



# wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 5, 2026 – 03:14 PM EDT

PDB ID : 8EZ5 / pdb\_00008ez5  
Title : RT XFEL structure of the two-flash state of Photosystem II (2F, S3-rich) at 2.09 Angstrom resolution  
Authors : Bhowmick, A.; Hussein, R.; Bogacz, I.; Simon, P.S.; Ibrahim, M.; Chatterjee, R.; Doyle, M.D.; Cheah, M.H.; Fransson, T.; Chernev, P.; Kim, I.-S.; Makita, H.; Dasgupta, M.; Kaminsky, C.J.; Zhang, M.; Gatcke, J.; Haupt, S.; Nangca, I.I.; Keable, S.M.; Aydin, O.; Tono, K.; Owada, S.; Gee, L.B.; Fuller, F.D.; Batyuk, A.; Alonso-Mori, R.; Holton, J.M.; Paley, D.W.; Moriarty, N.W.; Mamedov, F.; Adams, P.D.; Brewster, A.S.; Dobbek, H.; Sauter, N.K.; Bergmann, U.; Zouni, A.; Messinger, J.; Kern, J.; Yano, J.; Yachandra, V.K.  
Deposited on : 2022-10-31  
Resolution : 2.09 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>.

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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

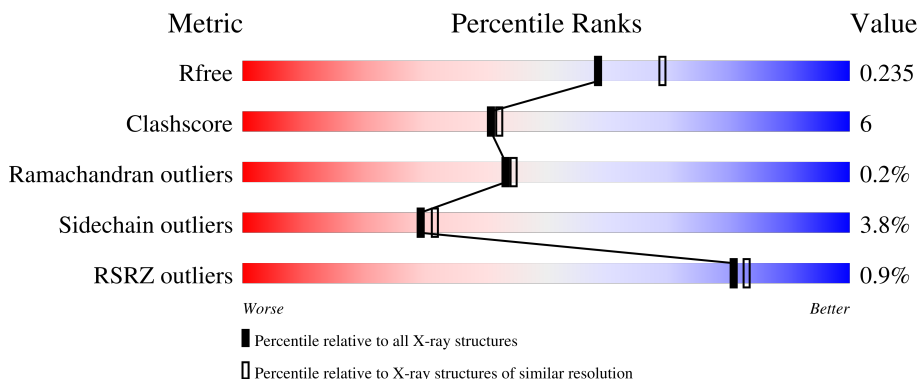
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.09 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                      | 6658 (2.10-2.10)                                      |
| Clashscore            | 190562                      | 7164 (2.10-2.10)                                      |
| Ramachandran outliers | 187476                      | 7099 (2.10-2.10)                                      |
| Sidechain outliers    | 187428                      | 7100 (2.10-2.10)                                      |
| RSRZ outliers         | 180081                      | 6662 (2.10-2.10)                                      |

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.

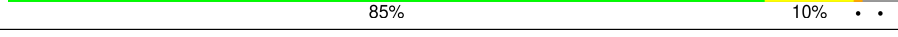
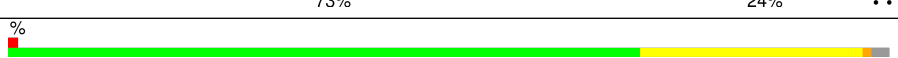
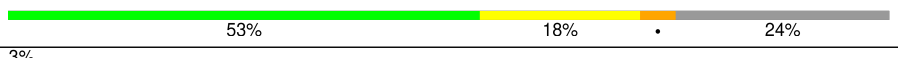
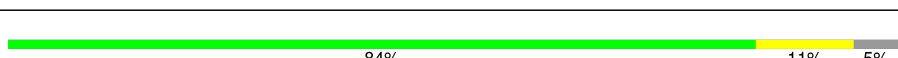
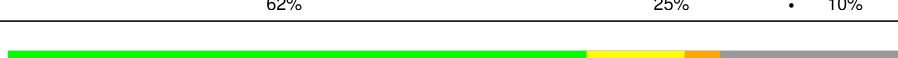
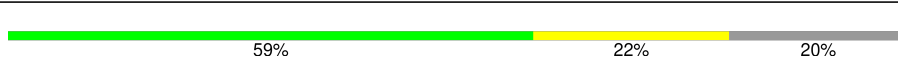
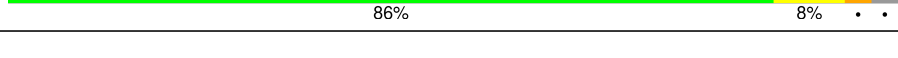
| Mol | Chain | Length | Quality of chain                                                                     |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 1   | A     | 344    |  |

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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



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| Mol | Chain | Length | Quality of chain                                                                     |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 1   | a     | 344    |    |
| 2   | B     | 510    |    |
| 2   | b     | 510    |    |
| 3   | C     | 461    |    |
| 3   | c     | 461    |    |
| 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     | 46     |  |
| 10  | k     | 46     |  |
| 11  | L     | 37     |  |
| 11  | l     | 37     |  |
| 12  | M     | 36     |  |
| 12  | m     | 36     |  |
| 13  | O     | 272    |  |
| 13  | o     | 272    |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 14  | T     | 32     |                  |
| 14  | t     | 32     |                  |
| 15  | U     | 134    |                  |
| 15  | u     | 134    |                  |
| 16  | V     | 163    |                  |
| 16  | v     | 163    |                  |
| 17  | Y     | 46     |                  |
| 17  | y     | 46     |                  |
| 18  | X     | 41     |                  |
| 18  | x     | 41     |                  |
| 19  | Z     | 62     |                  |
| 19  | z     | 62     |                  |
| 20  | R     | 41     |                  |
| 20  | r     | 41     |                  |

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 |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 36  | HEC  | V     | 201 | X         | -        | -       | -                |
| 36  | HEC  | v     | 201 | X         | -        | -       | -                |

## 2 Entry composition

There are 37 unique types of molecules in this entry. The entry contains 53041 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 II protein D1 1.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 1   | A     | 334      | Total | C    | N   | O   | S  | 0       | 64      | 0     |
|     |       |          | 3113  | 2030 | 513 | 551 | 19 |         |         |       |
| 1   | a     | 334      | Total | C    | N   | O   | S  | 0       | 64      | 0     |
|     |       |          | 3110  | 2027 | 513 | 551 | 19 |         |         |       |

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

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 2   | B     | 505      | Total | C    | N   | O   | S  | 0       | 4       | 0     |
|     |       |          | 4005  | 2631 | 666 | 695 | 13 |         |         |       |
| 2   | b     | 505      | Total | C    | N   | O   | S  | 0       | 0       | 0     |
|     |       |          | 3978  | 2610 | 665 | 690 | 13 |         |         |       |

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

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 3   | C     | 442      | Total | C    | N   | O   | S  | 0       | 11      | 0     |
|     |       |          | 3509  | 2302 | 586 | 607 | 14 |         |         |       |
| 3   | c     | 451      | Total | C    | N   | O   | S  | 0       | 12      | 0     |
|     |       |          | 3583  | 2343 | 602 | 624 | 14 |         |         |       |

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

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 4   | D     | 341      | Total | C    | N   | O   | S  | 0       | 2       | 0     |
|     |       |          | 2731  | 1809 | 446 | 464 | 12 |         |         |       |
| 4   | d     | 341      | Total | C    | N   | O   | S  | 0       | 3       | 0     |
|     |       |          | 2737  | 1813 | 446 | 466 | 12 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 5   | E     | 82       | Total | C   | N   | O   | 0       | 1       | 0     |
|     |       |          | 666   | 436 | 107 | 123 |         |         |       |
| 5   | e     | 82       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 664   | 434 | 108 | 122 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 6   | F     | 34       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 275   | 187 | 45 | 42 | 1 |         |         |       |
| 6   | f     | 34       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 275   | 187 | 45 | 42 | 1 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 7   | H     | 65       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 510   | 341 | 82 | 85 | 2 |         |         |       |
| 7   | h     | 63       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 498   | 333 | 80 | 83 | 2 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 8   | I     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 296   | 200 | 46 | 49 | 1 |         |         |       |
| 8   | i     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 296   | 200 | 46 | 49 | 1 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 9   | J     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 257   | 174 | 40 | 42 | 1 |         |         |       |
| 9   | j     | 36       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 257   | 174 | 40 | 42 | 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     |
|     |       |          | 293   | 204 | 43 | 46 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 10  | k     | 37       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 293   | 204 | 43 | 46 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 11  | L     | 37       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 304   | 202 | 48 | 53 | 1 |         |         |       |
| 11  | l     | 36       | Total | C   | N  | O  |   | 0       | 0       | 0     |
|     |       |          | 296   | 197 | 47 | 52 |   |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 12  | M     | 33       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 256   | 171 | 37 | 47 | 1 |         |         |       |
| 12  | m     | 32       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 251   | 168 | 36 | 46 | 1 |         |         |       |

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

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 13  | O     | 244      | Total | C    | N   | O   | S | 0       | 1       | 0     |
|     |       |          | 1870  | 1168 | 313 | 385 | 4 |         |         |       |
| 13  | o     | 244      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1874  | 1170 | 317 | 383 | 4 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 14  | T     | 30       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 258   | 181 | 36 | 39 | 2 |         |         |       |
| 14  | t     | 30       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 256   | 180 | 36 | 38 | 2 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 15  | U     | 97       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 774   | 491 | 129 | 154 |         |         |       |
| 15  | u     | 97       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 774   | 491 | 129 | 154 |         |         |       |

- 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 Photosystem II reaction center protein Ycf12.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 17  | Y     | 27       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 196   | 128 | 35 | 30 | 3 |         |         |       |
| 17  | y     | 30       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 218   | 144 | 35 | 36 | 3 |         |         |       |

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

| Mol | Chain | Residues | Atoms |     |    |    |  | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|--|---------|---------|-------|
| 18  | X     | 38       | Total | C   | N  | O  |  | 0       | 0       | 0     |
|     |       |          | 281   | 188 | 45 | 48 |  |         |         |       |
| 18  | x     | 39       | Total | C   | N  | O  |  | 0       | 0       | 0     |
|     |       |          | 286   | 191 | 46 | 49 |  |         |         |       |

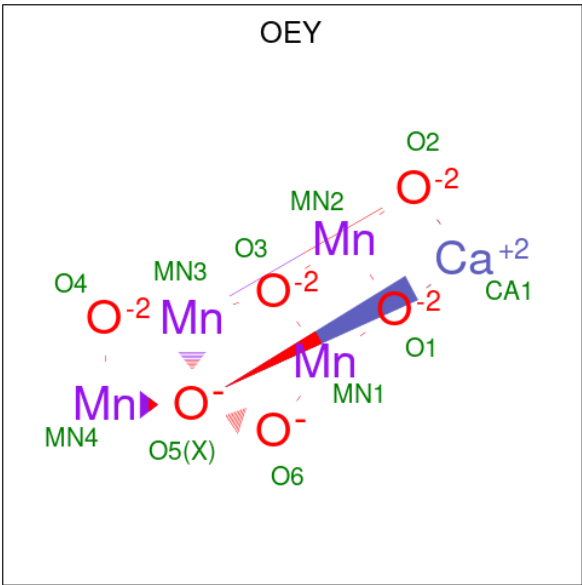
- Molecule 19 is a protein called Photosystem II reaction center protein Z.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 19  | Z     | 62       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 479   | 328 | 72 | 77 | 2 |         |         |       |
| 19  | z     | 62       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 477   | 326 | 72 | 77 | 2 |         |         |       |

- Molecule 20 is a protein called Photosystem II protein Y.

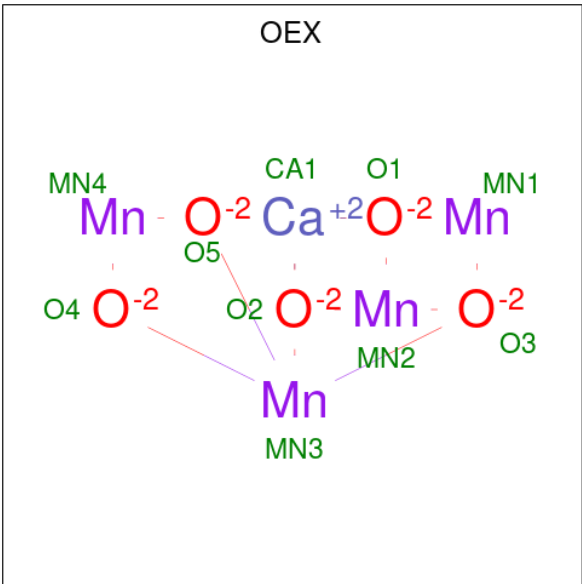
| Mol | Chain | Residues | Atoms |     |    |    |  | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|--|---------|---------|-------|
| 20  | R     | 34       | Total | C   | N  | O  |  | 0       | 0       | 0     |
|     |       |          | 271   | 184 | 47 | 40 |  |         |         |       |
| 20  | r     | 31       | Total | C   | N  | O  |  | 0       | 0       | 0     |
|     |       |          | 246   | 166 | 43 | 37 |  |         |         |       |

- Molecule 21 is CA-MN4-O6 CLUSTER (CCD ID: OEY) (formula:  $\text{CaMn}_4\text{O}_6$ ) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 21  | A     | 1        | Total | Ca | Mn | O | 0       | 1       |
|     |       |          | 11    | 1  | 4  | 6 |         |         |
| 21  | a     | 1        | Total | Ca | Mn | O | 0       | 1       |
|     |       |          | 11    | 1  | 4  | 6 |         |         |

- Molecule 22 is CA-MN4-O5 CLUSTER (CCD ID: OEX) (formula:  $\text{CaMn}_4\text{O}_5$ ) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 22  | A     | 1        | Total | Ca | Mn | O | 0       | 1       |
|     |       |          | 10    | 1  | 4  | 5 |         |         |

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| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 22  | a     | 1        | Total | Ca | Mn | O | 0       | 1       |
|     |       |          | 10    | 1  | 4  | 5 |         |         |

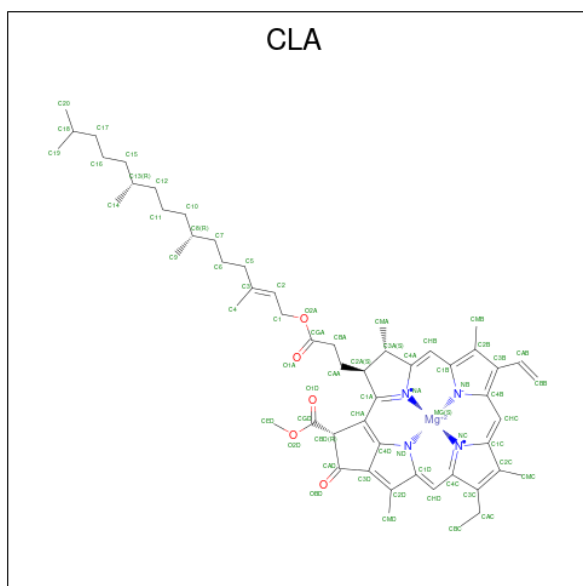
- Molecule 23 is FE (II) ION (CCD ID: FE2) (formula: Fe).

| Mol | Chain | Residues | Atoms |    |  |  | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|--|--|---------|---------|
| 23  | A     | 1        | Total | Fe |  |  | 0       | 0       |
|     |       |          | 1     | 1  |  |  |         |         |
| 23  | a     | 1        | Total | Fe |  |  | 0       | 0       |
|     |       |          | 1     | 1  |  |  |         |         |

- Molecule 24 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

| Mol | Chain | Residues | Atoms |    |  |  | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|--|--|---------|---------|
| 24  | A     | 2        | Total | Cl |  |  | 0       | 0       |
|     |       |          | 2     | 2  |  |  |         |         |
| 24  | a     | 2        | Total | Cl |  |  | 0       | 0       |
|     |       |          | 2     | 2  |  |  |         |         |

- Molecule 25 is CHLOROPHYLL A (CCD ID: CLA) (formula: C<sub>55</sub>H<sub>72</sub>MgN<sub>4</sub>O<sub>5</sub>).



| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 25  | A     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | A     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |

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| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | C     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | D     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | D     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | D     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | a     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |

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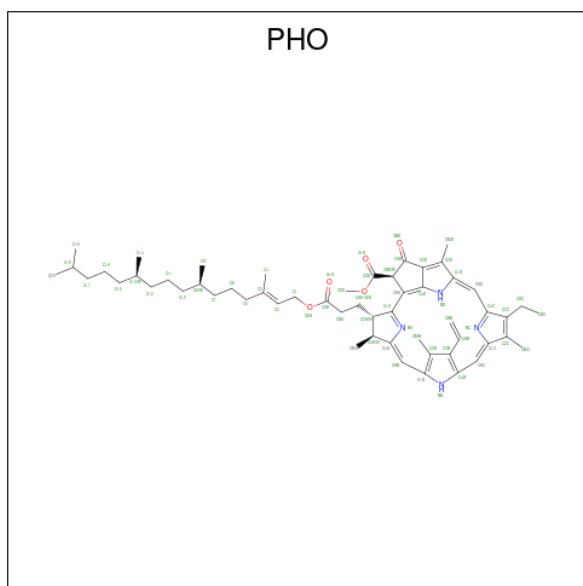
| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | b     | 1        | Total<br>60 | C<br>50 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>60 | C<br>50 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>64 | C<br>54 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |
| 25  | c     | 1        | Total<br>65 | C<br>55 | Mg<br>1 | N<br>4 | O<br>5 | 0       | 0       |

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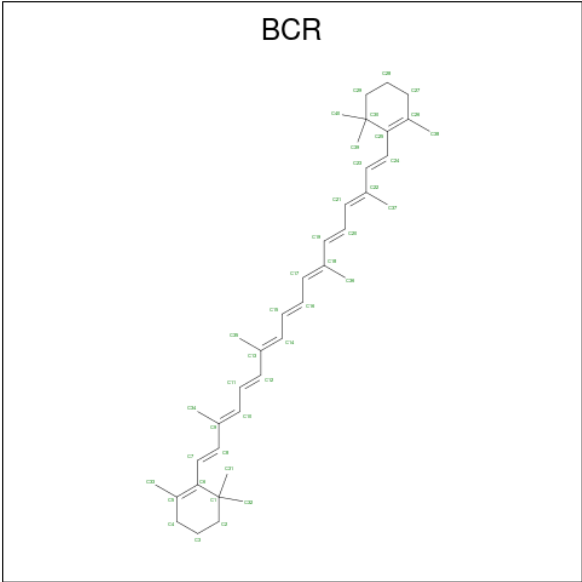
| Mol | Chain | Residues | Atoms |    |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|---------|
| 25  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 25  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 25  | c     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 25  | d     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |
| 25  | d     | 1        | Total | C  | Mg | N | O | 0       | 0       |
|     |       |          | 65    | 55 | 1  | 4 | 5 |         |         |

- Molecule 26 is PHEOPHYTIN A (CCD ID: PHO) (formula:  $C_{55}H_{74}N_4O_5$ ).



| Mol | Chain | Residues | Atoms |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---------|---------|
| 26  | A     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 26  | D     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 26  | d     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |
| 26  | d     | 1        | Total | C  | N | O | 0       | 0       |
|     |       |          | 64    | 55 | 4 | 5 |         |         |

- Molecule 27 is BETA-CAROTENE (CCD ID: BCR) (formula:  $C_{40}H_{56}$ ).



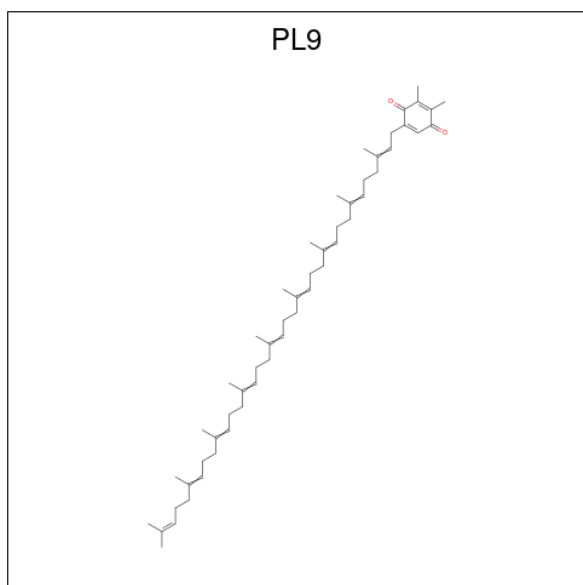
| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 27  | A     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | B     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | C     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | D     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | H     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | K     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | K     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | T     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | Y     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | a     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | b     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | b     | 1        | Total C<br>40 40 | 0       | 0       |

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| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 27  | b     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | c     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | d     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | k     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | t     | 1        | Total C<br>40 40 | 0       | 0       |
| 27  | x     | 1        | Total C<br>40 40 | 0       | 0       |

- Molecule 28 is 2,3-DIMETHYL-5-(3,7,11,15,19,23,27,31,35-NONAMETHYL-2,6,10,14,18,22,26,30,34-HEXATRIACONTANONAENYL-2,5-CYCLOHEXADIENE-1,4-DIONE-2,3-DIMETHYL-5-SOLANESYL-1,4-BENZOQUINONE (CCD ID: PL9) (formula: C<sub>53</sub>H<sub>80</sub>O<sub>2</sub>).



