



Full wwPDB EM Validation Report ⓘ

Mar 19, 2024 – 01:59 PM JST

PDB ID : 5GO9
EMDB ID : EMD-9528
Title : Cryo-EM structure of RyR2 in closed state
Authors : Peng, W.; Wu, J.P.; Yan, N.
Deposited on : 2016-07-26
Resolution : 4.40 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

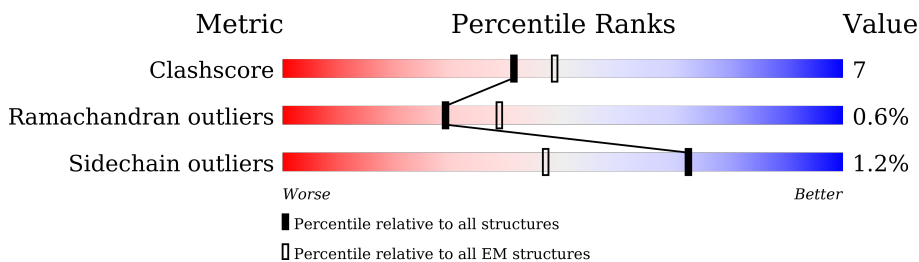
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.40 Å.

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



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

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | A | 4968 | |
| 1 | B | 4968 | |
| 1 | C | 4968 | |
| 1 | D | 4968 | |

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 105068 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 RyR2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-------|------|------|-----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 3423 | 26266 | 16740 | 4498 | 4874 | 154 | 0 | 0 |
| 1 | B | 3423 | 26266 | 16740 | 4498 | 4874 | 154 | 0 | 0 |
| 1 | C | 3423 | 26266 | 16740 | 4498 | 4874 | 154 | 0 | 0 |
| 1 | D | 3423 | 26266 | 16740 | 4498 | 4874 | 154 | 0 | 0 |

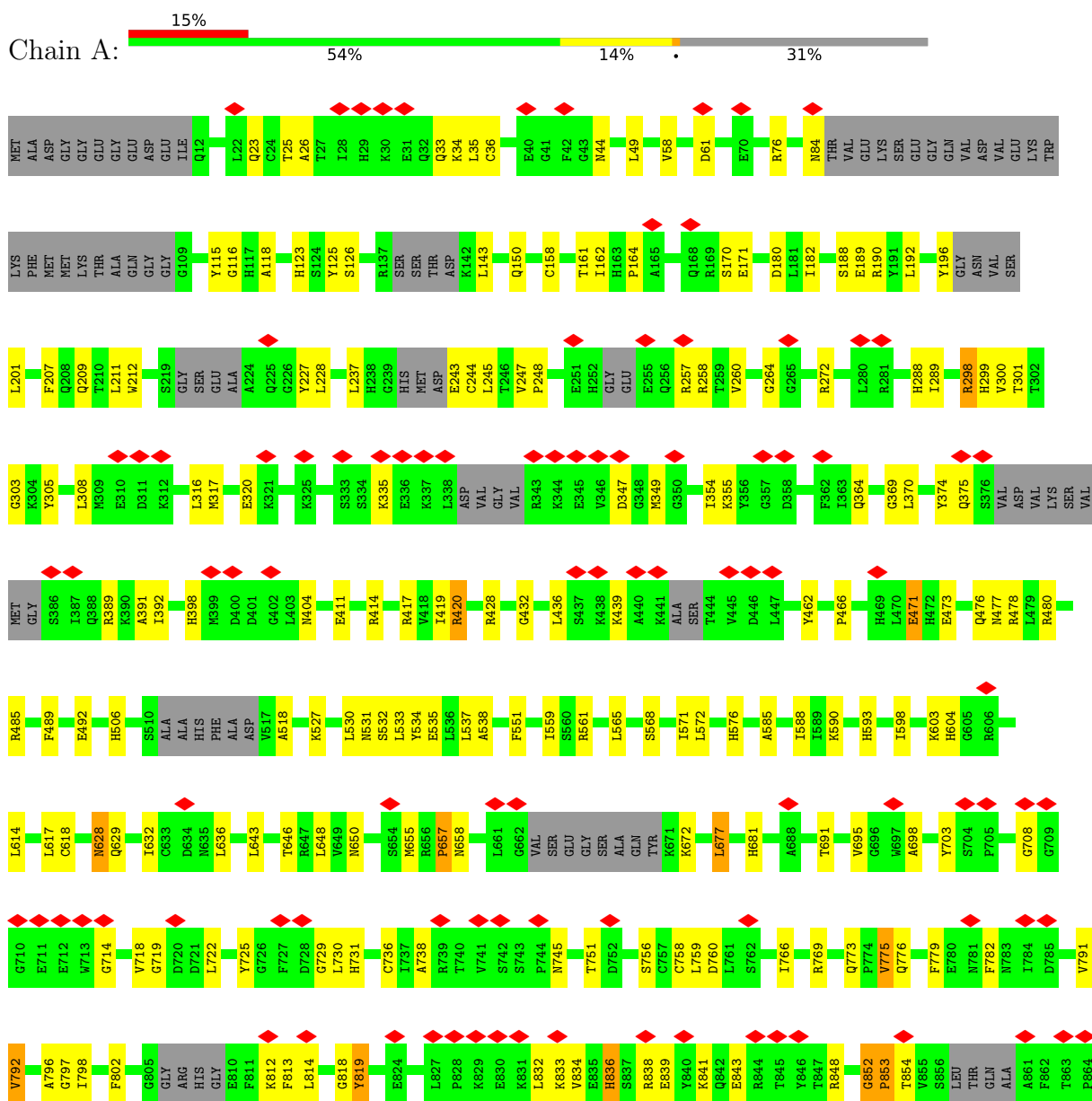
- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|----|---------|
| | | | Total | Zn | |
| 2 | A | 1 | 1 | 1 | 0 |
| 2 | B | 1 | 1 | 1 | 0 |
| 2 | C | 1 | 1 | 1 | 0 |
| 2 | D | 1 | 1 | 1 | 0 |

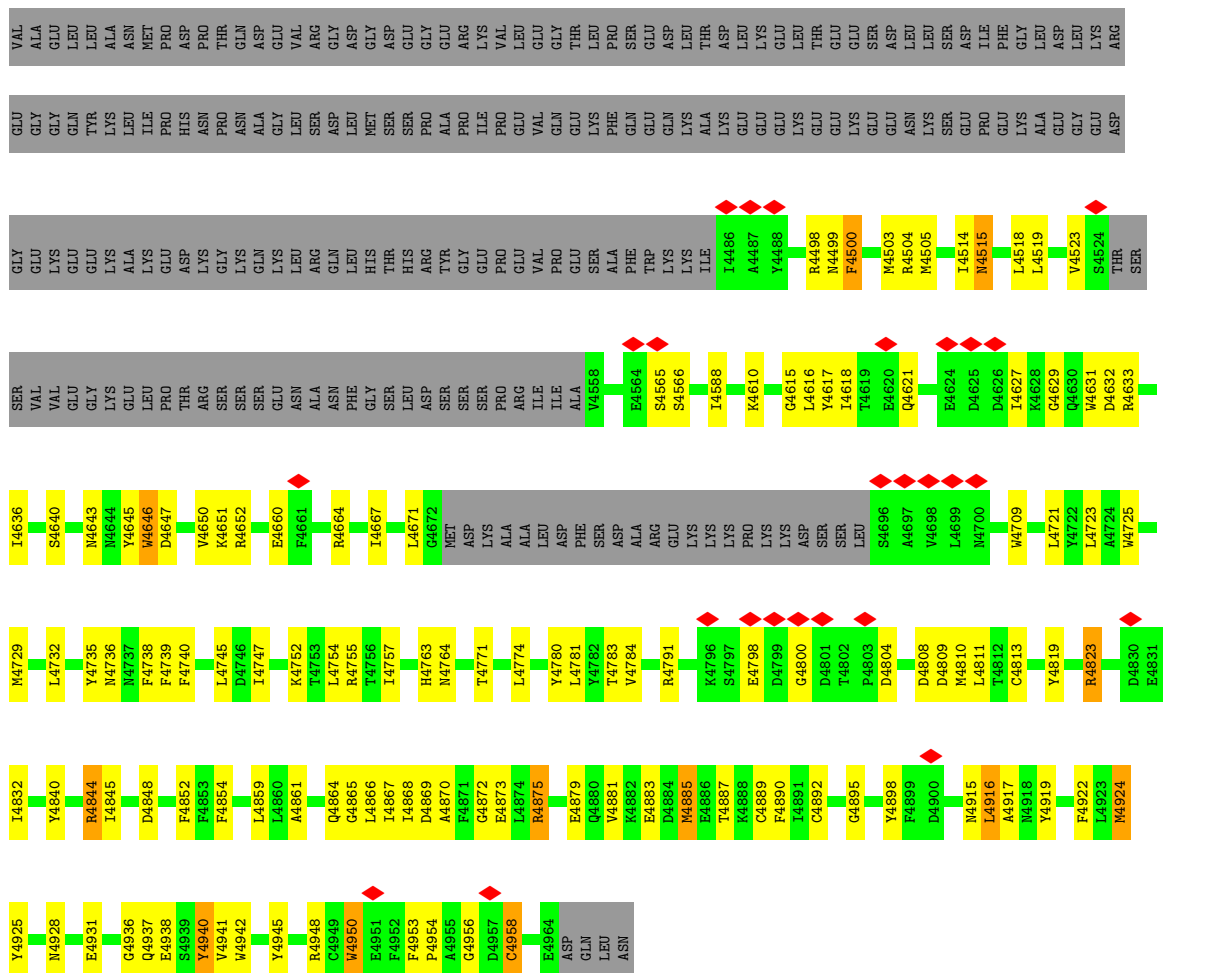
3 Residue-property plots

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

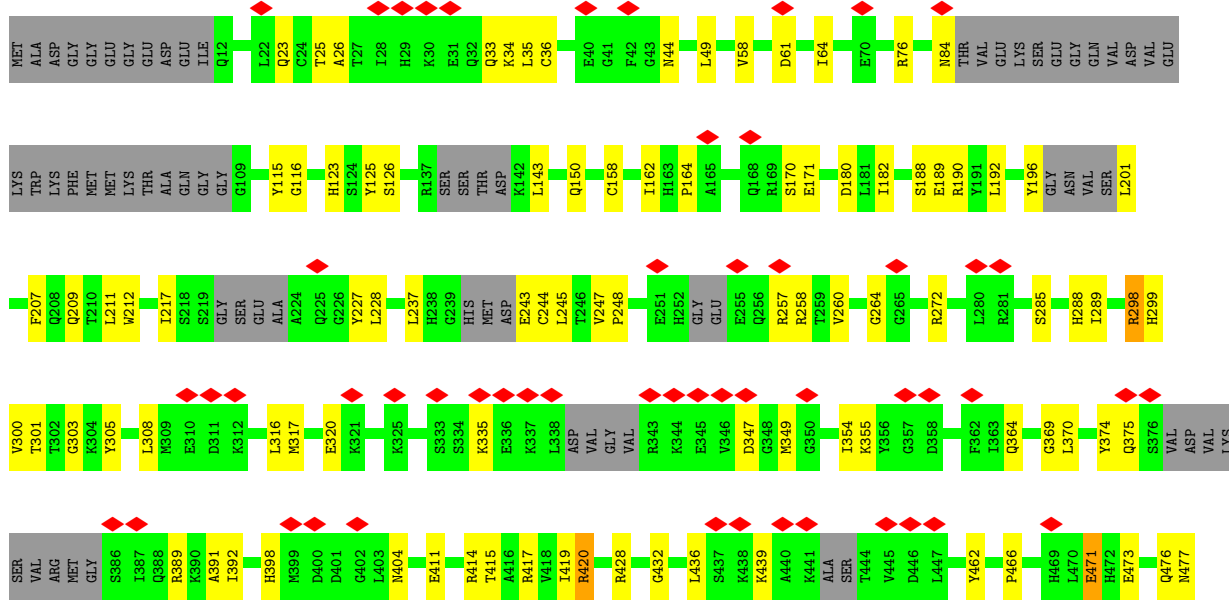
• Molecule 1: RyR2

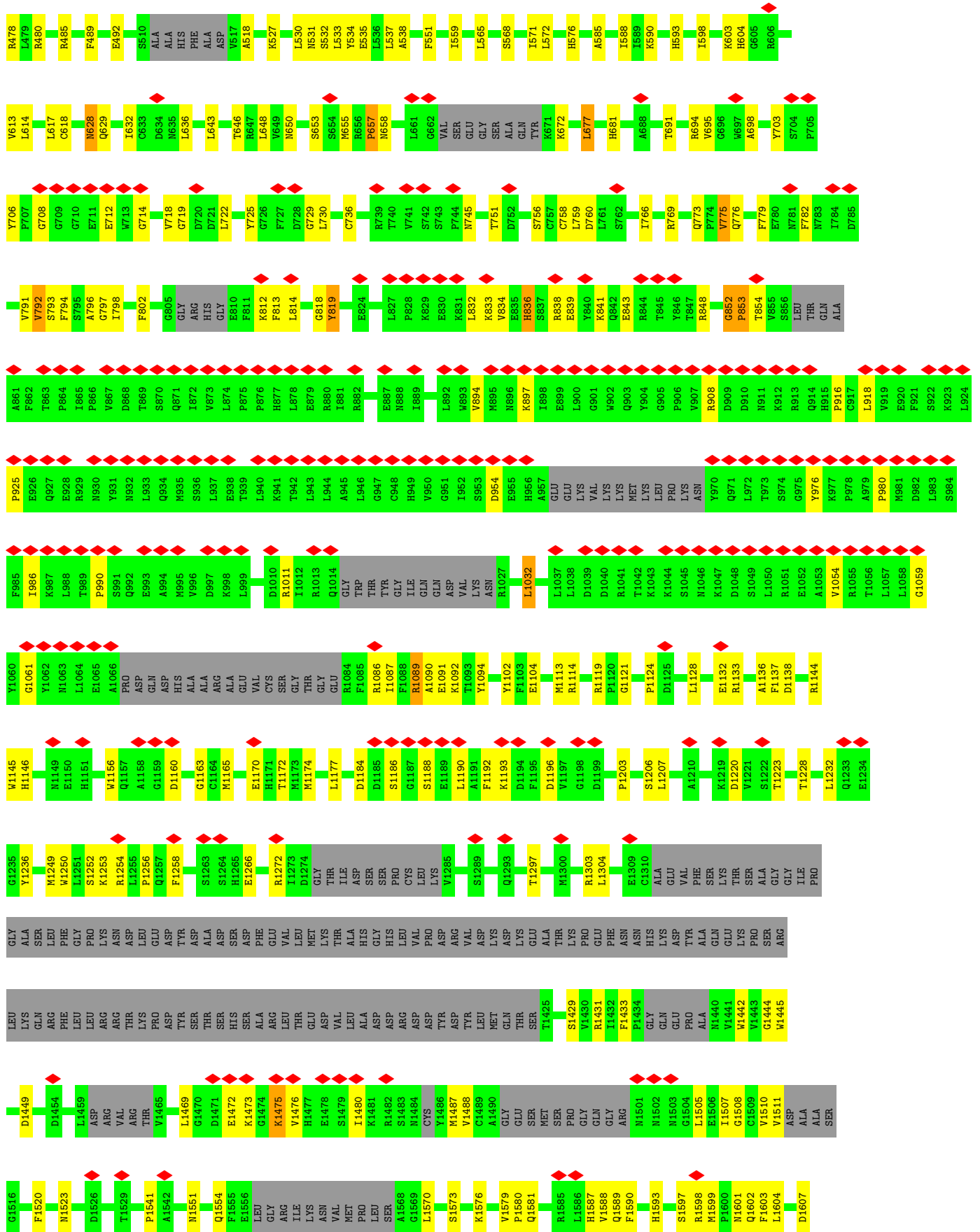


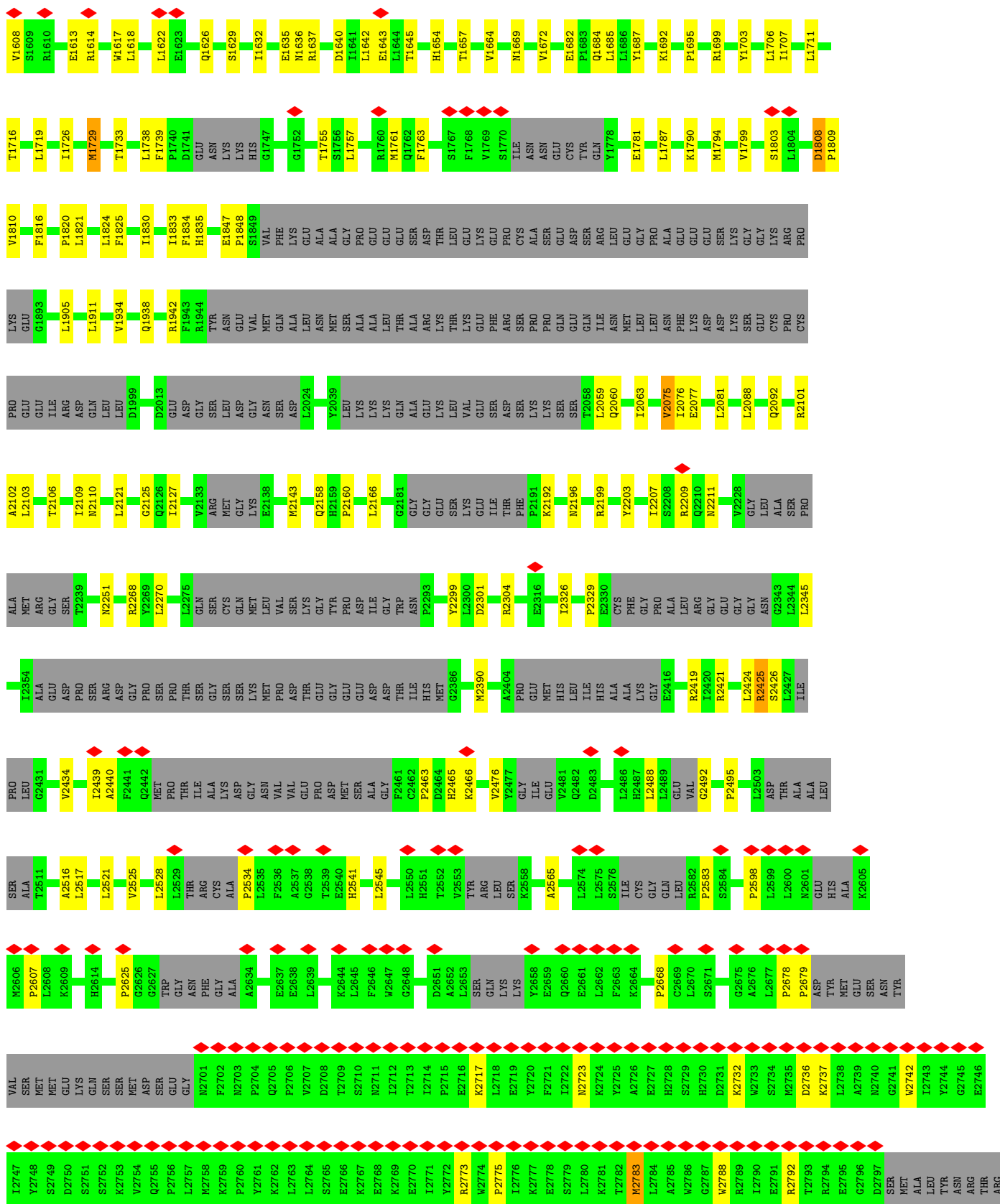
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| I865 | P866 | V867 | D868 | T869 | S870 | Q871 | I872 | V873 | L874 | P875 | P876 | H877 | L878 | E879 | R880 | I881 | R882 | E887 | N888 | I889 | L892 | V893 | V894 | M895 | N896 | K897 | I898 | E899 | L900 | G901 | V902 | Q903 | Y904 | G905 | P906 | V907 | R908 | D909 | D910 | N911 | K912 | R913 | H915 | P917 | L918 | V919 | F921 | S922 | K923 | L924 | P925 | E926 | Q927 | E928 | | | | |
| R929 | N930 | Y931 | N932 | L933 | Q934 | M935 | S936 | L937 | E938 | T939 | L940 | K941 | T942 | L943 | L944 | A945 | L946 | G947 | C948 | H949 | V950 | G951 | I952 | S953 | D954 | E955 | H956 | GLU | LYS | VAL | LYS | LYS | MET | LYS | LEU | PRO | LYS | ASN | Y970 | Q971 | L972 | T973 | S974 | G975 | Q976 | K977 | P978 | A979 | P980 | M981 | D982 | L983 | S984 | F985 | I986 | K987 | L988 | |
| T989 | P990 | S991 | Q992 | E993 | A994 | M995 | V996 | D997 | K998 | L999 | D1010 | I1011 | I1012 | A1013 | V1014 | GLY | TRP | THR | TYR | GLY | ILE | GLN | ASP | VAL | LYS | R1027 | R1028 | M1029 | P1030 | L1032 | L1037 | L1038 | D1039 | D1040 | R1041 | T1042 | K1043 | K1044 | S1045 | M1046 | K1047 | T1048 | S1049 | L1050 | R1051 | E1052 | A1053 | V1054 | R1055 | T1056 | L1057 | L1058 | G1059 | Y1060 | | | | |
| G1061 | Y1062 | N1063 | L1064 | E1065 | A1066 | PRO | ASP | GLN | ASP | HIS | ALA | ALA | ARG | ALA | GLU | ALA | I1071 | I1072 | V1073 | CYS | VAL | SER | GLY | THR | THR | GLY | GLU | R1084 | F1085 | I1087 | F1088 | R1089 | A1090 | E1091 | K1092 | T1093 | Y1094 | Y1102 | F1103 | E1104 | M1113 | R1114 | G1121 | P1124 | D1125 | L1128 | E1132 | R1133 | A1136 | F1137 | D1138 | R1144 | W1145 | H1146 | | | | |
| M1149 | E1150 | H1151 | W1156 | Q1157 | A1158 | G1159 | D1160 | G1163 | C1164 | M1165 | E1170 | H1171 | T1172 | M1173 | M1174 | L1177 | D1184 | D1185 | S1186 | G1187 | S1188 | E1189 | L1190 | F1192 | L1193 | D1194 | F1195 | D1196 | V1197 | G1198 | D1199 | P1203 | S1206 | L1207 | A1210 | K1219 | D1220 | V1221 | S1222 | T1223 | T1228 | L1232 | Q1233 | E1234 | G1235 | Y1236 | | | | | | | | | | | | |
| M1249 | W1250 | L1251 | S1252 | K1253 | R1254 | L1255 | P1256 | F1258 | S1263 | S1264 | E1266 | R1272 | I1273 | D1274 | GLY | THR | ILE | ASP | HIS | GLY | SER | PRO | CYS | VAL | LEU | V1285 | S1289 | Q1293 | T1297 | M1300 | R1303 | L1304 | E1309 | C1310 | ALA | GLU | VAL | PHE | GLN | LYS | THR | ALA | SER | LYS | THR | ALA | ALA | ALA | SER | | | | | | | | | |
| LEU | PHE | PRO | GLY | LYS | ASN | ASP | LEU | ASP | TYR | ASP | ALA | ASP | SER | PHE | GLU | VAL | LEU | THR | MET | GLY | LYS | THR | ALA | HIS | GLY | HIS | SER | PRO | CYS | VAL | LEU | ASP | PRO | ASP | ARG | VAL | VAL | THR | THR | ALA | ALA | ALA | GLN | GLU | LYS | THR | ALA | ALA | ALA | SER | | | | | | | | |
| ARG | PHE | LEU | LEU | ARG | ARG | THR | LYS | PRO | ASP | TYR | SER | THR | SER | HIS | SER | ALA | ALA | THR | LEU | THR | GLU | ASP | VAL | LEU | ALA | ASP | ASP | TYR | ASP | TYR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | THR | | | | | | |
| D1454 | L1459 | ARC | VAL | THR | THR | THR | V1465 | L1469 | G1470 | D1471 | E1472 | K1473 | G1474 | K1475 | V1476 | H1477 | E1478 | S1479 | I1480 | K1481 | R1482 | S1483 | N1484 | CYS | ASP | TYR | M1486 | M1487 | V1488 | C1489 | A1490 | GLY | GLN | THR | SER | T1425 | S1429 | V1430 | R1431 | I1432 | F1433 | P1434 | M1501 | M1502 | N1503 | I1507 | G1508 | C1509 | V1510 | V1511 | ASP | ALA | ALA | ALA | SER | G1516 | F1520 | D1526 |
| T1529 | P1541 | A1542 | M1551 | Q1554 | F1555 | E1556 | LEU | GLY | ARG | ILE | LYS | ASN | VAL | VAL | MET | PRO | LEU | SER | A1568 | K1576 | V1579 | P1580 | Q1581 | R1585 | L1586 | H1587 | V1588 | Q1589 | F1590 | H1593 | S1597 | R1598 | M1599 | P1600 | M1601 | Q1602 | F1603 | L1604 | D1607 | V1608 | S1609 | V1610 | E1613 | R1614 | W1617 | L1618 | L1622 | | | | | | | | | | | |
| E1623 | Q1626 | P1629 | I1632 | E1635 | N1636 | R1637 | D1640 | I1641 | L1642 | E1643 | T1645 | H1654 | T1657 | V1664 | M1669 | V1672 | E1682 | P1683 | Q1684 | L1685 | L1686 | Y1687 | K1692 | P1695 | R1699 | Y1703 | L1706 | I1707 | L1711 | T1716 | L1719 | M1720 | I1726 | M1729 | T1730 | T1733 | | | | | | | | | | | | | | | | | | | | | | |
| L1738 | F1739 | P1740 | D1741 | ASN | LYS | HIS | G1747 | G1752 | T1755 | S1756 | L1757 | R1760 | M1761 | Q1762 | F1763 | S1767 | F1768 | V1769 | S1770 | ILE | ASN | ASN | GLU | GLU | ASP | CYS | TYR | A1589 | Q1589 | F1590 | H1593 | S1597 | R1598 | M1599 | P1600 | M1601 | Q1602 | F1603 | L1604 | D1607 | V1608 | S1609 | V1610 | E1613 | R1614 | W1617 | L1618 | L1622 | | | | | | | | | | |
| I1830 | I1833 | F1834 | H1835 | E1847 | P1848 | S1849 | VAL | PHE | GLN | LYS | GLU | GLU | ALA | ALA | MET | SER | GLY | PRO | ALA | ALA | LEU | LEU | THR | ALA | SER | ARG | THR | THR | LEU | LEU | LYS | P1783 | L1786 | L1787 | V1799 | S1803 | L1804 | D1808 | P1809 | V1810 | G1883 | L1905 | L1911 | V1934 | D1999 | | | | | | | | | | | | | |
| Q1938 | R1942 | F1943 | H1944 | TYR | ASN | GLU | VAL | MET | GLN | ALA | LYS | GLU | ALA | ALA | MET | SER | GLY | PRO | ALA | ALA | LEU | LEU | THR | ALA | SER | ARG | THR | THR | LEU | LEU | LYS | P1783 | L1786 | L1787 | V1799 | S1803 | L1804 | D1808 | P1809 | V1810 | G1883 | L1905 | L1911 | V1934 | D1999 | | | | | | | | | | | | | |

