



wwPDB EM Validation Summary Report ⓘ

Mar 14, 2026 – 10:46 AM UTC

PDB ID : 9LUT / pdb_00009lut
EMDB ID : EMD-63404
Title : PSI-LHCI supercomplex binding with 4 Lhcas from M. polymorpha
Authors : Tsai, P.-C.; La Rocca, R.; Shen, J.-R.; Akita, F.
Deposited on : 2025-02-10
Resolution : 1.94 Å (reported)
Based on initial model : 6L35

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

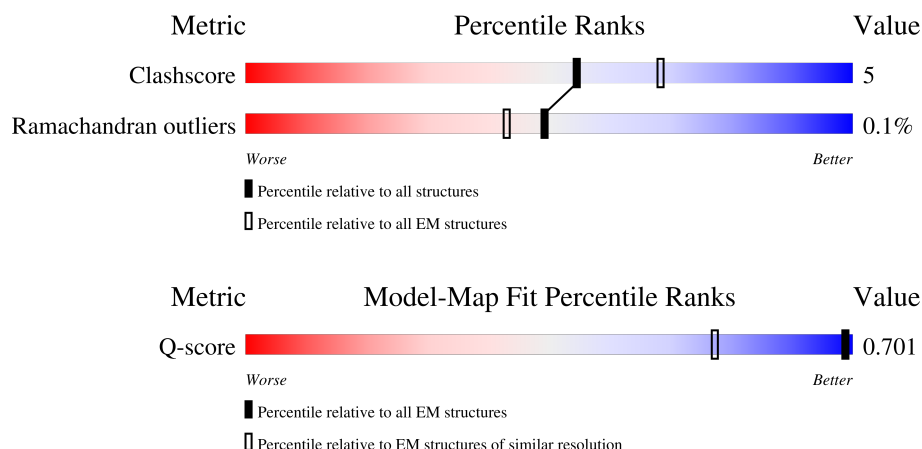
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 1.94 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) | Similar EM resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-----------------------------|--|
| Clashscore | 229148 | 23984 | - |
| Ramachandran outliers | 224038 | 23583 | - |
| Q-score | - | 25397 | 1283 (1.45 - 2.44) |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | 6 | 243 | |
| 2 | 2 | 267 | |
| 3 | 3 | 279 | |
| 4 | 5 | 249 | |
| 5 | A | 750 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 6 | B | 734 | |
| 7 | C | 81 | |
| 8 | D | 215 | |
| 9 | E | 132 | |
| 10 | F | 246 | |
| 11 | G | 161 | |
| 12 | I | 36 | |
| 13 | J | 42 | |
| 14 | K | 135 | |
| 15 | M | 32 | |
| 16 | H | 142 | |
| 17 | L | 221 | |

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 |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 18 | CHL | 2 | 301 | X | - | - | - |
| 18 | CHL | 2 | 305 | X | - | - | - |
| 18 | CHL | 2 | 306 | X | - | - | - |
| 18 | CHL | 2 | 307 | X | - | - | - |
| 18 | CHL | 2 | 314 | X | - | - | - |
| 18 | CHL | 2 | 320 | X | - | - | - |
| 18 | CHL | 3 | 306 | X | - | - | - |
| 18 | CHL | 3 | 314 | X | - | - | - |
| 18 | CHL | 5 | 304 | X | - | - | - |
| 18 | CHL | 5 | 305 | X | - | - | - |
| 18 | CHL | 5 | 306 | X | - | - | - |
| 18 | CHL | 5 | 313 | X | - | - | - |
| 18 | CHL | 6 | 301 | X | - | - | - |
| 18 | CHL | 6 | 306 | X | - | - | - |
| 19 | CLA | 2 | 302 | X | - | - | - |
| 19 | CLA | 2 | 303 | X | - | - | - |
| 19 | CLA | 2 | 304 | X | - | - | - |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 19 | CLA | 2 | 308 | X | - | - | - |
| 19 | CLA | 2 | 309 | X | - | - | - |
| 19 | CLA | 2 | 310 | X | - | - | - |
| 19 | CLA | 2 | 311 | X | - | - | - |
| 19 | CLA | 2 | 313 | X | - | - | - |
| 19 | CLA | 3 | 301 | X | - | - | - |
| 19 | CLA | 3 | 302 | X | - | - | - |
| 19 | CLA | 3 | 303 | X | - | - | - |
| 19 | CLA | 3 | 304 | X | - | - | - |
| 19 | CLA | 3 | 305 | X | - | - | - |
| 19 | CLA | 3 | 307 | X | - | - | - |
| 19 | CLA | 3 | 308 | X | - | - | - |
| 19 | CLA | 3 | 309 | X | - | - | - |
| 19 | CLA | 3 | 310 | X | - | - | - |
| 19 | CLA | 3 | 312 | X | - | - | - |
| 19 | CLA | 3 | 313 | X | - | - | - |
| 19 | CLA | 5 | 302 | X | - | - | - |
| 19 | CLA | 5 | 303 | X | - | - | - |
| 19 | CLA | 5 | 307 | X | - | - | - |
| 19 | CLA | 5 | 308 | X | - | - | - |
| 19 | CLA | 5 | 309 | X | - | - | - |
| 19 | CLA | 5 | 310 | X | - | - | - |
| 19 | CLA | 5 | 312 | X | - | - | - |
| 19 | CLA | 6 | 302 | X | - | - | - |
| 19 | CLA | 6 | 303 | X | - | - | - |
| 19 | CLA | 6 | 304 | X | - | - | - |
| 19 | CLA | 6 | 305 | X | - | - | - |
| 19 | CLA | 6 | 307 | X | - | - | - |
| 19 | CLA | 6 | 308 | X | - | - | - |
| 19 | CLA | 6 | 309 | X | - | - | - |
| 19 | CLA | 6 | 310 | X | - | - | - |
| 19 | CLA | 6 | 311 | X | - | - | - |
| 19 | CLA | 6 | 313 | X | - | - | - |
| 19 | CLA | 6 | 314 | X | - | - | - |
| 19 | CLA | A | 803 | X | - | - | - |
| 19 | CLA | A | 804 | X | - | - | - |
| 19 | CLA | A | 805 | X | - | - | - |
| 19 | CLA | A | 806 | X | - | - | - |
| 19 | CLA | A | 807 | X | - | - | - |
| 19 | CLA | A | 808 | X | - | - | - |
| 19 | CLA | A | 809 | X | - | - | - |
| 19 | CLA | A | 810 | X | - | - | - |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 19 | CLA | A | 812 | X | - | - | - |
| 19 | CLA | A | 813 | X | - | - | - |
| 19 | CLA | A | 814 | X | - | - | - |
| 19 | CLA | A | 815 | X | - | - | - |
| 19 | CLA | A | 816 | X | - | - | - |
| 19 | CLA | A | 817 | X | - | - | - |
| 19 | CLA | A | 820 | X | - | - | - |
| 19 | CLA | A | 821 | X | - | - | - |
| 19 | CLA | A | 824 | X | - | - | - |
| 19 | CLA | A | 826 | X | - | - | - |
| 19 | CLA | A | 827 | X | - | - | - |
| 19 | CLA | A | 828 | X | - | - | - |
| 19 | CLA | A | 829 | X | - | - | - |
| 19 | CLA | A | 830 | X | - | - | - |
| 19 | CLA | A | 834 | X | - | - | - |
| 19 | CLA | A | 835 | X | - | - | - |
| 19 | CLA | A | 837 | X | - | - | - |
| 19 | CLA | A | 838 | X | - | - | - |
| 19 | CLA | A | 839 | X | - | - | - |
| 19 | CLA | A | 840 | X | - | - | - |
| 19 | CLA | A | 841 | X | - | - | - |
| 19 | CLA | A | 842 | X | - | - | - |
| 19 | CLA | A | 843 | X | - | - | - |
| 19 | CLA | B | 801 | X | - | - | - |
| 19 | CLA | B | 802 | X | - | - | - |
| 19 | CLA | B | 803 | X | - | - | - |
| 19 | CLA | B | 804 | X | - | - | - |
| 19 | CLA | B | 806 | X | - | - | - |
| 19 | CLA | B | 807 | X | - | - | - |
| 19 | CLA | B | 808 | X | - | - | - |
| 19 | CLA | B | 809 | X | - | - | - |
| 19 | CLA | B | 810 | X | - | - | - |
| 19 | CLA | B | 811 | X | - | - | - |
| 19 | CLA | B | 812 | X | - | - | - |
| 19 | CLA | B | 814 | X | - | - | - |
| 19 | CLA | B | 815 | X | - | - | - |
| 19 | CLA | B | 818 | X | - | - | - |
| 19 | CLA | B | 819 | X | - | - | - |
| 19 | CLA | B | 821 | X | - | - | - |
| 19 | CLA | B | 823 | X | - | - | - |
| 19 | CLA | B | 825 | X | - | - | - |
| 19 | CLA | B | 826 | X | - | - | - |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 19 | CLA | B | 827 | X | - | - | - |
| 19 | CLA | B | 828 | X | - | - | - |
| 19 | CLA | B | 829 | X | - | - | - |
| 19 | CLA | B | 832 | X | - | - | - |
| 19 | CLA | B | 833 | X | - | - | - |
| 19 | CLA | B | 835 | X | - | - | - |
| 19 | CLA | B | 836 | X | - | - | - |
| 19 | CLA | B | 837 | X | - | - | - |
| 19 | CLA | B | 838 | X | - | - | - |
| 19 | CLA | B | 839 | X | - | - | - |
| 19 | CLA | B | 842 | X | - | - | - |
| 19 | CLA | F | 301 | X | - | - | - |
| 19 | CLA | F | 303 | X | - | - | - |
| 19 | CLA | F | 304 | X | - | - | - |
| 19 | CLA | G | 203 | X | - | - | - |
| 19 | CLA | G | 204 | X | - | - | - |
| 19 | CLA | J | 102 | X | - | - | - |
| 19 | CLA | K | 202 | X | - | - | - |
| 19 | CLA | K | 203 | X | - | - | - |
| 19 | CLA | L | 301 | X | - | - | - |
| 19 | CLA | L | 303 | X | - | - | - |

2 Entry composition

There are 30 unique types of molecules in this entry. The entry contains 36239 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 Chlorophyll a-b binding protein, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 1 | 6 | 194 | Total | C | N | O | S | 0 | 0 |
| | | | 1496 | 977 | 248 | 268 | 3 | | |

- Molecule 2 is a protein called Chlorophyll a-b binding protein, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 2 | 2 | 201 | Total | C | N | O | S | 0 | 0 |
| | | | 1557 | 1025 | 253 | 274 | 5 | | |

- Molecule 3 is a protein called Chlorophyll a-b binding protein, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 3 | 3 | 220 | Total | C | N | O | S | 0 | 0 |
| | | | 1705 | 1115 | 277 | 307 | 6 | | |

- Molecule 4 is a protein called Chlorophyll a-b binding protein, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 4 | 5 | 198 | Total | C | N | O | S | 0 | 0 |
| | | | 1549 | 1022 | 248 | 275 | 4 | | |

- Molecule 5 is a protein called Photosystem I P700 chlorophyll a apoprotein A1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|----|---------|-------|
| 5 | A | 742 | Total | C | N | O | S | 0 | 0 |
| | | | 5846 | 3837 | 988 | 1004 | 17 | | |

- Molecule 6 is a protein called Photosystem I P700 chlorophyll a apoprotein A2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|----|---------|-------|
| 6 | B | 733 | Total | C | N | O | S | 0 | 0 |
| | | | 5854 | 3839 | 998 | 1003 | 14 | | |

- Molecule 7 is a protein called Photosystem I iron-sulfur center.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 7 | C | 80 | Total | C | N | O | S | 0 | 0 |
| | | | 602 | 368 | 104 | 119 | 11 | | |

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

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 8 | D | 142 | Total | C | N | O | S | 0 | 0 |
| | | | 1112 | 719 | 191 | 199 | 3 | | |

- Molecule 9 is a protein called Photosystem I reaction centre subunit IV.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 9 | E | 64 | Total | C | N | O | S | 0 | 0 |
| | | | 503 | 319 | 86 | 96 | 2 | | |

- Molecule 10 is a protein called Photosystem I reaction center subunit III.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 10 | F | 161 | Total | C | N | O | S | 0 | 0 |
| | | | 1248 | 809 | 212 | 225 | 2 | | |

- Molecule 11 is a protein called Photosystem I reaction center subunit V, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 11 | G | 90 | Total | C | N | O | S | 0 | 0 |
| | | | 673 | 432 | 117 | 123 | 1 | | |

- Molecule 12 is a protein called Photosystem I reaction center subunit VIII.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 12 | I | 35 | Total | C | N | O | S | 0 | 0 |
| | | | 274 | 187 | 36 | 49 | 2 | | |

- Molecule 13 is a protein called Photosystem I reaction center subunit IX.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 13 | J | 41 | Total | C | N | O | S | 0 | 0 |
| | | | 328 | 225 | 48 | 54 | 1 | | |

- Molecule 14 is a protein called PSI-K.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|---|---------|-------|
| 14 | K | 80 | Total | C | N | O | S | 0 | 0 |
| | | | 561 | 354 | 97 | 106 | 4 | | |

- Molecule 15 is a protein called Photosystem I reaction center subunit XII.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|--|---------|-------|
| 15 | M | 30 | Total | C | N | O | | 0 | 0 |
| | | | 235 | 155 | 36 | 44 | | | |

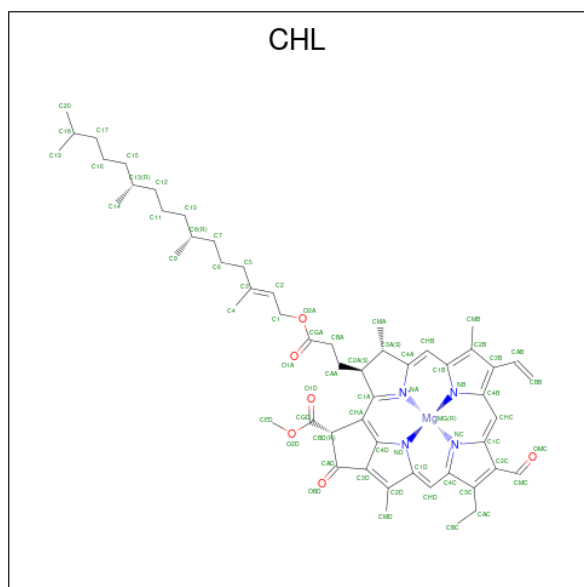
- Molecule 16 is a protein called Photosystem I reaction center subunit VI, chloroplastic.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|---|---------|-------|
| 16 | H | 78 | Total | C | N | O | S | 0 | 0 |
| | | | 578 | 374 | 99 | 103 | 2 | | |

- Molecule 17 is a protein called PSI subunit V.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 17 | L | 128 | Total | C | N | O | S | 0 | 0 |
| | | | 958 | 639 | 150 | 167 | 2 | | |

- Molecule 18 is CHLOROPHYLL B (CCD ID: CHL) (formula: $C_{55}H_{70}MgN_4O_6$) (labeled as "Ligand of Interest" by depositor).



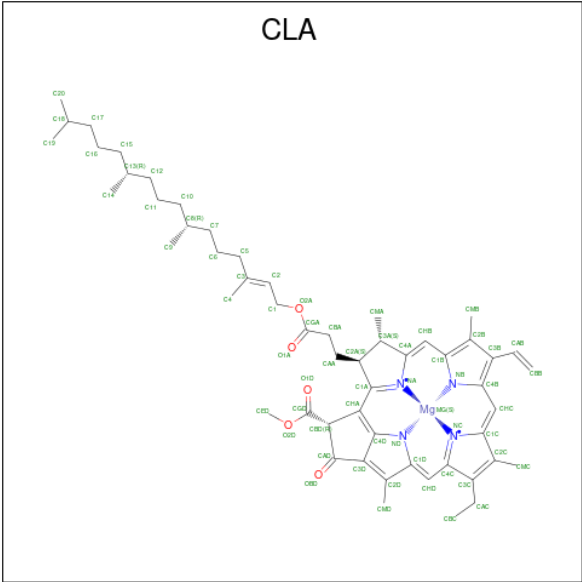
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 18 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 51 | 40 | 1 | 4 | 6 | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 18 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 66 | 55 | 1 | 4 | 6 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 43 | 34 | 1 | 4 | 4 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 49 | 38 | 1 | 4 | 6 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 52 | 41 | 1 | 4 | 6 | |
| 18 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 66 | 55 | 1 | 4 | 6 | |
| 18 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 43 | 34 | 1 | 4 | 4 | |
| 18 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 35 | 1 | 4 | 6 | |
| 18 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 43 | 34 | 1 | 4 | 4 | |

- Molecule 19 is CHLOROPHYLL A (CCD ID: CLA) (formula: $C_{55}H_{72}MgN_4O_5$) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 61 | 51 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 49 | 39 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 50 | 40 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 56 | 46 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 6 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 50 | 40 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 61 | 51 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 56 | 46 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | 2 | 1 | Total | C | Mg | N | O | 0 |
| | | | 50 | 40 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 60 | 50 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 47 | 37 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 46 | 36 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 60 | 50 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 43 | 35 | 1 | 4 | 3 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 42 | 34 | 1 | 4 | 3 | |
| 19 | 3 | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 60 | 50 | 1 | 4 | 5 | |
| 19 | 5 | 1 | Total | C | Mg | N | O | 0 |
| | | | 50 | 40 | 1 | 4 | 5 | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|
| 19 | 5 | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 59 | C 49 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 44 | C 34 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 61 | C 51 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | 5 | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 55 | C 45 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 55 | C 45 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 48 | C 38 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 55 | C 45 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 54 | C 44 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |

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| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 51 | 41 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 42 | 34 | 1 | 4 | 3 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 60 | 50 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 57 | 47 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 45 | 35 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 50 | 40 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 55 | 45 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |
| 19 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|
| 19 | A | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 51 | C 41 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 55 | C 45 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 50 | C 40 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | A | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |

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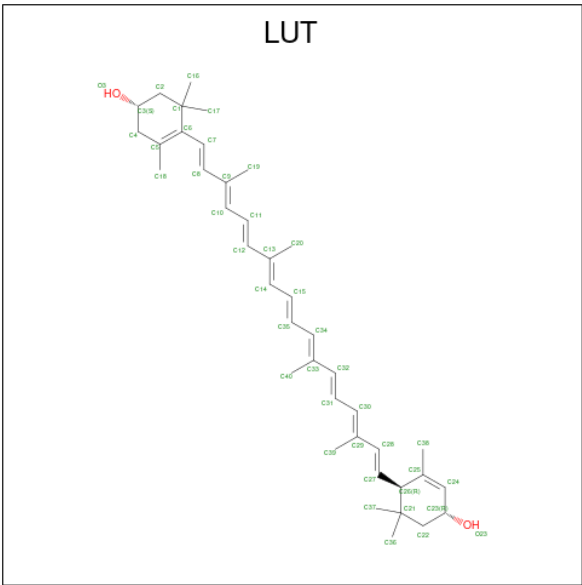
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 62 | C 52 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 57 | C 47 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 43 | C 35 | Mg 1 | N 4 | O 3 | 0 |
| 19 | B | 1 | Total 46 | C 36 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 55 | C 45 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 53 | C 43 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |

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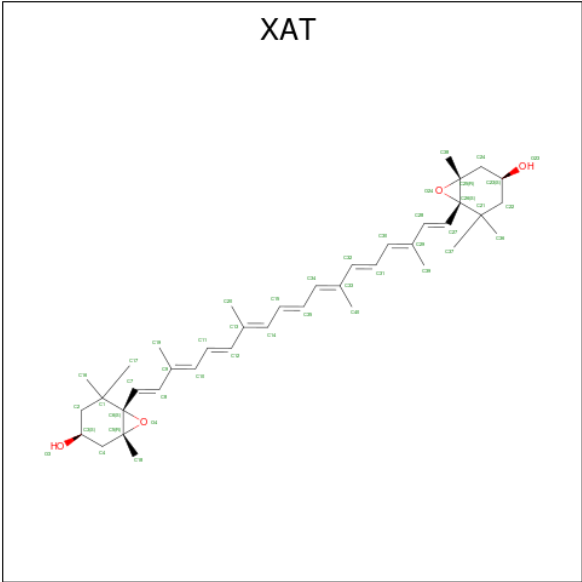
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 52 | C 42 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 47 | C 37 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | B | 1 | Total 65 | C 55 | Mg 1 | N 4 | O 5 | 0 |
| 19 | F | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | F | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | F | 1 | Total 41 | C 33 | Mg 1 | N 4 | O 3 | 0 |
| 19 | G | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | G | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | J | 1 | Total 42 | C 34 | Mg 1 | N 4 | O 3 | 0 |
| 19 | K | 1 | Total 51 | C 41 | Mg 1 | N 4 | O 5 | 0 |
| 19 | K | 1 | Total 44 | C 34 | Mg 1 | N 4 | O 5 | 0 |
| 19 | K | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | L | 1 | Total 45 | C 35 | Mg 1 | N 4 | O 5 | 0 |
| 19 | L | 1 | Total 60 | C 50 | Mg 1 | N 4 | O 5 | 0 |
| 19 | L | 1 | Total 42 | C 34 | Mg 1 | N 4 | O 3 | 0 |

- Molecule 20 is (3R,3'R,6S)-4,5-DIDEHYDRO-5,6-DIHYDRO-BETA,BETA-CAROTENE-3,3'-DIOL (CCD ID: LUT) (formula: C₄₀H₅₆O₂) (labeled as "Ligand of Interest" by depositor).



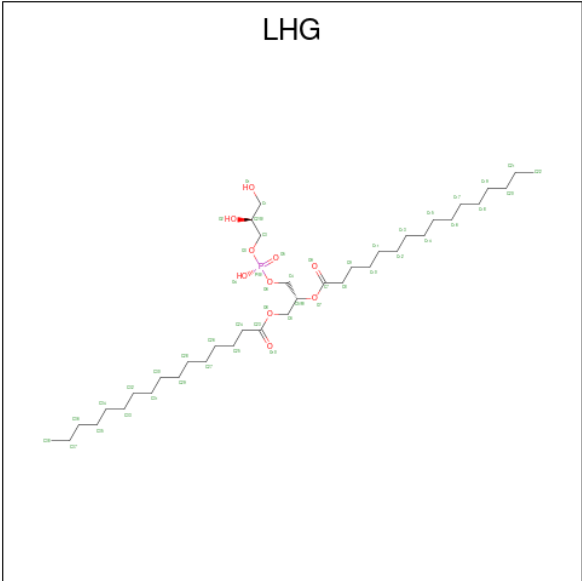
| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|---|---------|
| 20 | 6 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 6 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 2 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 2 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 2 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 3 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 3 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 5 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | 5 | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |
| 20 | J | 1 | Total | C | O | 0 |
| | | | 42 | 40 | 2 | |

- Molecule 21 is (3S,5R,6S,3'S,5'R,6'S)-5,6,5',6'-DIEPOXY-5,6,5',6'- TETRAHYDRO-BETA ,BETA-CAROTENE-3,3'-DIOL (CCD ID: XAT) (formula: C₄₀H₅₆O₄) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|---|---------|
| 21 | 6 | 1 | Total | C | O | 0 |
| | | | 44 | 40 | 4 | |

- Molecule 22 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (CCD ID: LHG) (formula: C₃₈H₇₅O₁₀P) (labeled as "Ligand of Interest" by depositor).



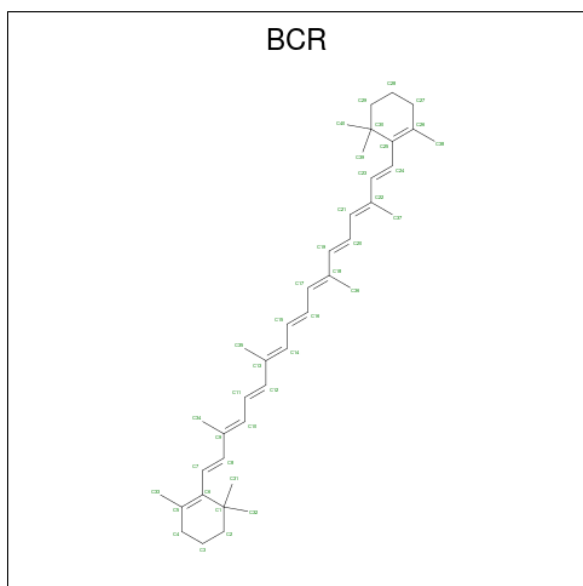
| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
| 22 | 6 | 1 | Total | C | O | P | 0 |
| | | | 49 | 38 | 10 | 1 | |
| 22 | 6 | 1 | Total | C | O | P | 0 |
| | | | 27 | 16 | 10 | 1 | |

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| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
| 22 | 2 | 1 | Total | C | O | P | 0 |
| | | | 38 | 27 | 10 | 1 | |
| 22 | 5 | 1 | Total | C | O | P | 0 |
| | | | 44 | 33 | 10 | 1 | |
| 22 | A | 1 | Total | C | O | P | 0 |
| | | | 49 | 38 | 10 | 1 | |
| 22 | A | 1 | Total | C | O | P | 0 |
| | | | 34 | 23 | 10 | 1 | |

- Molecule 23 is BETA-CAROTENE (CCD ID: BCR) (formula: $C_{40}H_{56}$) (labeled as "Ligand of Interest" by depositor).



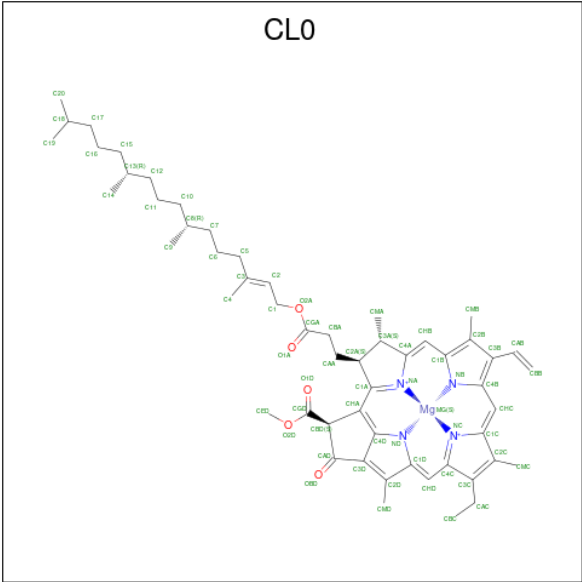
| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|----|---------|
| 23 | 2 | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | 3 | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | 5 | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | A | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | A | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | A | 1 | Total | C | 0 |
| | | | 40 | 40 | |
| 23 | A | 1 | Total | C | 0 |
| | | | 40 | 40 | |

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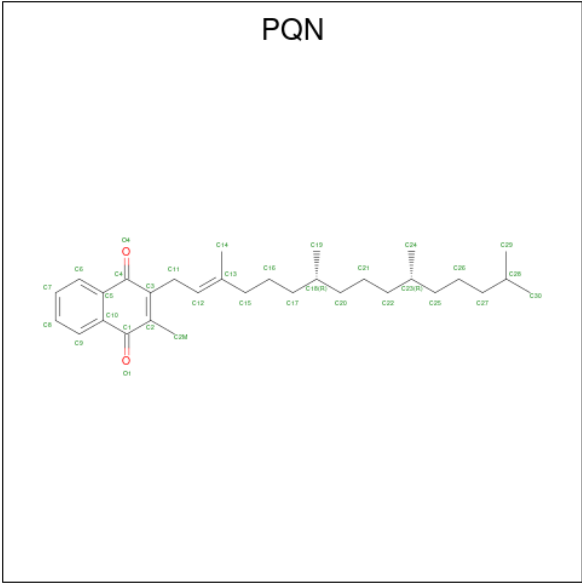
| Mol | Chain | Residues | Atoms | AltConf |
|-----|-------|----------|------------------|---------|
| 23 | A | 1 | Total C 40 40 | 0 |
| 23 | B | 1 | Total C 40 40 | 0 |
| 23 | B | 1 | Total C 40 40 | 0 |
| 23 | B | 1 | Total C 40 40 | 0 |
| 23 | B | 1 | Total C 40 40 | 0 |
| 23 | B | 1 | Total C 40 40 | 0 |
| 23 | F | 1 | Total C 40 40 | 0 |
| 23 | F | 1 | Total C 40 40 | 0 |
| 23 | G | 1 | Total C 40 40 | 0 |
| 23 | G | 1 | Total C 40 40 | 0 |
| 23 | I | 1 | Total C 40 40 | 0 |
| 23 | J | 1 | Total C 40 40 | 0 |
| 23 | K | 1 | Total C 40 40 | 0 |
| 23 | K | 1 | Total C 40 40 | 0 |
| 23 | M | 1 | Total C 40 40 | 0 |
| 23 | L | 1 | Total C 40 40 | 0 |
| 23 | L | 1 | Total C 40 40 | 0 |

- Molecule 24 is CHLOROPHYLL A ISOMER (CCD ID: CL0) (formula: $C_{55}H_{72}MgN_4O_5$) (labeled as "Ligand of Interest" by depositor).



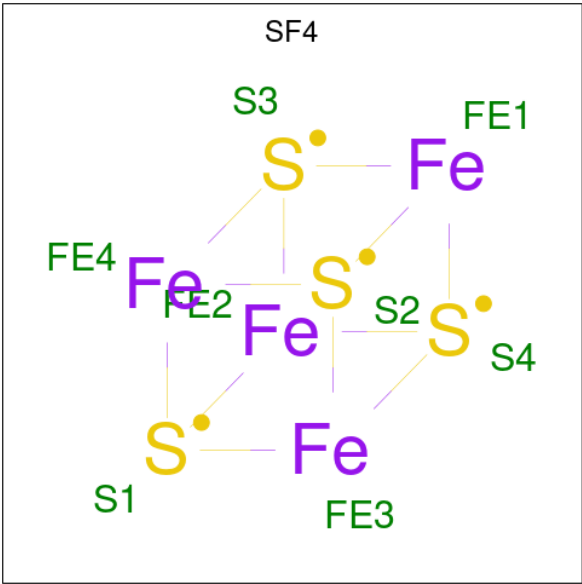
| Mol | Chain | Residues | Atoms | | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|
| 24 | A | 1 | Total | C | Mg | N | O | 0 |
| | | | 65 | 55 | 1 | 4 | 5 | |

- Molecule 25 is PHYLLOQUINONE (CCD ID: PQN) (formula: C₃₁H₄₆O₂) (labeled as "Ligand of Interest" by depositor).



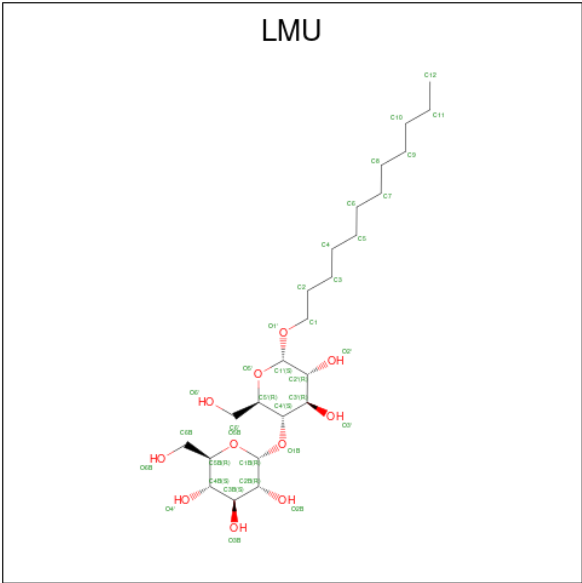
| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|---|---------|
| 25 | A | 1 | Total | C | O | 0 |
| | | | 33 | 31 | 2 | |
| 25 | B | 1 | Total | C | O | 0 |
| | | | 33 | 31 | 2 | |

- Molecule 26 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4) (labeled as "Ligand of Interest" by depositor).



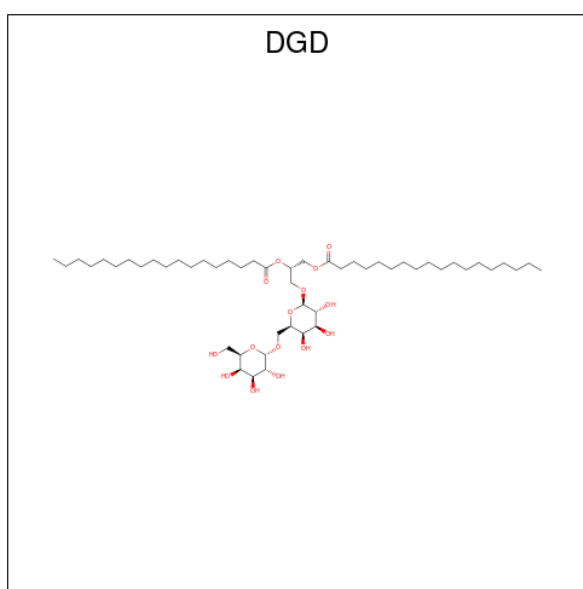
| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|---|---------|
| 26 | A | 1 | Total | Fe | S | 0 |
| | | | 8 | 4 | 4 | |
| 26 | C | 1 | Total | Fe | S | 0 |
| | | | 8 | 4 | 4 | |
| 26 | C | 1 | Total | Fe | S | 0 |
| | | | 8 | 4 | 4 | |

- Molecule 27 is DODECYL-ALPHA-D-MALTOSE (CCD ID: LMU) (formula: $\text{C}_{24}\text{H}_{46}\text{O}_{11}$) (labeled as "Ligand of Interest" by depositor).



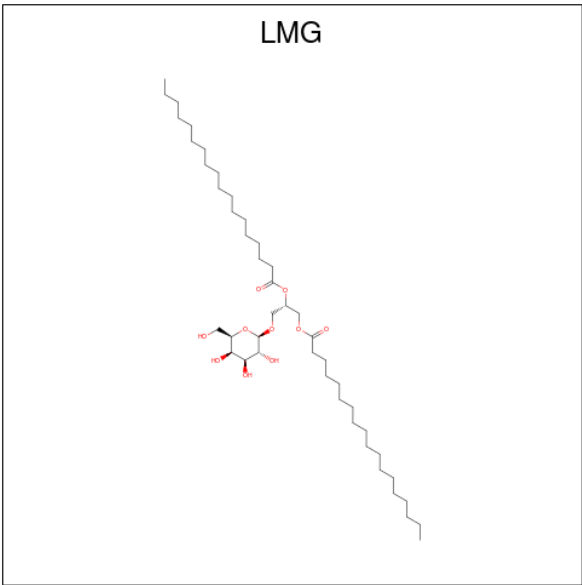
| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|----|---------|
| 27 | A | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |
| 27 | B | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |
| 27 | B | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |
| 27 | G | 1 | Total | C | O | 0 |
| | | | 35 | 24 | 11 | |

- Molecule 28 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula: $C_{51}H_{96}O_{15}$) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|----|---------|
| 28 | B | 1 | Total | C | O | 0 |
| | | | 66 | 51 | 15 | |

- Molecule 29 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (CCD ID: LMG) (formula: $C_{45}H_{86}O_{10}$) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | AltConf |
|-----|-------|----------|-------|----|----|---------|
| 29 | J | 1 | Total | C | O | 0 |
| | | | 30 | 20 | 10 | |
| 29 | J | 1 | Total | C | O | 0 |
| | | | 41 | 31 | 10 | |

- Molecule 30 is water.

| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|-----|---------|
| 30 | 6 | 14 | Total | O | 0 |
| | | | 14 | 14 | |
| 30 | 2 | 25 | Total | O | 0 |
| | | | 25 | 25 | |
| 30 | 3 | 37 | Total | O | 0 |
| | | | 37 | 37 | |
| 30 | 5 | 17 | Total | O | 0 |
| | | | 17 | 17 | |
| 30 | A | 184 | Total | O | 0 |
| | | | 184 | 184 | |
| 30 | B | 205 | Total | O | 0 |
| | | | 205 | 205 | |
| 30 | C | 45 | Total | O | 0 |
| | | | 45 | 45 | |
| 30 | D | 20 | Total | O | 0 |
| | | | 20 | 20 | |
| 30 | E | 17 | Total | O | 0 |
| | | | 17 | 17 | |
| 30 | F | 20 | Total | O | 0 |
| | | | 20 | 20 | |

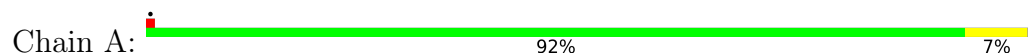
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| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|------------|--------|---------|
| 30 | G | 2 | Total 2 | O 2 | 0 |
| 30 | I | 3 | Total 3 | O 3 | 0 |
| 30 | J | 4 | Total 4 | O 4 | 0 |
| 30 | K | 2 | Total 2 | O 2 | 0 |
| 30 | M | 2 | Total 2 | O 2 | 0 |
| 30 | L | 9 | Total 9 | O 9 | 0 |



- Molecule 5: Photosystem I P700 chlorophyll a apoprotein A1



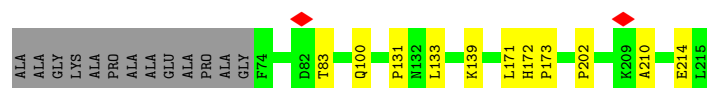
- Molecule 6: Photosystem I P700 chlorophyll a apoprotein A2



- Molecule 7: Photosystem I iron-sulfur center



- Molecule 8: Photosystem I reaction center subunit II, chloroplastic

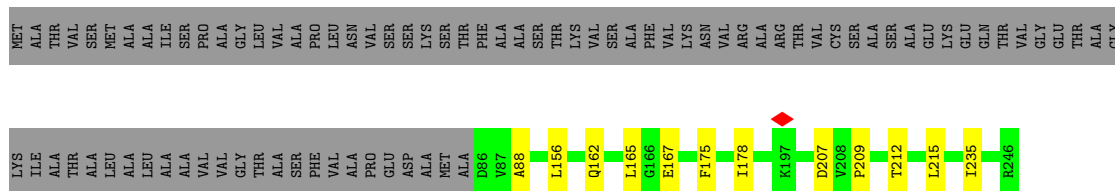


- Molecule 9: Photosystem I reaction centre subunit IV



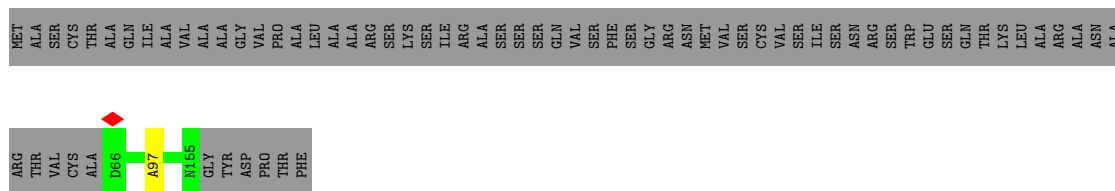
- Molecule 10: Photosystem I reaction center subunit III

Chain F: 61% 5% 35%



- Molecule 11: Photosystem I reaction center subunit V, chloroplastic

Chain G: 55% 44%



- Molecule 12: Photosystem I reaction center subunit VIII

Chain I:  89% 8% .



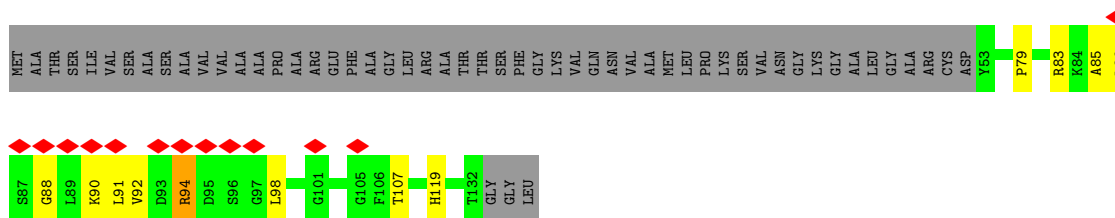
- Molecule 13: Photosystem I reaction center subunit IX

Chain J: 93% 5% .



- Molecule 14: PSI-K

Chain K: 



- Molecule 15: Photosystem I reaction center subunit XII

Chain M:

91%

6%



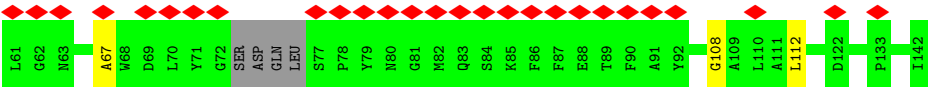
- Molecule 16: Photosystem I reaction center subunit VI, chloroplastic

Chain H:

19%

53%

45%



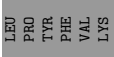
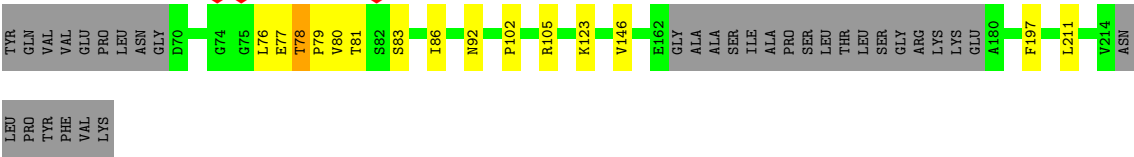
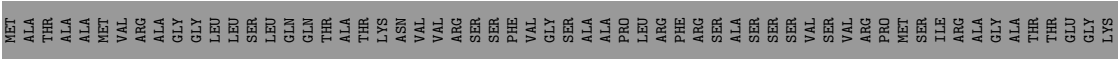
- Molecule 17: PSI subunit V

Chain L:

51%

6%

42%



4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 157685 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | TFS KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 50 | Depositor |
| Minimum defocus (nm) | 800 | Depositor |
| Maximum defocus (nm) | 2000 | Depositor |
| Magnification | 165000 | Depositor |
| Image detector | FEI FALCON IV (4k x 4k) | Depositor |
| Maximum map value | 0.674 | Depositor |
| Minimum map value | -0.321 | Depositor |
| Average map value | -0.000 | Depositor |
| Map value standard deviation | 0.015 | Depositor |
| Recommended contour level | 0.07 | Depositor |
| Map size (Å) | 363.5, 363.5, 363.5 | wwPDB |
| Map dimensions | 500, 500, 500 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.727, 0.727, 0.727 | Depositor |

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CL0, LUT, SF4, BCR, LMU, LHG, DGD, XAT, LMG, CLA, CHL, PQN

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 | 6 | 0.25 | 0/1546 | 0.48 | 0/2112 |
| 2 | 2 | 0.22 | 0/1612 | 0.40 | 0/2203 |
| 3 | 3 | 0.24 | 0/1755 | 0.46 | 0/2379 |
| 4 | 5 | 0.23 | 0/1600 | 0.45 | 0/2185 |
| 5 | A | 0.28 | 0/6044 | 0.50 | 0/8247 |
| 6 | B | 0.31 | 0/6066 | 0.56 | 0/8277 |
| 7 | C | 0.36 | 0/612 | 0.58 | 0/829 |
| 8 | D | 0.20 | 0/1141 | 0.47 | 0/1538 |
| 9 | E | 0.28 | 0/516 | 0.40 | 0/701 |
| 10 | F | 0.22 | 0/1275 | 0.49 | 0/1725 |
| 11 | G | 0.19 | 0/686 | 0.42 | 0/931 |
| 12 | I | 0.30 | 0/281 | 0.64 | 0/384 |
| 13 | J | 0.18 | 0/338 | 0.42 | 0/462 |
| 14 | K | 0.42 | 0/567 | 0.59 | 0/766 |
| 15 | M | 0.21 | 0/236 | 0.41 | 0/317 |
| 16 | H | 0.20 | 0/591 | 0.45 | 0/796 |
| 17 | L | 0.32 | 0/987 | 0.55 | 0/1348 |
| All | All | 0.28 | 0/25853 | 0.50 | 0/35200 |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 8 | D | 0 | 1 |
| 9 | E | 0 | 1 |
| 14 | K | 0 | 1 |
| All | All | 0 | 3 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (3) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 8 | D | 172 | HIS | Peptide |
| 9 | E | 74 | ARG | Sidechain |
| 14 | K | 94 | ARG | Sidechain |

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 | 6 | 1496 | 0 | 1474 | 11 | 0 |
| 2 | 2 | 1557 | 0 | 1510 | 9 | 0 |
| 3 | 3 | 1705 | 0 | 1672 | 14 | 0 |
| 4 | 5 | 1549 | 0 | 1528 | 16 | 0 |
| 5 | A | 5846 | 0 | 5712 | 39 | 0 |
| 6 | B | 5854 | 0 | 5632 | 36 | 0 |
| 7 | C | 602 | 0 | 575 | 1 | 0 |
| 8 | D | 1112 | 0 | 1128 | 6 | 0 |
| 9 | E | 503 | 0 | 490 | 0 | 0 |
| 10 | F | 1248 | 0 | 1291 | 9 | 0 |
| 11 | G | 673 | 0 | 678 | 1 | 0 |
| 12 | I | 274 | 0 | 285 | 2 | 0 |
| 13 | J | 328 | 0 | 339 | 2 | 0 |
| 14 | K | 561 | 0 | 581 | 11 | 0 |
| 15 | M | 235 | 0 | 259 | 1 | 0 |
| 16 | H | 578 | 0 | 590 | 2 | 0 |
| 17 | L | 958 | 0 | 956 | 11 | 0 |
| 18 | 2 | 302 | 0 | 234 | 11 | 0 |
| 18 | 3 | 112 | 0 | 101 | 4 | 0 |
| 18 | 5 | 178 | 0 | 120 | 1 | 0 |
| 18 | 6 | 97 | 0 | 68 | 6 | 0 |
| 19 | 2 | 482 | 0 | 433 | 12 | 0 |
| 19 | 3 | 618 | 0 | 535 | 15 | 0 |
| 19 | 5 | 549 | 0 | 501 | 11 | 0 |
| 19 | 6 | 626 | 0 | 548 | 18 | 0 |
| 19 | A | 2443 | 0 | 2417 | 59 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 19 | B | 2485 | 0 | 2516 | 57 | 0 |
| 19 | F | 146 | 0 | 121 | 4 | 0 |
| 19 | G | 90 | 0 | 66 | 1 | 0 |
| 19 | J | 42 | 0 | 31 | 1 | 0 |
| 19 | K | 140 | 0 | 104 | 1 | 0 |
| 19 | L | 147 | 0 | 123 | 4 | 0 |
| 20 | 2 | 126 | 0 | 168 | 8 | 0 |
| 20 | 3 | 84 | 0 | 112 | 11 | 0 |
| 20 | 5 | 84 | 0 | 112 | 7 | 0 |
| 20 | 6 | 84 | 0 | 112 | 4 | 0 |
| 20 | J | 42 | 0 | 56 | 4 | 0 |
| 21 | 6 | 44 | 0 | 56 | 3 | 0 |
| 22 | 2 | 38 | 0 | 46 | 0 | 0 |
| 22 | 5 | 44 | 0 | 58 | 5 | 0 |
| 22 | 6 | 76 | 0 | 98 | 6 | 0 |
| 22 | A | 83 | 0 | 112 | 3 | 0 |
| 23 | 2 | 40 | 0 | 56 | 2 | 0 |
| 23 | 3 | 40 | 0 | 56 | 2 | 0 |
| 23 | 5 | 40 | 0 | 56 | 2 | 0 |
| 23 | A | 200 | 0 | 280 | 17 | 0 |
| 23 | B | 200 | 0 | 280 | 13 | 0 |
| 23 | F | 80 | 0 | 112 | 6 | 0 |
| 23 | G | 80 | 0 | 112 | 6 | 0 |
| 23 | I | 40 | 0 | 56 | 2 | 0 |
| 23 | J | 40 | 0 | 56 | 6 | 0 |
| 23 | K | 80 | 0 | 112 | 4 | 0 |
| 23 | L | 80 | 0 | 112 | 4 | 0 |
| 23 | M | 40 | 0 | 56 | 3 | 0 |
| 24 | A | 65 | 0 | 72 | 2 | 0 |
| 25 | A | 33 | 0 | 46 | 2 | 0 |
| 25 | B | 33 | 0 | 46 | 1 | 0 |
| 26 | A | 8 | 0 | 0 | 0 | 0 |
| 26 | C | 16 | 0 | 0 | 0 | 0 |
| 27 | A | 35 | 0 | 46 | 0 | 0 |
| 27 | B | 70 | 0 | 92 | 4 | 0 |
| 27 | G | 35 | 0 | 46 | 2 | 0 |
| 28 | B | 66 | 0 | 96 | 4 | 0 |
| 29 | J | 71 | 0 | 85 | 3 | 0 |
| 30 | 2 | 25 | 0 | 0 | 0 | 0 |
| 30 | 3 | 37 | 0 | 0 | 0 | 0 |
| 30 | 5 | 17 | 0 | 0 | 0 | 0 |
| 30 | 6 | 14 | 0 | 0 | 2 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 30 | A | 184 | 0 | 0 | 0 | 0 |
| 30 | B | 205 | 0 | 0 | 2 | 0 |
| 30 | C | 45 | 0 | 0 | 0 | 0 |
| 30 | D | 20 | 0 | 0 | 0 | 0 |
| 30 | E | 17 | 0 | 0 | 0 | 0 |
| 30 | F | 20 | 0 | 0 | 0 | 0 |
| 30 | G | 2 | 0 | 0 | 0 | 0 |
| 30 | I | 3 | 0 | 0 | 0 | 0 |
| 30 | J | 4 | 0 | 0 | 0 | 0 |
| 30 | K | 2 | 0 | 0 | 0 | 0 |
| 30 | L | 9 | 0 | 0 | 0 | 0 |
| 30 | M | 2 | 0 | 0 | 0 | 0 |
| All | All | 36239 | 0 | 35421 | 364 | 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 5.

The worst 5 of 364 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) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:3:242:VAL:HG11 | 20:3:316:LUT:H32 | 1.69 | 0.74 |
| 3:3:191:PHE:HE2 | 18:3:306:CHL:HBB2 | 1.56 | 0.71 |
| 19:A:824:CLA:H2 | 14:K:88:GLY:HA3 | 1.73 | 0.71 |
| 19:A:811:CLA:HBB2 | 19:A:814:CLA:HMA3 | 1.75 | 0.68 |
| 1:6:98:VAL:HG11 | 20:6:315:LUT:H12 | 1.76 | 0.68 |

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 | 6 | 192/243 (79%) | 189 (98%) | 3 (2%) | 0 | 100 | 100 |
| 2 | 2 | 185/267 (69%) | 182 (98%) | 3 (2%) | 0 | 100 | 100 |
| 3 | 3 | 218/279 (78%) | 210 (96%) | 8 (4%) | 0 | 100 | 100 |
| 4 | 5 | 196/249 (79%) | 191 (97%) | 5 (3%) | 0 | 100 | 100 |
| 5 | A | 740/750 (99%) | 722 (98%) | 18 (2%) | 0 | 100 | 100 |
| 6 | B | 731/734 (100%) | 713 (98%) | 17 (2%) | 1 (0%) | 48 | 41 |
| 7 | C | 78/81 (96%) | 76 (97%) | 2 (3%) | 0 | 100 | 100 |
| 8 | D | 140/215 (65%) | 134 (96%) | 5 (4%) | 1 (1%) | 18 | 9 |
| 9 | E | 62/132 (47%) | 61 (98%) | 1 (2%) | 0 | 100 | 100 |
| 10 | F | 159/246 (65%) | 156 (98%) | 3 (2%) | 0 | 100 | 100 |
| 11 | G | 88/161 (55%) | 88 (100%) | 0 | 0 | 100 | 100 |
| 12 | I | 33/36 (92%) | 33 (100%) | 0 | 0 | 100 | 100 |
| 13 | J | 39/42 (93%) | 38 (97%) | 1 (3%) | 0 | 100 | 100 |
| 14 | K | 78/135 (58%) | 73 (94%) | 5 (6%) | 0 | 100 | 100 |
| 15 | M | 28/32 (88%) | 28 (100%) | 0 | 0 | 100 | 100 |
| 16 | H | 74/142 (52%) | 72 (97%) | 2 (3%) | 0 | 100 | 100 |
| 17 | L | 124/221 (56%) | 117 (94%) | 6 (5%) | 1 (1%) | 16 | 7 |
| All | All | 3165/3965 (80%) | 3083 (97%) | 79 (2%) | 3 (0%) | 49 | 41 |

All (3) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8 | D | 173 | PRO |
| 17 | L | 78 | THR |
| 6 | B | 669 | GLY |

5.3.2 Protein sidechains [i](#)

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

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

207 ligands are modelled in this entry.

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
| | | | | | Counts | RMSZ | $\# Z > 2$ | Counts | RMSZ | $\# Z > 2$ |
| 19 | CLA | J | 102 | 13 | 46,50,73 | 1.44 | 7 (15%) | 53,85,113 | 1.18 | 4 (7%) |
| 19 | CLA | B | 840 | 30 | 69,73,73 | 1.14 | 6 (8%) | 82,113,113 | 1.08 | 7 (8%) |
| 20 | LUT | J | 101 | - | 42,43,43 | 1.31 | 8 (19%) | 51,60,60 | 1.82 | 14 (27%) |
| 19 | CLA | G | 203 | 11 | 49,53,73 | 1.47 | 8 (16%) | 58,89,113 | 1.02 | 3 (5%) |
| 19 | CLA | B | 823 | 6 | 59,63,73 | 1.35 | 8 (13%) | 70,101,113 | 1.13 | 6 (8%) |
| 19 | CLA | 5 | 310 | 4 | 48,52,73 | 1.36 | 6 (12%) | 57,88,113 | 1.04 | 4 (7%) |
| 19 | CLA | B | 831 | 6 | 49,53,73 | 1.46 | 7 (14%) | 58,89,113 | 1.02 | 3 (5%) |
| 23 | BCR | L | 304 | - | 41,41,41 | 1.46 | 9 (21%) | 56,56,56 | 1.92 | 19 (33%) |
| 28 | DGD | B | 849 | - | 67,67,67 | 0.53 | 0 | 81,81,81 | 0.73 | 1 (1%) |
| 19 | CLA | 3 | 310 | 3 | 47,51,73 | 1.49 | 7 (14%) | 55,86,113 | 1.14 | 4 (7%) |
| 23 | BCR | F | 302 | - | 41,41,41 | 1.46 | 5 (12%) | 56,56,56 | 1.75 | 15 (26%) |
| 19 | CLA | L | 302 | 17 | 64,68,73 | 1.21 | 7 (10%) | 76,107,113 | 0.88 | 3 (3%) |
| 23 | BCR | B | 845 | - | 41,41,41 | 1.42 | 8 (19%) | 56,56,56 | 1.73 | 16 (28%) |
| 19 | CLA | A | 827 | 30 | 59,63,73 | 1.23 | 6 (10%) | 70,101,113 | 0.96 | 4 (5%) |
| 19 | CLA | A | 828 | 5 | 69,73,73 | 1.24 | 8 (11%) | 82,113,113 | 0.99 | 6 (7%) |
| 19 | CLA | 2 | 303 | 2 | 49,53,73 | 1.43 | 7 (14%) | 58,89,113 | 1.02 | 5 (8%) |
| 19 | CLA | A | 808 | 5 | 69,73,73 | 1.17 | 8 (11%) | 82,113,113 | 0.92 | 3 (3%) |
| 23 | BCR | K | 204 | - | 41,41,41 | 1.47 | 4 (9%) | 56,56,56 | 1.74 | 17 (30%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | CLA | A | 807 | 5 | 69,73,73 | 1.14 | 7 (10%) | 82,113,113 | 0.94 | 4 (4%) |
| 19 | CLA | 2 | 309 | 2 | 65,69,73 | 1.18 | 7 (10%) | 77,108,113 | 1.06 | 6 (7%) |
| 19 | CLA | A | 832 | 5 | 54,58,73 | 1.37 | 6 (11%) | 64,95,113 | 0.95 | 3 (4%) |
| 19 | CLA | 6 | 313 | 1 | 49,53,73 | 1.41 | 7 (14%) | 58,89,113 | 1.12 | 4 (6%) |
| 19 | CLA | F | 304 | 10 | 45,49,73 | 1.48 | 8 (17%) | 54,84,113 | 1.15 | 4 (7%) |
| 19 | CLA | B | 801 | 30 | 69,73,73 | 1.20 | 9 (13%) | 82,113,113 | 0.96 | 5 (6%) |
| 19 | CLA | 3 | 305 | 3 | 50,54,73 | 1.38 | 7 (14%) | 59,90,113 | 1.10 | 5 (8%) |
| 19 | CLA | 6 | 310 | 22 | 60,64,73 | 1.28 | 7 (11%) | 71,102,113 | 0.99 | 3 (4%) |
| 19 | CLA | 6 | 304 | 30 | 53,57,73 | 1.33 | 7 (13%) | 61,93,113 | 1.09 | 4 (6%) |
| 19 | CLA | 6 | 311 | 1 | 49,53,73 | 1.43 | 7 (14%) | 58,89,113 | 1.16 | 5 (8%) |
| 20 | LUT | 2 | 316 | - | 42,43,43 | 1.33 | 6 (14%) | 51,60,60 | 1.60 | 12 (23%) |
| 19 | CLA | B | 807 | 6 | 69,73,73 | 1.21 | 7 (10%) | 82,113,113 | 0.99 | 4 (4%) |
| 19 | CLA | B | 836 | 30 | 49,53,73 | 1.39 | 8 (16%) | 58,89,113 | 1.09 | 5 (8%) |
| 19 | CLA | B | 832 | 6 | 69,73,73 | 1.19 | 8 (11%) | 82,113,113 | 0.94 | 3 (3%) |
| 19 | CLA | B | 815 | 6 | 69,73,73 | 1.19 | 7 (10%) | 82,113,113 | 0.88 | 4 (4%) |
| 19 | CLA | 2 | 302 | 2 | 69,73,73 | 1.15 | 7 (10%) | 82,113,113 | 0.96 | 4 (4%) |
| 19 | CLA | A | 842 | 5 | 69,73,73 | 1.21 | 7 (10%) | 82,113,113 | 0.95 | 3 (3%) |
| 19 | CLA | K | 202 | 14 | 48,52,73 | 1.47 | 9 (18%) | 59,88,113 | 1.01 | 3 (5%) |
| 19 | CLA | 5 | 301 | 4 | 64,68,73 | 1.21 | 7 (10%) | 76,107,113 | 0.96 | 4 (5%) |
| 19 | CLA | B | 822 | 6 | 50,54,73 | 1.40 | 7 (14%) | 59,90,113 | 1.09 | 4 (6%) |
| 19 | CLA | A | 824 | 5 | 69,73,73 | 1.19 | 6 (8%) | 82,113,113 | 1.03 | 5 (6%) |
| 19 | CLA | 2 | 312 | 2 | 69,73,73 | 1.20 | 8 (11%) | 82,113,113 | 1.01 | 5 (6%) |
| 19 | CLA | B | 805 | 6 | 49,53,73 | 1.45 | 7 (14%) | 58,89,113 | 1.04 | 3 (5%) |
| 22 | LHG | A | 846 | - | 48,48,48 | 0.28 | 0 | 51,54,54 | 0.38 | 0 |
| 23 | BCR | B | 847 | - | 41,41,41 | 1.47 | 4 (9%) | 56,56,56 | 1.73 | 14 (25%) |
| 19 | CLA | 5 | 303 | 30 | 49,53,73 | 1.38 | 7 (14%) | 58,89,113 | 1.04 | 5 (8%) |
| 19 | CLA | B | 803 | 6 | 69,73,73 | 1.24 | 7 (10%) | 82,113,113 | 0.80 | 3 (3%) |
| 18 | CHL | 5 | 305 | 30 | 37,51,74 | 1.20 | 3 (8%) | 30,86,114 | 3.10 | 10 (33%) |
| 29 | LMG | J | 104 | - | 30,30,55 | 0.62 | 0 | 38,38,63 | 0.70 | 0 |
| 19 | CLA | 3 | 303 | 30 | 51,55,73 | 1.35 | 8 (15%) | 60,91,113 | 1.04 | 5 (8%) |
| 19 | CLA | B | 814 | 6 | 69,73,73 | 1.21 | 8 (11%) | 82,113,113 | 0.92 | 3 (3%) |
| 22 | LHG | 6 | 319 | - | 26,26,48 | 0.37 | 0 | 29,32,54 | 0.48 | 0 |
| 19 | CLA | 2 | 304 | 30 | 54,58,73 | 1.31 | 8 (14%) | 64,95,113 | 1.01 | 5 (7%) |
| 22 | LHG | A | 847 | 19 | 33,33,48 | 0.31 | 0 | 36,39,54 | 0.40 | 0 |
| 19 | CLA | A | 805 | 5 | 69,73,73 | 1.16 | 7 (10%) | 82,113,113 | 0.90 | 4 (4%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 23 | BCR | A | 848 | - | 41,41,41 | 1.45 | 8 (19%) | 56,56,56 | 1.85 | 17 (30%) |
| 19 | CLA | 5 | 308 | 4 | 64,68,73 | 1.17 | 7 (10%) | 76,107,113 | 0.96 | 4 (5%) |
| 21 | XAT | 6 | 316 | - | 41,47,47 | 0.73 | 2 (4%) | 54,74,74 | 0.98 | 3 (5%) |
| 19 | CLA | L | 303 | 30 | 46,50,73 | 1.42 | 8 (17%) | 53,85,113 | 1.13 | 4 (7%) |
| 18 | CHL | 5 | 304 | 30 | 40,54,74 | 1.29 | 3 (7%) | 34,90,114 | 3.00 | 10 (29%) |
| 26 | SF4 | A | 845 | 5,6 | 0,12,12 | - | - | - | | |
| 18 | CHL | 6 | 306 | 1 | 40,54,74 | 1.15 | 2 (5%) | 34,90,114 | 2.90 | 11 (32%) |
| 19 | CLA | 6 | 314 | 1 | 49,53,73 | 1.39 | 7 (14%) | 58,89,113 | 1.13 | 6 (10%) |
| 19 | CLA | 5 | 309 | 30 | 64,68,73 | 1.21 | 7 (10%) | 76,107,113 | 0.97 | 3 (3%) |
| 22 | LHG | 5 | 318 | - | 43,43,48 | 0.29 | 0 | 46,49,54 | 0.36 | 0 |
| 19 | CLA | A | 801 | 5 | 59,63,73 | 1.26 | 8 (13%) | 70,101,113 | 0.98 | 4 (5%) |
| 19 | CLA | A | 836 | 5 | 64,68,73 | 1.22 | 7 (10%) | 76,107,113 | 0.94 | 3 (3%) |
| 19 | CLA | B | 817 | 6 | 69,73,73 | 1.23 | 6 (8%) | 82,113,113 | 0.89 | 5 (6%) |
| 23 | BCR | J | 103 | - | 41,41,41 | 1.45 | 10 (24%) | 56,56,56 | 2.20 | 20 (35%) |
| 19 | CLA | B | 809 | 6 | 69,73,73 | 1.19 | 7 (10%) | 82,113,113 | 0.90 | 3 (3%) |
| 18 | CHL | 5 | 306 | 30 | 40,54,74 | 1.07 | 3 (7%) | 34,90,114 | 2.98 | 10 (29%) |
| 19 | CLA | A | 829 | 5 | 69,73,73 | 1.21 | 7 (10%) | 82,113,113 | 0.95 | 3 (3%) |
| 19 | CLA | B | 804 | - | 69,73,73 | 1.12 | 7 (10%) | 82,113,113 | 0.97 | 6 (7%) |
| 20 | LUT | 3 | 316 | - | 42,43,43 | 1.31 | 8 (19%) | 51,60,60 | 1.79 | 15 (29%) |
| 27 | LMU | B | 851 | - | 36,36,36 | 0.23 | 0 | 47,47,47 | 0.41 | 0 |
| 19 | CLA | 2 | 313 | 2 | 54,58,73 | 1.34 | 5 (9%) | 64,95,113 | 1.05 | 5 (7%) |
| 19 | CLA | B | 824 | 6 | 49,53,73 | 1.35 | 8 (16%) | 58,89,113 | 1.07 | 5 (8%) |
| 19 | CLA | A | 830 | 5 | 69,73,73 | 1.24 | 7 (10%) | 82,113,113 | 0.89 | 2 (2%) |
| 20 | LUT | 6 | 315 | - | 42,43,43 | 1.33 | 8 (19%) | 51,60,60 | 1.55 | 12 (23%) |
| 18 | CHL | 2 | 305 | 30 | 40,54,74 | 1.32 | 3 (7%) | 34,90,114 | 2.93 | 9 (26%) |
| 19 | CLA | 3 | 304 | 30 | 49,53,73 | 1.39 | 8 (16%) | 58,89,113 | 1.10 | 5 (8%) |
| 19 | CLA | 2 | 308 | 2 | 49,53,73 | 1.34 | 6 (12%) | 58,89,113 | 1.06 | 4 (6%) |
| 19 | CLA | A | 820 | 5 | 69,73,73 | 1.15 | 8 (11%) | 82,113,113 | 0.94 | 4 (4%) |
| 19 | CLA | A | 812 | 5 | 69,73,73 | 1.20 | 8 (11%) | 82,113,113 | 0.92 | 3 (3%) |
| 19 | CLA | B | 834 | 6 | 64,68,73 | 1.23 | 7 (10%) | 76,107,113 | 0.92 | 4 (5%) |
| 19 | CLA | B | 830 | 6 | 64,68,73 | 1.23 | 8 (12%) | 76,107,113 | 0.98 | 5 (6%) |
| 25 | PQN | B | 843 | - | 34,34,34 | 0.40 | 0 | 43,45,45 | 0.66 | 0 |
| 18 | CHL | 6 | 301 | 1 | 45,59,74 | 1.07 | 3 (6%) | 40,96,114 | 2.81 | 11 (27%) |
| 19 | CLA | F | 301 | 30 | 64,68,73 | 1.24 | 7 (10%) | 76,107,113 | 1.02 | 5 (6%) |
| 22 | LHG | 2 | 318 | 19 | 37,37,48 | 0.31 | 0 | 40,43,54 | 0.41 | 0 |
| 18 | CHL | 2 | 314 | 2 | 40,54,74 | 1.15 | 3 (7%) | 34,90,114 | 2.84 | 11 (32%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | CLA | B | 820 | 30 | 61,65,73 | 1.26 | 8 (13%) | 72,103,113 | 1.03 | 5 (6%) |
| 19 | CLA | A | 804 | 30 | 69,73,73 | 1.16 | 7 (10%) | 82,113,113 | 0.95 | 5 (6%) |
| 19 | CLA | A | 814 | 5 | 69,73,73 | 1.18 | 8 (11%) | 82,113,113 | 0.96 | 5 (6%) |
| 19 | CLA | 5 | 314 | 4 | 49,53,73 | 1.50 | 6 (12%) | 58,89,113 | 1.37 | 7 (12%) |
| 19 | CLA | A | 831 | 5 | 69,73,73 | 1.28 | 8 (11%) | 82,113,113 | 0.85 | 3 (3%) |
| 19 | CLA | 6 | 303 | 1 | 59,63,73 | 1.30 | 6 (10%) | 70,101,113 | 0.93 | 4 (5%) |
| 19 | CLA | B | 806 | 6 | 69,73,73 | 1.18 | 8 (11%) | 82,113,113 | 0.90 | 4 (4%) |
| 22 | LHG | 6 | 317 | 19 | 48,48,48 | 0.29 | 0 | 51,54,54 | 0.38 | 0 |
| 19 | CLA | 5 | 312 | 4 | 69,73,73 | 1.20 | 7 (10%) | 82,113,113 | 1.02 | 4 (4%) |
| 23 | BCR | L | 305 | - | 41,41,41 | 1.43 | 4 (9%) | 56,56,56 | 1.68 | 15 (26%) |
| 24 | CL0 | A | 802 | 5 | 58,73,73 | 0.87 | 4 (6%) | 60,113,113 | 1.70 | 8 (13%) |
| 19 | CLA | 3 | 301 | 3 | 64,68,73 | 1.20 | 7 (10%) | 76,107,113 | 0.95 | 5 (6%) |
| 19 | CLA | B | 812 | 6 | 64,68,73 | 1.28 | 6 (9%) | 76,107,113 | 0.95 | 4 (5%) |
| 23 | BCR | B | 848 | - | 41,41,41 | 1.45 | 8 (19%) | 56,56,56 | 2.07 | 14 (25%) |
| 23 | BCR | A | 852 | - | 41,41,41 | 1.47 | 7 (17%) | 56,56,56 | 1.76 | 14 (25%) |
| 23 | BCR | K | 205 | - | 41,41,41 | 1.37 | 8 (19%) | 56,56,56 | 1.47 | 12 (21%) |
| 27 | LMU | A | 853 | - | 36,36,36 | 0.25 | 0 | 47,47,47 | 0.73 | 3 (6%) |
| 19 | CLA | B | 837 | 6 | 56,60,73 | 1.37 | 7 (12%) | 65,97,113 | 1.04 | 4 (6%) |
| 19 | CLA | A | 803 | - | 69,73,73 | 1.17 | 7 (10%) | 82,113,113 | 0.91 | 4 (4%) |
| 26 | SF4 | C | 101 | 7 | 0,12,12 | - | - | - | - | - |
| 19 | CLA | A | 819 | 5 | 61,65,73 | 1.27 | 7 (11%) | 72,103,113 | 1.06 | 6 (8%) |
| 20 | LUT | 2 | 317 | - | 42,43,43 | 1.29 | 8 (19%) | 51,60,60 | 1.87 | 13 (25%) |
| 23 | BCR | 2 | 319 | - | 41,41,41 | 1.47 | 6 (14%) | 56,56,56 | 2.11 | 19 (33%) |
| 19 | CLA | 3 | 312 | 3 | 46,50,73 | 1.45 | 6 (13%) | 53,85,113 | 1.09 | 4 (7%) |
| 19 | CLA | B | 841 | 6 | 69,73,73 | 1.26 | 8 (11%) | 82,113,113 | 0.89 | 3 (3%) |
| 19 | CLA | B | 827 | 6 | 69,73,73 | 1.24 | 8 (11%) | 82,113,113 | 0.91 | 3 (3%) |
| 19 | CLA | K | 201 | 30 | 55,59,73 | 1.30 | 7 (12%) | 64,96,113 | 1.10 | 6 (9%) |
| 23 | BCR | A | 850 | - | 41,41,41 | 1.45 | 7 (17%) | 56,56,56 | 1.61 | 13 (23%) |
| 19 | CLA | L | 301 | 17 | 49,53,73 | 1.40 | 8 (16%) | 58,89,113 | 1.11 | 5 (8%) |
| 19 | CLA | A | 834 | 5 | 69,73,73 | 1.24 | 8 (11%) | 82,113,113 | 0.93 | 3 (3%) |
| 23 | BCR | G | 205 | - | 41,41,41 | 1.44 | 9 (21%) | 56,56,56 | 1.69 | 14 (25%) |
| 18 | CHL | 5 | 313 | 4 | 37,51,74 | 1.15 | 2 (5%) | 30,86,114 | 3.04 | 11 (36%) |
| 19 | CLA | B | 810 | 6 | 69,73,73 | 1.20 | 8 (11%) | 82,113,113 | 0.95 | 6 (7%) |
| 19 | CLA | 6 | 308 | 1 | 54,58,73 | 1.34 | 8 (14%) | 64,95,113 | 1.04 | 3 (4%) |
| 19 | CLA | A | 813 | 5 | 58,62,73 | 1.27 | 8 (13%) | 68,99,113 | 0.96 | 4 (5%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | CLA | A | 833 | 5 | 59,63,73 | 1.29 | 8 (13%) | 70,101,113 | 0.99 | 5 (7%) |
| 19 | CLA | B | 819 | 6 | 69,73,73 | 1.15 | 7 (10%) | 82,113,113 | 0.93 | 4 (4%) |
| 23 | BCR | I | 101 | - | 41,41,41 | 1.46 | 4 (9%) | 56,56,56 | 1.63 | 14 (25%) |
| 19 | CLA | A | 823 | 5 | 49,53,73 | 1.41 | 7 (14%) | 58,89,113 | 1.10 | 5 (8%) |
| 27 | LMU | G | 202 | - | 36,36,36 | 0.26 | 0 | 47,47,47 | 0.70 | 1 (2%) |
| 19 | CLA | B | 829 | 6 | 69,73,73 | 1.20 | 6 (8%) | 82,113,113 | 0.82 | 3 (3%) |
| 19 | CLA | 3 | 313 | 30 | 49,53,73 | 1.38 | 8 (16%) | 58,89,113 | 1.12 | 4 (6%) |
| 19 | CLA | B | 813 | 6 | 49,53,73 | 1.39 | 7 (14%) | 58,89,113 | 1.10 | 5 (8%) |
| 23 | BCR | F | 305 | - | 41,41,41 | 1.43 | 7 (17%) | 56,56,56 | 1.73 | 15 (26%) |
| 19 | CLA | A | 826 | 30 | 69,73,73 | 1.25 | 7 (10%) | 82,113,113 | 0.98 | 5 (6%) |
| 19 | CLA | A | 838 | 5 | 55,59,73 | 1.37 | 8 (14%) | 64,96,113 | 1.09 | 6 (9%) |
| 23 | BCR | M | 101 | - | 41,41,41 | 1.45 | 7 (17%) | 56,56,56 | 1.68 | 15 (26%) |
| 19 | CLA | B | 808 | 6 | 64,68,73 | 1.21 | 6 (9%) | 76,107,113 | 0.96 | 4 (5%) |
| 19 | CLA | 3 | 307 | 3 | 64,68,73 | 1.19 | 7 (10%) | 76,107,113 | 1.13 | 6 (7%) |
| 18 | CHL | 2 | 320 | 4 | 46,60,74 | 1.20 | 2 (4%) | 40,97,114 | 2.63 | 8 (20%) |
| 19 | CLA | 5 | 311 | 4 | 65,69,73 | 1.18 | 6 (9%) | 77,108,113 | 1.03 | 5 (6%) |
| 19 | CLA | 6 | 307 | 30 | 49,53,73 | 1.44 | 6 (12%) | 58,89,113 | 1.19 | 6 (10%) |
| 19 | CLA | 3 | 308 | 3 | 69,73,73 | 1.13 | 6 (8%) | 82,113,113 | 0.98 | 4 (4%) |
| 19 | CLA | A | 810 | 5 | 69,73,73 | 1.16 | 8 (11%) | 82,113,113 | 0.92 | 4 (4%) |
| 19 | CLA | A | 840 | 5 | 54,58,73 | 1.38 | 6 (11%) | 64,95,113 | 1.05 | 4 (6%) |
| 19 | CLA | A | 835 | 5 | 69,73,73 | 1.20 | 7 (10%) | 82,113,113 | 0.90 | 4 (4%) |
| 19 | CLA | A | 825 | 5 | 69,73,73 | 1.21 | 8 (11%) | 82,113,113 | 1.00 | 6 (7%) |
| 19 | CLA | A | 809 | 5 | 52,56,73 | 1.41 | 6 (11%) | 61,92,113 | 1.01 | 4 (6%) |
| 20 | LUT | 2 | 315 | - | 42,43,43 | 1.31 | 8 (19%) | 51,60,60 | 1.72 | 13 (25%) |
| 19 | CLA | B | 821 | 6 | 47,51,73 | 1.41 | 7 (14%) | 55,86,113 | 1.07 | 4 (7%) |
| 20 | LUT | 3 | 315 | - | 42,43,43 | 1.34 | 5 (11%) | 51,60,60 | 1.72 | 14 (27%) |
| 19 | CLA | B | 838 | 6 | 69,73,73 | 1.16 | 7 (10%) | 82,113,113 | 0.93 | 4 (4%) |
| 19 | CLA | A | 839 | 5 | 59,63,73 | 1.28 | 7 (11%) | 70,101,113 | 0.95 | 3 (4%) |
| 19 | CLA | K | 203 | 14 | 49,53,73 | 1.37 | 6 (12%) | 58,89,113 | 1.04 | 4 (6%) |
| 19 | CLA | A | 806 | 5 | 59,63,73 | 1.26 | 7 (11%) | 70,101,113 | 0.95 | 4 (5%) |
| 18 | CHL | 2 | 307 | 30 | 43,57,74 | 1.07 | 3 (6%) | 37,93,114 | 2.86 | 10 (27%) |
| 18 | CHL | 3 | 314 | 3 | 60,74,74 | 1.11 | 3 (5%) | 58,114,114 | 2.20 | 12 (20%) |
| 19 | CLA | B | 802 | 30 | 69,73,73 | 1.16 | 7 (10%) | 82,113,113 | 0.91 | 5 (6%) |
| 23 | BCR | A | 851 | - | 41,41,41 | 1.46 | 5 (12%) | 56,56,56 | 1.72 | 15 (26%) |
| 19 | CLA | 2 | 310 | 22 | 60,64,73 | 1.26 | 7 (11%) | 71,102,113 | 0.98 | 4 (5%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | CLA | B | 828 | 6 | 69,73,73 | 1.20 | 7 (10%) | 82,113,113 | 0.92 | 4 (4%) |
| 19 | CLA | 2 | 311 | 2 | 49,53,73 | 1.45 | 6 (12%) | 58,89,113 | 1.06 | 4 (6%) |
| 19 | CLA | 3 | 311 | 3 | 59,63,73 | 1.29 | 9 (15%) | 70,101,113 | 1.12 | 5 (7%) |
| 19 | CLA | B | 839 | 6 | 51,55,73 | 1.39 | 6 (11%) | 60,91,113 | 1.04 | 5 (8%) |
| 19 | CLA | 6 | 309 | 1 | 69,73,73 | 1.13 | 6 (8%) | 82,113,113 | 0.94 | 5 (6%) |
| 19 | CLA | B | 842 | - | 69,73,73 | 1.17 | 7 (10%) | 82,113,113 | 0.89 | 5 (6%) |
| 19 | CLA | B | 816 | 6 | 69,73,73 | 1.21 | 8 (11%) | 82,113,113 | 0.98 | 5 (6%) |
| 19 | CLA | 3 | 302 | 3 | 59,63,73 | 1.36 | 8 (13%) | 70,101,113 | 0.97 | 4 (5%) |
| 19 | CLA | A | 821 | 5 | 49,53,73 | 1.40 | 7 (14%) | 58,89,113 | 1.11 | 4 (6%) |
| 19 | CLA | 3 | 309 | 30 | 59,63,73 | 1.28 | 7 (11%) | 70,101,113 | 1.00 | 4 (5%) |
| 19 | CLA | A | 822 | 30 | 69,73,73 | 1.16 | 8 (11%) | 82,113,113 | 0.91 | 4 (4%) |
| 25 | PQN | A | 844 | - | 34,34,34 | 0.36 | 0 | 43,45,45 | 0.69 | 1 (2%) |
| 19 | CLA | B | 825 | 30 | 69,73,73 | 1.17 | 8 (11%) | 82,113,113 | 1.02 | 6 (7%) |
| 20 | LUT | 6 | 318 | - | 42,43,43 | 1.33 | 8 (19%) | 51,60,60 | 2.03 | 19 (37%) |
| 23 | BCR | B | 844 | - | 41,41,41 | 1.44 | 6 (14%) | 56,56,56 | 1.74 | 17 (30%) |
| 19 | CLA | A | 843 | 22 | 49,53,73 | 1.40 | 8 (16%) | 58,89,113 | 1.04 | 4 (6%) |
| 18 | CHL | 2 | 306 | 30 | 37,51,74 | 1.19 | 3 (8%) | 30,86,114 | 3.20 | 12 (40%) |
| 19 | CLA | A | 817 | 30 | 49,53,73 | 1.38 | 5 (10%) | 58,89,113 | 1.17 | 5 (8%) |
| 18 | CHL | 3 | 306 | 30 | 40,54,74 | 1.08 | 3 (7%) | 34,90,114 | 2.88 | 11 (32%) |
| 19 | CLA | 6 | 302 | 1 | 65,69,73 | 1.19 | 7 (10%) | 77,108,113 | 0.95 | 4 (5%) |
| 27 | LMU | B | 850 | - | 36,36,36 | 0.25 | 0 | 47,47,47 | 0.42 | 0 |
| 23 | BCR | 5 | 317 | - | 41,41,41 | 1.44 | 9 (21%) | 56,56,56 | 1.94 | 18 (32%) |
| 19 | CLA | A | 818 | 5 | 64,68,73 | 1.31 | 8 (12%) | 76,107,113 | 1.06 | 6 (7%) |
| 20 | LUT | 5 | 315 | - | 42,43,43 | 1.31 | 8 (19%) | 51,60,60 | 1.54 | 9 (17%) |
| 19 | CLA | 6 | 305 | 30 | 49,53,73 | 1.39 | 6 (12%) | 58,89,113 | 1.04 | 3 (5%) |
| 19 | CLA | A | 811 | 5 | 59,63,73 | 1.30 | 7 (11%) | 70,101,113 | 0.94 | 3 (4%) |
| 23 | BCR | 3 | 317 | - | 41,41,41 | 1.46 | 7 (17%) | 56,56,56 | 1.82 | 19 (33%) |
| 19 | CLA | 6 | 312 | 1 | 69,73,73 | 1.14 | 7 (10%) | 82,113,113 | 1.10 | 5 (6%) |
| 18 | CHL | 2 | 301 | 2 | 60,74,74 | 0.94 | 2 (3%) | 58,114,114 | 2.38 | 11 (18%) |
| 23 | BCR | A | 849 | - | 41,41,41 | 1.46 | 7 (17%) | 56,56,56 | 1.69 | 16 (28%) |
| 19 | CLA | A | 815 | 5 | 55,59,73 | 1.34 | 7 (12%) | 64,96,113 | 1.03 | 6 (9%) |
| 23 | BCR | B | 846 | - | 41,41,41 | 1.44 | 8 (19%) | 56,56,56 | 2.10 | 18 (32%) |
| 19 | CLA | B | 818 | 6 | 66,70,73 | 1.24 | 7 (10%) | 78,109,113 | 1.08 | 6 (7%) |
| 19 | CLA | B | 833 | 6 | 69,73,73 | 1.21 | 7 (10%) | 82,113,113 | 0.96 | 5 (6%) |
| 20 | LUT | 5 | 316 | - | 42,43,43 | 1.30 | 8 (19%) | 51,60,60 | 1.80 | 13 (25%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | CLA | B | 811 | 6 | 69,73,73 | 1.19 | 7 (10%) | 82,113,113 | 0.91 | 3 (3%) |
| 19 | CLA | 5 | 307 | 4 | 63,67,73 | 1.19 | 6 (9%) | 74,105,113 | 1.04 | 5 (6%) |
| 19 | CLA | F | 303 | 30 | 49,53,73 | 1.38 | 6 (12%) | 58,89,113 | 1.06 | 3 (5%) |
| 19 | CLA | A | 816 | 5 | 46,50,73 | 1.44 | 7 (15%) | 53,85,113 | 1.10 | 5 (9%) |
| 19 | CLA | 5 | 302 | 4 | 54,58,73 | 1.39 | 7 (12%) | 64,95,113 | 1.00 | 3 (4%) |
| 23 | BCR | G | 201 | - | 41,41,41 | 1.48 | 5 (12%) | 56,56,56 | 1.71 | 15 (26%) |
| 19 | CLA | G | 204 | 11 | 49,53,73 | 1.39 | 7 (14%) | 58,89,113 | 1.04 | 5 (8%) |
| 19 | CLA | B | 835 | 6 | 49,53,73 | 1.37 | 6 (12%) | 58,89,113 | 1.05 | 4 (6%) |
| 19 | CLA | A | 841 | 5 | 69,73,73 | 1.18 | 7 (10%) | 82,113,113 | 0.89 | 3 (3%) |
| 29 | LMG | J | 105 | - | 41,41,55 | 0.53 | 0 | 49,49,63 | 0.69 | 0 |
| 26 | SF4 | C | 102 | 7 | 0,12,12 | - | - | - | - | - |
| 19 | CLA | B | 826 | 30 | 57,61,73 | 1.25 | 7 (12%) | 67,98,113 | 0.98 | 4 (5%) |
| 19 | CLA | A | 837 | 5 | 49,53,73 | 1.38 | 7 (14%) | 58,89,113 | 1.14 | 4 (6%) |

