



# wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 5, 2026 – 02:37 PM EDT

PDB ID : 2AXT / pdb\_00002axt  
Title : Crystal Structure of Photosystem II from Thermosynechococcus elongatus  
Authors : Loll, B.; Kern, J.; Saenger, W.; Zouni, A.; Biesiadka, J.  
Deposited on : 2005-09-06  
Resolution : 3.00 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The 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:

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.015 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.50

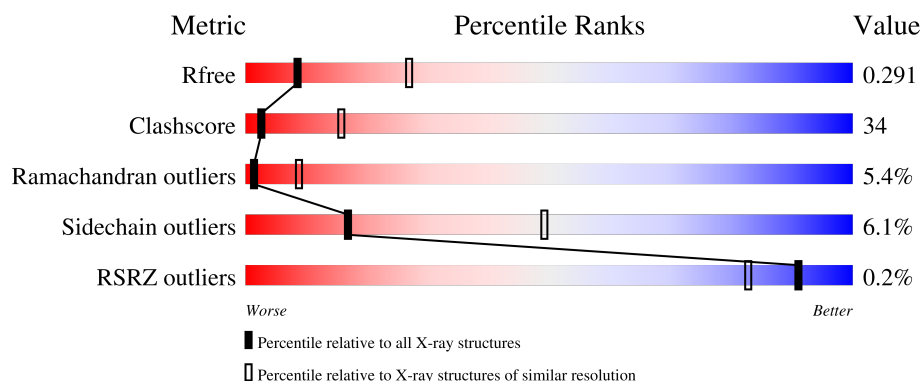
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.00 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<br>(#Entries) | Similar resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-------------------------------------------------------|
| $R_{free}$            | 180053                      | 2672 (3.00-3.00)                                      |
| Clashscore            | 190562                      | 2977 (3.00-3.00)                                      |
| Ramachandran outliers | 187476                      | 2877 (3.00-3.00)                                      |
| Sidechain outliers    | 187428                      | 2880 (3.00-3.00)                                      |
| RSRZ outliers         | 180081                      | 2671 (3.00-3.00)                                      |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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 electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain                                                         |
|-----|-------|--------|--------------------------------------------------------------------------|
| 1   | A     | 344    | <div> <div>39%</div> <div>48%</div> <div>9%</div> <div>..</div> </div>   |
| 1   | a     | 344    | <div> <div>37%</div> <div>48%</div> <div>11%</div> <div>..</div> </div>  |
| 2   | B     | 510    | <div> <div>50%</div> <div>38%</div> <div>7%</div> <div>..</div> </div>   |
| 2   | b     | 510    | <div> <div>48%</div> <div>40%</div> <div>7%</div> <div>..</div> </div>   |
| 3   | C     | 473    | <div> <div>37%</div> <div>48%</div> <div>9%</div> <div>• 5%</div> </div> |

*Continued on next page...*

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3   | c     | 473    |                  |
| 4   | D     | 352    |                  |
| 4   | d     | 352    |                  |
| 5   | E     | 84     |                  |
| 5   | e     | 84     |                  |
| 6   | F     | 45     |                  |
| 6   | f     | 45     |                  |
| 7   | H     | 66     |                  |
| 7   | h     | 66     |                  |
| 8   | I     | 38     |                  |
| 8   | i     | 38     |                  |
| 9   | J     | 40     |                  |
| 9   | j     | 40     |                  |
| 10  | K     | 37     |                  |
| 10  | k     | 37     |                  |
| 11  | L     | 37     |                  |
| 11  | l     | 37     |                  |
| 12  | M     | 36     |                  |
| 12  | m     | 36     |                  |
| 13  | O     | 247    |                  |
| 13  | o     | 247    |                  |
| 14  | T     | 32     |                  |
| 14  | t     | 32     |                  |
| 15  | U     | 104    |                  |
| 15  | u     | 104    |                  |

Continued on next page...

*Continued from previous page...*

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 16  | V     | 137    | <br>46% 46% 8%   |
| 16  | v     | 137    | <br>46% 44% 10%  |
| 17  | X     | 129    | <br>51% 29% 19%  |
| 17  | x     | 129    | <br>50% 30% 19%  |
| 18  | Z     | 62     | <br>40% 53% 6%   |
| 18  | z     | 62     | <br>37% 56% 6%   |

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 |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 30  | DGD  | C     | 507  | X         | -        | -       | -                |
| 30  | DGD  | C     | 508  | X         | -        | -       | -                |
| 30  | DGD  | C     | 509  | X         | -        | -       | -                |
| 30  | DGD  | H     | 208  | X         | -        | -       | -                |
| 30  | DGD  | c     | 5507 | X         | -        | -       | -                |
| 30  | DGD  | c     | 5508 | X         | -        | -       | -                |
| 30  | DGD  | c     | 5509 | X         | -        | -       | -                |
| 30  | DGD  | h     | 5208 | X         | -        | -       | -                |



## 2 Entry composition

There are 33 unique types of molecules in this entry. The entry contains 48254 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Photosystem Q(B) protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 1   | A     | 335      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 2623  | 1718 | 432 | 458 | 15 |         |         |       |
| 1   | a     | 335      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 2623  | 1718 | 432 | 458 | 15 |         |         |       |

- Molecule 2 is a protein called CP47 protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 2   | B     | 488      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 3800  | 2498 | 632 | 657 | 13 |         |         |       |
| 2   | b     | 488      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 3800  | 2498 | 632 | 657 | 13 |         |         |       |

- Molecule 3 is a protein called photosystem II CP43 protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 3   | C     | 447      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 3421  | 2244 | 571 | 593 | 13 |         |         |       |
| 3   | c     | 447      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 3421  | 2244 | 571 | 593 | 13 |         |         |       |

- Molecule 4 is a protein called photosystem II reaction center D2 protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 4   | D     | 340      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 2696  | 1789 | 436 | 459 | 12 |         |         |       |
| 4   | d     | 340      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 2696  | 1789 | 436 | 459 | 12 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 5   | E     | 82       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 646   | 424 | 101 | 121 |         |         |       |
| 5   | e     | 82       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 646   | 424 | 101 | 121 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 6   | F     | 35       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 278   | 189 | 46 | 42 | 1 |         |         |       |
| 6   | f     | 35       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 278   | 189 | 46 | 42 | 1 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 7   | H     | 64       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 492   | 330 | 77 | 83 | 2 |         |         |       |
| 7   | h     | 64       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 492   | 330 | 77 | 83 | 2 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 8   | I     | 35       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 286   | 195 | 45 | 45 | 1 |         |         |       |
| 8   | i     | 35       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 286   | 195 | 45 | 45 | 1 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 9   | J     | 34       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 240   | 164 | 35 | 40 | 1 |         |         |       |
| 9   | j     | 34       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 240   | 164 | 35 | 40 | 1 |         |         |       |

- Molecule 10 is a protein called Photosystem II reaction center protein K.

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 10  | K     | 37       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 289   | 201 | 42 | 46 |         |         |       |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 10  | k     | 37       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 289   | 201 | 42 | 46 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 11  | L     | 37       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 301   | 200 | 48 | 53 |         |         |       |
| 11  | l     | 37       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 301   | 200 | 48 | 53 |         |         |       |

- Molecule 12 is a protein called Photosystem II reaction center M protein.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 12  | M     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 276   | 181 | 41 | 53 | 1 |         |         |       |
| 12  | m     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 276   | 181 | 41 | 53 | 1 |         |         |       |

- Molecule 13 is a protein called Photosystem II manganese-stabilizing polypeptide.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 13  | O     | 242      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1772  | 1113 | 295 | 360 | 4 |         |         |       |
| 13  | o     | 242      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1772  | 1113 | 295 | 360 | 4 |         |         |       |

- Molecule 14 is a protein called Photosystem II reaction center T protein.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 14  | T     | 30       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 254   | 179 | 36 | 37 | 2 |         |         |       |
| 14  | t     | 30       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 254   | 179 | 36 | 37 | 2 |         |         |       |

- Molecule 15 is a protein called Photosystem II 12 kDa extrinsic protein.

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 15  | U     | 98       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 775   | 492 | 130 | 153 |         |         |       |
| 15  | u     | 98       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 775   | 492 | 130 | 153 |         |         |       |

- Molecule 16 is a protein called Cytochrome c-550.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16  | V     | 137      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1064  | 675 | 177 | 208 | 4 |         |         |       |
| 16  | v     | 137      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1064  | 675 | 177 | 208 | 4 |         |         |       |

- Molecule 17 is a protein called Unassigned subunits.

| Mol | Chain | Residues | Atoms |     |     |    |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|-----|---|---------|---------|-------|
| 17  | X     | 104      | Total | C   | N   | Ne | O   | S | 0       | 0       | 0     |
|     |       |          | 687   | 442 | 111 | 2  | 131 | 1 |         |         |       |
| 17  | x     | 104      | Total | C   | N   | Ne | O   | S | 0       | 0       | 0     |
|     |       |          | 687   | 442 | 111 | 2  | 131 | 1 |         |         |       |

- Molecule 18 is a protein called Photosystem II reaction center Z protein.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 18  | Z     | 62       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 442   | 306 | 65 | 69 | 2 |         |         |       |
| 18  | z     | 62       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 442   | 306 | 65 | 69 | 2 |         |         |       |

- Molecule 19 is FE (II) ION (CCD ID: FE2) (formula: Fe).

| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 19  | A     | 1        | Total | Fe | 0       | 0       |
|     |       |          | 1     | 1  |         |         |
| 19  | a     | 1        | Total | Fe | 0       | 0       |
|     |       |          | 1     | 1  |         |         |

- Molecule 20 is CHLOROPHYLL A (CCD ID: CLA) (formula: C<sub>55</sub>H<sub>72</sub>MgN<sub>4</sub>O<sub>5</sub>).



*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms |    |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|---------|
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 56    | 46 | 1  | 4 | 5 |         |         |
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | B     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 60    | 50 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 46    | 36 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 47    | 37 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 51    | 41 | 1  | 4 | 5 |         |         |
| 20  | C     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 50    | 40 | 1  | 4 | 5 |         |         |
| 20  | D     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | D     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 50    | 40 | 1  | 4 | 5 |         |         |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 20  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | a     | 1        | Total<br>55 | C<br>45 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>41 | C<br>33 | Mg<br>1 | N<br>4 | O<br>3 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>56 | C<br>46 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 20  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |

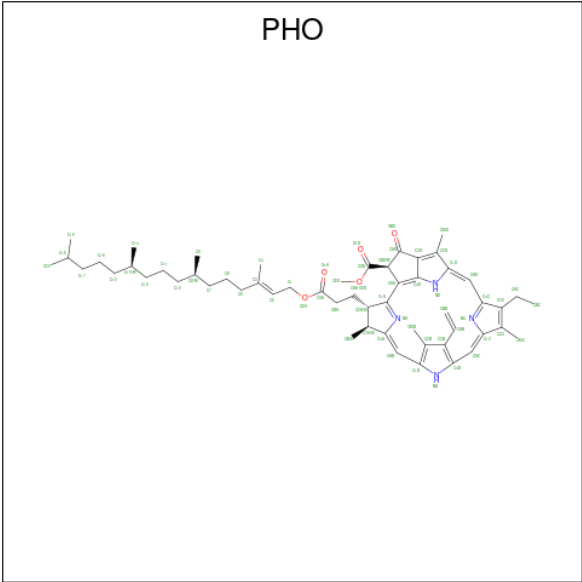
*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms |    |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|---------|
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 60    | 50 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 46    | 36 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 47    | 37 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 51    | 41 | 1  | 4 | 5 |         |         |
| 20  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 50    | 40 | 1  | 4 | 5 |         |         |
| 20  | d     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 20  | d     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 50    | 40 | 1  | 4 | 5 |         |         |

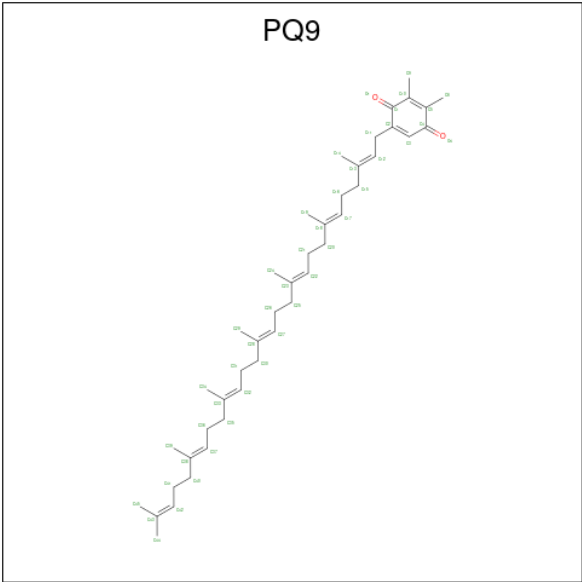
- Molecule 21 is PHEOPHYTIN A (CCD ID: PHO) (formula:  $C_{55}H_{74}N_4O_5$ ).





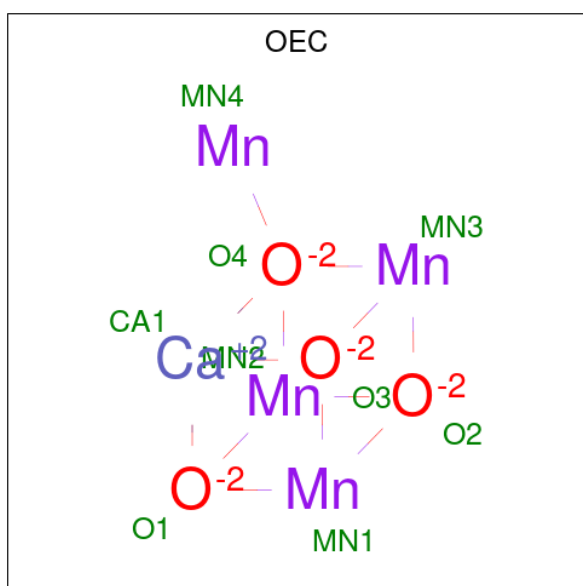
| Mol | Chain | Residues | Atoms |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---------|---------|
| 21  | A     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 21  | A     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 21  | a     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 21  | a     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |

- Molecule 22 is 5-[(2E,6E,10E,14E,18E,22E)-3,7,11,15,19,23,27-HEPTAMETHYLOCTACOSA-2,6,10,14,18,22,26-HEPTAENYL]-2,3-DIMETHYLBENZO-1,4-QUINONE (CCD ID: PQ9) (formula: C<sub>43</sub>H<sub>64</sub>O<sub>2</sub>).



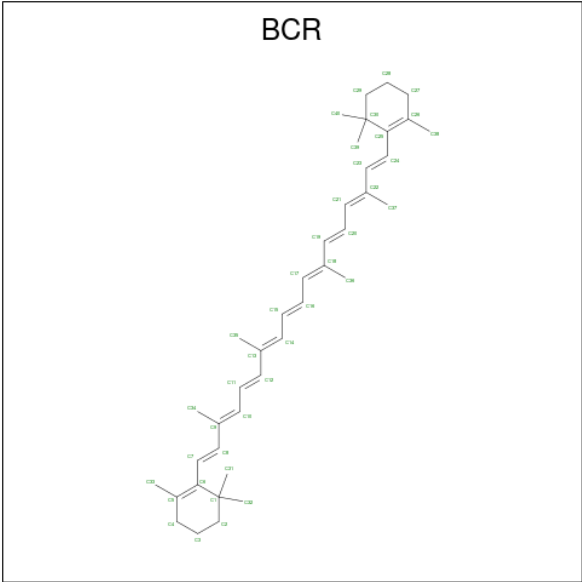
| Mol | Chain | Residues | Atoms |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---------|---------|
| 22  | A     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 30    | 28 | 2 |         |         |
| 22  | D     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 30    | 28 | 2 |         |         |
| 22  | a     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 30    | 28 | 2 |         |         |
| 22  | d     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 30    | 28 | 2 |         |         |

- Molecule 23 is OXYGEN EVOLVING SYSTEM (CCD ID: OEC) (formula:  $\text{CaMn}_4\text{O}_4$ ).



| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 23  | A     | 1        | Total | Ca | Mn | 0       | 0       |
|     |       |          | 5     | 1  | 4  |         |         |
| 23  | a     | 1        | Total | Ca | Mn | 0       | 0       |
|     |       |          | 5     | 1  | 4  |         |         |

- Molecule 24 is BETA-CAROTENE (CCD ID: BCR) (formula:  $\text{C}_{40}\text{H}_{56}$ ).



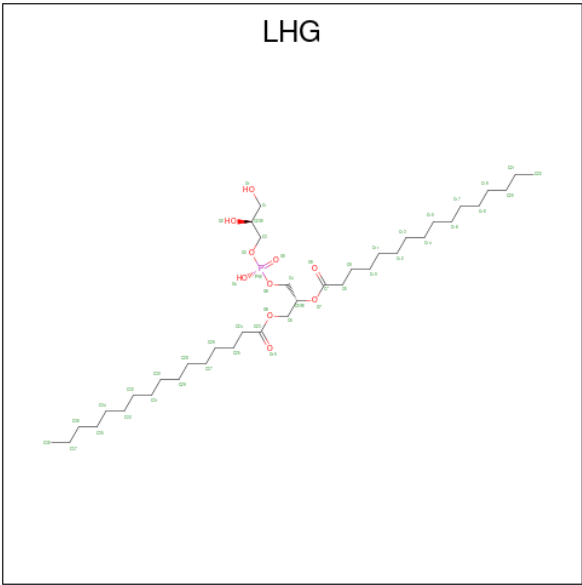
| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 24  | A     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | C     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | C     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | C     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | D     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | H     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | T     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | X     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | a     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | b     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | b     | 1        | Total C<br>40 40 | 0       | 0       |

Continued on next page...

Continued from previous page...

| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 24  | b     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | d     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | h     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | t     | 1        | Total C<br>40 40 | 0       | 0       |
| 24  | x     | 1        | Total C<br>40 40 | 0       | 0       |

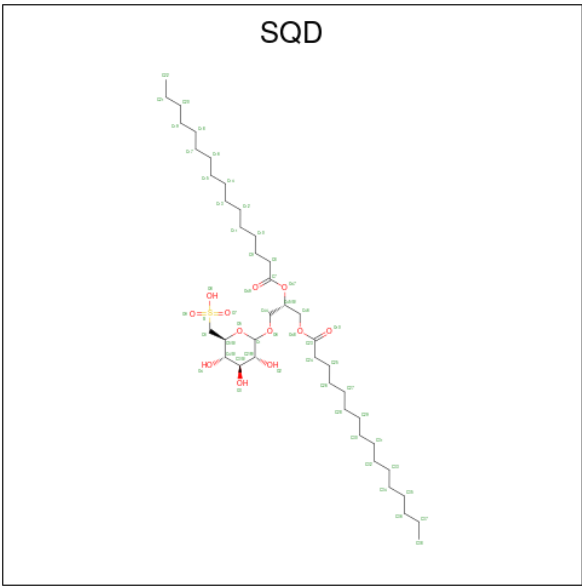
- Molecule 25 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (CCD ID: LHG) (formula: C<sub>38</sub>H<sub>75</sub>O<sub>10</sub>P).



| Mol | Chain | Residues | Atoms                     | ZeroOcc | AltConf |
|-----|-------|----------|---------------------------|---------|---------|
| 25  | A     | 1        | Total C O P<br>39 28 10 1 | 0       | 0       |
| 25  | a     | 1        | Total C O P<br>39 28 10 1 | 0       | 0       |

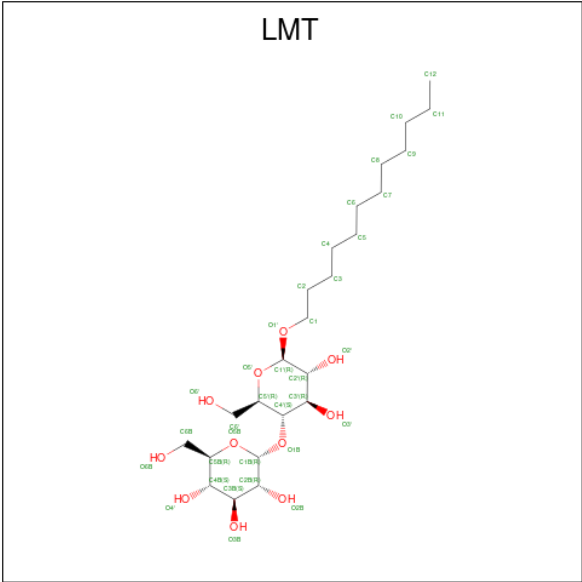
- Molecule 26 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSY

L]-SN-GLYCEROL (CCD ID: SQD) (formula: C<sub>41</sub>H<sub>78</sub>O<sub>12</sub>S).



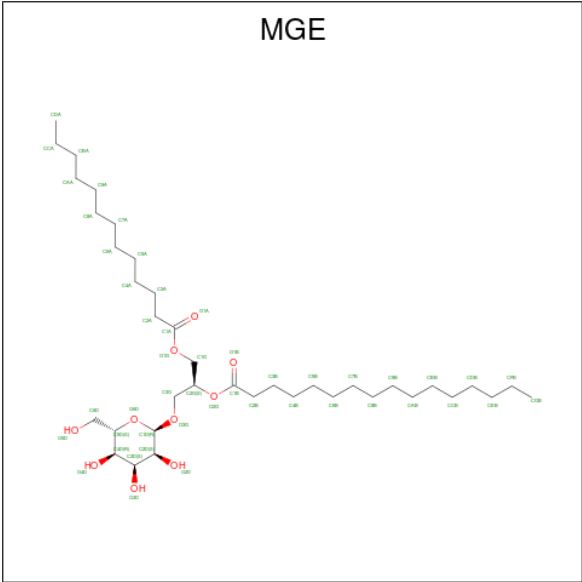
| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 26  | A     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 54    | 41 | 12 | 1 |         |         |
| 26  | A     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 26    | 13 | 12 | 1 |         |         |
| 26  | L     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 47    | 34 | 12 | 1 |         |         |
| 26  | a     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 26    | 13 | 12 | 1 |         |         |
| 26  | d     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 54    | 41 | 12 | 1 |         |         |
| 26  | t     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 47    | 34 | 12 | 1 |         |         |

- Molecule 27 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: C<sub>24</sub>H<sub>46</sub>O<sub>11</sub>).



| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 27  | A     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |
| 27  | M     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |
| 27  | T     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |
| 27  | a     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |
| 27  | m     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |
| 27  | t     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 35    | 24 | 11 |         |         |

- Molecule 28 is (1S)-2-(ALPHA-L-ALLOPYRANOSYLOXY)-1-[(TRIDECANOYLOXY)METHYL]ETHYL PALMITATE (CCD ID: MGE) (formula: C<sub>38</sub>H<sub>72</sub>O<sub>10</sub>).

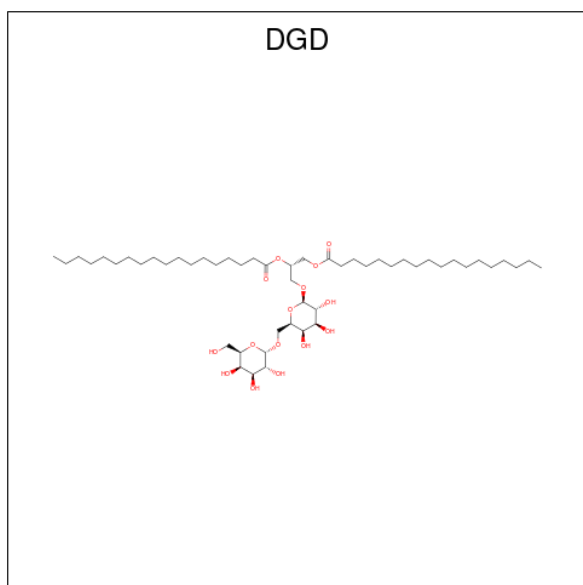


| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 28  | B     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | D     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 47    | 37 | 10 |         |         |
| 28  | D     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 41    | 31 | 10 |         |         |
| 28  | D     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | I     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | L     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | b     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | d     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 47    | 37 | 10 |         |         |
| 28  | d     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 41    | 31 | 10 |         |         |
| 28  | d     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | i     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 28  | l     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |

- Molecule 29 is UNKNOWN LIGAND (CCD ID: UNL) (formula: ).

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 29  | C     | 17       | Total | C   | 0       | 0       |
|     |       |          | 152   | 152 |         |         |
| 29  | c     | 17       | Total | C   | 0       | 0       |
|     |       |          | 152   | 152 |         |         |

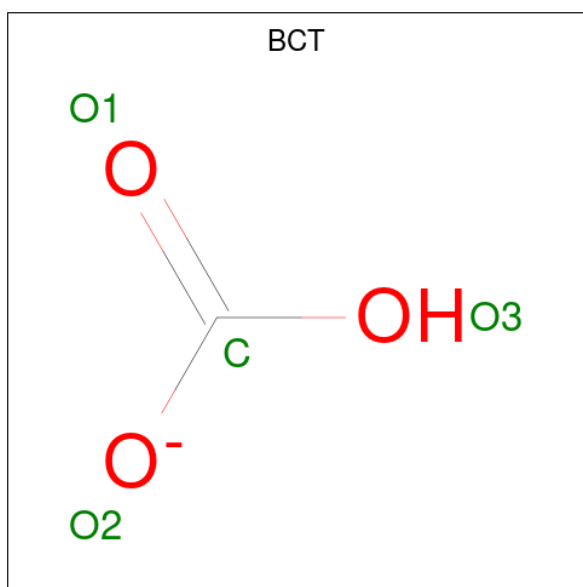
- Molecule 30 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula:  $C_{51}H_{96}O_{15}$ ).



| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 30  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 53    | 38 | 15 |         |         |
| 30  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 47    | 32 | 15 |         |         |
| 30  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 57    | 42 | 15 |         |         |
| 30  | H     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 54    | 39 | 15 |         |         |
| 30  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 53    | 38 | 15 |         |         |
| 30  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 47    | 32 | 15 |         |         |
| 30  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 57    | 42 | 15 |         |         |
| 30  | h     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 54    | 39 | 15 |         |         |

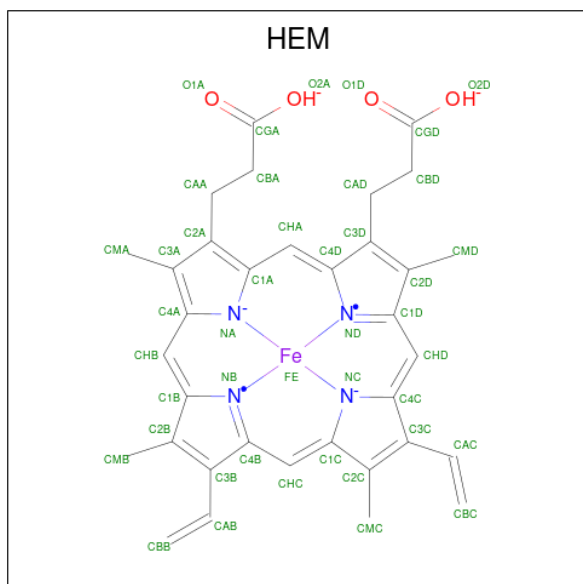
- Molecule 31 is BICARBONATE ION (CCD ID: BCT) (formula:  $CHO_3$ ).





| Mol | Chain | Residues | Atoms              | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 31  | D     | 1        | Total C O<br>4 1 3 | 0       | 0       |
| 31  | d     | 1        | Total C O<br>4 1 3 | 0       | 0       |

- Molecule 32 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula:  $C_{34}H_{32}FeN_4O_4$ ).



| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 32  | F     | 1        | Total<br>43 | C<br>34 | Fe<br>1 | N<br>4 | O<br>4 | 0       | 0       |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms       |         |         |        | ZeroOcc | AltConf |   |
|-----|-------|----------|-------------|---------|---------|--------|---------|---------|---|
| 32  | V     | 1        | Total<br>43 | C<br>34 | Fe<br>1 | N<br>4 | O<br>4  | 0       | 0 |
| 32  | f     | 1        | Total<br>43 | C<br>34 | Fe<br>1 | N<br>4 | O<br>4  | 0       | 0 |
| 32  | v     | 1        | Total<br>43 | C<br>34 | Fe<br>1 | N<br>4 | O<br>4  | 0       | 0 |

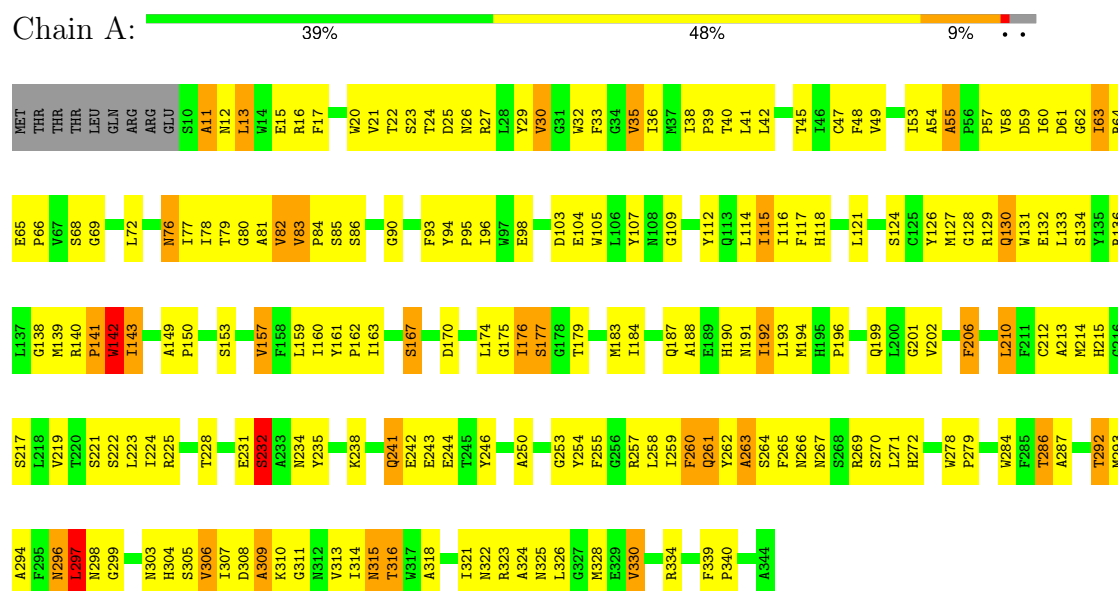
- Molecule 33 is CALCIUM ION (CCD ID: CA) (formula: Ca).

| Mol | Chain | Residues | Atoms      |         | ZeroOcc | AltConf |
|-----|-------|----------|------------|---------|---------|---------|
| 33  | K     | 1        | Total<br>1 | Ca<br>1 | 0       | 0       |
| 33  | k     | 1        | Total<br>1 | Ca<br>1 | 0       | 0       |

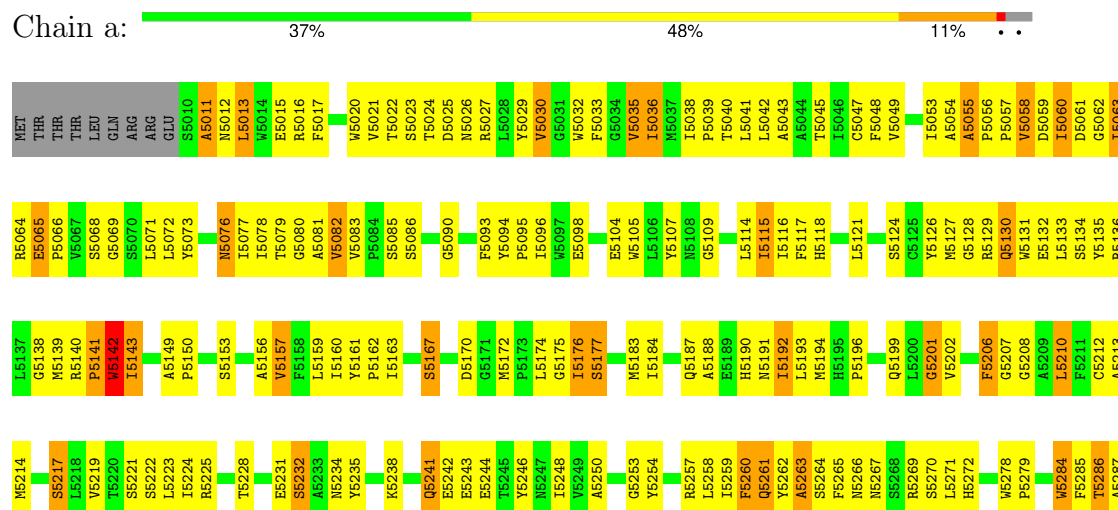
### 3 Residue-property plots

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

#### • Molecule 1: Photosystem Q(B) protein

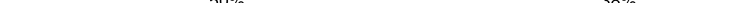


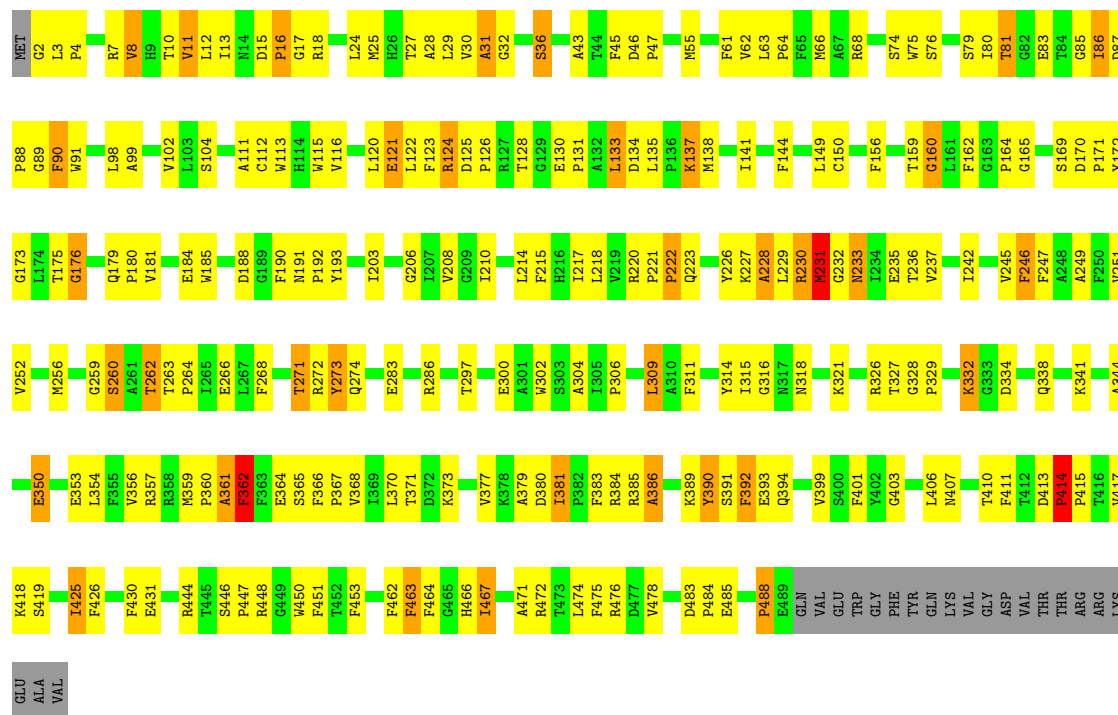
#### • Molecule 1: Photosystem Q(B) protein





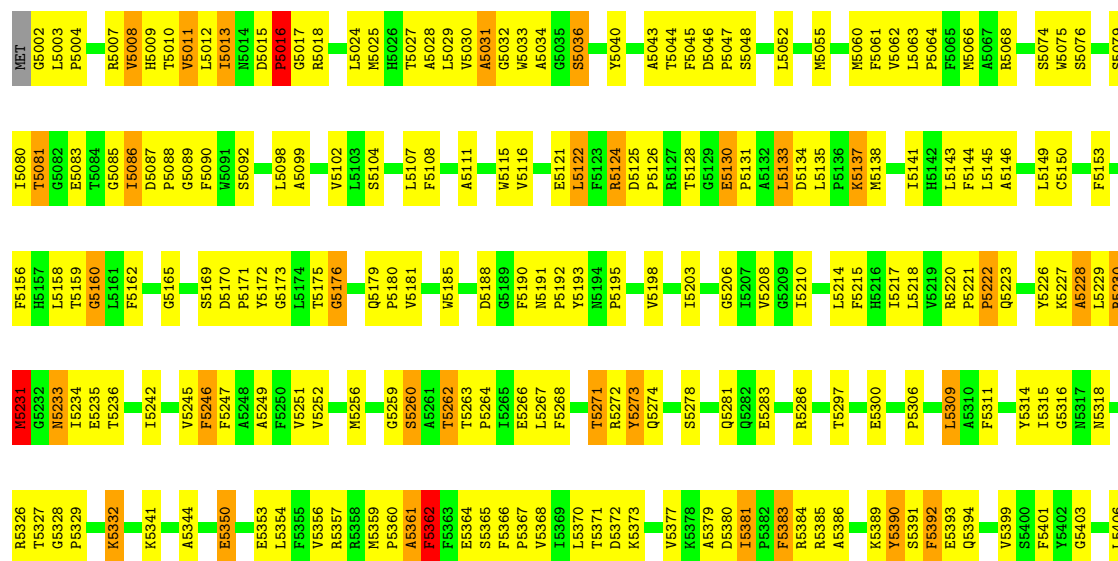
- Molecule 2: CP47 protein

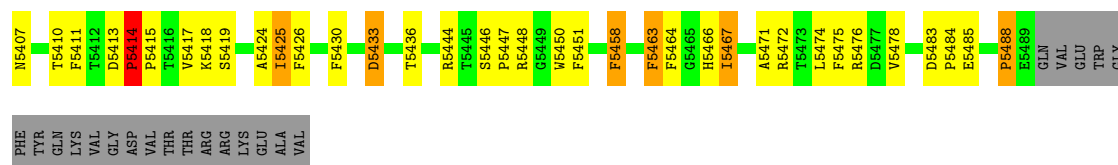
Chain B:  50% 38% 7% . .



- Molecule 2: CP47 protein

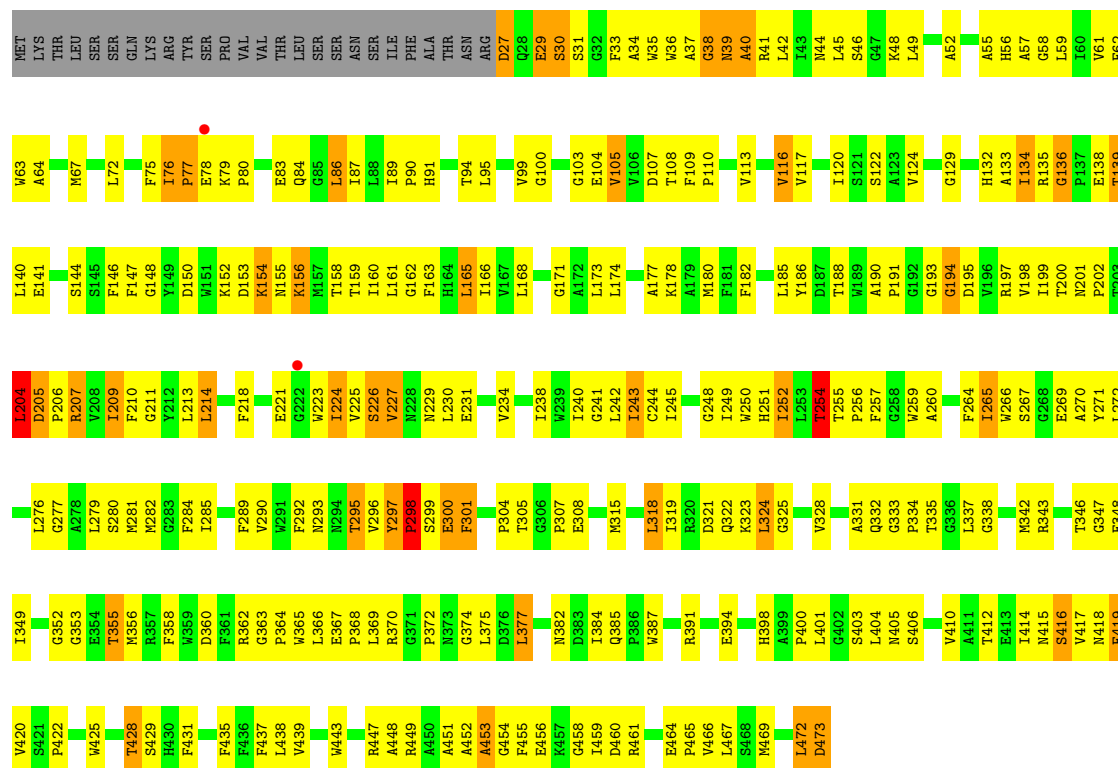
Chain b:  48% 40% 7% ..





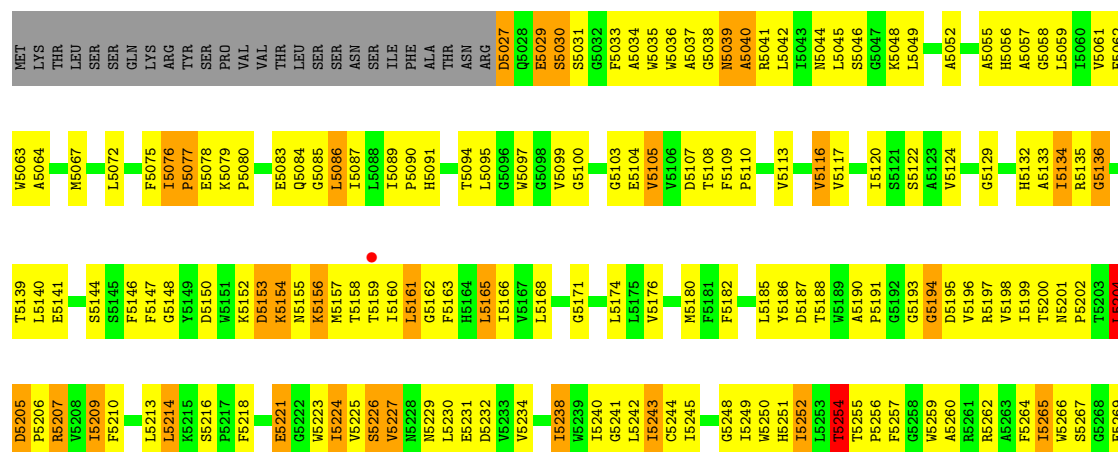
### • Molecule 3: photosystem II CP43 protein

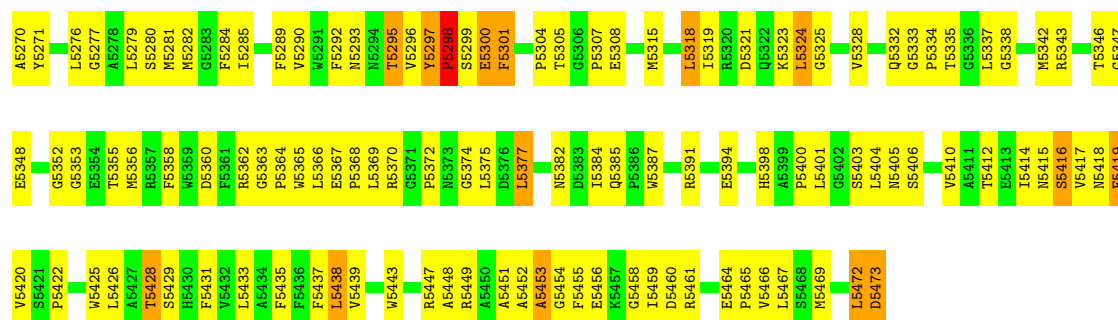
Chain C: 37% 48% 9% 5%



### • Molecule 3: photosystem II CP43 protein

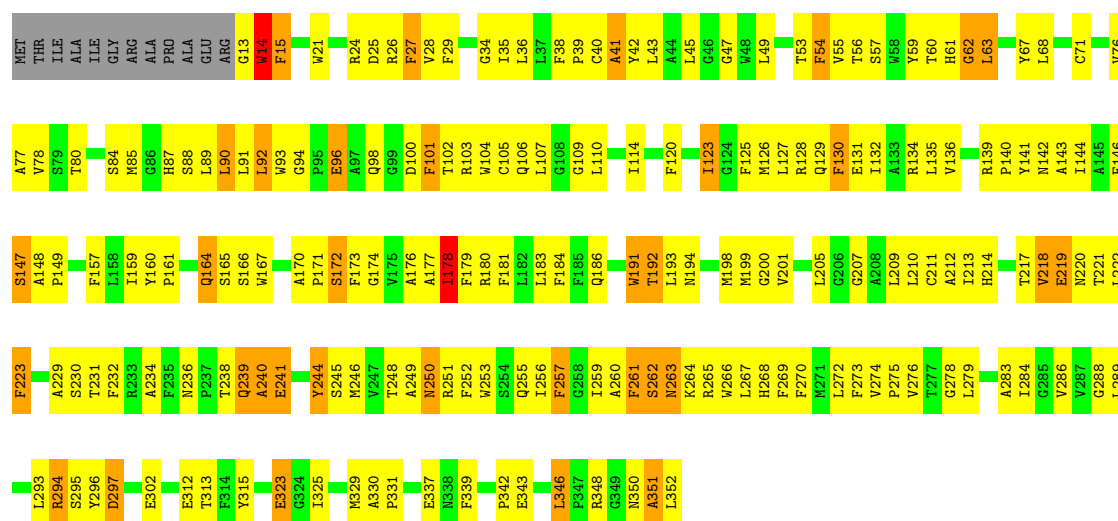
Chain c: 36% 48% 9% 5%





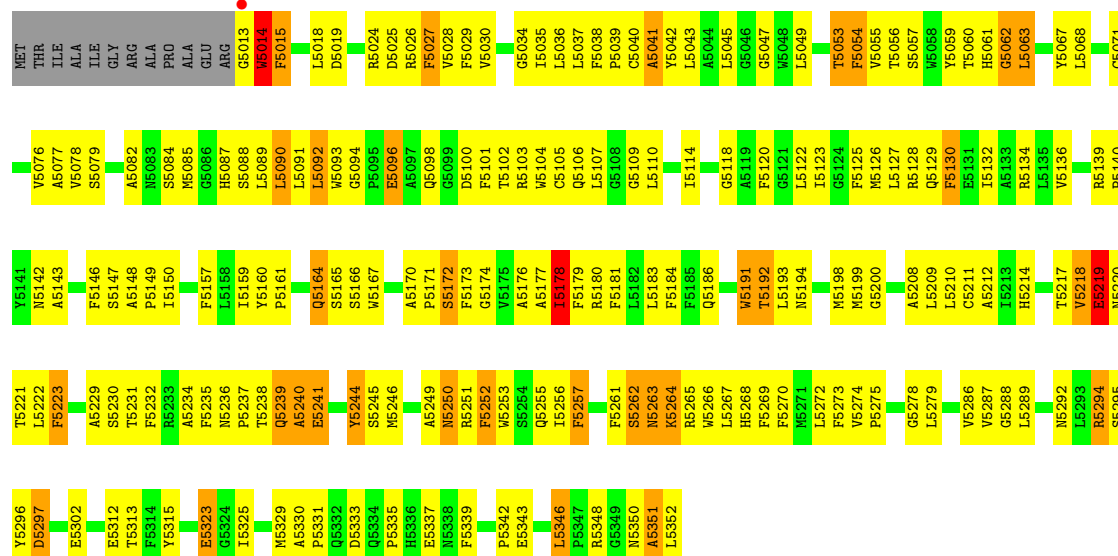
• Molecule 4: photosystem II reaction center D2 protein

Chain D: 40% 46% 10% ..

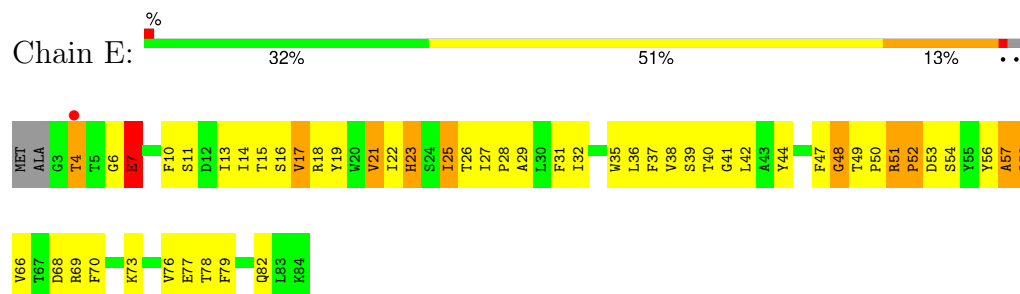


• Molecule 4: photosystem II reaction center D2 protein

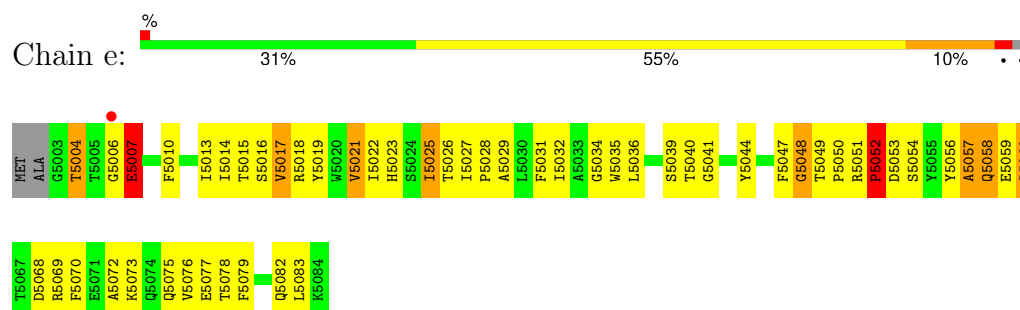
Chain d: 40% 46% 9% ..



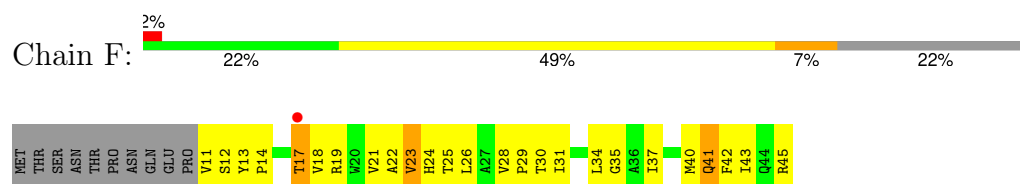
- Molecule 5: Cytochrome b559 alpha subunit



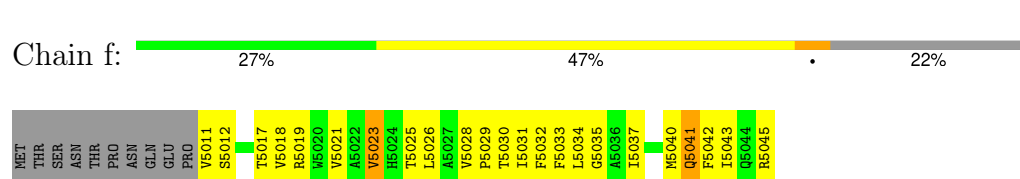
- Molecule 5: Cytochrome b559 alpha subunit



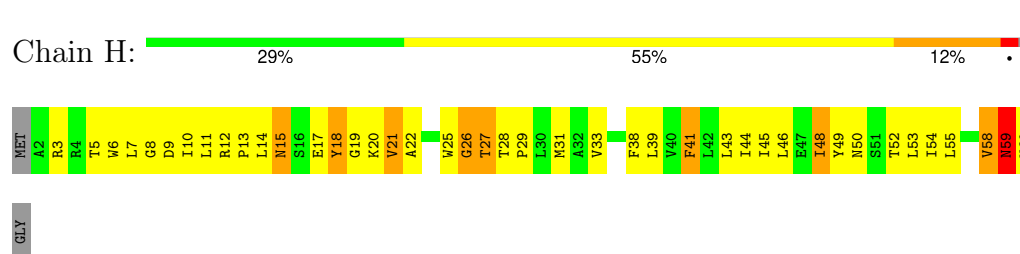
- Molecule 6: Cytochrome b559 beta subunit



- Molecule 6: Cytochrome b559 beta subunit



- Molecule 7: Photosystem II reaction center H protein



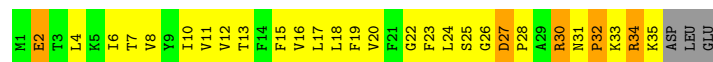
- Molecule 7: Photosystem II reaction center H protein





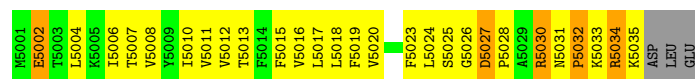
• Molecule 8: Photosystem II reaction center I protein

Chain I: 18% 61% 13% 8%



• Molecule 8: Photosystem II reaction center I protein

Chain i: 21% 58% 13% 8%



• Molecule 9: Photosystem II reaction center J protein

Chain J: 25% 50% 10% 15%



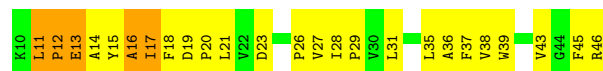
• Molecule 9: Photosystem II reaction center J protein

Chain j: 22% 52% 10% 15%



• Molecule 10: Photosystem II reaction center protein K

Chain K: 32% 54% 14%



• Molecule 10: Photosystem II reaction center protein K

Chain k: 32% 54% 11%



• Molecule 11: Photosystem II reaction center L protein

Chain L: 57% 30% 14%





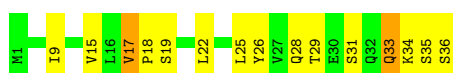
- Molecule 11: Photosystem II reaction center L protein

Chain l: 54% 32% 11%



- Molecule 12: Photosystem II reaction center M protein

Chain M: 58% 36% 6%



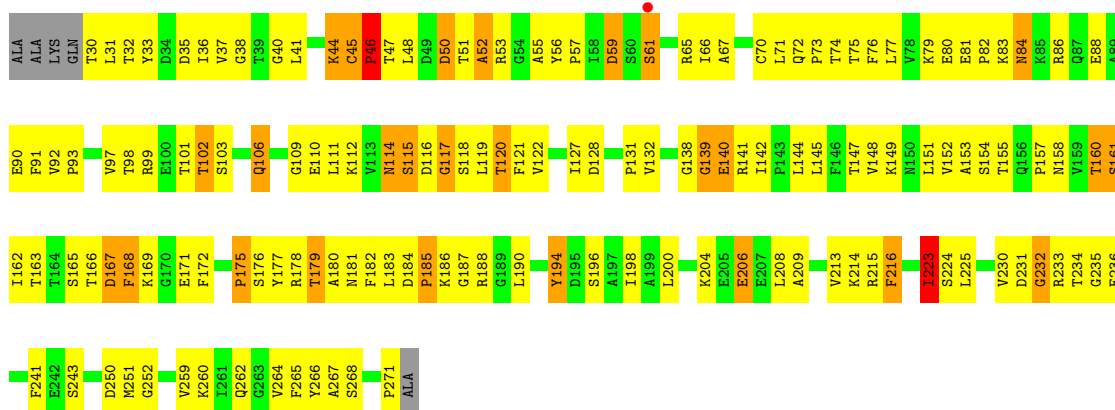
- Molecule 12: Photosystem II reaction center M protein

Chain m: 56% 39% 6%



- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain O: 37% 49% 11%

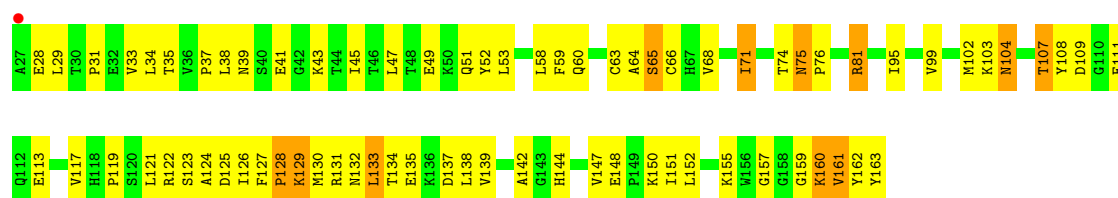


- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain o: 37% 50% 10%

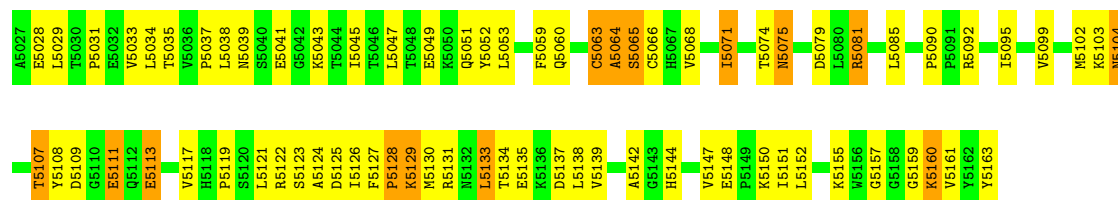






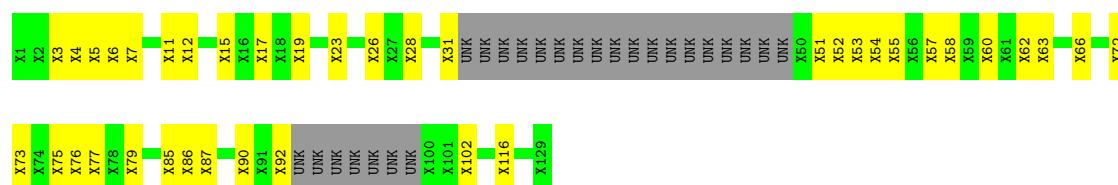
• Molecule 16: Cytochrome c-550

Chain v: 46% 44% 10%



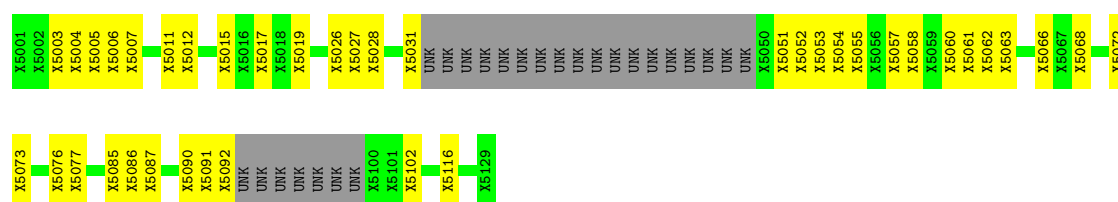
• Molecule 17: Unassigned subunits

Chain X: 51% 29% 19%



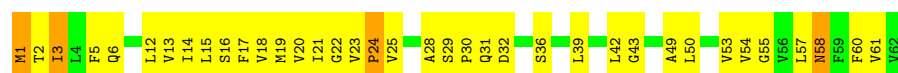
• Molecule 17: Unassigned subunits

Chain x: 50% 30% 19%



• Molecule 18: Photosystem II reaction center Z protein

Chain Z: 40% 53% 6%



• Molecule 18: Photosystem II reaction center Z protein

Chain z: 37% 56% 6%

|       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|
| M5001 | T5002 | L5003 | L5004 | F5005 | G5006 |
| L5012 | V5013 | L5014 | L5015 | S5016 | F5017 |
| V5018 | M5019 | V5020 | L5021 | G5022 | V5023 |
| V5024 | V5025 | A5026 | Y5027 | A5028 | S5029 |
| F5030 | Q5031 | D5032 | S5036 | L5039 | L5042 |
| G5043 | Y5047 | L5048 | A5049 | L5050 | V5053 |
| V5054 | G5055 | V5056 | L5057 | N5058 | F5059 |
| V5060 | V5061 | V5062 |       |       |       |

## 4 Data and refinement statistics

| Property                                                                | Value                                                       | Source           |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------|
| Space group                                                             | P 21 21 21                                                  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 127.69Å 225.40Å 306.11Å<br>90.00° 90.00° 90.00°             | Depositor        |
| Resolution (Å)                                                          | 10.00 – 3.00<br>10.00 – 3.00                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 75.6 (10.00-3.00)<br>79.0 (10.00-3.00)                      | Depositor<br>EDS |
| $R_{merge}$                                                             | (Not available)                                             | Depositor        |
| $R_{sym}$                                                               | 0.10                                                        | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 3.00 (at 2.98Å)                                             | Xtriage          |
| Refinement program                                                      | CNS 1.0                                                     | Depositor        |
| R, $R_{free}$                                                           | 0.234 , 0.286<br>0.241 , 0.291                              | Depositor<br>DCC |
| $R_{free}$ test set                                                     | 1908 reflections (1.23%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 78.2                                                        | Xtriage          |
| Anisotropy                                                              | 0.468                                                       | Xtriage          |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.33 , 59.5                                                 | EDS              |
| L-test for twinning <sup>2</sup>                                        | $\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$ | Xtriage          |
| Estimated twinning fraction                                             | No twinning to report.                                      | Xtriage          |
| $F_o, F_c$ correlation                                                  | 0.92                                                        | EDS              |
| Total number of atoms                                                   | 48254                                                       | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 67.0                                                        | wwPDB-VP         |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.63% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: LMT, CLA, LHG, UNL, BCT, SQD, FE2, PQ9, PHO, DGD, OEC, HEM, BCR, MGE, CA

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |               | Bond angles |                |
|-----|-------|--------------|---------------|-------------|----------------|
|     |       | RMSZ         | $\# Z  > 5$   | RMSZ        | $\# Z  > 5$    |
| 1   | A     | 0.80         | 0/2708        | 1.15        | 24/3694 (0.6%) |
| 1   | a     | 0.76         | 0/2708        | 1.16        | 29/3694 (0.8%) |
| 2   | B     | 0.74         | 0/3935        | 1.06        | 21/5366 (0.4%) |
| 2   | b     | 0.74         | 0/3935        | 1.07        | 23/5366 (0.4%) |
| 3   | C     | 0.66         | 0/3533        | 1.11        | 26/4815 (0.5%) |
| 3   | c     | 0.67         | 0/3533        | 1.13        | 27/4815 (0.6%) |
| 4   | D     | 0.81         | 1/2791 (0.0%) | 1.08        | 19/3806 (0.5%) |
| 4   | d     | 0.75         | 1/2791 (0.0%) | 1.08        | 15/3806 (0.4%) |
| 5   | E     | 0.75         | 0/665         | 1.24        | 7/911 (0.8%)   |
| 5   | e     | 0.73         | 0/665         | 1.21        | 4/911 (0.4%)   |
| 6   | F     | 0.77         | 0/287         | 0.98        | 0/392          |
| 6   | f     | 0.75         | 0/287         | 0.93        | 0/392          |
| 7   | H     | 0.72         | 0/505         | 1.07        | 3/692 (0.4%)   |
| 7   | h     | 0.69         | 0/505         | 1.07        | 3/692 (0.4%)   |
| 8   | I     | 0.77         | 0/293         | 1.06        | 1/395 (0.3%)   |
| 8   | i     | 0.70         | 0/293         | 1.08        | 1/395 (0.3%)   |
| 9   | J     | 0.75         | 0/246         | 1.22        | 4/335 (1.2%)   |
| 9   | j     | 0.69         | 0/246         | 1.24        | 4/335 (1.2%)   |
| 10  | K     | 0.78         | 0/299         | 1.11        | 1/412 (0.2%)   |
| 10  | k     | 0.88         | 0/299         | 1.08        | 2/412 (0.5%)   |
| 11  | L     | 0.78         | 0/308         | 1.07        | 1/419 (0.2%)   |
| 11  | l     | 0.85         | 0/308         | 1.05        | 2/419 (0.5%)   |
| 12  | M     | 0.90         | 0/279         | 1.04        | 0/379          |
| 12  | m     | 0.92         | 0/279         | 1.06        | 0/379          |
| 13  | O     | 0.78         | 1/1803 (0.1%) | 1.10        | 13/2461 (0.5%) |
| 13  | o     | 0.76         | 1/1803 (0.1%) | 1.10        | 14/2461 (0.6%) |
| 14  | T     | 0.93         | 0/263         | 1.08        | 2/356 (0.6%)   |
| 14  | t     | 0.90         | 0/263         | 1.07        | 2/356 (0.6%)   |
| 15  | U     | 0.79         | 0/786         | 1.13        | 7/1066 (0.7%)  |
| 15  | u     | 0.74         | 0/786         | 1.12        | 5/1066 (0.5%)  |
| 16  | V     | 0.74         | 0/1085        | 1.03        | 3/1473 (0.2%)  |
| 16  | v     | 0.71         | 0/1085        | 1.00        | 4/1473 (0.3%)  |

| Mol | Chain | Bond lengths |                | Bond angles |                  |
|-----|-------|--------------|----------------|-------------|------------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5          |
| 18  | Z     | 0.82         | 1/451 (0.2%)   | 1.08        | 0/620            |
| 18  | z     | 0.90         | 1/451 (0.2%)   | 1.11        | 0/620            |
| All | All   | 0.75         | 6/40474 (0.0%) | 1.10        | 267/55184 (0.5%) |

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 |
|-----|-------|---------------------|---------------------|
| 2   | B     | 0                   | 1                   |
| 2   | b     | 0                   | 1                   |
| All | All   | 0                   | 2                   |

The worst 5 of 6 bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 18  | z     | 5001 | MET  | SD-CE | 6.21  | 1.95        | 1.79     |
| 18  | Z     | 1    | MET  | SD-CE | 5.99  | 1.94        | 1.79     |
| 4   | d     | 5013 | GLY  | N-CA  | 5.40  | 1.54        | 1.45     |
| 13  | O     | 213  | VAL  | CA-CB | -5.32 | 1.47        | 1.53     |
| 4   | D     | 13   | GLY  | N-CA  | 5.12  | 1.53        | 1.45     |

The worst 5 of 267 bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms  | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|--------|-------|-------------|----------|
| 2   | b     | 5090 | PHE  | N-CA-C | -9.53 | 100.42      | 112.90   |
| 4   | D     | 143  | ALA  | N-CA-C | -9.33 | 102.03      | 113.50   |
| 4   | d     | 5143 | ALA  | N-CA-C | -8.99 | 102.44      | 113.41   |
| 8   | i     | 5002 | GLU  | N-CA-C | -8.92 | 101.97      | 113.12   |
| 4   | D     | 14   | TRP  | N-CA-C | -8.88 | 102.60      | 113.97   |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res  | Type | Group     |
|-----|-------|------|------|-----------|
| 2   | B     | 273  | TYR  | Sidechain |
| 2   | b     | 5273 | TYR  | 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   | A     | 2623  | 0        | 2517     | 233     | 0            |
| 1   | a     | 2623  | 0        | 2517     | 251     | 0            |
| 2   | B     | 3800  | 0        | 3637     | 285     | 0            |
| 2   | b     | 3800  | 0        | 3637     | 288     | 0            |
| 3   | C     | 3421  | 0        | 3326     | 310     | 0            |
| 3   | c     | 3421  | 0        | 3326     | 320     | 0            |
| 4   | D     | 2696  | 0        | 2591     | 251     | 0            |
| 4   | d     | 2696  | 0        | 2591     | 257     | 0            |
| 5   | E     | 646   | 0        | 616      | 56      | 0            |
| 5   | e     | 646   | 0        | 616      | 63      | 0            |
| 6   | F     | 278   | 0        | 279      | 31      | 0            |
| 6   | f     | 278   | 0        | 279      | 30      | 0            |
| 7   | H     | 492   | 0        | 495      | 56      | 0            |
| 7   | h     | 492   | 0        | 495      | 51      | 0            |
| 8   | I     | 286   | 0        | 308      | 33      | 0            |
| 8   | i     | 286   | 0        | 305      | 31      | 0            |
| 9   | J     | 240   | 0        | 242      | 27      | 0            |
| 9   | j     | 240   | 0        | 242      | 29      | 0            |
| 10  | K     | 289   | 0        | 294      | 51      | 0            |
| 10  | k     | 289   | 0        | 294      | 47      | 0            |
| 11  | L     | 301   | 0        | 309      | 25      | 0            |
| 11  | l     | 301   | 0        | 306      | 25      | 0            |
| 12  | M     | 276   | 0        | 288      | 23      | 0            |
| 12  | m     | 276   | 0        | 285      | 21      | 0            |
| 13  | O     | 1772  | 0        | 1664     | 166     | 0            |
| 13  | o     | 1772  | 0        | 1664     | 162     | 0            |
| 14  | T     | 254   | 0        | 257      | 27      | 0            |
| 14  | t     | 254   | 0        | 254      | 29      | 0            |
| 15  | U     | 775   | 0        | 771      | 61      | 0            |
| 15  | u     | 775   | 0        | 771      | 64      | 0            |
| 16  | V     | 1064  | 0        | 1072     | 73      | 0            |
| 16  | v     | 1064  | 0        | 1072     | 76      | 0            |
| 17  | X     | 687   | 0        | 268      | 44      | 0            |
| 17  | x     | 687   | 0        | 268      | 45      | 0            |
| 18  | Z     | 442   | 0        | 460      | 40      | 0            |
| 18  | z     | 442   | 0        | 457      | 44      | 0            |
| 19  | A     | 1     | 0        | 0        | 0       | 0            |

*Continued on next page...*



*Continued from previous page...*

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 19  | a     | 1     | 0        | 0        | 0       | 0            |
| 20  | A     | 250   | 0        | 265      | 13      | 0            |
| 20  | B     | 1007  | 0        | 1088     | 62      | 0            |
| 20  | C     | 774   | 0        | 783      | 44      | 0            |
| 20  | D     | 115   | 0        | 111      | 9       | 0            |
| 20  | a     | 250   | 0        | 265      | 15      | 0            |
| 20  | b     | 1007  | 0        | 1088     | 61      | 0            |
| 20  | c     | 774   | 0        | 783      | 42      | 0            |
| 20  | d     | 115   | 0        | 111      | 10      | 0            |
| 21  | A     | 128   | 0        | 148      | 12      | 0            |
| 21  | a     | 128   | 0        | 148      | 12      | 0            |
| 22  | A     | 30    | 0        | 37       | 1       | 0            |
| 22  | D     | 30    | 0        | 37       | 5       | 0            |
| 22  | a     | 30    | 0        | 37       | 0       | 0            |
| 22  | d     | 30    | 0        | 37       | 5       | 0            |
| 23  | A     | 5     | 0        | 0        | 0       | 0            |
| 23  | a     | 5     | 0        | 0        | 0       | 0            |
| 24  | A     | 40    | 0        | 56       | 1       | 0            |
| 24  | B     | 120   | 0        | 168      | 7       | 0            |
| 24  | C     | 120   | 0        | 168      | 19      | 0            |
| 24  | D     | 40    | 0        | 56       | 4       | 0            |
| 24  | H     | 40    | 0        | 56       | 2       | 0            |
| 24  | T     | 40    | 0        | 56       | 8       | 0            |
| 24  | X     | 40    | 0        | 56       | 9       | 0            |
| 24  | a     | 40    | 0        | 56       | 3       | 0            |
| 24  | b     | 120   | 0        | 168      | 6       | 0            |
| 24  | c     | 120   | 0        | 168      | 21      | 0            |
| 24  | d     | 40    | 0        | 56       | 6       | 0            |
| 24  | h     | 40    | 0        | 56       | 3       | 0            |
| 24  | t     | 40    | 0        | 56       | 9       | 0            |
| 24  | x     | 40    | 0        | 56       | 10      | 0            |
| 25  | A     | 39    | 0        | 51       | 4       | 0            |
| 25  | a     | 39    | 0        | 51       | 4       | 0            |
| 26  | A     | 80    | 0        | 92       | 0       | 0            |
| 26  | L     | 47    | 0        | 60       | 1       | 0            |
| 26  | a     | 26    | 0        | 15       | 0       | 0            |
| 26  | d     | 54    | 0        | 77       | 0       | 0            |
| 26  | t     | 47    | 0        | 60       | 1       | 0            |
| 27  | A     | 35    | 0        | 46       | 3       | 0            |
| 27  | M     | 35    | 0        | 46       | 0       | 0            |
| 27  | T     | 35    | 0        | 46       | 6       | 0            |
| 27  | a     | 35    | 0        | 46       | 1       | 0            |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 27  | m     | 35    | 0        | 46       | 0       | 0            |
| 27  | t     | 35    | 0        | 46       | 5       | 0            |
| 28  | B     | 48    | 0        | 72       | 1       | 0            |
| 28  | D     | 136   | 0        | 194      | 10      | 0            |
| 28  | I     | 48    | 0        | 72       | 1       | 0            |
| 28  | L     | 48    | 0        | 72       | 2       | 0            |
| 28  | b     | 48    | 0        | 72       | 1       | 0            |
| 28  | d     | 136   | 0        | 194      | 11      | 0            |
| 28  | i     | 48    | 0        | 72       | 2       | 0            |
| 28  | l     | 48    | 0        | 72       | 4       | 0            |
| 29  | C     | 152   | 0        | 0        | 1       | 0            |
| 29  | c     | 152   | 0        | 0        | 1       | 0            |
| 30  | C     | 157   | 0        | 188      | 18      | 0            |
| 30  | H     | 54    | 0        | 66       | 3       | 0            |
| 30  | c     | 157   | 0        | 188      | 18      | 0            |
| 30  | h     | 54    | 0        | 66       | 3       | 0            |
| 31  | D     | 4     | 0        | 0        | 0       | 0            |
| 31  | d     | 4     | 0        | 0        | 0       | 0            |
| 32  | F     | 43    | 0        | 30       | 3       | 0            |
| 32  | V     | 43    | 0        | 30       | 2       | 0            |
| 32  | f     | 43    | 0        | 30       | 3       | 0            |
| 32  | v     | 43    | 0        | 30       | 1       | 0            |
| 33  | K     | 1     | 0        | 0        | 0       | 0            |
| 33  | k     | 1     | 0        | 0        | 0       | 0            |
| All | All   | 48254 | 0        | 47073    | 3260    | 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 34.

The worst 5 of 3260 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) |
|-------------------|------------------|--------------------------|-------------------|
| 17:X:6:UNK:NE2    | 17:X:6:UNK:CD    | 1.33                     | 1.42              |
| 17:X:26:UNK:NE2   | 17:X:26:UNK:CD   | 1.33                     | 1.41              |
| 17:x:5026:UNK:NE2 | 17:x:5026:UNK:CD | 1.34                     | 1.41              |
| 17:x:5006:UNK:NE2 | 17:x:5006:UNK:CD | 1.33                     | 1.40              |
| 1:A:76:ASN:HD21   | 1:A:79:THR:HG23  | 1.13                     | 1.14              |

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 1   | A     | 333/344 (97%) | 279 (84%) | 39 (12%) | 15 (4%)  | 2           | 12 |
| 1   | a     | 333/344 (97%) | 278 (84%) | 38 (11%) | 17 (5%)  | 1           | 10 |
| 2   | B     | 486/510 (95%) | 407 (84%) | 60 (12%) | 19 (4%)  | 2           | 14 |
| 2   | b     | 486/510 (95%) | 413 (85%) | 56 (12%) | 17 (4%)  | 3           | 16 |
| 3   | C     | 445/473 (94%) | 340 (76%) | 80 (18%) | 25 (6%)  | 1           | 8  |
| 3   | c     | 445/473 (94%) | 342 (77%) | 77 (17%) | 26 (6%)  | 1           | 8  |
| 4   | D     | 338/352 (96%) | 272 (80%) | 50 (15%) | 16 (5%)  | 2           | 11 |
| 4   | d     | 338/352 (96%) | 272 (80%) | 52 (15%) | 14 (4%)  | 2           | 13 |
| 5   | E     | 80/84 (95%)   | 60 (75%)  | 14 (18%) | 6 (8%)   | 1           | 4  |
| 5   | e     | 80/84 (95%)   | 59 (74%)  | 15 (19%) | 6 (8%)   | 1           | 4  |
| 6   | F     | 33/45 (73%)   | 28 (85%)  | 3 (9%)   | 2 (6%)   | 1           | 7  |
| 6   | f     | 33/45 (73%)   | 28 (85%)  | 3 (9%)   | 2 (6%)   | 1           | 7  |
| 7   | H     | 62/66 (94%)   | 45 (73%)  | 11 (18%) | 6 (10%)  | 0           | 2  |
| 7   | h     | 62/66 (94%)   | 44 (71%)  | 12 (19%) | 6 (10%)  | 0           | 2  |
| 8   | I     | 33/38 (87%)   | 22 (67%)  | 10 (30%) | 1 (3%)   | 3           | 19 |
| 8   | i     | 33/38 (87%)   | 22 (67%)  | 10 (30%) | 1 (3%)   | 3           | 19 |
| 9   | J     | 32/40 (80%)   | 27 (84%)  | 2 (6%)   | 3 (9%)   | 0           | 2  |
| 9   | j     | 32/40 (80%)   | 25 (78%)  | 4 (12%)  | 3 (9%)   | 0           | 2  |
| 10  | K     | 35/37 (95%)   | 28 (80%)  | 5 (14%)  | 2 (6%)   | 1           | 8  |
| 10  | k     | 35/37 (95%)   | 28 (80%)  | 4 (11%)  | 3 (9%)   | 0           | 3  |
| 11  | L     | 35/37 (95%)   | 29 (83%)  | 4 (11%)  | 2 (6%)   | 1           | 8  |
| 11  | l     | 35/37 (95%)   | 28 (80%)  | 4 (11%)  | 3 (9%)   | 0           | 3  |
| 12  | M     | 34/36 (94%)   | 26 (76%)  | 6 (18%)  | 2 (6%)   | 1           | 7  |
| 12  | m     | 34/36 (94%)   | 28 (82%)  | 4 (12%)  | 2 (6%)   | 1           | 7  |
| 13  | O     | 240/247 (97%) | 185 (77%) | 38 (16%) | 17 (7%)  | 1           | 4  |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed        | Favoured   | Allowed   | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|-----------|----------|-------------|-----|
| 13  | o     | 240/247 (97%)   | 184 (77%)  | 39 (16%)  | 17 (7%)  | 1           | 4   |
| 14  | T     | 28/32 (88%)     | 24 (86%)   | 4 (14%)   | 0        | 100         | 100 |
| 14  | t     | 28/32 (88%)     | 26 (93%)   | 2 (7%)    | 0        | 100         | 100 |
| 15  | U     | 96/104 (92%)    | 71 (74%)   | 18 (19%)  | 7 (7%)   | 1           | 4   |
| 15  | u     | 96/104 (92%)    | 68 (71%)   | 21 (22%)  | 7 (7%)   | 1           | 4   |
| 16  | V     | 135/137 (98%)   | 110 (82%)  | 18 (13%)  | 7 (5%)   | 1           | 9   |
| 16  | v     | 135/137 (98%)   | 110 (82%)  | 18 (13%)  | 7 (5%)   | 1           | 9   |
| 18  | Z     | 60/62 (97%)     | 47 (78%)   | 9 (15%)   | 4 (7%)   | 1           | 5   |
| 18  | z     | 60/62 (97%)     | 46 (77%)   | 10 (17%)  | 4 (7%)   | 1           | 5   |
| All | All   | 5010/5288 (95%) | 4001 (80%) | 740 (15%) | 269 (5%) | 1           | 9   |

5 of 269 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 11  | ALA  |
| 1   | A     | 63  | ILE  |
| 1   | A     | 141 | PRO  |
| 1   | A     | 142 | TRP  |
| 1   | A     | 315 | ASN  |

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed      | Rotameric | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|-------------|----|
| 1   | A     | 269/280 (96%) | 252 (94%) | 17 (6%)  | 16          | 48 |
| 1   | a     | 269/280 (96%) | 253 (94%) | 16 (6%)  | 18          | 50 |
| 2   | B     | 378/407 (93%) | 356 (94%) | 22 (6%)  | 18          | 51 |
| 2   | b     | 378/407 (93%) | 353 (93%) | 25 (7%)  | 15          | 46 |
| 3   | C     | 341/374 (91%) | 322 (94%) | 19 (6%)  | 19          | 52 |
| 3   | c     | 341/374 (91%) | 320 (94%) | 21 (6%)  | 16          | 49 |
| 4   | D     | 273/283 (96%) | 258 (94%) | 15 (6%)  | 19          | 53 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 4   | d     | 273/283 (96%)   | 255 (93%)  | 18 (7%)  | 15          | 46  |
| 5   | E     | 68/73 (93%)     | 65 (96%)   | 3 (4%)   | 25          | 60  |
| 5   | e     | 68/73 (93%)     | 65 (96%)   | 3 (4%)   | 25          | 60  |
| 6   | F     | 27/39 (69%)     | 26 (96%)   | 1 (4%)   | 30          | 64  |
| 6   | f     | 27/39 (69%)     | 26 (96%)   | 1 (4%)   | 30          | 64  |
| 7   | H     | 50/55 (91%)     | 44 (88%)   | 6 (12%)  | 5           | 22  |
| 7   | h     | 50/55 (91%)     | 44 (88%)   | 6 (12%)  | 5           | 22  |
| 8   | I     | 32/35 (91%)     | 27 (84%)   | 5 (16%)  | 2           | 13  |
| 8   | i     | 32/35 (91%)     | 27 (84%)   | 5 (16%)  | 2           | 13  |
| 9   | J     | 22/28 (79%)     | 22 (100%)  | 0        | 100         | 100 |
| 9   | j     | 22/28 (79%)     | 22 (100%)  | 0        | 100         | 100 |
| 10  | K     | 29/30 (97%)     | 27 (93%)   | 2 (7%)   | 14          | 45  |
| 10  | k     | 29/30 (97%)     | 27 (93%)   | 2 (7%)   | 14          | 45  |
| 11  | L     | 34/35 (97%)     | 30 (88%)   | 4 (12%)  | 5           | 22  |
| 11  | l     | 34/35 (97%)     | 30 (88%)   | 4 (12%)  | 5           | 22  |
| 12  | M     | 32/33 (97%)     | 31 (97%)   | 1 (3%)   | 35          | 68  |
| 12  | m     | 32/33 (97%)     | 31 (97%)   | 1 (3%)   | 35          | 68  |
| 13  | O     | 181/208 (87%)   | 169 (93%)  | 12 (7%)  | 15          | 46  |
| 13  | o     | 181/208 (87%)   | 170 (94%)  | 11 (6%)  | 17          | 49  |
| 14  | T     | 26/29 (90%)     | 24 (92%)   | 2 (8%)   | 12          | 40  |
| 14  | t     | 26/29 (90%)     | 24 (92%)   | 2 (8%)   | 12          | 40  |
| 15  | U     | 83/89 (93%)     | 81 (98%)   | 2 (2%)   | 43          | 73  |
| 15  | u     | 83/89 (93%)     | 81 (98%)   | 2 (2%)   | 43          | 73  |
| 16  | V     | 117/117 (100%)  | 110 (94%)  | 7 (6%)   | 17          | 50  |
| 16  | v     | 117/117 (100%)  | 109 (93%)  | 8 (7%)   | 14          | 45  |
| 18  | Z     | 43/52 (83%)     | 42 (98%)   | 1 (2%)   | 44          | 74  |
| 18  | z     | 43/52 (83%)     | 42 (98%)   | 1 (2%)   | 44          | 74  |
| All | All   | 4010/4334 (92%) | 3765 (94%) | 245 (6%) | 17          | 49  |

5 of 245 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | V     | 107 | THR  |

Continued on next page...