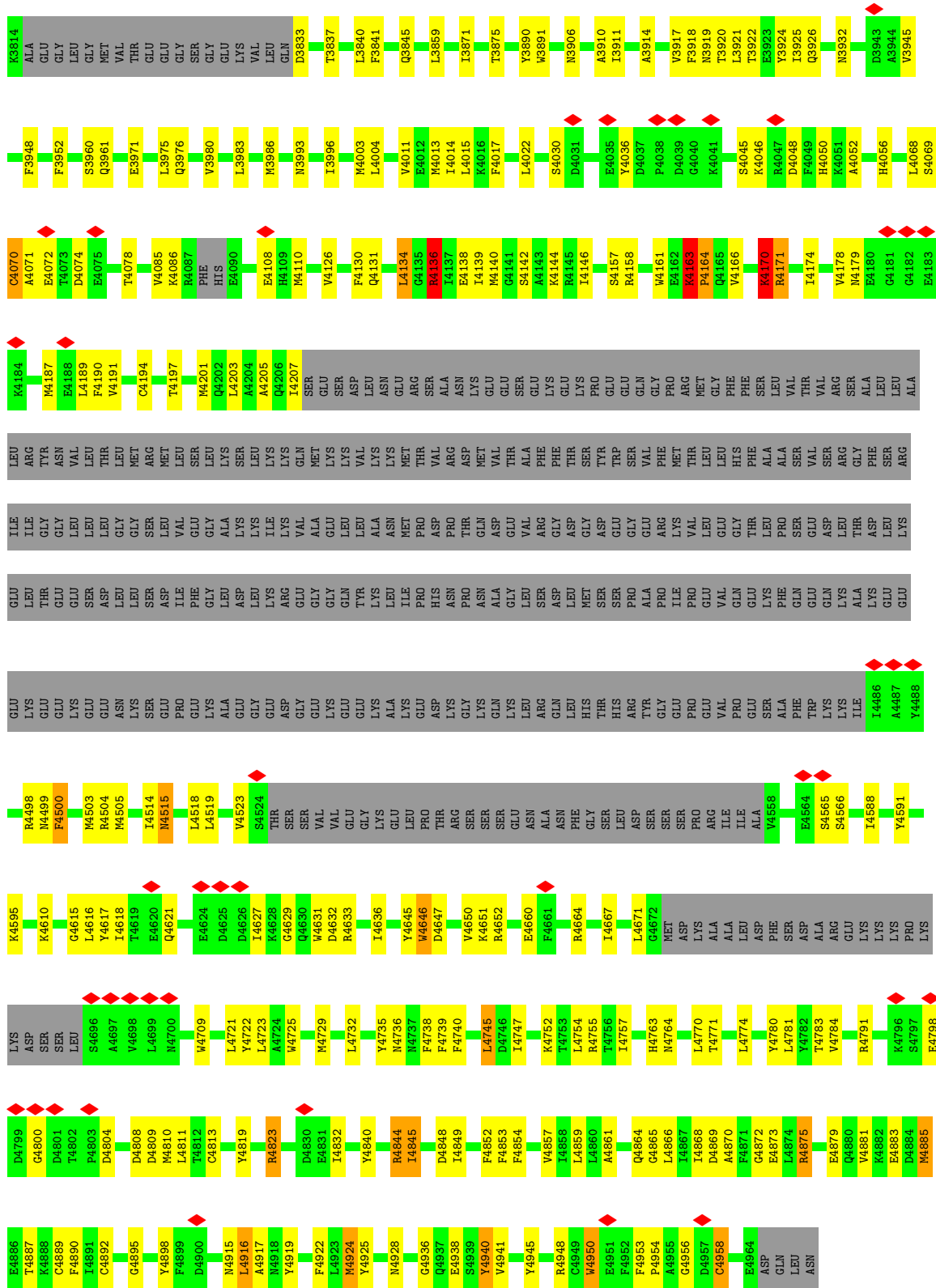


• Molecule 1: RyR2



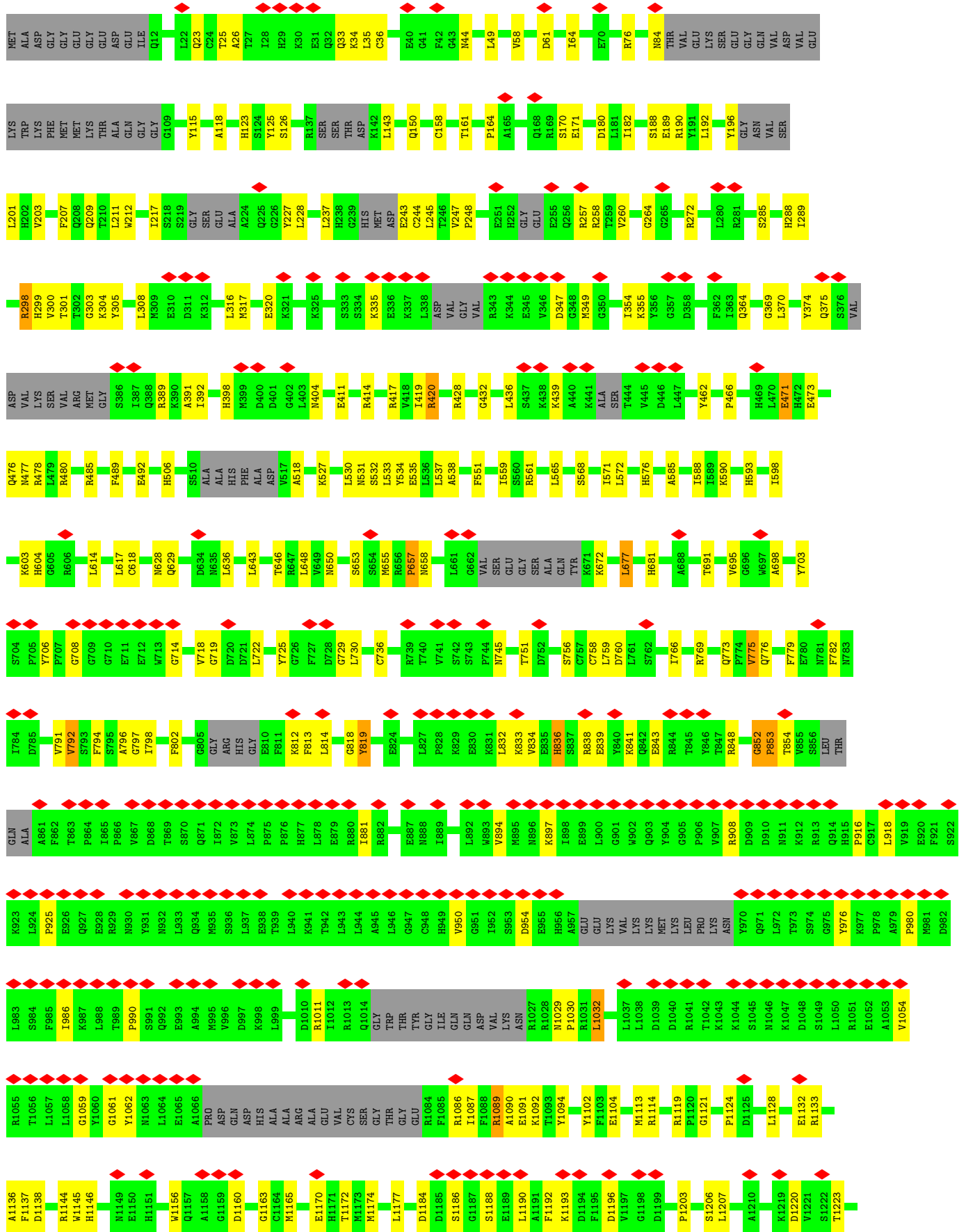


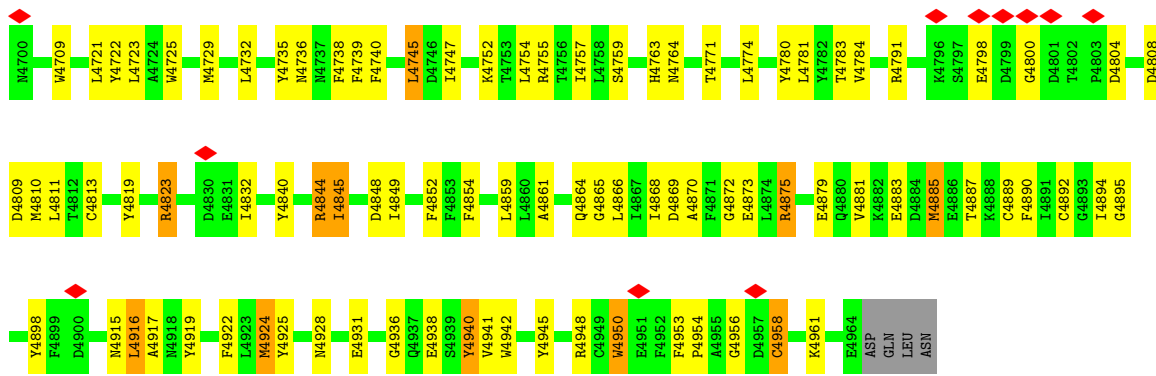




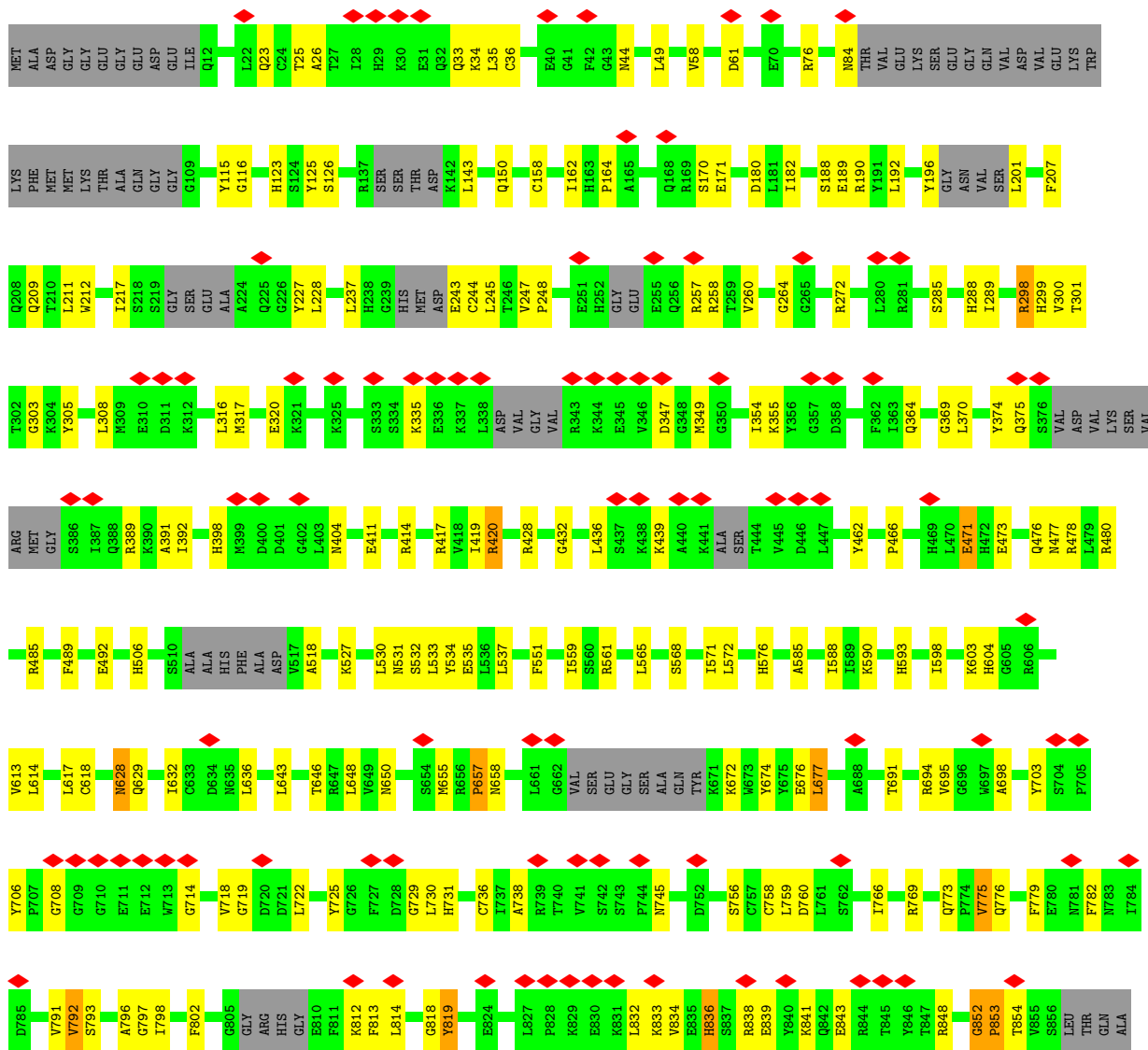
• Molecule 1: RyR2



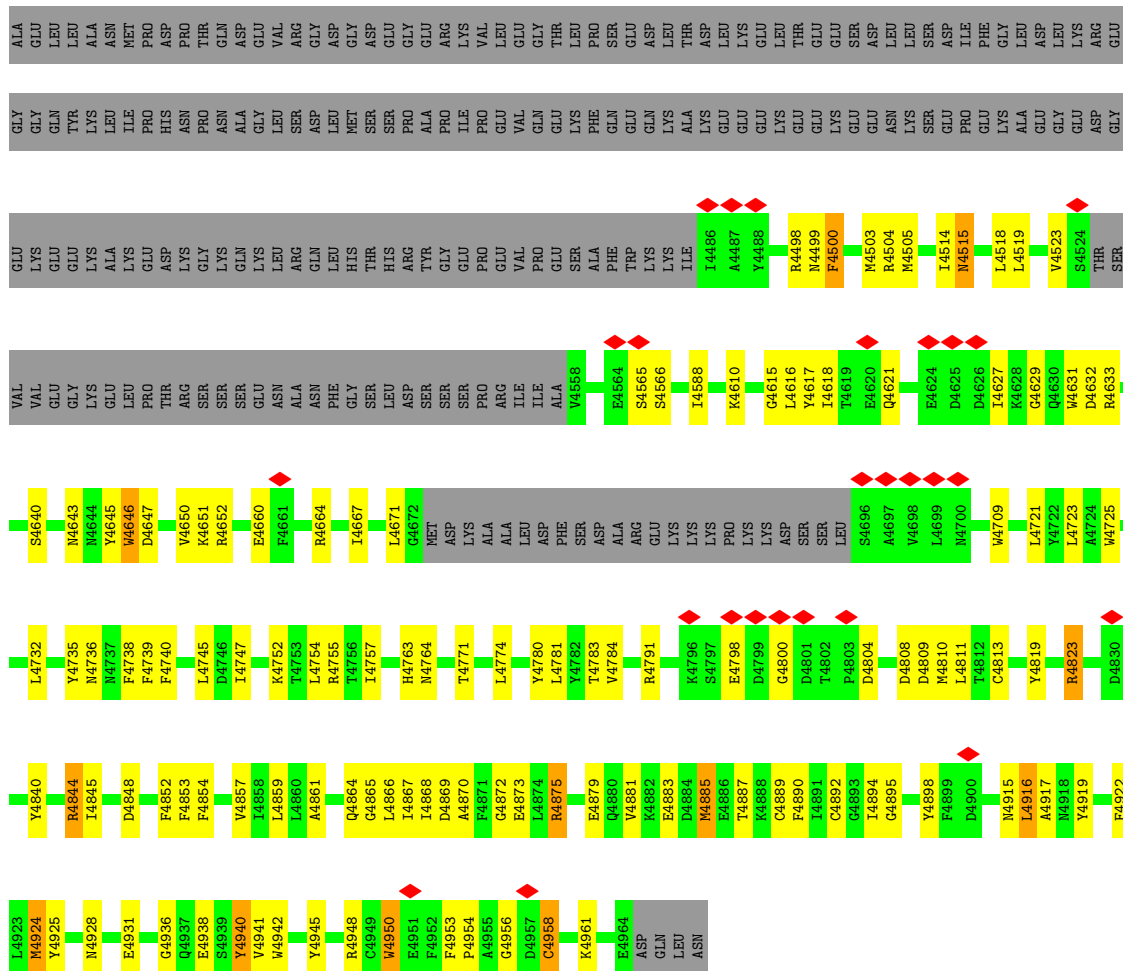




• Molecule 1: RyR2



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| A861 | F862 | T863 | P864 | I865 | P866 | V867 | D868 | T869 | S870 | Q871 | I872 | V873 | L874 | P875 | P876 | H877 | L878 | E879 | R880 | I881 | R882 | E887 | N888 | I889 | L892 | M893 | V894 | M895 | K896 | I897 | E899 | L900 | G901 | W902 | Q903 | Y904 | G905 | P906 | V907 | R908 | D909 | D910 | N911 | K912 | R913 | Q914 | H915 | P916 | C917 | L918 | V919 | E920 | F921 | S922 | K923 | L924 |
| P925 | E926 | Q927 | E928 | R929 | N930 | Y931 | N932 | L933 | Q934 | M935 | S936 | L937 | E938 | T939 | L940 | K941 | T942 | L943 | L944 | A945 | L946 | C947 | C948 | H949 | V950 | G951 | I952 | V953 | D954 | E955 | H956 | GLU | GLU | VAL | LYS | MET | LYS | LEU | PRO | LYS | ASN | Y970 | Q971 | L972 | T973 | S974 | G975 | Y976 | K977 | P978 | A979 | M981 | D982 | L983 | S984 | |
| F995 | I996 | K997 | L998 | T999 | P990 | S991 | Q992 | E993 | A994 | M995 | V996 | D997 | K998 | L999 | D1010 | I1011 | I1012 | R1013 | Q1014 | GLY | TRP | THR | THR | TYR | GLY | I1087 | R1088 | F1088 | A1089 | E1091 | R1027 | M1028 | N1029 | P1030 | L1032 | L1037 | L1038 | D1039 | D1040 | L1041 | T1042 | K1043 | K1044 | S1045 | M1046 | K1047 | D1048 | S1049 | L1050 | R1051 | E1052 | A1053 | V1054 | R1055 | T1056 | |
| L1057 | L1058 | G1059 | Y1060 | G1061 | Y1062 | H1063 | L1064 | E1065 | A1066 | PRO | ASP | GLN | ASP | HIS | ALA | ALA | ALA | ARG | ALA | GLU | VAL | CYS | GLY | THR | GLY | R1084 | F1085 | R1086 | I1087 | F1088 | A1089 | E1091 | K1092 | T1093 | Y1094 | Y1102 | F1103 | E1104 | M1113 | R1114 | D1119 | P1120 | G1121 | P1124 | D1125 | L1128 | E1132 | R1133 | A1136 | F1137 | | | | | | |
| D1138 | R1144 | W1145 | H1146 | M1149 | E1150 | H1151 | W1156 | A1158 | G1159 | D1160 | G1163 | C1164 | M1165 | E1170 | H1171 | T1172 | M1173 | M1174 | L1177 | D1184 | L1185 | S1186 | G1187 | S1188 | E1189 | L1190 | A1191 | F1192 | K1193 | D1194 | F1195 | D1196 | V1197 | R1113 | R1114 | D1199 | P1203 | S1206 | L1207 | A1210 | K1219 | M1220 | V1221 | T1223 | T1228 | | | | | | | | | | | |
| L1232 | Q1233 | E1234 | Y1236 | M1249 | W1250 | L1251 | S1252 | K1253 | R1254 | L1255 | L1256 | Q1257 | F1258 | S1263 | S1264 | H1265 | E1266 | R1272 | H1273 | D1274 | GLY | THR | ILE | ALA | HIS | GLY | SER | PRO | CYS | LEU | ASP | ARG | VAL | ASP | S1289 | Q1293 | T1297 | M1300 | R1303 | L1304 | E1309 | C1310 | ALA | VAL | PHE | LYS | THR | ALA | GLN | SER | LYS | | | | | |
| GLY | ILE | PRO | GLY | ALA | LYS | SER | LEU | PHE | LEU | GLY | PRO | ASP | ASP | THR | ALA | ASP | SER | PHE | VAL | LEU | MET | LYS | THR | ALA | HIS | GLY | HIS | LEU | VAL | PRO | LEU | ASP | ARG | VAL | ASP | ASP | S1289 | Q1293 | T1297 | M1300 | R1303 | L1304 | E1309 | C1310 | ALA | VAL | PHE | GLN | GLU | LYS | | | | | | |
| PRO | SER | ARG | LEU | LYS | GLN | ARG | PHE | LEU | LEU | ASP | LEU | THR | LYS | PRO | ASP | THR | SER | THR | ALA | ALA | ALA | ASP | THR | LEU | LEU | ALA | ASP | ASP | ASP | ASP | TYR | ASP | ASP | VAL | VAL | TYR | T1425 | S1429 | V1430 | R1431 | I1432 | F1433 | V1434 | GLY | GLN | GLU | PRO | ALA | ALA | M1440 | V1441 | W1442 | | | | |
| W1443 | G1444 | W1445 | D1449 | D1454 | L1459 | ASP | ARG | VAL | ARG | THR | LYS | V1465 | L1469 | G1470 | D1471 | E1472 | K1473 | G1474 | K1475 | V1476 | H1477 | E1478 | S1479 | I1480 | K1481 | R1482 | S1483 | M1484 | CYS | V1486 | M1487 | V1488 | C1489 | A1490 | GLY | GLU | SER | MET | S1429 | V1430 | R1431 | I1432 | F1433 | V1434 | N1501 | M1502 | N1503 | I1507 | G1508 | C1509 | V1510 | V1511 | ASP | ALA | ALA | |
| SER | G1516 | F1520 | D1526 | T1529 | P1541 | A1542 | M1551 | Q1554 | F1555 | E1556 | LEU | GLY | ARG | ILE | LYS | ASN | VAL | MET | PRO | LEU | SER | A1568 | K1576 | V1579 | P1580 | Q1581 | R1585 | L1586 | H1587 | V1588 | Q1589 | F1590 | H1593 | S1597 | R1598 | M1599 | P1600 | M1601 | Q1602 | F1603 | L1604 | D1607 | V1608 | S1609 | V1610 | E1613 | | | | | | | | | | |
| R1614 | W1617 | L1618 | L1622 | E1623 | Q1626 | S1629 | I1632 | E1635 | N1636 | R1637 | D1640 | I1641 | E1642 | E1643 | L1644 | T1645 | K1652 | F1653 | H1654 | T1657 | V1664 | M1669 | V1672 | E1682 | Q1684 | L1685 | L1686 | Y1687 | K1692 | P1695 | R1699 | Y1703 | L1706 | I1707 | L1711 | V1716 | L1719 | | | | | | | | | | | | | | | | | | | |
| M1720 | I1726 | M1729 | T1733 | L1738 | F1739 | P1740 | D1741 | GLU | ASN | LYS | HIS | G1747 | G1752 | T1755 | S1756 | L1757 | R1760 | M1761 | F1762 | F1763 | S1767 | F1768 | V1769 | S1770 | ILE | ASN | ASN | GLU | CYS | ASN | GLU | GLN | E1781 | F1782 | P1783 | I1786 | L1787 | V1799 | S1803 | L1804 | D1808 | P1809 | V1810 | F1816 | | | | | | | | | | | | |
| P1820 | L1824 | F1825 | I1830 | I1833 | F1834 | H1835 | E1847 | P1848 | S1849 | VAL | PHE | LYS | LYS | GLU | ALA | ALA | GLY | PRO | GLU | GLU | SER | ALA | ARG | THR | LEU | LYS | ASN | ALA | ALA | GLU | GLY | PRO | PHE | LYS | GLU | ASP | SER | LYS | GLY | GLY | LYS | ARG | PRO | PRO | LYS | GLU | GLU | ILE | | | | | | | | |
| L1905 | L1911 | V1934 | Q1938 | R1942 | F1943 | R1944 | TYR | ASN | GLU | VAL | MET | GLN | ALA | LEU | ASN | MET | SER | ALA | ALA | LEU | THR | ALA | ARG | THR | LYS | GLY | PHE | ARG | PRO | PRO | PRO | GLN | GLU | GLN | ILE | ASN | LEU | LEU | LEU | ASN | ALA | PRO | PRO | GLU | GLU | ILE | | | | | | | | | | |



4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C4 | Depositor |
| Number of particles used | 48454 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 44 | Depositor |
| Minimum defocus (nm) | Not provided | |
| Maximum defocus (nm) | Not provided | |
| Magnification | Not provided | |
| Image detector | FEI FALCON II (4k x 4k) | Depositor |
| Maximum map value | 0.173 | Depositor |
| Minimum map value | -0.090 | Depositor |
| Average map value | 0.000 | Depositor |
| Map value standard deviation | 0.007 | Depositor |
| Recommended contour level | 0.04 | Depositor |
| Map size (Å) | 546.0, 546.0, 546.0 | wwPDB |
| Map dimensions | 520, 520, 520 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.05, 1.05, 1.05 | 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:
ZN

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 | 0.98 | 29/26751 (0.1%) | 0.94 | 78/36149 (0.2%) |
| 1 | B | 0.98 | 29/26751 (0.1%) | 0.94 | 78/36149 (0.2%) |
| 1 | C | 0.98 | 29/26751 (0.1%) | 0.94 | 78/36149 (0.2%) |
| 1 | D | 0.98 | 29/26751 (0.1%) | 0.94 | 78/36149 (0.2%) |
| All | All | 0.98 | 116/107004 (0.1%) | 0.94 | 312/144596 (0.2%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | A | 0 | 30 |
| 1 | B | 0 | 30 |
| 1 | C | 0 | 30 |
| 1 | D | 0 | 30 |
| All | All | 0 | 120 |

All (116) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|--------|-------------|----------|
| 1 | A | 4945 | TYR | CG-CD1 | -10.60 | 1.25 | 1.39 |
| 1 | B | 4945 | TYR | CG-CD1 | -10.60 | 1.25 | 1.39 |
| 1 | C | 4945 | TYR | CG-CD1 | -10.60 | 1.25 | 1.39 |
| 1 | D | 4945 | TYR | CG-CD1 | -10.60 | 1.25 | 1.39 |
| 1 | A | 4950 | TRP | CE3-CZ3 | -9.89 | 1.21 | 1.38 |
| 1 | B | 4950 | TRP | CE3-CZ3 | -9.89 | 1.21 | 1.38 |
| 1 | C | 4950 | TRP | CE3-CZ3 | -9.89 | 1.21 | 1.38 |
| 1 | D | 4950 | TRP | CE3-CZ3 | -9.89 | 1.21 | 1.38 |
| 1 | A | 4190 | PHE | CG-CD1 | -8.95 | 1.25 | 1.38 |
| 1 | B | 4190 | PHE | CG-CD1 | -8.95 | 1.25 | 1.38 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 1 | C | 4190 | PHE | CG-CD1 | -8.95 | 1.25 | 1.38 |
| 1 | D | 4190 | PHE | CG-CD1 | -8.95 | 1.25 | 1.38 |
| 1 | A | 4919 | TYR | CG-CD1 | -8.51 | 1.28 | 1.39 |
| 1 | B | 4919 | TYR | CG-CD1 | -8.51 | 1.28 | 1.39 |
| 1 | C | 4919 | TYR | CG-CD1 | -8.51 | 1.28 | 1.39 |
| 1 | D | 4919 | TYR | CG-CD1 | -8.51 | 1.28 | 1.39 |
| 1 | A | 4940 | TYR | CG-CD1 | -8.37 | 1.28 | 1.39 |
| 1 | B | 4940 | TYR | CG-CD1 | -8.37 | 1.28 | 1.39 |
| 1 | C | 4940 | TYR | CG-CD1 | -8.37 | 1.28 | 1.39 |
| 1 | D | 4940 | TYR | CG-CD1 | -8.37 | 1.28 | 1.39 |
| 1 | A | 4953 | PHE | CG-CD2 | -8.12 | 1.26 | 1.38 |
| 1 | B | 4953 | PHE | CG-CD2 | -8.12 | 1.26 | 1.38 |
| 1 | C | 4953 | PHE | CG-CD2 | -8.12 | 1.26 | 1.38 |
| 1 | D | 4953 | PHE | CG-CD2 | -8.12 | 1.26 | 1.38 |
| 1 | A | 4945 | TYR | CE2-CZ | -7.18 | 1.29 | 1.38 |
| 1 | B | 4945 | TYR | CE2-CZ | -7.18 | 1.29 | 1.38 |
| 1 | C | 4945 | TYR | CE2-CZ | -7.18 | 1.29 | 1.38 |
| 1 | D | 4945 | TYR | CE2-CZ | -7.18 | 1.29 | 1.38 |
| 1 | A | 4500 | PHE | CG-CD1 | -6.99 | 1.28 | 1.38 |
| 1 | B | 4500 | PHE | CG-CD1 | -6.99 | 1.28 | 1.38 |
| 1 | C | 4500 | PHE | CG-CD1 | -6.99 | 1.28 | 1.38 |
| 1 | D | 4500 | PHE | CG-CD1 | -6.99 | 1.28 | 1.38 |
| 1 | A | 4953 | PHE | CE1-CZ | -6.97 | 1.24 | 1.37 |
| 1 | B | 4953 | PHE | CE1-CZ | -6.97 | 1.24 | 1.37 |
| 1 | C | 4953 | PHE | CE1-CZ | -6.97 | 1.24 | 1.37 |
| 1 | D | 4953 | PHE | CE1-CZ | -6.97 | 1.24 | 1.37 |
| 1 | A | 4646 | TRP | CG-CD1 | -6.90 | 1.27 | 1.36 |
| 1 | B | 4646 | TRP | CG-CD1 | -6.90 | 1.27 | 1.36 |
| 1 | C | 4646 | TRP | CG-CD1 | -6.90 | 1.27 | 1.36 |
| 1 | D | 4646 | TRP | CG-CD1 | -6.90 | 1.27 | 1.36 |
| 1 | A | 4898 | TYR | CG-CD2 | -6.79 | 1.30 | 1.39 |
| 1 | B | 4898 | TYR | CG-CD2 | -6.79 | 1.30 | 1.39 |
| 1 | C | 4898 | TYR | CG-CD2 | -6.79 | 1.30 | 1.39 |
| 1 | D | 4898 | TYR | CG-CD2 | -6.79 | 1.30 | 1.39 |
| 1 | A | 4895 | GLY | C-O | -6.48 | 1.13 | 1.23 |
| 1 | B | 4895 | GLY | C-O | -6.48 | 1.13 | 1.23 |
| 1 | C | 4895 | GLY | C-O | -6.48 | 1.13 | 1.23 |
| 1 | D | 4895 | GLY | C-O | -6.48 | 1.13 | 1.23 |
| 1 | A | 4136 | ARG | C-O | -6.46 | 1.11 | 1.23 |
| 1 | B | 4136 | ARG | C-O | -6.46 | 1.11 | 1.23 |
| 1 | C | 4136 | ARG | C-O | -6.46 | 1.11 | 1.23 |
| 1 | D | 4136 | ARG | C-O | -6.46 | 1.11 | 1.23 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 1 | A | 4919 | TYR | CE1-CZ | -6.08 | 1.30 | 1.38 |
| 1 | B | 4919 | TYR | CE1-CZ | -6.08 | 1.30 | 1.38 |
| 1 | C | 4919 | TYR | CE1-CZ | -6.08 | 1.30 | 1.38 |
| 1 | D | 4919 | TYR | CE1-CZ | -6.08 | 1.30 | 1.38 |
| 1 | A | 4138 | GLU | CD-OE1 | -5.87 | 1.19 | 1.25 |
| 1 | B | 4138 | GLU | CD-OE1 | -5.87 | 1.19 | 1.25 |
| 1 | C | 4138 | GLU | CD-OE1 | -5.87 | 1.19 | 1.25 |
| 1 | D | 4138 | GLU | CD-OE1 | -5.87 | 1.19 | 1.25 |
| 1 | A | 4922 | PHE | CD2-CE2 | -5.83 | 1.27 | 1.39 |
| 1 | B | 4922 | PHE | CD2-CE2 | -5.83 | 1.27 | 1.39 |
| 1 | C | 4922 | PHE | CD2-CE2 | -5.83 | 1.27 | 1.39 |
| 1 | D | 4922 | PHE | CD2-CE2 | -5.83 | 1.27 | 1.39 |
| 1 | A | 4950 | TRP | CB-CG | -5.79 | 1.39 | 1.50 |
| 1 | B | 4950 | TRP | CB-CG | -5.79 | 1.39 | 1.50 |
| 1 | C | 4950 | TRP | CB-CG | -5.79 | 1.39 | 1.50 |
| 1 | D | 4950 | TRP | CB-CG | -5.79 | 1.39 | 1.50 |
| 1 | A | 4854 | PHE | CG-CD1 | 5.72 | 1.47 | 1.38 |
| 1 | B | 4854 | PHE | CG-CD1 | 5.72 | 1.47 | 1.38 |
| 1 | C | 4854 | PHE | CG-CD1 | 5.72 | 1.47 | 1.38 |
| 1 | D | 4854 | PHE | CG-CD1 | 5.72 | 1.47 | 1.38 |
| 1 | A | 4954 | PRO | CA-C | -5.71 | 1.41 | 1.52 |
| 1 | B | 4954 | PRO | CA-C | -5.71 | 1.41 | 1.52 |
| 1 | C | 4954 | PRO | CA-C | -5.71 | 1.41 | 1.52 |
| 1 | D | 4954 | PRO | CA-C | -5.71 | 1.41 | 1.52 |
| 1 | A | 4925 | TYR | CG-CD2 | -5.62 | 1.31 | 1.39 |
| 1 | B | 4925 | TYR | CG-CD2 | -5.62 | 1.31 | 1.39 |
| 1 | C | 4925 | TYR | CG-CD2 | -5.62 | 1.31 | 1.39 |
| 1 | D | 4925 | TYR | CG-CD2 | -5.62 | 1.31 | 1.39 |
| 1 | A | 4735 | TYR | CE2-CZ | -5.60 | 1.31 | 1.38 |
| 1 | B | 4735 | TYR | CE2-CZ | -5.60 | 1.31 | 1.38 |
| 1 | C | 4735 | TYR | CE2-CZ | -5.60 | 1.31 | 1.38 |
| 1 | D | 4735 | TYR | CE2-CZ | -5.60 | 1.31 | 1.38 |
| 1 | A | 1825 | PHE | CG-CD2 | -5.56 | 1.30 | 1.38 |
| 1 | B | 1825 | PHE | CG-CD2 | -5.56 | 1.30 | 1.38 |
| 1 | C | 1825 | PHE | CG-CD2 | -5.56 | 1.30 | 1.38 |
| 1 | D | 1825 | PHE | CG-CD2 | -5.56 | 1.30 | 1.38 |
| 1 | A | 4890 | PHE | CB-CG | -5.45 | 1.42 | 1.51 |
| 1 | B | 4890 | PHE | CB-CG | -5.45 | 1.42 | 1.51 |
| 1 | C | 4890 | PHE | CB-CG | -5.45 | 1.42 | 1.51 |
| 1 | D | 4890 | PHE | CB-CG | -5.45 | 1.42 | 1.51 |
| 1 | A | 471 | GLU | CG-CD | 5.44 | 1.60 | 1.51 |
| 1 | B | 471 | GLU | CG-CD | 5.44 | 1.60 | 1.51 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 1 | C | 471 | GLU | CG-CD | 5.44 | 1.60 | 1.51 |
| 1 | D | 471 | GLU | CG-CD | 5.44 | 1.60 | 1.51 |
| 1 | A | 4958 | CYS | CB-SG | -5.40 | 1.73 | 1.81 |
| 1 | B | 4958 | CYS | CB-SG | -5.40 | 1.73 | 1.81 |
| 1 | C | 4958 | CYS | CB-SG | -5.40 | 1.73 | 1.81 |
| 1 | D | 4958 | CYS | CB-SG | -5.40 | 1.73 | 1.81 |
| 1 | A | 3781 | TYR | CG-CD1 | -5.39 | 1.32 | 1.39 |
| 1 | B | 3781 | TYR | CG-CD1 | -5.39 | 1.32 | 1.39 |
| 1 | C | 3781 | TYR | CG-CD1 | -5.39 | 1.32 | 1.39 |
| 1 | D | 3781 | TYR | CG-CD1 | -5.39 | 1.32 | 1.39 |
| 1 | A | 3700 | CYS | CB-SG | 5.37 | 1.91 | 1.82 |
| 1 | B | 3700 | CYS | CB-SG | 5.37 | 1.91 | 1.82 |
| 1 | C | 3700 | CYS | CB-SG | 5.37 | 1.91 | 1.82 |
| 1 | D | 3700 | CYS | CB-SG | 5.37 | 1.91 | 1.82 |
| 1 | A | 3890 | TYR | CE2-CZ | 5.27 | 1.45 | 1.38 |
| 1 | B | 3890 | TYR | CE2-CZ | 5.27 | 1.45 | 1.38 |
| 1 | C | 3890 | TYR | CE2-CZ | 5.27 | 1.45 | 1.38 |
| 1 | D | 3890 | TYR | CE2-CZ | 5.27 | 1.45 | 1.38 |
| 1 | A | 4735 | TYR | CG-CD1 | -5.18 | 1.32 | 1.39 |
| 1 | B | 4735 | TYR | CG-CD1 | -5.18 | 1.32 | 1.39 |
| 1 | C | 4735 | TYR | CG-CD1 | -5.18 | 1.32 | 1.39 |
| 1 | D | 4735 | TYR | CG-CD1 | -5.18 | 1.32 | 1.39 |

