:S:66:GLU:HA     | 6:S:69:ALA:HB3    | 1.79                     | 0.63              |
| 2:3f:368:ASN:ND2  | 2:3f:378:PRO:CA   | 2.58                     | 0.63              |
| 1:m:130:GLY:H     | 1:n:11:VAL:HG12   | 1.63                     | 0.63              |
| 2:1j:39:ALA:HB3   | 2:1j:269:VAL:HG23 | 1.81                     | 0.63              |
| 3:2G:408:VAL:HG12 | 3:2G:423:ASN:HD22 | 1.63                     | 0.63              |
| 2:3e:296:ILE:HD11 | 2:3e:309:ILE:HD11 | 1.80                     | 0.63              |
| 3:1H:299:LEU:HD13 | 3:1H:388:ILE:HG22 | 1.80                     | 0.63              |
| 3:1H:469:GLU:OE1  | 3:1H:469:GLU:N    | 2.22                     | 0.63              |
| 2:3g:372:ARG:NH1  | 2:3g:376:LYS:CE   | 2.56                     | 0.63              |
| 3:1J:500:PRO:HD3  | 3:1J:505:ARG:HB2  | 1.79                     | 0.63              |
| 3:1L:480:GLU:HA   | 3:1L:486:HIS:HB3  | 1.79                     | 0.63              |
| 2:1e:238:GLU:HG2  | 2:1e:244:PRO:HD3  | 1.79                     | 0.63              |
| 2:2i:41:VAL:HG12  | 2:2i:92:VAL:HB    | 1.80                     | 0.63              |
| 2:2i:247:TYR:HD2  | 2:2i:256:GLY:HA3  | 1.64                     | 0.63              |
| 2:2j:512:VAL:HG23 | 2:3j:527:VAL:HG23 | 1.80                     | 0.63              |
| 1:k:116:ASN:ND2   | 1:k:144:GLU:OE1   | 2.27                     | 0.63              |
| 3:2G:525:GLU:OE1  | 3:2G:525:GLU:HA   | 1.99                     | 0.63              |
| 7:c:86:ARG:HH21   | 7:c:110:LEU:HB2   | 1.64                     | 0.63              |
| 2:2e:376:LYS:HE3  | 2:1e:458:PRO:HG3  | 1.81                     | 0.63              |
| 1:l:45:ASN:OD1    | 1:l:46:GLN:N      | 2.31                     | 0.63              |
| 3:1J:547:ALA:HB2  | 3:1J:611:VAL:HG13 | 1.79                     | 0.63              |
| 3:2J:100:LEU:H    | 3:2J:127:ARG:HG2  | 1.62                     | 0.63              |
| 2:3j:457:GLU:HB2  | 2:3j:458:PRO:HD3  | 1.80                     | 0.63              |
| 1:l:106:ASP:O     | 1:l:107:ASN:ND2   | 2.25                     | 0.63              |
| 2:2f:247:TYR:HH   | 2:2f:250:ASP:CG   | 2.07                     | 0.63              |
| 2:1h:456:PHE:HB2  | 2:2h:380:ASN:HB3  | 1.81                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:b:86:ARG:HH21   | 7:b:110:LEU:HB2   | 1.62                     | 0.63              |
| 2:3j:368:ASN:HD22 | 2:3j:378:PRO:CB   | 2.12                     | 0.63              |
| 2:1e:384:ARG:O    | 2:1e:384:ARG:HG2  | 1.99                     | 0.63              |
| 3:2H:97:ASP:HB2   | 3:2H:129:VAL:HB   | 1.80                     | 0.63              |
| 3:2J:44:VAL:HA    | 3:2J:47:VAL:HG12  | 1.81                     | 0.63              |
| 6:V:43:PRO:HG3    | 6:V:55:ALA:HB2    | 1.81                     | 0.63              |
| 1:k:131:ASP:HB3   | 1:l:10:LEU:HD12   | 1.81                     | 0.63              |
| 4:M:35:LYS:HD3    | 4:M:101:SER:HB2   | 1.81                     | 0.63              |
| 2:2f:65:PHE:HB3   | 2:2f:93:ARG:NH1   | 2.13                     | 0.63              |
| 3:2l:135:ARG:HD2  | 3:2l:149:THR:HG22 | 1.80                     | 0.63              |
| 2:3g:73:TYR:HE1   | 2:3g:353:ARG:HH21 | 1.46                     | 0.63              |
| 2:3g:377:ALA:HB2  | 2:3g:522:LYS:CD   | 2.28                     | 0.63              |
| 2:1g:497:CYS:HB2  | 2:1g:513:VAL:HG23 | 1.81                     | 0.63              |
| 3:1K:204:LEU:HD23 | 3:1K:258:VAL:HG22 | 1.79                     | 0.63              |
| 4:P:210:ARG:NH2   | 3:2K:52:ASP:OD1   | 2.31                     | 0.63              |
| 3:2H:527:ARG:NH1  | 3:2H:531:THR:O    | 2.32                     | 0.63              |
| 2:3f:368:ASN:HD21 | 2:3f:378:PRO:HA   | 1.63                     | 0.63              |
| 7:e:89:ALA:HB3    | 7:e:106:LEU:HD12  | 1.81                     | 0.63              |
| 2:1g:45:PRO:O     | 2:1g:93:ARG:NH2   | 2.32                     | 0.63              |
| 2:1g:392:GLN:HE22 | 2:1g:411:SER:HB3  | 1.64                     | 0.63              |
| 2:2h:71:GLY:HA2   | 2:2h:353:ARG:HH22 | 1.63                     | 0.63              |
| 1:o:127:LEU:HD21  | 1:o:135:LEU:HD11  | 1.81                     | 0.62              |
| 3:1K:189:ASP:OD1  | 3:1K:190:SER:N    | 2.31                     | 0.62              |
| 3:2L:324:VAL:HG21 | 3:2L:355:VAL:HG21 | 1.81                     | 0.62              |
| 3:2L:355:VAL:HG23 | 3:2L:362:ILE:HG12 | 1.80                     | 0.62              |
| 2:3e:398:GLN:NE2  | 2:3e:402:ASN:OD1  | 2.31                     | 0.62              |
| 3:1H:17:VAL:HG12  | 3:2H:369:ARG:HH22 | 1.63                     | 0.62              |
| 1:m:115:ARG:O     | 1:m:116:ASN:ND2   | 2.31                     | 0.62              |
| 2:1f:37:VAL:HG21  | 2:1f:265:GLU:C    | 2.24                     | 0.62              |
| 2:3h:302:MET:SD   | 2:3h:305:ARG:NH2  | 2.72                     | 0.62              |
| 7:a:12:PHE:CE1    | 1:k:43:GLN:CG     | 2.82                     | 0.62              |
| 3:1L:191:ARG:NH1  | 3:1L:273:THR:OG1  | 2.32                     | 0.62              |
| 2:1j:241:HIS:HB2  | 2:1j:247:TYR:HD2  | 1.64                     | 0.62              |
| 4:R:210:ARG:NH2   | 3:2G:52:ASP:OD1   | 2.31                     | 0.62              |
| 3:2G:136:LEU:HD13 | 3:2G:152:LEU:HB3  | 1.81                     | 0.62              |
| 2:2e:457:GLU:CG   | 2:2e:458:PRO:CD   | 2.59                     | 0.62              |
| 2:3e:454:VAL:O    | 2:3e:456:PHE:HD2  | 1.82                     | 0.62              |
| 3:1H:543:VAL:HG12 | 3:1H:613:LEU:HD12 | 1.80                     | 0.62              |
| 2:3f:47:GLY:O     | 2:3f:93:ARG:NH1   | 2.32                     | 0.62              |
| 2:3g:369:ASP:OD2  | 2:3g:374:VAL:HG23 | 1.99                     | 0.62              |
| 3:2J:227:LEU:O    | 3:2J:272:PRO:HG3  | 1.99                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3h:47:GLY:O     | 2:3h:93:ARG:NH1   | 2.32                     | 0.62              |
| 3:2G:425:GLU:HA   | 3:2G:425:GLU:OE2  | 1.98                     | 0.62              |
| 2:2f:438:ARG:CB   | 2:2f:438:ARG:HH11 | 2.12                     | 0.62              |
| 2:2f:438:ARG:HH11 | 2:2f:438:ARG:HB3  | 1.63                     | 0.62              |
| 3:1l:53:GLN:OE1   | 3:2l:22:ARG:NH2   | 2.32                     | 0.62              |
| 2:2g:458:PRO:HG3  | 2:3g:523:PRO:HD3  | 1.80                     | 0.62              |
| 4:P:157:ARG:HH12  | 7:c:53:THR:HG1    | 1.44                     | 0.62              |
| 3:2K:64:LYS:HD2   | 5:E:55:ASP:HB2    | 1.81                     | 0.62              |
| 1:p:36:GLU:HB3    | 1:p:57:MET:CG     | 2.29                     | 0.62              |
| 3:1L:175:LEU:O    | 3:1L:251:ALA:HA   | 1.99                     | 0.62              |
| 2:1j:392:GLN:HE22 | 2:1j:411:SER:HB3  | 1.63                     | 0.62              |
| 6:X:92:VAL:HG12   | 6:X:107:VAL:HG12  | 1.81                     | 0.62              |
| 2:2e:368:ASN:ND2  | 2:2e:376:LYS:O    | 2.33                     | 0.62              |
| 3:1H:16:PHE:HE2   | 5:B:50:VAL:HG13   | 1.65                     | 0.62              |
| 3:1H:571:HIS:HB2  | 3:1H:598:VAL:HG21 | 1.81                     | 0.62              |
| 2:2j:451:THR:O    | 2:2j:452:GLN:NE2  | 2.32                     | 0.62              |
| 2:3j:260:LEU:HD23 | 2:3j:305:ARG:HH12 | 1.64                     | 0.62              |
| 3:1G:525:GLU:OE2  | 3:2G:457:ARG:NH1  | 2.32                     | 0.62              |
| 7:c:117:PRO:HB3   | 7:c:127:ALA:HB1   | 1.81                     | 0.62              |
| 2:2f:379:ALA:HB3  | 2:1f:455:VAL:HG12 | 1.81                     | 0.62              |
| 4:N:210:ARG:NH2   | 3:2l:52:ASP:OD1   | 2.31                     | 0.62              |
| 2:2g:65:PHE:HB2   | 2:2g:93:ARG:HH12  | 1.64                     | 0.62              |
| 3:1K:326:LEU:HD23 | 3:1K:326:LEU:H    | 1.63                     | 0.62              |
| 3:1K:619:LEU:HD23 | 3:1K:619:LEU:O    | 1.99                     | 0.62              |
| 7:e:10:ILE:HD13   | 1:n:58:PRO:HD3    | 1.80                     | 0.62              |
| 2:3g:369:ASP:OD1  | 2:3g:374:VAL:HA   | 1.99                     | 0.62              |
| 1:o:25:GLU:OE1    | 1:o:25:GLU:N      | 2.31                     | 0.62              |
| 1:o:66:VAL:CG1    | 1:o:138:THR:HG22  | 2.30                     | 0.62              |
| 3:2K:324:VAL:HG21 | 3:2K:355:VAL:HG21 | 1.82                     | 0.62              |
| 2:3i:275:MET:HE1  | 2:3i:312:PRO:HA   | 1.79                     | 0.62              |
| 1:l:122:VAL:O     | 1:m:33:LEU:HD22   | 1.99                     | 0.62              |
| 2:1f:368:ASN:ND2  | 2:1f:378:PRO:HA   | 2.14                     | 0.62              |
| 3:2J:47:VAL:HG21  | 5:D:23:LEU:HD23   | 1.79                     | 0.62              |
| 2:3h:37:VAL:HG21  | 2:3h:265:GLU:HG2  | 1.82                     | 0.62              |
| 2:2i:514:CYS:HB3  | 2:3i:529:PHE:HB2  | 1.82                     | 0.62              |
| 3:1G:642:ASP:OD2  | 3:1G:644:ARG:NH1  | 2.29                     | 0.62              |
| 1:m:66:VAL:HA     | 1:m:139:ILE:O     | 1.97                     | 0.62              |
| 1:o:44:GLN:N      | 1:o:44:GLN:OE1    | 2.31                     | 0.62              |
| 3:2K:144:ALA:O    | 3:2K:148:ARG:NH2  | 2.31                     | 0.62              |
| 2:2e:372:ARG:HD3  | 2:1e:456:PHE:HZ   | 1.65                     | 0.62              |
| 3:1H:246:ASN:ND2  | 3:1H:249:HIS:O    | 2.30                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:m:44:GLN:OE1    | 1:m:44:GLN:N      | 2.32                     | 0.62              |
| 3:1J:299:LEU:HD13 | 3:1J:388:ILE:HG22 | 1.82                     | 0.62              |
| 3:1J:592:THR:HG22 | 3:1J:613:LEU:HD23 | 1.82                     | 0.62              |
| 7:f:110:LEU:HB3   | 7:f:134:ALA:HB3   | 1.80                     | 0.62              |
| 7:a:52:PRO:CB     | 7:f:110:LEU:HD21  | 2.28                     | 0.62              |
| 7:a:117:PRO:HB3   | 7:a:127:ALA:HB1   | 1.81                     | 0.62              |
| 1:p:131:ASP:OD1   | 1:p:132:THR:N     | 2.29                     | 0.62              |
| 1:l:15:PHE:CE1    | 1:l:67:GLN:NE2    | 2.67                     | 0.62              |
| 2:1h:384:ARG:HG2  | 2:1h:384:ARG:O    | 1.99                     | 0.61              |
| 3:1K:189:ASP:HB3  | 3:1K:275:ARG:HB2  | 1.82                     | 0.61              |
| 3:2L:144:ALA:O    | 3:2L:148:ARG:NH2  | 2.30                     | 0.61              |
| 3:1G:25:GLN:O     | 3:1G:27:ARG:NH1   | 2.33                     | 0.61              |
| 2:3f:455:VAL:HG23 | 2:3f:457:GLU:HG3  | 1.80                     | 0.61              |
| 3:2l:191:ARG:HB3  | 3:2l:275:ARG:HD3  | 1.82                     | 0.61              |
| 1:n:66:VAL:HG13   | 1:n:138:THR:HG23  | 1.81                     | 0.61              |
| 2:2j:39:ALA:HB2   | 2:2j:266:ILE:HD12 | 1.83                     | 0.61              |
| 3:2G:369:ARG:HH22 | 5:A:47:ILE:HD13   | 1.65                     | 0.61              |
| 2:2e:35:THR:HG23  | 2:2e:35:THR:O     | 1.99                     | 0.61              |
| 6:S:16:ILE:HG22   | 6:S:20:GLY:HA2    | 1.82                     | 0.61              |
| 2:2f:261:GLU:HA   | 2:2f:302:MET:HE2  | 1.82                     | 0.61              |
| 2:1f:37:VAL:HG23  | 2:1f:37:VAL:O     | 2.00                     | 0.61              |
| 4:O:210:ARG:NH2   | 3:2J:52:ASP:OD1   | 2.32                     | 0.61              |
| 5:E:154:GLU:N     | 5:E:154:GLU:OE1   | 2.33                     | 0.61              |
| 3:2L:44:VAL:HA    | 3:2L:47:VAL:HG22  | 1.82                     | 0.61              |
| 2:2j:41:VAL:HG12  | 2:2j:92:VAL:HB    | 1.81                     | 0.61              |
| 2:2j:456:PHE:O    | 2:3j:522:LYS:HE2  | 2.01                     | 0.61              |
| 1:k:36:GLU:OE2    | 1:k:36:GLU:N      | 2.28                     | 0.61              |
| 3:1l:342:HIS:HB3  | 3:2l:448:ARG:HH21 | 1.65                     | 0.61              |
| 7:e:16:ILE:HG21   | 7:e:21:LEU:HD12   | 1.81                     | 0.61              |
| 7:e:109:VAL:HG13  | 7:e:133:ILE:HG13  | 1.82                     | 0.61              |
| 2:3g:286:GLU:O    | 2:3g:289:LYS:NZ   | 2.33                     | 0.61              |
| 2:3g:369:ASP:CG   | 2:3g:374:VAL:HA   | 2.26                     | 0.61              |
| 2:1g:37:VAL:HG13  | 2:1g:266:ILE:HA   | 1.81                     | 0.61              |
| 3:1K:190:SER:HB3  | 3:1K:272:PRO:HB2  | 1.82                     | 0.61              |
| 3:1L:455:THR:N    | 3:1L:458:ASP:OD2  | 2.31                     | 0.61              |
| 3:2L:136:LEU:HD12 | 3:2L:152:LEU:HB3  | 1.82                     | 0.61              |
| 2:1j:369:ASP:OD1  | 2:1j:438:ARG:NH1  | 2.26                     | 0.61              |
| 2:1e:271:VAL:HB   | 2:1e:274:LEU:HB2  | 1.81                     | 0.61              |
| 3:1H:542:GLY:O    | 3:1H:616:ALA:N    | 2.31                     | 0.61              |
| 3:2H:253:TRP:HE1  | 3:2H:255:ARG:HB2  | 1.66                     | 0.61              |
| 3:1l:135:ARG:HD3  | 3:1l:246:ASN:HB3  | 1.80                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2l:328:THR:OG1  | 3:2l:337:TRP:NE1  | 2.26                     | 0.61              |
| 2:3h:505:GLU:OE1  | 2:3h:505:GLU:N    | 2.34                     | 0.61              |
| 3:1K:205:VAL:O    | 3:1K:257:ARG:N    | 2.33                     | 0.61              |
| 3:2L:41:VAL:HG12  | 6:W:10:TRP:HB2    | 1.80                     | 0.61              |
| 2:2j:369:ASP:OD1  | 2:2j:374:VAL:HG13 | 1.99                     | 0.61              |
| 2:3e:311:PRO:HG3  | 2:3e:339:TYR:HA   | 1.83                     | 0.61              |
| 4:M:72:GLY:HA3    | 4:N:58:PRO:HB2    | 1.82                     | 0.61              |
| 3:1l:458:ASP:OD1  | 5:C:102:ARG:NH2   | 2.33                     | 0.61              |
| 2:2g:374:VAL:CG1  | 2:2g:442:TYR:CE2  | 2.83                     | 0.61              |
| 1:l:3:LEU:HB3     | 1:l:4:PRO:HD2     | 1.81                     | 0.61              |
| 2:2g:239:SER:HB3  | 2:2g:242:PRO:HD2  | 1.81                     | 0.61              |
| 3:2G:224:THR:HA   | 3:2G:233:VAL:HG22 | 1.83                     | 0.61              |
| 2:2f:241:HIS:NE2  | 2:2f:247:TYR:CE1  | 2.68                     | 0.61              |
| 2:2f:522:LYS:NZ   | 2:1f:459:ASN:CG   | 2.58                     | 0.61              |
| 3:2l:245:ARG:NH1  | 3:2l:247:GLY:O    | 2.34                     | 0.61              |
| 4:P:196:GLN:OE1   | 4:P:196:GLN:N     | 2.33                     | 0.61              |
| 1:p:40:ILE:CG1    | 1:p:53:ASN:HB3    | 2.30                     | 0.61              |
| 3:2L:513:ASP:HA   | 3:2L:516:LEU:HD12 | 1.83                     | 0.61              |
| 7:c:126:VAL:HG11  | 1:m:40:ILE:HG12   | 1.82                     | 0.61              |
| 2:2e:368:ASN:HB2  | 2:2e:378:PRO:HB3  | 1.80                     | 0.61              |
| 3:1H:180:PRO:HA   | 3:1H:241:HIS:HB3  | 1.82                     | 0.61              |
| 3:1H:592:THR:HG22 | 3:1H:613:LEU:HD23 | 1.81                     | 0.61              |
| 2:2g:452:GLN:HE21 | 2:2g:452:GLN:CA   | 2.03                     | 0.61              |
| 2:2j:271:VAL:HG22 | 2:2j:274:LEU:HB2  | 1.82                     | 0.61              |
| 2:3j:455:VAL:HG23 | 2:3j:457:GLU:HG3  | 1.83                     | 0.61              |
| 3:2G:492:VAL:HG11 | 3:2G:516:LEU:HD21 | 1.83                     | 0.61              |
| 7:c:110:LEU:HB3   | 7:c:134:ALA:HB3   | 1.83                     | 0.61              |
| 2:2e:369:ASP:HB2  | 2:2e:374:VAL:HG23 | 1.83                     | 0.61              |
| 2:2e:457:GLU:HG2  | 2:2e:458:PRO:CD   | 2.26                     | 0.61              |
| 2:3e:373:GLY:HA3  | 2:3e:375:HIS:CE1  | 2.36                     | 0.61              |
| 3:1H:544:THR:HG23 | 3:1H:643:HIS:HB3  | 1.82                     | 0.61              |
| 2:1f:61:TYR:HE1   | 2:1f:65:PHE:HB2   | 1.66                     | 0.61              |
| 2:3g:475:LEU:HD13 | 2:3g:493:TYR:HB2  | 1.83                     | 0.61              |
| 3:1J:525:GLU:OE2  | 3:2J:457:ARG:NH1  | 2.34                     | 0.61              |
| 3:1K:480:GLU:HA   | 3:1K:486:HIS:HB3  | 1.83                     | 0.61              |
| 2:3j:286:GLU:O    | 2:3j:289:LYS:NZ   | 2.33                     | 0.61              |
| 3:2G:302:SER:HB3  | 3:2G:388:ILE:HD11 | 1.83                     | 0.61              |
| 1:l:122:VAL:CB    | 1:m:33:LEU:HD23   | 2.30                     | 0.61              |
| 2:3f:241:HIS:H    | 2:3f:280:ARG:HH22 | 1.49                     | 0.61              |
| 3:1J:100:LEU:HD13 | 3:1J:418:VAL:HG11 | 1.82                     | 0.61              |
| 3:2J:271:SER:HB2  | 3:2J:272:PRO:CD   | 2.28                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3j:312:PRO:O    | 2:3j:315:GLN:HG3  | 2.01                     | 0.60              |
| 1:k:26:TYR:HB2    | 1:k:70:ARG:CB     | 2.30                     | 0.60              |
| 2:2f:376:LYS:NZ   | 2:2f:376:LYS:HB2  | 2.15                     | 0.60              |
| 3:1l:505:ARG:H    | 3:1l:508:GLN:HE22 | 1.48                     | 0.60              |
| 1:n:34:GLN:OE1    | 1:n:60:VAL:HG11   | 2.01                     | 0.60              |
| 1:p:40:ILE:HG21   | 7:f:126:VAL:CG2   | 2.31                     | 0.60              |
| 2:2g:368:ASN:ND2  | 2:2g:378:PRO:CG   | 2.61                     | 0.60              |
| 2:1g:455:VAL:HG12 | 2:1g:455:VAL:O    | 2.01                     | 0.60              |
| 2:1j:455:VAL:O    | 2:1j:455:VAL:HG12 | 1.99                     | 0.60              |
| 3:2G:308:GLN:O    | 3:2G:309:ARG:HD3  | 2.01                     | 0.60              |
| 2:2e:369:ASP:CB   | 2:2e:374:VAL:HG22 | 2.31                     | 0.60              |
| 2:1e:61:TYR:HE1   | 2:1e:65:PHE:HB2   | 1.65                     | 0.60              |
| 2:1e:239:SER:N    | 2:1e:242:PRO:O    | 2.33                     | 0.60              |
| 3:2H:137:VAL:HB   | 3:2H:172:LEU:HD12 | 1.82                     | 0.60              |
| 3:2l:302:SER:HA   | 3:2l:308:GLN:HE22 | 1.67                     | 0.60              |
| 2:1i:435:ASN:OD1  | 2:1i:436:ILE:N    | 2.34                     | 0.60              |
| 4:Q:147:THR:HG22  | 4:R:45:GLN:HG2    | 1.83                     | 0.60              |
| 3:2G:41:VAL:HG13  | 6:X:10:TRP:HB2    | 1.82                     | 0.60              |
| 2:2e:434:LEU:O    | 2:2e:438:ARG:HG3  | 2.02                     | 0.60              |
| 1:n:27:LEU:HD23   | 1:n:68:VAL:HG21   | 1.83                     | 0.60              |
| 3:2J:141:SER:N    | 3:2J:169:ASP:OD1  | 2.34                     | 0.60              |
| 2:2i:274:LEU:HD21 | 2:2i:288:VAL:HG22 | 1.83                     | 0.60              |
| 2:2i:372:ARG:NH1  | 2:1i:456:PHE:CE2  | 2.63                     | 0.60              |
| 2:1j:368:ASN:HD22 | 2:1j:378:PRO:HA   | 1.64                     | 0.60              |
| 2:1j:476:VAL:HG12 | 2:1j:489:PRO:HB3  | 1.84                     | 0.60              |
| 3:1G:169:ASP:HB3  | 3:1G:258:VAL:HB   | 1.82                     | 0.60              |
| 3:1G:184:LEU:HD22 | 3:1G:237:ILE:HD11 | 1.81                     | 0.60              |
| 3:1G:521:ARG:NH1  | 3:1G:521:ARG:O    | 2.34                     | 0.60              |
| 3:1J:452:ARG:NH2  | 3:2J:458:ASP:OD1  | 2.34                     | 0.60              |
| 2:2h:35:THR:HG23  | 2:2h:35:THR:O     | 1.99                     | 0.60              |
| 2:2h:515:GLU:HG2  | 2:3h:530:ARG:HH22 | 1.67                     | 0.60              |
| 2:1h:304:ASP:O    | 2:1h:441:ASN:ND2  | 2.33                     | 0.60              |
| 2:1h:453:TRP:CG   | 2:1h:457:GLU:OE2  | 2.55                     | 0.60              |
| 3:1L:169:ASP:HB3  | 3:1L:258:VAL:HB   | 1.82                     | 0.60              |
| 4:Q:37:PHE:HE1    | 4:Q:98:LYS:HG2    | 1.67                     | 0.60              |
| 3:1G:133:MET:HG2  | 3:1G:279:ALA:HB2  | 1.82                     | 0.60              |
| 4:R:196:GLN:HE22  | 3:2G:53:GLN:HE21  | 1.47                     | 0.60              |
| 3:2G:175:LEU:O    | 3:2G:252:GLY:N    | 2.24                     | 0.60              |
| 3:1H:480:GLU:HA   | 3:1H:486:HIS:HB3  | 1.82                     | 0.60              |
| 2:2g:377:ALA:HB2  | 2:2g:435:ASN:HB2  | 1.83                     | 0.60              |
| 2:2g:522:LYS:NZ   | 2:1g:459:ASN:HA   | 2.17                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1J:169:ASP:HB3  | 3:1J:258:VAL:HB   | 1.83                     | 0.60              |
| 3:1J:480:GLU:HA   | 3:1J:486:HIS:HB3  | 1.82                     | 0.60              |
| 3:2J:464:ARG:HE   | 3:2J:473:ILE:HD12 | 1.67                     | 0.60              |
| 3:2G:99:ILE:HA    | 3:2G:127:ARG:HG3  | 1.84                     | 0.60              |
| 3:2G:432:ASP:OD1  | 3:2G:432:ASP:N    | 2.32                     | 0.60              |
| 3:1H:505:ARG:HH21 | 3:1H:507:GLU:HB3  | 1.66                     | 0.60              |
| 4:M:85:ASP:OD1    | 4:M:87:SER:N      | 2.25                     | 0.60              |
| 7:d:106:LEU:HD22  | 7:d:135:HIS:CE1   | 2.37                     | 0.60              |
| 2:3f:39:ALA:HB2   | 2:3f:266:ILE:HD12 | 1.84                     | 0.60              |
| 3:1G:452:ARG:NH2  | 3:2G:458:ASP:OD1  | 2.35                     | 0.60              |
| 3:1H:220:ASP:OD2  | 3:1H:424:ARG:NH1  | 2.34                     | 0.60              |
| 3:2l:41:VAL:HG22  | 3:2l:41:VAL:O     | 2.02                     | 0.60              |
| 2:3g:368:ASN:HD22 | 2:3g:378:PRO:CA   | 2.14                     | 0.60              |
| 3:1J:521:ARG:NH1  | 3:1J:521:ARG:O    | 2.35                     | 0.60              |
| 2:2h:315:GLN:HB3  | 2:2h:319:GLN:HB3  | 1.82                     | 0.60              |
| 2:2i:254:ARG:NH1  | 2:3i:394:THR:OG1  | 2.35                     | 0.60              |
| 3:1G:294:VAL:HB   | 3:1G:393:TYR:HB2  | 1.84                     | 0.60              |
| 3:1H:169:ASP:HB3  | 3:1H:258:VAL:HB   | 1.83                     | 0.60              |
| 3:1H:546:VAL:HG23 | 3:1H:612:VAL:HG13 | 1.84                     | 0.60              |
| 3:1l:243:LEU:HG   | 3:1J:501:GLY:HA2  | 1.84                     | 0.60              |
| 3:2J:190:SER:OG   | 3:2J:272:PRO:HB2  | 2.01                     | 0.60              |
| 2:3h:310:ASP:OD1  | 2:3h:310:ASP:N    | 2.35                     | 0.60              |
| 3:1K:327:GLN:HB3  | 3:1K:334:TRP:HB3  | 1.83                     | 0.60              |
| 4:P:85:ASP:OD1    | 4:P:87:SER:N      | 2.30                     | 0.60              |
| 3:2K:243:LEU:HD23 | 3:2K:251:ALA:C    | 2.25                     | 0.60              |
| 1:k:18:GLN:N      | 1:k:18:GLN:OE1    | 2.32                     | 0.60              |
| 2:1j:45:PRO:O     | 2:1j:93:ARG:NH2   | 2.34                     | 0.60              |
| 3:2G:530:GLY:HA3  | 5:A:175:MET:HE1   | 1.84                     | 0.60              |
| 7:c:86:ARG:NE     | 7:c:109:VAL:O     | 2.35                     | 0.60              |
| 6:T:39:LEU:HD11   | 6:T:80:LEU:HD11   | 1.82                     | 0.60              |
| 2:2g:368:ASN:ND2  | 2:2g:378:PRO:CA   | 2.65                     | 0.60              |
| 4:P:157:ARG:NH1   | 7:c:53:THR:OG1    | 2.25                     | 0.59              |
| 3:2K:44:VAL:O     | 3:2K:48:ALA:N     | 2.30                     | 0.59              |
| 2:3i:344:SER:OG   | 2:3i:345:PHE:N    | 2.35                     | 0.59              |
| 2:3j:507:VAL:HG13 | 2:3j:509:LEU:H    | 1.66                     | 0.59              |
| 3:2G:144:ALA:O    | 3:2G:148:ARG:NH2  | 2.32                     | 0.59              |
| 3:1H:39:PRO:HD2   | 3:1H:43:LEU:HB2   | 1.84                     | 0.59              |
| 7:d:81:GLN:NE2    | 7:f:45:ASN:O      | 2.35                     | 0.59              |
| 2:1f:37:VAL:HG11  | 2:1f:265:GLU:CG   | 2.31                     | 0.59              |
| 3:1l:14:GLN:N     | 5:C:66:ASP:OD2    | 2.34                     | 0.59              |
| 3:1l:137:VAL:HG12 | 3:1l:149:THR:HG23 | 1.83                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:192:VAL:HG21 | 3:1l:229:ARG:HA   | 1.83                     | 0.59              |
| 3:2J:245:ARG:NH1  | 3:2J:247:GLY:O    | 2.35                     | 0.59              |
| 5:D:63:THR:O      | 5:D:89:ARG:NH2    | 2.35                     | 0.59              |
| 6:U:42:ALA:HB3    | 6:U:45:GLU:OE1    | 2.02                     | 0.59              |
| 3:1K:469:GLU:OE2  | 3:1K:469:GLU:N    | 2.27                     | 0.59              |
| 3:1L:227:LEU:HD23 | 3:1L:272:PRO:HD2  | 1.84                     | 0.59              |
| 7:c:110:LEU:HD12  | 7:c:111:PRO:HD2   | 1.84                     | 0.59              |
| 2:3f:344:SER:OG   | 2:3f:345:PHE:N    | 2.35                     | 0.59              |
| 2:3g:372:ARG:HH12 | 2:3g:376:LYS:HE3  | 1.62                     | 0.59              |
| 3:1K:134:GLY:H    | 3:1K:174:GLY:C    | 2.10                     | 0.59              |
| 3:2K:432:ASP:N    | 3:2K:432:ASP:OD1  | 2.33                     | 0.59              |
| 2:1i:263:ILE:HG22 | 2:1i:265:GLU:H    | 1.66                     | 0.59              |
| 3:1L:91:LEU:HD13  | 3:1L:418:VAL:HG12 | 1.85                     | 0.59              |
| 3:1G:571:HIS:HB2  | 3:1G:598:VAL:HG21 | 1.85                     | 0.59              |
| 3:1H:245:ARG:HH12 | 3:1l:500:PRO:HB2  | 1.67                     | 0.59              |
| 4:M:56:ALA:HB2    | 4:M:68:PRO:HB3    | 1.85                     | 0.59              |
| 7:e:109:VAL:HG22  | 7:e:133:ILE:HD11  | 1.83                     | 0.59              |
| 2:2g:376:LYS:HD2  | 2:1g:456:PHE:C    | 2.27                     | 0.59              |
| 2:3h:311:PRO:HG3  | 2:3h:339:TYR:HA   | 1.84                     | 0.59              |
| 1:o:66:VAL:HG13   | 1:o:138:THR:HG22  | 1.84                     | 0.59              |
| 2:3j:398:GLN:OE1  | 2:3j:402:ASN:ND2  | 2.35                     | 0.59              |
| 6:X:64:VAL:HA     | 2:1e:522:LYS:HE3  | 1.84                     | 0.59              |
| 2:1f:455:VAL:HG12 | 2:1f:455:VAL:O    | 2.01                     | 0.59              |
| 3:2l:183:ALA:HB3  | 3:2l:283:GLY:H    | 1.67                     | 0.59              |
| 2:1h:435:ASN:OD1  | 2:1h:436:ILE:N    | 2.35                     | 0.59              |
| 3:2L:207:GLU:HB2  | 3:2L:255:ARG:HB3  | 1.85                     | 0.59              |
| 7:b:96:ALA:HB3    | 1:k:56:LEU:HD12   | 1.85                     | 0.59              |
| 3:1G:545:VAL:HG12 | 3:1G:613:LEU:HD21 | 1.84                     | 0.59              |
| 2:1e:268:MET:HE1  | 2:1e:365:TRP:HB2  | 1.85                     | 0.59              |
| 3:2H:245:ARG:NH1  | 3:2H:247:GLY:O    | 2.36                     | 0.59              |
| 1:m:82:ILE:HD12   | 1:n:35:ILE:HD12   | 1.80                     | 0.59              |
| 2:1f:94:VAL:HG22  | 2:1f:243:GLY:H    | 1.66                     | 0.59              |
| 2:2g:374:VAL:O    | 2:2g:374:VAL:HG13 | 2.00                     | 0.59              |
| 2:2g:376:LYS:HD2  | 2:1g:456:PHE:O    | 2.02                     | 0.59              |
| 7:f:110:LEU:HD12  | 7:f:111:PRO:HD2   | 1.83                     | 0.59              |
| 2:2h:244:PRO:HB2  | 2:2h:274:LEU:HA   | 1.84                     | 0.59              |
| 2:1h:501:THR:HB   | 2:1h:512:VAL:HG23 | 1.83                     | 0.59              |
| 3:1K:77:LEU:HB2   | 3:1K:358:THR:HG21 | 1.83                     | 0.59              |
| 1:p:66:VAL:O      | 1:p:66:VAL:HG12   | 2.02                     | 0.59              |
| 7:b:126:VAL:HG21  | 1:l:40:ILE:HG12   | 1.84                     | 0.59              |
| 2:3j:242:PRO:HA   | 2:3j:246:GLN:CG   | 2.33                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1G:516:LEU:HD23 | 3:1G:535:VAL:HG13 | 1.83                     | 0.59              |
| 4:N:37:PHE:HE1    | 4:N:98:LYS:HG2    | 1.67                     | 0.59              |
| 7:e:117:PRO:HB3   | 7:e:127:ALA:HB1   | 1.83                     | 0.59              |
| 1:o:122:VAL:O     | 1:o:122:VAL:HG22  | 2.01                     | 0.59              |
| 3:2L:163:GLU:HB3  | 3:2L:270:THR:HA   | 1.83                     | 0.59              |
| 7:b:117:PRO:HB3   | 7:b:127:ALA:HB1   | 1.83                     | 0.59              |
| 2:2j:275:MET:HE1  | 2:2j:312:PRO:HA   | 1.85                     | 0.59              |
| 1:l:18:GLN:OE1    | 1:l:18:GLN:N      | 2.35                     | 0.59              |
| 5:B:131:ASN:HD22  | 5:B:137:PRO:HD2   | 1.66                     | 0.59              |
| 2:1f:415:ARG:HB3  | 2:1f:418:ARG:HH21 | 1.67                     | 0.59              |
| 1:o:64:GLY:CA     | 1:o:141:ILE:O     | 2.48                     | 0.59              |
| 3:2K:41:VAL:HG12  | 6:V:10:TRP:HB2    | 1.83                     | 0.59              |
| 2:1i:457:GLU:OE1  | 2:1i:463:LEU:CD1  | 2.51                     | 0.59              |
| 2:2j:369:ASP:CG   | 2:2j:374:VAL:HG13 | 2.27                     | 0.59              |
| 2:1j:412:PHE:CZ   | 2:1j:420:TRP:CE3  | 2.90                     | 0.59              |
| 6:X:51:GLU:OE1    | 6:X:82:ARG:NH2    | 2.35                     | 0.59              |
| 2:1e:476:VAL:HG22 | 2:1e:489:PRO:HB3  | 1.83                     | 0.59              |
| 3:2H:27:ARG:NH2   | 3:2H:36:VAL:O     | 2.36                     | 0.59              |
| 2:2f:522:LYS:CE   | 2:1f:459:ASN:HB2  | 2.32                     | 0.59              |
| 1:m:66:VAL:HG12   | 1:m:66:VAL:O      | 2.02                     | 0.59              |
| 2:1f:39:ALA:N     | 2:1f:268:MET:O    | 2.35                     | 0.59              |
| 3:2l:199:PRO:HA   | 3:2l:226:GLY:HA3  | 1.84                     | 0.59              |
| 2:2g:451:THR:O    | 2:2g:451:THR:HG22 | 2.03                     | 0.59              |
| 3:1J:133:MET:HE3  | 3:1J:278:GLU:C    | 2.28                     | 0.59              |
| 2:2i:407:ASN:HB3  | 2:2i:421:GLY:HA3  | 1.83                     | 0.59              |
| 1:p:90:MET:N      | 1:p:90:MET:SD     | 2.75                     | 0.59              |
| 3:1L:148:ARG:HG3  | 3:1L:156:LYS:HB3  | 1.85                     | 0.59              |
| 4:Q:210:ARG:NH2   | 3:2L:52:ASP:OD1   | 2.36                     | 0.59              |
| 2:1j:383:VAL:O    | 2:1j:383:VAL:HG12 | 2.03                     | 0.59              |
| 3:1G:145:VAL:HG23 | 3:1G:146:SER:H    | 1.68                     | 0.59              |
| 3:1G:529:ILE:HG21 | 3:2G:456:LEU:HG   | 1.85                     | 0.59              |
| 2:1e:383:VAL:O    | 2:1e:383:VAL:HG12 | 2.03                     | 0.59              |
| 3:1H:629:ARG:NH2  | 3:1H:631:ASP:OD1  | 2.36                     | 0.59              |
| 2:2f:274:LEU:HD21 | 2:2f:288:VAL:HG22 | 1.85                     | 0.59              |
| 3:1l:543:VAL:HG12 | 3:1l:613:LEU:HD12 | 1.85                     | 0.59              |
| 3:1J:294:VAL:HB   | 3:1J:393:TYR:HB2  | 1.83                     | 0.59              |
| 3:1J:342:HIS:HB3  | 3:2J:448:ARG:HH21 | 1.66                     | 0.59              |
| 3:1J:571:HIS:HB2  | 3:1J:598:VAL:HG21 | 1.83                     | 0.59              |
| 3:2L:200:ARG:O    | 3:2L:265:GLN:NE2  | 2.30                     | 0.59              |
| 3:2L:415:ILE:H    | 3:2L:415:ILE:HD12 | 1.67                     | 0.59              |
| 6:W:32:GLU:OE2    | 6:W:36:ARG:NH2    | 2.35                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3j:502:ASN:HD21 | 2:3j:511:ARG:HA   | 1.67                     | 0.59              |
| 3:1G:564:THR:O    | 3:1G:568:LEU:HG   | 2.03                     | 0.59              |
| 3:2G:141:SER:N    | 3:2G:169:ASP:OD1  | 2.36                     | 0.59              |
| 2:1f:383:VAL:O    | 2:1f:383:VAL:HG12 | 2.03                     | 0.59              |
| 3:1l:299:LEU:HD11 | 3:1l:326:LEU:HD21 | 1.85                     | 0.59              |
| 3:1K:543:VAL:HG12 | 3:1K:613:LEU:HD12 | 1.85                     | 0.58              |
| 1:p:118:TRP:HZ2   | 1:k:56:LEU:HD23   | 1.66                     | 0.58              |
| 2:2j:460:ASP:OD1  | 2:2j:460:ASP:N    | 2.35                     | 0.58              |
| 1:k:26:TYR:HB2    | 1:k:70:ARG:HB2    | 1.85                     | 0.58              |
| 2:2e:275:MET:HE1  | 2:2e:313:PRO:HD3  | 1.85                     | 0.58              |
| 3:1l:204:LEU:HD23 | 3:1l:258:VAL:HG22 | 1.85                     | 0.58              |
| 3:2l:207:GLU:HB2  | 3:2l:255:ARG:HB3  | 1.85                     | 0.58              |
| 3:2l:490:VAL:HB   | 3:2l:535:VAL:HG12 | 1.84                     | 0.58              |
| 2:3i:407:ASN:HD21 | 2:3i:422:ALA:HA   | 1.68                     | 0.58              |
| 3:2L:490:VAL:HB   | 3:2L:535:VAL:HG12 | 1.86                     | 0.58              |
| 1:m:25:GLU:OE1    | 1:m:25:GLU:O      | 2.22                     | 0.58              |
| 3:1l:192:VAL:HG12 | 3:1l:272:PRO:HG3  | 1.85                     | 0.58              |
| 3:1J:32:THR:HG22  | 5:D:35:ARG:HH21   | 1.68                     | 0.58              |
| 1:o:127:LEU:HB2   | 1:p:28:ASN:HB3    | 1.84                     | 0.58              |
| 3:1K:531:THR:OG1  | 5:E:174:HIS:NE2   | 2.36                     | 0.58              |
| 4:P:56:ALA:HB2    | 4:P:68:PRO:HB3    | 1.85                     | 0.58              |
| 2:2j:247:TYR:HB3  | 2:2j:257:PHE:H    | 1.68                     | 0.58              |
| 7:a:31:SER:HG     | 7:a:58:SER:HG     | 1.52                     | 0.58              |
| 1:l:122:VAL:HB    | 1:m:33:LEU:HD23   | 1.84                     | 0.58              |
| 1:m:35:ILE:HG23   | 1:m:35:ILE:O      | 2.02                     | 0.58              |
| 1:n:38:ASP:OD1    | 1:n:57:MET:HE1    | 2.03                     | 0.58              |
| 2:1g:383:VAL:O    | 2:1g:383:VAL:HG12 | 2.03                     | 0.58              |
| 7:f:106:LEU:HD22  | 7:f:135:HIS:NE2   | 2.18                     | 0.58              |
| 7:a:88:THR:HG21   | 2:1i:469:ARG:HB3  | 1.85                     | 0.58              |
| 1:p:29:SER:OG     | 1:p:30:VAL:N      | 2.31                     | 0.58              |
| 2:1i:296:ILE:HD11 | 2:1i:335:ALA:HB2  | 1.85                     | 0.58              |
| 3:1L:70:LEU:HD22  | 3:1L:75:ILE:HD11  | 1.84                     | 0.58              |
| 3:2L:129:VAL:HB   | 3:2L:179:VAL:CG2  | 2.33                     | 0.58              |
| 3:2L:190:SER:HB2  | 3:2L:273:THR:O    | 2.04                     | 0.58              |
| 2:1j:239:SER:HB3  | 2:1j:242:PRO:HD2  | 1.83                     | 0.58              |
| 3:2H:114:ARG:HH12 | 6:T:15:ARG:NH1    | 2.02                     | 0.58              |
| 5:B:59:ASP:O      | 5:B:63:THR:OG1    | 2.21                     | 0.58              |
| 2:2f:460:ASP:N    | 2:2f:460:ASP:OD1  | 2.35                     | 0.58              |
| 3:1l:592:THR:O    | 3:1l:596:PHE:N    | 2.31                     | 0.58              |
| 2:1h:522:LYS:HZ3  | 6:U:64:VAL:HA     | 1.69                     | 0.58              |
| 2:2i:437:ARG:HD3  | 2:2i:441:ASN:HD21 | 1.68                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1L:145:VAL:HG23 | 3:1L:146:SER:H    | 1.69                     | 0.58              |
| 3:2L:423:ASN:ND2  | 3:2L:425:GLU:O    | 2.36                     | 0.58              |
| 2:2e:453:TRP:HB2  | 2:2e:456:PHE:CG   | 2.38                     | 0.58              |
| 2:1e:67:ASP:N     | 2:1e:67:ASP:OD1   | 2.35                     | 0.58              |
| 3:1K:145:VAL:HG23 | 3:1K:146:SER:H    | 1.67                     | 0.58              |
| 3:1K:220:ASP:OD1  | 3:1K:221:ARG:N    | 2.33                     | 0.58              |
| 3:2H:122:THR:HG22 | 3:2H:124:GLN:H    | 1.69                     | 0.58              |
| 3:2H:355:VAL:HG22 | 3:2H:362:ILE:HG12 | 1.85                     | 0.58              |
| 3:2l:149:THR:HG21 | 3:2l:248:GLY:H    | 1.68                     | 0.58              |
| 2:2g:67:ASP:N     | 2:2g:67:ASP:OD1   | 2.36                     | 0.58              |
| 5:D:33:ALA:HB2    | 6:U:14:LEU:HD21   | 1.85                     | 0.58              |
| 3:1K:615:PRO:HG2  | 3:1K:624:GLY:HA3  | 1.86                     | 0.58              |
| 4:P:216:ASN:HD21  | 4:P:230:LEU:HB3   | 1.68                     | 0.58              |
| 3:2L:179:VAL:O    | 3:2L:237:ILE:HB   | 2.03                     | 0.58              |
| 3:2G:210:THR:HA   | 3:2G:241:HIS:HB3  | 1.85                     | 0.58              |
| 3:1H:77:LEU:HB2   | 3:1H:358:THR:HG21 | 1.85                     | 0.58              |
| 3:1l:189:ASP:OD1  | 3:1l:190:SER:N    | 2.36                     | 0.58              |
| 3:1l:205:VAL:O    | 3:1l:257:ARG:N    | 2.35                     | 0.58              |
| 1:o:66:VAL:HG11   | 1:o:138:THR:CG2   | 2.33                     | 0.58              |
| 1:o:90:MET:SD     | 1:p:56:LEU:HD21   | 2.43                     | 0.58              |
| 3:2K:253:TRP:HE1  | 3:2K:255:ARG:HB2  | 1.67                     | 0.58              |
| 1:p:43:GLN:HG2    | 7:f:12:PHE:CE1    | 2.39                     | 0.58              |
| 2:1i:241:HIS:HB2  | 2:1i:247:TYR:HB2  | 1.85                     | 0.58              |
| 3:1L:592:THR:HG22 | 3:1L:613:LEU:HD23 | 1.86                     | 0.58              |
| 5:A:129:THR:HG21  | 5:A:139:PRO:HD2   | 1.86                     | 0.58              |
| 2:2e:390:GLU:HG3  | 2:2e:391:LEU:HG   | 1.86                     | 0.58              |
| 2:2f:315:GLN:O    | 2:2f:339:TYR:OH   | 2.22                     | 0.58              |
| 3:2l:244:SER:O    | 3:2l:246:ASN:ND2  | 2.36                     | 0.58              |
| 3:2l:489:ARG:NH2  | 5:C:136:GLY:O     | 2.37                     | 0.58              |
| 2:2g:312:PRO:HB2  | 2:2g:315:GLN:HE22 | 1.61                     | 0.58              |
| 2:3g:490:ASP:OD1  | 2:3g:491:GLN:N    | 2.36                     | 0.58              |
| 3:1J:190:SER:HB2  | 3:1J:272:PRO:HB2  | 1.85                     | 0.58              |
| 3:2J:201:GLN:N    | 3:2J:202:PRO:CD   | 2.67                     | 0.58              |
| 3:2K:108:ALA:HB2  | 3:2K:119:VAL:HG13 | 1.85                     | 0.58              |
| 1:p:38:ASP:HB2    | 1:p:55:THR:OG1    | 2.03                     | 0.58              |
| 4:N:56:ALA:HB2    | 4:N:68:PRO:HB3    | 1.86                     | 0.58              |
| 2:2g:407:ASN:HB3  | 2:2g:421:GLY:HA3  | 1.86                     | 0.58              |
| 1:n:12:ALA:HB1    | 1:n:102:MET:HB2   | 1.85                     | 0.58              |
| 2:1i:456:PHE:HD2  | 2:1i:457:GLU:HG3  | 1.69                     | 0.57              |
| 2:2j:383:VAL:HG12 | 2:2j:383:VAL:O    | 2.04                     | 0.57              |
| 1:k:115:ARG:HG3   | 1:l:51:ARG:HH22   | 1.69                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1G:557:ALA:O    | 3:1G:561:ARG:N    | 2.31                     | 0.57              |
| 3:2l:253:TRP:HE1  | 3:2l:255:ARG:HB2  | 1.69                     | 0.57              |
| 3:1J:449:ALA:O    | 3:2J:452:ARG:NH2  | 2.36                     | 0.57              |
| 2:1h:368:ASN:ND2  | 2:1h:378:PRO:CA   | 2.64                     | 0.57              |
| 7:a:46:GLY:HA2    | 7:f:55:VAL:HB     | 1.87                     | 0.57              |
| 2:2e:274:LEU:HD21 | 2:2e:288:VAL:HG22 | 1.86                     | 0.57              |
| 2:3e:242:PRO:HB3  | 2:3e:246:GLN:HB2  | 1.85                     | 0.57              |
| 3:1H:157:ASP:N    | 3:1H:157:ASP:OD1  | 2.37                     | 0.57              |
| 2:1f:37:VAL:HG11  | 2:1f:265:GLU:HG2  | 1.86                     | 0.57              |
| 2:3h:315:GLN:O    | 2:3h:339:TYR:OH   | 2.21                     | 0.57              |
| 2:2i:261:GLU:HA   | 2:2i:302:MET:HE2  | 1.85                     | 0.57              |
| 5:F:133:ARG:HG2   | 5:F:134:PRO:HD2   | 1.86                     | 0.57              |
| 2:2j:338:TYR:CZ   | 2:2j:361:VAL:HG21 | 2.39                     | 0.57              |
| 4:R:157:ARG:NH1   | 7:e:53:THR:OG1    | 2.26                     | 0.57              |
| 2:3i:509:LEU:O    | 2:3i:511:ARG:NH1  | 2.37                     | 0.57              |
| 3:2G:186:LEU:O    | 3:2G:233:VAL:N    | 2.37                     | 0.57              |
| 3:2H:133:MET:HE2  | 3:2H:136:LEU:HD21 | 1.85                     | 0.57              |
| 3:2J:355:VAL:HG23 | 3:2J:362:ILE:HG12 | 1.86                     | 0.57              |
| 7:f:41:GLU:OE1    | 7:f:49:TRP:NE1    | 2.34                     | 0.57              |
| 2:2h:338:TYR:CZ   | 2:2h:361:VAL:HG21 | 2.39                     | 0.57              |
| 2:2h:390:GLU:HG3  | 2:2h:391:LEU:HG   | 1.85                     | 0.57              |
| 2:1h:61:TYR:HE1   | 2:1h:65:PHE:HB2   | 1.68                     | 0.57              |
| 4:P:148:LEU:HD21  | 7:c:53:THR:HA     | 1.86                     | 0.57              |
| 3:2K:24:ILE:HD11  | 6:V:48:MET:HE1    | 1.85                     | 0.57              |
| 3:2K:175:LEU:C    | 3:2K:251:ALA:HB1  | 2.29                     | 0.57              |
| 5:E:63:THR:O      | 5:E:89:ARG:NH2    | 2.37                     | 0.57              |
| 1:p:44:GLN:OE1    | 1:p:44:GLN:N      | 2.38                     | 0.57              |
| 4:M:202:GLU:HG3   | 4:M:232:LEU:HD22  | 1.86                     | 0.57              |
| 5:B:71:LEU:HA     | 5:B:74:TRP:HB2    | 1.87                     | 0.57              |
| 2:1f:497:CYS:HB2  | 2:1f:513:VAL:HG23 | 1.86                     | 0.57              |
| 3:1l:303:THR:O    | 3:1l:308:GLN:NE2  | 2.38                     | 0.57              |
| 2:2g:460:ASP:C    | 2:2g:462:ASN:H    | 2.12                     | 0.57              |
| 3:1K:89:PHE:HE1   | 3:1K:286:THR:HB   | 1.69                     | 0.57              |
| 2:2i:457:GLU:OE2  | 2:3i:375:HIS:CD2  | 2.55                     | 0.57              |
| 3:2L:199:PRO:HG3  | 3:2L:229:ARG:HH22 | 1.70                     | 0.57              |
| 2:3j:380:ASN:OD1  | 2:3j:418:ARG:NH1  | 2.38                     | 0.57              |
| 3:2G:326:LEU:HD22 | 3:2G:353:ILE:HD13 | 1.87                     | 0.57              |
| 3:2J:205:VAL:HG13 | 3:2J:257:ARG:HB3  | 1.87                     | 0.57              |
| 3:2J:435:THR:OG1  | 3:2J:438:GLU:OE1  | 2.22                     | 0.57              |
| 4:P:88:MET:HE3    | 7:b:86:ARG:HD2    | 1.87                     | 0.57              |
| 3:1L:136:LEU:HD11 | 3:1L:277:ALA:HB2  | 1.86                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2L:108:ALA:HB2  | 3:2L:119:VAL:HG13 | 1.86                     | 0.57              |
| 2:3j:313:PRO:O    | 2:3j:315:GLN:HG2  | 2.03                     | 0.57              |
| 2:3e:344:SER:OG   | 2:3e:345:PHE:N    | 2.35                     | 0.57              |
| 3:1H:25:GLN:HG2   | 5:B:43:VAL:HG12   | 1.85                     | 0.57              |
| 4:M:157:ARG:HH12  | 7:f:53:THR:HG1    | 1.49                     | 0.57              |
| 2:1f:39:ALA:HB2   | 2:1f:266:ILE:HD13 | 1.87                     | 0.57              |
| 2:2g:455:VAL:HG21 | 2:3g:379:ALA:HB3  | 1.86                     | 0.57              |
| 2:3g:310:ASP:OD1  | 2:3g:310:ASP:N    | 2.36                     | 0.57              |
| 1:p:18:GLN:OE1    | 1:p:18:GLN:HA     | 2.05                     | 0.57              |
| 3:2L:141:SER:N    | 3:2L:169:ASP:OD1  | 2.38                     | 0.57              |
| 1:k:27:LEU:N      | 1:k:68:VAL:O      | 2.37                     | 0.57              |
| 3:2H:172:LEU:O    | 3:2H:173:ILE:HD13 | 2.05                     | 0.57              |
| 3:2J:369:ARG:O    | 5:D:7:ARG:NE      | 2.38                     | 0.57              |
| 3:1L:174:GLY:HA2  | 3:1L:251:ALA:HB1  | 1.86                     | 0.57              |
| 7:b:110:LEU:HB3   | 7:b:134:ALA:HB3   | 1.87                     | 0.57              |
| 2:1j:239:SER:N    | 2:1j:242:PRO:O    | 2.32                     | 0.57              |
| 2:1e:49:LEU:HD12  | 2:1e:93:ARG:HD3   | 1.86                     | 0.57              |
| 3:1H:592:THR:O    | 3:1H:596:PHE:N    | 2.38                     | 0.57              |
| 3:2H:183:ALA:HA   | 3:2H:236:HIS:HA   | 1.86                     | 0.57              |
| 2:2f:457:GLU:O    | 2:3f:523:PRO:HD2  | 2.05                     | 0.57              |
| 2:1f:300:GLU:HG2  | 2:1f:334:TYR:HD2  | 1.70                     | 0.57              |
| 3:1l:542:GLY:HA2  | 3:1l:639:PHE:HB3  | 1.86                     | 0.57              |
| 2:3g:61:TYR:CE1   | 2:3g:65:PHE:HB2   | 2.40                     | 0.57              |
| 2:3g:311:PRO:HG3  | 2:3g:339:TYR:HA   | 1.87                     | 0.57              |
| 2:1h:456:PHE:CE2  | 2:2h:372:ARG:CZ   | 2.88                     | 0.57              |
| 3:2K:43:LEU:HD21  | 6:V:46:ARG:NH1    | 2.19                     | 0.57              |
| 6:W:14:LEU:H      | 6:W:14:LEU:HD23   | 1.70                     | 0.57              |
| 3:2G:464:ARG:HE   | 3:2G:473:ILE:HD12 | 1.70                     | 0.57              |
| 2:3e:460:ASP:H    | 2:3e:511:ARG:HH22 | 1.53                     | 0.57              |
| 2:1e:315:GLN:HE21 | 2:1e:319:GLN:HB2  | 1.70                     | 0.57              |
| 3:2H:108:ALA:HB2  | 3:2H:119:VAL:HG13 | 1.86                     | 0.57              |
| 2:1f:311:PRO:HG3  | 2:1f:339:TYR:HA   | 1.85                     | 0.57              |
| 6:T:42:ALA:N      | 6:T:45:GLU:OE2    | 2.38                     | 0.57              |
| 2:2g:338:TYR:CZ   | 2:2g:361:VAL:HG21 | 2.40                     | 0.57              |
| 2:3g:472:SER:HB2  | 2:3g:495:VAL:HG11 | 1.85                     | 0.57              |
| 2:1h:383:VAL:O    | 2:1h:383:VAL:HG12 | 2.03                     | 0.56              |
| 3:2L:464:ARG:HE   | 3:2L:473:ILE:HD12 | 1.70                     | 0.56              |
| 5:A:156:ARG:HG2   | 5:A:157:PRO:HD2   | 1.86                     | 0.56              |
| 6:U:12:PHE:HB3    | 6:U:13:PRO:HD3    | 1.87                     | 0.56              |
| 2:2h:455:VAL:HG13 | 2:3h:522:LYS:HE3  | 1.87                     | 0.56              |
| 3:1K:294:VAL:HB   | 3:1K:393:TYR:HB2  | 1.87                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2i:48:PRO:HB2   | 2:2i:51:GLU:HB3   | 1.87                     | 0.56              |
| 2:2i:431:TRP:NE1  | 2:2i:437:ARG:HH21 | 2.03                     | 0.56              |
| 3:1G:469:GLU:OE2  | 3:1G:469:GLU:N    | 2.24                     | 0.56              |
| 3:1H:205:VAL:O    | 3:1H:257:ARG:N    | 2.38                     | 0.56              |
| 6:S:87:ILE:HD12   | 6:S:88:GLU:H      | 1.69                     | 0.56              |
| 2:2f:372:ARG:HB3  | 2:2f:372:ARG:NH2  | 2.19                     | 0.56              |
| 2:2g:312:PRO:CB   | 2:2g:315:GLN:HE22 | 2.18                     | 0.56              |
| 2:1g:365:TRP:CH2  | 2:1g:434:LEU:HD11 | 2.40                     | 0.56              |
| 3:1K:135:ARG:HG3  | 3:1K:137:VAL:HG13 | 1.87                     | 0.56              |
| 3:1K:175:LEU:HD21 | 3:1K:186:LEU:HD21 | 1.86                     | 0.56              |
| 3:1K:592:THR:O    | 3:1K:596:PHE:N    | 2.37                     | 0.56              |
| 3:2K:464:ARG:HG2  | 3:2K:473:ILE:HD12 | 1.85                     | 0.56              |
| 1:p:26:TYR:CE1    | 1:p:70:ARG:HD2    | 2.40                     | 0.56              |
| 3:1L:299:LEU:HD11 | 3:1L:326:LEU:HD21 | 1.87                     | 0.56              |
| 3:1L:557:ALA:N    | 3:1L:651:SER:OG   | 2.37                     | 0.56              |
| 3:2L:135:ARG:HH12 | 3:2L:145:VAL:HG21 | 1.70                     | 0.56              |
| 2:3j:45:PRO:O     | 2:3j:97:SER:OG    | 2.23                     | 0.56              |
| 2:2e:455:VAL:HG12 | 2:3e:522:LYS:HZ3  | 1.69                     | 0.56              |
| 2:1e:42:GLY:HA2   | 2:1e:273:ASP:CG   | 2.30                     | 0.56              |
| 3:1H:107:VAL:HG23 | 3:1H:408:VAL:HG11 | 1.86                     | 0.56              |
| 3:2H:41:VAL:CG1   | 6:S:10:TRP:HB2    | 2.35                     | 0.56              |
| 3:1l:91:LEU:HD13  | 3:1l:418:VAL:HG12 | 1.88                     | 0.56              |
| 3:1l:521:ARG:NH1  | 3:1l:521:ARG:O    | 2.38                     | 0.56              |
| 3:2l:502:GLY:O    | 3:2l:503:ARG:NH1  | 2.38                     | 0.56              |
| 2:3g:502:ASN:HD21 | 2:3g:511:ARG:HB3  | 1.71                     | 0.56              |
| 1:n:33:LEU:HD11   | 1:n:147:VAL:CG2   | 2.34                     | 0.56              |
| 2:1g:41:VAL:HG22  | 2:1g:92:VAL:HB    | 1.88                     | 0.56              |
| 3:2J:208:ALA:HB1  | 3:2J:241:HIS:CD2  | 2.39                     | 0.56              |
| 2:2h:457:GLU:OE2  | 2:2h:463:LEU:HB2  | 2.06                     | 0.56              |
| 3:2K:505:ARG:N    | 3:2K:508:GLN:OE1  | 2.38                     | 0.56              |
| 7:a:57:TYR:HE1    | 7:b:46:GLY:O      | 1.89                     | 0.56              |
| 2:1i:383:VAL:O    | 2:1i:383:VAL:HG12 | 2.03                     | 0.56              |
| 3:2L:184:LEU:N    | 3:2L:235:LEU:O    | 2.38                     | 0.56              |
| 3:2G:351:HIS:O    | 3:2G:352:HIS:ND1  | 2.38                     | 0.56              |
| 1:l:116:ASN:ND2   | 1:l:144:GLU:OE1   | 2.38                     | 0.56              |
| 7:d:90:GLN:OE1    | 2:1f:469:ARG:NH1  | 2.39                     | 0.56              |
| 3:1l:346:SER:OG   | 3:1l:347:HIS:N    | 2.38                     | 0.56              |
| 3:2J:293:THR:HG22 | 3:2J:394:ARG:HG2  | 1.87                     | 0.56              |
| 2:1h:368:ASN:HD21 | 2:1h:378:PRO:HA   | 1.68                     | 0.56              |
| 3:1K:346:SER:OG   | 3:1K:347:HIS:N    | 2.39                     | 0.56              |
| 3:2K:210:THR:OG1  | 3:2K:213:GLY:O    | 2.22                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2K:532:ARG:NH1  | 5:E:139:PRO:O     | 2.39                     | 0.56              |
| 2:1i:455:VAL:O    | 2:1i:455:VAL:HG12 | 2.06                     | 0.56              |
| 7:b:57:TYR:CE2    | 7:b:137:GLY:HA2   | 2.41                     | 0.56              |
| 3:2G:324:VAL:HG21 | 3:2G:355:VAL:HG21 | 1.86                     | 0.56              |
| 3:2G:471:ALA:HB2  | 3:2G:495:GLN:HG2  | 1.88                     | 0.56              |
| 1:l:118:TRP:CZ2   | 1:m:56:LEU:HD23   | 2.40                     | 0.56              |
| 3:1l:220:ASP:OD1  | 3:1l:221:ARG:N    | 2.30                     | 0.56              |
| 4:N:147:THR:HG22  | 4:O:45:GLN:HG2    | 1.87                     | 0.56              |
| 7:e:110:LEU:HB3   | 7:e:134:ALA:HB3   | 1.87                     | 0.56              |
| 3:1J:205:VAL:O    | 3:1J:257:ARG:N    | 2.38                     | 0.56              |
| 3:1J:642:ASP:OD1  | 3:1J:644:ARG:NH2  | 2.33                     | 0.56              |
| 3:2J:432:ASP:OD1  | 3:2J:432:ASP:N    | 2.38                     | 0.56              |
| 3:1L:448:ARG:NH2  | 3:1L:461:GLU:OE2  | 2.39                     | 0.56              |
| 3:2L:183:ALA:HA   | 3:2L:236:HIS:HA   | 1.87                     | 0.56              |
| 3:2L:190:SER:CA   | 3:2L:273:THR:O    | 2.53                     | 0.56              |
| 3:2L:221:ARG:HG2  | 3:2L:234:VAL:HG22 | 1.88                     | 0.56              |
| 3:1G:210:THR:OG1  | 3:1G:213:GLY:O    | 2.24                     | 0.56              |
| 3:1l:205:VAL:HB   | 3:1l:257:ARG:HB3  | 1.87                     | 0.56              |
| 2:1g:274:LEU:HD11 | 2:1g:291:VAL:HG11 | 1.87                     | 0.56              |
| 3:1J:42:THR:OG1   | 6:U:22:ILE:HG12   | 2.05                     | 0.56              |
| 1:o:56:LEU:HD21   | 1:n:90:MET:HE1    | 1.87                     | 0.56              |
| 2:1h:39:ALA:N     | 2:1h:268:MET:O    | 2.38                     | 0.56              |
| 3:2K:87:VAL:HG11  | 3:2K:107:VAL:HG11 | 1.87                     | 0.56              |
| 3:1L:99:ILE:HD13  | 3:1L:126:LEU:H    | 1.70                     | 0.56              |
| 6:W:62:ALA:O      | 2:1j:522:LYS:NZ   | 2.37                     | 0.56              |
| 2:2j:522:LYS:HB2  | 2:1j:459:ASN:HB2  | 1.88                     | 0.56              |
| 4:R:56:ALA:HB2    | 4:R:68:PRO:HB3    | 1.87                     | 0.56              |
| 2:3e:310:ASP:OD1  | 2:3e:310:ASP:N    | 2.39                     | 0.56              |
| 3:1H:25:GLN:O     | 3:1H:27:ARG:NH1   | 2.39                     | 0.56              |
| 4:M:185:ARG:O     | 4:M:232:LEU:HD12  | 2.06                     | 0.56              |
| 2:2f:67:ASP:OD1   | 2:2f:67:ASP:N     | 2.37                     | 0.56              |
| 4:N:85:ASP:OD1    | 4:N:87:SER:N      | 2.34                     | 0.56              |
| 3:2l:99:ILE:HA    | 3:2l:127:ARG:HG3  | 1.87                     | 0.56              |
| 7:e:19:GLU:N      | 7:e:19:GLU:OE2    | 2.38                     | 0.56              |
| 4:O:56:ALA:HB2    | 4:O:68:PRO:HB3    | 1.87                     | 0.56              |
| 2:3h:505:GLU:HG3  | 2:3h:511:ARG:HH22 | 1.70                     | 0.56              |
| 2:1h:494:TYR:HD2  | 2:1h:516:ILE:HD11 | 1.70                     | 0.56              |
| 3:2K:157:ASP:OD1  | 3:2K:157:ASP:N    | 2.39                     | 0.56              |
| 3:2K:423:ASN:ND2  | 3:2K:425:GLU:O    | 2.39                     | 0.56              |
| 2:1i:241:HIS:HA   | 2:1i:245:ALA:HA   | 1.88                     | 0.56              |
| 3:2L:529:ILE:HG22 | 5:F:172:PRO:HG2   | 1.87                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:F:63:THR:O      | 5:F:89:ARG:NH2    | 2.37                     | 0.56              |
| 1:l:61:ALA:H      | 1:m:52:ASN:HD21   | 1.53                     | 0.56              |
| 6:S:92:VAL:HG12   | 6:S:107:VAL:HG12  | 1.87                     | 0.56              |
| 2:2f:263:ILE:HG22 | 2:2f:265:GLU:H    | 1.70                     | 0.56              |
| 7:a:106:LEU:HD22  | 7:a:135:HIS:NE2   | 2.20                     | 0.56              |
| 1:p:90:MET:SD     | 1:k:56:LEU:HD11   | 2.46                     | 0.56              |
| 2:1i:311:PRO:HG3  | 2:1i:339:TYR:HA   | 1.87                     | 0.56              |
| 3:1L:346:SER:OG   | 3:1L:347:HIS:N    | 2.38                     | 0.56              |
| 3:1G:199:PRO:HG2  | 3:1G:200:ARG:HH12 | 1.71                     | 0.56              |
| 2:1e:241:HIS:HB2  | 2:1e:247:TYR:HD2  | 1.70                     | 0.56              |
| 4:M:216:ASN:HD21  | 4:M:230:LEU:HB3   | 1.71                     | 0.56              |
| 3:2l:470:THR:HB   | 3:2l:473:ILE:HD11 | 1.88                     | 0.56              |
| 2:2h:514:CYS:HB3  | 2:3h:529:PHE:HB2  | 1.88                     | 0.56              |
| 2:1i:457:GLU:HB3  | 2:1i:458:PRO:HD3  | 1.85                     | 0.56              |
| 7:b:63:THR:HG22   | 7:b:130:VAL:HG22  | 1.86                     | 0.56              |
| 3:1H:145:VAL:HG23 | 3:1H:146:SER:H    | 1.69                     | 0.56              |
| 3:1l:544:THR:HG23 | 3:1l:643:HIS:HB3  | 1.87                     | 0.56              |
| 3:2l:137:VAL:HB   | 3:2l:172:LEU:HD12 | 1.87                     | 0.56              |
| 2:1g:316:ASN:ND2  | 2:1g:319:GLN:OE1  | 2.38                     | 0.56              |
| 7:f:66:LEU:HD22   | 7:f:117:PRO:HG3   | 1.87                     | 0.56              |
| 2:2h:271:VAL:HG22 | 2:2h:274:LEU:HB2  | 1.87                     | 0.56              |
| 2:3h:39:ALA:HB2   | 2:3h:266:ILE:HD12 | 1.87                     | 0.56              |
| 1:o:94:ARG:HG3    | 7:a:3:ARG:HD3     | 1.88                     | 0.55              |
| 3:1G:71:ASP:OD2   | 3:2G:11:ARG:NH1   | 2.38                     | 0.55              |
| 4:R:36:ARG:NH1    | 4:R:126:GLU:OE2   | 2.38                     | 0.55              |
| 3:1H:327:GLN:HB3  | 3:1H:334:TRP:HB3  | 1.87                     | 0.55              |
| 3:2H:32:THR:OG1   | 3:2H:33:ASP:N     | 2.39                     | 0.55              |
| 3:2H:101:VAL:HB   | 3:2H:126:LEU:H    | 1.71                     | 0.55              |
| 3:2H:335:GLN:OE1  | 3:2H:336:ASP:N    | 2.39                     | 0.55              |
| 3:2l:101:VAL:HB   | 3:2l:126:LEU:H    | 1.71                     | 0.55              |
| 3:2l:191:ARG:NH1  | 3:2l:193:ASP:OD2  | 2.39                     | 0.55              |
| 7:e:57:TYR:CE2    | 7:e:137:GLY:HA2   | 2.41                     | 0.55              |
| 2:3g:344:SER:OG   | 2:3g:345:PHE:N    | 2.39                     | 0.55              |
| 2:3g:398:GLN:OE1  | 2:3g:402:ASN:ND2  | 2.38                     | 0.55              |
| 1:n:33:LEU:CD1    | 1:n:147:VAL:HG22  | 2.36                     | 0.55              |
| 4:P:88:MET:HE1    | 7:b:86:ARG:HD2    | 1.88                     | 0.55              |
| 1:p:51:ARG:HH22   | 2:2h:477:ASN:HB2  | 1.70                     | 0.55              |
| 2:1i:48:PRO:HD2   | 2:1i:65:PHE:HE1   | 1.71                     | 0.55              |
| 3:1L:147:ASP:OD1  | 3:1L:147:ASP:N    | 2.37                     | 0.55              |
| 4:Q:152:ALA:HA    | 4:R:13:VAL:HG22   | 1.88                     | 0.55              |
| 3:2L:185:ALA:HA   | 3:2L:234:VAL:HA   | 1.87                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2L:271:SER:HB2  | 3:2L:272:PRO:HD2  | 1.87                     | 0.55              |
| 3:2L:411:LEU:HD22 | 3:2L:418:VAL:HG11 | 1.87                     | 0.55              |
| 3:2L:505:ARG:N    | 3:2L:508:GLN:OE1  | 2.36                     | 0.55              |
| 2:3j:311:PRO:HG3  | 2:3j:339:TYR:HA   | 1.88                     | 0.55              |
| 3:2G:135:ARG:HH12 | 3:2G:145:VAL:HG11 | 1.72                     | 0.55              |
| 3:1H:549:VAL:HG22 | 3:1H:608:VAL:HG23 | 1.88                     | 0.55              |
| 6:S:29:GLN:HE22   | 6:S:33:GLU:CD     | 2.14                     | 0.55              |
| 3:2l:137:VAL:HA   | 3:2l:151:ASP:HB2  | 1.88                     | 0.55              |
| 1:n:9:VAL:HG12    | 1:n:10:LEU:H      | 1.70                     | 0.55              |
| 3:1J:292:GLU:OE2  | 3:1J:292:GLU:N    | 2.39                     | 0.55              |
| 3:2J:303:THR:N    | 3:2J:308:GLN:OE1  | 2.39                     | 0.55              |
| 2:2j:517:GLY:C    | 2:2j:518:ILE:HD13 | 2.30                     | 0.55              |
| 1:k:19:ILE:HD11   | 1:k:77:VAL:HG23   | 1.88                     | 0.55              |
| 1:k:46:GLN:OE1    | 1:k:46:GLN:N      | 2.39                     | 0.55              |
| 2:2e:337:LEU:HD23 | 2:2e:406:VAL:HG23 | 1.89                     | 0.55              |
| 2:3e:458:PRO:HG2  | 2:3e:463:LEU:HD22 | 1.88                     | 0.55              |
| 3:1H:541:GLN:HE21 | 3:1H:632:LEU:HD13 | 1.72                     | 0.55              |
| 3:1H:568:LEU:HD21 | 3:1H:599:LEU:HG   | 1.89                     | 0.55              |
| 1:m:66:VAL:CG1    | 1:m:138:THR:HG21  | 2.35                     | 0.55              |
| 2:1g:57:ASN:ND2   | 6:U:119:SER:OG    | 2.38                     | 0.55              |
| 2:2h:48:PRO:HD2   | 2:2h:93:ARG:HD2   | 1.89                     | 0.55              |
| 2:2h:312:PRO:HB2  | 2:2h:315:GLN:CD   | 2.31                     | 0.55              |
| 2:1h:44:ALA:HB1   | 2:1h:65:PHE:HB3   | 1.87                     | 0.55              |
| 2:1h:477:ASN:HA   | 2:1h:480:ARG:HG3  | 1.89                     | 0.55              |
| 1:p:90:MET:HE1    | 1:k:56:LEU:HD21   | 1.88                     | 0.55              |
| 3:1L:521:ARG:NH1  | 3:1L:521:ARG:O    | 2.39                     | 0.55              |
| 3:2L:317:VAL:HG22 | 3:2L:393:TYR:HE1  | 1.71                     | 0.55              |
| 6:X:103:LEU:HD13  | 2:1e:522:LYS:HE2  | 1.88                     | 0.55              |
| 2:2f:372:ARG:NH2  | 2:2f:372:ARG:O    | 2.39                     | 0.55              |
| 2:2f:522:LYS:NZ   | 2:1f:459:ASN:HB2  | 2.21                     | 0.55              |
| 2:2g:469:ARG:NH1  | 1:n:98:THR:OG1    | 2.39                     | 0.55              |
| 2:3g:312:PRO:CD   | 2:3g:315:GLN:NE2  | 2.69                     | 0.55              |
| 3:1J:565:HIS:CD2  | 3:1J:644:ARG:HA   | 2.41                     | 0.55              |
| 5:D:113:ARG:HG3   | 5:D:119:ALA:HA    | 1.89                     | 0.55              |
| 2:2h:247:TYR:CD2  | 2:2h:256:GLY:HA3  | 2.42                     | 0.55              |
| 2:1h:316:ASN:ND2  | 2:1h:319:GLN:OE1  | 2.39                     | 0.55              |
| 3:1K:169:ASP:HB3  | 3:1K:258:VAL:HB   | 1.88                     | 0.55              |
| 5:E:78:GLU:OE1    | 5:E:78:GLU:O      | 2.24                     | 0.55              |
| 2:1i:44:ALA:HB3   | 2:1i:93:ARG:HD3   | 1.87                     | 0.55              |
| 7:b:54:ARG:NH1    | 7:c:40:GLN:OE1    | 2.40                     | 0.55              |
| 2:2e:249:GLY:O    | 2:2e:252:SER:OG   | 2.24                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1H:346:SER:OG   | 3:1H:347:HIS:N    | 2.39                     | 0.55              |
| 2:3f:93:ARG:NE    | 2:3f:97:SER:OG    | 2.40                     | 0.55              |
| 5:E:125:SER:O     | 5:E:125:SER:OG    | 2.22                     | 0.55              |
| 3:2L:302:SER:HA   | 3:2L:308:GLN:HE22 | 1.72                     | 0.55              |
| 2:2j:522:LYS:HZ3  | 2:1j:454:VAL:HA   | 1.69                     | 0.55              |
| 3:1G:42:THR:OG1   | 6:X:22:ILE:HG22   | 2.07                     | 0.55              |
| 3:2G:112:THR:HG23 | 3:2G:114:ARG:HG2  | 1.89                     | 0.55              |
| 2:2h:369:ASP:HB2  | 2:2h:438:ARG:HH22 | 1.71                     | 0.55              |
| 3:1K:629:ARG:HH21 | 3:1K:631:ASP:HA   | 1.72                     | 0.55              |
| 3:2K:355:VAL:HG23 | 3:2K:362:ILE:HG12 | 1.88                     | 0.55              |
| 2:3i:61:TYR:CE1   | 2:3i:65:PHE:HB2   | 2.42                     | 0.55              |
| 2:1i:476:VAL:HG22 | 2:1i:489:PRO:HB3  | 1.87                     | 0.55              |
| 2:3j:344:SER:OG   | 2:3j:345:PHE:N    | 2.37                     | 0.55              |
| 4:R:39:PHE:CE1    | 4:R:82:ILE:HG12   | 2.41                     | 0.55              |
| 1:l:15:PHE:HZ     | 1:l:25:GLU:HG2    | 1.71                     | 0.55              |
| 7:d:88:THR:HG21   | 2:1f:469:ARG:HB3  | 1.89                     | 0.55              |
| 2:1f:477:ASN:HA   | 2:1f:480:ARG:HG2  | 1.88                     | 0.55              |
| 3:1l:17:VAL:HG12  | 3:2l:369:ARG:HH22 | 1.71                     | 0.55              |
| 3:2l:312:LEU:HD11 | 3:2l:362:ILE:HD11 | 1.89                     | 0.55              |
| 6:T:33:GLU:OE1    | 6:T:33:GLU:HA     | 2.07                     | 0.55              |
| 3:1J:455:THR:HA   | 5:D:172:PRO:HA    | 1.89                     | 0.55              |
| 5:D:59:ASP:O      | 5:D:63:THR:OG1    | 2.23                     | 0.55              |
| 2:1h:61:TYR:CE1   | 2:1h:65:PHE:HB2   | 2.42                     | 0.55              |
| 2:1h:239:SER:N    | 2:1h:242:PRO:O    | 2.36                     | 0.55              |
| 3:1K:27:ARG:HD3   | 3:1K:30:GLU:HG3   | 1.89                     | 0.55              |
| 3:2K:313:GLU:OE1  | 3:2K:313:GLU:N    | 2.33                     | 0.55              |
| 6:V:120:LEU:HD21  | 6:V:122:PHE:CD1   | 2.41                     | 0.55              |
| 2:1i:459:ASN:ND2  | 2:1i:464:TRP:HE1  | 2.04                     | 0.55              |
| 3:1L:109:THR:HG22 | 3:1L:408:VAL:HG23 | 1.88                     | 0.55              |
| 3:1L:342:HIS:HB3  | 3:2L:448:ARG:HH21 | 1.71                     | 0.55              |
| 3:2L:322:PRO:HB3  | 3:2L:339:VAL:HG12 | 1.87                     | 0.55              |
| 5:F:112:VAL:HG23  | 5:F:166:LEU:HD23  | 1.88                     | 0.55              |
| 2:2j:376:LYS:HD3  | 2:2j:377:ALA:H    | 1.71                     | 0.55              |
| 2:1j:412:PHE:CE1  | 2:1j:420:TRP:CH2  | 2.94                     | 0.55              |
| 3:2G:303:THR:N    | 3:2G:308:GLN:OE1  | 2.39                     | 0.55              |
| 2:3e:45:PRO:HA    | 2:3e:98:ALA:HB3   | 1.89                     | 0.55              |
| 3:1H:134:GLY:H    | 3:1H:174:GLY:C    | 2.14                     | 0.55              |
| 3:2H:532:ARG:HH11 | 5:B:139:PRO:HB2   | 1.72                     | 0.55              |
| 5:B:63:THR:O      | 5:B:89:ARG:NH2    | 2.39                     | 0.55              |
| 4:N:102:LEU:HD21  | 4:N:162:MET:HE2   | 1.88                     | 0.55              |
| 2:2g:383:VAL:O    | 2:2g:383:VAL:HG12 | 2.05                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3g:312:PRO:CD   | 2:3g:315:GLN:HE22 | 2.15                     | 0.55              |
| 2:1g:263:ILE:HG22 | 2:1g:265:GLU:H    | 1.72                     | 0.55              |
| 3:1J:135:ARG:O    | 3:1J:174:GLY:N    | 2.40                     | 0.55              |
| 7:a:33:GLN:HA     | 7:f:113:SER:HA    | 1.89                     | 0.55              |
| 2:3i:458:PRO:C    | 2:3i:460:ASP:H    | 2.15                     | 0.55              |
| 2:1i:315:GLN:HG2  | 2:1i:320:ILE:HD13 | 1.88                     | 0.55              |
| 3:1L:25:GLN:O     | 3:1L:27:ARG:NH1   | 2.40                     | 0.55              |
| 3:1L:296:ASP:OD1  | 3:1L:389:ARG:NE   | 2.33                     | 0.55              |
| 2:1j:368:ASN:HD21 | 2:1j:378:PRO:HA   | 1.68                     | 0.55              |
| 3:1G:17:VAL:HG21  | 3:1G:55:VAL:HB    | 1.89                     | 0.55              |
| 3:1G:220:ASP:OD2  | 3:1G:424:ARG:NH1  | 2.40                     | 0.55              |
| 4:R:10:LYS:O      | 2:1f:486:GLY:N    | 2.32                     | 0.55              |
| 2:2e:274:LEU:HD23 | 2:2e:275:MET:HG2  | 1.89                     | 0.55              |
| 3:1H:136:LEU:HB3  | 3:1H:152:LEU:HD23 | 1.88                     | 0.55              |
| 2:2f:482:GLY:HA3  | 1:n:45:ASN:HD21   | 1.71                     | 0.55              |
| 1:m:121:LYS:HB3   | 1:m:140:THR:HB    | 1.88                     | 0.55              |
| 2:3g:410:ARG:HG3  | 2:3g:412:PHE:CZ   | 2.42                     | 0.55              |
| 2:3g:415:ARG:CZ   | 2:3g:415:ARG:HA   | 2.37                     | 0.55              |
| 2:1h:47:GLY:O     | 2:1h:93:ARG:NH1   | 2.40                     | 0.55              |
| 2:1h:315:GLN:HG2  | 2:1h:320:ILE:HD13 | 1.89                     | 0.55              |
| 4:P:14:ARG:HG2    | 4:P:14:ARG:HH11   | 1.71                     | 0.55              |
| 4:P:85:ASP:OD1    | 4:P:86:SER:N      | 2.40                     | 0.55              |
| 7:a:50:GLN:HE21   | 7:a:50:GLN:CA     | 2.15                     | 0.55              |
| 3:1L:41:VAL:HG21  | 6:W:24:LEU:HD11   | 1.87                     | 0.55              |
| 2:1j:269:VAL:HG11 | 2:1j:295:LEU:HD11 | 1.88                     | 0.55              |
| 1:l:5:LYS:O       | 1:l:5:LYS:HG2     | 2.07                     | 0.55              |
| 3:2H:477:GLU:HA   | 3:2H:488:VAL:HA   | 1.89                     | 0.55              |
| 3:2l:210:THR:HA   | 3:2l:241:HIS:HB3  | 1.89                     | 0.55              |
| 2:1g:476:VAL:HG13 | 2:1g:493:TYR:HE2  | 1.71                     | 0.55              |
| 3:2J:163:GLU:HB3  | 3:2J:270:THR:HA   | 1.88                     | 0.55              |
| 3:2J:201:GLN:N    | 3:2J:202:PRO:HD2  | 2.21                     | 0.55              |
| 4:Q:85:ASP:OD1    | 4:Q:87:SER:N      | 2.28                     | 0.54              |
| 2:3j:457:GLU:N    | 2:3j:458:PRO:CD   | 2.70                     | 0.54              |
| 2:1j:35:THR:O     | 2:1j:369:ASP:OD2  | 2.25                     | 0.54              |
| 2:3e:240:ALA:HB3  | 2:3e:280:ARG:HH22 | 1.72                     | 0.54              |
| 3:2H:205:VAL:HG13 | 3:2H:257:ARG:HB3  | 1.89                     | 0.54              |
| 2:2f:249:GLY:O    | 2:2f:252:SER:OG   | 2.21                     | 0.54              |
| 2:2g:522:LYS:HZ2  | 2:1g:459:ASN:HA   | 1.71                     | 0.54              |
| 1:n:9:VAL:HG12    | 1:n:10:LEU:N      | 2.22                     | 0.54              |
| 2:1g:368:ASN:HD22 | 2:1g:378:PRO:HB3  | 1.71                     | 0.54              |
| 3:1J:135:ARG:HD2  | 3:1J:246:ASN:HB3  | 1.87                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1J:145:VAL:HG23 | 3:1J:146:SER:H    | 1.72                     | 0.54              |
| 3:1J:346:SER:OG   | 3:1J:347:HIS:N    | 2.38                     | 0.54              |
| 2:2h:374:VAL:O    | 2:2h:374:VAL:HG22 | 2.07                     | 0.54              |
| 1:o:18:GLN:OE1    | 1:o:18:GLN:N      | 2.40                     | 0.54              |
| 2:1h:94:VAL:HG13  | 2:1h:94:VAL:O     | 2.06                     | 0.54              |
| 3:2K:152:LEU:HD22 | 3:2K:158:VAL:HG12 | 1.89                     | 0.54              |
| 3:2K:317:VAL:HG12 | 3:2K:393:TYR:HE1  | 1.72                     | 0.54              |
| 6:V:54:CYS:SG     | 6:V:56:ILE:HG23   | 2.47                     | 0.54              |
| 2:2j:516:ILE:HG21 | 2:3j:533:GLN:HG2  | 1.89                     | 0.54              |
| 1:k:12:ALA:HB1    | 1:k:102:MET:HB2   | 1.87                     | 0.54              |
| 3:1G:152:LEU:HD21 | 3:1G:274:ILE:HD13 | 1.89                     | 0.54              |
| 2:2e:304:ASP:OD1  | 2:2e:304:ASP:N    | 2.41                     | 0.54              |
| 3:1H:191:ARG:NH2  | 3:1H:274:ILE:O    | 2.40                     | 0.54              |
| 3:1l:225:GLY:H    | 3:1l:228:ASN:HD21 | 1.53                     | 0.54              |
| 3:1l:571:HIS:HE2  | 3:1l:594:GLU:CD   | 2.14                     | 0.54              |
| 2:1h:39:ALA:HB2   | 2:1h:266:ILE:HD13 | 1.88                     | 0.54              |
| 3:1K:15:GLN:NE2   | 5:E:5:SER:OG      | 2.40                     | 0.54              |
| 3:2K:369:ARG:N    | 5:E:57:TYR:OH     | 2.34                     | 0.54              |
| 4:Q:15:ALA:H      | 4:Q:42:ASN:ND2    | 2.05                     | 0.54              |
| 2:2j:367:ARG:CZ   | 2:2j:381:GLU:HG2  | 2.38                     | 0.54              |
| 2:1j:423:ARG:HE   | 2:1j:432:ARG:HD2  | 1.72                     | 0.54              |
| 3:2G:245:ARG:NH1  | 3:2G:247:GLY:O    | 2.39                     | 0.54              |
| 1:l:114:LEU:HD13  | 1:l:143:PHE:CE1   | 2.42                     | 0.54              |
| 3:1H:350:ASP:OD2  | 3:1H:352:HIS:NE2  | 2.41                     | 0.54              |
| 3:2H:505:ARG:N    | 3:2H:508:GLN:OE1  | 2.34                     | 0.54              |
| 7:d:17:ASP:OD1    | 7:d:18:GLY:N      | 2.34                     | 0.54              |
| 2:2f:46:THR:OG1   | 2:2f:95:GLY:O     | 2.24                     | 0.54              |
| 2:2f:407:ASN:HB3  | 2:2f:421:GLY:HA3  | 1.89                     | 0.54              |
| 3:1l:25:GLN:O     | 3:1l:27:ARG:NH1   | 2.40                     | 0.54              |
| 3:1l:70:LEU:HD13  | 3:1l:75:ILE:HD11  | 1.89                     | 0.54              |
| 3:1J:369:ARG:NH2  | 3:2J:438:GLU:OE2  | 2.41                     | 0.54              |
| 3:2J:95:GLN:HG2   | 3:2J:96:GLU:HG3   | 1.88                     | 0.54              |
| 3:2J:471:ALA:HB2  | 3:2J:495:GLN:HG2  | 1.89                     | 0.54              |
| 5:D:152:LEU:HD23  | 5:D:155:PRO:HA    | 1.89                     | 0.54              |
| 2:2h:455:VAL:HG22 | 2:3h:522:LYS:NZ   | 2.22                     | 0.54              |
| 3:2K:435:THR:HG23 | 3:2K:438:GLU:H    | 1.72                     | 0.54              |
| 2:2i:456:PHE:HE1  | 2:3i:372:ARG:CZ   | 2.21                     | 0.54              |
| 2:3i:365:TRP:O    | 2:3i:369:ASP:OD1  | 2.25                     | 0.54              |
| 3:2L:175:LEU:C    | 3:2L:251:ALA:HB1  | 2.31                     | 0.54              |
| 7:b:107:ILE:HD13  | 2:1j:476:VAL:HG21 | 1.90                     | 0.54              |
| 2:1e:43:LEU:HD12  | 2:1e:273:ASP:HB2  | 1.89                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1f:239:SER:N    | 2:1f:242:PRO:O    | 2.32                     | 0.54              |
| 2:2g:458:PRO:HG3  | 2:3g:523:PRO:CG   | 2.35                     | 0.54              |
| 3:2J:335:GLN:OE1  | 3:2J:336:ASP:N    | 2.41                     | 0.54              |
| 4:P:88:MET:HE1    | 7:b:86:ARG:NE     | 2.22                     | 0.54              |
| 3:2L:467:ALA:HA   | 3:2L:518:ARG:HH21 | 1.73                     | 0.54              |
| 2:2e:517:GLY:C    | 2:2e:518:ILE:HD13 | 2.32                     | 0.54              |
| 2:3e:45:PRO:HG2   | 2:3e:66:GLY:HA3   | 1.90                     | 0.54              |
| 2:3e:457:GLU:N    | 2:3e:458:PRO:CD   | 2.70                     | 0.54              |
| 5:B:78:GLU:OE1    | 5:B:78:GLU:O      | 2.25                     | 0.54              |
| 2:3g:380:ASN:OD1  | 2:3g:418:ARG:NH1  | 2.40                     | 0.54              |
| 3:2J:204:LEU:HD13 | 3:2J:225:GLY:HA3  | 1.89                     | 0.54              |
| 6:V:84:GLU:HG3    | 6:V:87:ILE:HG22   | 1.90                     | 0.54              |
| 3:1L:180:PRO:HA   | 3:1L:241:HIS:HB3  | 1.90                     | 0.54              |
| 6:W:118:ARG:HH11  | 6:W:118:ARG:HG3   | 1.72                     | 0.54              |
| 2:2j:249:GLY:O    | 2:2j:252:SER:OG   | 2.25                     | 0.54              |
| 1:l:65:SER:O      | 1:l:65:SER:OG     | 2.24                     | 0.54              |
| 1:l:122:VAL:HG12  | 1:m:33:LEU:HD23   | 1.90                     | 0.54              |
| 3:2H:26:GLN:NE2   | 3:2H:26:GLN:O     | 2.41                     | 0.54              |
| 3:2J:505:ARG:N    | 3:2J:508:GLN:OE1  | 2.35                     | 0.54              |
| 3:1K:21:LYS:HD3   | 3:1K:49:HIS:CD2   | 2.42                     | 0.54              |
| 3:1H:220:ASP:OD1  | 3:1H:221:ARG:N    | 2.34                     | 0.54              |
| 2:2f:376:LYS:HB2  | 2:2f:376:LYS:HZ3  | 1.72                     | 0.54              |
| 2:1f:395:ARG:HB2  | 2:1f:410:ARG:HH22 | 1.73                     | 0.54              |
| 3:1l:615:PRO:HG2  | 3:1l:624:GLY:HA3  | 1.90                     | 0.54              |
| 3:2l:41:VAL:HG11  | 6:T:10:TRP:HB3    | 1.87                     | 0.54              |
| 3:2l:317:VAL:HG12 | 3:2l:393:TYR:HE1  | 1.73                     | 0.54              |
| 3:2J:136:LEU:HD12 | 3:2J:152:LEU:HB3  | 1.90                     | 0.54              |
| 3:1K:500:PRO:HD3  | 3:1K:505:ARG:HB2  | 1.89                     | 0.54              |
| 4:R:15:ALA:HB2    | 4:R:127:TRP:CD2   | 2.43                     | 0.54              |
| 7:c:86:ARG:HH11   | 7:c:86:ARG:HG3    | 1.72                     | 0.54              |
| 2:2e:338:TYR:CZ   | 2:2e:361:VAL:HG21 | 2.42                     | 0.54              |
| 3:1H:91:LEU:HD13  | 3:1H:418:VAL:HG12 | 1.90                     | 0.54              |
| 3:1H:181:ASP:CG   | 3:1H:182:CYS:H    | 2.12                     | 0.54              |
| 3:1H:305:LEU:H    | 3:1H:305:LEU:HD12 | 1.73                     | 0.54              |
| 2:3f:61:TYR:CE1   | 2:3f:65:PHE:HB2   | 2.42                     | 0.54              |
| 2:1f:384:ARG:O    | 2:1f:384:ARG:HG2  | 2.07                     | 0.54              |
| 3:1J:90:TRP:HE1   | 3:1J:183:ALA:HB3  | 1.72                     | 0.54              |
| 7:f:57:TYR:CE2    | 7:f:137:GLY:HA2   | 2.43                     | 0.54              |
| 2:1h:369:ASP:CG   | 2:1h:374:VAL:HG23 | 2.33                     | 0.54              |
| 3:2L:140:VAL:HG12 | 3:2L:143:GLU:HB2  | 1.89                     | 0.54              |
| 4:R:216:ASN:HD21  | 4:R:231:ILE:H     | 1.56                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2H:295:LEU:HD12 | 3:2H:392:ARG:HB2  | 1.90                     | 0.54              |
| 2:2f:65:PHE:HB3   | 2:2f:93:ARG:HH12  | 1.73                     | 0.54              |
| 2:1f:494:TYR:HD2  | 2:1f:516:ILE:HD11 | 1.73                     | 0.54              |
| 3:2l:183:ALA:N    | 3:2l:283:GLY:O    | 2.34                     | 0.54              |
| 3:2l:187:GLU:HB3  | 3:2l:278:GLU:H    | 1.72                     | 0.54              |
| 6:T:12:PHE:HB3    | 6:T:13:PRO:HD3    | 1.89                     | 0.54              |
| 3:2J:85:THR:HG22  | 3:2J:427:ALA:HA   | 1.90                     | 0.54              |
| 7:a:110:LEU:HB3   | 7:a:134:ALA:HB3   | 1.89                     | 0.54              |
| 2:2i:247:TYR:CD2  | 2:2i:256:GLY:HA3  | 2.43                     | 0.54              |
| 2:1i:436:ILE:HD11 | 2:1i:520:PRO:HB3  | 1.90                     | 0.54              |
| 3:1L:85:THR:HB    | 3:1L:427:ALA:HB2  | 1.90                     | 0.54              |
| 3:2L:88:THR:HG22  | 3:2L:285:THR:HG23 | 1.90                     | 0.54              |
| 3:2L:183:ALA:N    | 3:2L:283:GLY:O    | 2.37                     | 0.54              |
| 1:k:26:TYR:CD2    | 1:k:68:VAL:HG12   | 2.42                     | 0.54              |
| 2:2e:480:ARG:O    | 1:m:44:GLN:HG2    | 2.08                     | 0.54              |
| 2:1e:44:ALA:O     | 2:1e:93:ARG:NE    | 2.41                     | 0.54              |
| 2:1e:392:GLN:HE22 | 2:1e:411:SER:HB3  | 1.73                     | 0.54              |
| 3:1l:128:ILE:HG22 | 3:1l:129:VAL:H    | 1.72                     | 0.54              |
| 3:1l:399:ARG:HH21 | 3:1l:432:ASP:H    | 1.56                     | 0.54              |
| 2:3g:299:CYS:SG   | 2:3g:300:GLU:N    | 2.81                     | 0.54              |
| 2:3g:389:LEU:HD11 | 2:3g:409:ILE:HG22 | 1.89                     | 0.54              |
| 3:1K:91:LEU:HD13  | 3:1K:418:VAL:HG12 | 1.90                     | 0.53              |
| 2:2i:368:ASN:ND2  | 2:2i:376:LYS:O    | 2.35                     | 0.53              |
| 2:3i:39:ALA:HB3   | 2:3i:269:VAL:HG23 | 1.90                     | 0.53              |
| 3:1L:175:LEU:N    | 3:1L:251:ALA:CB   | 2.52                     | 0.53              |
| 4:Q:113:LEU:HD21  | 4:M:62:VAL:HB     | 1.89                     | 0.53              |
| 3:2L:191:ARG:HB3  | 3:2L:275:ARG:HD3  | 1.91                     | 0.53              |
| 3:1G:175:LEU:HD21 | 3:1G:186:LEU:HD21 | 1.88                     | 0.53              |
| 2:2e:247:TYR:HD2  | 2:2e:256:GLY:HA3  | 1.72                     | 0.53              |
| 2:2e:453:TRP:O    | 2:2e:456:PHE:HB2  | 2.08                     | 0.53              |
| 3:1H:555:VAL:O    | 3:1H:651:SER:OG   | 2.26                     | 0.53              |
| 3:1l:642:ASP:OD1  | 3:1l:644:ARG:NH2  | 2.32                     | 0.53              |
| 3:2J:42:THR:OG1   | 3:2J:45:GLU:OE1   | 2.24                     | 0.53              |
| 2:2h:40:PHE:HE1   | 2:2h:78:VAL:HG22  | 1.73                     | 0.53              |
| 2:3h:296:ILE:HD11 | 2:3h:309:ILE:HD11 | 1.89                     | 0.53              |
| 2:1i:273:ASP:C    | 2:1i:273:ASP:OD1  | 2.50                     | 0.53              |
| 3:1L:136:LEU:HB2  | 3:1L:152:LEU:HB3  | 1.89                     | 0.53              |
| 4:R:37:PHE:HE1    | 4:R:98:LYS:HG2    | 1.73                     | 0.53              |
| 1:l:71:GLY:HA3    | 1:m:7:GLU:HB2     | 1.90                     | 0.53              |
| 2:1e:239:SER:HB2  | 2:1e:242:PRO:HG2  | 1.89                     | 0.53              |
| 7:d:80:VAL:HG22   | 7:d:84:ILE:HD12   | 1.90                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:134:GLY:H    | 3:1l:174:GLY:C    | 2.17                     | 0.53              |
| 3:1l:326:LEU:HD11 | 3:1l:362:ILE:HG21 | 1.90                     | 0.53              |
| 3:1l:565:HIS:CD2  | 3:1l:644:ARG:HA   | 2.43                     | 0.53              |
| 3:1J:542:GLY:HA2  | 3:1J:639:PHE:HB2  | 1.90                     | 0.53              |
| 3:2J:190:SER:HB2  | 3:2J:272:PRO:CB   | 2.25                     | 0.53              |
| 2:2h:376:LYS:HD3  | 2:2h:377:ALA:H    | 1.73                     | 0.53              |
| 1:o:43:GLN:CD     | 7:e:12:PHE:HE1    | 2.17                     | 0.53              |
| 1:o:56:LEU:HD23   | 1:n:118:TRP:HZ2   | 1.72                     | 0.53              |
| 3:2K:41:VAL:CG1   | 6:V:10:TRP:HB2    | 2.38                     | 0.53              |
| 3:2K:335:GLN:OE1  | 3:2K:336:ASP:N    | 2.40                     | 0.53              |
| 2:2i:315:GLN:O    | 2:2i:339:TYR:OH   | 2.24                     | 0.53              |
| 1:p:66:VAL:CG1    | 1:p:138:THR:HG23  | 2.38                     | 0.53              |
| 3:2L:187:GLU:HB3  | 3:2L:278:GLU:H    | 1.72                     | 0.53              |
| 7:b:80:VAL:HG22   | 7:b:84:ILE:HD12   | 1.91                     | 0.53              |
| 3:1G:346:SER:OG   | 3:1G:347:HIS:N    | 2.40                     | 0.53              |
| 6:X:87:ILE:HD11   | 6:X:109:TYR:HB2   | 1.91                     | 0.53              |
| 2:3e:443:LEU:HD11 | 2:3e:475:LEU:HD21 | 1.90                     | 0.53              |
| 2:1e:37:VAL:HG13  | 2:1e:266:ILE:HA   | 1.90                     | 0.53              |
| 3:1H:244:SER:HG   | 3:1H:253:TRP:CD1  | 2.26                     | 0.53              |
| 5:C:25:ALA:O      | 5:C:27:PHE:N      | 2.37                     | 0.53              |
| 2:3g:368:ASN:ND2  | 2:3g:378:PRO:CA   | 2.72                     | 0.53              |
| 1:n:36:GLU:HG2    | 1:n:57:MET:HG3    | 1.91                     | 0.53              |
| 2:1i:37:VAL:HG13  | 2:1i:266:ILE:HA   | 1.91                     | 0.53              |
| 2:1i:486:GLY:N    | 4:O:10:LYS:O      | 2.30                     | 0.53              |
| 3:1L:152:LEU:HD11 | 3:1L:274:ILE:HB   | 1.91                     | 0.53              |
| 3:2L:315:ALA:HB1  | 3:2L:316:PRO:HD2  | 1.90                     | 0.53              |
| 1:k:90:MET:N      | 1:k:90:MET:SD     | 2.81                     | 0.53              |
| 2:1j:315:GLN:HG3  | 2:1j:320:ILE:HD13 | 1.91                     | 0.53              |
| 3:2G:189:ASP:HA   | 3:2G:230:PRO:HB3  | 1.90                     | 0.53              |
| 7:d:63:THR:HG22   | 7:d:130:VAL:HG22  | 1.88                     | 0.53              |
| 2:3f:509:LEU:O    | 2:3f:511:ARG:NH2  | 2.39                     | 0.53              |
| 2:1f:457:GLU:HB3  | 2:1f:458:PRO:HD2  | 1.88                     | 0.53              |
| 2:1g:239:SER:HB3  | 2:1g:242:PRO:HD2  | 1.89                     | 0.53              |
| 2:1g:453:TRP:CB   | 2:1g:457:GLU:OE2  | 2.50                     | 0.53              |
| 3:1J:451:GLU:OE1  | 3:1J:526:ARG:NH1  | 2.40                     | 0.53              |
| 7:a:63:THR:HG22   | 7:a:130:VAL:HG22  | 1.89                     | 0.53              |
| 2:1j:497:CYS:HB2  | 2:1j:513:VAL:HG12 | 1.91                     | 0.53              |
| 3:1G:128:ILE:HG22 | 3:1G:129:VAL:H    | 1.73                     | 0.53              |
| 2:1e:372:ARG:HH11 | 2:1e:376:LYS:HZ2  | 1.57                     | 0.53              |
| 3:1l:480:GLU:HA   | 3:1l:486:HIS:HB3  | 1.90                     | 0.53              |
| 3:1J:542:GLY:O    | 3:1J:616:ALA:N    | 2.41                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:U:51:GLU:OE1    | 6:U:82:ARG:NH2    | 2.41                     | 0.53              |
| 3:1K:180:PRO:HA   | 3:1K:241:HIS:HB3  | 1.90                     | 0.53              |
| 2:2i:372:ARG:CZ   | 2:1i:456:PHE:HE2  | 2.21                     | 0.53              |
| 2:2i:456:PHE:O    | 2:3i:523:PRO:CD   | 2.41                     | 0.53              |
| 1:p:37:GLN:CA     | 1:p:37:GLN:HE21   | 2.21                     | 0.53              |
| 7:b:121:PRO:HG3   | 7:c:25:ASN:OD1    | 2.08                     | 0.53              |
| 1:k:72:MET:HE1    | 1:l:112:TRP:HE1   | 1.74                     | 0.53              |
| 1:l:3:LEU:HB3     | 1:l:4:PRO:CD      | 2.39                     | 0.53              |
| 1:l:71:GLY:CA     | 1:m:7:GLU:HB2     | 2.39                     | 0.53              |
| 2:1e:480:ARG:NH1  | 7:d:47:PHE:HZ     | 2.01                     | 0.53              |
| 5:B:152:LEU:HD23  | 5:B:155:PRO:HA    | 1.90                     | 0.53              |
| 2:3f:45:PRO:O     | 2:3f:93:ARG:NH2   | 2.42                     | 0.53              |
| 3:2l:183:ALA:HA   | 3:2l:236:HIS:HA   | 1.89                     | 0.53              |
| 5:C:133:ARG:HG2   | 5:C:134:PRO:HD2   | 1.90                     | 0.53              |
| 6:T:64:VAL:HA     | 2:1g:522:LYS:NZ   | 2.23                     | 0.53              |
| 3:1K:245:ARG:NH2  | 3:1L:503:ARG:HG3  | 2.24                     | 0.53              |
| 1:p:37:GLN:N      | 1:p:57:MET:HG2    | 2.23                     | 0.53              |
| 2:1i:273:ASP:OD1  | 2:1i:274:LEU:N    | 2.41                     | 0.53              |
| 3:1H:588:ARG:HD3  | 3:1H:589:PRO:HD2  | 1.91                     | 0.53              |
| 3:2H:87:VAL:HG11  | 3:2H:107:VAL:HG11 | 1.91                     | 0.53              |
| 3:2H:209:TRP:NE1  | 3:2H:244:SER:OG   | 2.41                     | 0.53              |
| 2:2f:304:ASP:N    | 2:2f:304:ASP:OD1  | 2.42                     | 0.53              |
| 3:1l:481:ASN:HD21 | 3:1l:485:ALA:HB3  | 1.73                     | 0.53              |
| 1:n:18:GLN:N      | 1:n:18:GLN:OE1    | 2.42                     | 0.53              |
| 2:1g:263:ILE:HG21 | 2:1g:266:ILE:HG23 | 1.89                     | 0.53              |
| 2:1g:423:ARG:HE   | 2:1g:432:ARG:HD2  | 1.74                     | 0.53              |
| 3:1J:70:LEU:HD13  | 3:1J:75:ILE:HD11  | 1.89                     | 0.53              |
| 3:2J:191:ARG:HB2  | 3:2J:275:ARG:HD3  | 1.91                     | 0.53              |
| 3:2J:191:ARG:NH2  | 3:2J:273:THR:OG1  | 2.41                     | 0.53              |
| 2:1h:43:LEU:HD12  | 2:1h:273:ASP:HB2  | 1.91                     | 0.53              |
| 5:E:59:ASP:O      | 5:E:63:THR:OG1    | 2.26                     | 0.53              |
| 1:p:36:GLU:HB3    | 1:p:57:MET:HB3    | 1.90                     | 0.53              |
| 3:1L:328:THR:HB   | 3:1L:337:TRP:HE1  | 1.73                     | 0.53              |
| 7:b:53:THR:OG1    | 4:O:157:ARG:NH1   | 2.25                     | 0.53              |
| 2:1j:494:TYR:HD2  | 2:1j:516:ILE:HD11 | 1.74                     | 0.53              |
| 3:1G:45:GLU:OE1   | 3:1G:45:GLU:HA    | 2.08                     | 0.53              |
| 5:A:25:ALA:O      | 5:A:27:PHE:N      | 2.39                     | 0.53              |
| 4:M:85:ASP:OD1    | 4:M:86:SER:N      | 2.42                     | 0.53              |
| 3:1l:108:ALA:HB2  | 3:1l:119:VAL:HA   | 1.91                     | 0.53              |
| 3:2l:41:VAL:HG13  | 6:T:10:TRP:CG     | 2.44                     | 0.53              |
| 5:C:63:THR:O      | 5:C:89:ARG:NH2    | 2.42                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2g:368:ASN:ND2  | 2:2g:378:PRO:CB   | 2.69                     | 0.53              |
| 3:1J:133:MET:HG2  | 3:1J:279:ALA:HB2  | 1.91                     | 0.53              |
| 3:2J:82:ALA:HB1   | 3:2J:290:HIS:HB3  | 1.90                     | 0.53              |
| 3:1K:70:LEU:HD13  | 3:1K:75:ILE:HD11  | 1.90                     | 0.53              |
| 2:3i:240:ALA:HB3  | 2:3i:280:ARG:HH12 | 1.73                     | 0.53              |
| 3:1G:412:ARG:HB3  | 3:1G:415:ILE:HD11 | 1.90                     | 0.53              |
| 6:X:28:GLU:HB2    | 6:X:118:ARG:HH22  | 1.73                     | 0.53              |
| 4:M:8:ALA:HB3     | 6:T:66:GLU:HG2    | 1.89                     | 0.53              |
| 2:1f:37:VAL:CG2   | 2:1f:266:ILE:HA   | 2.39                     | 0.53              |
| 4:N:216:ASN:HD21  | 4:N:230:LEU:HB3   | 1.74                     | 0.53              |
| 2:1g:47:GLY:O     | 2:1g:93:ARG:NH1   | 2.41                     | 0.53              |
| 5:D:25:ALA:O      | 5:D:27:PHE:N      | 2.39                     | 0.53              |
| 2:2h:304:ASP:OD1  | 2:2h:304:ASP:N    | 2.42                     | 0.53              |
| 2:3h:49:LEU:O     | 2:3h:52:PRO:HD2   | 2.08                     | 0.53              |
| 3:2K:209:TRP:NE1  | 3:2K:244:SER:OG   | 2.42                     | 0.53              |
| 3:2K:372:ASP:HA   | 5:E:6:GLN:HB2     | 1.90                     | 0.53              |
| 2:2i:494:TYR:O    | 2:2i:515:GLU:HA   | 2.09                     | 0.53              |
| 3:2H:112:THR:HG23 | 3:2H:114:ARG:HG2  | 1.91                     | 0.53              |
| 2:3f:308:ILE:C    | 2:3f:309:ILE:HD13 | 2.34                     | 0.53              |
| 6:T:57:HIS:HA     | 6:T:60:VAL:HG23   | 1.91                     | 0.53              |
| 6:T:64:VAL:HG22   | 2:1g:522:LYS:HD3  | 1.90                     | 0.53              |
| 2:3g:49:LEU:O     | 2:3g:52:PRO:HD2   | 2.09                     | 0.53              |
| 3:1L:516:LEU:HD23 | 3:1L:535:VAL:HG13 | 1.90                     | 0.52              |
| 5:F:59:ASP:O      | 5:F:63:THR:OG1    | 2.24                     | 0.52              |
| 1:k:96:ASN:OD1    | 1:k:97:ALA:N      | 2.42                     | 0.52              |
| 3:1G:224:THR:HG21 | 3:1G:229:ARG:HE   | 1.74                     | 0.52              |
| 3:1H:456:LEU:HD12 | 5:B:171:ARG:HH21  | 1.73                     | 0.52              |
| 2:2f:372:ARG:CZ   | 2:2f:372:ARG:CA   | 2.85                     | 0.52              |
| 3:1l:39:PRO:HD2   | 3:1l:43:LEU:HB2   | 1.91                     | 0.52              |
| 3:1l:96:GLU:OE1   | 3:1l:417:TYR:OH   | 2.23                     | 0.52              |
| 2:2g:458:PRO:CG   | 2:3g:523:PRO:HG3  | 2.39                     | 0.52              |
| 3:2J:190:SER:OG   | 3:2J:272:PRO:CB   | 2.56                     | 0.52              |
| 5:D:131:ASN:HD22  | 5:D:137:PRO:HD2   | 1.74                     | 0.52              |
| 3:1K:85:THR:HB    | 3:1K:427:ALA:HB2  | 1.91                     | 0.52              |
| 3:2G:119:VAL:HG11 | 3:2G:292:GLU:HG3  | 1.91                     | 0.52              |
| 2:2e:48:PRO:HD2   | 2:2e:93:ARG:HD2   | 1.92                     | 0.52              |