*Continued from previous page...*

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 13  | o     | 5046 | PRO  |
| 2   | b     | 5222 | PRO  |
| 11  | l     | 5016 | SER  |
| 16  | v     | 5035 | THR  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 117 such sidechains are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 15  | U     | 108  | ASN  |
| 13  | o     | 5114 | ASN  |
| 1   | a     | 5272 | HIS  |
| 13  | o     | 5108 | GLN  |
| 4   | d     | 5250 | ASN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 180 ligands modelled in this entry, 4 are monoatomic and 34 are unknown - leaving 142 for Mogul analysis.

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

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 20  | CLA  | a     | 5563 | 1    | 59,63,73     | 1.48 | 9 (15%)  | 70,101,113  | 1.69 | 10 (14%) |
| 20  | CLA  | B     | 524  | 2    | 60,64,73     | 1.50 | 7 (11%)  | 71,102,113  | 1.93 | 9 (12%)  |
| 28  | MGE  | D     | 358  | -    | 47,47,48     | 1.22 | 5 (10%)  | 55,55,56    | 0.96 | 3 (5%)   |
| 27  | LMT  | T     | 217  | -    | 36,36,36     | 1.40 | 5 (13%)  | 47,47,47    | 1.03 | 4 (8%)   |
| 30  | DGD  | C     | 507  | -    | 54,54,67     | 1.35 | 8 (14%)  | 68,68,81    | 1.47 | 7 (10%)  |
| 20  | CLA  | C     | 497  | -    | 69,73,73     | 1.31 | 10 (14%) | 82,113,113  | 1.87 | 11 (13%) |
| 20  | CLA  | B     | 521  | 2    | 69,73,73     | 1.31 | 9 (13%)  | 82,113,113  | 1.81 | 11 (13%) |
| 24  | BCR  | H     | 107  | -    | 41,41,41     | 2.11 | 6 (14%)  | 56,56,56    | 2.29 | 24 (42%) |
| 20  | CLA  | b     | 5522 | 2    | 69,73,73     | 1.40 | 10 (14%) | 82,113,113  | 1.68 | 7 (8%)   |
| 20  | CLA  | C     | 491  | 3    | 69,73,73     | 1.24 | 5 (7%)   | 82,113,113  | 1.62 | 9 (10%)  |
| 20  | CLA  | b     | 5511 | -    | 45,49,73     | 1.66 | 10 (22%) | 54,84,113   | 2.02 | 8 (14%)  |
| 20  | CLA  | d     | 5354 | 4    | 69,73,73     | 1.26 | 11 (15%) | 82,113,113  | 1.68 | 11 (13%) |
| 30  | DGD  | h     | 5208 | -    | 55,55,67     | 1.39 | 9 (16%)  | 69,69,81    | 1.56 | 9 (13%)  |
| 20  | CLA  | C     | 503  | 3    | 54,58,73     | 1.72 | 8 (14%)  | 64,95,113   | 1.95 | 9 (14%)  |
| 20  | CLA  | c     | 5500 | 3    | 69,73,73     | 1.24 | 6 (8%)   | 82,113,113  | 1.70 | 12 (14%) |
| 30  | DGD  | C     | 508  | -    | 48,48,67     | 1.43 | 9 (18%)  | 62,62,81    | 1.67 | 11 (17%) |
| 21  | PHO  | A     | 561  | -    | 58,69,69     | 1.61 | 9 (15%)  | 55,99,99    | 2.06 | 16 (29%) |
| 26  | SQD  | d     | 5358 | -    | 52,54,54     | 2.58 | 29 (55%) | 62,65,65    | 2.53 | 18 (29%) |
| 27  | LMT  | t     | 5217 | -    | 36,36,36     | 1.45 | 5 (13%)  | 47,47,47    | 1.00 | 3 (6%)   |
| 20  | CLA  | c     | 5493 | 3    | 69,73,73     | 1.35 | 7 (10%)  | 82,113,113  | 1.81 | 13 (15%) |
| 28  | MGE  | I     | 201  | -    | 48,48,48     | 1.10 | 5 (10%)  | 56,56,56    | 1.07 | 4 (7%)   |
| 26  | SQD  | t     | 213  | -    | 45,47,54     | 2.81 | 23 (51%) | 55,58,65    | 2.49 | 14 (25%) |
| 28  | MGE  | D     | 359  | -    | 41,41,48     | 1.25 | 5 (12%)  | 49,49,56    | 1.02 | 4 (8%)   |
| 20  | CLA  | B     | 526  | 2    | 69,73,73     | 1.49 | 12 (17%) | 82,113,113  | 1.76 | 10 (12%) |
| 20  | CLA  | b     | 5519 | 2    | 69,73,73     | 1.37 | 7 (10%)  | 82,113,113  | 1.73 | 12 (14%) |
| 20  | CLA  | a     | 5560 | -    | 69,73,73     | 1.37 | 8 (11%)  | 82,113,113  | 1.75 | 10 (12%) |
| 24  | BCR  | b     | 5528 | -    | 41,41,41     | 1.74 | 6 (14%)  | 56,56,56    | 2.06 | 17 (30%) |
| 24  | BCR  | c     | 5506 | -    | 41,41,41     | 1.95 | 7 (17%)  | 56,56,56    | 2.16 | 20 (35%) |
| 31  | BCT  | D     | 353  | 19   | 3,3,3        | 2.28 | 1 (33%)  | 2,3,3       | 0.32 | 0        |
| 30  | DGD  | H     | 208  | -    | 55,55,67     | 1.48 | 10 (18%) | 69,69,81    | 1.55 | 8 (11%)  |
| 20  | CLA  | B     | 517  | -    | 69,73,73     | 1.53 | 7 (10%)  | 82,113,113  | 1.87 | 12 (14%) |
| 20  | CLA  | c     | 5491 | 3    | 69,73,73     | 1.42 | 6 (8%)   | 82,113,113  | 1.84 | 11 (13%) |
| 20  | CLA  | B     | 519  | 2    | 69,73,73     | 1.46 | 6 (8%)   | 82,113,113  | 1.73 | 11 (13%) |
| 20  | CLA  | B     | 512  | 2    | 69,73,73     | 1.31 | 8 (11%)  | 82,113,113  | 1.63 | 11 (13%) |
| 28  | MGE  | b     | 5530 | -    | 48,48,48     | 1.19 | 8 (16%)  | 56,56,56    | 1.11 | 6 (10%)  |

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 32  | HEM  | v     | 5552 | 16   | 50,50,50     | 2.09 | 22 (44%) | 67,82,82    | 1.98 | 14 (20%) |
| 20  | CLA  | b     | 5512 | 2    | 69,73,73     | 1.23 | 6 (8%)   | 82,113,113  | 1.60 | 9 (10%)  |
| 20  | CLA  | b     | 5516 | 2    | 69,73,73     | 1.49 | 5 (7%)   | 82,113,113  | 1.85 | 8 (9%)   |
| 20  | CLA  | b     | 5518 | 2    | 69,73,73     | 1.41 | 6 (8%)   | 82,113,113  | 1.79 | 11 (13%) |
| 28  | MGE  | B     | 530  | -    | 48,48,48     | 1.21 | 6 (12%)  | 56,56,56    | 1.16 | 6 (10%)  |
| 20  | CLA  | C     | 500  | 3    | 69,73,73     | 1.29 | 8 (11%)  | 82,113,113  | 1.70 | 12 (14%) |
| 20  | CLA  | b     | 5517 | -    | 69,73,73     | 1.44 | 8 (11%)  | 82,113,113  | 1.77 | 9 (10%)  |
| 20  | CLA  | A     | 558  | 1    | 69,73,73     | 1.29 | 8 (11%)  | 82,113,113  | 1.64 | 10 (12%) |
| 28  | MGE  | D     | 360  | -    | 48,48,48     | 0.93 | 4 (8%)   | 56,56,56    | 1.12 | 4 (7%)   |
| 20  | CLA  | B     | 520  | -    | 69,73,73     | 1.25 | 8 (11%)  | 82,113,113  | 1.66 | 11 (13%) |
| 20  | CLA  | b     | 5520 | -    | 69,73,73     | 1.25 | 9 (13%)  | 82,113,113  | 1.66 | 10 (12%) |
| 21  | PHO  | A     | 562  | -    | 58,69,69     | 1.73 | 8 (13%)  | 55,99,99    | 2.11 | 12 (21%) |
| 20  | CLA  | C     | 501  | 3    | 69,73,73     | 1.47 | 9 (13%)  | 82,113,113  | 1.86 | 11 (13%) |
| 20  | CLA  | B     | 522  | 2    | 69,73,73     | 1.29 | 10 (14%) | 82,113,113  | 1.67 | 9 (10%)  |
| 20  | CLA  | c     | 5503 | 3    | 54,58,73     | 1.73 | 9 (16%)  | 64,95,113   | 1.96 | 6 (9%)   |
| 20  | CLA  | c     | 5495 | 3    | 69,73,73     | 1.59 | 8 (11%)  | 82,113,113  | 1.85 | 12 (14%) |
| 20  | CLA  | B     | 513  | 2    | 69,73,73     | 1.44 | 11 (15%) | 82,113,113  | 1.69 | 11 (13%) |
| 26  | SQD  | A     | 5212 | -    | 24,26,54     | 2.85 | 13 (54%) | 34,37,65    | 2.65 | 11 (32%) |
| 31  | BCT  | d     | 5353 | 19   | 3,3,3        | 2.70 | 1 (33%)  | 2,3,3       | 0.35 | 0        |
| 20  | CLA  | b     | 5514 | 2    | 69,73,73     | 1.45 | 10 (14%) | 82,113,113  | 1.84 | 10 (12%) |
| 27  | LMT  | M     | 5216 | -    | 36,36,36     | 1.45 | 8 (22%)  | 47,47,47    | 0.92 | 2 (4%)   |
| 27  | LMT  | a     | 5568 | -    | 36,36,36     | 1.46 | 6 (16%)  | 47,47,47    | 1.09 | 1 (2%)   |
| 27  | LMT  | m     | 216  | -    | 36,36,36     | 1.45 | 7 (19%)  | 47,47,47    | 0.98 | 3 (6%)   |
| 30  | DGD  | c     | 5508 | -    | 48,48,67     | 1.48 | 8 (16%)  | 62,62,81    | 1.71 | 10 (16%) |
| 20  | CLA  | B     | 518  | 2    | 69,73,73     | 1.41 | 6 (8%)   | 82,113,113  | 1.82 | 9 (10%)  |
| 24  | BCR  | C     | 506  | -    | 41,41,41     | 1.74 | 8 (19%)  | 56,56,56    | 2.23 | 21 (37%) |
| 20  | CLA  | D     | 354  | 4    | 69,73,73     | 1.24 | 7 (10%)  | 82,113,113  | 1.61 | 10 (12%) |
| 24  | BCR  | C     | 504  | -    | 41,41,41     | 1.87 | 6 (14%)  | 56,56,56    | 2.21 | 22 (39%) |
| 22  | PQ9  | A     | 564  | -    | 30,30,45     | 0.85 | 0        | 38,39,57    | 1.50 | 8 (21%)  |
| 24  | BCR  | A     | 566  | -    | 41,41,41     | 1.63 | 8 (19%)  | 56,56,56    | 2.14 | 22 (39%) |
| 20  | CLA  | c     | 5498 | 3    | 69,73,73     | 1.50 | 9 (13%)  | 82,113,113  | 1.80 | 12 (14%) |
| 22  | PQ9  | D     | 356  | -    | 30,30,45     | 0.91 | 1 (3%)   | 38,39,57    | 1.68 | 9 (23%)  |
| 20  | CLA  | b     | 5525 | -    | 69,73,73     | 1.22 | 7 (10%)  | 82,113,113  | 1.78 | 9 (10%)  |
| 24  | BCR  | d     | 5357 | -    | 41,41,41     | 2.02 | 8 (19%)  | 56,56,56    | 2.33 | 21 (37%) |
| 24  | BCR  | x     | 5130 | -    | 41,41,41     | 1.95 | 9 (21%)  | 56,56,56    | 2.52 | 24 (42%) |



| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 20  | CLA  | B     | 511  | -    | 45,49,73     | 1.61 | 10 (22%) | 54,84,113   | 1.94 | 8 (14%)  |
| 20  | CLA  | C     | 499  | 3    | 51,55,73     | 1.53 | 8 (15%)  | 60,91,113   | 1.95 | 8 (13%)  |
| 20  | CLA  | b     | 5513 | 2    | 69,73,73     | 1.30 | 8 (11%)  | 82,113,113  | 1.64 | 13 (15%) |
| 20  | CLA  | c     | 5501 | 3    | 69,73,73     | 1.45 | 9 (13%)  | 82,113,113  | 1.84 | 9 (10%)  |
| 20  | CLA  | B     | 516  | 2    | 69,73,73     | 1.39 | 4 (5%)   | 82,113,113  | 1.81 | 7 (8%)   |
| 20  | CLA  | b     | 5515 | 2    | 69,73,73     | 1.28 | 10 (14%) | 82,113,113  | 1.74 | 15 (18%) |
| 20  | CLA  | b     | 5526 | 2    | 69,73,73     | 1.49 | 11 (15%) | 82,113,113  | 1.77 | 11 (13%) |
| 20  | CLA  | C     | 493  | 3    | 69,73,73     | 1.30 | 7 (10%)  | 82,113,113  | 1.82 | 13 (15%) |
| 21  | PHO  | a     | 5561 | -    | 58,69,69     | 1.60 | 11 (18%) | 55,99,99    | 1.98 | 15 (27%) |
| 20  | CLA  | A     | 563  | 1    | 59,63,73     | 1.46 | 10 (16%) | 70,101,113  | 1.75 | 11 (15%) |
| 20  | CLA  | C     | 498  | 3    | 69,73,73     | 1.31 | 7 (10%)  | 82,113,113  | 1.76 | 10 (12%) |
| 26  | SQD  | a     | 212  | -    | 24,26,54     | 3.09 | 13 (54%) | 34,37,65    | 2.73 | 13 (38%) |
| 27  | LMT  | A     | 569  | -    | 36,36,36     | 1.54 | 6 (16%)  | 47,47,47    | 1.07 | 1 (2%)   |
| 24  | BCR  | h     | 5107 | -    | 41,41,41     | 2.04 | 7 (17%)  | 56,56,56    | 2.30 | 25 (44%) |
| 24  | BCR  | t     | 104  | -    | 41,41,41     | 1.67 | 10 (24%) | 56,56,56    | 2.28 | 23 (41%) |
| 20  | CLA  | C     | 496  | 3    | 69,73,73     | 1.43 | 10 (14%) | 82,113,113  | 1.78 | 13 (15%) |
| 24  | BCR  | c     | 5504 | -    | 41,41,41     | 2.18 | 5 (12%)  | 56,56,56    | 2.18 | 23 (41%) |
| 24  | BCR  | b     | 5529 | -    | 41,41,41     | 1.66 | 6 (14%)  | 56,56,56    | 2.15 | 21 (37%) |
| 20  | CLA  | b     | 5523 | 2    | 69,73,73     | 1.29 | 9 (13%)  | 82,113,113  | 1.78 | 9 (10%)  |
| 20  | CLA  | a     | 5559 | -    | 69,73,73     | 1.13 | 4 (5%)   | 82,113,113  | 1.66 | 9 (10%)  |
| 26  | SQD  | L     | 5213 | -    | 45,47,54     | 2.81 | 24 (53%) | 55,58,65    | 2.42 | 12 (21%) |
| 20  | CLA  | b     | 5524 | 2    | 60,64,73     | 1.43 | 7 (11%)  | 71,102,113  | 1.82 | 8 (11%)  |
| 20  | CLA  | A     | 560  | -    | 69,73,73     | 1.34 | 9 (13%)  | 82,113,113  | 1.72 | 10 (12%) |
| 28  | MGE  | d     | 5361 | -    | 48,48,48     | 1.04 | 4 (8%)   | 56,56,56    | 1.06 | 2 (3%)   |
| 20  | CLA  | B     | 523  | 2    | 69,73,73     | 1.36 | 8 (11%)  | 82,113,113  | 1.76 | 9 (10%)  |
| 28  | MGE  | d     | 5359 | -    | 47,47,48     | 1.14 | 5 (10%)  | 55,55,56    | 0.97 | 3 (5%)   |
| 24  | BCR  | a     | 5566 | -    | 41,41,41     | 1.68 | 7 (17%)  | 56,56,56    | 2.14 | 23 (41%) |
| 20  | CLA  | B     | 515  | 2    | 69,73,73     | 1.29 | 9 (13%)  | 82,113,113  | 1.77 | 14 (17%) |
| 20  | CLA  | C     | 494  | -    | 50,54,73     | 1.45 | 7 (14%)  | 59,90,113   | 2.05 | 7 (11%)  |
| 24  | BCR  | b     | 5527 | -    | 41,41,41     | 1.57 | 8 (19%)  | 56,56,56    | 1.99 | 15 (26%) |
| 26  | SQD  | A     | 568  | -    | 52,54,54     | 2.59 | 31 (59%) | 62,65,65    | 2.55 | 18 (29%) |
| 20  | CLA  | C     | 502  | 3    | 55,59,73     | 1.66 | 13 (23%) | 64,96,113   | 2.00 | 11 (17%) |
| 24  | BCR  | D     | 357  | -    | 41,41,41     | 1.96 | 8 (19%)  | 56,56,56    | 2.27 | 20 (35%) |
| 28  | MGE  | i     | 5201 | -    | 48,48,48     | 1.24 | 7 (14%)  | 56,56,56    | 1.08 | 4 (7%)   |
| 20  | CLA  | C     | 492  | 3    | 64,68,73     | 1.29 | 7 (10%)  | 76,107,113  | 1.82 | 11 (14%) |

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 24  | BCR  | B     | 528  | -    | 41,41,41     | 1.93 | 6 (14%)  | 56,56,56    | 2.02 | 17 (30%) |
| 20  | CLA  | D     | 355  | 4    | 54,58,73     | 1.65 | 11 (20%) | 64,95,113   | 1.94 | 11 (17%) |
| 22  | PQ9  | a     | 5564 | -    | 30,30,45     | 0.86 | 1 (3%)   | 38,39,57    | 1.46 | 6 (15%)  |
| 25  | LHG  | A     | 567  | -    | 38,38,48     | 1.98 | 5 (13%)  | 41,44,54    | 1.51 | 4 (9%)   |
| 30  | DGD  | c     | 5507 | -    | 54,54,67     | 1.47 | 9 (16%)  | 68,68,81    | 1.46 | 6 (8%)   |
| 21  | PHO  | a     | 5562 | -    | 58,69,69     | 1.75 | 7 (12%)  | 55,99,99    | 2.06 | 13 (23%) |
| 20  | CLA  | b     | 5521 | 2    | 69,73,73     | 1.17 | 5 (7%)   | 82,113,113  | 1.76 | 12 (14%) |
| 20  | CLA  | C     | 495  | 3    | 69,73,73     | 1.50 | 11 (15%) | 82,113,113  | 1.82 | 11 (13%) |
| 32  | HEM  | F     | 51   | 6,5  | 50,50,50     | 2.08 | 16 (32%) | 67,82,82    | 1.98 | 16 (23%) |
| 32  | HEM  | f     | 5051 | 6,5  | 50,50,50     | 2.16 | 17 (34%) | 67,82,82    | 2.05 | 13 (19%) |
| 20  | CLA  | c     | 5502 | -    | 55,59,73     | 1.71 | 12 (21%) | 64,96,113   | 2.03 | 11 (17%) |
| 24  | BCR  | X     | 130  | -    | 41,41,41     | 1.93 | 8 (19%)  | 56,56,56    | 2.54 | 23 (41%) |
| 24  | BCR  | T     | 5104 | -    | 41,41,41     | 1.55 | 9 (21%)  | 56,56,56    | 2.31 | 25 (44%) |
| 24  | BCR  | B     | 529  | -    | 41,41,41     | 1.79 | 6 (14%)  | 56,56,56    | 2.22 | 21 (37%) |
| 28  | MGE  | d     | 5360 | -    | 41,41,48     | 1.19 | 6 (14%)  | 49,49,56    | 1.05 | 4 (8%)   |
| 20  | CLA  | B     | 514  | 2    | 69,73,73     | 1.43 | 8 (11%)  | 82,113,113  | 1.81 | 10 (12%) |
| 20  | CLA  | c     | 5492 | 3    | 64,68,73     | 1.29 | 8 (12%)  | 76,107,113  | 1.84 | 9 (11%)  |
| 25  | LHG  | a     | 5567 | -    | 38,38,48     | 2.02 | 5 (13%)  | 41,44,54    | 1.46 | 4 (9%)   |
| 32  | HEM  | V     | 552  | 16   | 50,50,50     | 1.97 | 17 (34%) | 67,82,82    | 1.98 | 13 (19%) |
| 20  | CLA  | c     | 5496 | 3    | 69,73,73     | 1.36 | 8 (11%)  | 82,113,113  | 1.73 | 11 (13%) |
| 20  | CLA  | c     | 5499 | 3    | 51,55,73     | 1.45 | 7 (13%)  | 60,91,113   | 1.90 | 7 (11%)  |
| 22  | PQ9  | d     | 5356 | -    | 30,30,45     | 0.82 | 0        | 38,39,57    | 1.66 | 6 (15%)  |
| 28  | MGE  | l     | 5210 | -    | 48,48,48     | 0.90 | 4 (8%)   | 56,56,56    | 1.12 | 5 (8%)   |
| 28  | MGE  | L     | 210  | -    | 48,48,48     | 0.99 | 3 (6%)   | 56,56,56    | 1.15 | 5 (8%)   |
| 24  | BCR  | C     | 505  | -    | 41,41,41     | 1.98 | 9 (21%)  | 56,56,56    | 2.13 | 18 (32%) |
| 20  | CLA  | B     | 525  | -    | 69,73,73     | 1.25 | 9 (13%)  | 82,113,113  | 1.75 | 9 (10%)  |
| 20  | CLA  | c     | 5497 | -    | 69,73,73     | 1.31 | 10 (14%) | 82,113,113  | 1.76 | 11 (13%) |
| 20  | CLA  | a     | 5558 | 1    | 69,73,73     | 1.31 | 11 (15%) | 82,113,113  | 1.58 | 11 (13%) |
| 20  | CLA  | c     | 5494 | -    | 50,54,73     | 1.39 | 6 (12%)  | 59,90,113   | 1.89 | 8 (13%)  |
| 30  | DGD  | c     | 5509 | -    | 58,58,67     | 1.35 | 7 (12%)  | 72,72,81    | 1.39 | 6 (8%)   |
| 30  | DGD  | C     | 509  | -    | 58,58,67     | 1.12 | 7 (12%)  | 72,72,81    | 1.40 | 5 (6%)   |
| 24  | BCR  | B     | 527  | -    | 41,41,41     | 1.74 | 8 (19%)  | 56,56,56    | 2.08 | 16 (28%) |
| 20  | CLA  | d     | 5355 | 4    | 54,58,73     | 1.65 | 11 (20%) | 64,95,113   | 1.93 | 9 (14%)  |
| 24  | BCR  | c     | 5505 | -    | 41,41,41     | 2.01 | 8 (19%)  | 56,56,56    | 2.14 | 19 (33%) |
| 20  | CLA  | A     | 559  | -    | 69,73,73     | 1.14 | 5 (7%)   | 82,113,113  | 1.63 | 8 (9%)   |

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   |
|-----|------|-------|------|------|-----------|---------------|---------|
| 20  | CLA  | a     | 5563 | 1    | -         | 7/27/103/115  | -       |
| 20  | CLA  | B     | 524  | 2    | -         | 9/29/105/115  | -       |
| 28  | MGE  | D     | 358  | -    | -         | 14/42/62/63   | 0/1/1/1 |
| 27  | LMT  | T     | 217  | -    | -         | 1/21/61/61    | 0/2/2/2 |
| 30  | DGD  | C     | 507  | -    | 3/3/13/13 | 20/42/82/95   | 0/2/2/2 |
| 20  | CLA  | C     | 497  | -    | -         | 9/39/115/115  | -       |
| 20  | CLA  | B     | 521  | 2    | -         | 9/39/115/115  | -       |
| 24  | BCR  | H     | 107  | -    | -         | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | b     | 5522 | 2    | -         | 12/39/115/115 | -       |
| 20  | CLA  | C     | 491  | 3    | -         | 9/39/115/115  | -       |
| 20  | CLA  | b     | 5511 | -    | -         | 4/10/86/115   | -       |
| 30  | DGD  | h     | 5208 | -    | 3/3/13/13 | 23/43/83/95   | 0/2/2/2 |
| 20  | CLA  | d     | 5354 | 4    | -         | 8/39/115/115  | -       |
| 20  | CLA  | C     | 503  | 3    | -         | 7/21/97/115   | -       |
| 20  | CLA  | c     | 5500 | 3    | -         | 13/39/115/115 | -       |
| 30  | DGD  | C     | 508  | -    | 3/3/13/13 | 14/36/76/95   | 0/2/2/2 |
| 21  | PHO  | A     | 561  | -    | -         | 13/37/103/103 | 0/5/6/6 |
| 26  | SQD  | d     | 5358 | -    | -         | 23/49/69/69   | 0/1/1/1 |
| 27  | LMT  | t     | 5217 | -    | -         | 0/21/61/61    | 0/2/2/2 |
| 20  | CLA  | c     | 5493 | 3    | -         | 12/39/115/115 | -       |
| 28  | MGE  | I     | 201  | -    | -         | 24/43/63/63   | 0/1/1/1 |
| 26  | SQD  | t     | 213  | -    | -         | 20/42/62/69   | 0/1/1/1 |
| 28  | MGE  | D     | 359  | -    | -         | 18/36/56/63   | 0/1/1/1 |
| 20  | CLA  | B     | 526  | 2    | -         | 12/39/115/115 | -       |
| 20  | CLA  | b     | 5519 | 2    | -         | 13/39/115/115 | -       |
| 20  | CLA  | a     | 5560 | -    | -         | 9/39/115/115  | -       |
| 24  | BCR  | b     | 5528 | -    | -         | 1/29/63/63    | 0/2/2/2 |
| 24  | BCR  | c     | 5506 | -    | -         | 4/29/63/63    | 0/2/2/2 |
| 30  | DGD  | H     | 208  | -    | 3/3/13/13 | 23/43/83/95   | 0/2/2/2 |
| 20  | CLA  | B     | 517  | -    | -         | 14/39/115/115 | -       |
| 20  | CLA  | c     | 5491 | 3    | -         | 11/39/115/115 | -       |
| 20  | CLA  | B     | 519  | 2    | -         | 13/39/115/115 | -       |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res  | Link | Chirals   | Torsions      | Rings   |
|-----|------|-------|------|------|-----------|---------------|---------|
| 20  | CLA  | B     | 512  | 2    | -         | 12/39/115/115 | -       |
| 28  | MGE  | b     | 5530 | -    | -         | 21/43/63/63   | 0/1/1/1 |
| 32  | HEM  | v     | 5552 | 16   | -         | 6/14/54/54    | -       |
| 20  | CLA  | b     | 5512 | 2    | -         | 12/39/115/115 | -       |
| 20  | CLA  | b     | 5516 | 2    | -         | 15/39/115/115 | -       |
| 20  | CLA  | b     | 5518 | 2    | -         | 16/39/115/115 | -       |
| 28  | MGE  | B     | 530  | -    | -         | 21/43/63/63   | 0/1/1/1 |
| 20  | CLA  | C     | 500  | 3    | -         | 13/39/115/115 | -       |
| 20  | CLA  | b     | 5517 | -    | -         | 14/39/115/115 | -       |
| 20  | CLA  | A     | 558  | 1    | -         | 10/39/115/115 | -       |
| 28  | MGE  | D     | 360  | -    | -         | 23/43/63/63   | 0/1/1/1 |
| 20  | CLA  | B     | 520  | -    | -         | 15/39/115/115 | -       |
| 20  | CLA  | b     | 5520 | -    | -         | 13/39/115/115 | -       |
| 21  | PHO  | A     | 562  | -    | -         | 9/37/103/103  | 0/5/6/6 |
| 20  | CLA  | C     | 501  | 3    | -         | 15/39/115/115 | -       |
| 20  | CLA  | B     | 522  | 2    | -         | 12/39/115/115 | -       |
| 20  | CLA  | c     | 5503 | 3    | -         | 7/21/97/115   | -       |
| 20  | CLA  | c     | 5495 | 3    | -         | 18/39/115/115 | -       |
| 20  | CLA  | B     | 513  | 2    | -         | 14/39/115/115 | -       |
| 26  | SQD  | A     | 5212 | -    | -         | 5/19/39/69    | 0/1/1/1 |
| 20  | CLA  | b     | 5514 | 2    | -         | 14/39/115/115 | -       |
| 27  | LMT  | M     | 5216 | -    | -         | 2/21/61/61    | 0/2/2/2 |
| 27  | LMT  | a     | 5568 | -    | -         | 3/21/61/61    | 0/2/2/2 |
| 30  | DGD  | c     | 5508 | -    | 3/3/13/13 | 16/36/76/95   | 0/2/2/2 |
| 27  | LMT  | m     | 216  | -    | -         | 2/21/61/61    | 0/2/2/2 |
| 20  | CLA  | B     | 518  | 2    | -         | 16/39/115/115 | -       |
| 24  | BCR  | C     | 506  | -    | -         | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | D     | 354  | 4    | -         | 10/39/115/115 | -       |
| 24  | BCR  | C     | 504  | -    | -         | 5/29/63/63    | 0/2/2/2 |
| 22  | PQ9  | A     | 564  | -    | -         | 8/23/43/61    | 0/1/1/1 |
| 24  | BCR  | A     | 566  | -    | -         | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | c     | 5498 | 3    | -         | 18/39/115/115 | -       |
| 22  | PQ9  | D     | 356  | -    | -         | 11/23/43/61   | 0/1/1/1 |
| 20  | CLA  | b     | 5525 | -    | -         | 14/39/115/115 | -       |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res  | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|------|------|---------|---------------|---------|
| 24  | BCR  | d     | 5357 | -    | -       | 3/29/63/63    | 0/2/2/2 |
| 24  | BCR  | x     | 5130 | -    | -       | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | B     | 511  | -    | -       | 4/10/86/115   | -       |
| 20  | CLA  | C     | 499  | 3    | -       | 8/18/94/115   | -       |
| 20  | CLA  | b     | 5513 | 2    | -       | 12/39/115/115 | -       |
| 20  | CLA  | c     | 5501 | 3    | -       | 13/39/115/115 | -       |
| 20  | CLA  | B     | 516  | 2    | -       | 15/39/115/115 | -       |
| 20  | CLA  | b     | 5515 | 2    | -       | 19/39/115/115 | -       |
| 20  | CLA  | b     | 5526 | 2    | -       | 12/39/115/115 | -       |
| 20  | CLA  | C     | 493  | 3    | -       | 12/39/115/115 | -       |
| 21  | PHO  | a     | 5561 | -    | -       | 13/37/103/103 | 0/5/6/6 |
| 20  | CLA  | A     | 563  | 1    | -       | 7/27/103/115  | -       |
| 20  | CLA  | C     | 498  | 3    | -       | 18/39/115/115 | -       |
| 26  | SQD  | a     | 212  | -    | -       | 6/19/39/69    | 0/1/1/1 |
| 27  | LMT  | A     | 569  | -    | -       | 1/21/61/61    | 0/2/2/2 |
| 24  | BCR  | h     | 5107 | -    | -       | 4/29/63/63    | 0/2/2/2 |
| 24  | BCR  | t     | 104  | -    | -       | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | C     | 496  | 3    | -       | 13/39/115/115 | -       |
| 24  | BCR  | c     | 5504 | -    | -       | 5/29/63/63    | 0/2/2/2 |
| 24  | BCR  | b     | 5529 | -    | -       | 3/29/63/63    | 0/2/2/2 |
| 20  | CLA  | b     | 5523 | 2    | -       | 15/39/115/115 | -       |
| 20  | CLA  | a     | 5559 | -    | -       | 14/39/115/115 | -       |
| 26  | SQD  | L     | 5213 | -    | -       | 21/42/62/69   | 0/1/1/1 |
| 20  | CLA  | b     | 5524 | 2    | -       | 9/29/105/115  | -       |
| 20  | CLA  | A     | 560  | -    | -       | 9/39/115/115  | -       |
| 28  | MGE  | d     | 5361 | -    | -       | 23/43/63/63   | 0/1/1/1 |
| 20  | CLA  | B     | 523  | 2    | -       | 15/39/115/115 | -       |
| 28  | MGE  | d     | 5359 | -    | -       | 13/42/62/63   | 0/1/1/1 |
| 24  | BCR  | a     | 5566 | -    | -       | 4/29/63/63    | 0/2/2/2 |
| 20  | CLA  | B     | 515  | 2    | -       | 19/39/115/115 | -       |
| 20  | CLA  | C     | 494  | -    | -       | 9/17/93/115   | -       |
| 24  | BCR  | b     | 5527 | -    | -       | 1/29/63/63    | 0/2/2/2 |
| 26  | SQD  | A     | 568  | -    | -       | 23/49/69/69   | 0/1/1/1 |
| 20  | CLA  | C     | 502  | 3    | -       | 9/23/99/115   | -       |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res  | Link | Chirals   | Torsions      | Rings   |
|-----|------|-------|------|------|-----------|---------------|---------|
| 24  | BCR  | D     | 357  | -    | -         | 3/29/63/63    | 0/2/2/2 |
| 28  | MGE  | i     | 5201 | -    | -         | 22/43/63/63   | 0/1/1/1 |
| 20  | CLA  | C     | 492  | 3    | -         | 11/33/109/115 | -       |
| 24  | BCR  | B     | 528  | -    | -         | 1/29/63/63    | 0/2/2/2 |
| 20  | CLA  | D     | 355  | 4    | -         | 11/21/97/115  | -       |
| 22  | PQ9  | a     | 5564 | -    | -         | 8/23/43/61    | 0/1/1/1 |
| 25  | LHG  | A     | 567  | -    | -         | 16/43/43/53   | -       |
| 30  | DGD  | c     | 5507 | -    | 3/3/13/13 | 20/42/82/95   | 0/2/2/2 |
| 20  | CLA  | b     | 5521 | 2    | -         | 9/39/115/115  | -       |
| 21  | PHO  | a     | 5562 | -    | -         | 9/37/103/103  | 0/5/6/6 |
| 20  | CLA  | C     | 495  | 3    | -         | 18/39/115/115 | -       |
| 32  | HEM  | F     | 51   | 6,5  | -         | 2/14/54/54    | -       |
| 32  | HEM  | f     | 5051 | 6,5  | -         | 2/14/54/54    | -       |
| 20  | CLA  | c     | 5502 | -    | -         | 8/23/99/115   | -       |
| 24  | BCR  | X     | 130  | -    | -         | 5/29/63/63    | 0/2/2/2 |
| 24  | BCR  | T     | 5104 | -    | -         | 4/29/63/63    | 0/2/2/2 |
| 24  | BCR  | B     | 529  | -    | -         | 3/29/63/63    | 0/2/2/2 |
| 28  | MGE  | d     | 5360 | -    | -         | 18/36/56/63   | 0/1/1/1 |
| 20  | CLA  | B     | 514  | 2    | -         | 13/39/115/115 | -       |
| 20  | CLA  | c     | 5492 | 3    | -         | 11/33/109/115 | -       |
| 25  | LHG  | a     | 5567 | -    | -         | 14/43/43/53   | -       |
| 32  | HEM  | V     | 552  | 16   | -         | 6/14/54/54    | -       |
| 20  | CLA  | c     | 5496 | 3    | -         | 13/39/115/115 | -       |
| 20  | CLA  | c     | 5499 | 3    | -         | 8/18/94/115   | -       |
| 22  | PQ9  | d     | 5356 | -    | -         | 11/23/43/61   | 0/1/1/1 |
| 28  | MGE  | l     | 5210 | -    | -         | 23/43/63/63   | 0/1/1/1 |
| 28  | MGE  | L     | 210  | -    | -         | 23/43/63/63   | 0/1/1/1 |
| 24  | BCR  | C     | 505  | -    | -         | 3/29/63/63    | 0/2/2/2 |
| 20  | CLA  | B     | 525  | -    | -         | 14/39/115/115 | -       |
| 20  | CLA  | c     | 5497 | -    | -         | 10/39/115/115 | -       |
| 20  | CLA  | a     | 5558 | 1    | -         | 11/39/115/115 | -       |
| 20  | CLA  | c     | 5494 | -    | -         | 9/17/93/115   | -       |
| 30  | DGD  | c     | 5509 | -    | 3/3/13/13 | 19/46/86/95   | 0/2/2/2 |
| 30  | DGD  | C     | 509  | -    | 3/3/13/13 | 20/46/86/95   | 0/2/2/2 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res  | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|------|------|---------|---------------|---------|
| 24  | BCR  | B     | 527  | -    | -       | 1/29/63/63    | 0/2/2/2 |
| 20  | CLA  | d     | 5355 | 4    | -       | 11/21/97/115  | -       |
| 24  | BCR  | c     | 5505 | -    | -       | 3/29/63/63    | 0/2/2/2 |
| 20  | CLA  | A     | 559  | -    | -       | 14/39/115/115 | -       |

The worst 5 of 1162 bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|------|-------------|----------|
| 20  | c     | 5495 | CLA  | MG-NA | 8.38 | 2.26        | 2.06     |
| 25  | A     | 567  | LHG  | P-O5  | 8.23 | 1.79        | 1.50     |
| 24  | c     | 5504 | BCR  | C1-C6 | 8.20 | 1.64        | 1.53     |
| 20  | B     | 517  | CLA  | MG-NA | 8.14 | 2.25        | 2.06     |
| 25  | a     | 5567 | LHG  | P-O5  | 8.13 | 1.79        | 1.50     |

The worst 5 of 1531 bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 20  | c     | 5501 | CLA  | C4A-NA-C1A | 12.96 | 112.59      | 106.68   |
| 20  | b     | 5514 | CLA  | C4A-NA-C1A | 12.90 | 112.56      | 106.68   |
| 20  | C     | 501  | CLA  | C4A-NA-C1A | 12.84 | 112.54      | 106.68   |
| 20  | B     | 514  | CLA  | C4A-NA-C1A | 12.74 | 112.49      | 106.68   |
| 20  | B     | 524  | CLA  | C4A-NA-C1A | 12.52 | 112.39      | 106.68   |

5 of 24 chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 30  | C     | 507 | DGD  | C5D  |
| 30  | C     | 507 | DGD  | C5E  |
| 30  | C     | 507 | DGD  | C2D  |
| 30  | C     | 508 | DGD  | C5D  |
| 30  | C     | 508 | DGD  | C5E  |

5 of 1538 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 20  | A     | 558 | CLA  | C2B-C3B-CAB-CBB |
| 20  | A     | 558 | CLA  | C4B-C3B-CAB-CBB |
| 20  | A     | 559 | CLA  | C2B-C3B-CAB-CBB |
| 20  | A     | 559 | CLA  | C4B-C3B-CAB-CBB |
| 20  | A     | 560 | CLA  | C2B-C3B-CAB-CBB |

There are no ring outliers.

126 monomers are involved in 476 short contacts:

| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 20  | B     | 524  | CLA  | 4       | 0            |
| 28  | D     | 358  | MGE  | 2       | 0            |
| 27  | T     | 217  | LMT  | 6       | 0            |
| 30  | C     | 507  | DGD  | 6       | 0            |
| 20  | C     | 497  | CLA  | 5       | 0            |
| 20  | B     | 521  | CLA  | 3       | 0            |
| 24  | H     | 107  | BCR  | 2       | 0            |
| 20  | b     | 5522 | CLA  | 4       | 0            |
| 20  | C     | 491  | CLA  | 2       | 0            |
| 20  | b     | 5511 | CLA  | 1       | 0            |
| 20  | d     | 5354 | CLA  | 6       | 0            |
| 30  | h     | 5208 | DGD  | 3       | 0            |
| 20  | C     | 503  | CLA  | 1       | 0            |
| 30  | C     | 508  | DGD  | 2       | 0            |
| 21  | A     | 561  | PHO  | 6       | 0            |
| 27  | t     | 5217 | LMT  | 5       | 0            |
| 20  | c     | 5493 | CLA  | 6       | 0            |
| 28  | I     | 201  | MGE  | 1       | 0            |
| 26  | t     | 213  | SQD  | 1       | 0            |
| 28  | D     | 359  | MGE  | 1       | 0            |
| 20  | B     | 526  | CLA  | 1       | 0            |
| 20  | b     | 5519 | CLA  | 3       | 0            |
| 20  | a     | 5560 | CLA  | 1       | 0            |
| 24  | b     | 5528 | BCR  | 2       | 0            |
| 24  | c     | 5506 | BCR  | 6       | 0            |
| 30  | H     | 208  | DGD  | 3       | 0            |
| 20  | B     | 517  | CLA  | 9       | 0            |
| 20  | c     | 5491 | CLA  | 2       | 0            |
| 20  | B     | 519  | CLA  | 3       | 0            |
| 20  | B     | 512  | CLA  | 2       | 0            |
| 28  | b     | 5530 | MGE  | 1       | 0            |
| 32  | v     | 5552 | HEM  | 1       | 0            |
| 20  | b     | 5512 | CLA  | 3       | 0            |
| 20  | b     | 5516 | CLA  | 1       | 0            |
| 20  | b     | 5518 | CLA  | 9       | 0            |
| 28  | B     | 530  | MGE  | 1       | 0            |
| 20  | C     | 500  | CLA  | 2       | 0            |
| 20  | b     | 5517 | CLA  | 9       | 0            |
| 20  | A     | 558  | CLA  | 9       | 0            |
| 28  | D     | 360  | MGE  | 7       | 0            |

*Continued on next page...*



*Continued from previous page...*

| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 20  | B     | 520  | CLA  | 7       | 0            |
| 20  | b     | 5520 | CLA  | 6       | 0            |
| 21  | A     | 562  | PHO  | 6       | 0            |
| 20  | C     | 501  | CLA  | 9       | 0            |
| 20  | B     | 522  | CLA  | 3       | 0            |
| 20  | c     | 5503 | CLA  | 1       | 0            |
| 20  | c     | 5495 | CLA  | 10      | 0            |
| 20  | B     | 513  | CLA  | 8       | 0            |
| 20  | b     | 5514 | CLA  | 6       | 0            |
| 27  | a     | 5568 | LMT  | 1       | 0            |
| 30  | c     | 5508 | DGD  | 4       | 0            |
| 20  | B     | 518  | CLA  | 9       | 0            |
| 24  | C     | 506  | BCR  | 6       | 0            |
| 20  | D     | 354  | CLA  | 6       | 0            |
| 24  | C     | 504  | BCR  | 7       | 0            |
| 22  | A     | 564  | PQ9  | 1       | 0            |
| 24  | A     | 566  | BCR  | 1       | 0            |
| 20  | c     | 5498 | CLA  | 5       | 0            |
| 22  | D     | 356  | PQ9  | 5       | 0            |
| 20  | b     | 5525 | CLA  | 2       | 0            |
| 24  | d     | 5357 | BCR  | 6       | 0            |
| 24  | x     | 5130 | BCR  | 10      | 0            |
| 20  | B     | 511  | CLA  | 1       | 0            |
| 20  | C     | 499  | CLA  | 2       | 0            |
| 20  | b     | 5513 | CLA  | 8       | 0            |
| 20  | c     | 5501 | CLA  | 9       | 0            |
| 20  | B     | 516  | CLA  | 3       | 0            |
| 20  | b     | 5515 | CLA  | 10      | 0            |
| 20  | b     | 5526 | CLA  | 1       | 0            |
| 20  | C     | 493  | CLA  | 7       | 0            |
| 21  | a     | 5561 | PHO  | 5       | 0            |
| 20  | C     | 498  | CLA  | 6       | 0            |
| 27  | A     | 569  | LMT  | 3       | 0            |
| 24  | h     | 5107 | BCR  | 3       | 0            |
| 24  | t     | 104  | BCR  | 9       | 0            |
| 20  | C     | 496  | CLA  | 2       | 0            |
| 24  | c     | 5504 | BCR  | 9       | 0            |
| 24  | b     | 5529 | BCR  | 1       | 0            |
| 20  | b     | 5523 | CLA  | 1       | 0            |
| 20  | a     | 5559 | CLA  | 5       | 0            |
| 26  | L     | 5213 | SQD  | 1       | 0            |
| 20  | b     | 5524 | CLA  | 2       | 0            |

*Continued on next page...*

*Continued from previous page...*

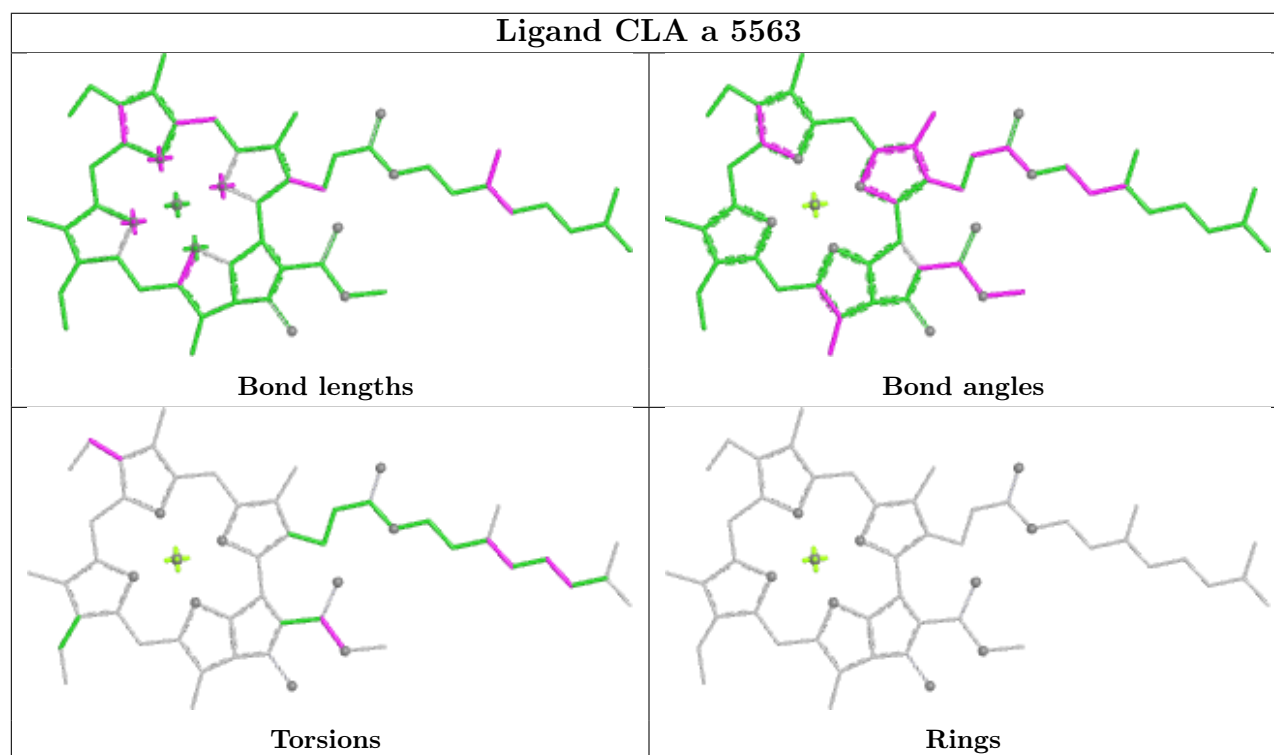
| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 20  | A     | 560  | CLA  | 1       | 0            |
| 28  | d     | 5361 | MGE  | 7       | 0            |
| 28  | d     | 5359 | MGE  | 2       | 0            |
| 24  | a     | 5566 | BCR  | 3       | 0            |
| 20  | B     | 515  | CLA  | 11      | 0            |
| 20  | C     | 494  | CLA  | 2       | 0            |
| 24  | b     | 5527 | BCR  | 3       | 0            |
| 20  | C     | 502  | CLA  | 2       | 0            |
| 24  | D     | 357  | BCR  | 4       | 0            |
| 28  | i     | 5201 | MGE  | 2       | 0            |
| 24  | B     | 528  | BCR  | 2       | 0            |
| 20  | D     | 355  | CLA  | 3       | 0            |
| 25  | A     | 567  | LHG  | 4       | 0            |
| 30  | c     | 5507 | DGD  | 5       | 0            |
| 21  | a     | 5562 | PHO  | 7       | 0            |
| 20  | b     | 5521 | CLA  | 1       | 0            |
| 20  | C     | 495  | CLA  | 9       | 0            |
| 32  | F     | 51   | HEM  | 3       | 0            |
| 32  | f     | 5051 | HEM  | 3       | 0            |
| 20  | c     | 5502 | CLA  | 1       | 0            |
| 24  | X     | 130  | BCR  | 9       | 0            |
| 24  | T     | 5104 | BCR  | 8       | 0            |
| 24  | B     | 529  | BCR  | 2       | 0            |
| 28  | d     | 5360 | MGE  | 2       | 0            |
| 20  | B     | 514  | CLA  | 5       | 0            |
| 20  | c     | 5492 | CLA  | 1       | 0            |
| 25  | a     | 5567 | LHG  | 4       | 0            |
| 32  | V     | 552  | HEM  | 2       | 0            |
| 20  | c     | 5496 | CLA  | 2       | 0            |
| 20  | c     | 5499 | CLA  | 1       | 0            |
| 22  | d     | 5356 | PQ9  | 5       | 0            |
| 28  | l     | 5210 | MGE  | 4       | 0            |
| 28  | L     | 210  | MGE  | 2       | 0            |
| 24  | C     | 505  | BCR  | 6       | 0            |
| 20  | B     | 525  | CLA  | 2       | 0            |
| 20  | c     | 5497 | CLA  | 5       | 0            |
| 20  | a     | 5558 | CLA  | 10      | 0            |
| 20  | c     | 5494 | CLA  | 2       | 0            |
| 30  | c     | 5509 | DGD  | 9       | 0            |
| 30  | C     | 509  | DGD  | 10      | 0            |
| 24  | B     | 527  | BCR  | 3       | 0            |
| 20  | d     | 5355 | CLA  | 4       | 0            |

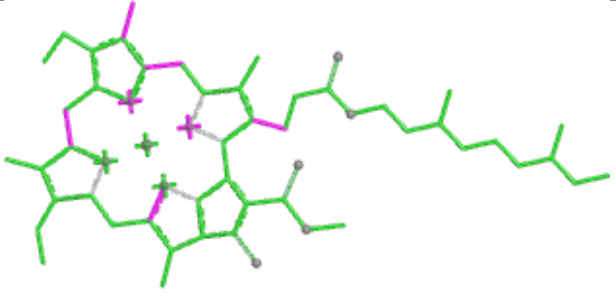
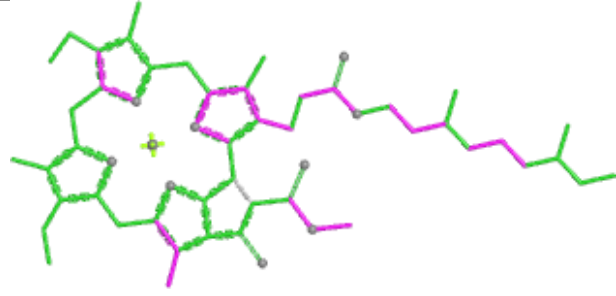
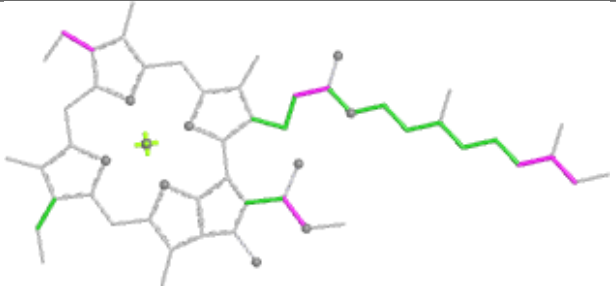
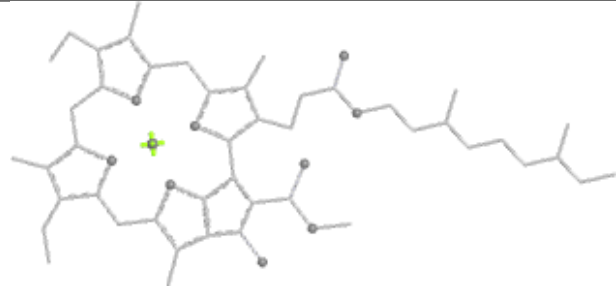
*Continued on next page...*

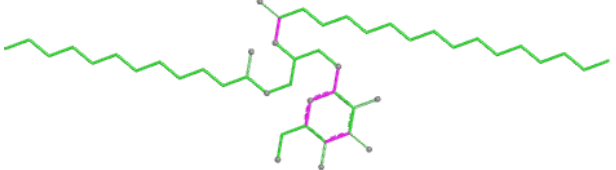
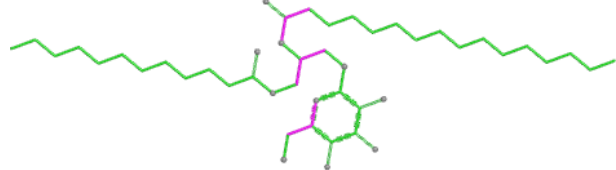
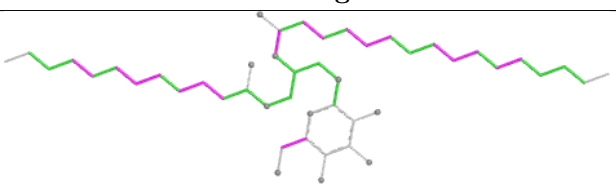
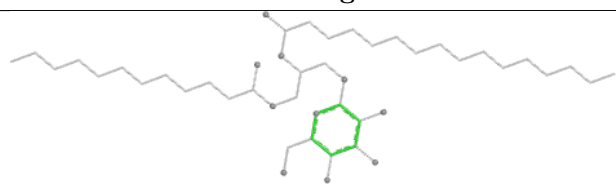
*Continued from previous page...*

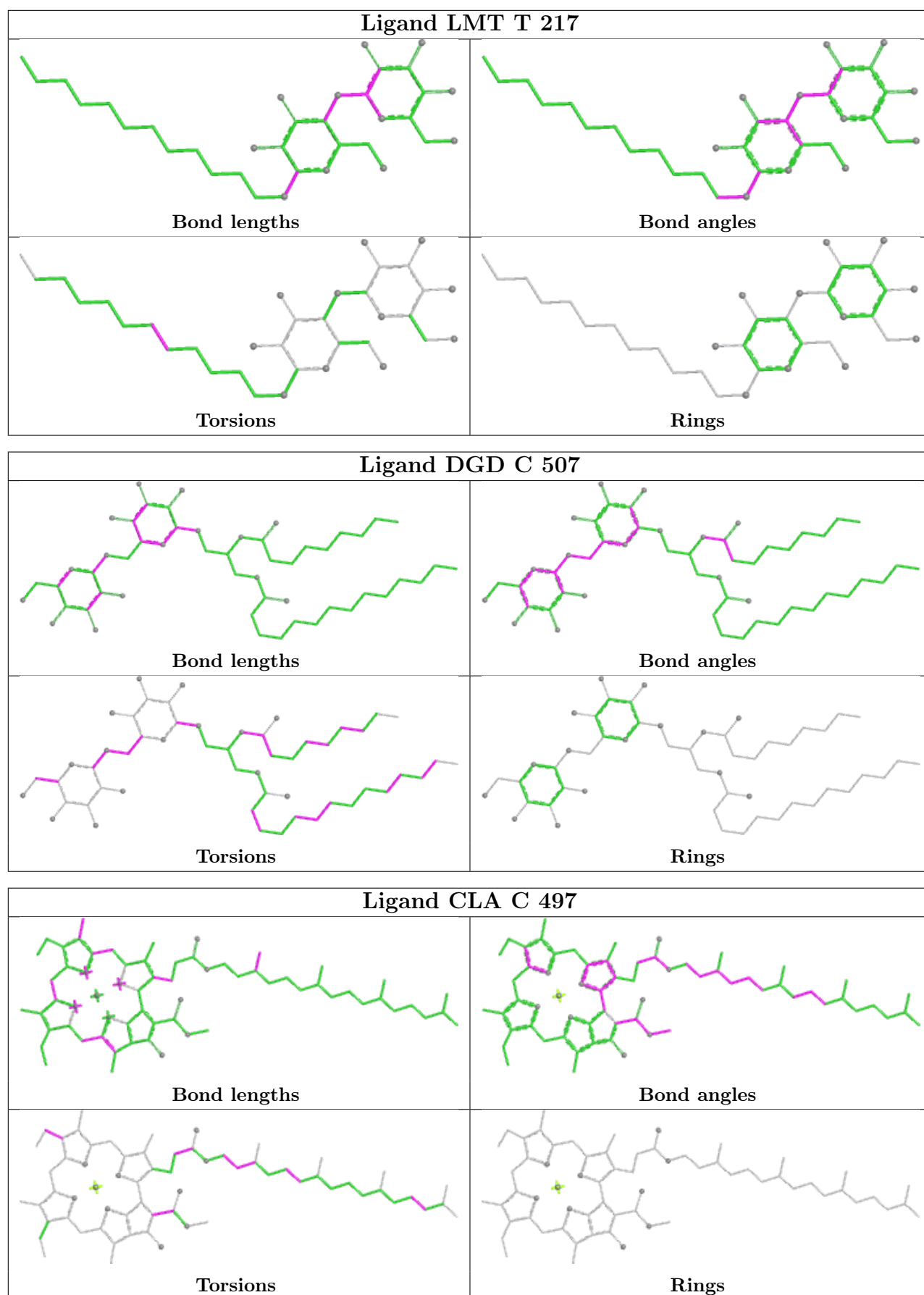
| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 24  | c     | 5505 | BCR  | 6       | 0            |
| 20  | A     | 559  | CLA  | 4       | 0            |

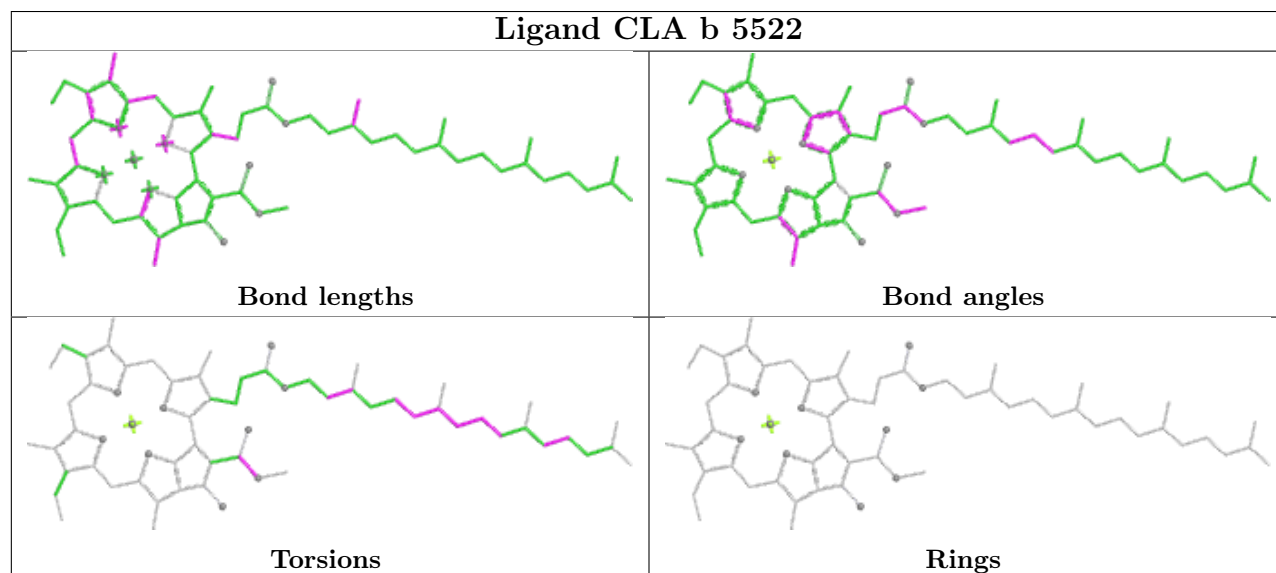
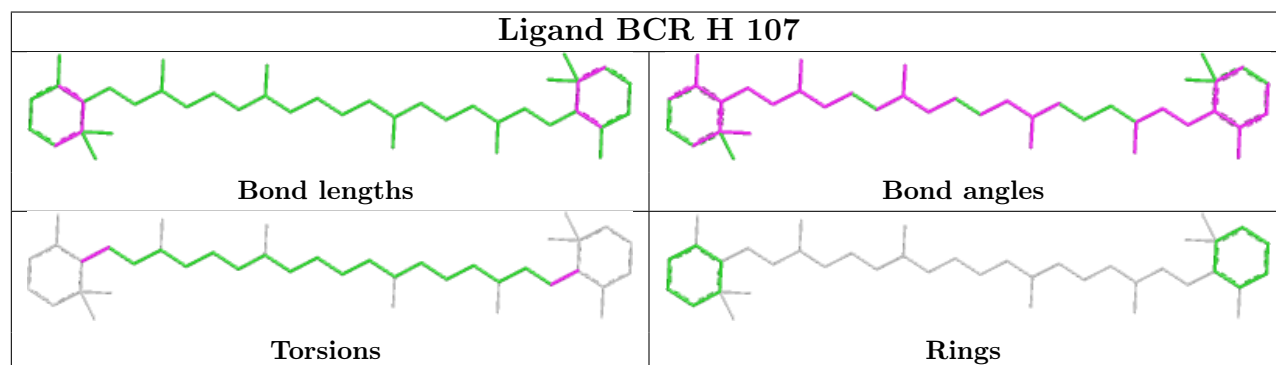
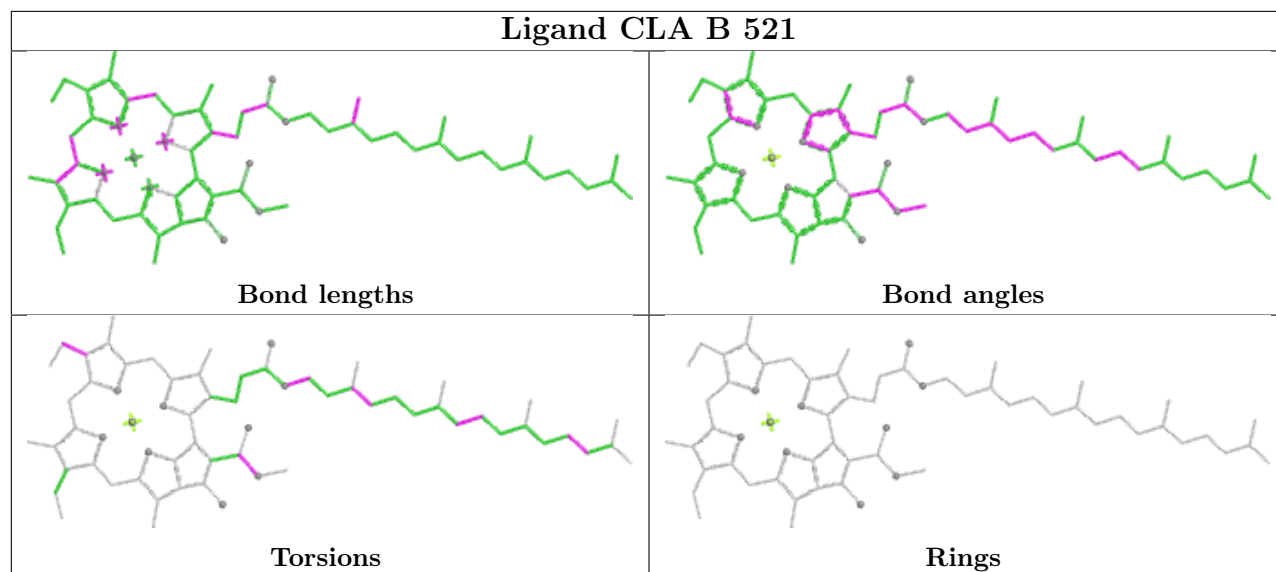
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

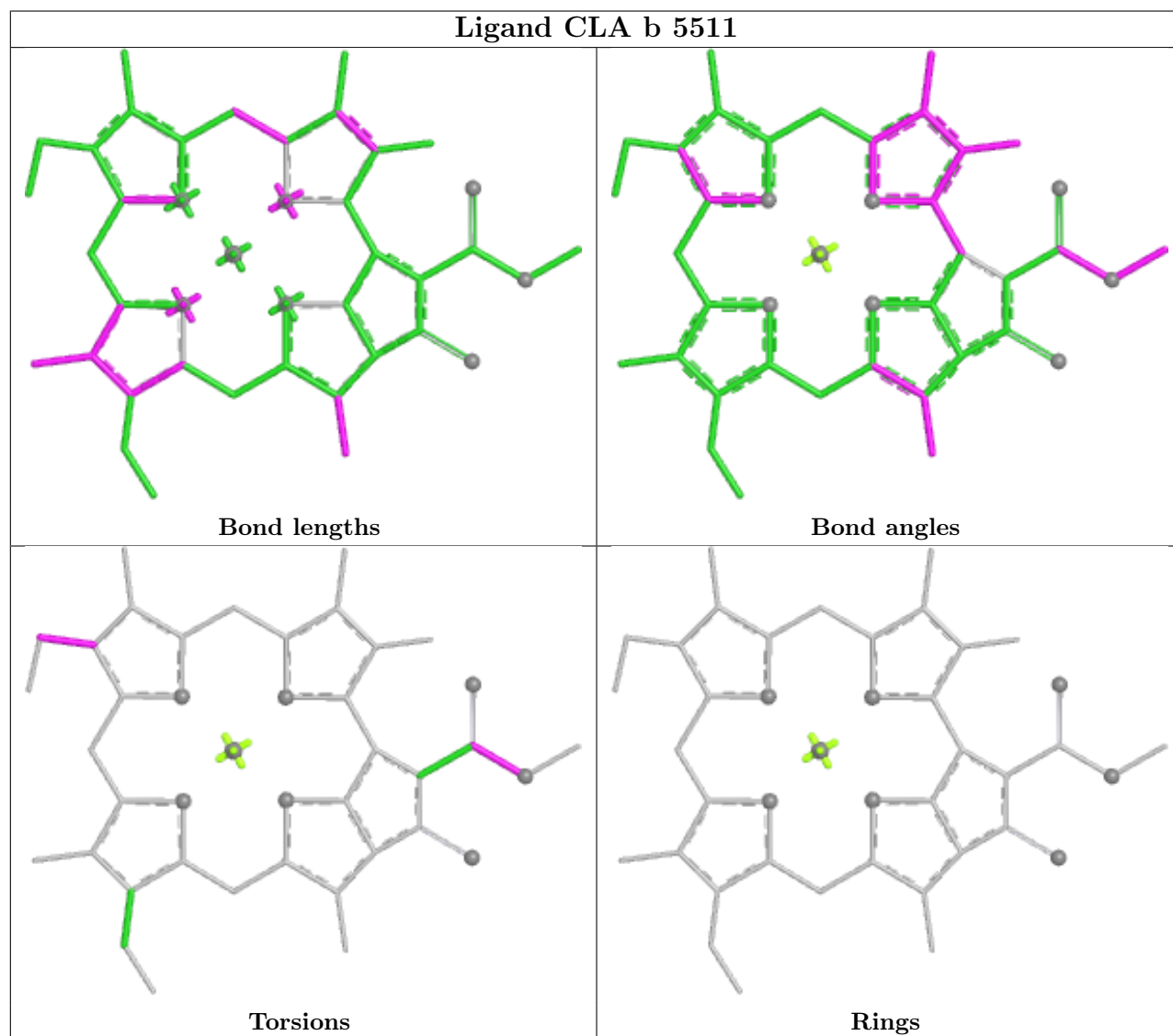
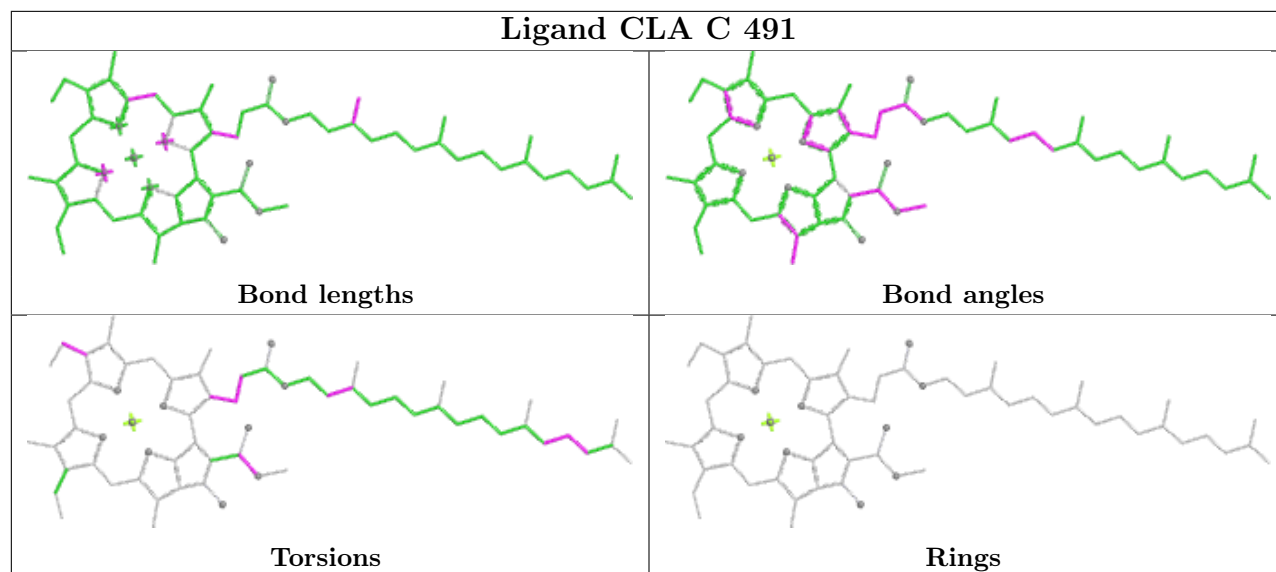


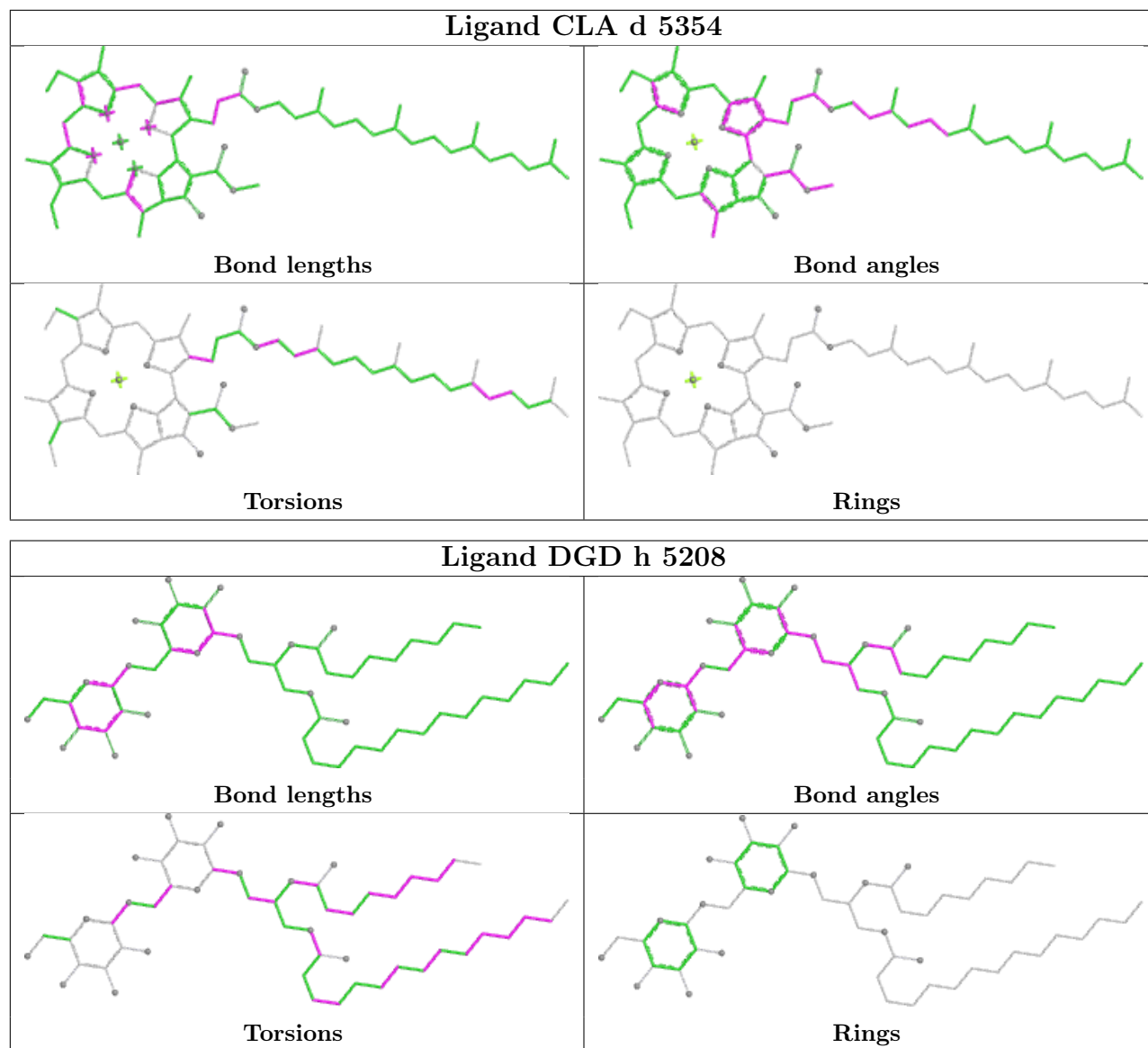
| Ligand CLA B 524                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand MGE D 358                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |



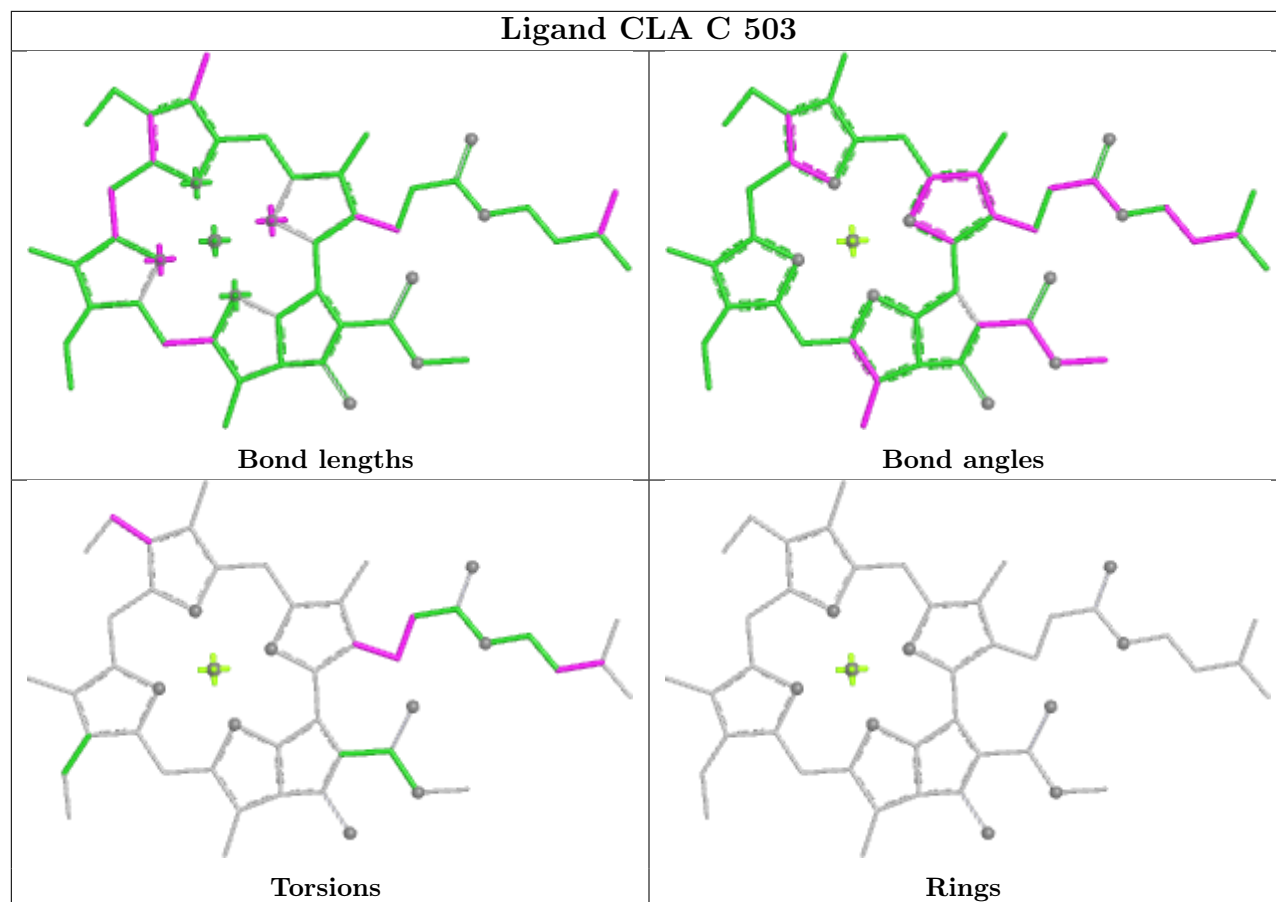




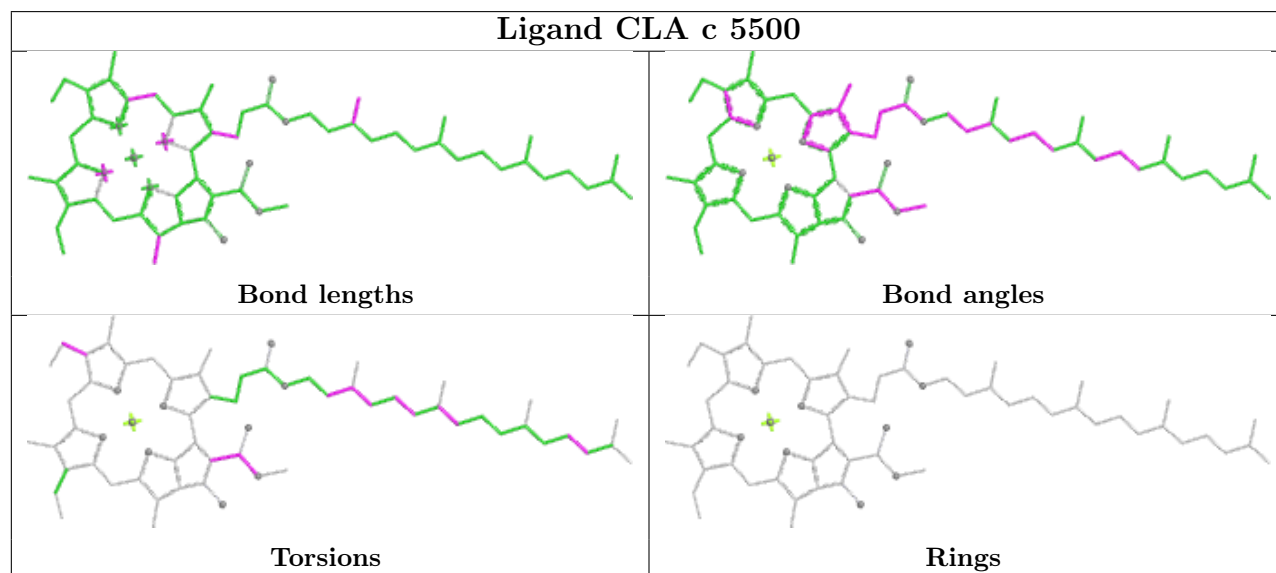


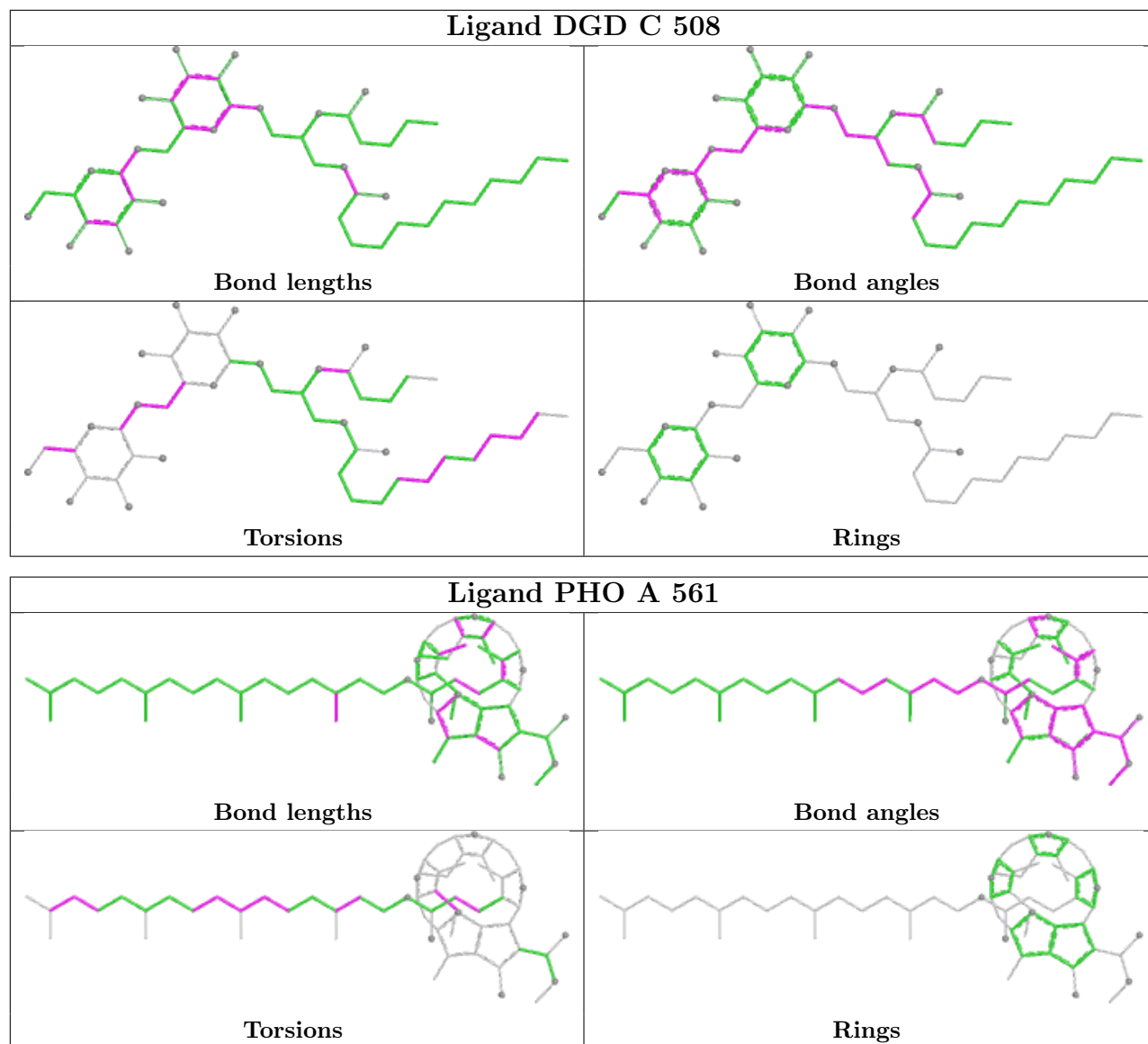


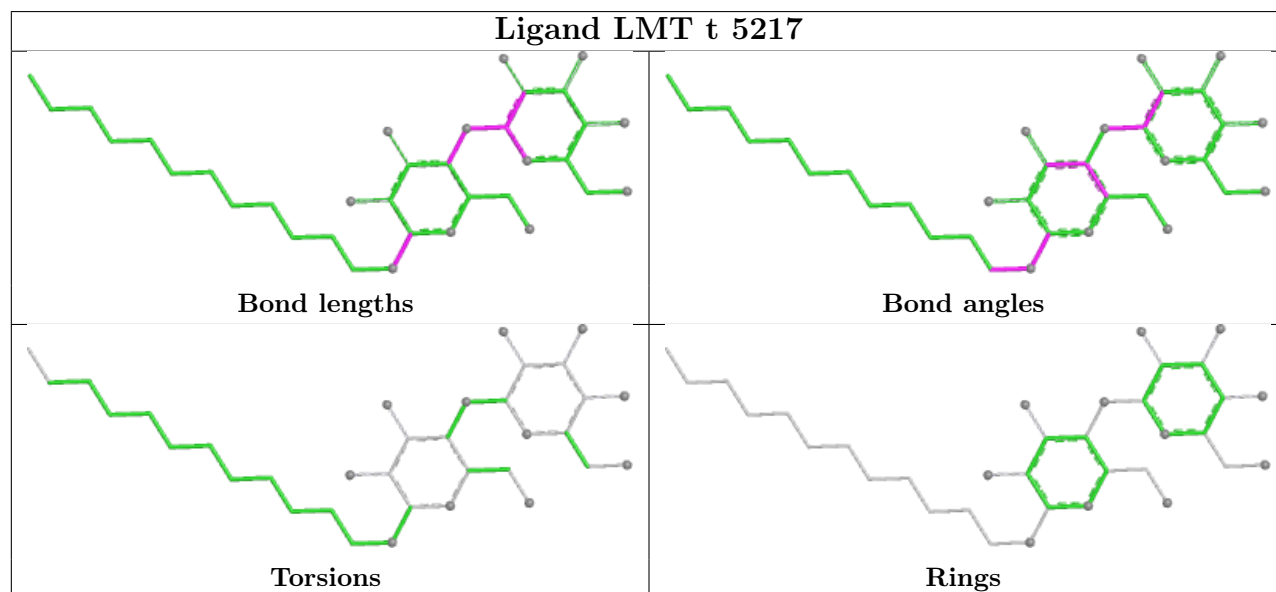
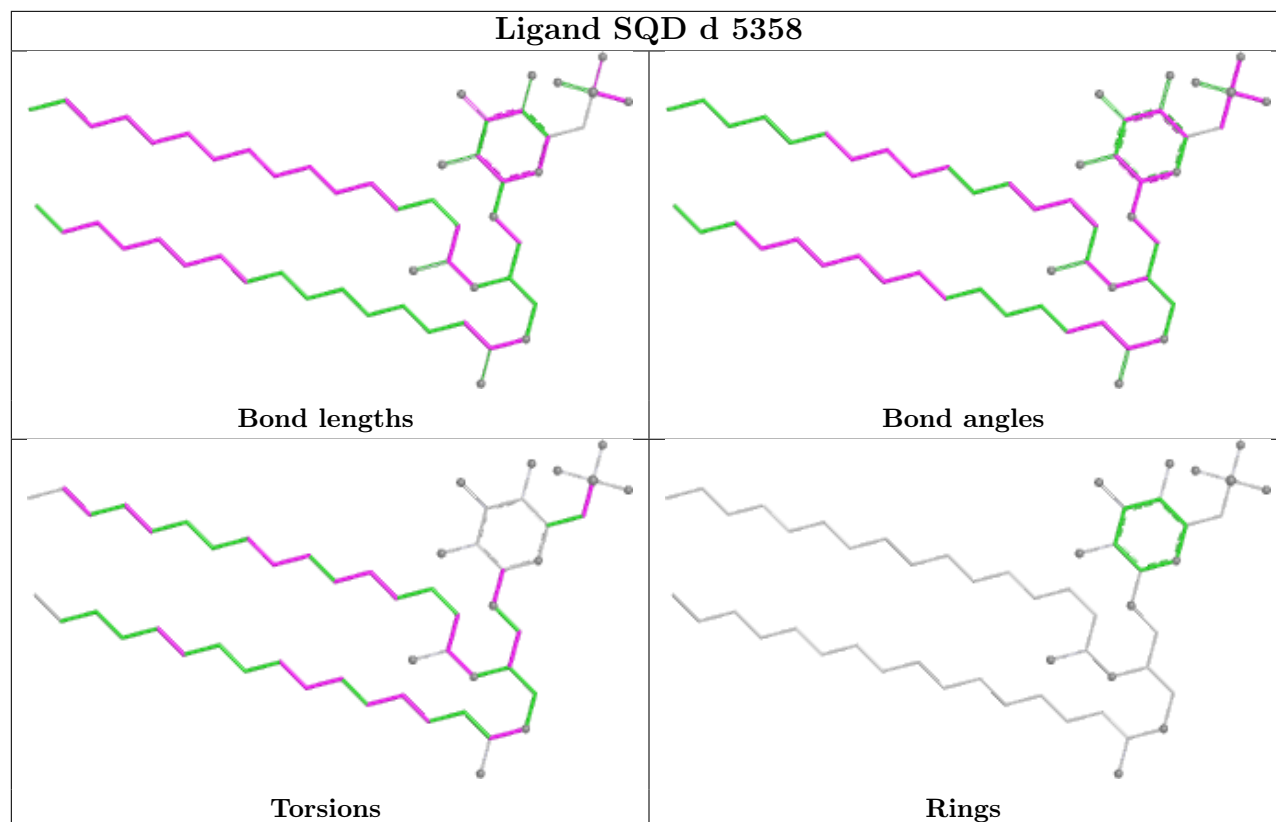
## Ligand CLA C 503

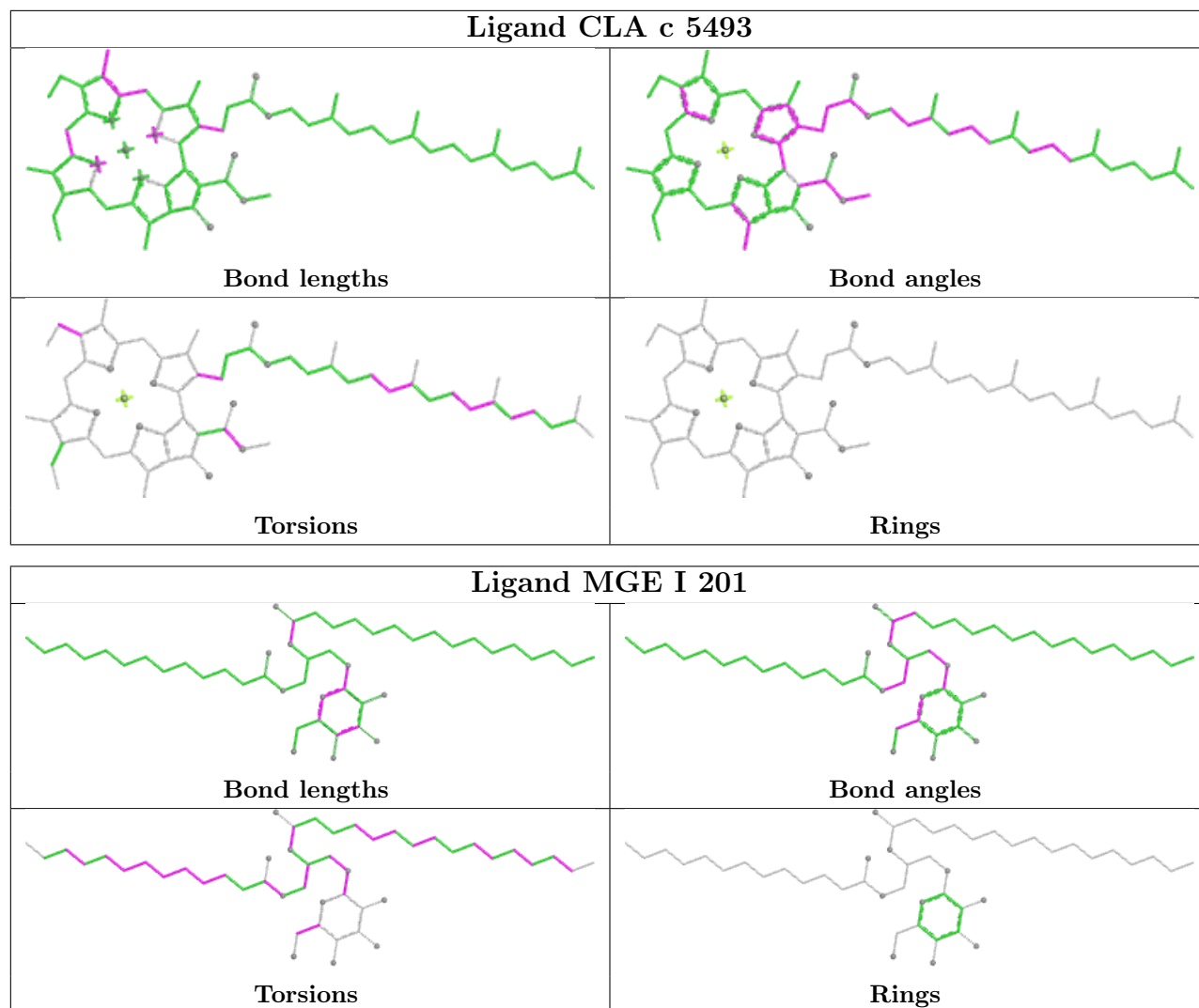


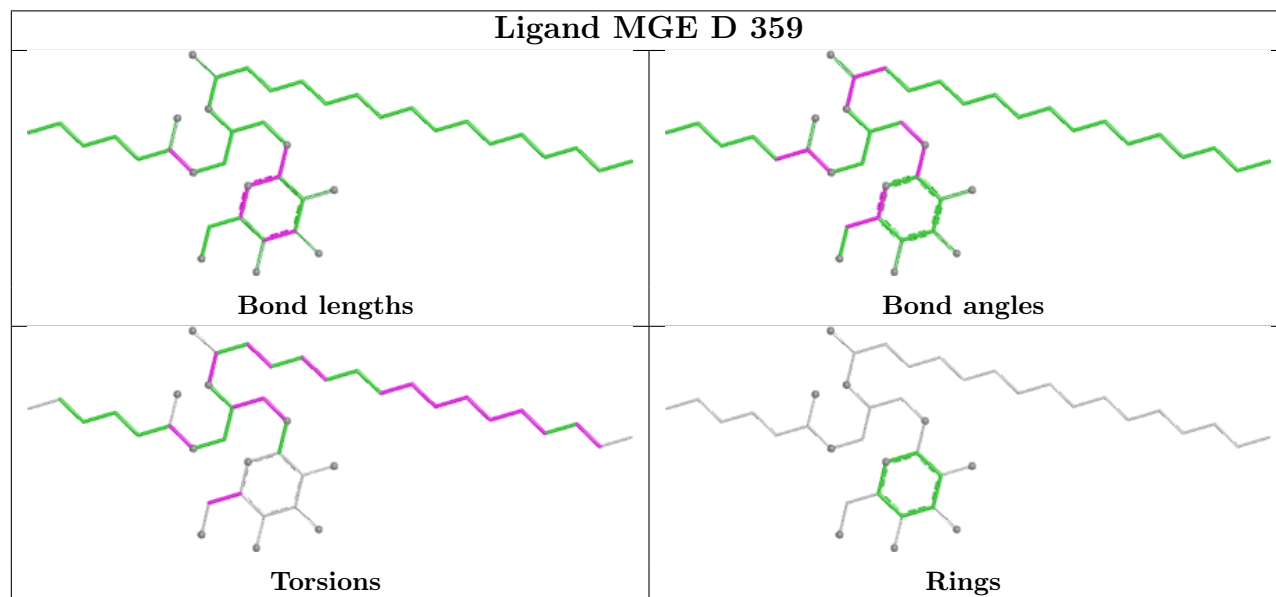
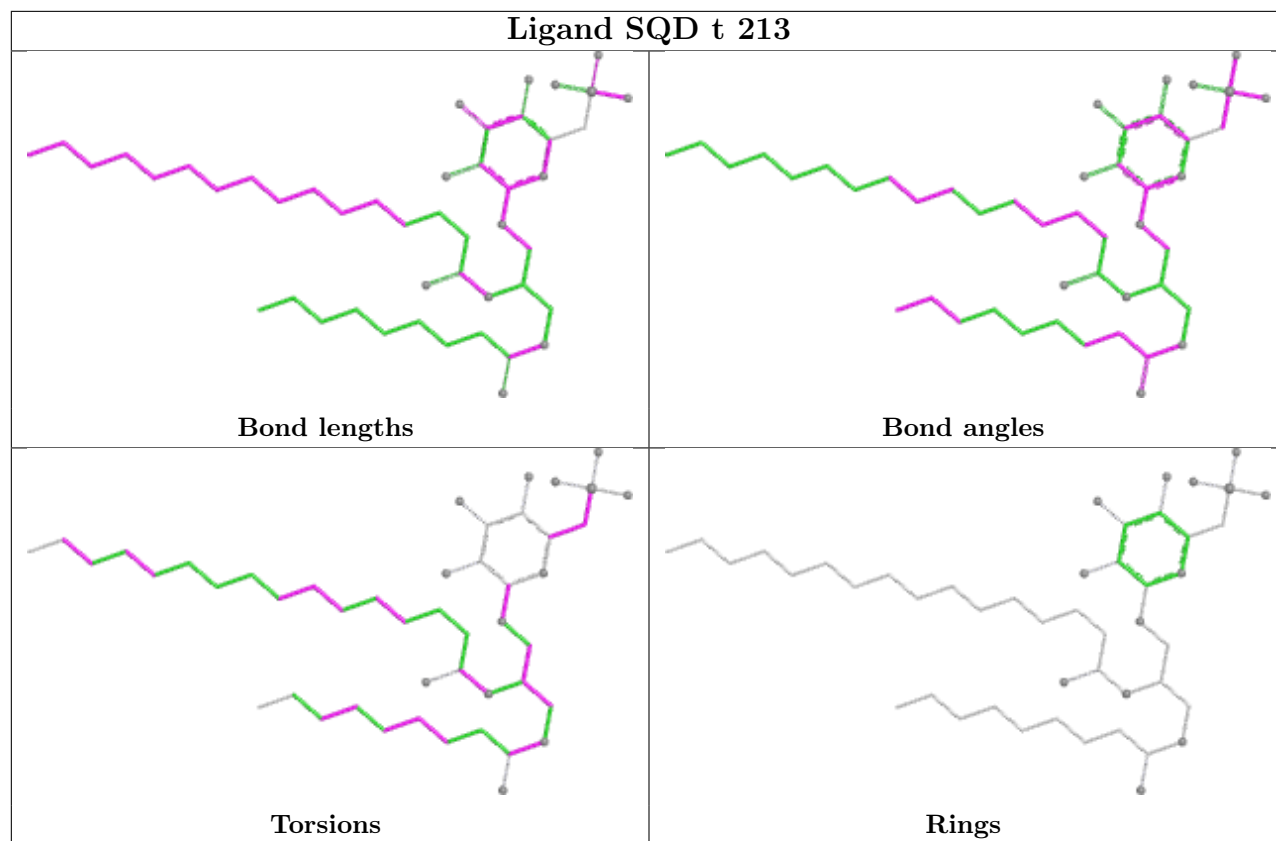
## Ligand CLA c 5500

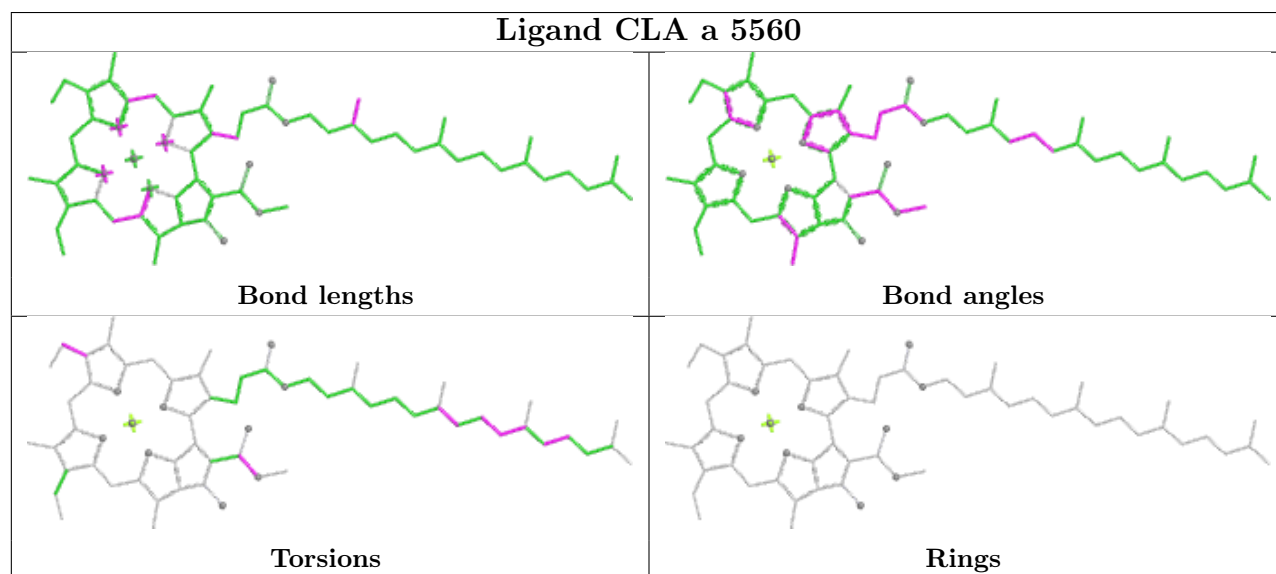
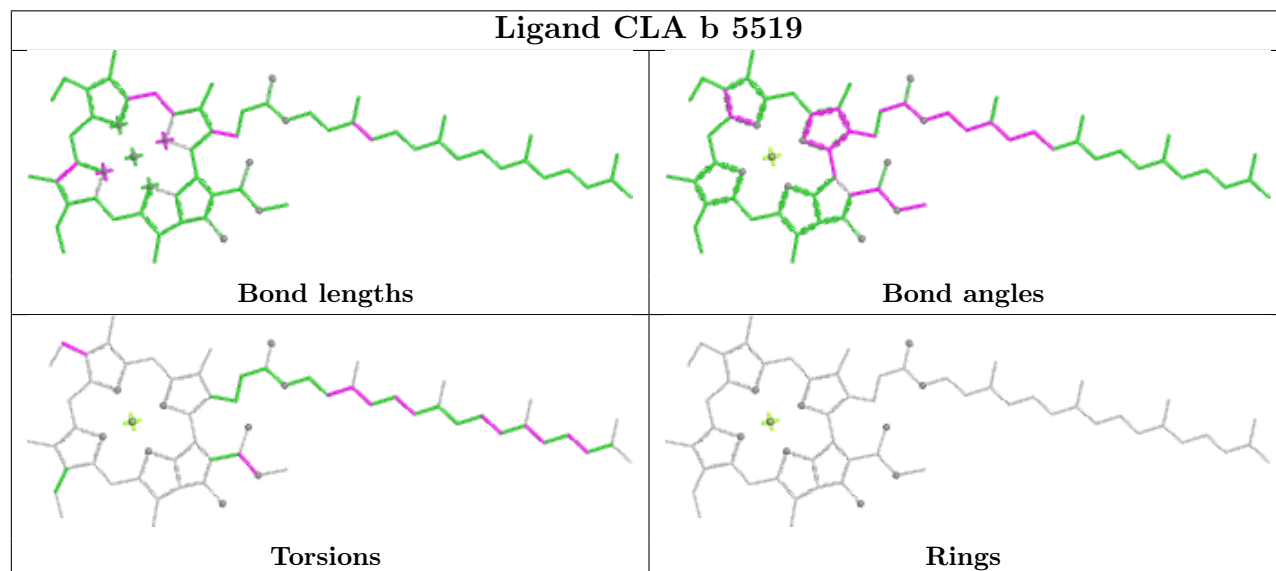
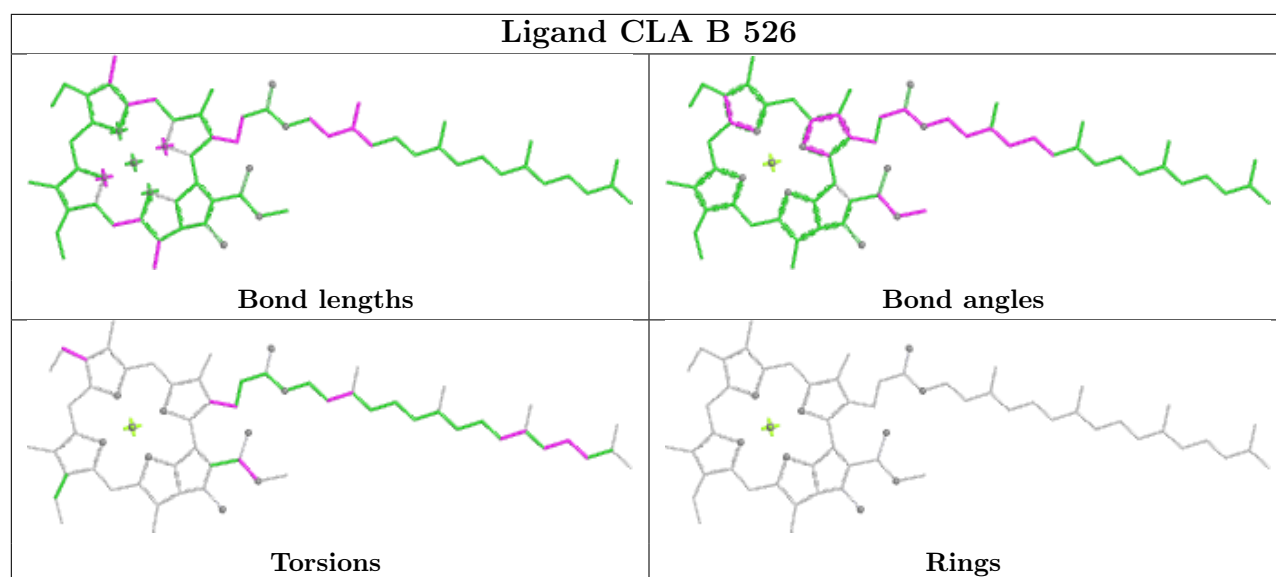


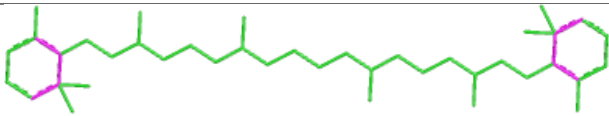
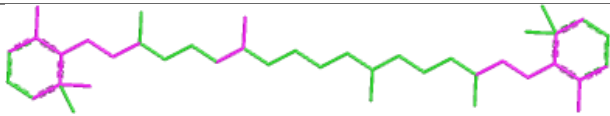
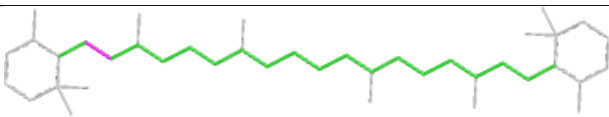
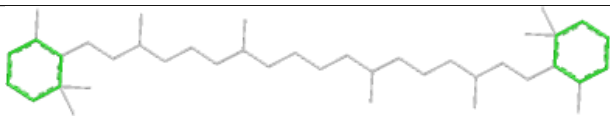


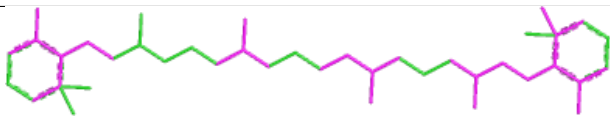
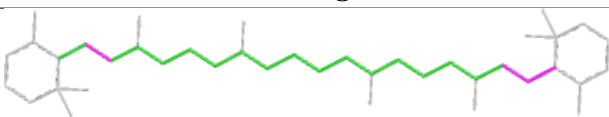
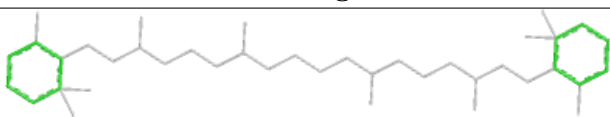


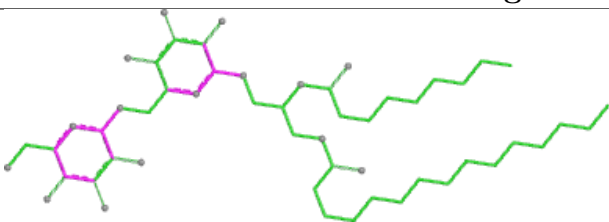
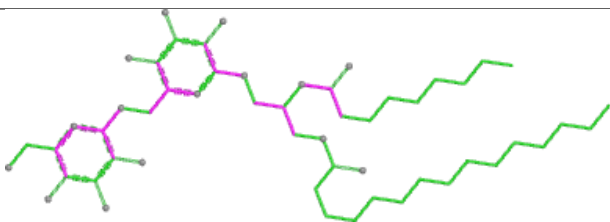
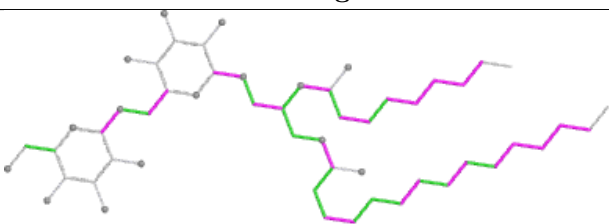
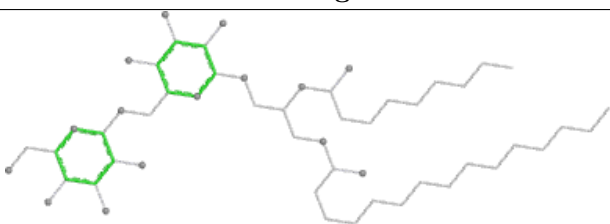


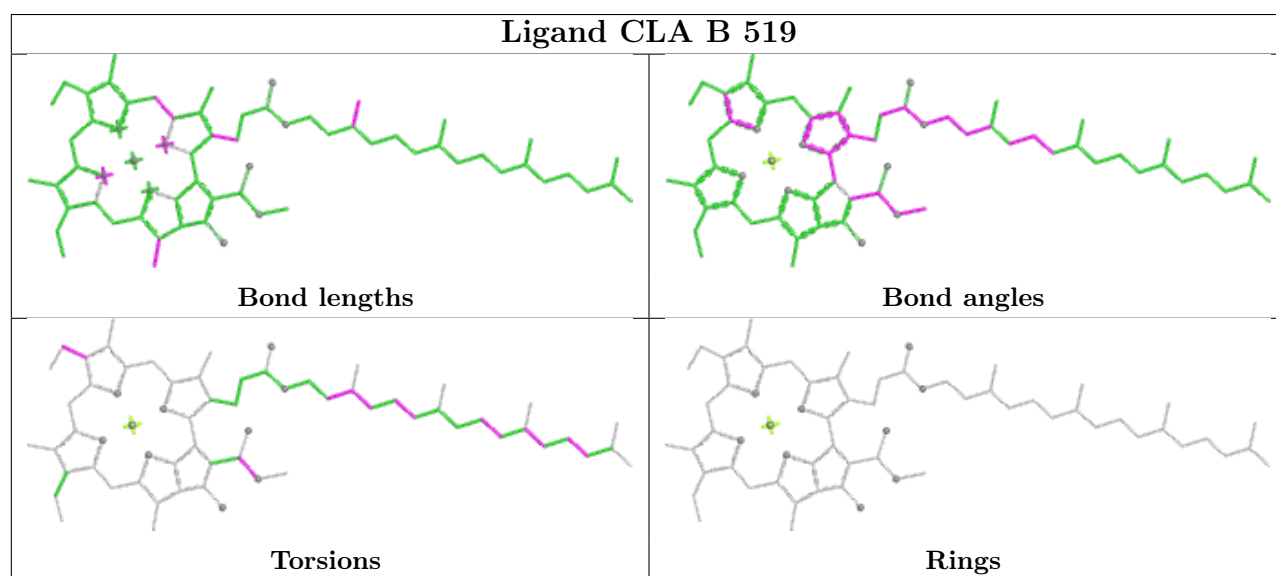
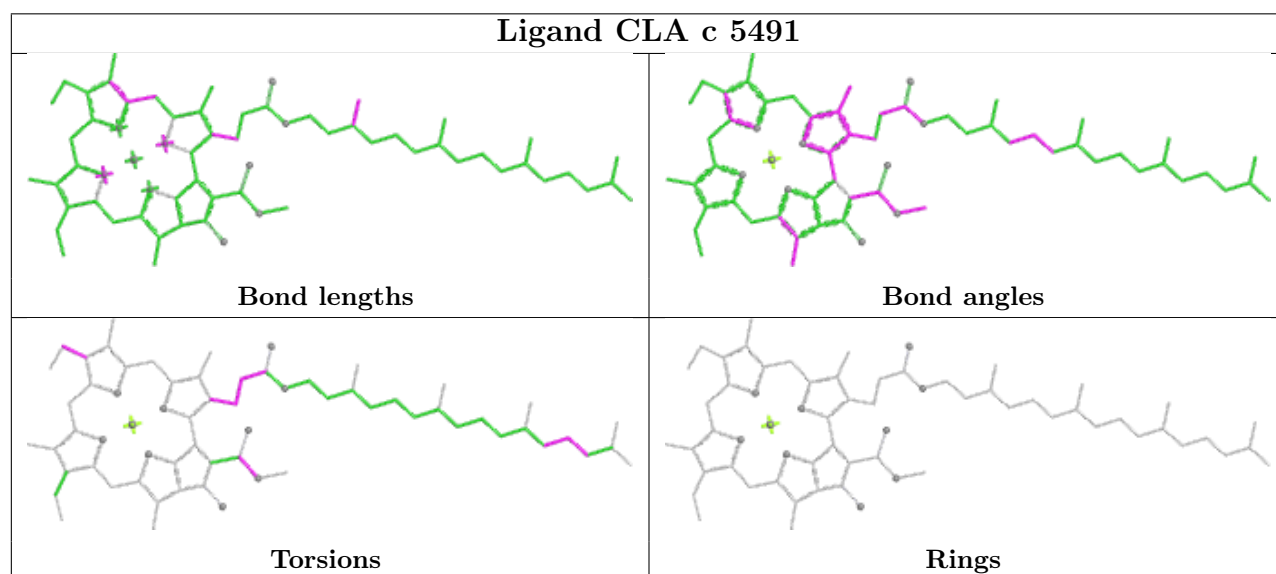
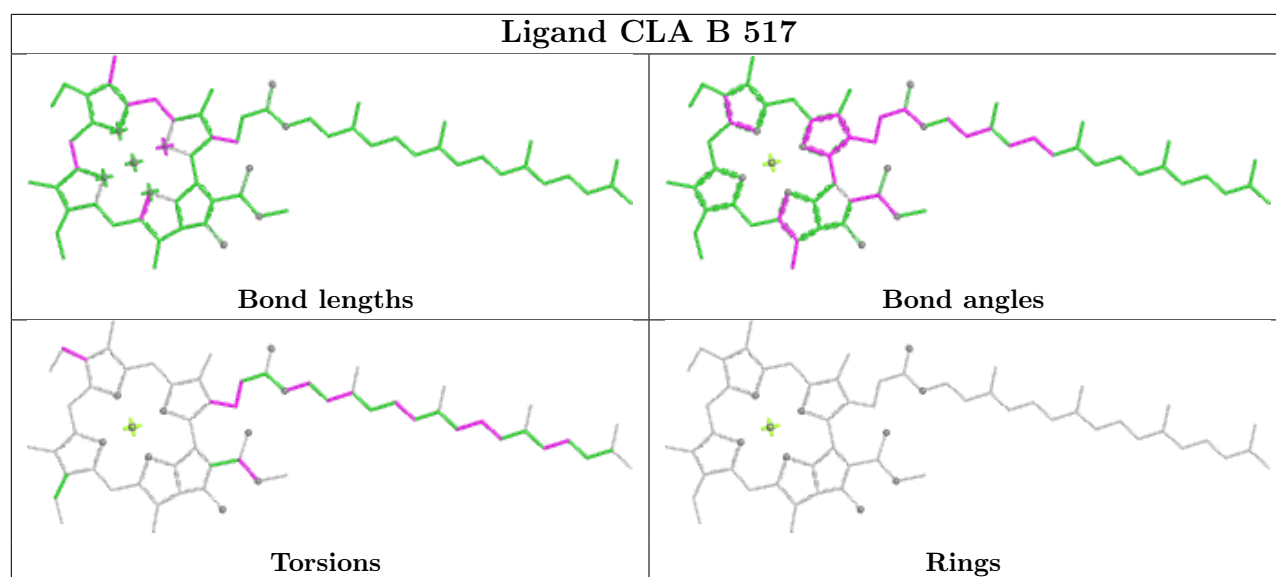




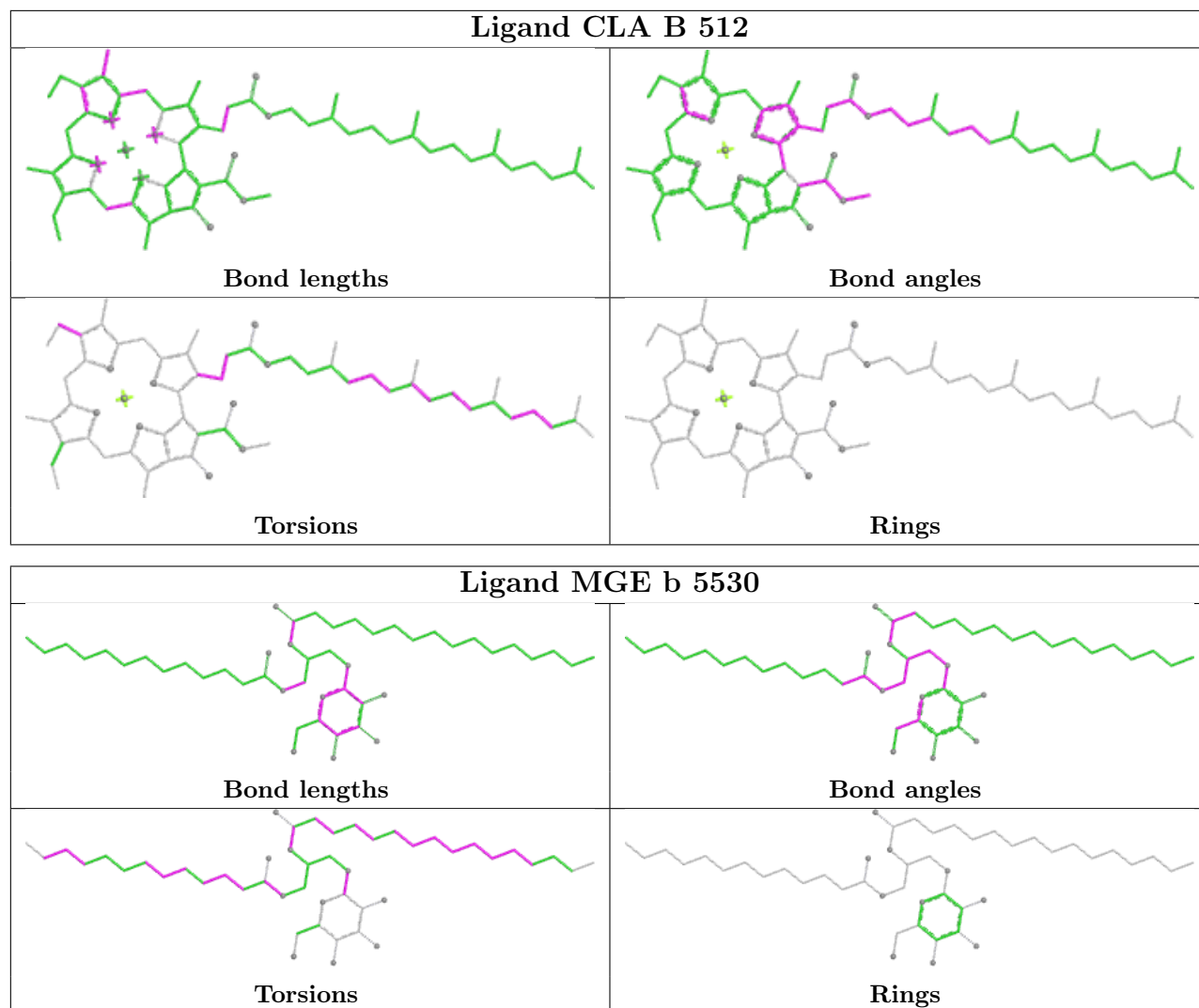
| Ligand BCR b 5528                                                                 |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand BCR c 5506                                                                 |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

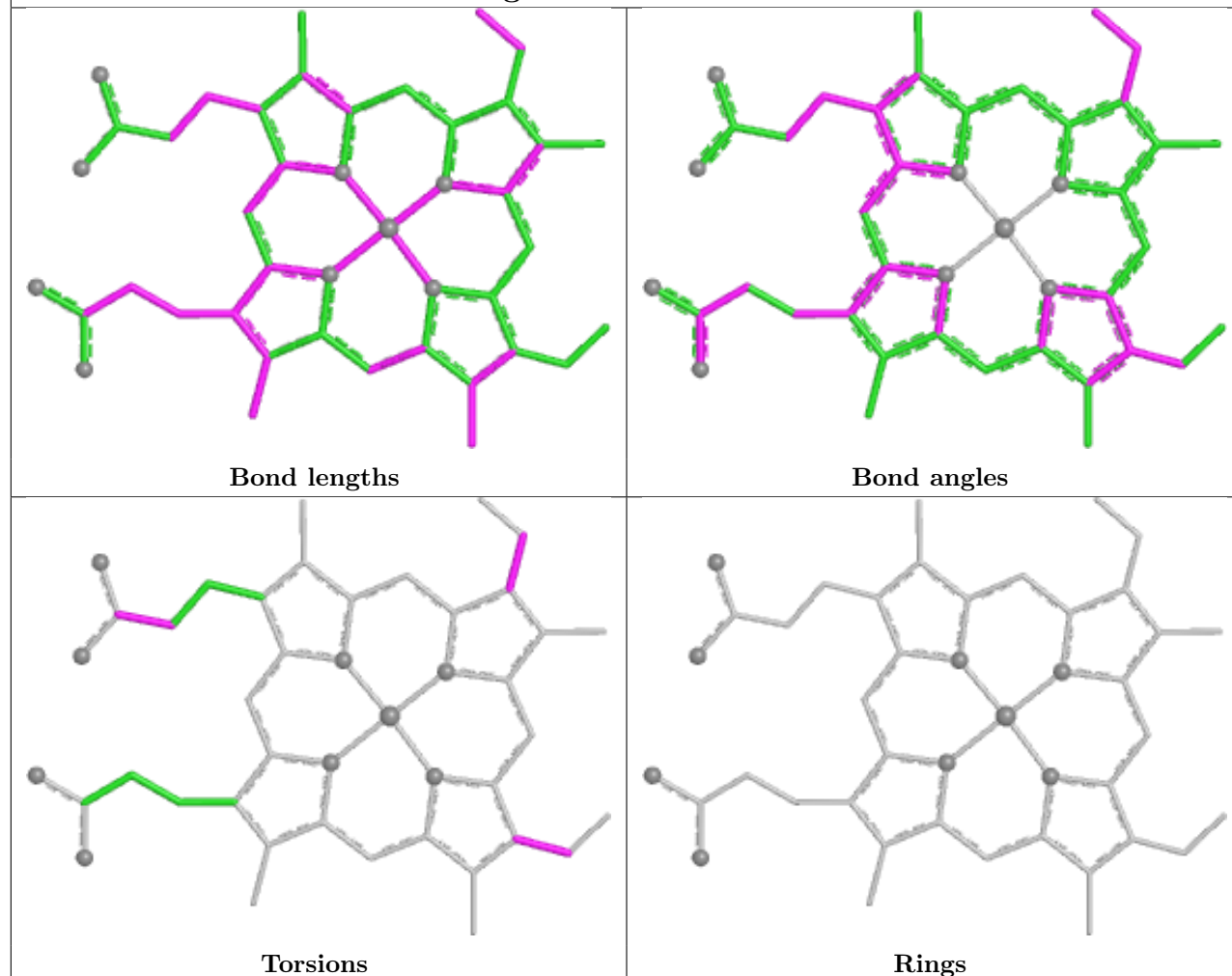
| Ligand DGD H 208                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |



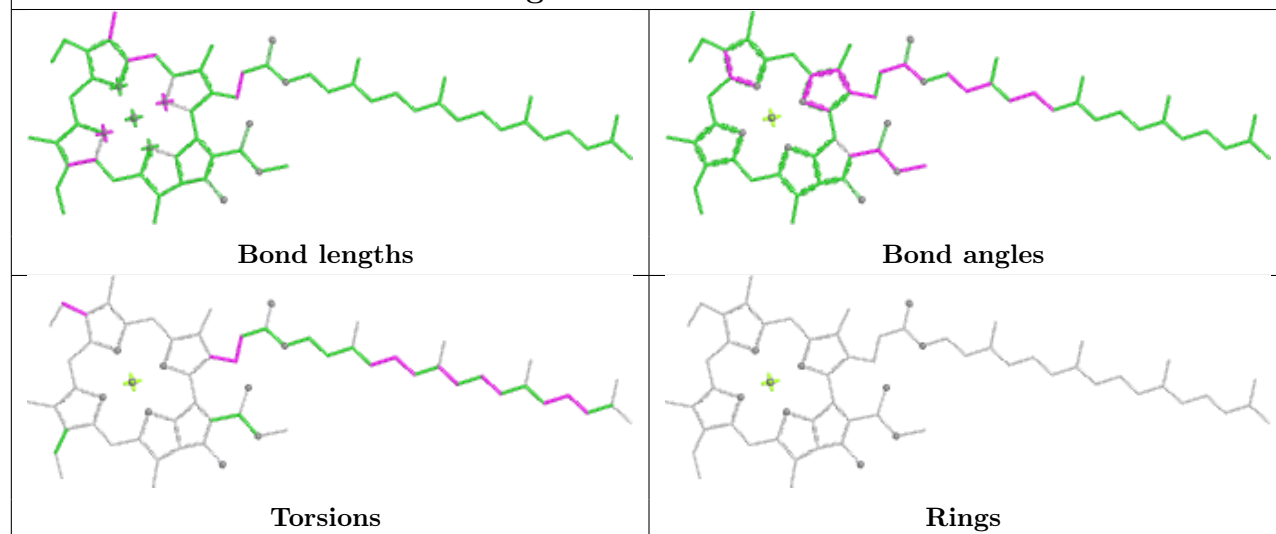


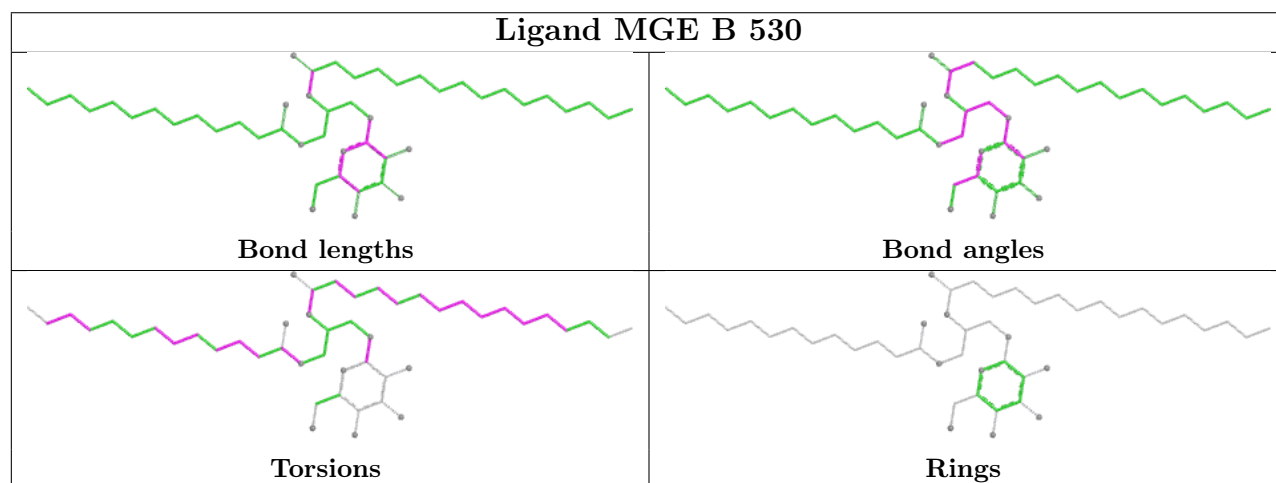
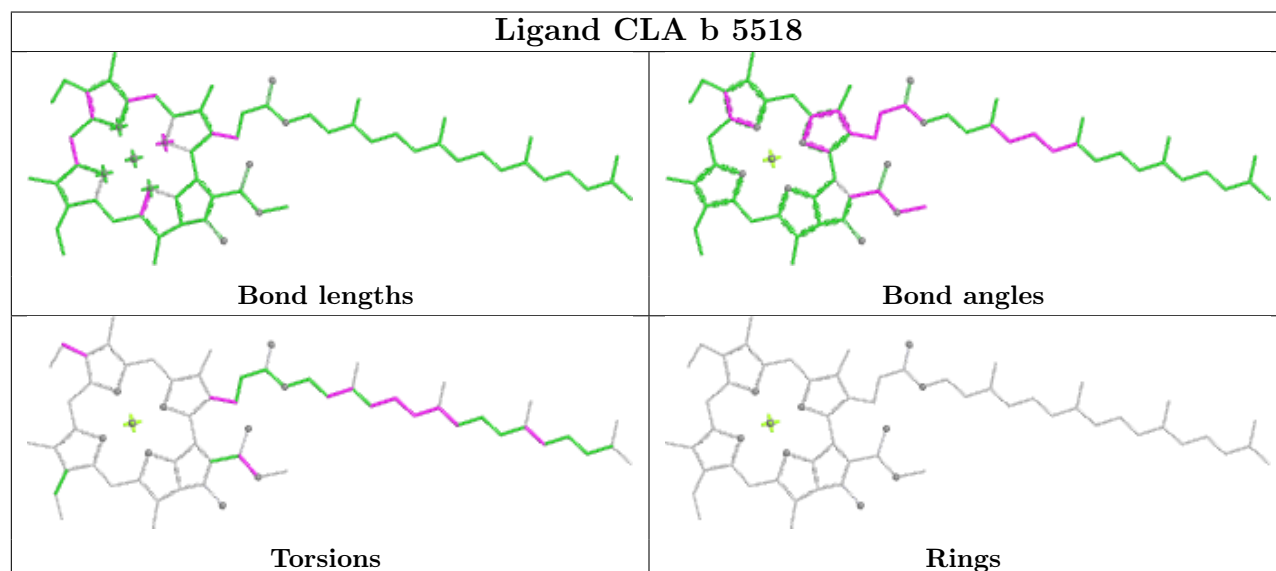
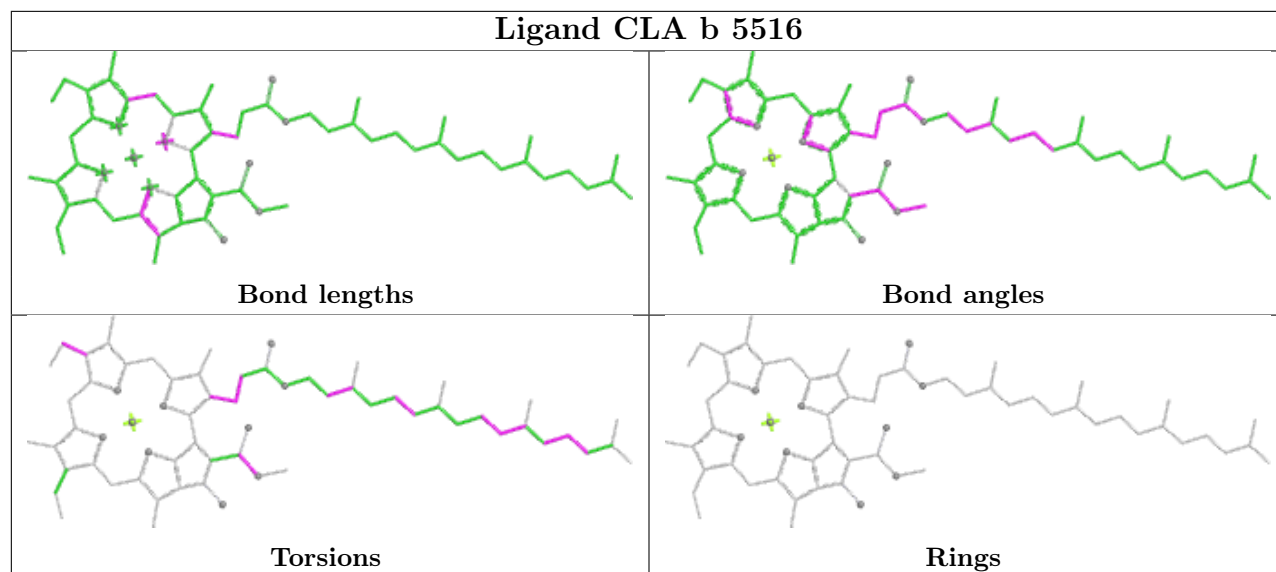


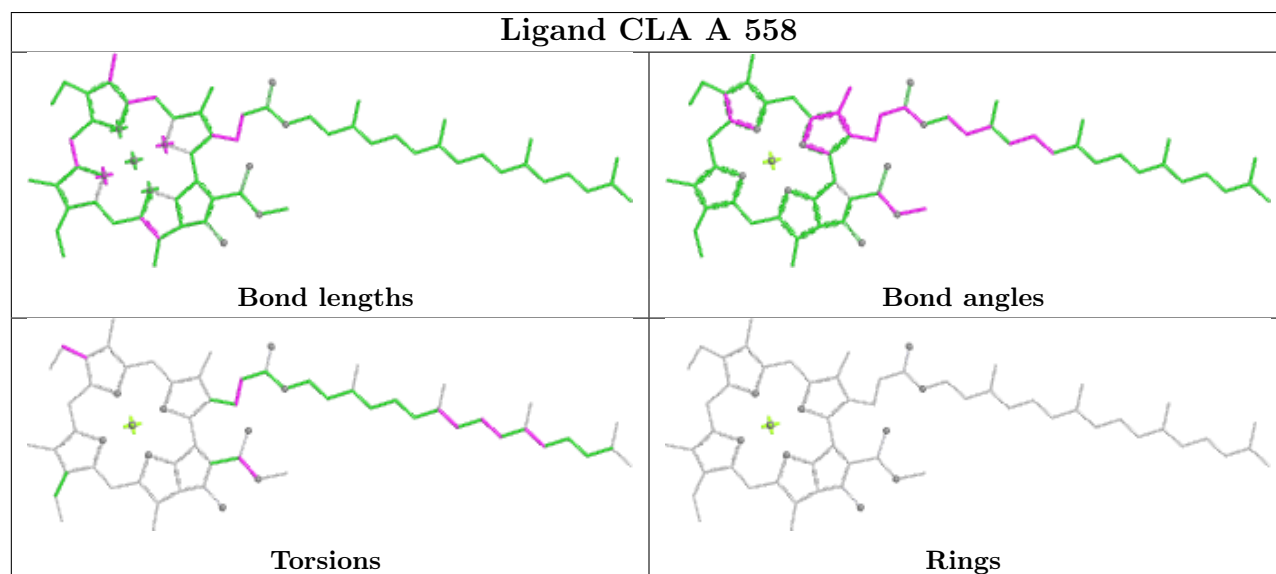
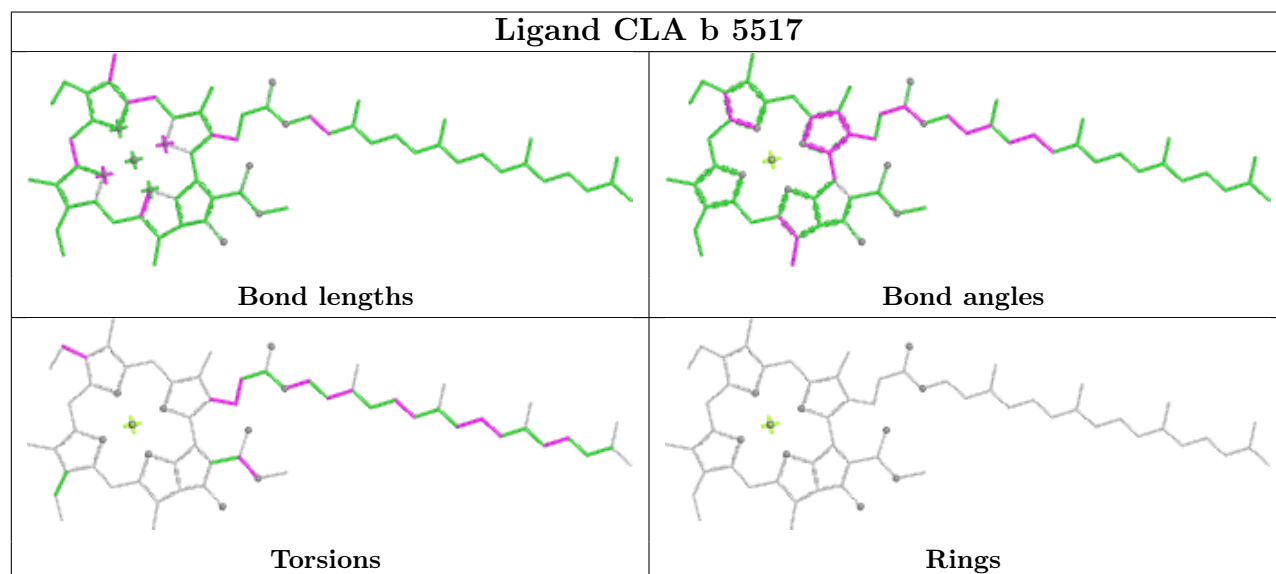
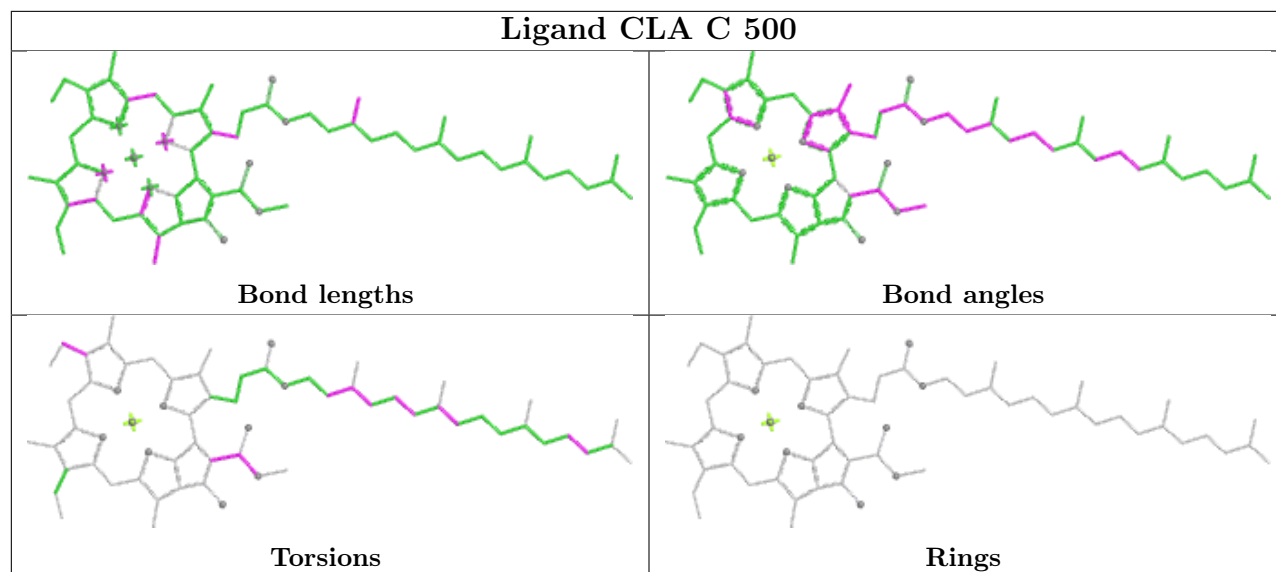
## Ligand HEM v 5552

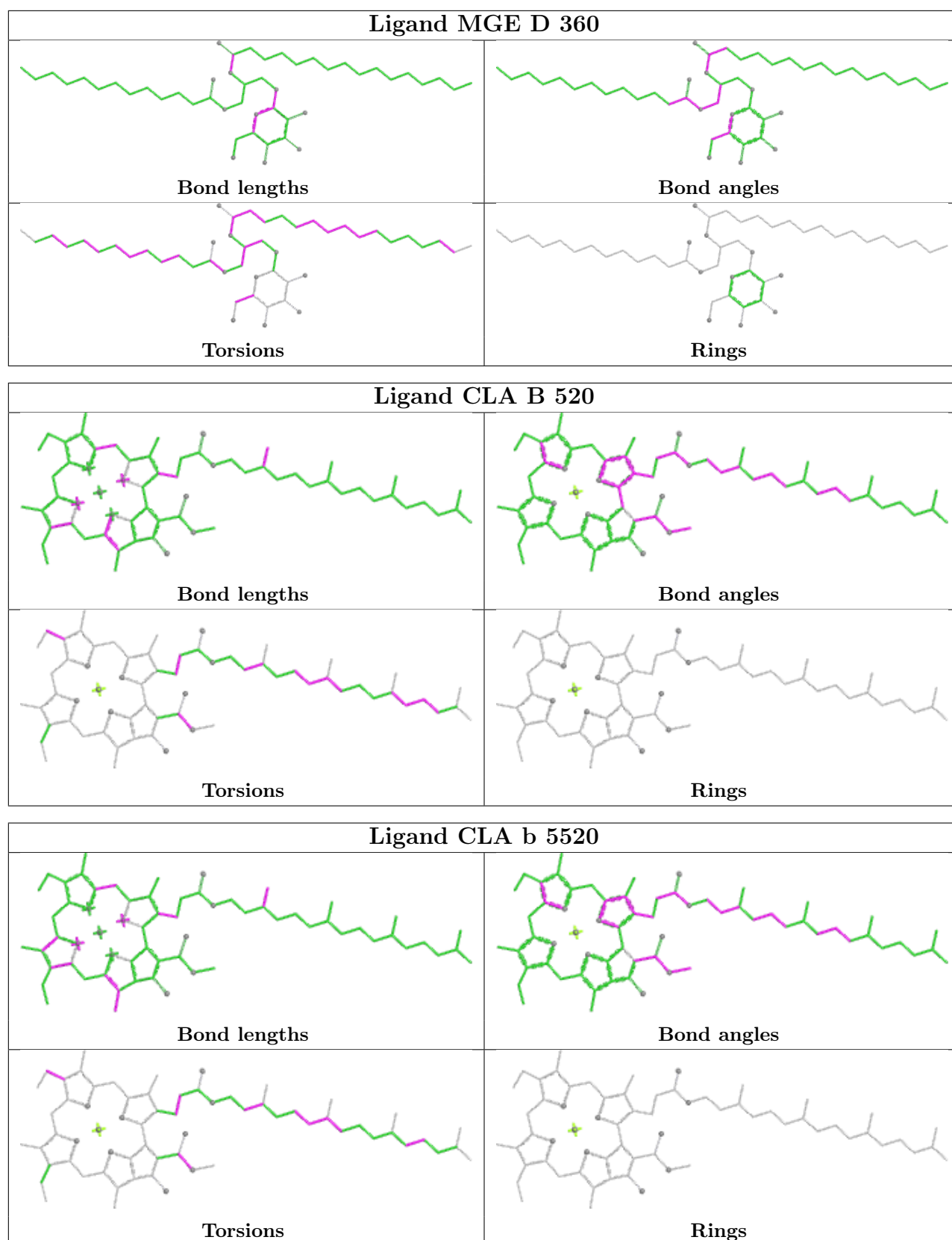


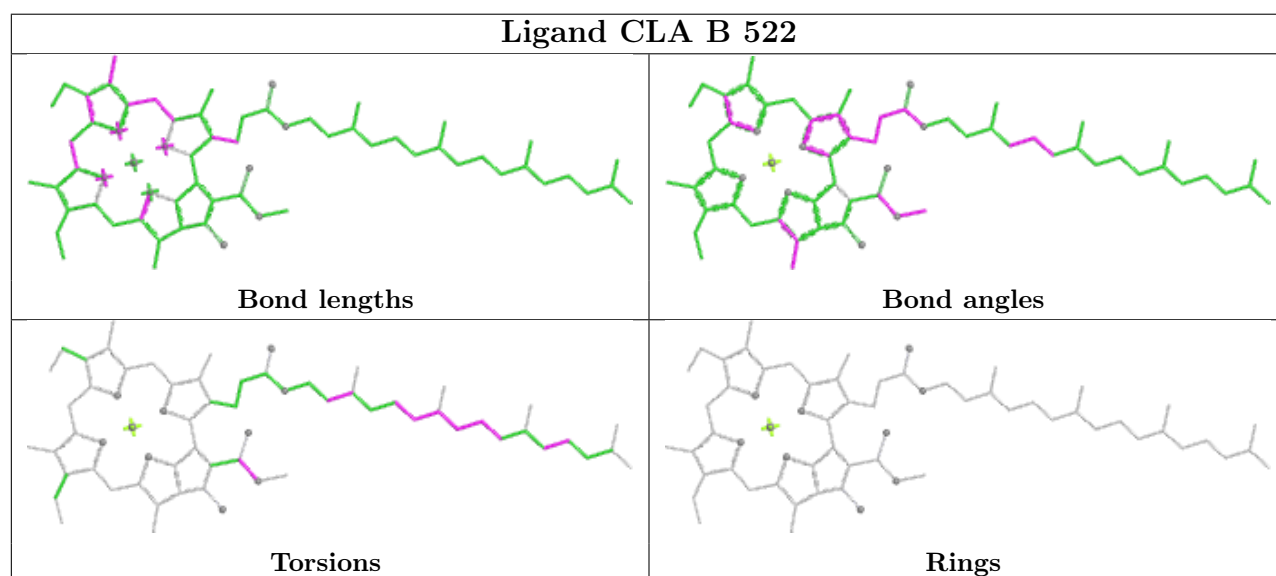
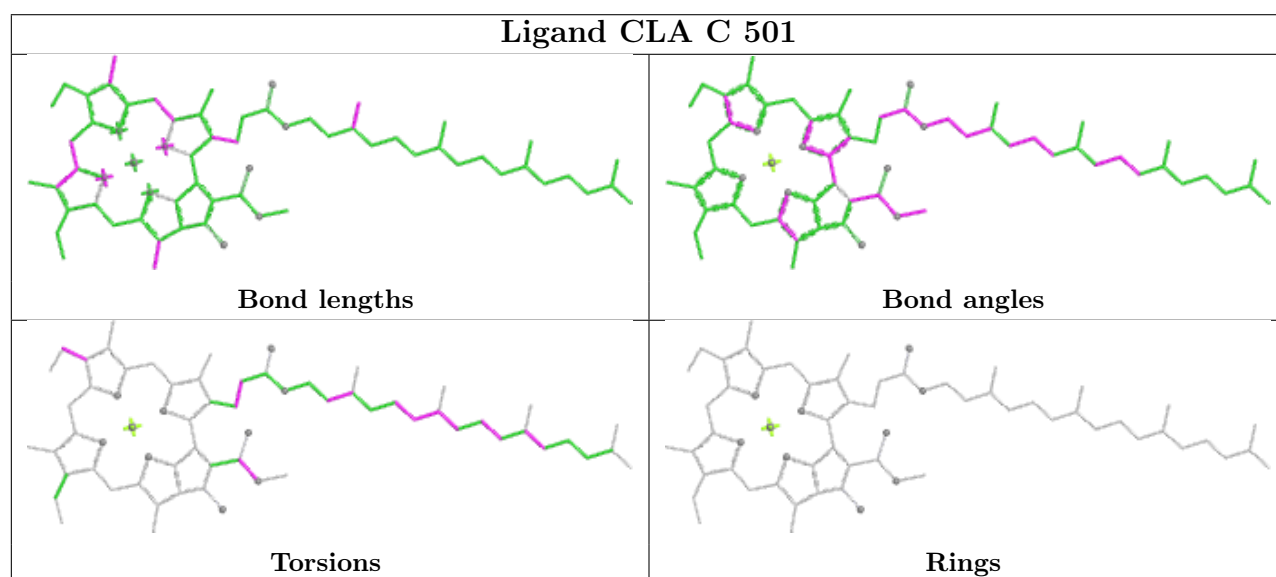
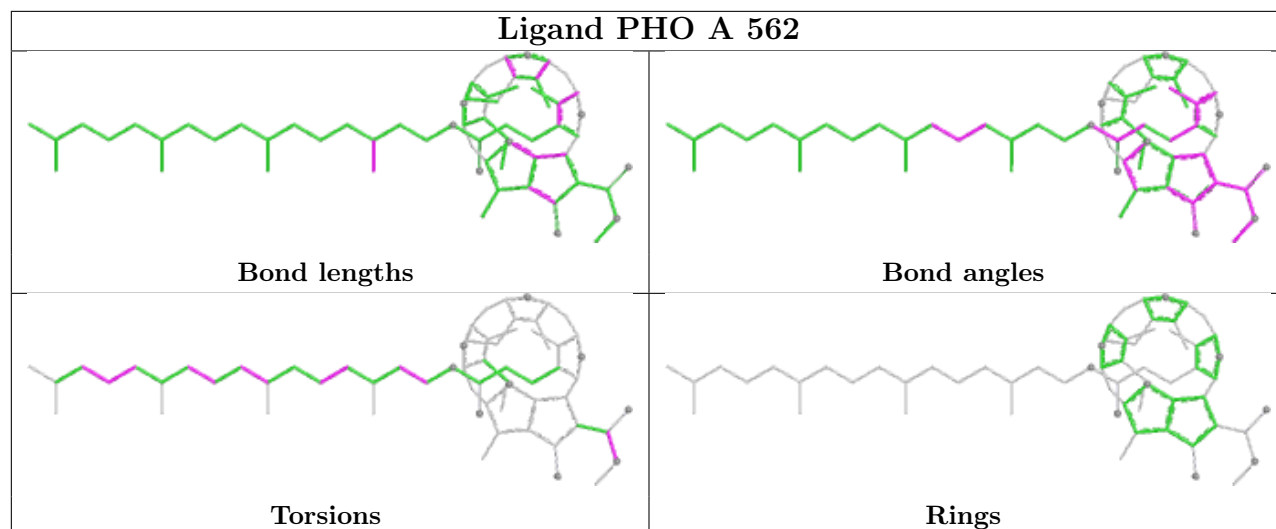
## Ligand CLA b 5512

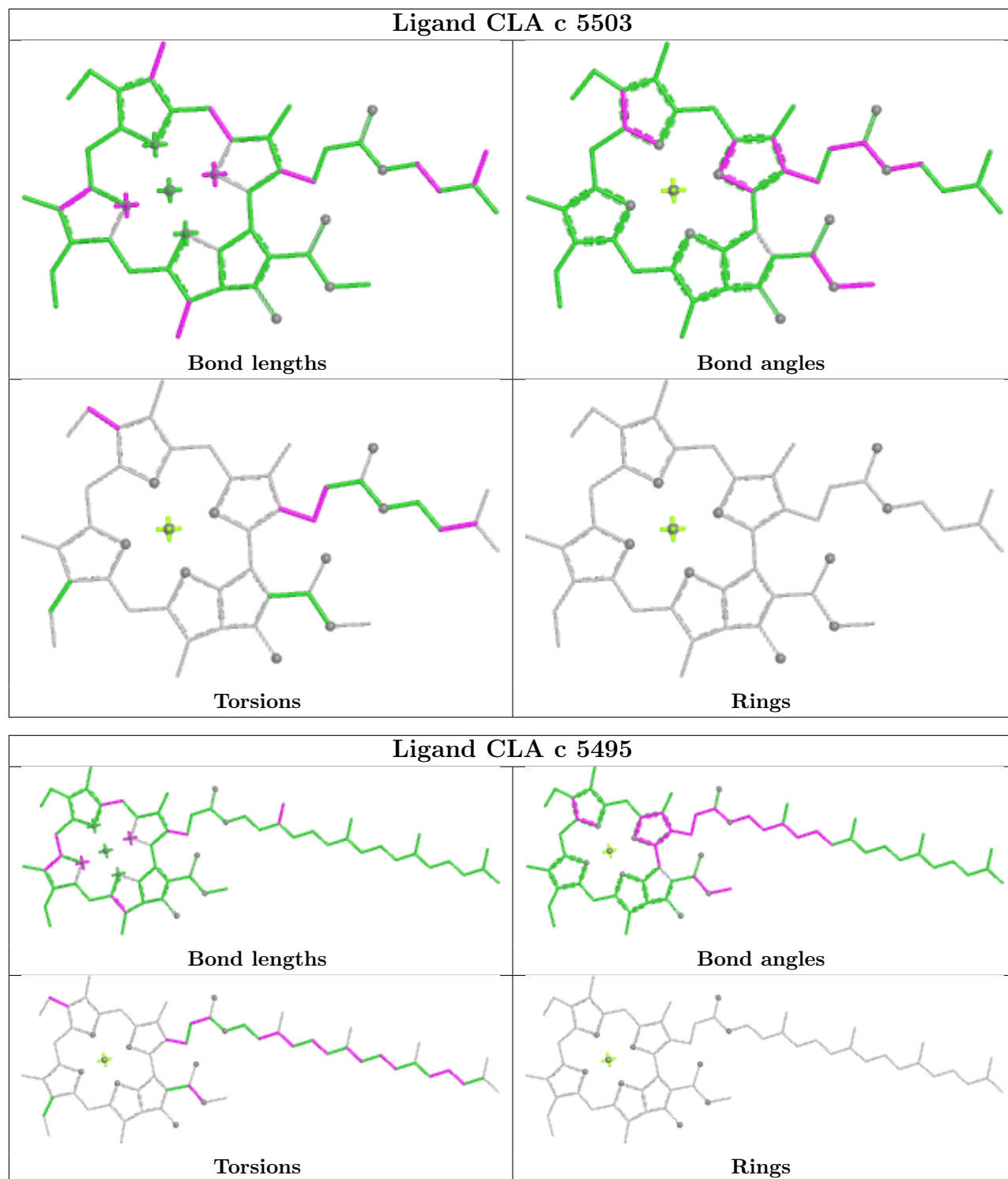




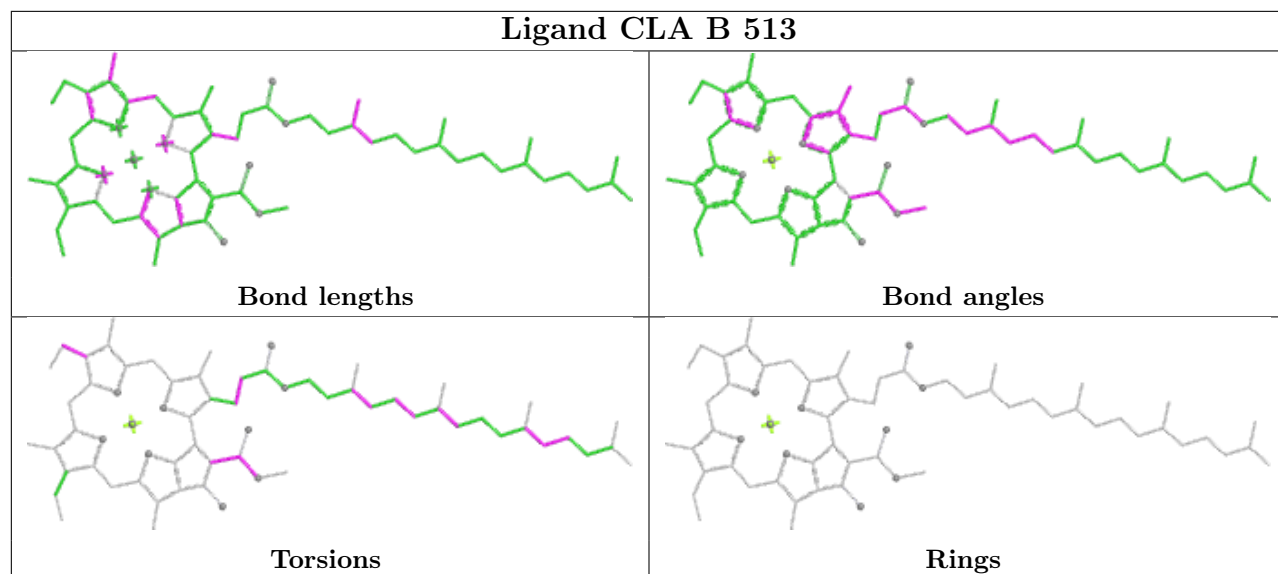




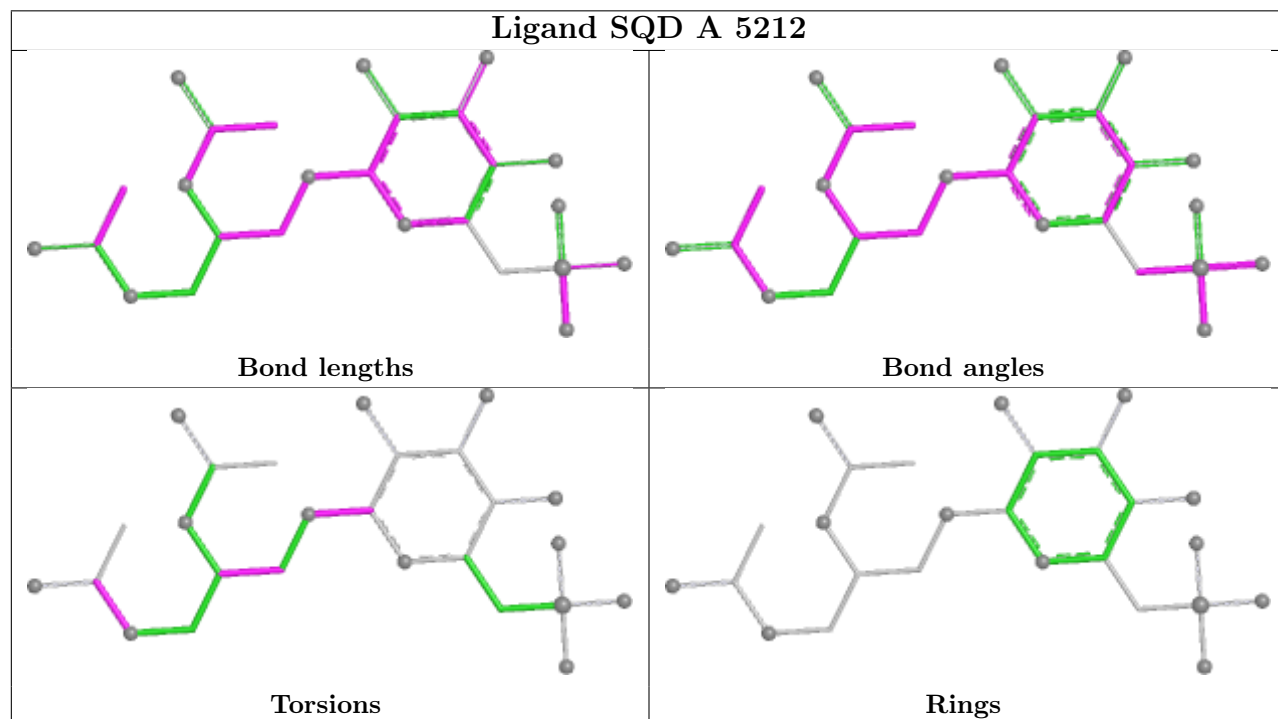




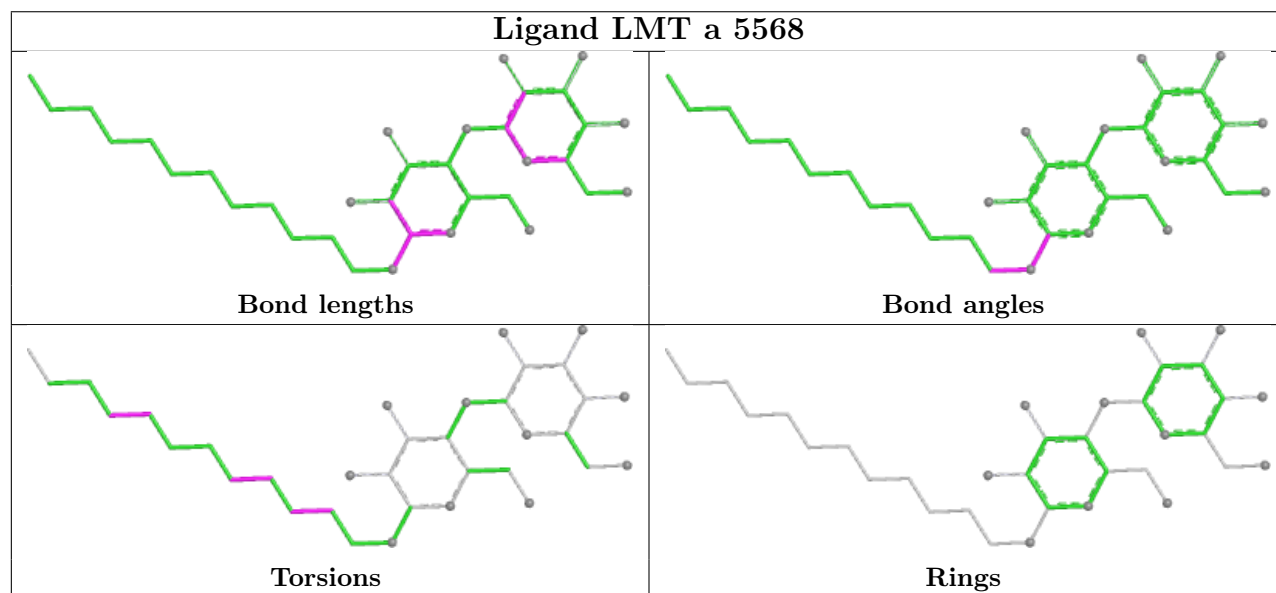
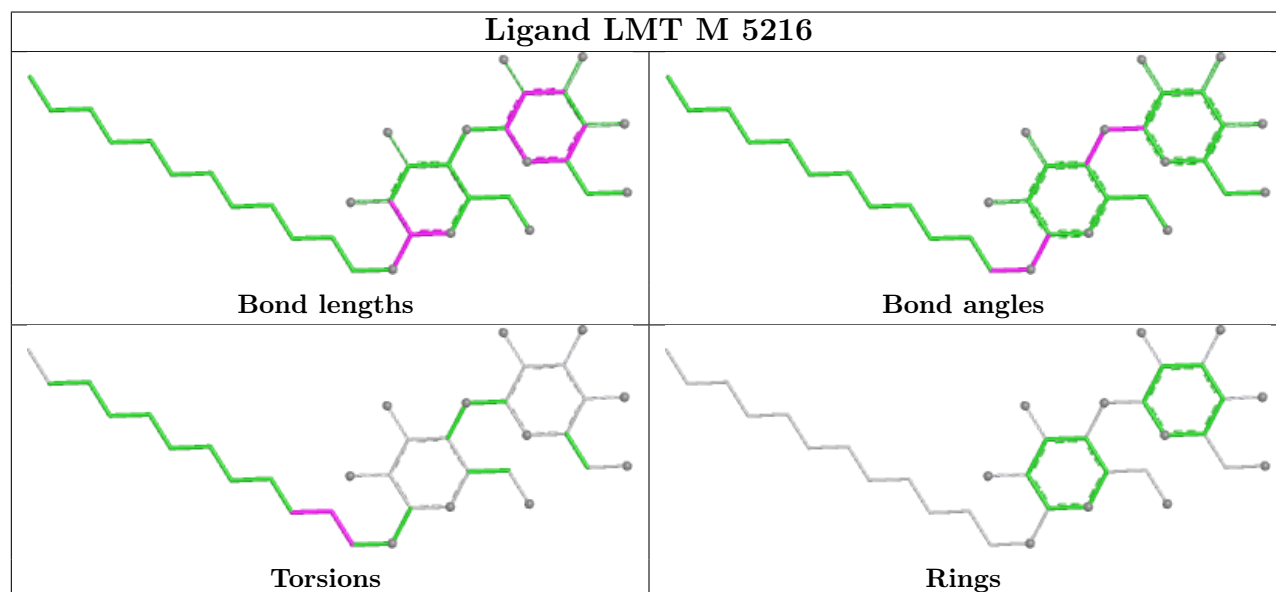
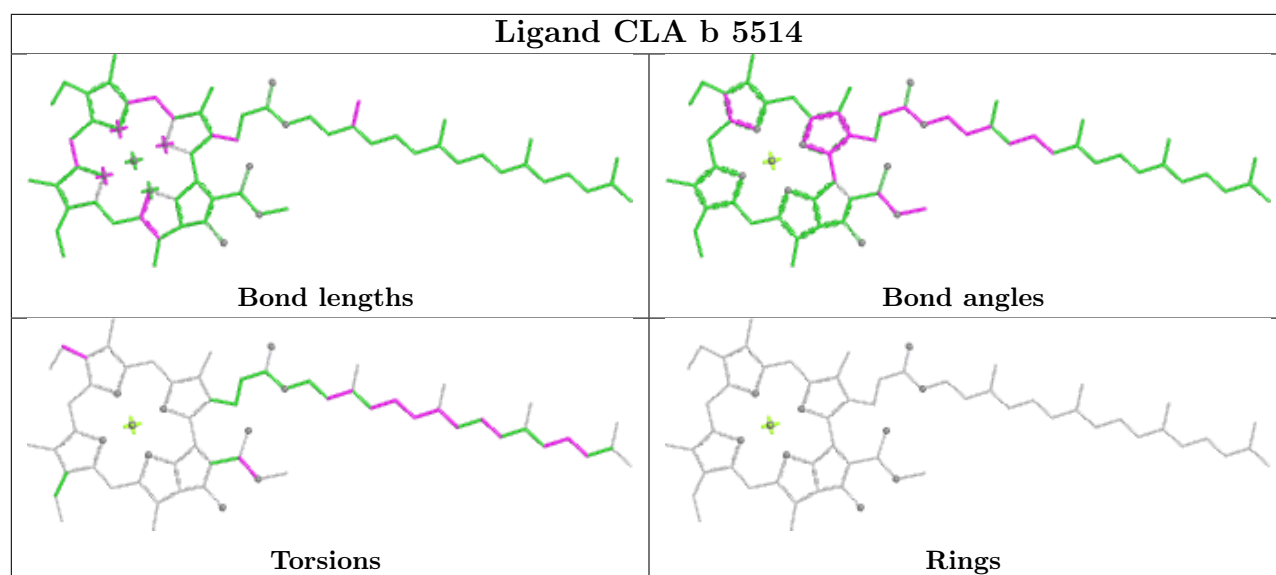
## Ligand CLA B 513