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 |
|-----|------|-------|-----|------|-----------|---------------|---------|
| 19 | CLA | J | 102 | 13 | 1/1/10/20 | 0/12/88/115 | - |
| 19 | CLA | B | 840 | 30 | - | 5/39/115/115 | - |
| 20 | LUT | J | 101 | - | - | 2/29/67/67 | 0/2/2/2 |
| 19 | CLA | G | 203 | 11 | 1/1/11/20 | 4/15/91/115 | - |
| 19 | CLA | B | 823 | 6 | 1/1/13/20 | 3/27/103/115 | - |
| 19 | CLA | 5 | 310 | 4 | 1/1/11/20 | 7/13/89/115 | - |
| 19 | CLA | B | 831 | 6 | - | 4/15/91/115 | - |
| 23 | BCR | L | 304 | - | - | 2/29/63/63 | 0/2/2/2 |
| 28 | DGD | B | 849 | - | - | 21/55/95/95 | 0/2/2/2 |
| 19 | CLA | 3 | 310 | 3 | 1/1/10/20 | 1/13/89/115 | - |
| 23 | BCR | F | 302 | - | - | 2/29/63/63 | 0/2/2/2 |
| 19 | CLA | L | 302 | 17 | - | 4/33/109/115 | - |
| 23 | BCR | B | 845 | - | - | 5/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 827 | 30 | 1/1/13/20 | 0/27/103/115 | - |
| 19 | CLA | A | 828 | 5 | 1/1/15/20 | 15/39/115/115 | - |
| 19 | CLA | 2 | 303 | 2 | 1/1/11/20 | 4/15/91/115 | - |
| 19 | CLA | A | 808 | 5 | 1/1/15/20 | 9/39/115/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|--------------|---------|
| 23 | BCR | K | 204 | - | - | 3/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 807 | 5 | 1/1/15/20 | 4/39/115/115 | - |
| 19 | CLA | 2 | 309 | 2 | 1/1/14/20 | 6/35/111/115 | - |
| 19 | CLA | F | 304 | 10 | 1/1/10/20 | 2/10/86/115 | - |
| 19 | CLA | 6 | 313 | 1 | 1/1/11/20 | 2/15/91/115 | - |
| 19 | CLA | A | 832 | 5 | - | 0/21/97/115 | - |
| 19 | CLA | B | 801 | 30 | 1/1/15/20 | 7/39/115/115 | - |
| 19 | CLA | 3 | 305 | 3 | 1/1/11/20 | 0/17/93/115 | - |
| 19 | CLA | 6 | 310 | 22 | 1/1/13/20 | 1/29/105/115 | - |
| 19 | CLA | 6 | 304 | 30 | 1/1/11/20 | 2/20/96/115 | - |
| 19 | CLA | 6 | 311 | 1 | 1/1/11/20 | 5/15/91/115 | - |
| 20 | LUT | 2 | 316 | - | - | 0/29/67/67 | 0/2/2/2 |
| 19 | CLA | B | 807 | 6 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | B | 836 | 30 | 1/1/11/20 | 1/15/91/115 | - |
| 19 | CLA | B | 832 | 6 | 1/1/15/20 | 3/39/115/115 | - |
| 19 | CLA | B | 815 | 6 | 1/1/15/20 | 3/39/115/115 | - |
| 19 | CLA | 2 | 302 | 2 | 1/1/15/20 | 6/39/115/115 | - |
| 19 | CLA | A | 842 | 5 | 1/1/15/20 | 0/39/115/115 | - |
| 19 | CLA | K | 202 | 14 | 1/1/11/20 | 2/13/89/115 | - |
| 19 | CLA | 5 | 301 | 4 | - | 3/33/109/115 | - |
| 19 | CLA | B | 822 | 6 | - | 0/17/93/115 | - |
| 19 | CLA | A | 824 | 5 | 1/1/15/20 | 2/39/115/115 | - |
| 19 | CLA | 2 | 312 | 2 | - | 0/39/115/115 | - |
| 19 | CLA | B | 805 | 6 | - | 3/15/91/115 | - |
| 22 | LHG | A | 846 | - | - | 6/53/53/53 | - |
| 23 | BCR | B | 847 | - | - | 0/29/63/63 | 0/2/2/2 |
| 19 | CLA | 5 | 303 | 30 | 1/1/11/20 | 1/15/91/115 | - |
| 19 | CLA | B | 803 | 6 | 1/1/15/20 | 1/39/115/115 | - |
| 18 | CHL | 5 | 305 | 30 | 3/3/15/26 | 2/12/110/137 | - |
| 29 | LMG | J | 104 | - | - | 6/25/45/70 | 0/1/1/1 |
| 19 | CLA | 3 | 303 | 30 | 1/1/11/20 | 1/18/94/115 | - |
| 19 | CLA | B | 814 | 6 | 1/1/15/20 | 6/39/115/115 | - |
| 22 | LHG | 6 | 319 | - | - | 2/31/31/53 | - |
| 19 | CLA | 2 | 304 | 30 | 1/1/12/20 | 2/21/97/115 | - |
| 22 | LHG | A | 847 | 19 | - | 4/38/38/53 | - |
| 19 | CLA | A | 805 | 5 | 1/1/15/20 | 4/39/115/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|--------------|---------|
| 23 | BCR | A | 848 | - | - | 5/29/63/63 | 0/2/2/2 |
| 19 | CLA | 5 | 308 | 4 | 1/1/14/20 | 4/33/109/115 | - |
| 21 | XAT | 6 | 316 | - | - | 1/31/93/93 | 0/4/4/4 |
| 19 | CLA | L | 303 | 30 | 1/1/10/20 | 1/12/88/115 | - |
| 18 | CHL | 5 | 304 | 30 | 3/3/16/26 | 3/15/113/137 | - |
| 26 | SF4 | A | 845 | 5,6 | - | - | 0/6/5/5 |
| 18 | CHL | 6 | 306 | 1 | 3/3/16/26 | 4/15/113/137 | - |
| 19 | CLA | 6 | 314 | 1 | 1/1/11/20 | 4/15/91/115 | - |
| 19 | CLA | 5 | 309 | 30 | 1/1/14/20 | 0/33/109/115 | - |
| 22 | LHG | 5 | 318 | - | - | 7/48/48/53 | - |
| 19 | CLA | A | 801 | 5 | - | 6/27/103/115 | - |
| 19 | CLA | A | 836 | 5 | - | 3/33/109/115 | - |
| 19 | CLA | B | 817 | 6 | - | 2/39/115/115 | - |
| 23 | BCR | J | 103 | - | - | 6/29/63/63 | 0/2/2/2 |
| 19 | CLA | B | 809 | 6 | 1/1/15/20 | 2/39/115/115 | - |
| 18 | CHL | 5 | 306 | 30 | 3/3/16/26 | 4/15/113/137 | - |
| 19 | CLA | A | 829 | 5 | 1/1/15/20 | 4/39/115/115 | - |
| 19 | CLA | B | 804 | - | 1/1/15/20 | 1/39/115/115 | - |
| 20 | LUT | 3 | 316 | - | - | 3/29/67/67 | 0/2/2/2 |
| 27 | LMU | B | 851 | - | - | 4/21/61/61 | 0/2/2/2 |
| 19 | CLA | 2 | 313 | 2 | 1/1/12/20 | 2/21/97/115 | - |
| 19 | CLA | B | 824 | 6 | - | 1/15/91/115 | - |
| 19 | CLA | A | 830 | 5 | 1/1/15/20 | 4/39/115/115 | - |
| 20 | LUT | 6 | 315 | - | - | 2/29/67/67 | 0/2/2/2 |
| 18 | CHL | 2 | 305 | 30 | 3/3/16/26 | 4/15/113/137 | - |
| 19 | CLA | 3 | 304 | 30 | 1/1/11/20 | 3/15/91/115 | - |
| 19 | CLA | 2 | 308 | 2 | 1/1/11/20 | 0/15/91/115 | - |
| 19 | CLA | A | 820 | 5 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | A | 812 | 5 | 1/1/15/20 | 7/39/115/115 | - |
| 19 | CLA | B | 834 | 6 | - | 2/33/109/115 | - |
| 19 | CLA | B | 830 | 6 | - | 4/33/109/115 | - |
| 25 | PQN | B | 843 | - | - | 1/23/43/43 | 0/2/2/2 |
| 18 | CHL | 6 | 301 | 1 | 3/3/17/26 | 2/21/119/137 | - |
| 19 | CLA | F | 301 | 30 | 1/1/14/20 | 2/33/109/115 | - |
| 22 | LHG | 2 | 318 | 19 | - | 3/42/42/53 | - |
| 18 | CHL | 2 | 314 | 2 | 3/3/16/26 | 4/15/113/137 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|--------------|---------|
| 19 | CLA | B | 820 | 30 | - | 0/30/106/115 | - |
| 19 | CLA | A | 804 | 30 | 1/1/15/20 | 3/39/115/115 | - |
| 19 | CLA | A | 814 | 5 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | 5 | 314 | 4 | - | 5/15/91/115 | - |
| 19 | CLA | A | 831 | 5 | - | 4/39/115/115 | - |
| 19 | CLA | 6 | 303 | 1 | 1/1/13/20 | 3/27/103/115 | - |
| 19 | CLA | B | 806 | 6 | 1/1/15/20 | 4/39/115/115 | - |
| 22 | LHG | 6 | 317 | 19 | - | 7/53/53/53 | - |
| 19 | CLA | 5 | 312 | 4 | 1/1/15/20 | 7/39/115/115 | - |
| 23 | BCR | L | 305 | - | - | 3/29/63/63 | 0/2/2/2 |
| 24 | CL0 | A | 802 | 5 | - | 3/37/135/135 | - |
| 19 | CLA | 3 | 301 | 3 | 1/1/14/20 | 3/33/109/115 | - |
| 19 | CLA | B | 812 | 6 | 1/1/14/20 | 4/33/109/115 | - |
| 23 | BCR | B | 848 | - | - | 4/29/63/63 | 0/2/2/2 |
| 23 | BCR | A | 852 | - | - | 7/29/63/63 | 0/2/2/2 |
| 23 | BCR | K | 205 | - | - | 17/29/63/63 | 0/2/2/2 |
| 27 | LMU | A | 853 | - | - | 4/21/61/61 | 0/2/2/2 |
| 19 | CLA | B | 837 | 6 | 1/1/12/20 | 3/24/100/115 | - |
| 19 | CLA | A | 803 | - | 1/1/15/20 | 4/39/115/115 | - |
| 26 | SF4 | C | 101 | 7 | - | - | 0/6/5/5 |
| 19 | CLA | A | 819 | 5 | - | 5/30/106/115 | - |
| 20 | LUT | 2 | 317 | - | - | 3/29/67/67 | 0/2/2/2 |
| 23 | BCR | 2 | 319 | - | - | 8/29/63/63 | 0/2/2/2 |
| 19 | CLA | 3 | 312 | 3 | 1/1/10/20 | 1/12/88/115 | - |
| 19 | CLA | B | 841 | 6 | - | 1/39/115/115 | - |
| 19 | CLA | B | 827 | 6 | 1/1/15/20 | 0/39/115/115 | - |
| 19 | CLA | K | 201 | 30 | - | 5/23/99/115 | - |
| 23 | BCR | A | 850 | - | - | 0/29/63/63 | 0/2/2/2 |
| 19 | CLA | L | 301 | 17 | 1/1/11/20 | 1/15/91/115 | - |
| 19 | CLA | A | 834 | 5 | 1/1/15/20 | 2/39/115/115 | - |
| 23 | BCR | G | 205 | - | - | 0/29/63/63 | 0/2/2/2 |
| 18 | CHL | 5 | 313 | 4 | 3/3/15/26 | 1/12/110/137 | - |
| 19 | CLA | B | 810 | 6 | 1/1/15/20 | 4/39/115/115 | - |
| 19 | CLA | 6 | 308 | 1 | 1/1/12/20 | 1/21/97/115 | - |
| 19 | CLA | A | 813 | 5 | 1/1/12/20 | 1/26/102/115 | - |
| 19 | CLA | B | 819 | 6 | 1/1/15/20 | 8/39/115/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|--------------|---------|
| 19 | CLA | A | 833 | 5 | - | 2/27/103/115 | - |
| 23 | BCR | I | 101 | - | - | 0/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 823 | 5 | - | 5/15/91/115 | - |
| 27 | LMU | G | 202 | - | - | 7/21/61/61 | 0/2/2/2 |
| 19 | CLA | B | 829 | 6 | 1/1/15/20 | 2/39/115/115 | - |
| 19 | CLA | 3 | 313 | 30 | 1/1/11/20 | 5/15/91/115 | - |
| 19 | CLA | B | 813 | 6 | - | 3/15/91/115 | - |
| 23 | BCR | F | 305 | - | - | 3/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 826 | 30 | 1/1/15/20 | 4/39/115/115 | - |
| 19 | CLA | A | 838 | 5 | 1/1/12/20 | 5/23/99/115 | - |
| 23 | BCR | M | 101 | - | - | 2/29/63/63 | 0/2/2/2 |
| 19 | CLA | B | 808 | 6 | 1/1/14/20 | 1/33/109/115 | - |
| 19 | CLA | 3 | 307 | 3 | 1/1/14/20 | 6/33/109/115 | - |
| 18 | CHL | 2 | 320 | 4 | 3/3/17/26 | 2/23/121/137 | - |
| 19 | CLA | 5 | 311 | 4 | - | 2/35/111/115 | - |
| 19 | CLA | 6 | 307 | 30 | 1/1/11/20 | 2/15/91/115 | - |
| 19 | CLA | 3 | 308 | 3 | 1/1/15/20 | 1/39/115/115 | - |
| 19 | CLA | A | 810 | 5 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | A | 840 | 5 | 1/1/12/20 | 1/21/97/115 | - |
| 19 | CLA | A | 835 | 5 | 1/1/15/20 | 2/39/115/115 | - |
| 19 | CLA | A | 825 | 5 | - | 3/39/115/115 | - |
| 19 | CLA | A | 809 | 5 | 1/1/11/20 | 0/19/95/115 | - |
| 20 | LUT | 2 | 315 | - | - | 2/29/67/67 | 0/2/2/2 |
| 19 | CLA | B | 821 | 6 | 1/1/10/20 | 1/13/89/115 | - |
| 20 | LUT | 3 | 315 | - | - | 4/29/67/67 | 0/2/2/2 |
| 19 | CLA | B | 838 | 6 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | A | 839 | 5 | 1/1/13/20 | 0/27/103/115 | - |
| 19 | CLA | K | 203 | 14 | 1/1/11/20 | 5/15/91/115 | - |
| 19 | CLA | A | 806 | 5 | 1/1/13/20 | 2/27/103/115 | - |
| 18 | CHL | 2 | 307 | 30 | 2/2/16/26 | 3/19/117/137 | - |
| 18 | CHL | 3 | 314 | 3 | 3/3/20/26 | 8/39/137/137 | - |
| 19 | CLA | B | 802 | 30 | 1/1/15/20 | 6/39/115/115 | - |
| 23 | BCR | A | 851 | - | - | 0/29/63/63 | 0/2/2/2 |
| 19 | CLA | 2 | 310 | 22 | 1/1/13/20 | 0/29/105/115 | - |
| 19 | CLA | B | 828 | 6 | 1/1/15/20 | 3/39/115/115 | - |
| 19 | CLA | 2 | 311 | 2 | 1/1/11/20 | 5/15/91/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|---------------|---------|
| 19 | CLA | B | 839 | 6 | 1/1/11/20 | 2/18/94/115 | - |
| 19 | CLA | 3 | 311 | 3 | - | 5/27/103/115 | - |
| 19 | CLA | 6 | 309 | 1 | 1/1/15/20 | 9/39/115/115 | - |
| 19 | CLA | B | 842 | - | 1/1/15/20 | 17/39/115/115 | - |
| 19 | CLA | B | 816 | 6 | - | 9/39/115/115 | - |
| 19 | CLA | 3 | 302 | 3 | 1/1/13/20 | 1/27/103/115 | - |
| 19 | CLA | A | 821 | 5 | 1/1/11/20 | 2/15/91/115 | - |
| 19 | CLA | 3 | 309 | 30 | 1/1/13/20 | 0/27/103/115 | - |
| 19 | CLA | A | 822 | 30 | - | 1/39/115/115 | - |
| 25 | PQN | A | 844 | - | - | 4/23/43/43 | 0/2/2/2 |
| 19 | CLA | B | 825 | 30 | 1/1/15/20 | 7/39/115/115 | - |
| 20 | LUT | 6 | 318 | - | - | 6/29/67/67 | 0/2/2/2 |
| 23 | BCR | B | 844 | - | - | 2/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 843 | 22 | 1/1/11/20 | 3/15/91/115 | - |
| 18 | CHL | 2 | 306 | 30 | 3/3/15/26 | 4/12/110/137 | - |
| 19 | CLA | A | 817 | 30 | 1/1/11/20 | 3/15/91/115 | - |
| 18 | CHL | 3 | 306 | 30 | 2/2/16/26 | 2/15/113/137 | - |
| 19 | CLA | 6 | 302 | 1 | 1/1/14/20 | 5/35/111/115 | - |
| 27 | LMU | B | 850 | - | - | 7/21/61/61 | 0/2/2/2 |
| 23 | BCR | 5 | 317 | - | - | 6/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 818 | 5 | - | 7/33/109/115 | - |
| 20 | LUT | 5 | 315 | - | - | 2/29/67/67 | 0/2/2/2 |
| 19 | CLA | 6 | 305 | 30 | 1/1/11/20 | 2/15/91/115 | - |
| 19 | CLA | A | 811 | 5 | - | 1/27/103/115 | - |
| 23 | BCR | 3 | 317 | - | - | 3/29/63/63 | 0/2/2/2 |
| 19 | CLA | 6 | 312 | 1 | - | 4/39/115/115 | - |
| 18 | CHL | 2 | 301 | 2 | 3/3/20/26 | 3/39/137/137 | - |
| 23 | BCR | A | 849 | - | - | 3/29/63/63 | 0/2/2/2 |
| 19 | CLA | A | 815 | 5 | 1/1/12/20 | 0/23/99/115 | - |
| 23 | BCR | B | 846 | - | - | 5/29/63/63 | 0/2/2/2 |
| 19 | CLA | B | 818 | 6 | 1/1/14/20 | 2/36/112/115 | - |
| 19 | CLA | B | 833 | 6 | 1/1/15/20 | 2/39/115/115 | - |
| 20 | LUT | 5 | 316 | - | - | 3/29/67/67 | 0/2/2/2 |
| 19 | CLA | B | 811 | 6 | 1/1/15/20 | 5/39/115/115 | - |
| 19 | CLA | 5 | 307 | 4 | 1/1/13/20 | 10/32/108/115 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|-----------|--------------|---------|
| 19 | CLA | F | 303 | 30 | 1/1/11/20 | 1/15/91/115 | - |
| 19 | CLA | A | 816 | 5 | 1/1/10/20 | 0/12/88/115 | - |
| 19 | CLA | 5 | 302 | 4 | 1/1/12/20 | 2/21/97/115 | - |
| 23 | BCR | G | 201 | - | - | 4/29/63/63 | 0/2/2/2 |
| 19 | CLA | G | 204 | 11 | 1/1/11/20 | 6/15/91/115 | - |
| 19 | CLA | B | 835 | 6 | 1/1/11/20 | 2/15/91/115 | - |
| 19 | CLA | A | 841 | 5 | 1/1/15/20 | 4/39/115/115 | - |
| 29 | LMG | J | 105 | - | - | 9/36/56/70 | 0/1/1/1 |
| 26 | SF4 | C | 102 | 7 | - | - | 0/6/5/5 |
| 19 | CLA | B | 826 | 30 | 1/1/12/20 | 4/25/101/115 | - |
| 19 | CLA | A | 837 | 5 | 1/1/11/20 | 2/15/91/115 | - |

The worst 5 of 1270 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 18 | 3 | 314 | CHL | C2C-C3C | 5.79 | 1.42 | 1.36 |
| 18 | 2 | 320 | CHL | C2C-C3C | 5.73 | 1.41 | 1.36 |
| 18 | 2 | 305 | CHL | C2C-C3C | 5.62 | 1.41 | 1.36 |
| 18 | 5 | 304 | CHL | C2C-C3C | 5.62 | 1.41 | 1.36 |
| 19 | A | 831 | CLA | MG-NA | 4.93 | 2.18 | 2.06 |

The worst 5 of 1279 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 18 | 2 | 301 | CHL | C1B-CHB-C4A | 14.50 | 130.65 | 121.32 |
| 18 | 6 | 301 | CHL | C1B-CHB-C4A | 14.10 | 130.40 | 121.32 |
| 18 | 5 | 304 | CHL | C1B-CHB-C4A | 14.04 | 130.35 | 121.32 |
| 18 | 2 | 307 | CHL | C1B-CHB-C4A | 13.87 | 130.24 | 121.32 |
| 18 | 5 | 306 | CHL | C1B-CHB-C4A | 13.83 | 130.22 | 121.32 |

5 of 148 chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 18 | 6 | 301 | CHL | ND |
| 18 | 6 | 301 | CHL | NA |
| 18 | 6 | 301 | CHL | NC |
| 18 | 6 | 306 | CHL | ND |
| 18 | 6 | 306 | CHL | NA |

5 of 712 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-----------------|
| 18 | 2 | 306 | CHL | CBD-CGD-O2D-CED |
| 18 | 2 | 306 | CHL | O1D-CGD-O2D-CED |
| 18 | 3 | 314 | CHL | CBD-CGD-O2D-CED |
| 18 | 3 | 314 | CHL | O1D-CGD-O2D-CED |
| 19 | 6 | 311 | CLA | CBD-CGD-O2D-CED |

There are no ring outliers.

165 monomers are involved in 280 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 19 | J | 102 | CLA | 1 | 0 |
| 19 | B | 840 | CLA | 3 | 0 |
| 20 | J | 101 | LUT | 4 | 0 |
| 19 | G | 203 | CLA | 1 | 0 |
| 19 | B | 823 | CLA | 2 | 0 |
| 19 | B | 831 | CLA | 1 | 0 |
| 28 | B | 849 | DGD | 4 | 0 |
| 19 | 3 | 310 | CLA | 2 | 0 |
| 23 | F | 302 | BCR | 4 | 0 |
| 19 | L | 302 | CLA | 2 | 0 |
| 23 | B | 845 | BCR | 3 | 0 |
| 19 | A | 828 | CLA | 1 | 0 |
| 19 | 2 | 303 | CLA | 1 | 0 |
| 19 | A | 808 | CLA | 4 | 0 |
| 23 | K | 204 | BCR | 2 | 0 |
| 19 | A | 807 | CLA | 3 | 0 |
| 19 | 2 | 309 | CLA | 3 | 0 |
| 19 | A | 832 | CLA | 1 | 0 |
| 19 | 6 | 313 | CLA | 1 | 0 |
| 19 | F | 304 | CLA | 1 | 0 |
| 19 | B | 801 | CLA | 3 | 0 |
| 19 | 3 | 305 | CLA | 1 | 0 |
| 19 | 6 | 310 | CLA | 2 | 0 |
| 19 | 6 | 304 | CLA | 1 | 0 |
| 19 | 6 | 311 | CLA | 1 | 0 |
| 20 | 2 | 316 | LUT | 2 | 0 |
| 19 | B | 807 | CLA | 3 | 0 |
| 19 | B | 832 | CLA | 2 | 0 |
| 19 | 2 | 302 | CLA | 2 | 0 |
| 19 | A | 842 | CLA | 2 | 0 |
| 19 | 5 | 301 | CLA | 1 | 0 |
| 19 | B | 822 | CLA | 1 | 0 |
| 19 | A | 824 | CLA | 3 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 19 | 2 | 312 | CLA | 4 | 0 |
| 22 | A | 846 | LHG | 2 | 0 |
| 23 | B | 847 | BCR | 4 | 0 |
| 19 | B | 803 | CLA | 2 | 0 |
| 29 | J | 104 | LMG | 2 | 0 |
| 19 | 3 | 303 | CLA | 1 | 0 |
| 19 | B | 814 | CLA | 2 | 0 |
| 22 | A | 847 | LHG | 1 | 0 |
| 19 | A | 805 | CLA | 2 | 0 |
| 23 | A | 848 | BCR | 5 | 0 |
| 19 | 5 | 308 | CLA | 1 | 0 |
| 21 | 6 | 316 | XAT | 3 | 0 |
| 19 | L | 303 | CLA | 1 | 0 |
| 18 | 6 | 306 | CHL | 3 | 0 |
| 19 | 6 | 314 | CLA | 1 | 0 |
| 19 | 5 | 309 | CLA | 1 | 0 |
| 22 | 5 | 318 | LHG | 5 | 0 |
| 19 | A | 836 | CLA | 1 | 0 |
| 19 | B | 817 | CLA | 2 | 0 |
| 23 | J | 103 | BCR | 6 | 0 |
| 19 | B | 809 | CLA | 2 | 0 |
| 19 | B | 804 | CLA | 1 | 0 |
| 20 | 3 | 316 | LUT | 6 | 0 |
| 27 | B | 851 | LMU | 1 | 0 |
| 19 | B | 824 | CLA | 1 | 0 |
| 20 | 6 | 315 | LUT | 2 | 0 |
| 18 | 2 | 305 | CHL | 2 | 0 |
| 19 | 2 | 308 | CLA | 2 | 0 |
| 19 | A | 820 | CLA | 2 | 0 |
| 19 | A | 812 | CLA | 2 | 0 |
| 19 | B | 834 | CLA | 1 | 0 |
| 19 | B | 830 | CLA | 3 | 0 |
| 25 | B | 843 | PQN | 1 | 0 |
| 18 | 6 | 301 | CHL | 3 | 0 |
| 19 | F | 301 | CLA | 2 | 0 |
| 18 | 2 | 314 | CHL | 1 | 0 |
| 19 | B | 820 | CLA | 3 | 0 |
| 19 | A | 814 | CLA | 2 | 0 |
| 19 | 5 | 314 | CLA | 1 | 0 |
| 19 | A | 831 | CLA | 2 | 0 |
| 19 | 6 | 303 | CLA | 1 | 0 |
| 19 | B | 806 | CLA | 3 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 22 | 6 | 317 | LHG | 6 | 0 |
| 19 | 5 | 312 | CLA | 1 | 0 |
| 23 | L | 305 | BCR | 4 | 0 |
| 24 | A | 802 | CL0 | 2 | 0 |
| 19 | 3 | 301 | CLA | 1 | 0 |
| 19 | B | 812 | CLA | 5 | 0 |
| 23 | B | 848 | BCR | 2 | 0 |
| 23 | A | 852 | BCR | 3 | 0 |
| 23 | K | 205 | BCR | 2 | 0 |
| 19 | A | 819 | CLA | 4 | 0 |
| 20 | 2 | 317 | LUT | 2 | 0 |
| 23 | 2 | 319 | BCR | 2 | 0 |
| 19 | 3 | 312 | CLA | 2 | 0 |
| 19 | B | 841 | CLA | 3 | 0 |
| 19 | B | 827 | CLA | 1 | 0 |
| 19 | K | 201 | CLA | 1 | 0 |
| 23 | A | 850 | BCR | 1 | 0 |
| 19 | L | 301 | CLA | 1 | 0 |
| 19 | A | 834 | CLA | 2 | 0 |
| 23 | G | 205 | BCR | 2 | 0 |
| 18 | 5 | 313 | CHL | 1 | 0 |
| 19 | B | 810 | CLA | 1 | 0 |
| 19 | 6 | 308 | CLA | 2 | 0 |
| 19 | A | 813 | CLA | 1 | 0 |
| 19 | A | 833 | CLA | 1 | 0 |
| 23 | I | 101 | BCR | 2 | 0 |
| 19 | A | 823 | CLA | 2 | 0 |
| 27 | G | 202 | LMU | 2 | 0 |
| 19 | B | 829 | CLA | 2 | 0 |
| 19 | 3 | 313 | CLA | 1 | 0 |
| 23 | F | 305 | BCR | 2 | 0 |
| 23 | M | 101 | BCR | 3 | 0 |
| 18 | 2 | 320 | CHL | 3 | 0 |
| 19 | 5 | 311 | CLA | 1 | 0 |
| 19 | 6 | 307 | CLA | 1 | 0 |
| 19 | 3 | 308 | CLA | 2 | 0 |
| 19 | A | 810 | CLA | 2 | 0 |
| 19 | A | 835 | CLA | 2 | 0 |
| 19 | A | 825 | CLA | 3 | 0 |
| 20 | 2 | 315 | LUT | 4 | 0 |
| 20 | 3 | 315 | LUT | 5 | 0 |
| 19 | B | 838 | CLA | 4 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 19 | A | 839 | CLA | 2 | 0 |
| 19 | A | 806 | CLA | 1 | 0 |
| 18 | 2 | 307 | CHL | 2 | 0 |
| 18 | 3 | 314 | CHL | 3 | 0 |
| 19 | B | 802 | CLA | 3 | 0 |
| 23 | A | 851 | BCR | 5 | 0 |
| 19 | 2 | 310 | CLA | 1 | 0 |
| 19 | B | 828 | CLA | 1 | 0 |
| 19 | 2 | 311 | CLA | 1 | 0 |
| 19 | 3 | 311 | CLA | 2 | 0 |
| 19 | 6 | 309 | CLA | 1 | 0 |
| 19 | B | 842 | CLA | 2 | 0 |
| 19 | B | 816 | CLA | 4 | 0 |
| 19 | 3 | 302 | CLA | 4 | 0 |
| 19 | A | 821 | CLA | 3 | 0 |
| 19 | 3 | 309 | CLA | 2 | 0 |
| 19 | A | 822 | CLA | 5 | 0 |
| 25 | A | 844 | PQN | 2 | 0 |
| 19 | B | 825 | CLA | 3 | 0 |
| 20 | 6 | 318 | LUT | 2 | 0 |
| 23 | B | 844 | BCR | 2 | 0 |
| 18 | 2 | 306 | CHL | 1 | 0 |
| 18 | 3 | 306 | CHL | 1 | 0 |
| 19 | 6 | 302 | CLA | 2 | 0 |
| 27 | B | 850 | LMU | 3 | 0 |
| 23 | 5 | 317 | BCR | 2 | 0 |
| 19 | A | 818 | CLA | 3 | 0 |
| 20 | 5 | 315 | LUT | 4 | 0 |
| 19 | 6 | 305 | CLA | 2 | 0 |
| 19 | A | 811 | CLA | 3 | 0 |
| 23 | 3 | 317 | BCR | 2 | 0 |
| 19 | 6 | 312 | CLA | 4 | 0 |
| 18 | 2 | 301 | CHL | 3 | 0 |
| 23 | A | 849 | BCR | 3 | 0 |
| 23 | B | 846 | BCR | 2 | 0 |
| 19 | B | 818 | CLA | 2 | 0 |
| 19 | B | 833 | CLA | 1 | 0 |
| 20 | 5 | 316 | LUT | 3 | 0 |
| 19 | B | 811 | CLA | 1 | 0 |
| 19 | 5 | 307 | CLA | 4 | 0 |
| 19 | F | 303 | CLA | 1 | 0 |
| 19 | A | 816 | CLA | 2 | 0 |

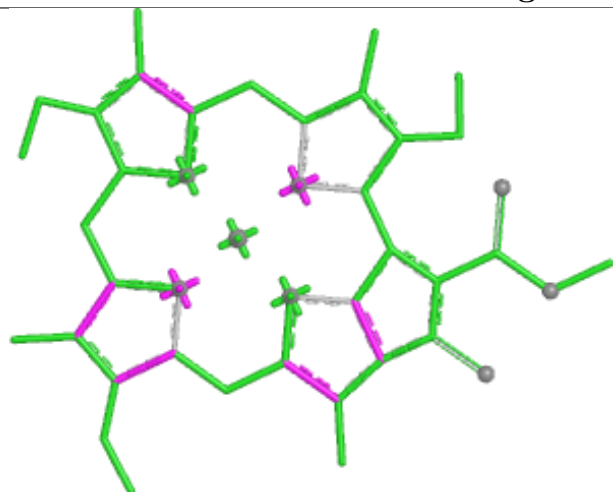
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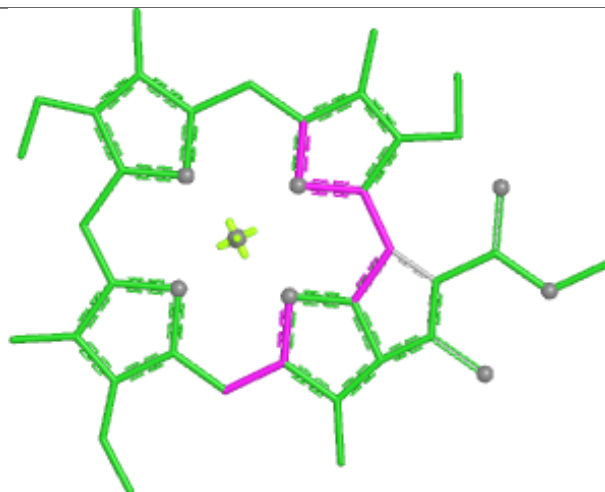
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 19 | 5 | 302 | CLA | 1 | 0 |
| 23 | G | 201 | BCR | 5 | 0 |
| 19 | A | 841 | CLA | 1 | 0 |
| 29 | J | 105 | LMG | 1 | 0 |
| 19 | B | 826 | CLA | 1 | 0 |
| 19 | A | 837 | CLA | 3 | 0 |

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 than 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.

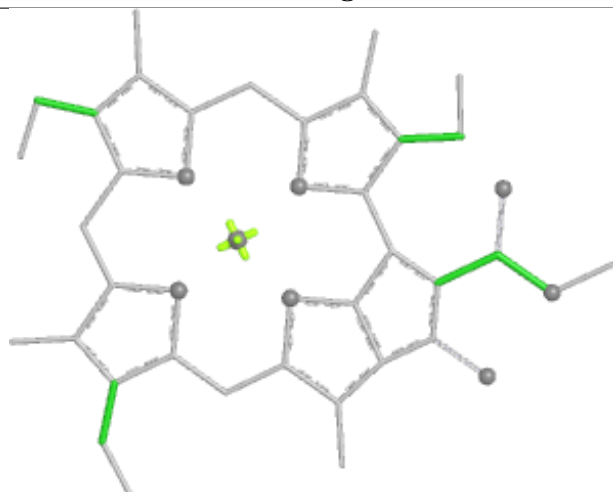
Ligand CLA J 102



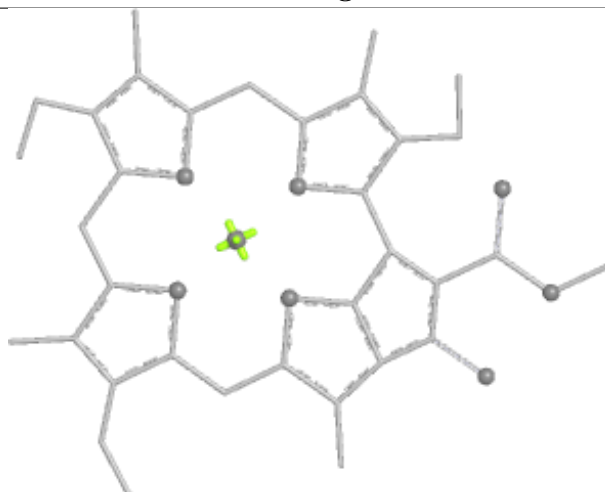
Bond lengths



Bond angles

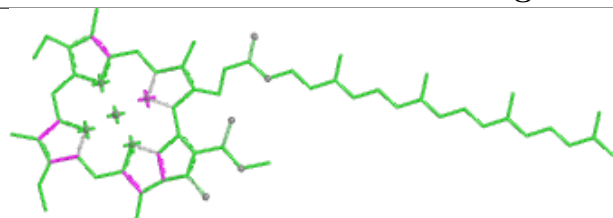


Torsions

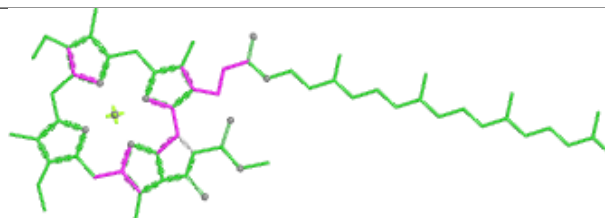


Rings

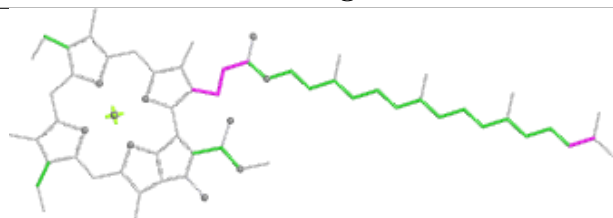
Ligand CLA B 840



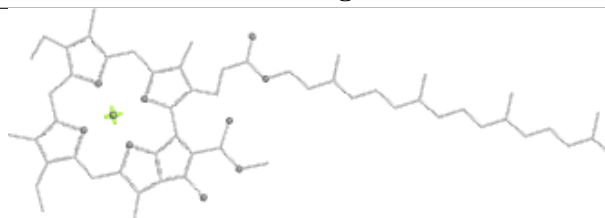
Bond lengths



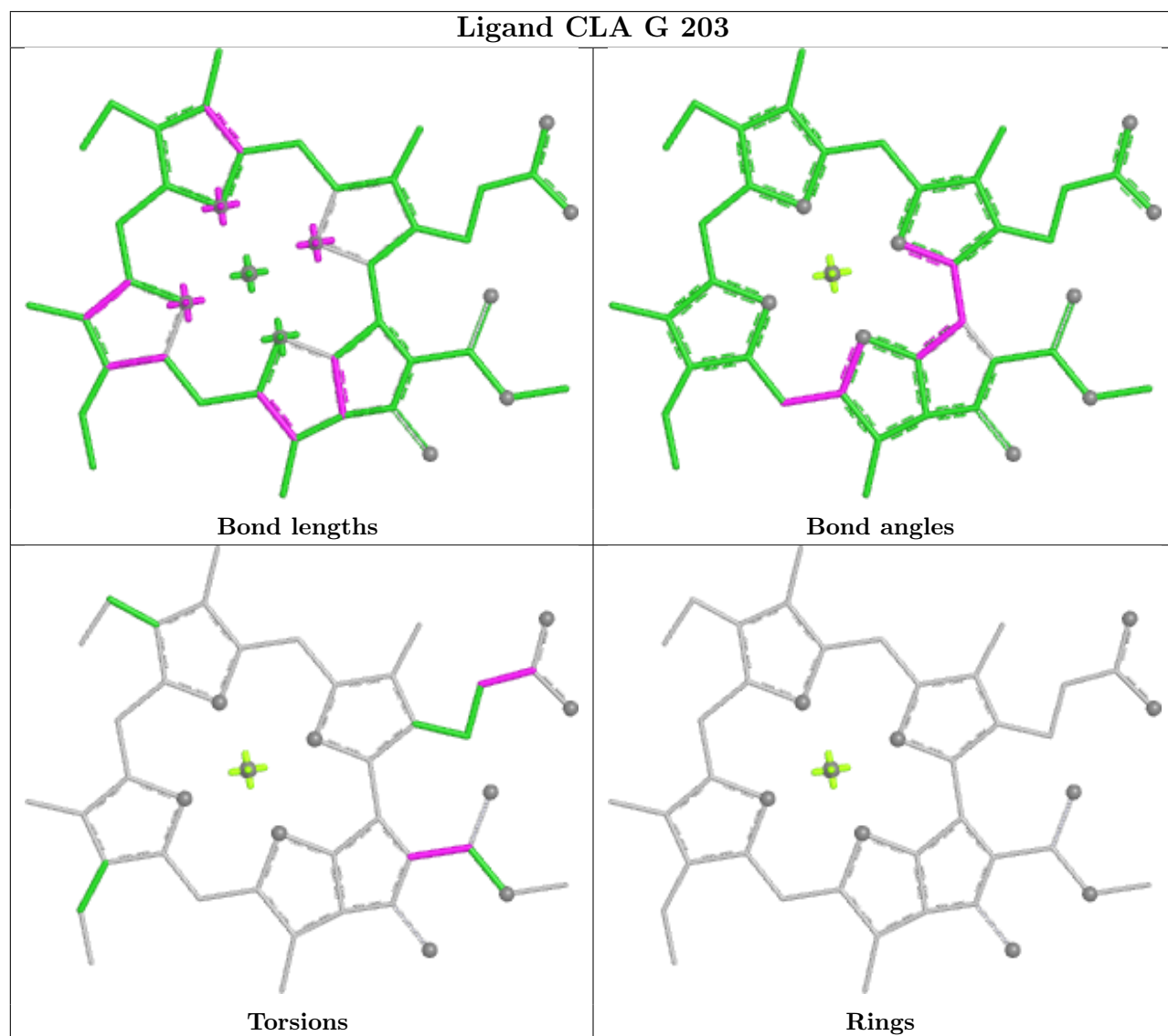
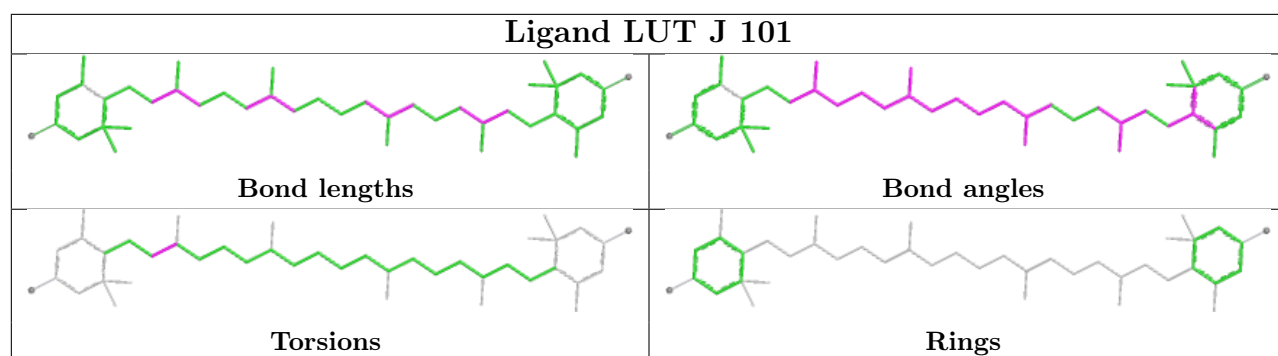
Bond angles

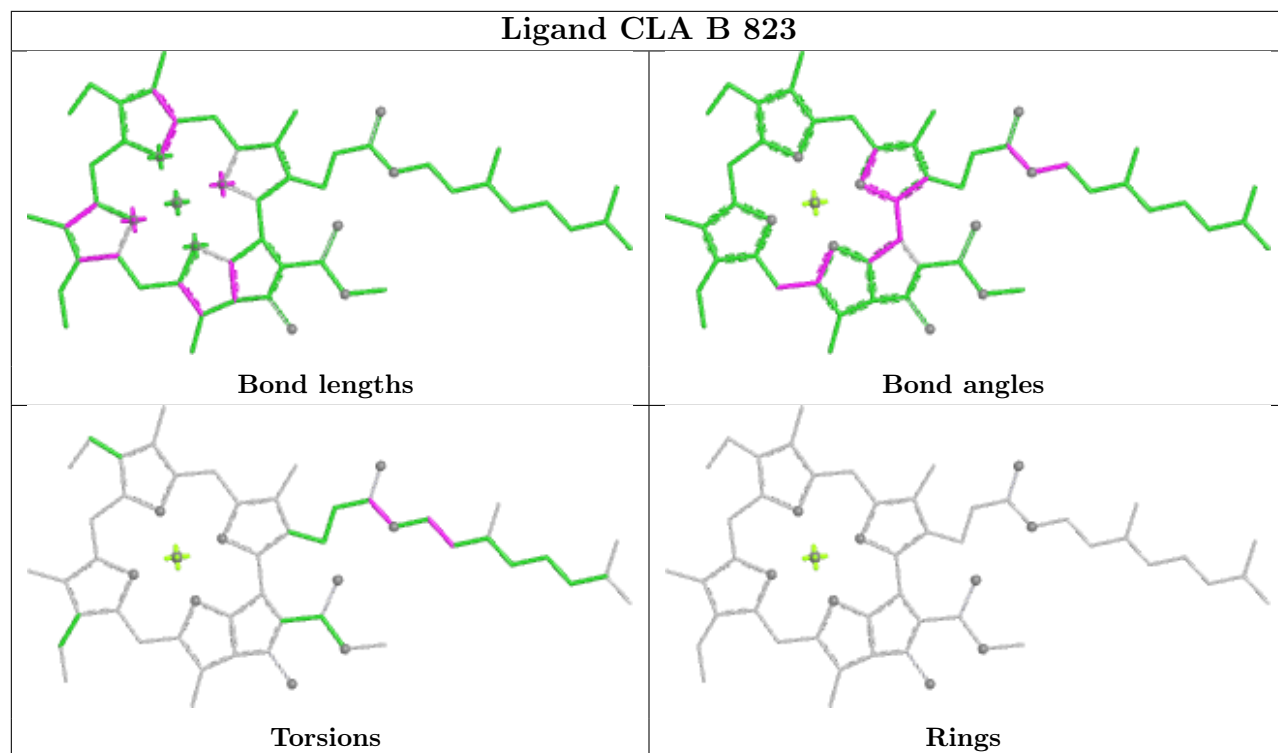


Torsions

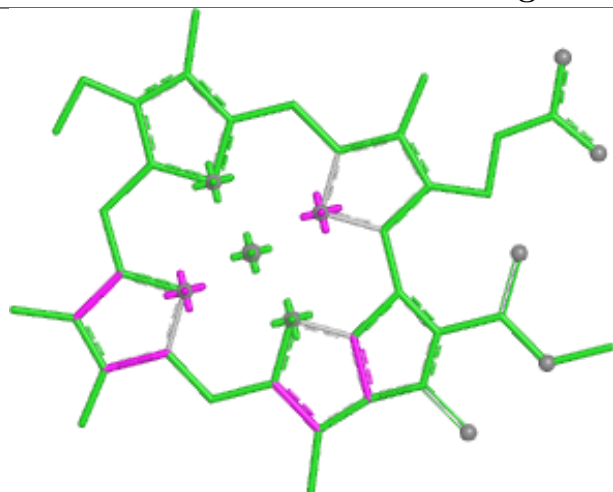


Rings

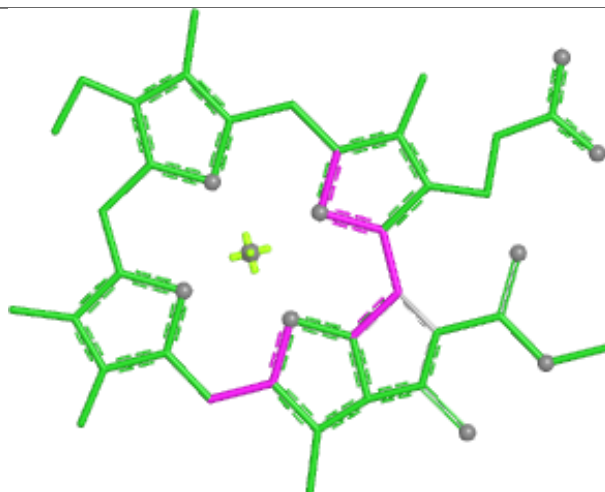




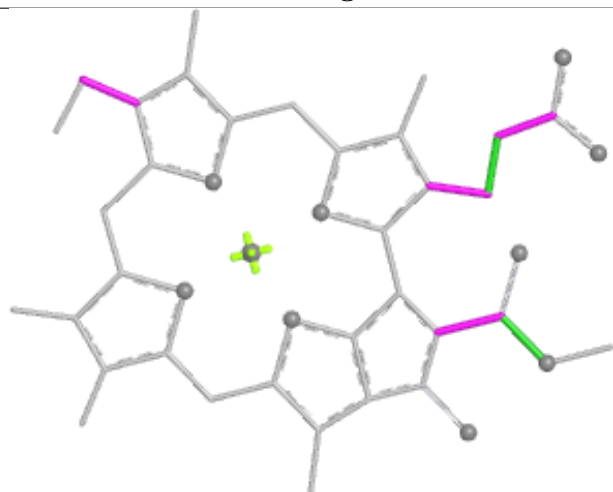
Ligand CLA 5 310



Bond lengths



Bond angles

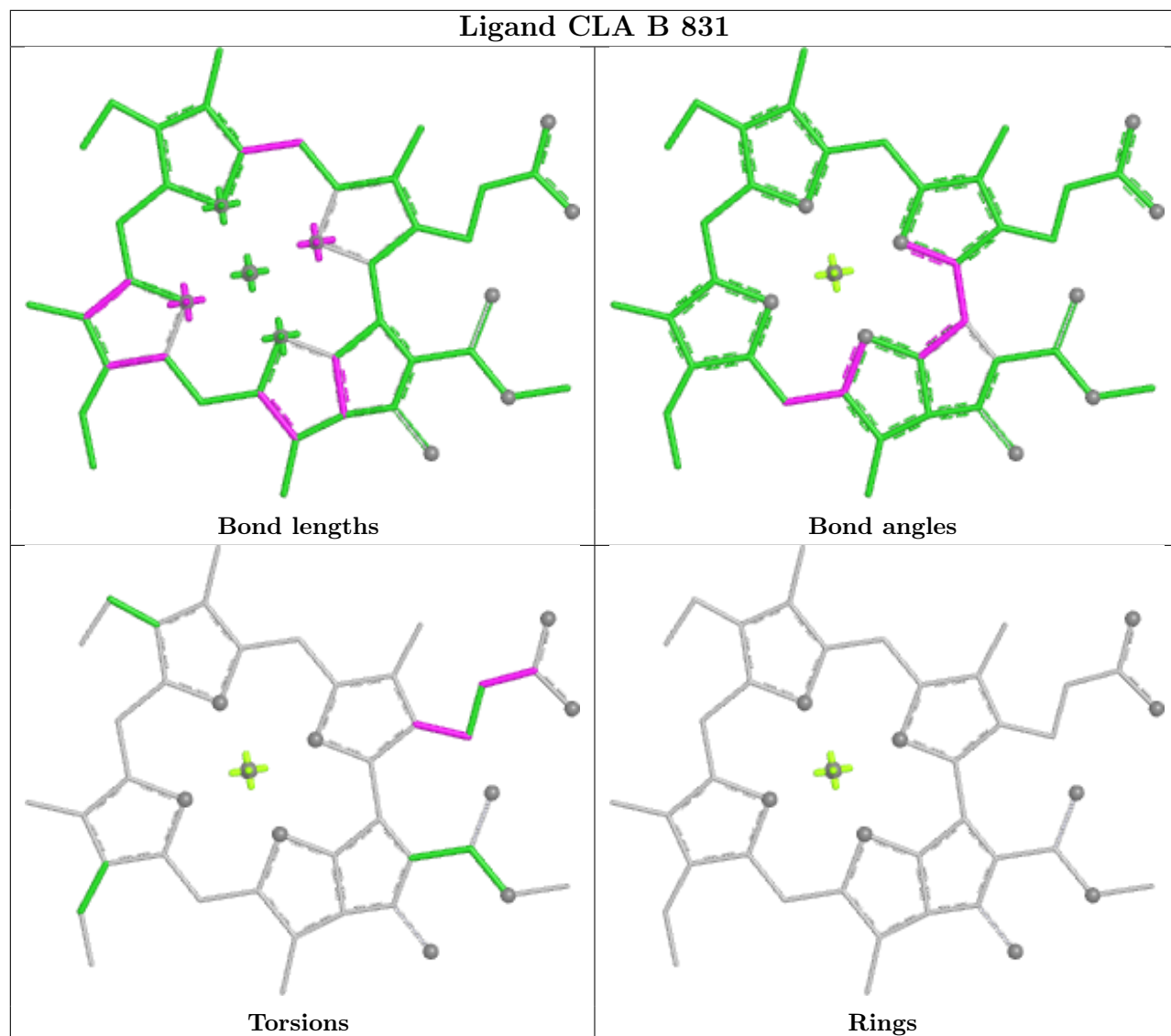


Torsions

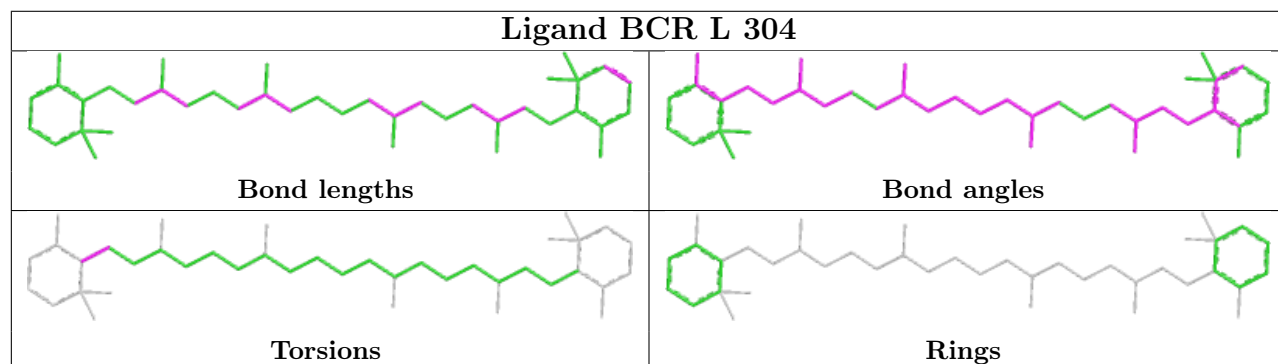


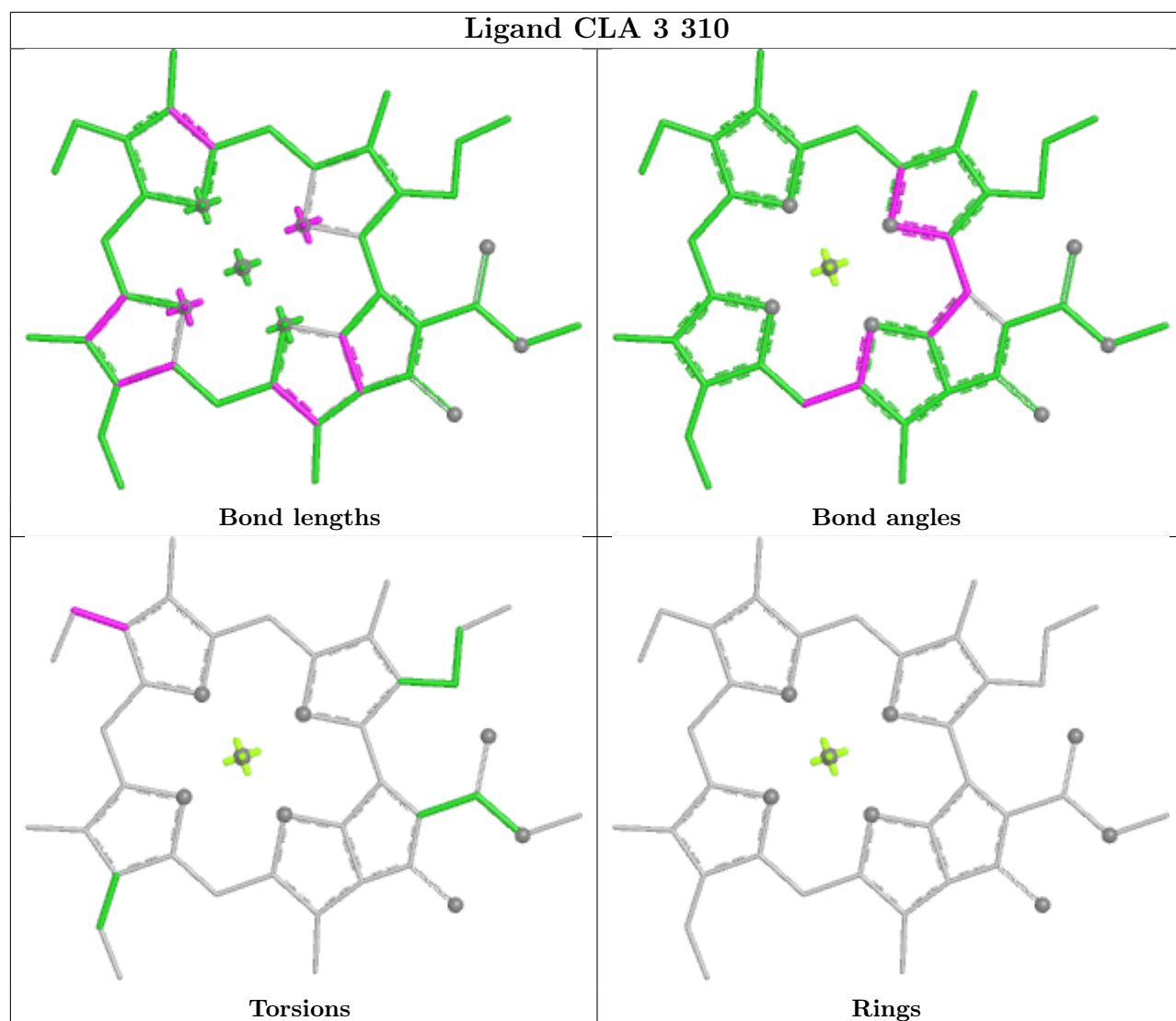
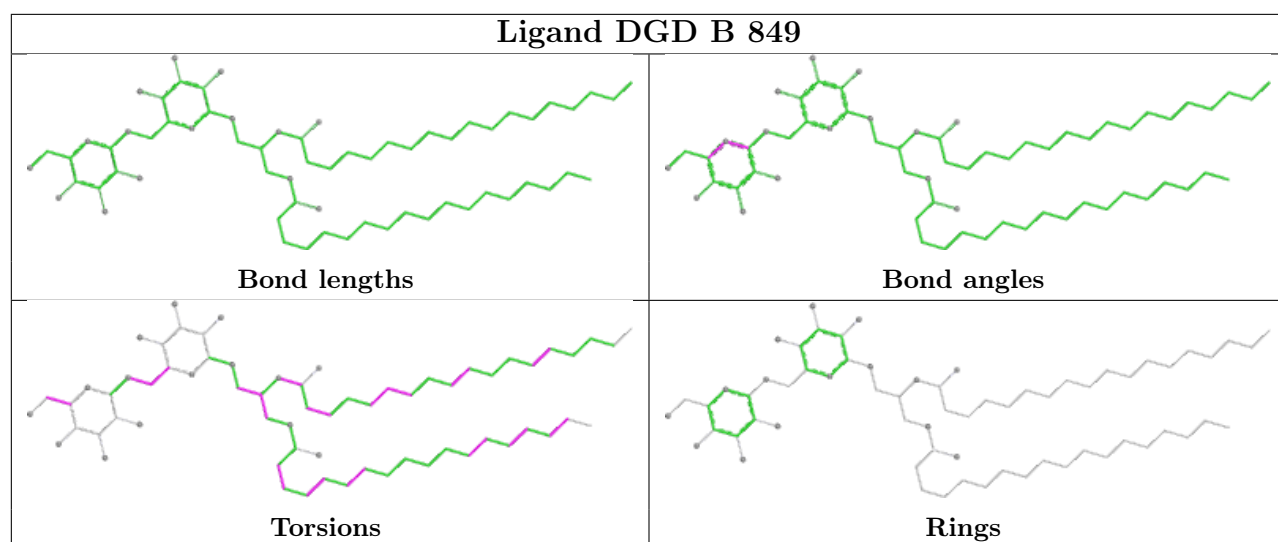
Rings

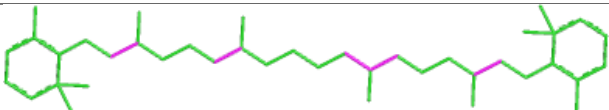
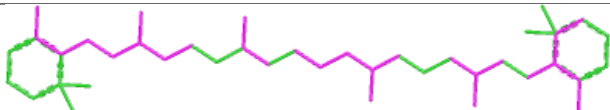
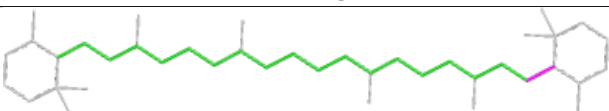
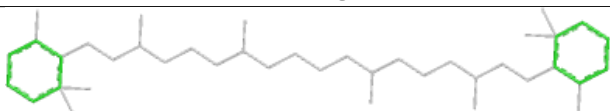
Ligand CLA B 831

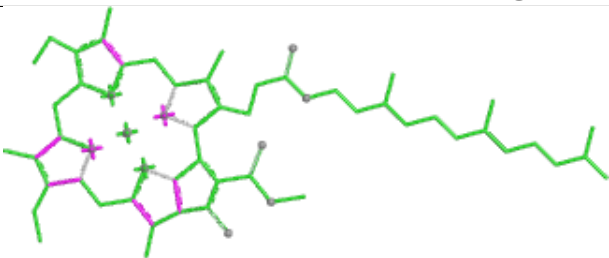
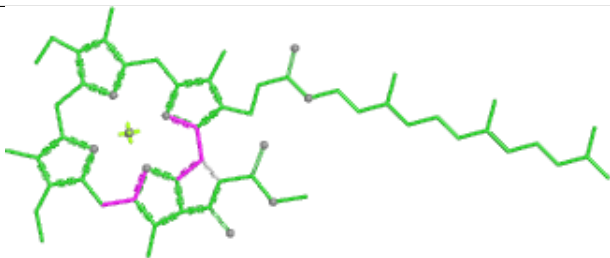
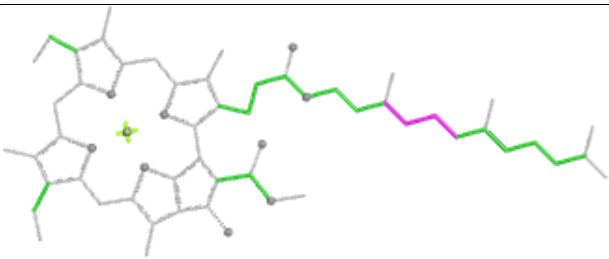
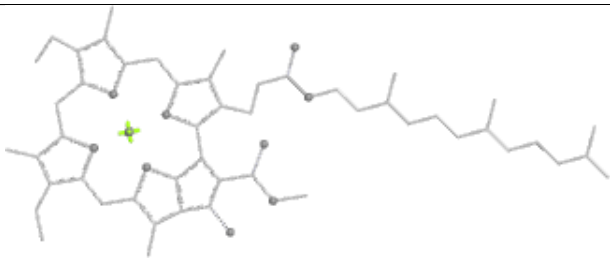



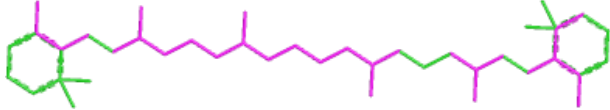
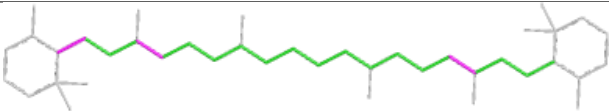
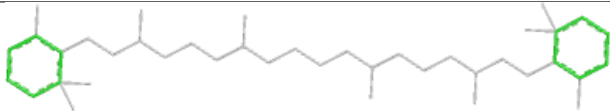
Ligand BCR L 304

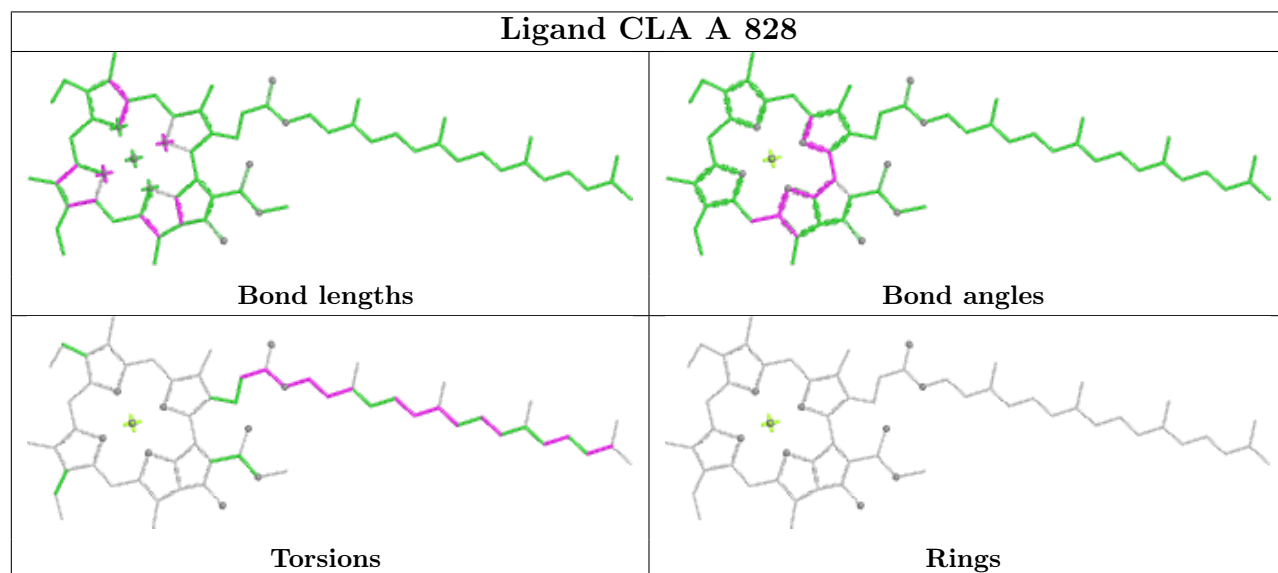
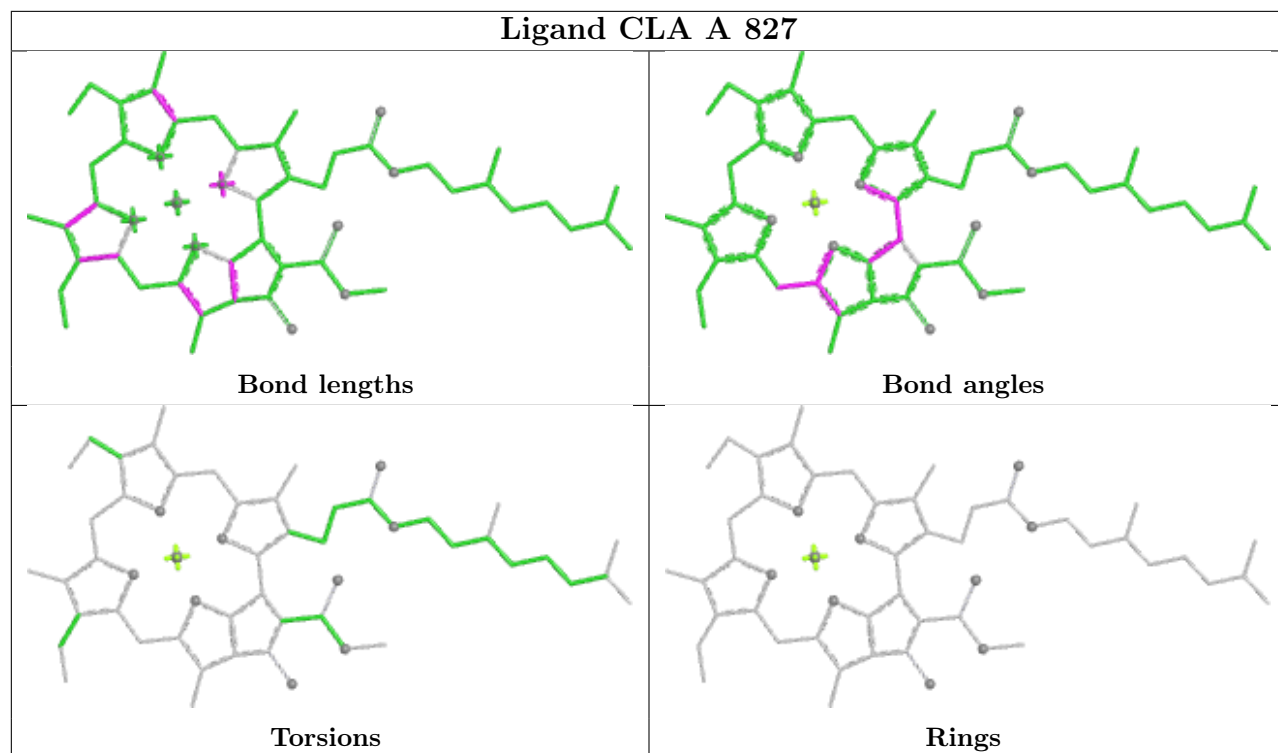




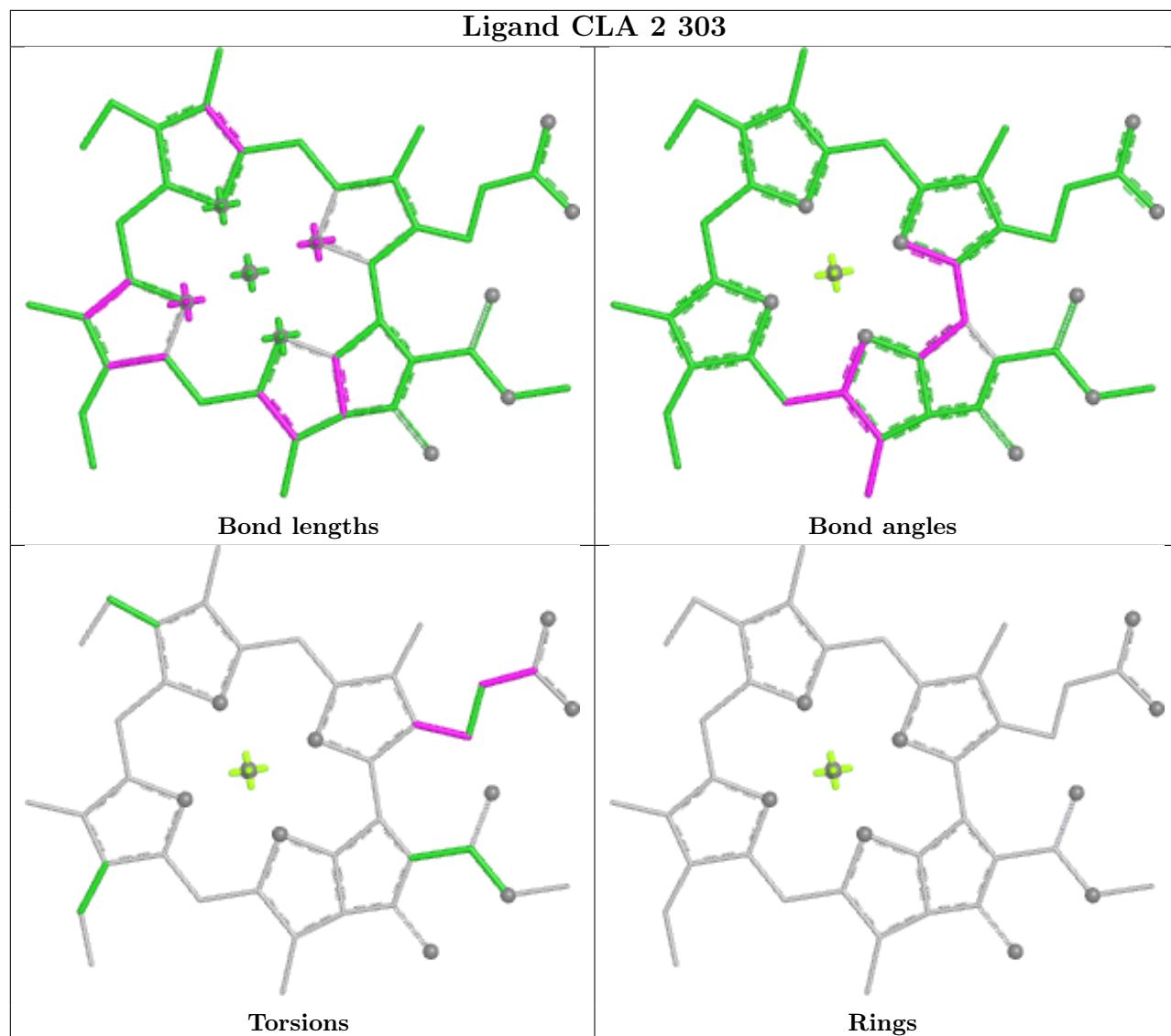
| Ligand BCR F 302 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

| Ligand CLA L 302 | |
|--|---|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

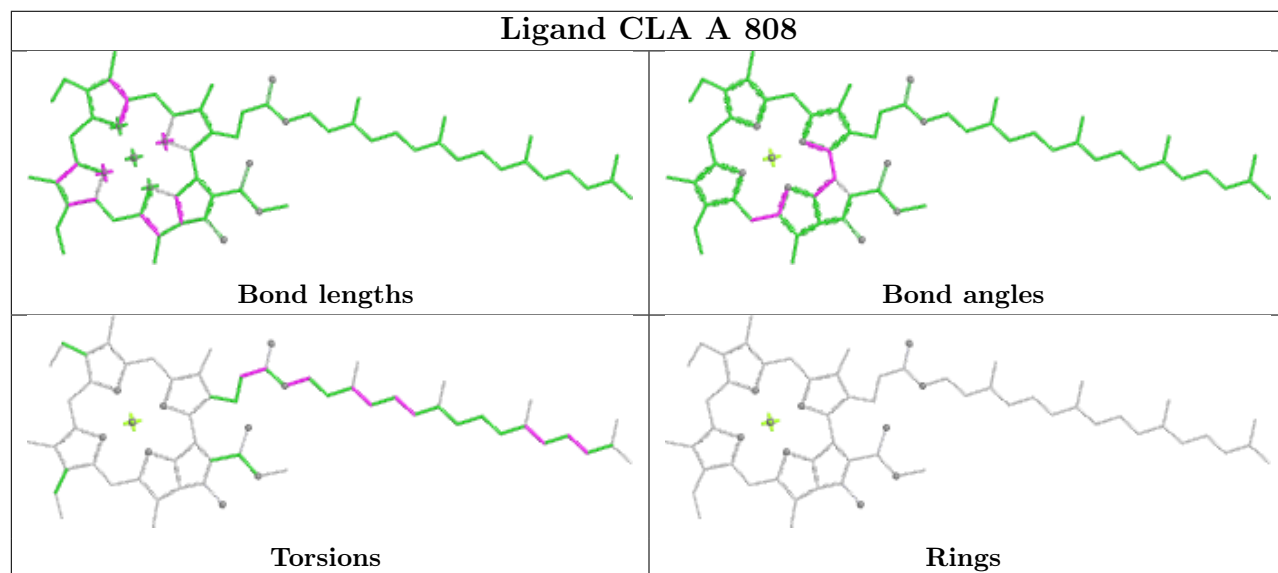
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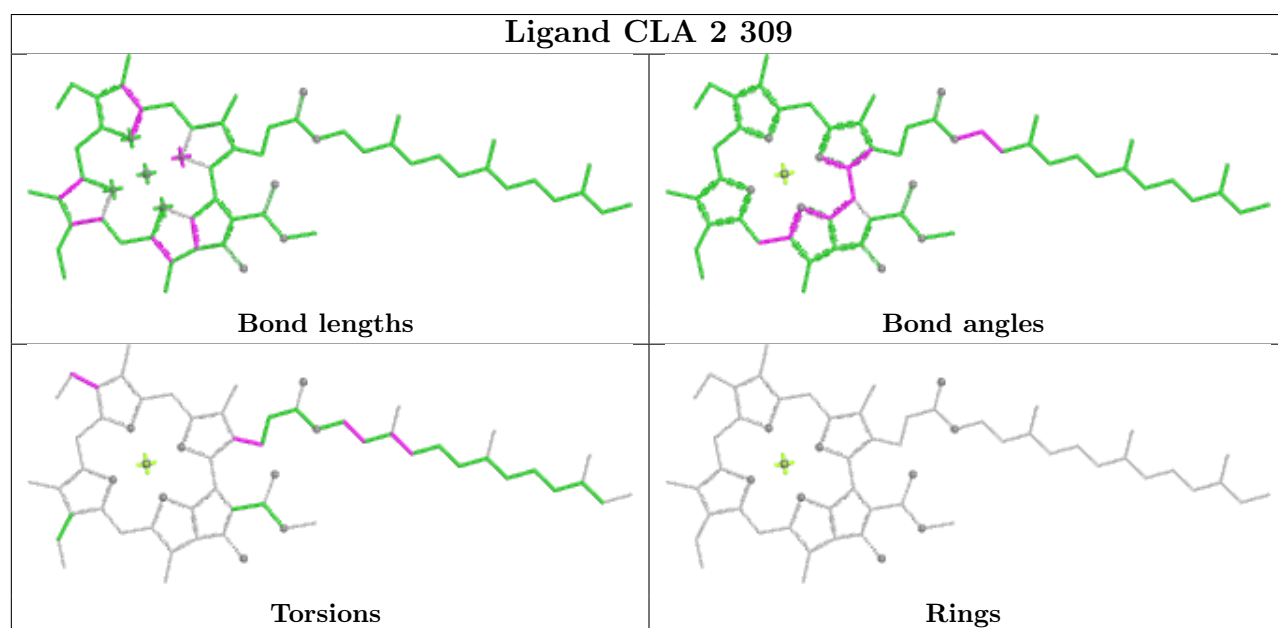
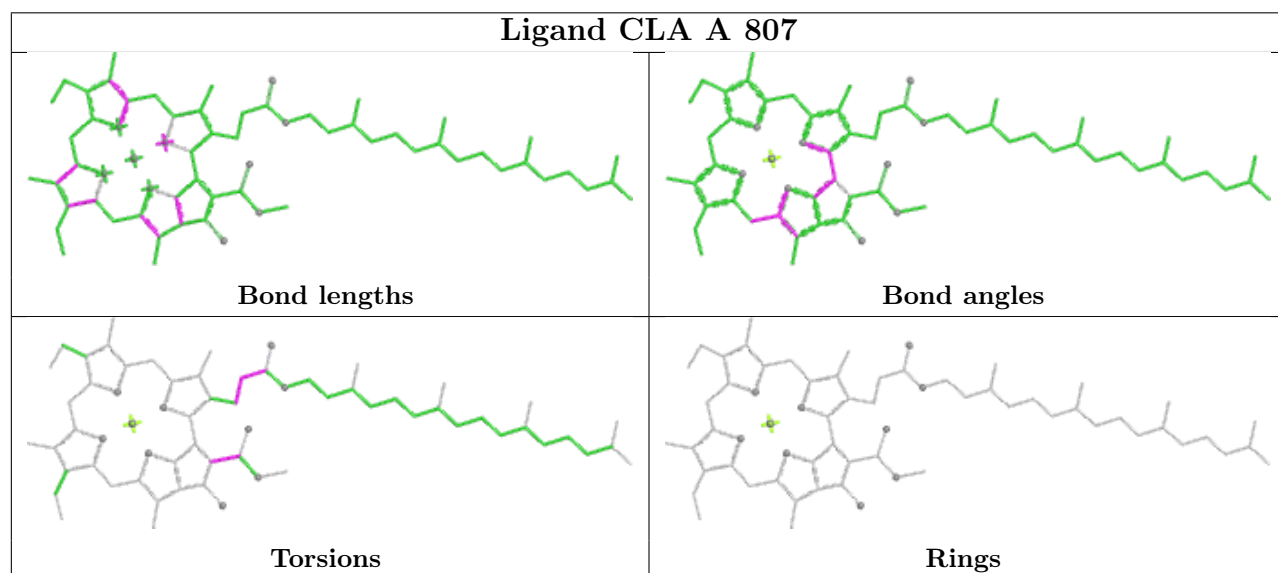
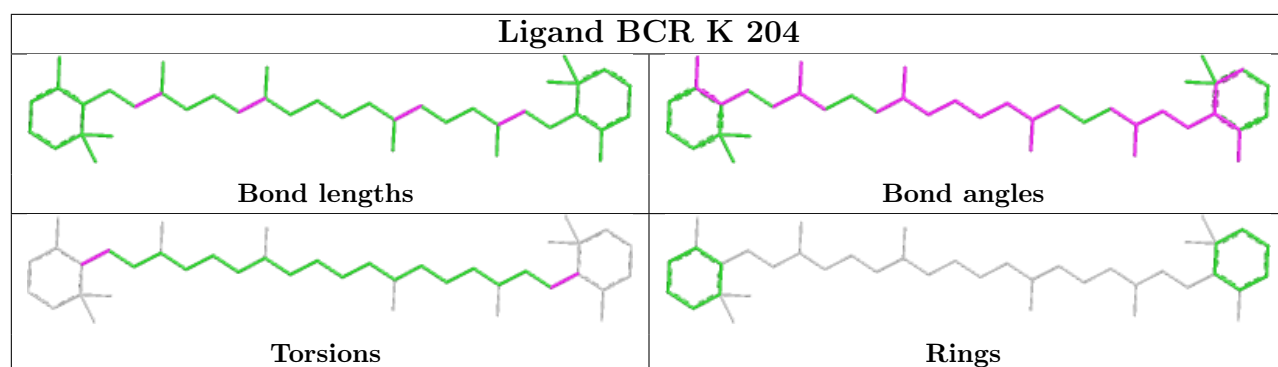


