# Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 01:41 PM EST

| | | |
|---|---|---|
| PDB ID | : | 7T3R |
| EMDB ID | : | EMD-25669 |
| Title | : | IP3 and ATP bound type 3 IP3 receptor in the pre-active C state |
| Authors | : | Schmitz, E.A.; Takahashi, H.; Karakas, E. |
| Deposited on | : | 2021-12-08 |
| Resolution | : | 3.40 Å(reported) |
| Based on initial model | : | 6UQK |

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.

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

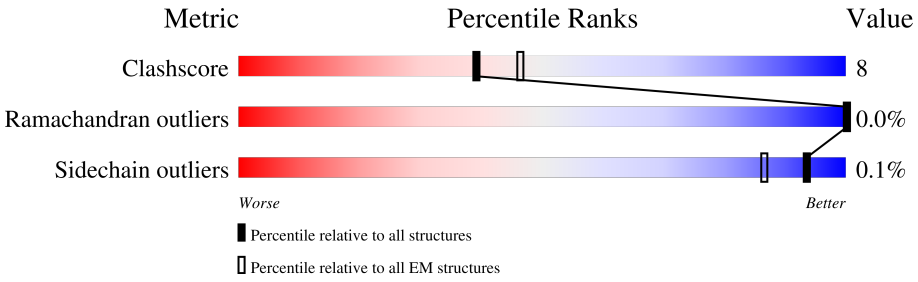
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev43 |
| Mogul | : | 1.8.5 (274361), CSD as541be (2020) |
| MolProbity | : | 4.02b-467 |
| buster-report | : | 1.1.7 (2018) |
| Percentile statistics | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| MapQ | : | 1.9.9 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.31.3 |

# 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.40 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 <=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 | 2633 | 65% 15% 19% |
| 1 | B | 2633 | 65% 15% 19% |
| 1 | C | 2633 | 66% 15% 19% |
| 1 | D | 2633 | 66% 15% 19% |

# 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 68780 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.

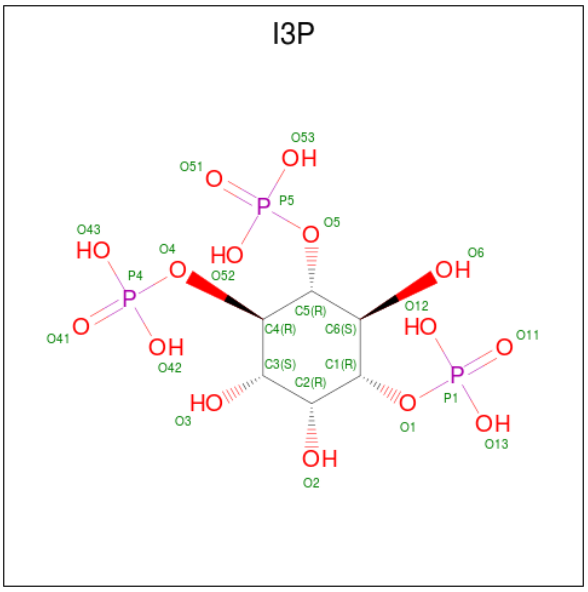
- Molecule 1 is a protein called Inositol 1,4,5-trisphosphate receptor type 3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 2130 | Total | C | N | O | S | 0 | 0 |
| | | | 17139 | 10950 | 2934 | 3151 | 104 | | |
| 1 | B | 2130 | Total | C | N | O | S | 0 | 0 |
| | | | 17139 | 10950 | 2934 | 3151 | 104 | | |
| 1 | C | 2130 | Total | C | N | O | S | 0 | 0 |
| | | | 17139 | 10950 | 2934 | 3151 | 104 | | |
| 1 | D | 2130 | Total | C | N | O | S | 0 | 0 |
| | | | 17139 | 10950 | 2934 | 3151 | 104 | | |

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

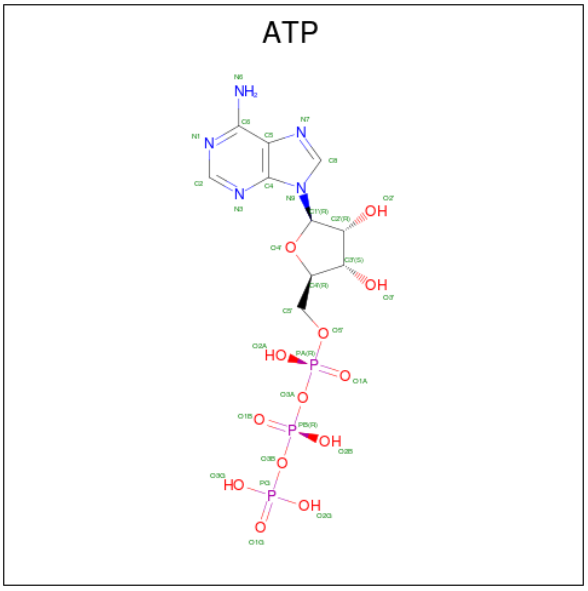
| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 2 | A | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 2 | B | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 2 | C | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 2 | D | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |

- Molecule 3 is D-MYO-INOSITOL-1,4,5-TRIPHOSPHATE (three-letter code: I3P) (formula: $C_6H_{15}O_{15}P_3$).




| Mol | Chain | Residues | Atoms | | | | AltConf |
|---|---|---|---|---|---|---|---|
| 3 | A | 1 | Total | C | O | P | 0 |
| | | | 24 | 6 | 15 | 3 | |
| 3 | B | 1 | Total | C | O | P | 0 |
| | | | 24 | 6 | 15 | 3 | |
| 3 | C | 1 | Total | C | O | P | 0 |
| | | | 24 | 6 | 15 | 3 | |
| 3 | D | 1 | Total | C | O | P | 0 |
| | | | 24 | 6 | 15 | 3 | |

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



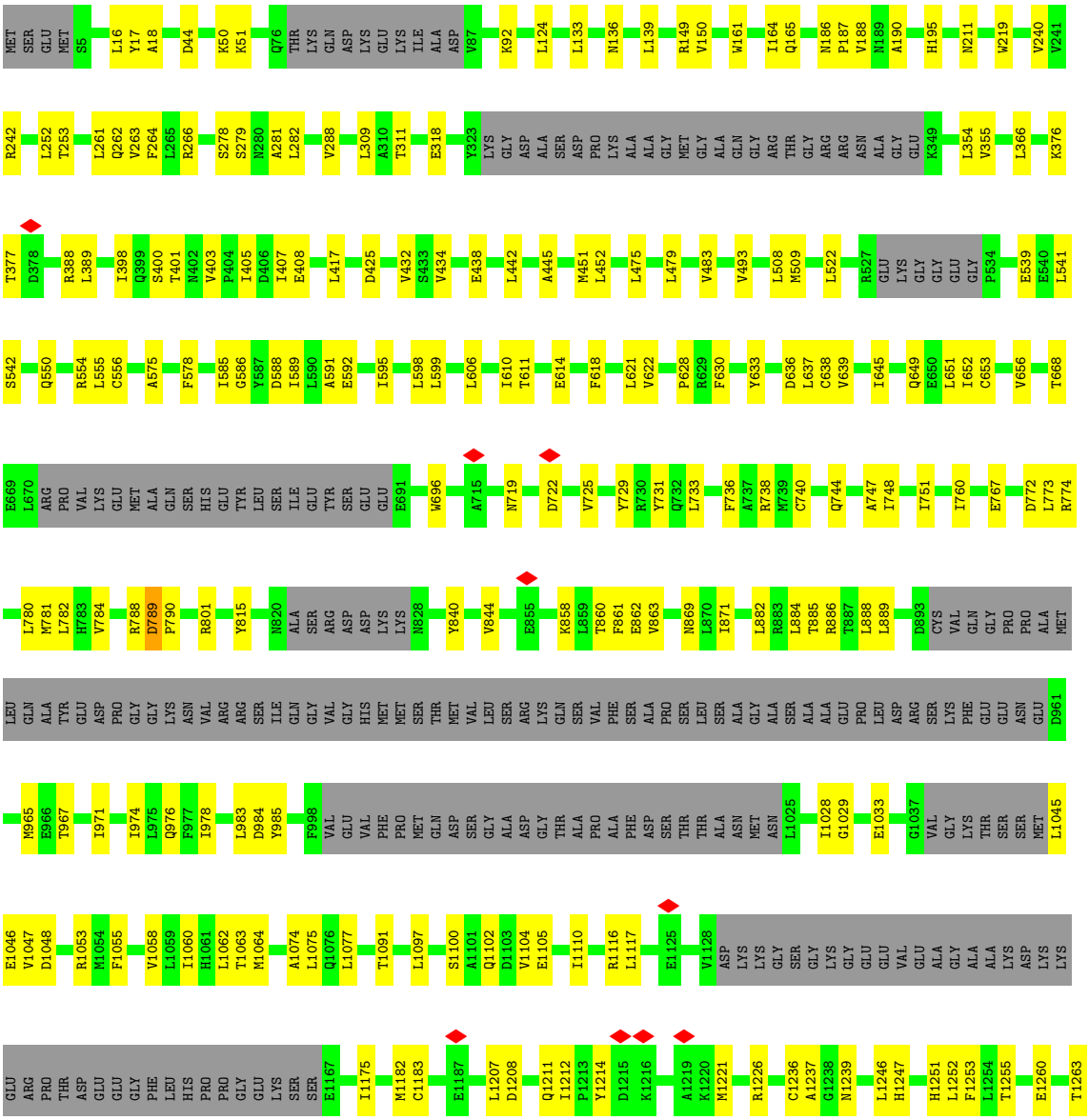
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|---|---|---|---|---|---|---|---|---|
| 4 | A | 1 | Total | C | N | O | P | 0 |
| | | | 31 | 10 | 5 | 13 | 3 | |
| 4 | B | 1 | Total | C | N | O | P | 0 |
| | | | 31 | 10 | 5 | 13 | 3 | |
| 4 | C | 1 | Total | C | N | O | P | 0 |
| | | | 31 | 10 | 5 | 13 | 3 | |
| 4 | D | 1 | Total | C | N | O | P | 0 |
| | | | 31 | 10 | 5 | 13 | 3 | |

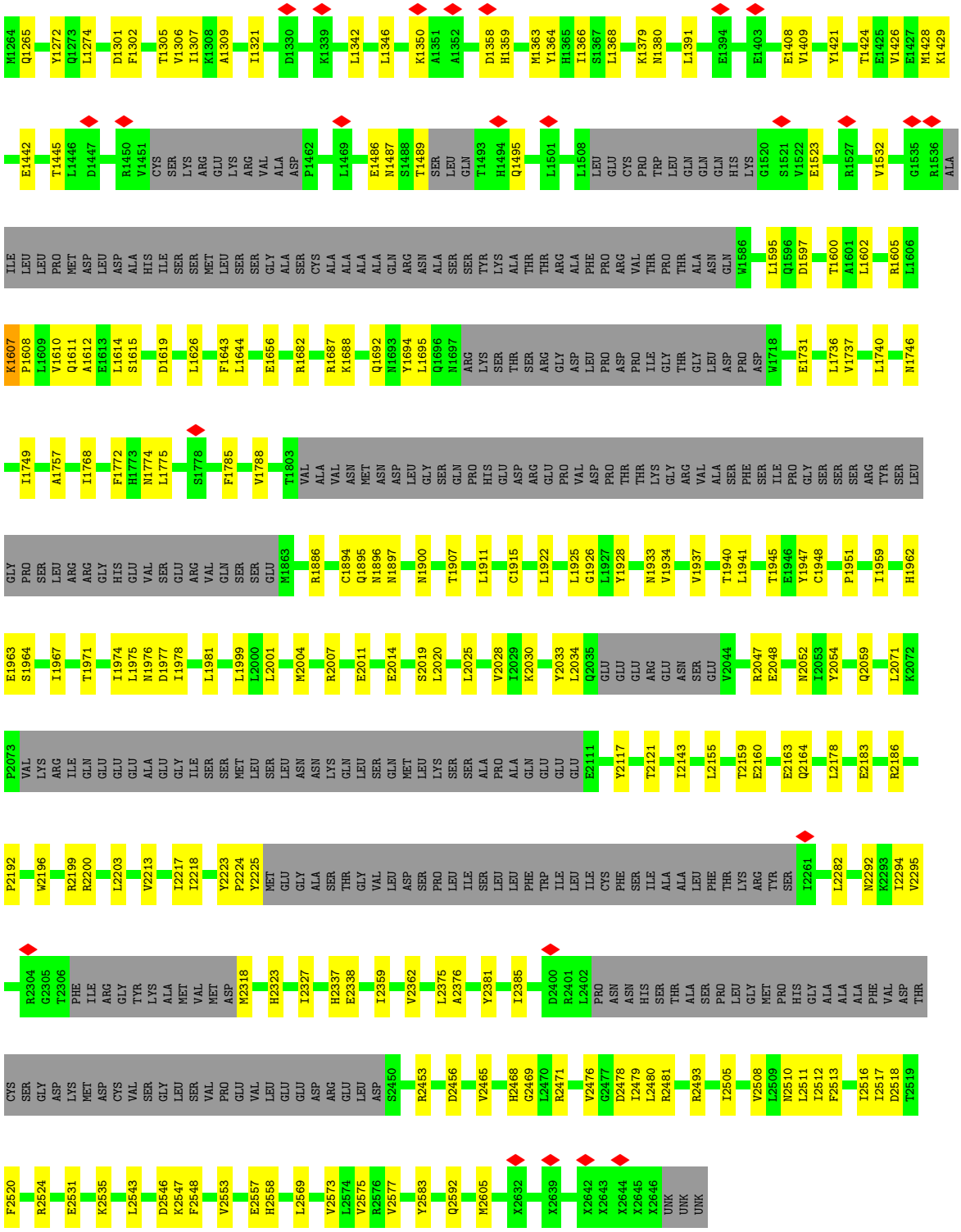
# 3 Residue-property plots (i)

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

- Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

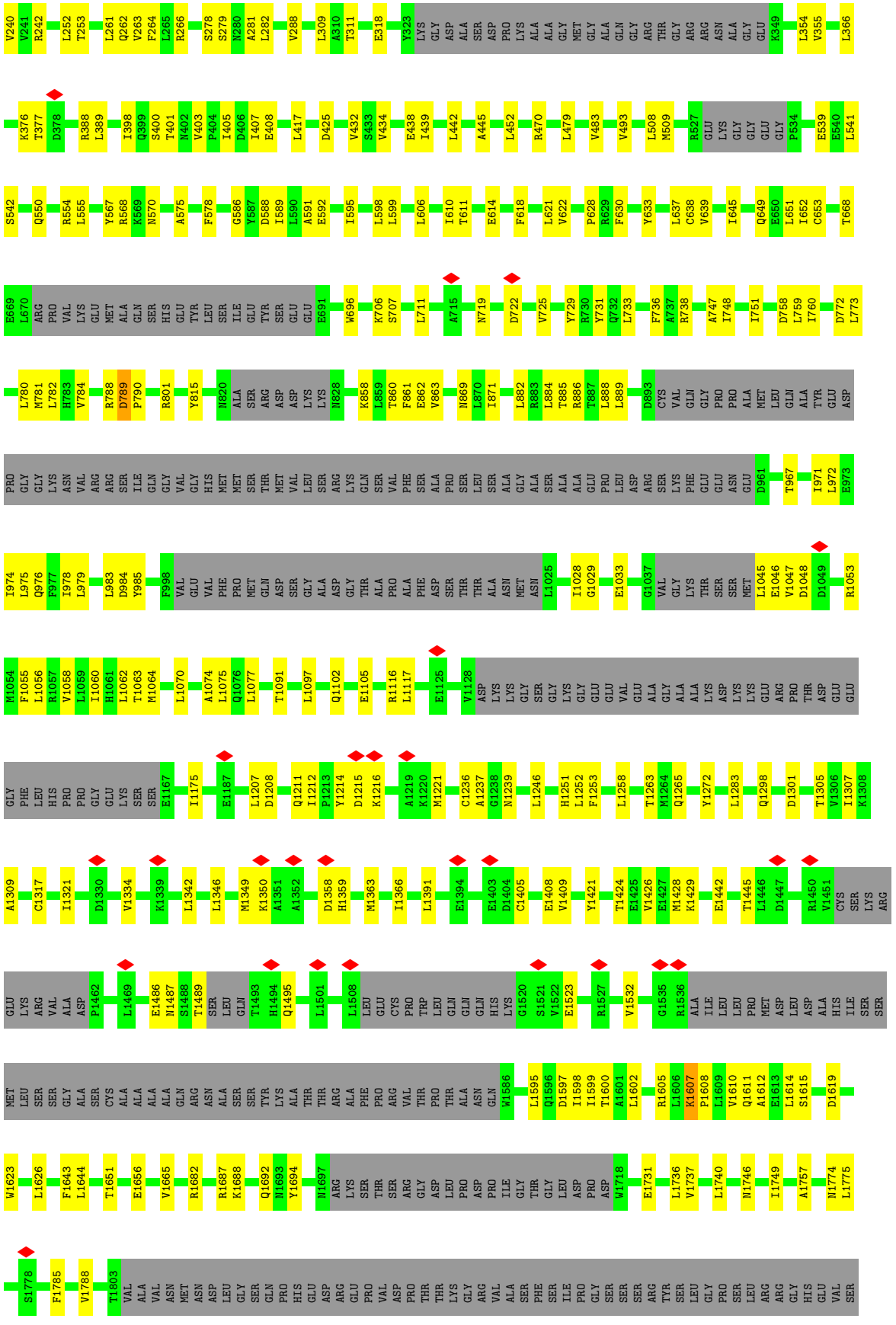
Chain A:

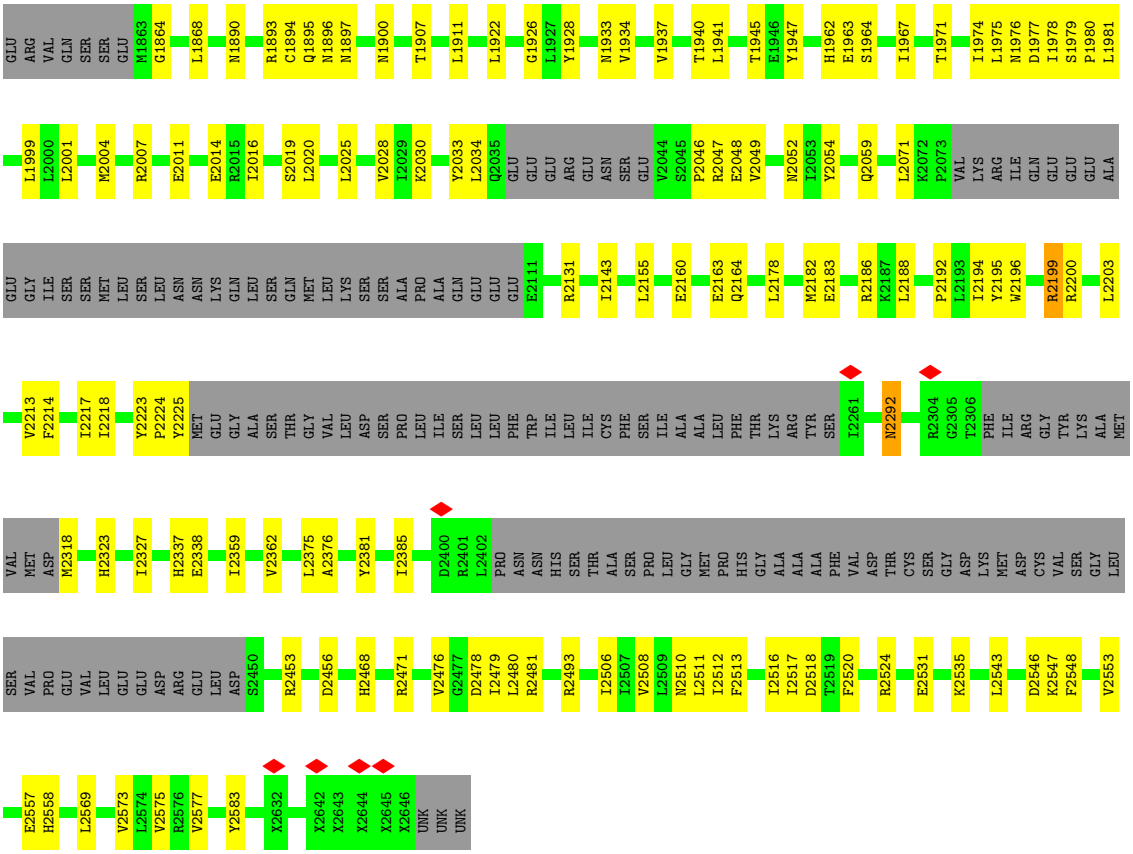





• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

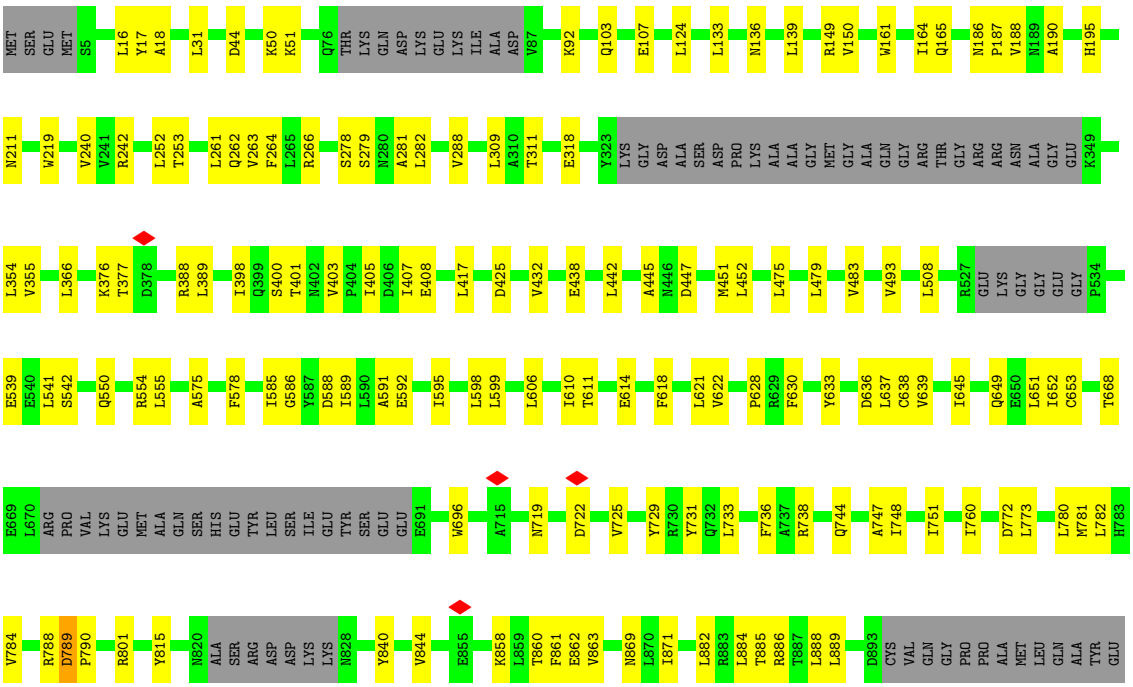
Chain B:

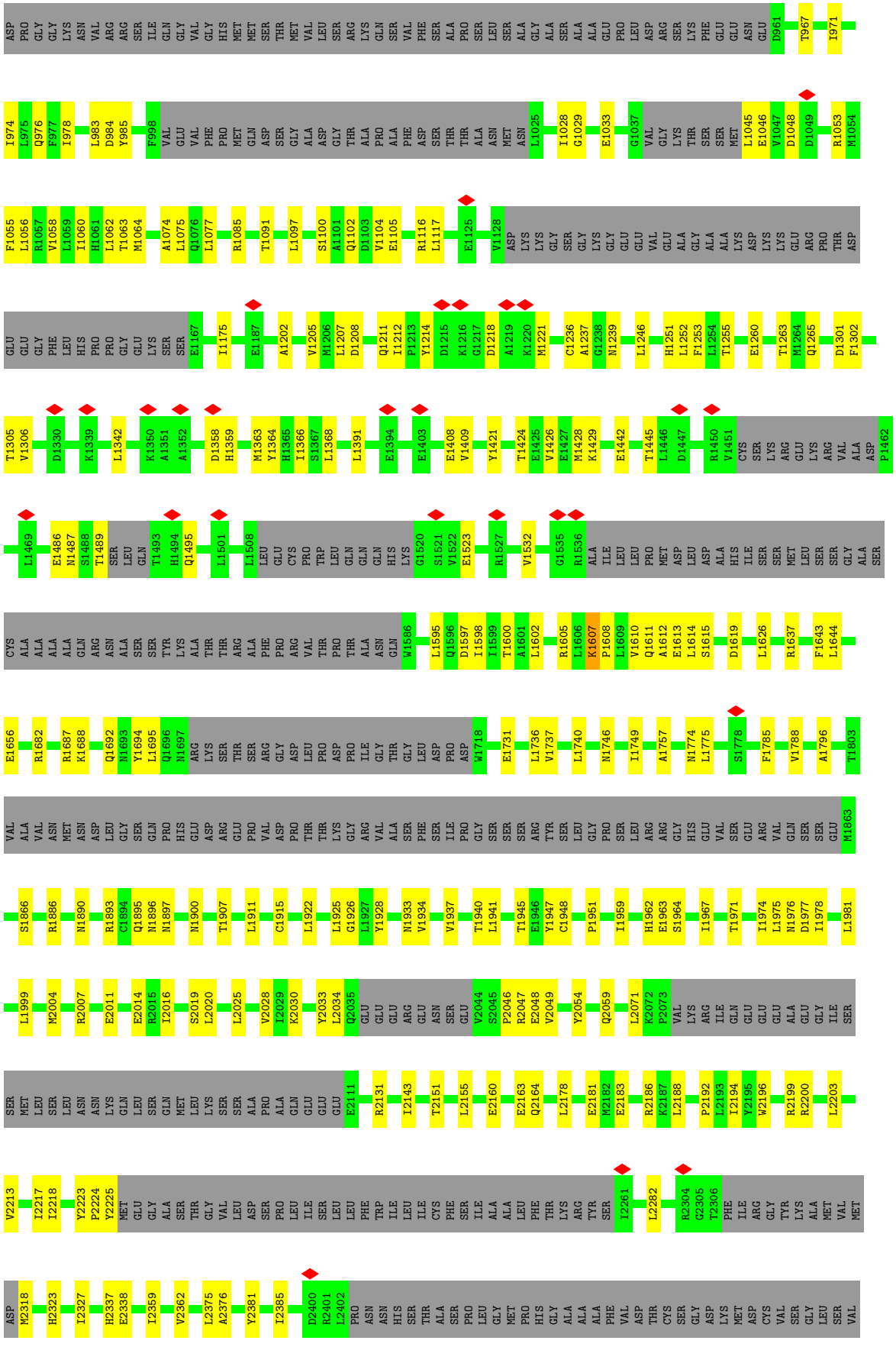


V240 V241 R242 L252 T253 L261 Q262 V263 F264 L265 R266 S278 S279 N280 A281 L282 V288 L309 A310 T311 E318 Y323 LYS GLY ASP ALA SER ASP PRO LYS ALA ALA GLY MET GLY ALA GLN GLY ARG THR GLY ARG ARG ASN ALA GLY GLU K349 L354 V355 L366
K376 T377 D378 R388 L389 I398 Q399 S400 T401 N402 V403 P404 I405 D406 I407 E408 L417 D425 V432 S433 V434 E438 I439 L442 A445 L452 R470 L479 V483 V493 L508 M509 R527 GLU LYS GLY GLY GLU GLY P534 E539 E540 L541
S542 Q550 R554 L555 Y567 R568 K569 N570 A575 F578 G586 Y587 D588 I589 L590 A591 E592 I595 L598 L599 L606 I610 T611 E614 F618 L621 V622 P628 R629 F630 Y633 L637 C638 V639 I645 Q649 E650 L651 I652 C653 T668
E669 L670 ARG PRO VAL LYS GLU MET ALA GLN SER HIS GLU TYR LEU SER ILE GLU TYR SER GLU GLU E691 W696 K706 S707 L711 A715 N719 D722 V725 Y729 R730 Y731 Q732 L733 F736 A737 R738 A747 I748 I751 D758 L759 I760 D772 L773
L780 M781 L782 H783 V784 R788 D789 P790 R801 Y815 N820 ALA SER ARG ASP ASP LYS LYS N828 K858 L859 T860 F861 E862 V863 N869 L870 I871 L882 R883 L884 T885 R886 T887 L888 L889 D893 CYS VAL GLN GLY PRO PRO ALA MET LEU GLN ALA TYR GLU ASP
PRO GLY GLY LYS ASN VAL ARG ARG SER ILE GLN GLY VAL GLY HIS MET MET SER THR MET VAL LEU SER ARG LYS GLN SER VAL PHE SER ALA PRO SER LEU SER ALA GLY ALA SER ALA ALA GLU PRO LEU ASP ARG SER LYS PHE GLU GLU ASN GLU D961 T967 I971 L972 E973
I974 L975 Q976 F977 I978 L979 L983 D984 Y985 F998 VAL GLU VAL PHE PRO MET GLN ASP SER GLY ALA ASP GLY THR ALA PRO ALA PHE ASP SER THR THR ALA ASN MET ASN L1025 I1028 G1029 E1033 G1037 VAL GLY LYS THR SER SER MET L1045 E1046 V1047 D1048 D1049 R1053
M1054 F1055 L1056 R1057 V1058 L1059 I1060 H1061 L1062 T1063 M1064 L1070 A1074 L1075 Q1076 L1077 T1091 L1097 Q1102 E1105 R1116 L1117 E1125 V1128 ASP LYS LYS GLY SER GLY LYS GLY GLU GLU VAL GLU ALA GLY ALA ALA LYS ASP LYS LYS GLU ARG PRO THR ASP GLU GLU
GLY PHE LEU HIS PRO PRO GLY GLU LYS SER SER E1167 I1175 E1187 L1207 D1208 Q1211 I1212 P1213 Y1214 D1215 K1216 A1219 K1220 M1221 C1236 A1237 G1238 N1239 L1246 H1251 L1252 F1253 L1258 T1263 M1264 Q1265 Y1272 L1283 Q1298 D1301 T1305 V1306 I1307 K1308
A1309 C1317 I1321 D1330 V1334 K1339 L1342 L1346 M1349 K1350 A1351 A1352 D1358 H1359 M1363 I1366 L1391 E1394 E1403 D1404 C1405 E1408 V1409 Y1421 T1424 E1425 V1426 E1427 M1428 K1429 E1442 T1445 L1446 D1447 R1450 V1451 CYS SER LYS ARG
GLU LYS ARG VAL ALA ASP P1462 L1469 E1486 N1487 S1488 T1489 SER LEU GLN T1493 H1494 Q1495 L1501 L1508 LEU GLU CYS PRO TRP LEU GLN GLN GLN HIS LYS G1520 S1521 V1522 E1523 R1527 V1532 G1535 R1536 ALA ILE LEU LEU PRO MET ASP LEU ASP ALA HIS ILE SER SER
MET LEU SER SER GLY ALA SER CYS ALA ALA ALA ALA GLN ARG ASN ALA SER SER TYR LYS ALA THR THR ARG ALA PHE PRO ARG VAL THR PRO THR ALA ASN GLN W1586 L1595 Q1596 D1597 I1598 I1599 T1600 A1601 L1602 R1605 L1606 K1607 P1608 L1609 V1610 Q1611 A1612 E1613 L1614 S1615 D1619
W1623 L1626 F1643 L1644 T1651 E1656 V1665 R1682 R1687 K1688 Q1692 N1693 Y1694 N1697 ARG LYS SER THR SER ARG GLY ASP LEU PRO ASP PRO ILE GLY THR GLY LEU ASP PRO ASP W1718 E1731 L1736 V1737 L1740 N1746 I1749 A1757 N1774 L1775
S1778 F1785 V1788 T1803 VAL ALA VAL ASN MET ASN ASP LEU GLY SER GLN PRO HIS GLU ASP ARG GLU PRO VAL ASP PRO THR THR LYS GLY ARG VAL ALA SER PHE SER ILE PRO GLY SER SER SER ARG TYR SER LEU GLY PRO SER LEU ARG ARG GLY HIS GLU VAL SER