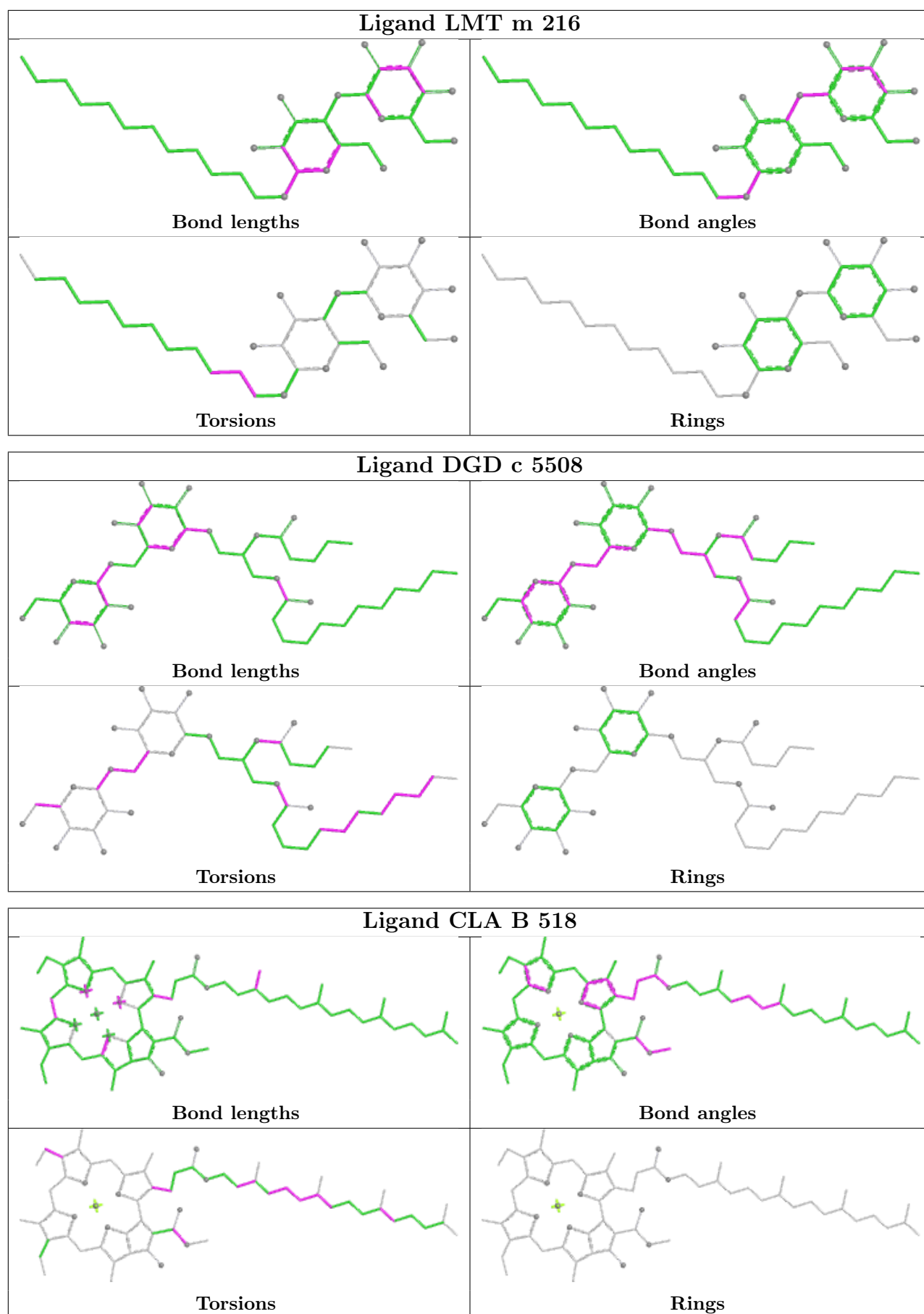


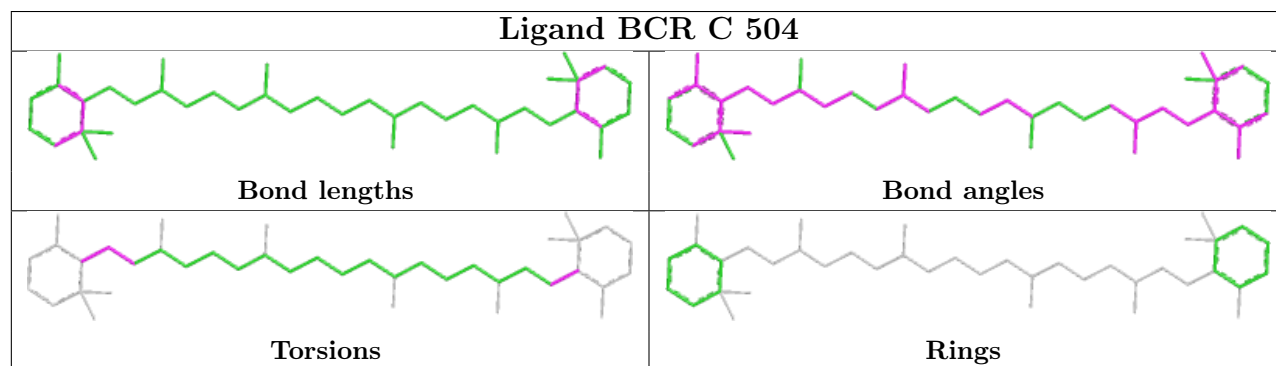
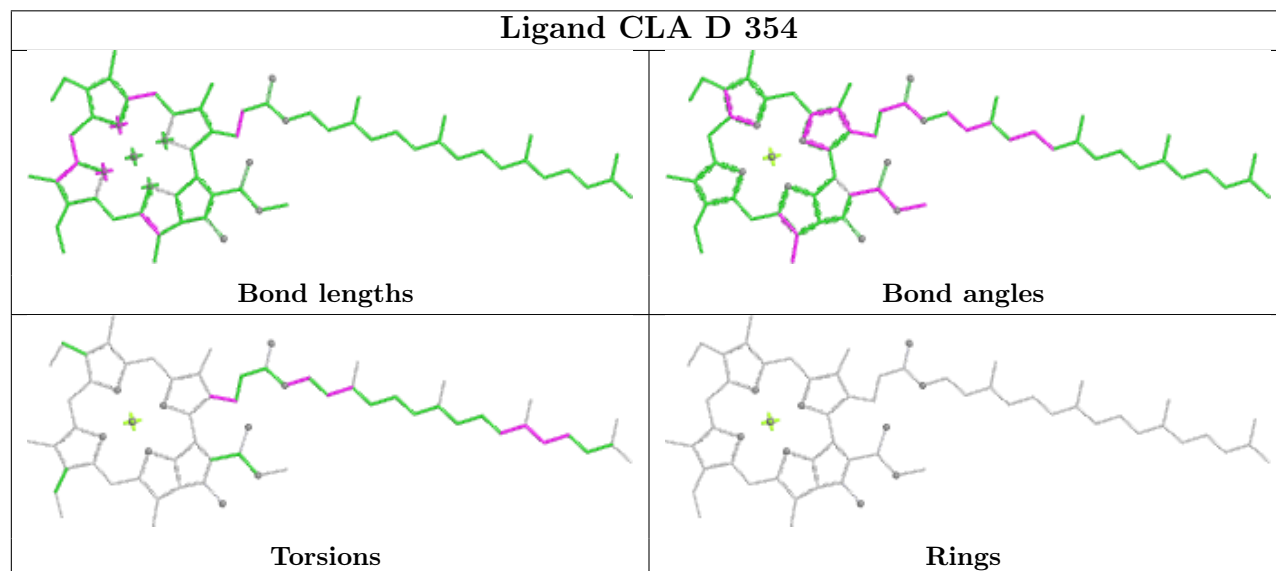
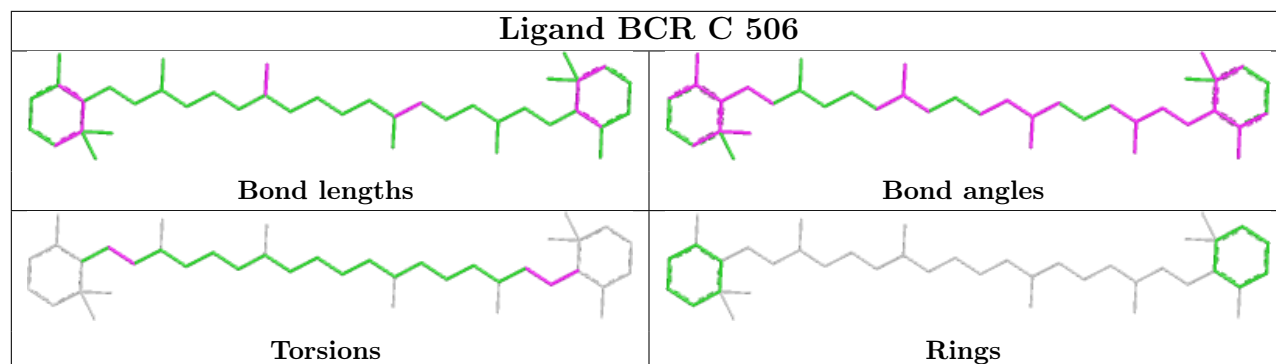
## Ligand SQD A 5212

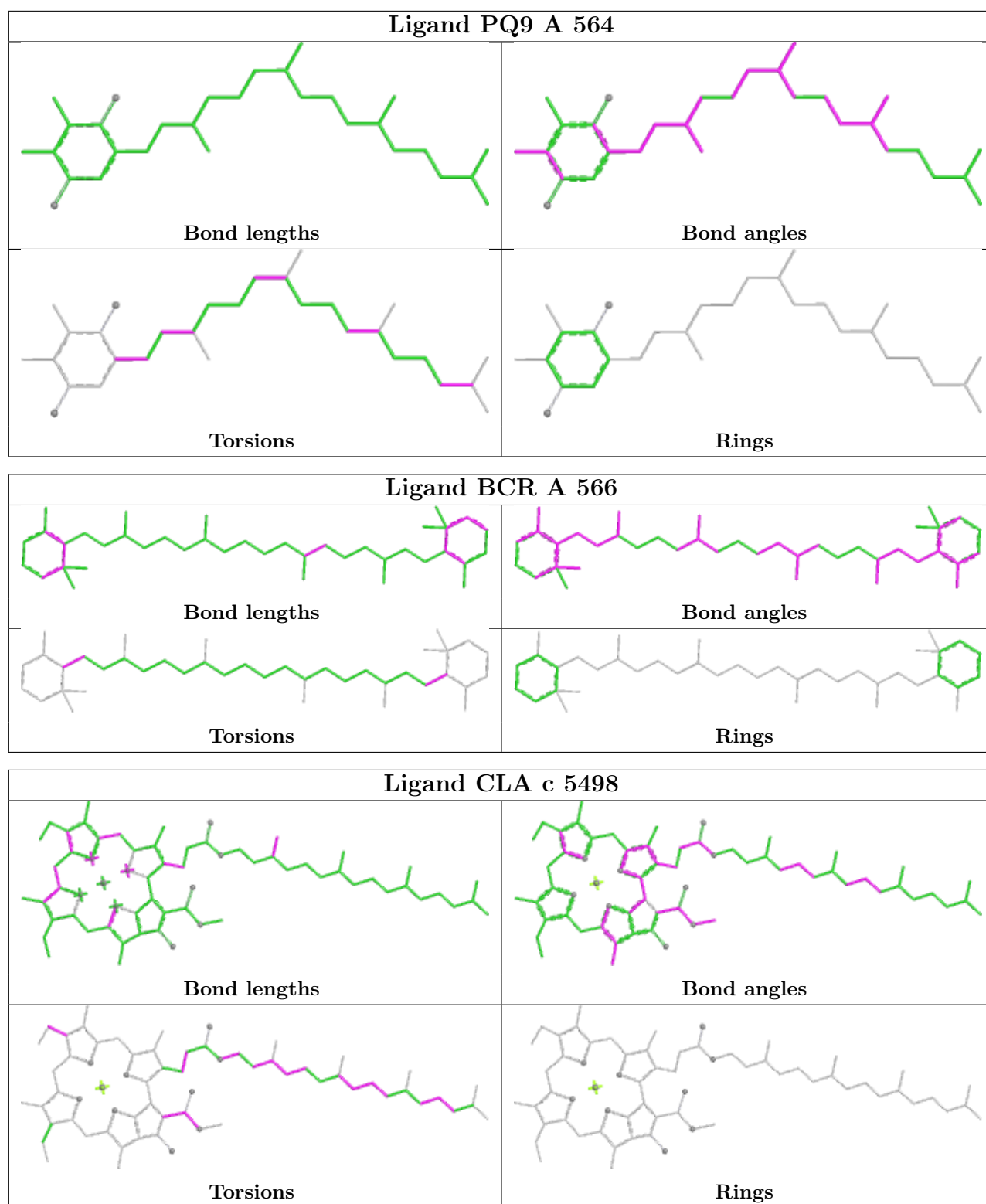


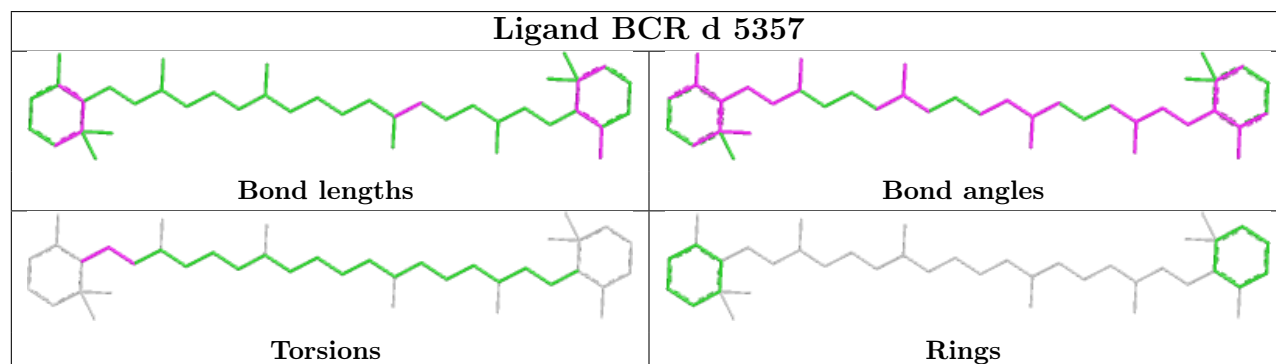
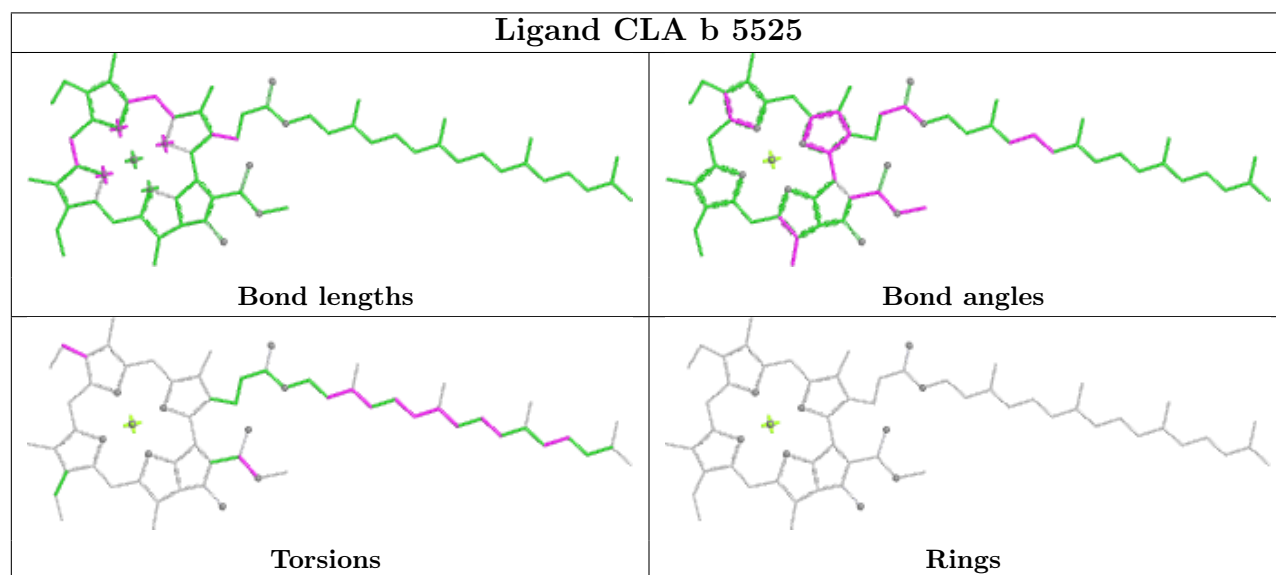
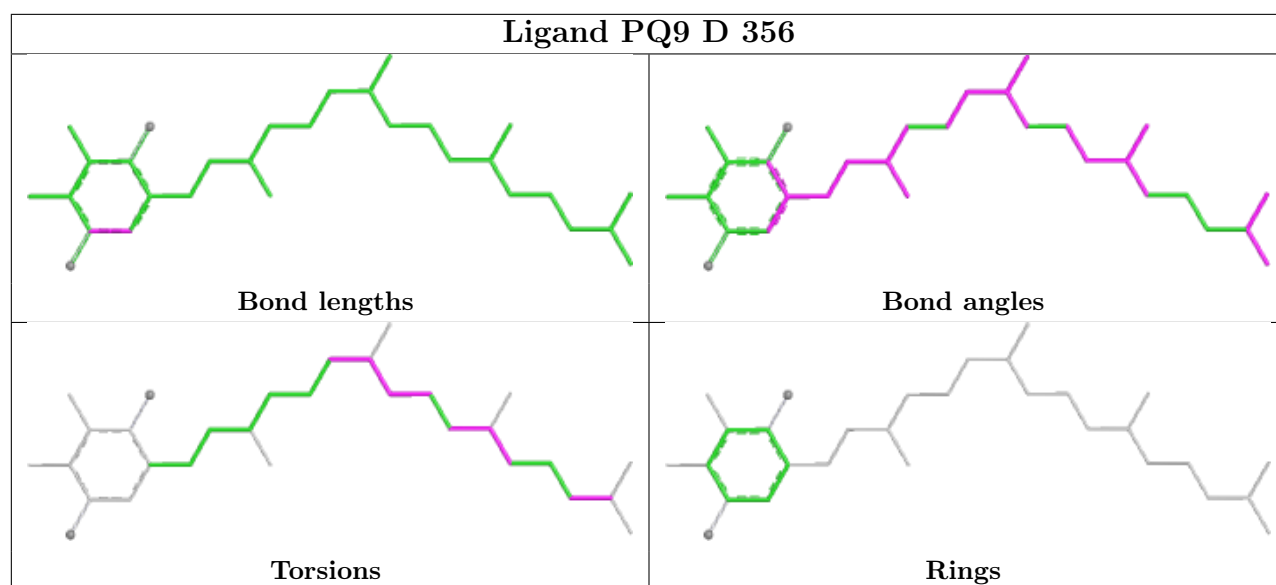


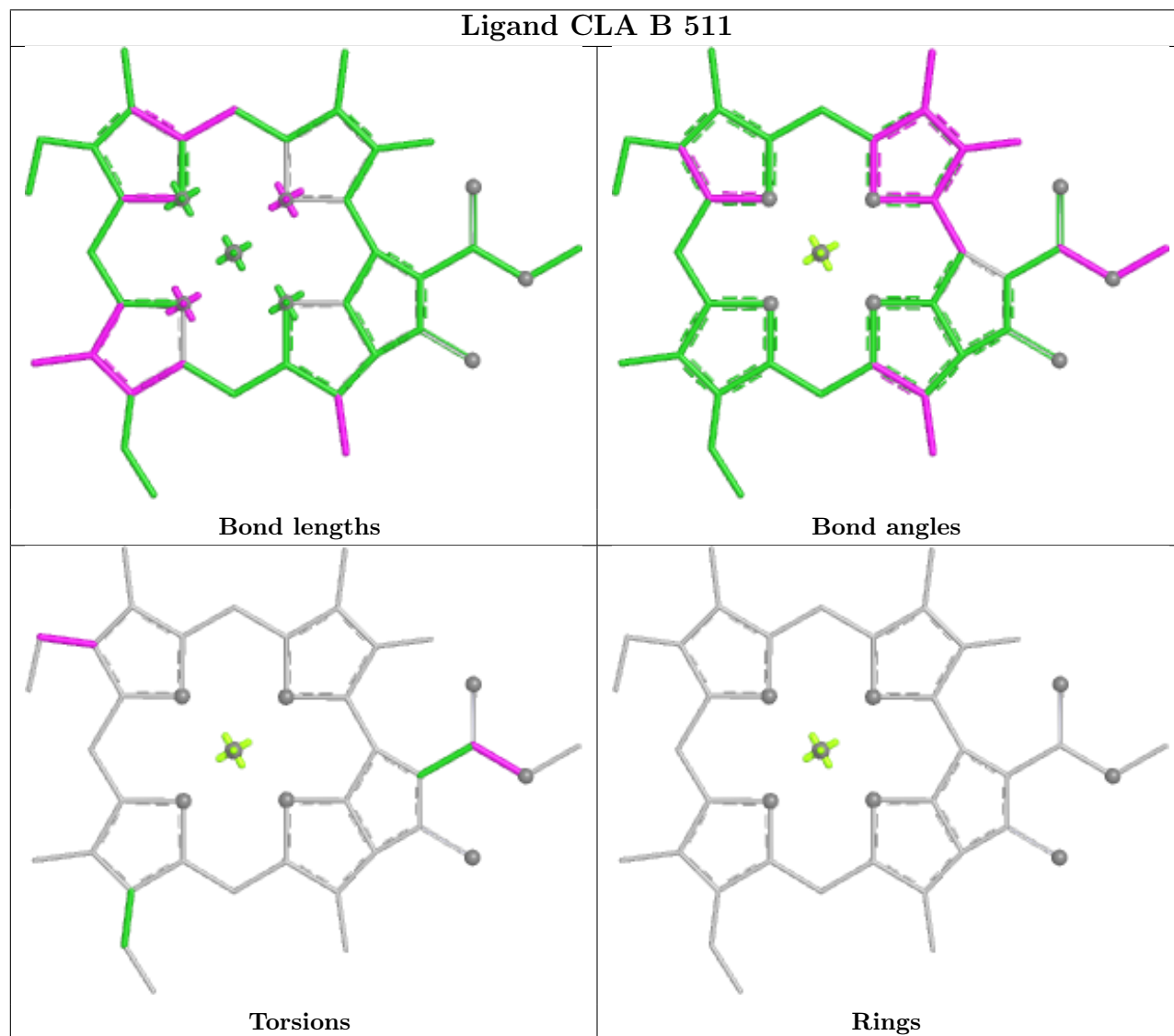
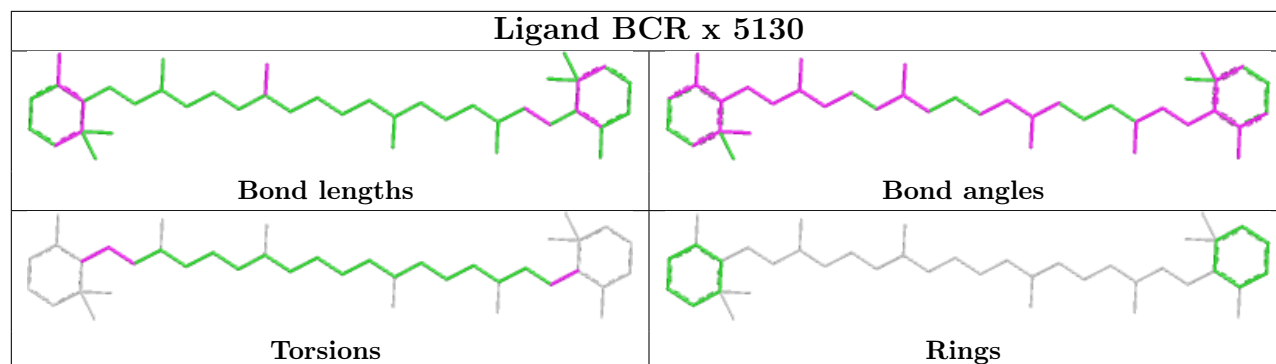




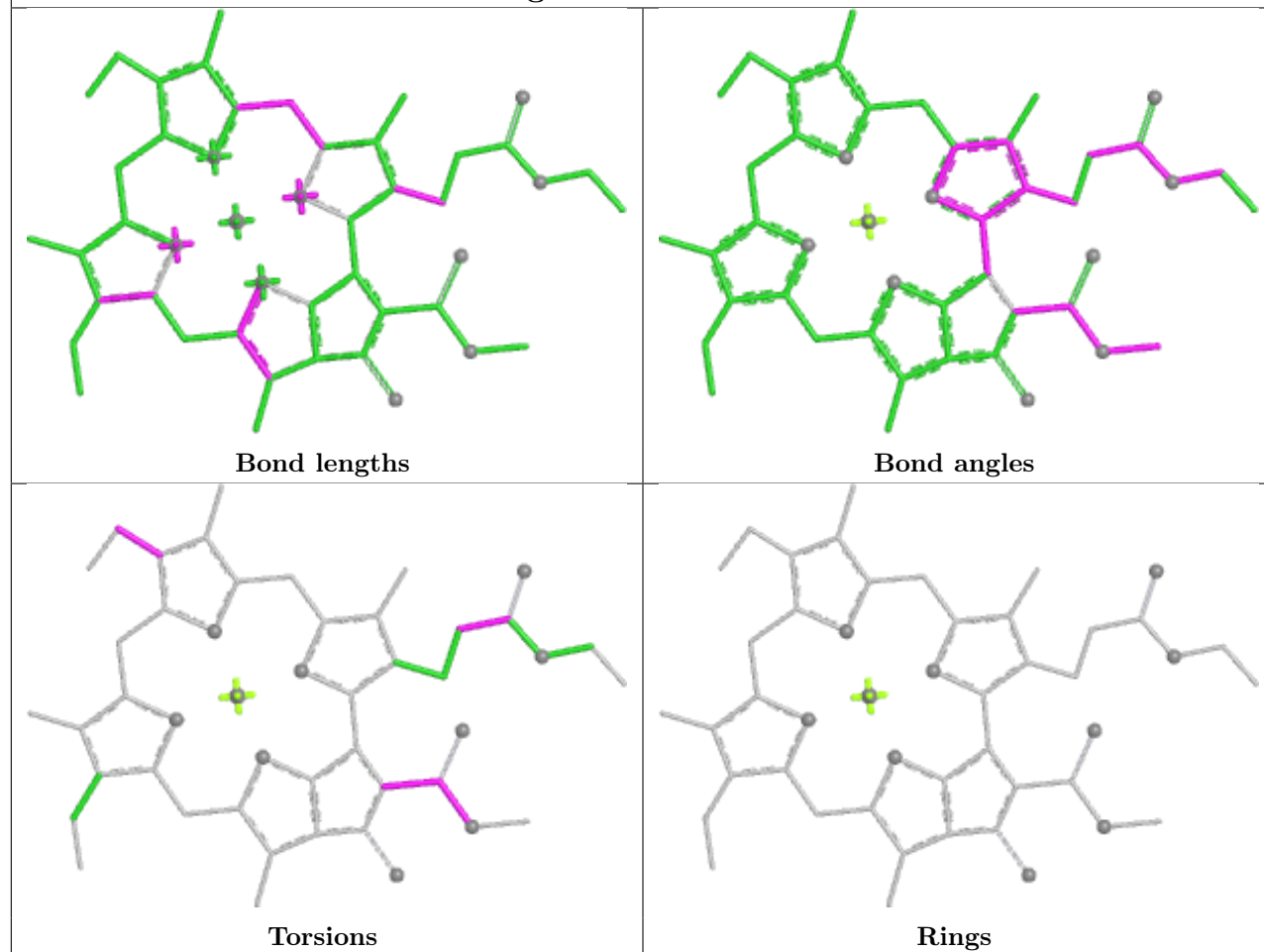




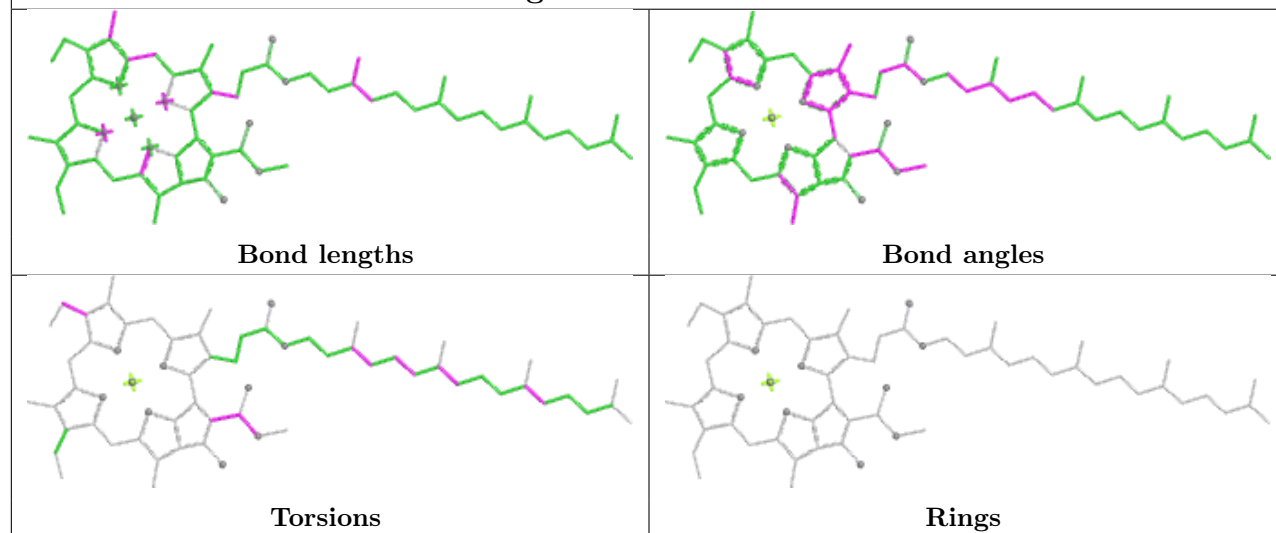


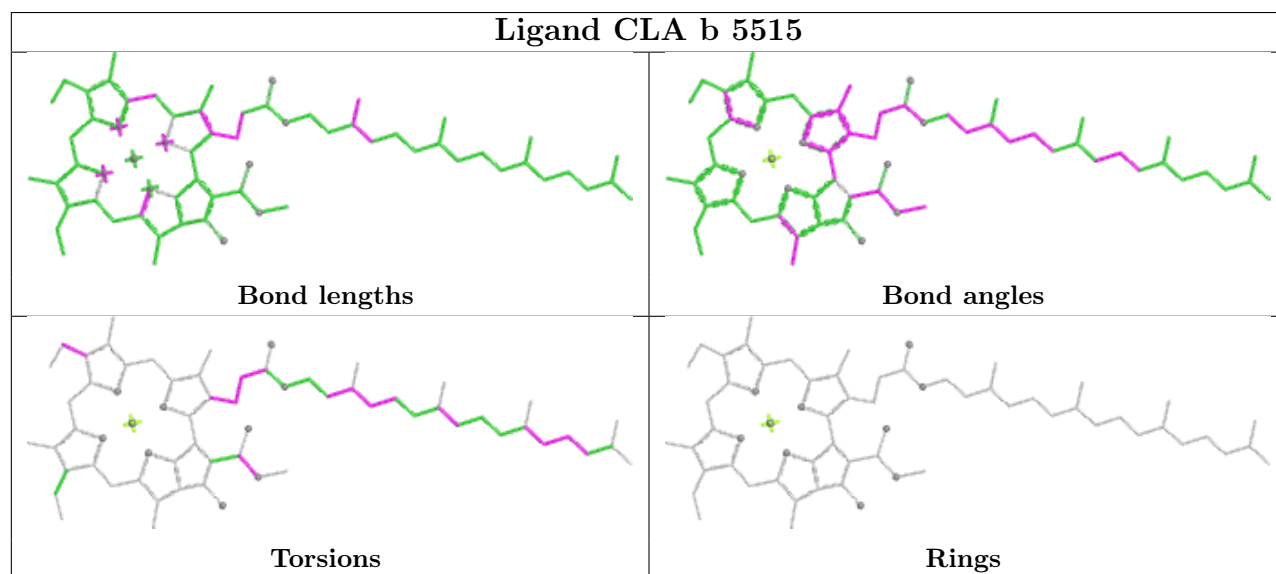
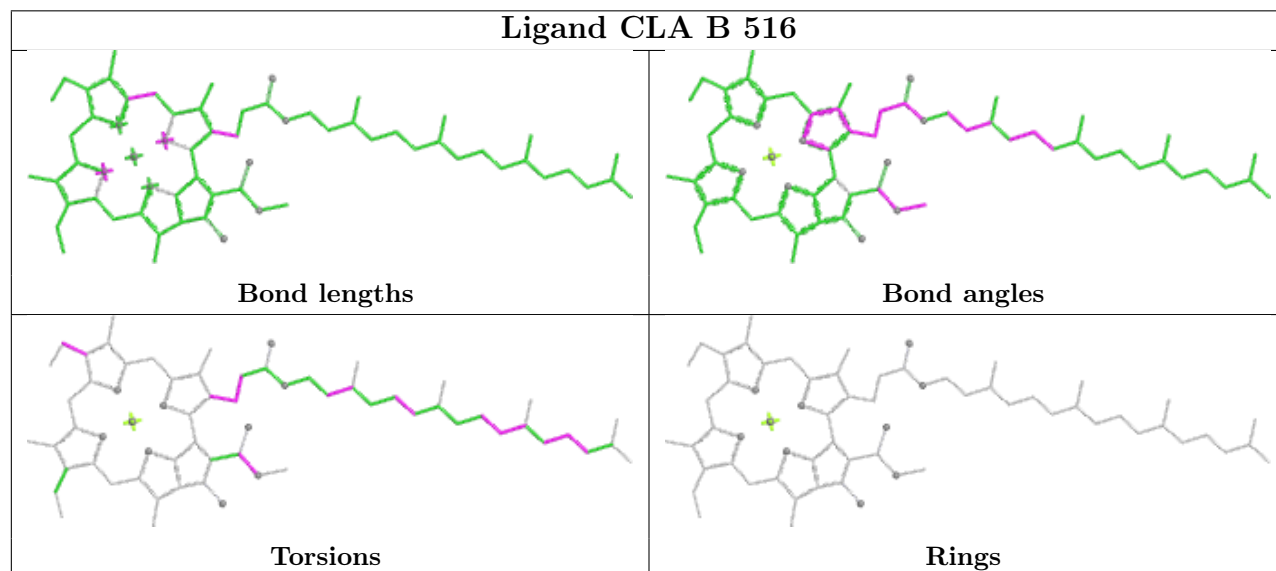
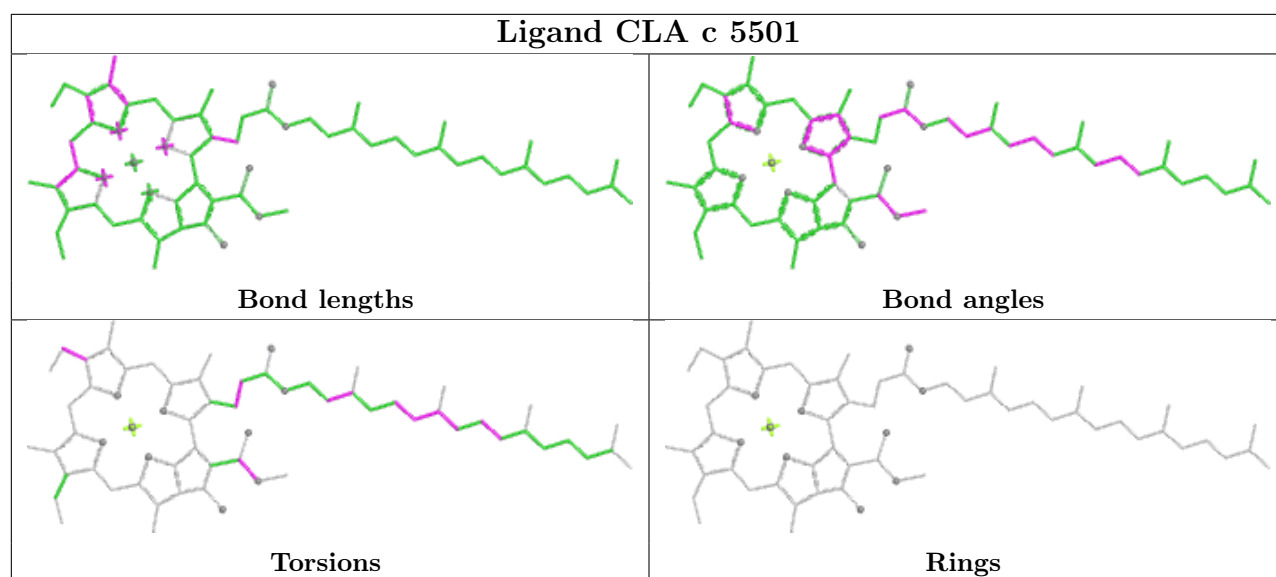


## Ligand CLA C 499

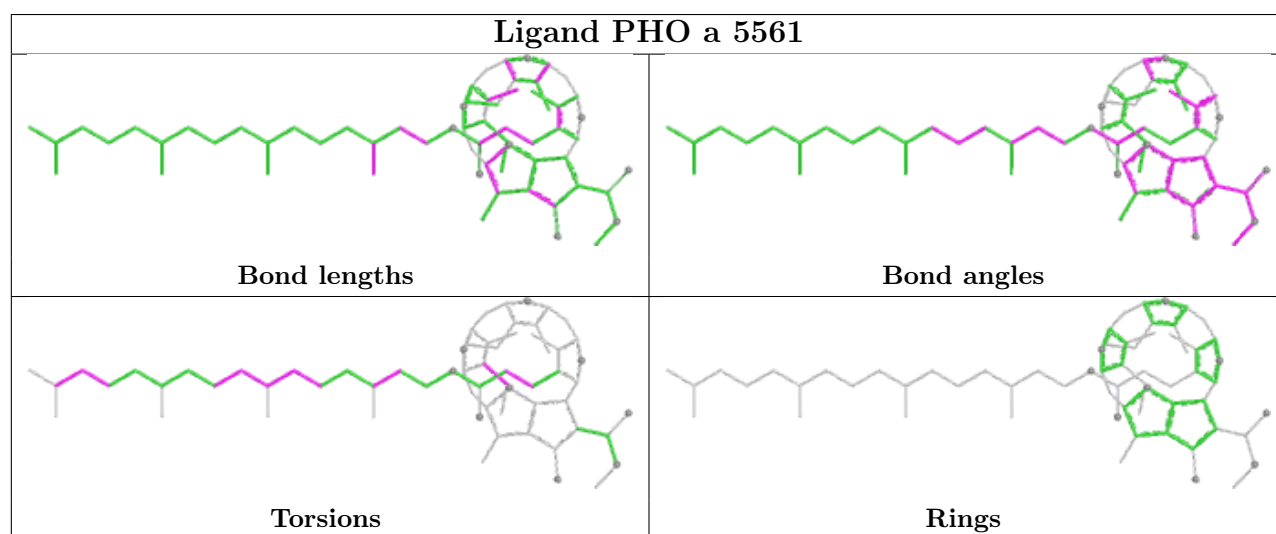
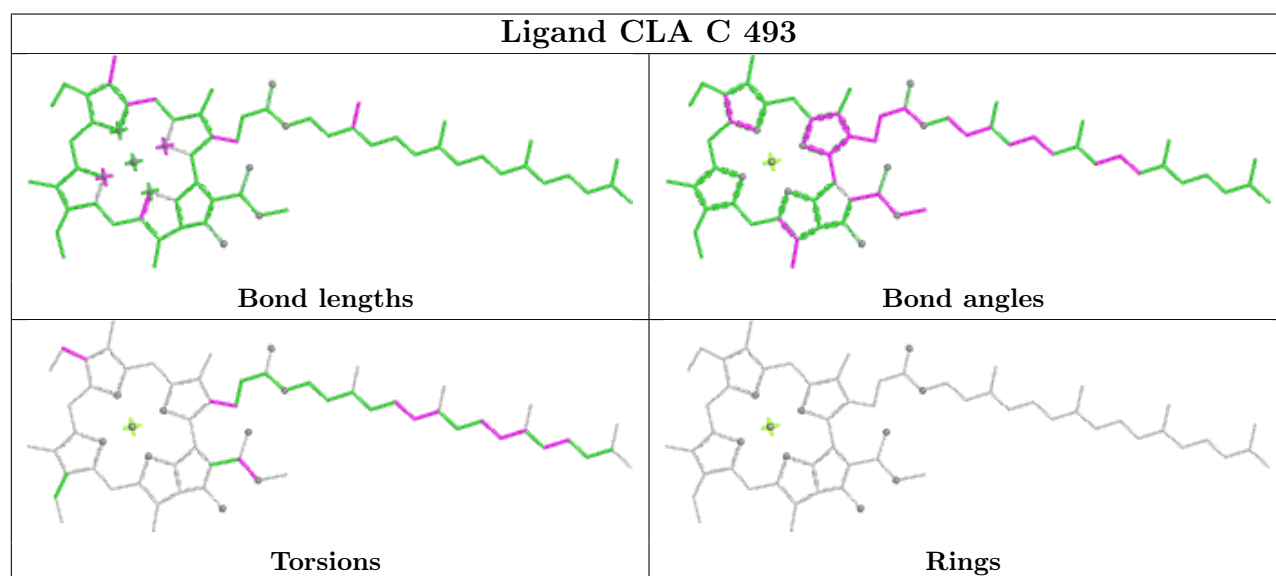
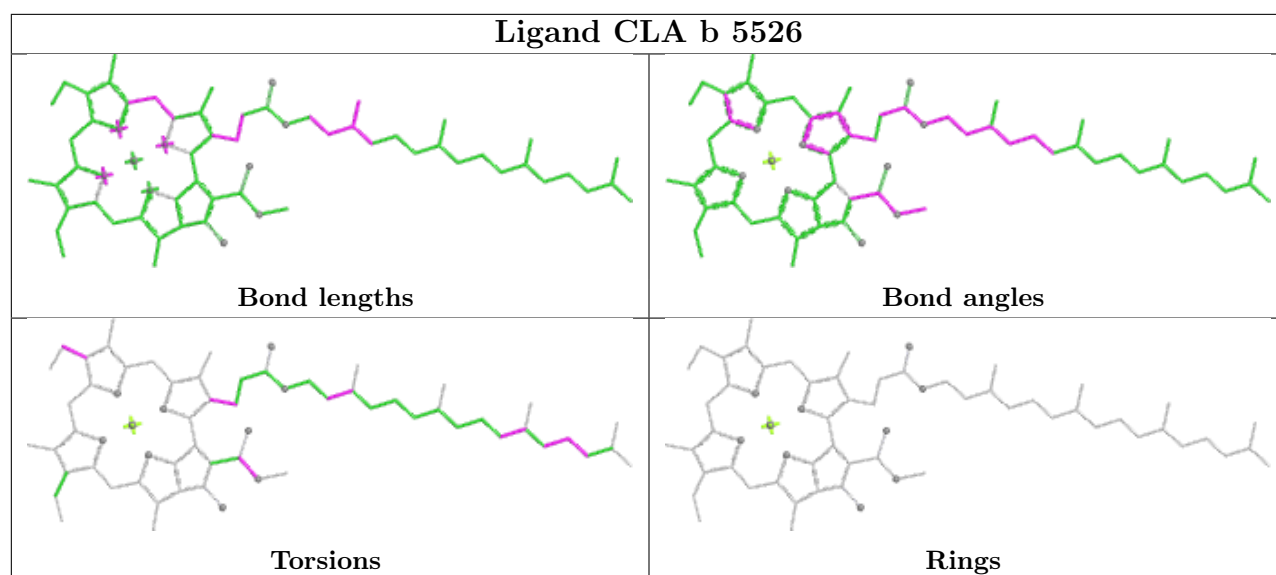


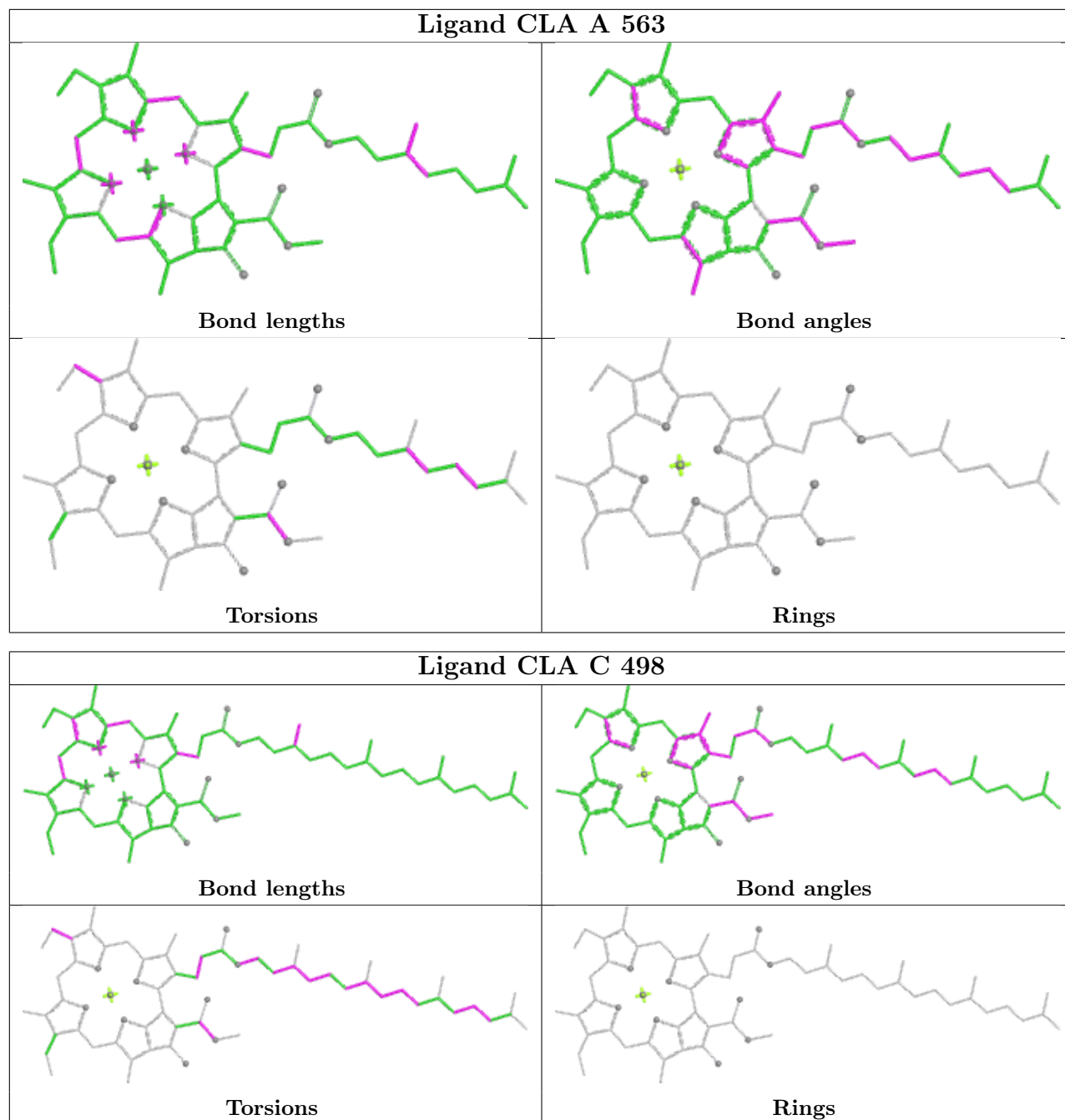
## Ligand CLA b 5513

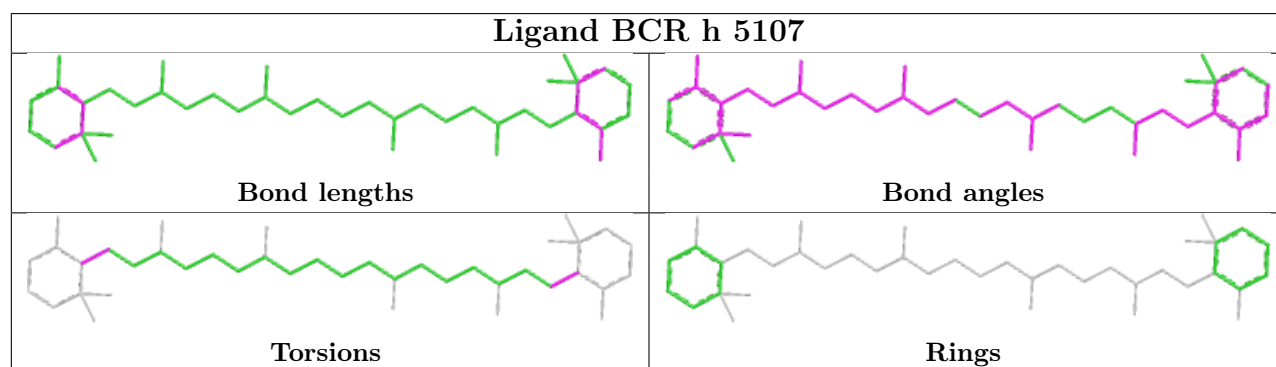
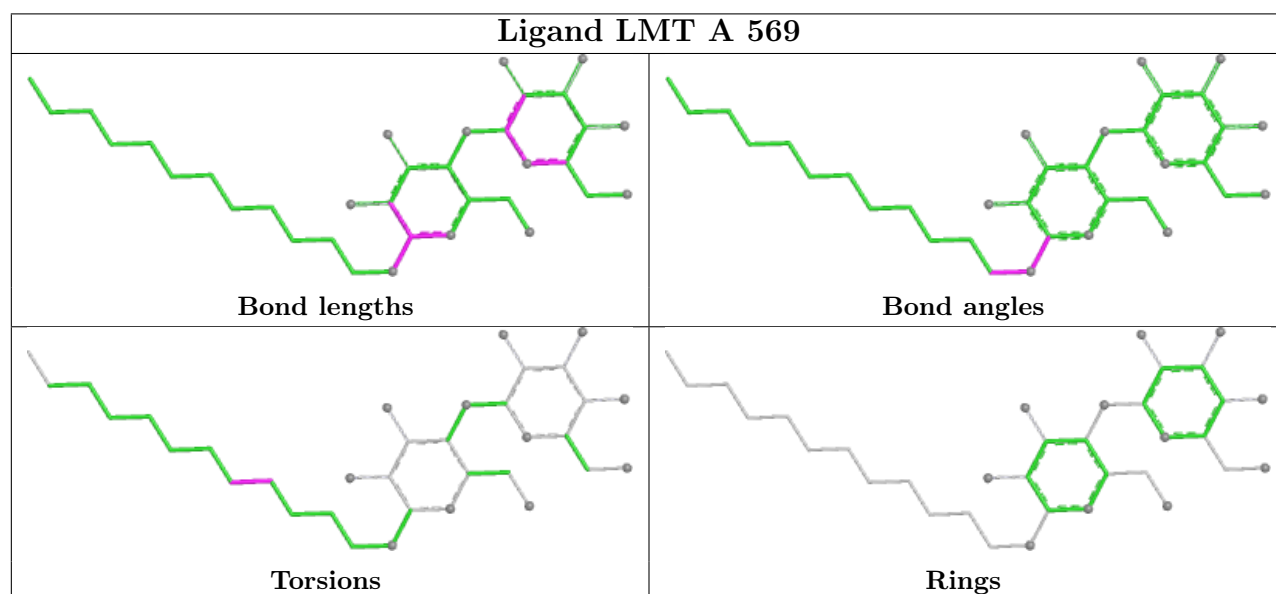
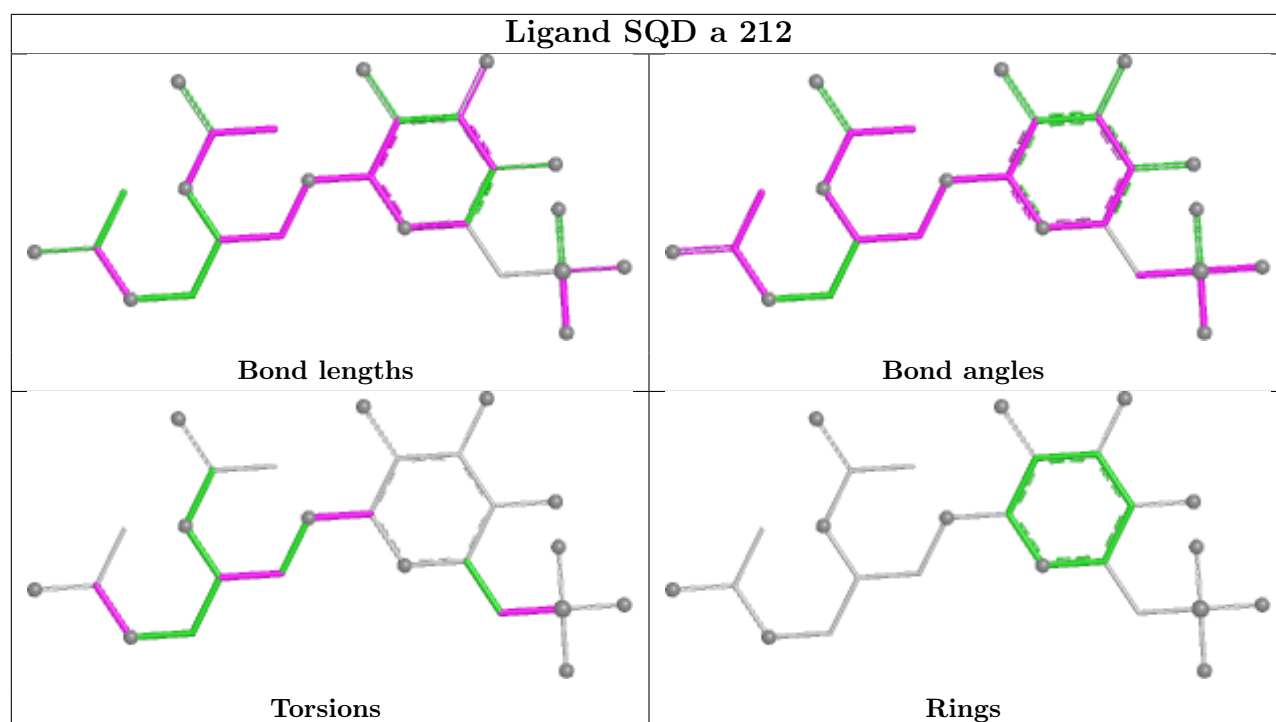


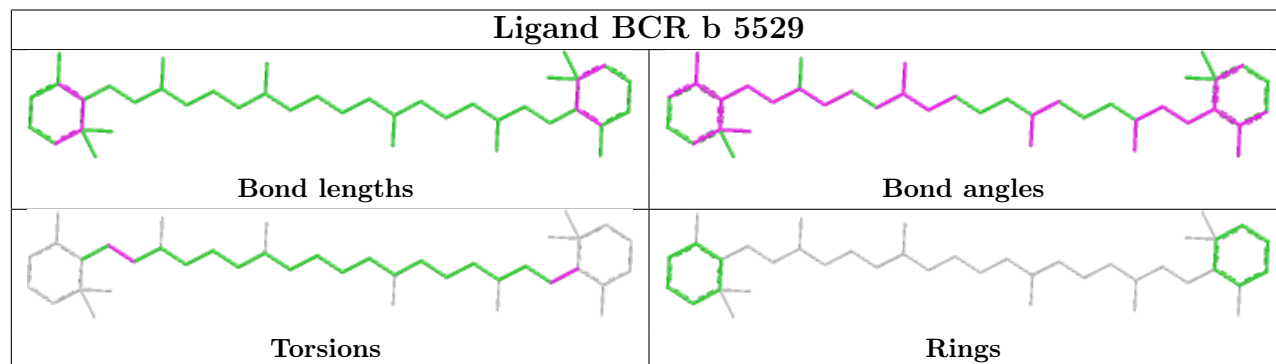
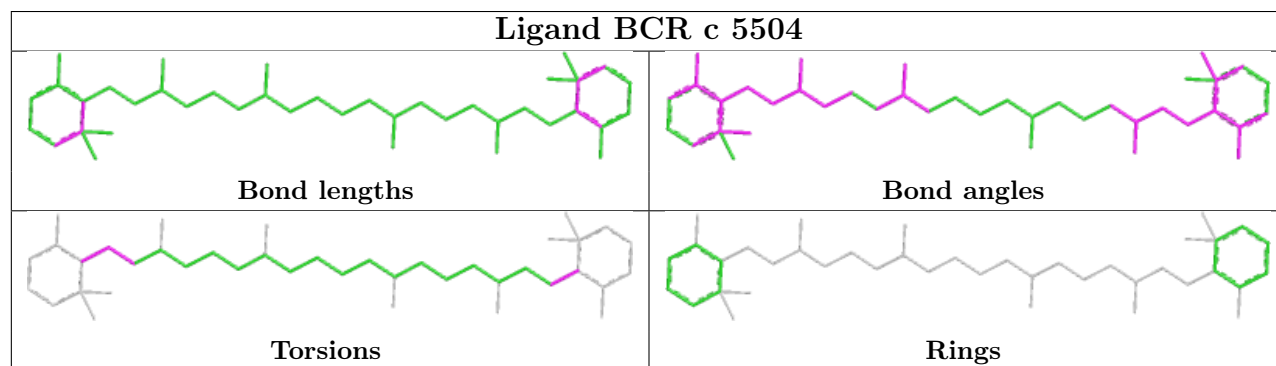
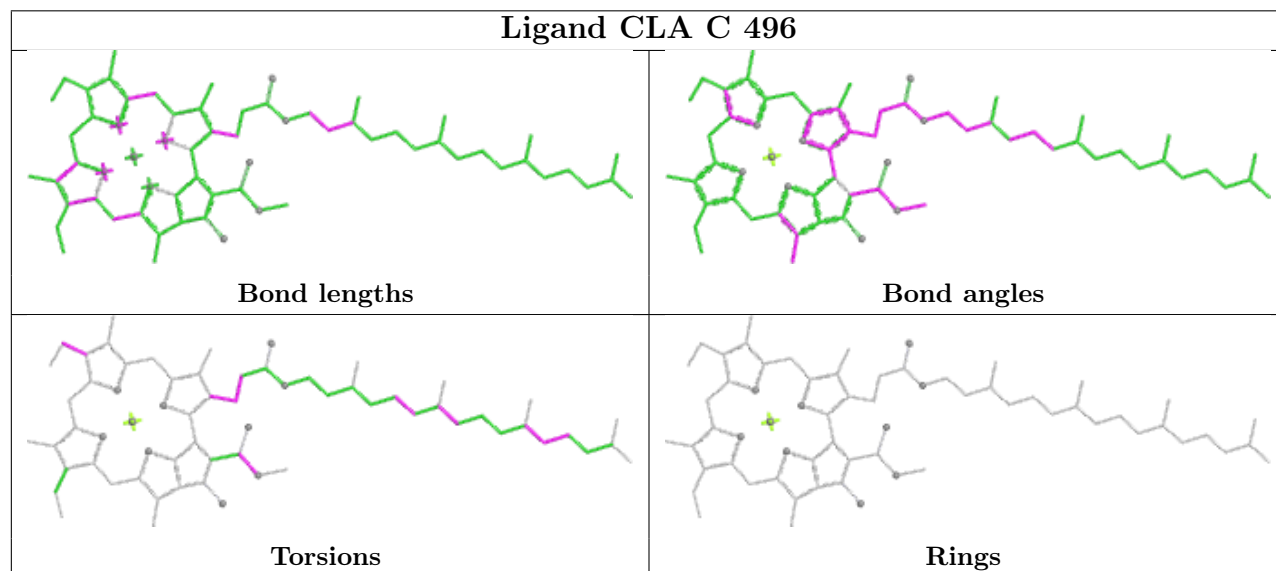
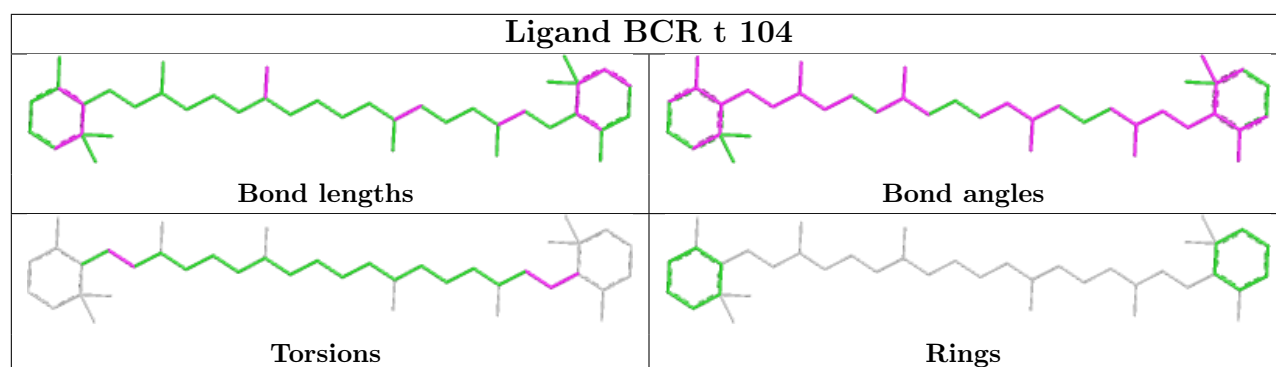


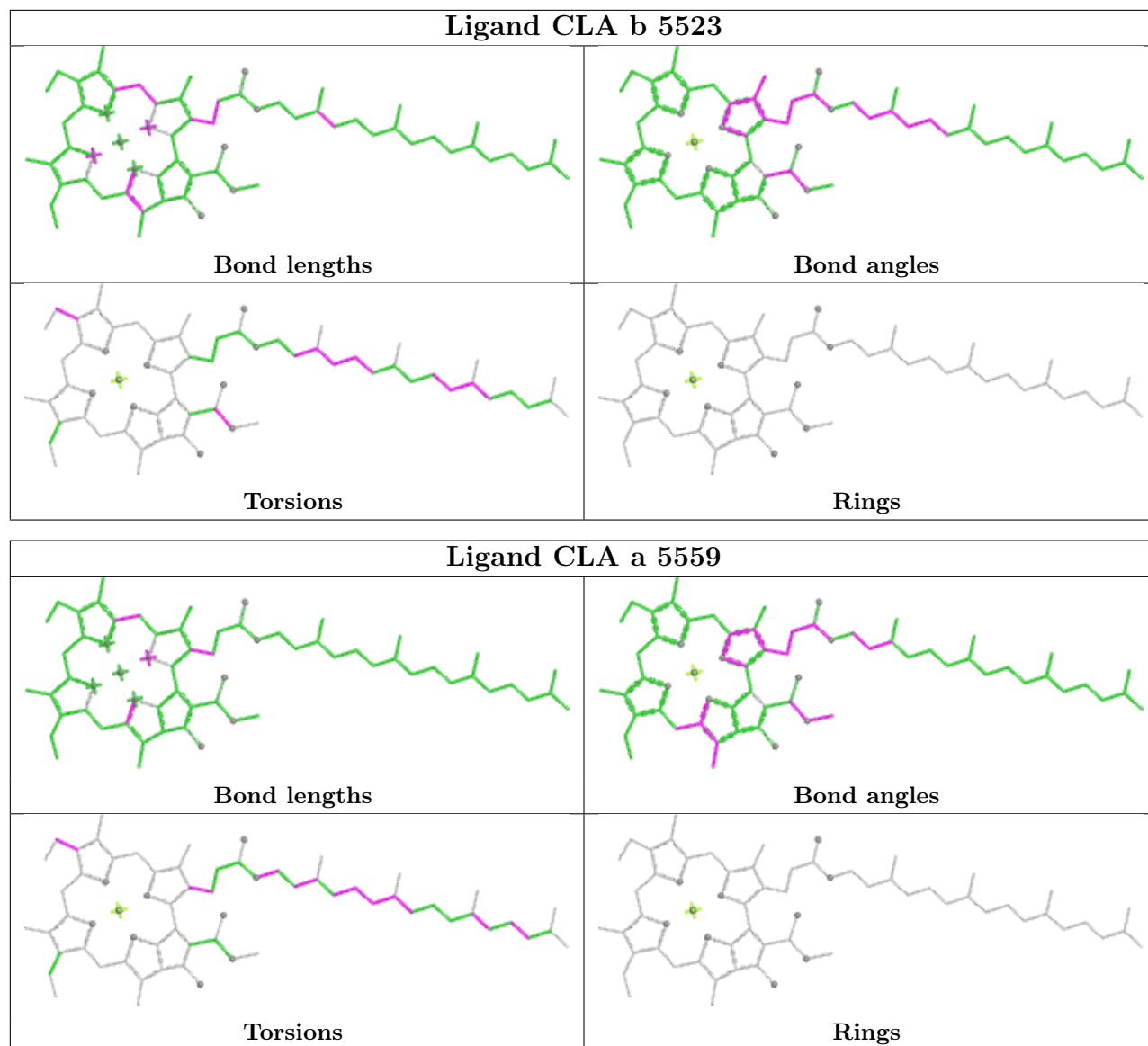


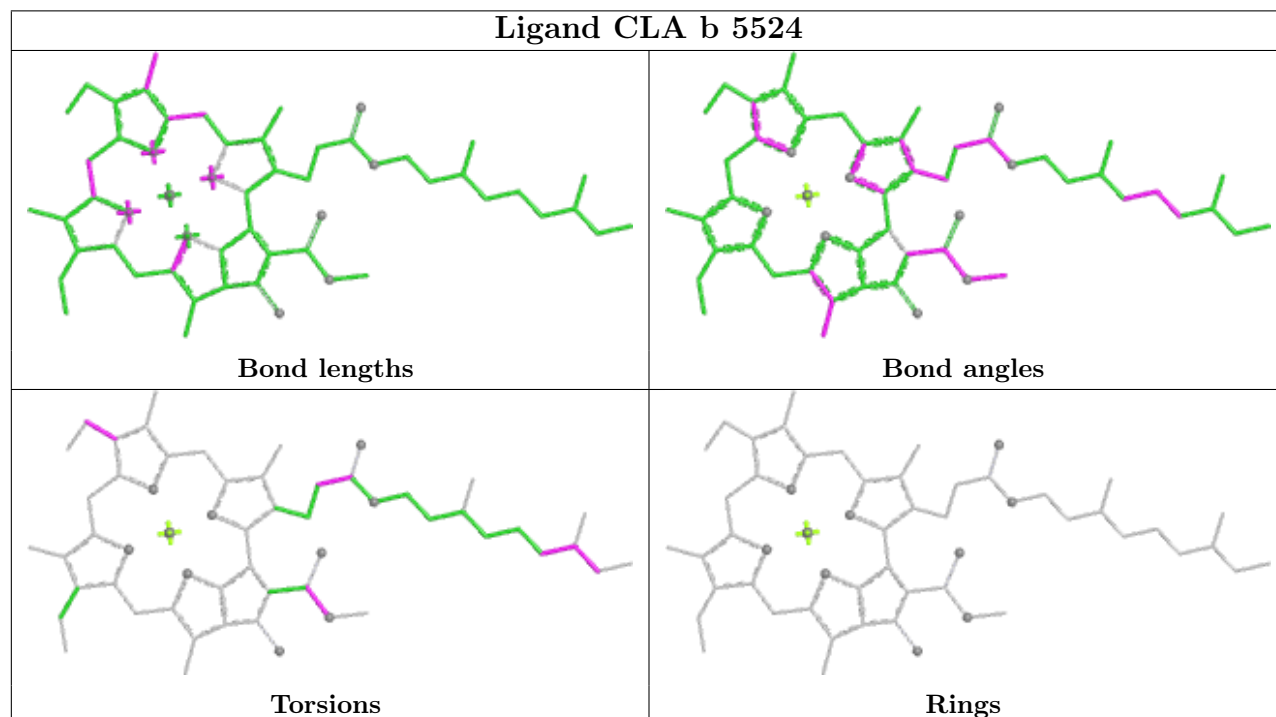
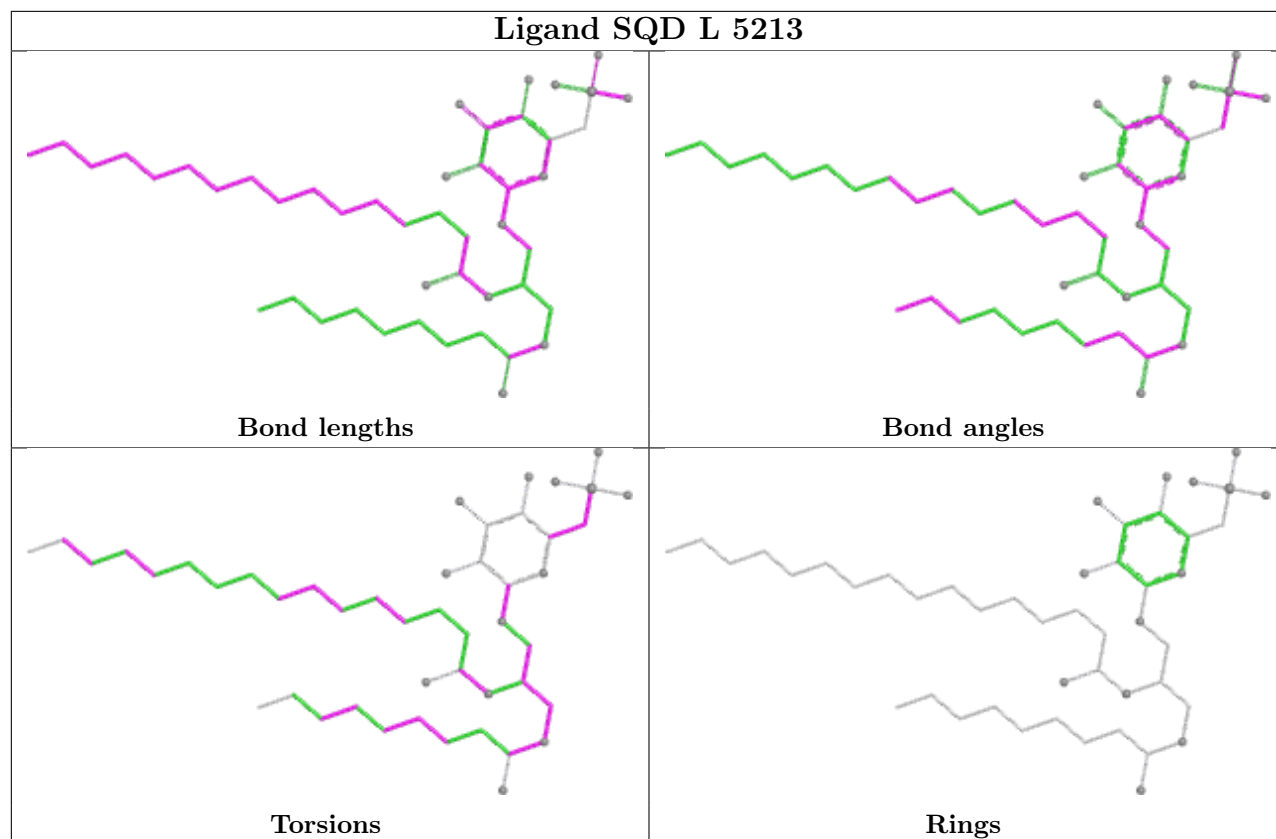