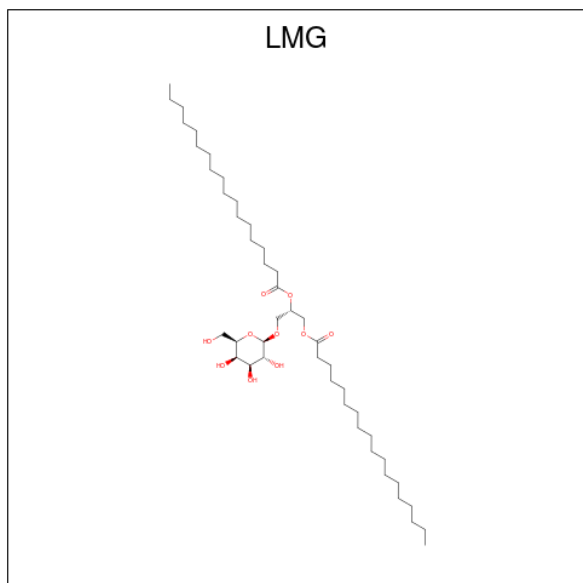
| Mol | Chain | Residues | Atoms                | ZeroOcc | AltConf |
|-----|-------|----------|----------------------|---------|---------|
| 28  | A     | 1        | Total C O<br>55 53 2 | 0       | 0       |
| 28  | D     | 1        | Total C O<br>55 53 2 | 0       | 0       |

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| Mol | Chain | Residues | Atoms |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---------|---------|
| 28  | a     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 55    | 53 | 2 |         |         |
| 28  | d     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 55    | 53 | 2 |         |         |

- Molecule 29 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (CCD ID: LMG) (formula:  $C_{45}H_{86}O_{10}$ ).



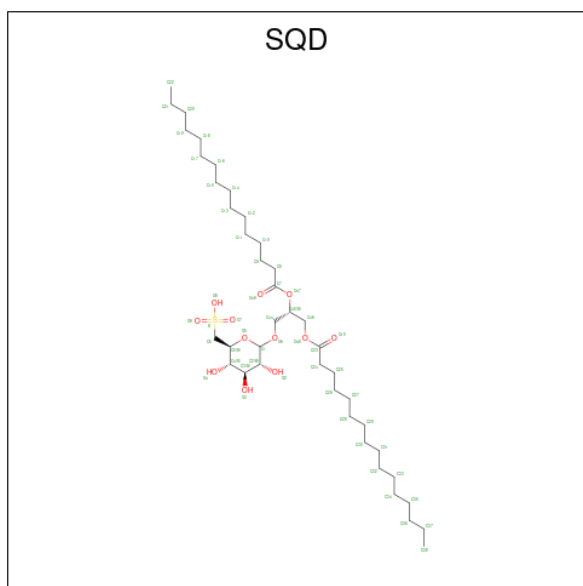
| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 29  | A     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 29  | B     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 28    | 24 | 4  |         |         |
| 29  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |
| 29  | D     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 51    | 41 | 10 |         |         |
| 29  | D     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 33    | 27 | 6  |         |         |
| 29  | M     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 51    | 41 | 10 |         |         |
| 29  | b     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 55    | 45 | 10 |         |         |
| 29  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 37    | 27 | 10 |         |         |
| 29  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 48    | 38 | 10 |         |         |

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| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 29  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 49    | 39 | 10 |         |         |
| 29  | d     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 23    | 21 | 2  |         |         |
| 29  | d     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 44    | 34 | 10 |         |         |
| 29  | m     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 51    | 41 | 10 |         |         |

- Molecule 30 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-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 |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 30  | A     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 52    | 39 | 12 | 1 |         |         |
| 30  | A     | 1        | Total | C  | O  |   | 0       | 0       |
|     |       |          | 39    | 35 | 4  |   |         |         |
| 30  | B     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 54    | 41 | 12 | 1 |         |         |
| 30  | F     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 36    | 25 | 10 | 1 |         |         |
| 30  | L     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 49    | 36 | 12 | 1 |         |         |
| 30  | a     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 54    | 41 | 12 | 1 |         |         |
| 30  | a     | 1        | Total | C  | O  |   | 0       | 0       |
|     |       |          | 36    | 31 | 5  |   |         |         |

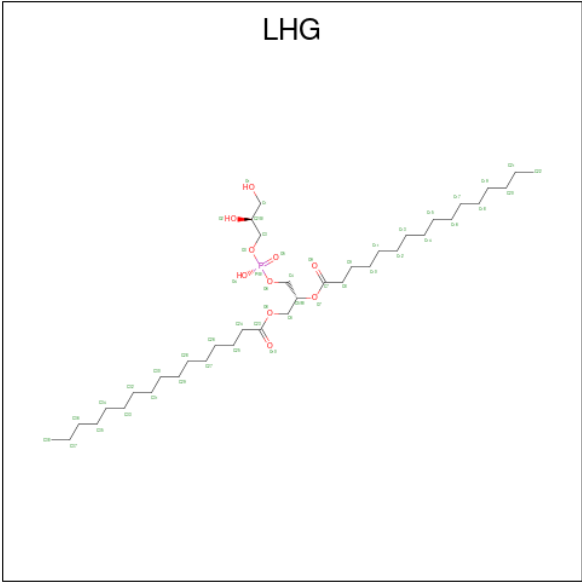
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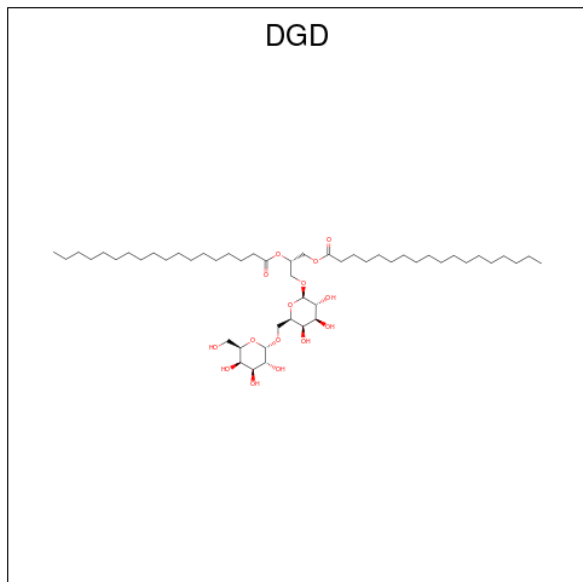
| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 30  | f     | 1        | Total | C  | O  | S | 0       | 0       |
|     |       |          | 41    | 28 | 12 | 1 |         |         |

- Molecule 31 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (CCD ID: LHG) (formula: C<sub>38</sub>H<sub>75</sub>O<sub>10</sub>P).



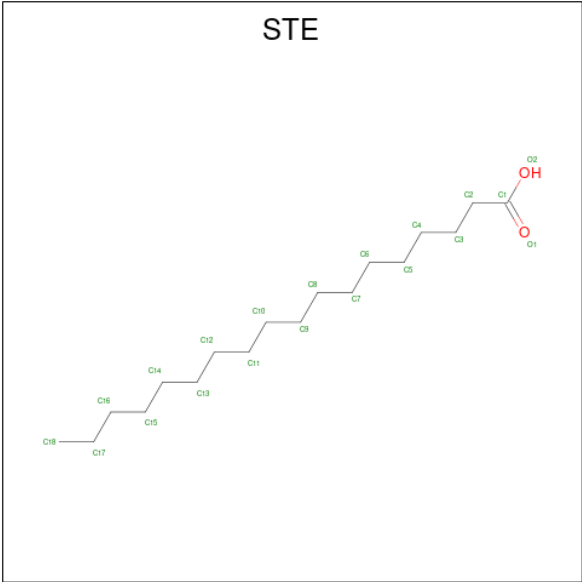
| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---------|---------|
| 31  | A     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | A     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | D     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | D     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 47    | 36 | 10 | 1 |         |         |
| 31  | D     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | d     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | d     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |
| 31  | d     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 39    | 28 | 10 | 1 |         |         |
| 31  | e     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 42    | 31 | 10 | 1 |         |         |
| 31  | l     | 1        | Total | C  | O  | P | 0       | 0       |
|     |       |          | 49    | 38 | 10 | 1 |         |         |

- Molecule 32 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula:  $C_{51}H_{96}O_{15}$ ).



| Mol | Chain | Residues | Atoms |    |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---------|---------|
| 32  | A     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 66    | 51 | 15 |         |         |
| 32  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | C     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | H     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | a     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 44    | 39 | 5  |         |         |
| 32  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | c     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |
| 32  | h     | 1        | Total | C  | O  | 0       | 0       |
|     |       |          | 62    | 47 | 15 |         |         |

- Molecule 33 is STEARIC ACID (CCD ID: STE) (formula:  $C_{18}H_{36}O_2$ ).



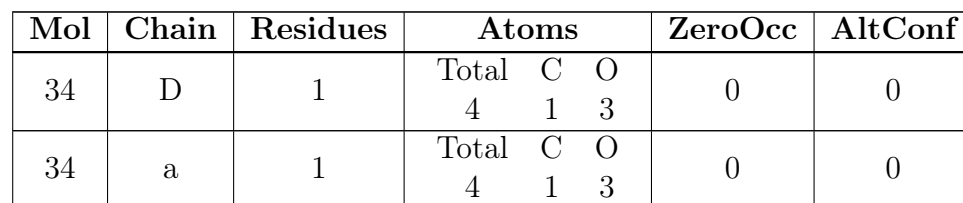
| Mol | Chain | Residues | Atoms |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---------|---------|
| 33  | B     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 17    | 15 | 2 |         |         |
| 33  | B     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | B     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 18    | 16 | 2 |         |         |
| 33  | B     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | B     | 1        | Total | C  |   | 0       | 0       |
|     |       |          | 16    | 16 |   |         |         |
| 33  | C     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | C     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | C     | 1        | Total | C  |   | 0       | 0       |
|     |       |          | 16    | 16 |   |         |         |
| 33  | D     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 20    | 18 | 2 |         |         |
| 33  | E     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | H     | 1        | Total | C  |   | 0       | 0       |
|     |       |          | 18    | 18 |   |         |         |
| 33  | I     | 1        | Total | C  |   | 0       | 0       |
|     |       |          | 15    | 15 |   |         |         |
| 33  | J     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 12    | 10 | 2 |         |         |
| 33  | M     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 15    | 13 | 2 |         |         |

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| Mol | Chain | Residues | Atoms                | ZeroOcc | AltConf |
|-----|-------|----------|----------------------|---------|---------|
| 33  | M     | 1        | Total C<br>10 10     | 0       | 0       |
| 33  | T     | 1        | Total C<br>16 16     | 0       | 0       |
| 33  | T     | 1        | Total C<br>15 15     | 0       | 0       |
| 33  | a     | 1        | Total C<br>10 10     | 0       | 0       |
| 33  | a     | 1        | Total C O<br>12 10 2 | 0       | 0       |
| 33  | b     | 1        | Total C O<br>20 18 2 | 0       | 0       |
| 33  | b     | 1        | Total C O<br>20 18 2 | 0       | 0       |
| 33  | b     | 1        | Total C<br>10 10     | 0       | 0       |
| 33  | c     | 1        | Total C O<br>20 18 2 | 0       | 0       |
| 33  | c     | 1        | Total C O<br>12 10 2 | 0       | 0       |
| 33  | d     | 1        | Total C O<br>16 14 2 | 0       | 0       |
| 33  | d     | 1        | Total C O<br>17 15 2 | 0       | 0       |
| 33  | j     | 1        | Total C O<br>12 10 2 | 0       | 0       |
| 33  | l     | 1        | Total C<br>18 18     | 0       | 0       |
| 33  | m     | 1        | Total C O<br>12 10 2 | 0       | 0       |
| 33  | t     | 1        | Total C O<br>14 12 2 | 0       | 0       |
| 33  | x     | 1        | Total C O<br>20 18 2 | 0       | 0       |

- Molecule 34 is BICARBONATE ION (CCD ID: BCT) (formula:  $\text{CHO}_3$ ).



- # HEM

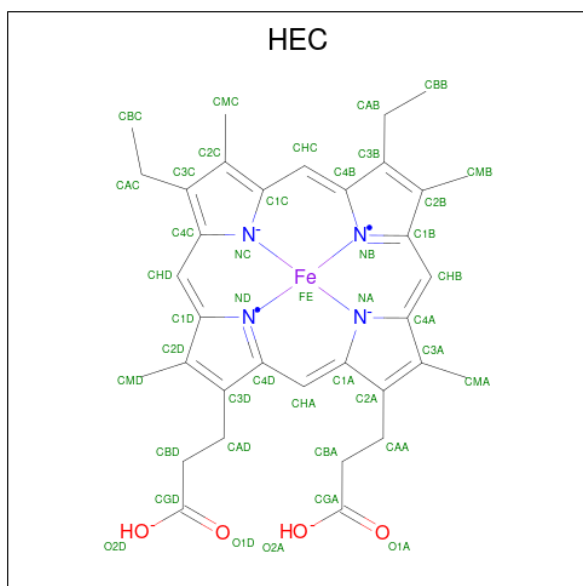
| Mol | Chain | Residues | Atoms       |         |         |        |        | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| 35  | E     | 1        | Total<br>43 | C<br>34 | Fe<br>1 | N<br>4 | O<br>4 | 0       | 0       |

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| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf |   |
|-----|-------|----------|-------|----|----|---|---------|---------|---|
| 35  | f     | 1        | Total | C  | Fe | N | O       | 0       | 0 |
|     |       |          | 43    | 34 | 1  | 4 | 4       |         |   |

- Molecule 36 is HEME C (CCD ID: HEC) (formula:  $C_{34}H_{36}FeN_4O_4$ ).



| Mol | Chain | Residues | Atoms |    |    |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|----|---|---|---------|---------|
| 36  | V     | 1        | Total | C  | Fe | N | O | 0       | 0       |
|     |       |          | 43    | 34 | 1  | 4 | 4 |         |         |
| 36  | v     | 1        | Total | C  | Fe | N | O | 0       | 0       |
|     |       |          | 43    | 34 | 1  | 4 | 4 |         |         |

- Molecule 37 is water.

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 37  | A     | 119      | Total | O   | 0       | 4       |
|     |       |          | 123   | 123 |         |         |
| 37  | B     | 197      | Total | O   | 0       | 0       |
|     |       |          | 197   | 197 |         |         |
| 37  | C     | 142      | Total | O   | 0       | 0       |
|     |       |          | 142   | 142 |         |         |
| 37  | D     | 106      | Total | O   | 0       | 0       |
|     |       |          | 106   | 106 |         |         |
| 37  | E     | 29       | Total | O   | 0       | 0       |
|     |       |          | 29    | 29  |         |         |
| 37  | F     | 3        | Total | O   | 0       | 0       |
|     |       |          | 3     | 3   |         |         |

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| Mol | Chain | Residues | Atoms        |          | ZeroOcc | AltConf |
|-----|-------|----------|--------------|----------|---------|---------|
| 37  | H     | 27       | Total<br>27  | O<br>27  | 0       | 0       |
| 37  | I     | 13       | Total<br>13  | O<br>13  | 0       | 0       |
| 37  | J     | 12       | Total<br>12  | O<br>12  | 0       | 0       |
| 37  | K     | 2        | Total<br>2   | O<br>2   | 0       | 0       |
| 37  | L     | 9        | Total<br>9   | O<br>9   | 0       | 0       |
| 37  | M     | 5        | Total<br>5   | O<br>5   | 0       | 0       |
| 37  | O     | 73       | Total<br>73  | O<br>73  | 0       | 0       |
| 37  | T     | 9        | Total<br>9   | O<br>9   | 0       | 0       |
| 37  | U     | 29       | Total<br>29  | O<br>29  | 0       | 0       |
| 37  | V     | 51       | Total<br>51  | O<br>51  | 0       | 0       |
| 37  | Y     | 1        | Total<br>1   | O<br>1   | 0       | 0       |
| 37  | X     | 8        | Total<br>8   | O<br>8   | 0       | 0       |
| 37  | Z     | 3        | Total<br>3   | O<br>3   | 0       | 0       |
| 37  | R     | 6        | Total<br>6   | O<br>6   | 0       | 0       |
| 37  | a     | 100      | Total<br>104 | O<br>104 | 0       | 4       |
| 37  | b     | 163      | Total<br>163 | O<br>163 | 0       | 0       |
| 37  | c     | 160      | Total<br>160 | O<br>160 | 0       | 0       |
| 37  | d     | 95       | Total<br>95  | O<br>95  | 0       | 0       |
| 37  | e     | 13       | Total<br>13  | O<br>13  | 0       | 0       |
| 37  | f     | 3        | Total<br>3   | O<br>3   | 0       | 0       |
| 37  | h     | 20       | Total<br>20  | O<br>20  | 0       | 0       |

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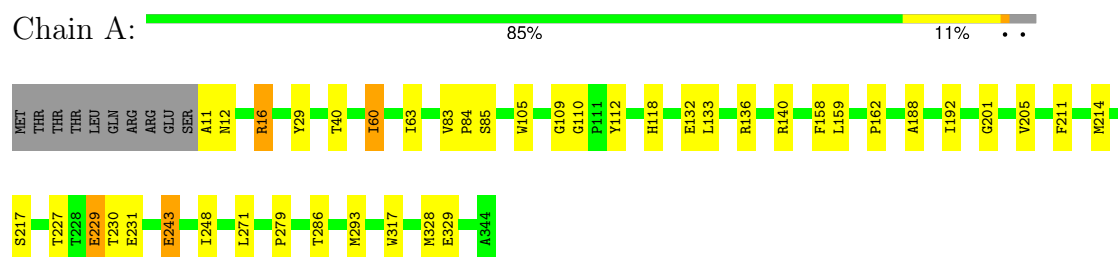
| Mol | Chain | Residues | Atoms       |         | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|---------|
| 37  | i     | 17       | Total<br>17 | O<br>17 | 0       | 0       |
| 37  | j     | 5        | Total<br>5  | O<br>5  | 0       | 0       |
| 37  | k     | 1        | Total<br>1  | O<br>1  | 0       | 0       |
| 37  | l     | 12       | Total<br>12 | O<br>12 | 0       | 0       |
| 37  | m     | 8        | Total<br>8  | O<br>8  | 0       | 0       |
| 37  | o     | 72       | Total<br>72 | O<br>72 | 0       | 0       |
| 37  | t     | 6        | Total<br>6  | O<br>6  | 0       | 0       |
| 37  | u     | 50       | Total<br>50 | O<br>50 | 0       | 0       |
| 37  | v     | 42       | Total<br>42 | O<br>42 | 0       | 0       |
| 37  | x     | 5        | Total<br>5  | O<br>5  | 0       | 0       |
| 37  | z     | 3        | Total<br>3  | O<br>3  | 0       | 0       |
| 37  | r     | 7        | Total<br>7  | O<br>7  | 0       | 0       |



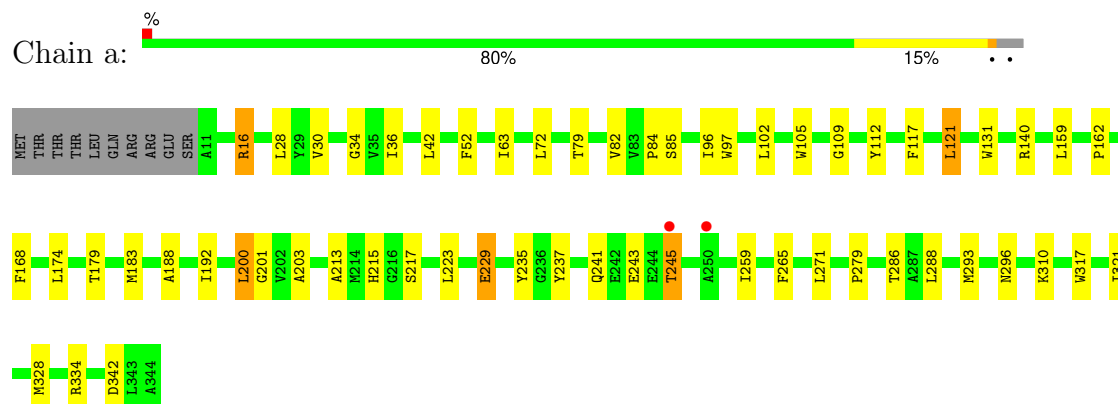
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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.

