# Full wwPDB EM Validation Report ⓘ

Feb 10, 2024 – 07:04 am GMT

| | | |
|---|---|---|
| PDB ID | : | 8R2I |
| EMDB ID | : | EMD-18848 |
| Title | : | Cryo-EM Structure of native Photosystem II assembly intermediate from Chlamydomonas reinhardtii |
| Authors | : | Fadeeva, M.; Klaiman, D.; Kandiah, E.; Nelson, N. |
| Deposited on | : | 2023-11-06 |
| Resolution | : | 2.90 Å(reported) |

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

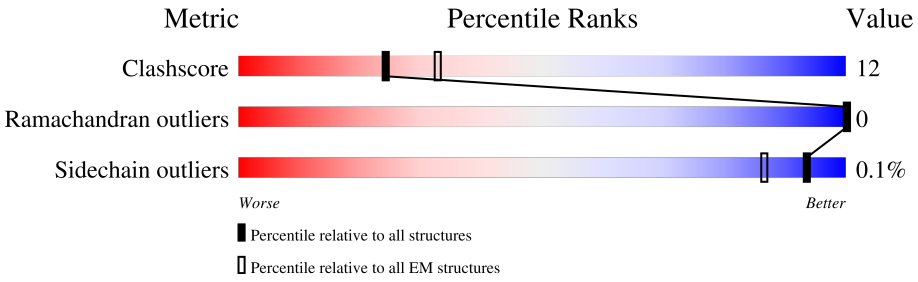
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev70 |
| Mogul | : | 1.8.4, CSD as541be (2020) |
| MolProbity | : | 4.02b-467 |
| buster-report | : | 1.1.7 (2018) |
| Percentile statistics | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.36 |

# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 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 | 327 | 73% 21% 6% |
| 2 | B | 487 | 81% 19% |
| 3 | C | 423 | 79% 21% |
| 4 | D | 350 | 74% 21% |
| 5 | E | 76 | 79% 21% |
| 6 | F | 33 | 70% 30% |
| 7 | H | 65 | 85% 15% |
| 8 | I | 28 | 86% 14% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 9 | K | 37 |   |
| 10 | 2 | 101 |   |
| 11 | 1 | 32 |   |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|---|---|---|---|---|---|---|---|
| 13 | CLA | A | 402 | X | - | - | - |
| 13 | CLA | A | 403 | X | - | - | - |
| 13 | CLA | A | 405 | X | - | - | - |
| 13 | CLA | B | 501 | X | - | - | - |
| 13 | CLA | B | 502 | X | - | - | - |
| 13 | CLA | B | 503 | X | - | - | - |
| 13 | CLA | B | 504 | X | - | - | - |
| 13 | CLA | B | 505 | X | - | - | - |
| 13 | CLA | B | 506 | X | - | - | - |
| 13 | CLA | B | 507 | X | - | - | - |
| 13 | CLA | B | 508 | X | - | - | - |
| 13 | CLA | B | 509 | X | - | - | - |
| 13 | CLA | B | 510 | X | - | - | - |
| 13 | CLA | B | 511 | X | - | - | - |
| 13 | CLA | B | 512 | X | - | - | - |
| 13 | CLA | B | 513 | X | - | - | - |
| 13 | CLA | B | 514 | X | - | - | - |
| 13 | CLA | B | 515 | X | - | - | - |
| 13 | CLA | B | 516 | X | - | - | - |
| 13 | CLA | C | 501 | X | - | - | - |
| 13 | CLA | C | 502 | X | - | - | - |
| 13 | CLA | C | 503 | X | - | - | - |
| 13 | CLA | C | 504 | X | - | - | - |
| 13 | CLA | C | 505 | X | - | - | - |
| 13 | CLA | C | 506 | X | - | - | - |
| 13 | CLA | C | 507 | X | - | - | - |
| 13 | CLA | C | 508 | X | - | - | - |
| 13 | CLA | C | 509 | X | - | - | - |
| 13 | CLA | C | 510 | X | - | - | - |
| 13 | CLA | C | 511 | X | - | - | - |
| 13 | CLA | C | 512 | X | - | - | - |
| 13 | CLA | C | 513 | X | - | - | - |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|---|---|---|---|---|---|---|---|
| 13 | CLA | D | 401 | X | - | - | - |
| 13 | CLA | D | 404 | X | - | - | - |
| 13 | CLA | D | 405 | X | - | - | - |
| 15 | BCR | H | 101 | - | X | - | - |

# 2 Entry composition

There are 24 unique types of molecules in this entry. The entry contains 18054 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 Photosystem II protein D1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 306 | Total | C | N | O | S | 0 | 0 |
| | | | 2390 | 1570 | 396 | 409 | 15 | | |

- Molecule 2 is a protein called Photosystem II CP47 reaction center protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 2 | B | 487 | Total | C | N | O | S | 0 | 0 |
| | | | 3811 | 2494 | 638 | 667 | 12 | | |

- Molecule 3 is a protein called Photosystem II CP43 reaction center protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 3 | C | 423 | Total | C | N | O | S | 0 | 0 |
| | | | 3292 | 2164 | 547 | 565 | 16 | | |

- Molecule 4 is a protein called Photosystem II D2 protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 4 | D | 335 | Total | C | N | O | S | 0 | 0 |
| | | | 2674 | 1770 | 437 | 455 | 12 | | |

- Molecule 5 is a protein called Cytochrome b559 subunit alpha.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 5 | E | 76 | Total | C | N | O | 0 | 0 |
| | | | 619 | 404 | 102 | 113 | | |

- Molecule 6 is a protein called Cytochrome b559 subunit beta.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 6 | F | 33 | Total | C | N | O | S | 0 | 0 |
| | | | 269 | 185 | 44 | 39 | 1 | | |

- Molecule 7 is a protein called Photosystem II reaction center protein H.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | H | 65 | Total | C | N | O | S | 0 | 0 |
| | | | 497 | 332 | 73 | 90 | 2 | | |

- Molecule 8 is a protein called Photosystem II reaction center protein I.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 8 | I | 28 | Total | C | N | O | S | 0 | 0 |
| | | | 231 | 163 | 30 | 36 | 2 | | |

- Molecule 9 is a protein called Photosystem II reaction center protein K.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 9 | K | 37 | Total | C | N | O | 0 | 0 |
| | | | 296 | 209 | 43 | 44 | | |

- Molecule 10 is a protein called Chain U, Predicted protein.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 10 | 2 | 101 | Total | C | N | O | 0 | 0 |
| | | | 790 | 501 | 137 | 152 | | |

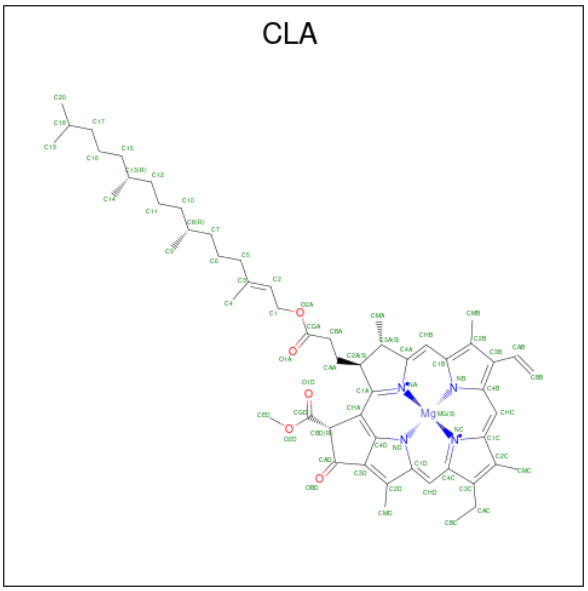
- Molecule 11 is a protein called Photosystem II reaction center protein Ycf12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 1 | 32 | Total | C | N | O | S | 0 | 0 |
| | | | 224 | 146 | 37 | 40 | 1 | | |

- Molecule 12 is FE (II) ION (three-letter code: FE2) (formula: Fe).

| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 12 | A | 1 | Total | Fe | 0 |
| | | | 1 | 1 | |

- Molecule 13 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).




| Mol | Chain | Residues | Atoms | | | | | AltConf |
|---|---|---|---|---|---|---|---|---|
| 13 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 49 | 39 | 1 | 4 | 5 | |
| 13 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 56 | 46 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 61 | 51 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |

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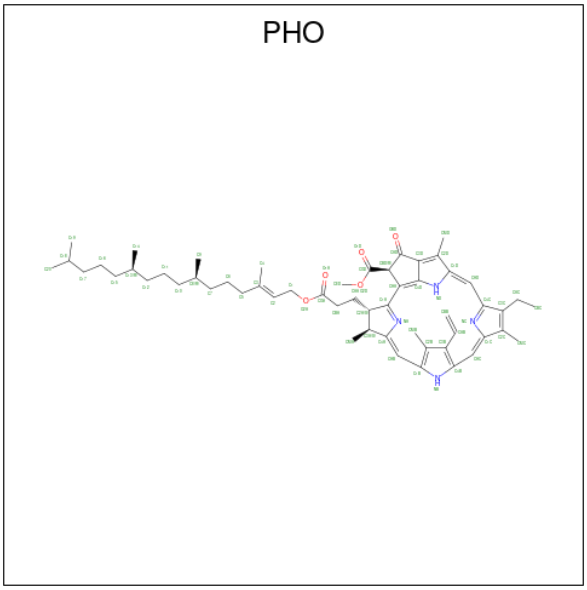
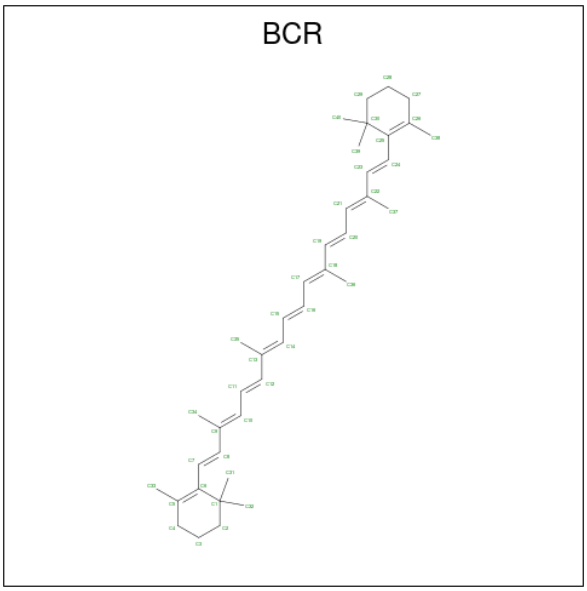
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|---|---|---|---|---|---|---|---|---|
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 60 | 50 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 36 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | B | 1 | Total | C | Mg | N | O | 0 |
| | | | 52 | 42 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 48 | 38 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 52 | 42 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 52 | 42 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 13 | C | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | D | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | D | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 13 | D | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 36 | 1 | 4 | 5 | |

- Molecule 14 is PHEOPHYTIN A (three-letter code: PHO) (formula: $C_{55}H_{74}N_4O_5$).




| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 14 | A | 1 | Total C N O<br>64 55 4 5 | 0 |
| 14 | D | 1 | Total C N O<br>64 55 4 5 | 0 |

- Molecule 15 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).




| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 15 | A | 1 | Total C<br>40 40 | 0 |

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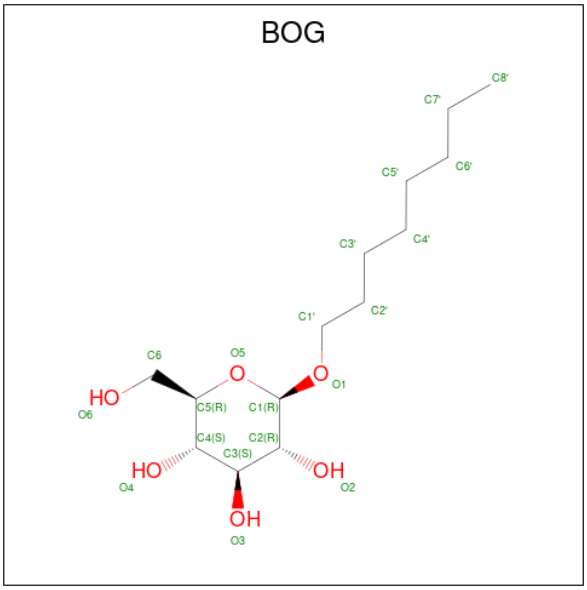
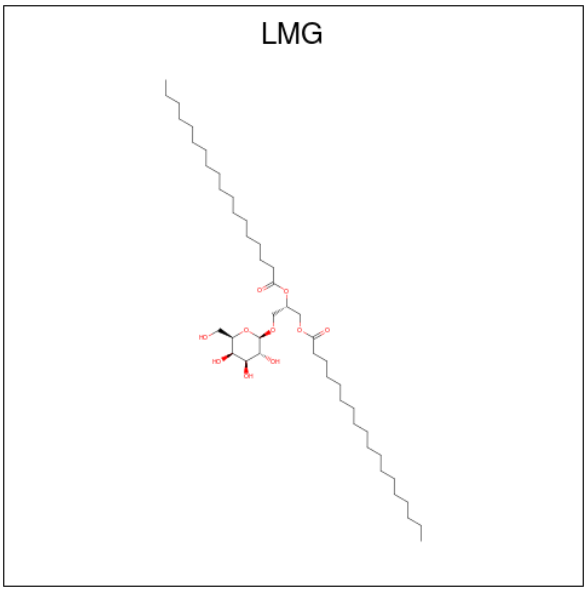
| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 15 | B | 1 | Total C<br>40 40 | 0 |
| 15 | B | 1 | Total C<br>40 40 | 0 |
| 15 | C | 1 | Total C<br>40 40 | 0 |
| 15 | C | 1 | Total C<br>40 40 | 0 |
| 15 | C | 1 | Total C<br>40 40 | 0 |
| 15 | D | 1 | Total C<br>40 40 | 0 |
| 15 | H | 1 | Total C<br>40 40 | 0 |

- Molecule 16 is octyl beta-D-glucopyranoside (three-letter code: BOG) (formula: $C_{14}H_{28}O_6$).



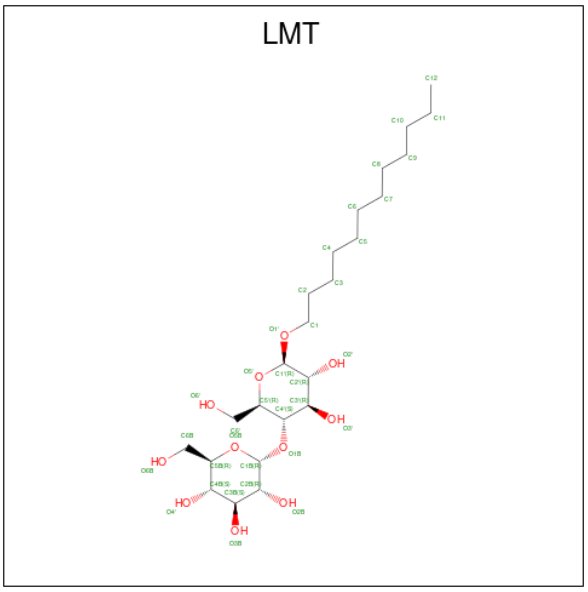

| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 16 | A | 1 | Total C O<br>20 14 6 | 0 |
| 16 | C | 1 | Total C O<br>20 14 6 | 0 |
| 16 | D | 1 | Total C O<br>20 14 6 | 0 |

- Molecule 17 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$).




| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 17 | B | 1 | Total | C | O | 0 |
| | | | 41 | 31 | 10 | |
| 17 | H | 1 | Total | C | O | 0 |
| | | | 48 | 38 | 10 | |

- Molecule 18 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).




| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 18 | B | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |

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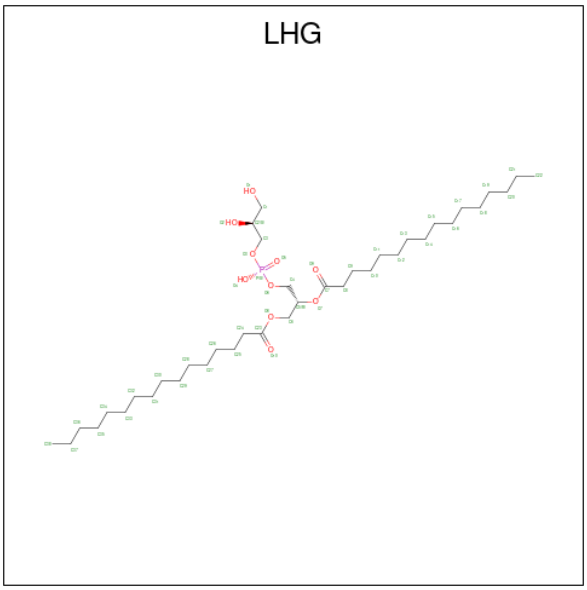
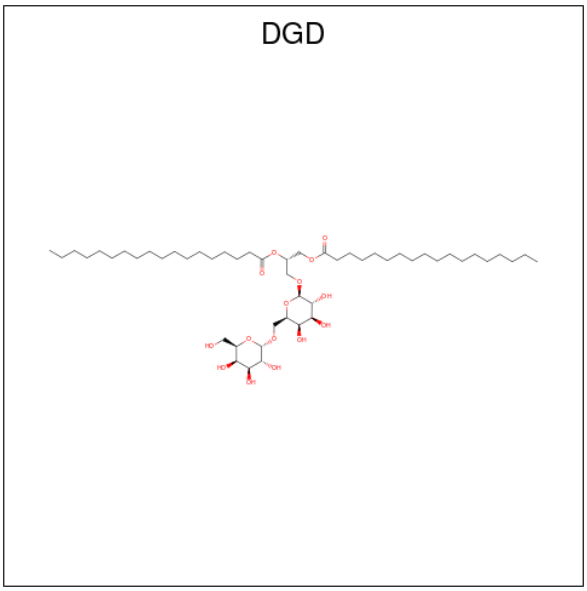
| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 18 | B | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |

- Molecule 19 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$).



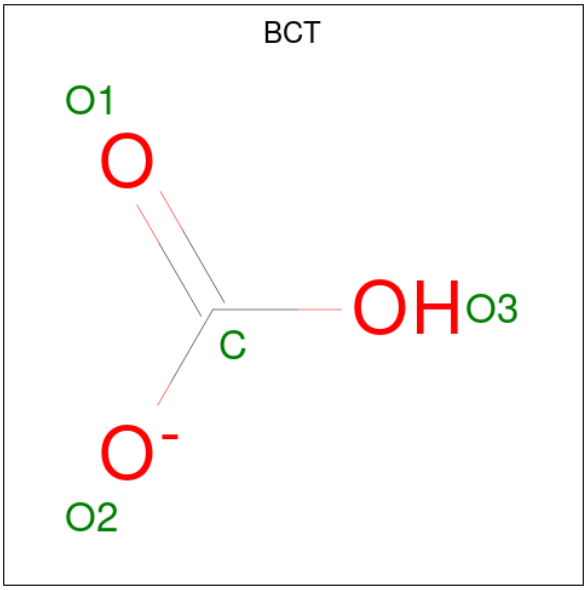

| Mol | Chain | Residues | Atoms | | | | AltConf |
|---|---|---|---|---|---|---|---|
| 19 | B | 1 | Total | C | O | P | 0 |
| | | | 44 | 33 | 10 | 1 | |

- Molecule 20 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).




| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 20 | C | 1 | Total | C | O | 0 |
| | | | 55 | 40 | 15 | |

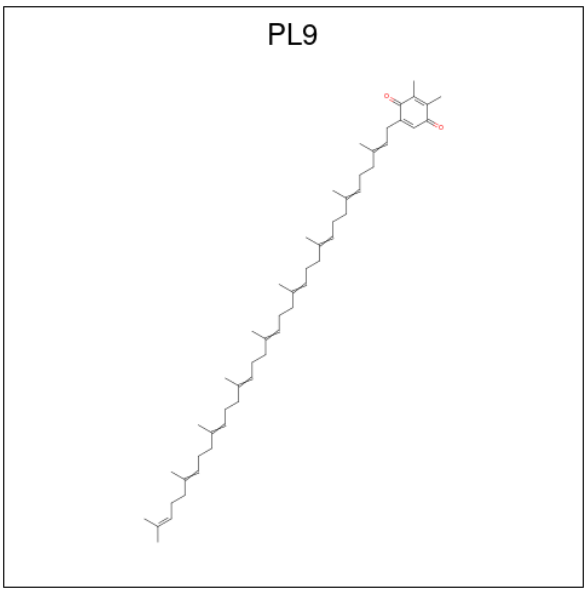
- Molecule 21 is BICARBONATE ION (three-letter code: BCT) (formula: $CHO_3$).




| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 21 | D | 1 | Total | C | O | 0 |
| | | | 4 | 1 | 3 | |

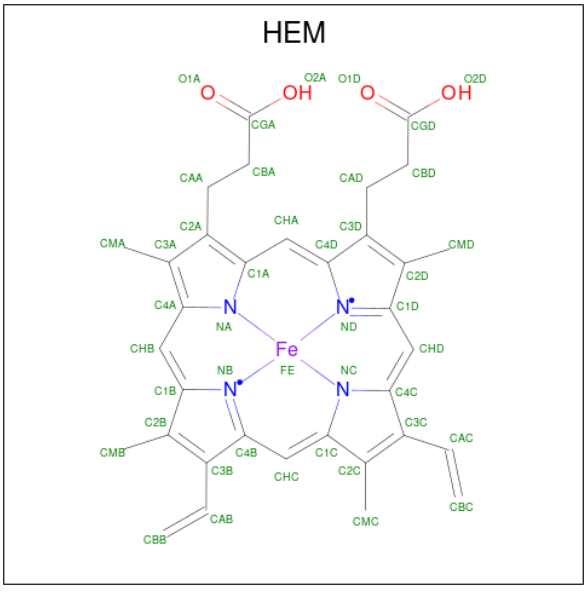
- Molecule 22 is 2,3-DIMETHYL-5-(3,7,11,15,19,23,27,31,35-NONAMETHYL-2,6,10,14,18,22,26,30,34-HEXATRIACONTANONAENYL-2,5-CYCLOHEXADIENE-1,4-DIONE-2,3-DIMETHYL-5-SOLANESYL-1,4-BENZOQUINONE (three-letter code: PL9) (formula:

$C_{53}H_{80}O_2$).




| Mol | Chain | Residues | Atoms | | | AltConf |
|---|---|---|---|---|---|---|
| 22 | D | 1 | Total | C | O | 0 |
| | | | 55 | 53 | 2 | |

- Molecule 23 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).




| Mol | Chain | Residues | Atoms | | | | | AltConf |
|---|---|---|---|---|---|---|---|---|
| 23 | E | 1 | Total | C | Fe | N | O | 0 |
| | | | 43 | 34 | 1 | 4 | 4 | |

- Molecule 24 is water.

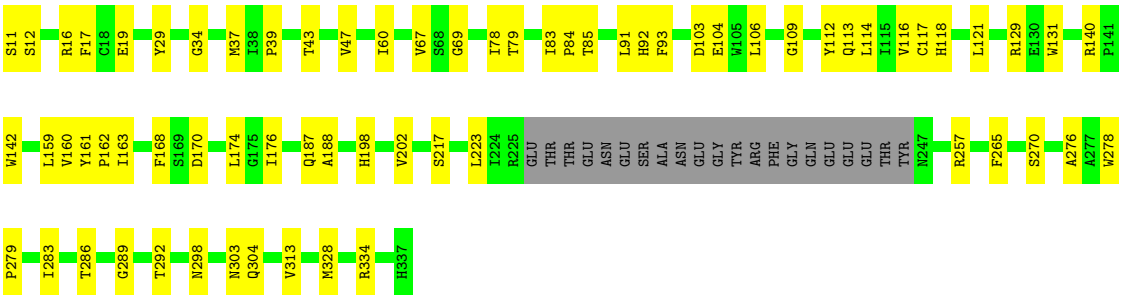
| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 24 | A | 1 | Total O<br>1 1 | 0 |
| 24 | B | 2 | Total O<br>2 2 | 0 |
| 24 | C | 1 | Total O<br>1 1 | 0 |
| 24 | D | 1 | Total O<br>1 1 | 0 |

# 3 Residue-property plots (i)

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

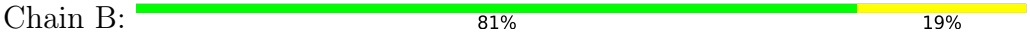
• Molecule 1: Photosystem II protein D1

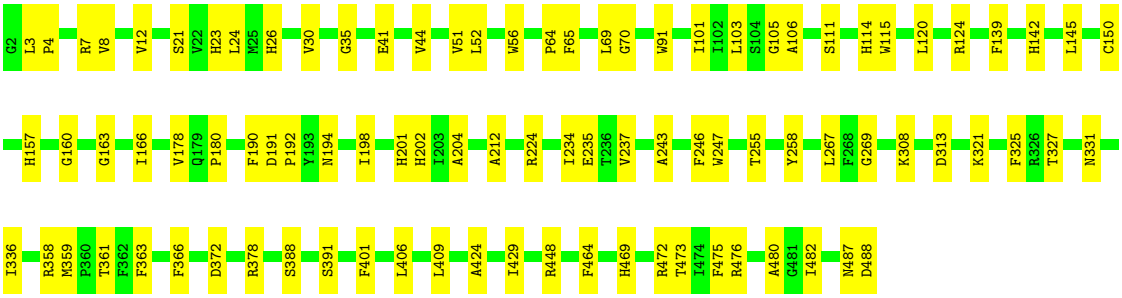
Chain A:


• Molecule 2: Photosystem II CP47 reaction center protein

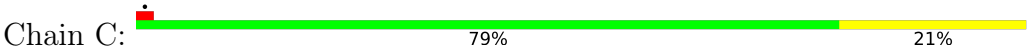
Chain B:

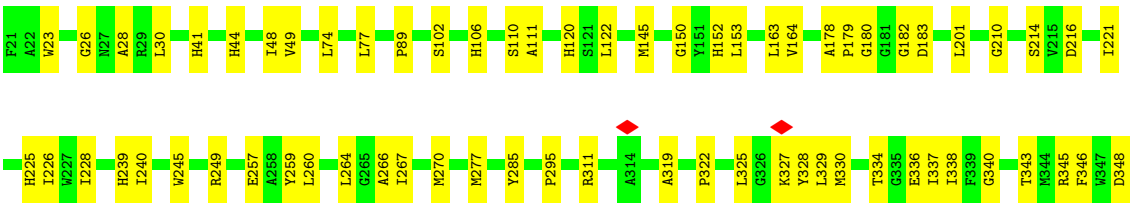


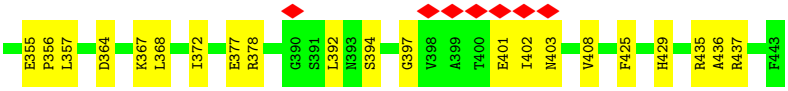




• Molecule 3: Photosystem II CP43 reaction center protein

Chain C:

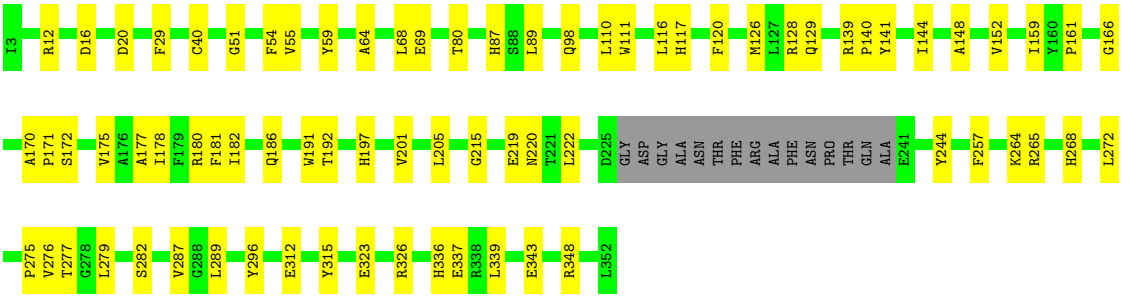




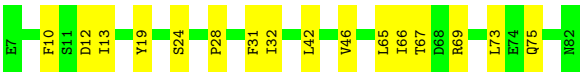

• Molecule 4: Photosystem II D2 protein

Chain D:

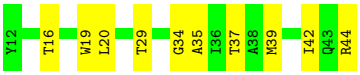

• Molecule 5: Cytochrome b559 subunit alpha

Chain E:


• Molecule 6: Cytochrome b559 subunit beta

Chain F:

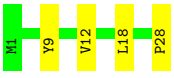

• Molecule 7: Photosystem II reaction center protein H

Chain H:



• Molecule 8: Photosystem II reaction center protein I

Chain I:

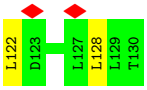

• Molecule 9: Photosystem II reaction center protein K

Chain K:


• Molecule 10: Chain U, Predicted protein

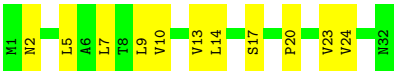
Chain 2:






• Molecule 11: Photosystem II reaction center protein Ycf12

Chain 1:

# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 327737 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | NONE | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 1.07 | Depositor |
| Minimum defocus (nm) | 800 | Depositor |
| Maximum defocus (nm) | 2200 | Depositor |
| Magnification | 105000 | Depositor |
| Image detector | GATAN K3 BIOQUANTUM (6k x 4k) | Depositor |
| Maximum map value | 0.043 | Depositor |
| Minimum map value | -0.016 | Depositor |
| Average map value | 0.000 | Depositor |
| Map value standard deviation | 0.002 | Depositor |
| Recommended contour level | 0.006 | Depositor |
| Map size (Å) | 285.6, 285.6, 285.6 | wwPDB |
| Map dimensions | 340, 340, 340 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.84000003, 0.84000003, 0.84000003 | Depositor |

# 5 Model quality

## 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: DGD, PL9, LMT, HEM, LMG, CLA, BCT, FE2, BOG, PHO, BCR, LHG

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 | 0.26 | 0/2466 | 0.46 | 0/3362 |
| 2 | B | 0.26 | 0/3939 | 0.46 | 0/5363 |
| 3 | C | 0.25 | 0/3410 | 0.43 | 0/4650 |
| 4 | D | 0.26 | 0/2765 | 0.46 | 0/3770 |
| 5 | E | 0.26 | 0/637 | 0.51 | 0/869 |
| 6 | F | 0.25 | 0/278 | 0.48 | 0/379 |
| 7 | H | 0.27 | 0/508 | 0.45 | 0/696 |
| 8 | I | 0.27 | 0/238 | 0.39 | 0/323 |
| 9 | K | 0.27 | 0/308 | 0.50 | 0/425 |
| 10 | 2 | 0.25 | 0/804 | 0.48 | 0/1086 |
| 11 | 1 | 0.26 | 0/224 | 0.53 | 0/306 |
| All | All | 0.26 | 0/15577 | 0.46 | 0/21229 |

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 | 2390 | 0 | 2328 | 57 | 0 |
| 2 | B | 3811 | 0 | 3686 | 81 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 3 | C | 3292 | 0 | 3176 | 71 | 0 |
| 4 | D | 2674 | 0 | 2573 | 69 | 0 |
| 5 | E | 619 | 0 | 605 | 23 | 0 |
| 6 | F | 269 | 0 | 279 | 9 | 0 |
| 7 | H | 497 | 0 | 520 | 10 | 0 |
| 8 | I | 231 | 0 | 240 | 4 | 0 |
| 9 | K | 296 | 0 | 308 | 8 | 0 |
| 10 | 2 | 790 | 0 | 805 | 20 | 0 |
| 11 | 1 | 224 | 0 | 257 | 19 | 0 |
| 12 | A | 1 | 0 | 0 | 0 | 0 |
| 13 | A | 169 | 0 | 158 | 22 | 0 |
| 13 | B | 960 | 0 | 969 | 84 | 0 |
| 13 | C | 782 | 0 | 786 | 54 | 0 |
| 13 | D | 176 | 0 | 175 | 21 | 0 |
| 14 | A | 64 | 0 | 74 | 3 | 0 |
| 14 | D | 64 | 0 | 74 | 2 | 0 |
| 15 | A | 40 | 0 | 56 | 3 | 0 |
| 15 | B | 80 | 0 | 112 | 7 | 0 |
| 15 | C | 120 | 0 | 168 | 9 | 0 |
| 15 | D | 40 | 0 | 56 | 1 | 0 |
| 15 | H | 40 | 0 | 56 | 2 | 0 |
| 16 | A | 20 | 0 | 28 | 1 | 0 |
| 16 | C | 20 | 0 | 28 | 2 | 0 |
| 16 | D | 20 | 0 | 28 | 1 | 0 |
| 17 | B | 41 | 0 | 52 | 1 | 0 |
| 17 | H | 48 | 0 | 66 | 2 | 0 |
| 18 | B | 70 | 0 | 92 | 5 | 0 |
| 19 | B | 44 | 0 | 61 | 5 | 0 |
| 20 | C | 55 | 0 | 68 | 1 | 0 |
| 21 | D | 4 | 0 | 1 | 0 | 0 |
| 22 | D | 55 | 0 | 80 | 1 | 0 |
| 23 | E | 43 | 0 | 30 | 2 | 0 |
| 24 | A | 1 | 0 | 0 | 0 | 0 |
| 24 | B | 2 | 0 | 0 | 0 | 0 |
| 24 | C | 1 | 0 | 0 | 0 | 0 |
| 24 | D | 1 | 0 | 0 | 0 | 0 |
| All | All | 18054 | 0 | 17995 | 428 | 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 12.