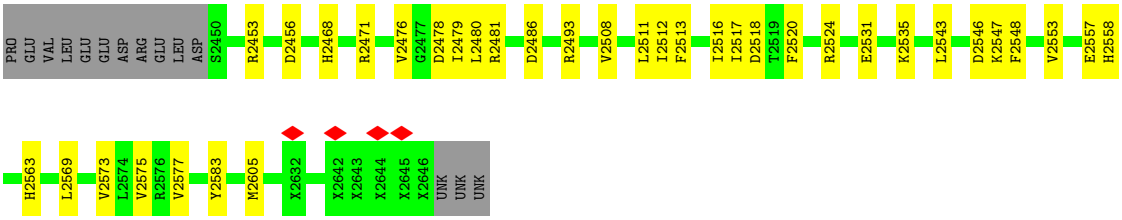


• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

Chain C:

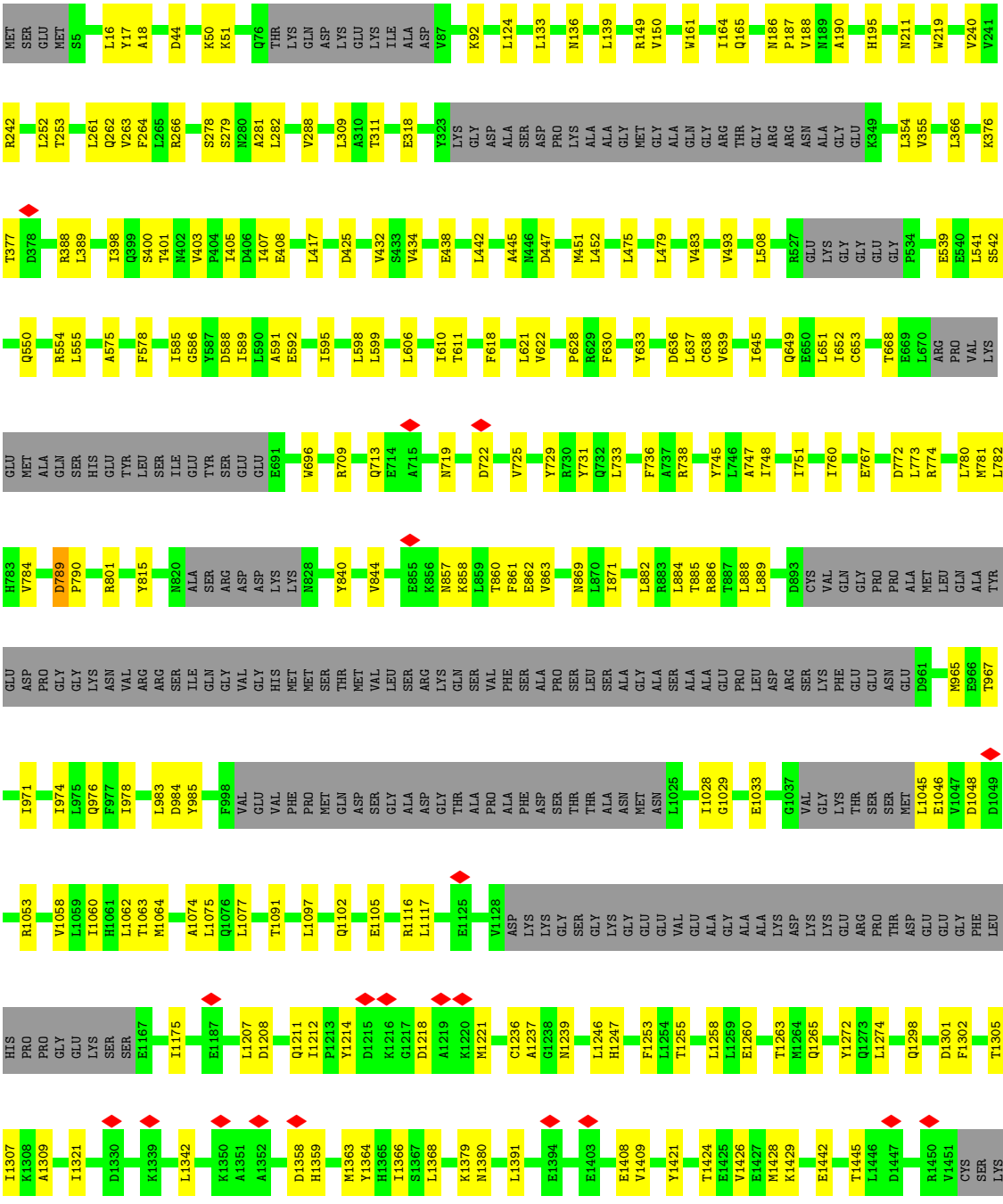


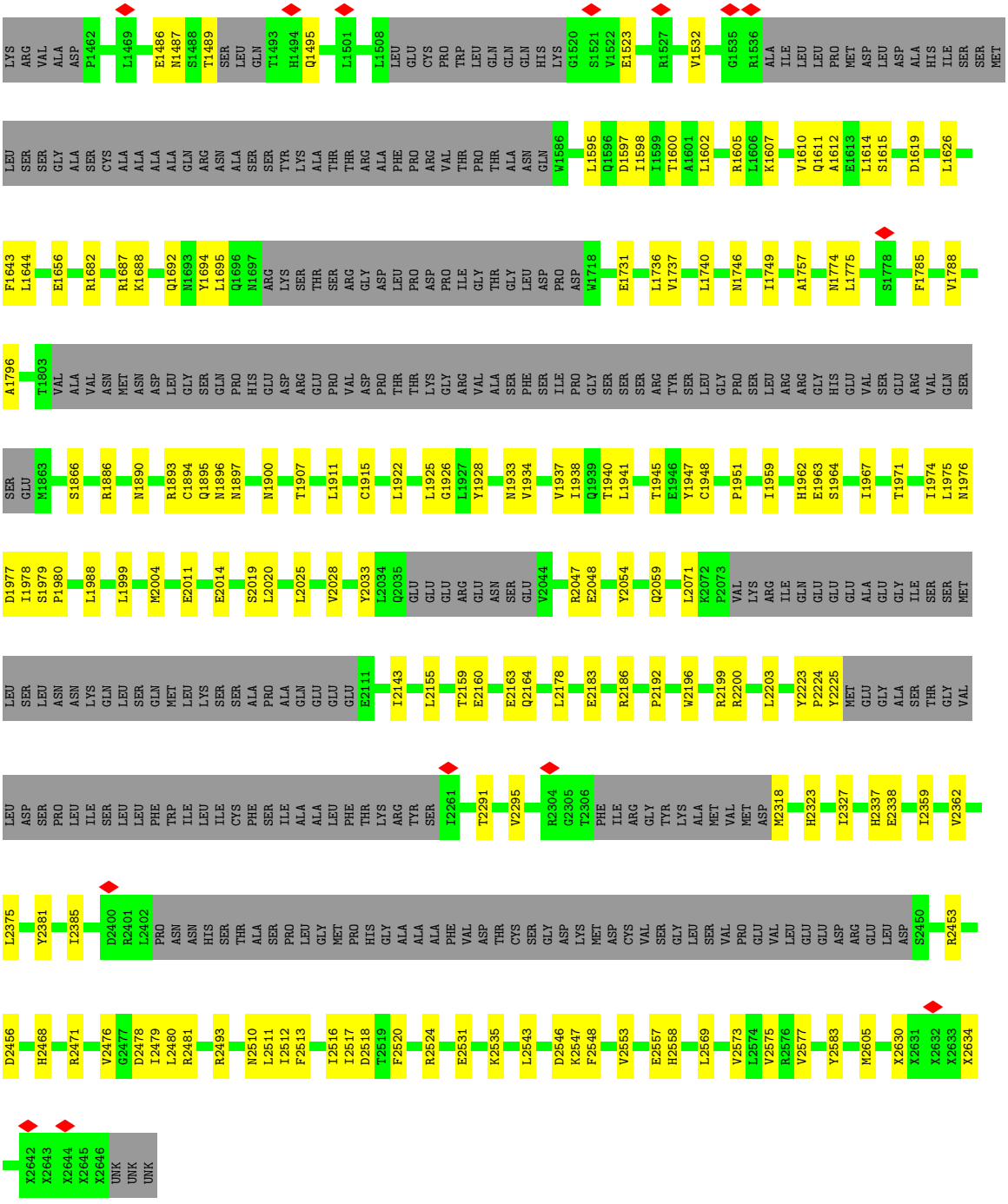




• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

Chain D:



# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C4 | Depositor |
| Number of particles used | 75994 | 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 ($e^-/Å^2$) | 60 | Depositor |
| Minimum defocus (nm) | 800 | Depositor |
| Maximum defocus (nm) | 1600 | Depositor |
| Magnification | 105000 | Depositor |
| Image detector | GATAN K3 BIOQUANTUM (6k x 4k) | Depositor |
| Maximum map value | 2.476 | Depositor |
| Minimum map value | -1.428 | Depositor |
| Average map value | 0.001 | Depositor |
| Map value standard deviation | 0.058 | Depositor |
| Recommended contour level | 0.18 | Depositor |
| Map size (Å) | 397.44, 397.44, 397.44 | wwPDB |
| Map dimensions | 480, 480, 480 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.828, 0.828, 0.828 | Depositor |

# 5 Model quality

## 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, I3P, 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 | 0.29 | 0/17356 | 0.47 | 0/23440 |
| 1 | B | 0.29 | 0/17356 | 0.47 | 0/23440 |
| 1 | C | 0.29 | 0/17356 | 0.47 | 0/23440 |
| 1 | D | 0.28 | 0/17356 | 0.47 | 0/23440 |
| All | All | 0.29 | 0/69424 | 0.47 | 0/93760 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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 | 17139 | 0 | 17153 | 282 | 0 |
| 1 | B | 17139 | 0 | 17153 | 281 | 0 |
| 1 | C | 17139 | 0 | 17153 | 276 | 0 |
| 1 | D | 17139 | 0 | 17153 | 263 | 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 |
| 3 | A | 24 | 0 | 9 | 1 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 3 | B | 24 | 0 | 9 | 2 | 0 |
| 3 | C | 24 | 0 | 9 | 1 | 0 |
| 3 | D | 24 | 0 | 9 | 1 | 0 |
| 4 | A | 31 | 0 | 12 | 0 | 0 |
| 4 | B | 31 | 0 | 12 | 0 | 0 |
| 4 | C | 31 | 0 | 12 | 1 | 0 |
| 4 | D | 31 | 0 | 12 | 0 | 0 |
| All | All | 68780 | 0 | 68696 | 1074 | 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 8.