All (312) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1 | A | 1089 | ARG | NE-CZ-NH2 | -9.65 | 115.48 | 120.30 |
| 1 | B | 1089 | ARG | NE-CZ-NH2 | -9.65 | 115.48 | 120.30 |
| 1 | C | 1089 | ARG | NE-CZ-NH2 | -9.65 | 115.48 | 120.30 |
| 1 | D | 1089 | ARG | NE-CZ-NH2 | -9.65 | 115.48 | 120.30 |
| 1 | A | 4171 | ARG | NE-CZ-NH2 | -8.50 | 116.05 | 120.30 |
| 1 | B | 4171 | ARG | NE-CZ-NH2 | -8.50 | 116.05 | 120.30 |
| 1 | C | 4171 | ARG | NE-CZ-NH2 | -8.50 | 116.05 | 120.30 |
| 1 | D | 4171 | ARG | NE-CZ-NH2 | -8.50 | 116.05 | 120.30 |
| 1 | A | 4948 | ARG | NE-CZ-NH1 | -8.45 | 116.08 | 120.30 |
| 1 | B | 4948 | ARG | NE-CZ-NH1 | -8.45 | 116.08 | 120.30 |
| 1 | C | 4948 | ARG | NE-CZ-NH1 | -8.45 | 116.08 | 120.30 |
| 1 | D | 4948 | ARG | NE-CZ-NH1 | -8.45 | 116.08 | 120.30 |
| 1 | A | 2583 | PRO | N-CA-CB | 8.35 | 113.31 | 103.30 |
| 1 | B | 2583 | PRO | N-CA-CB | 8.35 | 113.31 | 103.30 |
| 1 | C | 2583 | PRO | N-CA-CB | 8.35 | 113.31 | 103.30 |
| 1 | D | 2583 | PRO | N-CA-CB | 8.35 | 113.31 | 103.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | A | 3104 | PRO | N-CA-CB | 8.32 | 113.29 | 103.30 |
| 1 | B | 3104 | PRO | N-CA-CB | 8.32 | 113.29 | 103.30 |
| 1 | C | 3104 | PRO | N-CA-CB | 8.32 | 113.29 | 103.30 |
| 1 | D | 3104 | PRO | N-CA-CB | 8.32 | 113.29 | 103.30 |
| 1 | A | 4844 | ARG | NE-CZ-NH2 | 7.94 | 124.27 | 120.30 |
| 1 | B | 4844 | ARG | NE-CZ-NH2 | 7.94 | 124.27 | 120.30 |
| 1 | C | 4844 | ARG | NE-CZ-NH2 | 7.94 | 124.27 | 120.30 |
| 1 | D | 4844 | ARG | NE-CZ-NH2 | 7.94 | 124.27 | 120.30 |
| 1 | A | 3778 | MET | CG-SD-CE | 7.94 | 112.90 | 100.20 |
| 1 | B | 3778 | MET | CG-SD-CE | 7.94 | 112.90 | 100.20 |
| 1 | C | 3778 | MET | CG-SD-CE | 7.94 | 112.90 | 100.20 |
| 1 | D | 3778 | MET | CG-SD-CE | 7.94 | 112.90 | 100.20 |
| 1 | A | 2495 | PRO | N-CA-CB | 7.79 | 112.64 | 103.30 |
| 1 | B | 2495 | PRO | N-CA-CB | 7.79 | 112.64 | 103.30 |
| 1 | C | 2495 | PRO | N-CA-CB | 7.79 | 112.64 | 103.30 |
| 1 | D | 2495 | PRO | N-CA-CB | 7.79 | 112.64 | 103.30 |
| 1 | A | 2736 | ASP | CB-CG-OD2 | 7.77 | 125.30 | 118.30 |
| 1 | B | 2736 | ASP | CB-CG-OD2 | 7.77 | 125.30 | 118.30 |
| 1 | C | 2736 | ASP | CB-CG-OD2 | 7.77 | 125.30 | 118.30 |
| 1 | D | 2736 | ASP | CB-CG-OD2 | 7.77 | 125.30 | 118.30 |
| 1 | A | 4139 | ILE | CG1-CB-CG2 | -7.39 | 95.15 | 111.40 |
| 1 | B | 4139 | ILE | CG1-CB-CG2 | -7.39 | 95.15 | 111.40 |
| 1 | C | 4139 | ILE | CG1-CB-CG2 | -7.39 | 95.15 | 111.40 |
| 1 | D | 4139 | ILE | CG1-CB-CG2 | -7.39 | 95.15 | 111.40 |
| 1 | A | 347 | ASP | CB-CG-OD1 | 7.38 | 124.94 | 118.30 |
| 1 | B | 347 | ASP | CB-CG-OD1 | 7.38 | 124.94 | 118.30 |
| 1 | C | 347 | ASP | CB-CG-OD1 | 7.38 | 124.94 | 118.30 |
| 1 | D | 347 | ASP | CB-CG-OD1 | 7.38 | 124.94 | 118.30 |
| 1 | A | 4885 | MET | CG-SD-CE | -7.29 | 88.53 | 100.20 |
| 1 | B | 4885 | MET | CG-SD-CE | -7.29 | 88.53 | 100.20 |
| 1 | C | 4885 | MET | CG-SD-CE | -7.29 | 88.53 | 100.20 |
| 1 | D | 4885 | MET | CG-SD-CE | -7.29 | 88.53 | 100.20 |
| 1 | A | 2598 | PRO | N-CA-CB | 7.25 | 112.00 | 103.30 |
| 1 | B | 2598 | PRO | N-CA-CB | 7.25 | 112.00 | 103.30 |
| 1 | C | 2598 | PRO | N-CA-CB | 7.25 | 112.00 | 103.30 |
| 1 | D | 2598 | PRO | N-CA-CB | 7.25 | 112.00 | 103.30 |
| 1 | A | 4505 | MET | CB-CG-SD | 7.13 | 133.79 | 112.40 |
| 1 | B | 4505 | MET | CB-CG-SD | 7.13 | 133.79 | 112.40 |
| 1 | C | 4505 | MET | CB-CG-SD | 7.13 | 133.79 | 112.40 |
| 1 | D | 4505 | MET | CB-CG-SD | 7.13 | 133.79 | 112.40 |
| 1 | A | 4745 | LEU | CB-CG-CD2 | 7.06 | 123.01 | 111.00 |
| 1 | B | 4745 | LEU | CB-CG-CD2 | 7.06 | 123.01 | 111.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | C | 4745 | LEU | CB-CG-CD2 | 7.06 | 123.01 | 111.00 |
| 1 | D | 4745 | LEU | CB-CG-CD2 | 7.06 | 123.01 | 111.00 |
| 1 | A | 2534 | PRO | N-CA-CB | 7.04 | 111.75 | 103.30 |
| 1 | B | 2534 | PRO | N-CA-CB | 7.04 | 111.75 | 103.30 |
| 1 | C | 2534 | PRO | N-CA-CB | 7.04 | 111.75 | 103.30 |
| 1 | D | 2534 | PRO | N-CA-CB | 7.04 | 111.75 | 103.30 |
| 1 | A | 3918 | PHE | CB-CG-CD2 | -7.01 | 115.89 | 120.80 |
| 1 | B | 3918 | PHE | CB-CG-CD2 | -7.01 | 115.89 | 120.80 |
| 1 | C | 3918 | PHE | CB-CG-CD2 | -7.01 | 115.89 | 120.80 |
| 1 | D | 3918 | PHE | CB-CG-CD2 | -7.01 | 115.89 | 120.80 |
| 1 | A | 4859 | LEU | CB-CG-CD2 | 6.97 | 122.84 | 111.00 |
| 1 | B | 4859 | LEU | CB-CG-CD2 | 6.97 | 122.84 | 111.00 |
| 1 | C | 4859 | LEU | CB-CG-CD2 | 6.97 | 122.84 | 111.00 |
| 1 | D | 4859 | LEU | CB-CG-CD2 | 6.97 | 122.84 | 111.00 |
| 1 | A | 4859 | LEU | CB-CG-CD1 | -6.85 | 99.35 | 111.00 |
| 1 | B | 4859 | LEU | CB-CG-CD1 | -6.85 | 99.35 | 111.00 |
| 1 | C | 4859 | LEU | CB-CG-CD1 | -6.85 | 99.35 | 111.00 |
| 1 | D | 4859 | LEU | CB-CG-CD1 | -6.85 | 99.35 | 111.00 |
| 1 | A | 4136 | ARG | NE-CZ-NH2 | -6.69 | 116.96 | 120.30 |
| 1 | B | 4136 | ARG | NE-CZ-NH2 | -6.69 | 116.96 | 120.30 |
| 1 | C | 4136 | ARG | NE-CZ-NH2 | -6.69 | 116.96 | 120.30 |
| 1 | D | 4136 | ARG | NE-CZ-NH2 | -6.69 | 116.96 | 120.30 |
| 1 | A | 2625 | PRO | N-CA-CB | 6.61 | 111.23 | 103.30 |
| 1 | B | 2625 | PRO | N-CA-CB | 6.61 | 111.23 | 103.30 |
| 1 | C | 2625 | PRO | N-CA-CB | 6.61 | 111.23 | 103.30 |
| 1 | D | 2625 | PRO | N-CA-CB | 6.61 | 111.23 | 103.30 |
| 1 | A | 4500 | PHE | CB-CG-CD2 | 6.56 | 125.39 | 120.80 |
| 1 | B | 4500 | PHE | CB-CG-CD2 | 6.56 | 125.39 | 120.80 |
| 1 | C | 4500 | PHE | CB-CG-CD2 | 6.56 | 125.39 | 120.80 |
| 1 | D | 4500 | PHE | CB-CG-CD2 | 6.56 | 125.39 | 120.80 |
| 1 | A | 3683 | LEU | CB-CG-CD1 | -6.41 | 100.11 | 111.00 |
| 1 | B | 3683 | LEU | CB-CG-CD1 | -6.41 | 100.11 | 111.00 |
| 1 | C | 3683 | LEU | CB-CG-CD1 | -6.41 | 100.11 | 111.00 |
| 1 | D | 3683 | LEU | CB-CG-CD1 | -6.41 | 100.11 | 111.00 |
| 1 | A | 2678 | PRO | N-CA-CB | 6.36 | 110.93 | 103.30 |
| 1 | B | 2678 | PRO | N-CA-CB | 6.36 | 110.93 | 103.30 |
| 1 | C | 2678 | PRO | N-CA-CB | 6.36 | 110.93 | 103.30 |
| 1 | D | 2678 | PRO | N-CA-CB | 6.36 | 110.93 | 103.30 |
| 1 | A | 4938 | GLU | OE1-CD-OE2 | 6.35 | 130.92 | 123.30 |
| 1 | B | 4938 | GLU | OE1-CD-OE2 | 6.35 | 130.92 | 123.30 |
| 1 | C | 4938 | GLU | OE1-CD-OE2 | 6.35 | 130.92 | 123.30 |
| 1 | D | 4938 | GLU | OE1-CD-OE2 | 6.35 | 130.92 | 123.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | A | 4170 | LYS | CD-CE-NZ | -6.28 | 97.25 | 111.70 |
| 1 | B | 4170 | LYS | CD-CE-NZ | -6.28 | 97.25 | 111.70 |
| 1 | C | 4170 | LYS | CD-CE-NZ | -6.28 | 97.25 | 111.70 |
| 1 | D | 4170 | LYS | CD-CE-NZ | -6.28 | 97.25 | 111.70 |
| 1 | A | 4158 | ARG | NE-CZ-NH2 | 6.26 | 123.43 | 120.30 |
| 1 | B | 4158 | ARG | NE-CZ-NH2 | 6.26 | 123.43 | 120.30 |
| 1 | C | 4158 | ARG | NE-CZ-NH2 | 6.26 | 123.43 | 120.30 |
| 1 | D | 4158 | ARG | NE-CZ-NH2 | 6.26 | 123.43 | 120.30 |
| 1 | A | 3803 | VAL | N-CA-C | -6.17 | 94.34 | 111.00 |
| 1 | B | 3803 | VAL | N-CA-C | -6.17 | 94.34 | 111.00 |
| 1 | C | 3803 | VAL | N-CA-C | -6.17 | 94.34 | 111.00 |
| 1 | D | 3803 | VAL | N-CA-C | -6.17 | 94.34 | 111.00 |
| 1 | A | 2607 | PRO | N-CA-CB | 6.15 | 110.68 | 103.30 |
| 1 | B | 2607 | PRO | N-CA-CB | 6.15 | 110.68 | 103.30 |
| 1 | C | 2607 | PRO | N-CA-CB | 6.15 | 110.68 | 103.30 |
| 1 | D | 2607 | PRO | N-CA-CB | 6.15 | 110.68 | 103.30 |
| 1 | A | 2990 | PRO | N-CA-CB | 6.12 | 110.64 | 103.30 |
| 1 | B | 2990 | PRO | N-CA-CB | 6.12 | 110.64 | 103.30 |
| 1 | C | 2990 | PRO | N-CA-CB | 6.12 | 110.64 | 103.30 |
| 1 | D | 2990 | PRO | N-CA-CB | 6.12 | 110.64 | 103.30 |
| 1 | A | 2679 | PRO | N-CA-CB | 6.06 | 110.57 | 103.30 |
| 1 | B | 2679 | PRO | N-CA-CB | 6.06 | 110.57 | 103.30 |
| 1 | C | 2679 | PRO | N-CA-CB | 6.06 | 110.57 | 103.30 |
| 1 | D | 2679 | PRO | N-CA-CB | 6.06 | 110.57 | 103.30 |
| 1 | A | 4735 | TYR | CG-CD2-CE2 | 6.03 | 126.12 | 121.30 |
| 1 | B | 4735 | TYR | CG-CD2-CE2 | 6.03 | 126.12 | 121.30 |
| 1 | C | 4735 | TYR | CG-CD2-CE2 | 6.03 | 126.12 | 121.30 |
| 1 | D | 4735 | TYR | CG-CD2-CE2 | 6.03 | 126.12 | 121.30 |
| 1 | A | 2783 | MET | CG-SD-CE | 5.97 | 109.76 | 100.20 |
| 1 | B | 2783 | MET | CG-SD-CE | 5.97 | 109.76 | 100.20 |
| 1 | C | 2783 | MET | CG-SD-CE | 5.97 | 109.76 | 100.20 |
| 1 | D | 2783 | MET | CG-SD-CE | 5.97 | 109.76 | 100.20 |
| 1 | A | 1303 | ARG | NE-CZ-NH2 | -5.87 | 117.37 | 120.30 |
| 1 | B | 1303 | ARG | NE-CZ-NH2 | -5.87 | 117.37 | 120.30 |
| 1 | C | 1303 | ARG | NE-CZ-NH2 | -5.87 | 117.37 | 120.30 |
| 1 | D | 1303 | ARG | NE-CZ-NH2 | -5.87 | 117.37 | 120.30 |
| 1 | A | 3948 | PHE | CB-CG-CD2 | -5.83 | 116.72 | 120.80 |
| 1 | B | 3948 | PHE | CB-CG-CD2 | -5.83 | 116.72 | 120.80 |
| 1 | C | 3948 | PHE | CB-CG-CD2 | -5.83 | 116.72 | 120.80 |
| 1 | D | 3948 | PHE | CB-CG-CD2 | -5.83 | 116.72 | 120.80 |
| 1 | A | 814 | LEU | CA-CB-CG | 5.81 | 128.67 | 115.30 |
| 1 | B | 814 | LEU | CA-CB-CG | 5.81 | 128.67 | 115.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | C | 814 | LEU | CA-CB-CG | 5.81 | 128.67 | 115.30 |
| 1 | D | 814 | LEU | CA-CB-CG | 5.81 | 128.67 | 115.30 |
| 1 | A | 4134 | LEU | CA-CB-CG | 5.79 | 128.62 | 115.30 |
| 1 | B | 4134 | LEU | CA-CB-CG | 5.79 | 128.62 | 115.30 |
| 1 | C | 4134 | LEU | CA-CB-CG | 5.79 | 128.62 | 115.30 |
| 1 | D | 4134 | LEU | CA-CB-CG | 5.79 | 128.62 | 115.30 |
| 1 | A | 4953 | PHE | CB-CG-CD1 | 5.78 | 124.84 | 120.80 |
| 1 | B | 4953 | PHE | CB-CG-CD1 | 5.78 | 124.84 | 120.80 |
| 1 | C | 4953 | PHE | CB-CG-CD1 | 5.78 | 124.84 | 120.80 |
| 1 | D | 4953 | PHE | CB-CG-CD1 | 5.78 | 124.84 | 120.80 |
| 1 | A | 2268 | ARG | CB-CG-CD | 5.63 | 126.25 | 111.60 |
| 1 | B | 2268 | ARG | CB-CG-CD | 5.63 | 126.25 | 111.60 |
| 1 | C | 2268 | ARG | CB-CG-CD | 5.63 | 126.25 | 111.60 |
| 1 | D | 2268 | ARG | CB-CG-CD | 5.63 | 126.25 | 111.60 |
| 1 | A | 2425 | ARG | NE-CZ-NH1 | 5.60 | 123.10 | 120.30 |
| 1 | B | 2425 | ARG | NE-CZ-NH1 | 5.60 | 123.10 | 120.30 |
| 1 | C | 2425 | ARG | NE-CZ-NH1 | 5.60 | 123.10 | 120.30 |
| 1 | D | 2425 | ARG | NE-CZ-NH1 | 5.60 | 123.10 | 120.30 |
| 1 | A | 2668 | PRO | N-CA-CB | 5.60 | 110.02 | 103.30 |
| 1 | B | 2668 | PRO | N-CA-CB | 5.60 | 110.02 | 103.30 |
| 1 | C | 2668 | PRO | N-CA-CB | 5.60 | 110.02 | 103.30 |
| 1 | D | 2668 | PRO | N-CA-CB | 5.60 | 110.02 | 103.30 |
| 1 | A | 4945 | TYR | CB-CG-CD2 | 5.59 | 124.35 | 121.00 |
| 1 | B | 4945 | TYR | CB-CG-CD2 | 5.59 | 124.35 | 121.00 |
| 1 | C | 4945 | TYR | CB-CG-CD2 | 5.59 | 124.35 | 121.00 |
| 1 | D | 4945 | TYR | CB-CG-CD2 | 5.59 | 124.35 | 121.00 |
| 1 | A | 836 | HIS | CB-CA-C | -5.58 | 99.25 | 110.40 |
| 1 | B | 836 | HIS | CB-CA-C | -5.58 | 99.25 | 110.40 |
| 1 | C | 836 | HIS | CB-CA-C | -5.58 | 99.25 | 110.40 |
| 1 | D | 836 | HIS | CB-CA-C | -5.58 | 99.25 | 110.40 |
| 1 | A | 4504 | ARG | NE-CZ-NH1 | 5.51 | 123.06 | 120.30 |
| 1 | B | 4504 | ARG | NE-CZ-NH1 | 5.51 | 123.06 | 120.30 |
| 1 | C | 4504 | ARG | NE-CZ-NH1 | 5.51 | 123.06 | 120.30 |
| 1 | D | 4504 | ARG | NE-CZ-NH1 | 5.51 | 123.06 | 120.30 |
| 1 | A | 3803 | VAL | CG1-CB-CG2 | -5.49 | 102.11 | 110.90 |
| 1 | B | 3803 | VAL | CG1-CB-CG2 | -5.49 | 102.11 | 110.90 |
| 1 | C | 3803 | VAL | CG1-CB-CG2 | -5.49 | 102.11 | 110.90 |
| 1 | D | 3803 | VAL | CG1-CB-CG2 | -5.49 | 102.11 | 110.90 |
| 1 | A | 4500 | PHE | CB-CG-CD1 | -5.49 | 116.96 | 120.80 |
| 1 | B | 4500 | PHE | CB-CG-CD1 | -5.49 | 116.96 | 120.80 |
| 1 | C | 4500 | PHE | CB-CG-CD1 | -5.49 | 116.96 | 120.80 |
| 1 | D | 4500 | PHE | CB-CG-CD1 | -5.49 | 116.96 | 120.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | A | 4085 | VAL | CG1-CB-CG2 | -5.48 | 102.14 | 110.90 |
| 1 | B | 4085 | VAL | CG1-CB-CG2 | -5.48 | 102.14 | 110.90 |
| 1 | C | 4085 | VAL | CG1-CB-CG2 | -5.48 | 102.14 | 110.90 |
| 1 | D | 4085 | VAL | CG1-CB-CG2 | -5.48 | 102.14 | 110.90 |
| 1 | A | 2143 | MET | CG-SD-CE | -5.45 | 91.48 | 100.20 |
| 1 | B | 2143 | MET | CG-SD-CE | -5.45 | 91.48 | 100.20 |
| 1 | C | 2143 | MET | CG-SD-CE | -5.45 | 91.48 | 100.20 |
| 1 | D | 2143 | MET | CG-SD-CE | -5.45 | 91.48 | 100.20 |
| 1 | A | 1599 | MET | CG-SD-CE | 5.44 | 108.91 | 100.20 |
| 1 | B | 1599 | MET | CG-SD-CE | 5.44 | 108.91 | 100.20 |
| 1 | C | 1599 | MET | CG-SD-CE | 5.44 | 108.91 | 100.20 |
| 1 | D | 1599 | MET | CG-SD-CE | 5.44 | 108.91 | 100.20 |
| 1 | A | 4187 | MET | CG-SD-CE | 5.44 | 108.90 | 100.20 |
| 1 | B | 4187 | MET | CG-SD-CE | 5.44 | 108.90 | 100.20 |
| 1 | C | 4187 | MET | CG-SD-CE | 5.44 | 108.90 | 100.20 |
| 1 | D | 4187 | MET | CG-SD-CE | 5.44 | 108.90 | 100.20 |
| 1 | A | 1032 | LEU | CB-CG-CD2 | -5.43 | 101.78 | 111.00 |
| 1 | B | 1032 | LEU | CB-CG-CD2 | -5.43 | 101.78 | 111.00 |
| 1 | C | 1032 | LEU | CB-CG-CD2 | -5.43 | 101.78 | 111.00 |
| 1 | D | 1032 | LEU | CB-CG-CD2 | -5.43 | 101.78 | 111.00 |
| 1 | A | 4916 | LEU | CB-CG-CD1 | -5.39 | 101.83 | 111.00 |
| 1 | B | 4916 | LEU | CB-CG-CD1 | -5.39 | 101.83 | 111.00 |
| 1 | C | 4916 | LEU | CB-CG-CD1 | -5.39 | 101.83 | 111.00 |
| 1 | D | 4916 | LEU | CB-CG-CD1 | -5.39 | 101.83 | 111.00 |
| 1 | A | 4189 | LEU | CA-CB-CG | 5.36 | 127.63 | 115.30 |
| 1 | B | 4189 | LEU | CA-CB-CG | 5.36 | 127.63 | 115.30 |
| 1 | C | 4189 | LEU | CA-CB-CG | 5.36 | 127.63 | 115.30 |
| 1 | D | 4189 | LEU | CA-CB-CG | 5.36 | 127.63 | 115.30 |
| 1 | A | 4197 | THR | CA-CB-CG2 | -5.35 | 104.92 | 112.40 |
| 1 | B | 4197 | THR | CA-CB-CG2 | -5.35 | 104.92 | 112.40 |
| 1 | C | 4197 | THR | CA-CB-CG2 | -5.35 | 104.92 | 112.40 |
| 1 | D | 4197 | THR | CA-CB-CG2 | -5.35 | 104.92 | 112.40 |
| 1 | A | 1738 | LEU | CB-CG-CD1 | -5.34 | 101.92 | 111.00 |
| 1 | B | 1738 | LEU | CB-CG-CD1 | -5.34 | 101.92 | 111.00 |
| 1 | C | 1738 | LEU | CB-CG-CD1 | -5.34 | 101.92 | 111.00 |
| 1 | D | 1738 | LEU | CB-CG-CD1 | -5.34 | 101.92 | 111.00 |
| 1 | A | 4645 | TYR | CB-CG-CD1 | 5.33 | 124.20 | 121.00 |
| 1 | B | 4645 | TYR | CB-CG-CD1 | 5.33 | 124.20 | 121.00 |
| 1 | C | 4645 | TYR | CB-CG-CD1 | 5.33 | 124.20 | 121.00 |
| 1 | D | 4645 | TYR | CB-CG-CD1 | 5.33 | 124.20 | 121.00 |
| 1 | A | 2101 | ARG | NE-CZ-NH2 | -5.29 | 117.66 | 120.30 |
| 1 | A | 4940 | TYR | CB-CG-CD2 | 5.29 | 124.17 | 121.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1 | B | 2101 | ARG | NE-CZ-NH2 | -5.29 | 117.66 | 120.30 |
| 1 | B | 4940 | TYR | CB-CG-CD2 | 5.29 | 124.17 | 121.00 |
| 1 | C | 2101 | ARG | NE-CZ-NH2 | -5.29 | 117.66 | 120.30 |
| 1 | C | 4940 | TYR | CB-CG-CD2 | 5.29 | 124.17 | 121.00 |
| 1 | D | 2101 | ARG | NE-CZ-NH2 | -5.29 | 117.66 | 120.30 |
| 1 | D | 4940 | TYR | CB-CG-CD2 | 5.29 | 124.17 | 121.00 |
| 1 | A | 2166 | LEU | CB-CG-CD1 | -5.29 | 102.02 | 111.00 |
| 1 | B | 2166 | LEU | CB-CG-CD1 | -5.29 | 102.02 | 111.00 |
| 1 | C | 2166 | LEU | CB-CG-CD1 | -5.29 | 102.02 | 111.00 |
| 1 | D | 2166 | LEU | CB-CG-CD1 | -5.29 | 102.02 | 111.00 |
| 1 | A | 2517 | LEU | CA-CB-CG | 5.28 | 127.45 | 115.30 |
| 1 | B | 2517 | LEU | CA-CB-CG | 5.28 | 127.45 | 115.30 |
| 1 | C | 2517 | LEU | CA-CB-CG | 5.28 | 127.45 | 115.30 |
| 1 | D | 2517 | LEU | CA-CB-CG | 5.28 | 127.45 | 115.30 |
| 1 | A | 4823 | ARG | NE-CZ-NH2 | 5.25 | 122.92 | 120.30 |
| 1 | B | 4823 | ARG | NE-CZ-NH2 | 5.25 | 122.92 | 120.30 |
| 1 | C | 4823 | ARG | NE-CZ-NH2 | 5.25 | 122.92 | 120.30 |
| 1 | D | 4823 | ARG | NE-CZ-NH2 | 5.25 | 122.92 | 120.30 |
| 1 | A | 4924 | MET | CG-SD-CE | -5.25 | 91.81 | 100.20 |
| 1 | B | 4924 | MET | CG-SD-CE | -5.25 | 91.81 | 100.20 |
| 1 | C | 4924 | MET | CG-SD-CE | -5.25 | 91.81 | 100.20 |
| 1 | D | 4924 | MET | CG-SD-CE | -5.25 | 91.81 | 100.20 |
| 1 | A | 2736 | ASP | CB-CG-OD1 | -5.24 | 113.59 | 118.30 |
| 1 | B | 2736 | ASP | CB-CG-OD1 | -5.24 | 113.59 | 118.30 |
| 1 | C | 2736 | ASP | CB-CG-OD1 | -5.24 | 113.59 | 118.30 |
| 1 | D | 2736 | ASP | CB-CG-OD1 | -5.24 | 113.59 | 118.30 |
| 1 | A | 677 | LEU | CA-CB-CG | 5.22 | 127.30 | 115.30 |
| 1 | B | 677 | LEU | CA-CB-CG | 5.22 | 127.30 | 115.30 |
| 1 | C | 677 | LEU | CA-CB-CG | 5.22 | 127.30 | 115.30 |
| 1 | D | 677 | LEU | CA-CB-CG | 5.22 | 127.30 | 115.30 |
| 1 | A | 4945 | TYR | CB-CG-CD1 | -5.20 | 117.88 | 121.00 |
| 1 | B | 4945 | TYR | CB-CG-CD1 | -5.20 | 117.88 | 121.00 |
| 1 | C | 4945 | TYR | CB-CG-CD1 | -5.20 | 117.88 | 121.00 |
| 1 | D | 4945 | TYR | CB-CG-CD1 | -5.20 | 117.88 | 121.00 |
| 1 | A | 1824 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | A | 4721 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | B | 1824 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | B | 4721 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | C | 1824 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | C | 4721 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | D | 1824 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |
| 1 | D | 4721 | LEU | CA-CB-CG | 5.20 | 127.26 | 115.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | A | 1942 | ARG | NE-CZ-NH1 | -5.17 | 117.72 | 120.30 |
| 1 | B | 1942 | ARG | NE-CZ-NH1 | -5.17 | 117.72 | 120.30 |
| 1 | C | 1942 | ARG | NE-CZ-NH1 | -5.17 | 117.72 | 120.30 |
| 1 | D | 1942 | ARG | NE-CZ-NH1 | -5.17 | 117.72 | 120.30 |
| 1 | A | 1729 | MET | CG-SD-CE | 5.16 | 108.45 | 100.20 |
| 1 | B | 1729 | MET | CG-SD-CE | 5.16 | 108.45 | 100.20 |
| 1 | C | 1729 | MET | CG-SD-CE | 5.16 | 108.45 | 100.20 |
| 1 | D | 1729 | MET | CG-SD-CE | 5.16 | 108.45 | 100.20 |
| 1 | A | 3837 | THR | CA-CB-CG2 | -5.15 | 105.19 | 112.40 |
| 1 | B | 3837 | THR | CA-CB-CG2 | -5.15 | 105.19 | 112.40 |
| 1 | C | 3837 | THR | CA-CB-CG2 | -5.15 | 105.19 | 112.40 |
| 1 | D | 3837 | THR | CA-CB-CG2 | -5.15 | 105.19 | 112.40 |
| 1 | A | 4941 | VAL | CG1-CB-CG2 | -5.15 | 102.66 | 110.90 |
| 1 | B | 4941 | VAL | CG1-CB-CG2 | -5.15 | 102.66 | 110.90 |
| 1 | C | 4941 | VAL | CG1-CB-CG2 | -5.15 | 102.66 | 110.90 |
| 1 | D | 4941 | VAL | CG1-CB-CG2 | -5.15 | 102.66 | 110.90 |
| 1 | A | 4086 | LYS | CD-CE-NZ | 5.14 | 123.53 | 111.70 |
| 1 | B | 4086 | LYS | CD-CE-NZ | 5.14 | 123.53 | 111.70 |
| 1 | C | 4086 | LYS | CD-CE-NZ | 5.14 | 123.53 | 111.70 |
| 1 | D | 4086 | LYS | CD-CE-NZ | 5.14 | 123.53 | 111.70 |
| 1 | A | 3802 | SER | C-N-CA | 5.13 | 134.52 | 121.70 |
| 1 | B | 3802 | SER | C-N-CA | 5.13 | 134.52 | 121.70 |
| 1 | C | 3802 | SER | C-N-CA | 5.13 | 134.52 | 121.70 |
| 1 | D | 3802 | SER | C-N-CA | 5.13 | 134.52 | 121.70 |
| 1 | A | 3945 | VAL | CG1-CB-CG2 | -5.11 | 102.72 | 110.90 |
| 1 | B | 3945 | VAL | CG1-CB-CG2 | -5.11 | 102.72 | 110.90 |
| 1 | C | 3945 | VAL | CG1-CB-CG2 | -5.11 | 102.72 | 110.90 |
| 1 | D | 3945 | VAL | CG1-CB-CG2 | -5.11 | 102.72 | 110.90 |
| 1 | A | 4845 | ILE | CG1-CB-CG2 | -5.06 | 100.27 | 111.40 |
| 1 | B | 4845 | ILE | CG1-CB-CG2 | -5.06 | 100.27 | 111.40 |
| 1 | C | 4845 | ILE | CG1-CB-CG2 | -5.06 | 100.27 | 111.40 |
| 1 | D | 4845 | ILE | CG1-CB-CG2 | -5.06 | 100.27 | 111.40 |
| 1 | A | 2059 | LEU | CB-CG-CD1 | 5.03 | 119.54 | 111.00 |
| 1 | B | 2059 | LEU | CB-CG-CD1 | 5.03 | 119.54 | 111.00 |
| 1 | C | 2059 | LEU | CB-CG-CD1 | 5.03 | 119.54 | 111.00 |
| 1 | D | 2059 | LEU | CB-CG-CD1 | 5.03 | 119.54 | 111.00 |
| 1 | A | 3918 | PHE | CB-CG-CD1 | 5.02 | 124.31 | 120.80 |
| 1 | B | 3918 | PHE | CB-CG-CD1 | 5.02 | 124.31 | 120.80 |
| 1 | C | 3918 | PHE | CB-CG-CD1 | 5.02 | 124.31 | 120.80 |
| 1 | D | 3918 | PHE | CB-CG-CD1 | 5.02 | 124.31 | 120.80 |
| 1 | A | 2203 | TYR | CB-CG-CD2 | -5.01 | 118.00 | 121.00 |
| 1 | B | 2203 | TYR | CB-CG-CD2 | -5.01 | 118.00 | 121.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1 | C | 2203 | TYR | CB-CG-CD2 | -5.01 | 118.00 | 121.00 |
| 1 | D | 2203 | TYR | CB-CG-CD2 | -5.01 | 118.00 | 121.00 |

There are no chirality outliers.

All (120) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-------------------|
| 1 | A | 1102 | TYR | Peptide |
| 1 | A | 1266 | GLU | Peptide |
| 1 | A | 1297 | THR | Peptide |
| 1 | A | 1475 | LYS | Peptide |
| 1 | A | 1579 | VAL | Peptide |
| 1 | A | 1635 | GLU | Peptide |
| 1 | A | 1739 | PHE | Peptide |
| 1 | A | 1808 | ASP | Peptide |
| 1 | A | 1835 | HIS | Peptide |
| 1 | A | 1847 | GLU | Peptide |
| 1 | A | 2075 | VAL | Peptide |
| 1 | A | 2077 | GLU | Peptide |
| 1 | A | 3767 | LEU | Peptide |
| 1 | A | 3805 | ASP | Peptide |
| 1 | A | 4070 | CYS | Peptide |
| 1 | A | 4144 | LYS | Peptide |
| 1 | A | 4163 | LYS | Peptide |
| 1 | A | 471 | GLU | Peptide |
| 1 | A | 4798 | GLU | Peptide |
| 1 | A | 4956 | GLY | Peptide |
| 1 | A | 4958 | CYS | Peptide |
| 1 | A | 657 | PRO | Peptide |
| 1 | A | 729 | GLY | Peptide |
| 1 | A | 775 | VAL | Peptide |
| 1 | A | 791 | VAL | Peptide |
| 1 | A | 818 | GLY | Peptide |
| 1 | A | 819 | TYR | Peptide |
| 1 | A | 838 | ARG | Peptide |
| 1 | A | 852 | GLY | Peptide,Mainchain |
| 1 | B | 1102 | TYR | Peptide |
| 1 | B | 1266 | GLU | Peptide |
| 1 | B | 1297 | THR | Peptide |
| 1 | B | 1475 | LYS | Peptide |
| 1 | B | 1579 | VAL | Peptide |
| 1 | B | 1635 | GLU | Peptide |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|-------------------|
| 1 | B | 1739 | PHE | Peptide |
| 1 | B | 1808 | ASP | Peptide |
| 1 | B | 1835 | HIS | Peptide |
| 1 | B | 1847 | GLU | Peptide |
| 1 | B | 2075 | VAL | Peptide |
| 1 | B | 2077 | GLU | Peptide |
| 1 | B | 3767 | LEU | Peptide |
| 1 | B | 3805 | ASP | Peptide |
| 1 | B | 4070 | CYS | Peptide |
| 1 | B | 4144 | LYS | Peptide |
| 1 | B | 4163 | LYS | Peptide |
| 1 | B | 471 | GLU | Peptide |
| 1 | B | 4798 | GLU | Peptide |
| 1 | B | 4956 | GLY | Peptide |
| 1 | B | 4958 | CYS | Peptide |
| 1 | B | 657 | PRO | Peptide |
| 1 | B | 729 | GLY | Peptide |
| 1 | B | 775 | VAL | Peptide |
| 1 | B | 791 | VAL | Peptide |
| 1 | B | 818 | GLY | Peptide |
| 1 | B | 819 | TYR | Peptide |
| 1 | B | 838 | ARG | Peptide |
| 1 | B | 852 | GLY | Peptide,Mainchain |
| 1 | C | 1102 | TYR | Peptide |
| 1 | C | 1266 | GLU | Peptide |
| 1 | C | 1297 | THR | Peptide |
| 1 | C | 1475 | LYS | Peptide |
| 1 | C | 1579 | VAL | Peptide |
| 1 | C | 1635 | GLU | Peptide |
| 1 | C | 1739 | PHE | Peptide |
| 1 | C | 1808 | ASP | Peptide |
| 1 | C | 1835 | HIS | Peptide |
| 1 | C | 1847 | GLU | Peptide |
| 1 | C | 2075 | VAL | Peptide |
| 1 | C | 2077 | GLU | Peptide |
| 1 | C | 3767 | LEU | Peptide |
| 1 | C | 3805 | ASP | Peptide |
| 1 | C | 4070 | CYS | Peptide |
| 1 | C | 4144 | LYS | Peptide |
| 1 | C | 4163 | LYS | Peptide |
| 1 | C | 471 | GLU | Peptide |
| 1 | C | 4798 | GLU | Peptide |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|-------------------|
| 1 | C | 4956 | GLY | Peptide |
| 1 | C | 4958 | CYS | Peptide |
| 1 | C | 657 | PRO | Peptide |
| 1 | C | 729 | GLY | Peptide |
| 1 | C | 775 | VAL | Peptide |
| 1 | C | 791 | VAL | Peptide |
| 1 | C | 818 | GLY | Peptide |
| 1 | C | 819 | TYR | Peptide |
| 1 | C | 838 | ARG | Peptide |
| 1 | C | 852 | GLY | Peptide,Mainchain |
| 1 | D | 1102 | TYR | Peptide |
| 1 | D | 1266 | GLU | Peptide |
| 1 | D | 1297 | THR | Peptide |
| 1 | D | 1475 | LYS | Peptide |
| 1 | D | 1579 | VAL | Peptide |
| 1 | D | 1635 | GLU | Peptide |
| 1 | D | 1739 | PHE | Peptide |
| 1 | D | 1808 | ASP | Peptide |
| 1 | D | 1835 | HIS | Peptide |
| 1 | D | 1847 | GLU | Peptide |
| 1 | D | 2075 | VAL | Peptide |
| 1 | D | 2077 | GLU | Peptide |
| 1 | D | 3767 | LEU | Peptide |
| 1 | D | 3805 | ASP | Peptide |
| 1 | D | 4070 | CYS | Peptide |
| 1 | D | 4144 | LYS | Peptide |
| 1 | D | 4163 | LYS | Peptide |
| 1 | D | 471 | GLU | Peptide |
| 1 | D | 4798 | GLU | Peptide |
| 1 | D | 4956 | GLY | Peptide |
| 1 | D | 4958 | CYS | Peptide |
| 1 | D | 657 | PRO | Peptide |
| 1 | D | 729 | GLY | Peptide |
| 1 | D | 775 | VAL | Peptide |
| 1 | D | 791 | VAL | Peptide |
| 1 | D | 818 | GLY | Peptide |
| 1 | D | 819 | TYR | Peptide |
| 1 | D | 838 | ARG | Peptide |
| 1 | D | 852 | GLY | Peptide,Mainchain |

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 | 26266 | 0 | 24898 | 409 | 0 |
| 1 | B | 26266 | 0 | 24898 | 421 | 0 |
| 1 | C | 26266 | 0 | 24898 | 414 | 0 |
| 1 | D | 26266 | 0 | 24898 | 401 | 0 |
| 2 | A | 1 | 0 | 0 | 0 | 0 |
| 2 | B | 1 | 0 | 0 | 0 | 0 |
| 2 | C | 1 | 0 | 0 | 0 | 0 |
| 2 | D | 1 | 0 | 0 | 0 | 0 |
| All | All | 105068 | 0 | 99592 | 1515 | 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 7.