| 2:2e:376:LYS:HA   | 2:2e:376:LYS:CE   | 2.19                     | 0.52              |
| 2:1e:508:ASP:OD1  | 2:1e:508:ASP:N    | 2.39                     | 0.52              |
| 3:2H:141:SER:N    | 3:2H:169:ASP:OD1  | 2.42                     | 0.52              |
| 2:3f:41:VAL:HG12  | 2:3f:92:VAL:HB    | 1.91                     | 0.52              |
| 4:N:14:ARG:HG2    | 4:N:14:ARG:HH11   | 1.74                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2l:108:ALA:HB2  | 3:2l:119:VAL:HG13 | 1.90                     | 0.52              |
| 2:1h:513:VAL:HG22 | 2:1h:514:CYS:H    | 1.74                     | 0.52              |
| 2:3i:343:LYS:HD2  | 2:3i:388:ASP:HB3  | 1.91                     | 0.52              |
| 3:2G:62:PRO:HB2   | 3:2G:64:LYS:HG2   | 1.91                     | 0.52              |
| 3:2H:43:LEU:HD11  | 6:S:46:ARG:NH2    | 2.24                     | 0.52              |
| 2:3f:49:LEU:O     | 2:3f:52:PRO:HD2   | 2.09                     | 0.52              |
| 2:1f:44:ALA:HB3   | 2:1f:93:ARG:HD3   | 1.92                     | 0.52              |
| 3:1l:131:CYS:SG   | 3:1l:132:THR:N    | 2.82                     | 0.52              |
| 3:1l:591:GLN:NE2  | 3:1l:593:GLY:H    | 2.08                     | 0.52              |
| 2:3g:494:TYR:HD2  | 2:3g:516:ILE:HD12 | 1.73                     | 0.52              |
| 3:1J:568:LEU:HD21 | 3:1J:599:LEU:HG   | 1.91                     | 0.52              |
| 2:2h:312:PRO:CB   | 2:2h:315:GLN:HE22 | 2.21                     | 0.52              |
| 2:3h:249:GLY:N    | 2:3h:255:THR:O    | 2.43                     | 0.52              |
| 1:o:56:LEU:HD11   | 1:n:90:MET:SD     | 2.50                     | 0.52              |
| 3:1K:241:HIS:NE2  | 3:1K:252:GLY:HA3  | 2.25                     | 0.52              |
| 3:1L:565:HIS:CD2  | 3:1L:644:ARG:HA   | 2.45                     | 0.52              |
| 4:Q:187:HIS:CD2   | 4:Q:198:LEU:HD11  | 2.45                     | 0.52              |
| 2:2j:455:VAL:HG22 | 2:3j:522:LYS:NZ   | 2.25                     | 0.52              |
| 2:3j:435:ASN:O    | 2:3j:439:TYR:N    | 2.33                     | 0.52              |
| 1:k:20:ASP:C      | 1:k:20:ASP:OD1    | 2.52                     | 0.52              |
| 3:1H:500:PRO:HD3  | 3:1H:505:ARG:HB2  | 1.91                     | 0.52              |
| 2:2f:372:ARG:HH21 | 2:2f:376:LYS:HG2  | 1.74                     | 0.52              |
| 1:m:60:VAL:O      | 1:n:52:ASN:ND2    | 2.42                     | 0.52              |
| 1:m:90:MET:CE     | 1:n:56:LEU:HD21   | 2.40                     | 0.52              |
| 2:1f:438:ARG:HA   | 2:1f:441:ASN:HD21 | 1.74                     | 0.52              |
| 5:C:112:VAL:HA    | 5:C:166:LEU:HD21  | 1.91                     | 0.52              |
| 2:2g:304:ASP:N    | 2:2g:304:ASP:OD1  | 2.42                     | 0.52              |
| 2:2g:458:PRO:HG3  | 2:3g:523:PRO:CD   | 2.39                     | 0.52              |
| 2:3g:302:MET:HE2  | 2:3g:305:ARG:NH1  | 2.25                     | 0.52              |
| 3:2J:328:THR:HB   | 3:2J:337:TRP:HE1  | 1.74                     | 0.52              |
| 7:f:63:THR:HG22   | 7:f:130:VAL:HG22  | 1.91                     | 0.52              |
| 7:f:135:HIS:CD2   | 7:f:136:HIS:H     | 2.28                     | 0.52              |
| 2:3h:398:GLN:HG3  | 2:3h:408:CYS:SG   | 2.49                     | 0.52              |
| 3:1K:326:LEU:HD21 | 3:1K:353:ILE:HD13 | 1.91                     | 0.52              |
| 4:P:219:ASP:OD1   | 3:2K:60:ARG:NE    | 2.43                     | 0.52              |
| 2:3i:50:ASN:HD22  | 2:3i:50:ASN:C     | 2.12                     | 0.52              |
| 2:3i:458:PRO:O    | 2:3i:460:ASP:N    | 2.42                     | 0.52              |
| 1:p:36:GLU:CB     | 1:p:57:MET:HB3    | 2.39                     | 0.52              |
| 3:1L:572:LEU:HD21 | 3:1L:590:VAL:HG21 | 1.92                     | 0.52              |
| 3:1G:202:PRO:HB2  | 3:1G:204:LEU:HD12 | 1.91                     | 0.52              |
| 5:A:99:HIS:HA     | 5:A:102:ARG:HB2   | 1.91                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:A:133:ARG:HD2   | 5:A:134:PRO:HD2   | 1.90                     | 0.52              |
| 6:X:32:GLU:OE2    | 6:X:109:TYR:OH    | 2.26                     | 0.52              |
| 2:3e:496:LYS:NZ   | 2:3e:500:GLU:OE1  | 2.36                     | 0.52              |
| 2:2f:84:ASN:HD21  | 2:2f:367:ARG:HH22 | 1.57                     | 0.52              |
| 2:2f:372:ARG:NH2  | 2:2f:372:ARG:CB   | 2.72                     | 0.52              |
| 3:2l:78:PHE:HB3   | 3:2l:434:GLU:HB3  | 1.90                     | 0.52              |
| 3:2l:530:GLY:HA3  | 5:C:175:MET:HE1   | 1.92                     | 0.52              |
| 2:2g:511:ARG:CG   | 2:2g:511:ARG:NH2  | 2.72                     | 0.52              |
| 3:1J:328:THR:HB   | 3:1J:337:TRP:HE1  | 1.75                     | 0.52              |
| 2:2h:375:HIS:O    | 2:2h:435:ASN:ND2  | 2.41                     | 0.52              |
| 3:2K:369:ARG:HH12 | 5:E:47:ILE:HD13   | 1.73                     | 0.52              |
| 1:p:38:ASP:HB3    | 1:p:55:THR:OG1    | 2.09                     | 0.52              |
| 2:1j:496:LYS:NZ   | 2:1j:500:GLU:OE1  | 2.43                     | 0.52              |
| 5:A:63:THR:O      | 5:A:89:ARG:NH2    | 2.43                     | 0.52              |
| 3:1H:410:VAL:HG12 | 3:1H:412:ARG:H    | 1.74                     | 0.52              |
| 3:2H:140:VAL:HG12 | 3:2H:143:GLU:HB2  | 1.91                     | 0.52              |
| 2:3f:299:CYS:SG   | 2:3f:300:GLU:N    | 2.83                     | 0.52              |
| 2:1f:47:GLY:HA3   | 2:1f:65:PHE:HD1   | 1.74                     | 0.52              |
| 3:2l:209:TRP:NE1  | 3:2l:244:SER:OG   | 2.43                     | 0.52              |
| 2:3h:368:ASN:HD22 | 2:3h:368:ASN:C    | 2.15                     | 0.52              |
| 2:1h:41:VAL:HG21  | 2:1h:257:PHE:HE1  | 1.75                     | 0.52              |
| 3:1K:205:VAL:HB   | 3:1K:257:ARG:HB3  | 1.91                     | 0.52              |
| 7:a:34:VAL:HG22   | 7:a:55:VAL:HG13   | 1.88                     | 0.52              |
| 1:l:71:GLY:HA3    | 1:m:7:GLU:CB      | 2.40                     | 0.52              |
| 3:1H:108:ALA:HB2  | 3:1H:119:VAL:HA   | 1.92                     | 0.52              |
| 2:2f:42:GLY:HA3   | 2:2f:273:ASP:HB2  | 1.90                     | 0.52              |
| 1:m:90:MET:HG3    | 1:m:94:ARG:HH21   | 1.75                     | 0.52              |
| 7:e:66:LEU:HD22   | 7:e:117:PRO:HG3   | 1.91                     | 0.52              |
| 7:e:112:VAL:O     | 7:f:34:VAL:N      | 2.41                     | 0.52              |
| 2:3g:377:ALA:HB2  | 2:3g:522:LYS:HD3  | 1.91                     | 0.52              |
| 2:1g:240:ALA:O    | 2:1g:246:GLN:N    | 2.30                     | 0.52              |
| 3:1J:39:PRO:HG3   | 3:1J:42:THR:HB    | 1.92                     | 0.52              |
| 3:2J:64:LYS:HD2   | 5:D:55:ASP:HB2    | 1.90                     | 0.52              |
| 2:2h:454:VAL:HG23 | 2:2h:455:VAL:HG23 | 1.92                     | 0.52              |
| 3:2K:101:VAL:HB   | 3:2K:126:LEU:H    | 1.73                     | 0.52              |
| 2:3i:312:PRO:HB2  | 2:3i:315:GLN:HE21 | 1.75                     | 0.52              |
| 2:1i:395:ARG:HB2  | 2:1i:410:ARG:HH22 | 1.74                     | 0.52              |
| 3:2G:101:VAL:HB   | 3:2G:126:LEU:H    | 1.74                     | 0.52              |
| 3:2G:322:PRO:HB3  | 3:2G:339:VAL:HG12 | 1.92                     | 0.52              |
| 3:1H:455:THR:HA   | 5:B:172:PRO:HA    | 1.92                     | 0.52              |
| 3:1l:273:THR:OG1  | 3:1l:274:ILE:N    | 2.40                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:e:107:ILE:HG22  | 7:e:136:HIS:HB3   | 1.91                     | 0.52              |
| 2:2g:312:PRO:HB2  | 2:2g:315:GLN:CD   | 2.29                     | 0.52              |
| 2:3h:340:PRO:HG2  | 2:3h:409:ILE:HB   | 1.91                     | 0.52              |
| 2:1h:74:LEU:HD12  | 2:1h:272:PRO:HG2  | 1.92                     | 0.52              |
| 4:P:187:HIS:ND1   | 4:P:198:LEU:HD11  | 2.25                     | 0.52              |
| 3:2K:328:THR:HB   | 3:2K:337:TRP:HE1  | 1.75                     | 0.52              |
| 2:2i:249:GLY:O    | 2:2i:252:SER:OG   | 2.21                     | 0.52              |
| 3:2L:210:THR:OG1  | 3:2L:213:GLY:O    | 2.22                     | 0.52              |
| 2:2j:304:ASP:OD1  | 2:2j:304:ASP:N    | 2.43                     | 0.52              |
| 2:2j:472:SER:O    | 2:2j:476:VAL:HG12 | 2.10                     | 0.52              |
| 2:1j:240:ALA:O    | 2:1j:246:GLN:N    | 2.42                     | 0.52              |
| 2:2e:244:PRO:HB2  | 2:2e:274:LEU:HA   | 1.91                     | 0.52              |
| 3:2H:228:ASN:HD22 | 3:2H:229:ARG:NH1  | 2.08                     | 0.52              |
| 7:d:18:GLY:HA3    | 7:d:87:PRO:HB3    | 1.91                     | 0.52              |
| 2:2f:372:ARG:NH2  | 2:2f:372:ARG:CA   | 2.72                     | 0.52              |
| 2:2f:376:LYS:HG3  | 2:2f:376:LYS:O    | 2.10                     | 0.52              |
| 2:2f:498:ASP:OD1  | 2:2f:500:GLU:N    | 2.32                     | 0.52              |
| 2:3f:457:GLU:N    | 2:3f:458:PRO:CD   | 2.73                     | 0.52              |
| 1:m:52:ASN:OD1    | 1:m:52:ASN:N      | 2.43                     | 0.52              |
| 2:1f:377:ALA:HB2  | 2:1f:435:ASN:HB3  | 1.91                     | 0.52              |
| 1:n:23:MET:HG3    | 1:n:24:VAL:H      | 1.74                     | 0.52              |
| 3:1J:133:MET:SD   | 3:1J:277:ALA:HB1  | 2.50                     | 0.52              |
| 3:1J:182:CYS:H    | 3:1J:237:ILE:HB   | 1.75                     | 0.52              |
| 3:1K:214:TRP:CE2  | 3:1K:255:ARG:HG3  | 2.45                     | 0.52              |
| 4:P:39:PHE:CE1    | 4:P:82:ILE:HD12   | 2.45                     | 0.52              |
| 3:2L:335:GLN:OE1  | 3:2L:336:ASP:N    | 2.42                     | 0.52              |
| 3:1G:303:THR:O    | 3:1G:308:GLN:NE2  | 2.43                     | 0.52              |
| 1:l:27:LEU:HB2    | 1:l:68:VAL:HB     | 1.92                     | 0.52              |
| 1:l:36:GLU:OE2    | 1:l:36:GLU:N      | 2.35                     | 0.52              |
| 3:2H:255:ARG:HE   | 3:2H:257:ARG:HB2  | 1.75                     | 0.52              |
| 7:d:110:LEU:HB3   | 7:d:134:ALA:HB3   | 1.91                     | 0.52              |
| 2:2f:376:LYS:NZ   | 2:2f:376:LYS:CB   | 2.73                     | 0.52              |
| 2:2f:415:ARG:NH1  | 2:1f:452:GLN:OE1  | 2.42                     | 0.52              |
| 2:1f:41:VAL:HG21  | 2:1f:257:PHE:HE1  | 1.74                     | 0.52              |
| 3:1J:148:ARG:HD2  | 3:1J:151:ASP:HB3  | 1.92                     | 0.52              |
| 3:1J:448:ARG:NH2  | 3:1J:461:GLU:OE2  | 2.42                     | 0.52              |
| 3:1J:585:PRO:HG2  | 3:1J:588:ARG:HB2  | 1.91                     | 0.52              |
| 3:2J:270:THR:O    | 3:2J:270:THR:HG22 | 2.10                     | 0.52              |
| 2:3h:344:SER:OG   | 2:3h:345:PHE:N    | 2.43                     | 0.52              |
| 3:2K:34:HIS:NE2   | 3:2K:42:THR:HG21  | 2.25                     | 0.51              |
| 2:1i:501:THR:HB   | 2:1i:512:VAL:HG23 | 1.92                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:k:26:TYR:HD1    | 1:k:70:ARG:HD3    | 1.75                     | 0.51              |
| 2:1j:315:GLN:O    | 2:1j:316:ASN:HB3  | 2.09                     | 0.51              |
| 3:1G:617:ASP:OD1  | 3:1G:617:ASP:N    | 2.42                     | 0.51              |
| 2:3e:37:VAL:HG21  | 2:3e:265:GLU:HG2  | 1.93                     | 0.51              |
| 2:3e:490:ASP:C    | 2:3e:490:ASP:OD1  | 2.53                     | 0.51              |
| 3:1H:94:PRO:HB3   | 3:1H:280:TYR:HA   | 1.90                     | 0.51              |
| 1:m:123:VAL:HG13  | 1:m:138:THR:HB    | 1.91                     | 0.51              |
| 3:1l:453:ALA:HB2  | 3:1l:462:LEU:HD22 | 1.92                     | 0.51              |
| 5:C:26:VAL:HG21   | 6:T:40:ALA:HB1    | 1.92                     | 0.51              |
| 2:2g:389:LEU:HD21 | 2:2g:417:ILE:HG21 | 1.92                     | 0.51              |
| 2:3g:377:ALA:CA   | 2:3g:522:LYS:HE3  | 2.40                     | 0.51              |
| 3:1J:246:ASN:HD21 | 3:1J:253:TRP:CD1  | 2.28                     | 0.51              |
| 2:3h:435:ASN:O    | 2:3h:439:TYR:N    | 2.34                     | 0.51              |
| 3:1K:151:ASP:HB3  | 3:1K:156:LYS:HD2  | 1.90                     | 0.51              |
| 4:P:232:LEU:H     | 4:P:232:LEU:HD12  | 1.75                     | 0.51              |
| 3:2K:135:ARG:HH11 | 3:2K:137:VAL:HG21 | 1.75                     | 0.51              |
| 3:2K:197:VAL:HG11 | 3:2K:268:TYR:CZ   | 2.45                     | 0.51              |
| 5:E:25:ALA:O      | 5:E:27:PHE:N      | 2.38                     | 0.51              |
| 7:a:106:LEU:HD22  | 7:a:135:HIS:CE1   | 2.45                     | 0.51              |
| 2:2i:275:MET:HE1  | 2:2i:312:PRO:HA   | 1.92                     | 0.51              |
| 1:p:33:LEU:HD22   | 1:p:147:VAL:HG22  | 1.91                     | 0.51              |
| 2:1i:304:ASP:OD1  | 2:1i:305:ARG:N    | 2.43                     | 0.51              |
| 3:1L:15:GLN:NE2   | 5:F:5:SER:OG      | 2.43                     | 0.51              |
| 2:3j:368:ASN:HD22 | 2:3j:378:PRO:HB3  | 1.73                     | 0.51              |
| 1:k:103:ASP:OD1   | 1:k:105:GLU:N     | 2.43                     | 0.51              |
| 7:c:57:TYR:CE2    | 7:c:137:GLY:HA2   | 2.45                     | 0.51              |
| 1:l:30:VAL:HG12   | 1:l:63:ASP:OD1    | 2.09                     | 0.51              |
| 7:e:90:GLN:OE1    | 2:1g:469:ARG:NH1  | 2.43                     | 0.51              |
| 2:3g:286:GLU:OE2  | 2:3g:289:LYS:NZ   | 2.43                     | 0.51              |
| 3:2J:505:ARG:HB2  | 3:2J:508:GLN:HG3  | 1.93                     | 0.51              |
| 3:1K:503:ARG:HG3  | 3:1J:245:ARG:HH12 | 1.76                     | 0.51              |
| 7:a:5:ASP:N       | 7:a:5:ASP:OD1     | 2.43                     | 0.51              |
| 3:2L:208:ALA:HB1  | 3:2L:241:HIS:CD2  | 2.45                     | 0.51              |
| 2:1j:47:GLY:O     | 2:1j:93:ARG:NH1   | 2.42                     | 0.51              |
| 3:1G:137:VAL:HG22 | 3:1G:172:LEU:O    | 2.09                     | 0.51              |
| 3:2G:137:VAL:HG11 | 3:2G:145:VAL:HG13 | 1.93                     | 0.51              |
| 2:2e:457:GLU:CD   | 2:2e:458:PRO:HD3  | 2.30                     | 0.51              |
| 2:2f:423:ARG:NH2  | 2:2f:433:TYR:OH   | 2.43                     | 0.51              |
| 2:3f:460:ASP:OD1  | 2:3f:461:HIS:N    | 2.43                     | 0.51              |
| 3:2l:135:ARG:HD3  | 3:2l:249:HIS:HB2  | 1.92                     | 0.51              |
| 3:2J:36:VAL:HG22  | 3:2J:37:SER:H     | 1.75                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2h:316:ASN:OD1  | 2:2h:319:GLN:N    | 2.43                     | 0.51              |
| 3:2K:91:LEU:HD23  | 3:2K:128:ILE:HD13 | 1.92                     | 0.51              |
| 6:V:28:GLU:HG3    | 6:V:118:ARG:HH12  | 1.75                     | 0.51              |
| 2:2i:263:ILE:HG22 | 2:2i:265:GLU:H    | 1.74                     | 0.51              |
| 3:2L:179:VAL:CG1  | 3:2L:182:CYS:SG   | 2.95                     | 0.51              |
| 3:2L:209:TRP:HB2  | 3:2L:214:TRP:CZ3  | 2.45                     | 0.51              |
| 2:3j:286:GLU:OE1  | 2:3j:289:LYS:NZ   | 2.43                     | 0.51              |
| 2:3e:43:LEU:HD12  | 2:3e:273:ASP:OD2  | 2.10                     | 0.51              |
| 3:1H:69:PHE:CZ    | 5:B:74:TRP:CZ3    | 2.98                     | 0.51              |
| 3:2l:85:THR:HG22  | 3:2l:427:ALA:HA   | 1.91                     | 0.51              |
| 2:2g:46:THR:OG1   | 2:2g:95:GLY:O     | 2.28                     | 0.51              |
| 2:2g:271:VAL:HG22 | 2:2g:274:LEU:HB2  | 1.93                     | 0.51              |
| 2:1g:93:ARG:HH21  | 2:1g:96:GLY:HA2   | 1.76                     | 0.51              |
| 2:3h:368:ASN:OD1  | 2:3h:378:PRO:CA   | 2.57                     | 0.51              |
| 2:3h:490:ASP:C    | 2:3h:490:ASP:OD1  | 2.53                     | 0.51              |
| 3:1K:172:LEU:HG   | 3:1K:255:ARG:NH1  | 2.26                     | 0.51              |
| 4:P:13:VAL:HG12   | 4:O:152:ALA:HA    | 1.92                     | 0.51              |
| 2:2i:239:SER:HB3  | 2:2i:242:PRO:HD2  | 1.92                     | 0.51              |
| 1:p:37:GLN:NE2    | 1:p:37:GLN:HA     | 2.25                     | 0.51              |
| 2:1i:384:ARG:O    | 2:1i:384:ARG:HG2  | 2.09                     | 0.51              |
| 2:1j:93:ARG:HH21  | 2:1j:96:GLY:HA2   | 1.75                     | 0.51              |
| 3:2G:69:PHE:HE1   | 5:A:58:PHE:HB3    | 1.76                     | 0.51              |
| 3:2G:336:ASP:OD1  | 3:2G:336:ASP:N    | 2.39                     | 0.51              |
| 5:A:113:ARG:HG3   | 5:A:119:ALA:HA    | 1.91                     | 0.51              |
| 5:A:125:SER:HB2   | 5:A:141:ARG:HB3   | 1.92                     | 0.51              |
| 2:2e:241:HIS:CB   | 2:2e:242:PRO:CD   | 2.87                     | 0.51              |
| 2:3e:377:ALA:HB3  | 2:3e:522:LYS:NZ   | 2.26                     | 0.51              |
| 1:l:133:ASN:N     | 1:l:133:ASN:OD1   | 2.44                     | 0.51              |
| 3:2H:208:ALA:HB1  | 3:2H:241:HIS:CD2  | 2.46                     | 0.51              |
| 3:1l:181:ASP:C    | 3:1l:181:ASP:OD1  | 2.52                     | 0.51              |
| 6:T:55:ALA:HB3    | 6:T:75:GLU:OE2    | 2.11                     | 0.51              |
| 3:2J:144:ALA:O    | 3:2J:148:ARG:NH2  | 2.37                     | 0.51              |
| 2:3i:377:ALA:HA   | 2:3i:435:ASN:HB3  | 1.92                     | 0.51              |
| 2:3j:399:ASP:OD1  | 2:3j:399:ASP:N    | 2.43                     | 0.51              |
| 2:1e:238:GLU:HA   | 2:1e:243:GLY:HA3  | 1.91                     | 0.51              |
| 3:1H:455:THR:OG1  | 3:1H:456:LEU:N    | 2.43                     | 0.51              |
| 2:1f:241:HIS:HB3  | 2:1f:242:PRO:HD3  | 1.92                     | 0.51              |
| 3:1l:444:PRO:O    | 3:1l:448:ARG:N    | 2.43                     | 0.51              |
| 2:1g:460:ASP:N    | 2:1g:460:ASP:OD1  | 2.41                     | 0.51              |
| 2:1g:507:VAL:HG13 | 2:1g:509:LEU:HD12 | 1.93                     | 0.51              |
| 4:O:39:PHE:CE1    | 4:O:82:ILE:HD11   | 2.45                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3h:443:LEU:HD11 | 2:3h:475:LEU:HD21 | 1.93                     | 0.51              |
| 3:1K:557:ALA:N    | 3:1K:651:SER:OG   | 2.42                     | 0.51              |
| 3:1L:299:LEU:HD21 | 3:1L:390:ALA:HB2  | 1.92                     | 0.51              |
| 2:1j:367:ARG:NH2  | 2:1j:384:ARG:HD2  | 2.26                     | 0.51              |
| 3:1G:69:PHE:HD2   | 3:2G:69:PHE:CD2   | 2.29                     | 0.51              |
| 3:2G:131:CYS:SG   | 3:2G:176:SER:N    | 2.84                     | 0.51              |
| 2:2f:333:LYS:HD2  | 2:2f:431:TRP:CD1  | 2.45                     | 0.51              |
| 1:m:130:GLY:N     | 1:n:11:VAL:HG12   | 2.25                     | 0.51              |
| 3:2l:115:ASP:OD1  | 3:2l:116:GLU:N    | 2.44                     | 0.51              |
| 4:O:79:THR:O      | 4:O:79:THR:OG1    | 2.27                     | 0.51              |
| 2:3h:399:ASP:OD1  | 2:3h:399:ASP:N    | 2.42                     | 0.51              |
| 3:1K:79:PRO:HB3   | 3:1K:357:ALA:HB3  | 1.93                     | 0.51              |
| 4:P:144:THR:HG1   | 4:P:160:CYS:HG    | 1.51                     | 0.51              |
| 3:2K:110:LEU:CD2  | 3:2K:409:GLN:HB2  | 2.39                     | 0.51              |
| 2:3i:368:ASN:HD22 | 2:3i:378:PRO:CA   | 2.24                     | 0.51              |
| 3:1L:133:MET:HG3  | 3:1L:278:GLU:C    | 2.36                     | 0.51              |
| 3:2L:532:ARG:HH12 | 5:F:139:PRO:HG2   | 1.74                     | 0.51              |
| 1:k:26:TYR:CD1    | 1:k:70:ARG:HD2    | 2.46                     | 0.51              |
| 1:k:133:ASN:O     | 1:l:10:LEU:HG     | 2.11                     | 0.51              |
| 6:X:84:GLU:HG3    | 6:X:87:ILE:HG22   | 1.93                     | 0.51              |
| 2:3e:49:LEU:O     | 2:3e:52:PRO:HD2   | 2.11                     | 0.51              |
| 5:B:71:LEU:HB3    | 5:B:92:VAL:HG11   | 1.92                     | 0.51              |
| 2:1f:48:PRO:HD2   | 2:1f:65:PHE:HE1   | 1.76                     | 0.51              |
| 3:2l:175:LEU:C    | 3:2l:251:ALA:HB1  | 2.36                     | 0.51              |
| 3:2l:206:TRP:CD1  | 3:2l:256:CYS:HG   | 2.28                     | 0.51              |
| 3:2l:326:LEU:HD22 | 3:2l:353:ILE:HD13 | 1.93                     | 0.51              |
| 2:1g:271:VAL:HB   | 2:1g:274:LEU:HD23 | 1.93                     | 0.51              |
| 3:1J:326:LEU:HD12 | 3:1J:326:LEU:H    | 1.76                     | 0.51              |
| 4:O:212:ILE:HD11  | 4:O:232:LEU:HD23  | 1.93                     | 0.51              |
| 2:1h:469:ARG:HB3  | 7:f:88:THR:HG21   | 1.92                     | 0.51              |
| 3:1K:513:ASP:O    | 3:1K:517:ASN:ND2  | 2.44                     | 0.51              |
| 4:P:88:MET:HE1    | 7:b:86:ARG:CD     | 2.41                     | 0.51              |
| 3:2K:183:ALA:N    | 3:2K:283:GLY:O    | 2.38                     | 0.51              |
| 7:a:46:GLY:HA3    | 7:e:81:GLN:HE21   | 1.76                     | 0.51              |
| 2:2e:247:TYR:CD2  | 2:2e:256:GLY:HA3  | 2.46                     | 0.51              |
| 1:l:72:MET:O      | 1:m:8:ASP:OD2     | 2.29                     | 0.51              |
| 2:2f:247:TYR:H    | 2:2f:257:PHE:HB2  | 1.76                     | 0.51              |
| 2:3f:275:MET:HE1  | 2:3f:312:PRO:HA   | 1.93                     | 0.51              |
| 1:m:116:ASN:HB2   | 1:m:144:GLU:HB3   | 1.93                     | 0.51              |
| 3:1l:571:HIS:HB2  | 3:1l:598:VAL:HG21 | 1.93                     | 0.51              |
| 4:N:138:TYR:HD1   | 4:N:138:TYR:H     | 1.59                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2l:159:LEU:HA   | 3:2l:273:THR:HG23 | 1.92                     | 0.51              |
| 1:o:82:ILE:CG1    | 1:p:35:ILE:HD11   | 2.41                     | 0.51              |
| 1:o:82:ILE:HG12   | 1:p:35:ILE:HD11   | 1.92                     | 0.51              |
| 2:1h:454:VAL:C    | 2:1h:456:PHE:H    | 2.20                     | 0.51              |
| 2:2j:74:LEU:HB2   | 2:2j:273:ASP:OD2  | 2.10                     | 0.51              |
| 2:1j:423:ARG:HH21 | 2:1j:432:ARG:HH11 | 1.59                     | 0.51              |
| 3:1G:181:ASP:OD1  | 3:1G:181:ASP:C    | 2.54                     | 0.51              |
| 3:1H:451:GLU:HG2  | 3:1H:452:ARG:H    | 1.75                     | 0.51              |
| 3:2H:533:LEU:HD23 | 3:2H:534:ALA:N    | 2.26                     | 0.51              |
| 6:S:120:LEU:HD12  | 6:S:121:VAL:N     | 2.25                     | 0.51              |
| 3:2l:163:GLU:HB3  | 3:2l:270:THR:HA   | 1.93                     | 0.51              |
| 7:e:19:GLU:O      | 7:e:21:LEU:N      | 2.42                     | 0.51              |
| 2:2g:371:GLU:HG3  | 2:2g:372:ARG:HG2  | 1.92                     | 0.51              |
| 3:1J:527:ARG:HB2  | 3:1J:533:LEU:HD11 | 1.92                     | 0.51              |
| 3:2J:135:ARG:HH12 | 3:2J:145:VAL:HG11 | 1.76                     | 0.51              |
| 4:P:62:VAL:HB     | 4:N:113:LEU:HD21  | 1.93                     | 0.50              |
| 3:2K:490:VAL:HB   | 3:2K:535:VAL:HG12 | 1.94                     | 0.50              |
| 7:b:27:CYS:SG     | 7:b:28:GLU:N      | 2.84                     | 0.50              |
| 3:1G:585:PRO:HG2  | 3:1G:588:ARG:HB2  | 1.92                     | 0.50              |
| 4:M:149:PHE:HE1   | 4:N:45:GLN:HA     | 1.75                     | 0.50              |
| 3:2H:221:ARG:HG2  | 3:2H:234:VAL:HG22 | 1.93                     | 0.50              |
| 2:2f:239:SER:HB3  | 2:2f:242:PRO:HD2  | 1.91                     | 0.50              |
| 2:1f:456:PHE:CD2  | 2:1f:457:GLU:HG3  | 2.46                     | 0.50              |
| 2:2g:44:ALA:HB2   | 2:2g:74:LEU:HD23  | 1.93                     | 0.50              |
| 2:2g:262:ALA:HB1  | 2:3g:392:GLN:HB3  | 1.93                     | 0.50              |
| 3:1J:136:LEU:HB2  | 3:1J:152:LEU:HB3  | 1.92                     | 0.50              |
| 3:1J:530:GLY:O    | 3:2J:486:HIS:ND1  | 2.44                     | 0.50              |
| 4:O:15:ALA:HB2    | 4:O:127:TRP:CD2   | 2.46                     | 0.50              |
| 3:2J:175:LEU:C    | 3:2J:251:ALA:HB1  | 2.36                     | 0.50              |
| 2:2h:84:ASN:HD21  | 2:2h:364:ILE:HG12 | 1.75                     | 0.50              |
| 3:1K:152:LEU:HD11 | 3:1K:274:ILE:HB   | 1.92                     | 0.50              |
| 4:P:106:CYS:HB2   | 4:Q:50:GLN:HE21   | 1.75                     | 0.50              |
| 3:2K:369:ARG:NH2  | 5:E:8:GLY:O       | 2.44                     | 0.50              |
| 7:a:110:LEU:HD12  | 7:a:111:PRO:HD2   | 1.92                     | 0.50              |
| 2:2i:316:ASN:OD1  | 2:2i:319:GLN:N    | 2.43                     | 0.50              |
| 2:2i:369:ASP:N    | 2:2i:369:ASP:OD1  | 2.42                     | 0.50              |
| 1:p:18:GLN:HB2    | 1:p:95:LYS:HE3    | 1.93                     | 0.50              |
| 2:2j:497:CYS:HB2  | 2:2j:513:VAL:HG23 | 1.92                     | 0.50              |
| 3:1G:356:ASP:HB3  | 3:1G:361:GLU:HB2  | 1.94                     | 0.50              |
| 2:2e:368:ASN:CG   | 2:2e:378:PRO:CB   | 2.80                     | 0.50              |
| 3:1H:448:ARG:HH22 | 3:1H:457:ARG:HH21 | 1.57                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:d:126:VAL:HG11  | 1:n:40:ILE:HD11   | 1.92                     | 0.50              |
| 2:2g:247:TYR:HD2  | 2:2g:256:GLY:HA3  | 1.76                     | 0.50              |
| 3:2J:209:TRP:NE1  | 3:2J:244:SER:OG   | 2.44                     | 0.50              |
| 2:1h:45:PRO:HG2   | 2:1h:66:GLY:HA3   | 1.93                     | 0.50              |
| 2:1h:80:GLY:O     | 2:1h:84:ASN:ND2   | 2.34                     | 0.50              |
| 3:1K:448:ARG:HG3  | 3:1K:449:ALA:N    | 2.25                     | 0.50              |
| 4:P:15:ALA:HB2    | 4:P:127:TRP:CD2   | 2.47                     | 0.50              |
| 3:2K:137:VAL:HB   | 3:2K:172:LEU:HD12 | 1.93                     | 0.50              |
| 7:a:19:GLU:O      | 7:a:21:LEU:N      | 2.43                     | 0.50              |
| 1:p:127:LEU:HD12  | 1:k:13:PRO:HB3    | 1.92                     | 0.50              |
| 3:1L:543:VAL:HG12 | 3:1L:613:LEU:HD12 | 1.93                     | 0.50              |
| 3:2L:91:LEU:N     | 3:2L:282:ILE:O    | 2.44                     | 0.50              |
| 2:3j:369:ASP:OD2  | 2:3j:374:VAL:CG2  | 2.45                     | 0.50              |
| 2:1j:365:TRP:CZ2  | 2:1j:434:LEU:HD21 | 2.46                     | 0.50              |
| 3:1G:58:LEU:HD21  | 5:A:50:VAL:HG11   | 1.93                     | 0.50              |
| 2:3e:38:ALA:HB2   | 2:3e:268:MET:HE3  | 1.94                     | 0.50              |
| 1:l:17:ILE:HG22   | 1:l:97:ALA:HA     | 1.94                     | 0.50              |
| 3:1H:189:ASP:OD1  | 3:1H:190:SER:N    | 2.43                     | 0.50              |
| 3:1H:565:HIS:CD2  | 3:1H:644:ARG:HA   | 2.47                     | 0.50              |
| 2:2f:494:TYR:OH   | 2:3f:533:GLN:NE2  | 2.41                     | 0.50              |
| 2:2f:497:CYS:HB2  | 2:2f:513:VAL:HG23 | 1.92                     | 0.50              |
| 2:2f:522:LYS:HE3  | 2:1f:459:ASN:CB   | 2.40                     | 0.50              |
| 4:N:148:LEU:O     | 4:N:156:ILE:HB    | 2.11                     | 0.50              |
| 5:D:23:LEU:HD11   | 5:D:37:VAL:HG11   | 1.94                     | 0.50              |
| 2:2h:397:GLU:N    | 2:2h:397:GLU:OE1  | 2.43                     | 0.50              |
| 1:o:35:ILE:HG13   | 1:n:82:ILE:HD11   | 1.94                     | 0.50              |
| 3:1K:527:ARG:NH1  | 3:1K:533:LEU:HB2  | 2.26                     | 0.50              |
| 6:V:3:GLU:HB3     | 6:V:113:GLY:HA3   | 1.92                     | 0.50              |
| 6:V:67:GLN:HA     | 4:O:128:GLY:HA2   | 1.94                     | 0.50              |
| 1:p:118:TRP:CZ2   | 1:k:56:LEU:HD23   | 2.45                     | 0.50              |
| 1:k:33:LEU:HD21   | 1:k:112:TRP:HZ3   | 1.76                     | 0.50              |
| 3:2G:78:PHE:N     | 3:2G:434:GLU:OE2  | 2.42                     | 0.50              |
| 3:1H:181:ASP:CG   | 3:1H:182:CYS:N    | 2.69                     | 0.50              |
| 2:3f:435:ASN:O    | 2:3f:439:TYR:N    | 2.32                     | 0.50              |
| 1:m:145:GLU:HG3   | 1:n:51:ARG:HH11   | 1.75                     | 0.50              |
| 2:2g:41:VAL:HG12  | 2:2g:92:VAL:HB    | 1.93                     | 0.50              |
| 1:n:56:LEU:H      | 1:n:56:LEU:HD12   | 1.77                     | 0.50              |
| 3:1J:260:GLU:HG2  | 3:1J:262:LEU:H    | 1.76                     | 0.50              |
| 3:1J:453:ALA:HA   | 3:1J:458:ASP:OD2  | 2.10                     | 0.50              |
| 2:3h:377:ALA:HA   | 2:3h:435:ASN:HB3  | 1.93                     | 0.50              |
| 2:1h:476:VAL:HG22 | 2:1h:489:PRO:HB3  | 1.94                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2K:91:LEU:HD13  | 3:2K:418:VAL:HA   | 1.93                     | 0.50              |
| 2:2i:46:THR:OG1   | 2:2i:95:GLY:O     | 2.30                     | 0.50              |
| 1:p:118:TRP:HE3   | 1:p:142:VAL:HG21  | 1.76                     | 0.50              |
| 2:1i:43:LEU:HD23  | 2:1i:95:GLY:HA3   | 1.93                     | 0.50              |
| 2:2j:433:TYR:CG   | 2:2j:521:VAL:HG11 | 2.46                     | 0.50              |
| 3:2G:152:LEU:HD22 | 3:2G:158:VAL:HG12 | 1.93                     | 0.50              |
| 1:m:15:PHE:HB3    | 1:m:67:GLN:HE22   | 1.77                     | 0.50              |
| 2:1f:515:GLU:C    | 2:1f:516:ILE:HD12 | 2.36                     | 0.50              |
| 2:3h:505:GLU:H    | 2:3h:505:GLU:CD   | 2.19                     | 0.50              |
| 1:o:61:ALA:HB3    | 1:p:52:ASN:HD21   | 1.77                     | 0.50              |
| 7:a:1:MET:SD      | 2:2h:477:ASN:ND2  | 2.77                     | 0.50              |
| 3:1G:131:CYS:SG   | 3:1G:132:THR:N    | 2.84                     | 0.50              |
| 3:1G:350:ASP:OD2  | 3:1G:352:HIS:NE2  | 2.45                     | 0.50              |
| 3:1G:506:PHE:CE1  | 3:1G:618:PRO:HG2  | 2.47                     | 0.50              |
| 7:c:106:LEU:HD22  | 7:c:135:HIS:NE2   | 2.26                     | 0.50              |
| 2:2f:247:TYR:OH   | 2:2f:250:ASP:OD2  | 2.29                     | 0.50              |
| 2:2f:316:ASN:OD1  | 2:2f:319:GLN:N    | 2.42                     | 0.50              |
| 3:1l:136:LEU:HD21 | 3:1l:277:ALA:HB2  | 1.94                     | 0.50              |
| 3:1l:139:GLN:HB3  | 3:1l:145:VAL:HA   | 1.94                     | 0.50              |
| 2:2g:249:GLY:O    | 2:2g:252:SER:OG   | 2.25                     | 0.50              |
| 2:2g:494:TYR:O    | 2:2g:515:GLU:HA   | 2.10                     | 0.50              |
| 7:f:117:PRO:HB3   | 7:f:127:ALA:HB1   | 1.93                     | 0.50              |
| 2:2h:247:TYR:HD2  | 2:2h:256:GLY:HA3  | 1.75                     | 0.50              |
| 2:1h:42:GLY:HA2   | 2:1h:273:ASP:CG   | 2.36                     | 0.50              |
| 3:1K:41:VAL:HG21  | 6:V:10:TRP:HE1    | 1.76                     | 0.50              |
| 3:2K:115:ASP:OD1  | 3:2K:116:GLU:N    | 2.45                     | 0.50              |
| 3:2K:199:PRO:HA   | 3:2K:226:GLY:HA3  | 1.94                     | 0.50              |
| 6:V:98:GLU:HG3    | 6:V:99:GLU:H      | 1.77                     | 0.50              |
| 2:2i:431:TRP:HD1  | 2:2i:437:ARG:HB2  | 1.76                     | 0.50              |
| 2:3i:308:ILE:C    | 2:3i:309:ILE:HD13 | 2.37                     | 0.50              |
| 3:1L:152:LEU:HD21 | 3:1L:274:ILE:HD13 | 1.92                     | 0.50              |
| 2:2j:372:ARG:CA   | 2:2j:372:ARG:NH1  | 2.73                     | 0.50              |
| 2:1j:484:LEU:HD13 | 2:1j:492:ALA:HB1  | 1.94                     | 0.50              |
| 2:1j:515:GLU:C    | 2:1j:516:ILE:HD12 | 2.37                     | 0.50              |
| 3:1G:455:THR:OG1  | 5:A:169:ALA:O     | 2.23                     | 0.50              |
| 7:c:66:LEU:HD22   | 7:c:117:PRO:HG3   | 1.93                     | 0.50              |
| 2:3e:50:ASN:HD21  | 2:3e:255:THR:HG22 | 1.76                     | 0.50              |
| 3:1H:85:THR:HB    | 3:1H:427:ALA:HB2  | 1.94                     | 0.50              |
| 4:M:185:ARG:N     | 6:T:3:GLU:O       | 2.44                     | 0.50              |
| 2:2f:375:HIS:CD2  | 2:2f:483:ALA:HB2  | 2.47                     | 0.50              |
| 2:3f:302:MET:HE2  | 2:3f:305:ARG:NH1  | 2.27                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:94:PRO:HB3   | 3:1l:280:TYR:HA   | 1.92                     | 0.50              |
| 3:1l:328:THR:HB   | 3:1l:337:TRP:HE1  | 1.77                     | 0.50              |
| 3:2l:315:ALA:HB1  | 3:2l:316:PRO:HD2  | 1.93                     | 0.50              |
| 2:2g:511:ARG:NH2  | 2:2g:511:ARG:HB3  | 2.27                     | 0.50              |
| 2:3g:36:SER:O     | 2:3g:36:SER:OG    | 2.26                     | 0.50              |
| 2:3g:315:GLN:OE1  | 2:3g:320:ILE:HD13 | 2.12                     | 0.50              |
| 3:1J:547:ALA:H    | 3:1J:645:VAL:HG12 | 1.76                     | 0.50              |
| 2:2h:80:GLY:HA3   | 2:2h:360:HIS:CE1  | 2.46                     | 0.50              |
| 2:3h:45:PRO:O     | 2:3h:93:ARG:NH2   | 2.45                     | 0.50              |
| 2:3h:365:TRP:O    | 2:3h:369:ASP:CG   | 2.54                     | 0.50              |
| 1:o:82:ILE:HG13   | 1:o:119:CYS:O     | 2.12                     | 0.50              |
| 3:1K:299:LEU:HD21 | 3:1K:388:ILE:HG22 | 1.94                     | 0.50              |
| 3:2K:245:ARG:NH1  | 3:2K:247:GLY:O    | 2.44                     | 0.50              |
| 3:2K:491:LEU:HB3  | 3:2K:538:PRO:HG3  | 1.93                     | 0.50              |
| 2:2i:304:ASP:N    | 2:2i:304:ASP:OD1  | 2.44                     | 0.50              |
| 1:p:118:TRP:HE3   | 1:p:142:VAL:CG2   | 2.25                     | 0.50              |
| 2:1i:494:TYR:HD2  | 2:1i:516:ILE:HD11 | 1.77                     | 0.50              |
| 2:1i:515:GLU:C    | 2:1i:516:ILE:HD12 | 2.36                     | 0.50              |
| 3:1L:135:ARG:HD3  | 3:1L:246:ASN:OD1  | 2.12                     | 0.50              |
| 2:3e:389:LEU:HD11 | 2:3e:409:ILE:HG22 | 1.93                     | 0.50              |
| 6:S:29:GLN:NE2    | 6:S:33:GLU:OE1    | 2.41                     | 0.50              |
| 6:S:120:LEU:HD11  | 6:S:122:PHE:HD1   | 1.77                     | 0.50              |
| 2:2f:341:TRP:HB2  | 2:2f:390:GLU:HG3  | 1.94                     | 0.50              |
| 2:2f:522:LYS:HZ2  | 2:1f:459:ASN:HB2  | 1.77                     | 0.50              |
| 3:1l:542:GLY:N    | 3:1l:616:ALA:O    | 2.41                     | 0.50              |
| 2:2g:247:TYR:CD2  | 2:2g:256:GLY:HA3  | 2.47                     | 0.50              |
| 2:2g:368:ASN:ND2  | 2:2g:378:PRO:HA   | 2.27                     | 0.50              |
| 3:1K:246:ASN:CG   | 3:1K:251:ALA:HB3  | 2.37                     | 0.50              |
| 3:2K:27:ARG:NH2   | 3:2K:36:VAL:O     | 2.44                     | 0.50              |
| 3:1L:82:ALA:HB2   | 3:1L:318:VAL:HG11 | 1.94                     | 0.50              |
| 3:2L:184:LEU:O    | 3:2L:235:LEU:N    | 2.34                     | 0.50              |
| 1:k:26:TYR:CB     | 1:k:68:VAL:O      | 2.56                     | 0.50              |
| 3:2G:87:VAL:HG11  | 3:2G:107:VAL:HG11 | 1.93                     | 0.50              |
| 3:2G:487:ALA:HB3  | 5:A:138:PHE:CE2   | 2.47                     | 0.50              |
| 3:2H:209:TRP:HB2  | 3:2H:214:TRP:CZ3  | 2.47                     | 0.50              |
| 3:1l:99:ILE:HD13  | 3:1l:126:LEU:H    | 1.76                     | 0.50              |
| 3:1l:209:TRP:HB2  | 3:1l:253:TRP:HB2  | 1.93                     | 0.50              |
| 3:2l:415:ILE:H    | 3:2l:415:ILE:HD12 | 1.76                     | 0.50              |
| 5:C:24:PRO:HG3    | 6:T:46:ARG:HG3    | 1.94                     | 0.50              |
| 2:2g:65:PHE:HB2   | 2:2g:93:ARG:NH1   | 2.25                     | 0.50              |
| 1:n:7:GLU:HG2     | 1:n:9:VAL:HG22    | 1.94                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2h:74:LEU:HB2   | 2:2h:273:ASP:OD2  | 2.11                     | 0.50              |
| 2:1h:50:ASN:HD21  | 2:1h:94:VAL:HG23  | 1.75                     | 0.49              |
| 3:2K:205:VAL:HG13 | 3:2K:257:ARG:HB3  | 1.94                     | 0.49              |
| 7:a:127:ALA:N     | 7:b:9:SER:HB3     | 2.27                     | 0.49              |
| 2:2i:372:ARG:CZ   | 2:1i:456:PHE:CE2  | 2.94                     | 0.49              |
| 2:1i:44:ALA:HB1   | 2:1i:65:PHE:HB3   | 1.94                     | 0.49              |
| 2:2e:40:PHE:HE1   | 2:2e:78:VAL:HG22  | 1.76                     | 0.49              |
| 2:2e:74:LEU:HB2   | 2:2e:273:ASP:OD2  | 2.11                     | 0.49              |
| 2:2e:316:ASN:O    | 2:2e:339:TYR:OH   | 2.28                     | 0.49              |
| 2:3e:337:LEU:HB3  | 2:3e:406:VAL:HG23 | 1.94                     | 0.49              |
| 1:l:5:LYS:N       | 1:l:6:PRO:CD      | 2.74                     | 0.49              |
| 3:1H:131:CYS:SG   | 3:1H:132:THR:N    | 2.84                     | 0.49              |
| 3:2H:322:PRO:HB3  | 3:2H:339:VAL:HG12 | 1.93                     | 0.49              |
| 2:1f:43:LEU:HD23  | 2:1f:95:GLY:HA3   | 1.94                     | 0.49              |
| 3:1l:327:GLN:HB3  | 3:1l:334:TRP:HB3  | 1.93                     | 0.49              |
| 2:2g:84:ASN:HD21  | 2:2g:367:ARG:HH22 | 1.59                     | 0.49              |
| 3:1J:261:PRO:O    | 3:1J:265:GLN:N    | 2.45                     | 0.49              |
| 2:2h:65:PHE:CB    | 2:2h:93:ARG:NH1   | 2.67                     | 0.49              |
| 6:V:11:SER:HB3    | 6:V:25:VAL:HG11   | 1.94                     | 0.49              |
| 7:a:35:GLU:O      | 7:a:53:THR:HG23   | 2.12                     | 0.49              |
| 3:1L:99:ILE:HD12  | 3:1L:100:LEU:H    | 1.77                     | 0.49              |
| 3:1L:172:LEU:CB   | 3:1L:253:TRP:CZ3  | 2.87                     | 0.49              |
| 3:1L:620:THR:O    | 3:1L:620:THR:OG1  | 2.30                     | 0.49              |
| 3:1L:620:THR:OG1  | 3:1L:622:LYS:NZ   | 2.45                     | 0.49              |
| 2:3j:36:SER:O     | 2:3j:36:SER:OG    | 2.27                     | 0.49              |
| 3:2G:209:TRP:NE1  | 3:2G:244:SER:OG   | 2.45                     | 0.49              |
| 2:1e:292:GLN:OE1  | 2:1e:330:TYR:OH   | 2.22                     | 0.49              |
| 2:1e:377:ALA:HB2  | 2:1e:521:VAL:HG11 | 1.95                     | 0.49              |
| 3:1l:557:ALA:O    | 3:1l:561:ARG:N    | 2.36                     | 0.49              |
| 2:1g:61:TYR:CE1   | 2:1g:65:PHE:HB2   | 2.47                     | 0.49              |
| 2:2h:265:GLU:HA   | 2:2h:265:GLU:OE2  | 2.12                     | 0.49              |
| 2:2i:67:ASP:N     | 2:2i:67:ASP:OD1   | 2.44                     | 0.49              |
| 2:2i:452:GLN:HE22 | 2:3i:415:ARG:NE   | 2.11                     | 0.49              |
| 2:3i:460:ASP:OD1  | 2:3i:462:ASN:N    | 2.42                     | 0.49              |
| 3:1L:303:THR:O    | 3:1L:308:GLN:NE2  | 2.45                     | 0.49              |
| 3:2L:41:VAL:CG1   | 6:W:10:TRP:HB2    | 2.42                     | 0.49              |
| 3:1G:352:HIS:C    | 3:1G:353:ILE:HD13 | 2.37                     | 0.49              |
| 5:A:26:VAL:HG21   | 6:X:40:ALA:HB1    | 1.95                     | 0.49              |
| 1:l:118:TRP:HZ3   | 1:m:37:GLN:HB2    | 1.77                     | 0.49              |
| 3:1H:458:ASP:OD1  | 5:B:102:ARG:NH2   | 2.45                     | 0.49              |
| 3:2H:136:LEU:HD12 | 3:2H:152:LEU:HB3  | 1.95                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:S:64:VAL:HG22   | 2:1f:522:LYS:HZ3  | 1.77                     | 0.49              |
| 4:N:15:ALA:HB2    | 4:N:127:TRP:CD2   | 2.48                     | 0.49              |
| 3:2l:369:ARG:NH1  | 5:C:46:PRO:HB2    | 2.26                     | 0.49              |
| 2:2g:376:LYS:CD   | 2:1g:456:PHE:O    | 2.59                     | 0.49              |
| 2:1g:41:VAL:HG21  | 2:1g:257:PHE:HE1  | 1.77                     | 0.49              |
| 6:U:96:THR:OG1    | 6:U:97:GLY:N      | 2.41                     | 0.49              |
| 1:o:35:ILE:HD11   | 1:n:86:MET:CG     | 2.36                     | 0.49              |
| 2:1h:522:LYS:HZ3  | 6:U:64:VAL:HG22   | 1.76                     | 0.49              |
| 1:p:23:MET:HE2    | 1:p:23:MET:HA     | 1.93                     | 0.49              |
| 1:p:40:ILE:HD11   | 1:p:53:ASN:HD22   | 1.77                     | 0.49              |
| 2:1i:435:ASN:O    | 2:1i:439:TYR:N    | 2.37                     | 0.49              |
| 3:1G:205:VAL:O    | 3:1G:257:ARG:N    | 2.44                     | 0.49              |
| 2:2e:46:THR:OG1   | 2:2e:95:GLY:O     | 2.26                     | 0.49              |
| 2:1e:311:PRO:HG3  | 2:1e:339:TYR:HA   | 1.93                     | 0.49              |
| 5:B:125:SER:HB2   | 5:B:141:ARG:HB2   | 1.94                     | 0.49              |
| 2:1f:476:VAL:HG22 | 2:1f:489:PRO:HB3  | 1.94                     | 0.49              |
| 3:2J:175:LEU:O    | 3:2J:251:ALA:HB1  | 2.13                     | 0.49              |
| 1:o:74:GLN:HG2    | 1:p:1:MET:HE2     | 1.94                     | 0.49              |
| 2:1h:38:ALA:HA    | 2:1h:268:MET:HB2  | 1.95                     | 0.49              |
| 3:1K:135:ARG:HD2  | 3:1K:246:ASN:HB3  | 1.95                     | 0.49              |
| 2:2i:456:PHE:H    | 2:3i:523:PRO:HD2  | 1.76                     | 0.49              |
| 3:1L:173:ILE:HD12 | 3:1L:254:ILE:CG2  | 2.43                     | 0.49              |
| 3:1L:210:THR:HG23 | 3:1L:212:ASP:H    | 1.77                     | 0.49              |
| 3:1L:503:ARG:HD3  | 3:1L:569:TYR:CD1  | 2.47                     | 0.49              |
| 3:2L:186:LEU:HD23 | 3:2L:279:ALA:HB2  | 1.95                     | 0.49              |
| 3:2G:218:GLU:HB2  | 3:2G:236:HIS:HE1  | 1.77                     | 0.49              |
| 7:c:34:VAL:HG23   | 7:c:54:ARG:O      | 2.12                     | 0.49              |
| 4:M:15:ALA:HB2    | 4:M:127:TRP:CD2   | 2.48                     | 0.49              |
| 3:2H:70:LEU:HB3   | 3:2H:75:ILE:HB    | 1.94                     | 0.49              |
| 3:2H:78:PHE:HD1   | 3:2H:79:PRO:HD2   | 1.77                     | 0.49              |
| 3:2H:152:LEU:HD22 | 3:2H:158:VAL:HG12 | 1.93                     | 0.49              |
| 3:2H:159:LEU:HA   | 3:2H:273:THR:HG23 | 1.95                     | 0.49              |
| 2:2f:438:ARG:HB3  | 2:2f:438:ARG:NH1  | 2.28                     | 0.49              |
| 2:3f:272:PRO:C    | 2:3f:274:LEU:H    | 2.19                     | 0.49              |
| 4:N:79:THR:O      | 4:N:79:THR:OG1    | 2.31                     | 0.49              |
| 4:N:112:SER:HB3   | 4:N:117:GLN:O     | 2.12                     | 0.49              |
| 2:2g:263:ILE:HG22 | 2:2g:265:GLU:H    | 1.77                     | 0.49              |
| 2:3g:522:LYS:NZ   | 2:3g:522:LYS:CB   | 2.73                     | 0.49              |
| 2:1g:45:PRO:HG2   | 2:1g:65:PHE:O     | 2.12                     | 0.49              |
| 3:2J:315:ALA:HB1  | 3:2J:316:PRO:HD2  | 1.93                     | 0.49              |
| 3:1K:123:GLU:OE2  | 3:1K:394:ARG:NH1  | 2.46                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3i:44:ALA:HB3   | 2:3i:93:ARG:HD2   | 1.94                     | 0.49              |
| 3:1L:69:PHE:HE1   | 5:F:74:TRP:CE2    | 2.30                     | 0.49              |
| 7:b:19:GLU:N      | 7:b:19:GLU:OE2    | 2.46                     | 0.49              |
| 3:1G:390:ALA:HB1  | 3:1G:393:TYR:HE1  | 1.77                     | 0.49              |
| 3:2G:112:THR:OG1  | 3:2G:113:GLU:N    | 2.46                     | 0.49              |
| 6:X:12:PHE:HB3    | 6:X:13:PRO:HD3    | 1.94                     | 0.49              |
| 3:1H:557:ALA:N    | 3:1H:651:SER:OG   | 2.44                     | 0.49              |
| 3:1l:123:GLU:HG2  | 3:1l:124:GLN:HG2  | 1.93                     | 0.49              |
| 3:1l:191:ARG:HE   | 3:1l:275:ARG:HG2  | 1.77                     | 0.49              |
| 3:2l:184:LEU:O    | 3:2l:235:LEU:N    | 2.38                     | 0.49              |
| 3:2l:210:THR:OG1  | 3:2l:213:GLY:O    | 2.27                     | 0.49              |
| 6:T:99:GLU:N      | 6:T:99:GLU:OE1    | 2.45                     | 0.49              |
| 3:1J:350:ASP:OD2  | 3:1J:352:HIS:NE2  | 2.46                     | 0.49              |
| 4:O:150:GLY:H     | 4:O:156:ILE:HG12  | 1.78                     | 0.49              |
| 3:2J:139:GLN:HG2  | 3:2J:170:CYS:SG   | 2.52                     | 0.49              |
| 2:3h:272:PRO:C    | 2:3h:274:LEU:H    | 2.20                     | 0.49              |
| 3:2K:208:ALA:HB1  | 3:2K:241:HIS:CD2  | 2.47                     | 0.49              |
| 3:2K:532:ARG:NH2  | 5:E:129:THR:HB    | 2.26                     | 0.49              |
| 2:2i:74:LEU:HB2   | 2:2i:273:ASP:OD2  | 2.13                     | 0.49              |
| 1:p:116:ASN:HB2   | 1:p:144:GLU:HB3   | 1.95                     | 0.49              |
| 2:1i:437:ARG:HH11 | 2:1i:441:ASN:HD21 | 1.61                     | 0.49              |
| 3:1L:588:ARG:HD3  | 3:1L:589:PRO:HD2  | 1.94                     | 0.49              |
| 1:k:26:TYR:CA     | 1:k:68:VAL:O      | 2.61                     | 0.49              |
| 3:1G:108:ALA:HB2  | 3:1G:119:VAL:HA   | 1.94                     | 0.49              |
| 3:1G:453:ALA:HA   | 3:1G:458:ASP:OD2  | 2.12                     | 0.49              |
| 3:2G:191:ARG:HB2  | 3:2G:275:ARG:HD3  | 1.95                     | 0.49              |
| 2:3e:269:VAL:HG11 | 2:3e:295:LEU:HD11 | 1.94                     | 0.49              |
| 1:l:122:VAL:CG1   | 1:m:33:LEU:HD23   | 2.42                     | 0.49              |
| 3:1H:210:THR:OG1  | 3:1H:213:GLY:O    | 2.31                     | 0.49              |
| 2:1f:338:TYR:CE2  | 2:1f:361:VAL:HG11 | 2.48                     | 0.49              |
| 3:1l:85:THR:HB    | 3:1l:427:ALA:HB2  | 1.95                     | 0.49              |
| 3:1l:350:ASP:OD2  | 3:1l:352:HIS:NE2  | 2.45                     | 0.49              |
| 3:2l:175:LEU:O    | 3:2l:252:GLY:N    | 2.29                     | 0.49              |
| 2:1g:361:VAL:C    | 2:1g:365:TRP:HD1  | 2.20                     | 0.49              |
| 3:1J:77:LEU:HB2   | 3:1J:358:THR:HG21 | 1.94                     | 0.49              |
| 3:1K:152:LEU:HD21 | 3:1K:274:ILE:HD13 | 1.94                     | 0.49              |
| 3:2K:94:PRO:HG3   | 3:2K:280:TYR:HD2  | 1.77                     | 0.49              |
| 5:E:156:ARG:HG2   | 5:E:157:PRO:HD2   | 1.95                     | 0.49              |
| 6:V:44:GLY:C      | 6:V:46:ARG:H      | 2.21                     | 0.49              |
| 2:2i:40:PHE:HB3   | 2:2i:270:ALA:HB3  | 1.95                     | 0.49              |
| 2:3i:57:ASN:HA    | 2:3i:82:PHE:CZ    | 2.47                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3i:494:TYR:HB3  | 2:3i:516:ILE:HD12 | 1.95                     | 0.49              |
| 1:p:18:GLN:CB     | 1:p:95:LYS:HE3    | 2.43                     | 0.49              |
| 1:p:32:ASN:N      | 1:p:32:ASN:ND2    | 2.59                     | 0.49              |
| 3:1L:350:ASP:OD2  | 3:1L:352:HIS:NE2  | 2.45                     | 0.49              |
| 4:Q:112:SER:HB3   | 4:Q:117:GLN:O     | 2.13                     | 0.49              |
| 2:3j:38:ALA:HA    | 2:3j:268:MET:HG2  | 1.95                     | 0.49              |
| 2:3j:58:TRP:N     | 2:2e:500:GLU:OE2  | 2.45                     | 0.49              |
| 1:k:122:VAL:CG1   | 1:l:33:LEU:CD2    | 2.88                     | 0.49              |
| 3:2G:527:ARG:HH21 | 3:2G:531:THR:H    | 1.60                     | 0.49              |
| 2:3e:37:VAL:HG13  | 2:3e:88:ALA:HB1   | 1.94                     | 0.49              |
| 2:1f:47:GLY:HA3   | 2:1f:65:PHE:CD1   | 2.48                     | 0.49              |
| 4:N:152:ALA:HA    | 4:O:13:VAL:HG22   | 1.93                     | 0.49              |
| 2:1g:362:ALA:HA   | 2:1g:365:TRP:CD1  | 2.48                     | 0.49              |
| 3:2J:54:ILE:O     | 3:2J:58:LEU:HD23  | 2.12                     | 0.49              |
| 6:U:57:HIS:HA     | 6:U:60:VAL:HG23   | 1.92                     | 0.49              |
| 2:2h:455:VAL:HG11 | 2:3h:379:ALA:HB3  | 1.93                     | 0.49              |
| 2:1h:296:ILE:HD11 | 2:1h:335:ALA:HB2  | 1.94                     | 0.49              |
| 2:1h:453:TRP:HB3  | 2:1h:457:GLU:OE1  | 2.11                     | 0.49              |
| 2:1h:455:VAL:O    | 2:1h:455:VAL:HG12 | 2.13                     | 0.49              |
| 3:1K:455:THR:OG1  | 3:1K:456:LEU:N    | 2.45                     | 0.49              |
| 3:1K:619:LEU:C    | 3:1K:619:LEU:CD2  | 2.86                     | 0.49              |
| 3:2K:141:SER:N    | 3:2K:169:ASP:HB3  | 2.28                     | 0.49              |
| 3:2K:487:ALA:HB3  | 5:E:138:PHE:CE2   | 2.48                     | 0.49              |
| 5:E:144:PRO:HB2   | 5:E:175:MET:HB3   | 1.95                     | 0.49              |
| 7:a:34:VAL:N      | 7:f:112:VAL:O     | 2.45                     | 0.49              |
| 2:2i:502:ASN:OD1  | 2:2i:512:VAL:N    | 2.43                     | 0.49              |
| 1:p:34:GLN:HG3    | 1:p:60:VAL:HG13   | 1.95                     | 0.49              |
| 3:1L:39:PRO:HD2   | 3:1L:43:LEU:HB2   | 1.95                     | 0.49              |
| 3:2L:152:LEU:HD22 | 3:2L:158:VAL:HG12 | 1.93                     | 0.49              |
| 3:2L:326:LEU:HB2  | 3:2L:337:TRP:HB2  | 1.95                     | 0.49              |
| 3:2G:170:CYS:SG   | 3:2G:255:ARG:NH1  | 2.85                     | 0.49              |
| 7:c:63:THR:HG22   | 7:c:130:VAL:HG22  | 1.94                     | 0.49              |
| 2:2e:80:GLY:HA3   | 2:2e:360:HIS:CE1  | 2.48                     | 0.49              |
| 1:l:36:GLU:O      | 1:l:57:MET:HG2    | 2.13                     | 0.49              |
| 2:1e:455:VAL:O    | 2:1e:455:VAL:HG12 | 2.13                     | 0.49              |
| 3:1H:197:VAL:HG23 | 3:1H:266:PRO:HB2  | 1.95                     | 0.49              |
| 3:2H:82:ALA:HB1   | 3:2H:290:HIS:HB3  | 1.95                     | 0.49              |
| 3:2H:171:MET:HG3  | 3:2H:173:ILE:HD11 | 1.95                     | 0.49              |
| 2:2f:254:ARG:HH22 | 2:3f:397:GLU:CD   | 2.17                     | 0.49              |
| 3:1J:189:ASP:OD1  | 3:1J:190:SER:N    | 2.45                     | 0.49              |
| 2:2h:41:VAL:HG12  | 2:2h:92:VAL:HB    | 1.94                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:o:56:LEU:HD23   | 1:n:118:TRP:CZ2   | 2.47                     | 0.49              |
| 2:2i:368:ASN:HD22 | 2:2i:378:PRO:HB3  | 1.78                     | 0.49              |
| 3:1L:184:LEU:HD22 | 3:1L:237:ILE:HD11 | 1.95                     | 0.49              |
| 3:2L:189:ASP:HA   | 3:2L:230:PRO:HB3  | 1.94                     | 0.49              |
| 3:1G:77:LEU:HB2   | 3:1G:358:THR:HG21 | 1.95                     | 0.49              |
| 3:1G:203:PRO:HG2  | 3:1G:267:PHE:HD1  | 1.78                     | 0.49              |
| 3:1G:220:ASP:OD1  | 3:1G:221:ARG:N    | 2.31                     | 0.49              |
| 3:2G:183:ALA:N    | 3:2G:283:GLY:O    | 2.46                     | 0.49              |
| 6:X:84:GLU:HG3    | 6:X:87:ILE:CG2    | 2.43                     | 0.49              |
| 2:3e:61:TYR:O     | 2:3e:65:PHE:N     | 2.44                     | 0.49              |
| 3:2H:173:ILE:HG22 | 3:2H:174:GLY:H    | 1.78                     | 0.49              |
| 6:S:28:GLU:OE1    | 6:S:118:ARG:NE    | 2.46                     | 0.49              |
| 2:2f:254:ARG:HH21 | 2:3f:393:ILE:HA   | 1.75                     | 0.49              |
| 6:T:116:ASN:OD1   | 6:T:118:ARG:NH2   | 2.46                     | 0.49              |
| 7:e:119:LEU:HD12  | 7:f:12:PHE:HB3    | 1.95                     | 0.49              |
| 2:3g:61:TYR:O     | 2:3g:65:PHE:N     | 2.40                     | 0.49              |
| 2:1g:279:GLN:HG3  | 2:1g:313:PRO:HG3  | 1.95                     | 0.49              |
| 2:1g:365:TRP:CH2  | 2:1g:434:LEU:CD2  | 2.79                     | 0.49              |
| 3:2J:172:LEU:HB3  | 3:2J:253:TRP:HH2  | 1.78                     | 0.49              |
| 2:2h:337:LEU:HD23 | 2:2h:406:VAL:HG22 | 1.95                     | 0.49              |
| 3:1K:101:VAL:HG21 | 3:1K:126:LEU:N    | 2.19                     | 0.48              |
| 4:P:220:ASP:HB3   | 4:P:223:HIS:HE2   | 1.78                     | 0.48              |
| 3:2K:532:ARG:HG3  | 5:E:127:GLY:O     | 2.13                     | 0.48              |
| 2:1i:50:ASN:OD1   | 2:1i:241:HIS:NE2  | 2.46                     | 0.48              |
| 2:1i:377:ALA:HB2  | 2:1i:435:ASN:HB3  | 1.95                     | 0.48              |
| 3:1L:254:ILE:O    | 3:1L:254:ILE:HG22 | 2.13                     | 0.48              |
| 2:3j:272:PRO:C    | 2:3j:274:LEU:H    | 2.21                     | 0.48              |
| 2:1j:377:ALA:HB2  | 2:1j:435:ASN:HB3  | 1.95                     | 0.48              |
| 3:1G:342:HIS:HB3  | 3:2G:448:ARG:HH21 | 1.78                     | 0.48              |
| 2:1e:461:HIS:HA   | 2:1e:464:TRP:CE3  | 2.48                     | 0.48              |
| 2:2f:41:VAL:HG12  | 2:2f:92:VAL:HB    | 1.93                     | 0.48              |
| 1:m:28:ASN:HD21   | 1:m:99:ILE:HD13   | 1.78                     | 0.48              |
| 3:1l:25:GLN:HB2   | 5:C:43:VAL:HG12   | 1.95                     | 0.48              |
| 7:e:121:PRO:HG3   | 7:f:25:ASN:OD1    | 2.12                     | 0.48              |
| 2:1g:371:GLU:HG3  | 2:1g:372:ARG:HG2  | 1.95                     | 0.48              |
| 3:1J:203:PRO:HG2  | 3:1J:267:PHE:HD2  | 1.77                     | 0.48              |
| 4:O:85:ASP:OD1    | 4:O:87:SER:N      | 2.28                     | 0.48              |
| 3:2J:480:GLU:OE2  | 3:2J:486:HIS:NE2  | 2.46                     | 0.48              |
| 1:o:61:ALA:HA     | 1:o:63:ASP:OD1    | 2.12                     | 0.48              |
| 3:1K:116:GLU:OE2  | 3:1K:116:GLU:N    | 2.46                     | 0.48              |
| 3:1K:549:VAL:HG13 | 3:1K:608:VAL:HG12 | 1.95                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2i:244:PRO:HB2  | 2:2i:274:LEU:HA   | 1.95                     | 0.48              |
| 2:3i:299:CYS:SG   | 2:3i:300:GLU:N    | 2.86                     | 0.48              |
| 1:p:40:ILE:HG21   | 7:f:126:VAL:HG21  | 1.95                     | 0.48              |
| 2:1i:393:ILE:HD11 | 2:1i:398:GLN:HA   | 1.95                     | 0.48              |
| 6:W:118:ARG:HG3   | 6:W:118:ARG:NH1   | 2.28                     | 0.48              |
| 7:b:140:ASP:O     | 2:1j:468:ARG:NH2  | 2.47                     | 0.48              |
| 1:k:122:VAL:HG12  | 1:l:33:LEU:HD13   | 1.86                     | 0.48              |
| 2:1j:49:LEU:HD12  | 2:1j:93:ARG:HG2   | 1.93                     | 0.48              |
| 3:1G:246:ASN:HB3  | 3:1G:253:TRP:CZ2  | 2.48                     | 0.48              |
| 3:2G:197:VAL:HG11 | 3:2G:268:TYR:CE1  | 2.48                     | 0.48              |
| 2:2e:247:TYR:HB3  | 2:2e:257:PHE:H    | 1.79                     | 0.48              |
| 2:2e:275:MET:CE   | 2:2e:313:PRO:HD3  | 2.43                     | 0.48              |
| 2:1e:93:ARG:HH21  | 2:1e:96:GLY:HA2   | 1.78                     | 0.48              |
| 3:2H:157:ASP:OD1  | 3:2H:157:ASP:N    | 2.45                     | 0.48              |
| 3:2H:315:ALA:HB1  | 3:2H:316:PRO:HD2  | 1.96                     | 0.48              |
| 6:S:120:LEU:HD12  | 6:S:121:VAL:H     | 1.78                     | 0.48              |
| 1:m:90:MET:HE3    | 1:n:56:LEU:HD21   | 1.95                     | 0.48              |
| 3:1l:178:ALA:HB1  | 3:1l:241:HIS:CE1  | 2.48                     | 0.48              |
| 3:2l:355:VAL:HG23 | 3:2l:362:ILE:HG12 | 1.95                     | 0.48              |
| 7:e:63:THR:HG22   | 7:e:130:VAL:HG22  | 1.95                     | 0.48              |
| 2:1g:296:ILE:HD11 | 2:1g:335:ALA:HB2  | 1.94                     | 0.48              |
| 2:2h:263:ILE:HG22 | 2:2h:265:GLU:H    | 1.78                     | 0.48              |
| 2:2h:517:GLY:C    | 2:2h:518:ILE:HD13 | 2.38                     | 0.48              |
| 2:3h:494:TYR:HB3  | 2:3h:516:ILE:HG22 | 1.94                     | 0.48              |
| 1:o:127:LEU:HD13  | 1:p:13:PRO:HB3    | 1.94                     | 0.48              |
| 3:2K:36:VAL:HG22  | 3:2K:37:SER:H     | 1.79                     | 0.48              |
| 2:2i:518:ILE:HD11 | 2:3i:533:GLN:HG2  | 1.95                     | 0.48              |
| 3:1L:42:THR:HB    | 6:W:22:ILE:HG12   | 1.94                     | 0.48              |
| 3:1L:157:ASP:HB3  | 3:1L:273:THR:HB   | 1.95                     | 0.48              |
| 7:b:39:ARG:HH22   | 4:O:81:GLU:HG2    | 1.78                     | 0.48              |
| 2:3j:269:VAL:HG12 | 2:3j:307:ALA:HA   | 1.94                     | 0.48              |
| 2:3j:472:SER:HB2  | 2:3j:495:VAL:HG11 | 1.94                     | 0.48              |
| 1:k:35:ILE:CG1    | 1:k:57:MET:HG2    | 2.39                     | 0.48              |
| 2:3e:41:VAL:HG12  | 2:3e:92:VAL:HB    | 1.94                     | 0.48              |
| 2:1e:435:ASN:O    | 2:1e:439:TYR:N    | 2.37                     | 0.48              |
| 2:1f:337:LEU:O    | 2:1f:407:ASN:ND2  | 2.46                     | 0.48              |
| 2:2g:337:LEU:HD23 | 2:2g:406:VAL:HG22 | 1.94                     | 0.48              |
| 2:1g:39:ALA:HB3   | 2:1g:269:VAL:HG12 | 1.94                     | 0.48              |
| 3:2J:532:ARG:HG3  | 5:D:127:GLY:C     | 2.38                     | 0.48              |
| 2:2i:239:SER:OG   | 2:2i:240:ALA:N    | 2.46                     | 0.48              |
| 2:3i:310:ASP:OD1  | 2:3i:310:ASP:N    | 2.38                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:p:116:ASN:ND2   | 1:p:144:GLU:OE1   | 2.46                     | 0.48              |
| 4:Q:85:ASP:OD1    | 4:Q:86:SER:N      | 2.46                     | 0.48              |
| 3:2L:204:LEU:HD13 | 3:2L:225:GLY:HA3  | 1.94                     | 0.48              |
| 5:F:25:ALA:O      | 5:F:27:PHE:N      | 2.41                     | 0.48              |
| 5:A:40:LEU:O      | 5:A:43:VAL:HG22   | 2.12                     | 0.48              |
| 2:2e:312:PRO:HB2  | 2:2e:315:GLN:NE2  | 2.28                     | 0.48              |
| 3:1H:57:ARG:NH2   | 3:2H:18:ASP:OD2   | 2.46                     | 0.48              |
| 3:1H:173:ILE:HG22 | 3:1H:254:ILE:HB   | 1.95                     | 0.48              |
| 3:2H:432:ASP:OD1  | 3:2H:432:ASP:N    | 2.43                     | 0.48              |
| 5:B:26:VAL:HG12   | 5:B:27:PHE:CD1    | 2.48                     | 0.48              |
| 2:2f:45:PRO:HD3   | 2:2f:72:TYR:HD2   | 1.78                     | 0.48              |
| 2:2f:80:GLY:HA3   | 2:2f:360:HIS:CE1  | 2.49                     | 0.48              |
| 2:2g:45:PRO:HA    | 2:2g:97:SER:HB3   | 1.93                     | 0.48              |
| 2:3g:45:PRO:O     | 2:3g:97:SER:OG    | 2.32                     | 0.48              |
| 2:1g:271:VAL:O    | 2:1g:271:VAL:CG2  | 2.61                     | 0.48              |
| 1:o:10:LEU:HG     | 1:n:133:ASN:O     | 2.13                     | 0.48              |
| 2:2i:389:LEU:HD21 | 2:2i:417:ILE:HG21 | 1.95                     | 0.48              |
| 2:1i:337:LEU:O    | 2:1i:407:ASN:ND2  | 2.47                     | 0.48              |
| 3:1L:205:VAL:O    | 3:1L:257:ARG:N    | 2.45                     | 0.48              |
| 2:2j:247:TYR:CD2  | 2:2j:256:GLY:HA3  | 2.47                     | 0.48              |
| 4:R:88:MET:HE2    | 7:d:86:ARG:NH1    | 2.29                     | 0.48              |
| 2:1e:275:MET:HE1  | 2:1e:312:PRO:HA   | 1.95                     | 0.48              |
| 2:1e:494:TYR:HD2  | 2:1e:516:ILE:HD11 | 1.79                     | 0.48              |
| 3:1H:79:PRO:HB3   | 3:1H:357:ALA:HB3  | 1.94                     | 0.48              |
| 3:1H:303:THR:O    | 3:1H:308:GLN:NE2  | 2.47                     | 0.48              |
| 3:1H:585:PRO:HG2  | 3:1H:588:ARG:HB2  | 1.95                     | 0.48              |
| 2:3f:57:ASN:ND2   | 2:3f:60:GLN:OE1   | 2.47                     | 0.48              |
| 1:m:66:VAL:HG13   | 1:m:138:THR:HG22  | 1.88                     | 0.48              |
| 2:3g:509:LEU:O    | 2:3g:511:ARG:NH2  | 2.46                     | 0.48              |
| 3:2J:529:ILE:HD12 | 5:D:105:LEU:HD23  | 1.94                     | 0.48              |
| 2:1h:522:LYS:NZ   | 6:U:103:LEU:HG    | 2.27                     | 0.48              |
| 3:2K:204:LEU:HD13 | 3:2K:225:GLY:HA3  | 1.96                     | 0.48              |
| 2:3i:272:PRO:C    | 2:3i:274:LEU:H    | 2.21                     | 0.48              |
| 2:3i:286:GLU:O    | 2:3i:289:LYS:NZ   | 2.32                     | 0.48              |
| 2:3i:393:ILE:HD11 | 2:3i:410:ARG:HD2  | 1.95                     | 0.48              |
| 3:1L:184:LEU:N    | 3:1L:235:LEU:O    | 2.47                     | 0.48              |
| 2:3j:37:VAL:HG13  | 2:3j:88:ALA:HB1   | 1.95                     | 0.48              |
| 1:k:105:GLU:OE1   | 1:k:106:ASP:N     | 2.47                     | 0.48              |
| 2:2e:469:ARG:NH2  | 1:l:18:GLN:HE22   | 2.12                     | 0.48              |
| 2:1e:39:ALA:HB2   | 2:1e:266:ILE:HD13 | 1.95                     | 0.48              |
| 2:2f:372:ARG:HD2  | 2:1f:456:PHE:CZ   | 2.49                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:457:GLU:HB2  | 2:2f:458:PRO:HD3  | 1.94                     | 0.48              |
| 2:2f:512:VAL:HG23 | 2:3f:527:VAL:HG23 | 1.96                     | 0.48              |
| 2:3f:461:HIS:NE2  | 2:3f:462:ASN:OD1  | 2.47                     | 0.48              |
| 2:3f:494:TYR:HB3  | 2:3f:516:ILE:HD13 | 1.96                     | 0.48              |
| 1:m:63:ASP:HB3    | 1:m:143:PHE:HD2   | 1.76                     | 0.48              |
| 4:O:223:HIS:ND1   | 4:O:224:LEU:N     | 2.61                     | 0.48              |
| 3:2J:88:THR:HG23  | 3:2J:285:THR:HG22 | 1.95                     | 0.48              |
| 3:2J:199:PRO:HA   | 3:2J:226:GLY:HA3  | 1.96                     | 0.48              |
| 3:1K:328:THR:HB   | 3:1K:337:TRP:HE1  | 1.79                     | 0.48              |
| 3:2K:529:ILE:HG22 | 5:E:175:MET:HE1   | 1.95                     | 0.48              |
| 3:2K:532:ARG:HH12 | 5:E:138:PHE:HB2   | 1.79                     | 0.48              |
| 2:2i:504:PRO:HA   | 2:2i:507:VAL:HB   | 1.95                     | 0.48              |
| 3:1G:204:LEU:HD23 | 3:1G:258:VAL:HG22 | 1.95                     | 0.48              |
| 1:l:38:ASP:OD2    | 1:l:57:MET:HE1    | 2.14                     | 0.48              |
| 3:1l:130:PRO:HA   | 3:1l:281:THR:HG21 | 1.96                     | 0.48              |
| 3:1l:503:ARG:HD2  | 3:1l:569:TYR:CD1  | 2.49                     | 0.48              |
| 3:2l:369:ARG:HH11 | 5:C:46:PRO:HB2    | 1.79                     | 0.48              |
| 2:2g:460:ASP:C    | 2:2g:462:ASN:N    | 2.70                     | 0.48              |
| 2:3g:44:ALA:HB1   | 2:3g:65:PHE:HB3   | 1.96                     | 0.48              |
| 4:O:96:MET:HE2    | 4:O:96:MET:HB3    | 1.78                     | 0.48              |
| 3:2J:532:ARG:HE   | 5:D:127:GLY:HA3   | 1.78                     | 0.48              |
| 3:2J:532:ARG:HH11 | 5:D:140:GLY:N     | 2.11                     | 0.48              |
| 1:o:116:ASN:HB2   | 1:o:144:GLU:HB3   | 1.96                     | 0.48              |
| 3:2K:208:ALA:HB1  | 3:2K:241:HIS:HD2  | 1.79                     | 0.48              |
| 6:V:64:VAL:HG22   | 2:1i:522:LYS:NZ   | 2.29                     | 0.48              |
| 1:p:41:ARG:NE     | 1:p:52:ASN:HB3    | 2.20                     | 0.48              |
| 3:1L:179:VAL:HG21 | 3:1L:182:CYS:HB3  | 1.94                     | 0.48              |
| 3:2L:100:LEU:HD13 | 3:2L:128:ILE:HG22 | 1.96                     | 0.48              |
| 2:2j:263:ILE:HG22 | 2:2j:265:GLU:H    | 1.78                     | 0.48              |
| 2:3j:299:CYS:HA   | 2:3j:305:ARG:HD2  | 1.95                     | 0.48              |
| 3:2G:315:ALA:HB1  | 3:2G:316:PRO:HD2  | 1.95                     | 0.48              |
| 3:1H:329:ALA:HB3  | 3:1H:387:VAL:H    | 1.78                     | 0.48              |
| 7:d:66:LEU:HD22   | 7:d:117:PRO:HG3   | 1.94                     | 0.48              |
| 7:d:121:PRO:HG3   | 7:e:25:ASN:OD1    | 2.14                     | 0.48              |
| 2:3f:310:ASP:OD1  | 2:3f:310:ASP:N    | 2.40                     | 0.48              |
| 2:1f:461:HIS:HA   | 2:1f:464:TRP:CE3  | 2.49                     | 0.48              |
| 3:1l:137:VAL:HG22 | 3:1l:172:LEU:O    | 2.14                     | 0.48              |
| 3:1l:527:ARG:HG2  | 3:1l:528:LEU:N    | 2.28                     | 0.48              |
| 4:N:138:TYR:CE1   | 4:N:165:VAL:HB    | 2.49                     | 0.48              |
| 7:e:18:GLY:HA3    | 7:e:87:PRO:HB3    | 1.95                     | 0.48              |
| 2:3g:37:VAL:HG13  | 2:3g:88:ALA:HB1   | 1.95                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:p:33:LEU:HD21   | 1:p:147:VAL:CG2   | 2.44                     | 0.48              |
| 7:b:17:ASP:HB2    | 7:b:88:THR:O      | 2.14                     | 0.48              |
| 7:b:126:VAL:HG11  | 1:l:40:ILE:HD11   | 1.95                     | 0.48              |
| 2:2j:80:GLY:HA3   | 2:2j:360:HIS:CE1  | 2.48                     | 0.48              |
| 2:2j:254:ARG:NH1  | 2:3j:392:GLN:O    | 2.47                     | 0.48              |
| 2:1j:94:VAL:HG11  | 2:1j:243:GLY:O    | 2.14                     | 0.48              |
| 2:2e:67:ASP:OD1   | 2:2e:67:ASP:N     | 2.45                     | 0.48              |
| 2:2e:455:VAL:HG12 | 2:3e:522:LYS:NZ   | 2.28                     | 0.48              |
| 2:1e:269:VAL:HG11 | 2:1e:295:LEU:HD11 | 1.95                     | 0.48              |
| 2:1e:315:GLN:HG2  | 2:1e:320:ILE:HD13 | 1.95                     | 0.48              |
| 3:1H:596:PHE:HA   | 3:1H:599:LEU:HD12 | 1.96                     | 0.48              |
| 2:1f:368:ASN:ND2  | 2:1f:378:PRO:CA   | 2.76                     | 0.48              |
| 3:1l:557:ALA:N    | 3:1l:651:SER:OG   | 2.41                     | 0.48              |
| 4:N:126:GLU:OE2   | 4:N:134:ARG:NH1   | 2.46                     | 0.48              |
| 1:n:34:GLN:OE1    | 1:n:60:VAL:CG1    | 2.61                     | 0.48              |
| 4:O:85:ASP:OD1    | 4:O:86:SER:N      | 2.47                     | 0.48              |
| 6:U:90:HIS:O      | 6:U:108:ARG:HB2   | 2.14                     | 0.48              |
| 2:1h:338:TYR:CE1  | 2:1h:361:VAL:HG11 | 2.49                     | 0.48              |
| 2:1h:369:ASP:OD1  | 2:1h:374:VAL:N    | 2.46                     | 0.48              |
| 3:2K:207:GLU:HB2  | 3:2K:255:ARG:HB3  | 1.96                     | 0.48              |
| 7:a:10:ILE:HD13   | 1:p:58:PRO:HD3    | 1.96                     | 0.48              |
| 2:3i:241:HIS:O    | 2:3i:241:HIS:ND1  | 2.46                     | 0.48              |
| 3:2L:302:SER:HB3  | 3:2L:388:ILE:HD11 | 1.96                     | 0.48              |
| 2:3j:457:GLU:N    | 2:3j:458:PRO:HD2  | 2.29                     | 0.48              |
| 3:1G:165:PRO:HB3  | 3:1G:267:PHE:CG   | 2.49                     | 0.48              |
| 3:2G:129:VAL:HB   | 3:2G:179:VAL:HG21 | 1.96                     | 0.48              |
| 3:2G:516:LEU:HD13 | 3:2G:535:VAL:HG23 | 1.96                     | 0.48              |
| 2:3e:435:ASN:O    | 2:3e:439:TYR:N    | 2.34                     | 0.48              |
| 2:1e:38:ALA:HA    | 2:1e:268:MET:HG3  | 1.95                     | 0.48              |
| 3:2H:203:PRO:HD3  | 3:2H:265:GLN:HB3  | 1.95                     | 0.48              |
| 2:3f:372:ARG:NH1  | 2:3f:376:LYS:HE3  | 2.28                     | 0.48              |
| 1:m:61:ALA:HA     | 1:m:146:LEU:HG    | 1.96                     | 0.48              |
| 4:N:85:ASP:OD1    | 4:N:86:SER:N      | 2.47                     | 0.48              |
| 3:2l:112:THR:OG1  | 3:2l:114:ARG:HG2  | 2.13                     | 0.48              |
| 2:3g:437:ARG:O    | 2:3g:437:ARG:HD3  | 2.14                     | 0.48              |
| 3:1J:148:ARG:HH21 | 3:1J:152:LEU:HD13 | 1.77                     | 0.48              |
| 3:2J:172:LEU:HD22 | 3:2J:253:TRP:HZ2  | 1.79                     | 0.48              |
| 2:2h:239:SER:OG   | 2:2h:240:ALA:N    | 2.47                     | 0.48              |
| 2:2h:254:ARG:NH2  | 2:3h:394:THR:H    | 2.12                     | 0.48              |
| 2:1h:41:VAL:HG22  | 2:1h:92:VAL:HB    | 1.96                     | 0.47              |
| 3:1K:229:ARG:HE   | 3:1K:230:PRO:HD2  | 1.79                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:P:196:GLN:HE22  | 3:2K:53:GLN:HE21  | 1.62                     | 0.47              |
| 2:2i:380:ASN:O    | 2:2i:418:ARG:NH1  | 2.47                     | 0.47              |
| 2:2i:462:ASN:HD22 | 2:2i:462:ASN:N    | 2.09                     | 0.47              |
| 2:1i:42:GLY:HA3   | 2:1i:74:LEU:HD13  | 1.96                     | 0.47              |
| 3:2L:205:VAL:HG13 | 3:2L:257:ARG:HB3  | 1.96                     | 0.47              |
| 5:F:148:VAL:HG11  | 5:F:163:LEU:HD11  | 1.96                     | 0.47              |
| 6:W:48:MET:O      | 6:W:48:MET:HG2    | 2.14                     | 0.47              |
| 7:b:106:LEU:HD22  | 7:b:135:HIS:NE2   | 2.29                     | 0.47              |
| 3:1G:294:VAL:HG21 | 3:1G:314:HIS:CD2  | 2.48                     | 0.47              |
| 3:2G:85:THR:HG22  | 3:2G:427:ALA:HA   | 1.96                     | 0.47              |
| 3:2G:91:LEU:N     | 3:2G:282:ILE:O    | 2.47                     | 0.47              |
| 1:l:43:GLN:NE2    | 1:l:49:THR:HA     | 2.29                     | 0.47              |
| 3:1H:97:ASP:HB2   | 3:1H:130:PRO:HG3  | 1.95                     | 0.47              |
| 4:M:195:LEU:HD12  | 4:M:221:PRO:HB3   | 1.96                     | 0.47              |
| 2:1f:42:GLY:HA3   | 2:1f:74:LEU:HD13  | 1.96                     | 0.47              |
| 2:1f:43:LEU:HD12  | 2:1f:273:ASP:HB2  | 1.94                     | 0.47              |
| 2:1f:46:THR:HA    | 2:1f:93:ARG:HH21  | 1.78                     | 0.47              |
| 3:2l:185:ALA:HA   | 3:2l:234:VAL:HA   | 1.96                     | 0.47              |
| 1:n:66:VAL:CG1    | 1:n:138:THR:HG23  | 2.44                     | 0.47              |
| 2:1g:50:ASN:ND2   | 2:1g:94:VAL:HG23  | 2.29                     | 0.47              |
| 2:2h:333:LYS:HD2  | 2:2h:431:TRP:CD1  | 2.48                     | 0.47              |
| 1:o:90:MET:HA     | 1:o:93:ALA:HB3    | 1.96                     | 0.47              |
| 3:1K:128:ILE:HG22 | 3:1K:129:VAL:H    | 1.79                     | 0.47              |
| 3:2K:140:VAL:HG22 | 3:2K:141:SER:H    | 1.79                     | 0.47              |
| 7:a:86:ARG:HD3    | 4:O:88:MET:CE     | 2.45                     | 0.47              |
| 2:2i:254:ARG:HH22 | 2:3i:397:GLU:HB2  | 1.78                     | 0.47              |
| 2:1i:244:PRO:HB2  | 2:1i:291:VAL:HG11 | 1.95                     | 0.47              |
| 2:3j:310:ASP:OD1  | 2:3j:310:ASP:N    | 2.44                     | 0.47              |
| 2:3j:389:LEU:HD11 | 2:3j:409:ILE:HG22 | 1.94                     | 0.47              |
| 3:1G:136:LEU:HB2  | 3:1G:152:LEU:HB3  | 1.95                     | 0.47              |
| 3:2G:218:GLU:HB2  | 3:2G:236:HIS:CE1  | 2.48                     | 0.47              |
| 3:2G:269:THR:HG23 | 3:2G:270:THR:HG23 | 1.96                     | 0.47              |
| 2:3e:90:TYR:HE2   | 2:3e:263:ILE:HD13 | 1.78                     | 0.47              |
| 2:3e:460:ASP:OD1  | 2:3e:461:HIS:N    | 2.47                     | 0.47              |
| 2:1e:477:ASN:O    | 2:1e:480:ARG:HB2  | 2.14                     | 0.47              |
| 3:1H:69:PHE:CE1   | 5:B:74:TRP:CZ3    | 3.01                     | 0.47              |
| 2:2f:275:MET:HE1  | 2:2f:312:PRO:HA   | 1.95                     | 0.47              |
| 2:3g:399:ASP:N    | 2:3g:399:ASP:OD1  | 2.47                     | 0.47              |
| 3:2J:11:ARG:C     | 3:2J:12:ARG:HD2   | 2.39                     | 0.47              |
| 3:1K:27:ARG:HA    | 3:1K:27:ARG:NE    | 2.29                     | 0.47              |
| 3:1K:261:PRO:O    | 3:1K:265:GLN:N    | 2.47                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1K:329:ALA:HB3  | 3:1K:387:VAL:H    | 1.80                     | 0.47              |
| 3:2K:99:ILE:HA    | 3:2K:127:ARG:HG3  | 1.96                     | 0.47              |
| 2:2i:337:LEU:HD23 | 2:2i:406:VAL:HG12 | 1.96                     | 0.47              |
| 2:3i:392:GLN:HE22 | 2:3i:411:SER:HB3  | 1.78                     | 0.47              |
| 1:p:14:ASN:OD1    | 1:p:15:PHE:N      | 2.43                     | 0.47              |
| 3:1L:204:LEU:HG   | 3:1L:258:VAL:HG22 | 1.95                     | 0.47              |
| 3:2L:84:ARG:HG2   | 3:2L:289:ILE:HA   | 1.96                     | 0.47              |
| 1:k:33:LEU:HD22   | 1:k:33:LEU:N      | 2.30                     | 0.47              |
| 1:k:128:LYS:HB3   | 1:k:131:ASP:HB2   | 1.96                     | 0.47              |
| 3:1G:70:LEU:HD13  | 3:1G:75:ILE:HD11  | 1.96                     | 0.47              |
| 2:1e:57:ASN:ND2   | 6:S:119:SER:OG    | 2.47                     | 0.47              |
| 2:1e:275:MET:CE   | 2:1e:312:PRO:HA   | 2.44                     | 0.47              |
| 3:1H:560:VAL:O    | 3:1H:564:THR:OG1  | 2.30                     | 0.47              |
| 4:M:152:ALA:HA    | 4:N:13:VAL:HG22   | 1.94                     | 0.47              |
| 3:2H:90:TRP:HB2   | 3:2H:420:GLU:HB2  | 1.96                     | 0.47              |
| 3:1l:459:TYR:CE2  | 3:1l:488:VAL:HG11 | 2.50                     | 0.47              |
| 2:2g:254:ARG:NH1  | 2:3g:394:THR:OG1  | 2.44                     | 0.47              |
| 3:1J:481:ASN:N    | 3:1J:485:ALA:O    | 2.41                     | 0.47              |
| 2:2h:313:PRO:HB3  | 2:2h:341:TRP:CZ2  | 2.49                     | 0.47              |
| 2:2h:457:GLU:OE2  | 2:2h:463:LEU:CA   | 2.62                     | 0.47              |
| 2:3h:460:ASP:OD1  | 2:3h:461:HIS:N    | 2.47                     | 0.47              |
| 1:o:6:PRO:HG2     | 1:n:73:SER:HB3    | 1.97                     | 0.47              |
| 2:1h:456:PHE:HE2  | 2:2h:372:ARG:NH1  | 2.12                     | 0.47              |
| 3:1K:45:GLU:HG2   | 6:V:10:TRP:HH2    | 1.79                     | 0.47              |
| 3:1K:571:HIS:HB2  | 3:1K:598:VAL:HG21 | 1.96                     | 0.47              |
| 4:P:78:MET:HB3    | 4:P:164:LEU:HB2   | 1.96                     | 0.47              |
| 3:2K:21:LYS:HD2   | 3:2K:24:ILE:HD13  | 1.95                     | 0.47              |
| 2:3i:252:SER:OG   | 2:3i:254:ARG:NH1  | 2.47                     | 0.47              |
| 2:3i:275:MET:HE1  | 2:3i:312:PRO:CA   | 2.44                     | 0.47              |
| 2:3i:496:LYS:NZ   | 2:3i:500:GLU:OE1  | 2.43                     | 0.47              |
| 3:2L:24:ILE:HD11  | 6:W:48:MET:HE1    | 1.95                     | 0.47              |
| 6:W:43:PRO:HG2    | 6:W:55:ALA:HB2    | 1.96                     | 0.47              |
| 7:b:12:PHE:CE1    | 1:l:43:GLN:HG2    | 2.49                     | 0.47              |
| 2:3j:49:LEU:O     | 2:3j:52:PRO:HD2   | 2.14                     | 0.47              |
| 2:3j:61:TYR:CE1   | 2:3j:65:PHE:HB2   | 2.49                     | 0.47              |
| 1:k:63:ASP:HB2    | 1:k:143:PHE:CE2   | 2.49                     | 0.47              |
| 1:k:90:MET:HE2    | 1:l:56:LEU:HD11   | 1.96                     | 0.47              |
| 4:R:85:ASP:OD1    | 4:R:87:SER:N      | 2.28                     | 0.47              |
| 4:R:150:GLY:H     | 4:R:156:ILE:HG12  | 1.78                     | 0.47              |
| 3:2G:505:ARG:N    | 3:2G:508:GLN:OE1  | 2.43                     | 0.47              |
| 2:3e:340:PRO:HG2  | 2:3e:409:ILE:HB   | 1.96                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:l:22:VAL:HG12   | 1:l:23:MET:H      | 1.79                     | 0.47              |
| 2:1e:338:TYR:CE1  | 2:1e:361:VAL:HG11 | 2.49                     | 0.47              |
| 3:1H:294:VAL:HG21 | 3:1H:314:HIS:CD2  | 2.49                     | 0.47              |
| 3:2H:64:LYS:HD2   | 5:B:55:ASP:HB2    | 1.96                     | 0.47              |
| 7:d:110:LEU:HD12  | 7:d:111:PRO:HD2   | 1.95                     | 0.47              |
| 2:3f:241:HIS:O    | 2:3f:241:HIS:ND1  | 2.47                     | 0.47              |
| 2:3f:392:GLN:HE22 | 2:3f:411:SER:HB3  | 1.79                     | 0.47              |
| 2:1f:457:GLU:OE1  | 2:1f:463:LEU:CD1  | 2.58                     | 0.47              |
| 2:2g:80:GLY:HA3   | 2:2g:360:HIS:CE1  | 2.49                     | 0.47              |
| 1:n:33:LEU:CD1    | 1:n:147:VAL:CG2   | 2.92                     | 0.47              |
| 6:U:94:VAL:HG12   | 6:U:103:LEU:HD22  | 1.97                     | 0.47              |
| 2:2h:337:LEU:O    | 2:2h:407:ASN:HB2  | 2.15                     | 0.47              |
| 2:1h:337:LEU:HD22 | 2:1h:406:VAL:HG13 | 1.97                     | 0.47              |
| 2:1h:456:PHE:HB2  | 2:2h:380:ASN:CB   | 2.44                     | 0.47              |
| 3:1K:448:ARG:NH1  | 3:1K:457:ARG:HH21 | 2.13                     | 0.47              |
| 3:2K:140:VAL:HG12 | 3:2K:143:GLU:HB2  | 1.96                     | 0.47              |
| 2:2i:365:TRP:CZ3  | 2:2i:438:ARG:HD2  | 2.50                     | 0.47              |
| 3:1L:542:GLY:HA2  | 3:1L:639:PHE:HB3  | 1.96                     | 0.47              |
| 3:1L:572:LEU:HD23 | 3:1L:638:VAL:HG11 | 1.96                     | 0.47              |
| 3:2L:96:GLU:C     | 3:2L:130:PRO:HD3  | 2.39                     | 0.47              |
| 4:R:222:SER:O     | 4:R:222:SER:OG    | 2.22                     | 0.47              |
| 3:2G:160:CYS:SG   | 3:2G:274:ILE:HG12 | 2.54                     | 0.47              |
| 5:A:125:SER:O     | 5:A:125:SER:OG    | 2.25                     | 0.47              |
| 2:2e:453:TRP:CG   | 2:2e:456:PHE:CD1  | 3.01                     | 0.47              |
| 3:1H:190:SER:OG   | 3:1H:273:THR:O    | 2.30                     | 0.47              |
| 2:2f:40:PHE:HB3   | 2:2f:270:ALA:HB3  | 1.96                     | 0.47              |
| 2:3f:57:ASN:H     | 2:3f:60:GLN:HB2   | 1.80                     | 0.47              |
| 2:1f:273:ASP:OD1  | 2:1f:274:LEU:N    | 2.48                     | 0.47              |
| 2:2g:306:VAL:HG21 | 2:2g:365:TRP:HZ3  | 1.80                     | 0.47              |
| 2:3g:51:GLU:HG3   | 2:3g:254:ARG:HG2  | 1.96                     | 0.47              |
| 2:3g:509:LEU:C    | 2:3g:511:ARG:HH21 | 2.23                     | 0.47              |
| 1:n:103:ASP:OD1   | 1:n:105:GLU:N     | 2.39                     | 0.47              |
| 3:2J:137:VAL:HG11 | 3:2J:145:VAL:HG13 | 1.97                     | 0.47              |
| 7:f:95:ARG:NH1    | 7:f:99:SER:HB2    | 2.30                     | 0.47              |
| 3:1K:542:GLY:HA2  | 3:1K:639:PHE:HB3  | 1.95                     | 0.47              |
| 4:P:138:TYR:HD1   | 4:P:138:TYR:H     | 1.63                     | 0.47              |
| 6:V:38:ILE:HG12   | 6:V:52:PHE:HE1    | 1.78                     | 0.47              |
| 6:V:64:VAL:HA     | 2:1i:522:LYS:HZ3  | 1.79                     | 0.47              |
| 6:W:120:LEU:HD21  | 6:W:122:PHE:HD1   | 1.80                     | 0.47              |
| 2:3j:388:ASP:OD1  | 2:3j:389:LEU:N    | 2.48                     | 0.47              |
| 1:k:41:ARG:HD2    | 7:f:122:GLY:HA2   | 1.96                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:k:78:PHE:HB3    | 1:k:139:ILE:HD11  | 1.97                     | 0.47              |
| 4:R:79:THR:O      | 4:R:79:THR:OG1    | 2.32                     | 0.47              |
| 4:R:149:PHE:N     | 4:R:149:PHE:CD1   | 2.82                     | 0.47              |
| 3:2G:112:THR:OG1  | 3:2G:113:GLU:OE1  | 2.33                     | 0.47              |
| 7:c:41:GLU:OE1    | 7:c:49:TRP:NE1    | 2.35                     | 0.47              |
| 1:l:115:ARG:HD3   | 1:l:115:ARG:HA    | 1.67                     | 0.47              |
| 3:1H:434:GLU:HB2  | 3:1H:438:GLU:HG2  | 1.96                     | 0.47              |
| 3:1H:546:VAL:HG12 | 3:1H:644:ARG:H    | 1.78                     | 0.47              |
| 4:M:149:PHE:CE1   | 4:N:45:GLN:HA     | 2.49                     | 0.47              |
| 3:2H:98:ALA:O     | 3:2H:127:ARG:HG3  | 2.13                     | 0.47              |
| 2:2f:376:LYS:HE3  | 2:1f:458:PRO:HD3  | 1.97                     | 0.47              |
| 7:e:70:THR:OG1    | 7:e:129:GLU:OE1   | 2.30                     | 0.47              |
| 2:2g:43:LEU:HG    | 2:2g:95:GLY:HA3   | 1.97                     | 0.47              |
| 2:3g:40:PHE:N     | 2:3g:90:TYR:O     | 2.46                     | 0.47              |
| 2:1g:43:LEU:HD12  | 2:1g:273:ASP:HB2  | 1.97                     | 0.47              |
| 2:1g:43:LEU:HD12  | 2:1g:43:LEU:H     | 1.80                     | 0.47              |
| 2:3h:43:LEU:HD23  | 2:3h:96:GLY:HA3   | 1.96                     | 0.47              |
| 2:3h:45:PRO:HA    | 2:3h:98:ALA:HB3   | 1.96                     | 0.47              |
| 2:1h:311:PRO:HG3  | 2:1h:339:TYR:HA   | 1.97                     | 0.47              |
| 4:P:85:ASP:OD1    | 4:P:85:ASP:C      | 2.56                     | 0.47              |
| 3:2K:136:LEU:HD12 | 3:2K:152:LEU:HB3  | 1.96                     | 0.47              |
| 3:2K:137:VAL:HB   | 3:2K:172:LEU:HB2  | 1.97                     | 0.47              |
| 3:2K:187:GLU:HB3  | 3:2K:278:GLU:N    | 2.28                     | 0.47              |
| 3:2K:312:LEU:HD11 | 3:2K:362:ILE:HD11 | 1.96                     | 0.47              |
| 2:3i:51:GLU:OE2   | 2:3i:93:ARG:HB3   | 2.13                     | 0.47              |
| 3:1L:174:GLY:HA2  | 3:1L:251:ALA:CB   | 2.45                     | 0.47              |
| 3:1L:220:ASP:OD1  | 3:1L:221:ARG:N    | 2.34                     | 0.47              |
| 3:1L:327:GLN:HB3  | 3:1L:334:TRP:HB3  | 1.95                     | 0.47              |
| 3:1L:557:ALA:HA   | 3:1L:560:VAL:HB   | 1.97                     | 0.47              |
| 3:2L:245:ARG:NH1  | 3:2L:247:GLY:O    | 2.48                     | 0.47              |
| 3:2L:323:SER:O    | 3:2L:393:TYR:HA   | 2.14                     | 0.47              |
| 5:F:67:PHE:HA     | 5:F:70:TRP:HB3    | 1.97                     | 0.47              |
| 6:W:59:LEU:HD21   | 6:W:71:ARG:HG2    | 1.97                     | 0.47              |
| 6:W:59:LEU:HD23   | 6:W:72:ILE:HG12   | 1.96                     | 0.47              |
| 6:W:100:GLN:HG2   | 2:1j:520:PRO:HG2  | 1.97                     | 0.47              |
| 7:b:19:GLU:O      | 7:b:21:LEU:N      | 2.42                     | 0.47              |
| 7:b:70:THR:OG1    | 7:b:129:GLU:OE1   | 2.28                     | 0.47              |
| 2:3j:460:ASP:OD1  | 2:3j:461:HIS:N    | 2.48                     | 0.47              |
| 1:k:135:LEU:HD23  | 1:k:135:LEU:HA    | 1.64                     | 0.47              |
| 2:1j:437:ARG:O    | 2:1j:437:ARG:HD3  | 2.15                     | 0.47              |
| 2:1j:454:VAL:HG22 | 2:1j:455:VAL:HG23 | 1.96                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1G:544:THR:HG23 | 3:1G:643:HIS:HB3  | 1.96                     | 0.47              |
| 3:2G:413:THR:HB   | 3:2G:415:ILE:HD11 | 1.97                     | 0.47              |
| 6:X:96:THR:O      | 6:X:96:THR:OG1    | 2.33                     | 0.47              |
| 6:X:120:LEU:HD21  | 6:X:122:PHE:CE1   | 2.49                     | 0.47              |
| 2:2e:65:PHE:HB3   | 2:2e:93:ARG:NH2   | 2.19                     | 0.47              |
| 3:2H:98:ALA:O     | 3:2H:100:LEU:HD12 | 2.15                     | 0.47              |
| 3:2H:156:LYS:HD3  | 3:2H:156:LYS:HA   | 1.66                     | 0.47              |
| 5:B:26:VAL:HG13   | 6:S:12:PHE:CZ     | 2.50                     | 0.47              |
| 2:3f:299:CYS:HA   | 2:3f:305:ARG:HD2  | 1.97                     | 0.47              |
| 2:1f:518:ILE:HG13 | 2:1f:520:PRO:HD3  | 1.96                     | 0.47              |
| 3:1l:452:ARG:NH2  | 3:2l:455:THR:OG1  | 2.44                     | 0.47              |
| 3:1l:593:GLY:HA2  | 3:1l:596:PHE:HB2  | 1.95                     | 0.47              |
| 4:N:146:TYR:HB3   | 4:N:149:PHE:CE1   | 2.49                     | 0.47              |
| 3:2l:224:THR:HG22 | 3:2l:233:VAL:HA   | 1.96                     | 0.47              |
| 5:C:111:THR:HG22  | 5:C:166:LEU:HD11  | 1.97                     | 0.47              |
| 7:e:39:ARG:HD3    | 7:e:40:GLN:N      | 2.29                     | 0.47              |
| 2:2g:368:ASN:HD22 | 2:2g:378:PRO:HB3  | 1.75                     | 0.47              |
| 2:2g:372:ARG:NH1  | 2:2g:372:ARG:CG   | 2.73                     | 0.47              |
| 2:2g:374:VAL:HG11 | 2:2g:442:TYR:CD1  | 2.49                     | 0.47              |
| 2:1g:37:VAL:HG11  | 2:1g:265:GLU:HG2  | 1.96                     | 0.47              |
| 2:1g:50:ASN:HD21  | 2:1g:94:VAL:HG23  | 1.79                     | 0.47              |
| 2:1g:302:MET:HG2  | 2:1g:305:ARG:CZ   | 2.45                     | 0.47              |
| 3:1J:131:CYS:SG   | 3:1J:132:THR:N    | 2.87                     | 0.47              |
| 3:1J:294:VAL:HG21 | 3:1J:314:HIS:CD2  | 2.50                     | 0.47              |
| 3:1J:557:ALA:O    | 3:1J:561:ARG:N    | 2.34                     | 0.47              |
| 3:2J:145:VAL:O    | 3:2J:148:ARG:NE   | 2.48                     | 0.47              |
| 3:2J:209:TRP:HB2  | 3:2J:214:TRP:CZ3  | 2.49                     | 0.47              |
| 7:f:19:GLU:O      | 7:f:21:LEU:N      | 2.43                     | 0.47              |
| 2:2h:494:TYR:HD1  | 2:2h:516:ILE:HG12 | 1.79                     | 0.47              |
| 2:3h:368:ASN:C    | 2:3h:368:ASN:ND2  | 2.73                     | 0.47              |
| 3:1K:557:ALA:O    | 3:1K:561:ARG:N    | 2.36                     | 0.47              |
| 4:Q:120:PRO:HG2   | 4:R:54:TRP:HZ2    | 1.80                     | 0.47              |
| 7:b:114:TRP:HE3   | 7:c:32:THR:HG23   | 1.80                     | 0.47              |
| 2:2j:516:ILE:HG23 | 2:3j:531:LEU:O    | 2.14                     | 0.47              |
| 3:1G:455:THR:HA   | 5:A:172:PRO:HA    | 1.96                     | 0.47              |
| 4:R:85:ASP:OD1    | 4:R:86:SER:N      | 2.48                     | 0.47              |
| 2:2e:254:ARG:NH2  | 2:3e:394:THR:H    | 2.12                     | 0.47              |
| 2:2e:372:ARG:NE   | 2:2e:372:ARG:CA   | 2.73                     | 0.47              |
| 2:2f:268:MET:SD   | 2:2f:268:MET:N    | 2.88                     | 0.47              |
| 2:1f:241:HIS:HB2  | 2:1f:247:TYR:CD1  | 2.50                     | 0.47              |
| 3:1l:152:LEU:HD21 | 3:1l:274:ILE:HD13 | 1.97                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:N:210:ARG:NH1   | 3:2l:19:ASP:OD1   | 2.48                     | 0.47              |
| 3:2l:47:VAL:HG11  | 5:C:23:LEU:HD23   | 1.96                     | 0.47              |
| 1:n:17:ILE:HG22   | 1:n:97:ALA:HA     | 1.97                     | 0.47              |
| 3:1J:281:THR:O    | 3:1J:281:THR:HG22 | 2.14                     | 0.47              |
| 2:2h:254:ARG:HH22 | 2:3h:397:GLU:HB2  | 1.80                     | 0.47              |
| 2:2h:312:PRO:HB2  | 2:2h:315:GLN:HE22 | 1.69                     | 0.47              |
| 2:2h:457:GLU:CG   | 2:2h:463:LEU:HD13 | 2.45                     | 0.47              |
| 3:1K:109:THR:HA   | 3:1K:408:VAL:O    | 2.15                     | 0.47              |
| 3:1L:220:ASP:OD2  | 3:1L:424:ARG:NH1  | 2.48                     | 0.47              |
| 3:2L:532:ARG:NH1  | 5:F:139:PRO:HG2   | 2.30                     | 0.47              |
| 2:2j:377:ALA:HB2  | 2:2j:435:ASN:HB2  | 1.96                     | 0.47              |
| 1:k:57:MET:N      | 1:k:57:MET:SD     | 2.88                     | 0.47              |
| 1:k:90:MET:CE     | 1:l:56:LEU:HD11   | 2.45                     | 0.47              |
| 2:1j:84:ASN:OD1   | 2:1j:384:ARG:O    | 2.33                     | 0.47              |
| 2:1j:501:THR:HG23 | 2:1j:502:ASN:OD1  | 2.15                     | 0.47              |