All (1074) 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:2213:VAL:O | 1:A:2217:ILE:HD12 | 1.78 | 0.83 |
| 1:B:2213:VAL:O | 1:B:2217:ILE:HD12 | 1.79 | 0.83 |
| 1:C:801:ARG:NH2 | 1:C:984:ASP:OD1 | 2.14 | 0.81 |
| 1:B:801:ARG:NH2 | 1:B:984:ASP:OD1 | 2.14 | 0.81 |
| 1:D:801:ARG:NH2 | 1:D:984:ASP:OD1 | 2.13 | 0.81 |
| 1:A:801:ARG:NH2 | 1:A:984:ASP:OD1 | 2.13 | 0.80 |
| 1:C:2213:VAL:O | 1:C:2217:ILE:HD12 | 1.81 | 0.80 |
| 1:A:668:THR:HG1 | 1:A:729:TYR:HH | 1.25 | 0.79 |
| 1:A:242:ARG:NH2 | 1:A:438:GLU:OE1 | 2.16 | 0.79 |
| 1:D:2163:GLU:OE2 | 1:D:2164:GLN:NE2 | 2.16 | 0.79 |
| 1:A:1236:CYS:SG | 1:A:1246:LEU:HD12 | 2.23 | 0.79 |
| 1:C:242:ARG:NH2 | 1:C:438:GLU:OE1 | 2.16 | 0.79 |
| 1:B:242:ARG:NH2 | 1:B:438:GLU:OE1 | 2.15 | 0.78 |
| 1:C:2163:GLU:OE2 | 1:C:2164:GLN:NE2 | 2.16 | 0.78 |
| 1:D:1236:CYS:SG | 1:D:1246:LEU:HD12 | 2.23 | 0.78 |
| 1:D:242:ARG:NH2 | 1:D:438:GLU:OE1 | 2.17 | 0.78 |
| 1:D:2323:HIS:O | 1:D:2327:ILE:HD12 | 1.84 | 0.78 |
| 1:C:2323:HIS:O | 1:C:2327:ILE:HD12 | 1.83 | 0.77 |
| 1:A:2323:HIS:O | 1:A:2327:ILE:HD12 | 1.84 | 0.77 |
| 1:B:2323:HIS:O | 1:B:2327:ILE:HD12 | 1.83 | 0.76 |
| 1:B:1102:GLN:NE2 | 1:B:1105:GLU:OE2 | 2.18 | 0.76 |
| 1:C:668:THR:HG1 | 1:C:729:TYR:HH | 1.23 | 0.76 |
| 1:A:1102:GLN:NE2 | 1:A:1105:GLU:OE2 | 2.19 | 0.76 |
| 1:C:1102:GLN:NE2 | 1:C:1105:GLU:OE2 | 2.19 | 0.76 |
| 1:C:2513:PHE:CE2 | 1:C:2517:ILE:HD11 | 2.21 | 0.75 |
| 1:D:719:ASN:ND2 | 1:D:722:ASP:OD2 | 2.19 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:1102:GLN:NE2 | 1:D:1105:GLU:OE2 | 2.19 | 0.75 |
| 1:A:719:ASN:ND2 | 1:A:722:ASP:OD2 | 2.20 | 0.75 |
| 1:B:18:ALA:HB2 | 1:B:219:TRP:CZ3 | 2.21 | 0.75 |
| 1:B:240:VAL:HG11 | 1:B:309:LEU:HD11 | 1.67 | 0.75 |
| 1:C:696:TRP:CZ2 | 1:C:725:VAL:HG21 | 2.22 | 0.75 |
| 1:A:18:ALA:HB2 | 1:A:219:TRP:CZ3 | 2.21 | 0.74 |
| 1:B:696:TRP:CZ2 | 1:B:725:VAL:HG21 | 2.23 | 0.74 |
| 1:C:18:ALA:HB2 | 1:C:219:TRP:CZ3 | 2.22 | 0.74 |
| 1:C:719:ASN:ND2 | 1:C:722:ASP:OD2 | 2.21 | 0.74 |
| 1:D:696:TRP:CZ2 | 1:D:725:VAL:HG21 | 2.23 | 0.74 |
| 1:A:240:VAL:HG11 | 1:A:309:LEU:HD11 | 1.69 | 0.73 |
| 1:C:1644:LEU:HD23 | 1:C:1731:GLU:HG3 | 1.71 | 0.73 |
| 1:A:885:THR:HG23 | 1:A:978:ILE:HD13 | 1.70 | 0.73 |
| 1:B:1644:LEU:HD23 | 1:B:1731:GLU:HG3 | 1.71 | 0.73 |
| 1:D:18:ALA:HB2 | 1:D:219:TRP:CZ3 | 2.23 | 0.73 |
| 1:D:885:THR:HG23 | 1:D:978:ILE:HD13 | 1.71 | 0.73 |
| 1:D:2183:GLU:OE2 | 1:D:2186:ARG:NH2 | 2.22 | 0.73 |
| 1:A:696:TRP:CZ2 | 1:A:725:VAL:HG21 | 2.23 | 0.73 |
| 1:C:780:LEU:O | 1:C:784:VAL:HG12 | 1.88 | 0.73 |
| 1:D:1644:LEU:HD23 | 1:D:1731:GLU:HG3 | 1.70 | 0.73 |
| 1:C:1053:ARG:NH1 | 1:C:1694:TYR:O | 2.23 | 0.72 |
| 1:D:1053:ARG:NH1 | 1:D:1694:TYR:O | 2.22 | 0.72 |
| 1:A:1644:LEU:HD23 | 1:A:1731:GLU:HG3 | 1.70 | 0.72 |
| 1:B:885:THR:HG23 | 1:B:978:ILE:HD13 | 1.71 | 0.72 |
| 1:B:2513:PHE:CE2 | 1:B:2517:ILE:HD11 | 2.25 | 0.72 |
| 1:C:885:THR:HG23 | 1:C:978:ILE:HD13 | 1.71 | 0.72 |
| 1:B:719:ASN:ND2 | 1:B:722:ASP:OD2 | 2.22 | 0.72 |
| 1:C:240:VAL:HG11 | 1:C:309:LEU:HD11 | 1.69 | 0.71 |
| 1:D:780:LEU:O | 1:D:784:VAL:HG12 | 1.89 | 0.71 |
| 1:A:772:ASP:OD1 | 1:A:773:LEU:N | 2.23 | 0.71 |
| 1:B:2163:GLU:OE2 | 1:B:2164:GLN:NE2 | 2.23 | 0.71 |
| 1:B:780:LEU:O | 1:B:784:VAL:HG12 | 1.89 | 0.71 |
| 1:B:1053:ARG:NH1 | 1:B:1694:TYR:O | 2.22 | 0.71 |
| 1:C:389:LEU:HB2 | 1:C:398:ILE:HD12 | 1.72 | 0.71 |
| 1:A:780:LEU:O | 1:A:784:VAL:HG12 | 1.90 | 0.71 |
| 1:A:1053:ARG:NH1 | 1:A:1694:TYR:O | 2.23 | 0.70 |
| 1:A:2143:ILE:HD11 | 1:A:2183:GLU:HA | 1.73 | 0.70 |
| 1:A:2163:GLU:OE2 | 1:A:2164:GLN:NE2 | 2.24 | 0.70 |
| 1:B:2143:ILE:HD11 | 1:B:2183:GLU:HA | 1.71 | 0.70 |
| 1:D:389:LEU:HB2 | 1:D:398:ILE:HD12 | 1.73 | 0.70 |
| 1:B:389:LEU:HB2 | 1:B:398:ILE:HD12 | 1.72 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:2214:PHE:O | 1:B:2218:ILE:HD12 | 1.92 | 0.70 |
| 1:D:772:ASP:OD1 | 1:D:773:LEU:N | 2.25 | 0.69 |
| 1:B:772:ASP:OD1 | 1:B:773:LEU:N | 2.25 | 0.69 |
| 1:B:2183:GLU:OE2 | 1:B:2186:ARG:NH2 | 2.25 | 0.69 |
| 1:C:2048:GLU:N | 1:C:2048:GLU:OE1 | 2.26 | 0.69 |
| 1:A:389:LEU:HB2 | 1:A:398:ILE:HD12 | 1.74 | 0.69 |
| 1:C:772:ASP:OD1 | 1:C:773:LEU:N | 2.25 | 0.69 |
| 1:B:2048:GLU:N | 1:B:2048:GLU:OE1 | 2.26 | 0.69 |
| 1:A:2048:GLU:OE1 | 1:A:2048:GLU:N | 2.26 | 0.68 |
| 1:B:2506:ILE:O | 1:B:2510:ASN:ND2 | 2.26 | 0.68 |
| 1:D:2048:GLU:N | 1:D:2048:GLU:OE1 | 2.26 | 0.68 |
| 1:A:2155:LEU:O | 1:A:2159:THR:OG1 | 2.11 | 0.68 |
| 1:C:1028:ILE:HG22 | 1:C:1602:LEU:HD21 | 1.77 | 0.67 |
| 1:C:1941:LEU:O | 1:C:1945:THR:HG23 | 1.95 | 0.67 |
| 1:C:282:LEU:HD12 | 1:C:442:LEU:HD22 | 1.75 | 0.67 |
| 1:D:2513:PHE:CE2 | 1:D:2517:ILE:HD11 | 2.30 | 0.67 |
| 1:C:649:GLN:NE2 | 1:C:738:ARG:O | 2.27 | 0.67 |
| 1:D:649:GLN:NE2 | 1:D:738:ARG:O | 2.28 | 0.67 |
| 1:D:282:LEU:HD12 | 1:D:442:LEU:HD22 | 1.76 | 0.66 |
| 1:A:282:LEU:HD12 | 1:A:442:LEU:HD22 | 1.77 | 0.66 |
| 1:D:17:TYR:OH | 1:D:44:ASP:OD1 | 2.10 | 0.66 |
| 1:A:2513:PHE:CE2 | 1:A:2517:ILE:HD11 | 2.30 | 0.66 |
| 1:D:240:VAL:HG11 | 1:D:309:LEU:HD11 | 1.77 | 0.66 |
| 1:B:649:GLN:NE2 | 1:B:738:ARG:O | 2.28 | 0.66 |
| 1:A:2471:ARG:NH2 | 1:D:2478:ASP:OD1 | 2.29 | 0.66 |
| 1:D:2143:ILE:HD11 | 1:D:2183:GLU:HA | 1.77 | 0.66 |
| 1:A:17:TYR:OH | 1:A:44:ASP:OD1 | 2.11 | 0.66 |
| 1:A:882:LEU:O | 1:A:885:THR:OG1 | 2.14 | 0.66 |
| 1:A:1941:LEU:O | 1:A:1945:THR:HG23 | 1.96 | 0.65 |
| 1:B:261:LEU:HD21 | 1:B:311:THR:HG21 | 1.77 | 0.65 |
| 1:B:2531:GLU:OE1 | 1:B:2535:LYS:NZ | 2.30 | 0.65 |
| 1:B:1941:LEU:O | 1:B:1945:THR:HG23 | 1.96 | 0.65 |
| 1:A:649:GLN:NE2 | 1:A:738:ARG:O | 2.29 | 0.65 |
| 1:C:2531:GLU:OE1 | 1:C:2535:LYS:NZ | 2.30 | 0.65 |
| 1:B:282:LEU:HD12 | 1:B:442:LEU:HD22 | 1.78 | 0.64 |
| 1:C:1265:GLN:HG3 | 1:C:1305:THR:HG21 | 1.79 | 0.64 |
| 1:D:882:LEU:O | 1:D:885:THR:OG1 | 2.14 | 0.64 |
| 1:D:1941:LEU:O | 1:D:1945:THR:HG23 | 1.96 | 0.64 |
| 1:A:261:LEU:HD21 | 1:A:311:THR:HG21 | 1.79 | 0.64 |
| 1:A:2478:ASP:OD1 | 1:B:2471:ARG:NH2 | 2.31 | 0.64 |
| 1:A:1265:GLN:HG3 | 1:A:1305:THR:HG21 | 1.79 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:1028:ILE:HG22 | 1:B:1602:LEU:HD21 | 1.78 | 0.64 |
| 1:A:400:SER:HA | 1:A:417:LEU:HD23 | 1.79 | 0.64 |
| 1:D:889:LEU:HD13 | 1:D:1048:ASP:OD1 | 1.98 | 0.64 |
| 1:D:1028:ILE:HG22 | 1:D:1602:LEU:HD21 | 1.79 | 0.64 |
| 1:C:1301:ASP:O | 1:C:1305:THR:HG23 | 1.98 | 0.64 |
| 1:D:1265:GLN:HG3 | 1:D:1305:THR:HG21 | 1.79 | 0.64 |
| 1:D:2453:ARG:NH2 | 1:D:2456:ASP:OD1 | 2.31 | 0.64 |
| 1:A:388:ARG:NH1 | 1:A:425:ASP:O | 2.30 | 0.63 |
| 1:A:2453:ARG:NH2 | 1:A:2456:ASP:OD1 | 2.31 | 0.63 |
| 1:C:882:LEU:O | 1:C:885:THR:OG1 | 2.14 | 0.63 |
| 1:A:2531:GLU:OE1 | 1:A:2535:LYS:NZ | 2.31 | 0.63 |
| 1:C:889:LEU:HD13 | 1:C:1048:ASP:OD1 | 1.98 | 0.63 |
| 1:D:1489:THR:O | 1:D:1495:GLN:NE2 | 2.32 | 0.63 |
| 1:A:2543:LEU:HD23 | 1:A:2548:PHE:CZ | 2.34 | 0.63 |
| 1:C:2476:VAL:HG22 | 1:C:2480:LEU:HD13 | 1.81 | 0.63 |
| 1:A:889:LEU:HD13 | 1:A:1048:ASP:OD1 | 1.99 | 0.63 |
| 1:A:1301:ASP:O | 1:A:1305:THR:HG23 | 1.98 | 0.63 |
| 1:B:1265:GLN:HG3 | 1:B:1305:THR:HG21 | 1.79 | 0.63 |
| 1:B:1301:ASP:O | 1:B:1305:THR:HG23 | 1.98 | 0.63 |
| 1:B:2225:TYR:OH | 1:B:2338:GLU:OE1 | 2.12 | 0.63 |
| 1:D:2531:GLU:OE1 | 1:D:2535:LYS:NZ | 2.30 | 0.63 |
| 1:B:1117:LEU:HD13 | 1:B:1175:ILE:HG21 | 1.80 | 0.63 |
| 1:B:889:LEU:HD13 | 1:B:1048:ASP:OD1 | 1.99 | 0.63 |
| 1:D:2225:TYR:OH | 1:D:2338:GLU:OE1 | 2.13 | 0.62 |
| 1:C:388:ARG:NH1 | 1:C:425:ASP:O | 2.32 | 0.62 |
| 1:B:1237:ALA:O | 1:B:1239:ASN:N | 2.31 | 0.62 |
| 1:A:760:ILE:HG21 | 1:A:781:MET:HB2 | 1.80 | 0.62 |
| 1:A:871:ILE:HD11 | 1:A:884:LEU:CD2 | 2.29 | 0.62 |
| 1:A:1489:THR:O | 1:A:1495:GLN:NE2 | 2.32 | 0.62 |
| 1:D:1301:ASP:O | 1:D:1305:THR:HG23 | 1.99 | 0.62 |
| 1:B:388:ARG:NH1 | 1:B:425:ASP:O | 2.32 | 0.62 |
| 1:C:2543:LEU:HD23 | 1:C:2548:PHE:CZ | 2.35 | 0.62 |
| 1:D:2543:LEU:HD23 | 1:D:2548:PHE:CZ | 2.34 | 0.62 |
| 1:B:871:ILE:HD11 | 1:B:884:LEU:CD2 | 2.29 | 0.62 |
| 1:C:400:SER:HA | 1:C:417:LEU:HD23 | 1.81 | 0.62 |
| 1:B:882:LEU:O | 1:B:885:THR:OG1 | 2.14 | 0.62 |
| 1:B:1258:LEU:HD22 | 1:B:1298:GLN:OE1 | 1.99 | 0.62 |
| 1:B:2543:LEU:HD23 | 1:B:2548:PHE:CZ | 2.34 | 0.62 |
| 1:C:261:LEU:HD21 | 1:C:311:THR:HG21 | 1.81 | 0.62 |
| 1:C:1489:THR:O | 1:C:1495:GLN:NE2 | 2.32 | 0.62 |
| 1:D:976:GLN:HG2 | 1:D:1077:LEU:HD11 | 1.81 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:2453:ARG:NH2 | 1:B:2456:ASP:OD1 | 2.32 | 0.62 |
| 1:C:871:ILE:HD11 | 1:C:884:LEU:CD2 | 2.29 | 0.62 |
| 1:D:261:LEU:HD21 | 1:D:311:THR:HG21 | 1.82 | 0.62 |
| 1:D:871:ILE:HD11 | 1:D:884:LEU:CD2 | 2.30 | 0.62 |
| 1:A:1237:ALA:O | 1:A:1239:ASN:N | 2.30 | 0.61 |
| 1:B:1489:THR:O | 1:B:1495:GLN:NE2 | 2.32 | 0.61 |
| 1:D:2476:VAL:HG22 | 1:D:2480:LEU:HD13 | 1.81 | 0.61 |
| 1:A:976:GLN:HG2 | 1:A:1077:LEU:HD11 | 1.81 | 0.61 |
| 1:C:976:GLN:HG2 | 1:C:1077:LEU:HD11 | 1.82 | 0.61 |
| 1:A:1774:ASN:OD1 | 1:A:1775:LEU:N | 2.33 | 0.61 |
| 1:B:400:SER:HA | 1:B:417:LEU:HD23 | 1.81 | 0.61 |
| 1:D:388:ARG:NH1 | 1:D:425:ASP:O | 2.33 | 0.61 |
| 1:C:452:LEU:HD11 | 1:C:479:LEU:HD11 | 1.82 | 0.61 |
| 1:C:760:ILE:HG21 | 1:C:781:MET:HB2 | 1.82 | 0.61 |
| 1:A:2575:VAL:O | 1:A:2583:TYR:OH | 2.15 | 0.61 |
| 1:D:760:ILE:HG21 | 1:D:781:MET:HB2 | 1.82 | 0.61 |
| 1:D:400:SER:HA | 1:D:417:LEU:HD23 | 1.81 | 0.61 |
| 1:B:976:GLN:HG2 | 1:B:1077:LEU:HD11 | 1.83 | 0.61 |
| 1:B:1612:ALA:O | 1:B:1615:SER:OG | 2.18 | 0.61 |
| 1:C:2143:ILE:HD11 | 1:C:2183:GLU:HA | 1.81 | 0.61 |
| 1:B:760:ILE:HG21 | 1:B:781:MET:HB2 | 1.82 | 0.60 |
| 1:B:2468:HIS:CB | 1:B:2479:ILE:HD13 | 2.30 | 0.60 |
| 1:D:709:ARG:O | 1:D:713:GLN:OE1 | 2.19 | 0.60 |
| 1:B:253:THR:HG22 | 1:B:281:ALA:HB2 | 1.84 | 0.60 |
| 1:B:1774:ASN:OD1 | 1:B:1775:LEU:N | 2.34 | 0.60 |
| 1:C:2225:TYR:OH | 1:C:2338:GLU:OE1 | 2.14 | 0.60 |
| 1:A:858:LYS:O | 1:A:862:GLU:OE1 | 2.19 | 0.60 |
| 1:A:1945:THR:HG22 | 1:A:1999:LEU:HA | 1.83 | 0.60 |
| 1:D:1774:ASN:OD1 | 1:D:1775:LEU:N | 2.34 | 0.60 |
| 1:A:2468:HIS:CB | 1:A:2479:ILE:HD13 | 2.31 | 0.60 |
| 1:B:318:GLU:CG | 1:B:355:VAL:HG21 | 2.31 | 0.60 |
| 1:B:1349:MET:HE2 | 1:B:1405:CYS:HA | 1.83 | 0.60 |
| 1:C:1774:ASN:OD1 | 1:C:1775:LEU:N | 2.34 | 0.60 |
| 1:D:1237:ALA:O | 1:D:1239:ASN:N | 2.30 | 0.60 |
| 1:D:1945:THR:HG22 | 1:D:1999:LEU:HA | 1.84 | 0.60 |
| 1:C:2468:HIS:CB | 1:C:2479:ILE:HD13 | 2.32 | 0.60 |
| 1:B:452:LEU:HD11 | 1:B:479:LEU:HD11 | 1.83 | 0.60 |
| 1:B:1028:ILE:CG2 | 1:B:1602:LEU:HD21 | 2.31 | 0.60 |
| 1:C:1237:ALA:O | 1:C:1239:ASN:N | 2.31 | 0.60 |
| 1:C:1424:THR:O | 1:C:1429:LYS:NZ | 2.35 | 0.60 |
| 1:D:858:LYS:O | 1:D:862:GLU:OE1 | 2.20 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:2513:PHE:CZ | 1:D:2517:ILE:HD11 | 2.36 | 0.60 |
| 1:A:1424:THR:O | 1:A:1429:LYS:NZ | 2.35 | 0.60 |
| 1:C:2183:GLU:OE2 | 1:C:2186:ARG:NH2 | 2.35 | 0.60 |
| 1:A:318:GLU:CG | 1:A:355:VAL:HG21 | 2.32 | 0.60 |
| 1:A:1610:VAL:O | 1:A:1614:LEU:HD23 | 2.02 | 0.60 |
| 1:C:318:GLU:CG | 1:C:355:VAL:HG21 | 2.31 | 0.59 |
| 1:C:2453:ARG:NH2 | 1:C:2456:ASP:OD1 | 2.33 | 0.59 |
| 1:C:2478:ASP:OD1 | 1:D:2471:ARG:NH2 | 2.34 | 0.59 |
| 1:D:318:GLU:CG | 1:D:355:VAL:HG21 | 2.31 | 0.59 |
| 1:D:1610:VAL:O | 1:D:1614:LEU:HD23 | 2.02 | 0.59 |
| 1:A:1886:ARG:NH1 | 1:A:1951:PRO:O | 2.35 | 0.59 |
| 1:B:858:LYS:O | 1:B:862:GLU:OE1 | 2.19 | 0.59 |
| 1:A:253:THR:HG22 | 1:A:281:ALA:HB2 | 1.85 | 0.59 |
| 1:B:2478:ASP:OD1 | 1:C:2471:ARG:NH2 | 2.35 | 0.59 |
| 1:C:1610:VAL:O | 1:C:1614:LEU:HD23 | 2.02 | 0.59 |
| 1:B:1610:VAL:O | 1:B:1614:LEU:HD23 | 2.03 | 0.59 |
| 1:C:1028:ILE:CG2 | 1:C:1602:LEU:HD21 | 2.33 | 0.59 |
| 1:A:2225:TYR:OH | 1:A:2338:GLU:OE1 | 2.16 | 0.59 |
| 1:B:1408:GLU:OE2 | 1:B:1409:VAL:HG23 | 2.03 | 0.59 |
| 1:B:1116:ARG:NH2 | 1:B:1175:ILE:HD11 | 2.17 | 0.59 |
| 1:B:1424:THR:O | 1:B:1429:LYS:NZ | 2.35 | 0.59 |
| 1:C:858:LYS:O | 1:C:862:GLU:OE1 | 2.20 | 0.59 |
| 1:D:2575:VAL:O | 1:D:2583:TYR:OH | 2.15 | 0.59 |
| 1:A:240:VAL:CG1 | 1:A:309:LEU:HD11 | 2.33 | 0.58 |
| 1:A:1612:ALA:O | 1:A:1615:SER:OG | 2.19 | 0.58 |
| 1:D:1028:ILE:CG2 | 1:D:1602:LEU:HD21 | 2.33 | 0.58 |
| 1:D:1424:THR:O | 1:D:1429:LYS:NZ | 2.35 | 0.58 |
| 1:C:871:ILE:HD13 | 1:C:974:ILE:HG23 | 1.83 | 0.58 |
| 1:A:2143:ILE:HD13 | 1:A:2186:ARG:HE | 1.68 | 0.58 |
| 1:B:2468:HIS:HB2 | 1:B:2479:ILE:HD13 | 1.86 | 0.58 |
| 1:A:1922:LEU:O | 1:D:92:LYS:NZ | 2.33 | 0.58 |
| 1:C:1945:THR:HG22 | 1:C:1999:LEU:HA | 1.86 | 0.58 |
| 1:A:1116:ARG:NH1 | 1:A:1175:ILE:HD11 | 2.19 | 0.57 |
| 1:C:2518:ASP:OD1 | 1:D:2524:ARG:NE | 2.37 | 0.57 |
| 1:D:2468:HIS:CB | 1:D:2479:ILE:HD13 | 2.33 | 0.57 |
| 1:A:1656:GLU:N | 1:A:1656:GLU:OE1 | 2.38 | 0.57 |
| 1:C:1612:ALA:O | 1:C:1615:SER:OG | 2.18 | 0.57 |
| 1:D:318:GLU:HG3 | 1:D:355:VAL:HG21 | 1.86 | 0.57 |
| 1:D:611:THR:C | 1:D:651:LEU:HD21 | 2.24 | 0.57 |
| 1:D:1656:GLU:OE1 | 1:D:1656:GLU:N | 2.37 | 0.57 |
| 1:B:1486:GLU:OE1 | 1:B:1486:GLU:N | 2.37 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:318:GLU:HG3 | 1:C:355:VAL:HG21 | 1.87 | 0.57 |
| 1:D:871:ILE:HD13 | 1:D:974:ILE:HG23 | 1.85 | 0.57 |
| 1:A:1911:LEU:HB2 | 1:A:1940:THR:HG21 | 1.86 | 0.57 |
| 1:A:2030:LYS:O | 1:A:2034:LEU:HD23 | 2.04 | 0.57 |
| 1:B:2575:VAL:O | 1:B:2583:TYR:OH | 2.17 | 0.57 |
| 1:D:2155:LEU:O | 1:D:2159:THR:OG1 | 2.11 | 0.57 |
| 1:A:1486:GLU:N | 1:A:1486:GLU:OE1 | 2.37 | 0.57 |
| 1:D:1486:GLU:OE1 | 1:D:1486:GLU:N | 2.37 | 0.57 |
| 1:A:2468:HIS:HB2 | 1:A:2479:ILE:HD13 | 1.85 | 0.57 |
| 1:C:1486:GLU:N | 1:C:1486:GLU:OE1 | 2.37 | 0.57 |
| 1:D:282:LEU:HB3 | 1:D:309:LEU:HD12 | 1.86 | 0.57 |
| 1:B:1656:GLU:N | 1:B:1656:GLU:OE1 | 2.38 | 0.57 |
| 1:D:452:LEU:HD11 | 1:D:479:LEU:HD11 | 1.86 | 0.57 |
| 1:D:1911:LEU:HB2 | 1:D:1940:THR:HG21 | 1.86 | 0.57 |
| 1:D:2468:HIS:HB2 | 1:D:2479:ILE:HD13 | 1.85 | 0.57 |
| 1:A:318:GLU:HG3 | 1:A:355:VAL:HG21 | 1.87 | 0.57 |
| 1:A:2513:PHE:CZ | 1:A:2517:ILE:HD11 | 2.40 | 0.57 |
| 1:B:871:ILE:HD13 | 1:B:974:ILE:HG23 | 1.86 | 0.57 |
| 1:B:2481:ARG:O | 1:B:2493:ARG:NH2 | 2.34 | 0.56 |
| 1:B:318:GLU:HG3 | 1:B:355:VAL:HG21 | 1.86 | 0.56 |
| 1:B:252:LEU:HD11 | 1:B:263:VAL:CG1 | 2.35 | 0.56 |
| 1:B:1945:THR:HG22 | 1:B:1999:LEU:HA | 1.87 | 0.56 |
| 1:B:2030:LYS:O | 1:B:2034:LEU:HD23 | 2.06 | 0.56 |
| 1:B:2143:ILE:HD13 | 1:B:2186:ARG:HE | 1.70 | 0.56 |
| 1:C:17:TYR:OH | 1:C:44:ASP:OD1 | 2.10 | 0.56 |
| 1:C:240:VAL:CG1 | 1:C:309:LEU:HD11 | 2.35 | 0.56 |
| 1:C:1656:GLU:N | 1:C:1656:GLU:OE1 | 2.38 | 0.56 |
| 1:D:578:PHE:CE2 | 1:D:595:ILE:HD12 | 2.40 | 0.56 |
| 1:D:1612:ALA:O | 1:D:1615:SER:OG | 2.20 | 0.56 |
| 1:D:1962:HIS:CE1 | 1:D:1964:SER:HG | 2.23 | 0.56 |
| 1:B:92:LYS:NZ | 1:C:1922:LEU:O | 2.32 | 0.56 |
| 1:B:240:VAL:CG1 | 1:B:309:LEU:HD11 | 2.34 | 0.56 |
| 1:B:1117:LEU:CD1 | 1:B:1175:ILE:HG21 | 2.35 | 0.56 |
| 1:B:1911:LEU:HB2 | 1:B:1940:THR:HG21 | 1.86 | 0.56 |
| 1:A:252:LEU:HD11 | 1:A:263:VAL:CG1 | 2.36 | 0.56 |
| 1:A:1408:GLU:OE2 | 1:A:1409:VAL:HG23 | 2.06 | 0.56 |
| 1:B:2553:VAL:HG23 | 1:B:2557:GLU:HG2 | 1.88 | 0.56 |
| 1:C:1911:LEU:HB2 | 1:C:1940:THR:HG21 | 1.87 | 0.56 |
| 1:C:2004:MET:O | 1:C:2059:GLN:NE2 | 2.39 | 0.56 |
| 1:B:2054:TYR:CE1 | 1:B:2071:LEU:HD22 | 2.40 | 0.56 |
| 1:C:578:PHE:CE2 | 1:C:595:ILE:HD12 | 2.41 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:252:LEU:HD11 | 1:D:263:VAL:CG1 | 2.35 | 0.56 |
| 1:C:2468:HIS:HB2 | 1:C:2479:ILE:HD13 | 1.86 | 0.56 |
| 1:A:2054:TYR:CE1 | 1:A:2071:LEU:HD22 | 2.41 | 0.56 |
| 1:B:2004:MET:O | 1:B:2059:GLN:NE2 | 2.39 | 0.56 |
| 1:A:622:VAL:HG22 | 1:A:630:PHE:HB3 | 1.88 | 0.56 |
| 1:B:578:PHE:CE2 | 1:B:595:ILE:HD12 | 2.41 | 0.56 |
| 1:B:976:GLN:CG | 1:B:1077:LEU:HD11 | 2.36 | 0.56 |
| 1:B:1236:CYS:SG | 1:B:1246:LEU:HD12 | 2.46 | 0.56 |
| 1:C:253:THR:HG22 | 1:C:281:ALA:HB2 | 1.88 | 0.56 |
| 1:C:2030:LYS:O | 1:C:2034:LEU:HD23 | 2.06 | 0.56 |
| 1:C:622:VAL:HG22 | 1:C:630:PHE:HB3 | 1.88 | 0.55 |
| 1:C:1408:GLU:OE2 | 1:C:1409:VAL:HG23 | 2.06 | 0.55 |
| 1:C:2054:TYR:CE1 | 1:C:2071:LEU:HD22 | 2.41 | 0.55 |
| 1:A:668:THR:OG1 | 1:A:729:TYR:OH | 2.05 | 0.55 |
| 1:A:886:ARG:NH1 | 1:A:1046:GLU:O | 2.40 | 0.55 |
| 1:A:2004:MET:O | 1:A:2059:GLN:NE2 | 2.39 | 0.55 |
| 1:C:976:GLN:CG | 1:C:1077:LEU:HD11 | 2.36 | 0.55 |
| 1:A:252:LEU:HD13 | 1:A:417:LEU:CD1 | 2.36 | 0.55 |
| 1:C:1214:TYR:CD2 | 1:C:1221:MET:HE3 | 2.41 | 0.55 |
| 1:D:253:THR:HG22 | 1:D:281:ALA:HB2 | 1.88 | 0.55 |
| 1:D:976:GLN:CG | 1:D:1077:LEU:HD11 | 2.36 | 0.55 |
| 1:B:622:VAL:HG22 | 1:B:630:PHE:HB3 | 1.89 | 0.55 |
| 1:B:1967:ILE:O | 1:B:1971:THR:HG23 | 2.06 | 0.55 |
| 1:C:31:LEU:HD11 | 1:C:451:MET:CE | 2.36 | 0.55 |
| 1:C:405:ILE:HG22 | 1:C:405:ILE:O | 2.06 | 0.55 |
| 1:D:1408:GLU:OE2 | 1:D:1409:VAL:HG23 | 2.07 | 0.55 |
| 1:D:1208:ASP:O | 1:D:1212:ILE:HG23 | 2.06 | 0.55 |
| 1:B:1926:GLY:HA2 | 1:B:1978:ILE:HG23 | 1.89 | 0.55 |
| 1:C:252:LEU:HD11 | 1:C:263:VAL:CG1 | 2.35 | 0.55 |
| 1:D:1886:ARG:NH1 | 1:D:1951:PRO:O | 2.39 | 0.55 |
| 1:A:2468:HIS:HB3 | 1:A:2479:ILE:HG21 | 1.88 | 0.55 |
| 1:C:252:LEU:HD13 | 1:C:417:LEU:CD1 | 2.37 | 0.55 |
| 1:D:2468:HIS:HB3 | 1:D:2479:ILE:HG21 | 1.89 | 0.55 |
| 1:A:1967:ILE:O | 1:A:1971:THR:HG23 | 2.07 | 0.54 |
| 1:A:2476:VAL:HG22 | 1:A:2480:LEU:HD13 | 1.89 | 0.54 |
| 1:C:2575:VAL:O | 1:C:2583:TYR:OH | 2.17 | 0.54 |
| 1:A:976:GLN:CG | 1:A:1077:LEU:HD11 | 2.36 | 0.54 |
| 1:B:2518:ASP:OD1 | 1:C:2524:ARG:NE | 2.37 | 0.54 |
| 1:C:1236:CYS:SG | 1:C:1246:LEU:HD12 | 2.47 | 0.54 |
| 1:D:252:LEU:HD13 | 1:D:417:LEU:CD1 | 2.37 | 0.54 |
| 1:D:405:ILE:O | 1:D:405:ILE:HG22 | 2.06 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:2054:TYR:CE1 | 1:D:2071:LEU:HD22 | 2.42 | 0.54 |
| 1:B:554:ARG:NH2 | 1:B:588:ASP:O | 2.41 | 0.54 |
| 1:B:782:LEU:HD11 | 1:B:869:ASN:CG | 2.28 | 0.54 |
| 1:B:886:ARG:NH1 | 1:B:1046:GLU:O | 2.41 | 0.54 |
| 1:B:2553:VAL:HG21 | 1:B:2558:HIS:HB2 | 1.89 | 0.54 |
| 1:C:1967:ILE:O | 1:C:1971:THR:HG23 | 2.07 | 0.54 |
| 1:A:405:ILE:HG22 | 1:A:405:ILE:O | 2.06 | 0.54 |
| 1:C:2553:VAL:HG23 | 1:C:2557:GLU:HG2 | 1.90 | 0.54 |
| 1:A:282:LEU:HB3 | 1:A:309:LEU:HD12 | 1.89 | 0.54 |
| 1:A:2518:ASP:OD1 | 1:B:2524:ARG:NE | 2.39 | 0.54 |
| 1:A:1214:TYR:CD2 | 1:A:1221:MET:HE1 | 2.42 | 0.54 |
| 1:B:1207:LEU:O | 1:B:1211:GLN:HG3 | 2.08 | 0.54 |
| 1:D:622:VAL:HG22 | 1:D:630:PHE:HB3 | 1.89 | 0.54 |
| 1:C:985:TYR:CD2 | 1:C:1045:LEU:HD21 | 2.43 | 0.54 |
| 1:C:1208:ASP:O | 1:C:1212:ILE:HG23 | 2.07 | 0.54 |
| 1:C:1737:VAL:HG21 | 1:C:1757:ALA:HB2 | 1.90 | 0.54 |
| 1:D:554:ARG:NH2 | 1:D:588:ASP:O | 2.41 | 0.54 |
| 1:A:2553:VAL:HG21 | 1:A:2558:HIS:HB2 | 1.89 | 0.54 |
| 1:D:240:VAL:CG1 | 1:D:309:LEU:HD11 | 2.38 | 0.54 |
| 1:A:261:LEU:CD2 | 1:A:311:THR:HG21 | 2.38 | 0.53 |
| 1:A:578:PHE:CE1 | 1:A:595:ILE:HD12 | 2.43 | 0.53 |
| 1:A:2553:VAL:HG23 | 1:A:2557:GLU:HG2 | 1.90 | 0.53 |
| 1:C:165:GLN:OE1 | 1:C:186:ASN:ND2 | 2.37 | 0.53 |
| 1:D:2004:MET:O | 1:D:2059:GLN:NE2 | 2.41 | 0.53 |
| 1:D:1737:VAL:HG21 | 1:D:1757:ALA:HB2 | 1.90 | 0.53 |
| 1:B:261:LEU:CD2 | 1:B:311:THR:HG21 | 2.37 | 0.53 |
| 1:C:554:ARG:NH2 | 1:C:588:ASP:O | 2.41 | 0.53 |
| 1:D:886:ARG:NH1 | 1:D:1046:GLU:O | 2.41 | 0.53 |
| 1:A:1028:ILE:HG22 | 1:A:1602:LEU:HD21 | 1.90 | 0.53 |
| 1:C:31:LEU:HD11 | 1:C:451:MET:HE1 | 1.90 | 0.53 |
| 1:C:1207:LEU:O | 1:C:1211:GLN:HG3 | 2.08 | 0.53 |
| 1:D:376:LYS:NZ | 1:D:377:THR:O | 2.41 | 0.53 |
| 1:A:871:ILE:HD13 | 1:A:974:ILE:HG23 | 1.89 | 0.53 |
| 1:B:985:TYR:CD2 | 1:B:1045:LEU:HD21 | 2.43 | 0.53 |
| 1:D:401:THR:HG22 | 1:D:403:VAL:H | 1.73 | 0.53 |
| 1:B:16:LEU:HD11 | 1:B:124:LEU:HD13 | 1.91 | 0.53 |
| 1:B:252:LEU:HD13 | 1:B:417:LEU:CD1 | 2.37 | 0.53 |
| 1:B:2468:HIS:HB3 | 1:B:2479:ILE:HG21 | 1.89 | 0.53 |
| 1:C:668:THR:OG1 | 1:C:729:TYR:OH | 2.04 | 0.53 |
| 1:C:2553:VAL:HG21 | 1:C:2558:HIS:HB2 | 1.90 | 0.53 |
| 1:D:985:TYR:CD2 | 1:D:1045:LEU:HD21 | 2.44 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:554:ARG:NH2 | 1:A:588:ASP:O | 2.42 | 0.53 |
| 1:A:985:TYR:CD2 | 1:A:1045:LEU:HD21 | 2.44 | 0.53 |
| 1:B:405:ILE:O | 1:B:405:ILE:HG22 | 2.07 | 0.53 |
| 1:B:2476:VAL:HG22 | 1:B:2480:LEU:HD13 | 1.89 | 0.53 |
| 1:D:1116:ARG:NH1 | 1:D:1175:ILE:HD11 | 2.24 | 0.53 |
| 1:D:1967:ILE:O | 1:D:1971:THR:HG23 | 2.08 | 0.53 |
