



## Full wwPDB EM Validation Report ⓘ

Nov 29, 2022 – 10:32 PM JST

PDB ID : 7X7N  
EMDB ID : EMD-33042  
Title : 3D model of the 3-RBD up single trimeric spike protein of SARS-CoV2 in the presence of synthetic peptide SIH-5.  
Authors : Khatri, B.; Pramanick, I.; Malladi, S.K.; Rajmani, R.S.; Kumar, S.; Ghosh, P.; Sengupta, N.; Rahisuddin, R.; Kumaran, S.; Ringe, R.P.; Varadarajan, R.; Dutta, S.; Chatterjee, J.  
Deposited on : 2022-03-10  
Resolution : 4.47 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:

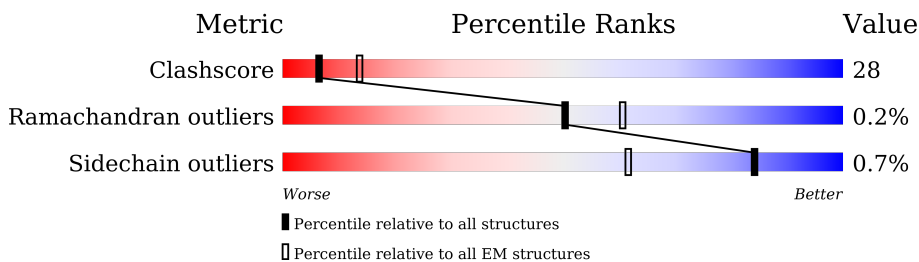
EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.3

# 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 4.47 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            | 158937                      | 4297                        |
| Ramachandran outliers | 154571                      | 4023                        |
| Sidechain outliers    | 154315                      | 3826                        |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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   | A     | 1288   |                  |
| 1   | B     | 1288   |                  |
| 1   | C     | 1288   |                  |
| 2   | D     | 38     |                  |
| 2   | E     | 38     |                  |
| 2   | F     | 38     |                  |
| 2   | G     | 38     |                  |
| 2   | H     | 38     |                  |

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| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 2   | I     | 38     | <br>32% 68% |

## 2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 26493 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 Spike glycoprotein.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
|     |       |          | Total | C    | N    | O    | S  |         |       |
| 1   | B     | 1033     | 8031  | 5134 | 1334 | 1526 | 37 | 0       | 0     |
| 1   | C     | 1033     | 8033  | 5135 | 1335 | 1526 | 37 | 0       | 0     |
| 1   | A     | 1026     | 7981  | 5104 | 1326 | 1515 | 36 | 0       | 0     |

There are 255 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| B     | 682     | GLY      | ARG    | engineered mutation | UNP P0DTC2 |
| B     | 683     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| B     | 685     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| B     | 986     | PRO      | LYS    | engineered mutation | UNP P0DTC2 |
| B     | 987     | PRO      | VAL    | engineered mutation | UNP P0DTC2 |
| B     | 1209    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1210    | SER      | -      | expression tag      | UNP P0DTC2 |
| B     | 1211    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1212    | TYR      | -      | expression tag      | UNP P0DTC2 |
| B     | 1213    | ILE      | -      | expression tag      | UNP P0DTC2 |
| B     | 1214    | PRO      | -      | expression tag      | UNP P0DTC2 |
| B     | 1215    | GLU      | -      | expression tag      | UNP P0DTC2 |
| B     | 1216    | ALA      | -      | expression tag      | UNP P0DTC2 |
| B     | 1217    | PRO      | -      | expression tag      | UNP P0DTC2 |
| B     | 1218    | ARG      | -      | expression tag      | UNP P0DTC2 |
| B     | 1219    | ASP      | -      | expression tag      | UNP P0DTC2 |
| B     | 1220    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1221    | GLN      | -      | expression tag      | UNP P0DTC2 |
| B     | 1222    | ALA      | -      | expression tag      | UNP P0DTC2 |
| B     | 1223    | TYR      | -      | expression tag      | UNP P0DTC2 |
| B     | 1224    | VAL      | -      | expression tag      | UNP P0DTC2 |
| B     | 1225    | ARG      | -      | expression tag      | UNP P0DTC2 |
| B     | 1226    | LYS      | -      | expression tag      | UNP P0DTC2 |
| B     | 1227    | ASP      | -      | expression tag      | UNP P0DTC2 |

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| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| B     | 1228    | GLY      | -      | expression tag | UNP P0DTC2 |
| B     | 1229    | GLU      | -      | expression tag | UNP P0DTC2 |
| B     | 1230    | TRP      | -      | expression tag | UNP P0DTC2 |
| B     | 1231    | VAL      | -      | expression tag | UNP P0DTC2 |
| B     | 1232    | LEU      | -      | expression tag | UNP P0DTC2 |
| B     | 1233    | LEU      | -      | expression tag | UNP P0DTC2 |
| B     | 1234    | SER      | -      | expression tag | UNP P0DTC2 |
| B     | 1235    | THR      | -      | expression tag | UNP P0DTC2 |
| B     | 1236    | PHE      | -      | expression tag | UNP P0DTC2 |
| B     | 1237    | LEU      | -      | expression tag | UNP P0DTC2 |
| B     | 1238    | GLY      | -      | expression tag | UNP P0DTC2 |
| B     | 1239    | ARG      | -      | expression tag | UNP P0DTC2 |
| B     | 1240    | SER      | -      | expression tag | UNP P0DTC2 |
| B     | 1241    | LEU      | -      | expression tag | UNP P0DTC2 |
| B     | 1242    | GLU      | -      | expression tag | UNP P0DTC2 |
| B     | 1243    | VAL      | -      | expression tag | UNP P0DTC2 |
| B     | 1244    | LEU      | -      | expression tag | UNP P0DTC2 |
| B     | 1245    | PHE      | -      | expression tag | UNP P0DTC2 |
| B     | 1246    | GLN      | -      | expression tag | UNP P0DTC2 |
| B     | 1247    | GLY      | -      | expression tag | UNP P0DTC2 |
| B     | 1248    | PRO      | -      | expression tag | UNP P0DTC2 |
| B     | 1249    | GLY      | -      | expression tag | UNP P0DTC2 |
| B     | 1250    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1251    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1252    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1253    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1254    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1255    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1256    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1257    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1258    | SER      | -      | expression tag | UNP P0DTC2 |
| B     | 1259    | ALA      | -      | expression tag | UNP P0DTC2 |
| B     | 1260    | TRP      | -      | expression tag | UNP P0DTC2 |
| B     | 1261    | SER      | -      | expression tag | UNP P0DTC2 |
| B     | 1262    | HIS      | -      | expression tag | UNP P0DTC2 |
| B     | 1263    | PRO      | -      | expression tag | UNP P0DTC2 |
| B     | 1264    | GLN      | -      | expression tag | UNP P0DTC2 |
| B     | 1265    | PHE      | -      | expression tag | UNP P0DTC2 |
| B     | 1266    | GLU      | -      | expression tag | UNP P0DTC2 |
| B     | 1267    | LYS      | -      | expression tag | UNP P0DTC2 |
| B     | 1268    | GLY      | -      | expression tag | UNP P0DTC2 |
| B     | 1269    | GLY      | -      | expression tag | UNP P0DTC2 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| B     | 1270    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1271    | SER      | -      | expression tag      | UNP P0DTC2 |
| B     | 1272    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1273    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1274    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1275    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1276    | SER      | -      | expression tag      | UNP P0DTC2 |
| B     | 1277    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1278    | GLY      | -      | expression tag      | UNP P0DTC2 |
| B     | 1279    | SER      | -      | expression tag      | UNP P0DTC2 |
| B     | 1280    | ALA      | -      | expression tag      | UNP P0DTC2 |
| B     | 1281    | TRP      | -      | expression tag      | UNP P0DTC2 |
| B     | 1282    | SER      | -      | expression tag      | UNP P0DTC2 |
| B     | 1283    | HIS      | -      | expression tag      | UNP P0DTC2 |
| B     | 1284    | PRO      | -      | expression tag      | UNP P0DTC2 |
| B     | 1285    | GLN      | -      | expression tag      | UNP P0DTC2 |
| B     | 1286    | PHE      | -      | expression tag      | UNP P0DTC2 |
| B     | 1287    | GLU      | -      | expression tag      | UNP P0DTC2 |
| B     | 1288    | LYS      | -      | expression tag      | UNP P0DTC2 |
| C     | 682     | GLY      | ARG    | engineered mutation | UNP P0DTC2 |
| C     | 683     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| C     | 685     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| C     | 986     | PRO      | LYS    | engineered mutation | UNP P0DTC2 |
| C     | 987     | PRO      | VAL    | engineered mutation | UNP P0DTC2 |
| C     | 1209    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1210    | SER      | -      | expression tag      | UNP P0DTC2 |
| C     | 1211    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1212    | TYR      | -      | expression tag      | UNP P0DTC2 |
| C     | 1213    | ILE      | -      | expression tag      | UNP P0DTC2 |
| C     | 1214    | PRO      | -      | expression tag      | UNP P0DTC2 |
| C     | 1215    | GLU      | -      | expression tag      | UNP P0DTC2 |
| C     | 1216    | ALA      | -      | expression tag      | UNP P0DTC2 |
| C     | 1217    | PRO      | -      | expression tag      | UNP P0DTC2 |
| C     | 1218    | ARG      | -      | expression tag      | UNP P0DTC2 |
| C     | 1219    | ASP      | -      | expression tag      | UNP P0DTC2 |
| C     | 1220    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1221    | GLN      | -      | expression tag      | UNP P0DTC2 |
| C     | 1222    | ALA      | -      | expression tag      | UNP P0DTC2 |
| C     | 1223    | TYR      | -      | expression tag      | UNP P0DTC2 |
| C     | 1224    | VAL      | -      | expression tag      | UNP P0DTC2 |
| C     | 1225    | ARG      | -      | expression tag      | UNP P0DTC2 |
| C     | 1226    | LYS      | -      | expression tag      | UNP P0DTC2 |

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| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| C     | 1227    | ASP      | -      | expression tag | UNP P0DTC2 |
| C     | 1228    | GLY      | -      | expression tag | UNP P0DTC2 |
| C     | 1229    | GLU      | -      | expression tag | UNP P0DTC2 |
| C     | 1230    | TRP      | -      | expression tag | UNP P0DTC2 |
| C     | 1231    | VAL      | -      | expression tag | UNP P0DTC2 |
| C     | 1232    | LEU      | -      | expression tag | UNP P0DTC2 |
| C     | 1233    | LEU      | -      | expression tag | UNP P0DTC2 |
| C     | 1234    | SER      | -      | expression tag | UNP P0DTC2 |
| C     | 1235    | THR      | -      | expression tag | UNP P0DTC2 |
| C     | 1236    | PHE      | -      | expression tag | UNP P0DTC2 |
| C     | 1237    | LEU      | -      | expression tag | UNP P0DTC2 |
| C     | 1238    | GLY      | -      | expression tag | UNP P0DTC2 |
| C     | 1239    | ARG      | -      | expression tag | UNP P0DTC2 |
| C     | 1240    | SER      | -      | expression tag | UNP P0DTC2 |
| C     | 1241    | LEU      | -      | expression tag | UNP P0DTC2 |
| C     | 1242    | GLU      | -      | expression tag | UNP P0DTC2 |
| C     | 1243    | VAL      | -      | expression tag | UNP P0DTC2 |
| C     | 1244    | LEU      | -      | expression tag | UNP P0DTC2 |
| C     | 1245    | PHE      | -      | expression tag | UNP P0DTC2 |
| C     | 1246    | GLN      | -      | expression tag | UNP P0DTC2 |
| C     | 1247    | GLY      | -      | expression tag | UNP P0DTC2 |
| C     | 1248    | PRO      | -      | expression tag | UNP P0DTC2 |
| C     | 1249    | GLY      | -      | expression tag | UNP P0DTC2 |
| C     | 1250    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1251    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1252    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1253    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1254    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1255    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1256    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1257    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1258    | SER      | -      | expression tag | UNP P0DTC2 |
| C     | 1259    | ALA      | -      | expression tag | UNP P0DTC2 |
| C     | 1260    | TRP      | -      | expression tag | UNP P0DTC2 |
| C     | 1261    | SER      | -      | expression tag | UNP P0DTC2 |
| C     | 1262    | HIS      | -      | expression tag | UNP P0DTC2 |
| C     | 1263    | PRO      | -      | expression tag | UNP P0DTC2 |
| C     | 1264    | GLN      | -      | expression tag | UNP P0DTC2 |
| C     | 1265    | PHE      | -      | expression tag | UNP P0DTC2 |
| C     | 1266    | GLU      | -      | expression tag | UNP P0DTC2 |
| C     | 1267    | LYS      | -      | expression tag | UNP P0DTC2 |
| C     | 1268    | GLY      | -      | expression tag | UNP P0DTC2 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| C     | 1269    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1270    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1271    | SER      | -      | expression tag      | UNP P0DTC2 |
| C     | 1272    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1273    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1274    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1275    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1276    | SER      | -      | expression tag      | UNP P0DTC2 |
| C     | 1277    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1278    | GLY      | -      | expression tag      | UNP P0DTC2 |
| C     | 1279    | SER      | -      | expression tag      | UNP P0DTC2 |
| C     | 1280    | ALA      | -      | expression tag      | UNP P0DTC2 |
| C     | 1281    | TRP      | -      | expression tag      | UNP P0DTC2 |
| C     | 1282    | SER      | -      | expression tag      | UNP P0DTC2 |
| C     | 1283    | HIS      | -      | expression tag      | UNP P0DTC2 |
| C     | 1284    | PRO      | -      | expression tag      | UNP P0DTC2 |
| C     | 1285    | GLN      | -      | expression tag      | UNP P0DTC2 |
| C     | 1286    | PHE      | -      | expression tag      | UNP P0DTC2 |
| C     | 1287    | GLU      | -      | expression tag      | UNP P0DTC2 |
| C     | 1288    | LYS      | -      | expression tag      | UNP P0DTC2 |
| A     | 682     | GLY      | ARG    | engineered mutation | UNP P0DTC2 |
| A     | 683     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| A     | 685     | SER      | ARG    | engineered mutation | UNP P0DTC2 |
| A     | 986     | PRO      | LYS    | engineered mutation | UNP P0DTC2 |
| A     | 987     | PRO      | VAL    | engineered mutation | UNP P0DTC2 |
| A     | 1209    | GLY      | -      | expression tag      | UNP P0DTC2 |
| A     | 1210    | SER      | -      | expression tag      | UNP P0DTC2 |
| A     | 1211    | GLY      | -      | expression tag      | UNP P0DTC2 |
| A     | 1212    | TYR      | -      | expression tag      | UNP P0DTC2 |
| A     | 1213    | ILE      | -      | expression tag      | UNP P0DTC2 |
| A     | 1214    | PRO      | -      | expression tag      | UNP P0DTC2 |
| A     | 1215    | GLU      | -      | expression tag      | UNP P0DTC2 |
| A     | 1216    | ALA      | -      | expression tag      | UNP P0DTC2 |
| A     | 1217    | PRO      | -      | expression tag      | UNP P0DTC2 |
| A     | 1218    | ARG      | -      | expression tag      | UNP P0DTC2 |
| A     | 1219    | ASP      | -      | expression tag      | UNP P0DTC2 |
| A     | 1220    | GLY      | -      | expression tag      | UNP P0DTC2 |
| A     | 1221    | GLN      | -      | expression tag      | UNP P0DTC2 |
| A     | 1222    | ALA      | -      | expression tag      | UNP P0DTC2 |
| A     | 1223    | TYR      | -      | expression tag      | UNP P0DTC2 |
| A     | 1224    | VAL      | -      | expression tag      | UNP P0DTC2 |
| A     | 1225    | ARG      | -      | expression tag      | UNP P0DTC2 |

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| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| A     | 1226    | LYS      | -      | expression tag | UNP P0DTC2 |
| A     | 1227    | ASP      | -      | expression tag | UNP P0DTC2 |
| A     | 1228    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1229    | GLU      | -      | expression tag | UNP P0DTC2 |
| A     | 1230    | TRP      | -      | expression tag | UNP P0DTC2 |
| A     | 1231    | VAL      | -      | expression tag | UNP P0DTC2 |
| A     | 1232    | LEU      | -      | expression tag | UNP P0DTC2 |
| A     | 1233    | LEU      | -      | expression tag | UNP P0DTC2 |
| A     | 1234    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1235    | THR      | -      | expression tag | UNP P0DTC2 |
| A     | 1236    | PHE      | -      | expression tag | UNP P0DTC2 |
| A     | 1237    | LEU      | -      | expression tag | UNP P0DTC2 |
| A     | 1238    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1239    | ARG      | -      | expression tag | UNP P0DTC2 |
| A     | 1240    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1241    | LEU      | -      | expression tag | UNP P0DTC2 |
| A     | 1242    | GLU      | -      | expression tag | UNP P0DTC2 |
| A     | 1243    | VAL      | -      | expression tag | UNP P0DTC2 |
| A     | 1244    | LEU      | -      | expression tag | UNP P0DTC2 |
| A     | 1245    | PHE      | -      | expression tag | UNP P0DTC2 |
| A     | 1246    | GLN      | -      | expression tag | UNP P0DTC2 |
| A     | 1247    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1248    | PRO      | -      | expression tag | UNP P0DTC2 |
| A     | 1249    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1250    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1251    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1252    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1253    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1254    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1255    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1256    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1257    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1258    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1259    | ALA      | -      | expression tag | UNP P0DTC2 |
| A     | 1260    | TRP      | -      | expression tag | UNP P0DTC2 |
| A     | 1261    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1262    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1263    | PRO      | -      | expression tag | UNP P0DTC2 |
| A     | 1264    | GLN      | -      | expression tag | UNP P0DTC2 |
| A     | 1265    | PHE      | -      | expression tag | UNP P0DTC2 |
| A     | 1266    | GLU      | -      | expression tag | UNP P0DTC2 |
| A     | 1267    | LYS      | -      | expression tag | UNP P0DTC2 |

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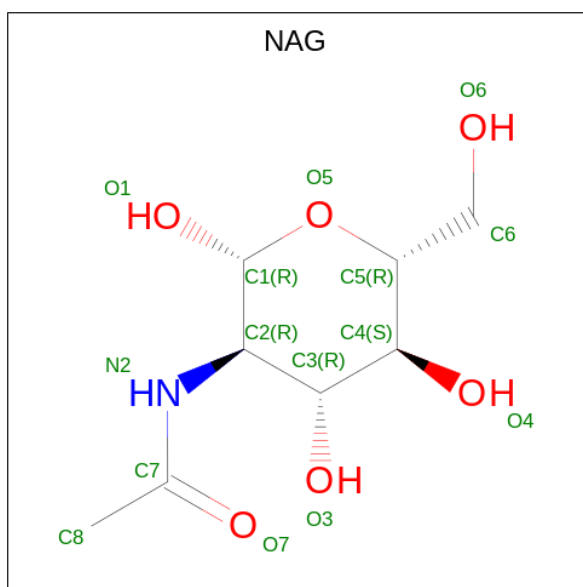
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| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| A     | 1268    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1269    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1270    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1271    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1272    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1273    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1274    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1275    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1276    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1277    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1278    | GLY      | -      | expression tag | UNP P0DTC2 |
| A     | 1279    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1280    | ALA      | -      | expression tag | UNP P0DTC2 |
| A     | 1281    | TRP      | -      | expression tag | UNP P0DTC2 |
| A     | 1282    | SER      | -      | expression tag | UNP P0DTC2 |
| A     | 1283    | HIS      | -      | expression tag | UNP P0DTC2 |
| A     | 1284    | PRO      | -      | expression tag | UNP P0DTC2 |
| A     | 1285    | GLN      | -      | expression tag | UNP P0DTC2 |
| A     | 1286    | PHE      | -      | expression tag | UNP P0DTC2 |
| A     | 1287    | GLU      | -      | expression tag | UNP P0DTC2 |
| A     | 1288    | LYS      | -      | expression tag | UNP P0DTC2 |

- Molecule 2 is a protein called Synthetic peptide SIH-5.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 2   | D     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |
| 2   | E     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |
| 2   | H     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |
| 2   | I     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |
| 2   | F     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |
| 2   | G     | 38       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 317   | 204 | 49 | 61 | 3 |         |       |

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C<sub>8</sub>H<sub>15</sub>NO<sub>6</sub>).



| Mol | Chain | Residues | Atoms |     |    |    | AltConf |
|-----|-------|----------|-------|-----|----|----|---------|
|     |       |          | Total | C   | N  | O  |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | B     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |
| 3   | C     | 1        | Total | C   | N  | O  | 0       |
|     |       |          | 182   | 104 | 13 | 65 |         |

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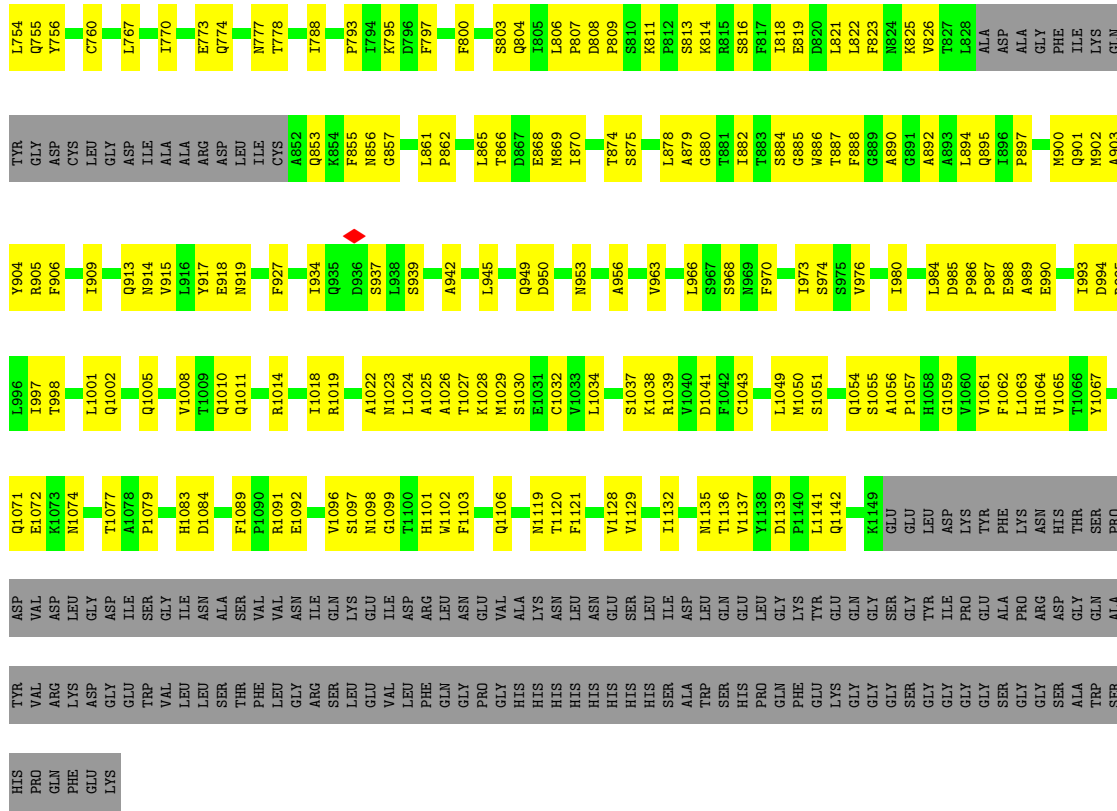
| Mol | Chain | Residues | Atoms |     |    |    | AltConf |
|-----|-------|----------|-------|-----|----|----|---------|
|     |       |          | Total | C   | N  | O  |         |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | C     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |
| 3   | A     | 1        | 182   | 104 | 13 | 65 | 0       |

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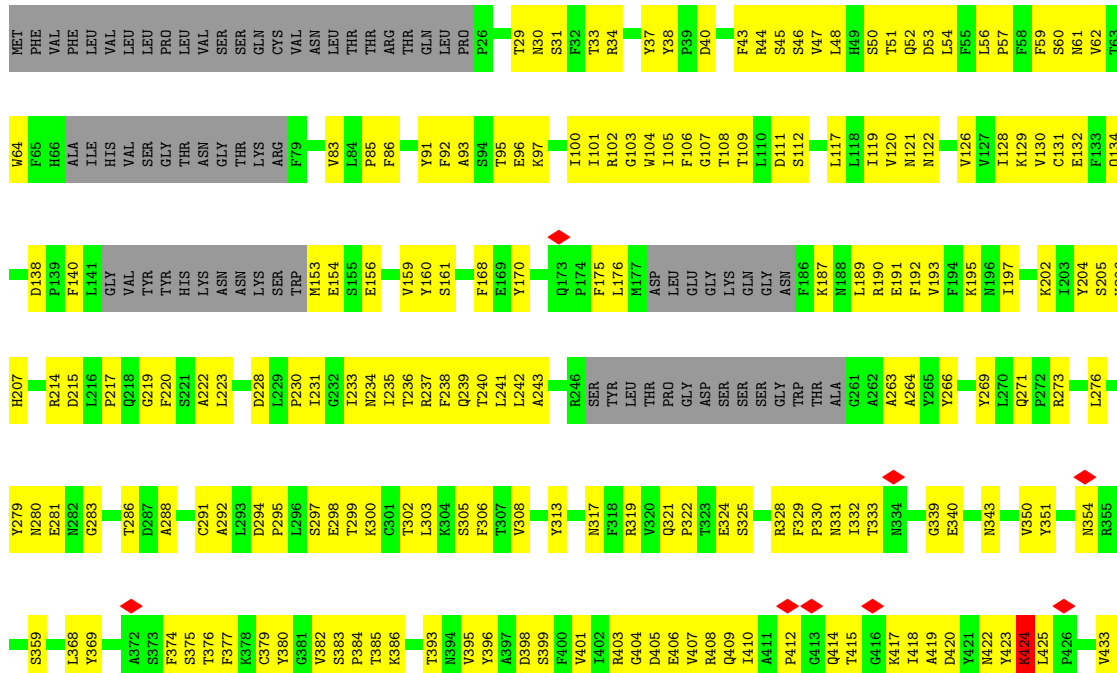
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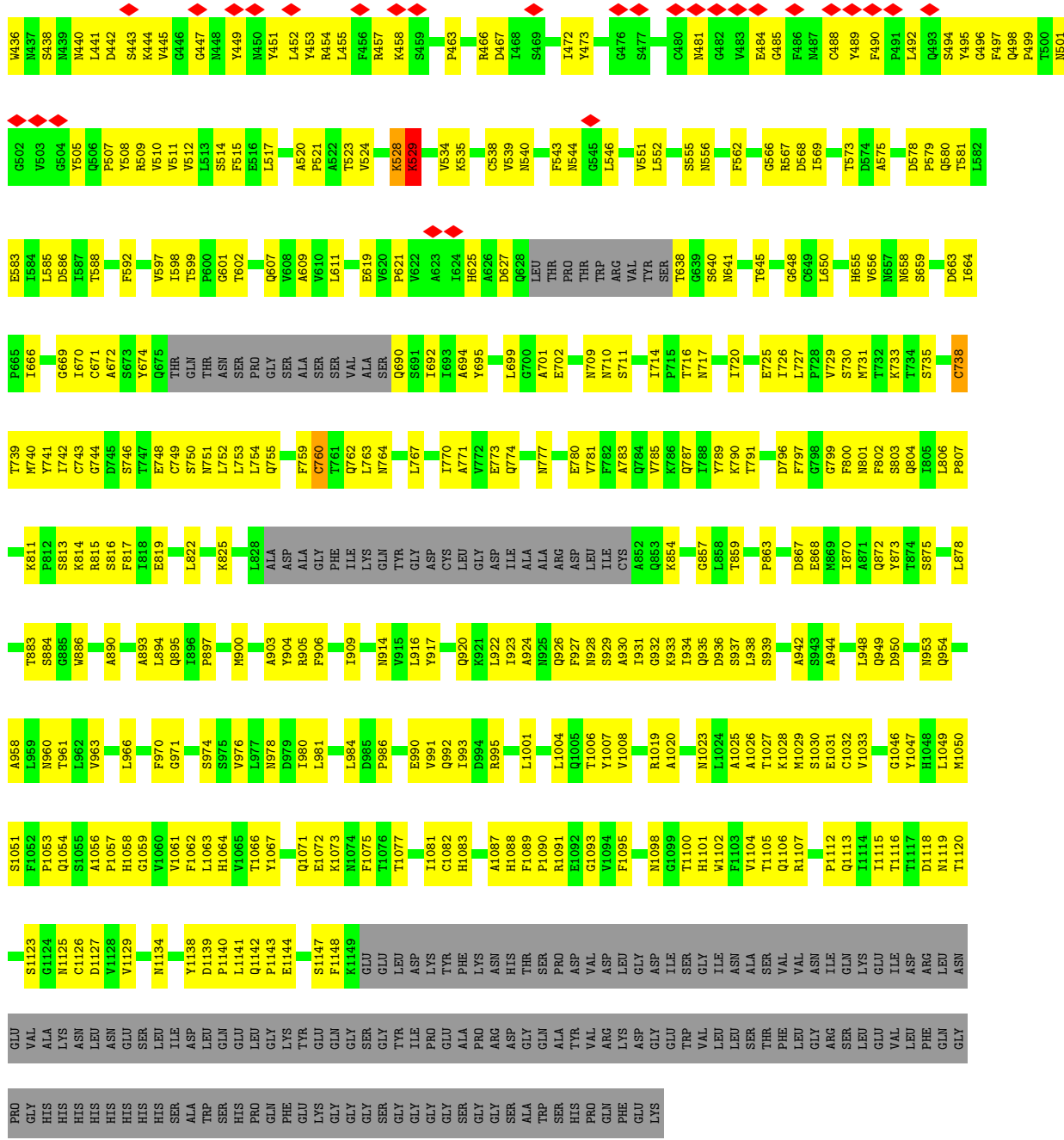
| Mol | Chain | Residues | Atoms        |          |         |         | AltConf |
|-----|-------|----------|--------------|----------|---------|---------|---------|
|     |       |          | Total        | C        | N       | O       |         |
| 3   | A     | 1        | Total<br>182 | C<br>104 | N<br>13 | O<br>65 | 0       |
| 3   | A     | 1        | Total<br>182 | C<br>104 | N<br>13 | O<br>65 | 0       |
| 3   | A     | 1        | Total<br>182 | C<br>104 | N<br>13 | O<br>65 | 0       |
| 3   | A     | 1        | Total<br>182 | C<br>104 | N<br>13 | O<br>65 | 0       |



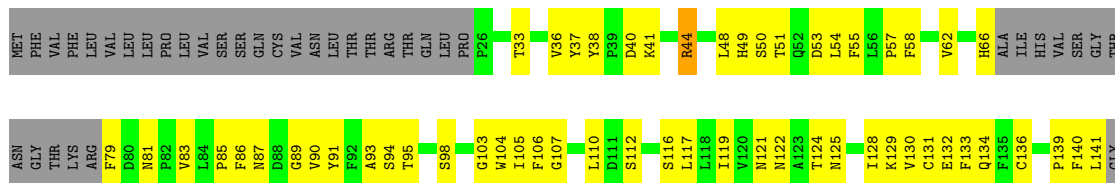


• Molecule 1: Spike glycoprotein





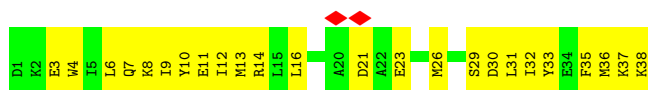
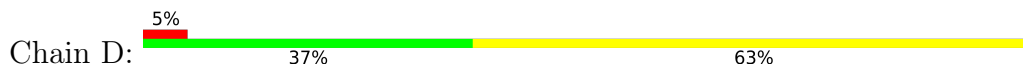
• Molecule 1: Spike glycoprotein