All (428) 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) |
|---|---|---|---|
| 5:E:31:PHE:HB3 | 11:1:10:VAL:HG12 | 1.36 | 1.01 |
| 2:B:24:LEU:HD21 | 13:B:516:CLA:HAB | 1.47 | 0.94 |
| 4:D:282:SER:HB2 | 13:D:404:CLA:HED3 | 1.51 | 0.88 |
| 13:C:502:CLA:HMB3 | 13:C:504:CLA:HAB | 1.59 | 0.82 |
| 7:H:60:PHE:HB2 | 15:H:101:BCR:H16C | 1.62 | 0.81 |
| 3:C:397:GLY:HA3 | 3:C:401:GLU:HG3 | 1.63 | 0.80 |
| 2:B:192:PRO:HG2 | 7:H:68:TYR:HD1 | 1.44 | 0.79 |
| 13:B:505:CLA:HBC3 | 13:B:512:CLA:H42 | 1.67 | 0.77 |
| 4:D:152:VAL:HG21 | 4:D:279:LEU:HD12 | 1.67 | 0.76 |
| 3:C:264:LEU:HD21 | 13:C:508:CLA:HAB | 1.67 | 0.76 |
| 4:D:191:TRP:HZ2 | 13:D:404:CLA:HED1 | 1.49 | 0.75 |
| 5:E:31:PHE:CB | 11:1:10:VAL:HG12 | 2.15 | 0.75 |
| 3:C:179:PRO:HD3 | 10:2:72:VAL:HG11 | 1.70 | 0.73 |
| 10:2:47:THR:O | 10:2:57:LYS:NZ | 2.21 | 0.72 |
| 2:B:65:PHE:HE2 | 13:B:504:CLA:HED2 | 1.55 | 0.71 |
| 23:E:101:HEM:HBC2 | 23:E:101:HEM:HHD | 1.72 | 0.71 |
| 13:B:513:CLA:HBB1 | 13:B:513:CLA:HMB1 | 1.73 | 0.70 |
| 2:B:198:ILE:HG21 | 13:B:503:CLA:HED2 | 1.72 | 0.70 |
| 1:A:29:TYR:O | 1:A:129:ARG:NH1 | 2.25 | 0.70 |
| 4:D:337:GLU:HB2 | 4:D:339:LEU:HD22 | 1.75 | 0.69 |
| 1:A:162:PRO:HB3 | 1:A:168:PHE:HA | 1.75 | 0.68 |
| 1:A:39:PRO:HB2 | 13:A:405:CLA:HAB | 1.76 | 0.68 |
| 13:C:503:CLA:HMB3 | 16:C:518:BOG:H5'1 | 1.76 | 0.68 |
| 2:B:469:HIS:HE1 | 13:B:511:CLA:NA | 1.90 | 0.68 |
| 5:E:31:PHE:HB3 | 11:1:10:VAL:CG1 | 2.17 | 0.68 |
| 3:C:319:ALA:HB1 | 3:C:327:LYS:H | 1.59 | 0.67 |
| 10:2:68:ILE:HG12 | 10:2:94:LEU:HD12 | 1.75 | 0.67 |
| 13:B:514:CLA:HBB1 | 13:B:514:CLA:HMB1 | 1.75 | 0.67 |
| 2:B:247:TRP:HB2 | 13:B:508:CLA:HBC1 | 1.77 | 0.67 |
| 1:A:140:ARG:HB2 | 4:D:220:ASN:HD22 | 1.58 | 0.66 |
| 5:E:24:SER:HA | 11:1:14:LEU:HD11 | 1.77 | 0.66 |
| 2:B:120:LEU:HD13 | 13:B:516:CLA:HMD2 | 1.77 | 0.66 |
| 3:C:152:HIS:HB3 | 13:C:509:CLA:H91 | 1.76 | 0.66 |
| 2:B:150:CYS:HB2 | 13:B:503:CLA:HMC3 | 1.78 | 0.65 |
| 2:B:321:LYS:NZ | 2:B:363:PHE:O | 2.29 | 0.65 |
| 13:D:405:CLA:HMB1 | 13:D:405:CLA:HBB1 | 1.78 | 0.65 |
| 1:A:103:ASP:OD1 | 1:A:104:GLU:N | 2.30 | 0.65 |
| 6:F:19:TRP:HE3 | 6:F:20:LEU:HD22 | 1.61 | 0.65 |
| 13:B:512:CLA:HBB1 | 13:B:512:CLA:HMB1 | 1.77 | 0.65 |
| 3:C:111:ALA:HA | 15:C:516:BCR:H16C | 1.78 | 0.65 |
| 10:2:47:THR:HG22 | 10:2:60:SER:HB2 | 1.79 | 0.65 |
| 1:A:93:PHE:HZ | 13:A:405:CLA:HAA2 | 1.62 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:178:ALA:HB3 | 3:C:182:GLY:HA2 | 1.78 | 0.64 |
| 7:H:65:LEU:HD11 | 17:H:102:LMG:H302 | 1.80 | 0.64 |
| 3:C:357:LEU:HD21 | 3:C:372:ILE:HG12 | 1.80 | 0.64 |
| 4:D:336:HIS:HA | 5:E:65:LEU:HD21 | 1.80 | 0.63 |
| 13:D:401:CLA:HMB1 | 13:D:401:CLA:HBB1 | 1.79 | 0.63 |
| 5:E:10:PHE:HD2 | 11:1:24:VAL:HA | 1.63 | 0.63 |
| 2:B:30:VAL:HG12 | 13:B:505:CLA:HHD | 1.81 | 0.63 |
| 13:A:403:CLA:HAB | 13:D:404:CLA:H51 | 1.79 | 0.62 |
| 2:B:192:PRO:HG2 | 7:H:68:TYR:CD1 | 2.31 | 0.62 |
| 4:D:172:SER:HB2 | 4:D:177:ALA:HB1 | 1.82 | 0.62 |
| 4:D:192:THR:HG23 | 13:D:404:CLA:HBC2 | 1.81 | 0.62 |
| 2:B:234:ILE:HD11 | 13:B:510:CLA:H191 | 1.81 | 0.62 |
| 13:B:509:CLA:H2 | 13:B:510:CLA:HBB2 | 1.80 | 0.61 |
| 3:C:180:GLY:O | 10:2:102:ASN:ND2 | 2.33 | 0.61 |
| 1:A:92:HIS:NE2 | 3:C:348:ASP:OD2 | 2.33 | 0.61 |
| 2:B:202:HIS:HE1 | 13:B:503:CLA:NA | 1.96 | 0.61 |
| 7:H:53:PHE:HB3 | 15:H:101:BCR:H343 | 1.82 | 0.61 |
| 2:B:160:GLY:HA3 | 2:B:180:PRO:HB3 | 1.83 | 0.61 |
| 2:B:212:ALA:HB2 | 13:B:509:CLA:HMC3 | 1.81 | 0.61 |
| 2:B:69:LEU:HD12 | 13:B:505:CLA:HBA1 | 1.83 | 0.60 |
| 3:C:394:SER:H | 3:C:408:VAL:HG21 | 1.65 | 0.60 |
| 3:C:319:ALA:HA | 3:C:328:TYR:HB2 | 1.83 | 0.60 |
| 13:C:508:CLA:C4C | 13:C:510:CLA:H51 | 2.31 | 0.60 |
| 6:F:35:ALA:O | 6:F:39:MET:HG3 | 2.01 | 0.60 |
| 2:B:103:LEU:HD21 | 13:B:505:CLA:HMC3 | 1.81 | 0.60 |
| 4:D:87:HIS:ND1 | 17:H:102:LMG:O2 | 2.34 | 0.60 |
| 10:2:85:PRO:HG2 | 10:2:128:LEU:HD21 | 1.83 | 0.59 |
| 14:A:404:PHO:HAB | 4:D:205:LEU:HD13 | 1.84 | 0.59 |
| 13:A:405:CLA:HAC2 | 15:A:406:BCR:H363 | 1.83 | 0.59 |
| 3:C:120:HIS:HE1 | 13:C:513:CLA:NA | 2.01 | 0.59 |
| 13:A:405:CLA:HMA2 | 16:A:407:BOG:H6'2 | 1.85 | 0.59 |
| 2:B:142:HIS:HA | 2:B:145:LEU:HD12 | 1.84 | 0.58 |
| 4:D:55:VAL:HG21 | 4:D:110:LEU:HD22 | 1.84 | 0.58 |
| 4:D:191:TRP:CZ2 | 13:D:404:CLA:HED1 | 2.35 | 0.58 |
| 13:B:504:CLA:H42 | 13:B:505:CLA:H2 | 1.86 | 0.58 |
| 23:E:101:HEM:HBB2 | 23:E:101:HEM:HMB2 | 1.86 | 0.58 |
| 3:C:311:ARG:NH2 | 3:C:377:GLU:OE2 | 2.35 | 0.58 |
| 2:B:269:GLY:O | 2:B:448:ARG:NH1 | 2.37 | 0.58 |
| 1:A:93:PHE:CZ | 13:A:405:CLA:HAA2 | 2.39 | 0.57 |
| 2:B:224:ARG:NH2 | 4:D:16:ASP:OD2 | 2.34 | 0.57 |
| 2:B:91:TRP:CD2 | 13:B:506:CLA:HBA2 | 2.39 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:472:ARG:NH2 | 2:B:480:ALA:O | 2.36 | 0.57 |
| 3:C:153:LEU:HD21 | 13:C:506:CLA:HAB | 1.85 | 0.57 |
| 4:D:201:VAL:HG22 | 13:D:404:CLA:C2B | 2.34 | 0.57 |
| 2:B:124:ARG:NH1 | 7:H:19:GLU:O | 2.27 | 0.57 |
| 3:C:28:ALA:HA | 13:C:508:CLA:HMA2 | 1.87 | 0.57 |
| 5:E:28:PRO:HA | 11:1:10:VAL:HB | 1.87 | 0.57 |
| 15:B:518:BCR:H323 | 18:B:521:LMT:H82 | 1.86 | 0.56 |
| 13:C:508:CLA:C4A | 13:C:510:CLA:H11 | 2.32 | 0.56 |
| 4:D:186:GLN:HB2 | 13:D:404:CLA:HBC1 | 1.87 | 0.56 |
| 1:A:265:PHE:HB3 | 1:A:270:SER:HB2 | 1.88 | 0.56 |
| 1:A:159:LEU:O | 1:A:161:TYR:N | 2.38 | 0.56 |
| 4:D:343:GLU:OE1 | 4:D:348:ARG:NH2 | 2.39 | 0.56 |
| 1:A:304:GLN:HE21 | 1:A:313:VAL:HG21 | 1.70 | 0.56 |
| 3:C:201:LEU:HD11 | 15:C:515:BCR:H373 | 1.88 | 0.56 |
| 7:H:74:LEU:HB2 | 7:H:77:VAL:HG12 | 1.87 | 0.56 |
| 4:D:201:VAL:HA | 13:D:404:CLA:HMB3 | 1.88 | 0.55 |
| 13:C:501:CLA:H172 | 13:C:507:CLA:HMB3 | 1.88 | 0.55 |
| 4:D:129:GLN:NE2 | 14:D:402:PHO:OBD | 2.39 | 0.55 |
| 2:B:359:MET:HG3 | 2:B:366:PHE:HB2 | 1.89 | 0.55 |
| 3:C:225:HIS:HA | 3:C:228:ILE:HG22 | 1.89 | 0.55 |
| 1:A:85:THR:HA | 1:A:109:GLY:HA3 | 1.89 | 0.55 |
| 3:C:364:ASP:HB3 | 3:C:367:LYS:HB2 | 1.89 | 0.55 |
| 3:C:225:HIS:HE1 | 13:C:501:CLA:NA | 2.06 | 0.54 |
| 4:D:12:ARG:NH2 | 4:D:20:ASP:OD2 | 2.40 | 0.54 |
| 1:A:304:GLN:HG2 | 1:A:313:VAL:HG11 | 1.88 | 0.54 |
| 2:B:190:PHE:CZ | 13:B:501:CLA:HBB1 | 2.42 | 0.54 |
| 4:D:51:GLY:HA2 | 4:D:55:VAL:HB | 1.89 | 0.54 |
| 9:K:21:ILE:O | 9:K:25:LEU:HG | 2.07 | 0.54 |
| 2:B:464:PHE:HD2 | 13:B:511:CLA:HAC2 | 1.73 | 0.54 |
| 4:D:98:GLN:HG3 | 5:E:73:LEU:HD22 | 1.89 | 0.54 |
| 13:C:513:CLA:HBB1 | 13:C:513:CLA:HMB1 | 1.90 | 0.53 |
| 13:B:508:CLA:H61 | 13:B:509:CLA:H142 | 1.89 | 0.53 |
| 4:D:59:TYR:HB3 | 5:E:66:ILE:HD11 | 1.91 | 0.53 |
| 4:D:161:PRO:HB3 | 4:D:170:ALA:HB2 | 1.90 | 0.53 |
| 3:C:106:HIS:HE1 | 13:C:503:CLA:C4A | 2.20 | 0.53 |
| 5:E:13:ILE:HD11 | 11:1:20:PRO:HB3 | 1.89 | 0.53 |
| 10:2:58:GLU:HB3 | 10:2:62:LYS:NZ | 2.23 | 0.53 |
| 2:B:331:ASN:HB3 | 2:B:336:ILE:HG12 | 1.89 | 0.53 |
| 2:B:487:ASN:OD1 | 2:B:488:ASP:N | 2.42 | 0.53 |
| 7:H:75:ASP:OD1 | 7:H:76:ASP:N | 2.42 | 0.52 |
| 16:D:408:BOG:O6 | 6:F:44:ARG:NH2 | 2.42 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:159:LEU:HG | 1:A:160:VAL:H | 1.75 | 0.52 |
| 2:B:70:GLY:HA2 | 2:B:178:VAL:HG11 | 1.92 | 0.52 |
| 13:B:510:CLA:H102 | 13:B:515:CLA:HAA1 | 1.92 | 0.52 |
| 3:C:26:GLY:HA3 | 13:C:511:CLA:HMD3 | 1.91 | 0.52 |
| 3:C:221:ILE:HA | 15:C:515:BCR:H282 | 1.91 | 0.52 |
| 13:C:513:CLA:H171 | 15:C:514:BCR:H373 | 1.91 | 0.52 |
| 2:B:234:ILE:HG22 | 2:B:482:ILE:HG12 | 1.92 | 0.52 |
| 3:C:150:GLY:HA3 | 3:C:240:ILE:HG13 | 1.91 | 0.52 |
| 6:F:42:ILE:HG22 | 6:F:44:ARG:H | 1.74 | 0.52 |
| 4:D:117:HIS:HE1 | 13:D:405:CLA:C4D | 2.22 | 0.52 |
| 1:A:118:HIS:HE1 | 13:A:405:CLA:C4D | 2.23 | 0.52 |
| 10:2:118:LEU:O | 10:2:122:LEU:HD23 | 2.10 | 0.52 |
| 13:B:504:CLA:HMB3 | 13:B:507:CLA:HAB | 1.90 | 0.51 |
| 13:C:502:CLA:H61 | 13:C:512:CLA:H42 | 1.91 | 0.51 |
| 1:A:278:TRP:HB3 | 1:A:279:PRO:HD3 | 1.92 | 0.51 |
| 2:B:26:HIS:HB2 | 13:B:512:CLA:HMB2 | 1.92 | 0.51 |
| 2:B:65:PHE:CE2 | 13:B:504:CLA:HED2 | 2.42 | 0.51 |
| 10:2:40:ILE:HD12 | 10:2:43:LYS:HD2 | 1.92 | 0.51 |
| 1:A:121:LEU:HD13 | 13:A:405:CLA:HMB3 | 1.92 | 0.51 |
| 1:A:131:TRP:CE2 | 13:C:505:CLA:HMA2 | 2.45 | 0.51 |
| 13:B:512:CLA:HMB3 | 13:B:513:CLA:HAA1 | 1.93 | 0.51 |
| 3:C:295:PRO:HB3 | 3:C:346:PHE:HB3 | 1.93 | 0.51 |
| 1:A:60:ILE:HD12 | 1:A:84:PRO:HD2 | 1.92 | 0.50 |
| 11:1:7:LEU:HA | 11:1:10:VAL:HG22 | 1.92 | 0.50 |
| 13:A:403:CLA:CHA | 13:A:403:CLA:HBA1 | 2.41 | 0.50 |
| 2:B:325:PHE:HD2 | 4:D:296:TYR:H | 1.59 | 0.50 |
| 2:B:201:HIS:HE1 | 13:B:502:CLA:C1D | 2.16 | 0.50 |
| 13:D:401:CLA:H2A | 13:D:401:CLA:HED2 | 1.92 | 0.50 |
| 1:A:142:TRP:H | 4:D:220:ASN:HD21 | 1.60 | 0.50 |
| 1:A:303:ASN:ND2 | 3:C:401:GLU:O | 2.45 | 0.50 |
| 13:B:511:CLA:H2A | 13:B:511:CLA:HED2 | 1.93 | 0.50 |
| 5:E:10:PHE:CE2 | 11:1:23:VAL:HG23 | 2.46 | 0.50 |
| 19:B:522:LHG:H262 | 4:D:277:THR:HB | 1.94 | 0.50 |
| 10:2:82:SER:HA | 10:2:87:PHE:CD2 | 2.46 | 0.50 |
| 4:D:197:HIS:HD2 | 13:D:404:CLA:HED2 | 1.76 | 0.49 |
| 2:B:255:THR:HG21 | 13:B:502:CLA:HED1 | 1.94 | 0.49 |
| 2:B:327:THR:HG22 | 13:B:507:CLA:H11 | 1.94 | 0.49 |
| 13:B:513:CLA:OBD | 13:B:514:CLA:HAB | 2.12 | 0.49 |
| 13:C:508:CLA:HBC3 | 13:C:510:CLA:H92 | 1.94 | 0.49 |
| 13:C:512:CLA:HBB1 | 13:C:512:CLA:HMB1 | 1.93 | 0.49 |
| 1:A:106:LEU:HD11 | 15:A:406:BCR:H402 | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:357:LEU:HD23 | 3:C:368:LEU:HD23 | 1.93 | 0.49 |
| 10:2:40:ILE:HA | 10:2:43:LYS:HG2 | 1.94 | 0.49 |
| 2:B:12:VAL:HG23 | 13:B:512:CLA:HMC2 | 1.94 | 0.49 |
| 15:B:518:BCR:HC31 | 18:B:521:LMT:H61 | 1.95 | 0.49 |
| 13:A:405:CLA:H12 | 8:I:9:TYR:CZ | 2.48 | 0.49 |
| 3:C:402:ILE:HG13 | 3:C:403:ASN:H | 1.77 | 0.49 |
| 3:C:437:ARG:NH2 | 8:I:28:PRO:O | 2.45 | 0.49 |
| 1:A:117:CYS:HB2 | 13:A:405:CLA:HED1 | 1.95 | 0.49 |
| 13:B:512:CLA:H72 | 13:B:512:CLA:H12 | 1.94 | 0.49 |
| 2:B:106:ALA:HB1 | 15:B:518:BCR:H14C | 1.95 | 0.48 |
| 2:B:201:HIS:HB2 | 13:B:502:CLA:CHB | 2.43 | 0.48 |
| 10:2:110:ILE:HB | 10:2:115:LEU:HD12 | 1.94 | 0.48 |
| 13:C:509:CLA:H192 | 13:C:512:CLA:HMD2 | 1.94 | 0.48 |
| 2:B:243:ALA:HA | 2:B:246:PHE:CD2 | 2.49 | 0.48 |
| 3:C:89:PRO:HA | 3:C:183:ASP:HB3 | 1.95 | 0.48 |
| 3:C:277:MET:HE2 | 13:C:501:CLA:HMA2 | 1.95 | 0.48 |
| 1:A:334:ARG:NH1 | 4:D:312:GLU:OE2 | 2.47 | 0.48 |
| 4:D:117:HIS:HE1 | 13:D:405:CLA:ND | 2.12 | 0.48 |
| 9:K:27:VAL:O | 9:K:30:VAL:HG12 | 2.13 | 0.48 |
| 2:B:313:ASP:OD1 | 2:B:358:ARG:NH1 | 2.44 | 0.48 |
| 5:E:67:THR:H | 5:E:75:GLN:HE22 | 1.62 | 0.48 |
| 9:K:11:LEU:HD11 | 9:K:22:VAL:HG21 | 1.96 | 0.48 |
| 5:E:19:TYR:OH | 11:1:17:SER:O | 2.25 | 0.48 |
| 2:B:237:VAL:HG23 | 13:B:512:CLA:CMD | 2.44 | 0.48 |
| 3:C:41:HIS:CD2 | 13:C:509:CLA:NA | 2.81 | 0.48 |
| 1:A:142:TRP:H | 4:D:220:ASN:ND2 | 2.11 | 0.48 |
| 3:C:429:HIS:HE1 | 13:C:505:CLA:ND | 2.05 | 0.48 |
| 13:A:405:CLA:HBB1 | 13:A:405:CLA:HMB1 | 1.94 | 0.48 |
| 2:B:166:ILE:HG21 | 13:B:503:CLA:HED1 | 1.96 | 0.48 |
| 1:A:187:GLN:HB2 | 13:A:402:CLA:HAC2 | 1.97 | 0.47 |
| 1:A:202:VAL:HG13 | 13:A:402:CLA:HMB3 | 1.96 | 0.47 |
| 1:A:223:LEU:HG | 4:D:265:ARG:HH21 | 1.79 | 0.47 |
| 2:B:201:HIS:HB2 | 13:B:502:CLA:C1B | 2.44 | 0.47 |
| 5:E:69:ARG:NH2 | 7:H:69:ASN:O | 2.44 | 0.47 |
| 1:A:170:ASP:OD2 | 3:C:345:ARG:NH1 | 2.47 | 0.47 |
| 2:B:243:ALA:HA | 2:B:246:PHE:CE2 | 2.49 | 0.47 |
| 2:B:142:HIS:HE1 | 13:B:515:CLA:ND | 2.04 | 0.47 |
| 1:A:67:VAL:HG12 | 4:D:312:GLU:HB3 | 1.97 | 0.47 |
| 2:B:21:SER:OG | 2:B:115:TRP:HB2 | 2.13 | 0.47 |
| 13:B:503:CLA:HAB | 13:B:505:CLA:H18 | 1.95 | 0.47 |
| 13:B:507:CLA:H2 | 17:B:519:LMG:H151 | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:D:139:ARG:HE | 4:D:141:TYR:HE2 | 1.62 | 0.47 |
| 1:A:131:TRP:CD2 | 13:C:505:CLA:HMA2 | 2.49 | 0.47 |
| 13:B:506:CLA:H61 | 13:B:506:CLA:H92 | 1.68 | 0.47 |
| 13:C:502:CLA:CMB | 13:C:504:CLA:HAB | 2.38 | 0.47 |
| 13:B:503:CLA:H61 | 13:B:503:CLA:H41 | 1.66 | 0.47 |
| 4:D:159:ILE:HG21 | 4:D:287:VAL:HG22 | 1.97 | 0.47 |
| 6:F:16:THR:HG23 | 6:F:19:TRP:H | 1.79 | 0.47 |
| 2:B:139:PHE:HB2 | 13:B:510:CLA:C1D | 2.45 | 0.47 |
| 2:B:406:LEU:HD22 | 2:B:409:LEU:HD22 | 1.97 | 0.47 |
| 3:C:216:ASP:N | 3:C:216:ASP:OD1 | 2.47 | 0.47 |
| 13:B:515:CLA:H12 | 13:B:515:CLA:HMA2 | 1.97 | 0.46 |
| 3:C:44:HIS:HE1 | 13:C:510:CLA:C4B | 2.28 | 0.46 |
| 3:C:145:MET:HB2 | 3:C:145:MET:HE2 | 1.79 | 0.46 |
| 2:B:35:GLY:HA3 | 2:B:101:ILE:HG13 | 1.96 | 0.46 |
| 13:C:510:CLA:H142 | 13:C:510:CLA:H111 | 1.75 | 0.46 |
| 13:B:512:CLA:H61 | 13:B:512:CLA:H102 | 1.75 | 0.46 |
| 4:D:116:LEU:HB3 | 13:D:405:CLA:HMA3 | 1.97 | 0.46 |
| 4:D:191:TRP:CE2 | 4:D:197:HIS:HB2 | 2.50 | 0.46 |
| 2:B:51:VAL:HG13 | 2:B:308:LYS:HB2 | 1.98 | 0.46 |
| 2:B:157:HIS:HA | 2:B:163:GLY:HA3 | 1.97 | 0.46 |
| 3:C:44:HIS:HE1 | 13:C:510:CLA:NB | 2.10 | 0.46 |
| 13:D:404:CLA:H41 | 13:D:404:CLA:H62 | 1.51 | 0.46 |
| 3:C:266:ALA:O | 3:C:270:MET:HG3 | 2.16 | 0.46 |
| 13:D:401:CLA:H92 | 13:D:401:CLA:H62 | 1.69 | 0.46 |
| 2:B:105:GLY:HA3 | 15:B:517:BCR:H402 | 1.98 | 0.46 |
| 13:B:504:CLA:H141 | 13:B:504:CLA:H161 | 1.84 | 0.46 |
| 13:C:513:CLA:H92 | 13:C:513:CLA:H61 | 1.68 | 0.46 |
| 15:C:516:BCR:HC32 | 9:K:15:TYR:CD1 | 2.51 | 0.46 |
| 5:E:24:SER:HA | 11:1:14:LEU:CD1 | 2.46 | 0.46 |
| 13:B:504:CLA:HMD2 | 13:B:512:CLA:H192 | 1.99 | 0.45 |
| 4:D:148:ALA:HB2 | 4:D:276:VAL:HG13 | 1.98 | 0.45 |
| 1:A:140:ARG:HB2 | 4:D:220:ASN:HA | 1.97 | 0.45 |
| 13:B:504:CLA:H61 | 13:B:504:CLA:H41 | 1.63 | 0.45 |
| 10:2:100:HIS:CE1 | 10:2:110:ILE:HA | 2.51 | 0.45 |
| 1:A:16:ARG:O | 1:A:19:GLU:HG3 | 2.16 | 0.45 |
| 13:C:510:CLA:H42 | 13:C:510:CLA:H12 | 1.87 | 0.45 |
| 2:B:69:LEU:HD11 | 13:B:503:CLA:HMD1 | 1.99 | 0.45 |
| 2:B:235:GLU:HG3 | 2:B:473:THR:OG1 | 2.16 | 0.45 |
| 2:B:51:VAL:HG12 | 2:B:52:LEU:HD12 | 1.97 | 0.45 |
| 18:B:520:LMT:H11 | 18:B:520:LMT:H2' | 1.54 | 0.45 |
| 13:C:509:CLA:HMB3 | 13:C:510:CLA:HAA1 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:C:513:CLA:H121 | 15:C:514:BCR:H24C | 1.98 | 0.45 |
| 4:D:175:VAL:O | 4:D:178:ILE:HG22 | 2.16 | 0.45 |
| 13:A:405:CLA:O1A | 8:I:12:VAL:HG21 | 2.17 | 0.45 |
| 2:B:4:PRO:HG2 | 2:B:7:ARG:HH11 | 1.81 | 0.45 |
| 2:B:321:LYS:HE2 | 2:B:361:THR:HA | 1.99 | 0.45 |
| 3:C:267:ILE:HG12 | 13:C:502:CLA:HAC1 | 1.99 | 0.45 |
| 13:C:513:CLA:H93 | 13:C:513:CLA:H112 | 1.73 | 0.45 |
| 10:2:110:ILE:H | 10:2:110:ILE:HD12 | 1.82 | 0.45 |
| 11:1:10:VAL:HA | 11:1:13:VAL:HG12 | 1.97 | 0.45 |
| 2:B:191:ASP:HB3 | 2:B:194:ASN:HB2 | 1.98 | 0.45 |
| 13:B:513:CLA:H43 | 19:B:522:LHG:H372 | 1.98 | 0.45 |
| 3:C:152:HIS:CD2 | 13:C:512:CLA:NA | 2.84 | 0.45 |
| 3:C:277:MET:HG3 | 3:C:285:TYR:HE1 | 1.82 | 0.45 |
| 1:A:17:PHE:HE2 | 8:I:18:LEU:HD11 | 1.82 | 0.45 |
| 3:C:260:LEU:O | 3:C:264:LEU:HG | 2.17 | 0.45 |
| 1:A:176:ILE:HD13 | 13:D:401:CLA:HED1 | 1.98 | 0.45 |
| 14:D:402:PHO:H3A | 14:D:402:PHO:HBA2 | 1.66 | 0.45 |
| 1:A:11:SER:OG | 1:A:12:SER:N | 2.50 | 0.44 |
| 13:B:507:CLA:H41 | 13:B:507:CLA:H62 | 1.34 | 0.44 |
| 3:C:48:ILE:HG23 | 13:C:510:CLA:HMC2 | 1.98 | 0.44 |
| 3:C:164:VAL:HG11 | 3:C:226:ILE:HG12 | 1.99 | 0.44 |
| 13:C:505:CLA:H93 | 13:C:505:CLA:H112 | 1.73 | 0.44 |
| 11:1:2:ASN:HB2 | 11:1:5:LEU:HG | 1.99 | 0.44 |
| 13:A:402:CLA:H191 | 4:D:257:PHE:HE1 | 1.82 | 0.44 |
| 2:B:476:ARG:NE | 2:B:482:ILE:O | 2.38 | 0.44 |
| 15:C:515:BCR:H15C | 15:C:515:BCR:H351 | 1.83 | 0.44 |
| 4:D:89:LEU:HD22 | 4:D:116:LEU:HD11 | 1.98 | 0.44 |
| 13:B:509:CLA:H143 | 13:B:509:CLA:H111 | 1.70 | 0.44 |
| 2:B:41:GLU:HA | 2:B:44:VAL:HG12 | 1.98 | 0.44 |
| 2:B:145:LEU:HB3 | 13:B:504:CLA:H162 | 1.99 | 0.44 |
| 3:C:356:PRO:HG3 | 10:2:95:ASN:ND2 | 2.33 | 0.44 |
| 13:C:502:CLA:H142 | 13:C:502:CLA:H112 | 1.83 | 0.44 |
| 15:D:406:BCR:H15C | 6:F:29:THR:HA | 1.98 | 0.44 |
| 1:A:43:THR:HG23 | 15:A:406:BCR:H362 | 1.99 | 0.44 |
| 13:B:515:CLA:H52 | 13:B:515:CLA:H11 | 1.76 | 0.44 |
| 15:B:518:BCR:H341 | 15:B:518:BCR:H11C | 1.62 | 0.44 |
| 19:B:522:LHG:H361 | 19:B:522:LHG:H102 | 2.00 | 0.44 |
| 1:A:174:LEU:HD22 | 14:A:404:PHO:H143 | 2.00 | 0.44 |
| 15:B:518:BCR:H20C | 15:B:518:BCR:H361 | 1.63 | 0.44 |
| 18:B:521:LMT:H62 | 18:B:521:LMT:H31 | 1.65 | 0.44 |
| 3:C:145:MET:HE1 | 3:C:259:TYR:CE2 | 2.53 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:330:MET:N | 3:C:338:ILE:O | 2.51 | 0.44 |
| 22:D:407:PL9:H121 | 22:D:407:PL9:H101 | 1.83 | 0.44 |
| 13:B:504:CLA:CMB | 13:B:507:CLA:HAB | 2.48 | 0.44 |
| 4:D:29:PHE:O | 4:D:128:ARG:NH1 | 2.47 | 0.44 |
| 1:A:84:PRO:HA | 1:A:112:TYR:CG | 2.53 | 0.44 |
| 1:A:257:ARG:O | 4:D:128:ARG:NH2 | 2.45 | 0.44 |
| 15:C:516:BCR:H11C | 15:C:516:BCR:H341 | 1.78 | 0.44 |
| 3:C:41:HIS:HE1 | 13:C:509:CLA:NC | 2.14 | 0.43 |
| 10:2:54:ASP:OD2 | 10:2:56:ALA:HB3 | 2.18 | 0.43 |
| 9:K:30:VAL:HA | 9:K:33:ILE:HG22 | 2.00 | 0.43 |
| 1:A:276:ALA:HB2 | 4:D:215:GLY:C | 2.39 | 0.43 |
| 13:A:405:CLA:H11 | 13:A:405:CLA:H51 | 1.76 | 0.43 |
| 2:B:3:LEU:HD23 | 2:B:7:ARG:HB3 | 2.00 | 0.43 |
| 2:B:23:HIS:CE1 | 13:B:512:CLA:ND | 2.85 | 0.43 |
| 13:B:516:CLA:H11 | 13:B:516:CLA:H52 | 1.79 | 0.43 |
| 19:B:522:LHG:HC81 | 19:B:522:LHG:H112 | 1.52 | 0.43 |
| 10:2:57:LYS:O | 10:2:61:VAL:HG23 | 2.17 | 0.43 |
| 13:B:505:CLA:H3A | 13:B:505:CLA:HBA2 | 1.49 | 0.43 |
| 13:B:510:CLA:H202 | 13:B:510:CLA:H161 | 1.75 | 0.43 |
| 4:D:219:GLU:H | 4:D:222:LEU:CD1 | 2.30 | 0.43 |
| 13:D:401:CLA:H141 | 13:D:401:CLA:H162 | 1.84 | 0.43 |
| 5:E:10:PHE:CD2 | 11:1:23:VAL:HG23 | 2.54 | 0.43 |
| 5:E:42:LEU:O | 5:E:46:VAL:HG12 | 2.18 | 0.43 |
| 6:F:19:TRP:CE3 | 6:F:20:LEU:HD22 | 2.46 | 0.43 |
| 13:B:512:CLA:H3A | 13:B:512:CLA:HBA2 | 1.66 | 0.43 |
| 3:C:122:LEU:HD21 | 13:C:511:CLA:HBA1 | 2.00 | 0.43 |
| 4:D:191:TRP:CZ2 | 4:D:197:HIS:HB2 | 2.53 | 0.43 |
| 4:D:222:LEU:HA | 4:D:244:TYR:HA | 2.00 | 0.43 |
| 1:A:34:GLY:HA2 | 1:A:37:MET:HB3 | 2.00 | 0.43 |
| 2:B:401:PHE:HB3 | 2:B:406:LEU:O | 2.18 | 0.43 |
| 3:C:210:GLY:H | 3:C:214:SER:HB3 | 1.84 | 0.43 |
| 1:A:188:ALA:HB2 | 1:A:328:MET:HB3 | 1.99 | 0.43 |
| 1:A:198:HIS:HE1 | 13:A:402:CLA:NB | 2.16 | 0.43 |
| 13:B:508:CLA:H43 | 13:B:509:CLA:H102 | 2.01 | 0.43 |
| 3:C:425:PHE:CZ | 13:C:510:CLA:HMB3 | 2.53 | 0.43 |
| 1:A:79:THR:HG23 | 4:D:315:TYR:HB2 | 1.99 | 0.43 |
| 1:A:283:ILE:HA | 1:A:286:THR:HG22 | 2.00 | 0.43 |
| 9:K:28:ILE:HG22 | 9:K:32:PHE:CE2 | 2.54 | 0.43 |
| 1:A:217:SER:HA | 4:D:272:LEU:HD12 | 2.00 | 0.43 |
| 2:B:201:HIS:HE2 | 13:B:503:CLA:HMB3 | 1.84 | 0.43 |
| 13:B:501:CLA:H2A | 13:B:501:CLA:HED2 | 2.01 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:B:513:CLA:CAD | 13:B:514:CLA:HAB | 2.49 | 0.43 |
| 4:D:40:CYS:HB3 | 4:D:117:HIS:O | 2.18 | 0.43 |
| 18:B:520:LMT:H52 | 18:B:520:LMT:H21 | 1.79 | 0.43 |
| 4:D:54:PHE:HA | 4:D:68:LEU:HD22 | 1.99 | 0.43 |
| 9:K:20:PRO:O | 9:K:24:VAL:HG23 | 2.18 | 0.43 |
| 1:A:131:TRP:CH2 | 13:C:505:CLA:HAA2 | 2.55 | 0.42 |
| 1:A:289:GLY:O | 1:A:292:THR:OG1 | 2.29 | 0.42 |
| 3:C:257:GLU:HG3 | 3:C:436:ALA:HB2 | 2.02 | 0.42 |
| 4:D:64:ALA:HB1 | 4:D:69:GLU:HB3 | 2.01 | 0.42 |
| 4:D:141:TYR:HA | 4:D:144:ILE:HD12 | 2.01 | 0.42 |
| 5:E:67:THR:H | 5:E:75:GLN:NE2 | 2.17 | 0.42 |
| 2:B:201:HIS:NE2 | 13:B:503:CLA:HMB3 | 2.33 | 0.42 |
| 2:B:388:SER:HB3 | 2:B:391:SER:HB2 | 2.01 | 0.42 |
| 13:C:501:CLA:C1D | 13:C:503:CLA:H51 | 2.49 | 0.42 |
| 5:E:12:ASP:OD1 | 5:E:13:ILE:N | 2.52 | 0.42 |
| 5:E:31:PHE:CG | 11:1:10:VAL:HG12 | 2.53 | 0.42 |
| 10:2:47:THR:HG21 | 10:2:64:LEU:HB2 | 2.01 | 0.42 |
| 1:A:113:GLN:HA | 1:A:116:VAL:HG12 | 2.02 | 0.42 |
| 13:B:509:CLA:H3A | 13:B:509:CLA:HBA2 | 1.41 | 0.42 |
| 13:B:513:CLA:HBA1 | 13:B:513:CLA:H3A | 1.80 | 0.42 |
| 15:B:517:BCR:H15C | 15:B:517:BCR:H351 | 1.96 | 0.42 |
| 3:C:23:TRP:HE3 | 9:K:40:GLN:HG2 | 1.85 | 0.42 |
| 13:C:511:CLA:HMB1 | 13:C:511:CLA:HBB1 | 2.01 | 0.42 |
| 10:2:97:LEU:HB2 | 10:2:118:LEU:HD11 | 2.01 | 0.42 |
| 1:A:142:TRP:CB | 4:D:220:ASN:HD21 | 2.32 | 0.42 |
| 13:B:507:CLA:H92 | 13:B:507:CLA:H61 | 1.71 | 0.42 |
| 3:C:49:VAL:HG12 | 3:C:106:HIS:O | 2.19 | 0.42 |
| 3:C:355:GLU:N | 3:C:356:PRO:HD2 | 2.35 | 0.42 |
| 13:C:503:CLA:H93 | 13:C:503:CLA:H112 | 1.88 | 0.42 |
| 4:D:87:HIS:CD2 | 4:D:166:GLY:HA2 | 2.53 | 0.42 |
| 4:D:191:TRP:CE3 | 4:D:289:LEU:HD11 | 2.55 | 0.42 |
| 11:1:5:LEU:O | 11:1:9:LEU:HD23 | 2.19 | 0.42 |
| 1:A:69:GLY:HA3 | 1:A:83:ILE:HD11 | 2.01 | 0.42 |
| 3:C:74:LEU:HD13 | 3:C:77:LEU:HD12 | 2.01 | 0.42 |
| 1:A:47:VAL:HG21 | 1:A:114:LEU:HD22 | 2.01 | 0.42 |
| 2:B:64:PRO:O | 2:B:267:LEU:HD23 | 2.19 | 0.42 |
| 2:B:150:CYS:HB2 | 13:B:503:CLA:CMC | 2.48 | 0.42 |
| 3:C:30:LEU:HD12 | 13:C:509:CLA:HBB2 | 2.02 | 0.42 |
| 13:C:509:CLA:H111 | 13:C:509:CLA:H142 | 1.76 | 0.42 |
| 2:B:204:ALA:CB | 13:B:502:CLA:HAB | 2.50 | 0.42 |
| 3:C:102:SER:HA | 16:C:518:BOG:H4'1 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:239:HIS:HE1 | 13:C:506:CLA:C1C | 2.22 | 0.42 |
| 3:C:435:ARG:NH1 | 13:C:508:CLA:O2D | 2.53 | 0.42 |
| 5:E:28:PRO:HB3 | 11:1:10:VAL:HB | 2.02 | 0.42 |
| 3:C:267:ILE:HG12 | 13:C:502:CLA:CAC | 2.50 | 0.42 |
| 13:A:402:CLA:H142 | 13:A:402:CLA:H112 | 1.74 | 0.41 |
| 13:B:514:CLA:H3A | 13:B:514:CLA:HBA2 | 1.57 | 0.41 |
| 13:C:505:CLA:H11 | 15:C:515:BCR:H322 | 2.01 | 0.41 |
| 2:B:114:HIS:HE1 | 13:B:516:CLA:C1B | 2.33 | 0.41 |
| 4:D:323:GLU:HG2 | 4:D:326:ARG:NH2 | 2.36 | 0.41 |
| 14:A:404:PHO:H61 | 14:A:404:PHO:H2 | 1.57 | 0.41 |
| 2:B:69:LEU:HD12 | 13:B:505:CLA:CBA | 2.47 | 0.41 |
| 3:C:49:VAL:HG12 | 3:C:110:SER:HB3 | 2.02 | 0.41 |
| 4:D:264:LYS:HG3 | 4:D:268:HIS:CE1 | 2.55 | 0.41 |
| 2:B:237:VAL:CG1 | 13:B:510:CLA:HBC2 | 2.48 | 0.41 |
| 4:D:171:PRO:HG3 | 4:D:181:PHE:CZ | 2.55 | 0.41 |
| 13:B:508:CLA:H152 | 4:D:120:PHE:CZ | 2.55 | 0.41 |
| 3:C:245:TRP:O | 3:C:249:ARG:HG3 | 2.21 | 0.41 |
| 3:C:334:THR:OG1 | 3:C:336:GLU:OE1 | 2.27 | 0.41 |
| 20:C:517:DGD:HB92 | 20:C:517:DGD:HB61 | 1.88 | 0.41 |
| 13:B:505:CLA:H202 | 13:B:505:CLA:H161 | 1.81 | 0.41 |
| 4:D:201:VAL:HG11 | 13:D:401:CLA:C3D | 2.49 | 0.41 |
| 1:A:78:ILE:HA | 1:A:176:ILE:HD12 | 2.01 | 0.41 |
| 13:B:506:CLA:H2A | 13:B:506:CLA:HED2 | 2.01 | 0.41 |
| 13:B:512:CLA:H203 | 13:B:512:CLA:H161 | 1.77 | 0.41 |
| 4:D:197:HIS:O | 4:D:201:VAL:HG23 | 2.21 | 0.41 |
| 11:1:7:LEU:O | 11:1:10:VAL:HG22 | 2.21 | 0.41 |
| 1:A:91:LEU:HD11 | 1:A:163:ILE:HA | 2.02 | 0.41 |
| 13:A:402:CLA:H72 | 13:A:402:CLA:H111 | 1.73 | 0.41 |
| 2:B:8:VAL:HB | 13:B:514:CLA:O1D | 2.21 | 0.41 |
| 2:B:372:ASP:HB3 | 2:B:378:ARG:HG3 | 2.03 | 0.41 |
| 2:B:475:PHE:CD1 | 4:D:140:PRO:HG3 | 2.55 | 0.41 |
| 13:B:503:CLA:H192 | 13:B:509:CLA:H121 | 2.01 | 0.41 |
| 5:E:28:PRO:O | 5:E:32:ILE:HG12 | 2.20 | 0.41 |
| 13:A:402:CLA:HBD | 13:D:401:CLA:HAC2 | 2.02 | 0.41 |
| 2:B:24:LEU:HB3 | 2:B:111:SER:HB2 | 2.03 | 0.41 |
| 3:C:163:LEU:HD22 | 13:C:501:CLA:C1D | 2.51 | 0.41 |
| 3:C:322:PRO:HG2 | 3:C:325:LEU:HB2 | 2.02 | 0.41 |
| 3:C:340:GLY:O | 3:C:343:THR:OG1 | 2.36 | 0.41 |
| 13:C:503:CLA:H161 | 13:C:503:CLA:H193 | 1.79 | 0.41 |
| 1:A:304:GLN:HB2 | 3:C:403:ASN:OD1 | 2.22 | 0.40 |
| 13:B:515:CLA:H192 | 13:B:515:CLA:H162 | 1.82 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:B:522:LHG:H121 | 19:B:522:LHG:H331 | 2.04 | 0.40 |
| 4:D:275:PRO:O | 4:D:279:LEU:HD23 | 2.21 | 0.40 |
| 1:A:298:ASN:HB2 | 3:C:392:LEU:HA | 2.03 | 0.40 |
| 13:A:402:CLA:CAB | 13:A:403:CLA:HMD2 | 2.52 | 0.40 |
| 2:B:258:TYR:HB2 | 7:H:68:TYR:OH | 2.21 | 0.40 |
| 4:D:178:ILE:O | 4:D:182:ILE:HG13 | 2.21 | 0.40 |
| 5:E:31:PHE:CZ | 6:F:34:GLY:HA2 | 2.56 | 0.40 |
| 2:B:56:TRP:HB3 | 2:B:267:LEU:O | 2.21 | 0.40 |
| 2:B:424:ALA:HB2 | 2:B:429:ILE:HD11 | 2.04 | 0.40 |
| 13:B:509:CLA:C2 | 13:B:510:CLA:HBB2 | 2.50 | 0.40 |
| 4:D:80:THR:HG22 | 4:D:111:TRP:CE2 | 2.56 | 0.40 |
| 4:D:126:MET:HB2 | 4:D:126:MET:HE3 | 1.89 | 0.40 |
| 6:F:37:THR:HG21 | 11:1:9:LEU:HG | 2.02 | 0.40 |
| 10:2:39:ALA:C | 10:2:43:LYS:HZ2 | 2.24 | 0.40 |
| 3:C:329:LEU:HD22 | 3:C:337:ILE:HG22 | 2.03 | 0.40 |
| 13:C:502:CLA:HBB1 | 13:C:502:CLA:HMB1 | 2.03 | 0.40 |
| 4:D:339:LEU:HD23 | 4:D:339:LEU:H | 1.87 | 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 | 302/327 (92%) | 290 (96%) | 12 (4%) | 0 | 100 | 100 |
| 2 | B | 485/487 (100%) | 473 (98%) | 12 (2%) | 0 | 100 | 100 |
| 3 | C | 421/423 (100%) | 406 (96%) | 15 (4%) | 0 | 100 | 100 |
| 4 | D | 331/350 (95%) | 320 (97%) | 11 (3%) | 0 | 100 | 100 |
| 5 | E | 74/76 (97%) | 72 (97%) | 2 (3%) | 0 | 100 | 100 |
| 6 | F | 31/33 (94%) | 31 (100%) | 0 | 0 | 100 | 100 |
| 7 | H | 63/65 (97%) | 61 (97%) | 2 (3%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 8 | I | 26/28 (93%) | 25 (96%) | 1 (4%) | 0 | 100 | 100 |
| 9 | K | 35/37 (95%) | 33 (94%) | 2 (6%) | 0 | 100 | 100 |
| 10 | 2 | 99/101 (98%) | 96 (97%) | 3 (3%) | 0 | 100 | 100 |
| 11 | 1 | 30/32 (94%) | 27 (90%) | 3 (10%) | 0 | 100 | 100 |
| All | All | 1897/1959 (97%) | 1834 (97%) | 63 (3%) | 0 | 100 | 100 |

There are no Ramachandran outliers to report.

### 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 | 248/266 (93%) | 248 (100%) | 0 | 100 | 100 |
| 2 | B | 389/389 (100%) | 389 (100%) | 0 | 100 | 100 |
| 3 | C | 329/329 (100%) | 328 (100%) | 1 (0%) | 92 | 98 |
| 4 | D | 269/279 (96%) | 268 (100%) | 1 (0%) | 91 | 97 |
| 5 | E | 67/67 (100%) | 67 (100%) | 0 | 100 | 100 |
| 6 | F | 27/27 (100%) | 27 (100%) | 0 | 100 | 100 |
| 7 | H | 56/56 (100%) | 56 (100%) | 0 | 100 | 100 |
| 8 | I | 27/27 (100%) | 27 (100%) | 0 | 100 | 100 |
| 9 | K | 31/31 (100%) | 31 (100%) | 0 | 100 | 100 |
| 10 | 2 | 85/85 (100%) | 85 (100%) | 0 | 100 | 100 |
| 11 | 1 | 26/26 (100%) | 26 (100%) | 0 | 100 | 100 |
| All | All | 1554/1582 (98%) | 1552 (100%) | 2 (0%) | 93 | 98 |

All (2) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | C | 378 | ARG |
| 4 | D | 180 | ARG |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | D | 220 | ASN |

### 5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry (i)

Of 58 ligands modelled in this entry, 1 is monoatomic - leaving 57 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 | $\#\|Z\| > 2$ |
| 15 | BCR | D | 406 | - | 41,41,41 | 4.80 | 27 (65%) | 56,56,56 | 2.38 | 20 (35%) |
| 13 | CLA | C | 505 | - | 65,73,73 | 1.35 | 7 (10%) | 76,113,113 | 1.94 | 16 (21%) |
| 16 | BOG | A | 407 | - | 20,20,20 | 1.29 | 2 (10%) | 25,25,25 | 0.78 | 0 |
| 22 | PL9 | D | 407 | - | 55,55,55 | 1.07 | 4 (7%) | 68,69,69 | 1.51 | 13 (19%) |
| 13 | CLA | C | 512 | - | 55,63,73 | 1.46 | 7 (12%) | 64,101,113 | 2.16 | 17 (26%) |
| 16 | BOG | C | 518 | - | 20,20,20 | 1.28 | 2 (10%) | 25,25,25 | 0.80 | 0 |
| 15 | BCR | H | 101 | - | 41,41,41 | 4.81 | 27 (65%) | 56,56,56 | 2.45 | 23 (41%) |
| 13 | CLA | D | 404 | - | 65,73,73 | 1.36 | 8 (12%) | 76,113,113 | 1.91 | 16 (21%) |
| 13 | CLA | C | 508 | - | 52,60,73 | 1.53 | 9 (17%) | 60,97,113 | 2.23 | 19 (31%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 13 | CLA | B | 505 | - | 65,73,73 | 1.35 | 7 (10%) | 76,113,113 | 1.99 | 15 (19%) |
| 13 | CLA | B | 512 | - | 65,73,73 | 1.35 | 8 (12%) | 76,113,113 | 2.04 | 16 (21%) |
| 13 | CLA | A | 402 | - | 65,73,73 | 1.33 | 7 (10%) | 76,113,113 | 2.01 | 19 (25%) |
| 17 | LMG | H | 102 | - | 48,48,55 | 1.00 | 5 (10%) | 56,56,63 | 1.08 | 2 (3%) |
| 13 | CLA | B | 508 | - | 65,73,73 | 1.34 | 9 (13%) | 76,113,113 | 2.07 | 19 (25%) |
| 15 | BCR | C | 514 | - | 41,41,41 | 4.79 | 27 (65%) | 56,56,56 | 2.37 | 20 (35%) |
| 13 | CLA | B | 511 | - | 65,73,73 | 1.34 | 7 (10%) | 76,113,113 | 1.99 | 18 (23%) |
| 13 | CLA | B | 506 | - | 56,64,73 | 1.45 | 8 (14%) | 65,102,113 | 2.14 | 17 (26%) |
| 13 | CLA | B | 516 | - | 52,60,73 | 1.54 | 8 (15%) | 60,97,113 | 2.22 | 17 (28%) |
| 13 | CLA | B | 513 | - | 60,68,73 | 1.40 | 8 (13%) | 70,107,113 | 2.11 | 19 (27%) |
| 13 | CLA | A | 405 | - | 55,63,73 | 1.46 | 7 (12%) | 64,101,113 | 2.26 | 18 (28%) |
| 14 | PHO | A | 404 | - | 51,69,69 | 1.00 | 4 (7%) | 47,99,99 | 1.13 | 4 (8%) |
| 14 | PHO | D | 402 | - | 51,69,69 | 1.01 | 4 (7%) | 47,99,99 | 1.12 | 5 (10%) |
| 13 | CLA | B | 507 | - | 55,63,73 | 1.47 | 8 (14%) | 64,101,113 | 2.14 | 17 (26%) |
| 15 | BCR | C | 515 | - | 41,41,41 | 4.80 | 27 (65%) | 56,56,56 | 2.31 | 21 (37%) |
| 18 | LMT | B | 520 | - | 36,36,36 | 1.12 | 2 (5%) | 47,47,47 | 1.08 | 2 (4%) |
| 13 | CLA | C | 501 | - | 65,73,73 | 1.36 | 8 (12%) | 76,113,113 | 2.01 | 19 (25%) |
| 18 | LMT | B | 521 | - | 36,36,36 | 1.11 | 2 (5%) | 47,47,47 | 0.98 | 1 (2%) |
| 15 | BCR | B | 517 | - | 41,41,41 | 4.82 | 27 (65%) | 56,56,56 | 2.33 | 21 (37%) |
| 13 | CLA | D | 405 | - | 46,54,73 | 1.56 | 7 (15%) | 53,90,113 | 2.32 | 16 (30%) |
| 15 | BCR | C | 516 | - | 41,41,41 | 4.79 | 27 (65%) | 56,56,56 | 2.44 | 21 (37%) |
| 13 | CLA | D | 401 | 24 | 65,73,73 | 1.33 | 6 (9%) | 76,113,113 | 2.04 | 20 (26%) |
| 13 | CLA | B | 514 | - | 46,54,73 | 1.58 | 7 (15%) | 53,90,113 | 2.13 | 15 (28%) |
| 13 | CLA | C | 509 | - | 65,73,73 | 1.36 | 9 (13%) | 76,113,113 | 1.92 | 17 (22%) |
| 21 | BCT | D | 403 | 12 | 2,3,3 | 1.23 | 0 | 2,3,3 | 4.16 | 2 (100%) |
| 13 | CLA | B | 515 | - | 65,73,73 | 1.35 | 8 (12%) | 76,113,113 | 2.06 | 19 (25%) |
| 13 | CLA | C | 506 | - | 48,56,73 | 1.57 | 8 (16%) | 55,92,113 | 2.19 | 17 (30%) |
| 13 | CLA | B | 509 | - | 61,69,73 | 1.38 | 8 (13%) | 71,108,113 | 2.03 | 16 (22%) |
| 19 | LHG | B | 522 | - | 43,43,48 | 0.40 | 0 | 46,49,54 | 1.10 | 3 (6%) |
| 13 | CLA | B | 510 | 24 | 65,73,73 | 1.36 | 7 (10%) | 76,113,113 | 1.96 | 19 (25%) |
| 13 | CLA | B | 504 | - | 65,73,73 | 1.36 | 8 (12%) | 76,113,113 | 2.07 | 17 (22%) |
| 13 | CLA | A | 403 | 24 | 49,57,73 | 1.56 | 9 (18%) | 55,93,113 | 2.29 | 16 (29%) |
| 13 | CLA | C | 507 | 24 | 65,73,73 | 1.35 | 9 (13%) | 76,113,113 | 1.96 | 15 (19%) |
| 15 | BCR | B | 518 | - | 41,41,41 | 4.79 | 27 (65%) | 56,56,56 | 3.23 | 25 (44%) |
| 13 | CLA | B | 502 | - | 65,73,73 | 1.35 | 9 (13%) | 76,113,113 | 4.35 | 22 (28%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 13 | CLA | B | 503 | - | 65,73,73 | 1.36 | 8 (12%) | 76,113,113 | 1.96 | 17 (22%) |
| 13 | CLA | C | 513 | - | 65,73,73 | 1.35 | 7 (10%) | 76,113,113 | 5.12 | 20 (26%) |
| 17 | LMG | B | 519 | - | 41,41,55 | 0.90 | 3 (7%) | 49,49,63 | 1.17 | 4 (8%) |
| 13 | CLA | C | 511 | 3 | 52,60,73 | 1.52 | 8 (15%) | 60,97,113 | 2.25 | 18 (30%) |
| 16 | BOG | D | 408 | - | 20,20,20 | 1.30 | 2 (10%) | 25,25,25 | 0.76 | 0 |
| 20 | DGD | C | 517 | - | 56,56,67 | 0.99 | 4 (7%) | 70,70,81 | 0.95 | 2 (2%) |
| 15 | BCR | A | 406 | - | 41,41,41 | 4.82 | 27 (65%) | 56,56,56 | 2.29 | 21 (37%) |
| 23 | HEM | E | 101 | 5,6 | 41,50,50 | 1.53 | 5 (12%) | 45,82,82 | 1.36 | 5 (11%) |
| 13 | CLA | C | 510 | - | 65,73,73 | 1.35 | 9 (13%) | 76,113,113 | 2.17 | 18 (23%) |
| 13 | CLA | B | 501 | 24 | 45,53,73 | 1.63 | 9 (20%) | 52,89,113 | 2.15 | 14 (26%) |
| 13 | CLA | C | 504 | - | 55,63,73 | 1.46 | 8 (14%) | 64,101,113 | 2.19 | 18 (28%) |
| 13 | CLA | C | 502 | - | 65,73,73 | 1.34 | 7 (10%) | 76,113,113 | 1.98 | 17 (22%) |
| 13 | CLA | C | 503 | - | 65,73,73 | 1.37 | 10 (15%) | 76,113,113 | 1.96 | 17 (22%) |

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 |
|---|---|---|---|---|---|---|---|
| 15 | BCR | D | 406 | - | - | 15/29/63/63 | 0/2/2/2 |
| 13 | CLA | C | 505 | - | 1/1/15/20 | 13/37/115/115 | - |
| 16 | BOG | A | 407 | - | - | 4/11/31/31 | 0/1/1/1 |
| 22 | PL9 | D | 407 | - | - | 13/53/73/73 | 0/1/1/1 |
| 13 | CLA | C | 512 | - | 1/1/13/20 | 11/25/103/115 | - |
| 16 | BOG | C | 518 | - | - | 1/11/31/31 | 0/1/1/1 |
| 15 | BCR | H | 101 | - | - | 16/29/63/63 | 0/2/2/2 |
| 13 | CLA | D | 404 | - | 1/1/15/20 | 18/37/115/115 | - |
| 13 | CLA | C | 508 | - | 1/1/12/20 | 8/22/100/115 | - |
| 13 | CLA | B | 505 | - | 1/1/15/20 | 21/37/115/115 | - |
| 13 | CLA | B | 512 | - | 1/1/15/20 | 17/37/115/115 | - |
| 13 | CLA | A | 402 | - | 1/1/15/20 | 11/37/115/115 | - |
| 17 | LMG | H | 102 | - | - | 8/43/63/70 | 0/1/1/1 |
| 13 | CLA | B | 508 | - | 1/1/15/20 | 13/37/115/115 | - |
| 15 | BCR | C | 514 | - | - | 13/29/63/63 | 0/2/2/2 |
| 13 | CLA | B | 511 | - | 1/1/15/20 | 15/37/115/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 13 | CLA | B | 506 | - | 1/1/13/20 | 7/27/105/115 | - |
| 13 | CLA | B | 516 | - | 1/1/12/20 | 8/22/100/115 | - |
| 13 | CLA | B | 513 | - | 1/1/14/20 | 11/31/109/115 | - |
| 13 | CLA | A | 405 | - | 1/1/13/20 | 13/25/103/115 | - |
| 14 | PHO | A | 404 | - | - | 13/37/103/103 | 0/5/6/6 |
| 14 | PHO | D | 402 | - | - | 7/37/103/103 | 0/5/6/6 |
| 13 | CLA | B | 507 | - | 1/1/13/20 | 19/25/103/115 | - |
| 15 | BCR | C | 515 | - | - | 9/29/63/63 | 0/2/2/2 |
| 18 | LMT | B | 520 | - | - | 11/21/61/61 | 0/2/2/2 |
| 13 | CLA | C | 501 | - | 1/1/15/20 | 19/37/115/115 | - |
| 18 | LMT | B | 521 | - | - | 13/21/61/61 | 0/2/2/2 |
| 15 | BCR | B | 517 | - | - | 14/29/63/63 | 0/2/2/2 |
| 13 | CLA | D | 405 | - | 1/1/11/20 | 9/15/93/115 | - |
| 15 | BCR | C | 516 | - | - | 12/29/63/63 | 0/2/2/2 |
| 13 | CLA | D | 401 | 24 | 1/1/15/20 | 23/37/115/115 | - |
| 13 | CLA | B | 514 | - | 1/1/11/20 | 6/15/93/115 | - |
| 13 | CLA | C | 509 | - | 1/1/15/20 | 12/37/115/115 | - |
| 13 | CLA | B | 515 | - | 1/1/15/20 | 10/37/115/115 | - |
| 13 | CLA | C | 506 | - | 1/1/11/20 | 12/17/95/115 | - |
| 13 | CLA | B | 509 | - | 1/1/14/20 | 18/33/111/115 | - |
| 19 | LHG | B | 522 | - | - | 29/48/48/53 | - |
| 13 | CLA | B | 510 | 24 | 1/1/15/20 | 12/37/115/115 | - |
| 13 | CLA | B | 504 | - | 1/1/15/20 | 14/37/115/115 | - |
| 13 | CLA | A | 403 | 24 | 1/1/11/20 | 11/18/96/115 | - |
| 13 | CLA | C | 507 | 24 | 1/1/15/20 | 17/37/115/115 | - |
| 15 | BCR | B | 518 | - | - | 10/29/63/63 | 0/2/2/2 |
| 13 | CLA | B | 502 | - | 1/1/15/20 | 17/37/115/115 | - |
| 13 | CLA | B | 503 | - | 1/1/15/20 | 17/37/115/115 | - |
| 13 | CLA | C | 513 | - | 1/1/15/20 | 20/37/115/115 | - |
| 17 | LMG | B | 519 | - | - | 10/36/56/70 | 0/1/1/1 |
| 13 | CLA | C | 511 | 3 | 1/1/12/20 | 11/22/100/115 | - |
| 16 | BOG | D | 408 | - | - | 5/11/31/31 | 0/1/1/1 |
| 20 | DGD | C | 517 | - | - | 10/44/84/95 | 0/2/2/2 |
| 15 | BCR | A | 406 | - | - | 14/29/63/63 | 0/2/2/2 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 23 | HEM | E | 101 | 5,6 | - | 1/12/54/54 | - |
| 13 | CLA | C | 510 | - | 1/1/15/20 | 11/37/115/115 | - |
| 13 | CLA | B | 501 | 24 | 1/1/11/20 | 6/13/91/115 | - |
| 13 | CLA | C | 504 | - | 1/1/13/20 | 14/25/103/115 | - |
| 13 | CLA | C | 502 | - | 1/1/15/20 | 15/37/115/115 | - |
| 13 | CLA | C | 503 | - | 1/1/15/20 | 14/37/115/115 | - |