| 1:D:165:GLN:OE1 | 1:D:186:ASN:ND2 | 2.38 | 0.53 |
| 1:C:401:THR:HG22 | 1:C:403:VAL:H | 1.74 | 0.53 |
| 1:B:376:LYS:NZ | 1:B:377:THR:O | 2.41 | 0.52 |
| 1:C:1116:ARG:NH1 | 1:C:1175:ILE:HD11 | 2.24 | 0.52 |
| 1:C:2481:ARG:O | 1:C:2493:ARG:NH2 | 2.35 | 0.52 |
| 1:A:1207:LEU:O | 1:A:1211:GLN:HG3 | 2.08 | 0.52 |
| 1:B:401:THR:HG22 | 1:B:403:VAL:H | 1.73 | 0.52 |
| 1:B:1358:ASP:O | 1:B:1359:HIS:ND1 | 2.42 | 0.52 |
| 1:D:1117:LEU:CD1 | 1:D:1175:ILE:HG21 | 2.40 | 0.52 |
| 1:A:638:CYS:HB3 | 1:A:652:ILE:HD12 | 1.91 | 0.52 |
| 1:C:1605:ARG:O | 1:C:1682:ARG:NH2 | 2.42 | 0.52 |
| 1:D:2553:VAL:HG21 | 1:D:2558:HIS:HB2 | 1.91 | 0.52 |
| 1:C:16:LEU:HD11 | 1:C:124:LEU:HD13 | 1.92 | 0.52 |
| 1:D:2481:ARG:O | 1:D:2493:ARG:NH2 | 2.37 | 0.52 |
| 1:A:195:HIS:N | 1:A:211:ASN:O | 2.40 | 0.52 |
| 1:C:1688:LYS:O | 1:C:1692:GLN:OE1 | 2.28 | 0.52 |
| 1:D:2553:VAL:HG23 | 1:D:2557:GLU:HG2 | 1.91 | 0.52 |
| 1:D:1358:ASP:O | 1:D:1359:HIS:ND1 | 2.43 | 0.52 |
| 1:A:1117:LEU:CD1 | 1:A:1175:ILE:HG21 | 2.40 | 0.52 |
| 1:A:1915:CYS:HB3 | 1:A:1925:LEU:HD11 | 1.92 | 0.52 |
| 1:C:1117:LEU:CD1 | 1:C:1175:ILE:HG21 | 2.40 | 0.52 |
| 1:A:92:LYS:NZ | 1:B:1922:LEU:O | 2.33 | 0.52 |
| 1:A:401:THR:HG22 | 1:A:403:VAL:H | 1.74 | 0.52 |
| 1:A:1182:MET:SD | 1:A:1183:CYS:N | 2.83 | 0.52 |
| 1:B:1097:LEU:HD12 | 1:B:1595:LEU:HD22 | 1.92 | 0.52 |
| 1:A:1358:ASP:O | 1:A:1359:HIS:ND1 | 2.43 | 0.52 |
| 1:B:861:PHE:HA | 1:B:967:THR:HG22 | 1.92 | 0.52 |
| 1:A:451:MET:HE2 | 1:A:475:LEU:HD22 | 1.92 | 0.51 |
| 1:A:452:LEU:HD11 | 1:A:479:LEU:HD11 | 1.91 | 0.51 |
| 1:A:541:LEU:O | 1:A:550:GLN:NE2 | 2.42 | 0.51 |
| 1:B:1975:LEU:HD11 | 1:B:2020:LEU:HB2 | 1.91 | 0.51 |
| 1:C:92:LYS:NZ | 1:D:1922:LEU:O | 2.35 | 0.51 |
| 1:C:886:ARG:NH1 | 1:C:1046:GLU:O | 2.42 | 0.51 |
| 1:D:1688:LYS:O | 1:D:1692:GLN:OE1 | 2.28 | 0.51 |
| 1:B:1391:LEU:O | 1:B:1421:TYR:OH | 2.22 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:195:HIS:N | 1:D:211:ASN:O | 2.41 | 0.51 |
| 1:D:1971:THR:HG21 | 1:D:2019:SER:HB2 | 1.92 | 0.51 |
| 1:A:1737:VAL:HG21 | 1:A:1757:ALA:HB2 | 1.92 | 0.51 |
| 1:B:1029:GLY:O | 1:B:1033:GLU:OE1 | 2.29 | 0.51 |
| 1:C:1926:GLY:HA2 | 1:C:1978:ILE:HG23 | 1.91 | 0.51 |
| 1:A:1926:GLY:HA2 | 1:A:1978:ILE:HG23 | 1.92 | 0.51 |
| 1:C:861:PHE:HA | 1:C:967:THR:HG22 | 1.92 | 0.51 |
| 1:A:782:LEU:HD11 | 1:A:869:ASN:OD1 | 2.11 | 0.51 |
| 1:A:1117:LEU:HD13 | 1:A:1175:ILE:HG21 | 1.93 | 0.51 |
| 1:D:1926:GLY:HA2 | 1:D:1978:ILE:HG23 | 1.91 | 0.51 |
| 1:B:1688:LYS:O | 1:B:1692:GLN:OE1 | 2.28 | 0.51 |
| 1:C:261:LEU:CD2 | 1:C:311:THR:HG21 | 2.39 | 0.51 |
| 1:D:261:LEU:CD2 | 1:D:311:THR:HG21 | 2.40 | 0.51 |
| 1:D:1971:THR:HG21 | 1:D:2019:SER:CB | 2.41 | 0.51 |
| 1:C:599:LEU:HD12 | 1:C:610:ILE:HD11 | 1.93 | 0.51 |
| 1:A:2510:ASN:HB3 | 1:B:2513:PHE:CD1 | 2.45 | 0.51 |
| 1:C:282:LEU:HB3 | 1:C:309:LEU:HD12 | 1.92 | 0.51 |
| 1:D:1117:LEU:HD13 | 1:D:1175:ILE:HG21 | 1.93 | 0.51 |
| 1:C:195:HIS:N | 1:C:211:ASN:O | 2.41 | 0.51 |
| 1:C:782:LEU:HD11 | 1:C:869:ASN:CG | 2.31 | 0.51 |
| 1:D:782:LEU:HD11 | 1:D:869:ASN:OD1 | 2.11 | 0.51 |
| 1:D:1253:PHE:CE1 | 1:D:1263:THR:HG21 | 2.46 | 0.51 |
| 1:A:861:PHE:HA | 1:A:967:THR:HG22 | 1.93 | 0.51 |
| 1:A:1097:LEU:HD12 | 1:A:1595:LEU:HD22 | 1.93 | 0.50 |
| 1:C:1029:GLY:O | 1:C:1033:GLU:OE1 | 2.28 | 0.50 |
| 1:A:628:PRO:HB2 | 1:A:731:TYR:CD2 | 2.46 | 0.50 |
| 1:A:1688:LYS:O | 1:A:1692:GLN:OE1 | 2.28 | 0.50 |
| 1:C:2468:HIS:HB3 | 1:C:2479:ILE:HG21 | 1.92 | 0.50 |
| 1:C:2511:LEU:HD21 | 1:D:2362:VAL:HG23 | 1.93 | 0.50 |
| 1:A:2481:ARG:O | 1:A:2493:ARG:NH2 | 2.36 | 0.50 |
| 1:B:1737:VAL:HG21 | 1:B:1757:ALA:HB2 | 1.92 | 0.50 |
| 1:B:2160:GLU:OE1 | 1:B:2160:GLU:HA | 2.12 | 0.50 |
| 1:C:1358:ASP:O | 1:C:1359:HIS:ND1 | 2.43 | 0.50 |
| 1:C:1886:ARG:NH1 | 1:C:1951:PRO:O | 2.44 | 0.50 |
| 1:D:861:PHE:HA | 1:D:967:THR:HG22 | 1.93 | 0.50 |
| 1:B:195:HIS:N | 1:B:211:ASN:O | 2.41 | 0.50 |
| 1:B:1208:ASP:O | 1:B:1212:ILE:HG23 | 2.11 | 0.50 |
| 1:C:1117:LEU:HD13 | 1:C:1175:ILE:HG21 | 1.93 | 0.50 |
| 1:D:16:LEU:HD11 | 1:D:124:LEU:HD13 | 1.94 | 0.50 |
| 1:B:1962:HIS:CE1 | 1:B:1964:SER:HG | 2.28 | 0.50 |
| 1:B:628:PRO:HB2 | 1:B:731:TYR:CD2 | 2.47 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:161:TRP:HB2 | 1:A:188:VAL:HG12 | 1.94 | 0.50 |
| 1:D:1029:GLY:O | 1:D:1033:GLU:OE1 | 2.29 | 0.50 |
| 1:D:1426:VAL:HG12 | 1:D:1428:MET:H | 1.75 | 0.50 |
| 1:A:1029:GLY:O | 1:A:1033:GLU:OE1 | 2.29 | 0.50 |
| 1:B:2511:LEU:HD21 | 1:C:2362:VAL:HG23 | 1.94 | 0.50 |
| 1:C:1928:TYR:O | 1:C:1933:ASN:ND2 | 2.44 | 0.50 |
| 1:A:2160:GLU:OE1 | 1:A:2160:GLU:HA | 2.12 | 0.49 |
| 1:C:318:GLU:HG2 | 1:C:355:VAL:HG21 | 1.94 | 0.49 |
| 1:C:452:LEU:HD11 | 1:C:479:LEU:CD1 | 2.42 | 0.49 |
| 1:C:638:CYS:HB3 | 1:C:652:ILE:HD12 | 1.94 | 0.49 |
| 1:A:599:LEU:HD12 | 1:A:610:ILE:HD11 | 1.94 | 0.49 |
| 1:A:1971:THR:HG21 | 1:A:2019:SER:HB2 | 1.94 | 0.49 |
| 1:A:2183:GLU:OE2 | 1:A:2186:ARG:NH2 | 2.45 | 0.49 |
| 1:B:599:LEU:HD12 | 1:B:610:ILE:HD11 | 1.93 | 0.49 |
| 1:C:1253:PHE:CE1 | 1:C:1263:THR:HG21 | 2.47 | 0.49 |
| 1:D:164:ILE:HG23 | 1:D:164:ILE:O | 2.12 | 0.49 |
| 1:D:1897:ASN:O | 1:D:1900:ASN:ND2 | 2.46 | 0.49 |
| 1:C:1915:CYS:HB3 | 1:C:1925:LEU:HD11 | 1.93 | 0.49 |
| 1:C:2160:GLU:HA | 1:C:2160:GLU:OE1 | 2.12 | 0.49 |
| 1:D:541:LEU:O | 1:D:550:GLN:NE2 | 2.42 | 0.49 |
| 1:B:479:LEU:O | 1:B:483:VAL:HG23 | 2.12 | 0.49 |
| 1:D:161:TRP:HB2 | 1:D:188:VAL:HG12 | 1.94 | 0.49 |
| 1:D:599:LEU:HD12 | 1:D:610:ILE:HD11 | 1.95 | 0.49 |
| 1:D:2160:GLU:OE1 | 1:D:2160:GLU:HA | 2.12 | 0.49 |
| 1:A:16:LEU:HD11 | 1:A:124:LEU:HD13 | 1.94 | 0.49 |
| 1:A:1208:ASP:O | 1:A:1212:ILE:HG23 | 2.13 | 0.49 |
| 1:C:1971:THR:HG21 | 1:C:2019:SER:HB2 | 1.95 | 0.49 |
| 1:D:1097:LEU:HD12 | 1:D:1595:LEU:HD22 | 1.94 | 0.49 |
| 1:A:1253:PHE:CE1 | 1:A:1263:THR:HG21 | 2.47 | 0.49 |
| 1:C:983:LEU:HD21 | 1:C:1091:THR:HG21 | 1.94 | 0.49 |
| 1:D:318:GLU:HG2 | 1:D:355:VAL:HG21 | 1.95 | 0.49 |
| 1:D:452:LEU:HD11 | 1:D:479:LEU:CD1 | 2.42 | 0.49 |
| 1:A:983:LEU:HD21 | 1:A:1091:THR:HG21 | 1.94 | 0.49 |
| 1:B:165:GLN:OE1 | 1:B:186:ASN:ND2 | 2.38 | 0.49 |
| 1:B:318:GLU:HG2 | 1:B:355:VAL:HG21 | 1.94 | 0.49 |
| 1:C:1426:VAL:HG12 | 1:C:1428:MET:H | 1.77 | 0.49 |
| 1:D:789:ASP:HB3 | 1:D:790:PRO:HD3 | 1.94 | 0.49 |
| 1:D:2178:LEU:HD13 | 1:D:2569:LEU:HD22 | 1.93 | 0.49 |
| 1:B:1253:PHE:CE1 | 1:B:1263:THR:HG21 | 2.48 | 0.49 |
| 1:B:1605:ARG:O | 1:B:1682:ARG:NH2 | 2.46 | 0.49 |
| 1:D:1915:CYS:HB3 | 1:D:1925:LEU:HD11 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:639:VAL:HG21 | 1:B:738:ARG:HD3 | 1.95 | 0.49 |
| 1:C:103:GLN:OE1 | 1:C:107:GLU:OE2 | 2.30 | 0.49 |
| 1:C:2155:LEU:HD22 | 1:C:2178:LEU:HD11 | 1.93 | 0.49 |
| 1:A:1626:LEU:HD12 | 1:A:1695:LEU:HB3 | 1.95 | 0.49 |
| 1:D:1442:GLU:O | 1:D:1445:THR:OG1 | 2.30 | 0.49 |
| 1:A:2337:HIS:O | 1:A:2337:HIS:ND1 | 2.45 | 0.48 |
| 1:C:139:LEU:HD23 | 1:C:149:ARG:HD2 | 1.93 | 0.48 |
| 1:C:1097:LEU:HD12 | 1:C:1595:LEU:HD22 | 1.95 | 0.48 |
| 1:B:541:LEU:O | 1:B:550:GLN:NE2 | 2.42 | 0.48 |
| 1:B:2178:LEU:HD13 | 1:B:2569:LEU:HD22 | 1.95 | 0.48 |
| 1:C:136:ASN:HD22 | 1:C:139:LEU:HD22 | 1.77 | 0.48 |
| 1:D:983:LEU:HD21 | 1:D:1091:THR:HG21 | 1.94 | 0.48 |
| 1:D:2155:LEU:HD22 | 1:D:2178:LEU:HD11 | 1.94 | 0.48 |
| 1:A:1391:LEU:O | 1:A:1421:TYR:OH | 2.23 | 0.48 |
| 1:A:2178:LEU:HD13 | 1:A:2569:LEU:HD22 | 1.95 | 0.48 |
| 1:B:983:LEU:HD21 | 1:B:1091:THR:HG21 | 1.95 | 0.48 |
| 1:B:2007:ARG:NH2 | 1:B:2011:GLU:OE2 | 2.45 | 0.48 |
| 1:C:1062:LEU:HB3 | 1:C:1074:ALA:HB2 | 1.95 | 0.48 |
| 1:A:479:LEU:O | 1:A:483:VAL:HG23 | 2.13 | 0.48 |
| 1:A:1442:GLU:O | 1:A:1445:THR:OG1 | 2.31 | 0.48 |
| 1:A:1907:THR:HG21 | 1:A:1947:TYR:HE2 | 1.77 | 0.48 |
| 1:A:2362:VAL:HG23 | 1:D:2511:LEU:HD21 | 1.94 | 0.48 |
| 1:B:161:TRP:HB2 | 1:B:188:VAL:HG12 | 1.94 | 0.48 |
| 1:C:164:ILE:HG23 | 1:C:164:ILE:O | 2.13 | 0.48 |
| 1:D:139:LEU:HD23 | 1:D:149:ARG:HD2 | 1.94 | 0.48 |
| 1:D:2337:HIS:O | 1:D:2337:HIS:ND1 | 2.45 | 0.48 |
| 1:A:1426:VAL:HG12 | 1:A:1428:MET:H | 1.78 | 0.48 |
| 1:B:2188:LEU:HD11 | 1:B:2194:ILE:HG22 | 1.95 | 0.48 |
| 1:B:2510:ASN:HB3 | 1:C:2513:PHE:CD1 | 2.49 | 0.48 |
| 1:C:161:TRP:HB2 | 1:C:188:VAL:HG12 | 1.94 | 0.48 |
| 1:D:2476:VAL:HG22 | 1:D:2480:LEU:CD1 | 2.42 | 0.48 |
| 1:A:2007:ARG:NH2 | 1:A:2011:GLU:OE2 | 2.45 | 0.48 |
| 1:C:1442:GLU:O | 1:C:1445:THR:OG1 | 2.29 | 0.48 |
| 1:D:767:GLU:OE2 | 1:D:774:ARG:NH2 | 2.47 | 0.48 |
| 1:A:1971:THR:HG21 | 1:A:2019:SER:CB | 2.43 | 0.48 |
| 1:C:288:VAL:HG21 | 1:C:366:LEU:HD21 | 1.95 | 0.48 |
| 1:C:2476:VAL:HG22 | 1:C:2480:LEU:CD1 | 2.43 | 0.48 |
| 1:D:539:GLU:OE1 | 1:D:539:GLU:N | 2.46 | 0.48 |
| 1:D:1626:LEU:HD12 | 1:D:1695:LEU:HB3 | 1.96 | 0.48 |
| 1:D:2192:PRO:O | 1:D:2196:TRP:N | 2.43 | 0.48 |
| 1:A:1060:ILE:O | 1:A:1063:THR:OG1 | 2.26 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:539:GLU:OE1 | 1:B:539:GLU:N | 2.44 | 0.48 |
| 1:B:706:LYS:HB3 | 1:B:711:LEU:HD11 | 1.95 | 0.48 |
| 1:B:1062:LEU:HB3 | 1:B:1074:ALA:HB2 | 1.94 | 0.48 |
| 1:A:318:GLU:HG2 | 1:A:355:VAL:HG21 | 1.95 | 0.48 |
| 1:A:789:ASP:HB3 | 1:A:790:PRO:HD3 | 1.96 | 0.48 |
| 1:A:1897:ASN:O | 1:A:1900:ASN:ND2 | 2.46 | 0.48 |
| 1:B:589:ILE:O | 1:B:591:ALA:N | 2.43 | 0.48 |
| 1:B:1619:ASP:OD2 | 1:B:1687:ARG:NH2 | 2.46 | 0.48 |
| 1:C:2178:LEU:HD13 | 1:C:2569:LEU:HD22 | 1.95 | 0.48 |
| 1:D:288:VAL:HG21 | 1:D:366:LEU:HD21 | 1.94 | 0.48 |
| 1:A:840:TYR:O | 1:A:844:VAL:HG23 | 2.12 | 0.48 |
| 1:A:2543:LEU:HD23 | 1:A:2548:PHE:HZ | 1.79 | 0.48 |
| 1:C:278:SER:O | 1:C:279:SER:HB3 | 2.14 | 0.48 |
| 1:C:1895:GLN:O | 1:C:1896:ASN:OD1 | 2.32 | 0.48 |
| 1:C:1962:HIS:CE1 | 1:C:1964:SER:HG | 2.28 | 0.48 |
| 1:A:262:GLN:OE1 | 1:A:405:ILE:HG21 | 2.14 | 0.47 |
| 1:C:376:LYS:NZ | 1:C:377:THR:O | 2.44 | 0.47 |
| 1:C:628:PRO:HB2 | 1:C:731:TYR:CD2 | 2.48 | 0.47 |
| 1:C:985:TYR:HD2 | 1:C:1045:LEU:HD21 | 1.79 | 0.47 |
| 1:C:1971:THR:HG21 | 1:C:2019:SER:CB | 2.44 | 0.47 |
| 1:A:2200:ARG:HG3 | 1:A:2203:LEU:HB3 | 1.96 | 0.47 |
| 1:B:136:ASN:HD22 | 1:B:139:LEU:HD22 | 1.79 | 0.47 |
| 1:B:278:SER:O | 1:B:279:SER:HB3 | 2.14 | 0.47 |
| 1:B:1442:GLU:O | 1:B:1445:THR:OG1 | 2.30 | 0.47 |
| 1:C:2200:ARG:HG3 | 1:C:2203:LEU:HB3 | 1.96 | 0.47 |
| 1:A:165:GLN:OE1 | 1:A:186:ASN:ND2 | 2.40 | 0.47 |
| 1:A:1342:LEU:O | 1:A:1342:LEU:HD23 | 2.15 | 0.47 |
| 1:B:985:TYR:HD2 | 1:B:1045:LEU:HD21 | 1.79 | 0.47 |
| 1:D:628:PRO:HB2 | 1:D:731:TYR:CD2 | 2.49 | 0.47 |
| 1:A:278:SER:O | 1:A:279:SER:HB3 | 2.14 | 0.47 |
| 1:A:2381:TYR:CZ | 1:A:2385:ILE:HD11 | 2.48 | 0.47 |
| 1:A:2511:LEU:HD21 | 1:B:2362:VAL:HG23 | 1.96 | 0.47 |
| 1:B:707:SER:O | 1:B:711:LEU:HD13 | 2.15 | 0.47 |
| 1:C:479:LEU:O | 1:C:483:VAL:HG23 | 2.14 | 0.47 |
| 1:C:1897:ASN:O | 1:C:1900:ASN:ND2 | 2.47 | 0.47 |
| 1:A:621:LEU:HD23 | 1:A:630:PHE:CE1 | 2.50 | 0.47 |
| 1:B:1974:ILE:HD11 | 1:B:2020:LEU:HD22 | 1.95 | 0.47 |
| 1:D:815:TYR:OH | 1:D:984:ASP:OD2 | 2.27 | 0.47 |
| 1:A:139:LEU:HD23 | 1:A:149:ARG:HD2 | 1.96 | 0.47 |
| 1:C:493:VAL:HG21 | 1:C:555:LEU:HD21 | 1.97 | 0.47 |
| 1:D:278:SER:O | 1:D:279:SER:HB3 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:1342:LEU:HD23 | 1:D:1342:LEU:O | 2.14 | 0.47 |
| 1:A:1974:ILE:HD11 | 1:A:2020:LEU:CD2 | 2.44 | 0.47 |
| 1:B:1897:ASN:O | 1:B:1900:ASN:ND2 | 2.48 | 0.47 |
| 1:C:1060:ILE:O | 1:C:1063:THR:OG1 | 2.27 | 0.47 |
| 1:C:2337:HIS:O | 1:C:2337:HIS:ND1 | 2.44 | 0.47 |
| 1:D:1605:ARG:O | 1:D:1682:ARG:NH2 | 2.48 | 0.47 |
| 1:D:1907:THR:HG21 | 1:D:1947:TYR:HE2 | 1.79 | 0.47 |
| 1:D:2020:LEU:HD12 | 1:D:2020:LEU:O | 2.15 | 0.47 |
| 1:A:288:VAL:HG21 | 1:A:366:LEU:HD21 | 1.97 | 0.47 |
| 1:B:696:TRP:CE2 | 1:B:725:VAL:HG21 | 2.49 | 0.47 |
| 1:B:1785:PHE:O | 1:B:1788:VAL:HG12 | 2.15 | 0.47 |
| 1:C:2020:LEU:HD12 | 1:C:2020:LEU:O | 2.15 | 0.47 |
| 1:D:136:ASN:HD22 | 1:D:139:LEU:HD22 | 1.80 | 0.47 |
| 1:D:1934:VAL:HG12 | 1:D:1938:ILE:HD12 | 1.96 | 0.47 |
| 1:A:1610:VAL:HG23 | 1:A:1611:GLN:N | 2.30 | 0.47 |
| 1:A:2513:PHE:CD1 | 1:D:2510:ASN:HB3 | 2.50 | 0.47 |
| 1:B:288:VAL:HG21 | 1:B:366:LEU:HD21 | 1.97 | 0.47 |
| 1:B:1426:VAL:HG12 | 1:B:1428:MET:H | 1.78 | 0.47 |
| 1:B:1907:THR:HG21 | 1:B:1947:TYR:HE2 | 1.79 | 0.47 |
| 1:C:1974:ILE:HD11 | 1:C:2020:LEU:CD2 | 2.45 | 0.47 |
| 1:A:136:ASN:HD22 | 1:A:139:LEU:HD22 | 1.80 | 0.47 |
| 1:D:1214:TYR:CD2 | 1:D:1221:MET:HE1 | 2.50 | 0.47 |
| 1:A:539:GLU:OE1 | 1:A:539:GLU:N | 2.45 | 0.46 |
| 1:A:1062:LEU:HB3 | 1:A:1074:ALA:HB2 | 1.97 | 0.46 |
| 1:A:1605:ARG:O | 1:A:1682:ARG:NH2 | 2.48 | 0.46 |
| 1:B:638:CYS:HB3 | 1:B:652:ILE:HD12 | 1.95 | 0.46 |
| 1:C:696:TRP:CE2 | 1:C:725:VAL:HG21 | 2.50 | 0.46 |
| 1:C:2004:MET:CE | 1:C:2016:ILE:HD12 | 2.45 | 0.46 |
| 1:A:1895:GLN:O | 1:A:1896:ASN:OD1 | 2.32 | 0.46 |
| 1:B:452:LEU:HD11 | 1:B:479:LEU:CD1 | 2.44 | 0.46 |
| 1:B:1623:TRP:HB3 | 1:B:1626:LEU:HD13 | 1.96 | 0.46 |
| 1:C:1907:THR:HG21 | 1:C:1947:TYR:HE2 | 1.80 | 0.46 |
| 1:D:262:GLN:OE1 | 1:D:405:ILE:HG21 | 2.16 | 0.46 |
| 1:D:985:TYR:HD2 | 1:D:1045:LEU:HD21 | 1.80 | 0.46 |
| 1:D:1895:GLN:O | 1:D:1896:ASN:OD1 | 2.32 | 0.46 |
| 1:D:2381:TYR:CZ | 1:D:2385:ILE:HD11 | 2.50 | 0.46 |
| 1:A:164:ILE:O | 1:A:164:ILE:HG23 | 2.14 | 0.46 |
| 1:A:1532:VAL:HG12 | 1:A:1532:VAL:O | 2.16 | 0.46 |
| 1:B:282:LEU:HB3 | 1:B:309:LEU:HD12 | 1.96 | 0.46 |
| 1:C:539:GLU:N | 1:C:539:GLU:OE1 | 2.45 | 0.46 |
| 1:C:541:LEU:O | 1:C:550:GLN:NE2 | 2.42 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:2155:LEU:CD2 | 1:C:2178:LEU:HD11 | 2.45 | 0.46 |
| 1:D:1974:ILE:HD11 | 1:D:2020:LEU:CD2 | 2.45 | 0.46 |
| 1:D:2543:LEU:HD23 | 1:D:2548:PHE:HZ | 1.80 | 0.46 |
| 1:A:452:LEU:HD11 | 1:A:479:LEU:CD1 | 2.46 | 0.46 |
| 1:B:1342:LEU:HD23 | 1:B:1342:LEU:O | 2.15 | 0.46 |
| 1:C:1255:THR:OG1 | 1:C:1260:GLU:OE1 | 2.25 | 0.46 |
| 1:C:1619:ASP:OD2 | 1:C:1687:ARG:NH2 | 2.47 | 0.46 |
| 1:D:493:VAL:HG21 | 1:D:555:LEU:HD21 | 1.97 | 0.46 |
| 1:D:1610:VAL:HG23 | 1:D:1611:GLN:N | 2.30 | 0.46 |
| 1:B:164:ILE:HG23 | 1:B:164:ILE:O | 2.15 | 0.46 |
| 1:A:133:LEU:HD11 | 1:A:150:VAL:CG1 | 2.46 | 0.46 |
| 1:A:1214:TYR:CG | 1:A:1221:MET:HE1 | 2.50 | 0.46 |
| 1:A:2192:PRO:O | 1:A:2196:TRP:N | 2.42 | 0.46 |
| 1:B:1971:THR:HG21 | 1:B:2019:SER:HB2 | 1.97 | 0.46 |
| 1:C:621:LEU:HD23 | 1:C:630:PHE:CE2 | 2.51 | 0.46 |
| 1:B:493:VAL:HG21 | 1:B:555:LEU:HD21 | 1.98 | 0.46 |
| 1:B:1610:VAL:HG23 | 1:B:1611:GLN:N | 2.30 | 0.46 |
| 1:C:1626:LEU:HD12 | 1:C:1695:LEU:HB3 | 1.97 | 0.46 |
| 1:C:2007:ARG:NH2 | 1:C:2011:GLU:OE2 | 2.47 | 0.46 |
| 1:A:493:VAL:HG21 | 1:A:555:LEU:HD21 | 1.97 | 0.46 |
| 1:B:17:TYR:OH | 1:B:44:ASP:OD1 | 2.10 | 0.46 |
| 1:B:139:LEU:HD23 | 1:B:149:ARG:HD2 | 1.97 | 0.46 |
| 1:B:621:LEU:HD23 | 1:B:630:PHE:CE2 | 2.50 | 0.46 |
| 1:B:1063:THR:HG22 | 1:B:1075:LEU:HG | 1.98 | 0.46 |
| 1:C:653:CYS:SG | 1:C:747:ALA:HB2 | 2.56 | 0.46 |
| 1:C:1342:LEU:O | 1:C:1342:LEU:HD23 | 2.14 | 0.46 |
| 1:C:2573:VAL:O | 1:C:2577:VAL:HG12 | 2.15 | 0.46 |
| 1:A:653:CYS:SG | 1:A:747:ALA:HB2 | 2.56 | 0.46 |
| 1:A:2524:ARG:NE | 1:D:2518:ASP:OD1 | 2.43 | 0.46 |
| 1:D:479:LEU:O | 1:D:483:VAL:HG23 | 2.15 | 0.46 |
| 1:D:1062:LEU:HB3 | 1:D:1074:ALA:HB2 | 1.97 | 0.46 |
| 1:A:696:TRP:CE2 | 1:A:725:VAL:HG21 | 2.51 | 0.46 |
| 1:A:1619:ASP:OD2 | 1:A:1687:ARG:NH2 | 2.49 | 0.46 |
| 1:A:2033:TYR:HD2 | 1:A:2034:LEU:HD22 | 1.81 | 0.46 |
| 1:C:789:ASP:HB3 | 1:C:790:PRO:HD3 | 1.96 | 0.46 |
| 1:C:1028:ILE:HG21 | 1:C:1598:ILE:HD11 | 1.97 | 0.46 |
| 1:D:638:CYS:HB3 | 1:D:652:ILE:HD12 | 1.97 | 0.46 |
| 1:D:1933:ASN:O | 1:D:1937:VAL:HG23 | 2.16 | 0.46 |
| 1:A:445:ALA:HB2 | 1:A:508:LEU:HD21 | 1.98 | 0.45 |
| 1:A:1928:TYR:O | 1:A:1933:ASN:ND2 | 2.49 | 0.45 |
| 1:B:2004:MET:CE | 1:B:2016:ILE:HD12 | 2.46 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:1610:VAL:HG23 | 1:C:1611:GLN:N | 2.30 | 0.45 |
| 1:C:1746:ASN:HB3 | 1:C:1749:ILE:HD13 | 1.97 | 0.45 |
| 1:C:2381:TYR:CZ | 1:C:2385:ILE:HD11 | 2.51 | 0.45 |
| 1:D:266:ARG:NH2 | 3:D:2702:I3P:O43 | 2.49 | 0.45 |
| 1:D:696:TRP:CE2 | 1:D:725:VAL:HG21 | 2.51 | 0.45 |
| 1:D:1060:ILE:O | 1:D:1063:THR:OG1 | 2.26 | 0.45 |
| 1:D:1532:VAL:HG12 | 1:D:1532:VAL:O | 2.16 | 0.45 |
| 1:D:1785:PHE:O | 1:D:1788:VAL:HG12 | 2.16 | 0.45 |
| 1:B:2510:ASN:HB3 | 1:C:2513:PHE:CE1 | 2.50 | 0.45 |
| 1:C:1218:ASP:OD1 | 1:C:1218:ASP:N | 2.47 | 0.45 |
| 1:C:1532:VAL:O | 1:C:1532:VAL:HG12 | 2.16 | 0.45 |
| 1:D:1928:TYR:O | 1:D:1933:ASN:ND2 | 2.49 | 0.45 |
| 1:A:1110:ILE:HD11 | 1:A:1182:MET:CE | 2.46 | 0.45 |
| 1:B:161:TRP:HE3 | 1:B:188:VAL:HG11 | 1.81 | 0.45 |
| 1:B:633:TYR:O | 1:B:637:LEU:HD13 | 2.17 | 0.45 |
| 1:B:885:THR:CG2 | 1:B:978:ILE:HD13 | 2.45 | 0.45 |
| 1:B:1864:GLY:O | 1:B:1868:LEU:HD13 | 2.16 | 0.45 |
| 1:C:1975:LEU:HD11 | 1:C:2020:LEU:HB2 | 1.98 | 0.45 |
| 1:D:451:MET:HB2 | 1:D:475:LEU:HD22 | 1.98 | 0.45 |
| 1:D:1746:ASN:HB3 | 1:D:1749:ILE:HD13 | 1.98 | 0.45 |
| 1:D:2557:GLU:N | 1:D:2557:GLU:OE1 | 2.50 | 0.45 |
| 1:A:376:LYS:NZ | 1:A:377:THR:O | 2.43 | 0.45 |
| 1:A:633:TYR:O | 1:A:637:LEU:HD13 | 2.17 | 0.45 |
| 1:A:815:TYR:OH | 1:A:984:ASP:OD2 | 2.29 | 0.45 |
| 1:A:1785:PHE:O | 1:A:1788:VAL:HG12 | 2.16 | 0.45 |
| 1:A:2557:GLU:OE1 | 1:A:2557:GLU:N | 2.49 | 0.45 |
| 1:B:2573:VAL:O | 1:B:2577:VAL:HG12 | 2.16 | 0.45 |
| 1:D:589:ILE:O | 1:D:591:ALA:N | 2.47 | 0.45 |
| 1:D:2033:TYR:O | 1:D:2047:ARG:NH2 | 2.48 | 0.45 |
| 1:A:2033:TYR:O | 1:A:2047:ARG:NH2 | 2.46 | 0.45 |
| 1:B:653:CYS:SG | 1:B:747:ALA:HB2 | 2.56 | 0.45 |
| 1:C:262:GLN:OE1 | 1:C:405:ILE:HG21 | 2.16 | 0.45 |
| 1:A:782:LEU:HD11 | 1:A:869:ASN:CG | 2.37 | 0.45 |
| 1:A:1063:THR:HG22 | 1:A:1075:LEU:HG | 1.98 | 0.45 |
| 1:B:1532:VAL:HG12 | 1:B:1532:VAL:O | 2.16 | 0.45 |
| 1:B:1746:ASN:HB3 | 1:B:1749:ILE:HD13 | 1.96 | 0.45 |
| 1:C:1933:ASN:O | 1:C:1937:VAL:HG23 | 2.17 | 0.45 |
| 1:C:2512:ILE:HG22 | 1:C:2512:ILE:O | 2.17 | 0.45 |
| 1:D:445:ALA:HB2 | 1:D:508:LEU:HD21 | 1.98 | 0.45 |
| 1:D:638:CYS:SG | 1:D:738:ARG:HB3 | 2.56 | 0.45 |
| 1:A:985:TYR:HD2 | 1:A:1045:LEU:HD21 | 1.80 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:2294:ILE:HG13 | 1:A:2295:VAL:N | 2.32 | 0.45 |
| 1:B:575:ALA:HB2 | 1:B:598:LEU:HD21 | 1.99 | 0.45 |
| 1:B:748:ILE:HG21 | 1:B:788:ARG:HD2 | 1.98 | 0.45 |
| 1:C:445:ALA:HB2 | 1:C:508:LEU:HD21 | 1.99 | 0.45 |
| 1:C:1974:ILE:HD11 | 1:C:2020:LEU:HD22 | 1.98 | 0.45 |
| 1:D:621:LEU:HD23 | 1:D:630:PHE:CE2 | 2.51 | 0.45 |
| 1:D:633:TYR:O | 1:D:637:LEU:HD13 | 2.17 | 0.45 |
| 1:D:1028:ILE:HG21 | 1:D:1598:ILE:HD11 | 1.99 | 0.45 |
| 1:D:1643:PHE:CG | 1:D:1643:PHE:O | 2.70 | 0.45 |
| 1:A:1746:ASN:HB3 | 1:A:1749:ILE:HD13 | 1.97 | 0.45 |
| 1:B:2546:ASP:OD1 | 1:B:2547:LYS:N | 2.50 | 0.45 |
| 1:C:1785:PHE:O | 1:C:1788:VAL:HG12 | 2.16 | 0.45 |
| 1:A:1894:CYS:SG | 1:A:1895:GLN:N | 2.90 | 0.45 |
| 1:B:606:LEU:HD13 | 1:B:645:ILE:HD12 | 1.98 | 0.45 |
| 1:B:2513:PHE:CZ | 1:B:2517:ILE:HD11 | 2.51 | 0.45 |
| 1:C:815:TYR:OH | 1:C:984:ASP:OD2 | 2.30 | 0.45 |
| 1:D:133:LEU:HD11 | 1:D:150:VAL:CG1 | 2.47 | 0.45 |
| 1:D:2054:TYR:HE1 | 1:D:2071:LEU:HD22 | 1.82 | 0.45 |
| 1:D:2573:VAL:O | 1:D:2577:VAL:HG12 | 2.17 | 0.45 |
| 1:A:606:LEU:HD13 | 1:A:645:ILE:HD12 | 1.99 | 0.45 |
| 1:B:253:THR:OG1 | 1:B:264:PHE:CE2 | 2.69 | 0.45 |
| 1:B:1060:ILE:O | 1:B:1063:THR:OG1 | 2.27 | 0.45 |
| 1:B:1060:ILE:O | 1:B:1064:MET:HG3 | 2.17 | 0.45 |
| 1:C:2192:PRO:O | 1:C:2196:TRP:N | 2.43 | 0.45 |
| 1:D:1597:ASP:O | 1:D:1600:THR:OG1 | 2.32 | 0.45 |
| 1:B:2381:TYR:CZ | 1:B:2385:ILE:HD11 | 2.52 | 0.44 |
| 1:B:2476:VAL:HG22 | 1:B:2480:LEU:CD1 | 2.47 | 0.44 |
| 1:C:633:TYR:O | 1:C:637:LEU:HD13 | 2.17 | 0.44 |
| 1:D:606:LEU:HD13 | 1:D:645:ILE:HD12 | 2.00 | 0.44 |
| 1:D:2155:LEU:CD2 | 1:D:2178:LEU:HD11 | 2.47 | 0.44 |
| 1:A:589:ILE:O | 1:A:591:ALA:N | 2.45 | 0.44 |
| 1:A:1251:HIS:ND1 | 1:A:1252:LEU:HD12 | 2.32 | 0.44 |
| 1:C:606:LEU:HD13 | 1:C:645:ILE:HD12 | 1.99 | 0.44 |
| 1:C:748:ILE:HG21 | 1:C:788:ARG:HD2 | 1.99 | 0.44 |
| 1:A:161:TRP:HE3 | 1:A:188:VAL:HG11 | 1.83 | 0.44 |
| 1:B:407:ILE:HD12 | 1:B:407:ILE:H | 1.82 | 0.44 |
| 1:B:638:CYS:SG | 1:B:738:ARG:HB3 | 2.58 | 0.44 |
| 1:B:1523:GLU:OE1 | 1:B:1523:GLU:N | 2.48 | 0.44 |
| 1:B:1597:ASP:O | 1:B:1600:THR:OG1 | 2.29 | 0.44 |