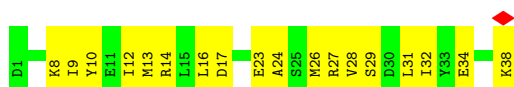


|     |     |     |       |       |      |     |      |      |      |      |      |      |     |
|-----|-----|-----|-------|-------|------|-----|------|------|------|------|------|------|-----|
| GLN | ARG | ASP | F1089 | T1009 | E918 | GLY | Y741 | V597 | P521 | Y449 | N282 | L216 | VAL |
| PHE | LYS | LEU | P1090 | Q1010 | N919 | ASP | I742 | I598 | A522 | M450 | N282 | F220 | TYR |
| GLU | ASP | GLY | R1091 | Q1011 | Q926 | CYS | S746 | G601 | T523 | Y451 | D287 | F220 | TYR |
| LYS | GLY | ILE | E1092 | L1012 | T602 | GLY | Y674 | Y452 | V524 | S366 | A288 | L452 | HIS |
| VAL | TRP | LEU | F1095 | I1013 | T603 | ILE | Q675 | R453 | C525 | Y453 | A292 | L223 | ASN |
| LEU | VAL | GLY | V1096 | R1014 | T604 | ALA | THR  | L455 | G526 | R454 | L226 | E224 | ASN |
| LEU | LEU | ILE | S1097 | K1028 | S750 | ALA | GLN  | F456 | K528 | N370 | V227 | L228 | LYS |
| LEU | LEU | ALA | N1098 | M1029 | S751 | ALA | THR  | R457 | K529 | F374 | L296 | D228 | SER |
| LEU | LEU | ALA | G1099 | S1030 | L752 | ALA | THR  | F377 | N530 | K378 | L298 | D228 | TRP |
| ALA | SER | ARG | T1100 | E1031 | L753 | ARG | ASN  | F378 | S530 | E298 | L299 | E298 | SER |
| VAL | THR | ASP | S940  | S1032 | L754 | ASP | SER  | K379 | T531 | E298 | L299 | E298 | TRP |
| VAL | PHE | LEU | H1101 | L1033 | L755 | LEU | PRO  | R466 | K537 | F377 | K300 | L299 | ASN |
| LEU | LEU | ILE | V1102 | V1033 | Q755 | ILE | PRO  | D467 | G538 | K378 | K300 | L299 | ASN |
| ASN | ASN | CYS | F1103 | L1034 | C760 | CYS | SER  | L461 | V539 | F377 | C301 | G232 | ASN |
| ILE | ARG | ASP | T1104 | G1035 | I760 | ASP | ALA  | R466 | N540 | K378 | T302 | G232 | ASN |
| ARG | ARG | ILE | L1105 | L1036 | L763 | ARG | ALA  | D467 | N540 | K378 | L303 | T236 | ASN |
| GLN | GLN | LEU | L948  | G1037 | L763 | SER | SER  | S469 | N540 | K378 | L303 | T236 | ASN |
| LEU | LEU | LYS | Q949  | S1037 | I763 | SER | SER  | P384 | F541 | L387 | R304 | R237 | ASN |
| LEU | LEU | GLU | D950  | K1038 | I770 | VAL | VAL  | L387 | N542 | N388 | S305 | F238 | ASN |
| VAL | VAL | ILE | V951  | H1039 | I770 | ALA | ALA  | N388 | F543 | N317 | S305 | F238 | ASN |
| LEU | LEU | ASP | V952  | V1040 | Q690 | SER | SER  | Y396 | N544 | N317 | V308 | Q239 | ASN |
| ARG | ARG | ARG | N953  | D1041 | Q690 | SER | SER  | G476 | N544 | N317 | V308 | Q239 | ASN |
| GLN | GLN | LEU | Q954  | F1042 | S691 | LEU | LEU  | S477 | T549 | T392 | Y313 | L242 | ASN |
| GLU | GLU | GLU | N955  | C1043 | S691 | LEU | LEU  | T478 | G550 | T392 | Y313 | L242 | ASN |
| VAL | VAL | VAL | Q965  | G1045 | Y695 | LEU | LEU  | N481 | G550 | N394 | S316 | L244 | ASN |
| ALA | ALA | ALA | L966  | Y1047 | T696 | LEU | LEU  | GLY  | L552 | N394 | S316 | L244 | ASN |
| LYS | LYS | LYS | S967  | H1048 | M697 | LEU | LEU  | VAL  | T553 | N394 | S316 | L244 | ASN |
| HIS | HIS | ASN | N969  | L1049 | M697 | LEU | LEU  | GLY  | E554 | N394 | S316 | L244 | ASN |
| HIS | HIS | ASN | F1121 | M1050 | M697 | LEU | LEU  | GLY  | S555 | N394 | S316 | L244 | ASN |
| HIS | HIS | ASN | G971  | S1051 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| HIS | HIS | GLU | A972  | F1052 | M697 | LEU | LEU  | GLY  | Q563 | N394 | S316 | L244 | ASN |
| HIS | HIS | SER | I973  | Q1054 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| HIS | HIS | ILE | S974  | P1057 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| ALA | ALA | ASP | S975  | H1058 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| TRP | TRP | LEU | V976  | L1059 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| SER | SER | GLN | L977  | G1059 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| HIS | HIS | GLU | T980  | V1060 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| PRO | PRO | LEU | D985  | V1061 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLN | GLN | GLY | D985  | F1062 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| PHE | PHE | TYR | E988  | L1063 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLU | GLU | TYR | E988  | H1064 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| LYS | LYS | GLU | E988  | V1065 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | GLN | Q992  | T1066 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | GLY | Q992  | T1066 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | SER | I993  | P1069 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | SER | I993  | A1070 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| SER | SER | TYR | D994  | Q1071 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | ILE | R995  | E1072 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | PRO | L996  | K1073 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | GLU | G999  | H1074 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| ALA | PHE | ALA | R1000 | F1075 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | PHE | ALA | L1001 | L1076 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | PRO | L1001 | L1076 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | PRO | Q1002 | L1076 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| GLY | GLY | ARG | S1003 | H1081 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| ALA | HIS | ASP | G1082 | C1082 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| SER | THR | GLY | L1004 | L1081 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| ALA | ALA | GLN | Q1005 | H1083 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| TRP | TRP | ALA | T1006 | D1084 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| SER | SER | ALA | T1006 | H1088 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| HIS | HIS | TYR | Y1007 | Y1008 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| SER | SER | VAL | Y1007 | Y1008 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |
| PRO | PRO | VAL | Y1007 | Y1008 | M697 | LEU | LEU  | GLY  | L560 | N394 | S316 | L244 | ASN |

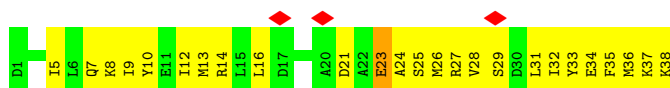
• Molecule 2: Synthetic peptide SIH-5



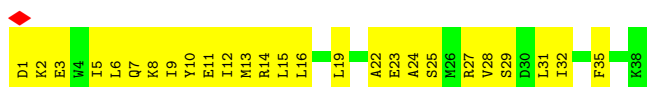
• Molecule 2: Synthetic peptide SIH-5



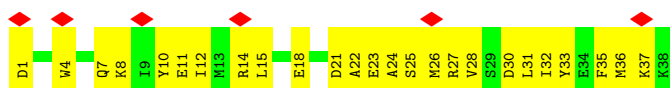
• Molecule 2: Synthetic peptide SIH-5



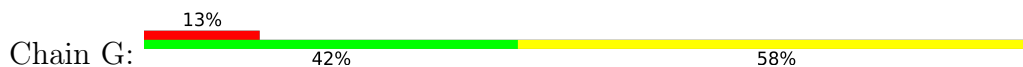
• Molecule 2: Synthetic peptide SIH-5



• Molecule 2: Synthetic peptide SIH-5



• Molecule 2: Synthetic peptide SIH-5



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|---|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 101296                                  | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | FEI TALOS ARCTICA                       | Depositor |
| Voltage (kV)                         | 200                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 80                                      | Depositor |
| Minimum defocus (nm)                 | 750                                     | Depositor |
| Maximum defocus (nm)                 | 2500                                    | Depositor |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K2 SUMMIT (4k x 4k)               | Depositor |
| Maximum map value                    | 0.103                                   | Depositor |
| Minimum map value                    | -0.061                                  | Depositor |
| Average map value                    | 0.000                                   | Depositor |
| Map value standard deviation         | 0.005                                   | Depositor |
| Recommended contour level            | 0.0135                                  | Depositor |
| Map size (Å)                         | 299.52, 299.52, 299.52                  | wwPDB     |
| Map dimensions                       | 256, 256, 256                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 1.17, 1.17, 1.17                        | Depositor |

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, DAL, AIB

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

| Mol | Chain | Bond lengths |         | Bond angles |         |
|-----|-------|--------------|---------|-------------|---------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5 |
| 1   | A     | 0.49         | 0/8162  | 0.57        | 0/11106 |
| 1   | B     | 0.47         | 0/8214  | 0.56        | 0/11178 |
| 1   | C     | 0.47         | 0/8216  | 0.58        | 0/11180 |
| 2   | D     | 0.34         | 0/309   | 0.48        | 0/411   |
| 2   | E     | 0.29         | 0/309   | 0.41        | 0/411   |
| 2   | F     | 0.31         | 0/309   | 0.52        | 0/411   |
| 2   | G     | 0.26         | 0/309   | 0.42        | 0/411   |
| 2   | H     | 0.33         | 0/309   | 0.49        | 0/411   |
| 2   | I     | 0.29         | 0/309   | 0.49        | 0/411   |
| All | All   | 0.47         | 0/26446 | 0.56        | 0/35930 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 7981  | 0        | 7762     | 473     | 0            |
| 1   | B     | 8031  | 0        | 7806     | 453     | 0            |
| 1   | C     | 8033  | 0        | 7807     | 492     | 0            |
| 2   | D     | 317   | 0        | 312      | 27      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2   | E     | 317   | 0        | 312      | 20      | 0            |
| 2   | F     | 317   | 0        | 312      | 31      | 0            |
| 2   | G     | 317   | 0        | 312      | 18      | 0            |
| 2   | H     | 317   | 0        | 312      | 25      | 0            |
| 2   | I     | 317   | 0        | 312      | 20      | 0            |
| 3   | A     | 182   | 0        | 169      | 10      | 0            |
| 3   | B     | 182   | 0        | 169      | 6       | 0            |
| 3   | C     | 182   | 0        | 169      | 2       | 0            |
| All | All   | 26493 | 0        | 25754    | 1471    | 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 28.