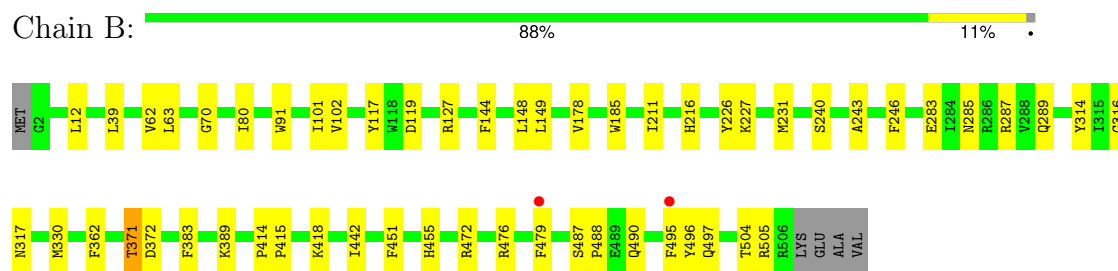
- Molecule 1: Photosystem II protein D1 1



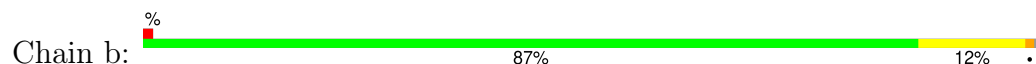
- Molecule 1: Photosystem II protein D1 1



- Molecule 2: Photosystem II CP47 reaction center protein

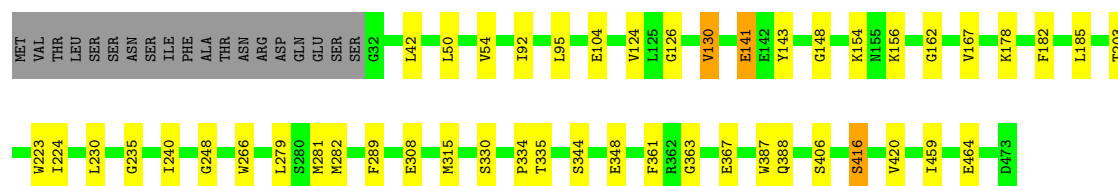


- Molecule 2: Photosystem II CP47 reaction center protein



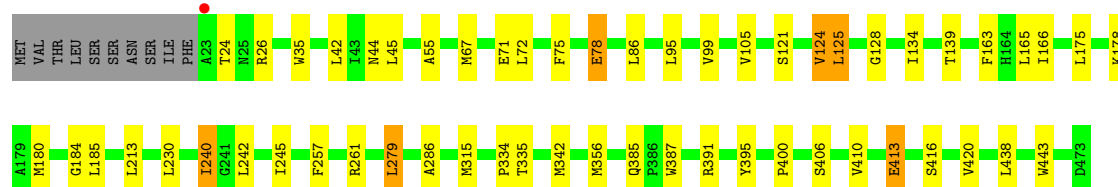
- Molecule 3: Photosystem II CP43 reaction center protein

Chain C:  85% 10% ..



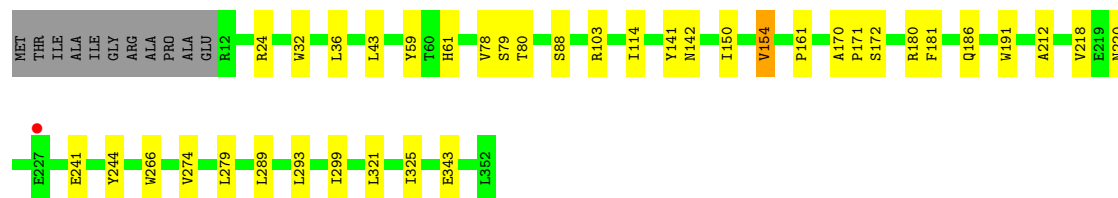
- Molecule 3: Photosystem II CP43 reaction center protein

Chain c:  86% 11% ..



- Molecule 4: Photosystem II D2 protein

Chain D:  86% 11% .



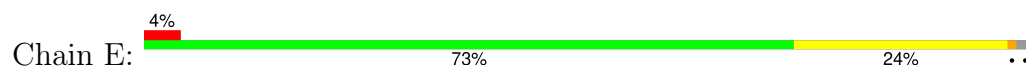
- Molecule 4: Photosystem II D2 protein

Chain d:  81% 14% ..





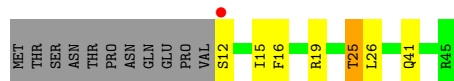
- Molecule 5: Cytochrome b559 subunit alpha



- Molecule 5: Cytochrome b559 subunit alpha



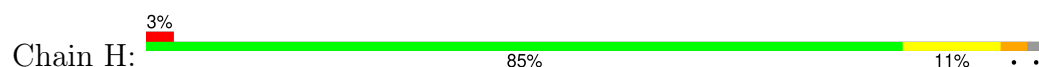
- Molecule 6: Cytochrome b559 subunit beta



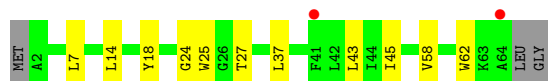
- Molecule 6: Cytochrome b559 subunit beta



- Molecule 7: Photosystem II reaction center protein H



- Molecule 7: Photosystem II reaction center protein H



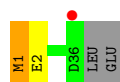
- Molecule 8: Photosystem II reaction center protein I

Chain I:  84% 11% 5%



- Molecule 8: Photosystem II reaction center protein I

Chain i:  3% 89% 5%



- Molecule 9: Photosystem II reaction center protein J

Chain J:  68% 22% 10%



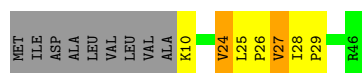
- Molecule 9: Photosystem II reaction center protein J

Chain j:  2% 62% 25% 10%



- Molecule 10: Photosystem II reaction center protein K

Chain K:  65% 11% 20%



- Molecule 10: Photosystem II reaction center protein K

Chain k:  59% 22% 20%



- Molecule 11: Photosystem II reaction center protein L

Chain L:  86% 14%



- Molecule 11: Photosystem II reaction center protein L

Chain l:  86% 8% . .



- Molecule 12: Photosystem II reaction center protein M

Chain M:  69% 22% 8%



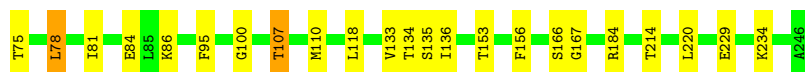
- Molecule 12: Photosystem II reaction center protein M

Chain m:  72% 11% 6% 11%



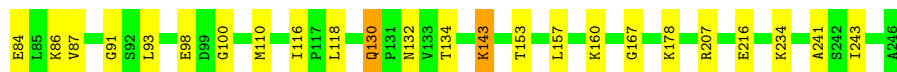
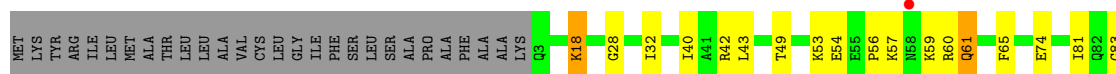
- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain O:  74% 14% . 10%



- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain o:  74% 14% . 10%

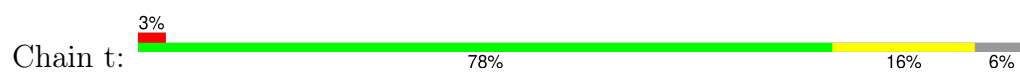


- Molecule 14: Photosystem II reaction center protein T

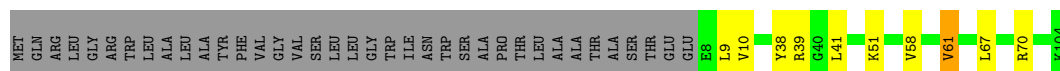
Chain T:  75% 19% 6% 3%



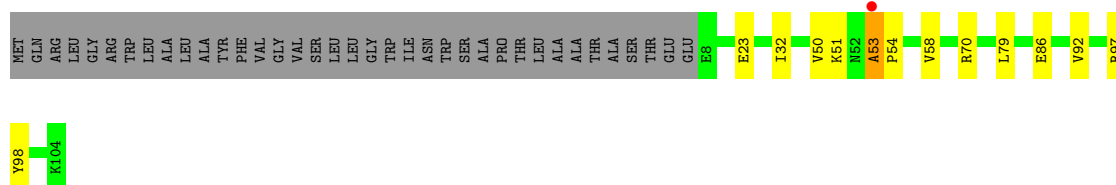
- Molecule 14: Photosystem II reaction center protein T



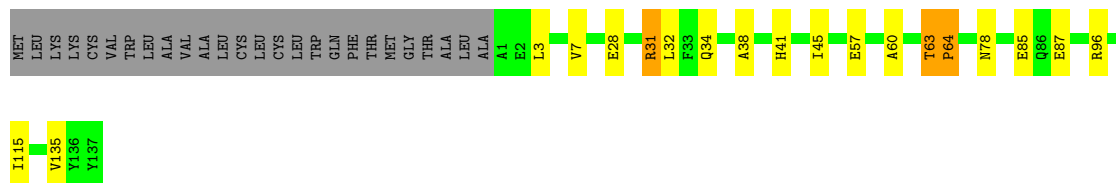
- Molecule 15: Photosystem II 12 kDa extrinsic protein



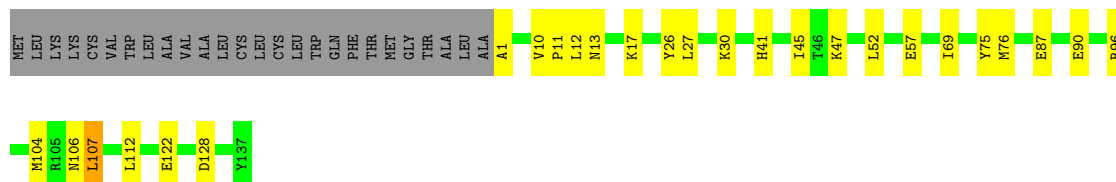
- Molecule 15: Photosystem II 12 kDa extrinsic protein



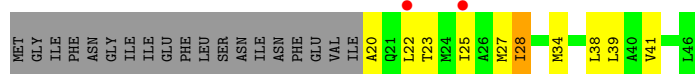
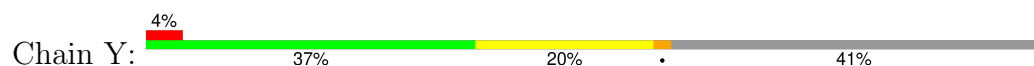
- Molecule 16: Cytochrome c-550



- Molecule 16: Cytochrome c-550

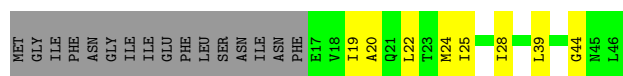


- Molecule 17: Photosystem II reaction center protein Ycf12



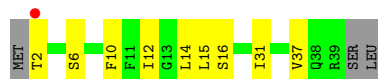
- Molecule 17: Photosystem II reaction center protein Ycf12

Chain y:  48% 17% 35%



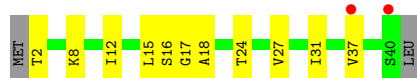
- Molecule 18: Photosystem II reaction center X protein

Chain X:  2% 71% 22% 7%



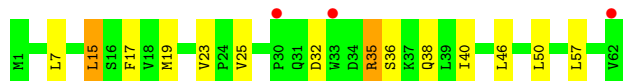
- Molecule 18: Photosystem II reaction center X protein

Chain x:  5% 68% 27% 5%



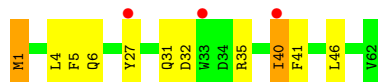
- Molecule 19: Photosystem II reaction center protein Z

Chain Z:  5% 77% 19% 0%



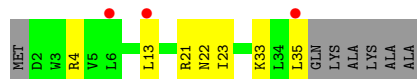
- Molecule 19: Photosystem II reaction center protein Z

Chain z:  5% 82% 15% 0%



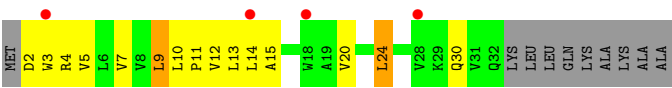
- Molecule 20: Photosystem II protein Y

Chain R:  7% 66% 17% 17%



- Molecule 20: Photosystem II protein Y

Chain r:  10% 39% 32% 5% 24%





## 4 Data and refinement statistics

| Property                                                                | Value                                                       | Source           |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------|
| Space group                                                             | P 21 21 21                                                  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 116.96Å 221.65Å 307.79Å<br>90.00° 90.00° 90.00°             | Depositor        |
| Resolution (Å)                                                          | 33.65 – 2.09<br>33.65 – 2.09                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 99.3 (33.65-2.09)<br>85.3 (33.65-2.09)                      | Depositor<br>EDS |
| $R_{merge}$                                                             | (Not available)                                             | Depositor        |
| $R_{sym}$                                                               | (Not available)                                             | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 0.51 (at 2.08Å)                                             | Xtriage          |
| Refinement program                                                      | PHENIX 1.19.2_4158                                          | Depositor        |
| R, $R_{free}$                                                           | 0.186 , 0.234<br>0.186 , 0.235                              | Depositor<br>DCC |
| $R_{free}$ test set                                                     | 4165 reflections (0.66%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 28.9                                                        | Xtriage          |
| Anisotropy                                                              | 0.214                                                       | Xtriage          |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.29 , 54.3                                                 | EDS              |
| L-test for twinning <sup>2</sup>                                        | $\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$ | Xtriage          |
| Estimated twinning fraction                                             | No twinning to report.                                      | Xtriage          |
| $F_o, F_c$ correlation                                                  | 0.96                                                        | EDS              |
| Total number of atoms                                                   | 53041                                                       | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 44.0                                                        | wwPDB-VP         |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.65% 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: DGD, OEX, SQD, OEY, LHG, PL9, FME, BCT, PHO, BCR, HEC, LMG, STE, CL, CLA, HEM, FE2

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     | 0.30         | 0/3212  | 0.50        | 0/4376  |
| 1   | a     | 0.29         | 0/3209  | 0.47        | 0/4372  |
| 2   | B     | 0.32         | 0/4155  | 0.49        | 0/5661  |
| 2   | b     | 0.31         | 0/4118  | 0.48        | 0/5611  |
| 3   | C     | 0.31         | 0/3625  | 0.47        | 0/4935  |
| 3   | c     | 0.29         | 0/3705  | 0.45        | 0/5042  |
| 4   | D     | 0.34         | 0/2825  | 0.50        | 0/3847  |
| 4   | d     | 0.32         | 0/2834  | 0.51        | 0/3859  |
| 5   | E     | 0.27         | 0/688   | 0.43        | 0/940   |
| 5   | e     | 0.24         | 0/683   | 0.41        | 0/932   |
| 6   | F     | 0.27         | 0/284   | 0.39        | 0/387   |
| 6   | f     | 0.25         | 0/284   | 0.51        | 0/387   |
| 7   | H     | 0.33         | 0/523   | 0.49        | 0/713   |
| 7   | h     | 0.30         | 0/511   | 0.46        | 0/697   |
| 8   | I     | 0.28         | 0/293   | 0.48        | 0/396   |
| 8   | i     | 0.34         | 0/293   | 0.45        | 0/396   |
| 9   | J     | 0.27         | 0/263   | 0.42        | 0/356   |
| 9   | j     | 0.23         | 0/263   | 0.40        | 0/356   |
| 10  | K     | 0.29         | 0/303   | 0.45        | 0/416   |
| 10  | k     | 0.26         | 0/303   | 0.44        | 0/416   |
| 11  | L     | 0.31         | 0/311   | 0.49        | 0/422   |
| 11  | l     | 0.33         | 0/303   | 0.49        | 0/412   |
| 12  | M     | 0.33         | 0/249   | 0.50        | 0/341   |
| 12  | m     | 0.35         | 0/244   | 0.52        | 0/334   |
| 13  | O     | 0.31         | 0/1904  | 0.50        | 0/2585  |
| 13  | o     | 0.32         | 0/1905  | 0.50        | 0/2583  |
| 14  | T     | 0.34         | 0/257   | 0.55        | 0/349   |
| 14  | t     | 0.31         | 0/255   | 0.54        | 0/346   |
| 15  | U     | 0.27         | 0/785   | 0.47        | 0/1064  |
| 15  | u     | 0.30         | 0/785   | 0.48        | 0/1064  |
| 16  | V     | 0.31         | 0/1085  | 0.49        | 0/1473  |

| Mol | Chain | Bond lengths |         | Bond angles |         |
|-----|-------|--------------|---------|-------------|---------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5 |
| 16  | v     | 0.29         | 0/1085  | 0.45        | 0/1473  |
| 17  | Y     | 0.21         | 0/197   | 0.36        | 0/264   |
| 17  | y     | 0.20         | 0/219   | 0.39        | 0/294   |
| 18  | X     | 0.26         | 0/284   | 0.39        | 0/384   |
| 18  | x     | 0.23         | 0/289   | 0.32        | 0/391   |
| 19  | Z     | 0.22         | 0/490   | 0.44        | 0/669   |
| 19  | z     | 0.18         | 0/488   | 0.33        | 0/666   |
| 20  | R     | 0.29         | 0/277   | 0.50        | 0/380   |
| 20  | r     | 0.25         | 0/252   | 0.37        | 0/347   |
| All | All   | 0.30         | 0/44038 | 0.48        | 0/59936 |

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 |
|-----|-------|---------------------|---------------------|
| 16  | V     | 0                   | 1                   |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 16  | V     | 63  | THR  | Peptide |