All (1515) 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:A:4873:GLU:HA | 1:B:4875:ARG:NH1 | 1.62 | 1.15 |
| 1:A:4875:ARG:NH1 | 1:D:4873:GLU:HA | 1.62 | 1.14 |
| 1:B:4873:GLU:HA | 1:C:4875:ARG:NH1 | 1.62 | 1.13 |
| 1:C:4873:GLU:OE1 | 1:D:4875:ARG:HD3 | 1.49 | 1.12 |
| 1:C:4873:GLU:HA | 1:D:4875:ARG:NH1 | 1.62 | 1.12 |
| 1:B:4873:GLU:OE1 | 1:C:4875:ARG:HD3 | 1.49 | 1.11 |
| 1:A:4873:GLU:OE1 | 1:B:4875:ARG:HD3 | 1.49 | 1.11 |
| 1:A:4875:ARG:HD3 | 1:D:4873:GLU:OE1 | 1.49 | 1.10 |
| 1:A:4823:ARG:HA | 1:D:4852:PHE:CZ | 1.98 | 0.98 |
| 1:B:4852:PHE:CZ | 1:C:4823:ARG:HA | 1.98 | 0.98 |
| 1:A:4852:PHE:CZ | 1:B:4823:ARG:HA | 1.98 | 0.98 |
| 1:C:4852:PHE:CZ | 1:D:4823:ARG:HA | 1.98 | 0.98 |
| 1:D:4832:ILE:HG21 | 1:D:4844:ARG:HH21 | 1.44 | 0.83 |
| 1:B:4832:ILE:HG21 | 1:B:4844:ARG:HH21 | 1.44 | 0.82 |
| 1:C:4832:ILE:HG21 | 1:C:4844:ARG:HH21 | 1.44 | 0.82 |
| 1:A:4832:ILE:HG21 | 1:A:4844:ARG:HH21 | 1.44 | 0.80 |
| 1:A:4872:GLY:C | 1:B:4875:ARG:HH22 | 1.86 | 0.79 |
| 1:A:4875:ARG:HH22 | 1:D:4872:GLY:C | 1.86 | 0.78 |
| 1:A:4810:MET:HG2 | 1:B:4518:LEU:O | 1.84 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:B:4872:GLY:C | 1:C:4875:ARG:HH22 | 1.86 | 0.78 |
| 1:B:4810:MET:HG2 | 1:C:4518:LEU:O | 1.84 | 0.78 |
| 1:C:4872:GLY:C | 1:D:4875:ARG:HH22 | 1.86 | 0.78 |
| 1:A:4518:LEU:O | 1:D:4810:MET:HG2 | 1.84 | 0.77 |
| 1:C:4810:MET:HG2 | 1:D:4518:LEU:O | 1.84 | 0.77 |
| 1:C:76:ARG:HG2 | 1:D:3891:TRP:HB3 | 1.68 | 0.75 |
| 1:B:708:GLY:HA2 | 1:B:714:GLY:HA3 | 1.69 | 0.74 |
| 1:B:76:ARG:HG2 | 1:C:3891:TRP:HB3 | 1.68 | 0.74 |
| 1:D:708:GLY:HA2 | 1:D:714:GLY:HA3 | 1.69 | 0.74 |
| 1:A:708:GLY:HA2 | 1:A:714:GLY:HA3 | 1.69 | 0.73 |
| 1:A:76:ARG:HG2 | 1:B:3891:TRP:HB3 | 1.68 | 0.73 |
| 1:A:3891:TRP:HB3 | 1:D:76:ARG:HG2 | 1.68 | 0.73 |
| 1:C:4872:GLY:C | 1:D:4875:ARG:NH2 | 2.42 | 0.73 |
| 1:B:4872:GLY:C | 1:C:4875:ARG:NH2 | 2.42 | 0.73 |
| 1:C:4873:GLU:OE1 | 1:D:4875:ARG:CD | 2.35 | 0.73 |
| 1:C:708:GLY:HA2 | 1:C:714:GLY:HA3 | 1.69 | 0.72 |
| 1:B:4873:GLU:OE1 | 1:C:4875:ARG:CD | 2.35 | 0.72 |
| 1:A:4872:GLY:C | 1:B:4875:ARG:NH2 | 2.42 | 0.72 |
| 1:A:4875:ARG:NH2 | 1:D:4872:GLY:C | 2.42 | 0.71 |
| 1:A:4875:ARG:NH1 | 1:D:4872:GLY:O | 2.24 | 0.71 |
| 1:A:4157:SER:OG | 1:A:4924:MET:SD | 2.50 | 0.70 |
| 1:A:4872:GLY:O | 1:B:4875:ARG:NH2 | 2.25 | 0.70 |
| 1:A:4872:GLY:O | 1:B:4875:ARG:NH1 | 2.24 | 0.70 |
| 1:A:4875:ARG:NH2 | 1:D:4872:GLY:O | 2.25 | 0.70 |
| 1:B:4157:SER:OG | 1:B:4924:MET:SD | 2.50 | 0.70 |
| 1:C:4872:GLY:O | 1:D:4875:ARG:NH1 | 2.24 | 0.70 |
| 1:D:4157:SER:OG | 1:D:4924:MET:SD | 2.50 | 0.70 |
| 1:B:4872:GLY:O | 1:C:4875:ARG:NH2 | 2.25 | 0.70 |
| 1:A:2419:ARG:NH1 | 1:D:189:GLU:OE1 | 2.25 | 0.70 |
| 1:B:189:GLU:OE1 | 1:C:2419:ARG:NH1 | 2.25 | 0.70 |
| 1:C:4873:GLU:CA | 1:D:4875:ARG:NH1 | 2.51 | 0.69 |
| 1:B:4872:GLY:O | 1:C:4875:ARG:NH1 | 2.24 | 0.69 |
| 1:A:189:GLU:OE1 | 1:B:2419:ARG:NH1 | 2.25 | 0.69 |
| 1:C:4157:SER:OG | 1:C:4924:MET:SD | 2.50 | 0.69 |
| 1:C:189:GLU:OE1 | 1:D:2419:ARG:NH1 | 2.25 | 0.69 |
| 1:B:4800:GLY:HA2 | 1:B:4804:ASP:HB3 | 1.74 | 0.68 |
| 1:A:4873:GLU:CA | 1:B:4875:ARG:NH1 | 2.51 | 0.68 |
| 1:C:4872:GLY:O | 1:D:4875:ARG:NH2 | 2.25 | 0.68 |
| 1:A:3986:MET:HG2 | 1:A:3996:ILE:HD11 | 1.75 | 0.68 |
| 1:D:3986:MET:HG2 | 1:D:3996:ILE:HD11 | 1.75 | 0.68 |
| 1:A:4875:ARG:NH1 | 1:D:4873:GLU:CA | 2.51 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:4011:VAL:HA | 1:A:4014:ILE:HG12 | 1.76 | 0.68 |
| 1:A:1645:THR:HG22 | 1:A:1695:PRO:HG3 | 1.76 | 0.68 |
| 1:B:4873:GLU:CA | 1:C:4875:ARG:NH1 | 2.51 | 0.68 |
| 1:C:4011:VAL:HA | 1:C:4014:ILE:HG12 | 1.76 | 0.68 |
| 1:D:4800:GLY:HA2 | 1:D:4804:ASP:HB3 | 1.74 | 0.68 |
| 1:C:1645:THR:HG22 | 1:C:1695:PRO:HG3 | 1.76 | 0.67 |
| 1:C:4873:GLU:HA | 1:D:4875:ARG:HH12 | 1.59 | 0.67 |
| 1:D:1138:ASP:HB2 | 1:D:1145:TRP:HE1 | 1.60 | 0.67 |
| 1:D:4011:VAL:HA | 1:D:4014:ILE:HG12 | 1.76 | 0.67 |
| 1:A:1138:ASP:HB2 | 1:A:1145:TRP:HE1 | 1.60 | 0.67 |
| 1:C:1138:ASP:HB2 | 1:C:1145:TRP:HE1 | 1.60 | 0.67 |
| 1:C:4800:GLY:HA2 | 1:C:4804:ASP:HB3 | 1.74 | 0.67 |
| 1:A:4800:GLY:HA2 | 1:A:4804:ASP:HB3 | 1.74 | 0.67 |
| 1:B:1645:THR:HG22 | 1:B:1695:PRO:HG3 | 1.76 | 0.67 |
| 1:B:4873:GLU:HA | 1:C:4875:ARG:HH12 | 1.59 | 0.67 |
| 1:C:3986:MET:HG2 | 1:C:3996:ILE:HD11 | 1.75 | 0.67 |
| 1:B:3986:MET:HG2 | 1:B:3996:ILE:HD11 | 1.75 | 0.67 |
| 1:B:4011:VAL:HA | 1:B:4014:ILE:HG12 | 1.76 | 0.67 |
| 1:B:1138:ASP:HB2 | 1:B:1145:TRP:HE1 | 1.60 | 0.67 |
| 1:D:1645:THR:HG22 | 1:D:1695:PRO:HG3 | 1.76 | 0.67 |
| 1:D:35:LEU:HD13 | 1:D:49:LEU:HD22 | 1.77 | 0.66 |
| 1:A:299:HIS:HE2 | 1:A:301:THR:HG1 | 1.43 | 0.66 |
| 1:B:35:LEU:HD13 | 1:B:49:LEU:HD22 | 1.77 | 0.66 |
| 1:A:4875:ARG:CD | 1:D:4873:GLU:OE1 | 2.35 | 0.65 |
| 1:A:4873:GLU:HA | 1:B:4875:ARG:HH12 | 1.59 | 0.65 |
| 1:C:3875:THR:HG21 | 1:C:3924:TYR:HE2 | 1.62 | 0.65 |
| 1:A:35:LEU:HD13 | 1:A:49:LEU:HD22 | 1.77 | 0.65 |
| 1:B:248:PRO:HG2 | 1:B:257:ARG:HA | 1.79 | 0.65 |
| 1:A:3875:THR:HG21 | 1:A:3924:TYR:HE2 | 1.62 | 0.65 |
| 1:A:248:PRO:HG2 | 1:A:257:ARG:HA | 1.79 | 0.65 |
| 1:A:4873:GLU:OE1 | 1:B:4875:ARG:CD | 2.35 | 0.65 |
| 1:C:35:LEU:HD13 | 1:C:49:LEU:HD22 | 1.77 | 0.65 |
| 1:D:248:PRO:HG2 | 1:D:257:ARG:HA | 1.79 | 0.65 |
| 1:B:243:GLU:HA | 1:B:264:GLY:HA2 | 1.79 | 0.65 |
| 1:B:1602:GLN:HE22 | 1:B:1642:LEU:HB3 | 1.62 | 0.65 |
| 1:A:1602:GLN:HE22 | 1:A:1642:LEU:HB3 | 1.62 | 0.65 |
| 1:B:299:HIS:HE2 | 1:B:301:THR:HG1 | 1.45 | 0.65 |
| 1:C:243:GLU:HA | 1:C:264:GLY:HA2 | 1.79 | 0.65 |
| 1:C:248:PRO:HG2 | 1:C:257:ARG:HA | 1.79 | 0.64 |
| 1:D:1602:GLN:HE22 | 1:D:1642:LEU:HB3 | 1.62 | 0.64 |
| 1:A:243:GLU:HA | 1:A:264:GLY:HA2 | 1.79 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1602:GLN:HE22 | 1:C:1642:LEU:HB3 | 1.62 | 0.64 |
| 1:D:3875:THR:HG21 | 1:D:3924:TYR:HE2 | 1.62 | 0.64 |
| 1:D:243:GLU:HA | 1:D:264:GLY:HA2 | 1.79 | 0.64 |
| 1:B:1304:LEU:HB3 | 1:B:1541:PRO:HG2 | 1.80 | 0.64 |
| 1:B:3875:THR:HG21 | 1:B:3924:TYR:HE2 | 1.62 | 0.63 |
| 1:A:227:TYR:HE1 | 1:A:355:LYS:HG2 | 1.64 | 0.63 |
| 1:A:4868:ILE:HG12 | 1:D:4865:GLY:HA3 | 1.81 | 0.63 |
| 1:B:3845:GLN:HB2 | 1:B:3920:THR:HG22 | 1.81 | 0.63 |
| 1:D:188:SER:HB2 | 1:D:190:ARG:HH21 | 1.64 | 0.63 |
| 1:D:227:TYR:HE1 | 1:D:355:LYS:HG2 | 1.64 | 0.63 |
| 1:C:227:TYR:HE1 | 1:C:355:LYS:HG2 | 1.64 | 0.63 |
| 1:D:1304:LEU:HB3 | 1:D:1541:PRO:HG2 | 1.80 | 0.63 |
| 1:B:188:SER:HB2 | 1:B:190:ARG:HH21 | 1.64 | 0.62 |
| 1:A:188:SER:HB2 | 1:A:190:ARG:HH21 | 1.64 | 0.62 |
| 1:A:3922:THR:O | 1:A:3926:GLN:N | 2.32 | 0.62 |
| 1:A:4865:GLY:HA3 | 1:B:4868:ILE:HG12 | 1.81 | 0.62 |
| 1:C:188:SER:HB2 | 1:C:190:ARG:HH21 | 1.64 | 0.62 |
| 1:C:3922:THR:O | 1:C:3926:GLN:N | 2.32 | 0.62 |
| 1:A:1304:LEU:HB3 | 1:A:1541:PRO:HG2 | 1.80 | 0.62 |
| 1:A:3845:GLN:HB2 | 1:A:3920:THR:HG22 | 1.81 | 0.62 |
| 1:C:1304:LEU:HB3 | 1:C:1541:PRO:HG2 | 1.80 | 0.62 |
| 1:B:3922:THR:O | 1:B:3926:GLN:N | 2.32 | 0.62 |
| 1:B:227:TYR:HE1 | 1:B:355:LYS:HG2 | 1.64 | 0.62 |
| 1:D:3922:THR:O | 1:D:3926:GLN:N | 2.32 | 0.62 |
| 1:B:4865:GLY:HA3 | 1:C:4868:ILE:HG12 | 1.81 | 0.62 |
| 1:D:3845:GLN:HB2 | 1:D:3920:THR:HG22 | 1.81 | 0.62 |
| 1:C:4865:GLY:HA3 | 1:D:4868:ILE:HG12 | 1.81 | 0.62 |
| 1:B:1272:ARG:NH1 | 1:B:1587:HIS:O | 2.34 | 0.61 |
| 1:D:1272:ARG:NH1 | 1:D:1587:HIS:O | 2.34 | 0.61 |
| 1:D:299:HIS:HE2 | 1:D:301:THR:HG1 | 1.46 | 0.61 |
| 1:C:4072:GLU:HB3 | 1:C:4074:ASP:HB2 | 1.83 | 0.61 |
| 1:C:1272:ARG:NH1 | 1:C:1587:HIS:O | 2.34 | 0.61 |
| 1:A:4875:ARG:HH12 | 1:D:4873:GLU:HA | 1.59 | 0.61 |
| 1:B:3841:PHE:HB3 | 1:B:3920:THR:HG21 | 1.82 | 0.61 |
| 1:D:779:PHE:HB3 | 1:D:782:PHE:HE2 | 1.66 | 0.61 |
| 1:A:3841:PHE:HB3 | 1:A:3920:THR:HG21 | 1.82 | 0.60 |
| 1:B:4072:GLU:HB3 | 1:B:4074:ASP:HB2 | 1.83 | 0.60 |
| 1:D:3841:PHE:HB3 | 1:D:3920:THR:HG21 | 1.82 | 0.60 |
| 1:A:4140:MET:HG2 | 1:A:4146:ILE:HG12 | 1.82 | 0.60 |
| 1:B:1258:PHE:HB2 | 1:B:1593:HIS:HB3 | 1.83 | 0.60 |
| 1:D:4140:MET:HG2 | 1:D:4146:ILE:HG12 | 1.82 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:25:THR:HG22 | 1:A:34:LYS:HG2 | 1.83 | 0.60 |
| 1:A:779:PHE:HB3 | 1:A:782:PHE:HE2 | 1.66 | 0.60 |
| 1:C:3802:SER:OG | 1:C:3833:ASP:O | 2.18 | 0.60 |
| 1:C:779:PHE:HB3 | 1:C:782:PHE:HE2 | 1.66 | 0.60 |
| 1:A:954:ASP:HB3 | 1:A:1061:GLY:HA3 | 1.84 | 0.60 |
| 1:B:779:PHE:HB3 | 1:B:782:PHE:HE2 | 1.66 | 0.60 |
| 1:D:954:ASP:HB3 | 1:D:1061:GLY:HA3 | 1.84 | 0.60 |
| 1:A:1469:LEU:HG | 1:A:1480:ILE:HD11 | 1.84 | 0.60 |
| 1:A:3802:SER:OG | 1:A:3833:ASP:O | 2.18 | 0.60 |
| 1:B:143:LEU:HD23 | 1:C:2426:SER:HB3 | 1.84 | 0.60 |
| 1:C:123:HIS:HD2 | 1:C:126:SER:H | 1.50 | 0.60 |
| 1:C:3845:GLN:HB2 | 1:C:3920:THR:HG22 | 1.81 | 0.60 |
| 1:D:802:PHE:HB2 | 1:D:1617:TRP:HB2 | 1.84 | 0.60 |
| 1:D:1469:LEU:HG | 1:D:1480:ILE:HD11 | 1.84 | 0.60 |
| 1:B:954:ASP:HB3 | 1:B:1061:GLY:HA3 | 1.84 | 0.60 |
| 1:C:802:PHE:HB2 | 1:C:1617:TRP:HB2 | 1.84 | 0.60 |
| 1:C:4140:MET:HG2 | 1:C:4146:ILE:HG12 | 1.82 | 0.60 |
| 1:D:25:THR:HG22 | 1:D:34:LYS:HG2 | 1.83 | 0.60 |
| 1:A:802:PHE:HB2 | 1:A:1617:TRP:HB2 | 1.84 | 0.60 |
| 1:A:1258:PHE:HB2 | 1:A:1593:HIS:HB3 | 1.83 | 0.60 |
| 1:C:1137:PHE:HA | 1:C:1144:ARG:HA | 1.82 | 0.60 |
| 1:A:1272:ARG:NH1 | 1:A:1587:HIS:O | 2.34 | 0.60 |
| 1:B:25:THR:HG22 | 1:B:34:LYS:HG2 | 1.83 | 0.60 |
| 1:B:123:HIS:HD2 | 1:B:126:SER:H | 1.50 | 0.60 |
| 1:B:4140:MET:HG2 | 1:B:4146:ILE:HG12 | 1.82 | 0.60 |
| 1:C:1258:PHE:HB2 | 1:C:1593:HIS:HB3 | 1.83 | 0.60 |
| 1:A:756:SER:HB3 | 1:A:769:ARG:HB2 | 1.84 | 0.60 |
| 1:A:4072:GLU:HB3 | 1:A:4074:ASP:HB2 | 1.83 | 0.60 |
| 1:B:672:LYS:HA | 1:B:760:ASP:HA | 1.84 | 0.60 |
| 1:B:4617:TYR:OH | 1:B:4629:GLY:O | 2.20 | 0.60 |
| 1:D:1113:MET:HG3 | 1:D:1156:TRP:HZ2 | 1.67 | 0.60 |
| 1:B:756:SER:HB3 | 1:B:769:ARG:HB2 | 1.84 | 0.59 |
| 1:D:123:HIS:HD2 | 1:D:126:SER:H | 1.50 | 0.59 |
| 1:A:1137:PHE:HA | 1:A:1144:ARG:HA | 1.82 | 0.59 |
| 1:D:4072:GLU:HB3 | 1:D:4074:ASP:HB2 | 1.83 | 0.59 |
| 1:A:672:LYS:HA | 1:A:760:ASP:HA | 1.84 | 0.59 |
| 1:A:4617:TYR:OH | 1:A:4629:GLY:O | 2.20 | 0.59 |
| 1:B:802:PHE:HB2 | 1:B:1617:TRP:HB2 | 1.84 | 0.59 |
| 1:B:1469:LEU:HG | 1:B:1480:ILE:HD11 | 1.84 | 0.59 |
| 1:C:954:ASP:HB3 | 1:C:1061:GLY:HA3 | 1.84 | 0.59 |
| 1:D:1137:PHE:HA | 1:D:1144:ARG:HA | 1.82 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:3802:SER:OG | 1:D:3833:ASP:O | 2.18 | 0.59 |
| 1:A:559:ILE:HD13 | 1:A:593:HIS:HB3 | 1.85 | 0.59 |
| 1:B:1137:PHE:HA | 1:B:1144:ARG:HA | 1.82 | 0.59 |
| 1:D:1445:TRP:HE1 | 1:D:1508:GLY:HA3 | 1.67 | 0.59 |
| 1:A:2426:SER:HB3 | 1:D:143:LEU:HD23 | 1.84 | 0.59 |
| 1:C:3914:ALA:HA | 1:C:3917:VAL:HG12 | 1.85 | 0.59 |
| 1:D:559:ILE:HD13 | 1:D:593:HIS:HB3 | 1.85 | 0.59 |
| 1:A:123:HIS:HD2 | 1:A:126:SER:H | 1.50 | 0.59 |
| 1:A:143:LEU:HD23 | 1:B:2426:SER:HB3 | 1.84 | 0.59 |
| 1:A:3914:ALA:HA | 1:A:3917:VAL:HG12 | 1.85 | 0.59 |
| 1:D:3914:ALA:HA | 1:D:3917:VAL:HG12 | 1.85 | 0.59 |
| 1:C:143:LEU:HD23 | 1:D:2426:SER:HB3 | 1.84 | 0.59 |
| 1:D:3924:TYR:O | 1:D:3932:ASN:ND2 | 2.36 | 0.59 |
| 1:B:3914:ALA:HA | 1:B:3917:VAL:HG12 | 1.85 | 0.59 |
| 1:C:25:THR:HG22 | 1:C:34:LYS:HG2 | 1.83 | 0.59 |
| 1:C:3841:PHE:HB3 | 1:C:3920:THR:HG21 | 1.82 | 0.59 |
| 1:D:1258:PHE:HB2 | 1:D:1593:HIS:HB3 | 1.83 | 0.59 |
| 1:A:1113:MET:HG3 | 1:A:1156:TRP:HZ2 | 1.67 | 0.59 |
| 1:C:756:SER:HB3 | 1:C:769:ARG:HB2 | 1.84 | 0.59 |
| 1:C:1469:LEU:HG | 1:C:1480:ILE:HD11 | 1.84 | 0.59 |
| 1:B:1113:MET:HG3 | 1:B:1156:TRP:HZ2 | 1.67 | 0.58 |
| 1:C:672:LYS:HA | 1:C:760:ASP:HA | 1.84 | 0.58 |
| 1:C:1113:MET:HG3 | 1:C:1156:TRP:HZ2 | 1.67 | 0.58 |
| 1:A:3924:TYR:O | 1:A:3932:ASN:ND2 | 2.36 | 0.58 |
| 1:C:4883:GLU:O | 1:C:4887:THR:HG23 | 2.04 | 0.58 |
| 1:B:1445:TRP:HE1 | 1:B:1508:GLY:HA3 | 1.67 | 0.58 |
| 1:C:1706:LEU:HD21 | 1:C:1787:LEU:HD21 | 1.85 | 0.58 |
| 1:B:3802:SER:OG | 1:B:3833:ASP:O | 2.18 | 0.58 |
| 1:C:4617:TYR:OH | 1:C:4629:GLY:O | 2.20 | 0.58 |
| 1:D:756:SER:HB3 | 1:D:769:ARG:HB2 | 1.84 | 0.58 |
| 1:A:1104:GLU:HA | 1:A:1163:GLY:HA2 | 1.85 | 0.58 |
| 1:B:3924:TYR:O | 1:B:3932:ASN:ND2 | 2.36 | 0.58 |
| 1:C:897:LYS:HD3 | 1:C:918:LEU:HD21 | 1.86 | 0.58 |
| 1:B:559:ILE:HD13 | 1:B:593:HIS:HB3 | 1.85 | 0.58 |
| 1:D:672:LYS:HA | 1:D:760:ASP:HA | 1.84 | 0.58 |
| 1:B:897:LYS:HD3 | 1:B:918:LEU:HD21 | 1.86 | 0.58 |
| 1:B:1706:LEU:HD21 | 1:B:1787:LEU:HD21 | 1.85 | 0.58 |
| 1:D:4617:TYR:OH | 1:D:4629:GLY:O | 2.20 | 0.58 |
| 1:A:247:VAL:O | 1:A:272:ARG:NH1 | 2.36 | 0.58 |
| 1:C:559:ILE:HD13 | 1:C:593:HIS:HB3 | 1.85 | 0.58 |
| 1:A:897:LYS:HD3 | 1:A:918:LEU:HD21 | 1.86 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:4883:GLU:O | 1:A:4887:THR:HG23 | 2.04 | 0.58 |
| 1:C:1104:GLU:HA | 1:C:1163:GLY:HA2 | 1.85 | 0.58 |
| 1:D:897:LYS:HD3 | 1:D:918:LEU:HD21 | 1.86 | 0.58 |
| 1:D:4883:GLU:O | 1:D:4887:THR:HG23 | 2.04 | 0.58 |
| 1:A:1445:TRP:HE1 | 1:A:1508:GLY:HA3 | 1.67 | 0.57 |
| 1:C:3924:TYR:O | 1:C:3932:ASN:ND2 | 2.36 | 0.57 |
| 1:C:4915:ASN:O | 1:C:4917:ALA:N | 2.38 | 0.57 |
| 1:D:1104:GLU:HA | 1:D:1163:GLY:HA2 | 1.85 | 0.57 |
| 1:A:1124:PRO:HB2 | 1:A:1252:SER:HB3 | 1.86 | 0.57 |
| 1:A:4915:ASN:O | 1:A:4917:ALA:N | 2.38 | 0.57 |
| 1:C:1445:TRP:HE1 | 1:C:1508:GLY:HA3 | 1.67 | 0.57 |
| 1:D:247:VAL:O | 1:D:272:ARG:NH1 | 2.36 | 0.57 |
| 1:B:4915:ASN:O | 1:B:4917:ALA:N | 2.38 | 0.57 |
| 1:C:1114:ARG:HB2 | 1:C:1206:SER:HB3 | 1.86 | 0.57 |
| 1:D:1706:LEU:HD21 | 1:D:1787:LEU:HD21 | 1.85 | 0.57 |
| 1:B:1114:ARG:HB2 | 1:B:1206:SER:HB3 | 1.86 | 0.57 |
| 1:D:1124:PRO:HB2 | 1:D:1252:SER:HB3 | 1.86 | 0.57 |
| 1:D:4915:ASN:O | 1:D:4917:ALA:N | 2.38 | 0.57 |
| 1:B:4883:GLU:O | 1:B:4887:THR:HG23 | 2.04 | 0.57 |
| 1:C:299:HIS:HE2 | 1:C:301:THR:HG1 | 1.51 | 0.57 |
| 1:C:530:LEU:HD23 | 1:C:533:LEU:HD12 | 1.87 | 0.57 |
| 1:C:1429:SER:HA | 1:C:1507:ILE:HG12 | 1.87 | 0.57 |
| 1:D:1429:SER:HA | 1:D:1507:ILE:HG12 | 1.87 | 0.57 |
| 1:A:530:LEU:HD23 | 1:A:533:LEU:HD12 | 1.87 | 0.57 |
| 1:C:1433:PHE:HD2 | 1:C:1551:ASN:HB3 | 1.70 | 0.57 |
| 1:D:530:LEU:HD23 | 1:D:533:LEU:HD12 | 1.87 | 0.57 |
| 1:A:1429:SER:HA | 1:A:1507:ILE:HG12 | 1.87 | 0.57 |
| 1:B:1104:GLU:HA | 1:B:1163:GLY:HA2 | 1.85 | 0.57 |
| 1:A:1706:LEU:HD21 | 1:A:1787:LEU:HD21 | 1.85 | 0.56 |
| 1:A:1433:PHE:HD2 | 1:A:1551:ASN:HB3 | 1.70 | 0.56 |
| 1:D:1442:TRP:HD1 | 1:D:1488:VAL:HG13 | 1.71 | 0.56 |
| 1:B:4791:ARG:NE | 1:C:4523:VAL:HG11 | 2.20 | 0.56 |
| 1:C:473:GLU:OE2 | 1:C:477:ASN:ND2 | 2.39 | 0.56 |
| 1:C:1124:PRO:HB2 | 1:C:1252:SER:HB3 | 1.86 | 0.56 |
| 1:C:1442:TRP:HD1 | 1:C:1488:VAL:HG13 | 1.71 | 0.56 |
| 1:C:1699:ARG:NH1 | 1:C:1816:PHE:O | 2.39 | 0.56 |
| 1:D:1433:PHE:HD2 | 1:D:1551:ASN:HB3 | 1.70 | 0.56 |
| 1:B:1429:SER:HA | 1:B:1507:ILE:HG12 | 1.87 | 0.56 |
| 1:C:58:VAL:HG22 | 1:C:320:GLU:HA | 1.87 | 0.56 |
| 1:C:4015:LEU:HD22 | 1:C:4126:VAL:HG21 | 1.87 | 0.56 |
| 1:D:473:GLU:OE2 | 1:D:477:ASN:ND2 | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1442:TRP:HD1 | 1:A:1488:VAL:HG13 | 1.71 | 0.56 |
| 1:A:1114:ARG:HB2 | 1:A:1206:SER:HB3 | 1.86 | 0.56 |
| 1:B:530:LEU:HD23 | 1:B:533:LEU:HD12 | 1.87 | 0.56 |
| 1:B:4161:TRP:HD1 | 1:B:4201:MET:HE1 | 1.71 | 0.56 |
| 1:D:4015:LEU:HD22 | 1:D:4126:VAL:HG21 | 1.87 | 0.56 |
| 1:A:1121:GLY:O | 1:A:1133:ARG:NH1 | 2.38 | 0.56 |
| 1:C:2060:GLN:NE2 | 1:C:2092:GLN:O | 2.39 | 0.56 |
| 1:D:1114:ARG:HB2 | 1:D:1206:SER:HB3 | 1.86 | 0.56 |
| 1:A:4015:LEU:HD22 | 1:A:4126:VAL:HG21 | 1.87 | 0.56 |
| 1:B:58:VAL:HG22 | 1:B:320:GLU:HA | 1.87 | 0.56 |
| 1:D:1121:GLY:O | 1:D:1133:ARG:NH1 | 2.38 | 0.56 |
| 1:A:58:VAL:HG22 | 1:A:320:GLU:HA | 1.87 | 0.56 |
| 1:A:4791:ARG:NE | 1:B:4523:VAL:HG11 | 2.20 | 0.56 |
| 1:B:1699:ARG:NH1 | 1:B:1816:PHE:O | 2.39 | 0.56 |
| 1:B:4015:LEU:HD22 | 1:B:4126:VAL:HG21 | 1.87 | 0.56 |
| 1:A:2060:GLN:NE2 | 1:A:2092:GLN:O | 2.39 | 0.56 |
| 1:A:4618:ILE:HD12 | 1:A:4667:ILE:HD12 | 1.88 | 0.56 |
| 1:B:986:ILE:HD12 | 1:B:1059:GLY:HA2 | 1.88 | 0.56 |
| 1:C:4161:TRP:HD1 | 1:C:4201:MET:HE1 | 1.71 | 0.56 |
| 1:C:4618:ILE:HD12 | 1:C:4667:ILE:HD12 | 1.88 | 0.56 |
| 1:C:4791:ARG:NE | 1:D:4523:VAL:HG11 | 2.20 | 0.56 |
| 1:B:1124:PRO:HB2 | 1:B:1252:SER:HB3 | 1.86 | 0.55 |
| 1:D:2060:GLN:NE2 | 1:D:2092:GLN:O | 2.39 | 0.55 |
| 1:B:1433:PHE:HD2 | 1:B:1551:ASN:HB3 | 1.70 | 0.55 |
| 1:B:2060:GLN:NE2 | 1:B:2092:GLN:O | 2.39 | 0.55 |
| 1:D:1272:ARG:NH2 | 1:D:1590:PHE:O | 2.39 | 0.55 |
| 1:A:1272:ARG:NH2 | 1:A:1590:PHE:O | 2.39 | 0.55 |
| 1:A:4523:VAL:HG11 | 1:D:4791:ARG:NE | 2.20 | 0.55 |
| 1:B:375:GLN:HE21 | 1:B:392:ILE:HD13 | 1.72 | 0.55 |
| 1:B:473:GLU:OE2 | 1:B:477:ASN:ND2 | 2.39 | 0.55 |
| 1:C:1726:ILE:HD11 | 1:C:2121:LEU:HD11 | 1.89 | 0.55 |
| 1:D:1726:ILE:HD11 | 1:D:2121:LEU:HD11 | 1.89 | 0.55 |
| 1:A:618:CYS:SG | 1:A:629:GLN:NE2 | 2.80 | 0.55 |
| 1:A:986:ILE:HD12 | 1:A:1059:GLY:HA2 | 1.88 | 0.55 |
| 1:A:2463:PRO:HB3 | 1:A:2516:ALA:HA | 1.88 | 0.55 |
| 1:B:4618:ILE:HD12 | 1:B:4667:ILE:HD12 | 1.88 | 0.55 |
| 1:B:4819:TYR:O | 1:B:4823:ARG:NH2 | 2.33 | 0.55 |
| 1:C:1272:ARG:NH2 | 1:C:1590:PHE:O | 2.39 | 0.55 |
| 1:D:58:VAL:HG22 | 1:D:320:GLU:HA | 1.87 | 0.55 |
| 1:A:375:GLN:HE21 | 1:A:392:ILE:HD13 | 1.72 | 0.55 |
| 1:A:1699:ARG:NH1 | 1:A:1816:PHE:O | 2.39 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:4618:ILE:HD12 | 1:D:4667:ILE:HD12 | 1.88 | 0.55 |
| 1:B:2843:GLU:OE1 | 1:B:2887:ARG:NH2 | 2.40 | 0.55 |
| 1:C:2843:GLU:OE1 | 1:C:2887:ARG:NH2 | 2.40 | 0.55 |
| 1:C:4840:TYR:O | 1:C:4844:ARG:N | 2.40 | 0.55 |
| 1:B:1272:ARG:NH2 | 1:B:1590:PHE:O | 2.39 | 0.55 |
| 1:C:247:VAL:O | 1:C:272:ARG:NH1 | 2.36 | 0.55 |
| 1:C:2463:PRO:HB3 | 1:C:2516:ALA:HA | 1.88 | 0.55 |
| 1:B:618:CYS:SG | 1:B:629:GLN:NE2 | 2.80 | 0.55 |
| 1:B:1442:TRP:HD1 | 1:B:1488:VAL:HG13 | 1.71 | 0.55 |
| 1:C:797:GLY:HA2 | 1:C:1622:LEU:HA | 1.89 | 0.55 |
| 1:D:375:GLN:HE21 | 1:D:392:ILE:HD13 | 1.72 | 0.55 |
| 1:D:1699:ARG:NH1 | 1:D:1816:PHE:O | 2.39 | 0.55 |
| 1:C:618:CYS:SG | 1:C:629:GLN:NE2 | 2.80 | 0.55 |
| 1:D:797:GLY:HA2 | 1:D:1622:LEU:HA | 1.89 | 0.55 |
| 1:D:2463:PRO:HB3 | 1:D:2516:ALA:HA | 1.88 | 0.55 |
| 1:A:4514:ILE:HG21 | 1:A:4740:PHE:HE2 | 1.72 | 0.55 |
| 1:B:1726:ILE:HD11 | 1:B:2121:LEU:HD11 | 1.89 | 0.55 |
| 1:B:4514:ILE:HG21 | 1:B:4740:PHE:HE2 | 1.72 | 0.55 |
| 1:C:986:ILE:HD12 | 1:C:1059:GLY:HA2 | 1.88 | 0.55 |
| 1:C:4514:ILE:HG21 | 1:C:4740:PHE:HE2 | 1.72 | 0.55 |
| 1:A:473:GLU:OE2 | 1:A:477:ASN:ND2 | 2.39 | 0.54 |
| 1:A:1510:VAL:HG12 | 1:A:1511:VAL:HG23 | 1.89 | 0.54 |
| 1:B:3960:SER:HG | 1:B:4070:CYS:HG | 1.53 | 0.54 |
| 1:D:2158:GLN:O | 1:D:3616:ARG:NH1 | 2.40 | 0.54 |
| 1:A:1156:TRP:HB3 | 1:A:1177:LEU:HD11 | 1.90 | 0.54 |
| 1:B:4840:TYR:O | 1:B:4844:ARG:N | 2.40 | 0.54 |
| 1:C:258:ARG:NH1 | 1:C:317:MET:SD | 2.80 | 0.54 |
| 1:A:258:ARG:NH1 | 1:A:317:MET:SD | 2.80 | 0.54 |
| 1:A:1726:ILE:HD11 | 1:A:2121:LEU:HD11 | 1.89 | 0.54 |
| 1:B:258:ARG:NH1 | 1:B:317:MET:SD | 2.80 | 0.54 |
| 1:B:2158:GLN:O | 1:B:3616:ARG:NH1 | 2.40 | 0.54 |
| 1:D:258:ARG:NH1 | 1:D:317:MET:SD | 2.80 | 0.54 |
| 1:D:986:ILE:HD12 | 1:D:1059:GLY:HA2 | 1.88 | 0.54 |
| 1:D:2843:GLU:OE1 | 1:D:2887:ARG:NH2 | 2.40 | 0.54 |
| 1:A:2158:GLN:O | 1:A:3616:ARG:NH1 | 2.40 | 0.54 |
| 1:C:375:GLN:HE21 | 1:C:392:ILE:HD13 | 1.72 | 0.54 |
| 1:C:2158:GLN:O | 1:C:3616:ARG:NH1 | 2.40 | 0.54 |
| 1:D:618:CYS:SG | 1:D:629:GLN:NE2 | 2.80 | 0.54 |
| 1:D:4514:ILE:HG21 | 1:D:4740:PHE:HE2 | 1.72 | 0.54 |
| 1:A:797:GLY:HA2 | 1:A:1622:LEU:HA | 1.89 | 0.54 |
| 1:B:4046:LYS:HG3 | 1:B:4068:LEU:HD22 | 1.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1601:ASN:ND2 | 1:C:1643:GLU:OE2 | 2.41 | 0.54 |
| 1:A:2843:GLU:OE1 | 1:A:2887:ARG:NH2 | 2.40 | 0.54 |
| 1:B:247:VAL:O | 1:B:272:ARG:NH1 | 2.36 | 0.54 |
| 1:B:1156:TRP:HB3 | 1:B:1177:LEU:HD11 | 1.90 | 0.54 |
| 1:B:1601:ASN:ND2 | 1:B:1643:GLU:OE2 | 2.41 | 0.54 |
| 1:C:1156:TRP:HB3 | 1:C:1177:LEU:HD11 | 1.90 | 0.54 |
| 1:C:4046:LYS:HG3 | 1:C:4068:LEU:HD22 | 1.90 | 0.54 |
| 1:D:1510:VAL:HG12 | 1:D:1511:VAL:HG23 | 1.89 | 0.54 |
| 1:A:1607:ASP:HB3 | 1:A:1608:VAL:HG23 | 1.90 | 0.54 |
| 1:B:228:LEU:HB3 | 1:B:289:ILE:HB | 1.90 | 0.54 |
| 1:B:1510:VAL:HG12 | 1:B:1511:VAL:HG23 | 1.89 | 0.54 |
| 1:C:1607:ASP:HB3 | 1:C:1608:VAL:HG23 | 1.90 | 0.54 |
| 1:D:1156:TRP:HB3 | 1:D:1177:LEU:HD11 | 1.90 | 0.54 |
| 1:A:1601:ASN:ND2 | 1:A:1643:GLU:OE2 | 2.41 | 0.54 |
| 1:A:4161:TRP:HD1 | 1:A:4201:MET:HE1 | 1.71 | 0.54 |
| 1:C:228:LEU:HB3 | 1:C:289:ILE:HB | 1.90 | 0.54 |
| 1:D:598:ILE:HG23 | 1:D:636:LEU:HD12 | 1.90 | 0.54 |
| 1:B:797:GLY:HA2 | 1:B:1622:LEU:HA | 1.89 | 0.54 |
| 1:B:2463:PRO:HB3 | 1:B:2516:ALA:HA | 1.88 | 0.54 |
| 1:B:1121:GLY:O | 1:B:1133:ARG:NH1 | 2.38 | 0.54 |
| 1:B:1607:ASP:HB3 | 1:B:1608:VAL:HG23 | 1.90 | 0.54 |
| 1:D:1601:ASN:ND2 | 1:D:1643:GLU:OE2 | 2.41 | 0.54 |
| 1:A:4840:TYR:O | 1:A:4844:ARG:N | 2.40 | 0.53 |
| 1:C:26:ALA:HB3 | 1:C:33:GLN:HB3 | 1.90 | 0.53 |
| 1:C:1911:LEU:HD11 | 1:C:2063:ILE:HG12 | 1.90 | 0.53 |
| 1:D:4819:TYR:O | 1:D:4823:ARG:NH2 | 2.33 | 0.53 |
| 1:C:3926:GLN:HE21 | 1:C:4936:GLY:H | 1.56 | 0.53 |
| 1:C:4660:GLU:HG3 | 1:C:4664:ARG:HH21 | 1.73 | 0.53 |
| 1:B:598:ILE:HG23 | 1:B:636:LEU:HD12 | 1.90 | 0.53 |
| 1:D:4161:TRP:HD1 | 1:D:4201:MET:HE1 | 1.71 | 0.53 |
| 1:A:3926:GLN:HE21 | 1:A:4936:GLY:H | 1.56 | 0.53 |
| 1:C:1121:GLY:O | 1:C:1133:ARG:NH1 | 2.38 | 0.53 |
| 1:D:636:LEU:HD21 | 1:D:643:LEU:HD21 | 1.90 | 0.53 |
| 1:D:1607:ASP:HB3 | 1:D:1608:VAL:HG23 | 1.90 | 0.53 |
| 1:D:1726:ILE:HB | 1:D:2109:ILE:HD11 | 1.91 | 0.53 |
| 1:D:4840:TYR:O | 1:D:4844:ARG:N | 2.40 | 0.53 |
| 1:C:3730:ALA:HA | 1:C:3733:HIS:CE1 | 2.44 | 0.53 |
| 1:D:1911:LEU:HD11 | 1:D:2063:ILE:HG12 | 1.90 | 0.53 |
| 1:D:2488:LEU:O | 1:D:2492:GLY:N | 2.42 | 0.53 |
| 1:B:3730:ALA:HA | 1:B:3733:HIS:CE1 | 2.44 | 0.53 |
| 1:C:61:ASP:OD2 | 1:C:417:ARG:NH2 | 2.42 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:598:ILE:HG23 | 1:C:636:LEU:HD12 | 1.90 | 0.53 |
| 1:D:26:ALA:HB3 | 1:D:33:GLN:HB3 | 1.90 | 0.53 |
| 1:D:4046:LYS:HG3 | 1:D:4068:LEU:HD22 | 1.90 | 0.53 |
| 1:A:1726:ILE:HB | 1:A:2109:ILE:HD11 | 1.91 | 0.53 |
| 1:A:3730:ALA:HA | 1:A:3733:HIS:CE1 | 2.44 | 0.53 |
| 1:A:3798:MET:HE1 | 1:A:3875:THR:HB | 1.91 | 0.53 |
| 1:A:598:ILE:HG23 | 1:A:636:LEU:HD12 | 1.90 | 0.53 |
| 1:B:61:ASP:OD2 | 1:B:417:ARG:NH2 | 2.42 | 0.53 |
| 1:B:1726:ILE:HB | 1:B:2109:ILE:HD11 | 1.91 | 0.53 |
| 1:C:1510:VAL:HG12 | 1:C:1511:VAL:HG23 | 1.89 | 0.53 |
| 1:D:4660:GLU:HG3 | 1:D:4664:ARG:HH21 | 1.73 | 0.53 |
| 1:B:677:LEU:HD11 | 1:B:792:VAL:HG21 | 1.91 | 0.53 |
| 1:B:4660:GLU:HG3 | 1:B:4664:ARG:HH21 | 1.73 | 0.53 |
| 1:C:4889:CYS:HB3 | 1:C:4892:CYS:SG | 2.49 | 0.53 |
| 1:D:3798:MET:HE1 | 1:D:3875:THR:HB | 1.91 | 0.53 |
| 1:D:4889:CYS:HB3 | 1:D:4892:CYS:SG | 2.49 | 0.53 |
| 1:A:228:LEU:HB3 | 1:A:289:ILE:HB | 1.90 | 0.52 |
| 1:A:2488:LEU:O | 1:A:2492:GLY:N | 2.42 | 0.52 |
| 1:A:2793:THR:OG1 | 1:A:2901:GLY:O | 2.25 | 0.52 |
| 1:B:4889:CYS:HB3 | 1:B:4892:CYS:SG | 2.49 | 0.52 |
| 1:D:61:ASP:OD2 | 1:D:417:ARG:NH2 | 2.42 | 0.52 |
| 1:D:228:LEU:HB3 | 1:D:289:ILE:HB | 1.90 | 0.52 |
| 1:D:3729:GLN:O | 1:D:3733:HIS:ND1 | 2.41 | 0.52 |
| 1:D:4108:GLU:HG3 | 1:D:4136:ARG:HH22 | 1.74 | 0.52 |
| 1:B:636:LEU:HD21 | 1:B:643:LEU:HD21 | 1.90 | 0.52 |
| 1:B:1094:TYR:OH | 1:B:1808:ASP:OD1 | 2.28 | 0.52 |
| 1:B:4050:HIS:HB2 | 1:B:4068:LEU:HD11 | 1.91 | 0.52 |
| 1:C:677:LEU:HD11 | 1:C:792:VAL:HG21 | 1.91 | 0.52 |
| 1:B:1911:LEU:HD11 | 1:B:2063:ILE:HG12 | 1.90 | 0.52 |
| 1:B:3798:MET:HE1 | 1:B:3875:THR:HB | 1.91 | 0.52 |
| 1:C:1094:TYR:OH | 1:C:1808:ASP:OD1 | 2.28 | 0.52 |
| 1:C:3798:MET:HE1 | 1:C:3875:THR:HB | 1.92 | 0.52 |
| 1:A:1911:LEU:HD11 | 1:A:2063:ILE:HG12 | 1.90 | 0.52 |
| 1:B:2488:LEU:O | 1:B:2492:GLY:N | 2.42 | 0.52 |
| 1:B:4791:ARG:CZ | 1:C:4523:VAL:HG11 | 2.39 | 0.52 |
| 1:A:26:ALA:HB3 | 1:A:33:GLN:HB3 | 1.90 | 0.52 |
| 1:A:364:GLN:HE21 | 1:A:369:GLY:HA2 | 1.75 | 0.52 |
| 1:A:4889:CYS:HB3 | 1:A:4892:CYS:SG | 2.49 | 0.52 |
| 1:C:2488:LEU:O | 1:C:2492:GLY:N | 2.42 | 0.52 |
| 1:A:4660:GLU:HG3 | 1:A:4664:ARG:HH21 | 1.73 | 0.52 |
| 1:A:4819:TYR:O | 1:A:4823:ARG:NH2 | 2.33 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:26:ALA:HB3 | 1:B:33:GLN:HB3 | 1.90 | 0.52 |
| 1:B:1487:MET:HB3 | 1:B:1520:PHE:HZ | 1.75 | 0.52 |
| 1:B:3926:GLN:HE21 | 1:B:4936:GLY:H | 1.56 | 0.52 |
| 1:C:4108:GLU:HG3 | 1:C:4136:ARG:HH22 | 1.74 | 0.52 |
| 1:A:192:LEU:O | 1:A:212:TRP:NE1 | 2.42 | 0.52 |
| 1:A:1487:MET:HB3 | 1:A:1520:PHE:HZ | 1.75 | 0.52 |
| 1:A:4046:LYS:HG3 | 1:A:4068:LEU:HD22 | 1.90 | 0.52 |
| 1:A:4791:ARG:CZ | 1:B:4523:VAL:HG11 | 2.39 | 0.52 |
| 1:C:636:LEU:HD21 | 1:C:643:LEU:HD21 | 1.90 | 0.52 |
| 1:C:1726:ILE:HB | 1:C:2109:ILE:HD11 | 1.91 | 0.52 |
| 1:D:3730:ALA:HA | 1:D:3733:HIS:CE1 | 2.44 | 0.52 |
| 1:A:61:ASP:OD2 | 1:A:417:ARG:NH2 | 2.42 | 0.52 |
| 1:C:1938:GLN:HE22 | 1:C:3614:ARG:HA | 1.75 | 0.52 |
| 1:A:1252:SER:HB2 | 1:A:1598:ARG:HB2 | 1.92 | 0.52 |
| 1:A:4108:GLU:HG3 | 1:A:4136:ARG:HH22 | 1.74 | 0.52 |
| 1:A:4523:VAL:HG11 | 1:D:4791:ARG:CZ | 2.39 | 0.52 |
| 1:C:4791:ARG:CZ | 1:D:4523:VAL:HG11 | 2.39 | 0.52 |
| 1:D:1094:TYR:OH | 1:D:1808:ASP:OD1 | 2.28 | 0.52 |
| 1:D:1632:ILE:HD11 | 1:D:1637:ARG:HG2 | 1.92 | 0.52 |
| 1:A:476:GLN:NE2 | 1:A:3679:GLU:OE1 | 2.43 | 0.52 |
| 1:A:636:LEU:HD21 | 1:A:643:LEU:HD21 | 1.90 | 0.52 |
| 1:A:677:LEU:HD11 | 1:A:792:VAL:HG21 | 1.91 | 0.52 |
| 1:A:1703:TYR:HD2 | 1:A:1820:PRO:HB2 | 1.75 | 0.52 |
| 1:B:2192:LYS:O | 1:B:2196:ASN:ND2 | 2.43 | 0.52 |
| 1:B:4108:GLU:HG3 | 1:B:4136:ARG:HH22 | 1.74 | 0.52 |
| 1:C:1632:ILE:HD11 | 1:C:1637:ARG:HG2 | 1.92 | 0.52 |
| 1:C:4050:HIS:HB2 | 1:C:4068:LEU:HD11 | 1.91 | 0.52 |
| 1:C:4873:GLU:HA | 1:D:4875:ARG:HH11 | 1.68 | 0.52 |
| 1:D:3926:GLN:HE21 | 1:D:4936:GLY:H | 1.56 | 0.52 |
| 1:A:4873:GLU:HA | 1:B:4875:ARG:HH11 | 1.68 | 0.51 |
| 1:B:1252:SER:HB2 | 1:B:1598:ARG:HB2 | 1.92 | 0.51 |
| 1:D:1487:MET:HB3 | 1:D:1520:PHE:HZ | 1.75 | 0.51 |
| 1:A:1938:GLN:HE22 | 1:A:3614:ARG:HA | 1.75 | 0.51 |
| 1:B:1629:SER:HA | 1:B:1640:ASP:HA | 1.93 | 0.51 |
| 1:B:2103:LEU:HA | 1:B:2106:THR:HG22 | 1.93 | 0.51 |
| 1:C:1487:MET:HB3 | 1:C:1520:PHE:HZ | 1.75 | 0.51 |
| 1:C:2103:LEU:HA | 1:C:2106:THR:HG22 | 1.93 | 0.51 |
| 1:C:2192:LYS:O | 1:C:2196:ASN:ND2 | 2.43 | 0.51 |
| 1:D:4809:ASP:O | 1:D:4813:CYS:N | 2.39 | 0.51 |
| 1:A:1613:GLU:HB2 | 1:A:1618:LEU:H | 1.76 | 0.51 |
| 1:B:476:GLN:NE2 | 1:B:3679:GLU:OE1 | 2.43 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1613:GLU:HB2 | 1:B:1618:LEU:H | 1.76 | 0.51 |
| 1:D:677:LEU:HD11 | 1:D:792:VAL:HG21 | 1.91 | 0.51 |
| 1:D:1613:GLU:HB2 | 1:D:1618:LEU:H | 1.76 | 0.51 |
| 1:D:1629:SER:HA | 1:D:1640:ASP:HA | 1.93 | 0.51 |
| 1:C:1629:SER:HA | 1:C:1640:ASP:HA | 1.93 | 0.51 |
| 1:C:1703:TYR:HD2 | 1:C:1820:PRO:HB2 | 1.75 | 0.51 |
| 1:C:4809:ASP:O | 1:C:4813:CYS:N | 2.39 | 0.51 |
| 1:D:476:GLN:NE2 | 1:D:3679:GLU:OE1 | 2.43 | 0.51 |
| 1:B:364:GLN:HE21 | 1:B:369:GLY:HA2 | 1.75 | 0.51 |
| 1:C:476:GLN:NE2 | 1:C:3679:GLU:OE1 | 2.43 | 0.51 |
| 1:C:1613:GLU:HB2 | 1:C:1618:LEU:H | 1.76 | 0.51 |
| 1:C:3980:VAL:HA | 1:C:3983:LEU:HD23 | 1.92 | 0.51 |
| 1:D:364:GLN:HE21 | 1:D:369:GLY:HA2 | 1.75 | 0.51 |
| 1:D:1703:TYR:HD2 | 1:D:1820:PRO:HB2 | 1.75 | 0.51 |
| 1:A:4050:HIS:HB2 | 1:A:4068:LEU:HD11 | 1.91 | 0.51 |
| 1:B:23:GLN:HA | 1:B:36:CYS:HA | 1.92 | 0.51 |
| 1:B:1654:HIS:O | 1:B:1657:THR:OG1 | 2.26 | 0.51 |
| 1:B:4163:LYS:HB2 | 1:B:4164:PRO:HD3 | 1.92 | 0.51 |
| 1:C:4636:ILE:O | 1:C:4651:LYS:NZ | 2.44 | 0.51 |
| 1:D:192:LEU:O | 1:D:212:TRP:NE1 | 2.42 | 0.51 |
| 1:D:1252:SER:HB2 | 1:D:1598:ARG:HB2 | 1.92 | 0.51 |
| 1:D:1938:GLN:HE22 | 1:D:3614:ARG:HA | 1.75 | 0.51 |
| 1:D:2192:LYS:O | 1:D:2196:ASN:ND2 | 2.43 | 0.51 |
| 1:D:4636:ILE:O | 1:D:4651:LYS:NZ | 2.44 | 0.51 |
| 1:A:1094:TYR:OH | 1:A:1808:ASP:OD1 | 2.28 | 0.51 |
| 1:A:4163:LYS:HB2 | 1:A:4164:PRO:HD3 | 1.92 | 0.51 |
| 1:B:1576:LYS:NZ | 1:B:1589:GLN:OE1 | 2.44 | 0.51 |
| 1:B:4636:ILE:O | 1:B:4651:LYS:NZ | 2.44 | 0.51 |
| 1:C:364:GLN:HE21 | 1:C:369:GLY:HA2 | 1.75 | 0.51 |
| 1:C:1252:SER:HB2 | 1:C:1598:ARG:HB2 | 1.92 | 0.51 |
| 1:A:4875:ARG:CZ | 1:D:4872:GLY:O | 2.59 | 0.51 |
| 1:B:1703:TYR:HD2 | 1:B:1820:PRO:HB2 | 1.75 | 0.51 |
| 1:A:1576:LYS:NZ | 1:A:1589:GLN:OE1 | 2.44 | 0.51 |
| 1:A:2103:LEU:HA | 1:A:2106:THR:HG22 | 1.93 | 0.51 |
| 1:A:4636:ILE:O | 1:A:4651:LYS:NZ | 2.44 | 0.51 |
| 1:C:4872:GLY:O | 1:D:4875:ARG:CZ | 2.59 | 0.51 |
| 1:A:2192:LYS:O | 1:A:2196:ASN:ND2 | 2.43 | 0.51 |
| 1:B:4872:GLY:O | 1:C:4875:ARG:CZ | 2.59 | 0.51 |
| 1:C:4819:TYR:O | 1:C:4823:ARG:NH2 | 2.33 | 0.51 |
| 1:D:2103:LEU:HA | 1:D:2106:THR:HG22 | 1.93 | 0.51 |
| 1:D:4050:HIS:HB2 | 1:D:4068:LEU:HD11 | 1.91 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1632:ILE:HD11 | 1:B:1637:ARG:HG2 | 1.92 | 0.50 |
| 1:B:4052:ALA:O | 1:B:4056:HIS:ND1 | 2.44 | 0.50 |
| 1:C:150:GLN:NE2 | 1:C:158:CYS:SG | 2.80 | 0.50 |
| 1:C:4052:ALA:O | 1:C:4056:HIS:ND1 | 2.44 | 0.50 |
| 1:D:1726:ILE:HG13 | 1:D:1757:LEU:HD23 | 1.93 | 0.50 |
| 1:D:4174:ILE:HG21 | 1:D:4885:MET:HE2 | 1.93 | 0.50 |
| 1:A:1629:SER:HA | 1:A:1640:ASP:HA | 1.93 | 0.50 |
| 1:A:2857:LYS:HE3 | 1:A:2861:LEU:HD11 | 1.93 | 0.50 |
| 1:B:260:VAL:HG12 | 1:B:391:ALA:HB3 | 1.92 | 0.50 |
| 1:B:3980:VAL:HA | 1:B:3983:LEU:HD23 | 1.92 | 0.50 |
| 1:C:419:ILE:HD13 | 1:C:492:GLU:HG3 | 1.93 | 0.50 |
| 1:A:3980:VAL:HA | 1:A:3983:LEU:HD23 | 1.92 | 0.50 |
| 1:A:260:VAL:HG12 | 1:A:391:ALA:HB3 | 1.92 | 0.50 |
| 1:A:1911:LEU:HD22 | 1:A:2088:LEU:HD13 | 1.94 | 0.50 |
| 1:C:23:GLN:HA | 1:C:36:CYS:HA | 1.92 | 0.50 |
| 1:C:1128:LEU:HD13 | 1:C:1206:SER:HB2 | 1.94 | 0.50 |
| 1:C:1654:HIS:O | 1:C:1657:THR:OG1 | 2.26 | 0.50 |
| 1:C:4647:ASP:O | 1:C:4650:VAL:HG23 | 2.12 | 0.50 |
| 1:A:812:LYS:HD3 | 1:A:813:PHE:HB2 | 1.93 | 0.50 |
| 1:A:1632:ILE:HD11 | 1:A:1637:ARG:HG2 | 1.92 | 0.50 |
| 1:A:3729:GLN:O | 1:A:3733:HIS:ND1 | 2.41 | 0.50 |
| 1:B:150:GLN:NE2 | 1:B:158:CYS:SG | 2.80 | 0.50 |
| 1:B:1431:ARG:HB3 | 1:B:1554:GLN:HB2 | 1.94 | 0.50 |
| 1:B:1726:ILE:HG13 | 1:B:1757:LEU:HD23 | 1.93 | 0.50 |
| 1:B:1938:GLN:HE22 | 1:B:3614:ARG:HA | 1.75 | 0.50 |
| 1:B:2857:LYS:HE3 | 1:B:2861:LEU:HD11 | 1.93 | 0.50 |
| 1:D:1128:LEU:HD13 | 1:D:1206:SER:HB2 | 1.94 | 0.50 |
| 1:D:1911:LEU:HD22 | 1:D:2088:LEU:HD13 | 1.94 | 0.50 |
| 1:C:260:VAL:HG12 | 1:C:391:ALA:HB3 | 1.92 | 0.50 |
| 1:C:812:LYS:HD3 | 1:C:813:PHE:HB2 | 1.93 | 0.50 |
| 1:C:1576:LYS:NZ | 1:C:1589:GLN:OE1 | 2.44 | 0.50 |
| 1:D:1228:THR:HA | 1:D:1232:LEU:HD12 | 1.94 | 0.50 |
| 1:A:1726:ILE:HG13 | 1:A:1757:LEU:HD23 | 1.93 | 0.50 |
| 1:A:2783:MET:HG2 | 1:A:2788:TRP:HE3 | 1.77 | 0.50 |
| 1:D:23:GLN:HA | 1:D:36:CYS:HA | 1.92 | 0.50 |
| 1:A:2439:ILE:HD13 | 1:A:2465:HIS:HB3 | 1.94 | 0.50 |
| 1:B:1444:GLY:HA2 | 1:B:1487:MET:HB2 | 1.94 | 0.50 |
| 1:C:565:LEU:HG | 1:C:604:HIS:CE1 | 2.47 | 0.50 |
| 1:C:1228:THR:HA | 1:C:1232:LEU:HD12 | 1.94 | 0.50 |
| 1:C:1726:ILE:HG13 | 1:C:1757:LEU:HD23 | 1.93 | 0.50 |
| 1:A:23:GLN:HA | 1:A:36:CYS:HA | 1.92 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:4780:TYR:HA | 1:A:4783:THR:HG22 | 1.94 | 0.50 |
| 1:B:419:ILE:HD13 | 1:B:492:GLU:HG3 | 1.93 | 0.50 |
| 1:C:4861:ALA:HA | 1:C:4864:GLN:HB2 | 1.94 | 0.50 |
| 1:D:260:VAL:HG12 | 1:D:391:ALA:HB3 | 1.92 | 0.50 |
| 1:D:4163:LYS:HB2 | 1:D:4164:PRO:HD3 | 1.92 | 0.50 |
| 1:A:3961:GLN:NE2 | 1:A:4069:SER:OG | 2.45 | 0.49 |
| 1:A:4052:ALA:O | 1:A:4056:HIS:ND1 | 2.44 | 0.49 |
| 1:B:565:LEU:HG | 1:B:604:HIS:CE1 | 2.47 | 0.49 |
| 1:B:2439:ILE:HD13 | 1:B:2465:HIS:HB3 | 1.94 | 0.49 |
| 1:B:4647:ASP:O | 1:B:4650:VAL:HG23 | 2.12 | 0.49 |
| 1:C:1444:GLY:HA2 | 1:C:1487:MET:HB2 | 1.94 | 0.49 |
| 1:D:1576:LYS:NZ | 1:D:1589:GLN:OE1 | 2.44 | 0.49 |
| 1:A:4811:LEU:HD23 | 1:B:4519:LEU:HG | 1.94 | 0.49 |
| 1:A:4872:GLY:O | 1:B:4875:ARG:CZ | 2.59 | 0.49 |
| 1:B:4784:VAL:HG13 | 1:C:4738:PHE:CE2 | 2.47 | 0.49 |
| 1:B:4861:ALA:HA | 1:B:4864:GLN:HB2 | 1.94 | 0.49 |
| 1:C:1911:LEU:HD22 | 1:C:2088:LEU:HD13 | 1.94 | 0.49 |
| 1:D:719:GLY:H | 1:D:722:LEU:HD12 | 1.77 | 0.49 |
| 1:D:1654:HIS:O | 1:D:1657:THR:OG1 | 2.26 | 0.49 |
| 1:D:2857:LYS:HE3 | 1:D:2861:LEU:HD11 | 1.93 | 0.49 |
| 1:A:4632:ASP:OD1 | 1:A:4709:TRP:NE1 | 2.42 | 0.49 |
| 1:A:4784:VAL:HG13 | 1:B:4738:PHE:CE2 | 2.47 | 0.49 |
| 1:B:2783:MET:HG2 | 1:B:2788:TRP:HE3 | 1.77 | 0.49 |
| 1:B:4811:LEU:HD23 | 1:C:4519:LEU:HG | 1.94 | 0.49 |
| 1:C:4784:VAL:HG13 | 1:D:4738:PHE:CE2 | 2.47 | 0.49 |
| 1:D:3961:GLN:NE2 | 1:D:4069:SER:OG | 2.45 | 0.49 |
| 1:D:4610:LYS:HB3 | 1:D:4616:LEU:HD22 | 1.94 | 0.49 |
| 1:A:477:ASN:OD1 | 1:A:480:ARG:NH1 | 2.46 | 0.49 |
| 1:A:1444:GLY:HA2 | 1:A:1487:MET:HB2 | 1.94 | 0.49 |
| 1:A:2521:LEU:HD22 | 1:A:2565:ALA:HB2 | 1.94 | 0.49 |
| 1:A:4519:LEU:HG | 1:D:4811:LEU:HD23 | 1.94 | 0.49 |
| 1:B:3961:GLN:NE2 | 1:B:4069:SER:OG | 2.45 | 0.49 |
| 1:B:4780:TYR:HA | 1:B:4783:THR:HG22 | 1.94 | 0.49 |
| 1:D:812:LYS:HD3 | 1:D:813:PHE:HB2 | 1.93 | 0.49 |
| 1:D:3980:VAL:HA | 1:D:3983:LEU:HD23 | 1.92 | 0.49 |
| 1:A:1228:THR:HA | 1:A:1232:LEU:HD12 | 1.94 | 0.49 |
| 1:A:1431:ARG:HB3 | 1:A:1554:GLN:HB2 | 1.94 | 0.49 |
| 1:D:1444:GLY:HA2 | 1:D:1487:MET:HB2 | 1.94 | 0.49 |
| 1:D:2521:LEU:HD22 | 1:D:2565:ALA:HB2 | 1.94 | 0.49 |
| 1:A:288:HIS:ND1 | 1:A:349:MET:O | 2.43 | 0.49 |
| 1:B:1911:LEU:HD22 | 1:B:2088:LEU:HD13 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:2783:MET:HG2 | 1:C:2788:TRP:HE3 | 1.77 | 0.49 |
| 1:C:4163:LYS:HB2 | 1:C:4164:PRO:HD3 | 1.92 | 0.49 |
| 1:D:4003:MET:HG3 | 1:D:4004:LEU:HG | 1.95 | 0.49 |
| 1:A:419:ILE:HD13 | 1:A:492:GLU:HG3 | 1.93 | 0.49 |
| 1:A:4647:ASP:O | 1:A:4650:VAL:HG23 | 2.12 | 0.49 |
| 1:B:1184:ASP:HB3 | 1:B:1186:SER:H | 1.78 | 0.49 |
| 1:B:1228:THR:HA | 1:B:1232:LEU:HD12 | 1.94 | 0.49 |
| 1:C:2857:LYS:HE3 | 1:C:2861:LEU:HD11 | 1.93 | 0.49 |
| 1:D:227:TYR:CE1 | 1:D:355:LYS:HG2 | 2.47 | 0.49 |
| 1:D:477:ASN:OD1 | 1:D:480:ARG:NH1 | 2.46 | 0.49 |
| 1:D:4052:ALA:O | 1:D:4056:HIS:ND1 | 2.44 | 0.49 |
| 1:A:1128:LEU:HD13 | 1:A:1206:SER:HB2 | 1.94 | 0.49 |
| 1:A:4610:LYS:HB3 | 1:A:4616:LEU:HD22 | 1.94 | 0.49 |
| 1:B:335:LYS:NZ | 1:B:398:HIS:O | 2.44 | 0.49 |
| 1:B:812:LYS:HD3 | 1:B:813:PHE:HB2 | 1.93 | 0.49 |
| 1:B:2521:LEU:HD22 | 1:B:2565:ALA:HB2 | 1.94 | 0.49 |
| 1:B:3729:GLN:O | 1:B:3733:HIS:ND1 | 2.41 | 0.49 |
| 1:C:227:TYR:CE1 | 1:C:355:LYS:HG2 | 2.47 | 0.49 |
| 1:C:335:LYS:NZ | 1:C:398:HIS:O | 2.44 | 0.49 |
| 1:D:4647:ASP:O | 1:D:4650:VAL:HG23 | 2.12 | 0.49 |
| 1:B:1473:LYS:HE2 | 1:B:1475:LYS:HE3 | 1.95 | 0.49 |
| 1:C:2439:ILE:HD13 | 1:C:2465:HIS:HB3 | 1.94 | 0.49 |
| 1:C:4610:LYS:HB3 | 1:C:4616:LEU:HD22 | 1.94 | 0.49 |
| 1:D:419:ILE:HD13 | 1:D:492:GLU:HG3 | 1.93 | 0.49 |
| 1:D:565:LEU:HG | 1:D:604:HIS:CE1 | 2.47 | 0.49 |
| 1:D:1086:ARG:HH22 | 1:D:1254:ARG:HB2 | 1.78 | 0.49 |
| 1:D:4780:TYR:HA | 1:D:4783:THR:HG22 | 1.94 | 0.49 |
| 1:A:565:LEU:HG | 1:A:604:HIS:CE1 | 2.47 | 0.49 |
| 1:A:1184:ASP:HB3 | 1:A:1186:SER:H | 1.78 | 0.49 |
| 1:B:719:GLY:H | 1:B:722:LEU:HD12 | 1.77 | 0.49 |
| 1:B:2421:ARG:HH21 | 1:B:2425:ARG:HH21 | 1.61 | 0.49 |
| 1:C:1431:ARG:HB3 | 1:C:1554:GLN:HB2 | 1.94 | 0.49 |
| 1:C:2521:LEU:HD22 | 1:C:2565:ALA:HB2 | 1.94 | 0.49 |
| 1:C:4003:MET:HG3 | 1:C:4004:LEU:HG | 1.95 | 0.49 |
| 1:D:1184:ASP:HB3 | 1:D:1186:SER:H | 1.78 | 0.49 |
| 1:D:1431:ARG:HB3 | 1:D:1554:GLN:HB2 | 1.94 | 0.49 |
| 1:A:3663:ASP:OD2 | 1:A:3735:ARG:NH2 | 2.46 | 0.48 |
| 1:A:150:GLN:NE2 | 1:A:158:CYS:SG | 2.80 | 0.48 |
| 1:A:4774:LEU:HD13 | 1:B:4754:LEU:HD21 | 1.95 | 0.48 |
| 1:B:1086:ARG:HB2 | 1:B:1207:LEU:HB2 | 1.95 | 0.48 |
| 1:B:1220:ASP:O | 1:B:1223:THR:N | 2.35 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:477:ASN:OD1 | 1:C:480:ARG:NH1 | 2.46 | 0.48 |
| 1:C:4174:ILE:HD13 | 1:C:4885:MET:HE1 | 1.96 | 0.48 |
| 1:D:2783:MET:HG2 | 1:D:2788:TRP:HE3 | 1.77 | 0.48 |
| 1:A:4191:VAL:HA | 1:A:4194:CYS:HB2 | 1.96 | 0.48 |
| 1:A:4732:LEU:O | 1:A:4736:ASN:N | 2.44 | 0.48 |
| 1:A:4861:ALA:HA | 1:A:4864:GLN:HB2 | 1.94 | 0.48 |
| 1:B:1128:LEU:HD13 | 1:B:1206:SER:HB2 | 1.94 | 0.48 |
| 1:B:2345:LEU:HD21 | 1:B:2434:VAL:HB | 1.96 | 0.48 |
| 1:C:3663:ASP:OD2 | 1:C:3735:ARG:NH2 | 2.46 | 0.48 |
| 1:C:4764:ASN:ND2 | 1:C:4866:LEU:O | 2.47 | 0.48 |
| 1:C:4780:TYR:HA | 1:C:4783:THR:HG22 | 1.94 | 0.48 |
| 1:D:3663:ASP:OD2 | 1:D:3735:ARG:NH2 | 2.46 | 0.48 |
| 1:D:4861:ALA:HA | 1:D:4864:GLN:HB2 | 1.94 | 0.48 |
| 1:A:719:GLY:H | 1:A:722:LEU:HD12 | 1.77 | 0.48 |
| 1:A:1934:VAL:O | 1:A:1938:GLN:N | 2.43 | 0.48 |
| 1:A:2345:LEU:HD21 | 1:A:2434:VAL:HB | 1.96 | 0.48 |
| 1:B:477:ASN:OD1 | 1:B:480:ARG:NH1 | 2.46 | 0.48 |
| 1:B:653:SER:OG | 1:B:794:PHE:O | 2.31 | 0.48 |
| 1:B:1184:ASP:OD2 | 1:B:1188:SER:OG | 2.31 | 0.48 |
| 1:B:3663:ASP:OD2 | 1:B:3735:ARG:NH2 | 2.46 | 0.48 |
| 1:C:192:LEU:O | 1:C:212:TRP:NE1 | 2.42 | 0.48 |
| 1:C:2723:ASN:OD1 | 1:C:2773:ARG:NH2 | 2.47 | 0.48 |
| 1:C:4774:LEU:HD13 | 1:D:4754:LEU:HD21 | 1.95 | 0.48 |
| 1:D:150:GLN:NE2 | 1:D:158:CYS:SG | 2.80 | 0.48 |
| 1:D:2209:ARG:HG3 | 1:D:2251:ASN:HD21 | 1.79 | 0.48 |
| 1:D:2345:LEU:HD21 | 1:D:2434:VAL:HB | 1.96 | 0.48 |
| 1:A:4003:MET:HG3 | 1:A:4004:LEU:HG | 1.95 | 0.48 |
| 1:B:1086:ARG:HH22 | 1:B:1254:ARG:HB2 | 1.78 | 0.48 |
| 1:C:2421:ARG:HH21 | 1:C:2425:ARG:HH21 | 1.61 | 0.48 |
| 1:C:4811:LEU:HD23 | 1:D:4519:LEU:HG | 1.94 | 0.48 |
| 1:D:1184:ASP:OD2 | 1:D:1188:SER:OG | 2.31 | 0.48 |
| 1:A:4013:MET:O | 1:A:4017:PHE:N | 2.46 | 0.48 |
| 1:C:2345:LEU:HD21 | 1:C:2434:VAL:HB | 1.96 | 0.48 |
| 1:C:4780:TYR:OH | 1:D:4515:ASN:ND2 | 2.46 | 0.48 |
| 1:D:1473:LYS:HE2 | 1:D:1475:LYS:HE3 | 1.95 | 0.48 |
| 1:A:1220:ASP:O | 1:A:1223:THR:N | 2.35 | 0.48 |
| 1:A:1473:LYS:HE2 | 1:A:1475:LYS:HE3 | 1.95 | 0.48 |
| 1:A:2421:ARG:HH21 | 1:A:2425:ARG:HH21 | 1.61 | 0.48 |
| 1:C:374:TYR:HA | 1:C:391:ALA:HA | 1.96 | 0.48 |
| 1:C:719:GLY:H | 1:C:722:LEU:HD12 | 1.77 | 0.48 |
| 1:C:852:GLY:HA2 | 1:C:853:PRO:HA | 1.69 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:3961:GLN:NE2 | 1:C:4069:SER:OG | 2.45 | 0.48 |
| 1:D:2723:ASN:OD1 | 1:D:2773:ARG:NH2 | 2.47 | 0.48 |
| 1:A:428:ARG:O | 1:A:432:GLY:N | 2.46 | 0.48 |
| 1:A:1833:ILE:HG22 | 1:A:1834:PHE:H | 1.79 | 0.48 |
| 1:A:4515:ASN:ND2 | 1:D:4780:TYR:OH | 2.46 | 0.48 |
| 1:A:4738:PHE:CE2 | 1:D:4784:VAL:HG13 | 2.47 | 0.48 |
| 1:A:4780:TYR:OH | 1:B:4515:ASN:ND2 | 2.46 | 0.48 |
| 1:C:2717:LYS:HB2 | 1:C:2792:ARG:HH22 | 1.79 | 0.48 |
| 1:D:4764:ASN:ND2 | 1:D:4866:LEU:O | 2.47 | 0.48 |
| 1:A:4130:PHE:O | 1:A:4134:LEU:N | 2.45 | 0.48 |
| 1:B:2723:ASN:OD1 | 1:B:2773:ARG:NH2 | 2.47 | 0.48 |
| 1:B:4771:THR:OG1 | 1:C:4757:ILE:HD13 | 2.14 | 0.48 |
| 1:B:4780:TYR:OH | 1:C:4515:ASN:ND2 | 2.46 | 0.48 |
| 1:D:2439:ILE:HD13 | 1:D:2465:HIS:HB3 | 1.94 | 0.48 |
| 1:B:192:LEU:O | 1:B:212:TRP:NE1 | 2.42 | 0.48 |
| 1:B:1833:ILE:HG22 | 1:B:1834:PHE:H | 1.79 | 0.48 |
| 1:B:3911:ILE:HG21 | 1:B:3971:GLU:HB3 | 1.96 | 0.48 |
| 1:B:4610:LYS:HB3 | 1:B:4616:LEU:HD22 | 1.94 | 0.48 |
| 1:C:1184:ASP:HB3 | 1:C:1186:SER:H | 1.78 | 0.48 |
| 1:D:1086:ARG:HB2 | 1:D:1207:LEU:HB2 | 1.95 | 0.48 |
| 1:D:1626:GLN:O | 1:D:1687:TYR:OH | 2.32 | 0.48 |
| 1:B:4191:VAL:HA | 1:B:4194:CYS:HB2 | 1.96 | 0.47 |
| 1:C:1473:LYS:HE2 | 1:C:1475:LYS:HE3 | 1.95 | 0.47 |
| 1:D:2717:LYS:HB2 | 1:D:2792:ARG:HH22 | 1.79 | 0.47 |
| 1:D:4013:MET:O | 1:D:4017:PHE:N | 2.46 | 0.47 |
| 1:D:4191:VAL:HA | 1:D:4194:CYS:HB2 | 1.96 | 0.47 |
| 1:B:115:TYR:HB3 | 1:B:164:PRO:HD3 | 1.97 | 0.47 |
| 1:C:3729:GLN:O | 1:C:3733:HIS:ND1 | 2.41 | 0.47 |
| 1:C:3911:ILE:HG21 | 1:C:3971:GLU:HB3 | 1.96 | 0.47 |
| 1:D:374:TYR:HA | 1:D:391:ALA:HA | 1.96 | 0.47 |
| 1:D:2421:ARG:HH21 | 1:D:2425:ARG:HH21 | 1.61 | 0.47 |
| 1:D:3911:ILE:HG21 | 1:D:3971:GLU:HB3 | 1.96 | 0.47 |
| 1:A:1086:ARG:HH22 | 1:A:1254:ARG:HB2 | 1.78 | 0.47 |
| 1:A:2723:ASN:OD1 | 1:A:2773:ARG:NH2 | 2.47 | 0.47 |
| 1:A:4764:ASN:ND2 | 1:A:4866:LEU:O | 2.47 | 0.47 |
| 1:A:4771:THR:OG1 | 1:B:4757:ILE:HD13 | 2.14 | 0.47 |
| 1:D:2076:ILE:HG21 | 1:D:2081:LEU:HD22 | 1.97 | 0.47 |
| 1:D:3804:LEU:HD13 | 1:D:3910:ALA:HB2 | 1.96 | 0.47 |
| 1:A:115:TYR:HB3 | 1:A:164:PRO:HD3 | 1.97 | 0.47 |
| 1:A:3911:ILE:HG21 | 1:A:3971:GLU:HB3 | 1.96 | 0.47 |
| 1:B:4764:ASN:ND2 | 1:B:4866:LEU:O | 2.47 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:4774:LEU:HD13 | 1:C:4754:LEU:HD21 | 1.95 | 0.47 |
| 1:C:1086:ARG:HH22 | 1:C:1254:ARG:HB2 | 1.78 | 0.47 |
| 1:D:115:TYR:HB3 | 1:D:164:PRO:HD3 | 1.97 | 0.47 |
| 1:D:2793:THR:OG1 | 1:D:2901:GLY:O | 2.25 | 0.47 |
| 1:A:374:TYR:HA | 1:A:391:ALA:HA | 1.96 | 0.47 |
| 1:A:1184:ASP:OD2 | 1:A:1188:SER:OG | 2.31 | 0.47 |
| 1:A:2076:ILE:HG21 | 1:A:2081:LEU:HD22 | 1.97 | 0.47 |
| 1:B:4003:MET:HG3 | 1:B:4004:LEU:HG | 1.95 | 0.47 |
| 1:C:590:LYS:HB2 | 1:C:593:HIS:HD2 | 1.80 | 0.47 |
| 1:C:718:VAL:HA | 1:C:736:CYS:HB2 | 1.96 | 0.47 |
| 1:A:572:LEU:O | 1:A:576:HIS:N | 2.47 | 0.47 |
| 1:A:2717:LYS:HB2 | 1:A:2792:ARG:HH22 | 1.79 | 0.47 |
| 1:A:3804:LEU:HD13 | 1:A:3910:ALA:HB2 | 1.96 | 0.47 |
| 1:A:4757:ILE:HD13 | 1:D:4771:THR:OG1 | 2.14 | 0.47 |
| 1:B:300:VAL:O | 1:B:420:ARG:NH2 | 2.48 | 0.47 |
| 1:B:572:LEU:O | 1:B:576:HIS:N | 2.47 | 0.47 |
| 1:B:3800:SER:OG | 1:B:3801:CYS:N | 2.47 | 0.47 |
| 1:B:4191:VAL:HB | 1:B:4950:TRP:HH2 | 1.79 | 0.47 |
| 1:C:115:TYR:HB3 | 1:C:164:PRO:HD3 | 1.97 | 0.47 |
| 1:C:1086:ARG:HB2 | 1:C:1207:LEU:HB2 | 1.95 | 0.47 |
| 1:C:1184:ASP:OD2 | 1:C:1188:SER:OG | 2.31 | 0.47 |
| 1:C:2737:LYS:HB3 | 1:C:2742:TRP:HB2 | 1.96 | 0.47 |
| 1:D:4191:VAL:HB | 1:D:4950:TRP:HH2 | 1.79 | 0.47 |
| 1:A:1086:ARG:HB2 | 1:A:1207:LEU:HB2 | 1.95 | 0.47 |
| 1:A:1707:ILE:HA | 1:A:1711:LEU:HB2 | 1.97 | 0.47 |
| 1:A:2209:ARG:HG3 | 1:A:2251:ASN:HD21 | 1.79 | 0.47 |
| 1:B:374:TYR:HA | 1:B:391:ALA:HA | 1.96 | 0.47 |
| 1:B:2076:ILE:HG21 | 1:B:2081:LEU:HD22 | 1.97 | 0.47 |
| 1:B:2717:LYS:HB2 | 1:B:2792:ARG:HH22 | 1.79 | 0.47 |
| 1:C:2076:ILE:HG21 | 1:C:2081:LEU:HD22 | 1.97 | 0.47 |
| 1:C:2121:LEU:O | 1:C:2125:GLY:N | 2.47 | 0.47 |
| 1:C:2793:THR:OG1 | 1:C:2901:GLY:O | 2.25 | 0.47 |
| 1:C:4752:LYS:HA | 1:C:4755:ARG:HE | 1.80 | 0.47 |
| 1:C:4771:THR:OG1 | 1:D:4757:ILE:HD13 | 2.14 | 0.47 |
| 1:D:125:TYR:CZ | 1:D:417:ARG:HB3 | 2.50 | 0.47 |
| 1:D:335:LYS:NZ | 1:D:398:HIS:O | 2.44 | 0.47 |
| 1:D:718:VAL:HA | 1:D:736:CYS:HB2 | 1.96 | 0.47 |
| 1:B:2209:ARG:HG3 | 1:B:2251:ASN:HD21 | 1.79 | 0.47 |
| 1:B:2424:LEU:HD23 | 1:B:2476:VAL:HG22 | 1.97 | 0.47 |
| 1:B:2737:LYS:HB3 | 1:B:2742:TRP:HB2 | 1.96 | 0.47 |
| 1:B:4174:ILE:HG21 | 1:B:4885:MET:HE2 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:4207:ILE:HG22 | 1:B:4498:ARG:HE | 1.80 | 0.47 |