All (532) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | B | 517 | BCR | C26-C25 | 15.65 | 1.61 | 1.34 |
| 15 | H | 101 | BCR | C26-C25 | 15.47 | 1.61 | 1.34 |
| 15 | C | 515 | BCR | C26-C25 | 15.42 | 1.61 | 1.34 |
| 15 | C | 516 | BCR | C26-C25 | 15.38 | 1.61 | 1.34 |
| 15 | A | 406 | BCR | C26-C25 | 15.37 | 1.61 | 1.34 |
| 15 | B | 518 | BCR | C26-C25 | 15.32 | 1.61 | 1.34 |
| 15 | D | 406 | BCR | C26-C25 | 15.32 | 1.61 | 1.34 |
| 15 | C | 514 | BCR | C26-C25 | 15.31 | 1.61 | 1.34 |
| 15 | C | 515 | BCR | C5-C6 | 14.25 | 1.59 | 1.34 |
| 15 | A | 406 | BCR | C5-C6 | 14.24 | 1.59 | 1.34 |
| 15 | B | 517 | BCR | C5-C6 | 14.06 | 1.58 | 1.34 |
| 15 | H | 101 | BCR | C5-C6 | 14.02 | 1.58 | 1.34 |
| 15 | B | 518 | BCR | C5-C6 | 14.01 | 1.58 | 1.34 |
| 15 | C | 516 | BCR | C5-C6 | 13.96 | 1.58 | 1.34 |
| 15 | C | 514 | BCR | C5-C6 | 13.96 | 1.58 | 1.34 |
| 15 | D | 406 | BCR | C5-C6 | 13.93 | 1.58 | 1.34 |
| 15 | A | 406 | BCR | C30-C25 | -6.91 | 1.44 | 1.53 |
| 15 | B | 518 | BCR | C30-C25 | -6.86 | 1.44 | 1.53 |
| 15 | C | 516 | BCR | C30-C25 | -6.77 | 1.44 | 1.53 |
| 15 | C | 515 | BCR | C30-C25 | -6.75 | 1.44 | 1.53 |
| 15 | C | 514 | BCR | C30-C25 | -6.74 | 1.44 | 1.53 |
| 15 | D | 406 | BCR | C30-C25 | -6.73 | 1.44 | 1.53 |
| 15 | C | 515 | BCR | C2-C3 | -6.71 | 1.36 | 1.52 |
| 15 | H | 101 | BCR | C2-C3 | -6.69 | 1.36 | 1.52 |
| 15 | A | 406 | BCR | C2-C3 | -6.66 | 1.36 | 1.52 |
| 15 | B | 518 | BCR | C2-C3 | -6.61 | 1.36 | 1.52 |
| 15 | B | 517 | BCR | C30-C25 | -6.61 | 1.44 | 1.53 |
| 15 | C | 516 | BCR | C2-C3 | -6.60 | 1.36 | 1.52 |
| 15 | C | 516 | BCR | C1-C6 | -6.58 | 1.44 | 1.53 |
| 15 | B | 517 | BCR | C2-C3 | -6.54 | 1.36 | 1.52 |
| 15 | D | 406 | BCR | C2-C3 | -6.53 | 1.36 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | C | 514 | BCR | C2-C3 | -6.53 | 1.36 | 1.52 |
| 15 | B | 517 | BCR | C1-C6 | -6.53 | 1.44 | 1.53 |
| 15 | H | 101 | BCR | C30-C25 | -6.52 | 1.44 | 1.53 |
| 15 | D | 406 | BCR | C1-C6 | -6.51 | 1.44 | 1.53 |
| 15 | H | 101 | BCR | C1-C6 | -6.49 | 1.44 | 1.53 |
| 15 | C | 514 | BCR | C1-C6 | -6.48 | 1.44 | 1.53 |
| 13 | C | 503 | CLA | MG-NA | 6.47 | 2.21 | 2.06 |
| 13 | C | 511 | CLA | MG-NA | 6.46 | 2.21 | 2.06 |
| 13 | B | 504 | CLA | MG-NA | 6.42 | 2.21 | 2.06 |
| 15 | A | 406 | BCR | C1-C6 | -6.41 | 1.45 | 1.53 |
| 13 | A | 403 | CLA | MG-NA | 6.40 | 2.21 | 2.06 |
| 13 | B | 510 | CLA | MG-NA | 6.40 | 2.21 | 2.06 |
| 13 | B | 503 | CLA | MG-NA | 6.39 | 2.21 | 2.06 |
| 13 | C | 513 | CLA | MG-NA | 6.38 | 2.21 | 2.06 |
| 13 | B | 501 | CLA | MG-NA | 6.38 | 2.21 | 2.06 |
| 15 | C | 515 | BCR | C29-C28 | -6.38 | 1.36 | 1.52 |
| 15 | C | 515 | BCR | C1-C6 | -6.37 | 1.45 | 1.53 |
| 13 | B | 516 | CLA | MG-NA | 6.37 | 2.21 | 2.06 |
| 15 | B | 517 | BCR | C29-C28 | -6.36 | 1.36 | 1.52 |
| 13 | B | 507 | CLA | MG-NA | 6.36 | 2.21 | 2.06 |
| 13 | C | 506 | CLA | MG-NA | 6.36 | 2.21 | 2.06 |
| 13 | C | 508 | CLA | MG-NA | 6.36 | 2.21 | 2.06 |
| 13 | D | 404 | CLA | MG-NA | 6.36 | 2.21 | 2.06 |
| 13 | B | 511 | CLA | MG-NA | 6.35 | 2.21 | 2.06 |
| 13 | C | 509 | CLA | MG-NA | 6.34 | 2.21 | 2.06 |
| 13 | C | 504 | CLA | MG-NA | 6.34 | 2.21 | 2.06 |
| 13 | C | 502 | CLA | MG-NA | 6.34 | 2.21 | 2.06 |
| 13 | B | 502 | CLA | MG-NA | 6.34 | 2.21 | 2.06 |
| 13 | C | 512 | CLA | MG-NA | 6.33 | 2.21 | 2.06 |
| 13 | A | 405 | CLA | MG-NA | 6.33 | 2.21 | 2.06 |
| 13 | B | 514 | CLA | MG-NA | 6.33 | 2.21 | 2.06 |
| 13 | B | 515 | CLA | MG-NA | 6.32 | 2.21 | 2.06 |
| 13 | C | 507 | CLA | MG-NA | 6.32 | 2.21 | 2.06 |
| 13 | B | 508 | CLA | MG-NA | 6.32 | 2.21 | 2.06 |
| 15 | H | 101 | BCR | C29-C28 | -6.32 | 1.37 | 1.52 |
| 13 | C | 501 | CLA | MG-NA | 6.31 | 2.21 | 2.06 |
| 13 | D | 401 | CLA | MG-NA | 6.30 | 2.21 | 2.06 |
| 15 | A | 406 | BCR | C29-C28 | -6.30 | 1.37 | 1.52 |
| 13 | B | 513 | CLA | MG-NA | 6.29 | 2.21 | 2.06 |
| 13 | C | 510 | CLA | MG-NA | 6.28 | 2.21 | 2.06 |
| 13 | B | 506 | CLA | MG-NA | 6.28 | 2.21 | 2.06 |
| 15 | D | 406 | BCR | C29-C28 | -6.27 | 1.37 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | C | 516 | BCR | C29-C28 | -6.27 | 1.37 | 1.52 |
| 13 | B | 505 | CLA | MG-NA | 6.26 | 2.21 | 2.06 |
| 15 | B | 518 | BCR | C1-C6 | -6.26 | 1.45 | 1.53 |
| 13 | C | 505 | CLA | MG-NA | 6.24 | 2.21 | 2.06 |
| 13 | B | 512 | CLA | MG-NA | 6.21 | 2.21 | 2.06 |
| 15 | C | 514 | BCR | C29-C28 | -6.19 | 1.37 | 1.52 |
| 13 | B | 509 | CLA | MG-NA | 6.19 | 2.21 | 2.06 |
| 13 | D | 405 | CLA | MG-NA | 6.17 | 2.20 | 2.06 |
| 15 | B | 518 | BCR | C29-C28 | -6.15 | 1.37 | 1.52 |
| 13 | A | 402 | CLA | MG-NA | 6.13 | 2.20 | 2.06 |
| 15 | A | 406 | BCR | C12-C13 | 5.83 | 1.58 | 1.45 |
| 15 | H | 101 | BCR | C12-C13 | 5.80 | 1.58 | 1.45 |
| 15 | B | 518 | BCR | C12-C13 | 5.77 | 1.58 | 1.45 |
| 15 | B | 517 | BCR | C12-C13 | 5.75 | 1.58 | 1.45 |
| 15 | D | 406 | BCR | C12-C13 | 5.74 | 1.58 | 1.45 |
| 15 | C | 514 | BCR | C12-C13 | 5.73 | 1.58 | 1.45 |
| 15 | C | 516 | BCR | C12-C13 | 5.65 | 1.58 | 1.45 |
| 15 | C | 515 | BCR | C12-C13 | 5.64 | 1.58 | 1.45 |
| 15 | H | 101 | BCR | C8-C9 | 5.53 | 1.57 | 1.45 |
| 15 | C | 514 | BCR | C8-C9 | 5.51 | 1.57 | 1.45 |
| 15 | B | 518 | BCR | C8-C9 | 5.51 | 1.57 | 1.45 |
| 15 | A | 406 | BCR | C8-C9 | 5.48 | 1.57 | 1.45 |
| 15 | D | 406 | BCR | C8-C9 | 5.47 | 1.57 | 1.45 |
| 15 | C | 515 | BCR | C8-C9 | 5.42 | 1.57 | 1.45 |
| 15 | B | 517 | BCR | C8-C9 | 5.40 | 1.57 | 1.45 |
| 15 | C | 516 | BCR | C8-C9 | 5.39 | 1.57 | 1.45 |
| 15 | D | 406 | BCR | C23-C22 | 5.34 | 1.57 | 1.45 |
| 15 | C | 514 | BCR | C23-C22 | 5.30 | 1.57 | 1.45 |
| 15 | H | 101 | BCR | C29-C30 | 5.27 | 1.66 | 1.54 |
| 15 | B | 518 | BCR | C29-C30 | 5.26 | 1.66 | 1.54 |
| 15 | B | 518 | BCR | C23-C22 | 5.26 | 1.57 | 1.45 |
| 15 | H | 101 | BCR | C23-C22 | 5.26 | 1.57 | 1.45 |
| 15 | D | 406 | BCR | C29-C30 | 5.25 | 1.66 | 1.54 |
| 15 | A | 406 | BCR | C23-C22 | 5.24 | 1.57 | 1.45 |
| 15 | B | 517 | BCR | C23-C22 | 5.23 | 1.57 | 1.45 |
| 15 | C | 514 | BCR | C29-C30 | 5.21 | 1.66 | 1.54 |
| 15 | B | 517 | BCR | C29-C30 | 5.18 | 1.66 | 1.54 |
| 15 | A | 406 | BCR | C29-C30 | 5.17 | 1.66 | 1.54 |
| 15 | C | 516 | BCR | C23-C22 | 5.14 | 1.57 | 1.45 |
| 15 | C | 516 | BCR | C29-C30 | 5.14 | 1.66 | 1.54 |
| 15 | C | 515 | BCR | C23-C22 | 5.14 | 1.57 | 1.45 |
| 15 | C | 515 | BCR | C29-C30 | 5.07 | 1.65 | 1.54 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | A | 406 | BCR | C15-C14 | 4.82 | 1.58 | 1.43 |
| 15 | H | 101 | BCR | C15-C14 | 4.81 | 1.58 | 1.43 |
| 15 | C | 514 | BCR | C15-C14 | 4.80 | 1.58 | 1.43 |
| 15 | B | 518 | BCR | C15-C14 | 4.80 | 1.58 | 1.43 |
| 15 | D | 406 | BCR | C15-C14 | 4.77 | 1.58 | 1.43 |
| 15 | B | 517 | BCR | C15-C14 | 4.76 | 1.58 | 1.43 |
| 15 | C | 516 | BCR | C15-C14 | 4.70 | 1.58 | 1.43 |
| 15 | C | 515 | BCR | C15-C14 | 4.68 | 1.57 | 1.43 |
| 15 | H | 101 | BCR | C19-C18 | 4.67 | 1.56 | 1.45 |
| 23 | E | 101 | HEM | C3C-C2C | -4.66 | 1.33 | 1.40 |
| 15 | D | 406 | BCR | C19-C18 | 4.65 | 1.55 | 1.45 |
| 15 | C | 514 | BCR | C19-C18 | 4.65 | 1.55 | 1.45 |
| 15 | A | 406 | BCR | C19-C18 | 4.60 | 1.55 | 1.45 |
| 15 | B | 517 | BCR | C2-C1 | 4.60 | 1.64 | 1.54 |
| 15 | B | 517 | BCR | C19-C18 | 4.59 | 1.55 | 1.45 |
| 15 | C | 514 | BCR | C2-C1 | 4.58 | 1.64 | 1.54 |
| 15 | B | 518 | BCR | C19-C18 | 4.57 | 1.55 | 1.45 |
| 15 | D | 406 | BCR | C2-C1 | 4.56 | 1.64 | 1.54 |
| 15 | B | 518 | BCR | C2-C1 | 4.55 | 1.64 | 1.54 |
| 15 | C | 516 | BCR | C19-C18 | 4.54 | 1.55 | 1.45 |
| 15 | C | 516 | BCR | C2-C1 | 4.54 | 1.64 | 1.54 |
| 15 | C | 515 | BCR | C2-C1 | 4.51 | 1.64 | 1.54 |
| 15 | A | 406 | BCR | C2-C1 | 4.50 | 1.64 | 1.54 |
| 15 | C | 515 | BCR | C19-C18 | 4.49 | 1.55 | 1.45 |
| 15 | H | 101 | BCR | C2-C1 | 4.47 | 1.64 | 1.54 |
| 15 | D | 406 | BCR | C20-C21 | 4.34 | 1.56 | 1.43 |
| 15 | H | 101 | BCR | C20-C21 | 4.31 | 1.56 | 1.43 |
| 15 | C | 516 | BCR | C20-C21 | 4.30 | 1.56 | 1.43 |
| 20 | C | 517 | DGD | O1G-C1A | 4.28 | 1.45 | 1.33 |
| 15 | C | 514 | BCR | C20-C21 | 4.27 | 1.56 | 1.43 |
| 15 | A | 406 | BCR | C20-C21 | 4.27 | 1.56 | 1.43 |
| 15 | B | 518 | BCR | C20-C21 | 4.26 | 1.56 | 1.43 |
| 15 | C | 516 | BCR | C28-C27 | 4.26 | 1.65 | 1.52 |
| 15 | B | 518 | BCR | C28-C27 | 4.25 | 1.65 | 1.52 |
| 15 | B | 517 | BCR | C20-C21 | 4.25 | 1.56 | 1.43 |
| 15 | D | 406 | BCR | C28-C27 | 4.25 | 1.65 | 1.52 |
| 15 | A | 406 | BCR | C28-C27 | 4.23 | 1.65 | 1.52 |
| 15 | C | 514 | BCR | C28-C27 | 4.23 | 1.65 | 1.52 |
| 15 | C | 515 | BCR | C20-C21 | 4.21 | 1.56 | 1.43 |
| 16 | D | 408 | BOG | O5-C1 | 4.18 | 1.52 | 1.41 |
| 15 | C | 515 | BCR | C28-C27 | 4.17 | 1.65 | 1.52 |
| 15 | B | 517 | BCR | C28-C27 | 4.16 | 1.65 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | H | 101 | BCR | C28-C27 | 4.14 | 1.65 | 1.52 |
| 16 | A | 407 | BOG | O5-C1 | 4.13 | 1.52 | 1.41 |
| 16 | C | 518 | BOG | O5-C1 | 4.10 | 1.52 | 1.41 |
| 13 | B | 512 | CLA | MG-ND | -3.98 | 1.97 | 2.05 |
| 15 | C | 514 | BCR | C3-C4 | 3.92 | 1.64 | 1.52 |
| 15 | D | 406 | BCR | C3-C4 | 3.92 | 1.64 | 1.52 |
| 15 | B | 517 | BCR | C3-C4 | 3.89 | 1.64 | 1.52 |
| 15 | C | 516 | BCR | C3-C4 | 3.88 | 1.64 | 1.52 |
| 13 | B | 513 | CLA | MG-ND | -3.87 | 1.98 | 2.05 |
| 15 | B | 518 | BCR | C3-C4 | 3.86 | 1.64 | 1.52 |
| 13 | B | 516 | CLA | MG-ND | -3.86 | 1.98 | 2.05 |
| 13 | C | 506 | CLA | MG-ND | -3.86 | 1.98 | 2.05 |
| 13 | B | 503 | CLA | MG-ND | -3.85 | 1.98 | 2.05 |
| 15 | H | 101 | BCR | C3-C4 | 3.85 | 1.64 | 1.52 |
| 13 | C | 512 | CLA | MG-ND | -3.84 | 1.98 | 2.05 |
| 22 | D | 407 | PL9 | C7-C3 | -3.84 | 1.47 | 1.51 |
| 13 | B | 508 | CLA | MG-ND | -3.83 | 1.98 | 2.05 |
| 13 | C | 507 | CLA | MG-ND | -3.83 | 1.98 | 2.05 |
| 13 | D | 404 | CLA | MG-ND | -3.82 | 1.98 | 2.05 |
| 15 | A | 406 | BCR | C16-C17 | 3.82 | 1.55 | 1.43 |
| 13 | B | 510 | CLA | MG-ND | -3.82 | 1.98 | 2.05 |
| 13 | B | 504 | CLA | MG-ND | -3.81 | 1.98 | 2.05 |
| 15 | A | 406 | BCR | C3-C4 | 3.81 | 1.64 | 1.52 |
| 13 | B | 506 | CLA | MG-ND | -3.81 | 1.98 | 2.05 |
| 15 | H | 101 | BCR | C16-C17 | 3.80 | 1.55 | 1.43 |
| 13 | C | 508 | CLA | MG-ND | -3.79 | 1.98 | 2.05 |
| 13 | C | 511 | CLA | MG-ND | -3.79 | 1.98 | 2.05 |
| 13 | A | 402 | CLA | MG-ND | -3.79 | 1.98 | 2.05 |
| 13 | C | 502 | CLA | MG-ND | -3.78 | 1.98 | 2.05 |
| 13 | B | 507 | CLA | MG-ND | -3.77 | 1.98 | 2.05 |
| 15 | C | 514 | BCR | C16-C17 | 3.77 | 1.55 | 1.43 |
| 15 | B | 518 | BCR | C16-C17 | 3.77 | 1.55 | 1.43 |
| 15 | H | 101 | BCR | C11-C10 | 3.77 | 1.55 | 1.43 |
| 15 | D | 406 | BCR | C16-C17 | 3.77 | 1.55 | 1.43 |
| 13 | B | 515 | CLA | MG-ND | -3.77 | 1.98 | 2.05 |
| 13 | A | 403 | CLA | MG-ND | -3.76 | 1.98 | 2.05 |
| 13 | C | 510 | CLA | MG-ND | -3.76 | 1.98 | 2.05 |
| 15 | C | 515 | BCR | C3-C4 | 3.76 | 1.64 | 1.52 |
| 13 | C | 505 | CLA | MG-ND | -3.76 | 1.98 | 2.05 |
| 15 | D | 406 | BCR | C11-C10 | 3.76 | 1.55 | 1.43 |
| 15 | A | 406 | BCR | C11-C10 | 3.75 | 1.55 | 1.43 |
| 13 | B | 501 | CLA | MG-ND | -3.75 | 1.98 | 2.05 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | C | 504 | CLA | MG-ND | -3.74 | 1.98 | 2.05 |
| 13 | B | 511 | CLA | MG-ND | -3.74 | 1.98 | 2.05 |
| 13 | C | 509 | CLA | MG-ND | -3.74 | 1.98 | 2.05 |
| 15 | B | 517 | BCR | C16-C17 | 3.74 | 1.55 | 1.43 |
| 13 | C | 503 | CLA | MG-ND | -3.73 | 1.98 | 2.05 |
| 15 | C | 514 | BCR | C11-C10 | 3.73 | 1.55 | 1.43 |
| 13 | D | 401 | CLA | MG-ND | -3.73 | 1.98 | 2.05 |
| 13 | B | 514 | CLA | MG-ND | -3.72 | 1.98 | 2.05 |
| 15 | B | 518 | BCR | C11-C10 | 3.72 | 1.55 | 1.43 |
| 23 | E | 101 | HEM | C3C-CAC | 3.72 | 1.55 | 1.47 |
| 13 | B | 509 | CLA | MG-ND | -3.71 | 1.98 | 2.05 |
| 15 | C | 516 | BCR | C16-C17 | 3.69 | 1.54 | 1.43 |
| 13 | C | 501 | CLA | MG-ND | -3.69 | 1.98 | 2.05 |
| 13 | C | 513 | CLA | MG-ND | -3.69 | 1.98 | 2.05 |
| 15 | B | 517 | BCR | C11-C10 | 3.68 | 1.54 | 1.43 |
| 13 | B | 505 | CLA | MG-ND | -3.67 | 1.98 | 2.05 |
| 15 | C | 515 | BCR | C11-C10 | 3.66 | 1.54 | 1.43 |
| 15 | C | 515 | BCR | C16-C17 | 3.65 | 1.54 | 1.43 |
| 15 | H | 101 | BCR | C24-C25 | 3.63 | 1.58 | 1.45 |
| 15 | B | 517 | BCR | C24-C25 | 3.62 | 1.58 | 1.45 |
| 13 | A | 405 | CLA | MG-ND | -3.62 | 1.98 | 2.05 |
| 15 | C | 516 | BCR | C11-C10 | 3.62 | 1.54 | 1.43 |
| 15 | C | 515 | BCR | C24-C25 | 3.60 | 1.57 | 1.45 |
| 15 | C | 514 | BCR | C24-C25 | 3.59 | 1.57 | 1.45 |
| 15 | A | 406 | BCR | C24-C25 | 3.56 | 1.57 | 1.45 |
| 13 | B | 502 | CLA | MG-ND | -3.56 | 1.98 | 2.05 |
| 15 | D | 406 | BCR | C24-C25 | 3.56 | 1.57 | 1.45 |
| 15 | C | 516 | BCR | C24-C25 | 3.55 | 1.57 | 1.45 |
| 13 | D | 405 | CLA | MG-ND | -3.55 | 1.98 | 2.05 |
| 15 | B | 518 | BCR | C24-C25 | 3.54 | 1.57 | 1.45 |
| 18 | B | 521 | LMT | O5B-C1B | 3.38 | 1.50 | 1.41 |
| 13 | C | 505 | CLA | C1C-NC | -3.37 | 1.32 | 1.37 |
| 15 | C | 516 | BCR | C4-C5 | -3.37 | 1.44 | 1.51 |
| 13 | B | 515 | CLA | CBB-CAB | 3.37 | 1.51 | 1.29 |
| 18 | B | 520 | LMT | O5B-C1B | 3.37 | 1.50 | 1.41 |
| 13 | B | 511 | CLA | C1C-NC | -3.36 | 1.32 | 1.37 |
| 13 | C | 512 | CLA | CBB-CAB | 3.36 | 1.51 | 1.29 |
| 13 | C | 507 | CLA | CBB-CAB | 3.36 | 1.51 | 1.29 |
| 13 | B | 504 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | C | 513 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | A | 402 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 513 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | C | 505 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 516 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 501 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | C | 506 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | C | 508 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | C | 511 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 503 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 509 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | C | 502 | CLA | CBB-CAB | 3.35 | 1.51 | 1.29 |
| 13 | B | 505 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 502 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 508 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | C | 503 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 514 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | C | 510 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 510 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | D | 405 | CLA | C1C-NC | -3.34 | 1.32 | 1.37 |
| 13 | B | 507 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 506 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | C | 501 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | C | 509 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | D | 401 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | B | 511 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 15 | C | 515 | BCR | C4-C5 | -3.34 | 1.44 | 1.51 |
| 15 | H | 101 | BCR | C4-C5 | -3.34 | 1.44 | 1.51 |
| 13 | C | 508 | CLA | C1C-NC | -3.34 | 1.32 | 1.37 |
| 13 | A | 403 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | D | 405 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | A | 405 | CLA | CBB-CAB | 3.34 | 1.51 | 1.29 |
| 13 | D | 404 | CLA | CBB-CAB | 3.33 | 1.51 | 1.29 |
| 15 | B | 517 | BCR | C4-C5 | -3.33 | 1.44 | 1.51 |
| 13 | B | 512 | CLA | CBB-CAB | 3.32 | 1.51 | 1.29 |
| 15 | A | 406 | BCR | C27-C26 | -3.32 | 1.44 | 1.51 |
| 15 | C | 514 | BCR | C4-C5 | -3.32 | 1.44 | 1.51 |
| 13 | C | 504 | CLA | CBB-CAB | 3.31 | 1.51 | 1.29 |
| 13 | B | 504 | CLA | C1C-NC | -3.31 | 1.32 | 1.37 |
| 15 | D | 406 | BCR | C4-C5 | -3.31 | 1.44 | 1.51 |
| 13 | D | 401 | CLA | C1C-NC | -3.30 | 1.32 | 1.37 |
| 15 | H | 101 | BCR | C27-C26 | -3.29 | 1.44 | 1.51 |
| 13 | B | 516 | CLA | C1C-NC | -3.28 | 1.32 | 1.37 |
| 15 | B | 518 | BCR | C4-C5 | -3.28 | 1.44 | 1.51 |
| 15 | C | 514 | BCR | C27-C26 | -3.27 | 1.44 | 1.51 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 15 | C | 516 | BCR | C27-C26 | -3.27 | 1.44 | 1.51 |
| 13 | B | 505 | CLA | C1C-NC | -3.27 | 1.32 | 1.37 |
| 13 | C | 501 | CLA | C1C-NC | -3.26 | 1.32 | 1.37 |
| 15 | A | 406 | BCR | C4-C5 | -3.25 | 1.44 | 1.51 |
| 15 | C | 515 | BCR | C27-C26 | -3.25 | 1.44 | 1.51 |
| 13 | B | 510 | CLA | C1C-NC | -3.25 | 1.33 | 1.37 |
| 15 | D | 406 | BCR | C27-C26 | -3.25 | 1.44 | 1.51 |
| 17 | B | 519 | LMG | C22-C21 | -3.24 | 1.33 | 1.51 |
| 13 | A | 403 | CLA | C1C-NC | -3.24 | 1.33 | 1.37 |
| 13 | C | 503 | CLA | C1C-NC | -3.24 | 1.33 | 1.37 |
| 17 | H | 102 | LMG | C37-C36 | -3.24 | 1.33 | 1.51 |
| 17 | H | 102 | LMG | C19-C18 | -3.24 | 1.33 | 1.51 |
| 20 | C | 517 | DGD | CDB-CCB | -3.24 | 1.33 | 1.51 |
| 13 | B | 503 | CLA | C1C-NC | -3.23 | 1.33 | 1.37 |
| 17 | B | 519 | LMG | C19-C18 | -3.23 | 1.33 | 1.51 |
| 20 | C | 517 | DGD | CAB-C9B | -3.23 | 1.33 | 1.51 |
| 13 | C | 504 | CLA | C1C-NC | -3.23 | 1.33 | 1.37 |
| 13 | B | 508 | CLA | C1C-NC | -3.22 | 1.33 | 1.37 |
| 13 | C | 513 | CLA | C1C-NC | -3.22 | 1.33 | 1.37 |
| 13 | A | 405 | CLA | C1C-NC | -3.22 | 1.33 | 1.37 |
| 13 | A | 402 | CLA | C1C-NC | -3.21 | 1.33 | 1.37 |
| 13 | B | 502 | CLA | C1C-NC | -3.21 | 1.33 | 1.37 |
| 13 | C | 502 | CLA | C1C-NC | -3.21 | 1.33 | 1.37 |
| 17 | H | 102 | LMG | C40-C39 | -3.21 | 1.33 | 1.51 |
| 13 | B | 512 | CLA | C1C-NC | -3.21 | 1.33 | 1.37 |
| 18 | B | 520 | LMT | O5'-C1' | 3.20 | 1.50 | 1.41 |
| 15 | B | 518 | BCR | C27-C26 | -3.20 | 1.44 | 1.51 |
| 13 | C | 507 | CLA | C1C-NC | -3.19 | 1.33 | 1.37 |
| 13 | B | 509 | CLA | C1C-NC | -3.18 | 1.33 | 1.37 |
| 13 | B | 506 | CLA | C1C-NC | -3.18 | 1.33 | 1.37 |
| 13 | B | 507 | CLA | C1C-NC | -3.17 | 1.33 | 1.37 |
| 15 | B | 517 | BCR | C27-C26 | -3.17 | 1.44 | 1.51 |
| 13 | B | 501 | CLA | C1C-NC | -3.17 | 1.33 | 1.37 |
| 13 | B | 513 | CLA | C1C-NC | -3.14 | 1.33 | 1.37 |
| 13 | C | 509 | CLA | C1C-NC | -3.14 | 1.33 | 1.37 |
| 13 | C | 511 | CLA | C1C-NC | -3.13 | 1.33 | 1.37 |
| 13 | C | 506 | CLA | C1C-NC | -3.13 | 1.33 | 1.37 |
| 13 | B | 514 | CLA | C1C-NC | -3.13 | 1.33 | 1.37 |
| 13 | B | 515 | CLA | C1C-NC | -3.11 | 1.33 | 1.37 |
| 13 | C | 512 | CLA | C1C-NC | -3.11 | 1.33 | 1.37 |
| 18 | B | 521 | LMT | O5'-C1' | 3.09 | 1.49 | 1.41 |
| 13 | C | 510 | CLA | C1C-NC | -3.09 | 1.33 | 1.37 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 23 | E | 101 | HEM | CAB-C3B | 3.02 | 1.55 | 1.47 |
| 13 | D | 404 | CLA | C1C-NC | -3.02 | 1.33 | 1.37 |
| 22 | D | 407 | PL9 | C3-C4 | -2.96 | 1.44 | 1.49 |
| 15 | B | 518 | BCR | C34-C9 | 2.86 | 1.56 | 1.50 |
| 15 | C | 516 | BCR | C34-C9 | 2.85 | 1.56 | 1.50 |
| 15 | B | 517 | BCR | C34-C9 | 2.84 | 1.56 | 1.50 |
| 15 | C | 514 | BCR | C34-C9 | 2.82 | 1.56 | 1.50 |
| 13 | D | 404 | CLA | CHC-C1C | 2.81 | 1.42 | 1.35 |
| 15 | A | 406 | BCR | C34-C9 | 2.81 | 1.56 | 1.50 |
| 15 | C | 515 | BCR | C34-C9 | 2.80 | 1.56 | 1.50 |
| 15 | H | 101 | BCR | C7-C6 | 2.74 | 1.54 | 1.45 |
| 15 | B | 518 | BCR | C7-C6 | 2.74 | 1.54 | 1.45 |
| 15 | H | 101 | BCR | C34-C9 | 2.72 | 1.56 | 1.50 |
| 13 | B | 510 | CLA | CHC-C1C | 2.72 | 1.41 | 1.35 |
| 15 | D | 406 | BCR | C7-C6 | 2.71 | 1.54 | 1.45 |
| 15 | A | 406 | BCR | C7-C6 | 2.70 | 1.54 | 1.45 |
| 15 | D | 406 | BCR | C34-C9 | 2.70 | 1.56 | 1.50 |
| 14 | D | 402 | PHO | CAC-C3C | -2.69 | 1.47 | 1.52 |
| 15 | B | 517 | BCR | C7-C6 | 2.68 | 1.54 | 1.45 |
| 13 | B | 502 | CLA | CHC-C1C | 2.68 | 1.41 | 1.35 |
| 15 | C | 515 | BCR | C7-C6 | 2.67 | 1.54 | 1.45 |
| 13 | C | 503 | CLA | CHC-C1C | 2.67 | 1.41 | 1.35 |
| 13 | B | 514 | CLA | CHC-C1C | 2.67 | 1.41 | 1.35 |
| 13 | C | 509 | CLA | CHC-C1C | 2.67 | 1.41 | 1.35 |
| 13 | C | 513 | CLA | CHC-C1C | 2.66 | 1.41 | 1.35 |
| 13 | C | 508 | CLA | CHC-C1C | 2.65 | 1.41 | 1.35 |
| 15 | C | 514 | BCR | C7-C6 | 2.65 | 1.54 | 1.45 |
| 14 | A | 404 | PHO | CAC-C3C | -2.65 | 1.47 | 1.52 |
| 13 | B | 501 | CLA | CHC-C1C | 2.64 | 1.41 | 1.35 |
| 13 | C | 508 | CLA | C1B-NB | 2.64 | 1.37 | 1.35 |
| 13 | C | 511 | CLA | CHC-C1C | 2.64 | 1.41 | 1.35 |
| 13 | C | 507 | CLA | CHC-C1C | 2.63 | 1.41 | 1.35 |
| 13 | C | 506 | CLA | CHC-C1C | 2.63 | 1.41 | 1.35 |
| 13 | A | 402 | CLA | CHC-C1C | 2.63 | 1.41 | 1.35 |
| 13 | C | 510 | CLA | CHC-C1C | 2.63 | 1.41 | 1.35 |
| 13 | C | 501 | CLA | CHC-C1C | 2.62 | 1.41 | 1.35 |
| 13 | C | 505 | CLA | CHC-C1C | 2.62 | 1.41 | 1.35 |
| 13 | C | 512 | CLA | CHC-C1C | 2.61 | 1.41 | 1.35 |
| 13 | B | 509 | CLA | CHC-C1C | 2.61 | 1.41 | 1.35 |
| 13 | C | 501 | CLA | C3B-C2B | -2.61 | 1.36 | 1.40 |
| 13 | B | 507 | CLA | CHC-C1C | 2.61 | 1.41 | 1.35 |
| 13 | B | 505 | CLA | CHC-C1C | 2.60 | 1.41 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | B | 508 | CLA | CHC-C1C | 2.60 | 1.41 | 1.35 |
| 13 | A | 403 | CLA | CHC-C1C | 2.59 | 1.41 | 1.35 |
| 13 | B | 503 | CLA | CHC-C1C | 2.59 | 1.41 | 1.35 |
| 15 | C | 516 | BCR | C7-C6 | 2.59 | 1.54 | 1.45 |
| 13 | B | 506 | CLA | CHC-C1C | 2.59 | 1.41 | 1.35 |
| 13 | D | 405 | CLA | CHC-C1C | 2.59 | 1.41 | 1.35 |
| 13 | A | 405 | CLA | CHC-C1C | 2.58 | 1.41 | 1.35 |
| 13 | B | 515 | CLA | CHC-C1C | 2.58 | 1.41 | 1.35 |
| 13 | B | 501 | CLA | C3B-C2B | -2.57 | 1.36 | 1.40 |
| 13 | C | 504 | CLA | CHC-C1C | 2.57 | 1.41 | 1.35 |
| 13 | B | 516 | CLA | CHC-C1C | 2.57 | 1.41 | 1.35 |
| 13 | D | 401 | CLA | CHC-C1C | 2.56 | 1.41 | 1.35 |
| 13 | B | 516 | CLA | C3B-C2B | -2.56 | 1.36 | 1.40 |
| 13 | B | 512 | CLA | CHC-C1C | 2.55 | 1.41 | 1.35 |
| 13 | C | 509 | CLA | C3B-C2B | -2.55 | 1.36 | 1.40 |
| 13 | B | 504 | CLA | CHC-C1C | 2.54 | 1.41 | 1.35 |
| 13 | B | 513 | CLA | CHC-C1C | 2.53 | 1.41 | 1.35 |
| 13 | C | 502 | CLA | CHC-C1C | 2.53 | 1.41 | 1.35 |
| 13 | B | 511 | CLA | CHC-C1C | 2.53 | 1.41 | 1.35 |
| 16 | A | 407 | BOG | O1-C1 | -2.45 | 1.36 | 1.40 |
| 16 | D | 408 | BOG | O1-C1 | -2.44 | 1.36 | 1.40 |
| 15 | B | 518 | BCR | C36-C18 | 2.42 | 1.55 | 1.50 |
| 15 | B | 517 | BCR | C36-C18 | 2.41 | 1.55 | 1.50 |
| 16 | C | 518 | BOG | O1-C1 | -2.39 | 1.36 | 1.40 |
| 15 | C | 514 | BCR | C36-C18 | 2.38 | 1.55 | 1.50 |
| 15 | D | 406 | BCR | C36-C18 | 2.38 | 1.55 | 1.50 |
| 15 | H | 101 | BCR | C36-C18 | 2.37 | 1.55 | 1.50 |
| 15 | C | 515 | BCR | C36-C18 | 2.36 | 1.55 | 1.50 |
| 15 | C | 516 | BCR | C36-C18 | 2.36 | 1.55 | 1.50 |
| 13 | D | 404 | CLA | C3B-C2B | -2.36 | 1.37 | 1.40 |
| 13 | B | 516 | CLA | C1B-NB | 2.32 | 1.37 | 1.35 |
| 15 | A | 406 | BCR | C36-C18 | 2.29 | 1.55 | 1.50 |
| 13 | B | 515 | CLA | C3B-C2B | -2.28 | 1.37 | 1.40 |
| 13 | A | 403 | CLA | C3B-C2B | -2.27 | 1.37 | 1.40 |
| 13 | D | 404 | CLA | C1C-C2C | 2.27 | 1.49 | 1.44 |
| 13 | C | 503 | CLA | C3B-C2B | -2.25 | 1.37 | 1.40 |
| 13 | B | 505 | CLA | C3B-C2B | -2.23 | 1.37 | 1.40 |
| 13 | C | 505 | CLA | C3B-C2B | -2.23 | 1.37 | 1.40 |
| 15 | C | 515 | BCR | C39-C30 | -2.23 | 1.49 | 1.53 |
| 13 | C | 507 | CLA | C3B-C2B | -2.23 | 1.37 | 1.40 |
| 13 | C | 510 | CLA | C1C-C2C | 2.22 | 1.48 | 1.44 |
| 13 | C | 503 | CLA | C1B-NB | 2.22 | 1.37 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | C | 503 | CLA | C1C-C2C | 2.22 | 1.48 | 1.44 |
| 13 | C | 513 | CLA | C1C-C2C | 2.21 | 1.48 | 1.44 |
| 15 | C | 514 | BCR | C39-C30 | -2.21 | 1.49 | 1.53 |
| 15 | C | 516 | BCR | C39-C30 | -2.20 | 1.49 | 1.53 |
| 13 | B | 503 | CLA | C1A-CHA | 2.20 | 1.52 | 1.43 |
| 13 | B | 511 | CLA | C3B-C2B | -2.20 | 1.37 | 1.40 |
| 13 | C | 510 | CLA | C3B-C2B | -2.20 | 1.37 | 1.40 |
| 15 | D | 406 | BCR | C38-C26 | 2.20 | 1.54 | 1.50 |
| 13 | B | 505 | CLA | C1C-C2C | 2.19 | 1.48 | 1.44 |
| 13 | B | 506 | CLA | C3B-C2B | -2.19 | 1.37 | 1.40 |
| 13 | B | 507 | CLA | C3B-C2B | -2.19 | 1.37 | 1.40 |
| 13 | B | 513 | CLA | C1A-CHA | 2.19 | 1.52 | 1.43 |
| 15 | B | 517 | BCR | C39-C30 | -2.19 | 1.49 | 1.53 |
| 13 | C | 512 | CLA | C1C-C2C | 2.18 | 1.48 | 1.44 |
| 13 | C | 509 | CLA | C1C-C2C | 2.17 | 1.48 | 1.44 |
| 13 | B | 510 | CLA | C1C-C2C | 2.17 | 1.48 | 1.44 |
| 15 | A | 406 | BCR | C38-C26 | 2.17 | 1.54 | 1.50 |
| 13 | C | 504 | CLA | C1A-CHA | 2.17 | 1.52 | 1.43 |
| 13 | B | 514 | CLA | C1C-C2C | 2.17 | 1.48 | 1.44 |
| 15 | B | 518 | BCR | C39-C30 | -2.17 | 1.49 | 1.53 |
| 15 | C | 516 | BCR | C38-C26 | 2.17 | 1.54 | 1.50 |
| 22 | D | 407 | PL9 | C6-C1 | -2.17 | 1.44 | 1.48 |
| 13 | C | 506 | CLA | C3B-C2B | -2.16 | 1.37 | 1.40 |
| 13 | D | 405 | CLA | C1A-CHA | 2.16 | 1.52 | 1.43 |
| 13 | C | 508 | CLA | C1A-CHA | 2.16 | 1.52 | 1.43 |
| 15 | B | 517 | BCR | C38-C26 | 2.16 | 1.54 | 1.50 |
| 13 | C | 511 | CLA | C1A-CHA | 2.15 | 1.52 | 1.43 |
| 15 | D | 406 | BCR | C39-C30 | -2.15 | 1.49 | 1.53 |
| 15 | B | 518 | BCR | C38-C26 | 2.15 | 1.54 | 1.50 |
| 15 | A | 406 | BCR | C39-C30 | -2.15 | 1.49 | 1.53 |
| 13 | B | 504 | CLA | C1A-CHA | 2.14 | 1.52 | 1.43 |
| 15 | H | 101 | BCR | C38-C26 | 2.14 | 1.54 | 1.50 |
| 15 | C | 514 | BCR | C38-C26 | 2.14 | 1.54 | 1.50 |
| 13 | C | 505 | CLA | C1A-CHA | 2.14 | 1.52 | 1.43 |
| 13 | B | 507 | CLA | C1A-CHA | 2.14 | 1.52 | 1.43 |
| 14 | A | 404 | PHO | CMC-C2C | -2.13 | 1.46 | 1.51 |
| 15 | H | 101 | BCR | C39-C30 | -2.13 | 1.49 | 1.53 |
| 13 | A | 402 | CLA | C1A-CHA | 2.13 | 1.51 | 1.43 |
| 15 | C | 515 | BCR | C37-C22 | 2.13 | 1.55 | 1.50 |
| 13 | A | 403 | CLA | C1C-C2C | 2.13 | 1.48 | 1.44 |
| 13 | B | 502 | CLA | C1C-C2C | 2.13 | 1.48 | 1.44 |
| 13 | B | 503 | CLA | C3B-C2B | -2.12 | 1.37 | 1.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | A | 405 | CLA | C1C-C2C | 2.12 | 1.48 | 1.44 |
| 13 | A | 403 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 13 | D | 401 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 13 | C | 509 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 14 | D | 402 | PHO | CMC-C2C | -2.12 | 1.46 | 1.51 |
| 13 | B | 515 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 13 | C | 501 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 13 | C | 512 | CLA | C1A-CHA | 2.12 | 1.51 | 1.43 |
| 13 | C | 501 | CLA | C1C-C2C | 2.11 | 1.48 | 1.44 |
| 13 | C | 506 | CLA | C1A-CHA | 2.11 | 1.51 | 1.43 |
| 13 | A | 405 | CLA | C1A-CHA | 2.11 | 1.51 | 1.43 |
| 13 | C | 511 | CLA | C1C-C2C | 2.10 | 1.48 | 1.44 |
| 13 | B | 501 | CLA | C1C-C2C | 2.10 | 1.48 | 1.44 |
| 13 | D | 405 | CLA | C1C-C2C | 2.10 | 1.48 | 1.44 |
| 13 | B | 506 | CLA | C1A-CHA | 2.10 | 1.51 | 1.43 |
| 13 | B | 511 | CLA | C1A-CHA | 2.10 | 1.51 | 1.43 |
| 13 | C | 510 | CLA | C1A-CHA | 2.10 | 1.51 | 1.43 |
| 13 | C | 502 | CLA | C3B-C2B | -2.10 | 1.37 | 1.40 |
| 14 | D | 402 | PHO | CMD-C2D | -2.10 | 1.46 | 1.51 |
| 13 | B | 504 | CLA | C3B-C2B | -2.10 | 1.37 | 1.40 |
| 13 | B | 512 | CLA | C3D-C4D | -2.09 | 1.39 | 1.44 |
| 13 | C | 502 | CLA | C1A-CHA | 2.09 | 1.51 | 1.43 |
| 13 | B | 512 | CLA | C1C-C2C | 2.09 | 1.48 | 1.44 |
| 13 | C | 513 | CLA | C1A-CHA | 2.09 | 1.51 | 1.43 |
| 13 | B | 509 | CLA | C3B-C2B | -2.09 | 1.37 | 1.40 |
| 15 | B | 518 | BCR | C37-C22 | 2.09 | 1.55 | 1.50 |
| 13 | C | 503 | CLA | C1A-CHA | 2.09 | 1.51 | 1.43 |
| 23 | E | 101 | HEM | CAA-C2A | 2.09 | 1.55 | 1.52 |
| 13 | B | 516 | CLA | C1A-CHA | 2.08 | 1.51 | 1.43 |
| 13 | B | 508 | CLA | C3B-C2B | -2.08 | 1.37 | 1.40 |
| 13 | B | 508 | CLA | C1A-CHA | 2.08 | 1.51 | 1.43 |
| 13 | B | 508 | CLA | C1C-C2C | 2.08 | 1.48 | 1.44 |
| 13 | C | 507 | CLA | C1A-CHA | 2.08 | 1.51 | 1.43 |
| 13 | B | 502 | CLA | C3B-C2B | -2.08 | 1.37 | 1.40 |
| 13 | B | 509 | CLA | C1C-C2C | 2.08 | 1.48 | 1.44 |
| 13 | B | 502 | CLA | C1A-CHA | 2.08 | 1.51 | 1.43 |
| 13 | B | 502 | CLA | C1B-NB | 2.08 | 1.37 | 1.35 |
| 15 | D | 406 | BCR | C37-C22 | 2.07 | 1.55 | 1.50 |
| 13 | B | 501 | CLA | C1B-NB | 2.07 | 1.37 | 1.35 |
| 13 | C | 504 | CLA | C1C-C2C | 2.07 | 1.48 | 1.44 |
| 15 | A | 406 | BCR | C37-C22 | 2.07 | 1.55 | 1.50 |
| 13 | C | 509 | CLA | C1B-NB | 2.07 | 1.37 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 13 | B | 514 | CLA | C1A-CHA | 2.07 | 1.51 | 1.43 |
| 15 | C | 515 | BCR | C38-C26 | 2.07 | 1.54 | 1.50 |
| 14 | D | 402 | PHO | CMB-C2B | -2.07 | 1.46 | 1.51 |
| 13 | C | 510 | CLA | C1B-NB | 2.06 | 1.37 | 1.35 |
| 13 | C | 507 | CLA | C1C-C2C | 2.06 | 1.48 | 1.44 |
| 13 | B | 503 | CLA | C1C-C2C | 2.06 | 1.48 | 1.44 |
| 13 | C | 511 | CLA | C1B-NB | 2.06 | 1.37 | 1.35 |
| 13 | B | 507 | CLA | C1C-C2C | 2.06 | 1.48 | 1.44 |
| 14 | A | 404 | PHO | CMB-C2B | -2.05 | 1.46 | 1.51 |
| 14 | A | 404 | PHO | CMD-C2D | -2.05 | 1.46 | 1.51 |
| 13 | B | 510 | CLA | C1A-CHA | 2.05 | 1.51 | 1.43 |
| 13 | B | 501 | CLA | C1A-CHA | 2.05 | 1.51 | 1.43 |
| 15 | B | 517 | BCR | C37-C22 | 2.05 | 1.55 | 1.50 |
| 22 | D | 407 | PL9 | C53-C6 | -2.05 | 1.46 | 1.50 |
| 13 | C | 503 | CLA | MG-NC | 2.05 | 2.11 | 2.06 |
| 13 | A | 402 | CLA | C3B-C2B | -2.05 | 1.37 | 1.40 |
| 13 | C | 506 | CLA | MG-NC | 2.04 | 2.11 | 2.06 |
| 13 | B | 513 | CLA | C1C-C2C | 2.04 | 1.48 | 1.44 |
| 13 | B | 509 | CLA | C1A-CHA | 2.04 | 1.51 | 1.43 |
| 13 | C | 508 | CLA | C1C-C2C | 2.04 | 1.48 | 1.44 |
| 23 | E | 101 | HEM | CMB-C2B | 2.04 | 1.55 | 1.50 |
| 13 | B | 504 | CLA | C1C-C2C | 2.03 | 1.48 | 1.44 |
| 13 | B | 515 | CLA | C1C-C2C | 2.03 | 1.48 | 1.44 |
| 15 | C | 514 | BCR | C37-C22 | 2.03 | 1.55 | 1.50 |
| 15 | C | 516 | BCR | C37-C22 | 2.03 | 1.55 | 1.50 |
| 15 | H | 101 | BCR | C37-C22 | 2.03 | 1.55 | 1.50 |
| 13 | B | 508 | CLA | C3D-C4D | -2.02 | 1.39 | 1.44 |
| 13 | A | 403 | CLA | C3D-C4D | -2.02 | 1.39 | 1.44 |
| 13 | B | 512 | CLA | C1A-CHA | 2.02 | 1.51 | 1.43 |
| 17 | H | 102 | LMG | C22-C21 | -2.02 | 1.33 | 1.49 |
| 13 | B | 506 | CLA | C1C-C2C | 2.02 | 1.48 | 1.44 |
| 13 | C | 507 | CLA | C1B-NB | 2.01 | 1.37 | 1.35 |
| 13 | C | 508 | CLA | C3B-C2B | -2.01 | 1.37 | 1.40 |
| 17 | B | 519 | LMG | C25-C24 | -2.01 | 1.33 | 1.49 |
| 20 | C | 517 | DGD | CGB-CFB | -2.01 | 1.33 | 1.49 |
| 13 | C | 504 | CLA | C3B-C2B | -2.01 | 1.37 | 1.40 |
| 17 | H | 102 | LMG | C43-C42 | -2.01 | 1.33 | 1.49 |
| 13 | B | 513 | CLA | MG-NC | 2.00 | 2.11 | 2.06 |
| 13 | D | 404 | CLA | C1A-CHA | 2.00 | 1.51 | 1.43 |