## 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     | 3113  | 0        | 2981     | 27      | 0            |
| 1   | a     | 3110  | 0        | 2972     | 48      | 0            |
| 2   | B     | 4005  | 0        | 3871     | 35      | 0            |
| 2   | b     | 3978  | 0        | 3836     | 44      | 0            |
| 3   | C     | 3509  | 0        | 3426     | 29      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3   | c     | 3583  | 0        | 3499     | 42      | 0            |
| 4   | D     | 2731  | 0        | 2637     | 29      | 0            |
| 4   | d     | 2737  | 0        | 2643     | 43      | 0            |
| 5   | E     | 666   | 0        | 651      | 14      | 0            |
| 5   | e     | 664   | 0        | 648      | 19      | 0            |
| 6   | F     | 275   | 0        | 282      | 7       | 0            |
| 6   | f     | 275   | 0        | 282      | 11      | 0            |
| 7   | H     | 510   | 0        | 532      | 6       | 0            |
| 7   | h     | 498   | 0        | 518      | 11      | 0            |
| 8   | I     | 296   | 0        | 311      | 1       | 0            |
| 8   | i     | 296   | 0        | 311      | 1       | 0            |
| 9   | J     | 257   | 0        | 268      | 9       | 0            |
| 9   | j     | 257   | 0        | 268      | 9       | 0            |
| 10  | K     | 293   | 0        | 305      | 5       | 0            |
| 10  | k     | 293   | 0        | 305      | 6       | 0            |
| 11  | L     | 304   | 0        | 316      | 5       | 0            |
| 11  | l     | 296   | 0        | 304      | 3       | 0            |
| 12  | M     | 256   | 0        | 269      | 6       | 0            |
| 12  | m     | 251   | 0        | 267      | 5       | 0            |
| 13  | O     | 1870  | 0        | 1830     | 28      | 0            |
| 13  | o     | 1874  | 0        | 1846     | 22      | 0            |
| 14  | T     | 258   | 0        | 261      | 5       | 0            |
| 14  | t     | 256   | 0        | 256      | 3       | 0            |
| 15  | U     | 774   | 0        | 773      | 4       | 0            |
| 15  | u     | 774   | 0        | 773      | 8       | 0            |
| 16  | V     | 1064  | 0        | 1073     | 12      | 0            |
| 16  | v     | 1064  | 0        | 1073     | 18      | 0            |
| 17  | Y     | 196   | 0        | 217      | 8       | 0            |
| 17  | y     | 218   | 0        | 241      | 4       | 0            |
| 18  | X     | 281   | 0        | 312      | 8       | 0            |
| 18  | x     | 286   | 0        | 314      | 10      | 0            |
| 19  | Z     | 479   | 0        | 516      | 6       | 0            |
| 19  | z     | 477   | 0        | 509      | 6       | 0            |
| 20  | R     | 271   | 0        | 298      | 2       | 0            |
| 20  | r     | 246   | 0        | 263      | 9       | 0            |
| 21  | A     | 11    | 0        | 0        | 1       | 0            |
| 21  | a     | 11    | 0        | 0        | 0       | 0            |
| 22  | A     | 10    | 0        | 0        | 0       | 0            |
| 22  | a     | 10    | 0        | 0        | 0       | 0            |
| 23  | A     | 1     | 0        | 0        | 0       | 0            |
| 23  | a     | 1     | 0        | 0        | 0       | 0            |
| 24  | A     | 2     | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 24  | a     | 2     | 0        | 0        | 0       | 0            |
| 25  | A     | 184   | 0        | 192      | 4       | 0            |
| 25  | B     | 1035  | 0        | 1139     | 37      | 0            |
| 25  | C     | 839   | 0        | 922      | 25      | 0            |
| 25  | D     | 195   | 0        | 216      | 5       | 0            |
| 25  | a     | 260   | 0        | 288      | 8       | 0            |
| 25  | b     | 1035  | 0        | 1139     | 38      | 0            |
| 25  | c     | 839   | 0        | 919      | 33      | 0            |
| 25  | d     | 130   | 0        | 144      | 5       | 0            |
| 26  | A     | 64    | 0        | 74       | 2       | 0            |
| 26  | D     | 64    | 0        | 74       | 3       | 0            |
| 26  | d     | 128   | 0        | 148      | 1       | 0            |
| 27  | A     | 40    | 0        | 56       | 4       | 0            |
| 27  | B     | 120   | 0        | 168      | 6       | 0            |
| 27  | C     | 40    | 0        | 56       | 4       | 0            |
| 27  | D     | 40    | 0        | 56       | 2       | 0            |
| 27  | H     | 40    | 0        | 56       | 3       | 0            |
| 27  | K     | 80    | 0        | 112      | 6       | 0            |
| 27  | T     | 40    | 0        | 56       | 4       | 0            |
| 27  | Y     | 40    | 0        | 56       | 2       | 0            |
| 27  | a     | 40    | 0        | 56       | 3       | 0            |
| 27  | b     | 120   | 0        | 168      | 3       | 0            |
| 27  | c     | 120   | 0        | 168      | 7       | 0            |
| 27  | d     | 40    | 0        | 56       | 2       | 0            |
| 27  | k     | 40    | 0        | 56       | 1       | 0            |
| 27  | t     | 40    | 0        | 56       | 1       | 0            |
| 27  | x     | 40    | 0        | 56       | 3       | 0            |
| 28  | A     | 55    | 0        | 80       | 4       | 0            |
| 28  | D     | 55    | 0        | 80       | 2       | 0            |
| 28  | a     | 55    | 0        | 80       | 6       | 0            |
| 28  | d     | 55    | 0        | 80       | 3       | 0            |
| 29  | A     | 48    | 0        | 66       | 2       | 0            |
| 29  | B     | 28    | 0        | 40       | 1       | 0            |
| 29  | C     | 48    | 0        | 66       | 2       | 0            |
| 29  | D     | 84    | 0        | 117      | 2       | 0            |
| 29  | M     | 51    | 0        | 72       | 1       | 0            |
| 29  | b     | 55    | 0        | 86       | 2       | 0            |
| 29  | c     | 134   | 0        | 181      | 6       | 0            |
| 29  | d     | 67    | 0        | 92       | 1       | 0            |
| 29  | m     | 51    | 0        | 72       | 3       | 0            |
| 30  | A     | 91    | 0        | 136      | 5       | 0            |
| 30  | B     | 54    | 0        | 78       | 3       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 30  | F     | 36    | 0        | 46       | 2       | 0            |
| 30  | L     | 49    | 0        | 65       | 4       | 0            |
| 30  | a     | 90    | 0        | 134      | 6       | 0            |
| 30  | f     | 41    | 0        | 49       | 3       | 0            |
| 31  | A     | 98    | 0        | 148      | 2       | 0            |
| 31  | D     | 145   | 0        | 215      | 6       | 0            |
| 31  | d     | 137   | 0        | 199      | 8       | 0            |
| 31  | e     | 42    | 0        | 57       | 2       | 0            |
| 31  | l     | 49    | 0        | 74       | 2       | 0            |
| 32  | A     | 66    | 0        | 96       | 7       | 0            |
| 32  | C     | 186   | 0        | 246      | 6       | 0            |
| 32  | H     | 62    | 0        | 82       | 2       | 0            |
| 32  | a     | 44    | 0        | 75       | 5       | 0            |
| 32  | c     | 186   | 0        | 246      | 3       | 0            |
| 32  | h     | 62    | 0        | 82       | 2       | 0            |
| 33  | B     | 75    | 0        | 114      | 5       | 0            |
| 33  | C     | 40    | 0        | 60       | 0       | 0            |
| 33  | D     | 20    | 0        | 35       | 1       | 0            |
| 33  | E     | 12    | 0        | 16       | 0       | 0            |
| 33  | H     | 18    | 0        | 35       | 2       | 0            |
| 33  | I     | 15    | 0        | 26       | 2       | 0            |
| 33  | J     | 12    | 0        | 16       | 0       | 0            |
| 33  | M     | 25    | 0        | 38       | 0       | 0            |
| 33  | T     | 31    | 0        | 54       | 2       | 0            |
| 33  | a     | 22    | 0        | 32       | 2       | 0            |
| 33  | b     | 50    | 0        | 86       | 2       | 0            |
| 33  | c     | 32    | 0        | 51       | 0       | 0            |
| 33  | d     | 33    | 0        | 50       | 1       | 0            |
| 33  | j     | 12    | 0        | 16       | 0       | 0            |
| 33  | l     | 18    | 0        | 35       | 1       | 0            |
| 33  | m     | 12    | 0        | 16       | 0       | 0            |
| 33  | t     | 14    | 0        | 20       | 1       | 0            |
| 33  | x     | 20    | 0        | 35       | 6       | 0            |
| 34  | D     | 4     | 0        | 0        | 0       | 0            |
| 34  | a     | 4     | 0        | 0        | 0       | 0            |
| 35  | E     | 43    | 0        | 30       | 2       | 0            |
| 35  | f     | 43    | 0        | 30       | 2       | 0            |
| 36  | V     | 43    | 0        | 30       | 0       | 0            |
| 36  | v     | 43    | 0        | 30       | 1       | 0            |
| 37  | A     | 123   | 0        | 0        | 2       | 0            |
| 37  | B     | 197   | 0        | 0        | 0       | 0            |
| 37  | C     | 142   | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 37  | D     | 106   | 0        | 0        | 0       | 0            |
| 37  | E     | 29    | 0        | 0        | 0       | 0            |
| 37  | F     | 3     | 0        | 0        | 1       | 0            |
| 37  | H     | 27    | 0        | 0        | 0       | 0            |
| 37  | I     | 13    | 0        | 0        | 0       | 0            |
| 37  | J     | 12    | 0        | 0        | 4       | 0            |
| 37  | K     | 2     | 0        | 0        | 0       | 0            |
| 37  | L     | 9     | 0        | 0        | 0       | 0            |
| 37  | M     | 5     | 0        | 0        | 2       | 0            |
| 37  | O     | 73    | 0        | 0        | 3       | 0            |
| 37  | R     | 6     | 0        | 0        | 0       | 0            |
| 37  | T     | 9     | 0        | 0        | 0       | 0            |
| 37  | U     | 29    | 0        | 0        | 0       | 0            |
| 37  | V     | 51    | 0        | 0        | 1       | 0            |
| 37  | X     | 8     | 0        | 0        | 0       | 0            |
| 37  | Y     | 1     | 0        | 0        | 0       | 0            |
| 37  | Z     | 3     | 0        | 0        | 0       | 0            |
| 37  | a     | 104   | 0        | 0        | 4       | 0            |
| 37  | b     | 163   | 0        | 0        | 1       | 0            |
| 37  | c     | 160   | 0        | 0        | 3       | 0            |
| 37  | d     | 95    | 0        | 0        | 0       | 0            |
| 37  | e     | 13    | 0        | 0        | 0       | 0            |
| 37  | f     | 3     | 0        | 0        | 0       | 0            |
| 37  | h     | 20    | 0        | 0        | 0       | 0            |
| 37  | i     | 17    | 0        | 0        | 0       | 0            |
| 37  | j     | 5     | 0        | 0        | 1       | 0            |
| 37  | k     | 1     | 0        | 0        | 0       | 0            |
| 37  | l     | 12    | 0        | 0        | 1       | 0            |
| 37  | m     | 8     | 0        | 0        | 0       | 0            |
| 37  | o     | 72    | 0        | 0        | 1       | 0            |
| 37  | r     | 7     | 0        | 0        | 1       | 0            |
| 37  | t     | 6     | 0        | 0        | 0       | 0            |
| 37  | u     | 50    | 0        | 0        | 1       | 0            |
| 37  | v     | 42    | 0        | 0        | 2       | 0            |
| 37  | x     | 5     | 0        | 0        | 2       | 0            |
| 37  | z     | 3     | 0        | 0        | 0       | 0            |
| All | All   | 53041 | 0        | 52739    | 673     | 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 6.

The worst 5 of 673 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) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:A:611:PL9:H361 | 6:F:25:THR:HG21   | 1.47                     | 0.96              |
| 17:Y:20:ALA:N     | 17:Y:23:THR:HG1   | 1.64                     | 0.94              |
| 25:c:501:CLA:H192 | 25:c:507:CLA:HBB1 | 1.61                     | 0.82              |
| 35:E:101:HEM:HBC2 | 35:E:101:HEM:HHD  | 1.62                     | 0.80              |
| 1:a:241:GLN:HE22  | 1:a:245:THR:HG23  | 1.47                     | 0.79              |

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     | 395/344 (115%) | 387 (98%) | 8 (2%)  | 0        | 100         | 100 |
| 1   | a     | 395/344 (115%) | 386 (98%) | 8 (2%)  | 1 (0%)   | 36          | 36  |
| 2   | B     | 507/510 (99%)  | 499 (98%) | 8 (2%)  | 0        | 100         | 100 |
| 2   | b     | 503/510 (99%)  | 491 (98%) | 12 (2%) | 0        | 100         | 100 |
| 3   | C     | 451/461 (98%)  | 438 (97%) | 12 (3%) | 1 (0%)   | 43          | 44  |
| 3   | c     | 461/461 (100%) | 449 (97%) | 11 (2%) | 1 (0%)   | 43          | 44  |
| 4   | D     | 340/352 (97%)  | 332 (98%) | 8 (2%)  | 0        | 100         | 100 |
| 4   | d     | 341/352 (97%)  | 331 (97%) | 10 (3%) | 0        | 100         | 100 |
| 5   | E     | 81/84 (96%)    | 78 (96%)  | 3 (4%)  | 0        | 100         | 100 |
| 5   | e     | 80/84 (95%)    | 78 (98%)  | 2 (2%)  | 0        | 100         | 100 |
| 6   | F     | 32/45 (71%)    | 32 (100%) | 0       | 0        | 100         | 100 |
| 6   | f     | 32/45 (71%)    | 32 (100%) | 0       | 0        | 100         | 100 |
| 7   | H     | 63/66 (96%)    | 59 (94%)  | 3 (5%)  | 1 (2%)   | 7           | 4   |
| 7   | h     | 61/66 (92%)    | 57 (93%)  | 4 (7%)  | 0        | 100         | 100 |
| 8   | I     | 34/38 (90%)    | 32 (94%)  | 2 (6%)  | 0        | 100         | 100 |
| 8   | i     | 34/38 (90%)    | 32 (94%)  | 2 (6%)  | 0        | 100         | 100 |

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| Mol | Chain | Analysed        | Favoured   | Allowed  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|----------|-------------|-----|
| 9   | J     | 34/40 (85%)     | 32 (94%)   | 2 (6%)   | 0        | 100         | 100 |
| 9   | j     | 34/40 (85%)     | 34 (100%)  | 0        | 0        | 100         | 100 |
| 10  | K     | 35/46 (76%)     | 35 (100%)  | 0        | 0        | 100         | 100 |
| 10  | k     | 35/46 (76%)     | 35 (100%)  | 0        | 0        | 100         | 100 |
| 11  | L     | 35/37 (95%)     | 35 (100%)  | 0        | 0        | 100         | 100 |
| 11  | l     | 34/37 (92%)     | 34 (100%)  | 0        | 0        | 100         | 100 |
| 12  | M     | 31/36 (86%)     | 31 (100%)  | 0        | 0        | 100         | 100 |
| 12  | m     | 30/36 (83%)     | 28 (93%)   | 2 (7%)   | 0        | 100         | 100 |
| 13  | O     | 243/272 (89%)   | 229 (94%)  | 11 (4%)  | 3 (1%)   | 10          | 7   |
| 13  | o     | 242/272 (89%)   | 231 (96%)  | 10 (4%)  | 1 (0%)   | 30          | 28  |
| 14  | T     | 28/32 (88%)     | 28 (100%)  | 0        | 0        | 100         | 100 |
| 14  | t     | 28/32 (88%)     | 28 (100%)  | 0        | 0        | 100         | 100 |
| 15  | U     | 95/134 (71%)    | 92 (97%)   | 3 (3%)   | 0        | 100         | 100 |
| 15  | u     | 95/134 (71%)    | 91 (96%)   | 3 (3%)   | 1 (1%)   | 11          | 8   |
| 16  | V     | 135/163 (83%)   | 129 (96%)  | 5 (4%)   | 1 (1%)   | 18          | 15  |
| 16  | v     | 135/163 (83%)   | 132 (98%)  | 3 (2%)   | 0        | 100         | 100 |
| 17  | Y     | 25/46 (54%)     | 24 (96%)   | 1 (4%)   | 0        | 100         | 100 |
| 17  | y     | 28/46 (61%)     | 26 (93%)   | 2 (7%)   | 0        | 100         | 100 |
| 18  | X     | 36/41 (88%)     | 34 (94%)   | 2 (6%)   | 0        | 100         | 100 |
| 18  | x     | 37/41 (90%)     | 37 (100%)  | 0        | 0        | 100         | 100 |
| 19  | Z     | 60/62 (97%)     | 58 (97%)   | 2 (3%)   | 0        | 100         | 100 |
| 19  | z     | 60/62 (97%)     | 58 (97%)   | 2 (3%)   | 0        | 100         | 100 |
| 20  | R     | 32/41 (78%)     | 32 (100%)  | 0        | 0        | 100         | 100 |
| 20  | r     | 29/41 (71%)     | 29 (100%)  | 0        | 0        | 100         | 100 |
| All | All   | 5386/5700 (94%) | 5235 (97%) | 141 (3%) | 10 (0%)  | 43          | 44  |

5 of 10 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | C     | 416 | SER  |
| 16  | V     | 64  | PRO  |
| 3   | c     | 416 | SER  |
| 13  | O     | 59  | LYS  |
| 13  | o     | 61  | GLN  |

### 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     | 322/280 (115%) | 314 (98%) | 8 (2%)   | 42          | 48  |
| 1   | a     | 321/280 (115%) | 309 (96%) | 12 (4%)  | 30          | 33  |
| 2   | B     | 407/407 (100%) | 398 (98%) | 9 (2%)   | 45          | 53  |
| 2   | b     | 402/407 (99%)  | 390 (97%) | 12 (3%)  | 36          | 41  |
| 3   | C     | 353/362 (98%)  | 346 (98%) | 7 (2%)   | 48          | 56  |
| 3   | c     | 362/362 (100%) | 350 (97%) | 12 (3%)  | 33          | 37  |
| 4   | D     | 277/283 (98%)  | 275 (99%) | 2 (1%)   | 76          | 83  |
| 4   | d     | 278/283 (98%)  | 270 (97%) | 8 (3%)   | 37          | 42  |
| 5   | E     | 72/73 (99%)    | 69 (96%)  | 3 (4%)   | 26          | 28  |
| 5   | e     | 71/73 (97%)    | 66 (93%)  | 5 (7%)   | 14          | 11  |
| 6   | F     | 28/39 (72%)    | 27 (96%)  | 1 (4%)   | 31          | 34  |
| 6   | f     | 28/39 (72%)    | 25 (89%)  | 3 (11%)  | 6           | 4   |
| 7   | H     | 54/55 (98%)    | 51 (94%)  | 3 (6%)   | 19          | 18  |
| 7   | h     | 53/55 (96%)    | 50 (94%)  | 3 (6%)   | 18          | 17  |
| 8   | I     | 32/34 (94%)    | 29 (91%)  | 3 (9%)   | 8           | 6   |
| 8   | i     | 32/34 (94%)    | 31 (97%)  | 1 (3%)   | 35          | 39  |
| 9   | J     | 24/28 (86%)    | 24 (100%) | 0        | 100         | 100 |
| 9   | j     | 24/28 (86%)    | 22 (92%)  | 2 (8%)   | 10          | 8   |
| 10  | K     | 30/37 (81%)    | 27 (90%)  | 3 (10%)  | 7           | 5   |
| 10  | k     | 30/37 (81%)    | 27 (90%)  | 3 (10%)  | 7           | 5   |
| 11  | L     | 35/35 (100%)   | 34 (97%)  | 1 (3%)   | 37          | 42  |
| 11  | l     | 34/35 (97%)    | 31 (91%)  | 3 (9%)   | 9           | 7   |
| 12  | M     | 28/32 (88%)    | 26 (93%)  | 2 (7%)   | 13          | 11  |
| 12  | m     | 28/32 (88%)    | 25 (89%)  | 3 (11%)  | 6           | 4   |
| 13  | O     | 206/228 (90%)  | 200 (97%) | 6 (3%)   | 37          | 42  |
| 13  | o     | 207/228 (91%)  | 198 (96%) | 9 (4%)   | 26          | 27  |

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| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 14  | T     | 26/28 (93%)     | 25 (96%)   | 1 (4%)   | 29          | 32  |
| 14  | t     | 25/28 (89%)     | 24 (96%)   | 1 (4%)   | 28          | 29  |
| 15  | U     | 84/112 (75%)    | 79 (94%)   | 5 (6%)   | 17          | 15  |
| 15  | u     | 84/112 (75%)    | 83 (99%)   | 1 (1%)   | 63          | 72  |
| 16  | V     | 117/138 (85%)   | 114 (97%)  | 3 (3%)   | 40          | 46  |
| 16  | v     | 117/138 (85%)   | 113 (97%)  | 4 (3%)   | 32          | 35  |
| 17  | Y     | 19/37 (51%)     | 17 (90%)   | 2 (10%)  | 6           | 4   |
| 17  | y     | 22/37 (60%)     | 21 (96%)   | 1 (4%)   | 24          | 25  |
| 18  | X     | 31/34 (91%)     | 31 (100%)  | 0        | 100         | 100 |
| 18  | x     | 31/34 (91%)     | 29 (94%)   | 2 (6%)   | 15          | 13  |
| 19  | Z     | 52/52 (100%)    | 45 (86%)   | 7 (14%)  | 4           | 2   |
| 19  | z     | 51/52 (98%)     | 46 (90%)   | 5 (10%)  | 7           | 5   |
| 20  | R     | 28/33 (85%)     | 23 (82%)   | 5 (18%)  | 2           | 1   |
| 20  | r     | 25/33 (76%)     | 19 (76%)   | 6 (24%)  | 1           | 0   |
| All | All   | 4450/4654 (96%) | 4283 (96%) | 167 (4%) | 29          | 32  |

5 of 167 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | e     | 4   | THR  |
| 13  | o     | 130 | GLN  |
| 5   | e     | 84  | LYS  |
| 10  | k     | 30  | VAL  |
| 16  | v     | 52  | LEU  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 35 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 13  | o     | 109 | GLN  |
| 13  | o     | 124 | ASN  |
| 18  | x     | 33  | GLN  |
| 16  | V     | 86  | GLN  |
| 15  | U     | 81  | HIS  |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

6 non-standard protein/DNA/RNA residues are modelled in this entry.