| 3:1G:434:GLU:HB2  | 3:1G:438:GLU:HG2  | 1.97                     | 0.47              |
| 3:2G:88:THR:HG23  | 3:2G:285:THR:HG22 | 1.97                     | 0.47              |
| 3:2G:139:GLN:HG2  | 3:2G:170:CYS:SG   | 2.54                     | 0.47              |
| 7:c:90:GLN:OE1    | 2:1e:469:ARG:NH1  | 2.47                     | 0.47              |
| 7:c:109:VAL:HB    | 7:c:133:ILE:HD11  | 1.97                     | 0.47              |
| 1:l:56:LEU:C      | 1:l:57:MET:SD     | 2.98                     | 0.47              |
| 3:2H:91:LEU:HG    | 3:2H:418:VAL:HA   | 1.97                     | 0.47              |
| 3:2l:189:ASP:HA   | 3:2l:230:PRO:HB3  | 1.97                     | 0.47              |
| 2:2g:254:ARG:NH2  | 2:3g:394:THR:H    | 2.13                     | 0.47              |
| 2:3g:272:PRO:C    | 2:3g:274:LEU:H    | 2.23                     | 0.47              |
| 2:3g:498:ASP:OD1  | 2:3g:500:GLU:N    | 2.46                     | 0.47              |
| 3:2J:197:VAL:HG11 | 3:2J:268:TYR:CE1  | 2.50                     | 0.47              |
| 1:o:33:LEU:HD13   | 1:n:122:VAL:CG1   | 2.39                     | 0.47              |
| 3:1K:481:ASN:N    | 3:1K:485:ALA:O    | 2.46                     | 0.47              |
| 3:1K:595:LEU:HD23 | 3:1K:595:LEU:HA   | 1.70                     | 0.47              |
| 4:P:220:ASP:HB3   | 4:P:223:HIS:NE2   | 2.29                     | 0.47              |
| 3:2K:139:GLN:NE2  | 3:2K:170:CYS:SG   | 2.88                     | 0.47              |
| 6:V:59:LEU:HD23   | 6:V:72:ILE:HG12   | 1.96                     | 0.47              |
| 6:V:77:TYR:OH     | 6:V:91:ASP:HA     | 2.15                     | 0.47              |
| 2:2i:80:GLY:HA3   | 2:2i:360:HIS:CE1  | 2.49                     | 0.47              |
| 2:2i:241:HIS:HB3  | 2:2i:242:PRO:HD3  | 1.97                     | 0.47              |
| 2:3i:295:LEU:HA   | 2:3i:295:LEU:HD23 | 1.78                     | 0.47              |
| 2:1i:338:TYR:CE2  | 2:1i:361:VAL:HG11 | 2.49                     | 0.47              |
| 3:1L:513:ASP:O    | 3:1L:517:ASN:ND2  | 2.48                     | 0.47              |
| 3:1L:620:THR:O    | 3:1L:622:LYS:HG2  | 2.15                     | 0.47              |
| 3:2L:527:ARG:NH2  | 3:2L:531:THR:O    | 2.47                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:b:66:LEU:HD22   | 7:b:117:PRO:HG3   | 1.96                     | 0.47              |
| 2:3j:299:CYS:SG   | 2:3j:300:GLU:N    | 2.88                     | 0.47              |
| 1:k:26:TYR:HD1    | 1:k:70:ARG:CD     | 2.28                     | 0.47              |
| 2:1j:80:GLY:O     | 2:1j:84:ASN:ND2   | 2.37                     | 0.47              |
| 4:R:128:GLY:HA2   | 6:S:67:GLN:HA     | 1.97                     | 0.47              |
| 4:R:232:LEU:H     | 4:R:232:LEU:HD12  | 1.80                     | 0.47              |
| 3:2G:184:LEU:N    | 3:2G:235:LEU:O    | 2.36                     | 0.47              |
| 3:2G:312:LEU:HD11 | 3:2G:362:ILE:HD11 | 1.96                     | 0.47              |
| 3:2G:505:ARG:HB2  | 3:2G:508:GLN:HG3  | 1.97                     | 0.47              |
| 1:l:57:MET:SD     | 1:l:57:MET:N      | 2.87                     | 0.47              |
| 3:1H:542:GLY:HA2  | 3:1H:639:PHE:HB3  | 1.96                     | 0.47              |
| 3:1H:614:HIS:NE2  | 3:1H:624:GLY:O    | 2.48                     | 0.47              |
| 3:2H:185:ALA:HA   | 3:2H:234:VAL:HA   | 1.97                     | 0.47              |
| 3:1l:448:ARG:NH2  | 3:1l:461:GLU:OE2  | 2.48                     | 0.47              |
| 7:e:27:CYS:SG     | 7:e:28:GLU:N      | 2.88                     | 0.47              |
| 1:n:43:GLN:NE2    | 1:n:43:GLN:CA     | 2.71                     | 0.47              |
| 3:1J:165:PRO:HB3  | 3:1J:267:PHE:CG   | 2.50                     | 0.47              |
| 3:1J:448:ARG:NH2  | 3:1J:457:ARG:HH21 | 2.13                     | 0.47              |
| 3:2J:131:CYS:SG   | 3:2J:176:SER:N    | 2.88                     | 0.47              |
| 6:U:54:CYS:SG     | 6:U:56:ILE:HG12   | 2.55                     | 0.47              |
| 7:f:57:TYR:HE2    | 7:f:137:GLY:HA2   | 1.80                     | 0.47              |
| 2:3h:316:ASN:OD1  | 2:3h:319:GLN:N    | 2.38                     | 0.47              |
| 2:1h:440:PHE:HE1  | 2:1h:517:GLY:HA3  | 1.79                     | 0.46              |
| 3:1K:157:ASP:HB3  | 3:1K:273:THR:HB   | 1.96                     | 0.46              |
| 2:3i:261:GLU:HG2  | 2:3i:302:MET:HE3  | 1.98                     | 0.46              |
| 2:1i:371:GLU:HG3  | 2:1i:372:ARG:HG2  | 1.97                     | 0.46              |
| 3:1L:137:VAL:HG22 | 3:1L:172:LEU:O    | 2.15                     | 0.46              |
| 6:W:73:GLN:HG2    | 6:W:92:VAL:HG23   | 1.96                     | 0.46              |
| 2:3j:35:THR:HG22  | 2:3j:36:SER:N     | 2.23                     | 0.46              |
| 2:3j:57:ASN:HB3   | 2:2e:500:GLU:OE2  | 2.15                     | 0.46              |
| 3:1G:458:ASP:HA   | 3:1G:461:GLU:OE1  | 2.14                     | 0.46              |
| 3:2G:66:HIS:CE1   | 3:2G:440:LYS:HD3  | 2.50                     | 0.46              |
| 3:1H:15:GLN:HE21  | 5:B:7:ARG:HE      | 1.62                     | 0.46              |
| 3:2H:259:THR:O    | 3:2H:267:PHE:HE2  | 1.98                     | 0.46              |
| 3:2H:313:GLU:O    | 3:2H:314:HIS:ND1  | 2.48                     | 0.46              |
| 7:d:10:ILE:HD13   | 1:m:58:PRO:HD3    | 1.98                     | 0.46              |
| 3:1l:82:ALA:HB2   | 3:1l:318:VAL:HG11 | 1.97                     | 0.46              |
| 2:2g:313:PRO:HB3  | 2:2g:341:TRP:CZ2  | 2.50                     | 0.46              |
| 2:2g:476:VAL:CG1  | 1:n:115:ARG:NH1   | 2.69                     | 0.46              |
| 1:n:96:ASN:OD1    | 1:n:97:ALA:N      | 2.49                     | 0.46              |
| 3:1J:561:ARG:O    | 3:1J:565:HIS:ND1  | 2.48                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:U:33:GLU:OE2    | 6:U:33:GLU:N      | 2.48                     | 0.46              |
| 7:f:5:ASP:OD1     | 7:f:5:ASP:N       | 2.47                     | 0.46              |
| 2:3h:249:GLY:HA3  | 2:3h:255:THR:HB   | 1.97                     | 0.46              |
| 2:3h:389:LEU:HD11 | 2:3h:409:ILE:HG22 | 1.96                     | 0.46              |
| 3:2K:315:ALA:HB1  | 3:2K:316:PRO:HD2  | 1.97                     | 0.46              |
| 2:2i:312:PRO:HB2  | 2:2i:315:GLN:CD   | 2.40                     | 0.46              |
| 2:2i:372:ARG:HD3  | 2:2i:372:ARG:HA   | 1.57                     | 0.46              |
| 3:2L:467:ALA:HA   | 3:2L:518:ARG:NH2  | 2.30                     | 0.46              |
| 2:2j:315:GLN:O    | 2:2j:339:TYR:OH   | 2.29                     | 0.46              |
| 2:2j:469:ARG:NH1  | 1:k:96:ASN:OD1    | 2.47                     | 0.46              |
| 3:1G:151:ASP:HB3  | 3:1G:156:LYS:HD2  | 1.97                     | 0.46              |
| 3:1G:328:THR:HB   | 3:1G:337:TRP:HE1  | 1.80                     | 0.46              |
| 4:R:152:ALA:HA    | 4:M:13:VAL:HG12   | 1.97                     | 0.46              |
| 3:2G:135:ARG:HD3  | 3:2G:249:HIS:HB2  | 1.97                     | 0.46              |
| 3:2G:155:SER:OG   | 3:2G:156:LYS:N    | 2.48                     | 0.46              |
| 3:2G:207:GLU:HB2  | 3:2G:255:ARG:HB3  | 1.97                     | 0.46              |
| 2:2e:254:ARG:HH21 | 2:3e:394:THR:HG23 | 1.80                     | 0.46              |
| 2:3e:93:ARG:HG3   | 2:3e:94:VAL:N     | 2.30                     | 0.46              |
| 1:l:37:GLN:OE1    | 1:l:37:GLN:N      | 2.48                     | 0.46              |
| 1:l:57:MET:HB3    | 1:l:58:PRO:HD2    | 1.98                     | 0.46              |
| 3:1H:444:PRO:O    | 3:1H:448:ARG:N    | 2.48                     | 0.46              |
| 4:M:37:PHE:HE1    | 4:M:98:LYS:HG2    | 1.80                     | 0.46              |
| 3:2H:18:ASP:OD2   | 3:2H:22:ARG:NH1   | 2.48                     | 0.46              |
| 3:2H:532:ARG:NH1  | 5:B:139:PRO:HB2   | 2.30                     | 0.46              |
| 2:2f:443:LEU:HD12 | 2:2f:443:LEU:HA   | 1.78                     | 0.46              |
| 2:1f:42:GLY:HA2   | 2:1f:273:ASP:CG   | 2.40                     | 0.46              |
| 2:2g:316:ASN:OD1  | 2:2g:319:GLN:N    | 2.41                     | 0.46              |
| 2:2h:275:MET:CE   | 2:2h:313:PRO:HD3  | 2.44                     | 0.46              |
| 2:3h:41:VAL:HA    | 2:3h:92:VAL:HG12  | 1.97                     | 0.46              |
| 6:V:120:LEU:HD23  | 6:V:120:LEU:C     | 2.40                     | 0.46              |
| 2:3i:54:LEU:HD13  | 2:3i:65:PHE:HZ    | 1.80                     | 0.46              |
| 3:1L:191:ARG:NH1  | 3:1L:273:THR:HG1  | 2.12                     | 0.46              |
| 7:b:100:LEU:HD12  | 7:b:101:VAL:N     | 2.30                     | 0.46              |
| 1:k:37:GLN:OE1    | 1:k:37:GLN:N      | 2.49                     | 0.46              |
| 3:1G:371:ALA:HA   | 3:2G:78:PHE:CZ    | 2.51                     | 0.46              |
| 2:3e:457:GLU:N    | 2:3e:458:PRO:HD2  | 2.31                     | 0.46              |
| 3:1H:268:TYR:CE1  | 3:1H:271:SER:HB2  | 2.51                     | 0.46              |
| 3:1H:552:PHE:CD1  | 3:1H:606:GLU:HG3  | 2.51                     | 0.46              |
| 3:2H:160:CYS:SG   | 3:2H:274:ILE:HG12 | 2.56                     | 0.46              |
| 2:3f:498:ASP:C    | 2:3f:498:ASP:OD1  | 2.58                     | 0.46              |
| 1:m:122:VAL:HG13  | 1:n:33:LEU:CG     | 2.44                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2l:335:GLN:OE1  | 3:2l:336:ASP:N    | 2.49                     | 0.46              |
| 3:2l:378:TYR:CG   | 5:C:62:LEU:HD11   | 2.51                     | 0.46              |
| 2:2g:444:GLU:OE1  | 2:2g:444:GLU:HA   | 2.16                     | 0.46              |
| 3:2J:151:ASP:OD1  | 3:2J:151:ASP:N    | 2.48                     | 0.46              |
| 3:2J:491:LEU:HB3  | 3:2J:538:PRO:HG3  | 1.97                     | 0.46              |
| 2:3h:457:GLU:N    | 2:3h:458:PRO:CD   | 2.78                     | 0.46              |
| 7:a:90:GLN:OE1    | 2:1i:469:ARG:NH1  | 2.48                     | 0.46              |
| 2:3i:461:HIS:HB2  | 2:3i:464:TRP:CH2  | 2.51                     | 0.46              |
| 3:2L:415:ILE:HB   | 3:2L:416:PRO:HD3  | 1.98                     | 0.46              |
| 3:1G:41:VAL:HG11  | 6:X:24:LEU:HD11   | 1.98                     | 0.46              |
| 3:1G:191:ARG:NH1  | 3:1G:273:THR:HG23 | 2.31                     | 0.46              |
| 3:1G:415:ILE:HG22 | 3:1G:417:TYR:H    | 1.80                     | 0.46              |
| 3:2G:364:PHE:CZ   | 3:2G:382:PRO:HD3  | 2.51                     | 0.46              |
| 6:X:42:ALA:N      | 6:X:45:GLU:OE2    | 2.48                     | 0.46              |
| 2:2e:409:ILE:HG12 | 2:2e:419:VAL:HG22 | 1.98                     | 0.46              |
| 2:3e:368:ASN:HD22 | 2:3e:378:PRO:CB   | 2.28                     | 0.46              |
| 2:3e:399:ASP:OD1  | 2:3e:399:ASP:N    | 2.49                     | 0.46              |
| 3:1H:211:GLU:O    | 3:1l:559:ARG:NH2  | 2.48                     | 0.46              |
| 6:S:44:GLY:C      | 6:S:46:ARG:H      | 2.23                     | 0.46              |
| 6:S:107:VAL:HG23  | 6:S:120:LEU:HB3   | 1.97                     | 0.46              |
| 2:2f:369:ASP:N    | 2:2f:369:ASP:OD1  | 2.47                     | 0.46              |
| 2:3f:50:ASN:HD21  | 2:3f:255:THR:HA   | 1.79                     | 0.46              |
| 1:m:105:GLU:OE2   | 1:m:106:ASP:N     | 2.49                     | 0.46              |
| 2:1f:296:ILE:HD11 | 2:1f:335:ALA:HB2  | 1.97                     | 0.46              |
| 3:1l:455:THR:N    | 3:1l:458:ASP:OD2  | 2.34                     | 0.46              |
| 3:1l:470:THR:HG21 | 3:1l:519:ILE:HD11 | 1.98                     | 0.46              |
| 3:1l:527:ARG:HG3  | 3:1l:533:LEU:HD12 | 1.97                     | 0.46              |
| 3:2l:453:ALA:HB2  | 3:2l:462:LEU:HD12 | 1.97                     | 0.46              |
| 2:1g:61:TYR:HE1   | 2:1g:65:PHE:HB2   | 1.81                     | 0.46              |
| 3:1J:214:TRP:CZ2  | 3:1J:255:ARG:HG3  | 2.51                     | 0.46              |
| 3:1J:434:GLU:HB2  | 3:1J:438:GLU:HG2  | 1.97                     | 0.46              |
| 3:2J:261:PRO:HB3  | 3:2J:267:PHE:CE1  | 2.50                     | 0.46              |
| 3:2J:417:TYR:HD1  | 3:2J:418:VAL:HG13 | 1.80                     | 0.46              |
| 2:3i:61:TYR:O     | 2:3i:65:PHE:N     | 2.38                     | 0.46              |
| 1:p:97:ALA:HB3    | 1:p:114:LEU:HD12  | 1.96                     | 0.46              |
| 3:1L:542:GLY:N    | 3:1L:616:ALA:O    | 2.45                     | 0.46              |
| 3:1L:625:ASP:OD1  | 3:1L:625:ASP:N    | 2.48                     | 0.46              |
| 3:2L:315:ALA:HB3  | 3:2L:395:THR:OG1  | 2.15                     | 0.46              |
| 5:F:33:ALA:O      | 5:F:37:VAL:HG12   | 2.16                     | 0.46              |
| 6:W:10:TRP:N      | 6:W:10:TRP:CD1    | 2.84                     | 0.46              |
| 7:b:17:ASP:OD2    | 2:1j:466:ARG:HG3  | 2.15                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:k:40:ILE:HB     | 1:k:53:ASN:OD1    | 2.16                     | 0.46              |
| 3:1G:557:ALA:HA   | 3:1G:560:VAL:HB   | 1.98                     | 0.46              |
| 7:c:19:GLU:O      | 7:c:21:LEU:N      | 2.42                     | 0.46              |
| 3:2H:175:LEU:O    | 3:2H:251:ALA:HB1  | 2.15                     | 0.46              |
| 3:2H:487:ALA:HB1  | 3:2H:532:ARG:O    | 2.16                     | 0.46              |
| 3:2H:532:ARG:HG3  | 5:B:127:GLY:C     | 2.41                     | 0.46              |
| 6:S:3:GLU:HB3     | 6:S:113:GLY:HA3   | 1.97                     | 0.46              |
| 1:n:121:LYS:HE2   | 1:n:121:LYS:HB3   | 1.69                     | 0.46              |
| 6:U:103:LEU:HD23  | 6:U:103:LEU:HA    | 1.73                     | 0.46              |
| 3:2K:436:ILE:HD13 | 3:2K:436:ILE:HA   | 1.86                     | 0.46              |
| 1:p:33:LEU:CD2    | 1:p:147:VAL:CG2   | 2.94                     | 0.46              |
| 1:p:45:ASN:OD1    | 1:p:45:ASN:C      | 2.59                     | 0.46              |
| 2:1i:320:ILE:HG12 | 2:1i:339:TYR:CD1  | 2.51                     | 0.46              |
| 4:Q:157:ARG:HH12  | 7:d:53:THR:HG1    | 1.56                     | 0.46              |
| 6:W:77:TYR:OH     | 6:W:91:ASP:HA     | 2.15                     | 0.46              |
| 2:2j:448:LEU:O    | 2:2j:452:GLN:NE2  | 2.49                     | 0.46              |
| 2:2j:477:ASN:OD1  | 7:c:1:MET:HE2     | 2.16                     | 0.46              |
| 2:1j:279:GLN:HG3  | 2:1j:313:PRO:HG3  | 1.97                     | 0.46              |
| 3:1G:327:GLN:HB3  | 3:1G:334:TRP:HB3  | 1.98                     | 0.46              |
| 2:1e:278:TYR:HE1  | 2:1e:285:LEU:HB2  | 1.80                     | 0.46              |
| 3:2H:487:ALA:HB3  | 5:B:138:PHE:CZ    | 2.51                     | 0.46              |
| 3:2H:527:ARG:HH21 | 5:B:105:LEU:HD11  | 1.81                     | 0.46              |
| 2:2f:247:TYR:OH   | 2:2f:250:ASP:OD1  | 2.31                     | 0.46              |
| 2:3f:35:THR:OG1   | 2:3f:36:SER:N     | 2.48                     | 0.46              |
| 4:N:195:LEU:HD23  | 4:N:195:LEU:HA    | 1.76                     | 0.46              |
| 2:3g:241:HIS:O    | 2:3g:241:HIS:ND1  | 2.45                     | 0.46              |
| 3:1J:210:THR:OG1  | 3:1J:213:GLY:O    | 2.34                     | 0.46              |
| 3:1J:629:ARG:HH21 | 3:1J:631:ASP:HA   | 1.79                     | 0.46              |
| 7:f:82:THR:O      | 7:f:82:THR:HG22   | 2.16                     | 0.46              |
| 2:3h:424:THR:HG23 | 2:3h:434:LEU:HA   | 1.98                     | 0.46              |
| 2:1h:55:VAL:HG23  | 2:1h:89:ALA:HB3   | 1.98                     | 0.46              |
| 3:1K:137:VAL:HG22 | 3:1K:172:LEU:O    | 2.15                     | 0.46              |
| 3:2K:189:ASP:HA   | 3:2K:230:PRO:HB3  | 1.97                     | 0.46              |
| 7:a:126:VAL:HG11  | 1:k:40:ILE:HD11   | 1.97                     | 0.46              |
| 2:2i:415:ARG:NH1  | 2:1i:452:GLN:OE1  | 2.48                     | 0.46              |
| 2:1i:308:ILE:C    | 2:1i:309:ILE:HD13 | 2.41                     | 0.46              |
| 3:1L:464:ARG:HG2  | 3:1L:473:ILE:HD13 | 1.97                     | 0.46              |
| 3:1L:481:ASN:N    | 3:1L:485:ALA:O    | 2.44                     | 0.46              |
| 3:1L:557:ALA:O    | 3:1L:561:ARG:N    | 2.34                     | 0.46              |
| 4:Q:210:ARG:NH1   | 3:2L:19:ASP:OD1   | 2.49                     | 0.46              |
| 3:2L:87:VAL:HG11  | 3:2L:107:VAL:HG11 | 1.98                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2L:261:PRO:HB3  | 3:2L:267:PHE:CD1  | 2.51                     | 0.46              |
| 7:b:44:ASN:HB2    | 4:O:12:LEU:HD11   | 1.97                     | 0.46              |
| 2:2j:368:ASN:HD21 | 2:2j:376:LYS:HB3  | 1.79                     | 0.46              |
| 2:3j:309:ILE:HB   | 2:3j:337:LEU:HD13 | 1.97                     | 0.46              |
| 3:1G:553:ARG:HG3  | 3:1G:650:ASP:HB2  | 1.98                     | 0.46              |
| 2:2f:358:SER:HA   | 2:2f:361:VAL:HG12 | 1.98                     | 0.46              |
| 3:2l:109:THR:HA   | 3:2l:408:VAL:HA   | 1.98                     | 0.46              |
| 2:2g:454:VAL:HG12 | 2:3g:526:PHE:CD1  | 2.51                     | 0.46              |
| 2:3g:460:ASP:OD1  | 2:3g:461:HIS:N    | 2.48                     | 0.46              |
| 2:1g:44:ALA:HB1   | 2:1g:65:PHE:HB3   | 1.98                     | 0.46              |
| 2:2h:518:ILE:HD11 | 2:3h:533:GLN:HB3  | 1.98                     | 0.46              |
| 2:3h:269:VAL:HG11 | 2:3h:295:LEU:HD11 | 1.97                     | 0.46              |
| 1:o:10:LEU:HD23   | 1:n:135:LEU:HD12  | 1.98                     | 0.46              |
| 1:o:45:ASN:C      | 1:o:45:ASN:OD1    | 2.59                     | 0.46              |
| 2:1h:494:TYR:N    | 2:1h:516:ILE:HD13 | 2.31                     | 0.46              |
| 3:1K:312:LEU:HD22 | 3:1K:393:TYR:OH   | 2.16                     | 0.46              |
| 2:1i:266:ILE:HD11 | 2:1i:305:ARG:CZ   | 2.45                     | 0.46              |
| 3:1L:545:VAL:O    | 3:1L:643:HIS:HB2  | 2.16                     | 0.46              |
| 5:F:33:ALA:HB2    | 6:W:14:LEU:HD21   | 1.97                     | 0.46              |
| 3:1G:147:ASP:OD1  | 3:1G:147:ASP:N    | 2.49                     | 0.46              |
| 3:1G:437:GLU:HA   | 3:1G:440:LYS:HE3  | 1.98                     | 0.46              |
| 4:R:88:MET:HE2    | 7:d:86:ARG:HH11   | 1.80                     | 0.46              |
| 6:X:52:PHE:HA     | 6:X:83:TRP:NE1    | 2.31                     | 0.46              |
| 3:1H:255:ARG:HA   | 3:1H:255:ARG:HH11 | 1.80                     | 0.46              |
| 3:2H:491:LEU:HB3  | 3:2H:538:PRO:HG3  | 1.97                     | 0.46              |
| 2:2f:376:LYS:CA   | 2:2f:376:LYS:HZ2  | 2.28                     | 0.46              |
| 2:3f:61:TYR:HE1   | 2:3f:65:PHE:HB2   | 1.80                     | 0.46              |
| 3:1l:87:VAL:HG23  | 3:1l:423:ASN:HB2  | 1.98                     | 0.46              |
| 3:1l:145:VAL:HG23 | 3:1l:146:SER:H    | 1.79                     | 0.46              |
| 3:1l:173:ILE:HG21 | 3:1l:186:LEU:HD13 | 1.97                     | 0.46              |
| 3:1l:179:VAL:HG21 | 3:1l:182:CYS:HB3  | 1.97                     | 0.46              |
| 2:2g:374:VAL:HG21 | 2:2g:442:TYR:CB   | 2.46                     | 0.46              |
| 3:2J:41:VAL:HG12  | 6:U:10:TRP:HB2    | 1.97                     | 0.46              |
| 3:2J:528:LEU:HD12 | 3:2J:528:LEU:HA   | 1.77                     | 0.46              |
| 3:2K:27:ARG:HH12  | 3:2K:36:VAL:HG12  | 1.80                     | 0.46              |
| 6:V:57:HIS:HA     | 6:V:60:VAL:HG23   | 1.98                     | 0.46              |
| 2:3i:45:PRO:HA    | 2:3i:97:SER:H     | 1.79                     | 0.46              |
| 2:1i:292:GLN:NE2  | 2:1i:309:ILE:HG23 | 2.31                     | 0.46              |
| 3:1L:642:ASP:OD1  | 3:1L:644:ARG:NH2  | 2.48                     | 0.46              |
| 2:3j:242:PRO:HA   | 2:3j:246:GLN:HG2  | 1.97                     | 0.46              |
| 3:1G:211:GLU:O    | 3:1H:559:ARG:NH2  | 2.49                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2G:453:ALA:HB2  | 3:2G:462:LEU:HD12 | 1.98                     | 0.46              |
| 2:2e:275:MET:CE   | 2:2e:312:PRO:HA   | 2.45                     | 0.46              |
| 3:1H:561:ARG:O    | 3:1H:565:HIS:ND1  | 2.49                     | 0.46              |
| 6:S:103:LEU:HD23  | 6:S:103:LEU:HA    | 1.79                     | 0.46              |
| 2:1f:302:MET:HG2  | 2:1f:305:ARG:HE   | 1.81                     | 0.46              |
| 3:1l:410:VAL:C    | 3:1l:412:ARG:H    | 2.23                     | 0.46              |
| 3:2l:513:ASP:HA   | 3:2l:516:LEU:HD12 | 1.98                     | 0.46              |
| 2:2g:241:HIS:HB3  | 2:2g:242:PRO:HD3  | 1.98                     | 0.46              |
| 3:1J:34:HIS:CG    | 3:1J:34:HIS:O     | 2.68                     | 0.46              |
| 3:1J:178:ALA:HB1  | 3:1J:241:HIS:CE1  | 2.50                     | 0.46              |
| 2:3h:320:ILE:HB   | 2:3h:339:TYR:HE2  | 1.80                     | 0.46              |
| 1:o:145:GLU:HG2   | 1:p:51:ARG:HB3    | 1.96                     | 0.46              |
| 2:2i:358:SER:HA   | 2:2i:361:VAL:HG12 | 1.97                     | 0.46              |
| 2:1i:252:SER:O    | 2:1i:252:SER:OG   | 2.32                     | 0.46              |
| 3:1L:21:LYS:HD3   | 3:1L:49:HIS:CE1   | 2.51                     | 0.46              |
| 3:2L:73:VAL:HG23  | 3:2L:75:ILE:HG12  | 1.98                     | 0.46              |
| 3:1G:245:ARG:HA   | 3:1G:250:GLU:HB2  | 1.96                     | 0.46              |
| 3:1G:261:PRO:O    | 3:1G:265:GLN:N    | 2.48                     | 0.46              |
| 3:1G:292:GLU:N    | 3:1G:292:GLU:OE1  | 2.49                     | 0.46              |
| 1:l:116:ASN:O     | 1:l:143:PHE:HA    | 2.15                     | 0.46              |
| 2:1e:412:PHE:HE2  | 2:1e:420:TRP:CZ3  | 2.33                     | 0.46              |
| 2:3f:50:ASN:ND2   | 2:3f:255:THR:HA   | 2.31                     | 0.46              |
| 3:2l:135:ARG:HH12 | 3:2l:145:VAL:HG11 | 1.80                     | 0.46              |
| 2:2g:368:ASN:HD22 | 2:2g:378:PRO:CA   | 2.29                     | 0.46              |
| 3:1J:506:PHE:N    | 3:1J:508:GLN:OE1  | 2.49                     | 0.46              |
| 3:2J:224:THR:HG22 | 3:2J:233:VAL:HA   | 1.97                     | 0.46              |
| 3:1K:187:GLU:OE1  | 3:1K:278:GLU:HB3  | 2.16                     | 0.45              |
| 3:1K:292:GLU:OE1  | 3:1K:292:GLU:N    | 2.49                     | 0.45              |
| 1:p:116:ASN:O     | 1:p:143:PHE:HA    | 2.15                     | 0.45              |
| 2:1i:45:PRO:HG2   | 2:1i:65:PHE:O     | 2.16                     | 0.45              |
| 2:2j:330:TYR:HB2  | 2:2j:425:LEU:HD13 | 1.99                     | 0.45              |
| 3:1G:131:CYS:SG   | 3:1G:175:LEU:HB3  | 2.56                     | 0.45              |
| 3:1G:568:LEU:HA   | 3:1G:598:VAL:HG11 | 1.98                     | 0.45              |
| 2:2e:457:GLU:O    | 2:3e:522:LYS:CA   | 2.64                     | 0.45              |
| 2:3e:380:ASN:OD1  | 2:3e:418:ARG:NH1  | 2.47                     | 0.45              |
| 2:3e:457:GLU:H    | 2:3e:458:PRO:CD   | 2.29                     | 0.45              |
| 1:l:17:ILE:HG13   | 1:l:19:ILE:HG22   | 1.96                     | 0.45              |
| 3:1H:481:ASN:N    | 3:1H:485:ALA:O    | 2.46                     | 0.45              |
| 3:1H:557:ALA:O    | 3:1H:561:ARG:N    | 2.34                     | 0.45              |
| 3:2H:369:ARG:NH1  | 5:B:46:PRO:HB2    | 2.31                     | 0.45              |
| 3:2H:378:TYR:CG   | 5:B:62:LEU:HD11   | 2.51                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:494:TYR:CZ   | 2:3f:533:GLN:NE2  | 2.78                     | 0.45              |
| 2:2f:494:TYR:CE2  | 2:3f:533:GLN:NE2  | 2.84                     | 0.45              |
| 1:m:72:MET:HE1    | 1:n:112:TRP:HZ2   | 1.80                     | 0.45              |
| 2:1f:302:MET:HG2  | 2:1f:305:ARG:HH21 | 1.81                     | 0.45              |
| 3:1l:79:PRO:HB3   | 3:1l:357:ALA:HB3  | 1.97                     | 0.45              |
| 3:1l:133:MET:HG3  | 3:1l:279:ALA:N    | 2.32                     | 0.45              |
| 3:1l:190:SER:OG   | 3:1l:273:THR:O    | 2.30                     | 0.45              |
| 3:2l:200:ARG:O    | 3:2l:265:GLN:NE2  | 2.46                     | 0.45              |
| 2:3g:46:THR:O     | 2:3g:65:PHE:HA    | 2.17                     | 0.45              |
| 2:1g:423:ARG:HH21 | 2:1g:432:ARG:HH11 | 1.63                     | 0.45              |
| 2:2h:307:ALA:N    | 2:2h:334:TYR:O    | 2.42                     | 0.45              |
| 2:3h:401:LEU:HB3  | 2:3h:406:VAL:HG13 | 1.97                     | 0.45              |
| 6:V:29:GLN:HE22   | 6:V:33:GLU:CD     | 2.23                     | 0.45              |
| 6:V:87:ILE:HD12   | 6:V:88:GLU:H      | 1.81                     | 0.45              |
| 2:2i:37:VAL:HG22  | 2:2i:88:ALA:HB3   | 1.99                     | 0.45              |
| 2:3i:48:PRO:HG2   | 2:3i:54:LEU:HD21  | 1.99                     | 0.45              |
| 1:p:15:PHE:HB3    | 1:p:99:ILE:HD13   | 1.98                     | 0.45              |
| 2:1i:477:ASN:HA   | 2:1i:480:ARG:HG2  | 1.98                     | 0.45              |
| 3:1L:94:PRO:HB3   | 3:1L:280:TYR:HA   | 1.98                     | 0.45              |
| 3:1L:292:GLU:OE2  | 3:1L:292:GLU:N    | 2.40                     | 0.45              |
| 3:1L:444:PRO:O    | 3:1L:448:ARG:N    | 2.47                     | 0.45              |
| 4:Q:10:LYS:O      | 2:1e:487:GLN:N    | 2.48                     | 0.45              |
| 3:2L:470:THR:HB   | 3:2L:473:ILE:HD11 | 1.97                     | 0.45              |
| 2:2j:239:SER:OG   | 2:2j:240:ALA:N    | 2.49                     | 0.45              |
| 2:3j:80:GLY:O     | 2:3j:84:ASN:N     | 2.44                     | 0.45              |
| 2:3j:480:ARG:HH12 | 1:l:5:LYS:NZ      | 2.15                     | 0.45              |
| 1:k:127:LEU:CD2   | 1:k:135:LEU:HD21  | 2.46                     | 0.45              |
| 2:1j:38:ALA:HB2   | 2:1j:268:MET:HE3  | 1.98                     | 0.45              |
| 2:1j:41:VAL:HG21  | 2:1j:257:PHE:HE1  | 1.79                     | 0.45              |
| 2:1j:435:ASN:OD1  | 2:1j:436:ILE:N    | 2.50                     | 0.45              |
| 3:2G:175:LEU:C    | 3:2G:251:ALA:HB1  | 2.41                     | 0.45              |
| 3:2H:27:ARG:HH12  | 3:2H:36:VAL:HG12  | 1.81                     | 0.45              |
| 3:1l:182:CYS:SG   | 3:1l:183:ALA:N    | 2.88                     | 0.45              |
| 3:2l:206:TRP:CD1  | 3:2l:254:ILE:HD11 | 2.51                     | 0.45              |
| 2:2g:43:LEU:H     | 2:2g:273:ASP:CG   | 2.24                     | 0.45              |
| 2:2g:458:PRO:HB3  | 2:3g:523:PRO:HG3  | 1.98                     | 0.45              |
| 4:O:208:ALA:O     | 4:O:211:VAL:HG12  | 2.16                     | 0.45              |
| 3:2J:190:SER:CB   | 3:2J:272:PRO:CB   | 2.83                     | 0.45              |
| 2:2h:494:TYR:CD1  | 2:2h:516:ILE:HG12 | 2.51                     | 0.45              |
| 2:3h:240:ALA:O    | 2:3h:241:HIS:ND1  | 2.50                     | 0.45              |
| 4:P:152:ALA:HA    | 4:Q:13:VAL:HG22   | 1.98                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2K:395:THR:OG1  | 3:2K:396:GLY:N    | 2.48                     | 0.45              |
| 3:2K:412:ARG:HG3  | 3:2K:413:THR:OG1  | 2.16                     | 0.45              |
| 3:2L:150:THR:O    | 3:2L:150:THR:OG1  | 2.29                     | 0.45              |
| 3:2L:190:SER:HB2  | 3:2L:272:PRO:HB2  | 1.98                     | 0.45              |
| 3:2L:190:SER:CB   | 3:2L:272:PRO:HB2  | 2.47                     | 0.45              |
| 3:2L:530:GLY:O    | 5:F:126:GLY:HA2   | 2.15                     | 0.45              |
| 5:F:79:THR:HB     | 5:F:88:LEU:HD21   | 1.98                     | 0.45              |
| 2:2j:45:PRO:HA    | 2:2j:97:SER:HB3   | 1.97                     | 0.45              |
| 2:2j:254:ARG:NH2  | 2:3j:394:THR:H    | 2.11                     | 0.45              |
| 3:1G:197:VAL:HG22 | 3:1G:266:PRO:HB2  | 1.99                     | 0.45              |
| 2:3e:460:ASP:CG   | 2:3e:462:ASN:H    | 2.24                     | 0.45              |
| 2:1e:479:TRP:HB2  | 2:1e:484:LEU:HD12 | 1.98                     | 0.45              |
| 3:1H:292:GLU:OE1  | 3:1H:292:GLU:N    | 2.48                     | 0.45              |
| 3:2H:412:ARG:HG3  | 3:2H:413:THR:OG1  | 2.17                     | 0.45              |
| 2:3f:447:ILE:HG13 | 2:3f:448:LEU:N    | 2.31                     | 0.45              |
| 3:1l:128:ILE:HG23 | 3:1l:179:VAL:HG21 | 1.98                     | 0.45              |
| 3:2l:100:LEU:HD13 | 3:2l:128:ILE:HG22 | 1.99                     | 0.45              |
| 2:2g:340:PRO:HG2  | 2:2g:409:ILE:HB   | 1.98                     | 0.45              |
| 1:n:123:VAL:HG22  | 1:n:138:THR:HB    | 1.99                     | 0.45              |
| 3:1J:557:ALA:HA   | 3:1J:560:VAL:HB   | 1.97                     | 0.45              |
| 3:2J:478:GLY:N    | 3:2J:487:ALA:O    | 2.37                     | 0.45              |
| 1:o:38:ASP:OD1    | 1:o:38:ASP:N      | 2.49                     | 0.45              |
| 3:1K:410:VAL:C    | 3:1K:412:ARG:H    | 2.24                     | 0.45              |
| 1:p:105:GLU:OE2   | 1:p:106:ASP:N     | 2.49                     | 0.45              |
| 1:p:114:LEU:HD13  | 1:p:143:PHE:CE1   | 2.50                     | 0.45              |
| 3:1L:108:ALA:HB2  | 3:1L:119:VAL:HA   | 1.97                     | 0.45              |
| 3:1L:137:VAL:HG12 | 3:1L:149:THR:HA   | 1.99                     | 0.45              |
| 1:k:26:TYR:CD1    | 1:k:70:ARG:CD     | 2.99                     | 0.45              |
| 4:R:80:LEU:HB2    | 4:R:162:MET:HB2   | 1.97                     | 0.45              |
| 4:M:220:ASP:HB3   | 4:M:223:HIS:NE2   | 2.32                     | 0.45              |
| 2:2f:368:ASN:HD22 | 2:2f:378:PRO:HG3  | 1.81                     | 0.45              |
| 2:2f:511:ARG:HD3  | 2:2f:511:ARG:N    | 2.32                     | 0.45              |
| 2:3f:311:PRO:HG3  | 2:3f:339:TYR:HA   | 1.97                     | 0.45              |
| 2:1f:501:THR:HG23 | 2:1f:502:ASN:OD1  | 2.15                     | 0.45              |
| 3:1l:99:ILE:HD12  | 3:1l:100:LEU:H    | 1.82                     | 0.45              |
| 3:1l:133:MET:HG3  | 3:1l:278:GLU:C    | 2.41                     | 0.45              |
| 3:1l:490:VAL:HB   | 3:1l:535:VAL:HG23 | 1.97                     | 0.45              |
| 6:T:84:GLU:HG3    | 6:T:87:ILE:CG2    | 2.46                     | 0.45              |
| 2:3g:269:VAL:HG12 | 2:3g:307:ALA:HA   | 1.97                     | 0.45              |
| 2:3g:299:CYS:HA   | 2:3g:305:ARG:HD2  | 1.99                     | 0.45              |
| 3:1J:455:THR:OG1  | 5:D:169:ALA:O     | 2.33                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2h:239:SER:HB3  | 2:2h:242:PRO:HD2  | 1.99                     | 0.45              |
| 1:o:63:ASP:OD1    | 1:o:63:ASP:N      | 2.50                     | 0.45              |
| 2:1h:277:ALA:HB1  | 2:1h:282:ALA:HB3  | 1.98                     | 0.45              |
| 2:1h:456:PHE:CE2  | 2:2h:372:ARG:NH1  | 2.85                     | 0.45              |
| 3:1K:434:GLU:HB2  | 3:1K:438:GLU:HG2  | 1.97                     | 0.45              |
| 3:1K:458:ASP:OD1  | 5:E:102:ARG:NH1   | 2.49                     | 0.45              |
| 3:1K:585:PRO:HG2  | 3:1K:588:ARG:HB2  | 1.98                     | 0.45              |
| 3:2K:417:TYR:CD1  | 3:2K:417:TYR:N    | 2.84                     | 0.45              |
| 2:2i:459:ASN:HB2  | 2:2i:507:VAL:HG13 | 1.98                     | 0.45              |
| 3:1L:178:ALA:HB1  | 3:1L:241:HIS:CE1  | 2.51                     | 0.45              |
| 3:2L:36:VAL:HG22  | 3:2L:37:SER:H     | 1.81                     | 0.45              |
| 2:3j:401:LEU:HB3  | 2:3j:406:VAL:CG1  | 2.47                     | 0.45              |
| 2:1j:296:ILE:HD11 | 2:1j:335:ALA:HB2  | 1.99                     | 0.45              |
| 3:1G:34:HIS:CD2   | 3:1G:42:THR:HG21  | 2.52                     | 0.45              |
| 3:1G:506:PHE:CZ   | 3:1G:618:PRO:HG2  | 2.51                     | 0.45              |
| 7:c:121:PRO:HG3   | 7:d:25:ASN:OD1    | 2.17                     | 0.45              |
| 2:3e:299:CYS:SG   | 2:3e:300:GLU:N    | 2.89                     | 0.45              |
| 2:1e:275:MET:HE1  | 2:1e:311:PRO:C    | 2.42                     | 0.45              |
| 3:2H:505:ARG:HB2  | 3:2H:508:GLN:HG3  | 1.98                     | 0.45              |
| 5:B:72:GLY:O      | 5:B:76:GLY:N      | 2.49                     | 0.45              |
| 5:B:131:ASN:OD1   | 5:B:131:ASN:N     | 2.47                     | 0.45              |
| 6:S:100:GLN:HE22  | 2:1f:520:PRO:CD   | 2.29                     | 0.45              |
| 2:2f:73:TYR:HE1   | 2:2f:353:ARG:HH11 | 1.64                     | 0.45              |
| 2:2f:476:VAL:O    | 2:2f:480:ARG:HG2  | 2.16                     | 0.45              |
| 1:m:45:ASN:C      | 1:m:45:ASN:OD1    | 2.59                     | 0.45              |
| 2:1f:67:ASP:OD1   | 2:1f:67:ASP:O     | 2.34                     | 0.45              |
| 3:1l:172:LEU:HD12 | 3:1l:173:ILE:H    | 1.82                     | 0.45              |
| 5:C:156:ARG:HG2   | 5:C:157:PRO:HD2   | 1.98                     | 0.45              |
| 3:1J:529:ILE:HG21 | 3:2J:456:LEU:HG   | 1.97                     | 0.45              |
| 5:D:62:LEU:HD12   | 5:D:62:LEU:HA     | 1.81                     | 0.45              |
| 2:2h:368:ASN:HD22 | 2:2h:378:PRO:HB3  | 1.82                     | 0.45              |
| 2:3h:80:GLY:O     | 2:3h:84:ASN:N     | 2.46                     | 0.45              |
| 2:3h:509:LEU:O    | 2:3h:511:ARG:NH2  | 2.43                     | 0.45              |
| 1:o:68:VAL:HG22   | 1:o:138:THR:HG23  | 1.97                     | 0.45              |
| 3:1K:155:SER:OG   | 3:1K:156:LYS:N    | 2.49                     | 0.45              |
| 3:1K:178:ALA:HB1  | 3:1K:241:HIS:CE1  | 2.52                     | 0.45              |
| 3:1K:326:LEU:H    | 3:1K:326:LEU:CD2  | 2.27                     | 0.45              |
| 3:1K:350:ASP:OD2  | 3:1K:352:HIS:NE2  | 2.50                     | 0.45              |
| 4:P:148:LEU:HD13  | 4:P:148:LEU:O     | 2.17                     | 0.45              |
| 3:2K:47:VAL:HG21  | 5:E:23:LEU:HD23   | 1.99                     | 0.45              |
| 3:2K:73:VAL:HG23  | 3:2K:75:ILE:HG12  | 1.98                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2K:78:PHE:HB3   | 3:2K:434:GLU:HB3  | 1.98                     | 0.45              |
| 2:3i:275:MET:CE   | 2:3i:312:PRO:HA   | 2.45                     | 0.45              |
| 2:1i:41:VAL:O     | 2:1i:272:PRO:HD2  | 2.16                     | 0.45              |
| 2:1i:401:LEU:HD22 | 2:1i:406:VAL:HB   | 1.98                     | 0.45              |
| 2:1i:456:PHE:CD2  | 2:1i:457:GLU:HG3  | 2.51                     | 0.45              |
| 3:1L:451:GLU:OE2  | 3:1L:526:ARG:NH1  | 2.49                     | 0.45              |
| 3:1L:459:TYR:CE2  | 3:1L:488:VAL:HG11 | 2.51                     | 0.45              |
| 2:2j:265:GLU:OE1  | 2:2j:265:GLU:HA   | 2.16                     | 0.45              |
| 3:2G:36:VAL:HG22  | 3:2G:37:SER:H     | 1.82                     | 0.45              |
| 3:2G:369:ARG:NH2  | 5:A:47:ILE:HD13   | 2.30                     | 0.45              |
| 2:2e:368:ASN:HB2  | 2:2e:378:PRO:CB   | 2.43                     | 0.45              |
| 2:2e:431:TRP:CD1  | 2:2e:437:ARG:HH21 | 2.35                     | 0.45              |
| 2:3e:343:LYS:HE3  | 2:3e:354:LEU:HD21 | 1.98                     | 0.45              |
| 1:l:23:MET:HG2    | 1:m:5:LYS:HB3     | 1.99                     | 0.45              |
| 3:1H:128:ILE:HG12 | 3:1H:182:CYS:SG   | 2.57                     | 0.45              |
| 1:m:114:LEU:HD13  | 1:m:143:PHE:CE1   | 2.51                     | 0.45              |
| 1:m:114:LEU:CD2   | 1:m:147:VAL:HG12  | 2.46                     | 0.45              |
| 1:m:115:ARG:NH2   | 1:m:148:VAL:HG21  | 2.32                     | 0.45              |
| 3:2l:172:LEU:HD22 | 3:2l:253:TRP:HH2  | 1.82                     | 0.45              |
| 6:T:12:PHE:CD1    | 6:T:12:PHE:C      | 2.94                     | 0.45              |
| 7:e:76:TRP:CZ2    | 7:e:111:PRO:HD3   | 2.51                     | 0.45              |
| 3:1J:84:ARG:HE    | 3:1J:289:ILE:HG12 | 1.81                     | 0.45              |
| 3:1J:91:LEU:HG    | 3:1J:93:ALA:HB3   | 1.98                     | 0.45              |
| 3:1J:132:THR:HA   | 3:1J:279:ALA:HB3  | 1.99                     | 0.45              |
| 4:O:24:THR:OG1    | 4:O:25:GLY:N      | 2.49                     | 0.45              |
| 3:2K:11:ARG:HB2   | 3:2K:12:ARG:H     | 1.52                     | 0.45              |
| 3:2K:322:PRO:HB3  | 3:2K:339:VAL:HG12 | 1.98                     | 0.45              |
| 5:E:34:LEU:HD12   | 5:E:34:LEU:HA     | 1.81                     | 0.45              |
| 6:V:55:ALA:HB3    | 6:V:75:GLU:OE1    | 2.17                     | 0.45              |
| 7:a:34:VAL:CG2    | 7:a:55:VAL:HG12   | 2.44                     | 0.45              |
| 2:2i:456:PHE:HE1  | 2:3i:372:ARG:NH1  | 2.14                     | 0.45              |
| 2:3i:268:MET:HE3  | 2:3i:362:ALA:HB1  | 1.99                     | 0.45              |
| 3:1L:585:PRO:HG2  | 3:1L:588:ARG:HB2  | 1.98                     | 0.45              |
| 2:1j:41:VAL:O     | 2:1j:272:PRO:HD2  | 2.17                     | 0.45              |
| 3:2G:186:LEU:N    | 3:2G:233:VAL:O    | 2.48                     | 0.45              |
| 3:2G:395:THR:OG1  | 3:2G:396:GLY:N    | 2.50                     | 0.45              |
| 7:c:106:LEU:HD22  | 7:c:135:HIS:CE1   | 2.51                     | 0.45              |
| 2:2e:366:ALA:O    | 2:2e:369:ASP:OD1  | 2.34                     | 0.45              |
| 2:2e:516:ILE:CG2  | 2:3e:531:LEU:HD23 | 2.46                     | 0.45              |
| 3:1H:138:THR:HG21 | 3:1H:158:VAL:HG11 | 1.97                     | 0.45              |
| 3:1H:214:TRP:CE2  | 3:1H:255:ARG:HG3  | 2.52                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:M:138:TYR:CE1   | 4:M:165:VAL:HB    | 2.52                     | 0.45              |
| 3:2H:140:VAL:HG22 | 3:2H:141:SER:H    | 1.82                     | 0.45              |
| 3:2H:204:LEU:HD13 | 3:2H:225:GLY:HA3  | 1.97                     | 0.45              |
| 7:d:19:GLU:O      | 7:d:21:LEU:N      | 2.43                     | 0.45              |
| 2:2f:368:ASN:OD1  | 2:2f:372:ARG:HB2  | 2.17                     | 0.45              |
| 2:3f:257:PHE:HB3  | 2:3f:298:HIS:CD2  | 2.52                     | 0.45              |
| 1:m:72:MET:SD     | 1:m:135:LEU:HD23  | 2.56                     | 0.45              |
| 4:N:24:THR:OG1    | 4:N:25:GLY:N      | 2.49                     | 0.45              |
| 3:2l:291:ALA:HA   | 3:2l:396:GLY:HA3  | 1.99                     | 0.45              |
| 2:3g:59:THR:HB    | 2:2h:500:GLU:HG3  | 1.99                     | 0.45              |
| 3:1J:209:TRP:HB2  | 3:1J:253:TRP:HB2  | 1.97                     | 0.45              |
| 4:O:216:ASN:HD21  | 4:O:231:ILE:H     | 1.63                     | 0.45              |
| 3:2J:199:PRO:C    | 3:2J:202:PRO:HD2  | 2.42                     | 0.45              |
| 2:1h:278:TYR:HE2  | 2:1h:312:PRO:HB3  | 1.82                     | 0.45              |
| 3:1K:131:CYS:SG   | 3:1K:132:THR:N    | 2.89                     | 0.45              |
| 3:1K:459:TYR:CE2  | 3:1K:488:VAL:HG11 | 2.52                     | 0.45              |
| 2:2i:374:VAL:C    | 2:2i:376:LYS:N    | 2.70                     | 0.45              |
| 2:3i:522:LYS:HE3  | 2:3i:522:LYS:HB2  | 1.83                     | 0.45              |
| 2:1i:293:LEU:HD23 | 2:1i:293:LEU:HA   | 1.78                     | 0.45              |
| 5:F:156:ARG:HG2   | 5:F:157:PRO:HD2   | 1.99                     | 0.45              |
| 2:2j:64:ALA:O     | 2:2j:93:ARG:NH1   | 2.49                     | 0.45              |
| 3:1G:204:LEU:HD23 | 3:1G:258:VAL:CG2  | 2.46                     | 0.45              |
| 2:2e:516:ILE:HG23 | 2:3e:531:LEU:HD23 | 1.98                     | 0.45              |
| 2:3e:80:GLY:O     | 2:3e:84:ASN:N     | 2.47                     | 0.45              |
| 1:l:26:TYR:HB2    | 1:l:70:ARG:HB2    | 1.99                     | 0.45              |
| 3:1H:246:ASN:HD21 | 3:1H:249:HIS:C    | 2.21                     | 0.45              |
| 3:2H:133:MET:SD   | 3:2H:278:GLU:HA   | 2.57                     | 0.45              |
| 3:2H:529:ILE:HD13 | 5:B:105:LEU:HD23  | 1.99                     | 0.45              |
| 1:m:40:ILE:O      | 1:m:41:ARG:HD2    | 2.17                     | 0.45              |
| 3:1l:561:ARG:O    | 3:1l:565:HIS:ND1  | 2.49                     | 0.45              |
| 6:T:29:GLN:HE22   | 6:T:33:GLU:HG2    | 1.82                     | 0.45              |
| 2:2g:380:ASN:O    | 2:2g:418:ARG:NH1  | 2.50                     | 0.45              |
| 3:1J:410:VAL:C    | 3:1J:412:ARG:H    | 2.25                     | 0.45              |
| 2:3h:38:ALA:HB2   | 2:3h:268:MET:HE3  | 1.99                     | 0.45              |
| 5:E:30:ASP:N      | 5:E:30:ASP:OD1    | 2.48                     | 0.45              |
| 2:3i:72:TYR:OH    | 2:3i:97:SER:O     | 2.27                     | 0.45              |
| 2:3i:368:ASN:ND2  | 2:3i:378:PRO:CA   | 2.75                     | 0.45              |
| 1:p:15:PHE:HE1    | 1:p:25:GLU:CD     | 2.25                     | 0.45              |
| 4:Q:216:ASN:HD21  | 4:Q:230:LEU:HB3   | 1.82                     | 0.45              |
| 3:2L:190:SER:CB   | 3:2L:273:THR:O    | 2.64                     | 0.45              |
| 2:1j:412:PHE:CE2  | 2:1j:420:TRP:CZ2  | 3.04                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1j:476:VAL:O    | 2:1j:480:ARG:HG3  | 2.17                     | 0.45              |
| 3:1G:79:PRO:HB3   | 3:1G:357:ALA:HB3  | 1.97                     | 0.45              |
| 3:1G:572:LEU:HB2  | 3:1G:640:SER:HB2  | 1.99                     | 0.45              |
| 4:R:149:PHE:N     | 4:R:149:PHE:HD1   | 2.14                     | 0.45              |
| 3:2G:343:PHE:CE2  | 3:2G:354:THR:OG1  | 2.60                     | 0.45              |
| 7:c:97:ASP:OD1    | 7:c:98:GLY:N      | 2.50                     | 0.45              |
| 2:3e:43:LEU:HD23  | 2:3e:96:GLY:HA3   | 1.99                     | 0.45              |
| 2:3e:393:ILE:HG22 | 2:3e:410:ARG:HD2  | 1.99                     | 0.45              |
| 2:2f:522:LYS:NZ   | 2:1f:459:ASN:CB   | 2.80                     | 0.45              |
| 2:1f:337:LEU:HD22 | 2:1f:406:VAL:HG13 | 1.99                     | 0.45              |
| 2:1f:479:TRP:HD1  | 2:1f:484:LEU:HB2  | 1.82                     | 0.45              |
| 2:2g:464:TRP:HZ3  | 2:2g:499:GLU:HG2  | 1.82                     | 0.45              |
| 3:1J:17:VAL:HG23  | 3:1J:55:VAL:HG13  | 1.98                     | 0.45              |
| 3:2J:367:ALA:HB1  | 3:2J:375:LEU:HD11 | 1.99                     | 0.45              |
| 2:2h:249:GLY:O    | 2:2h:252:SER:OG   | 2.24                     | 0.45              |
| 2:1h:522:LYS:NZ   | 6:U:64:VAL:HG22   | 2.32                     | 0.45              |
| 3:1K:432:ASP:OD1  | 3:1K:433:GLY:N    | 2.50                     | 0.45              |
| 5:E:11:ASP:OD1    | 5:E:11:ASP:N      | 2.50                     | 0.45              |
| 2:2i:409:ILE:HD13 | 2:2i:409:ILE:HA   | 1.85                     | 0.45              |
| 2:3i:457:GLU:H    | 2:3i:458:PRO:HD2  | 1.81                     | 0.45              |
| 4:Q:14:ARG:HA     | 4:Q:42:ASN:HD21   | 1.82                     | 0.45              |
| 5:F:26:VAL:HG21   | 6:W:40:ALA:HB1    | 1.99                     | 0.45              |
| 6:W:101:ASN:ND2   | 2:1j:433:TYR:OH   | 2.50                     | 0.45              |
| 2:2j:379:ALA:HB3  | 2:1j:455:VAL:HG12 | 1.99                     | 0.45              |
| 1:k:121:LYS:CB    | 1:k:140:THR:HB    | 2.45                     | 0.45              |
| 2:1j:369:ASP:OD2  | 2:1j:438:ARG:NH2  | 2.43                     | 0.45              |
| 3:1G:458:ASP:O    | 3:1G:462:LEU:HD12 | 2.17                     | 0.45              |
| 2:2e:263:ILE:HG22 | 2:2e:265:GLU:H    | 1.82                     | 0.45              |
| 2:3e:292:GLN:OE1  | 2:3e:309:ILE:CG2  | 2.65                     | 0.45              |
| 2:1e:61:TYR:CE1   | 2:1e:65:PHE:HB2   | 2.48                     | 0.45              |
| 7:d:106:LEU:HD22  | 7:d:135:HIS:NE2   | 2.31                     | 0.45              |
| 2:2f:511:ARG:HD3  | 2:2f:511:ARG:H    | 1.82                     | 0.45              |
| 1:m:56:LEU:HD23   | 1:m:56:LEU:HA     | 1.85                     | 0.45              |
| 3:1l:161:PHE:CE1  | 3:1l:171:MET:HE3  | 2.52                     | 0.45              |
| 3:1l:175:LEU:HD21 | 3:1l:186:LEU:HD21 | 1.99                     | 0.45              |
| 3:1l:207:GLU:OE1  | 3:1l:257:ARG:NH2  | 2.49                     | 0.45              |
| 3:1l:527:ARG:HE   | 3:1l:527:ARG:HB3  | 1.63                     | 0.45              |
| 2:2g:397:GLU:OE1  | 2:2g:397:GLU:N    | 2.45                     | 0.45              |
| 2:2g:522:LYS:HE3  | 2:1g:459:ASN:CG   | 2.42                     | 0.45              |
| 3:1J:174:GLY:HA2  | 3:1J:251:ALA:HB1  | 1.98                     | 0.45              |
| 3:2K:533:LEU:HD21 | 3:2K:535:VAL:HG13 | 1.99                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:V:80:LEU:HD11   | 6:V:89:VAL:HB     | 1.98                     | 0.44              |
| 7:a:5:ASP:HB2     | 7:a:95:ARG:NE     | 2.32                     | 0.44              |
| 7:a:35:GLU:O      | 7:a:53:THR:CG2    | 2.64                     | 0.44              |
| 1:p:121:LYS:HB3   | 1:p:140:THR:HB    | 1.99                     | 0.44              |
| 3:2L:317:VAL:HG22 | 3:2L:393:TYR:CE1  | 2.52                     | 0.44              |
| 5:F:99:HIS:HA     | 5:F:102:ARG:HB2   | 1.99                     | 0.44              |
| 2:3j:39:ALA:HB2   | 2:3j:266:ILE:HD12 | 1.97                     | 0.44              |
| 1:k:116:ASN:HB3   | 1:k:144:GLU:HB3   | 1.97                     | 0.44              |
| 3:1G:68:ALA:HA    | 3:2G:13:PHE:CZ    | 2.52                     | 0.44              |
| 3:1G:109:THR:HA   | 3:1G:408:VAL:O    | 2.17                     | 0.44              |
| 3:1G:542:GLY:HA2  | 3:1G:639:PHE:HB3  | 2.00                     | 0.44              |
| 5:A:111:THR:HG22  | 5:A:166:LEU:HD11  | 2.00                     | 0.44              |
| 2:2e:45:PRO:HD3   | 2:2e:72:TYR:HD2   | 1.82                     | 0.44              |
| 3:1H:459:TYR:CE2  | 3:1H:488:VAL:HG11 | 2.52                     | 0.44              |
| 4:M:49:SER:OG     | 4:M:50:GLN:N      | 2.49                     | 0.44              |
| 6:S:56:ILE:HD11   | 6:S:72:ILE:HG13   | 1.99                     | 0.44              |
| 7:d:41:GLU:OE1    | 7:d:43:GLY:N      | 2.36                     | 0.44              |
| 2:2f:516:ILE:HG23 | 2:3f:531:LEU:HB3  | 1.99                     | 0.44              |
| 3:2l:140:VAL:HG12 | 3:2l:143:GLU:HB2  | 1.99                     | 0.44              |
| 2:1g:368:ASN:HD22 | 2:1g:378:PRO:CB   | 2.30                     | 0.44              |
| 4:O:149:PHE:N     | 4:O:149:PHE:CD1   | 2.85                     | 0.44              |
| 2:1h:320:ILE:HD12 | 2:1h:323:TRP:HB3  | 2.00                     | 0.44              |
| 3:1K:502:GLY:O    | 3:1J:245:ARG:NH2  | 2.50                     | 0.44              |
| 3:1K:643:HIS:C    | 3:1K:643:HIS:CD2  | 2.95                     | 0.44              |
| 3:2K:156:LYS:HB3  | 3:2K:157:ASP:H    | 1.62                     | 0.44              |
| 7:a:44:ASN:ND2    | 7:a:47:PHE:HE1    | 2.15                     | 0.44              |
| 2:1i:37:VAL:CG1   | 2:1i:266:ILE:HA   | 2.47                     | 0.44              |
| 3:2L:90:TRP:O     | 3:2L:419:SER:HB3  | 2.17                     | 0.44              |
| 2:3j:249:GLY:HA3  | 2:3j:254:ARG:O    | 2.17                     | 0.44              |
| 3:2H:190:SER:HB2  | 3:2H:272:PRO:HB2  | 1.99                     | 0.44              |
| 3:2H:197:VAL:HG11 | 3:2H:268:TYR:CE1  | 2.52                     | 0.44              |
| 3:2H:218:GLU:HB2  | 3:2H:236:HIS:HE1  | 1.80                     | 0.44              |
| 3:2H:222:ASP:OD1  | 3:2H:223:GLY:N    | 2.50                     | 0.44              |
| 2:1f:269:VAL:HG11 | 2:1f:295:LEU:HD11 | 1.98                     | 0.44              |
| 2:2g:453:TRP:CD1  | 2:2g:453:TRP:O    | 2.71                     | 0.44              |
| 2:2g:511:ARG:H    | 2:2g:511:ARG:HG3  | 1.48                     | 0.44              |
| 1:n:15:PHE:HE1    | 1:n:25:GLU:CD     | 2.25                     | 0.44              |
| 2:1g:401:LEU:HD22 | 2:1g:406:VAL:HB   | 1.98                     | 0.44              |
| 3:1J:173:ILE:HD12 | 3:1J:188:LEU:HD11 | 1.99                     | 0.44              |
| 3:2J:417:TYR:CD1  | 3:2J:418:VAL:HG13 | 2.52                     | 0.44              |
| 5:D:131:ASN:OD1   | 5:D:131:ASN:N     | 2.50                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:U:43:PRO:HG3    | 6:U:55:ALA:HB2    | 1.99                     | 0.44              |
| 6:U:73:GLN:HG2    | 6:U:92:VAL:HG23   | 1.99                     | 0.44              |
| 2:2h:320:ILE:HD13 | 2:2h:339:TYR:HD1  | 1.82                     | 0.44              |
| 2:2h:439:TYR:OH   | 2:2h:478:GLU:OE2  | 2.27                     | 0.44              |
| 2:2h:455:VAL:HA   | 2:3h:522:LYS:HE2  | 2.00                     | 0.44              |
| 2:2h:515:GLU:CD   | 2:3h:530:ARG:HH12 | 2.26                     | 0.44              |
| 3:1K:32:THR:HG22  | 5:E:35:ARG:HH21   | 1.83                     | 0.44              |
| 3:1K:503:ARG:HD3  | 3:1K:569:TYR:CD1  | 2.53                     | 0.44              |
| 3:1K:557:ALA:HA   | 3:1K:560:VAL:HB   | 1.99                     | 0.44              |
| 4:Q:24:THR:OG1    | 4:Q:25:GLY:N      | 2.49                     | 0.44              |
| 2:2j:337:LEU:HB3  | 2:2j:406:VAL:HG23 | 1.99                     | 0.44              |
| 4:R:24:THR:OG1    | 4:R:25:GLY:N      | 2.51                     | 0.44              |
| 4:R:113:LEU:HD21  | 4:N:62:VAL:HB     | 1.99                     | 0.44              |
| 1:l:46:GLN:C      | 1:l:46:GLN:OE1    | 2.60                     | 0.44              |
| 2:1e:37:VAL:HG11  | 2:1e:265:GLU:HG2  | 1.99                     | 0.44              |
| 5:B:71:LEU:HD22   | 5:B:74:TRP:CD1    | 2.53                     | 0.44              |
| 4:N:14:ARG:HG2    | 4:N:14:ARG:NH1    | 2.32                     | 0.44              |
| 3:2l:18:ASP:OD2   | 3:2l:22:ARG:NH1   | 2.50                     | 0.44              |
| 6:T:42:ALA:O      | 6:T:44:GLY:N      | 2.50                     | 0.44              |
| 5:D:124:GLU:OE1   | 5:D:124:GLU:N     | 2.50                     | 0.44              |
| 3:1K:214:TRP:HZ2  | 3:1K:255:ARG:HE   | 1.66                     | 0.44              |
| 3:2K:34:HIS:CE1   | 3:2K:42:THR:HG21  | 2.52                     | 0.44              |
| 7:a:51:LEU:CD1    | 4:N:85:ASP:OD2    | 2.54                     | 0.44              |
| 2:2i:76:HIS:NE2   | 2:2i:346:ASP:OD2  | 2.50                     | 0.44              |
| 2:2i:265:GLU:OE1  | 2:2i:265:GLU:HA   | 2.17                     | 0.44              |
| 2:1i:484:LEU:HD13 | 2:1i:492:ALA:HB1  | 1.98                     | 0.44              |
| 3:2L:46:THR:O     | 3:2L:49:HIS:N     | 2.51                     | 0.44              |
| 2:1j:320:ILE:HG12 | 2:1j:339:TYR:CD1  | 2.52                     | 0.44              |
| 3:2G:114:ARG:HH22 | 6:S:15:ARG:NH1    | 2.13                     | 0.44              |
| 3:2G:436:ILE:HD13 | 3:2G:436:ILE:HA   | 1.82                     | 0.44              |
| 2:2e:254:ARG:HH21 | 2:3e:394:THR:H    | 1.66                     | 0.44              |
| 2:3e:494:TYR:HB3  | 2:3e:516:ILE:HG22 | 1.99                     | 0.44              |
| 1:l:96:ASN:OD1    | 1:l:97:ALA:N      | 2.50                     | 0.44              |
| 2:1e:320:ILE:HG12 | 2:1e:339:TYR:CD1  | 2.53                     | 0.44              |
| 2:1e:337:LEU:HD22 | 2:1e:406:VAL:HG13 | 1.99                     | 0.44              |
| 2:1e:518:ILE:HG13 | 2:1e:520:PRO:HD3  | 1.98                     | 0.44              |
| 4:M:198:LEU:HA    | 4:M:198:LEU:HD23  | 1.59                     | 0.44              |
| 3:2H:243:LEU:HB2  | 3:2H:253:TRP:CE3  | 2.52                     | 0.44              |
| 2:3f:515:GLU:O    | 2:3f:516:ILE:HG13 | 2.17                     | 0.44              |
| 1:m:116:ASN:O     | 1:m:143:PHE:HA    | 2.17                     | 0.44              |
| 2:1f:41:VAL:HG22  | 2:1f:92:VAL:HB    | 1.99                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1f:308:ILE:C    | 2:1f:309:ILE:HD13 | 2.41                     | 0.44              |
| 3:1l:70:LEU:HD23  | 3:1l:70:LEU:HA    | 1.78                     | 0.44              |
| 2:2g:265:GLU:OE1  | 2:2g:265:GLU:HA   | 2.17                     | 0.44              |
| 2:2g:275:MET:CE   | 2:2g:313:PRO:HD3  | 2.48                     | 0.44              |
| 2:2g:376:LYS:HD3  | 2:2g:377:ALA:H    | 1.83                     | 0.44              |
| 2:3g:39:ALA:HB3   | 2:3g:269:VAL:HG23 | 1.99                     | 0.44              |
| 2:3g:388:ASP:OD1  | 2:3g:389:LEU:N    | 2.51                     | 0.44              |
| 3:1J:79:PRO:HB3   | 3:1J:357:ALA:HB3  | 1.99                     | 0.44              |
| 7:f:95:ARG:HH12   | 7:f:99:SER:HB2    | 1.81                     | 0.44              |
| 2:3h:398:GLN:HE22 | 2:3h:420:TRP:CD1  | 2.36                     | 0.44              |
| 2:1h:435:ASN:O    | 2:1h:439:TYR:N    | 2.37                     | 0.44              |
| 6:V:120:LEU:HD23  | 6:V:121:VAL:N     | 2.33                     | 0.44              |
| 2:2i:456:PHE:HE1  | 2:3i:372:ARG:HH12 | 1.65                     | 0.44              |
| 1:k:58:PRO:HG3    | 1:l:49:THR:HG21   | 2.00                     | 0.44              |
| 2:1j:456:PHE:HD2  | 2:1j:457:GLU:HG3  | 1.82                     | 0.44              |
| 5:A:43:VAL:HG23   | 5:A:44:LEU:HD12   | 2.00                     | 0.44              |
| 7:c:112:VAL:HA    | 7:d:34:VAL:HG22   | 1.99                     | 0.44              |
| 2:3e:377:ALA:HB3  | 2:3e:522:LYS:HZ3  | 1.83                     | 0.44              |
| 1:l:114:LEU:HD13  | 1:l:143:PHE:HE1   | 1.80                     | 0.44              |
| 2:1e:424:THR:HG23 | 2:1e:434:LEU:HA   | 2.00                     | 0.44              |
| 3:1H:133:MET:HE2  | 3:1H:133:MET:HB3  | 1.92                     | 0.44              |
| 3:1H:455:THR:N    | 3:1H:458:ASP:OD2  | 2.39                     | 0.44              |
| 3:1H:529:ILE:HG12 | 3:2H:455:THR:HA   | 1.99                     | 0.44              |
| 2:3f:45:PRO:HA    | 2:3f:98:ALA:HB3   | 2.00                     | 0.44              |
| 3:1l:542:GLY:O    | 3:1l:616:ALA:N    | 2.50                     | 0.44              |
| 2:2g:522:LYS:O    | 2:1g:455:VAL:HA   | 2.17                     | 0.44              |
| 1:n:40:ILE:HB     | 1:n:53:ASN:HB3    | 1.99                     | 0.44              |
| 3:1J:70:LEU:HD23  | 3:1J:70:LEU:HA    | 1.78                     | 0.44              |
| 3:1J:108:ALA:HB2  | 3:1J:119:VAL:HA   | 1.99                     | 0.44              |
| 1:o:129:ALA:HB3   | 1:p:26:TYR:HB3    | 2.00                     | 0.44              |
| 3:2K:291:ALA:HA   | 3:2K:396:GLY:HA3  | 1.98                     | 0.44              |
| 2:2i:339:TYR:HB3  | 2:2i:340:PRO:HD3  | 1.99                     | 0.44              |
| 2:2i:374:VAL:C    | 2:2i:376:LYS:H    | 2.26                     | 0.44              |
| 3:1L:214:TRP:CE2  | 3:1L:255:ARG:HG3  | 2.52                     | 0.44              |
| 3:1G:190:SER:HA   | 3:1G:275:ARG:HG3  | 1.99                     | 0.44              |
| 6:X:100:GLN:O     | 6:X:100:GLN:HG2   | 2.16                     | 0.44              |
| 2:2e:376:LYS:HE3  | 2:1e:458:PRO:HD3  | 2.00                     | 0.44              |
| 2:2e:390:GLU:O    | 2:2e:391:LEU:HD23 | 2.17                     | 0.44              |
| 2:3e:388:ASP:OD1  | 2:3e:389:LEU:N    | 2.51                     | 0.44              |
| 3:1H:174:GLY:HA2  | 3:1H:251:ALA:HB1  | 2.00                     | 0.44              |
| 3:2H:183:ALA:N    | 3:2H:283:GLY:O    | 2.36                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2H:208:ALA:O    | 3:2H:241:HIS:HD2  | 2.00                     | 0.44              |
| 3:2H:532:ARG:HD2  | 5:B:139:PRO:C     | 2.42                     | 0.44              |
| 2:2f:64:ALA:HB1   | 2:2f:93:ARG:HH22  | 1.81                     | 0.44              |
| 2:1f:61:TYR:HE2   | 2:1f:75:ALA:HA    | 1.83                     | 0.44              |
| 3:1l:187:GLU:HA   | 3:1l:232:ASP:HB3  | 2.00                     | 0.44              |
| 3:1l:388:ILE:HD13 | 3:1l:388:ILE:HA   | 1.87                     | 0.44              |
| 3:1l:615:PRO:O    | 3:1l:624:GLY:N    | 2.49                     | 0.44              |
| 3:2l:209:TRP:HB2  | 3:2l:214:TRP:CZ3  | 2.53                     | 0.44              |
| 3:2l:302:SER:HB3  | 3:2l:388:ILE:HD11 | 2.00                     | 0.44              |
| 2:2g:409:ILE:HD12 | 2:2g:419:VAL:HG22 | 2.00                     | 0.44              |
| 2:1g:361:VAL:HG12 | 2:1g:365:TRP:CD1  | 2.51                     | 0.44              |
| 3:1J:109:THR:HA   | 3:1J:408:VAL:O    | 2.16                     | 0.44              |
| 3:1J:121:ALA:O    | 3:1J:288:SER:HB2  | 2.17                     | 0.44              |
| 4:O:187:HIS:CE1   | 4:O:198:LEU:HD11  | 2.53                     | 0.44              |
| 2:2h:247:TYR:HB3  | 2:2h:257:PHE:H    | 1.83                     | 0.44              |
| 2:3h:61:TYR:O     | 2:3h:65:PHE:N     | 2.51                     | 0.44              |
| 2:1h:456:PHE:HE2  | 2:2h:372:ARG:HH12 | 1.64                     | 0.44              |
| 2:1h:456:PHE:CD2  | 2:1h:456:PHE:O    | 2.70                     | 0.44              |
| 3:1K:646:ARG:HH21 | 3:1K:648:ILE:HG12 | 1.81                     | 0.44              |
| 6:V:54:CYS:HB2    | 6:V:79:THR:HG21   | 1.99                     | 0.44              |
| 7:a:121:PRO:HG3   | 7:b:25:ASN:OD1    | 2.17                     | 0.44              |
| 2:2i:472:SER:O    | 2:2i:476:VAL:HG12 | 2.17                     | 0.44              |
| 1:p:12:ALA:HB1    | 1:p:102:MET:HB2   | 2.00                     | 0.44              |
| 1:p:49:THR:HG22   | 7:f:11:TRP:CZ3    | 2.53                     | 0.44              |
| 2:1i:455:VAL:O    | 2:1i:455:VAL:CG1  | 2.66                     | 0.44              |
| 3:1L:544:THR:HB   | 3:1L:614:HIS:NE2  | 2.32                     | 0.44              |
| 4:Q:146:TYR:HB3   | 4:Q:149:PHE:CE1   | 2.53                     | 0.44              |
| 3:2L:184:LEU:HA   | 3:2L:281:THR:HA   | 2.00                     | 0.44              |
| 2:2j:469:ARG:HE   | 2:2j:469:ARG:HB3  | 1.54                     | 0.44              |
| 2:2j:511:ARG:NH1  | 2:3j:526:PHE:HA   | 2.32                     | 0.44              |
| 1:k:26:TYR:HD2    | 1:k:68:VAL:HG12   | 1.78                     | 0.44              |
| 1:k:26:TYR:HB3    | 1:k:68:VAL:HG12   | 2.00                     | 0.44              |
| 2:1j:401:LEU:HD22 | 2:1j:406:VAL:HB   | 1.98                     | 0.44              |
| 4:R:88:MET:CE     | 7:d:86:ARG:HD3    | 2.48                     | 0.44              |
| 3:2G:43:LEU:HD23  | 3:2G:43:LEU:HA    | 1.78                     | 0.44              |
| 2:3e:272:PRO:C    | 2:3e:274:LEU:H    | 2.26                     | 0.44              |
| 1:l:44:GLN:N      | 1:l:44:GLN:CD     | 2.75                     | 0.44              |
| 2:1e:239:SER:H    | 2:1e:244:PRO:HD2  | 1.82                     | 0.44              |
| 3:1H:261:PRO:O    | 3:1H:265:GLN:N    | 2.50                     | 0.44              |
| 3:2H:187:GLU:HB3  | 3:2H:278:GLU:H    | 1.83                     | 0.44              |
| 7:d:57:TYR:CD2    | 7:d:137:GLY:HA2   | 2.53                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:m:41:ARG:CZ     | 1:m:52:ASN:HB3    | 2.48                     | 0.44              |
| 1:m:114:LEU:HD22  | 1:m:147:VAL:HG12  | 2.00                     | 0.44              |
| 2:1f:391:LEU:HD23 | 2:1f:391:LEU:HA   | 1.80                     | 0.44              |
| 3:1l:261:PRO:O    | 3:1l:265:GLN:N    | 2.50                     | 0.44              |
| 3:1l:273:THR:HG1  | 3:1l:274:ILE:H    | 1.66                     | 0.44              |
| 2:1g:245:ALA:HB1  | 2:1g:256:GLY:HA2  | 2.00                     | 0.44              |
| 2:1g:477:ASN:HA   | 2:1g:480:ARG:HG2  | 2.00                     | 0.44              |
| 3:1J:91:LEU:HD13  | 3:1J:418:VAL:HG12 | 1.99                     | 0.44              |
| 7:f:58:SER:OG     | 7:f:59:ASN:N      | 2.49                     | 0.44              |
| 2:3h:501:THR:HB   | 2:3h:512:VAL:HG12 | 1.98                     | 0.44              |
| 1:o:30:VAL:O      | 1:o:65:SER:CB     | 2.65                     | 0.44              |
| 3:1K:613:LEU:HD13 | 3:1K:613:LEU:HA   | 1.85                     | 0.44              |
| 3:2K:101:VAL:HG21 | 3:2K:126:LEU:HB3  | 2.00                     | 0.44              |
| 1:p:36:GLU:HB3    | 1:p:57:MET:CB     | 2.47                     | 0.44              |
| 3:1L:255:ARG:HH11 | 3:1L:255:ARG:HA   | 1.82                     | 0.44              |
| 3:1L:544:THR:HG23 | 3:1L:643:HIS:HB3  | 2.00                     | 0.44              |
| 2:3j:398:GLN:HG3  | 2:3j:408:CYS:SG   | 2.58                     | 0.44              |
| 2:1j:338:TYR:CE1  | 2:1j:361:VAL:HG11 | 2.53                     | 0.44              |
| 4:R:85:ASP:OD1    | 4:R:85:ASP:C      | 2.61                     | 0.44              |
| 3:2G:22:ARG:O     | 3:2G:25:GLN:HB3   | 2.18                     | 0.44              |
| 2:2f:454:VAL:HG11 | 2:3f:420:TRP:CZ2  | 2.53                     | 0.44              |
| 2:3f:240:ALA:O    | 2:3f:241:HIS:ND1  | 2.51                     | 0.44              |
| 2:3f:289:LYS:HE3  | 2:3f:289:LYS:HB3  | 1.84                     | 0.44              |
| 1:m:24:VAL:HG23   | 1:m:25:GLU:H      | 1.82                     | 0.44              |
| 2:1f:484:LEU:HD13 | 2:1f:492:ALA:HB1  | 1.99                     | 0.44              |
| 3:1l:215:GLN:OE1  | 3:1l:215:GLN:N    | 2.51                     | 0.44              |
| 3:1l:585:PRO:HG2  | 3:1l:588:ARG:HB2  | 2.00                     | 0.44              |
| 3:1J:179:VAL:HG21 | 3:1J:182:CYS:HB3  | 2.00                     | 0.44              |
| 6:U:12:PHE:CD1    | 6:U:12:PHE:C      | 2.94                     | 0.44              |
| 2:1h:320:ILE:HG12 | 2:1h:339:TYR:CD1  | 2.53                     | 0.44              |
| 2:1h:484:LEU:HD13 | 2:1h:492:ALA:HB1  | 1.99                     | 0.44              |
| 2:1h:487:GLN:HB2  | 4:N:10:LYS:HB3    | 2.00                     | 0.44              |
| 3:1K:210:THR:OG1  | 3:1K:211:GLU:N    | 2.51                     | 0.44              |
| 3:2K:54:ILE:O     | 3:2K:58:LEU:HD23  | 2.18                     | 0.44              |
| 6:V:11:SER:OG     | 6:V:15:ARG:NH2    | 2.51                     | 0.44              |
| 3:2L:197:VAL:HG11 | 3:2L:268:TYR:CE1  | 2.53                     | 0.44              |
| 2:1j:57:ASN:ND2   | 6:X:119:SER:OG    | 2.51                     | 0.44              |
| 2:1j:278:TYR:HE1  | 2:1j:285:LEU:HB2  | 1.83                     | 0.44              |
| 3:1G:410:VAL:C    | 3:1G:412:ARG:H    | 2.24                     | 0.44              |
| 4:R:218:ILE:HD13  | 4:R:218:ILE:HA    | 1.87                     | 0.44              |
| 3:2G:303:THR:O    | 3:2G:384:LYS:NZ   | 2.36                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:A:112:VAL:HA    | 5:A:166:LEU:HD21  | 1.98                     | 0.44              |
| 2:3e:260:LEU:HD23 | 2:3e:260:LEU:HA   | 1.80                     | 0.44              |
| 2:3e:328:ALA:HB1  | 2:3e:330:TYR:CE1  | 2.53                     | 0.44              |
| 7:d:44:ASN:ND2    | 7:d:47:PHE:CZ     | 2.85                     | 0.44              |
| 7:d:112:VAL:HA    | 7:e:34:VAL:HG22   | 2.00                     | 0.44              |
| 1:m:33:LEU:HD22   | 1:m:33:LEU:N      | 2.32                     | 0.44              |
| 2:1f:401:LEU:HD22 | 2:1f:406:VAL:HB   | 2.00                     | 0.44              |
| 3:1l:109:THR:HA   | 3:1l:408:VAL:O    | 2.17                     | 0.44              |
| 4:N:202:GLU:C     | 4:N:203:TYR:HD1   | 2.25                     | 0.44              |
| 5:C:124:GLU:OE1   | 5:C:124:GLU:N     | 2.50                     | 0.44              |
| 2:3g:457:GLU:N    | 2:3g:458:PRO:CD   | 2.81                     | 0.44              |
| 1:n:116:ASN:HB2   | 1:n:144:GLU:HB3   | 1.99                     | 0.44              |
| 2:1g:436:ILE:HD11 | 2:1g:520:PRO:HB3  | 2.00                     | 0.44              |
| 3:1J:503:ARG:HD2  | 3:1J:569:TYR:CD1  | 2.52                     | 0.44              |
| 3:2J:183:ALA:N    | 3:2J:283:GLY:O    | 2.51                     | 0.44              |
| 7:f:86:ARG:NH1    | 7:f:110:LEU:HB2   | 2.33                     | 0.44              |
| 2:3h:398:GLN:HE22 | 2:3h:420:TRP:HD1  | 1.64                     | 0.44              |
| 2:3h:407:ASN:HD21 | 2:3h:423:ARG:N    | 2.05                     | 0.44              |
| 1:o:120:SER:O     | 1:p:35:ILE:HG13   | 2.18                     | 0.43              |
| 3:1K:203:PRO:HG2  | 3:1K:267:PHE:HD2  | 1.83                     | 0.43              |
| 3:2K:108:ALA:C    | 3:2K:408:VAL:HG23 | 2.43                     | 0.43              |
| 3:2K:134:GLY:HA3  | 3:2K:174:GLY:HA3  | 1.99                     | 0.43              |
| 3:2K:175:LEU:O    | 3:2K:252:GLY:N    | 2.29                     | 0.43              |
| 3:2K:188:LEU:HD12 | 3:2K:227:LEU:HD21 | 2.00                     | 0.43              |
| 3:2K:217:CYS:SG   | 3:2K:235:LEU:HD21 | 2.58                     | 0.43              |
| 2:2i:365:TRP:CZ2  | 2:2i:434:LEU:HD21 | 2.52                     | 0.43              |
| 1:p:37:GLN:CA     | 1:p:37:GLN:NE2    | 2.80                     | 0.43              |
| 1:p:40:ILE:CG2    | 7:f:126:VAL:CG2   | 2.93                     | 0.43              |
| 3:1L:575:LEU:HD23 | 3:1L:575:LEU:HA   | 1.83                     | 0.43              |
| 3:1G:451:GLU:OE2  | 3:1G:526:ARG:NH1  | 2.51                     | 0.43              |
| 3:2G:207:GLU:CD   | 3:2G:257:ARG:HH21 | 2.24                     | 0.43              |
| 2:2e:313:PRO:HB3  | 2:2e:341:TRP:CZ2  | 2.53                     | 0.43              |
| 2:2e:494:TYR:HB3  | 2:2e:516:ILE:HD13 | 1.99                     | 0.43              |
| 2:3e:424:THR:HG23 | 2:3e:434:LEU:HA   | 2.00                     | 0.43              |
| 3:1H:41:VAL:HG21  | 6:S:10:TRP:HE1    | 1.82                     | 0.43              |
| 2:3f:457:GLU:H    | 2:3f:458:PRO:CD   | 2.30                     | 0.43              |
| 2:1f:293:LEU:HA   | 2:1f:293:LEU:HD23 | 1.81                     | 0.43              |
| 3:2l:108:ALA:C    | 3:2l:408:VAL:HG23 | 2.43                     | 0.43              |
| 2:1g:46:THR:HG22  | 2:1g:65:PHE:O     | 2.18                     | 0.43              |
| 3:1J:31:TRP:CZ3   | 5:D:39:GLY:HA2    | 2.53                     | 0.43              |
| 3:1J:241:HIS:NE2  | 3:1J:252:GLY:HA3  | 2.33                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:O:146:TYR:HB3   | 4:O:149:PHE:CE1   | 2.52                     | 0.43              |
| 4:O:214:GLU:OE1   | 3:2J:60:ARG:NH1   | 2.51                     | 0.43              |
| 3:2J:26:GLN:O     | 3:2J:26:GLN:CD    | 2.60                     | 0.43              |
| 2:2h:40:PHE:HB3   | 2:2h:270:ALA:HB3  | 2.00                     | 0.43              |
| 2:1h:45:PRO:HD2   | 2:1h:66:GLY:H     | 1.83                     | 0.43              |
| 2:1i:443:LEU:HD12 | 2:1i:443:LEU:HA   | 1.80                     | 0.43              |
| 3:1L:212:ASP:OD1  | 3:1G:559:ARG:NH2  | 2.50                     | 0.43              |
| 3:1L:528:LEU:HD11 | 5:F:174:HIS:ND1   | 2.32                     | 0.43              |
| 3:2L:109:THR:HA   | 3:2L:408:VAL:HA   | 1.99                     | 0.43              |
| 3:2L:204:LEU:HD12 | 3:2L:204:LEU:H    | 1.82                     | 0.43              |
| 5:F:113:ARG:HG3   | 5:F:119:ALA:HA    | 2.00                     | 0.43              |
| 6:W:12:PHE:CD1    | 6:W:12:PHE:C      | 2.96                     | 0.43              |
| 2:2j:459:ASN:OD1  | 2:3j:523:PRO:HB3  | 2.18                     | 0.43              |
| 2:3j:43:LEU:HD12  | 2:3j:273:ASP:OD2  | 2.18                     | 0.43              |
| 2:1j:47:GLY:HA3   | 2:1j:65:PHE:CD1   | 2.54                     | 0.43              |
| 3:1G:184:LEU:N    | 3:1G:235:LEU:O    | 2.50                     | 0.43              |
| 3:1G:432:ASP:OD1  | 3:1G:433:GLY:N    | 2.51                     | 0.43              |
| 3:2G:517:ASN:O    | 3:2G:521:ARG:HG2  | 2.18                     | 0.43              |
| 2:1e:293:LEU:HD23 | 2:1e:293:LEU:HA   | 1.91                     | 0.43              |
| 3:1H:372:ASP:HB2  | 3:1H:374:THR:HG23 | 2.00                     | 0.43              |
| 3:1H:547:ALA:H    | 3:1H:645:VAL:HG12 | 1.83                     | 0.43              |
| 3:2H:533:LEU:HD21 | 3:2H:535:VAL:HG13 | 1.99                     | 0.43              |
| 6:S:35:MET:CE     | 6:S:87:ILE:HG12   | 2.48                     | 0.43              |
| 2:2f:64:ALA:CB    | 2:2f:93:ARG:HH22  | 2.31                     | 0.43              |
| 2:1f:453:TRP:O    | 2:1f:511:ARG:NH2  | 2.51                     | 0.43              |
| 6:T:73:GLN:HA     | 6:T:92:VAL:HG21   | 2.01                     | 0.43              |
| 4:O:238:VAL:HG23  | 4:O:238:VAL:O     | 2.17                     | 0.43              |
| 1:o:82:ILE:HD11   | 1:p:35:ILE:HD11   | 1.99                     | 0.43              |
| 2:1h:479:TRP:HB2  | 2:1h:484:LEU:HD12 | 2.01                     | 0.43              |
| 4:P:96:MET:HE2    | 4:P:96:MET:HB3    | 1.91                     | 0.43              |
| 3:2K:209:TRP:HB2  | 3:2K:214:TRP:CZ3  | 2.53                     | 0.43              |
| 6:V:64:VAL:HA     | 2:1i:522:LYS:NZ   | 2.33                     | 0.43              |
| 1:p:135:LEU:HA    | 1:p:135:LEU:HD23  | 1.80                     | 0.43              |
| 3:1L:174:GLY:CA   | 3:1L:251:ALA:HB1  | 2.48                     | 0.43              |
| 3:1L:175:LEU:HD21 | 3:1L:184:LEU:HD11 | 1.99                     | 0.43              |
| 3:1L:326:LEU:HD11 | 3:1L:362:ILE:HG21 | 2.00                     | 0.43              |
| 2:2j:275:MET:HE1  | 2:2j:311:PRO:O    | 2.18                     | 0.43              |
| 2:2j:425:LEU:HA   | 2:2j:425:LEU:HD23 | 1.85                     | 0.43              |
| 2:2j:444:GLU:HA   | 2:3j:530:ARG:HH12 | 1.83                     | 0.43              |
| 1:k:103:ASP:CG    | 1:k:104:TYR:N     | 2.76                     | 0.43              |
| 3:1G:408:VAL:C    | 3:1G:410:VAL:H    | 2.25                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1G:612:VAL:O    | 3:1G:613:LEU:HD23 | 2.19                     | 0.43              |
| 4:R:220:ASP:HB2   | 4:R:223:HIS:ND1   | 2.33                     | 0.43              |
| 7:c:114:TRP:HE3   | 7:d:32:THR:HG23   | 1.83                     | 0.43              |
| 2:2e:373:GLY:C    | 2:2e:375:HIS:N    | 2.70                     | 0.43              |
| 2:2e:423:ARG:NH1  | 2:2e:423:ARG:HB2  | 2.33                     | 0.43              |
| 2:2e:494:TYR:HD2  | 2:2e:516:ILE:HD11 | 1.82                     | 0.43              |
| 2:3e:93:ARG:NH1   | 2:3e:97:SER:OG    | 2.51                     | 0.43              |
| 1:l:106:ASP:C     | 1:l:107:ASN:HD22  | 2.21                     | 0.43              |
| 4:M:85:ASP:OD1    | 4:M:85:ASP:C      | 2.62                     | 0.43              |
| 3:2H:12:ARG:N     | 3:2H:12:ARG:HD2   | 2.32                     | 0.43              |
| 6:S:114:THR:CG2   | 6:S:116:ASN:HD22  | 2.30                     | 0.43              |
| 2:3f:475:LEU:HD23 | 2:3f:475:LEU:HA   | 1.77                     | 0.43              |
| 1:m:41:ARG:NE     | 1:m:52:ASN:HB3    | 2.34                     | 0.43              |
| 3:1l:245:ARG:NH2  | 3:1J:503:ARG:HG2  | 2.33                     | 0.43              |
| 3:1l:557:ALA:HA   | 3:1l:560:VAL:HB   | 1.99                     | 0.43              |
| 3:2l:41:VAL:HG13  | 3:2l:41:VAL:O     | 2.19                     | 0.43              |
| 3:2l:221:ARG:HG2  | 3:2l:234:VAL:HG22 | 2.00                     | 0.43              |
| 2:2g:254:ARG:HH22 | 2:3g:397:GLU:HB2  | 1.83                     | 0.43              |
| 2:3g:73:TYR:OH    | 2:3g:279:GLN:OE1  | 2.33                     | 0.43              |
| 2:1g:278:TYR:HE1  | 2:1g:285:LEU:HB2  | 1.83                     | 0.43              |
| 5:D:67:PHE:O      | 5:D:71:LEU:N      | 2.44                     | 0.43              |
| 7:f:32:THR:O      | 7:f:32:THR:OG1    | 2.36                     | 0.43              |
| 1:o:41:ARG:NE     | 1:o:52:ASN:OD1    | 2.51                     | 0.43              |
| 3:1K:616:ALA:HB2  | 3:1K:623:ARG:HD3  | 2.00                     | 0.43              |
| 6:V:87:ILE:HD12   | 6:V:88:GLU:N      | 2.34                     | 0.43              |
| 3:1L:181:ASP:OD1  | 3:1L:181:ASP:C    | 2.62                     | 0.43              |
| 3:1L:352:HIS:O    | 3:1L:353:ILE:HD13 | 2.18                     | 0.43              |
| 4:Q:15:ALA:HB2    | 4:Q:127:TRP:CG    | 2.53                     | 0.43              |
| 4:Q:79:THR:O      | 4:Q:79:THR:OG1    | 2.34                     | 0.43              |
| 3:2L:140:VAL:HG22 | 3:2L:141:SER:H    | 1.82                     | 0.43              |
| 3:2L:311:ARG:NH1  | 3:2L:311:ARG:HB2  | 2.33                     | 0.43              |
| 3:2L:347:HIS:N    | 3:2L:350:ASP:OD2  | 2.51                     | 0.43              |
| 5:F:174:HIS:HB3   | 5:F:175:MET:SD    | 2.58                     | 0.43              |
| 6:W:39:LEU:HD22   | 6:W:54:CYS:SG     | 2.59                     | 0.43              |
| 7:b:139:THR:HG21  | 2:1j:469:ARG:HG2  | 2.01                     | 0.43              |
| 2:3j:72:TYR:OH    | 2:3j:98:ALA:HA    | 2.18                     | 0.43              |
| 1:k:120:SER:HB2   | 1:l:35:ILE:HG23   | 2.00                     | 0.43              |
| 2:1j:317:ALA:O    | 2:1j:320:ILE:HG22 | 2.18                     | 0.43              |
| 3:1G:241:HIS:NE2  | 3:1G:252:GLY:HA2  | 2.33                     | 0.43              |
| 3:2G:226:GLY:HA2  | 3:2G:268:TYR:OH   | 2.18                     | 0.43              |
| 2:3e:45:PRO:HD2   | 2:3e:66:GLY:H     | 1.83                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3e:457:GLU:H    | 2:3e:458:PRO:HD2  | 1.82                     | 0.43              |
| 3:2H:43:LEU:O     | 3:2H:47:VAL:HG23  | 2.18                     | 0.43              |
| 6:S:96:THR:O      | 6:S:96:THR:OG1    | 2.35                     | 0.43              |
| 2:3f:374:VAL:HG13 | 2:3f:438:ARG:NH2  | 2.34                     | 0.43              |
| 4:N:214:GLU:OE1   | 4:N:214:GLU:HA    | 2.18                     | 0.43              |
| 1:n:64:GLY:HA2    | 1:n:141:ILE:O     | 2.18                     | 0.43              |
| 2:1g:338:TYR:CE2  | 2:1g:361:VAL:HG11 | 2.53                     | 0.43              |
| 6:U:37:LEU:O      | 6:U:41:THR:HG22   | 2.19                     | 0.43              |
| 6:U:59:LEU:HD21   | 6:U:71:ARG:HG2    | 2.00                     | 0.43              |
| 2:2h:43:LEU:HD22  | 2:2h:95:GLY:HA3   | 1.99                     | 0.43              |
| 3:2K:135:ARG:HB3  | 3:2K:149:THR:HG23 | 1.99                     | 0.43              |
| 3:2K:253:TRP:NE1  | 3:2K:255:ARG:HB2  | 2.32                     | 0.43              |
| 2:2i:80:GLY:HA3   | 2:2i:360:HIS:ND1  | 2.33                     | 0.43              |
| 2:3i:58:TRP:C     | 2:3i:60:GLN:H     | 2.26                     | 0.43              |
| 2:1i:462:ASN:HD22 | 1:k:45:ASN:HD22   | 1.65                     | 0.43              |
| 3:1L:294:VAL:O    | 3:1L:392:ARG:HA   | 2.19                     | 0.43              |
| 3:1L:572:LEU:HD11 | 3:1L:595:LEU:HD11 | 1.99                     | 0.43              |
| 4:Q:85:ASP:OD1    | 4:Q:85:ASP:C      | 2.61                     | 0.43              |
| 3:2L:32:THR:OG1   | 3:2L:33:ASP:N     | 2.51                     | 0.43              |
| 3:2L:170:CYS:HB3  | 3:2L:255:ARG:HG3  | 1.99                     | 0.43              |
| 3:2L:228:ASN:HB3  | 3:2L:229:ARG:NH1  | 2.33                     | 0.43              |
| 2:3j:457:GLU:H    | 2:3j:458:PRO:CD   | 2.31                     | 0.43              |
| 3:1G:129:VAL:HG13 | 3:1G:130:PRO:HD2  | 2.00                     | 0.43              |
| 3:1G:615:PRO:HG2  | 3:1G:624:GLY:HA3  | 2.00                     | 0.43              |
| 3:2G:126:LEU:HD12 | 3:2G:126:LEU:HA   | 1.85                     | 0.43              |
| 3:2G:369:ARG:HG3  | 5:A:57:TYR:OH     | 2.19                     | 0.43              |
| 3:2G:537:PRO:HA   | 3:2G:538:PRO:HD3  | 1.91                     | 0.43              |
| 2:3e:279:GLN:HE21 | 2:3e:313:PRO:HG3  | 1.84                     | 0.43              |
| 2:3e:398:GLN:HG3  | 2:3e:408:CYS:SG   | 2.58                     | 0.43              |
| 3:1H:178:ALA:HB1  | 3:1H:241:HIS:CE1  | 2.53                     | 0.43              |
| 1:m:5:LYS:N       | 1:m:6:PRO:HD3     | 2.33                     | 0.43              |
| 2:1f:320:ILE:HG12 | 2:1f:339:TYR:CD1  | 2.53                     | 0.43              |
| 2:1f:393:ILE:HG23 | 2:1f:410:ARG:HG2  | 2.01                     | 0.43              |
| 3:1l:203:PRO:HG2  | 3:1l:267:PHE:HD2  | 1.83                     | 0.43              |
| 4:N:96:MET:HE2    | 4:N:96:MET:HB3    | 1.96                     | 0.43              |
| 5:C:138:PHE:HD1   | 5:C:138:PHE:O     | 2.02                     | 0.43              |
| 2:1g:480:ARG:HD3  | 2:1g:480:ARG:HA   | 1.74                     | 0.43              |
| 2:2h:457:GLU:OE2  | 2:2h:463:LEU:CB   | 2.66                     | 0.43              |
| 2:2h:522:LYS:C    | 2:2h:522:LYS:HD3  | 2.43                     | 0.43              |
| 2:1h:275:MET:HE2  | 2:1h:292:GLN:HE22 | 1.83                     | 0.43              |
| 3:1K:136:LEU:HD21 | 3:1K:277:ALA:HB2  | 2.00                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1K:181:ASP:C    | 3:1K:181:ASP:OD1  | 2.62                     | 0.43              |
| 3:2K:32:THR:OG1   | 3:2K:33:ASP:N     | 2.47                     | 0.43              |
| 3:2K:505:ARG:HB2  | 3:2K:508:GLN:HG3  | 2.01                     | 0.43              |
| 7:a:70:THR:OG1    | 7:a:129:GLU:OE1   | 2.36                     | 0.43              |
| 2:2i:513:VAL:HG12 | 2:3i:528:ILE:HG12 | 2.00                     | 0.43              |
| 2:2i:522:LYS:HE2  | 2:2i:522:LYS:HA   | 2.00                     | 0.43              |
| 2:3i:301:LEU:HD12 | 2:3i:301:LEU:HA   | 1.80                     | 0.43              |
| 2:1i:472:SER:HG   | 2:1i:493:TYR:HE2  | 1.63                     | 0.43              |
| 4:Q:195:LEU:HD23  | 4:Q:195:LEU:HA    | 1.78                     | 0.43              |
| 2:2j:522:LYS:HE3  | 2:2j:522:LYS:HB3  | 1.71                     | 0.43              |
| 2:3j:90:TYR:HB2   | 2:3j:266:ILE:HD11 | 2.01                     | 0.43              |
| 7:c:58:SER:OG     | 7:c:59:ASN:N      | 2.51                     | 0.43              |
| 2:2e:512:VAL:HG12 | 2:3e:527:VAL:HB   | 2.00                     | 0.43              |
| 2:1e:333:LYS:HB2  | 2:1e:333:LYS:HE3  | 1.80                     | 0.43              |
| 3:1H:432:ASP:OD1  | 3:1H:433:GLY:N    | 2.51                     | 0.43              |
| 3:1H:643:HIS:C    | 3:1H:644:ARG:HD3  | 2.44                     | 0.43              |
| 3:2H:204:LEU:H    | 3:2H:204:LEU:HD12 | 1.83                     | 0.43              |
| 6:S:55:ALA:HB3    | 6:S:75:GLU:OE2    | 2.19                     | 0.43              |
| 2:1f:46:THR:OG1   | 2:1f:47:GLY:N     | 2.51                     | 0.43              |
| 3:1l:346:SER:OG   | 3:1l:379:GLY:N    | 2.52                     | 0.43              |
| 3:2l:467:ALA:HA   | 3:2l:518:ARG:NH2  | 2.33                     | 0.43              |
| 5:C:131:ASN:ND2   | 5:C:136:GLY:HA3   | 2.33                     | 0.43              |
| 2:1g:241:HIS:HB2  | 2:1g:247:TYR:HD2  | 1.84                     | 0.43              |
| 3:1J:145:VAL:HG23 | 3:1J:146:SER:N    | 2.33                     | 0.43              |
| 3:2J:187:GLU:HB3  | 3:2J:278:GLU:H    | 1.83                     | 0.43              |
| 5:D:168:ALA:HA    | 5:D:171:ARG:NH1   | 2.34                     | 0.43              |
| 2:2h:409:ILE:HG12 | 2:2h:419:VAL:HG22 | 2.00                     | 0.43              |
| 2:1h:475:LEU:HD23 | 2:1h:475:LEU:HA   | 1.83                     | 0.43              |
| 3:1K:613:LEU:HB2  | 3:1K:627:THR:O    | 2.19                     | 0.43              |
| 4:P:202:GLU:HG3   | 4:P:232:LEU:HD22  | 2.00                     | 0.43              |
| 2:2i:64:ALA:HB3   | 2:2i:93:ARG:HH22  | 1.83                     | 0.43              |
| 2:3i:458:PRO:C    | 2:3i:460:ASP:N    | 2.77                     | 0.43              |
| 3:1L:432:ASP:OD1  | 3:1L:433:GLY:N    | 2.51                     | 0.43              |
| 3:1L:504:LEU:HD12 | 3:1L:508:GLN:NE2  | 2.33                     | 0.43              |
| 3:2L:207:GLU:HG3  | 3:2L:257:ARG:HH21 | 1.82                     | 0.43              |
| 3:2L:293:THR:HG22 | 3:2L:394:ARG:HG2  | 2.00                     | 0.43              |
| 6:W:29:GLN:HE22   | 6:W:33:GLU:CD     | 2.27                     | 0.43              |
| 3:1G:39:PRO:CG    | 3:1G:42:THR:HB    | 2.49                     | 0.43              |
| 3:1G:224:THR:OG1  | 3:1G:225:GLY:N    | 2.52                     | 0.43              |
| 3:2G:41:VAL:HG23  | 5:A:27:PHE:CZ     | 2.53                     | 0.43              |
| 3:2G:41:VAL:O     | 3:2G:41:VAL:HG22  | 2.19                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2G:129:VAL:O    | 3:2G:281:THR:OG1  | 2.28                     | 0.43              |
| 2:2e:457:GLU:O    | 2:3e:522:LYS:HA   | 2.18                     | 0.43              |
| 4:M:187:HIS:ND1   | 4:M:188:ARG:N     | 2.66                     | 0.43              |
| 3:2H:189:ASP:HB3  | 3:2H:276:SER:H    | 1.84                     | 0.43              |
| 2:2f:376:LYS:HZ2  | 2:2f:376:LYS:HA   | 1.83                     | 0.43              |
| 2:3f:51:GLU:HG3   | 2:3f:254:ARG:HG2  | 2.01                     | 0.43              |
| 2:3f:249:GLY:CA   | 2:3f:255:THR:HB   | 2.49                     | 0.43              |
| 1:m:15:PHE:CD2    | 1:m:25:GLU:HG3    | 2.53                     | 0.43              |
| 1:m:96:ASN:C      | 1:m:96:ASN:OD1    | 2.62                     | 0.43              |
| 3:1l:172:LEU:HD21 | 3:1l:246:ASN:ND2  | 2.33                     | 0.43              |
| 7:e:27:CYS:O      | 7:e:28:GLU:HG2    | 2.19                     | 0.43              |
| 2:3g:398:GLN:HG3  | 2:3g:408:CYS:SG   | 2.59                     | 0.43              |
| 2:1g:94:VAL:O     | 2:1g:94:VAL:HG13  | 2.19                     | 0.43              |
| 3:1J:99:ILE:HG23  | 3:1J:127:ARG:HG3  | 2.01                     | 0.43              |
| 3:2J:100:LEU:HD21 | 3:2J:417:TYR:OH   | 2.18                     | 0.43              |
| 7:f:17:ASP:HB2    | 7:f:88:THR:O      | 2.18                     | 0.43              |
| 2:2h:39:ALA:HB2   | 2:2h:266:ILE:HD12 | 2.01                     | 0.43              |
| 2:2h:512:VAL:HG13 | 2:3h:527:VAL:HG23 | 2.00                     | 0.43              |
| 1:o:45:ASN:OD1    | 1:o:46:GLN:NE2    | 2.51                     | 0.43              |
| 2:1h:83:ASN:OD1   | 6:V:116:ASN:HB3   | 2.18                     | 0.43              |
| 2:1h:522:LYS:HZ1  | 6:U:103:LEU:HG    | 1.84                     | 0.43              |
| 2:2i:508:ASP:OD1  | 2:2i:508:ASP:N    | 2.49                     | 0.43              |
| 2:3i:311:PRO:HG3  | 2:3i:339:TYR:HA   | 2.01                     | 0.43              |
| 2:3i:467:ILE:O    | 2:3i:471:VAL:HG12 | 2.19                     | 0.43              |
| 2:1i:461:HIS:HA   | 2:1i:464:TRP:CE3  | 2.54                     | 0.43              |
| 3:1L:262:LEU:HD23 | 3:1L:262:LEU:HA   | 1.92                     | 0.43              |
| 3:1L:346:SER:OG   | 3:1L:379:GLY:N    | 2.52                     | 0.43              |
| 3:1L:434:GLU:HB2  | 3:1L:438:GLU:HG2  | 2.01                     | 0.43              |
| 4:Q:96:MET:HE2    | 4:Q:96:MET:HB3    | 1.95                     | 0.43              |
| 3:2L:108:ALA:C    | 3:2L:408:VAL:HG23 | 2.44                     | 0.43              |
| 3:2L:456:LEU:HD23 | 3:2L:456:LEU:HA   | 1.85                     | 0.43              |
| 7:b:27:CYS:O      | 7:b:28:GLU:HG2    | 2.19                     | 0.43              |
| 2:3j:424:THR:HG23 | 2:3j:426:SER:H    | 1.82                     | 0.43              |
| 1:k:56:LEU:C      | 1:k:57:MET:SD     | 3.02                     | 0.43              |
| 2:1j:61:TYR:CE1   | 2:1j:65:PHE:HD2   | 2.37                     | 0.43              |
| 2:1j:418:ARG:HB2  | 2:1j:420:TRP:HZ3  | 1.83                     | 0.43              |
| 3:1G:506:PHE:C    | 3:1G:508:GLN:H    | 2.27                     | 0.43              |
| 2:3e:407:ASN:HD21 | 2:3e:422:ALA:HA   | 1.84                     | 0.43              |
| 2:1e:456:PHE:CD2  | 2:1e:457:GLU:HG3  | 2.54                     | 0.43              |
| 3:2H:135:ARG:HD3  | 3:2H:249:HIS:HB2  | 2.00                     | 0.43              |
| 7:d:93:ALA:O      | 7:d:101:VAL:HG12  | 2.18                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:511:ARG:NH1  | 2:3f:526:PHE:HA   | 2.33                     | 0.43              |
| 3:1l:136:LEU:HD13 | 3:1l:153:ALA:HA   | 2.01                     | 0.43              |
| 3:1l:434:GLU:HB2  | 3:1l:438:GLU:HG2  | 2.01                     | 0.43              |
| 2:3g:275:MET:HB3  | 2:3g:275:MET:HE2  | 1.71                     | 0.43              |
| 3:2J:516:LEU:O    | 3:2J:520:THR:OG1  | 2.31                     | 0.43              |
| 2:3h:388:ASP:OD1  | 2:3h:389:LEU:N    | 2.52                     | 0.43              |
| 1:o:131:ASP:HB3   | 1:p:10:LEU:HD11   | 2.01                     | 0.43              |
| 3:1K:108:ALA:O    | 3:1K:408:VAL:HG12 | 2.19                     | 0.43              |
| 3:1K:294:VAL:HG21 | 3:1K:314:HIS:CD2  | 2.54                     | 0.43              |
| 3:1K:311:ARG:HD2  | 3:1K:361:GLU:HG2  | 2.01                     | 0.43              |
| 3:1K:542:GLY:O    | 3:1K:616:ALA:N    | 2.50                     | 0.43              |
| 6:V:87:ILE:HD11   | 6:V:109:TYR:HB2   | 2.00                     | 0.43              |
| 2:2i:390:GLU:HG3  | 2:2i:391:LEU:HG   | 2.01                     | 0.43              |
| 2:2i:431:TRP:CD1  | 2:2i:437:ARG:HB2  | 2.54                     | 0.43              |
| 2:1i:315:GLN:O    | 2:1i:316:ASN:HB3  | 2.19                     | 0.43              |
| 3:2L:309:ARG:HD2  | 3:2L:363:ALA:HA   | 1.99                     | 0.43              |
| 5:F:30:ASP:HB2    | 5:F:33:ALA:HB3    | 2.00                     | 0.43              |
| 2:2j:299:CYS:SG   | 2:2j:305:ARG:HG3  | 2.59                     | 0.43              |
| 2:2j:513:VAL:HG12 | 2:3j:528:ILE:HG12 | 2.01                     | 0.43              |
| 2:3j:242:PRO:HA   | 2:3j:246:GLN:HG3  | 1.99                     | 0.43              |
| 1:k:115:ARG:NH2   | 1:k:148:VAL:HG21  | 2.34                     | 0.43              |
| 2:1j:377:ALA:HB2  | 2:1j:521:VAL:HG11 | 2.01                     | 0.43              |
| 3:2G:261:PRO:HB3  | 3:2G:267:PHE:CD1  | 2.54                     | 0.43              |
| 3:2G:368:VAL:HG11 | 5:A:64:PRO:HD3    | 2.01                     | 0.43              |
| 3:2G:516:LEU:HD12 | 5:A:130:TRP:CZ3   | 2.53                     | 0.43              |
| 5:A:71:LEU:HD12   | 5:A:71:LEU:HA     | 1.83                     | 0.43              |
| 2:3e:369:ASP:CG   | 2:3e:438:ARG:HH12 | 2.27                     | 0.43              |
| 1:l:105:GLU:OE1   | 1:l:106:ASP:N     | 2.52                     | 0.43              |
| 2:1e:54:LEU:HB2   | 2:1e:90:TYR:CE1   | 2.54                     | 0.43              |
| 3:1H:513:ASP:O    | 3:1H:517:ASN:ND2  | 2.52                     | 0.43              |
| 3:2H:112:THR:OG1  | 3:2H:113:GLU:N    | 2.50                     | 0.43              |
| 3:2H:221:ARG:HG3  | 3:2H:234:VAL:HG13 | 2.01                     | 0.43              |
| 6:S:12:PHE:C      | 6:S:12:PHE:CD1    | 2.94                     | 0.43              |
| 2:3f:67:ASP:OD1   | 2:3f:67:ASP:N     | 2.50                     | 0.43              |
| 3:1l:506:PHE:C    | 3:1l:508:GLN:H    | 2.27                     | 0.43              |