All (825) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 513 | CLA | O2D-CGD-CBD | 27.07 | 159.37 | 111.27 |
| 13 | C | 513 | CLA | O2D-CGD-O1D | -22.87 | 79.12 | 123.84 |
| 13 | B | 502 | CLA | C4-C3-C5 | -22.69 | 77.11 | 115.27 |
| 13 | C | 513 | CLA | O1D-CGD-CBD | -21.56 | 80.36 | 124.48 |
| 13 | B | 502 | CLA | C5-C3-C2 | 18.69 | 158.93 | 121.12 |
| 13 | B | 502 | CLA | C4-C3-C2 | -16.32 | 81.82 | 123.68 |
| 13 | D | 405 | CLA | C4A-NA-C1A | 9.77 | 111.10 | 106.71 |
| 13 | A | 402 | CLA | C4A-NA-C1A | 9.35 | 110.91 | 106.71 |
| 13 | B | 515 | CLA | C4A-NA-C1A | 9.27 | 110.87 | 106.71 |
| 13 | A | 405 | CLA | C4A-NA-C1A | 9.25 | 110.86 | 106.71 |
| 13 | B | 512 | CLA | C4A-NA-C1A | 9.24 | 110.86 | 106.71 |
| 13 | C | 504 | CLA | C4A-NA-C1A | 9.18 | 110.83 | 106.71 |
| 13 | C | 511 | CLA | C4A-NA-C1A | 9.17 | 110.83 | 106.71 |
| 13 | B | 513 | CLA | C4A-NA-C1A | 9.15 | 110.82 | 106.71 |
| 13 | B | 509 | CLA | C4A-NA-C1A | 9.15 | 110.82 | 106.71 |
| 13 | C | 512 | CLA | C4A-NA-C1A | 9.03 | 110.76 | 106.71 |
| 13 | B | 504 | CLA | C4A-NA-C1A | 9.02 | 110.76 | 106.71 |
| 13 | B | 507 | CLA | C4A-NA-C1A | 9.00 | 110.75 | 106.71 |
| 13 | B | 503 | CLA | C4A-NA-C1A | 8.99 | 110.75 | 106.71 |
| 13 | C | 502 | CLA | C4A-NA-C1A | 8.99 | 110.75 | 106.71 |
| 13 | B | 508 | CLA | C4A-NA-C1A | 8.97 | 110.74 | 106.71 |
| 13 | D | 401 | CLA | C4A-NA-C1A | 8.96 | 110.73 | 106.71 |
| 13 | B | 502 | CLA | C4A-NA-C1A | 8.93 | 110.72 | 106.71 |
| 13 | C | 510 | CLA | C4A-NA-C1A | 8.92 | 110.72 | 106.71 |
| 13 | C | 513 | CLA | C4A-NA-C1A | 8.89 | 110.70 | 106.71 |
| 13 | C | 506 | CLA | C4A-NA-C1A | 8.85 | 110.69 | 106.71 |
| 13 | C | 508 | CLA | C4A-NA-C1A | 8.84 | 110.68 | 106.71 |
| 13 | B | 505 | CLA | C4A-NA-C1A | 8.83 | 110.67 | 106.71 |
| 13 | C | 509 | CLA | C4A-NA-C1A | 8.81 | 110.67 | 106.71 |
| 13 | C | 501 | CLA | C4A-NA-C1A | 8.80 | 110.66 | 106.71 |
| 13 | B | 506 | CLA | C4A-NA-C1A | 8.79 | 110.66 | 106.71 |
| 13 | B | 516 | CLA | C4A-NA-C1A | 8.77 | 110.65 | 106.71 |
| 15 | B | 518 | BCR | C15-C14-C13 | -8.77 | 114.80 | 127.31 |
| 13 | A | 403 | CLA | C4A-NA-C1A | 8.76 | 110.64 | 106.71 |
| 13 | B | 501 | CLA | C4A-NA-C1A | 8.72 | 110.63 | 106.71 |
| 13 | B | 511 | CLA | C4A-NA-C1A | 8.69 | 110.61 | 106.71 |
| 13 | B | 514 | CLA | C4A-NA-C1A | 8.68 | 110.61 | 106.71 |
| 13 | C | 503 | CLA | C4A-NA-C1A | 8.63 | 110.59 | 106.71 |
| 13 | C | 507 | CLA | C4A-NA-C1A | 8.59 | 110.57 | 106.71 |
| 13 | C | 505 | CLA | C4A-NA-C1A | 8.53 | 110.54 | 106.71 |
| 13 | D | 404 | CLA | C4A-NA-C1A | 8.45 | 110.51 | 106.71 |
| 13 | B | 510 | CLA | C4A-NA-C1A | 8.09 | 110.34 | 106.71 |
| 13 | C | 510 | CLA | C1-C2-C3 | -8.09 | 112.05 | 126.04 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 15 | B | 518 | BCR | C20-C21-C22 | -7.80 | 116.18 | 127.31 |
| 15 | B | 518 | BCR | C11-C10-C9 | -7.74 | 116.26 | 127.31 |
| 15 | C | 515 | BCR | C15-C14-C13 | -6.63 | 117.85 | 127.31 |
| 15 | B | 518 | BCR | C7-C8-C9 | -6.34 | 116.65 | 126.23 |
| 15 | B | 517 | BCR | C15-C14-C13 | -6.14 | 118.55 | 127.31 |
| 15 | C | 516 | BCR | C15-C14-C13 | -6.13 | 118.56 | 127.31 |
| 13 | D | 401 | CLA | O2D-CGD-CBD | 6.04 | 121.99 | 111.27 |
| 13 | B | 508 | CLA | O2A-C1-C2 | 6.03 | 124.47 | 108.64 |
| 15 | H | 101 | BCR | C16-C17-C18 | -6.00 | 118.75 | 127.31 |
| 15 | B | 517 | BCR | C11-C10-C9 | -5.97 | 118.79 | 127.31 |
| 13 | D | 405 | CLA | O2D-CGD-CBD | 5.96 | 121.87 | 111.27 |
| 13 | B | 504 | CLA | O2D-CGD-CBD | 5.92 | 121.78 | 111.27 |
| 13 | A | 403 | CLA | O2D-CGD-CBD | 5.86 | 121.69 | 111.27 |
| 15 | C | 516 | BCR | C11-C10-C9 | -5.86 | 118.95 | 127.31 |
| 15 | C | 514 | BCR | C20-C21-C22 | -5.83 | 119.00 | 127.31 |
| 15 | H | 101 | BCR | C20-C21-C22 | -5.82 | 119.01 | 127.31 |
| 13 | A | 405 | CLA | O2A-C1-C2 | 5.81 | 123.91 | 108.64 |
| 13 | C | 501 | CLA | O2A-C1-C2 | 5.79 | 123.85 | 108.64 |
| 13 | B | 506 | CLA | O2D-CGD-CBD | 5.77 | 121.53 | 111.27 |
| 15 | B | 518 | BCR | C24-C23-C22 | -5.77 | 117.52 | 126.23 |
| 15 | D | 406 | BCR | C11-C10-C9 | -5.70 | 119.18 | 127.31 |
| 15 | B | 518 | BCR | C30-C25-C26 | -5.70 | 114.59 | 122.61 |
| 13 | B | 505 | CLA | CMD-C2D-C1D | 5.69 | 134.74 | 124.71 |
| 13 | B | 508 | CLA | O2D-CGD-CBD | 5.67 | 121.34 | 111.27 |
| 15 | H | 101 | BCR | C11-C10-C9 | -5.66 | 119.24 | 127.31 |
| 13 | C | 508 | CLA | O2D-CGD-CBD | 5.66 | 121.32 | 111.27 |
| 13 | C | 504 | CLA | O2D-CGD-CBD | 5.63 | 121.28 | 111.27 |
| 13 | A | 403 | CLA | CMD-C2D-C1D | 5.61 | 134.59 | 124.71 |
| 13 | C | 511 | CLA | CMD-C2D-C1D | 5.60 | 134.59 | 124.71 |
| 13 | B | 512 | CLA | CMD-C2D-C1D | 5.60 | 134.58 | 124.71 |
| 13 | C | 503 | CLA | CMD-C2D-C1D | 5.57 | 134.53 | 124.71 |
| 13 | B | 504 | CLA | CMD-C2D-C1D | 5.56 | 134.52 | 124.71 |
| 13 | D | 405 | CLA | CMD-C2D-C1D | 5.55 | 134.50 | 124.71 |
| 13 | B | 507 | CLA | CMD-C2D-C1D | 5.55 | 134.49 | 124.71 |
| 13 | B | 501 | CLA | CMD-C2D-C1D | 5.54 | 134.48 | 124.71 |
| 13 | B | 502 | CLA | CMD-C2D-C1D | 5.54 | 134.47 | 124.71 |
| 13 | C | 504 | CLA | CMD-C2D-C1D | 5.53 | 134.46 | 124.71 |
| 13 | A | 402 | CLA | CMD-C2D-C1D | 5.52 | 134.45 | 124.71 |
| 13 | A | 405 | CLA | CMD-C2D-C1D | 5.51 | 134.43 | 124.71 |
| 13 | B | 511 | CLA | O2D-CGD-CBD | 5.51 | 121.06 | 111.27 |
| 13 | B | 506 | CLA | CMD-C2D-C1D | 5.51 | 134.42 | 124.71 |
| 13 | B | 513 | CLA | CMD-C2D-C1D | 5.50 | 134.41 | 124.71 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 510 | CLA | CMD-C2D-C1D | 5.50 | 134.41 | 124.71 |
| 13 | B | 516 | CLA | CMD-C2D-C1D | 5.50 | 134.41 | 124.71 |
| 13 | B | 509 | CLA | CMD-C2D-C1D | 5.50 | 134.40 | 124.71 |
| 13 | C | 508 | CLA | CMD-C2D-C1D | 5.49 | 134.39 | 124.71 |
| 13 | D | 401 | CLA | CMD-C2D-C1D | 5.48 | 134.37 | 124.71 |
| 21 | D | 403 | BCT | O2-C-O1 | 5.47 | 133.73 | 119.55 |
| 13 | C | 509 | CLA | CMD-C2D-C1D | 5.47 | 134.35 | 124.71 |
| 13 | C | 506 | CLA | CMD-C2D-C1D | 5.47 | 134.34 | 124.71 |
| 13 | C | 507 | CLA | CMD-C2D-C1D | 5.47 | 134.34 | 124.71 |
| 13 | B | 511 | CLA | CMD-C2D-C1D | 5.46 | 134.33 | 124.71 |
| 13 | C | 501 | CLA | CMD-C2D-C1D | 5.46 | 134.33 | 124.71 |
| 13 | C | 513 | CLA | CMD-C2D-C1D | 5.45 | 134.32 | 124.71 |
| 13 | B | 514 | CLA | CMD-C2D-C1D | 5.44 | 134.30 | 124.71 |
| 13 | B | 515 | CLA | O2D-CGD-CBD | 5.43 | 120.92 | 111.27 |
| 13 | B | 510 | CLA | CMD-C2D-C1D | 5.43 | 134.28 | 124.71 |
| 13 | B | 513 | CLA | O2D-CGD-CBD | 5.41 | 120.89 | 111.27 |
| 13 | A | 405 | CLA | O2D-CGD-CBD | 5.41 | 120.89 | 111.27 |
| 13 | B | 515 | CLA | CMD-C2D-C1D | 5.40 | 134.24 | 124.71 |
| 13 | B | 505 | CLA | O2A-C1-C2 | 5.36 | 122.72 | 108.64 |
| 13 | A | 403 | CLA | O2A-C1-C2 | 5.35 | 121.49 | 108.97 |
| 13 | B | 512 | CLA | O2D-CGD-CBD | 5.33 | 120.73 | 111.27 |
| 15 | C | 514 | BCR | C16-C17-C18 | -5.31 | 119.73 | 127.31 |
| 13 | C | 513 | CLA | O2A-C1-C2 | 5.30 | 122.58 | 108.64 |
| 15 | B | 518 | BCR | C15-C16-C17 | -5.27 | 112.67 | 123.47 |
| 13 | B | 502 | CLA | O2D-CGD-CBD | 5.27 | 120.64 | 111.27 |
| 13 | B | 507 | CLA | O2D-CGD-CBD | 5.27 | 120.64 | 111.27 |
| 13 | B | 505 | CLA | O2D-CGD-CBD | 5.27 | 120.64 | 111.27 |
| 13 | C | 505 | CLA | O2A-C1-C2 | 5.27 | 122.49 | 108.64 |
| 13 | B | 503 | CLA | CMD-C2D-C1D | 5.27 | 133.99 | 124.71 |
| 13 | B | 504 | CLA | O2A-C1-C2 | 5.26 | 122.47 | 108.64 |
| 13 | B | 507 | CLA | O2A-C1-C2 | 5.22 | 122.36 | 108.64 |
| 13 | C | 512 | CLA | CMD-C2D-C1D | 5.22 | 133.91 | 124.71 |
| 13 | D | 404 | CLA | O2A-C1-C2 | 5.21 | 122.34 | 108.64 |
| 15 | B | 518 | BCR | C33-C5-C6 | -5.21 | 118.68 | 124.53 |
| 13 | C | 502 | CLA | CMD-C2D-C1D | 5.20 | 133.88 | 124.71 |
| 13 | C | 502 | CLA | O2D-CGD-CBD | 5.19 | 120.49 | 111.27 |
| 13 | B | 503 | CLA | O2A-C1-C2 | 5.19 | 122.27 | 108.64 |
| 13 | C | 512 | CLA | O2D-CGD-CBD | 5.17 | 120.46 | 111.27 |
| 13 | B | 510 | CLA | O2D-CGD-CBD | 5.17 | 120.46 | 111.27 |
| 13 | B | 501 | CLA | O2D-CGD-CBD | 5.17 | 120.45 | 111.27 |
| 13 | B | 512 | CLA | O2A-C1-C2 | 5.16 | 122.19 | 108.64 |
| 13 | C | 510 | CLA | O2D-CGD-CBD | 5.15 | 120.43 | 111.27 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 509 | CLA | O2D-CGD-CBD | 5.15 | 120.41 | 111.27 |
| 13 | C | 511 | CLA | O2D-CGD-CBD | 5.14 | 120.39 | 111.27 |
| 13 | B | 508 | CLA | CMD-C2D-C1D | 5.14 | 133.76 | 124.71 |
| 13 | B | 516 | CLA | O2D-CGD-CBD | 5.13 | 120.39 | 111.27 |
| 13 | C | 506 | CLA | O2D-CGD-CBD | 5.13 | 120.38 | 111.27 |
| 13 | C | 501 | CLA | O2D-CGD-CBD | 5.12 | 120.38 | 111.27 |
| 13 | C | 505 | CLA | CMD-C2D-C1D | 5.12 | 133.74 | 124.71 |
| 15 | A | 406 | BCR | C20-C21-C22 | -5.10 | 120.03 | 127.31 |
| 13 | C | 507 | CLA | O2D-CGD-CBD | 5.09 | 120.32 | 111.27 |
| 13 | D | 404 | CLA | CMD-C2D-C1D | 5.09 | 133.68 | 124.71 |
| 15 | C | 516 | BCR | C7-C8-C9 | -5.08 | 118.56 | 126.23 |
| 13 | B | 506 | CLA | O2A-C1-C2 | 5.05 | 121.90 | 108.64 |
| 13 | C | 503 | CLA | O2A-C1-C2 | 5.05 | 121.90 | 108.64 |
| 13 | C | 505 | CLA | O2D-CGD-CBD | 5.04 | 120.22 | 111.27 |
| 13 | C | 512 | CLA | O2A-C1-C2 | 5.04 | 121.87 | 108.64 |
| 13 | C | 509 | CLA | O2D-CGD-CBD | 5.01 | 120.17 | 111.27 |
| 15 | A | 406 | BCR | C15-C14-C13 | -4.96 | 120.23 | 127.31 |
| 13 | C | 503 | CLA | O2D-CGD-CBD | 4.96 | 120.08 | 111.27 |
| 15 | D | 406 | BCR | C15-C14-C13 | -4.95 | 120.24 | 127.31 |
| 13 | C | 508 | CLA | O2A-C1-C2 | 4.95 | 121.65 | 108.64 |
| 22 | D | 407 | PL9 | C7-C3-C4 | 4.93 | 120.89 | 116.88 |
| 13 | B | 509 | CLA | O2A-C1-C2 | 4.92 | 121.57 | 108.64 |
| 13 | B | 513 | CLA | O2A-C1-C2 | 4.92 | 121.55 | 108.64 |
| 13 | C | 504 | CLA | O2A-C1-C2 | 4.90 | 121.52 | 108.64 |
| 13 | B | 502 | CLA | O2A-C1-C2 | 4.90 | 121.50 | 108.64 |
| 13 | B | 511 | CLA | O2A-C1-C2 | 4.89 | 121.49 | 108.64 |
| 13 | B | 515 | CLA | O2A-C1-C2 | 4.88 | 121.46 | 108.64 |
| 13 | B | 514 | CLA | O2D-CGD-CBD | 4.81 | 119.82 | 111.27 |
| 13 | B | 516 | CLA | O2A-C1-C2 | 4.81 | 121.27 | 108.64 |
| 13 | C | 507 | CLA | O2A-C1-C2 | 4.79 | 121.23 | 108.64 |
| 15 | C | 514 | BCR | C11-C10-C9 | -4.79 | 120.48 | 127.31 |
| 13 | B | 503 | CLA | O2D-CGD-CBD | 4.78 | 119.77 | 111.27 |
| 13 | C | 510 | CLA | O2A-C1-C2 | 4.73 | 121.07 | 108.64 |
| 13 | B | 510 | CLA | O2A-C1-C2 | 4.72 | 121.04 | 108.64 |
| 13 | C | 502 | CLA | O2A-C1-C2 | 4.72 | 121.03 | 108.64 |
| 15 | C | 514 | BCR | C15-C14-C13 | -4.71 | 120.59 | 127.31 |
| 15 | C | 515 | BCR | C11-C10-C9 | -4.69 | 120.62 | 127.31 |
| 15 | C | 515 | BCR | C33-C5-C6 | -4.68 | 119.27 | 124.53 |
| 13 | D | 401 | CLA | O2A-C1-C2 | 4.66 | 120.88 | 108.64 |
| 13 | C | 511 | CLA | O2A-C1-C2 | 4.66 | 120.87 | 108.64 |
| 15 | A | 406 | BCR | C11-C10-C9 | -4.64 | 120.69 | 127.31 |
| 15 | D | 406 | BCR | C16-C17-C18 | -4.62 | 120.72 | 127.31 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 15 | B | 518 | BCR | C11-C12-C13 | -4.62 | 113.44 | 126.42 |
| 15 | B | 517 | BCR | C38-C26-C25 | -4.61 | 119.36 | 124.53 |
| 15 | C | 516 | BCR | C20-C21-C22 | -4.61 | 120.74 | 127.31 |
| 15 | H | 101 | BCR | C33-C5-C6 | -4.60 | 119.37 | 124.53 |
| 15 | C | 515 | BCR | C38-C26-C25 | -4.57 | 119.39 | 124.53 |
| 13 | A | 402 | CLA | O2A-C1-C2 | 4.56 | 120.62 | 108.64 |
| 15 | A | 406 | BCR | C16-C17-C18 | -4.56 | 120.81 | 127.31 |
| 15 | D | 406 | BCR | C20-C21-C22 | -4.56 | 120.81 | 127.31 |
| 15 | D | 406 | BCR | C24-C23-C22 | -4.51 | 119.42 | 126.23 |
| 15 | A | 406 | BCR | C38-C26-C25 | -4.49 | 119.48 | 124.53 |
| 13 | A | 402 | CLA | O2D-CGD-CBD | 4.48 | 119.22 | 111.27 |
| 15 | H | 101 | BCR | C38-C26-C25 | -4.44 | 119.54 | 124.53 |
| 15 | B | 517 | BCR | C7-C8-C9 | -4.42 | 119.56 | 126.23 |
| 15 | C | 516 | BCR | C16-C17-C18 | -4.36 | 121.09 | 127.31 |
| 15 | B | 518 | BCR | C27-C26-C25 | -4.34 | 116.43 | 122.73 |
| 15 | D | 406 | BCR | C30-C25-C26 | -4.34 | 116.50 | 122.61 |
| 17 | B | 519 | LMG | O7-C10-C11 | 4.32 | 120.80 | 111.50 |
| 19 | B | 522 | LHG | O7-C7-C8 | 4.31 | 120.80 | 111.50 |
| 13 | B | 504 | CLA | C1-C2-C3 | -4.31 | 118.58 | 126.04 |
| 15 | A | 406 | BCR | C24-C23-C22 | -4.29 | 119.75 | 126.23 |
| 15 | A | 406 | BCR | C7-C8-C9 | -4.29 | 119.75 | 126.23 |
| 15 | B | 518 | BCR | C20-C19-C18 | -4.26 | 114.44 | 126.42 |
| 15 | C | 515 | BCR | C16-C17-C18 | -4.26 | 121.23 | 127.31 |
| 15 | D | 406 | BCR | C1-C6-C5 | -4.23 | 116.66 | 122.61 |
| 15 | B | 518 | BCR | C1-C6-C5 | -4.18 | 116.73 | 122.61 |
| 15 | C | 516 | BCR | C38-C26-C25 | -4.18 | 119.84 | 124.53 |
| 13 | D | 404 | CLA | O2D-CGD-CBD | 4.14 | 118.62 | 111.27 |
| 15 | B | 518 | BCR | C38-C26-C25 | -4.05 | 119.98 | 124.53 |
| 15 | D | 406 | BCR | C38-C26-C25 | -4.04 | 120.00 | 124.53 |
| 17 | H | 102 | LMG | O7-C10-C11 | 4.03 | 120.19 | 111.50 |
| 15 | A | 406 | BCR | C33-C5-C6 | -4.02 | 120.02 | 124.53 |
| 15 | C | 516 | BCR | C33-C5-C6 | -4.00 | 120.03 | 124.53 |
| 15 | H | 101 | BCR | C15-C14-C13 | -4.00 | 121.60 | 127.31 |
| 15 | C | 516 | BCR | C27-C26-C25 | -3.92 | 117.03 | 122.73 |
| 15 | C | 515 | BCR | C7-C8-C9 | -3.92 | 120.31 | 126.23 |
| 15 | B | 518 | BCR | C4-C5-C6 | -3.92 | 117.04 | 122.73 |
| 13 | C | 509 | CLA | O2A-C1-C2 | 3.91 | 118.92 | 108.64 |
| 20 | C | 517 | DGD | O2G-C1B-C2B | 3.91 | 119.93 | 111.50 |
| 15 | B | 517 | BCR | C1-C6-C5 | -3.89 | 117.13 | 122.61 |
| 15 | C | 514 | BCR | C33-C5-C6 | -3.89 | 120.16 | 124.53 |
| 15 | B | 517 | BCR | C20-C21-C22 | -3.88 | 121.77 | 127.31 |
| 15 | H | 101 | BCR | C7-C8-C9 | -3.88 | 120.38 | 126.23 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | D | 404 | CLA | C1-C2-C3 | -3.87 | 119.35 | 126.04 |
| 15 | D | 406 | BCR | C4-C5-C6 | -3.87 | 117.11 | 122.73 |
| 15 | C | 515 | BCR | C20-C21-C22 | -3.86 | 121.80 | 127.31 |
| 13 | B | 512 | CLA | C1-C2-C3 | -3.85 | 119.38 | 126.04 |
| 15 | D | 406 | BCR | C33-C5-C6 | -3.84 | 120.22 | 124.53 |
| 15 | C | 514 | BCR | C4-C5-C6 | -3.84 | 117.16 | 122.73 |
| 15 | C | 516 | BCR | C30-C25-C26 | -3.82 | 117.23 | 122.61 |
| 15 | H | 101 | BCR | C4-C5-C6 | -3.81 | 117.20 | 122.73 |
| 15 | A | 406 | BCR | C27-C26-C25 | -3.81 | 117.21 | 122.73 |
| 15 | C | 516 | BCR | C1-C6-C5 | -3.79 | 117.28 | 122.61 |
| 15 | B | 517 | BCR | C4-C5-C6 | -3.77 | 117.25 | 122.73 |
| 15 | C | 514 | BCR | C24-C23-C22 | -3.77 | 120.54 | 126.23 |
| 15 | B | 517 | BCR | C16-C17-C18 | -3.76 | 121.94 | 127.31 |
| 15 | C | 514 | BCR | C27-C26-C25 | -3.76 | 117.27 | 122.73 |
| 13 | B | 513 | CLA | C1-C2-C3 | -3.74 | 119.57 | 126.04 |
| 15 | B | 518 | BCR | C36-C18-C17 | -3.73 | 117.70 | 122.92 |
| 15 | B | 518 | BCR | C19-C18-C17 | 3.68 | 124.59 | 118.94 |
| 15 | C | 514 | BCR | C30-C25-C26 | -3.68 | 117.44 | 122.61 |
| 15 | C | 515 | BCR | C27-C26-C25 | -3.67 | 117.40 | 122.73 |
| 15 | C | 514 | BCR | C7-C8-C9 | -3.67 | 120.69 | 126.23 |
| 15 | C | 516 | BCR | C4-C5-C6 | -3.64 | 117.45 | 122.73 |
| 15 | C | 514 | BCR | C38-C26-C25 | -3.63 | 120.45 | 124.53 |
| 18 | B | 520 | LMT | C1B-O1B-C4' | -3.57 | 109.14 | 117.96 |
| 15 | D | 406 | BCR | C27-C26-C25 | -3.56 | 117.56 | 122.73 |
| 15 | A | 406 | BCR | C1-C6-C5 | -3.54 | 117.63 | 122.61 |
| 15 | C | 514 | BCR | C1-C6-C5 | -3.50 | 117.68 | 122.61 |
| 13 | B | 502 | CLA | C1-C2-C3 | -3.50 | 119.99 | 126.04 |
| 13 | C | 508 | CLA | CHD-C1D-ND | -3.48 | 121.25 | 124.45 |
| 15 | B | 517 | BCR | C33-C5-C6 | -3.47 | 120.63 | 124.53 |
| 13 | C | 506 | CLA | O2A-C1-C2 | 3.46 | 121.19 | 109.49 |
| 15 | C | 514 | BCR | C38-C26-C27 | 3.45 | 120.24 | 113.62 |
| 18 | B | 521 | LMT | C1B-O1B-C4' | -3.44 | 109.45 | 117.96 |
| 13 | A | 402 | CLA | C1-C2-C3 | -3.44 | 120.10 | 126.04 |
| 13 | B | 516 | CLA | C1-C2-C3 | -3.42 | 120.13 | 126.04 |
| 13 | C | 502 | CLA | C2C-C1C-NC | 3.39 | 113.15 | 109.97 |
| 22 | D | 407 | PL9 | C7-C3-C2 | -3.38 | 118.86 | 123.30 |
| 15 | C | 515 | BCR | C15-C16-C17 | -3.36 | 116.59 | 123.47 |
| 15 | H | 101 | BCR | C24-C23-C22 | -3.36 | 121.16 | 126.23 |
| 13 | B | 502 | CLA | CHD-C1D-ND | -3.35 | 121.37 | 124.45 |
| 13 | B | 513 | CLA | C2C-C1C-NC | 3.35 | 113.11 | 109.97 |
| 15 | C | 516 | BCR | C24-C23-C22 | -3.35 | 121.17 | 126.23 |
| 13 | B | 515 | CLA | C2C-C1C-NC | 3.34 | 113.10 | 109.97 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 505 | CLA | CHD-C1D-ND | -3.34 | 121.38 | 124.45 |
| 13 | B | 515 | CLA | C1-C2-C3 | -3.34 | 120.27 | 126.04 |
| 13 | D | 405 | CLA | C2C-C1C-NC | 3.34 | 113.10 | 109.97 |
| 13 | B | 511 | CLA | C1-C2-C3 | -3.34 | 120.27 | 126.04 |
| 13 | C | 510 | CLA | CHD-C1D-ND | -3.34 | 121.39 | 124.45 |
| 13 | D | 401 | CLA | C2C-C1C-NC | 3.33 | 113.10 | 109.97 |
| 13 | D | 404 | CLA | C2D-C1D-ND | 3.33 | 112.56 | 110.10 |
| 15 | H | 101 | BCR | C1-C6-C5 | -3.32 | 117.93 | 122.61 |
| 13 | B | 516 | CLA | C6-C5-C3 | -3.32 | 109.19 | 114.62 |
| 15 | D | 406 | BCR | C38-C26-C27 | 3.31 | 119.97 | 113.62 |
| 13 | C | 506 | CLA | C2C-C1C-NC | 3.31 | 113.07 | 109.97 |
| 13 | C | 509 | CLA | CHD-C1D-ND | -3.31 | 121.41 | 124.45 |
| 13 | B | 516 | CLA | CHD-C1D-ND | -3.31 | 121.42 | 124.45 |
| 13 | B | 504 | CLA | C2C-C1C-NC | 3.30 | 113.07 | 109.97 |
| 13 | B | 510 | CLA | C2C-C1C-NC | 3.28 | 113.04 | 109.97 |
| 13 | C | 507 | CLA | CHD-C1D-ND | -3.27 | 121.44 | 124.45 |
| 13 | B | 515 | CLA | CHD-C1D-ND | -3.27 | 121.45 | 124.45 |
| 13 | B | 516 | CLA | C2C-C1C-NC | 3.27 | 113.04 | 109.97 |
| 15 | C | 516 | BCR | C33-C5-C4 | 3.27 | 119.89 | 113.62 |
| 15 | C | 514 | BCR | C33-C5-C4 | 3.26 | 119.89 | 113.62 |
| 15 | D | 406 | BCR | C33-C5-C4 | 3.25 | 119.86 | 113.62 |
| 13 | B | 509 | CLA | CHD-C1D-ND | -3.25 | 121.47 | 124.45 |
| 13 | C | 511 | CLA | C2C-C1C-NC | 3.25 | 113.01 | 109.97 |
| 13 | B | 501 | CLA | CHD-C1D-ND | -3.24 | 121.48 | 124.45 |
| 13 | C | 507 | CLA | C2C-C1C-NC | 3.24 | 113.00 | 109.97 |
| 15 | B | 517 | BCR | C33-C5-C4 | 3.24 | 119.83 | 113.62 |
| 15 | H | 101 | BCR | C30-C25-C26 | -3.23 | 118.06 | 122.61 |
| 13 | B | 506 | CLA | C1-C2-C3 | -3.23 | 120.45 | 126.04 |
| 13 | B | 508 | CLA | C2C-C1C-NC | 3.23 | 113.00 | 109.97 |
| 13 | C | 513 | CLA | CHD-C1D-ND | -3.23 | 121.49 | 124.45 |
| 13 | C | 504 | CLA | C1-C2-C3 | -3.23 | 120.46 | 126.04 |
| 15 | B | 518 | BCR | C38-C26-C27 | 3.22 | 119.81 | 113.62 |
| 13 | C | 511 | CLA | C1-C2-C3 | -3.22 | 120.48 | 126.04 |
| 13 | B | 506 | CLA | CHD-C1D-ND | -3.21 | 121.50 | 124.45 |
| 13 | B | 510 | CLA | CHD-C1D-ND | -3.21 | 121.50 | 124.45 |
| 13 | B | 512 | CLA | C2C-C1C-NC | 3.21 | 112.98 | 109.97 |
| 13 | C | 509 | CLA | C2C-C1C-NC | 3.21 | 112.98 | 109.97 |
| 13 | C | 507 | CLA | C1-C2-C3 | -3.21 | 120.50 | 126.04 |
| 13 | C | 512 | CLA | C2C-C1C-NC | 3.20 | 112.97 | 109.97 |
| 13 | A | 405 | CLA | C2C-C1C-NC | 3.19 | 112.96 | 109.97 |
| 13 | C | 504 | CLA | C2C-C1C-NC | 3.19 | 112.96 | 109.97 |
| 15 | B | 517 | BCR | C24-C23-C22 | -3.19 | 121.42 | 126.23 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 504 | CLA | CHD-C1D-ND | -3.19 | 121.52 | 124.45 |
| 15 | B | 518 | BCR | C12-C13-C14 | 3.19 | 123.83 | 118.94 |
| 13 | D | 401 | CLA | C1-C2-C3 | -3.19 | 120.53 | 126.04 |
| 13 | B | 510 | CLA | C1-C2-C3 | -3.19 | 120.53 | 126.04 |
| 13 | B | 514 | CLA | CHD-C1D-ND | -3.18 | 121.53 | 124.45 |
| 13 | B | 513 | CLA | CHD-C1D-ND | -3.18 | 121.53 | 124.45 |
| 15 | B | 518 | BCR | C35-C13-C14 | -3.18 | 118.47 | 122.92 |
| 13 | C | 501 | CLA | CHD-C1D-ND | -3.18 | 121.53 | 124.45 |
| 13 | B | 501 | CLA | C2C-C1C-NC | 3.17 | 112.94 | 109.97 |
| 13 | D | 401 | CLA | CHD-C1D-ND | -3.17 | 121.54 | 124.45 |
| 13 | A | 403 | CLA | C2C-C1C-NC | 3.16 | 112.94 | 109.97 |
| 13 | B | 507 | CLA | C1-C2-C3 | -3.16 | 120.57 | 126.04 |
| 13 | C | 502 | CLA | C1-C2-C3 | -3.16 | 120.58 | 126.04 |
| 13 | C | 512 | CLA | C1-C2-C3 | -3.16 | 120.58 | 126.04 |
| 15 | A | 406 | BCR | C4-C5-C6 | -3.15 | 118.16 | 122.73 |
| 13 | B | 509 | CLA | C1-C2-C3 | -3.14 | 120.62 | 126.04 |
| 13 | C | 511 | CLA | CMA-C3A-C4A | 3.12 | 120.17 | 111.77 |
| 13 | A | 403 | CLA | CHD-C1D-ND | -3.11 | 121.59 | 124.45 |
| 13 | A | 405 | CLA | CHD-C1D-ND | -3.11 | 121.60 | 124.45 |
| 15 | B | 517 | BCR | C27-C26-C25 | -3.10 | 118.22 | 122.73 |
| 13 | C | 512 | CLA | CHD-C1D-ND | -3.10 | 121.60 | 124.45 |
| 13 | B | 509 | CLA | C2C-C1C-NC | 3.10 | 112.88 | 109.97 |
| 13 | C | 503 | CLA | C2C-C1C-NC | 3.10 | 112.88 | 109.97 |
| 13 | C | 513 | CLA | C1-C2-C3 | -3.09 | 120.69 | 126.04 |
| 13 | B | 507 | CLA | C2C-C1C-NC | 3.09 | 112.87 | 109.97 |
| 13 | C | 508 | CLA | C6-C5-C3 | -3.09 | 109.57 | 114.62 |
| 15 | H | 101 | BCR | C27-C26-C25 | -3.08 | 118.25 | 122.73 |
| 13 | C | 503 | CLA | CMA-C3A-C4A | 3.07 | 120.03 | 111.77 |
| 13 | B | 505 | CLA | C2C-C1C-NC | 3.07 | 112.85 | 109.97 |
| 13 | B | 501 | CLA | CMA-C3A-C4A | 3.06 | 120.00 | 111.77 |
| 13 | C | 506 | CLA | CHD-C1D-ND | -3.06 | 121.64 | 124.45 |
| 13 | B | 507 | CLA | CHD-C1D-ND | -3.06 | 121.65 | 124.45 |
| 13 | B | 508 | CLA | C1-O2A-CGA | 3.05 | 124.46 | 116.44 |
| 13 | B | 511 | CLA | CHD-C1D-ND | -3.05 | 121.65 | 124.45 |
| 13 | C | 502 | CLA | CHD-C1D-ND | -3.05 | 121.66 | 124.45 |
| 15 | H | 101 | BCR | C34-C9-C10 | -3.04 | 118.66 | 122.92 |
| 13 | B | 515 | CLA | O2A-CGA-CBA | 3.04 | 121.45 | 111.91 |
| 13 | D | 404 | CLA | CHD-C1D-ND | -3.03 | 121.67 | 124.45 |
| 13 | D | 405 | CLA | C2D-C1D-ND | 3.03 | 112.34 | 110.10 |
| 17 | B | 519 | LMG | C8-O7-C10 | -3.03 | 110.34 | 117.79 |
| 13 | C | 511 | CLA | C6-C5-C3 | -3.03 | 109.67 | 114.62 |
| 13 | C | 510 | CLA | C2C-C1C-NC | 3.02 | 112.80 | 109.97 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 504 | CLA | CMA-C3A-C4A | 3.02 | 119.88 | 111.77 |
| 23 | E | 101 | HEM | C4D-ND-C1D | 3.01 | 108.18 | 105.07 |
| 13 | C | 505 | CLA | O2D-CGD-O1D | -3.01 | 117.96 | 123.84 |
| 13 | C | 503 | CLA | C2D-C1D-ND | 3.00 | 112.31 | 110.10 |
| 13 | A | 402 | CLA | CHD-C1D-ND | -3.00 | 121.70 | 124.45 |
| 13 | A | 405 | CLA | C2D-C1D-ND | 2.99 | 112.31 | 110.10 |
| 15 | C | 516 | BCR | C23-C24-C25 | -2.99 | 118.80 | 127.20 |
| 13 | A | 403 | CLA | CMA-C3A-C4A | 2.99 | 119.80 | 111.77 |
| 15 | A | 406 | BCR | C30-C25-C26 | -2.99 | 118.41 | 122.61 |
| 13 | C | 502 | CLA | CMA-C3A-C4A | 2.99 | 119.80 | 111.77 |
| 13 | B | 514 | CLA | C2C-C1C-NC | 2.98 | 112.76 | 109.97 |
| 13 | B | 503 | CLA | O2D-CGD-O1D | -2.97 | 118.02 | 123.84 |
| 13 | D | 405 | CLA | CMA-C3A-C4A | 2.97 | 119.77 | 111.77 |
| 14 | A | 404 | PHO | CMB-C2B-C3B | 2.97 | 130.24 | 124.68 |
| 23 | E | 101 | HEM | C4B-CHC-C1C | 2.97 | 126.48 | 122.56 |
| 13 | C | 508 | CLA | O2A-CGA-CBA | 2.97 | 121.23 | 111.91 |
| 15 | C | 515 | BCR | C23-C24-C25 | -2.97 | 118.86 | 127.20 |
| 13 | C | 513 | CLA | CMA-C3A-C4A | 2.97 | 119.75 | 111.77 |
| 15 | C | 515 | BCR | C2-C1-C6 | 2.97 | 115.05 | 110.48 |
| 13 | C | 506 | CLA | CMA-C3A-C4A | 2.96 | 119.72 | 111.77 |
| 13 | C | 503 | CLA | CHD-C1D-ND | -2.95 | 121.74 | 124.45 |
| 13 | C | 511 | CLA | CHD-C1D-ND | -2.95 | 121.74 | 124.45 |
| 13 | B | 503 | CLA | C2C-C1C-NC | 2.95 | 112.73 | 109.97 |
| 13 | C | 505 | CLA | C2C-C1C-NC | 2.95 | 112.73 | 109.97 |
| 13 | C | 510 | CLA | C2D-C1D-ND | 2.94 | 112.27 | 110.10 |
| 13 | C | 501 | CLA | CMA-C3A-C4A | 2.94 | 119.67 | 111.77 |
| 13 | B | 511 | CLA | C2C-C1C-NC | 2.94 | 112.72 | 109.97 |
| 13 | B | 502 | CLA | C2C-C1C-NC | 2.93 | 112.72 | 109.97 |
| 15 | H | 101 | BCR | C38-C26-C27 | 2.93 | 119.25 | 113.62 |
| 13 | A | 405 | CLA | O2D-CGD-O1D | -2.92 | 118.12 | 123.84 |
| 15 | H | 101 | BCR | C20-C19-C18 | -2.92 | 118.21 | 126.42 |
| 13 | B | 505 | CLA | C2D-C1D-ND | 2.92 | 112.26 | 110.10 |
| 15 | C | 515 | BCR | C24-C23-C22 | -2.92 | 121.82 | 126.23 |
| 13 | C | 513 | CLA | C2D-C1D-ND | 2.91 | 112.25 | 110.10 |
| 13 | B | 502 | CLA | CMA-C3A-C4A | 2.91 | 119.59 | 111.77 |
| 13 | D | 405 | CLA | CHD-C1D-ND | -2.91 | 121.78 | 124.45 |
| 13 | B | 511 | CLA | CMA-C3A-C4A | 2.91 | 119.58 | 111.77 |
| 13 | D | 405 | CLA | O2D-CGD-O1D | -2.90 | 118.16 | 123.84 |
| 13 | B | 505 | CLA | C1-C2-C3 | -2.90 | 121.02 | 126.04 |
| 13 | A | 402 | CLA | O2D-CGD-O1D | -2.90 | 118.17 | 123.84 |
| 13 | C | 513 | CLA | C2C-C1C-NC | 2.90 | 112.69 | 109.97 |
| 13 | A | 403 | CLA | O2D-CGD-O1D | -2.90 | 118.18 | 123.84 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 508 | CLA | CMA-C3A-C4A | 2.90 | 119.56 | 111.77 |
| 13 | B | 514 | CLA | CMA-C3A-C4A | 2.89 | 119.54 | 111.77 |
| 13 | C | 501 | CLA | C2C-C1C-NC | 2.89 | 112.68 | 109.97 |
| 15 | C | 516 | BCR | C15-C16-C17 | -2.89 | 117.56 | 123.47 |
| 13 | B | 508 | CLA | C1C-C2C-C3C | -2.89 | 103.92 | 106.96 |
| 15 | C | 515 | BCR | C21-C20-C19 | -2.88 | 114.22 | 123.22 |
| 13 | B | 505 | CLA | C1C-C2C-C3C | -2.88 | 103.93 | 106.96 |
| 13 | C | 511 | CLA | O2D-CGD-O1D | -2.88 | 118.21 | 123.84 |
| 13 | A | 405 | CLA | CMA-C3A-C4A | 2.87 | 119.50 | 111.77 |
| 13 | C | 512 | CLA | CMA-C3A-C4A | 2.86 | 119.47 | 111.77 |
| 15 | B | 518 | BCR | C34-C9-C10 | -2.86 | 118.91 | 122.92 |
| 13 | C | 505 | CLA | C1-C2-C3 | -2.86 | 121.09 | 126.04 |
| 15 | H | 101 | BCR | C16-C15-C14 | -2.86 | 117.61 | 123.47 |
| 13 | B | 506 | CLA | C2C-C1C-NC | 2.86 | 112.65 | 109.97 |
| 13 | D | 401 | CLA | CMA-C3A-C4A | 2.86 | 119.45 | 111.77 |
| 13 | B | 504 | CLA | CMA-C3A-C4A | 2.86 | 119.45 | 111.77 |
| 13 | B | 507 | CLA | CMA-C3A-C4A | 2.85 | 119.43 | 111.77 |
| 13 | C | 505 | CLA | CHD-C1D-ND | -2.85 | 121.83 | 124.45 |
| 13 | C | 502 | CLA | C1C-C2C-C3C | -2.85 | 103.96 | 106.96 |
| 15 | C | 516 | BCR | C11-C12-C13 | -2.85 | 118.42 | 126.42 |
| 15 | H | 101 | BCR | C33-C5-C4 | 2.85 | 119.08 | 113.62 |
| 14 | D | 402 | PHO | O1D-CGD-CBD | 2.84 | 129.47 | 124.74 |
| 14 | A | 404 | PHO | O1D-CGD-CBD | 2.84 | 129.47 | 124.74 |
| 15 | C | 516 | BCR | C38-C26-C27 | 2.84 | 119.07 | 113.62 |
| 13 | A | 402 | CLA | C2C-C1C-NC | 2.84 | 112.63 | 109.97 |
| 13 | A | 405 | CLA | O2A-CGA-CBA | 2.84 | 120.81 | 111.91 |
| 15 | C | 515 | BCR | C30-C25-C26 | -2.83 | 118.63 | 122.61 |
| 13 | B | 513 | CLA | C1C-C2C-C3C | -2.83 | 103.98 | 106.96 |
| 14 | D | 402 | PHO | CMB-C2B-C3B | 2.83 | 129.97 | 124.68 |
| 15 | A | 406 | BCR | C38-C26-C27 | 2.82 | 119.04 | 113.62 |
| 13 | C | 509 | CLA | C2D-C1D-ND | 2.82 | 112.19 | 110.10 |
| 13 | B | 510 | CLA | CMB-C2B-C3B | 2.82 | 129.96 | 124.68 |
| 13 | B | 512 | CLA | CHD-C1D-ND | -2.82 | 121.86 | 124.45 |
| 13 | B | 514 | CLA | C2D-C1D-ND | 2.82 | 112.18 | 110.10 |
| 13 | D | 401 | CLA | O2D-CGD-O1D | -2.82 | 118.33 | 123.84 |
| 13 | C | 508 | CLA | C2C-C1C-NC | 2.81 | 112.61 | 109.97 |
| 13 | C | 510 | CLA | C1C-C2C-C3C | -2.81 | 104.00 | 106.96 |
| 22 | D | 407 | PL9 | C7-C8-C9 | -2.81 | 122.11 | 126.79 |
| 13 | C | 508 | CLA | C1-C2-C3 | -2.81 | 121.19 | 126.04 |
| 15 | D | 406 | BCR | C7-C8-C9 | -2.80 | 122.00 | 126.23 |
| 13 | D | 401 | CLA | C1C-C2C-C3C | -2.80 | 104.01 | 106.96 |
| 13 | B | 502 | CLA | C2D-C1D-ND | 2.80 | 112.17 | 110.10 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 17 | B | 519 | LMG | O8-C28-C29 | 2.80 | 120.69 | 111.91 |
| 13 | B | 515 | CLA | C2D-C1D-ND | 2.80 | 112.16 | 110.10 |
| 13 | B | 504 | CLA | CHD-C1D-ND | -2.79 | 121.89 | 124.45 |
| 15 | D | 406 | BCR | C8-C7-C6 | -2.79 | 119.37 | 127.20 |
| 13 | B | 501 | CLA | C2D-C1D-ND | 2.78 | 112.16 | 110.10 |
| 13 | B | 511 | CLA | C2D-C1D-ND | 2.78 | 112.15 | 110.10 |
| 13 | B | 503 | CLA | CMA-C3A-C4A | 2.78 | 119.23 | 111.77 |
| 13 | A | 402 | CLA | C2D-C1D-ND | 2.76 | 112.14 | 110.10 |
| 13 | C | 501 | CLA | C2D-C1D-ND | 2.76 | 112.14 | 110.10 |
| 13 | D | 405 | CLA | C1C-C2C-C3C | -2.75 | 104.06 | 106.96 |
| 14 | D | 402 | PHO | O2D-CGD-O1D | -2.75 | 118.46 | 123.84 |
| 15 | B | 517 | BCR | C23-C24-C25 | -2.75 | 119.49 | 127.20 |
| 13 | C | 509 | CLA | CMA-C3A-C4A | 2.74 | 119.14 | 111.77 |
| 13 | D | 404 | CLA | C1D-ND-C4D | -2.73 | 104.39 | 106.33 |
| 13 | C | 512 | CLA | C2D-C1D-ND | 2.73 | 112.11 | 110.10 |
| 15 | C | 514 | BCR | C8-C7-C6 | -2.73 | 119.54 | 127.20 |
| 13 | C | 508 | CLA | O2D-CGD-O1D | -2.72 | 118.52 | 123.84 |
| 13 | B | 512 | CLA | C1C-C2C-C3C | -2.72 | 104.10 | 106.96 |
| 13 | B | 509 | CLA | C2D-C1D-ND | 2.72 | 112.11 | 110.10 |
| 13 | B | 515 | CLA | C1C-C2C-C3C | -2.72 | 104.10 | 106.96 |
| 15 | C | 515 | BCR | C4-C5-C6 | -2.72 | 118.79 | 122.73 |
| 13 | C | 502 | CLA | C2D-C1D-ND | 2.72 | 112.11 | 110.10 |
| 13 | C | 506 | CLA | C2D-C1D-ND | 2.71 | 112.10 | 110.10 |
| 13 | B | 513 | CLA | C2D-C1D-ND | 2.71 | 112.10 | 110.10 |
| 13 | C | 508 | CLA | C2D-C1D-ND | 2.71 | 112.10 | 110.10 |
| 13 | C | 504 | CLA | C2D-C1D-ND | 2.71 | 112.10 | 110.10 |
| 13 | C | 501 | CLA | C1-C2-C3 | -2.70 | 121.37 | 126.04 |
| 13 | C | 507 | CLA | C1C-C2C-C3C | -2.70 | 104.12 | 106.96 |
| 13 | C | 504 | CLA | C1C-C2C-C3C | -2.70 | 104.12 | 106.96 |
| 13 | C | 511 | CLA | C2D-C1D-ND | 2.70 | 112.09 | 110.10 |
| 13 | B | 504 | CLA | C1C-C2C-C3C | -2.70 | 104.12 | 106.96 |
| 13 | B | 507 | CLA | C2D-C1D-ND | 2.69 | 112.09 | 110.10 |
| 13 | B | 504 | CLA | O2D-CGD-O1D | -2.69 | 118.58 | 123.84 |
| 13 | A | 405 | CLA | C1C-C2C-C3C | -2.68 | 104.13 | 106.96 |
| 13 | B | 509 | CLA | C1C-C2C-C3C | -2.68 | 104.14 | 106.96 |
| 13 | C | 512 | CLA | C1C-C2C-C3C | -2.68 | 104.14 | 106.96 |
| 13 | B | 512 | CLA | CMA-C3A-C4A | 2.68 | 118.97 | 111.77 |
| 13 | C | 507 | CLA | CMA-C3A-C4A | 2.67 | 118.94 | 111.77 |
| 13 | C | 506 | CLA | C1C-C2C-C3C | -2.67 | 104.15 | 106.96 |
| 20 | C | 517 | DGD | O1G-C1A-C2A | 2.66 | 120.27 | 111.91 |
| 19 | B | 522 | LHG | O8-C23-C24 | 2.66 | 120.27 | 111.91 |
| 13 | A | 403 | CLA | C1C-C2C-C3C | -2.66 | 104.16 | 106.96 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | D | 401 | CLA | CMB-C2B-C3B | 2.66 | 129.66 | 124.68 |
| 13 | A | 405 | CLA | C1-C2-C3 | -2.66 | 121.44 | 126.04 |
| 13 | B | 515 | CLA | CMA-C3A-C4A | 2.66 | 118.92 | 111.77 |
| 13 | B | 508 | CLA | C1-C2-C3 | -2.66 | 121.45 | 126.04 |
| 13 | D | 401 | CLA | C2D-C1D-ND | 2.66 | 112.06 | 110.10 |
| 13 | C | 504 | CLA | O2D-CGD-O1D | -2.66 | 118.65 | 123.84 |
| 13 | C | 509 | CLA | C1C-C2C-C3C | -2.65 | 104.17 | 106.96 |
| 13 | C | 501 | CLA | C1C-C2C-C3C | -2.65 | 104.17 | 106.96 |
| 13 | C | 511 | CLA | C1C-C2C-C3C | -2.65 | 104.17 | 106.96 |
| 15 | C | 514 | BCR | C23-C24-C25 | -2.65 | 119.77 | 127.20 |
| 13 | B | 510 | CLA | CMA-C3A-C4A | 2.65 | 118.88 | 111.77 |
| 13 | D | 405 | CLA | CMB-C2B-C3B | 2.65 | 129.63 | 124.68 |
| 13 | B | 507 | CLA | O2D-CGD-O1D | -2.64 | 118.67 | 123.84 |
| 13 | B | 510 | CLA | C1C-C2C-C3C | -2.64 | 104.18 | 106.96 |
| 13 | B | 510 | CLA | C2D-C1D-ND | 2.64 | 112.05 | 110.10 |
| 13 | B | 508 | CLA | O2D-CGD-O1D | -2.64 | 118.67 | 123.84 |
| 13 | B | 516 | CLA | C2D-C1D-ND | 2.64 | 112.05 | 110.10 |
| 15 | B | 518 | BCR | C37-C22-C21 | -2.64 | 119.22 | 122.92 |
| 13 | B | 514 | CLA | CMB-C2B-C3B | 2.63 | 129.61 | 124.68 |
| 13 | B | 516 | CLA | O2A-CGA-CBA | 2.63 | 120.16 | 111.91 |
| 13 | B | 506 | CLA | O2D-CGD-O1D | -2.63 | 118.70 | 123.84 |
| 13 | B | 501 | CLA | C1C-C2C-C3C | -2.63 | 104.19 | 106.96 |
| 13 | B | 508 | CLA | CHD-C1D-ND | -2.63 | 122.04 | 124.45 |
| 14 | A | 404 | PHO | O2D-CGD-O1D | -2.63 | 118.70 | 123.84 |
| 22 | D | 407 | PL9 | C40-C39-C41 | 2.62 | 119.68 | 115.27 |
| 13 | B | 511 | CLA | O2D-CGD-O1D | -2.62 | 118.72 | 123.84 |
| 13 | B | 508 | CLA | C2D-C1D-ND | 2.61 | 112.03 | 110.10 |
| 22 | D | 407 | PL9 | C22-C23-C24 | -2.61 | 121.38 | 127.66 |
| 13 | B | 506 | CLA | CMA-C3A-C4A | 2.61 | 118.78 | 111.77 |
| 23 | E | 101 | HEM | C1B-NB-C4B | 2.61 | 107.77 | 105.07 |
| 15 | A | 406 | BCR | C20-C19-C18 | -2.61 | 119.10 | 126.42 |
| 13 | C | 512 | CLA | O2A-CGA-CBA | 2.60 | 120.07 | 111.91 |
| 13 | B | 514 | CLA | C1C-C2C-C3C | -2.60 | 104.22 | 106.96 |
| 13 | D | 404 | CLA | C2C-C1C-NC | 2.60 | 112.41 | 109.97 |
| 13 | B | 512 | CLA | O2D-CGD-O1D | -2.60 | 118.76 | 123.84 |
| 13 | B | 503 | CLA | CHD-C1D-ND | -2.60 | 122.07 | 124.45 |
| 15 | B | 517 | BCR | C30-C25-C26 | -2.59 | 118.96 | 122.61 |
| 13 | B | 508 | CLA | CMB-C2B-C3B | 2.59 | 129.53 | 124.68 |
| 15 | H | 101 | BCR | C23-C24-C25 | -2.59 | 119.92 | 127.20 |
| 13 | B | 516 | CLA | CMA-C3A-C4A | 2.59 | 118.73 | 111.77 |
| 13 | A | 405 | CLA | C1-O2A-CGA | 2.59 | 123.24 | 116.44 |
| 13 | B | 513 | CLA | O2D-CGD-O1D | -2.58 | 118.79 | 123.84 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 15 | B | 517 | BCR | C11-C12-C13 | -2.58 | 119.16 | 126.42 |
| 13 | C | 507 | CLA | C2D-C1D-ND | 2.58 | 112.00 | 110.10 |
| 13 | B | 504 | CLA | CHA-C4D-ND | 2.58 | 137.89 | 132.50 |
| 13 | B | 512 | CLA | CMD-C2D-C3D | -2.58 | 121.68 | 127.61 |
| 13 | C | 503 | CLA | C1C-C2C-C3C | -2.58 | 104.25 | 106.96 |
| 13 | B | 510 | CLA | O2D-CGD-O1D | -2.57 | 118.81 | 123.84 |
| 13 | B | 515 | CLA | O2D-CGD-O1D | -2.57 | 118.81 | 123.84 |
| 13 | C | 501 | CLA | O2D-CGD-O1D | -2.57 | 118.82 | 123.84 |
| 13 | B | 502 | CLA | C1C-C2C-C3C | -2.57 | 104.26 | 106.96 |
| 13 | B | 507 | CLA | C1C-C2C-C3C | -2.57 | 104.26 | 106.96 |
| 13 | B | 516 | CLA | C1C-C2C-C3C | -2.56 | 104.26 | 106.96 |
| 15 | B | 518 | BCR | C33-C5-C4 | 2.56 | 118.53 | 113.62 |
| 13 | B | 512 | CLA | CHA-C4D-ND | 2.56 | 137.85 | 132.50 |
| 15 | A | 406 | BCR | C23-C24-C25 | -2.56 | 120.02 | 127.20 |
| 15 | C | 515 | BCR | C8-C7-C6 | -2.55 | 120.03 | 127.20 |
| 13 | B | 503 | CLA | C2D-C1D-ND | 2.55 | 111.99 | 110.10 |
| 13 | C | 503 | CLA | C1-C2-C3 | -2.55 | 121.63 | 126.04 |
| 13 | C | 513 | CLA | C1C-C2C-C3C | -2.55 | 104.28 | 106.96 |
| 13 | B | 506 | CLA | C2D-C1D-ND | 2.55 | 111.98 | 110.10 |
| 13 | B | 503 | CLA | CHA-C4D-ND | 2.55 | 137.83 | 132.50 |
| 13 | C | 509 | CLA | C1-C2-C3 | -2.55 | 121.64 | 126.04 |
| 13 | B | 505 | CLA | C1D-ND-C4D | -2.55 | 104.53 | 106.33 |
| 13 | B | 508 | CLA | CMB-C2B-C1B | -2.54 | 124.56 | 128.46 |
| 13 | C | 508 | CLA | CMA-C3A-C4A | 2.54 | 118.59 | 111.77 |
| 13 | A | 403 | CLA | C2D-C1D-ND | 2.53 | 111.97 | 110.10 |
| 13 | B | 505 | CLA | O2D-CGD-O1D | -2.53 | 118.89 | 123.84 |
| 13 | A | 405 | CLA | C1D-ND-C4D | -2.52 | 104.54 | 106.33 |
| 13 | A | 402 | CLA | C1C-C2C-C3C | -2.52 | 104.31 | 106.96 |
| 13 | B | 512 | CLA | O2A-CGA-CBA | 2.52 | 119.81 | 111.91 |
| 13 | C | 510 | CLA | C1-O2A-CGA | 2.52 | 123.05 | 116.44 |
| 17 | H | 102 | LMG | O8-C28-C29 | 2.51 | 119.80 | 111.91 |
| 13 | C | 511 | CLA | CHA-C4D-ND | 2.51 | 137.76 | 132.50 |
| 15 | C | 514 | BCR | C20-C19-C18 | -2.51 | 119.36 | 126.42 |
| 13 | B | 513 | CLA | CMB-C2B-C3B | 2.51 | 129.37 | 124.68 |
| 13 | C | 505 | CLA | CHA-C4D-ND | 2.51 | 137.74 | 132.50 |
| 13 | C | 505 | CLA | CMB-C2B-C3B | 2.50 | 129.36 | 124.68 |
| 13 | C | 506 | CLA | O2D-CGD-O1D | -2.50 | 118.95 | 123.84 |
| 13 | C | 502 | CLA | O2D-CGD-O1D | -2.50 | 118.96 | 123.84 |
| 13 | B | 506 | CLA | C1C-C2C-C3C | -2.50 | 104.33 | 106.96 |
| 13 | B | 514 | CLA | O2D-CGD-O1D | -2.49 | 118.96 | 123.84 |
| 13 | B | 508 | CLA | O2A-CGA-CBA | 2.49 | 119.73 | 111.91 |
| 13 | B | 503 | CLA | O2A-CGA-CBA | 2.49 | 119.72 | 111.91 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 22 | D | 407 | PL9 | C27-C28-C29 | -2.49 | 121.67 | 127.66 |
| 13 | C | 507 | CLA | O2D-CGD-O1D | -2.48 | 118.98 | 123.84 |
| 13 | C | 503 | CLA | CHA-C4D-ND | 2.48 | 137.69 | 132.50 |
| 13 | B | 503 | CLA | C1C-C2C-C3C | -2.48 | 104.35 | 106.96 |
| 23 | E | 101 | HEM | C4C-CHD-C1D | 2.48 | 125.83 | 122.56 |
| 13 | C | 512 | CLA | CMB-C2B-C3B | 2.47 | 129.31 | 124.68 |
| 13 | B | 507 | CLA | CHA-C4D-ND | 2.47 | 137.68 | 132.50 |
| 13 | C | 504 | CLA | CHA-C4D-ND | 2.47 | 137.67 | 132.50 |
| 13 | B | 511 | CLA | C1C-C2C-C3C | -2.47 | 104.36 | 106.96 |
| 13 | C | 505 | CLA | O2A-CGA-CBA | 2.47 | 119.64 | 111.91 |
| 13 | C | 513 | CLA | CMB-C2B-C3B | 2.47 | 129.29 | 124.68 |
| 15 | B | 517 | BCR | C38-C26-C27 | 2.46 | 118.35 | 113.62 |
| 13 | A | 402 | CLA | CHA-C4D-ND | 2.46 | 137.64 | 132.50 |
| 13 | A | 403 | CLA | CHA-C4D-ND | 2.46 | 137.63 | 132.50 |
| 13 | B | 505 | CLA | CMA-C3A-C4A | 2.45 | 118.36 | 111.77 |
| 13 | B | 513 | CLA | CHA-C4D-ND | 2.45 | 137.63 | 132.50 |
| 15 | D | 406 | BCR | C16-C15-C14 | -2.45 | 118.45 | 123.47 |
| 13 | A | 402 | CLA | CMA-C3A-C4A | 2.45 | 118.36 | 111.77 |
| 15 | D | 406 | BCR | C20-C19-C18 | -2.45 | 119.53 | 126.42 |
| 13 | B | 506 | CLA | CHA-C4D-ND | 2.45 | 137.62 | 132.50 |
| 13 | D | 405 | CLA | C1D-ND-C4D | -2.45 | 104.60 | 106.33 |
| 13 | C | 510 | CLA | CMA-C3A-C4A | 2.44 | 118.34 | 111.77 |
| 13 | B | 512 | CLA | CMB-C2B-C3B | 2.44 | 129.25 | 124.68 |
| 13 | C | 512 | CLA | O2D-CGD-O1D | -2.44 | 119.06 | 123.84 |
| 13 | A | 405 | CLA | CMB-C2B-C3B | 2.44 | 129.24 | 124.68 |
| 13 | D | 404 | CLA | CMA-C3A-C4A | 2.44 | 118.32 | 111.77 |
| 13 | B | 501 | CLA | O2D-CGD-O1D | -2.44 | 119.08 | 123.84 |
| 13 | B | 516 | CLA | CHA-C4D-ND | 2.44 | 137.59 | 132.50 |
| 13 | C | 510 | CLA | O2D-CGD-O1D | -2.44 | 119.08 | 123.84 |
| 13 | C | 501 | CLA | CHA-C4D-ND | 2.43 | 137.59 | 132.50 |
| 13 | B | 514 | CLA | CHA-C4D-ND | 2.43 | 137.59 | 132.50 |
| 13 | C | 501 | CLA | O2A-CGA-CBA | 2.43 | 119.53 | 111.91 |
| 13 | B | 516 | CLA | O2D-CGD-O1D | -2.43 | 119.09 | 123.84 |
| 13 | C | 509 | CLA | O2D-CGD-O1D | -2.43 | 119.09 | 123.84 |
| 13 | B | 501 | CLA | CHA-C4D-ND | 2.43 | 137.57 | 132.50 |
| 13 | B | 505 | CLA | CHA-C4D-ND | 2.43 | 137.57 | 132.50 |
| 15 | C | 515 | BCR | C1-C6-C5 | -2.42 | 119.20 | 122.61 |
| 15 | C | 515 | BCR | C33-C5-C4 | 2.42 | 118.27 | 113.62 |
| 13 | B | 511 | CLA | CHA-C4D-ND | 2.42 | 137.57 | 132.50 |
| 13 | B | 506 | CLA | O2A-CGA-CBA | 2.42 | 119.52 | 111.91 |
| 13 | C | 501 | CLA | C1-O2A-CGA | 2.42 | 122.80 | 116.44 |
| 13 | C | 512 | CLA | CHA-C4D-ND | 2.42 | 137.56 | 132.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 504 | CLA | CMD-C2D-C3D | -2.42 | 122.04 | 127.61 |
| 15 | H | 101 | BCR | C36-C18-C17 | -2.42 | 119.54 | 122.92 |
| 13 | B | 505 | CLA | CMD-C2D-C3D | -2.41 | 122.06 | 127.61 |
| 13 | B | 508 | CLA | CHA-C4D-ND | 2.41 | 137.54 | 132.50 |
| 13 | C | 510 | CLA | CHA-C4D-ND | 2.41 | 137.53 | 132.50 |
| 13 | B | 515 | CLA | CHA-C4D-ND | 2.41 | 137.53 | 132.50 |
| 13 | B | 509 | CLA | CHA-C4D-ND | 2.40 | 137.51 | 132.50 |
| 13 | D | 401 | CLA | CHA-C4D-ND | 2.40 | 137.51 | 132.50 |
| 13 | C | 507 | CLA | CHA-C4D-ND | 2.40 | 137.51 | 132.50 |
| 13 | C | 505 | CLA | C1C-C2C-C3C | -2.39 | 104.44 | 106.96 |
| 13 | D | 404 | CLA | CHA-C4D-ND | 2.39 | 137.50 | 132.50 |
| 13 | C | 508 | CLA | CHA-C4D-ND | 2.39 | 137.50 | 132.50 |
| 13 | C | 511 | CLA | O2A-CGA-CBA | 2.39 | 119.40 | 111.91 |
| 13 | B | 509 | CLA | O2D-CGD-O1D | -2.39 | 119.17 | 123.84 |
| 13 | B | 510 | CLA | O2A-CGA-CBA | 2.38 | 119.39 | 111.91 |
| 15 | H | 101 | BCR | C29-C30-C25 | 2.38 | 114.15 | 110.48 |
| 13 | C | 510 | CLA | C5-C3-C2 | 2.38 | 125.94 | 121.12 |
| 13 | B | 502 | CLA | O2D-CGD-O1D | -2.38 | 119.19 | 123.84 |
| 15 | C | 514 | BCR | C37-C22-C21 | -2.38 | 119.59 | 122.92 |
| 15 | D | 406 | BCR | C34-C9-C10 | -2.38 | 119.59 | 122.92 |
| 13 | B | 510 | CLA | CHA-C4D-ND | 2.38 | 137.47 | 132.50 |
| 13 | C | 509 | CLA | CHA-C4D-ND | 2.38 | 137.47 | 132.50 |
| 13 | B | 502 | CLA | CHA-C4D-ND | 2.37 | 137.47 | 132.50 |
| 13 | D | 405 | CLA | CHA-C4D-ND | 2.37 | 137.46 | 132.50 |
| 13 | B | 504 | CLA | O1D-CGD-CBD | -2.37 | 119.64 | 124.48 |
| 15 | C | 516 | BCR | C8-C7-C6 | -2.37 | 120.55 | 127.20 |
| 13 | C | 506 | CLA | CHA-C4D-ND | 2.37 | 137.45 | 132.50 |
| 13 | B | 510 | CLA | CMB-C2B-C1B | -2.37 | 124.83 | 128.46 |
| 13 | C | 502 | CLA | CHA-C4D-ND | 2.37 | 137.45 | 132.50 |
| 13 | C | 513 | CLA | C1D-ND-C4D | -2.36 | 104.66 | 106.33 |
| 13 | A | 403 | CLA | CMD-C2D-C3D | -2.36 | 122.18 | 127.61 |
| 15 | B | 517 | BCR | C8-C7-C6 | -2.36 | 120.57 | 127.20 |
| 13 | C | 503 | CLA | O2A-CGA-CBA | 2.36 | 119.32 | 111.91 |
| 15 | A | 406 | BCR | C33-C5-C4 | 2.36 | 118.15 | 113.62 |
| 13 | C | 513 | CLA | CHA-C4D-ND | 2.36 | 137.43 | 132.50 |
| 15 | B | 517 | BCR | C35-C13-C14 | -2.36 | 119.62 | 122.92 |
| 13 | C | 505 | CLA | C2D-C1D-ND | 2.35 | 111.84 | 110.10 |
| 13 | D | 401 | CLA | O1D-CGD-CBD | -2.35 | 119.67 | 124.48 |
| 15 | B | 517 | BCR | C34-C9-C10 | -2.34 | 119.64 | 122.92 |
| 15 | D | 406 | BCR | C23-C24-C25 | -2.34 | 120.64 | 127.20 |
| 22 | D | 407 | PL9 | C20-C19-C21 | 2.34 | 119.20 | 115.27 |
| 13 | C | 508 | CLA | CMB-C2B-C3B | 2.33 | 129.04 | 124.68 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 505 | CLA | O2A-CGA-CBA | 2.32 | 119.18 | 111.91 |
| 13 | C | 508 | CLA | C1C-C2C-C3C | -2.32 | 104.52 | 106.96 |
| 13 | D | 404 | CLA | C1C-C2C-C3C | -2.31 | 104.53 | 106.96 |
| 13 | B | 513 | CLA | CMA-C3A-C4A | 2.31 | 117.98 | 111.77 |
| 13 | D | 401 | CLA | O2A-CGA-CBA | 2.31 | 119.15 | 111.91 |
| 15 | A | 406 | BCR | C11-C12-C13 | -2.30 | 119.94 | 126.42 |
| 13 | A | 405 | CLA | CHA-C4D-ND | 2.30 | 137.32 | 132.50 |
| 13 | B | 506 | CLA | O1D-CGD-CBD | -2.30 | 119.78 | 124.48 |
| 13 | C | 503 | CLA | O2D-CGD-O1D | -2.30 | 119.34 | 123.84 |
| 13 | B | 502 | CLA | C1D-ND-C4D | -2.30 | 104.70 | 106.33 |
| 15 | B | 518 | BCR | C8-C9-C10 | 2.30 | 122.46 | 118.94 |
| 13 | C | 511 | CLA | CMD-C2D-C3D | -2.29 | 122.34 | 127.61 |
| 13 | A | 402 | CLA | CMB-C2B-C3B | 2.29 | 128.97 | 124.68 |
| 15 | H | 101 | BCR | C8-C7-C6 | -2.29 | 120.77 | 127.20 |
| 15 | C | 515 | BCR | C11-C12-C13 | -2.29 | 119.99 | 126.42 |
| 13 | C | 513 | CLA | C1-O2A-CGA | 2.29 | 122.44 | 116.44 |
| 13 | B | 509 | CLA | O2A-CGA-CBA | 2.28 | 119.07 | 111.91 |
| 13 | B | 506 | CLA | CMD-C2D-C3D | -2.28 | 122.37 | 127.61 |
| 13 | B | 513 | CLA | O2A-CGA-CBA | 2.28 | 119.05 | 111.91 |
| 13 | A | 402 | CLA | O2A-CGA-CBA | 2.27 | 119.04 | 111.91 |
| 13 | B | 502 | CLA | O2A-CGA-CBA | 2.27 | 119.03 | 111.91 |
| 15 | C | 515 | BCR | C35-C13-C14 | -2.26 | 119.75 | 122.92 |
| 15 | A | 406 | BCR | C2-C1-C6 | 2.26 | 113.96 | 110.48 |
| 13 | C | 501 | CLA | CAA-C2A-C3A | -2.26 | 106.59 | 112.78 |
| 13 | B | 507 | CLA | CMD-C2D-C3D | -2.26 | 122.42 | 127.61 |
| 13 | B | 501 | CLA | CMD-C2D-C3D | -2.26 | 122.42 | 127.61 |
| 19 | B | 522 | LHG | C5-O7-C7 | -2.26 | 112.24 | 117.79 |
| 13 | B | 514 | CLA | C1D-ND-C4D | -2.26 | 104.73 | 106.33 |
| 15 | C | 515 | BCR | C38-C26-C27 | 2.25 | 117.94 | 113.62 |
| 13 | B | 515 | CLA | C1-O2A-CGA | 2.25 | 122.34 | 116.44 |
| 13 | C | 511 | CLA | CMB-C2B-C3B | 2.25 | 128.88 | 124.68 |
| 13 | B | 502 | CLA | CMD-C2D-C3D | -2.24 | 122.45 | 127.61 |
| 13 | B | 501 | CLA | C1D-ND-C4D | -2.24 | 104.74 | 106.33 |
| 13 | C | 513 | CLA | O2A-CGA-CBA | 2.24 | 118.94 | 111.91 |
| 15 | B | 517 | BCR | C29-C30-C25 | 2.24 | 113.93 | 110.48 |
| 13 | C | 510 | CLA | C1D-ND-C4D | -2.24 | 104.75 | 106.33 |
| 13 | B | 504 | CLA | C2D-C1D-ND | 2.24 | 111.75 | 110.10 |
| 13 | B | 509 | CLA | CMD-C2D-C3D | -2.23 | 122.48 | 127.61 |
| 13 | A | 402 | CLA | CMD-C2D-C3D | -2.23 | 122.48 | 127.61 |
| 13 | C | 504 | CLA | CMD-C2D-C3D | -2.23 | 122.48 | 127.61 |
| 13 | C | 507 | CLA | O2A-CGA-CBA | 2.23 | 118.90 | 111.91 |
| 13 | C | 503 | CLA | C3D-C2D-C1D | -2.23 | 102.79 | 105.83 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | D | 401 | CLA | CMB-C2B-C1B | -2.22 | 125.05 | 128.46 |
| 13 | A | 405 | CLA | CMD-C2D-C3D | -2.22 | 122.50 | 127.61 |
| 13 | B | 509 | CLA | C1D-ND-C4D | -2.22 | 104.76 | 106.33 |
| 13 | C | 508 | CLA | CMD-C2D-C3D | -2.22 | 122.51 | 127.61 |
| 13 | D | 405 | CLA | CMD-C2D-C3D | -2.22 | 122.51 | 127.61 |
| 13 | B | 516 | CLA | CMD-C2D-C3D | -2.22 | 122.51 | 127.61 |
| 15 | B | 517 | BCR | C15-C16-C17 | -2.22 | 118.94 | 123.47 |
| 13 | B | 507 | CLA | O2A-CGA-CBA | 2.22 | 118.86 | 111.91 |
| 13 | C | 507 | CLA | CMD-C2D-C3D | -2.22 | 122.52 | 127.61 |
| 13 | B | 514 | CLA | CMD-C2D-C3D | -2.21 | 122.52 | 127.61 |
| 13 | D | 401 | CLA | CMD-C2D-C3D | -2.21 | 122.53 | 127.61 |
| 13 | B | 504 | CLA | CMB-C2B-C3B | 2.21 | 128.81 | 124.68 |
| 13 | D | 405 | CLA | O1D-CGD-CBD | -2.21 | 119.97 | 124.48 |
| 13 | B | 511 | CLA | CMB-C2B-C3B | 2.20 | 128.79 | 124.68 |
| 15 | C | 516 | BCR | C35-C13-C14 | -2.20 | 119.84 | 122.92 |
| 13 | C | 513 | CLA | CMD-C2D-C3D | -2.20 | 122.56 | 127.61 |
| 13 | C | 509 | CLA | O2A-CGA-CBA | 2.20 | 118.81 | 111.91 |
| 13 | B | 508 | CLA | O1D-CGD-CBD | -2.20 | 119.99 | 124.48 |
| 13 | B | 515 | CLA | CHA-C1A-NA | -2.20 | 121.37 | 126.40 |
| 13 | B | 502 | CLA | CMB-C2B-C3B | 2.20 | 128.78 | 124.68 |
| 13 | C | 504 | CLA | CMB-C2B-C3B | 2.19 | 128.78 | 124.68 |
| 15 | A | 406 | BCR | C35-C13-C14 | -2.19 | 119.85 | 122.92 |
| 13 | B | 506 | CLA | CMB-C2B-C3B | 2.19 | 128.78 | 124.68 |
| 13 | A | 403 | CLA | CHA-C1A-NA | -2.19 | 121.39 | 126.40 |
| 13 | B | 512 | CLA | C2D-C1D-ND | 2.19 | 111.72 | 110.10 |
| 13 | C | 501 | CLA | CMD-C2D-C3D | -2.19 | 122.58 | 127.61 |
| 13 | B | 513 | CLA | CMD-C2D-C3D | -2.18 | 122.60 | 127.61 |
| 21 | D | 403 | BCT | O3-C-O1 | -2.18 | 113.89 | 119.55 |
| 13 | C | 503 | CLA | C1D-ND-C4D | -2.18 | 104.79 | 106.33 |
| 13 | B | 514 | CLA | CMB-C2B-C1B | -2.18 | 125.12 | 128.46 |
| 13 | D | 405 | CLA | CMB-C2B-C1B | -2.18 | 125.12 | 128.46 |
| 13 | C | 506 | CLA | CMD-C2D-C3D | -2.18 | 122.61 | 127.61 |
| 13 | B | 503 | CLA | C1-C2-C3 | -2.17 | 122.29 | 126.04 |
| 22 | D | 407 | PL9 | O1-C4-C3 | -2.17 | 118.33 | 120.72 |
| 13 | B | 510 | CLA | CMD-C2D-C3D | -2.17 | 122.63 | 127.61 |
| 15 | H | 101 | BCR | C37-C22-C21 | -2.17 | 119.89 | 122.92 |
| 13 | C | 510 | CLA | CMD-C2D-C3D | -2.17 | 122.63 | 127.61 |
| 13 | B | 511 | CLA | CMD-C2D-C3D | -2.16 | 122.63 | 127.61 |
| 15 | H | 101 | BCR | C1-C6-C7 | 2.16 | 121.90 | 115.78 |
| 13 | C | 509 | CLA | CMD-C2D-C3D | -2.16 | 122.64 | 127.61 |
| 13 | B | 508 | CLA | C1D-ND-C4D | -2.16 | 104.80 | 106.33 |
| 13 | C | 509 | CLA | C1D-ND-C4D | -2.16 | 104.80 | 106.33 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 504 | CLA | O1D-CGD-CBD | -2.16 | 120.07 | 124.48 |
| 13 | C | 504 | CLA | O2A-CGA-CBA | 2.15 | 118.67 | 111.91 |
| 22 | D | 407 | PL9 | O2-C1-C6 | 2.15 | 124.32 | 120.59 |
| 15 | C | 516 | BCR | C34-C9-C10 | -2.15 | 119.91 | 122.92 |
| 13 | B | 510 | CLA | CHA-C1A-NA | -2.15 | 121.47 | 126.40 |
| 15 | A | 406 | BCR | C8-C7-C6 | -2.15 | 121.17 | 127.20 |
| 13 | C | 503 | CLA | CMD-C2D-C3D | -2.15 | 122.67 | 127.61 |
| 15 | C | 514 | BCR | C36-C18-C17 | -2.15 | 119.92 | 122.92 |
| 13 | C | 506 | CLA | O2A-CGA-CBA | 2.14 | 118.64 | 111.91 |
| 14 | A | 404 | PHO | CMC-C2C-C3C | 2.14 | 128.99 | 124.94 |
| 13 | C | 501 | CLA | C1D-ND-C4D | -2.14 | 104.81 | 106.33 |
| 13 | B | 504 | CLA | CHA-C1A-NA | -2.13 | 121.51 | 126.40 |
| 13 | B | 513 | CLA | CHA-C1A-NA | -2.13 | 121.52 | 126.40 |
| 13 | C | 505 | CLA | CMB-C2B-C1B | -2.13 | 125.19 | 128.46 |
| 14 | D | 402 | PHO | CMC-C2C-C3C | 2.13 | 128.96 | 124.94 |
| 13 | C | 506 | CLA | CHA-C1A-NA | -2.13 | 121.53 | 126.40 |
| 13 | A | 402 | CLA | OBD-CAD-C3D | -2.13 | 123.40 | 128.52 |
| 13 | A | 403 | CLA | O1D-CGD-CBD | -2.12 | 120.14 | 124.48 |
| 13 | B | 503 | CLA | CMB-C2B-C3B | 2.12 | 128.65 | 124.68 |
| 13 | B | 503 | CLA | CMD-C2D-C3D | -2.12 | 122.73 | 127.61 |
| 22 | D | 407 | PL9 | C36-C34-C33 | -2.12 | 116.83 | 121.12 |
| 13 | C | 506 | CLA | CMB-C2B-C3B | 2.12 | 128.65 | 124.68 |
| 15 | B | 518 | BCR | C1-C6-C7 | 2.12 | 121.78 | 115.78 |
| 17 | B | 519 | LMG | O7-C10-O9 | -2.12 | 118.58 | 123.70 |
| 18 | B | 520 | LMT | O5B-C5B-C4B | 2.11 | 113.53 | 109.69 |
| 13 | A | 402 | CLA | C1D-ND-C4D | -2.11 | 104.83 | 106.33 |
| 13 | D | 401 | CLA | CHA-C1A-NA | -2.11 | 121.56 | 126.40 |
| 13 | B | 515 | CLA | CMD-C2D-C3D | -2.11 | 122.75 | 127.61 |
| 13 | B | 508 | CLA | CMD-C2D-C3D | -2.11 | 122.75 | 127.61 |
| 13 | C | 508 | CLA | O1D-CGD-CBD | -2.11 | 120.16 | 124.48 |
| 13 | C | 507 | CLA | CHA-C1A-NA | -2.11 | 121.56 | 126.40 |
| 13 | C | 502 | CLA | O2A-CGA-CBA | 2.11 | 118.53 | 111.91 |
| 13 | C | 502 | CLA | CHA-C1A-NA | -2.11 | 121.57 | 126.40 |
| 13 | D | 404 | CLA | CMC-C2C-C1C | 2.11 | 128.25 | 125.04 |
| 13 | C | 505 | CLA | CMD-C2D-C3D | -2.11 | 122.77 | 127.61 |
| 13 | B | 502 | CLA | O1D-CGD-CBD | -2.11 | 120.18 | 124.48 |
| 13 | C | 510 | CLA | C3D-C2D-C1D | -2.10 | 102.96 | 105.83 |
| 13 | B | 503 | CLA | CHA-C1A-NA | -2.10 | 121.59 | 126.40 |
| 13 | D | 404 | CLA | CHA-C1A-NA | -2.10 | 121.59 | 126.40 |
| 13 | D | 404 | CLA | O2D-CGD-O1D | -2.10 | 119.74 | 123.84 |
| 13 | B | 513 | CLA | CMB-C2B-C1B | -2.09 | 125.25 | 128.46 |
| 13 | C | 506 | CLA | C1D-ND-C4D | -2.09 | 104.85 | 106.33 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | C | 501 | CLA | CHA-C1A-NA | -2.09 | 121.62 | 126.40 |
| 13 | C | 503 | CLA | CHA-C1A-NA | -2.09 | 121.62 | 126.40 |
| 13 | B | 504 | CLA | O2A-CGA-CBA | 2.09 | 118.46 | 111.91 |
| 13 | B | 511 | CLA | C1D-ND-C4D | -2.09 | 104.85 | 106.33 |
| 13 | B | 511 | CLA | O1D-CGD-CBD | -2.08 | 120.22 | 124.48 |
| 14 | D | 402 | PHO | C1-C2-C3 | -2.08 | 122.44 | 126.04 |
| 13 | C | 512 | CLA | CHA-C1A-NA | -2.08 | 121.63 | 126.40 |
| 13 | B | 513 | CLA | C3D-C2D-C1D | -2.08 | 102.99 | 105.83 |
| 13 | B | 516 | CLA | CHA-C1A-NA | -2.08 | 121.63 | 126.40 |
| 15 | B | 518 | BCR | C23-C22-C21 | 2.08 | 122.13 | 118.94 |
| 13 | D | 405 | CLA | C3D-C2D-C1D | -2.08 | 102.99 | 105.83 |
| 13 | C | 511 | CLA | CHA-C1A-NA | -2.08 | 121.64 | 126.40 |
| 13 | B | 509 | CLA | CHA-C1A-NA | -2.07 | 121.65 | 126.40 |
| 13 | A | 403 | CLA | C1D-ND-C4D | -2.07 | 104.87 | 106.33 |
| 23 | E | 101 | HEM | C3D-C4D-ND | -2.07 | 107.87 | 110.17 |
| 13 | B | 515 | CLA | C3D-C2D-C1D | -2.06 | 103.01 | 105.83 |
| 13 | C | 509 | CLA | C3D-C2D-C1D | -2.06 | 103.01 | 105.83 |
| 13 | B | 515 | CLA | O1D-CGD-CBD | -2.06 | 120.26 | 124.48 |
| 22 | D | 407 | PL9 | C37-C38-C39 | -2.06 | 122.69 | 127.66 |
| 13 | C | 508 | CLA | C1D-ND-C4D | -2.06 | 104.87 | 106.33 |
| 13 | C | 504 | CLA | CHA-C1A-NA | -2.06 | 121.68 | 126.40 |
| 13 | C | 509 | CLA | CHA-C1A-NA | -2.06 | 121.69 | 126.40 |
| 13 | D | 404 | CLA | CAA-CBA-CGA | -2.05 | 107.25 | 113.25 |
| 13 | B | 514 | CLA | CHA-C1A-NA | -2.05 | 121.70 | 126.40 |
| 13 | B | 511 | CLA | C3D-C2D-C1D | -2.05 | 103.03 | 105.83 |
| 13 | A | 403 | CLA | O2A-CGA-CBA | 2.05 | 118.33 | 111.91 |
| 13 | A | 402 | CLA | CMC-C2C-C1C | 2.05 | 128.16 | 125.04 |
| 22 | D | 407 | PL9 | O2-C1-C2 | -2.05 | 117.09 | 121.78 |
| 13 | C | 510 | CLA | CHA-C1A-NA | -2.05 | 121.71 | 126.40 |
| 13 | B | 501 | CLA | CHA-C1A-NA | -2.04 | 121.72 | 126.40 |
| 13 | C | 506 | CLA | C3D-C2D-C1D | -2.04 | 103.05 | 105.83 |
| 13 | C | 505 | CLA | CHA-C1A-NA | -2.04 | 121.73 | 126.40 |
| 15 | C | 516 | BCR | C21-C20-C19 | -2.04 | 116.86 | 123.22 |
| 13 | B | 511 | CLA | CHA-C1A-NA | -2.04 | 121.73 | 126.40 |
| 13 | C | 513 | CLA | CHA-C1A-NA | -2.04 | 121.73 | 126.40 |
| 13 | B | 513 | CLA | O1D-CGD-CBD | -2.04 | 120.32 | 124.48 |
| 13 | C | 512 | CLA | CMB-C2B-C1B | -2.03 | 125.34 | 128.46 |
| 13 | B | 515 | CLA | C1D-ND-C4D | -2.03 | 104.89 | 106.33 |
| 13 | C | 512 | CLA | CMD-C2D-C3D | -2.03 | 122.94 | 127.61 |
| 13 | C | 504 | CLA | C3D-C2D-C1D | -2.03 | 103.06 | 105.83 |
| 13 | C | 511 | CLA | C3D-C2D-C1D | -2.02 | 103.07 | 105.83 |
| 13 | B | 510 | CLA | C1D-ND-C4D | -2.02 | 104.90 | 106.33 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 13 | B | 507 | CLA | CMB-C2B-C3B | 2.02 | 128.46 | 124.68 |
| 13 | A | 405 | CLA | C3D-C2D-C1D | -2.02 | 103.07 | 105.83 |
| 13 | A | 402 | CLA | C3D-C2D-C1D | -2.02 | 103.07 | 105.83 |
| 15 | D | 406 | BCR | C1-C6-C7 | 2.02 | 121.49 | 115.78 |
| 13 | B | 502 | CLA | CHA-C1A-NA | -2.02 | 121.77 | 126.40 |
| 13 | B | 502 | CLA | C3D-C2D-C1D | -2.02 | 103.08 | 105.83 |
| 13 | C | 502 | CLA | C1D-ND-C4D | -2.02 | 104.90 | 106.33 |
| 13 | D | 401 | CLA | C1D-ND-C4D | -2.02 | 104.90 | 106.33 |
| 13 | B | 516 | CLA | C3D-C2D-C1D | -2.01 | 103.08 | 105.83 |
| 22 | D | 407 | PL9 | C31-C32-C33 | -2.01 | 105.26 | 111.88 |
| 15 | A | 406 | BCR | C16-C15-C14 | -2.01 | 119.35 | 123.47 |
| 13 | B | 512 | CLA | C1D-ND-C4D | -2.01 | 104.91 | 106.33 |
| 13 | C | 501 | CLA | C3D-C2D-C1D | -2.01 | 103.09 | 105.83 |
| 13 | C | 502 | CLA | CMB-C2B-C3B | 2.01 | 128.44 | 124.68 |
| 13 | B | 506 | CLA | CHA-C1A-NA | -2.01 | 121.79 | 126.40 |
| 13 | C | 513 | CLA | CMB-C2B-C1B | -2.01 | 125.38 | 128.46 |
| 13 | B | 510 | CLA | C3D-C2D-C1D | -2.00 | 103.09 | 105.83 |
| 13 | B | 507 | CLA | C3D-C2D-C1D | -2.00 | 103.10 | 105.83 |
| 13 | C | 502 | CLA | C3D-C2D-C1D | -2.00 | 103.10 | 105.83 |
| 13 | D | 401 | CLA | C3D-C2D-C1D | -2.00 | 103.10 | 105.83 |
| 15 | C | 514 | BCR | C34-C9-C10 | -2.00 | 120.12 | 122.92 |
| 13 | B | 503 | CLA | CAA-C2A-C3A | -2.00 | 107.29 | 112.78 |
| 13 | C | 508 | CLA | C3D-C2D-C1D | -2.00 | 103.10 | 105.83 |
| 13 | B | 507 | CLA | CHA-C1A-NA | -2.00 | 121.81 | 126.40 |
| 13 | B | 501 | CLA | C3D-C2D-C1D | -2.00 | 103.10 | 105.83 |
| 13 | B | 509 | CLA | CMB-C2B-C3B | 2.00 | 128.42 | 124.68 |