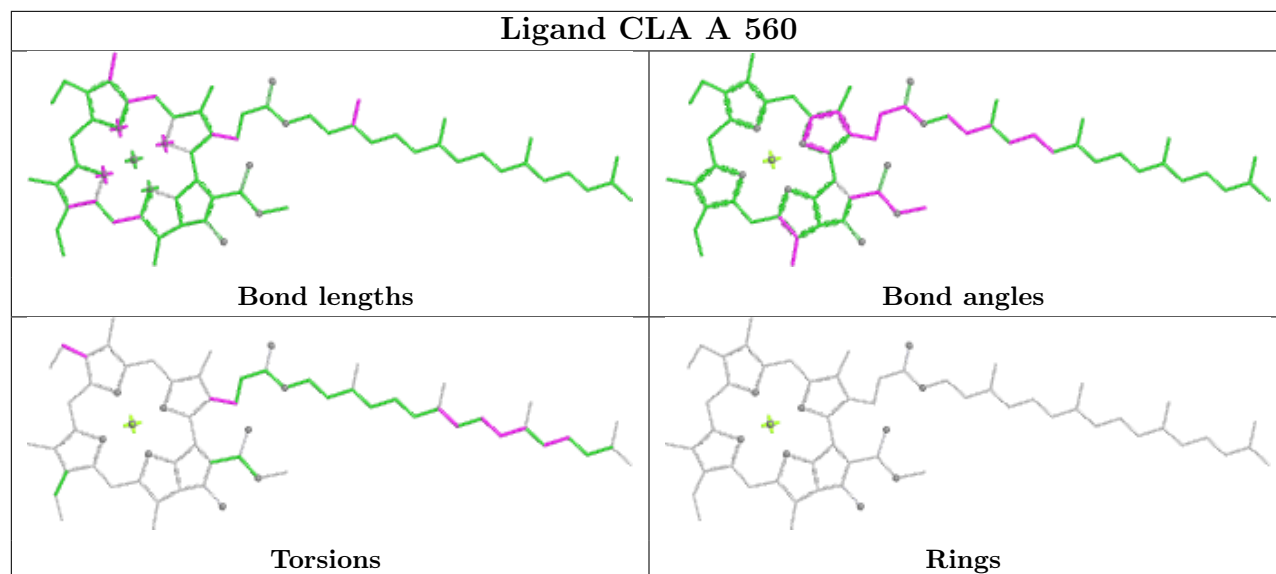




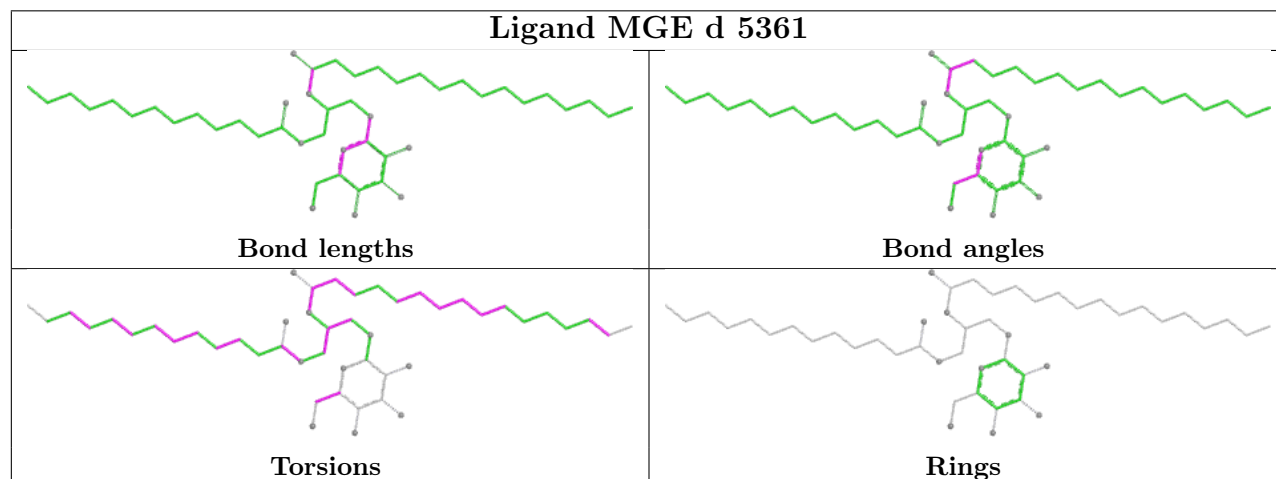




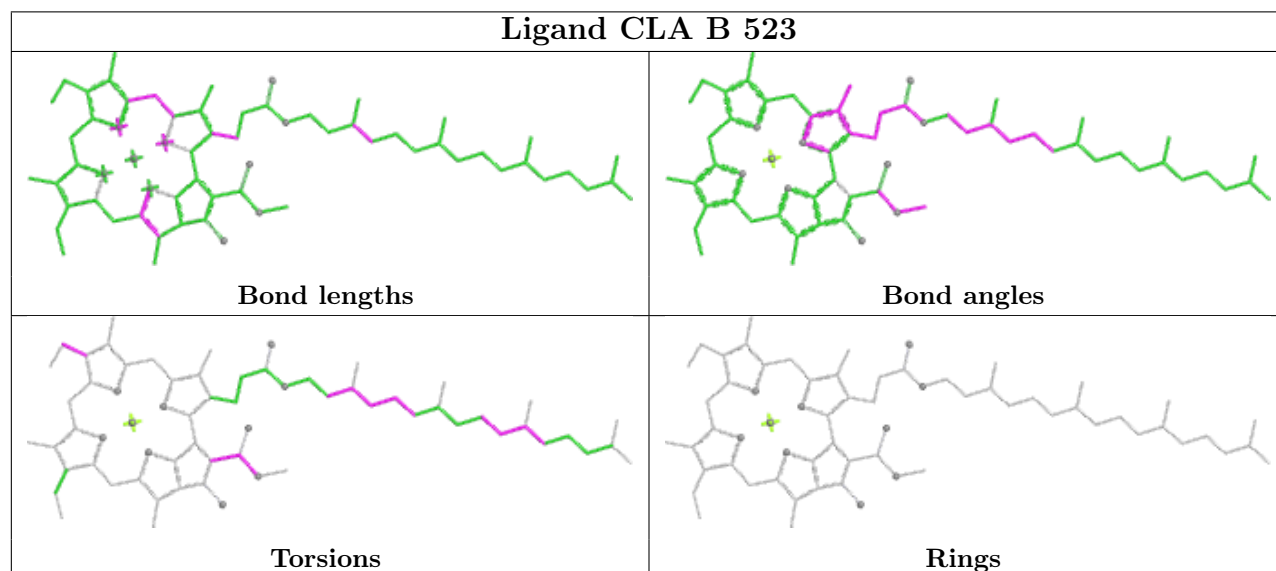
## Ligand CLA A 560

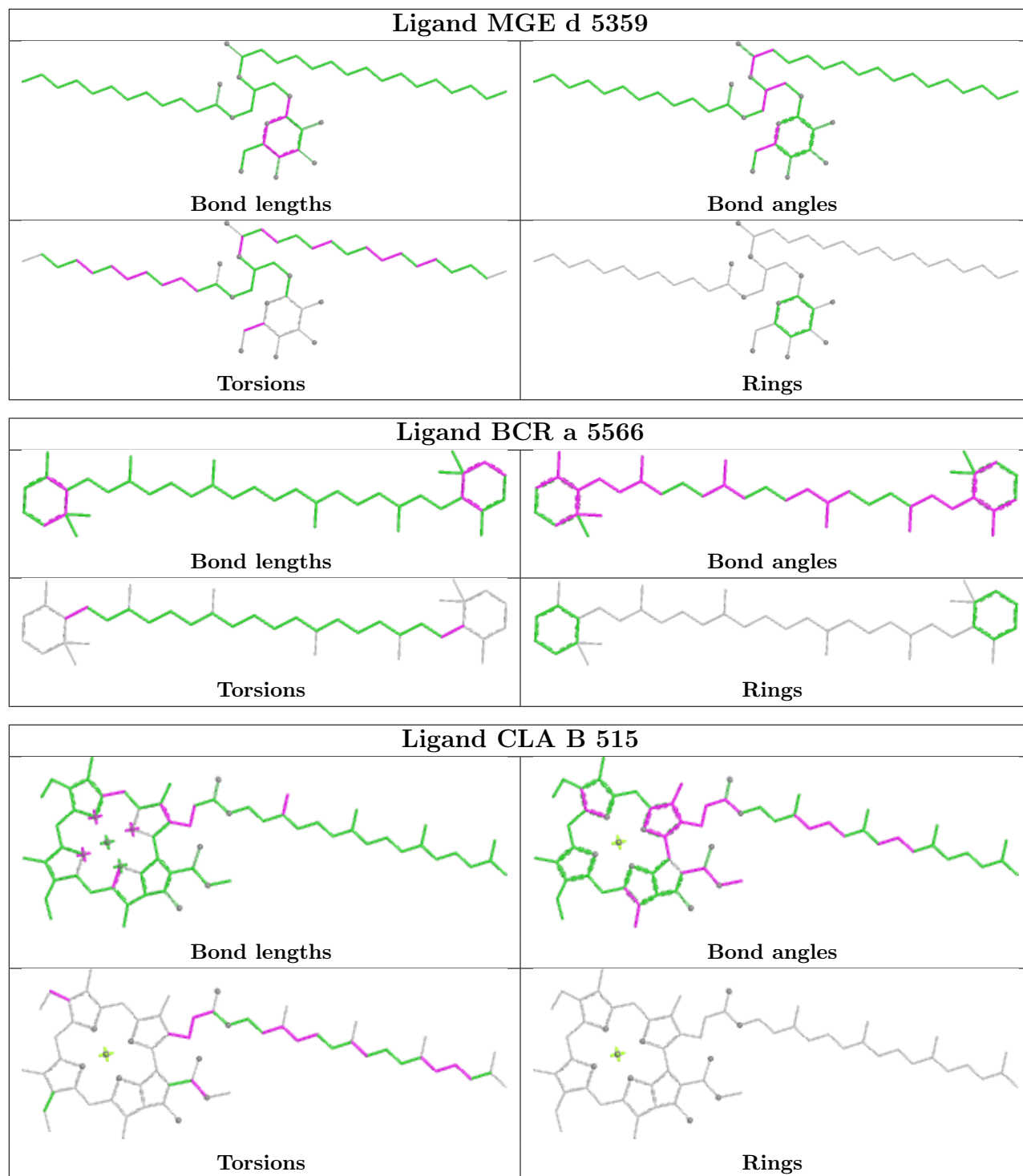


## Ligand MGE d 5361

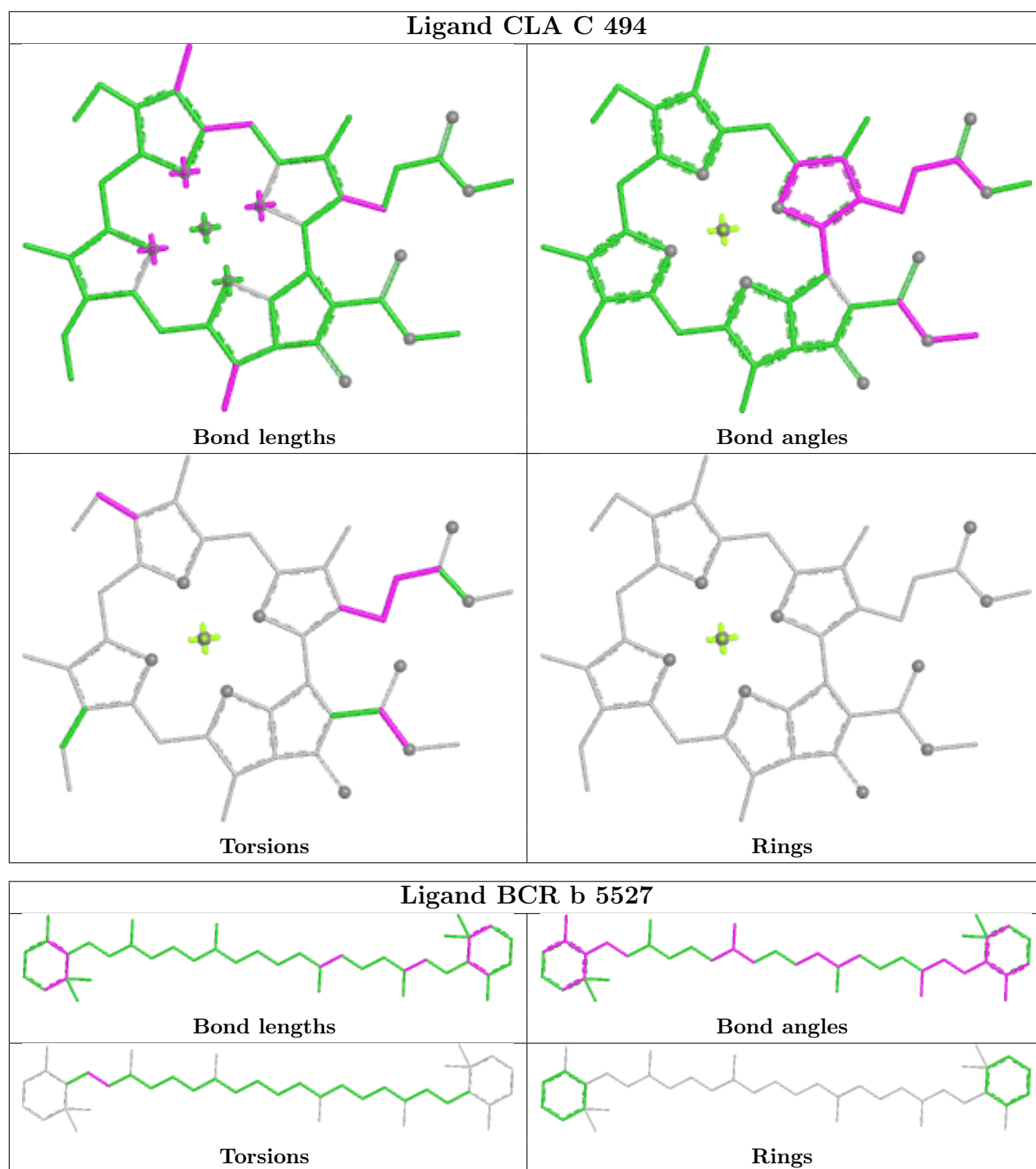


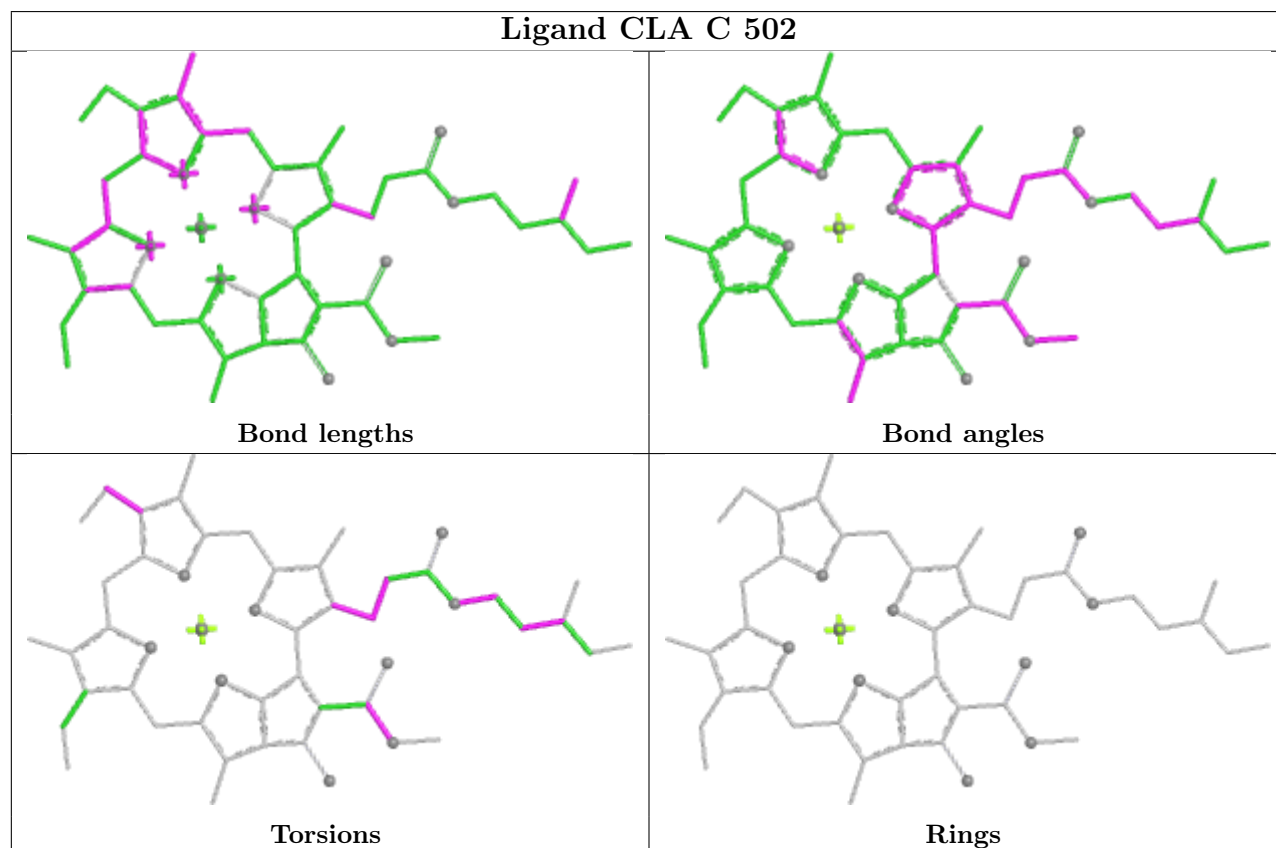
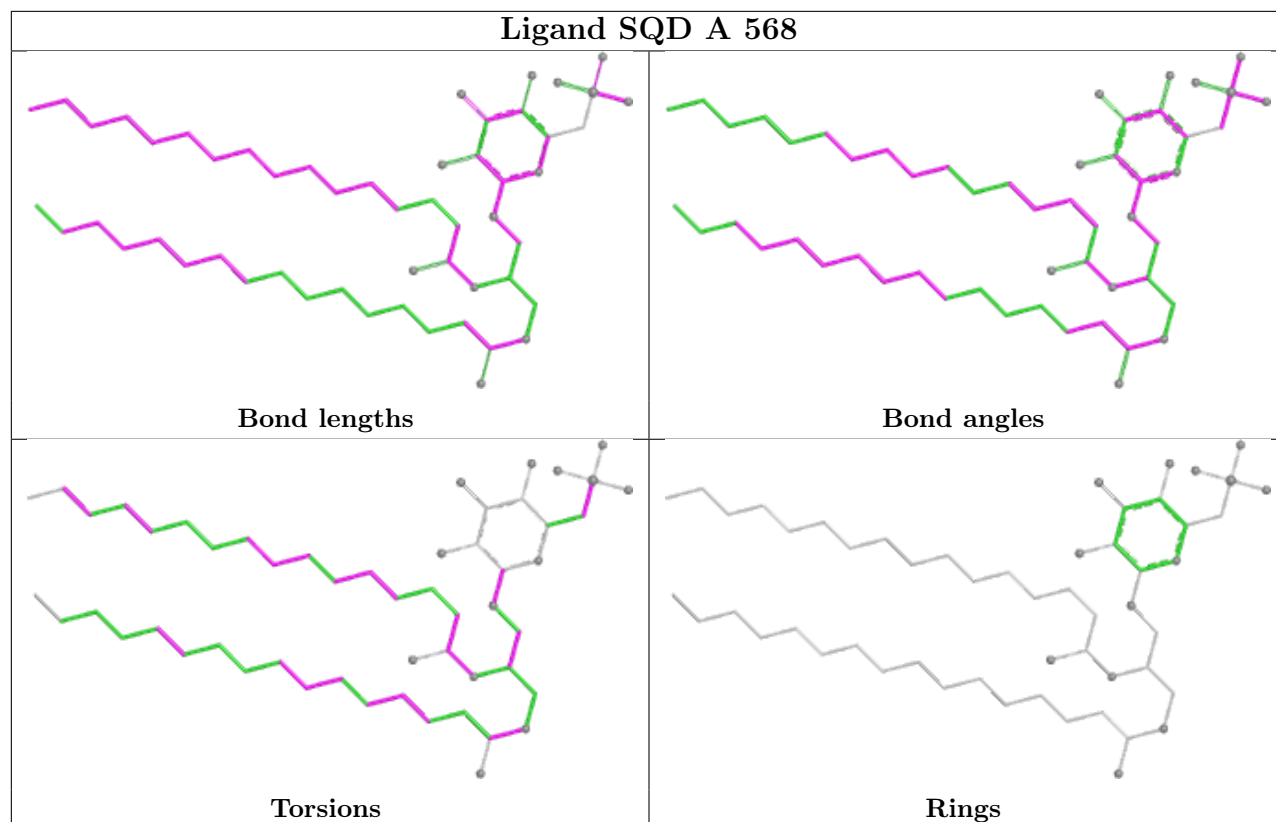
## Ligand CLA B 523

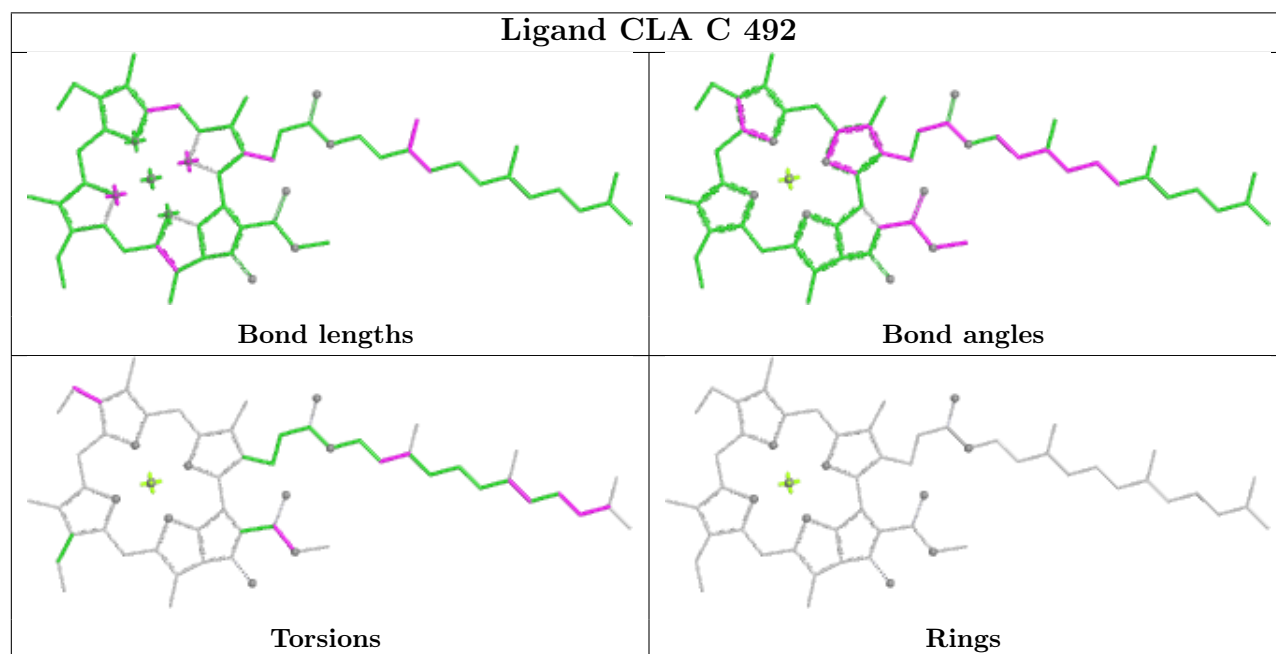
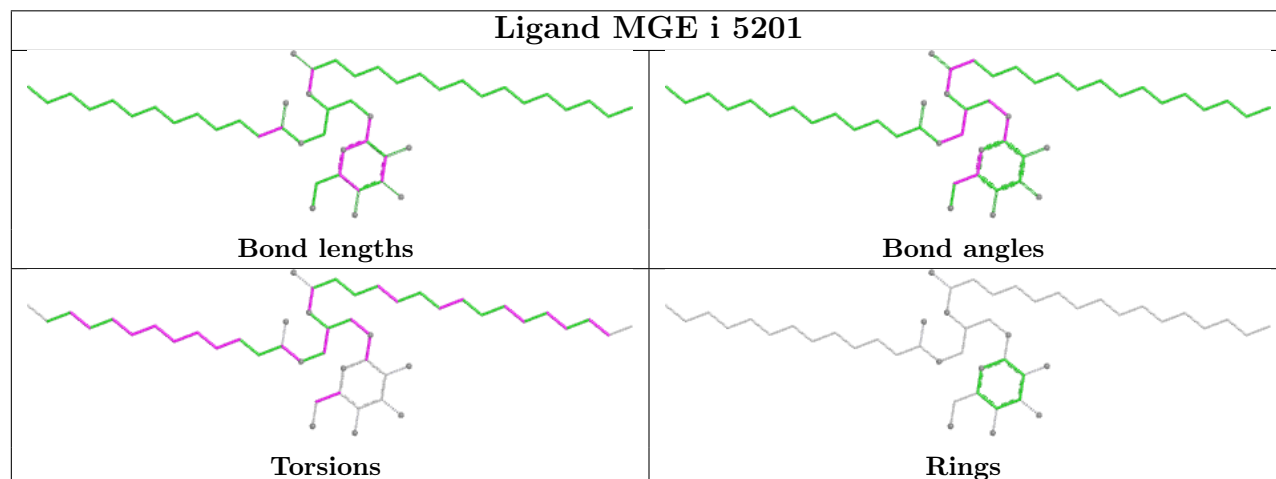
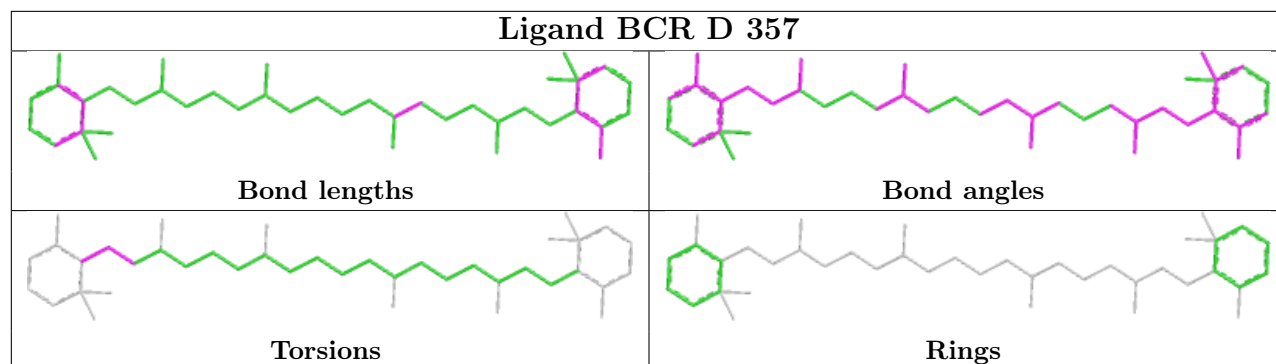


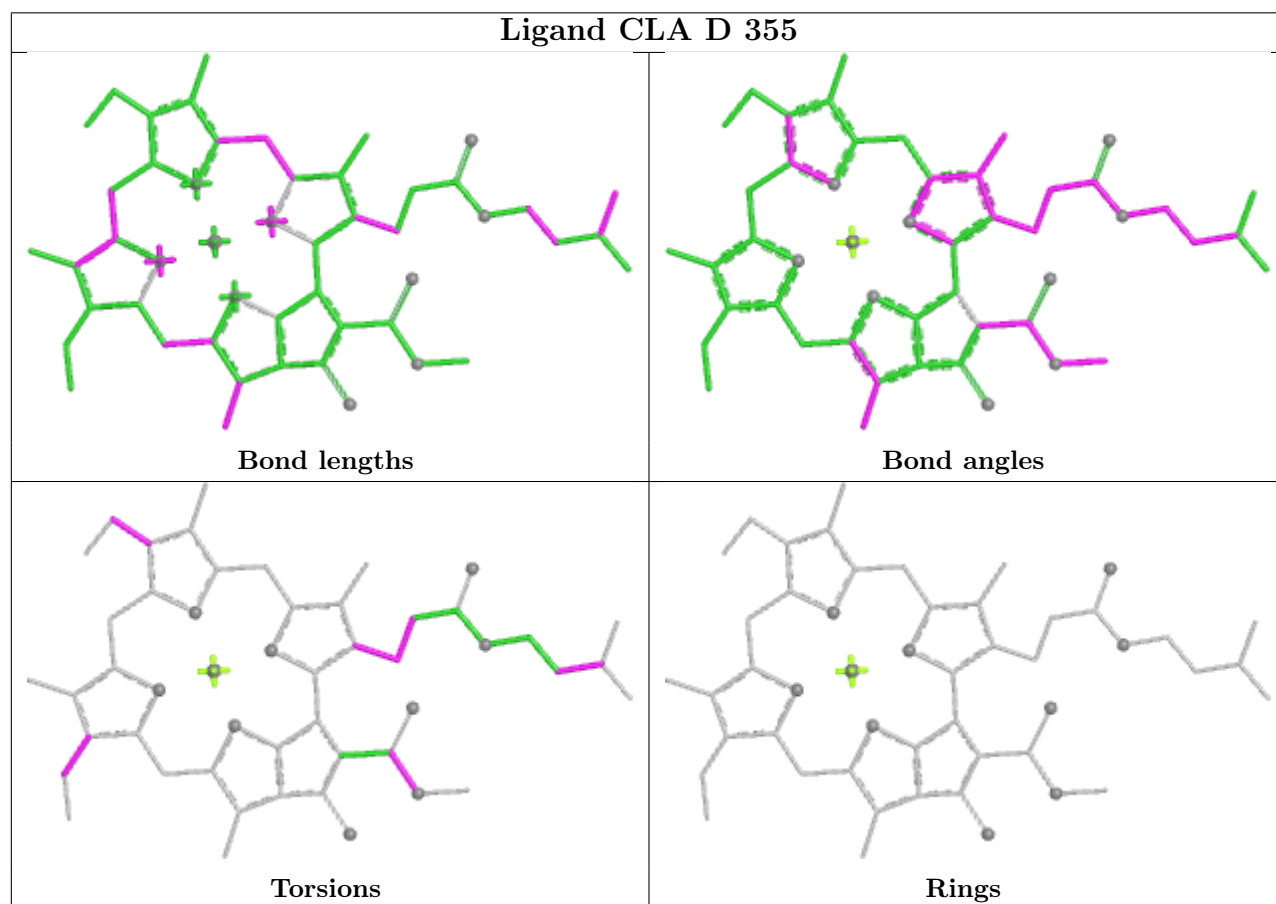
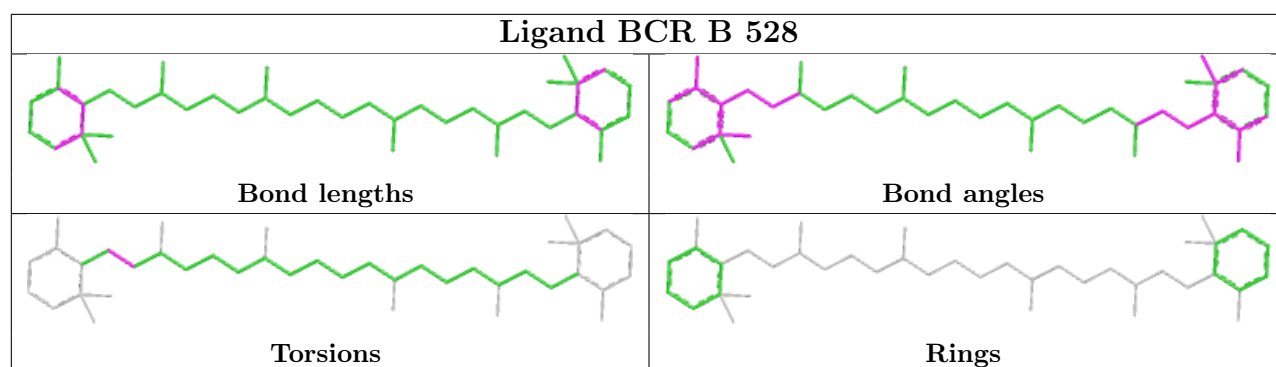


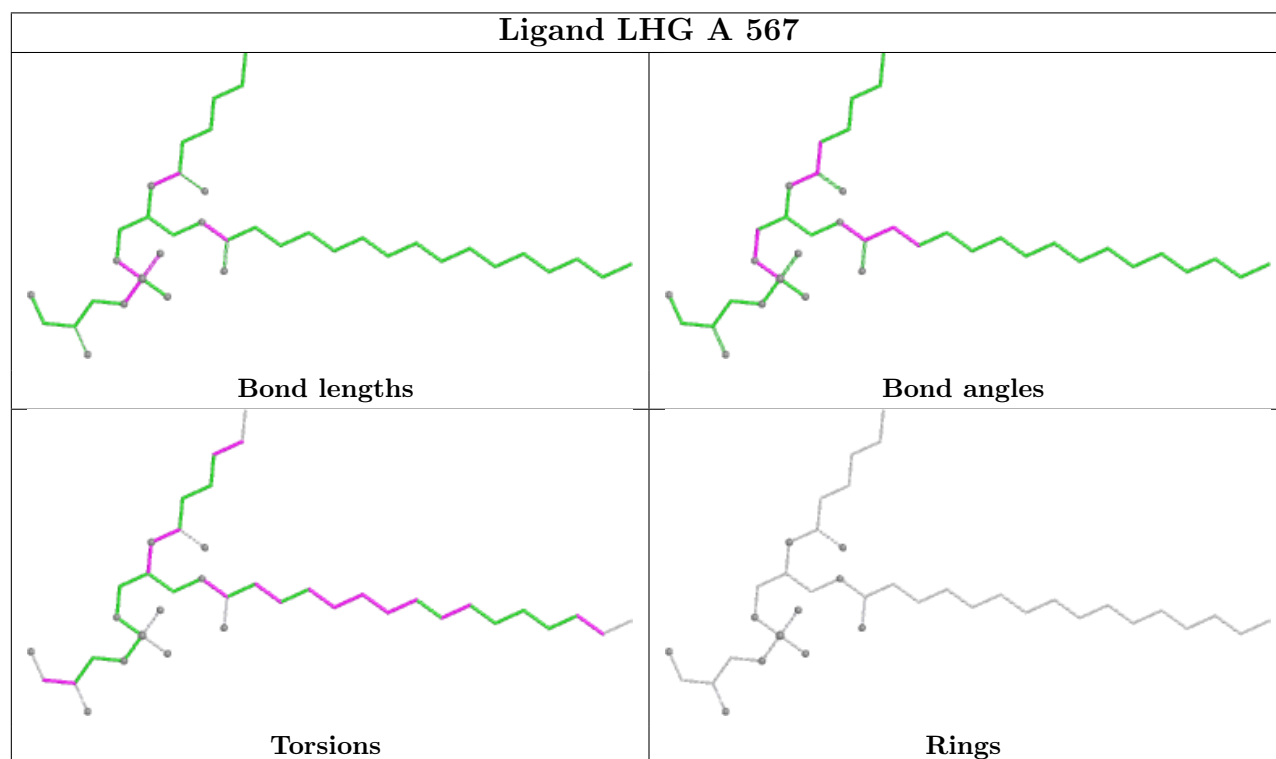
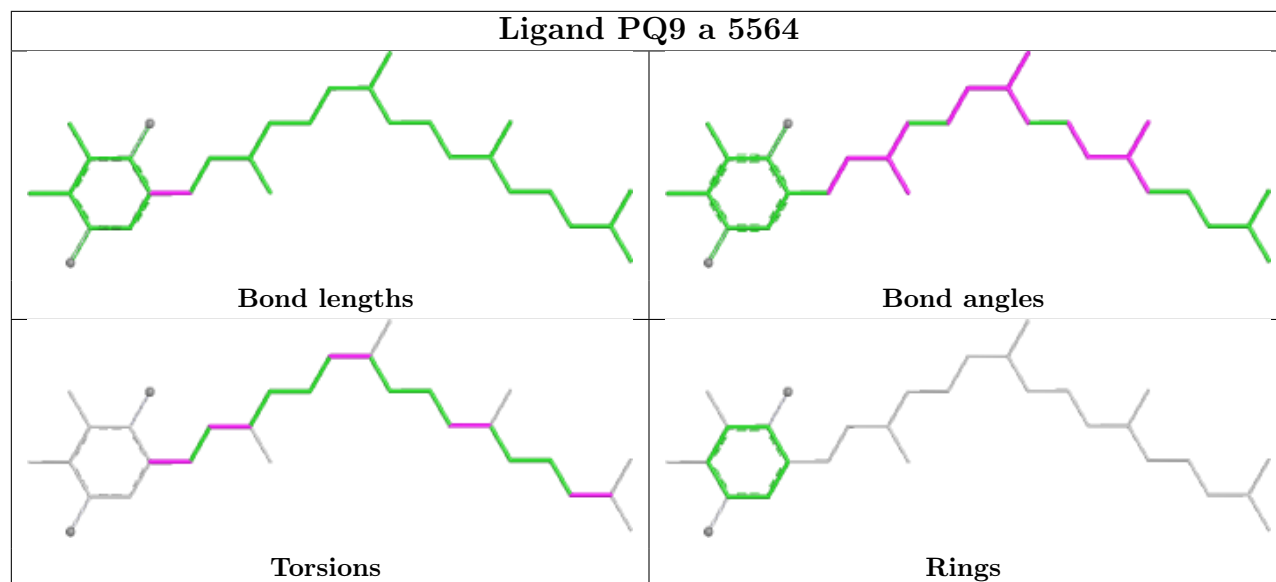


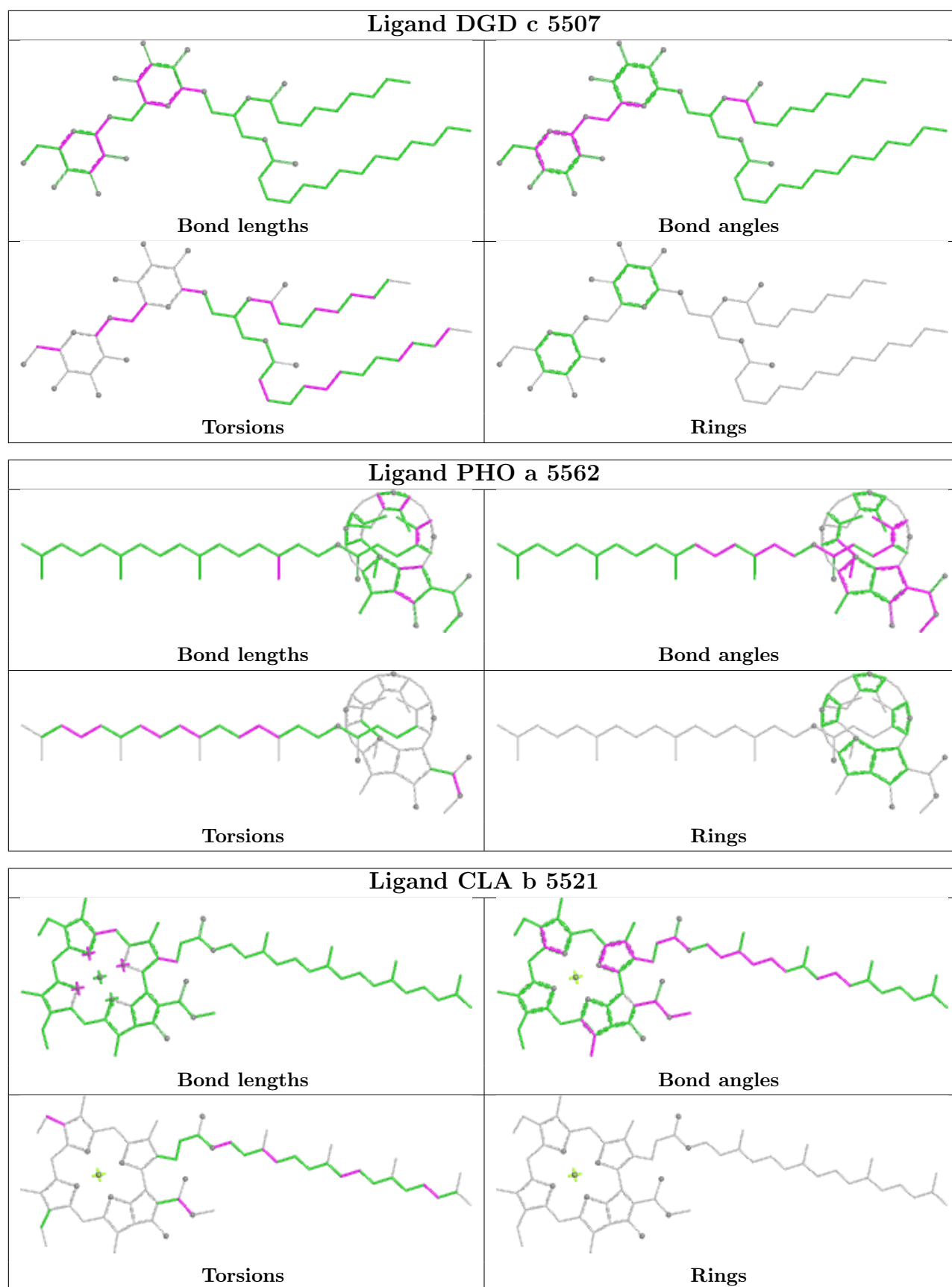




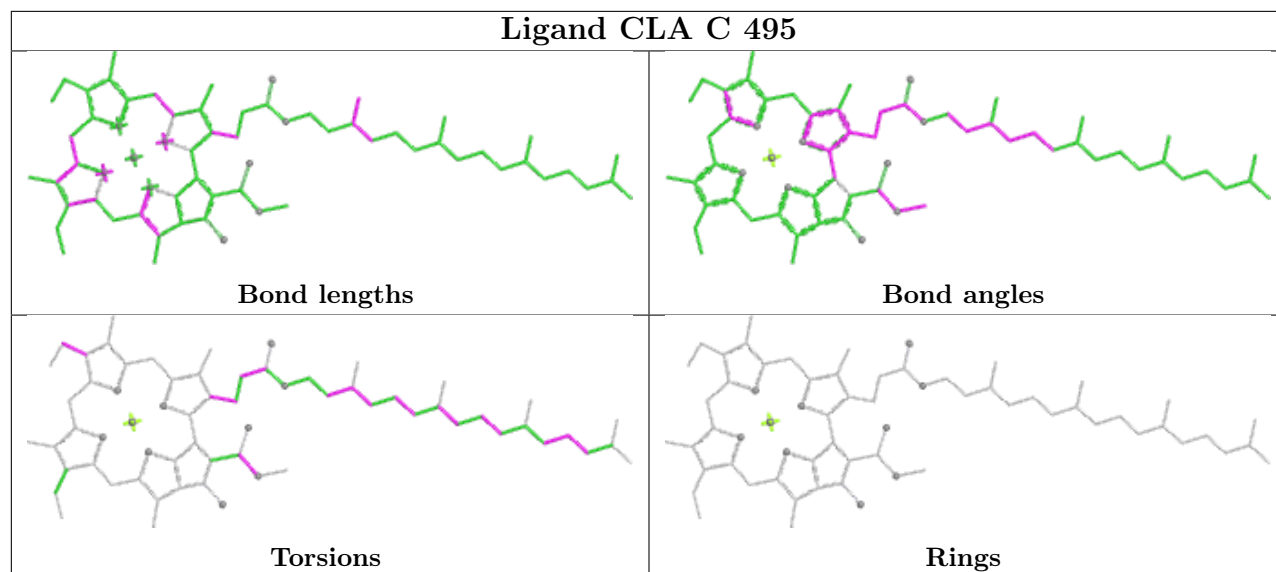




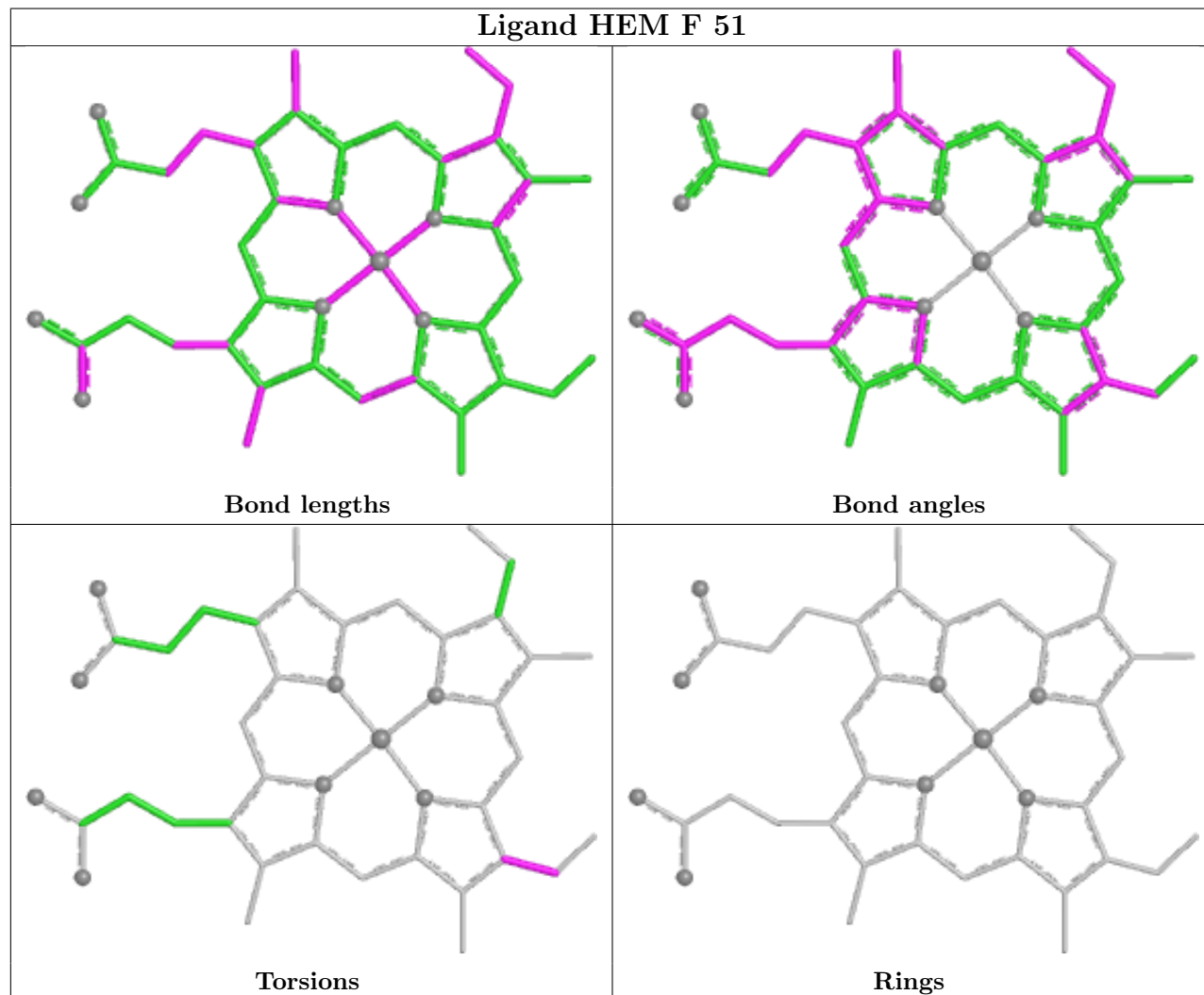


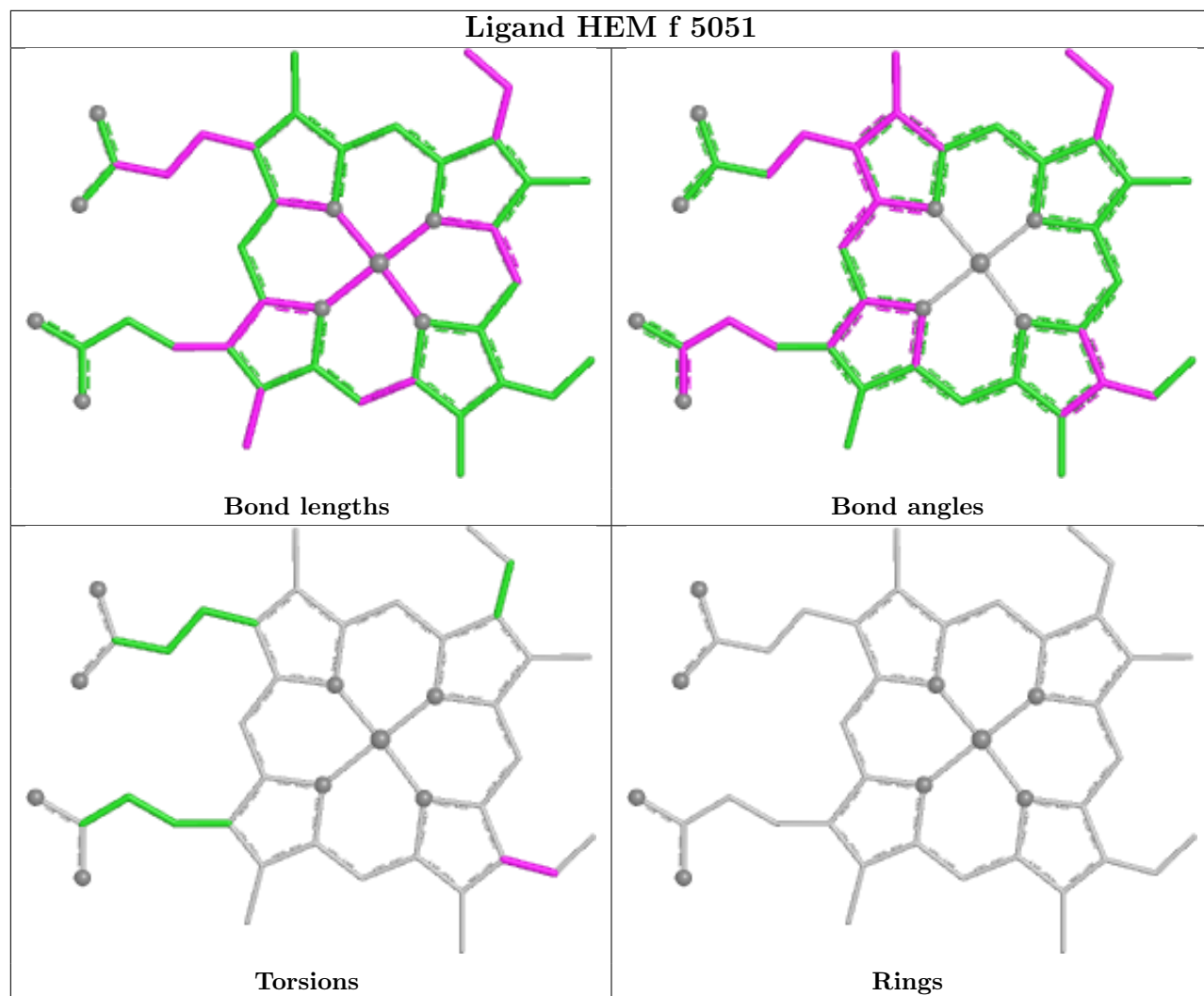


## Ligand CLA C 495

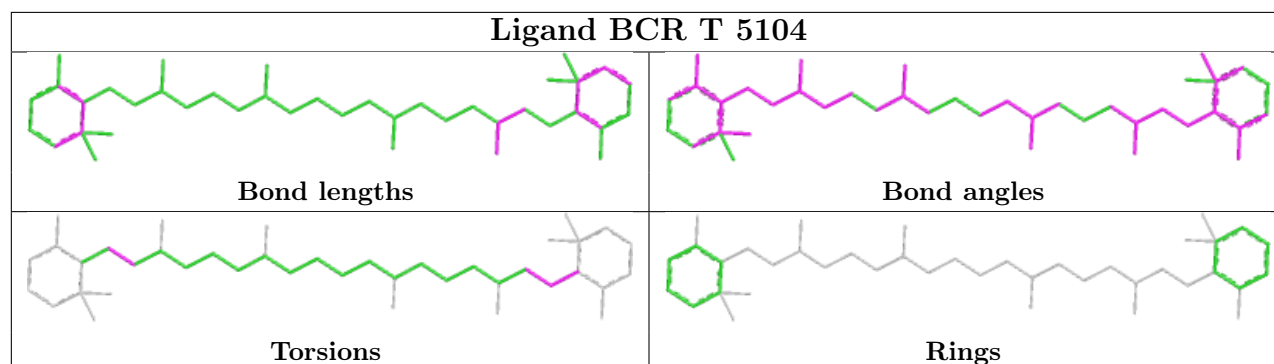
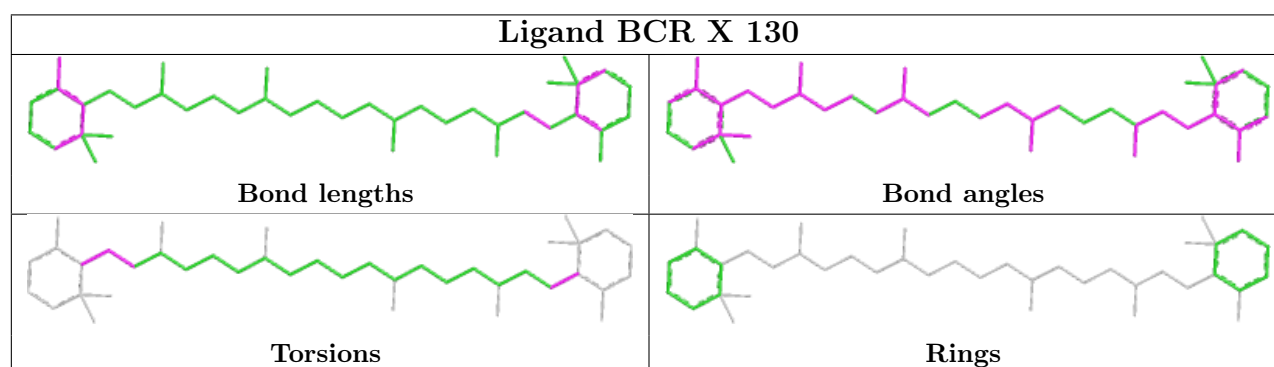
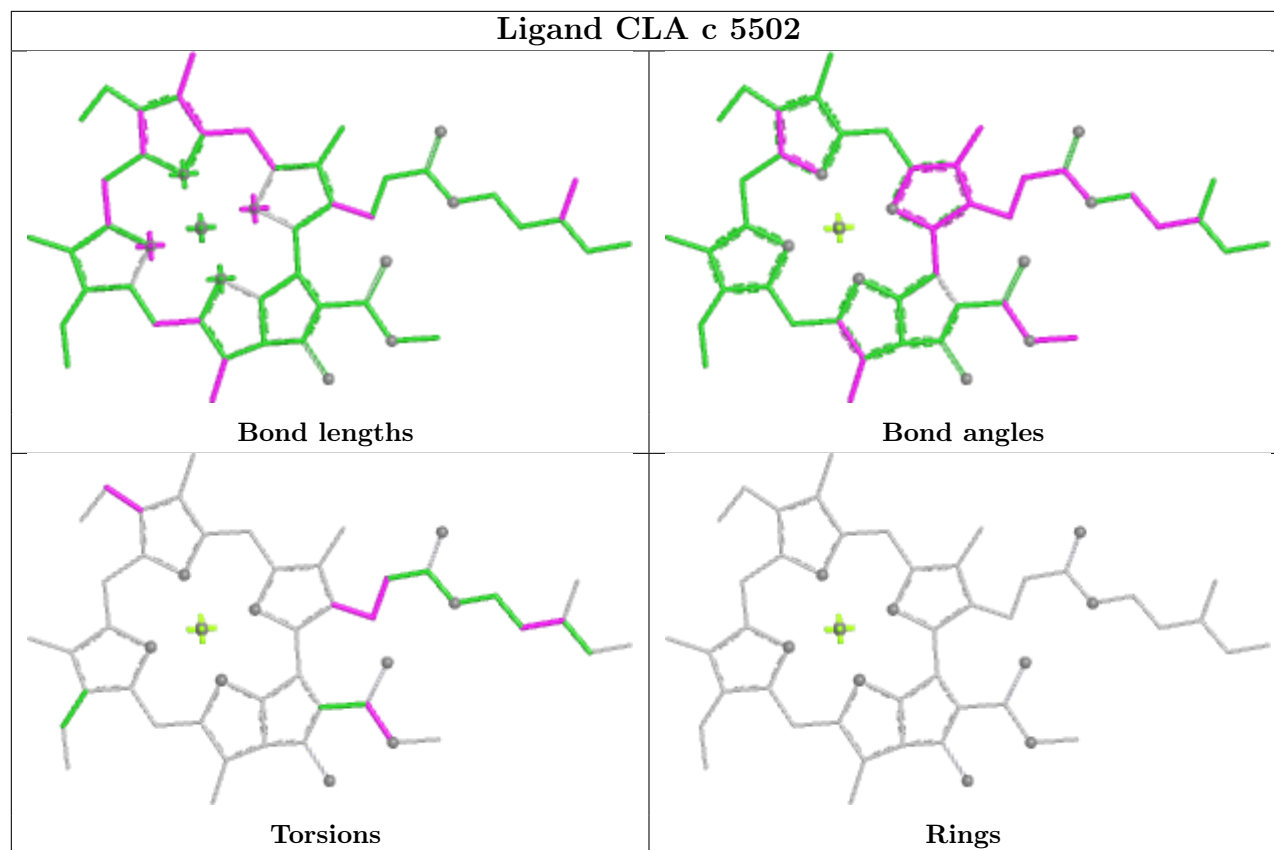


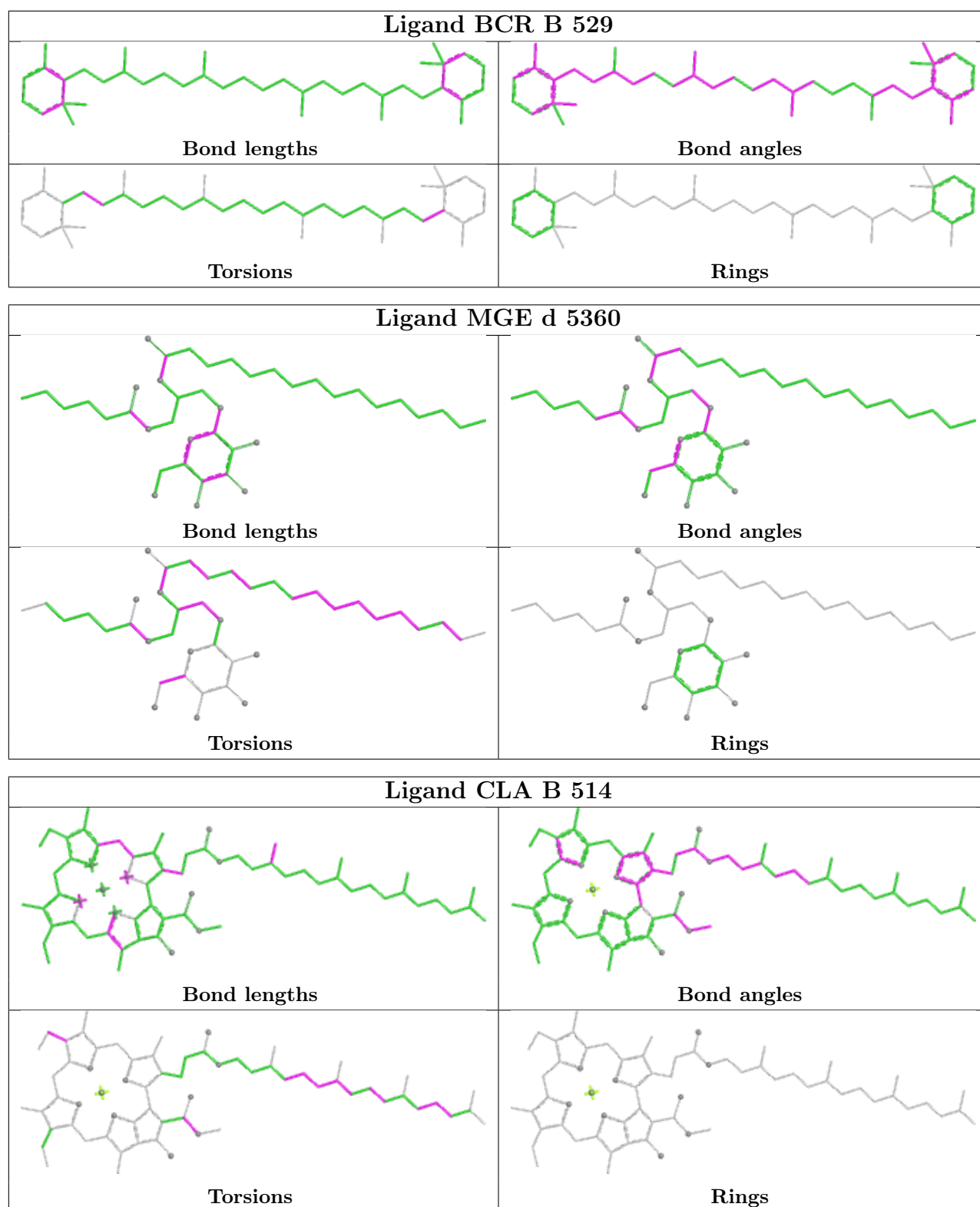
## Ligand HEM F 51

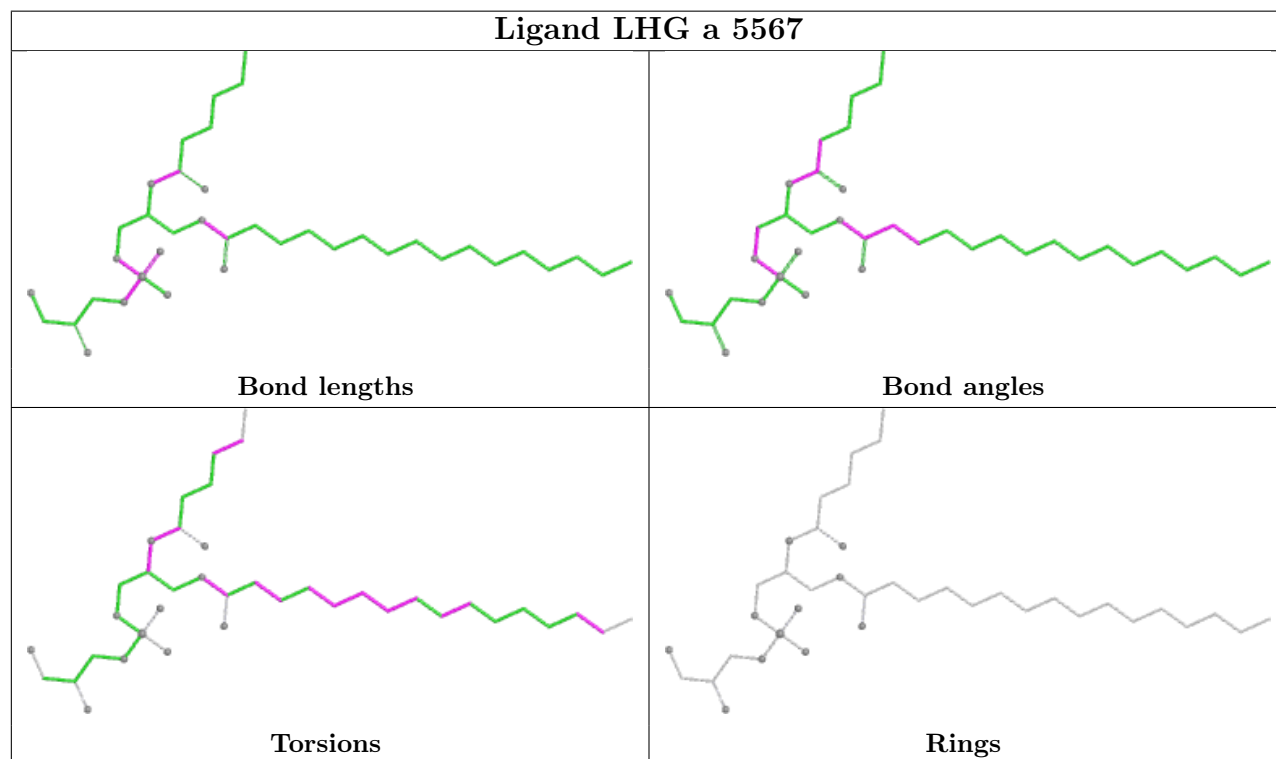
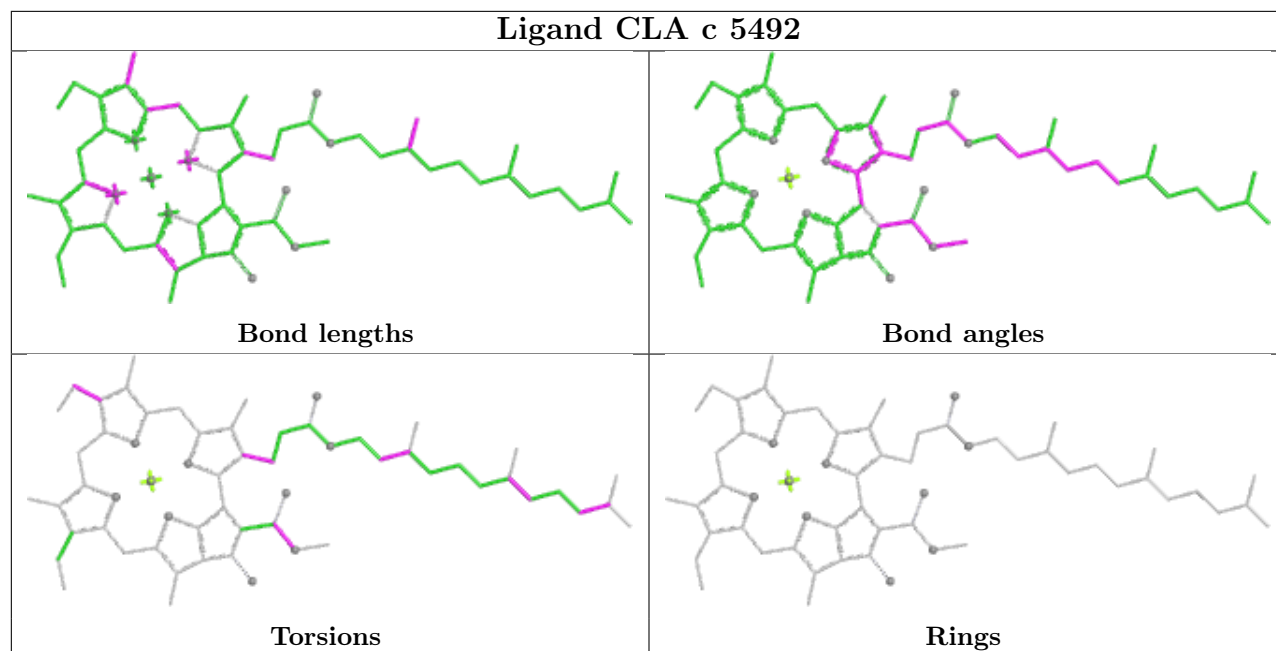


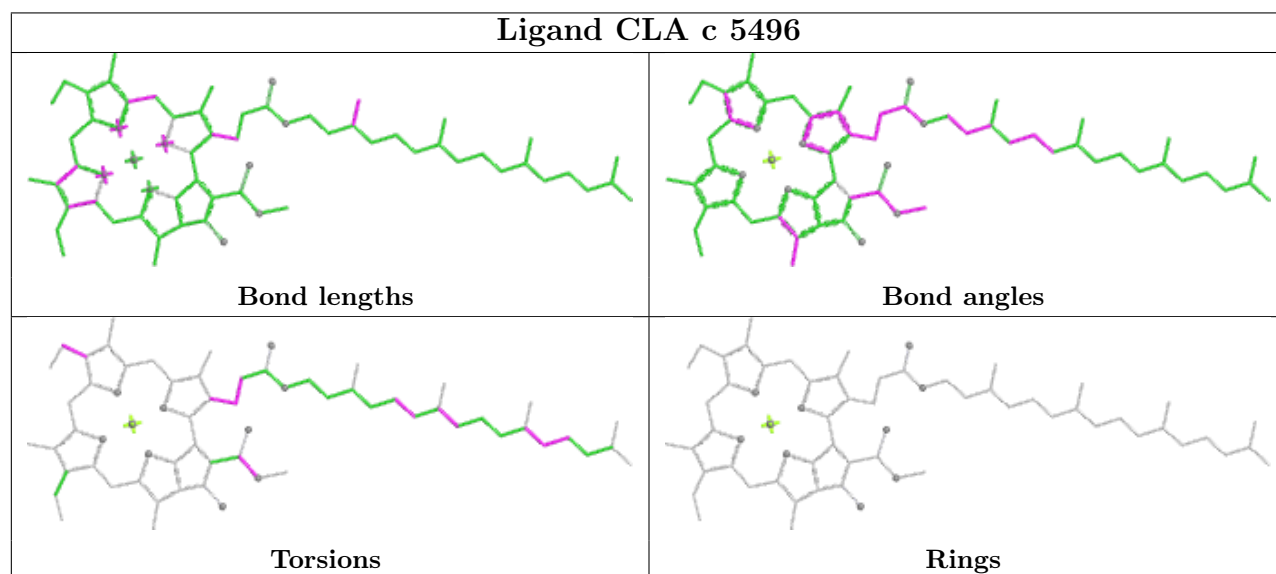
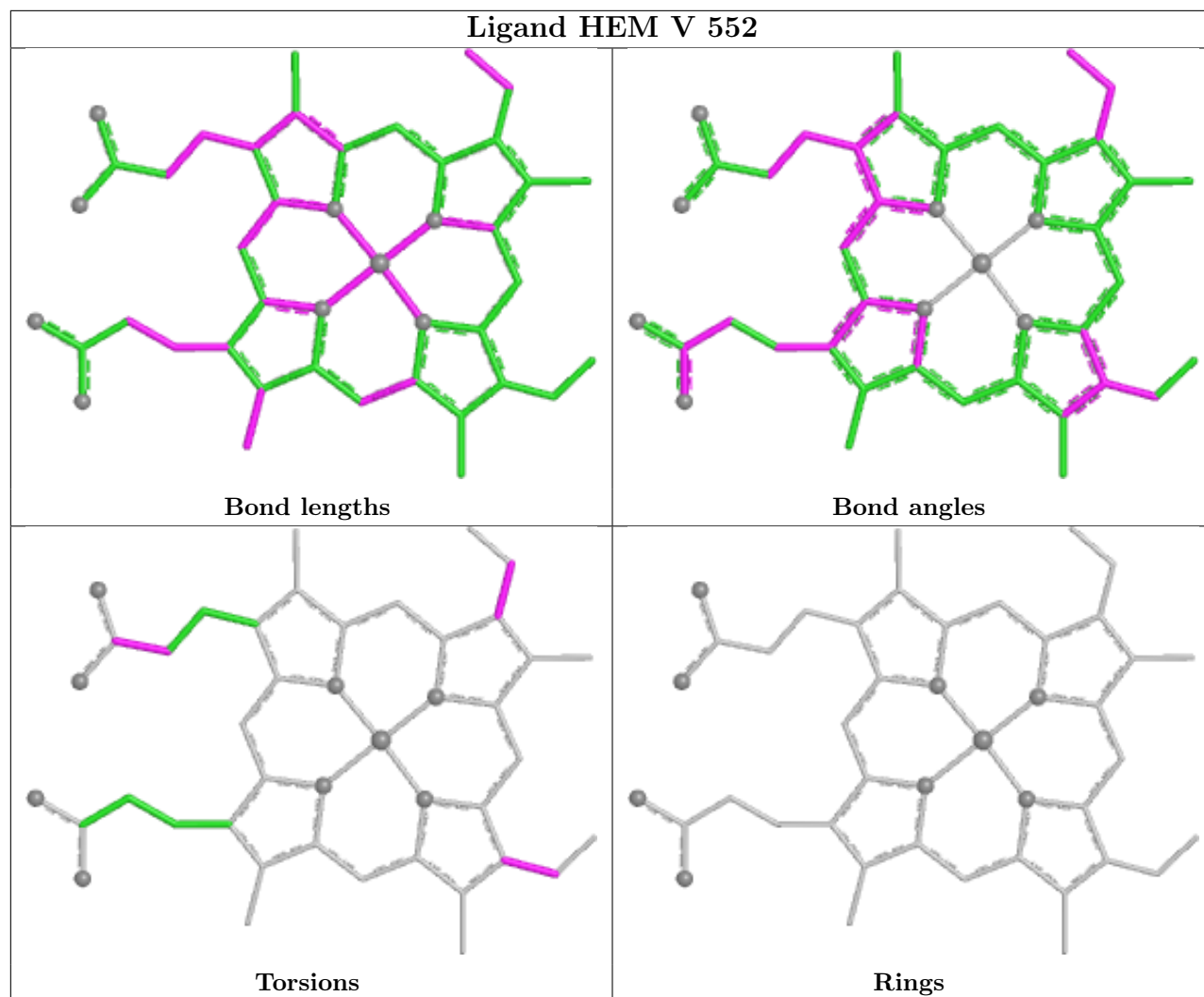


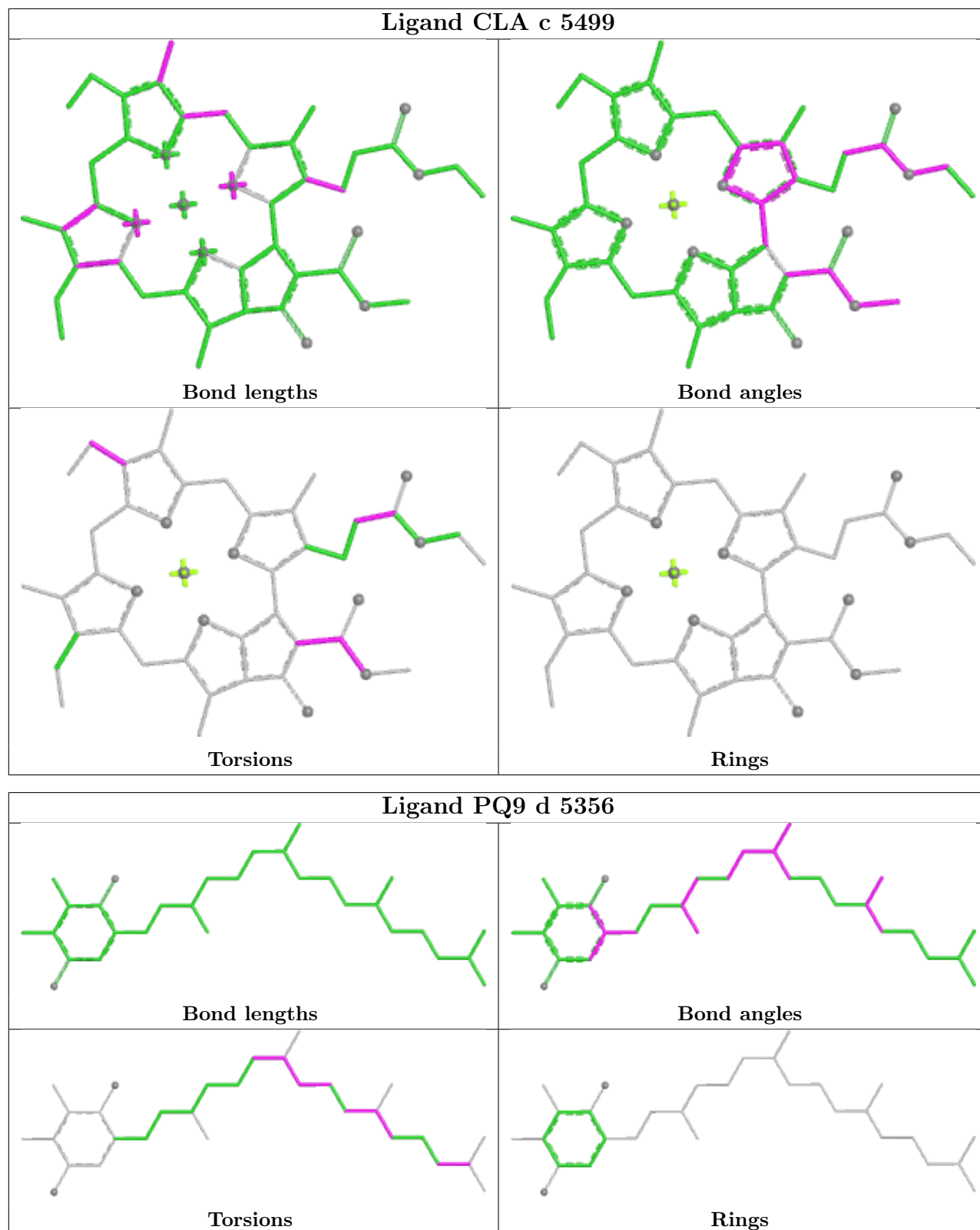


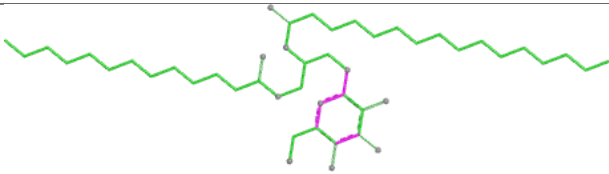
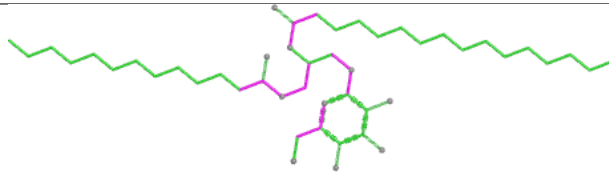
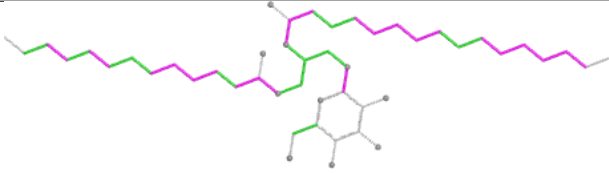
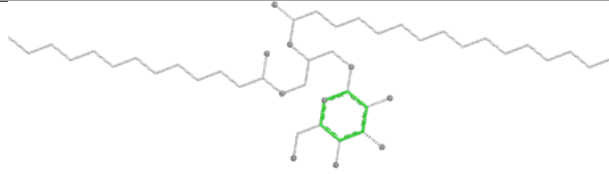


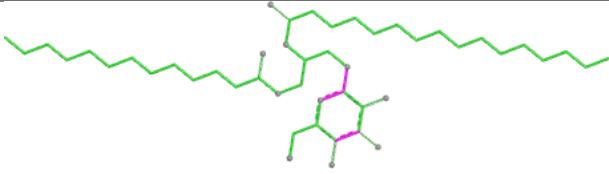
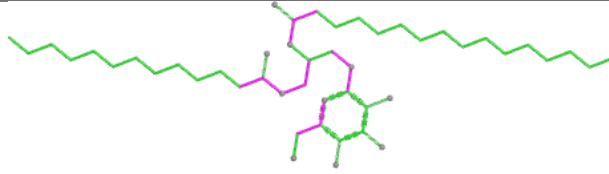
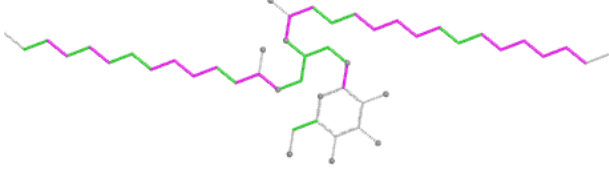
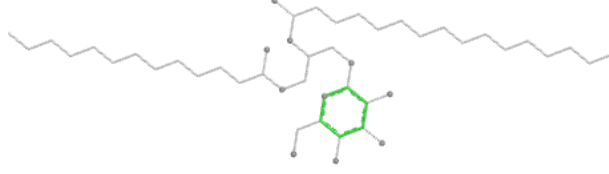


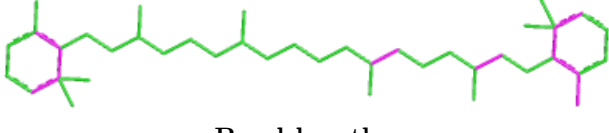
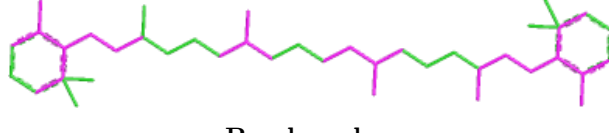
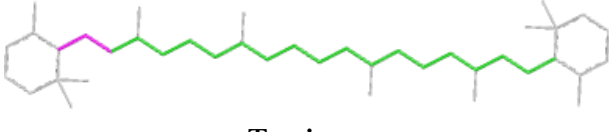
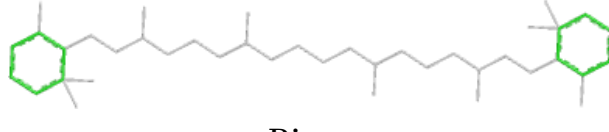


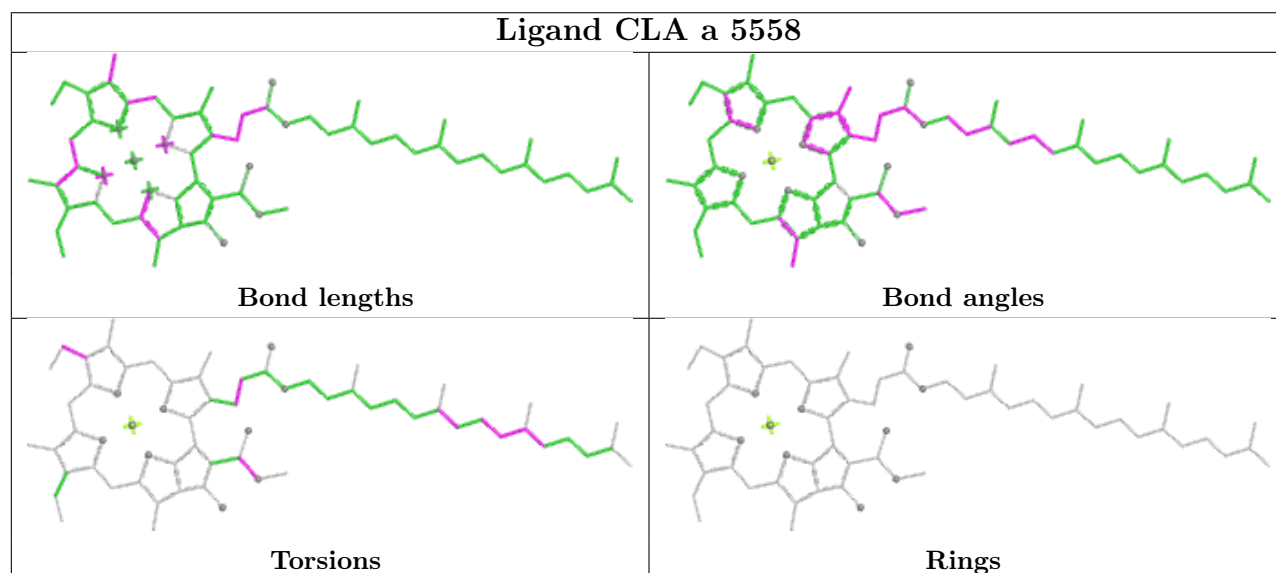
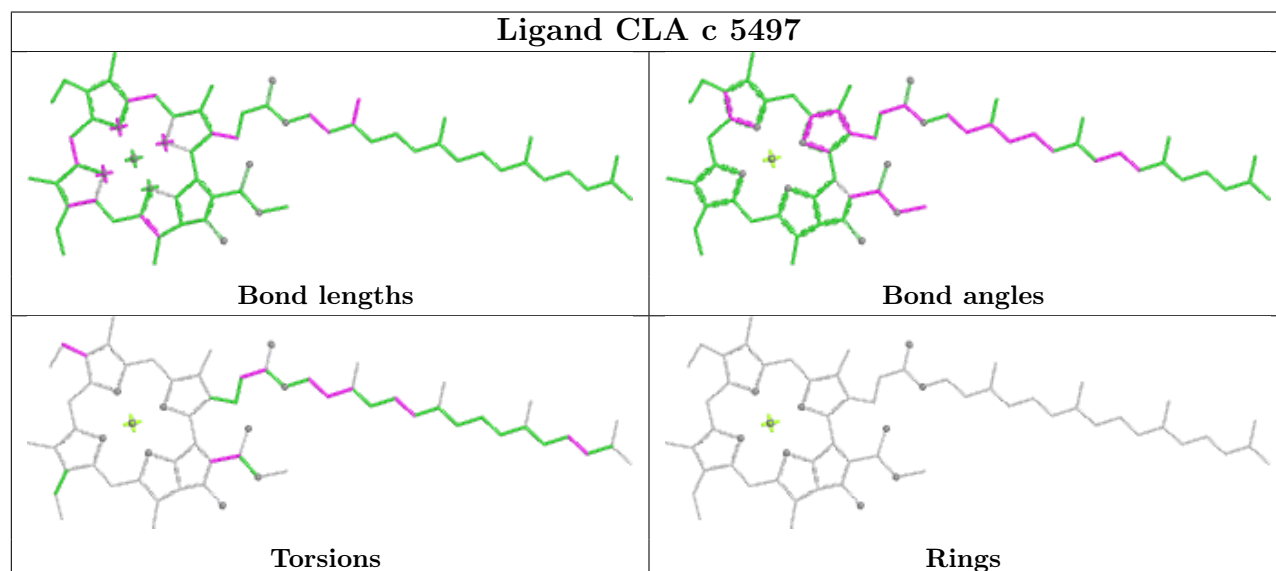
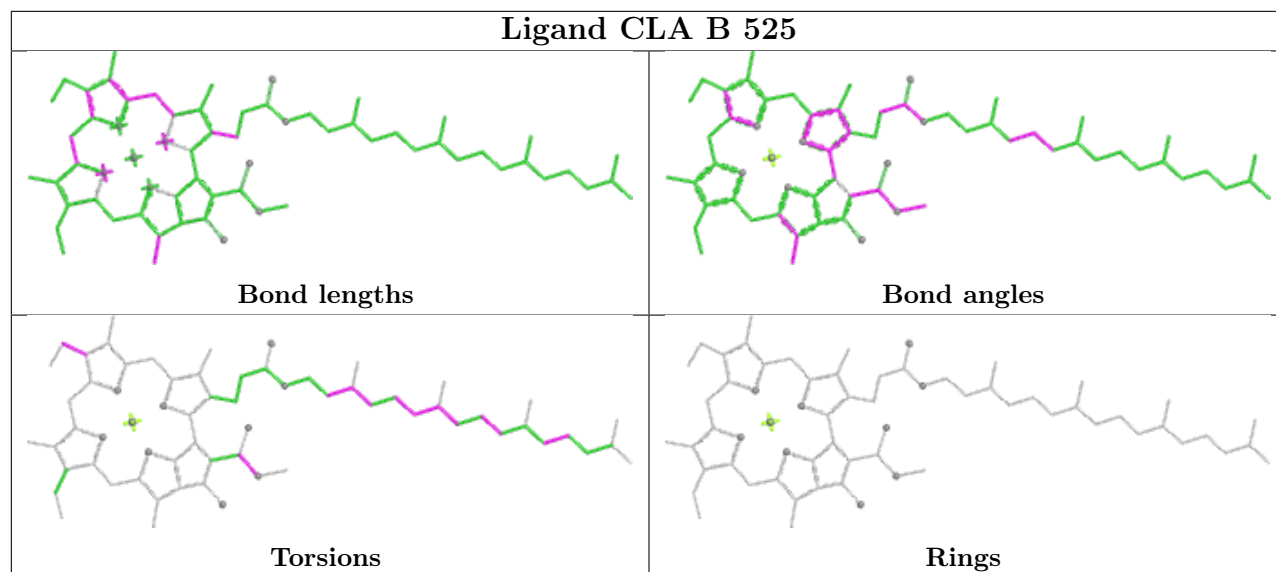


