



Full wwPDB X-ray Structure Validation Report ⓘ

May 29, 2020 – 06:11 am BST

PDB ID : 1I1K
Title : CRYSTAL STRUCTURE OF ESCHERICHIA COLI BRANCHED-CHAIN AMINO ACID AMINOTRANSFERASE.
Authors : Okada, K.; Hirotsu, K.; Hayashi, H.; Kagamiyama, H.
Deposited on : 2001-02-02
Resolution : 2.10 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

2 Entry composition i

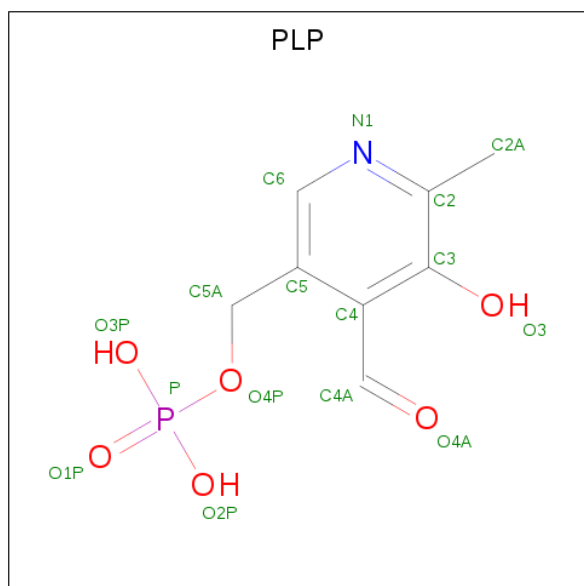
There are 3 unique types of molecules in this entry. The entry contains 7324 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 BRANCHED-CHAIN AMINO ACID AMINOTRANSFERASE.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|---------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 1 | A | 298 | Total 2325 | C 1474 | N 405 | O 436 | S 10 | 0 | 0 | 0 |
| 1 | B | 298 | Total 2325 | C 1474 | N 405 | O 436 | S 10 | 0 | 0 | 0 |
| 1 | C | 298 | Total 2325 | C 1474 | N 405 | O 436 | S 10 | 0 | 0 | 0 |

- Molecule 2 is PYRIDOXAL-5'-PHOSPHATE (three-letter code: PLP) (formula: C₈H₁₀NO₆P).



| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------------|--------|--------|--------|--------|---------|---------|
| | | | Total | C | N | O | P | | |
| 2 | A | 1 | Total 15 | C 8 | N 1 | O 5 | P 1 | 0 | 0 |
| 2 | B | 1 | Total 15 | C 8 | N 1 | O 5 | P 1 | 0 | 0 |
| 2 | C | 1 | Total 15 | C 8 | N 1 | O 5 | P 1 | 0 | 0 |

- Molecule 3 is water.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|------------|--------------|-----------------|--------------|----------|----------------|----------------|
| 3 | A | 94 | Total 94 | O 94 | 0 | 0 |
| 3 | B | 96 | Total 96 | O 96 | 0 | 0 |
| 3 | C | 114 | Total 114 | O 114 | 0 | 0 |

4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

| Property | Value | Source |
|--|---|-----------|
| Space group | C 2 2 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 100.93Å 156.06Å 141.53Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 30.00 – 2.10 | Depositor |
| % Data completeness (in resolution range) | (Not available) (30.00-2.10) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| Refinement program | X-PLOR 3.851 | Depositor |
| R, R_{free} | 0.189 , 0.231 | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| Total number of atoms | 7324 | wwPDB-VP |
| Average B, all atoms (Å ²) | 23.0 | wwPDB-VP |

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: PLP

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 | 0.39 | 1/2379 (0.0%) | 0.63 | 0/3223 |
| 1 | B | 0.40 | 1/2379 (0.0%) | 0.61 | 0/3223 |
| 1 | C | 0.38 | 1/2379 (0.0%) | 0.63 | 1/3223 (0.0%) |
| All | All | 0.39 | 3/7137 (0.0%) | 0.63 | 1/9669 (0.0%) |