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

| Mol | Type | Chain | Res | Link | Bond lengths |      |             | Bond angles |      |             |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
|     |      |       |     |      | Counts       | RMSZ | $\# Z  > 2$ | Counts      | RMSZ | $\# Z  > 2$ |
| 8   | FME  | I     | 1   | 8    | 8,9,10       | 1.00 | 0           | 8,9,11      | 1.02 | 0           |
| 12  | FME  | M     | 1   | 12   | 8,9,10       | 1.02 | 1 (12%)     | 8,9,11      | 1.02 | 0           |
| 8   | FME  | i     | 1   | 8    | 8,9,10       | 1.03 | 1 (12%)     | 8,9,11      | 0.76 | 0           |
| 12  | FME  | m     | 1   | 12   | 8,9,10       | 1.09 | 1 (12%)     | 8,9,11      | 0.86 | 0           |
| 14  | FME  | t     | 1   | 14   | 8,9,10       | 1.21 | 1 (12%)     | 8,9,11      | 0.78 | 0           |
| 14  | FME  | T     | 1   | 14   | 8,9,10       | 1.07 | 0           | 8,9,11      | 1.13 | 0           |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 8   | FME  | I     | 1   | 8    | -       | 0/7/9/11 | -     |
| 12  | FME  | M     | 1   | 12   | -       | 1/7/9/11 | -     |
| 8   | FME  | i     | 1   | 8    | -       | 4/7/9/11 | -     |
| 12  | FME  | m     | 1   | 12   | -       | 0/7/9/11 | -     |
| 14  | FME  | t     | 1   | 14   | -       | 2/7/9/11 | -     |
| 14  | FME  | T     | 1   | 14   | -       | 2/7/9/11 | -     |

All (4) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 14  | t     | 1   | FME  | CA-N  | -2.46 | 1.43        | 1.46     |
| 12  | m     | 1   | FME  | CA-N  | -2.34 | 1.43        | 1.46     |

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| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 12  | M     | 1   | FME  | CA-N  | -2.18 | 1.43        | 1.46     |
| 8   | i     | 1   | FME  | CA-N  | -2.03 | 1.43        | 1.46     |

There are no bond angle outliers.

There are no chirality outliers.

5 of 9 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms       |
|-----|-------|-----|------|-------------|
| 14  | T     | 1   | FME  | O-C-CA-CB   |
| 8   | i     | 1   | FME  | N-CA-CB-CG  |
| 8   | i     | 1   | FME  | C-CA-CB-CG  |
| 14  | t     | 1   | FME  | O-C-CA-CB   |
| 14  | t     | 1   | FME  | CB-CG-SD-CE |

There are no ring outliers.

2 monomers are involved in 2 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 8   | i     | 1   | FME  | 1       | 0            |
| 14  | T     | 1   | FME  | 1       | 0            |

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 188 ligands modelled in this entry, 6 are monoatomic - leaving 182 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 | $\# Z  > 2$ |
| 33  | STE  | M     | 103 | -    | 9,9,19       | 0.40 | 0           | 8,8,19      | 0.72 | 0           |
| 33  | STE  | a     | 616 | -    | 9,9,19       | 0.46 | 0           | 8,8,19      | 0.61 | 0           |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 25  | CLA  | b     | 613 | 2    | 69,73,73     | 1.45 | 8 (11%)  | 82,113,113  | 1.36 | 12 (14%) |
| 25  | CLA  | b     | 616 | 2    | 64,68,73     | 1.13 | 7 (10%)  | 76,107,113  | 1.40 | 9 (11%)  |
| 31  | LHG  | A     | 614 | -    | 48,48,48     | 0.70 | 1 (2%)   | 51,54,54    | 1.23 | 7 (13%)  |
| 25  | CLA  | C     | 510 | 3    | 69,73,73     | 1.18 | 9 (13%)  | 82,113,113  | 1.25 | 9 (10%)  |
| 26  | PHO  | d     | 401 | -    | 58,69,69     | 2.14 | 10 (17%) | 55,99,99    | 1.43 | 10 (18%) |
| 27  | BCR  | b     | 617 | -    | 41,41,41     | 0.99 | 3 (7%)   | 56,56,56    | 1.31 | 7 (12%)  |
| 28  | PL9  | d     | 406 | -    | 55,55,55     | 1.06 | 4 (7%)   | 68,69,69    | 1.59 | 16 (23%) |
| 33  | STE  | C     | 519 | -    | 11,11,19     | 0.61 | 0        | 11,11,19    | 1.48 | 3 (27%)  |
| 25  | CLA  | c     | 510 | 3    | 69,73,73     | 1.25 | 10 (14%) | 82,113,113  | 1.39 | 10 (12%) |
| 25  | CLA  | b     | 601 | 37   | 69,73,73     | 1.31 | 8 (11%)  | 82,113,113  | 1.41 | 5 (6%)   |
| 25  | CLA  | b     | 605 | 2    | 69,73,73     | 1.13 | 6 (8%)   | 82,113,113  | 1.32 | 12 (14%) |
| 27  | BCR  | x     | 101 | -    | 41,41,41     | 0.98 | 2 (4%)   | 56,56,56    | 1.20 | 5 (8%)   |
| 25  | CLA  | b     | 609 | 2    | 69,73,73     | 1.22 | 8 (11%)  | 82,113,113  | 1.20 | 9 (10%)  |
| 25  | CLA  | B     | 603 | 2    | 69,73,73     | 1.22 | 9 (13%)  | 82,113,113  | 1.29 | 10 (12%) |
| 31  | LHG  | l     | 101 | -    | 48,48,48     | 0.66 | 1 (2%)   | 51,54,54    | 1.20 | 6 (11%)  |
| 32  | DGD  | H     | 102 | -    | 63,63,67     | 1.07 | 5 (7%)   | 77,77,81    | 1.40 | 8 (10%)  |
| 33  | STE  | d     | 412 | -    | 15,15,19     | 0.73 | 0        | 15,15,19    | 0.98 | 0        |
| 25  | CLA  | c     | 501 | 3    | 69,73,73     | 1.17 | 6 (8%)   | 82,113,113  | 1.35 | 8 (9%)   |
| 29  | LMG  | M     | 101 | -    | 51,51,55     | 0.86 | 1 (1%)   | 59,59,63    | 1.39 | 6 (10%)  |
| 31  | LHG  | D     | 412 | -    | 48,48,48     | 0.92 | 2 (4%)   | 51,54,54    | 1.37 | 6 (11%)  |
| 25  | CLA  | a     | 609 | 1    | 69,73,73     | 1.24 | 7 (10%)  | 82,113,113  | 1.12 | 6 (7%)   |
| 31  | LHG  | D     | 410 | -    | 46,46,48     | 0.79 | 1 (2%)   | 49,52,54    | 1.23 | 5 (10%)  |
| 27  | BCR  | Y     | 101 | -    | 41,41,41     | 1.05 | 2 (4%)   | 56,56,56    | 1.19 | 4 (7%)   |
| 25  | CLA  | C     | 502 | 3    | 69,73,73     | 1.20 | 8 (11%)  | 82,113,113  | 1.27 | 7 (8%)   |
| 25  | CLA  | A     | 609 | 1    | 58,62,73     | 1.24 | 6 (10%)  | 68,99,113   | 1.35 | 8 (11%)  |
| 29  | LMG  | D     | 411 | -    | 31,31,55     | 0.73 | 1 (3%)   | 33,33,63    | 1.17 | 2 (6%)   |
| 25  | CLA  | b     | 603 | 2    | 69,73,73     | 1.24 | 8 (11%)  | 82,113,113  | 1.37 | 11 (13%) |
| 25  | CLA  | D     | 404 | 4    | 69,73,73     | 1.30 | 6 (8%)   | 82,113,113  | 1.30 | 8 (9%)   |
| 25  | CLA  | c     | 505 | 3    | 69,73,73     | 1.12 | 6 (8%)   | 82,113,113  | 1.24 | 6 (7%)   |
| 27  | BCR  | T     | 101 | -    | 41,41,41     | 1.08 | 2 (4%)   | 56,56,56    | 1.19 | 4 (7%)   |
| 29  | LMG  | A     | 612 | -    | 48,48,55     | 0.78 | 2 (4%)   | 56,56,63    | 1.33 | 6 (10%)  |
| 25  | CLA  | C     | 513 | 3    | 69,73,73     | 1.28 | 8 (11%)  | 82,113,113  | 1.36 | 6 (7%)   |
| 25  | CLA  | b     | 614 | 2    | 69,73,73     | 1.26 | 8 (11%)  | 82,113,113  | 1.14 | 8 (9%)   |
| 25  | CLA  | B     | 613 | 2    | 69,73,73     | 1.18 | 8 (11%)  | 82,113,113  | 1.41 | 9 (10%)  |
| 31  | LHG  | d     | 407 | -    | 48,48,48     | 0.81 | 2 (4%)   | 51,54,54    | 1.36 | 6 (11%)  |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 33  | STE  | M     | 102 | -    | 14,14,19     | 0.68 | 0        | 14,14,19    | 1.21 | 1 (7%)   |
| 25  | CLA  | B     | 611 | 2    | 69,73,73     | 1.13 | 6 (8%)   | 82,113,113  | 1.37 | 8 (9%)   |
| 33  | STE  | b     | 620 | -    | 19,19,19     | 0.63 | 0        | 19,19,19    | 0.98 | 0        |
| 25  | CLA  | C     | 512 | 3    | 69,73,73     | 1.41 | 10 (14%) | 82,113,113  | 1.31 | 9 (10%)  |
| 25  | CLA  | b     | 606 | 2    | 69,73,73     | 1.32 | 7 (10%)  | 82,113,113  | 1.53 | 9 (10%)  |
| 27  | BCR  | K     | 102 | -    | 41,41,41     | 1.04 | 2 (4%)   | 56,56,56    | 1.16 | 4 (7%)   |
| 25  | CLA  | a     | 612 | 37   | 69,73,73     | 1.27 | 6 (8%)   | 82,113,113  | 1.34 | 7 (8%)   |
| 33  | STE  | d     | 413 | -    | 16,16,19     | 0.63 | 0        | 16,16,19    | 1.13 | 1 (6%)   |
| 25  | CLA  | b     | 607 | 37   | 69,73,73     | 1.17 | 7 (10%)  | 82,113,113  | 1.28 | 8 (9%)   |
| 33  | STE  | E     | 102 | -    | 11,11,19     | 0.79 | 0        | 11,11,19    | 1.00 | 0        |
| 35  | HEM  | f     | 101 | 5,6  | 50,50,50     | 1.52 | 8 (16%)  | 67,82,82    | 1.21 | 7 (10%)  |
| 25  | CLA  | b     | 608 | 2    | 69,73,73     | 1.21 | 8 (11%)  | 82,113,113  | 1.43 | 13 (15%) |
| 32  | DGD  | h     | 101 | -    | 63,63,67     | 0.99 | 3 (4%)   | 77,77,81    | 1.47 | 10 (12%) |
| 25  | CLA  | c     | 509 | 3    | 69,73,73     | 1.26 | 7 (10%)  | 82,113,113  | 1.58 | 8 (9%)   |
| 31  | LHG  | D     | 409 | -    | 48,48,48     | 0.79 | 3 (6%)   | 51,54,54    | 1.32 | 7 (13%)  |
| 25  | CLA  | B     | 605 | 2    | 69,73,73     | 1.18 | 8 (11%)  | 82,113,113  | 1.26 | 8 (9%)   |
| 29  | LMG  | c     | 522 | -    | 48,48,55     | 0.88 | 3 (6%)   | 56,56,63    | 1.33 | 9 (16%)  |
| 27  | BCR  | k     | 101 | -    | 41,41,41     | 1.07 | 4 (9%)   | 56,56,56    | 1.07 | 3 (5%)   |
| 25  | CLA  | D     | 403 | 37   | 69,73,73     | 1.23 | 7 (10%)  | 82,113,113  | 1.11 | 7 (8%)   |
| 31  | LHG  | e     | 101 | -    | 41,41,48     | 0.77 | 1 (2%)   | 44,47,54    | 1.29 | 5 (11%)  |
| 25  | CLA  | A     | 607 | 37   | 69,73,73     | 1.21 | 6 (8%)   | 82,113,113  | 1.20 | 7 (8%)   |
| 29  | LMG  | c     | 524 | -    | 49,49,55     | 0.84 | 2 (4%)   | 57,57,63    | 1.27 | 4 (7%)   |
| 27  | BCR  | c     | 515 | -    | 41,41,41     | 1.10 | 2 (4%)   | 56,56,56    | 1.33 | 6 (10%)  |
| 33  | STE  | C     | 520 | -    | 11,11,19     | 0.71 | 0        | 11,11,19    | 1.41 | 2 (18%)  |
| 25  | CLA  | b     | 611 | 2    | 69,73,73     | 1.29 | 7 (10%)  | 82,113,113  | 1.42 | 7 (8%)   |
| 25  | CLA  | C     | 511 | 3    | 69,73,73     | 1.28 | 7 (10%)  | 82,113,113  | 1.29 | 4 (4%)   |
| 25  | CLA  | D     | 405 | 4    | 69,73,73     | 1.36 | 9 (13%)  | 82,113,113  | 1.35 | 9 (10%)  |
| 28  | PL9  | a     | 611 | -    | 55,55,55     | 0.79 | 1 (1%)   | 68,69,69    | 1.51 | 13 (19%) |
| 32  | DGD  | a     | 615 | -    | 43,43,67     | 0.77 | 2 (4%)   | 45,45,81    | 1.47 | 8 (17%)  |
| 29  | LMG  | b     | 621 | -    | 55,55,55     | 0.84 | 2 (3%)   | 63,63,63    | 1.33 | 8 (12%)  |
| 33  | STE  | x     | 102 | -    | 19,19,19     | 0.66 | 0        | 19,19,19    | 0.90 | 1 (5%)   |
| 36  | HEC  | v     | 201 | 16   | 50,50,50     | 1.79 | 7 (14%)  | 68,82,82    | 1.26 | 4 (5%)   |
| 33  | STE  | T     | 102 | -    | 15,15,19     | 0.40 | 0        | 14,14,19    | 0.73 | 0        |
| 29  | LMG  | d     | 411 | -    | 44,44,55     | 0.94 | 2 (4%)   | 52,52,63    | 1.34 | 6 (11%)  |
| 25  | CLA  | b     | 615 | 2    | 69,73,73     | 1.35 | 10 (14%) | 82,113,113  | 1.27 | 6 (7%)   |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 34  | BCT  | a     | 606 | 23   | 3,3,3        | 3.71 | 1 (33%)  | 2,3,3       | 2.09 | 1 (50%)  |
| 25  | CLA  | B     | 602 | 2    | 69,73,73     | 1.21 | 7 (10%)  | 82,113,113  | 1.39 | 9 (10%)  |
| 25  | CLA  | c     | 507 | 37   | 69,73,73     | 1.28 | 5 (7%)   | 82,113,113  | 1.28 | 7 (8%)   |
| 25  | CLA  | c     | 511 | 3    | 69,73,73     | 1.40 | 6 (8%)   | 82,113,113  | 1.55 | 6 (7%)   |
| 32  | DGD  | A     | 617 | -    | 67,67,67     | 1.10 | 7 (10%)  | 81,81,81    | 1.41 | 15 (18%) |
| 27  | BCR  | B     | 618 | -    | 41,41,41     | 1.07 | 2 (4%)   | 56,56,56    | 1.26 | 8 (14%)  |
| 25  | CLA  | a     | 607 | 1    | 69,73,73     | 1.47 | 10 (14%) | 82,113,113  | 1.27 | 9 (10%)  |
| 25  | CLA  | C     | 501 | 3    | 69,73,73     | 1.23 | 6 (8%)   | 82,113,113  | 1.38 | 6 (7%)   |
| 33  | STE  | c     | 523 | -    | 11,11,19     | 0.69 | 0        | 11,11,19    | 1.35 | 1 (9%)   |
| 25  | CLA  | B     | 616 | 2    | 64,68,73     | 1.28 | 7 (10%)  | 76,107,113  | 1.45 | 6 (7%)   |
| 25  | CLA  | b     | 602 | 2    | 69,73,73     | 1.08 | 5 (7%)   | 82,113,113  | 1.31 | 10 (12%) |
| 25  | CLA  | C     | 505 | 3    | 69,73,73     | 1.31 | 6 (8%)   | 82,113,113  | 1.22 | 5 (6%)   |
| 25  | CLA  | B     | 607 | 37   | 69,73,73     | 1.36 | 9 (13%)  | 82,113,113  | 1.32 | 6 (7%)   |
| 31  | LHG  | d     | 408 | -    | 48,48,48     | 0.61 | 1 (2%)   | 51,54,54    | 1.28 | 6 (11%)  |
| 27  | BCR  | B     | 619 | -    | 41,41,41     | 1.00 | 2 (4%)   | 56,56,56    | 1.32 | 6 (10%)  |
| 30  | SQD  | A     | 613 | -    | 50,52,54     | 1.59 | 6 (12%)  | 60,63,65    | 1.88 | 12 (20%) |
| 25  | CLA  | C     | 506 | 3    | 69,73,73     | 1.24 | 9 (13%)  | 82,113,113  | 1.31 | 8 (9%)   |
| 28  | PL9  | D     | 407 | -    | 55,55,55     | 0.94 | 2 (3%)   | 68,69,69    | 1.51 | 13 (19%) |
| 27  | BCR  | c     | 516 | -    | 41,41,41     | 1.03 | 2 (4%)   | 56,56,56    | 1.16 | 6 (10%)  |
| 28  | PL9  | A     | 611 | -    | 55,55,55     | 0.92 | 2 (3%)   | 68,69,69    | 1.41 | 11 (16%) |
| 27  | BCR  | b     | 619 | -    | 41,41,41     | 1.05 | 2 (4%)   | 56,56,56    | 1.27 | 4 (7%)   |
| 33  | STE  | I     | 101 | -    | 14,14,19     | 0.44 | 0        | 13,13,19    | 0.63 | 0        |
| 25  | CLA  | B     | 612 | 2    | 69,73,73     | 1.07 | 7 (10%)  | 82,113,113  | 1.36 | 12 (14%) |
| 33  | STE  | t     | 102 | -    | 13,13,19     | 0.67 | 0        | 13,13,19    | 1.16 | 1 (7%)   |
| 25  | CLA  | C     | 504 | 37   | 63,67,73     | 1.26 | 7 (11%)  | 74,105,113  | 1.27 | 8 (10%)  |
| 25  | CLA  | B     | 608 | 2    | 69,73,73     | 1.28 | 8 (11%)  | 82,113,113  | 1.49 | 8 (9%)   |
| 25  | CLA  | c     | 504 | 37   | 64,68,73     | 1.24 | 8 (12%)  | 76,107,113  | 1.35 | 8 (10%)  |
| 30  | SQD  | F     | 101 | -    | 34,36,54     | 1.60 | 6 (17%)  | 42,45,65    | 1.93 | 12 (28%) |
| 25  | CLA  | B     | 615 | 2    | 69,73,73     | 1.34 | 5 (7%)   | 82,113,113  | 1.36 | 8 (9%)   |
| 25  | CLA  | B     | 606 | 2    | 69,73,73     | 1.29 | 8 (11%)  | 82,113,113  | 1.39 | 9 (10%)  |
| 33  | STE  | B     | 626 | -    | 15,15,19     | 0.38 | 0        | 14,14,19    | 0.81 | 0        |
| 32  | DGD  | C     | 515 | -    | 63,63,67     | 1.04 | 4 (6%)   | 77,77,81    | 1.39 | 12 (15%) |
| 33  | STE  | a     | 617 | -    | 11,11,19     | 0.80 | 0        | 11,11,19    | 1.08 | 1 (9%)   |
| 32  | DGD  | c     | 518 | -    | 63,63,67     | 1.02 | 4 (6%)   | 77,77,81    | 1.40 | 10 (12%) |
| 30  | SQD  | L     | 101 | -    | 47,49,54     | 1.62 | 8 (17%)  | 57,60,65    | 1.96 | 12 (21%) |