| 3:1l:623:ARG:HH22 | 3:1l:641:TYR:HE2  | 1.67                     | 0.43              |
| 3:2l:137:VAL:HG21 | 3:2l:148:ARG:O    | 2.18                     | 0.43              |
| 2:3g:369:ASP:HA   | 2:3g:373:GLY:C    | 2.44                     | 0.43              |
| 2:3g:494:TYR:CD2  | 2:3g:516:ILE:HD12 | 2.53                     | 0.43              |
| 3:1J:138:THR:HG21 | 3:1J:158:VAL:HG11 | 2.01                     | 0.43              |
| 3:1J:203:PRO:HG2  | 3:1J:267:PHE:CD2  | 2.53                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1J:218:GLU:O    | 3:1J:236:HIS:N    | 2.50                     | 0.43              |
| 3:2J:19:ASP:HB2   | 3:2J:22:ARG:HH21  | 1.82                     | 0.43              |
| 2:2h:67:ASP:OD1   | 2:2h:67:ASP:N     | 2.51                     | 0.43              |
| 2:2h:429:PRO:HA   | 2:2h:432:ARG:HD3  | 2.01                     | 0.43              |
| 2:3h:461:HIS:NE2  | 2:3h:462:ASN:OD1  | 2.52                     | 0.43              |
| 2:3h:475:LEU:HD23 | 2:3h:475:LEU:HA   | 1.69                     | 0.43              |
| 1:o:56:LEU:HD21   | 1:n:90:MET:CE     | 2.48                     | 0.43              |
| 2:1h:461:HIS:HA   | 2:1h:464:TRP:CE3  | 2.53                     | 0.43              |
| 3:1K:148:ARG:C    | 3:1K:150:THR:H    | 2.26                     | 0.43              |
| 3:1K:545:VAL:O    | 3:1K:643:HIS:HB2  | 2.19                     | 0.43              |
| 3:2K:197:VAL:HG11 | 3:2K:268:TYR:CE1  | 2.54                     | 0.43              |
| 2:3i:343:LYS:HB3  | 2:3i:388:ASP:HB3  | 2.01                     | 0.43              |
| 2:3i:388:ASP:OD1  | 2:3i:389:LEU:N    | 2.52                     | 0.43              |
| 3:1L:134:GLY:H    | 3:1L:174:GLY:C    | 2.25                     | 0.43              |
| 3:1L:490:VAL:HB   | 3:1L:535:VAL:HG23 | 2.01                     | 0.43              |
| 4:Q:232:LEU:H     | 4:Q:232:LEU:HD12  | 1.83                     | 0.43              |
| 3:2L:202:PRO:HG2  | 3:2L:204:LEU:HD11 | 2.01                     | 0.43              |
| 3:1G:24:ILE:HG22  | 3:1G:26:GLN:HG3   | 2.00                     | 0.43              |
| 3:1G:25:GLN:HG2   | 3:1G:27:ARG:HG2   | 2.01                     | 0.43              |
| 6:X:99:GLU:HB2    | 6:X:101:ASN:HD22  | 1.84                     | 0.43              |
| 7:c:135:HIS:HE2   | 7:c:138:PHE:HE1   | 1.67                     | 0.43              |
| 2:2e:365:TRP:CZ2  | 2:2e:434:LEU:HD21 | 2.53                     | 0.43              |
| 2:3e:257:PHE:CE2  | 2:3e:295:LEU:HB2  | 2.54                     | 0.43              |
| 1:l:123:VAL:HG13  | 1:l:138:THR:HB    | 2.01                     | 0.43              |
| 3:1H:190:SER:O    | 3:1H:230:PRO:HG3  | 2.19                     | 0.43              |
| 3:2H:78:PHE:N     | 3:2H:434:GLU:OE1  | 2.40                     | 0.43              |
| 5:B:30:ASP:HB2    | 5:B:33:ALA:HB3    | 2.00                     | 0.43              |
| 2:2f:264:ASP:OD1  | 2:2f:264:ASP:O    | 2.36                     | 0.43              |
| 2:2f:457:GLU:O    | 2:3f:523:PRO:CD   | 2.67                     | 0.43              |
| 2:2f:515:GLU:N    | 2:2f:515:GLU:OE2  | 2.52                     | 0.43              |
| 2:3f:467:ILE:O    | 2:3f:471:VAL:HG12 | 2.19                     | 0.43              |
| 4:N:232:LEU:HD12  | 4:N:232:LEU:H     | 1.84                     | 0.43              |
| 2:3g:457:GLU:N    | 2:3g:458:PRO:HD2  | 2.34                     | 0.43              |
| 2:1g:320:ILE:HG12 | 2:1g:339:TYR:CD1  | 2.54                     | 0.43              |
| 2:1g:479:TRP:HB2  | 2:1g:484:LEU:HD12 | 2.00                     | 0.43              |
| 4:O:187:HIS:ND1   | 4:O:198:LEU:HD11  | 2.34                     | 0.43              |
| 4:O:232:LEU:H     | 4:O:232:LEU:HD12  | 1.83                     | 0.43              |
| 3:2J:43:LEU:HD23  | 3:2J:43:LEU:HA    | 1.74                     | 0.43              |
| 3:2J:315:ALA:HB3  | 3:2J:395:THR:OG1  | 2.19                     | 0.43              |
| 5:D:147:HIS:ND1   | 5:D:178:THR:HG23  | 2.34                     | 0.43              |
| 2:2h:376:LYS:HD3  | 2:2h:377:ALA:N    | 2.34                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1K:94:PRO:HB3   | 3:1K:280:TYR:HA   | 2.01                     | 0.42              |
| 3:2K:145:VAL:O    | 3:2K:148:ARG:NE   | 2.51                     | 0.42              |
| 1:p:6:PRO:C       | 1:p:7:GLU:HG3     | 2.44                     | 0.42              |
| 3:1L:182:CYS:HA   | 3:1L:284:GLY:HA2  | 2.01                     | 0.42              |
| 4:Q:36:ARG:NH2    | 6:X:71:ARG:HH12   | 2.17                     | 0.42              |
| 3:2L:11:ARG:HB2   | 3:2L:12:ARG:H     | 1.57                     | 0.42              |
| 5:F:88:LEU:HD23   | 5:F:88:LEU:HA     | 1.80                     | 0.42              |
| 2:1j:84:ASN:OD1   | 2:1j:384:ARG:HG2  | 2.19                     | 0.42              |
| 3:2G:354:THR:HB   | 3:2G:363:ALA:HB3  | 2.01                     | 0.42              |
| 2:2e:469:ARG:HH21 | 1:l:18:GLN:HE22   | 1.66                     | 0.42              |
| 2:3e:67:ASP:OD1   | 2:3e:67:ASP:N     | 2.52                     | 0.42              |
| 2:3e:325:GLN:HB3  | 2:3e:326:GLU:OE2  | 2.19                     | 0.42              |
| 4:M:138:TYR:CE2   | 4:N:54:TRP:CG     | 3.07                     | 0.42              |
| 3:2H:243:LEU:HB2  | 3:2H:253:TRP:HE3  | 1.84                     | 0.42              |
| 2:2f:365:TRP:CZ3  | 2:2f:438:ARG:HD2  | 2.54                     | 0.42              |
| 1:m:12:ALA:N      | 1:m:13:PRO:HD3    | 2.34                     | 0.42              |
| 3:1l:516:LEU:HD23 | 3:1l:535:VAL:HG13 | 2.01                     | 0.42              |
| 2:2g:469:ARG:HD2  | 1:n:96:ASN:OD1    | 2.19                     | 0.42              |
| 3:1J:19:ASP:OD1   | 3:1J:19:ASP:N     | 2.52                     | 0.42              |
| 3:1J:39:PRO:CG    | 3:1J:42:THR:HB    | 2.48                     | 0.42              |
| 3:1J:157:ASP:HB3  | 3:1J:273:THR:OG1  | 2.18                     | 0.42              |
| 3:2J:12:ARG:HD2   | 3:2J:12:ARG:N     | 2.34                     | 0.42              |
| 3:2J:167:PRO:HG3  | 3:2J:260:GLU:HA   | 2.01                     | 0.42              |
| 3:2J:172:LEU:HB3  | 3:2J:253:TRP:CH2  | 2.54                     | 0.42              |
| 3:2J:537:PRO:HA   | 3:2J:538:PRO:HD3  | 1.90                     | 0.42              |
| 6:U:45:GLU:N      | 6:U:45:GLU:OE2    | 2.52                     | 0.42              |
| 7:f:76:TRP:CZ2    | 7:f:111:PRO:HD3   | 2.54                     | 0.42              |
| 2:2h:301:LEU:HD12 | 2:2h:301:LEU:HA   | 1.85                     | 0.42              |
| 3:2K:460:GLU:H    | 3:2K:460:GLU:HG2  | 1.62                     | 0.42              |
| 6:V:28:GLU:HG3    | 6:V:118:ARG:NH1   | 2.34                     | 0.42              |
| 7:a:51:LEU:HD22   | 4:N:85:ASP:OD2    | 2.19                     | 0.42              |
| 2:2i:511:ARG:NH2  | 2:3i:526:PHE:HB2  | 2.34                     | 0.42              |
| 2:2j:372:ARG:HA   | 2:2j:372:ARG:NH1  | 2.16                     | 0.42              |
| 2:3j:389:LEU:HD23 | 2:3j:389:LEU:HA   | 1.83                     | 0.42              |
| 2:3e:39:ALA:HB3   | 2:3e:269:VAL:HG23 | 2.01                     | 0.42              |
| 2:3e:522:LYS:HB2  | 2:3e:522:LYS:HE3  | 1.78                     | 0.42              |
| 2:1e:453:TRP:CD1  | 2:1e:466:ARG:HH21 | 2.37                     | 0.42              |
| 3:1H:71:ASP:OD1   | 3:1H:72:LEU:N     | 2.52                     | 0.42              |
| 3:1H:575:LEU:HD23 | 3:1H:575:LEU:HA   | 1.86                     | 0.42              |
| 4:M:62:VAL:HG23   | 4:M:64:LYS:H      | 1.84                     | 0.42              |
| 2:2f:80:GLY:HA3   | 2:2f:360:HIS:ND1  | 2.34                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:311:PRO:HG3  | 2:2f:339:TYR:HA   | 2.01                     | 0.42              |
| 3:1l:145:VAL:HG23 | 3:1l:146:SER:N    | 2.34                     | 0.42              |
| 4:N:85:ASP:OD1    | 4:N:85:ASP:C      | 2.62                     | 0.42              |
| 3:2l:221:ARG:HA   | 3:2l:221:ARG:HD3  | 1.72                     | 0.42              |
| 3:2l:467:ALA:HA   | 3:2l:518:ARG:HH21 | 1.83                     | 0.42              |
| 1:n:24:VAL:HG23   | 1:n:26:TYR:CZ     | 2.54                     | 0.42              |
| 3:2J:200:ARG:C    | 3:2J:202:PRO:HD2  | 2.45                     | 0.42              |
| 2:3h:50:ASN:ND2   | 2:3h:94:VAL:HA    | 2.34                     | 0.42              |
| 2:3h:343:LYS:HE3  | 2:3h:354:LEU:HD21 | 1.99                     | 0.42              |
| 3:1K:197:VAL:HG23 | 3:1K:266:PRO:HB2  | 2.02                     | 0.42              |
| 4:P:14:ARG:HA     | 4:P:42:ASN:HD21   | 1.84                     | 0.42              |
| 3:2K:537:PRO:HA   | 3:2K:538:PRO:HD3  | 1.89                     | 0.42              |
| 2:2i:517:GLY:C    | 2:2i:518:ILE:HD13 | 2.45                     | 0.42              |
| 2:3i:55:VAL:HG22  | 2:3i:90:TYR:CE1   | 2.55                     | 0.42              |
| 1:p:33:LEU:CD2    | 1:p:147:VAL:HG22  | 2.48                     | 0.42              |
| 3:1L:99:ILE:HG12  | 3:1L:125:ASP:CG   | 2.44                     | 0.42              |
| 3:1L:261:PRO:O    | 3:1L:265:GLN:N    | 2.50                     | 0.42              |
| 1:k:22:VAL:HG12   | 1:k:24:VAL:H      | 1.84                     | 0.42              |
| 6:X:37:LEU:O      | 6:X:41:THR:HG23   | 2.20                     | 0.42              |
| 2:3e:240:ALA:O    | 2:3e:241:HIS:ND1  | 2.52                     | 0.42              |
| 1:l:22:VAL:HB     | 1:l:25:GLU:OE1    | 2.19                     | 0.42              |
| 1:l:105:GLU:OE1   | 1:l:105:GLU:C     | 2.62                     | 0.42              |
| 4:M:208:ALA:O     | 4:M:211:VAL:HG12  | 2.19                     | 0.42              |
| 7:d:11:TRP:CE2    | 7:d:96:ALA:HB2    | 2.54                     | 0.42              |
| 2:3f:302:MET:HE2  | 2:3f:305:ARG:CZ   | 2.48                     | 0.42              |
| 1:m:120:SER:HB2   | 1:n:35:ILE:HG22   | 2.00                     | 0.42              |
| 2:1f:437:ARG:O    | 2:1f:441:ASN:ND2  | 2.51                     | 0.42              |
| 3:1l:133:MET:HE2  | 3:1l:133:MET:HB3  | 1.86                     | 0.42              |
| 4:N:138:TYR:CE2   | 4:O:54:TRP:CG     | 3.06                     | 0.42              |
| 3:2l:96:GLU:C     | 3:2l:130:PRO:HD3  | 2.44                     | 0.42              |
| 5:C:152:LEU:HD23  | 5:C:155:PRO:HA    | 2.01                     | 0.42              |
| 6:T:88:GLU:HB2    | 6:T:112:ARG:HG2   | 2.00                     | 0.42              |
| 2:3g:73:TYR:CD2   | 2:3g:276:ALA:HB2  | 2.54                     | 0.42              |
| 2:3g:435:ASN:CG   | 2:3g:522:LYS:HE2  | 2.45                     | 0.42              |
| 2:1g:365:TRP:HH2  | 2:1g:434:LEU:HD11 | 1.84                     | 0.42              |
| 3:2J:11:ARG:HB2   | 3:2J:12:ARG:H     | 1.73                     | 0.42              |
| 3:2J:183:ALA:O    | 3:2J:281:THR:HA   | 2.19                     | 0.42              |
| 6:U:14:LEU:H      | 6:U:14:LEU:CD2    | 2.27                     | 0.42              |
| 6:U:38:ILE:HG22   | 6:U:39:LEU:HD12   | 2.01                     | 0.42              |
| 2:2h:249:GLY:HA2  | 2:2h:255:THR:OG1  | 2.19                     | 0.42              |
| 3:1K:91:LEU:HB3   | 3:1K:282:ILE:O    | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1K:192:VAL:HB   | 3:1K:272:PRO:HG3  | 2.01                     | 0.42              |
| 5:E:154:GLU:O     | 5:E:154:GLU:HG2   | 2.18                     | 0.42              |
| 6:V:91:ASP:C      | 6:V:91:ASP:OD1    | 2.62                     | 0.42              |
| 7:a:46:GLY:HA3    | 7:e:81:GLN:NE2    | 2.34                     | 0.42              |
| 2:2i:462:ASN:N    | 2:2i:462:ASN:ND2  | 2.67                     | 0.42              |
| 2:3i:51:GLU:HG3   | 2:3i:54:LEU:HD11  | 2.02                     | 0.42              |
| 2:3i:252:SER:O    | 2:3i:254:ARG:HG2  | 2.19                     | 0.42              |
| 2:3i:343:LYS:HE3  | 2:3i:354:LEU:HD21 | 2.02                     | 0.42              |
| 2:3i:490:ASP:OD1  | 2:3i:490:ASP:C    | 2.63                     | 0.42              |
| 2:1i:368:ASN:HD22 | 2:1i:378:PRO:HB3  | 1.79                     | 0.42              |
| 3:1L:592:THR:O    | 3:1L:596:PHE:N    | 2.52                     | 0.42              |
| 3:2L:527:ARG:NH2  | 5:F:127:GLY:H     | 2.18                     | 0.42              |
| 5:F:156:ARG:HH21  | 5:F:158:VAL:HG11  | 1.84                     | 0.42              |
| 2:3j:301:LEU:HD12 | 2:3j:301:LEU:HA   | 1.80                     | 0.42              |
| 3:1G:448:ARG:NH2  | 3:1G:457:ARG:HH21 | 2.17                     | 0.42              |
| 3:2G:136:LEU:HA   | 3:2G:172:LEU:O    | 2.20                     | 0.42              |
| 2:3e:475:LEU:HD23 | 2:3e:475:LEU:HA   | 1.71                     | 0.42              |
| 1:l:22:VAL:HG12   | 1:l:23:MET:N      | 2.34                     | 0.42              |
| 2:1e:423:ARG:HH21 | 2:1e:432:ARG:HH11 | 1.67                     | 0.42              |
| 3:1H:245:ARG:HH21 | 3:1l:503:ARG:CG   | 2.31                     | 0.42              |
| 3:1H:455:THR:OG1  | 5:B:169:ALA:O     | 2.33                     | 0.42              |
| 3:2H:532:ARG:HD3  | 5:B:139:PRO:HG2   | 2.02                     | 0.42              |
| 3:1l:545:VAL:O    | 3:1l:643:HIS:HB2  | 2.19                     | 0.42              |
| 3:2l:82:ALA:HB3   | 3:2l:289:ILE:HD11 | 2.01                     | 0.42              |
| 3:2l:529:ILE:HG12 | 5:C:103:GLY:O     | 2.19                     | 0.42              |
| 2:2g:55:VAL:HG11  | 2:2g:61:TYR:HB2   | 2.01                     | 0.42              |
| 2:3g:49:LEU:HA    | 2:3g:93:ARG:HD2   | 2.01                     | 0.42              |
| 2:3g:457:GLU:H    | 2:3g:458:PRO:HD2  | 1.83                     | 0.42              |
| 1:n:105:GLU:OE1   | 1:n:106:ASP:N     | 2.51                     | 0.42              |
| 2:1g:315:GLN:O    | 2:1g:316:ASN:HB3  | 2.19                     | 0.42              |
| 3:2J:60:ARG:HD2   | 3:2J:60:ARG:HA    | 1.84                     | 0.42              |
| 3:1K:452:ARG:HA   | 3:1K:526:ARG:HB3  | 2.02                     | 0.42              |
| 3:1K:523:LEU:O    | 3:1K:527:ARG:HB2  | 2.19                     | 0.42              |
| 3:1L:25:GLN:HB2   | 5:F:43:VAL:HG12   | 2.02                     | 0.42              |
| 3:2L:378:TYR:CG   | 5:F:62:LEU:HD11   | 2.54                     | 0.42              |
| 2:3j:61:TYR:O     | 2:3j:65:PHE:N     | 2.42                     | 0.42              |
| 2:3j:457:GLU:H    | 2:3j:458:PRO:HD2  | 1.83                     | 0.42              |
| 2:1j:393:ILE:HD11 | 2:1j:398:GLN:HA   | 2.01                     | 0.42              |
| 3:2G:337:TRP:CE3  | 3:2G:351:HIS:HB3  | 2.54                     | 0.42              |
| 2:3e:241:HIS:H    | 2:3e:280:ARG:NH2  | 2.18                     | 0.42              |
| 2:3e:341:TRP:CZ2  | 2:3e:356:PRO:HG3  | 2.54                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:3e:459:ASN:HA   | 2:3e:511:ARG:HH22 | 1.85                     | 0.42              |
| 3:1H:36:VAL:HB    | 3:1H:39:PRO:HB3   | 2.00                     | 0.42              |
| 1:m:33:LEU:CD1    | 1:m:147:VAL:CG2   | 2.98                     | 0.42              |
| 2:1f:278:TYR:HE1  | 2:1f:285:LEU:HB2  | 1.84                     | 0.42              |
| 3:1l:432:ASP:OD1  | 3:1l:433:GLY:N    | 2.52                     | 0.42              |
| 1:n:12:ALA:N      | 1:n:13:PRO:HD3    | 2.34                     | 0.42              |
| 1:n:19:ILE:HD13   | 1:n:19:ILE:HA     | 1.80                     | 0.42              |
| 3:2J:115:ASP:OD1  | 3:2J:116:GLU:N    | 2.53                     | 0.42              |
| 3:2J:187:GLU:HB3  | 3:2J:278:GLU:N    | 2.33                     | 0.42              |
| 5:D:24:PRO:HG3    | 6:U:46:ARG:HG3    | 2.01                     | 0.42              |
| 6:U:74:HIS:O      | 6:U:78:VAL:HG12   | 2.18                     | 0.42              |
| 1:o:122:VAL:HA    | 1:o:138:THR:O     | 2.19                     | 0.42              |
| 1:o:122:VAL:CG1   | 1:p:33:LEU:HB2    | 2.49                     | 0.42              |
| 2:1h:296:ILE:HD13 | 2:1h:296:ILE:HA   | 1.86                     | 0.42              |
| 2:1h:333:LYS:HB2  | 2:1h:333:LYS:HE3  | 1.82                     | 0.42              |
| 3:1K:211:GLU:O    | 3:1L:559:ARG:NH2  | 2.53                     | 0.42              |
| 3:2K:51:ALA:HA    | 3:2K:54:ILE:HD12  | 2.02                     | 0.42              |
| 7:a:53:THR:CB     | 4:N:148:LEU:HD22  | 2.49                     | 0.42              |
| 1:p:6:PRO:O       | 1:p:7:GLU:HG3     | 2.19                     | 0.42              |
| 2:1i:425:LEU:HD12 | 2:1i:425:LEU:HA   | 1.89                     | 0.42              |
| 3:1L:525:GLU:OE1  | 3:1L:526:ARG:NE   | 2.47                     | 0.42              |
| 4:Q:208:ALA:O     | 4:Q:211:VAL:HG12  | 2.19                     | 0.42              |
| 7:b:81:GLN:NE2    | 7:d:45:ASN:O      | 2.46                     | 0.42              |
| 2:2j:260:LEU:HD23 | 2:2j:260:LEU:HA   | 1.86                     | 0.42              |
| 2:2j:295:LEU:HD21 | 2:2j:307:ALA:HB1  | 2.02                     | 0.42              |
| 2:2j:343:LYS:HB2  | 2:2j:343:LYS:HE2  | 1.85                     | 0.42              |
| 1:k:26:TYR:N      | 1:k:68:VAL:O      | 2.53                     | 0.42              |
| 1:k:105:GLU:O     | 1:k:107:ASN:N     | 2.53                     | 0.42              |
| 3:1G:480:GLU:HG2  | 3:1G:486:HIS:HB3  | 2.01                     | 0.42              |
| 4:R:195:LEU:HG    | 4:R:224:LEU:HD11  | 2.01                     | 0.42              |
| 3:2G:185:ALA:N    | 3:2G:280:TYR:O    | 2.40                     | 0.42              |
| 3:2G:190:SER:HB2  | 3:2G:272:PRO:HB2  | 2.01                     | 0.42              |
| 3:2G:293:THR:HG22 | 3:2G:394:ARG:HG2  | 2.01                     | 0.42              |
| 2:2e:311:PRO:HG3  | 2:2e:338:TYR:O    | 2.19                     | 0.42              |
| 2:2e:395:ARG:HA   | 2:2e:398:GLN:HB2  | 2.01                     | 0.42              |
| 3:1H:17:VAL:HG12  | 3:2H:369:ARG:NH2  | 2.33                     | 0.42              |
| 3:1H:166:ASN:OD1  | 3:1H:166:ASN:N    | 2.52                     | 0.42              |
| 3:1H:189:ASP:CG   | 3:1H:275:ARG:HE   | 2.27                     | 0.42              |
| 4:M:96:MET:HE2    | 4:M:96:MET:HB3    | 1.93                     | 0.42              |
| 3:2H:243:LEU:HD12 | 3:2H:244:SER:C    | 2.44                     | 0.42              |
| 6:S:91:ASP:OD1    | 6:S:91:ASP:N      | 2.52                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2f:377:ALA:HB2  | 2:2f:435:ASN:HB2  | 2.01                     | 0.42              |
| 2:3f:266:ILE:HG21 | 2:3f:305:ARG:HH21 | 1.85                     | 0.42              |
| 2:1f:251:SER:O    | 2:1f:251:SER:OG   | 2.35                     | 0.42              |
| 2:1f:343:LYS:HG3  | 2:1f:354:LEU:HD22 | 2.02                     | 0.42              |
| 4:N:34:ILE:HG13   | 4:N:35:LYS:N      | 2.35                     | 0.42              |
| 3:2l:39:PRO:HB2   | 6:T:34:ALA:CB     | 2.36                     | 0.42              |
| 6:T:59:LEU:HD21   | 6:T:68:THR:HG23   | 2.00                     | 0.42              |
| 2:3g:333:LYS:HA   | 2:3g:426:SER:HB2  | 2.02                     | 0.42              |
| 2:3g:424:THR:HG23 | 2:3g:426:SER:H    | 1.84                     | 0.42              |
| 2:3g:457:GLU:HB2  | 2:3g:458:PRO:CD   | 2.43                     | 0.42              |
| 1:n:36:GLU:HG2    | 1:n:57:MET:CE     | 2.49                     | 0.42              |
| 2:1g:337:LEU:HD22 | 2:1g:406:VAL:HG13 | 2.01                     | 0.42              |
| 3:1J:262:LEU:HD23 | 3:1J:262:LEU:HA   | 1.93                     | 0.42              |
| 5:D:125:SER:HB2   | 5:D:141:ARG:HB2   | 2.02                     | 0.42              |
| 6:U:52:PHE:HA     | 6:U:83:TRP:NE1    | 2.33                     | 0.42              |
| 2:2h:365:TRP:CZ2  | 2:2h:434:LEU:HD21 | 2.54                     | 0.42              |
| 1:o:115:ARG:HA    | 1:o:115:ARG:HD3   | 1.86                     | 0.42              |
| 3:1K:192:VAL:HG11 | 3:1K:228:ASN:C    | 2.44                     | 0.42              |
| 3:1K:448:ARG:HA   | 5:E:99:HIS:HB3    | 2.00                     | 0.42              |
| 4:P:37:PHE:HE1    | 4:P:98:LYS:HG2    | 1.84                     | 0.42              |
| 4:P:39:PHE:HE2    | 4:P:125:PHE:HE1   | 1.67                     | 0.42              |
| 3:2K:158:VAL:HG22 | 3:2K:171:MET:HE1  | 2.02                     | 0.42              |
| 5:E:152:LEU:HD23  | 5:E:155:PRO:HA    | 2.02                     | 0.42              |
| 6:V:62:ALA:O      | 2:1i:522:LYS:HE2  | 2.20                     | 0.42              |
| 2:2i:65:PHE:HB3   | 2:2i:93:ARG:NH1   | 2.34                     | 0.42              |
| 2:2i:73:TYR:HE1   | 2:2i:353:ARG:HH11 | 1.68                     | 0.42              |
| 1:p:26:TYR:CZ     | 1:p:70:ARG:HD2    | 2.55                     | 0.42              |
| 2:1i:343:LYS:HG3  | 2:1i:354:LEU:HD22 | 2.02                     | 0.42              |
| 2:1i:464:TRP:HB3  | 2:1i:497:CYS:O    | 2.20                     | 0.42              |
| 3:1L:53:GLN:CD    | 3:2L:22:ARG:HH22  | 2.27                     | 0.42              |
| 3:1L:79:PRO:HG3   | 3:1L:357:ALA:HB3  | 2.02                     | 0.42              |
| 3:1L:210:THR:OG1  | 3:1L:211:GLU:N    | 2.52                     | 0.42              |
| 3:2L:199:PRO:HA   | 3:2L:226:GLY:HA3  | 2.02                     | 0.42              |
| 2:2j:469:ARG:HD2  | 1:k:96:ASN:OD1    | 2.20                     | 0.42              |
| 2:3j:241:HIS:H    | 2:3j:280:ARG:NH2  | 2.16                     | 0.42              |
| 2:1j:447:ILE:HG13 | 2:1j:448:LEU:N    | 2.35                     | 0.42              |
| 2:1j:485:PHE:C    | 2:1j:485:PHE:CD1  | 2.98                     | 0.42              |
| 6:X:45:GLU:CD     | 6:X:45:GLU:H      | 2.28                     | 0.42              |
| 2:2e:354:LEU:HD13 | 2:2e:354:LEU:HA   | 1.89                     | 0.42              |
| 2:1e:283:ILE:HD13 | 2:1e:283:ILE:HA   | 1.93                     | 0.42              |
| 4:M:120:PRO:HG2   | 4:N:54:TRP:HZ2    | 1.83                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:d:1:MET:HG2     | 7:d:3:ARG:H       | 1.84                     | 0.42              |
| 2:2f:84:ASN:ND2   | 2:2f:367:ARG:HH22 | 2.18                     | 0.42              |
| 2:3f:93:ARG:HH21  | 2:3f:97:SER:HB3   | 1.84                     | 0.42              |
| 2:3f:392:GLN:NE2  | 2:3f:411:SER:O    | 2.52                     | 0.42              |
| 3:1l:41:VAL:HG11  | 6:T:24:LEU:HD11   | 2.00                     | 0.42              |
| 4:N:208:ALA:O     | 4:N:211:VAL:HG12  | 2.20                     | 0.42              |
| 2:2g:65:PHE:CB    | 2:2g:93:ARG:HH12  | 2.32                     | 0.42              |
| 2:3g:277:ALA:HB1  | 2:3g:283:ILE:HG13 | 2.02                     | 0.42              |
| 3:2J:19:ASP:H     | 3:2J:22:ARG:NH2   | 2.16                     | 0.42              |
| 2:2h:455:VAL:HG13 | 2:3h:522:LYS:CE   | 2.50                     | 0.42              |
| 2:3h:299:CYS:SG   | 2:3h:300:GLU:N    | 2.92                     | 0.42              |
| 2:1h:267:SER:O    | 2:1h:267:SER:OG   | 2.35                     | 0.42              |
| 2:1h:365:TRP:CZ2  | 2:1h:434:LEU:HD21 | 2.55                     | 0.42              |
| 2:1h:456:PHE:CD2  | 2:2h:372:ARG:NH2  | 2.87                     | 0.42              |
| 2:1h:494:TYR:H    | 2:1h:516:ILE:HD13 | 1.84                     | 0.42              |
| 3:2K:151:ASP:N    | 3:2K:151:ASP:OD1  | 2.52                     | 0.42              |
| 5:E:19:ILE:HG21   | 5:E:37:VAL:HG22   | 2.01                     | 0.42              |
| 1:p:63:ASP:HB3    | 1:p:143:PHE:CD2   | 2.55                     | 0.42              |
| 2:1i:296:ILE:HD13 | 2:1i:296:ILE:HA   | 1.85                     | 0.42              |
| 3:2L:483:TYR:HB2  | 5:F:142:PRO:HB3   | 2.01                     | 0.42              |
| 3:1G:179:VAL:HG21 | 3:1G:182:CYS:HB3  | 2.00                     | 0.42              |
| 3:1G:210:THR:OG1  | 3:1G:215:GLN:NE2  | 2.53                     | 0.42              |
| 3:1G:299:LEU:HD21 | 3:1G:390:ALA:HB2  | 2.00                     | 0.42              |
| 3:1G:544:THR:HG22 | 3:1G:546:VAL:HG23 | 2.02                     | 0.42              |
| 3:2G:175:LEU:O    | 3:2G:251:ALA:HB1  | 2.20                     | 0.42              |
| 2:2e:40:PHE:HB3   | 2:2e:270:ALA:HB3  | 2.00                     | 0.42              |
| 2:2e:375:HIS:ND1  | 2:2e:375:HIS:O    | 2.53                     | 0.42              |
| 2:3e:328:ALA:HB1  | 2:3e:330:TYR:CZ   | 2.54                     | 0.42              |
| 1:l:62:LYS:HG3    | 1:m:37:GLN:CD     | 2.45                     | 0.42              |
| 2:1e:480:ARG:HA   | 2:1e:480:ARG:HD3  | 1.77                     | 0.42              |
| 4:M:83:PHE:C      | 4:M:84:LEU:HD22   | 2.45                     | 0.42              |
| 2:3f:275:MET:CE   | 2:3f:312:PRO:HA   | 2.49                     | 0.42              |
| 3:1l:21:LYS:HD3   | 3:1l:49:HIS:ND1   | 2.33                     | 0.42              |
| 3:1l:41:VAL:HG11  | 6:T:24:LEU:CD1    | 2.50                     | 0.42              |
| 4:N:219:ASP:OD1   | 4:N:219:ASP:N     | 2.48                     | 0.42              |
| 3:2l:43:LEU:O     | 3:2l:47:VAL:HG23  | 2.19                     | 0.42              |
| 5:C:51:LEU:HD23   | 5:C:51:LEU:HA     | 1.91                     | 0.42              |
| 7:e:21:LEU:O      | 7:e:64:ARG:NH1    | 2.51                     | 0.42              |
| 2:2g:239:SER:OG   | 2:2g:240:ALA:N    | 2.53                     | 0.42              |
| 2:2g:456:PHE:CE1  | 2:3g:372:ARG:NH2  | 2.88                     | 0.42              |
| 2:3g:312:PRO:CG   | 2:3g:315:GLN:NE2  | 2.83                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1J:135:ARG:HE   | 3:1J:149:THR:HG23 | 1.84                     | 0.42              |
| 3:1J:432:ASP:OD1  | 3:1J:433:GLY:N    | 2.52                     | 0.42              |
| 2:2h:254:ARG:NH1  | 2:3h:394:THR:OG1  | 2.50                     | 0.42              |
| 3:1K:147:ASP:N    | 3:1K:147:ASP:OD1  | 2.51                     | 0.42              |
| 3:1K:215:GLN:OE1  | 3:1K:216:SER:N    | 2.44                     | 0.42              |
| 3:1K:549:VAL:HG22 | 3:1K:608:VAL:HG12 | 2.01                     | 0.42              |
| 3:2K:326:LEU:HB2  | 3:2K:337:TRP:HB2  | 2.02                     | 0.42              |
| 2:2i:459:ASN:HB2  | 2:2i:507:VAL:CG1  | 2.50                     | 0.42              |
| 1:p:115:ARG:HD3   | 1:p:115:ARG:HA    | 1.85                     | 0.42              |
| 4:Q:37:PHE:CE1    | 4:Q:98:LYS:HG2    | 2.50                     | 0.42              |
| 4:Q:95:VAL:HG11   | 4:Q:156:ILE:HA    | 2.02                     | 0.42              |
| 3:1G:250:GLU:OE1  | 3:1H:501:GLY:N    | 2.53                     | 0.42              |
| 3:1G:481:ASN:N    | 3:1G:485:ALA:O    | 2.39                     | 0.42              |
| 5:A:36:PHE:CD1    | 5:A:36:PHE:C      | 2.97                     | 0.42              |
| 2:3e:73:TYR:CD2   | 2:3e:276:ALA:HB2  | 2.55                     | 0.42              |
| 2:1e:41:VAL:O     | 2:1e:272:PRO:HD2  | 2.20                     | 0.42              |
| 4:M:36:ARG:NH2    | 6:T:71:ARG:HH12   | 2.18                     | 0.42              |
| 3:2H:47:VAL:HG11  | 5:B:23:LEU:HD23   | 2.00                     | 0.42              |
| 6:S:13:PRO:O      | 6:S:15:ARG:NH2    | 2.52                     | 0.42              |
| 2:3f:257:PHE:CZ   | 2:3f:295:LEU:HD21 | 2.55                     | 0.42              |
| 2:1f:443:LEU:HD12 | 2:1f:443:LEU:HA   | 1.85                     | 0.42              |
| 4:N:120:PRO:HG2   | 4:O:54:TRP:HZ2    | 1.85                     | 0.42              |
| 2:3g:372:ARG:HH12 | 2:3g:376:LYS:CG   | 2.21                     | 0.42              |
| 1:n:10:LEU:O      | 1:n:11:VAL:HG22   | 2.20                     | 0.42              |
| 2:1g:368:ASN:HD22 | 2:1g:378:PRO:CA   | 2.32                     | 0.42              |
| 2:1g:514:CYS:C    | 2:1g:515:GLU:HG3  | 2.44                     | 0.42              |
| 3:1J:437:GLU:HA   | 3:1J:440:LYS:HE3  | 2.01                     | 0.42              |
| 3:1J:523:LEU:O    | 3:1J:527:ARG:N    | 2.53                     | 0.42              |
| 2:2h:358:SER:HA   | 2:2h:361:VAL:HG12 | 2.02                     | 0.42              |
| 2:2h:511:ARG:NH1  | 2:3h:526:PHE:HA   | 2.34                     | 0.42              |
| 2:3h:341:TRP:CZ2  | 2:3h:356:PRO:HG3  | 2.54                     | 0.42              |
| 2:1h:377:ALA:HB2  | 2:1h:435:ASN:HB3  | 2.02                     | 0.42              |
| 4:P:72:GLY:HA3    | 4:Q:58:PRO:HB2    | 2.01                     | 0.42              |
| 4:P:196:GLN:HE22  | 3:2K:53:GLN:NE2   | 2.18                     | 0.42              |
| 3:2K:369:ARG:HB2  | 5:E:7:ARG:HH21    | 1.84                     | 0.42              |
| 2:2i:423:ARG:NH2  | 2:2i:433:TYR:OH   | 2.53                     | 0.42              |
| 2:3i:67:ASP:OD1   | 2:3i:67:ASP:N     | 2.52                     | 0.42              |
| 2:3i:271:VAL:HG13 | 2:3i:271:VAL:O    | 2.20                     | 0.42              |
| 2:1i:457:GLU:CB   | 2:1i:458:PRO:CD   | 2.77                     | 0.42              |
| 2:1i:480:ARG:HD3  | 2:1i:480:ARG:HA   | 1.80                     | 0.42              |
| 3:1L:209:TRP:HB2  | 3:1L:253:TRP:HB2  | 2.01                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:F:34:LEU:HD23   | 5:F:34:LEU:HA     | 1.83                     | 0.42              |
| 6:W:38:ILE:HG12   | 6:W:52:PHE:HE1    | 1.85                     | 0.42              |
| 7:b:86:ARG:HH12   | 7:b:136:HIS:CE1   | 2.37                     | 0.42              |
| 2:2j:241:HIS:CD2  | 2:2j:242:PRO:HD3  | 2.54                     | 0.42              |
| 2:3j:451:THR:O    | 2:3j:451:THR:OG1  | 2.36                     | 0.42              |
| 2:1j:94:VAL:HG22  | 2:1j:242:PRO:HA   | 2.01                     | 0.42              |
| 4:R:39:PHE:HE2    | 4:R:125:PHE:HE1   | 1.67                     | 0.42              |
| 4:R:120:PRO:HG2   | 4:M:54:TRP:HZ2    | 1.84                     | 0.42              |
| 3:2G:208:ALA:HB1  | 3:2G:241:HIS:CE1  | 2.55                     | 0.42              |
| 5:A:112:VAL:HG23  | 5:A:166:LEU:HD23  | 2.02                     | 0.42              |
| 2:3e:59:THR:HG22  | 2:2f:500:GLU:HG3  | 2.02                     | 0.42              |
| 2:1e:47:GLY:HA3   | 2:1e:65:PHE:CD1   | 2.55                     | 0.42              |
| 7:d:76:TRP:CZ3    | 7:d:111:PRO:HG3   | 2.55                     | 0.42              |
| 2:2f:247:TYR:H    | 2:2f:257:PHE:CB   | 2.32                     | 0.42              |
| 1:m:127:LEU:HD22  | 1:m:135:LEU:HD11  | 2.02                     | 0.42              |
| 2:1f:484:LEU:HD23 | 2:1f:484:LEU:HA   | 1.89                     | 0.42              |
| 3:1l:135:ARG:NH2  | 3:1l:137:VAL:HG11 | 2.34                     | 0.42              |
| 7:e:57:TYR:HE2    | 7:e:137:GLY:HA2   | 1.82                     | 0.42              |
| 2:2g:36:SER:HB3   | 2:2g:268:MET:HE1  | 2.01                     | 0.42              |
| 2:3g:337:LEU:HB3  | 2:3g:406:VAL:HG23 | 2.02                     | 0.42              |
| 2:1g:365:TRP:CZ3  | 2:1g:434:LEU:HD11 | 2.54                     | 0.42              |
| 2:1g:401:LEU:HD23 | 2:1g:404:ILE:HD11 | 2.02                     | 0.42              |
| 3:2J:36:VAL:HG11  | 3:2J:42:THR:HG21  | 2.02                     | 0.42              |
| 3:2J:110:LEU:HD11 | 3:2J:409:GLN:HB2  | 2.00                     | 0.42              |
| 3:2J:476:LEU:HD13 | 3:2J:476:LEU:HA   | 1.88                     | 0.42              |
| 5:D:112:VAL:HA    | 5:D:166:LEU:HD21  | 2.01                     | 0.42              |
| 2:3h:436:ILE:H    | 2:3h:436:ILE:HG12 | 1.62                     | 0.42              |
| 2:3h:461:HIS:HA   | 2:3h:464:TRP:CZ3  | 2.55                     | 0.42              |
| 2:1h:392:GLN:HE22 | 2:1h:411:SER:HB3  | 1.84                     | 0.41              |
| 3:1K:36:VAL:HB    | 3:1K:39:PRO:HB3   | 2.02                     | 0.41              |
| 3:2K:170:CYS:HB2  | 3:2K:255:ARG:HG3  | 2.01                     | 0.41              |
| 7:a:14:LEU:HD13   | 7:a:62:LEU:HD22   | 2.02                     | 0.41              |
| 1:p:51:ARG:NH2    | 2:2h:477:ASN:HB2  | 2.35                     | 0.41              |
| 1:p:127:LEU:HB2   | 1:k:28:ASN:HB3    | 2.02                     | 0.41              |
| 3:1L:15:GLN:OE1   | 3:1L:15:GLN:N     | 2.53                     | 0.41              |
| 3:1L:91:LEU:HB3   | 3:1L:282:ILE:O    | 2.20                     | 0.41              |
| 3:1L:189:ASP:CG   | 3:1L:275:ARG:HE   | 2.28                     | 0.41              |
| 7:b:21:LEU:O      | 7:b:64:ARG:NH1    | 2.53                     | 0.41              |
| 2:2j:393:ILE:HD13 | 2:2j:393:ILE:N    | 2.35                     | 0.41              |
| 2:2j:453:TRP:O    | 2:2j:456:PHE:HB2  | 2.20                     | 0.41              |
| 2:3j:340:PRO:HG2  | 2:3j:409:ILE:HB   | 2.01                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1j:241:HIS:HB3  | 2:1j:242:PRO:HD3  | 2.02                     | 0.41              |
| 3:1G:85:THR:HB    | 3:1G:427:ALA:HB2  | 2.01                     | 0.41              |
| 3:1G:596:PHE:HA   | 3:1G:599:LEU:HD12 | 2.02                     | 0.41              |
| 2:3e:90:TYR:CE2   | 2:3e:263:ILE:HD13 | 2.54                     | 0.41              |
| 3:2H:175:LEU:C    | 3:2H:251:ALA:HB1  | 2.44                     | 0.41              |
| 6:S:62:ALA:O      | 2:1f:522:LYS:HE2  | 2.19                     | 0.41              |
| 2:2f:43:LEU:HG    | 2:2f:95:GLY:HA3   | 2.02                     | 0.41              |
| 2:2f:337:LEU:HD12 | 2:2f:337:LEU:HA   | 1.84                     | 0.41              |
| 2:3f:283:ILE:O    | 2:3f:284:ASP:HB3  | 2.19                     | 0.41              |
| 2:3f:490:ASP:OD1  | 2:3f:490:ASP:C    | 2.62                     | 0.41              |
| 3:1l:530:GLY:O    | 3:2l:486:HIS:ND1  | 2.53                     | 0.41              |
| 4:N:49:SER:OG     | 4:N:50:GLN:N      | 2.52                     | 0.41              |
| 3:2l:395:THR:OG1  | 3:2l:396:GLY:N    | 2.53                     | 0.41              |
| 5:C:34:LEU:HD23   | 5:C:34:LEU:HA     | 1.80                     | 0.41              |
| 5:C:62:LEU:HD12   | 5:C:62:LEU:HA     | 1.85                     | 0.41              |
| 2:2g:454:VAL:CG1  | 2:3g:526:PHE:CD1  | 3.03                     | 0.41              |
| 2:2g:517:GLY:C    | 2:2g:518:ILE:HD12 | 2.45                     | 0.41              |
| 2:3g:475:LEU:HD23 | 2:3g:475:LEU:HA   | 1.84                     | 0.41              |
| 3:1J:108:ALA:O    | 3:1J:408:VAL:HG12 | 2.19                     | 0.41              |
| 3:1J:204:LEU:HD23 | 3:1J:258:VAL:HG22 | 2.02                     | 0.41              |
| 3:1J:390:ALA:HB1  | 3:1J:393:TYR:HE1  | 1.83                     | 0.41              |
| 4:O:85:ASP:OD1    | 4:O:85:ASP:C      | 2.62                     | 0.41              |
| 3:2J:112:THR:HG22 | 3:2J:113:GLU:H    | 1.84                     | 0.41              |
| 3:2J:369:ARG:N    | 5:D:57:TYR:OH     | 2.51                     | 0.41              |
| 2:1h:296:ILE:CD1  | 2:1h:335:ALA:HB2  | 2.50                     | 0.41              |
| 5:E:156:ARG:HH21  | 5:E:158:VAL:HG11  | 1.85                     | 0.41              |
| 2:3i:45:PRO:HG3   | 2:3i:69:THR:OG1   | 2.20                     | 0.41              |
| 2:1i:300:GLU:HG2  | 2:1i:334:TYR:CD2  | 2.55                     | 0.41              |
| 3:1L:16:PHE:O     | 5:F:7:ARG:HD2     | 2.19                     | 0.41              |
| 3:1L:260:GLU:HG2  | 3:1L:262:LEU:H    | 1.85                     | 0.41              |
| 4:Q:191:ALA:HB3   | 2:1j:417:ILE:HD11 | 2.02                     | 0.41              |
| 3:2L:77:LEU:HD12  | 3:2L:77:LEU:HA    | 1.94                     | 0.41              |
| 3:2L:487:ALA:HB3  | 5:F:138:PHE:CE1   | 2.54                     | 0.41              |
| 3:1G:447:LEU:HD13 | 5:A:75:VAL:HG12   | 2.02                     | 0.41              |
| 4:R:37:PHE:CE1    | 4:R:98:LYS:HG2    | 2.53                     | 0.41              |
| 7:c:118:SER:O     | 7:c:118:SER:OG    | 2.34                     | 0.41              |
| 2:2e:459:ASN:ND2  | 2:3e:523:PRO:HG3  | 2.34                     | 0.41              |
| 2:1e:41:VAL:HG22  | 2:1e:92:VAL:HB    | 2.02                     | 0.41              |
| 3:1H:321:GLU:HB2  | 3:1H:322:PRO:HD3  | 2.02                     | 0.41              |
| 5:B:156:ARG:HE    | 5:B:156:ARG:HB3   | 1.72                     | 0.41              |
| 1:m:63:ASP:HB3    | 1:m:143:PHE:CE2   | 2.55                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:1l:189:ASP:OD1  | 3:1l:230:PRO:HB3  | 2.20                     | 0.41              |
| 3:1l:260:GLU:HG2  | 3:1l:262:LEU:H    | 1.85                     | 0.41              |
| 3:2l:317:VAL:HG12 | 3:2l:393:TYR:CE1  | 2.54                     | 0.41              |
| 3:2l:532:ARG:HG3  | 5:C:138:PHE:HB2   | 2.02                     | 0.41              |
| 2:2g:254:ARG:HH22 | 2:3g:394:THR:H    | 1.68                     | 0.41              |
| 2:3g:72:TYR:OH    | 2:3g:98:ALA:HA    | 2.20                     | 0.41              |
| 2:3g:372:ARG:NH1  | 2:3g:376:LYS:CG   | 2.78                     | 0.41              |
| 3:1J:548:THR:OG1  | 3:1J:646:ARG:HB2  | 2.20                     | 0.41              |
| 3:1J:571:HIS:NE2  | 3:1J:594:GLU:OE1  | 2.44                     | 0.41              |
| 4:O:59:THR:OG1    | 4:O:60:ALA:N      | 2.52                     | 0.41              |
| 7:f:107:ILE:HD13  | 7:f:107:ILE:HA    | 1.92                     | 0.41              |
| 2:3h:93:ARG:NE    | 2:3h:97:SER:OG    | 2.53                     | 0.41              |
| 2:3h:331:ASP:OD1  | 2:3h:427:SER:N    | 2.51                     | 0.41              |
| 1:o:1:MET:HB2     | 1:o:2:SER:H       | 1.75                     | 0.41              |
| 2:1h:44:ALA:HB3   | 2:1h:93:ARG:HD2   | 2.02                     | 0.41              |
| 2:1h:300:GLU:HG2  | 2:1h:334:TYR:CD2  | 2.56                     | 0.41              |
| 3:2K:85:THR:HG22  | 3:2K:427:ALA:HA   | 2.01                     | 0.41              |
| 5:E:40:LEU:O      | 5:E:43:VAL:HG22   | 2.20                     | 0.41              |
| 5:E:111:THR:HG22  | 5:E:166:LEU:HD11  | 2.02                     | 0.41              |
| 6:V:12:PHE:HB3    | 6:V:13:PRO:HD3    | 2.00                     | 0.41              |
| 7:a:13:SER:O      | 7:a:14:LEU:HD23   | 2.20                     | 0.41              |
| 7:a:25:ASN:OD1    | 7:f:121:PRO:HG3   | 2.20                     | 0.41              |
| 7:a:76:TRP:CZ2    | 7:a:111:PRO:HD3   | 2.55                     | 0.41              |
| 7:a:86:ARG:HD3    | 4:O:88:MET:HE1    | 2.01                     | 0.41              |
| 2:2i:500:GLU:HG3  | 2:3h:59:THR:HB    | 2.02                     | 0.41              |
| 2:1i:73:TYR:CD2   | 2:1i:276:ALA:HB2  | 2.55                     | 0.41              |
| 3:1L:184:LEU:HD12 | 3:1L:185:ALA:H    | 1.85                     | 0.41              |
| 3:2L:179:VAL:O    | 3:2L:237:ILE:CB   | 2.68                     | 0.41              |
| 1:k:26:TYR:CB     | 1:k:70:ARG:CA     | 2.83                     | 0.41              |
| 2:1j:401:LEU:HD23 | 2:1j:404:ILE:HD11 | 2.02                     | 0.41              |
| 3:1G:503:ARG:HD2  | 3:1G:569:TYR:CD1  | 2.56                     | 0.41              |
| 3:2G:108:ALA:O    | 3:2G:408:VAL:HG23 | 2.21                     | 0.41              |
| 3:2G:350:ASP:OD1  | 3:2G:351:HIS:N    | 2.53                     | 0.41              |
| 3:2G:477:GLU:HA   | 3:2G:488:VAL:HA   | 2.02                     | 0.41              |
| 2:2e:320:ILE:HA   | 2:2e:323:TRP:HB3  | 2.02                     | 0.41              |
| 1:l:120:SER:O     | 1:m:35:ILE:CG2    | 2.68                     | 0.41              |
| 2:1e:296:ILE:HD11 | 2:1e:335:ALA:HB2  | 2.02                     | 0.41              |
| 3:1H:483:TYR:OH   | 3:2H:481:ASN:OD1  | 2.32                     | 0.41              |
| 3:1H:646:ARG:HH21 | 3:1H:648:ILE:HG12 | 1.84                     | 0.41              |
| 4:M:195:LEU:HD23  | 4:M:195:LEU:HA    | 1.76                     | 0.41              |
| 3:2H:217:CYS:SG   | 3:2H:235:LEU:HD12 | 2.61                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1f:81:PHE:HE2   | 2:1f:89:ALA:HB2   | 1.86                     | 0.41              |
| 3:1l:72:LEU:HA    | 3:1l:72:LEU:HD23  | 1.78                     | 0.41              |
| 3:1l:441:LEU:HD12 | 3:1l:441:LEU:HA   | 1.86                     | 0.41              |
| 4:N:216:ASN:ND2   | 4:N:230:LEU:HD22  | 2.36                     | 0.41              |
| 3:2l:528:LEU:HD12 | 3:2l:528:LEU:HA   | 1.88                     | 0.41              |
| 2:3g:423:ARG:CZ   | 2:3g:432:ARG:HD3  | 2.50                     | 0.41              |
| 1:n:115:ARG:HD3   | 1:n:115:ARG:HA    | 1.88                     | 0.41              |
| 2:3h:309:ILE:HD11 | 2:3h:335:ALA:HB1  | 2.02                     | 0.41              |
| 3:1K:157:ASP:OD2  | 3:1K:191:ARG:NH1  | 2.52                     | 0.41              |
| 7:a:27:CYS:HA     | 7:a:62:LEU:HD23   | 2.02                     | 0.41              |
| 2:2j:365:TRP:CZ2  | 2:2j:434:LEU:HD21 | 2.55                     | 0.41              |
| 1:k:20:ASP:OD1    | 1:k:21:GLY:N      | 2.54                     | 0.41              |
| 3:1G:27:ARG:HA    | 3:1G:27:ARG:NE    | 2.36                     | 0.41              |
| 3:2G:41:VAL:HG11  | 6:X:11:SER:C      | 2.46                     | 0.41              |
| 3:2G:502:GLY:C    | 3:2G:503:ARG:HD2  | 2.46                     | 0.41              |
| 3:1H:466:ALA:HB2  | 3:1H:522:HIS:CD2  | 2.56                     | 0.41              |
| 3:2H:527:ARG:HG3  | 3:2H:528:LEU:O    | 2.21                     | 0.41              |
| 7:d:14:LEU:HD21   | 7:d:91:ILE:HG23   | 2.03                     | 0.41              |
| 2:1f:37:VAL:HG11  | 2:1f:265:GLU:OE2  | 2.20                     | 0.41              |
| 2:1f:249:GLY:HA3  | 2:1f:255:THR:OG1  | 2.20                     | 0.41              |
| 2:2g:358:SER:HA   | 2:2g:361:VAL:HG12 | 2.03                     | 0.41              |
| 2:3g:39:ALA:HB2   | 2:3g:266:ILE:HD12 | 2.02                     | 0.41              |
| 2:1g:296:ILE:HD13 | 2:1g:296:ILE:HA   | 1.81                     | 0.41              |
| 3:1J:455:THR:HG22 | 3:1J:458:ASP:HB3  | 2.02                     | 0.41              |
| 4:O:149:PHE:N     | 4:O:149:PHE:HD1   | 2.19                     | 0.41              |
| 5:D:34:LEU:HD23   | 5:D:34:LEU:HA     | 1.85                     | 0.41              |
| 2:2h:423:ARG:HE   | 2:2h:423:ARG:HB3  | 1.79                     | 0.41              |
| 1:o:58:PRO:HD3    | 7:f:10:ILE:HG21   | 2.01                     | 0.41              |
| 3:1K:70:LEU:HD23  | 3:1K:70:LEU:HA    | 1.88                     | 0.41              |
| 3:1K:133:MET:HG2  | 3:1K:279:ALA:HB2  | 2.01                     | 0.41              |
| 3:1K:321:GLU:HB2  | 3:1K:322:PRO:HD3  | 2.01                     | 0.41              |
| 4:P:195:LEU:HD23  | 4:P:195:LEU:HA    | 1.75                     | 0.41              |
| 2:2i:431:TRP:HE1  | 2:2i:437:ARG:HH21 | 1.68                     | 0.41              |
| 2:2i:443:LEU:HD23 | 2:2i:443:LEU:HA   | 1.85                     | 0.41              |
| 1:p:37:GLN:HE21   | 1:p:37:GLN:HA     | 1.83                     | 0.41              |
| 2:1i:239:SER:N    | 2:1i:242:PRO:O    | 2.39                     | 0.41              |
| 2:1i:485:PHE:CD1  | 2:1i:486:GLY:N    | 2.88                     | 0.41              |
| 3:1L:294:VAL:HG21 | 3:1L:314:HIS:CD2  | 2.56                     | 0.41              |
| 3:1L:327:GLN:OE1  | 3:1L:389:ARG:NH1  | 2.47                     | 0.41              |
| 3:2L:243:LEU:HD12 | 3:2L:244:SER:C    | 2.44                     | 0.41              |
| 3:2L:312:LEU:HD11 | 3:2L:362:ILE:HD11 | 2.01                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2L:477:GLU:HA   | 3:2L:488:VAL:HA   | 2.03                     | 0.41              |
| 2:2j:43:LEU:HD13  | 2:2j:244:PRO:HB3  | 2.03                     | 0.41              |
| 2:2j:43:LEU:HG    | 2:2j:95:GLY:HA3   | 2.01                     | 0.41              |
| 2:2j:248:LEU:HD23 | 2:2j:248:LEU:H    | 1.86                     | 0.41              |
| 2:2j:320:ILE:HD13 | 2:2j:339:TYR:CD1  | 2.56                     | 0.41              |
| 2:3j:57:ASN:HB3   | 2:2e:500:GLU:CD   | 2.46                     | 0.41              |
| 2:3j:240:ALA:O    | 2:3j:241:HIS:ND1  | 2.53                     | 0.41              |
| 2:1j:271:VAL:HB   | 2:1j:274:LEU:HD23 | 2.02                     | 0.41              |
| 3:1G:15:GLN:OE1   | 3:1G:15:GLN:N     | 2.52                     | 0.41              |
| 3:1G:325:LEU:HD12 | 3:1G:325:LEU:HA   | 1.90                     | 0.41              |
| 4:R:62:VAL:HG23   | 4:R:64:LYS:H      | 1.85                     | 0.41              |
| 2:2e:469:ARG:NH1  | 1:l:98:THR:HG1    | 2.19                     | 0.41              |
| 2:3e:464:TRP:HE1  | 2:3e:511:ARG:HD2  | 1.85                     | 0.41              |
| 3:2H:43:LEU:HD11  | 6:S:46:ARG:CZ     | 2.50                     | 0.41              |
| 3:2H:207:GLU:CD   | 3:2H:257:ARG:HH21 | 2.28                     | 0.41              |
| 7:d:76:TRP:CZ2    | 7:d:111:PRO:HD3   | 2.55                     | 0.41              |
| 2:2f:389:LEU:HD11 | 2:2f:417:ILE:HG23 | 2.03                     | 0.41              |
| 2:2f:502:ASN:OD1  | 2:2f:512:VAL:N    | 2.44                     | 0.41              |
| 3:1l:148:ARG:C    | 3:1l:150:THR:H    | 2.28                     | 0.41              |
| 3:1l:294:VAL:HG21 | 3:1l:314:HIS:CD2  | 2.56                     | 0.41              |
| 3:2l:294:VAL:HB   | 3:2l:393:TYR:HB3  | 2.03                     | 0.41              |
| 5:C:125:SER:O     | 5:C:125:SER:OG    | 2.32                     | 0.41              |
| 1:n:116:ASN:O     | 1:n:143:PHE:HA    | 2.20                     | 0.41              |
| 2:2h:369:ASP:HA   | 2:2h:373:GLY:C    | 2.45                     | 0.41              |
| 3:1K:214:TRP:NE1  | 3:1K:255:ARG:HG3  | 2.35                     | 0.41              |
| 3:2K:182:CYS:HB3  | 3:2K:281:THR:OG1  | 2.20                     | 0.41              |
| 3:2K:477:GLU:HA   | 3:2K:488:VAL:HA   | 2.03                     | 0.41              |
| 3:2K:533:LEU:HD23 | 3:2K:534:ALA:N    | 2.36                     | 0.41              |
| 5:E:125:SER:HA    | 5:E:141:ARG:HD2   | 2.01                     | 0.41              |
| 1:p:22:VAL:HG21   | 1:p:69:GLU:CD     | 2.46                     | 0.41              |
| 1:p:34:GLN:HG3    | 1:p:60:VAL:CG1    | 2.50                     | 0.41              |
| 3:1L:218:GLU:O    | 3:1L:236:HIS:N    | 2.53                     | 0.41              |
| 4:Q:35:LYS:HD3    | 4:Q:101:SER:OG    | 2.21                     | 0.41              |
| 3:2L:537:PRO:HA   | 3:2L:538:PRO:HD3  | 1.91                     | 0.41              |
| 2:2j:254:ARG:HH12 | 2:3j:394:THR:N    | 2.18                     | 0.41              |
| 2:2j:518:ILE:HD13 | 2:2j:518:ILE:N    | 2.35                     | 0.41              |
| 2:3j:241:HIS:ND1  | 2:3j:241:HIS:O    | 2.49                     | 0.41              |
| 2:3j:331:ASP:OD1  | 2:3j:427:SER:N    | 2.50                     | 0.41              |
| 2:1j:461:HIS:HA   | 2:1j:464:TRP:CE3  | 2.55                     | 0.41              |
| 3:1G:548:THR:OG1  | 3:1G:646:ARG:HB2  | 2.20                     | 0.41              |
| 3:2G:221:ARG:HA   | 3:2G:221:ARG:HD3  | 1.79                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:c:76:TRP:CZ3    | 7:c:111:PRO:HG3   | 2.56                     | 0.41              |
| 2:3e:299:CYS:HB2  | 2:3e:305:ARG:HG2  | 2.02                     | 0.41              |
| 1:l:58:PRO:HB3    | 1:m:49:THR:CG2    | 2.46                     | 0.41              |
| 1:l:115:ARG:NH2   | 1:l:148:VAL:HG21  | 2.36                     | 0.41              |
| 3:1H:21:LYS:HD3   | 3:1H:49:HIS:ND1   | 2.35                     | 0.41              |
| 3:2H:131:CYS:SG   | 3:2H:176:SER:N    | 2.94                     | 0.41              |
| 1:m:3:LEU:CB      | 1:m:4:PRO:CD      | 2.67                     | 0.41              |
| 3:1l:166:ASN:OD1  | 3:1l:166:ASN:N    | 2.53                     | 0.41              |
| 3:1l:245:ARG:HH22 | 3:1J:503:ARG:HG2  | 1.85                     | 0.41              |
| 3:1l:548:THR:OG1  | 3:1l:646:ARG:HB2  | 2.21                     | 0.41              |
| 3:1l:592:THR:HG22 | 3:1l:613:LEU:HD23 | 2.01                     | 0.41              |
| 3:2l:491:LEU:HB3  | 3:2l:538:PRO:HG3  | 2.02                     | 0.41              |
| 5:C:11:ASP:OD1    | 5:C:11:ASP:N      | 2.53                     | 0.41              |
| 2:2g:84:ASN:ND2   | 2:2g:367:ARG:HH22 | 2.19                     | 0.41              |
| 3:1J:190:SER:CB   | 3:1J:272:PRO:HB2  | 2.49                     | 0.41              |
| 4:O:80:LEU:HB2    | 4:O:162:MET:HB2   | 2.03                     | 0.41              |
| 3:2J:243:LEU:HB2  | 3:2J:253:TRP:CE3  | 2.55                     | 0.41              |
| 5:D:30:ASP:HB2    | 5:D:33:ALA:HB3    | 2.02                     | 0.41              |
| 1:o:122:VAL:O     | 1:o:122:VAL:HG13  | 2.21                     | 0.41              |
| 2:1h:316:ASN:OD1  | 2:1h:317:ALA:N    | 2.53                     | 0.41              |
| 2:1h:424:THR:HG23 | 2:1h:434:LEU:HA   | 2.01                     | 0.41              |
| 4:P:24:THR:OG1    | 4:P:25:GLY:N      | 2.54                     | 0.41              |
| 4:P:120:PRO:HG2   | 4:Q:54:TRP:HZ2    | 1.84                     | 0.41              |
| 4:P:138:TYR:CE2   | 4:Q:54:TRP:CG     | 3.07                     | 0.41              |
| 4:P:138:TYR:CE1   | 4:P:165:VAL:HB    | 2.55                     | 0.41              |
| 3:2K:122:THR:HG22 | 3:2K:124:GLN:H    | 1.86                     | 0.41              |
| 3:2K:262:LEU:HB2  | 3:2K:265:GLN:HB3  | 2.01                     | 0.41              |
| 6:V:74:HIS:O      | 6:V:78:VAL:HG12   | 2.21                     | 0.41              |
| 1:p:133:ASN:OD1   | 1:p:133:ASN:N     | 2.53                     | 0.41              |
| 3:1L:207:GLU:HB3  | 3:1L:214:TRP:HB3  | 2.03                     | 0.41              |
| 3:1L:388:ILE:HD13 | 3:1L:388:ILE:HA   | 1.91                     | 0.41              |
| 4:Q:34:ILE:HG13   | 4:Q:35:LYS:N      | 2.34                     | 0.41              |
| 3:2L:115:ASP:OD1  | 3:2L:116:GLU:N    | 2.54                     | 0.41              |
| 3:2L:328:THR:OG1  | 3:2L:337:TRP:NE1  | 2.37                     | 0.41              |
| 5:F:171:ARG:HA    | 5:F:172:PRO:HD3   | 1.94                     | 0.41              |
| 2:2j:372:ARG:HB3  | 2:2j:372:ARG:CZ   | 2.51                     | 0.41              |
| 2:3j:341:TRP:CZ2  | 2:3j:356:PRO:HG3  | 2.56                     | 0.41              |
| 2:1j:333:LYS:HE3  | 2:1j:333:LYS:HB2  | 1.84                     | 0.41              |
| 3:1G:250:GLU:OE2  | 3:1H:500:PRO:HA   | 2.21                     | 0.41              |
| 3:1G:449:ALA:O    | 3:2G:452:ARG:NH2  | 2.47                     | 0.41              |
| 3:1G:506:PHE:HD1  | 3:1G:639:PHE:HE2  | 1.69                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:R:216:ASN:OD1   | 4:R:216:ASN:N     | 2.53                     | 0.41              |
| 3:2G:513:ASP:CG   | 5:A:130:TRP:HH2   | 2.27                     | 0.41              |
| 3:2G:516:LEU:HD12 | 5:A:130:TRP:CE3   | 2.55                     | 0.41              |
| 6:X:59:LEU:HD13   | 6:X:59:LEU:HA     | 1.88                     | 0.41              |
| 2:3e:58:TRP:O     | 2:3e:61:TYR:HB3   | 2.20                     | 0.41              |
| 3:1H:69:PHE:CE2   | 5:B:74:TRP:CZ3    | 3.09                     | 0.41              |
| 3:1H:133:MET:HG3  | 3:1H:279:ALA:N    | 2.36                     | 0.41              |
| 3:1H:241:HIS:NE2  | 3:1H:252:GLY:HA3  | 2.35                     | 0.41              |
| 3:2H:32:THR:HG1   | 3:2H:33:ASP:H     | 1.68                     | 0.41              |
| 3:2H:186:LEU:HB2  | 3:2H:233:VAL:HG13 | 2.03                     | 0.41              |
| 3:2H:298:PRO:HA   | 3:2H:389:ARG:HA   | 2.02                     | 0.41              |
| 6:S:77:TYR:OH     | 6:S:91:ASP:HA     | 2.21                     | 0.41              |
| 2:2f:307:ALA:N    | 2:2f:334:TYR:O    | 2.51                     | 0.41              |
| 2:3f:54:LEU:O     | 2:3f:90:TYR:HA    | 2.20                     | 0.41              |
| 2:3f:73:TYR:CD2   | 2:3f:276:ALA:HB2  | 2.55                     | 0.41              |
| 1:m:65:SER:O      | 1:m:140:THR:HA    | 2.20                     | 0.41              |
| 2:1f:333:LYS:HE3  | 2:1f:333:LYS:HB2  | 1.92                     | 0.41              |
| 4:N:223:HIS:ND1   | 4:N:224:LEU:N     | 2.68                     | 0.41              |
| 3:2l:139:GLN:CD   | 3:2l:172:LEU:HD21 | 2.45                     | 0.41              |
| 3:1J:326:LEU:HD21 | 3:1J:362:ILE:HD13 | 2.03                     | 0.41              |
| 3:1J:506:PHE:C    | 3:1J:508:GLN:H    | 2.27                     | 0.41              |
| 6:U:29:GLN:C      | 6:U:29:GLN:OE1    | 2.64                     | 0.41              |
| 3:1K:311:ARG:O    | 3:1K:312:LEU:HD23 | 2.21                     | 0.41              |
| 3:2K:97:ASP:CG    | 3:2K:129:VAL:HG22 | 2.46                     | 0.41              |
| 7:a:18:GLY:HA3    | 7:a:87:PRO:HB3    | 2.03                     | 0.41              |
| 2:3i:457:GLU:CB   | 2:3i:458:PRO:CD   | 2.93                     | 0.41              |
| 3:1L:148:ARG:HD2  | 3:1L:156:LYS:HD3  | 2.02                     | 0.41              |
| 4:Q:202:GLU:C     | 4:Q:203:TYR:HD1   | 2.29                     | 0.41              |
| 3:2L:80:PRO:HB3   | 3:2L:433:GLY:H    | 1.85                     | 0.41              |
| 3:2L:395:THR:OG1  | 3:2L:396:GLY:N    | 2.54                     | 0.41              |
| 7:b:106:LEU:HD22  | 7:b:135:HIS:CE1   | 2.56                     | 0.41              |
| 2:3j:67:ASP:OD1   | 2:3j:67:ASP:N     | 2.52                     | 0.41              |
| 1:k:66:VAL:O      | 1:k:66:VAL:HG12   | 2.21                     | 0.41              |
| 3:1G:513:ASP:O    | 3:1G:517:ASN:ND2  | 2.54                     | 0.41              |
| 3:2G:532:ARG:NH1  | 5:A:139:PRO:HG2   | 2.35                     | 0.41              |
| 5:A:88:LEU:HD12   | 5:A:88:LEU:HA     | 1.89                     | 0.41              |
| 7:c:25:ASN:HB3    | 7:c:64:ARG:HA     | 2.03                     | 0.41              |
| 2:2e:368:ASN:CG   | 2:2e:378:PRO:CA   | 2.94                     | 0.41              |
| 2:3e:365:TRP:O    | 2:3e:369:ASP:CG   | 2.64                     | 0.41              |
| 4:M:24:THR:OG1    | 4:M:25:GLY:N      | 2.54                     | 0.41              |
| 3:2H:145:VAL:HG22 | 3:2H:172:LEU:HD13 | 2.03                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:2H:207:GLU:OE1  | 3:2H:257:ARG:NH2  | 2.44                     | 0.41              |
| 3:2H:326:LEU:HB2  | 3:2H:337:TRP:HB2  | 2.02                     | 0.41              |
| 6:S:68:THR:O      | 6:S:72:ILE:HG22   | 2.21                     | 0.41              |
| 2:2f:498:ASP:OD1  | 2:2f:499:GLU:N    | 2.54                     | 0.41              |
| 2:3f:43:LEU:HD23  | 2:3f:96:GLY:HA3   | 2.02                     | 0.41              |
| 2:3f:479:TRP:HB2  | 2:3f:484:LEU:HD12 | 2.03                     | 0.41              |
| 1:m:90:MET:HE2    | 1:m:90:MET:N      | 2.35                     | 0.41              |
| 3:1l:352:HIS:O    | 3:1l:353:ILE:HD13 | 2.20                     | 0.41              |
| 4:N:150:GLY:H     | 4:N:156:ILE:HG12  | 1.86                     | 0.41              |
| 3:2l:204:LEU:HD12 | 3:2l:257:ARG:O    | 2.21                     | 0.41              |
| 2:3g:50:ASN:CG    | 2:3g:255:THR:HA   | 2.44                     | 0.41              |
| 2:1g:73:TYR:CD2   | 2:1g:276:ALA:HB2  | 2.56                     | 0.41              |
| 3:1J:139:GLN:HB3  | 3:1J:145:VAL:HA   | 2.02                     | 0.41              |
| 3:2J:139:GLN:CD   | 3:2J:172:LEU:HD11 | 2.45                     | 0.41              |
| 2:2h:307:ALA:O    | 2:2h:335:ALA:HA   | 2.20                     | 0.41              |
| 2:3h:316:ASN:ND2  | 2:3h:319:GLN:OE1  | 2.53                     | 0.41              |
| 2:3h:328:ALA:HB1  | 2:3h:330:TYR:CZ   | 2.56                     | 0.41              |
| 1:o:56:LEU:HD12   | 7:f:96:ALA:HB3    | 2.03                     | 0.41              |
| 1:o:69:GLU:HB2    | 1:o:78:PHE:HE2    | 1.85                     | 0.41              |
| 2:1h:274:LEU:HD11 | 2:1h:291:VAL:HG13 | 2.03                     | 0.41              |
| 2:1h:293:LEU:HD23 | 2:1h:293:LEU:HA   | 1.86                     | 0.41              |
| 3:1K:207:GLU:OE2  | 3:1K:214:TRP:HB3  | 2.20                     | 0.41              |
| 3:1K:218:GLU:O    | 3:1K:236:HIS:N    | 2.53                     | 0.41              |
| 3:1K:506:PHE:C    | 3:1K:508:GLN:H    | 2.29                     | 0.41              |
| 4:P:13:VAL:CG2    | 6:W:67:GLN:HB2    | 2.42                     | 0.41              |
| 4:P:218:ILE:HD13  | 4:P:218:ILE:HA    | 1.93                     | 0.41              |
| 3:2K:32:THR:HG1   | 3:2K:33:ASP:H     | 1.68                     | 0.41              |
| 3:2K:138:THR:HG22 | 3:2K:159:LEU:HG   | 2.03                     | 0.41              |
| 5:E:26:VAL:HG21   | 6:V:40:ALA:HB1    | 2.03                     | 0.41              |
| 5:E:105:LEU:H     | 5:E:105:LEU:HD12  | 1.85                     | 0.41              |
| 6:V:94:VAL:HA     | 6:V:104:PHE:O     | 2.20                     | 0.41              |
| 2:2i:368:ASN:ND2  | 2:2i:378:PRO:CA   | 2.84                     | 0.41              |
| 2:2i:440:PHE:O    | 2:2i:444:GLU:HG2  | 2.21                     | 0.41              |
| 2:2i:457:GLU:HA   | 2:2i:458:PRO:HD3  | 1.86                     | 0.41              |
| 2:3i:283:ILE:O    | 2:3i:284:ASP:HB3  | 2.21                     | 0.41              |
| 2:3i:341:TRP:CZ2  | 2:3i:356:PRO:HG3  | 2.56                     | 0.41              |
| 2:3i:389:LEU:O    | 2:3i:389:LEU:HG   | 2.21                     | 0.41              |
| 1:p:72:MET:H      | 1:p:72:MET:HG2    | 1.61                     | 0.41              |
| 2:1i:320:ILE:HD12 | 2:1i:323:TRP:HB3  | 2.03                     | 0.41              |
| 3:1L:215:GLN:N    | 3:1L:215:GLN:OE1  | 2.53                     | 0.41              |
| 3:1L:584:TRP:HB2  | 3:1L:637:LEU:HD11 | 2.03                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2j:275:MET:CE   | 2:2j:313:PRO:HD3  | 2.51                     | 0.41              |
| 2:2j:376:LYS:HE3  | 2:1j:457:GLU:HA   | 2.03                     | 0.41              |
| 1:k:71:GLY:HA2    | 1:k:135:LEU:O     | 2.20                     | 0.41              |
| 2:1j:395:ARG:HB2  | 2:1j:410:ARG:HH22 | 1.85                     | 0.41              |
| 3:1G:172:LEU:HB3  | 3:1G:253:TRP:HZ3  | 1.85                     | 0.41              |
| 3:1G:568:LEU:HD22 | 3:1G:599:LEU:HG   | 2.03                     | 0.41              |
| 4:R:16:ASN:N      | 4:R:16:ASN:OD1    | 2.52                     | 0.41              |
| 2:3e:331:ASP:OD1  | 2:3e:427:SER:N    | 2.49                     | 0.41              |
| 2:3e:333:LYS:C    | 2:3e:334:TYR:HD1  | 2.29                     | 0.41              |
| 2:3e:401:LEU:HB3  | 2:3e:406:VAL:HG13 | 2.02                     | 0.41              |
| 2:1e:73:TYR:CD2   | 2:1e:276:ALA:HB2  | 2.56                     | 0.41              |
| 3:1H:328:THR:HB   | 3:1H:337:TRP:HE1  | 1.86                     | 0.41              |
| 4:M:150:GLY:H     | 4:M:156:ILE:HG12  | 1.86                     | 0.41              |
| 3:2H:109:THR:HA   | 3:2H:408:VAL:HA   | 2.03                     | 0.41              |
| 3:2H:516:LEU:HD13 | 3:2H:535:VAL:HG23 | 2.03                     | 0.41              |
| 1:m:18:GLN:OE1    | 1:m:18:GLN:HA     | 2.21                     | 0.41              |
| 2:1f:435:ASN:HA   | 2:1f:438:ARG:HB2  | 2.03                     | 0.41              |
| 2:1f:447:ILE:HG13 | 2:1f:448:LEU:N    | 2.36                     | 0.41              |
| 3:1l:99:ILE:HG12  | 3:1l:125:ASP:CG   | 2.46                     | 0.41              |
| 3:1l:210:THR:OG1  | 3:1l:213:GLY:O    | 2.34                     | 0.41              |
| 3:1l:241:HIS:NE2  | 3:1l:252:GLY:HA3  | 2.36                     | 0.41              |
| 3:1l:329:ALA:HB3  | 3:1l:387:VAL:H    | 1.86                     | 0.41              |
| 3:2l:315:ALA:HB3  | 3:2l:395:THR:OG1  | 2.20                     | 0.41              |
| 3:2l:336:ASP:N    | 3:2l:336:ASP:OD1  | 2.44                     | 0.41              |
| 3:2l:373:GLY:C    | 3:2l:375:LEU:H    | 2.29                     | 0.41              |
| 3:2l:537:PRO:HA   | 3:2l:538:PRO:HD3  | 1.91                     | 0.41              |
| 6:T:58:ASP:O      | 2:1g:380:ASN:ND2  | 2.53                     | 0.41              |
| 6:T:59:LEU:HD22   | 6:T:72:ILE:HD11   | 2.02                     | 0.41              |
| 6:T:72:ILE:HD13   | 6:T:72:ILE:HA     | 1.93                     | 0.41              |
| 2:2g:375:HIS:ND1  | 2:2g:375:HIS:O    | 2.53                     | 0.41              |
| 2:1g:300:GLU:HG2  | 2:1g:334:TYR:CD2  | 2.56                     | 0.41              |
| 2:1g:393:ILE:HD11 | 2:1g:398:GLN:HA   | 2.01                     | 0.41              |
| 2:1g:395:ARG:HB2  | 2:1g:410:ARG:HH22 | 1.86                     | 0.41              |
| 2:1g:485:PHE:C    | 2:1g:485:PHE:CD1  | 2.99                     | 0.41              |
| 3:1J:34:HIS:CE1   | 3:1J:42:THR:HG21  | 2.56                     | 0.41              |
| 3:1J:161:PHE:CE1  | 3:1J:171:MET:HE3  | 2.56                     | 0.41              |
| 3:1J:448:ARG:HH22 | 3:1J:457:ARG:HH21 | 1.69                     | 0.41              |
| 3:1J:527:ARG:HD3  | 3:1J:533:LEU:HG   | 2.02                     | 0.41              |
| 3:1J:528:LEU:HD23 | 3:1J:528:LEU:H    | 1.86                     | 0.41              |
| 4:O:195:LEU:HD23  | 4:O:195:LEU:HA    | 1.79                     | 0.41              |
| 5:D:168:ALA:HA    | 5:D:171:ARG:HH12  | 1.86                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:U:42:ALA:O      | 6:U:45:GLU:OE2    | 2.38                     | 0.41              |
| 7:f:1:MET:CE      | 7:f:4:LYS:HA      | 2.51                     | 0.41              |
| 7:f:27:CYS:HA     | 7:f:62:LEU:HD23   | 2.03                     | 0.41              |
| 2:2h:436:ILE:H    | 2:2h:436:ILE:HG12 | 1.68                     | 0.41              |
| 2:2h:459:ASN:OD1  | 2:3h:523:PRO:HB3  | 2.20                     | 0.41              |
| 2:3h:46:THR:O     | 2:3h:65:PHE:HA    | 2.21                     | 0.41              |
| 2:3h:73:TYR:CD2   | 2:3h:276:ALA:HB2  | 2.56                     | 0.41              |
| 1:o:66:VAL:HA     | 1:o:139:ILE:O     | 2.21                     | 0.41              |
| 2:1h:456:PHE:O    | 2:1h:456:PHE:CG   | 2.74                     | 0.41              |
| 3:1K:15:GLN:N     | 3:1K:15:GLN:OE1   | 2.54                     | 0.41              |
| 3:1K:452:ARG:HB3  | 3:2K:454:VAL:HG11 | 2.03                     | 0.41              |
| 3:2K:191:ARG:NH1  | 3:2K:193:ASP:OD2  | 2.54                     | 0.41              |
| 3:2K:261:PRO:HB3  | 3:2K:267:PHE:CD1  | 2.54                     | 0.41              |
| 3:2K:296:ASP:OD1  | 3:2K:389:ARG:NH1  | 2.54                     | 0.41              |
| 3:2K:528:LEU:HD23 | 3:2K:528:LEU:HA   | 1.96                     | 0.41              |
| 7:a:32:THR:CG2    | 7:a:57:TYR:CE2    | 3.04                     | 0.41              |
| 2:2i:39:ALA:HB2   | 2:2i:266:ILE:HD12 | 2.03                     | 0.41              |
| 2:2i:263:ILE:HG21 | 2:2i:266:ILE:HD11 | 2.03                     | 0.41              |
| 2:2i:437:ARG:HD3  | 2:2i:441:ASN:ND2  | 2.35                     | 0.41              |
| 2:2i:516:ILE:HG13 | 2:3i:531:LEU:HB2  | 2.02                     | 0.41              |
| 2:3i:252:SER:O    | 2:3i:254:ARG:NH1  | 2.54                     | 0.41              |
| 1:p:44:GLN:N      | 1:p:44:GLN:CD     | 2.79                     | 0.41              |
| 3:1L:90:TRP:CZ3   | 3:1L:282:ILE:HB   | 2.56                     | 0.41              |
| 3:1L:107:VAL:CG1  | 3:1L:412:ARG:HD3  | 2.51                     | 0.41              |
| 3:1L:190:SER:OG   | 3:1L:273:THR:O    | 2.32                     | 0.41              |
| 3:2L:78:PHE:HB3   | 3:2L:434:GLU:HB3  | 2.02                     | 0.41              |
| 3:2L:216:SER:OG   | 3:2L:217:CYS:N    | 2.54                     | 0.41              |
| 6:W:100:GLN:HG2   | 6:W:100:GLN:O     | 2.21                     | 0.41              |
| 2:2j:249:GLY:HA3  | 2:2j:253:ASP:N    | 2.35                     | 0.41              |
| 1:k:18:GLN:HB2    | 1:k:95:LYS:HD3    | 2.02                     | 0.41              |
| 3:1G:243:LEU:HG   | 3:1H:501:GLY:HA2  | 2.03                     | 0.41              |
| 4:R:59:THR:OG1    | 4:R:60:ALA:N      | 2.54                     | 0.41              |
| 5:A:24:PRO:HG3    | 6:X:46:ARG:HG2    | 2.03                     | 0.41              |
| 2:2e:337:LEU:O    | 2:2e:407:ASN:HB2  | 2.22                     | 0.41              |
| 3:1H:172:LEU:HG   | 3:1H:255:ARG:NH1  | 2.36                     | 0.41              |
| 3:1H:548:THR:OG1  | 3:1H:646:ARG:HB2  | 2.21                     | 0.41              |
| 3:2H:302:SER:HB3  | 3:2H:388:ILE:HD11 | 2.02                     | 0.41              |
| 5:B:49:ASN:OD1    | 5:B:49:ASN:C      | 2.63                     | 0.41              |
| 2:2f:307:ALA:O    | 2:2f:335:ALA:HA   | 2.21                     | 0.41              |
| 3:1l:14:GLN:HE22  | 5:C:70:TRP:NE1    | 2.19                     | 0.41              |
| 3:1l:505:ARG:N    | 3:1l:508:GLN:HE22 | 2.15                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:N:126:GLU:OE1   | 4:N:134:ARG:NH2   | 2.54                     | 0.41              |
| 2:2g:459:ASN:HB2  | 2:2g:507:VAL:CG1  | 2.51                     | 0.41              |
| 3:2J:27:ARG:HH12  | 3:2J:36:VAL:HG12  | 1.86                     | 0.41              |
| 3:2J:411:LEU:HD22 | 3:2J:414:SER:HA   | 2.03                     | 0.41              |
| 2:2h:54:LEU:HB2   | 2:2h:90:TYR:CE1   | 2.56                     | 0.41              |
| 2:1h:84:ASN:OD1   | 2:1h:384:ARG:O    | 2.40                     | 0.40              |
| 3:2K:182:CYS:H    | 3:2K:237:ILE:HG13 | 1.86                     | 0.40              |
| 6:V:24:LEU:HD12   | 6:V:24:LEU:HA     | 1.83                     | 0.40              |
| 6:V:64:VAL:HG23   | 2:1i:520:PRO:O    | 2.21                     | 0.40              |
| 2:3i:260:LEU:HD12 | 2:3i:260:LEU:HA   | 1.94                     | 0.40              |
| 2:3i:389:LEU:HD21 | 2:3i:409:ILE:O    | 2.21                     | 0.40              |
| 1:p:73:SER:HB3    | 1:k:6:PRO:HG2     | 2.02                     | 0.40              |
| 1:p:102:MET:HB2   | 1:p:102:MET:HE3   | 2.01                     | 0.40              |
| 1:p:129:ALA:HA    | 1:k:11:VAL:HG13   | 2.03                     | 0.40              |
| 2:1i:477:ASN:O    | 2:1i:480:ARG:HB2  | 2.21                     | 0.40              |
| 3:1L:569:TYR:HB2  | 3:1L:643:HIS:CE1  | 2.55                     | 0.40              |
| 2:2j:518:ILE:HD11 | 2:3j:533:GLN:CG   | 2.52                     | 0.40              |
| 2:3j:73:TYR:CD2   | 2:3j:276:ALA:HB2  | 2.56                     | 0.40              |
| 2:1j:424:THR:OG1  | 2:1j:432:ARG:O    | 2.37                     | 0.40              |
| 3:1G:137:VAL:HG12 | 3:1G:149:THR:HA   | 2.03                     | 0.40              |
| 3:1G:200:ARG:HA   | 3:1G:200:ARG:NE   | 2.36                     | 0.40              |
| 3:1G:566:ASP:N    | 3:1G:566:ASP:OD1  | 2.52                     | 0.40              |
| 3:2G:145:VAL:O    | 3:2G:148:ARG:NE   | 2.53                     | 0.40              |
| 3:2G:291:ALA:HA   | 3:2G:396:GLY:HA3  | 2.04                     | 0.40              |
| 7:c:72:LYS:HA     | 7:c:72:LYS:HD3    | 1.85                     | 0.40              |
| 1:l:135:LEU:HD23  | 1:l:135:LEU:HA    | 1.77                     | 0.40              |
| 3:1H:448:ARG:NH2  | 3:1H:461:GLU:OE1  | 2.54                     | 0.40              |
| 3:2H:537:PRO:HA   | 3:2H:538:PRO:HD3  | 1.87                     | 0.40              |
| 2:2f:522:LYS:HZ3  | 2:1f:511:ARG:HB2  | 1.85                     | 0.40              |
| 3:1l:198:ASP:HA   | 3:1l:199:PRO:HD3  | 1.87                     | 0.40              |
| 3:1l:371:ALA:HA   | 3:2l:78:PHE:CZ    | 2.57                     | 0.40              |
| 3:1l:582:LYS:HD2  | 3:1l:582:LYS:HA   | 1.68                     | 0.40              |
| 4:N:155:PRO:O     | 4:N:156:ILE:HD13  | 2.21                     | 0.40              |
| 3:2l:12:ARG:HD2   | 3:2l:12:ARG:N     | 2.37                     | 0.40              |
| 3:2l:237:ILE:HA   | 3:2l:238:PRO:HD3  | 1.92                     | 0.40              |
| 7:e:115:GLN:HB2   | 7:e:130:VAL:HB    | 2.03                     | 0.40              |
| 2:2g:249:GLY:HA2  | 2:2g:255:THR:OG1  | 2.21                     | 0.40              |
| 2:3g:401:LEU:HB3  | 2:3g:406:VAL:HG13 | 2.03                     | 0.40              |
| 1:n:90:MET:SD     | 1:n:90:MET:N      | 2.95                     | 0.40              |
| 3:2J:271:SER:CB   | 3:2J:272:PRO:HD2  | 2.33                     | 0.40              |
| 5:D:36:PHE:CD1    | 5:D:36:PHE:C      | 2.97                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2h:315:GLN:O    | 2:2h:391:LEU:HD11 | 2.21                     | 0.40              |
| 2:3h:57:ASN:ND2   | 2:3h:60:GLN:OE1   | 2.54                     | 0.40              |
| 2:1h:43:LEU:HD12  | 2:1h:43:LEU:H     | 1.86                     | 0.40              |
| 4:P:106:CYS:CB    | 4:Q:50:GLN:HE21   | 2.34                     | 0.40              |
| 2:1i:61:TYR:CE1   | 2:1i:65:PHE:HD2   | 2.40                     | 0.40              |
| 3:1L:86:ASP:HA    | 3:1L:287:GLY:HA2  | 2.03                     | 0.40              |
| 3:1L:210:THR:HG1  | 3:1L:211:GLU:H    | 1.68                     | 0.40              |
| 2:1j:375:HIS:CE1  | 2:1j:483:ALA:HA   | 2.56                     | 0.40              |
| 3:1G:39:PRO:HG3   | 3:1G:42:THR:HB    | 2.03                     | 0.40              |
| 3:1G:187:GLU:OE1  | 3:1G:278:GLU:HB3  | 2.22                     | 0.40              |
| 3:1G:575:LEU:HA   | 3:1G:575:LEU:HD23 | 1.80                     | 0.40              |
| 4:R:80:LEU:HA     | 4:R:80:LEU:HD23   | 1.87                     | 0.40              |
| 3:2G:532:ARG:HG2  | 5:A:139:PRO:O     | 2.20                     | 0.40              |
| 6:X:64:VAL:HG13   | 6:X:103:LEU:HD11  | 2.03                     | 0.40              |
| 2:3e:389:LEU:HD23 | 2:3e:389:LEU:HA   | 1.82                     | 0.40              |
| 2:1e:305:ARG:H    | 2:1e:305:ARG:HG2  | 1.66                     | 0.40              |
| 3:1H:161:PHE:HD2  | 3:1H:268:TYR:OH   | 2.04                     | 0.40              |
| 3:1H:523:LEU:O    | 3:1H:527:ARG:HB2  | 2.22                     | 0.40              |
| 3:2H:43:LEU:HD13  | 3:2H:43:LEU:HA    | 1.91                     | 0.40              |
| 3:2H:80:PRO:HD3   | 3:2H:358:THR:HB   | 2.04                     | 0.40              |
| 6:S:64:VAL:HG23   | 2:1f:520:PRO:O    | 2.21                     | 0.40              |
| 2:3f:341:TRP:CZ2  | 2:3f:356:PRO:HG3  | 2.56                     | 0.40              |
| 2:1f:377:ALA:HB2  | 2:1f:521:VAL:HG11 | 2.03                     | 0.40              |
| 3:1l:60:ARG:NH1   | 3:2l:14:GLN:OE1   | 2.54                     | 0.40              |
| 3:1l:189:ASP:CG   | 3:1l:275:ARG:HE   | 2.29                     | 0.40              |
| 3:1l:399:ARG:HE   | 3:1l:399:ARG:HB2  | 1.63                     | 0.40              |
| 3:2l:43:LEU:O     | 3:2l:46:THR:N     | 2.55                     | 0.40              |
| 5:C:25:ALA:C      | 5:C:27:PHE:N      | 2.79                     | 0.40              |
| 5:C:156:ARG:HH21  | 5:C:158:VAL:HG11  | 1.86                     | 0.40              |
| 2:3g:368:ASN:ND2  | 2:3g:376:LYS:O    | 2.44                     | 0.40              |
| 3:1J:549:VAL:HG22 | 3:1J:608:VAL:HG23 | 2.03                     | 0.40              |
| 3:2J:101:VAL:HA   | 3:2J:102:PRO:HD3  | 1.94                     | 0.40              |
| 5:D:88:LEU:HD12   | 5:D:88:LEU:HA     | 1.88                     | 0.40              |
| 6:U:116:ASN:OD1   | 6:U:116:ASN:C     | 2.63                     | 0.40              |
| 2:1h:238:GLU:HG2  | 2:1h:244:PRO:HD3  | 2.03                     | 0.40              |
| 2:1h:279:GLN:HG3  | 2:1h:313:PRO:HG2  | 2.04                     | 0.40              |
| 3:2K:107:VAL:HG21 | 3:2K:421:VAL:HG11 | 2.02                     | 0.40              |
| 3:2K:190:SER:HB2  | 3:2K:272:PRO:HB2  | 2.03                     | 0.40              |
| 5:E:38:ALA:O      | 5:E:41:ASP:HB3    | 2.21                     | 0.40              |
| 6:V:10:TRP:CD1    | 6:V:10:TRP:N      | 2.87                     | 0.40              |
| 2:2i:249:GLY:HA2  | 2:2i:255:THR:OG1  | 2.21                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2i:518:ILE:CD1  | 2:3i:533:GLN:HG2  | 2.50                     | 0.40              |
| 2:3i:37:VAL:HG21  | 2:3i:265:GLU:HG2  | 2.04                     | 0.40              |
| 2:3i:435:ASN:O    | 2:3i:439:TYR:N    | 2.34                     | 0.40              |
| 1:p:105:GLU:O     | 1:p:107:ASN:N     | 2.54                     | 0.40              |
| 3:1L:182:CYS:SG   | 3:1L:183:ALA:N    | 2.94                     | 0.40              |
| 3:1L:192:VAL:HG21 | 3:1L:229:ARG:HA   | 2.01                     | 0.40              |
| 3:2L:477:GLU:H    | 3:2L:477:GLU:HG3  | 1.63                     | 0.40              |
| 2:2j:454:VAL:O    | 2:2j:455:VAL:HG12 | 2.22                     | 0.40              |
| 2:2j:494:TYR:HD2  | 2:2j:516:ILE:CD1  | 2.34                     | 0.40              |
| 2:3j:423:ARG:CZ   | 2:3j:432:ARG:HD3  | 2.51                     | 0.40              |
| 2:3j:463:LEU:HD23 | 2:3j:511:ARG:HE   | 1.86                     | 0.40              |
| 3:1G:207:GLU:HB2  | 3:1G:255:ARG:HG3  | 2.03                     | 0.40              |
| 3:1G:214:TRP:CZ2  | 3:1G:255:ARG:HD3  | 2.56                     | 0.40              |
| 3:1G:445:ILE:HD13 | 3:1G:448:ARG:HH21 | 1.86                     | 0.40              |
| 3:1G:466:ALA:HB2  | 3:1G:522:HIS:ND1  | 2.37                     | 0.40              |
| 5:A:49:ASN:OD1    | 5:A:49:ASN:C      | 2.64                     | 0.40              |
| 2:2e:488:SER:O    | 2:2e:490:ASP:N    | 2.50                     | 0.40              |
| 2:2e:518:ILE:HD13 | 2:2e:518:ILE:N    | 2.37                     | 0.40              |
| 3:1H:572:LEU:HD11 | 3:1H:595:LEU:HD11 | 2.03                     | 0.40              |
| 4:M:224:LEU:HD12  | 4:M:224:LEU:HA    | 1.87                     | 0.40              |
| 3:2H:20:ALA:HB2   | 3:2H:52:ASP:CG    | 2.47                     | 0.40              |
| 6:S:44:GLY:C      | 6:S:46:ARG:N      | 2.80                     | 0.40              |
| 2:2f:313:PRO:HB3  | 2:2f:341:TRP:CZ2  | 2.56                     | 0.40              |
| 2:3f:531:LEU:HD12 | 2:3f:532:ALA:H    | 1.86                     | 0.40              |
| 3:2l:141:SER:HB3  | 3:2l:166:ASN:HD21 | 1.85                     | 0.40              |
| 6:T:87:ILE:HD11   | 6:T:109:TYR:HB2   | 2.03                     | 0.40              |
| 2:2g:423:ARG:NH2  | 2:2g:433:TYR:OH   | 2.55                     | 0.40              |
| 2:3g:283:ILE:O    | 2:3g:284:ASP:HB3  | 2.21                     | 0.40              |
| 3:1J:85:THR:HB    | 3:1J:427:ALA:HB2  | 2.03                     | 0.40              |
| 3:2J:41:VAL:C     | 3:2J:43:LEU:H     | 2.29                     | 0.40              |
| 3:2J:533:LEU:HD21 | 3:2J:535:VAL:HG13 | 2.03                     | 0.40              |
| 5:D:125:SER:O     | 5:D:125:SER:OG    | 2.33                     | 0.40              |
| 7:f:30:LEU:HD11   | 7:f:138:PHE:HZ    | 1.85                     | 0.40              |
| 2:2h:378:PRO:HG3  | 2:2h:438:ARG:HH11 | 1.86                     | 0.40              |
| 2:3h:50:ASN:CG    | 2:3h:255:THR:HA   | 2.47                     | 0.40              |
| 2:3h:457:GLU:N    | 2:3h:458:PRO:HD2  | 2.37                     | 0.40              |
| 1:o:96:ASN:OD1    | 1:o:96:ASN:C      | 2.64                     | 0.40              |
| 1:o:145:GLU:OE1   | 1:o:146:LEU:N     | 2.54                     | 0.40              |
| 2:1h:401:LEU:O    | 2:1h:404:ILE:HG12 | 2.22                     | 0.40              |
| 6:V:42:ALA:O      | 6:V:44:GLY:N      | 2.53                     | 0.40              |
| 2:2i:275:MET:CE   | 2:2i:312:PRO:HA   | 2.51                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:2i:454:VAL:HG11 | 2:3i:420:TRP:CH2  | 2.56                     | 0.40              |
| 2:3i:43:LEU:HD12  | 2:3i:273:ASP:OD2  | 2.22                     | 0.40              |
| 3:2L:186:LEU:HB2  | 3:2L:233:VAL:HG13 | 2.04                     | 0.40              |
| 6:W:76:VAL:HG11   | 6:W:92:VAL:HG11   | 2.02                     | 0.40              |
| 7:b:95:ARG:NH1    | 7:b:99:SER:HB2    | 2.36                     | 0.40              |
| 2:2j:43:LEU:HD23  | 2:2j:72:TYR:CE1   | 2.57                     | 0.40              |
| 2:2j:488:SER:O    | 2:2j:490:ASP:N    | 2.46                     | 0.40              |
| 2:2j:522:LYS:HZ2  | 2:1j:454:VAL:HA   | 1.82                     | 0.40              |
| 2:3j:475:LEU:HD23 | 2:3j:475:LEU:HA   | 1.79                     | 0.40              |
| 2:1j:479:TRP:HB2  | 2:1j:484:LEU:HD12 | 2.02                     | 0.40              |
| 2:1j:522:LYS:N    | 2:1j:522:LYS:HD3  | 2.36                     | 0.40              |
| 3:1G:228:ASN:OD1  | 3:1G:228:ASN:N    | 2.45                     | 0.40              |
| 3:1G:456:LEU:HD23 | 5:A:171:ARG:HH21  | 1.87                     | 0.40              |
| 3:2G:33:ASP:OD1   | 3:2G:33:ASP:N     | 2.53                     | 0.40              |
| 3:2G:46:THR:O     | 3:2G:49:HIS:N     | 2.54                     | 0.40              |
| 3:1H:491:LEU:HA   | 3:1H:536:GLY:O    | 2.21                     | 0.40              |
| 4:M:15:ALA:HB2    | 4:M:127:TRP:CG    | 2.56                     | 0.40              |
| 3:2H:41:VAL:HG11  | 6:S:10:TRP:HB2    | 2.04                     | 0.40              |
| 3:2H:77:LEU:HD23  | 3:2H:77:LEU:HA    | 1.84                     | 0.40              |
| 3:2H:120:PHE:HB3  | 3:2H:288:SER:OG   | 2.21                     | 0.40              |
| 3:2H:137:VAL:HA   | 3:2H:151:ASP:CG   | 2.46                     | 0.40              |
| 3:2H:206:TRP:CD1  | 3:2H:206:TRP:N    | 2.90                     | 0.40              |
| 2:2f:412:PHE:HD1  | 2:2f:413:PRO:HD2  | 1.86                     | 0.40              |
| 2:3f:53:THR:HG22  | 2:3f:92:VAL:HG22  | 2.03                     | 0.40              |
| 2:3f:289:LYS:NZ   | 2:3f:328:ALA:HA   | 2.37                     | 0.40              |
| 2:3f:424:THR:HG23 | 2:3f:434:LEU:HA   | 2.02                     | 0.40              |
| 2:1f:42:GLY:HA2   | 2:1f:273:ASP:HB3  | 2.03                     | 0.40              |
| 2:1f:236:GLN:OE1  | 2:1f:239:SER:OG   | 2.34                     | 0.40              |
| 3:2l:90:TRP:HB2   | 3:2l:420:GLU:HB2  | 2.04                     | 0.40              |
| 5:C:36:PHE:CD1    | 5:C:36:PHE:C      | 2.99                     | 0.40              |
| 2:2g:393:ILE:N    | 2:2g:393:ILE:HD13 | 2.35                     | 0.40              |
| 2:1g:41:VAL:O     | 2:1g:272:PRO:HD2  | 2.21                     | 0.40              |
| 2:1g:443:LEU:HA   | 2:1g:443:LEU:HD23 | 1.88                     | 0.40              |
| 3:1J:202:PRO:HB2  | 3:1J:204:LEU:HD12 | 2.04                     | 0.40              |
| 3:1J:399:ARG:HE   | 3:1J:399:ARG:HB2  | 1.63                     | 0.40              |
| 3:2J:78:PHE:HD1   | 3:2J:79:PRO:HD2   | 1.87                     | 0.40              |
| 6:U:55:ALA:HB3    | 6:U:75:GLU:OE1    | 2.21                     | 0.40              |
| 6:U:82:ARG:HD3    | 6:U:83:TRP:NE1    | 2.37                     | 0.40              |
| 1:o:122:VAL:HG13  | 1:p:33:LEU:HB2    | 2.04                     | 0.40              |
| 2:1h:67:ASP:OD1   | 2:1h:67:ASP:N     | 2.54                     | 0.40              |
| 2:1h:320:ILE:HD12 | 2:1h:320:ILE:HA   | 1.89                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:1h:342:ILE:HD13 | 2:1h:342:ILE:HA   | 1.90                     | 0.40              |
| 3:1K:52:ASP:HA    | 3:1K:55:VAL:HG22  | 2.04                     | 0.40              |
| 3:1K:220:ASP:OD2  | 3:1K:424:ARG:NH1  | 2.54                     | 0.40              |
| 3:1K:565:HIS:NE2  | 3:1K:644:ARG:HA   | 2.37                     | 0.40              |
| 4:P:127:TRP:CH2   | 4:O:149:PHE:HD2   | 2.40                     | 0.40              |
| 2:2i:307:ALA:N    | 2:2i:334:TYR:O    | 2.54                     | 0.40              |
| 3:2L:91:LEU:HD23  | 3:2L:91:LEU:HA    | 1.82                     | 0.40              |
| 3:2L:532:ARG:HD3  | 3:2L:533:LEU:H    | 1.85                     | 0.40              |
| 7:b:115:GLN:HB2   | 7:b:130:VAL:HB    | 2.04                     | 0.40              |
| 2:3j:39:ALA:HB3   | 2:3j:269:VAL:HG23 | 2.03                     | 0.40              |
| 2:3j:57:ASN:HB2   | 2:3j:60:GLN:HE21  | 1.87                     | 0.40              |
| 2:3j:268:MET:HE1  | 2:3j:365:TRP:HB2  | 2.04                     | 0.40              |
| 2:1j:368:ASN:ND2  | 2:1j:378:PRO:CA   | 2.76                     | 0.40              |
| 3:1G:122:THR:HA   | 3:1G:288:SER:HB2  | 2.04                     | 0.40              |
| 3:2G:140:VAL:HG12 | 3:2G:143:GLU:HB2  | 2.03                     | 0.40              |
| 3:2G:369:ARG:CZ   | 5:A:46:PRO:HB2    | 2.51                     | 0.40              |
| 2:2e:39:ALA:HB2   | 2:2e:266:ILE:HD12 | 2.03                     | 0.40              |
| 3:1H:60:ARG:NH1   | 3:2H:14:GLN:OE1   | 2.55                     | 0.40              |
| 3:1H:136:LEU:HD21 | 3:1H:277:ALA:HB2  | 2.03                     | 0.40              |
| 3:1H:529:ILE:HD13 | 3:1H:529:ILE:HA   | 1.86                     | 0.40              |
| 3:2H:255:ARG:HH21 | 3:2H:257:ARG:HG3  | 1.87                     | 0.40              |
| 3:2H:370:GLU:HB3  | 5:B:64:PRO:HB3    | 2.04                     | 0.40              |
| 5:B:113:ARG:HG3   | 5:B:119:ALA:HA    | 2.02                     | 0.40              |
| 2:2f:254:ARG:NH2  | 2:3f:393:ILE:HA   | 2.37                     | 0.40              |
| 3:1l:184:LEU:HD22 | 3:1l:237:ILE:HD11 | 2.03                     | 0.40              |
| 3:1l:361:GLU:C    | 3:1l:362:ILE:HD12 | 2.46                     | 0.40              |
| 3:1l:555:VAL:O    | 3:1l:651:SER:OG   | 2.33                     | 0.40              |
| 4:N:113:LEU:HD23  | 4:N:113:LEU:HA    | 1.90                     | 0.40              |
| 3:2l:70:LEU:HD23  | 3:2l:70:LEU:HA    | 1.84                     | 0.40              |
| 2:2g:254:ARG:NH2  | 2:3g:393:ILE:HA   | 2.37                     | 0.40              |
| 3:2J:261:PRO:HB3  | 3:2J:267:PHE:HE1  | 1.86                     | 0.40              |
| 3:2J:489:ARG:HD3  | 5:D:138:PHE:CZ    | 2.56                     | 0.40              |
| 7:f:1:MET:HE3     | 7:f:4:LYS:HA      | 2.03                     | 0.40              |
| 2:2h:299:CYS:SG   | 2:2h:305:ARG:HG3  | 2.62                     | 0.40              |
| 2:3h:54:LEU:O     | 2:3h:90:TYR:HA    | 2.21                     | 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   | k     | 147/149 (99%) | 115 (78%) | 32 (22%) | 0        | 100         | 100 |
| 1   | l     | 147/149 (99%) | 112 (76%) | 34 (23%) | 1 (1%)   | 19          | 53  |
| 1   | m     | 147/149 (99%) | 117 (80%) | 29 (20%) | 1 (1%)   | 19          | 53  |
| 1   | n     | 147/149 (99%) | 115 (78%) | 32 (22%) | 0        | 100         | 100 |
| 1   | o     | 147/149 (99%) | 113 (77%) | 32 (22%) | 2 (1%)   | 9           | 40  |
| 1   | p     | 147/149 (99%) | 112 (76%) | 33 (22%) | 2 (1%)   | 9           | 40  |
| 2   | 1e    | 347/534 (65%) | 307 (88%) | 39 (11%) | 1 (0%)   | 37          | 68  |
| 2   | 1f    | 346/534 (65%) | 302 (87%) | 40 (12%) | 4 (1%)   | 11          | 43  |
| 2   | 1g    | 347/534 (65%) | 304 (88%) | 43 (12%) | 0        | 100         | 100 |
| 2   | 1h    | 346/534 (65%) | 307 (89%) | 38 (11%) | 1 (0%)   | 37          | 68  |
| 2   | 1i    | 347/534 (65%) | 306 (88%) | 39 (11%) | 2 (1%)   | 22          | 56  |
| 2   | 1j    | 347/534 (65%) | 308 (89%) | 39 (11%) | 0        | 100         | 100 |
| 2   | 2e    | 348/534 (65%) | 311 (89%) | 33 (10%) | 4 (1%)   | 12          | 45  |
| 2   | 2f    | 348/534 (65%) | 318 (91%) | 28 (8%)  | 2 (1%)   | 22          | 56  |
| 2   | 2g    | 348/534 (65%) | 317 (91%) | 31 (9%)  | 0        | 100         | 100 |
| 2   | 2h    | 348/534 (65%) | 315 (90%) | 33 (10%) | 0        | 100         | 100 |
| 2   | 2i    | 348/534 (65%) | 321 (92%) | 26 (8%)  | 1 (0%)   | 37          | 68  |
| 2   | 2j    | 348/534 (65%) | 314 (90%) | 34 (10%) | 0        | 100         | 100 |
| 2   | 3e    | 355/534 (66%) | 312 (88%) | 42 (12%) | 1 (0%)   | 37          | 68  |
| 2   | 3f    | 355/534 (66%) | 319 (90%) | 35 (10%) | 1 (0%)   | 37          | 68  |
| 2   | 3g    | 355/534 (66%) | 316 (89%) | 37 (10%) | 2 (1%)   | 22          | 56  |
| 2   | 3h    | 355/534 (66%) | 323 (91%) | 29 (8%)  | 3 (1%)   | 16          | 51  |
| 2   | 3i    | 355/534 (66%) | 318 (90%) | 36 (10%) | 1 (0%)   | 37          | 68  |
| 2   | 3j    | 355/534 (66%) | 326 (92%) | 28 (8%)  | 1 (0%)   | 37          | 68  |
| 3   | 1G    | 637/652 (98%) | 569 (89%) | 68 (11%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 3   | 1H    | 637/652 (98%) | 569 (89%) | 68 (11%) | 0        | 100         | 100 |
| 3   | 1J    | 637/652 (98%) | 572 (90%) | 65 (10%) | 0        | 100         | 100 |
| 3   | 1K    | 637/652 (98%) | 578 (91%) | 59 (9%)  | 0        | 100         | 100 |
| 3   | 1L    | 637/652 (98%) | 568 (89%) | 69 (11%) | 0        | 100         | 100 |
| 3   | 1I    | 637/652 (98%) | 583 (92%) | 54 (8%)  | 0        | 100         | 100 |
| 3   | 2G    | 526/652 (81%) | 472 (90%) | 54 (10%) | 0        | 100         | 100 |
| 3   | 2H    | 526/652 (81%) | 466 (89%) | 60 (11%) | 0        | 100         | 100 |
| 3   | 2J    | 526/652 (81%) | 467 (89%) | 59 (11%) | 0        | 100         | 100 |
| 3   | 2K    | 526/652 (81%) | 469 (89%) | 57 (11%) | 0        | 100         | 100 |
| 3   | 2L    | 526/652 (81%) | 469 (89%) | 57 (11%) | 0        | 100         | 100 |
| 3   | 2I    | 526/652 (81%) | 467 (89%) | 58 (11%) | 1 (0%)   | 44          | 75  |
| 4   | M     | 221/240 (92%) | 201 (91%) | 20 (9%)  | 0        | 100         | 100 |
| 4   | N     | 221/240 (92%) | 203 (92%) | 18 (8%)  | 0        | 100         | 100 |
| 4   | O     | 221/240 (92%) | 202 (91%) | 19 (9%)  | 0        | 100         | 100 |
| 4   | P     | 221/240 (92%) | 198 (90%) | 23 (10%) | 0        | 100         | 100 |
| 4   | Q     | 221/240 (92%) | 202 (91%) | 19 (9%)  | 0        | 100         | 100 |
| 4   | R     | 221/240 (92%) | 201 (91%) | 20 (9%)  | 0        | 100         | 100 |
| 5   | A     | 177/190 (93%) | 162 (92%) | 15 (8%)  | 0        | 100         | 100 |
| 5   | B     | 177/190 (93%) | 161 (91%) | 16 (9%)  | 0        | 100         | 100 |
| 5   | C     | 177/190 (93%) | 163 (92%) | 14 (8%)  | 0        | 100         | 100 |
| 5   | D     | 177/190 (93%) | 167 (94%) | 10 (6%)  | 0        | 100         | 100 |
| 5   | E     | 177/190 (93%) | 161 (91%) | 16 (9%)  | 0        | 100         | 100 |
| 5   | F     | 177/190 (93%) | 164 (93%) | 13 (7%)  | 0        | 100         | 100 |
| 6   | S     | 120/150 (80%) | 106 (88%) | 14 (12%) | 0        | 100         | 100 |
| 6   | T     | 120/150 (80%) | 102 (85%) | 18 (15%) | 0        | 100         | 100 |
| 6   | U     | 120/150 (80%) | 106 (88%) | 14 (12%) | 0        | 100         | 100 |
| 6   | V     | 120/150 (80%) | 107 (89%) | 13 (11%) | 0        | 100         | 100 |
| 6   | W     | 120/150 (80%) | 106 (88%) | 14 (12%) | 0        | 100         | 100 |
| 6   | X     | 120/150 (80%) | 110 (92%) | 10 (8%)  | 0        | 100         | 100 |
| 7   | a     | 138/140 (99%) | 124 (90%) | 14 (10%) | 0        | 100         | 100 |
| 7   | b     | 138/140 (99%) | 123 (89%) | 15 (11%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed          | Favoured    | Allowed    | Outliers | Percentiles |     |
|-----|-------|-------------------|-------------|------------|----------|-------------|-----|
| 7   | c     | 138/140 (99%)     | 120 (87%)   | 18 (13%)   | 0        | 100         | 100 |
| 7   | d     | 138/140 (99%)     | 127 (92%)   | 11 (8%)    | 0        | 100         | 100 |
| 7   | e     | 138/140 (99%)     | 126 (91%)   | 12 (9%)    | 0        | 100         | 100 |
| 7   | f     | 138/140 (99%)     | 123 (89%)   | 15 (11%)   | 0        | 100         | 100 |
| All | All   | 18094/22650 (80%) | 16142 (89%) | 1921 (11%) | 31 (0%)  | 45          | 75  |