| 1:B:1934:VAL:HG21 | 1:B:1981:LEU:HD21 | 1.99 | 0.44 |
| 1:B:2375:LEU:CD2 | 1:C:2359:ILE:HD11 | 2.47 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:2557:GLU:N | 1:B:2557:GLU:OE1 | 2.50 | 0.44 |
| 1:C:161:TRP:HE3 | 1:C:188:VAL:HG11 | 1.82 | 0.44 |
| 1:C:266:ARG:NH2 | 3:C:2702:I3P:O43 | 2.50 | 0.44 |
| 1:C:389:LEU:CB | 1:C:398:ILE:HD12 | 2.46 | 0.44 |
| 1:C:888:LEU:HD22 | 1:C:971:ILE:HG12 | 1.98 | 0.44 |
| 1:C:1363:MET:HA | 1:C:1366:ILE:HD12 | 2.00 | 0.44 |
| 1:D:1255:THR:OG1 | 1:D:1260:GLU:OE1 | 2.25 | 0.44 |
| 1:D:1975:LEU:HD11 | 1:D:2020:LEU:HB2 | 2.00 | 0.44 |
| 1:A:1643:PHE:O | 1:A:1643:PHE:CG | 2.70 | 0.44 |
| 1:B:445:ALA:HB2 | 1:B:508:LEU:HD21 | 1.99 | 0.44 |
| 1:B:1895:GLN:O | 1:B:1896:ASN:OD1 | 2.36 | 0.44 |
| 1:B:2200:ARG:HG3 | 1:B:2203:LEU:HB3 | 1.99 | 0.44 |
| 1:C:253:THR:OG1 | 1:C:264:PHE:CE2 | 2.70 | 0.44 |
| 1:C:2546:ASP:OD1 | 1:C:2547:LYS:N | 2.50 | 0.44 |
| 1:D:1974:ILE:HD11 | 1:D:2020:LEU:HD22 | 1.99 | 0.44 |
| 1:A:253:THR:OG1 | 1:A:264:PHE:CE2 | 2.69 | 0.44 |
| 1:A:885:THR:CG2 | 1:A:978:ILE:HD13 | 2.45 | 0.44 |
| 1:A:2512:ILE:HG22 | 1:A:2512:ILE:O | 2.17 | 0.44 |
| 1:B:262:GLN:OE1 | 1:B:405:ILE:HG21 | 2.18 | 0.44 |
| 1:B:1047:VAL:HG23 | 1:B:1048:ASP:OD1 | 2.17 | 0.44 |
| 1:C:840:TYR:O | 1:C:844:VAL:HG23 | 2.18 | 0.44 |
| 1:C:1945:THR:HG22 | 1:C:1999:LEU:CA | 2.48 | 0.44 |
| 1:C:2054:TYR:HE1 | 1:C:2071:LEU:HD22 | 1.83 | 0.44 |
| 1:D:653:CYS:SG | 1:D:747:ALA:HB2 | 2.58 | 0.44 |
| 1:A:748:ILE:HG21 | 1:A:788:ARG:HD2 | 1.99 | 0.44 |
| 1:A:1523:GLU:OE1 | 1:A:1523:GLU:N | 2.47 | 0.44 |
| 1:A:2573:VAL:O | 1:A:2577:VAL:HG12 | 2.17 | 0.44 |
| 1:C:2557:GLU:OE1 | 1:C:2557:GLU:N | 2.51 | 0.44 |
| 1:D:1364:TYR:CE2 | 1:D:1368:LEU:HD11 | 2.52 | 0.44 |
| 1:A:2476:VAL:HG22 | 1:A:2480:LEU:CD1 | 2.48 | 0.44 |
| 1:B:266:ARG:NH2 | 3:B:2702:I3P:O43 | 2.51 | 0.44 |
| 1:C:451:MET:HE1 | 1:C:475:LEU:HD13 | 2.00 | 0.44 |
| 1:C:2375:LEU:CD2 | 1:D:2359:ILE:HD11 | 2.47 | 0.44 |
| 1:A:407:ILE:H | 1:A:407:ILE:HD12 | 1.83 | 0.44 |
| 1:A:1945:THR:HG22 | 1:A:1999:LEU:CA | 2.46 | 0.44 |
| 1:B:242:ARG:HB2 | 1:B:432:VAL:CG2 | 2.48 | 0.44 |
| 1:B:789:ASP:HB3 | 1:B:790:PRO:HD3 | 1.99 | 0.44 |
| 1:B:2054:TYR:HE1 | 1:B:2071:LEU:HD22 | 1.82 | 0.44 |
| 1:B:2192:PRO:O | 1:B:2196:TRP:N | 2.42 | 0.44 |
| 1:C:451:MET:HB2 | 1:C:475:LEU:HD22 | 2.00 | 0.44 |
| 1:C:638:CYS:SG | 1:C:738:ARG:HB3 | 2.57 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:407:ILE:HD12 | 1:C:407:ILE:H | 1.82 | 0.44 |
| 1:C:542:SER:HA | 1:C:550:GLN:NE2 | 2.33 | 0.44 |
| 1:D:668:THR:OG1 | 1:D:729:TYR:OH | 2.05 | 0.44 |
| 1:D:1063:THR:HG22 | 1:D:1075:LEU:HG | 2.00 | 0.44 |
| 1:A:242:ARG:HB2 | 1:A:432:VAL:CG2 | 2.48 | 0.43 |
| 1:A:733:LEU:HD22 | 1:A:780:LEU:HD22 | 2.00 | 0.43 |
| 1:A:748:ILE:HG21 | 1:A:788:ARG:CD | 2.48 | 0.43 |
| 1:A:1975:LEU:HD11 | 1:A:2020:LEU:HB2 | 2.00 | 0.43 |
| 1:A:2020:LEU:O | 1:A:2020:LEU:HD12 | 2.18 | 0.43 |
| 1:A:2054:TYR:HE1 | 1:A:2071:LEU:HD22 | 1.82 | 0.43 |
| 1:C:133:LEU:HD11 | 1:C:150:VAL:CG1 | 2.48 | 0.43 |
| 1:C:447:ASP:O | 1:C:451:MET:HG3 | 2.17 | 0.43 |
| 1:C:1060:ILE:O | 1:C:1064:MET:HG3 | 2.18 | 0.43 |
| 1:C:1643:PHE:O | 1:C:1643:PHE:CG | 2.71 | 0.43 |
| 1:D:407:ILE:HD12 | 1:D:407:ILE:H | 1.82 | 0.43 |
| 1:D:1894:CYS:SG | 1:D:1895:GLN:N | 2.91 | 0.43 |
| 1:A:187:PRO:HB2 | 1:A:190:ALA:HB3 | 1.99 | 0.43 |
| 1:A:1060:ILE:O | 1:A:1064:MET:HG3 | 2.18 | 0.43 |
| 1:A:1736:LEU:HD12 | 1:A:1740:LEU:HD13 | 2.00 | 0.43 |
| 1:B:282:LEU:CD2 | 1:B:434:VAL:HG21 | 2.48 | 0.43 |
| 1:B:1928:TYR:O | 1:B:1933:ASN:ND2 | 2.51 | 0.43 |
| 1:B:2025:LEU:O | 1:B:2028:VAL:HG12 | 2.18 | 0.43 |
| 1:D:745:TYR:HA | 1:D:748:ILE:HB | 1.99 | 0.43 |
| 1:D:888:LEU:HD22 | 1:D:971:ILE:HG12 | 2.00 | 0.43 |
| 1:A:542:SER:HA | 1:A:550:GLN:NE2 | 2.33 | 0.43 |
| 1:B:542:SER:HA | 1:B:550:GLN:NE2 | 2.33 | 0.43 |
| 1:B:748:ILE:HG21 | 1:B:788:ARG:CD | 2.48 | 0.43 |
| 1:C:1391:LEU:O | 1:C:1421:TYR:OH | 2.25 | 0.43 |
| 1:D:782:LEU:HD11 | 1:D:869:ASN:CG | 2.38 | 0.43 |
| 1:A:354:LEU:HD11 | 1:A:398:ILE:HD13 | 2.00 | 0.43 |
| 1:A:408:GLU:OE1 | 1:A:408:GLU:N | 2.51 | 0.43 |
| 1:A:610:ILE:HD13 | 1:A:614:GLU:OE1 | 2.18 | 0.43 |
| 1:B:133:LEU:HD11 | 1:B:150:VAL:CG1 | 2.49 | 0.43 |
| 1:B:888:LEU:HD22 | 1:B:971:ILE:HG12 | 2.00 | 0.43 |
| 1:C:1063:THR:HG22 | 1:C:1075:LEU:HG | 2.01 | 0.43 |
| 1:D:252:LEU:HD13 | 1:D:417:LEU:HD11 | 2.00 | 0.43 |
| 1:D:736:PHE:CD2 | 1:D:751:ILE:HD12 | 2.54 | 0.43 |
| 1:D:1363:MET:HA | 1:D:1366:ILE:HD12 | 2.00 | 0.43 |
| 1:B:610:ILE:HD13 | 1:B:614:GLU:OE1 | 2.18 | 0.43 |
| 1:B:2337:HIS:O | 1:B:2337:HIS:ND1 | 2.45 | 0.43 |
| 1:C:1597:ASP:O | 1:C:1600:THR:OG1 | 2.32 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:242:ARG:HB2 | 1:D:432:VAL:CG2 | 2.49 | 0.43 |
| 1:D:408:GLU:OE1 | 1:D:408:GLU:N | 2.51 | 0.43 |
| 1:D:2200:ARG:HG3 | 1:D:2203:LEU:HB3 | 1.99 | 0.43 |
| 1:B:2131:ARG:HD2 | 1:B:2131:ARG:N | 2.34 | 0.43 |
| 1:B:2214:PHE:O | 1:B:2218:ILE:CD1 | 2.63 | 0.43 |
| 1:C:1890:ASN:OD1 | 1:C:1893:ARG:NH2 | 2.52 | 0.43 |
| 1:C:2543:LEU:HD23 | 1:C:2548:PHE:HZ | 1.80 | 0.43 |
| 1:A:638:CYS:SG | 1:A:738:ARG:HB3 | 2.59 | 0.43 |
| 1:A:1597:ASP:O | 1:A:1600:THR:OG1 | 2.31 | 0.43 |
| 1:B:1971:THR:HG21 | 1:B:2019:SER:CB | 2.49 | 0.43 |
| 1:C:242:ARG:HB2 | 1:C:432:VAL:CG2 | 2.49 | 0.43 |
| 1:C:451:MET:CE | 1:C:475:LEU:HD13 | 2.49 | 0.43 |
| 1:C:575:ALA:HB2 | 1:C:598:LEU:HD21 | 2.01 | 0.43 |
| 1:D:722:ASP:HA | 1:D:725:VAL:HG12 | 1.99 | 0.43 |
| 1:D:840:TYR:O | 1:D:844:VAL:HG23 | 2.18 | 0.43 |
| 1:D:2318:MET:SD | 1:D:2318:MET:N | 2.92 | 0.43 |
| 1:A:1363:MET:HA | 1:A:1366:ILE:HD12 | 2.00 | 0.43 |
| 1:A:1933:ASN:O | 1:A:1937:VAL:HG23 | 2.19 | 0.43 |
| 1:C:748:ILE:HG21 | 1:C:788:ARG:CD | 2.49 | 0.43 |
| 1:D:354:LEU:HD11 | 1:D:398:ILE:HD13 | 2.00 | 0.43 |
| 1:B:2318:MET:SD | 1:B:2318:MET:N | 2.92 | 0.43 |
| 1:B:2376:ALA:HB2 | 1:B:2508:VAL:HG11 | 2.01 | 0.43 |
| 1:B:2516:ILE:O | 1:B:2520:PHE:CD2 | 2.72 | 0.43 |
| 1:C:736:PHE:CD2 | 1:C:751:ILE:HD12 | 2.54 | 0.43 |
| 1:C:1364:TYR:CE2 | 1:C:1368:LEU:HD11 | 2.54 | 0.43 |
| 1:C:2318:MET:SD | 1:C:2318:MET:N | 2.92 | 0.43 |
| 1:D:447:ASP:O | 1:D:451:MET:HG3 | 2.19 | 0.43 |
| 1:D:542:SER:HA | 1:D:550:GLN:NE2 | 2.34 | 0.43 |
| 1:D:1945:THR:HG22 | 1:D:1999:LEU:CA | 2.47 | 0.43 |
| 1:A:767:GLU:OE2 | 1:A:774:ARG:NH2 | 2.52 | 0.43 |
| 1:A:1768:ILE:HG22 | 1:A:1772:PHE:CE2 | 2.54 | 0.43 |
| 1:B:2155:LEU:HD22 | 1:B:2178:LEU:HD11 | 2.01 | 0.43 |
| 1:C:2563:HIS:O | 4:C:2703:ATP:N6 | 2.51 | 0.43 |
| 1:D:161:TRP:HE3 | 1:D:188:VAL:HG11 | 1.84 | 0.43 |
| 1:D:1963:GLU:OE1 | 1:D:1963:GLU:N | 2.43 | 0.43 |
| 1:D:2512:ILE:O | 1:D:2512:ILE:HG22 | 2.17 | 0.43 |
| 1:A:522:LEU:HD21 | 1:A:556:CYS:HB2 | 2.01 | 0.42 |
| 1:A:722:ASP:HA | 1:A:725:VAL:HG12 | 2.00 | 0.42 |
| 1:A:2025:LEU:O | 1:A:2028:VAL:HG12 | 2.18 | 0.42 |
| 1:C:722:ASP:HA | 1:C:725:VAL:HG12 | 2.00 | 0.42 |
| 1:C:1487:ASN:OD1 | 1:C:1487:ASN:O | 2.37 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:1523:GLU:OE1 | 1:D:1523:GLU:N | 2.47 | 0.42 |
| 1:D:1619:ASP:OD2 | 1:D:1687:ARG:NH2 | 2.50 | 0.42 |
| 1:A:266:ARG:NH2 | 3:A:2702:I3P:O43 | 2.52 | 0.42 |
| 1:A:2186:ARG:HG2 | 1:A:2186:ARG:HH11 | 1.84 | 0.42 |
| 1:B:408:GLU:N | 1:B:408:GLU:OE1 | 2.52 | 0.42 |
| 1:B:1487:ASN:O | 1:B:1487:ASN:OD1 | 2.38 | 0.42 |
| 1:B:2512:ILE:O | 1:B:2512:ILE:HG22 | 2.19 | 0.42 |
| 1:C:252:LEU:HD13 | 1:C:417:LEU:HD11 | 2.00 | 0.42 |
| 1:C:2375:LEU:HD22 | 1:D:2359:ILE:HD11 | 2.00 | 0.42 |
| 1:A:585:ILE:HG23 | 1:A:592:GLU:HB3 | 2.02 | 0.42 |
| 1:A:1302:PHE:O | 1:A:1306:VAL:HG23 | 2.19 | 0.42 |
| 1:B:1363:MET:HA | 1:B:1366:ILE:HD12 | 2.00 | 0.42 |
| 1:C:2131:ARG:N | 1:C:2131:ARG:HD2 | 2.34 | 0.42 |
| 1:D:1218:ASP:OD1 | 1:D:1218:ASP:N | 2.46 | 0.42 |
| 1:A:282:LEU:CD2 | 1:A:434:VAL:HG21 | 2.50 | 0.42 |
| 1:A:2218:ILE:CG2 | 1:A:2282:LEU:HD21 | 2.50 | 0.42 |
| 1:A:2359:ILE:HD11 | 1:D:2375:LEU:CD2 | 2.49 | 0.42 |
| 1:B:187:PRO:HB2 | 1:B:190:ALA:HB3 | 2.00 | 0.42 |
| 1:B:354:LEU:HD11 | 1:B:398:ILE:HD13 | 2.01 | 0.42 |
| 1:B:736:PHE:CD2 | 1:B:751:ILE:HD12 | 2.54 | 0.42 |
| 1:D:1890:ASN:OD1 | 1:D:1893:ARG:NH2 | 2.53 | 0.42 |
| 1:A:452:LEU:HG | 1:A:475:LEU:HD21 | 2.01 | 0.42 |
| 1:A:2318:MET:SD | 1:A:2318:MET:N | 2.92 | 0.42 |
| 1:A:2592:GLN:OE1 | 1:A:2592:GLN:HA | 2.18 | 0.42 |
| 1:D:575:ALA:HB2 | 1:D:598:LEU:HD21 | 2.01 | 0.42 |
| 1:D:733:LEU:HD22 | 1:D:780:LEU:HD22 | 2.00 | 0.42 |
| 1:D:1214:TYR:CG | 1:D:1221:MET:HE1 | 2.55 | 0.42 |
| 1:D:2546:ASP:OD1 | 1:D:2547:LYS:N | 2.53 | 0.42 |
| 1:A:1934:VAL:HG21 | 1:A:1981:LEU:HD21 | 2.02 | 0.42 |
| 1:C:408:GLU:OE1 | 1:C:408:GLU:N | 2.53 | 0.42 |
| 1:C:452:LEU:HG | 1:C:475:LEU:HD21 | 2.01 | 0.42 |
| 1:C:610:ILE:HD13 | 1:C:614:GLU:OE1 | 2.20 | 0.42 |
| 1:D:610:ILE:HD12 | 1:D:637:LEU:CD2 | 2.49 | 0.42 |
| 1:A:2375:LEU:CD2 | 1:B:2359:ILE:HD11 | 2.50 | 0.42 |
| 1:A:2376:ALA:HB2 | 1:A:2508:VAL:HG11 | 2.02 | 0.42 |
| 1:A:2546:ASP:OD1 | 1:A:2547:LYS:N | 2.53 | 0.42 |
| 1:C:1251:HIS:ND1 | 1:C:1252:LEU:HD12 | 2.35 | 0.42 |
| 1:C:1934:VAL:HG21 | 1:C:1981:LEU:HD21 | 2.02 | 0.42 |
| 1:C:2218:ILE:CG2 | 1:C:2282:LEU:HD21 | 2.49 | 0.42 |
| 1:B:1251:HIS:ND1 | 1:B:1252:LEU:HD12 | 2.35 | 0.42 |
| 1:B:2001:LEU:HD11 | 1:B:2052:ASN:OD1 | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:187:PRO:HB2 | 1:C:190:ALA:HB3 | 2.02 | 0.42 |
| 1:A:888:LEU:HD22 | 1:A:971:ILE:HG12 | 2.01 | 0.42 |
| 1:A:1255:THR:OG1 | 1:A:1260:GLU:OE1 | 2.26 | 0.42 |
| 1:A:1886:ARG:HH11 | 1:A:1886:ARG:HG3 | 1.85 | 0.42 |
| 1:B:2223:TYR:HB3 | 1:B:2224:PRO:HD3 | 2.02 | 0.42 |
| 1:B:2375:LEU:HD22 | 1:C:2359:ILE:HD11 | 2.02 | 0.42 |
| 1:C:636:ASP:O | 1:C:639:VAL:O | 2.38 | 0.42 |
| 1:C:1056:LEU:O | 1:C:1060:ILE:HG12 | 2.20 | 0.42 |
| 1:D:2025:LEU:O | 1:D:2028:VAL:HG12 | 2.19 | 0.42 |
| 1:D:2516:ILE:O | 1:D:2520:PHE:CD2 | 2.73 | 0.42 |
| 1:A:636:ASP:O | 1:A:639:VAL:O | 2.38 | 0.42 |
| 1:A:1963:GLU:OE1 | 1:A:1963:GLU:N | 2.42 | 0.42 |
| 1:B:567:TYR:CD2 | 1:B:570:ASN:HB2 | 2.55 | 0.42 |
| 1:B:1272:TYR:HA | 1:B:1309:ALA:HB1 | 2.02 | 0.42 |
| 1:B:1366:ILE:HD13 | 1:B:1408:GLU:OE1 | 2.20 | 0.42 |
| 1:B:1643:PHE:O | 1:B:1643:PHE:CG | 2.73 | 0.42 |
| 1:C:354:LEU:HD11 | 1:C:398:ILE:HD13 | 2.01 | 0.42 |
| 1:C:586:GLY:HA3 | 1:C:621:LEU:HD21 | 2.02 | 0.42 |
| 1:D:860:THR:HA | 1:D:863:VAL:HG12 | 2.02 | 0.42 |
| 1:D:1302:PHE:O | 1:D:1306:VAL:HG23 | 2.20 | 0.42 |
| 1:A:1364:TYR:CE2 | 1:A:1368:LEU:HD11 | 2.55 | 0.41 |
| 1:B:470:ARG:NH1 | 1:B:470:ARG:HB2 | 2.35 | 0.41 |
| 1:B:722:ASP:HA | 1:B:725:VAL:HG12 | 2.01 | 0.41 |
| 1:B:1933:ASN:O | 1:B:1937:VAL:HG23 | 2.20 | 0.41 |
| 1:B:1974:ILE:HD11 | 1:B:2020:LEU:CD2 | 2.50 | 0.41 |
| 1:D:965:MET:HA | 1:D:965:MET:CE | 2.50 | 0.41 |
| 1:D:1058:VAL:O | 1:D:1062:LEU:HD13 | 2.19 | 0.41 |
| 1:D:1391:LEU:O | 1:D:1421:TYR:OH | 2.26 | 0.41 |
| 1:D:1487:ASN:OD1 | 1:D:1487:ASN:O | 2.37 | 0.41 |
| 1:A:618:PHE:O | 1:A:622:VAL:HG23 | 2.21 | 0.41 |
| 1:A:1487:ASN:OD1 | 1:A:1487:ASN:O | 2.38 | 0.41 |
| 1:A:2001:LEU:HD11 | 1:A:2052:ASN:OD1 | 2.18 | 0.41 |
| 1:A:2359:ILE:HD11 | 1:D:2375:LEU:HD22 | 2.01 | 0.41 |
| 1:B:586:GLY:HA3 | 1:B:621:LEU:HD21 | 2.02 | 0.41 |
| 1:B:1028:ILE:HG21 | 1:B:1598:ILE:HD11 | 2.01 | 0.41 |
| 1:B:1055:PHE:O | 1:B:1058:VAL:HG22 | 2.20 | 0.41 |
| 1:B:2182:MET:HE1 | 1:B:2573:VAL:HG21 | 2.02 | 0.41 |
| 1:C:50:LYS:O | 1:C:51:LYS:HB3 | 2.20 | 0.41 |
| 1:C:2188:LEU:HD11 | 1:C:2194:ILE:HG22 | 2.02 | 0.41 |
| 1:C:2376:ALA:HB2 | 1:C:2508:VAL:HG11 | 2.02 | 0.41 |
| 1:C:2513:PHE:HD2 | 1:D:2513:PHE:HZ | 1.68 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:2516:ILE:O | 1:C:2520:PHE:CD2 | 2.73 | 0.41 |
| 1:D:1060:ILE:O | 1:D:1064:MET:HG3 | 2.19 | 0.41 |
| 1:D:1934:VAL:HG11 | 1:D:1988:LEU:HB3 | 2.01 | 0.41 |
| 1:D:1976:ASN:OD1 | 1:D:1977:ASP:N | 2.53 | 0.41 |
| 1:A:1962:HIS:ND1 | 1:A:1964:SER:OG | 2.36 | 0.41 |
| 1:B:50:LYS:O | 1:B:51:LYS:HB3 | 2.20 | 0.41 |
| 1:B:240:VAL:HG21 | 1:B:439:ILE:HG12 | 2.03 | 0.41 |
| 1:B:252:LEU:HD13 | 1:B:417:LEU:HD11 | 2.01 | 0.41 |
| 1:B:2543:LEU:HD23 | 1:B:2548:PHE:HZ | 1.80 | 0.41 |
| 1:C:733:LEU:HD22 | 1:C:780:LEU:HD22 | 2.02 | 0.41 |
| 1:C:1366:ILE:HD13 | 1:C:1408:GLU:OE1 | 2.21 | 0.41 |
| 1:C:1886:ARG:HH11 | 1:C:1886:ARG:HG3 | 1.85 | 0.41 |
| 1:D:585:ILE:HG23 | 1:D:592:GLU:HB3 | 2.01 | 0.41 |
| 1:D:857:ASN:O | 1:D:860:THR:OG1 | 2.34 | 0.41 |
| 1:D:1979:SER:OG | 1:D:1980:PRO:HD3 | 2.20 | 0.41 |
| 1:A:50:LYS:O | 1:A:51:LYS:HB3 | 2.21 | 0.41 |
| 1:A:1058:VAL:O | 1:A:1062:LEU:HD13 | 2.20 | 0.41 |
| 1:A:2516:ILE:O | 1:A:2520:PHE:CD2 | 2.73 | 0.41 |
| 1:B:592:GLU:HG3 | 1:B:633:TYR:CE2 | 2.56 | 0.41 |
| 1:B:618:PHE:O | 1:B:622:VAL:HG23 | 2.20 | 0.41 |
| 1:B:1214:TYR:CD1 | 1:B:1221:MET:HE3 | 2.55 | 0.41 |
| 1:C:589:ILE:O | 1:C:591:ALA:N | 2.45 | 0.41 |
| 1:C:1302:PHE:O | 1:C:1306:VAL:HG23 | 2.20 | 0.41 |
| 1:C:2025:LEU:O | 1:C:2028:VAL:HG12 | 2.20 | 0.41 |
| 1:D:50:LYS:O | 1:D:51:LYS:HB3 | 2.20 | 0.41 |
| 1:D:187:PRO:HB2 | 1:D:190:ALA:HB3 | 2.02 | 0.41 |
| 1:D:1207:LEU:O | 1:D:1211:GLN:HG3 | 2.20 | 0.41 |
| 1:D:1736:LEU:HD12 | 1:D:1740:LEU:HD13 | 2.02 | 0.41 |
| 1:A:1100:SER:O | 1:A:1104:VAL:HG23 | 2.20 | 0.41 |
| 1:B:972:LEU:HD12 | 1:B:1070:LEU:HD12 | 2.01 | 0.41 |
| 1:B:1058:VAL:O | 1:B:1062:LEU:HD13 | 2.21 | 0.41 |
| 1:C:585:ILE:HG23 | 1:C:592:GLU:HB3 | 2.02 | 0.41 |
| 1:D:618:PHE:O | 1:D:622:VAL:HG23 | 2.20 | 0.41 |
| 1:A:965:MET:HA | 1:A:965:MET:CE | 2.50 | 0.41 |
| 1:B:758:ASP:OD1 | 1:B:759:LEU:N | 2.54 | 0.41 |
| 1:B:1307:ILE:HD13 | 1:B:1321:ILE:HD11 | 2.02 | 0.41 |
| 1:B:1945:THR:HG22 | 1:B:1999:LEU:CA | 2.50 | 0.41 |
| 1:C:860:THR:HA | 1:C:863:VAL:HG12 | 2.02 | 0.41 |
| 1:C:1637:ARG:HG2 | 1:C:1637:ARG:HH11 | 1.84 | 0.41 |
| 1:D:636:ASP:O | 1:D:639:VAL:O | 2.38 | 0.41 |
| 1:D:1886:ARG:HH11 | 1:D:1886:ARG:HG3 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1028:ILE:CG2 | 1:A:1602:LEU:HD21 | 2.49 | 0.41 |
| 1:B:611:THR:C | 1:B:651:LEU:HD21 | 2.41 | 0.41 |
| 1:B:733:LEU:HD22 | 1:B:780:LEU:HD22 | 2.02 | 0.41 |
| 1:B:1307:ILE:HG22 | 1:B:1317:CYS:HB2 | 2.03 | 0.41 |
| 1:B:1736:LEU:HD12 | 1:B:1740:LEU:HD13 | 2.02 | 0.41 |
| 1:B:1963:GLU:OE1 | 1:B:1963:GLU:N | 2.42 | 0.41 |
| 1:C:618:PHE:O | 1:C:622:VAL:HG23 | 2.20 | 0.41 |
| 1:C:1736:LEU:HD12 | 1:C:1740:LEU:HD13 | 2.02 | 0.41 |
| 1:C:1976:ASN:OD1 | 1:C:1977:ASP:N | 2.54 | 0.41 |
| 1:C:2011:GLU:O | 1:C:2014:GLU:HG2 | 2.21 | 0.41 |
| 1:D:2011:GLU:O | 1:D:2014:GLU:HG2 | 2.21 | 0.41 |
| 1:A:652:ILE:O | 1:A:656:VAL:HG12 | 2.20 | 0.41 |
| 1:A:740:CYS:HB3 | 1:A:748:ILE:CD1 | 2.51 | 0.41 |
| 1:A:1214:TYR:CG | 1:A:1221:MET:CE | 3.04 | 0.41 |
| 1:A:1307:ILE:HD13 | 1:A:1321:ILE:HD11 | 2.02 | 0.41 |
| 1:A:1379:LYS:O | 1:A:1380:ASN:C | 2.59 | 0.41 |
| 1:A:1948:CYS:SG | 1:A:1959:ILE:HD12 | 2.61 | 0.41 |
| 1:A:1976:ASN:OD1 | 1:A:1977:ASP:N | 2.54 | 0.41 |
| 1:B:668:THR:OG1 | 1:B:729:TYR:OH | 2.04 | 0.41 |
| 1:B:815:TYR:OH | 1:B:984:ASP:OD2 | 2.32 | 0.41 |
| 1:B:2195:TYR:O | 1:B:2199:ARG:HD2 | 2.20 | 0.41 |
| 1:C:2486:ASP:OD1 | 1:C:2486:ASP:N | 2.49 | 0.41 |
| 1:A:586:GLY:HA3 | 1:A:621:LEU:HD21 | 2.02 | 0.41 |
| 1:A:611:THR:C | 1:A:651:LEU:HD21 | 2.41 | 0.41 |
| 1:A:740:CYS:HB3 | 1:A:748:ILE:HD13 | 2.03 | 0.41 |
| 1:A:860:THR:HA | 1:A:863:VAL:HG12 | 2.03 | 0.41 |
| 1:A:1272:TYR:HA | 1:A:1309:ALA:HB1 | 2.03 | 0.41 |
| 1:A:2117:TYR:O | 1:A:2121:THR:OG1 | 2.28 | 0.41 |
| 1:B:860:THR:HA | 1:B:863:VAL:HG12 | 2.02 | 0.41 |
| 1:B:1283:LEU:HD22 | 1:B:1321:ILE:HG22 | 2.02 | 0.41 |
| 1:B:1346:LEU:O | 1:B:1350:LYS:HG2 | 2.21 | 0.41 |
| 1:B:2033:TYR:O | 1:B:2047:ARG:NH2 | 2.48 | 0.41 |
| 1:B:2292:ASN:O | 1:B:2292:ASN:ND2 | 2.54 | 0.41 |
| 1:C:1058:VAL:O | 1:C:1062:LEU:HD13 | 2.21 | 0.41 |
| 1:D:253:THR:OG1 | 1:D:264:PHE:CE2 | 2.71 | 0.41 |
| 1:D:1258:LEU:HD22 | 1:D:1298:GLN:OE1 | 2.20 | 0.41 |
| 1:A:252:LEU:HD13 | 1:A:417:LEU:HD11 | 2.03 | 0.41 |
| 1:A:744:GLN:O | 1:A:748:ILE:HG12 | 2.20 | 0.41 |
| 1:A:2011:GLU:O | 1:A:2014:GLU:HG2 | 2.21 | 0.41 |
| 1:A:2155:LEU:HD22 | 1:A:2178:LEU:HD11 | 2.01 | 0.41 |
| 1:A:2605:MET:HG3 | 1:A:2605:MET:O | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:B:483:VAL:HG22 | 1:B:509:MET:SD | 2.61 | 0.41 |
| 1:B:568:ARG:NH2 | 3:B:2702:I3P:O3 | 2.54 | 0.41 |
| 1:B:1334:VAL:O | 1:B:1334:VAL:HG13 | 2.21 | 0.41 |
| 1:B:1626:LEU:N | 1:B:1626:LEU:HD12 | 2.35 | 0.41 |
| 1:B:2011:GLU:O | 1:B:2014:GLU:HG2 | 2.20 | 0.41 |
| 1:C:1100:SER:O | 1:C:1104:VAL:HG23 | 2.20 | 0.41 |
| 1:C:1796:ALA:HB2 | 1:C:1866:SER:O | 2.22 | 0.41 |
| 1:D:2630:UNK:O | 1:D:2634:UNK:N | 2.54 | 0.41 |
| 1:A:389:LEU:CB | 1:A:398:ILE:HD12 | 2.48 | 0.40 |
| 1:A:1047:VAL:HG23 | 1:A:1048:ASP:OD1 | 2.21 | 0.40 |
| 1:A:1226:ARG:HG2 | 1:A:1226:ARG:HH11 | 1.86 | 0.40 |
| 1:B:975:LEU:O | 1:B:979:LEU:HD13 | 2.21 | 0.40 |
| 1:B:1056:LEU:O | 1:B:1060:ILE:HG12 | 2.20 | 0.40 |
| 1:B:1651:THR:HB | 1:B:1665:VAL:HG11 | 2.03 | 0.40 |
| 1:B:1979:SER:OG | 1:B:1980:PRO:HD3 | 2.20 | 0.40 |
| 1:C:610:ILE:HD12 | 1:C:637:LEU:CD2 | 2.50 | 0.40 |
| 1:C:1055:PHE:O | 1:C:1058:VAL:HG22 | 2.21 | 0.40 |
| 1:C:1085:ARG:NH1 | 1:C:1613:GLU:OE1 | 2.54 | 0.40 |
| 1:C:1948:CYS:SG | 1:C:1959:ILE:HD12 | 2.61 | 0.40 |
| 1:C:2151:THR:OG1 | 1:C:2181:GLU:OE2 | 2.39 | 0.40 |
| 1:D:1366:ILE:HD13 | 1:D:1408:GLU:OE1 | 2.21 | 0.40 |
| 1:D:1948:CYS:SG | 1:D:1959:ILE:HD12 | 2.61 | 0.40 |
| 1:A:1055:PHE:O | 1:A:1058:VAL:HG22 | 2.22 | 0.40 |
| 1:A:1346:LEU:O | 1:A:1350:LYS:HG2 | 2.20 | 0.40 |
| 1:A:1607:LYS:HG3 | 1:A:1608:PRO:HD3 | 2.03 | 0.40 |
| 1:B:1976:ASN:OD1 | 1:B:1977:ASP:N | 2.53 | 0.40 |
| 1:C:1202:ALA:O | 1:C:1205:VAL:HG12 | 2.21 | 0.40 |
| 1:C:2033:TYR:O | 1:C:2047:ARG:NH2 | 2.50 | 0.40 |
| 1:D:282:LEU:CD2 | 1:D:434:VAL:HG21 | 2.51 | 0.40 |
| 1:D:1247:HIS:HB2 | 1:D:1274:LEU:HD21 | 2.03 | 0.40 |
| 1:D:1272:TYR:HA | 1:D:1309:ALA:HB1 | 2.04 | 0.40 |
| 1:D:2223:TYR:HB3 | 1:D:2224:PRO:HD3 | 2.03 | 0.40 |
| 1:A:736:PHE:CD2 | 1:A:751:ILE:HD12 | 2.57 | 0.40 |
| 1:B:1215:ASP:OD1 | 1:B:1216:LYS:N | 2.55 | 0.40 |
| 1:B:2046:PRO:HA | 1:B:2049:VAL:HG22 | 2.03 | 0.40 |
| 1:B:2548:PHE:HD2 | 1:B:2553:VAL:HG13 | 1.87 | 0.40 |
| 1:C:611:THR:C | 1:C:651:LEU:HD21 | 2.42 | 0.40 |
| 1:C:744:GLN:O | 1:C:748:ILE:HG12 | 2.21 | 0.40 |
| 1:C:1963:GLU:OE1 | 1:C:1963:GLU:N | 2.43 | 0.40 |
| 1:D:2291:THR:O | 1:D:2295:VAL:HG12 | 2.22 | 0.40 |
| 1:D:2543:LEU:HD23 | 1:D:2548:PHE:CE1 | 2.57 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:483:VAL:HG22 | 1:A:509:MET:SD | 2.61 | 0.40 |
| 1:A:575:ALA:HB2 | 1:A:598:LEU:HD21 | 2.03 | 0.40 |
| 1:A:1247:HIS:HB2 | 1:A:1274:LEU:HD21 | 2.03 | 0.40 |
| 1:A:2469:GLY:O | 1:A:2505:ILE:HD11 | 2.22 | 0.40 |
| 1:B:187:PRO:HD2 | 1:B:192:GLN:O | 2.22 | 0.40 |
| 1:B:1607:LYS:HG3 | 1:B:1608:PRO:HD3 | 2.02 | 0.40 |
| 1:C:2605:MET:HG3 | 1:C:2605:MET:O | 2.22 | 0.40 |
| 1:D:1379:LYS:O | 1:D:1380:ASN:C | 2.60 | 0.40 |
| 1:D:1796:ALA:HB2 | 1:D:1866:SER:O | 2.22 | 0.40 |
| 1:D:2605:MET:O | 1:D:2605:MET:HG3 | 2.21 | 0.40 |
| 1:A:2223:TYR:HB3 | 1:A:2224:PRO:HD3 | 2.03 | 0.40 |
| 1:A:2465:VAL:HG22 | 1:A:2476:VAL:HG21 | 2.03 | 0.40 |
| 1:B:318:GLU:HG3 | 1:B:355:VAL:HG11 | 2.04 | 0.40 |
| 1:B:1595:LEU:O | 1:B:1599:ILE:HG13 | 2.21 | 0.40 |
| 1:B:1890:ASN:OD1 | 1:B:1893:ARG:NH2 | 2.54 | 0.40 |
| 1:B:1894:CYS:SG | 1:B:1895:GLN:N | 2.95 | 0.40 |
| 1:C:1523:GLU:OE1 | 1:C:1523:GLU:N | 2.48 | 0.40 |
| 1:C:1607:LYS:HG3 | 1:C:1608:PRO:HD3 | 2.03 | 0.40 |
| 1:C:2046:PRO:HA | 1:C:2049:VAL:HG22 | 2.03 | 0.40 |
| 1:C:2223:TYR:HB3 | 1:C:2224:PRO:HD3 | 2.03 | 0.40 |
| 1:C:2548:PHE:HD2 | 1:C:2553:VAL:HG13 | 1.86 | 0.40 |
| 1:D:586:GLY:HA3 | 1:D:621:LEU:HD21 | 2.03 | 0.40 |
| 1:D:1307:ILE:HD13 | 1:D:1321:ILE:HD11 | 2.04 | 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 | 2069/2633 (79%) | 1975 (96%) | 93 (4%) | 1 (0%) | 100 | 100 |
| 1 | B | 2069/2633 (79%) | 1968 (95%) | 100 (5%) | 1 (0%) | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | C | 2069/2633 (79%) | 1970 (95%) | 98 (5%) | 1 (0%) | 100 | 100 |
| 1 | D | 2069/2633 (79%) | 1974 (95%) | 94 (4%) | 1 (0%) | 100 | 100 |
| All | All | 8276/10532 (79%) | 7887 (95%) | 385 (5%) | 4 (0%) | 100 | 100 |