| Mol | Type | Chain | Res    | Link   | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|--------|--------|--------------|------|----------|-------------|------|----------|
|     |      |       |        |        | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 25  | CLA  | c     | 506    | 3      | 69,73,73     | 1.21 | 9 (13%)  | 82,113,113  | 1.31 | 7 (8%)   |
| 27  | BCR  | C     | 514    | -      | 41,41,41     | 1.10 | 2 (4%)   | 56,56,56    | 1.21 | 5 (8%)   |
| 25  | CLA  | B     | 610    | 37     | 69,73,73     | 1.18 | 6 (8%)   | 82,113,113  | 1.43 | 10 (12%) |
| 33  | STE  | B     | 623    | -      | 11,11,19     | 0.75 | 0        | 11,11,19    | 1.07 | 0        |
| 27  | BCR  | H     | 101    | -      | 41,41,41     | 0.99 | 2 (4%)   | 56,56,56    | 1.24 | 6 (10%)  |
| 25  | CLA  | d     | 403    | 4      | 69,73,73     | 1.21 | 8 (11%)  | 82,113,113  | 1.14 | 5 (6%)   |
| 25  | CLA  | a     | 608    | 37     | 69,73,73     | 1.20 | 8 (11%)  | 82,113,113  | 1.30 | 7 (8%)   |
| 33  | STE  | b     | 622    | -      | 19,19,19     | 0.69 | 0        | 19,19,19    | 0.95 | 1 (5%)   |
| 33  | STE  | c     | 521    | -      | 19,19,19     | 0.68 | 0        | 19,19,19    | 0.92 | 0        |
| 25  | CLA  | b     | 610    | 37     | 69,73,73     | 1.30 | 8 (11%)  | 82,113,113  | 1.31 | 9 (10%)  |
| 29  | LMG  | D     | 408    | -      | 51,51,55     | 0.89 | 3 (5%)   | 59,59,63    | 1.34 | 6 (10%)  |
| 29  | LMG  | C     | 518    | -      | 48,48,55     | 0.82 | 1 (2%)   | 56,56,63    | 1.37 | 10 (17%) |
| 31  | LHG  | A     | 615    | -      | 48,48,48     | 0.75 | 3 (6%)   | 51,54,54    | 1.21 | 2 (3%)   |
| 27  | BCR  | t     | 101    | -      | 41,41,41     | 0.97 | 2 (4%)   | 56,56,56    | 1.34 | 6 (10%)  |
| 25  | CLA  | C     | 508    | 3      | 69,73,73     | 1.28 | 7 (10%)  | 82,113,113  | 1.37 | 9 (10%)  |
| 25  | CLA  | B     | 609    | 2      | 69,73,73     | 1.16 | 6 (8%)   | 82,113,113  | 1.19 | 4 (4%)   |
| 33  | STE  | j     | 101    | -      | 11,11,19     | 0.70 | 0        | 11,11,19    | 1.40 | 2 (18%)  |
| 25  | CLA  | C     | 507    | 37     | 69,73,73     | 1.21 | 9 (13%)  | 82,113,113  | 1.46 | 7 (8%)   |
| 33  | STE  | T     | 103    | -      | 14,14,19     | 0.31 | 0        | 13,13,19    | 0.96 | 0        |
| 27  | BCR  | K     | 101    | -      | 41,41,41     | 1.05 | 2 (4%)   | 56,56,56    | 1.40 | 7 (12%)  |
| 35  | HEM  | E     | 101    | 5,6    | 50,50,50     | 1.39 | 7 (14%)  | 67,82,82    | 1.10 | 1 (1%)   |
| 33  | STE  | b     | 623    | -      | 9,9,19       | 0.40 | 0        | 8,8,19      | 0.67 | 0        |
| 25  | CLA  | c     | 508    | 3      | 68,72,73     | 1.25 | 9 (13%)  | 80,111,113  | 1.29 | 7 (8%)   |
| 36  | HEC  | V     | 201    | 16     | 50,50,50     | 1.67 | 6 (12%)  | 68,82,82    | 1.36 | 9 (13%)  |
| 25  | CLA  | B     | 604    | 2      | 69,73,73     | 1.35 | 9 (13%)  | 82,113,113  | 1.61 | 11 (13%) |
| 25  | CLA  | B     | 601    | 37     | 69,73,73     | 1.41 | 10 (14%) | 82,113,113  | 1.33 | 6 (7%)   |
| 33  | STE  | m     | 102    | -      | 11,11,19     | 0.69 | 0        | 11,11,19    | 1.41 | 1 (9%)   |
| 25  | CLA  | C     | 509    | 3      | 69,73,73     | 1.24 | 8 (11%)  | 82,113,113  | 1.35 | 8 (9%)   |
| 22  | OEX  | A     | 602[A] | 37,3,1 | 0,14,14      | -    | -        | -           | -    | -        |
| 33  | STE  | B     | 624    | -      | 17,17,19     | 0.63 | 0        | 17,17,19    | 1.03 | 0        |
| 25  | CLA  | c     | 513    | 3      | 69,73,73     | 1.25 | 8 (11%)  | 82,113,113  | 1.27 | 8 (9%)   |
| 33  | STE  | H     | 103    | -      | 17,17,19     | 0.40 | 0        | 16,16,19    | 0.73 | 0        |
| 27  | BCR  | c     | 514    | -      | 41,41,41     | 1.11 | 2 (4%)   | 56,56,56    | 1.26 | 7 (12%)  |
| 33  | STE  | B     | 625    | -      | 11,11,19     | 0.73 | 0        | 11,11,19    | 1.20 | 1 (9%)   |
| 34  | BCT  | D     | 401    | 23     | 3,3,3        | 3.55 | 1 (33%)  | 2,3,3       | 2.02 | 1 (50%)  |
| 26  | PHO  | A     | 608    | -      | 58,69,69     | 1.97 | 9 (15%)  | 55,99,99    | 1.47 | 6 (10%)  |

| Mol | Type | Chain | Res    | Link   | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|--------|--------|--------------|------|----------|-------------|------|----------|
|     |      |       |        |        | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 33  | STE  | D     | 413    | -      | 19,19,19     | 0.59 | 0        | 19,19,19    | 1.15 | 0        |
| 26  | PHO  | d     | 402    | -      | 58,69,69     | 2.15 | 8 (13%)  | 55,99,99    | 1.63 | 8 (14%)  |
| 25  | CLA  | B     | 614    | 2      | 69,73,73     | 1.34 | 8 (11%)  | 82,113,113  | 1.23 | 6 (7%)   |
| 21  | OEY  | A     | 601[B] | 37,3,1 | 0,16,16      | -    | -        | -           |      |          |
| 25  | CLA  | A     | 606    | 1      | 69,73,73     | 1.18 | 8 (11%)  | 82,113,113  | 1.27 | 9 (10%)  |
| 22  | OEX  | a     | 602[A] | 37,3,1 | 0,14,14      | -    | -        | -           |      |          |
| 29  | LMG  | B     | 621    | -      | 26,26,55     | 0.59 | 0        | 26,26,63    | 1.35 | 2 (7%)   |
| 29  | LMG  | m     | 101    | -      | 51,51,55     | 0.87 | 3 (5%)   | 59,59,63    | 1.47 | 9 (15%)  |
| 27  | BCR  | d     | 405    | -      | 41,41,41     | 1.11 | 3 (7%)   | 56,56,56    | 1.23 | 7 (12%)  |
| 29  | LMG  | c     | 520    | -      | 37,37,55     | 0.85 | 0        | 45,45,63    | 1.37 | 7 (15%)  |
| 33  | STE  | B     | 620    | -      | 16,16,19     | 0.65 | 0        | 16,16,19    | 1.15 | 0        |
| 25  | CLA  | c     | 503    | 3      | 69,73,73     | 1.31 | 9 (13%)  | 82,113,113  | 1.45 | 6 (7%)   |
| 21  | OEY  | a     | 601[B] | 37,3,1 | 0,16,16      | -    | -        | -           |      |          |
| 25  | CLA  | c     | 512    | 3      | 69,73,73     | 1.28 | 9 (13%)  | 82,113,113  | 1.34 | 7 (8%)   |
| 27  | BCR  | D     | 406    | -      | 41,41,41     | 1.10 | 2 (4%)   | 56,56,56    | 1.18 | 5 (8%)   |
| 25  | CLA  | C     | 503    | 3      | 69,73,73     | 1.51 | 9 (13%)  | 82,113,113  | 1.47 | 9 (10%)  |
| 30  | SQD  | f     | 102    | -      | 39,41,54     | 1.70 | 8 (20%)  | 49,52,65    | 1.67 | 11 (22%) |
| 32  | DGD  | C     | 517    | -      | 63,63,67     | 0.93 | 3 (4%)   | 77,77,81    | 1.34 | 7 (9%)   |
| 25  | CLA  | b     | 612    | 2      | 69,73,73     | 1.19 | 6 (8%)   | 82,113,113  | 1.30 | 8 (9%)   |
| 30  | SQD  | B     | 622    | -      | 52,54,54     | 1.60 | 8 (15%)  | 62,65,65    | 1.51 | 8 (12%)  |
| 30  | SQD  | a     | 613    | -      | 52,54,54     | 1.52 | 7 (13%)  | 62,65,65    | 1.95 | 12 (19%) |
| 27  | BCR  | A     | 610    | -      | 41,41,41     | 0.96 | 2 (4%)   | 56,56,56    | 1.39 | 10 (17%) |
| 32  | DGD  | c     | 519    | -      | 63,63,67     | 0.96 | 3 (4%)   | 77,77,81    | 1.41 | 8 (10%)  |
| 26  | PHO  | D     | 402    | -      | 58,69,69     | 2.06 | 10 (17%) | 55,99,99    | 1.60 | 8 (14%)  |
| 32  | DGD  | c     | 517    | -      | 63,63,67     | 0.97 | 3 (4%)   | 77,77,81    | 1.36 | 7 (9%)   |
| 32  | DGD  | C     | 516    | -      | 63,63,67     | 1.11 | 6 (9%)   | 77,77,81    | 1.41 | 13 (16%) |
| 25  | CLA  | b     | 604    | 2      | 69,73,73     | 1.18 | 6 (8%)   | 82,113,113  | 1.61 | 9 (10%)  |
| 25  | CLA  | c     | 502    | 3      | 69,73,73     | 1.18 | 9 (13%)  | 82,113,113  | 1.31 | 8 (9%)   |
| 30  | SQD  | a     | 614    | -      | 35,35,54     | 1.74 | 7 (20%)  | 37,37,65    | 1.36 | 4 (10%)  |
| 25  | CLA  | d     | 404    | 4      | 69,73,73     | 1.27 | 8 (11%)  | 82,113,113  | 1.23 | 8 (9%)   |
| 33  | STE  | l     | 102    | -      | 17,17,19     | 0.34 | 0        | 16,16,19    | 0.96 | 0        |
| 31  | LHG  | d     | 409    | -      | 38,38,48     | 0.77 | 1 (2%)   | 41,44,54    | 1.14 | 2 (4%)   |
| 27  | BCR  | B     | 617    | -      | 41,41,41     | 1.04 | 3 (7%)   | 56,56,56    | 1.23 | 5 (8%)   |
| 33  | STE  | C     | 521    | -      | 15,15,19     | 0.46 | 0        | 14,14,19    | 0.60 | 0        |
| 27  | BCR  | a     | 610    | -      | 41,41,41     | 0.98 | 2 (4%)   | 56,56,56    | 1.28 | 8 (14%)  |
| 27  | BCR  | b     | 618    | -      | 41,41,41     | 1.14 | 2 (4%)   | 56,56,56    | 1.17 | 5 (8%)   |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 33  | STE  | J     | 101 | -    | 11,11,19     | 0.70 | 0        | 11,11,19    | 1.23 | 0        |
| 29  | LMG  | d     | 410 | -    | 21,21,55     | 0.49 | 0        | 20,20,63    | 1.19 | 2 (10%)  |
| 30  | SQD  | A     | 616 | -    | 38,38,54     | 1.77 | 5 (13%)  | 40,40,65    | 1.28 | 2 (5%)   |

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   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 33  | STE  | M     | 103 | -    | -       | 3/7/7/17      | -       |
| 33  | STE  | a     | 616 | -    | -       | 3/7/7/17      | -       |
| 25  | CLA  | b     | 613 | 2    | -       | 8/39/115/115  | -       |
| 25  | CLA  | b     | 616 | 2    | -       | 7/33/109/115  | -       |
| 31  | LHG  | A     | 614 | -    | -       | 29/53/53/53   | -       |
| 25  | CLA  | C     | 510 | 3    | -       | 11/39/115/115 | -       |
| 26  | PHO  | d     | 401 | -    | -       | 6/37/103/103  | 0/5/6/6 |
| 27  | BCR  | b     | 617 | -    | -       | 6/29/63/63    | 0/2/2/2 |
| 28  | PL9  | d     | 406 | -    | -       | 12/53/73/73   | 0/1/1/1 |
| 33  | STE  | C     | 519 | -    | -       | 5/9/9/17      | -       |
| 25  | CLA  | c     | 510 | 3    | -       | 14/39/115/115 | -       |
| 25  | CLA  | b     | 601 | 37   | -       | 16/39/115/115 | -       |
| 25  | CLA  | b     | 605 | 2    | -       | 7/39/115/115  | -       |
| 27  | BCR  | x     | 101 | -    | -       | 9/29/63/63    | 0/2/2/2 |
| 25  | CLA  | b     | 609 | 2    | -       | 8/39/115/115  | -       |
| 25  | CLA  | B     | 603 | 2    | -       | 11/39/115/115 | -       |
| 31  | LHG  | l     | 101 | -    | -       | 20/53/53/53   | -       |
| 32  | DGD  | H     | 102 | -    | -       | 18/51/91/95   | 0/2/2/2 |
| 33  | STE  | d     | 412 | -    | -       | 6/13/13/17    | -       |
| 25  | CLA  | c     | 501 | 3    | -       | 5/39/115/115  | -       |
| 29  | LMG  | M     | 101 | -    | -       | 21/46/66/70   | 0/1/1/1 |
| 31  | LHG  | D     | 412 | -    | -       | 15/53/53/53   | -       |
| 25  | CLA  | a     | 609 | 1    | -       | 7/39/115/115  | -       |
| 31  | LHG  | D     | 410 | -    | -       | 16/51/51/53   | -       |
| 27  | BCR  | Y     | 101 | -    | -       | 6/29/63/63    | 0/2/2/2 |
| 25  | CLA  | C     | 502 | 3    | -       | 9/39/115/115  | -       |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 25  | CLA  | A     | 609 | 1    | -       | 3/26/102/115  | -       |
| 29  | LMG  | D     | 411 | -    | -       | 20/33/33/70   | -       |
| 25  | CLA  | b     | 603 | 2    | -       | 6/39/115/115  | -       |
| 25  | CLA  | D     | 404 | 4    | -       | 8/39/115/115  | -       |
| 25  | CLA  | c     | 505 | 3    | -       | 12/39/115/115 | -       |
| 27  | BCR  | T     | 101 | -    | -       | 8/29/63/63    | 0/2/2/2 |
| 29  | LMG  | A     | 612 | -    | -       | 23/43/63/70   | 0/1/1/1 |
| 25  | CLA  | C     | 513 | 3    | -       | 16/39/115/115 | -       |
| 25  | CLA  | b     | 614 | 2    | -       | 12/39/115/115 | -       |
| 25  | CLA  | B     | 613 | 2    | -       | 14/39/115/115 | -       |
| 31  | LHG  | d     | 407 | -    | -       | 22/53/53/53   | -       |
| 33  | STE  | M     | 102 | -    | -       | 5/12/12/17    | -       |
| 25  | CLA  | B     | 611 | 2    | -       | 7/39/115/115  | -       |
| 33  | STE  | b     | 620 | -    | -       | 9/17/17/17    | -       |
| 25  | CLA  | C     | 512 | 3    | -       | 15/39/115/115 | -       |
| 25  | CLA  | b     | 606 | 2    | -       | 11/39/115/115 | -       |
| 27  | BCR  | K     | 102 | -    | -       | 10/29/63/63   | 0/2/2/2 |
| 25  | CLA  | a     | 612 | 37   | -       | 2/39/115/115  | -       |
| 33  | STE  | d     | 413 | -    | -       | 9/14/14/17    | -       |
| 25  | CLA  | b     | 607 | 37   | -       | 16/39/115/115 | -       |
| 33  | STE  | E     | 102 | -    | -       | 4/9/9/17      | -       |
| 35  | HEM  | f     | 101 | 5,6  | -       | 5/14/54/54    | -       |
| 25  | CLA  | b     | 608 | 2    | -       | 8/39/115/115  | -       |
| 32  | DGD  | h     | 101 | -    | -       | 16/51/91/95   | 0/2/2/2 |
| 25  | CLA  | c     | 509 | 3    | -       | 10/39/115/115 | -       |
| 31  | LHG  | D     | 409 | -    | -       | 22/53/53/53   | -       |
| 25  | CLA  | B     | 605 | 2    | -       | 13/39/115/115 | -       |
| 29  | LMG  | c     | 522 | -    | -       | 23/43/63/70   | 0/1/1/1 |
| 27  | BCR  | k     | 101 | -    | -       | 10/29/63/63   | 0/2/2/2 |
| 25  | CLA  | D     | 403 | 37   | -       | 11/39/115/115 | -       |
| 31  | LHG  | e     | 101 | -    | -       | 22/46/46/53   | -       |
| 25  | CLA  | A     | 607 | 37   | -       | 13/39/115/115 | -       |
| 29  | LMG  | c     | 524 | -    | -       | 19/44/64/70   | 0/1/1/1 |
| 27  | BCR  | c     | 515 | -    | -       | 4/29/63/63    | 0/2/2/2 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 33  | STE  | C     | 520 | -    | -       | 5/9/9/17      | -       |
| 25  | CLA  | b     | 611 | 2    | -       | 5/39/115/115  | -       |
| 36  | HEC  | v     | 201 | 16   | 1/1/3/7 | 4/14/54/54    | -       |
| 25  | CLA  | C     | 511 | 3    | -       | 6/39/115/115  | -       |
| 25  | CLA  | D     | 405 | 4    | -       | 7/39/115/115  | -       |
| 28  | PL9  | a     | 611 | -    | -       | 15/53/73/73   | 0/1/1/1 |
| 29  | LMG  | b     | 621 | -    | -       | 26/50/70/70   | 0/1/1/1 |
| 32  | DGD  | a     | 615 | -    | -       | 28/45/45/95   | -       |
| 33  | STE  | x     | 102 | -    | -       | 10/17/17/17   | -       |
| 33  | STE  | T     | 102 | -    | -       | 7/13/13/17    | -       |
| 29  | LMG  | d     | 411 | -    | -       | 11/39/59/70   | 0/1/1/1 |
| 25  | CLA  | b     | 615 | 2    | -       | 11/39/115/115 | -       |
| 25  | CLA  | B     | 602 | 2    | -       | 9/39/115/115  | -       |
| 25  | CLA  | c     | 507 | 37   | -       | 10/39/115/115 | -       |
| 25  | CLA  | c     | 511 | 3    | -       | 11/39/115/115 | -       |
| 32  | DGD  | A     | 617 | -    | -       | 28/55/95/95   | 0/2/2/2 |
| 27  | BCR  | B     | 618 | -    | -       | 5/29/63/63    | 0/2/2/2 |
| 25  | CLA  | a     | 607 | 1    | -       | 4/39/115/115  | -       |
| 25  | CLA  | C     | 501 | 3    | -       | 5/39/115/115  | -       |
| 33  | STE  | c     | 523 | -    | -       | 4/9/9/17      | -       |
| 25  | CLA  | B     | 616 | 2    | -       | 13/33/109/115 | -       |
| 25  | CLA  | b     | 602 | 2    | -       | 13/39/115/115 | -       |
| 25  | CLA  | C     | 505 | 3    | -       | 17/39/115/115 | -       |
| 25  | CLA  | B     | 607 | 37   | -       | 12/39/115/115 | -       |
| 31  | LHG  | d     | 408 | -    | -       | 20/53/53/53   | -       |
| 27  | BCR  | B     | 619 | -    | -       | 5/29/63/63    | 0/2/2/2 |
| 30  | SQD  | A     | 613 | -    | -       | 16/47/67/69   | 0/1/1/1 |
| 25  | CLA  | C     | 506 | 3    | -       | 10/39/115/115 | -       |
| 28  | PL9  | D     | 407 | -    | -       | 7/53/73/73    | 0/1/1/1 |
| 27  | BCR  | c     | 516 | -    | -       | 3/29/63/63    | 0/2/2/2 |
| 28  | PL9  | A     | 611 | -    | -       | 26/53/73/73   | 0/1/1/1 |
| 27  | BCR  | b     | 619 | -    | -       | 3/29/63/63    | 0/2/2/2 |
| 33  | STE  | I     | 101 | -    | -       | 6/12/12/17    | -       |
| 25  | CLA  | B     | 612 | 2    | -       | 8/39/115/115  | -       |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 33  | STE  | t     | 102 | -    | -       | 5/11/11/17    | -       |
| 25  | CLA  | C     | 504 | 37   | -       | 7/32/108/115  | -       |
| 25  | CLA  | B     | 608 | 2    | -       | 4/39/115/115  | -       |
| 25  | CLA  | c     | 504 | 37   | -       | 7/33/109/115  | -       |
| 30  | SQD  | F     | 101 | -    | -       | 12/28/48/69   | 0/1/1/1 |
| 25  | CLA  | B     | 615 | 2    | -       | 10/39/115/115 | -       |
| 25  | CLA  | B     | 606 | 2    | -       | 14/39/115/115 | -       |
| 33  | STE  | B     | 626 | -    | -       | 7/13/13/17    | -       |
| 32  | DGD  | C     | 515 | -    | -       | 22/51/91/95   | 0/2/2/2 |
| 33  | STE  | a     | 617 | -    | -       | 4/9/9/17      | -       |
| 32  | DGD  | c     | 518 | -    | -       | 22/51/91/95   | 0/2/2/2 |
| 30  | SQD  | L     | 101 | -    | -       | 17/44/64/69   | 0/1/1/1 |
| 25  | CLA  | c     | 506 | 3    | -       | 12/39/115/115 | -       |
| 27  | BCR  | C     | 514 | -    | -       | 6/29/63/63    | 0/2/2/2 |
| 25  | CLA  | B     | 610 | 37   | -       | 7/39/115/115  | -       |
| 33  | STE  | B     | 623 | -    | -       | 7/9/9/17      | -       |
| 27  | BCR  | H     | 101 | -    | -       | 6/29/63/63    | 0/2/2/2 |
| 25  | CLA  | d     | 403 | 4    | -       | 8/39/115/115  | -       |
| 25  | CLA  | a     | 608 | 37   | -       | 14/39/115/115 | -       |
| 33  | STE  | b     | 622 | -    | -       | 8/17/17/17    | -       |
| 33  | STE  | c     | 521 | -    | -       | 8/17/17/17    | -       |
| 25  | CLA  | b     | 610 | 37   | -       | 5/39/115/115  | -       |
| 29  | LMG  | D     | 408 | -    | -       | 17/46/66/70   | 0/1/1/1 |
| 29  | LMG  | C     | 518 | -    | -       | 20/43/63/70   | 0/1/1/1 |
| 31  | LHG  | A     | 615 | -    | -       | 17/53/53/53   | -       |
| 27  | BCR  | t     | 101 | -    | -       | 7/29/63/63    | 0/2/2/2 |
| 25  | CLA  | C     | 508 | 3    | -       | 8/39/115/115  | -       |
| 25  | CLA  | B     | 609 | 2    | -       | 2/39/115/115  | -       |
| 33  | STE  | j     | 101 | -    | -       | 4/9/9/17      | -       |
| 25  | CLA  | C     | 507 | 37   | -       | 6/39/115/115  | -       |
| 33  | STE  | T     | 103 | -    | -       | 8/12/12/17    | -       |
| 27  | BCR  | K     | 101 | -    | -       | 7/29/63/63    | 0/2/2/2 |
| 35  | HEM  | E     | 101 | 5,6  | -       | 3/14/54/54    | -       |
| 33  | STE  | b     | 623 | -    | -       | 5/7/7/17      | -       |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 25  | CLA  | c     | 508 | 3    | -       | 3/38/114/115  | -       |
| 36  | HEC  | V     | 201 | 16   | 1/1/3/7 | 4/14/54/54    | -       |
| 25  | CLA  | B     | 604 | 2    | -       | 11/39/115/115 | -       |
| 25  | CLA  | B     | 601 | 37   | -       | 15/39/115/115 | -       |
| 33  | STE  | m     | 102 | -    | -       | 4/9/9/17      | -       |
| 25  | CLA  | C     | 509 | 3    | -       | 11/39/115/115 | -       |
| 33  | STE  | B     | 624 | -    | -       | 9/15/15/17    | -       |
| 25  | CLA  | c     | 513 | 3    | -       | 10/39/115/115 | -       |
| 33  | STE  | H     | 103 | -    | -       | 6/15/15/17    | -       |
| 27  | BCR  | c     | 514 | -    | -       | 10/29/63/63   | 0/2/2/2 |
| 33  | STE  | B     | 625 | -    | -       | 8/9/9/17      | -       |
| 26  | PHO  | A     | 608 | -    | -       | 5/37/103/103  | 0/5/6/6 |
| 33  | STE  | D     | 413 | -    | -       | 9/17/17/17    | -       |
| 26  | PHO  | d     | 402 | -    | -       | 7/37/103/103  | 0/5/6/6 |
| 25  | CLA  | B     | 614 | 2    | -       | 10/39/115/115 | -       |
| 25  | CLA  | A     | 606 | 1    | -       | 6/39/115/115  | -       |
| 29  | LMG  | B     | 621 | -    | -       | 14/22/22/70   | -       |
| 29  | LMG  | m     | 101 | -    | -       | 12/46/66/70   | 0/1/1/1 |
| 27  | BCR  | d     | 405 | -    | -       | 7/29/63/63    | 0/2/2/2 |
| 29  | LMG  | c     | 520 | -    | -       | 10/31/51/70   | 0/1/1/1 |
| 33  | STE  | B     | 620 | -    | -       | 8/14/14/17    | -       |
| 25  | CLA  | c     | 503 | 3    | -       | 7/39/115/115  | -       |
| 27  | BCR  | D     | 406 | -    | -       | 6/29/63/63    | 0/2/2/2 |
| 25  | CLA  | c     | 512 | 3    | -       | 22/39/115/115 | -       |
| 25  | CLA  | C     | 503 | 3    | -       | 8/39/115/115  | -       |
| 30  | SQD  | f     | 102 | -    | -       | 12/36/56/69   | 0/1/1/1 |
| 32  | DGD  | C     | 517 | -    | -       | 14/51/91/95   | 0/2/2/2 |
| 25  | CLA  | b     | 612 | 2    | -       | 4/39/115/115  | -       |
| 30  | SQD  | B     | 622 | -    | -       | 25/49/69/69   | 0/1/1/1 |
| 30  | SQD  | a     | 613 | -    | -       | 25/49/69/69   | 0/1/1/1 |
| 27  | BCR  | A     | 610 | -    | -       | 2/29/63/63    | 0/2/2/2 |
| 32  | DGD  | c     | 519 | -    | -       | 21/51/91/95   | 0/2/2/2 |
| 26  | PHO  | D     | 402 | -    | -       | 3/37/103/103  | 0/5/6/6 |
| 32  | DGD  | c     | 517 | -    | -       | 30/51/91/95   | 0/2/2/2 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions      | Rings   |
|-----|------|-------|-----|------|---------|---------------|---------|
| 32  | DGD  | C     | 516 | -    | -       | 21/51/91/95   | 0/2/2/2 |
| 25  | CLA  | b     | 604 | 2    | -       | 8/39/115/115  | -       |
| 25  | CLA  | c     | 502 | 3    | -       | 12/39/115/115 | -       |
| 30  | SQD  | a     | 614 | -    | -       | 17/37/37/69   | -       |
| 25  | CLA  | d     | 404 | 4    | -       | 6/39/115/115  | -       |
| 33  | STE  | l     | 102 | -    | -       | 9/15/15/17    | -       |
| 31  | LHG  | d     | 409 | -    | -       | 11/43/43/53   | -       |
| 27  | BCR  | B     | 617 | -    | -       | 0/29/63/63    | 0/2/2/2 |
| 33  | STE  | C     | 521 | -    | -       | 7/13/13/17    | -       |
| 27  | BCR  | a     | 610 | -    | -       | 2/29/63/63    | 0/2/2/2 |
| 27  | BCR  | b     | 618 | -    | -       | 4/29/63/63    | 0/2/2/2 |
| 33  | STE  | J     | 101 | -    | -       | 2/9/9/17      | -       |
| 29  | LMG  | d     | 410 | -    | -       | 11/17/17/70   | -       |
| 30  | SQD  | A     | 616 | -    | -       | 18/39/39/69   | -       |