| 1:C:4191:VAL:HA | 1:C:4194:CYS:HB2 | 1.96 | 0.47 |
| 1:D:300:VAL:O | 1:D:420:ARG:NH2 | 2.48 | 0.47 |
| 1:D:590:LYS:HB2 | 1:D:593:HIS:HD2 | 1.80 | 0.47 |
| 1:D:4732:LEU:O | 1:D:4736:ASN:N | 2.44 | 0.47 |
| 1:A:4207:ILE:HG22 | 1:A:4498:ARG:HE | 1.80 | 0.47 |
| 1:C:125:TYR:CZ | 1:C:417:ARG:HB3 | 2.50 | 0.47 |
| 1:B:2301:ASP:OD1 | 1:B:2304:ARG:NH2 | 2.48 | 0.47 |
| 1:B:3696:MET:O | 1:B:3699:SER:OG | 2.26 | 0.47 |
| 1:B:4130:PHE:O | 1:B:4134:LEU:N | 2.45 | 0.47 |
| 1:B:4752:LYS:HA | 1:B:4755:ARG:HE | 1.80 | 0.47 |
| 1:A:125:TYR:CZ | 1:A:417:ARG:HB3 | 2.50 | 0.46 |
| 1:A:298:ARG:HE | 1:A:303:GLY:HA2 | 1.81 | 0.46 |
| 1:A:300:VAL:O | 1:A:420:ARG:NH2 | 2.48 | 0.46 |
| 1:A:1172:THR:HG21 | 1:A:1190:LEU:HD13 | 1.97 | 0.46 |
| 1:A:2301:ASP:OD1 | 1:A:2304:ARG:NH2 | 2.48 | 0.46 |
| 1:A:2737:LYS:HB3 | 1:A:2742:TRP:HB2 | 1.96 | 0.46 |
| 1:B:125:TYR:CZ | 1:B:417:ARG:HB3 | 2.50 | 0.46 |
| 1:C:1833:ILE:HG22 | 1:C:1834:PHE:H | 1.79 | 0.46 |
| 1:C:2424:LEU:HD23 | 1:C:2476:VAL:HG22 | 1.97 | 0.46 |
| 1:D:1172:THR:HG21 | 1:D:1190:LEU:HD13 | 1.97 | 0.46 |
| 1:A:1174:MET:SD | 1:A:1236:TYR:OH | 2.73 | 0.46 |
| 1:B:590:LYS:HB2 | 1:B:593:HIS:HD2 | 1.80 | 0.46 |
| 1:B:1445:TRP:H | 1:B:1487:MET:HB2 | 1.81 | 0.46 |
| 1:C:300:VAL:O | 1:C:420:ARG:NH2 | 2.48 | 0.46 |
| 1:C:1172:THR:HG21 | 1:C:1190:LEU:HD13 | 1.97 | 0.46 |
| 1:C:2209:ARG:HG3 | 1:C:2251:ASN:HD21 | 1.79 | 0.46 |
| 1:D:1833:ILE:HG22 | 1:D:1834:PHE:H | 1.79 | 0.46 |
| 1:D:2301:ASP:OD1 | 1:D:2304:ARG:NH2 | 2.48 | 0.46 |
| 1:D:2737:LYS:HB3 | 1:D:2742:TRP:HB2 | 1.96 | 0.46 |
| 1:D:4565:SER:OG | 1:D:4566:SER:N | 2.49 | 0.46 |
| 1:A:590:LYS:HB2 | 1:A:593:HIS:HD2 | 1.80 | 0.46 |
| 1:A:2858:LYS:HG2 | 1:A:2872:LEU:HD13 | 1.96 | 0.46 |
| 1:A:4565:SER:OG | 1:A:4566:SER:N | 2.49 | 0.46 |
| 1:A:4754:LEU:HD21 | 1:D:4774:LEU:HD13 | 1.95 | 0.46 |
| 1:B:657:PRO:HA | 1:B:834:VAL:HA | 1.97 | 0.46 |
| 1:B:1172:THR:HG21 | 1:B:1190:LEU:HD13 | 1.97 | 0.46 |
| 1:B:1763:PHE:HB3 | 1:B:1781:GLU:HB3 | 1.98 | 0.46 |
| 1:B:3804:LEU:HD13 | 1:B:3910:ALA:HB2 | 1.96 | 0.46 |
| 1:B:4627:ILE:O | 1:B:4631:TRP:N | 2.48 | 0.46 |
| 1:C:1626:GLN:O | 1:C:1687:TYR:OH | 2.32 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:4191:VAL:HB | 1:C:4950:TRP:HH2 | 1.79 | 0.46 |
| 1:D:4752:LYS:HA | 1:D:4755:ARG:HE | 1.80 | 0.46 |
| 1:A:718:VAL:HA | 1:A:736:CYS:HB2 | 1.96 | 0.46 |
| 1:A:1445:TRP:H | 1:A:1487:MET:HB2 | 1.81 | 0.46 |
| 1:A:4752:LYS:HA | 1:A:4755:ARG:HE | 1.80 | 0.46 |
| 1:B:428:ARG:O | 1:B:432:GLY:N | 2.46 | 0.46 |
| 1:B:1707:ILE:HA | 1:B:1711:LEU:HB2 | 1.97 | 0.46 |
| 1:B:2121:LEU:O | 1:B:2125:GLY:N | 2.47 | 0.46 |
| 1:C:648:LEU:HD23 | 1:C:1684:GLN:HA | 1.98 | 0.46 |
| 1:A:648:LEU:HD23 | 1:A:1684:GLN:HA | 1.98 | 0.46 |
| 1:B:648:LEU:HD23 | 1:B:1684:GLN:HA | 1.98 | 0.46 |
| 1:B:718:VAL:HA | 1:B:736:CYS:HB2 | 1.96 | 0.46 |
| 1:B:4201:MET:O | 1:B:4205:ALA:N | 2.49 | 0.46 |
| 1:C:180:ASP:HB3 | 1:C:211:LEU:HD22 | 1.97 | 0.46 |
| 1:C:3804:LEU:HD13 | 1:C:3910:ALA:HB2 | 1.96 | 0.46 |
| 1:D:2858:LYS:HG2 | 1:D:2872:LEU:HD13 | 1.96 | 0.46 |
| 1:A:1763:PHE:HB3 | 1:A:1781:GLU:HB3 | 1.98 | 0.46 |
| 1:A:2326:ILE:HD13 | 1:A:2326:ILE:HA | 1.83 | 0.46 |
| 1:A:2424:LEU:HD23 | 1:A:2476:VAL:HG22 | 1.97 | 0.46 |
| 1:A:4191:VAL:HB | 1:A:4950:TRP:HH2 | 1.79 | 0.46 |
| 1:B:852:GLY:HA2 | 1:B:853:PRO:HA | 1.69 | 0.46 |
| 1:D:2424:LEU:HD23 | 1:D:2476:VAL:HG22 | 1.97 | 0.46 |
| 1:A:657:PRO:HA | 1:A:834:VAL:HA | 1.97 | 0.46 |
| 1:A:4174:ILE:HG21 | 1:A:4885:MET:HE2 | 1.97 | 0.46 |
| 1:B:436:LEU:HD13 | 1:B:518:ALA:HA | 1.98 | 0.46 |
| 1:B:2858:LYS:HG2 | 1:B:2872:LEU:HD13 | 1.96 | 0.46 |
| 1:C:298:ARG:HA | 1:C:305:TYR:HA | 1.97 | 0.46 |
| 1:C:698:ALA:HB2 | 1:C:722:LEU:HD23 | 1.98 | 0.46 |
| 1:C:1174:MET:SD | 1:C:1236:TYR:OH | 2.73 | 0.46 |
| 1:C:2301:ASP:OD1 | 1:C:2304:ARG:NH2 | 2.48 | 0.46 |
| 1:C:4632:ASP:OD1 | 1:C:4709:TRP:NE1 | 2.42 | 0.46 |
| 1:D:298:ARG:HA | 1:D:305:TYR:HA | 1.97 | 0.46 |
| 1:D:698:ALA:HB2 | 1:D:722:LEU:HD23 | 1.98 | 0.46 |
| 1:A:298:ARG:HA | 1:A:305:TYR:HA | 1.97 | 0.46 |
| 1:A:436:LEU:HD13 | 1:A:518:ALA:HA | 1.98 | 0.46 |
| 1:A:4875:ARG:HH11 | 1:D:4873:GLU:HA | 1.68 | 0.46 |
| 1:B:180:ASP:HB3 | 1:B:211:LEU:HD22 | 1.97 | 0.46 |
| 1:C:170:SER:OG | 1:C:171:GLU:N | 2.49 | 0.46 |
| 1:C:572:LEU:O | 1:C:576:HIS:N | 2.47 | 0.46 |
| 1:C:1707:ILE:HA | 1:C:1711:LEU:HB2 | 1.97 | 0.46 |
| 1:C:4627:ILE:O | 1:C:4631:TRP:N | 2.48 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:298:ARG:HE | 1:D:303:GLY:HA2 | 1.81 | 0.46 |
| 1:D:657:PRO:HA | 1:D:834:VAL:HA | 1.97 | 0.46 |
| 1:D:4201:MET:O | 1:D:4205:ALA:N | 2.49 | 0.46 |
| 1:A:189:GLU:CG | 1:B:2419:ARG:NH2 | 2.79 | 0.46 |
| 1:B:189:GLU:CG | 1:C:2419:ARG:NH2 | 2.79 | 0.46 |
| 1:B:298:ARG:HA | 1:B:305:TYR:HA | 1.97 | 0.46 |
| 1:B:1174:MET:SD | 1:B:1236:TYR:OH | 2.73 | 0.46 |
| 1:B:4565:SER:OG | 1:B:4566:SER:N | 2.49 | 0.46 |
| 1:C:189:GLU:OE1 | 1:D:2419:ARG:CZ | 2.64 | 0.46 |
| 1:C:2858:LYS:HG2 | 1:C:2872:LEU:HD13 | 1.96 | 0.46 |
| 1:D:537:LEU:HD11 | 1:D:551:PHE:HZ | 1.81 | 0.46 |
| 1:D:1174:MET:SD | 1:D:1236:TYR:OH | 2.73 | 0.46 |
| 1:A:695:VAL:O | 1:A:725:TYR:N | 2.49 | 0.46 |
| 1:B:537:LEU:HD11 | 1:B:551:PHE:HZ | 1.81 | 0.46 |
| 1:C:189:GLU:CG | 1:D:2419:ARG:NH2 | 2.79 | 0.46 |
| 1:C:288:HIS:ND1 | 1:C:349:MET:O | 2.43 | 0.46 |
| 1:C:478:ARG:HE | 1:C:485:ARG:HH22 | 1.64 | 0.46 |
| 1:D:478:ARG:HE | 1:D:485:ARG:HH22 | 1.64 | 0.46 |
| 1:D:648:LEU:HD23 | 1:D:1684:GLN:HA | 1.98 | 0.46 |
| 1:D:1707:ILE:HA | 1:D:1711:LEU:HB2 | 1.97 | 0.46 |
| 1:A:537:LEU:HD11 | 1:A:551:PHE:HZ | 1.81 | 0.45 |
| 1:C:298:ARG:HE | 1:C:303:GLY:HA2 | 1.81 | 0.45 |
| 1:C:4565:SER:OG | 1:C:4566:SER:N | 2.49 | 0.45 |
| 1:D:428:ARG:O | 1:D:432:GLY:N | 2.46 | 0.45 |
| 1:D:4207:ILE:HG22 | 1:D:4498:ARG:HE | 1.80 | 0.45 |
| 1:D:4627:ILE:O | 1:D:4631:TRP:N | 2.48 | 0.45 |
| 1:A:170:SER:OG | 1:A:171:GLU:N | 2.49 | 0.45 |
| 1:A:2419:ARG:CZ | 1:D:189:GLU:OE1 | 2.64 | 0.45 |
| 1:B:237:LEU:N | 1:B:404:ASN:O | 2.49 | 0.45 |
| 1:B:4869:ASP:O | 1:B:4873:GLU:N | 2.49 | 0.45 |
| 1:C:237:LEU:N | 1:C:404:ASN:O | 2.49 | 0.45 |
| 1:C:646:THR:OG1 | 1:C:1684:GLN:NE2 | 2.49 | 0.45 |
| 1:C:657:PRO:HA | 1:C:834:VAL:HA | 1.97 | 0.45 |
| 1:D:1763:PHE:HB3 | 1:D:1781:GLU:HB3 | 1.98 | 0.45 |
| 1:A:180:ASP:HB3 | 1:A:211:LEU:HD22 | 1.97 | 0.45 |
| 1:A:848:ARG:HB2 | 1:A:1603:PHE:HZ | 1.81 | 0.45 |
| 1:C:1445:TRP:H | 1:C:1487:MET:HB2 | 1.81 | 0.45 |
| 1:C:1763:PHE:HB3 | 1:C:1781:GLU:HB3 | 1.98 | 0.45 |
| 1:D:848:ARG:HB2 | 1:D:1603:PHE:HZ | 1.81 | 0.45 |
| 1:A:646:THR:OG1 | 1:A:1684:GLN:NE2 | 2.49 | 0.45 |
| 1:A:698:ALA:HB2 | 1:A:722:LEU:HD23 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:2419:ARG:NH2 | 1:D:189:GLU:CG | 2.79 | 0.45 |
| 1:B:189:GLU:OE1 | 1:C:2419:ARG:CZ | 2.64 | 0.45 |
| 1:B:698:ALA:HB2 | 1:B:722:LEU:HD23 | 1.98 | 0.45 |
| 1:C:4207:ILE:HG22 | 1:C:4498:ARG:HE | 1.80 | 0.45 |
| 1:D:180:ASP:HB3 | 1:D:211:LEU:HD22 | 1.97 | 0.45 |
| 1:D:4869:ASP:O | 1:D:4873:GLU:N | 2.49 | 0.45 |
| 1:A:189:GLU:OE1 | 1:B:2419:ARG:CZ | 2.64 | 0.45 |
| 1:A:4201:MET:O | 1:A:4205:ALA:N | 2.49 | 0.45 |
| 1:B:298:ARG:HE | 1:B:303:GLY:HA2 | 1.81 | 0.45 |
| 1:C:4013:MET:O | 1:C:4017:PHE:N | 2.46 | 0.45 |
| 1:D:843:GLU:HA | 1:D:848:ARG:HG2 | 1.98 | 0.45 |
| 1:D:3859:LEU:HD22 | 1:D:3871:ILE:HG21 | 1.98 | 0.45 |
| 1:A:227:TYR:CE1 | 1:A:355:LYS:HG2 | 2.47 | 0.45 |
| 1:A:4588:ILE:HG22 | 1:A:4723:LEU:HD23 | 1.99 | 0.45 |
| 1:B:1602:GLN:HB3 | 1:B:1604:LEU:HD12 | 1.99 | 0.45 |
| 1:B:4142:SER:HB3 | 1:B:4940:TYR:CE1 | 2.52 | 0.45 |
| 1:D:436:LEU:HD13 | 1:D:518:ALA:HA | 1.98 | 0.45 |
| 1:D:766:ILE:HB | 1:D:779:PHE:HB2 | 1.99 | 0.45 |
| 1:D:4588:ILE:HG22 | 1:D:4723:LEU:HD23 | 1.99 | 0.45 |
| 1:A:478:ARG:HE | 1:A:485:ARG:HH22 | 1.64 | 0.45 |
| 1:A:4142:SER:HB3 | 1:A:4940:TYR:CE1 | 2.52 | 0.45 |
| 1:B:478:ARG:HE | 1:B:485:ARG:HH22 | 1.64 | 0.45 |
| 1:C:537:LEU:HD11 | 1:C:551:PHE:HZ | 1.81 | 0.45 |
| 1:C:766:ILE:HB | 1:C:779:PHE:HB2 | 1.99 | 0.45 |
| 1:C:1220:ASP:O | 1:C:1223:THR:N | 2.35 | 0.45 |
| 1:C:4142:SER:HB3 | 1:C:4940:TYR:CE1 | 2.52 | 0.45 |
| 1:C:4201:MET:O | 1:C:4205:ALA:N | 2.49 | 0.45 |
| 1:D:1445:TRP:H | 1:D:1487:MET:HB2 | 1.81 | 0.45 |
| 1:D:3800:SER:OG | 1:D:3801:CYS:N | 2.47 | 0.45 |
| 1:A:843:GLU:HA | 1:A:848:ARG:HG2 | 1.98 | 0.45 |
| 1:B:1934:VAL:O | 1:B:1938:GLN:N | 2.43 | 0.45 |
| 1:C:419:ILE:HG12 | 1:C:489:PHE:CE1 | 2.52 | 0.45 |
| 1:C:4588:ILE:HG22 | 1:C:4723:LEU:HD23 | 1.99 | 0.45 |
| 1:D:289:ILE:HG22 | 1:D:354:ILE:HD12 | 1.99 | 0.45 |
| 1:A:2525:VAL:HG13 | 1:A:2528:LEU:HD12 | 1.99 | 0.45 |
| 1:B:695:VAL:O | 1:B:725:TYR:N | 2.49 | 0.45 |
| 1:C:3743:GLN:NE2 | 1:C:3781:TYR:OH | 2.43 | 0.45 |
| 1:C:3952:PHE:HB3 | 1:C:3976:GLN:HE22 | 1.82 | 0.45 |
| 1:D:3737:ALA:O | 1:D:3740:MET:HG2 | 2.17 | 0.45 |
| 1:A:3952:PHE:HB3 | 1:A:3976:GLN:HE22 | 1.82 | 0.45 |
| 1:B:308:LEU:HD22 | 1:B:370:LEU:HD12 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:3737:ALA:O | 1:B:3740:MET:HG2 | 2.17 | 0.45 |
| 1:C:428:ARG:O | 1:C:432:GLY:N | 2.46 | 0.45 |
| 1:C:436:LEU:HD13 | 1:C:518:ALA:HA | 1.98 | 0.45 |
| 1:C:4203:LEU:O | 1:C:4207:ILE:HG12 | 2.17 | 0.45 |
| 1:A:766:ILE:HB | 1:A:779:PHE:HB2 | 1.99 | 0.44 |
| 1:B:419:ILE:HG12 | 1:B:489:PHE:CE1 | 2.52 | 0.44 |
| 1:B:4036:TYR:HE2 | 1:B:4048:ASP:HB3 | 1.82 | 0.44 |
| 1:C:143:LEU:CD2 | 1:D:2426:SER:HB3 | 2.47 | 0.44 |
| 1:C:843:GLU:HA | 1:C:848:ARG:HG2 | 1.98 | 0.44 |
| 1:C:1602:GLN:HB3 | 1:C:1604:LEU:HD12 | 1.99 | 0.44 |
| 1:C:4747:ILE:HG13 | 1:C:4754:LEU:HD22 | 1.99 | 0.44 |
| 1:D:419:ILE:HG12 | 1:D:489:PHE:CE1 | 2.52 | 0.44 |
| 1:D:745:ASN:ND2 | 1:D:773:GLN:OE1 | 2.48 | 0.44 |
| 1:D:4844:ARG:HH12 | 1:D:4848:ASP:HB2 | 1.83 | 0.44 |
| 1:A:419:ILE:HG12 | 1:A:489:PHE:CE1 | 2.52 | 0.44 |
| 1:A:1626:GLN:O | 1:A:1687:TYR:OH | 2.32 | 0.44 |
| 1:A:4627:ILE:O | 1:A:4631:TRP:N | 2.48 | 0.44 |
| 1:A:4844:ARG:HH12 | 1:A:4848:ASP:HB2 | 1.83 | 0.44 |
| 1:A:4869:ASP:O | 1:A:4873:GLU:N | 2.49 | 0.44 |
| 1:B:848:ARG:HB2 | 1:B:1603:PHE:HZ | 1.81 | 0.44 |
| 1:B:4747:ILE:HG13 | 1:B:4754:LEU:HD22 | 1.99 | 0.44 |
| 1:B:4844:ARG:HH12 | 1:B:4848:ASP:HB2 | 1.83 | 0.44 |
| 1:B:4845:ILE:O | 1:B:4849:ILE:N | 2.44 | 0.44 |
| 1:C:3737:ALA:O | 1:C:3740:MET:HG2 | 2.17 | 0.44 |
| 1:D:1170:GLU:O | 1:D:1172:THR:N | 2.50 | 0.44 |
| 1:D:2121:LEU:O | 1:D:2125:GLY:N | 2.47 | 0.44 |
| 1:D:4203:LEU:O | 1:D:4207:ILE:HG12 | 2.17 | 0.44 |
| 1:D:4632:ASP:OD1 | 1:D:4709:TRP:NE1 | 2.42 | 0.44 |
| 1:A:308:LEU:HD22 | 1:A:370:LEU:HD12 | 1.98 | 0.44 |
| 1:A:3859:LEU:HD22 | 1:A:3871:ILE:HG21 | 1.98 | 0.44 |
| 1:B:766:ILE:HB | 1:B:779:PHE:HB2 | 1.99 | 0.44 |
| 1:B:1799:VAL:O | 1:B:1803:SER:N | 2.46 | 0.44 |
| 1:B:2525:VAL:HG13 | 1:B:2528:LEU:HD12 | 1.99 | 0.44 |
| 1:B:3859:LEU:HD22 | 1:B:3871:ILE:HG21 | 1.98 | 0.44 |
| 1:B:3925:ILE:HG21 | 1:B:3925:ILE:HD13 | 1.70 | 0.44 |
| 1:B:4013:MET:O | 1:B:4017:PHE:N | 2.46 | 0.44 |
| 1:B:4588:ILE:HG22 | 1:B:4723:LEU:HD23 | 1.99 | 0.44 |
| 1:C:289:ILE:HG22 | 1:C:354:ILE:HD12 | 1.99 | 0.44 |
| 1:C:695:VAL:O | 1:C:725:TYR:N | 2.49 | 0.44 |
| 1:C:1087:ILE:HG23 | 1:C:1128:LEU:HD12 | 2.00 | 0.44 |
| 1:D:466:PRO:HB3 | 1:D:478:ARG:HG2 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:745:ASN:ND2 | 1:A:773:GLN:OE1 | 2.48 | 0.44 |
| 1:A:4747:ILE:HG13 | 1:A:4754:LEU:HD22 | 1.99 | 0.44 |
| 1:B:466:PRO:HB3 | 1:B:478:ARG:HG2 | 1.99 | 0.44 |
| 1:B:4203:LEU:O | 1:B:4207:ILE:HG12 | 2.17 | 0.44 |
| 1:D:308:LEU:HD22 | 1:D:370:LEU:HD12 | 1.98 | 0.44 |
| 1:D:695:VAL:O | 1:D:725:TYR:N | 2.49 | 0.44 |
| 1:A:2390:MET:HG3 | 1:A:2465:HIS:CE1 | 2.53 | 0.44 |
| 1:A:3767:LEU:O | 1:A:3770:GLY:N | 2.51 | 0.44 |
| 1:A:4203:LEU:O | 1:A:4207:ILE:HG12 | 2.17 | 0.44 |
| 1:B:646:THR:OG1 | 1:B:1684:GLN:NE2 | 2.49 | 0.44 |
| 1:C:848:ARG:HB2 | 1:C:1603:PHE:HZ | 1.81 | 0.44 |
| 1:C:2390:MET:HG3 | 1:C:2465:HIS:CE1 | 2.53 | 0.44 |
| 1:C:4130:PHE:O | 1:C:4134:LEU:N | 2.45 | 0.44 |
| 1:D:1011:ARG:HB3 | 1:D:1032:LEU:HD21 | 2.00 | 0.44 |
| 1:D:1934:VAL:O | 1:D:1938:GLN:N | 2.43 | 0.44 |
| 1:D:4747:ILE:HG13 | 1:D:4754:LEU:HD22 | 1.99 | 0.44 |
| 1:A:466:PRO:HB3 | 1:A:478:ARG:HG2 | 1.99 | 0.44 |
| 1:A:1136:ALA:HB3 | 1:A:1145:TRP:HB2 | 2.00 | 0.44 |
| 1:A:1602:GLN:HB3 | 1:A:1604:LEU:HD12 | 1.99 | 0.44 |
| 1:A:2121:LEU:O | 1:A:2125:GLY:N | 2.47 | 0.44 |
| 1:A:2832:VAL:O | 1:A:2895:LYS:NZ | 2.45 | 0.44 |
| 1:B:843:GLU:HA | 1:B:848:ARG:HG2 | 1.98 | 0.44 |
| 1:C:299:HIS:NE2 | 1:C:301:THR:OG1 | 2.46 | 0.44 |
| 1:C:308:LEU:HD22 | 1:C:370:LEU:HD12 | 1.98 | 0.44 |
| 1:C:2525:VAL:HG13 | 1:C:2528:LEU:HD12 | 1.99 | 0.44 |
| 1:D:237:LEU:N | 1:D:404:ASN:O | 2.49 | 0.44 |
| 1:D:1087:ILE:HG23 | 1:D:1128:LEU:HD12 | 2.00 | 0.44 |
| 1:D:2390:MET:HG3 | 1:D:2465:HIS:CE1 | 2.53 | 0.44 |
| 1:D:3952:PHE:HB3 | 1:D:3976:GLN:HE22 | 1.82 | 0.44 |
| 1:D:4142:SER:HB3 | 1:D:4940:TYR:CE1 | 2.52 | 0.44 |
| 1:A:1664:VAL:HG12 | 1:A:1672:VAL:HG11 | 2.00 | 0.44 |
| 1:A:1799:VAL:O | 1:A:1803:SER:N | 2.46 | 0.44 |
| 1:A:4867:ILE:HD12 | 1:A:4867:ILE:HG23 | 1.80 | 0.44 |
| 1:B:123:HIS:CD2 | 1:B:126:SER:H | 2.34 | 0.44 |
| 1:B:655:MET:HG2 | 1:B:836:HIS:HA | 2.00 | 0.44 |
| 1:B:1092:LYS:H | 1:B:1250:TRP:HZ3 | 1.66 | 0.44 |
| 1:B:4632:ASP:OD1 | 1:B:4709:TRP:NE1 | 2.42 | 0.44 |
| 1:C:123:HIS:CD2 | 1:C:126:SER:H | 2.34 | 0.44 |
| 1:C:655:MET:HG2 | 1:C:836:HIS:HA | 2.00 | 0.44 |
| 1:C:4732:LEU:O | 1:C:4736:ASN:N | 2.44 | 0.44 |
| 1:B:196:TYR:O | 1:B:201:LEU:N | 2.51 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:1626:GLN:O | 1:B:1687:TYR:OH | 2.32 | 0.44 |
| 1:B:2390:MET:HG3 | 1:B:2465:HIS:CE1 | 2.53 | 0.44 |
| 1:B:2732:LYS:HD2 | 1:B:2732:LYS:HA | 1.82 | 0.44 |
| 1:B:4500:PHE:HA | 1:B:4503:MET:HB2 | 2.00 | 0.44 |
| 1:B:4732:LEU:O | 1:B:4736:ASN:N | 2.44 | 0.44 |
| 1:C:4500:PHE:HA | 1:C:4503:MET:HB2 | 2.00 | 0.44 |
| 1:D:1664:VAL:HG12 | 1:D:1672:VAL:HG11 | 2.00 | 0.44 |
| 1:D:1720:MET:HE2 | 1:D:2128:ARG:HD2 | 2.00 | 0.44 |
| 1:D:4036:TYR:HE2 | 1:D:4048:ASP:HB3 | 1.82 | 0.44 |
| 1:A:289:ILE:HG22 | 1:A:354:ILE:HD12 | 1.99 | 0.44 |
| 1:A:655:MET:HG2 | 1:A:836:HIS:HA | 2.00 | 0.44 |
| 1:B:4610:LYS:O | 1:B:4615:GLY:N | 2.51 | 0.44 |
| 1:D:196:TYR:O | 1:D:201:LEU:N | 2.51 | 0.44 |
| 1:D:3767:LEU:O | 1:D:3770:GLY:N | 2.51 | 0.44 |
| 1:A:196:TYR:O | 1:A:201:LEU:N | 2.51 | 0.43 |
| 1:A:1449:ASP:OD1 | 1:A:1449:ASP:N | 2.51 | 0.43 |
| 1:A:4178:VAL:HG11 | 1:A:4881:VAL:HA | 1.99 | 0.43 |
| 1:A:4610:LYS:O | 1:A:4615:GLY:N | 2.51 | 0.43 |
| 1:B:3743:GLN:NE2 | 1:B:3781:TYR:OH | 2.43 | 0.43 |
| 1:B:4739:PHE:HD1 | 1:B:4739:PHE:HA | 1.76 | 0.43 |
| 1:C:1011:ARG:HB3 | 1:C:1032:LEU:HD21 | 2.00 | 0.43 |
| 1:D:646:THR:OG1 | 1:D:1684:GLN:NE2 | 2.49 | 0.43 |
| 1:D:655:MET:HG2 | 1:D:836:HIS:HA | 2.00 | 0.43 |
| 1:D:4610:LYS:O | 1:D:4615:GLY:N | 2.51 | 0.43 |
| 1:A:908:ARG:HA | 1:A:916:PRO:HD3 | 2.00 | 0.43 |
| 1:A:2426:SER:HB3 | 1:D:143:LEU:CD2 | 2.47 | 0.43 |
| 1:B:227:TYR:CE1 | 1:B:355:LYS:HG2 | 2.47 | 0.43 |
| 1:B:288:HIS:ND1 | 1:B:349:MET:O | 2.43 | 0.43 |
| 1:B:289:ILE:HG22 | 1:B:354:ILE:HD12 | 1.99 | 0.43 |
| 1:C:758:CYS:SG | 1:C:759:LEU:N | 2.91 | 0.43 |
| 1:C:3859:LEU:HD22 | 1:C:3871:ILE:HG21 | 1.98 | 0.43 |
| 1:C:4759:SER:O | 1:C:4763:HIS:ND1 | 2.30 | 0.43 |
| 1:C:4763:HIS:CE1 | 1:C:4870:ALA:HB1 | 2.53 | 0.43 |
| 1:C:4869:ASP:O | 1:C:4873:GLU:N | 2.49 | 0.43 |
| 1:D:170:SER:OG | 1:D:171:GLU:N | 2.49 | 0.43 |
| 1:D:758:CYS:SG | 1:D:759:LEU:N | 2.91 | 0.43 |
| 1:D:908:ARG:HA | 1:D:916:PRO:HD3 | 2.00 | 0.43 |
| 1:D:1602:GLN:HB3 | 1:D:1604:LEU:HD12 | 1.99 | 0.43 |
| 1:D:2525:VAL:HG13 | 1:D:2528:LEU:HD12 | 1.99 | 0.43 |
| 1:D:4763:HIS:CE1 | 1:D:4870:ALA:HB1 | 2.53 | 0.43 |
| 1:A:143:LEU:CD2 | 1:B:2426:SER:HB3 | 2.47 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:189:GLU:HB2 | 1:B:2419:ARG:HH22 | 1.84 | 0.43 |
| 1:A:1720:MET:HE2 | 1:A:2128:ARG:HD2 | 2.00 | 0.43 |
| 1:A:2419:ARG:HH22 | 1:D:189:GLU:HB2 | 1.84 | 0.43 |
| 1:A:4763:HIS:CE1 | 1:A:4870:ALA:HB1 | 2.53 | 0.43 |
| 1:B:908:ARG:HA | 1:B:916:PRO:HD3 | 2.00 | 0.43 |
| 1:B:1664:VAL:HG12 | 1:B:1672:VAL:HG11 | 2.00 | 0.43 |
| 1:C:466:PRO:HB3 | 1:C:478:ARG:HG2 | 1.99 | 0.43 |
| 1:C:4178:VAL:HG11 | 1:C:4881:VAL:HA | 1.99 | 0.43 |
| 1:A:462:TYR:O | 1:A:485:ARG:NH1 | 2.51 | 0.43 |
| 1:A:758:CYS:SG | 1:A:759:LEU:N | 2.91 | 0.43 |
| 1:A:1092:LYS:H | 1:A:1250:TRP:HZ3 | 1.66 | 0.43 |
| 1:A:1654:HIS:O | 1:A:1657:THR:OG1 | 2.26 | 0.43 |
| 1:A:4036:TYR:HE2 | 1:A:4048:ASP:HB3 | 1.82 | 0.43 |
| 1:A:4514:ILE:HG21 | 1:A:4740:PHE:CE2 | 2.52 | 0.43 |
| 1:A:4523:VAL:HG22 | 1:D:4808:ASP:OD2 | 2.19 | 0.43 |
| 1:B:170:SER:OG | 1:B:171:GLU:N | 2.49 | 0.43 |
| 1:B:189:GLU:HB2 | 1:C:2419:ARG:HH22 | 1.84 | 0.43 |
| 1:C:462:TYR:O | 1:C:485:ARG:NH1 | 2.51 | 0.43 |
| 1:C:1090:ALA:HB3 | 1:C:1203:PRO:HD2 | 2.00 | 0.43 |
| 1:D:1136:ALA:HB3 | 1:D:1145:TRP:HB2 | 2.00 | 0.43 |
| 1:A:237:LEU:N | 1:A:404:ASN:O | 2.49 | 0.43 |
| 1:A:3737:ALA:O | 1:A:3740:MET:HG2 | 2.17 | 0.43 |
| 1:A:4791:ARG:HD2 | 1:A:4808:ASP:HB2 | 2.00 | 0.43 |
| 1:A:4924:MET:O | 1:A:4928:ASN:HB2 | 2.18 | 0.43 |
| 1:B:745:ASN:ND2 | 1:B:773:GLN:OE1 | 2.48 | 0.43 |
| 1:B:758:CYS:SG | 1:B:759:LEU:N | 2.91 | 0.43 |
| 1:B:1449:ASP:OD1 | 1:B:1449:ASP:N | 2.51 | 0.43 |
| 1:B:4763:HIS:CE1 | 1:B:4870:ALA:HB1 | 2.53 | 0.43 |
| 1:B:4809:ASP:O | 1:B:4813:CYS:N | 2.39 | 0.43 |
| 1:C:189:GLU:HB2 | 1:D:2419:ARG:HH22 | 1.84 | 0.43 |
| 1:C:4036:TYR:HE2 | 1:C:4048:ASP:HB3 | 1.82 | 0.43 |
| 1:D:1220:ASP:O | 1:D:1223:THR:N | 2.35 | 0.43 |
| 1:A:335:LYS:NZ | 1:A:398:HIS:O | 2.44 | 0.43 |
| 1:A:1165:MET:HB2 | 1:A:1174:MET:HB2 | 2.01 | 0.43 |
| 1:A:2440:ALA:HB2 | 1:A:2466:LYS:HD2 | 2.01 | 0.43 |
| 1:A:4500:PHE:HA | 1:A:4503:MET:HB2 | 2.00 | 0.43 |
| 1:A:4808:ASP:OD2 | 1:B:4523:VAL:HG22 | 2.19 | 0.43 |
| 1:B:1011:ARG:HB3 | 1:B:1032:LEU:HD21 | 2.00 | 0.43 |
| 1:B:1087:ILE:HG23 | 1:B:1128:LEU:HD12 | 2.00 | 0.43 |
| 1:C:604:HIS:HA | 1:C:1588:VAL:HB | 2.01 | 0.43 |
| 1:C:691:THR:HB | 1:C:796:ALA:HB2 | 2.01 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:832:LEU:O | 1:C:1614:ARG:NH1 | 2.51 | 0.43 |
| 1:C:1092:LYS:H | 1:C:1250:TRP:HZ3 | 1.66 | 0.43 |
| 1:C:4739:PHE:HD1 | 1:C:4739:PHE:HA | 1.76 | 0.43 |
| 1:C:4844:ARG:HH12 | 1:C:4848:ASP:HB2 | 1.83 | 0.43 |
| 1:D:691:THR:HB | 1:D:796:ALA:HB2 | 2.01 | 0.43 |
| 1:D:1719:LEU:HD21 | 1:D:1830:ILE:HD13 | 2.01 | 0.43 |
| 1:A:532:SER:HA | 1:A:535:GLU:HB3 | 2.01 | 0.43 |
| 1:A:1011:ARG:HB3 | 1:A:1032:LEU:HD21 | 2.00 | 0.43 |
| 1:B:1136:ALA:HB3 | 1:B:1145:TRP:HB2 | 2.00 | 0.43 |
| 1:B:1790:LYS:O | 1:B:1794:MET:N | 2.44 | 0.43 |
| 1:B:3952:PHE:HB3 | 1:B:3976:GLN:HE22 | 1.82 | 0.43 |
| 1:B:4178:VAL:HG11 | 1:B:4881:VAL:HA | 1.99 | 0.43 |
| 1:C:196:TYR:O | 1:C:201:LEU:N | 2.51 | 0.43 |
| 1:C:1719:LEU:HD21 | 1:C:1830:ILE:HD13 | 2.01 | 0.43 |
| 1:C:2832:VAL:O | 1:C:2895:LYS:NZ | 2.45 | 0.43 |
| 1:C:4610:LYS:O | 1:C:4615:GLY:N | 2.51 | 0.43 |
| 1:C:4791:ARG:HD2 | 1:C:4808:ASP:HB2 | 2.00 | 0.43 |
| 1:C:4845:ILE:O | 1:C:4849:ILE:N | 2.44 | 0.43 |
| 1:D:4725:TRP:O | 1:D:4729:MET:HG2 | 2.19 | 0.43 |
| 1:A:1090:ALA:HB3 | 1:A:1203:PRO:HD2 | 2.00 | 0.43 |
| 1:A:1719:LEU:HD21 | 1:A:1830:ILE:HD13 | 2.01 | 0.43 |
| 1:B:1090:ALA:HB3 | 1:B:1203:PRO:HD2 | 2.00 | 0.43 |
| 1:C:745:ASN:ND2 | 1:C:773:GLN:OE1 | 2.48 | 0.43 |
| 1:C:1091:GLU:HB3 | 1:C:1094:TYR:HD2 | 1.84 | 0.43 |
| 1:C:1449:ASP:OD1 | 1:C:1449:ASP:N | 2.51 | 0.43 |
| 1:C:1664:VAL:HG12 | 1:C:1672:VAL:HG11 | 2.00 | 0.43 |
| 1:C:1733:THR:HG22 | 1:C:1755:THR:HB | 2.00 | 0.43 |
| 1:C:2102:ALA:O | 1:C:2106:THR:N | 2.47 | 0.43 |
| 1:C:4514:ILE:HG21 | 1:C:4740:PHE:CE2 | 2.52 | 0.43 |
| 1:C:4571:PRO:O | 1:C:4575:ILE:N | 2.49 | 0.43 |
| 1:D:462:TYR:O | 1:D:485:ARG:NH1 | 2.51 | 0.43 |
| 1:D:1165:MET:HB2 | 1:D:1174:MET:HB2 | 2.01 | 0.43 |
| 1:D:4178:VAL:HG11 | 1:D:4881:VAL:HA | 1.99 | 0.43 |
| 1:D:4791:ARG:HD2 | 1:D:4808:ASP:HB2 | 2.00 | 0.43 |
| 1:A:629:GLN:OE1 | 1:A:1669:ASN:ND2 | 2.52 | 0.43 |
| 1:A:1170:GLU:O | 1:A:1172:THR:N | 2.50 | 0.43 |
| 1:A:1733:THR:HG22 | 1:A:1755:THR:HB | 2.00 | 0.43 |
| 1:A:4725:TRP:O | 1:A:4729:MET:HG2 | 2.19 | 0.43 |
| 1:B:4808:ASP:OD2 | 1:C:4523:VAL:HG22 | 2.19 | 0.43 |
| 1:C:1119:ARG:NH2 | 1:C:1196:ASP:O | 2.48 | 0.43 |
| 1:C:1799:VAL:O | 1:C:1803:SER:N | 2.46 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:3800:SER:OG | 1:C:3801:CYS:N | 2.47 | 0.43 |
| 1:A:832:LEU:O | 1:A:1614:ARG:NH1 | 2.51 | 0.43 |
| 1:A:1087:ILE:HG23 | 1:A:1128:LEU:HD12 | 2.00 | 0.43 |
| 1:A:4809:ASP:O | 1:A:4813:CYS:N | 2.39 | 0.43 |
| 1:B:629:GLN:OE1 | 1:B:1669:ASN:ND2 | 2.52 | 0.43 |
| 1:B:1172:THR:HG22 | 1:B:1193:LYS:HG3 | 2.01 | 0.43 |
| 1:B:1719:LEU:HD21 | 1:B:1830:ILE:HD13 | 2.01 | 0.43 |
| 1:B:3767:LEU:O | 1:B:3770:GLY:N | 2.51 | 0.43 |
| 1:B:4791:ARG:HD2 | 1:B:4808:ASP:HB2 | 2.00 | 0.43 |
| 1:C:411:GLU:HA | 1:C:414:ARG:HB2 | 2.01 | 0.43 |
| 1:C:1032:LEU:HD23 | 1:C:1032:LEU:HA | 1.82 | 0.43 |
| 1:C:1790:LYS:O | 1:C:1794:MET:N | 2.44 | 0.43 |
| 1:C:2196:ASN:OD1 | 1:C:2199:ARG:NH1 | 2.52 | 0.43 |
| 1:C:4924:MET:O | 1:C:4928:ASN:HB2 | 2.18 | 0.43 |
| 1:D:1090:ALA:HB3 | 1:D:1203:PRO:HD2 | 2.00 | 0.43 |
| 1:D:1733:THR:HG22 | 1:D:1755:THR:HB | 2.00 | 0.43 |
| 1:D:2196:ASN:OD1 | 1:D:2199:ARG:NH1 | 2.52 | 0.43 |
| 1:D:4130:PHE:O | 1:D:4134:LEU:N | 2.45 | 0.43 |
| 1:D:4500:PHE:HA | 1:D:4503:MET:HB2 | 2.00 | 0.43 |
| 1:D:4514:ILE:HG21 | 1:D:4740:PHE:CE2 | 2.52 | 0.43 |
| 1:D:4867:ILE:HD12 | 1:D:4867:ILE:HG23 | 1.80 | 0.43 |
| 1:D:4924:MET:O | 1:D:4928:ASN:HB2 | 2.18 | 0.43 |
| 1:A:691:THR:HB | 1:A:796:ALA:HB2 | 2.01 | 0.42 |
| 1:B:258:ARG:HA | 1:B:316:LEU:HB2 | 2.01 | 0.42 |
| 1:B:565:LEU:HD11 | 1:B:603:LYS:HG2 | 2.01 | 0.42 |
| 1:B:832:LEU:O | 1:B:1614:ARG:NH1 | 2.51 | 0.42 |
| 1:B:2102:ALA:O | 1:B:2106:THR:N | 2.47 | 0.42 |
| 1:B:3919:ASN:O | 1:B:3922:THR:OG1 | 2.35 | 0.42 |
| 1:C:258:ARG:HA | 1:C:316:LEU:HB2 | 2.01 | 0.42 |
| 1:C:565:LEU:HD11 | 1:C:603:LYS:HG2 | 2.01 | 0.42 |
| 1:D:2834:LEU:HG | 1:D:2895:LYS:HZ3 | 1.84 | 0.42 |
| 1:A:1156:TRP:HB2 | 1:A:1160:ASP:HB2 | 2.01 | 0.42 |
| 1:B:462:TYR:O | 1:B:485:ARG:NH1 | 2.51 | 0.42 |
| 1:B:604:HIS:HA | 1:B:1588:VAL:HB | 2.01 | 0.42 |
| 1:B:703:TYR:CZ | 1:B:722:LEU:HD21 | 2.54 | 0.42 |
| 1:B:1091:GLU:HB3 | 1:B:1094:TYR:HD2 | 1.84 | 0.42 |
| 1:B:4514:ILE:HG21 | 1:B:4740:PHE:CE2 | 2.52 | 0.42 |
| 1:C:908:ARG:HA | 1:C:916:PRO:HD3 | 2.00 | 0.42 |
| 1:C:1136:ALA:HB3 | 1:C:1145:TRP:HB2 | 2.00 | 0.42 |
| 1:C:4808:ASP:OD2 | 1:D:4523:VAL:HG22 | 2.19 | 0.42 |
| 1:D:604:HIS:HA | 1:D:1588:VAL:HB | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:629:GLN:OE1 | 1:D:1669:ASN:ND2 | 2.52 | 0.42 |
| 1:A:1172:THR:HG22 | 1:A:1193:LYS:HG3 | 2.01 | 0.42 |
| 1:A:4161:TRP:CD1 | 1:A:4201:MET:HE1 | 2.53 | 0.42 |
| 1:B:694:ARG:N | 1:B:793:SER:O | 2.45 | 0.42 |
| 1:B:1119:ARG:NH2 | 1:B:1196:ASP:O | 2.48 | 0.42 |
| 1:B:1165:MET:HB2 | 1:B:1174:MET:HB2 | 2.01 | 0.42 |
| 1:C:703:TYR:CZ | 1:C:722:LEU:HD21 | 2.54 | 0.42 |
| 1:D:532:SER:HA | 1:D:535:GLU:HB3 | 2.01 | 0.42 |
| 1:D:1449:ASP:N | 1:D:1449:ASP:OD1 | 2.51 | 0.42 |
| 1:D:3696:MET:O | 1:D:3699:SER:OG | 2.26 | 0.42 |
| 1:D:4161:TRP:CD1 | 1:D:4201:MET:HE1 | 2.53 | 0.42 |
| 1:A:355:LYS:HE3 | 1:A:355:LYS:HB3 | 1.94 | 0.42 |
| 1:A:585:ALA:HA | 1:A:588:ILE:HD12 | 2.02 | 0.42 |
| 1:B:613:VAL:O | 1:B:617:LEU:N | 2.46 | 0.42 |
| 1:B:1733:THR:HG22 | 1:B:1755:THR:HB | 2.00 | 0.42 |
| 1:B:4166:VAL:O | 1:B:4170:LYS:N | 2.52 | 0.42 |
| 1:C:189:GLU:HG3 | 1:D:2419:ARG:NH2 | 2.35 | 0.42 |
| 1:C:629:GLN:OE1 | 1:C:1669:ASN:ND2 | 2.52 | 0.42 |
| 1:C:3759:THR:O | 1:C:3763:GLY:N | 2.51 | 0.42 |
| 1:C:4725:TRP:O | 1:C:4729:MET:HG2 | 2.19 | 0.42 |
| 1:D:585:ALA:HA | 1:D:588:ILE:HD12 | 2.02 | 0.42 |
| 1:D:1092:LYS:H | 1:D:1250:TRP:HZ3 | 1.66 | 0.42 |
| 1:A:2419:ARG:NH2 | 1:D:189:GLU:HG3 | 2.35 | 0.42 |
| 1:B:1570:LEU:O | 1:B:1573:SER:OG | 2.36 | 0.42 |
| 1:B:4924:MET:O | 1:B:4928:ASN:HB2 | 2.18 | 0.42 |
| 1:C:243:GLU:OE2 | 1:C:389:ARG:NH1 | 2.53 | 0.42 |
| 1:C:565:LEU:HA | 1:C:568:SER:HB2 | 2.02 | 0.42 |
| 1:C:4636:ILE:HG22 | 1:C:4671:LEU:HD22 | 2.02 | 0.42 |
| 1:D:116:GLY:N | 1:D:162:ILE:O | 2.45 | 0.42 |
| 1:D:123:HIS:CD2 | 1:D:126:SER:H | 2.34 | 0.42 |
| 1:D:243:GLU:OE2 | 1:D:389:ARG:NH1 | 2.53 | 0.42 |
| 1:D:572:LEU:O | 1:D:576:HIS:N | 2.47 | 0.42 |
| 1:D:832:LEU:O | 1:D:1614:ARG:NH1 | 2.51 | 0.42 |
| 1:D:1029:ASN:HA | 1:D:1030:PRO:HD3 | 1.82 | 0.42 |
| 1:D:1091:GLU:HB3 | 1:D:1094:TYR:HD2 | 1.84 | 0.42 |
| 1:D:1682:GLU:HA | 1:D:1685:LEU:HD13 | 2.02 | 0.42 |
| 1:A:190:ARG:HG2 | 1:A:207:PHE:CE1 | 2.55 | 0.42 |
| 1:A:2196:ASN:OD1 | 1:A:2199:ARG:NH1 | 2.52 | 0.42 |
| 1:B:1170:GLU:O | 1:B:1172:THR:N | 2.50 | 0.42 |
| 1:B:4725:TRP:O | 1:B:4729:MET:HG2 | 2.19 | 0.42 |
| 1:C:1692:LYS:HA | 1:C:1810:VAL:HG13 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:3921:LEU:HD23 | 1:C:3921:LEU:HA | 1.84 | 0.42 |
| 1:D:852:GLY:HA3 | 1:D:1086:ARG:HG3 | 2.01 | 0.42 |
| 1:D:1799:VAL:O | 1:D:1803:SER:N | 2.46 | 0.42 |
| 1:D:2326:ILE:HD13 | 1:D:2326:ILE:HA | 1.83 | 0.42 |
| 1:A:123:HIS:CD2 | 1:A:126:SER:H | 2.34 | 0.42 |
| 1:A:565:LEU:HA | 1:A:568:SER:HB2 | 2.02 | 0.42 |
| 1:A:1730:THR:O | 1:A:1733:THR:OG1 | 2.31 | 0.42 |
| 1:B:532:SER:HA | 1:B:535:GLU:HB3 | 2.01 | 0.42 |
| 1:B:691:THR:HB | 1:B:796:ALA:HB2 | 2.01 | 0.42 |
| 1:B:2440:ALA:HB2 | 1:B:2466:LYS:HD2 | 2.01 | 0.42 |
| 1:B:2834:LEU:HG | 1:B:2895:LYS:HZ3 | 1.84 | 0.42 |
| 1:C:585:ALA:HA | 1:C:588:ILE:HD12 | 2.02 | 0.42 |
| 1:C:2440:ALA:HB2 | 1:C:2466:LYS:HD2 | 2.01 | 0.42 |
| 1:C:3767:LEU:O | 1:C:3770:GLY:N | 2.51 | 0.42 |
| 1:C:3925:ILE:HG21 | 1:C:3925:ILE:HD13 | 1.70 | 0.42 |
| 1:D:565:LEU:HA | 1:D:568:SER:HB2 | 2.02 | 0.42 |
| 1:D:1172:THR:HG22 | 1:D:1193:LYS:HG3 | 2.01 | 0.42 |
| 1:D:2440:ALA:HB2 | 1:D:2466:LYS:HD2 | 2.01 | 0.42 |
| 1:D:3759:THR:O | 1:D:3763:GLY:N | 2.51 | 0.42 |
| 1:D:3797:LEU:HD13 | 1:D:3840:LEU:HD11 | 2.02 | 0.42 |
| 1:D:3914:ALA:HB3 | 1:D:3975:LEU:HD11 | 2.02 | 0.42 |
| 1:A:189:GLU:HG3 | 1:B:2419:ARG:NH2 | 2.35 | 0.42 |
| 1:A:258:ARG:HA | 1:A:316:LEU:HB2 | 2.01 | 0.42 |
| 1:A:4636:ILE:HG22 | 1:A:4671:LEU:HD22 | 2.02 | 0.42 |
| 1:B:1091:GLU:HA | 1:B:1250:TRP:CZ3 | 2.55 | 0.42 |
| 1:B:1692:LYS:HA | 1:B:1810:VAL:HG13 | 2.02 | 0.42 |
| 1:B:2326:ILE:HD13 | 1:B:2326:ILE:HA | 1.83 | 0.42 |
| 1:C:776:GLN:HG2 | 1:C:1472:GLU:HA | 2.01 | 0.42 |
| 1:D:190:ARG:HG2 | 1:D:207:PHE:CE1 | 2.55 | 0.42 |
| 1:D:258:ARG:HA | 1:D:316:LEU:HB2 | 2.01 | 0.42 |
| 1:D:4636:ILE:HG22 | 1:D:4671:LEU:HD22 | 2.02 | 0.42 |
| 1:A:604:HIS:HA | 1:A:1588:VAL:HB | 2.01 | 0.42 |
| 1:A:1682:GLU:HA | 1:A:1685:LEU:HD13 | 2.02 | 0.42 |
| 1:A:2102:ALA:O | 1:A:2106:THR:N | 2.47 | 0.42 |
| 1:A:4931:GLU:OE2 | 1:A:4942:TRP:NE1 | 2.53 | 0.42 |
| 1:B:243:GLU:OE2 | 1:B:389:ARG:NH1 | 2.53 | 0.42 |
| 1:B:565:LEU:HA | 1:B:568:SER:HB2 | 2.02 | 0.42 |
| 1:B:4621:GLN:HE22 | 1:B:4633:ARG:HH12 | 1.68 | 0.42 |
| 1:C:1090:ALA:HA | 1:C:1249:MET:HG2 | 2.02 | 0.42 |
| 1:C:1172:THR:HG22 | 1:C:1193:LYS:HG3 | 2.01 | 0.42 |
| 1:C:3797:LEU:HD13 | 1:C:3840:LEU:HD11 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:411:GLU:HA | 1:D:414:ARG:HB2 | 2.01 | 0.42 |
| 1:D:674:TYR:OH | 1:D:676:GLU:OE2 | 2.27 | 0.42 |
| 1:D:852:GLY:HA2 | 1:D:853:PRO:HA | 1.69 | 0.42 |
| 1:D:4515:ASN:HD22 | 1:D:4518:LEU:HB2 | 1.85 | 0.42 |
| 1:A:565:LEU:HD11 | 1:A:603:LYS:HG2 | 2.01 | 0.42 |
| 1:A:852:GLY:HA3 | 1:A:1086:ARG:HG3 | 2.01 | 0.42 |
| 1:A:1091:GLU:HA | 1:A:1250:TRP:CZ3 | 2.55 | 0.42 |
| 1:A:4621:GLN:HE22 | 1:A:4633:ARG:HH12 | 1.68 | 0.42 |
| 1:A:4739:PHE:HD1 | 1:A:4739:PHE:HA | 1.76 | 0.42 |
| 1:B:614:LEU:HD23 | 1:B:617:LEU:HD12 | 2.01 | 0.42 |
| 1:B:1682:GLU:HA | 1:B:1685:LEU:HD13 | 2.02 | 0.42 |
| 1:B:2196:ASN:OD1 | 1:B:2199:ARG:NH1 | 2.52 | 0.42 |
| 1:B:2858:LYS:HG3 | 1:B:2872:LEU:HD22 | 2.02 | 0.42 |
| 1:B:4636:ILE:HG22 | 1:B:4671:LEU:HD22 | 2.02 | 0.42 |
| 1:C:534:TYR:O | 1:C:538:ALA:N | 2.51 | 0.42 |
| 1:C:796:ALA:HB3 | 1:C:798:ILE:HG13 | 2.02 | 0.42 |
| 1:C:1156:TRP:HB2 | 1:C:1160:ASP:HB2 | 2.01 | 0.42 |
| 1:C:1165:MET:HB2 | 1:C:1174:MET:HB2 | 2.01 | 0.42 |
| 1:C:3914:ALA:HB3 | 1:C:3975:LEU:HD11 | 2.02 | 0.42 |
| 1:C:3919:ASN:O | 1:C:3922:THR:OG1 | 2.35 | 0.42 |
| 1:D:796:ALA:HB3 | 1:D:798:ILE:HG13 | 2.02 | 0.42 |
| 1:D:2421:ARG:HA | 1:D:2424:LEU:HB2 | 2.01 | 0.42 |
| 1:A:1029:ASN:HA | 1:A:1030:PRO:HD3 | 1.82 | 0.41 |
| 1:A:3743:GLN:NE2 | 1:A:3781:TYR:OH | 2.43 | 0.41 |
| 1:B:189:GLU:HG3 | 1:C:2419:ARG:NH2 | 2.35 | 0.41 |
| 1:B:190:ARG:HG2 | 1:B:207:PHE:CE1 | 2.55 | 0.41 |
| 1:B:712:GLU:OE2 | 1:B:1636:ASN:ND2 | 2.46 | 0.41 |
| 1:B:4852:PHE:CG | 1:C:4823:ARG:HG2 | 2.55 | 0.41 |
| 1:C:4931:GLU:OE2 | 1:C:4942:TRP:NE1 | 2.53 | 0.41 |
| 1:D:565:LEU:HD11 | 1:D:603:LYS:HG2 | 2.01 | 0.41 |
| 1:D:614:LEU:HD23 | 1:D:617:LEU:HD12 | 2.01 | 0.41 |
| 1:D:1156:TRP:HB2 | 1:D:1160:ASP:HB2 | 2.01 | 0.41 |
| 1:A:703:TYR:CZ | 1:A:722:LEU:HD21 | 2.54 | 0.41 |
| 1:A:4515:ASN:HD22 | 1:A:4518:LEU:HB2 | 1.85 | 0.41 |
| 1:B:585:ALA:HA | 1:B:588:ILE:HD12 | 2.02 | 0.41 |
| 1:B:776:GLN:HG2 | 1:B:1472:GLU:HA | 2.01 | 0.41 |
| 1:B:2421:ARG:HA | 1:B:2424:LEU:HB2 | 2.01 | 0.41 |
| 1:B:3911:ILE:HD13 | 1:B:3911:ILE:HA | 1.91 | 0.41 |
| 1:C:1682:GLU:HA | 1:C:1685:LEU:HD13 | 2.02 | 0.41 |
| 1:C:4852:PHE:CG | 1:D:4823:ARG:HG2 | 2.55 | 0.41 |
| 1:D:182:ILE:HD12 | 1:D:209:GLN:HB3 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:D:703:TYR:CZ | 1:D:722:LEU:HD21 | 2.54 | 0.41 |
| 1:D:1090:ALA:HA | 1:D:1249:MET:HG2 | 2.02 | 0.41 |
| 1:D:1119:ARG:NH2 | 1:D:1196:ASP:O | 2.48 | 0.41 |
| 1:D:1146:HIS:HB2 | 1:D:1192:PHE:HE1 | 1.85 | 0.41 |
| 1:D:4739:PHE:HD1 | 1:D:4739:PHE:HA | 1.76 | 0.41 |
| 1:A:243:GLU:OE2 | 1:A:389:ARG:NH1 | 2.53 | 0.41 |
| 1:A:411:GLU:HA | 1:A:414:ARG:HB2 | 2.01 | 0.41 |
| 1:A:725:TYR:OH | 1:A:775:VAL:HG11 | 2.21 | 0.41 |
| 1:A:1091:GLU:HB3 | 1:A:1094:TYR:HD2 | 1.84 | 0.41 |
| 1:B:143:LEU:CD2 | 1:C:2426:SER:HB3 | 2.47 | 0.41 |
| 1:B:833:LYS:HA | 1:B:1614:ARG:HH12 | 1.86 | 0.41 |
| 1:C:836:HIS:HB2 | 1:C:839:GLU:HG2 | 2.03 | 0.41 |
| 1:C:852:GLY:HA3 | 1:C:1086:ARG:HG3 | 2.01 | 0.41 |
| 1:C:1905:LEU:HD23 | 1:C:2081:LEU:HA | 2.03 | 0.41 |
| 1:C:2858:LYS:HG3 | 1:C:2872:LEU:HD22 | 2.02 | 0.41 |
| 1:D:1692:LYS:HA | 1:D:1810:VAL:HG13 | 2.02 | 0.41 |
| 1:A:796:ALA:HB3 | 1:A:798:ILE:HG13 | 2.02 | 0.41 |
| 1:A:1146:HIS:HB2 | 1:A:1192:PHE:HE1 | 1.85 | 0.41 |
| 1:A:1256:PRO:HB3 | 1:A:1597:SER:HA | 2.02 | 0.41 |
| 1:A:3914:ALA:HB3 | 1:A:3975:LEU:HD11 | 2.02 | 0.41 |
| 1:A:4823:ARG:HG2 | 1:D:4852:PHE:CG | 2.55 | 0.41 |
| 1:B:796:ALA:HB3 | 1:B:798:ILE:HG13 | 2.02 | 0.41 |
| 1:B:836:HIS:HB2 | 1:B:839:GLU:HG2 | 2.03 | 0.41 |
| 1:B:2160:PRO:HB3 | 1:B:2207:ILE:HD12 | 2.02 | 0.41 |
| 1:C:532:SER:HA | 1:C:535:GLU:HB3 | 2.01 | 0.41 |
| 1:C:1256:PRO:HB3 | 1:C:1597:SER:HA | 2.02 | 0.41 |
| 1:C:1934:VAL:O | 1:C:1938:GLN:N | 2.43 | 0.41 |
| 1:C:2884:ALA:HA | 1:C:2887:ARG:HB3 | 2.03 | 0.41 |
| 1:C:3779:LEU:HD11 | 1:C:3783:LYS:HE2 | 2.03 | 0.41 |
| 1:D:244:CYS:SG | 1:D:245:LEU:N | 2.93 | 0.41 |
| 1:A:614:LEU:HD23 | 1:A:617:LEU:HD12 | 2.01 | 0.41 |
| 1:A:833:LYS:HA | 1:A:1614:ARG:HH12 | 1.86 | 0.41 |
| 1:A:1090:ALA:HA | 1:A:1249:MET:HG2 | 2.02 | 0.41 |
| 1:A:2421:ARG:HA | 1:A:2424:LEU:HB2 | 2.01 | 0.41 |
| 1:A:2858:LYS:HG3 | 1:A:2872:LEU:HD22 | 2.02 | 0.41 |
| 1:A:3800:SER:OG | 1:A:3801:CYS:N | 2.47 | 0.41 |
| 1:B:852:GLY:HA3 | 1:B:1086:ARG:HG3 | 2.01 | 0.41 |
| 1:B:1090:ALA:HA | 1:B:1249:MET:HG2 | 2.02 | 0.41 |
| 1:B:1137:PHE:HD1 | 1:B:1144:ARG:HB3 | 1.86 | 0.41 |
| 1:B:1905:LEU:HD23 | 1:B:2081:LEU:HA | 2.03 | 0.41 |
| 1:B:2127:ILE:HD12 | 1:B:2127:ILE:HA | 1.96 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:2541:HIS:O | 1:B:2545:LEU:N | 2.49 | 0.41 |
| 1:C:244:CYS:SG | 1:C:245:LEU:N | 2.93 | 0.41 |
| 1:C:653:SER:OG | 1:C:794:PHE:O | 2.31 | 0.41 |
| 1:C:4161:TRP:CD1 | 1:C:4201:MET:HE1 | 2.53 | 0.41 |
| 1:D:725:TYR:OH | 1:D:775:VAL:HG11 | 2.21 | 0.41 |
| 1:D:833:LYS:HA | 1:D:1614:ARG:HH12 | 1.86 | 0.41 |
| 1:D:3743:GLN:NE2 | 1:D:3781:TYR:OH | 2.43 | 0.41 |
| 1:A:1905:LEU:HD23 | 1:A:2081:LEU:HA | 2.03 | 0.41 |
| 1:A:2732:LYS:HD2 | 1:A:2732:LYS:HA | 1.82 | 0.41 |
| 1:A:3925:ILE:HG21 | 1:A:3925:ILE:HD13 | 1.70 | 0.41 |
| 1:A:4045:SER:HA | 1:A:4078:THR:HG22 | 2.03 | 0.41 |
| 1:B:1156:TRP:HB2 | 1:B:1160:ASP:HB2 | 2.01 | 0.41 |
| 1:B:2884:ALA:HA | 1:B:2887:ARG:HB3 | 2.03 | 0.41 |
| 1:C:182:ILE:HD12 | 1:C:209:GLN:HB3 | 2.02 | 0.41 |
| 1:C:3743:GLN:O | 1:C:3746:SER:OG | 2.32 | 0.41 |
| 1:D:288:HIS:ND1 | 1:D:349:MET:O | 2.43 | 0.41 |
| 1:D:1091:GLU:HA | 1:D:1250:TRP:CZ3 | 2.55 | 0.41 |
| 1:D:4621:GLN:HE22 | 1:D:4633:ARG:HH12 | 1.68 | 0.41 |
| 1:A:244:CYS:SG | 1:A:245:LEU:N | 2.93 | 0.41 |
| 1:A:1137:PHE:HD1 | 1:A:1144:ARG:HB3 | 1.86 | 0.41 |
| 1:A:1692:LYS:HA | 1:A:1810:VAL:HG13 | 2.02 | 0.41 |
| 1:A:2154:LYS:HD3 | 1:A:2154:LYS:HA | 1.90 | 0.41 |
| 1:A:3797:LEU:HD13 | 1:A:3840:LEU:HD11 | 2.02 | 0.41 |
| 1:B:3921:LEU:HA | 1:B:3921:LEU:HD23 | 1.84 | 0.41 |
| 1:C:614:LEU:HD23 | 1:C:617:LEU:HD12 | 2.01 | 0.41 |
| 1:C:1132:GLU:HG2 | 1:C:1133:ARG:HG3 | 2.03 | 0.41 |
| 1:C:1170:GLU:O | 1:C:1172:THR:N | 2.50 | 0.41 |
| 1:C:2463:PRO:HD3 | 1:C:2516:ALA:HB2 | 2.02 | 0.41 |
| 1:D:534:TYR:CZ | 1:D:571:ILE:HG13 | 2.56 | 0.41 |
| 1:D:613:VAL:O | 1:D:617:LEU:N | 2.46 | 0.41 |
| 1:D:3779:LEU:HD11 | 1:D:3783:LYS:HE2 | 2.03 | 0.41 |
| 1:D:3996:ILE:H | 1:D:3996:ILE:HG22 | 1.64 | 0.41 |
| 1:A:182:ILE:HD12 | 1:A:209:GLN:HB3 | 2.02 | 0.41 |
| 1:A:534:TYR:CZ | 1:A:571:ILE:HG13 | 2.56 | 0.41 |
| 1:A:650:ASN:HA | 1:A:1626:GLN:HA | 2.03 | 0.41 |
| 1:A:836:HIS:HB2 | 1:A:839:GLU:HG2 | 2.03 | 0.41 |
| 1:A:935:MET:O | 1:A:939:THR:OG1 | 2.36 | 0.41 |
| 1:A:4852:PHE:CG | 1:B:4823:ARG:HG2 | 2.55 | 0.41 |
| 1:B:534:TYR:CZ | 1:B:571:ILE:HG13 | 2.56 | 0.41 |
| 1:B:3914:ALA:HB3 | 1:B:3975:LEU:HD11 | 2.02 | 0.41 |
| 1:C:299:HIS:N | 1:C:304:LYS:O | 2.54 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1029:ASN:HA | 1:C:1030:PRO:HD3 | 1.82 | 0.41 |
| 1:C:1137:PHE:HD1 | 1:C:1144:ARG:HB3 | 1.86 | 0.41 |
| 1:C:2421:ARG:HA | 1:C:2424:LEU:HB2 | 2.01 | 0.41 |
| 1:C:4872:GLY:C | 1:D:4875:ARG:CZ | 2.89 | 0.41 |
| 1:C:4894:ILE:HD12 | 1:C:4961:LYS:HE3 | 2.03 | 0.41 |
| 1:D:776:GLN:HG2 | 1:D:1472:GLU:HA | 2.01 | 0.41 |
| 1:D:836:HIS:HB2 | 1:D:839:GLU:HG2 | 2.03 | 0.41 |
| 1:D:1256:PRO:HB3 | 1:D:1597:SER:HA | 2.02 | 0.41 |
| 1:D:4045:SER:HA | 1:D:4078:THR:HG22 | 2.03 | 0.41 |
| 1:A:551:PHE:HD1 | 1:A:551:PHE:HA | 1.74 | 0.41 |
| 1:A:776:GLN:HG2 | 1:A:1472:GLU:HA | 2.01 | 0.41 |
| 1:A:881:ILE:HG21 | 1:A:1062:TYR:CZ | 2.56 | 0.41 |
| 1:A:2160:PRO:HB3 | 1:A:2207:ILE:HD12 | 2.02 | 0.41 |
| 1:B:182:ILE:HD12 | 1:B:209:GLN:HB3 | 2.02 | 0.41 |
| 1:B:244:CYS:SG | 1:B:245:LEU:N | 2.93 | 0.41 |
| 1:B:411:GLU:HA | 1:B:414:ARG:HB2 | 2.01 | 0.41 |
| 1:B:725:TYR:OH | 1:B:775:VAL:HG11 | 2.21 | 0.41 |
| 1:B:1132:GLU:HG2 | 1:B:1133:ARG:HG3 | 2.03 | 0.41 |
| 1:B:1146:HIS:HB2 | 1:B:1192:PHE:HE1 | 1.85 | 0.41 |
| 1:B:1699:ARG:HH22 | 1:B:1821:LEU:HD11 | 1.86 | 0.41 |
| 1:B:2829:MET:HE1 | 1:B:2896:PHE:HB2 | 2.03 | 0.41 |
| 1:B:3779:LEU:HD11 | 1:B:3783:LYS:HE2 | 2.03 | 0.41 |
| 1:B:4022:LEU:HA | 1:B:4022:LEU:HD23 | 1.85 | 0.41 |
| 1:B:4161:TRP:CD1 | 1:B:4201:MET:HE1 | 2.53 | 0.41 |
| 1:B:4872:GLY:C | 1:C:4875:ARG:CZ | 2.89 | 0.41 |
| 1:C:190:ARG:HG2 | 1:C:207:PHE:CE1 | 2.55 | 0.41 |
| 1:C:534:TYR:CZ | 1:C:571:ILE:HG13 | 2.56 | 0.41 |
| 1:C:650:ASN:HA | 1:C:1626:GLN:HA | 2.03 | 0.41 |
| 1:C:706:TYR:CD1 | 1:C:1253:LYS:HD2 | 2.56 | 0.41 |
| 1:C:1091:GLU:HA | 1:C:1250:TRP:CZ3 | 2.55 | 0.41 |
| 1:C:3911:ILE:HD13 | 1:C:3911:ILE:HA | 1.91 | 0.41 |
| 1:C:4515:ASN:HD22 | 1:C:4518:LEU:HB2 | 1.85 | 0.41 |
| 1:C:4621:GLN:HE22 | 1:C:4633:ARG:HH12 | 1.68 | 0.41 |
| 1:D:650:ASN:HA | 1:D:1626:GLN:HA | 2.03 | 0.41 |
| 1:D:881:ILE:HG21 | 1:D:1062:TYR:CZ | 2.56 | 0.41 |
| 1:D:1132:GLU:HG2 | 1:D:1133:ARG:HG3 | 2.03 | 0.41 |
| 1:D:1652:LYS:HE2 | 1:D:1652:LYS:HB3 | 1.90 | 0.41 |
| 1:D:1716:THR:HA | 1:D:1719:LEU:HD12 | 2.03 | 0.41 |
| 1:D:1905:LEU:HD23 | 1:D:2081:LEU:HA | 2.03 | 0.41 |
| 1:D:2160:PRO:HB3 | 1:D:2207:ILE:HD12 | 2.02 | 0.41 |
| 1:D:4853:PHE:HA | 1:D:4857:VAL:HB | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:118:ALA:HA | 1:A:161:THR:HA | 2.03 | 0.41 |
| 1:A:681:HIS:HA | 1:A:751:THR:HG22 | 2.03 | 0.41 |
| 1:A:852:GLY:HA2 | 1:A:853:PRO:HA | 1.69 | 0.41 |
| 1:A:1255:LEU:HA | 1:A:1256:PRO:HD3 | 1.92 | 0.41 |
| 1:A:1716:THR:HA | 1:A:1719:LEU:HD12 | 2.03 | 0.41 |
| 1:A:2463:PRO:HD3 | 1:A:2516:ALA:HB2 | 2.02 | 0.41 |
| 1:A:4823:ARG:HA | 1:D:4852:PHE:CE1 | 2.53 | 0.41 |
| 1:B:1505:LEU:H | 1:B:1523:ASN:HA | 1.86 | 0.41 |
| 1:B:2463:PRO:HD3 | 1:B:2516:ALA:HB2 | 2.02 | 0.41 |
| 1:C:64:ILE:HG12 | 1:C:417:ARG:HH21 | 1.86 | 0.41 |
| 1:C:217:ILE:HG23 | 1:C:285:SER:HB3 | 2.03 | 0.41 |
| 1:C:506:HIS:HB2 | 1:C:561:ARG:NH1 | 2.36 | 0.41 |
| 1:C:833:LYS:HA | 1:C:1614:ARG:HH12 | 1.86 | 0.41 |
| 1:C:1177:LEU:HD12 | 1:C:1177:LEU:HA | 1.92 | 0.41 |
| 1:C:3808:ALA:HA | 1:C:3811:ARG:HD2 | 2.03 | 0.41 |
| 1:C:4045:SER:HA | 1:C:4078:THR:HG22 | 2.03 | 0.41 |
| 1:D:2884:ALA:HA | 1:D:2887:ARG:HB3 | 2.03 | 0.41 |
| 1:A:1132:GLU:HG2 | 1:A:1133:ARG:HG3 | 2.03 | 0.40 |
| 1:A:1783:PRO:HB3 | 1:A:1786:ILE:HD12 | 2.02 | 0.40 |
| 1:A:4875:ARG:CZ | 1:D:4872:GLY:C | 2.89 | 0.40 |
| 1:B:534:TYR:O | 1:B:538:ALA:N | 2.51 | 0.40 |
| 1:B:681:HIS:HA | 1:B:751:THR:HG22 | 2.03 | 0.40 |
| 1:B:3797:LEU:HD13 | 1:B:3840:LEU:HD11 | 2.02 | 0.40 |
| 1:B:4045:SER:HA | 1:B:4078:THR:HG22 | 2.03 | 0.40 |
| 1:B:4515:ASN:HD22 | 1:B:4518:LEU:HB2 | 1.85 | 0.40 |
| 1:C:3642:ILE:HD12 | 1:C:3642:ILE:HG23 | 1.91 | 0.40 |
| 1:D:217:ILE:HG23 | 1:D:285:SER:HB3 | 2.03 | 0.40 |
| 1:D:1137:PHE:HD1 | 1:D:1144:ARG:HB3 | 1.86 | 0.40 |
| 1:D:2858:LYS:HG3 | 1:D:2872:LEU:HD22 | 2.02 | 0.40 |
| 1:D:4640:SER:HB3 | 1:D:4643:ASN:ND2 | 2.37 | 0.40 |
| 1:D:4931:GLU:OE2 | 1:D:4942:TRP:NE1 | 2.53 | 0.40 |
| 1:A:731:HIS:HE1 | 1:A:738:ALA:HB1 | 1.87 | 0.40 |
| 1:A:1699:ARG:HH22 | 1:A:1821:LEU:HD11 | 1.86 | 0.40 |
| 1:A:2270:LEU:HD21 | 1:A:2299:TYR:HB2 | 2.04 | 0.40 |
| 1:A:4166:VAL:O | 1:A:4170:LYS:N | 2.52 | 0.40 |
| 1:B:64:ILE:H | 1:B:64:ILE:HG13 | 1.79 | 0.40 |
| 1:B:706:TYR:CD1 | 1:B:1253:LYS:HD2 | 2.56 | 0.40 |
| 1:B:1032:LEU:HD23 | 1:B:1032:LEU:HA | 1.82 | 0.40 |
| 1:B:3808:ALA:HA | 1:B:3811:ARG:HD2 | 2.03 | 0.40 |
| 1:B:4591:TYR:CE1 | 1:B:4595:LYS:HB2 | 2.57 | 0.40 |
| 1:B:4722:TYR:OH | 1:B:4745:LEU:O | 2.40 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:B:4770:LEU:HD23 | 1:B:4770:LEU:HA | 1.98 | 0.40 |
| 1:B:4853:PHE:HA | 1:B:4857:VAL:HB | 2.03 | 0.40 |
| 1:A:116:GLY:N | 1:A:162:ILE:O | 2.45 | 0.40 |
| 1:A:534:TYR:O | 1:A:538:ALA:N | 2.51 | 0.40 |
| 1:A:2069:ARG:HA | 1:A:2069:ARG:HD3 | 1.92 | 0.40 |
| 1:A:3779:LEU:HD11 | 1:A:3783:LYS:HE2 | 2.03 | 0.40 |
| 1:B:217:ILE:HG23 | 1:B:285:SER:HB3 | 2.03 | 0.40 |
| 1:B:415:THR:O | 1:B:419:ILE:HG13 | 2.22 | 0.40 |
| 1:B:2270:LEU:HD21 | 1:B:2299:TYR:HB2 | 2.04 | 0.40 |
| 1:B:4873:GLU:HA | 1:C:4875:ARG:HH11 | 1.68 | 0.40 |
| 1:C:681:HIS:HA | 1:C:751:THR:HG22 | 2.03 | 0.40 |
| 1:C:725:TYR:OH | 1:C:775:VAL:HG11 | 2.21 | 0.40 |
| 1:C:3777:LYS:HE3 | 1:C:3777:LYS:HB2 | 1.94 | 0.40 |
| 1:C:4640:SER:HB3 | 1:C:4643:ASN:ND2 | 2.37 | 0.40 |
| 1:D:506:HIS:HB2 | 1:D:561:ARG:NH1 | 2.36 | 0.40 |
| 1:D:2775:PRO:HB2 | 1:D:2889:LYS:NZ | 2.36 | 0.40 |
| 1:A:628:ASN:O | 1:A:632:ILE:HG12 | 2.22 | 0.40 |
| 1:A:2834:LEU:HG | 1:A:2895:LYS:HZ3 | 1.87 | 0.40 |
| 1:A:4852:PHE:CE1 | 1:B:4823:ARG:HA | 2.53 | 0.40 |
| 1:B:551:PHE:HD1 | 1:B:551:PHE:HA | 1.74 | 0.40 |
| 1:B:650:ASN:HA | 1:B:1626:GLN:HA | 2.03 | 0.40 |
| 1:B:1256:PRO:HB3 | 1:B:1597:SER:HA | 2.02 | 0.40 |
| 1:B:1716:THR:HA | 1:B:1719:LEU:HD12 | 2.03 | 0.40 |
| 1:B:1729:MET:HG2 | 1:B:2110:ASN:HA | 2.03 | 0.40 |
| 1:B:2775:PRO:HB2 | 1:B:2889:LYS:NZ | 2.36 | 0.40 |
| 1:B:3747:ALA:O | 1:B:3749:LYS:HD2 | 2.22 | 0.40 |
| 1:C:881:ILE:HG21 | 1:C:1062:TYR:CZ | 2.56 | 0.40 |
| 1:C:1146:HIS:HB2 | 1:C:1192:PHE:HE1 | 1.85 | 0.40 |
| 1:C:1783:PRO:HB3 | 1:C:1786:ILE:HD12 | 2.02 | 0.40 |
| 1:C:2270:LEU:HD21 | 1:C:2299:TYR:HB2 | 2.04 | 0.40 |
| 1:C:3886:ILE:HD12 | 1:C:3886:ILE:HG23 | 1.92 | 0.40 |
| 1:D:628:ASN:O | 1:D:632:ILE:HG12 | 2.22 | 0.40 |
| 1:D:694:ARG:N | 1:D:793:SER:O | 2.45 | 0.40 |
| 1:D:706:TYR:CD1 | 1:D:1253:LYS:HD2 | 2.56 | 0.40 |
| 1:D:731:HIS:HE1 | 1:D:738:ALA:HB1 | 1.87 | 0.40 |
| 1:D:3756:VAL:O | 1:D:3759:THR:OG1 | 2.31 | 0.40 |
| 1:A:506:HIS:HB2 | 1:A:561:ARG:NH1 | 2.36 | 0.40 |
| 1:A:3747:ALA:O | 1:A:3749:LYS:HD2 | 2.22 | 0.40 |
| 1:A:3808:ALA:HA | 1:A:3811:ARG:HD2 | 2.03 | 0.40 |
| 1:A:3919:ASN:O | 1:A:3922:THR:OG1 | 2.35 | 0.40 |
| 1:A:3921:LEU:HA | 1:A:3921:LEU:HD23 | 1.84 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:3988:GLU:HB2 | 1:A:4937:GLN:NE2 | 2.37 | 0.40 |
| 1:A:4640:SER:HB3 | 1:A:4643:ASN:ND2 | 2.37 | 0.40 |
| 1:A:4804:ASP:OD1 | 1:A:4804:ASP:N | 2.54 | 0.40 |
| 1:B:64:ILE:HG12 | 1:B:417:ARG:HH21 | 1.86 | 0.40 |
| 1:B:116:GLY:N | 1:B:162:ILE:O | 2.45 | 0.40 |
| 1:B:189:GLU:CD | 1:C:2419:ARG:CZ | 2.90 | 0.40 |
| 1:B:628:ASN:O | 1:B:632:ILE:HG12 | 2.22 | 0.40 |
| 1:B:894:VAL:HG11 | 1:B:976:TYR:HD2 | 1.87 | 0.40 |
| 1:B:2788:TRP:HH2 | 1:B:2844:MET:HB2 | 1.87 | 0.40 |
| 1:B:3993:ASN:HD22 | 1:B:4110:MET:HG3 | 1.87 | 0.40 |
| 1:C:49:LEU:HD21 | 1:C:203:VAL:HG23 | 2.04 | 0.40 |
| 1:C:118:ALA:HA | 1:C:161:THR:HA | 2.03 | 0.40 |
| 1:C:894:VAL:HG11 | 1:C:976:TYR:HD2 | 1.87 | 0.40 |
| 1:C:1255:LEU:HA | 1:C:1256:PRO:HD3 | 1.92 | 0.40 |
| 1:C:2160:PRO:HB3 | 1:C:2207:ILE:HD12 | 2.02 | 0.40 |
| 1:C:3993:ASN:HD22 | 1:C:4110:MET:HG3 | 1.87 | 0.40 |
| 1:C:4722:TYR:OH | 1:C:4745:LEU:O | 2.40 | 0.40 |
| 1:D:1783:PRO:HB3 | 1:D:1786:ILE:HD12 | 2.02 | 0.40 |
| 1:D:3808:ALA:HA | 1:D:3811:ARG:HD2 | 2.03 | 0.40 |
| 1:D:4894:ILE:HD12 | 1:D:4961:LYS:HE3 | 2.03 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|-----|-------|-------------------|-------------|-----------|----------|-------------|
| 1 | A | 3289/4968 (66%) | 2983 (91%) | 285 (9%) | 21 (1%) | 25 65 |
| 1 | B | 3289/4968 (66%) | 2983 (91%) | 285 (9%) | 21 (1%) | 25 65 |
| 1 | C | 3289/4968 (66%) | 2983 (91%) | 285 (9%) | 21 (1%) | 25 65 |
| 1 | D | 3289/4968 (66%) | 2983 (91%) | 285 (9%) | 21 (1%) | 25 65 |
| All | All | 13156/19872 (66%) | 11932 (91%) | 1140 (9%) | 84 (1%) | 29 65 |