All (35) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|---|---|---|---|---|
| 13 | A | 402 | CLA | ND |
| 13 | A | 403 | CLA | ND |
| 13 | A | 405 | CLA | ND |
| 13 | B | 501 | CLA | ND |
| 13 | B | 502 | CLA | ND |
| 13 | B | 503 | CLA | ND |
| 13 | B | 504 | CLA | ND |
| 13 | B | 505 | CLA | ND |
| 13 | B | 506 | CLA | ND |
| 13 | B | 507 | CLA | ND |
| 13 | B | 508 | CLA | ND |
| 13 | B | 509 | CLA | ND |

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| Mol | Chain | Res | Type | Atom |
|---|---|---|---|---|
| 13 | B | 510 | CLA | ND |
| 13 | B | 511 | CLA | ND |
| 13 | B | 512 | CLA | ND |
| 13 | B | 513 | CLA | ND |
| 13 | B | 514 | CLA | ND |
| 13 | B | 515 | CLA | ND |
| 13 | B | 516 | CLA | ND |
| 13 | C | 501 | CLA | ND |
| 13 | C | 502 | CLA | ND |
| 13 | C | 503 | CLA | ND |
| 13 | C | 504 | CLA | ND |
| 13 | C | 505 | CLA | ND |
| 13 | C | 506 | CLA | ND |
| 13 | C | 507 | CLA | ND |
| 13 | C | 508 | CLA | ND |
| 13 | C | 509 | CLA | ND |
| 13 | C | 510 | CLA | ND |
| 13 | C | 511 | CLA | ND |
| 13 | C | 512 | CLA | ND |
| 13 | C | 513 | CLA | ND |
| 13 | D | 401 | CLA | ND |
| 13 | D | 404 | CLA | ND |
| 13 | D | 405 | CLA | ND |

All (701) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | A | 402 | CLA | CAD-CBD-CGD-O1D |
| 13 | A | 402 | CLA | CAD-CBD-CGD-O2D |
| 13 | A | 403 | CLA | C1A-C2A-CAA-CBA |
| 13 | A | 405 | CLA | C1A-C2A-CAA-CBA |
| 13 | A | 405 | CLA | C3A-C2A-CAA-CBA |
| 13 | A | 405 | CLA | C2-C1-O2A-CGA |
| 13 | B | 501 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 502 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 503 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 503 | CLA | CAD-CBD-CGD-O1D |
| 13 | B | 503 | CLA | CAD-CBD-CGD-O2D |
| 13 | B | 504 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 504 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 505 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 505 | CLA | C3A-C2A-CAA-CBA |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 505 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 505 | CLA | C2-C3-C5-C6 |
| 13 | B | 505 | CLA | C4-C3-C5-C6 |
| 13 | B | 507 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 507 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 507 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 507 | CLA | CHA-CBD-CGD-O2D |
| 13 | B | 507 | CLA | CAD-CBD-CGD-O1D |
| 13 | B | 507 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 508 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 508 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 508 | CLA | C2-C1-O2A-CGA |
| 13 | B | 509 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 509 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 512 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 512 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 514 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 515 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 501 | CLA | C1A-C2A-CAA-CBA |
| 13 | C | 501 | CLA | C2-C1-O2A-CGA |
| 13 | C | 501 | CLA | CHA-CBD-CGD-O1D |
| 13 | C | 501 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 501 | CLA | CAD-CBD-CGD-O1D |
| 13 | C | 501 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 502 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 503 | CLA | C2-C1-O2A-CGA |
| 13 | C | 503 | CLA | C4-C3-C5-C6 |
| 13 | C | 504 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 505 | CLA | CAD-CBD-CGD-O1D |
| 13 | C | 505 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 506 | CLA | C1A-C2A-CAA-CBA |
| 13 | C | 506 | CLA | C3A-C2A-CAA-CBA |
| 13 | C | 506 | CLA | CHA-CBD-CGD-O1D |
| 13 | C | 506 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 506 | CLA | CAD-CBD-CGD-O1D |
| 13 | C | 506 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 507 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 508 | CLA | C2-C1-O2A-CGA |
| 13 | C | 509 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 510 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 511 | CLA | CHA-CBD-CGD-O1D |
| 13 | C | 511 | CLA | CAD-CBD-CGD-O1D |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | C | 511 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 511 | CLA | C3-C5-C6-C7 |
| 13 | C | 513 | CLA | C1A-C2A-CAA-CBA |
| 13 | C | 513 | CLA | C3A-C2A-CAA-CBA |
| 13 | D | 401 | CLA | C1A-C2A-CAA-CBA |
| 13 | D | 401 | CLA | C3A-C2A-CAA-CBA |
| 13 | D | 404 | CLA | CBD-CGD-O2D-CED |
| 13 | D | 404 | CLA | C2-C3-C5-C6 |
| 13 | D | 404 | CLA | C4-C3-C5-C6 |
| 13 | D | 405 | CLA | C1A-C2A-CAA-CBA |
| 13 | D | 405 | CLA | C3A-C2A-CAA-CBA |
| 13 | D | 405 | CLA | CHA-CBD-CGD-O1D |
| 13 | D | 405 | CLA | CHA-CBD-CGD-O2D |
| 15 | A | 406 | BCR | C13-C14-C15-C16 |
| 15 | A | 406 | BCR | C17-C18-C19-C20 |
| 15 | A | 406 | BCR | C36-C18-C19-C20 |
| 15 | B | 517 | BCR | C7-C8-C9-C10 |
| 15 | B | 517 | BCR | C7-C8-C9-C34 |
| 15 | B | 517 | BCR | C11-C12-C13-C14 |
| 15 | B | 517 | BCR | C11-C12-C13-C35 |
| 15 | B | 517 | BCR | C19-C20-C21-C22 |
| 15 | B | 517 | BCR | C21-C22-C23-C24 |
| 15 | B | 517 | BCR | C37-C22-C23-C24 |
| 15 | B | 518 | BCR | C1-C6-C7-C8 |
| 15 | B | 518 | BCR | C5-C6-C7-C8 |
| 15 | B | 518 | BCR | C11-C12-C13-C14 |
| 15 | B | 518 | BCR | C11-C12-C13-C35 |
| 15 | C | 514 | BCR | C19-C20-C21-C22 |
| 15 | C | 514 | BCR | C21-C22-C23-C24 |
| 15 | C | 514 | BCR | C37-C22-C23-C24 |
| 15 | C | 516 | BCR | C7-C8-C9-C10 |
| 15 | C | 516 | BCR | C7-C8-C9-C34 |
| 15 | C | 516 | BCR | C11-C12-C13-C14 |
| 15 | C | 516 | BCR | C11-C12-C13-C35 |
| 15 | C | 516 | BCR | C23-C24-C25-C30 |
| 15 | D | 406 | BCR | C9-C10-C11-C12 |
| 15 | D | 406 | BCR | C11-C12-C13-C14 |
| 15 | D | 406 | BCR | C11-C12-C13-C35 |
| 15 | H | 101 | BCR | C7-C8-C9-C10 |
| 15 | H | 101 | BCR | C7-C8-C9-C34 |
| 15 | H | 101 | BCR | C11-C12-C13-C35 |
| 15 | H | 101 | BCR | C13-C14-C15-C16 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 15 | H | 101 | BCR | C15-C16-C17-C18 |
| 18 | B | 521 | LMT | C2'-C1'-O1'-C1 |
| 18 | B | 521 | LMT | O5'-C1'-O1'-C1 |
| 19 | B | 522 | LHG | O1-C1-C2-C3 |
| 19 | B | 522 | LHG | C1-C2-C3-O3 |
| 19 | B | 522 | LHG | C3-O3-P-O4 |
| 19 | B | 522 | LHG | C3-O3-P-O5 |
| 19 | B | 522 | LHG | C3-O3-P-O6 |
| 19 | B | 522 | LHG | C4-O6-P-O5 |
| 22 | D | 407 | PL9 | C12-C13-C14-C16 |
| 22 | D | 407 | PL9 | C37-C38-C39-C41 |
| 22 | D | 407 | PL9 | C42-C43-C44-C45 |
| 22 | D | 407 | PL9 | C42-C43-C44-C46 |
| 13 | C | 508 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 513 | CLA | O1D-CGD-O2D-CED |
| 13 | D | 404 | CLA | O1D-CGD-O2D-CED |
| 13 | A | 405 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 510 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 511 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 514 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 515 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 516 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 503 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 508 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 512 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 513 | CLA | CBD-CGD-O2D-CED |
| 13 | D | 405 | CLA | CBD-CGD-O2D-CED |
| 13 | A | 405 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 512 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 515 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 516 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 512 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 514 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 515 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 502 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 506 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 510 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 505 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 503 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 507 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 512 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 516 | CLA | CBA-CGA-O2A-C1 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | C | 512 | CLA | CBA-CGA-O2A-C1 |
| 13 | A | 403 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 506 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 508 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 512 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 513 | CLA | CBD-CGD-O2D-CED |
| 13 | D | 401 | CLA | CBD-CGD-O2D-CED |
| 14 | A | 404 | PHO | CBD-CGD-O2D-CED |
| 14 | D | 402 | PHO | CBD-CGD-O2D-CED |
| 13 | A | 402 | CLA | O1A-CGA-O2A-C1 |
| 13 | D | 401 | CLA | O1A-CGA-O2A-C1 |
| 17 | B | 519 | LMG | O10-C28-O8-C9 |
| 13 | B | 502 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 509 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 501 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 501 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 507 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 509 | CLA | O1D-CGD-O2D-CED |
| 13 | A | 405 | CLA | C3-C5-C6-C7 |
| 13 | B | 507 | CLA | C3-C5-C6-C7 |
| 13 | B | 515 | CLA | C3-C5-C6-C7 |
| 13 | C | 504 | CLA | C3-C5-C6-C7 |
| 14 | A | 404 | PHO | C3-C5-C6-C7 |
| 14 | D | 402 | PHO | C3-C5-C6-C7 |
| 13 | A | 405 | CLA | CBA-CGA-O2A-C1 |
| 13 | D | 401 | CLA | CBA-CGA-O2A-C1 |
| 17 | B | 519 | LMG | C29-C28-O8-C9 |
| 18 | B | 520 | LMT | O5B-C5B-C6B-O6B |
| 18 | B | 521 | LMT | O5'-C5'-C6'-O6' |
| 13 | B | 504 | CLA | C4-C3-C5-C6 |
| 13 | C | 504 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 504 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 510 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 512 | CLA | C2A-CAA-CBA-CGA |
| 17 | B | 519 | LMG | C17-C18-C19-C20 |
| 17 | H | 102 | LMG | C38-C39-C40-C41 |
| 20 | C | 517 | DGD | C8B-C9B-CAB-CBB |
| 13 | A | 402 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 509 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 506 | CLA | CBA-CGA-O2A-C1 |
| 22 | D | 407 | PL9 | C47-C48-C49-C51 |
| 13 | B | 510 | CLA | O1D-CGD-O2D-CED |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 516 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 512 | CLA | O1D-CGD-O2D-CED |
| 13 | D | 405 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 509 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 509 | CLA | O1A-CGA-O2A-C1 |
| 15 | C | 514 | BCR | C15-C16-C17-C18 |
| 15 | C | 515 | BCR | C15-C16-C17-C18 |
| 15 | C | 515 | BCR | C19-C20-C21-C22 |
| 15 | C | 516 | BCR | C19-C20-C21-C22 |
| 15 | D | 406 | BCR | C13-C14-C15-C16 |
| 15 | H | 101 | BCR | C9-C10-C11-C12 |
| 15 | H | 101 | BCR | C19-C20-C21-C22 |
| 13 | C | 505 | CLA | CBD-CGD-O2D-CED |
| 13 | B | 511 | CLA | O1D-CGD-O2D-CED |
| 19 | B | 522 | LHG | O2-C2-C3-O3 |
| 13 | C | 512 | CLA | C3-C5-C6-C7 |
| 13 | A | 403 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 507 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 503 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 504 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 509 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 506 | CLA | O1A-CGA-O2A-C1 |
| 18 | B | 520 | LMT | C4B-C5B-C6B-O6B |
| 13 | A | 405 | CLA | O1D-CGD-O2D-CED |
| 13 | D | 405 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 503 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 504 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 503 | CLA | C4-C3-C5-C6 |
| 13 | B | 507 | CLA | C4-C3-C5-C6 |
| 13 | B | 503 | CLA | C2-C3-C5-C6 |
| 13 | B | 507 | CLA | C2-C3-C5-C6 |
| 13 | C | 503 | CLA | C2-C3-C5-C6 |
| 13 | C | 502 | CLA | C2A-CAA-CBA-CGA |
| 13 | C | 511 | CLA | C2A-CAA-CBA-CGA |
| 13 | A | 403 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 511 | CLA | CBA-CGA-O2A-C1 |
| 18 | B | 521 | LMT | C4'-C5'-C6'-O6' |
| 13 | B | 507 | CLA | O1A-CGA-O2A-C1 |
| 13 | A | 403 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 508 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 513 | CLA | O1D-CGD-O2D-CED |
| 14 | A | 404 | PHO | O1D-CGD-O2D-CED |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 22 | D | 407 | PL9 | C7-C8-C9-C11 |
| 13 | D | 401 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 502 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 504 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 505 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 508 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 511 | CLA | CBA-CGA-O2A-C1 |
| 19 | B | 522 | LHG | C11-C10-C9-C8 |
| 13 | B | 512 | CLA | C10-C11-C12-C13 |
| 13 | B | 513 | CLA | C8-C10-C11-C12 |
| 16 | A | 407 | BOG | O5-C5-C6-O6 |
| 13 | B | 515 | CLA | C15-C16-C17-C18 |
| 13 | D | 401 | CLA | C15-C16-C17-C18 |
| 13 | C | 508 | CLA | C3-C5-C6-C7 |
| 18 | B | 520 | LMT | C2'-C1'-O1'-C1 |
| 13 | B | 505 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 505 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 508 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 511 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 504 | CLA | C2-C3-C5-C6 |
| 13 | B | 509 | CLA | C6-C7-C8-C9 |
| 13 | B | 509 | CLA | C11-C12-C13-C14 |
| 13 | C | 507 | CLA | C6-C7-C8-C9 |
| 14 | A | 404 | PHO | C6-C7-C8-C9 |
| 13 | B | 509 | CLA | C8-C10-C11-C12 |
| 13 | C | 505 | CLA | C8-C10-C11-C12 |
| 13 | C | 513 | CLA | C8-C10-C11-C12 |
| 13 | C | 504 | CLA | C2A-CAA-CBA-CGA |
| 15 | B | 517 | BCR | C36-C18-C19-C20 |
| 15 | C | 514 | BCR | C36-C18-C19-C20 |
| 15 | C | 515 | BCR | C36-C18-C19-C20 |
| 15 | H | 101 | BCR | C36-C18-C19-C20 |
| 15 | H | 101 | BCR | C37-C22-C23-C24 |
| 15 | C | 515 | BCR | C17-C18-C19-C20 |
| 15 | C | 516 | BCR | C21-C22-C23-C24 |
| 15 | H | 101 | BCR | C17-C18-C19-C20 |
| 15 | H | 101 | BCR | C21-C22-C23-C24 |
| 13 | B | 502 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 504 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 506 | CLA | O1D-CGD-O2D-CED |
| 13 | B | 503 | CLA | C13-C15-C16-C17 |
| 13 | B | 505 | CLA | C15-C16-C17-C18 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | C | 503 | CLA | C8-C10-C11-C12 |
| 13 | C | 507 | CLA | C13-C15-C16-C17 |
| 13 | B | 503 | CLA | C10-C11-C12-C13 |
| 13 | B | 506 | CLA | C5-C6-C7-C8 |
| 13 | B | 509 | CLA | C10-C11-C12-C13 |
| 13 | C | 510 | CLA | C10-C11-C12-C13 |
| 13 | C | 512 | CLA | C5-C6-C7-C8 |
| 13 | B | 512 | CLA | O1D-CGD-O2D-CED |
| 13 | A | 403 | CLA | C2-C1-O2A-CGA |
| 13 | B | 507 | CLA | C2-C1-O2A-CGA |
| 13 | B | 509 | CLA | C2-C1-O2A-CGA |
| 13 | B | 513 | CLA | C2-C1-O2A-CGA |
| 13 | C | 504 | CLA | C2-C1-O2A-CGA |
| 13 | C | 506 | CLA | C2-C1-O2A-CGA |
| 13 | C | 509 | CLA | C2-C1-O2A-CGA |
| 13 | D | 401 | CLA | C2-C1-O2A-CGA |
| 13 | C | 507 | CLA | C8-C10-C11-C12 |
| 13 | C | 513 | CLA | C10-C11-C12-C13 |
| 19 | B | 522 | LHG | C7-C8-C9-C10 |
| 13 | B | 516 | CLA | C3-C5-C6-C7 |
| 14 | D | 402 | PHO | O1D-CGD-O2D-CED |
| 13 | C | 501 | CLA | C11-C10-C8-C7 |
| 15 | A | 406 | BCR | C9-C10-C11-C12 |
| 15 | A | 406 | BCR | C15-C16-C17-C18 |
| 15 | B | 517 | BCR | C15-C16-C17-C18 |
| 15 | C | 514 | BCR | C13-C14-C15-C16 |
| 15 | C | 516 | BCR | C13-C14-C15-C16 |
| 15 | C | 516 | BCR | C15-C16-C17-C18 |
| 15 | D | 406 | BCR | C15-C16-C17-C18 |
| 13 | B | 509 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 511 | CLA | C5-C6-C7-C8 |
| 13 | B | 511 | CLA | C15-C16-C17-C18 |
| 13 | C | 503 | CLA | C15-C16-C17-C18 |
| 20 | C | 517 | DGD | C1B-C2B-C3B-C4B |
| 13 | B | 511 | CLA | C3-C5-C6-C7 |
| 13 | B | 510 | CLA | C13-C15-C16-C17 |
| 13 | D | 401 | CLA | C13-C15-C16-C17 |
| 13 | B | 505 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 512 | CLA | C13-C15-C16-C17 |
| 13 | C | 513 | CLA | C5-C6-C7-C8 |
| 13 | D | 404 | CLA | C15-C16-C17-C18 |
| 13 | D | 405 | CLA | O1A-CGA-O2A-C1 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 511 | CLA | O1A-CGA-O2A-C1 |
| 17 | B | 519 | LMG | C11-C10-O7-C8 |
| 13 | B | 508 | CLA | C13-C15-C16-C17 |
| 13 | C | 501 | CLA | C15-C16-C17-C18 |
| 19 | B | 522 | LHG | C4-O6-P-O3 |
| 13 | C | 504 | CLA | O1D-CGD-O2D-CED |
| 13 | C | 503 | CLA | C2A-CAA-CBA-CGA |
| 15 | D | 406 | BCR | C19-C20-C21-C22 |
| 13 | C | 505 | CLA | O1D-CGD-O2D-CED |
| 18 | B | 520 | LMT | C6-C7-C8-C9 |
| 13 | C | 513 | CLA | CBA-CGA-O2A-C1 |
| 17 | B | 519 | LMG | O9-C10-O7-C8 |
| 18 | B | 520 | LMT | C7-C8-C9-C10 |
| 18 | B | 521 | LMT | C6-C7-C8-C9 |
| 13 | C | 510 | CLA | C15-C16-C17-C18 |
| 13 | B | 504 | CLA | C6-C7-C8-C9 |
| 13 | B | 506 | CLA | C6-C7-C8-C9 |
| 13 | C | 503 | CLA | C6-C7-C8-C9 |
| 19 | B | 522 | LHG | C13-C14-C15-C16 |
| 13 | B | 516 | CLA | C2A-CAA-CBA-CGA |
| 13 | C | 505 | CLA | C2A-CAA-CBA-CGA |
| 15 | A | 406 | BCR | C11-C12-C13-C35 |
| 15 | C | 514 | BCR | C7-C8-C9-C34 |
| 15 | C | 514 | BCR | C11-C12-C13-C35 |
| 15 | C | 515 | BCR | C11-C12-C13-C35 |
| 15 | C | 516 | BCR | C36-C18-C19-C20 |
| 15 | C | 516 | BCR | C37-C22-C23-C24 |
| 15 | D | 406 | BCR | C36-C18-C19-C20 |
| 15 | D | 406 | BCR | C37-C22-C23-C24 |
| 15 | A | 406 | BCR | C11-C12-C13-C14 |
| 15 | C | 514 | BCR | C7-C8-C9-C10 |
| 15 | C | 514 | BCR | C11-C12-C13-C14 |
| 15 | C | 514 | BCR | C17-C18-C19-C20 |
| 15 | C | 515 | BCR | C11-C12-C13-C14 |
| 15 | C | 516 | BCR | C17-C18-C19-C20 |
| 15 | D | 406 | BCR | C17-C18-C19-C20 |
| 15 | D | 406 | BCR | C21-C22-C23-C24 |
| 15 | H | 101 | BCR | C11-C12-C13-C14 |
| 16 | A | 407 | BOG | C4-C5-C6-O6 |
| 13 | B | 515 | CLA | C16-C17-C18-C20 |
| 19 | B | 522 | LHG | C31-C32-C33-C34 |
| 13 | C | 501 | CLA | CBA-CGA-O2A-C1 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | A | 403 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 501 | CLA | C3A-C2A-CAA-CBA |
| 13 | B | 502 | CLA | C3A-C2A-CAA-CBA |
| 13 | C | 501 | CLA | C3A-C2A-CAA-CBA |
| 16 | D | 408 | BOG | C2'-C1'-O1-C1 |
| 13 | C | 507 | CLA | C16-C17-C18-C19 |
| 13 | C | 507 | CLA | C16-C17-C18-C20 |
| 18 | B | 520 | LMT | C1-C2-C3-C4 |
| 22 | D | 407 | PL9 | C13-C14-C16-C17 |
| 13 | B | 508 | CLA | C15-C16-C17-C18 |
| 13 | B | 510 | CLA | C15-C16-C17-C18 |
| 13 | C | 501 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 513 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 503 | CLA | C2-C1-O2A-CGA |
| 13 | B | 505 | CLA | C2-C1-O2A-CGA |
| 13 | B | 510 | CLA | C2-C1-O2A-CGA |
| 13 | C | 507 | CLA | C2-C1-O2A-CGA |
| 13 | C | 511 | CLA | C2-C1-O2A-CGA |
| 13 | C | 513 | CLA | C2-C1-O2A-CGA |
| 13 | D | 404 | CLA | C2-C1-O2A-CGA |
| 19 | B | 522 | LHG | C25-C26-C27-C28 |
| 19 | B | 522 | LHG | C28-C29-C30-C31 |
| 13 | A | 402 | CLA | C15-C16-C17-C18 |
| 13 | B | 503 | CLA | C8-C10-C11-C12 |
| 13 | D | 401 | CLA | C5-C6-C7-C8 |
| 15 | B | 518 | BCR | C23-C24-C25-C26 |
| 15 | C | 515 | BCR | C5-C6-C7-C8 |
| 15 | D | 406 | BCR | C1-C6-C7-C8 |
| 15 | D | 406 | BCR | C23-C24-C25-C26 |
| 15 | H | 101 | BCR | C1-C6-C7-C8 |
| 15 | H | 101 | BCR | C23-C24-C25-C26 |
| 13 | B | 509 | CLA | C11-C12-C13-C15 |
| 13 | C | 503 | CLA | C6-C7-C8-C10 |
| 19 | B | 522 | LHG | C35-C36-C37-C38 |
| 15 | B | 517 | BCR | C13-C14-C15-C16 |
| 13 | B | 503 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 505 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 514 | CLA | C2A-CAA-CBA-CGA |
| 13 | D | 405 | CLA | C2A-CAA-CBA-CGA |
| 13 | A | 402 | CLA | C10-C11-C12-C13 |
| 13 | B | 511 | CLA | C8-C10-C11-C12 |
| 13 | A | 402 | CLA | C16-C17-C18-C19 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 19 | B | 522 | LHG | C8-C7-O7-C5 |
| 19 | B | 522 | LHG | O9-C7-O7-C5 |
| 17 | B | 519 | LMG | C2-C1-O1-C7 |
| 13 | C | 507 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 509 | CLA | C2-C3-C5-C6 |
| 22 | D | 407 | PL9 | C4-C3-C7-C8 |
| 13 | B | 503 | CLA | C6-C7-C8-C9 |
| 13 | B | 515 | CLA | C11-C12-C13-C14 |
| 13 | C | 501 | CLA | C11-C10-C8-C9 |
| 14 | A | 404 | PHO | C11-C10-C8-C9 |
| 15 | A | 406 | BCR | C7-C8-C9-C34 |
| 15 | A | 406 | BCR | C37-C22-C23-C24 |
| 15 | A | 406 | BCR | C7-C8-C9-C10 |
| 15 | A | 406 | BCR | C21-C22-C23-C24 |
| 13 | B | 501 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 502 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 506 | CLA | C1A-C2A-CAA-CBA |
| 13 | B | 509 | CLA | C1A-C2A-CAA-CBA |
| 13 | D | 404 | CLA | C1A-C2A-CAA-CBA |
| 20 | C | 517 | DGD | O6E-C5E-C6E-O5E |
| 13 | B | 515 | CLA | C16-C17-C18-C19 |
| 13 | D | 401 | CLA | C16-C17-C18-C20 |
| 13 | B | 507 | CLA | C5-C6-C7-C8 |
| 13 | C | 504 | CLA | C5-C6-C7-C8 |
| 19 | B | 522 | LHG | C23-C24-C25-C26 |
| 17 | H | 102 | LMG | C7-C8-C9-O8 |
| 19 | B | 522 | LHG | C4-C5-C6-O8 |
| 20 | C | 517 | DGD | O1G-C1G-C2G-C3G |
| 13 | C | 507 | CLA | O1A-CGA-O2A-C1 |
| 17 | B | 519 | LMG | C10-C11-C12-C13 |
| 16 | C | 518 | BOG | O5-C5-C6-O6 |
| 17 | H | 102 | LMG | O6-C5-C6-O5 |
| 19 | B | 522 | LHG | O1-C1-C2-O2 |
| 13 | B | 503 | CLA | O1A-CGA-O2A-C1 |
| 17 | H | 102 | LMG | C30-C31-C32-C33 |
| 16 | D | 408 | BOG | O5-C5-C6-O6 |
| 13 | C | 509 | CLA | C4-C3-C5-C6 |
| 22 | D | 407 | PL9 | C15-C14-C16-C17 |
| 13 | C | 513 | CLA | CAA-CBA-CGA-O2A |
| 18 | B | 521 | LMT | O5B-C5B-C6B-O6B |
| 13 | C | 502 | CLA | C13-C15-C16-C17 |
| 13 | C | 505 | CLA | C10-C11-C12-C13 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | C | 509 | CLA | C8-C10-C11-C12 |
| 13 | B | 502 | CLA | C2-C1-O2A-CGA |
| 13 | C | 505 | CLA | C3-C5-C6-C7 |
| 13 | B | 503 | CLA | C15-C16-C17-C18 |
| 13 | D | 404 | CLA | C13-C15-C16-C17 |
| 13 | B | 513 | CLA | CBA-CGA-O2A-C1 |
| 13 | A | 402 | CLA | C16-C17-C18-C20 |
| 14 | D | 402 | PHO | CHA-CBD-CGD-O2D |
| 19 | B | 522 | LHG | C11-C12-C13-C14 |
| 13 | A | 402 | CLA | C6-C7-C8-C10 |
| 13 | B | 502 | CLA | C6-C7-C8-C10 |
| 13 | B | 503 | CLA | C6-C7-C8-C10 |
| 13 | B | 509 | CLA | C11-C10-C8-C7 |
| 13 | B | 513 | CLA | C11-C10-C8-C7 |
| 13 | B | 515 | CLA | C11-C12-C13-C15 |
| 14 | A | 404 | PHO | C11-C10-C8-C7 |
| 17 | H | 102 | LMG | C39-C40-C41-C42 |
| 13 | A | 402 | CLA | C6-C7-C8-C9 |
| 13 | B | 502 | CLA | C6-C7-C8-C9 |
| 13 | B | 513 | CLA | C11-C10-C8-C9 |
| 13 | C | 502 | CLA | C14-C13-C15-C16 |
| 18 | B | 521 | LMT | C5-C6-C7-C8 |
| 13 | D | 401 | CLA | C16-C17-C18-C19 |
| 13 | D | 404 | CLA | C16-C17-C18-C19 |
| 15 | D | 406 | BCR | C7-C8-C9-C10 |
| 20 | C | 517 | DGD | O6D-C5D-C6D-O5D |
| 13 | C | 502 | CLA | C10-C11-C12-C13 |
| 14 | A | 404 | PHO | CBA-CGA-O2A-C1 |
| 13 | B | 504 | CLA | C13-C15-C16-C17 |
| 19 | B | 522 | LHG | C34-C35-C36-C37 |
| 13 | B | 502 | CLA | C15-C16-C17-C18 |
| 13 | C | 509 | CLA | C10-C11-C12-C13 |
| 13 | B | 502 | CLA | C10-C11-C12-C13 |
| 13 | D | 401 | CLA | C3-C5-C6-C7 |
| 13 | B | 514 | CLA | C3A-C2A-CAA-CBA |
| 15 | C | 515 | BCR | C9-C10-C11-C12 |
| 18 | B | 520 | LMT | C2-C1-O1'-C1' |
| 18 | B | 521 | LMT | C2-C1-O1'-C1' |
| 13 | C | 513 | CLA | C3-C5-C6-C7 |
| 18 | B | 521 | LMT | C7-C8-C9-C10 |
| 13 | B | 513 | CLA | O1A-CGA-O2A-C1 |
| 13 | D | 404 | CLA | C16-C17-C18-C20 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 508 | CLA | CAA-CBA-CGA-O2A |
| 17 | H | 102 | LMG | O7-C8-C9-O8 |
| 19 | B | 522 | LHG | C30-C31-C32-C33 |
| 13 | C | 510 | CLA | C2-C1-O2A-CGA |
| 13 | D | 401 | CLA | C11-C12-C13-C14 |
| 13 | D | 404 | CLA | C11-C10-C8-C9 |
| 13 | A | 403 | CLA | C2A-CAA-CBA-CGA |
| 15 | C | 514 | BCR | C23-C24-C25-C26 |
| 15 | D | 406 | BCR | C5-C6-C7-C8 |
| 15 | H | 101 | BCR | C5-C6-C7-C8 |
| 15 | D | 406 | BCR | C7-C8-C9-C34 |
| 15 | B | 517 | BCR | C17-C18-C19-C20 |
| 23 | E | 101 | HEM | C3D-CAD-CBD-CGD |
| 14 | A | 404 | PHO | O1A-CGA-O2A-C1 |
| 13 | B | 505 | CLA | C8-C10-C11-C12 |
| 19 | B | 522 | LHG | O6-C4-C5-C6 |
| 13 | B | 509 | CLA | C6-C7-C8-C10 |
| 13 | B | 511 | CLA | C12-C13-C15-C16 |
| 13 | B | 512 | CLA | C12-C13-C15-C16 |
| 13 | C | 502 | CLA | C12-C13-C15-C16 |
| 13 | C | 507 | CLA | C6-C7-C8-C10 |
| 13 | D | 401 | CLA | C11-C10-C8-C7 |
| 13 | D | 404 | CLA | C11-C10-C8-C7 |
| 14 | A | 404 | PHO | C6-C7-C8-C10 |
| 15 | B | 517 | BCR | C9-C10-C11-C12 |
| 15 | B | 518 | BCR | C19-C20-C21-C22 |
| 15 | C | 514 | BCR | C9-C10-C11-C12 |
| 13 | C | 507 | CLA | C5-C6-C7-C8 |
| 13 | D | 401 | CLA | C8-C10-C11-C12 |
| 20 | C | 517 | DGD | C4D-C5D-C6D-O5D |
| 13 | C | 501 | CLA | C16-C17-C18-C20 |
| 13 | B | 504 | CLA | CAD-CBD-CGD-O2D |
| 13 | B | 513 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 501 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 503 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 507 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 512 | CLA | C6-C7-C8-C9 |
| 13 | C | 501 | CLA | C13-C15-C16-C17 |
| 13 | A | 403 | CLA | CHA-CBD-CGD-O1D |
| 13 | A | 403 | CLA | CHA-CBD-CGD-O2D |
| 13 | A | 405 | CLA | CHA-CBD-CGD-O1D |
| 13 | A | 405 | CLA | CHA-CBD-CGD-O2D |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 502 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 504 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 505 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 505 | CLA | CHA-CBD-CGD-O2D |
| 13 | B | 509 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 510 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 510 | CLA | CHA-CBD-CGD-O2D |
| 13 | B | 511 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 511 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 504 | CLA | CHA-CBD-CGD-O1D |
| 13 | D | 404 | CLA | CHA-CBD-CGD-O1D |
| 13 | D | 404 | CLA | CHA-CBD-CGD-O2D |
| 19 | B | 522 | LHG | O7-C5-C6-O8 |
| 20 | C | 517 | DGD | O1G-C1G-C2G-O2G |
| 13 | C | 507 | CLA | C3-C5-C6-C7 |
| 22 | D | 407 | PL9 | C12-C11-C9-C8 |
| 13 | B | 504 | CLA | C11-C12-C13-C14 |
| 13 | C | 510 | CLA | C6-C7-C8-C9 |
| 13 | D | 401 | CLA | C11-C10-C8-C9 |
| 18 | B | 521 | LMT | C2-C3-C4-C5 |
| 13 | B | 501 | CLA | C2A-CAA-CBA-CGA |
| 20 | C | 517 | DGD | O1G-C1A-C2A-C3A |
| 19 | B | 522 | LHG | C4-O6-P-O4 |
| 13 | B | 502 | CLA | C16-C17-C18-C20 |
| 13 | B | 513 | CLA | C3-C5-C6-C7 |
| 13 | D | 404 | CLA | C3-C5-C6-C7 |
| 13 | B | 505 | CLA | CAD-CBD-CGD-O1D |
| 13 | C | 502 | CLA | CAD-CBD-CGD-O1D |
| 13 | D | 404 | CLA | CAD-CBD-CGD-O1D |
| 13 | B | 512 | CLA | C5-C6-C7-C8 |
| 13 | B | 512 | CLA | C15-C16-C17-C18 |
| 22 | D | 407 | PL9 | C47-C48-C49-C50 |
| 13 | B | 504 | CLA | C8-C10-C11-C12 |
| 13 | B | 505 | CLA | C5-C6-C7-C8 |
| 13 | B | 504 | CLA | C11-C12-C13-C15 |
| 13 | C | 509 | CLA | C6-C7-C8-C10 |
| 13 | C | 510 | CLA | C11-C10-C8-C7 |
| 19 | B | 522 | LHG | O6-C4-C5-O7 |
| 17 | B | 519 | LMG | O7-C8-C9-O8 |
| 18 | B | 521 | LMT | C3-C4-C5-C6 |
| 14 | A | 404 | PHO | C10-C11-C12-C13 |
| 13 | B | 502 | CLA | C5-C6-C7-C8 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 509 | CLA | C11-C10-C8-C9 |
| 13 | B | 511 | CLA | C11-C12-C13-C14 |
| 13 | B | 511 | CLA | C14-C13-C15-C16 |
| 13 | B | 512 | CLA | C14-C13-C15-C16 |
| 13 | C | 509 | CLA | C6-C7-C8-C9 |
| 13 | C | 513 | CLA | C11-C10-C8-C9 |
| 13 | D | 401 | CLA | C6-C7-C8-C9 |
| 13 | C | 512 | CLA | C6-C7-C8-C10 |
| 16 | A | 407 | BOG | C3'-C4'-C5'-C6' |
| 13 | A | 403 | CLA | C1-C2-C3-C4 |
| 13 | C | 508 | CLA | C2A-CAA-CBA-CGA |
| 13 | C | 501 | CLA | C10-C11-C12-C13 |
| 13 | B | 507 | CLA | C6-C7-C8-C9 |
| 13 | D | 404 | CLA | CAA-CBA-CGA-O2A |
| 13 | C | 501 | CLA | C16-C17-C18-C19 |
| 14 | D | 402 | PHO | CHA-CBD-CGD-O1D |
| 18 | B | 520 | LMT | C2-C3-C4-C5 |
| 13 | B | 503 | CLA | O1D-CGD-O2D-CED |
| 13 | D | 401 | CLA | C11-C12-C13-C15 |
| 14 | D | 402 | PHO | C6-C7-C8-C10 |
| 13 | C | 510 | CLA | C11-C10-C8-C9 |
| 13 | C | 513 | CLA | C6-C7-C8-C9 |
| 15 | C | 515 | BCR | C13-C14-C15-C16 |
| 13 | B | 502 | CLA | C16-C17-C18-C19 |
| 13 | A | 402 | CLA | C3-C5-C6-C7 |
| 16 | D | 408 | BOG | C3'-C4'-C5'-C6' |
| 13 | C | 505 | CLA | C4-C3-C5-C6 |
| 18 | B | 520 | LMT | C3-C4-C5-C6 |
| 19 | B | 522 | LHG | C27-C28-C29-C30 |
| 20 | C | 517 | DGD | O6E-C1E-O5D-C6D |
| 20 | C | 517 | DGD | C2E-C1E-O5D-C6D |
| 13 | A | 405 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 507 | CLA | C2A-CAA-CBA-CGA |
| 13 | B | 503 | CLA | C3A-C2A-CAA-CBA |
| 13 | C | 504 | CLA | C3A-C2A-CAA-CBA |
| 17 | B | 519 | LMG | C28-C29-C30-C31 |
| 13 | B | 510 | CLA | C11-C12-C13-C14 |
| 13 | C | 505 | CLA | C11-C10-C8-C9 |
| 13 | D | 404 | CLA | C6-C7-C8-C9 |
| 17 | H | 102 | LMG | C34-C35-C36-C37 |
| 15 | B | 518 | BCR | C16-C17-C18-C36 |
| 17 | B | 519 | LMG | C7-C8-C9-O8 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | C | 507 | CLA | C11-C10-C8-C7 |
| 13 | C | 503 | CLA | C13-C15-C16-C17 |
| 13 | C | 513 | CLA | C15-C16-C17-C18 |
| 15 | B | 518 | BCR | C16-C17-C18-C19 |
| 19 | B | 522 | LHG | C33-C34-C35-C36 |
| 13 | B | 512 | CLA | C8-C10-C11-C12 |
| 13 | C | 513 | CLA | CAA-CBA-CGA-O1A |
| 13 | B | 506 | CLA | C2-C1-O2A-CGA |
| 13 | B | 512 | CLA | C2-C1-O2A-CGA |
| 13 | C | 502 | CLA | C2-C1-O2A-CGA |
| 13 | C | 505 | CLA | C2-C3-C5-C6 |
| 13 | B | 510 | CLA | O1A-CGA-O2A-C1 |
| 13 | B | 514 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 506 | CLA | C2A-CAA-CBA-CGA |
| 13 | C | 513 | CLA | C2A-CAA-CBA-CGA |
| 15 | A | 406 | BCR | C23-C24-C25-C30 |
| 15 | B | 517 | BCR | C23-C24-C25-C30 |
| 15 | H | 101 | BCR | C23-C24-C25-C30 |
| 17 | H | 102 | LMG | O7-C10-C11-C12 |
| 13 | C | 513 | CLA | C4-C3-C5-C6 |
| 18 | B | 521 | LMT | C9-C10-C11-C12 |
| 13 | B | 513 | CLA | C5-C6-C7-C8 |
| 13 | B | 511 | CLA | C13-C15-C16-C17 |
| 13 | B | 502 | CLA | C4-C3-C5-C6 |
| 16 | D | 408 | BOG | C2-C1-O1-C1' |
| 16 | A | 407 | BOG | C1'-C2'-C3'-C4' |
| 13 | C | 506 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 510 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 505 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 508 | CLA | CAA-CBA-CGA-O1A |
| 22 | D | 407 | PL9 | C38-C39-C41-C42 |
| 13 | C | 502 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 505 | CLA | C11-C10-C8-C9 |
| 13 | B | 507 | CLA | CAD-CBD-CGD-O2D |
| 13 | B | 509 | CLA | CAD-CBD-CGD-O2D |
| 13 | C | 508 | CLA | CAD-CBD-CGD-O2D |
| 13 | D | 401 | CLA | CAD-CBD-CGD-O2D |
| 13 | B | 508 | CLA | O1A-CGA-O2A-C1 |
| 18 | B | 520 | LMT | C9-C10-C11-C12 |
| 15 | B | 518 | BCR | C7-C8-C9-C10 |
| 13 | D | 401 | CLA | C2A-CAA-CBA-CGA |
| 18 | B | 520 | LMT | C5-C6-C7-C8 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 13 | B | 501 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 502 | CLA | CHA-CBD-CGD-O2D |
| 13 | B | 508 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 508 | CLA | CHA-CBD-CGD-O2D |
| 13 | B | 516 | CLA | CHA-CBD-CGD-O1D |
| 13 | B | 516 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 502 | CLA | CHA-CBD-CGD-O1D |
| 13 | C | 509 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 511 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 512 | CLA | CHA-CBD-CGD-O1D |
| 13 | C | 512 | CLA | CHA-CBD-CGD-O2D |
| 13 | C | 502 | CLA | C8-C10-C11-C12 |
| 13 | B | 507 | CLA | CAA-CBA-CGA-O2A |
| 13 | C | 507 | CLA | C11-C10-C8-C9 |
| 14 | D | 402 | PHO | C6-C7-C8-C9 |
| 13 | C | 502 | CLA | CAA-CBA-CGA-O1A |
| 13 | C | 506 | CLA | CAA-CBA-CGA-O1A |
| 13 | C | 502 | CLA | O1A-CGA-O2A-C1 |
| 13 | C | 513 | CLA | C2-C3-C5-C6 |
| 14 | A | 404 | PHO | C2-C3-C5-C6 |
| 13 | C | 510 | CLA | CBA-CGA-O2A-C1 |
| 13 | C | 504 | CLA | C1A-C2A-CAA-CBA |
| 13 | C | 504 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 505 | CLA | CAA-CBA-CGA-O1A |
| 16 | D | 408 | BOG | O5-C1-O1-C1' |
| 15 | A | 406 | BCR | C5-C6-C7-C8 |
| 15 | A | 406 | BCR | C23-C24-C25-C26 |
| 15 | B | 517 | BCR | C5-C6-C7-C8 |
| 13 | C | 502 | CLA | CBA-CGA-O2A-C1 |
| 13 | B | 507 | CLA | CAA-CBA-CGA-O1A |
| 13 | B | 505 | CLA | C11-C12-C13-C14 |
| 13 | C | 507 | CLA | C14-C13-C15-C16 |
| 13 | A | 405 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 512 | CLA | CAA-CBA-CGA-O2A |
| 18 | B | 521 | LMT | C11-C10-C9-C8 |
| 13 | B | 503 | CLA | CBD-CGD-O2D-CED |
| 13 | C | 512 | CLA | CAA-CBA-CGA-O2A |
| 14 | A | 404 | PHO | C4-C3-C5-C6 |
| 13 | B | 508 | CLA | C11-C12-C13-C15 |
| 13 | B | 511 | CLA | C11-C12-C13-C15 |
| 13 | C | 510 | CLA | C6-C7-C8-C10 |
| 13 | C | 513 | CLA | C11-C10-C8-C7 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 14 | A | 404 | PHO | C11-C12-C13-C15 |
| 13 | C | 511 | CLA | CAA-CBA-CGA-O2A |
| 13 | D | 401 | CLA | CAA-CBA-CGA-O2A |
| 13 | B | 505 | CLA | C3-C5-C6-C7 |
| 13 | B | 510 | CLA | C3-C5-C6-C7 |
| 15 | B | 518 | BCR | C21-C22-C23-C24 |
| 13 | B | 512 | CLA | CAA-CBA-CGA-O1A |
| 13 | C | 504 | CLA | CAA-CBA-CGA-O1A |
| 13 | D | 401 | CLA | CAA-CBA-CGA-O1A |
| 13 | C | 501 | CLA | CAA-CBA-CGA-O2A |
| 13 | C | 510 | CLA | O1A-CGA-O2A-C1 |
| 13 | A | 405 | CLA | CAA-CBA-CGA-O1A |
| 22 | D | 407 | PL9 | C37-C38-C39-C40 |
| 13 | C | 511 | CLA | CAA-CBA-CGA-O1A |

There are no ring outliers.