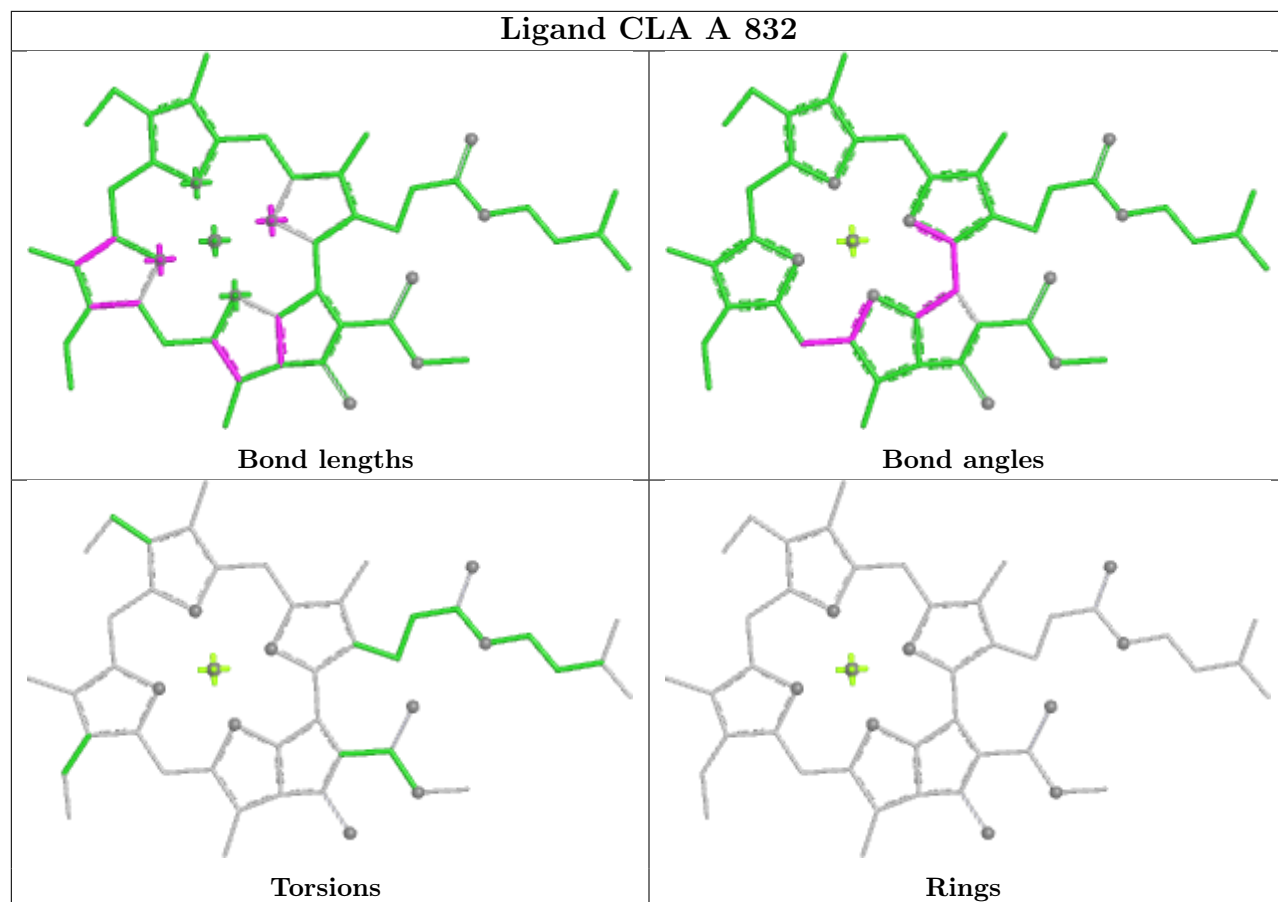
Ligand CLA 2 303



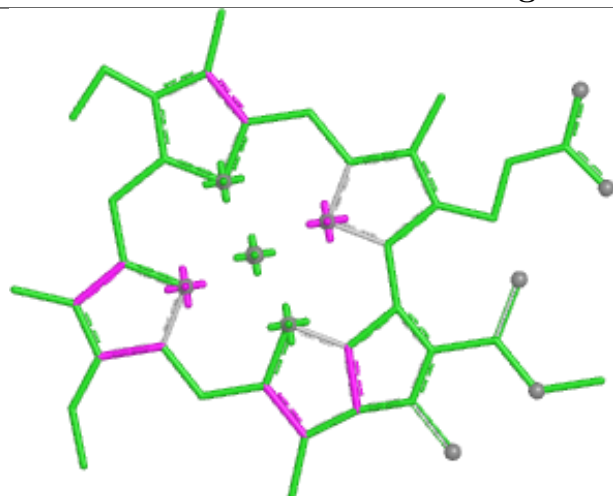
Ligand CLA A 808



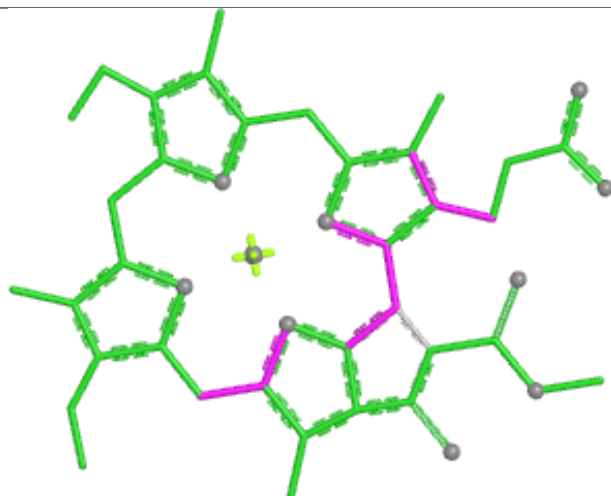




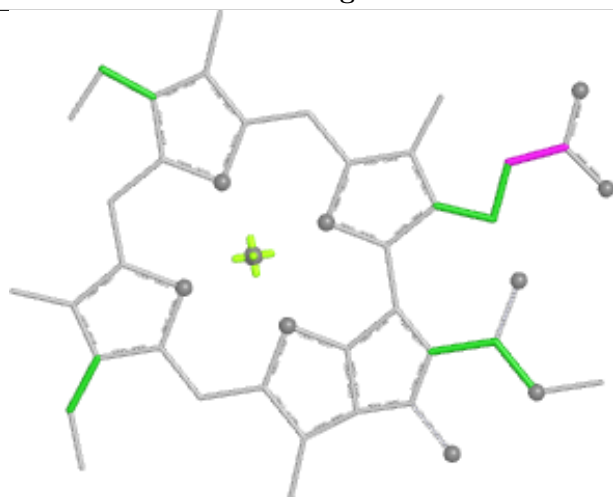
Ligand CLA 6 313



Bond lengths



Bond angles

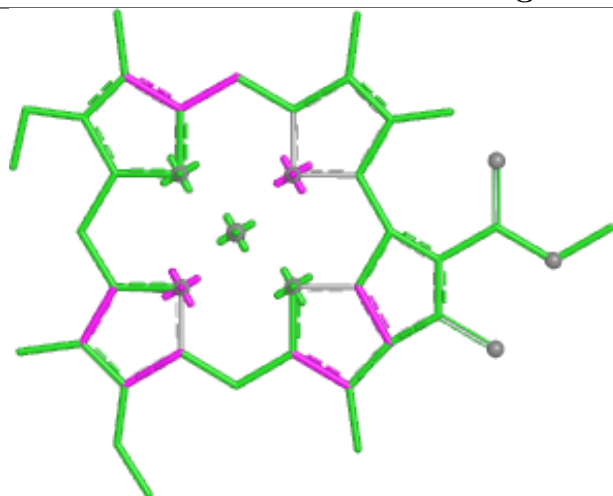


Torsions

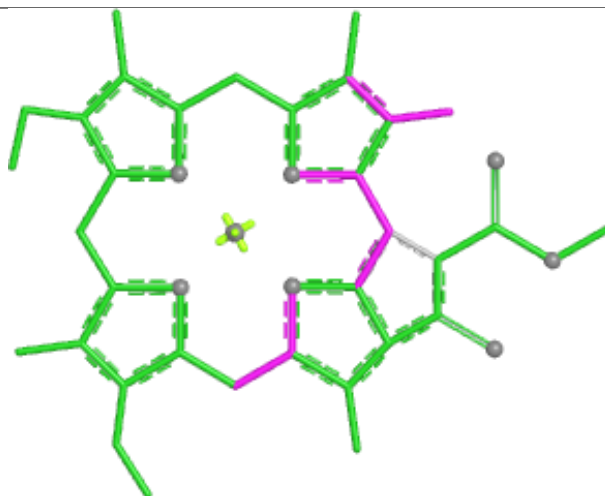


Rings

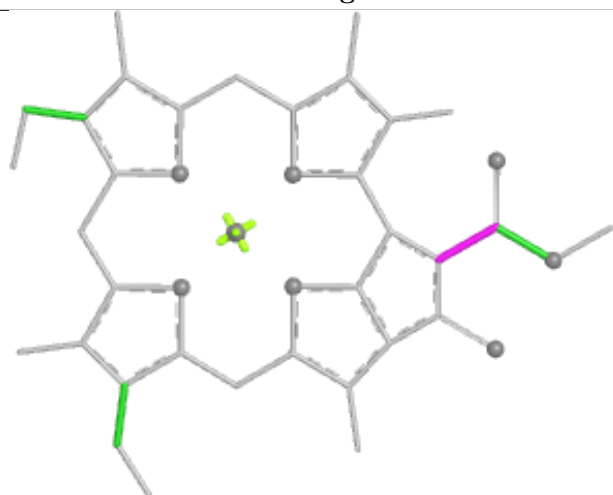
Ligand CLA F 304



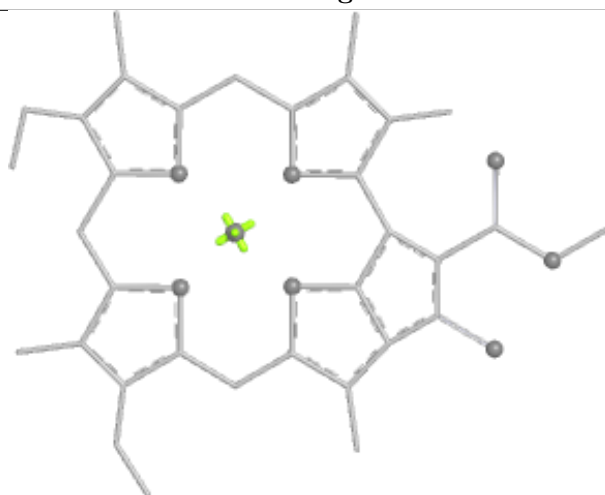
Bond lengths



Bond angles

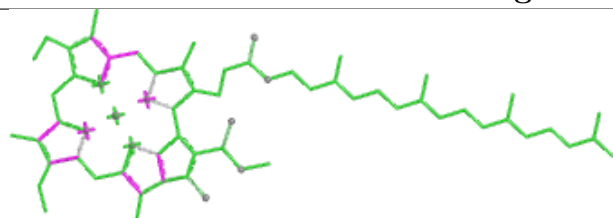


Torsions

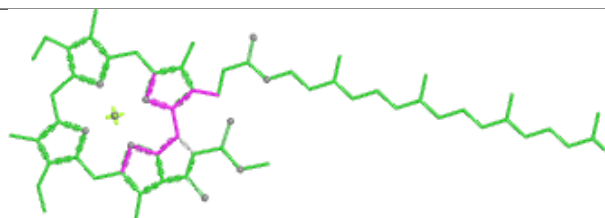


Rings

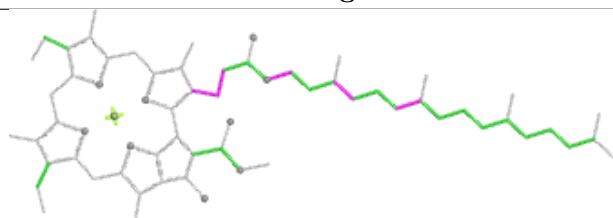
Ligand CLA B 801



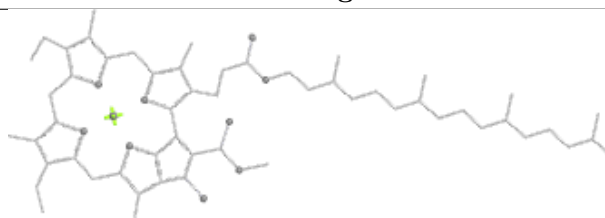
Bond lengths



Bond angles

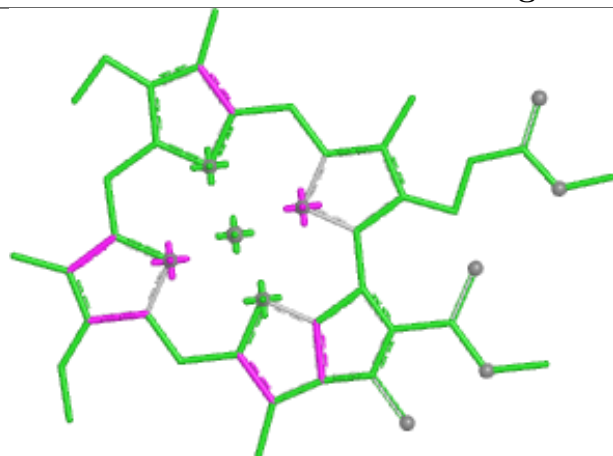


Torsions

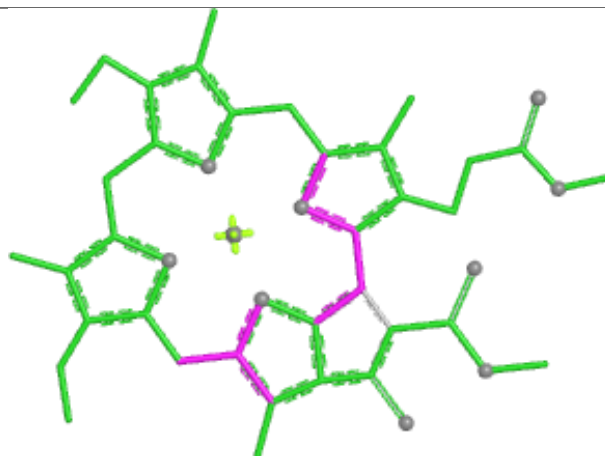


Rings

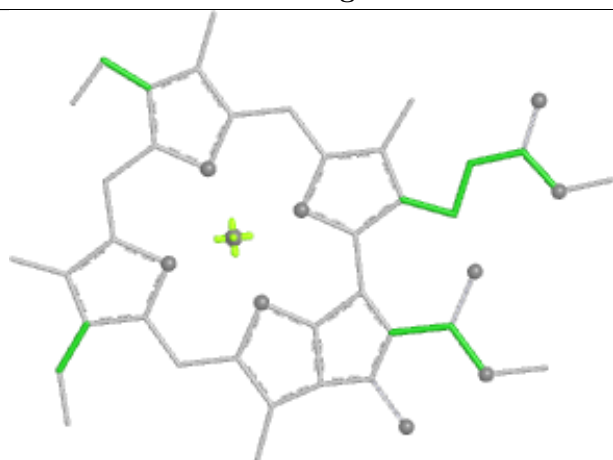
Ligand CLA 3 305



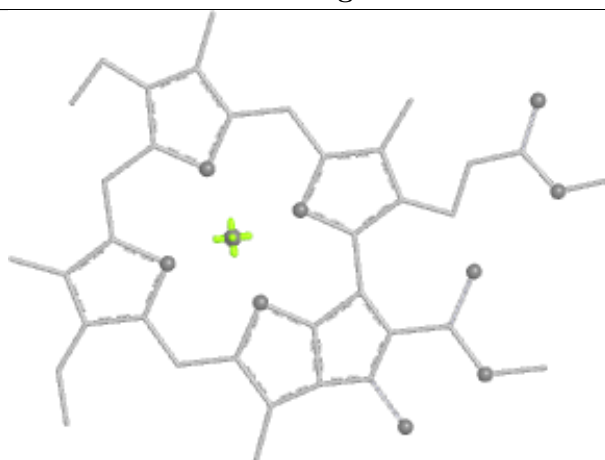
Bond lengths



Bond angles

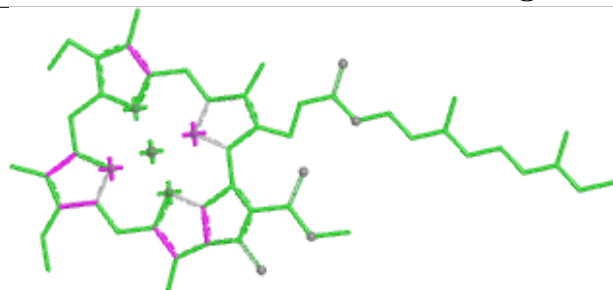


Torsions

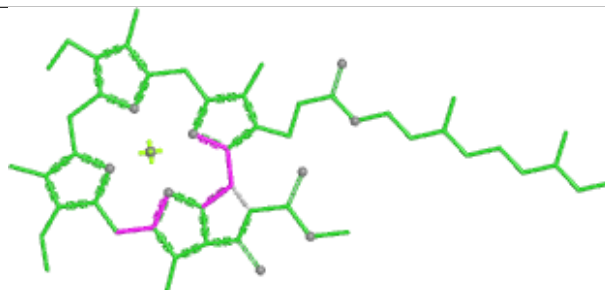


Rings

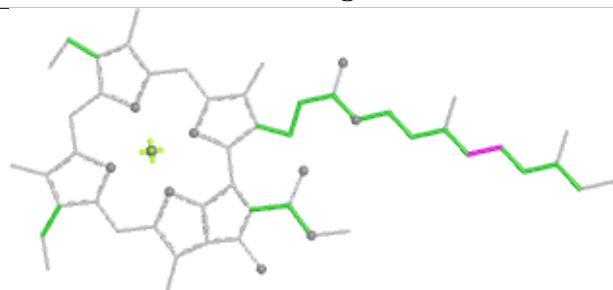
Ligand CLA 6 310



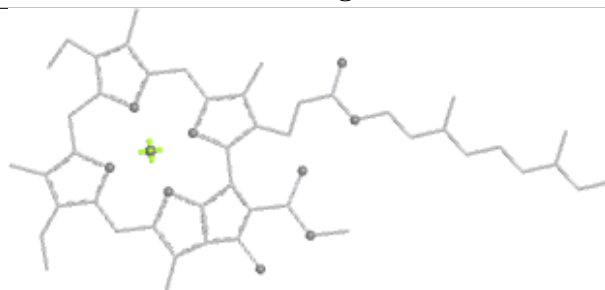
Bond lengths



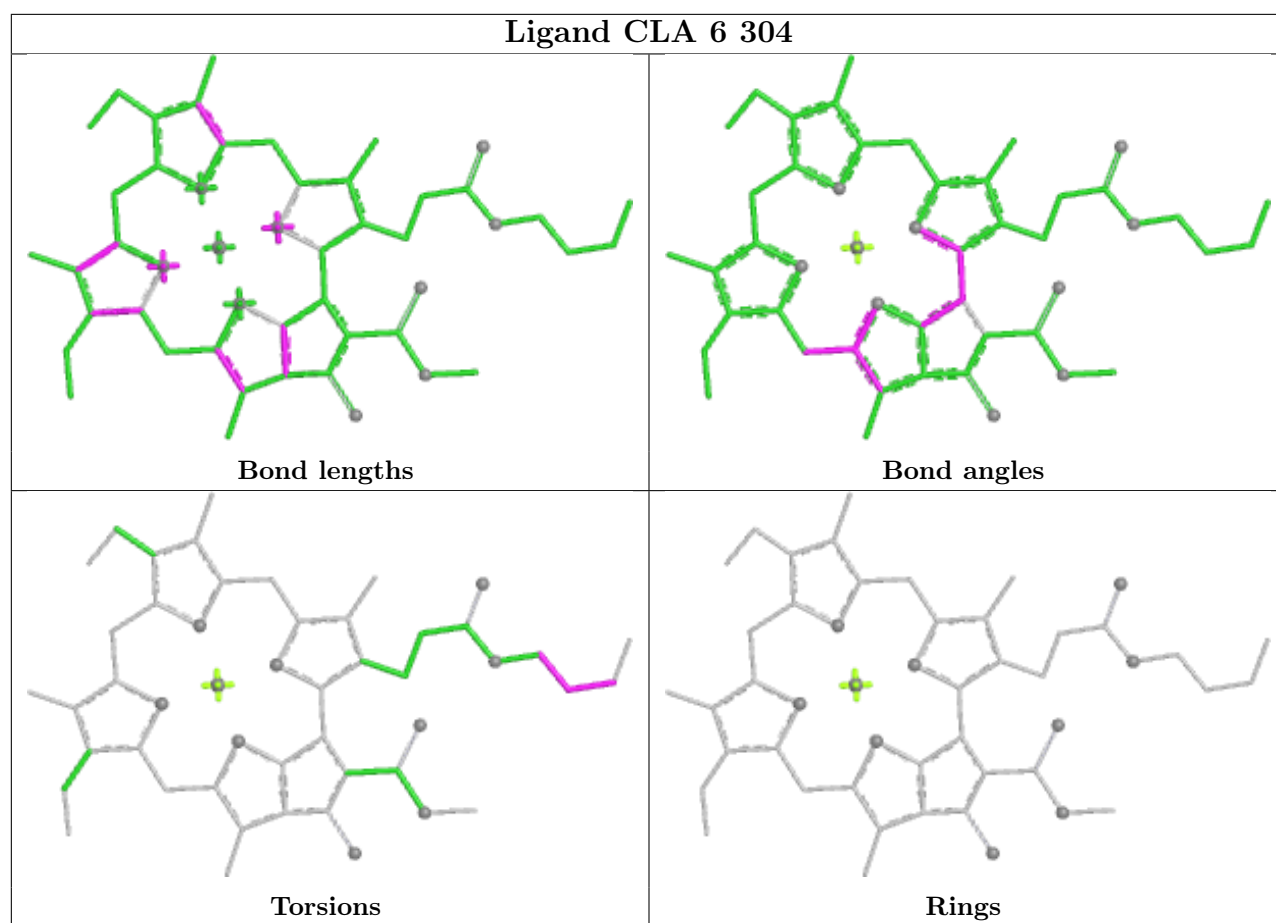
Bond angles



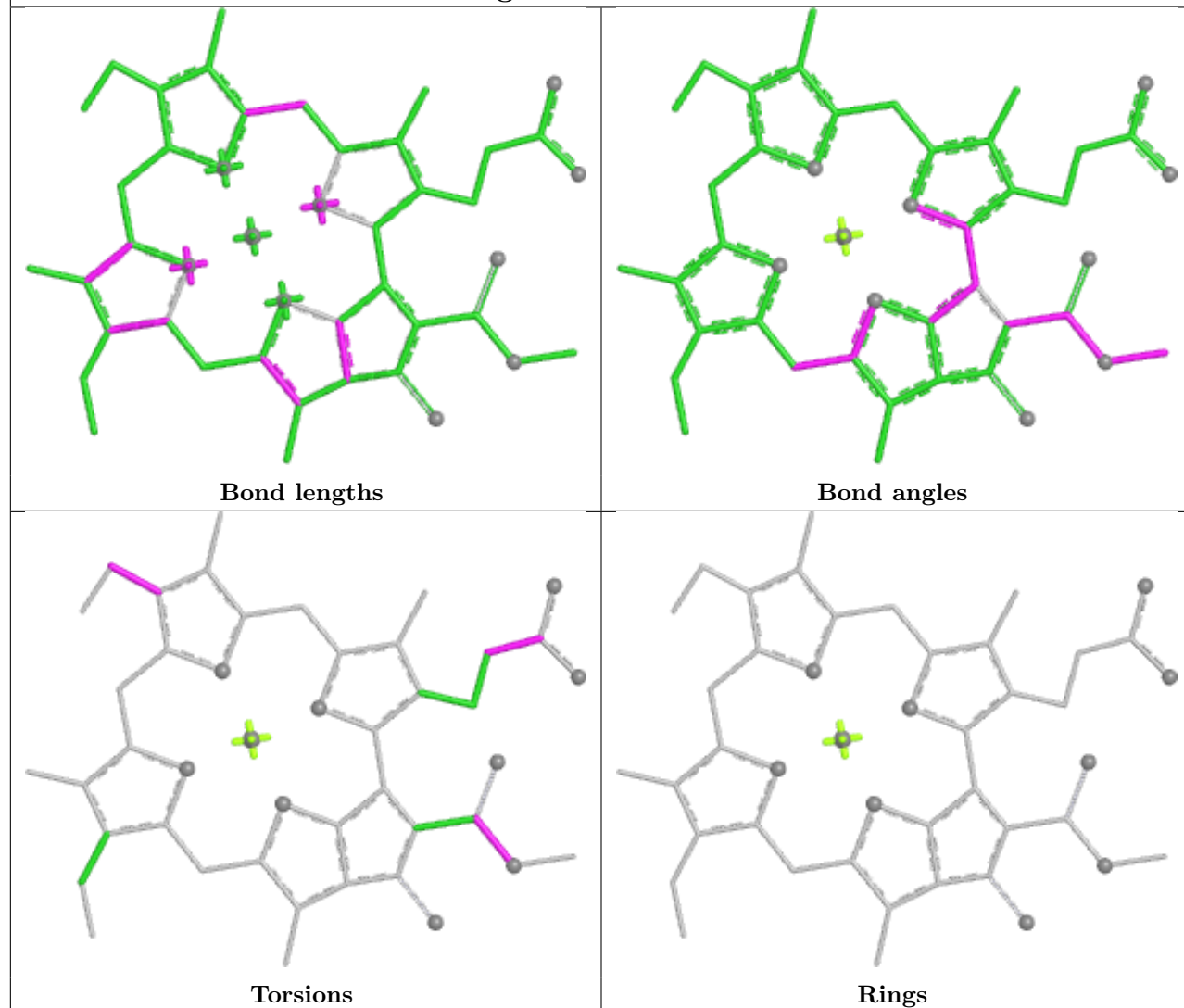
Torsions



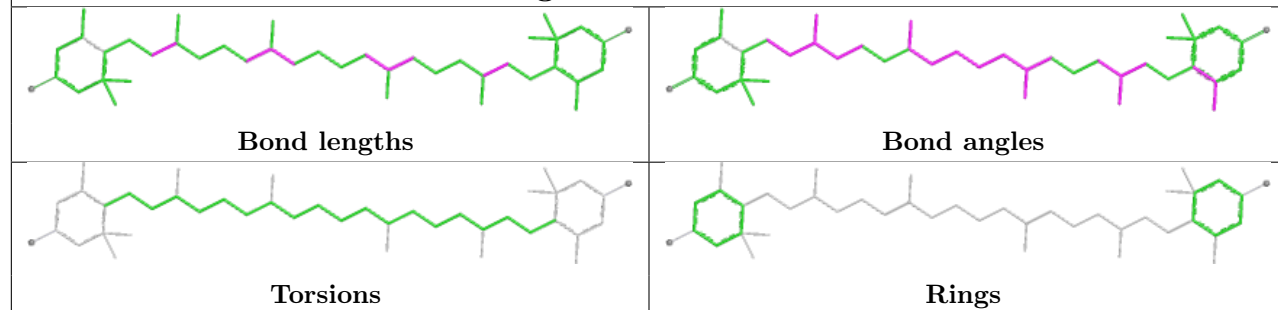
Rings

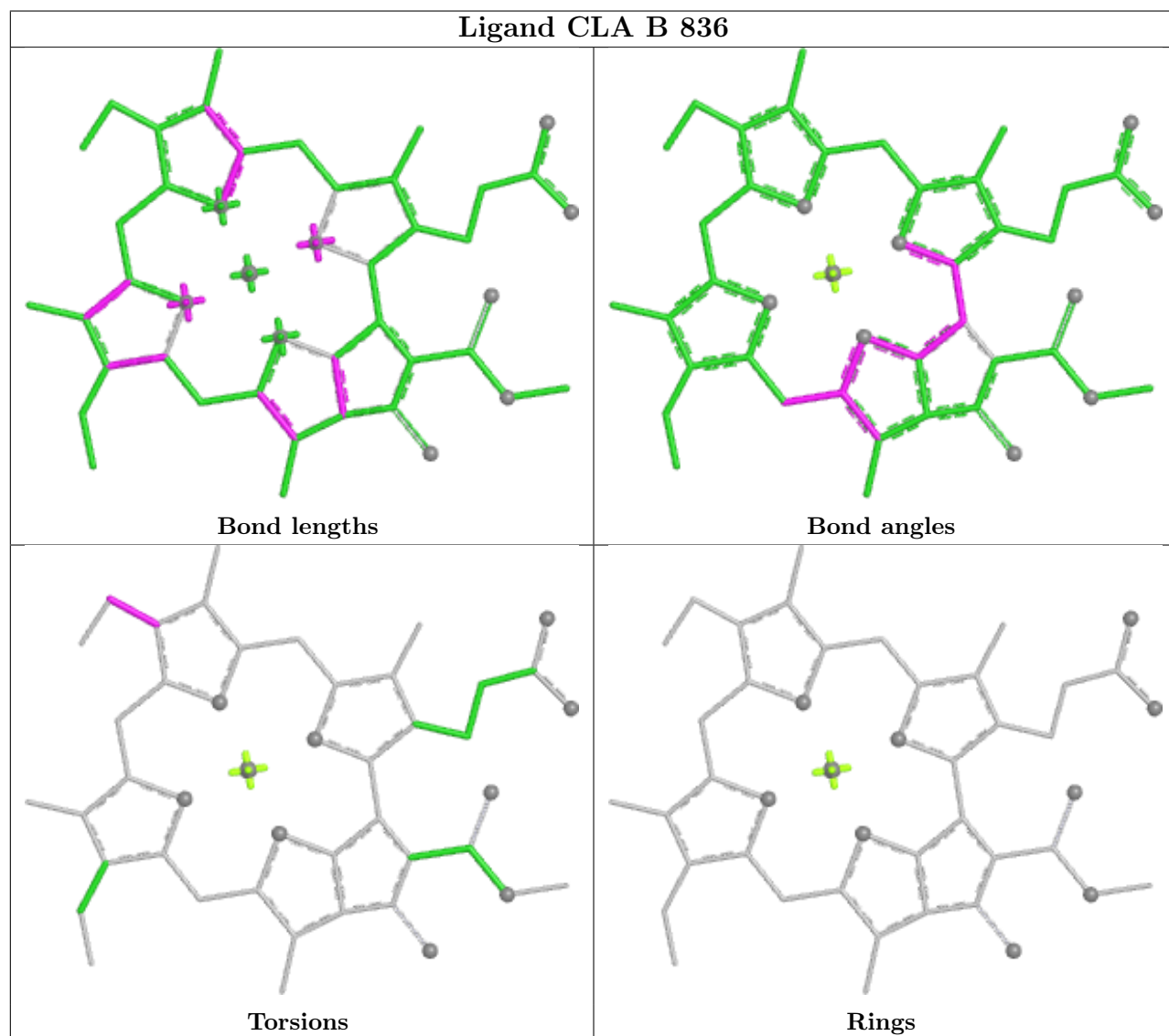
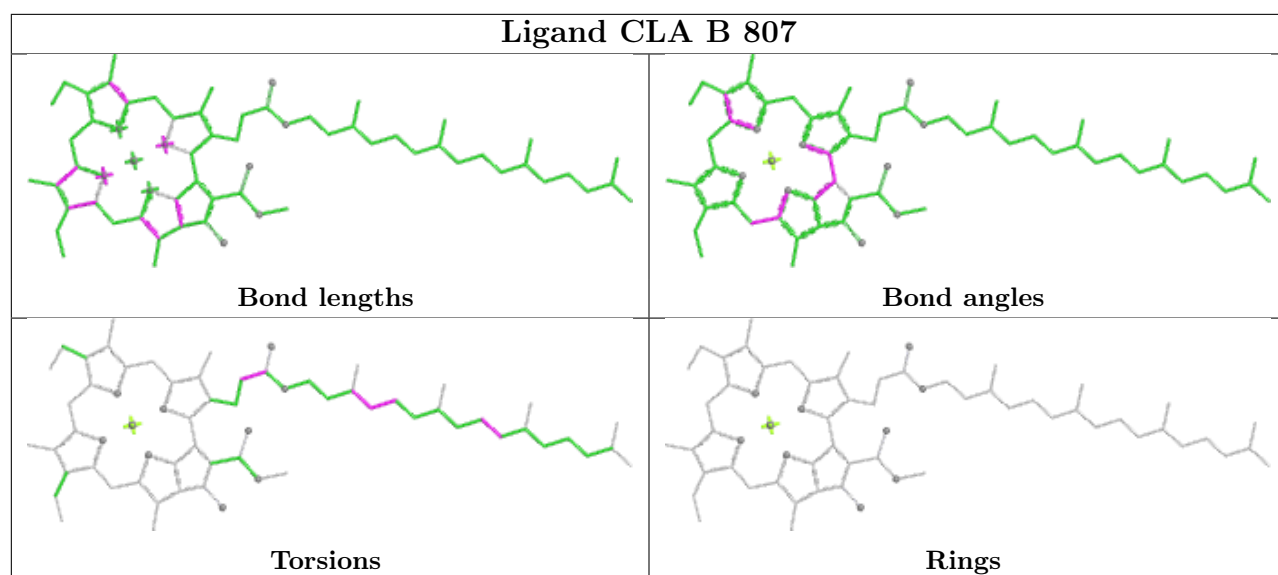


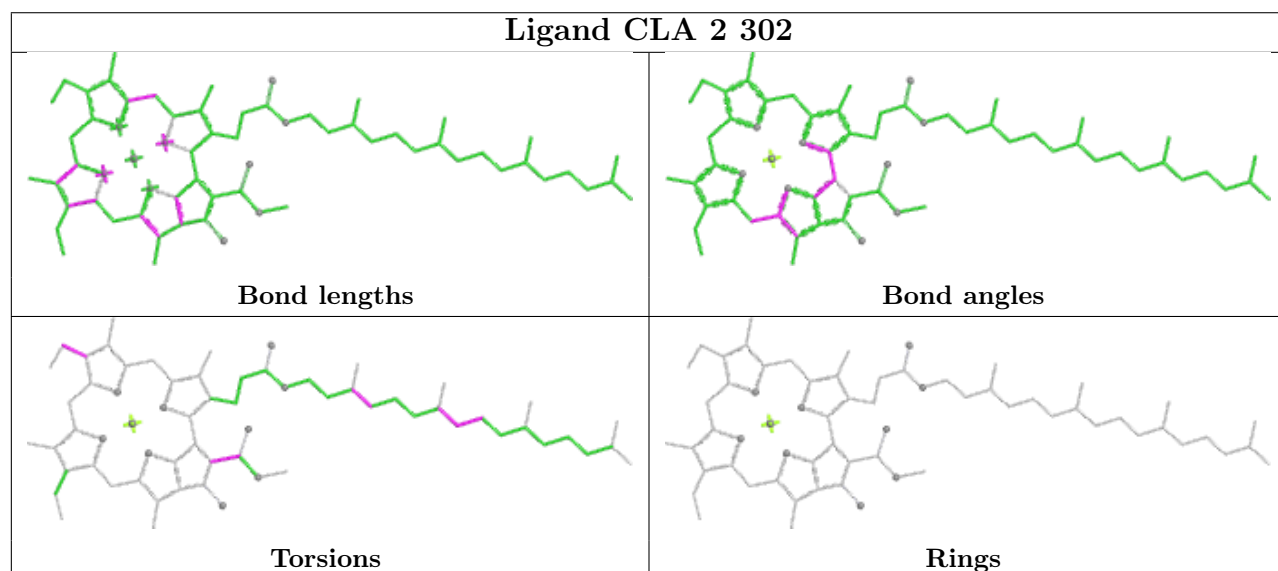
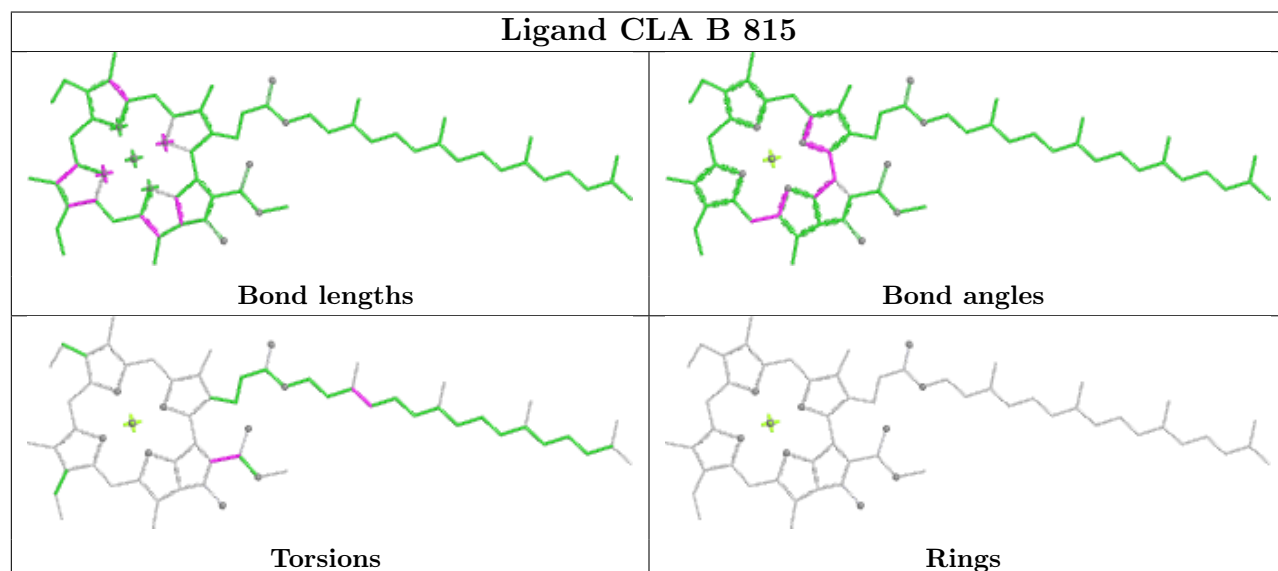
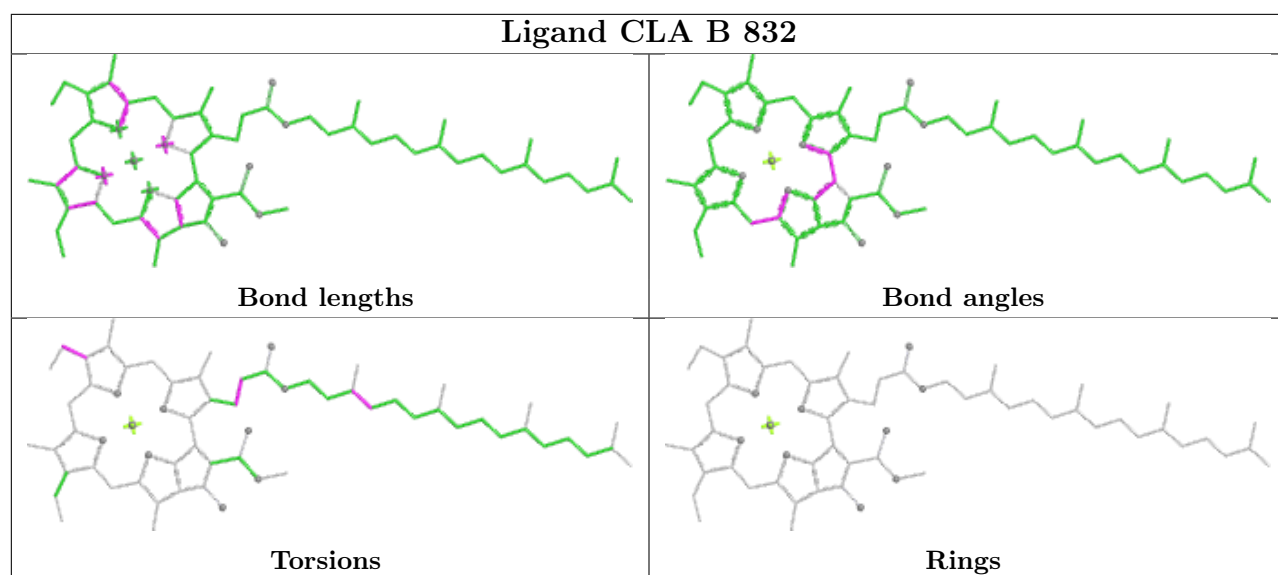
Ligand CLA 6 311

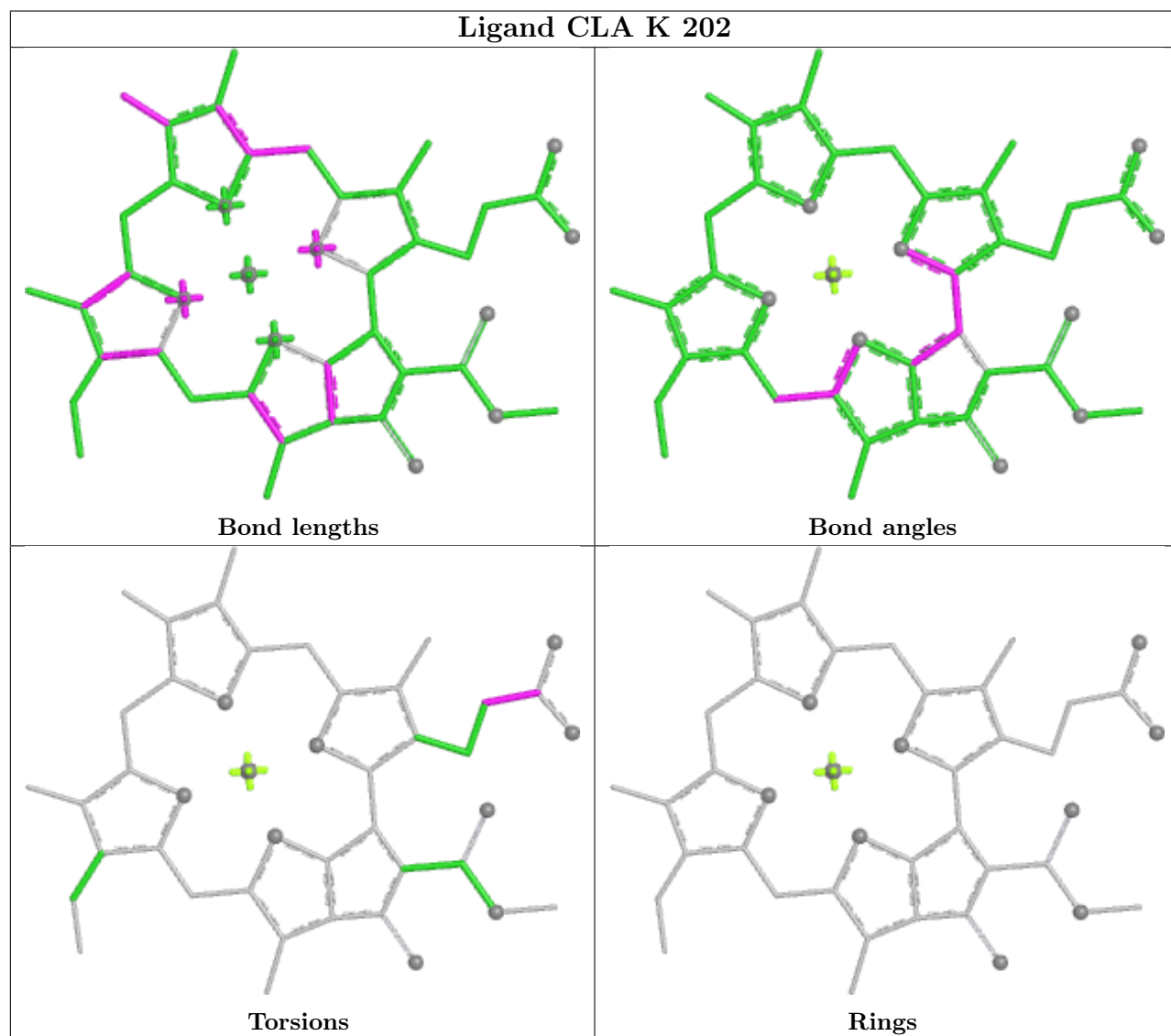
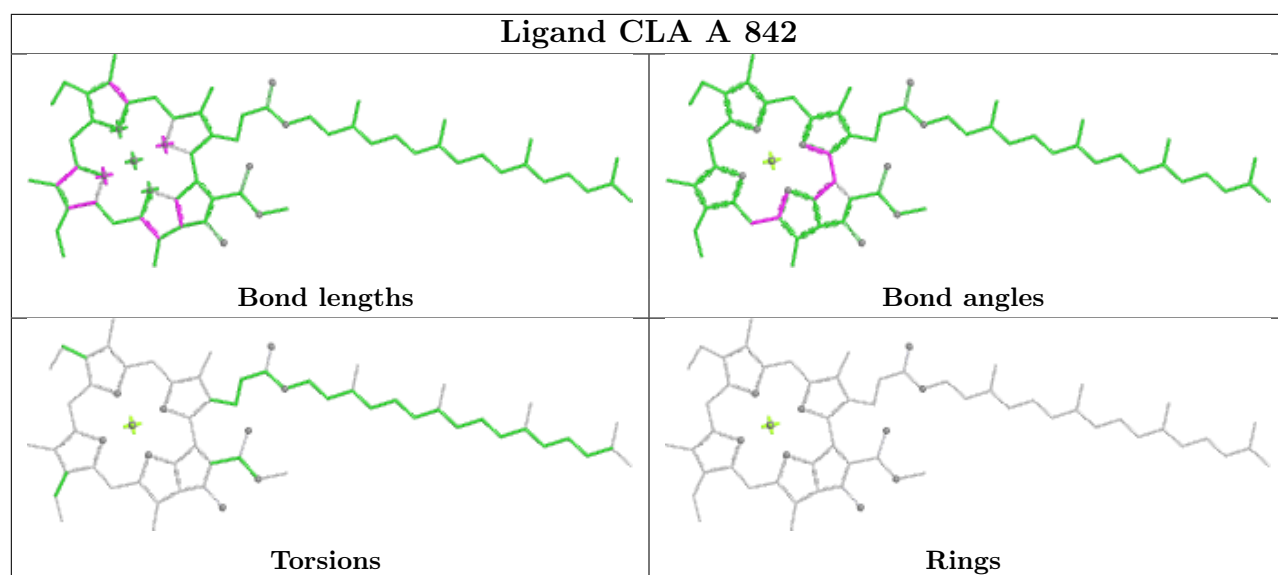


Ligand LUT 2 316

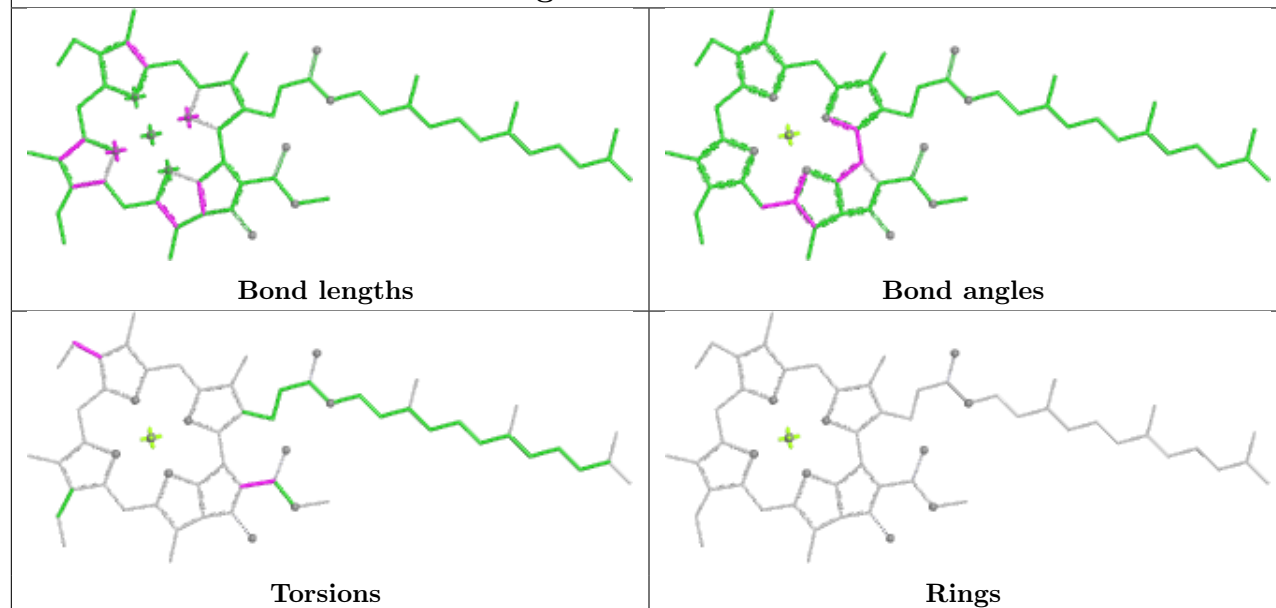




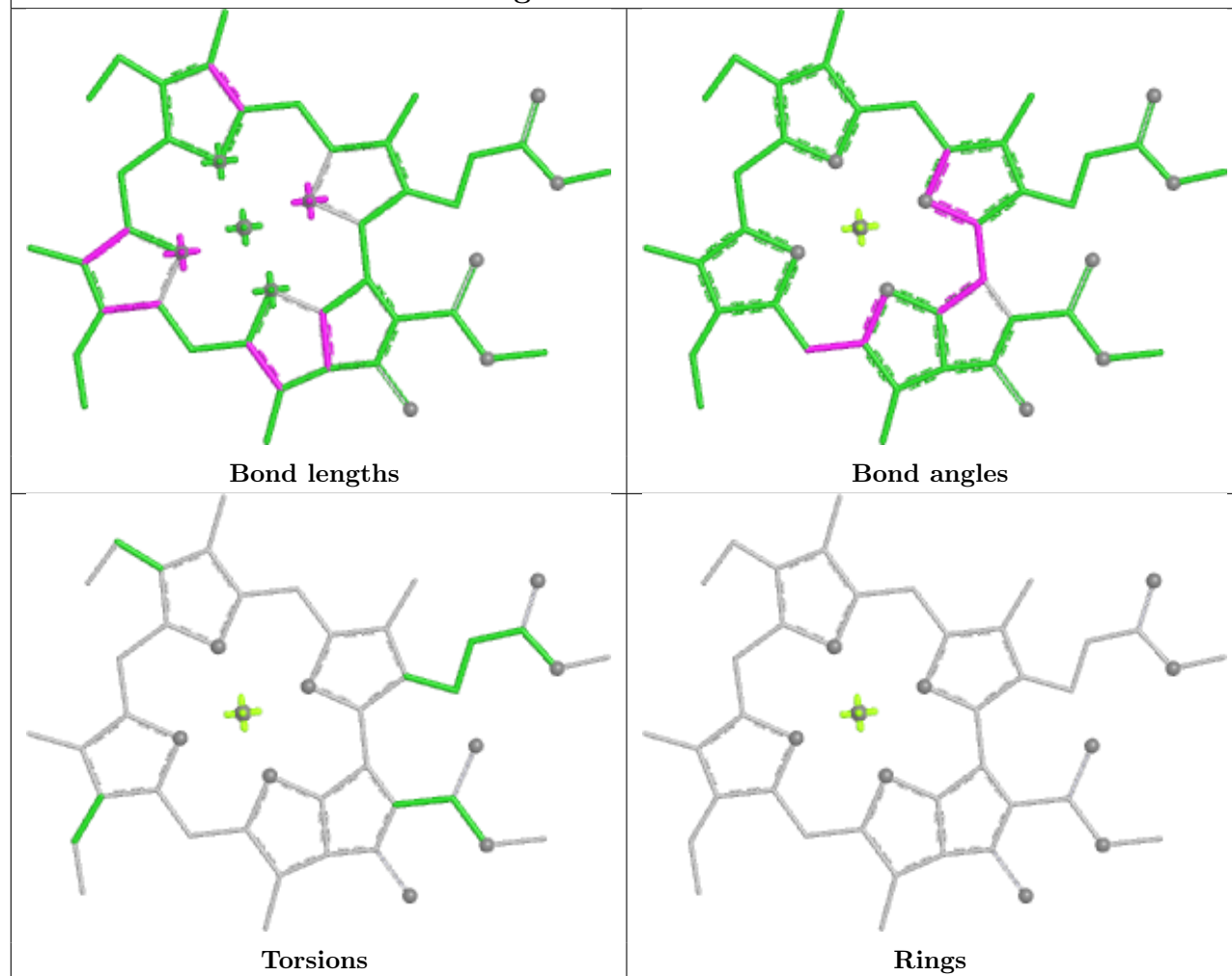


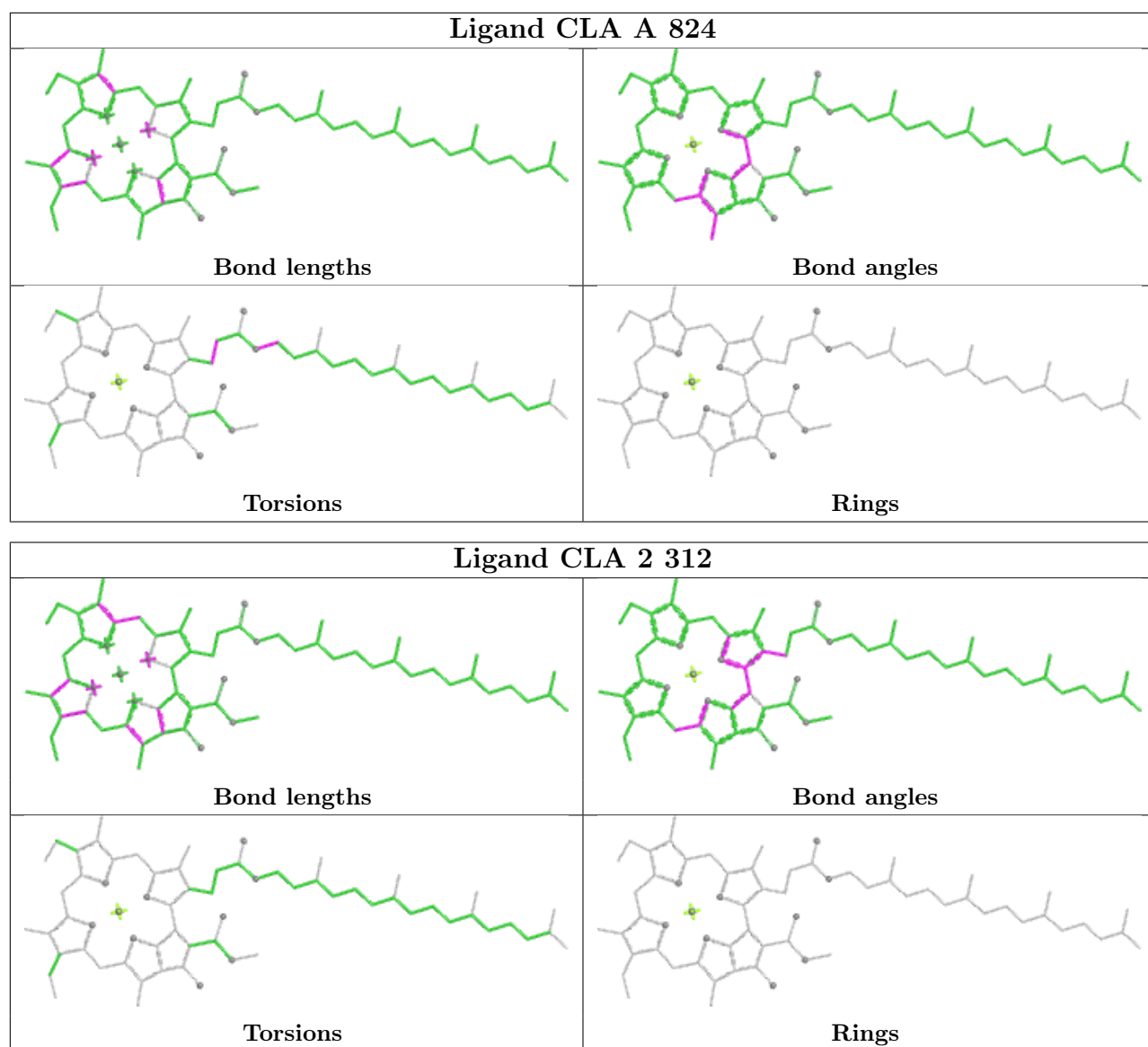


Ligand CLA 5 301

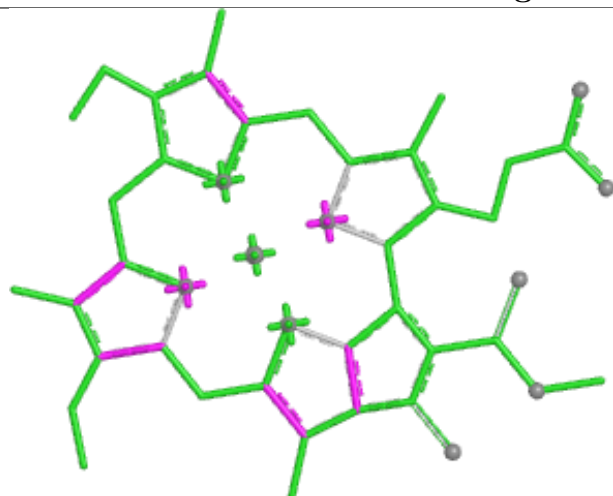


Ligand CLA B 822

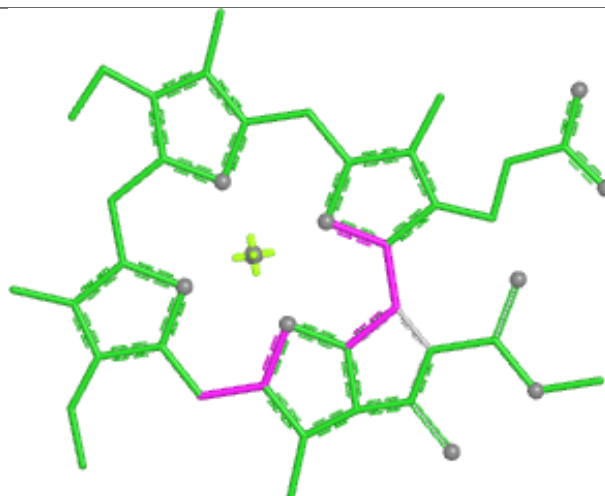




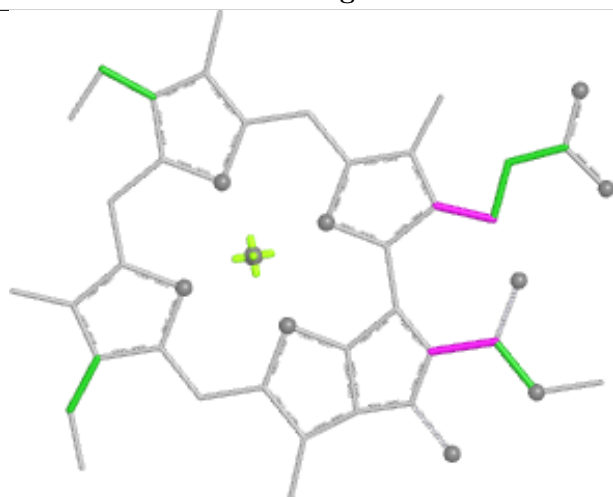
Ligand CLA B 805



Bond lengths



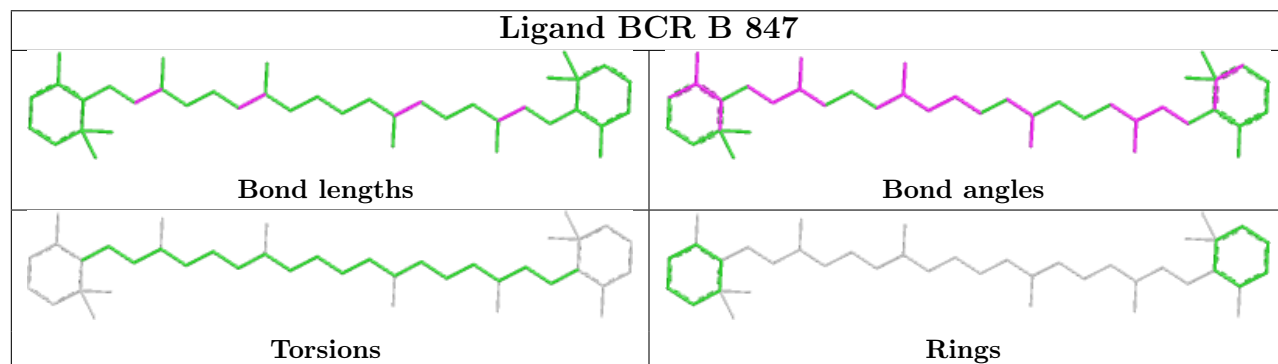
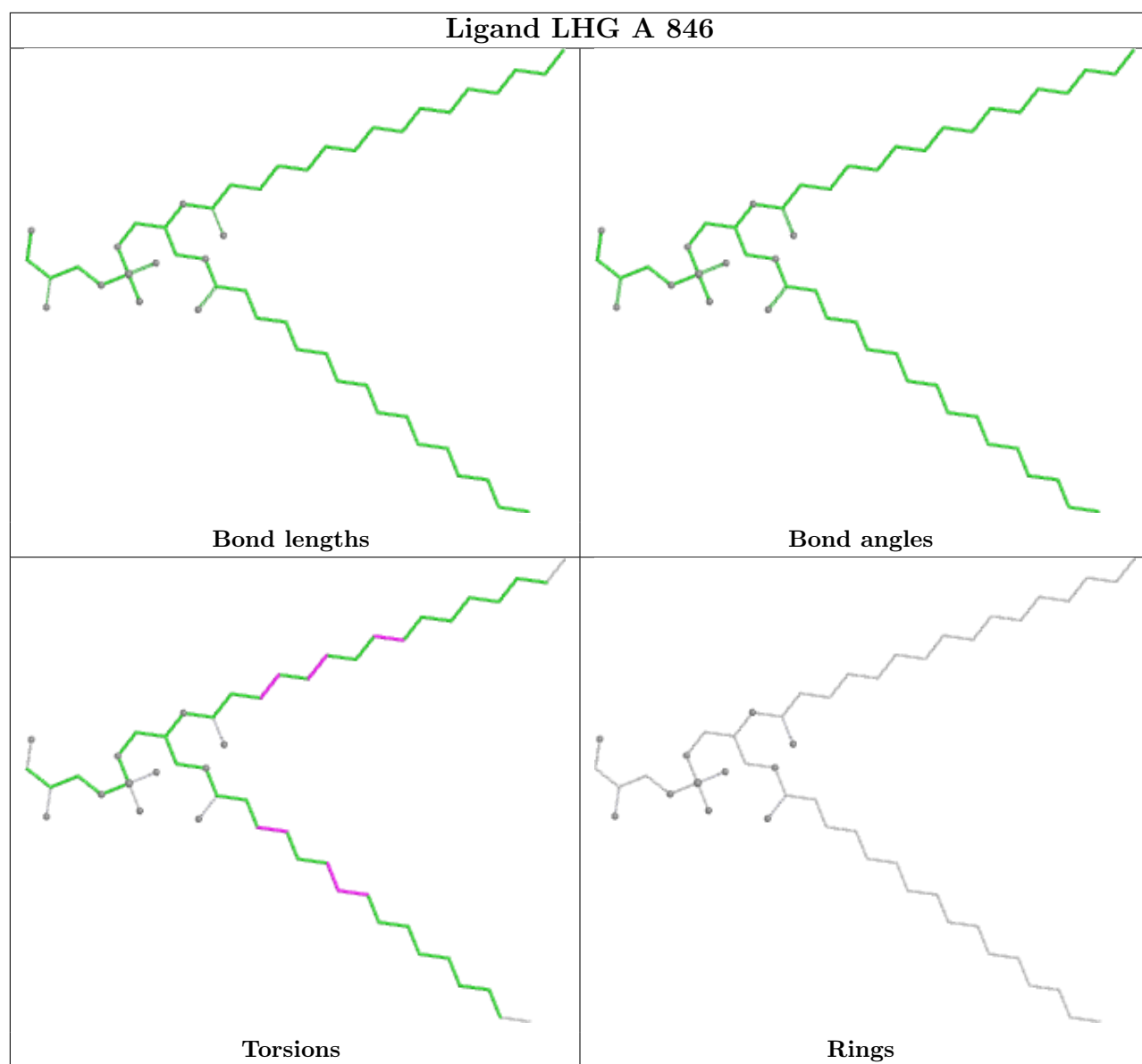
Bond angles



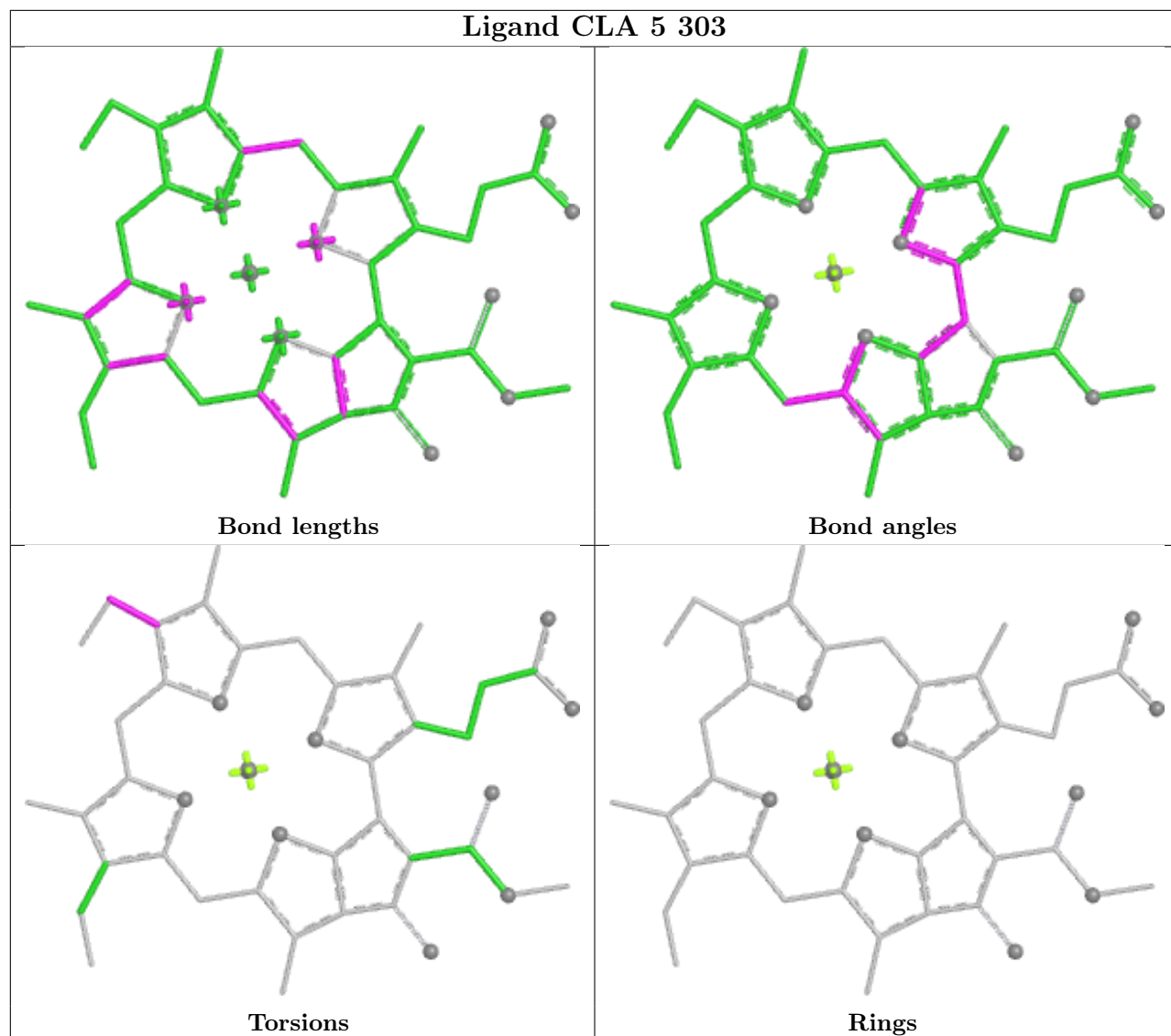
Torsions



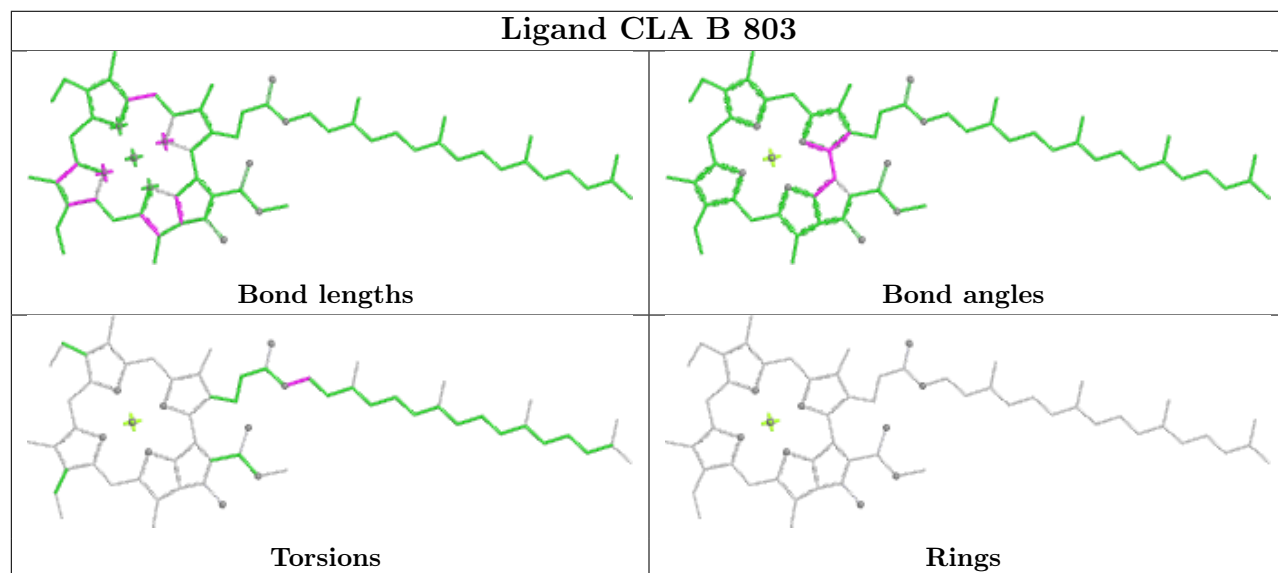
Rings



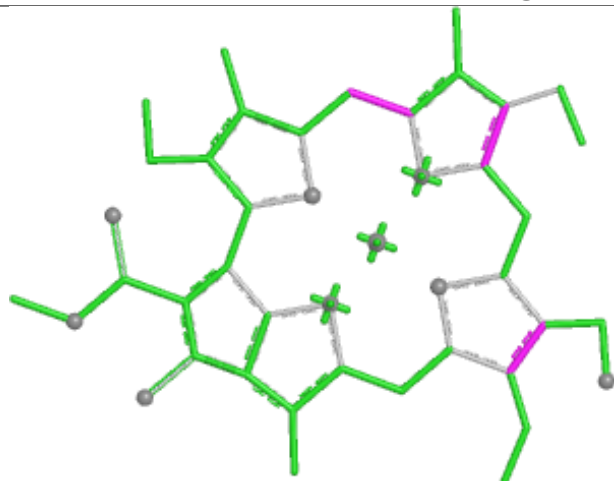
Ligand CLA 5 303



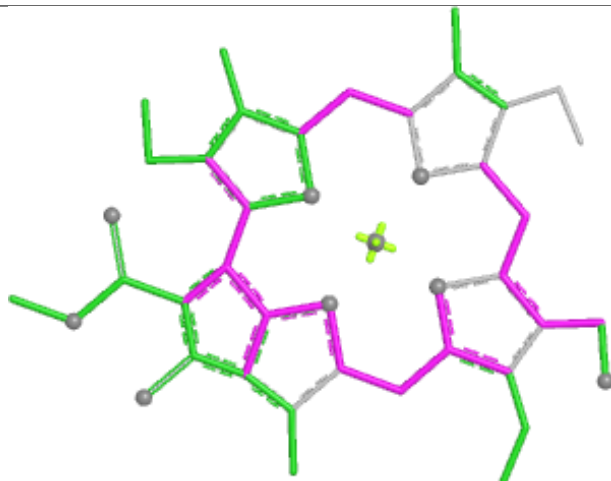
Ligand CLA B 803



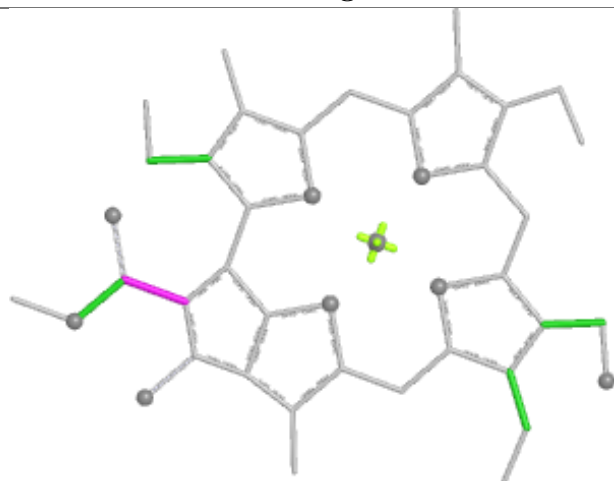
Ligand CHL 5 305



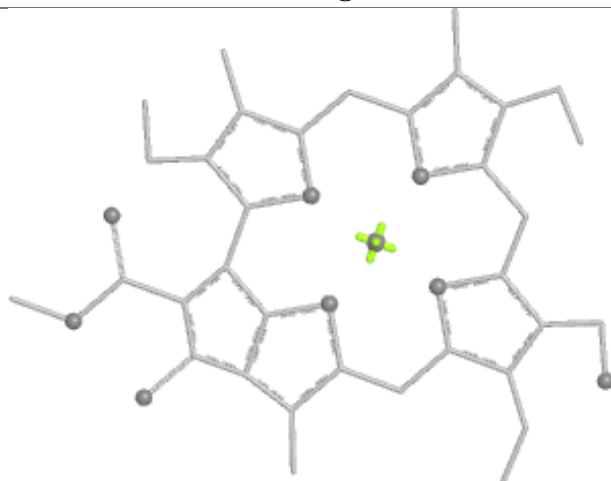
Bond lengths



Bond angles

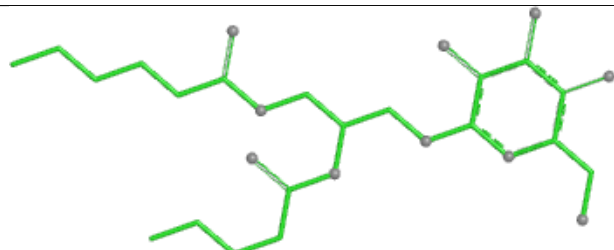


Torsions

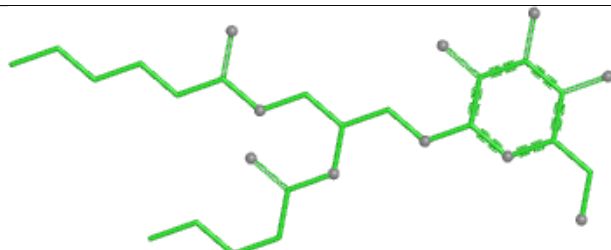


Rings

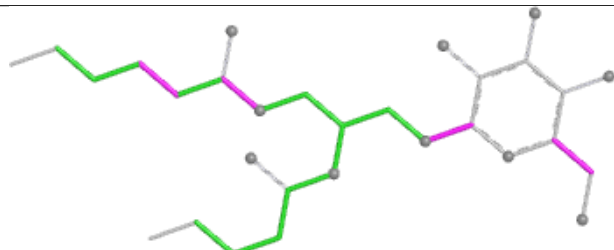
Ligand LMG J 104



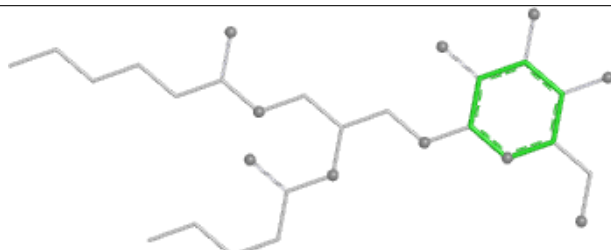
Bond lengths



Bond angles

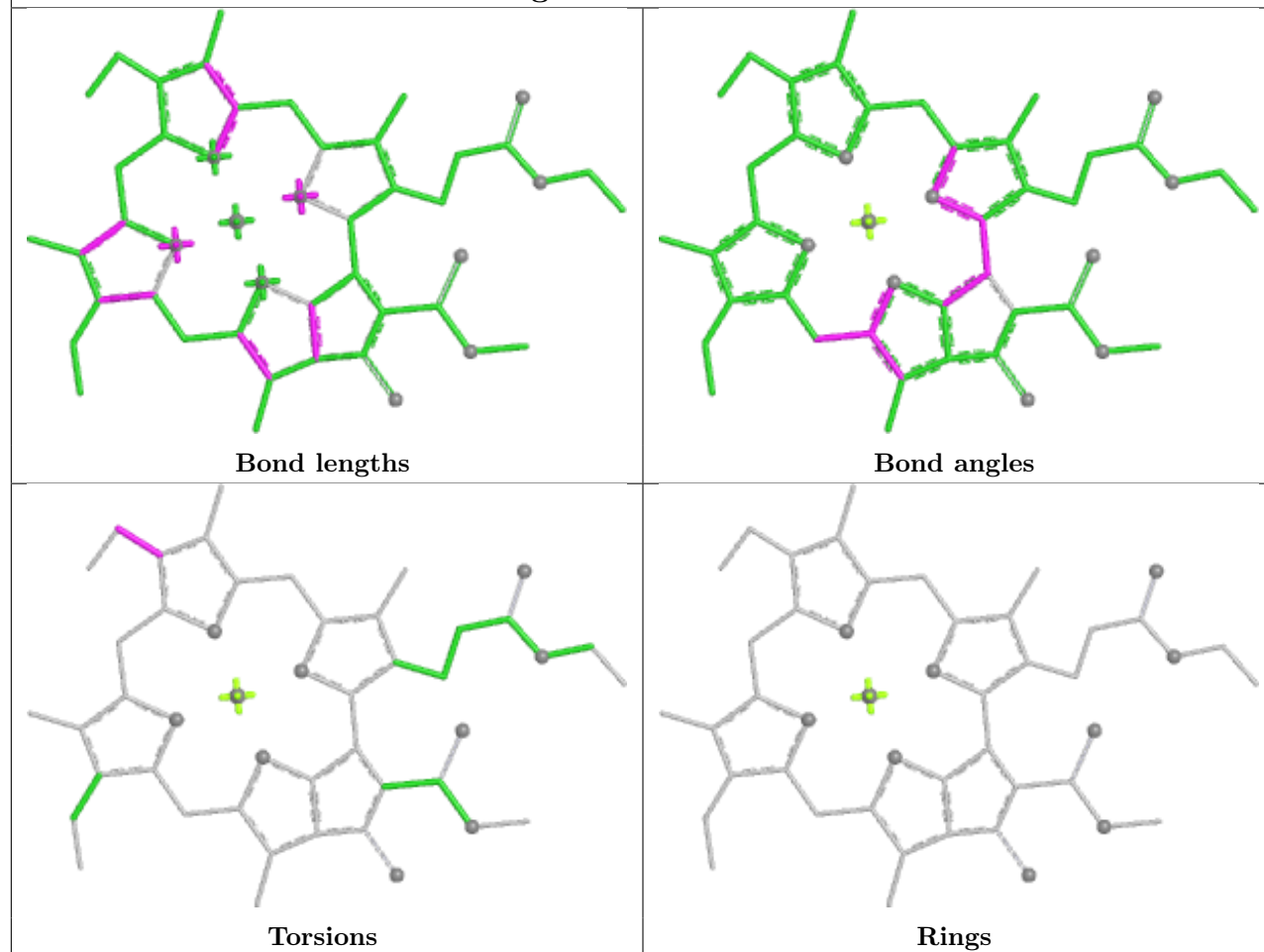


Torsions

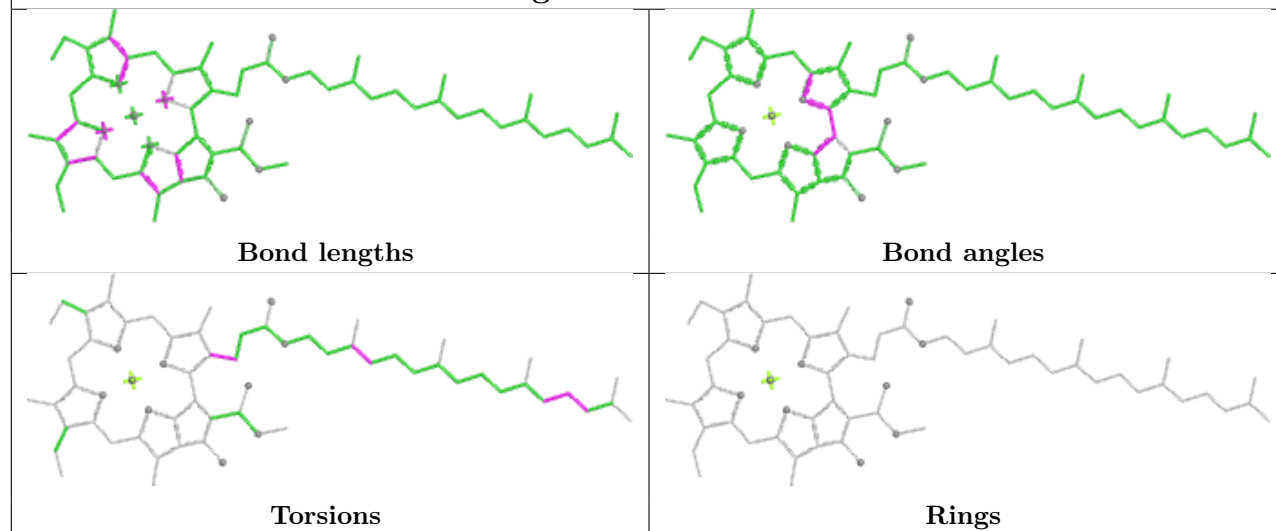


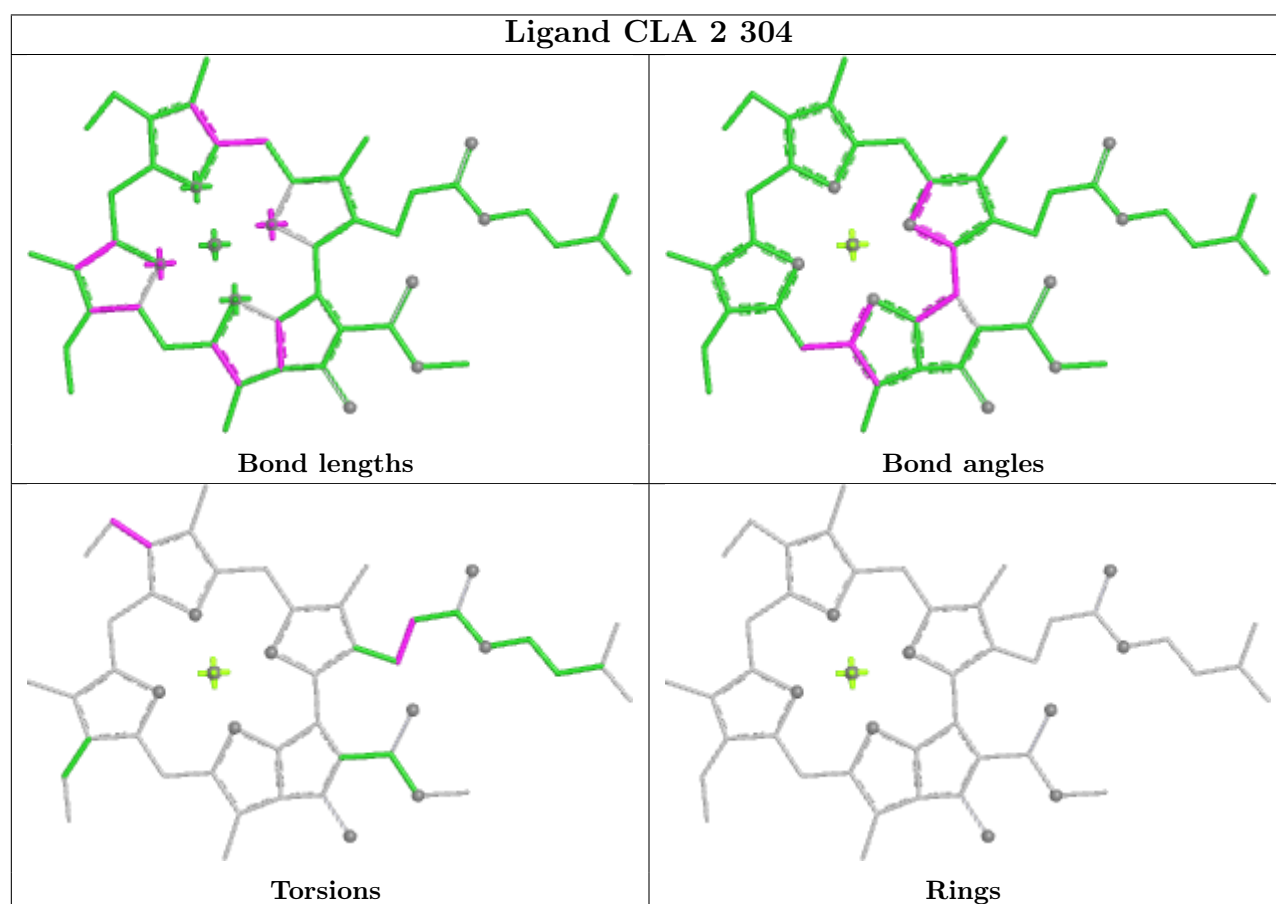
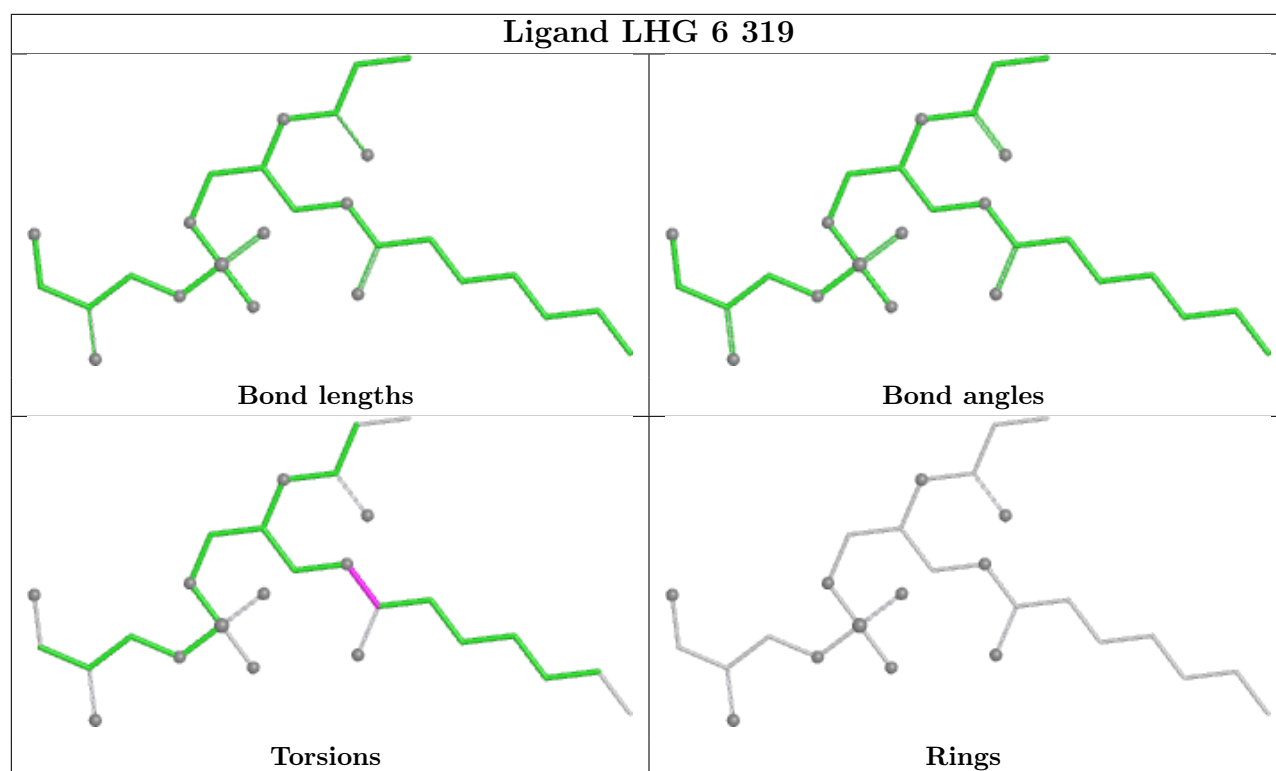
Rings