All (84) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 4071 | ALA |
| 1 | B | 4071 | ALA |
| 1 | C | 4071 | ALA |
| 1 | D | 4071 | ALA |
| 1 | A | 730 | LEU |
| 1 | A | 1580 | PRO |
| 1 | A | 3802 | SER |
| 1 | A | 4164 | PRO |
| 1 | A | 4916 | LEU |
| 1 | B | 730 | LEU |
| 1 | B | 1580 | PRO |
| 1 | B | 3802 | SER |
| 1 | B | 4164 | PRO |
| 1 | B | 4916 | LEU |
| 1 | C | 730 | LEU |
| 1 | C | 1580 | PRO |
| 1 | C | 3802 | SER |
| 1 | C | 4164 | PRO |
| 1 | C | 4916 | LEU |
| 1 | D | 730 | LEU |
| 1 | D | 1580 | PRO |
| 1 | D | 3802 | SER |
| 1 | D | 4164 | PRO |
| 1 | D | 4916 | LEU |
| 1 | A | 1581 | GLN |
| 1 | A | 1809 | PRO |
| 1 | A | 2075 | VAL |
| 1 | A | 3805 | ASP |
| 1 | A | 4030 | SER |
| 1 | A | 4646 | TRP |
| 1 | B | 1581 | GLN |
| 1 | B | 1809 | PRO |
| 1 | B | 2075 | VAL |
| 1 | B | 3805 | ASP |
| 1 | B | 4030 | SER |
| 1 | B | 4646 | TRP |
| 1 | C | 1581 | GLN |
| 1 | C | 1809 | PRO |
| 1 | C | 2075 | VAL |
| 1 | C | 3805 | ASP |
| 1 | C | 4030 | SER |
| 1 | C | 4646 | TRP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 1581 | GLN |
| 1 | D | 1809 | PRO |
| 1 | D | 2075 | VAL |
| 1 | D | 3805 | ASP |
| 1 | D | 4030 | SER |
| 1 | D | 4646 | TRP |
| 1 | A | 819 | TYR |
| 1 | A | 980 | PRO |
| 1 | A | 3804 | LEU |
| 1 | B | 819 | TYR |
| 1 | B | 980 | PRO |
| 1 | B | 3804 | LEU |
| 1 | C | 819 | TYR |
| 1 | C | 980 | PRO |
| 1 | C | 3804 | LEU |
| 1 | D | 819 | TYR |
| 1 | D | 980 | PRO |
| 1 | D | 3804 | LEU |
| 1 | A | 792 | VAL |
| 1 | B | 792 | VAL |
| 1 | C | 792 | VAL |
| 1 | D | 792 | VAL |
| 1 | A | 853 | PRO |
| 1 | A | 1848 | PRO |
| 1 | B | 853 | PRO |
| 1 | B | 1848 | PRO |
| 1 | C | 853 | PRO |
| 1 | C | 1848 | PRO |
| 1 | D | 853 | PRO |
| 1 | D | 1848 | PRO |
| 1 | A | 1476 | VAL |
| 1 | A | 2329 | PRO |
| 1 | A | 4163 | LYS |
| 1 | B | 1476 | VAL |
| 1 | B | 2329 | PRO |
| 1 | B | 4163 | LYS |
| 1 | C | 1476 | VAL |
| 1 | C | 2329 | PRO |
| 1 | C | 4163 | LYS |
| 1 | D | 1476 | VAL |
| 1 | D | 2329 | PRO |
| 1 | D | 4163 | LYS |