All (31) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 1h    | 455 | VAL  |
| 2   | 3j    | 459 | ASN  |
| 2   | 2e    | 457 | GLU  |
| 2   | 3e    | 459 | ASN  |
| 2   | 2f    | 457 | GLU  |
| 2   | 3f    | 459 | ASN  |
| 2   | 3g    | 459 | ASN  |
| 2   | 3h    | 459 | ASN  |
| 2   | 3h    | 508 | ASP  |
| 2   | 2i    | 458 | PRO  |
| 2   | 3i    | 459 | ASN  |
| 2   | 1i    | 458 | PRO  |
| 2   | 1f    | 37  | VAL  |
| 1   | o     | 44  | GLN  |
| 1   | p     | 34  | GLN  |
| 2   | 1i    | 457 | GLU  |
| 2   | 2e    | 375 | HIS  |
| 2   | 2e    | 458 | PRO  |
| 1   | m     | 35  | ILE  |
| 2   | 1f    | 458 | PRO  |
| 1   | p     | 41  | ARG  |
| 1   | l     | 44  | GLN  |
| 2   | 2f    | 377 | ALA  |
| 2   | 3g    | 413 | PRO  |
| 2   | 3h    | 503 | PRO  |
| 2   | 1f    | 455 | VAL  |
| 2   | 1f    | 457 | GLU  |
| 3   | 2l    | 41  | VAL  |
| 1   | o     | 122 | VAL  |
| 2   | 2e    | 456 | PHE  |
| 2   | 1e    | 458 | 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   | k     | 129/129 (100%) | 128 (99%)  | 1 (1%)   | 79          | 88  |
| 1   | l     | 129/129 (100%) | 128 (99%)  | 1 (1%)   | 79          | 88  |
| 1   | m     | 129/129 (100%) | 128 (99%)  | 1 (1%)   | 79          | 88  |
| 1   | n     | 129/129 (100%) | 126 (98%)  | 3 (2%)   | 45          | 69  |
| 1   | o     | 129/129 (100%) | 124 (96%)  | 5 (4%)   | 27          | 56  |
| 1   | p     | 129/129 (100%) | 127 (98%)  | 2 (2%)   | 58          | 76  |
| 2   | 1e    | 279/414 (67%)  | 276 (99%)  | 3 (1%)   | 70          | 83  |
| 2   | 1f    | 278/414 (67%)  | 276 (99%)  | 2 (1%)   | 81          | 89  |
| 2   | 1g    | 279/414 (67%)  | 276 (99%)  | 3 (1%)   | 70          | 83  |
| 2   | 1h    | 279/414 (67%)  | 275 (99%)  | 4 (1%)   | 62          | 79  |
| 2   | 1i    | 279/414 (67%)  | 277 (99%)  | 2 (1%)   | 81          | 89  |
| 2   | 1j    | 279/414 (67%)  | 279 (100%) | 0        | 100         | 100 |
| 2   | 2e    | 279/414 (67%)  | 275 (99%)  | 4 (1%)   | 62          | 79  |
| 2   | 2f    | 279/414 (67%)  | 274 (98%)  | 5 (2%)   | 54          | 74  |
| 2   | 2g    | 279/414 (67%)  | 274 (98%)  | 5 (2%)   | 54          | 74  |
| 2   | 2h    | 279/414 (67%)  | 277 (99%)  | 2 (1%)   | 81          | 89  |
| 2   | 2i    | 279/414 (67%)  | 275 (99%)  | 4 (1%)   | 62          | 79  |
| 2   | 2j    | 279/414 (67%)  | 278 (100%) | 1 (0%)   | 89          | 95  |
| 2   | 3e    | 285/414 (69%)  | 284 (100%) | 1 (0%)   | 89          | 95  |
| 2   | 3f    | 285/414 (69%)  | 285 (100%) | 0        | 100         | 100 |
| 2   | 3g    | 285/414 (69%)  | 282 (99%)  | 3 (1%)   | 70          | 83  |
| 2   | 3h    | 285/414 (69%)  | 284 (100%) | 1 (0%)   | 89          | 95  |
| 2   | 3i    | 285/414 (69%)  | 284 (100%) | 1 (0%)   | 89          | 95  |
| 2   | 3j    | 285/414 (69%)  | 284 (100%) | 1 (0%)   | 89          | 95  |
| 3   | 1G    | 515/528 (98%)  | 513 (100%) | 2 (0%)   | 89          | 95  |
| 3   | 1H    | 515/528 (98%)  | 513 (100%) | 2 (0%)   | 89          | 95  |