All (1471) 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) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:422:ASN:HB3  | 1:C:463:PRO:HA    | 1.41                     | 1.00              |
| 1:C:398:ASP:HB3  | 1:C:512:VAL:HB    | 1.47                     | 0.96              |
| 1:B:96:GLU:HB2   | 1:B:187:LYS:HB3   | 1.47                     | 0.96              |
| 1:B:57:PRO:HA    | 1:B:273:ARG:HH22  | 1.36                     | 0.91              |
| 1:B:456:PHE:H    | 1:B:491:PRO:HB3   | 1.38                     | 0.88              |
| 1:C:128:ILE:HB   | 1:C:170:TYR:HB3   | 1.56                     | 0.88              |
| 2:E:27:ARG:O     | 2:E:27:ARG:NH1    | 2.09                     | 0.86              |
| 1:C:1100:THR:HG1 | 1:C:1101:HIS:HD1  | 1.19                     | 0.85              |
| 1:A:328:ARG:NH2  | 1:A:580:GLN:OE1   | 2.09                     | 0.84              |
| 1:C:37:TYR:OH    | 1:C:195:LYS:NZ    | 2.10                     | 0.84              |
| 1:C:331:ASN:OD1  | 1:C:580:GLN:NE2   | 2.10                     | 0.84              |
| 1:B:195:LYS:NZ   | 1:B:196:ASN:OD1   | 2.11                     | 0.84              |
| 1:B:469:SER:HB3  | 1:B:471:GLU:HG3   | 1.60                     | 0.83              |
| 1:A:1032:CYS:O   | 1:A:1051:SER:OG   | 1.96                     | 0.82              |
| 1:A:737:ASP:OD2  | 1:A:740:MET:N     | 2.13                     | 0.82              |
| 1:A:438:SER:HB3  | 1:A:509:ARG:HG3   | 1.62                     | 0.81              |
| 1:A:889:GLY:HA3  | 1:A:1034:LEU:HD21 | 1.60                     | 0.81              |
| 1:A:1116:THR:H   | 1:A:1119:ASN:HD21 | 1.28                     | 0.81              |
| 1:B:788:ILE:HD11 | 1:C:702:GLU:HB3   | 1.63                     | 0.81              |
| 1:C:369:TYR:HH   | 1:C:385:THR:HG1   | 1.26                     | 0.81              |
| 1:A:456:PHE:HB2  | 1:A:473:TYR:HE2   | 1.44                     | 0.80              |
| 1:B:96:GLU:HA    | 1:B:187:LYS:HD2   | 1.63                     | 0.80              |
| 2:D:9:ILE:HA     | 2:D:12:ILE:HD12   | 1.62                     | 0.80              |
| 1:B:403:ARG:NH1  | 2:H:26:MET:SD     | 2.54                     | 0.79              |
| 1:B:307:THR:HA   | 1:B:602:THR:HG21  | 1.65                     | 0.79              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:452:LEU:HA    | 1:A:494:SER:HA    | 1.64                     | 0.79              |
| 1:B:752:LEU:O     | 1:B:755:GLN:NE2   | 2.15                     | 0.79              |
| 1:A:331:ASN:HB2   | 1:A:580:GLN:HG3   | 1.65                     | 0.78              |
| 1:A:1116:THR:OG1  | 1:A:1118:ASP:OD1  | 2.02                     | 0.78              |
| 2:F:1:ASP:HB3     | 2:F:4:TRP:HB3     | 1.63                     | 0.78              |
| 1:B:731:MET:SD    | 1:B:774:GLN:NE2   | 2.57                     | 0.78              |
| 1:A:731:MET:HG2   | 1:A:774:GLN:NE2   | 1.98                     | 0.78              |
| 1:A:731:MET:HG2   | 1:A:774:GLN:HE21  | 1.48                     | 0.77              |
| 1:C:44:ARG:NH2    | 1:C:279:TYR:OH    | 2.17                     | 0.77              |
| 1:B:129:LYS:HZ3   | 1:B:169:GLU:HB3   | 1.48                     | 0.77              |
| 1:C:801:ASN:H     | 1:C:928:ASN:HD21  | 1.31                     | 0.77              |
| 1:A:125:ASN:ND2   | 1:A:172:SER:O     | 2.18                     | 0.77              |
| 1:B:737:ASP:OD2   | 1:C:317:ASN:ND2   | 2.18                     | 0.77              |
| 1:C:645:THR:N     | 1:C:648:GLY:O     | 2.17                     | 0.76              |
| 1:A:57:PRO:HG3    | 1:A:273:ARG:HG3   | 1.67                     | 0.76              |
| 1:B:552:LEU:HD11  | 1:B:585:LEU:HB3   | 1.68                     | 0.75              |
| 1:C:319:ARG:O     | 1:C:321:GLN:NE2   | 2.18                     | 0.75              |
| 1:C:393:THR:HG22  | 1:C:517:LEU:HD23  | 1.67                     | 0.75              |
| 1:A:308:VAL:O     | 1:A:602:THR:OG1   | 2.04                     | 0.75              |
| 1:A:1053:PRO:O    | 1:A:1054:GLN:NE2  | 2.19                     | 0.75              |
| 1:B:726:ILE:HG23  | 1:B:1061:VAL:HG12 | 1.69                     | 0.75              |
| 1:C:729:VAL:HG12  | 1:C:1059:GLY:HA2  | 1.67                     | 0.75              |
| 1:A:131:CYS:HA    | 1:A:166:CYS:HB3   | 1.69                     | 0.74              |
| 2:H:31:LEU:HD22   | 2:I:8:LYS:HD2     | 1.69                     | 0.74              |
| 1:B:746:SER:OG    | 1:B:748:GLU:OE2   | 2.05                     | 0.74              |
| 1:B:826:VAL:HG11  | 1:B:1057:PRO:HG3  | 1.69                     | 0.74              |
| 1:A:1033:VAL:HG21 | 1:A:1053:PRO:HD3  | 1.68                     | 0.74              |
| 1:A:598:ILE:HB    | 1:A:609:ALA:HB3   | 1.68                     | 0.74              |
| 2:H:9:ILE:HA      | 2:H:12:ILE:HD12   | 1.70                     | 0.74              |
| 1:C:568:ASP:OD1   | 1:C:569:ILE:N     | 2.20                     | 0.74              |
| 1:C:816:SER:N     | 1:C:819:GLU:OE2   | 2.20                     | 0.74              |
| 1:C:106:PHE:HB2   | 1:C:117:LEU:HD21  | 1.68                     | 0.74              |
| 1:A:726:ILE:HG12  | 1:A:1061:VAL:HG22 | 1.68                     | 0.74              |
| 1:C:451:TYR:HB3   | 1:C:495:TYR:HB2   | 1.68                     | 0.74              |
| 1:C:415:THR:HG21  | 2:F:37:LYS:HE3    | 1.70                     | 0.73              |
| 1:A:377:PHE:HA    | 1:A:434:ILE:HG23  | 1.70                     | 0.73              |
| 2:E:34:GLU:O      | 2:E:38:LYS:N      | 2.21                     | 0.73              |
| 1:A:87:ASN:HB2    | 1:A:269:TYR:HE2   | 1.53                     | 0.73              |
| 2:G:22:AIB:HB12   | 2:G:25:SER:HB3    | 1.69                     | 0.73              |
| 1:B:356:LYS:NZ    | 1:B:357:ARG:O     | 2.21                     | 0.73              |
| 1:C:497:PHE:HB3   | 1:C:501:ASN:HD21  | 1.53                     | 0.73              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:886:TRP:HB3  | 1:C:905:ARG:HH21  | 1.52                     | 0.73              |
| 1:A:133:PHE:HE2  | 1:A:160:TYR:HA    | 1.53                     | 0.73              |
| 1:C:395:VAL:HG13 | 1:C:515:PHE:HB3   | 1.71                     | 0.73              |
| 1:B:542:ASN:HA   | 1:B:547:THR:HA    | 1.71                     | 0.73              |
| 1:B:580:GLN:O    | 3:B:1301:NAG:O6   | 2.07                     | 0.72              |
| 1:A:93:ALA:HB3   | 1:A:266:TYR:H     | 1.53                     | 0.72              |
| 1:A:675:GLN:O    | 1:A:690:GLN:N     | 2.22                     | 0.72              |
| 1:C:740:MET:HE1  | 1:A:592:PHE:HE2   | 1.55                     | 0.72              |
| 1:C:438:SER:HB3  | 1:C:509:ARG:HB2   | 1.71                     | 0.72              |
| 1:A:317:ASN:HA   | 1:A:594:GLY:HA2   | 1.71                     | 0.72              |
| 1:C:781:VAL:HG23 | 1:C:1026:ALA:HA   | 1.72                     | 0.72              |
| 1:C:783:ALA:HA   | 1:C:873:TYR:HE2   | 1.53                     | 0.72              |
| 1:C:890:ALA:HA   | 1:A:1046:GLY:HA2  | 1.72                     | 0.72              |
| 1:A:48:LEU:HD13  | 1:A:305:SER:HA    | 1.72                     | 0.71              |
| 1:A:866:THR:HG1  | 1:A:869:MET:H     | 1.36                     | 0.71              |
| 1:C:743:CYS:SG   | 1:C:744:GLY:N     | 2.62                     | 0.71              |
| 1:A:393:THR:HG22 | 1:A:517:LEU:HD12  | 1.71                     | 0.71              |
| 1:B:104:TRP:HB2  | 1:B:119:ILE:HB    | 1.72                     | 0.71              |
| 1:B:82:PRO:O     | 1:B:239:GLN:NE2   | 2.23                     | 0.71              |
| 1:B:355:ARG:HG2  | 1:B:396:TYR:HB3   | 1.71                     | 0.71              |
| 1:B:900:MET:SD   | 1:B:917:TYR:OH    | 2.49                     | 0.71              |
| 1:C:611:LEU:HD12 | 1:C:650:LEU:HG    | 1.72                     | 0.71              |
| 1:A:357:ARG:NH2  | 1:A:396:TYR:OH    | 2.24                     | 0.71              |
| 1:B:738:CYS:O    | 1:B:742:ILE:N     | 2.23                     | 0.71              |
| 1:A:403:ARG:NE   | 1:A:405:ASP:OD2   | 2.24                     | 0.70              |
| 1:B:131:CYS:HA   | 1:B:166:CYS:HB3   | 1.71                     | 0.70              |
| 1:A:712:ILE:O    | 1:A:1075:PHE:N    | 2.24                     | 0.70              |
| 1:B:970:PHE:O    | 1:B:995:ARG:NH1   | 2.23                     | 0.70              |
| 1:C:674:TYR:HH   | 1:C:690:GLN:N     | 1.89                     | 0.70              |
| 1:C:112:SER:HA   | 1:C:132:GLU:HG3   | 1.73                     | 0.70              |
| 1:B:1098:ASN:OD1 | 1:B:1101:HIS:N    | 2.24                     | 0.70              |
| 1:B:456:PHE:N    | 1:B:491:PRO:HB3   | 2.06                     | 0.70              |
| 1:A:244:LEU:O    | 1:A:245:HIS:ND1   | 2.24                     | 0.70              |
| 1:B:294:ASP:O    | 1:B:297:SER:OG    | 2.10                     | 0.70              |
| 1:C:950:ASP:HA   | 1:C:953:ASN:HB3   | 1.74                     | 0.70              |
| 1:C:731:MET:H    | 1:C:774:GLN:NE2   | 1.90                     | 0.70              |
| 1:A:103:GLY:HA3  | 1:A:241:LEU:HD13  | 1.72                     | 0.69              |
| 1:C:763:LEU:HD12 | 1:C:1008:VAL:HG21 | 1.74                     | 0.69              |
| 1:C:868:GLU:N    | 1:C:868:GLU:OE1   | 2.24                     | 0.69              |
| 1:B:710:ASN:O    | 1:B:1077:THR:N    | 2.24                     | 0.69              |
| 1:A:1049:LEU:HB2 | 1:A:1065:VAL:HG23 | 1.74                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:596:SER:HB2   | 1:B:611:LEU:HB3   | 1.74                     | 0.69              |
| 1:B:100:ILE:HG13  | 1:B:101:ILE:HD12  | 1.74                     | 0.69              |
| 1:C:1112:PRO:O    | 1:C:1113:GLN:NE2  | 2.26                     | 0.69              |
| 1:A:448:ASN:H     | 1:A:497:PHE:H     | 1.39                     | 0.69              |
| 1:B:346:ARG:NH2   | 1:B:347:PHE:O     | 2.25                     | 0.69              |
| 1:B:485:GLY:O     | 2:H:7:GLN:NE2     | 2.26                     | 0.69              |
| 1:C:300:LYS:HE3   | 1:C:306:PHE:HA    | 1.74                     | 0.69              |
| 1:C:607:GLN:OE1   | 1:C:607:GLN:N     | 2.25                     | 0.69              |
| 1:C:924:ALA:O     | 1:C:928:ASN:N     | 2.22                     | 0.69              |
| 1:A:722:VAL:HG12  | 1:A:1065:VAL:HG12 | 1.75                     | 0.69              |
| 1:A:731:MET:H     | 1:A:774:GLN:NE2   | 1.91                     | 0.69              |
| 2:F:31:LEU:O      | 2:G:8:LYS:NZ      | 2.25                     | 0.69              |
| 1:C:404:GLY:HA2   | 1:C:508:TYR:HD1   | 1.58                     | 0.69              |
| 1:A:563:GLN:H     | 1:A:577:ARG:HH22  | 1.40                     | 0.68              |
| 1:C:107:GLY:H     | 1:C:235:ILE:HG23  | 1.59                     | 0.68              |
| 1:B:1043:CYS:HB3  | 1:B:1064:HIS:CD2  | 2.27                     | 0.68              |
| 1:C:443:SER:OG    | 1:C:501:ASN:ND2   | 2.27                     | 0.68              |
| 2:F:22:AIB:HB12   | 2:F:25:SER:HB3    | 1.75                     | 0.68              |
| 1:B:129:LYS:HD3   | 1:B:169:GLU:HG2   | 1.75                     | 0.68              |
| 1:C:731:MET:HG2   | 1:C:774:GLN:HE21  | 1.59                     | 0.68              |
| 2:G:10:TYR:OH     | 2:G:14:ARG:NH1    | 2.27                     | 0.68              |
| 1:C:239:GLN:NE2   | 1:C:240:THR:OG1   | 2.27                     | 0.68              |
| 1:A:1028:LYS:NZ   | 1:A:1042:PHE:O    | 2.27                     | 0.68              |
| 1:A:1104:VAL:HG23 | 1:A:1115:ILE:HG13 | 1.76                     | 0.68              |
| 1:A:965:GLN:O     | 1:A:968:SER:OG    | 2.11                     | 0.68              |
| 1:B:578:ASP:OD2   | 1:B:581:THR:N     | 2.22                     | 0.68              |
| 1:C:749:CYS:O     | 1:C:753:LEU:N     | 2.27                     | 0.68              |
| 1:C:990:GLU:HA    | 1:C:993:ILE:HG22  | 1.76                     | 0.67              |
| 1:A:112:SER:HA    | 1:A:132:GLU:HG3   | 1.76                     | 0.67              |
| 1:C:1098:ASN:HB2  | 3:C:1302:NAG:N2   | 2.09                     | 0.67              |
| 1:A:436:TRP:O     | 1:A:509:ARG:N     | 2.26                     | 0.67              |
| 1:A:1072:GLU:OE1  | 1:A:1072:GLU:N    | 2.27                     | 0.67              |
| 1:B:332:ILE:HG22  | 1:B:333:THR:H     | 1.60                     | 0.67              |
| 1:A:709:ASN:HB2   | 3:A:1307:NAG:C7   | 2.24                     | 0.67              |
| 1:C:1125:ASN:ND2  | 1:C:1127:ASP:OD2  | 2.27                     | 0.67              |
| 1:C:580:GLN:OE1   | 1:C:581:THR:OG1   | 2.12                     | 0.67              |
| 1:A:295:PRO:HA    | 1:A:298:GLU:HB3   | 1.75                     | 0.67              |
| 2:H:24:ALA:HA     | 2:H:27:ARG:HD2    | 1.76                     | 0.67              |
| 1:C:31:SER:N      | 1:C:60:SER:O      | 2.22                     | 0.67              |
| 1:C:438:SER:H     | 1:C:508:TYR:HA    | 1.58                     | 0.67              |
| 1:B:1091:ARG:HH22 | 1:B:1121:PHE:HB3  | 1.59                     | 0.67              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:586:ASP:OD1  | 1:A:587:ILE:N     | 2.28                     | 0.67              |
| 1:B:454:ARG:CZ   | 1:B:491:PRO:HD2   | 2.25                     | 0.67              |
| 1:B:625:HIS:O    | 1:B:628:GLN:NE2   | 2.27                     | 0.66              |
| 1:C:1026:ALA:O   | 1:C:1030:SER:OG   | 2.09                     | 0.66              |
| 2:I:9:ILE:HG22   | 2:I:12:ILE:HD12   | 1.77                     | 0.66              |
| 1:C:1050:MET:HE3 | 1:C:1051:SER:H    | 1.61                     | 0.66              |
| 1:A:568:ASP:OD1  | 1:A:572:THR:OG1   | 2.14                     | 0.66              |
| 1:C:767:LEU:HD21 | 1:C:1008:VAL:HG22 | 1.77                     | 0.66              |
| 1:C:1093:GLY:HA3 | 1:C:1105:THR:O    | 1.95                     | 0.66              |
| 1:B:29:THR:O     | 1:B:62:VAL:N      | 2.24                     | 0.66              |
| 1:C:308:VAL:N    | 1:C:602:THR:OG1   | 2.29                     | 0.66              |
| 1:C:895:GLN:HE21 | 1:A:706:ALA:H     | 1.43                     | 0.66              |
| 1:B:106:PHE:CD1  | 1:B:238:PHE:HB2   | 2.31                     | 0.66              |
| 1:B:552:LEU:HD21 | 1:B:585:LEU:HD13  | 1.76                     | 0.66              |
| 1:C:433:VAL:HG12 | 1:C:512:VAL:HG22  | 1.77                     | 0.66              |
| 1:A:287:ASP:OD1  | 1:A:288:ALA:N     | 2.29                     | 0.66              |
| 1:A:742:ILE:HG21 | 1:A:753:LEU:HD22  | 1.78                     | 0.66              |
| 1:A:1118:ASP:OD1 | 1:A:1119:ASN:N    | 2.29                     | 0.66              |
| 2:E:9:ILE:HA     | 2:E:12:ILE:HD12   | 1.78                     | 0.66              |
| 1:B:206:LYS:HD3  | 1:B:207:HIS:H     | 1.60                     | 0.66              |
| 1:B:748:GLU:HA   | 1:B:751:ASN:HB2   | 1.78                     | 0.66              |
| 1:C:340:GLU:HA   | 1:C:343:ASN:HB2   | 1.78                     | 0.66              |
| 1:C:730:SER:OG   | 1:C:1058:HIS:ND1  | 2.28                     | 0.66              |
| 1:A:299:THR:HG22 | 1:A:597:VAL:HG11  | 1.78                     | 0.66              |
| 1:C:441:LEU:O    | 1:C:444:LYS:NZ    | 2.29                     | 0.65              |
| 1:B:319:ARG:O    | 1:B:321:GLN:NE2   | 2.28                     | 0.65              |
| 1:B:1129:VAL:HB  | 1:B:1132:ILE:HD11 | 1.78                     | 0.65              |
| 1:C:111:ASP:OD1  | 1:C:112:SER:N     | 2.26                     | 0.65              |
| 1:A:216:LEU:HD13 | 1:A:266:TYR:CE2   | 2.31                     | 0.65              |
| 1:A:903:ALA:HB2  | 1:A:916:LEU:HD22  | 1.78                     | 0.65              |
| 1:A:818:ILE:HD11 | 1:A:1054:GLN:HG3  | 1.77                     | 0.65              |
| 1:A:886:TRP:HZ2  | 1:A:904:TYR:HE2   | 1.43                     | 0.65              |
| 1:B:317:ASN:HB3  | 1:B:594:GLY:HA2   | 1.78                     | 0.65              |
| 1:C:134:GLN:N    | 1:C:161:SER:OG    | 2.21                     | 0.65              |
| 2:D:3:GLU:HA     | 2:D:6:LEU:HD13    | 1.79                     | 0.65              |
| 1:C:505:TYR:CG   | 2:F:27:ARG:HB2    | 2.32                     | 0.65              |
| 1:B:369:TYR:HE2  | 1:B:388:ASN:HD21  | 1.44                     | 0.65              |
| 1:A:404:GLY:O    | 1:A:408:ARG:NH1   | 2.30                     | 0.65              |
| 1:B:1039:ARG:NE  | 1:A:1031:GLU:OE2  | 2.26                     | 0.65              |
| 1:B:543:PHE:N    | 1:B:546:LEU:O     | 2.30                     | 0.64              |
| 1:B:337:PRO:HB2  | 1:B:340:GLU:HG2   | 1.79                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:305:SER:OG   | 1:C:306:PHE:N    | 2.29                     | 0.64              |
| 1:C:905:ARG:NH1  | 1:C:1050:MET:SD  | 2.69                     | 0.64              |
| 1:C:1100:THR:OG1 | 1:C:1101:HIS:ND1 | 2.20                     | 0.64              |
| 1:A:98:SER:H     | 1:A:187:LYS:NZ   | 1.96                     | 0.64              |
| 1:B:417:LYS:NZ   | 1:B:455:LEU:O    | 2.29                     | 0.64              |
| 1:B:918:GLU:OE2  | 1:B:919:ASN:ND2  | 2.29                     | 0.64              |
| 1:C:354:ASN:O    | 1:C:356:LYS:NZ   | 2.29                     | 0.64              |
| 1:A:605:SER:OG   | 1:A:607:GLN:OE1  | 2.14                     | 0.64              |
| 1:A:66:HIS:O     | 1:A:79:PHE:N     | 2.29                     | 0.64              |
| 1:A:419:ALA:HA   | 1:A:422:ASN:HB2  | 1.79                     | 0.64              |
| 2:F:21:ASP:O     | 2:F:23:GLU:N     | 2.30                     | 0.64              |
| 2:G:34:GLU:OE1   | 2:G:38:LYS:NZ    | 2.27                     | 0.64              |
| 1:B:444:LYS:HE3  | 1:B:448:ASN:HA   | 1.80                     | 0.64              |
| 1:C:294:ASP:O    | 1:C:297:SER:OG   | 2.16                     | 0.64              |
| 1:B:360:ASN:H    | 1:B:523:THR:HB   | 1.63                     | 0.64              |
| 1:B:750:SER:HA   | 1:B:753:LEU:HB3  | 1.79                     | 0.64              |
| 1:C:710:ASN:O    | 1:C:1077:THR:N   | 2.22                     | 0.64              |
| 1:A:40:ASP:OD1   | 1:A:41:LYS:N     | 2.29                     | 0.64              |
| 1:B:439:ASN:ND2  | 1:B:506:GLN:OE1  | 2.31                     | 0.64              |
| 1:A:553:THR:HG22 | 1:A:554:GLU:H    | 1.61                     | 0.64              |
| 1:B:113:LYS:N    | 1:B:132:GLU:OE2  | 2.31                     | 0.63              |
| 1:B:737:ASP:OD1  | 1:B:738:CYS:N    | 2.31                     | 0.63              |
| 1:C:97:LYS:H     | 1:C:187:LYS:HG2  | 1.63                     | 0.63              |
| 1:A:709:ASN:OD1  | 1:A:710:ASN:N    | 2.31                     | 0.63              |
| 1:A:950:ASP:O    | 1:A:953:ASN:N    | 2.31                     | 0.63              |
| 1:C:785:VAL:HG22 | 1:C:787:GLN:H    | 1.62                     | 0.63              |
| 1:A:607:GLN:OE1  | 1:A:607:GLN:N    | 2.31                     | 0.63              |
| 1:A:887:THR:HG21 | 1:A:894:LEU:HD12 | 1.78                     | 0.63              |
| 1:B:117:LEU:HB2  | 1:B:233:ILE:HD13 | 1.81                     | 0.63              |
| 1:B:592:PHE:O    | 1:A:854:LYS:NZ   | 2.24                     | 0.63              |
| 1:B:120:VAL:HG23 | 1:B:127:VAL:HB   | 1.78                     | 0.63              |
| 1:A:690:GLN:NE2  | 1:A:691:SER:OG   | 2.31                     | 0.63              |
| 1:C:117:LEU:HD22 | 1:C:233:ILE:HD11 | 1.80                     | 0.63              |
| 1:A:417:LYS:HA   | 1:A:420:ASP:HB2  | 1.80                     | 0.63              |
| 1:C:1098:ASN:OD1 | 1:C:1101:HIS:N   | 2.28                     | 0.62              |
| 1:A:819:GLU:O    | 1:A:823:PHE:N    | 2.25                     | 0.62              |
| 2:D:12:ILE:HG23  | 2:E:24:ALA:HB1   | 1.81                     | 0.62              |
| 1:B:85:PRO:HA    | 1:B:237:ARG:HG2  | 1.80                     | 0.62              |
| 1:B:540:ASN:OD1  | 1:B:549:THR:OG1  | 2.10                     | 0.62              |
| 1:B:874:THR:HG21 | 1:B:1055:SER:HB2 | 1.79                     | 0.62              |
| 1:C:112:SER:OG   | 1:C:134:GLN:OE1  | 2.13                     | 0.62              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:230:PRO:HB2  | 1:A:521:PRO:HB2   | 1.82                     | 0.62              |
| 1:B:825:LYS:NZ   | 1:B:942:ALA:O     | 2.32                     | 0.62              |
| 1:A:357:ARG:NE   | 1:A:359:SER:OG    | 2.31                     | 0.62              |
| 1:A:616:ASN:HD21 | 3:A:1305:NAG:C7   | 2.11                     | 0.62              |
| 1:B:1139:ASP:OD2 | 1:B:1142:GLN:N    | 2.28                     | 0.62              |
| 1:B:195:LYS:NZ   | 1:B:196:ASN:O     | 2.33                     | 0.62              |
| 1:A:195:LYS:O    | 1:A:202:LYS:N     | 2.31                     | 0.62              |
| 2:H:34:GLU:HG3   | 2:H:38:LYS:HE2    | 1.81                     | 0.62              |
| 1:C:1148:PHE:HB3 | 1:A:1145:LEU:HD21 | 1.82                     | 0.62              |
| 1:C:299:THR:HA   | 1:C:302:THR:HG22  | 1.81                     | 0.62              |
| 1:A:239:GLN:NE2  | 1:A:240:THR:O     | 2.31                     | 0.62              |
| 2:F:28:VAL:O     | 2:F:32:ILE:HG13   | 1.99                     | 0.62              |
| 1:C:379:CYS:HB2  | 1:C:384:PRO:HD3   | 1.81                     | 0.61              |
| 1:C:505:TYR:CD2  | 2:F:27:ARG:HB2    | 2.36                     | 0.61              |
| 1:B:448:ASN:N    | 1:B:497:PHE:O     | 2.32                     | 0.61              |
| 1:B:869:MET:HE1  | 1:C:669:GLY:HA3   | 1.83                     | 0.61              |
| 1:A:620:VAL:N    | 1:A:621:PRO:HD2   | 2.15                     | 0.61              |
| 1:C:950:ASP:O    | 1:C:954:GLN:N     | 2.30                     | 0.61              |
| 1:A:605:SER:OG   | 1:A:606:ASN:N     | 2.32                     | 0.61              |
| 1:B:358:ILE:HG22 | 1:B:524:VAL:HG21  | 1.82                     | 0.61              |
| 1:C:485:GLY:H    | 1:C:488:CYS:HB2   | 1.66                     | 0.61              |
| 1:A:131:CYS:HA   | 1:A:166:CYS:CB    | 2.30                     | 0.61              |
| 1:A:328:ARG:NH1  | 1:A:531:THR:O     | 2.34                     | 0.61              |
| 1:B:44:ARG:HB2   | 1:B:279:TYR:CD2   | 2.35                     | 0.61              |
| 1:A:456:PHE:HE1  | 2:D:37:LYS:HE2    | 1.65                     | 0.61              |
| 2:H:27:ARG:O     | 2:H:31:LEU:HG     | 2.00                     | 0.61              |
| 1:C:903:ALA:HA   | 1:C:916:LEU:HD13  | 1.82                     | 0.61              |
| 1:C:904:TYR:HB2  | 1:A:1107:ARG:NH2  | 2.15                     | 0.61              |
| 1:B:385:THR:HG23 | 1:B:386:LYS:H     | 1.64                     | 0.61              |
| 1:A:323:THR:OG1  | 1:A:537:LYS:NZ    | 2.33                     | 0.61              |
| 1:C:168:PHE:HZ   | 1:C:170:TYR:HD2   | 1.47                     | 0.61              |
| 2:I:3:GLU:HA     | 2:I:6:LEU:HG      | 1.83                     | 0.61              |
| 1:B:298:GLU:OE2  | 1:B:315:THR:OG1   | 2.17                     | 0.61              |
| 1:C:717:ASN:O    | 1:C:1071:GLN:NE2  | 2.34                     | 0.61              |
| 1:A:391:CYS:O    | 1:A:523:THR:OG1   | 2.12                     | 0.61              |
| 1:A:454:ARG:HH22 | 1:A:468:ILE:HA    | 1.66                     | 0.61              |
| 1:A:994:ASP:OD1  | 1:A:995:ARG:N     | 2.33                     | 0.61              |
| 1:A:719:THR:HA   | 1:A:926:GLN:HE22  | 1.66                     | 0.60              |
| 1:A:915:VAL:O    | 1:A:919:ASN:ND2   | 2.31                     | 0.60              |
| 1:B:96:GLU:HG2   | 1:B:213:VAL:HG12  | 1.83                     | 0.60              |
| 1:B:472:ILE:O    | 1:B:474:GLN:NE2   | 2.35                     | 0.60              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:130:VAL:HG21 | 1:A:168:PHE:HB3   | 1.82                     | 0.60              |
| 1:B:568:ASP:OD1  | 1:B:569:ILE:N     | 2.34                     | 0.60              |
| 1:A:121:ASN:OD1  | 1:A:122:ASN:N     | 2.33                     | 0.60              |
| 1:A:1081:ILE:HB  | 1:A:1088:HIS:HB2  | 1.84                     | 0.60              |
| 1:B:626:ALA:HB1  | 1:B:638:THR:HG22  | 1.83                     | 0.60              |
| 1:B:950:ASP:O    | 1:B:953:ASN:N     | 2.35                     | 0.60              |
| 1:C:38:TYR:HE1   | 1:C:222:ALA:HB1   | 1.67                     | 0.60              |
| 1:C:214:ARG:HD2  | 1:C:215:ASP:N     | 2.17                     | 0.60              |
| 1:C:435:ALA:HB2  | 1:C:510:VAL:HG23  | 1.83                     | 0.60              |
| 1:C:760:CYS:HA   | 1:C:763:LEU:HD23  | 1.82                     | 0.60              |
| 1:C:783:ALA:HA   | 1:C:873:TYR:CE2   | 2.34                     | 0.60              |
| 1:A:729:VAL:HG22 | 1:A:777:ASN:HD21  | 1.65                     | 0.60              |
| 1:A:782:PHE:HB3  | 1:A:873:TYR:HD2   | 1.65                     | 0.60              |
| 1:C:34:ARG:NH1   | 1:C:219:GLY:O     | 2.32                     | 0.60              |
| 1:A:912:THR:HB   | 1:A:1106:GLN:HE22 | 1.66                     | 0.60              |
| 1:B:417:LYS:HB2  | 2:H:33:TYR:HB2    | 1.83                     | 0.60              |
| 1:B:574:ASP:OD1  | 1:B:575:ALA:N     | 2.34                     | 0.60              |
| 1:B:644:GLN:NE2  | 1:B:649:CYS:HB3   | 2.15                     | 0.60              |
| 1:C:454:ARG:HH12 | 1:C:473:TYR:HB2   | 1.67                     | 0.60              |
| 1:C:974:SER:HB3  | 1:C:980:ILE:HG12  | 1.84                     | 0.60              |
| 1:B:279:TYR:HB3  | 1:B:283:GLY:HA2   | 1.84                     | 0.60              |
| 1:C:787:GLN:OE1  | 1:A:703:ASN:ND2   | 2.34                     | 0.60              |
| 1:B:379:CYS:HB3  | 1:B:382:VAL:HG12  | 1.83                     | 0.60              |
| 1:B:486:PHE:HA   | 2:H:7:GLN:HE21    | 1.66                     | 0.60              |
| 1:C:359:SER:HA   | 1:C:524:VAL:HG11  | 1.84                     | 0.60              |
| 1:A:327:VAL:O    | 1:A:531:THR:OG1   | 2.19                     | 0.60              |
| 1:A:81:ASN:O     | 1:A:239:GLN:NE2   | 2.35                     | 0.59              |
| 1:C:934:ILE:HD12 | 1:C:937:SER:HB2   | 1.84                     | 0.59              |
| 1:A:348:ALA:N    | 1:A:399:SER:O     | 2.35                     | 0.59              |
| 1:B:644:GLN:HE22 | 1:B:649:CYS:HB3   | 1.66                     | 0.59              |
| 1:B:1055:SER:OG  | 1:B:1056:ALA:N    | 2.34                     | 0.59              |
| 1:C:799:GLY:O    | 1:C:928:ASN:ND2   | 2.35                     | 0.59              |
| 1:A:407:VAL:HG21 | 1:A:508:TYR:HD2   | 1.67                     | 0.59              |
| 1:B:308:VAL:HG12 | 1:B:602:THR:HB    | 1.85                     | 0.59              |
| 1:A:351:TYR:HD1  | 1:A:451:TYR:CE1   | 2.20                     | 0.59              |
| 1:A:866:THR:OG1  | 1:A:869:MET:N     | 2.29                     | 0.59              |
| 2:I:23:GLU:O     | 2:I:27:ARG:HD3    | 2.02                     | 0.59              |
| 1:B:330:PRO:HD3  | 1:B:544:ASN:HD22  | 1.68                     | 0.59              |
| 1:B:455:LEU:HB2  | 1:B:493:GLN:HB2   | 1.85                     | 0.59              |
| 1:C:1029:MET:O   | 1:C:1033:VAL:HG12 | 2.02                     | 0.59              |
| 1:B:433:VAL:HG12 | 1:B:512:VAL:HA    | 1.85                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:934:ILE:O     | 1:B:937:SER:OG    | 2.19                     | 0.59              |
| 1:B:1010:GLN:HE21 | 1:B:1014:ARG:HH22 | 1.50                     | 0.59              |
| 1:C:57:PRO:HG3    | 1:C:273:ARG:HH22  | 1.68                     | 0.59              |
| 1:A:912:THR:HG22  | 1:A:914:ASN:H     | 1.67                     | 0.59              |
| 1:C:658:ASN:OD1   | 1:C:659:SER:N     | 2.34                     | 0.59              |
| 1:C:872:GLN:O     | 1:C:875:SER:OG    | 2.16                     | 0.59              |
| 1:A:741:TYR:HE1   | 1:A:966:LEU:HD11  | 1.68                     | 0.59              |
| 2:D:6:LEU:HA      | 2:D:9:ILE:HD12    | 1.84                     | 0.59              |
| 1:B:699:LEU:HD12  | 1:A:873:TYR:CE1   | 2.38                     | 0.59              |
| 1:A:95:THR:HB     | 1:A:264:ALA:HB3   | 1.84                     | 0.59              |
| 2:G:21:ASP:HB3    | 2:G:24:ALA:HB3    | 1.83                     | 0.59              |
| 1:B:102:ARG:NH2   | 1:B:243:ALA:HB2   | 2.17                     | 0.59              |
| 1:B:819:GLU:OE1   | 1:B:1054:GLN:NE2  | 2.36                     | 0.59              |
| 1:A:79:PHE:N      | 1:A:263:ALA:O     | 2.35                     | 0.59              |
| 1:A:560:LEU:HB2   | 1:A:563:GLN:NE2   | 2.18                     | 0.59              |
| 1:B:895:GLN:N     | 1:B:895:GLN:OE1   | 2.34                     | 0.59              |
| 1:A:350:VAL:HG22  | 1:A:422:ASN:HB3   | 1.84                     | 0.59              |
| 2:E:10:TYR:O      | 2:E:13:MET:HG3    | 2.02                     | 0.59              |
| 1:B:1072:GLU:OE1  | 1:B:1072:GLU:N    | 2.27                     | 0.58              |
| 1:B:83:VAL:HB     | 1:B:237:ARG:HH22  | 1.68                     | 0.58              |
| 1:C:103:GLY:O     | 1:C:241:LEU:HB2   | 2.03                     | 0.58              |
| 1:C:231:ILE:HG22  | 1:C:233:ILE:HG23  | 1.85                     | 0.58              |
| 1:C:598:ILE:HB    | 1:C:609:ALA:HB3   | 1.85                     | 0.58              |
| 1:A:87:ASN:HB2    | 1:A:269:TYR:CE2   | 2.37                     | 0.58              |
| 1:B:377:PHE:HB3   | 1:B:434:ILE:HG12  | 1.85                     | 0.58              |
| 1:B:770:ILE:HA    | 1:B:773:GLU:HB3   | 1.86                     | 0.58              |
| 1:C:419:ALA:HB1   | 1:C:423:TYR:HB3   | 1.85                     | 0.58              |
| 1:C:958:ALA:HA    | 1:C:961:THR:HG22  | 1.84                     | 0.58              |
| 1:B:321:GLN:CD    | 1:B:321:GLN:H     | 2.07                     | 0.58              |
| 1:C:490:PHE:CE2   | 1:C:492:LEU:HB2   | 2.38                     | 0.58              |
| 1:A:580:GLN:HG2   | 1:A:581:THR:HG23  | 1.86                     | 0.58              |
| 1:B:83:VAL:HB     | 1:B:237:ARG:NH2   | 2.18                     | 0.58              |
| 1:B:458:LYS:HA    | 1:B:473:TYR:HE1   | 1.68                     | 0.58              |
| 1:C:291:CYS:HB2   | 1:C:298:GLU:HA    | 1.86                     | 0.58              |
| 1:C:804:GLN:NE2   | 1:C:935:GLN:OE1   | 2.37                     | 0.58              |
| 1:A:516:GLU:N     | 1:A:516:GLU:OE1   | 2.37                     | 0.58              |
| 1:B:277:LEU:HD11  | 1:B:285:ILE:HG23  | 1.85                     | 0.58              |
| 1:C:445:VAL:HG22  | 1:C:499:PRO:HG3   | 1.84                     | 0.58              |
| 1:C:551:VAL:HG12  | 1:C:588:THR:O     | 2.03                     | 0.58              |
| 1:C:787:GLN:HB2   | 1:C:789:TYR:CE1   | 2.39                     | 0.58              |
| 1:C:825:LYS:HD3   | 1:C:942:ALA:HA    | 1.86                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:229:LEU:H     | 1:B:229:LEU:HD23  | 1.67                     | 0.58              |
| 1:B:350:VAL:HA    | 1:B:400:PHE:HB2   | 1.86                     | 0.58              |
| 1:B:439:ASN:OD1   | 1:B:443:SER:OG    | 2.20                     | 0.58              |
| 1:A:985:ASP:OD2   | 1:A:988:GLU:HG3   | 2.04                     | 0.58              |
| 1:B:328:ARG:HH12  | 1:B:533:LEU:HD22  | 1.68                     | 0.58              |
| 1:C:29:THR:N      | 1:C:62:VAL:O      | 2.37                     | 0.57              |
| 1:C:803:SER:HA    | 1:C:806:LEU:HB3   | 1.86                     | 0.57              |
| 1:A:228:ASP:OD1   | 1:A:229:LEU:N     | 2.37                     | 0.57              |
| 2:I:5:ILE:O       | 2:I:8:LYS:HG2     | 2.04                     | 0.57              |
| 1:C:29:THR:O      | 1:C:62:VAL:N      | 2.34                     | 0.57              |
| 1:C:422:ASN:CB    | 1:C:463:PRO:HA    | 2.25                     | 0.57              |
| 1:A:105:ILE:HG12  | 1:A:110:LEU:HD22  | 1.86                     | 0.57              |
| 1:B:803:SER:HA    | 1:B:806:LEU:HD21  | 1.85                     | 0.57              |
| 1:C:96:GLU:HA     | 1:C:187:LYS:HZ1   | 1.70                     | 0.57              |
| 2:D:4:TRP:HB3     | 2:D:8:LYS:NZ      | 2.19                     | 0.57              |
| 2:E:8:LYS:O       | 2:E:12:ILE:HG13   | 2.04                     | 0.57              |