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 | 2659/4355 (61%) | 2628 (99%) | 31 (1%) | 71 | 84 |
| 1 | B | 2658/4355 (61%) | 2627 (99%) | 31 (1%) | 71 | 84 |
| 1 | C | 2659/4355 (61%) | 2627 (99%) | 32 (1%) | 71 | 84 |
| 1 | D | 2660/4355 (61%) | 2628 (99%) | 32 (1%) | 71 | 84 |
| All | All | 10636/17420 (61%) | 10510 (99%) | 126 (1%) | 72 | 84 |

All (126) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 44 | ASN |
| 1 | A | 84 | ASN |
| 1 | A | 298 | ARG |
| 1 | A | 420 | ARG |
| 1 | A | 439 | LYS |
| 1 | A | 527 | LYS |
| 1 | A | 531 | ASN |
| 1 | A | 628 | ASN |
| 1 | A | 658 | ASN |
| 1 | A | 841 | LYS |
| 1 | A | 854 | THR |
| 1 | A | 925 | PRO |
| 1 | A | 990 | PRO |
| 1 | A | 1054 | VAL |
| 1 | A | 1089 | ARG |
| 1 | A | 1761 | MET |
| 1 | A | 2211 | ASN |
| 1 | A | 3722 | LYS |
| 1 | A | 3813 | ASN |
| 1 | A | 3906 | ASN |
| 1 | A | 4131 | GLN |
| 1 | A | 4136 | ARG |
| 1 | A | 4170 | LYS |
| 1 | A | 4171 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 4179 | ASN |
| 1 | A | 4499 | ASN |
| 1 | A | 4515 | ASN |
| 1 | A | 4652 | ARG |
| 1 | A | 4781 | LEU |
| 1 | A | 4875 | ARG |
| 1 | A | 4879 | GLU |
| 1 | B | 44 | ASN |
| 1 | B | 84 | ASN |
| 1 | B | 298 | ARG |
| 1 | B | 420 | ARG |
| 1 | B | 439 | LYS |
| 1 | B | 527 | LYS |
| 1 | B | 531 | ASN |
| 1 | B | 628 | ASN |
| 1 | B | 658 | ASN |
| 1 | B | 841 | LYS |
| 1 | B | 854 | THR |
| 1 | B | 925 | PRO |
| 1 | B | 990 | PRO |
| 1 | B | 1054 | VAL |
| 1 | B | 1089 | ARG |
| 1 | B | 1761 | MET |
| 1 | B | 2211 | ASN |
| 1 | B | 3722 | LYS |
| 1 | B | 3813 | ASN |
| 1 | B | 3906 | ASN |
| 1 | B | 4131 | GLN |
| 1 | B | 4136 | ARG |
| 1 | B | 4170 | LYS |
| 1 | B | 4171 | ARG |
| 1 | B | 4179 | ASN |
| 1 | B | 4499 | ASN |
| 1 | B | 4515 | ASN |
| 1 | B | 4652 | ARG |
| 1 | B | 4781 | LEU |
| 1 | B | 4875 | ARG |
| 1 | B | 4879 | GLU |
| 1 | C | 44 | ASN |
| 1 | C | 84 | ASN |
| 1 | C | 298 | ARG |
| 1 | C | 420 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 439 | LYS |
| 1 | C | 527 | LYS |
| 1 | C | 531 | ASN |
| 1 | C | 628 | ASN |
| 1 | C | 658 | ASN |
| 1 | C | 841 | LYS |
| 1 | C | 854 | THR |
| 1 | C | 925 | PRO |
| 1 | C | 950 | VAL |
| 1 | C | 990 | PRO |
| 1 | C | 1054 | VAL |
| 1 | C | 1089 | ARG |
| 1 | C | 1761 | MET |
| 1 | C | 2211 | ASN |
| 1 | C | 3722 | LYS |
| 1 | C | 3813 | ASN |
| 1 | C | 3906 | ASN |
| 1 | C | 4131 | GLN |
| 1 | C | 4136 | ARG |
| 1 | C | 4170 | LYS |
| 1 | C | 4171 | ARG |
| 1 | C | 4179 | ASN |
| 1 | C | 4499 | ASN |
| 1 | C | 4515 | ASN |
| 1 | C | 4652 | ARG |
| 1 | C | 4781 | LEU |
| 1 | C | 4875 | ARG |
| 1 | C | 4879 | GLU |
| 1 | D | 44 | ASN |
| 1 | D | 84 | ASN |
| 1 | D | 298 | ARG |
| 1 | D | 420 | ARG |
| 1 | D | 439 | LYS |
| 1 | D | 527 | LYS |
| 1 | D | 531 | ASN |
| 1 | D | 628 | ASN |
| 1 | D | 658 | ASN |
| 1 | D | 841 | LYS |
| 1 | D | 854 | THR |
| 1 | D | 925 | PRO |
| 1 | D | 950 | VAL |
| 1 | D | 990 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | D | 1054 | VAL |
| 1 | D | 1089 | ARG |
| 1 | D | 1761 | MET |
| 1 | D | 2211 | ASN |
| 1 | D | 3722 | LYS |
| 1 | D | 3813 | ASN |
| 1 | D | 3906 | ASN |
| 1 | D | 4131 | GLN |
| 1 | D | 4136 | ARG |
| 1 | D | 4170 | LYS |
| 1 | D | 4171 | ARG |
| 1 | D | 4179 | ASN |
| 1 | D | 4499 | ASN |
| 1 | D | 4515 | ASN |
| 1 | D | 4652 | ARG |
| 1 | D | 4781 | LEU |
| 1 | D | 4875 | ARG |
| 1 | D | 4879 | GLU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (156) such sidechains are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 44 | ASN |
| 1 | A | 84 | ASN |
| 1 | A | 123 | HIS |
| 1 | A | 293 | GLN |
| 1 | A | 364 | GLN |
| 1 | A | 375 | GLN |
| 1 | A | 476 | GLN |
| 1 | A | 531 | ASN |
| 1 | A | 593 | HIS |
| 1 | A | 604 | HIS |
| 1 | A | 628 | ASN |
| 1 | A | 1267 | HIS |
| 1 | A | 1294 | ASN |
| 1 | A | 1602 | GLN |
| 1 | A | 1631 | HIS |
| 1 | A | 1684 | GLN |
| 1 | A | 1722 | ASN |
| 1 | A | 1835 | HIS |
| 1 | A | 2090 | HIS |
| 1 | A | 2212 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 2225 | ASN |
| 1 | A | 2251 | ASN |
| 1 | A | 2310 | ASN |
| 1 | A | 3856 | GLN |
| 1 | A | 3906 | ASN |
| 1 | A | 3916 | GLN |
| 1 | A | 3926 | GLN |
| 1 | A | 3950 | HIS |
| 1 | A | 3956 | GLN |
| 1 | A | 3961 | GLN |
| 1 | A | 3976 | GLN |
| 1 | A | 3993 | ASN |
| 1 | A | 4179 | ASN |
| 1 | A | 4499 | ASN |
| 1 | A | 4515 | ASN |
| 1 | A | 4621 | GLN |
| 1 | A | 4914 | HIS |
| 1 | A | 4962 | GLN |
| 1 | B | 23 | GLN |
| 1 | B | 44 | ASN |
| 1 | B | 84 | ASN |
| 1 | B | 123 | HIS |
| 1 | B | 293 | GLN |
| 1 | B | 364 | GLN |
| 1 | B | 375 | GLN |
| 1 | B | 476 | GLN |
| 1 | B | 531 | ASN |
| 1 | B | 593 | HIS |
| 1 | B | 604 | HIS |
| 1 | B | 628 | ASN |
| 1 | B | 1267 | HIS |
| 1 | B | 1294 | ASN |
| 1 | B | 1440 | ASN |
| 1 | B | 1602 | GLN |
| 1 | B | 1631 | HIS |
| 1 | B | 1684 | GLN |
| 1 | B | 1722 | ASN |
| 1 | B | 1835 | HIS |
| 1 | B | 2090 | HIS |
| 1 | B | 2212 | GLN |
| 1 | B | 2225 | ASN |
| 1 | B | 2251 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 2310 | ASN |
| 1 | B | 2730 | HIS |
| 1 | B | 3856 | GLN |
| 1 | B | 3906 | ASN |
| 1 | B | 3916 | GLN |
| 1 | B | 3926 | GLN |
| 1 | B | 3956 | GLN |
| 1 | B | 3961 | GLN |
| 1 | B | 3976 | GLN |
| 1 | B | 3993 | ASN |
| 1 | B | 4179 | ASN |
| 1 | B | 4499 | ASN |
| 1 | B | 4515 | ASN |
| 1 | B | 4621 | GLN |
| 1 | B | 4914 | HIS |
| 1 | B | 4962 | GLN |
| 1 | C | 23 | GLN |
| 1 | C | 44 | ASN |
| 1 | C | 84 | ASN |
| 1 | C | 123 | HIS |
| 1 | C | 293 | GLN |
| 1 | C | 364 | GLN |
| 1 | C | 375 | GLN |
| 1 | C | 476 | GLN |
| 1 | C | 531 | ASN |
| 1 | C | 593 | HIS |
| 1 | C | 604 | HIS |
| 1 | C | 628 | ASN |
| 1 | C | 1267 | HIS |
| 1 | C | 1294 | ASN |
| 1 | C | 1440 | ASN |
| 1 | C | 1602 | GLN |
| 1 | C | 1631 | HIS |
| 1 | C | 1684 | GLN |
| 1 | C | 1691 | ASN |
| 1 | C | 1722 | ASN |
| 1 | C | 1835 | HIS |
| 1 | C | 2090 | HIS |
| 1 | C | 2212 | GLN |
| 1 | C | 2225 | ASN |
| 1 | C | 2251 | ASN |
| 1 | C | 2310 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | C | 2730 | HIS |
| 1 | C | 3856 | GLN |
| 1 | C | 3906 | ASN |
| 1 | C | 3916 | GLN |
| 1 | C | 3926 | GLN |
| 1 | C | 3956 | GLN |
| 1 | C | 3961 | GLN |
| 1 | C | 3976 | GLN |
| 1 | C | 3993 | ASN |
| 1 | C | 4179 | ASN |
| 1 | C | 4499 | ASN |
| 1 | C | 4515 | ASN |
| 1 | C | 4621 | GLN |
| 1 | C | 4914 | HIS |
| 1 | C | 4962 | GLN |
| 1 | D | 44 | ASN |
| 1 | D | 84 | ASN |
| 1 | D | 123 | HIS |
| 1 | D | 293 | GLN |
| 1 | D | 364 | GLN |
| 1 | D | 375 | GLN |
| 1 | D | 476 | GLN |
| 1 | D | 531 | ASN |
| 1 | D | 593 | HIS |
| 1 | D | 604 | HIS |
| 1 | D | 628 | ASN |
| 1 | D | 1267 | HIS |
| 1 | D | 1294 | ASN |
| 1 | D | 1602 | GLN |
| 1 | D | 1631 | HIS |
| 1 | D | 1684 | GLN |
| 1 | D | 1722 | ASN |
| 1 | D | 1835 | HIS |
| 1 | D | 2090 | HIS |
| 1 | D | 2212 | GLN |
| 1 | D | 2225 | ASN |
| 1 | D | 2251 | ASN |
| 1 | D | 2730 | HIS |
| 1 | D | 3856 | GLN |
| 1 | D | 3906 | ASN |
| 1 | D | 3916 | GLN |
| 1 | D | 3926 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | D | 3956 | GLN |
| 1 | D | 3961 | GLN |
| 1 | D | 3976 | GLN |
| 1 | D | 3993 | ASN |
| 1 | D | 4179 | ASN |
| 1 | D | 4499 | ASN |
| 1 | D | 4515 | ASN |
| 1 | D | 4621 | GLN |
| 1 | D | 4914 | HIS |
| 1 | D | 4962 | GLN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