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| Mol | Chain | Analysed       | Rotameric  | Outliers | Percentiles |     |
|-----|-------|----------------|------------|----------|-------------|-----|
| 3   | 1J    | 515/528 (98%)  | 514 (100%) | 1 (0%)   | 92          | 97  |
| 3   | 1K    | 515/528 (98%)  | 512 (99%)  | 3 (1%)   | 84          | 91  |
| 3   | 1L    | 515/528 (98%)  | 511 (99%)  | 4 (1%)   | 79          | 88  |
| 3   | 1l    | 515/528 (98%)  | 511 (99%)  | 4 (1%)   | 79          | 88  |
| 3   | 2G    | 424/528 (80%)  | 423 (100%) | 1 (0%)   | 92          | 97  |
| 3   | 2H    | 424/528 (80%)  | 422 (100%) | 2 (0%)   | 86          | 93  |
| 3   | 2J    | 423/528 (80%)  | 418 (99%)  | 5 (1%)   | 67          | 82  |
| 3   | 2K    | 424/528 (80%)  | 421 (99%)  | 3 (1%)   | 81          | 89  |
| 3   | 2L    | 424/528 (80%)  | 421 (99%)  | 3 (1%)   | 81          | 89  |
| 3   | 2l    | 424/528 (80%)  | 424 (100%) | 0        | 100         | 100 |
| 4   | M     | 183/194 (94%)  | 182 (100%) | 1 (0%)   | 86          | 93  |
| 4   | N     | 183/194 (94%)  | 181 (99%)  | 2 (1%)   | 70          | 83  |
| 4   | O     | 183/194 (94%)  | 183 (100%) | 0        | 100         | 100 |
| 4   | P     | 183/194 (94%)  | 180 (98%)  | 3 (2%)   | 58          | 76  |
| 4   | Q     | 183/194 (94%)  | 182 (100%) | 1 (0%)   | 86          | 93  |
| 4   | R     | 183/194 (94%)  | 183 (100%) | 0        | 100         | 100 |
| 5   | A     | 137/147 (93%)  | 136 (99%)  | 1 (1%)   | 81          | 89  |
| 5   | B     | 137/147 (93%)  | 137 (100%) | 0        | 100         | 100 |
| 5   | C     | 137/147 (93%)  | 135 (98%)  | 2 (2%)   | 60          | 77  |
| 5   | D     | 137/147 (93%)  | 137 (100%) | 0        | 100         | 100 |
| 5   | E     | 137/147 (93%)  | 137 (100%) | 0        | 100         | 100 |
| 5   | F     | 137/147 (93%)  | 137 (100%) | 0        | 100         | 100 |
| 6   | S     | 104/127 (82%)  | 104 (100%) | 0        | 100         | 100 |
| 6   | T     | 104/127 (82%)  | 103 (99%)  | 1 (1%)   | 73          | 84  |
| 6   | U     | 104/127 (82%)  | 103 (99%)  | 1 (1%)   | 73          | 84  |
| 6   | V     | 104/127 (82%)  | 103 (99%)  | 1 (1%)   | 73          | 84  |
| 6   | W     | 104/127 (82%)  | 104 (100%) | 0        | 100         | 100 |
| 6   | X     | 104/127 (82%)  | 103 (99%)  | 1 (1%)   | 73          | 84  |
| 7   | a     | 116/116 (100%) | 115 (99%)  | 1 (1%)   | 75          | 86  |
| 7   | b     | 116/116 (100%) | 115 (99%)  | 1 (1%)   | 75          | 86  |
| 7   | c     | 116/116 (100%) | 116 (100%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed          | Rotameric   | Outliers | Percentiles |     |
|-----|-------|-------------------|-------------|----------|-------------|-----|
| 7   | d     | 116/116 (100%)    | 115 (99%)   | 1 (1%)   | 75          | 86  |
| 7   | e     | 116/116 (100%)    | 115 (99%)   | 1 (1%)   | 75          | 86  |
| 7   | f     | 116/116 (100%)    | 116 (100%)  | 0        | 100         | 100 |
| All | All   | 14704/18066 (81%) | 14601 (99%) | 103 (1%) | 80          | 89  |