All (4) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 789 | ASP |
| 1 | B | 789 | ASP |
| 1 | C | 789 | ASP |
| 1 | D | 789 | ASP |

### 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 | 1903/2329 (82%) | 1900 (100%) | 3 (0%) | 93 | 98 |
| 1 | B | 1903/2329 (82%) | 1900 (100%) | 3 (0%) | 93 | 98 |
| 1 | C | 1903/2329 (82%) | 1901 (100%) | 2 (0%) | 93 | 98 |
| 1 | D | 1903/2329 (82%) | 1901 (100%) | 2 (0%) | 93 | 98 |
| All | All | 7612/9316 (82%) | 7602 (100%) | 10 (0%) | 93 | 98 |

All (10) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 1607 | LYS |
| 1 | A | 2199 | ARG |
| 1 | A | 2292 | ASN |
| 1 | B | 1607 | LYS |
| 1 | B | 2199 | ARG |
| 1 | B | 2292 | ASN |
| 1 | C | 1607 | LYS |
| 1 | C | 2199 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | D | 1607 | LYS |
| 1 | D | 2199 | ARG |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 491 | GLN |
| 1 | A | 2164 | GLN |
| 1 | B | 491 | GLN |
| 1 | B | 1193 | GLN |
| 1 | B | 2164 | GLN |
| 1 | C | 491 | GLN |
| 1 | C | 2164 | GLN |
| 1 | D | 2164 | 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 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 4 | ATP | C | 2703 | - | 26,33,33 | 0.63 | 0 | 31,52,52 | 1.06 | 2 (6%) |
| 4 | ATP | B | 2703 | - | 26,33,33 | 0.64 | 0 | 31,52,52 | 1.06 | 2 (6%) |
| 4 | ATP | A | 2703 | - | 26,33,33 | 0.63 | 0 | 31,52,52 | 1.06 | 2 (6%) |
| 3 | I3P | C | 2702 | - | 24,24,24 | 1.25 | 3 (12%) | 36,39,39 | 0.54 | 0 |
| 4 | ATP | D | 2703 | - | 26,33,33 | 0.63 | 0 | 31,52,52 | 1.06 | 2 (6%) |
| 3 | I3P | B | 2702 | - | 24,24,24 | 1.25 | 3 (12%) | 36,39,39 | 0.54 | 0 |
| 3 | I3P | D | 2702 | - | 24,24,24 | 1.25 | 3 (12%) | 36,39,39 | 0.53 | 0 |
| 3 | I3P | A | 2702 | - | 24,24,24 | 1.25 | 3 (12%) | 36,39,39 | 0.54 | 0 |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 4 | ATP | C | 2703 | - | - | 3/18/38/38 | 0/3/3/3 |
| 4 | ATP | B | 2703 | - | - | 4/18/38/38 | 0/3/3/3 |
| 4 | ATP | A | 2703 | - | - | 4/18/38/38 | 0/3/3/3 |
| 3 | I3P | C | 2702 | - | - | 2/15/39/39 | 0/1/1/1 |
| 4 | ATP | D | 2703 | - | - | 3/18/38/38 | 0/3/3/3 |
| 3 | I3P | B | 2702 | - | - | 2/15/39/39 | 0/1/1/1 |
| 3 | I3P | D | 2702 | - | - | 2/15/39/39 | 0/1/1/1 |
| 3 | I3P | A | 2702 | - | - | 2/15/39/39 | 0/1/1/1 |

All (12) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 3 | D | 2702 | I3P | P1-O1 | 3.04 | 1.65 | 1.59 |
| 3 | B | 2702 | I3P | P4-O4 | 3.01 | 1.65 | 1.59 |
| 3 | A | 2702 | I3P | P4-O4 | 3.01 | 1.65 | 1.59 |
| 3 | A | 2702 | I3P | P1-O1 | 2.99 | 1.65 | 1.59 |
| 3 | D | 2702 | I3P | P4-O4 | 2.99 | 1.65 | 1.59 |
| 3 | C | 2702 | I3P | P1-O1 | 2.98 | 1.64 | 1.59 |
| 3 | C | 2702 | I3P | P4-O4 | 2.97 | 1.64 | 1.59 |
| 3 | B | 2702 | I3P | P1-O1 | 2.97 | 1.64 | 1.59 |
| 3 | C | 2702 | I3P | P5-O5 | 2.74 | 1.64 | 1.59 |
| 3 | B | 2702 | I3P | P5-O5 | 2.72 | 1.64 | 1.59 |
| 3 | D | 2702 | I3P | P5-O5 | 2.71 | 1.64 | 1.59 |
| 3 | A | 2702 | I3P | P5-O5 | 2.69 | 1.64 | 1.59 |

All (8) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 4 | A | 2703 | ATP | C5-C6-N6 | 2.34 | 123.91 | 120.35 |
| 4 | D | 2703 | ATP | C5-C6-N6 | 2.33 | 123.90 | 120.35 |
| 4 | C | 2703 | ATP | C5-C6-N6 | 2.30 | 123.84 | 120.35 |
| 4 | B | 2703 | ATP | C5-C6-N6 | 2.28 | 123.82 | 120.35 |
| 4 | C | 2703 | ATP | PB-O3B-PG | 2.05 | 139.87 | 132.83 |
| 4 | D | 2703 | ATP | PB-O3B-PG | 2.04 | 139.83 | 132.83 |
| 4 | A | 2703 | ATP | PB-O3B-PG | 2.04 | 139.83 | 132.83 |
| 4 | B | 2703 | ATP | PB-O3B-PG | 2.03 | 139.79 | 132.83 |

There are no chirality outliers.

All (22) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 3 | B | 2702 | I3P | C5-O5-P5-O51 |
| 3 | C | 2702 | I3P | C5-O5-P5-O51 |
| 3 | C | 2702 | I3P | C5-O5-P5-O53 |
| 3 | D | 2702 | I3P | C5-O5-P5-O53 |
| 4 | A | 2703 | ATP | O4'-C4'-C5'-O5' |
| 4 | D | 2703 | ATP | O4'-C4'-C5'-O5' |
| 4 | B | 2703 | ATP | O4'-C4'-C5'-O5' |
| 4 | C | 2703 | ATP | O4'-C4'-C5'-O5' |
| 4 | A | 2703 | ATP | PB-O3A-PA-O5' |
| 4 | B | 2703 | ATP | PB-O3A-PA-O5' |
| 4 | C | 2703 | ATP | PB-O3A-PA-O5' |
| 4 | D | 2703 | ATP | PB-O3A-PA-O5' |
| 3 | A | 2702 | I3P | C5-O5-P5-O53 |
| 3 | B | 2702 | I3P | C5-O5-P5-O53 |
| 3 | D | 2702 | I3P | C4-O4-P4-O41 |
| 3 | A | 2702 | I3P | C4-O4-P4-O43 |
| 4 | A | 2703 | ATP | PB-O3A-PA-O1A |
| 4 | B | 2703 | ATP | PB-O3A-PA-O1A |
| 4 | A | 2703 | ATP | C5'-O5'-PA-O1A |
| 4 | B | 2703 | ATP | C5'-O5'-PA-O1A |
| 4 | C | 2703 | ATP | C5'-O5'-PA-O1A |
| 4 | D | 2703 | ATP | C5'-O5'-PA-O1A |

There are no ring outliers.

5 monomers are involved in 6 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 4 | C | 2703 | ATP | 1 | 0 |

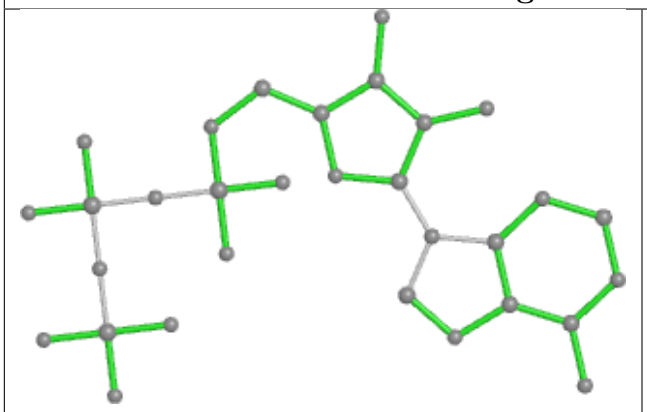
*Continued on next page...*

*Continued from previous page...*

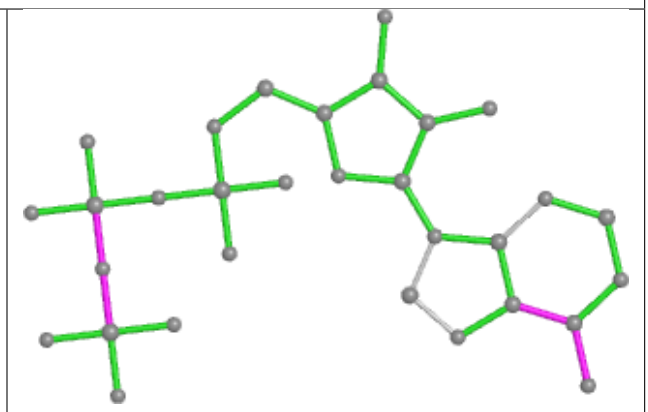
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 3 | C | 2702 | I3P | 1 | 0 |
| 3 | B | 2702 | I3P | 2 | 0 |
| 3 | D | 2702 | I3P | 1 | 0 |
| 3 | A | 2702 | I3P | 1 | 0 |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