All (3) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|------|-------------|----------|
| 1 | B | 681 | GLU | CD-OE2 | 7.48 | 1.33 | 1.25 |
| 1 | C | 1181 | GLU | CD-OE2 | 7.39 | 1.33 | 1.25 |
| 1 | A | 181 | GLU | CD-OE2 | 7.17 | 1.33 | 1.25 |

All (1) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|----------|------|-------------|----------|
| 1 | C | 1199 | LEU | CA-CB-CG | 5.51 | 127.96 | 115.30 |

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 2325 | 0 | 2265 | 35 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | B | 2325 | 0 | 2265 | 40 | 0 |
| 1 | C | 2325 | 0 | 2265 | 31 | 0 |
| 2 | A | 15 | 0 | 7 | 2 | 0 |
| 2 | B | 15 | 0 | 7 | 0 | 0 |
| 2 | C | 15 | 0 | 7 | 0 | 0 |
| 3 | A | 94 | 0 | 0 | 1 | 0 |
| 3 | B | 96 | 0 | 0 | 1 | 0 |
| 3 | C | 114 | 0 | 0 | 3 | 0 |
| All | All | 7324 | 0 | 6816 | 103 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (103) 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:B:634:ALA:HA | 1:B:762:THR:HG23 | 1.63 | 0.80 |
| 1:B:549:VAL:HG21 | 1:B:803:LEU:HB3 | 1.66 | 0.77 |
| 1:B:752:VAL:HG12 | 1:B:772:VAL:HG11 | 1.67 | 0.75 |
| 1:C:1049:VAL:HG21 | 1:C:1303:LEU:HB3 | 1.69 | 0.74 |
| 1:B:606:GLY:HA3 | 3:B:287:HOH:O | 1.91 | 0.71 |
| 1:C:1252:VAL:HG12 | 1:C:1272:VAL:HG11 | 1.74 | 0.69 |
| 1:A:101:PHE:HE2 | 1:A:120:ILE:HD13 | 1.58 | 0.67 |
| 1:B:702:VAL:HB | 1:B:751:GLU:HB2 | 1.80 | 0.64 |
| 1:C:1023:HIS:HD2 | 1:C:1025:MET:H | 1.48 | 0.61 |
| 1:A:7:TYR:HA | 1:A:15:VAL:O | 2.01 | 0.60 |
| 1:A:27:HIS:HE1 | 1:A:108:GLY:O | 1.84 | 0.60 |
| 1:C:1007:TYR:HA | 1:C:1015:VAL:O | 2.03 | 0.59 |
| 1:C:1082:CYS:O | 1:C:1085:VAL:HG12 | 2.04 | 0.58 |
| 1:A:9:TRP:CZ2 | 1:A:12:GLY:HA2 | 2.39 | 0.58 |
| 1:A:202:VAL:HB | 1:A:251:GLU:HB2 | 1.86 | 0.58 |
| 1:B:727:LYS:HD2 | 1:B:802:TRP:HZ2 | 1.70 | 0.56 |
| 1:A:81:ALA:O | 1:A:85:VAL:HG23 | 2.05 | 0.56 |
| 1:B:527:HIS:HD2 | 1:B:533:THR:OG1 | 1.87 | 0.56 |
| 1:B:506:ASP:O | 1:B:589:ASN:ND2 | 2.37 | 0.56 |
| 1:B:523:HIS:HD2 | 1:B:525:MET:HB2 | 1.69 | 0.55 |
| 1:B:777:CYS:SG | 1:B:782:LYS:HD2 | 2.47 | 0.55 |
| 1:A:209:THR:HG22 | 3:A:423:HOH:O | 2.06 | 0.55 |
| 1:C:1027:HIS:HD2 | 1:C:1033:THR:OG1 | 1.90 | 0.55 |