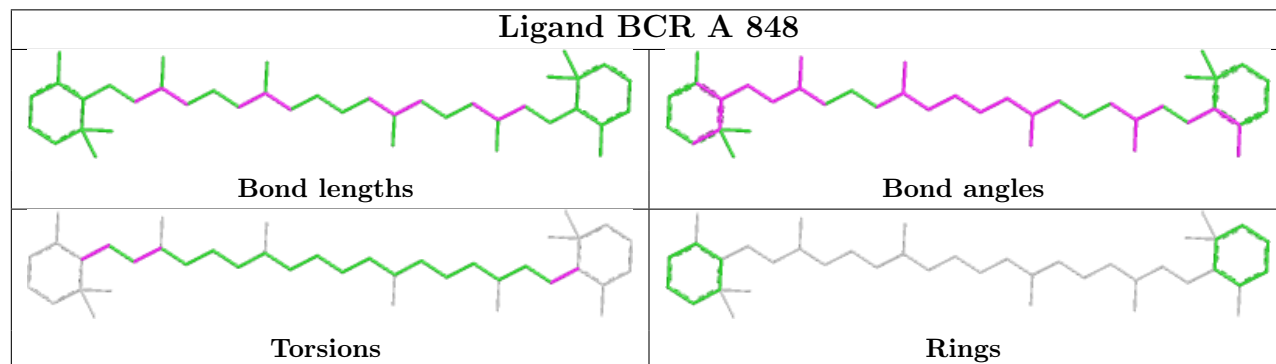
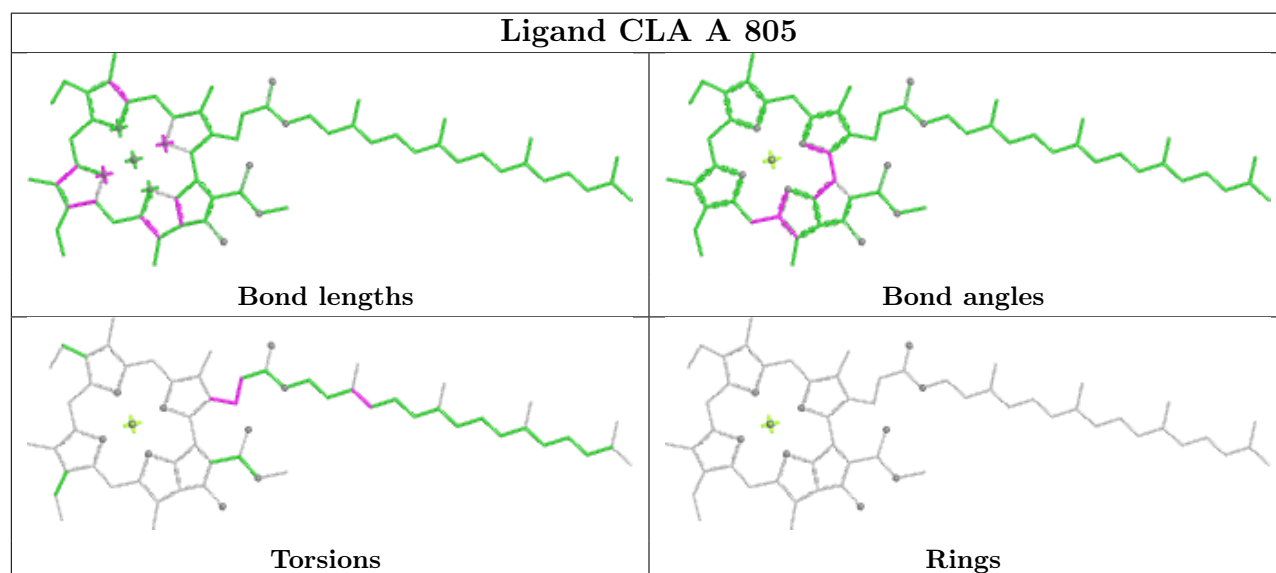
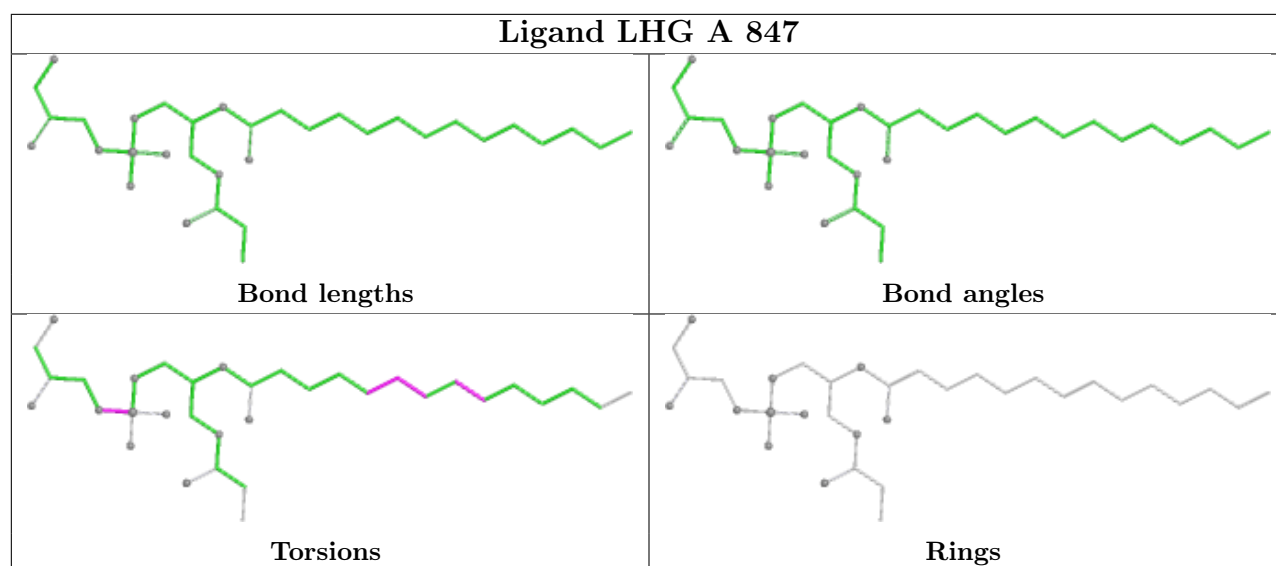
Ligand CLA 3 303

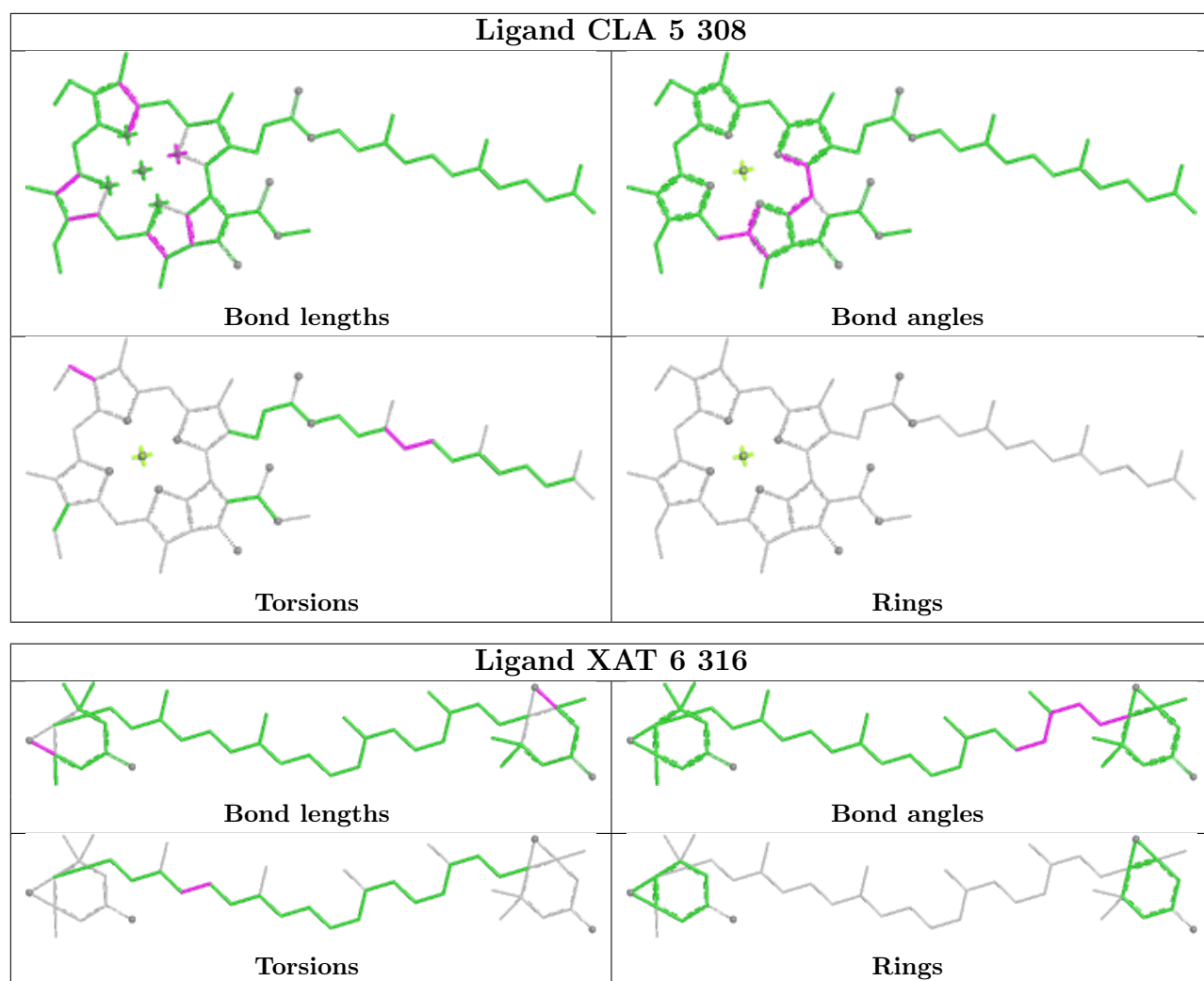


Ligand CLA B 814

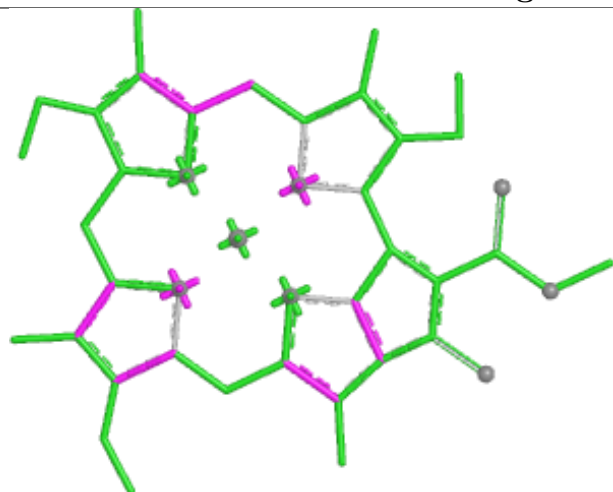




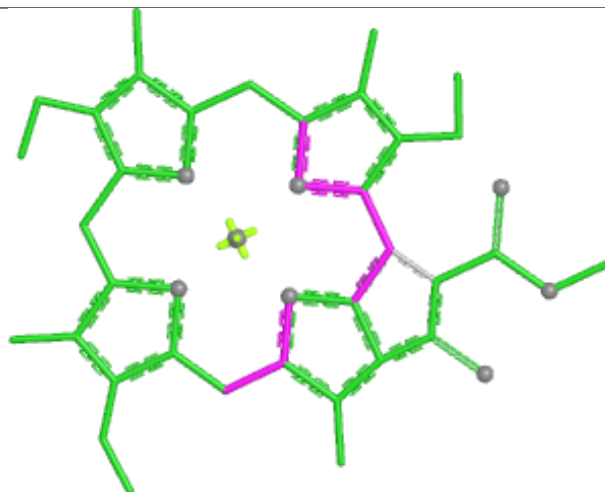




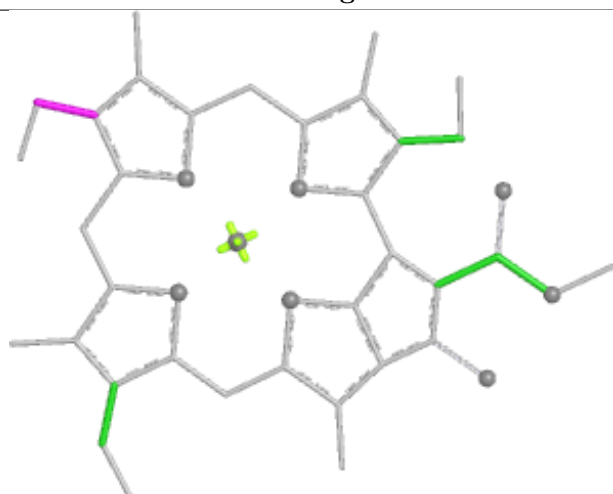
Ligand CLA L 303



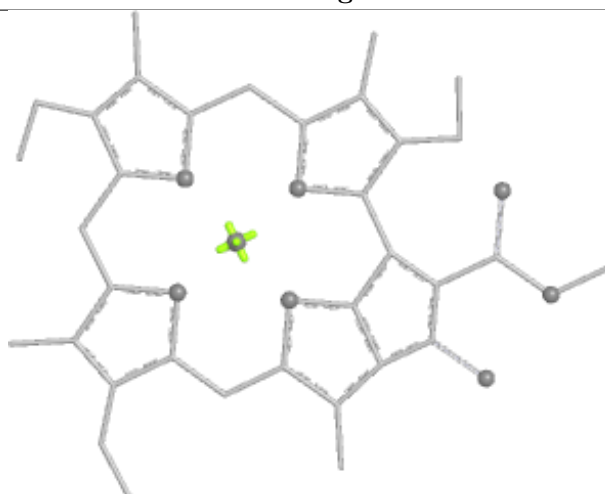
Bond lengths



Bond angles

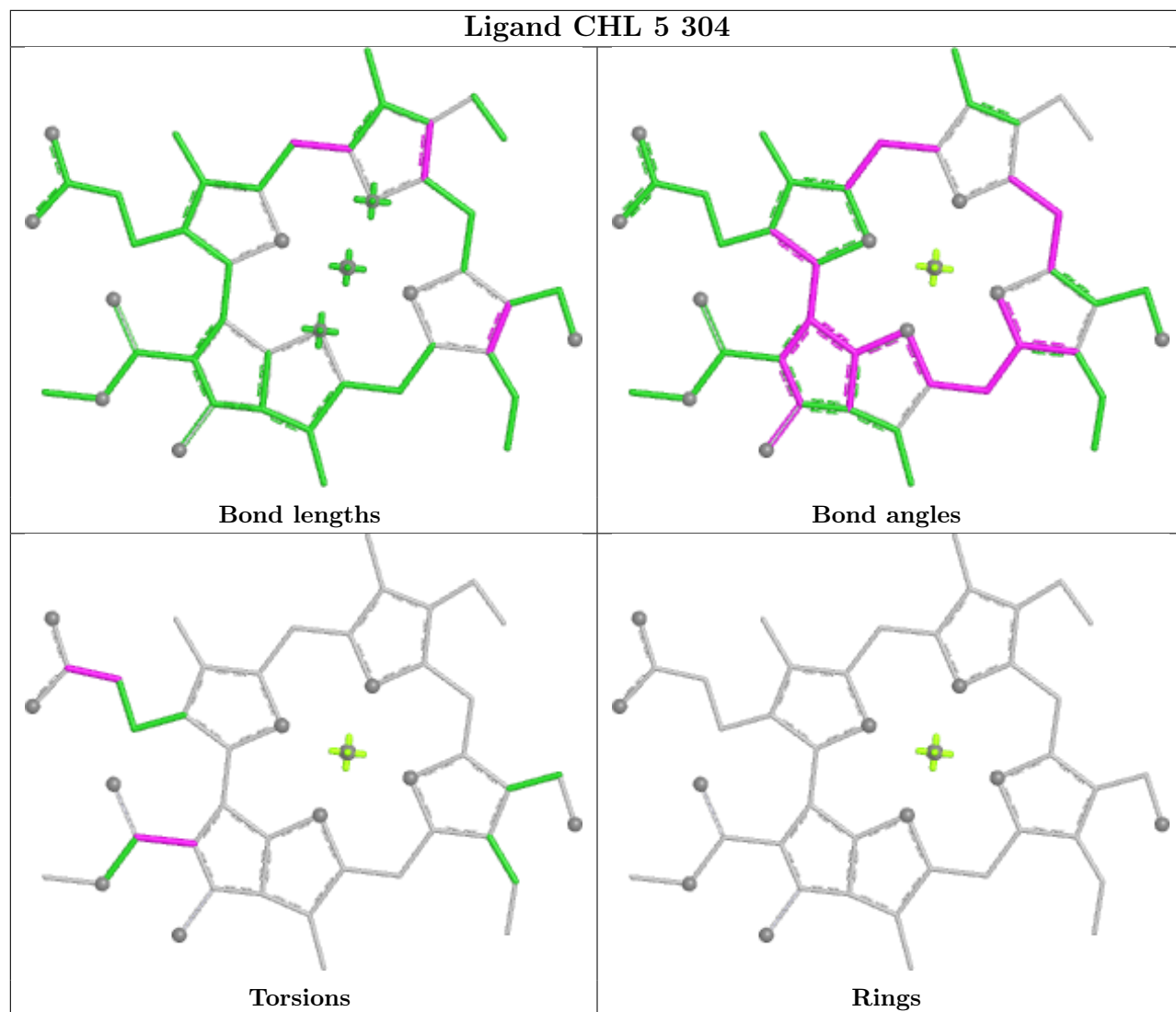


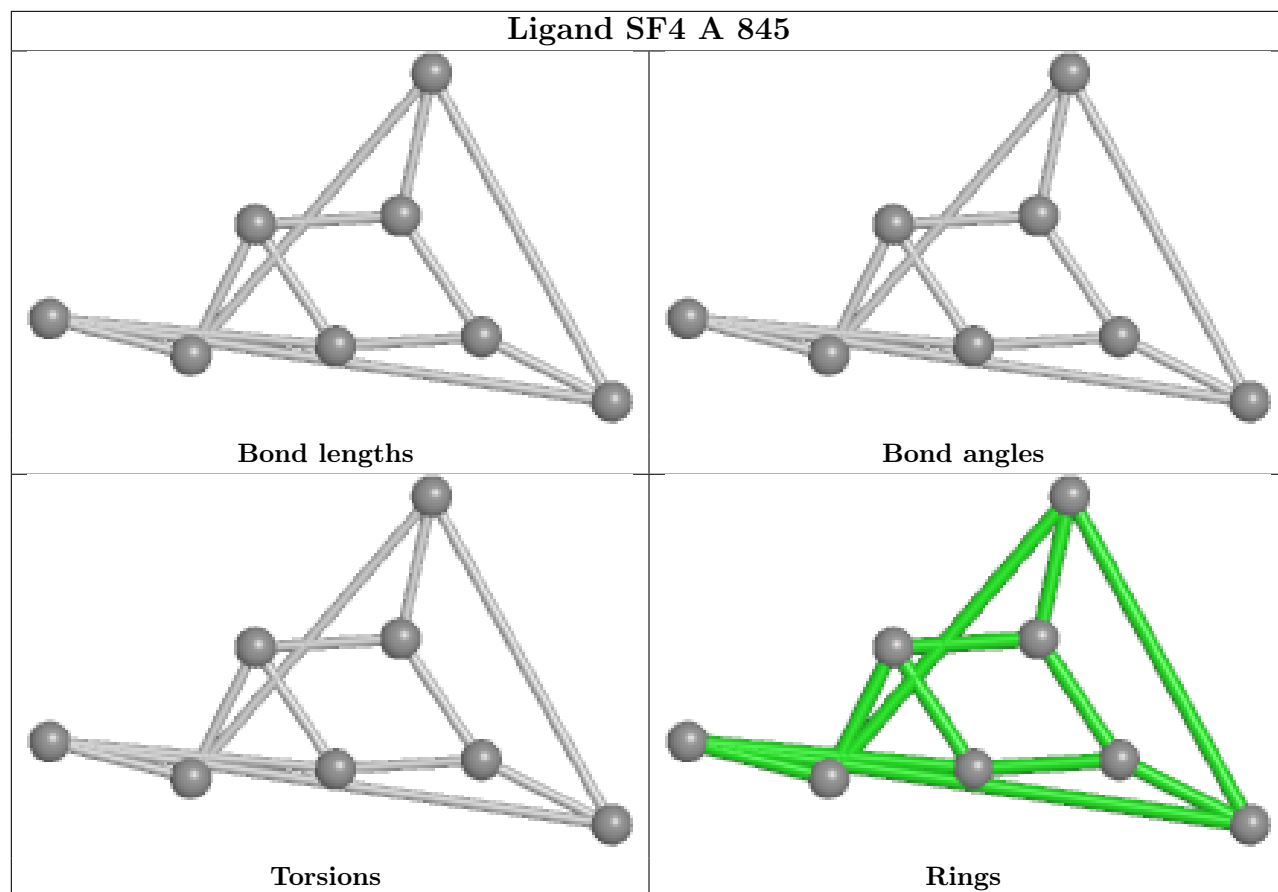
Torsions



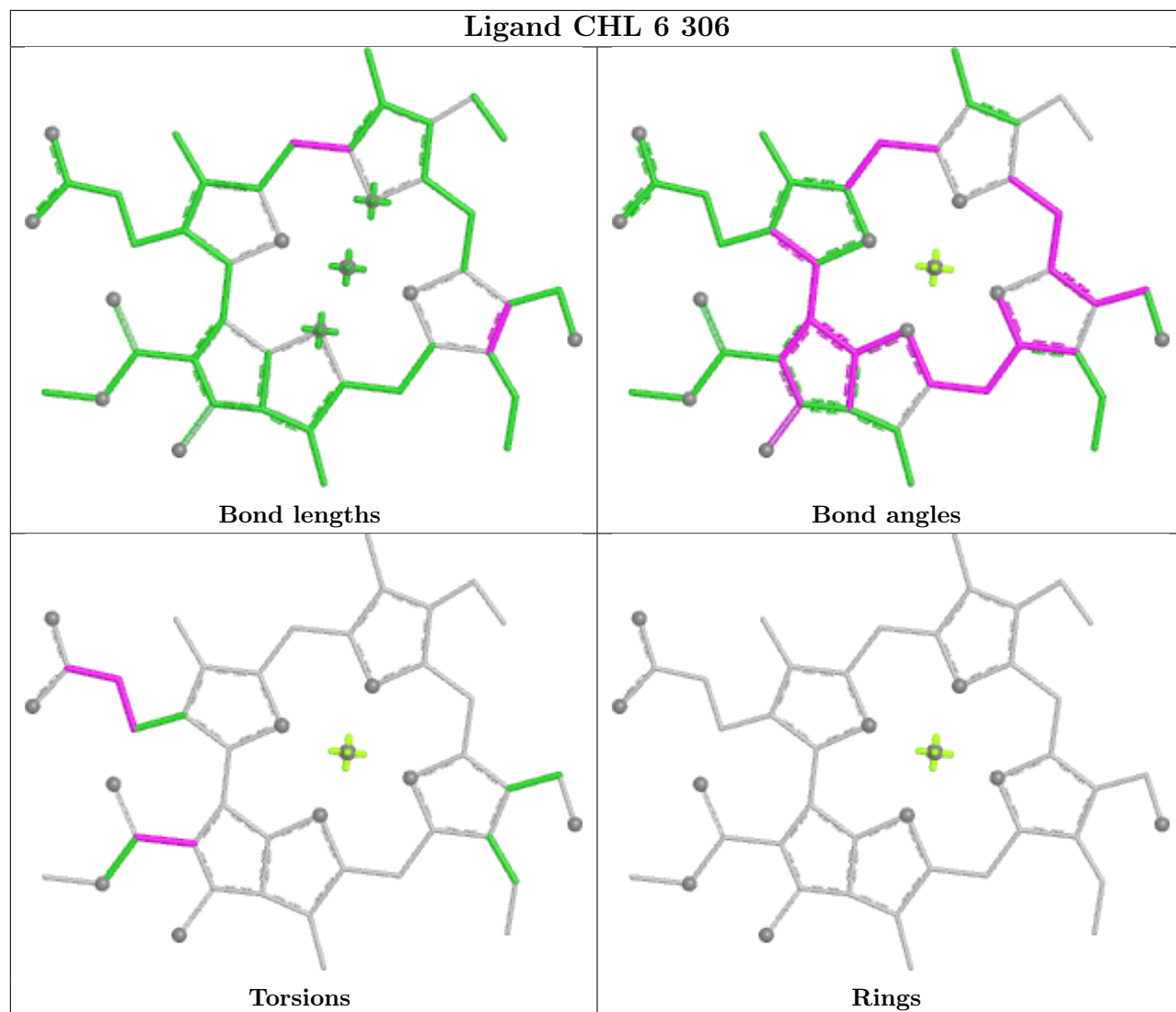
Rings

Ligand CHL 5 304

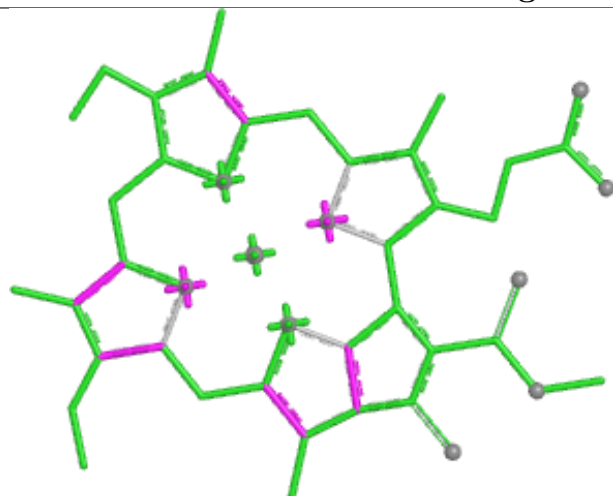




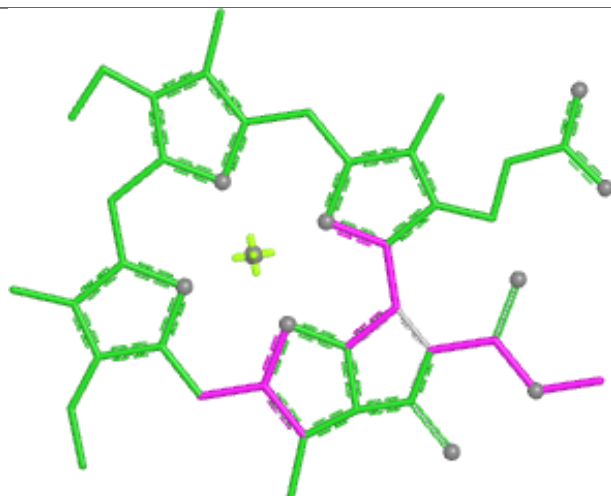
Ligand CHL 6 306



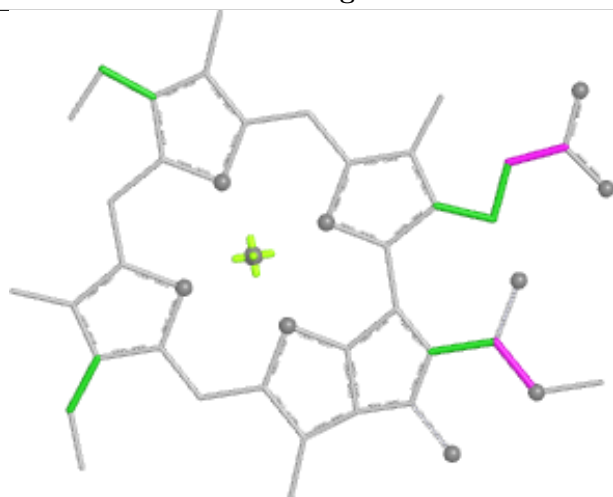
Ligand CLA 6 314



Bond lengths



Bond angles

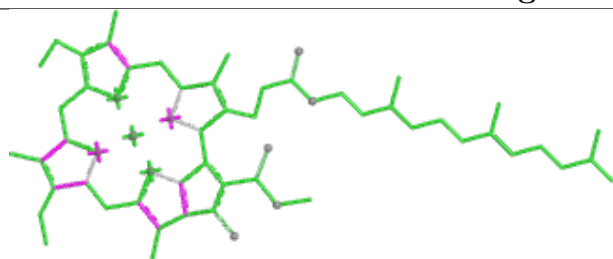


Torsions

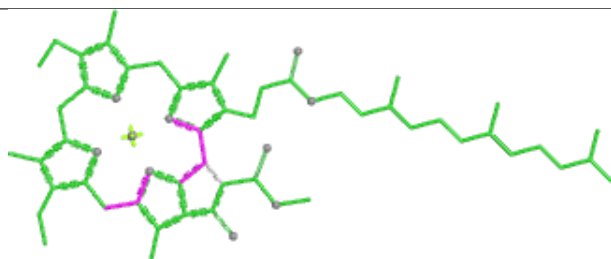


Rings

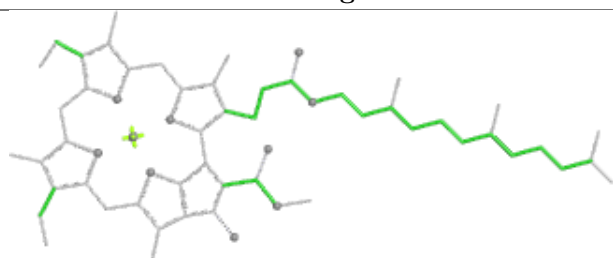
Ligand CLA 5 309



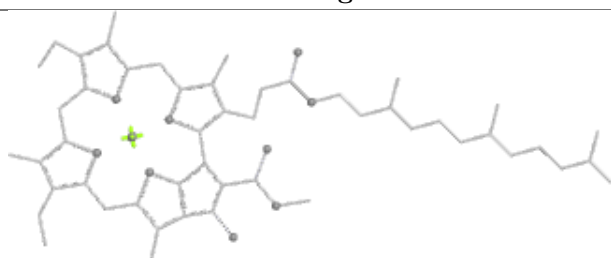
Bond lengths



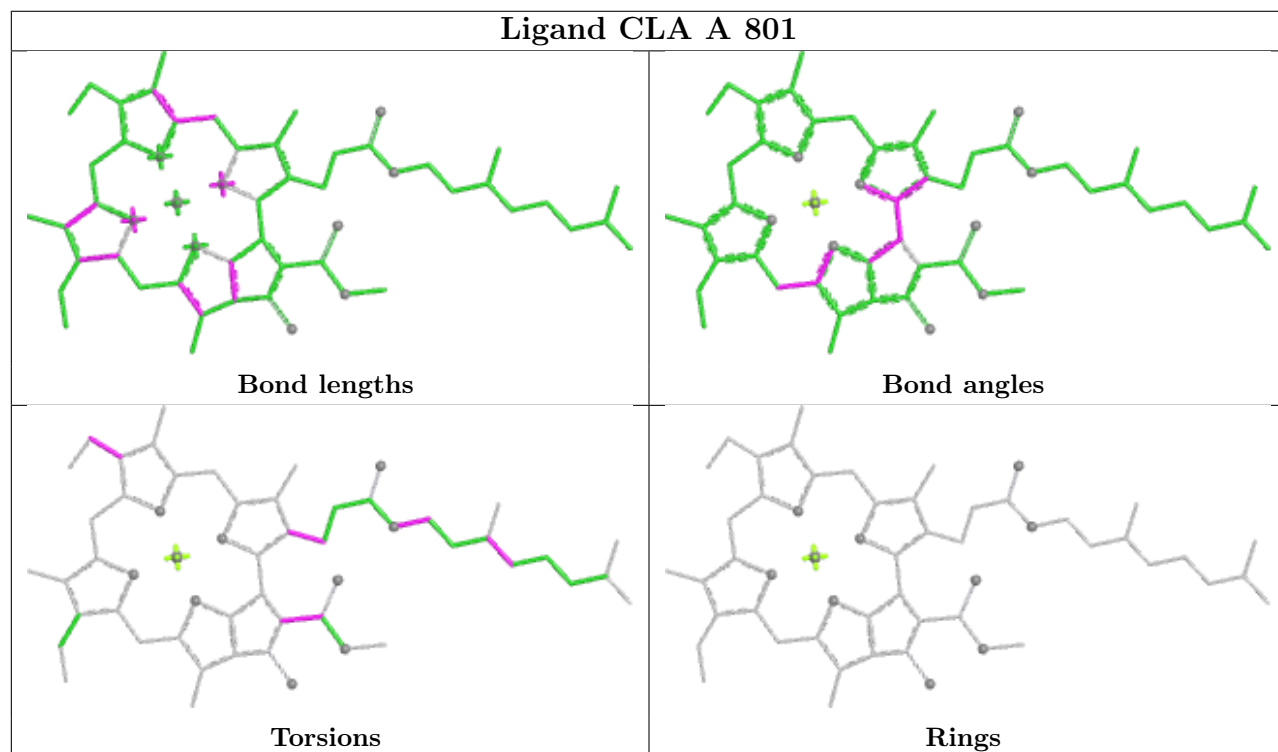
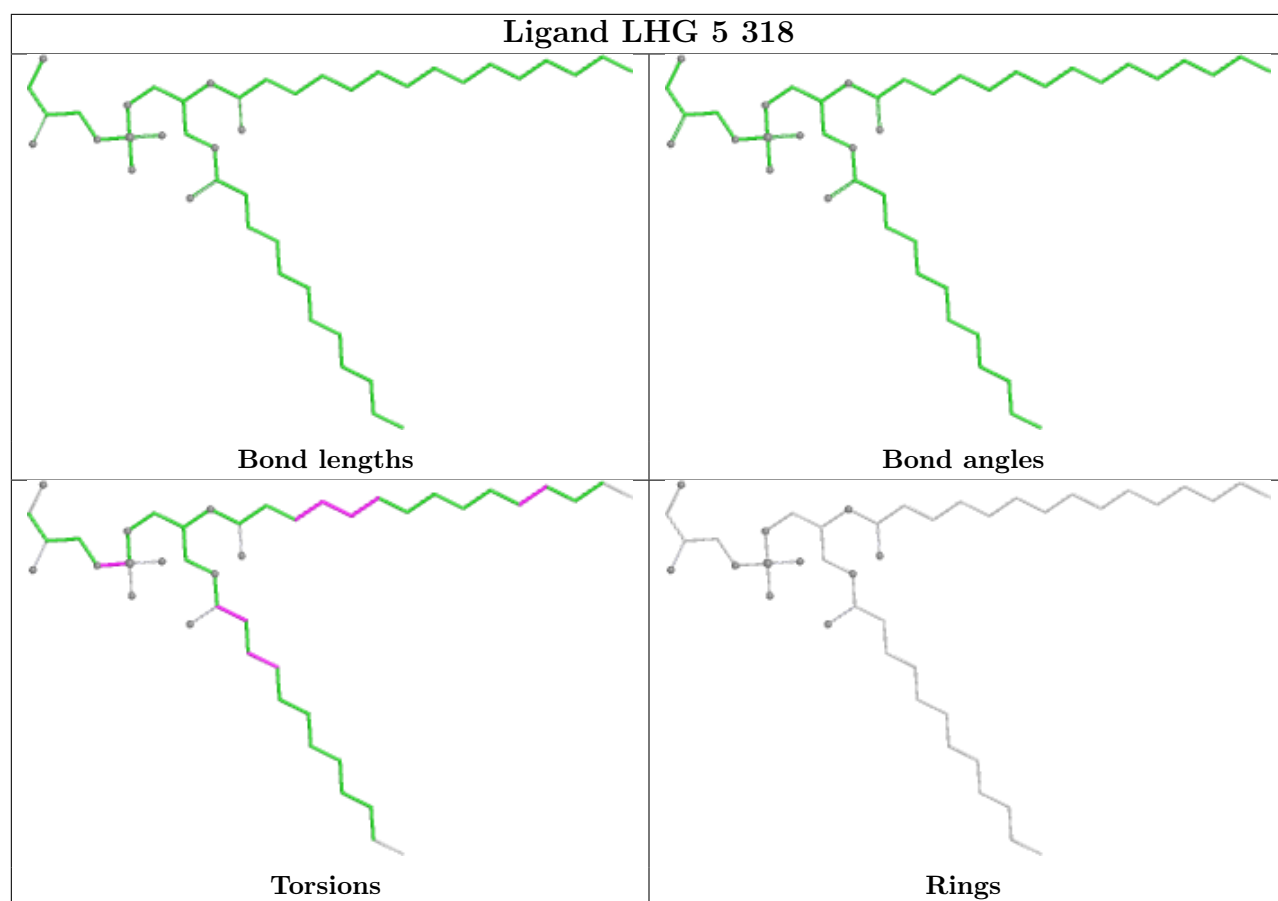
Bond angles

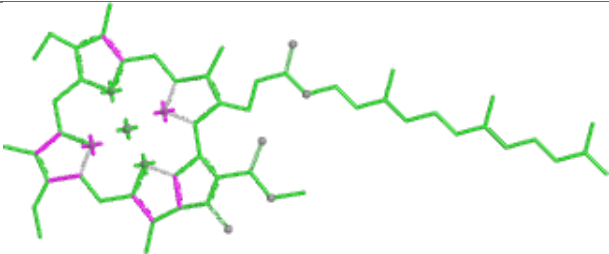
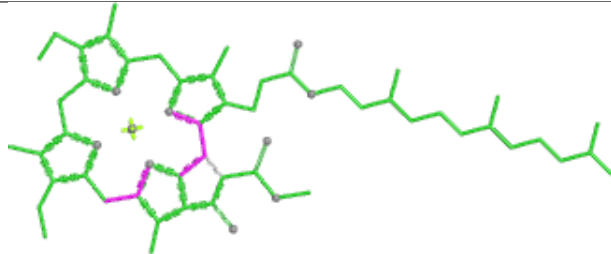
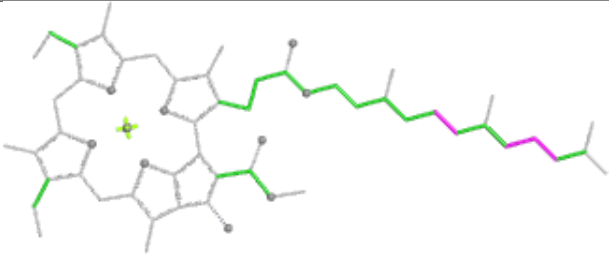
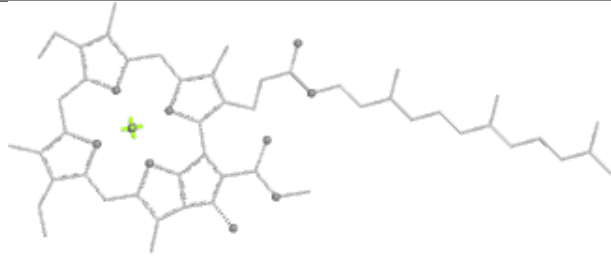


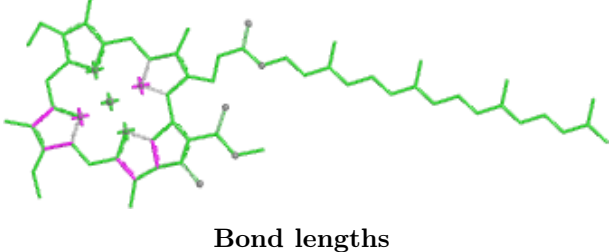
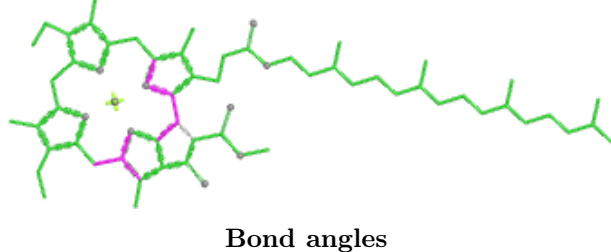
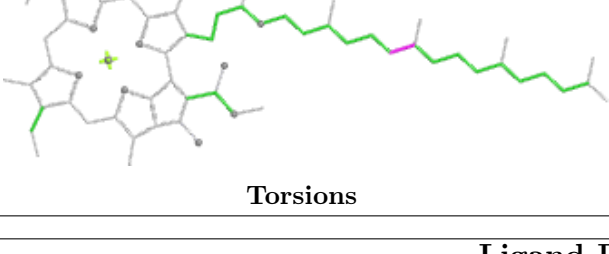
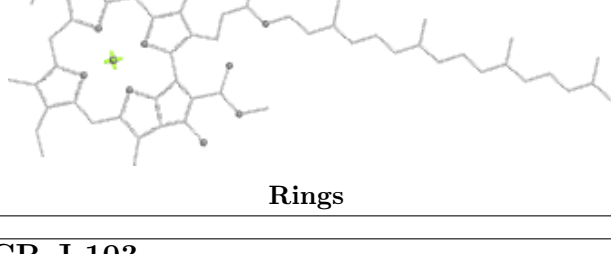
Torsions

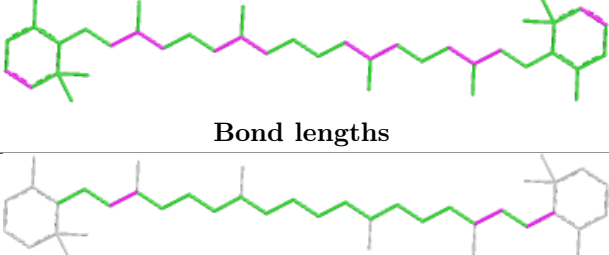
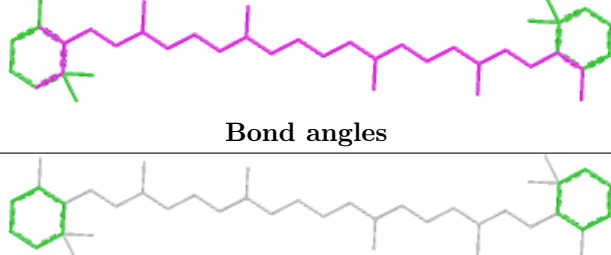


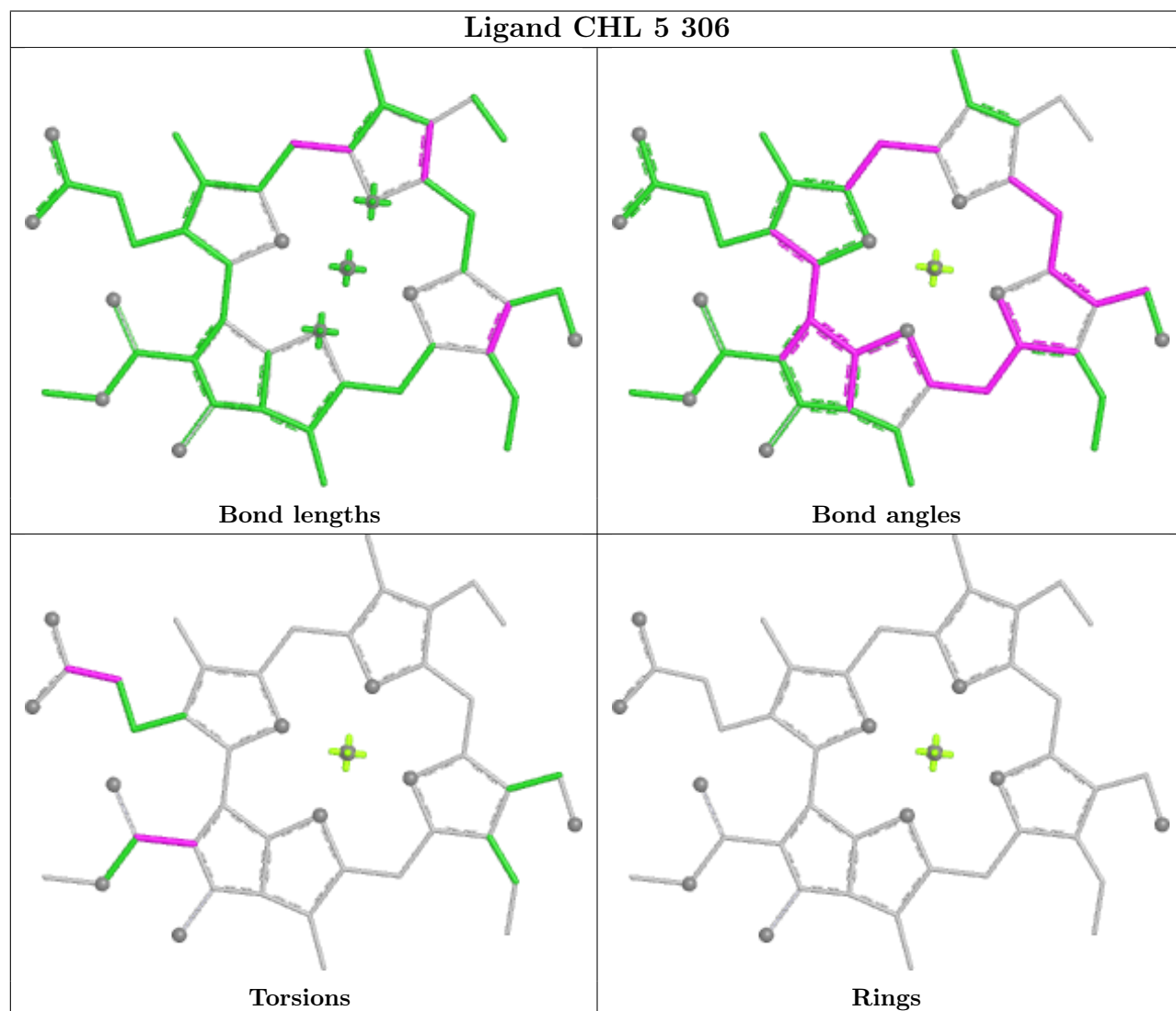
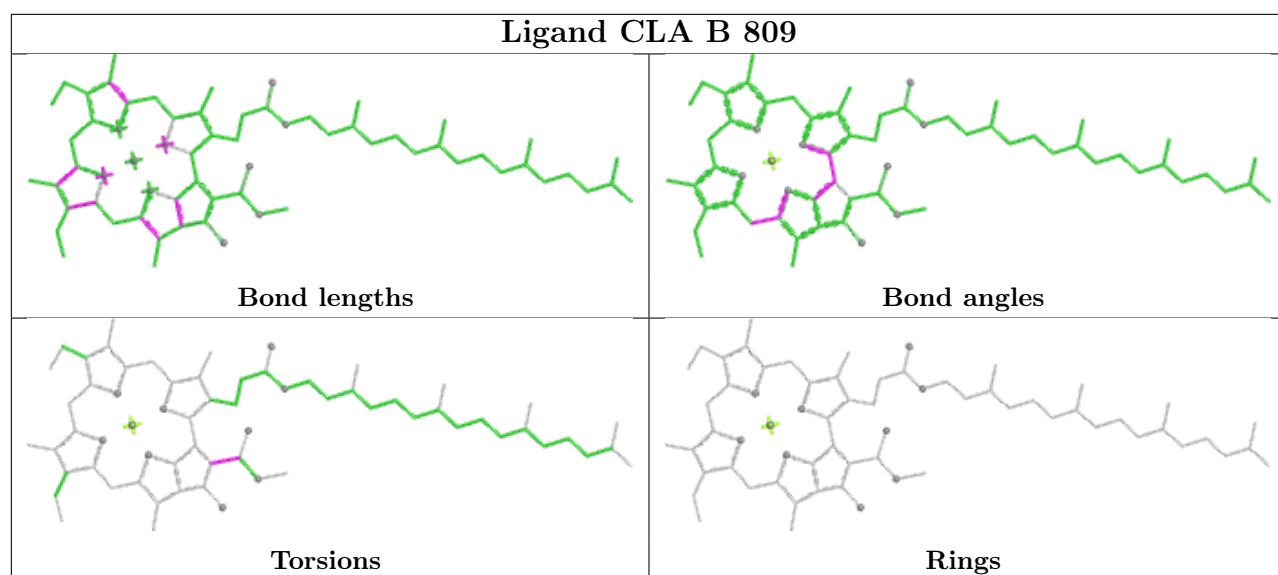
Rings

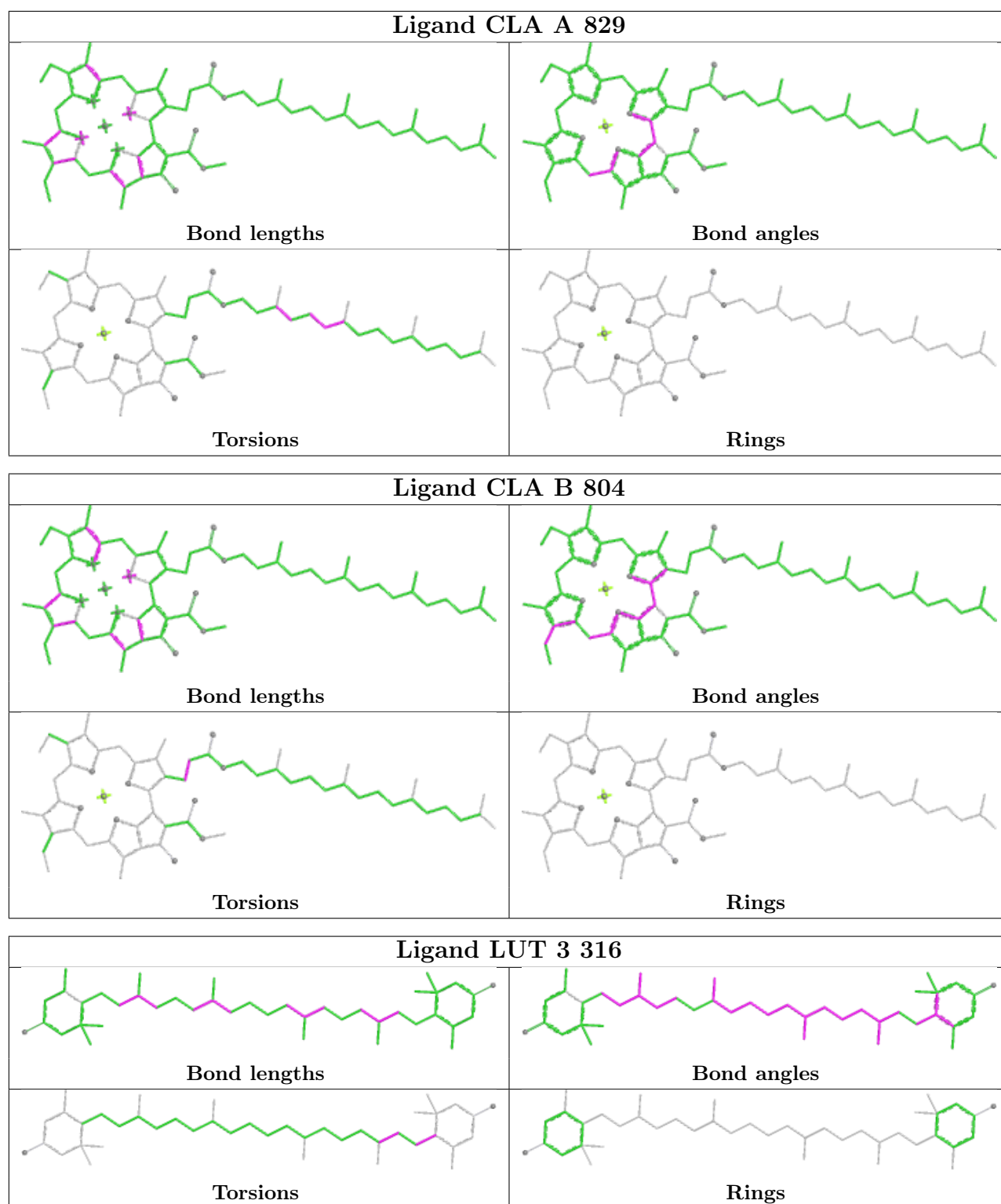


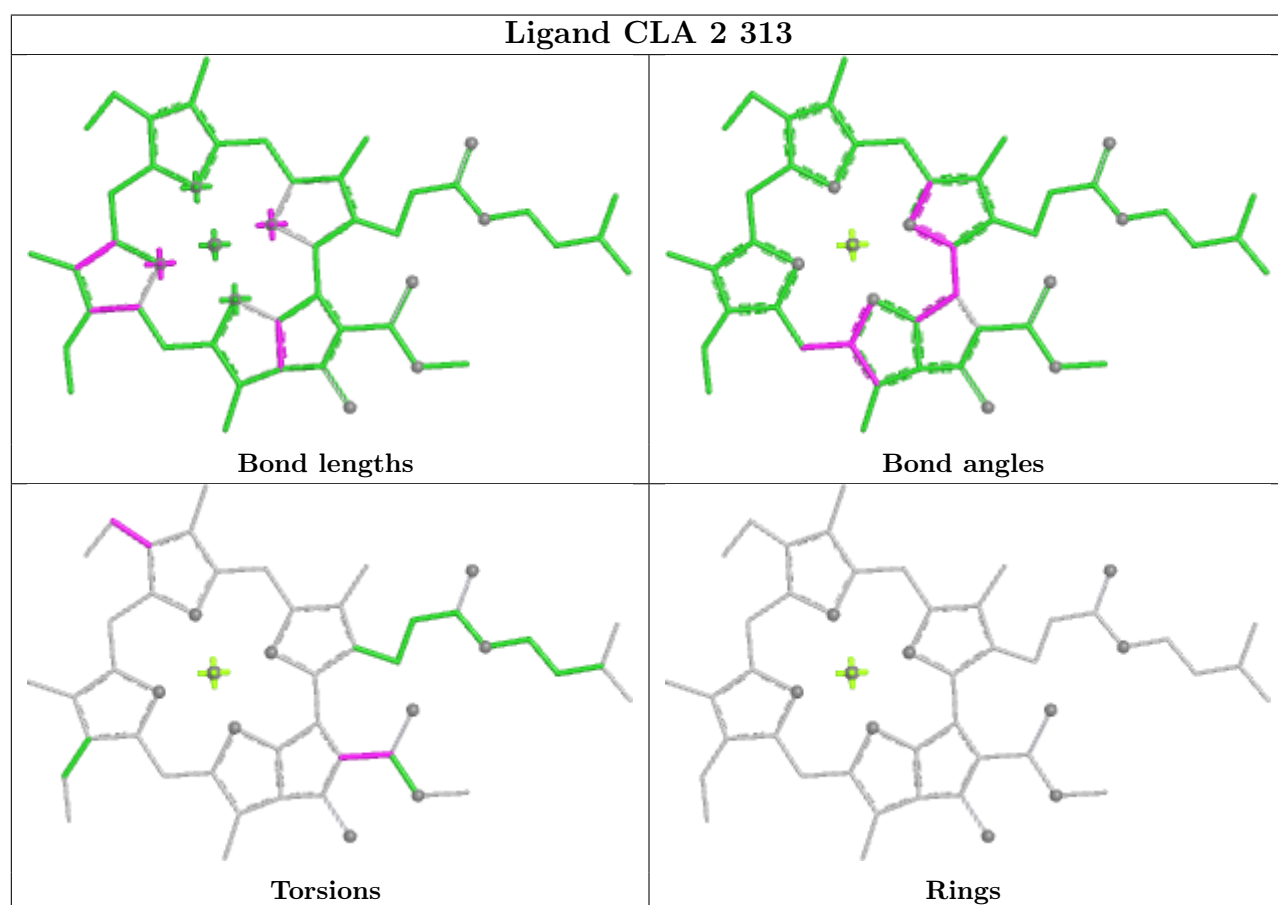
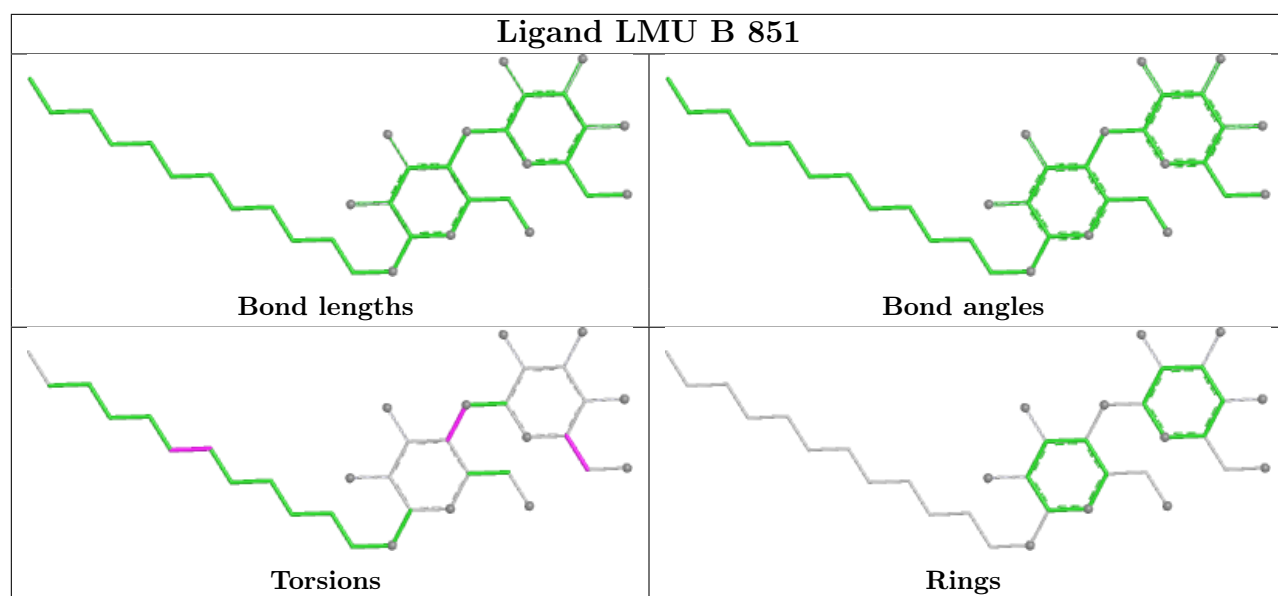
| Ligand CLA A 836 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

| Ligand CLA B 817 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

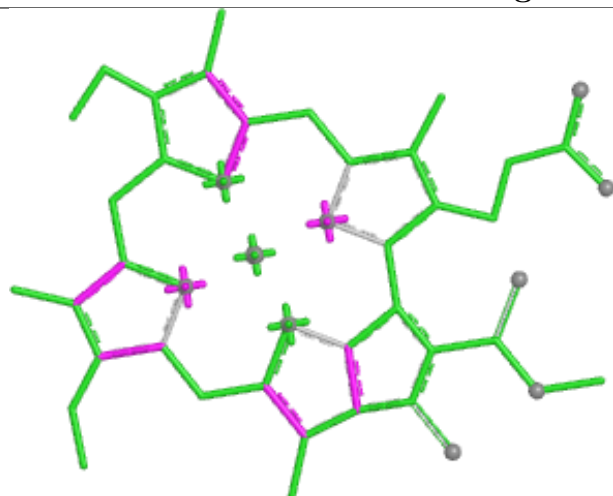
| Ligand BCR J 103 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
| | |
| Torsions | Rings |



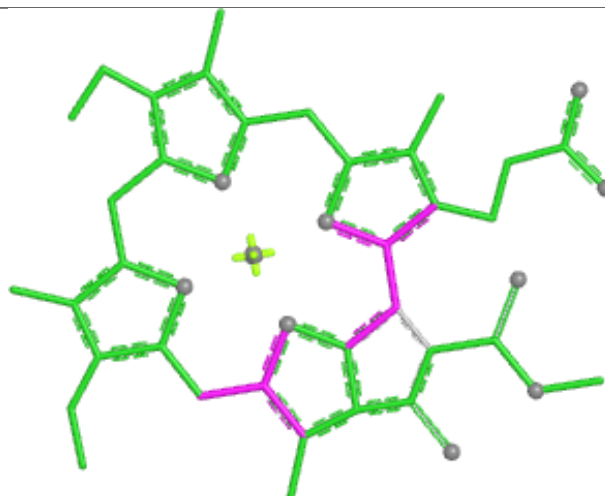




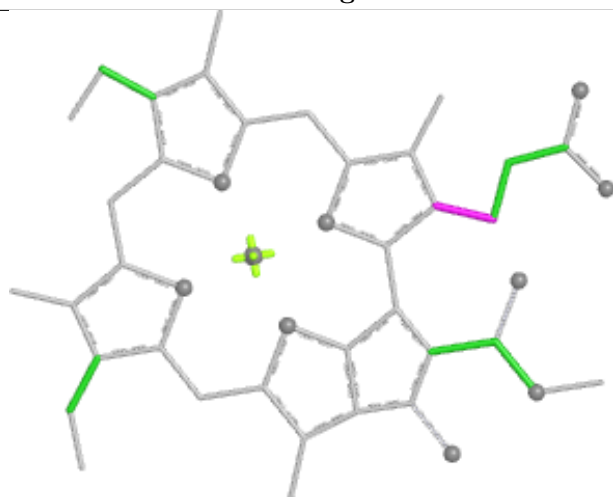
Ligand CLA B 824



Bond lengths



Bond angles

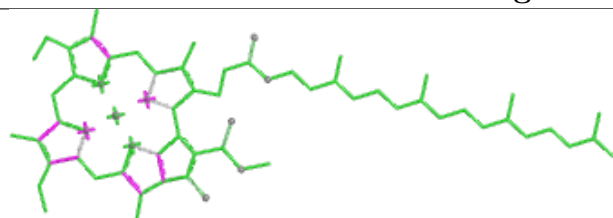


Torsions

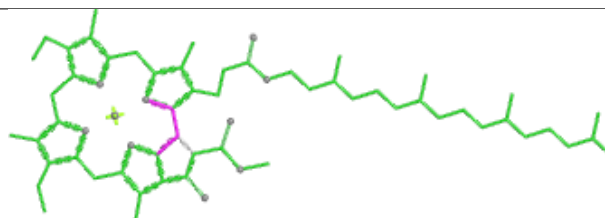


Rings

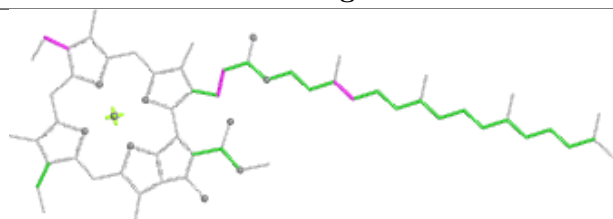
Ligand CLA A 830



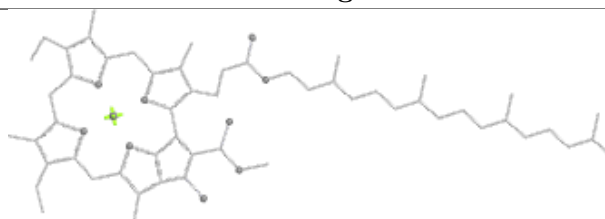
Bond lengths



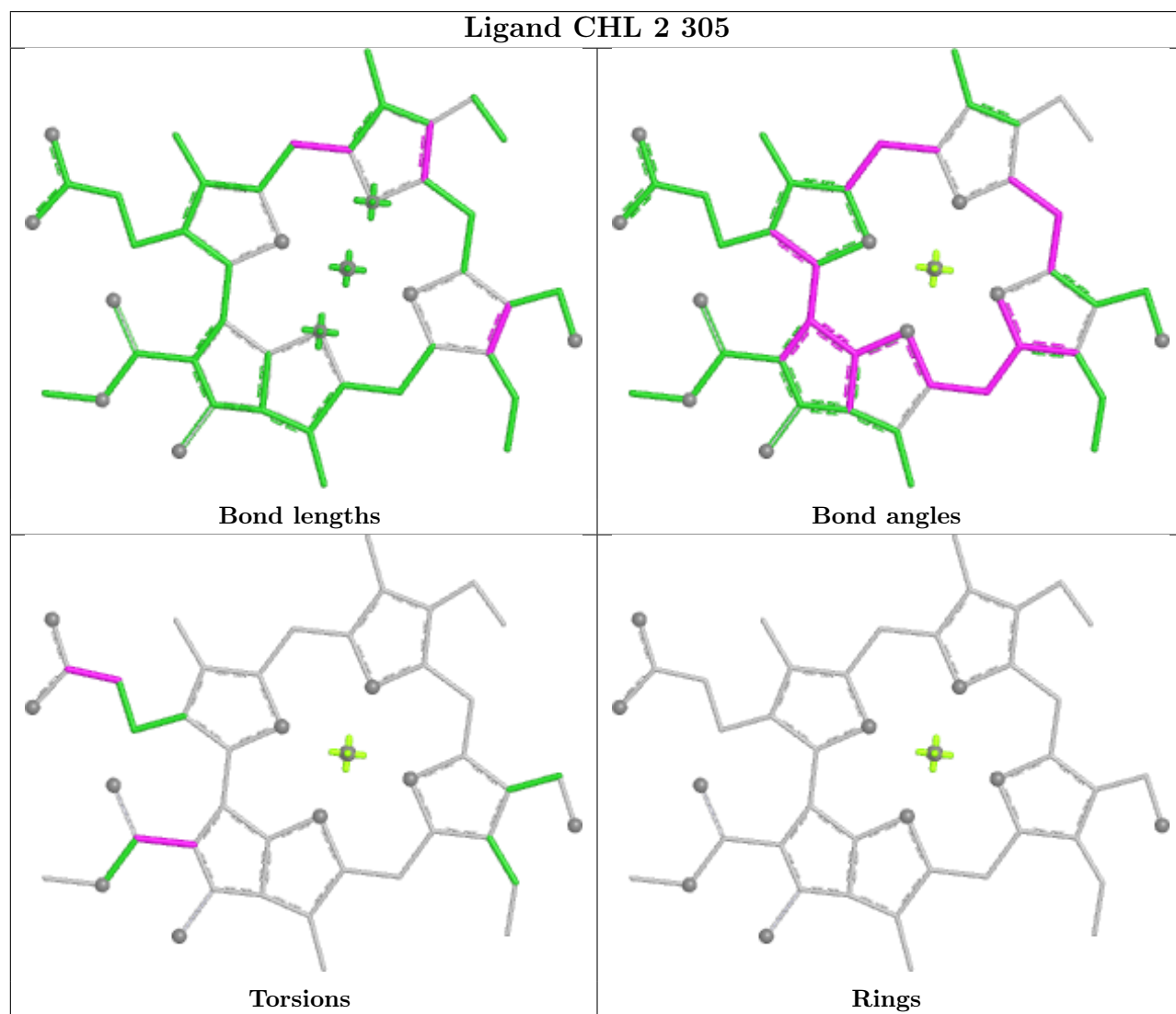
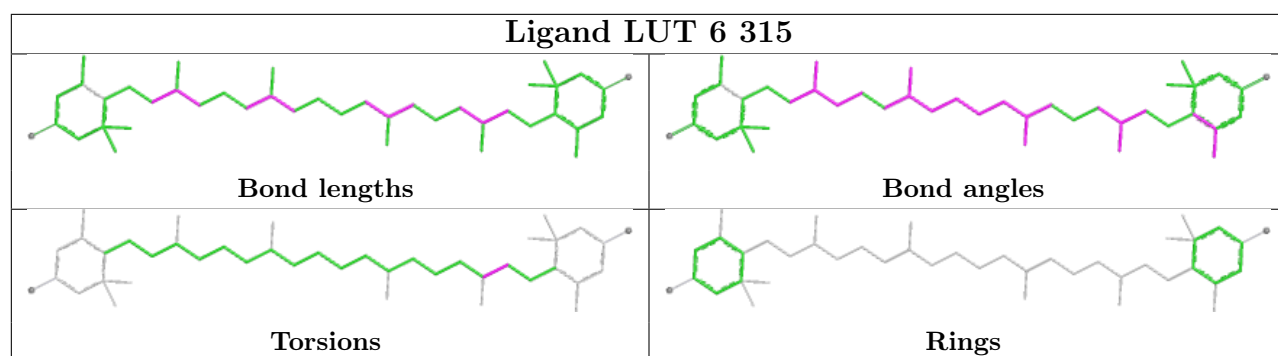
Bond angles



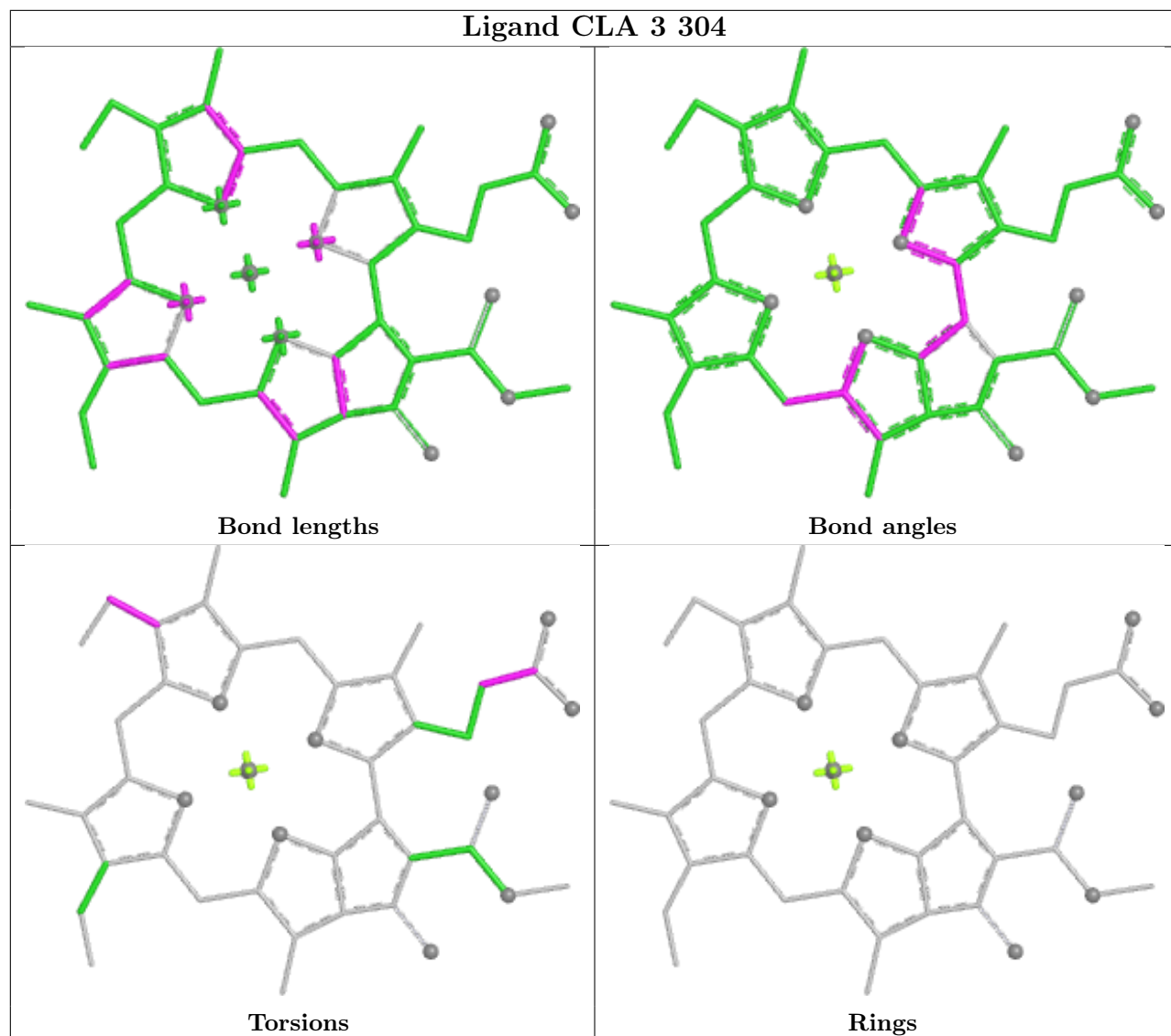
Torsions



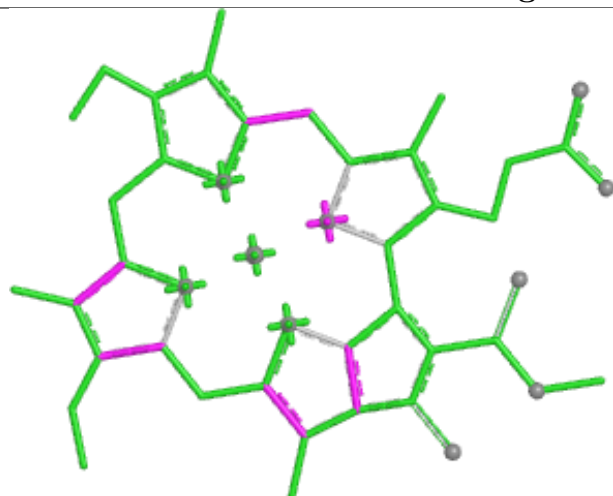
Rings



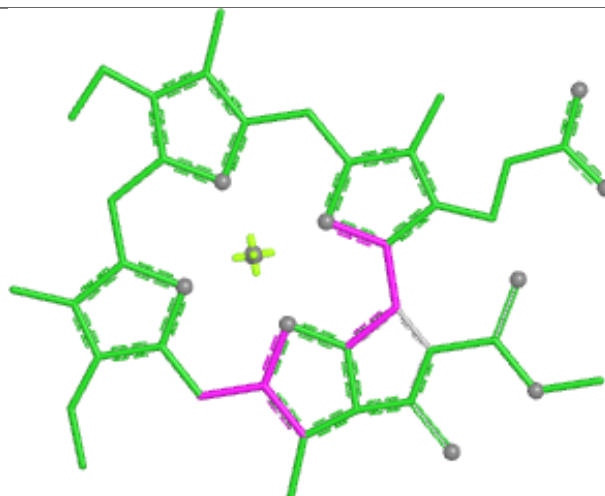
Ligand CLA 3 304



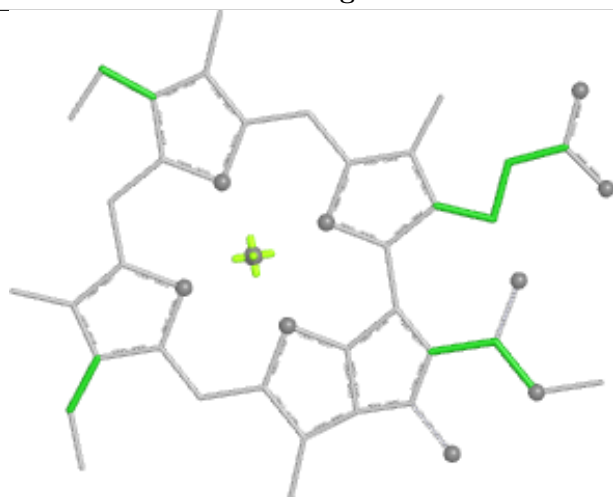
Ligand CLA 2 308



Bond lengths



Bond angles

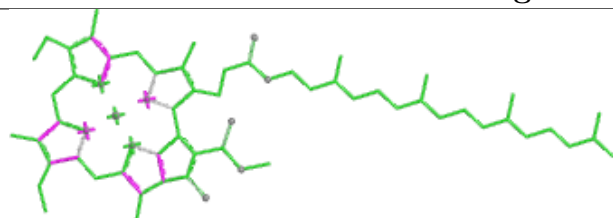


Torsions

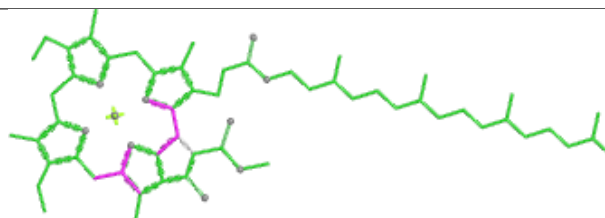


Rings

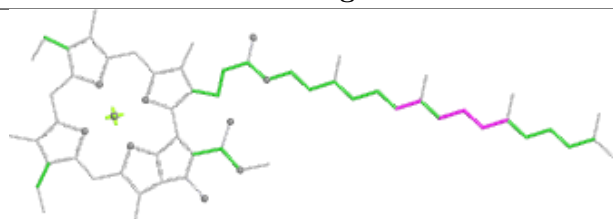
Ligand CLA A 820



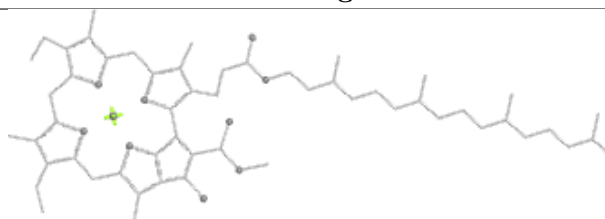
Bond lengths



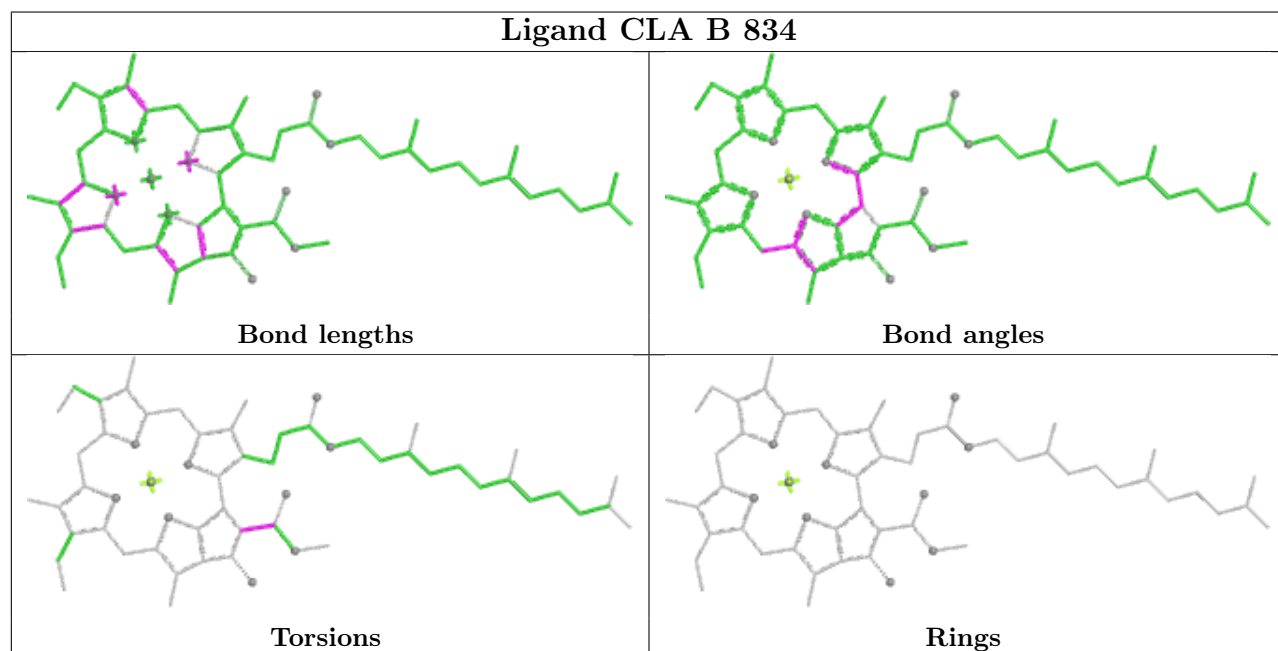
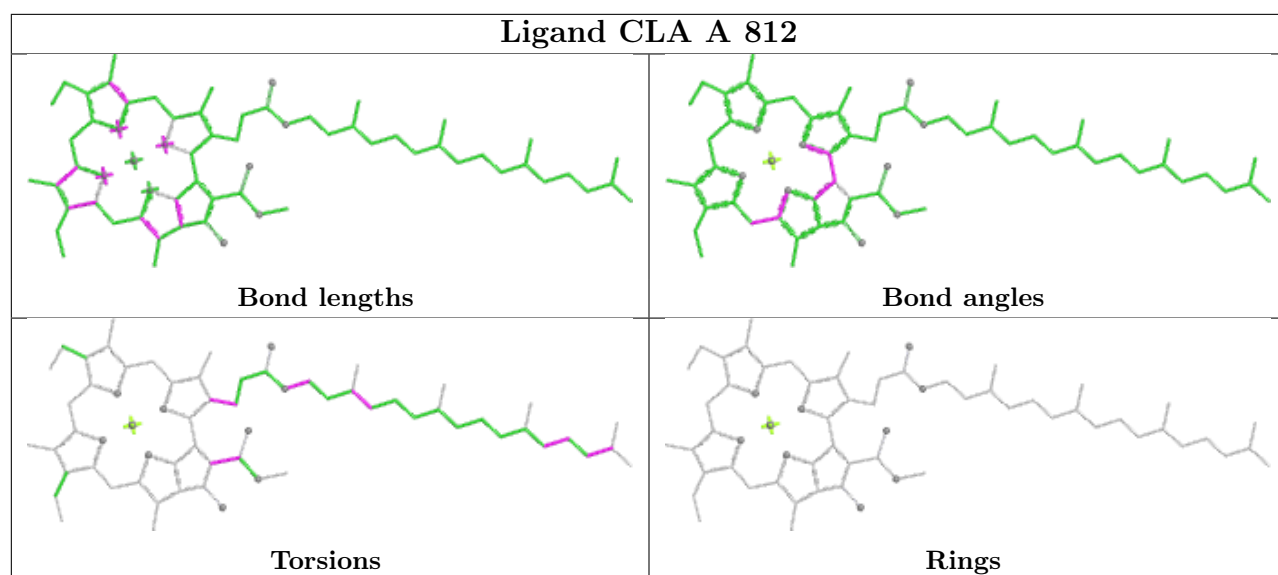
Bond angles