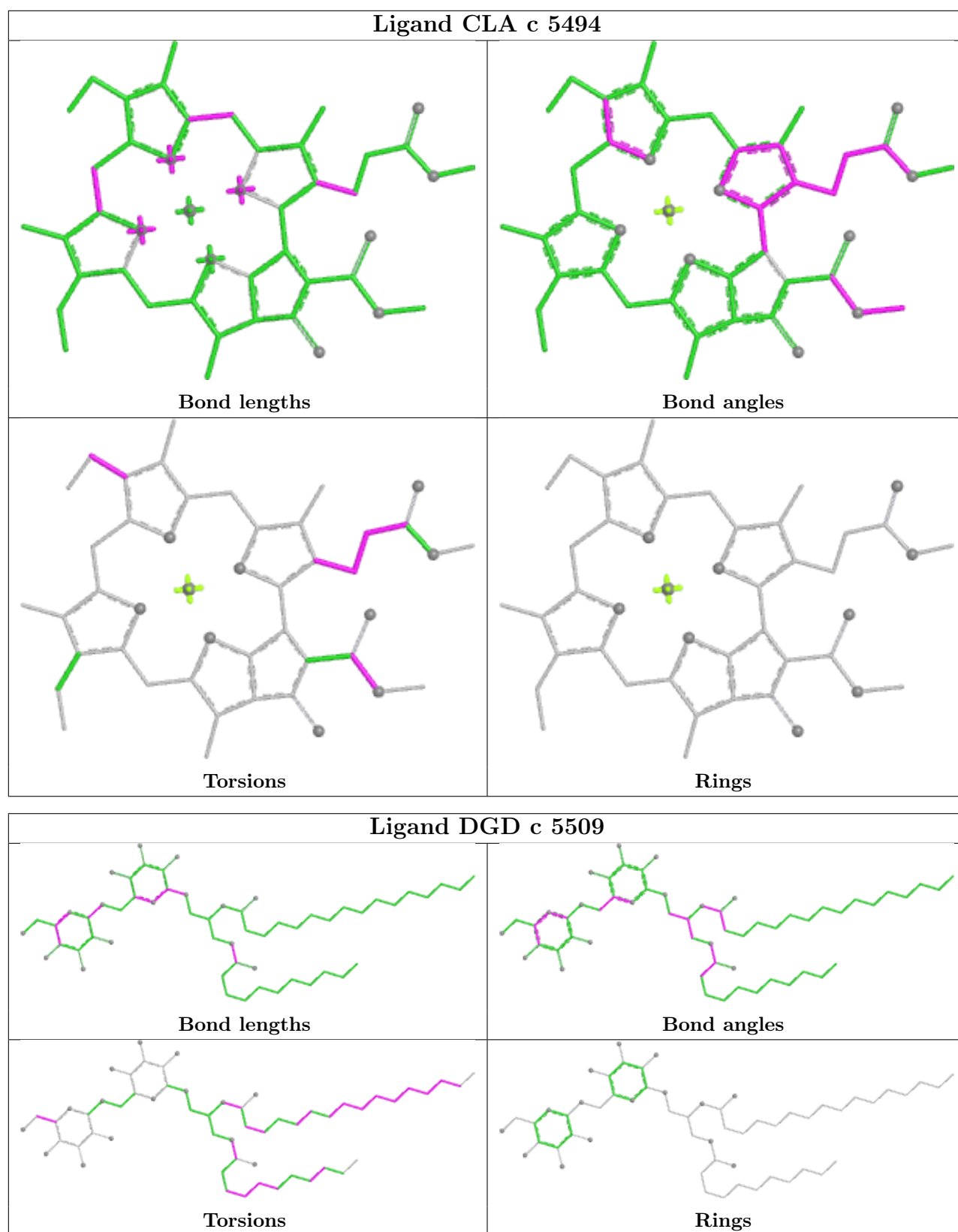


| Ligand MGE I 5210                                                                 |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

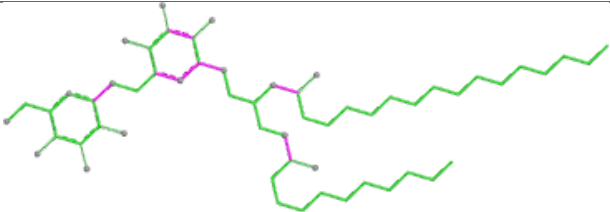
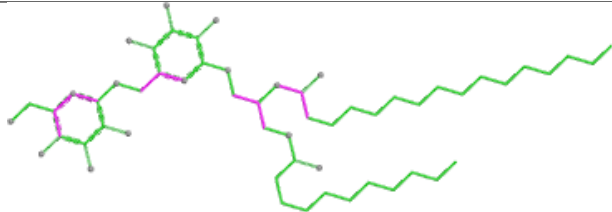
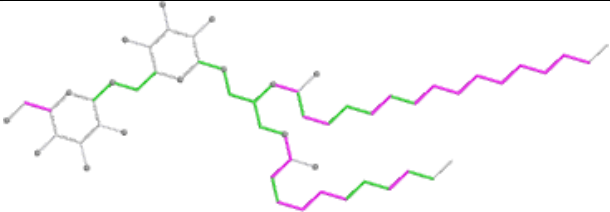
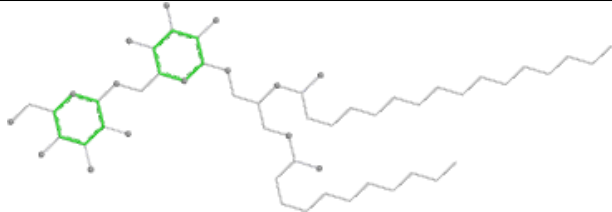
| Ligand MGE L 210                                                                   |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                       | Bond angles                                                                         |
|  |  |
| Torsions                                                                           | Rings                                                                               |

| Ligand BCR C 505                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

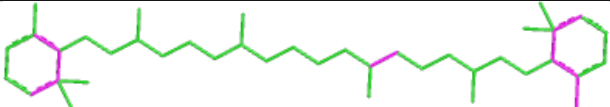
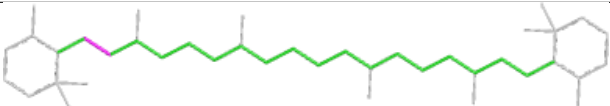
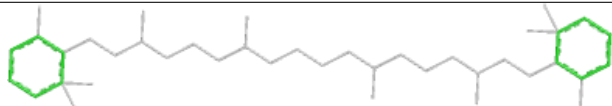


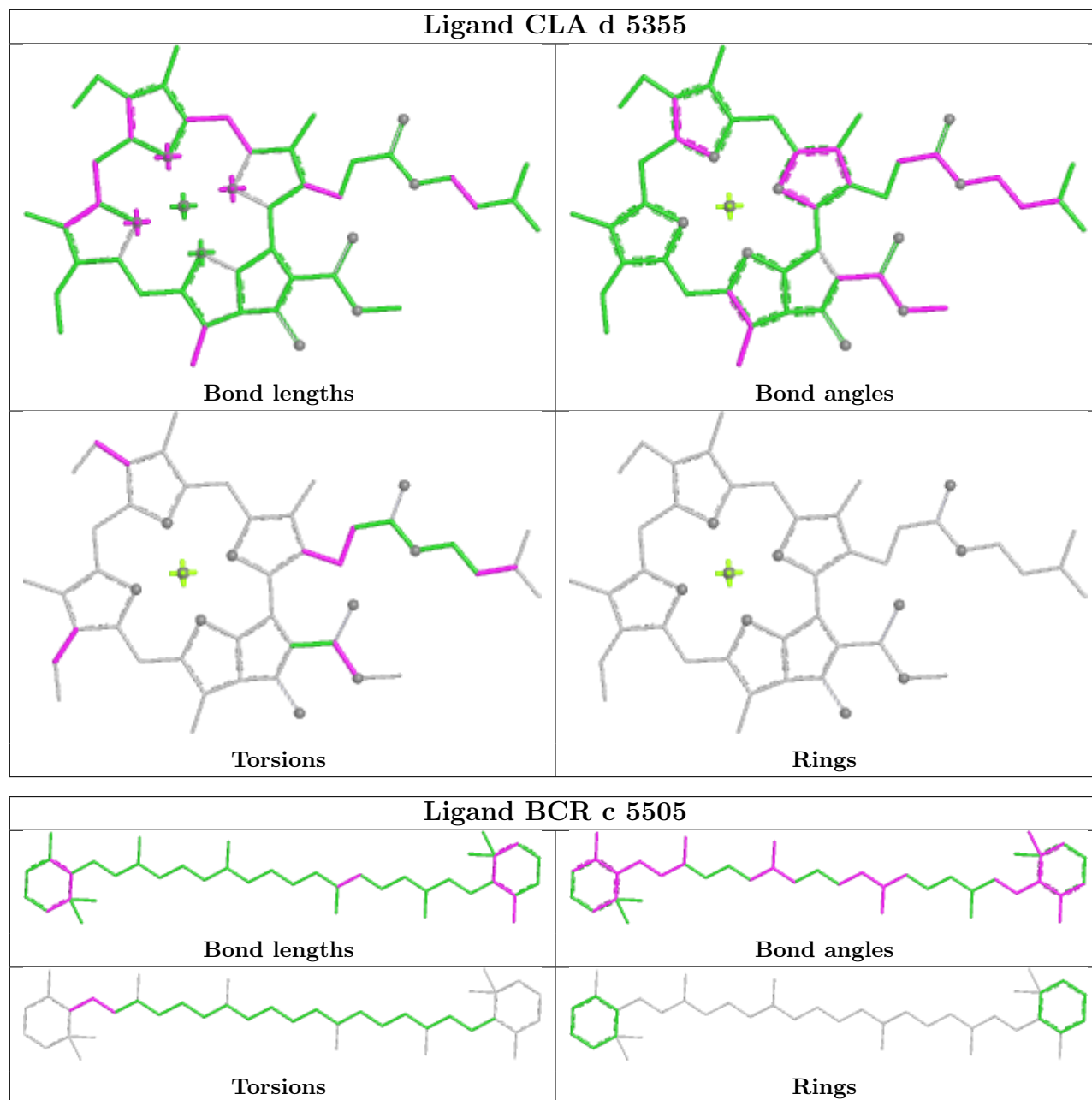


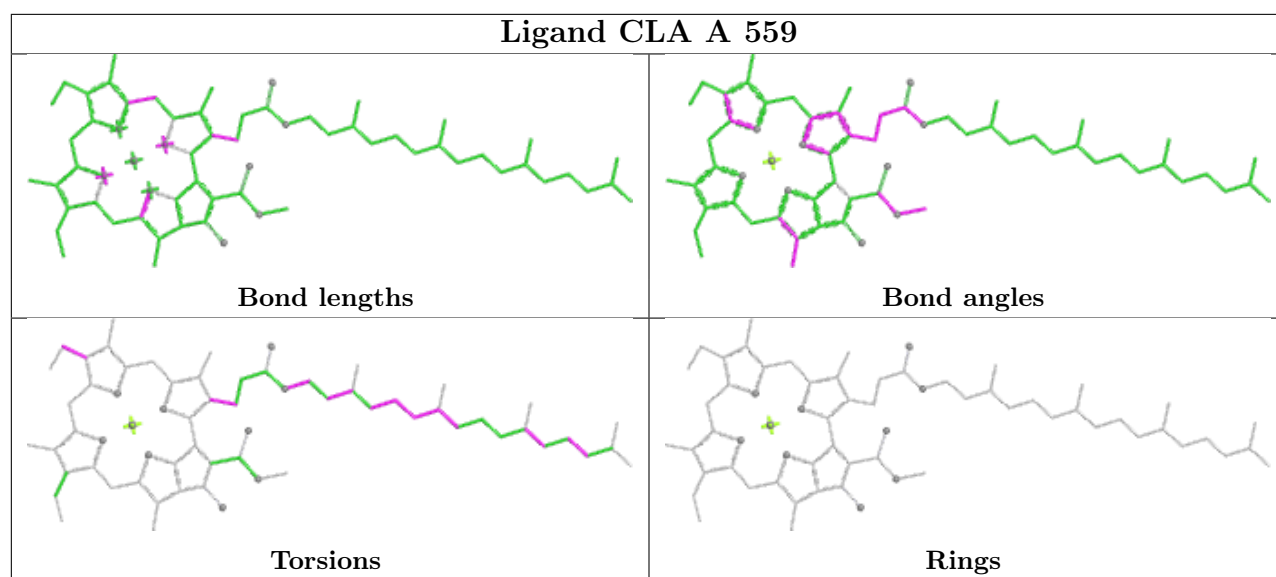


| Ligand DGD C 509                                                                  |                                                                                    |  |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--|--|
|  |  |  |  |
| Bond lengths                                                                      | Bond angles                                                                        |  |  |
|  |  |  |  |
| Torsions                                                                          | Rings                                                                              |  |  |

| Ligand BCR B 527                                                                   |                                                                                     |  |  |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|
|   |   |  |  |
| 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 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed      | <RSRZ> | #RSRZ>2      | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|---------------|--------|--------------|-----------------------|-------|
| 1   | A     | 335/344 (97%) | -0.62  | 0 100 100    | 40, 58, 78, 87        | 0     |
| 1   | a     | 335/344 (97%) | -0.58  | 0 100 100    | 48, 65, 82, 98        | 0     |
| 2   | B     | 488/510 (95%) | -0.63  | 0 100 100    | 40, 61, 78, 91        | 0     |
| 2   | b     | 488/510 (95%) | -0.63  | 0 100 100    | 40, 62, 79, 91        | 0     |
| 3   | C     | 447/473 (94%) | -0.57  | 2 (0%) 88 76 | 46, 68, 80, 88        | 0     |
| 3   | c     | 447/473 (94%) | -0.43  | 1 (0%) 91 83 | 53, 75, 86, 98        | 0     |
| 4   | D     | 340/352 (96%) | -0.75  | 0 100 100    | 35, 58, 76, 89        | 0     |
| 4   | d     | 340/352 (96%) | -0.65  | 1 (0%) 90 79 | 42, 65, 83, 95        | 0     |
| 5   | E     | 82/84 (97%)   | -0.32  | 1 (1%) 76 55 | 55, 70, 86, 94        | 0     |
| 5   | e     | 82/84 (97%)   | -0.21  | 1 (1%) 76 55 | 65, 77, 90, 94        | 0     |
| 6   | F     | 35/45 (77%)   | -0.34  | 1 (2%) 53 31 | 55, 67, 82, 85        | 0     |
| 6   | f     | 35/45 (77%)   | -0.31  | 0 100 100    | 67, 75, 87, 89        | 0     |
| 7   | H     | 64/66 (96%)   | -0.40  | 0 100 100    | 57, 72, 81, 87        | 0     |
| 7   | h     | 64/66 (96%)   | -0.47  | 0 100 100    | 62, 71, 81, 93        | 0     |
| 8   | I     | 35/38 (92%)   | -0.47  | 0 100 100    | 57, 66, 80, 88        | 0     |
| 8   | i     | 35/38 (92%)   | -0.46  | 0 100 100    | 62, 72, 86, 88        | 0     |
| 9   | J     | 34/40 (85%)   | -0.28  | 0 100 100    | 55, 68, 72, 74        | 0     |
| 9   | j     | 34/40 (85%)   | -0.30  | 0 100 100    | 68, 74, 79, 86        | 0     |
| 10  | K     | 37/37 (100%)  | -0.62  | 0 100 100    | 60, 68, 80, 87        | 0     |
| 10  | k     | 37/37 (100%)  | -0.33  | 0 100 100    | 76, 80, 93, 97        | 0     |
| 11  | L     | 37/37 (100%)  | -0.39  | 0 100 100    | 43, 61, 95, 100       | 0     |
| 11  | l     | 37/37 (100%)  | -0.51  | 0 100 100    | 45, 56, 86, 91        | 0     |
| 12  | M     | 36/36 (100%)  | -0.43  | 0 100 100    | 52, 58, 89, 94        | 0     |
| 12  | m     | 36/36 (100%)  | -0.49  | 0 100 100    | 54, 60, 86, 91        | 0     |

*Continued on next page...*

Continued from previous page...

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2      | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|--------------|-----------------------|-------|
| 13  | O     | 242/247 (97%)   | -0.47  | 1 (0%) 88 76 | 44, 65, 88, 101       | 0     |
| 13  | o     | 242/247 (97%)   | -0.43  | 0 100 100    | 43, 71, 88, 97        | 0     |
| 14  | T     | 30/32 (93%)     | -0.38  | 0 100 100    | 47, 61, 91, 97        | 0     |
| 14  | t     | 30/32 (93%)     | -0.43  | 0 100 100    | 48, 60, 89, 93        | 0     |
| 15  | U     | 98/104 (94%)    | -0.58  | 0 100 100    | 44, 60, 76, 83        | 0     |
| 15  | u     | 98/104 (94%)    | -0.56  | 0 100 100    | 52, 64, 74, 89        | 0     |
| 16  | V     | 137/137 (100%)  | -0.60  | 1 (0%) 84 66 | 47, 60, 75, 84        | 0     |
| 16  | v     | 137/137 (100%)  | -0.42  | 0 100 100    | 54, 74, 87, 99        | 0     |
| 17  | X     | 0/129           | -      | -            | -                     | -     |
| 17  | x     | 0/129           | -      | -            | -                     | -     |
| 18  | Z     | 62/62 (100%)    | -0.28  | 0 100 100    | 67, 76, 93, 96        | 0     |
| 18  | z     | 62/62 (100%)    | -0.04  | 0 100 100    | 73, 87, 94, 97        | 0     |
| All | All   | 5078/5546 (91%) | -0.54  | 9 (0%) 91 83 | 35, 66, 85, 101       | 0     |

The worst 5 of 9 RSRZ outliers are listed below:

| Mol | Chain | Res  | Type | RSRZ |
|-----|-------|------|------|------|
| 3   | C     | 222  | GLY  | 3.6  |
| 16  | V     | 27   | ALA  | 3.0  |
| 5   | E     | 4    | THR  | 2.5  |
| 5   | e     | 5006 | GLY  | 2.3  |
| 4   | d     | 5013 | GLY  | 2.3  |

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

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

## 6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 29  | UNL  | C     | 486  | 8/-   | 0.49 | 0.12 | 55,56,59,60                 | 0     |
| 29  | UNL  | c     | 5490 | 4/-   | 0.63 | 0.10 | 91,92,92,92                 | 0     |
| 20  | CLA  | B     | 511  | 41/65 | 0.64 | 0.13 | 88,90,92,98                 | 0     |
| 20  | CLA  | b     | 5511 | 41/65 | 0.65 | 0.13 | 88,92,95,96                 | 0     |
| 29  | UNL  | c     | 5485 | 5/-   | 0.67 | 0.08 | 68,69,69,70                 | 0     |
| 29  | UNL  | C     | 485  | 5/-   | 0.67 | 0.11 | 57,59,61,61                 | 0     |
| 29  | UNL  | C     | 477  | 7/-   | 0.71 | 0.12 | 47,49,51,51                 | 0     |
| 29  | UNL  | C     | 481  | 13/-  | 0.71 | 0.10 | 61,64,68,69                 | 0     |
| 27  | LMT  | A     | 569  | 35/35 | 0.71 | 0.12 | 80,89,92,93                 | 0     |
| 29  | UNL  | c     | 5479 | 11/-  | 0.72 | 0.12 | 76,77,77,77                 | 0     |
| 29  | UNL  | c     | 5481 | 13/-  | 0.72 | 0.09 | 60,62,66,66                 | 0     |
| 29  | UNL  | C     | 484  | 5/-   | 0.75 | 0.10 | 47,51,52,53                 | 0     |
| 29  | UNL  | C     | 479  | 11/-  | 0.75 | 0.10 | 58,64,67,67                 | 0     |
| 29  | UNL  | C     | 482  | 13/-  | 0.75 | 0.09 | 64,66,67,67                 | 0     |
| 29  | UNL  | c     | 5486 | 8/-   | 0.75 | 0.08 | 63,64,65,66                 | 0     |
| 29  | UNL  | C     | 487  | 7/-   | 0.75 | 0.07 | 49,52,52,53                 | 0     |
| 29  | UNL  | c     | 5483 | 13/-  | 0.76 | 0.10 | 71,75,80,82                 | 0     |
| 26  | SQD  | a     | 212  | 26/54 | 0.77 | 0.10 | 82,94,101,103               | 0     |
| 29  | UNL  | C     | 476  | 9/-   | 0.77 | 0.06 | 61,62,63,64                 | 0     |
| 29  | UNL  | c     | 5478 | 11/-  | 0.77 | 0.09 | 76,79,81,81                 | 0     |
| 26  | SQD  | A     | 5212 | 26/54 | 0.78 | 0.11 | 75,100,107,107              | 0     |
| 29  | UNL  | c     | 5484 | 5/-   | 0.78 | 0.09 | 69,69,70,72                 | 0     |
| 27  | LMT  | a     | 5568 | 35/35 | 0.78 | 0.10 | 79,92,94,96                 | 0     |
| 29  | UNL  | c     | 5480 | 7/-   | 0.78 | 0.13 | 65,66,66,67                 | 0     |
| 29  | UNL  | c     | 5489 | 7/-   | 0.78 | 0.09 | 73,73,74,74                 | 0     |
| 28  | MGE  | i     | 5201 | 48/48 | 0.78 | 0.10 | 67,83,88,90                 | 0     |
| 27  | LMT  | m     | 216  | 35/35 | 0.79 | 0.10 | 62,87,89,91                 | 0     |
| 29  | UNL  | C     | 488  | 5/-   | 0.79 | 0.09 | 41,45,47,47                 | 0     |
| 29  | UNL  | C     | 478  | 11/-  | 0.79 | 0.08 | 58,65,66,66                 | 0     |
| 29  | UNL  | c     | 5488 | 5/-   | 0.81 | 0.07 | 59,59,59,60                 | 0     |
| 29  | UNL  | C     | 483  | 13/-  | 0.81 | 0.10 | 61,68,78,78                 | 0     |
| 29  | UNL  | C     | 475  | 12/-  | 0.81 | 0.08 | 68,69,72,73                 | 0     |
| 26  | SQD  | L     | 5213 | 47/54 | 0.82 | 0.10 | 52,85,106,108               | 0     |
| 29  | UNL  | C     | 480  | 7/-   | 0.82 | 0.12 | 35,36,38,38                 | 0     |
| 24  | BCR  | c     | 5506 | 40/40 | 0.82 | 0.09 | 75,81,86,86                 | 0     |
| 27  | LMT  | t     | 5217 | 35/35 | 0.82 | 0.13 | 76,95,104,105               | 0     |
| 29  | UNL  | c     | 5482 | 13/-  | 0.82 | 0.08 | 60,61,71,72                 | 0     |
| 20  | CLA  | c     | 5501 | 65/65 | 0.82 | 0.10 | 82,91,94,95                 | 0     |
| 24  | BCR  | C     | 505  | 40/40 | 0.83 | 0.11 | 75,81,91,92                 | 0     |
| 27  | LMT  | T     | 217  | 35/35 | 0.83 | 0.12 | 83,93,96,97                 | 0     |
| 24  | BCR  | c     | 5505 | 40/40 | 0.83 | 0.10 | 84,87,91,92                 | 0     |
| 20  | CLA  | c     | 5502 | 51/65 | 0.83 | 0.10 | 93,96,97,98                 | 0     |
| 26  | SQD  | d     | 5358 | 54/54 | 0.83 | 0.10 | 74,85,106,107               | 0     |

Continued on next page...

*Continued from previous page...*

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 29  | UNL  | c     | 5477 | 7/-   | 0.83 | 0.14 | 67,68,70,70                 | 0     |
| 28  | MGE  | d     | 5359 | 47/48 | 0.84 | 0.10 | 72,81,96,98                 | 0     |
| 28  | MGE  | d     | 5360 | 41/48 | 0.84 | 0.09 | 68,72,78,80                 | 0     |
| 22  | PQ9  | A     | 564  | 30/45 | 0.84 | 0.14 | 54,57,63,64                 | 30    |
| 27  | LMT  | M     | 5216 | 35/35 | 0.84 | 0.09 | 58,83,90,90                 | 0     |
| 20  | CLA  | c     | 5498 | 65/65 | 0.84 | 0.10 | 81,90,93,93                 | 0     |
| 28  | MGE  | d     | 5361 | 48/48 | 0.85 | 0.09 | 61,68,78,83                 | 0     |
| 24  | BCR  | H     | 107  | 40/40 | 0.85 | 0.10 | 77,83,88,89                 | 0     |
| 28  | MGE  | l     | 5210 | 48/48 | 0.85 | 0.09 | 59,69,78,81                 | 0     |
| 29  | UNL  | c     | 5475 | 12/-  | 0.85 | 0.07 | 74,78,84,84                 | 0     |
| 29  | UNL  | c     | 5476 | 9/-   | 0.85 | 0.05 | 58,60,62,62                 | 0     |
| 26  | SQD  | A     | 568  | 54/54 | 0.85 | 0.09 | 76,82,90,90                 | 0     |
| 29  | UNL  | c     | 5487 | 7/-   | 0.85 | 0.06 | 57,57,58,58                 | 0     |
| 28  | MGE  | D     | 358  | 47/48 | 0.85 | 0.10 | 65,72,79,81                 | 0     |
| 20  | CLA  | c     | 5491 | 65/65 | 0.85 | 0.09 | 70,78,81,86                 | 0     |
| 26  | SQD  | t     | 213  | 47/54 | 0.85 | 0.10 | 61,95,116,117               | 0     |
| 28  | MGE  | b     | 5530 | 48/48 | 0.86 | 0.09 | 59,64,71,73                 | 0     |
| 22  | PQ9  | a     | 5564 | 30/45 | 0.86 | 0.10 | 51,55,62,62                 | 30    |
| 20  | CLA  | B     | 526  | 65/65 | 0.86 | 0.10 | 71,82,97,98                 | 0     |
| 20  | CLA  | b     | 5526 | 65/65 | 0.86 | 0.09 | 66,71,92,95                 | 0     |
| 20  | CLA  | C     | 502  | 51/65 | 0.86 | 0.09 | 74,80,83,84                 | 0     |
| 20  | CLA  | c     | 5503 | 50/65 | 0.86 | 0.10 | 88,91,92,93                 | 0     |
| 20  | CLA  | c     | 5495 | 65/65 | 0.86 | 0.09 | 74,81,86,88                 | 0     |
| 28  | MGE  | I     | 201  | 48/48 | 0.86 | 0.09 | 73,81,89,90                 | 0     |
| 28  | MGE  | L     | 210  | 48/48 | 0.86 | 0.09 | 59,68,73,75                 | 0     |
| 30  | DGD  | C     | 507  | 53/66 | 0.86 | 0.10 | 55,66,86,88                 | 0     |
| 30  | DGD  | c     | 5507 | 53/66 | 0.86 | 0.09 | 66,74,90,91                 | 0     |
| 30  | DGD  | c     | 5509 | 57/66 | 0.86 | 0.08 | 67,72,77,78                 | 0     |
| 31  | BCT  | d     | 5353 | 4/4   | 0.86 | 0.06 | 75,75,76,77                 | 0     |
| 20  | CLA  | B     | 516  | 65/65 | 0.87 | 0.10 | 61,76,92,97                 | 0     |
| 20  | CLA  | c     | 5497 | 65/65 | 0.87 | 0.10 | 66,82,84,87                 | 0     |
| 28  | MGE  | D     | 359  | 41/48 | 0.87 | 0.09 | 60,67,76,79                 | 0     |
| 28  | MGE  | D     | 360  | 48/48 | 0.87 | 0.09 | 52,60,63,68                 | 0     |
| 24  | BCR  | B     | 527  | 40/40 | 0.87 | 0.09 | 58,65,68,69                 | 0     |
| 29  | UNL  | C     | 489  | 7/-   | 0.87 | 0.12 | 75,76,77,78                 | 0     |
| 30  | DGD  | C     | 508  | 47/66 | 0.87 | 0.12 | 61,71,80,83                 | 0     |
| 29  | UNL  | c     | 5474 | 15/-  | 0.87 | 0.06 | 39,50,56,56                 | 0     |
| 30  | DGD  | c     | 5508 | 47/66 | 0.87 | 0.11 | 66,76,82,84                 | 0     |
| 24  | BCR  | h     | 5107 | 40/40 | 0.87 | 0.09 | 74,79,82,83                 | 0     |
| 20  | CLA  | b     | 5519 | 65/65 | 0.87 | 0.08 | 70,75,80,81                 | 0     |
| 20  | CLA  | B     | 519  | 65/65 | 0.88 | 0.08 | 73,82,85,87                 | 0     |
| 20  | CLA  | C     | 497  | 65/65 | 0.88 | 0.09 | 74,78,80,82                 | 0     |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 24  | BCR  | d     | 5357 | 40/40 | 0.88 | 0.09 | 61,72,86,88                 | 0     |
| 30  | DGD  | C     | 509  | 57/66 | 0.88 | 0.09 | 52,60,69,70                 | 0     |
| 29  | UNL  | C     | 474  | 15/-  | 0.88 | 0.05 | 26,37,40,40                 | 0     |
| 20  | CLA  | b     | 5524 | 56/65 | 0.88 | 0.10 | 63,68,89,91                 | 0     |
| 24  | BCR  | D     | 357  | 40/40 | 0.88 | 0.08 | 61,66,78,80                 | 0     |
| 20  | CLA  | B     | 525  | 65/65 | 0.88 | 0.09 | 67,84,91,92                 | 0     |
| 20  | CLA  | c     | 5493 | 65/65 | 0.89 | 0.09 | 67,81,86,86                 | 0     |
| 20  | CLA  | B     | 524  | 56/65 | 0.89 | 0.09 | 67,72,77,80                 | 0     |
| 24  | BCR  | B     | 528  | 40/40 | 0.89 | 0.09 | 54,68,74,75                 | 0     |
| 20  | CLA  | C     | 495  | 65/65 | 0.89 | 0.08 | 58,68,74,76                 | 0     |
| 28  | MGE  | B     | 530  | 48/48 | 0.89 | 0.09 | 55,64,70,72                 | 0     |
| 24  | BCR  | C     | 506  | 40/40 | 0.89 | 0.08 | 68,72,79,80                 | 0     |
| 24  | BCR  | x     | 5130 | 40/40 | 0.89 | 0.08 | 77,81,85,86                 | 0     |
| 30  | DGD  | h     | 5208 | 54/66 | 0.89 | 0.08 | 57,68,73,75                 | 0     |
| 20  | CLA  | b     | 5520 | 65/65 | 0.89 | 0.09 | 63,72,74,76                 | 0     |
| 24  | BCR  | b     | 5529 | 40/40 | 0.90 | 0.08 | 69,72,74,74                 | 0     |
| 24  | BCR  | c     | 5504 | 40/40 | 0.90 | 0.09 | 73,80,88,89                 | 0     |
| 20  | CLA  | c     | 5496 | 65/65 | 0.90 | 0.08 | 79,83,95,97                 | 0     |
| 20  | CLA  | b     | 5525 | 65/65 | 0.90 | 0.09 | 71,77,80,82                 | 0     |
| 20  | CLA  | b     | 5518 | 65/65 | 0.90 | 0.08 | 60,64,69,75                 | 0     |
| 20  | CLA  | C     | 498  | 65/65 | 0.90 | 0.09 | 64,74,98,101                | 0     |
| 24  | BCR  | t     | 104  | 40/40 | 0.90 | 0.07 | 65,72,84,85                 | 0     |
| 24  | BCR  | B     | 529  | 40/40 | 0.90 | 0.07 | 62,69,80,80                 | 0     |
| 25  | LHG  | A     | 567  | 39/49 | 0.90 | 0.08 | 57,73,79,81                 | 0     |
| 25  | LHG  | a     | 5567 | 39/49 | 0.90 | 0.07 | 65,68,74,80                 | 0     |
| 30  | DGD  | H     | 208  | 54/66 | 0.90 | 0.09 | 61,69,75,76                 | 0     |
| 20  | CLA  | C     | 503  | 50/65 | 0.90 | 0.10 | 83,86,88,94                 | 0     |
| 20  | CLA  | C     | 501  | 65/65 | 0.90 | 0.08 | 70,78,83,85                 | 0     |
| 20  | CLA  | d     | 5355 | 50/65 | 0.90 | 0.08 | 74,77,80,81                 | 0     |
| 21  | PHO  | a     | 5562 | 64/64 | 0.90 | 0.09 | 70,75,81,82                 | 0     |
| 24  | BCR  | X     | 130  | 40/40 | 0.90 | 0.08 | 68,71,80,81                 | 0     |
| 20  | CLA  | c     | 5500 | 65/65 | 0.91 | 0.09 | 64,69,82,83                 | 0     |
| 20  | CLA  | a     | 5560 | 65/65 | 0.91 | 0.09 | 62,68,100,101               | 0     |
| 20  | CLA  | B     | 522  | 65/65 | 0.91 | 0.09 | 54,65,75,77                 | 0     |
| 20  | CLA  | b     | 5512 | 65/65 | 0.91 | 0.09 | 68,72,75,76                 | 0     |
| 20  | CLA  | b     | 5516 | 65/65 | 0.91 | 0.09 | 62,66,84,86                 | 0     |
| 24  | BCR  | T     | 5104 | 40/40 | 0.91 | 0.09 | 67,71,78,79                 | 0     |
| 20  | CLA  | C     | 500  | 65/65 | 0.91 | 0.09 | 59,63,73,74                 | 0     |
| 24  | BCR  | b     | 5527 | 40/40 | 0.91 | 0.09 | 58,63,72,72                 | 0     |
| 20  | CLA  | B     | 518  | 65/65 | 0.91 | 0.07 | 53,64,79,79                 | 0     |
| 20  | CLA  | C     | 496  | 65/65 | 0.91 | 0.08 | 71,78,88,89                 | 0     |
| 20  | CLA  | B     | 520  | 65/65 | 0.91 | 0.09 | 62,67,76,79                 | 0     |

*Continued on next page...*



*Continued from previous page...*

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 20  | CLA  | c     | 5499 | 47/65 | 0.91 | 0.09 | 60,69,76,78                 | 0     |
| 20  | CLA  | b     | 5523 | 65/65 | 0.92 | 0.08 | 45,52,74,75                 | 0     |
| 20  | CLA  | B     | 513  | 65/65 | 0.92 | 0.09 | 56,61,67,67                 | 0     |
| 20  | CLA  | C     | 491  | 65/65 | 0.92 | 0.07 | 63,70,77,79                 | 0     |
| 29  | UNL  | C     | 490  | 4/-   | 0.92 | 0.04 | 67,67,68,68                 | 0     |
| 20  | CLA  | C     | 494  | 46/65 | 0.92 | 0.08 | 59,66,68,72                 | 0     |
| 20  | CLA  | b     | 5517 | 65/65 | 0.92 | 0.07 | 54,58,66,71                 | 0     |
| 20  | CLA  | c     | 5492 | 60/65 | 0.92 | 0.08 | 57,61,83,84                 | 0     |
| 20  | CLA  | B     | 523  | 65/65 | 0.92 | 0.08 | 47,56,73,74                 | 0     |
| 21  | PHO  | a     | 5561 | 64/64 | 0.92 | 0.08 | 51,55,66,68                 | 0     |
| 20  | CLA  | c     | 5494 | 46/65 | 0.92 | 0.09 | 72,77,86,88                 | 0     |
| 20  | CLA  | B     | 514  | 65/65 | 0.92 | 0.08 | 59,64,82,83                 | 0     |
| 20  | CLA  | B     | 512  | 65/65 | 0.92 | 0.07 | 68,75,78,79                 | 0     |
| 22  | PQ9  | d     | 5356 | 30/45 | 0.92 | 0.07 | 51,57,66,66                 | 0     |
| 23  | OEC  | A     | 565  | 5/9   | 0.92 | 0.07 | 62,63,65,66                 | 0     |
| 20  | CLA  | b     | 5521 | 65/65 | 0.92 | 0.07 | 48,57,63,64                 | 0     |
| 20  | CLA  | B     | 515  | 65/65 | 0.93 | 0.08 | 55,66,71,72                 | 0     |
| 21  | PHO  | A     | 561  | 64/64 | 0.93 | 0.07 | 32,52,55,59                 | 0     |
| 21  | PHO  | A     | 562  | 64/64 | 0.93 | 0.07 | 47,53,63,66                 | 0     |
| 20  | CLA  | A     | 560  | 65/65 | 0.93 | 0.07 | 49,57,86,88                 | 0     |
| 20  | CLA  | D     | 355  | 50/65 | 0.93 | 0.07 | 63,65,68,70                 | 0     |
| 24  | BCR  | a     | 5566 | 40/40 | 0.93 | 0.07 | 59,75,78,79                 | 0     |
| 20  | CLA  | B     | 521  | 65/65 | 0.93 | 0.08 | 58,63,66,68                 | 0     |
| 24  | BCR  | b     | 5528 | 40/40 | 0.93 | 0.07 | 61,64,72,73                 | 0     |
| 20  | CLA  | b     | 5522 | 65/65 | 0.93 | 0.09 | 60,66,75,76                 | 0     |
| 20  | CLA  | a     | 5563 | 55/65 | 0.93 | 0.09 | 59,65,102,103               | 0     |
| 20  | CLA  | B     | 517  | 65/65 | 0.93 | 0.07 | 37,44,56,57                 | 0     |
| 24  | BCR  | A     | 566  | 40/40 | 0.93 | 0.07 | 50,57,64,66                 | 0     |
| 20  | CLA  | C     | 499  | 47/65 | 0.93 | 0.09 | 57,60,66,69                 | 0     |
| 20  | CLA  | b     | 5513 | 65/65 | 0.93 | 0.07 | 54,61,84,90                 | 0     |
| 20  | CLA  | C     | 493  | 65/65 | 0.93 | 0.09 | 67,71,77,79                 | 0     |
| 24  | BCR  | C     | 504  | 40/40 | 0.93 | 0.07 | 57,64,70,70                 | 0     |
| 20  | CLA  | A     | 563  | 55/65 | 0.93 | 0.08 | 43,49,75,78                 | 0     |
| 32  | HEM  | f     | 5051 | 43/43 | 0.93 | 0.11 | 80,84,97,101                | 0     |
| 20  | CLA  | D     | 354  | 65/65 | 0.94 | 0.07 | 35,43,63,66                 | 0     |
| 20  | CLA  | b     | 5515 | 65/65 | 0.94 | 0.08 | 46,51,74,76                 | 0     |
| 23  | OEC  | a     | 5565 | 5/9   | 0.94 | 0.05 | 63,64,71,87                 | 0     |
| 22  | PQ9  | D     | 356  | 30/45 | 0.94 | 0.07 | 49,67,80,83                 | 0     |
| 20  | CLA  | C     | 492  | 60/65 | 0.94 | 0.08 | 53,58,76,77                 | 0     |
| 20  | CLA  | a     | 5559 | 65/65 | 0.95 | 0.07 | 42,49,60,60                 | 0     |
| 20  | CLA  | d     | 5354 | 65/65 | 0.95 | 0.06 | 39,47,64,65                 | 0     |
| 20  | CLA  | A     | 559  | 65/65 | 0.95 | 0.06 | 39,43,49,52                 | 0     |

*Continued on next page...*

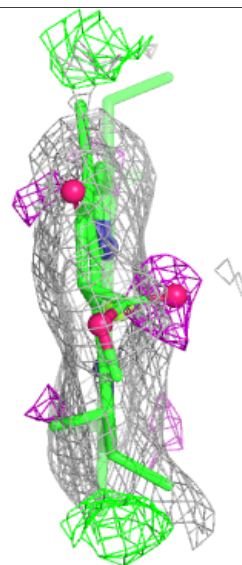
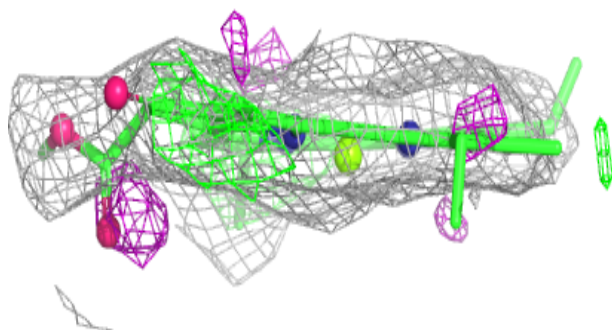
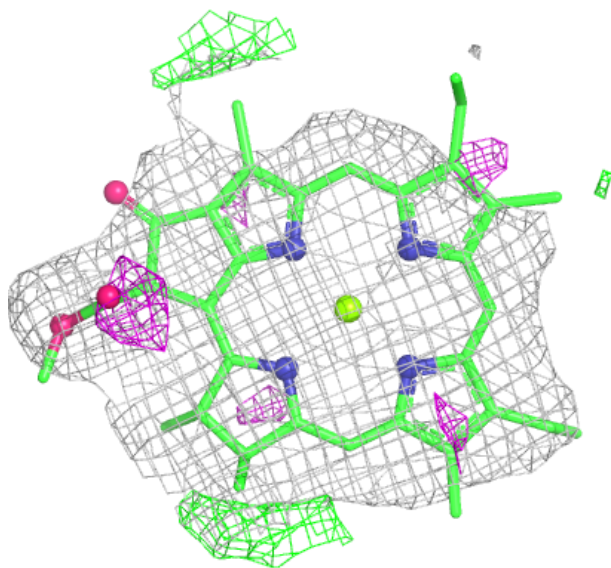
*Continued from previous page...*

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 20  | CLA  | a     | 5558 | 65/65 | 0.95 | 0.07 | 41,50,55,61                 | 0     |
| 32  | HEM  | F     | 51   | 43/43 | 0.95 | 0.10 | 78,84,92,95                 | 0     |
| 20  | CLA  | b     | 5514 | 65/65 | 0.95 | 0.06 | 41,51,74,75                 | 0     |
| 32  | HEM  | v     | 5552 | 43/43 | 0.95 | 0.08 | 65,67,70,70                 | 0     |
| 33  | CA   | K     | 56   | 1/1   | 0.95 | 0.13 | 119,119,119,119             | 0     |
| 20  | CLA  | A     | 558  | 65/65 | 0.96 | 0.07 | 41,46,50,51                 | 0     |
| 33  | CA   | k     | 5056 | 1/1   | 0.96 | 0.08 | 119,119,119,119             | 0     |
| 31  | BCT  | D     | 353  | 4/4   | 0.97 | 0.05 | 72,73,73,74                 | 0     |
| 32  | HEM  | V     | 552  | 43/43 | 0.97 | 0.07 | 37,54,58,59                 | 0     |
| 19  | FE2  | A     | 557  | 1/1   | 0.98 | 0.01 | 60,60,60,60                 | 0     |
| 19  | FE2  | a     | 5557 | 1/1   | 1.00 | 0.03 | 75,75,75,75                 | 0     |

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

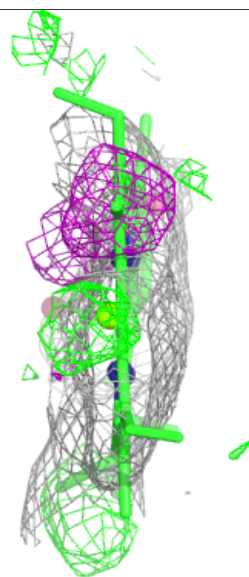
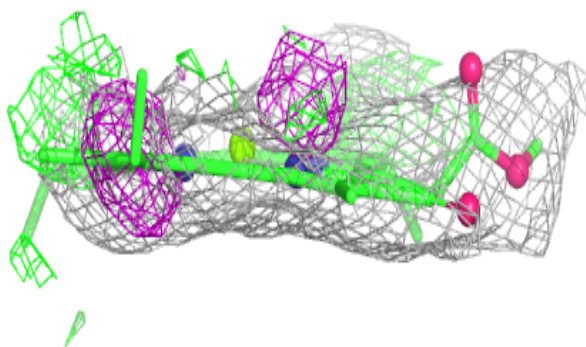
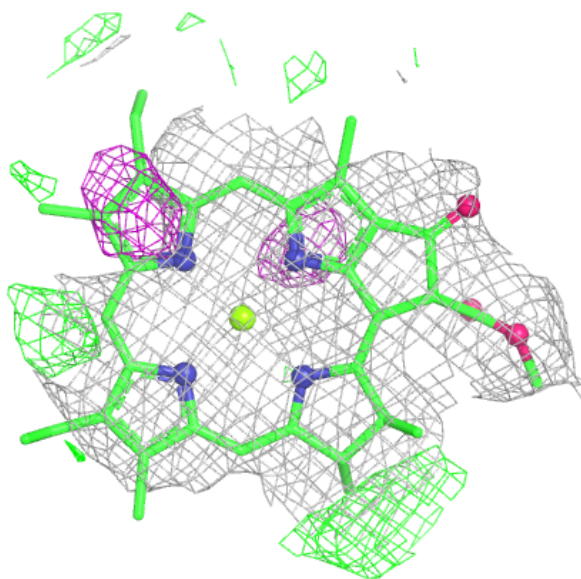
**Electron density around CLA B 511:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



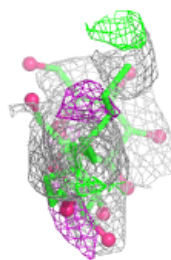
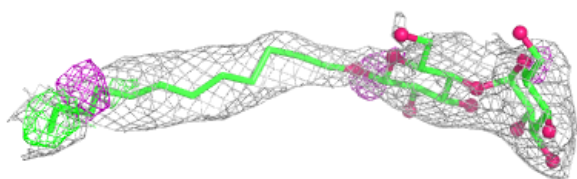
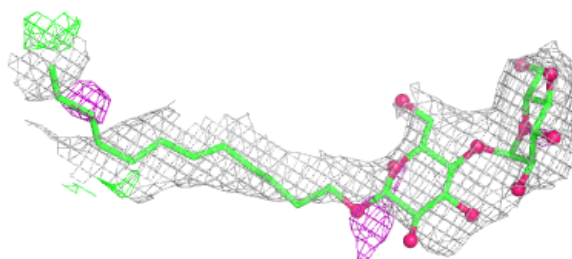
**Electron density around CLA b 5511:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



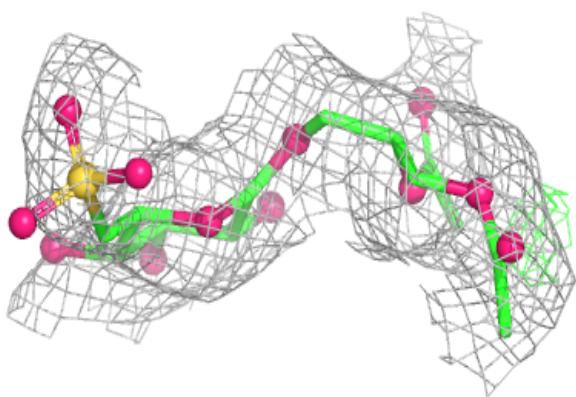
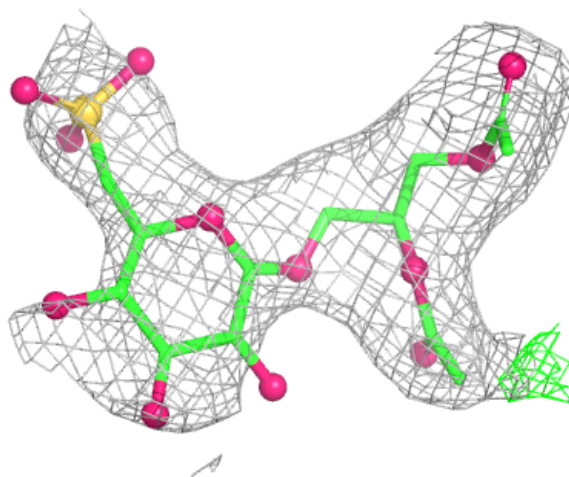
**Electron density around LMT A 569:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



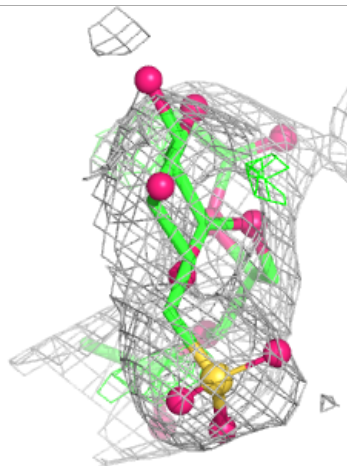
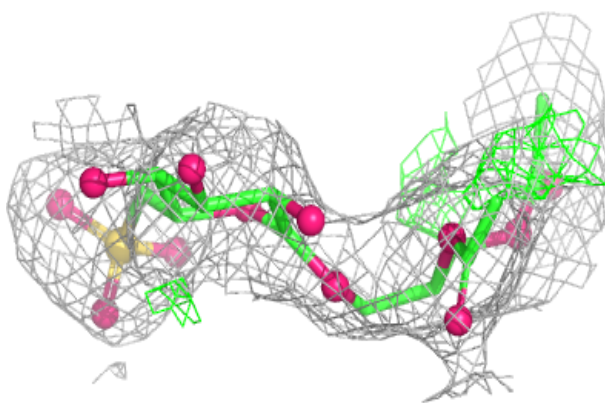
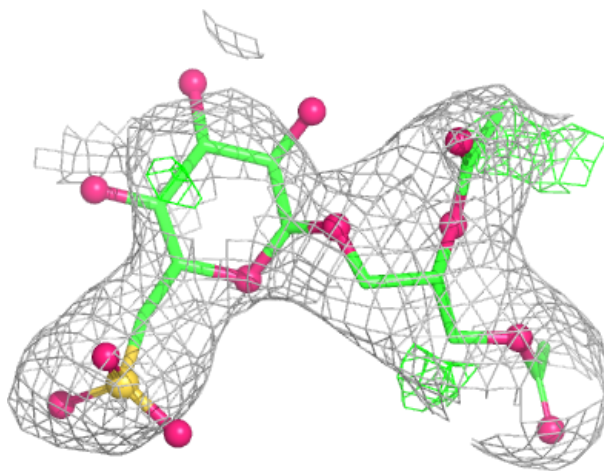
**Electron density around SQD a 212:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around SQD A 5212:**

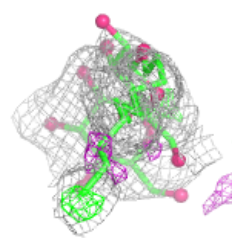
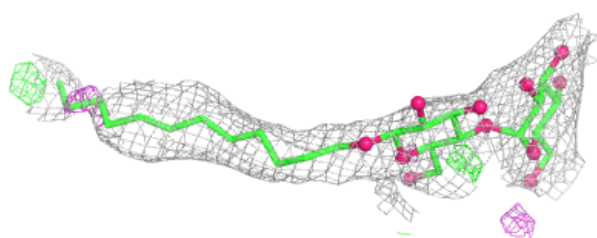
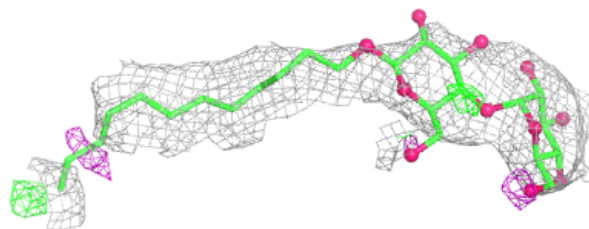
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



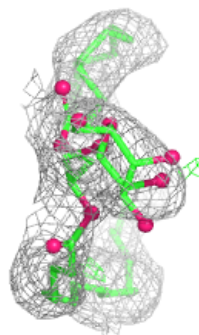
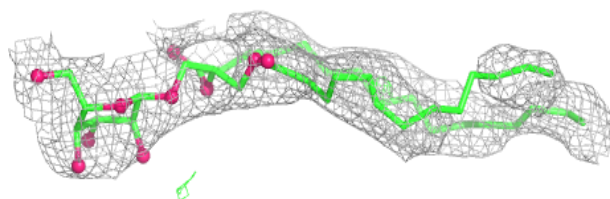
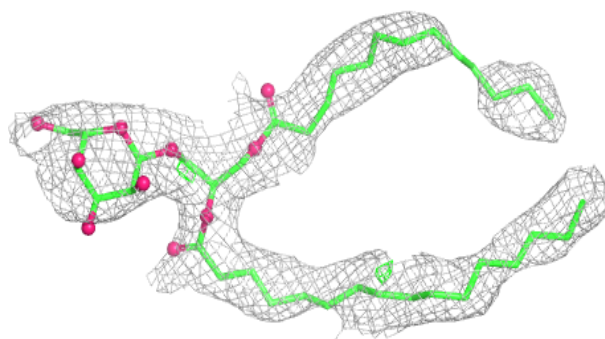


**Electron density around LMT a 5568:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around MGE i 5201:**

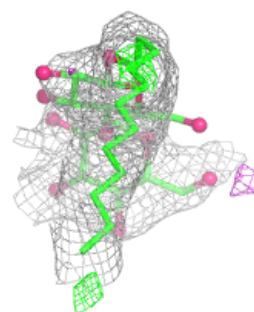
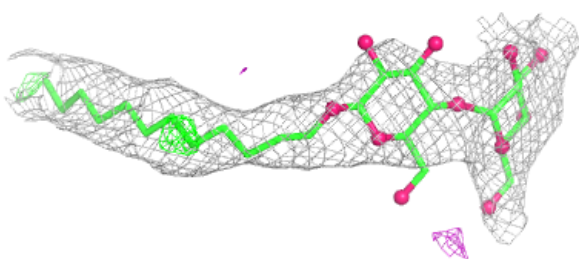
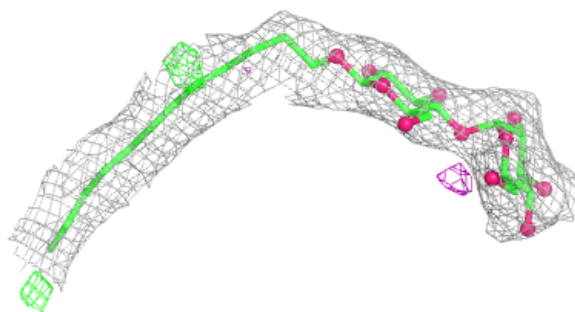
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



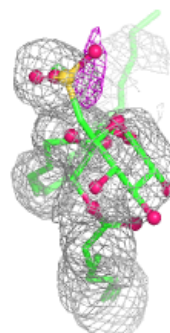
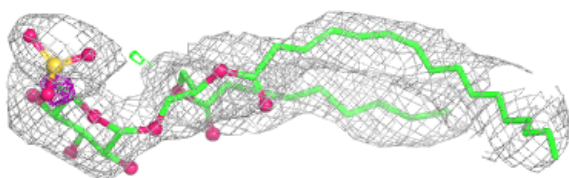
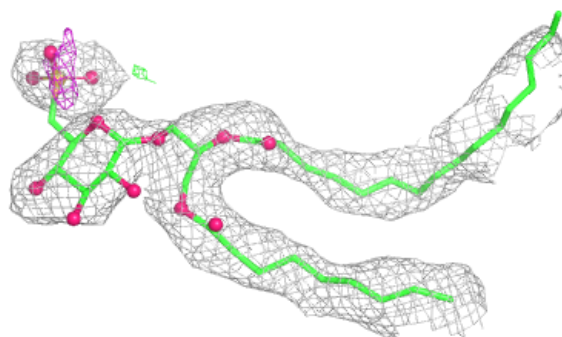


**Electron density around LMT m 216:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

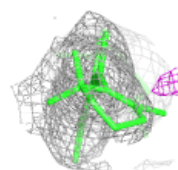
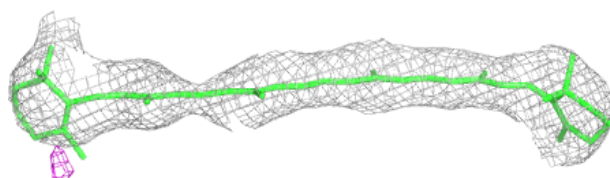
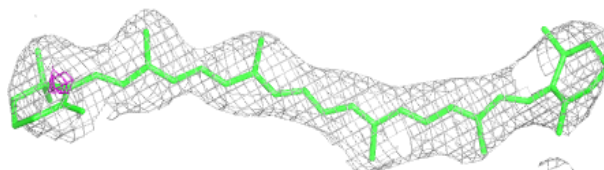
**Electron density around SQD L 5213:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

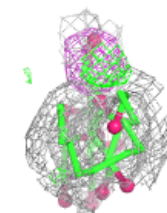
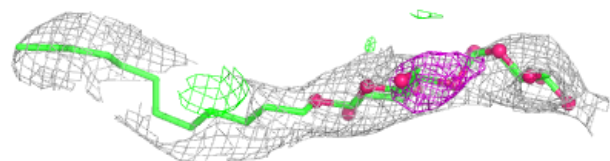
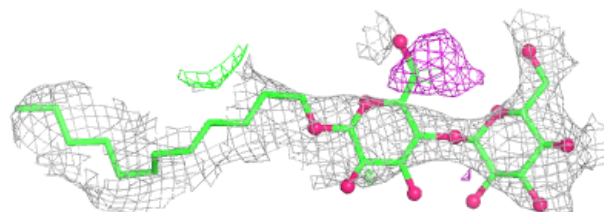


**Electron density around BCR c 5506:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

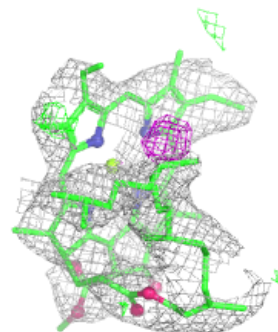
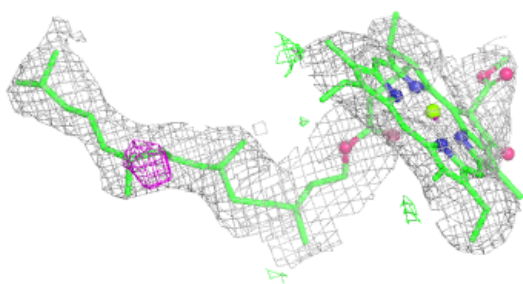
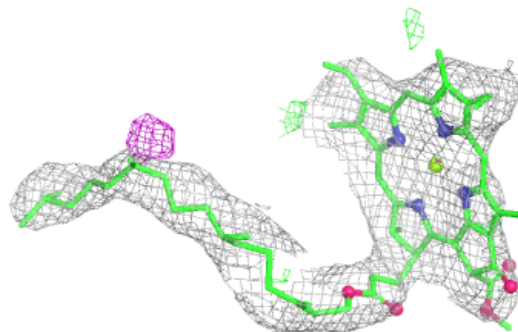
**Electron density around LMT t 5217:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

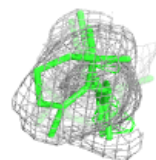
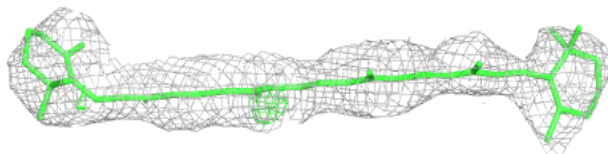
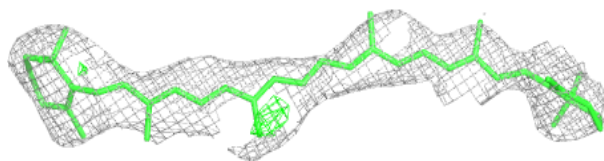


**Electron density around CLA c 5501:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

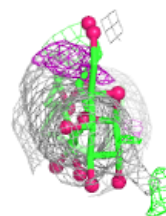
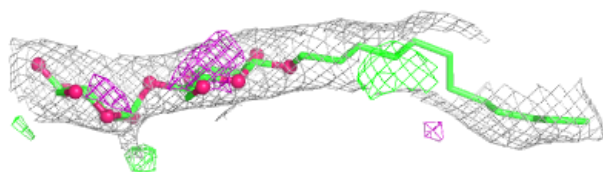
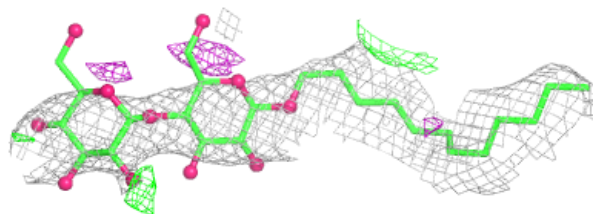
**Electron density around BCR C 505:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

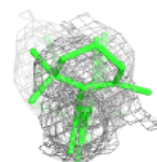
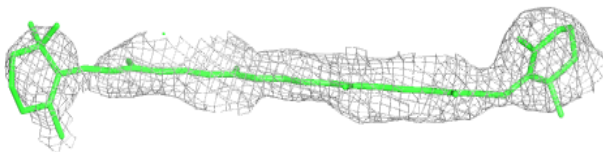
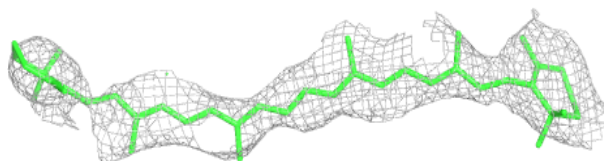


**Electron density around LMT T 217:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

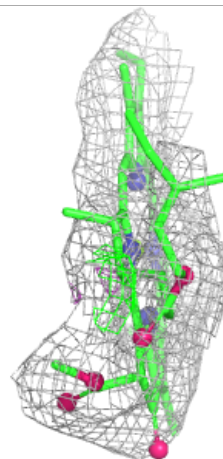
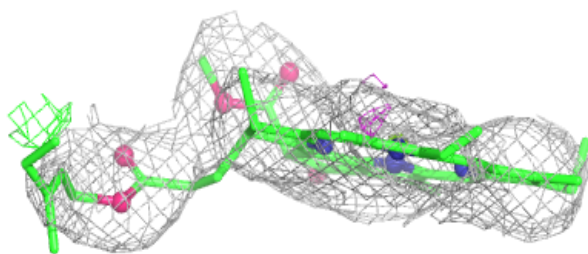
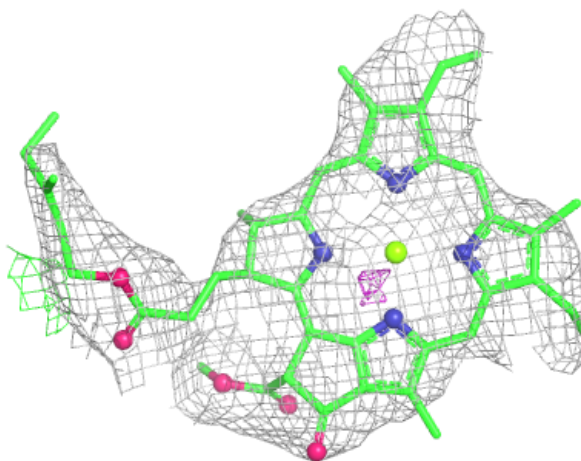
**Electron density around BCR c 5505:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



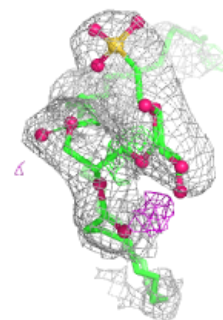
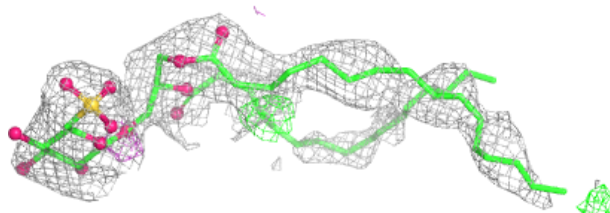
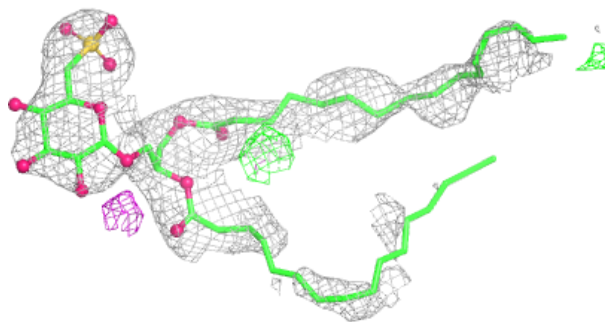
**Electron density around CLA c 5502:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

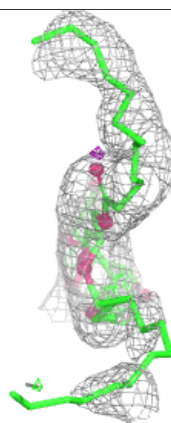
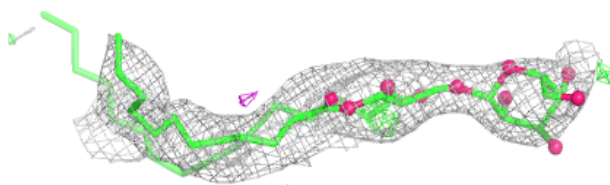
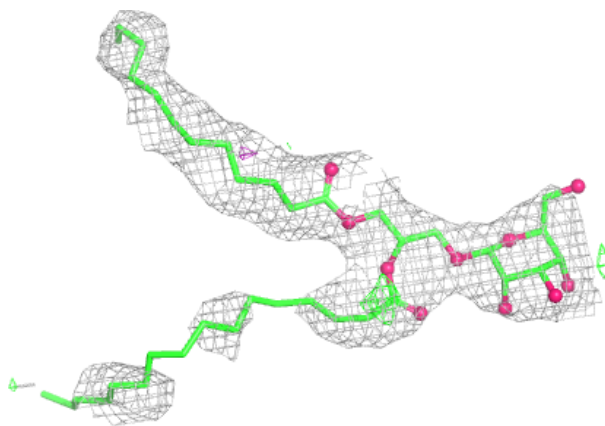


**Electron density around SQD d 5358:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around MGE d 5359:**

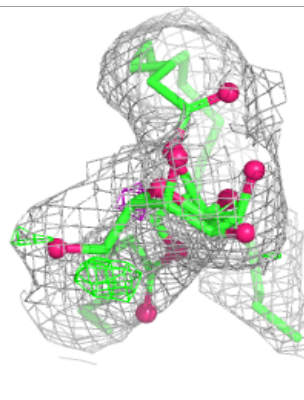
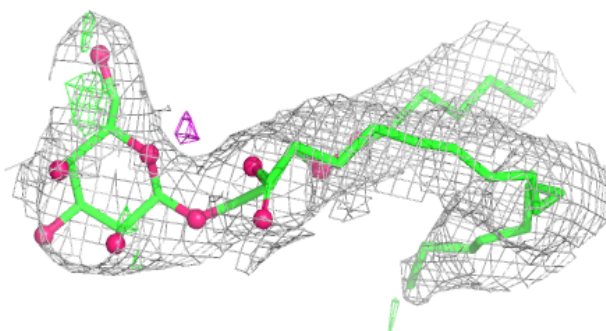
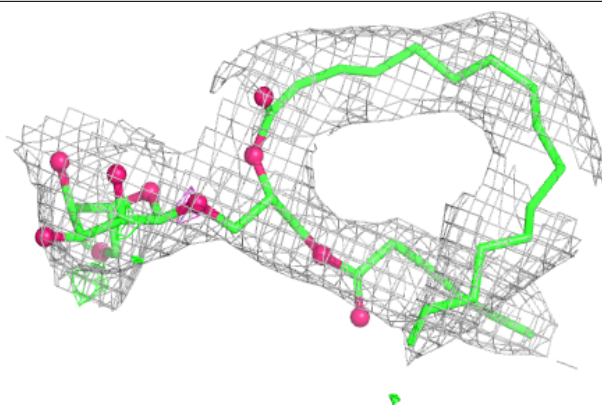
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



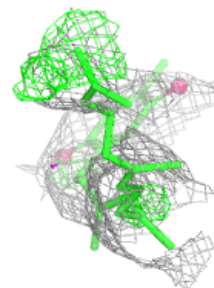
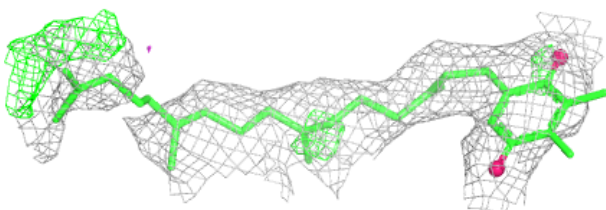
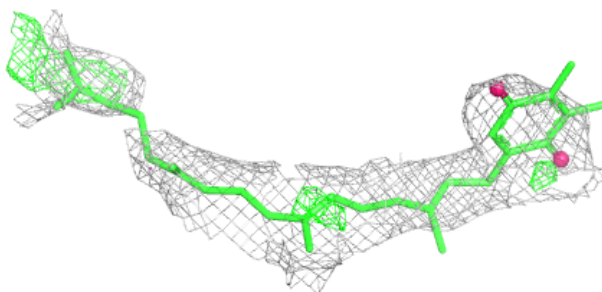


**Electron density around MGE d 5360:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

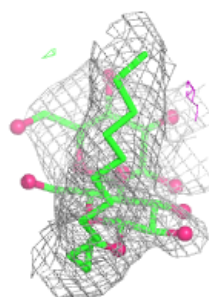
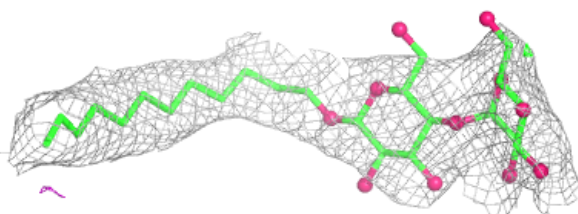
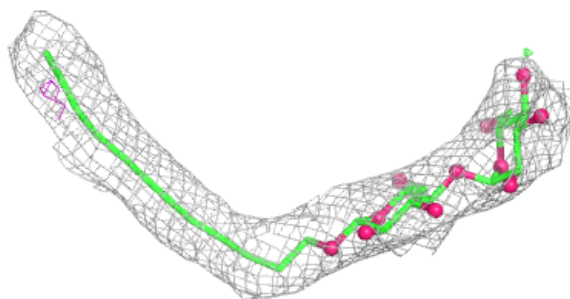
**Electron density around PQ9 A 564:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

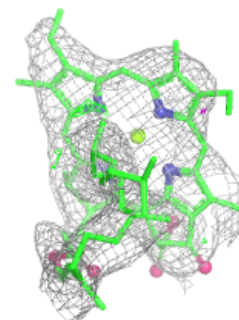
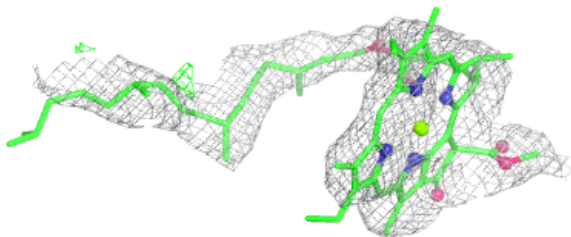
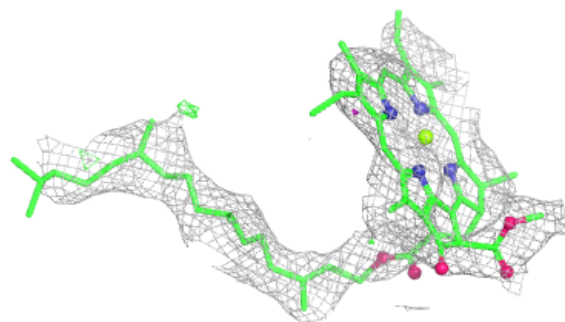


**Electron density around LMT M 5216:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around CLA c 5498:**

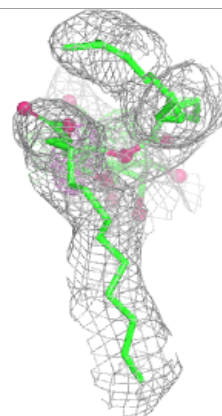
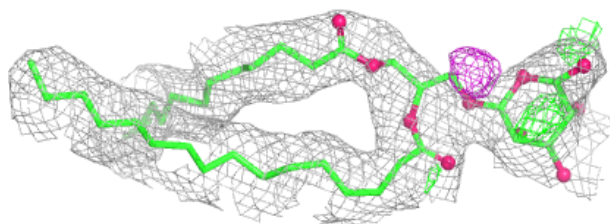
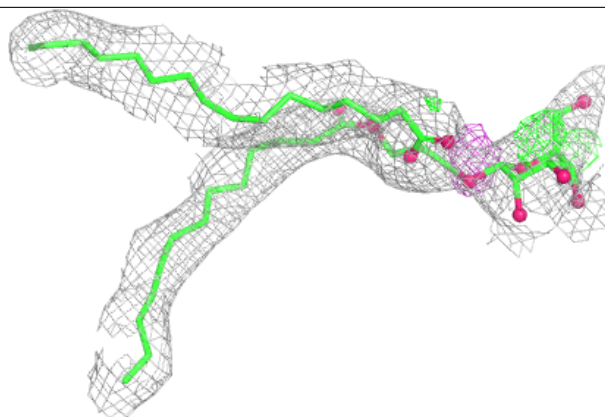
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



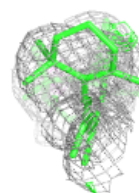
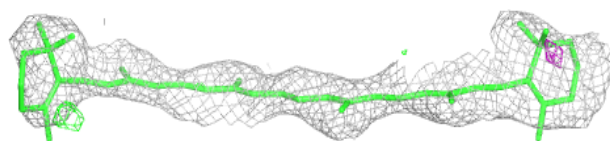
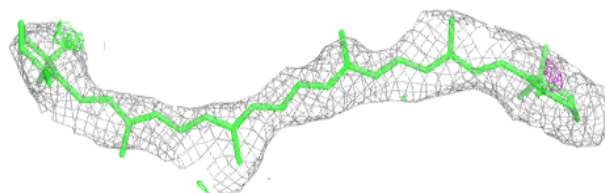


**Electron density around MGE d 5361:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

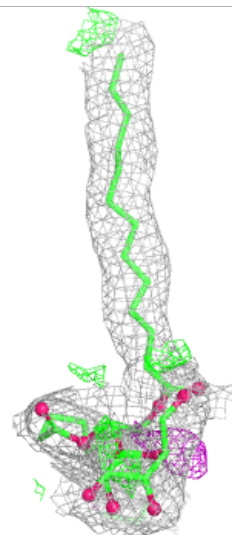
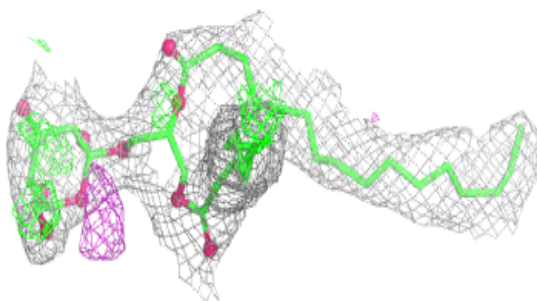
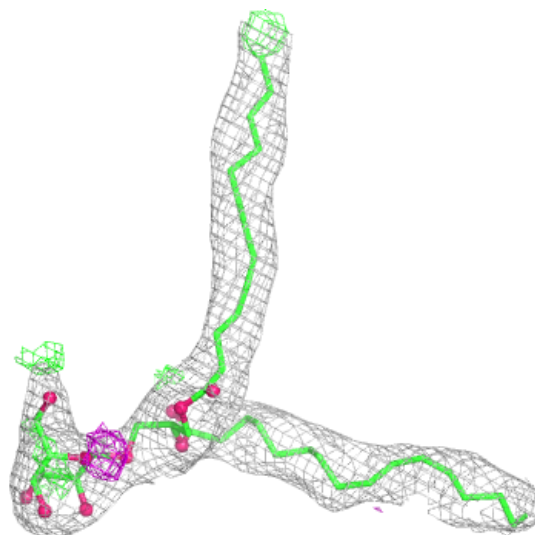
**Electron density around BCR H 107:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



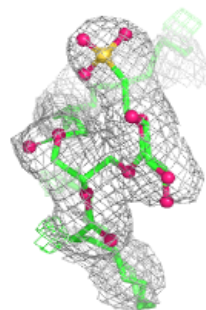
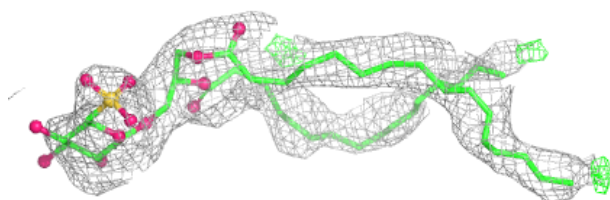
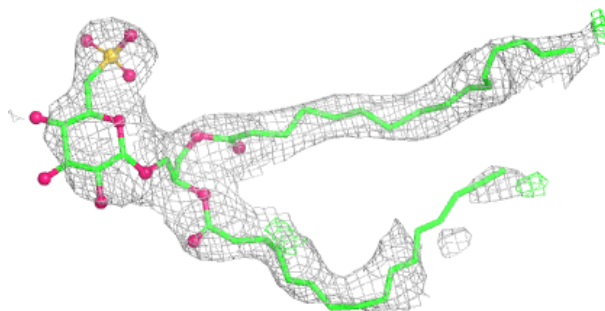
**Electron density around MGE 1 5210:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

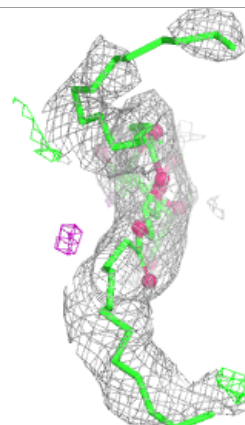
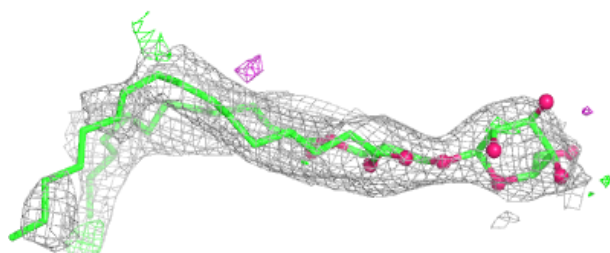
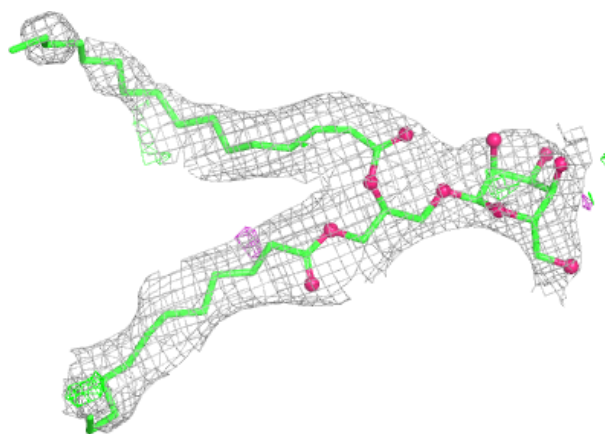


**Electron density around SQD A 568:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

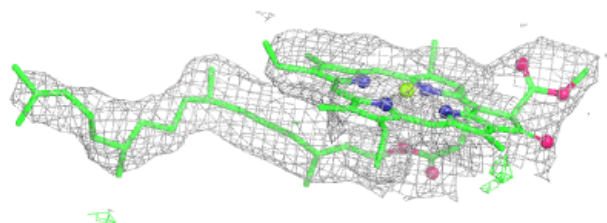
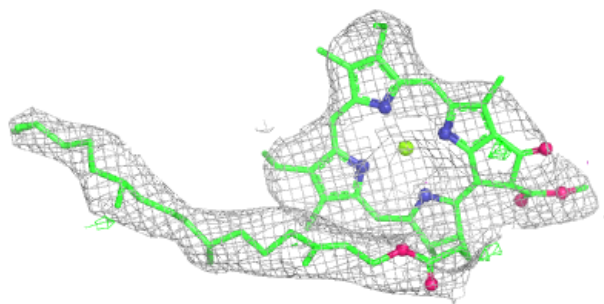
**Electron density around MGE D 358:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

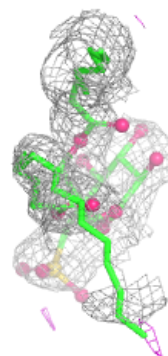
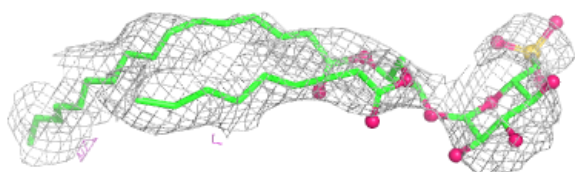
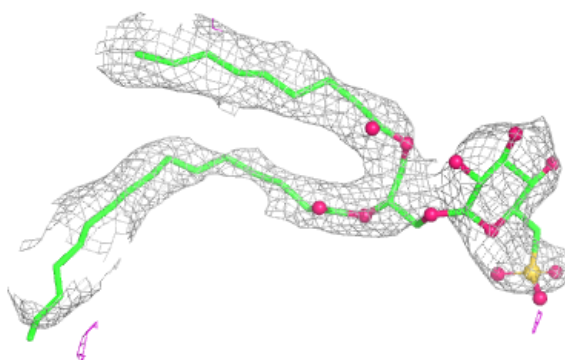


**Electron density around CLA c 5491:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

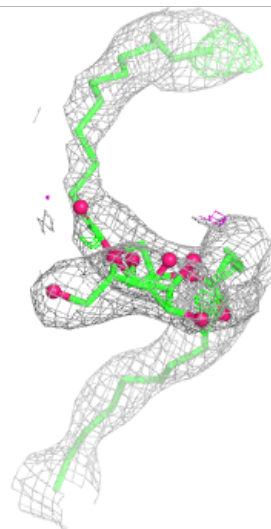
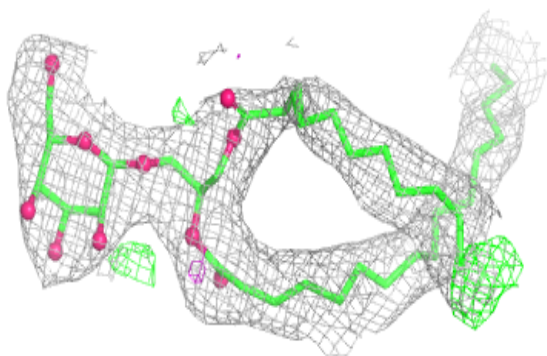
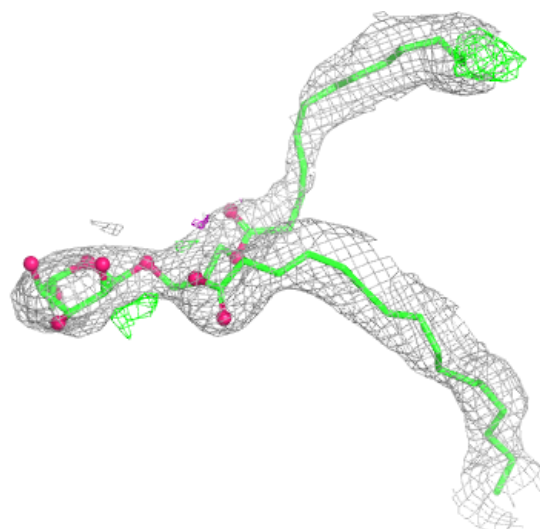
**Electron density around SQD t 213:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