| 1:B:656:VAL:HG21  | 1:B:693:ILE:HD11  | 1.85                     | 0.57              |
| 1:B:1135:ASN:OD1  | 1:B:1136:THR:N    | 2.31                     | 0.57              |
| 1:C:538:CYS:HA    | 1:C:551:VAL:HA    | 1.85                     | 0.57              |
| 1:A:560:LEU:HB2   | 1:A:563:GLN:HE22  | 1.69                     | 0.57              |
| 1:A:620:VAL:O     | 1:A:621:PRO:C     | 2.43                     | 0.57              |
| 1:C:398:ASP:OD1   | 1:C:399:SER:N     | 2.37                     | 0.57              |
| 1:C:497:PHE:CZ    | 1:C:507:PRO:HB3   | 2.40                     | 0.57              |
| 1:A:948:LEU:HD21  | 1:A:1057:PRO:HG2  | 1.85                     | 0.57              |
| 1:B:309:GLU:O     | 1:B:313:TYR:OH    | 2.15                     | 0.57              |
| 1:B:729:VAL:HG13  | 1:B:1059:GLY:HA2  | 1.86                     | 0.57              |
| 1:B:949:GLN:O     | 1:B:949:GLN:NE2   | 2.37                     | 0.57              |
| 1:C:1020:ALA:O    | 1:C:1023:ASN:N    | 2.37                     | 0.57              |
| 1:C:1049:LEU:HD11 | 1:C:1067:TYR:HB2  | 1.87                     | 0.57              |
| 1:B:411:ALA:HB3   | 1:B:414:GLN:HB2   | 1.87                     | 0.57              |
| 1:B:821:LEU:HD11  | 1:B:939:SER:HB3   | 1.86                     | 0.57              |
| 1:C:566:GLY:O     | 1:C:575:ALA:N     | 2.30                     | 0.57              |
| 1:B:357:ARG:NH1   | 1:B:358:ILE:O     | 2.37                     | 0.57              |
| 1:B:365:TYR:HD2   | 1:B:387:LEU:HD23  | 1.69                     | 0.57              |
| 1:B:804:GLN:N     | 1:B:804:GLN:OE1   | 2.38                     | 0.57              |
| 1:C:93:ALA:HA     | 1:C:190:ARG:O     | 2.05                     | 0.57              |
| 1:C:374:PHE:HA    | 1:C:436:TRP:HB3   | 1.86                     | 0.57              |
| 1:A:1100:THR:OG1  | 1:A:1101:HIS:ND1  | 2.34                     | 0.57              |
| 1:B:434:ILE:HB    | 1:B:436:TRP:HZ3   | 1.69                     | 0.57              |
| 1:B:917:TYR:HB3   | 1:C:1129:VAL:HG12 | 1.87                     | 0.57              |
| 1:C:1098:ASN:ND2  | 1:C:1100:THR:OG1  | 2.38                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1135:ASN:CG   | 1:B:1136:THR:H    | 2.08                     | 0.56              |
| 1:C:971:GLY:O     | 1:C:995:ARG:NH2   | 2.38                     | 0.56              |
| 1:C:46:SER:OG     | 1:C:281:GLU:HA    | 2.05                     | 0.56              |
| 1:C:417:LYS:NZ    | 2:F:30:ASP:HA     | 2.20                     | 0.56              |
| 1:B:439:ASN:HD21  | 1:B:506:GLN:HB3   | 1.70                     | 0.56              |
| 1:C:710:ASN:HA    | 1:C:1077:THR:HG22 | 1.86                     | 0.56              |
| 1:C:726:ILE:HD13  | 1:C:1061:VAL:HG12 | 1.87                     | 0.56              |
| 1:A:729:VAL:HG21  | 1:A:781:VAL:HG11  | 1.88                     | 0.56              |
| 1:A:566:GLY:N     | 1:A:575:ALA:O     | 2.38                     | 0.56              |
| 1:B:361:CYS:O     | 1:B:524:VAL:HA    | 2.06                     | 0.56              |
| 1:C:91:TYR:HA     | 1:C:193:VAL:HG12  | 1.88                     | 0.56              |
| 1:C:1089:PHE:O    | 1:C:1120:THR:OG1  | 2.12                     | 0.56              |
| 1:A:129:LYS:HB3   | 1:A:131:CYS:SG    | 2.46                     | 0.56              |
| 1:A:357:ARG:HD3   | 1:A:396:TYR:CE1   | 2.41                     | 0.56              |
| 1:B:774:GLN:O     | 1:B:777:ASN:N     | 2.36                     | 0.56              |
| 1:B:980:ILE:HG21  | 1:B:993:ILE:HD11  | 1.87                     | 0.56              |
| 1:B:1091:ARG:NH2  | 1:B:1120:THR:O    | 2.39                     | 0.56              |
| 1:B:1096:VAL:HG22 | 1:B:1103:PHE:O    | 2.06                     | 0.56              |
| 1:C:383:SER:HB3   | 1:C:386:LYS:HD2   | 1.88                     | 0.56              |
| 1:A:276:LEU:HD11  | 1:A:301:CYS:HA    | 1.86                     | 0.56              |
| 1:B:455:LEU:HD13  | 1:B:493:GLN:HG3   | 1.87                     | 0.56              |
| 1:C:140:PHE:HB2   | 1:C:243:ALA:HA    | 1.88                     | 0.56              |
| 1:A:660:TYR:O     | 1:A:698:SER:OG    | 2.24                     | 0.56              |
| 1:B:96:GLU:HB2    | 1:B:187:LYS:CB    | 2.30                     | 0.56              |
| 1:B:1089:PHE:HE2  | 1:A:917:TYR:HD2   | 1.54                     | 0.56              |
| 1:C:105:ILE:HG23  | 1:C:241:LEU:HD11  | 1.88                     | 0.56              |
| 1:A:369:TYR:HD1   | 1:A:374:PHE:HZ    | 1.52                     | 0.56              |
| 1:A:879:ALA:HA    | 1:A:882:ILE:HG22  | 1.88                     | 0.56              |
| 1:B:613:GLN:HA    | 1:B:648:GLY:HA3   | 1.87                     | 0.55              |
| 1:B:811:LYS:O     | 1:B:813:SER:N     | 2.34                     | 0.55              |
| 1:C:886:TRP:HB3   | 1:C:905:ARG:NH2   | 2.21                     | 0.55              |
| 1:A:324:GLU:HB2   | 1:A:539:VAL:HG23  | 1.89                     | 0.55              |
| 1:A:403:ARG:NH1   | 2:D:30:ASP:OD1    | 2.38                     | 0.55              |
| 1:B:141:LEU:HD22  | 1:B:243:ALA:HB1   | 1.87                     | 0.55              |
| 1:C:95:THR:HB     | 1:C:264:ALA:HB3   | 1.88                     | 0.55              |
| 1:C:104:TRP:HA    | 1:C:241:LEU:HD13  | 1.88                     | 0.55              |
| 1:A:452:LEU:HD13  | 1:A:492:LEU:HD11  | 1.87                     | 0.55              |
| 1:A:816:SER:OG    | 1:A:819:GLU:HG3   | 2.06                     | 0.55              |
| 2:F:8:LYS:O       | 2:F:12:ILE:HG12   | 2.06                     | 0.55              |
| 1:B:436:TRP:CE2   | 1:B:509:ARG:HB3   | 2.41                     | 0.55              |
| 1:C:339:GLY:O     | 1:C:343:ASN:N     | 2.37                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:351:TYR:CD1   | 1:C:418:ILE:HG21  | 2.41                     | 0.55              |
| 1:C:733:LYS:HD2   | 1:C:771:ALA:HB1   | 1.88                     | 0.55              |
| 1:A:365:TYR:HA    | 1:A:368:LEU:HD13  | 1.87                     | 0.55              |
| 1:A:422:ASN:O     | 1:A:466:ARG:NH1   | 2.39                     | 0.55              |
| 1:A:601:GLY:O     | 1:A:604:THR:OG1   | 2.23                     | 0.55              |
| 1:B:287:ASP:OD1   | 1:B:287:ASP:N     | 2.39                     | 0.55              |
| 1:B:351:TYR:CE1   | 1:B:468:ILE:HA    | 2.41                     | 0.55              |
| 1:C:811:LYS:HD2   | 1:C:814:LYS:HA    | 1.88                     | 0.55              |
| 1:C:854:LYS:HE3   | 1:A:592:PHE:HE1   | 1.71                     | 0.55              |
| 1:C:1115:ILE:HD12 | 1:C:1115:ILE:H    | 1.70                     | 0.55              |
| 1:A:876:ALA:O     | 1:A:880:GLY:N     | 2.39                     | 0.55              |
| 1:C:752:LEU:HD21  | 1:C:993:ILE:HG12  | 1.88                     | 0.55              |
| 1:C:929:SER:OG    | 1:C:930:ALA:N     | 2.40                     | 0.55              |
| 1:A:659:SER:HB3   | 1:A:698:SER:HB3   | 1.88                     | 0.55              |
| 1:A:797:PHE:O     | 1:A:800:PHE:N     | 2.24                     | 0.55              |
| 1:B:356:LYS:O     | 1:B:396:TYR:HA    | 2.07                     | 0.55              |
| 1:C:1054:GLN:HB2  | 1:C:1061:VAL:HG23 | 1.87                     | 0.55              |
| 1:B:131:CYS:CA    | 1:B:166:CYS:HB3   | 2.36                     | 0.55              |
| 1:B:532:ASN:OD1   | 1:B:533:LEU:N     | 2.37                     | 0.55              |
| 1:C:56:LEU:HD23   | 1:C:56:LEU:H      | 1.70                     | 0.55              |
| 1:C:112:SER:HA    | 1:C:132:GLU:CG    | 2.36                     | 0.55              |
| 1:C:324:GLU:H     | 1:C:539:VAL:HG23  | 1.72                     | 0.55              |
| 1:C:740:MET:HE1   | 1:A:592:PHE:CE2   | 2.39                     | 0.55              |
| 1:A:560:LEU:O     | 1:A:577:ARG:NH2   | 2.40                     | 0.55              |
| 1:A:662:CYS:HB2   | 1:A:697:MET:SD    | 2.46                     | 0.55              |
| 1:A:820:ASP:HA    | 1:A:823:PHE:HB3   | 1.88                     | 0.55              |
| 1:B:748:GLU:O     | 1:B:752:LEU:N     | 2.40                     | 0.55              |
| 1:C:83:VAL:HG12   | 1:C:239:GLN:HB2   | 1.88                     | 0.55              |
| 1:C:790:LYS:HD2   | 1:C:791:THR:O     | 2.06                     | 0.55              |
| 1:A:85:PRO:HA     | 1:A:237:ARG:HA    | 1.89                     | 0.55              |
| 1:A:417:LYS:HB2   | 2:D:33:TYR:HE1    | 1.71                     | 0.55              |
| 1:C:85:PRO:HA     | 1:C:237:ARG:HA    | 1.89                     | 0.55              |
| 1:C:903:ALA:HB2   | 1:C:916:LEU:HD22  | 1.88                     | 0.55              |
| 1:A:90:VAL:HG13   | 1:A:267:VAL:HG13  | 1.89                     | 0.55              |
| 1:A:280:ASN:HD21  | 1:A:282:ASN:HB2   | 1.71                     | 0.55              |
| 1:B:37:TYR:HA     | 1:B:222:ALA:HB1   | 1.89                     | 0.54              |
| 1:B:563:GLN:O     | 1:B:577:ARG:NH2   | 2.40                     | 0.54              |
| 1:C:739:THR:HA    | 1:C:742:ILE:HG22  | 1.89                     | 0.54              |
| 1:A:341:VAL:HG13  | 1:A:342:PHE:HD1   | 1.72                     | 0.54              |
| 1:A:493:GLN:NE2   | 2:D:13:MET:SD     | 2.80                     | 0.54              |
| 1:B:879:ALA:HA    | 1:B:882:ILE:HB    | 1.87                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:796:ASP:OD1  | 1:C:796:ASP:N     | 2.38                     | 0.54              |
| 1:C:816:SER:OG   | 1:C:817:PHE:N     | 2.40                     | 0.54              |
| 1:A:360:ASN:HA   | 1:A:524:VAL:HG11  | 1.89                     | 0.54              |
| 1:B:993:ILE:O    | 1:B:997:ILE:N     | 2.36                     | 0.54              |
| 1:A:742:ILE:HD11 | 1:A:1001:LEU:HB2  | 1.88                     | 0.54              |
| 1:B:1002:GLN:NE2 | 1:A:1002:GLN:OE1  | 2.40                     | 0.54              |
| 1:C:933:LYS:O    | 1:C:937:SER:N     | 2.34                     | 0.54              |
| 1:B:296:LEU:HD13 | 1:B:608:VAL:HG11  | 1.89                     | 0.54              |
| 1:C:1081:ILE:O   | 1:C:1088:HIS:N    | 2.37                     | 0.54              |
| 1:A:555:SER:HB2  | 1:A:584:ILE:HG23  | 1.88                     | 0.54              |
| 1:B:193:VAL:N    | 1:B:204:TYR:O     | 2.30                     | 0.54              |
| 1:A:94:SER:OG    | 1:A:190:ARG:N     | 2.40                     | 0.54              |
| 1:A:1080:ALA:HB3 | 1:A:1132:ILE:HG12 | 1.89                     | 0.54              |
| 1:B:738:CYS:SG   | 1:B:739:THR:N     | 2.81                     | 0.54              |
| 1:B:890:ALA:HB1  | 1:C:1046:GLY:HA2  | 1.90                     | 0.54              |
| 1:B:897:PRO:HG3  | 1:C:1077:THR:HG21 | 1.89                     | 0.54              |
| 1:B:1074:ASN:HB3 | 3:B:1308:NAG:N2   | 2.23                     | 0.54              |
| 1:C:742:ILE:HD11 | 1:C:1001:LEU:HB2  | 1.88                     | 0.54              |
| 1:B:359:SER:HA   | 1:B:523:THR:HB    | 1.90                     | 0.54              |
| 1:B:904:TYR:HB2  | 1:C:1107:ARG:CZ   | 2.37                     | 0.54              |
| 1:B:927:PHE:CZ   | 1:B:1065:VAL:HG11 | 2.42                     | 0.54              |
| 1:A:421:TYR:CD1  | 1:A:461:LEU:HG    | 2.43                     | 0.54              |
| 1:C:30:ASN:OD1   | 1:C:31:SER:N      | 2.41                     | 0.54              |
| 1:C:57:PRO:HG3   | 1:C:273:ARG:NH2   | 2.23                     | 0.54              |
| 1:A:379:CYS:HB2  | 1:A:432:CYS:HA    | 1.89                     | 0.54              |
| 1:A:720:ILE:HG22 | 1:A:926:GLN:HB3   | 1.89                     | 0.54              |
| 2:H:21:ASP:O     | 2:H:23:GLU:HG2    | 2.08                     | 0.54              |
| 1:B:333:THR:HA   | 1:B:335:LEU:HG    | 1.90                     | 0.53              |
| 1:B:342:PHE:HE1  | 1:B:511:VAL:HG21  | 1.73                     | 0.53              |
| 1:B:866:THR:HG23 | 1:B:869:MET:H     | 1.73                     | 0.53              |
| 1:C:176:LEU:HB2  | 1:C:207:HIS:NE2   | 2.22                     | 0.53              |
| 1:C:329:PHE:HE1  | 1:C:544:ASN:HB2   | 1.73                     | 0.53              |
| 1:C:484:GLU:OE1  | 1:C:489:TYR:HA    | 2.08                     | 0.53              |
| 1:A:729:VAL:O    | 1:A:777:ASN:ND2   | 2.41                     | 0.53              |
| 2:F:4:TRP:CZ3    | 2:F:7:GLN:HG2     | 2.43                     | 0.53              |
| 1:A:456:PHE:HB2  | 1:A:473:TYR:CE2   | 2.34                     | 0.53              |
| 1:A:473:TYR:HB3  | 1:A:491:PRO:HG2   | 1.91                     | 0.53              |
| 1:A:543:PHE:O    | 1:A:545:GLY:N     | 2.41                     | 0.53              |
| 1:B:328:ARG:HH11 | 1:B:533:LEU:HD13  | 1.73                     | 0.53              |
| 1:A:568:ASP:OD1  | 1:A:569:ILE:N     | 2.39                     | 0.53              |
| 1:A:974:SER:HB2  | 1:A:980:ILE:HG12  | 1.89                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:40:ASP:N      | 1:C:40:ASP:OD1    | 2.39                     | 0.53              |
| 1:C:543:PHE:HB2   | 1:C:546:LEU:HB3   | 1.91                     | 0.53              |
| 1:C:1091:ARG:NE   | 1:C:1118:ASP:O    | 2.37                     | 0.53              |
| 1:C:369:TYR:OH    | 1:C:385:THR:OG1   | 2.09                     | 0.53              |
| 1:C:376:THR:HB    | 1:C:435:ALA:HB3   | 1.91                     | 0.53              |
| 1:C:401:VAL:HB    | 1:C:451:TYR:CZ    | 2.44                     | 0.53              |
| 1:B:342:PHE:CE1   | 1:B:511:VAL:HG11  | 2.43                     | 0.53              |
| 1:B:405:ASP:N     | 1:B:504:GLY:O     | 2.31                     | 0.53              |
| 1:B:454:ARG:HH11  | 1:B:492:LEU:HG    | 1.74                     | 0.53              |
| 1:B:819:GLU:HA    | 1:B:822:LEU:HB3   | 1.91                     | 0.53              |
| 1:C:414:GLN:O     | 1:C:424:LYS:HG2   | 2.08                     | 0.53              |
| 1:C:884:SER:OG    | 1:C:894:LEU:N     | 2.22                     | 0.53              |
| 1:C:991:VAL:O     | 1:C:992:GLN:NE2   | 2.36                     | 0.53              |
| 1:B:994:ASP:HA    | 1:B:997:ILE:HG22  | 1.91                     | 0.53              |
| 1:B:1083:HIS:CD2  | 1:B:1137:VAL:H    | 2.27                     | 0.53              |
| 1:C:329:PHE:CD2   | 1:C:528:LYS:HG3   | 2.44                     | 0.53              |
| 1:C:332:ILE:HG23  | 1:C:333:THR:H     | 1.74                     | 0.53              |
| 1:C:395:VAL:HA    | 1:C:515:PHE:HA    | 1.90                     | 0.53              |
| 1:C:750:SER:O     | 1:C:754:LEU:N     | 2.28                     | 0.53              |
| 1:A:33:THR:HA     | 1:A:58:PHE:CD2    | 2.44                     | 0.53              |
| 1:A:295:PRO:HG3   | 1:A:627:ASP:HB2   | 1.91                     | 0.53              |
| 1:C:567:ARG:HD3   | 1:C:573:THR:HG22  | 1.90                     | 0.52              |
| 1:A:1090:PRO:HB2  | 1:A:1092:GLU:O    | 2.09                     | 0.52              |
| 1:B:335:LEU:H     | 1:B:362:VAL:CG1   | 2.23                     | 0.52              |
| 1:B:673:SER:OG    | 1:B:674:TYR:N     | 2.41                     | 0.52              |
| 1:B:767:LEU:HD12  | 1:B:1008:VAL:HG23 | 1.91                     | 0.52              |
| 1:C:777:ASN:O     | 1:C:780:GLU:N     | 2.40                     | 0.52              |
| 1:C:1091:ARG:HD2  | 1:C:1119:ASN:HA   | 1.91                     | 0.52              |
| 1:A:91:TYR:HE1    | 1:A:191:GLU:HB2   | 1.73                     | 0.52              |
| 1:B:797:PHE:O     | 1:B:800:PHE:N     | 2.41                     | 0.52              |
| 1:B:1128:VAL:HG13 | 1:B:1129:VAL:HG23 | 1.90                     | 0.52              |
| 1:A:191:GLU:HG2   | 1:A:223:LEU:HD11  | 1.91                     | 0.52              |
| 2:H:13:MET:HE2    | 2:H:28:VAL:HG12   | 1.91                     | 0.52              |
| 1:B:753:LEU:HD12  | 1:B:756:TYR:HB3   | 1.91                     | 0.52              |
| 1:C:489:TYR:HE2   | 2:F:7:GLN:HA      | 1.74                     | 0.52              |
| 1:C:535:LYS:HA    | 1:C:552:LEU:HD11  | 1.91                     | 0.52              |
| 1:A:44:ARG:HH22   | 1:A:49:HIS:CE1    | 2.26                     | 0.52              |
| 1:A:697:MET:HE2   | 1:A:698:SER:H     | 1.74                     | 0.52              |
| 1:A:1057:PRO:O    | 1:A:1058:HIS:ND1  | 2.43                     | 0.52              |
| 1:B:213:VAL:HG23  | 1:B:214:ARG:H     | 1.75                     | 0.52              |
| 1:C:726:ILE:HD13  | 1:C:1061:VAL:CG1  | 2.40                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:883:THR:HG21  | 1:A:705:VAL:HG21  | 1.92                     | 0.52              |
| 1:C:1047:TYR:O    | 1:C:1066:THR:OG1  | 2.21                     | 0.52              |
| 1:B:335:LEU:H     | 1:B:362:VAL:HG13  | 1.74                     | 0.52              |
| 1:B:1038:LYS:O    | 1:A:1038:LYS:NZ   | 2.41                     | 0.52              |
| 1:C:376:THR:N     | 1:C:435:ALA:O     | 2.41                     | 0.52              |
| 1:C:401:VAL:HG22  | 1:C:509:ARG:HE    | 1.74                     | 0.52              |
| 1:C:120:VAL:HG12  | 1:C:121:ASN:N     | 2.25                     | 0.52              |
| 1:C:404:GLY:HA3   | 2:F:27:ARG:NH2    | 2.24                     | 0.52              |
| 1:A:91:TYR:CE1    | 1:A:191:GLU:HB2   | 2.45                     | 0.52              |
| 1:A:456:PHE:CE2   | 2:D:36:MET:HB2    | 2.44                     | 0.52              |
| 1:B:114:THR:N     | 1:B:132:GLU:OE2   | 2.43                     | 0.52              |
| 1:B:332:ILE:HG22  | 1:B:333:THR:N     | 2.25                     | 0.52              |
| 1:B:386:LYS:HG3   | 1:B:390:LEU:HD23  | 1.91                     | 0.52              |
| 1:B:1049:LEU:HD11 | 1:B:1067:TYR:HB2  | 1.91                     | 0.52              |
| 1:B:1089:PHE:O    | 1:B:1120:THR:OG1  | 2.16                     | 0.52              |
| 1:C:195:LYS:HE2   | 1:C:197:ILE:HD13  | 1.91                     | 0.52              |
| 2:G:4:TRP:O       | 2:G:8:LYS:HG3     | 2.10                     | 0.52              |
| 1:B:98:SER:OG     | 1:B:99:ASN:N      | 2.43                     | 0.52              |
| 1:B:434:ILE:O     | 1:B:510:VAL:HA    | 2.10                     | 0.52              |
| 1:B:640:SER:OG    | 1:B:641:ASN:N     | 2.43                     | 0.52              |
| 1:A:606:ASN:O     | 1:A:608:VAL:HG13  | 2.08                     | 0.52              |
| 1:A:1028:LYS:HB3  | 1:A:1062:PHE:HE2  | 1.75                     | 0.52              |
| 1:A:1098:ASN:OD1  | 1:A:1101:HIS:N    | 2.40                     | 0.52              |
| 1:B:344:ALA:O     | 1:B:509:ARG:NH2   | 2.43                     | 0.52              |
| 1:C:619:GLU:N     | 1:C:619:GLU:OE1   | 2.43                     | 0.52              |
| 1:C:752:LEU:O     | 1:C:755:GLN:NE2   | 2.43                     | 0.52              |
| 1:A:1097:SER:HB3  | 1:A:1102:TRP:CZ3  | 2.45                     | 0.52              |
| 1:C:893:ALA:O     | 1:C:894:LEU:HD23  | 2.10                     | 0.51              |
| 1:B:645:THR:N     | 1:B:648:GLY:O     | 2.42                     | 0.51              |
| 1:C:528:LYS:H     | 1:C:528:LYS:HZ2   | 1.57                     | 0.51              |
| 1:C:717:ASN:HB3   | 1:C:1071:GLN:HE21 | 1.75                     | 0.51              |
| 1:B:55:PHE:O      | 1:B:271:GLN:NE2   | 2.42                     | 0.51              |
| 1:B:276:LEU:HD23  | 1:B:277:LEU:N     | 2.24                     | 0.51              |
| 1:B:363:ALA:N     | 1:B:525:CYS:O     | 2.29                     | 0.51              |
| 1:C:454:ARG:HE    | 1:C:455:LEU:H     | 1.57                     | 0.51              |
| 1:A:53:ASP:OD1    | 1:A:54:LEU:N      | 2.34                     | 0.51              |
| 1:A:400:PHE:CE2   | 1:A:510:VAL:HG21  | 2.45                     | 0.51              |
| 1:B:100:ILE:HD13  | 1:B:263:ALA:HB3   | 1.92                     | 0.51              |
| 1:B:490:PHE:HD2   | 1:B:492:LEU:HD12  | 1.75                     | 0.51              |
| 1:B:853:GLN:HB2   | 1:B:855:PHE:CE2   | 2.45                     | 0.51              |
| 1:C:44:ARG:HB2    | 1:C:279:TYR:CD2   | 2.45                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:89:GLY:HA3   | 1:A:270:LEU:HB2   | 1.91                     | 0.51              |
| 1:A:1098:ASN:HB2 | 3:A:1302:NAG:N2   | 2.26                     | 0.51              |
| 1:B:341:VAL:HG13 | 1:B:342:PHE:CE1   | 2.45                     | 0.51              |
| 1:C:86:PHE:H     | 1:C:237:ARG:HA    | 1.76                     | 0.51              |
| 1:C:414:GLN:NE2  | 1:C:415:THR:O     | 2.41                     | 0.51              |
| 1:A:421:TYR:HA   | 1:A:461:LEU:HD12  | 1.91                     | 0.51              |
| 1:A:433:VAL:HG12 | 1:A:512:VAL:HG13  | 1.93                     | 0.51              |
| 1:A:1116:THR:H   | 1:A:1119:ASN:ND2  | 2.03                     | 0.51              |
| 2:E:27:ARG:HH22  | 2:E:31:LEU:HB2    | 1.75                     | 0.51              |
| 1:B:729:VAL:HG22 | 1:B:1059:GLY:HA2  | 1.93                     | 0.51              |
| 1:B:906:PHE:HA   | 1:B:909:ILE:HG22  | 1.92                     | 0.51              |
| 1:C:175:PHE:HB2  | 1:C:207:HIS:HE1   | 1.76                     | 0.51              |
| 1:A:278:LYS:HB3  | 1:A:287:ASP:O     | 2.11                     | 0.51              |
| 1:B:437:ASN:HA   | 1:B:508:TYR:CE1   | 2.45                     | 0.51              |
| 1:B:1023:ASN:O   | 1:B:1026:ALA:N    | 2.44                     | 0.51              |
| 1:B:52:GLN:O     | 1:B:52:GLN:HG2    | 2.10                     | 0.51              |
| 1:B:456:PHE:HD2  | 1:B:473:TYR:CD2   | 2.29                     | 0.51              |
| 1:B:1018:ILE:O   | 1:B:1022:ALA:N    | 2.44                     | 0.51              |
| 1:C:566:GLY:N    | 1:C:575:ALA:O     | 2.28                     | 0.51              |
| 1:C:895:GLN:O    | 1:A:712:ILE:HD13  | 2.11                     | 0.51              |
| 1:B:346:ARG:CZ   | 1:B:347:PHE:H     | 2.24                     | 0.51              |
| 1:B:1008:VAL:HA  | 1:B:1011:GLN:HB3  | 1.93                     | 0.51              |
| 1:C:497:PHE:HB3  | 1:C:501:ASN:ND2   | 2.22                     | 0.51              |
| 1:C:931:ILE:O    | 1:C:934:ILE:HG22  | 2.11                     | 0.51              |
| 1:A:37:TYR:OH    | 1:A:195:LYS:NZ    | 2.24                     | 0.51              |
| 1:A:83:VAL:HG12  | 1:A:239:GLN:HB2   | 1.93                     | 0.51              |
| 1:A:1101:HIS:NE2 | 3:A:1302:NAG:H61  | 2.26                     | 0.51              |
| 1:A:1106:GLN:O   | 1:A:1108:ASN:N    | 2.44                     | 0.51              |
| 2:H:10:TYR:O     | 2:H:14:ARG:HG2    | 2.11                     | 0.51              |
| 1:B:538:CYS:HB2  | 1:B:550:GLY:C     | 2.30                     | 0.50              |
| 1:C:733:LYS:HZ1  | 1:C:863:PRO:HA    | 1.76                     | 0.50              |
| 1:C:976:VAL:HG12 | 1:C:978:ASN:H     | 1.76                     | 0.50              |
| 1:A:366:SER:N    | 1:A:388:ASN:OD1   | 2.44                     | 0.50              |
| 1:A:443:SER:OG   | 1:A:497:PHE:HB3   | 2.10                     | 0.50              |
| 1:A:748:GLU:HA   | 1:A:751:ASN:HB2   | 1.93                     | 0.50              |
| 2:E:28:VAL:O     | 2:E:32:ILE:HG13   | 2.11                     | 0.50              |
| 1:B:1027:THR:O   | 1:B:1030:SER:OG   | 2.28                     | 0.50              |
| 1:C:47:VAL:HG12  | 1:C:48:LEU:O      | 2.11                     | 0.50              |
| 1:C:1083:HIS:HA  | 1:C:1134:ASN:HD21 | 1.75                     | 0.50              |
| 1:A:576:VAL:HG13 | 1:A:585:LEU:HB2   | 1.93                     | 0.50              |
| 2:G:5:ILE:O      | 2:G:9:ILE:HG12    | 2.11                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:127:VAL:HA    | 1:B:171:VAL:HG22  | 1.94                     | 0.50              |
| 1:B:1038:LYS:C    | 1:A:1038:LYS:HZ1  | 2.13                     | 0.50              |
| 1:A:49:HIS:HE1    | 1:A:51:THR:HB     | 1.76                     | 0.50              |
| 1:A:316:SER:O     | 1:A:595:VAL:HG12  | 2.11                     | 0.50              |
| 1:A:969:ASN:CG    | 1:A:971:GLY:H     | 2.15                     | 0.50              |
| 1:B:415:THR:OG1   | 1:B:420:ASP:OD2   | 2.18                     | 0.50              |
| 1:B:1083:HIS:CE1  | 1:B:1084:ASP:HB2  | 2.46                     | 0.50              |
| 1:C:435:ALA:HA    | 1:C:510:VAL:HA    | 1.92                     | 0.50              |
| 1:A:491:PRO:HG3   | 2:D:7:GLN:HG3     | 1.94                     | 0.50              |
| 2:I:16:LEU:HA     | 2:I:19:LEU:HG     | 1.93                     | 0.50              |
| 1:B:200:TYR:HB3   | 1:B:228:ASP:OD1   | 2.11                     | 0.50              |
| 1:B:1025:ALA:O    | 1:B:1028:LYS:N    | 2.44                     | 0.50              |
| 1:A:85:PRO:O      | 1:A:269:TYR:OH    | 2.28                     | 0.50              |
| 1:A:133:PHE:CE2   | 1:A:160:TYR:HA    | 2.41                     | 0.50              |
| 1:A:577:ARG:HG3   | 1:A:582:LEU:O     | 2.11                     | 0.50              |
| 1:A:616:ASN:HB2   | 3:A:1305:NAG:O5   | 2.11                     | 0.50              |
| 2:I:10:TYR:O      | 2:I:14:ARG:HG2    | 2.11                     | 0.50              |
| 1:B:93:ALA:HB3    | 1:B:266:TYR:H     | 1.76                     | 0.50              |
| 1:B:206:LYS:HD3   | 1:B:207:HIS:N     | 2.26                     | 0.50              |
| 1:B:809:PRO:HB3   | 1:B:813:SER:HA    | 1.92                     | 0.50              |
| 1:C:764:ASN:O     | 1:C:767:LEU:N     | 2.45                     | 0.50              |
| 1:C:770:ILE:HA    | 1:C:773:GLU:HB2   | 1.94                     | 0.50              |
| 1:B:976:VAL:O     | 1:B:980:ILE:HG12  | 2.11                     | 0.50              |
| 1:B:1002:GLN:HE22 | 1:A:1002:GLN:HE22 | 1.60                     | 0.50              |
| 1:C:655:HIS:CG    | 1:C:656:VAL:N     | 2.80                     | 0.50              |
| 1:C:664:ILE:HB    | 1:C:672:ALA:H     | 1.76                     | 0.50              |
| 1:B:269:TYR:O     | 1:B:270:LEU:HD23  | 2.11                     | 0.50              |
| 1:C:95:THR:HG21   | 1:C:263:ALA:HA    | 1.94                     | 0.50              |
| 1:C:472:ILE:HD12  | 1:C:481:ASN:HB3   | 1.93                     | 0.50              |
| 1:A:770:ILE:O     | 1:A:774:GLN:N     | 2.38                     | 0.50              |
| 1:C:108:THR:OG1   | 1:C:109:THR:N     | 2.45                     | 0.49              |
| 1:C:351:TYR:HD1   | 1:C:418:ILE:HG21  | 1.77                     | 0.49              |
| 1:C:407:VAL:HG22  | 1:C:408:ARG:HH12  | 1.77                     | 0.49              |
| 1:C:1082:CYS:O    | 1:C:1134:ASN:ND2  | 2.45                     | 0.49              |
| 1:A:517:LEU:HG    | 1:A:518:LEU:O     | 2.12                     | 0.49              |
| 1:B:1083:HIS:NE2  | 1:B:1084:ASP:HB2  | 2.26                     | 0.49              |
| 1:B:1097:SER:HB3  | 1:B:1102:TRP:CZ3  | 2.47                     | 0.49              |
| 1:C:192:PHE:HA    | 1:C:204:TYR:O     | 2.12                     | 0.49              |
| 1:C:735:SER:HB3   | 1:C:859:THR:OG1   | 2.12                     | 0.49              |
| 1:A:349:SER:OG    | 1:A:350:VAL:N     | 2.45                     | 0.49              |
| 1:A:950:ASP:OD1   | 1:A:951:VAL:N     | 2.43                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:92:PHE:HE2   | 1:B:238:PHE:HE2  | 1.59                     | 0.49              |
| 1:B:986:PRO:N    | 1:B:987:PRO:HD2  | 2.28                     | 0.49              |
| 1:C:467:ASP:N    | 1:C:467:ASP:OD1  | 2.45                     | 0.49              |
| 1:C:733:LYS:NZ   | 1:C:863:PRO:HA   | 2.27                     | 0.49              |
| 1:C:738:CYS:SG   | 1:C:739:THR:N    | 2.84                     | 0.49              |
| 1:A:276:LEU:O    | 1:A:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:A:715:PRO:HA   | 1:A:1072:GLU:HB3 | 1.93                     | 0.49              |
| 1:A:1030:SER:OG  | 1:A:1030:SER:O   | 2.31                     | 0.49              |
| 1:B:189:LEU:N    | 1:B:208:THR:O    | 2.31                     | 0.49              |
| 1:B:342:PHE:HB2  | 3:B:1313:NAG:H82 | 1.94                     | 0.49              |
| 1:B:628:GLN:H    | 1:B:638:THR:N    | 2.10                     | 0.49              |
| 1:C:807:PRO:HA   | 1:C:816:SER:HB2  | 1.94                     | 0.49              |
| 1:A:141:LEU:HB2  | 1:A:243:ALA:HB2  | 1.95                     | 0.49              |
| 1:B:384:PRO:HA   | 1:B:387:LEU:HB2  | 1.94                     | 0.49              |
| 1:B:1030:SER:O   | 1:B:1034:LEU:HB2 | 2.12                     | 0.49              |
| 1:C:801:ASN:H    | 1:C:928:ASN:ND2  | 2.06                     | 0.49              |
| 1:A:107:GLY:H    | 1:A:235:ILE:HG23 | 1.77                     | 0.49              |
| 2:F:36:MET:SD    | 2:F:37:LYS:N     | 2.85                     | 0.49              |
| 1:B:99:ASN:HB3   | 1:B:177:MET:C    | 2.33                     | 0.49              |
| 1:B:1098:ASN:HB2 | 3:B:1302:NAG:N2  | 2.27                     | 0.49              |
| 1:B:1106:GLN:OE1 | 1:B:1106:GLN:N   | 2.45                     | 0.49              |
| 1:C:730:SER:HA   | 1:C:774:GLN:OE1  | 2.12                     | 0.49              |
| 1:A:738:CYS:SG   | 1:A:739:THR:N    | 2.85                     | 0.49              |
| 1:B:57:PRO:HA    | 1:B:273:ARG:NH2  | 2.16                     | 0.49              |
| 1:A:709:ASN:HB2  | 3:A:1307:NAG:N2  | 2.28                     | 0.49              |
| 2:E:23:GLU:O     | 2:E:26:MET:HG2   | 2.12                     | 0.49              |
| 1:B:237:ARG:HD3  | 1:B:238:PHE:N    | 2.28                     | 0.49              |
| 1:B:554:GLU:HA   | 1:B:585:LEU:HD23 | 1.93                     | 0.49              |
| 1:C:489:TYR:CE2  | 2:F:7:GLN:HA     | 2.48                     | 0.49              |
| 1:C:494:SER:OG   | 1:C:495:TYR:N    | 2.42                     | 0.49              |
| 1:C:938:LEU:HD13 | 1:C:944:ALA:HB3  | 1.95                     | 0.49              |
| 1:B:29:THR:HG22  | 1:B:30:ASN:H     | 1.78                     | 0.49              |
| 1:B:316:SER:OG   | 1:B:317:ASN:N    | 2.45                     | 0.49              |
| 1:B:334:ASN:HB2  | 1:B:362:VAL:HG12 | 1.95                     | 0.49              |
| 1:B:716:THR:OG1  | 1:B:1071:GLN:O   | 2.20                     | 0.49              |
| 1:B:900:MET:O    | 1:B:903:ALA:HB3  | 2.13                     | 0.49              |
| 1:B:902:MET:HA   | 1:B:905:ARG:HG3  | 1.95                     | 0.49              |
| 1:A:296:LEU:HD23 | 1:A:606:ASN:HB3  | 1.95                     | 0.49              |
| 1:A:366:SER:HA   | 1:A:369:TYR:CE2  | 2.47                     | 0.49              |
| 2:H:16:LEU:HD22  | 2:H:25:SER:H     | 1.78                     | 0.49              |
| 1:B:421:TYR:OH   | 2:H:36:MET:SD    | 2.71                     | 0.49              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:788:ILE:HG12 | 1:C:701:ALA:O     | 2.12                     | 0.49              |
| 1:B:885:GLY:HA3  | 1:B:901:GLN:HE21  | 1.78                     | 0.49              |
| 1:A:503:VAL:HA   | 1:A:506:GLN:HE21  | 1.78                     | 0.49              |
| 1:A:552:LEU:HA   | 1:A:586:ASP:O     | 2.12                     | 0.49              |
| 1:B:328:ARG:NE   | 1:B:530:SER:OG    | 2.43                     | 0.48              |
| 1:B:712:ILE:HG22 | 1:B:714:ILE:HG12  | 1.95                     | 0.48              |
| 1:C:108:THR:HG21 | 1:C:234:ASN:HB3   | 1.94                     | 0.48              |
| 1:C:452:LEU:HD12 | 1:C:453:TYR:H     | 1.77                     | 0.48              |
| 1:A:116:SER:OG   | 1:A:117:LEU:N     | 2.46                     | 0.48              |
| 1:C:404:GLY:HA2  | 1:C:508:TYR:CD1   | 2.45                     | 0.48              |
| 1:A:36:VAL:HG21  | 1:A:220:PHE:CZ    | 2.47                     | 0.48              |
| 1:B:300:LYS:HD3  | 1:B:306:PHE:HA    | 1.95                     | 0.48              |
| 1:C:725:GLU:HB3  | 1:C:1062:PHE:HB2  | 1.95                     | 0.48              |
| 1:C:895:GLN:O    | 1:A:712:ILE:HA    | 2.13                     | 0.48              |
| 1:A:85:PRO:HB2   | 1:A:87:ASN:OD1    | 2.13                     | 0.48              |
| 1:A:620:VAL:O    | 1:A:622:VAL:N     | 2.46                     | 0.48              |
| 1:A:905:ARG:HD2  | 1:A:1050:MET:SD   | 2.53                     | 0.48              |