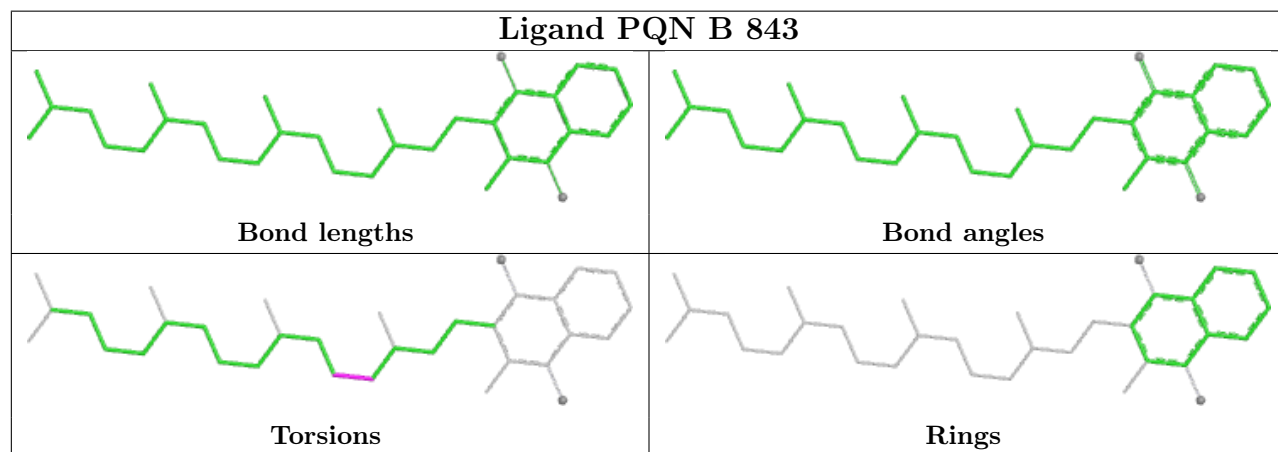
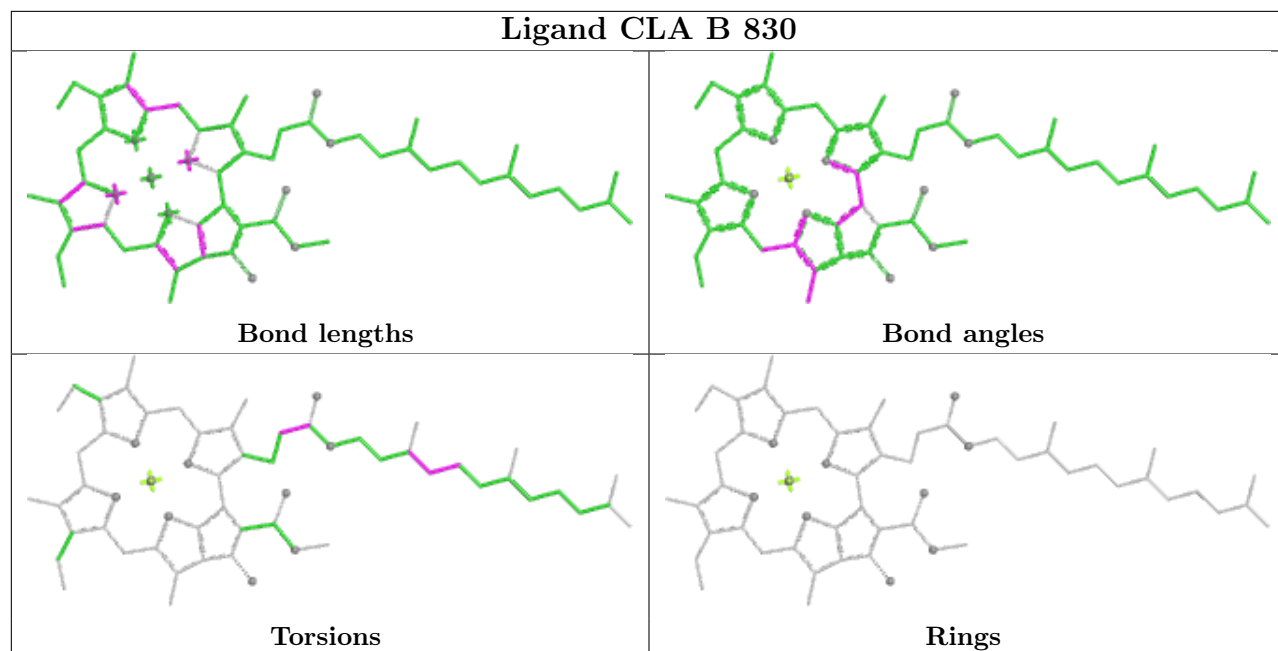


Torsions

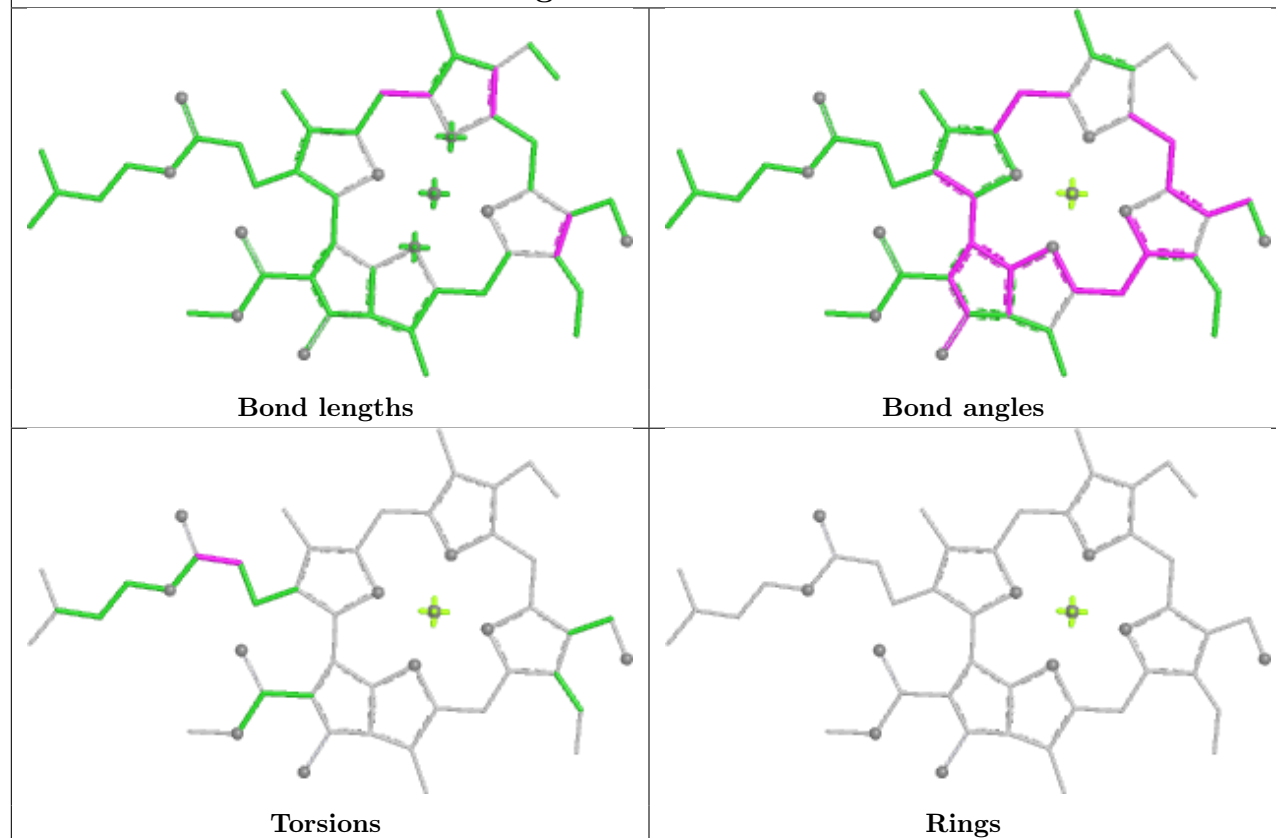


Rings

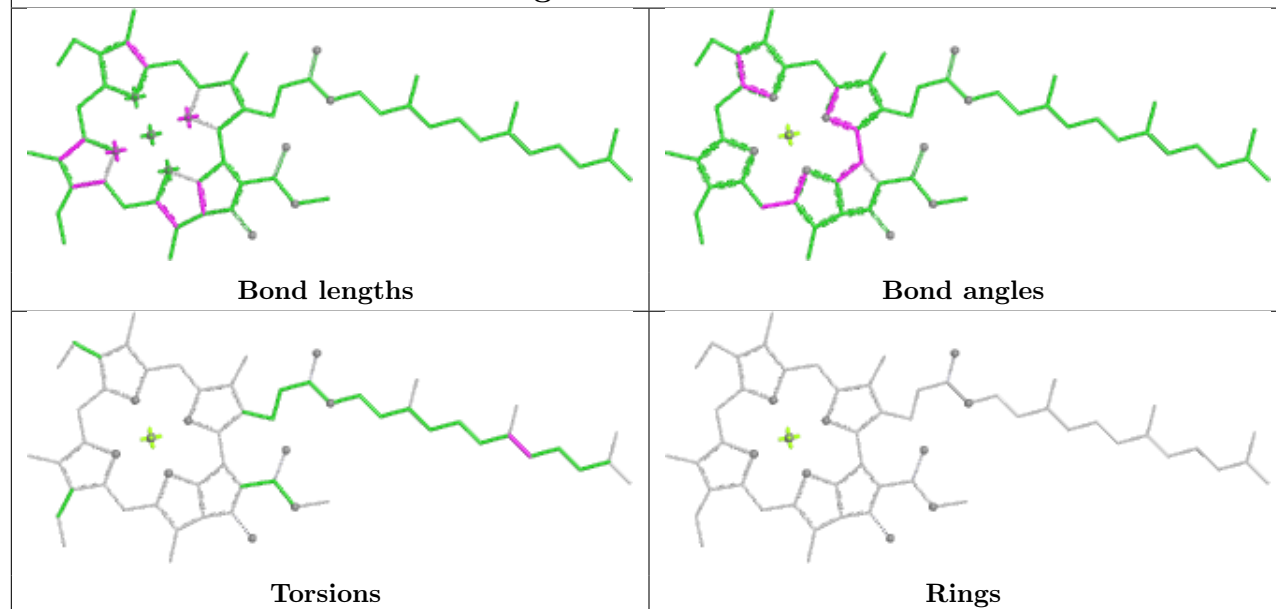


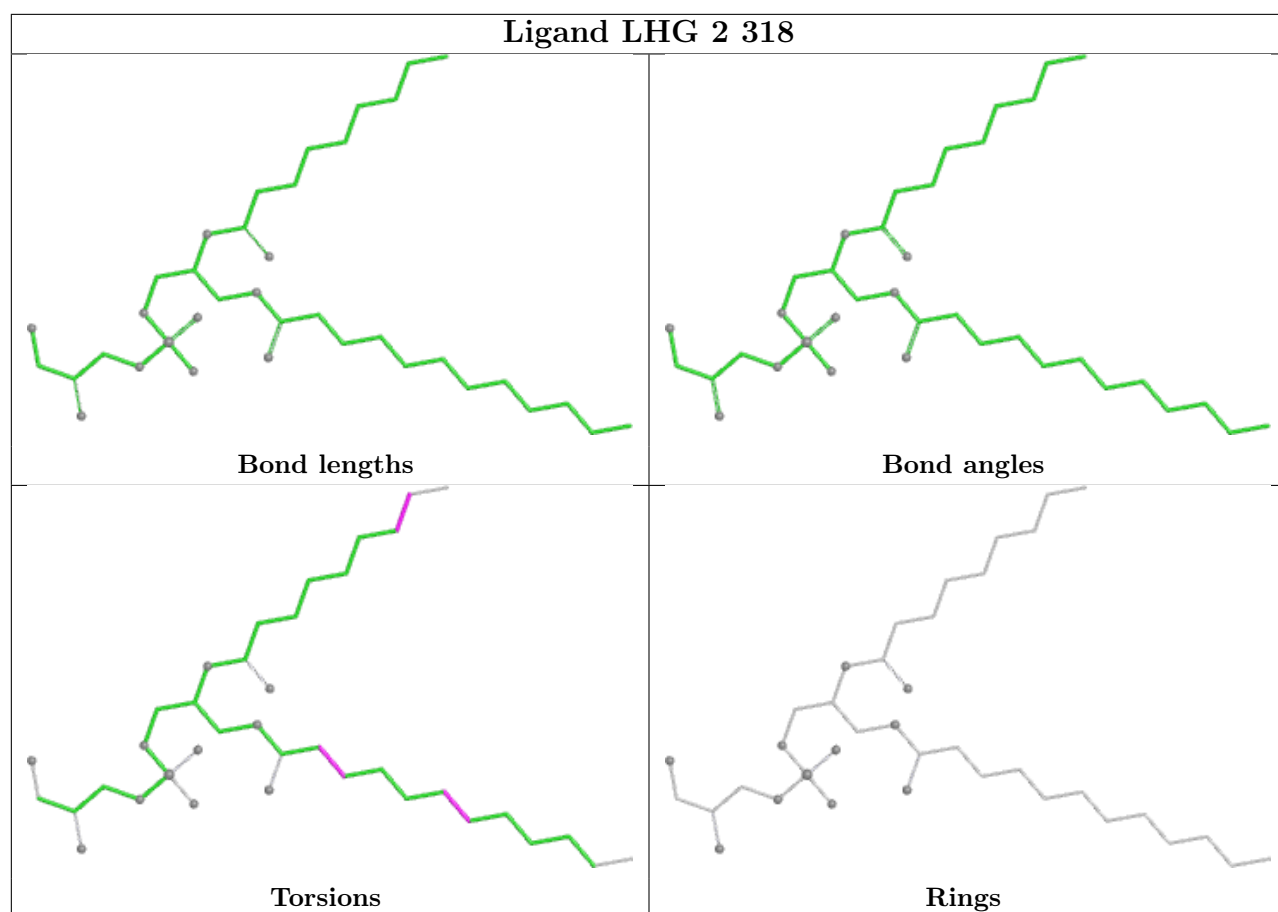


Ligand CHL 6 301

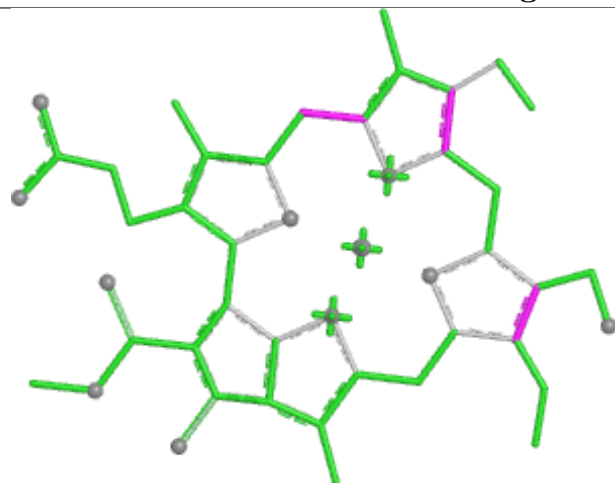


Ligand CLA F 301

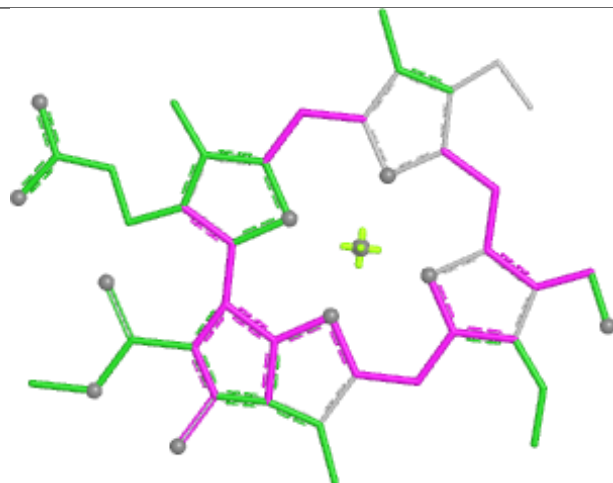




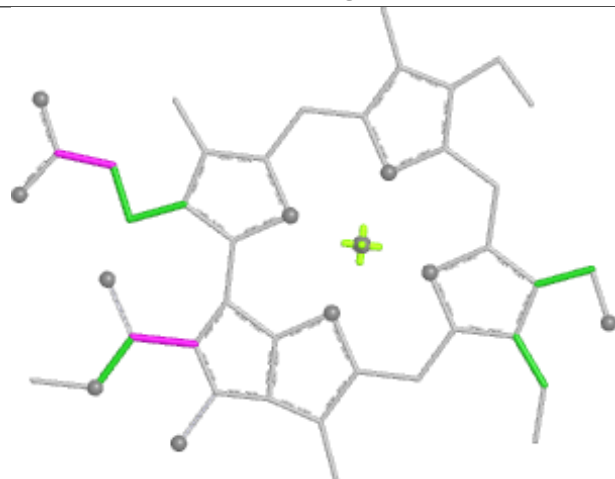
Ligand CHL 2 314



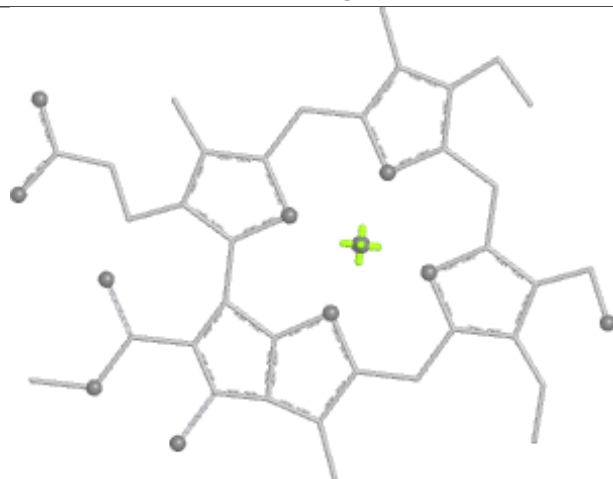
Bond lengths



Bond angles

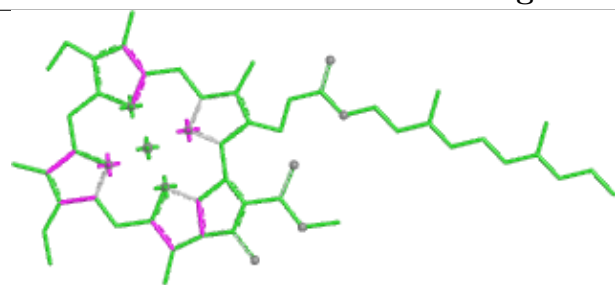


Torsions

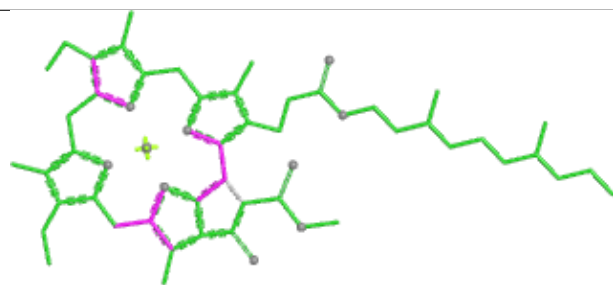


Rings

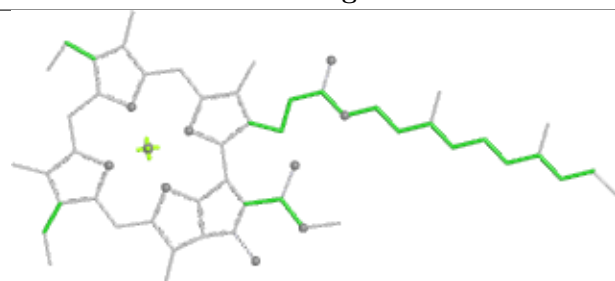
Ligand CLA B 820



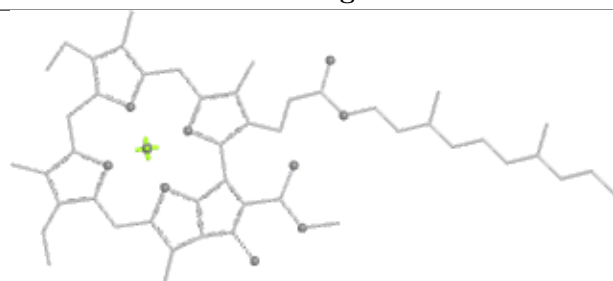
Bond lengths



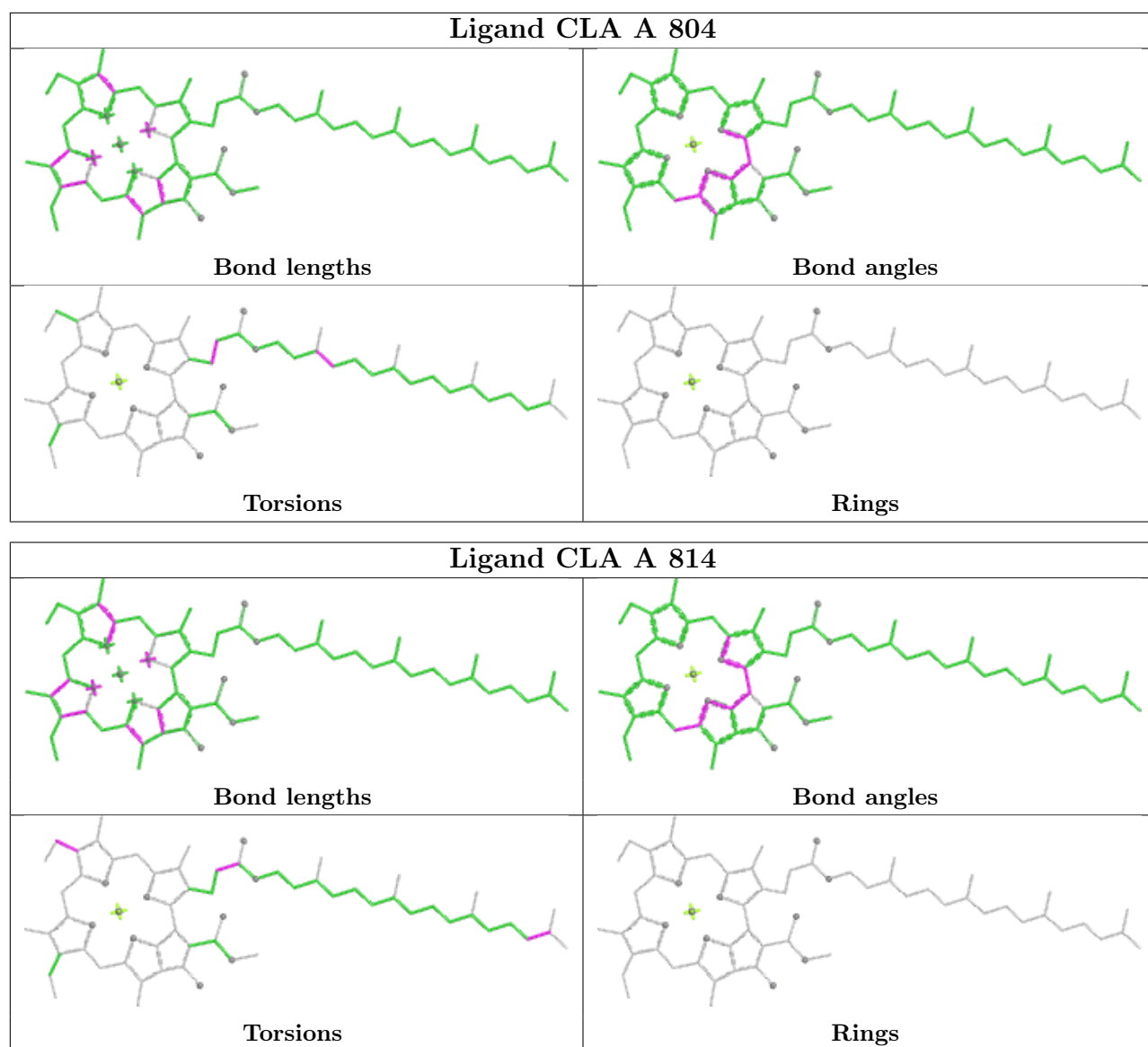
Bond angles



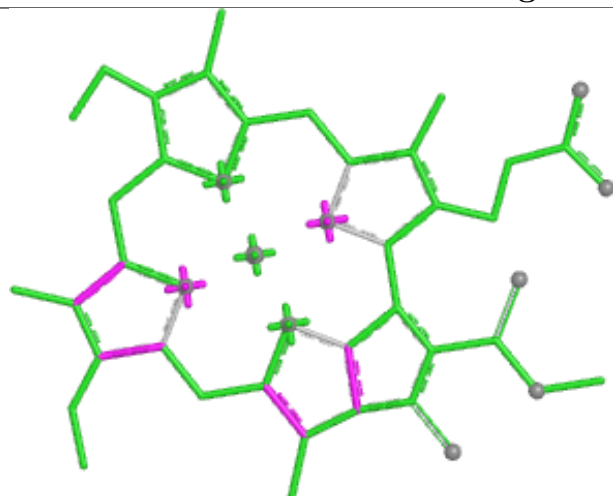
Torsions



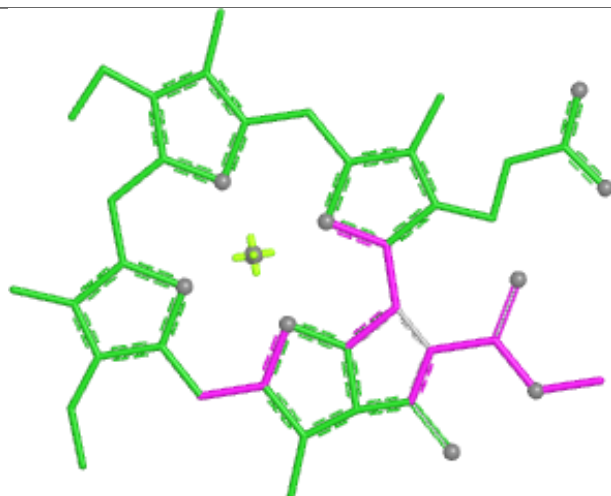
Rings



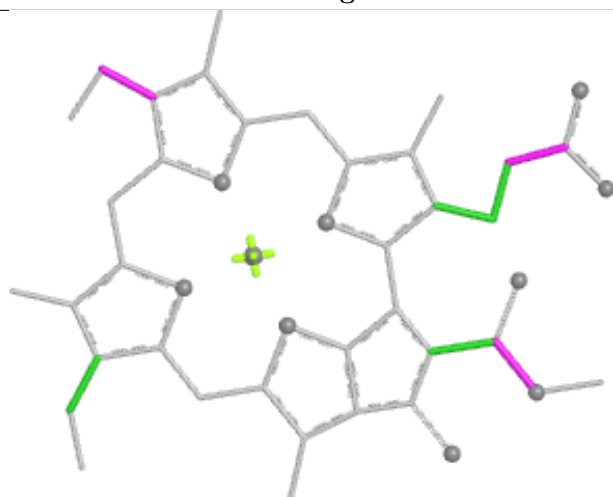
Ligand CLA 5 314



Bond lengths



Bond angles

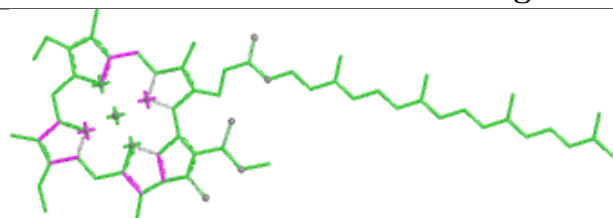


Torsions

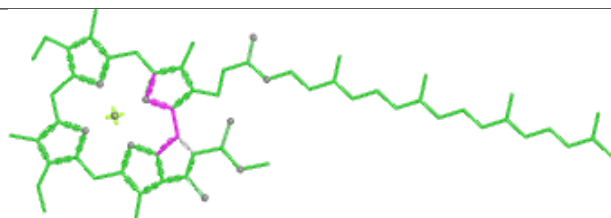


Rings

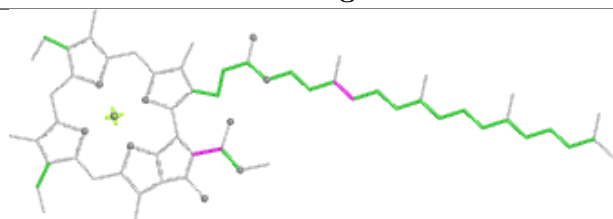
Ligand CLA A 831



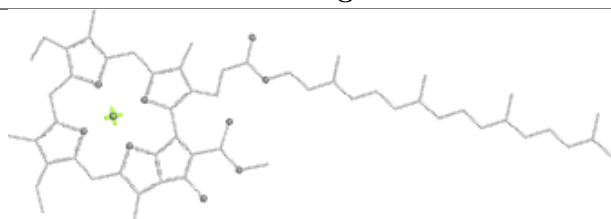
Bond lengths



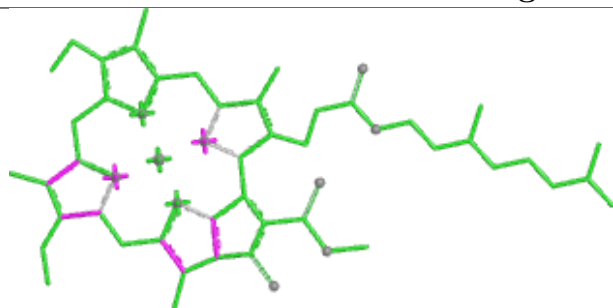
Bond angles



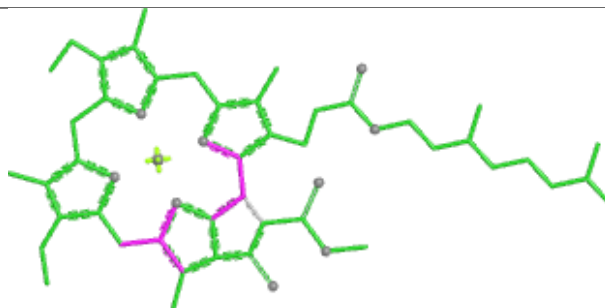
Torsions



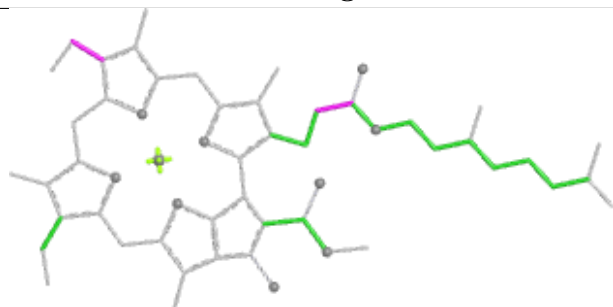
Rings

Ligand CLA 6 303

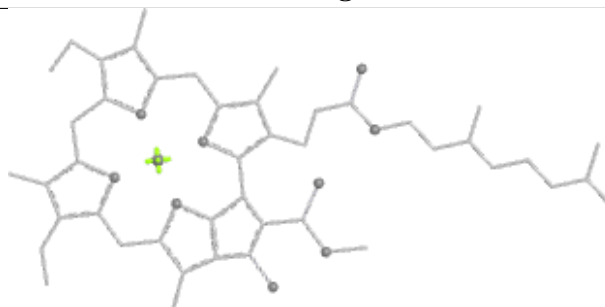
Bond lengths



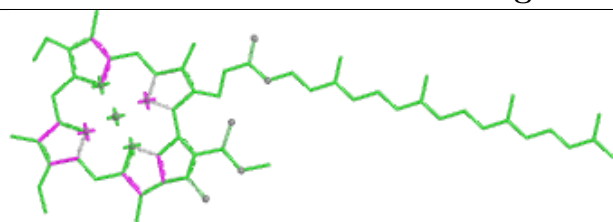
Bond angles



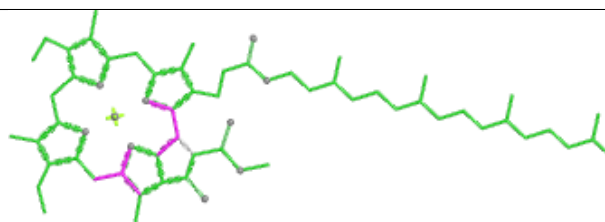
Torsions



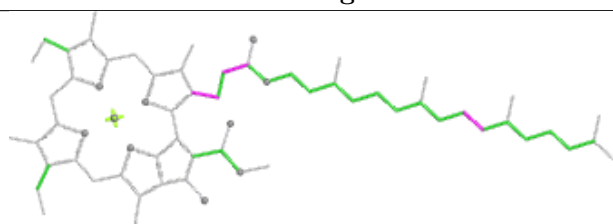
Rings

Ligand CLA B 806

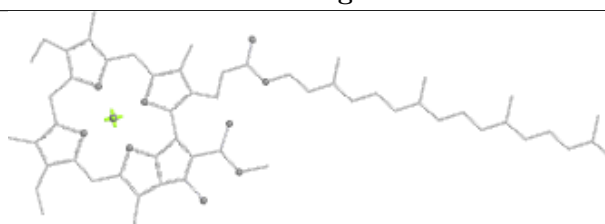
Bond lengths



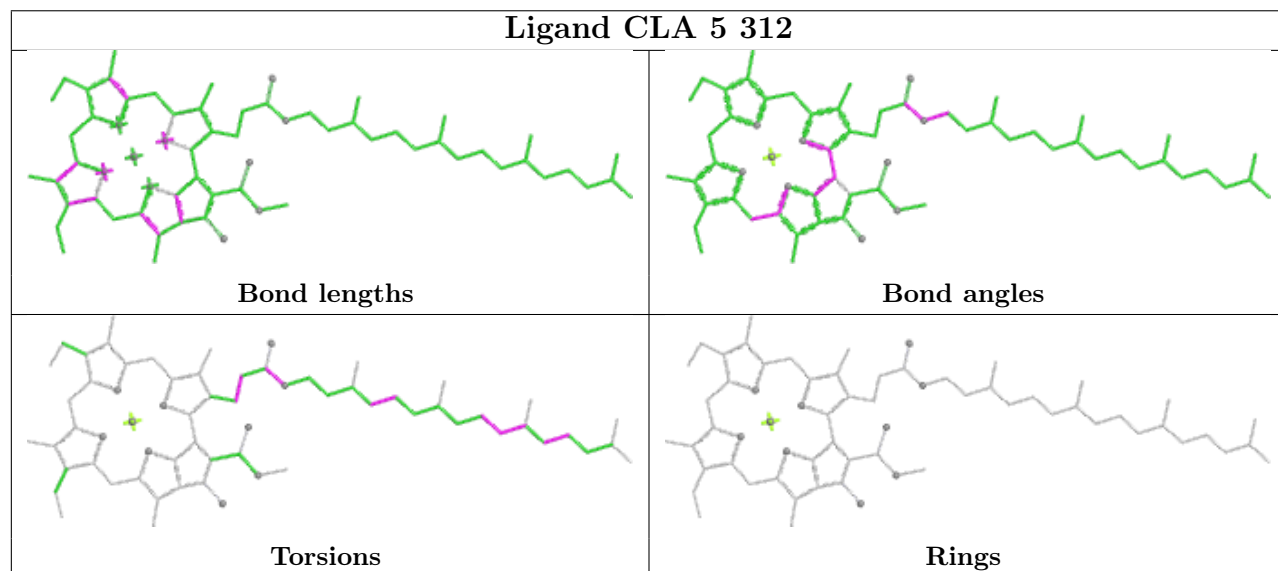
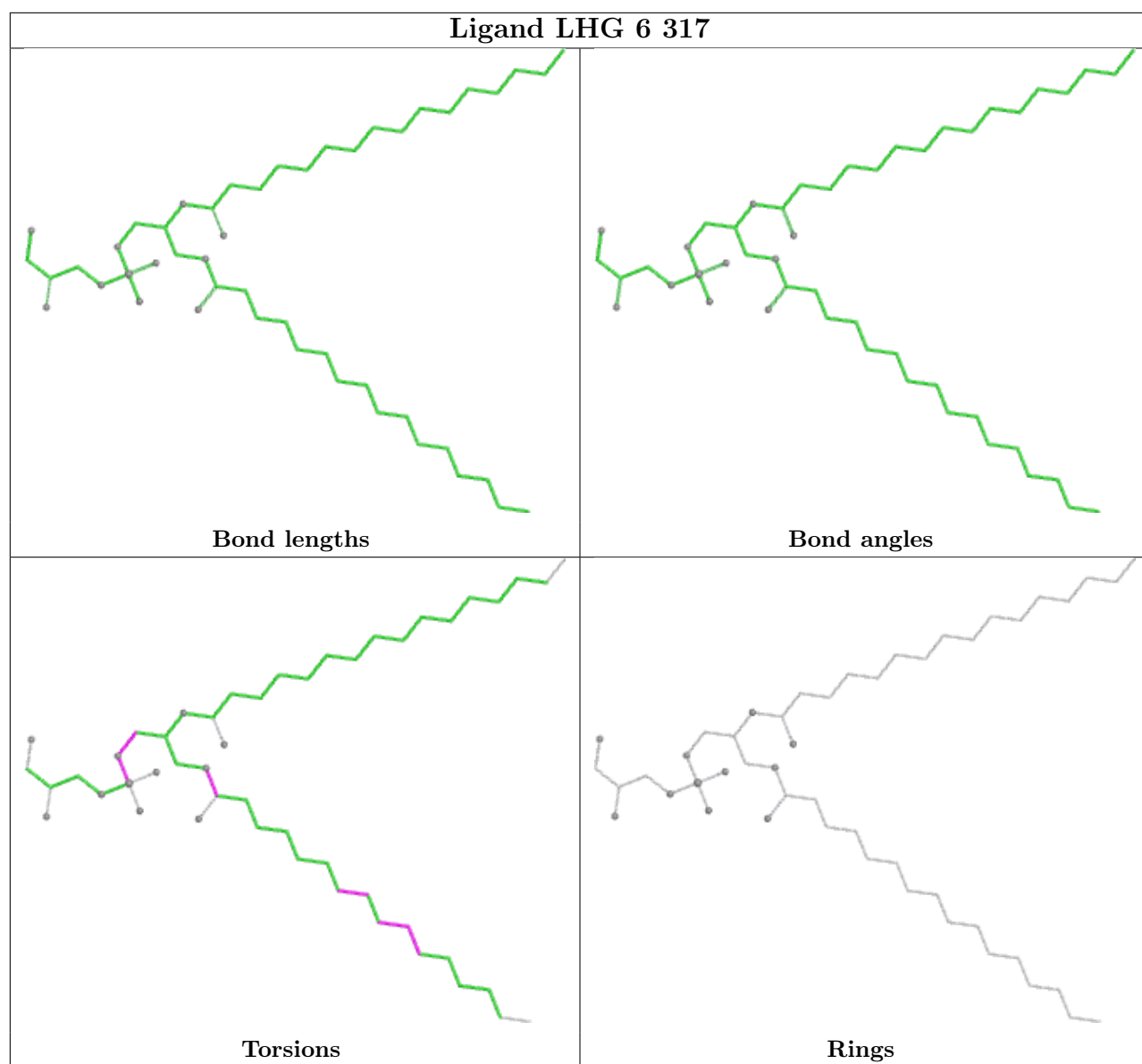
Bond angles

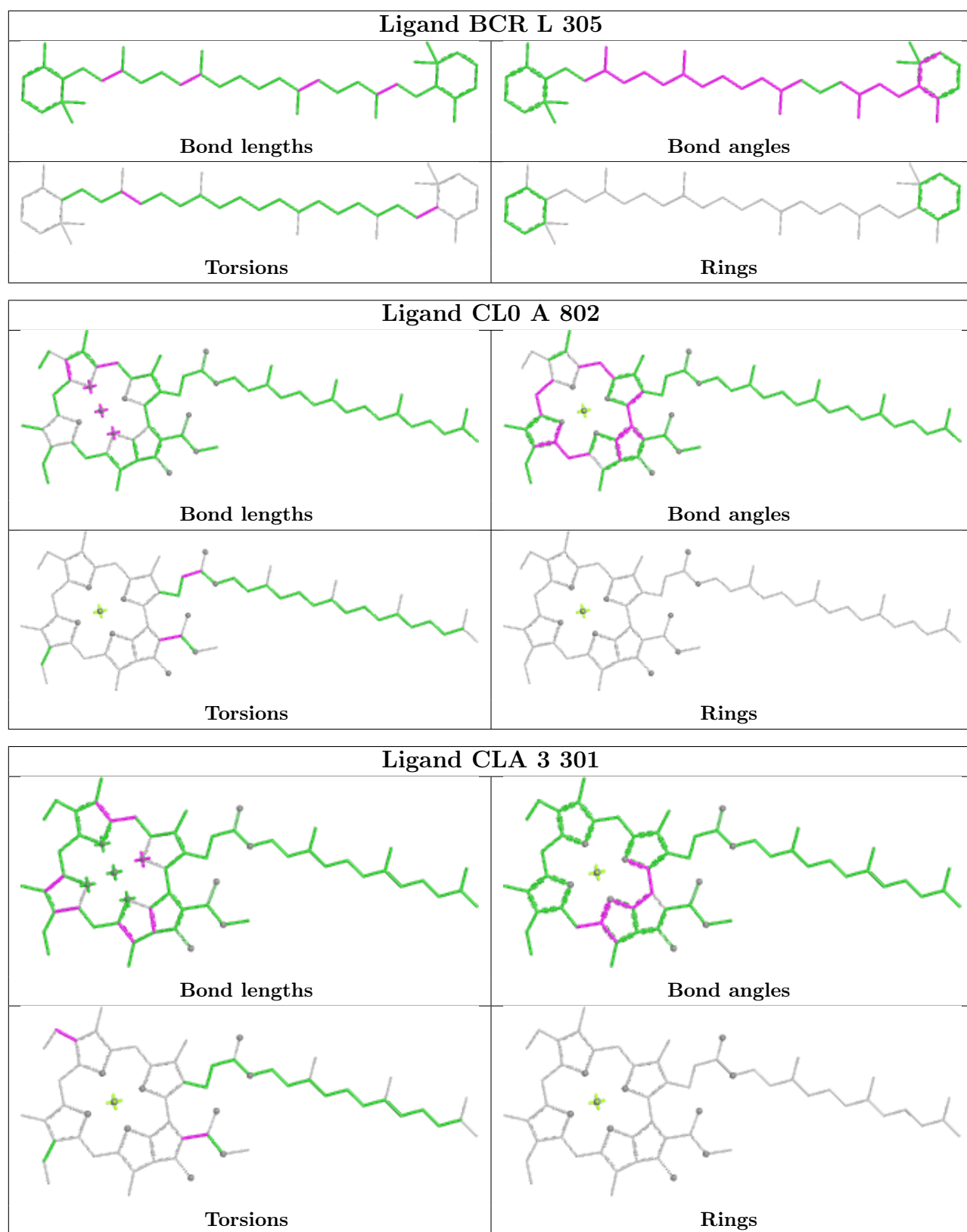


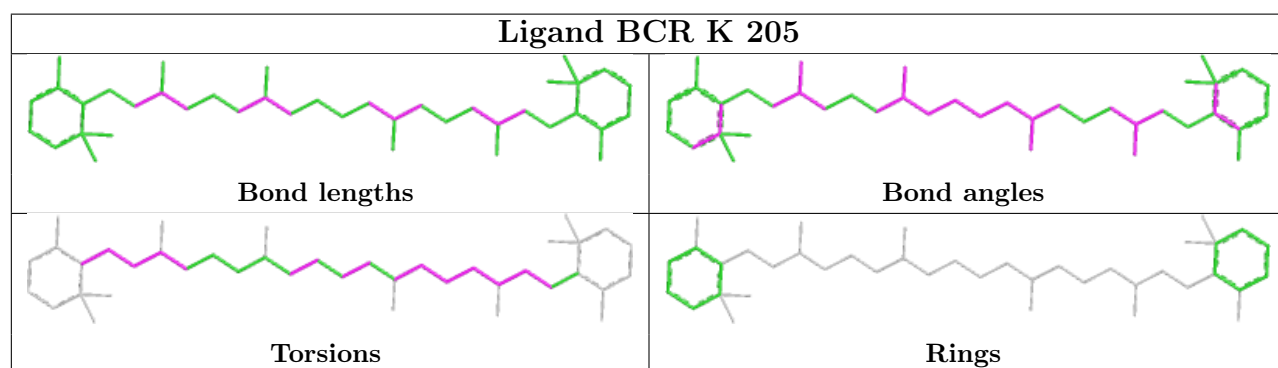
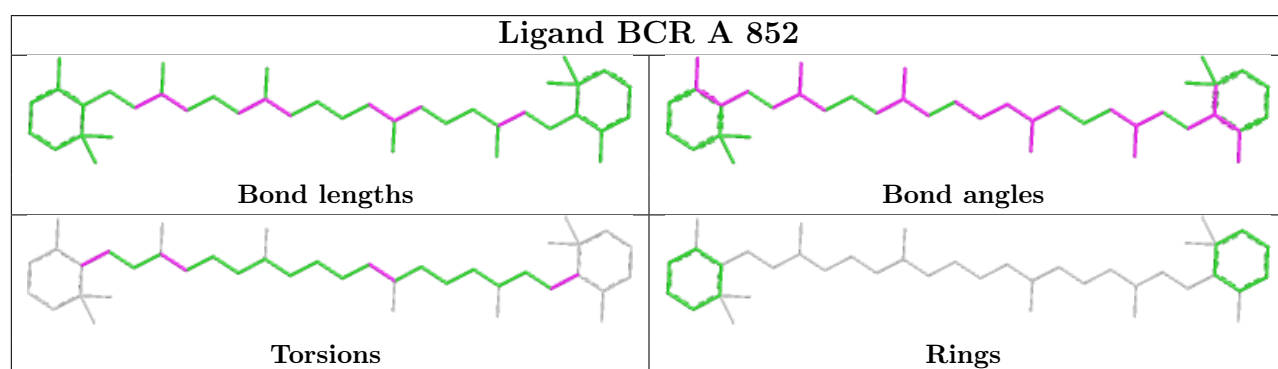
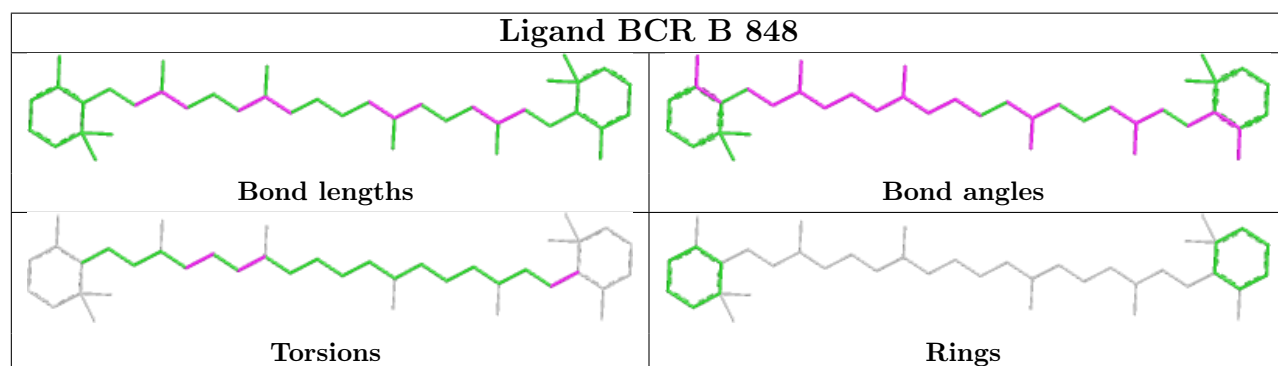
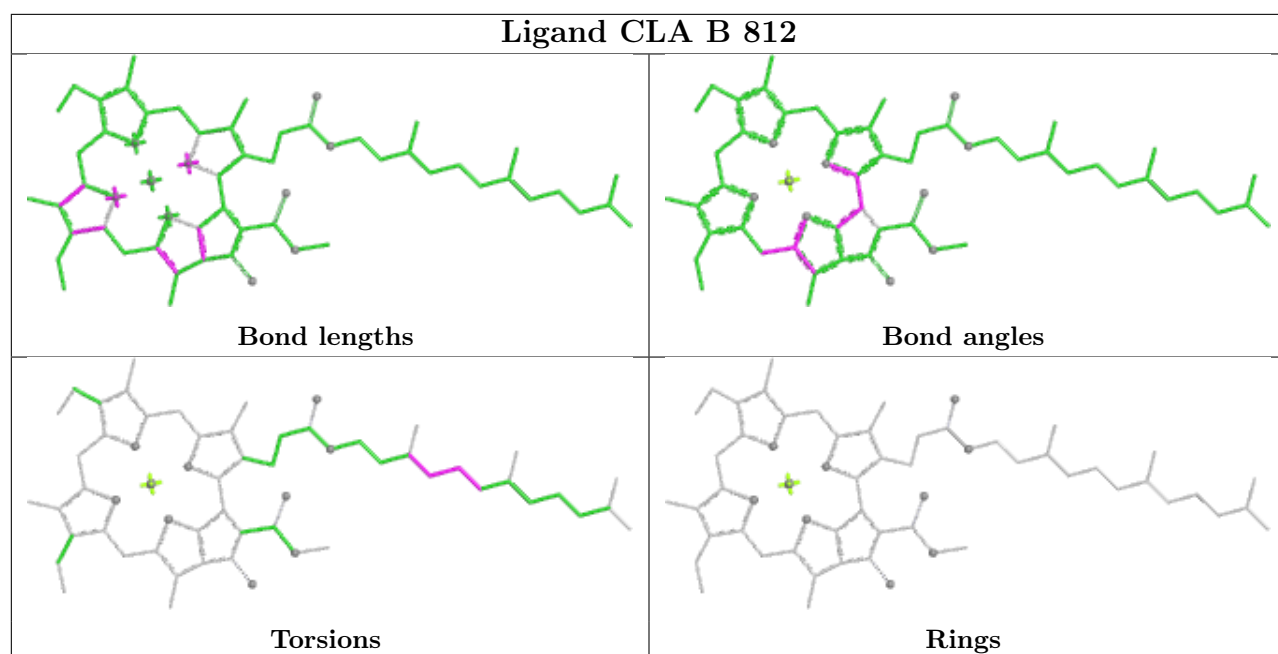
Torsions

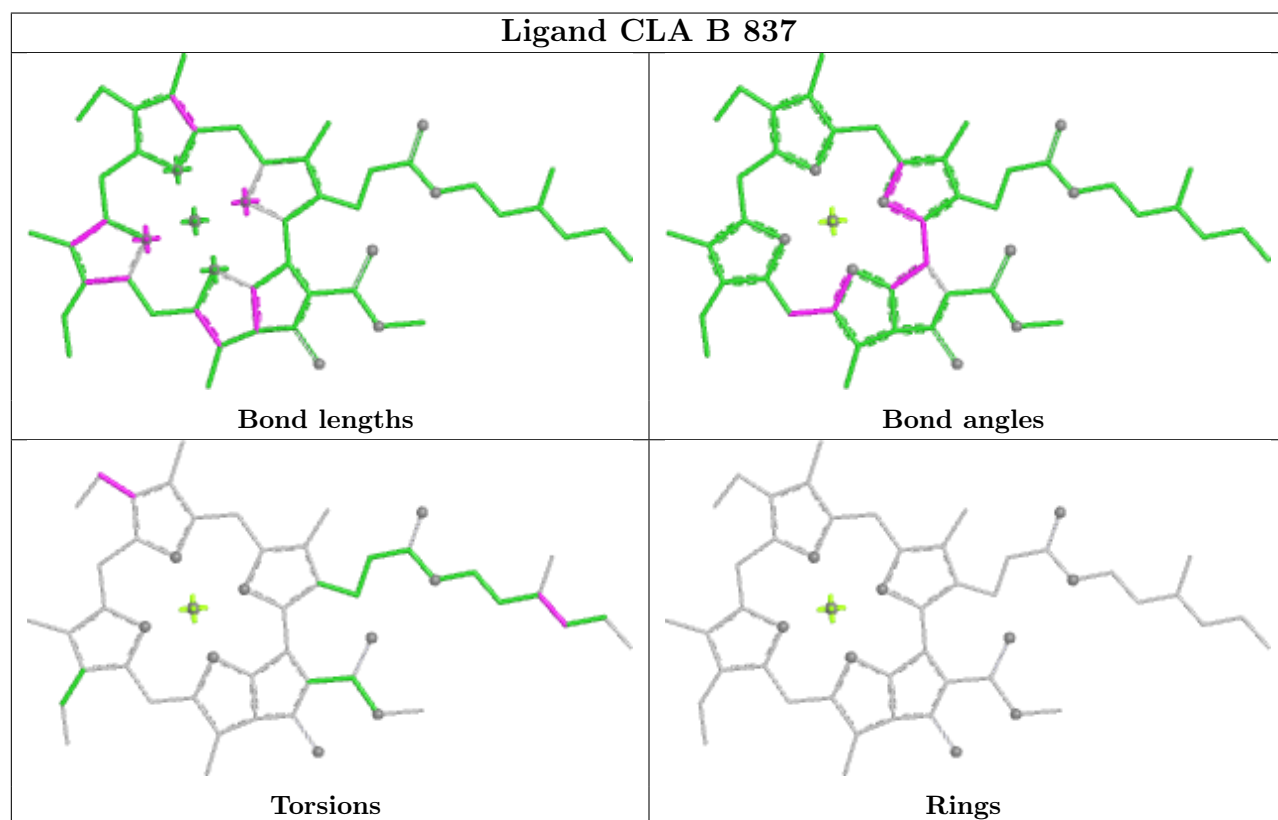
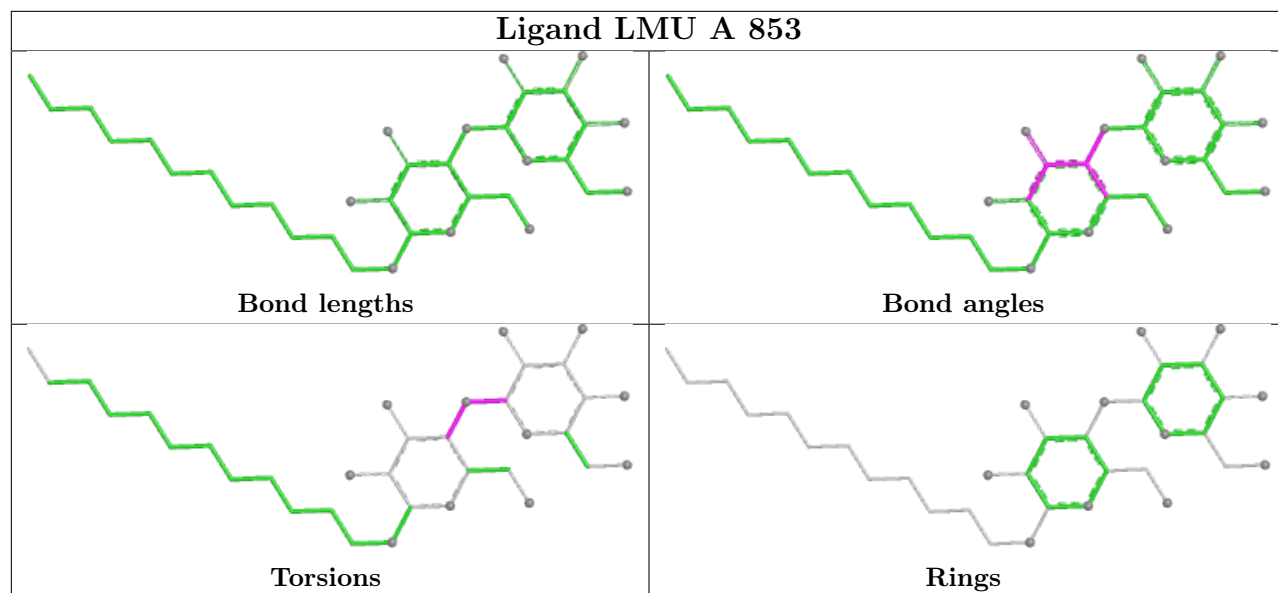


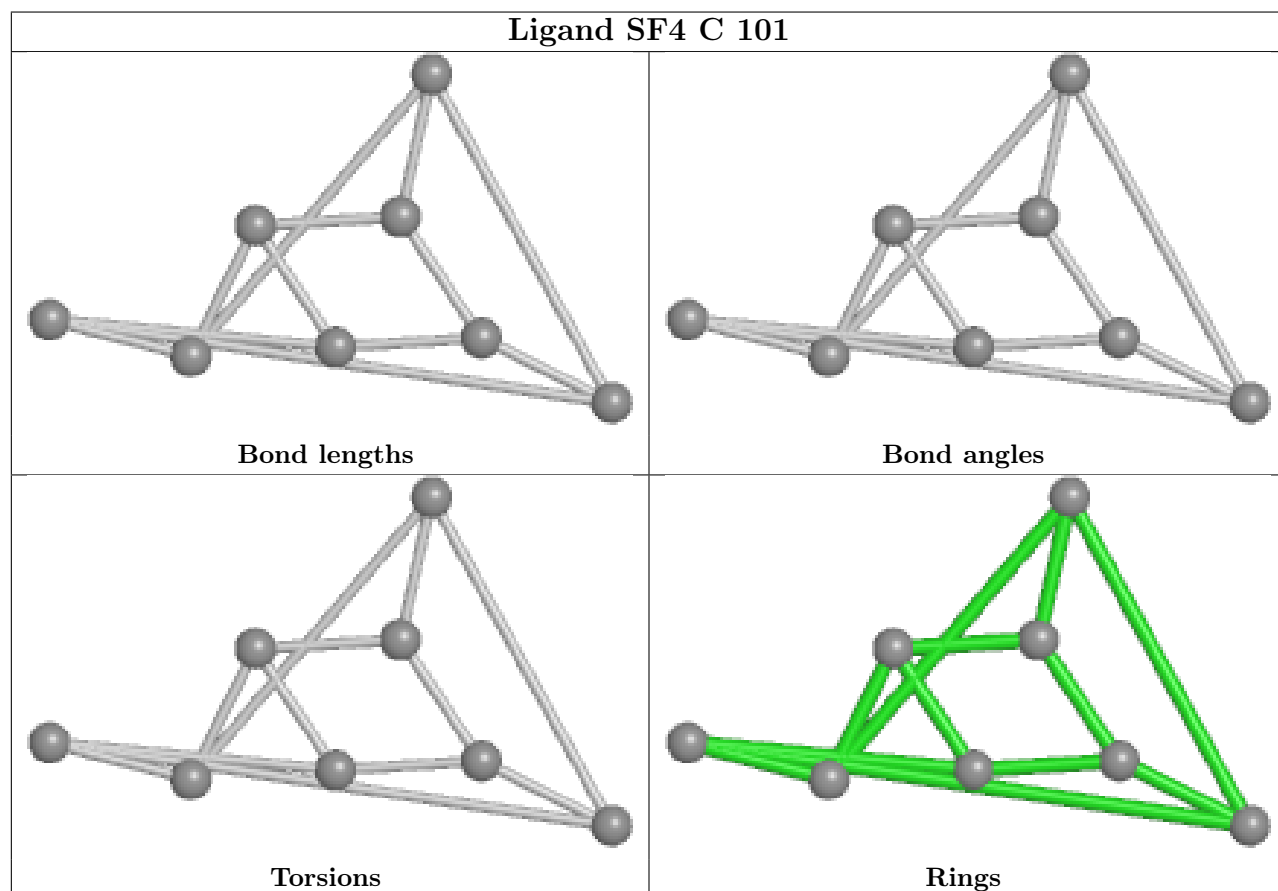
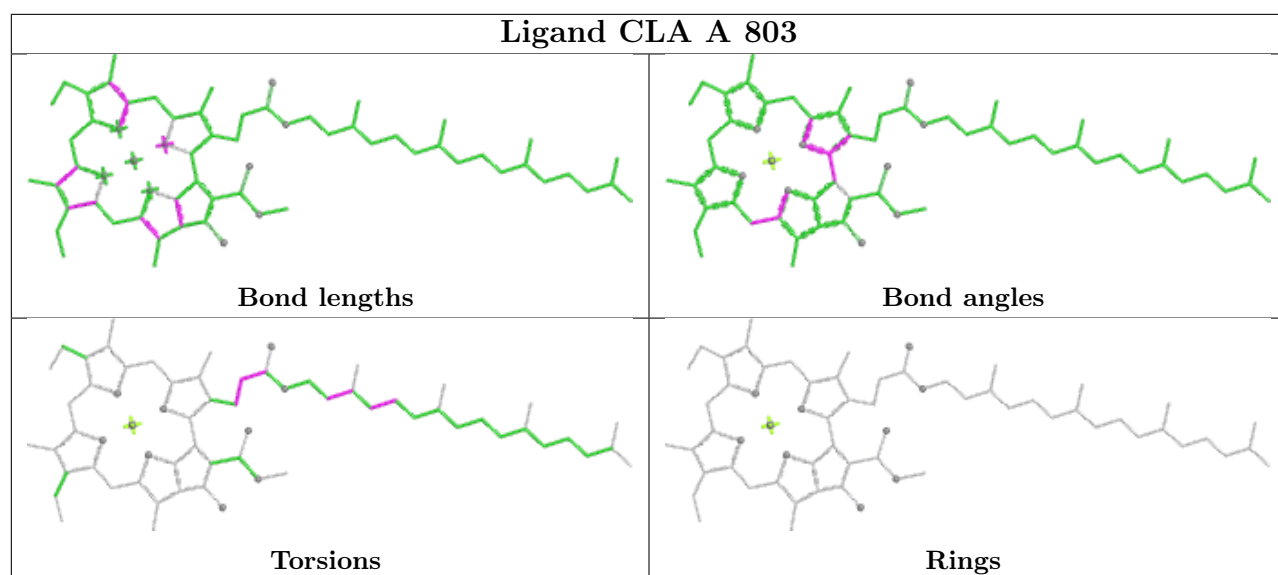
Rings

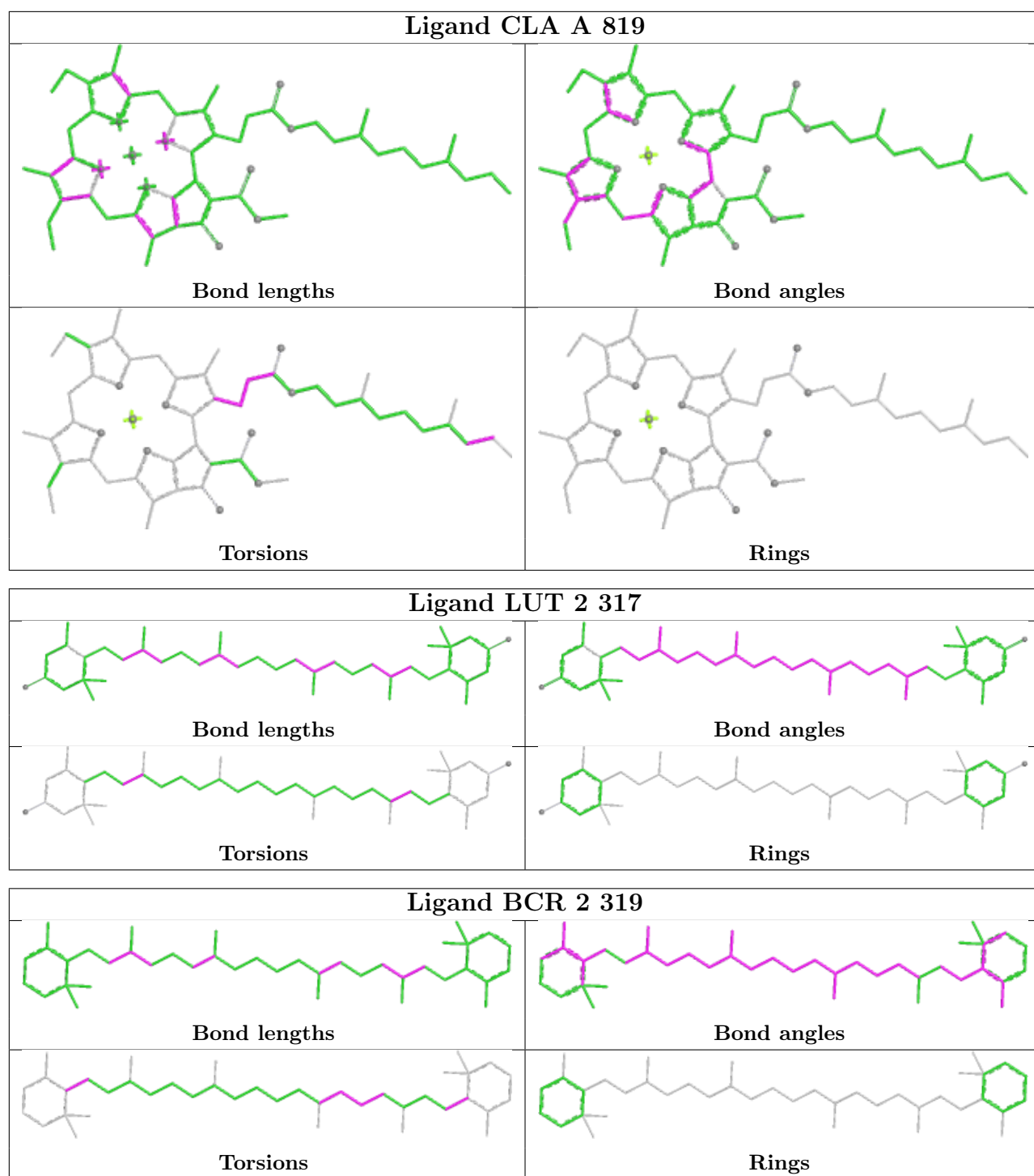




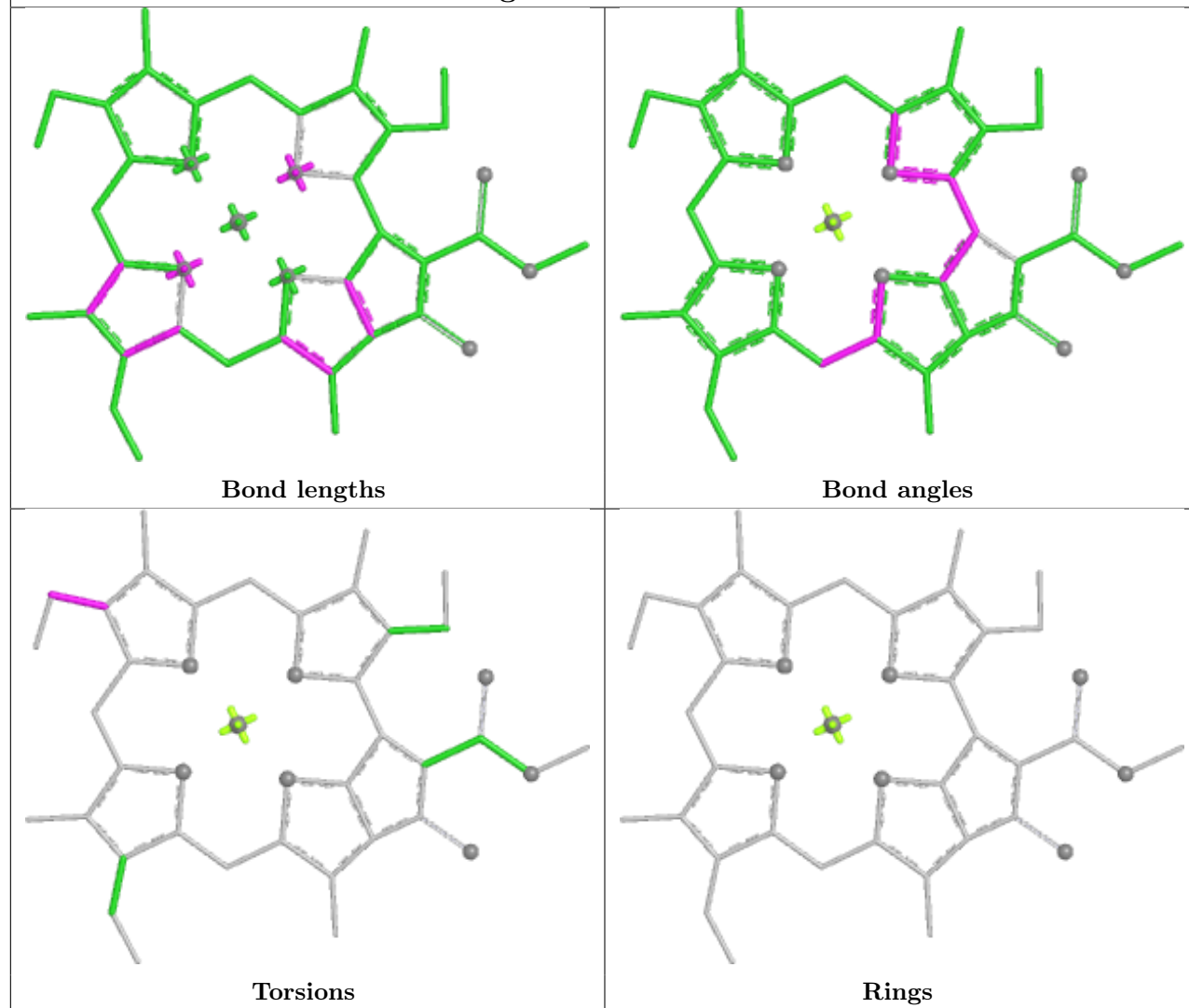




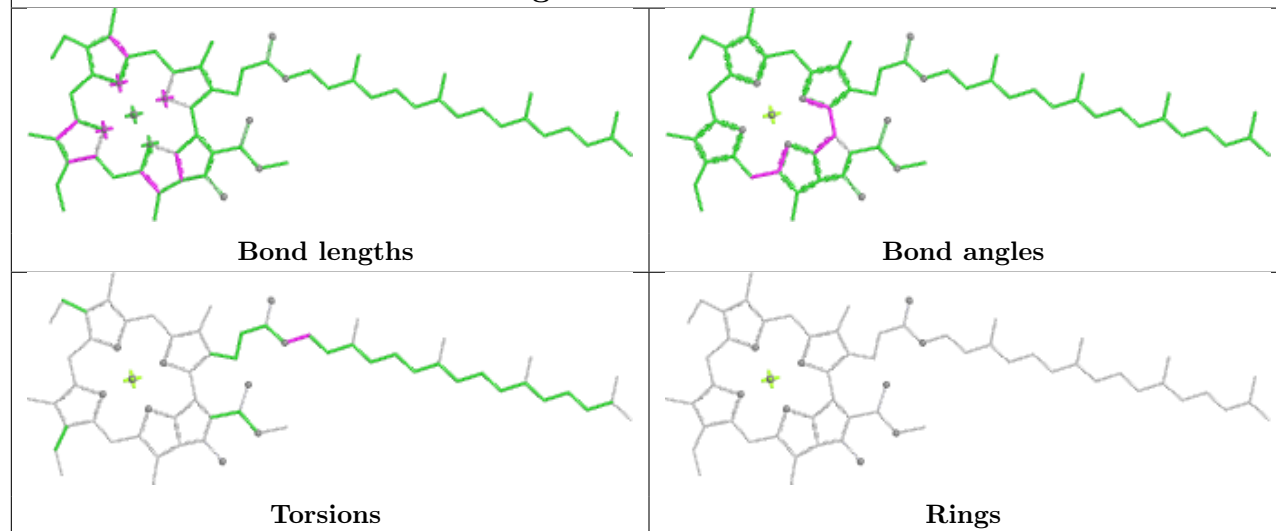


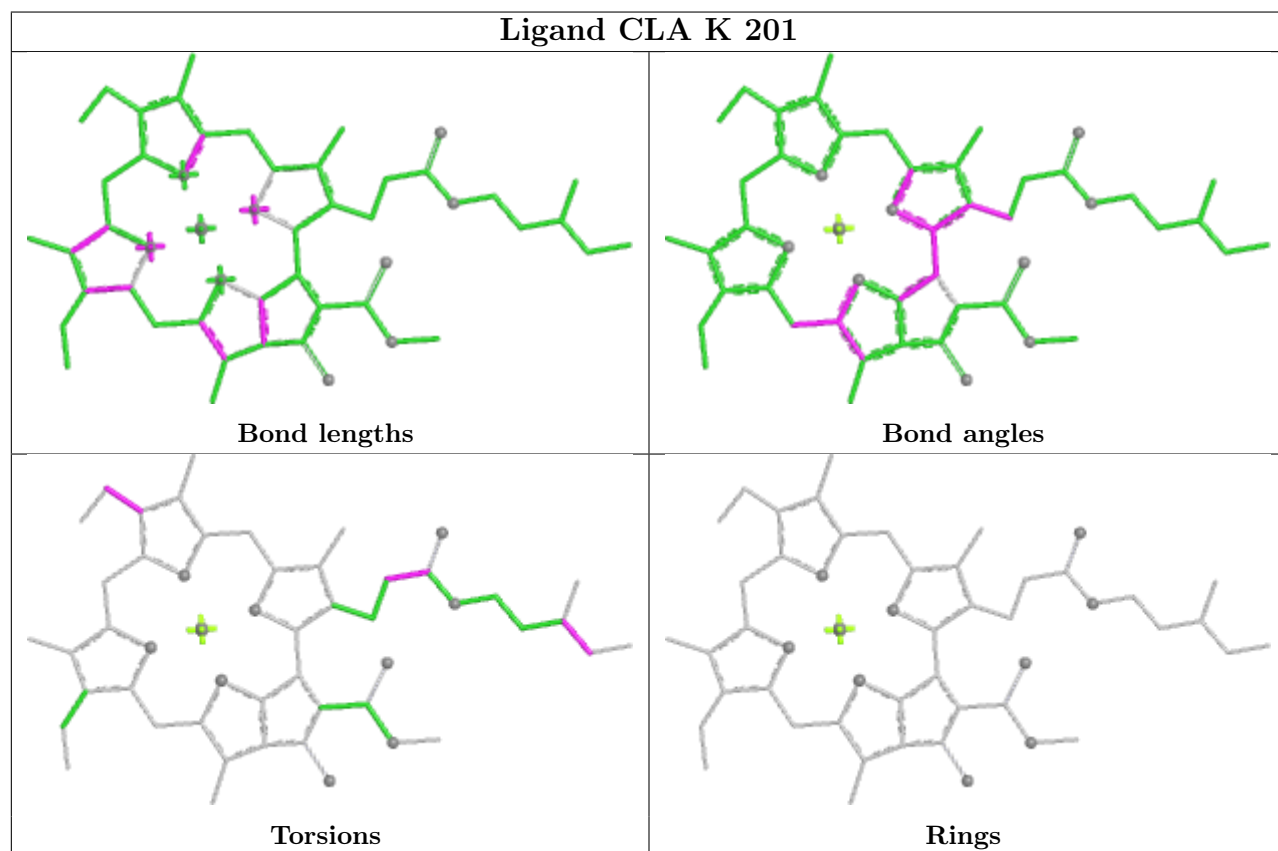
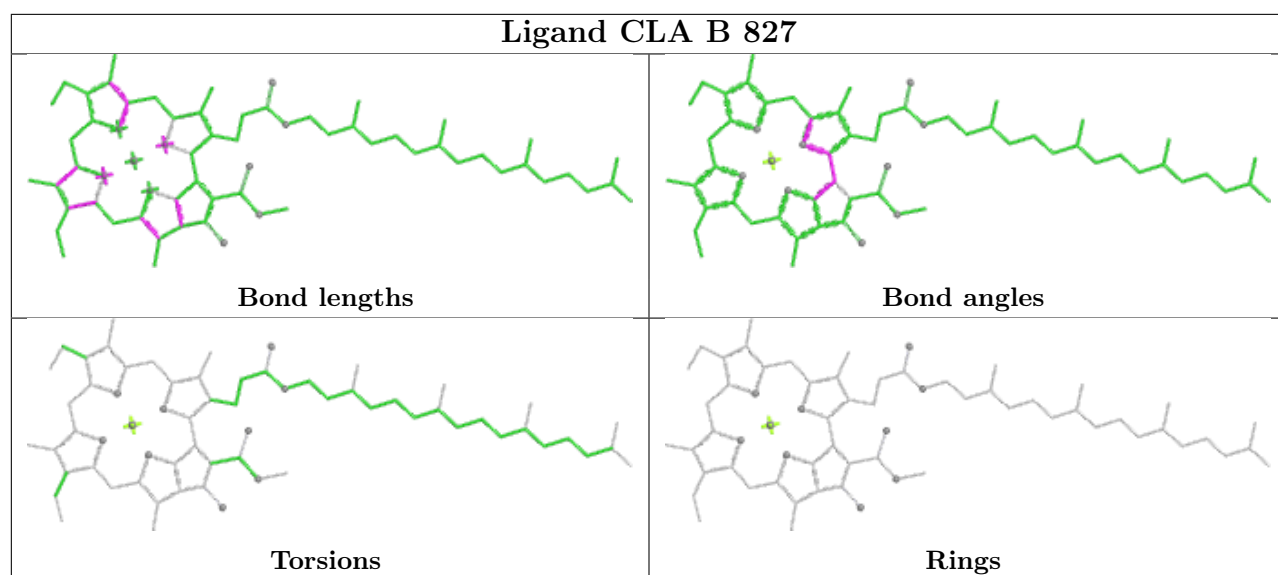


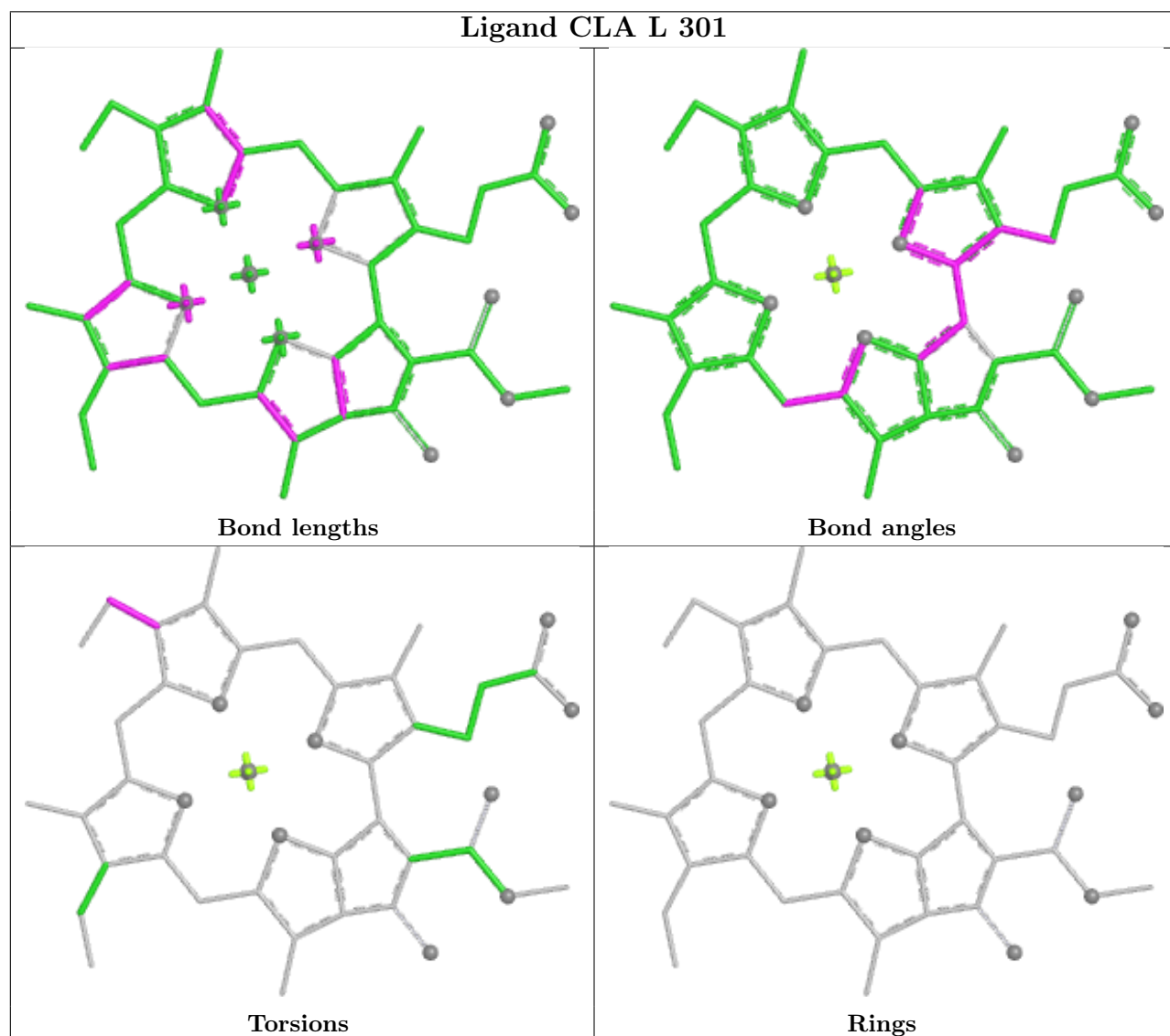
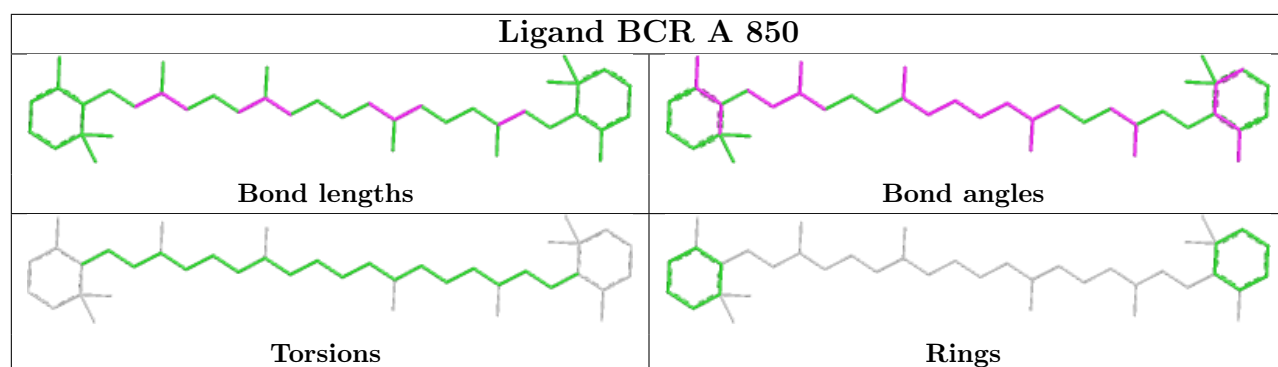
Ligand CLA 3 312