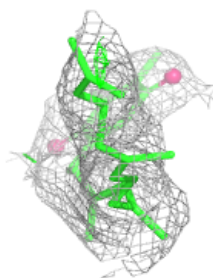
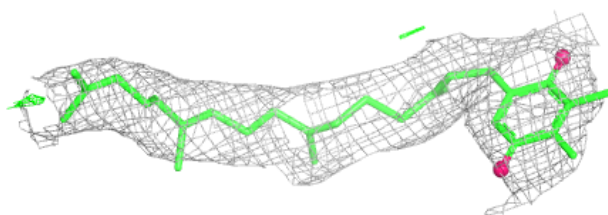
**Electron density around MGE b 5530:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around PQ9 a 5564:**

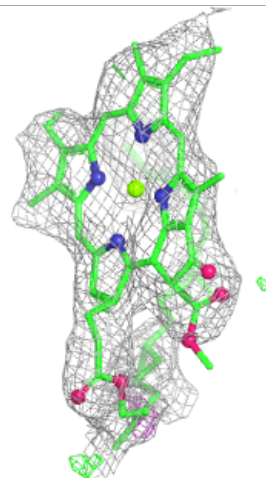
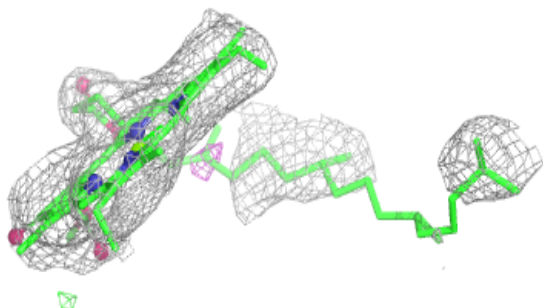
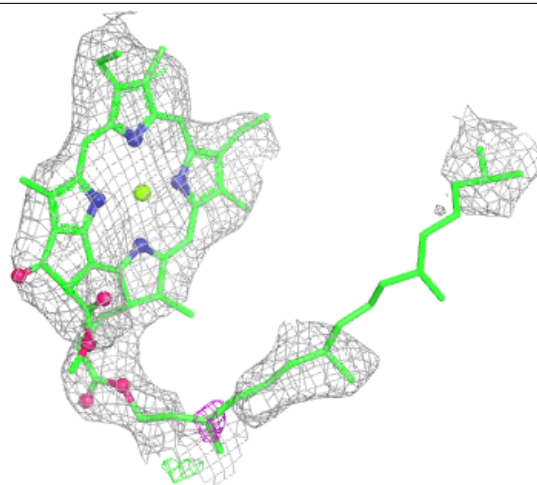
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





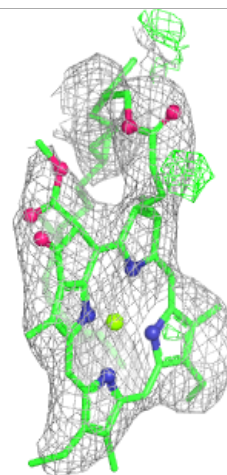
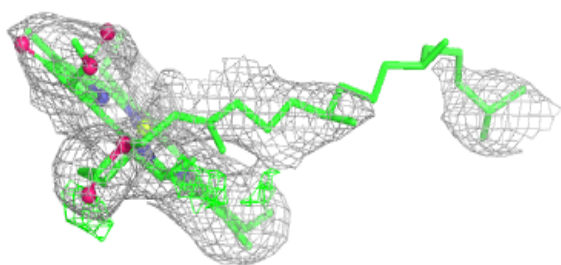
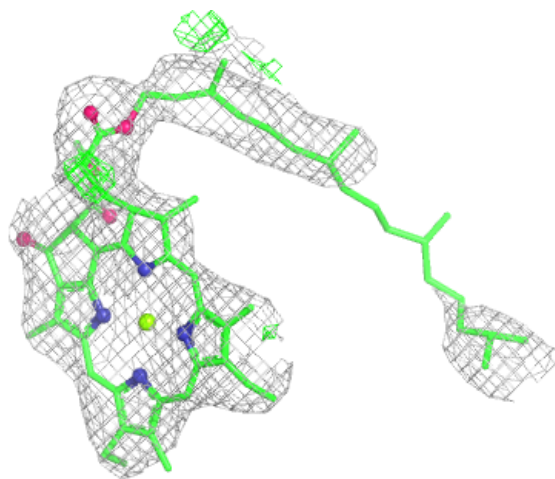
**Electron density around CLA B 526:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around CLA b 5526:**

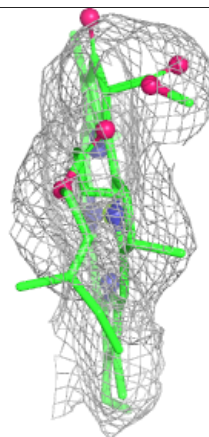
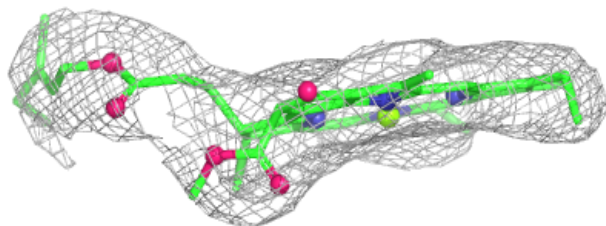
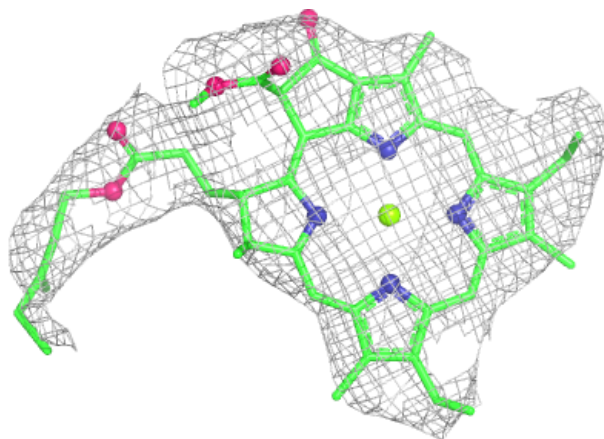
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





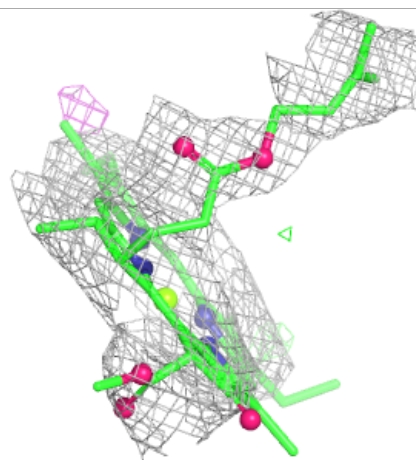
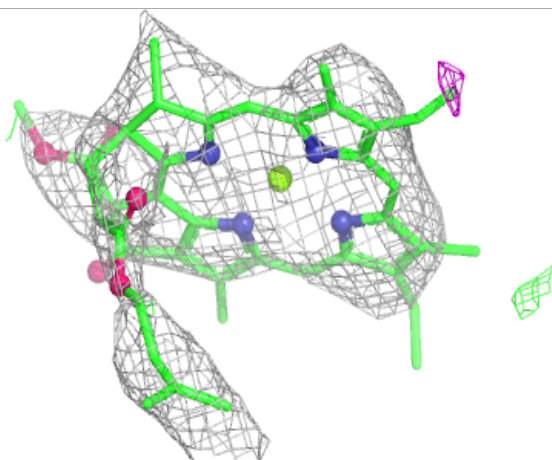
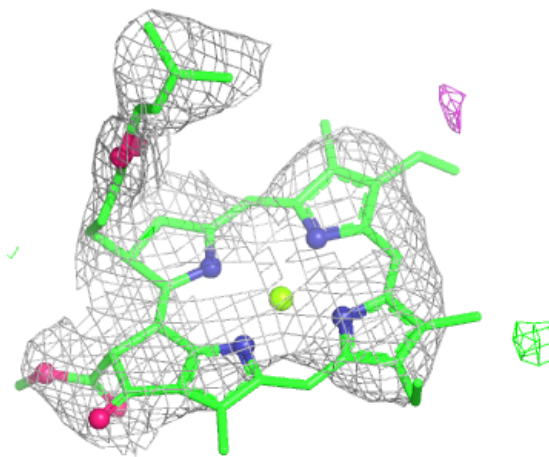
**Electron density around CLA C 502:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



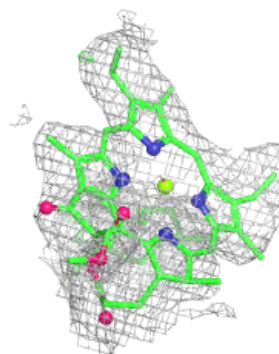
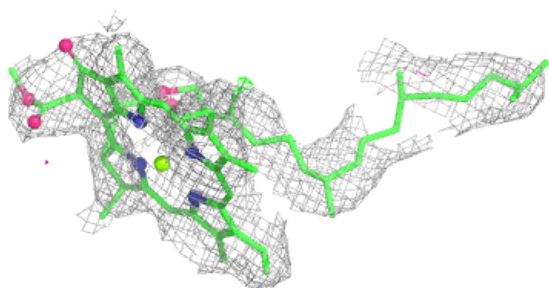
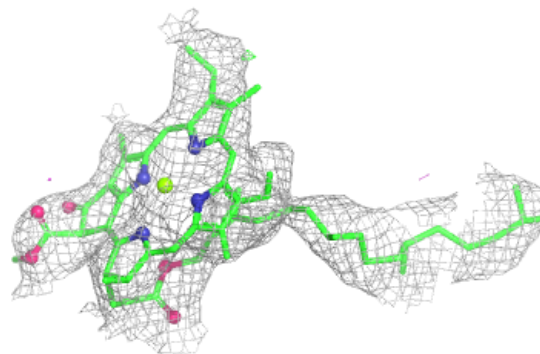
**Electron density around CLA c 5503:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

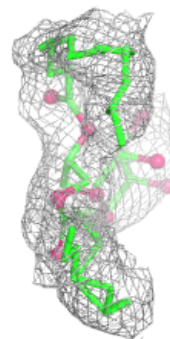
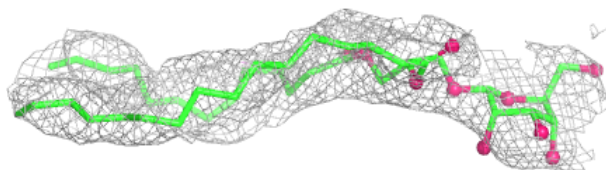
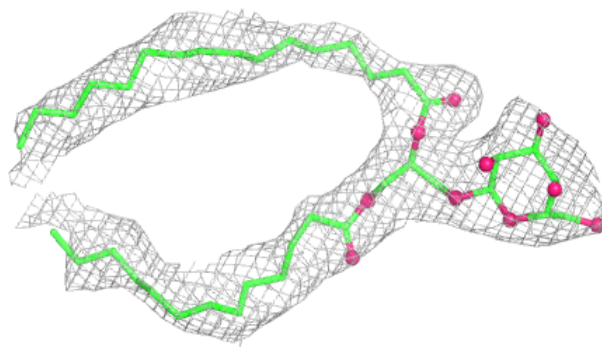


**Electron density around CLA c 5495:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

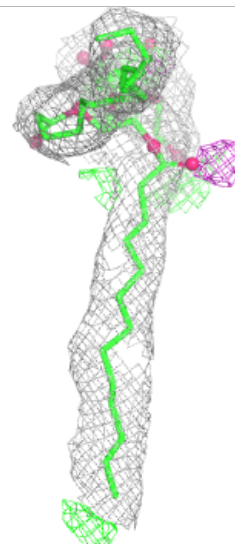
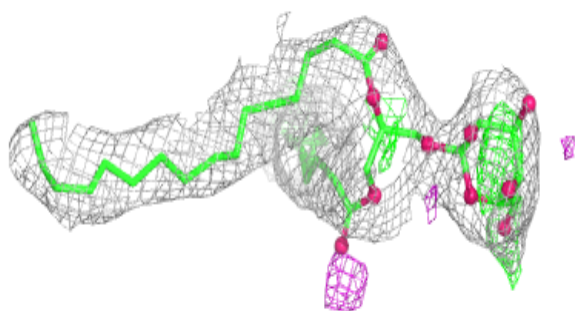
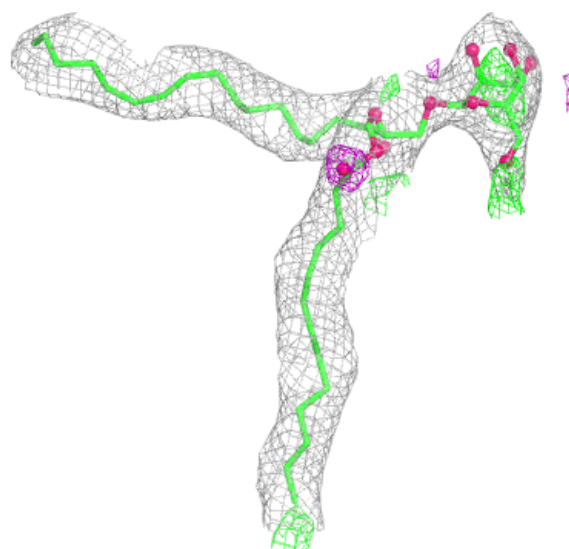
**Electron density around MGE I 201:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



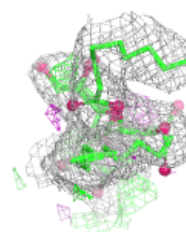
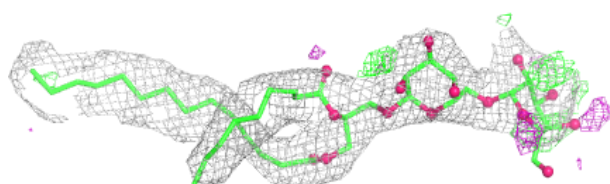
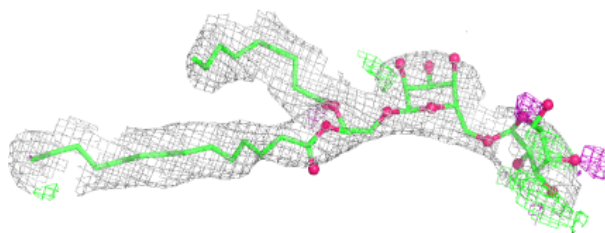
**Electron density around MGE L 210:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

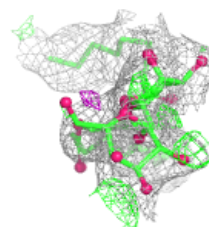
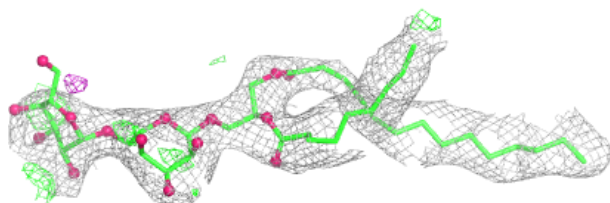
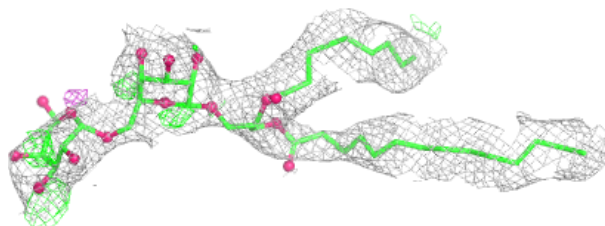


**Electron density around DGD C 507:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

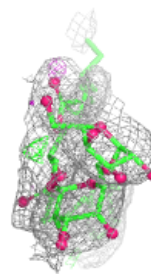
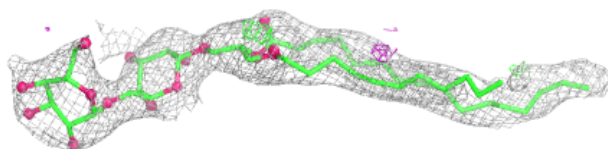
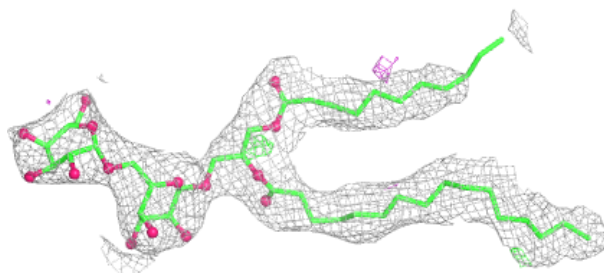
**Electron density around DGD c 5507:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

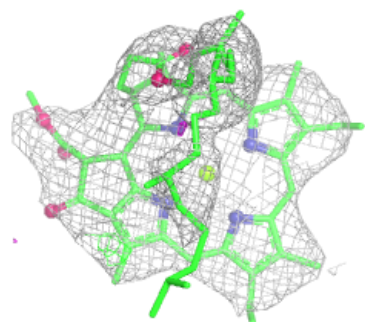
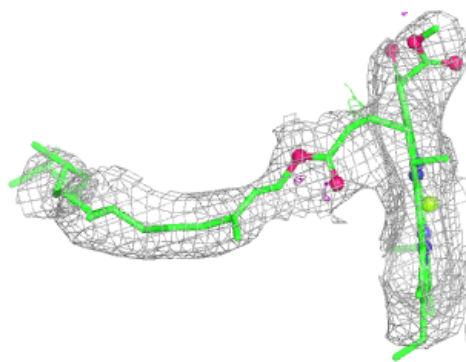
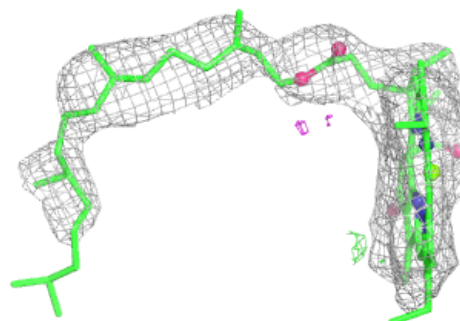


**Electron density around DGD c 5509:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around CLA B 516:**

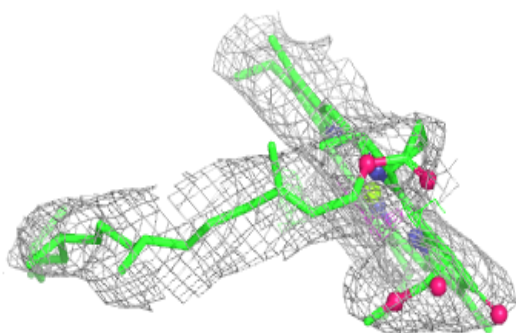
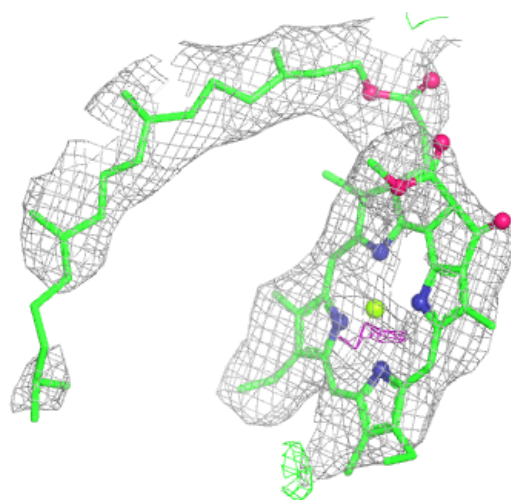
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





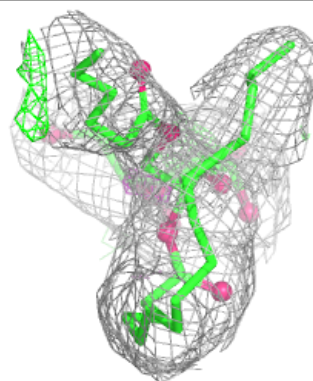
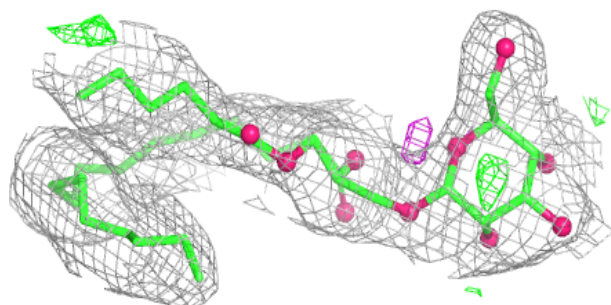
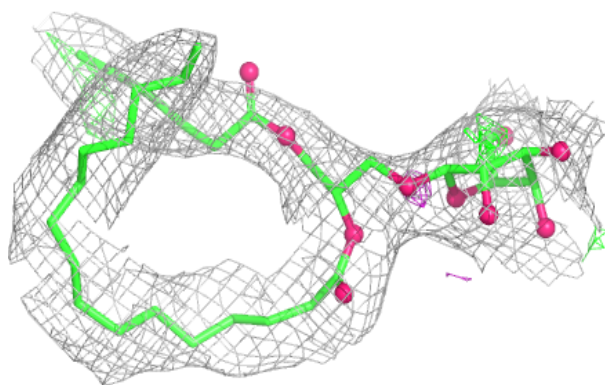
**Electron density around CLA c 5497:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

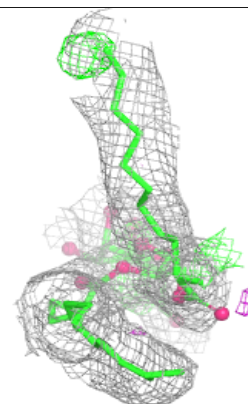
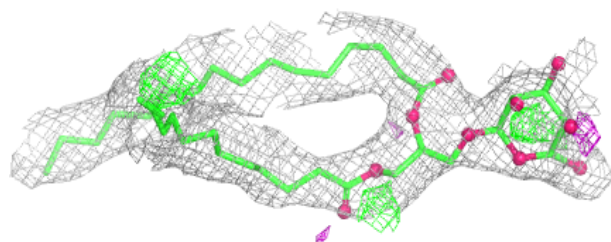
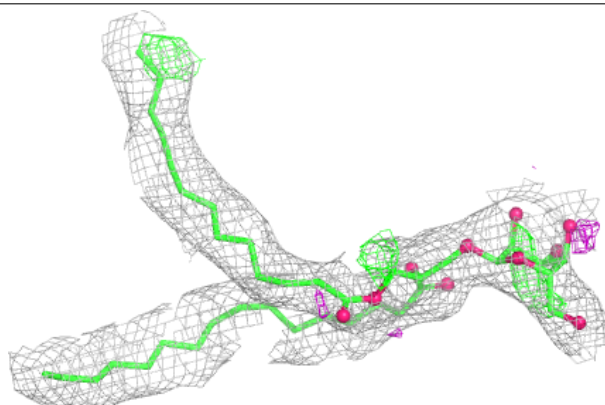


**Electron density around MGE D 359:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around MGE D 360:**

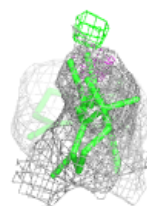
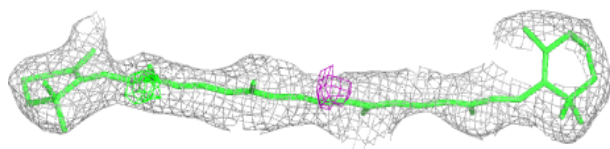
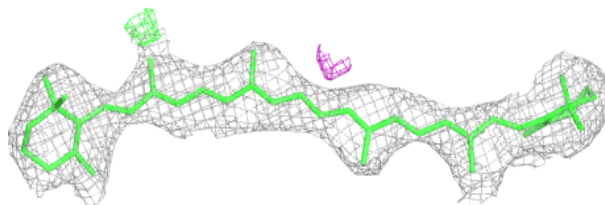
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





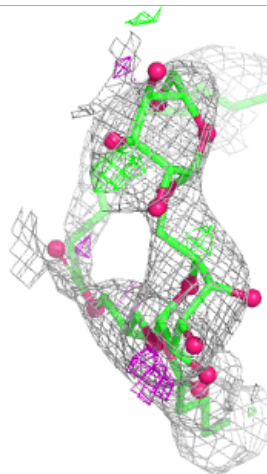
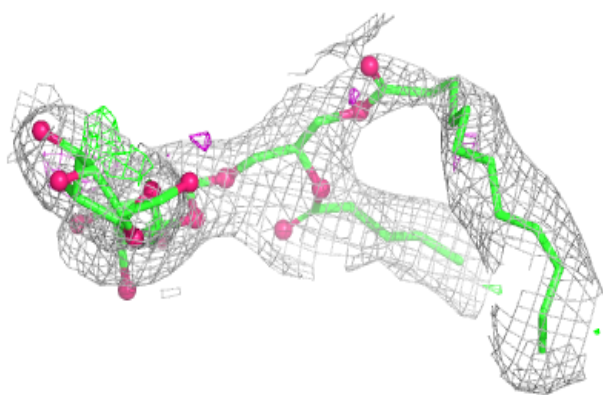
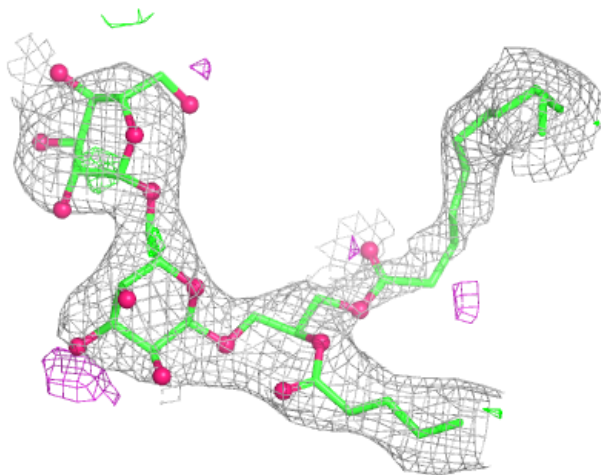
**Electron density around BCR B 527:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



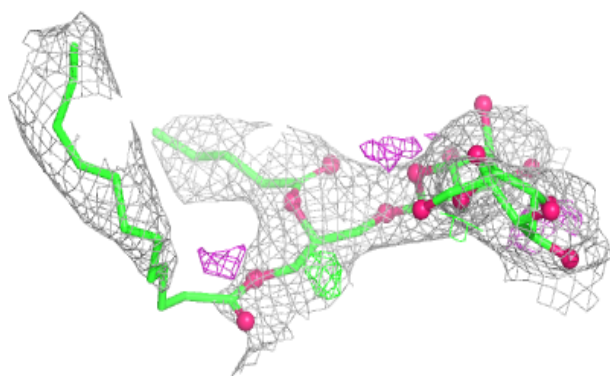
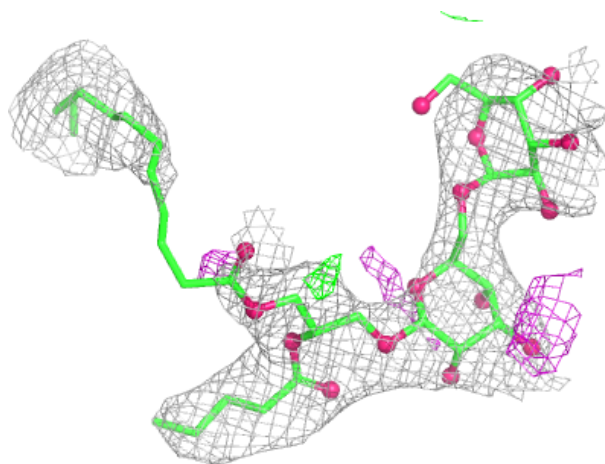
**Electron density around DGD C 508:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



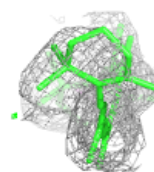
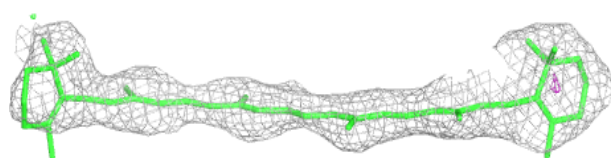
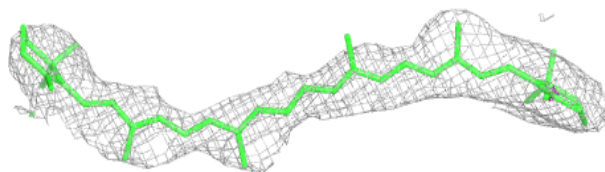
**Electron density around DGD c 5508:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

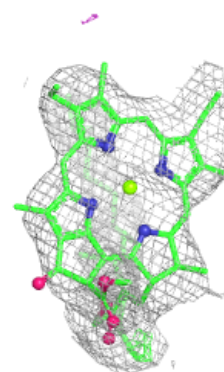
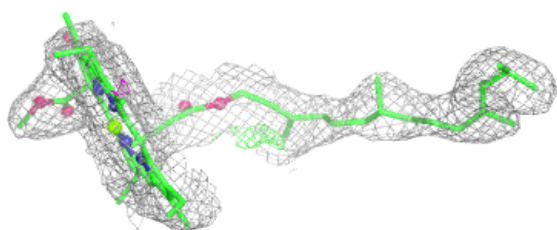
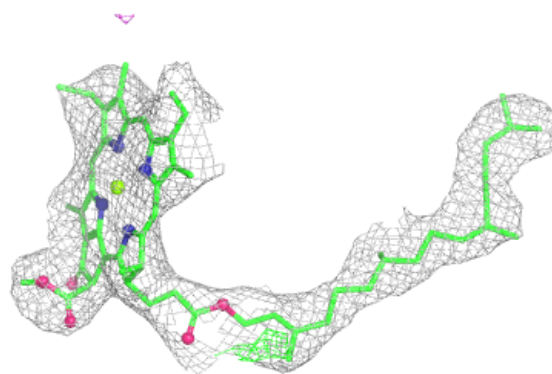


**Electron density around BCR h 5107:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

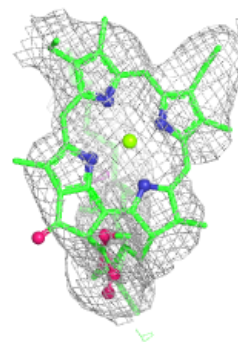
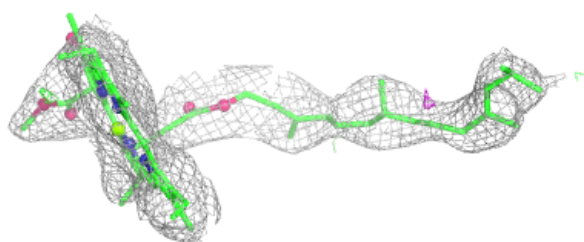
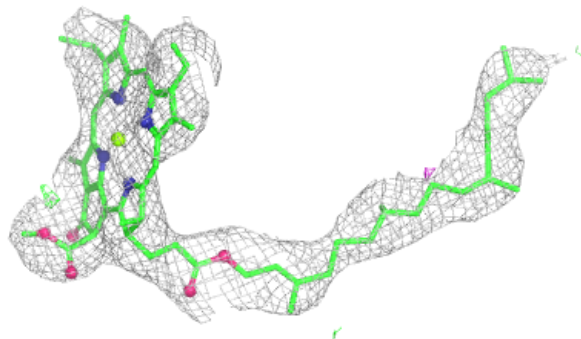
**Electron density around CLA b 5519:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



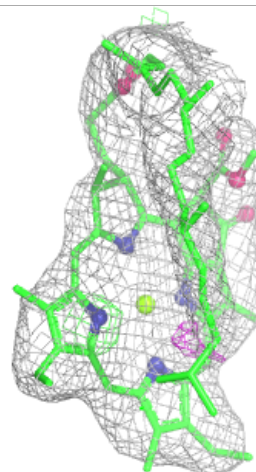
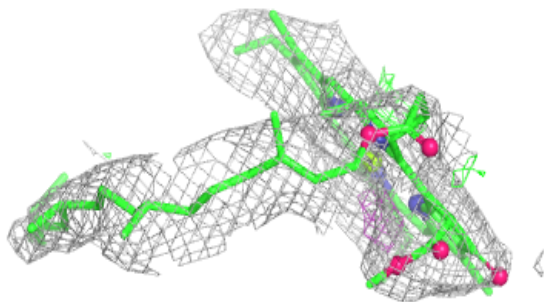
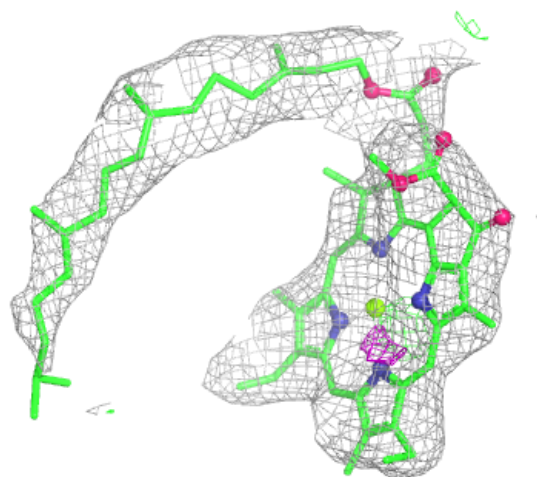
**Electron density around CLA B 519:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



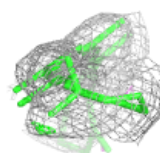
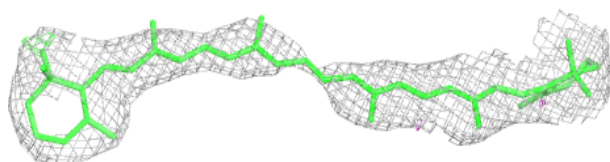
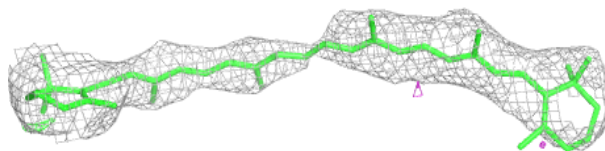
**Electron density around CLA C 497:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

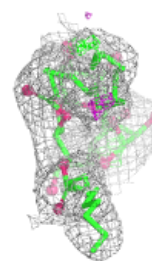
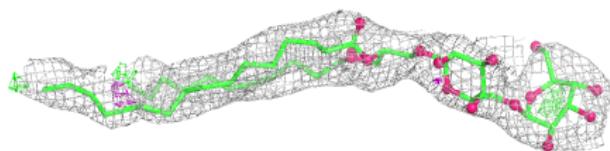


**Electron density around BCR d 5357:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around DGD C 509:**

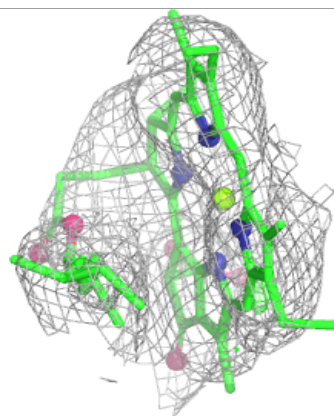
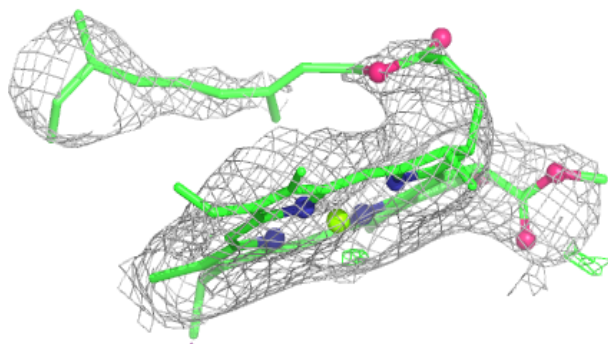
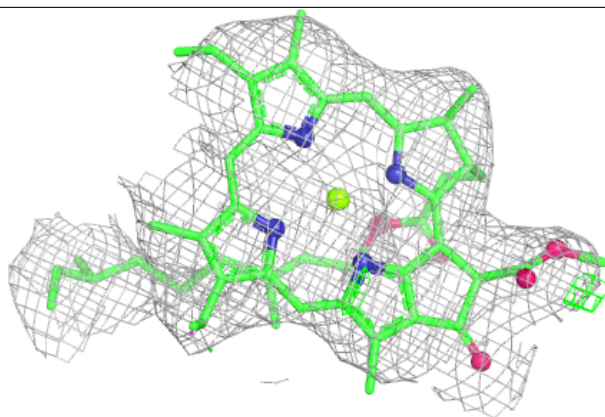
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



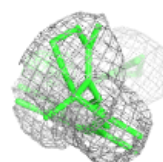
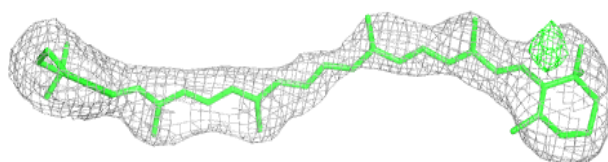


**Electron density around CLA b 5524:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around BCR D 357:**

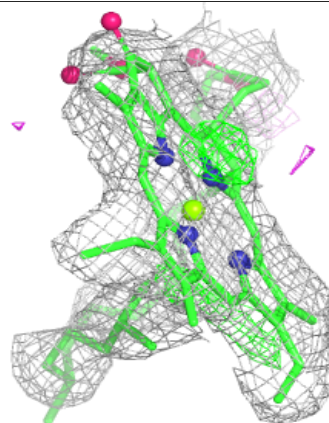
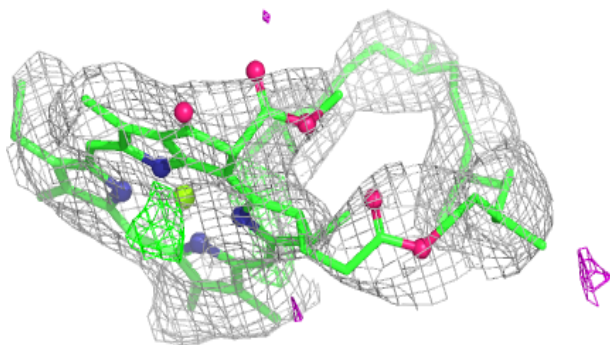
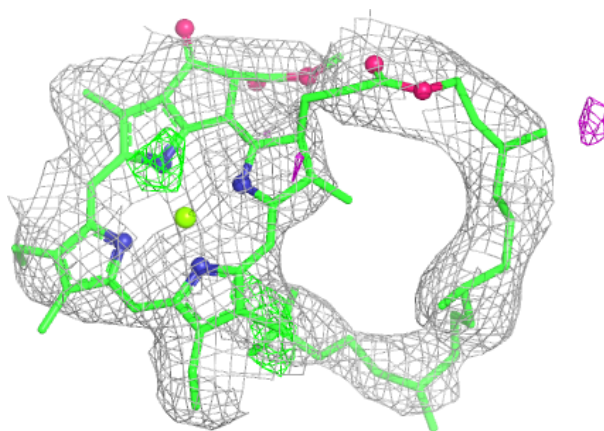
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





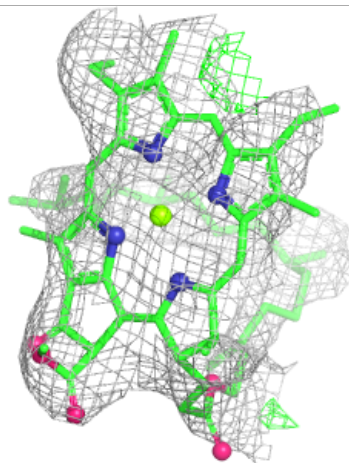
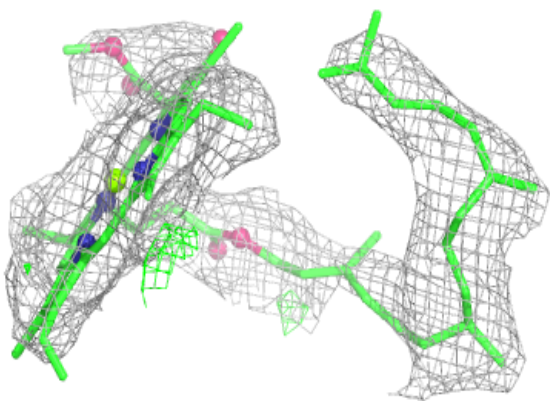
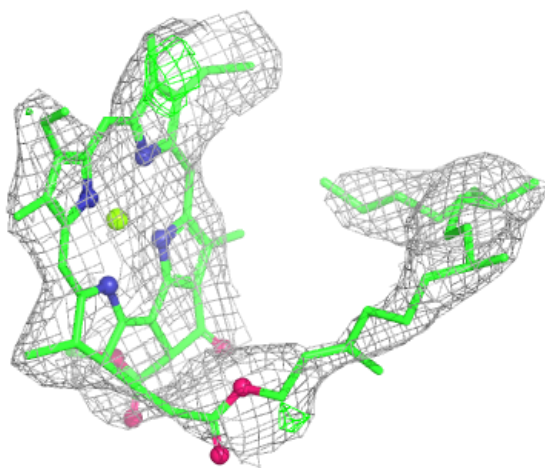
**Electron density around CLA B 525:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



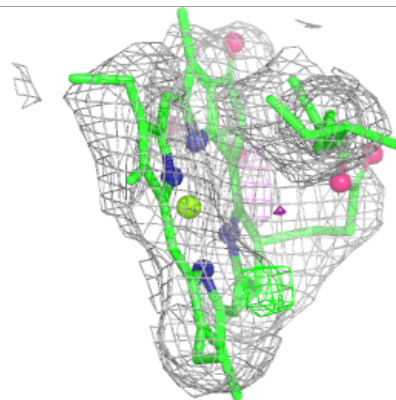
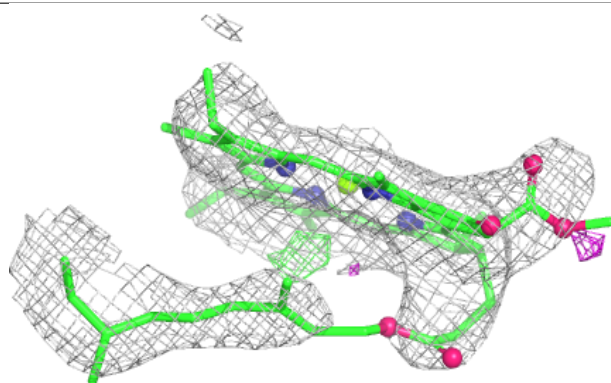
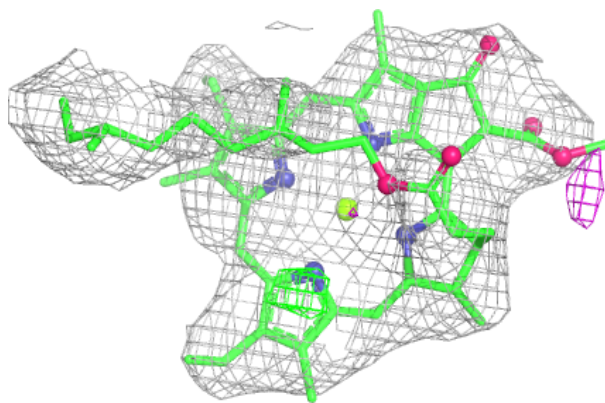
**Electron density around CLA c 5493:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

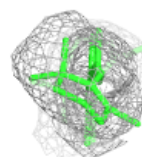
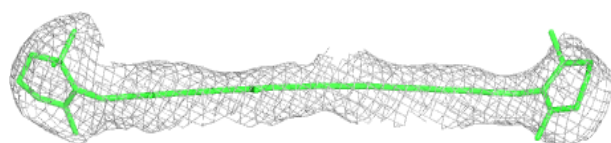
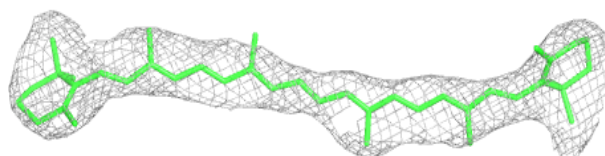


**Electron density around CLA B 524:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

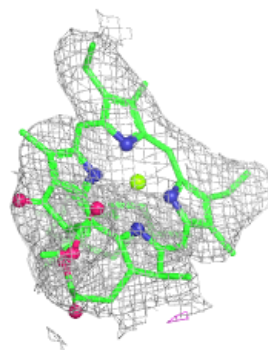
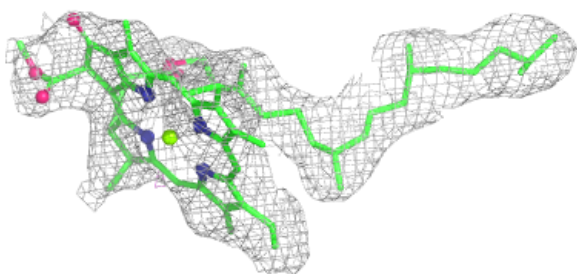
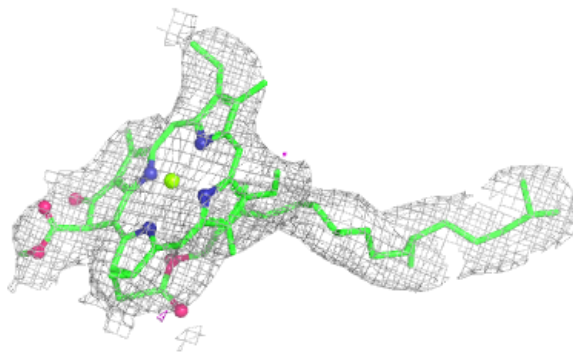
**Electron density around BCR B 528:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



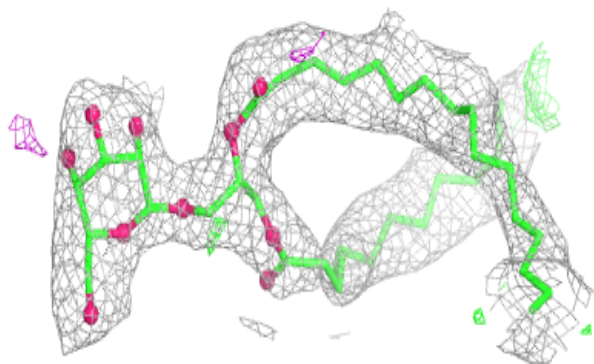
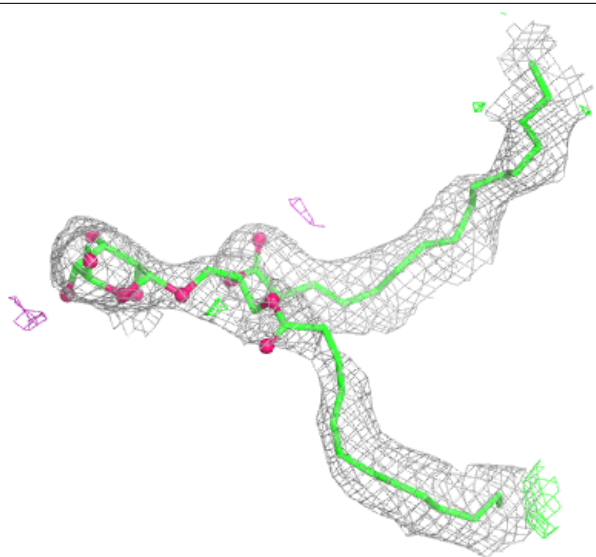
**Electron density around CLA C 495:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



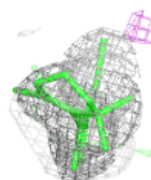
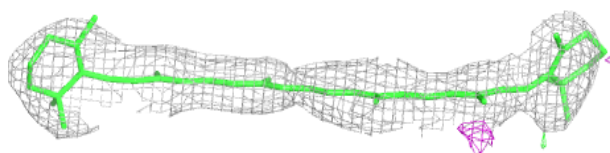
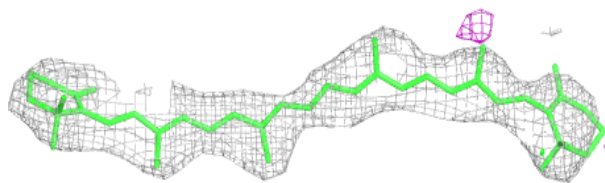
**Electron density around MGE B 530:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

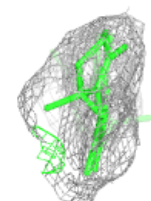
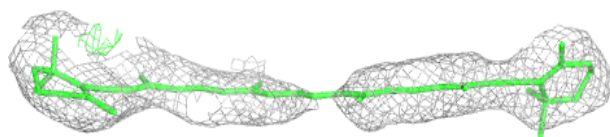
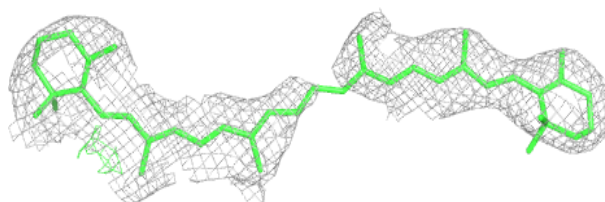


**Electron density around BCR C 506:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around BCR x 5130:**

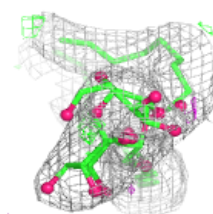
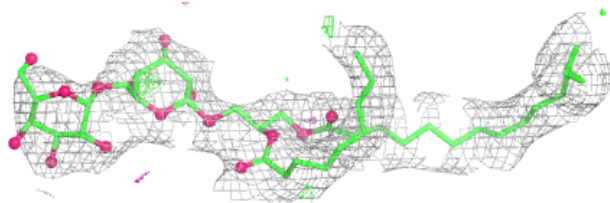
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



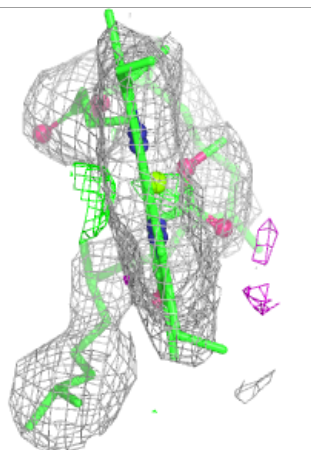
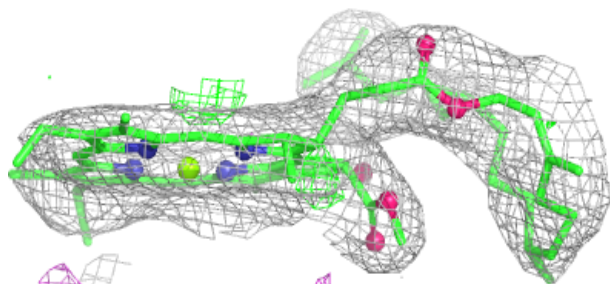
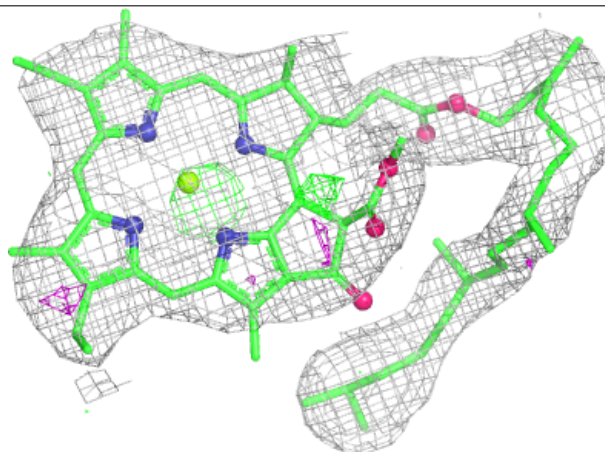


**Electron density around DGD h 5208:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

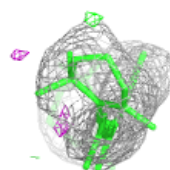
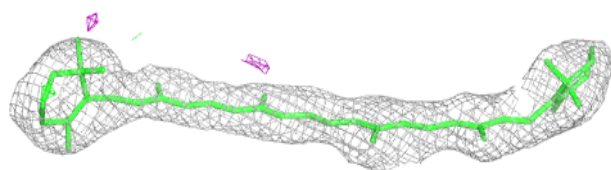
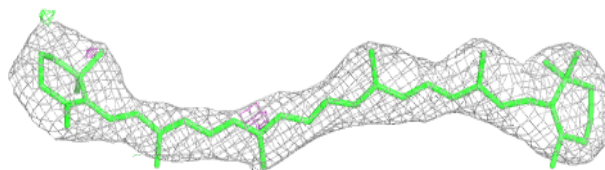
**Electron density around CLA b 5520:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

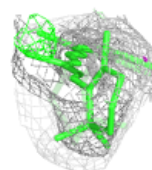
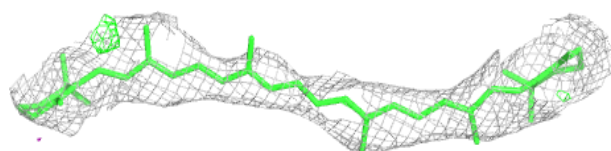


**Electron density around BCR b 5529:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around BCR c 5504:**

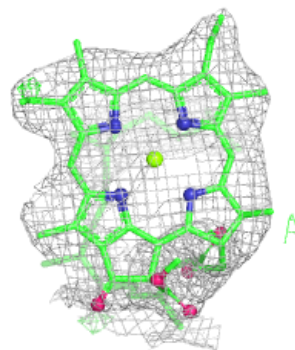
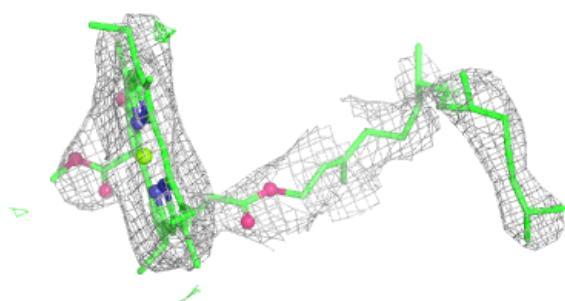
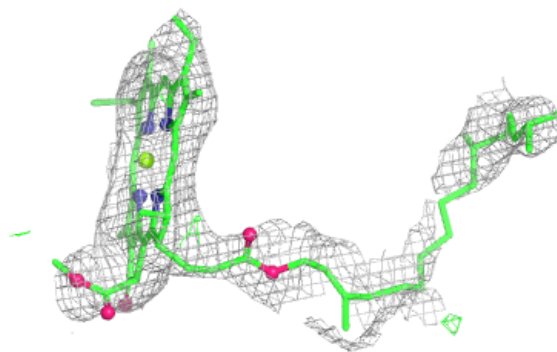
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





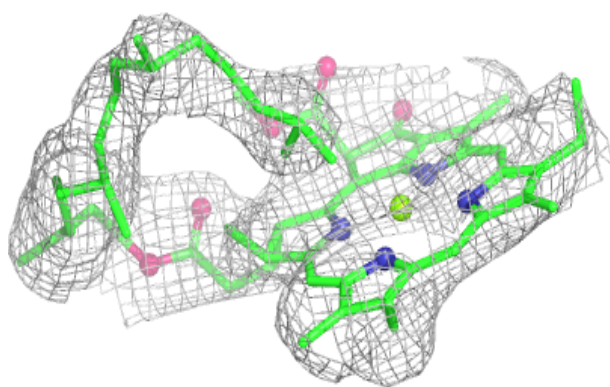
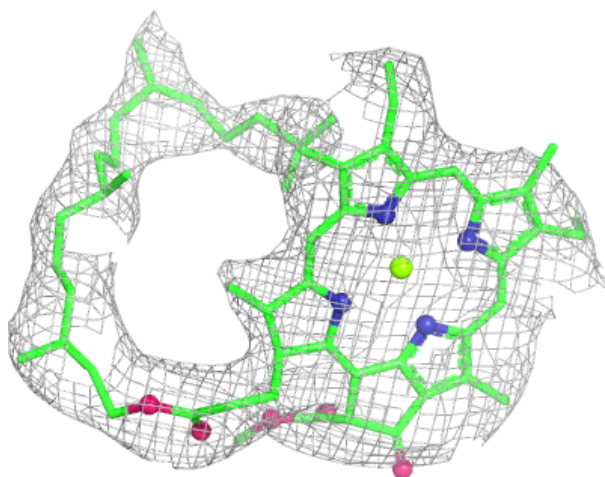
**Electron density around CLA c 5496:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



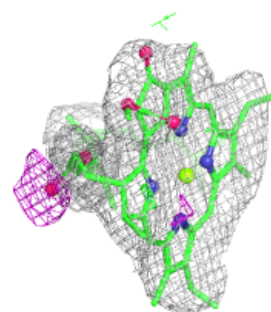
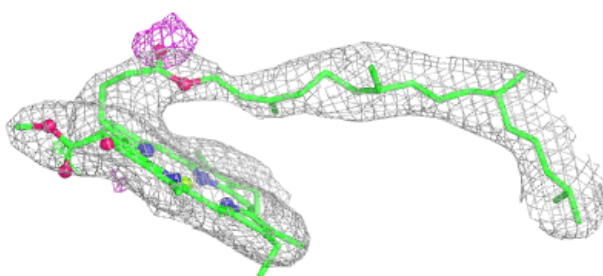
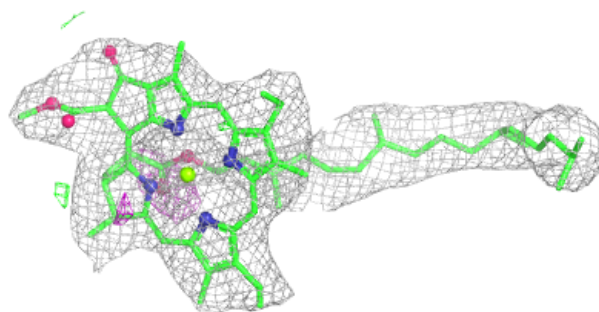
**Electron density around CLA b 5525:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

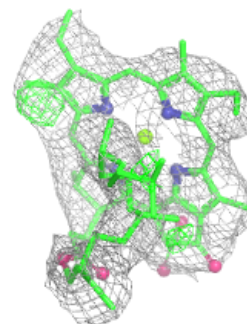
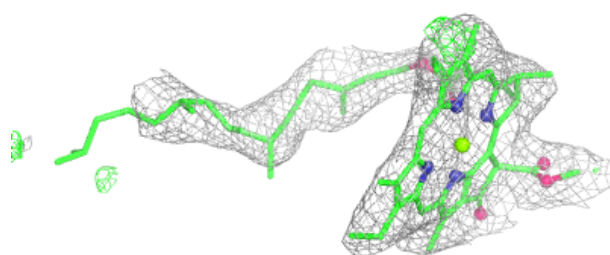
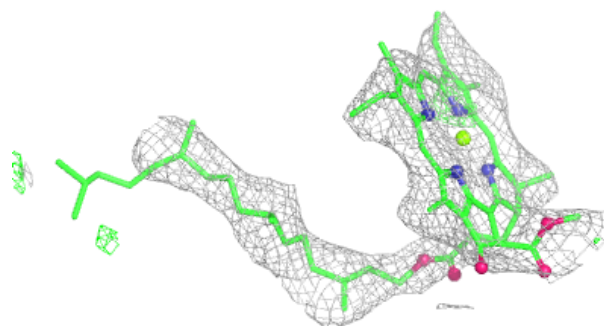


**Electron density around CLA b 5518:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

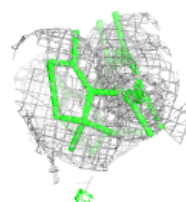
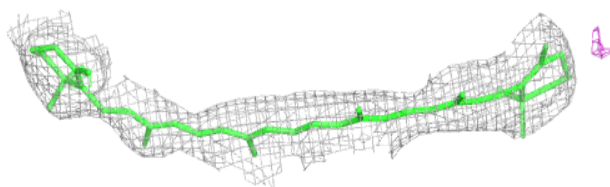
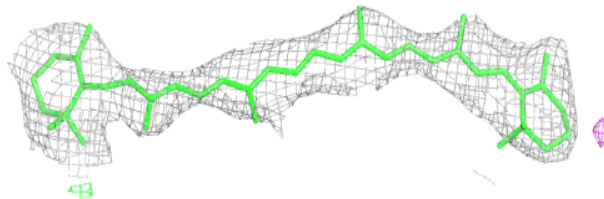
**Electron density around CLA C 498:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

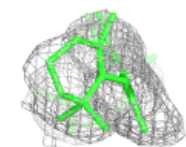
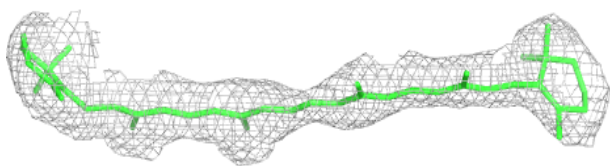
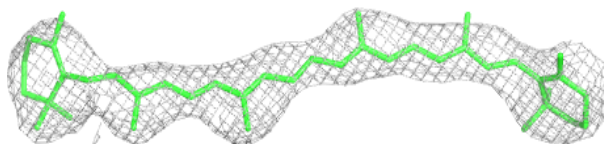


**Electron density around BCR t 104:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

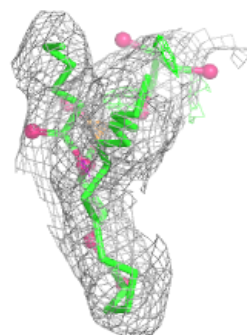
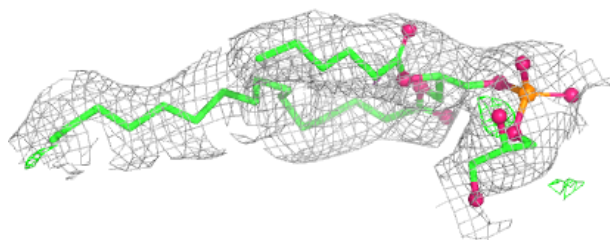
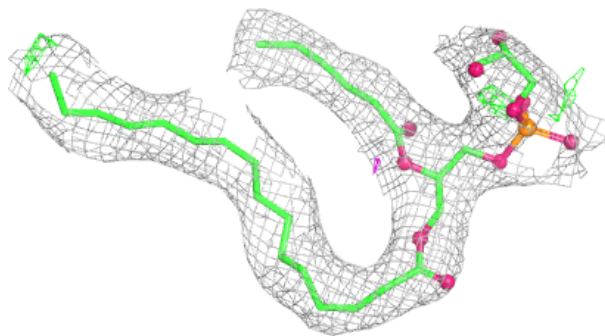
**Electron density around BCR B 529:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

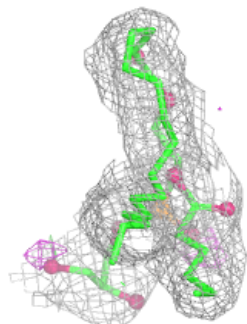
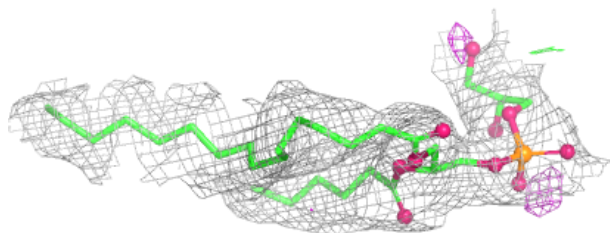
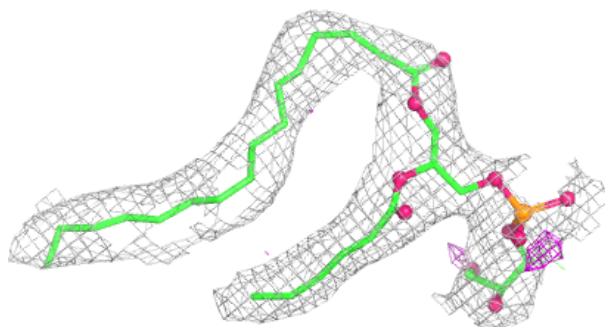


**Electron density around LHG A 567:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around LHG a 5567:**

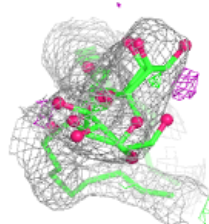
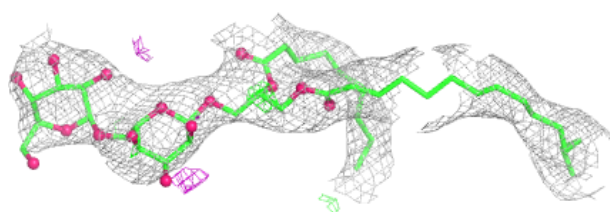
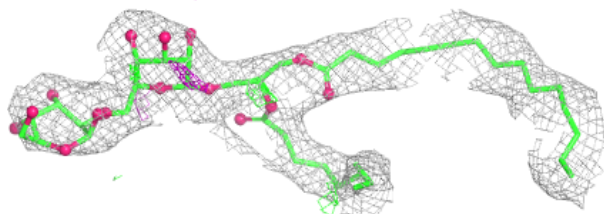
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



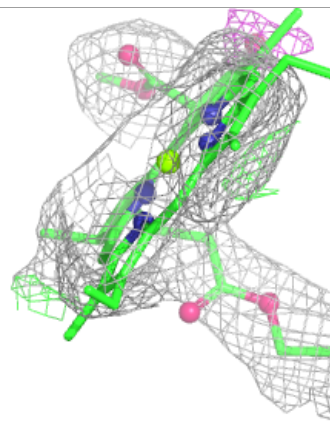
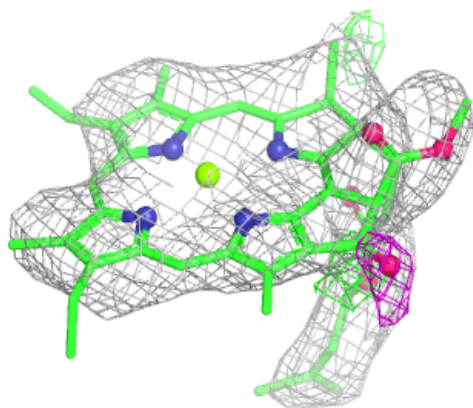
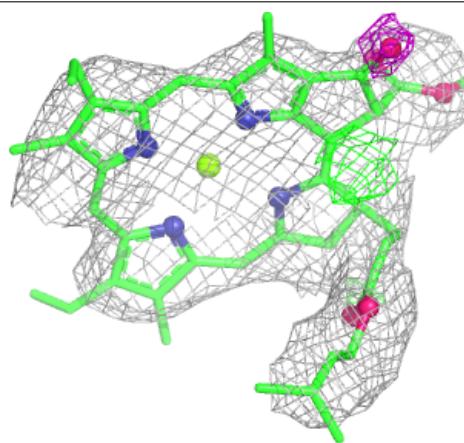


**Electron density around DGD H 208:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

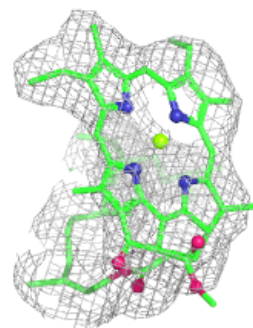
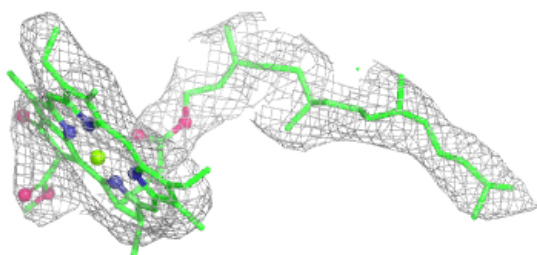
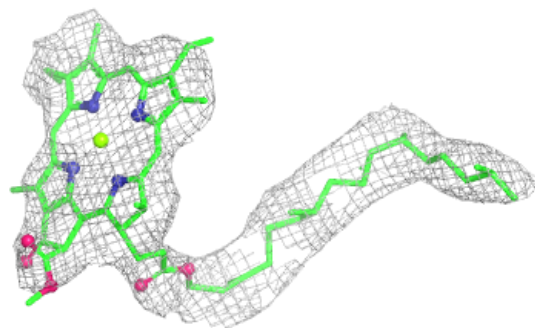
**Electron density around CLA C 503:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



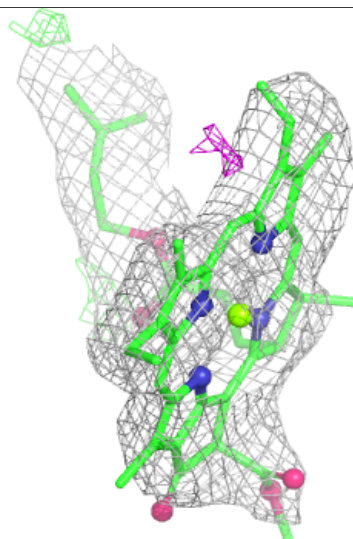
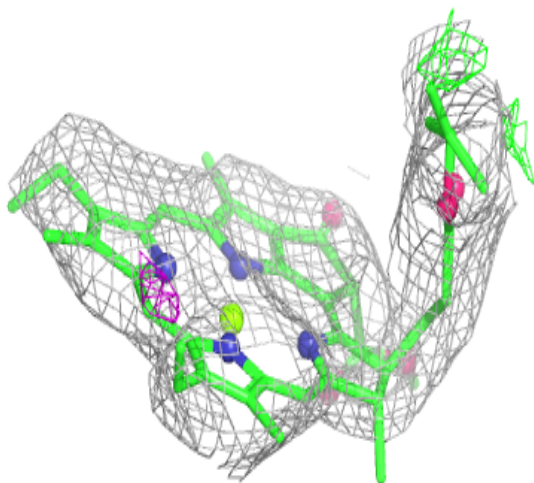
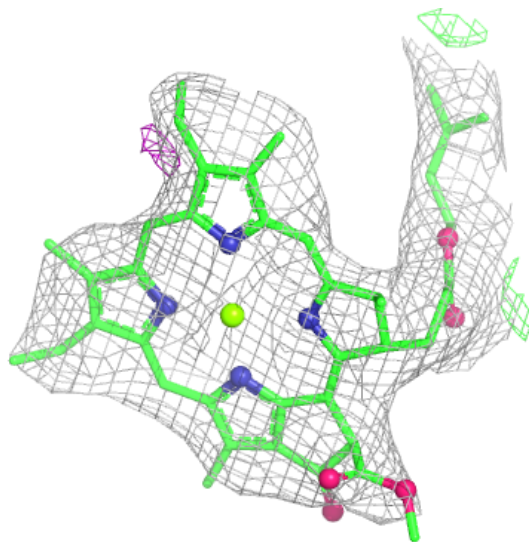
**Electron density around CLA C 501:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around CLA d 5355:**

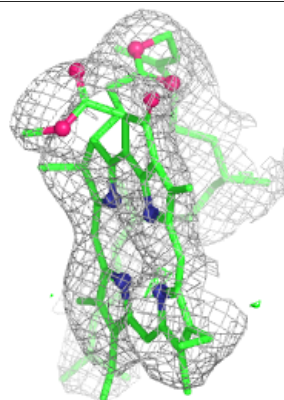
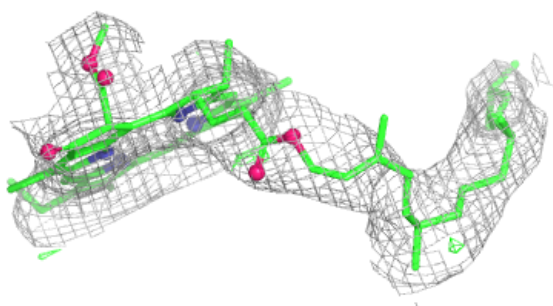
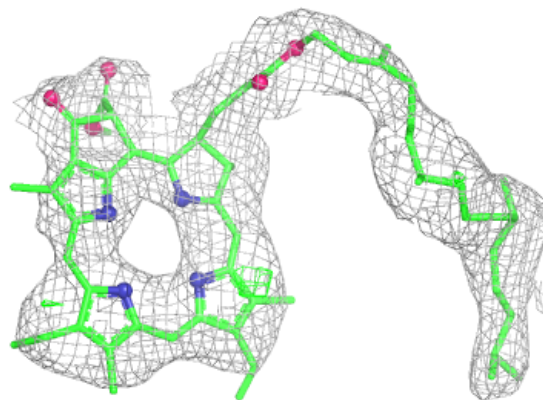
2mF<sub>o</sub>-DF<sub>c</sub> (at 0.7 rmsd) in gray  
mF<sub>o</sub>-DF<sub>c</sub> (at 3 rmsd) in purple (negative)  
and green (positive)



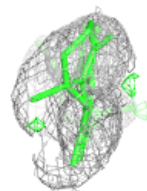
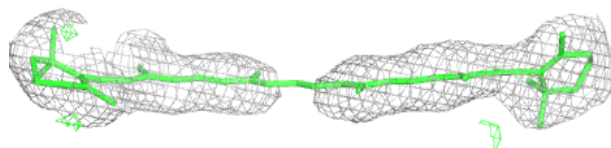
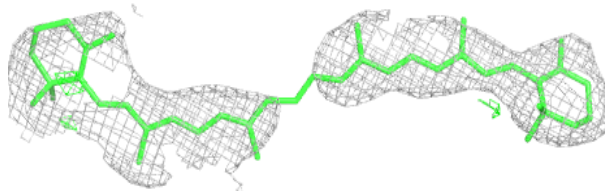


**Electron density around PHO a 5562:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

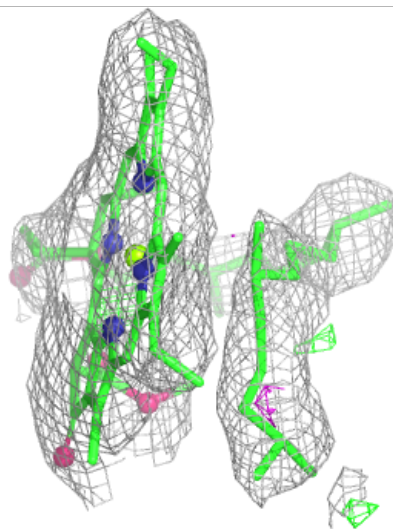
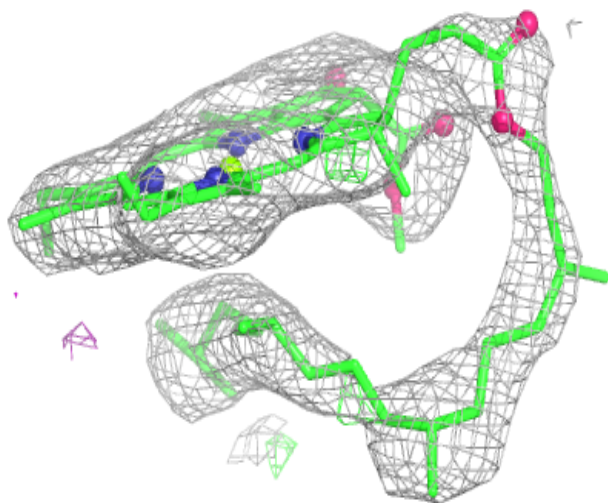
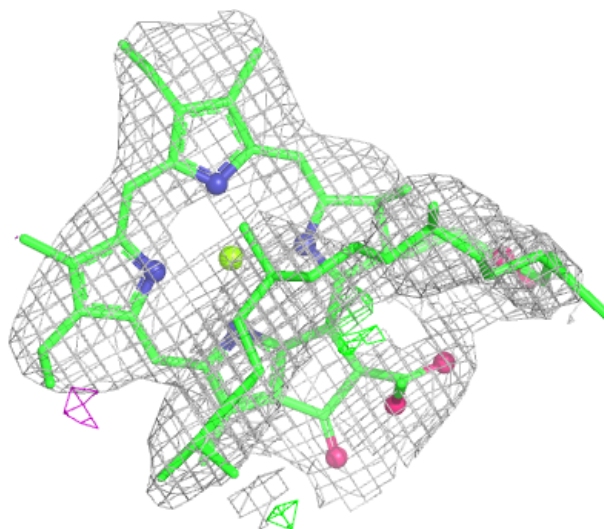
**Electron density around BCR X 130:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



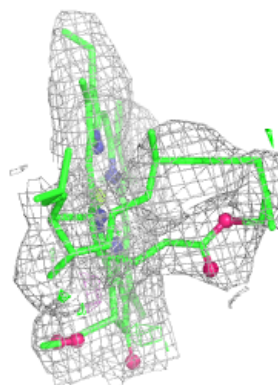
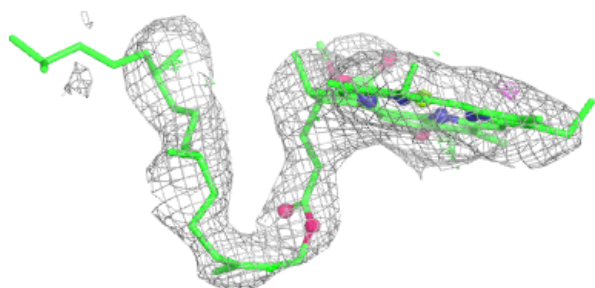
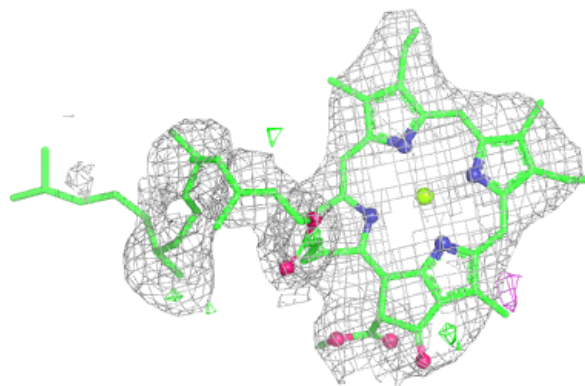
**Electron density around CLA c 5500:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

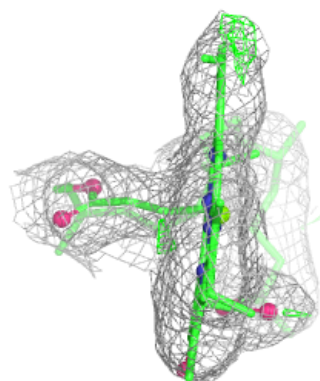
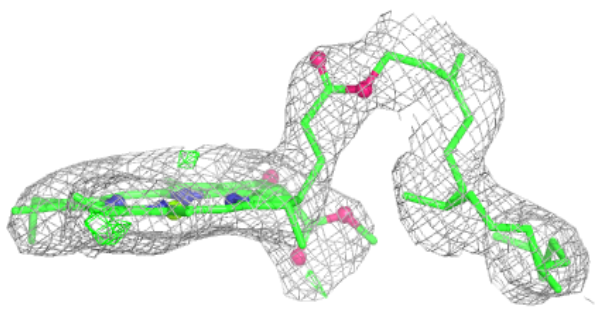
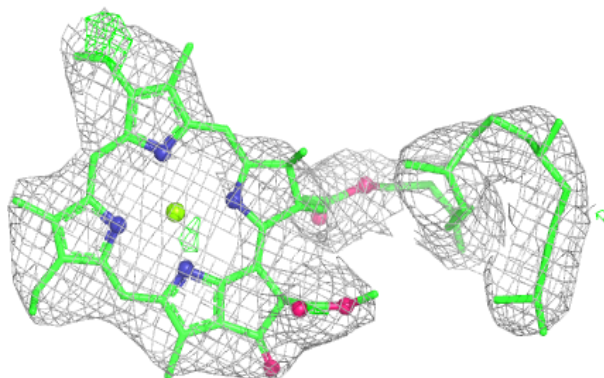


**Electron density around CLA a 5560:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

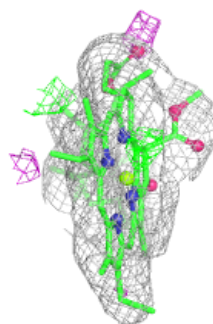
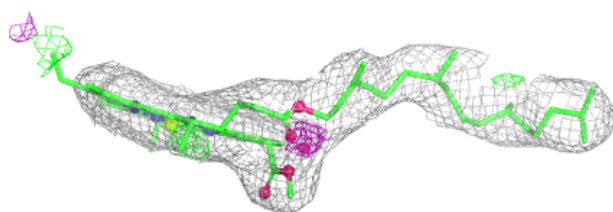
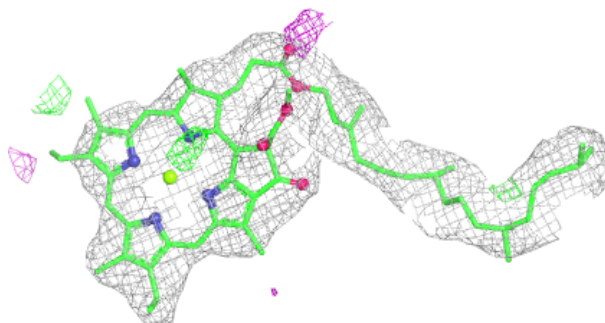
**Electron density around CLA B 522:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

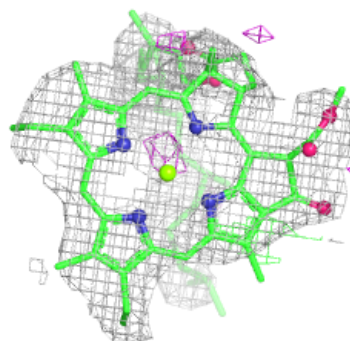
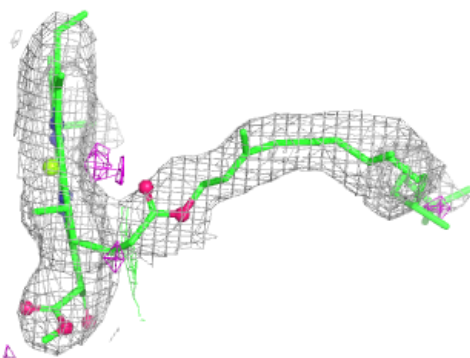
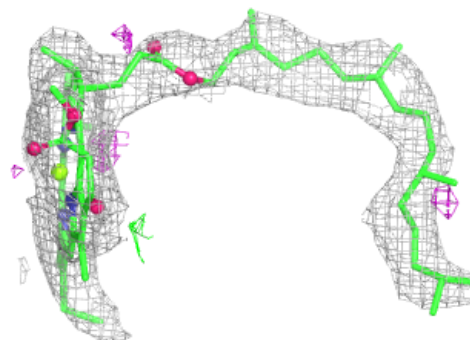