| 1:B:110:LEU:C    | 1:B:134:GLN:HA    | 2.33                     | 0.48              |
| 2:I:11:GLU:O     | 2:I:15:LEU:HG     | 2.13                     | 0.48              |
| 1:C:800:PHE:HB3  | 1:C:802:PHE:CE1   | 2.49                     | 0.48              |
| 1:A:966:LEU:HG   | 1:A:1000:ARG:HH12 | 1.78                     | 0.48              |
| 2:I:5:ILE:O      | 2:I:9:ILE:HG12    | 2.12                     | 0.48              |
| 2:I:12:ILE:HG22  | 2:I:28:VAL:HG21   | 1.94                     | 0.48              |
| 1:B:134:GLN:N    | 1:B:161:SER:OG    | 2.34                     | 0.48              |
| 1:B:562:PHE:CZ   | 1:A:224:GLU:HG2   | 2.48                     | 0.48              |
| 1:C:1102:TRP:O   | 1:C:1115:ILE:HD11 | 2.13                     | 0.48              |
| 1:A:405:ASP:OD1  | 1:A:406:GLU:N     | 2.43                     | 0.48              |
| 1:A:461:LEU:HD11 | 1:A:467:ASP:OD1   | 2.14                     | 0.48              |
| 1:A:720:ILE:N    | 1:A:926:GLN:OE1   | 2.30                     | 0.48              |
| 1:A:730:SER:O    | 1:A:1058:HIS:HB3  | 2.13                     | 0.48              |
| 1:A:1010:GLN:OE1 | 1:A:1014:ARG:NH2  | 2.45                     | 0.48              |
| 1:B:105:ILE:HG23 | 1:B:239:GLN:HB3   | 1.96                     | 0.48              |
| 1:B:361:CYS:N    | 1:B:524:VAL:HG22  | 2.28                     | 0.48              |
| 1:C:47:VAL:HG12  | 1:C:48:LEU:N      | 2.29                     | 0.48              |
| 1:A:331:ASN:OD1  | 3:A:1301:NAG:N2   | 2.46                     | 0.48              |
| 1:A:973:ILE:HG23 | 1:A:992:GLN:NE2   | 2.29                     | 0.48              |
| 1:A:1028:LYS:HB3 | 1:A:1062:PHE:CE2  | 2.49                     | 0.48              |
| 1:B:83:VAL:HA    | 1:B:239:GLN:HE22  | 1.79                     | 0.48              |
| 1:B:598:ILE:HD11 | 1:B:666:ILE:HD11  | 1.96                     | 0.48              |
| 1:B:1038:LYS:HG3 | 1:A:1038:LYS:HZ1  | 1.79                     | 0.48              |
| 1:C:555:SER:OG   | 1:C:556:ASN:N     | 2.45                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:759:PHE:O    | 1:C:762:GLN:N    | 2.47                     | 0.48              |
| 1:A:655:HIS:CG   | 1:A:656:VAL:N    | 2.82                     | 0.48              |
| 1:A:1098:ASN:HB2 | 3:A:1302:NAG:HN2 | 1.79                     | 0.48              |
| 1:B:329:PHE:CD1  | 1:B:544:ASN:HB3  | 2.49                     | 0.48              |
| 1:B:361:CYS:C    | 1:B:524:VAL:HG13 | 2.34                     | 0.48              |
| 1:B:444:LYS:HG2  | 1:B:448:ASN:HD22 | 1.78                     | 0.48              |
| 1:A:33:THR:HG22  | 1:A:58:PHE:HD2   | 1.78                     | 0.48              |
| 1:A:336:CYS:HB3  | 1:A:362:VAL:O    | 2.14                     | 0.48              |
| 2:D:26:MET:O     | 2:D:29:SER:OG    | 2.25                     | 0.48              |
| 1:C:664:ILE:HG22 | 1:C:666:ILE:HD11 | 1.96                     | 0.48              |
| 1:C:749:CYS:HA   | 1:C:752:LEU:HB3  | 1.96                     | 0.48              |
| 1:A:456:PHE:CE1  | 2:D:37:LYS:HE2   | 2.48                     | 0.48              |
| 1:A:1098:ASN:ND2 | 1:A:1100:THR:OG1 | 2.47                     | 0.48              |
| 1:B:93:ALA:HA    | 1:B:191:GLU:OE1  | 2.15                     | 0.47              |
| 1:B:315:THR:HG23 | 1:B:316:SER:N    | 2.29                     | 0.47              |
| 1:C:714:ILE:O    | 1:C:1072:GLU:HB2 | 2.13                     | 0.47              |
| 1:C:1106:GLN:OE1 | 1:C:1106:GLN:N   | 2.47                     | 0.47              |
| 1:B:29:THR:HG22  | 1:B:30:ASN:N     | 2.30                     | 0.47              |
| 1:C:406:GLU:OE2  | 1:C:417:LYS:HG2  | 2.14                     | 0.47              |
| 1:C:417:LYS:HZ1  | 2:F:30:ASP:HA    | 1.79                     | 0.47              |
| 1:C:423:TYR:O    | 1:C:424:LYS:HB2  | 2.13                     | 0.47              |
| 1:C:523:THR:OG1  | 1:C:524:VAL:N    | 2.47                     | 0.47              |
| 1:C:797:PHE:O    | 1:C:799:GLY:N    | 2.47                     | 0.47              |
| 1:C:884:SER:CB   | 1:C:893:ALA:HB1  | 2.44                     | 0.47              |
| 1:C:897:PRO:HG2  | 1:C:900:MET:HG2  | 1.95                     | 0.47              |
| 1:C:1032:CYS:O   | 1:C:1051:SER:OG  | 2.20                     | 0.47              |
| 2:F:36:MET:SD    | 2:F:37:LYS:HG2   | 2.54                     | 0.47              |
| 2:G:10:TYR:O     | 2:G:13:MET:HG3   | 2.13                     | 0.47              |
| 1:B:454:ARG:NH1  | 1:B:492:LEU:HG   | 2.28                     | 0.47              |
| 1:C:191:GLU:HG3  | 1:C:206:LYS:HB3  | 1.95                     | 0.47              |
| 1:C:440:ASN:OD1  | 1:C:441:LEU:N    | 2.41                     | 0.47              |
| 1:C:444:LYS:O    | 1:C:499:PRO:HD3  | 2.14                     | 0.47              |
| 1:C:922:LEU:HD12 | 1:C:926:GLN:NE2  | 2.29                     | 0.47              |
| 1:A:746:SER:OG   | 1:A:748:GLU:OE2  | 2.29                     | 0.47              |
| 1:B:596:SER:OG   | 1:B:611:LEU:HD23 | 2.15                     | 0.47              |
| 1:B:887:THR:OG1  | 1:B:888:PHE:N    | 2.48                     | 0.47              |
| 1:A:325:SER:HA   | 1:A:540:ASN:O    | 2.14                     | 0.47              |
| 1:A:729:VAL:N    | 1:A:1059:GLY:HA2 | 2.30                     | 0.47              |
| 1:A:1142:GLN:N   | 1:A:1143:PRO:HD2 | 2.30                     | 0.47              |
| 1:B:103:GLY:HA2  | 1:B:120:VAL:HA   | 1.96                     | 0.47              |
| 1:B:357:ARG:HB2  | 1:B:396:TYR:HE1  | 1.79                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:451:TYR:HB2  | 1:B:495:TYR:HB2  | 1.96                     | 0.47              |
| 1:B:968:SER:OG   | 1:A:755:GLN:O    | 2.30                     | 0.47              |
| 1:C:121:ASN:HB2  | 1:C:126:VAL:HG12 | 1.97                     | 0.47              |
| 1:A:446:GLY:H    | 1:A:498:GLN:HE22 | 1.63                     | 0.47              |
| 1:A:715:PRO:HB3  | 1:A:1069:PRO:HB2 | 1.97                     | 0.47              |
| 1:A:1073:LYS:HB2 | 1:A:1075:PHE:CZ  | 2.49                     | 0.47              |
| 1:B:374:PHE:HB3  | 1:B:434:ILE:HG21 | 1.96                     | 0.47              |
| 1:B:1037:SER:OG  | 1:B:1039:ARG:HG2 | 2.14                     | 0.47              |
| 1:A:454:ARG:NH2  | 1:A:468:ILE:HA   | 2.29                     | 0.47              |
| 2:G:14:ARG:HA    | 2:G:17:ASP:OD2   | 2.14                     | 0.47              |
| 1:B:310:LYS:HG2  | 1:B:664:ILE:HD11 | 1.96                     | 0.47              |
| 1:B:323:THR:OG1  | 1:B:324:GLU:OE1  | 2.33                     | 0.47              |
| 1:B:750:SER:O    | 1:B:754:LEU:N    | 2.33                     | 0.47              |
| 1:C:107:GLY:O    | 1:C:236:THR:N    | 2.44                     | 0.47              |
| 1:C:130:VAL:CG2  | 1:C:168:PHE:HB3  | 2.45                     | 0.47              |
| 1:A:98:SER:H     | 1:A:187:LYS:HZ2  | 1.63                     | 0.47              |
| 1:A:130:VAL:HG12 | 1:A:130:VAL:O    | 2.15                     | 0.47              |
| 1:A:199:GLY:HA2  | 1:A:232:GLY:HA2  | 1.96                     | 0.47              |
| 1:A:206:LYS:HG2  | 1:A:207:HIS:N    | 2.28                     | 0.47              |
| 1:A:299:THR:CG2  | 1:A:597:VAL:HG11 | 2.44                     | 0.47              |
| 1:A:421:TYR:HE2  | 1:A:456:PHE:CA   | 2.28                     | 0.47              |
| 1:A:902:MET:O    | 1:A:905:ARG:N    | 2.46                     | 0.47              |
| 1:A:905:ARG:NH1  | 1:A:1036:GLN:HB2 | 2.29                     | 0.47              |
| 2:H:8:LYS:HB3    | 2:I:31:LEU:HD12  | 1.96                     | 0.47              |
| 2:F:12:ILE:O     | 2:F:15:LEU:HG    | 2.14                     | 0.47              |
| 1:B:415:THR:OG1  | 1:B:416:GLY:N    | 2.47                     | 0.47              |
| 1:B:1043:CYS:HB3 | 1:B:1064:HIS:NE2 | 2.29                     | 0.47              |
| 1:C:857:GLY:H    | 1:A:592:PHE:HZ   | 1.62                     | 0.47              |
| 1:B:240:THR:C    | 1:B:241:LEU:HD22 | 2.35                     | 0.47              |
| 1:B:884:SER:HA   | 1:B:894:LEU:O    | 2.14                     | 0.47              |
| 1:C:671:CYS:HB2  | 1:C:695:TYR:CZ   | 2.50                     | 0.47              |
| 1:C:914:ASN:OD1  | 1:C:914:ASN:N    | 2.47                     | 0.47              |
| 1:C:920:GLN:O    | 1:C:923:ILE:N    | 2.48                     | 0.47              |
| 1:A:124:THR:HA   | 1:A:174:PRO:HD3  | 1.97                     | 0.47              |
| 1:A:436:TRP:HE1  | 1:A:509:ARG:NH1  | 2.13                     | 0.47              |
| 1:A:658:ASN:ND2  | 1:A:660:TYR:OH   | 2.48                     | 0.47              |
| 1:A:1004:LEU:O   | 1:A:1007:TYR:N   | 2.48                     | 0.47              |
| 1:B:456:PHE:HB3  | 1:B:473:TYR:HB2  | 1.97                     | 0.47              |
| 1:B:577:ARG:HA   | 1:B:584:ILE:HA   | 1.97                     | 0.47              |
| 1:C:103:GLY:HA3  | 1:C:119:ILE:O    | 2.14                     | 0.47              |
| 1:C:566:GLY:HA3  | 1:C:575:ALA:HB3  | 1.96                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:666:ILE:HB   | 1:C:670:ILE:O    | 2.14                     | 0.47              |
| 1:C:906:PHE:O    | 1:C:909:ILE:HG22 | 2.15                     | 0.47              |
| 1:C:960:ASN:O    | 1:C:963:VAL:N    | 2.45                     | 0.47              |
| 1:A:914:ASN:OD1  | 1:A:915:VAL:N    | 2.48                     | 0.47              |
| 1:B:99:ASN:HB3   | 1:B:177:MET:O    | 2.15                     | 0.46              |
| 1:B:1089:PHE:CE2 | 1:A:917:TYR:HD2  | 2.33                     | 0.46              |
| 1:C:54:LEU:HA    | 1:C:271:GLN:O    | 2.15                     | 0.46              |
| 1:C:451:TYR:C    | 1:C:494:SER:HG   | 2.18                     | 0.46              |
| 1:C:1144:GLU:HA  | 1:C:1147:SER:OG  | 2.16                     | 0.46              |
| 1:A:330:PRO:HA   | 1:A:579:PRO:HB2  | 1.97                     | 0.46              |
| 1:C:100:ILE:HD12 | 1:C:100:ILE:H    | 1.80                     | 0.46              |
| 1:C:529:LYS:HB3  | 1:C:529:LYS:HE3  | 1.44                     | 0.46              |
| 1:A:663:ASP:HB2  | 1:A:664:ILE:HD12 | 1.96                     | 0.46              |
| 2:H:16:LEU:HD11  | 2:H:24:ALA:HB3   | 1.97                     | 0.46              |
| 1:B:664:ILE:HB   | 1:B:672:ALA:O    | 2.14                     | 0.46              |
| 1:B:1032:CYS:O   | 1:B:1051:SER:OG  | 2.26                     | 0.46              |
| 1:B:1097:SER:C   | 1:B:1099:GLY:H   | 2.19                     | 0.46              |
| 1:C:419:ALA:CB   | 1:C:423:TYR:HB3  | 2.44                     | 0.46              |
| 1:C:498:GLN:OE1  | 1:C:499:PRO:HD2  | 2.16                     | 0.46              |
| 1:C:867:ASP:HA   | 1:C:870:ILE:HB   | 1.97                     | 0.46              |
| 1:A:240:THR:C    | 1:A:241:LEU:HD12 | 2.35                     | 0.46              |
| 1:A:417:LYS:HB2  | 2:D:33:TYR:CE1   | 2.49                     | 0.46              |
| 1:A:454:ARG:HH22 | 1:A:469:SER:H    | 1.64                     | 0.46              |
| 1:A:752:LEU:O    | 1:A:755:GLN:HG2  | 2.16                     | 0.46              |
| 1:A:975:SER:OG   | 1:A:976:VAL:N    | 2.47                     | 0.46              |
| 1:B:296:LEU:HB2  | 1:B:608:VAL:HG11 | 1.97                     | 0.46              |
| 1:B:816:SER:H    | 1:B:819:GLU:HG3  | 1.80                     | 0.46              |
| 1:B:875:SER:O    | 1:B:878:LEU:HB2  | 2.15                     | 0.46              |
| 1:B:1097:SER:HB3 | 1:B:1102:TRP:HZ3 | 1.81                     | 0.46              |
| 1:C:93:ALA:HB3   | 1:C:266:TYR:HB2  | 1.97                     | 0.46              |
| 1:C:505:TYR:CD1  | 2:F:27:ARG:HD2   | 2.51                     | 0.46              |
| 1:A:276:LEU:C    | 1:A:277:LEU:HD12 | 2.36                     | 0.46              |
| 1:A:816:SER:N    | 1:A:819:GLU:OE2  | 2.49                     | 0.46              |
| 1:B:57:PRO:HG3   | 1:B:271:GLN:CD   | 2.36                     | 0.46              |
| 1:B:342:PHE:CE1  | 1:B:511:VAL:HG21 | 2.50                     | 0.46              |
| 1:B:454:ARG:HB3  | 1:B:491:PRO:HB2  | 1.97                     | 0.46              |
| 1:B:617:CYS:SG   | 1:B:620:VAL:HG21 | 2.55                     | 0.46              |
| 1:C:61:ASN:ND2   | 3:C:1309:NAG:O7  | 2.49                     | 0.46              |
| 1:C:420:ASP:OD1  | 1:C:457:ARG:HG2  | 2.16                     | 0.46              |
| 1:A:53:ASP:HB3   | 1:A:55:PHE:CZ    | 2.50                     | 0.46              |
| 1:A:392:PHE:HB3  | 1:A:517:LEU:HD13 | 1.98                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:124:THR:O    | 1:B:174:PRO:HD3   | 2.15                     | 0.46              |
| 1:B:271:GLN:N    | 1:B:271:GLN:OE1   | 2.49                     | 0.46              |
| 1:B:367:VAL:O    | 1:B:371:SER:N     | 2.49                     | 0.46              |
| 1:B:562:PHE:HZ   | 1:A:224:GLU:HG2   | 1.79                     | 0.46              |
| 1:B:612:TYR:OH   | 1:B:624:ILE:HG22  | 2.16                     | 0.46              |
| 1:B:811:LYS:C    | 1:B:813:SER:H     | 2.17                     | 0.46              |
| 1:B:973:ILE:HG13 | 1:B:974:SER:N     | 2.30                     | 0.46              |
| 1:B:1023:ASN:O   | 1:B:1024:LEU:C    | 2.54                     | 0.46              |
| 1:C:325:SER:H    | 1:C:539:VAL:HG22  | 1.80                     | 0.46              |
| 1:C:403:ARG:NH1  | 2:F:26:MET:O      | 2.48                     | 0.46              |
| 1:A:616:ASN:O    | 1:A:618:THR:N     | 2.40                     | 0.46              |
| 1:A:937:SER:O    | 1:A:938:LEU:HD23  | 2.16                     | 0.46              |
| 1:A:955:ASN:HD21 | 1:A:1011:GLN:CD   | 2.19                     | 0.46              |
| 2:E:27:ARG:HH12  | 2:E:31:LEU:HB2    | 1.81                     | 0.46              |
| 1:C:332:ILE:HG23 | 1:C:333:THR:N     | 2.31                     | 0.46              |
| 1:C:567:ARG:HG2  | 1:C:573:THR:HA    | 1.98                     | 0.46              |
| 1:B:393:THR:HG21 | 1:B:518:LEU:HB2   | 1.97                     | 0.46              |
| 1:B:750:SER:O    | 1:B:753:LEU:N     | 2.48                     | 0.46              |
| 1:B:825:LYS:HD2  | 1:B:825:LYS:HA    | 1.75                     | 0.46              |
| 1:B:884:SER:OG   | 1:B:894:LEU:N     | 2.48                     | 0.46              |
| 1:B:963:VAL:O    | 1:B:966:LEU:N     | 2.47                     | 0.46              |
| 1:C:655:HIS:NE2  | 1:C:656:VAL:O     | 2.49                     | 0.46              |
| 1:C:726:ILE:O    | 1:C:727:LEU:HD23  | 2.15                     | 0.46              |
| 1:A:358:ILE:HB   | 1:A:395:VAL:HB    | 1.97                     | 0.46              |
| 1:A:908:GLY:HA3  | 1:A:1036:GLN:HE22 | 1.81                     | 0.46              |
| 1:B:442:ASP:O    | 1:B:443:SER:OG    | 2.34                     | 0.46              |
| 1:C:156:GLU:OE2  | 1:C:156:GLU:N     | 2.49                     | 0.46              |
| 1:C:978:ASN:O    | 1:C:981:LEU:HB2   | 2.16                     | 0.46              |
| 1:C:1116:THR:HG1 | 1:C:1119:ASN:H    | 1.62                     | 0.46              |
| 1:A:295:PRO:O    | 1:A:299:THR:HG23  | 2.16                     | 0.46              |
| 1:A:342:PHE:CZ   | 1:A:511:VAL:HG11  | 2.51                     | 0.46              |
| 1:B:201:PHE:HD2  | 1:B:229:LEU:HD21  | 1.80                     | 0.46              |
| 1:C:1087:ALA:HB2 | 1:C:1125:ASN:O    | 2.16                     | 0.46              |
| 1:A:324:GLU:N    | 1:A:324:GLU:OE1   | 2.48                     | 0.46              |
| 1:A:730:SER:HA   | 1:A:774:GLN:OE1   | 2.16                     | 0.46              |
| 1:B:57:PRO:HB3   | 1:B:273:ARG:HH12  | 1.80                     | 0.45              |
| 1:B:105:ILE:CG2  | 1:B:239:GLN:HB3   | 2.46                     | 0.45              |
| 1:B:888:PHE:HA   | 1:B:892:ALA:O     | 2.15                     | 0.45              |
| 1:C:750:SER:OG   | 1:C:751:ASN:N     | 2.50                     | 0.45              |
| 1:A:191:GLU:O    | 1:A:205:SER:HA    | 2.16                     | 0.45              |
| 1:A:197:ILE:O    | 1:A:200:TYR:N     | 2.39                     | 0.45              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:444:LYS:N    | 1:A:497:PHE:O     | 2.49                     | 0.45              |
| 2:D:11:GLU:HA    | 2:D:14:ARG:HG2    | 1.98                     | 0.45              |
| 2:E:31:LEU:O     | 2:E:34:GLU:HB3    | 2.14                     | 0.45              |
| 1:B:296:LEU:HB2  | 1:B:608:VAL:HG21  | 1.98                     | 0.45              |
| 1:B:325:SER:H    | 1:B:539:VAL:HG23  | 1.80                     | 0.45              |
| 1:B:807:PRO:HA   | 1:B:816:SER:OG    | 2.16                     | 0.45              |
| 1:B:1089:PHE:HE2 | 1:A:917:TYR:CD2   | 2.35                     | 0.45              |
| 1:C:85:PRO:HG2   | 1:C:269:TYR:OH    | 2.16                     | 0.45              |
| 1:C:452:LEU:HD11 | 1:C:492:LEU:HD12  | 1.98                     | 0.45              |
| 1:C:528:LYS:O    | 1:C:529:LYS:C     | 2.53                     | 0.45              |
| 1:C:578:ASP:C    | 1:C:580:GLN:H     | 2.20                     | 0.45              |
| 1:A:130:VAL:HG23 | 1:A:168:PHE:O     | 2.17                     | 0.45              |
| 1:A:357:ARG:HE   | 1:A:359:SER:CB    | 2.29                     | 0.45              |
| 1:A:404:GLY:HA2  | 1:A:508:TYR:CD2   | 2.52                     | 0.45              |
| 1:A:935:GLN:O    | 1:A:939:SER:OG    | 2.18                     | 0.45              |
| 1:A:1105:THR:OG1 | 1:A:1109:PHE:O    | 2.17                     | 0.45              |
| 2:E:24:ALA:O     | 2:E:28:VAL:HG23   | 2.16                     | 0.45              |
| 1:C:280:ASN:HB3  | 1:C:286:THR:HG23  | 1.98                     | 0.45              |
| 1:C:303:LEU:HD21 | 1:C:313:TYR:CE2   | 2.51                     | 0.45              |
| 1:C:405:ASP:OD1  | 1:C:405:ASP:N     | 2.42                     | 0.45              |
| 1:A:273:ARG:HH21 | 1:A:292:ALA:HB1   | 1.80                     | 0.45              |
| 2:G:9:ILE:HA     | 2:G:12:ILE:HD12   | 1.99                     | 0.45              |
| 1:B:106:PHE:HB3  | 1:B:235:ILE:HG21  | 1.98                     | 0.45              |
| 1:C:295:PRO:O    | 1:C:299:THR:HG23  | 2.17                     | 0.45              |
| 1:C:900:MET:O    | 1:C:904:TYR:N     | 2.37                     | 0.45              |
| 1:A:881:THR:HG23 | 1:A:882:ILE:N     | 2.31                     | 0.45              |
| 1:A:886:TRP:CZ2  | 1:A:904:TYR:HE2   | 2.29                     | 0.45              |
| 1:B:37:TYR:OH    | 1:B:54:LEU:O      | 2.26                     | 0.45              |
| 1:C:406:GLU:HA   | 1:C:409:GLN:HG3   | 1.99                     | 0.45              |
| 1:C:414:GLN:HB3  | 1:C:424:LYS:HD2   | 1.98                     | 0.45              |
| 1:C:717:ASN:CB   | 1:C:1071:GLN:HE21 | 2.30                     | 0.45              |
| 1:A:472:ILE:HD12 | 1:A:490:PHE:HB2   | 1.98                     | 0.45              |
| 1:A:1102:TRP:HZ2 | 1:A:1133:VAL:HG11 | 1.82                     | 0.45              |
| 2:D:9:ILE:HG22   | 2:D:32:ILE:HD11   | 1.98                     | 0.45              |
| 1:B:819:GLU:O    | 1:B:823:PHE:N     | 2.34                     | 0.45              |
| 1:B:990:GLU:O    | 1:B:994:ASP:N     | 2.29                     | 0.45              |
| 1:C:44:ARG:HB2   | 1:C:279:TYR:CE2   | 2.51                     | 0.45              |
| 1:C:330:PRO:HA   | 1:C:579:PRO:O     | 2.16                     | 0.45              |
| 1:C:655:HIS:HA   | 1:C:694:ALA:O     | 2.17                     | 0.45              |
| 1:C:978:ASN:HA   | 1:C:981:LEU:HD12  | 1.98                     | 0.45              |
| 1:A:107:GLY:N    | 1:A:235:ILE:HG23  | 2.31                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:G:1:ASP:HB3    | 2:G:2:LYS:H      | 1.56                     | 0.45              |
| 2:G:14:ARG:HA    | 2:G:14:ARG:HD3   | 1.73                     | 0.45              |
| 1:B:118:LEU:HG   | 1:B:133:PHE:CE1  | 2.51                     | 0.45              |
| 1:B:315:THR:HG23 | 1:B:316:SER:H    | 1.81                     | 0.45              |
| 1:B:417:LYS:HB2  | 2:H:33:TYR:CB    | 2.46                     | 0.45              |
| 1:B:748:GLU:CD   | 1:B:748:GLU:H    | 2.19                     | 0.45              |
| 1:B:905:ARG:CZ   | 1:B:1050:MET:HB3 | 2.46                     | 0.45              |
| 1:C:168:PHE:CZ   | 1:C:170:TYR:HD2  | 2.32                     | 0.45              |
| 1:C:505:TYR:CD2  | 2:F:24:ALA:HA    | 2.52                     | 0.45              |
| 1:C:640:SER:O    | 1:C:641:ASN:ND2  | 2.50                     | 0.45              |
| 1:A:342:PHE:CZ   | 1:A:511:VAL:HG21 | 2.51                     | 0.45              |
| 1:A:493:GLN:HE22 | 2:D:10:TYR:HD1   | 1.64                     | 0.45              |
| 1:A:670:ILE:HD13 | 1:A:696:THR:HA   | 1.99                     | 0.45              |
| 1:C:175:PHE:HB2  | 1:C:207:HIS:CE1  | 2.52                     | 0.45              |
| 1:C:239:GLN:HG3  | 1:C:240:THR:O    | 2.17                     | 0.45              |
| 1:C:710:ASN:OD1  | 1:C:711:SER:N    | 2.50                     | 0.45              |
| 1:A:406:GLU:HG2  | 1:A:416:GLY:HA3  | 1.98                     | 0.45              |
| 1:A:472:ILE:HG23 | 1:A:490:PHE:HA   | 1.99                     | 0.45              |
| 1:A:497:PHE:HA   | 1:A:501:ASN:ND2  | 2.31                     | 0.45              |
| 1:A:549:THR:HG22 | 1:A:550:GLY:N    | 2.30                     | 0.45              |
| 1:A:908:GLY:HA3  | 1:A:1036:GLN:NE2 | 2.32                     | 0.45              |
| 1:B:35:GLY:HA3   | 1:B:56:LEU:HB3   | 1.99                     | 0.45              |
| 1:B:106:PHE:CE1  | 1:B:238:PHE:HB2  | 2.52                     | 0.45              |
| 1:A:617:CYS:HB2  | 1:A:649:CYS:HB3  | 1.82                     | 0.45              |
| 1:B:316:SER:O    | 1:B:595:VAL:HG22 | 2.17                     | 0.45              |
| 1:C:175:PHE:O    | 1:C:207:HIS:NE2  | 2.49                     | 0.45              |
| 1:C:376:THR:HB   | 1:C:435:ALA:H    | 1.82                     | 0.45              |
| 1:A:136:CYS:SG   | 1:A:159:VAL:HA   | 2.57                     | 0.45              |
| 1:A:406:GLU:CG   | 1:A:416:GLY:HA3  | 2.46                     | 0.45              |
| 1:A:502:GLY:O    | 1:A:506:GLN:NE2  | 2.49                     | 0.45              |
| 1:A:666:ILE:HB   | 1:A:670:ILE:O    | 2.17                     | 0.45              |
| 1:A:826:VAL:HG21 | 1:A:1057:PRO:HG3 | 1.98                     | 0.45              |
| 1:B:984:LEU:HD22 | 1:B:988:GLU:OE2  | 2.18                     | 0.44              |
| 1:C:351:TYR:O    | 1:C:466:ARG:HB3  | 2.17                     | 0.44              |
| 1:C:368:LEU:HD23 | 1:C:377:PHE:HE1  | 1.81                     | 0.44              |
| 1:A:596:SER:N    | 1:A:611:LEU:O    | 2.49                     | 0.44              |
| 1:A:806:LEU:HD23 | 1:A:807:PRO:HD2  | 2.00                     | 0.44              |
| 1:B:569:ILE:HD12 | 1:B:570:ALA:H    | 1.81                     | 0.44              |
| 1:B:870:ILE:HD13 | 1:B:870:ILE:HA   | 1.75                     | 0.44              |
| 1:C:449:TYR:CE1  | 1:C:496:GLY:HA3  | 2.52                     | 0.44              |
| 1:A:384:PRO:HA   | 1:A:387:LEU:HD23 | 1.98                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:642:VAL:HG12 | 1:A:651:ILE:HG13  | 1.99                     | 0.44              |
| 2:I:7:GLN:HA     | 2:I:10:TYR:HB2    | 2.00                     | 0.44              |
| 1:B:195:LYS:HD2  | 1:B:195:LYS:HA    | 1.76                     | 0.44              |
| 1:B:417:LYS:HE3  | 2:H:29:SER:O      | 2.16                     | 0.44              |
| 1:B:722:VAL:HG22 | 1:B:1065:VAL:HG12 | 2.00                     | 0.44              |
| 1:C:303:LEU:HD21 | 1:C:313:TYR:CZ    | 2.52                     | 0.44              |
| 1:C:801:ASN:HB3  | 1:C:928:ASN:OD1   | 2.17                     | 0.44              |
| 1:C:1025:ALA:O   | 1:C:1028:LYS:N    | 2.50                     | 0.44              |
| 1:A:1036:GLN:HA  | 1:A:1048:HIS:CE1  | 2.53                     | 0.44              |
| 1:A:1098:ASN:HB3 | 1:A:1103:PHE:HE2  | 1.81                     | 0.44              |
| 2:G:5:ILE:O      | 2:G:8:LYS:HB2     | 2.17                     | 0.44              |
| 1:A:346:ARG:HD2  | 1:A:347:PHE:H     | 1.82                     | 0.44              |
| 1:C:904:TYR:HB2  | 1:A:1107:ARG:HH22 | 1.82                     | 0.44              |
| 1:A:438:SER:CB   | 1:A:509:ARG:HG3   | 2.41                     | 0.44              |
| 1:A:733:LYS:NZ   | 1:A:862:PRO:O     | 2.37                     | 0.44              |
| 1:B:424:LYS:HB3  | 1:B:461:LEU:HB2   | 2.00                     | 0.44              |
| 1:C:193:VAL:CG2  | 1:C:204:TYR:HB2   | 2.48                     | 0.44              |
| 1:C:451:TYR:O    | 1:C:495:TYR:N     | 2.51                     | 0.44              |
| 1:C:621:PRO:HB3  | 1:C:638:THR:N     | 2.32                     | 0.44              |
| 1:A:362:VAL:HG21 | 1:A:527:PRO:HD3   | 1.99                     | 0.44              |
| 1:A:421:TYR:OH   | 1:A:457:ARG:N     | 2.39                     | 0.44              |
| 2:I:9:ILE:HD11   | 2:I:35:PHE:CD2    | 2.53                     | 0.44              |
| 1:C:153:MET:HE3  | 1:C:154:GLU:HG3   | 2.00                     | 0.44              |
| 1:C:295:PRO:HA   | 1:C:298:GLU:OE1   | 2.18                     | 0.44              |
| 1:C:674:TYR:HA   | 1:C:692:ILE:HD12  | 1.99                     | 0.44              |
| 1:C:886:TRP:HD1  | 1:C:886:TRP:H     | 1.63                     | 0.44              |
| 1:A:124:THR:O    | 1:A:174:PRO:HD3   | 2.17                     | 0.44              |
| 1:A:324:GLU:HB2  | 1:A:539:VAL:CG2   | 2.47                     | 0.44              |
| 2:H:37:LYS:HE3   | 2:H:37:LYS:HB3    | 1.86                     | 0.44              |
| 1:B:612:TYR:O    | 1:B:649:CYS:N     | 2.47                     | 0.44              |
| 1:B:616:ASN:O    | 1:B:618:THR:N     | 2.49                     | 0.44              |
| 1:C:50:SER:O     | 1:C:51:THR:OG1    | 2.34                     | 0.44              |
| 1:C:202:LYS:HD3  | 1:C:228:ASP:OD1   | 2.18                     | 0.44              |
| 1:C:322:PRO:HG3  | 1:C:540:ASN:OD1   | 2.18                     | 0.44              |
| 1:A:320:VAL:HA   | 1:A:624:ILE:HG21  | 1.99                     | 0.44              |
| 1:A:393:THR:OG1  | 1:A:394:ASN:N     | 2.50                     | 0.44              |
| 1:A:618:THR:HA   | 1:A:621:PRO:HG2   | 2.00                     | 0.44              |
| 1:A:763:LEU:HD11 | 1:A:1008:VAL:HG11 | 1.99                     | 0.44              |
| 1:B:130:VAL:HG12 | 1:B:130:VAL:O     | 2.18                     | 0.44              |
| 1:B:447:GLY:N    | 1:B:498:GLN:HG3   | 2.33                     | 0.44              |
| 1:B:1030:SER:HA  | 1:B:1034:LEU:HD23 | 2.00                     | 0.44              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:1091:ARG:NH2 | 1:B:1121:PHE:HB3  | 2.30                     | 0.44              |
| 1:C:418:ILE:HG12 | 1:C:453:TYR:HA    | 1.99                     | 0.44              |
| 1:C:583:GLU:OE1  | 1:C:585:LEU:HG    | 2.18                     | 0.44              |
| 1:A:325:SER:OG   | 1:A:540:ASN:HB3   | 2.17                     | 0.44              |
| 1:A:496:GLY:N    | 2:D:26:MET:SD     | 2.91                     | 0.44              |
| 1:B:294:ASP:N    | 1:B:294:ASP:OD1   | 2.51                     | 0.43              |
| 1:B:356:LYS:HA   | 1:B:356:LYS:HD2   | 1.77                     | 0.43              |
| 1:B:371:SER:C    | 1:B:373:SER:H     | 2.21                     | 0.43              |
| 1:B:620:VAL:O    | 1:B:622:VAL:N     | 2.51                     | 0.43              |
| 1:B:1025:ALA:O   | 1:B:1029:MET:N    | 2.42                     | 0.43              |
| 1:C:33:THR:HB    | 1:C:220:PHE:HD2   | 1.82                     | 0.43              |
| 1:C:96:GLU:HA    | 1:C:187:LYS:NZ    | 2.33                     | 0.43              |
| 1:A:157:PHE:HD2  | 1:A:160:TYR:CZ    | 2.36                     | 0.43              |
| 1:A:436:TRP:NE1  | 1:A:509:ARG:HD3   | 2.33                     | 0.43              |
| 1:A:825:LYS:HZ2  | 1:A:938:LEU:C     | 2.21                     | 0.43              |
| 1:B:172:SER:OG   | 1:B:173:GLN:N     | 2.51                     | 0.43              |
| 1:B:814:LYS:HG3  | 1:B:868:GLU:OE1   | 2.18                     | 0.43              |
| 1:B:1005:GLN:O   | 1:B:1008:VAL:HG12 | 2.18                     | 0.43              |
| 1:C:53:ASP:OD1   | 1:C:54:LEU:N      | 2.39                     | 0.43              |
| 1:C:140:PHE:CD2  | 1:C:243:ALA:HA    | 2.52                     | 0.43              |
| 1:C:189:LEU:HD23 | 1:C:190:ARG:N     | 2.34                     | 0.43              |
| 1:C:273:ARG:HD3  | 1:C:292:ALA:HB3   | 2.00                     | 0.43              |
| 1:C:716:THR:OG1  | 1:C:717:ASN:N     | 2.51                     | 0.43              |
| 1:C:749:CYS:SG   | 1:C:750:SER:N     | 2.90                     | 0.43              |
| 1:C:1004:LEU:O   | 1:C:1007:TYR:N    | 2.51                     | 0.43              |
| 1:A:872:GLN:O    | 1:A:875:SER:OG    | 2.29                     | 0.43              |
| 2:H:12:ILE:O     | 2:H:16:LEU:HB2    | 2.18                     | 0.43              |
| 2:G:31:LEU:O     | 2:G:35:PHE:HB2    | 2.18                     | 0.43              |
| 1:B:857:GLY:HA2  | 1:C:592:PHE:HE2   | 1.83                     | 0.43              |
| 1:B:953:ASN:O    | 1:B:956:ALA:N     | 2.51                     | 0.43              |
| 1:B:985:ASP:HB3  | 1:B:987:PRO:HD2   | 2.00                     | 0.43              |
| 1:B:1096:VAL:O   | 1:B:1102:TRP:HE3  | 2.01                     | 0.43              |
| 1:C:520:ALA:HA   | 1:C:521:PRO:HD3   | 1.85                     | 0.43              |
| 1:C:699:LEU:HD13 | 1:C:699:LEU:HA    | 1.80                     | 0.43              |
| 1:C:1051:SER:HB3 | 1:C:1064:HIS:HD2  | 1.83                     | 0.43              |
| 1:A:105:ILE:HG23 | 1:A:238:PHE:HA    | 2.00                     | 0.43              |
| 2:I:15:LEU:O     | 2:I:19:LEU:HG     | 2.17                     | 0.43              |
| 2:I:28:VAL:O     | 2:I:31:LEU:HB3    | 2.17                     | 0.43              |
| 1:B:426:PRO:HD2  | 1:B:464:PHE:CE1   | 2.53                     | 0.43              |
| 1:B:456:PHE:HB2  | 1:B:491:PRO:HG3   | 2.01                     | 0.43              |
| 1:C:324:GLU:HG2  | 1:C:539:VAL:HG21  | 2.01                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:1090:PRO:HD3 | 1:C:1095:PHE:CE1  | 2.52                     | 0.43              |
| 1:A:81:ASN:CB    | 1:A:239:GLN:HE22  | 2.30                     | 0.43              |
| 1:A:271:GLN:HB2  | 1:A:272:PRO:HD2   | 2.00                     | 0.43              |
| 1:A:449:TYR:HA   | 1:A:495:TYR:O     | 2.18                     | 0.43              |
| 1:A:815:ARG:NE   | 1:A:868:GLU:OE2   | 2.50                     | 0.43              |
| 1:A:946:GLY:O    | 1:A:949:GLN:N     | 2.51                     | 0.43              |
| 1:A:1088:HIS:CE1 | 1:A:1137:VAL:HG21 | 2.53                     | 0.43              |
| 1:B:34:ARG:O     | 1:B:56:LEU:HD22   | 2.17                     | 0.43              |
| 1:B:1019:ARG:HD2 | 1:B:1019:ARG:HA   | 1.68                     | 0.43              |
| 1:C:134:GLN:H    | 1:C:161:SER:HG    | 1.54                     | 0.43              |
| 1:C:423:TYR:CG   | 1:C:424:LYS:N     | 2.86                     | 0.43              |
| 1:C:825:LYS:O    | 1:C:825:LYS:HG2   | 2.19                     | 0.43              |
| 1:A:351:TYR:CD1  | 1:A:451:TYR:CE1   | 3.05                     | 0.43              |
| 1:A:528:LYS:C    | 1:A:530:SER:H     | 2.21                     | 0.43              |
| 1:A:544:ASN:OD1  | 1:A:544:ASN:N     | 2.49                     | 0.43              |
| 1:A:712:ILE:N    | 1:A:1075:PHE:O    | 2.42                     | 0.43              |
| 1:A:936:ASP:HA   | 1:A:939:SER:HB2   | 2.00                     | 0.43              |
| 1:B:353:TRP:CZ2  | 1:B:466:ARG:HB2   | 2.53                     | 0.43              |
| 1:B:720:ILE:HD11 | 1:B:927:PHE:N     | 2.34                     | 0.43              |
| 1:B:722:VAL:HG12 | 1:B:723:THR:N     | 2.34                     | 0.43              |
| 1:B:793:PRO:O    | 1:B:795:LYS:HG3   | 2.19                     | 0.43              |