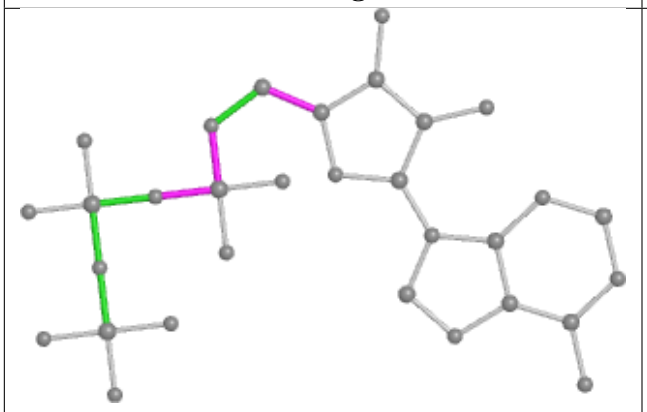
**Ligand ATP C 2703**



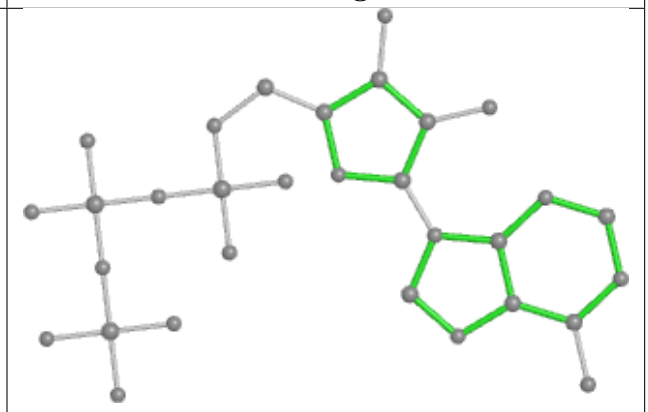
**Bond lengths**



**Bond angles**

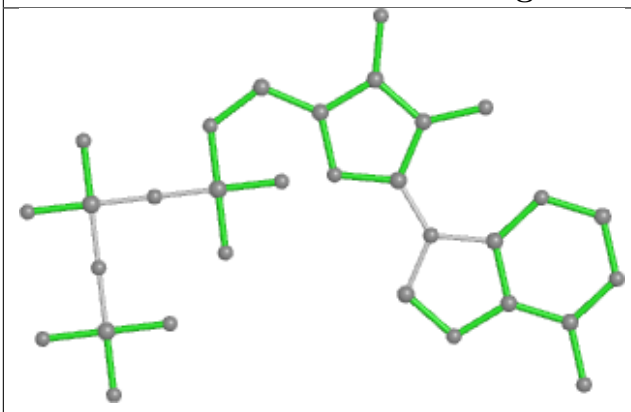


**Torsions**

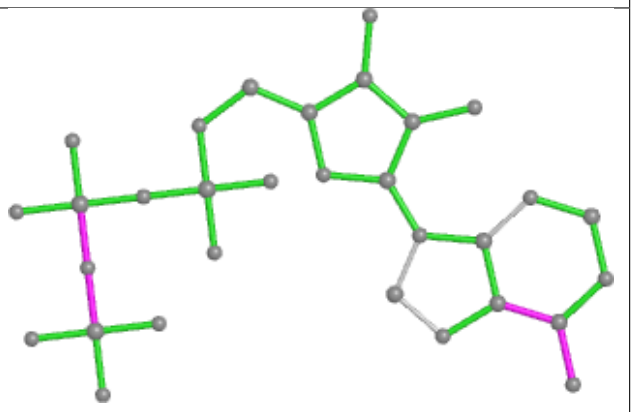


**Rings**

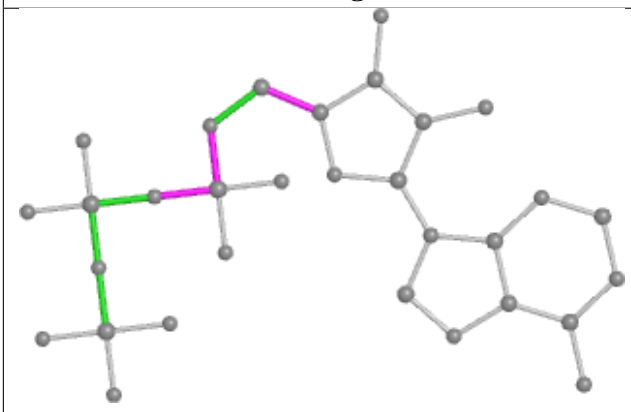
**Ligand ATP B 2703**



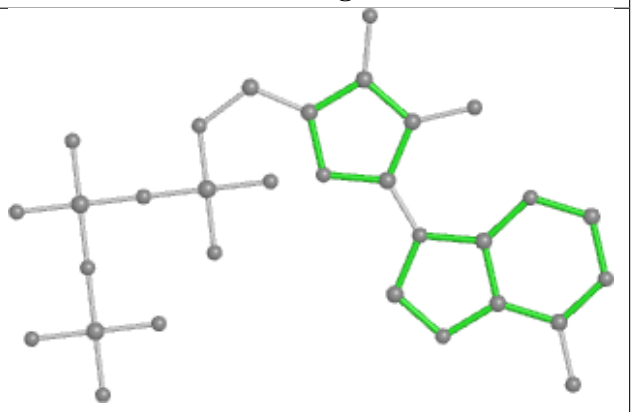
Bond lengths



Bond angles

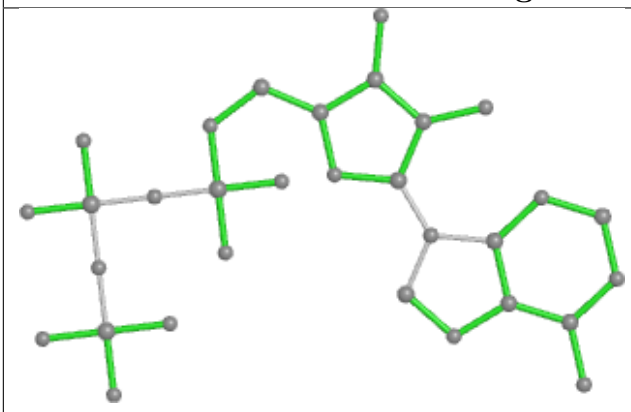


Torsions

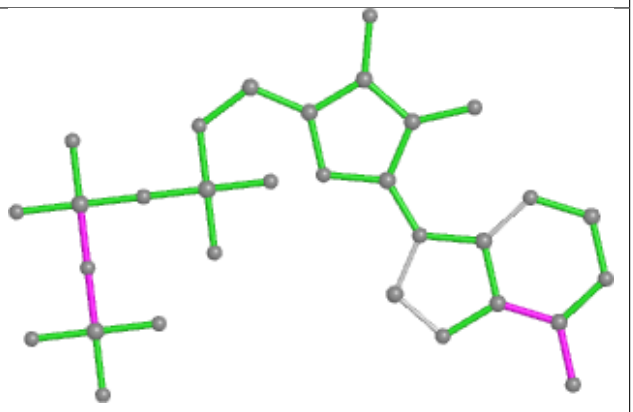


Rings

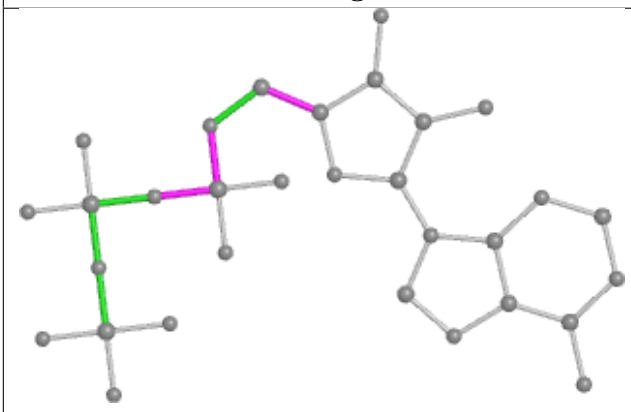
**Ligand ATP A 2703**



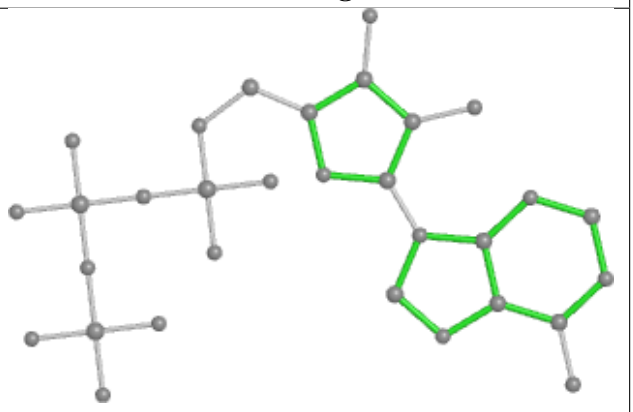
**Bond lengths**



**Bond angles**

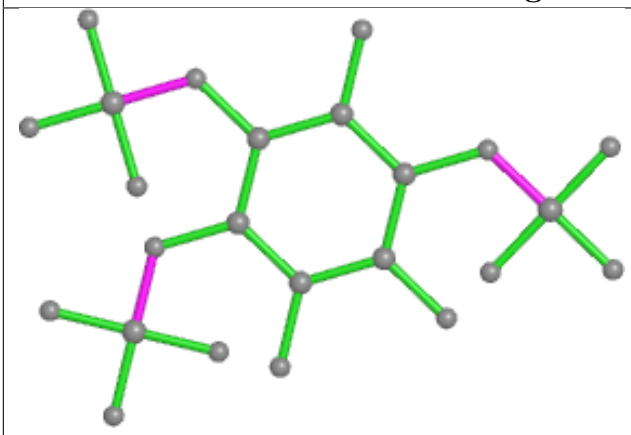


**Torsions**

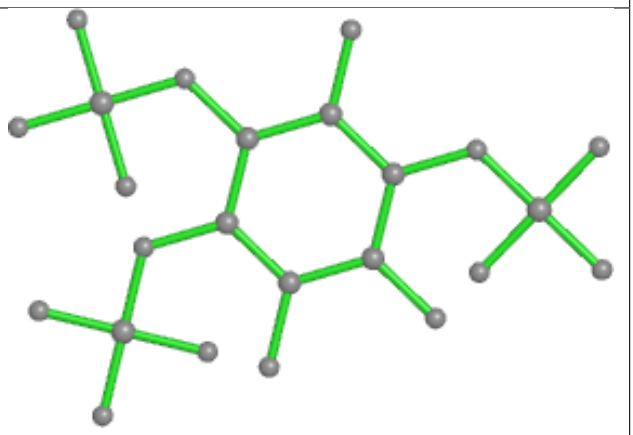


**Rings**

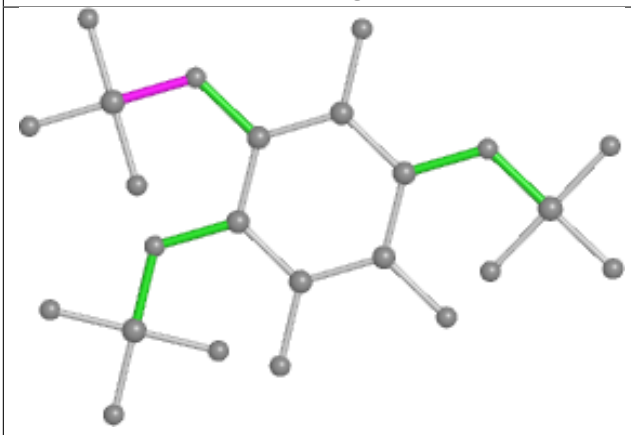
**Ligand I3P C 2702**



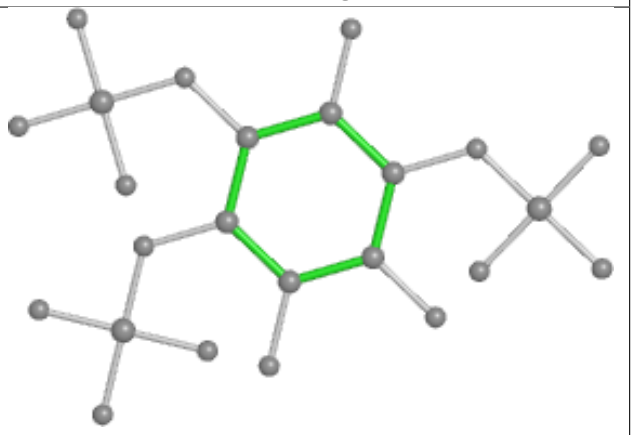
**Bond lengths**



**Bond angles**

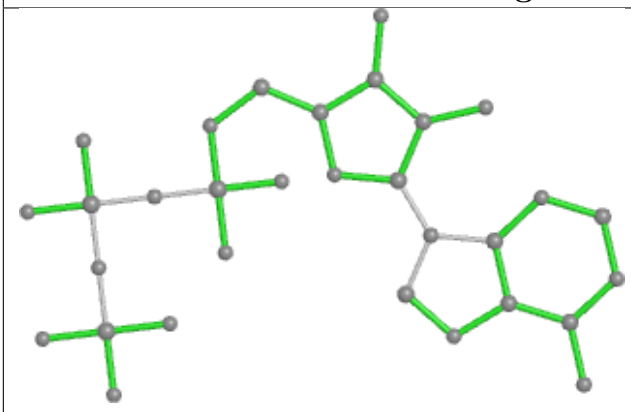


**Torsions**

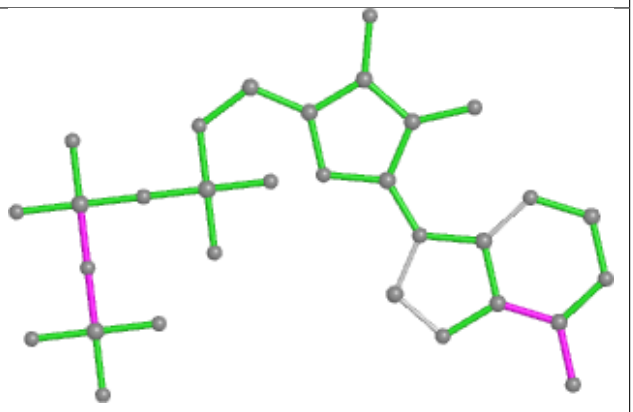


**Rings**

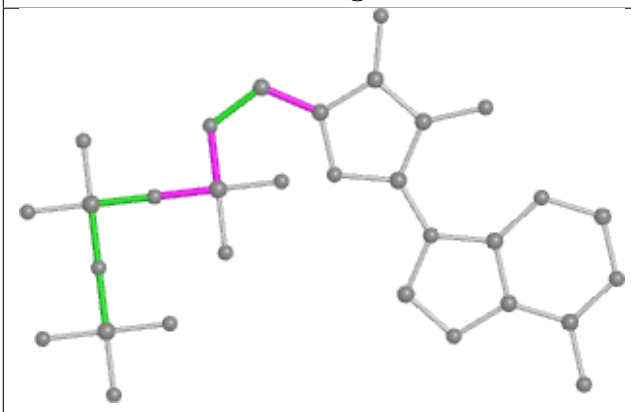
**Ligand ATP D 2703**



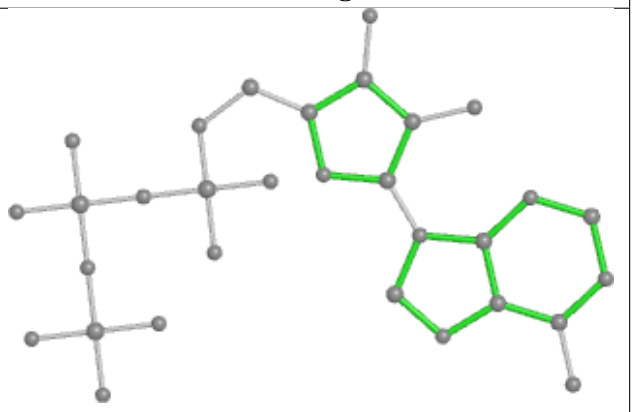
Bond lengths



Bond angles

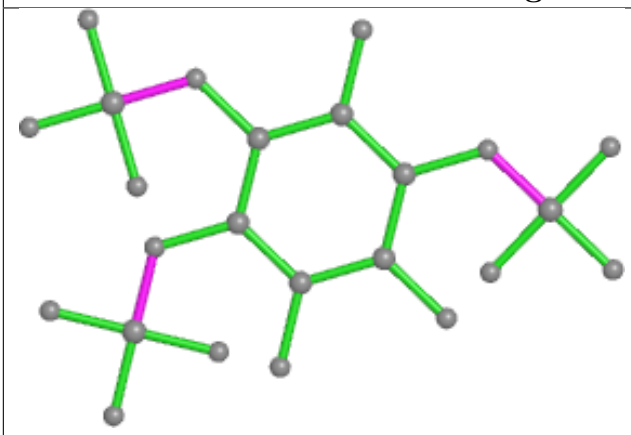


Torsions

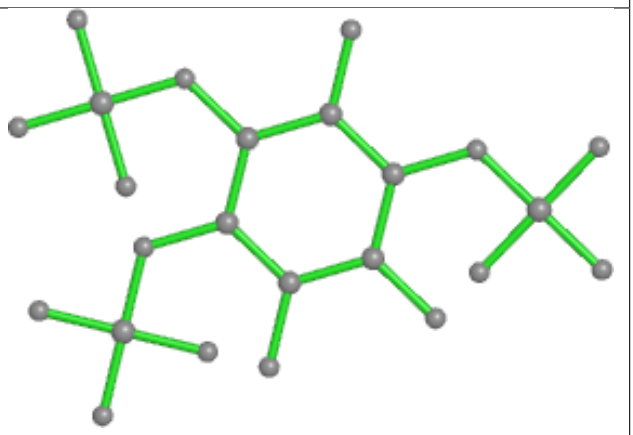


Rings

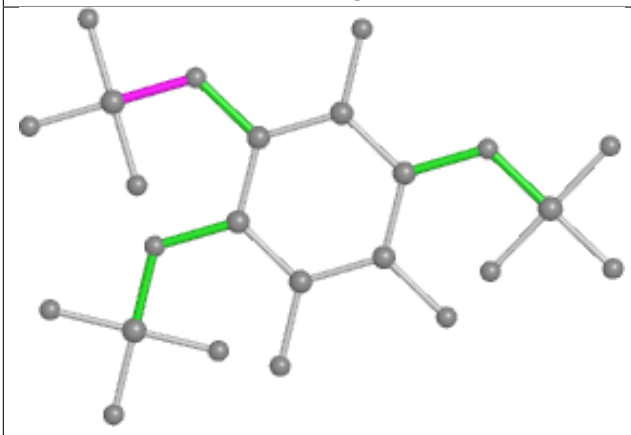
**Ligand I3P B 2702**



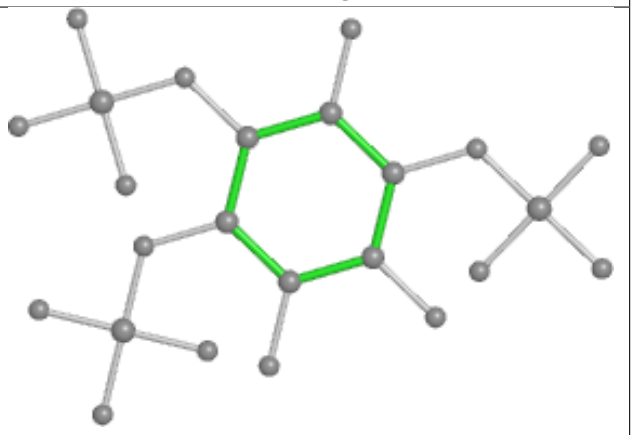
**Bond lengths**



**Bond angles**

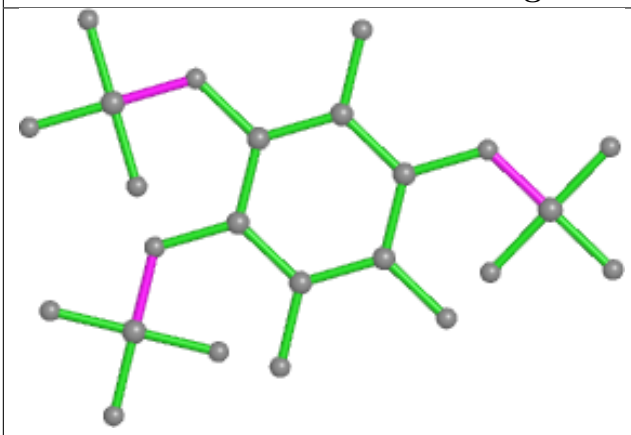


**Torsions**

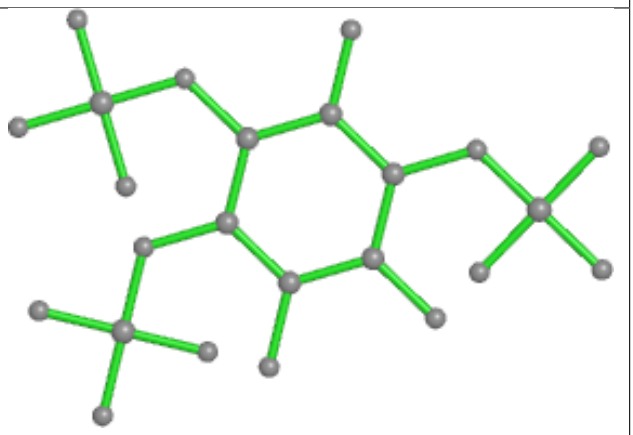


**Rings**

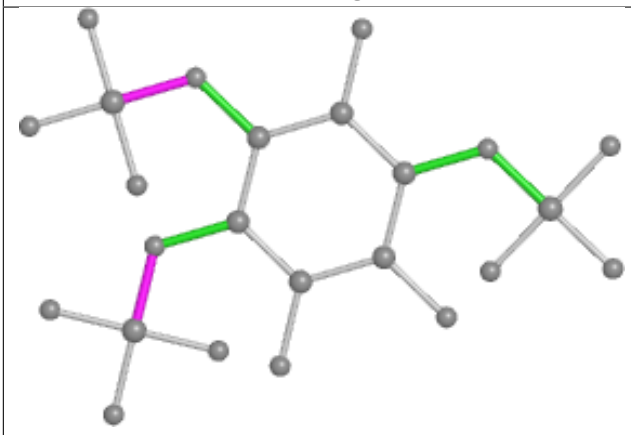
**Ligand I3P D 2702**



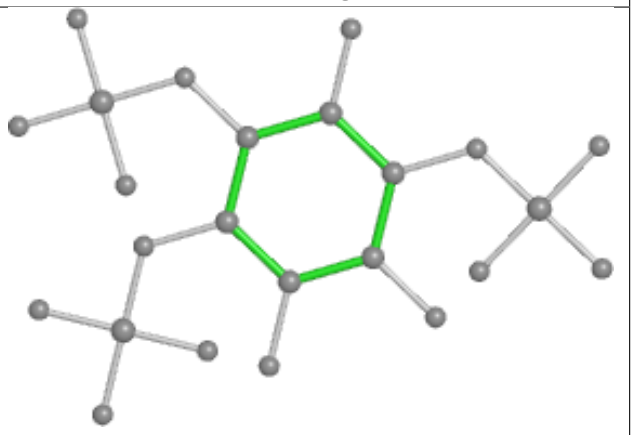
**Bond lengths**



**Bond angles**

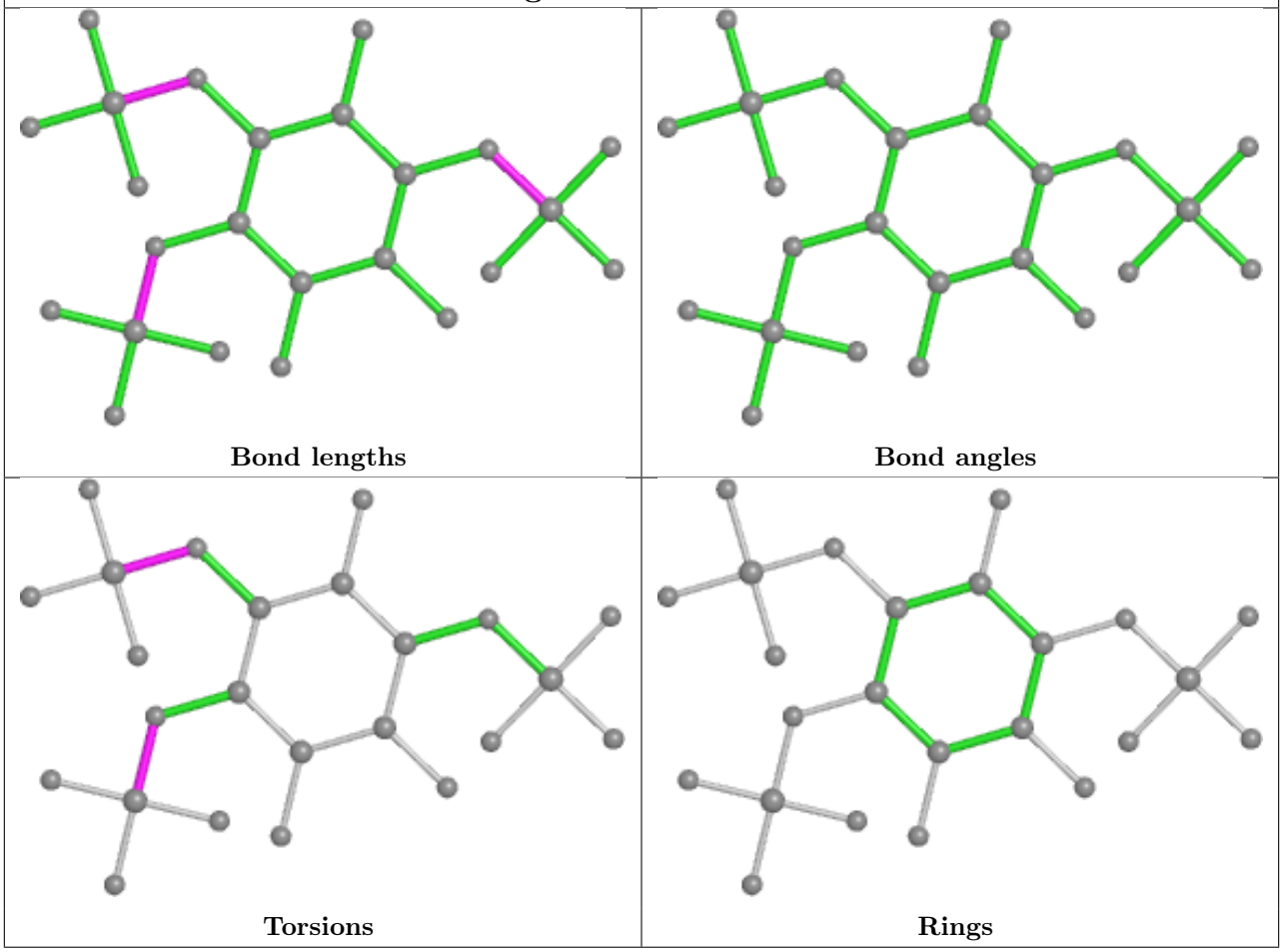


**Torsions**



**Rings**

**Ligand I3P A 2702**




## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|---|---|---|
| 1 | A | 1 |
| 1 | D | 1 |
| 1 | C | 1 |
| 1 | B | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|---|---|---|---|---|---|---|
| 1 | A | 2611:VAL | C | 2628:UNK | N | 27.59 |

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| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|---|---|---|---|---|---|---|
| 1 | D | 2611:VAL | C | 2628:UNK | N | 27.58 |
| 1 | C | 2611:VAL | C | 2628:UNK | N | 27.54 |
| 1 | B | 2611:VAL | C | 2628:UNK | N | 27.53 |

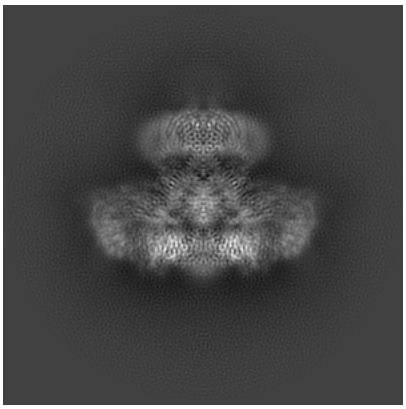
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-25669. These allow visual inspection of the internal detail of the map and identification of artifacts.

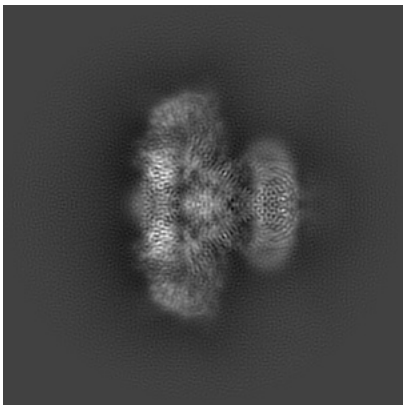
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

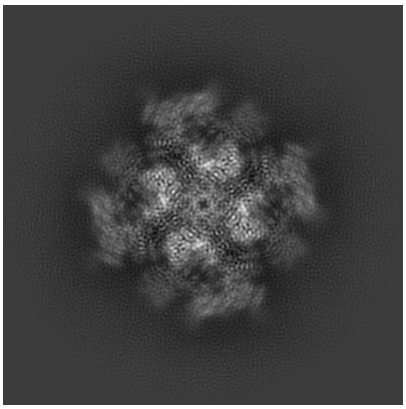
### 6.1.1 Primary map



X

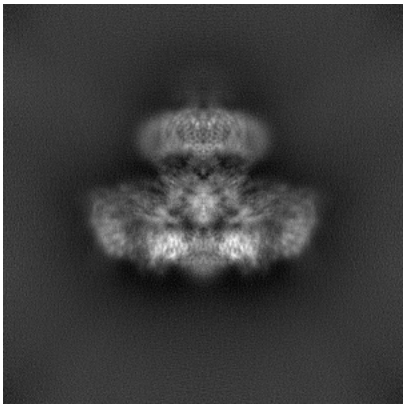


Y

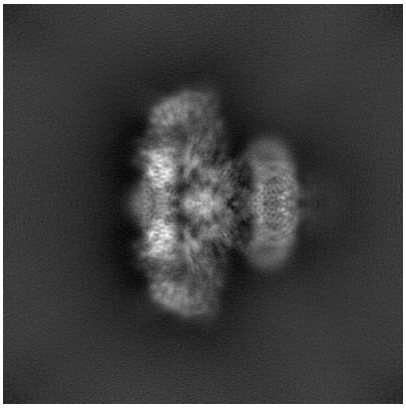


Z

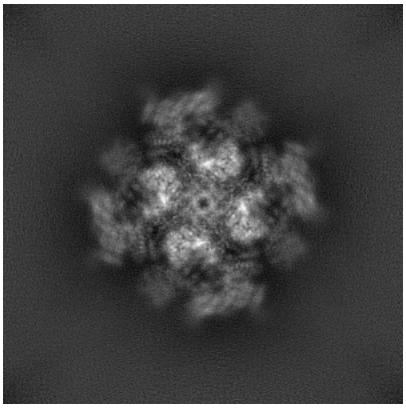
### 6.1.2 Raw map



X



Y

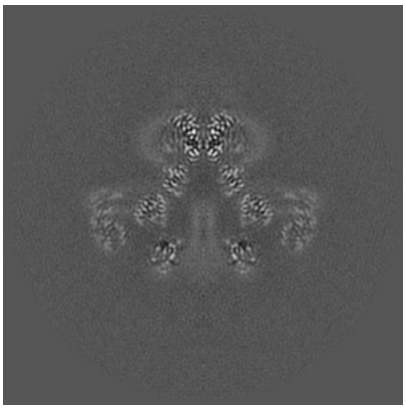


Z

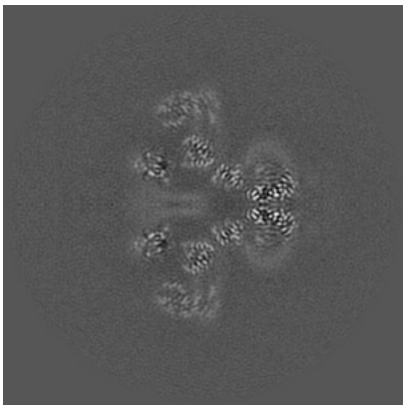
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

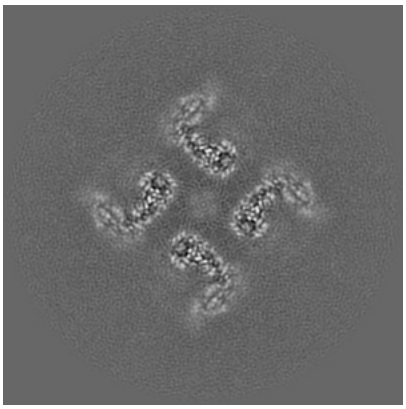
### 6.2.1 Primary map



X Index: 240

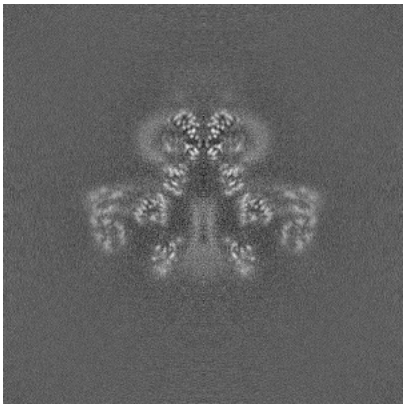


Y Index: 240

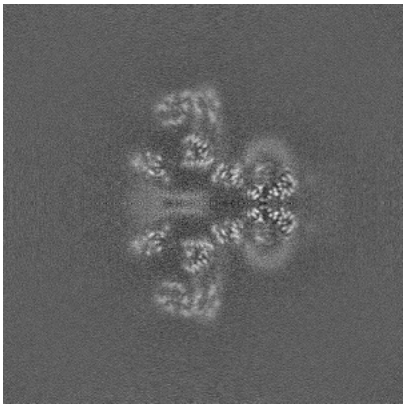


Z Index: 240

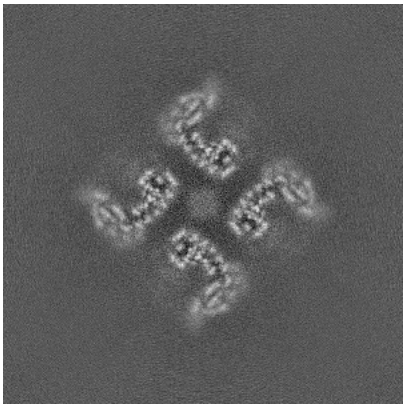
### 6.2.2 Raw map



X Index: 240



Y Index: 240

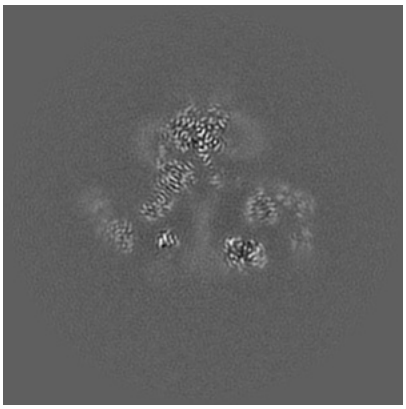


Z Index: 240

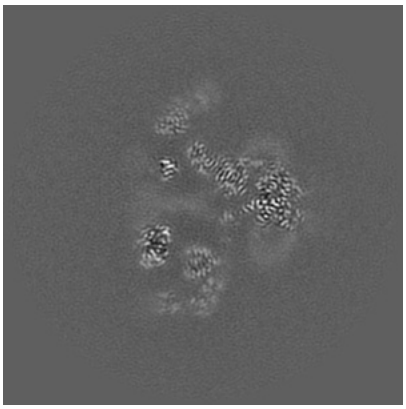
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