56 monomers are involved in 217 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 15 | D | 406 | BCR | 1 | 0 |
| 13 | C | 505 | CLA | 6 | 0 |
| 16 | A | 407 | BOG | 1 | 0 |
| 22 | D | 407 | PL9 | 1 | 0 |
| 13 | C | 512 | CLA | 4 | 0 |
| 16 | C | 518 | BOG | 2 | 0 |
| 15 | H | 101 | BCR | 2 | 0 |
| 13 | D | 404 | CLA | 10 | 0 |
| 13 | C | 508 | CLA | 6 | 0 |
| 13 | B | 505 | CLA | 9 | 0 |
| 13 | B | 512 | CLA | 12 | 0 |
| 13 | A | 402 | CLA | 8 | 0 |
| 17 | H | 102 | LMG | 2 | 0 |
| 13 | B | 508 | CLA | 4 | 0 |
| 15 | C | 514 | BCR | 2 | 0 |
| 13 | B | 511 | CLA | 3 | 0 |
| 13 | B | 506 | CLA | 3 | 0 |
| 13 | B | 516 | CLA | 4 | 0 |
| 13 | B | 513 | CLA | 6 | 0 |
| 13 | A | 405 | CLA | 12 | 0 |
| 14 | A | 404 | PHO | 3 | 0 |
| 14 | D | 402 | PHO | 2 | 0 |
| 13 | B | 507 | CLA | 6 | 0 |

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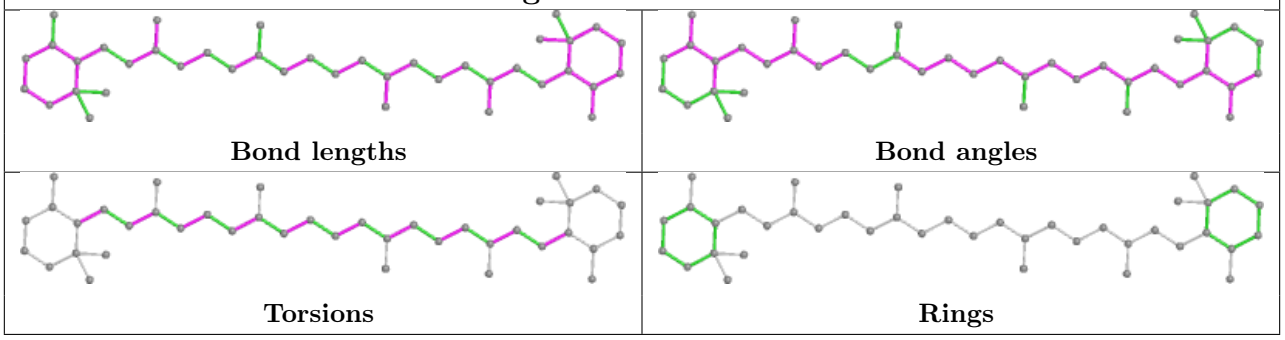
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 15 | C | 515 | BCR | 4 | 0 |
| 18 | B | 520 | LMT | 2 | 0 |
| 13 | C | 501 | CLA | 5 | 0 |
| 18 | B | 521 | LMT | 3 | 0 |
| 15 | B | 517 | BCR | 2 | 0 |
| 13 | D | 405 | CLA | 4 | 0 |
| 15 | C | 516 | BCR | 3 | 0 |
| 13 | D | 401 | CLA | 7 | 0 |
| 13 | B | 514 | CLA | 5 | 0 |
| 13 | C | 509 | CLA | 7 | 0 |
| 13 | B | 515 | CLA | 5 | 0 |
| 13 | C | 506 | CLA | 2 | 0 |
| 13 | B | 509 | CLA | 8 | 0 |
| 19 | B | 522 | LHG | 5 | 0 |
| 13 | B | 510 | CLA | 7 | 0 |
| 13 | B | 504 | CLA | 9 | 0 |
| 13 | A | 403 | CLA | 3 | 0 |
| 13 | C | 507 | CLA | 1 | 0 |
| 15 | B | 518 | BCR | 5 | 0 |
| 13 | B | 502 | CLA | 5 | 0 |
| 13 | B | 503 | CLA | 11 | 0 |
| 13 | C | 513 | CLA | 6 | 0 |
| 17 | B | 519 | LMG | 1 | 0 |
| 13 | C | 511 | CLA | 3 | 0 |
| 16 | D | 408 | BOG | 1 | 0 |
| 20 | C | 517 | DGD | 1 | 0 |
| 15 | A | 406 | BCR | 3 | 0 |
| 23 | E | 101 | HEM | 2 | 0 |
| 13 | C | 510 | CLA | 10 | 0 |
| 13 | B | 501 | CLA | 2 | 0 |
| 13 | C | 504 | CLA | 2 | 0 |
| 13 | C | 502 | CLA | 7 | 0 |
| 13 | C | 503 | CLA | 5 | 0 |

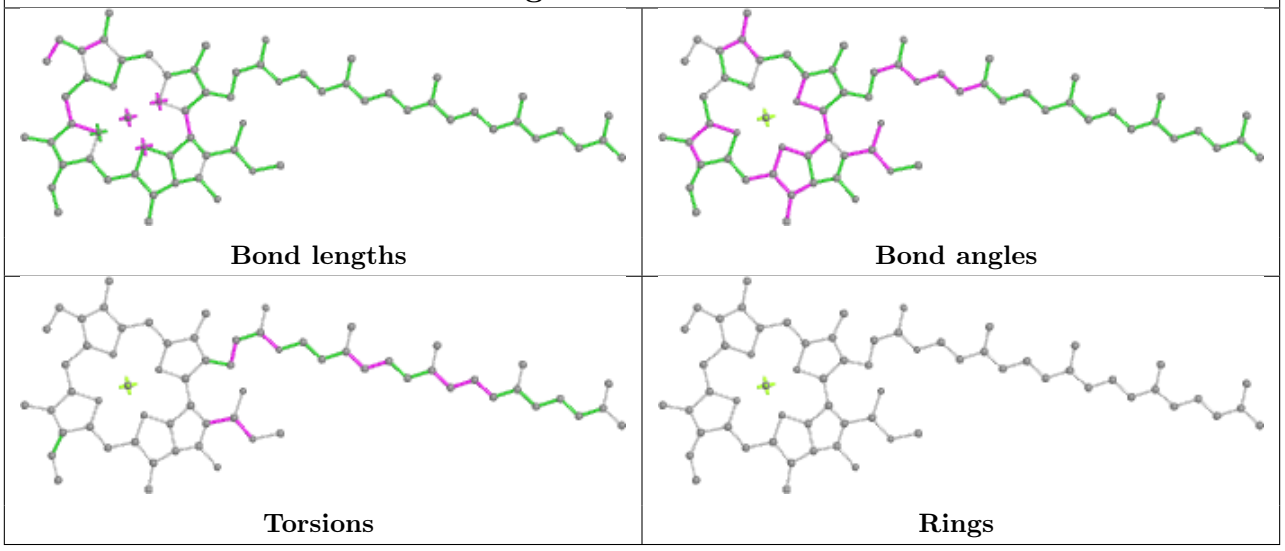
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