| 1:B:861:LEU:HG   | 1:B:862:PRO:HD2   | 2.00                     | 0.43              |
| 1:B:861:LEU:HD23 | 1:B:862:PRO:O     | 2.18                     | 0.43              |
| 1:C:401:VAL:HB   | 1:C:451:TYR:CE1   | 2.54                     | 0.43              |
| 1:C:539:VAL:HG13 | 1:C:540:ASN:O     | 2.19                     | 0.43              |
| 1:C:669:GLY:O    | 1:C:670:ILE:HD13  | 2.19                     | 0.43              |
| 1:C:906:PHE:CE2  | 1:C:916:LEU:HD12  | 2.53                     | 0.43              |
| 1:C:923:ILE:HD13 | 1:C:923:ILE:HA    | 1.74                     | 0.43              |
| 1:C:1025:ALA:HA  | 1:C:1028:LYS:HB2  | 2.00                     | 0.43              |
| 1:C:1056:ALA:HB1 | 1:C:1057:PRO:HD2  | 2.00                     | 0.43              |
| 1:A:90:VAL:N     | 1:A:270:LEU:HD23  | 2.34                     | 0.43              |
| 1:B:40:ASP:OD1   | 1:B:42:VAL:HG22   | 2.18                     | 0.43              |
| 1:B:448:ASN:O    | 1:B:496:GLY:HA2   | 2.19                     | 0.43              |
| 1:B:927:PHE:CE2  | 1:B:1065:VAL:HG11 | 2.54                     | 0.43              |
| 1:C:92:PHE:HA    | 1:C:266:TYR:O     | 2.18                     | 0.43              |
| 1:C:308:VAL:O    | 1:C:602:THR:OG1   | 2.36                     | 0.43              |
| 1:C:329:PHE:HB3  | 1:C:330:PRO:HD2   | 2.00                     | 0.43              |
| 1:A:44:ARG:HB2   | 1:A:279:TYR:CE2   | 2.53                     | 0.43              |
| 1:A:356:LYS:O    | 1:A:396:TYR:HA    | 2.17                     | 0.43              |
| 1:A:697:MET:HE2  | 1:A:698:SER:N     | 2.33                     | 0.43              |
| 1:A:980:ILE:HD13 | 1:A:980:ILE:HA    | 1.87                     | 0.43              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:1047:TYR:O   | 1:A:1066:THR:OG1  | 2.30                     | 0.43              |
| 2:D:32:ILE:O     | 2:D:36:MET:HG3    | 2.19                     | 0.43              |
| 1:B:83:VAL:HA    | 1:B:239:GLN:OE1   | 2.18                     | 0.43              |
| 1:B:481:ASN:OD1  | 1:B:481:ASN:N     | 2.52                     | 0.43              |
| 1:B:582:LEU:HD13 | 1:B:582:LEU:HA    | 1.87                     | 0.43              |
| 1:C:191:GLU:O    | 1:C:205:SER:HA    | 2.19                     | 0.43              |
| 1:C:325:SER:O    | 1:C:325:SER:OG    | 2.33                     | 0.43              |
| 1:C:494:SER:O    | 2:F:26:MET:HE1    | 2.19                     | 0.43              |
| 1:C:664:ILE:HG13 | 1:C:672:ALA:O     | 2.19                     | 0.43              |
| 1:A:62:VAL:HG21  | 1:A:266:TYR:HB3   | 2.01                     | 0.43              |
| 1:A:140:PHE:HD2  | 1:A:243:ALA:HA    | 1.84                     | 0.43              |
| 1:A:165:ASN:ND2  | 3:A:1312:NAG:O7   | 2.51                     | 0.43              |
| 1:A:476:GLY:O    | 1:A:477:SER:C     | 2.57                     | 0.43              |
| 1:A:750:SER:O    | 1:A:754:LEU:HG    | 2.18                     | 0.43              |
| 1:B:383:SER:O    | 1:B:387:LEU:HB2   | 2.19                     | 0.43              |
| 1:B:416:GLY:O    | 1:B:420:ASP:HB3   | 2.19                     | 0.43              |
| 1:C:380:TYR:O    | 1:C:382:VAL:N     | 2.52                     | 0.43              |
| 1:C:489:TYR:CE2  | 2:F:10:TYR:HB3    | 2.53                     | 0.43              |
| 1:C:655:HIS:HD2  | 1:C:695:TYR:HA    | 1.83                     | 0.43              |
| 1:C:927:PHE:CE2  | 1:C:931:ILE:HG13  | 2.54                     | 0.43              |
| 1:C:1100:THR:OG1 | 1:C:1101:HIS:N    | 2.52                     | 0.43              |
| 1:A:497:PHE:HA   | 1:A:501:ASN:HD21  | 1.84                     | 0.43              |
| 1:A:716:THR:OG1  | 1:A:1071:GLN:O    | 2.29                     | 0.43              |
| 1:A:1129:VAL:HB  | 1:A:1132:ILE:HD11 | 2.01                     | 0.43              |
| 2:E:26:MET:HA    | 2:E:29:SER:OG     | 2.18                     | 0.43              |
| 1:B:154:GLU:HA   | 1:B:245:HIS:ND1   | 2.33                     | 0.43              |
| 1:B:403:ARG:CZ   | 1:B:505:TYR:HD1   | 2.32                     | 0.43              |
| 1:C:328:ARG:NH2  | 1:C:580:GLN:OE1   | 2.52                     | 0.43              |
| 1:C:819:GLU:O    | 1:C:822:LEU:HB2   | 2.19                     | 0.43              |
| 1:C:870:ILE:HD13 | 1:C:870:ILE:HA    | 1.87                     | 0.43              |
| 1:C:909:ILE:HD11 | 1:C:1047:TYR:CD1  | 2.54                     | 0.43              |
| 1:A:33:THR:HG22  | 1:A:58:PHE:CD2    | 2.54                     | 0.43              |
| 1:A:324:GLU:HB3  | 1:A:326:ILE:HG23  | 2.01                     | 0.43              |
| 1:A:739:THR:O    | 1:A:742:ILE:HG22  | 2.19                     | 0.43              |
| 2:G:16:LEU:HD12  | 2:G:28:VAL:HG21   | 2.01                     | 0.43              |
| 1:B:945:LEU:HD13 | 1:B:945:LEU:HA    | 1.80                     | 0.42              |
| 1:C:350:VAL:HG12 | 1:C:418:ILE:HG22  | 2.00                     | 0.42              |
| 1:C:854:LYS:HE3  | 1:A:592:PHE:CE1   | 2.52                     | 0.42              |
| 1:A:226:LEU:HD23 | 1:A:226:LEU:HA    | 1.64                     | 0.42              |
| 1:A:313:TYR:O    | 1:A:597:VAL:HG12  | 2.18                     | 0.42              |
| 1:A:365:TYR:HB2  | 1:A:388:ASN:ND2   | 2.34                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:699:LEU:HD13  | 1:A:699:LEU:HA    | 1.62                     | 0.42              |
| 1:A:820:ASP:O     | 1:A:824:ASN:N     | 2.49                     | 0.42              |
| 1:B:645:THR:OG1   | 1:B:648:GLY:N     | 2.52                     | 0.42              |
| 1:B:914:ASN:OD1   | 1:B:914:ASN:N     | 2.51                     | 0.42              |
| 1:B:1062:PHE:O    | 1:B:1063:LEU:HD23 | 2.19                     | 0.42              |
| 1:C:107:GLY:C     | 1:C:235:ILE:HA    | 2.39                     | 0.42              |
| 1:C:130:VAL:HG21  | 1:C:168:PHE:HB3   | 2.00                     | 0.42              |
| 1:C:375:SER:N     | 1:C:436:TRP:HB3   | 2.34                     | 0.42              |
| 1:C:375:SER:OG    | 1:C:436:TRP:HA    | 2.19                     | 0.42              |
| 1:C:410:ILE:HG13  | 1:C:423:TYR:HE2   | 1.84                     | 0.42              |
| 1:C:438:SER:HB2   | 1:C:442:ASP:HB2   | 2.01                     | 0.42              |
| 1:C:671:CYS:HB2   | 1:C:695:TYR:CE2   | 2.54                     | 0.42              |
| 1:A:406:GLU:OE2   | 1:A:418:ILE:HB    | 2.19                     | 0.42              |
| 1:A:583:GLU:CD    | 1:A:584:ILE:H     | 2.23                     | 0.42              |
| 1:A:778:THR:O     | 1:A:781:VAL:HG12  | 2.19                     | 0.42              |
| 1:A:1040:VAL:C    | 1:A:1042:PHE:H    | 2.22                     | 0.42              |
| 1:B:702:GLU:OE1   | 1:A:788:ILE:HG21  | 2.19                     | 0.42              |
| 1:B:816:SER:O     | 1:B:819:GLU:HG3   | 2.20                     | 0.42              |
| 1:C:104:TRP:N     | 1:C:241:LEU:HD22  | 2.35                     | 0.42              |
| 1:C:663:ASP:OD1   | 1:C:663:ASP:N     | 2.51                     | 0.42              |
| 1:C:781:VAL:CG2   | 1:C:1026:ALA:HA   | 2.45                     | 0.42              |
| 1:C:1006:THR:OG1  | 1:C:1007:TYR:N    | 2.52                     | 0.42              |
| 1:C:1087:ALA:HB3  | 1:C:1123:SER:O    | 2.19                     | 0.42              |
| 1:A:1004:LEU:HD23 | 1:A:1005:GLN:N    | 2.33                     | 0.42              |
| 2:D:11:GLU:O      | 2:D:14:ARG:HG2    | 2.20                     | 0.42              |
| 1:B:365:TYR:CD1   | 1:B:365:TYR:N     | 2.87                     | 0.42              |
| 1:B:398:ASP:HB2   | 1:B:512:VAL:HG12  | 2.00                     | 0.42              |
| 1:B:998:THR:O     | 1:B:1001:LEU:N    | 2.52                     | 0.42              |
| 1:B:1083:HIS:CD2  | 1:B:1084:ASP:HB2  | 2.53                     | 0.42              |
| 1:B:1098:ASN:HB2  | 3:B:1302:NAG:HN2  | 1.85                     | 0.42              |
| 1:C:671:CYS:O     | 1:C:695:TYR:N     | 2.51                     | 0.42              |
| 1:C:897:PRO:HB3   | 1:A:709:ASN:O     | 2.19                     | 0.42              |
| 1:A:38:TYR:N      | 1:A:38:TYR:CD1    | 2.86                     | 0.42              |
| 1:B:86:PHE:HB3    | 1:B:236:THR:C     | 2.40                     | 0.42              |
| 1:B:710:ASN:OD1   | 1:B:710:ASN:N     | 2.50                     | 0.42              |
| 1:B:855:PHE:HB3   | 1:B:856:ASN:H     | 1.70                     | 0.42              |
| 1:C:134:GLN:NE2   | 1:C:161:SER:OG    | 2.52                     | 0.42              |
| 1:C:159:VAL:HG13  | 1:C:160:TYR:HD1   | 1.83                     | 0.42              |
| 1:A:41:LYS:HE2    | 1:A:41:LYS:HB2    | 1.88                     | 0.42              |
| 1:A:165:ASN:ND2   | 3:A:1312:NAG:C7   | 2.83                     | 0.42              |
| 1:A:335:LEU:HB2   | 1:A:362:VAL:HG12  | 2.01                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:D:16:LEU:HB3    | 2:D:21:ASP:OD2    | 2.19                     | 0.42              |
| 2:F:31:LEU:HD11   | 2:G:8:LYS:HG2     | 2.00                     | 0.42              |
| 1:B:44:ARG:HB2    | 1:B:279:TYR:CE2   | 2.55                     | 0.42              |
| 1:B:328:ARG:HE    | 1:B:530:SER:HG    | 1.64                     | 0.42              |
| 1:B:1092:GLU:OE1  | 1:B:1092:GLU:N    | 2.53                     | 0.42              |
| 1:C:103:GLY:C     | 1:C:241:LEU:HD22  | 2.40                     | 0.42              |
| 1:C:121:ASN:OD1   | 1:C:122:ASN:N     | 2.51                     | 0.42              |
| 1:C:396:TYR:O     | 1:C:514:SER:OG    | 2.31                     | 0.42              |
| 1:C:900:MET:SD    | 1:C:917:TYR:OH    | 2.76                     | 0.42              |
| 1:C:904:TYR:CD2   | 1:C:905:ARG:HD2   | 2.55                     | 0.42              |
| 1:A:86:PHE:HA     | 1:A:238:PHE:HE1   | 1.84                     | 0.42              |
| 1:A:303:LEU:HD22  | 1:A:308:VAL:HG23  | 2.02                     | 0.42              |
| 1:A:357:ARG:HD3   | 1:A:396:TYR:CZ    | 2.53                     | 0.42              |
| 1:A:673:SER:OG    | 1:A:674:TYR:N     | 2.51                     | 0.42              |
| 1:A:861:LEU:H     | 1:A:861:LEU:HD12  | 1.84                     | 0.42              |
| 1:A:877:LEU:C     | 1:A:880:GLY:H     | 2.22                     | 0.42              |
| 2:E:27:ARG:HH12   | 2:E:31:LEU:N      | 2.18                     | 0.42              |
| 2:H:32:ILE:HA     | 2:H:35:PHE:HD2    | 1.85                     | 0.42              |
| 1:B:106:PHE:HB3   | 1:B:235:ILE:CG2   | 2.50                     | 0.42              |
| 1:B:124:THR:HA    | 1:B:174:PRO:HG3   | 2.01                     | 0.42              |
| 1:B:358:ILE:HB    | 1:B:395:VAL:HB    | 2.00                     | 0.42              |
| 1:B:365:TYR:CD2   | 1:B:387:LEU:HD23  | 2.53                     | 0.42              |
| 1:B:913:GLN:OE1   | 1:B:913:GLN:N     | 2.44                     | 0.42              |
| 1:B:1010:GLN:HE22 | 1:B:1014:ARG:HH12 | 1.68                     | 0.42              |
| 1:C:709:ASN:OD1   | 1:C:709:ASN:N     | 2.52                     | 0.42              |
| 1:C:797:PHE:O     | 1:C:800:PHE:N     | 2.40                     | 0.42              |
| 1:C:1073:LYS:HG3  | 1:C:1075:PHE:CE1  | 2.54                     | 0.42              |
| 1:A:447:GLY:HA2   | 1:A:497:PHE:H     | 1.85                     | 0.42              |
| 1:A:645:THR:HG1   | 1:A:648:GLY:H     | 1.63                     | 0.42              |
| 1:A:747:THR:OG1   | 1:A:748:GLU:N     | 2.53                     | 0.42              |
| 1:A:1114:ILE:O    | 1:A:1116:THR:HG23 | 2.19                     | 0.42              |
| 2:H:16:LEU:HB3    | 2:H:25:SER:OG     | 2.20                     | 0.42              |
| 2:I:1:ASP:HB3     | 2:I:2:LYS:H       | 1.66                     | 0.42              |
| 1:B:1038:LYS:HG3  | 1:A:1038:LYS:NZ   | 2.34                     | 0.42              |
| 1:C:43:PHE:HE2    | 1:C:283:GLY:HA3   | 1.84                     | 0.42              |
| 1:C:48:LEU:HA     | 1:C:48:LEU:HD13   | 1.76                     | 0.42              |
| 1:C:350:VAL:HG11  | 1:C:419:ALA:HA    | 2.02                     | 0.42              |
| 1:C:412:PRO:HB3   | 1:C:425:LEU:O     | 2.19                     | 0.42              |
| 1:C:730:SER:HG    | 1:C:1058:HIS:HD1  | 1.56                     | 0.42              |
| 1:C:740:MET:O     | 1:C:744:GLY:HA2   | 2.19                     | 0.42              |
| 1:C:970:PHE:O     | 1:C:995:ARG:HG2   | 2.20                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1027:THR:O    | 1:C:1031:GLU:N    | 2.53                     | 0.42              |
| 1:A:91:TYR:O      | 1:A:267:VAL:HA    | 2.20                     | 0.42              |
| 1:A:188:ASN:O     | 1:A:189:LEU:HD23  | 2.20                     | 0.42              |
| 1:A:741:TYR:CE1   | 1:A:966:LEU:HD11  | 2.50                     | 0.42              |
| 1:A:825:LYS:HZ1   | 1:A:941:THR:N     | 2.17                     | 0.42              |
| 1:A:905:ARG:HH12  | 1:A:1036:GLN:HB2  | 1.84                     | 0.42              |
| 1:A:1008:VAL:HG13 | 1:A:1009:THR:N    | 2.35                     | 0.42              |
| 1:A:1081:ILE:HD13 | 1:A:1081:ILE:HA   | 1.91                     | 0.42              |
| 2:F:32:ILE:HA     | 2:F:35:PHE:HB3    | 2.02                     | 0.42              |
| 1:B:299:THR:CG2   | 1:B:597:VAL:HG21  | 2.49                     | 0.42              |
| 1:C:494:SER:HG    | 1:C:495:TYR:H     | 1.68                     | 0.42              |
| 1:C:746:SER:OG    | 1:C:748:GLU:HG3   | 2.20                     | 0.42              |
| 1:C:1063:LEU:HD23 | 1:C:1063:LEU:HA   | 1.76                     | 0.42              |
| 1:A:364:ASP:OD1   | 1:A:365:TYR:N     | 2.53                     | 0.42              |
| 1:A:733:LYS:NZ    | 1:A:775:ASP:OD2   | 2.43                     | 0.42              |
| 1:B:95:THR:HG21   | 1:B:263:ALA:HB1   | 2.01                     | 0.42              |
| 1:B:546:LEU:HD13  | 1:B:576:VAL:HG22  | 2.02                     | 0.42              |
| 1:B:738:CYS:C     | 1:B:742:ILE:HG22  | 2.40                     | 0.42              |
| 1:B:808:ASP:HA    | 1:B:809:PRO:HD3   | 1.81                     | 0.42              |
| 1:C:192:PHE:CD1   | 1:C:205:SER:HB2   | 2.55                     | 0.42              |
| 1:C:455:LEU:HB2   | 2:F:33:TYR:CZ     | 2.55                     | 0.42              |
| 1:C:534:VAL:O     | 1:C:552:LEU:HD11  | 2.20                     | 0.42              |
| 1:A:370:ASN:N     | 1:A:370:ASN:OD1   | 2.48                     | 0.42              |
| 1:A:620:VAL:N     | 1:A:621:PRO:CD    | 2.82                     | 0.42              |
| 1:A:695:TYR:HD1   | 1:A:696:THR:O     | 2.03                     | 0.42              |
| 1:B:224:GLU:HG2   | 1:C:562:PHE:CZ    | 2.55                     | 0.41              |
| 1:B:501:ASN:O     | 1:B:506:GLN:NE2   | 2.53                     | 0.41              |
| 1:C:949:GLN:NE2   | 1:C:949:GLN:O     | 2.53                     | 0.41              |
| 1:C:1082:CYS:HB2  | 1:C:1126:CYS:HB2  | 1.67                     | 0.41              |
| 1:A:624:ILE:HD12  | 1:A:625:HIS:H     | 1.85                     | 0.41              |
| 1:A:1141:LEU:HB2  | 1:A:1142:GLN:HE21 | 1.84                     | 0.41              |
| 1:B:804:GLN:O     | 1:B:818:ILE:HG23  | 2.19                     | 0.41              |
| 1:B:1079:PRO:HB3  | 1:A:917:TYR:CZ    | 2.55                     | 0.41              |
| 1:B:1098:ASN:O    | 3:B:1302:NAG:H83  | 2.20                     | 0.41              |
| 1:C:313:TYR:O     | 1:C:597:VAL:HG22  | 2.20                     | 0.41              |
| 1:C:322:PRO:HA    | 1:C:538:CYS:O     | 2.20                     | 0.41              |
| 1:C:599:THR:C     | 1:C:601:GLY:H     | 2.23                     | 0.41              |
| 1:C:750:SER:O     | 1:C:753:LEU:N     | 2.52                     | 0.41              |
| 1:C:1138:TYR:OH   | 1:C:1140:PRO:HA   | 2.20                     | 0.41              |
| 1:A:265:TYR:C     | 1:A:266:TYR:HD1   | 2.24                     | 0.41              |
| 1:A:280:ASN:ND2   | 1:A:282:ASN:HB2   | 2.35                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:529:LYS:O    | 1:A:530:SER:HB2  | 2.19                     | 0.41              |
| 1:A:977:LEU:HD12 | 1:A:977:LEU:HA   | 1.78                     | 0.41              |
| 1:A:1043:CYS:HB2 | 1:A:1064:HIS:NE2 | 2.36                     | 0.41              |
| 2:G:24:ALA:O     | 2:G:28:VAL:HG22  | 2.20                     | 0.41              |
| 1:B:418:ILE:HD12 | 1:B:453:TYR:OH   | 2.20                     | 0.41              |
| 1:C:105:ILE:O    | 1:C:238:PHE:HB2  | 2.19                     | 0.41              |
| 1:C:299:THR:HG23 | 1:C:299:THR:H    | 1.63                     | 0.41              |
| 1:C:380:TYR:CE2  | 1:C:425:LEU:HD11 | 2.55                     | 0.41              |
| 1:C:505:TYR:HB3  | 2:F:27:ARG:HG3   | 2.02                     | 0.41              |
| 1:C:878:LEU:HD13 | 1:C:878:LEU:HA   | 1.88                     | 0.41              |
| 1:C:1142:GLN:N   | 1:C:1143:PRO:HD2 | 2.35                     | 0.41              |
| 1:A:95:THR:CB    | 1:A:264:ALA:HB3  | 2.50                     | 0.41              |
| 1:A:720:ILE:HD12 | 1:A:720:ILE:HA   | 1.89                     | 0.41              |
| 2:D:31:LEU:HB3   | 2:E:12:ILE:HD11  | 2.03                     | 0.41              |
| 2:D:31:LEU:HD12  | 2:E:8:LYS:HB3    | 2.02                     | 0.41              |
| 2:I:24:ALA:O     | 2:I:28:VAL:HG12  | 2.20                     | 0.41              |
| 1:B:38:TYR:CZ    | 1:B:285:ILE:HG12 | 2.55                     | 0.41              |
| 1:B:48:LEU:HD13  | 1:B:48:LEU:HA    | 1.90                     | 0.41              |
| 1:B:738:CYS:HB3  | 1:B:760:CYS:HB2  | 1.54                     | 0.41              |
| 1:B:895:GLN:H    | 1:B:895:GLN:CD   | 2.13                     | 0.41              |
| 1:B:1139:ASP:OD2 | 1:B:1141:LEU:N   | 2.52                     | 0.41              |
| 1:C:295:PRO:HD3  | 1:C:627:ASP:OD1  | 2.20                     | 0.41              |
| 1:C:383:SER:O    | 1:C:386:LYS:HG2  | 2.21                     | 0.41              |
| 1:C:401:VAL:N    | 1:C:451:TYR:OH   | 2.54                     | 0.41              |
| 1:C:664:ILE:HG21 | 1:C:672:ALA:O    | 2.20                     | 0.41              |
| 1:A:104:TRP:HB3  | 1:A:106:PHE:HE1  | 1.85                     | 0.41              |
| 1:A:539:VAL:HG13 | 1:A:541:PHE:HB3  | 2.02                     | 0.41              |
| 1:A:816:SER:H    | 1:A:819:GLU:CD   | 2.24                     | 0.41              |
| 1:B:105:ILE:C    | 1:B:106:PHE:HD1  | 2.23                     | 0.41              |
| 1:B:195:LYS:HZ2  | 1:B:195:LYS:HG3  | 1.61                     | 0.41              |
| 1:B:391:CYS:CB   | 1:B:525:CYS:HA   | 2.51                     | 0.41              |
| 1:B:417:LYS:HG3  | 1:B:418:ILE:HD13 | 2.02                     | 0.41              |
| 1:B:429:PHE:CZ   | 1:B:431:GLY:HA3  | 2.55                     | 0.41              |
| 1:B:437:ASN:OD1  | 1:B:439:ASN:N    | 2.36                     | 0.41              |
| 1:C:45:SER:O     | 1:C:47:VAL:HG23  | 2.20                     | 0.41              |
| 1:C:276:LEU:O    | 1:C:288:ALA:HB1  | 2.20                     | 0.41              |
| 1:C:447:GLY:HA3  | 1:C:449:TYR:CD1  | 2.55                     | 0.41              |
| 1:C:1139:ASP:OD1 | 1:C:1140:PRO:HD2 | 2.21                     | 0.41              |
| 1:A:119:ILE:HG23 | 1:A:128:ILE:HD11 | 2.03                     | 0.41              |
| 1:A:154:GLU:HB2  | 1:A:156:GLU:OE2  | 2.21                     | 0.41              |
| 1:A:353:TRP:NE1  | 1:A:466:ARG:HD2  | 2.35                     | 0.41              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:A:436:TRP:CE2   | 1:A:509:ARG:HB3  | 2.55                     | 0.41              |
| 1:A:1013:ILE:HD13 | 1:A:1013:ILE:HA  | 1.89                     | 0.41              |
| 1:A:1089:PHE:HB2  | 1:A:1121:PHE:CE1 | 2.56                     | 0.41              |
| 1:B:33:THR:HG23   | 1:B:58:PHE:CE2   | 2.56                     | 0.41              |
| 1:B:384:PRO:HA    | 1:B:387:LEU:CB   | 2.50                     | 0.41              |
| 1:B:398:ASP:O     | 1:B:511:VAL:HG23 | 2.20                     | 0.41              |
| 1:B:724:THR:HA    | 1:B:1062:PHE:O   | 2.20                     | 0.41              |
| 1:B:1028:LYS:HE3  | 1:B:1028:LYS:HB3 | 1.86                     | 0.41              |
| 1:C:140:PHE:HB2   | 1:C:242:LEU:O    | 2.21                     | 0.41              |
| 1:C:222:ALA:C     | 1:C:223:LEU:HD22 | 2.41                     | 0.41              |
| 1:C:455:LEU:HD13  | 2:F:33:TYR:CE1   | 2.56                     | 0.41              |
| 1:C:807:PRO:HG3   | 1:C:875:SER:HB2  | 2.03                     | 0.41              |
| 1:A:439:ASN:ND2   | 1:A:506:GLN:OE1  | 2.53                     | 0.41              |
| 1:A:448:ASN:N     | 1:A:497:PHE:H    | 2.13                     | 0.41              |
| 1:A:1083:HIS:NE2  | 1:A:1084:ASP:OD2 | 2.53                     | 0.41              |
| 2:E:9:ILE:HA      | 2:E:12:ILE:CD1   | 2.49                     | 0.41              |
| 2:F:7:GLN:O       | 2:F:11:GLU:HG2   | 2.21                     | 0.41              |
| 1:B:49:HIS:O      | 1:B:277:LEU:N    | 2.29                     | 0.41              |
| 1:B:1102:TRP:HD1  | 1:B:1135:ASN:ND2 | 2.18                     | 0.41              |
| 1:C:52:GLN:NE2    | 1:C:53:ASP:O     | 2.53                     | 0.41              |
| 1:C:102:ARG:NH1   | 1:C:122:ASN:HA   | 2.35                     | 0.41              |
| 1:C:720:ILE:HD12  | 1:C:720:ILE:HA   | 1.95                     | 0.41              |
| 1:A:190:ARG:HA    | 1:A:206:LYS:O    | 2.20                     | 0.41              |
| 1:A:526:GLY:HA2   | 1:A:527:PRO:HD3  | 1.85                     | 0.41              |
| 2:F:14:ARG:O      | 2:F:18:GLU:HG2   | 2.21                     | 0.41              |
| 1:B:59:PHE:N      | 1:B:59:PHE:CD1   | 2.86                     | 0.41              |
| 1:B:394:ASN:HB3   | 1:B:516:GLU:OE2  | 2.21                     | 0.41              |
| 1:B:624:ILE:HG12  | 1:B:625:HIS:CG   | 2.56                     | 0.41              |
| 1:C:120:VAL:HG12  | 1:C:121:ASN:O    | 2.21                     | 0.41              |
| 1:C:129:LYS:HD2   | 1:C:131:CYS:SG   | 2.61                     | 0.41              |
| 1:C:299:THR:HG21  | 1:C:597:VAL:HG21 | 2.02                     | 0.41              |
| 1:C:813:SER:O     | 1:C:815:ARG:HG3  | 2.21                     | 0.41              |
| 1:C:1033:VAL:HG21 | 1:C:1053:PRO:HD3 | 2.03                     | 0.41              |
| 1:A:107:GLY:N     | 1:A:235:ILE:HG12 | 2.36                     | 0.41              |
| 1:A:134:GLN:HG3   | 1:A:162:SER:OG   | 2.21                     | 0.41              |
| 1:A:204:TYR:CE2   | 1:A:225:PRO:HB3  | 2.55                     | 0.41              |
| 1:A:336:CYS:HB2   | 1:A:361:CYS:HB2  | 1.21                     | 0.41              |
| 1:A:456:PHE:CE1   | 2:D:37:LYS:HB2   | 2.56                     | 0.41              |
| 1:A:996:LEU:HD12  | 1:A:996:LEU:HA   | 1.71                     | 0.41              |
| 1:A:1098:ASN:OD1  | 1:A:1099:GLY:N   | 2.53                     | 0.41              |
| 1:B:30:ASN:OD1    | 1:B:31:SER:N     | 2.54                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:103:GLY:HA3  | 1:B:241:LEU:HD23 | 2.03                     | 0.41              |
| 1:B:275:PHE:HD1  | 1:B:275:PHE:HA   | 1.73                     | 0.41              |
| 1:B:353:TRP:CE2  | 1:B:466:ARG:HB2  | 2.55                     | 0.41              |
| 1:B:778:THR:HG22 | 1:B:865:LEU:HD12 | 2.01                     | 0.41              |
| 1:B:822:LEU:HD11 | 1:B:945:LEU:HD11 | 2.03                     | 0.41              |
| 1:B:934:ILE:HD12 | 1:B:934:ILE:HA   | 1.84                     | 0.41              |
| 1:B:1041:ASP:HB3 | 1:A:1030:SER:OG  | 2.21                     | 0.41              |
| 1:C:30:ASN:OD1   | 1:C:59:PHE:HA    | 2.21                     | 0.41              |
| 1:C:104:TRP:CA   | 1:C:241:LEU:HD13 | 2.49                     | 0.41              |
| 1:C:329:PHE:HD2  | 1:C:528:LYS:HG3  | 1.82                     | 0.41              |
| 1:C:331:ASN:HA   | 1:C:580:GLN:HG2  | 2.03                     | 0.41              |
| 1:C:495:TYR:HD1  | 1:C:495:TYR:HA   | 1.65                     | 0.41              |
| 1:A:49:HIS:CG    | 1:A:50:SER:N     | 2.88                     | 0.41              |
| 1:A:136:CYS:O    | 1:A:139:PRO:HD3  | 2.21                     | 0.41              |
| 1:A:299:THR:OG1  | 1:A:300:LYS:N    | 2.53                     | 0.41              |
| 1:A:437:ASN:OD1  | 1:A:438:SER:N    | 2.54                     | 0.41              |
| 2:D:38:LYS:NZ    | 2:E:8:LYS:HD2    | 2.36                     | 0.41              |
| 2:H:5:ILE:O      | 2:H:9:ILE:HG12   | 2.20                     | 0.41              |
| 2:I:22:AIB:HB12  | 2:I:25:SER:HB2   | 2.03                     | 0.41              |
| 2:G:16:LEU:HA    | 2:G:19:LEU:HD12  | 2.03                     | 0.41              |
| 1:B:357:ARG:CZ   | 1:B:359:SER:HB3  | 2.51                     | 0.41              |
| 1:B:379:CYS:HA   | 1:B:432:CYS:HA   | 2.02                     | 0.41              |
| 1:C:34:ARG:HH21  | 1:C:217:PRO:HG2  | 1.85                     | 0.41              |
| 1:C:140:PHE:HD2  | 1:C:243:ALA:HA   | 1.86                     | 0.41              |
| 1:C:433:VAL:O    | 1:C:434:ILE:HD13 | 2.21                     | 0.41              |
| 1:C:453:TYR:HD2  | 2:F:33:TYR:HH    | 1.69                     | 0.41              |
| 1:C:575:ALA:HA   | 1:C:586:ASP:HA   | 2.03                     | 0.41              |
| 1:A:188:ASN:CG   | 1:A:207:HIS:HB3  | 2.40                     | 0.41              |
| 1:A:529:LYS:HB3  | 1:A:529:LYS:HE2  | 1.53                     | 0.41              |
| 1:A:870:ILE:HA   | 1:A:870:ILE:HD13 | 1.79                     | 0.41              |
| 1:A:877:LEU:HD13 | 1:A:877:LEU:HA   | 1.78                     | 0.41              |
| 2:E:16:LEU:HD23  | 2:E:16:LEU:HA    | 1.96                     | 0.41              |
| 1:B:357:ARG:NE   | 1:B:359:SER:HB3  | 2.36                     | 0.40              |
| 1:B:586:ASP:OD1  | 1:B:587:ILE:N    | 2.51                     | 0.40              |
| 1:B:886:TRP:CD1  | 1:B:886:TRP:N    | 2.88                     | 0.40              |
| 1:B:989:ALA:O    | 1:B:993:ILE:HG12 | 2.21                     | 0.40              |
| 1:C:138:ASP:O    | 1:C:140:PHE:HD1  | 2.04                     | 0.40              |
| 1:C:264:ALA:HB1  | 1:C:266:TYR:HE2  | 1.86                     | 0.40              |
| 1:C:625:HIS:CD2  | 1:C:627:ASP:HB3  | 2.57                     | 0.40              |
| 1:C:936:ASP:HA   | 1:C:939:SER:HB3  | 2.02                     | 0.40              |
| 1:A:271:GLN:HE21 | 1:A:273:ARG:NH1  | 2.20                     | 0.40              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 2:I:29:SER:HA     | 2:I:32:ILE:HG22  | 2.03                     | 0.40              |
| 1:B:278:LYS:HD2   | 1:B:287:ASP:OD1  | 2.21                     | 0.40              |
| 1:B:594:GLY:H     | 1:B:613:GLN:NE2  | 2.18                     | 0.40              |
| 1:B:880:GLY:O     | 1:B:885:GLY:N    | 2.54                     | 0.40              |
| 1:C:50:SER:OG     | 1:C:51:THR:N     | 2.53                     | 0.40              |
| 1:C:424:LYS:HD3   | 1:C:424:LYS:HA   | 1.86                     | 0.40              |
| 1:C:457:ARG:HG3   | 1:C:458:LYS:N    | 2.37                     | 0.40              |
| 1:C:578:ASP:OD2   | 1:C:581:THR:HB   | 2.21                     | 0.40              |
| 1:C:984:LEU:O     | 1:C:986:PRO:HD3  | 2.22                     | 0.40              |
| 1:A:403:ARG:HE    | 1:A:405:ASP:CG   | 2.23                     | 0.40              |
| 1:A:642:VAL:HA    | 1:A:650:LEU:O    | 2.21                     | 0.40              |
| 1:A:970:PHE:CD2   | 1:A:999:GLY:HA3  | 2.57                     | 0.40              |
| 2:I:13:MET:HE1    | 2:I:28:VAL:HG13  | 2.03                     | 0.40              |
| 1:B:277:LEU:HD12  | 1:B:278:LYS:H    | 1.87                     | 0.40              |
| 1:B:745:ASP:HB3   | 1:C:319:ARG:NH1  | 2.37                     | 0.40              |
| 1:C:64:TRP:HB3    | 1:C:266:TYR:CE1  | 2.56                     | 0.40              |
| 1:C:741:TYR:OH    | 1:C:966:LEU:HD11 | 2.21                     | 0.40              |
| 1:C:1141:LEU:HD23 | 1:C:1141:LEU:HA  | 1.86                     | 0.40              |
| 1:A:498:GLN:HG3   | 1:A:500:THR:H    | 1.86                     | 0.40              |
| 1:A:707:TYR:CG    | 1:A:708:SER:N    | 2.89                     | 0.40              |
| 1:B:54:LEU:HD12   | 1:B:270:LEU:HB2  | 2.03                     | 0.40              |
| 1:B:909:ILE:HD12  | 1:B:909:ILE:HA   | 1.85                     | 0.40              |
| 1:B:914:ASN:OD1   | 1:B:915:VAL:N    | 2.51                     | 0.40              |
| 1:C:101:ILE:HA    | 1:C:241:LEU:O    | 2.21                     | 0.40              |
| 1:C:264:ALA:HB1   | 1:C:266:TYR:CE2  | 2.57                     | 0.40              |
| 1:C:434:ILE:HB    | 1:C:511:VAL:HG22 | 2.03                     | 0.40              |
| 1:C:726:ILE:HD11  | 1:C:948:LEU:HD22 | 2.04                     | 0.40              |
| 1:C:932:GLY:O     | 1:C:935:GLN:HG2  | 2.21                     | 0.40              |
| 1:A:400:PHE:CD2   | 1:A:510:VAL:HG21 | 2.57                     | 0.40              |
| 1:A:909:ILE:O     | 1:A:909:ILE:HG22 | 2.22                     | 0.40              |
| 1:A:1140:PRO:O    | 1:A:1143:PRO:HG2 | 2.21                     | 0.40              |
| 2:D:6:LEU:HD11    | 2:D:35:PHE:HE2   | 1.87                     | 0.40              |
| 2:H:24:ALA:O      | 2:H:28:VAL:HG23  | 2.21                     | 0.40              |
| 2:H:26:MET:H      | 2:H:26:MET:HG3   | 1.66                     | 0.40              |
| 1:B:57:PRO:CB     | 1:B:273:ARG:HH12 | 2.35                     | 0.40              |
| 1:B:328:ARG:NH1   | 1:B:533:LEU:HD13 | 2.36                     | 0.40              |
| 1:B:717:ASN:ND2   | 1:B:1071:GLN:OE1 | 2.44                     | 0.40              |
| 1:B:752:LEU:O     | 1:B:752:LEU:HD23 | 2.21                     | 0.40              |
| 1:B:809:PRO:HA    | 1:B:813:SER:HA   | 2.03                     | 0.40              |
| 1:B:1119:ASN:OD1  | 1:B:1119:ASN:N   | 2.43                     | 0.40              |
| 1:C:106:PHE:HB3   | 1:C:235:ILE:HG21 | 2.02                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1104:VAL:HG12 | 1:C:1113:GLN:HB2  | 2.04                     | 0.40              |
| 1:C:1116:THR:H    | 1:C:1119:ASN:HD21 | 1.69                     | 0.40              |
| 1:A:140:PHE:CD2   | 1:A:243:ALA:HA    | 2.57                     | 0.40              |
| 1:A:297:SER:HA    | 1:A:300:LYS:HE3   | 2.04                     | 0.40              |
| 1:A:421:TYR:HD1   | 1:A:461:LEU:HG    | 1.85                     | 0.40              |
| 1:A:596:SER:O     | 1:A:611:LEU:N     | 2.50                     | 0.40              |
| 1:A:748:GLU:O     | 1:A:752:LEU:N     | 2.55                     | 0.40              |
| 1:A:1038:LYS:HB2  | 1:A:1038:LYS:HE2  | 1.88                     | 0.40              |
| 1:A:1090:PRO:HB3  | 1:A:1095:PHE:CE1  | 2.57                     | 0.40              |
| 2:D:4:TRP:HB3     | 2:D:8:LYS:HZ1     | 1.87                     | 0.40              |
| 2:E:14:ARG:O      | 2:E:17:ASP:HB2    | 2.21                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed        | Favoured   | Allowed   | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|-----------|----------|-------------|-----|
| 1   | A     | 1008/1288 (78%) | 813 (81%)  | 194 (19%) | 1 (0%)   | 51          | 85  |
| 1   | B     | 1017/1288 (79%) | 799 (79%)  | 217 (21%) | 1 (0%)   | 51          | 85  |
| 1   | C     | 1017/1288 (79%) | 796 (78%)  | 219 (22%) | 2 (0%)   | 47          | 81  |
| 2   | D     | 34/38 (90%)     | 32 (94%)   | 1 (3%)    | 1 (3%)   | 4           | 32  |
| 2   | E     | 34/38 (90%)     | 33 (97%)   | 1 (3%)    | 0        | 100         | 100 |
| 2   | F     | 34/38 (90%)     | 33 (97%)   | 1 (3%)    | 0        | 100         | 100 |
| 2   | G     | 34/38 (90%)     | 31 (91%)   | 3 (9%)    | 0        | 100         | 100 |
| 2   | H     | 34/38 (90%)     | 30 (88%)   | 3 (9%)    | 1 (3%)   | 4           | 32  |
| 2   | I     | 34/38 (90%)     | 32 (94%)   | 2 (6%)    | 0        | 100         | 100 |
| All | All   | 3246/4092 (79%) | 2599 (80%) | 641 (20%) | 6 (0%)   | 50          | 81  |