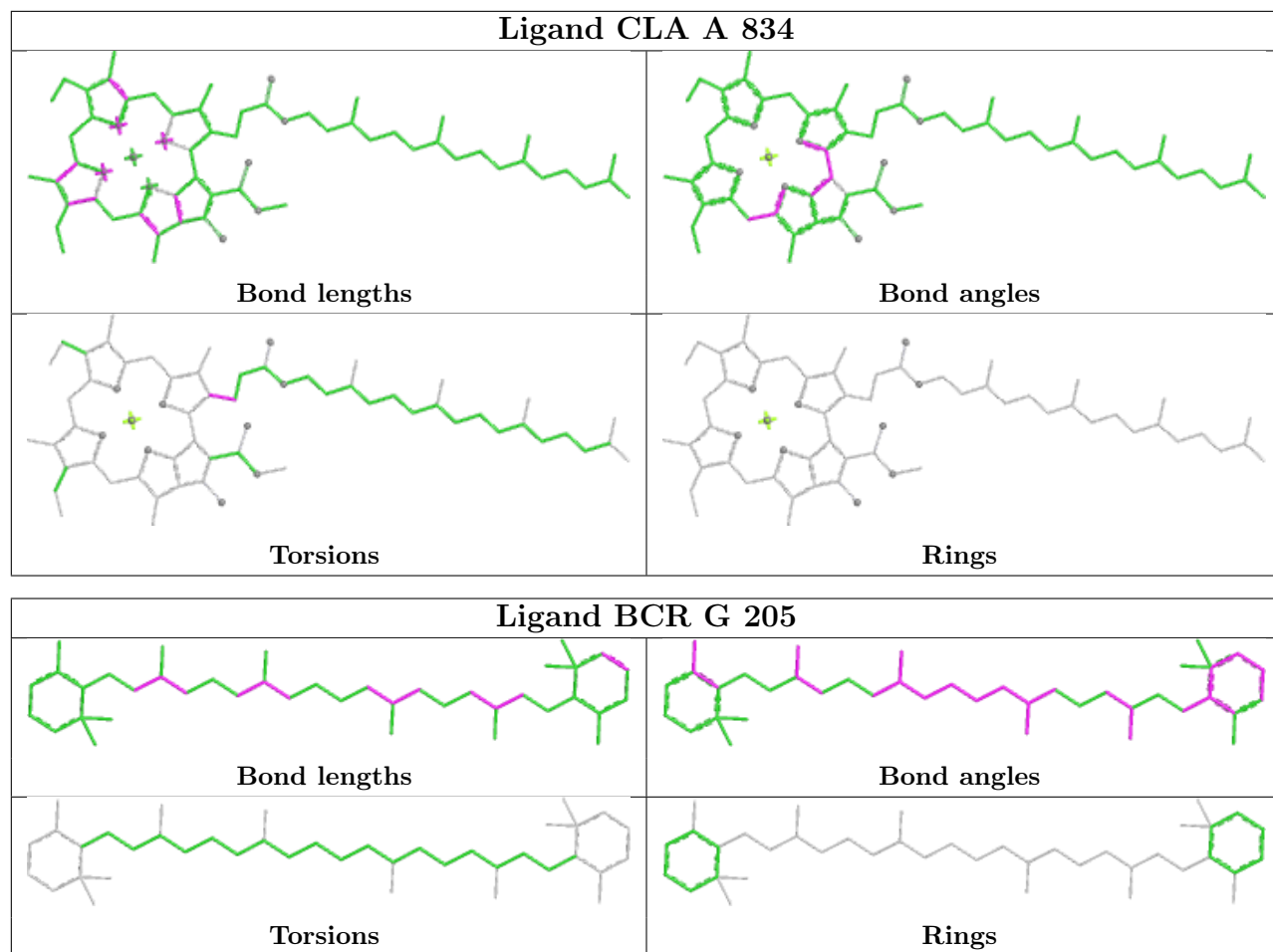


Ligand CLA B 841

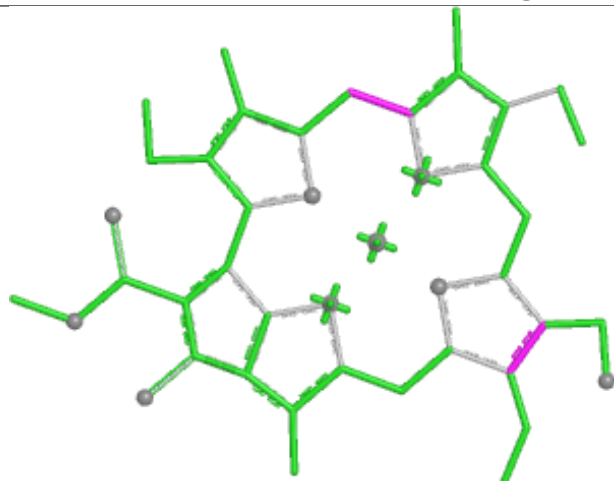




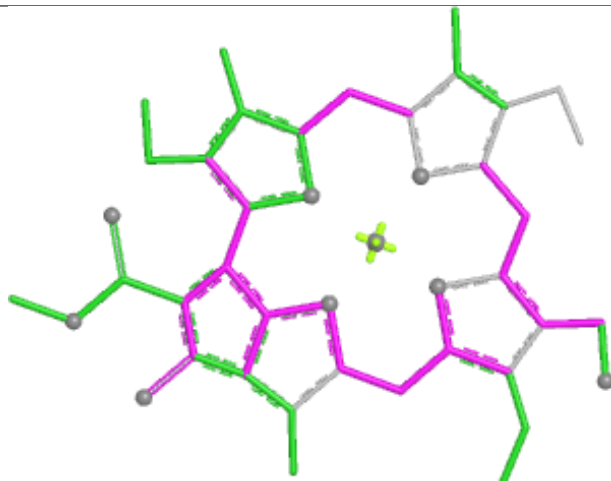




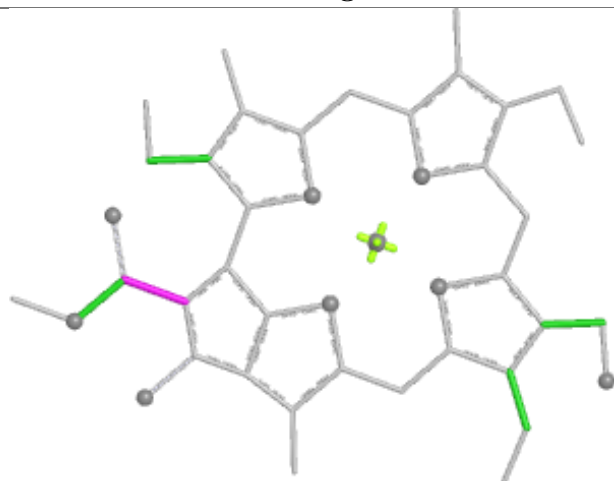
Ligand CHL 5 313



Bond lengths



Bond angles

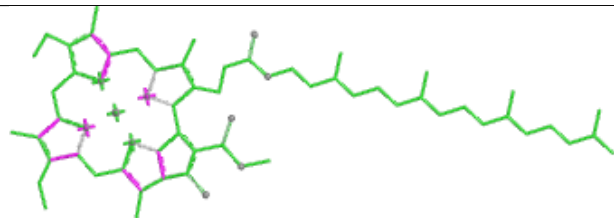


Torsions

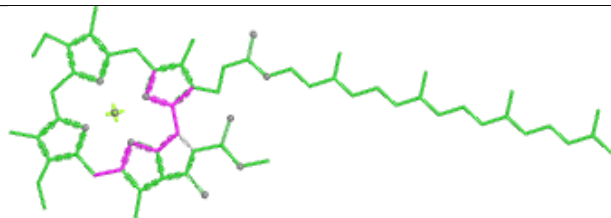


Rings

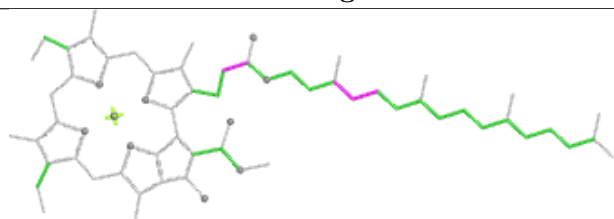
Ligand CLA B 810



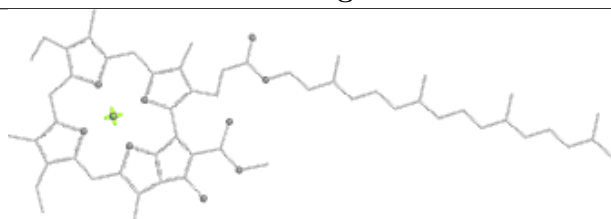
Bond lengths



Bond angles

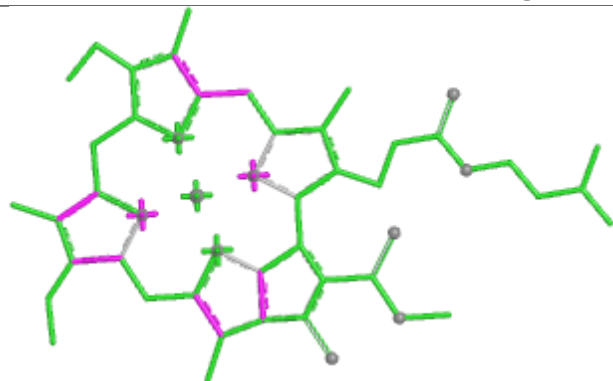


Torsions

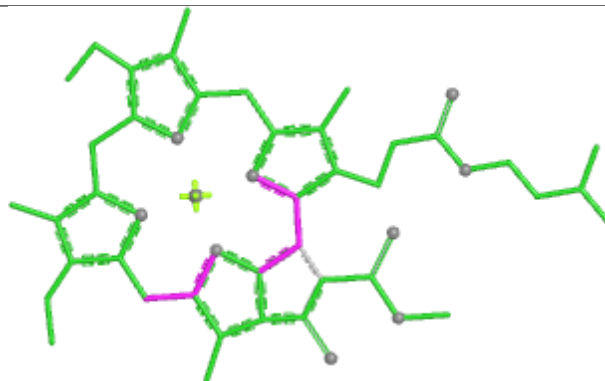


Rings

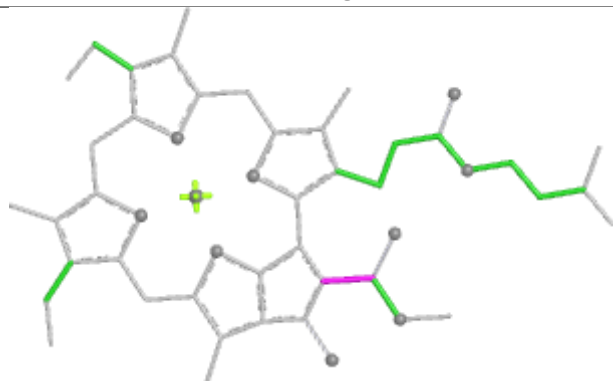
Ligand CLA 6 308



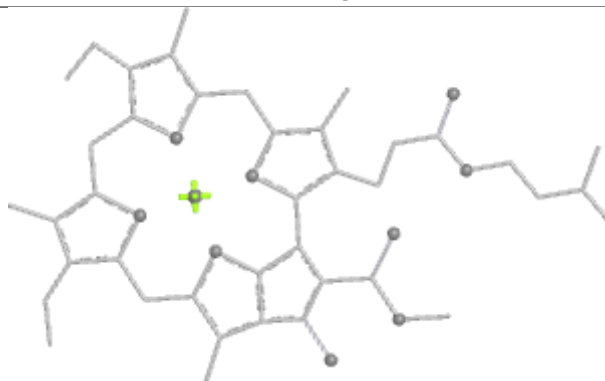
Bond lengths



Bond angles

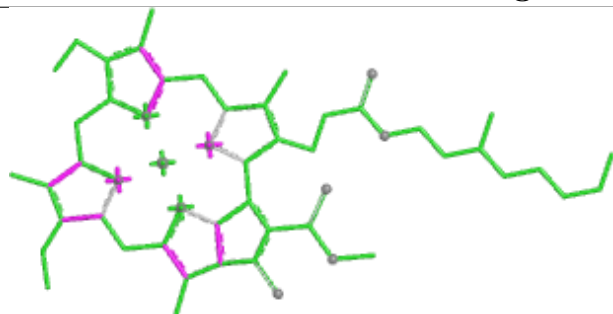


Torsions

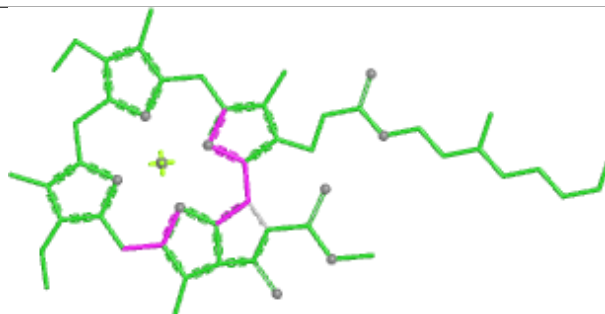


Rings

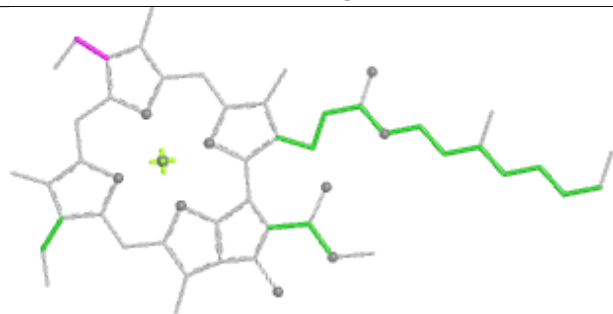
Ligand CLA A 813



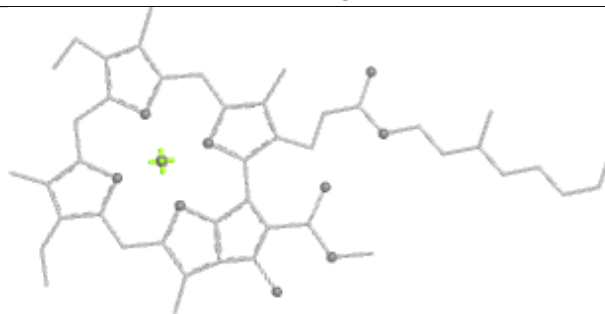
Bond lengths



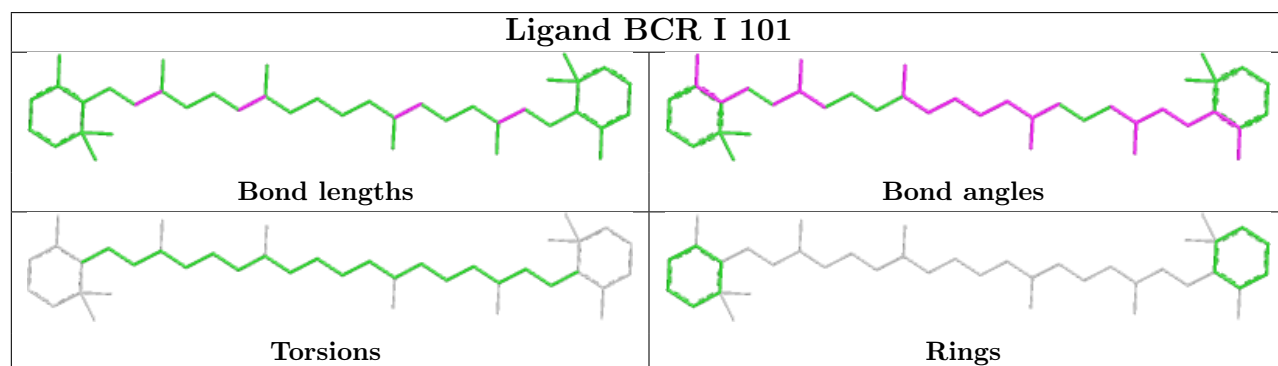
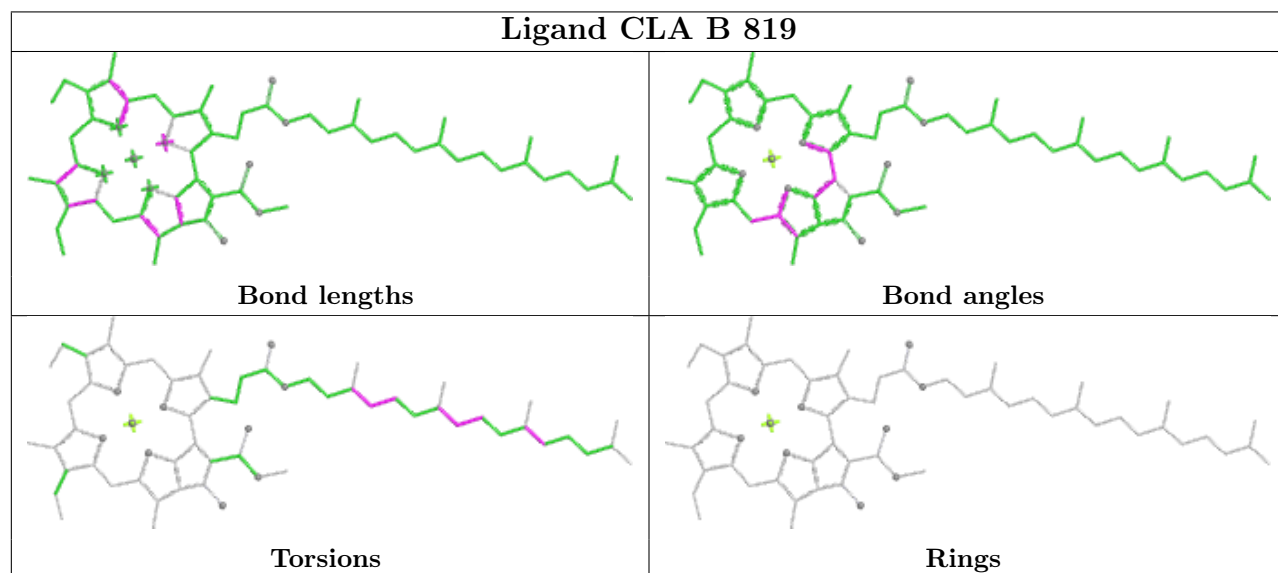
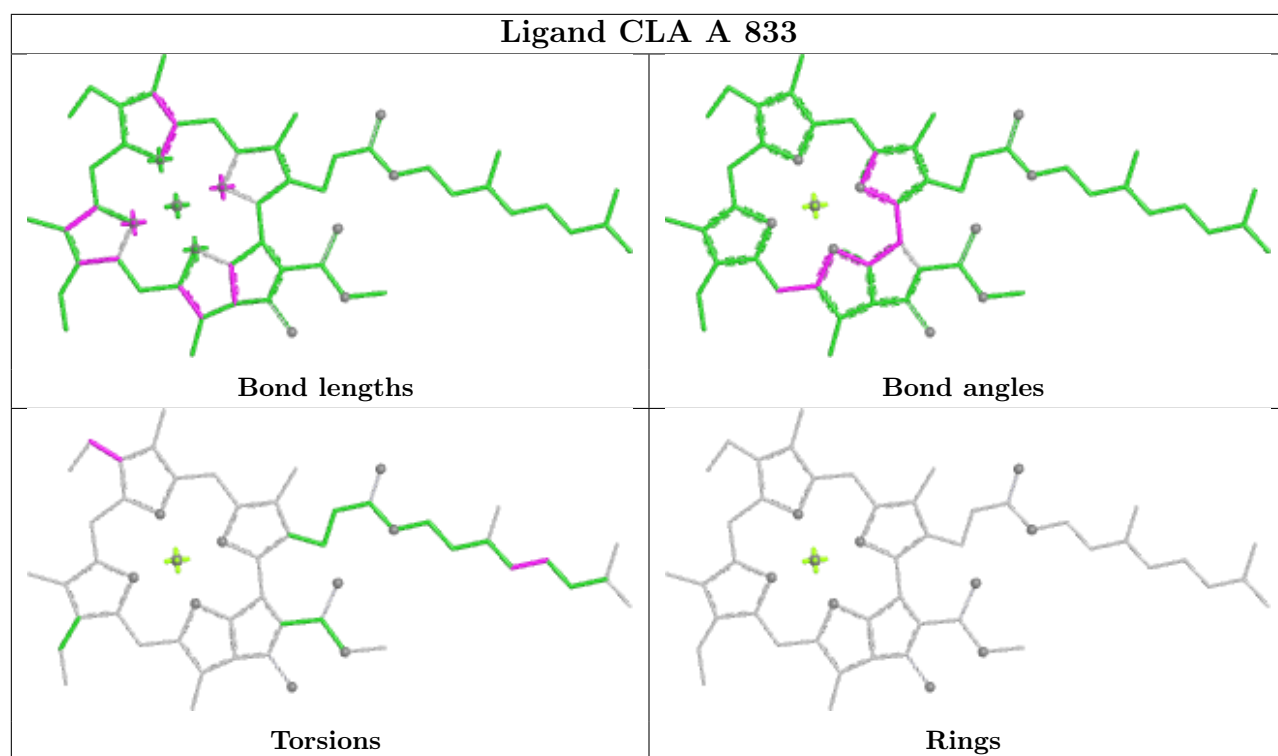
Bond angles



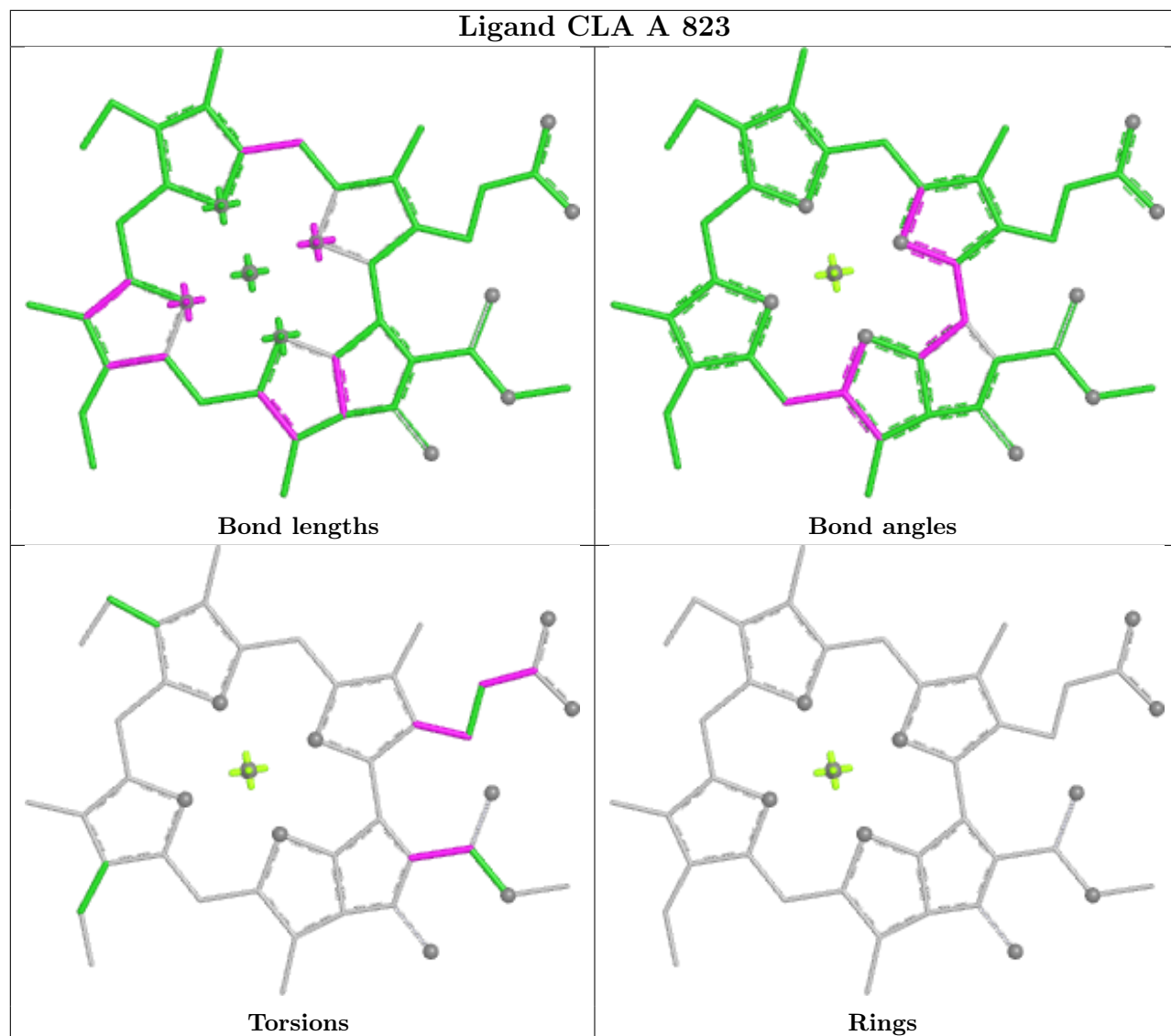
Torsions



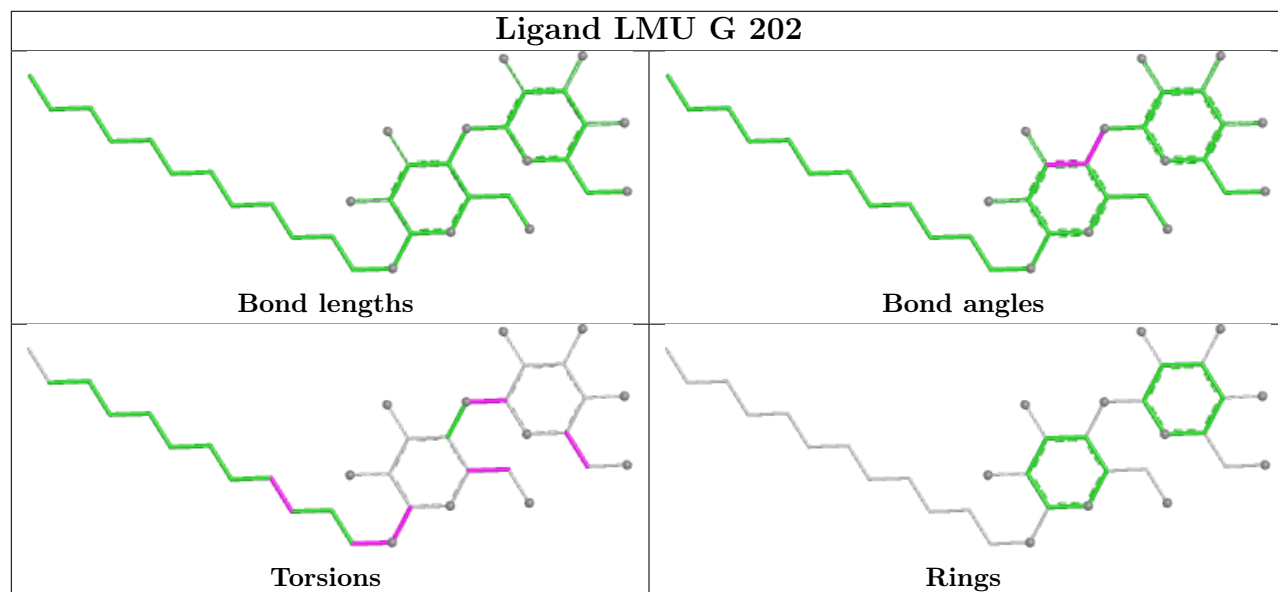
Rings

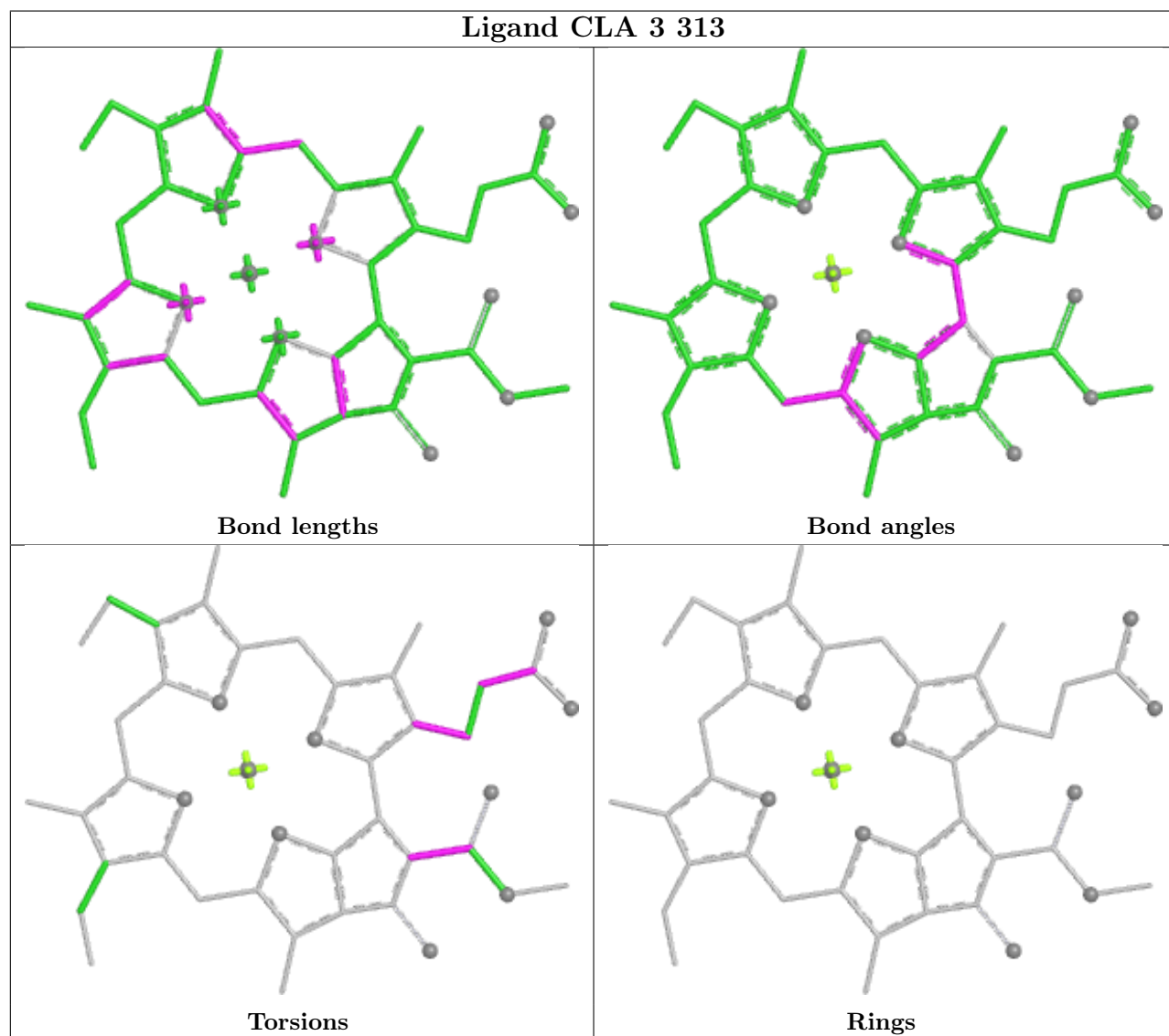
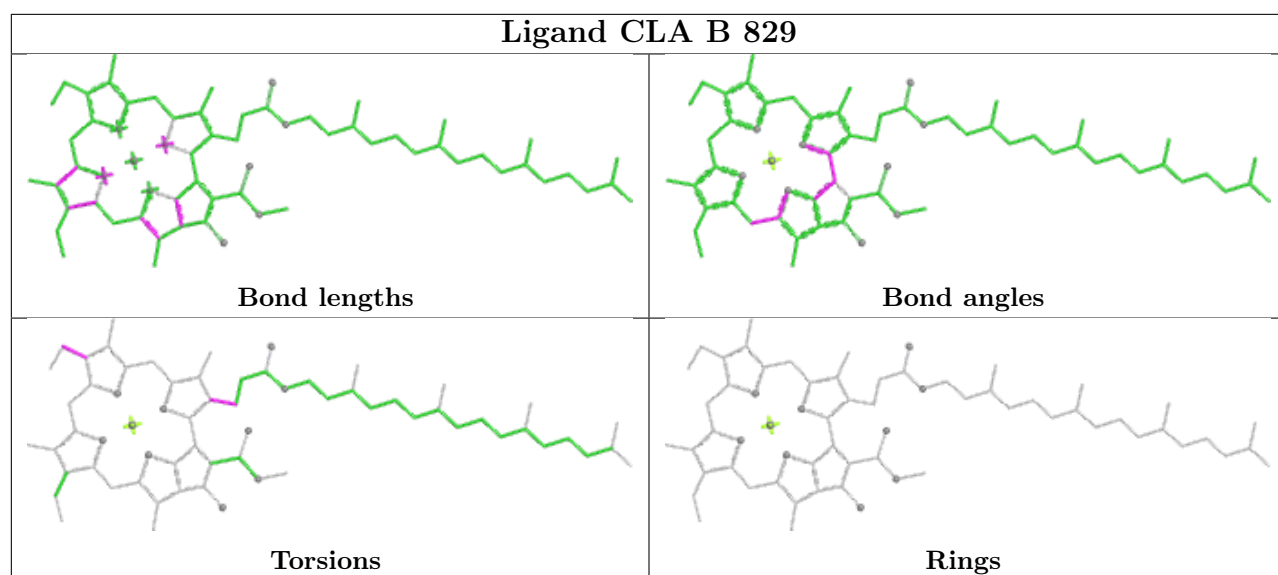


Ligand CLA A 823

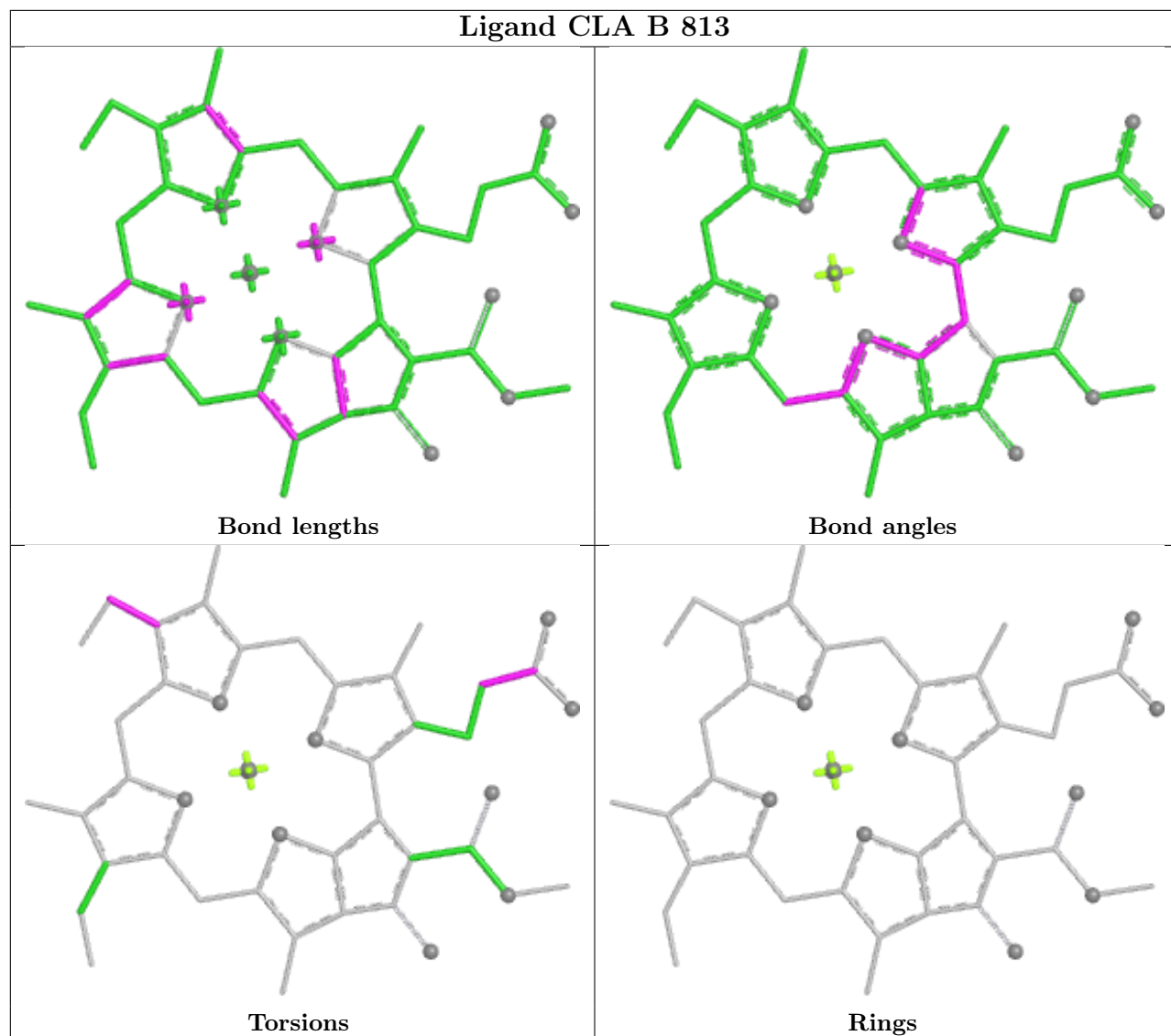


Ligand LMU G 202

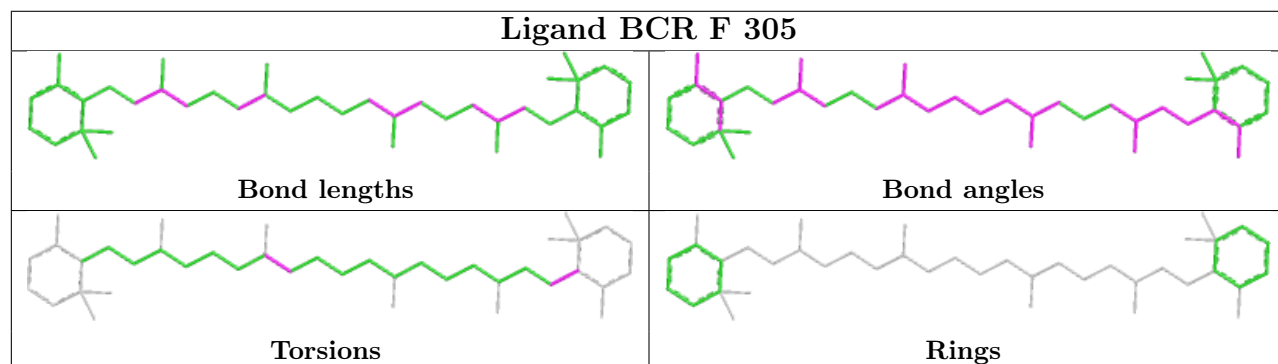


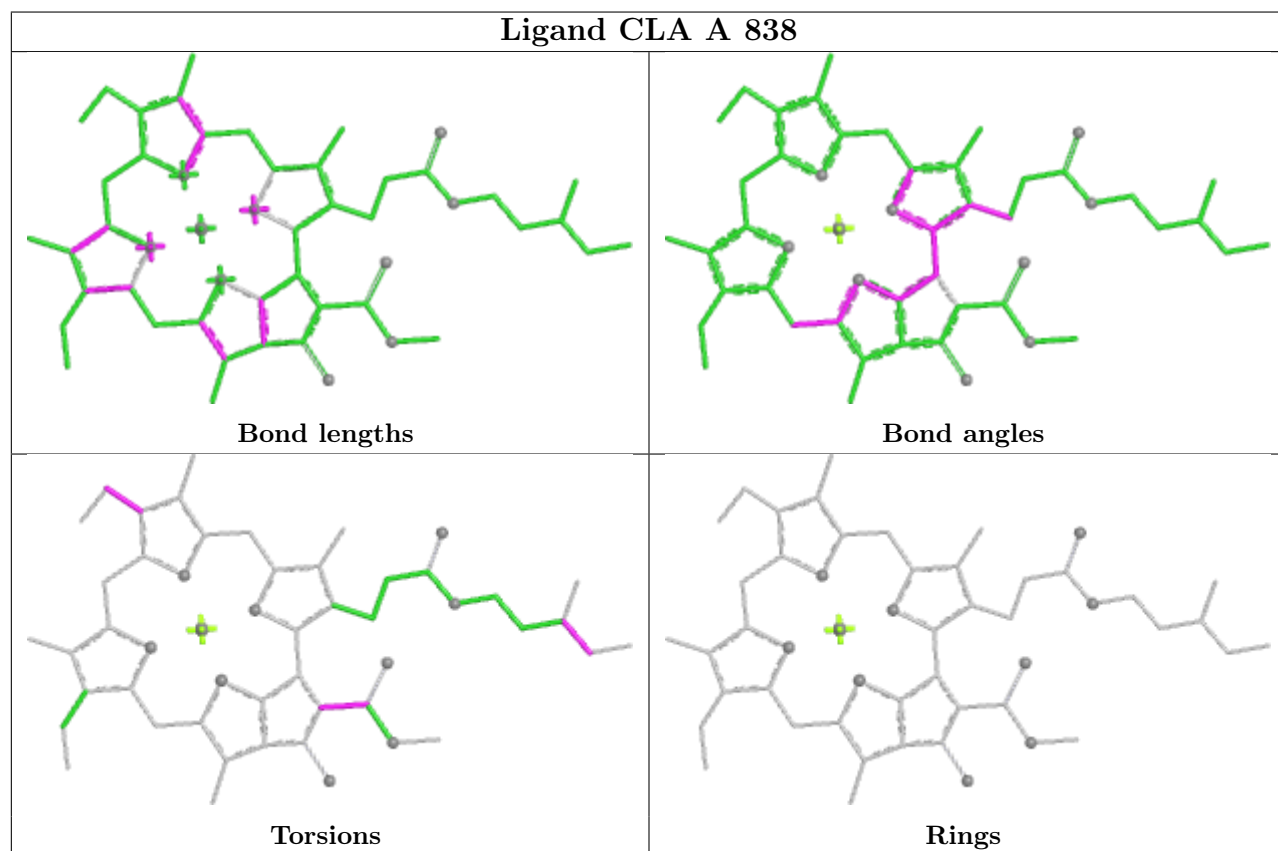
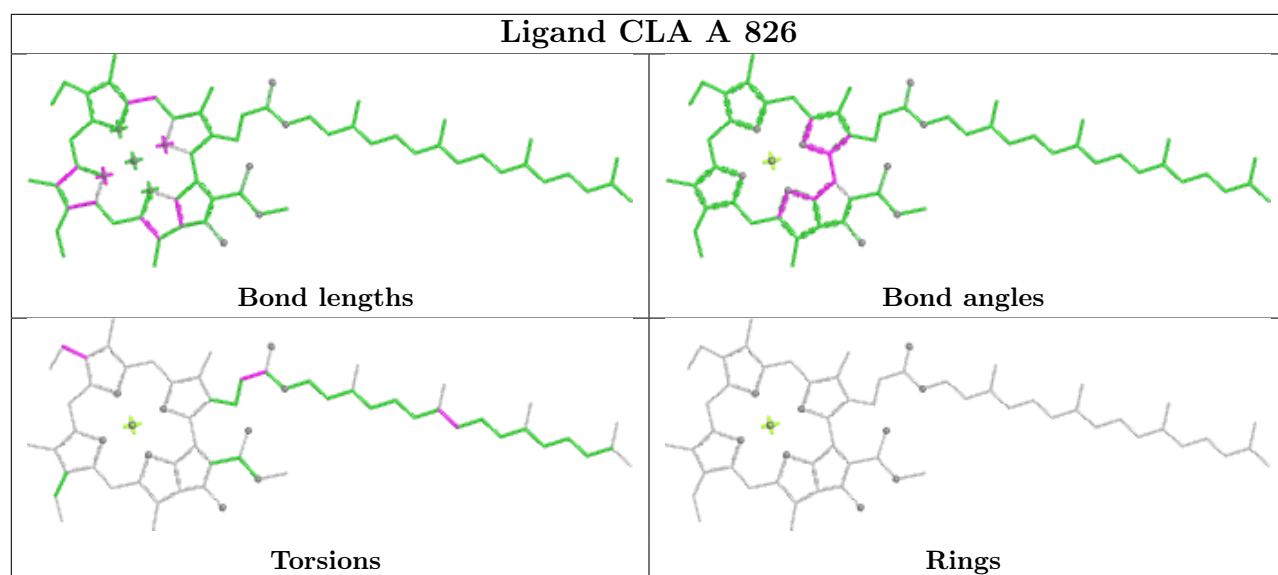


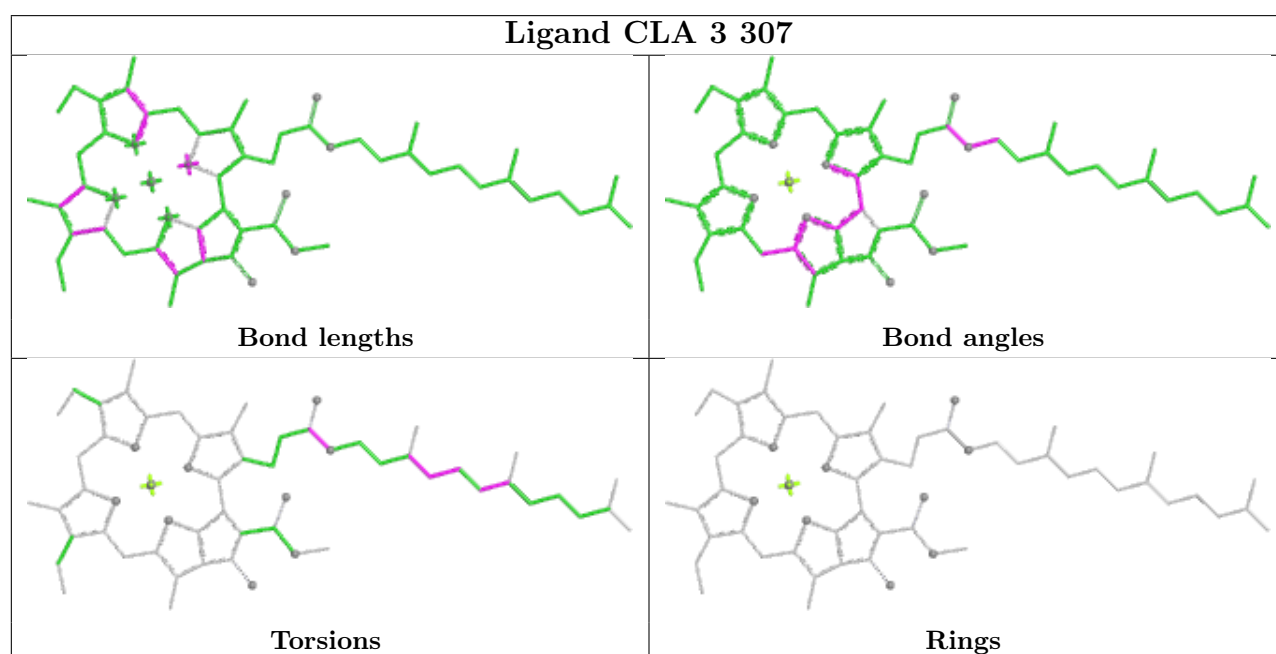
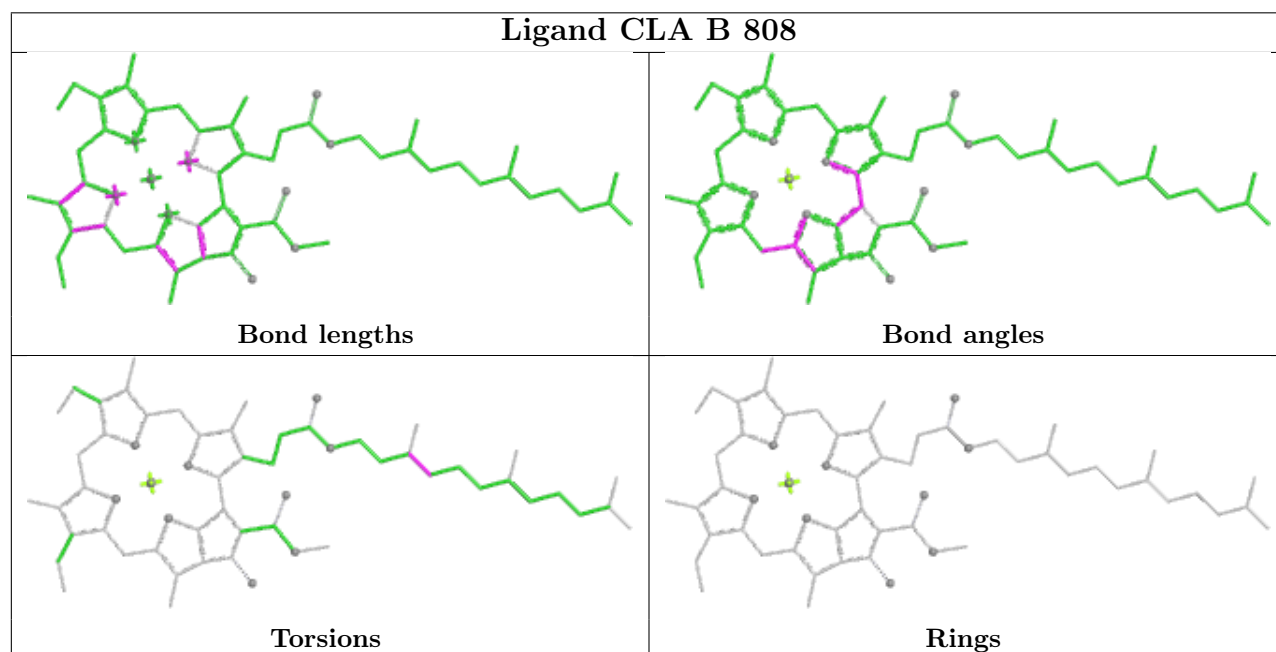
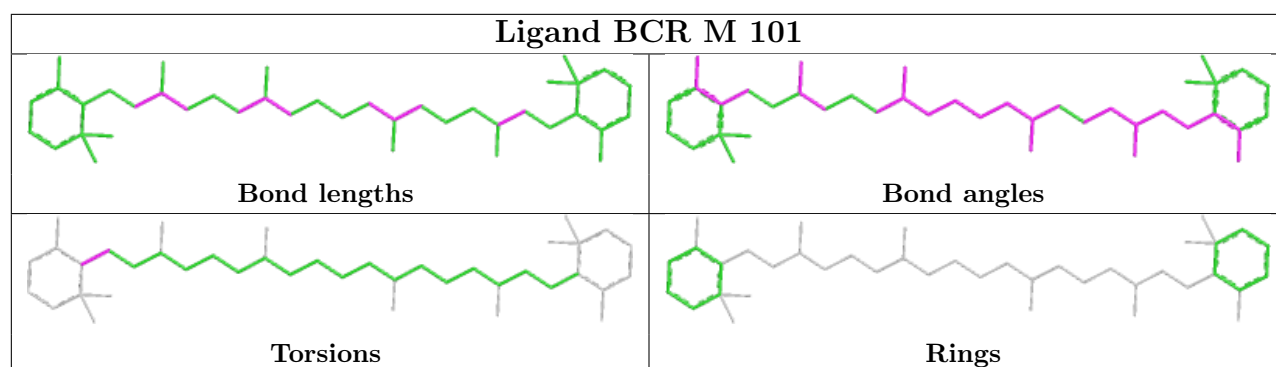
Ligand CLA B 813

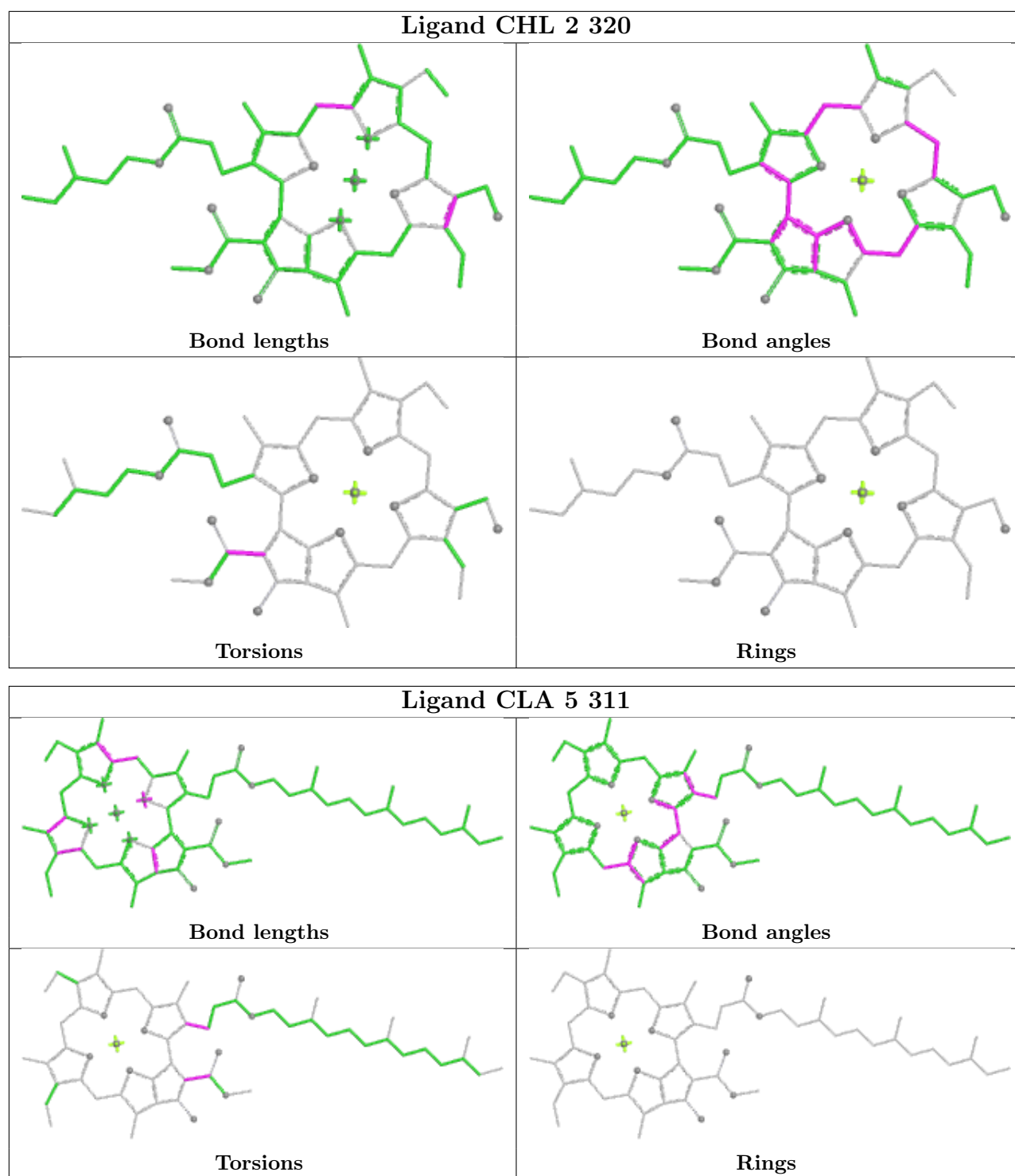


Ligand BCR F 305

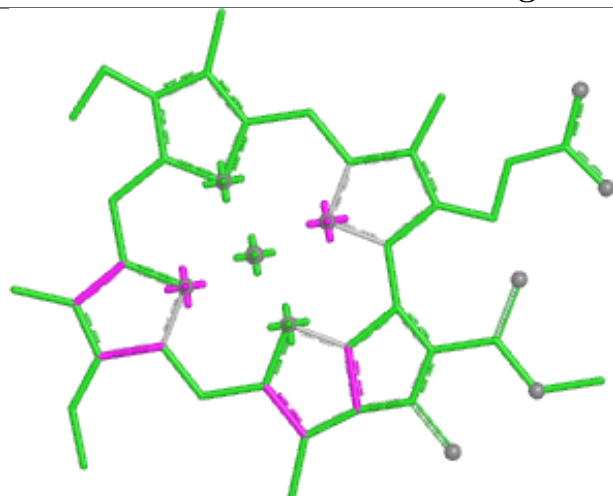




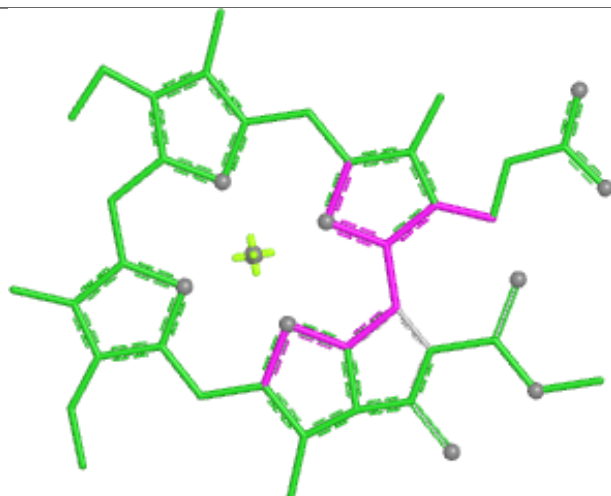




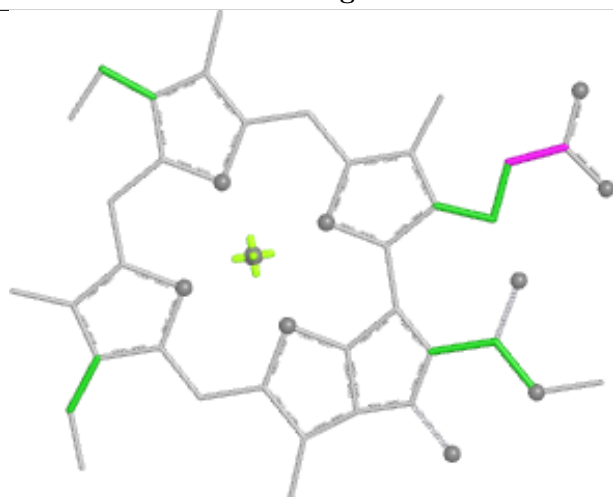
Ligand CLA 6 307



Bond lengths



Bond angles

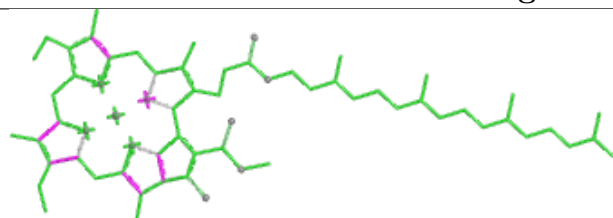


Torsions

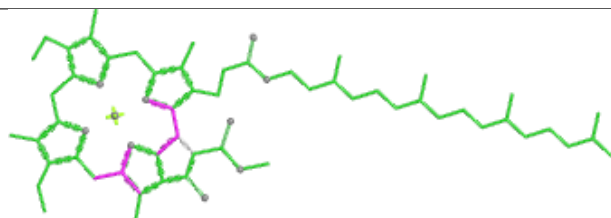


Rings

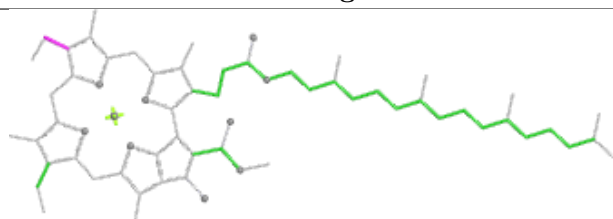
Ligand CLA 3 308



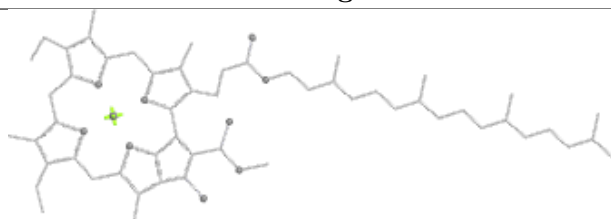
Bond lengths



Bond angles

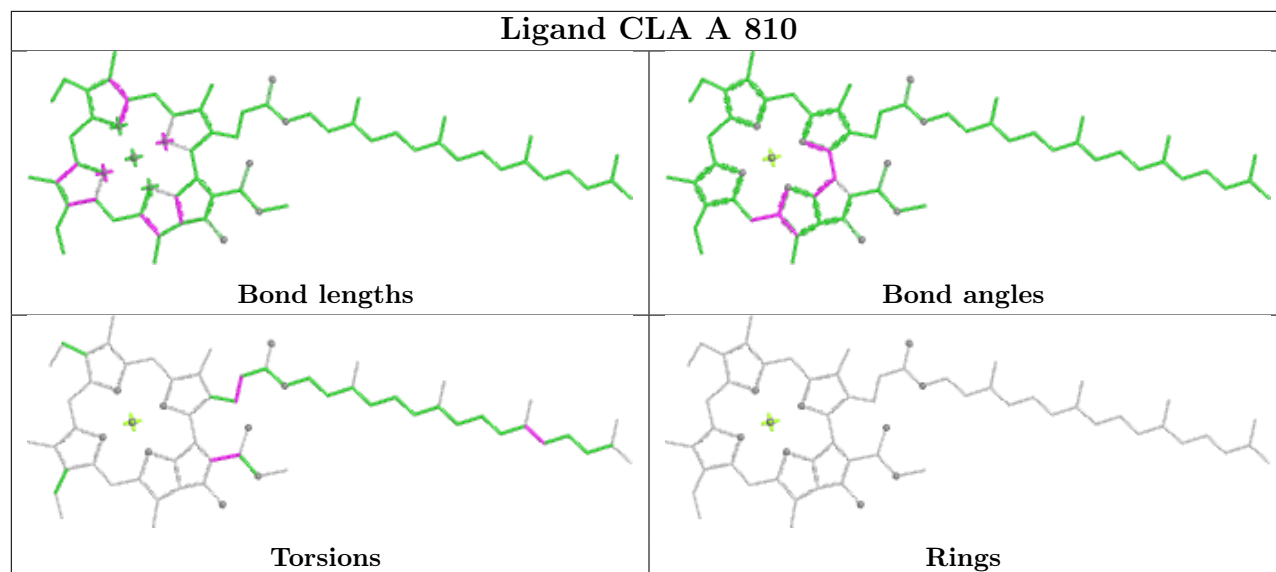


Torsions

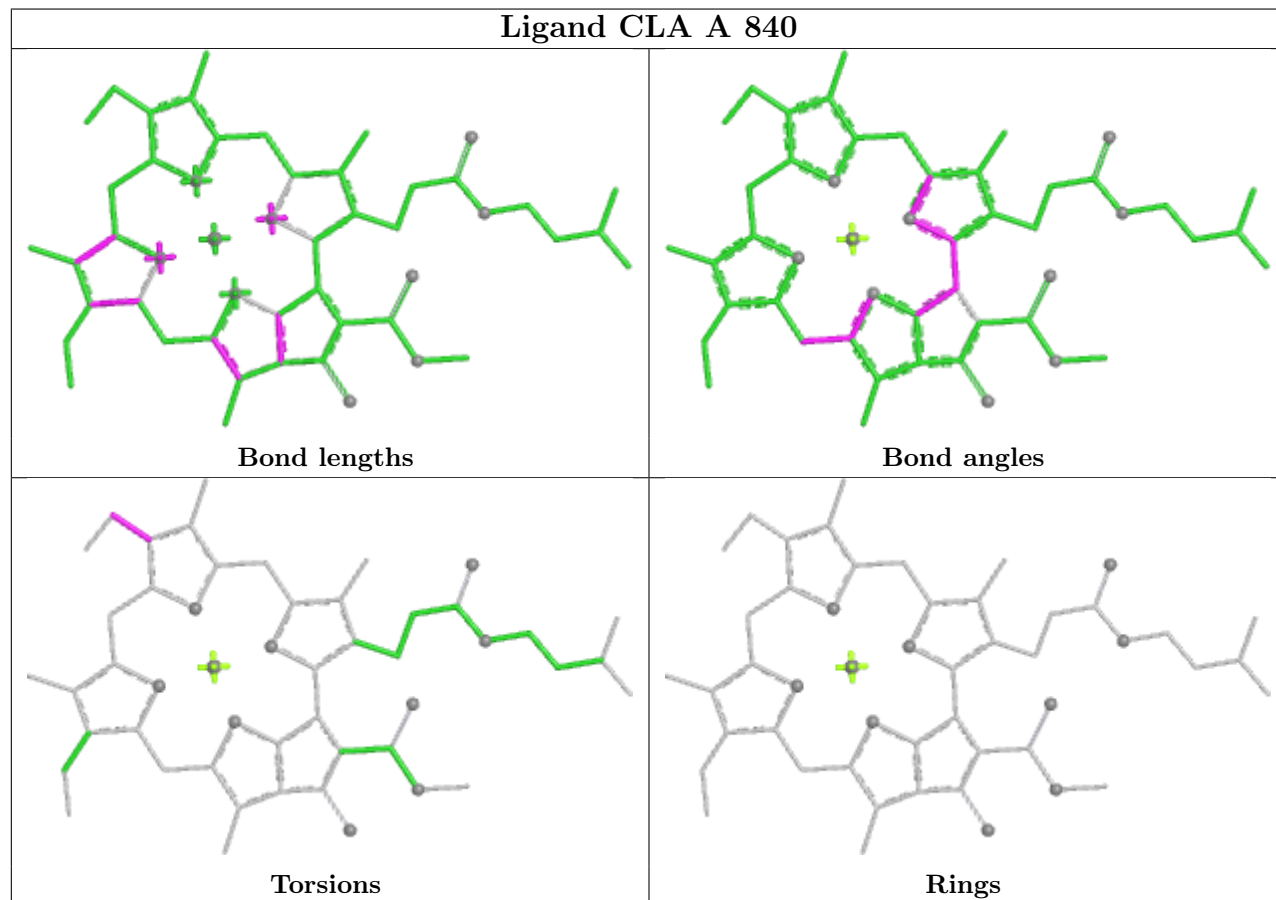


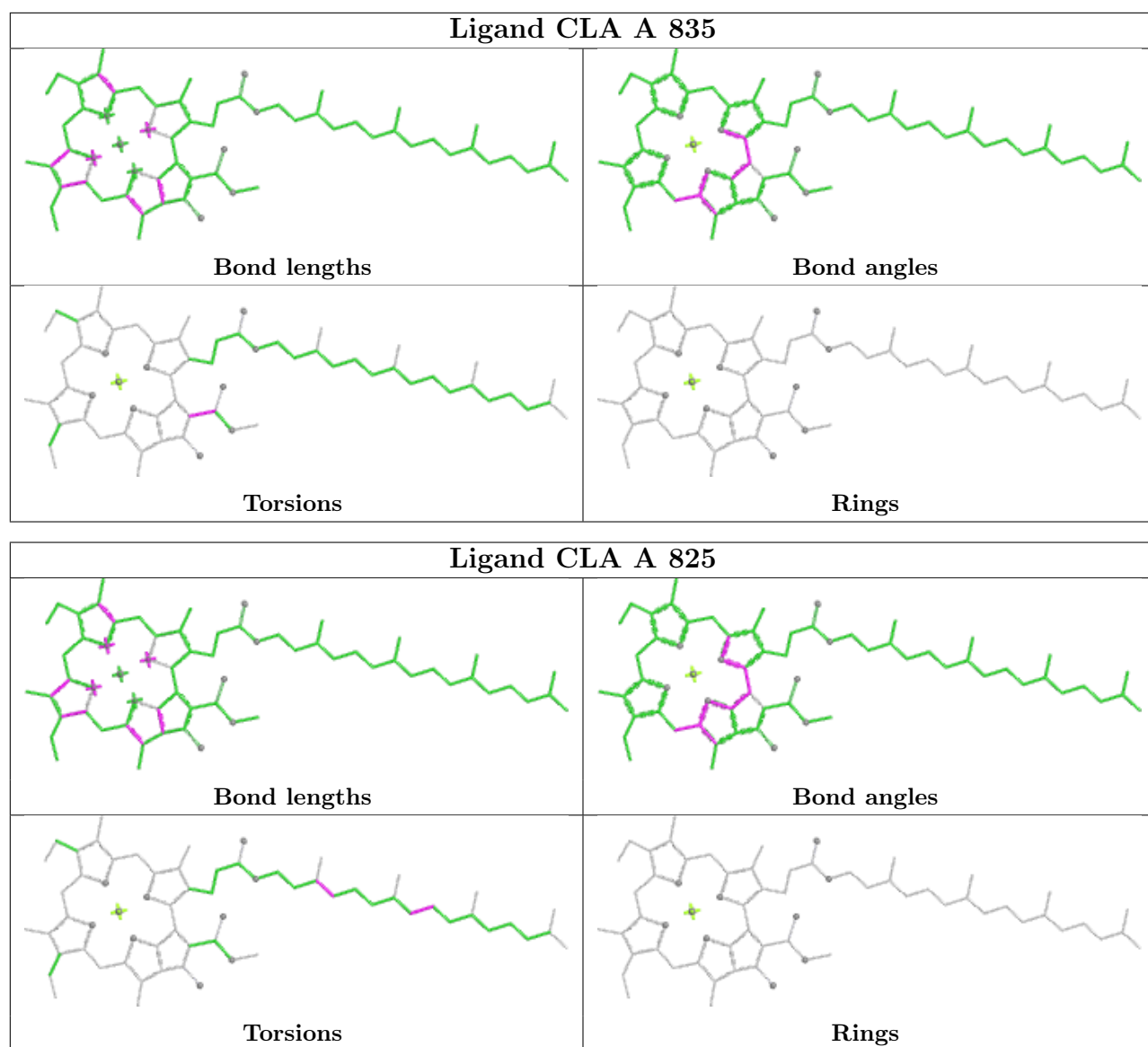
Rings

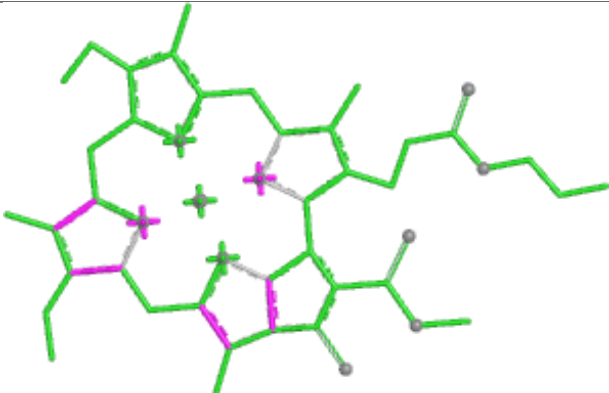
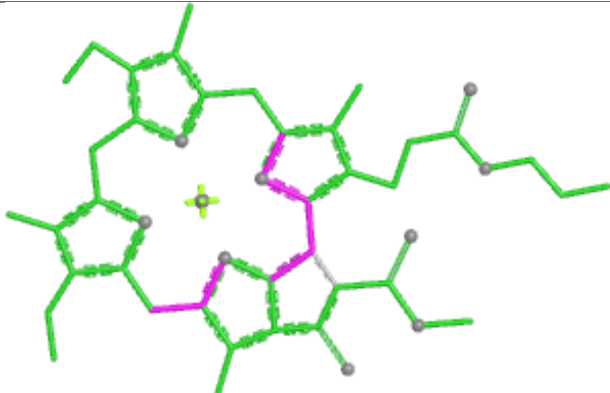
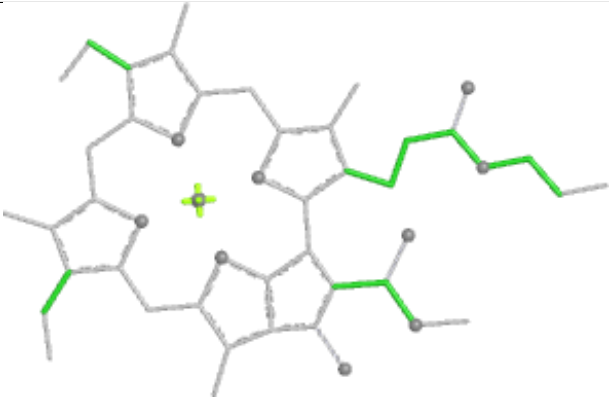
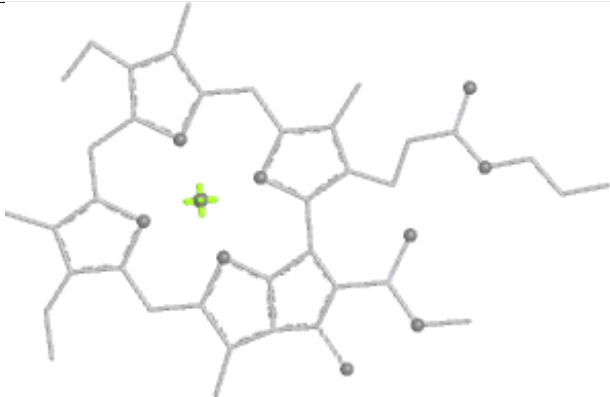
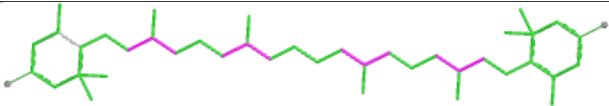
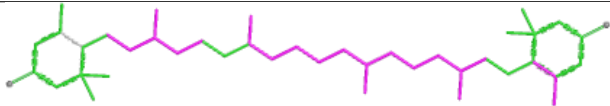


Ligand CLA A 810



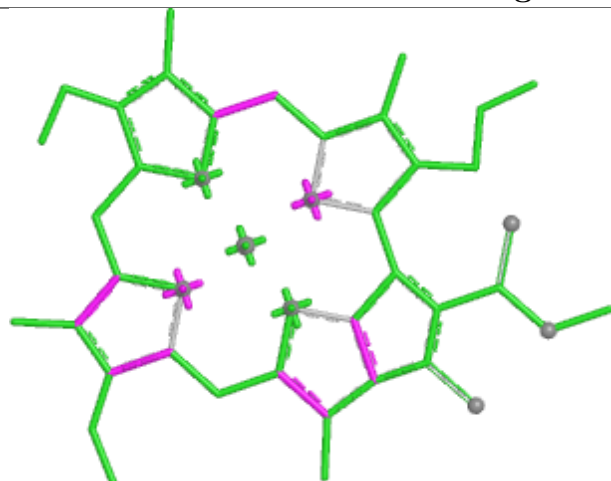
Ligand CLA A 840



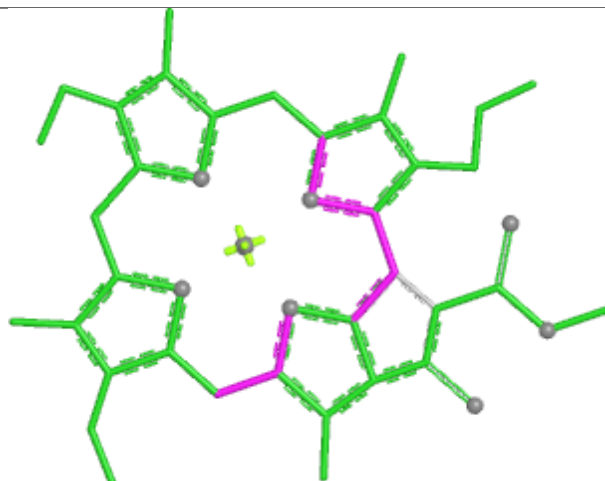


| Ligand CLA A 809 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |
| Ligand LUT 2 315 | |
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

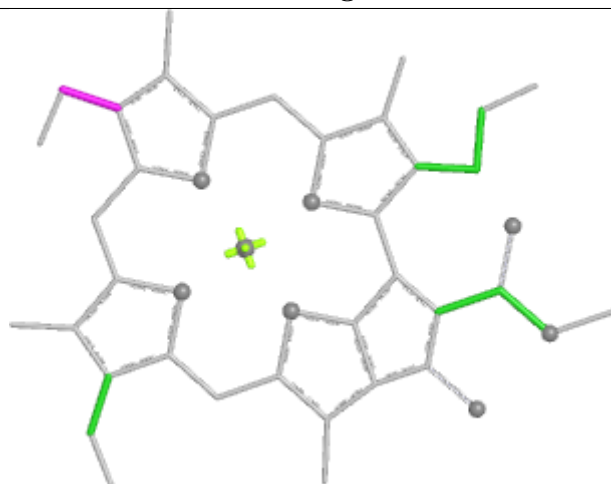
Ligand CLA B 821



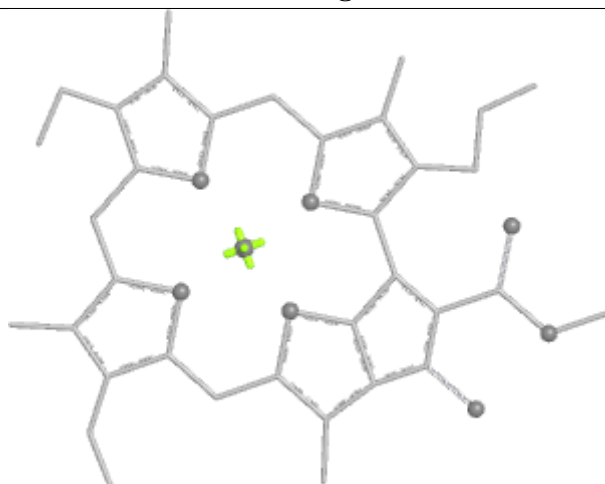
Bond lengths



Bond angles

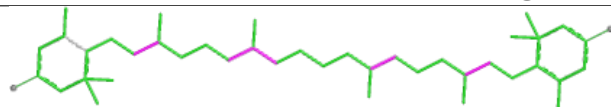


Torsions

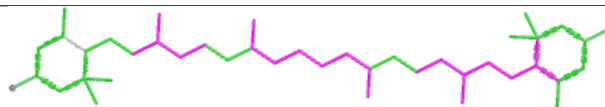


Rings

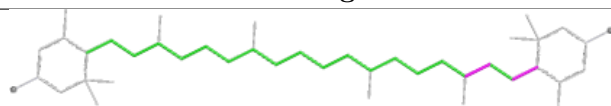
Ligand LUT 3 315



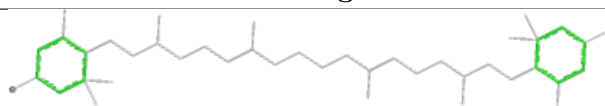
Bond lengths



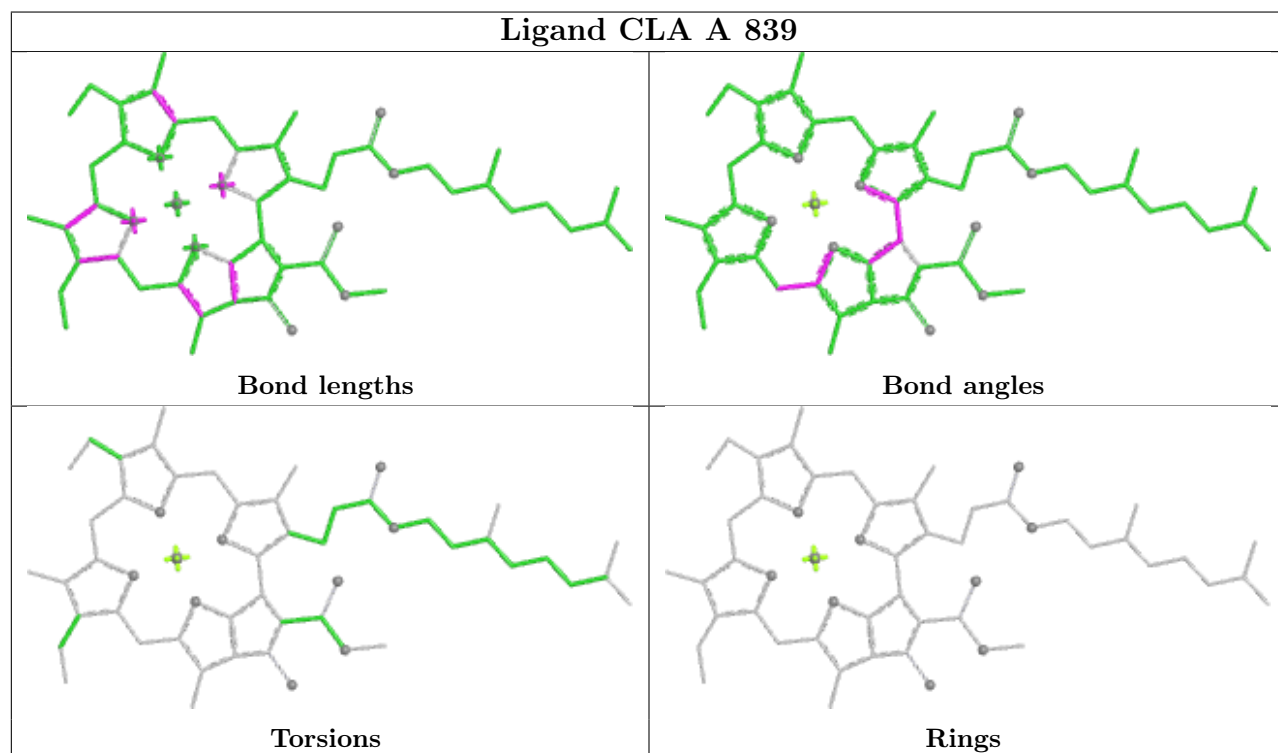
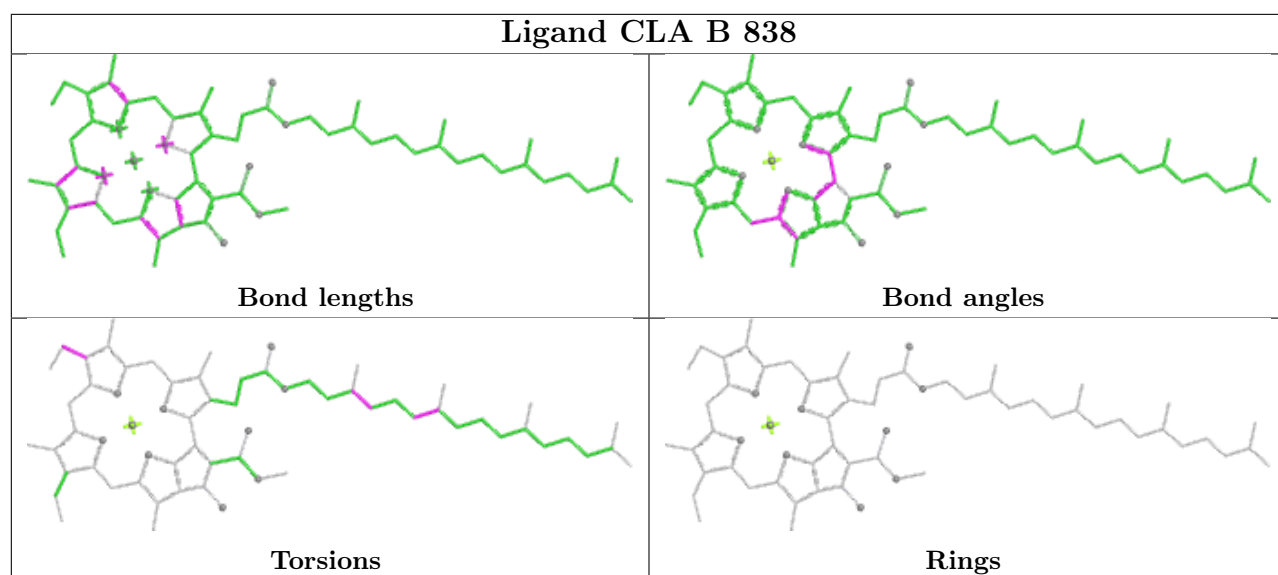
Bond angles