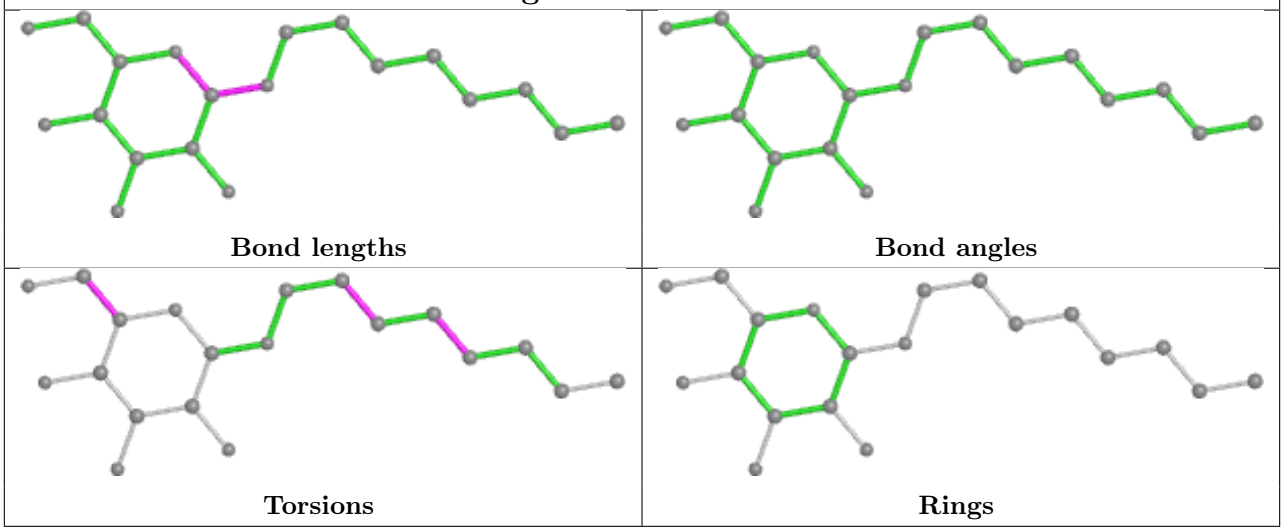
**Ligand BCR D 406**



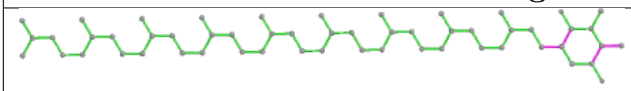

**Ligand CLA C 505**



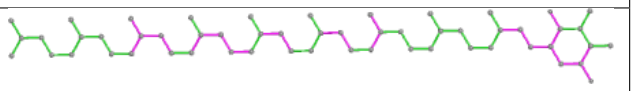

**Ligand BOG A 407**



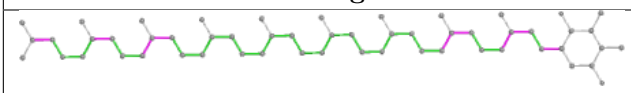
## Ligand PL9 D 407



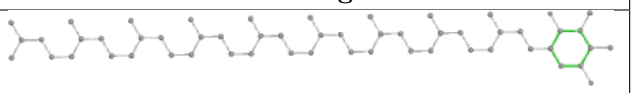
Bond lengths



Bond angles

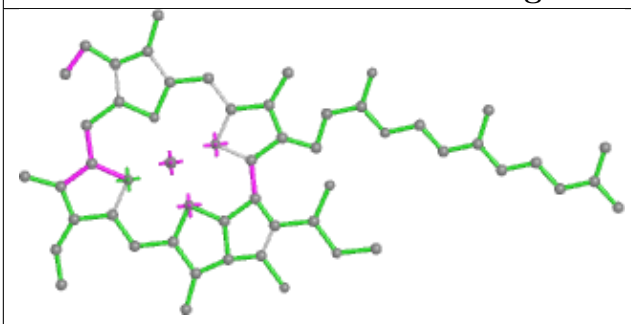


Torsions

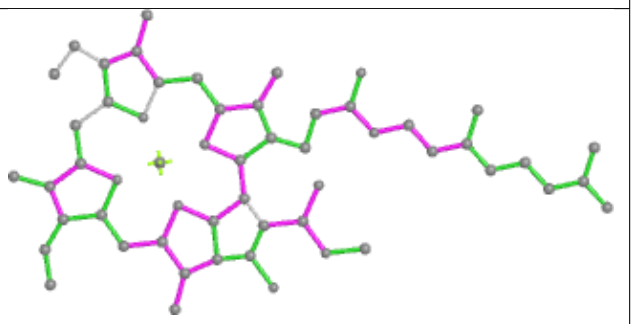


Rings

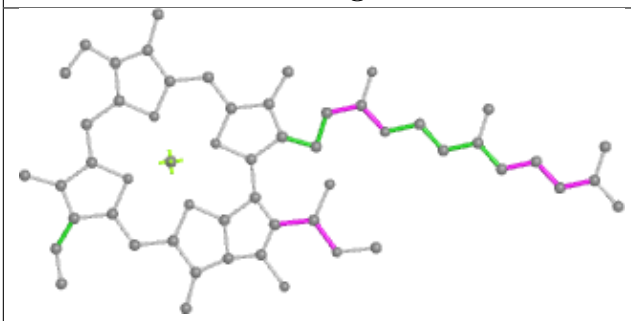
## Ligand CLA C 512



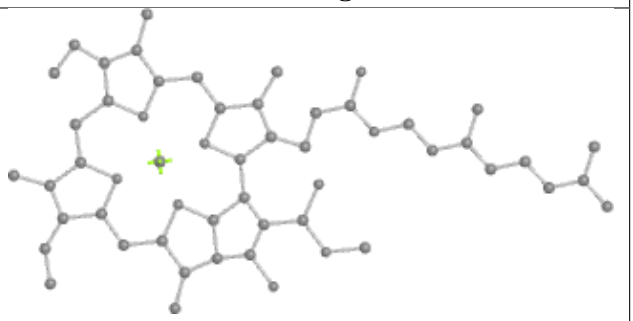
Bond lengths



Bond angles

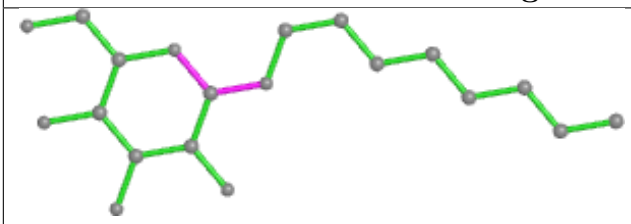


Torsions

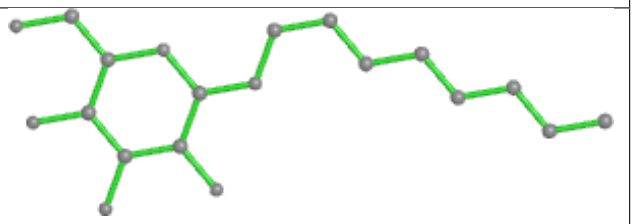


Rings

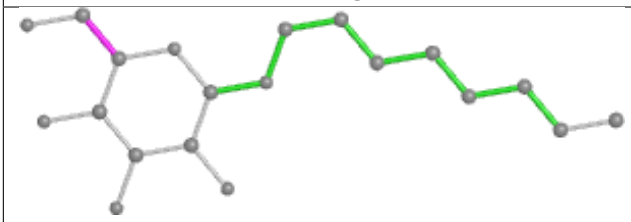
## Ligand BOG C 518



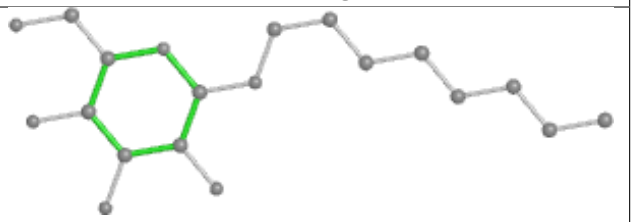
Bond lengths



Bond angles

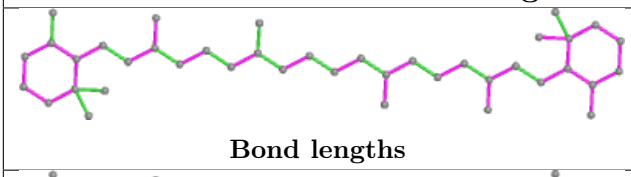


Torsions

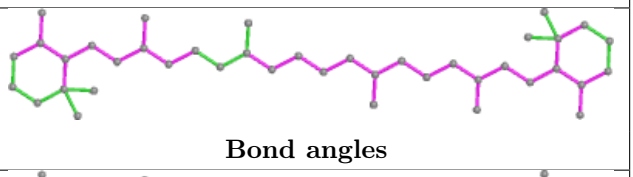


Rings

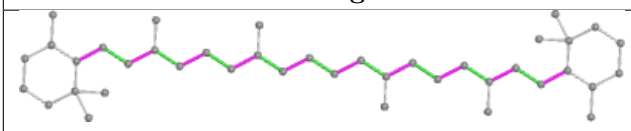
## Ligand BCR H 101



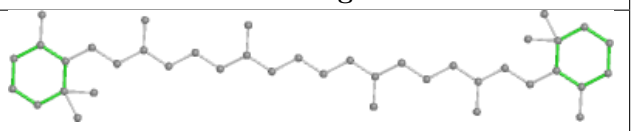
Bond lengths



Bond angles

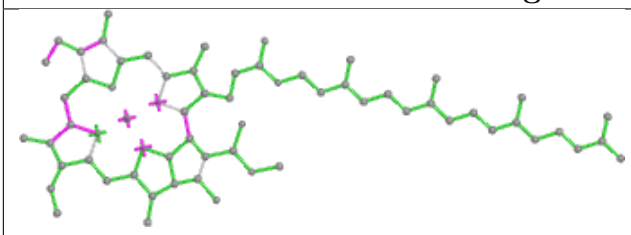


Torsions

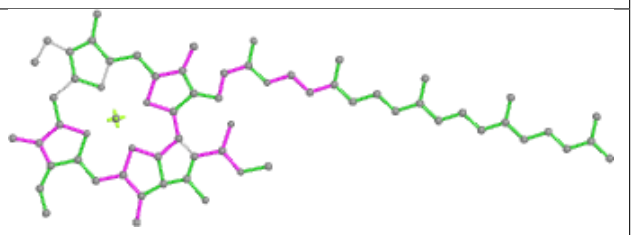


Rings

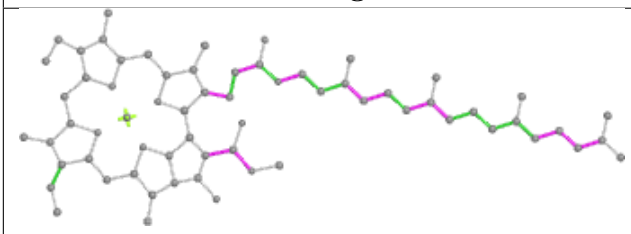
## Ligand CLA D 404



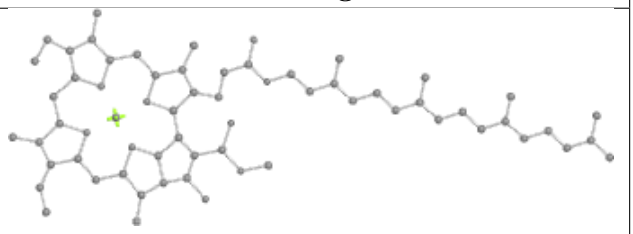
Bond lengths



Bond angles

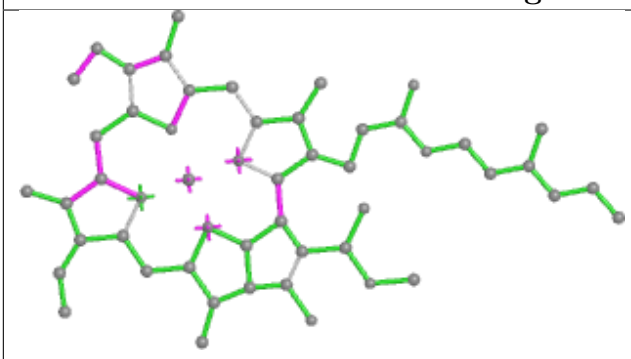


Torsions

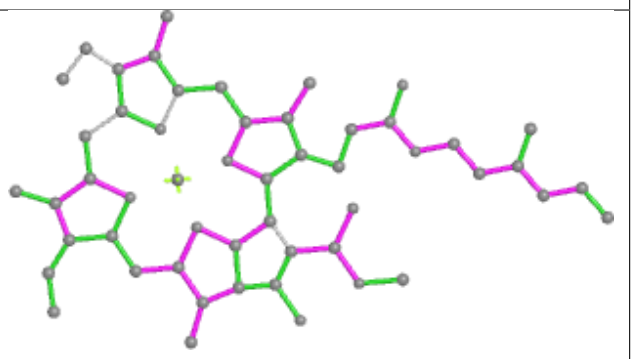


Rings

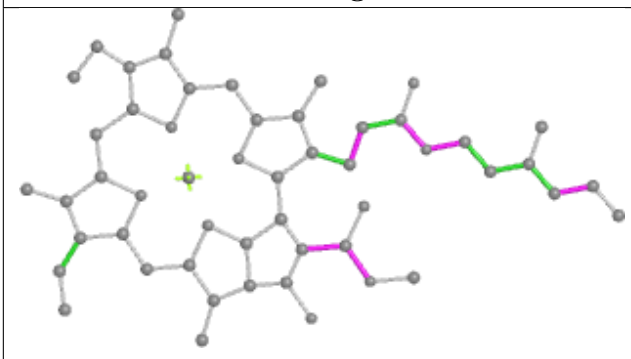
## Ligand CLA C 508



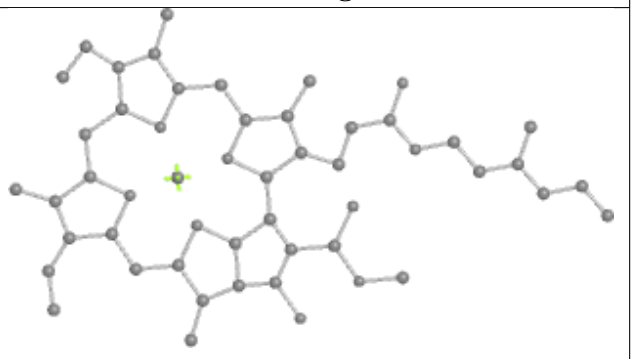
Bond lengths



Bond angles

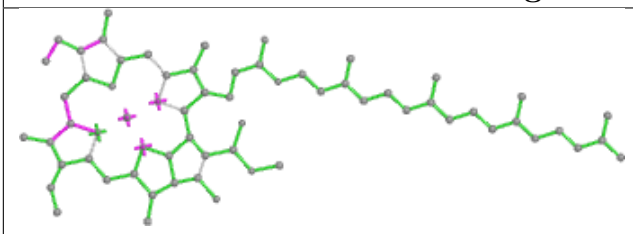


Torsions

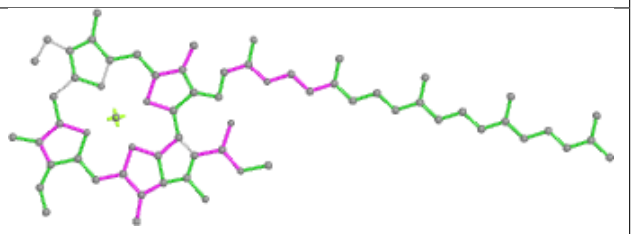


Rings

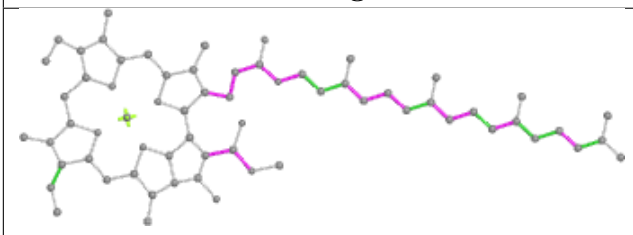
## Ligand CLA B 505



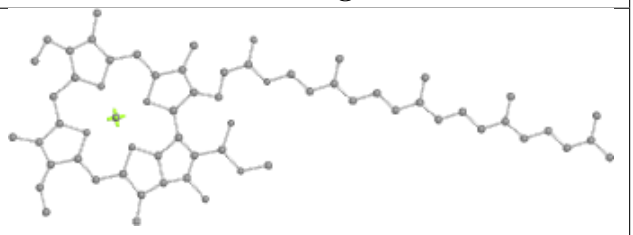
Bond lengths



Bond angles

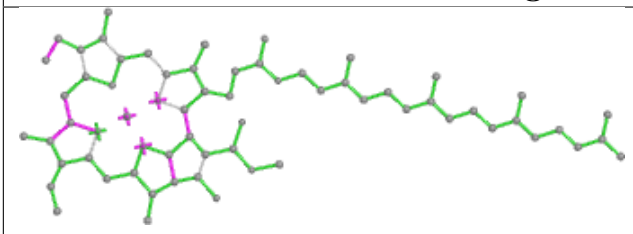


Torsions

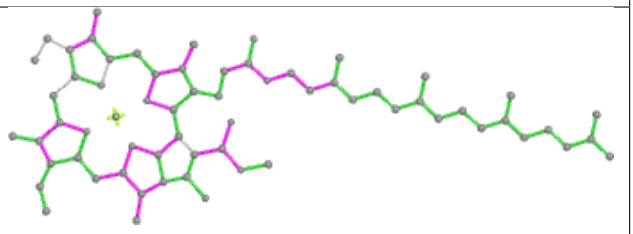


Rings

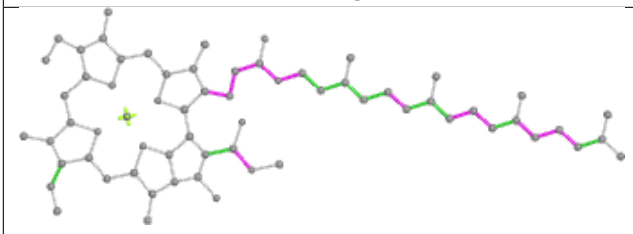
## Ligand CLA B 512



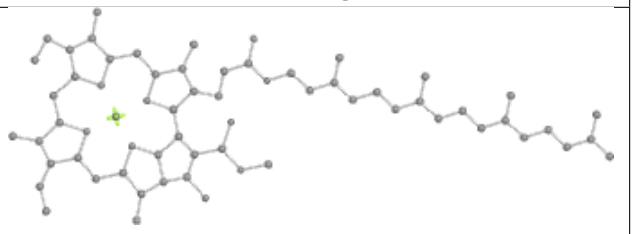
Bond lengths



Bond angles

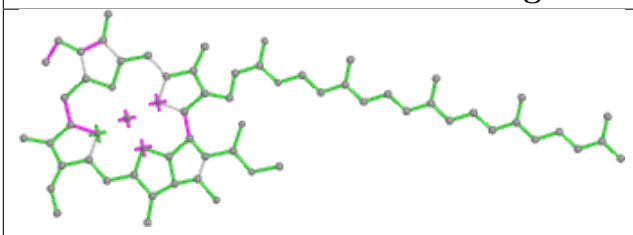


Torsions

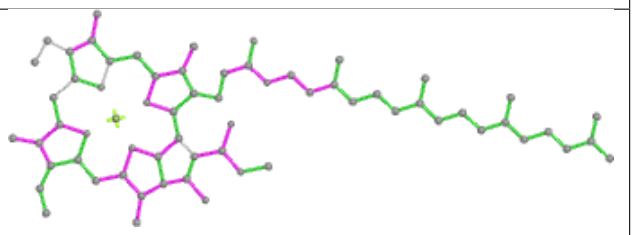


Rings

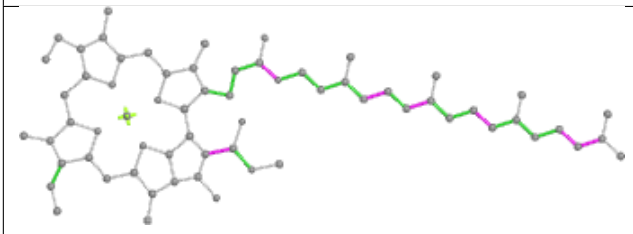
## Ligand CLA A 402



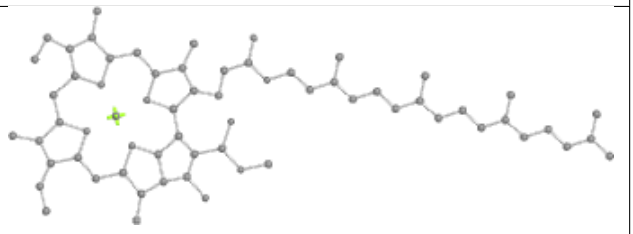
Bond lengths



Bond angles

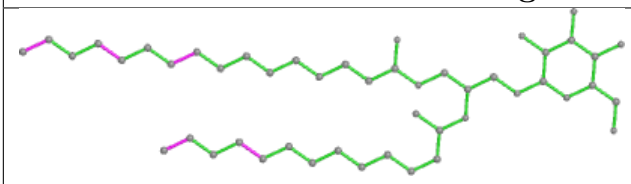


Torsions

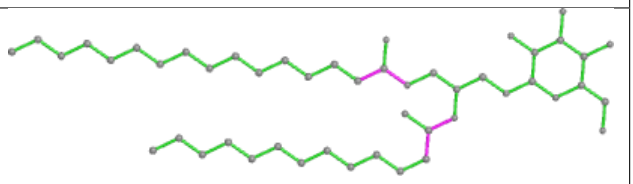


Rings

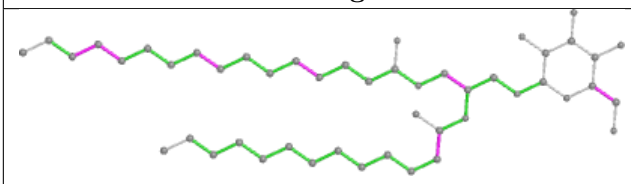
## Ligand LMG H 102



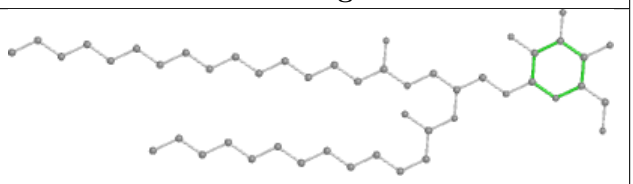
Bond lengths



Bond angles

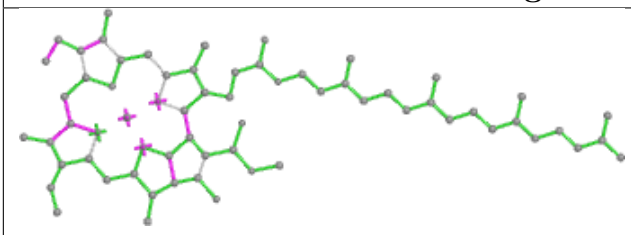


Torsions

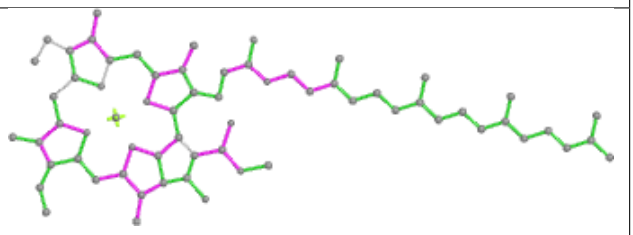


Rings

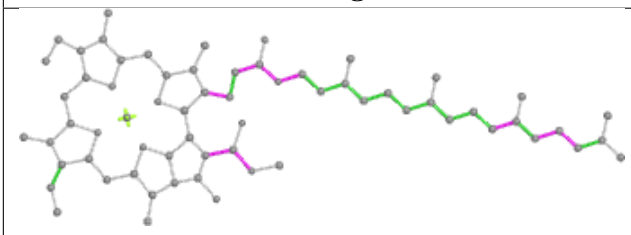
## Ligand CLA B 508



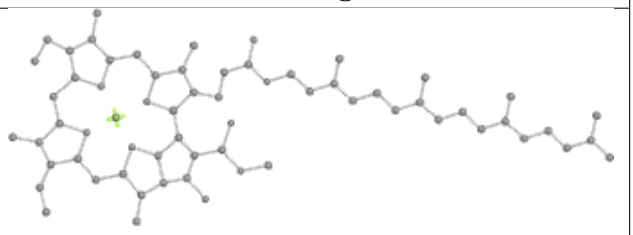
Bond lengths



Bond angles

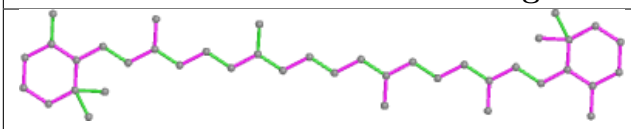


Torsions

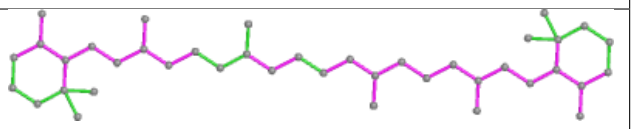


Rings

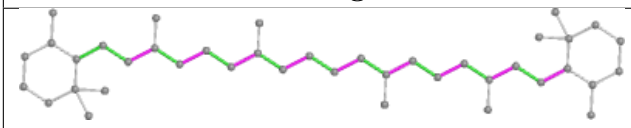
## Ligand BCR C 514



Bond lengths



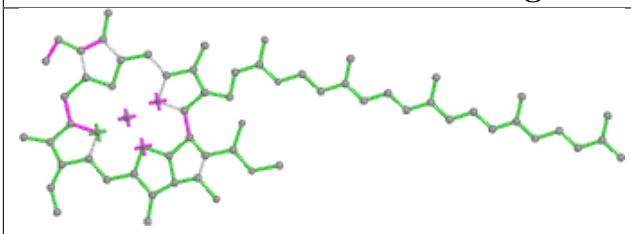
Bond angles



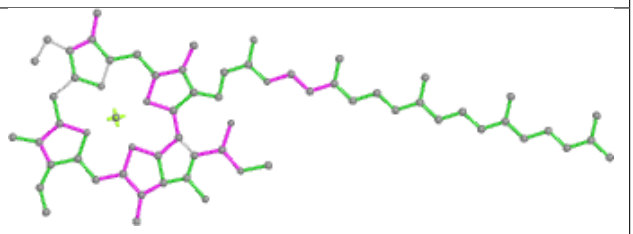
Torsions

Rings

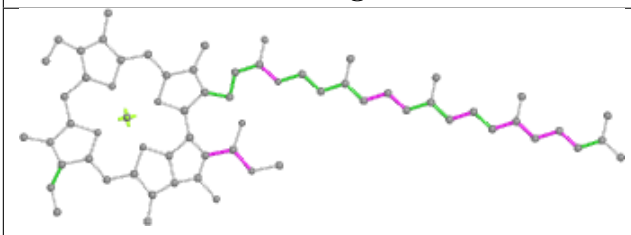
## Ligand CLA B 511



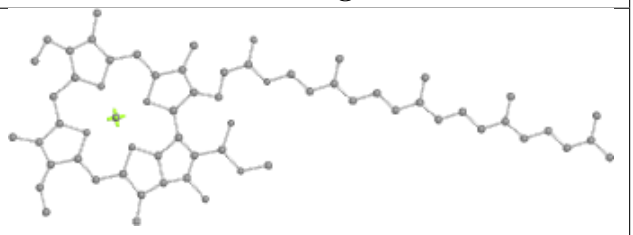
Bond lengths



Bond angles

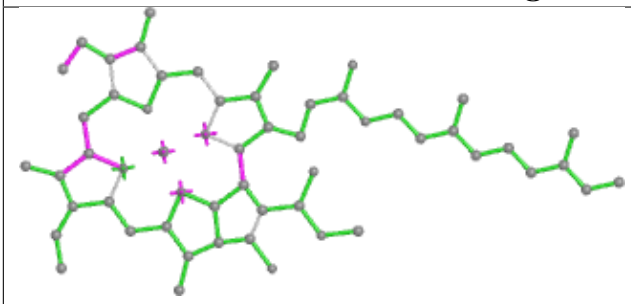


Torsions

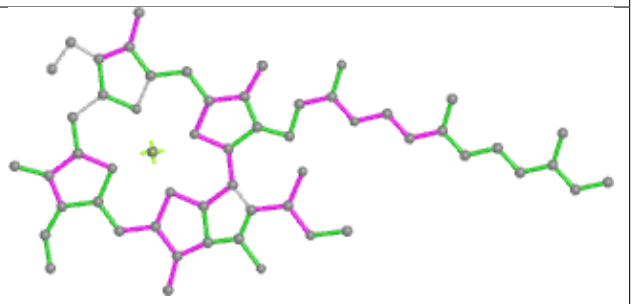


Rings

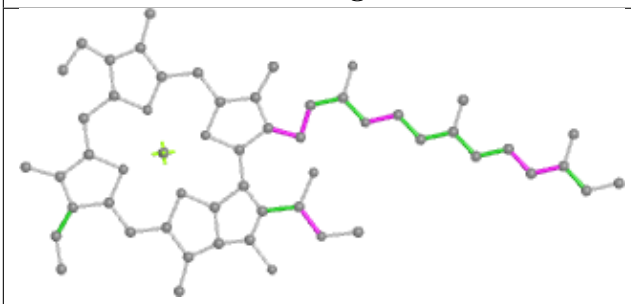
## Ligand CLA B 506



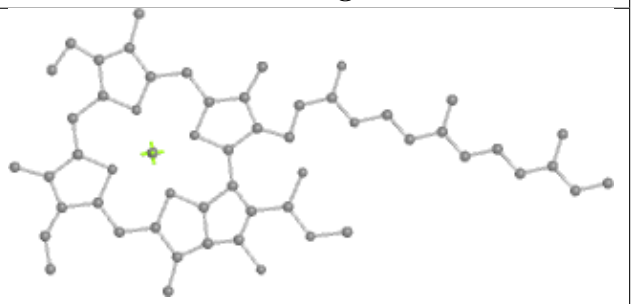
Bond lengths



Bond angles

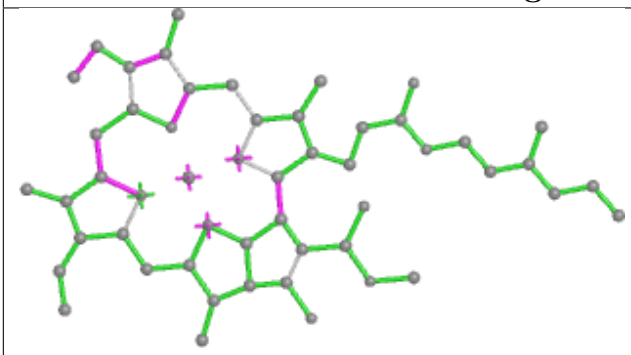


Torsions

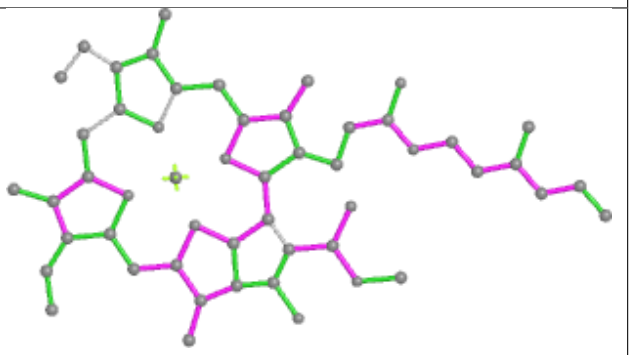


Rings

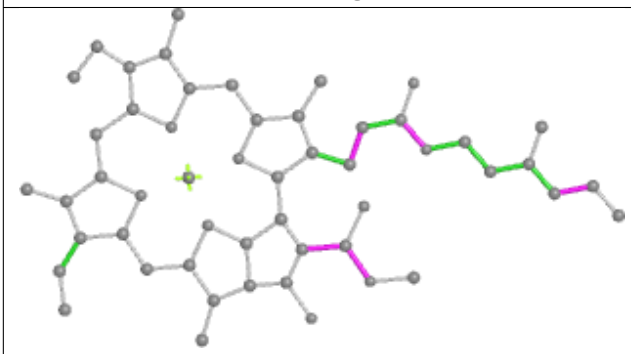
## Ligand CLA B 516



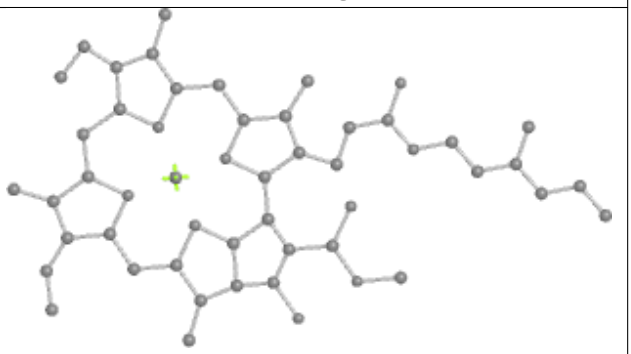
Bond lengths



Bond angles

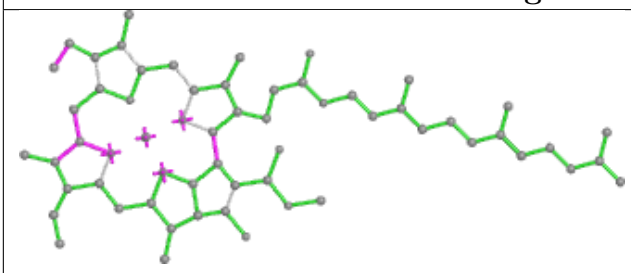


Torsions

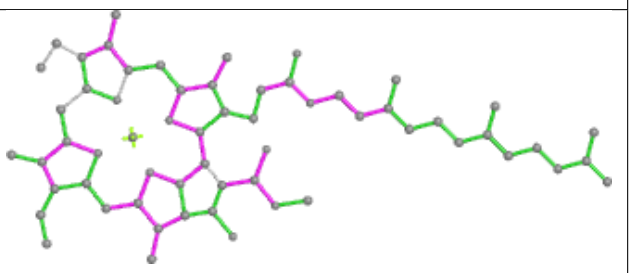


Rings

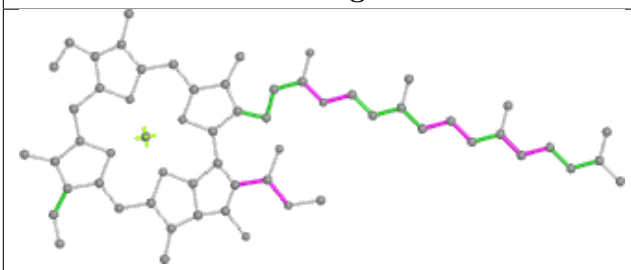
## Ligand CLA B 513



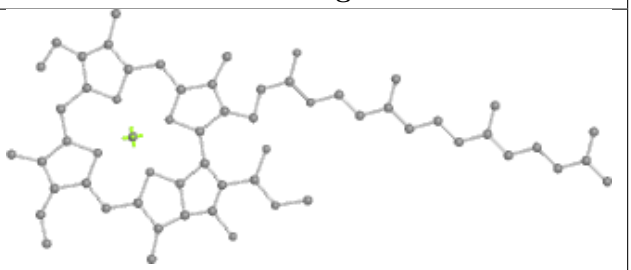
Bond lengths



Bond angles

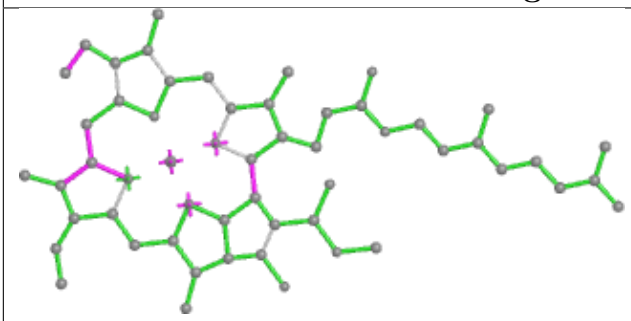


Torsions

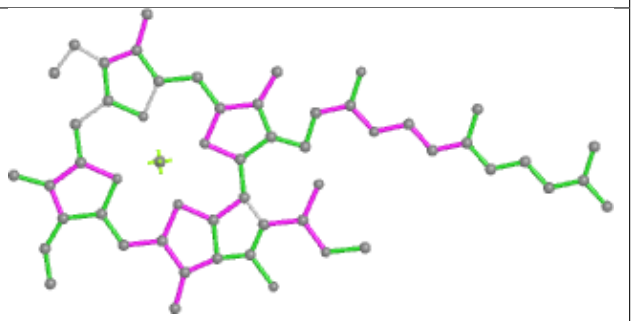


Rings

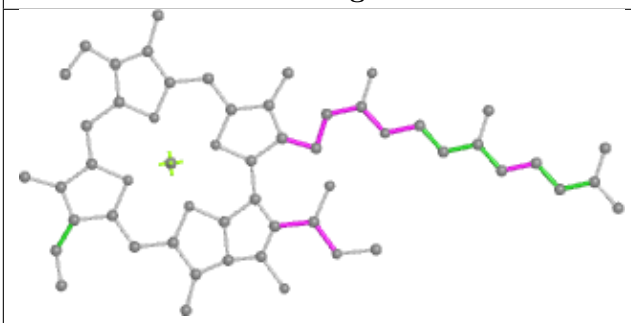
## Ligand CLA A 405



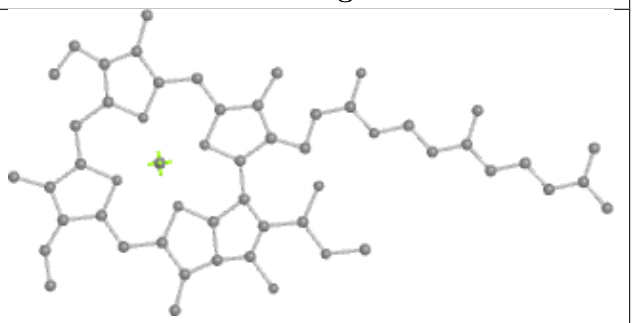
Bond lengths



Bond angles

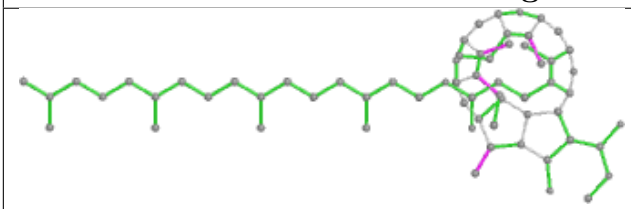


Torsions

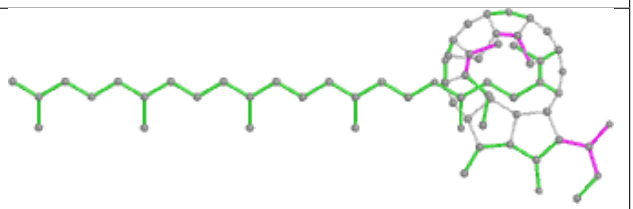


Rings

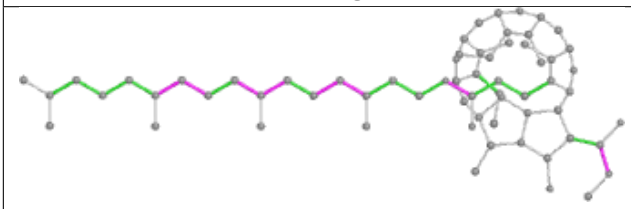
## Ligand PHO A 404



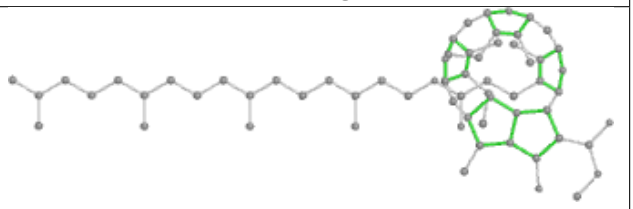
Bond lengths



Bond angles

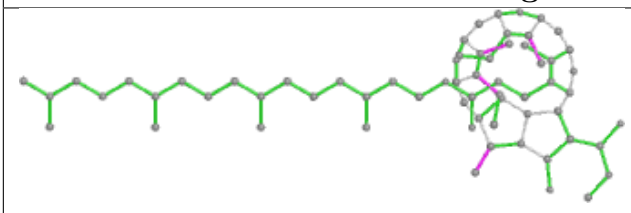


Torsions

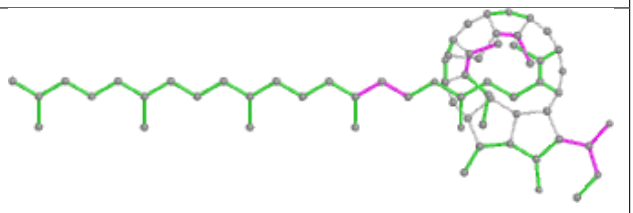


Rings

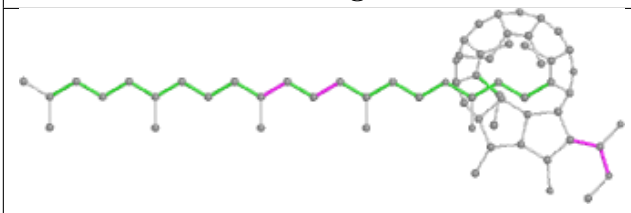
## Ligand PHO D 402



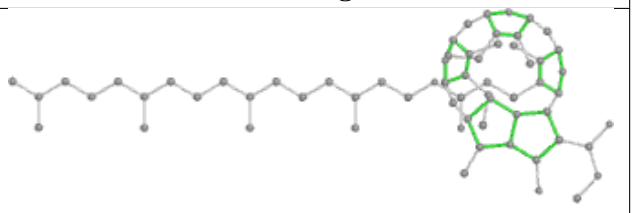
Bond lengths



Bond angles

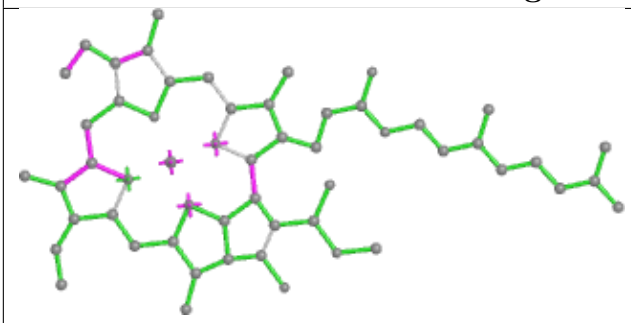


Torsions

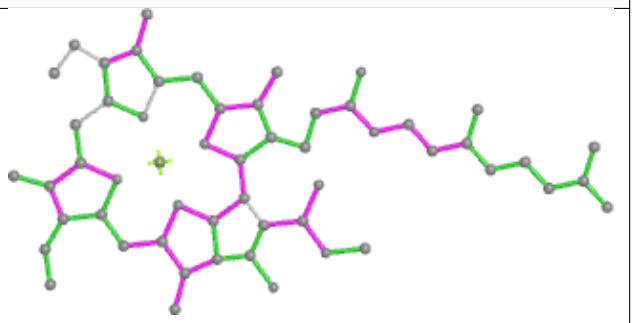


Rings

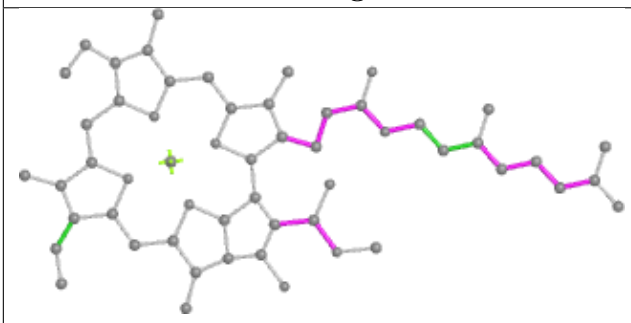
## Ligand CLA B 507



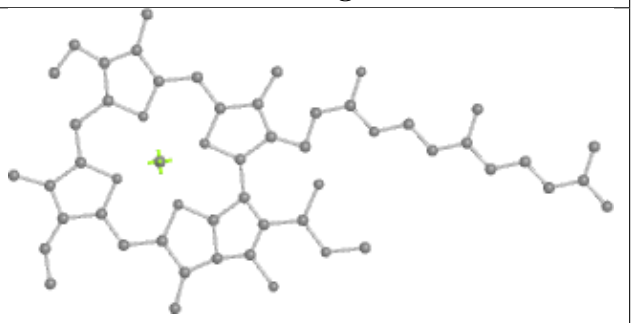
Bond lengths



Bond angles

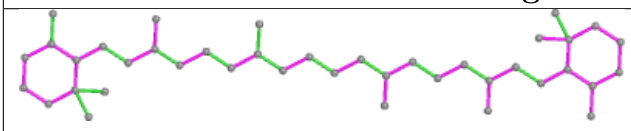


Torsions

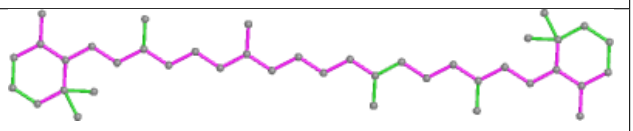


Rings

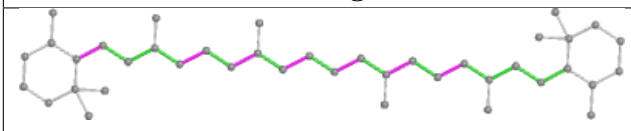
## Ligand BCR C 515



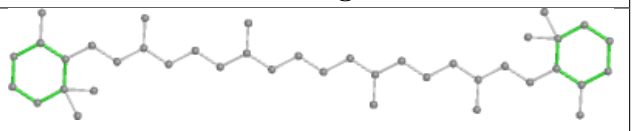
Bond lengths



Bond angles

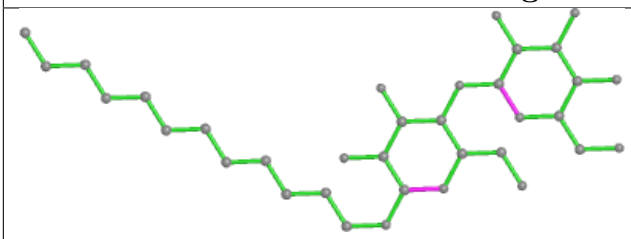


Torsions

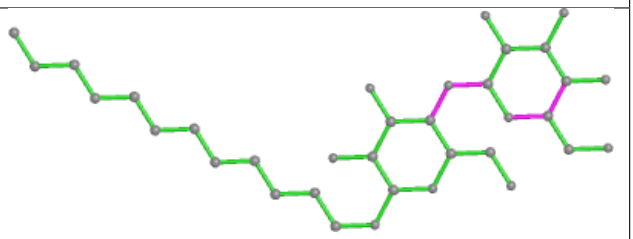


Rings

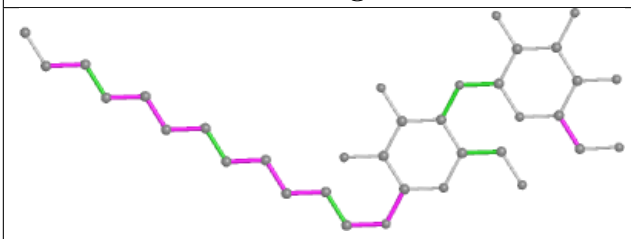
## Ligand LMT B 520



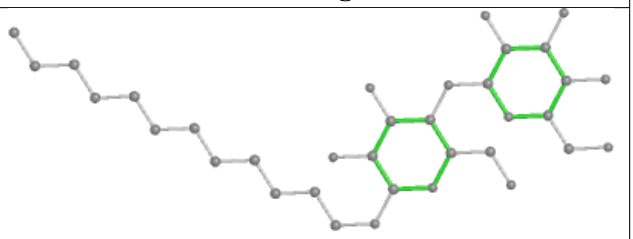
Bond lengths



Bond angles

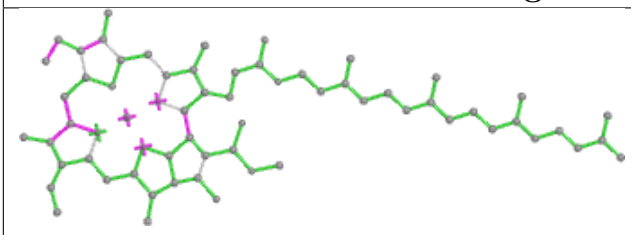


Torsions

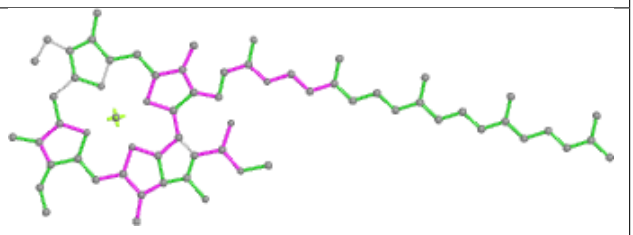


Rings

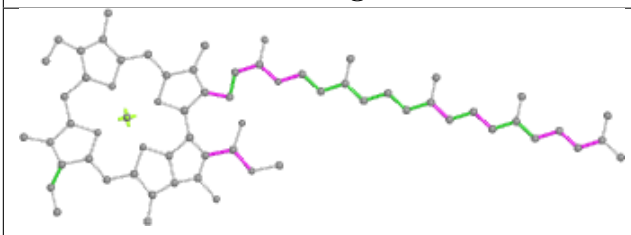
## Ligand CLA C 501



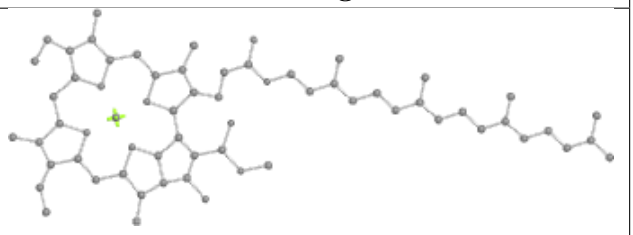
Bond lengths



Bond angles

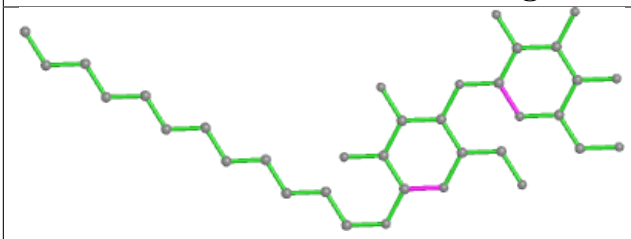


Torsions

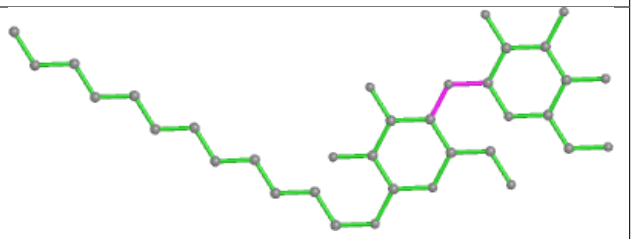


Rings

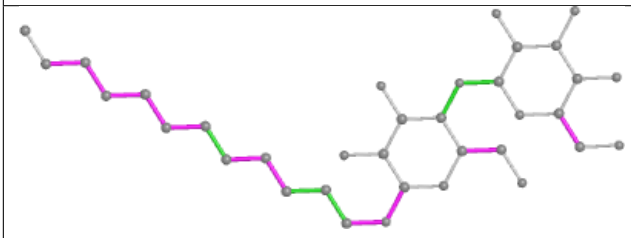
## Ligand LMT B 521



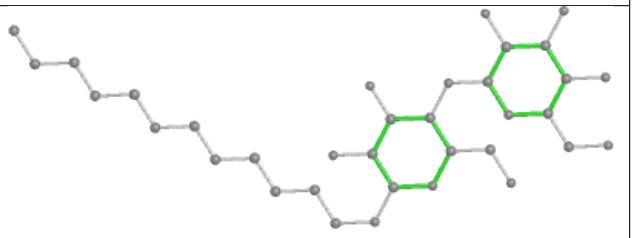
Bond lengths



Bond angles

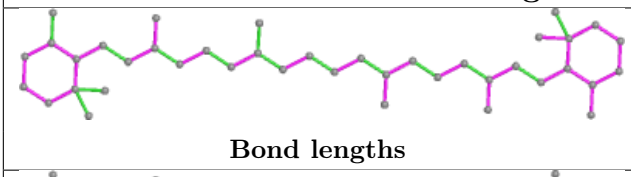


Torsions

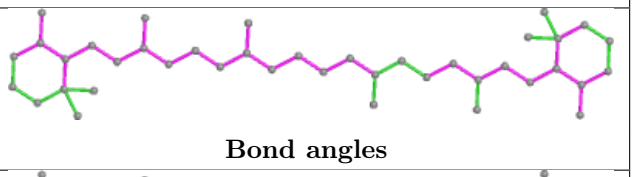


Rings

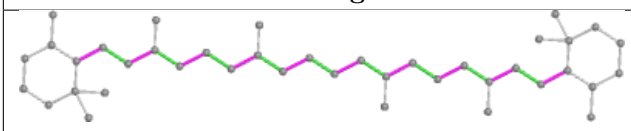
## Ligand BCR B 517



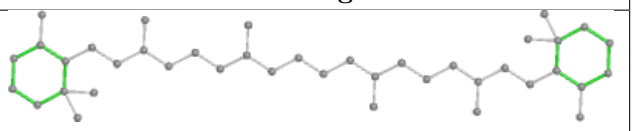
Bond lengths



Bond angles

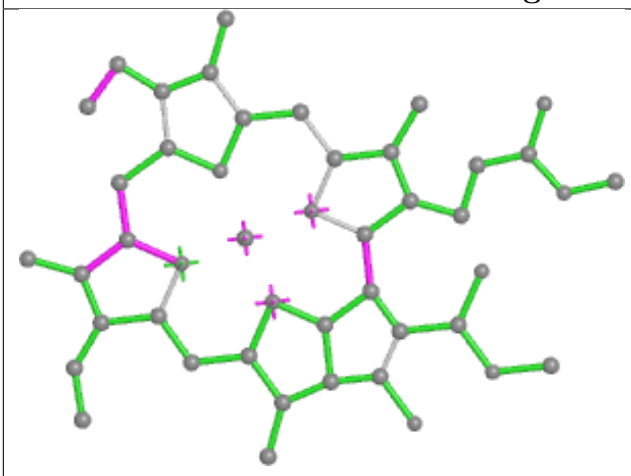


Torsions

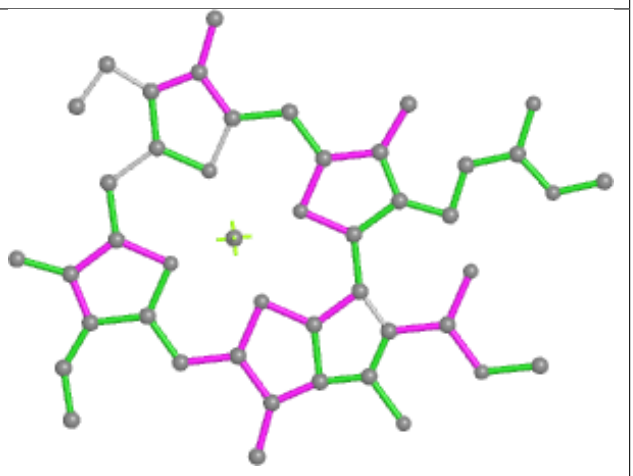


Rings

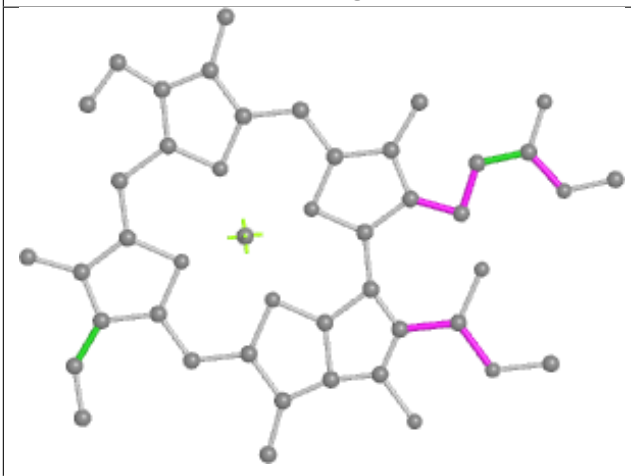
## Ligand CLA D 405



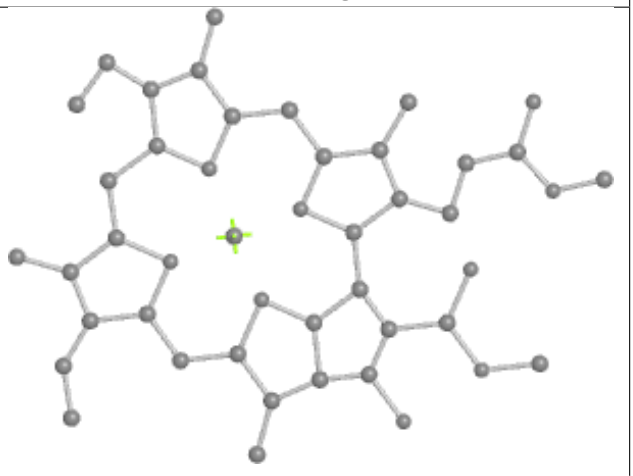
Bond lengths



Bond angles

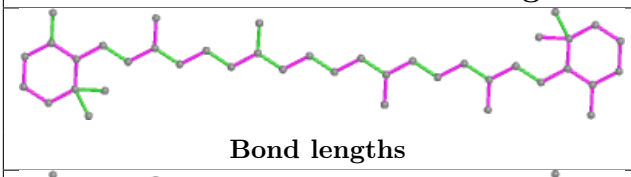


Torsions

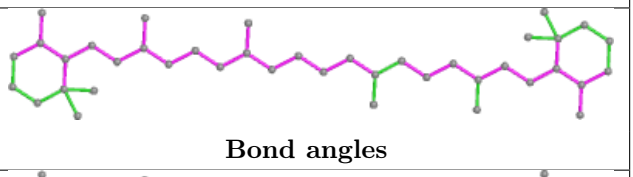


Rings

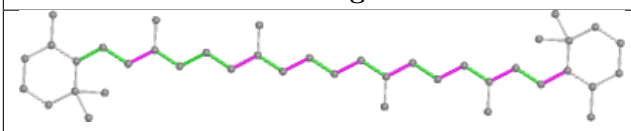
## Ligand BCR C 516



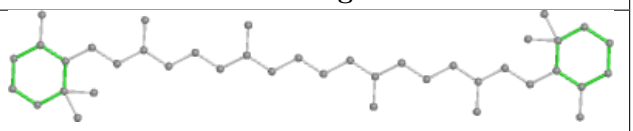
Bond lengths



Bond angles

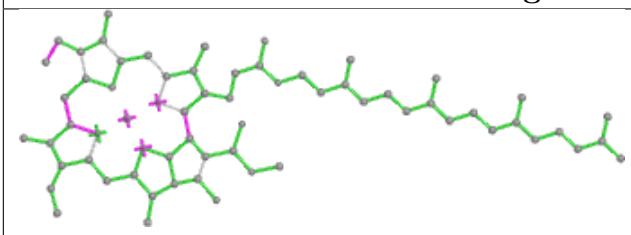


Torsions

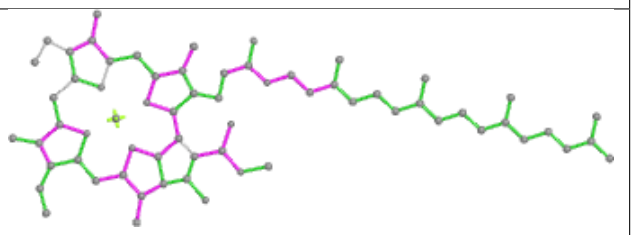


Rings

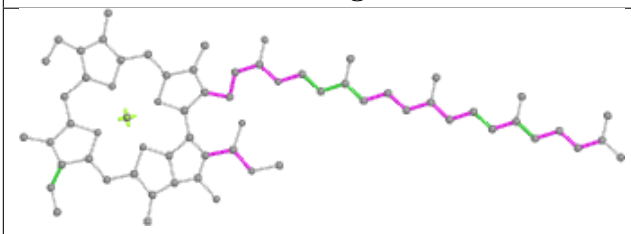
## Ligand CLA D 401



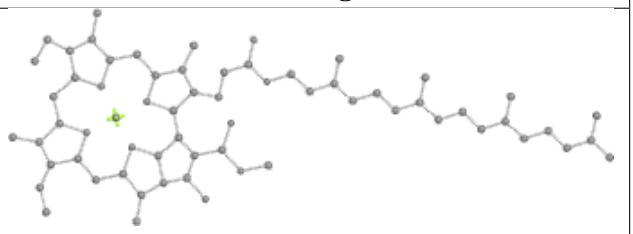
Bond lengths



Bond angles

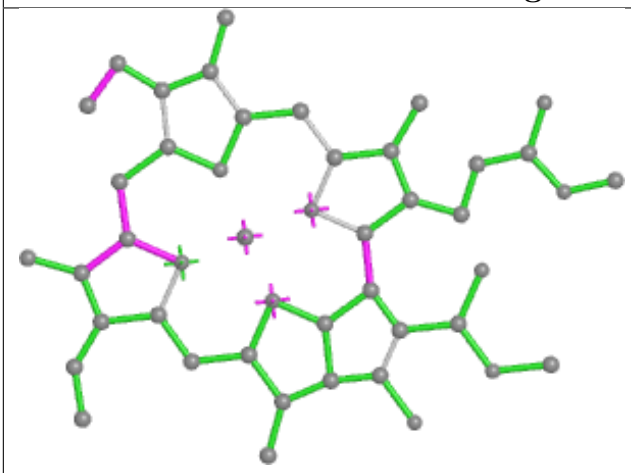


Torsions

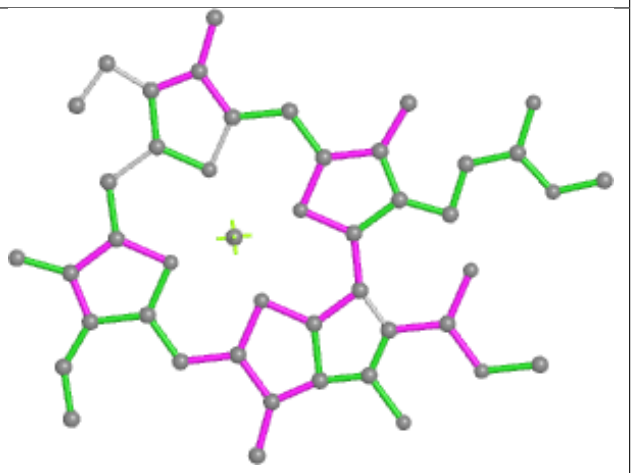


Rings

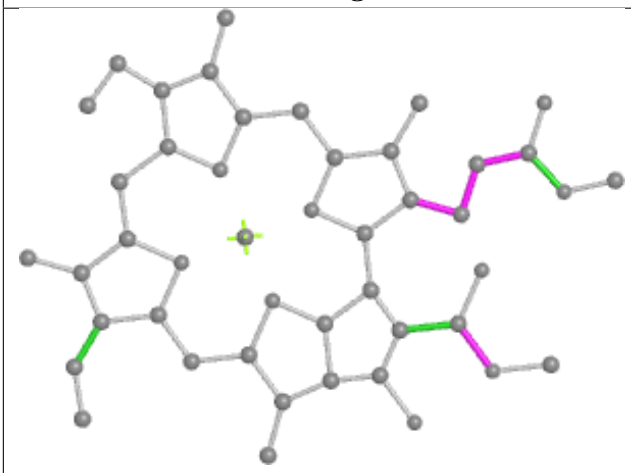
## Ligand CLA B 514



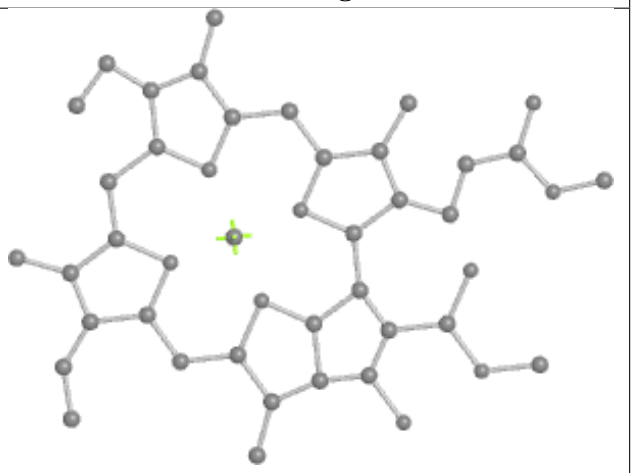
Bond lengths



Bond angles

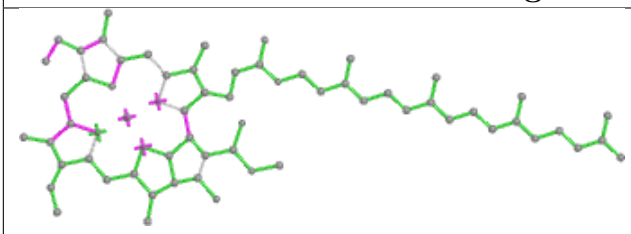


Torsions



Rings

## Ligand CLA C 509



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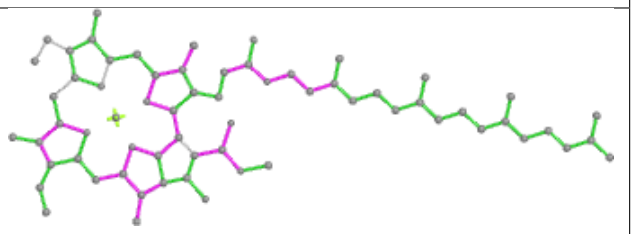
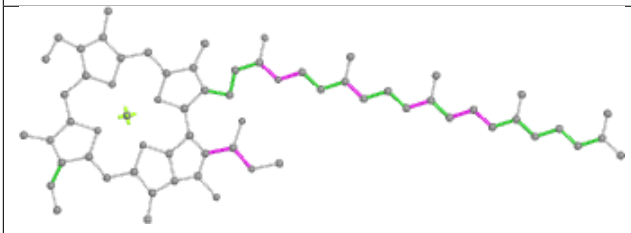
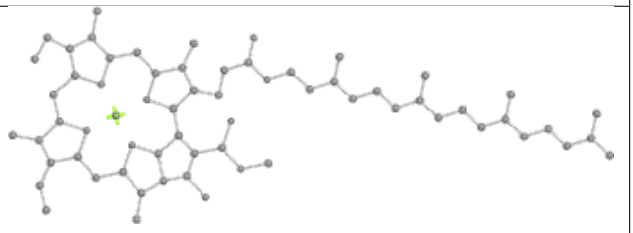


Bond angles

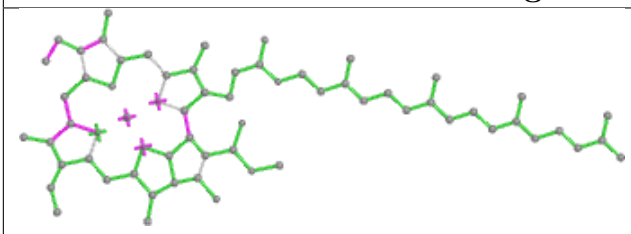


Torsions

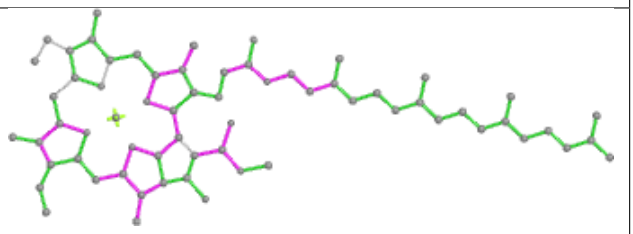


Rings

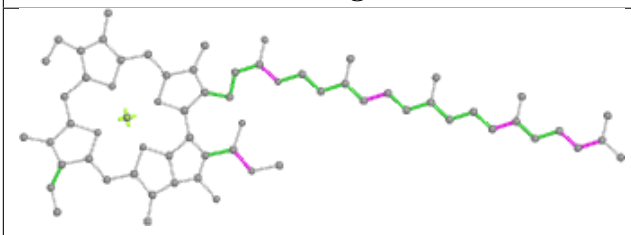
## Ligand CLA B 515



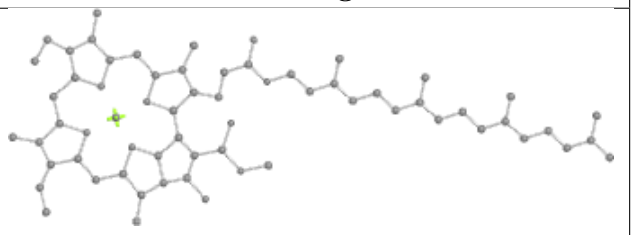
Bond lengths



Bond angles

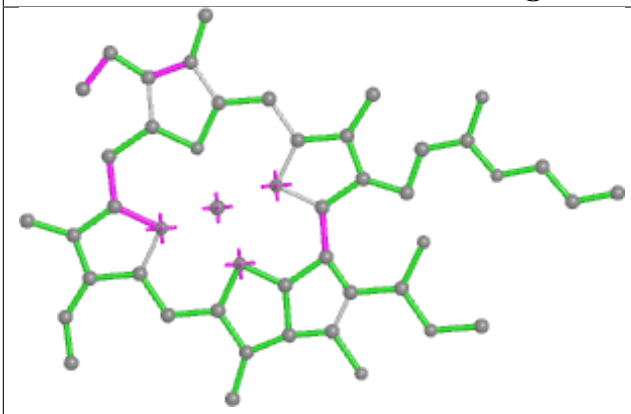


Torsions

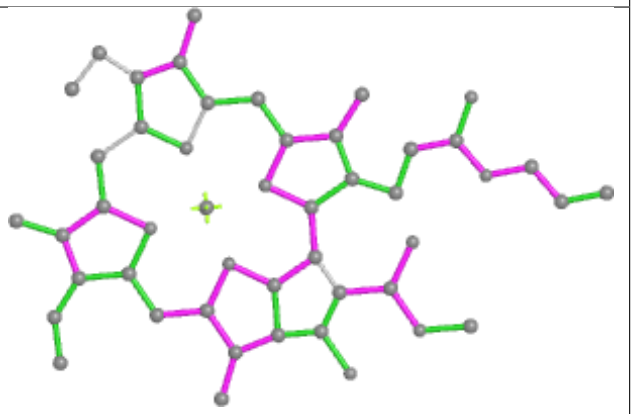


Rings

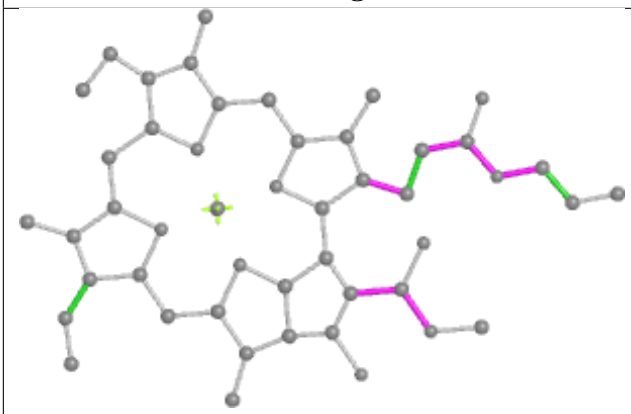
## Ligand CLA C 506



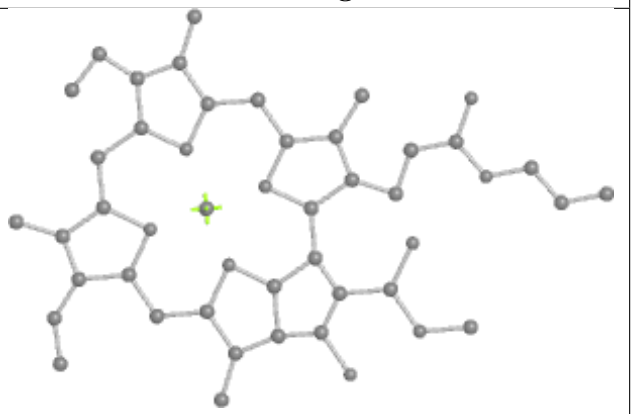
Bond lengths



Bond angles

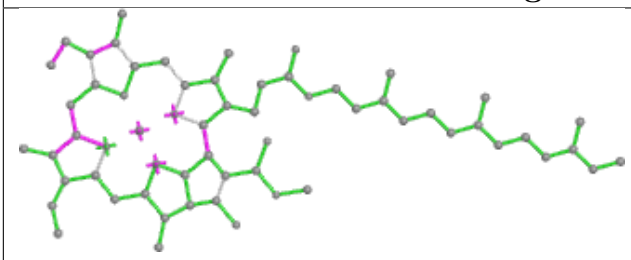


Torsions

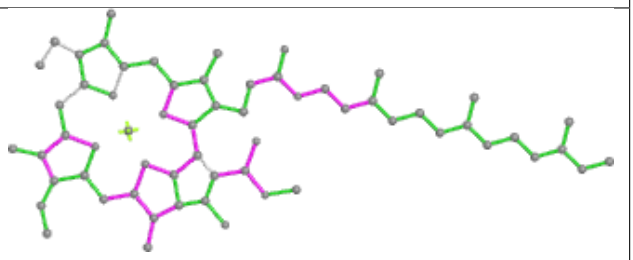


Rings

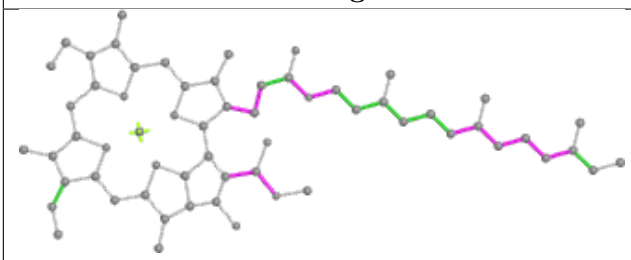
## Ligand CLA B 509



Bond lengths



Bond angles



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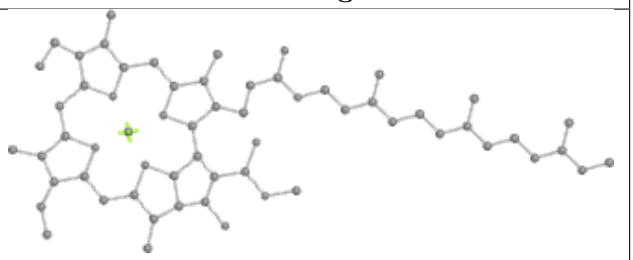
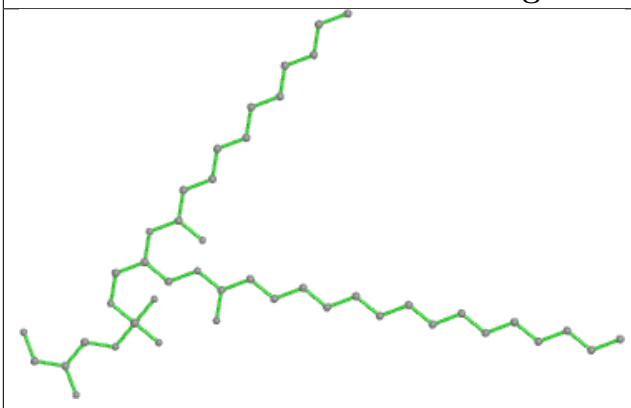
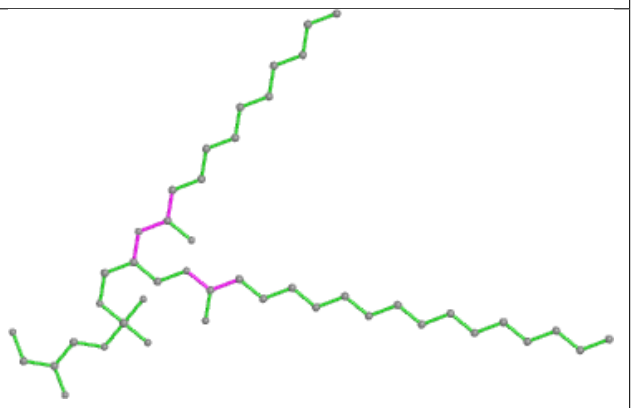


Rings

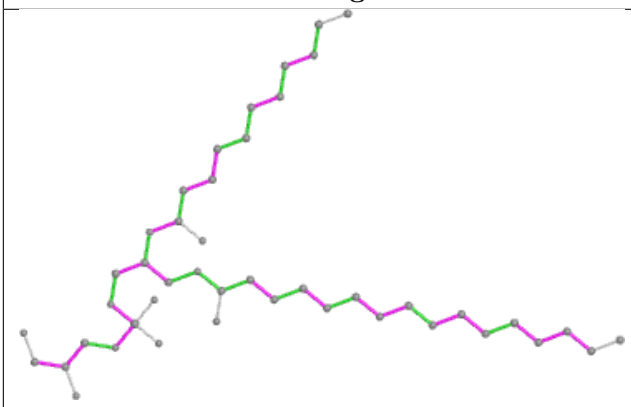
## Ligand LHG B 522



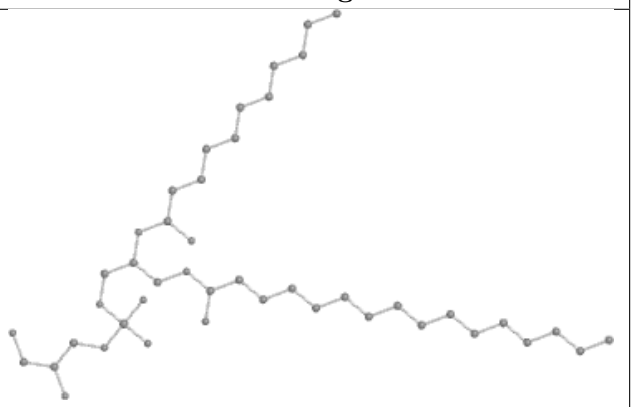
Bond lengths



Bond angles

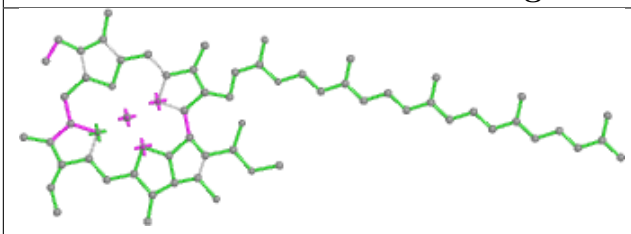


Torsions

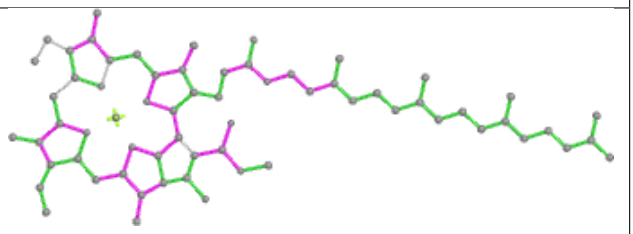


Rings

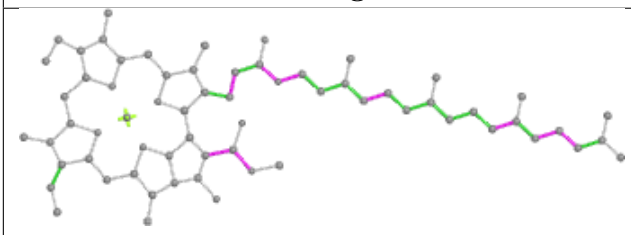
## Ligand CLA B 510



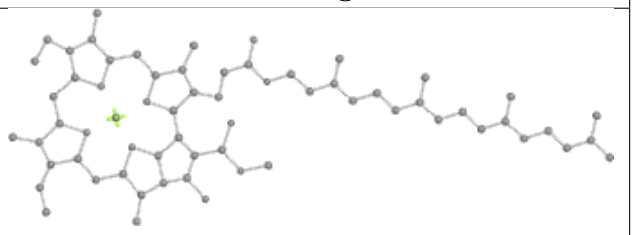
Bond lengths



Bond angles

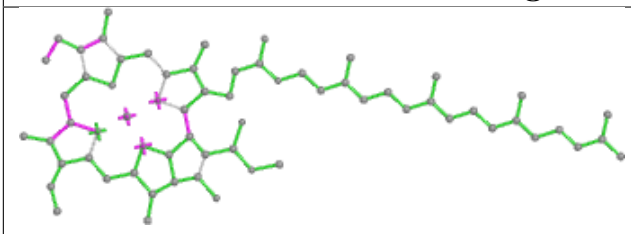


Torsions

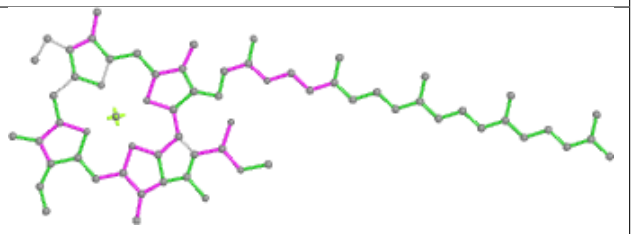


Rings

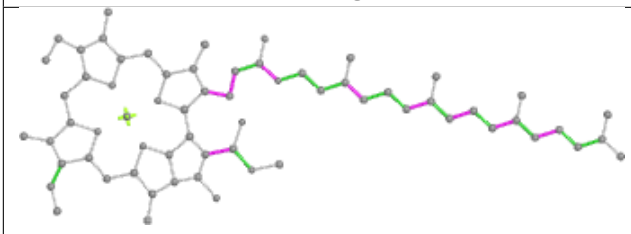
## Ligand CLA B 504



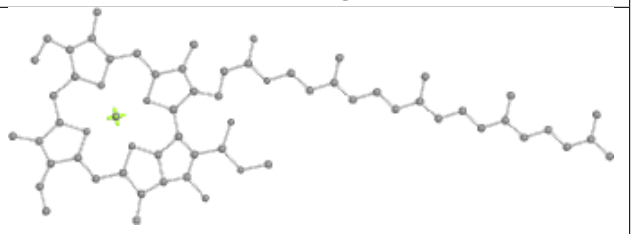
Bond lengths



Bond angles

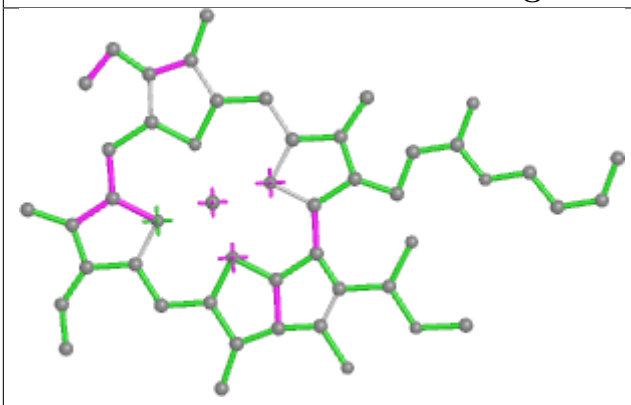


Torsions

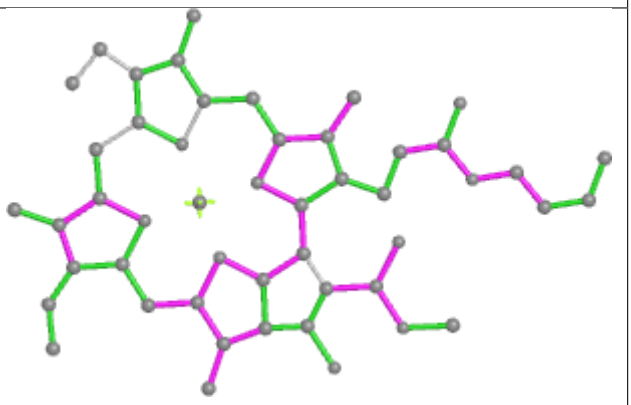


Rings

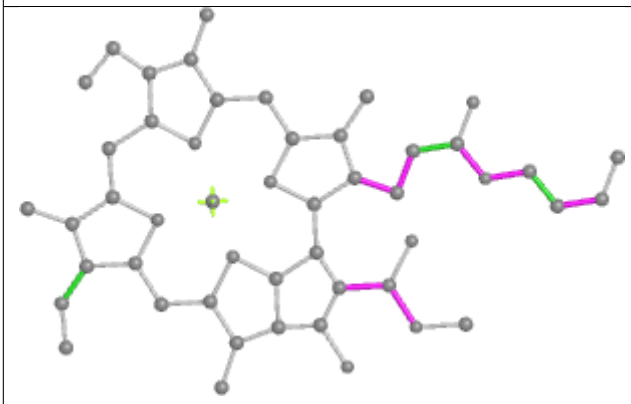
## Ligand CLA A 403



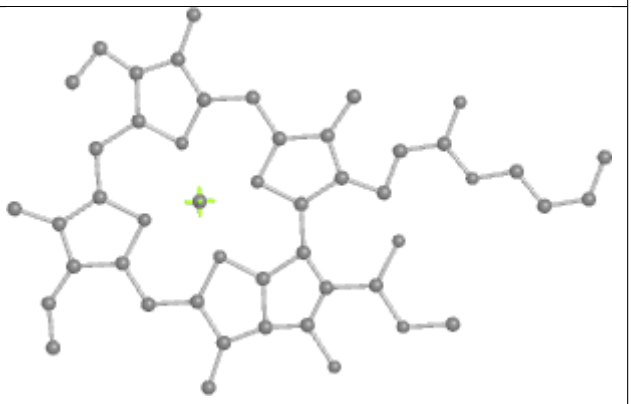
Bond lengths



Bond angles

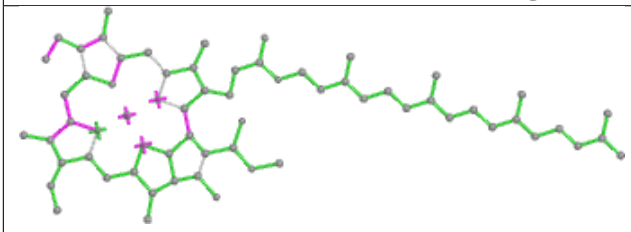


Torsions

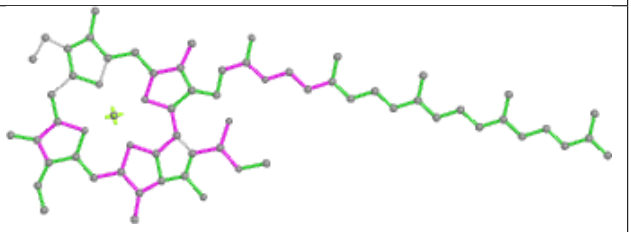


Rings

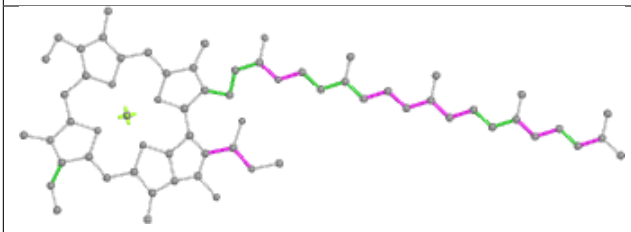
## Ligand CLA C 507



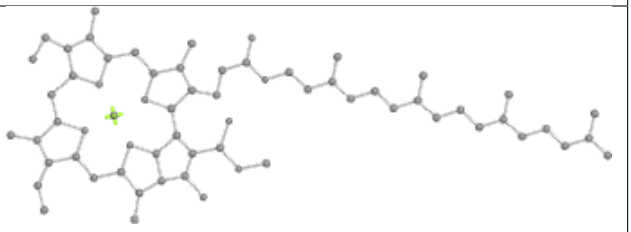
Bond lengths



Bond angles

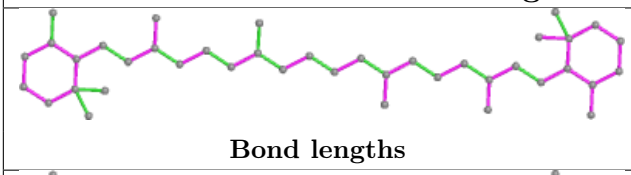


Torsions

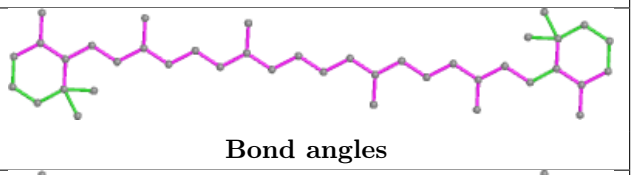


Rings

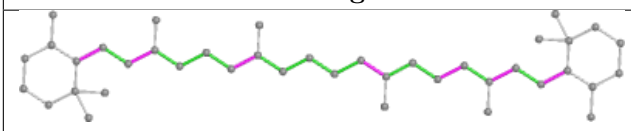
## Ligand BCR B 518



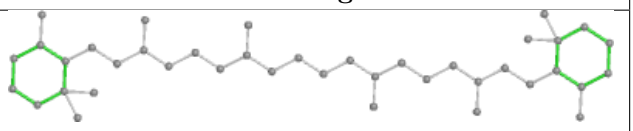
Bond lengths



Bond angles

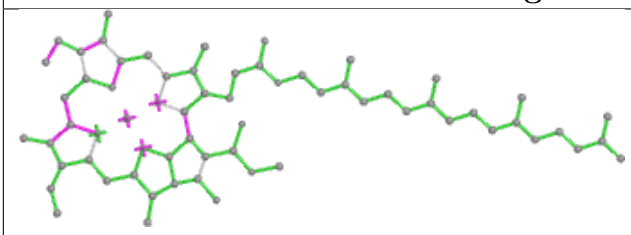


Torsions

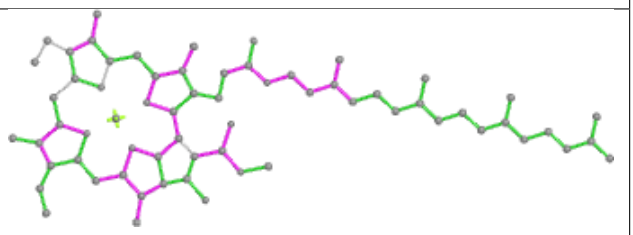


Rings

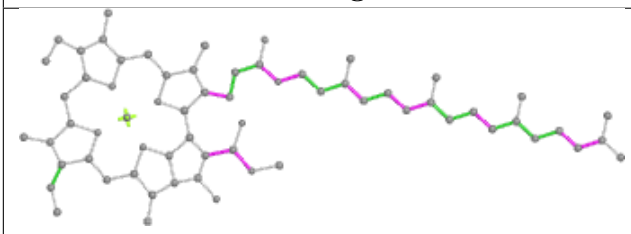
## Ligand CLA B 502



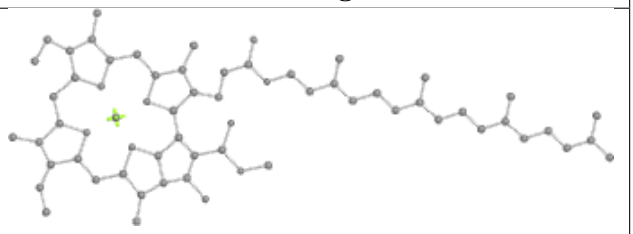
Bond lengths



Bond angles

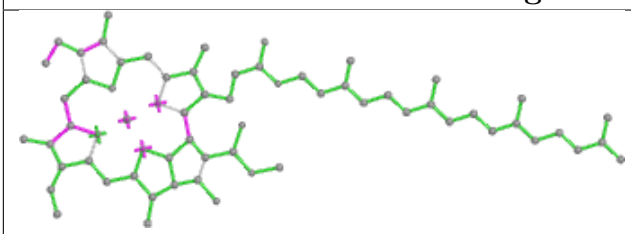


Torsions

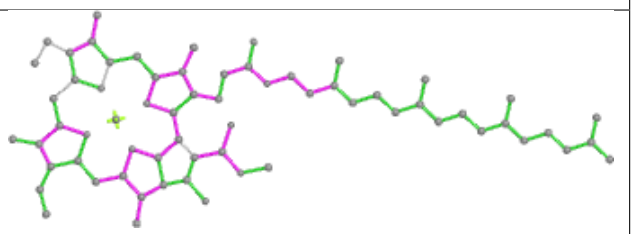


Rings

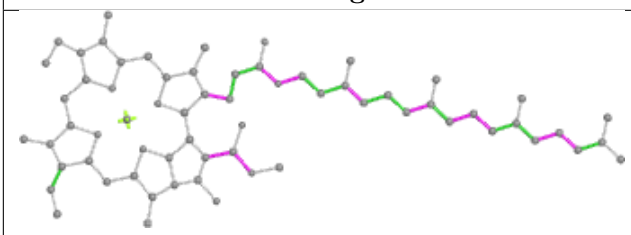
## Ligand CLA B 503



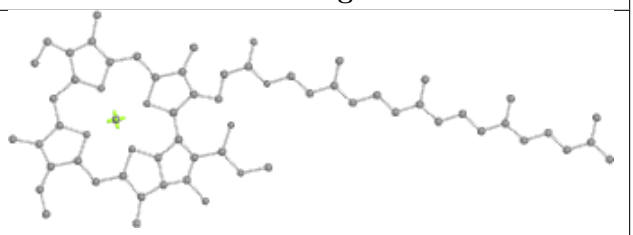
Bond lengths



Bond angles

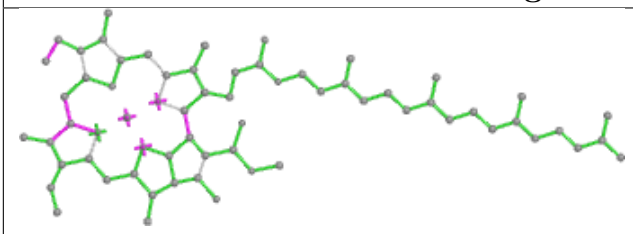


Torsions

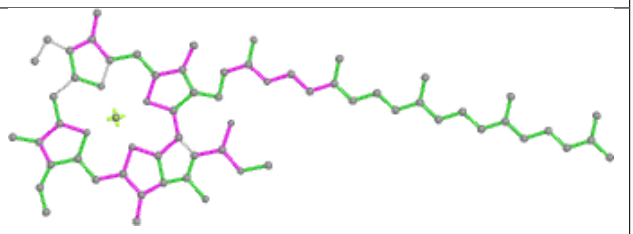


Rings

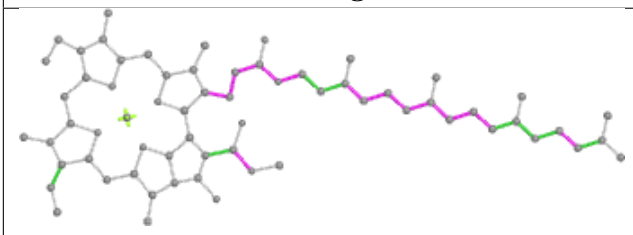
## Ligand CLA C 513



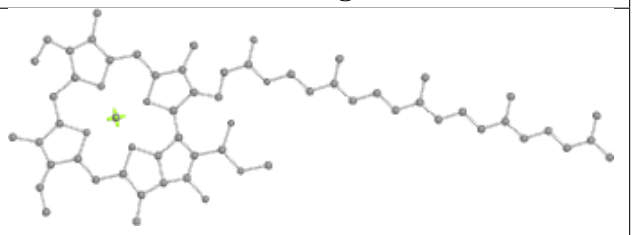
Bond lengths



Bond angles

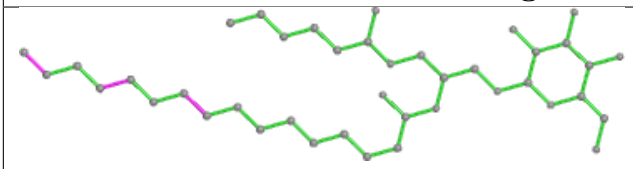


Torsions

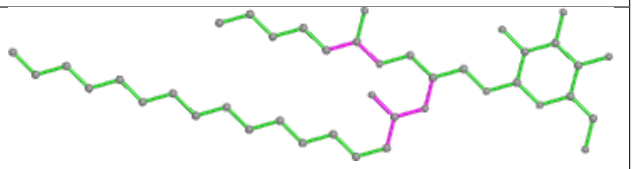


Rings

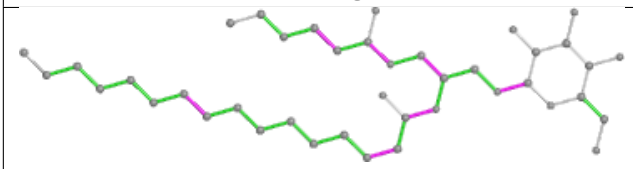
## Ligand LMG B 519



Bond lengths

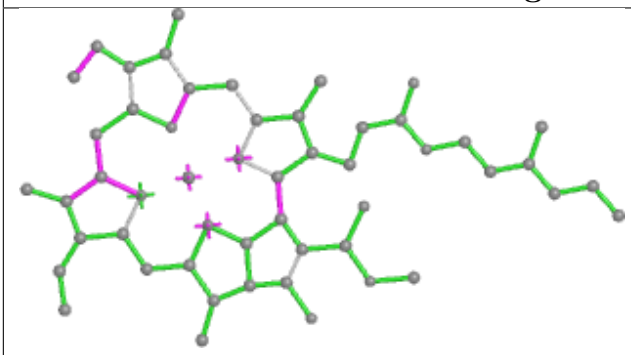
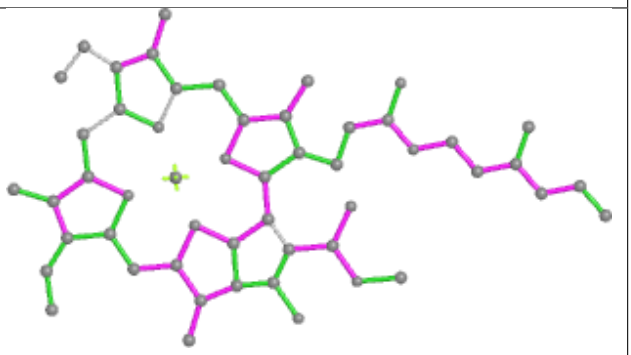
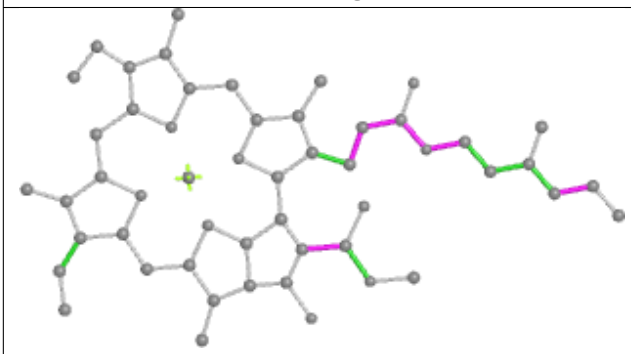
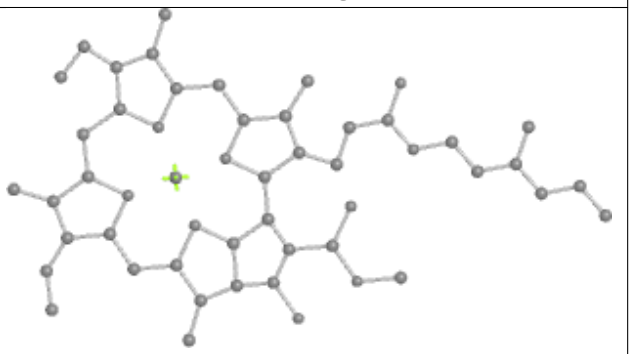


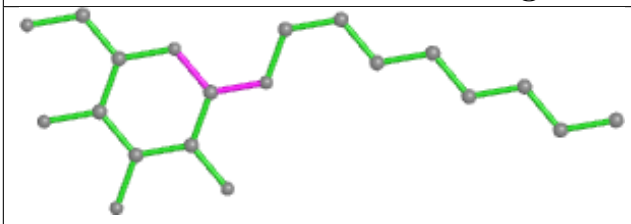
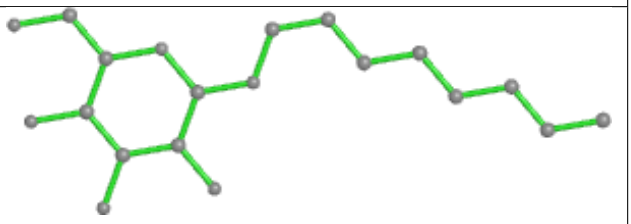
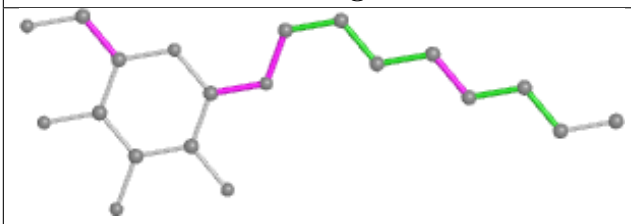
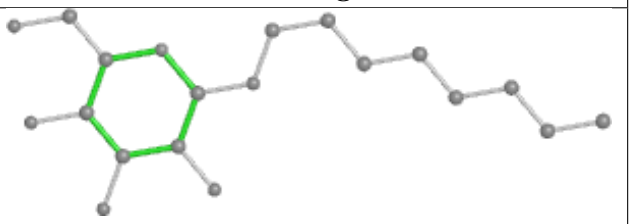
Bond angles



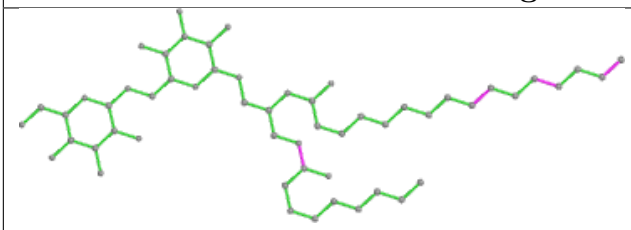
Torsions

Rings

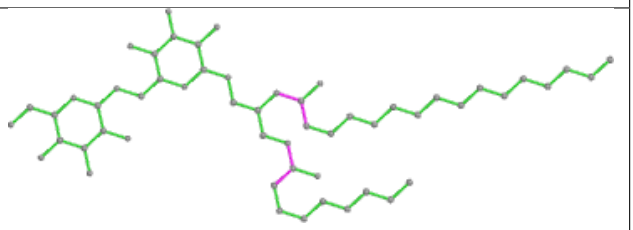
| Ligand CLA C 511 | |
|---|---|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

| Ligand BOG D 408 | |
|---|---|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