All (6) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | C     | 424 | LYS  |
| 2   | H     | 23  | GLU  |
| 1   | C     | 529 | LYS  |
| 1   | A     | 621 | PRO  |
| 2   | D     | 23  | GLU  |
| 1   | B     | 333 | THR  |

### 5.3.2 Protein sidechains [i](#)

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

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

| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 1   | A     | 885/1113 (80%)  | 874 (99%)  | 11 (1%)  | 71          | 84  |
| 1   | B     | 891/1113 (80%)  | 887 (100%) | 4 (0%)   | 91          | 94  |
| 1   | C     | 891/1113 (80%)  | 885 (99%)  | 6 (1%)   | 84          | 90  |
| 2   | D     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| 2   | E     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| 2   | F     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| 2   | G     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| 2   | H     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| 2   | I     | 33/35 (94%)     | 33 (100%)  | 0        | 100         | 100 |
| All | All   | 2865/3549 (81%) | 2844 (99%) | 21 (1%)  | 84          | 90  |

All (21) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | B     | 166 | CYS  |
| 1   | B     | 319 | ARG  |
| 1   | B     | 334 | ASN  |
| 1   | B     | 421 | TYR  |
| 1   | C     | 424 | LYS  |
| 1   | C     | 528 | LYS  |
| 1   | C     | 529 | LYS  |
| 1   | C     | 738 | CYS  |
| 1   | C     | 760 | CYS  |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | C     | 1019 | ARG  |
| 1   | A     | 44   | ARG  |
| 1   | A     | 246  | ARG  |
| 1   | A     | 266  | TYR  |
| 1   | A     | 478  | THR  |
| 1   | A     | 525  | CYS  |
| 1   | A     | 528  | LYS  |
| 1   | A     | 529  | LYS  |
| 1   | A     | 620  | VAL  |
| 1   | A     | 621  | PRO  |
| 1   | A     | 622  | VAL  |
| 1   | A     | 760  | CYS  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | B     | 49   | HIS  |
| 1   | B     | 121  | ASN  |
| 1   | B     | 439  | ASN  |
| 1   | B     | 448  | ASN  |
| 1   | B     | 450  | ASN  |
| 1   | B     | 1002 | GLN  |
| 1   | B     | 1010 | GLN  |
| 1   | B     | 1011 | GLN  |
| 1   | B     | 1083 | HIS  |
| 1   | B     | 1088 | HIS  |
| 1   | C     | 321  | GLN  |
| 1   | C     | 437  | ASN  |
| 1   | C     | 501  | ASN  |
| 1   | C     | 641  | ASN  |
| 1   | C     | 774  | GLN  |
| 1   | C     | 928  | ASN  |
| 1   | C     | 1005 | GLN  |
| 1   | C     | 1064 | HIS  |
| 1   | C     | 1071 | GLN  |
| 1   | C     | 1134 | ASN  |
| 1   | A     | 49   | HIS  |
| 1   | A     | 125  | ASN  |
| 1   | A     | 493  | GLN  |
| 1   | A     | 606  | ASN  |
| 1   | A     | 690  | GLN  |
| 1   | A     | 774  | GLN  |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | A     | 777  | ASN  |
| 1   | A     | 955  | ASN  |
| 1   | A     | 1002 | GLN  |
| 1   | A     | 1054 | GLN  |
| 1   | A     | 1142 | GLN  |
| 2   | H     | 7    | GLN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

12 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths |      |             | Bond angles |      |             |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
|     |      |       |     |      | Counts       | RMSZ | $\# Z  > 2$ | Counts      | RMSZ | $\# Z  > 2$ |
| 2   | AIB  | D     | 22  | 2    | 1,5,6        | 1.10 | 0           | 2,7,9       | 1.03 | 0           |
| 2   | AIB  | H     | 22  | 2    | 1,5,6        | 1.18 | 0           | 2,7,9       | 0.87 | 0           |
| 2   | AIB  | I     | 22  | 2    | 1,5,6        | 1.20 | 0           | 2,7,9       | 0.84 | 0           |
| 2   | AIB  | F     | 22  | 2    | 1,5,6        | 1.05 | 0           | 2,7,9       | 0.93 | 0           |
| 2   | AIB  | E     | 22  | 2    | 1,5,6        | 0.88 | 0           | 2,7,9       | 1.12 | 0           |
| 2   | AIB  | G     | 22  | 2    | 1,5,6        | 1.18 | 0           | 2,7,9       | 1.10 | 0           |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 2   | AIB  | D     | 22  | 2    | -       | 0/2/3/6  | -     |
| 2   | AIB  | H     | 22  | 2    | -       | 2/2/3/6  | -     |
| 2   | AIB  | I     | 22  | 2    | -       | 0/2/3/6  | -     |
| 2   | AIB  | F     | 22  | 2    | -       | 0/2/3/6  | -     |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 2   | AIB  | E     | 22  | 2    | -       | 0/2/3/6  | -     |
| 2   | AIB  | G     | 22  | 2    | -       | 0/2/3/6  | -     |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms      |
|-----|-------|-----|------|------------|
| 2   | H     | 22  | AIB  | O-C-CA-CB1 |
| 2   | H     | 22  | AIB  | O-C-CA-CB2 |

There are no ring outliers.

3 monomers are involved in 3 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2   | I     | 22  | AIB  | 1       | 0            |
| 2   | F     | 22  | AIB  | 1       | 0            |
| 2   | G     | 22  | AIB  | 1       | 0            |

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

39 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res  | Link | Bond lengths |      |             | Bond angles |      |             |
|-----|------|-------|------|------|--------------|------|-------------|-------------|------|-------------|
|     |      |       |      |      | Counts       | RMSZ | $\# Z  > 2$ | Counts      | RMSZ | $\# Z  > 2$ |
| 3   | NAG  | B     | 1308 | 1    | 14,14,15     | 0.45 | 0           | 17,19,21    | 0.53 | 0           |
| 3   | NAG  | B     | 1312 | 1    | 14,14,15     | 0.27 | 0           | 17,19,21    | 0.41 | 0           |

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 3   | NAG  | C     | 1302 | 1    | 14,14,15     | 0.42 | 0        | 17,19,21    | 0.51 | 0        |
| 3   | NAG  | C     | 1305 | 1    | 14,14,15     | 0.57 | 0        | 17,19,21    | 0.91 | 1 (5%)   |
| 3   | NAG  | A     | 1310 | 1    | 14,14,15     | 0.35 | 0        | 17,19,21    | 0.41 | 0        |
| 3   | NAG  | B     | 1304 | 1    | 14,14,15     | 0.30 | 0        | 17,19,21    | 0.61 | 0        |
| 3   | NAG  | A     | 1304 | 1    | 14,14,15     | 0.81 | 1 (7%)   | 17,19,21    | 0.82 | 0        |
| 3   | NAG  | C     | 1309 | 1    | 14,14,15     | 0.37 | 0        | 17,19,21    | 0.45 | 0        |
| 3   | NAG  | A     | 1313 | 1    | 14,14,15     | 0.29 | 0        | 17,19,21    | 0.57 | 0        |
| 3   | NAG  | B     | 1309 | 1    | 14,14,15     | 0.96 | 1 (7%)   | 17,19,21    | 0.94 | 1 (5%)   |
| 3   | NAG  | C     | 1308 | 1    | 14,14,15     | 0.33 | 0        | 17,19,21    | 0.36 | 0        |
| 3   | NAG  | A     | 1302 | 1    | 14,14,15     | 0.18 | 0        | 17,19,21    | 0.59 | 0        |
| 3   | NAG  | A     | 1306 | 1    | 14,14,15     | 0.52 | 0        | 17,19,21    | 0.50 | 0        |
| 3   | NAG  | A     | 1301 | 1    | 14,14,15     | 0.43 | 0        | 17,19,21    | 0.38 | 0        |
| 3   | NAG  | B     | 1307 | 1    | 14,14,15     | 0.62 | 0        | 17,19,21    | 0.41 | 0        |
| 3   | NAG  | A     | 1303 | 1    | 14,14,15     | 0.35 | 0        | 17,19,21    | 0.61 | 0        |
| 3   | NAG  | C     | 1301 | 1    | 14,14,15     | 0.24 | 0        | 17,19,21    | 0.35 | 0        |
| 3   | NAG  | A     | 1312 | 1    | 14,14,15     | 0.20 | 0        | 17,19,21    | 0.46 | 0        |
| 3   | NAG  | A     | 1307 | 1    | 14,14,15     | 0.41 | 0        | 17,19,21    | 0.40 | 0        |
| 3   | NAG  | C     | 1311 | 1    | 14,14,15     | 0.23 | 0        | 17,19,21    | 0.55 | 0        |
| 3   | NAG  | B     | 1305 | 1    | 14,14,15     | 0.18 | 0        | 17,19,21    | 0.61 | 0        |
| 3   | NAG  | A     | 1308 | 1    | 14,14,15     | 0.30 | 0        | 17,19,21    | 0.40 | 0        |
| 3   | NAG  | A     | 1311 | 1    | 14,14,15     | 0.37 | 0        | 17,19,21    | 0.38 | 0        |
| 3   | NAG  | A     | 1309 | 1    | 14,14,15     | 0.20 | 0        | 17,19,21    | 0.57 | 0        |
| 3   | NAG  | B     | 1313 | 1    | 14,14,15     | 0.26 | 0        | 17,19,21    | 0.66 | 1 (5%)   |
| 3   | NAG  | B     | 1311 | 1    | 14,14,15     | 0.22 | 0        | 17,19,21    | 0.57 | 0        |
| 3   | NAG  | B     | 1302 | 1    | 14,14,15     | 0.35 | 0        | 17,19,21    | 0.49 | 0        |
| 3   | NAG  | B     | 1301 | 1    | 14,14,15     | 0.44 | 0        | 17,19,21    | 0.41 | 0        |
| 3   | NAG  | C     | 1307 | 1    | 14,14,15     | 0.52 | 0        | 17,19,21    | 0.40 | 0        |
| 3   | NAG  | C     | 1303 | 1    | 14,14,15     | 0.29 | 0        | 17,19,21    | 0.54 | 0        |
| 3   | NAG  | A     | 1305 | 1    | 14,14,15     | 0.20 | 0        | 17,19,21    | 0.43 | 0        |
| 3   | NAG  | C     | 1313 | 1    | 14,14,15     | 0.40 | 0        | 17,19,21    | 0.51 | 0        |
| 3   | NAG  | C     | 1306 | 1    | 14,14,15     | 0.40 | 0        | 17,19,21    | 0.47 | 0        |
| 3   | NAG  | B     | 1306 | 1    | 14,14,15     | 0.52 | 0        | 17,19,21    | 0.35 | 0        |
| 3   | NAG  | C     | 1312 | 1    | 14,14,15     | 0.21 | 0        | 17,19,21    | 0.43 | 0        |
| 3   | NAG  | C     | 1310 | 1    | 14,14,15     | 0.19 | 0        | 17,19,21    | 0.62 | 0        |
| 3   | NAG  | B     | 1310 | 1    | 14,14,15     | 0.29 | 0        | 17,19,21    | 0.54 | 0        |
| 3   | NAG  | B     | 1303 | 1    | 14,14,15     | 0.49 | 0        | 17,19,21    | 0.38 | 0        |
| 3   | NAG  | C     | 1304 | 1    | 14,14,15     | 0.46 | 0        | 17,19,21    | 0.49 | 0        |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res  | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|------|------|---------|-----------|---------|
| 3   | NAG  | B     | 1308 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1312 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1302 | 1    | -       | 4/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1305 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1310 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1304 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1304 | 1    | -       | 4/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1309 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1313 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1309 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1308 | 1    | -       | 4/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1302 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1306 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1301 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1307 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1303 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1301 | 1    | -       | 1/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1312 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1307 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1311 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1305 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1308 | 1    | -       | 4/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1311 | 1    | -       | 0/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1309 | 1    | -       | 0/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1313 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1311 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1302 | 1    | -       | 3/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1301 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1307 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1303 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | A     | 1305 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1313 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1306 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1306 | 1    | -       | 1/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1312 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1310 | 1    | -       | 4/6/23/26 | 0/1/1/1 |

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| Mol | Type | Chain | Res  | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|------|------|---------|-----------|---------|
| 3   | NAG  | B     | 1310 | 1    | -       | 1/6/23/26 | 0/1/1/1 |
| 3   | NAG  | B     | 1303 | 1    | -       | 2/6/23/26 | 0/1/1/1 |
| 3   | NAG  | C     | 1304 | 1    | -       | 1/6/23/26 | 0/1/1/1 |

All (2) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 3   | B     | 1309 | NAG  | O5-C1 | 2.87  | 1.48        | 1.43     |
| 3   | A     | 1304 | NAG  | O5-C1 | -2.82 | 1.39        | 1.43     |

All (3) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms    | Z    | Observed(°) | Ideal(°) |
|-----|-------|------|------|----------|------|-------------|----------|
| 3   | B     | 1309 | NAG  | C1-O5-C5 | 3.57 | 117.03      | 112.19   |
| 3   | C     | 1305 | NAG  | C1-O5-C5 | 3.34 | 116.71      | 112.19   |
| 3   | B     | 1313 | NAG  | C1-O5-C5 | 2.08 | 115.01      | 112.19   |

There are no chirality outliers.

All (86) torsion outliers are listed below:

| Mol | Chain | Res  | Type | Atoms       |
|-----|-------|------|------|-------------|
| 3   | B     | 1309 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1307 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1313 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1311 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1313 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1301 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1306 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1302 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1302 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1312 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1306 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1309 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1310 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1312 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1305 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1307 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1312 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1304 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1307 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1305 | NAG  | O5-C5-C6-O6 |

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| Mol | Chain | Res  | Type | Atoms       |
|-----|-------|------|------|-------------|
| 3   | A     | 1306 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1311 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1310 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1305 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1306 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1310 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1302 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1308 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1304 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1307 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1305 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1313 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1302 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1308 | NAG  | C8-C7-N2-C2 |
| 3   | B     | 1308 | NAG  | O7-C7-N2-C2 |
| 3   | C     | 1308 | NAG  | C8-C7-N2-C2 |
| 3   | C     | 1308 | NAG  | O7-C7-N2-C2 |
| 3   | A     | 1308 | NAG  | C8-C7-N2-C2 |
| 3   | A     | 1308 | NAG  | O7-C7-N2-C2 |
| 3   | C     | 1307 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1301 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1310 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1305 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1311 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1303 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1305 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1304 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1301 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1311 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1308 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1303 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1312 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1313 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1307 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1301 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1309 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1313 | NAG  | C1-C2-N2-C7 |
| 3   | A     | 1301 | NAG  | C1-C2-N2-C7 |
| 3   | B     | 1303 | NAG  | C4-C5-C6-O6 |
| 3   | B     | 1306 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1303 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1304 | NAG  | C4-C5-C6-O6 |

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| Mol | Chain | Res  | Type | Atoms       |
|-----|-------|------|------|-------------|
| 3   | A     | 1308 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1302 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1302 | NAG  | C3-C2-N2-C7 |
| 3   | A     | 1308 | NAG  | O5-C5-C6-O6 |
| 3   | A     | 1303 | NAG  | C1-C2-N2-C7 |
| 3   | B     | 1312 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1303 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1303 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1312 | NAG  | O5-C5-C6-O6 |
| 3   | B     | 1302 | NAG  | C3-C2-N2-C7 |
| 3   | B     | 1304 | NAG  | C3-C2-N2-C7 |
| 3   | C     | 1302 | NAG  | C3-C2-N2-C7 |
| 3   | C     | 1304 | NAG  | C3-C2-N2-C7 |
| 3   | C     | 1310 | NAG  | C3-C2-N2-C7 |
| 3   | C     | 1313 | NAG  | C3-C2-N2-C7 |
| 3   | C     | 1302 | NAG  | C1-C2-N2-C7 |
| 3   | C     | 1310 | NAG  | C1-C2-N2-C7 |
| 3   | A     | 1304 | NAG  | C1-C2-N2-C7 |
| 3   | B     | 1310 | NAG  | C4-C5-C6-O6 |
| 3   | C     | 1309 | NAG  | C4-C5-C6-O6 |
| 3   | A     | 1301 | NAG  | C3-C2-N2-C7 |
| 3   | A     | 1304 | NAG  | C3-C2-N2-C7 |
| 3   | B     | 1308 | NAG  | O5-C5-C6-O6 |
| 3   | C     | 1311 | NAG  | C1-C2-N2-C7 |

There are no ring outliers.

11 monomers are involved in 18 short contacts:

| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 3   | B     | 1308 | NAG  | 1       | 0            |
| 3   | C     | 1302 | NAG  | 1       | 0            |
| 3   | C     | 1309 | NAG  | 1       | 0            |
| 3   | A     | 1302 | NAG  | 3       | 0            |
| 3   | A     | 1301 | NAG  | 1       | 0            |
| 3   | A     | 1312 | NAG  | 2       | 0            |
| 3   | A     | 1307 | NAG  | 2       | 0            |
| 3   | B     | 1313 | NAG  | 1       | 0            |
| 3   | B     | 1302 | NAG  | 3       | 0            |
| 3   | B     | 1301 | NAG  | 1       | 0            |
| 3   | A     | 1305 | NAG  | 2       | 0            |

## 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.

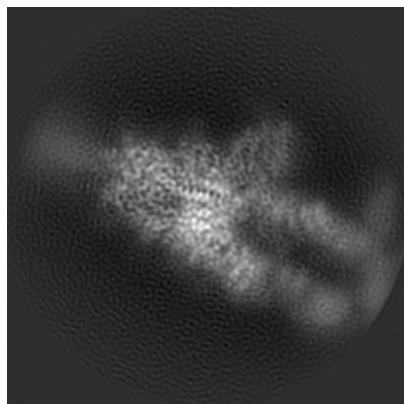
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-33042. These allow visual inspection of the internal detail of the map and identification of artifacts.

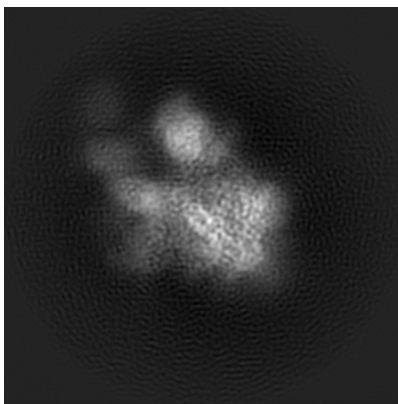
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

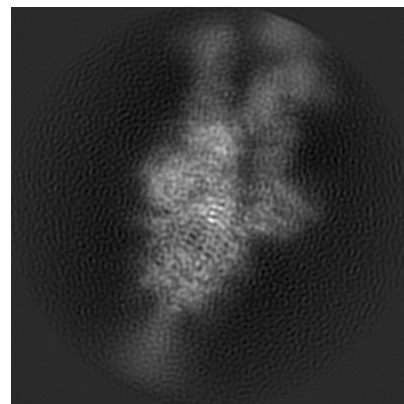
#### 6.1.1 Primary map



X

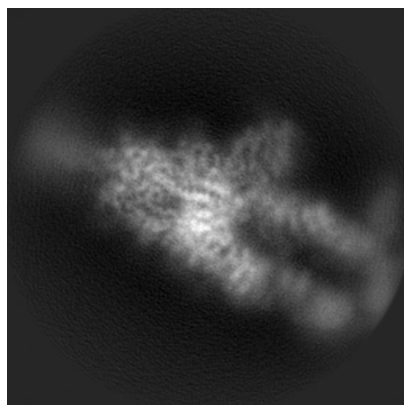


Y

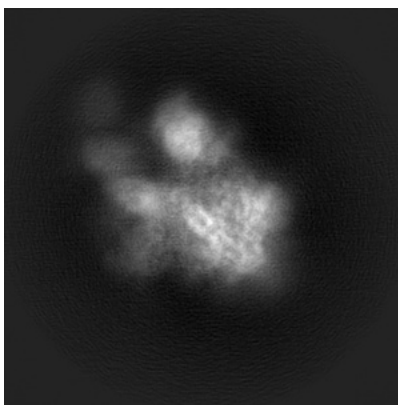


Z

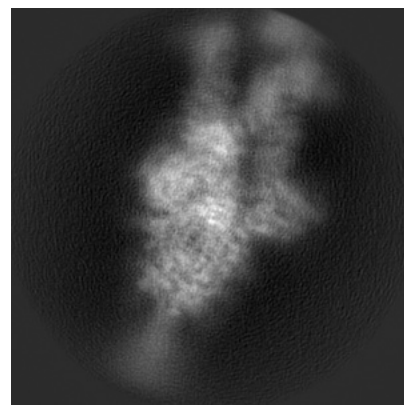
#### 6.1.2 Raw map



X



Y

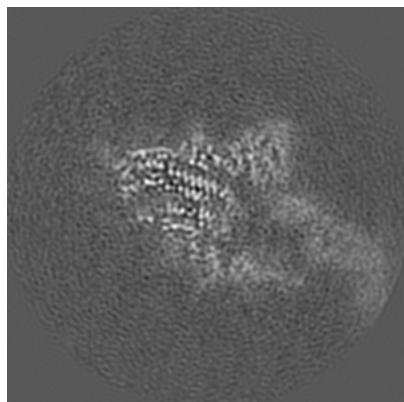


Z

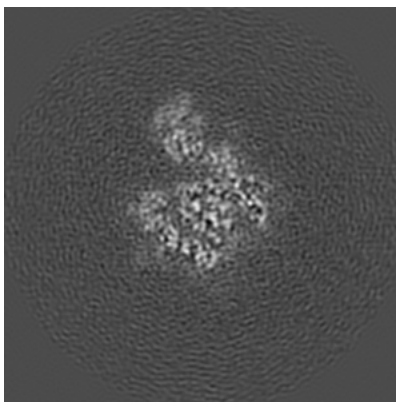
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

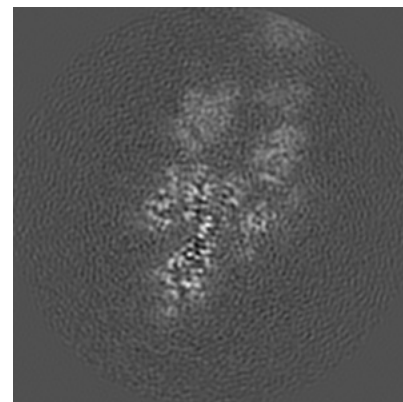
### 6.2.1 Primary map



X Index: 128

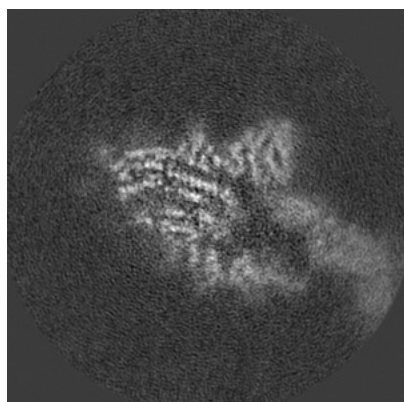


Y Index: 128

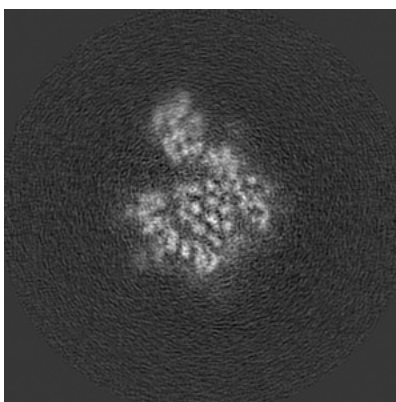


Z Index: 128

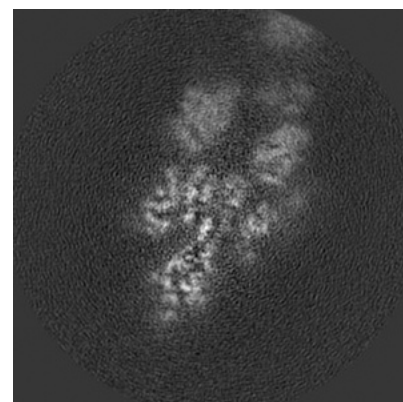
### 6.2.2 Raw map



X Index: 128



Y Index: 128

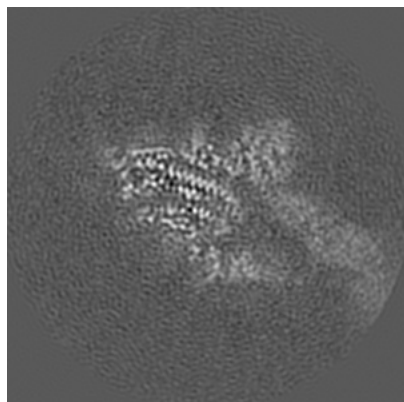


Z Index: 128

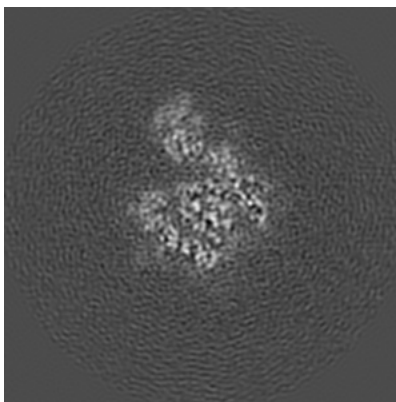
The images above show central slices of the map in three orthogonal directions.