The worst 5 of 787 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 26  | d     | 402 | PHO  | C1B-C2B | 10.06 | 1.50        | 1.39     |
| 26  | d     | 401 | PHO  | C1B-C2B | 9.64  | 1.50        | 1.39     |
| 26  | A     | 608 | PHO  | C1B-C2B | 9.04  | 1.49        | 1.39     |
| 26  | D     | 402 | PHO  | C1B-C2B | 8.81  | 1.49        | 1.39     |
| 26  | D     | 402 | PHO  | C3B-C4B | 8.61  | 1.50        | 1.41     |

The worst 5 of 1108 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 25  | c     | 511 | CLA  | C4A-NA-C1A | 10.11 | 111.29      | 106.68   |
| 25  | c     | 509 | CLA  | C4A-NA-C1A | 9.52  | 111.02      | 106.68   |
| 25  | c     | 503 | CLA  | C4A-NA-C1A | 8.89  | 110.74      | 106.68   |
| 25  | B     | 604 | CLA  | C4A-NA-C1A | 8.88  | 110.73      | 106.68   |
| 25  | b     | 601 | CLA  | C4A-NA-C1A | 8.20  | 110.42      | 106.68   |

All (2) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 36  | V     | 201 | HEC  | NA   |
| 36  | v     | 201 | HEC  | NA   |



5 of 1858 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 25  | A     | 607 | CLA  | C2B-C3B-CAB-CBB |
| 25  | A     | 607 | CLA  | C4B-C3B-CAB-CBB |
| 25  | B     | 601 | CLA  | CAD-CBD-CGD-O1D |
| 25  | B     | 601 | CLA  | CAD-CBD-CGD-O2D |
| 25  | B     | 605 | CLA  | C4B-C3B-CAB-CBB |

There are no ring outliers.

150 monomers are involved in 304 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 33  | a     | 616 | STE  | 1       | 0            |
| 25  | b     | 613 | CLA  | 4       | 0            |
| 25  | b     | 616 | CLA  | 4       | 0            |
| 31  | A     | 614 | LHG  | 1       | 0            |
| 25  | C     | 510 | CLA  | 4       | 0            |
| 28  | d     | 406 | PL9  | 3       | 0            |
| 25  | c     | 510 | CLA  | 4       | 0            |
| 25  | b     | 601 | CLA  | 3       | 0            |
| 25  | b     | 605 | CLA  | 3       | 0            |
| 27  | x     | 101 | BCR  | 3       | 0            |
| 25  | B     | 603 | CLA  | 5       | 0            |
| 31  | l     | 101 | LHG  | 2       | 0            |
| 32  | H     | 102 | DGD  | 2       | 0            |
| 25  | c     | 501 | CLA  | 6       | 0            |
| 29  | M     | 101 | LMG  | 1       | 0            |
| 31  | D     | 412 | LHG  | 2       | 0            |
| 25  | a     | 609 | CLA  | 3       | 0            |
| 31  | D     | 410 | LHG  | 2       | 0            |
| 27  | Y     | 101 | BCR  | 2       | 0            |
| 25  | C     | 502 | CLA  | 4       | 0            |
| 25  | A     | 609 | CLA  | 2       | 0            |
| 29  | D     | 411 | LMG  | 1       | 0            |
| 25  | b     | 603 | CLA  | 1       | 0            |
| 25  | D     | 404 | CLA  | 3       | 0            |
| 25  | c     | 505 | CLA  | 6       | 0            |
| 27  | T     | 101 | BCR  | 4       | 0            |
| 29  | A     | 612 | LMG  | 2       | 0            |
| 25  | C     | 513 | CLA  | 2       | 0            |
| 25  | b     | 614 | CLA  | 3       | 0            |
| 25  | B     | 613 | CLA  | 1       | 0            |
| 31  | d     | 407 | LHG  | 2       | 0            |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 25  | B     | 611 | CLA  | 2       | 0            |
| 33  | b     | 620 | STE  | 1       | 0            |
| 25  | C     | 512 | CLA  | 3       | 0            |
| 25  | b     | 606 | CLA  | 7       | 0            |
| 27  | K     | 102 | BCR  | 3       | 0            |
| 25  | a     | 612 | CLA  | 2       | 0            |
| 33  | d     | 413 | STE  | 1       | 0            |
| 25  | b     | 607 | CLA  | 1       | 0            |
| 35  | f     | 101 | HEM  | 2       | 0            |
| 25  | b     | 608 | CLA  | 1       | 0            |
| 32  | h     | 101 | DGD  | 2       | 0            |
| 25  | c     | 509 | CLA  | 3       | 0            |
| 31  | D     | 409 | LHG  | 2       | 0            |
| 25  | B     | 605 | CLA  | 5       | 0            |
| 29  | c     | 522 | LMG  | 4       | 0            |
| 27  | k     | 101 | BCR  | 1       | 0            |
| 25  | D     | 403 | CLA  | 1       | 0            |
| 31  | e     | 101 | LHG  | 2       | 0            |
| 25  | A     | 607 | CLA  | 1       | 0            |
| 29  | c     | 524 | LMG  | 2       | 0            |
| 27  | c     | 515 | BCR  | 2       | 0            |
| 25  | b     | 611 | CLA  | 1       | 0            |
| 25  | C     | 511 | CLA  | 1       | 0            |
| 25  | D     | 405 | CLA  | 1       | 0            |
| 28  | a     | 611 | PL9  | 6       | 0            |
| 32  | a     | 615 | DGD  | 5       | 0            |
| 29  | b     | 621 | LMG  | 2       | 0            |
| 33  | x     | 102 | STE  | 6       | 0            |
| 36  | v     | 201 | HEC  | 1       | 0            |
| 33  | T     | 102 | STE  | 1       | 0            |
| 29  | d     | 411 | LMG  | 1       | 0            |
| 25  | b     | 615 | CLA  | 3       | 0            |
| 25  | B     | 602 | CLA  | 2       | 0            |
| 25  | c     | 507 | CLA  | 4       | 0            |
| 25  | c     | 511 | CLA  | 3       | 0            |
| 32  | A     | 617 | DGD  | 7       | 0            |
| 27  | B     | 618 | BCR  | 1       | 0            |
| 25  | C     | 501 | CLA  | 1       | 0            |
| 25  | B     | 616 | CLA  | 5       | 0            |
| 25  | b     | 602 | CLA  | 5       | 0            |
| 25  | B     | 607 | CLA  | 3       | 0            |
| 31  | d     | 408 | LHG  | 5       | 0            |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 27  | B     | 619 | BCR  | 4       | 0            |
| 30  | A     | 613 | SQD  | 1       | 0            |
| 25  | C     | 506 | CLA  | 2       | 0            |
| 28  | D     | 407 | PL9  | 2       | 0            |
| 27  | c     | 516 | BCR  | 2       | 0            |
| 28  | A     | 611 | PL9  | 4       | 0            |
| 27  | b     | 619 | BCR  | 3       | 0            |
| 33  | I     | 101 | STE  | 2       | 0            |
| 25  | B     | 612 | CLA  | 2       | 0            |
| 33  | t     | 102 | STE  | 1       | 0            |
| 25  | C     | 504 | CLA  | 3       | 0            |
| 25  | c     | 504 | CLA  | 1       | 0            |
| 30  | F     | 101 | SQD  | 2       | 0            |
| 25  | B     | 615 | CLA  | 4       | 0            |
| 25  | B     | 606 | CLA  | 5       | 0            |
| 32  | C     | 515 | DGD  | 2       | 0            |
| 33  | a     | 617 | STE  | 1       | 0            |
| 32  | c     | 518 | DGD  | 1       | 0            |
| 30  | L     | 101 | SQD  | 4       | 0            |
| 27  | C     | 514 | BCR  | 4       | 0            |
| 33  | B     | 623 | STE  | 1       | 0            |
| 27  | H     | 101 | BCR  | 3       | 0            |
| 25  | d     | 403 | CLA  | 2       | 0            |
| 25  | a     | 608 | CLA  | 3       | 0            |
| 33  | b     | 622 | STE  | 1       | 0            |
| 25  | b     | 610 | CLA  | 1       | 0            |
| 29  | D     | 408 | LMG  | 1       | 0            |
| 29  | C     | 518 | LMG  | 2       | 0            |
| 31  | A     | 615 | LHG  | 1       | 0            |
| 27  | t     | 101 | BCR  | 1       | 0            |
| 25  | C     | 508 | CLA  | 3       | 0            |
| 25  | B     | 609 | CLA  | 2       | 0            |
| 25  | C     | 507 | CLA  | 1       | 0            |
| 33  | T     | 103 | STE  | 1       | 0            |
| 27  | K     | 101 | BCR  | 3       | 0            |
| 35  | E     | 101 | HEM  | 2       | 0            |
| 25  | c     | 508 | CLA  | 4       | 0            |
| 25  | B     | 604 | CLA  | 2       | 0            |
| 25  | B     | 601 | CLA  | 2       | 0            |
| 25  | C     | 509 | CLA  | 3       | 0            |
| 33  | B     | 624 | STE  | 1       | 0            |
| 25  | c     | 513 | CLA  | 3       | 0            |