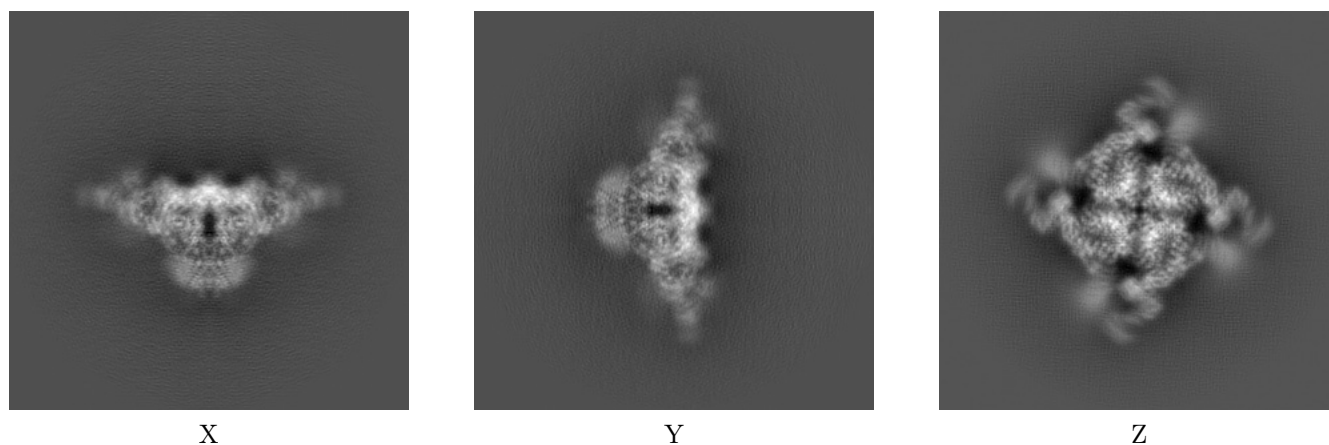
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-9528. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections [i](#)

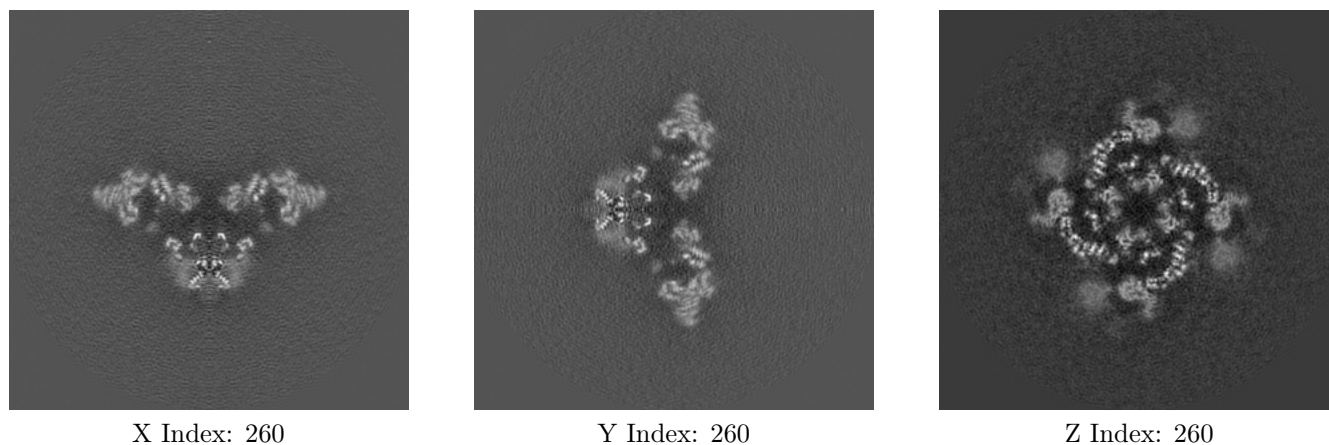
6.1.1 Primary map



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

6.2 Central slices [i](#)

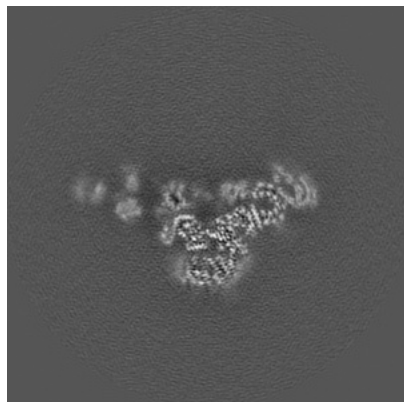
6.2.1 Primary map



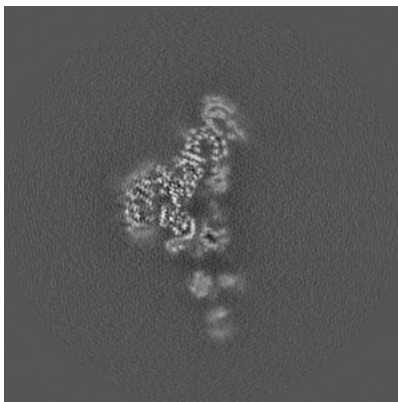
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

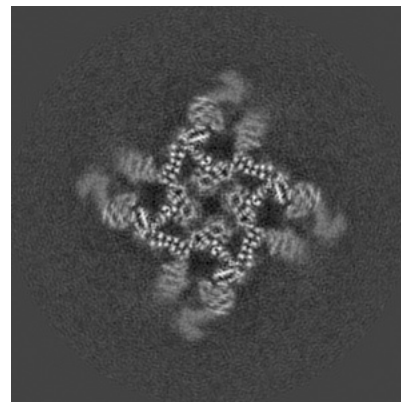
6.3.1 Primary map



X Index: 243



Y Index: 277

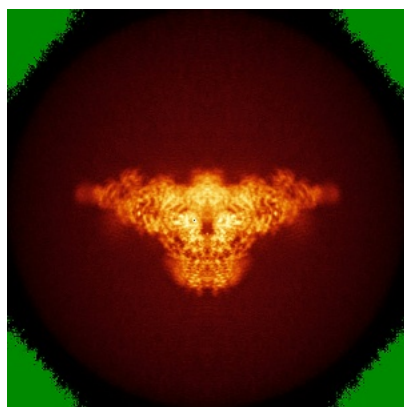


Z Index: 271

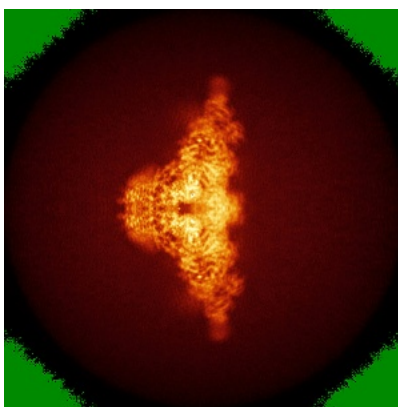
The images above show the largest variance slices of the map in three orthogonal directions.

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

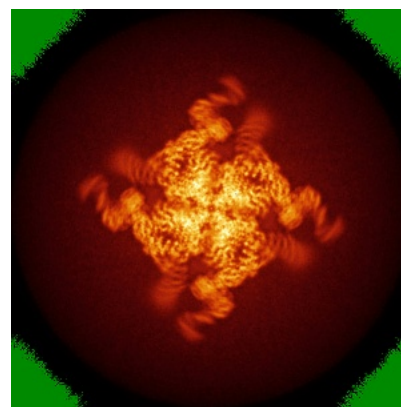
6.4.1 Primary map



X



Y

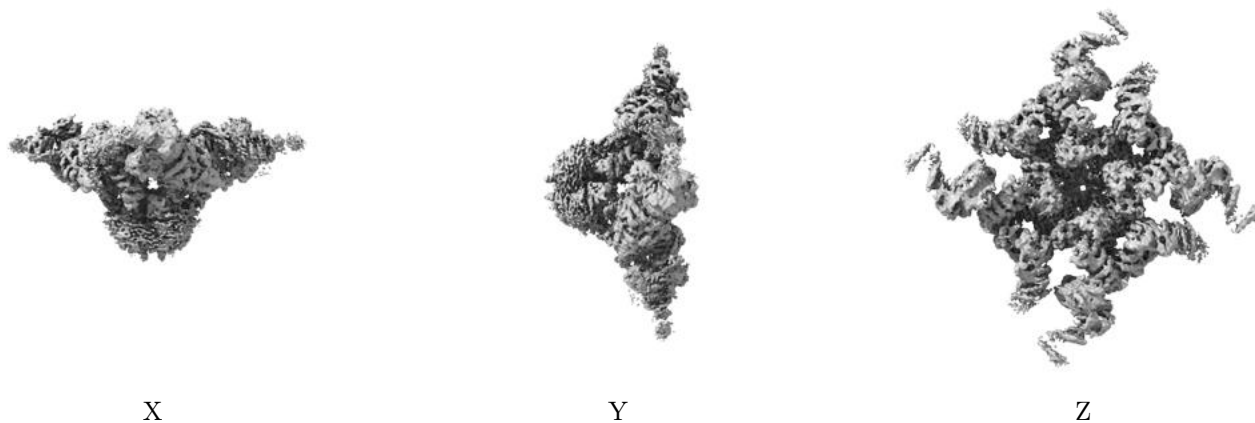


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

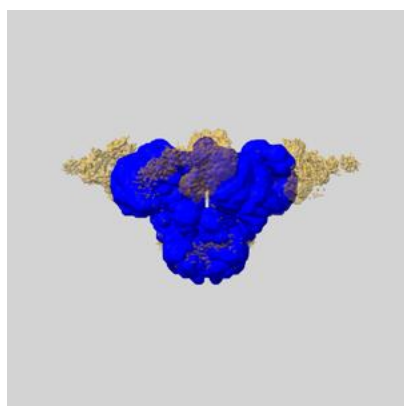
6.6 Mask visualisation [i](#)

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

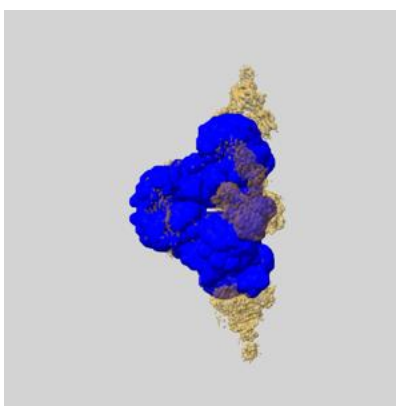
A mask typically either:

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

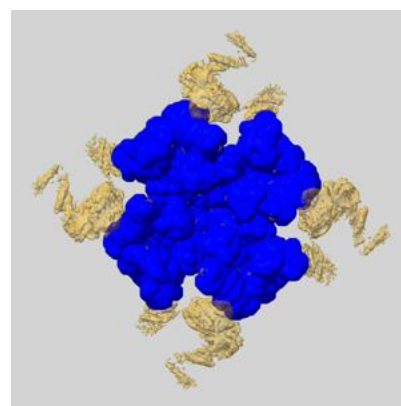
6.6.1 emd_9528_msk_1.map [i](#)



X



Y

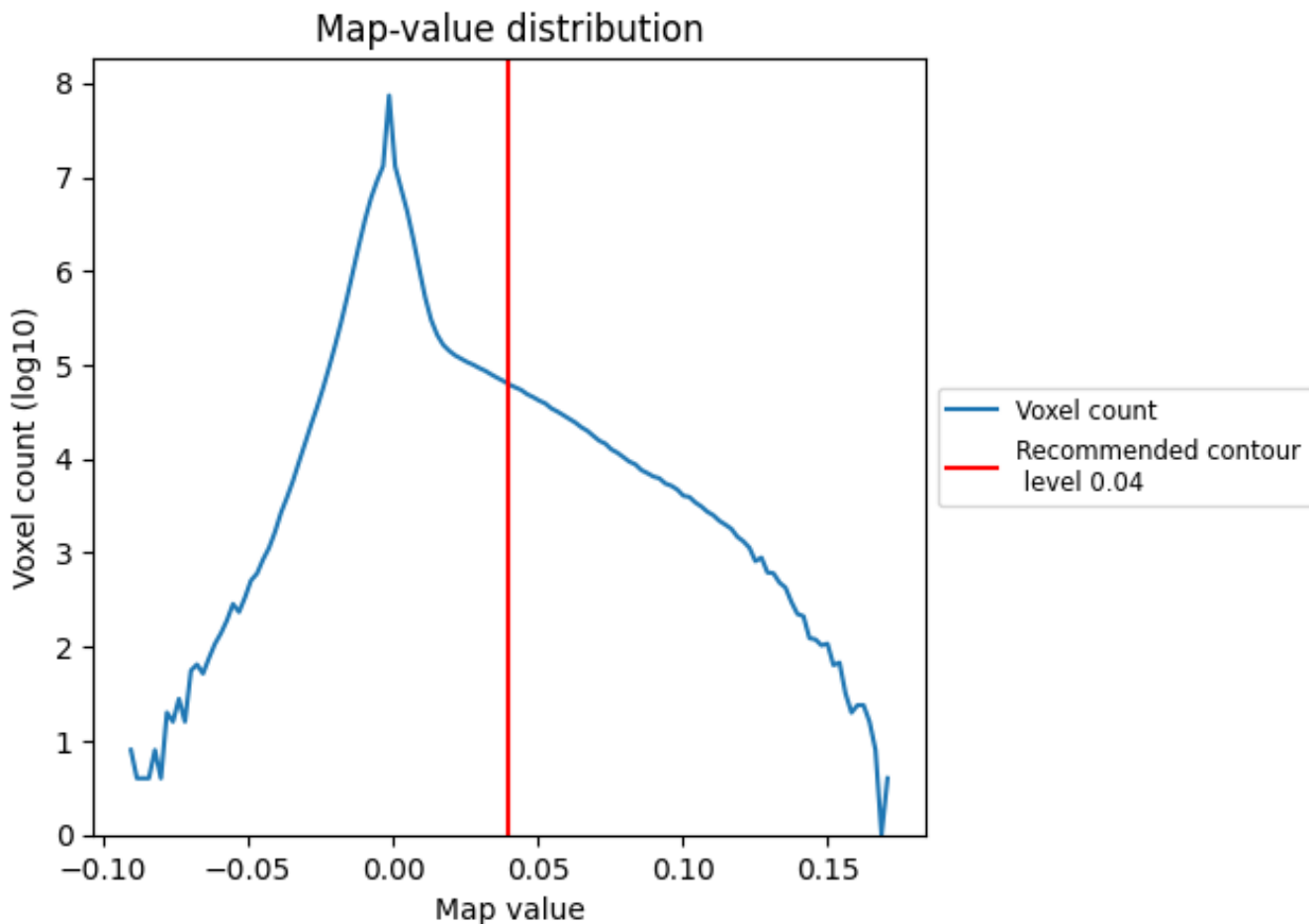


Z

7 Map analysis [i](#)

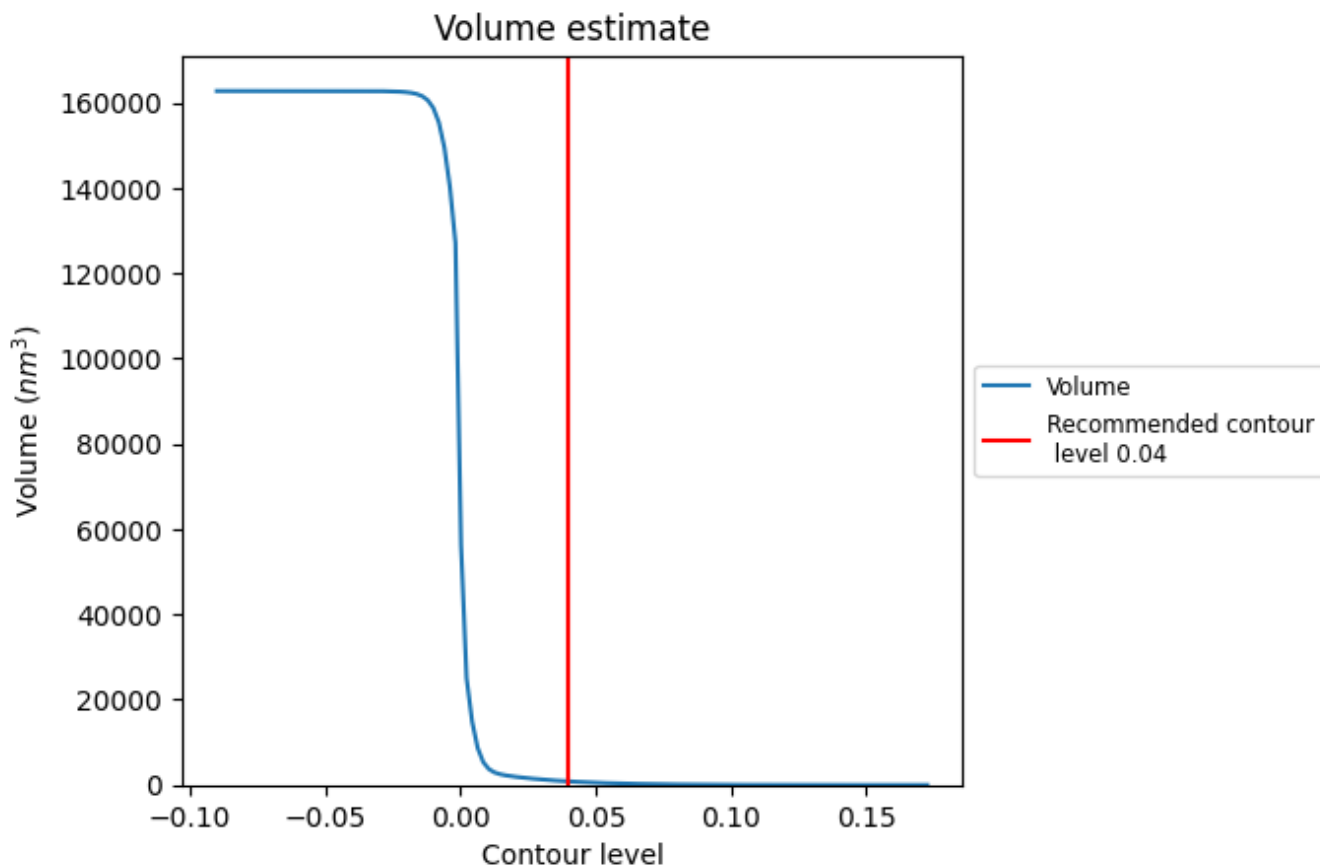
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

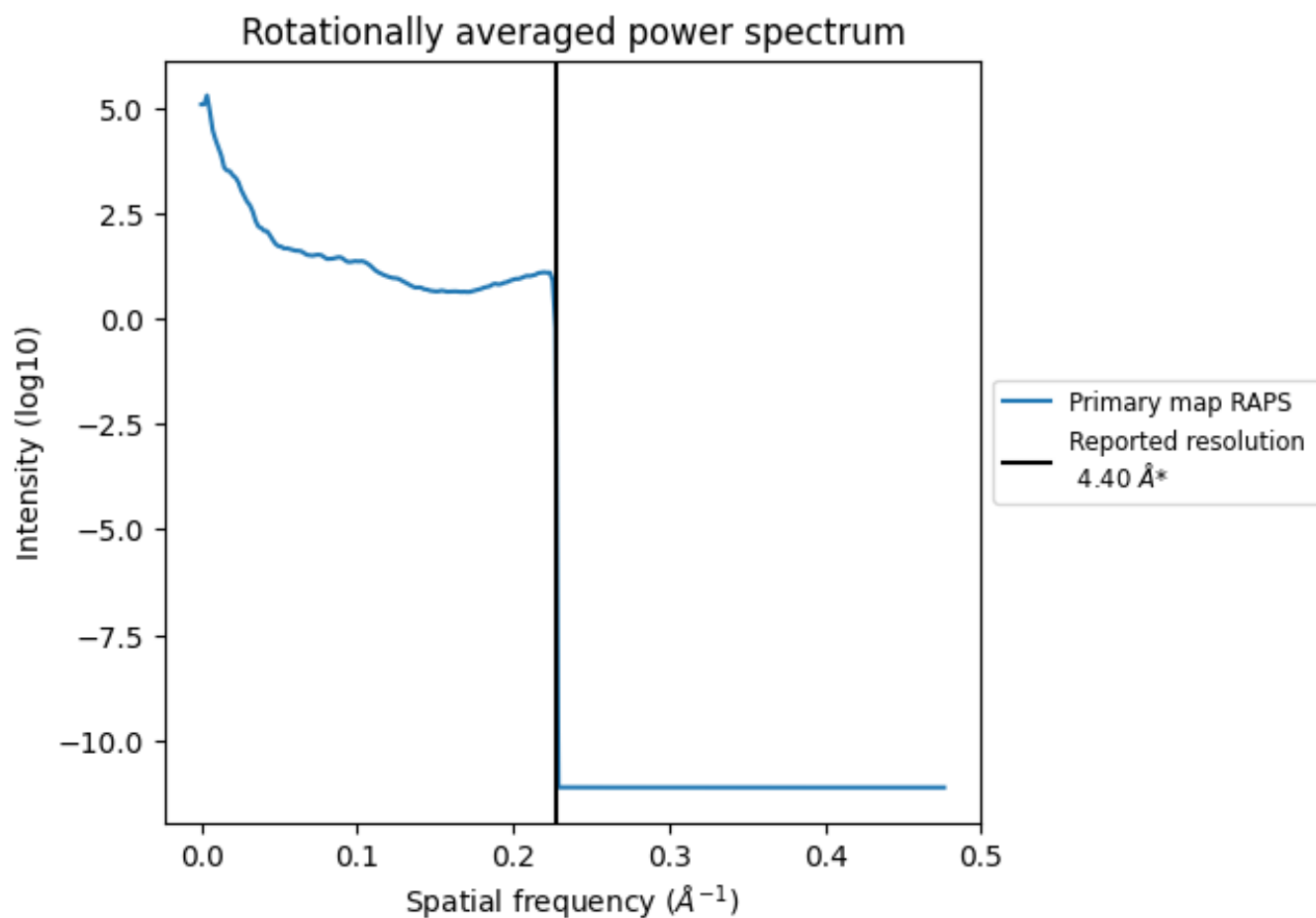
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 837 nm^3 ; this corresponds to an approximate mass of 756 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 0.227 Å⁻¹

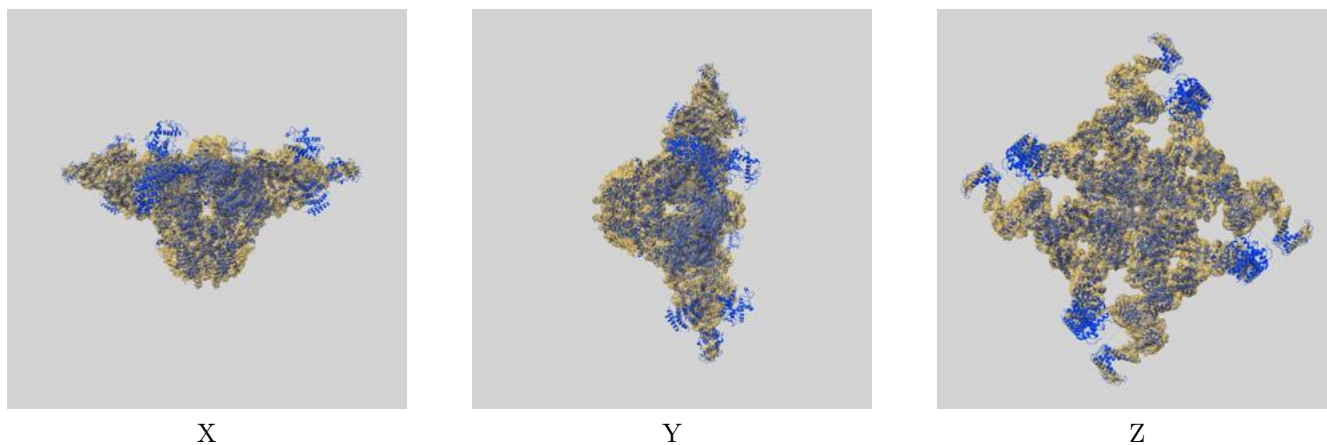
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

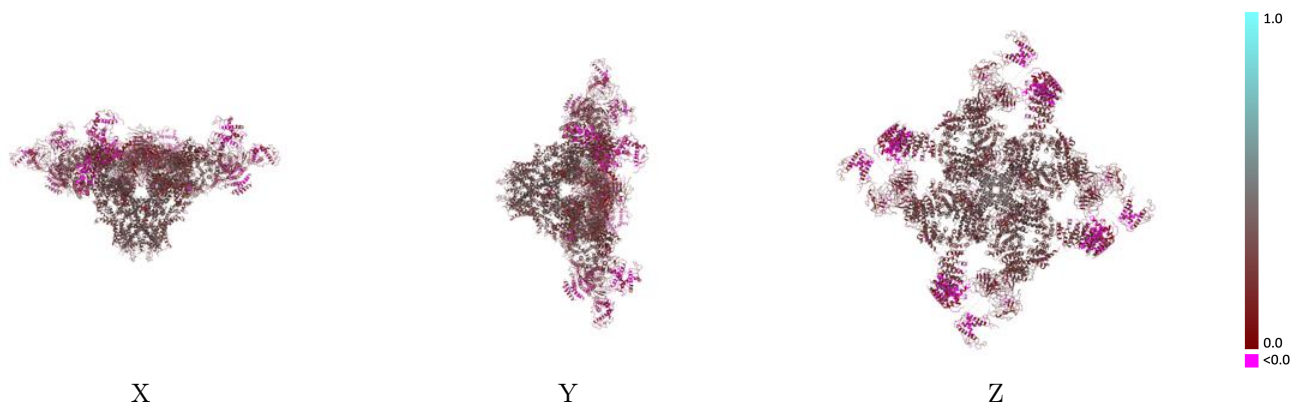
This section contains information regarding the fit between EMDB map EMD-9528 and PDB model 5GO9. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay [i](#)



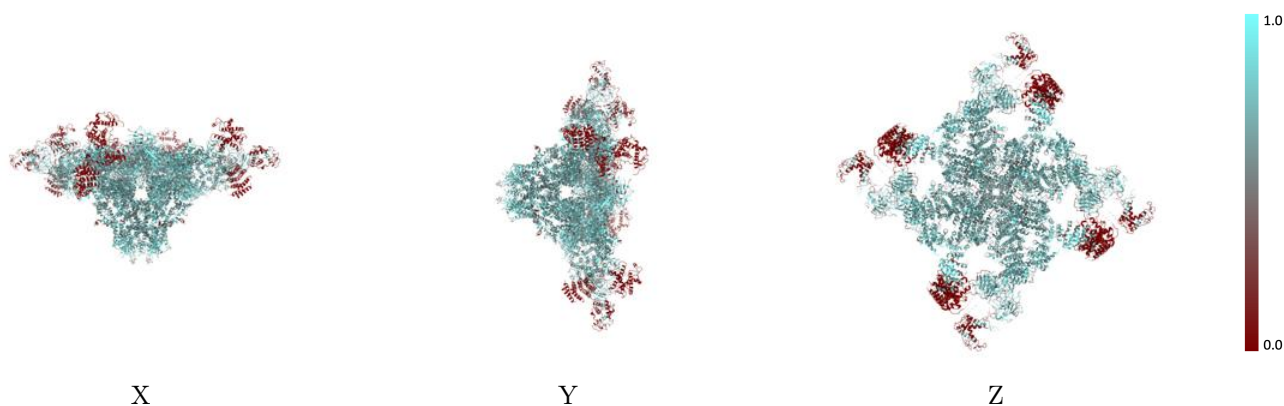
The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



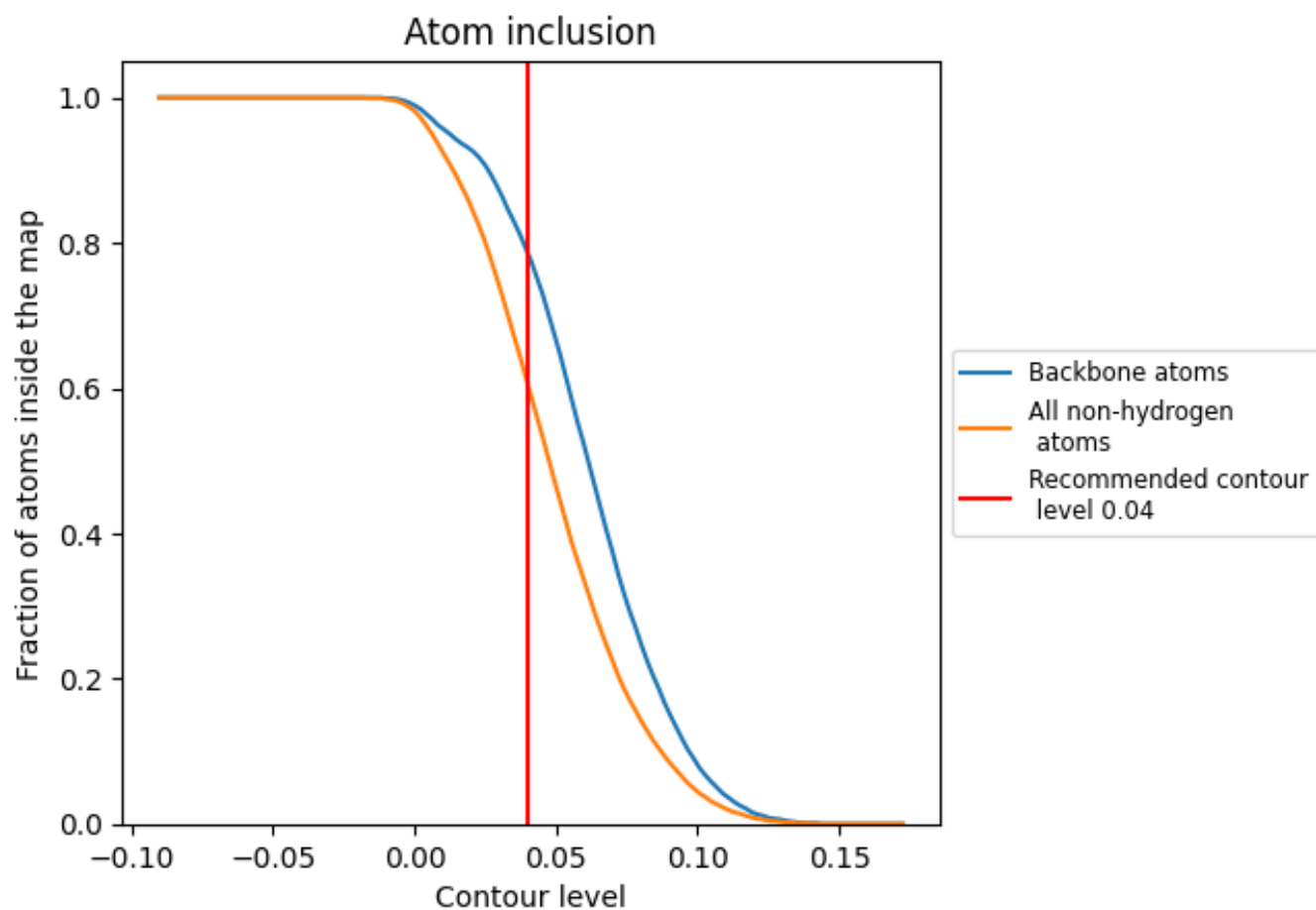
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.04).








9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 61% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.04) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|--|
| All |  0.6060 |  0.2520 |
| A |  0.6060 |  0.2520 |
| B |  0.6060 |  0.2530 |
| C |  0.6060 |  0.2520 |
| D |  0.6060 |  0.2520 |