All (103) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | o     | 35  | ILE  |
| 1   | o     | 43  | GLN  |
| 1   | o     | 79  | THR  |
| 1   | o     | 82  | ILE  |
| 1   | o     | 122 | VAL  |
| 2   | 1h    | 94  | VAL  |
| 2   | 1h    | 308 | ILE  |
| 2   | 1h    | 384 | ARG  |
| 2   | 1h    | 462 | ASN  |
| 3   | 1K    | 16  | PHE  |
| 3   | 1K    | 106 | GLU  |
| 3   | 1K    | 128 | ILE  |
| 4   | P     | 69  | GLN  |
| 4   | P     | 147 | THR  |
| 4   | P     | 148 | LEU  |
| 3   | 2K    | 41  | VAL  |
| 3   | 2K    | 65  | ASN  |
| 3   | 2K    | 282 | ILE  |
| 6   | V     | 80  | LEU  |
| 7   | a     | 55  | VAL  |
| 2   | 2i    | 369 | ASP  |
| 2   | 2i    | 371 | GLU  |
| 2   | 2i    | 372 | ARG  |
| 2   | 2i    | 376 | LYS  |
| 2   | 3i    | 437 | ARG  |
| 1   | p     | 32  | ASN  |
| 1   | p     | 37  | GLN  |
| 2   | 1i    | 384 | ARG  |
| 2   | 1i    | 393 | ILE  |
| 3   | 1L    | 16  | PHE  |
| 3   | 1L    | 41  | VAL  |
| 3   | 1L    | 243 | LEU  |
| 3   | 1L    | 393 | TYR  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | Q     | 119 | SER  |
| 3   | 2L    | 24  | ILE  |
| 3   | 2L    | 273 | THR  |
| 3   | 2L    | 350 | ASP  |
| 7   | b     | 101 | VAL  |
| 2   | 2j    | 241 | HIS  |
| 2   | 3j    | 478 | GLU  |
| 1   | k     | 65  | SER  |
| 3   | 1G    | 95  | GLN  |
| 3   | 1G    | 137 | VAL  |
| 3   | 2G    | 33  | ASP  |
| 5   | A     | 40  | LEU  |
| 6   | X     | 26  | SER  |
| 2   | 2e    | 35  | THR  |
| 2   | 2e    | 37  | VAL  |
| 2   | 2e    | 372 | ARG  |
| 2   | 2e    | 459 | ASN  |
| 2   | 3e    | 273 | ASP  |
| 1   | l     | 43  | GLN  |
| 2   | 1e    | 43  | LEU  |
| 2   | 1e    | 384 | ARG  |
| 2   | 1e    | 515 | GLU  |
| 3   | 1H    | 16  | PHE  |
| 3   | 1H    | 458 | ASP  |
| 4   | M     | 147 | THR  |
| 3   | 2H    | 61  | VAL  |
| 3   | 2H    | 375 | LEU  |
| 7   | d     | 32  | THR  |
| 2   | 2f    | 369 | ASP  |
| 2   | 2f    | 372 | ARG  |
| 2   | 2f    | 376 | LYS  |
| 2   | 2f    | 438 | ARG  |
| 2   | 2f    | 494 | TYR  |
| 1   | m     | 5   | LYS  |
| 2   | 1f    | 268 | MET  |
| 2   | 1f    | 384 | ARG  |
| 3   | 1l    | 182 | CYS  |
| 3   | 1l    | 393 | TYR  |
| 3   | 1l    | 590 | VAL  |
| 3   | 1l    | 641 | TYR  |
| 4   | N     | 69  | GLN  |
| 4   | N     | 77  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | C     | 71  | LEU  |
| 5   | C     | 108 | LEU  |
| 6   | T     | 87  | ILE  |
| 7   | e     | 67  | THR  |
| 2   | 2g    | 452 | GLN  |
| 2   | 2g    | 454 | VAL  |
| 2   | 2g    | 455 | VAL  |
| 2   | 2g    | 457 | GLU  |
| 2   | 2g    | 511 | ARG  |
| 2   | 3g    | 382 | VAL  |
| 2   | 3g    | 399 | ASP  |
| 2   | 3g    | 522 | LYS  |
| 1   | n     | 35  | ILE  |
| 1   | n     | 43  | GLN  |
| 1   | n     | 46  | GLN  |
| 2   | 1g    | 322 | VAL  |
| 2   | 1g    | 508 | ASP  |
| 2   | 1g    | 515 | GLU  |
| 3   | 1J    | 572 | LEU  |
| 3   | 2J    | 55  | VAL  |
| 3   | 2J    | 65  | ASN  |
| 3   | 2J    | 317 | VAL  |
| 3   | 2J    | 364 | PHE  |
| 3   | 2J    | 431 | VAL  |
| 6   | U     | 59  | LEU  |
| 2   | 2h    | 35  | THR  |
| 2   | 2h    | 37  | VAL  |
| 2   | 3h    | 505 | GLU  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (142) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | o     | 43  | GLN  |
| 1   | o     | 46  | GLN  |
| 1   | o     | 67  | GLN  |
| 2   | 1h    | 76  | HIS  |
| 2   | 1h    | 316 | ASN  |
| 2   | 1h    | 319 | GLN  |
| 2   | 1h    | 368 | ASN  |
| 2   | 1h    | 402 | ASN  |
| 2   | 1h    | 452 | GLN  |
| 3   | 1K    | 15  | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | 1K    | 49  | HIS  |
| 3   | 1K    | 139 | GLN  |
| 3   | 1K    | 246 | ASN  |
| 3   | 1K    | 481 | ASN  |
| 3   | 1K    | 550 | HIS  |
| 3   | 2K    | 53  | GLN  |
| 3   | 2K    | 265 | GLN  |
| 3   | 2K    | 517 | ASN  |
| 6   | V     | 74  | HIS  |
| 6   | V     | 115 | ASN  |
| 7   | a     | 50  | GLN  |
| 7   | a     | 135 | HIS  |
| 2   | 2i    | 315 | GLN  |
| 2   | 2i    | 375 | HIS  |
| 2   | 2i    | 462 | ASN  |
| 2   | 3i    | 368 | ASN  |
| 2   | 3i    | 375 | HIS  |
| 1   | p     | 32  | ASN  |
| 1   | p     | 34  | GLN  |
| 1   | p     | 37  | GLN  |
| 1   | p     | 53  | ASN  |
| 2   | 1i    | 360 | HIS  |
| 2   | 1i    | 368 | ASN  |
| 2   | 1i    | 441 | ASN  |
| 2   | 1i    | 462 | ASN  |
| 3   | 1L    | 15  | GLN  |
| 3   | 1L    | 65  | ASN  |
| 3   | 1L    | 139 | GLN  |
| 3   | 1L    | 351 | HIS  |
| 3   | 1L    | 481 | ASN  |
| 4   | Q     | 50  | GLN  |
| 4   | Q     | 216 | ASN  |
| 3   | 2L    | 49  | HIS  |
| 3   | 2L    | 241 | HIS  |
| 6   | W     | 74  | HIS  |
| 6   | W     | 101 | ASN  |
| 7   | b     | 44  | ASN  |
| 2   | 2j    | 319 | GLN  |
| 2   | 2j    | 368 | ASN  |
| 2   | 2j    | 441 | ASN  |
| 2   | 3j    | 50  | ASN  |
| 2   | 3j    | 314 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 3j    | 368 | ASN  |
| 1   | k     | 28  | ASN  |
| 1   | k     | 43  | GLN  |
| 1   | k     | 83  | ASN  |
| 2   | 1j    | 241 | HIS  |
| 2   | 1j    | 375 | HIS  |
| 2   | 1j    | 392 | GLN  |
| 3   | 1G    | 95  | GLN  |
| 3   | 1G    | 215 | GLN  |
| 3   | 1G    | 409 | GLN  |
| 3   | 1G    | 550 | HIS  |
| 3   | 1G    | 591 | GLN  |
| 4   | R     | 136 | ASN  |
| 3   | 2G    | 53  | GLN  |
| 3   | 2G    | 423 | ASN  |
| 3   | 2G    | 450 | GLN  |
| 5   | A     | 99  | HIS  |
| 2   | 2e    | 241 | HIS  |
| 2   | 2e    | 435 | ASN  |
| 2   | 2e    | 459 | ASN  |
| 2   | 2e    | 470 | ASN  |
| 2   | 3e    | 50  | ASN  |
| 2   | 3e    | 292 | GLN  |
| 2   | 3e    | 325 | GLN  |
| 2   | 3e    | 368 | ASN  |
| 2   | 1e    | 76  | HIS  |
| 2   | 1e    | 368 | ASN  |
| 2   | 1e    | 402 | ASN  |
| 2   | 1e    | 462 | ASN  |
| 3   | 1H    | 481 | ASN  |
| 3   | 1H    | 550 | HIS  |
| 3   | 2H    | 26  | GLN  |
| 3   | 2H    | 241 | HIS  |
| 5   | B     | 174 | HIS  |
| 6   | S     | 57  | HIS  |
| 6   | S     | 100 | GLN  |
| 6   | S     | 116 | ASN  |
| 7   | d     | 135 | HIS  |
| 2   | 2f    | 84  | ASN  |
| 2   | 2f    | 246 | GLN  |
| 2   | 2f    | 315 | GLN  |
| 2   | 2f    | 325 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 2f    | 368 | ASN  |
| 2   | 2f    | 402 | ASN  |
| 2   | 2f    | 441 | ASN  |
| 2   | 3f    | 57  | ASN  |
| 2   | 3f    | 60  | GLN  |
| 2   | 3f    | 368 | ASN  |
| 2   | 3f    | 392 | GLN  |
| 2   | 3f    | 487 | GLN  |
| 2   | 3f    | 533 | GLN  |
| 1   | m     | 37  | GLN  |
| 1   | m     | 67  | GLN  |
| 2   | 1f    | 368 | ASN  |
| 3   | 1l    | 14  | GLN  |
| 3   | 1l    | 34  | HIS  |
| 3   | 1l    | 95  | GLN  |
| 3   | 1l    | 409 | GLN  |
| 3   | 1l    | 508 | GLN  |
| 3   | 1l    | 591 | GLN  |
| 4   | N     | 42  | ASN  |
| 6   | T     | 29  | GLN  |
| 2   | 2g    | 315 | GLN  |
| 2   | 2g    | 368 | ASN  |
| 2   | 2g    | 441 | ASN  |
| 2   | 2g    | 452 | GLN  |
| 2   | 2g    | 477 | ASN  |
| 2   | 3g    | 315 | GLN  |
| 2   | 3g    | 368 | ASN  |
| 2   | 3g    | 375 | HIS  |
| 2   | 1g    | 368 | ASN  |
| 2   | 1g    | 392 | GLN  |
| 3   | 1J    | 66  | HIS  |
| 3   | 1J    | 246 | ASN  |
| 3   | 1J    | 481 | ASN  |
| 3   | 1J    | 550 | HIS  |
| 4   | O     | 216 | ASN  |
| 3   | 2J    | 241 | HIS  |
| 3   | 2J    | 517 | ASN  |
| 7   | f     | 40  | GLN  |
| 7   | f     | 135 | HIS  |
| 7   | f     | 136 | HIS  |
| 2   | 2h    | 315 | GLN  |
| 2   | 2h    | 368 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | 2h    | 441 | ASN  |
| 2   | 3h    | 279 | GLN  |
| 2   | 3h    | 325 | GLN  |
| 2   | 3h    | 375 | HIS  |
| 2   | 3h    | 392 | GLN  |
| 2   | 3h    | 407 | ASN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