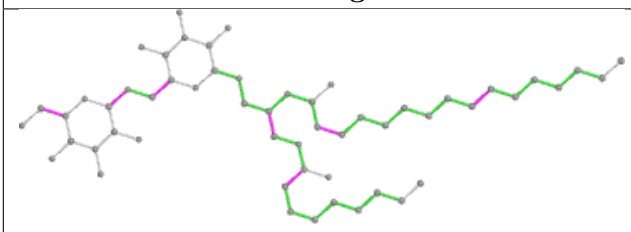
## Ligand DGD C 517



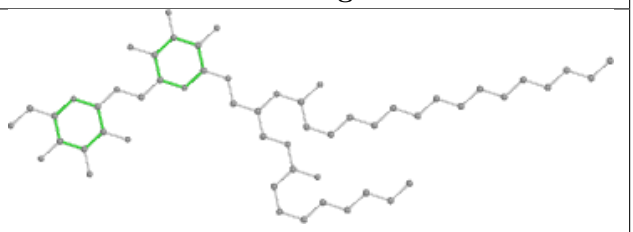
Bond lengths



Bond angles

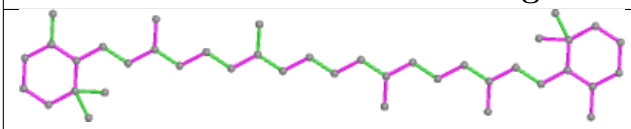


Torsions

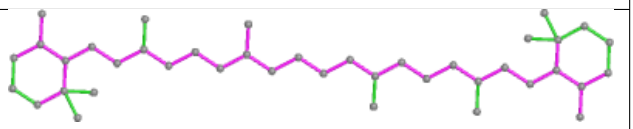


Rings

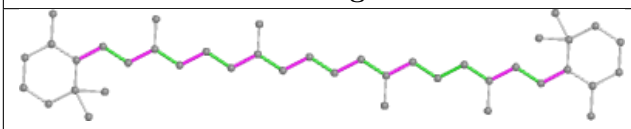
## Ligand BCR A 406



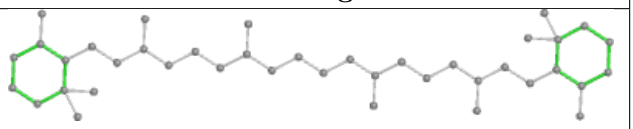
Bond lengths



Bond angles

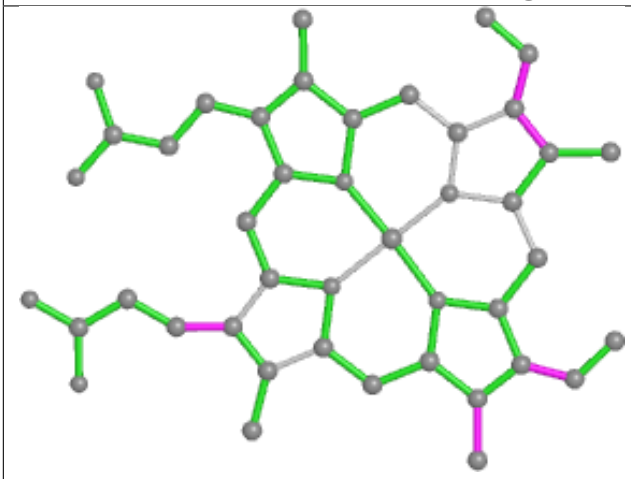


Torsions

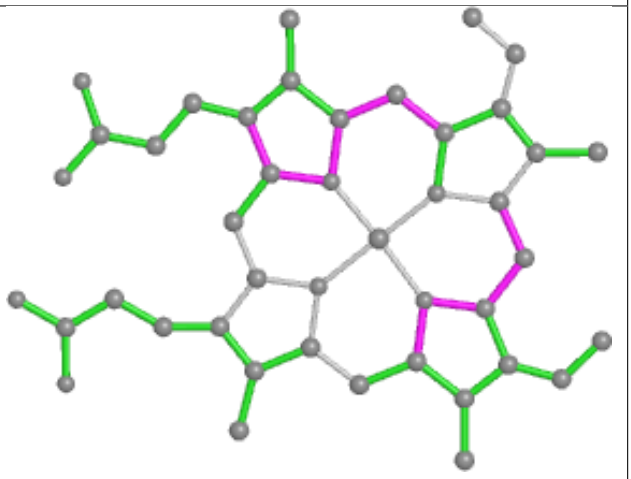


Rings

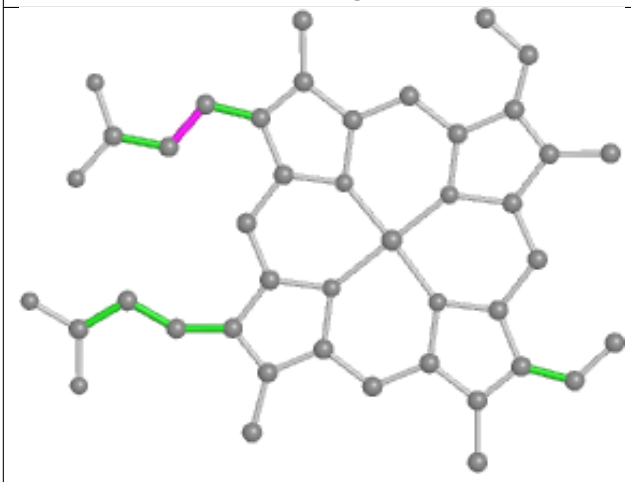
## Ligand HEM E 101



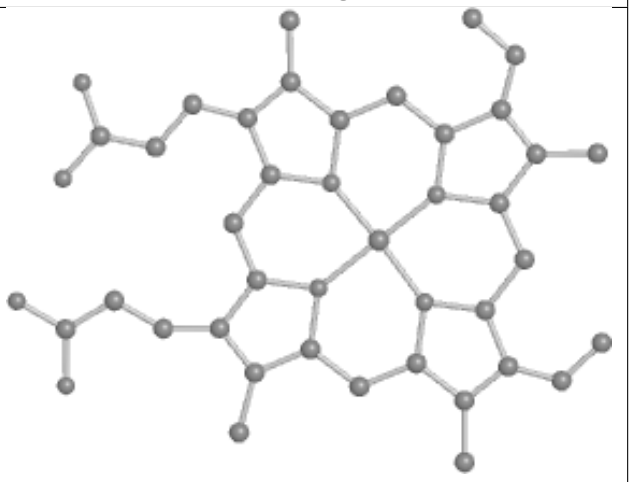
Bond lengths



Bond angles

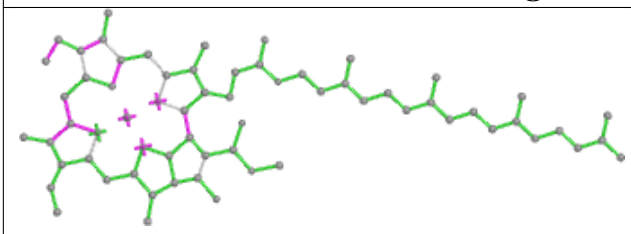


Torsions

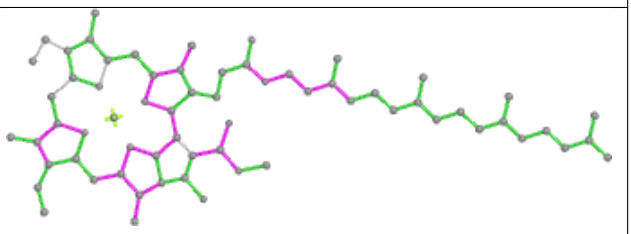


Rings

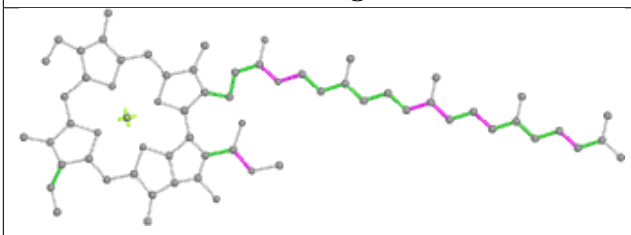
## Ligand CLA C 510



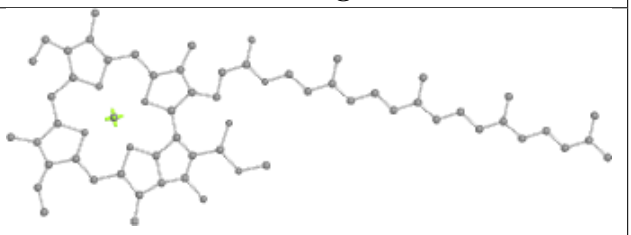
Bond lengths



Bond angles

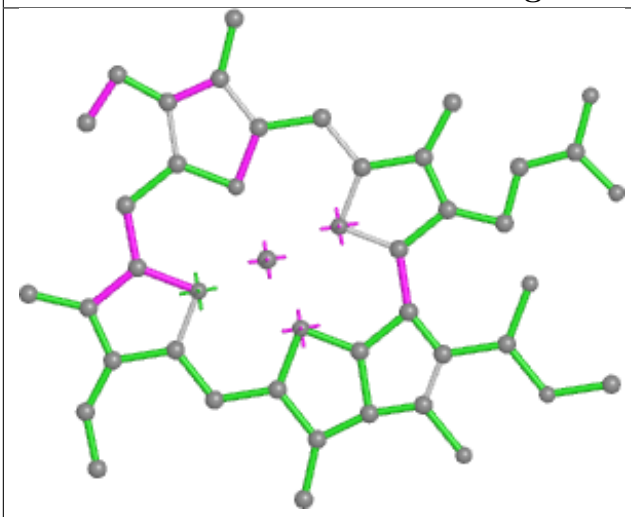


Torsions

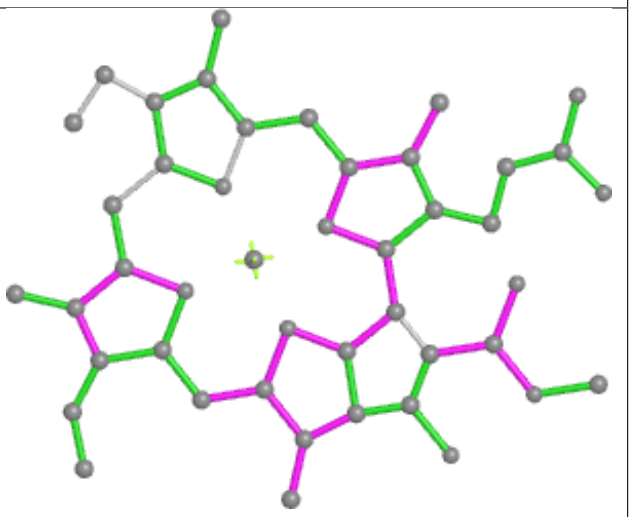


Rings

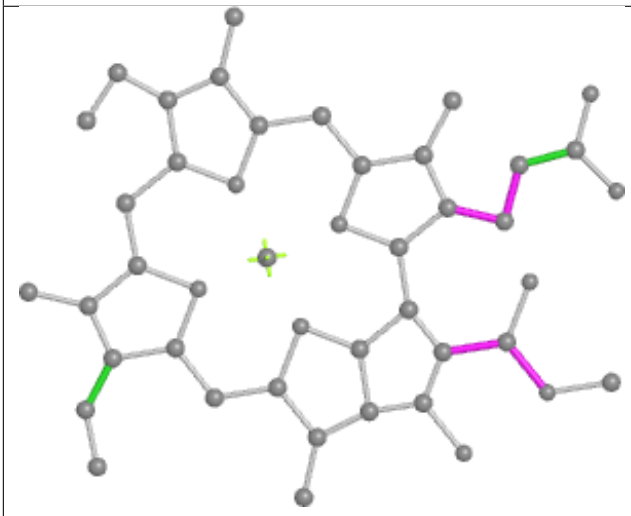
**Ligand CLA B 501**



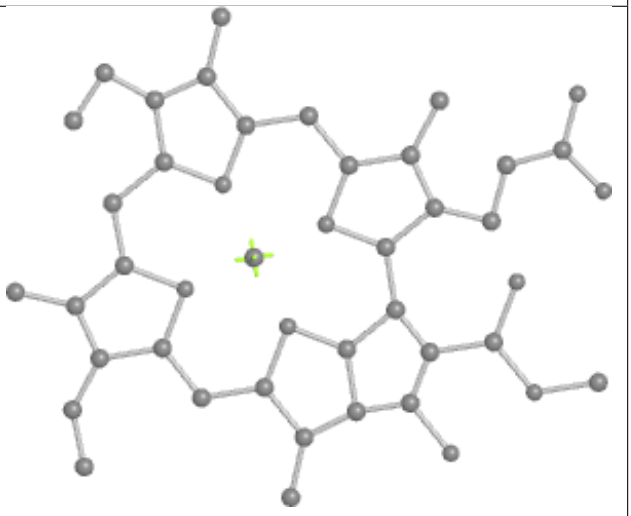
**Bond lengths**



**Bond angles**

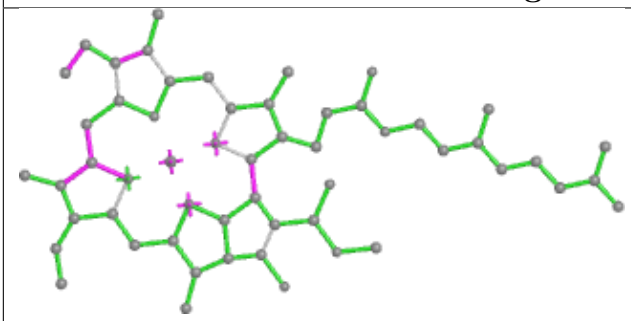


**Torsions**

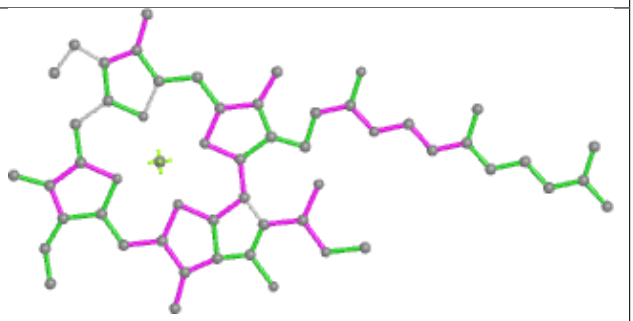


**Rings**

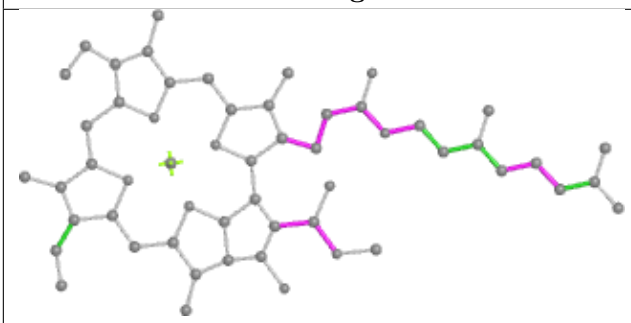
## Ligand CLA C 504



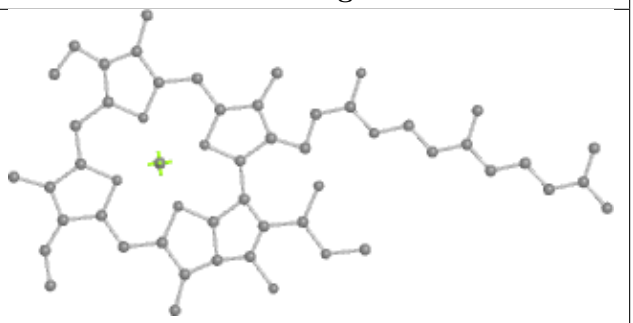
Bond lengths



Bond angles

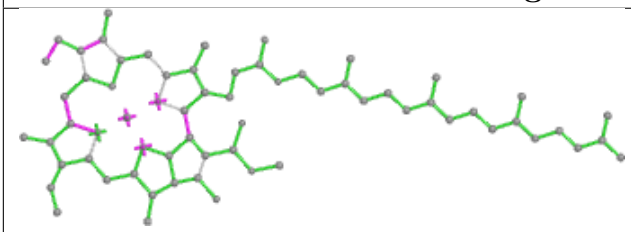


Torsions

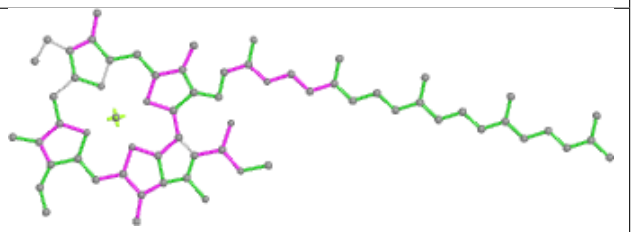


Rings

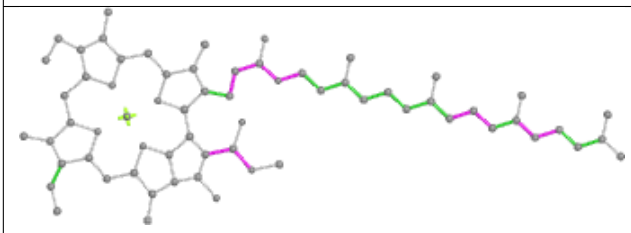
## Ligand CLA C 502



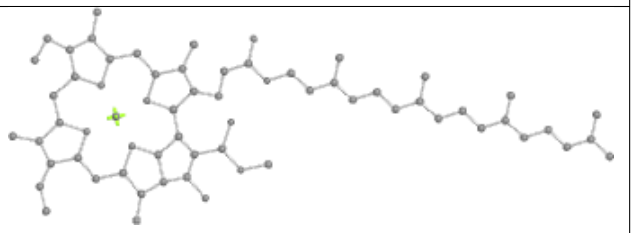
Bond lengths



Bond angles

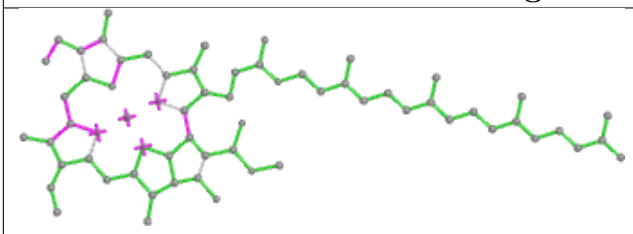


Torsions

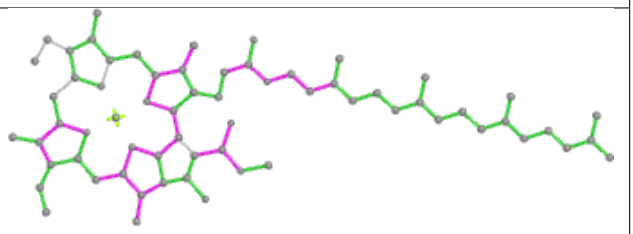


Rings

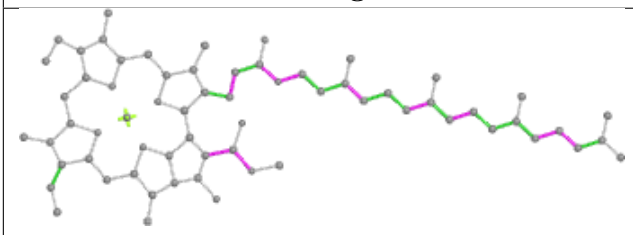
**Ligand CLA C 503**



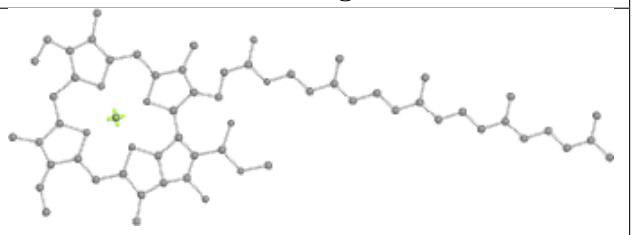
Bond lengths



Bond angles



Torsions



Rings

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

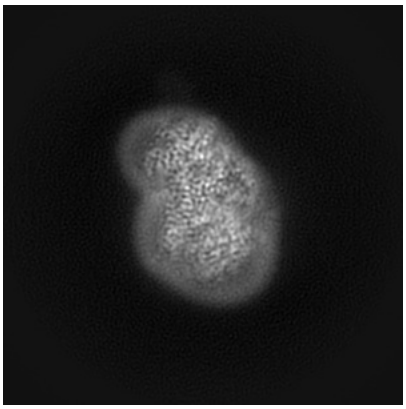
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-18848. These allow visual inspection of the internal detail of the map and identification of artifacts.

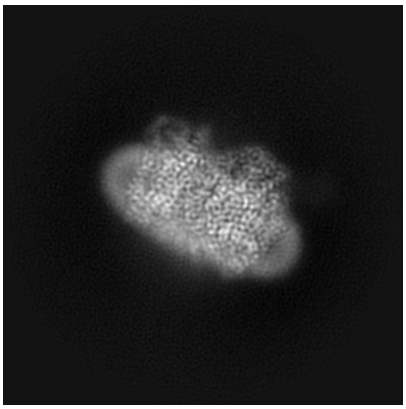
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

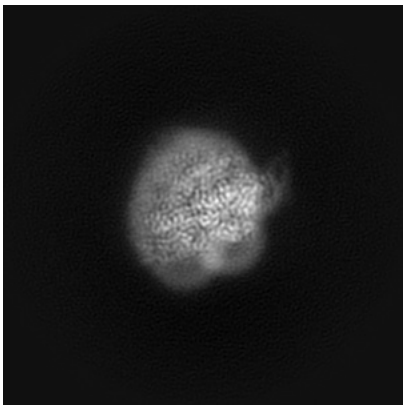
### 6.1.1 Primary map



X

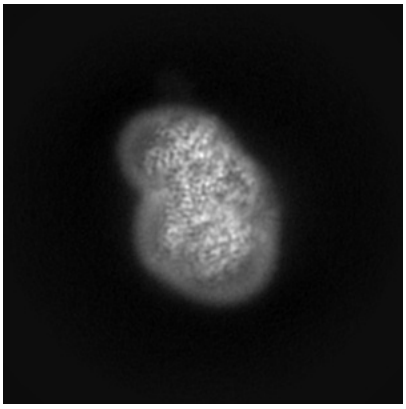


Y

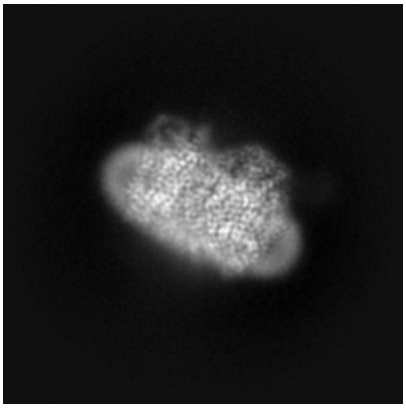


Z

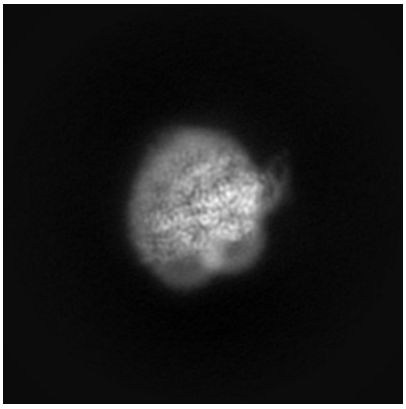
### 6.1.2 Raw map



X



Y

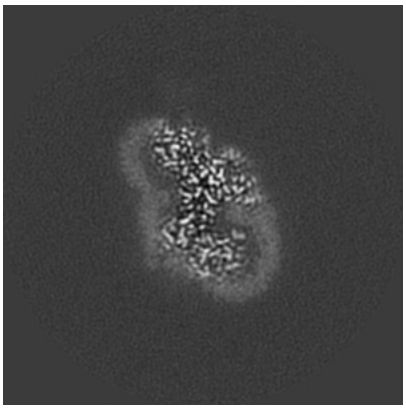


Z

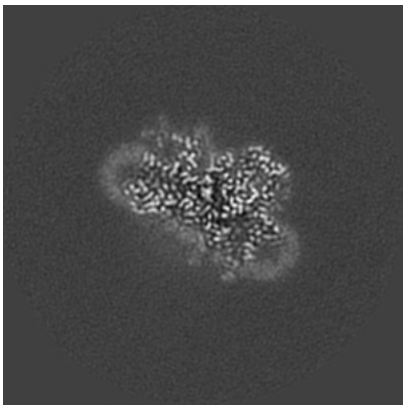
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

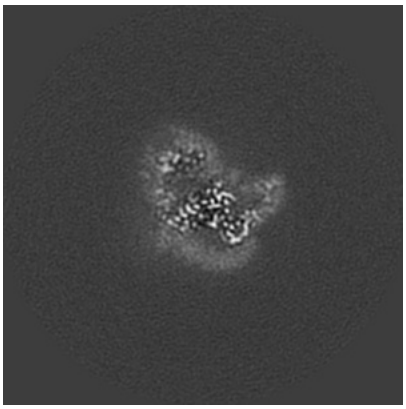
### 6.2.1 Primary map



X Index: 170

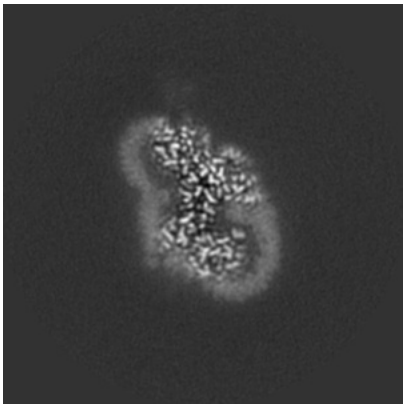


Y Index: 170

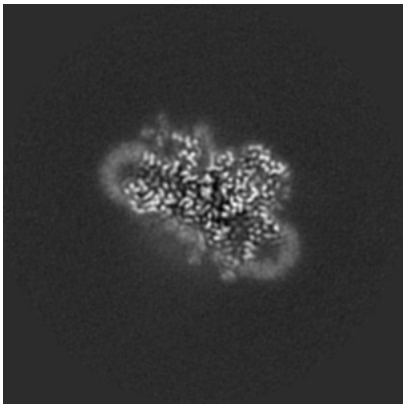


Z Index: 170

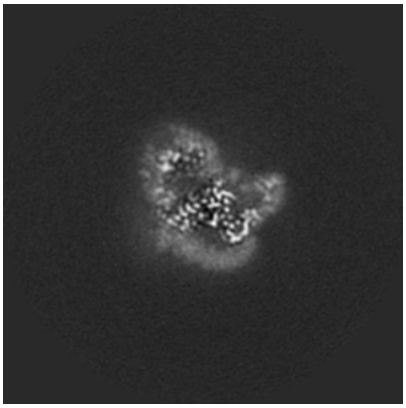
### 6.2.2 Raw map



X Index: 170



Y Index: 170

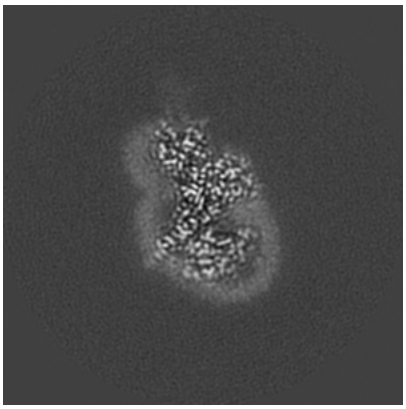


Z Index: 170

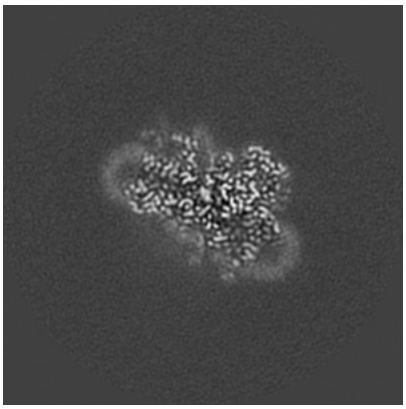
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

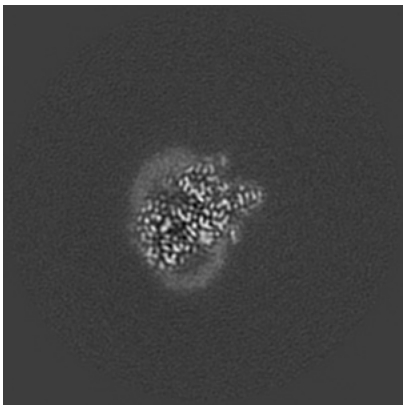
### 6.3.1 Primary map



X Index: 175

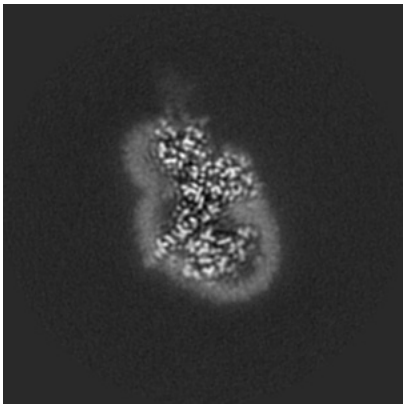


Y Index: 169

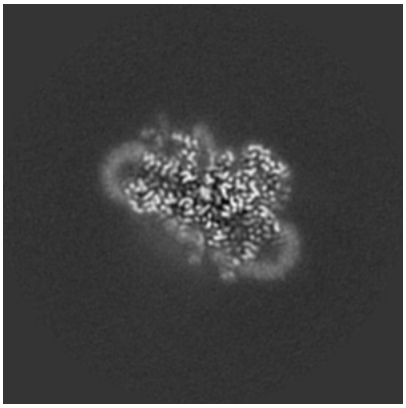


Z Index: 205

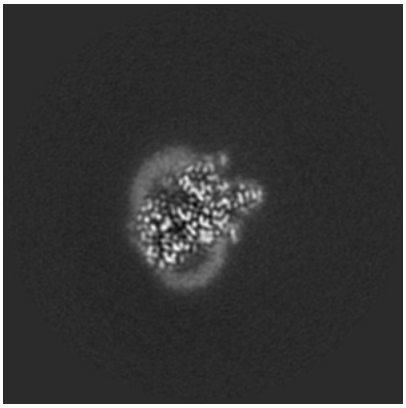
### 6.3.2 Raw map



X Index: 175



Y Index: 169

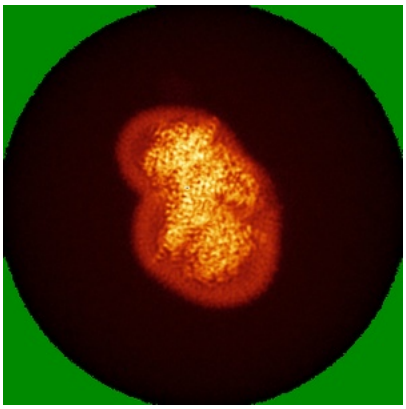


Z Index: 205

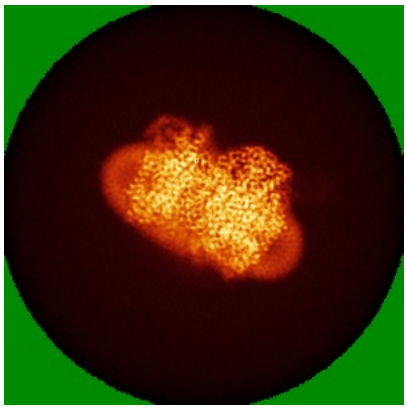
The images above show the largest variance slices of the map in three orthogonal directions.

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

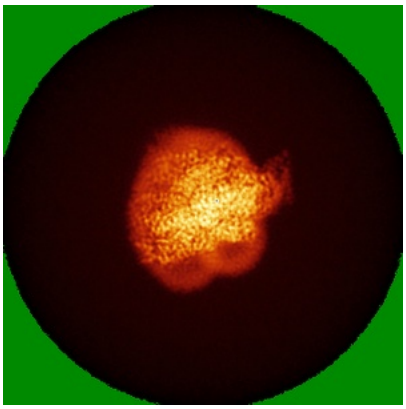
### 6.4.1 Primary map



X

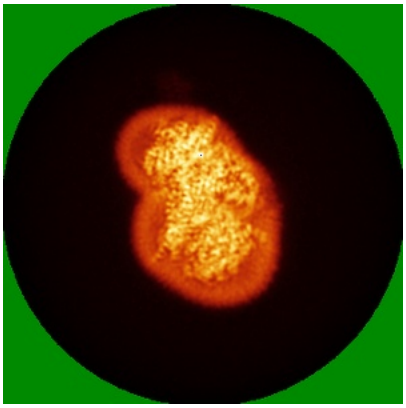


Y

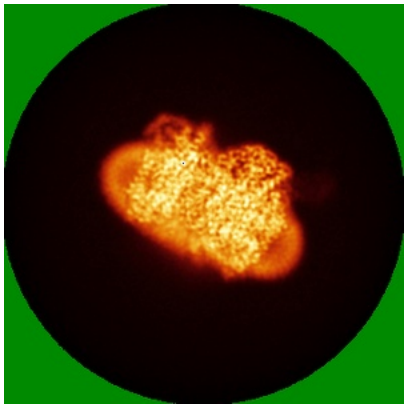


Z

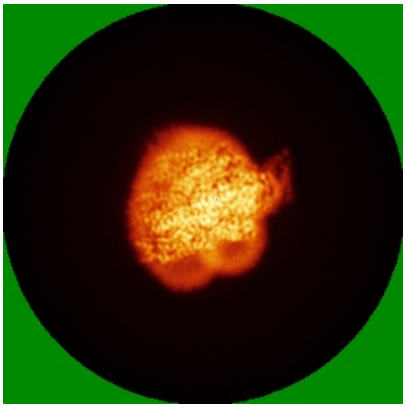
### 6.4.2 Raw map



X



Y



Z

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

## 6.5 Orthogonal surface views (i)

### 6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.006. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map

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.

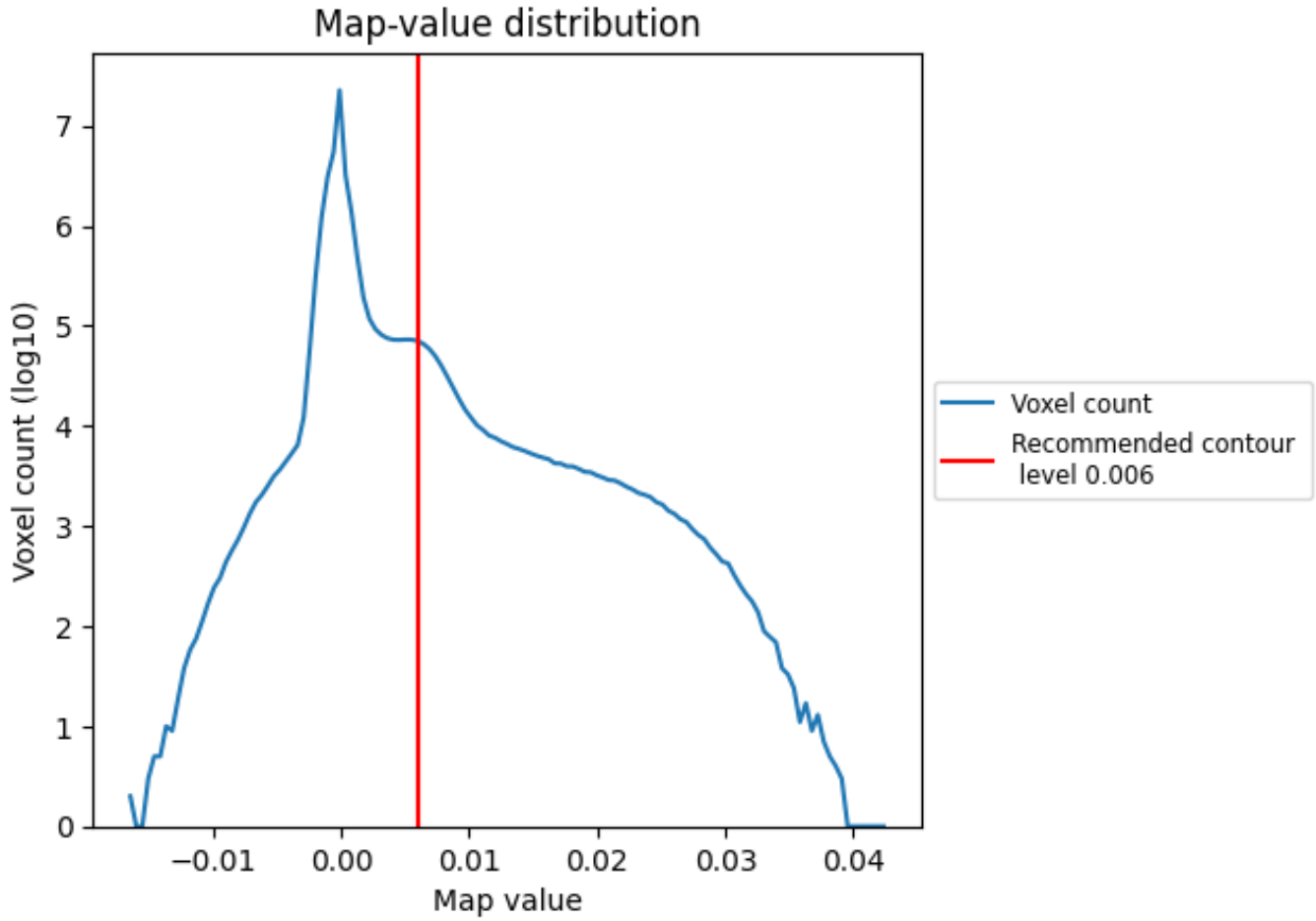
## 6.6 Mask visualisation (i)

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

# 7 Map analysis

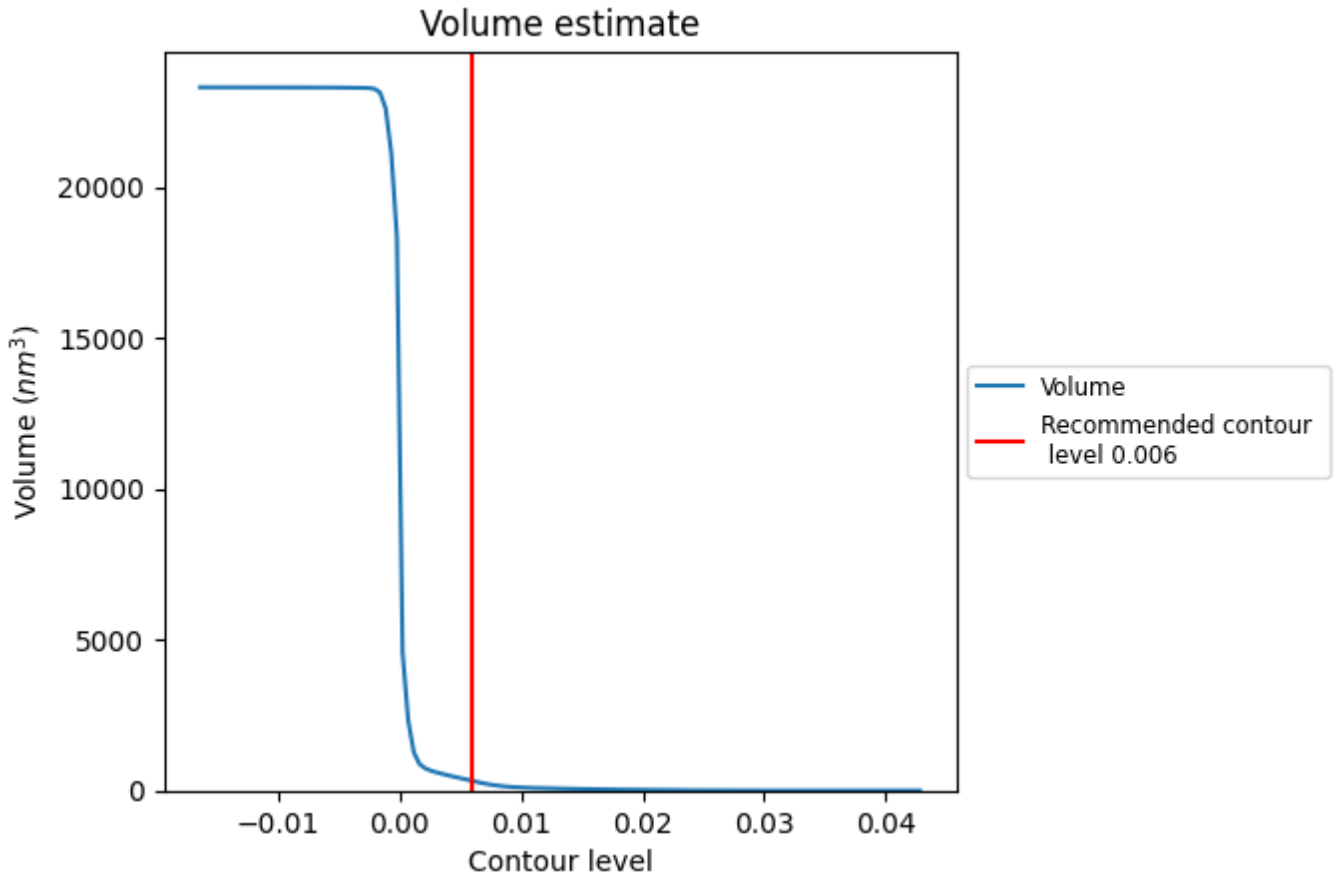
This section contains the results of statistical analysis of the map.

## 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.

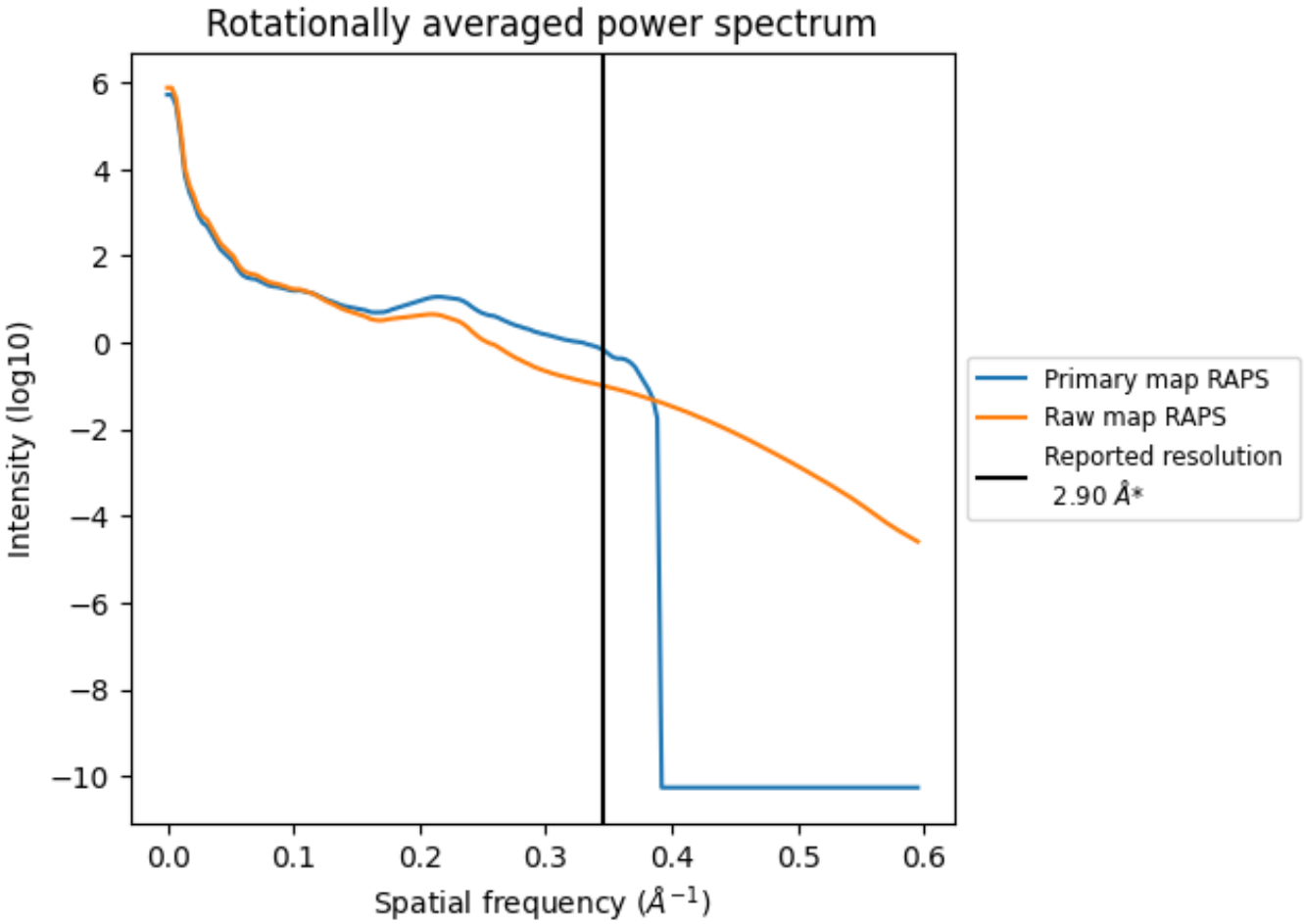
## 7.2 Volume estimate




The volume at the recommended contour level is 318 $nm^3$; this corresponds to an approximate mass of 287 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)

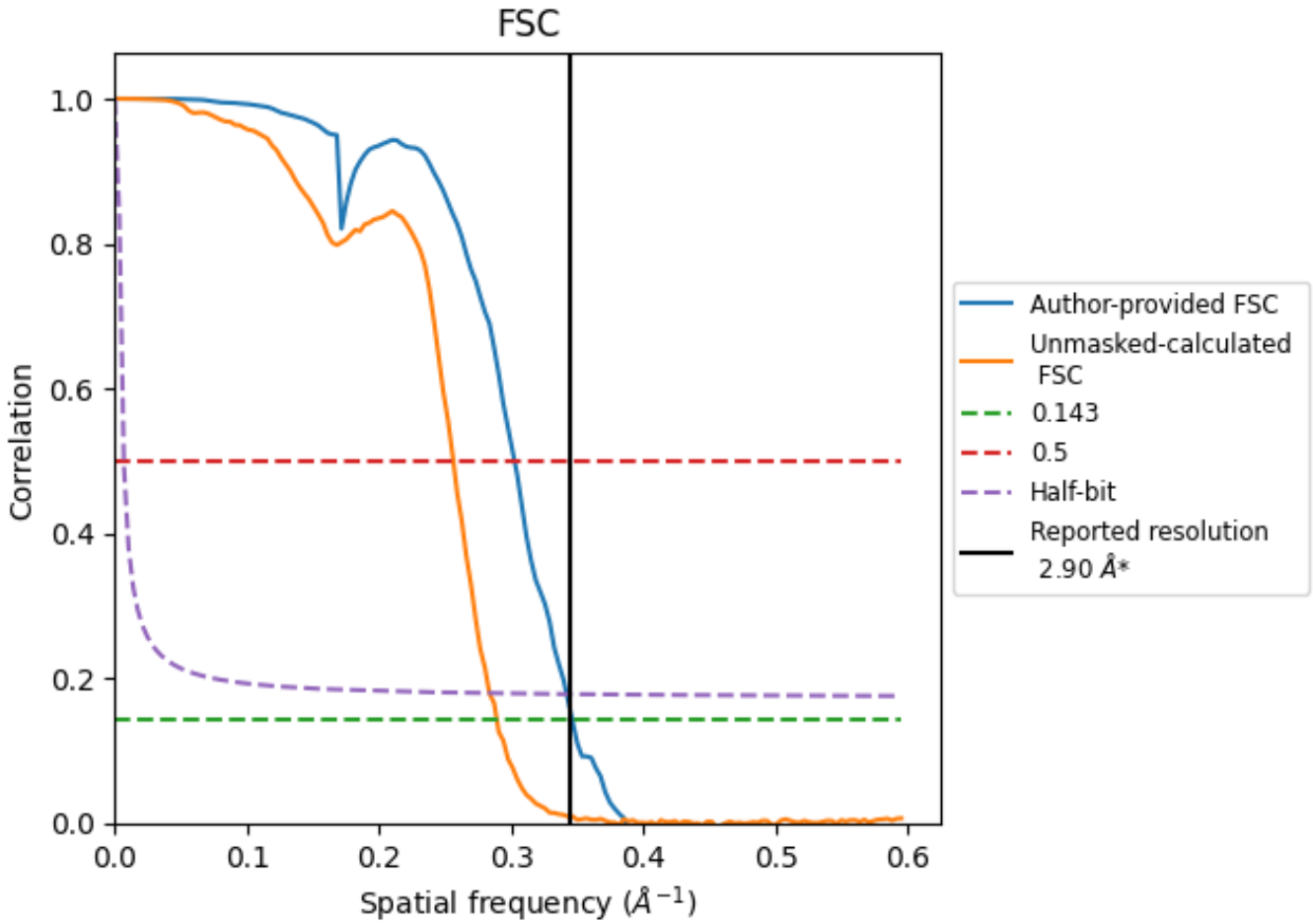



*Reported resolution corresponds to spatial frequency of 0.345 Å$^{-1}$

# 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 0.345 Å$^{-1}$

## 8.2 Resolution estimates (i)

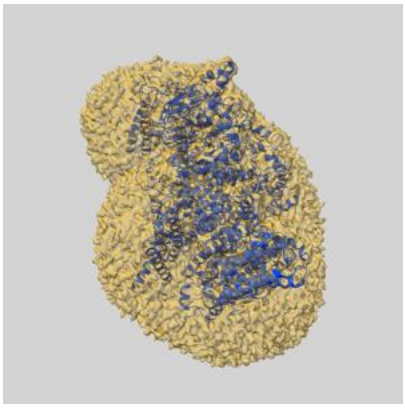
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 2.90 | - | - |
| Author-provided FSC curve | 2.89 | 3.31 | 2.92 |
| Unmasked-calculated* | 3.46 | 3.90 | 3.53 |

*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 3.46 differs from the reported value 2.9 by more than 10 %

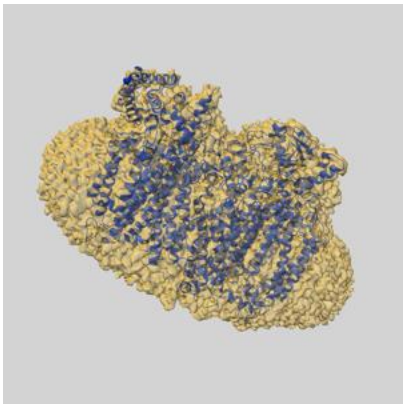
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-18848 and PDB model 8R2I. Per-residue inclusion information can be found in section 3 on page 16.

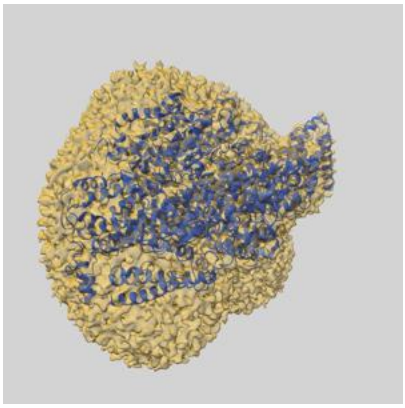
## 9.1 Map-model overlay



X



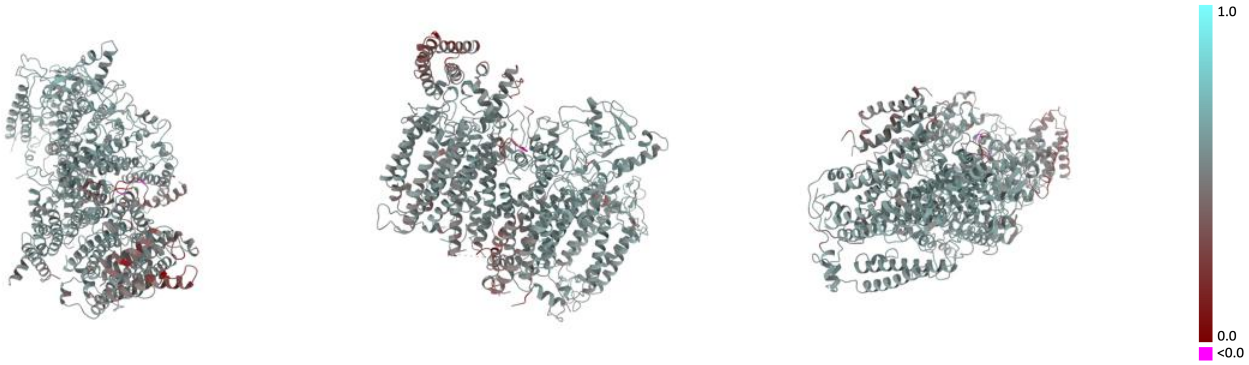
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.006 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.

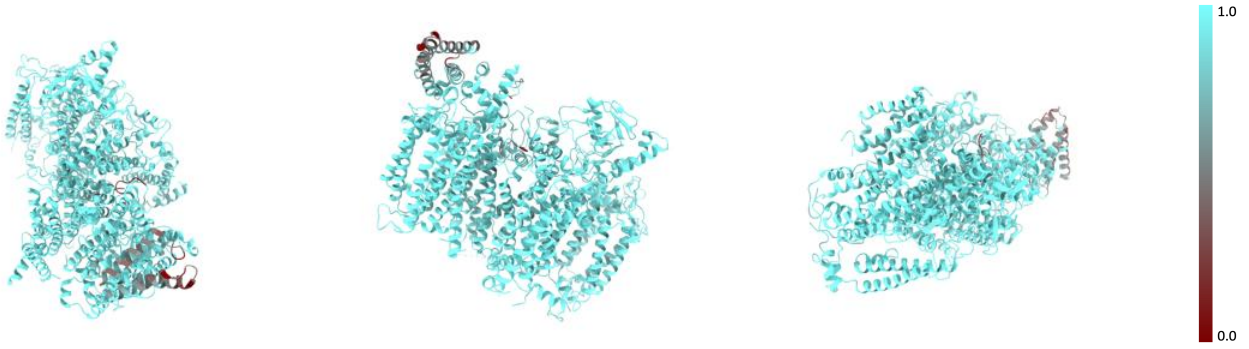
## 9.2 Q-score mapped to coordinate model




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.

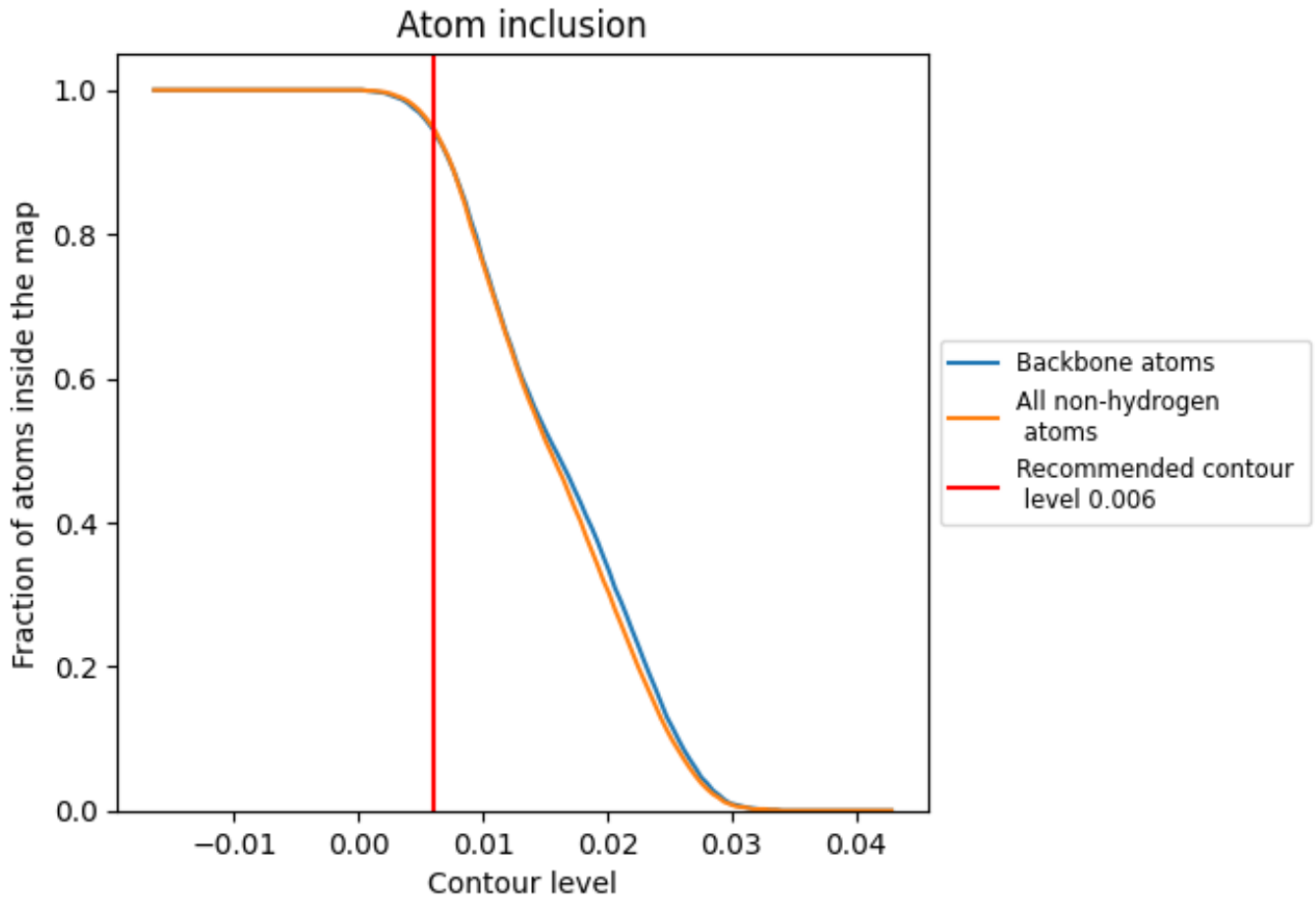
## 9.3 Atom inclusion mapped to coordinate model




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 (0.006).

## 9.4 Atom inclusion (i)




At the recommended contour level, 94% of all backbone atoms, 95% 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 (0.006) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.9480 | 0.5330 |
| 1 | 0.9230 | 0.3870 |
| 2 | 0.6220 | 0.4050 |
| A | 0.9770 | 0.5490 |
| B | 0.9690 | 0.5590 |
| C | 0.9480 | 0.5200 |
| D | 0.9670 | 0.5610 |
| E | 0.9460 | 0.4980 |
| F | 0.9660 | 0.4780 |
| H | 0.9520 | 0.5360 |
| I | 0.9960 | 0.5050 |
| K | 0.9800 | 0.4670 |