| 1:B:507:TYR:HA | 1:B:515:VAL:O | 2.07 | 0.54 |
| 1:B:723:ASP:OD2 | 1:B:727:LYS:HE2 | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:C:1006:ASP:O | 1:C:1089:ASN:OD1 | 2.26 | 0.54 |
| 1:C:1023:HIS:CD2 | 1:C:1025:MET:H | 2.25 | 0.54 |
| 1:A:6:ASP:O | 1:A:89:ASN:OD1 | 2.27 | 0.53 |
| 1:B:581:ALA:O | 1:B:585:VAL:HG23 | 2.09 | 0.53 |
| 1:C:1024:VAL:O | 1:C:1030:HIS:HE1 | 1.93 | 0.52 |
| 1:A:10:PHE:CE2 | 1:A:120:ILE:HD11 | 2.44 | 0.52 |
| 1:C:1191:ILE:HD11 | 1:C:1246:LEU:HG | 1.92 | 0.51 |
| 1:B:596:ILE:N | 1:B:596:ILE:HD12 | 2.26 | 0.50 |
| 1:C:1027:HIS:HE1 | 1:C:1108:GLY:O | 1.95 | 0.50 |
| 1:A:49:VAL:HG21 | 1:A:303:LEU:HB3 | 1.94 | 0.50 |
| 1:A:191:ILE:HD11 | 1:A:246:LEU:HG | 1.94 | 0.50 |
| 1:A:159:LYS:NZ | 2:A:413:PLP:O3 | 2.45 | 0.50 |
| 1:B:777:CYS:SG | 1:B:782:LYS:CD | 3.01 | 0.49 |
| 1:B:595:TYR:HE2 | 1:B:597:ARG:NH1 | 2.11 | 0.49 |
| 1:A:23:HIS:HD2 | 1:A:25:MET:HB2 | 1.78 | 0.49 |
| 1:C:1037:GLU:OE2 | 1:C:1056:HIS:HD2 | 1.96 | 0.49 |
| 1:C:1277:CYS:SG | 1:C:1282:LYS:CD | 3.00 | 0.48 |
| 1:A:101:PHE:CE2 | 1:A:120:ILE:HD13 | 2.45 | 0.48 |
| 1:B:540:ARG:HH11 | 1:B:540:ARG:HG2 | 1.79 | 0.48 |
| 1:A:45:HIS:H | 1:A:45:HIS:CD2 | 2.31 | 0.48 |
| 1:C:1040:ARG:HH11 | 1:C:1040:ARG:HG2 | 1.78 | 0.48 |
| 1:A:197:GLU:HG3 | 1:A:254:MET:HB3 | 1.94 | 0.48 |
| 1:A:34:SER:HB2 | 1:A:99:LEU:HD21 | 1.95 | 0.47 |
| 1:B:611:PRO:HB2 | 1:B:615:TYR:CE2 | 2.49 | 0.47 |
| 1:C:1255:SER:HA | 1:C:1260:GLU:O | 2.15 | 0.47 |
| 1:A:4:LYS:HG2 | 1:A:5:ALA:N | 2.30 | 0.46 |
| 1:B:535:VAL:HG11 | 1:B:563:SER:HB2 | 1.97 | 0.46 |
| 1:B:726:ILE:O | 1:B:730:LYS:HG3 | 2.16 | 0.46 |
| 1:B:635:LEU:HG | 1:B:636:GLU:H | 1.81 | 0.46 |
| 1:A:273:GLY:O | 1:A:274:GLU:HB2 | 2.16 | 0.46 |
| 1:A:97:ARG:HG3 | 1:A:97:ARG:O | 2.16 | 0.45 |
| 1:C:1010:PHE:CD1 | 1:C:1120:ILE:HD11 | 2.52 | 0.45 |
| 1:B:595:TYR:CE2 | 1:B:597:ARG:NH1 | 2.85 | 0.45 |
| 1:C:1273:GLY:O | 1:C:1274:GLU:HB2 | 2.16 | 0.45 |
| 1:C:1035:VAL:HG12 | 1:C:1060:LEU:CD2 | 2.47 | 0.45 |
| 1:C:1277:CYS:SG | 1:C:1282:LYS:HD2 | 2.57 | 0.45 |
| 1:C:1049:VAL:CG2 | 1:C:1303:LEU:HB3 | 2.45 | 0.45 |
| 1:C:1225:ILE:HD11 | 1:C:1261:ILE:CD1 | 2.48 | 0.44 |