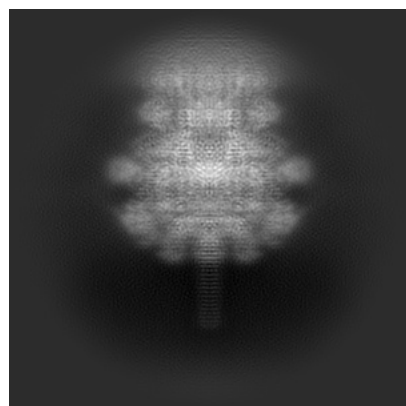
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-51564. These allow visual inspection of the internal detail of the map and identification of artifacts.

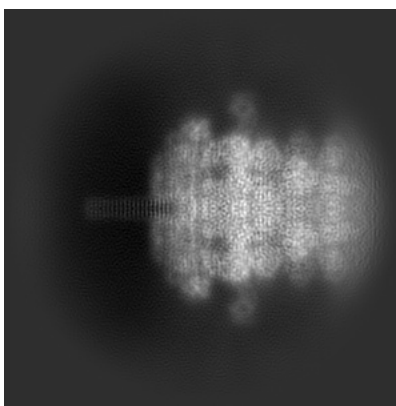
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

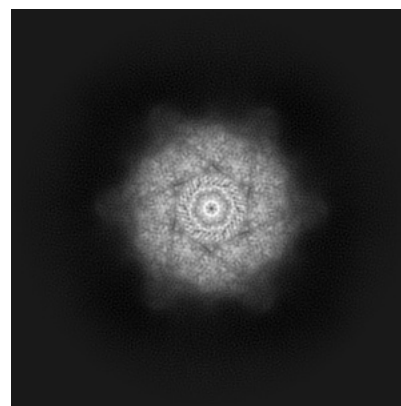
#### 6.1.1 Primary map



X

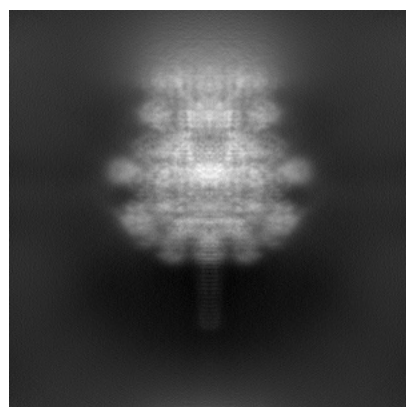


Y

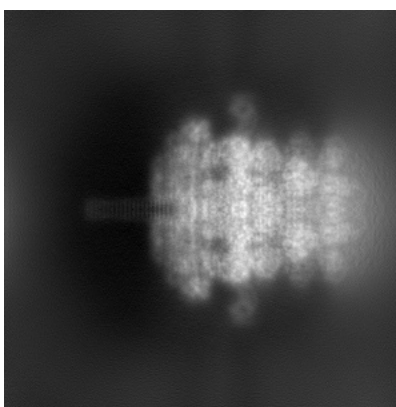


Z

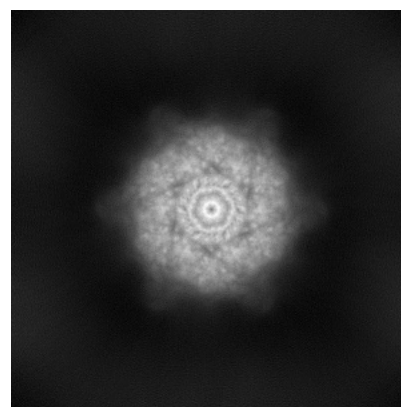
#### 6.1.2 Raw map



X



Y

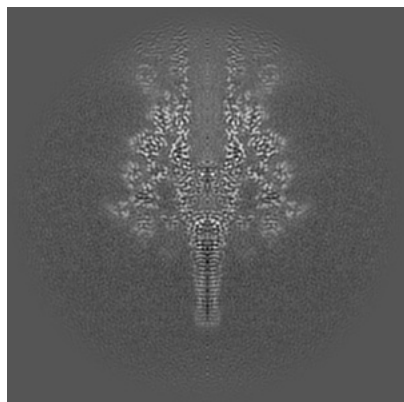


Z

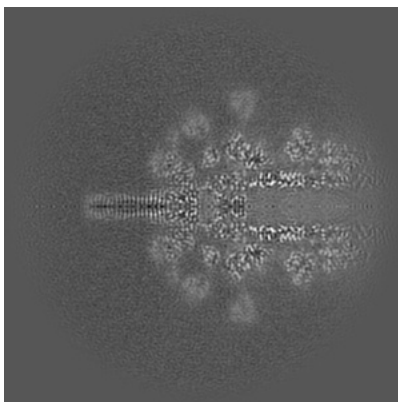
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

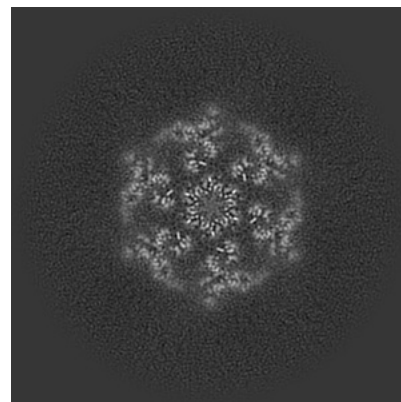
### 6.2.1 Primary map



X Index: 210

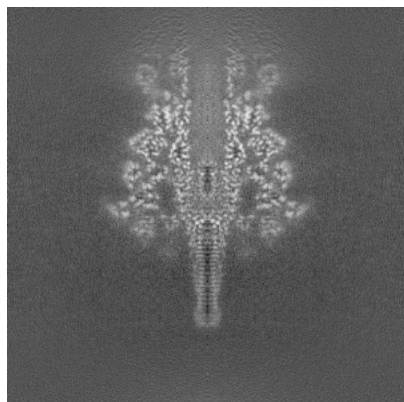


Y Index: 210

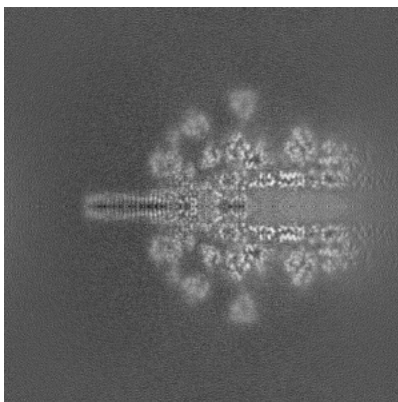


Z Index: 210

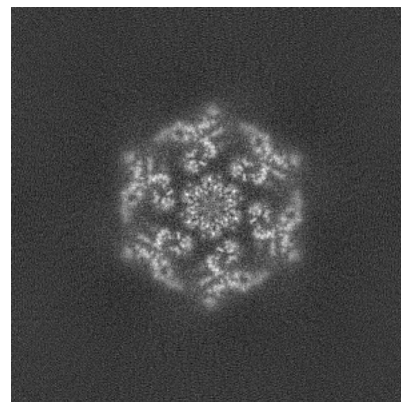
### 6.2.2 Raw map



X Index: 210



Y Index: 210

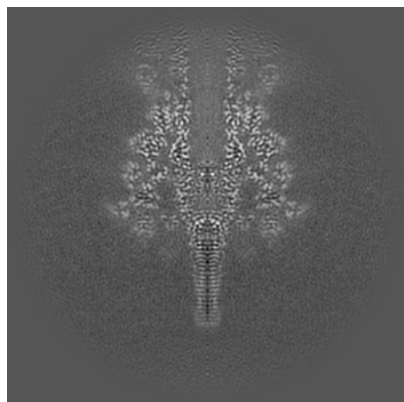


Z Index: 210

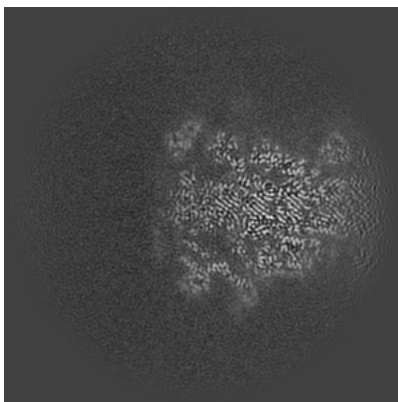
The images above show central slices of the map in three orthogonal directions.

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

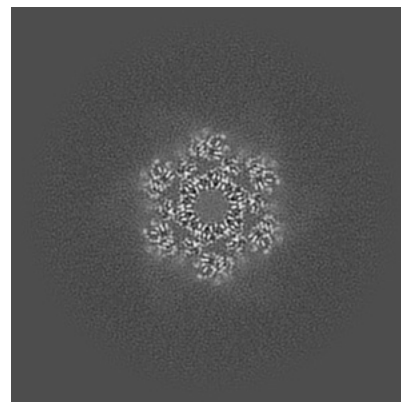
### 6.3.1 Primary map



X Index: 210

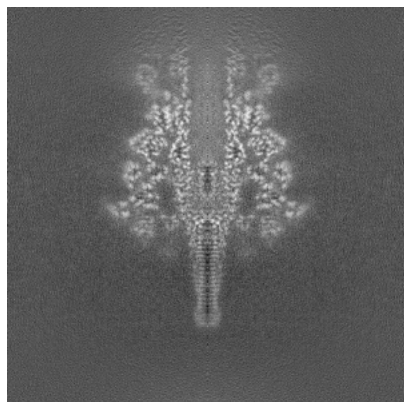


Y Index: 231

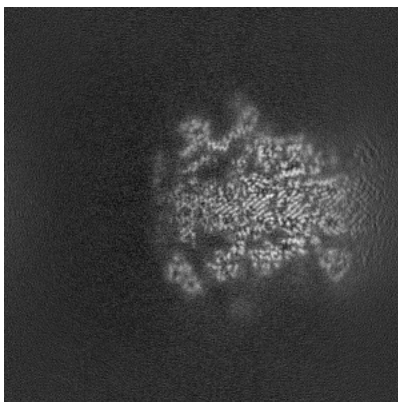


Z Index: 269

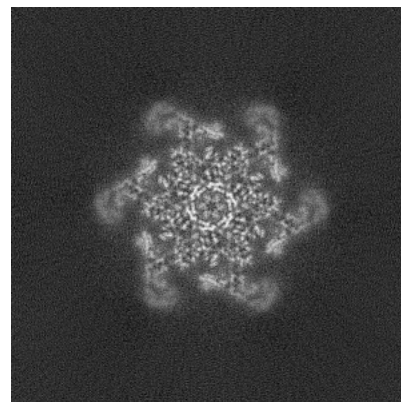
### 6.3.2 Raw map



X Index: 210



Y Index: 189

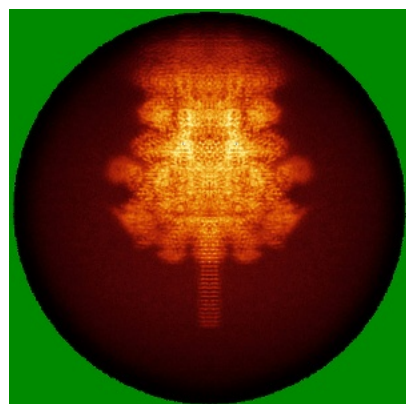


Z Index: 252

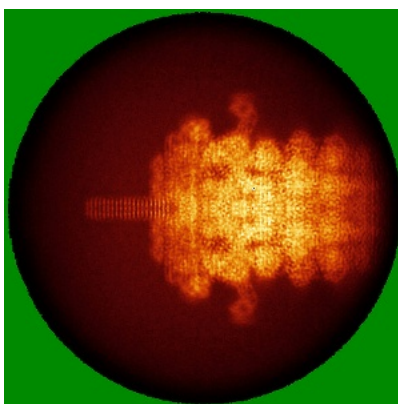
The images above show the largest variance slices of the map in three orthogonal directions.

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

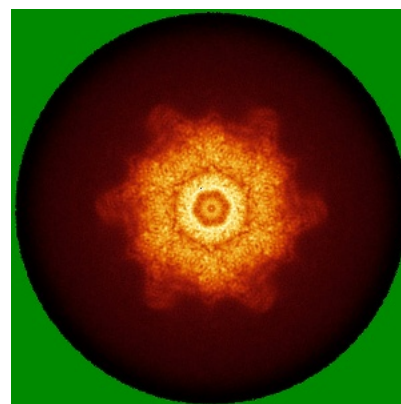
### 6.4.1 Primary map



X

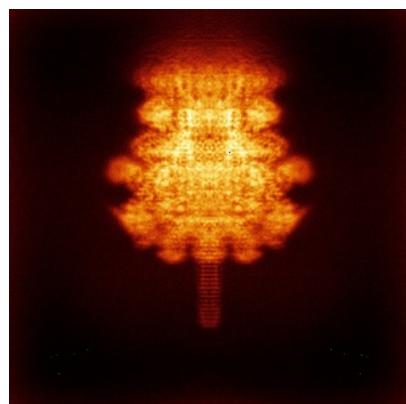


Y

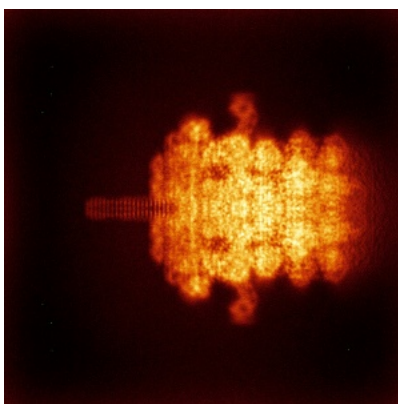


Z

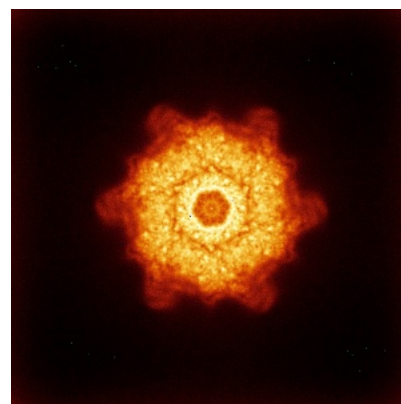
### 6.4.2 Raw map



X



Y



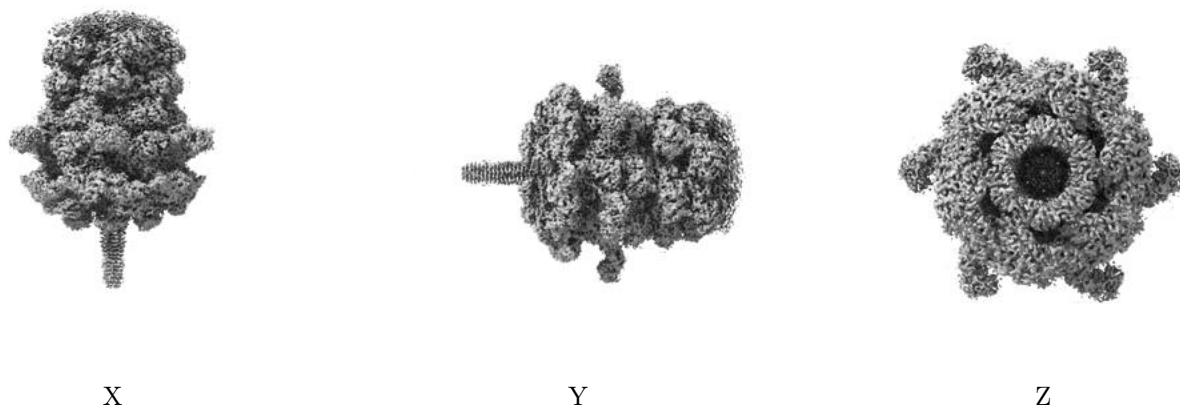
Z

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.



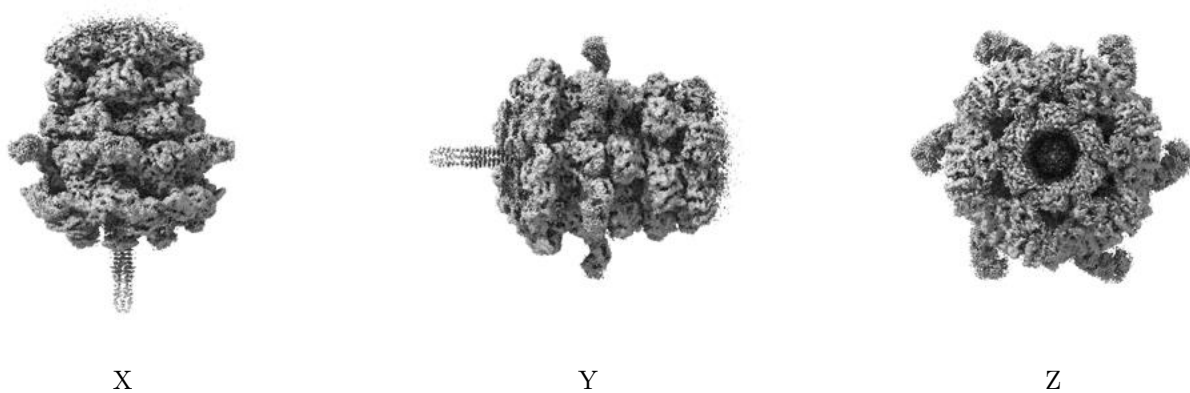
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.421. 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.

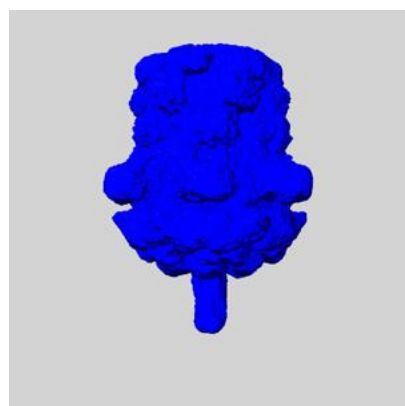
## 6.6 Mask visualisation [i](#)

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

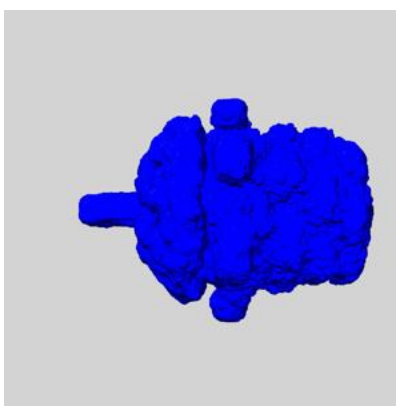
A mask typically either:

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

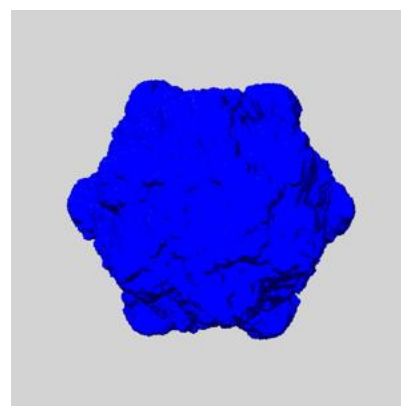
### 6.6.1 emd\_51564\_msk\_1.map [i](#)



X



Y

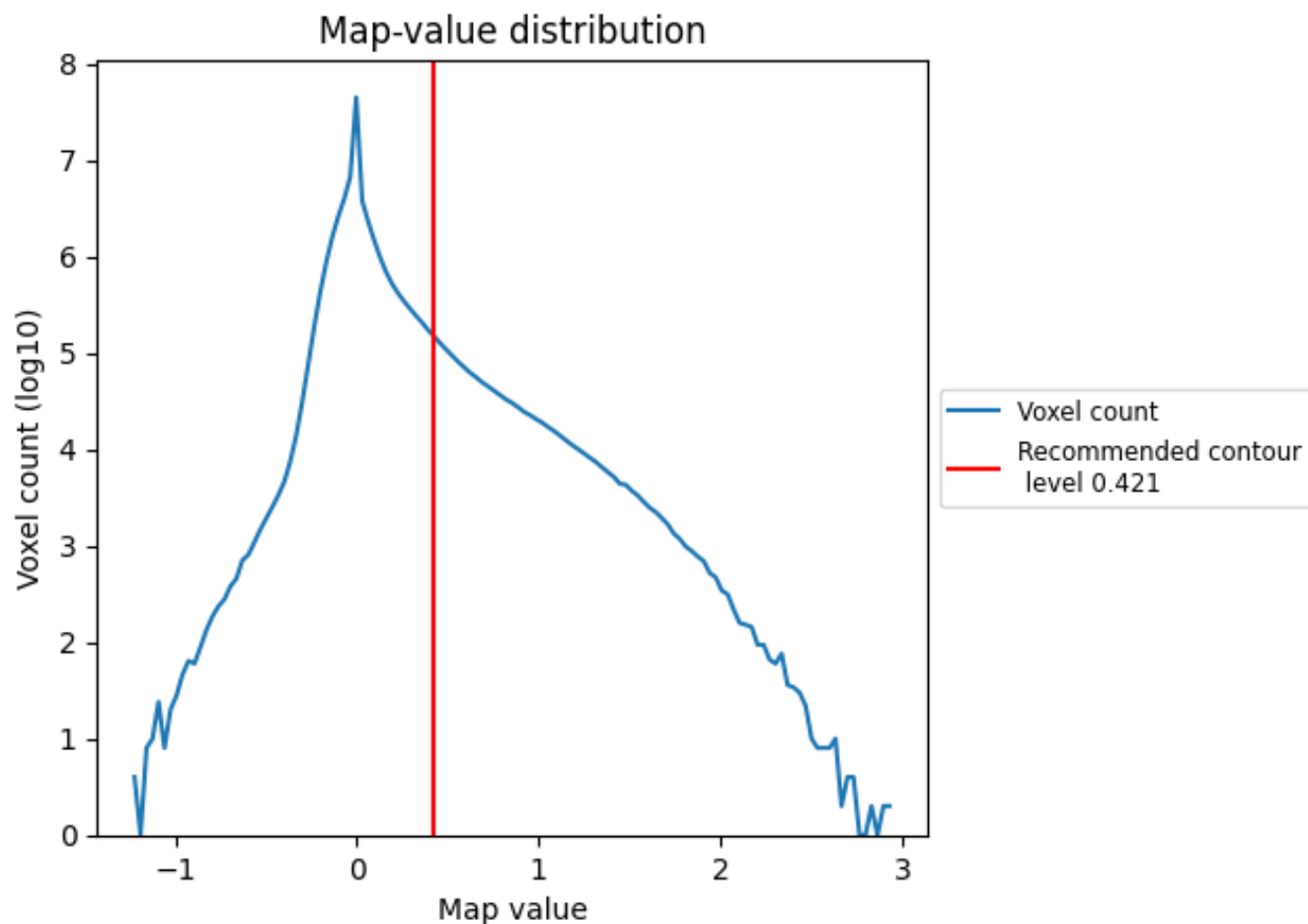


Z

## 7 Map analysis [i](#)

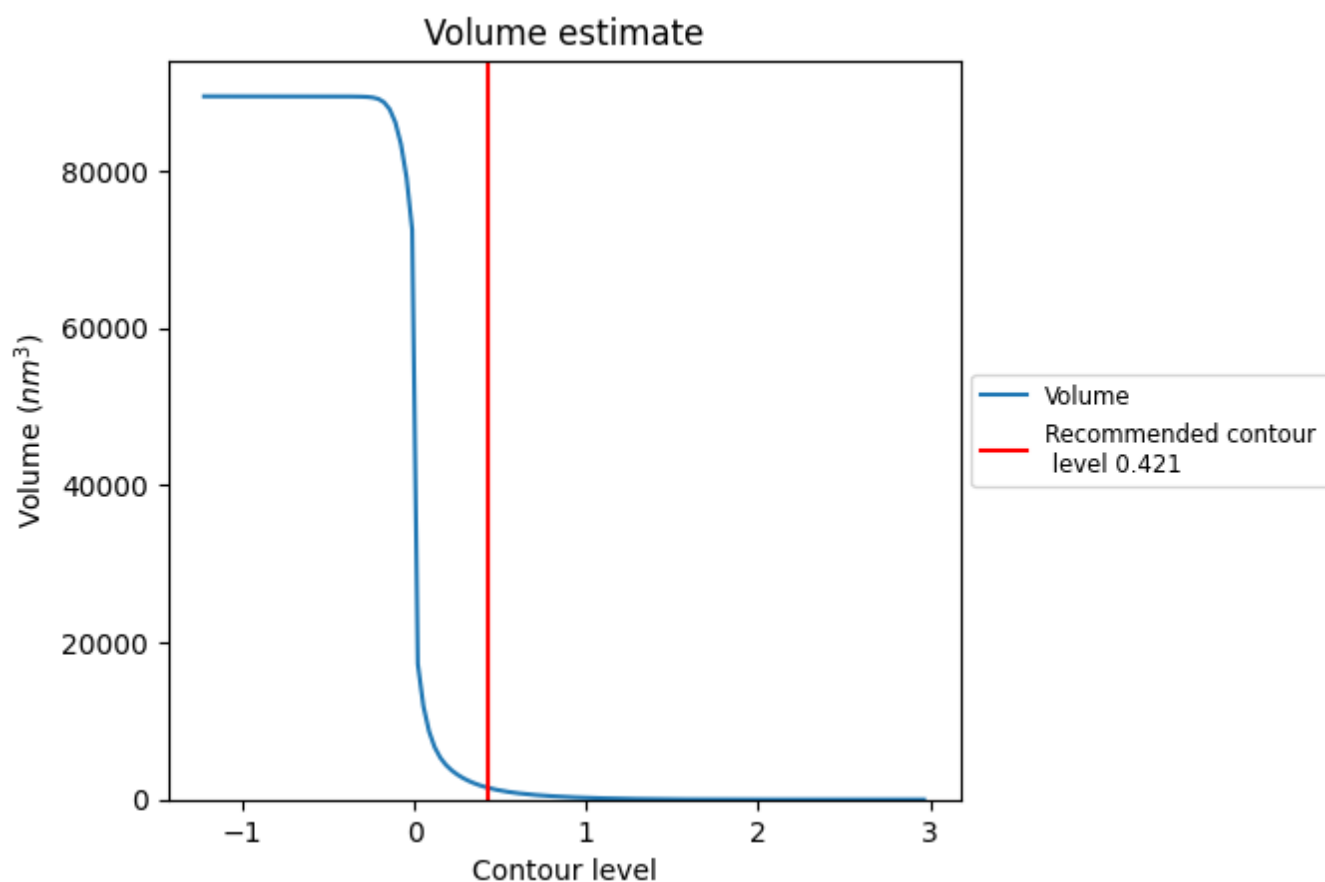
This section contains the results of statistical analysis of the map.

### 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](#)

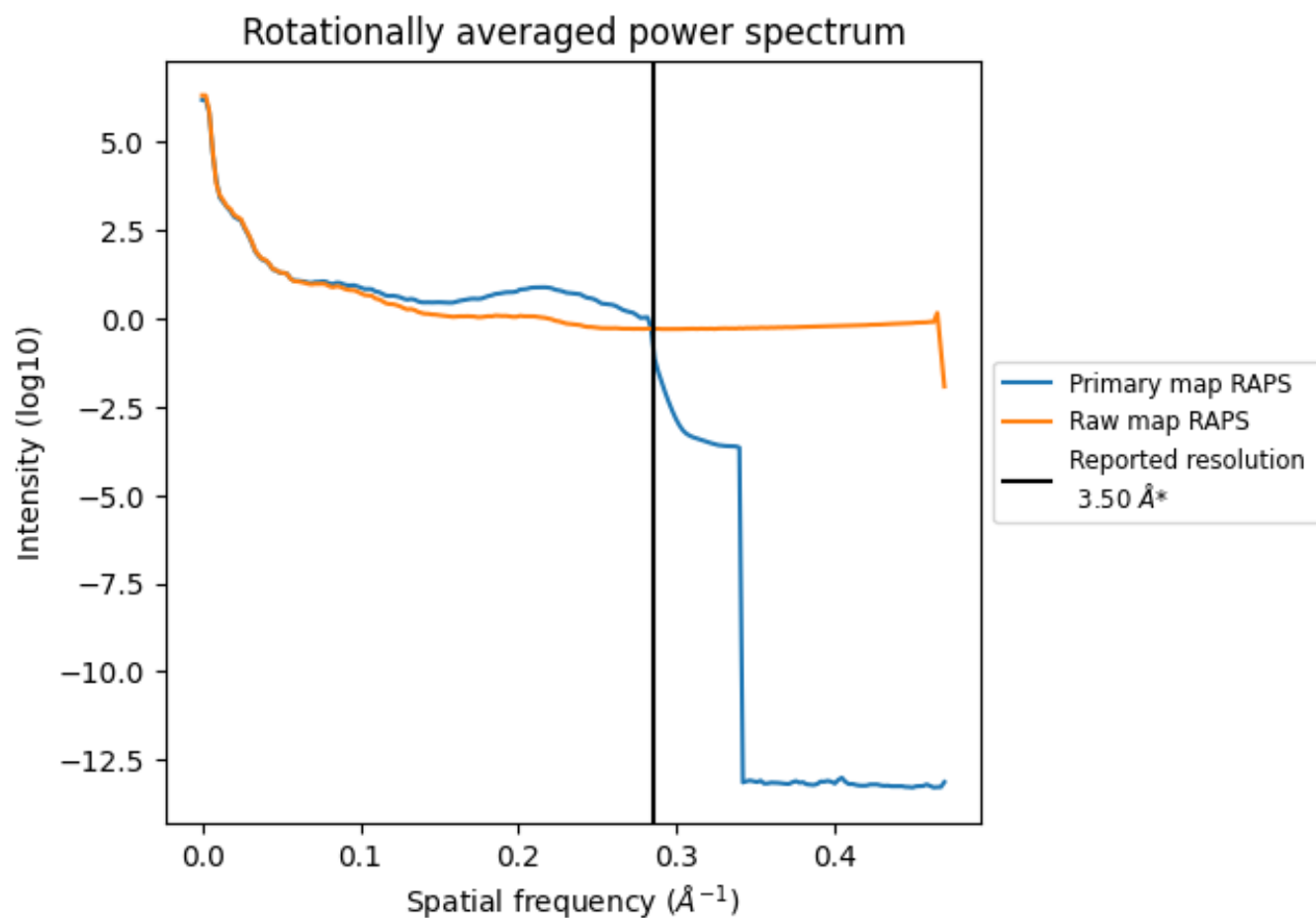


The volume at the recommended contour level is 1541 nm<sup>3</sup>; this corresponds to an approximate mass of 1392 kDa.

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 ⓘ

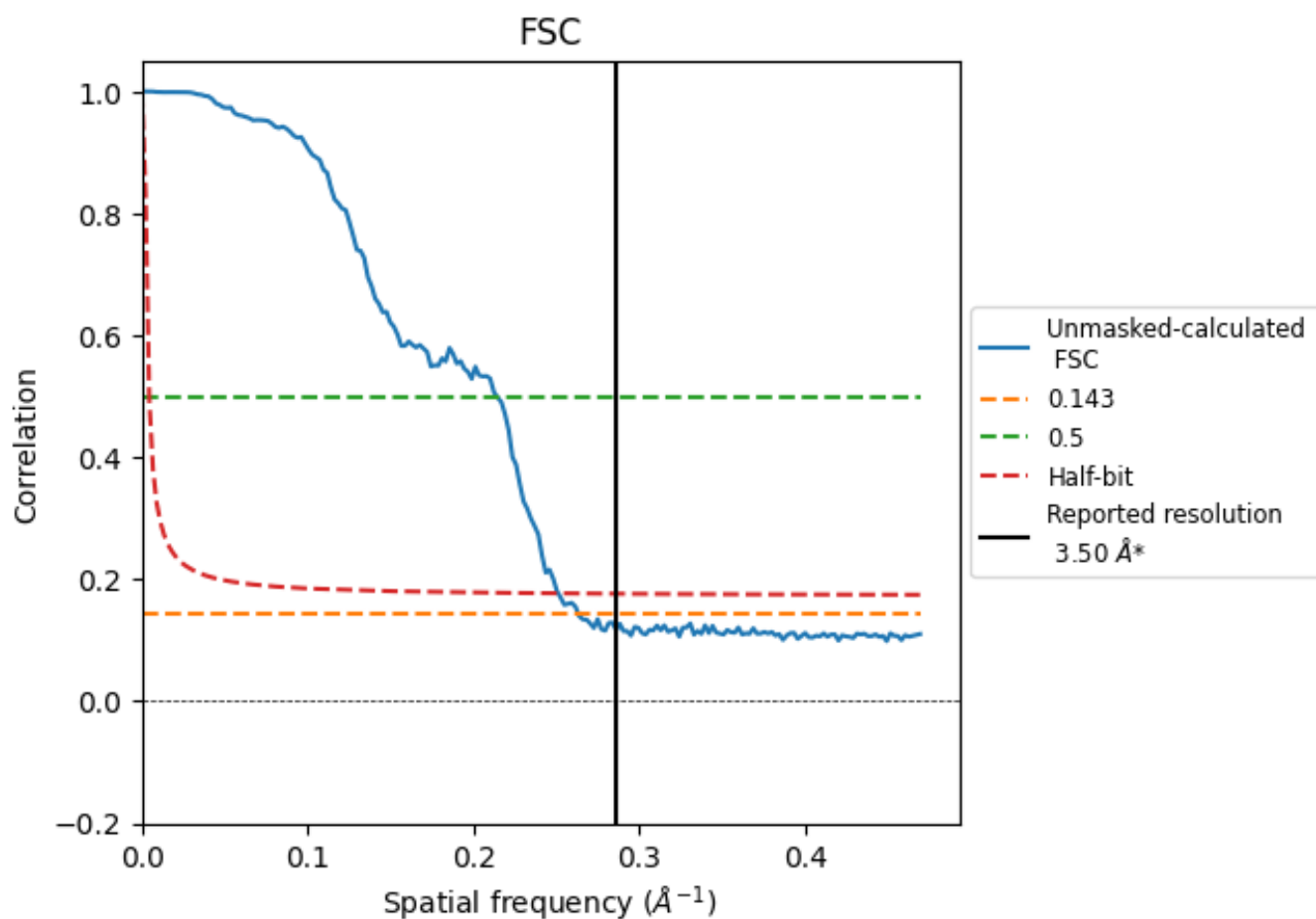


\*Reported resolution corresponds to spatial frequency of 0.286 Å<sup>-1</sup>

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

## 8.2 Resolution estimates [i](#)

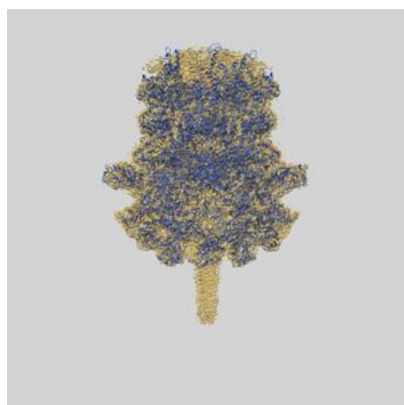
| Resolution estimate (Å)   | Estimation criterion (FSC cut-off) |      |          |
|---------------------------|------------------------------------|------|----------|
|                           | 0.143                              | 0.5  | Half-bit |
| Reported by author        | 3.50                               | -    | -        |
| Author-provided FSC curve | -                                  | -    | -        |
| Unmasked-calculated*      | 3.80                               | 4.67 | 3.98     |

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

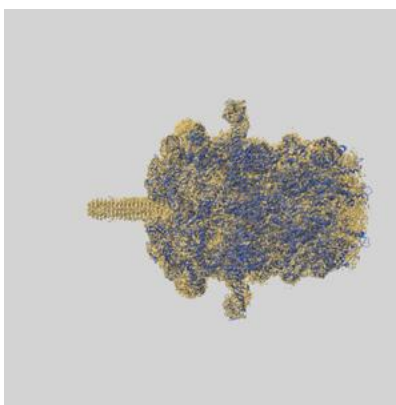
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-51564 and PDB model 9GTP. Per-residue inclusion information can be found in section [3](#) on page [10](#).

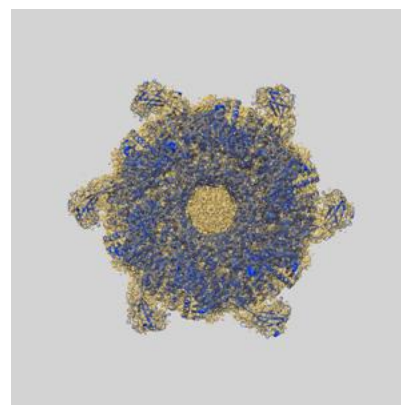
### 9.1 Map-model overlay [i](#)



X



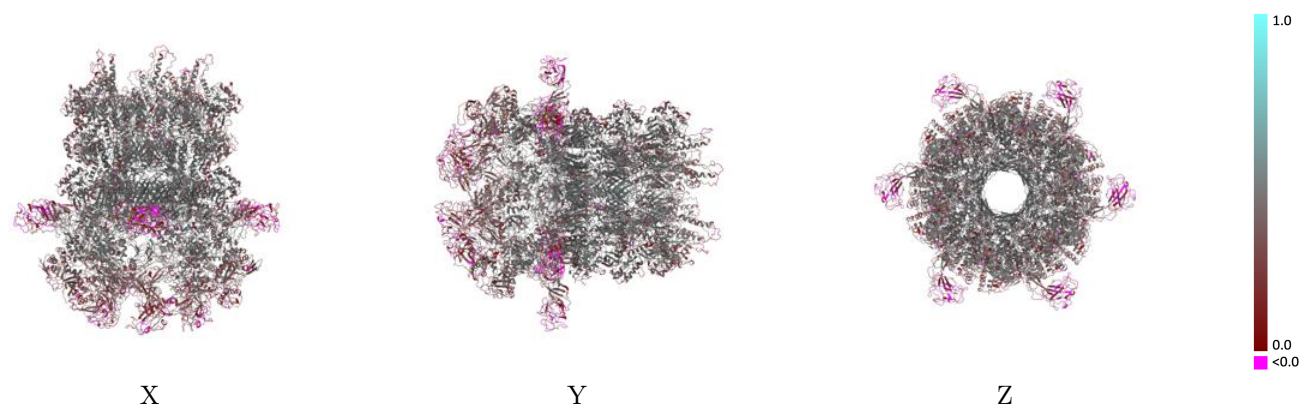
Y



Z

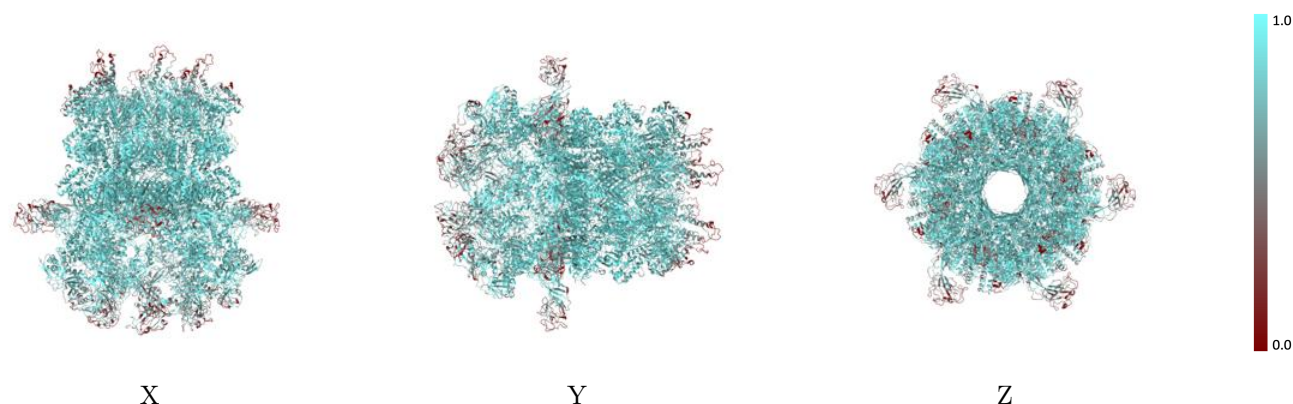
The images above show the 3D surface view of the map at the recommended contour level 0.421 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



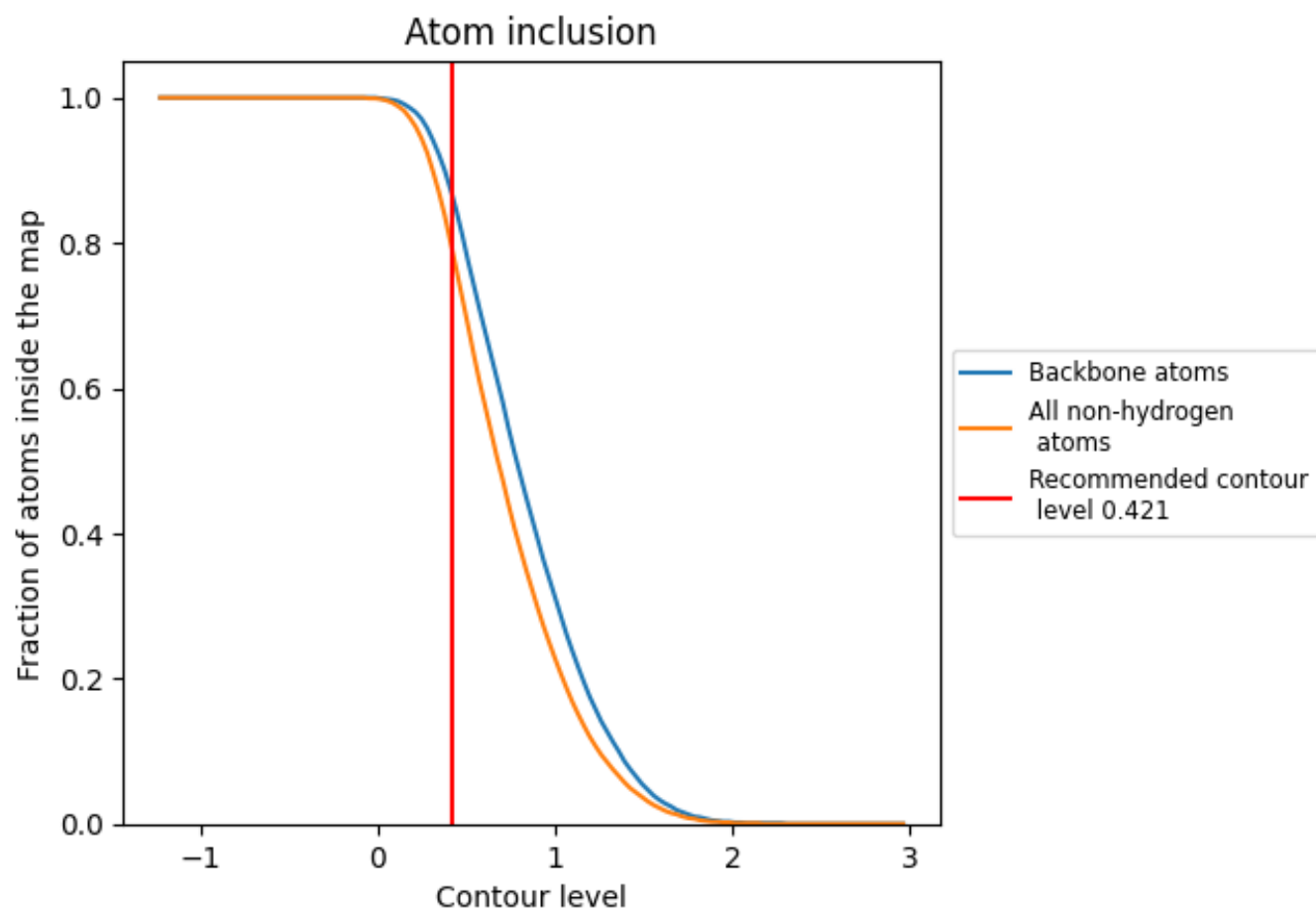
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.421).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 87% of all backbone atoms, 79% 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 (0.421) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion                                                                             | Q-score                                                                                    |
|-------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| All   |  0.7910   |  0.3810   |
| 1G    |  0.6960   |  0.3170   |
| 1H    |  0.6950   |  0.3210   |
| 1J    |  0.6920   |  0.3160   |
| 1K    |  0.6940   |  0.3170   |
| 1L    |  0.6910   |  0.3180   |
| 1e    |  0.9060   |  0.4360   |
| 1f    |  0.8990   |  0.4310   |
| 1g    |  0.9050   |  0.4310   |
| 1h    |  0.9060   |  0.4330   |
| 1i    |  0.9030   |  0.4330   |
| 1j    |  0.9090   |  0.4350   |
| 1l    |  0.6930   |  0.3170   |
| 2G    |  0.6840   |  0.2850   |
| 2H    |  0.6820  |  0.2840  |
| 2J    |  0.6860 |  0.2870 |
| 2K    |  0.6890 |  0.2860 |
| 2L    |  0.6840 |  0.2860 |
| 2e    |  0.8810 |  0.4110 |
| 2f    |  0.8890 |  0.4140 |
| 2g    |  0.8760 |  0.4100 |
| 2h    |  0.8820 |  0.4120 |
| 2i    |  0.8790 |  0.4110 |
| 2j    |  0.8850 |  0.4120 |
| 2l    |  0.6810 |  0.2880 |
| 3e    |  0.6840 |  0.3940 |
| 3f    |  0.6850 |  0.3910 |
| 3g    |  0.6800 |  0.3890 |
| 3h    |  0.6880 |  0.3930 |
| 3i    |  0.6840 |  0.3990 |
| 3j    |  0.6810 |  0.3950 |
| A     |  0.8530 |  0.3940 |
| B     |  0.8550 |  0.3950 |
| C     |  0.8550 |  0.4000 |
| D     |  0.8490 |  0.3920 |



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| Chain | Atom inclusion                                                                             | Q-score                                                                                    |
|-------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| E     |  0.8600   |  0.3910   |
| F     |  0.8610   |  0.3970   |
| M     |  0.9090   |  0.4740   |
| N     |  0.9070   |  0.4770   |
| O     |  0.9160   |  0.4760   |
| P     |  0.9160   |  0.4800   |
| Q     |  0.9120   |  0.4770   |
| R     |  0.9160   |  0.4760   |
| S     |  0.9140   |  0.4550   |
| T     |  0.9140   |  0.4540   |
| U     |  0.9180   |  0.4560   |
| V     |  0.9150   |  0.4570   |
| W     |  0.9090   |  0.4570   |
| X     |  0.9210   |  0.4550   |
| a     |  0.9300   |  0.4890   |
| b     |  0.9220   |  0.4910   |
| c     |  0.9280   |  0.4960   |
| d     |  0.9280   |  0.4930   |
| e     |  0.9290   |  0.4950   |
| f     |  0.9270  |  0.4900  |
| k     |  0.8640 |  0.4210 |
| l     |  0.8530 |  0.4200 |
| m     |  0.8580 |  0.4230 |
| n     |  0.8680 |  0.4230 |
| o     |  0.8650 |  0.4280 |
| p     |  0.8580 |  0.4260 |