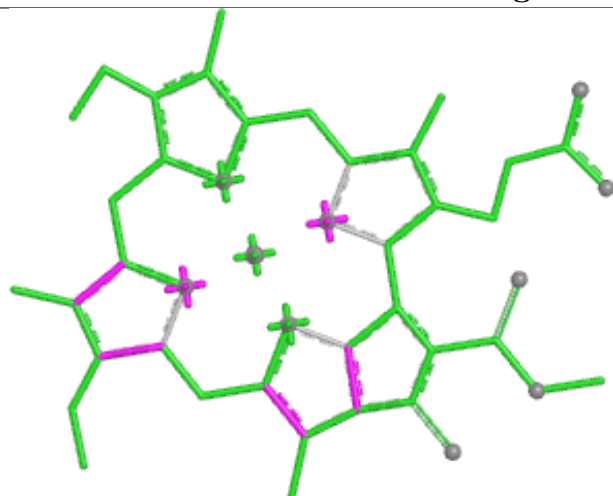
Torsions



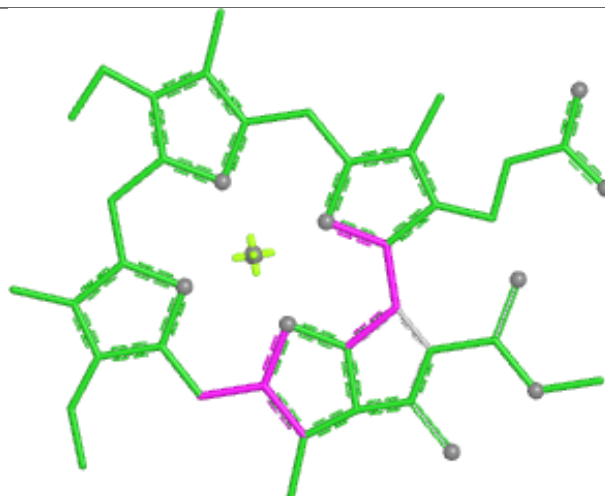
Rings



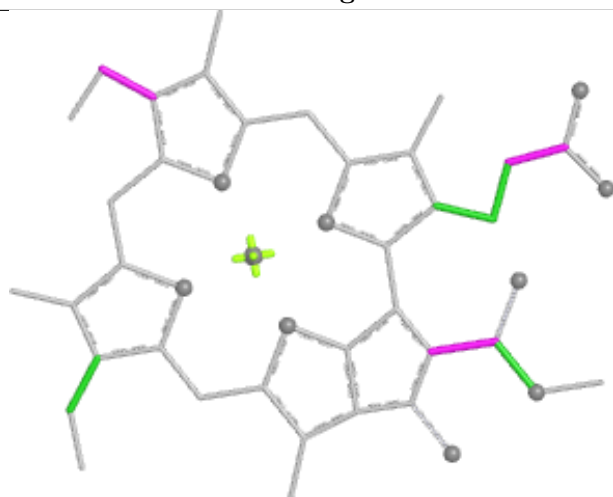
Ligand CLA K 203



Bond lengths



Bond angles

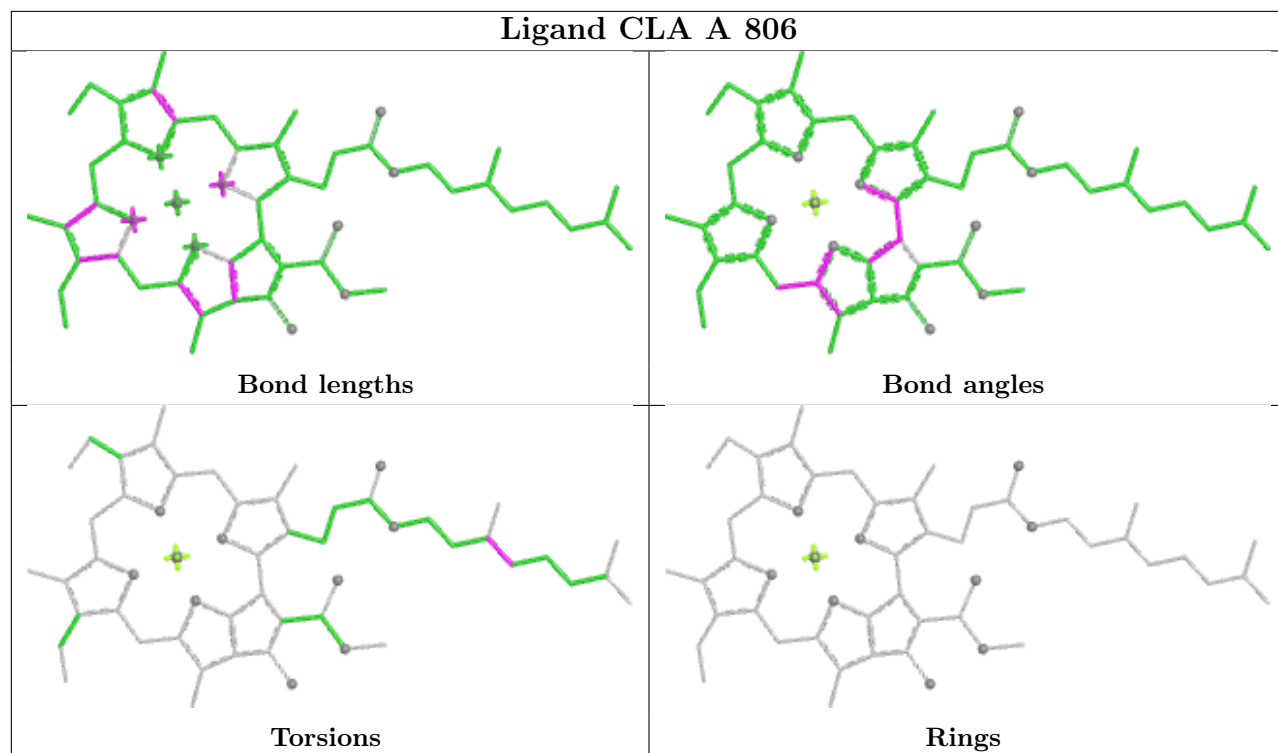


Torsions

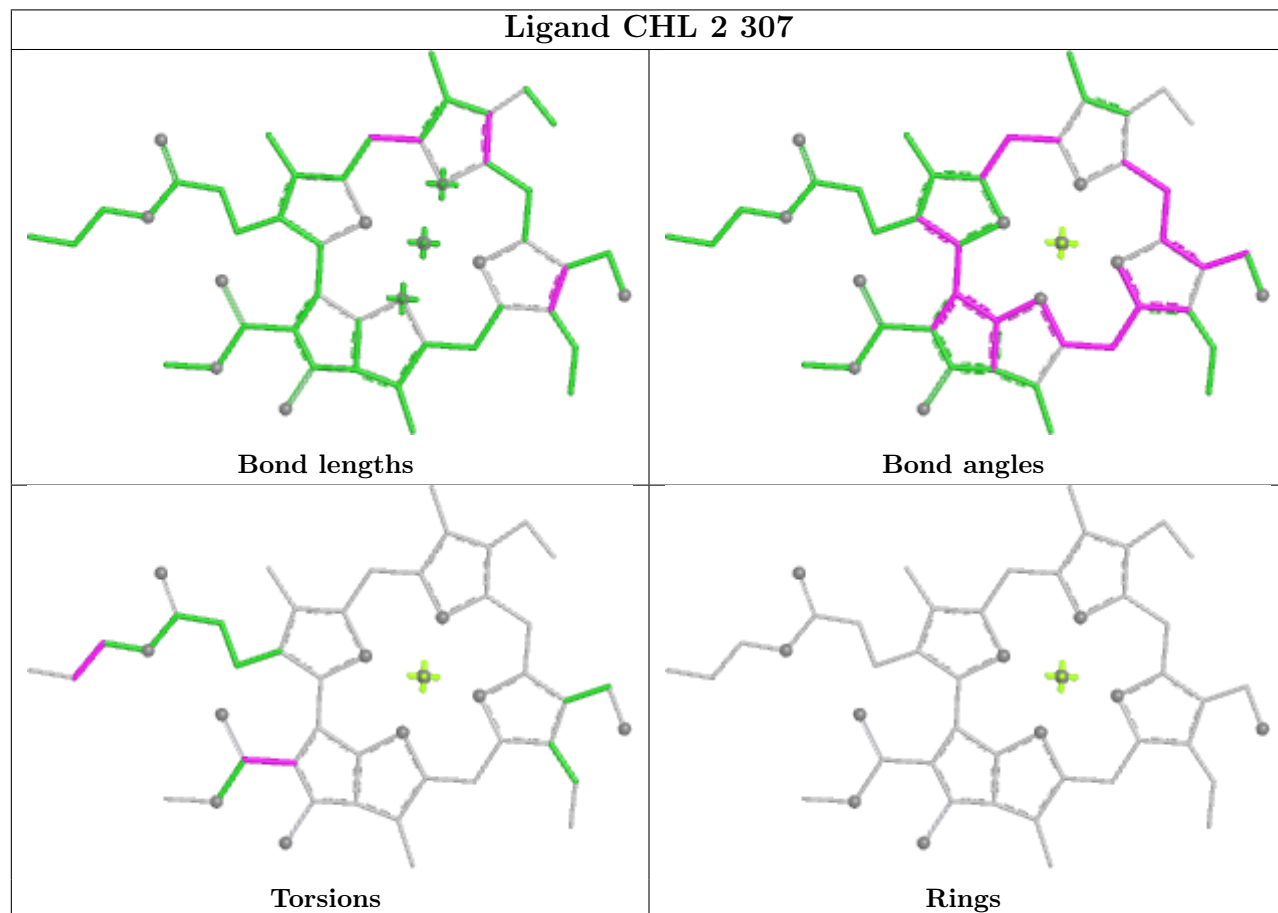


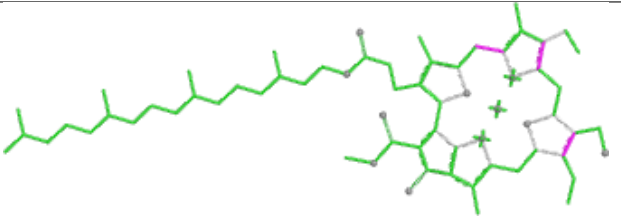
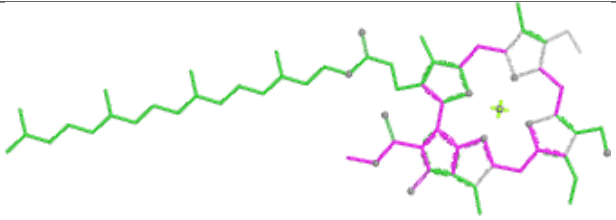
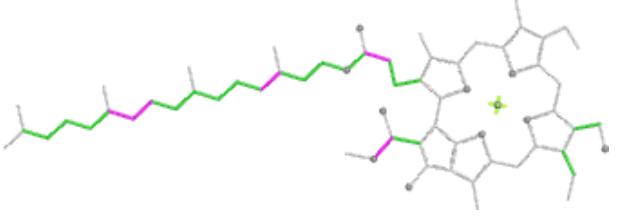
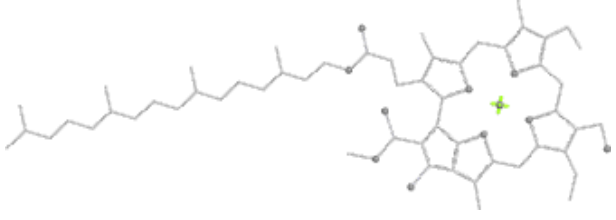
Rings

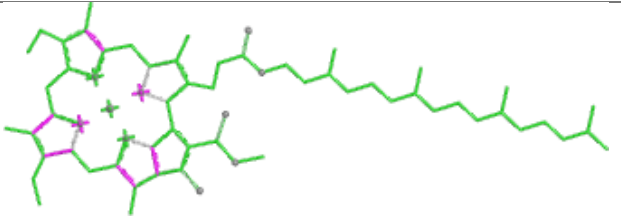
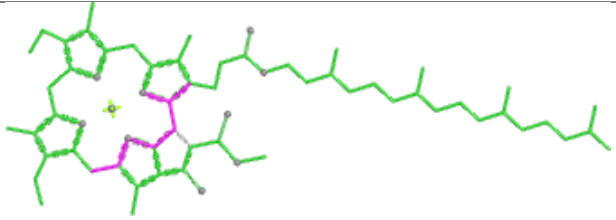
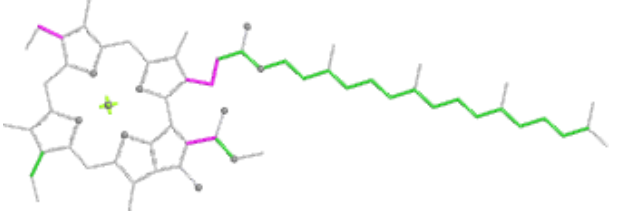
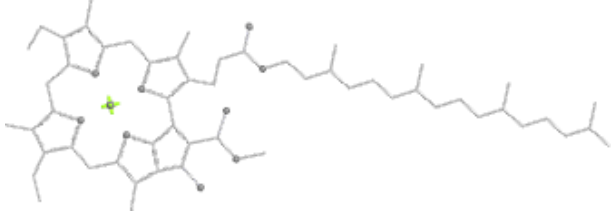
Ligand CLA A 806

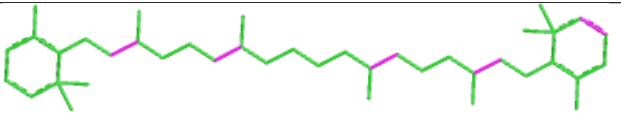
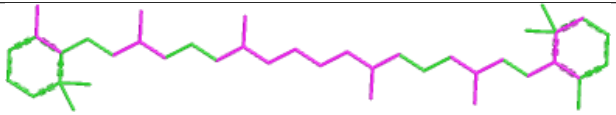
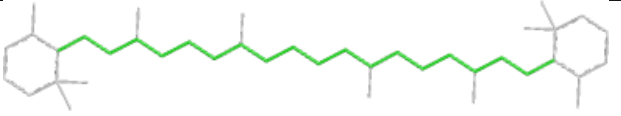
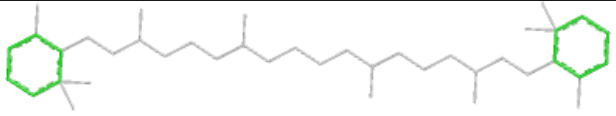


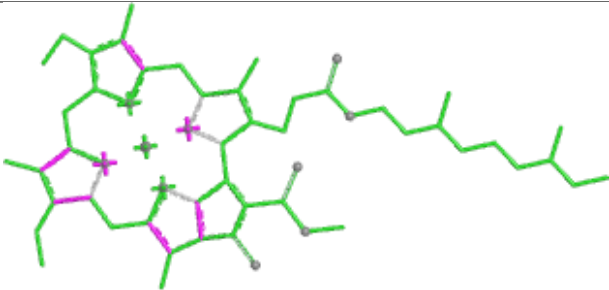
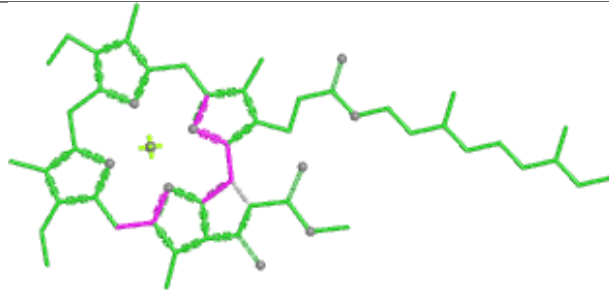
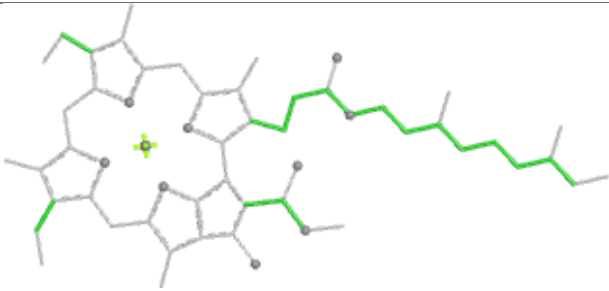
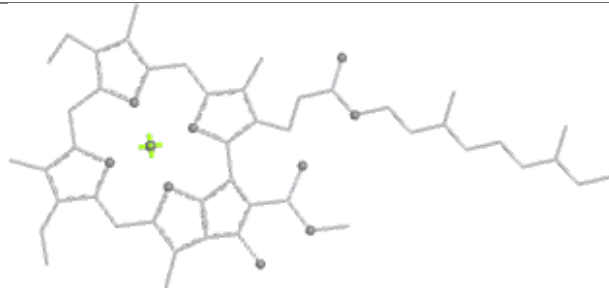
Ligand CHL 2 307

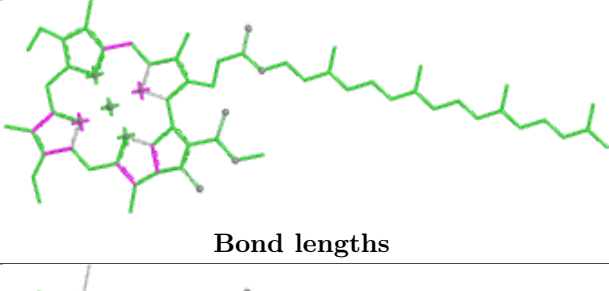
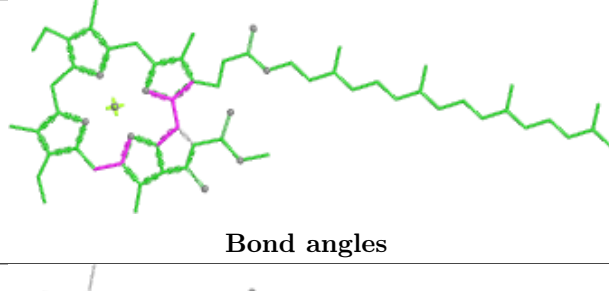
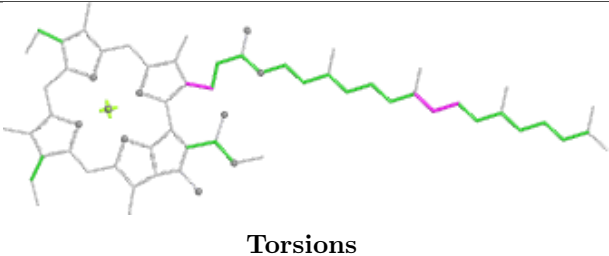
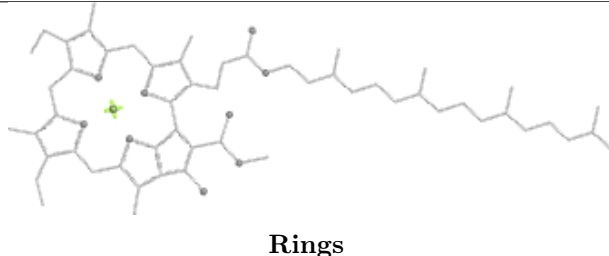


| Ligand CHL 3 314 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

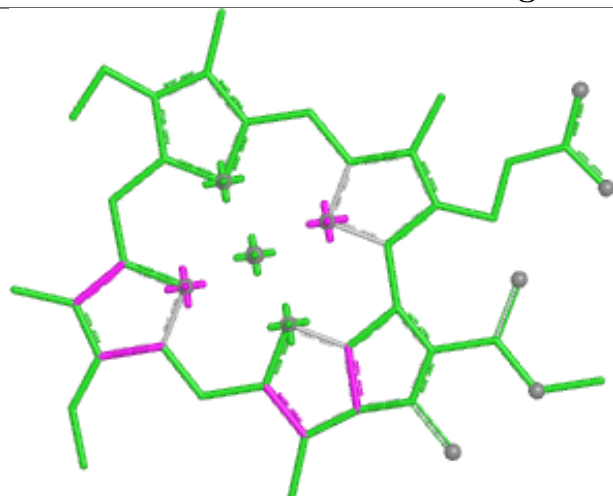
| Ligand CLA B 802 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

| Ligand BCR A 851 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

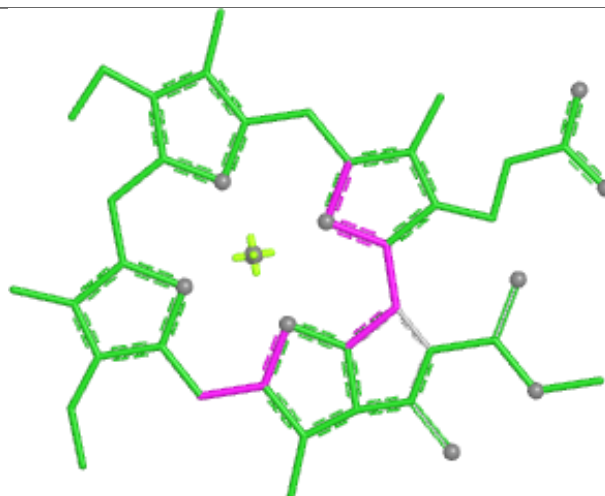
| Ligand CLA 2 310 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

| Ligand CLA B 828 | |
|---|--|
|  |  |
| Bond lengths | Bond angles |
|  |  |
| Torsions | Rings |

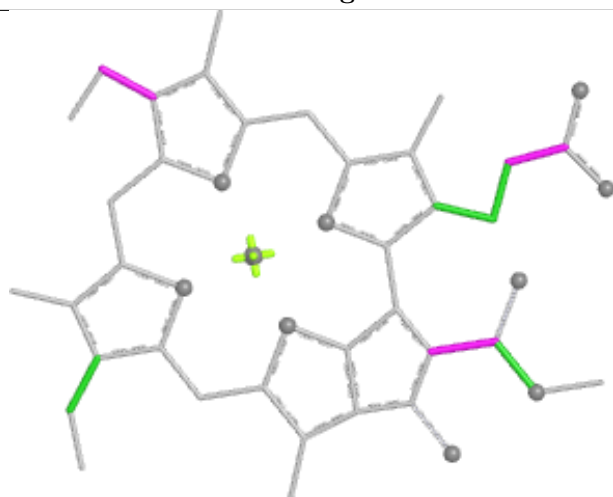
Ligand CLA 2 311



Bond lengths



Bond angles

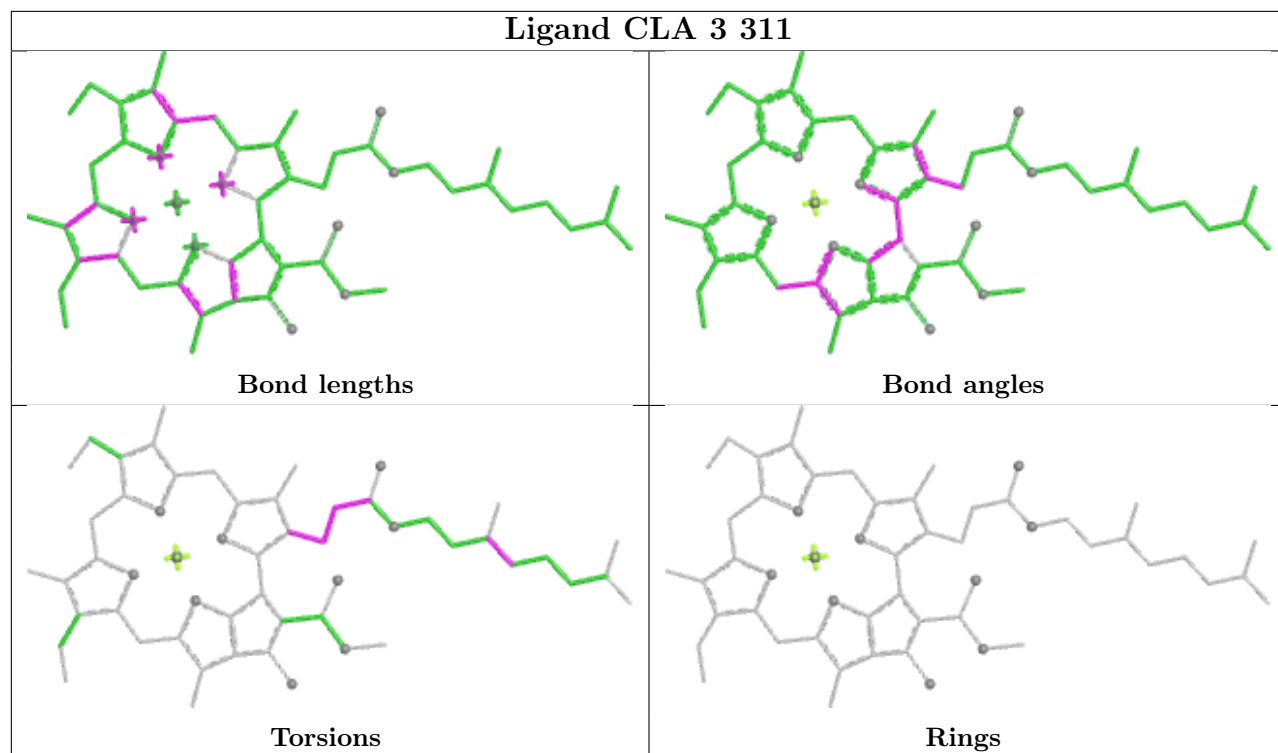


Torsions

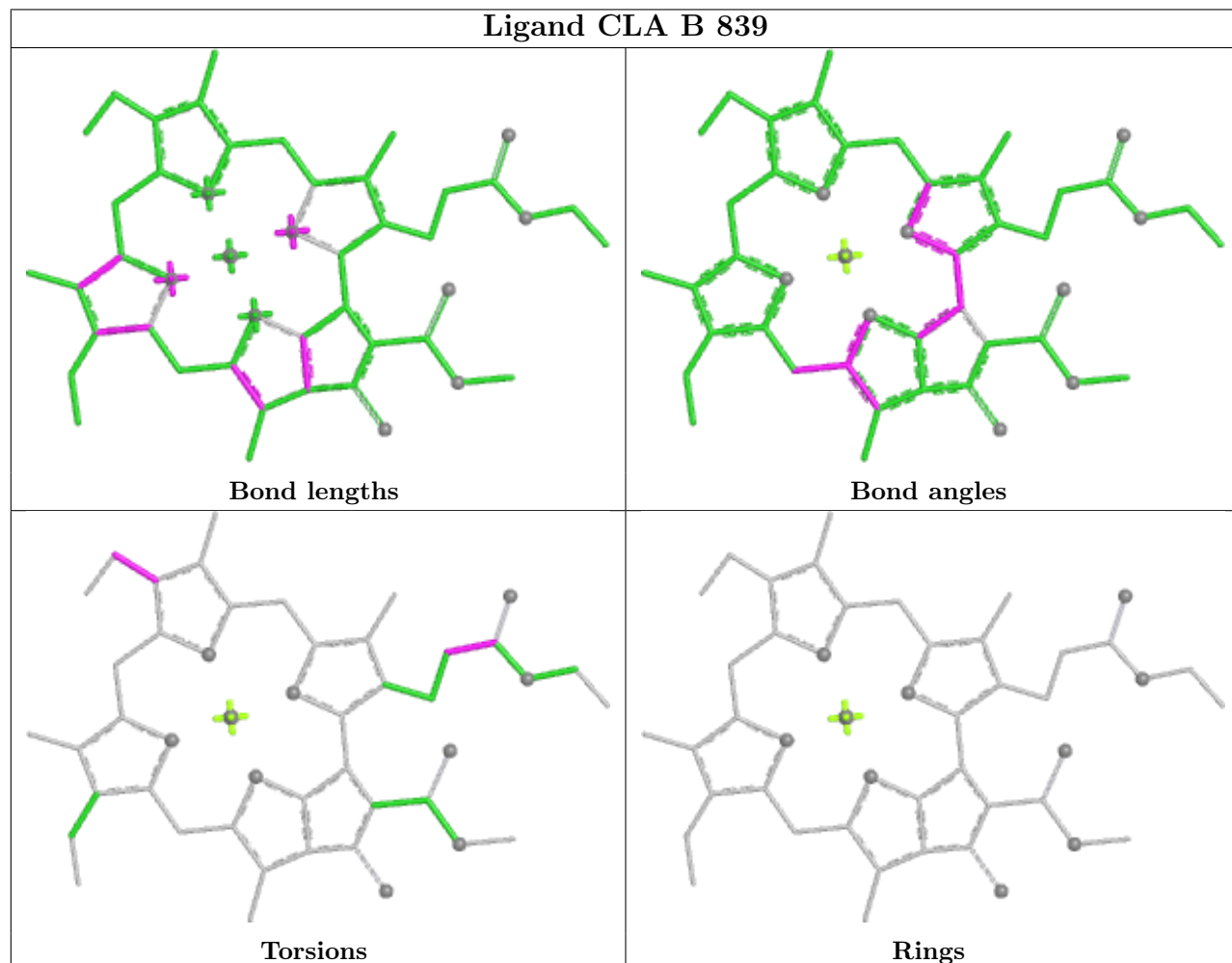


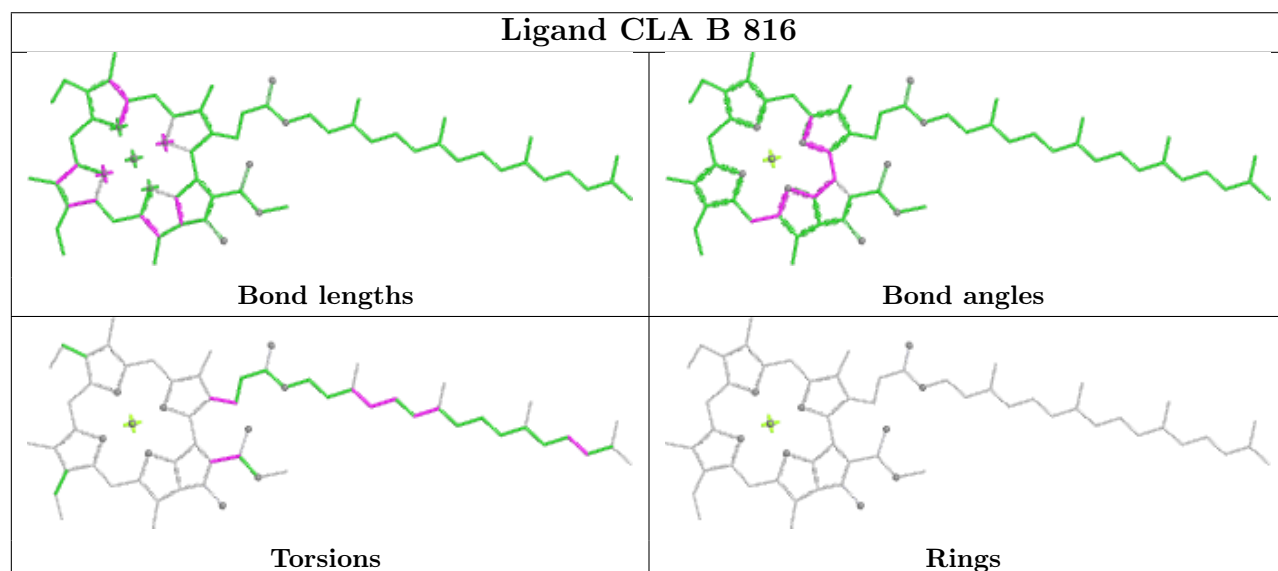
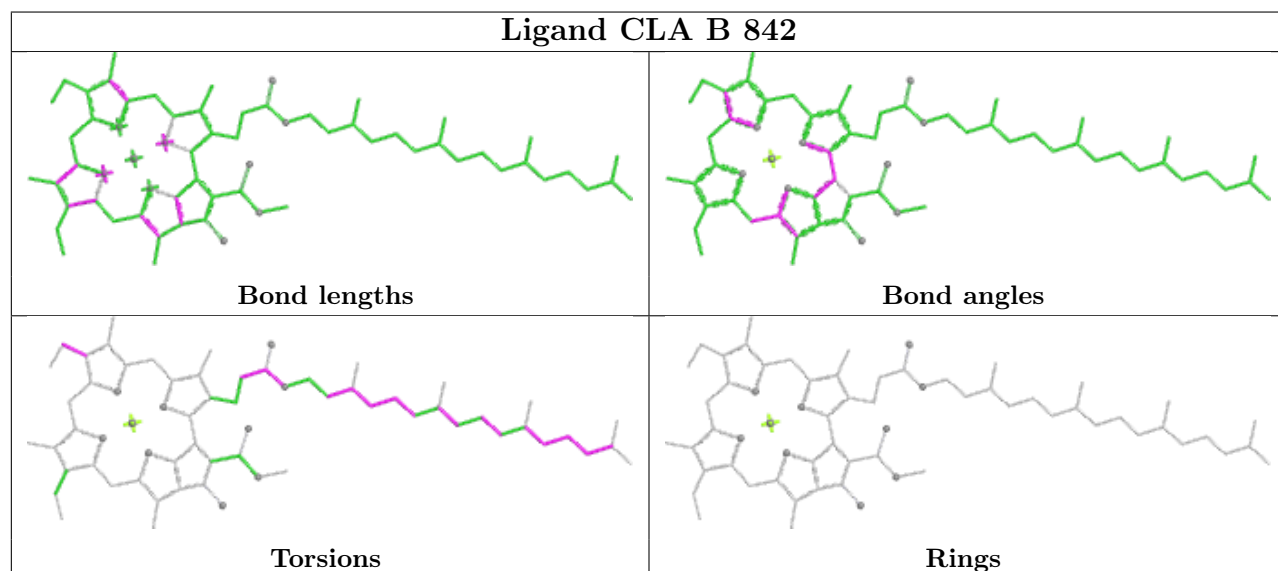
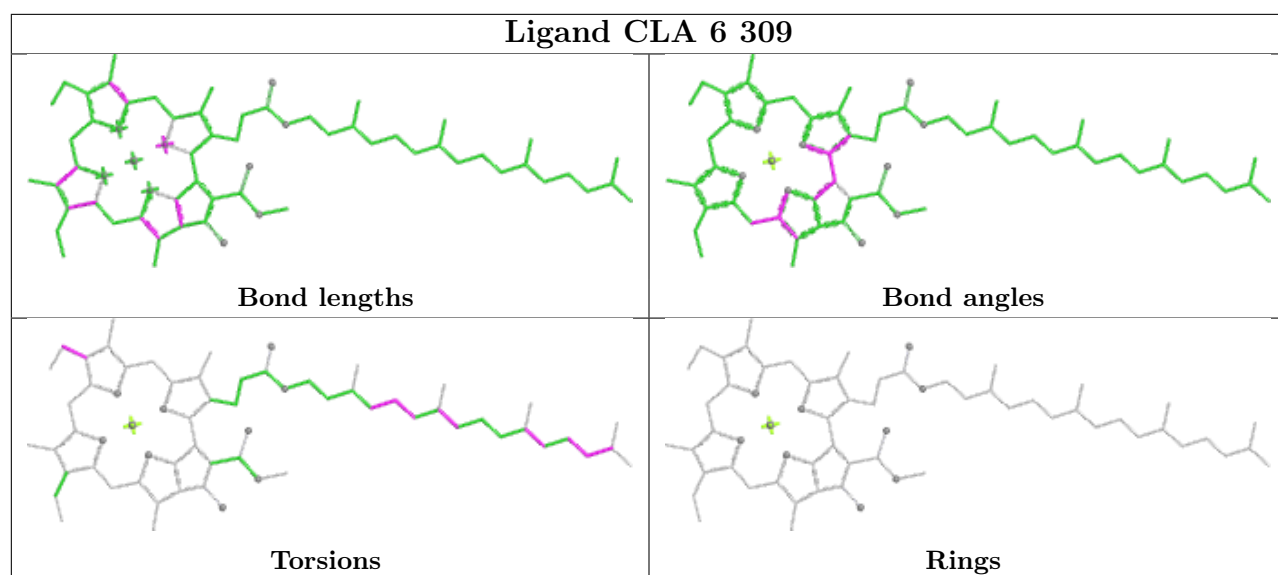
Rings

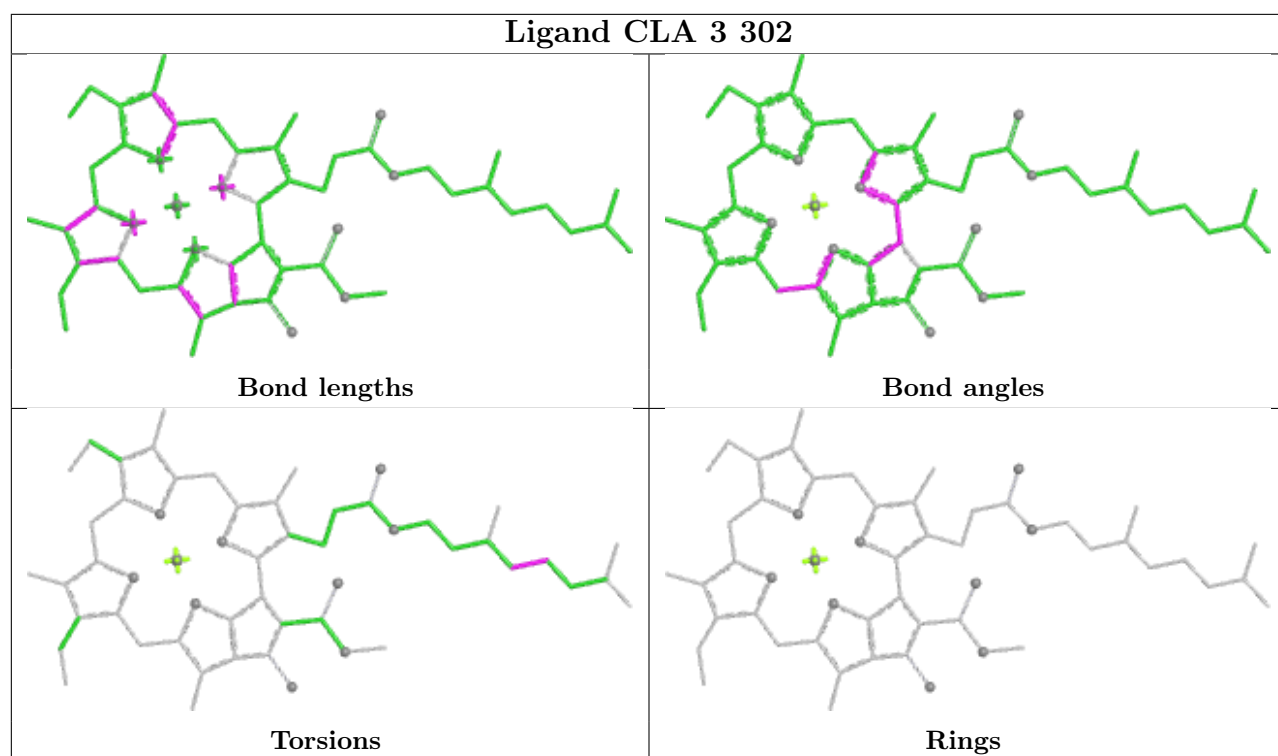
Ligand CLA 3 311



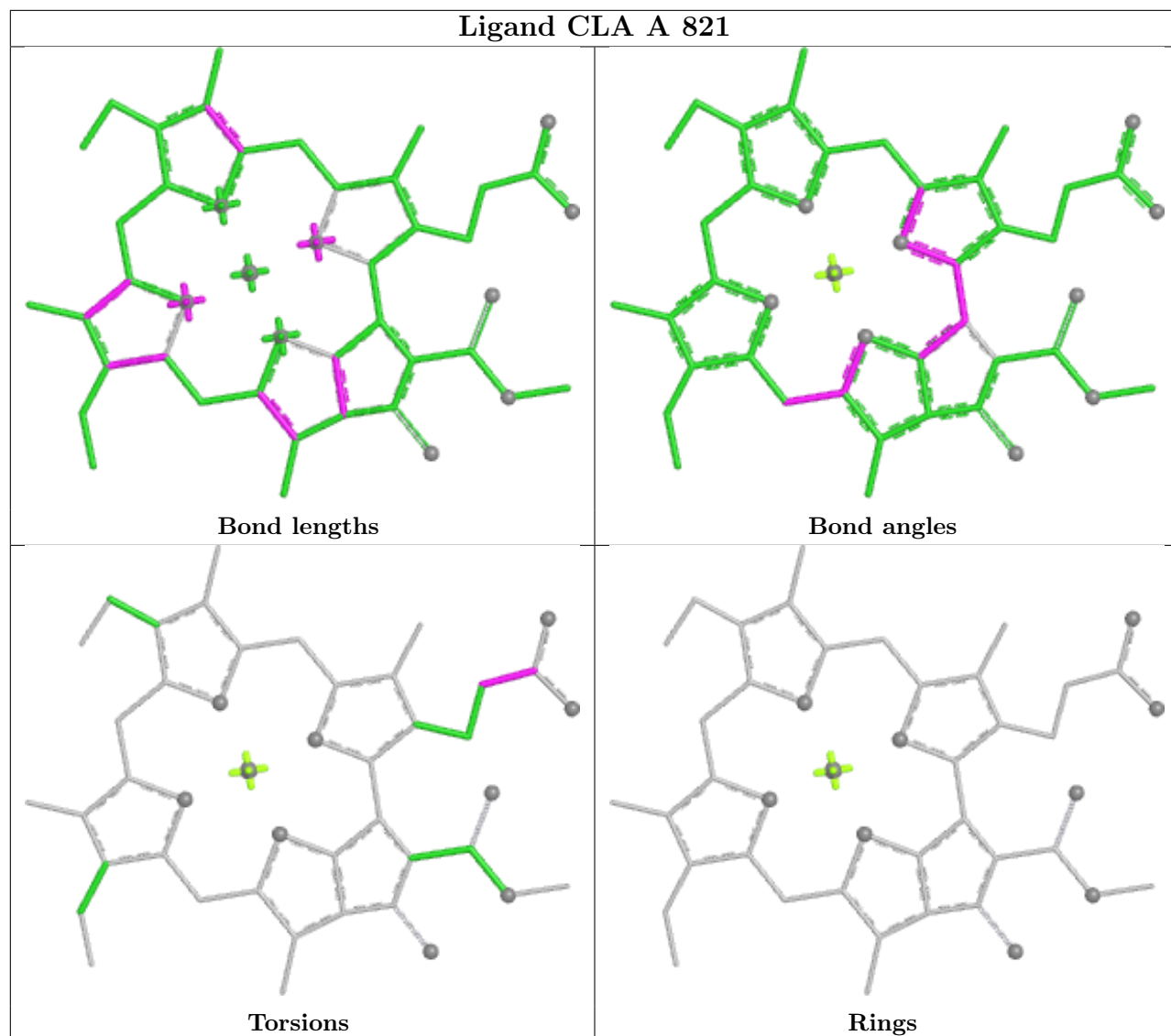
Ligand CLA B 839

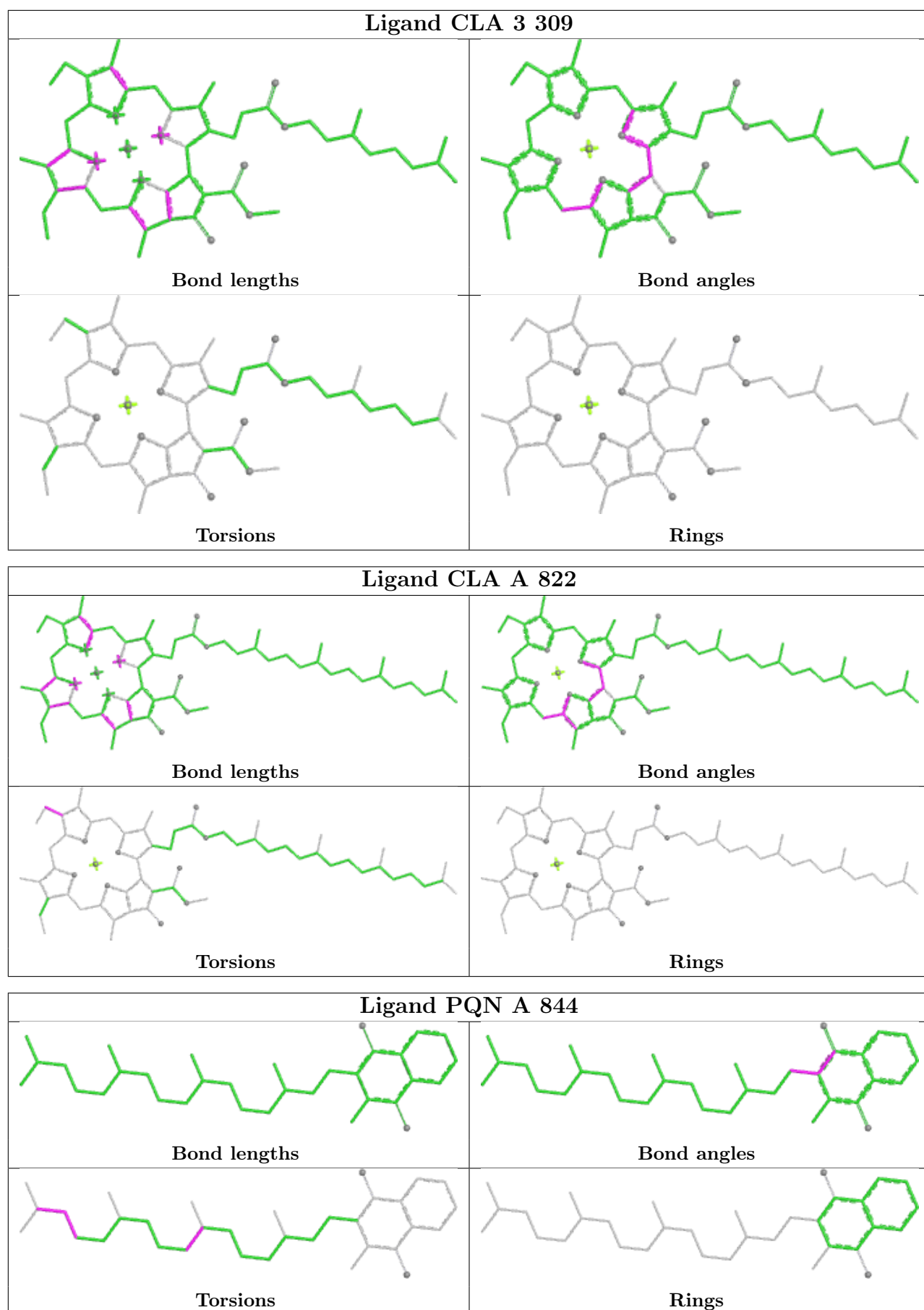


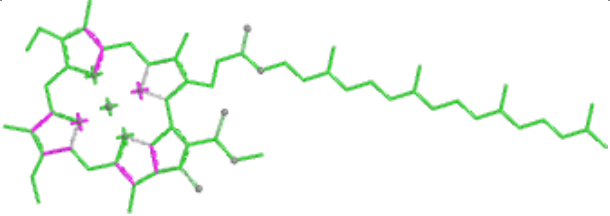
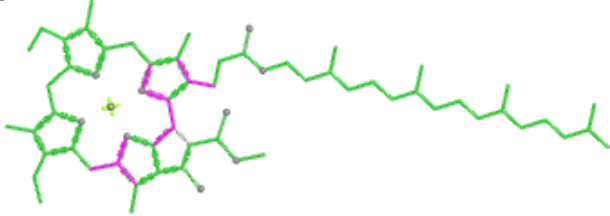
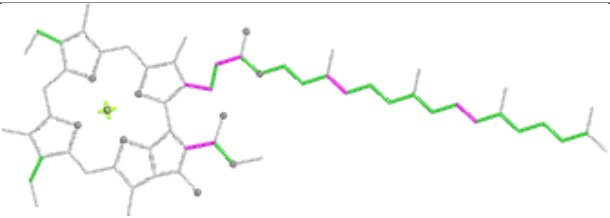
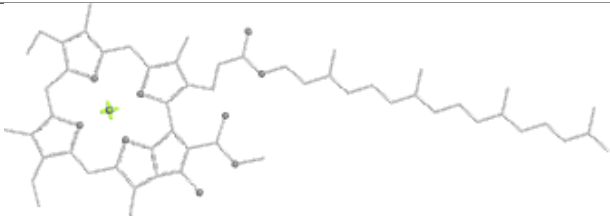
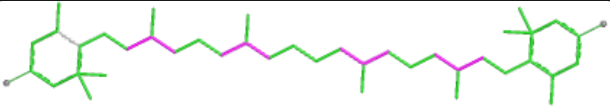
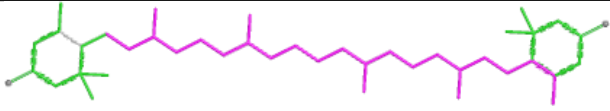
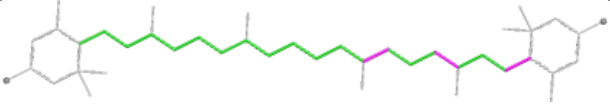
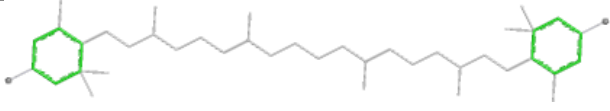
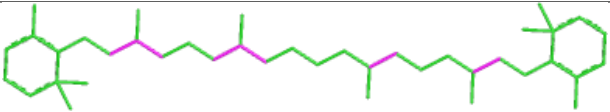
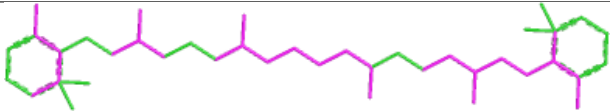
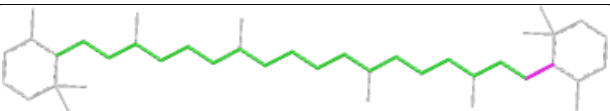
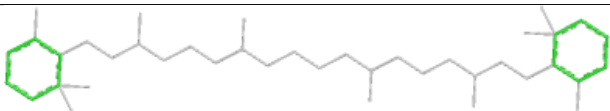


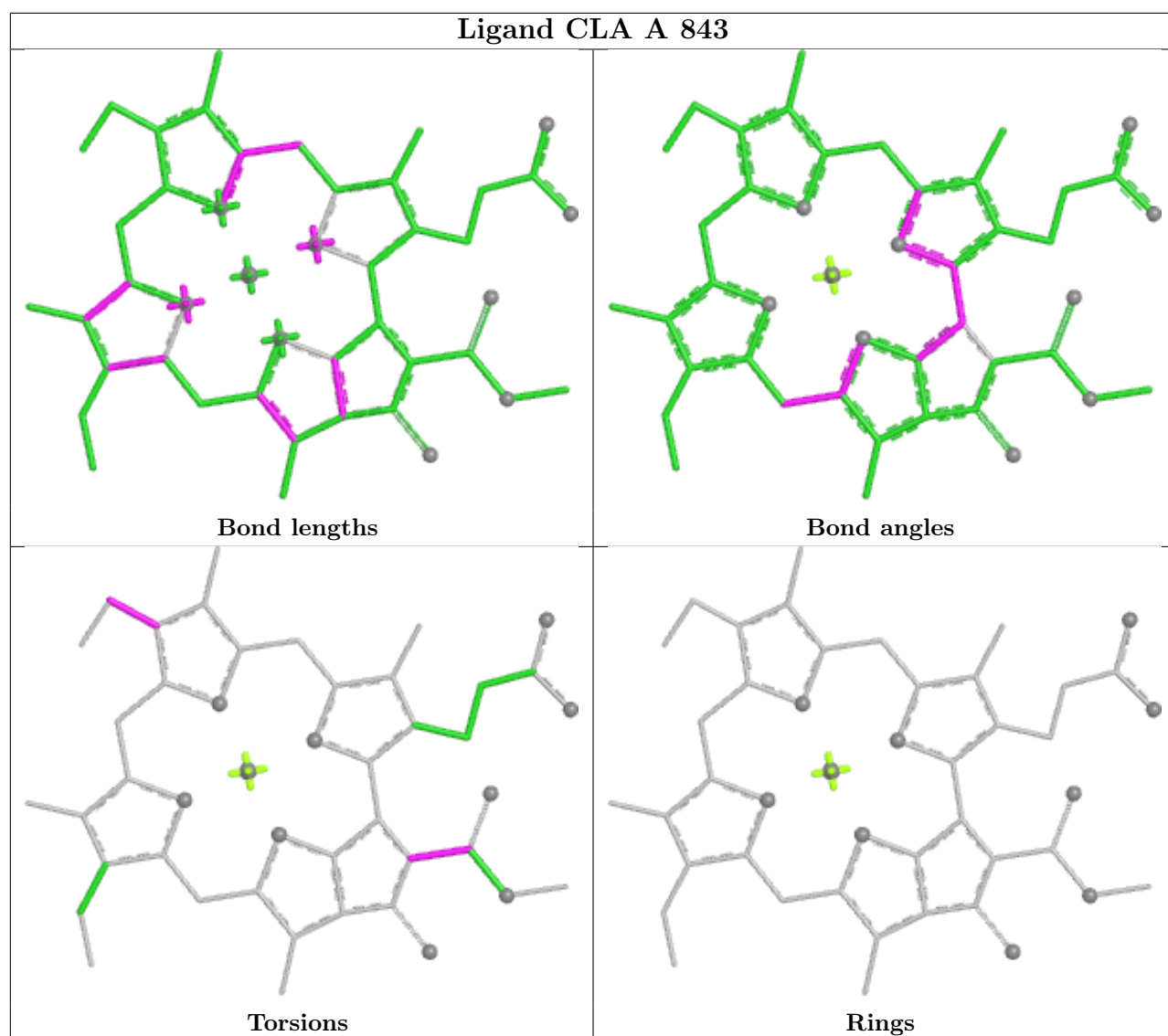


Ligand CLA A 821

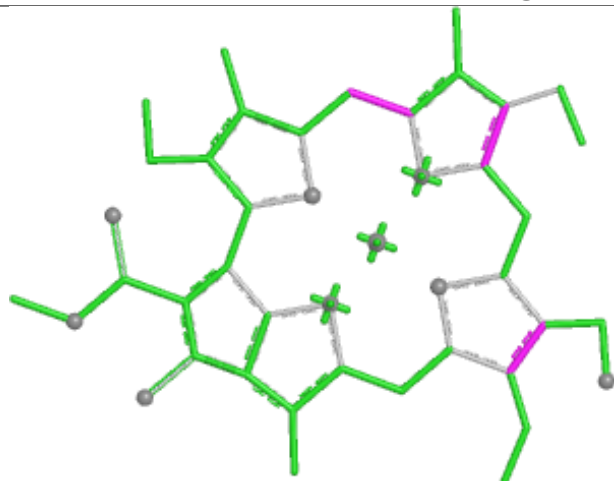




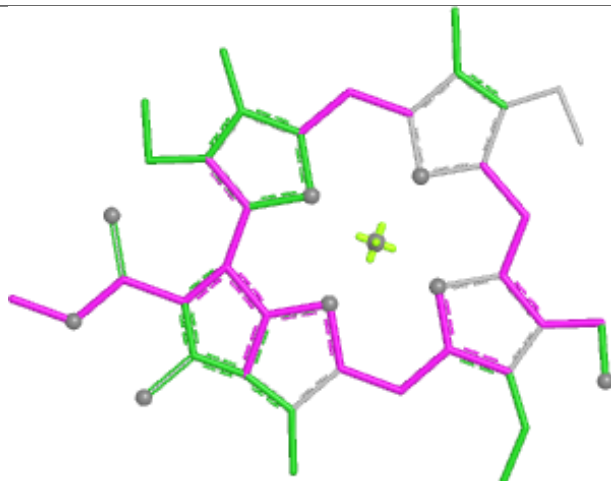
| Ligand CLA B 825 | |
|---|---|
|  <p>Bond lengths</p> |  <p>Bond angles</p> |
|  <p>Torsions</p> |  <p>Rings</p> |
| Ligand LUT 6 318 | |
|  <p>Bond lengths</p> |  <p>Bond angles</p> |
|  <p>Torsions</p> |  <p>Rings</p> |
| Ligand BCR B 844 | |
|  <p>Bond lengths</p> |  <p>Bond angles</p> |
|  <p>Torsions</p> |  <p>Rings</p> |



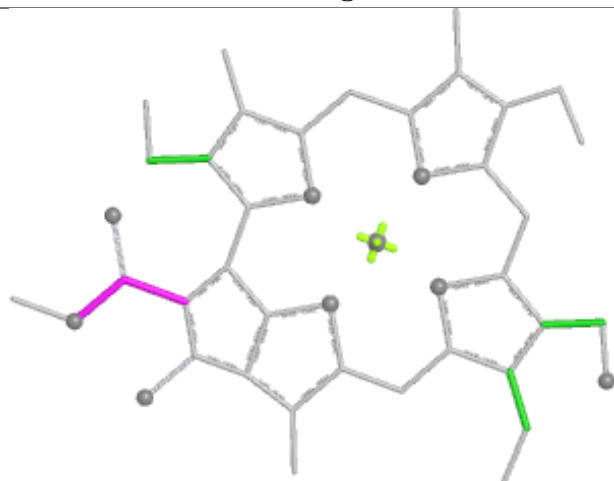
Ligand CHL 2 306



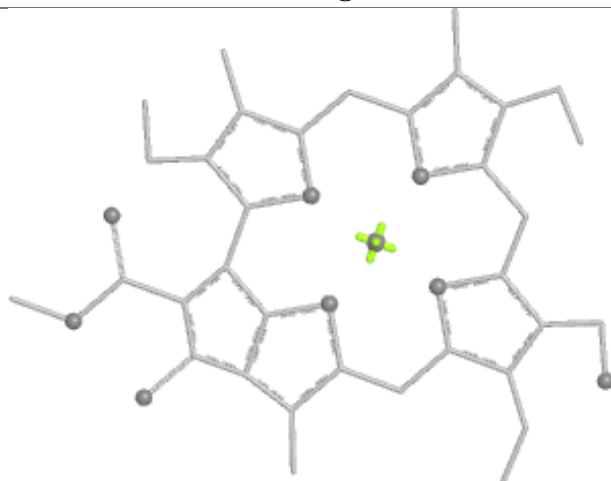
Bond lengths



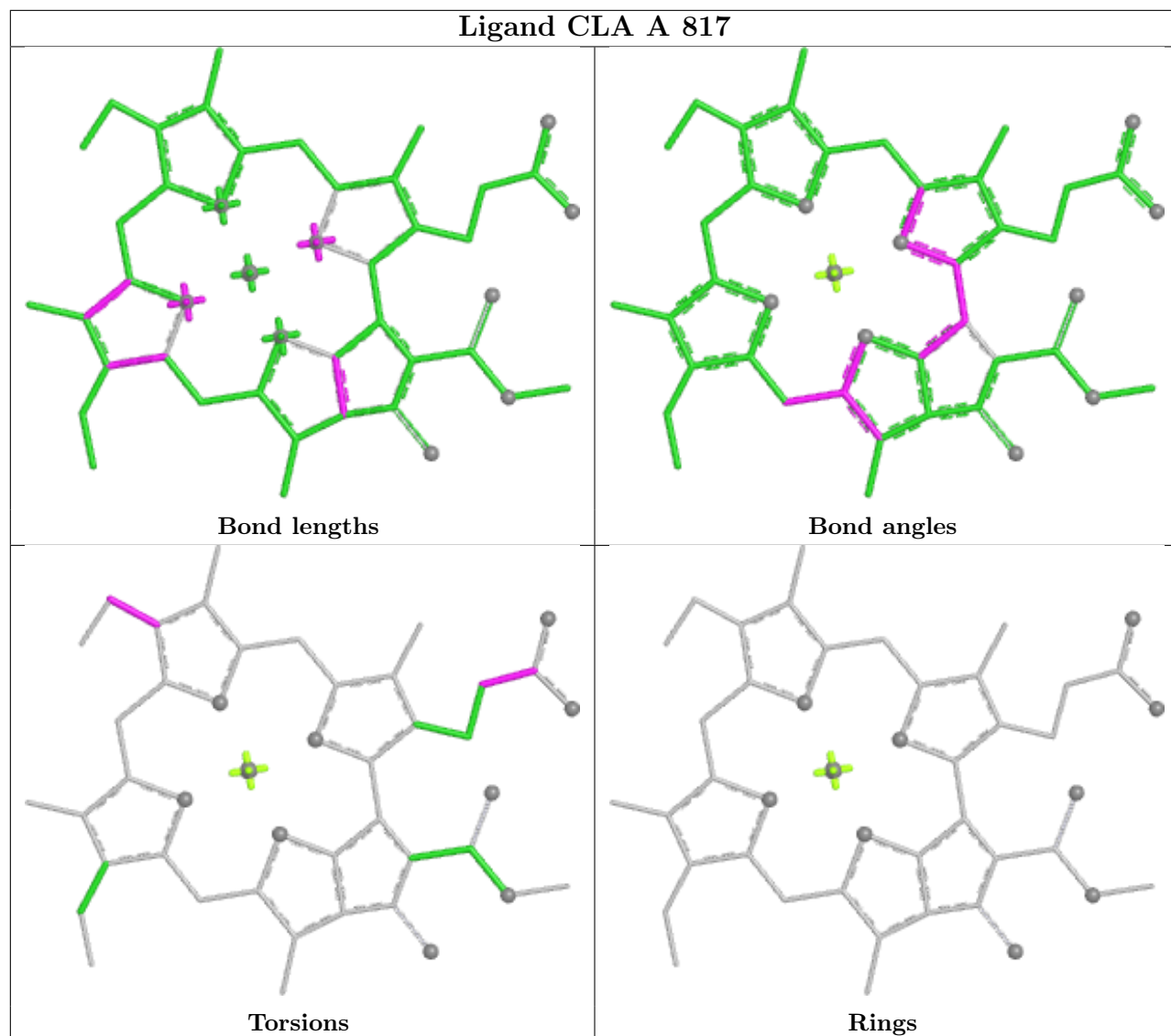
Bond angles



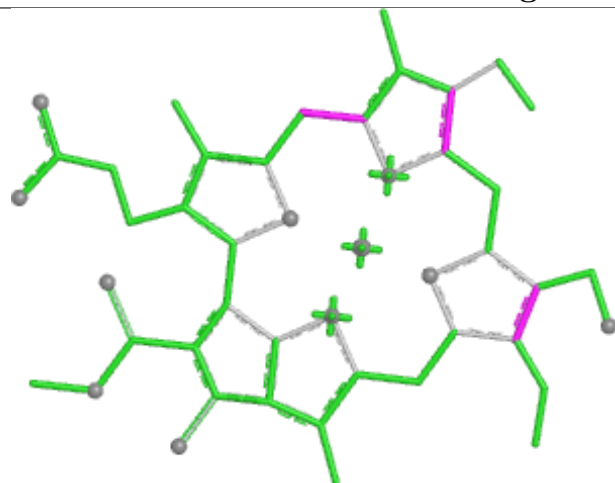
Torsions



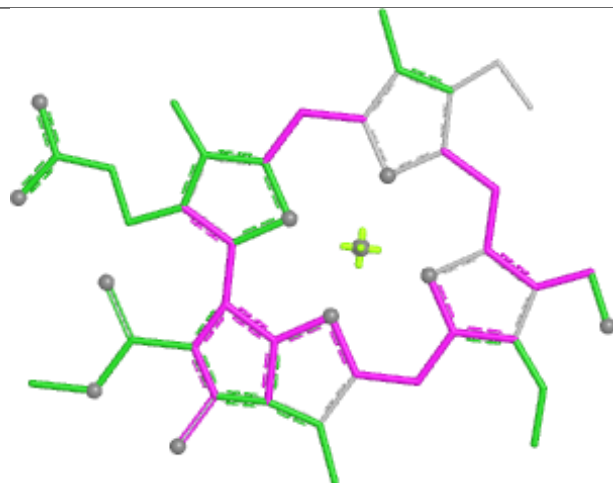
Rings



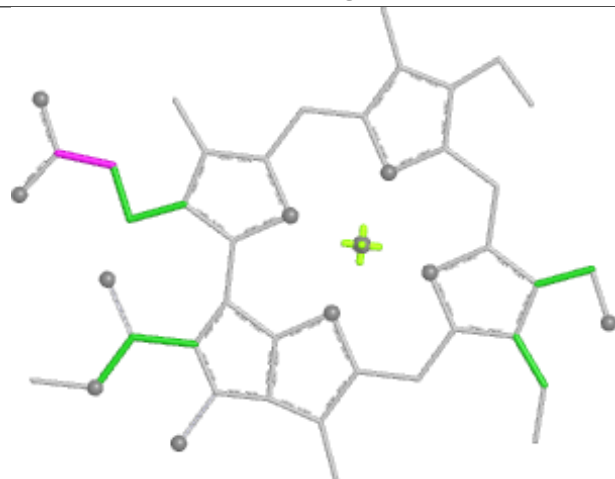
Ligand CHL 3 306



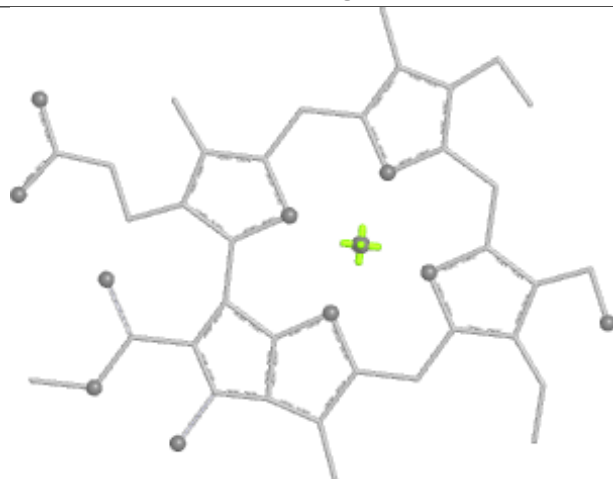
Bond lengths



Bond angles

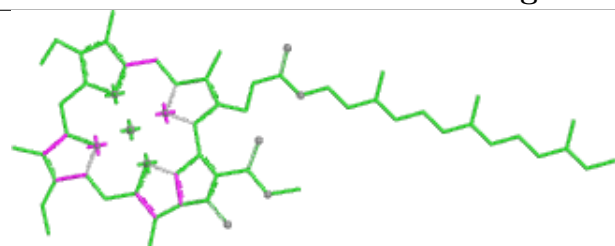


Torsions

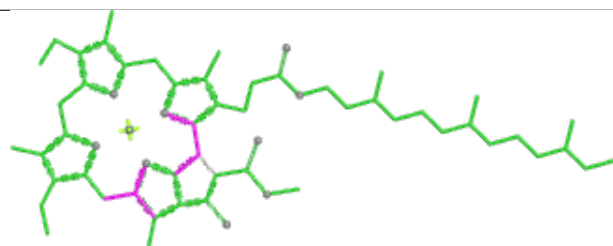


Rings

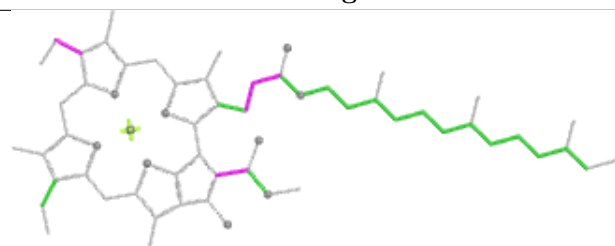
Ligand CLA 6 302



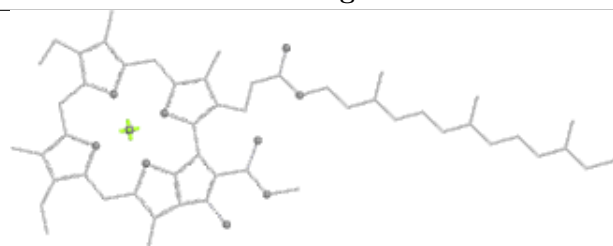
Bond lengths



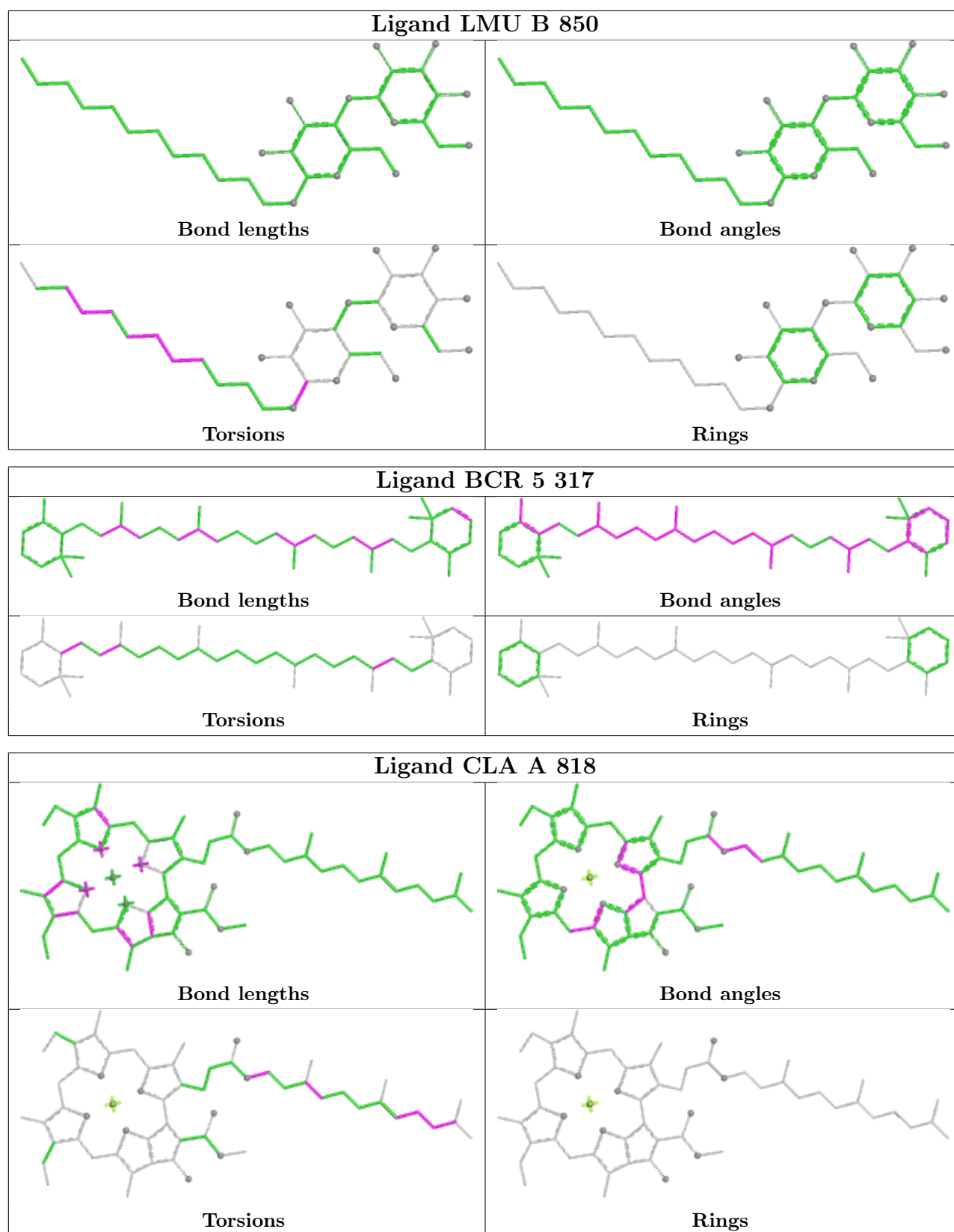
Bond angles



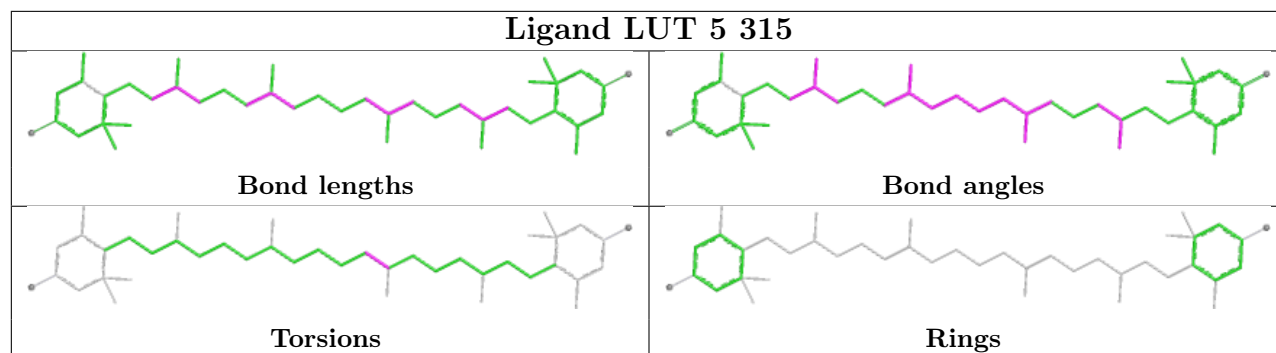
Torsions



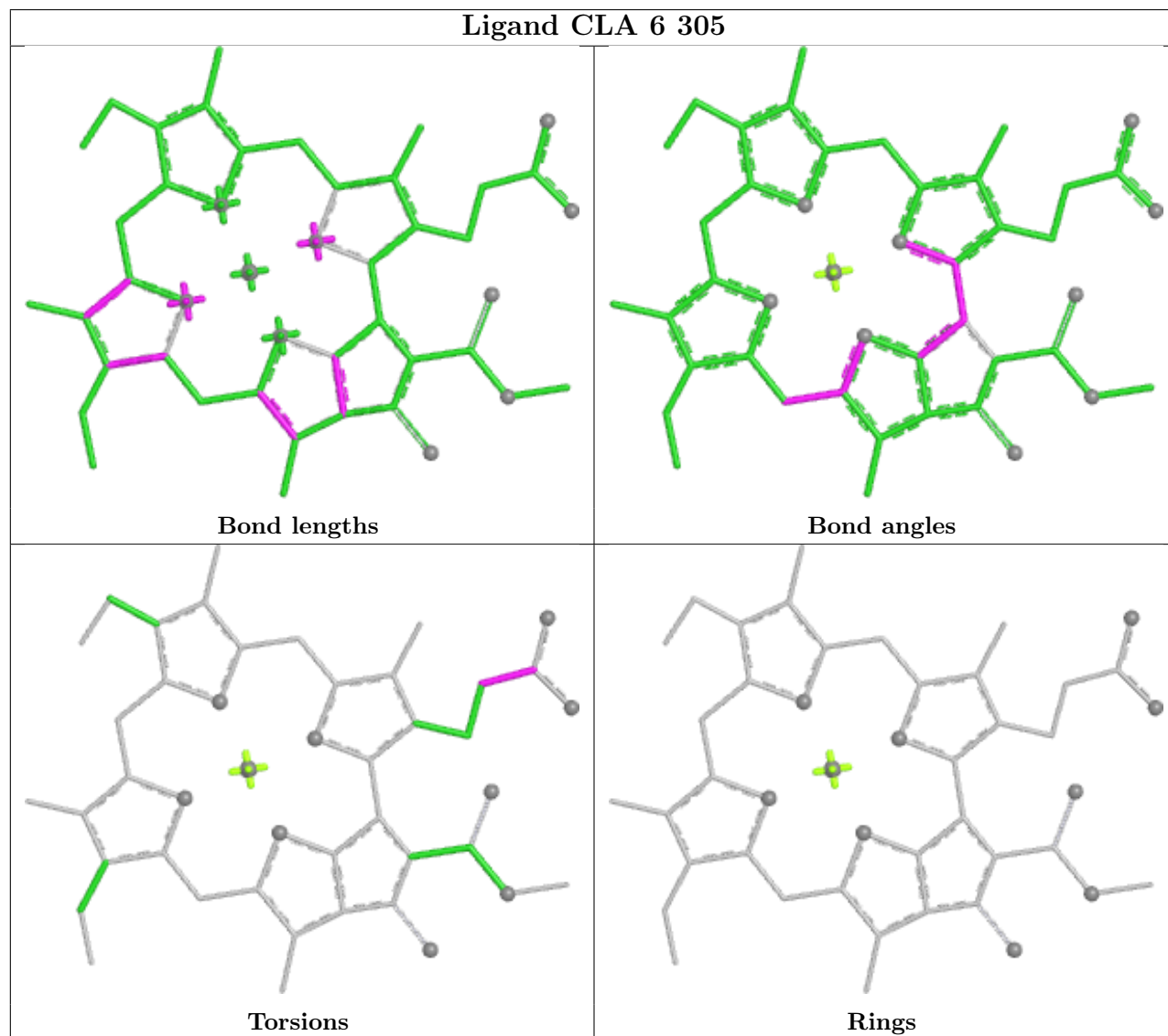
Rings

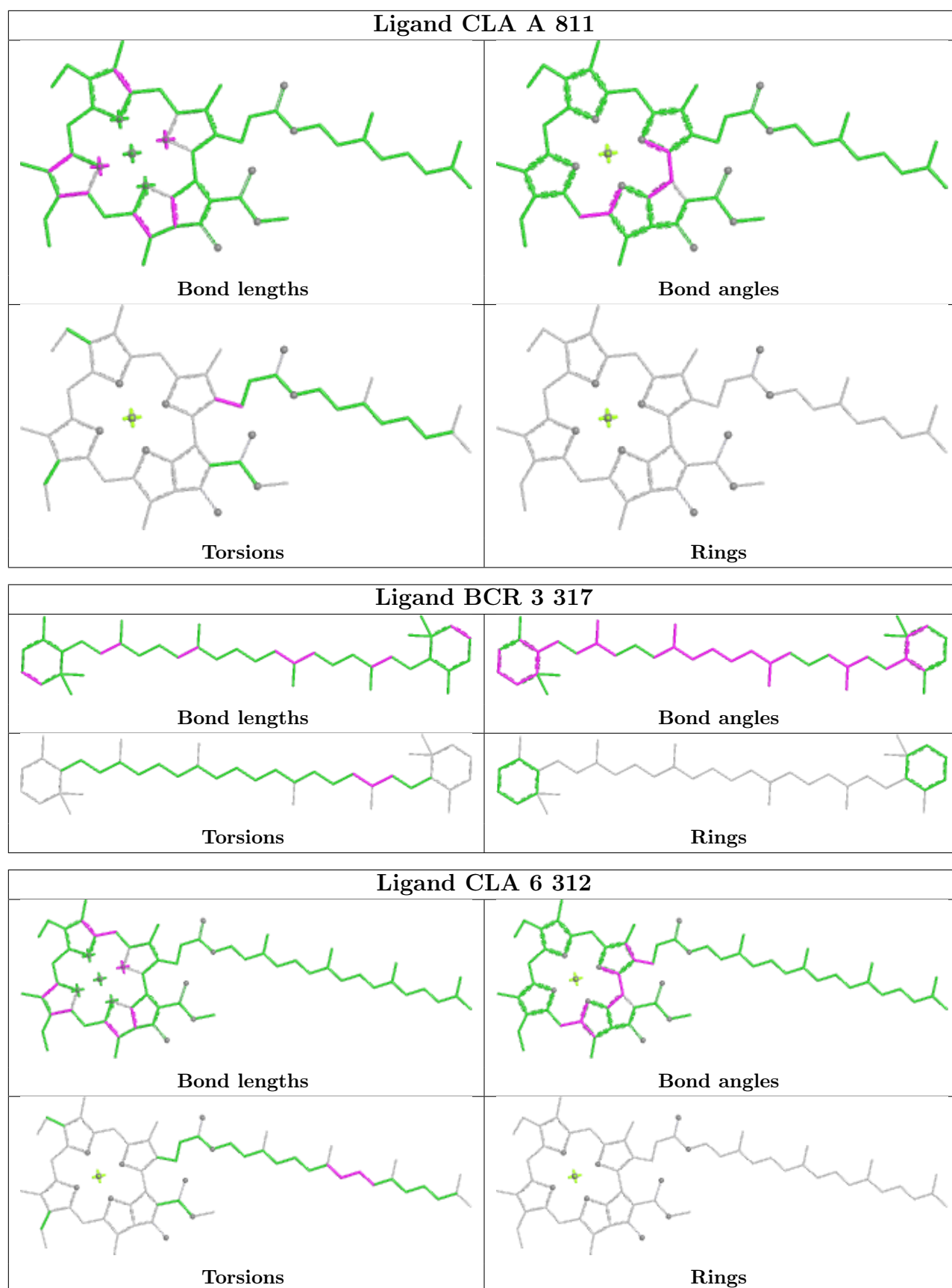


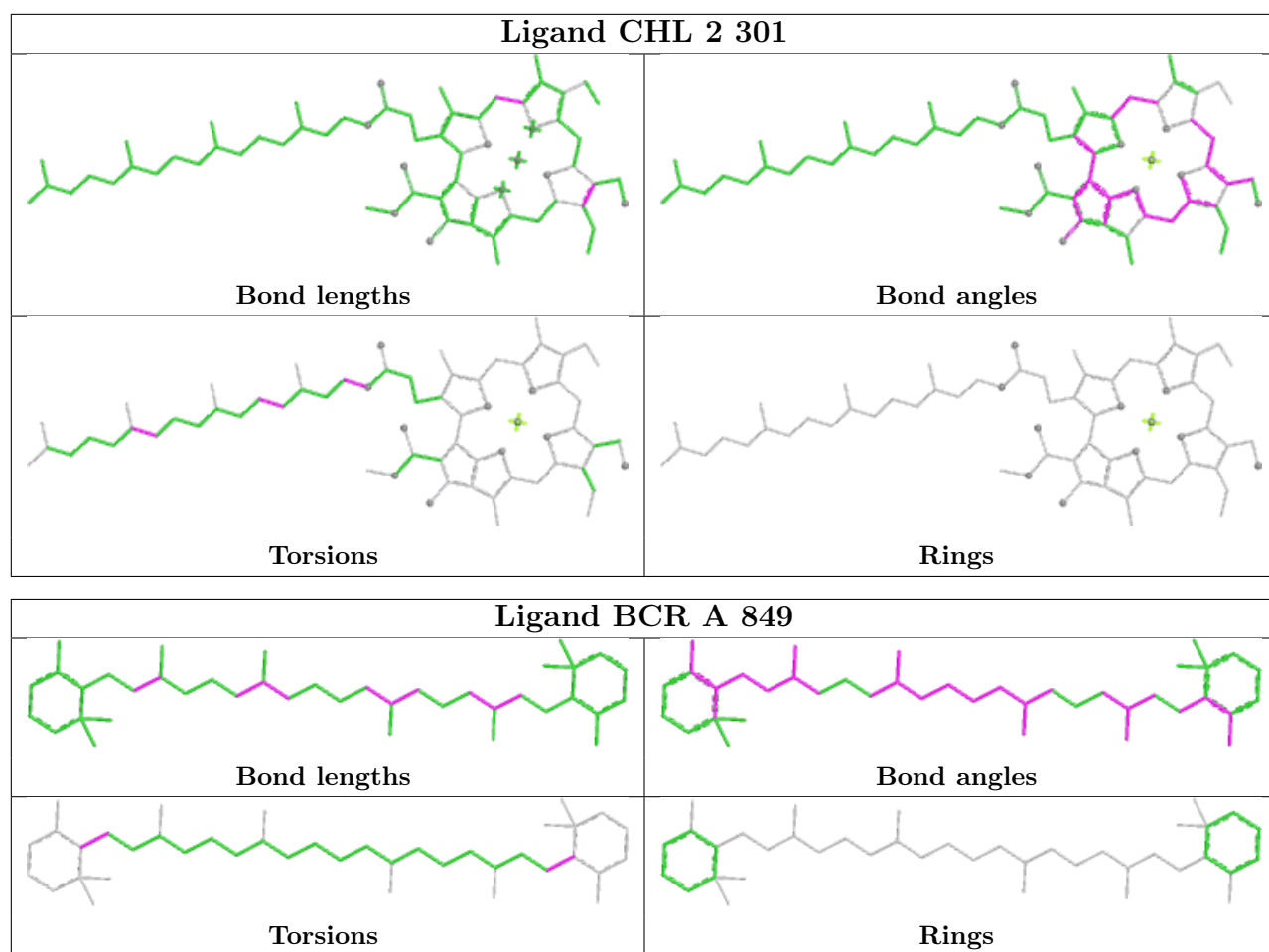
Ligand LUT 5 315

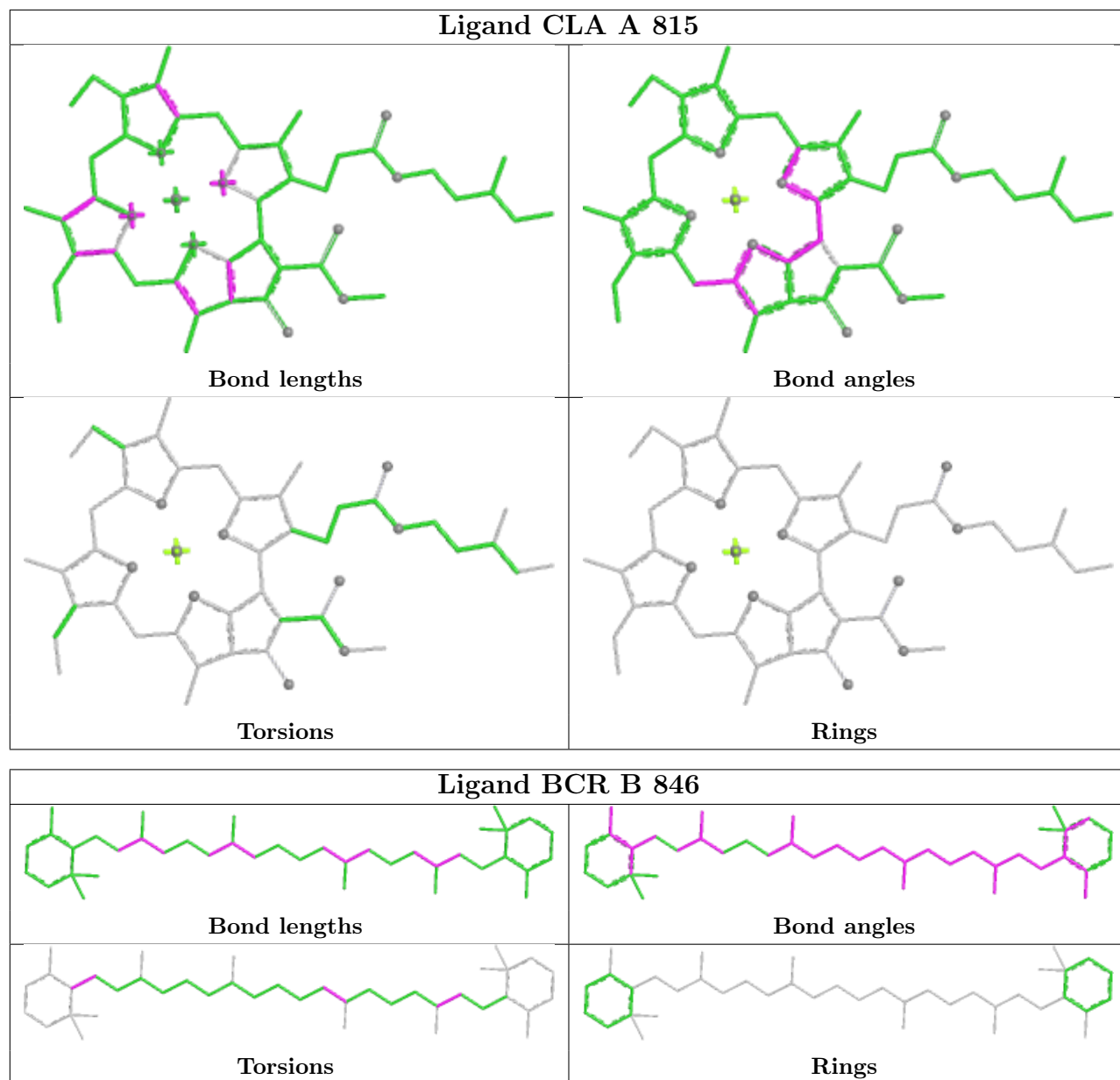


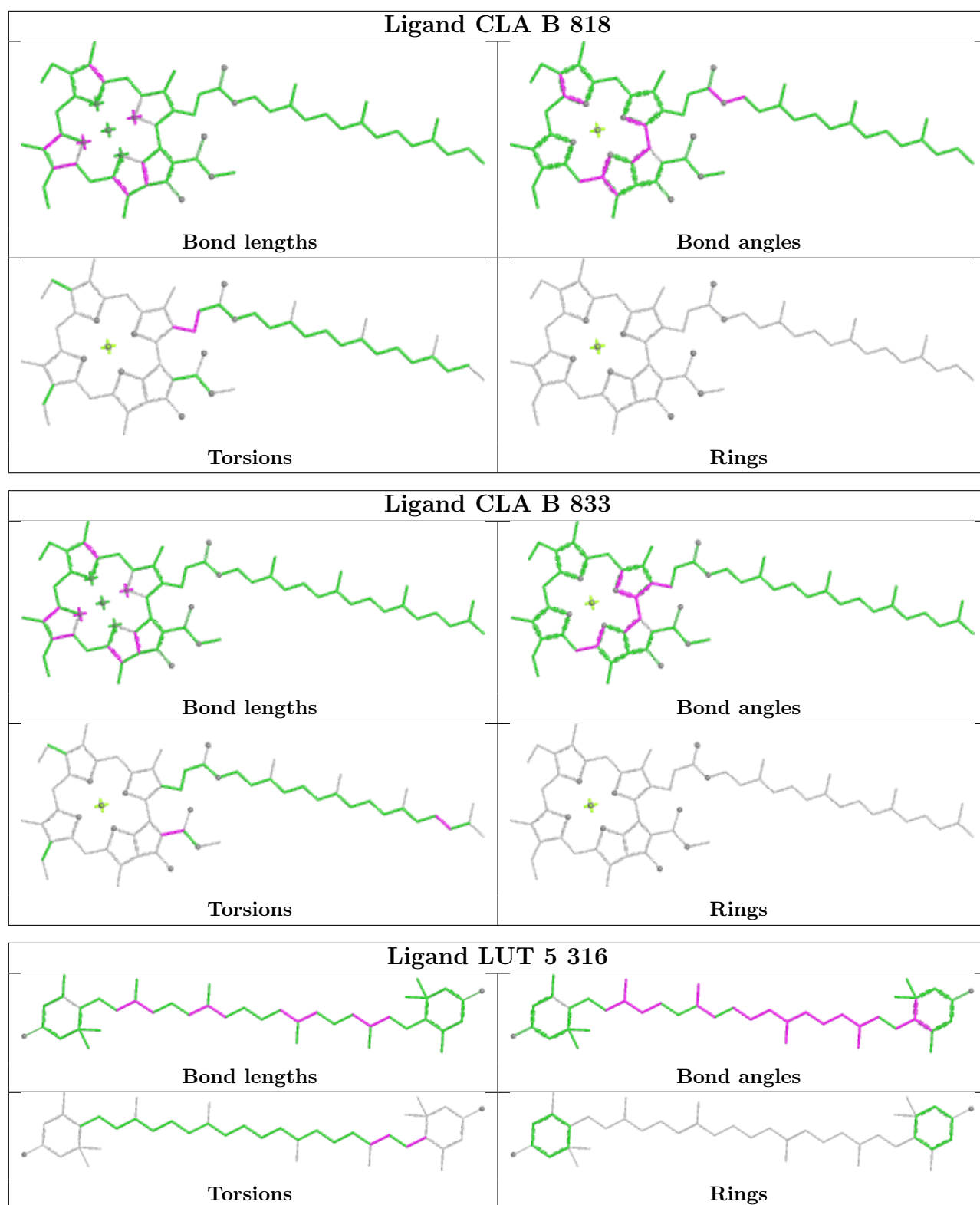
Ligand CLA 6 305

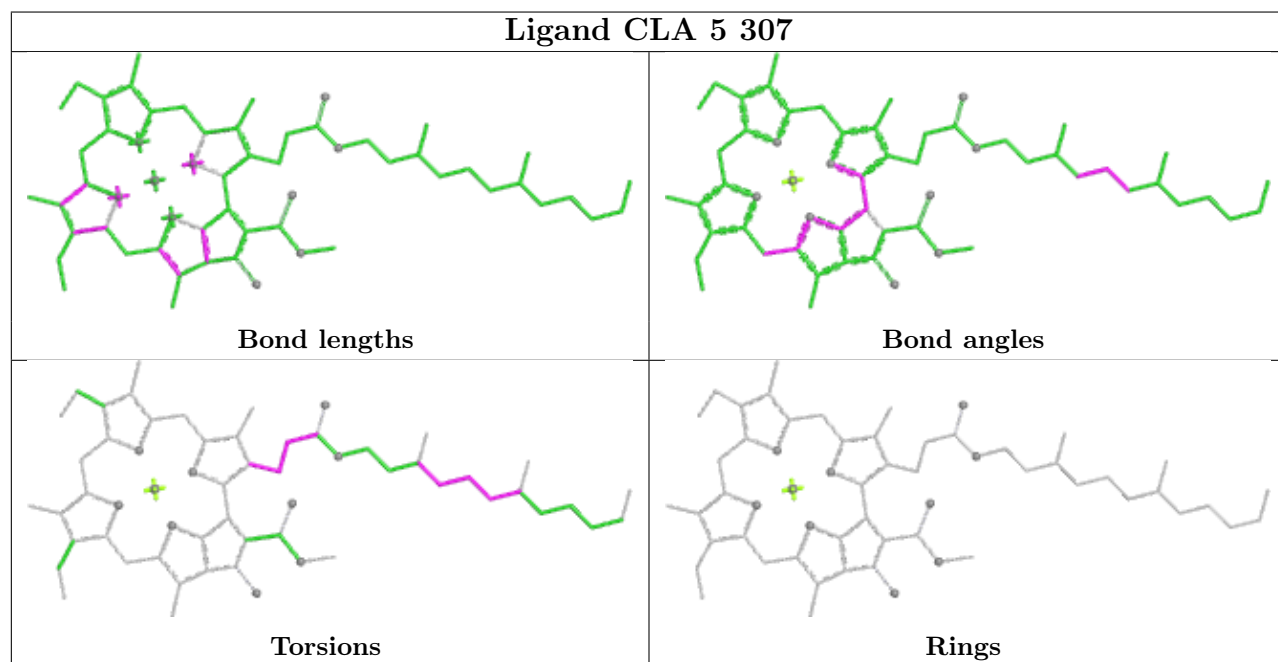
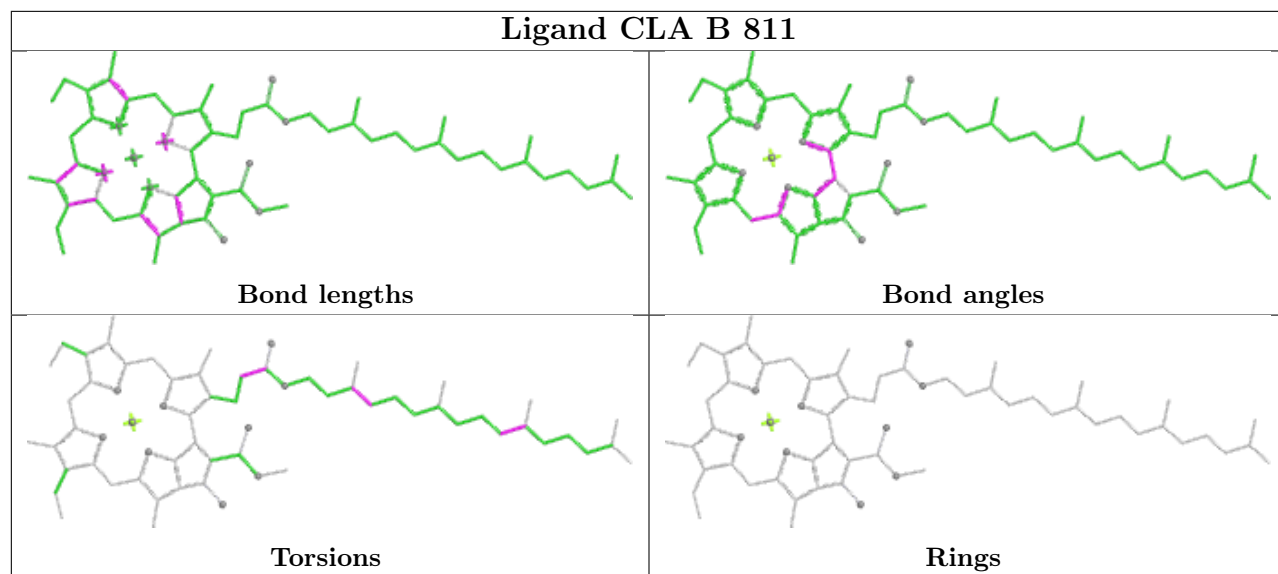