| 1:A:266:SER:HA | 1:A:272:VAL:HG23 | 1.99 | 0.44 |
| 1:B:509:TRP:CZ2 | 1:B:512:GLY:HA2 | 2.53 | 0.44 |
| 1:B:638:GLY:HA2 | 1:B:763:PRO:HG2 | 1.98 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:C:1004:LYS:HG2 | 1:C:1005:ALA:N | 2.32 | 0.44 |
| 1:C:1096:ILE:N | 1:C:1096:ILE:HD12 | 2.32 | 0.44 |
| 1:B:523:HIS:CD2 | 1:B:525:MET:H | 2.35 | 0.44 |
| 1:C:1010:PHE:CG | 1:C:1120:ILE:HD11 | 2.52 | 0.44 |
| 1:A:217:LEU:HA | 1:A:218:PRO:HD3 | 1.88 | 0.44 |
| 1:B:516:ARG:HH11 | 1:B:516:ARG:HG3 | 1.82 | 0.43 |
| 1:A:244:GLU:HG2 | 1:B:655:PRO:HB3 | 2.00 | 0.43 |
| 1:B:744:GLU:HG2 | 1:C:1155:PRO:HB3 | 2.00 | 0.43 |
| 1:A:119:VAL:C | 1:A:120:ILE:HD12 | 2.39 | 0.43 |
| 1:B:703:LYS:HB3 | 1:B:704:ASP:H | 1.63 | 0.43 |
| 1:C:1202:VAL:HB | 1:C:1251:GLU:HB2 | 2.00 | 0.43 |
| 1:A:199:LEU:O | 1:A:209:THR:HG23 | 2.19 | 0.43 |
| 1:A:255:SER:HA | 1:A:260:GLU:O | 2.19 | 0.42 |
| 1:B:527:HIS:HE1 | 1:B:608:GLY:O | 2.02 | 0.42 |
| 1:C:1186:ASP:HB2 | 3:C:107:HOH:O | 2.18 | 0.42 |
| 1:A:14:MET:HE2 | 1:A:88:LYS:HG2 | 2.00 | 0.42 |
| 1:A:210:PRO:HA | 1:A:211:PRO:HD3 | 1.89 | 0.42 |
| 1:A:35:VAL:HG11 | 1:A:63:SER:HB2 | 2.02 | 0.42 |
| 1:B:554:ARG:NH2 | 1:B:579:MET:HE3 | 2.35 | 0.41 |
| 1:A:193:GLU:OE2 | 2:A:413:PLP:N1 | 2.54 | 0.41 |
| 1:B:514:MET:HE3 | 1:B:585:VAL:HA | 2.03 | 0.41 |
| 1:B:545:HIS:CD2 | 1:B:545:HIS:H | 2.39 | 0.41 |
| 1:B:773:GLY:O | 1:B:774:GLU:HB2 | 2.20 | 0.41 |
| 1:A:138:GLY:HA2 | 1:A:263:PRO:HG2 | 2.02 | 0.41 |
| 1:B:766:SER:HA | 1:B:772:VAL:HG23 | 2.03 | 0.41 |
| 1:B:575:ILE:HG22 | 1:B:579:MET:CE | 2.51 | 0.41 |
| 1:C:1040:ARG:HD2 | 3:C:231:HOH:O | 2.21 | 0.41 |
| 1:C:1056:HIS:HE1 | 3:C:58:HOH:O | 2.04 | 0.41 |
| 1:A:37:GLU:OE2 | 1:A:56:HIS:HD2 | 2.04 | 0.41 |
| 1:B:756:GLY:O | 1:B:760:GLU:N | 2.54 | 0.41 |
| 1:B:755:SER:HA | 1:B:760:GLU:O | 2.21 | 0.41 |
| 1:C:1262:THR:HA | 1:C:1263:PRO:HD3 | 1.96 | 0.41 |
| 1:A:134:ALA:O | 1:A:135:LEU:HD12 | 2.21 | 0.40 |
| 1:B:575:ILE:HG22 | 1:B:579:MET:HE2 | 2.03 | 0.40 |
| 1:A:213:THR:HG21 | 1:C:1240:VAL:HG12 | 2.02 | 0.40 |
| 1:A:91:LEU:CD2 | 1:A:125:PRO:HG3 | 2.52 | 0.40 |
| 1:B:516:ARG:NH1 | 1:B:516:ARG:HG3 | 2.36 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