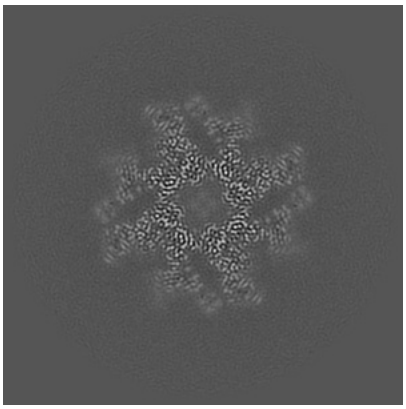
### 6.3.1 Primary map



X Index: 229

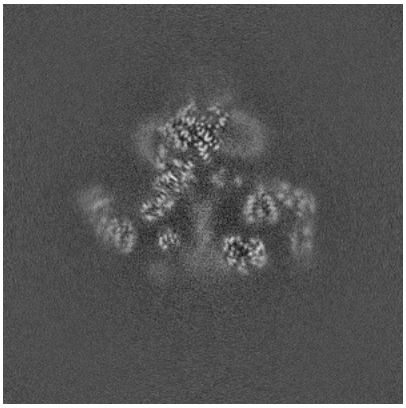


Y Index: 229

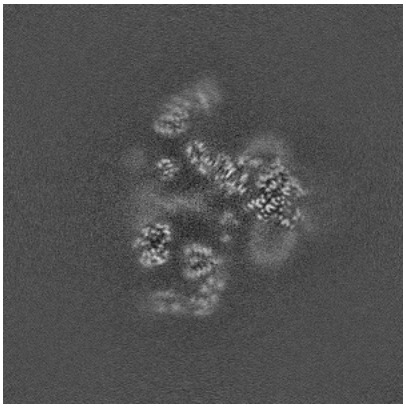


Z Index: 191

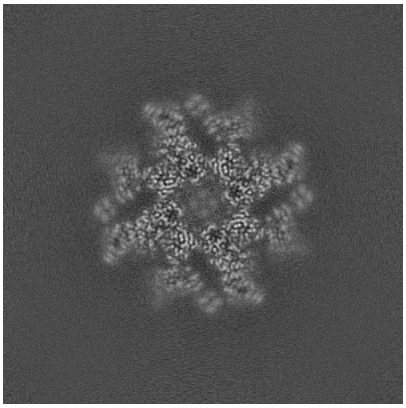
### 6.3.2 Raw map



X Index: 230



Y Index: 230

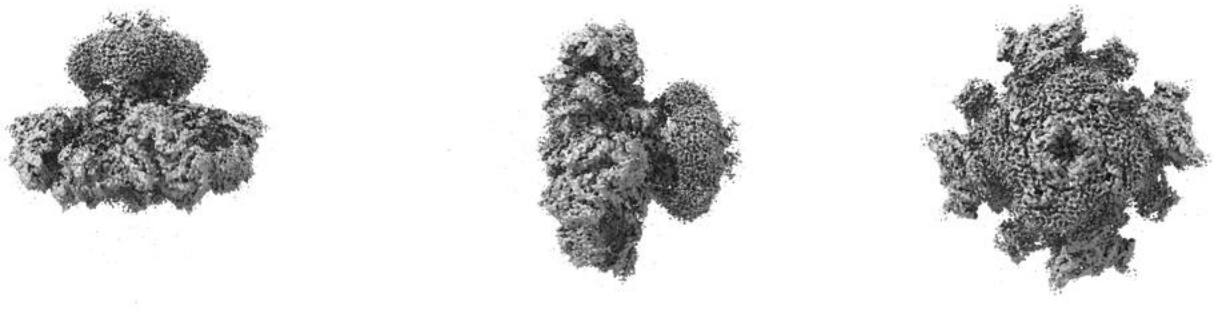


Z Index: 190

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

## 6.4 Orthogonal surface views (i)

### 6.4.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.18. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.4.2 Raw map

X Y Z

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

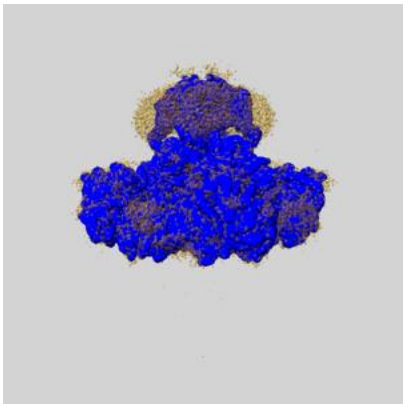
## 6.5 Mask visualisation (i)

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

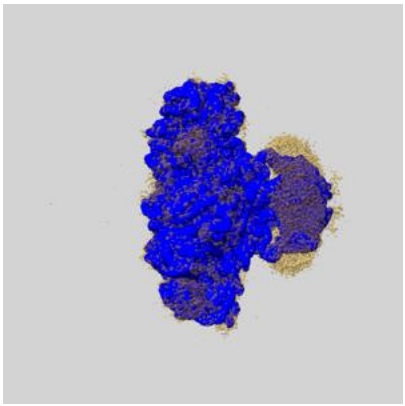
A mask typically either:

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

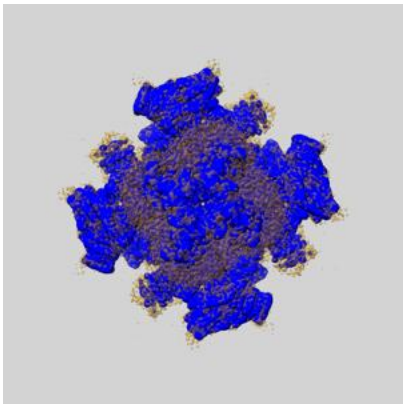
### 6.5.1 emd_25669_msk_1.map (i)



X



Y

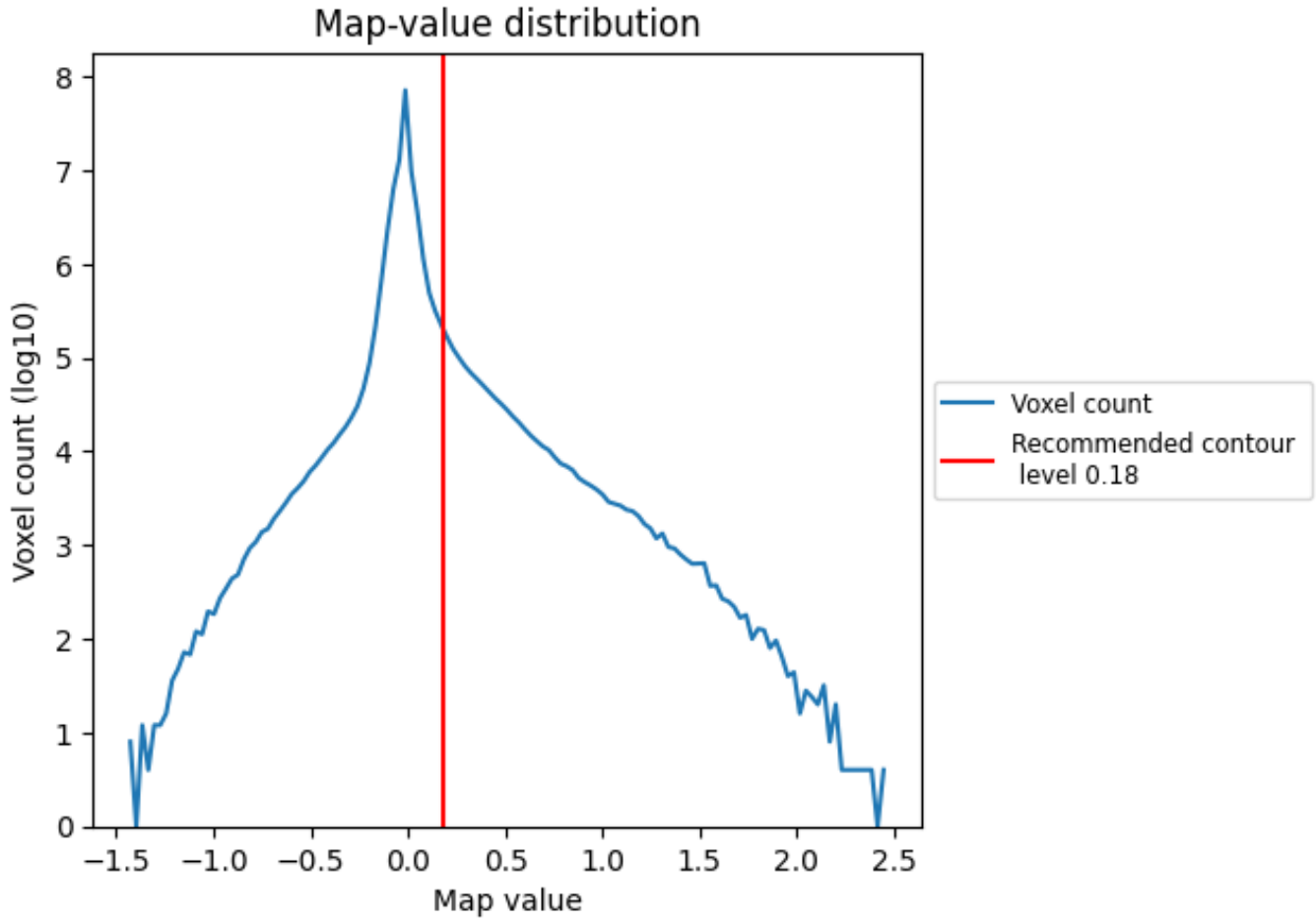


Z

# 7 Map analysis

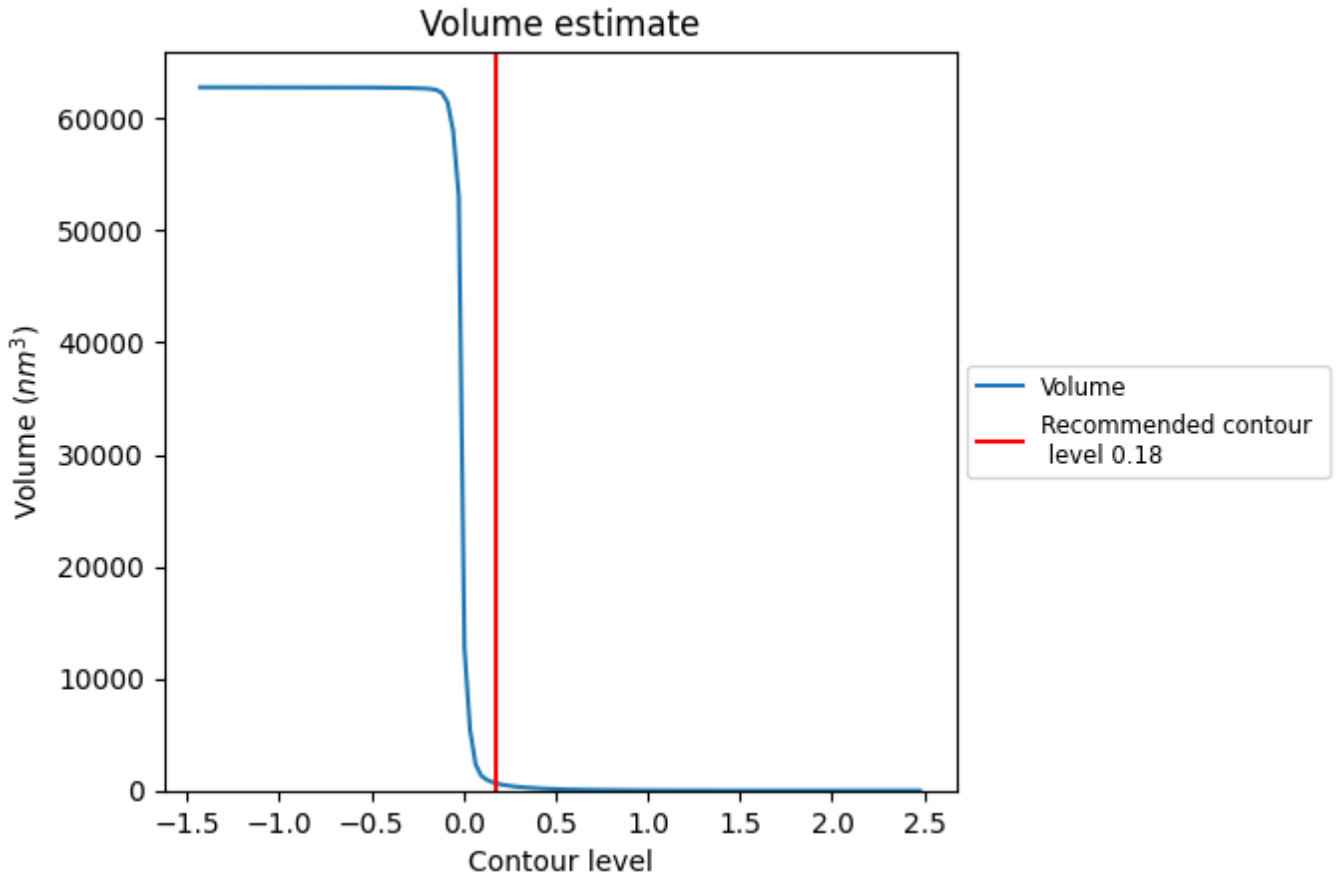
This section contains the results of statistical analysis of the map.

## 7.1 Map-value distribution




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.

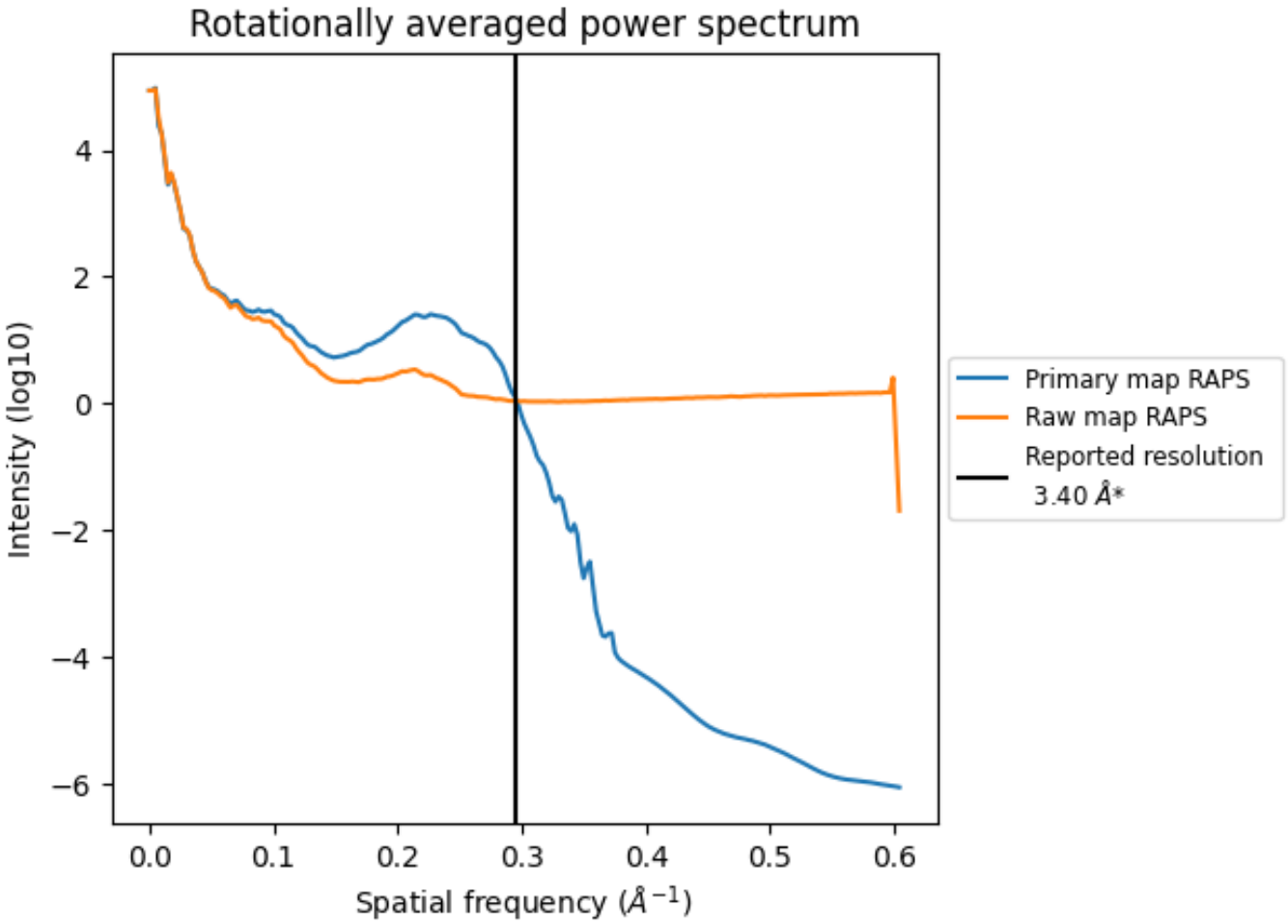
## 7.2 Volume estimate




The volume at the recommended contour level is 645 $nm^3$; this corresponds to an approximate mass of 583 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)

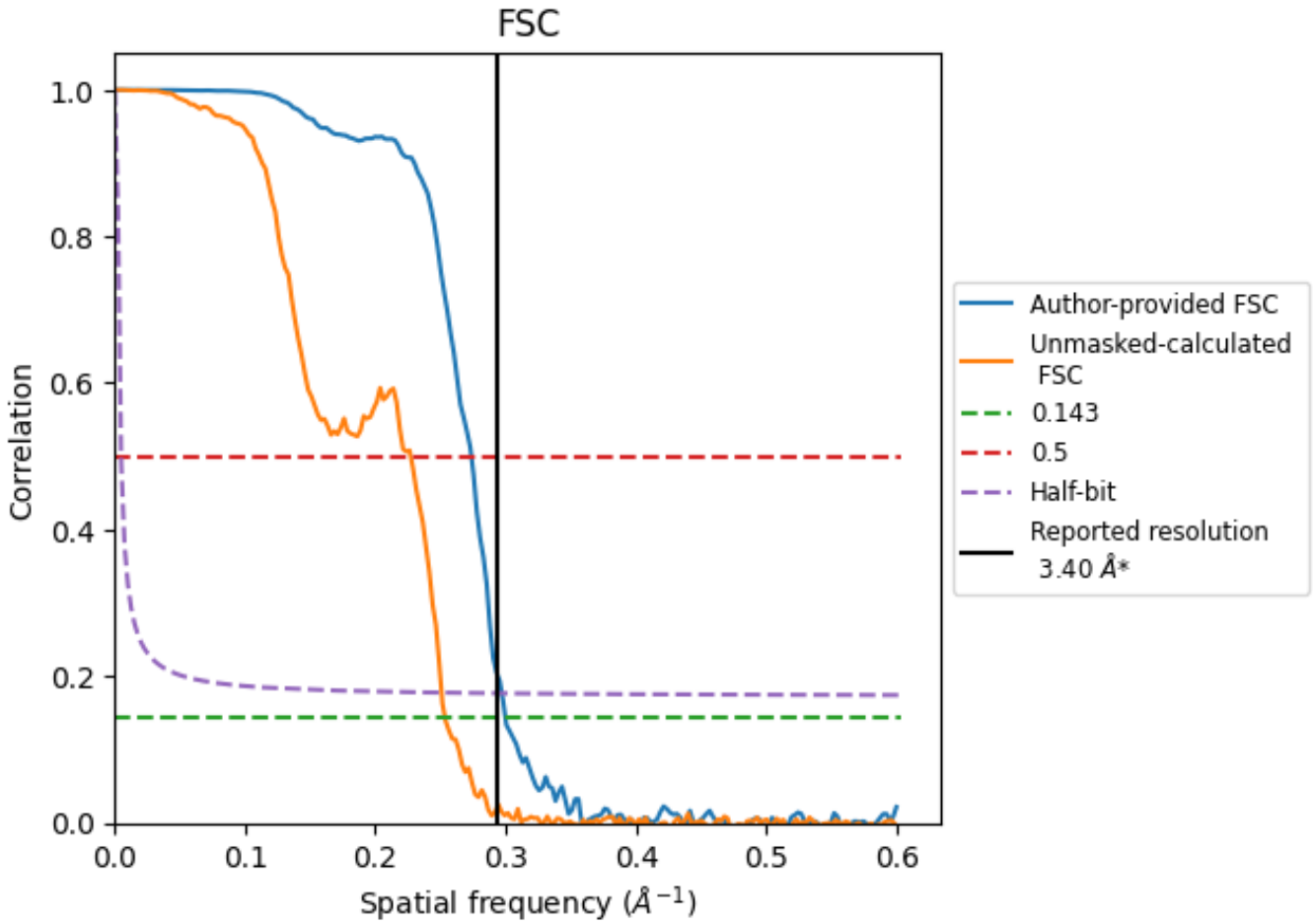



*Reported resolution corresponds to spatial frequency of 0.294 Å$^{-1}$

# 8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

## 8.1 FSC




*Reported resolution corresponds to spatial frequency of 0.294 Å$^{-1}$

## 8.2 Resolution estimates (i)

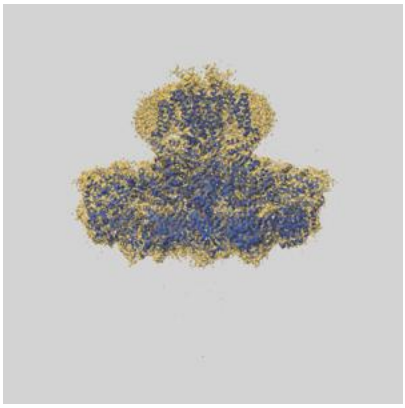
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.40 | - | - |
| Author-provided FSC curve | 3.33 | 3.65 | 3.36 |
| Unmasked-calculated* | 3.94 | 4.40 | 3.99 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.94 differs from the reported value 3.4 by more than 10 %

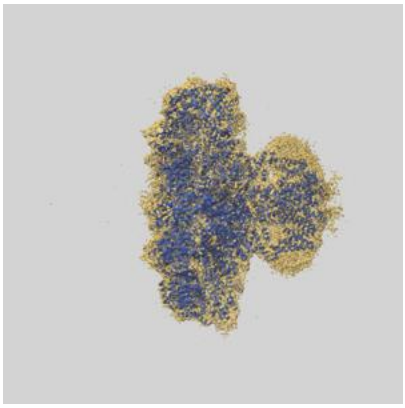
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-25669 and PDB model 7T3R. Per-residue inclusion information can be found in section 3 on page 6.

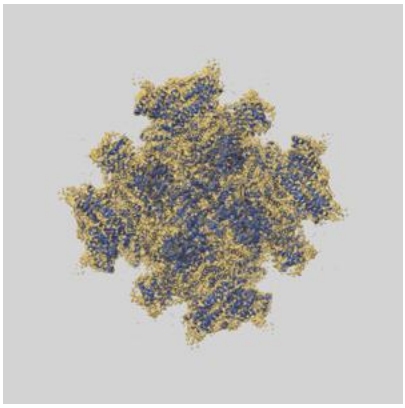
## 9.1 Map-model overlay



X



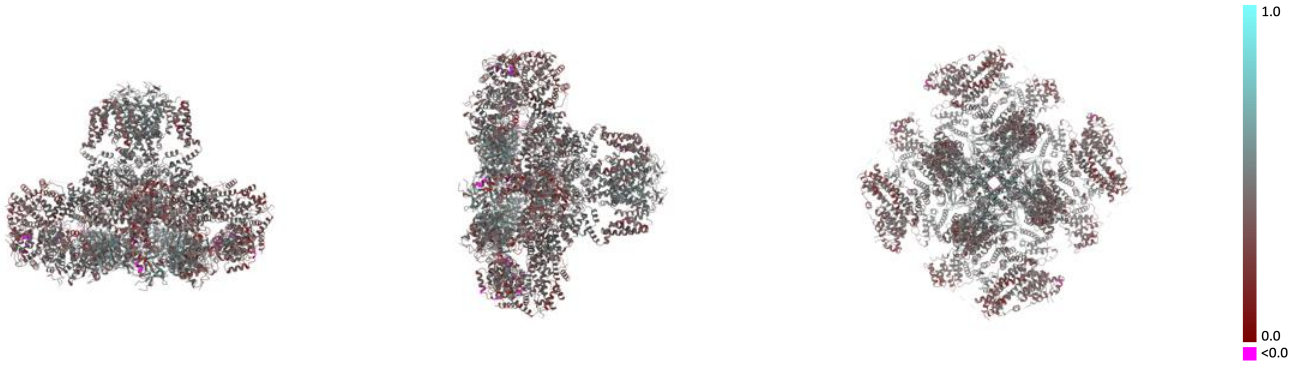
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.18 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.

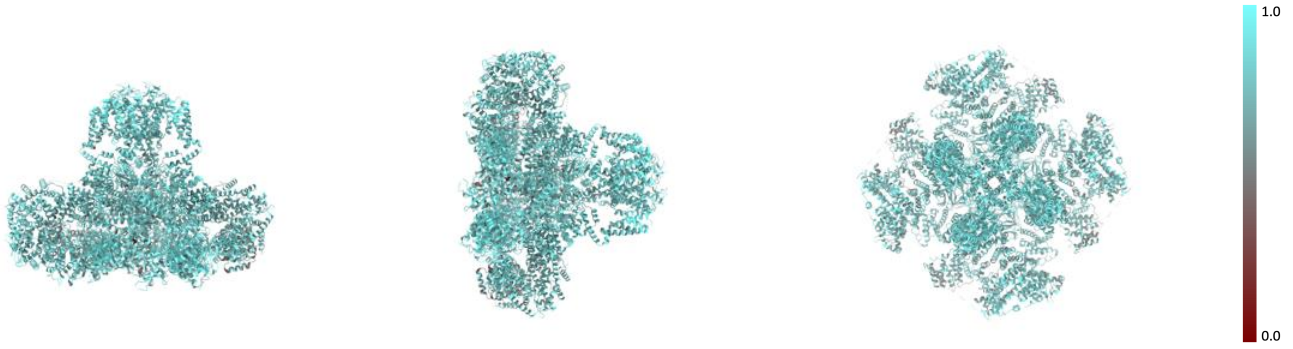
## 9.2 Q-score mapped to coordinate model (i)




X Y Z

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

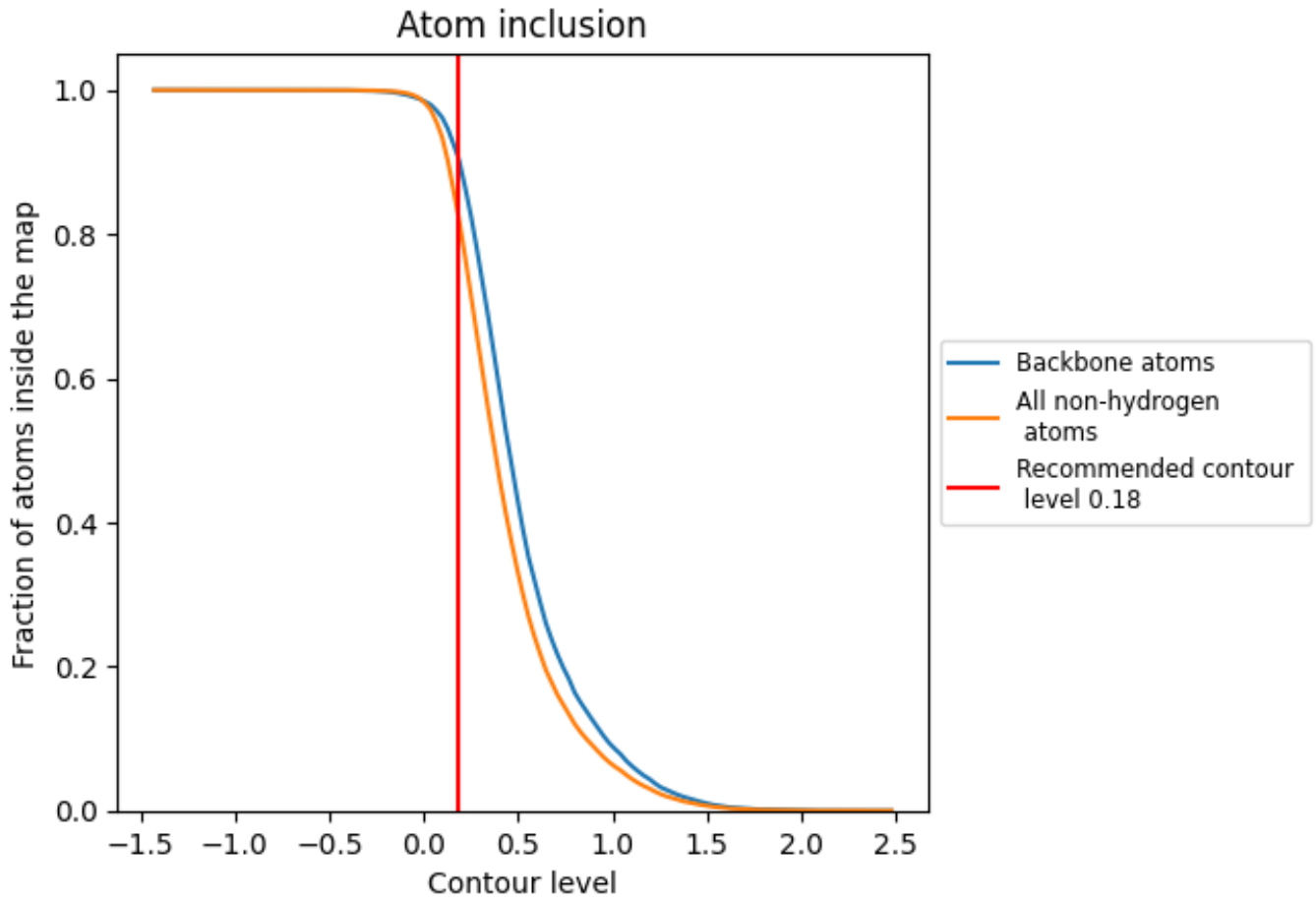
## 9.3 Atom inclusion mapped to coordinate model (i)




X Y Z

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 (0.18).

## 9.4 Atom inclusion (i)




At the recommended contour level, 91% of all backbone atoms, 83% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.18) and Q-score for the entire model and for each chain.


| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.8301 | 0.4320 |
| A | 0.8298 | 0.4320 |
| B | 0.8302 | 0.4320 |
| C | 0.8304 | 0.4310 |
| D | 0.8298 | 0.4320 |