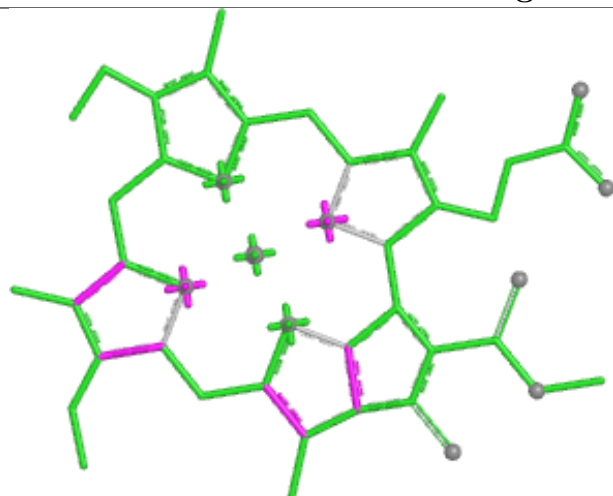




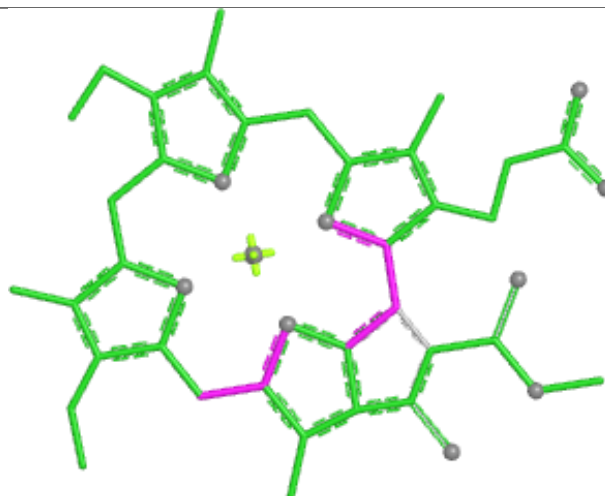




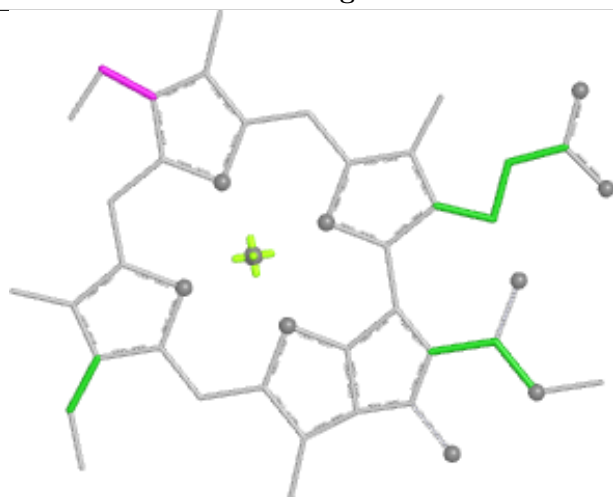
Ligand CLA F 303



Bond lengths



Bond angles

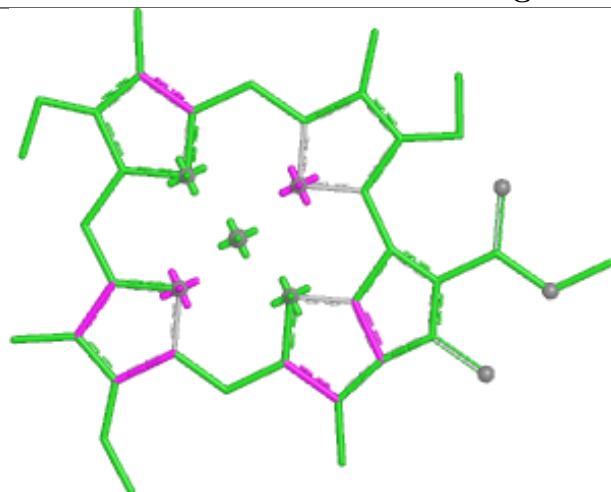


Torsions

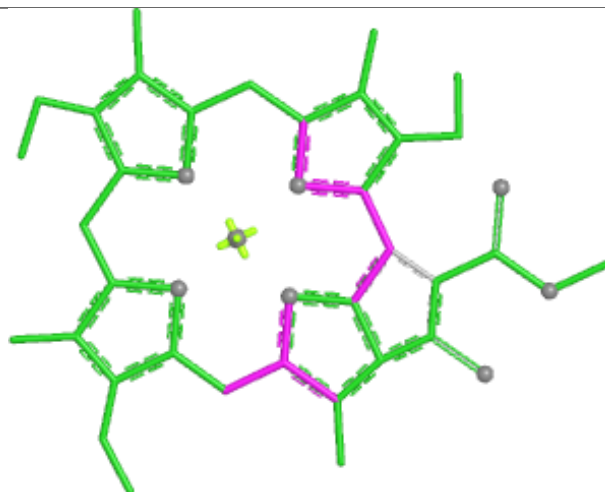


Rings

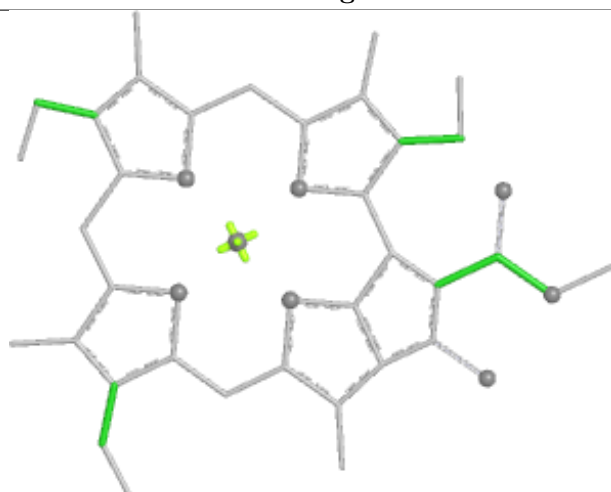
Ligand CLA A 816



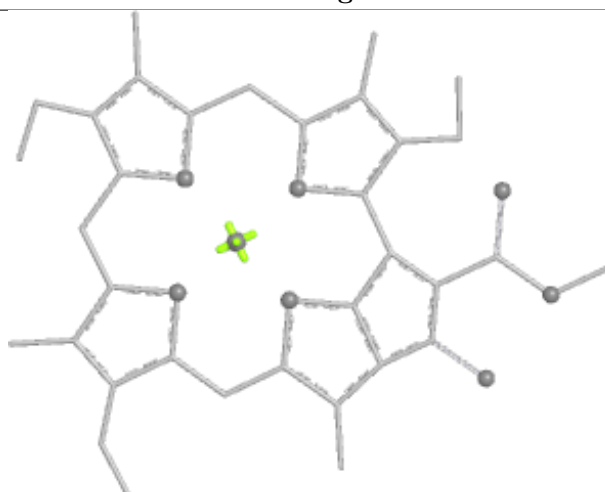
Bond lengths



Bond angles

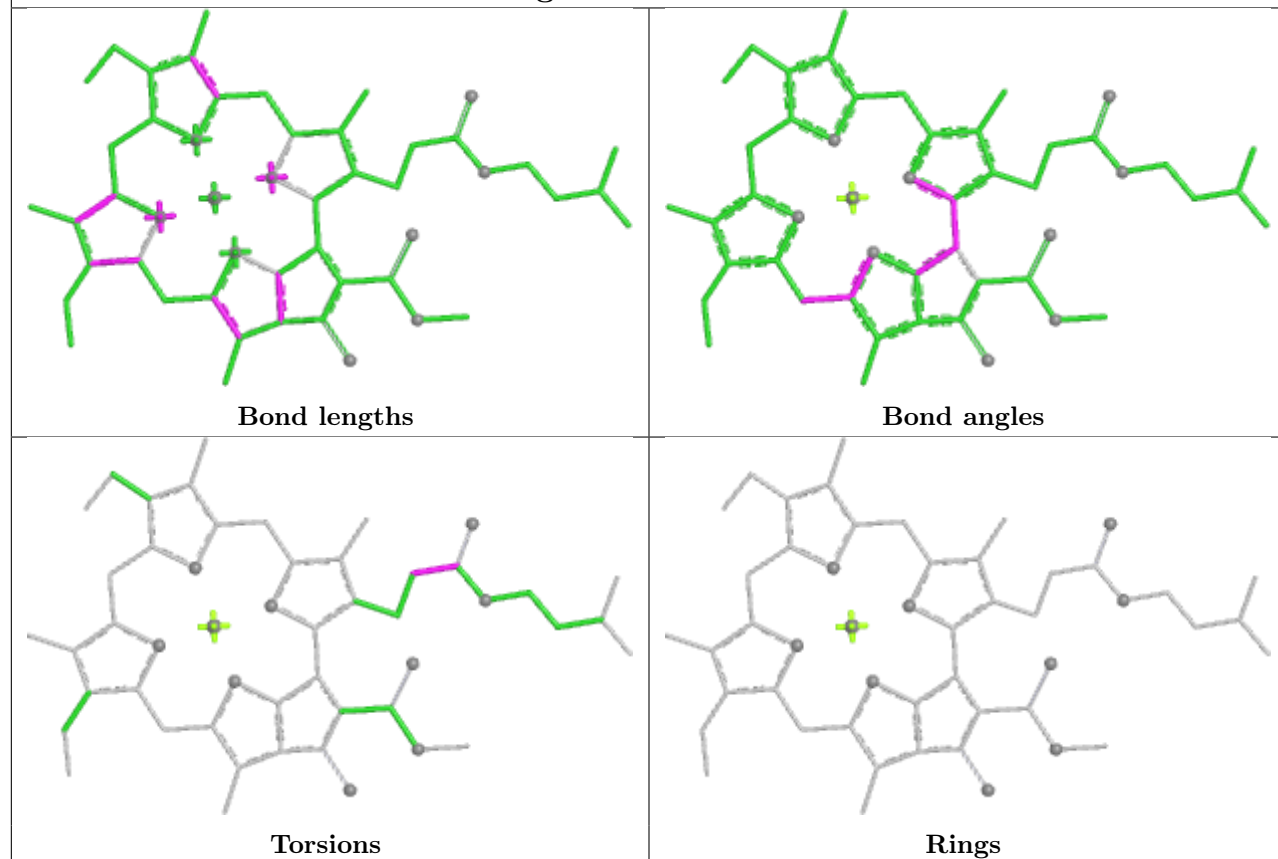


Torsions

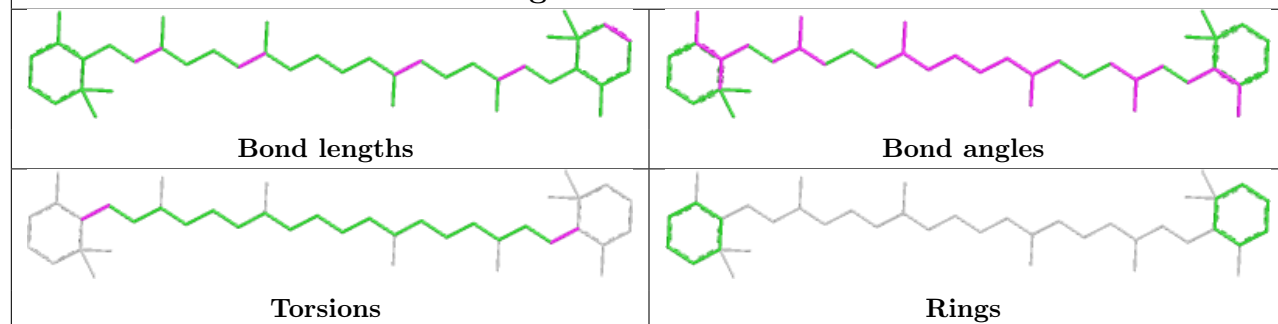


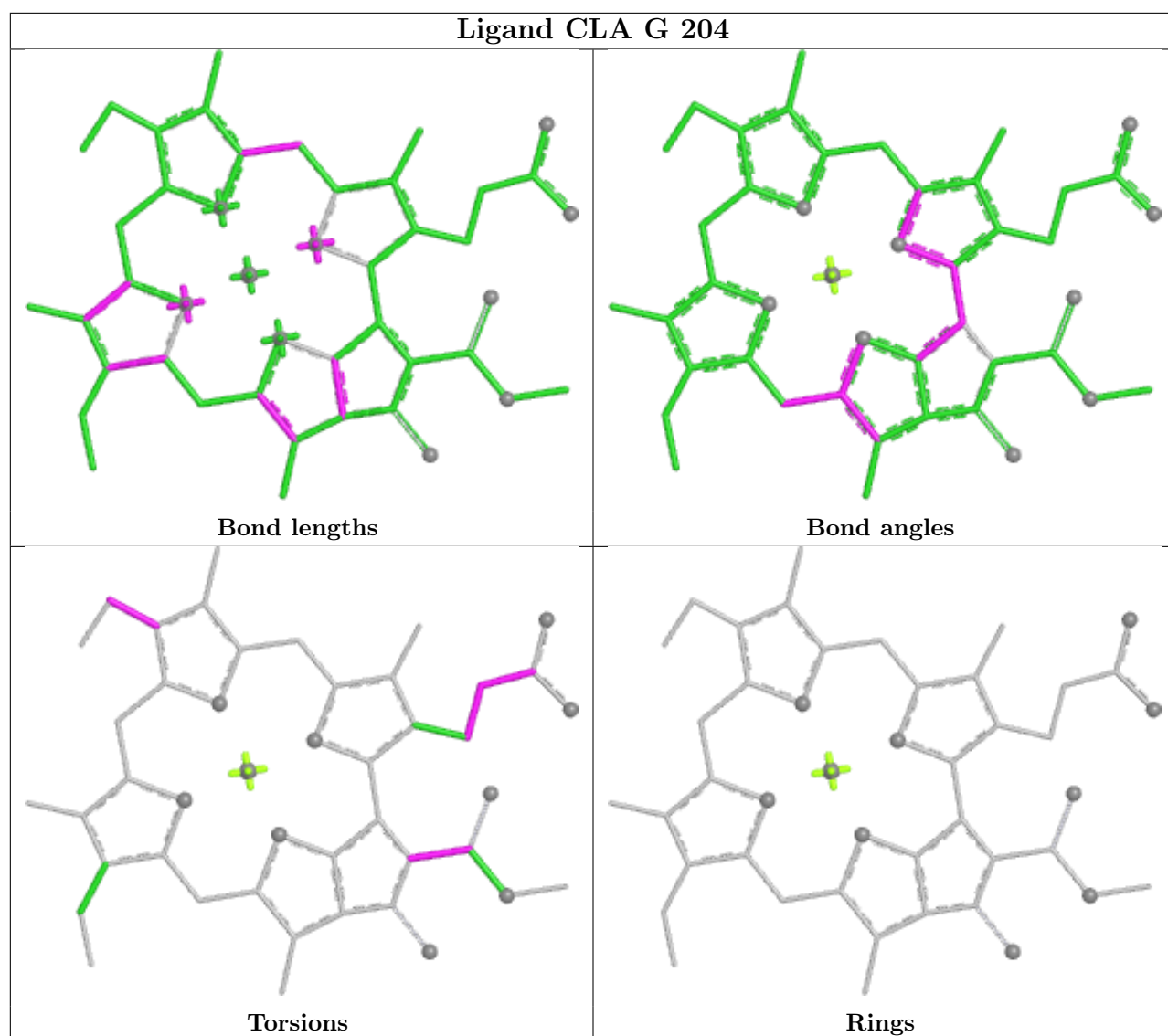
Rings

Ligand CLA 5 302

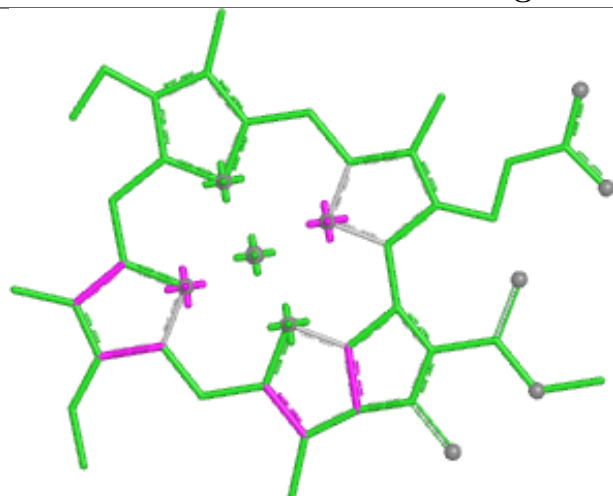


Ligand BCR G 201

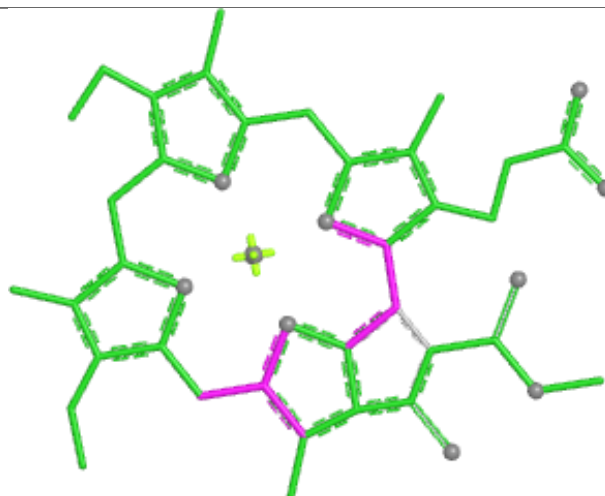




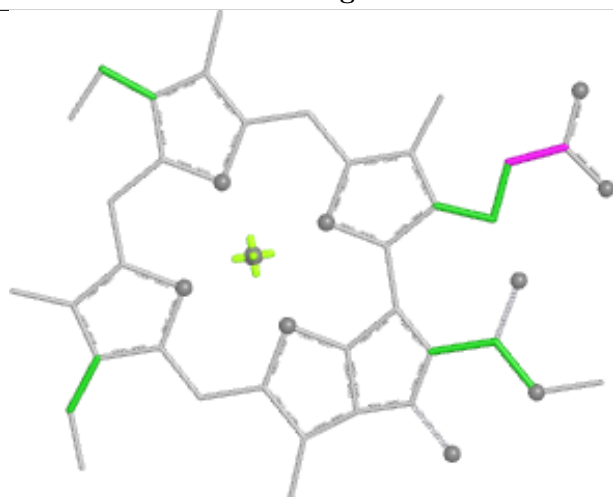
Ligand CLA B 835



Bond lengths



Bond angles

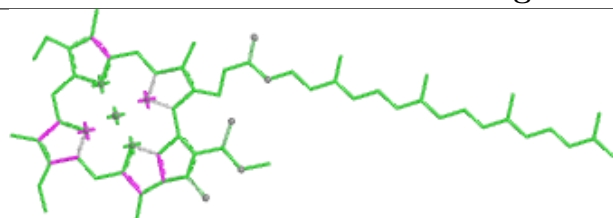


Torsions

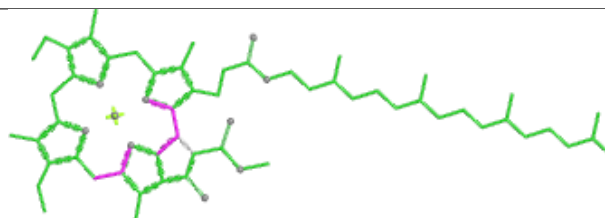


Rings

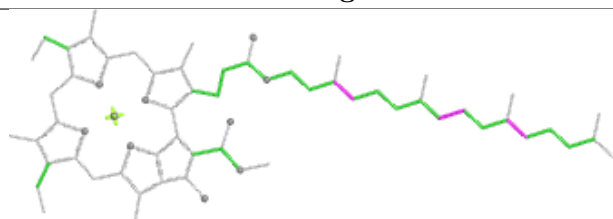
Ligand CLA A 841



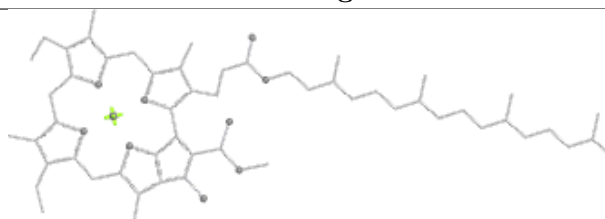
Bond lengths



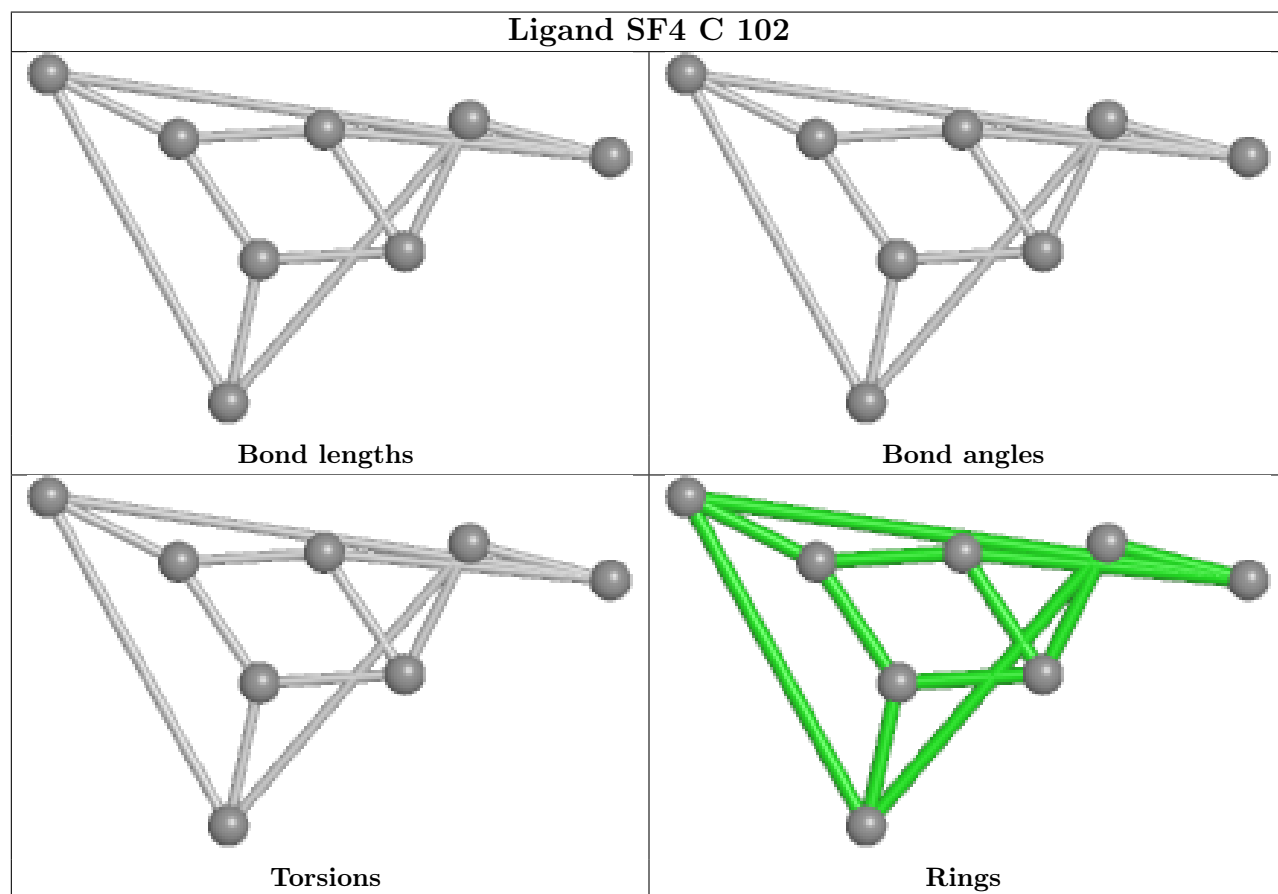
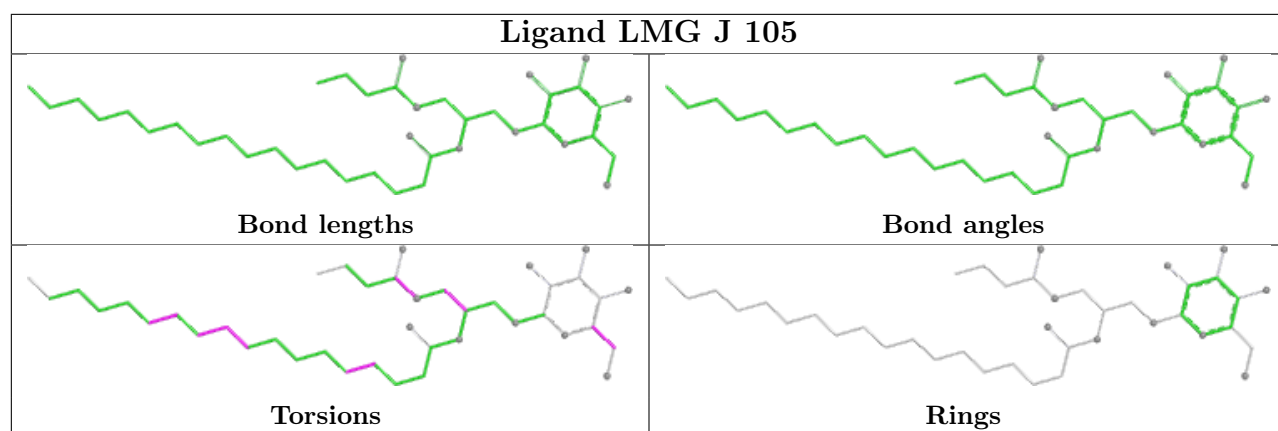
Bond angles

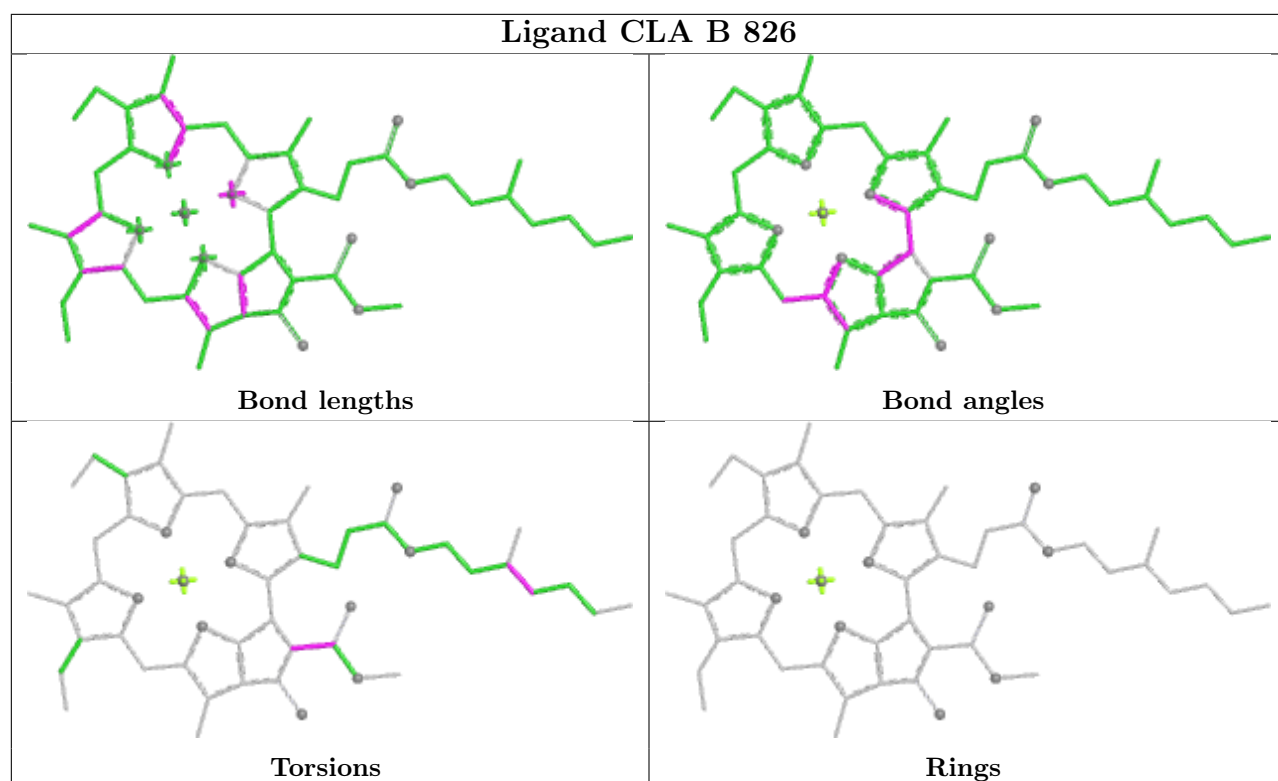


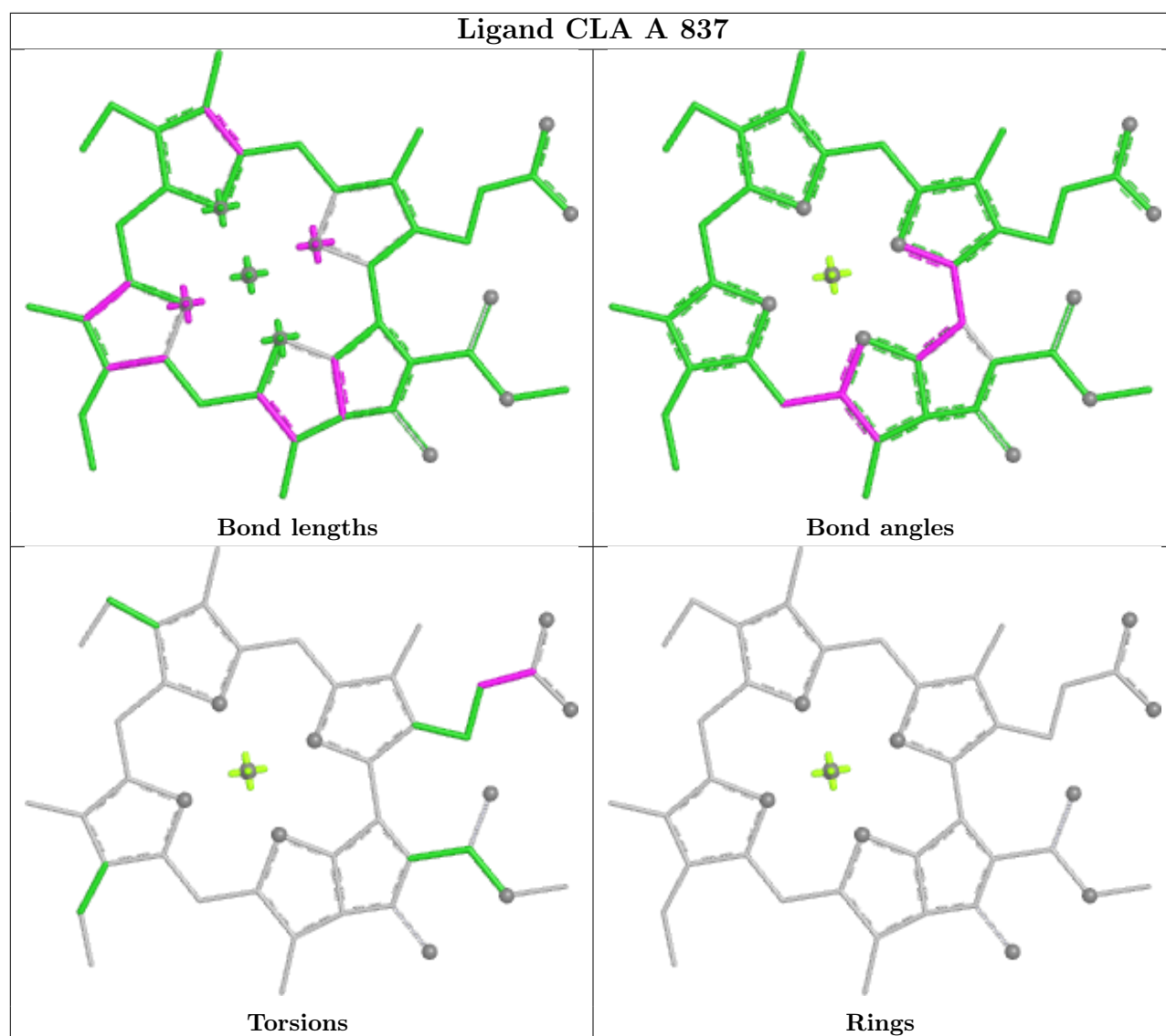
Torsions



Rings







5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

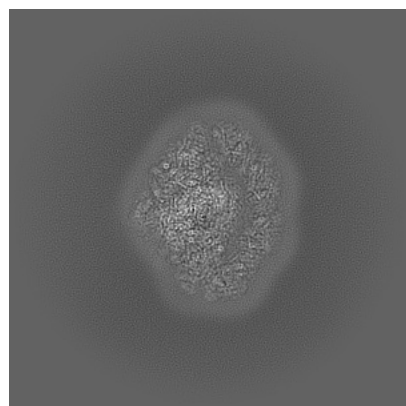
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-63404. These allow visual inspection of the internal detail of the map and identification of artifacts.

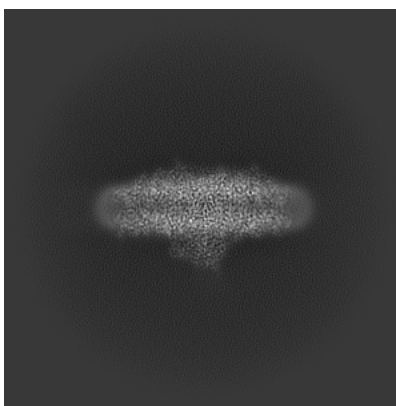
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

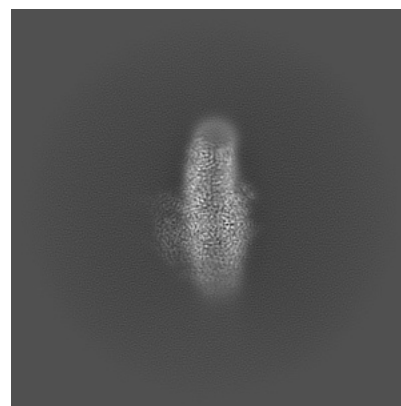
6.1.1 Primary map



X

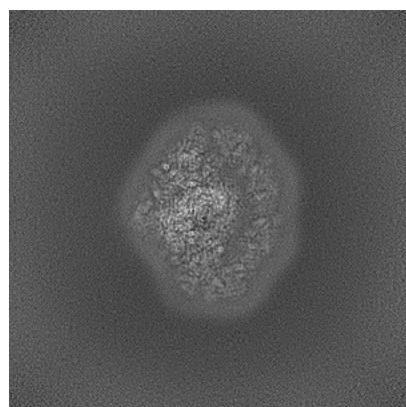


Y

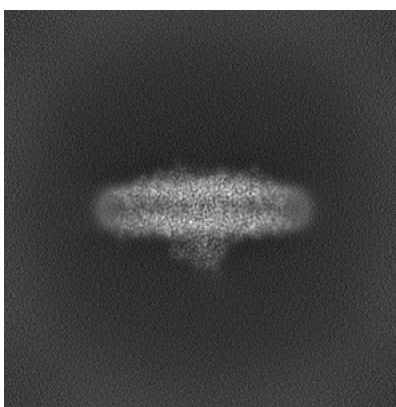


Z

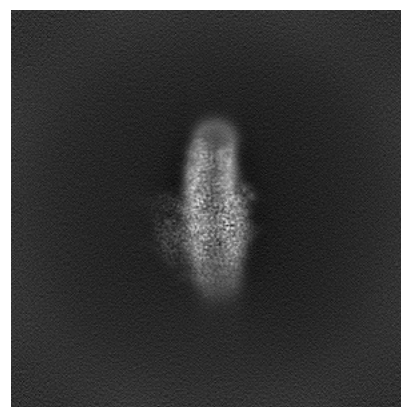
6.1.2 Raw map



X



Y

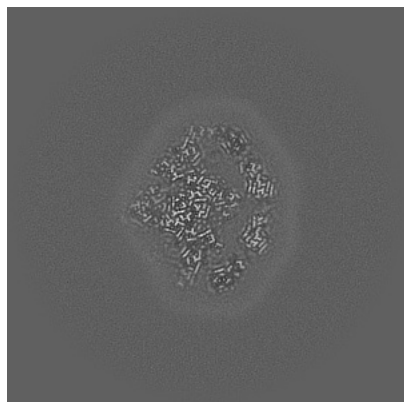


Z

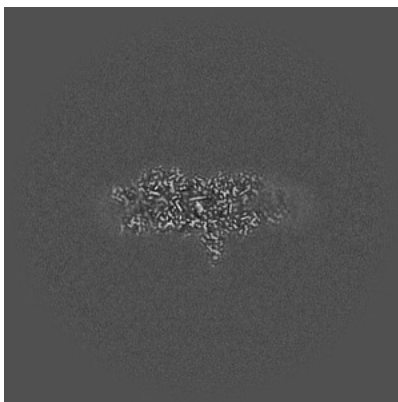
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

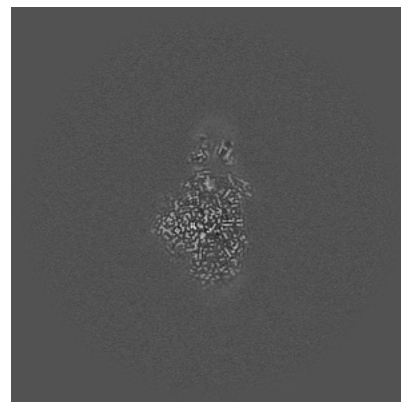
6.2.1 Primary map



X Index: 250

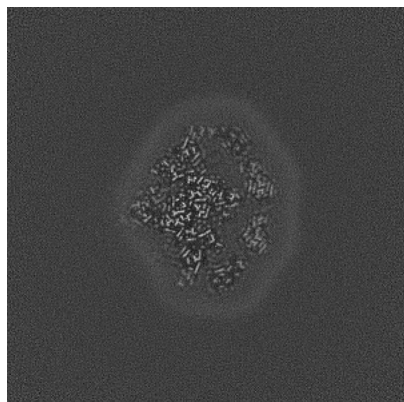


Y Index: 250

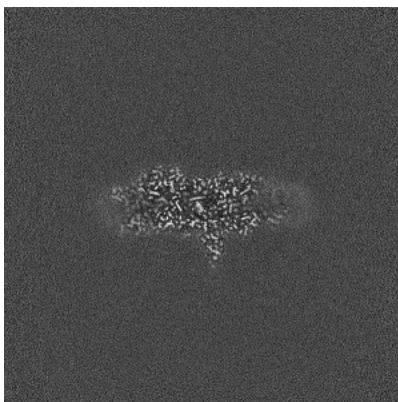


Z Index: 250

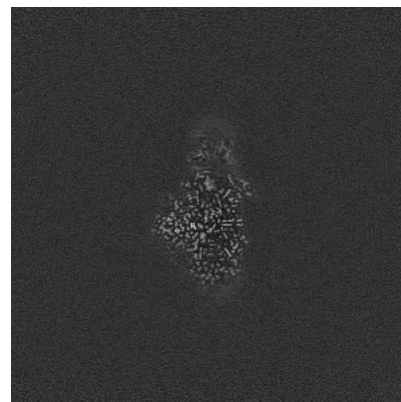
6.2.2 Raw map



X Index: 250



Y Index: 250

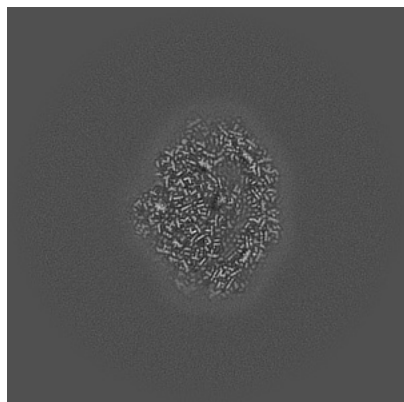


Z Index: 250

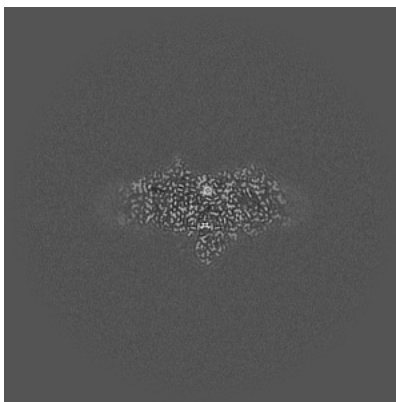
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

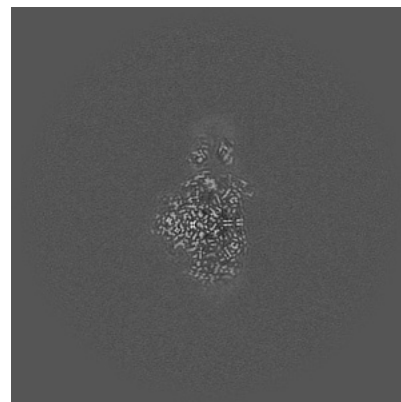
6.3.1 Primary map



X Index: 236

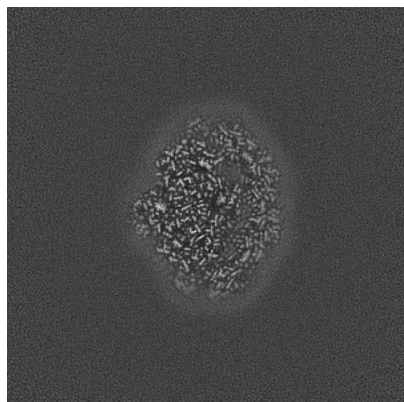


Y Index: 227

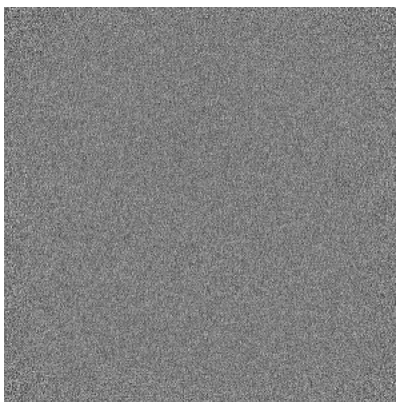


Z Index: 251

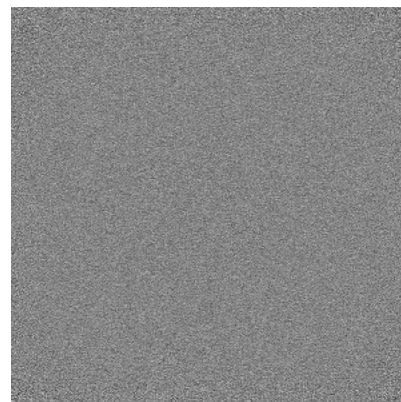
6.3.2 Raw map



X Index: 236



Y Index: 0

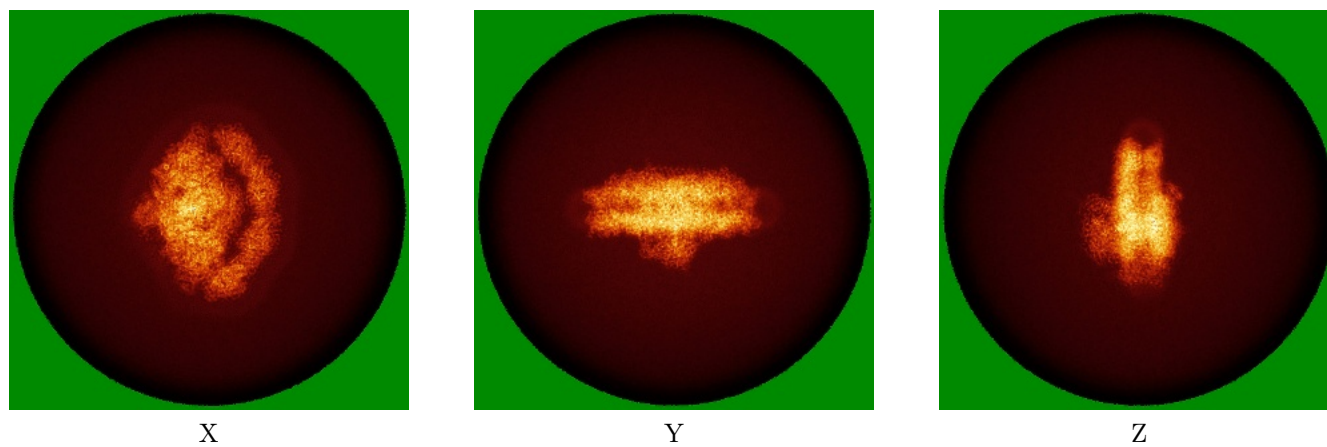


Z Index: 0

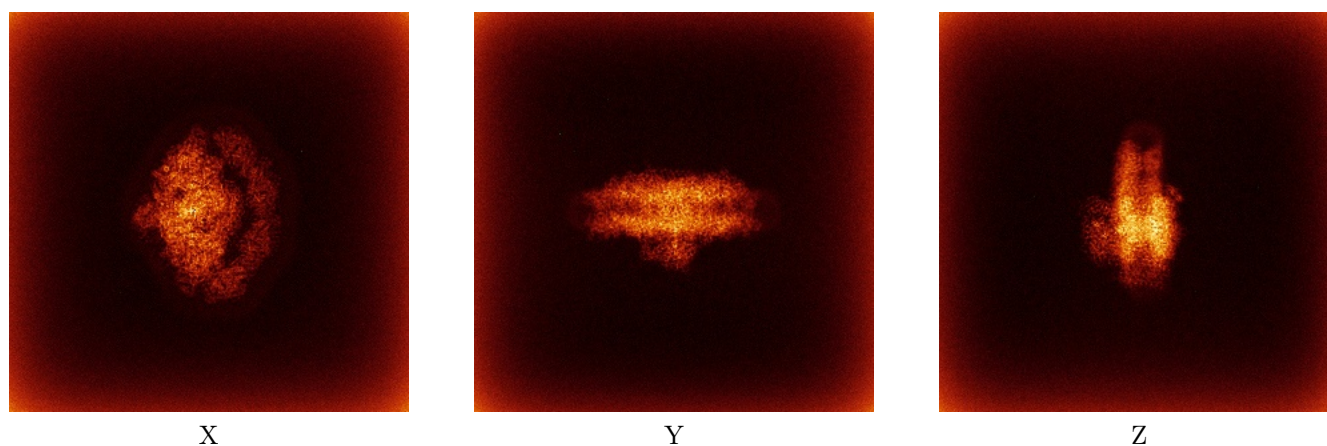
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



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](#)

This section was not generated.

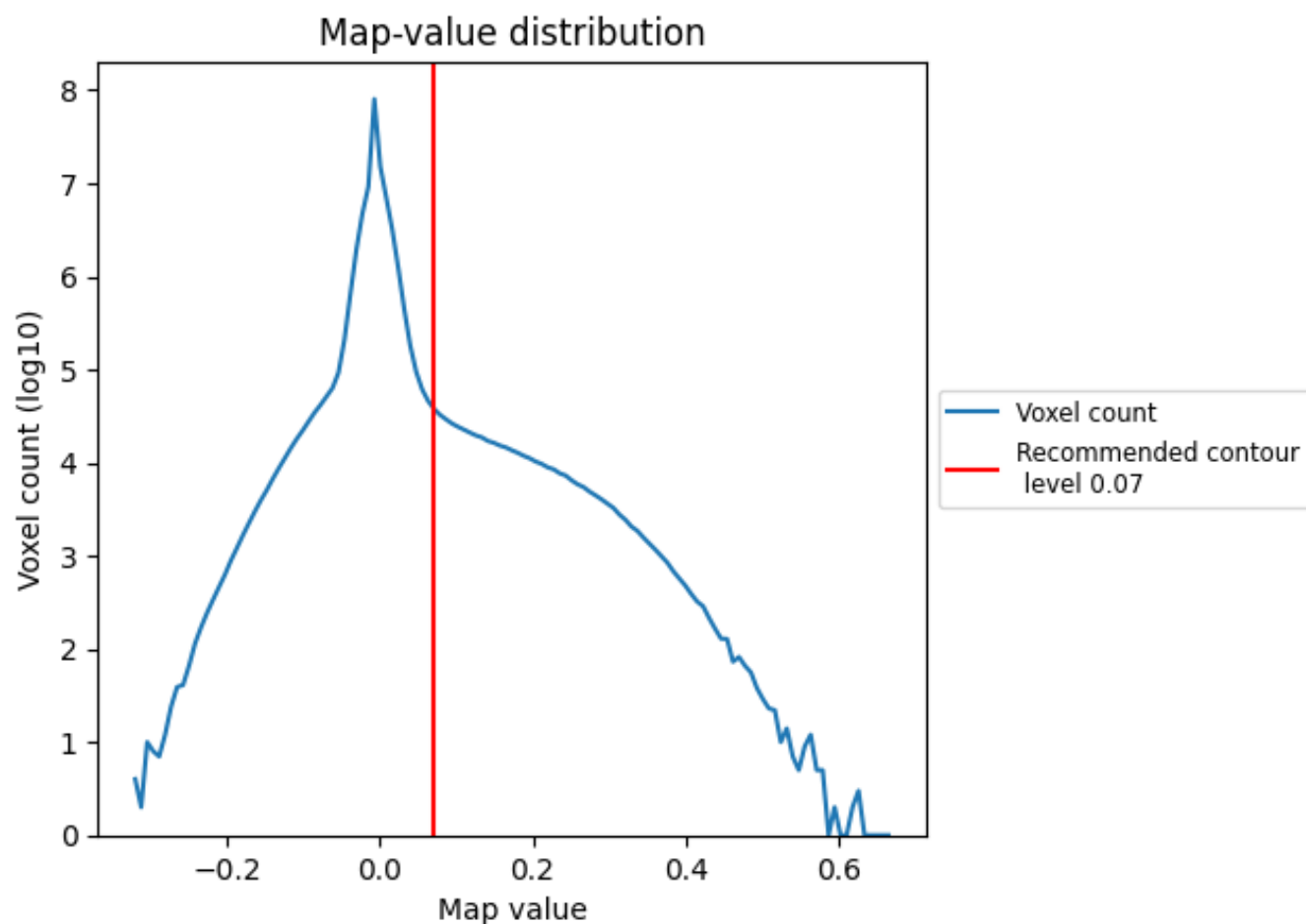
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

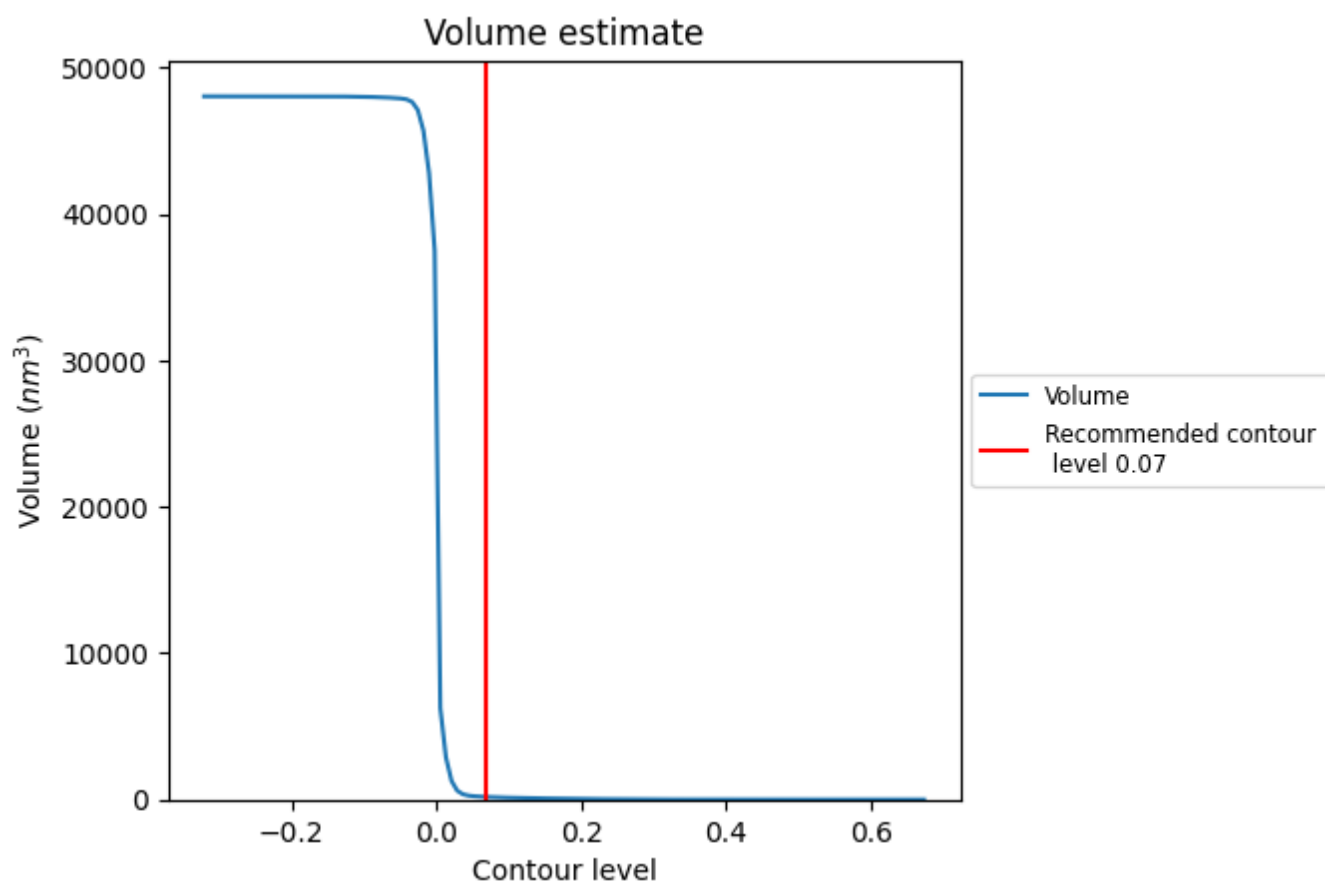
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

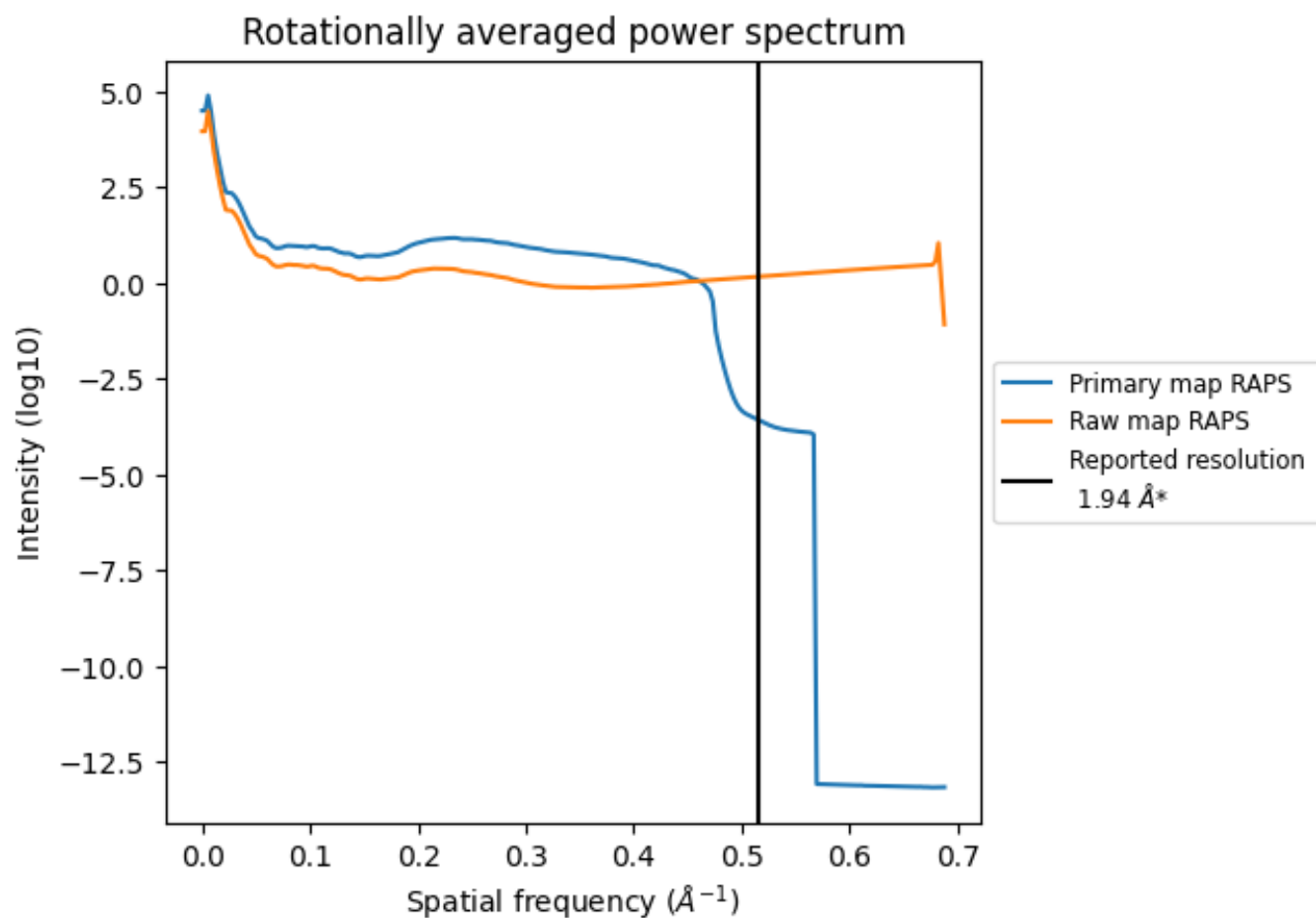
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 177 nm³; this corresponds to an approximate mass of 159 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 ⓘ

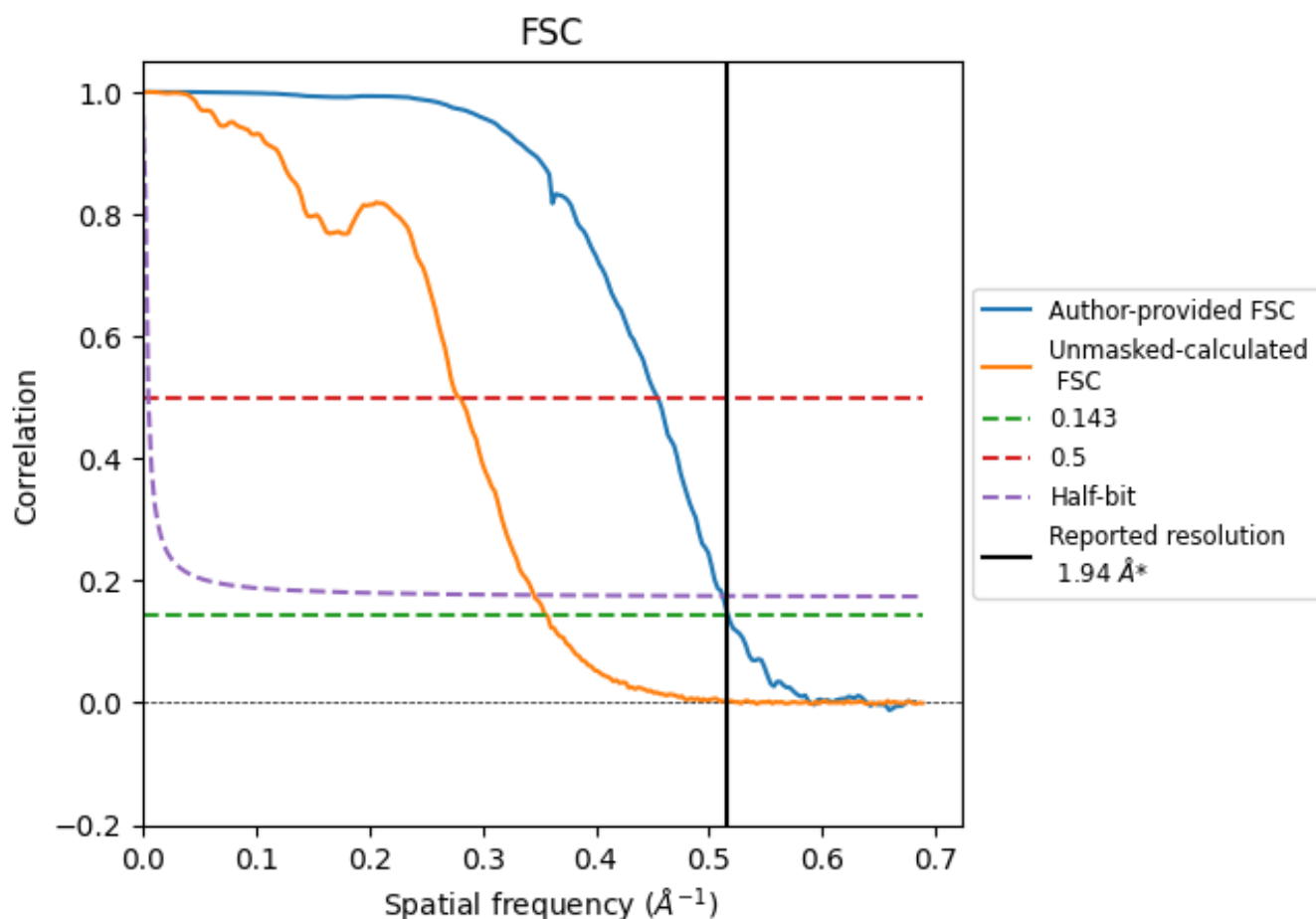


*Reported resolution corresponds to spatial frequency of 0.515 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.515 \AA^{-1}

8.2 Resolution estimates [i](#)

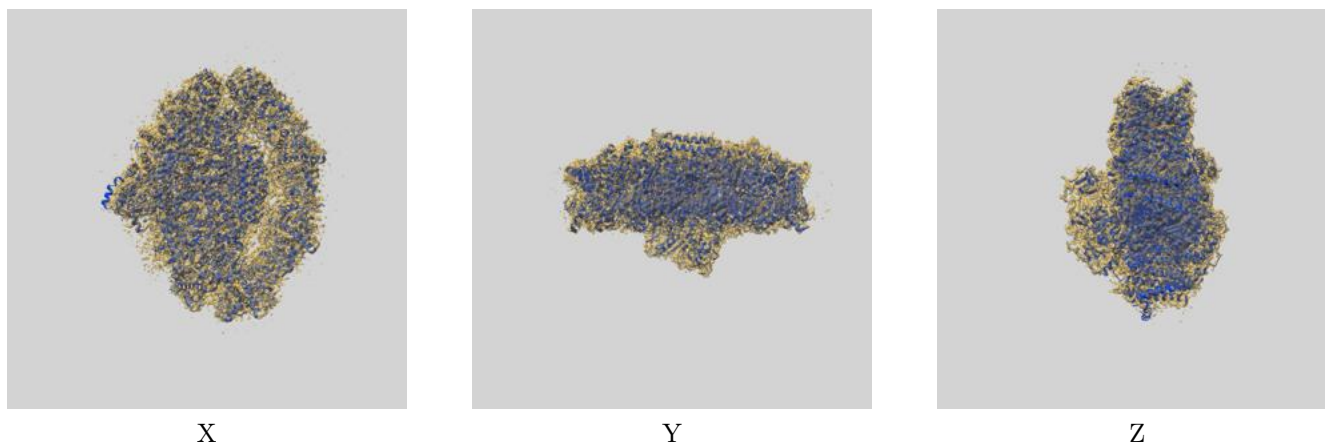
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---------------------------|------------------------------------|------|----------|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 1.94 | - | - |
| Author-provided FSC curve | 1.94 | 2.20 | 1.95 |
| Unmasked-calculated* | 2.80 | 3.58 | 2.89 |

*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 2.80 differs from the reported value 1.94 by more than 10 %

9 Map-model fit [i](#)

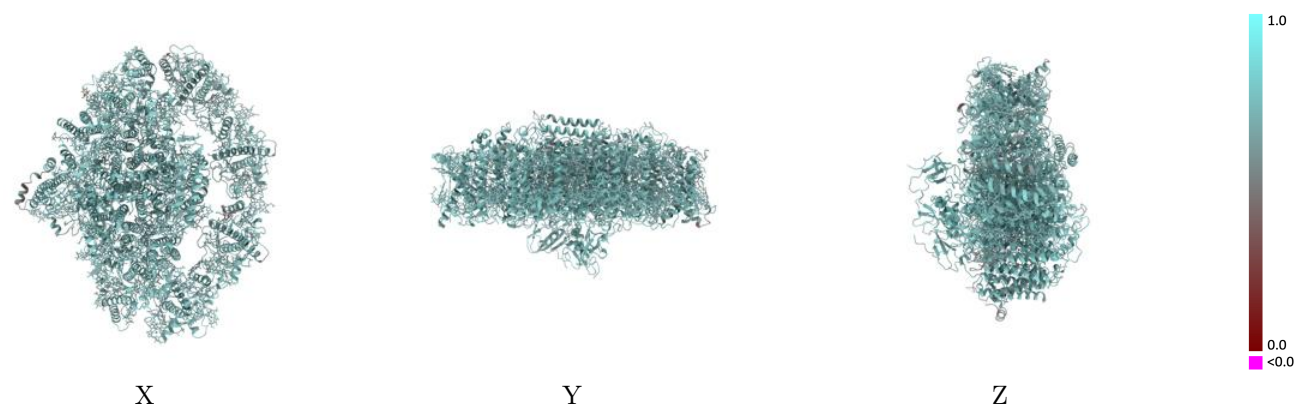
This section contains information regarding the fit between EMDB map EMD-63404 and PDB model 9LUT. Per-residue inclusion information can be found in section [3](#) on page [27](#).

9.1 Map-model overlay [i](#)



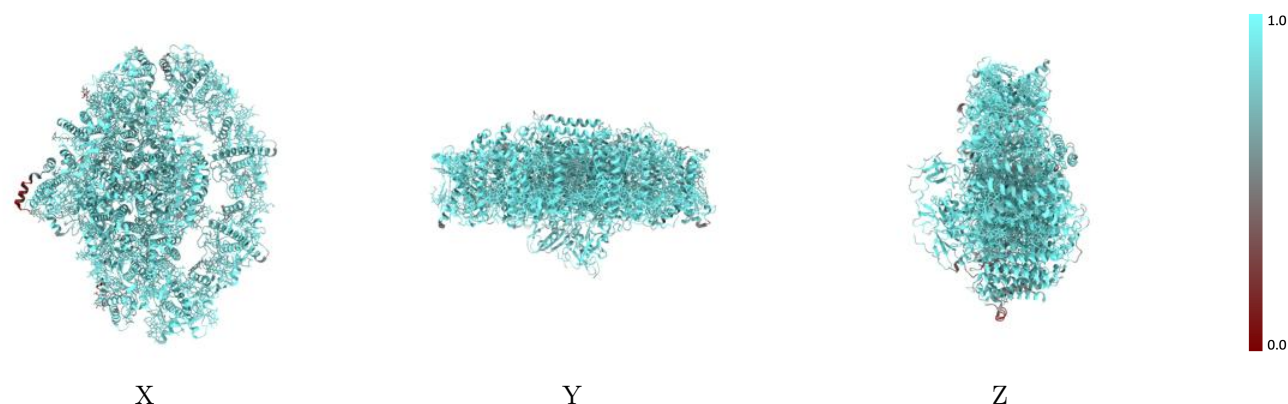
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



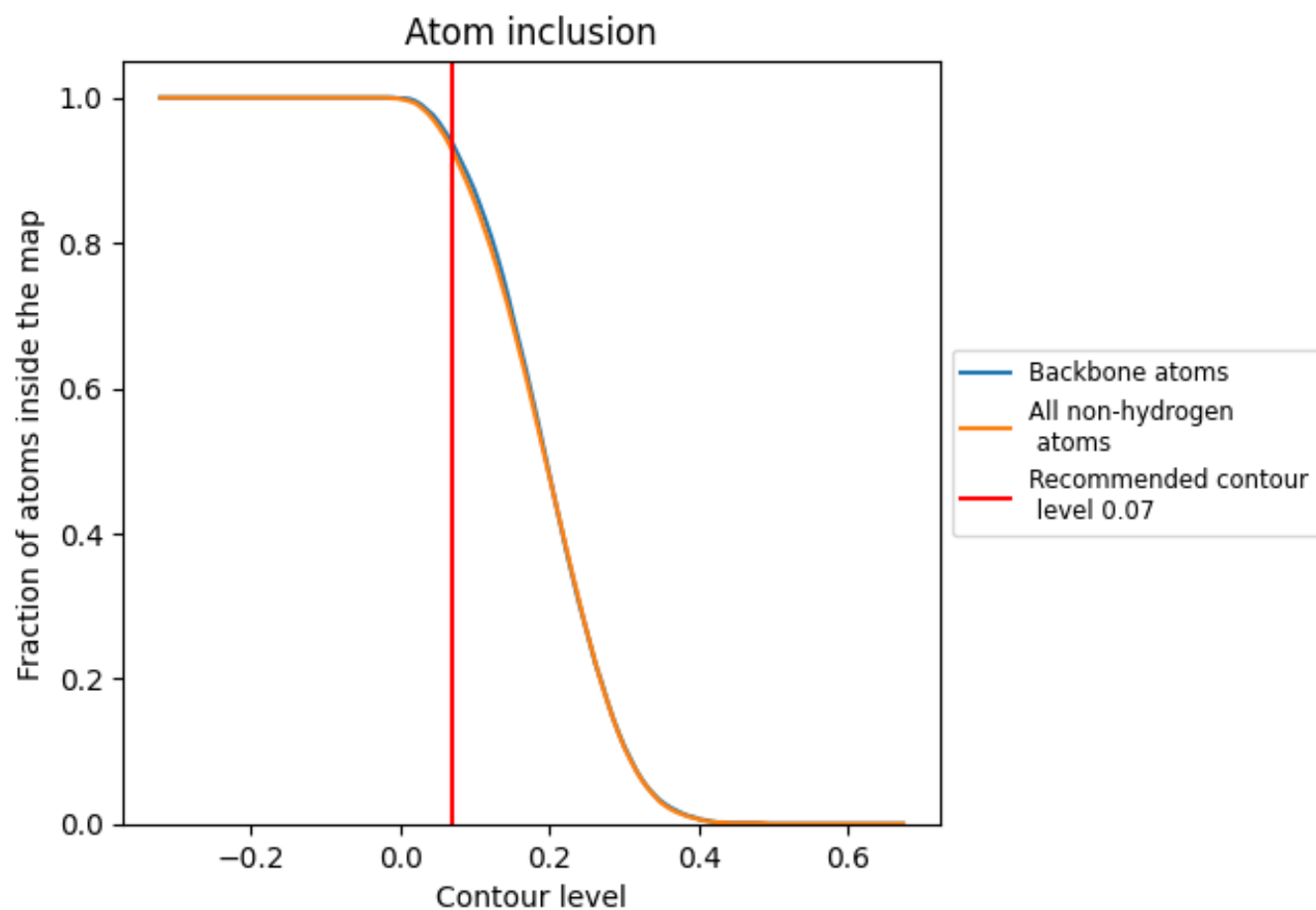
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.07).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 93% 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 (0.07) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--------------------|--------------------|
| All | <div></div> 0.9280 | <div></div> 0.7010 |
| 2 | <div></div> 0.9240 | <div></div> 0.6830 |
| 3 | <div></div> 0.9280 | <div></div> 0.6930 |
| 5 | <div></div> 0.9090 | <div></div> 0.6680 |
| 6 | <div></div> 0.8820 | <div></div> 0.6520 |
| A | <div></div> 0.9680 | <div></div> 0.7270 |
| B | <div></div> 0.9610 | <div></div> 0.7210 |
| C | <div></div> 0.9830 | <div></div> 0.7350 |
| D | <div></div> 0.9250 | <div></div> 0.7020 |
| E | <div></div> 0.9100 | <div></div> 0.6980 |
| F | <div></div> 0.9190 | <div></div> 0.7020 |
| G | <div></div> 0.8640 | <div></div> 0.6730 |
| H | <div></div> 0.5090 | <div></div> 0.6040 |
| I | <div></div> 0.9620 | <div></div> 0.7000 |
| J | <div></div> 0.9460 | <div></div> 0.6980 |
| K | <div></div> 0.7170 | <div></div> 0.6180 |
| L | <div></div> 0.9140 | <div></div> 0.6820 |
| M | <div></div> 0.8680 | <div></div> 0.6720 |