3 ligands are modelled in this entry.

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|------|------|--------------|------|-------------|-------------|------|-------------|
| | | | | | Counts | RMSZ | $\# Z > 2$ | Counts | RMSZ | $\# Z > 2$ |
| 2 | PLP | A | 413 | 1 | 15,15,16 | 1.22 | 1 (6%) | 20,22,23 | 1.21 | 3 (15%) |
| 2 | PLP | C | 1413 | 1 | 15,15,16 | 1.27 | 2 (13%) | 20,22,23 | 1.39 | 4 (20%) |
| 2 | PLP | B | 913 | 1 | 15,15,16 | 1.42 | 2 (13%) | 20,22,23 | 1.68 | 5 (25%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|------|------|---------|----------|---------|
| 2 | PLP | A | 413 | 1 | - | 0/6/6/8 | 0/1/1/1 |
| 2 | PLP | C | 1413 | 1 | - | 0/6/6/8 | 0/1/1/1 |
| 2 | PLP | B | 913 | 1 | - | 2/6/6/8 | 0/1/1/1 |

All (5) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 2 | B | 913 | PLP | C3-C2 | -3.61 | 1.37 | 1.40 |
| 2 | C | 1413 | PLP | C3-C2 | -2.84 | 1.38 | 1.40 |
| 2 | A | 413 | PLP | C3-C2 | -2.54 | 1.38 | 1.40 |
| 2 | B | 913 | PLP | P-O3P | -2.40 | 1.45 | 1.54 |
| 2 | C | 1413 | PLP | P-O3P | -2.12 | 1.46 | 1.54 |

All (12) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 2 | B | 913 | PLP | O4P-C5A-C5 | 5.01 | 118.89 | 109.35 |
| 2 | C | 1413 | PLP | O2P-P-O4P | -3.19 | 98.24 | 106.73 |
| 2 | B | 913 | PLP | O2P-P-O4P | -2.80 | 99.29 | 106.73 |
| 2 | C | 1413 | PLP | O4P-C5A-C5 | 2.50 | 114.12 | 109.35 |
| 2 | A | 413 | PLP | O3P-P-O1P | 2.47 | 120.33 | 110.68 |
| 2 | C | 1413 | PLP | O3P-P-O1P | 2.43 | 120.21 | 110.68 |
| 2 | B | 913 | PLP | O3P-P-O1P | 2.19 | 119.27 | 110.68 |
| 2 | B | 913 | PLP | C6-C5-C4 | 2.16 | 119.86 | 118.16 |
| 2 | A | 413 | PLP | C5-C6-N1 | -2.15 | 120.23 | 123.82 |
| 2 | B | 913 | PLP | C5-C6-N1 | -2.10 | 120.32 | 123.82 |
| 2 | C | 1413 | PLP | C5-C6-N1 | -2.08 | 120.35 | 123.82 |
| 2 | A | 413 | PLP | O4P-C5A-C5 | 2.01 | 113.18 | 109.35 |

There are no chirality outliers.

All (2) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|---------------|
| 2 | B | 913 | PLP | C5A-O4P-P-O2P |
| 2 | B | 913 | PLP | C5A-O4P-P-O3P |

There are no ring outliers.

1 monomer is involved in 2 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | A | 413 | PLP | 2 | 0 |

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.