**Electron density around CLA b 5512:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

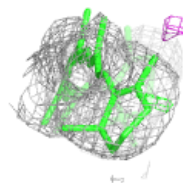
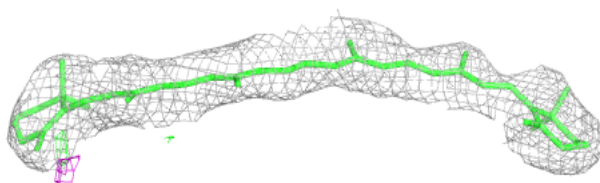
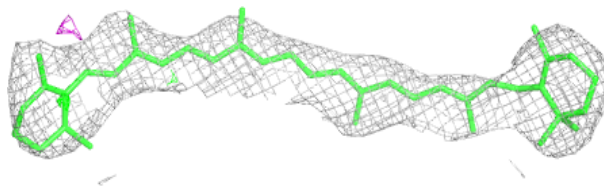
**Electron density around CLA b 5516:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around BCR T 5104:**

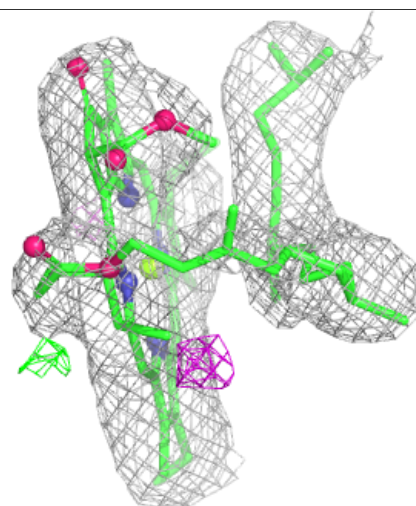
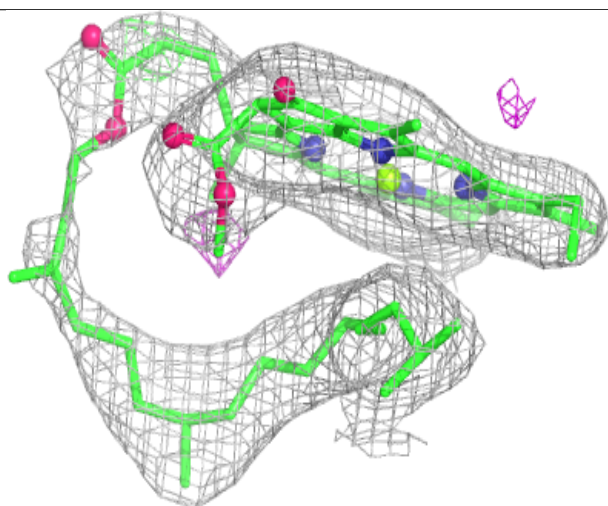
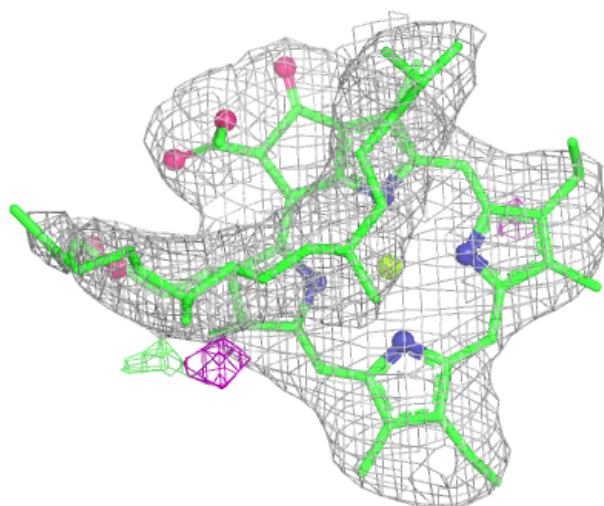
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





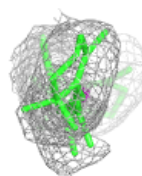
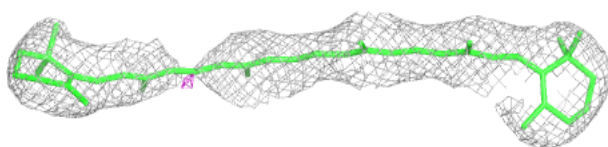
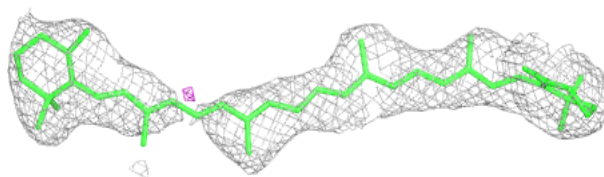
**Electron density around CLA C 500:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

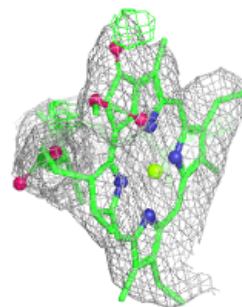
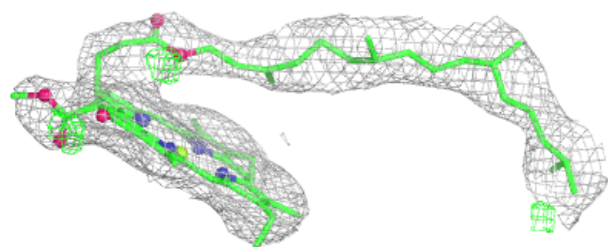
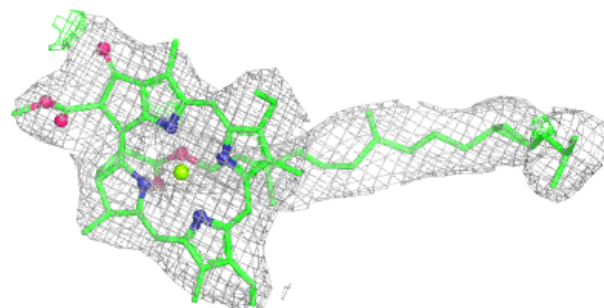


**Electron density around BCR b 5527:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

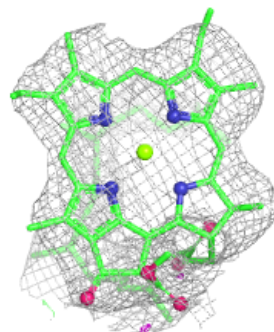
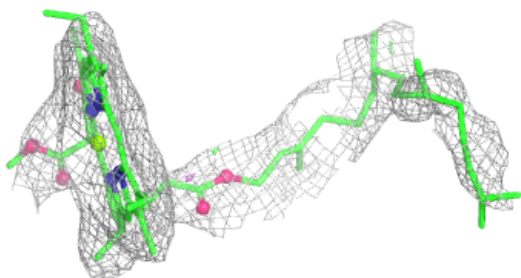
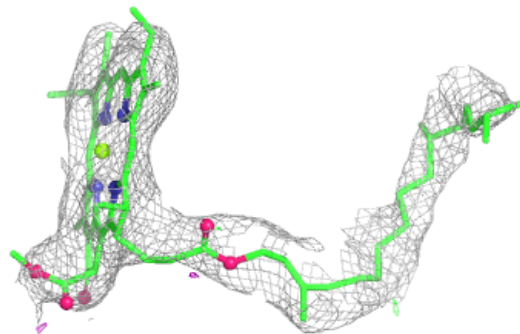
**Electron density around CLA B 518:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around CLA C 496:**

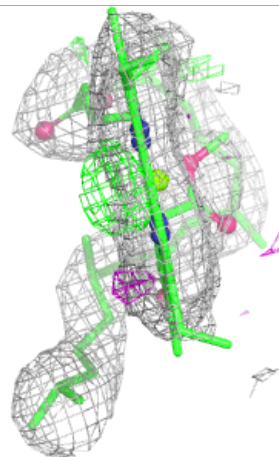
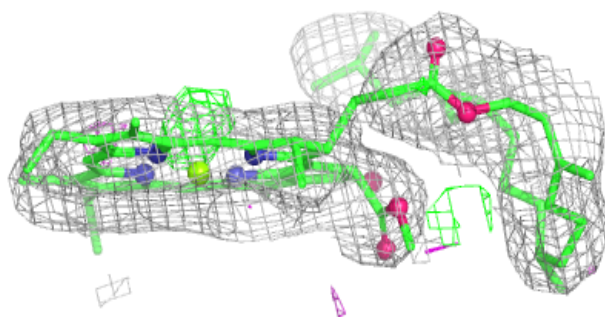
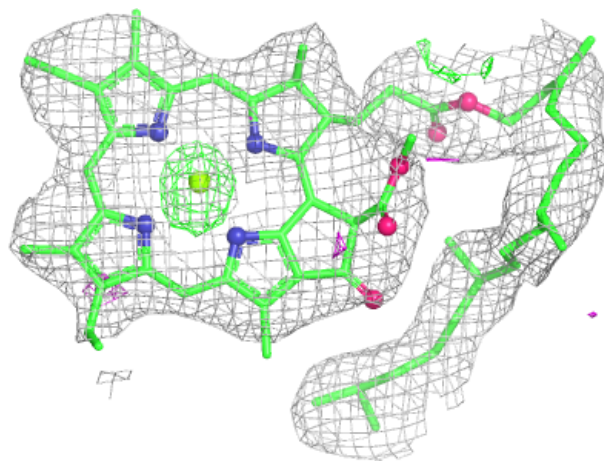
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





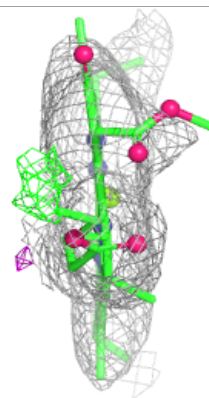
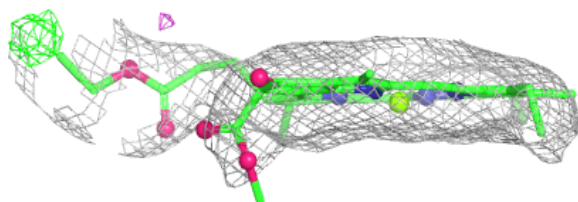
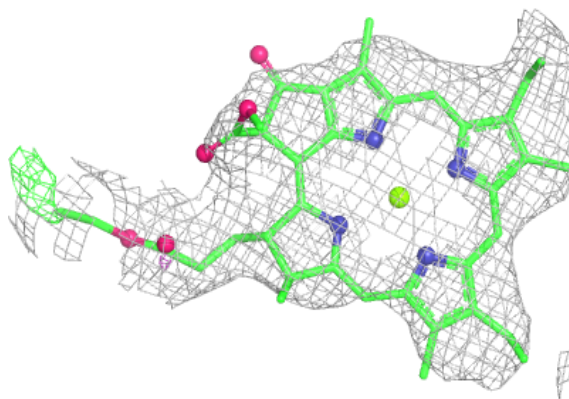
**Electron density around CLA B 520:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

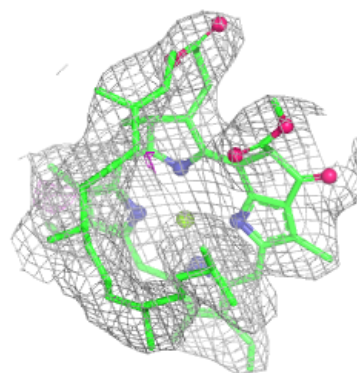
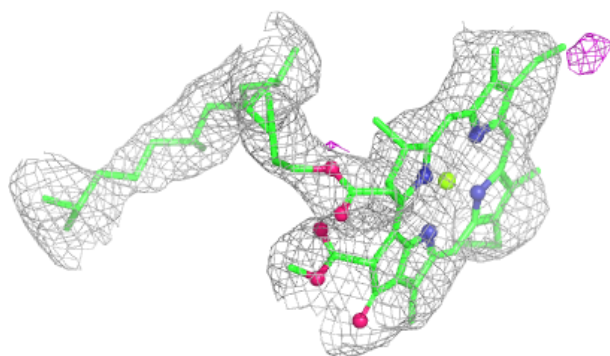
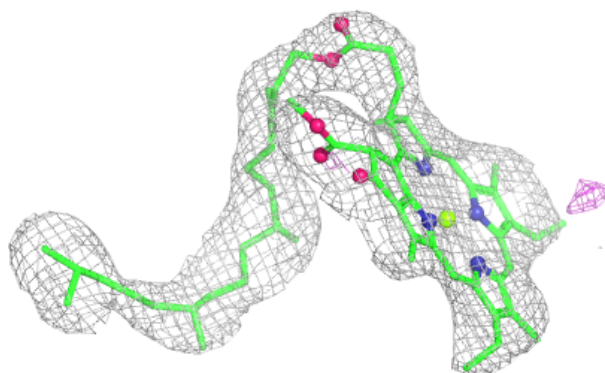


**Electron density around CLA c 5499:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

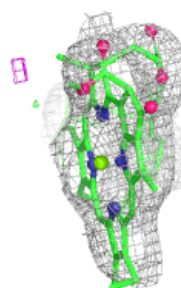
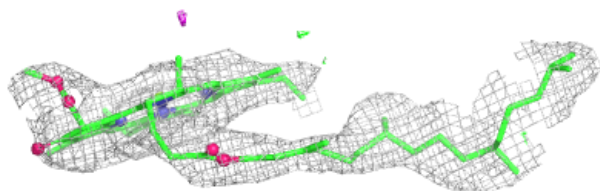
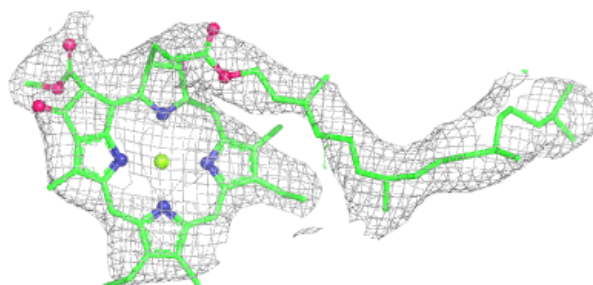
**Electron density around CLA b 5523:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

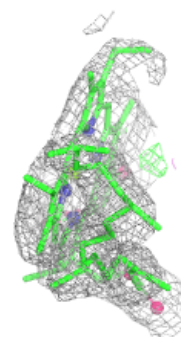
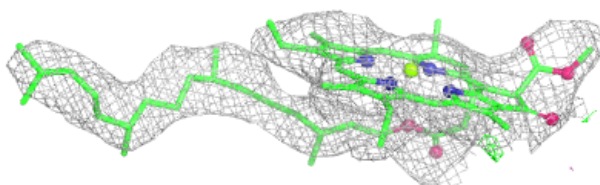
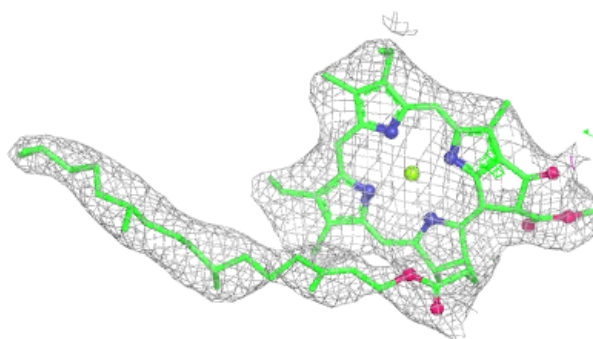


**Electron density around CLA B 513:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

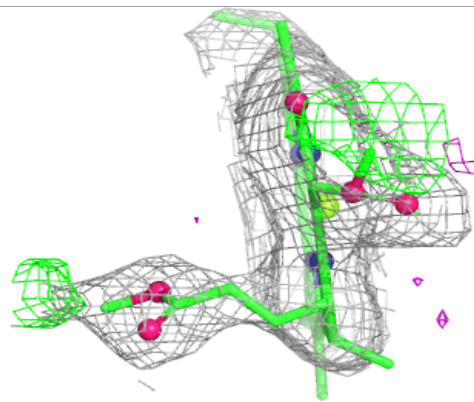
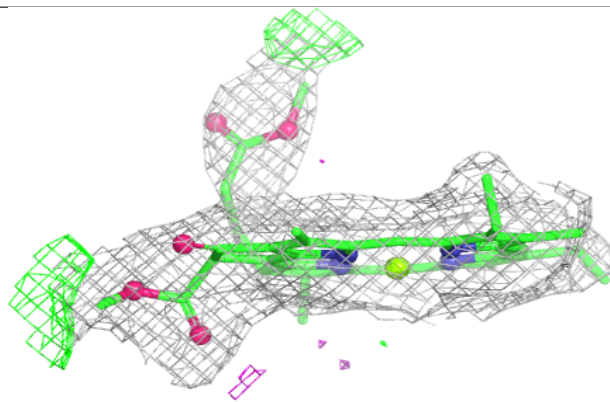
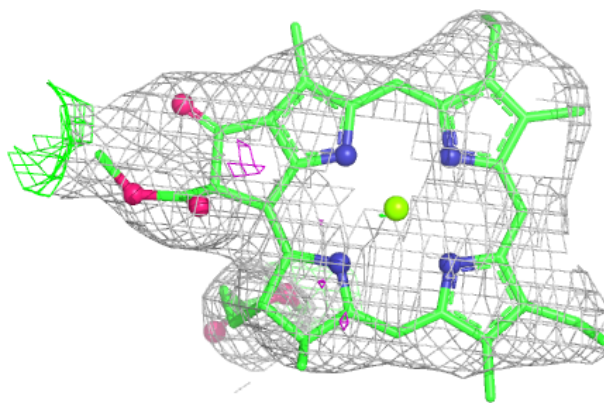
**Electron density around CLA C 491:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

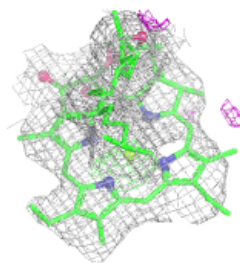
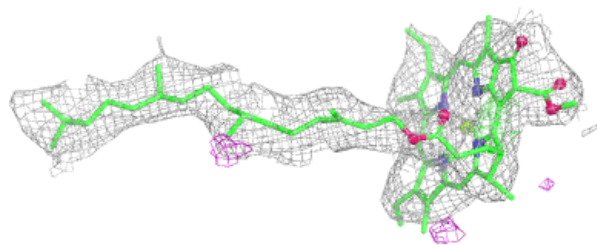
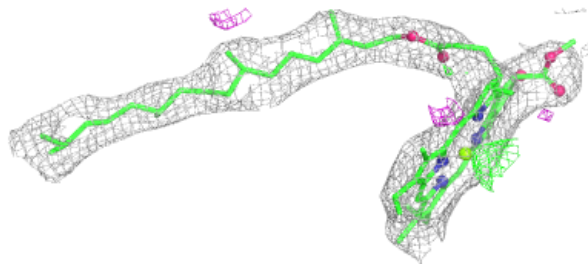


**Electron density around CLA C 494:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around CLA b 5517:**

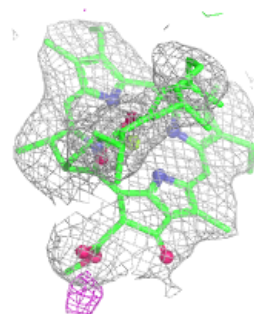
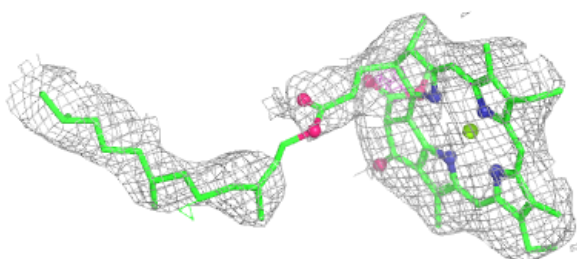
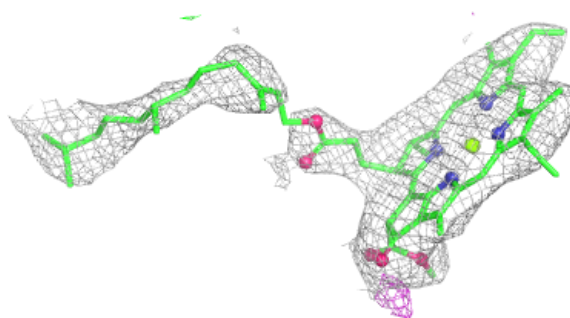
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



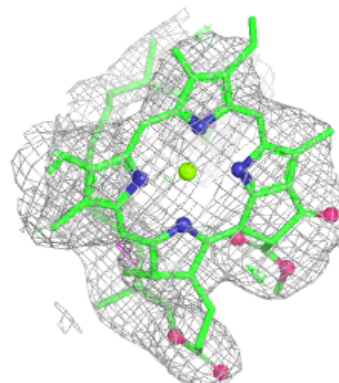
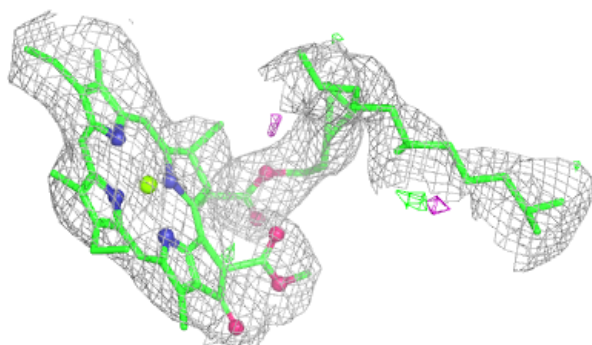
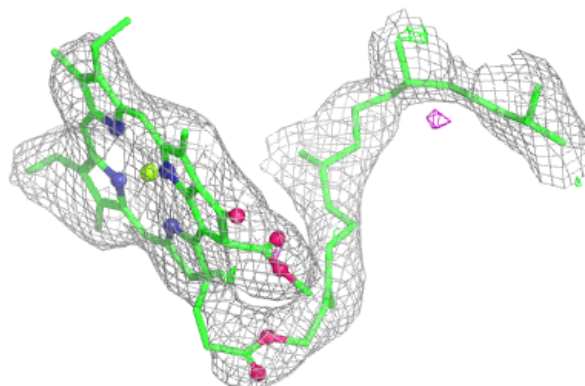


**Electron density around CLA c 5492:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

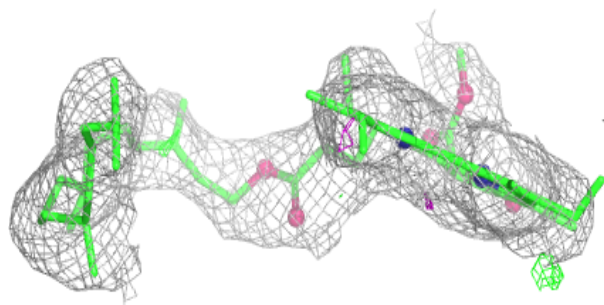
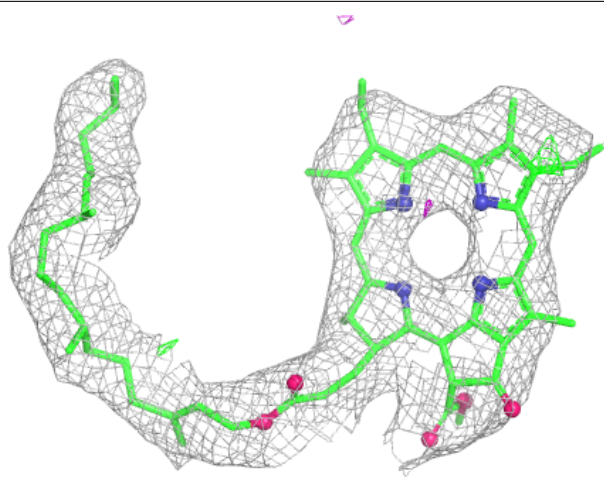
**Electron density around CLA B 523:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



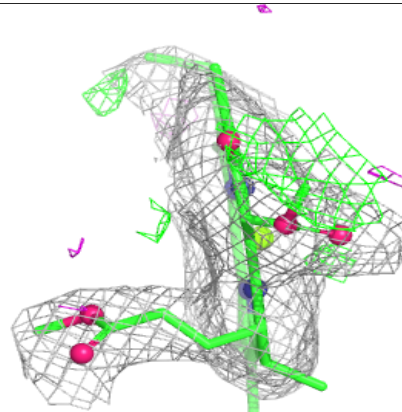
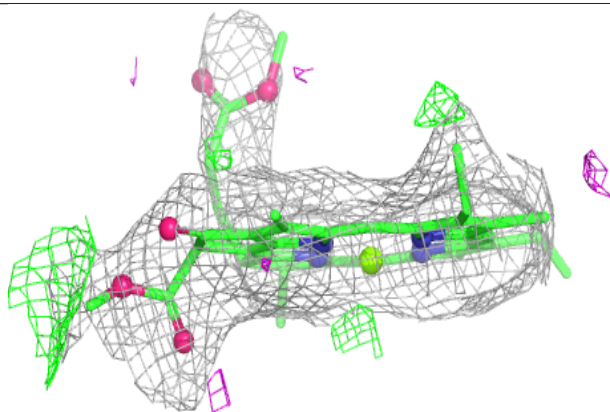
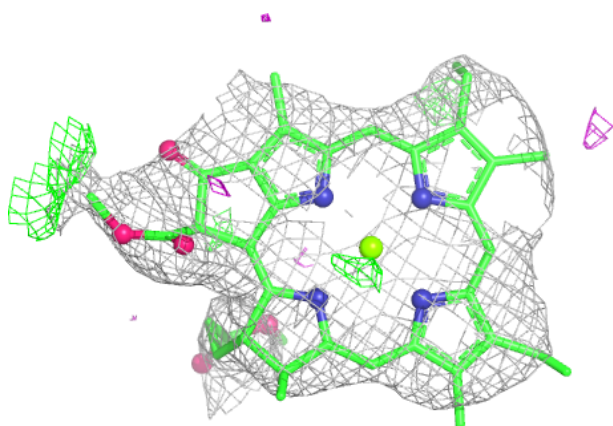
**Electron density around PHO a 5561:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

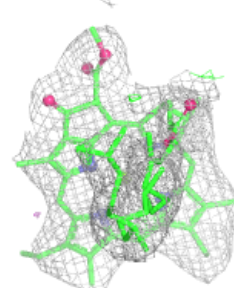
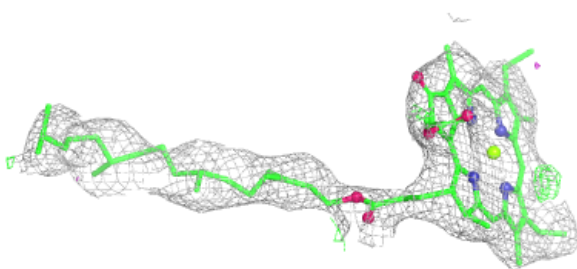
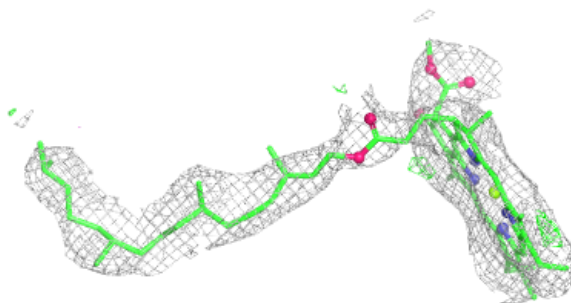


**Electron density around CLA c 5494:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

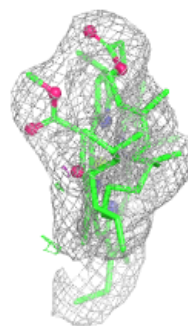
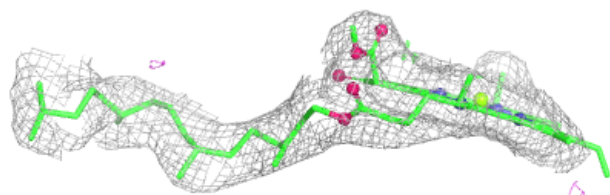
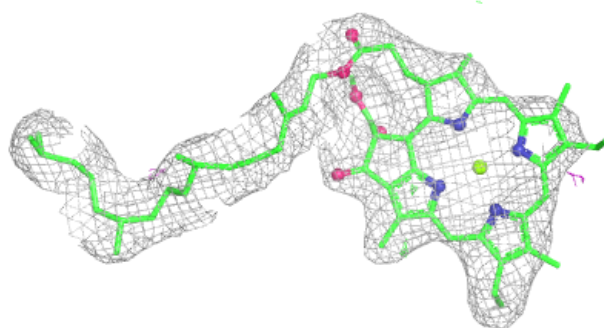
**Electron density around CLA B 514:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

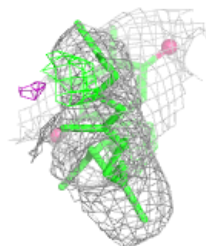
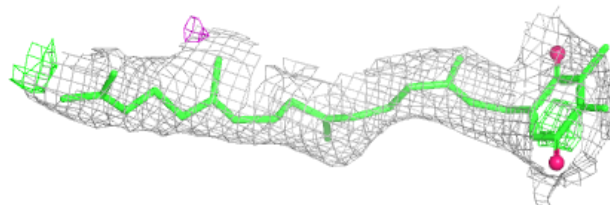
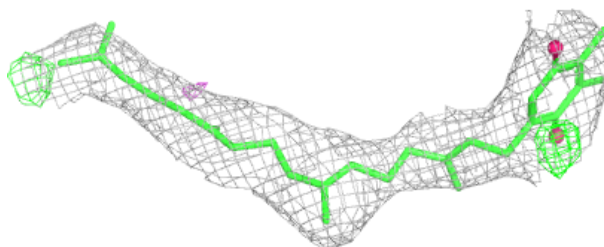


**Electron density around CLA B 512:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around PQ9 d 5356:**

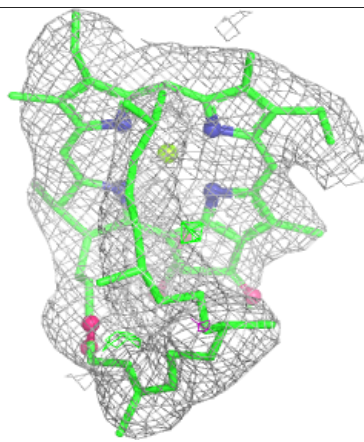
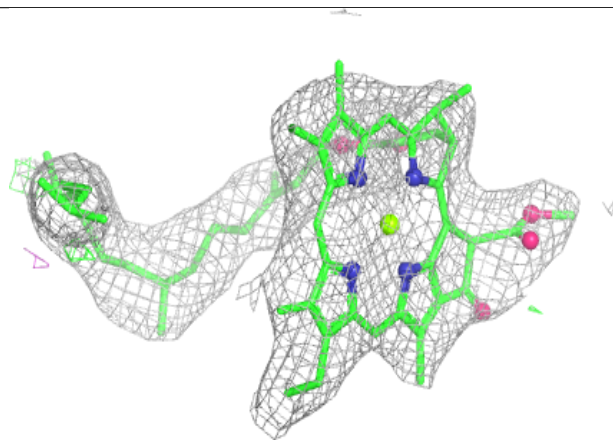
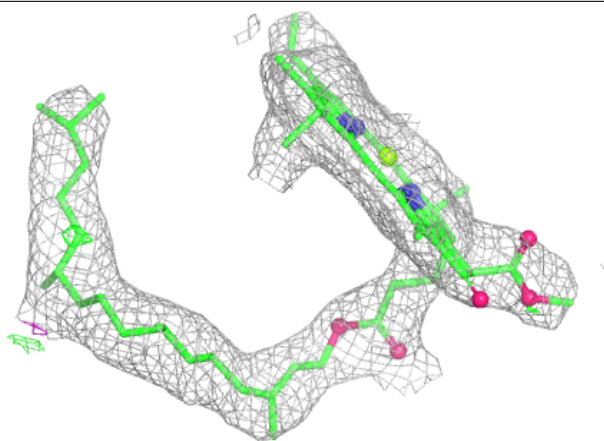
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





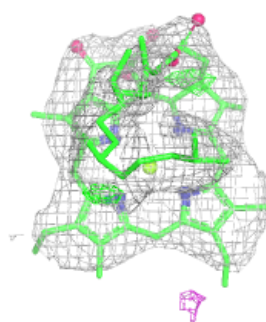
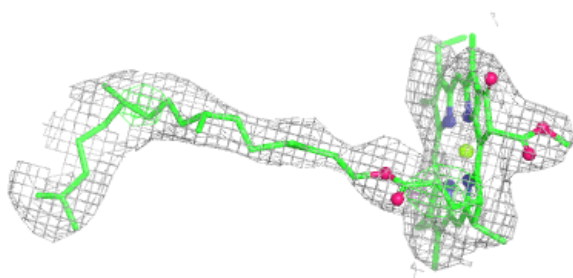
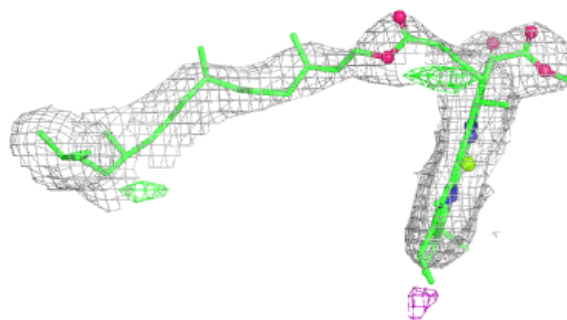
**Electron density around CLA b 5521:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



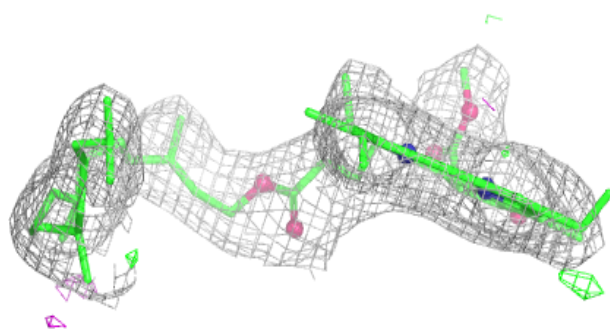
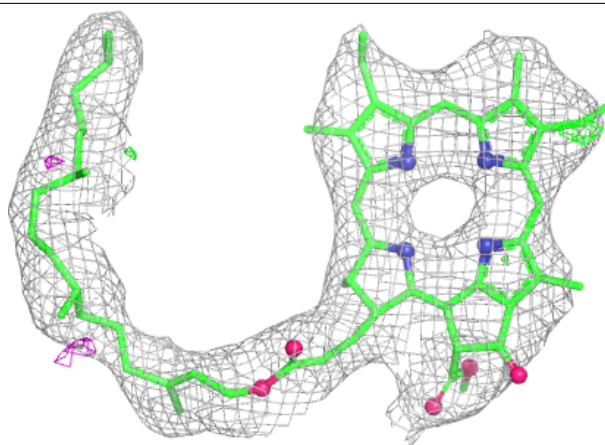
**Electron density around CLA B 515:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



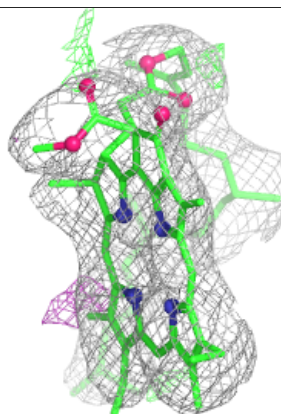
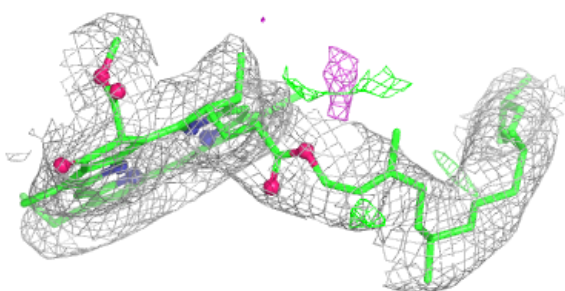
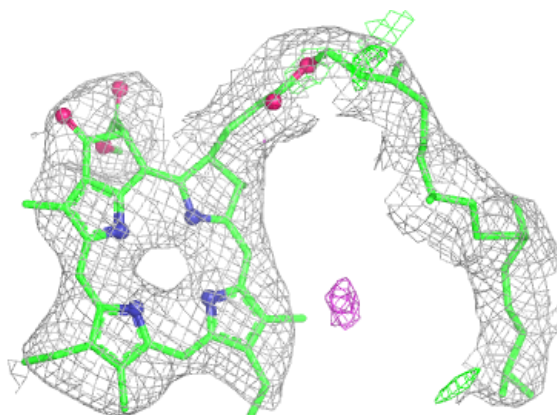
**Electron density around PHO A 561:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

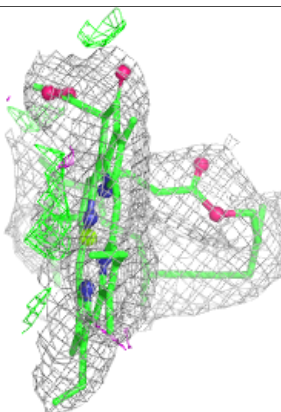
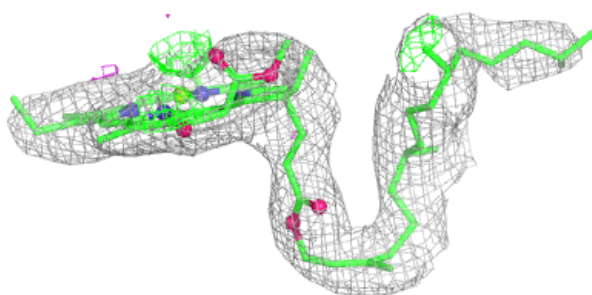
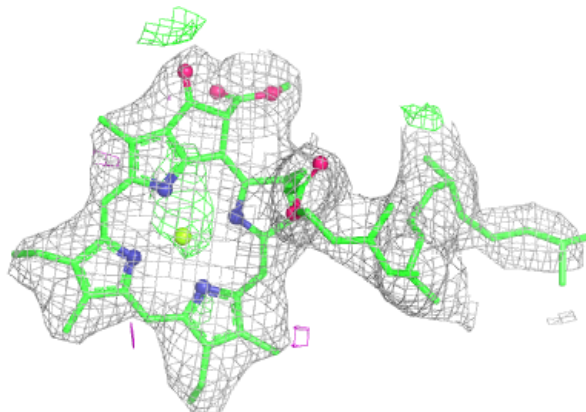


**Electron density around PHO A 562:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

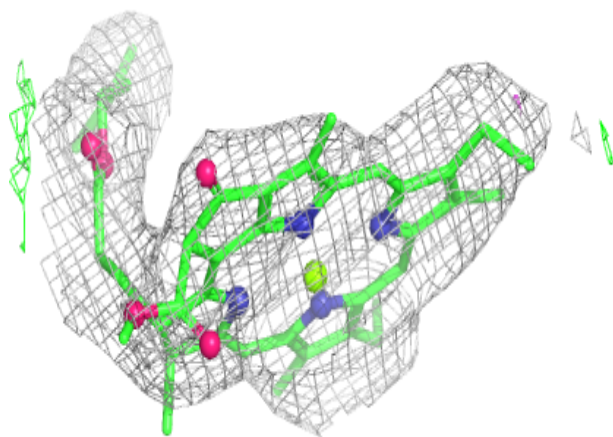
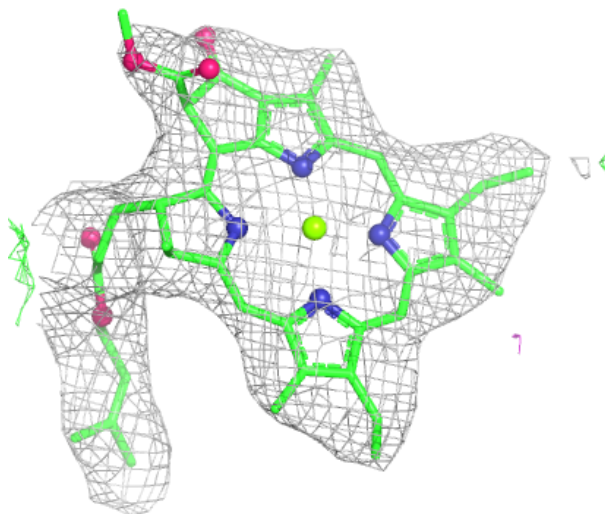
**Electron density around CLA A 560:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



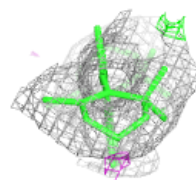
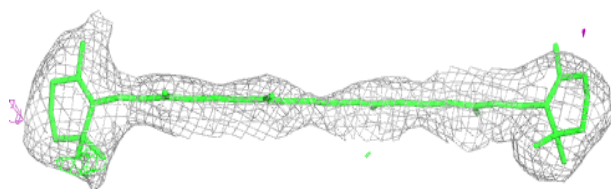
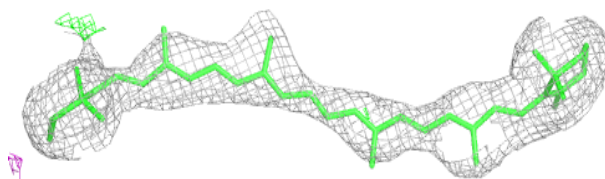
**Electron density around CLA D 355:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around BCR a 5566:**

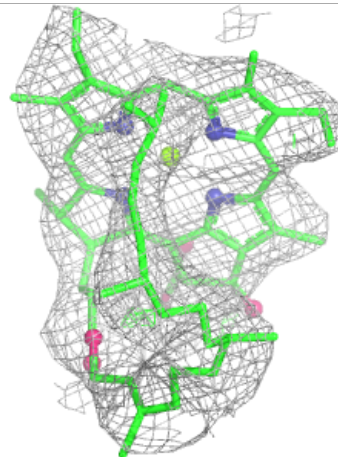
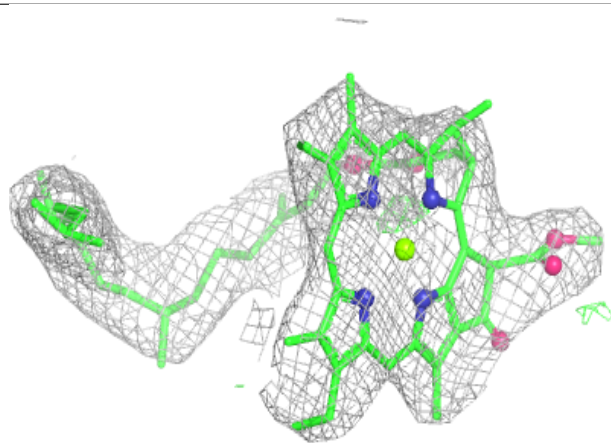
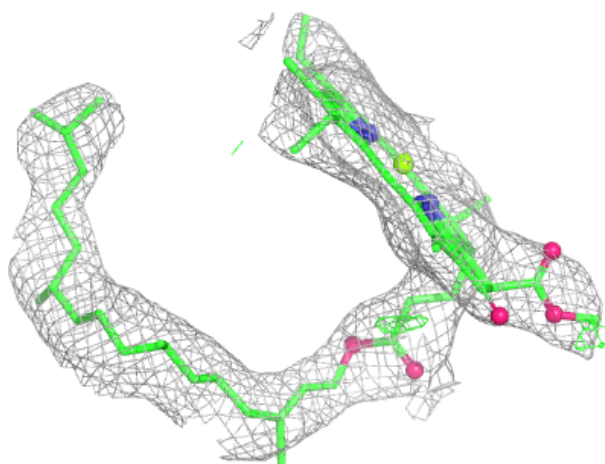
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





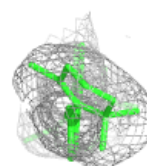
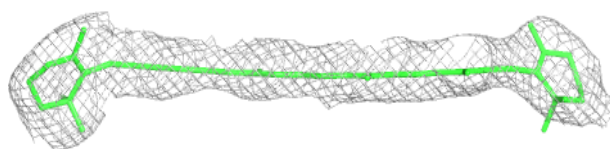
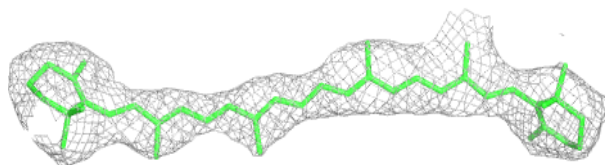
**Electron density around CLA B 521:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

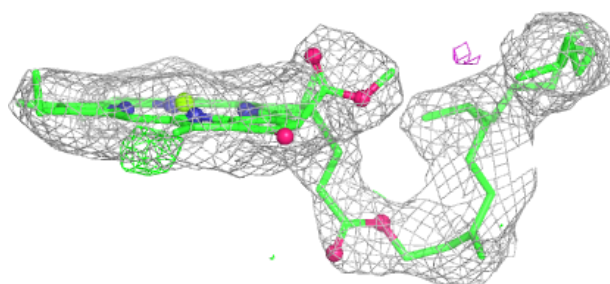
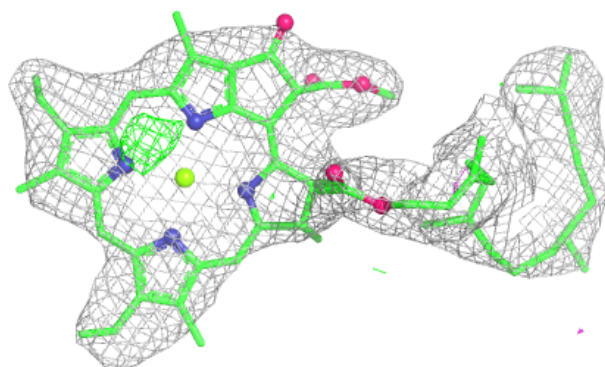


**Electron density around BCR b 5528:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around CLA b 5522:**

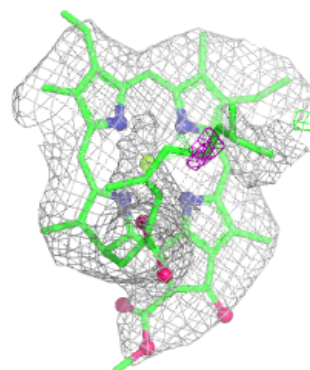
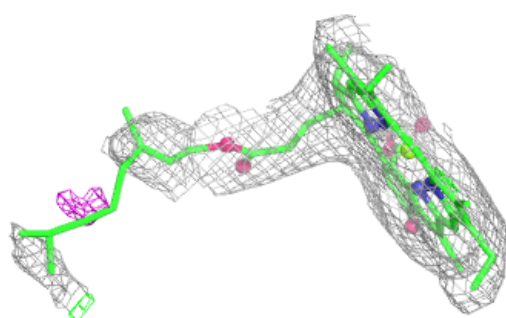
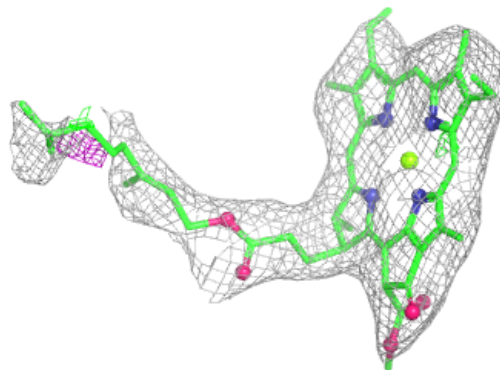
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



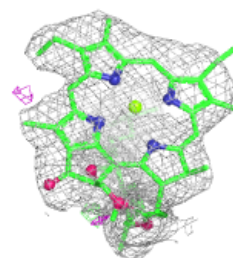
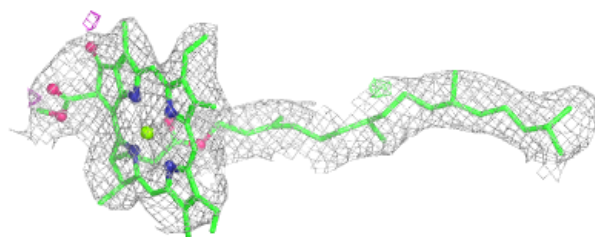
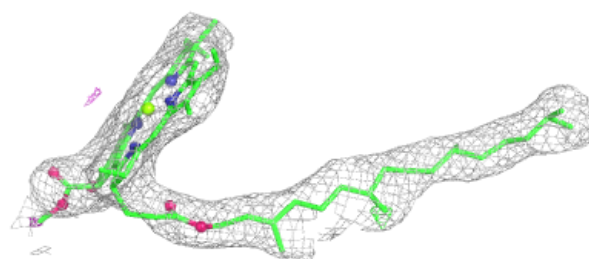


**Electron density around CLA a 5563:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

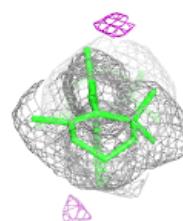
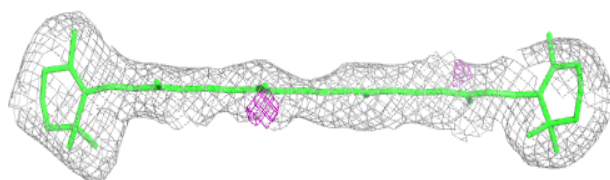
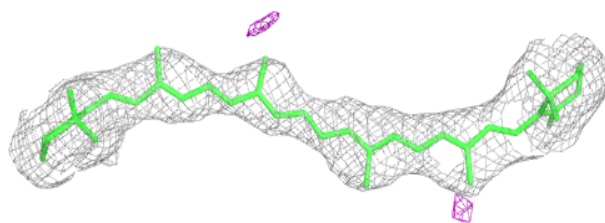
**Electron density around CLA B 517:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

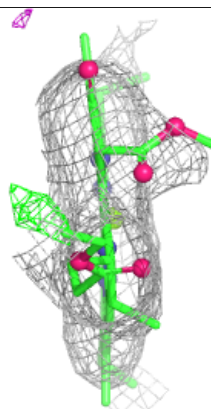
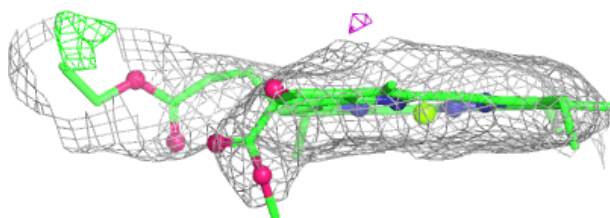
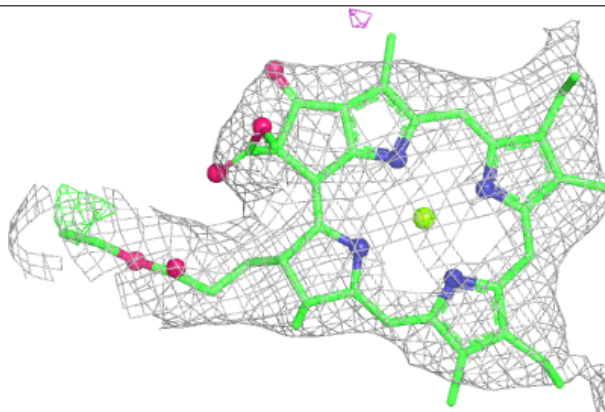


**Electron density around BCR A 566:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

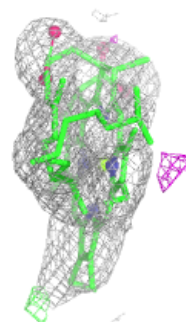
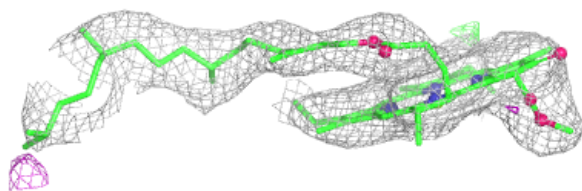
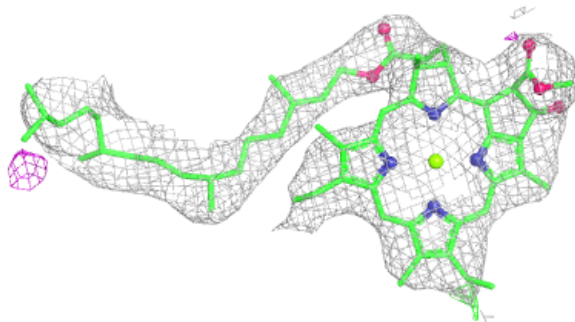
**Electron density around CLA C 499:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



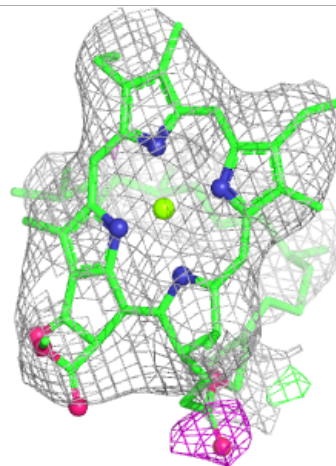
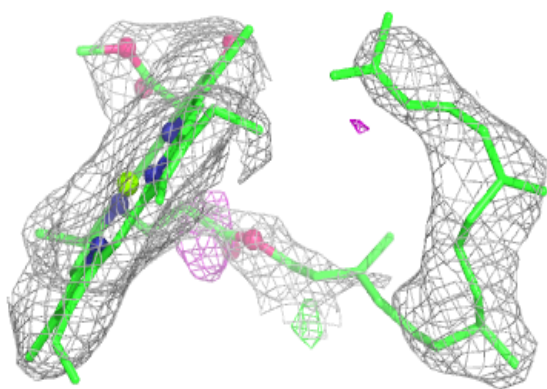
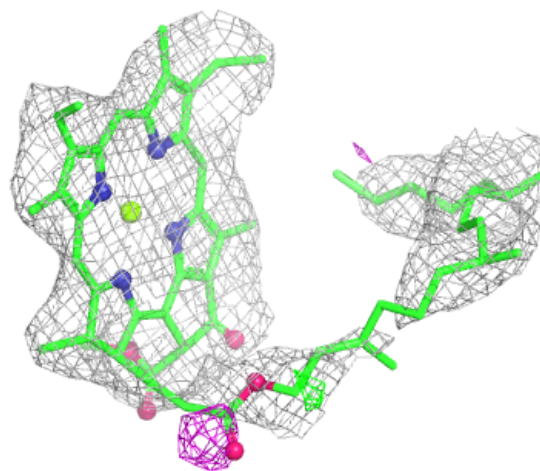
**Electron density around CLA b 5513:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



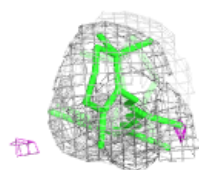
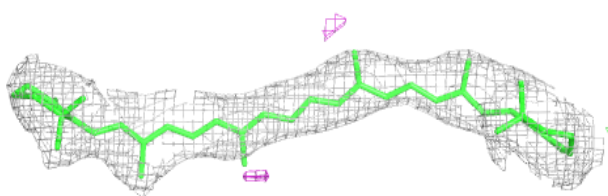
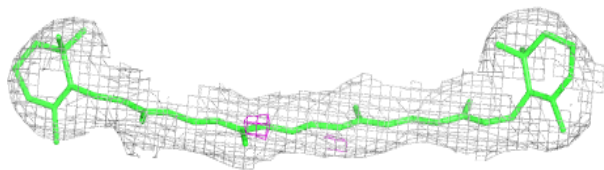
**Electron density around CLA C 493:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

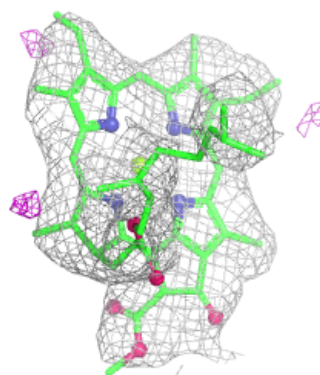
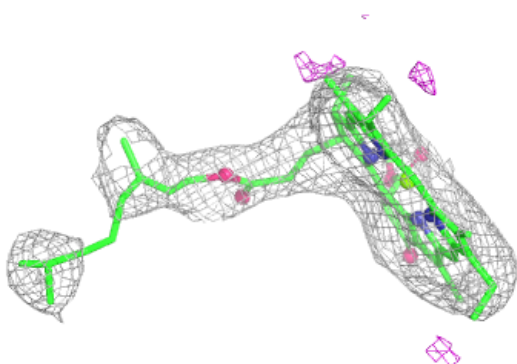
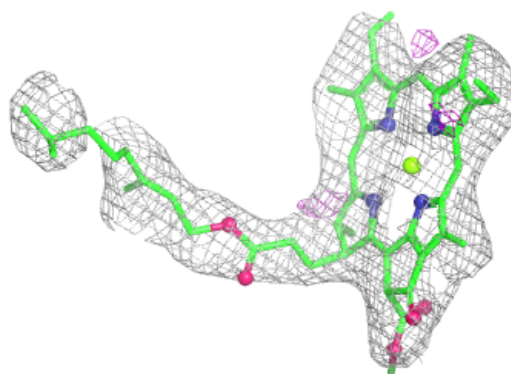


**Electron density around BCR C 504:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

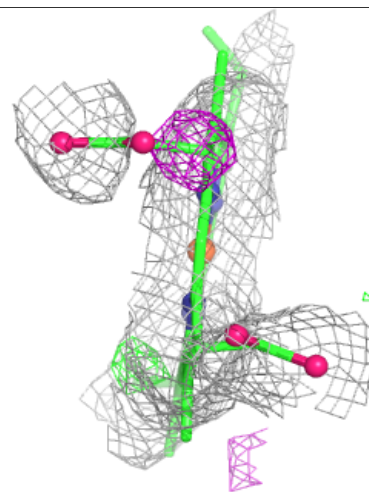
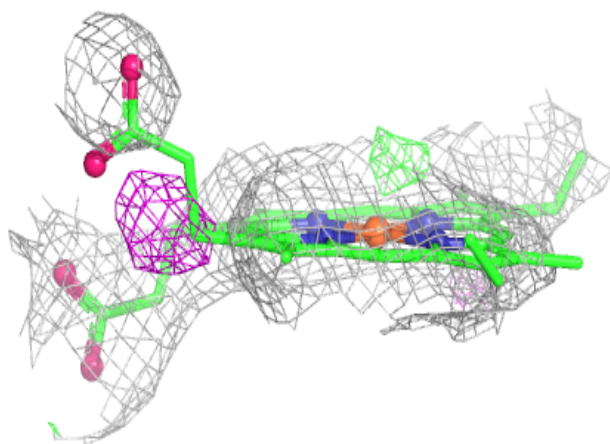
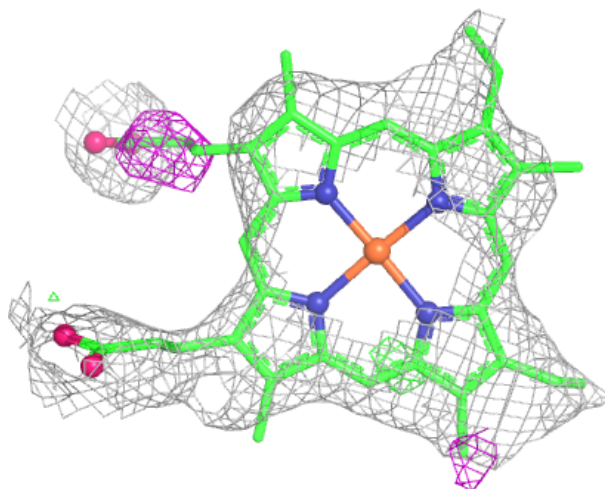
**Electron density around CLA A 563:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around HEM f 5051:**

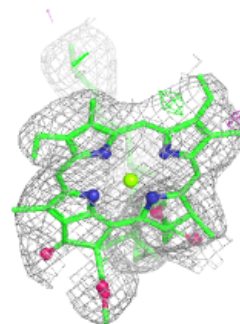
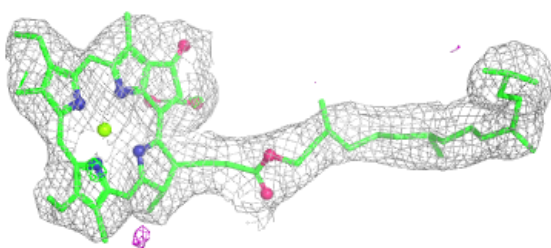
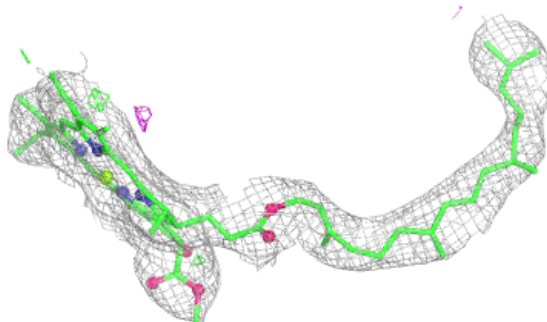
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



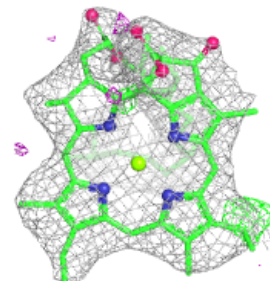
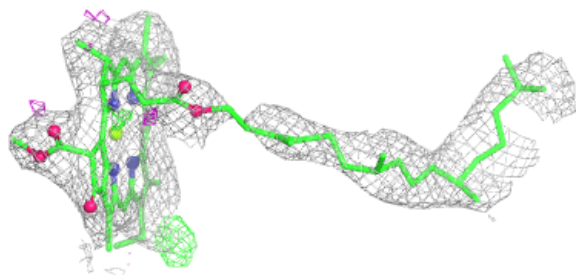
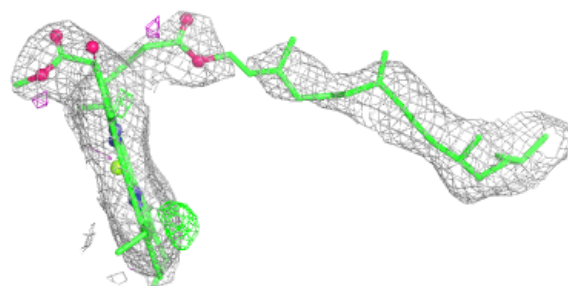


**Electron density around CLA D 354:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

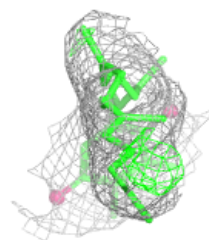
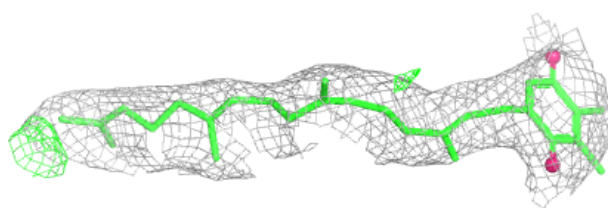
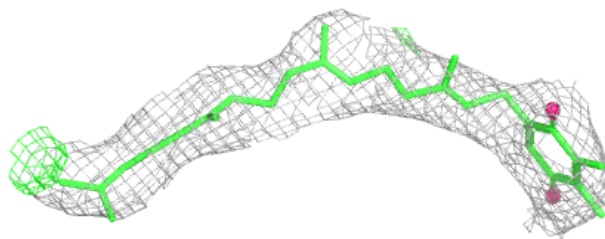
**Electron density around CLA b 5515:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

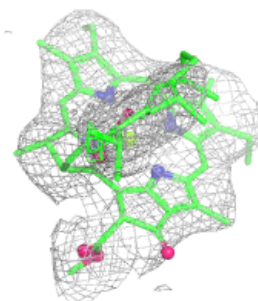
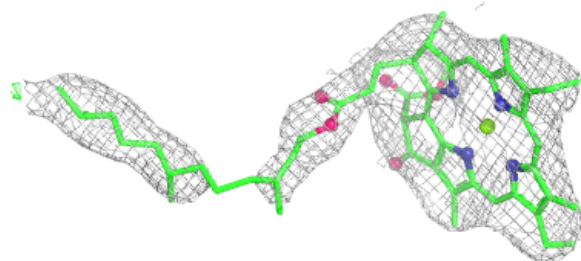
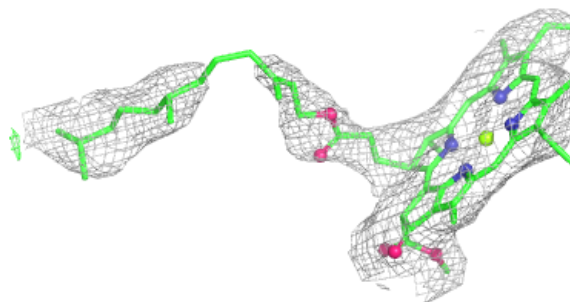


**Electron density around PQ9 D 356:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around CLA C 492:**

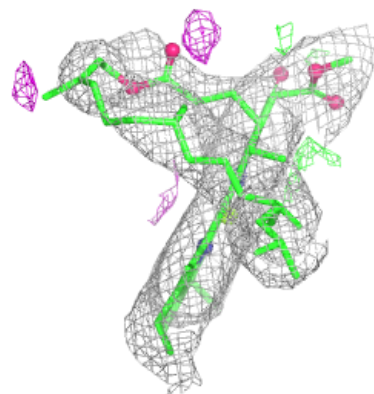
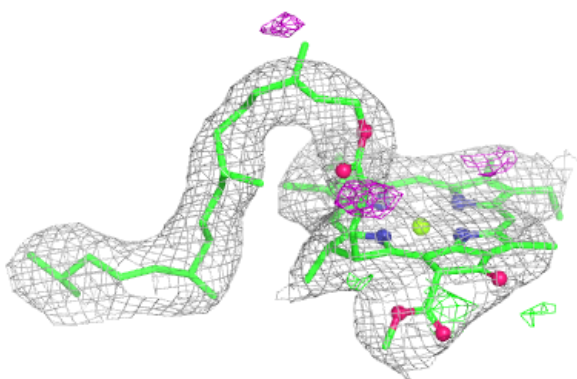
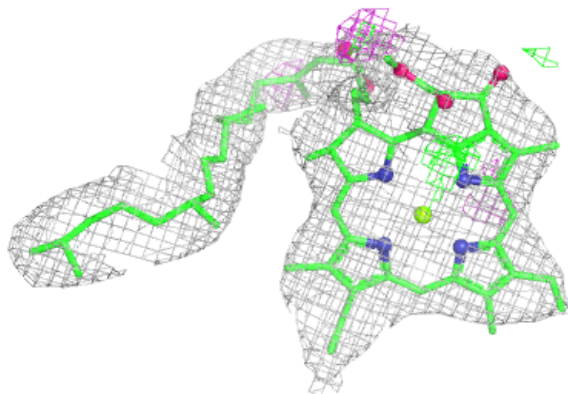
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



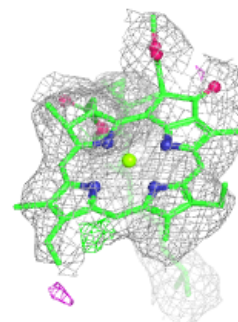
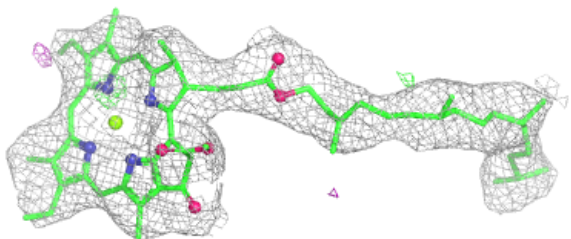
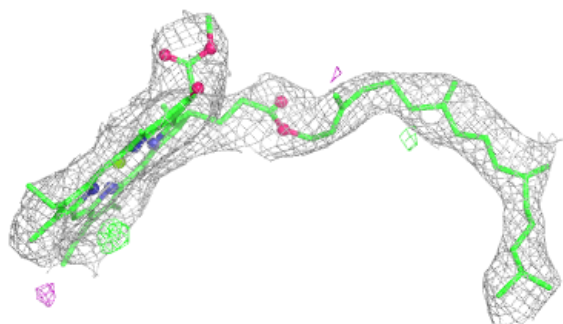


**Electron density around CLA a 5559:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

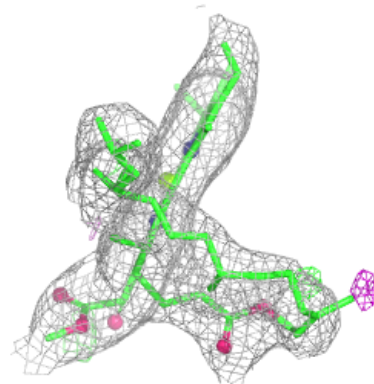
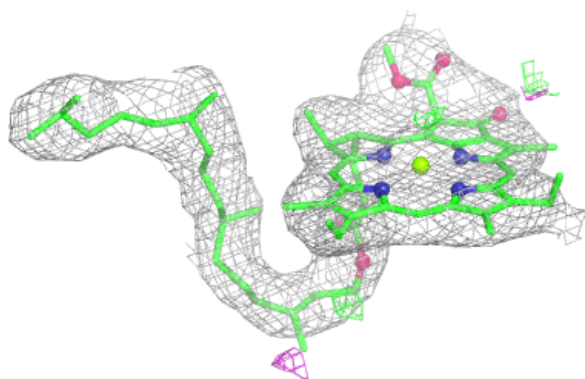
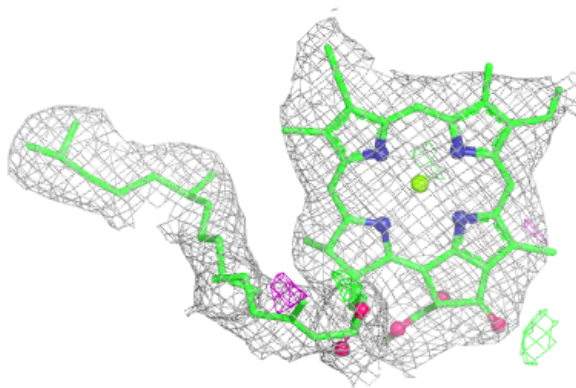
**Electron density around CLA d 5354:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

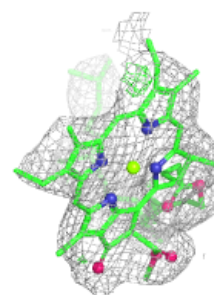
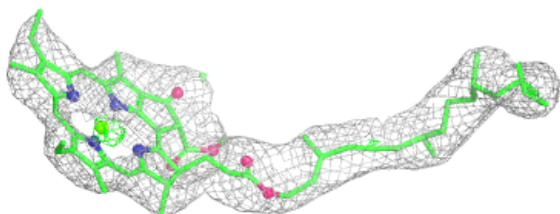
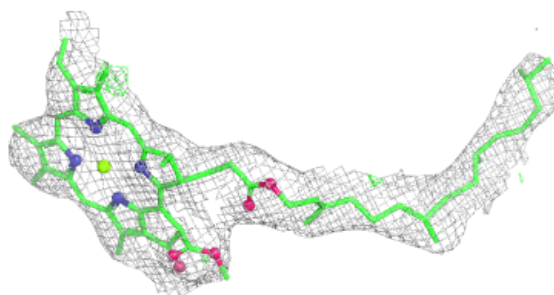


**Electron density around CLA A 559:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

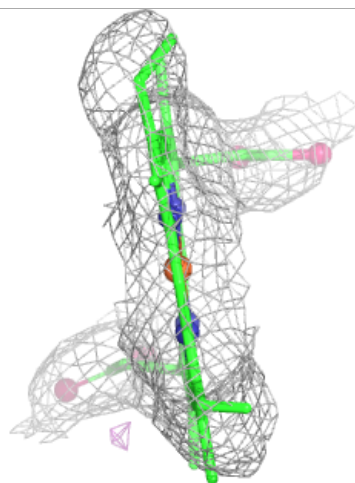
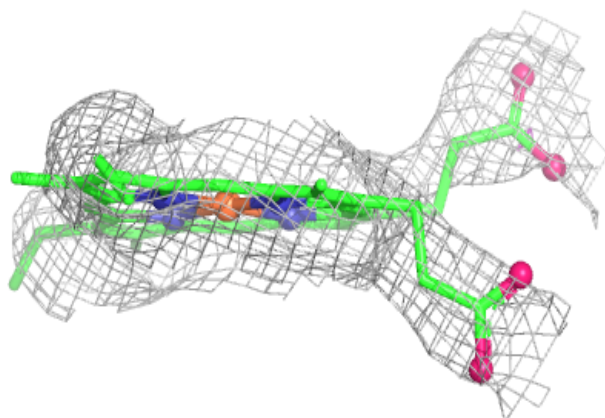
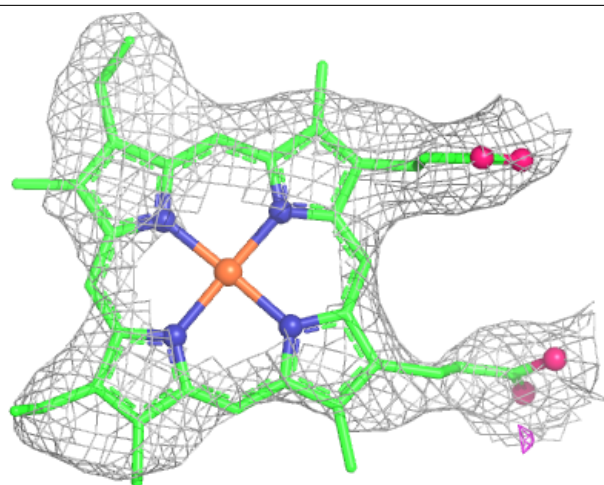
**Electron density around CLA a 5558:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



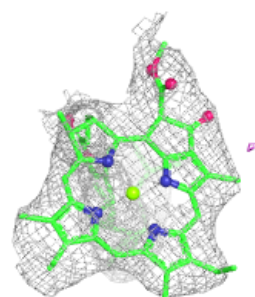
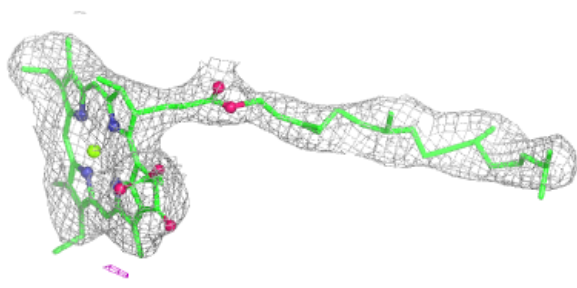
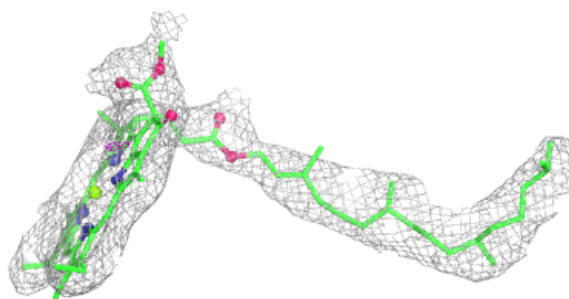
**Electron density around HEM F 51:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



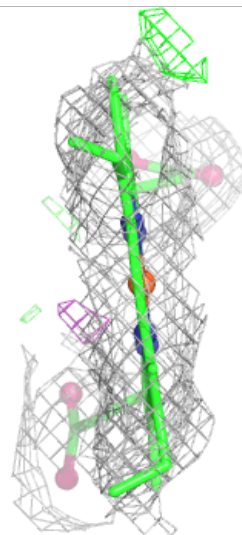
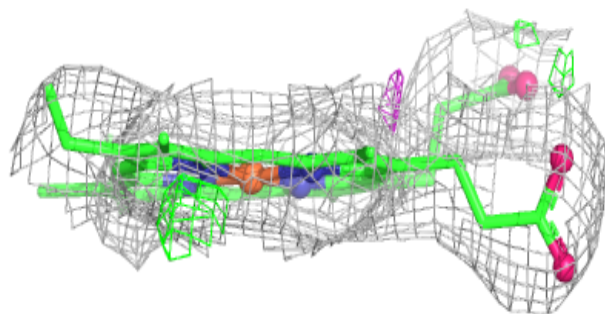
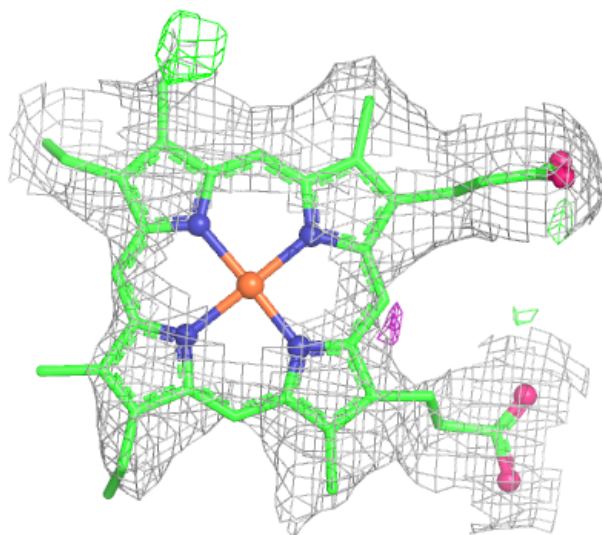
**Electron density around CLA b 5514:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



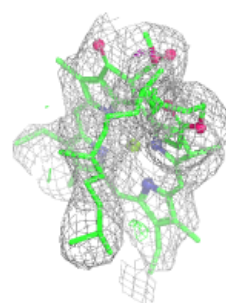
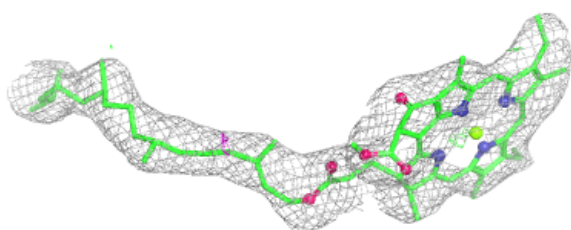
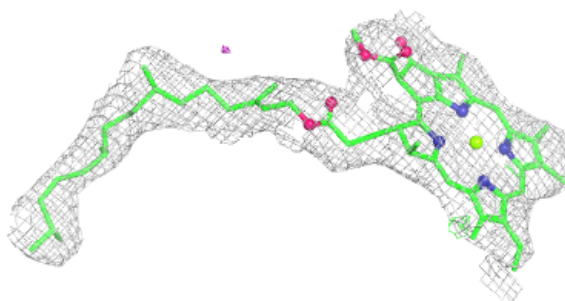
**Electron density around HEM v 5552:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

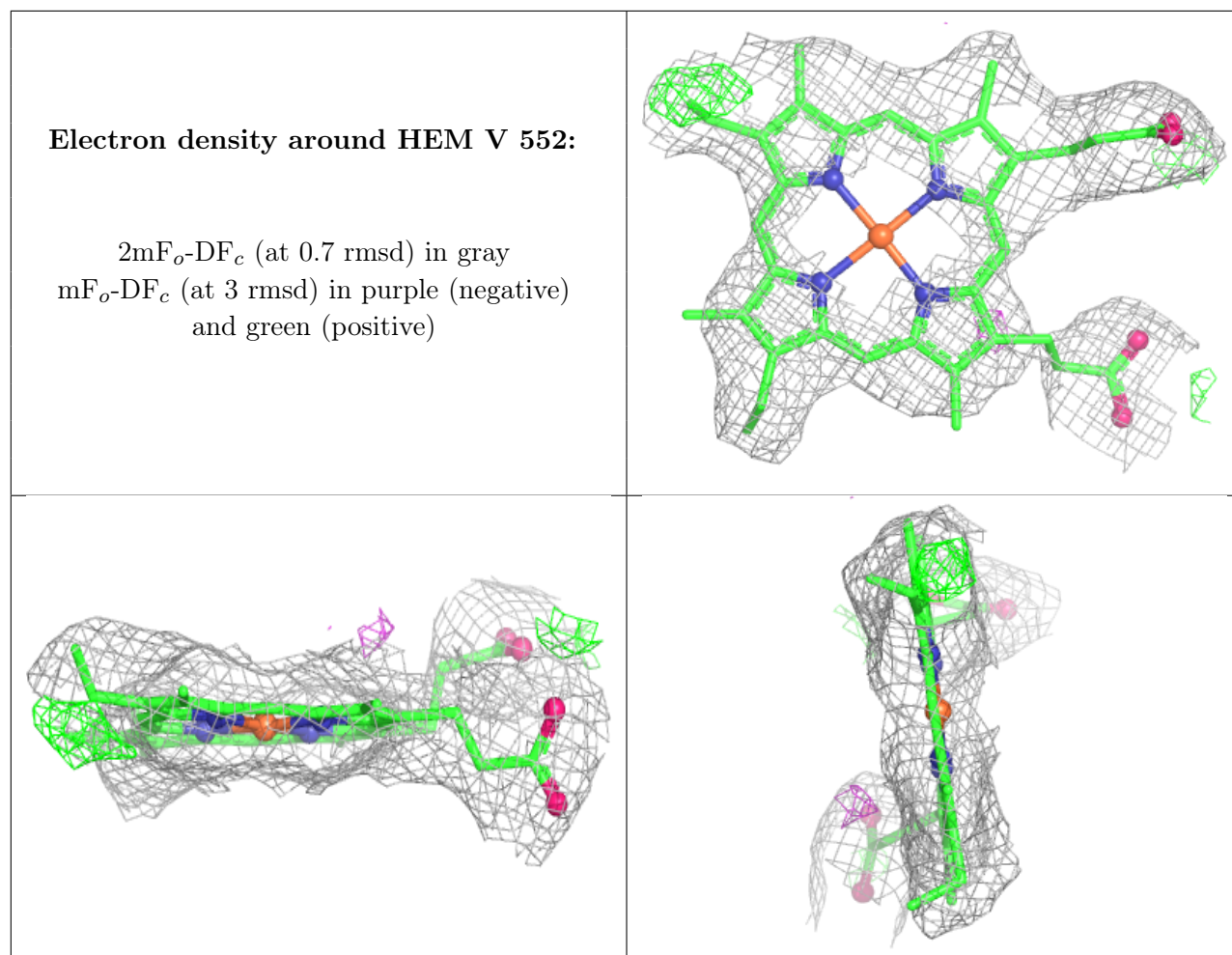


**Electron density around CLA A 558:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)







## 6.5 Other polymers ⓘ

There are no such residues in this entry.