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

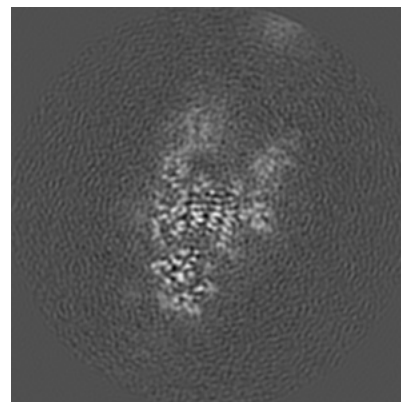
### 6.3.1 Primary map



X Index: 127

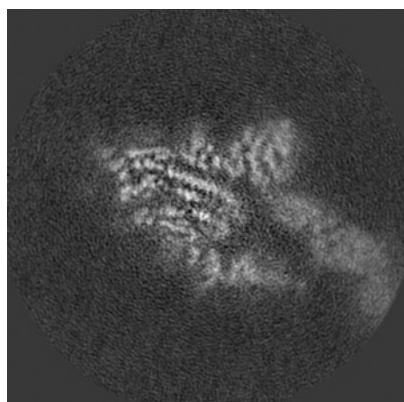


Y Index: 128

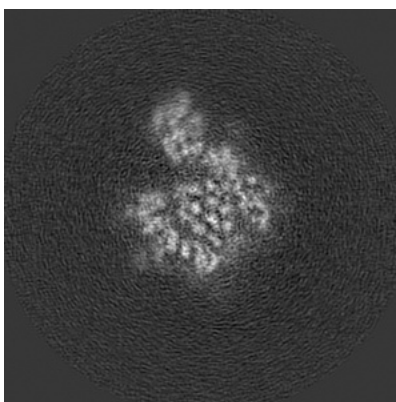


Z Index: 135

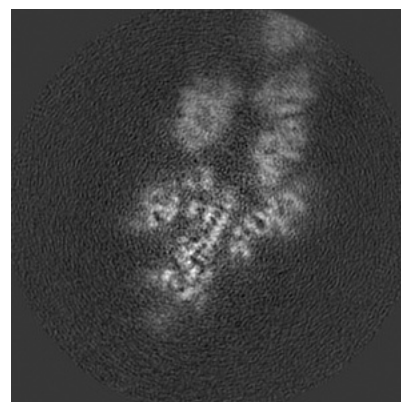
### 6.3.2 Raw map



X Index: 127



Y Index: 128

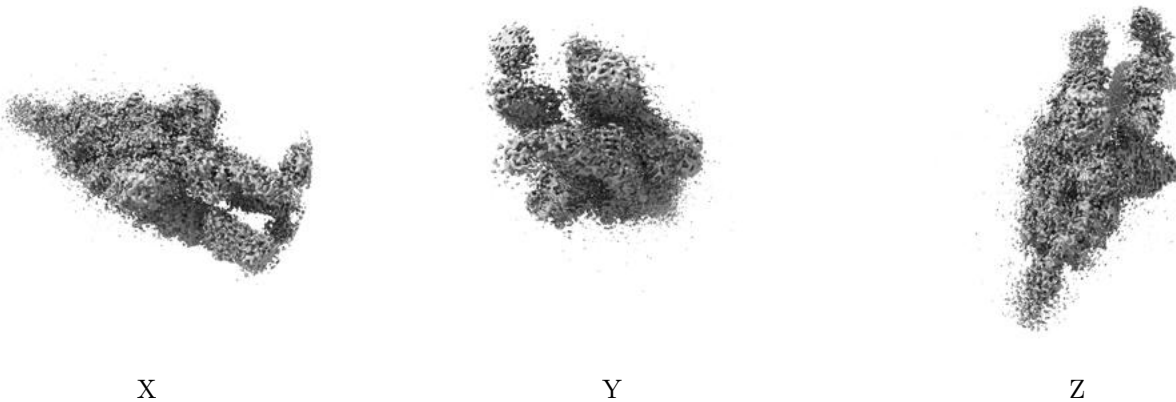


Z Index: 124

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

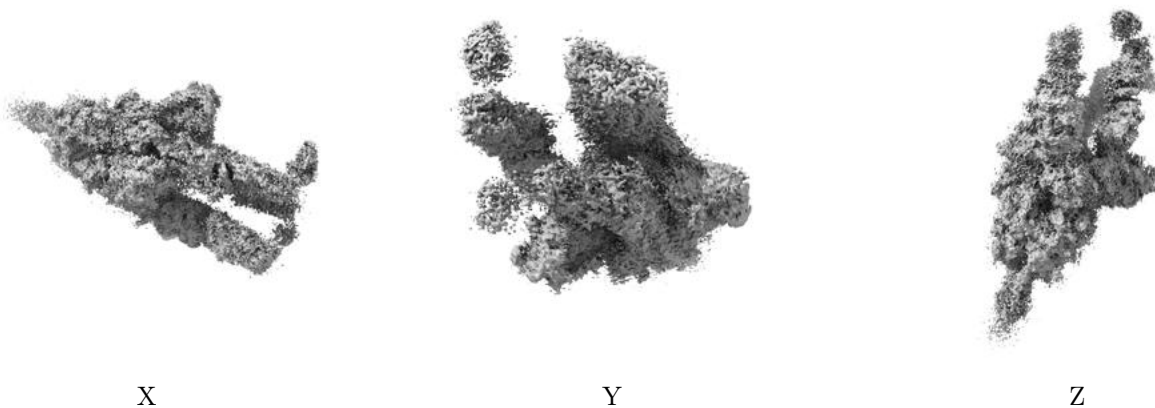
## 6.4 Orthogonal surface views [i](#)

### 6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0135. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.4.2 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.

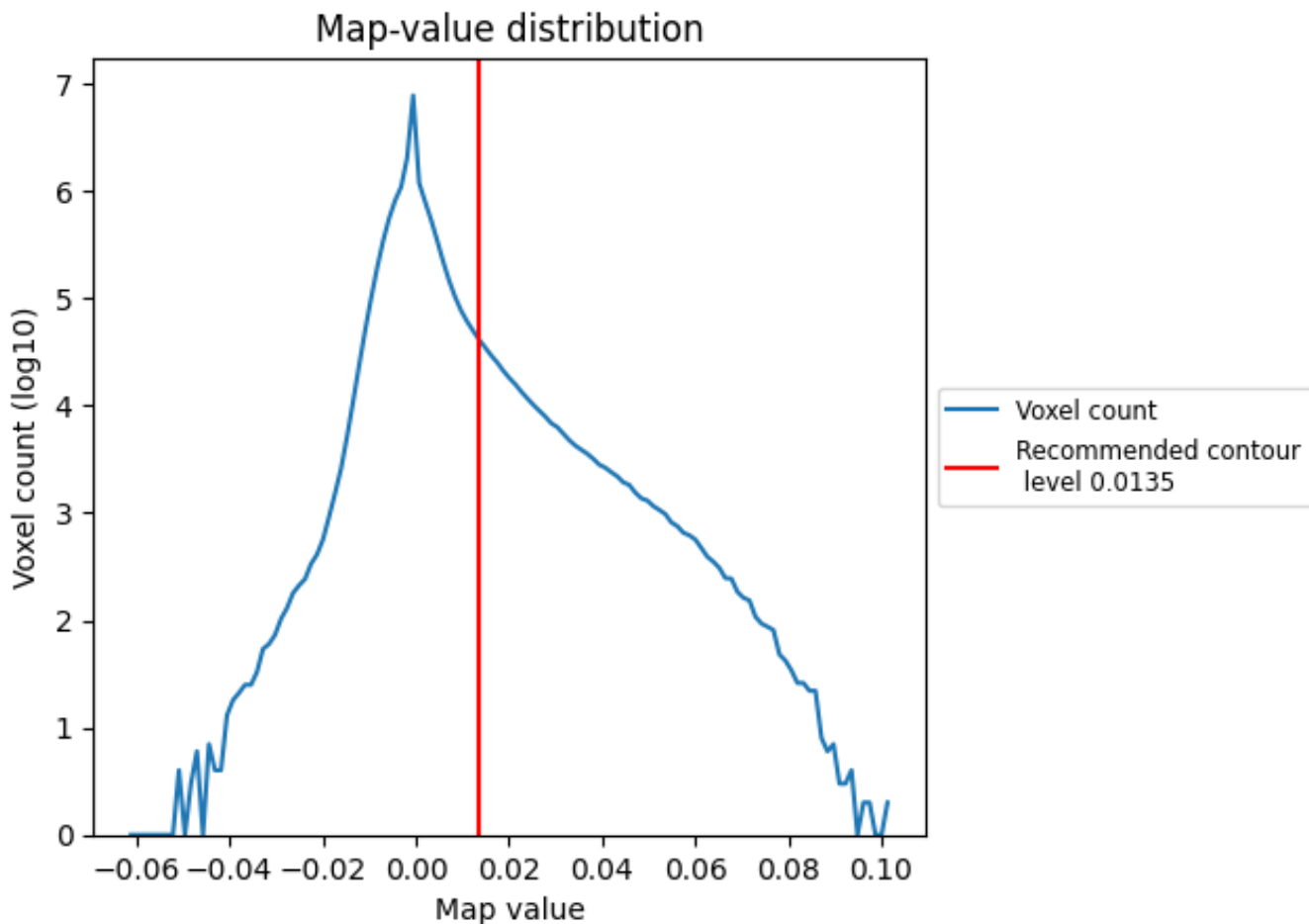
## 6.5 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

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

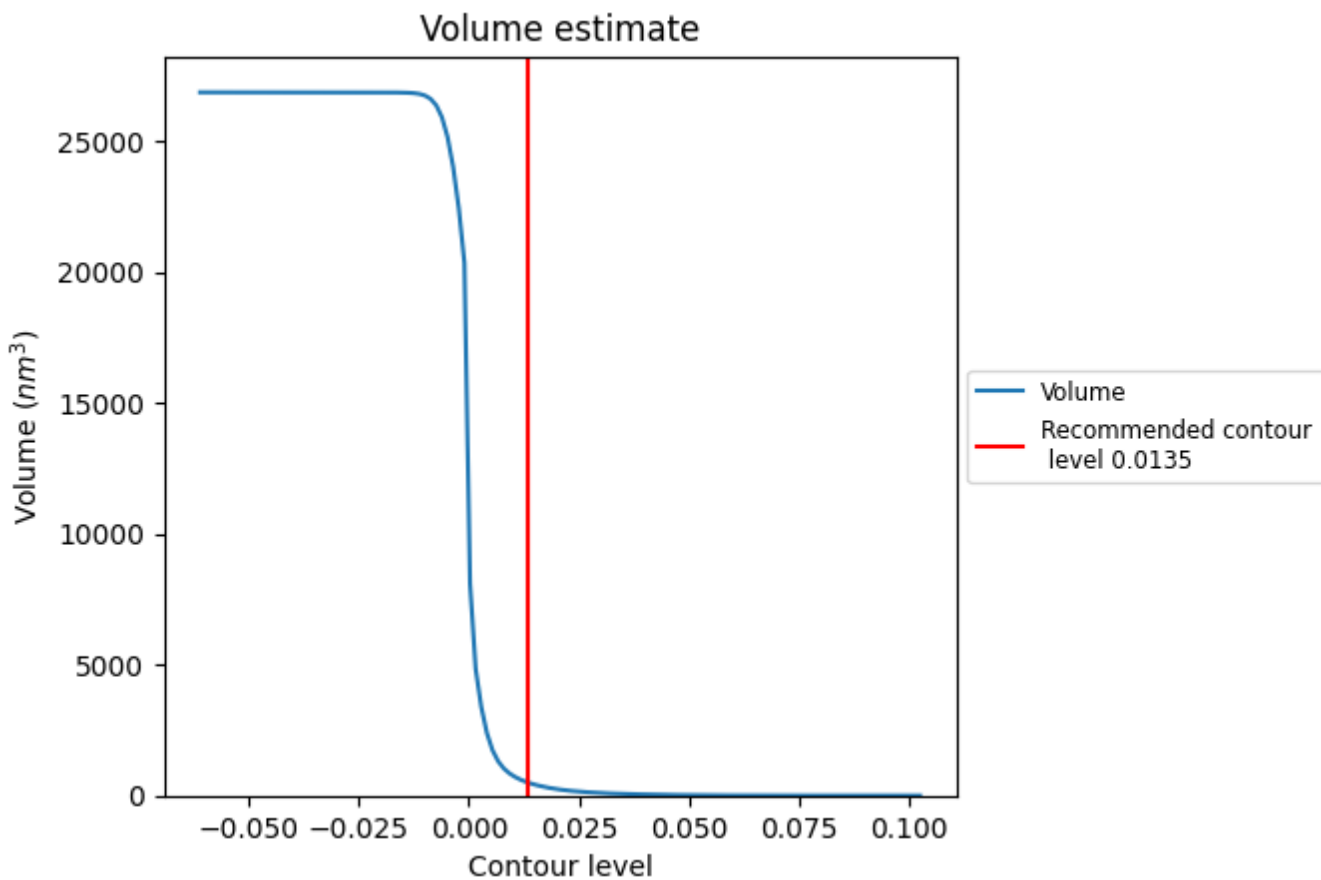
### 7.1 Map-value distribution [i](#)



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



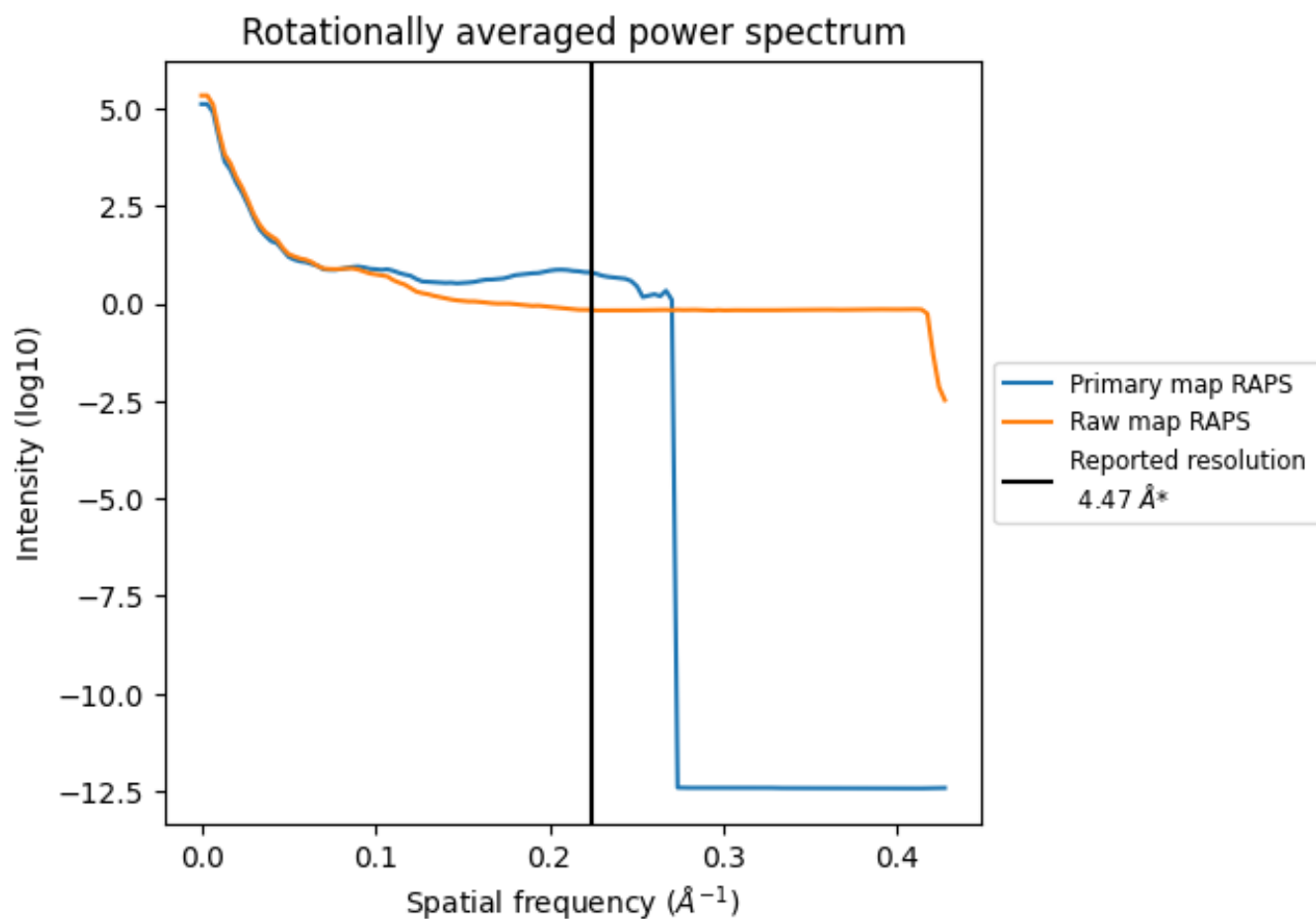
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 495 nm<sup>3</sup>; this corresponds to an approximate mass of 447 kDa.

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

### 7.3 Rotationally averaged power spectrum i

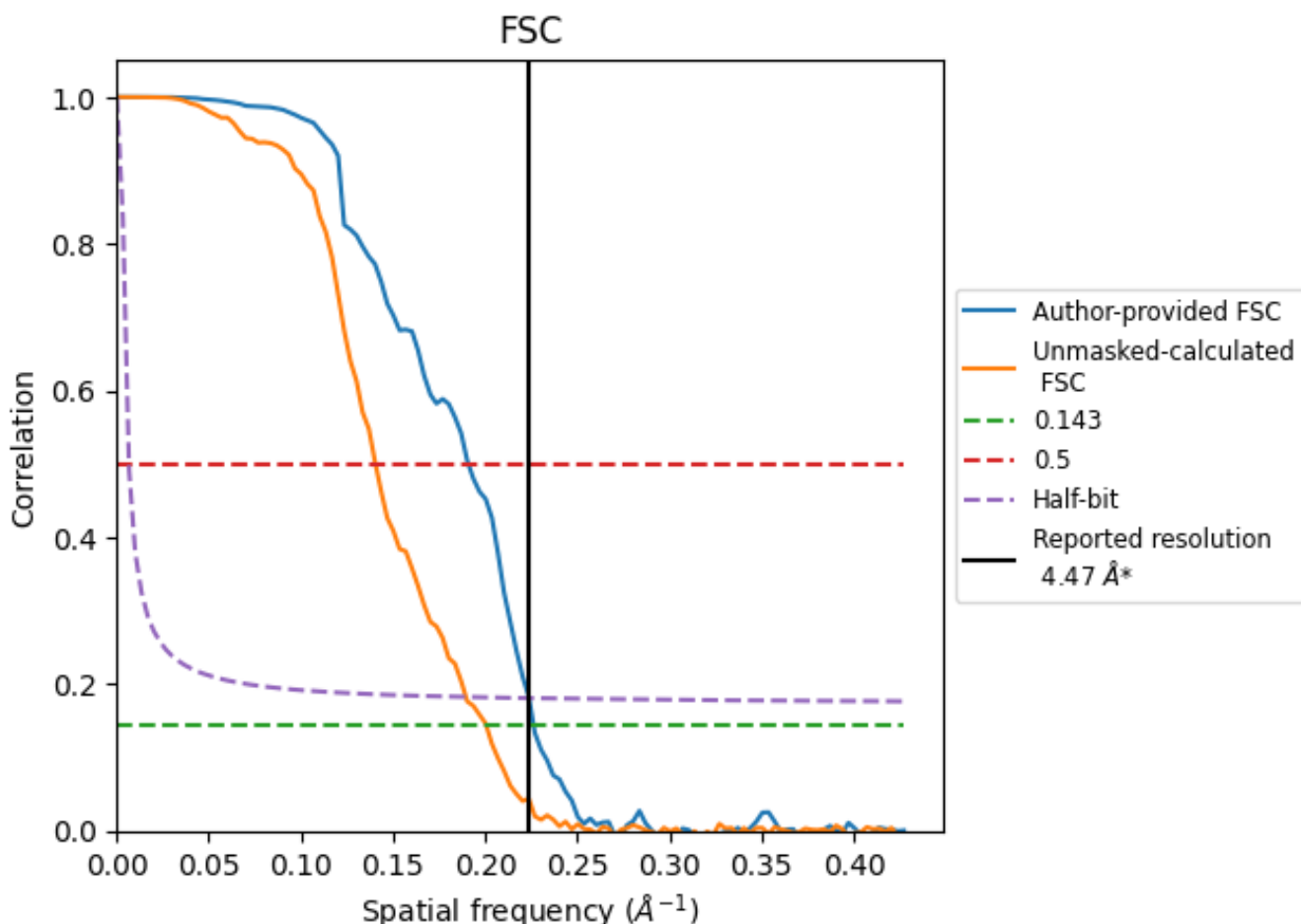


\*Reported resolution corresponds to spatial frequency of 0.224 Å<sup>-1</sup>

## 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 0.224 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

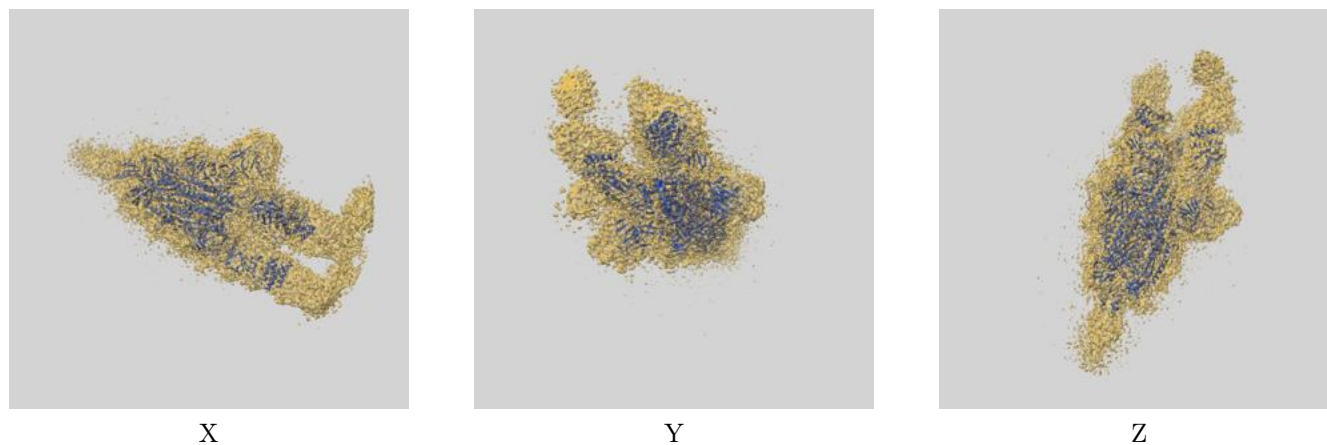
| Resolution estimate (Å)   | Estimation criterion (FSC cut-off) |      |          |
|---------------------------|------------------------------------|------|----------|
|                           | 0.143                              | 0.5  | Half-bit |
| Reported by author        | 4.47                               | -    | -        |
| Author-provided FSC curve | 4.42                               | 5.24 | 4.47     |
| Unmasked-calculated*      | 4.98                               | 7.12 | 5.27     |

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.98 differs from the reported value 4.47 by more than 10 %

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

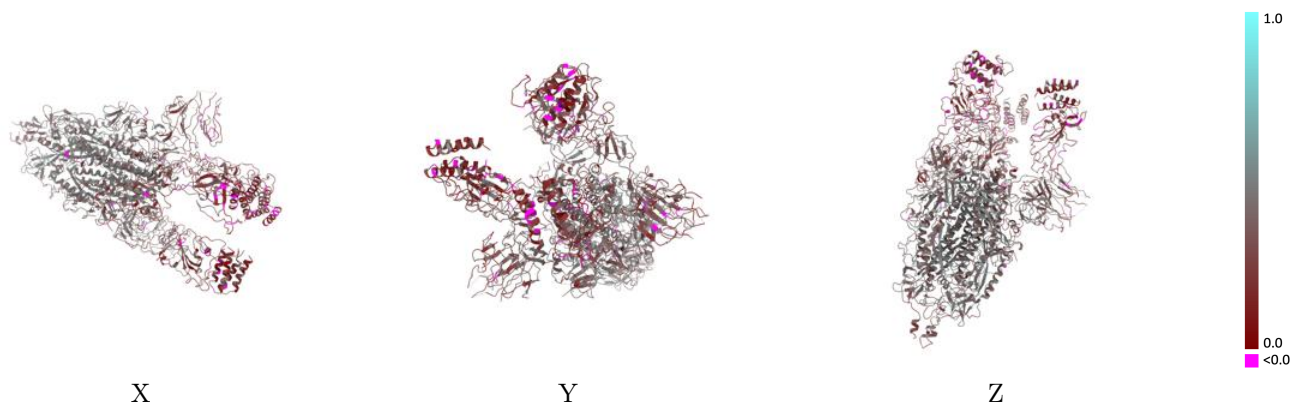
This section contains information regarding the fit between EMDB map EMD-33042 and PDB model 7X7N. Per-residue inclusion information can be found in section 3 on page 14.

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



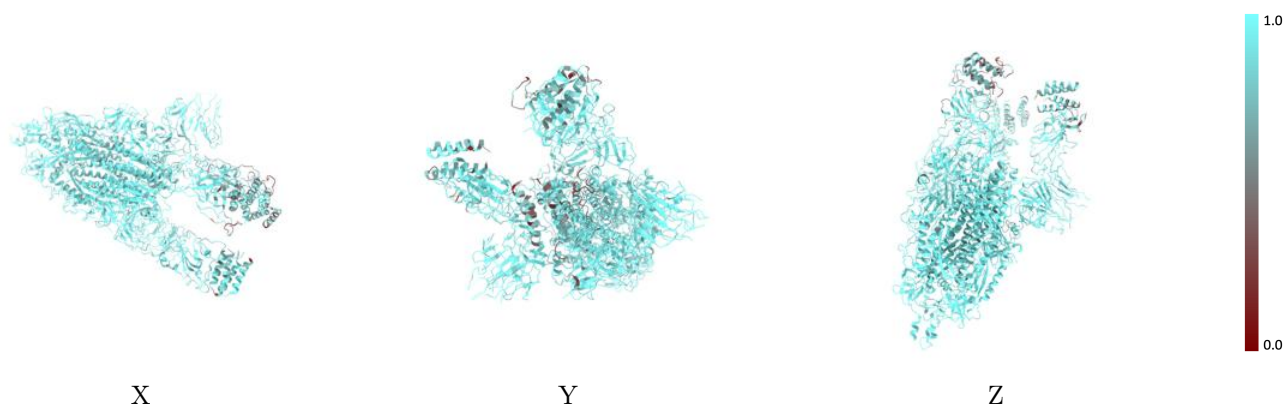
The images above show the 3D surface view of the map at the recommended contour level 0.0135 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



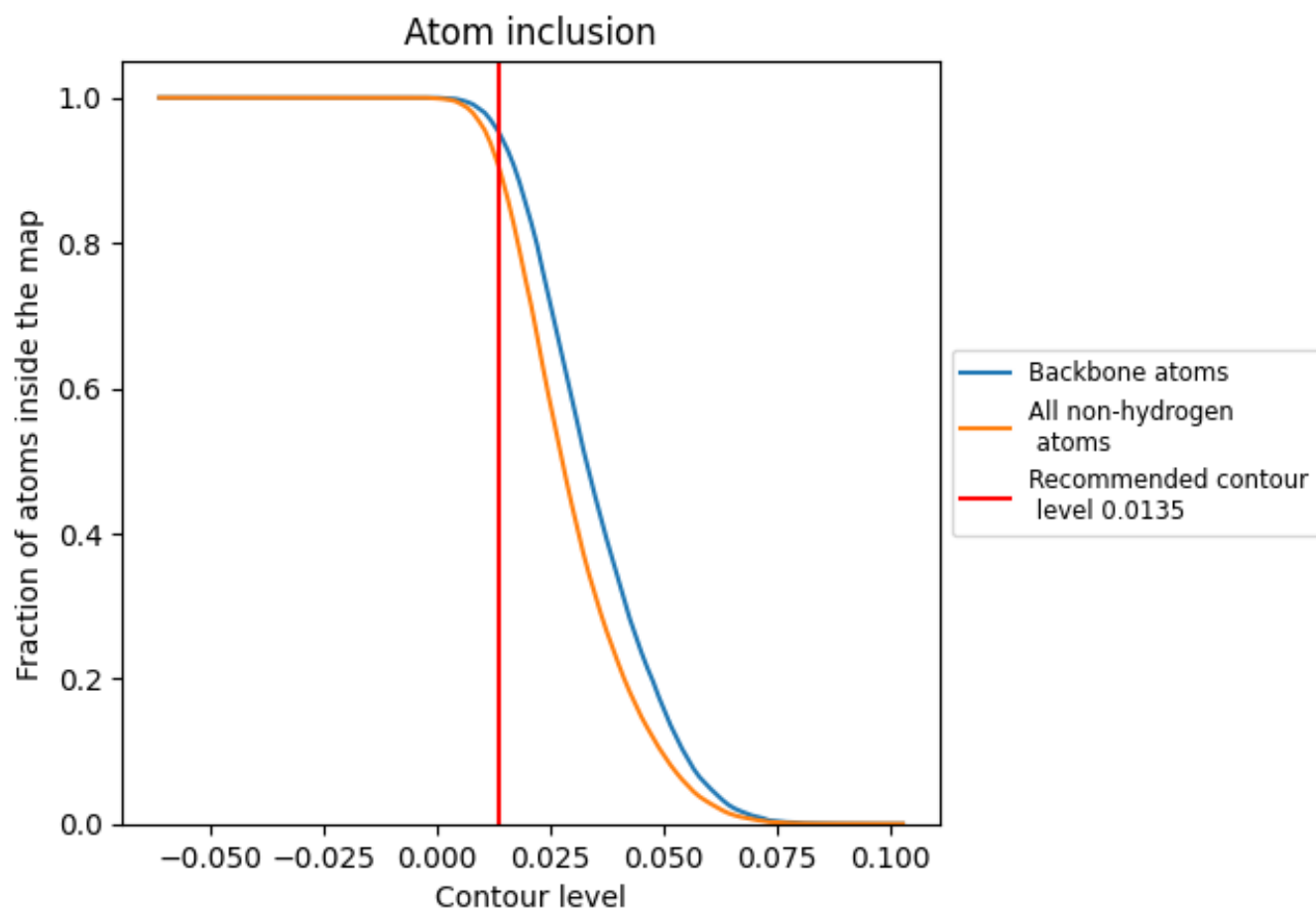
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0135).





















## 9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 91% 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 (0.0135) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| All   |  0.9069 |  0.3480 |
| A     |  0.9362 |  0.3700 |
| B     |  0.9252 |  0.3580 |
| C     |  0.9016 |  0.3550 |
| D     |  0.7903 |  0.1760 |
| E     |  0.7968 |  0.2230 |
| F     |  0.6355 |  0.2120 |
| G     |  0.6032 |  0.1480 |
| H     |  0.7194 |  0.1610 |
| I     |  0.7935 |  0.2200 |