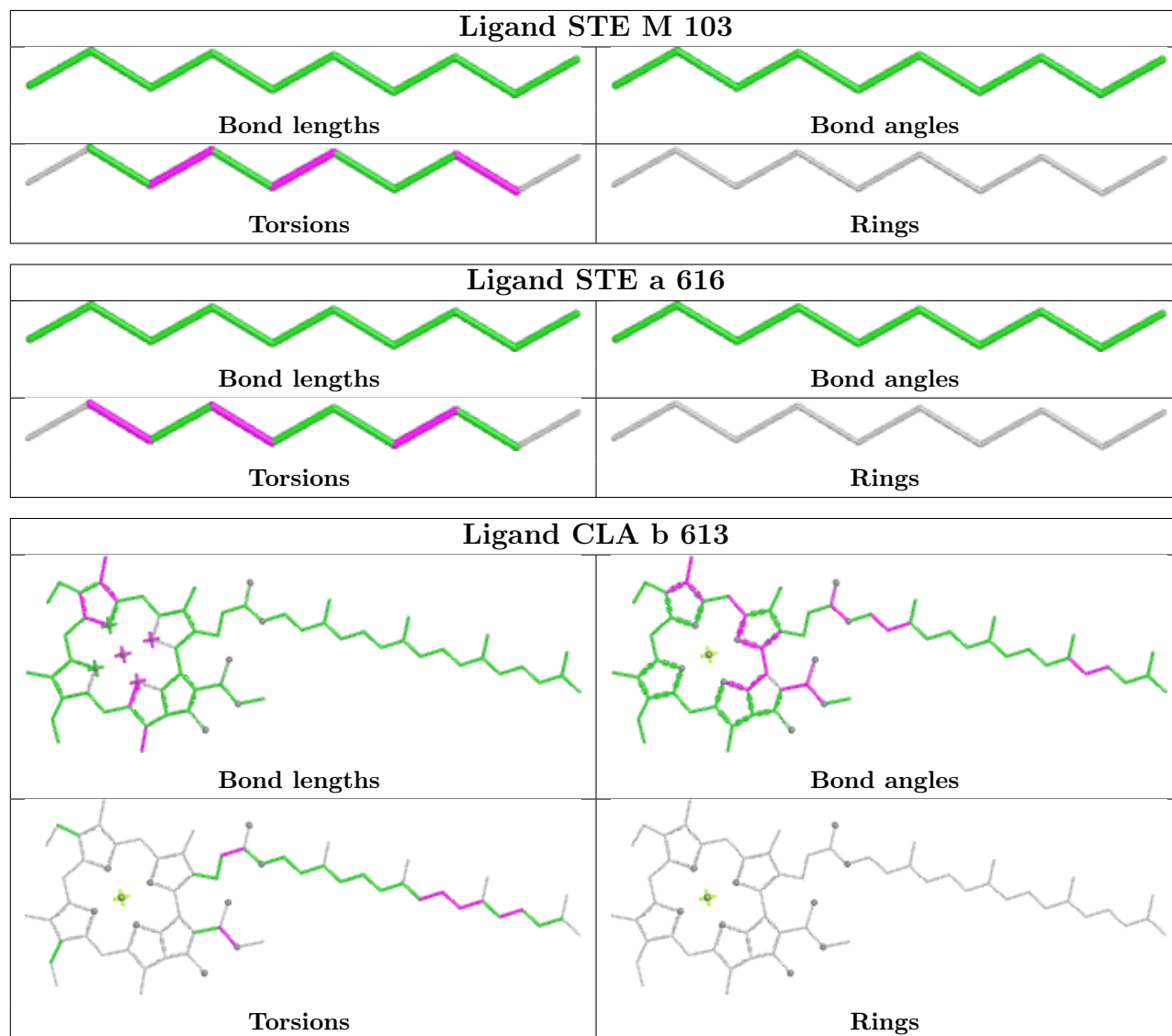
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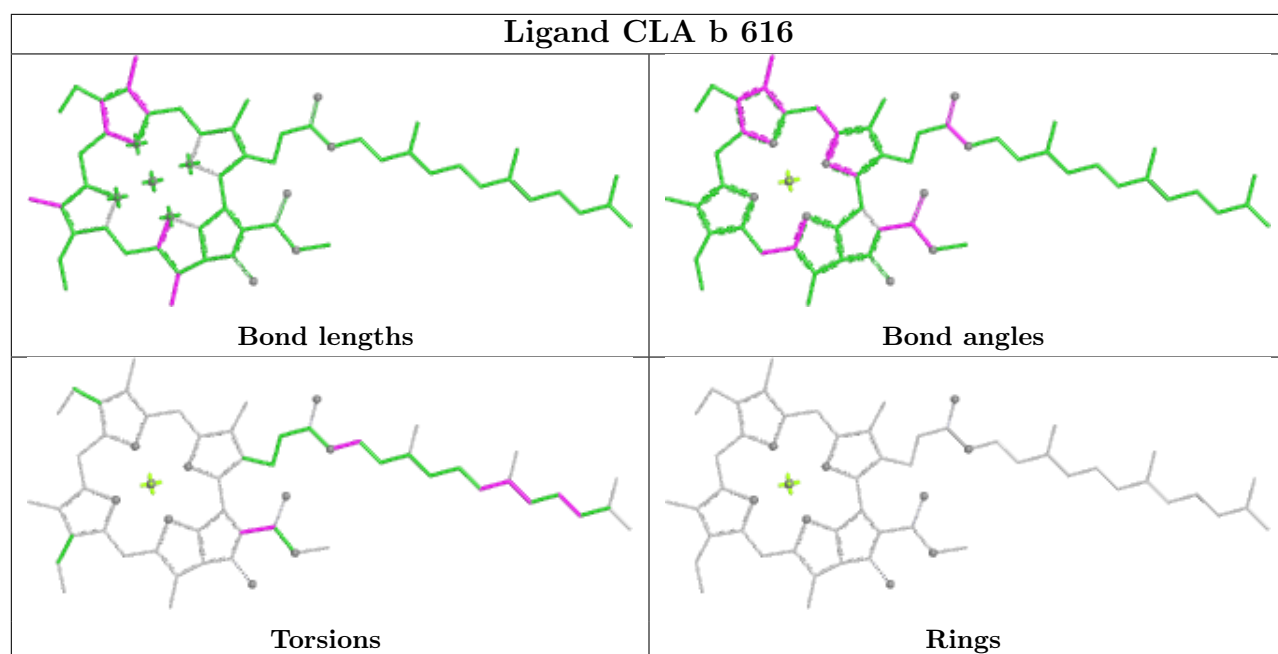
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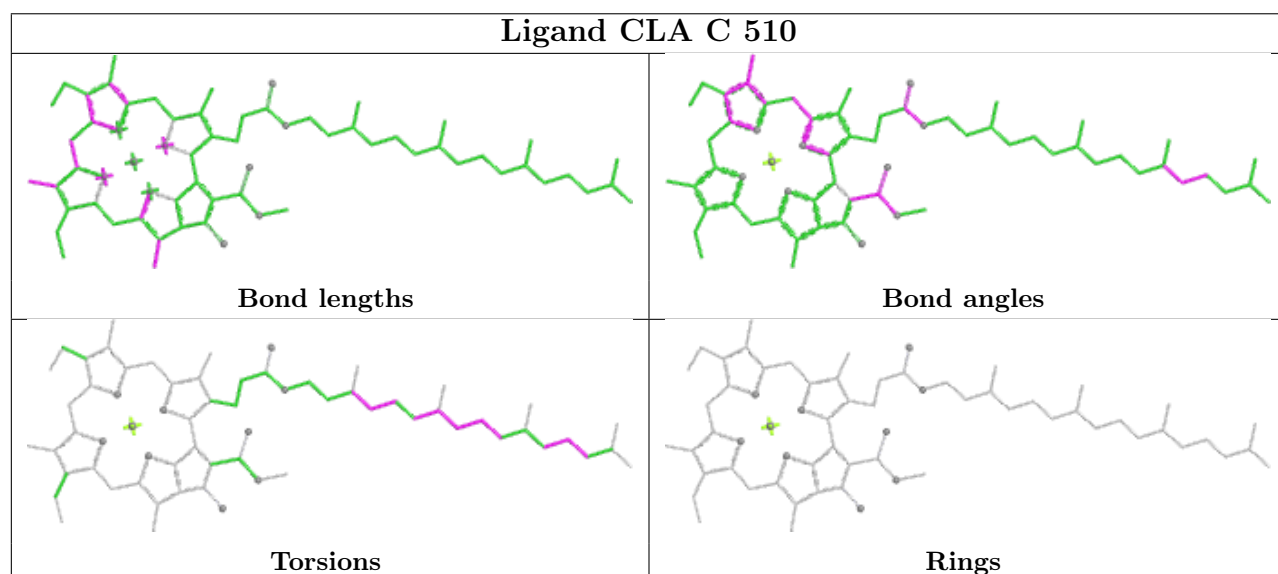
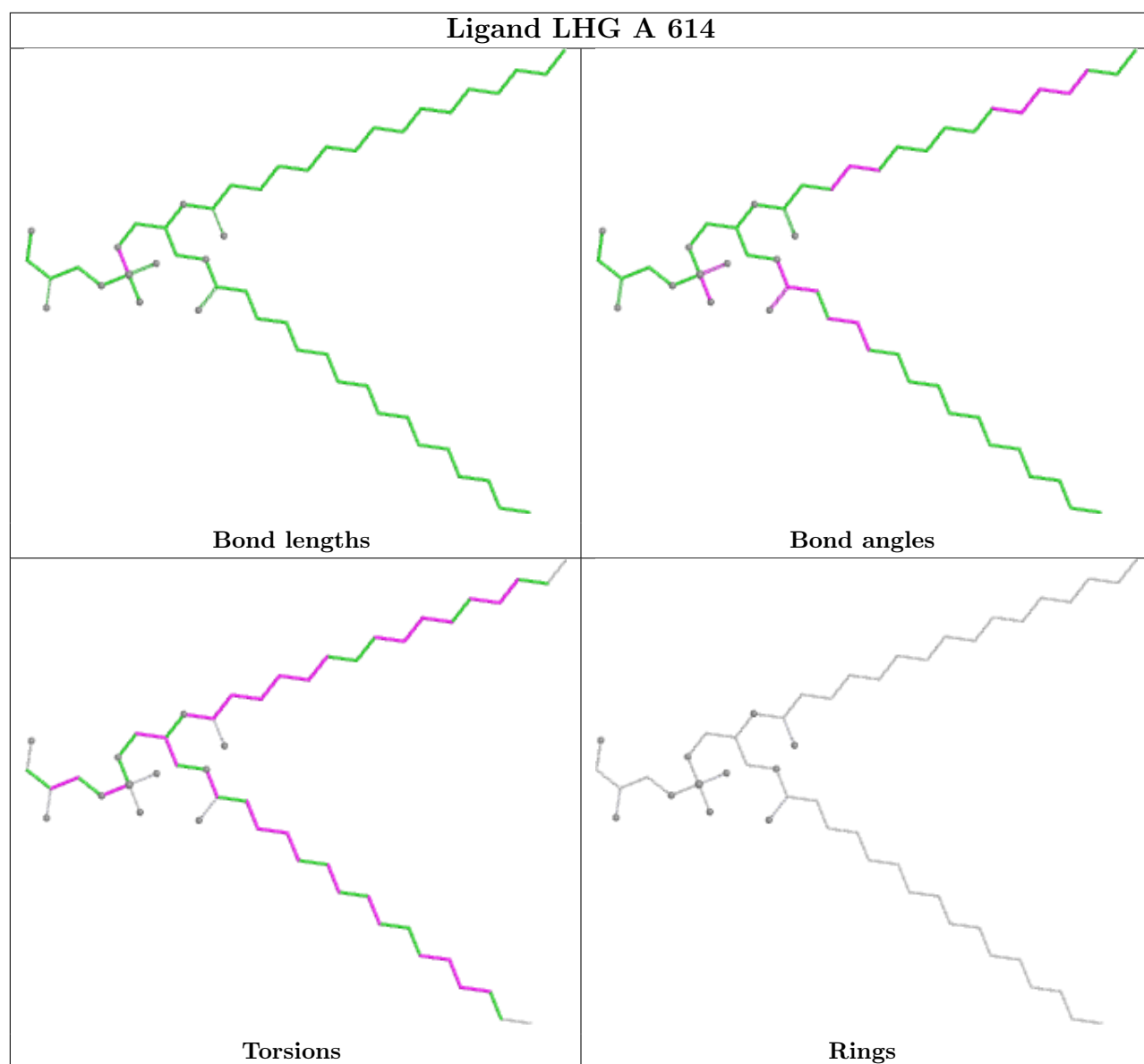
| Mol | Chain | Res    | Type | Clashes | Symm-Clashes |
|-----|-------|--------|------|---------|--------------|
| 33  | H     | 103    | STE  | 2       | 0            |
| 27  | c     | 514    | BCR  | 3       | 0            |
| 33  | B     | 625    | STE  | 2       | 0            |
| 26  | A     | 608    | PHO  | 2       | 0            |
| 33  | D     | 413    | STE  | 1       | 0            |
| 26  | d     | 402    | PHO  | 1       | 0            |
| 25  | B     | 614    | CLA  | 4       | 0            |
| 21  | A     | 601[B] | OEY  | 1       | 0            |
| 25  | A     | 606    | CLA  | 1       | 0            |
| 29  | B     | 621    | LMG  | 1       | 0            |
| 29  | m     | 101    | LMG  | 3       | 0            |
| 27  | d     | 405    | BCR  | 2       | 0            |
| 33  | B     | 620    | STE  | 1       | 0            |
| 25  | c     | 503    | CLA  | 4       | 0            |
| 25  | c     | 512    | CLA  | 4       | 0            |
| 27  | D     | 406    | BCR  | 2       | 0            |
| 25  | C     | 503    | CLA  | 3       | 0            |
| 30  | f     | 102    | SQD  | 3       | 0            |
| 32  | C     | 517    | DGD  | 2       | 0            |
| 25  | b     | 612    | CLA  | 3       | 0            |
| 30  | B     | 622    | SQD  | 3       | 0            |
| 30  | a     | 613    | SQD  | 4       | 0            |
| 27  | A     | 610    | BCR  | 4       | 0            |
| 32  | c     | 519    | DGD  | 2       | 0            |
| 26  | D     | 402    | PHO  | 3       | 0            |
| 32  | C     | 516    | DGD  | 2       | 0            |
| 25  | b     | 604    | CLA  | 5       | 0            |
| 25  | c     | 502    | CLA  | 1       | 0            |
| 30  | a     | 614    | SQD  | 2       | 0            |
| 25  | d     | 404    | CLA  | 3       | 0            |
| 33  | l     | 102    | STE  | 1       | 0            |
| 31  | d     | 409    | LHG  | 1       | 0            |
| 27  | B     | 617    | BCR  | 1       | 0            |
| 27  | a     | 610    | BCR  | 3       | 0            |
| 30  | A     | 616    | SQD  | 4       | 0            |

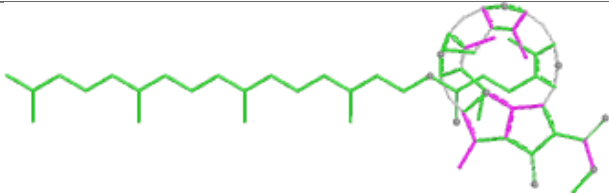
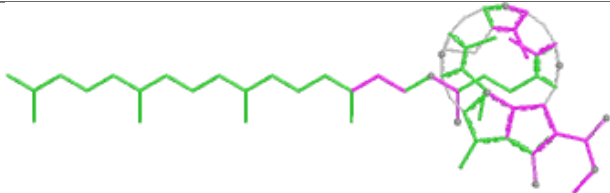
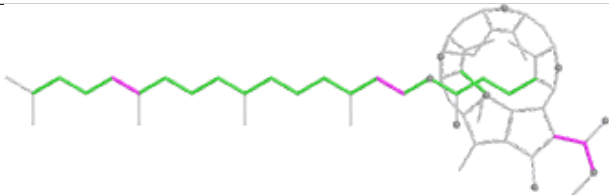
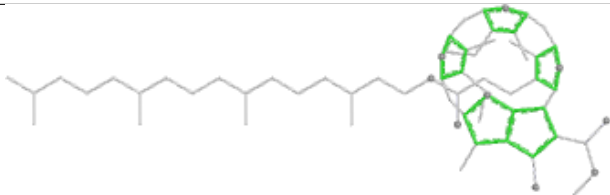
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

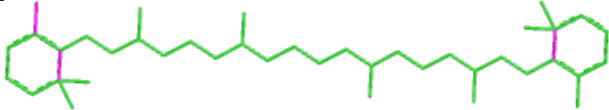
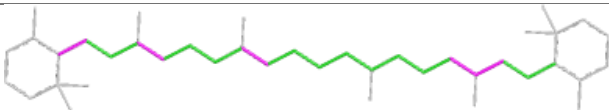
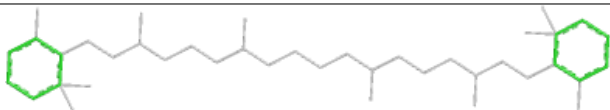
in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

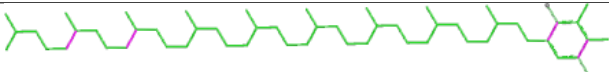
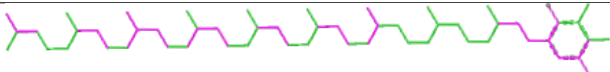
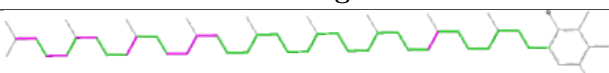
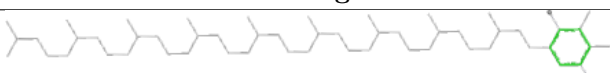


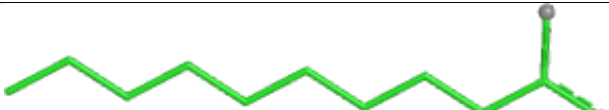
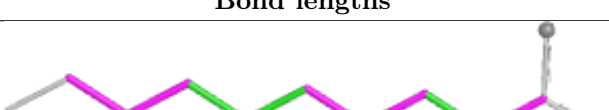




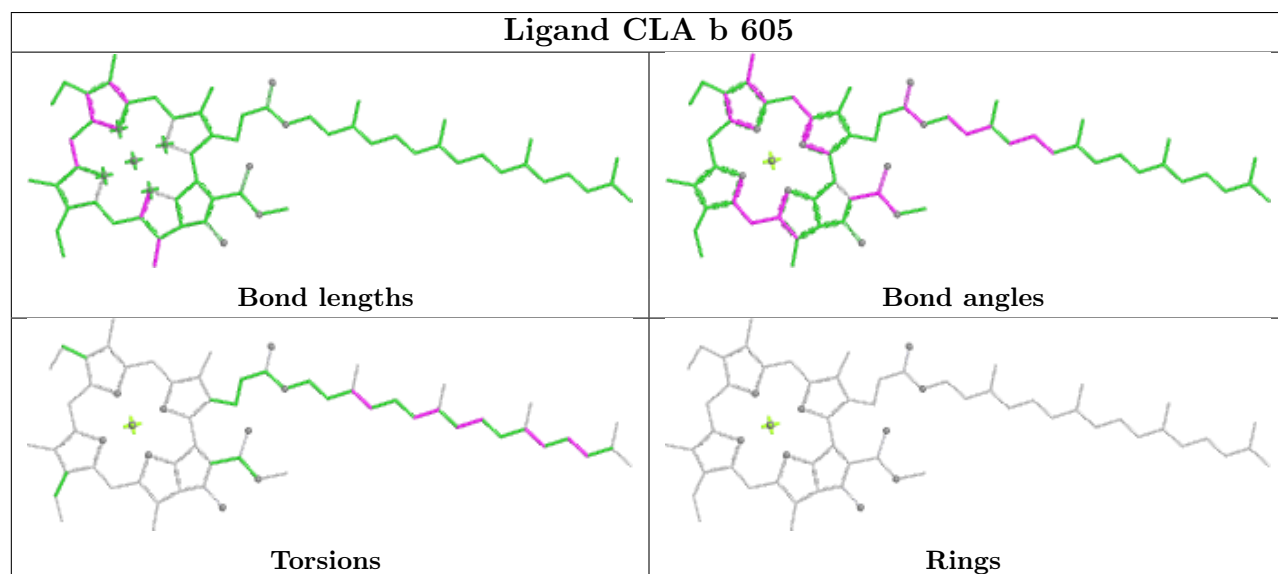
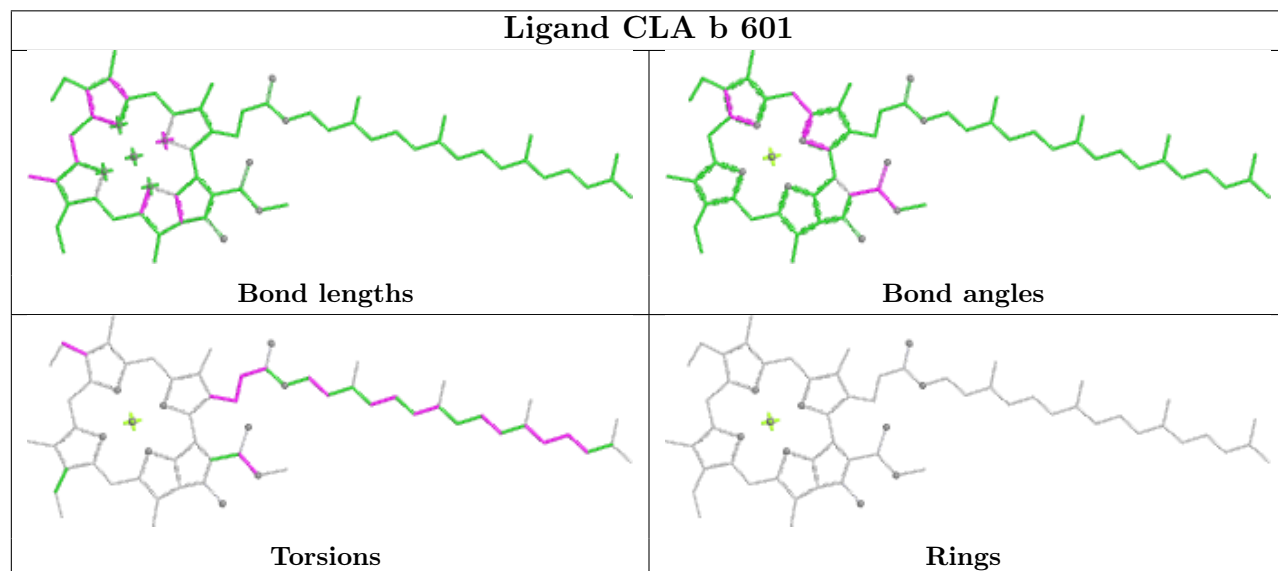
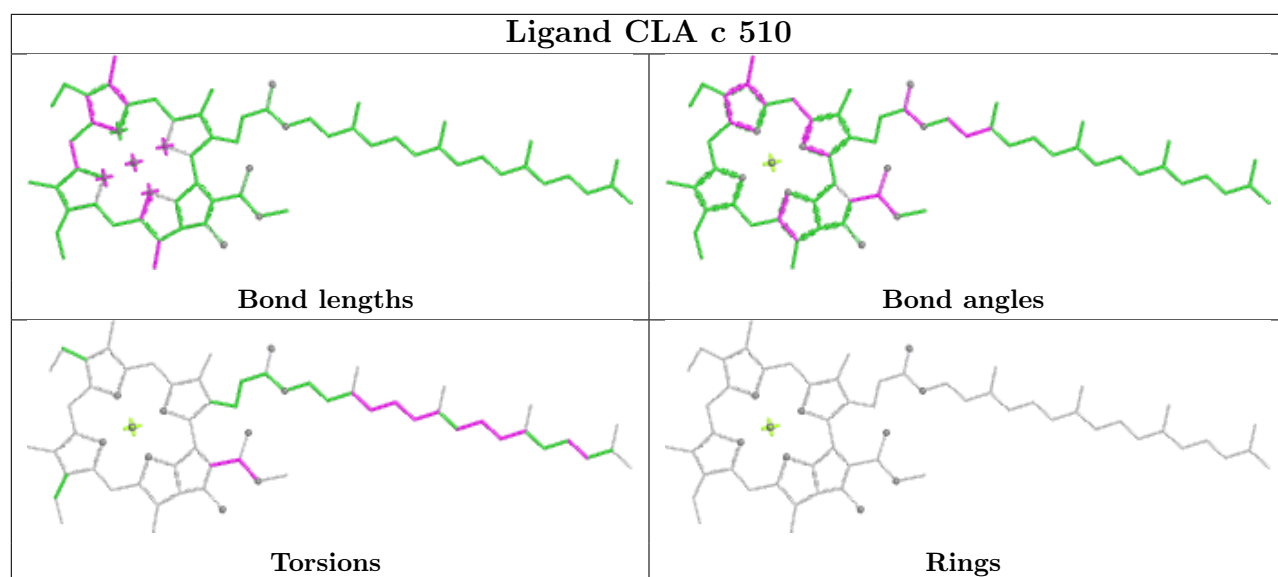
| Ligand PHO d 401                                                                   |              |
|------------------------------------------------------------------------------------|--------------|
|   | Bond lengths |
|  | Bond angles  |
|   | Torsions     |
|  | Rings        |

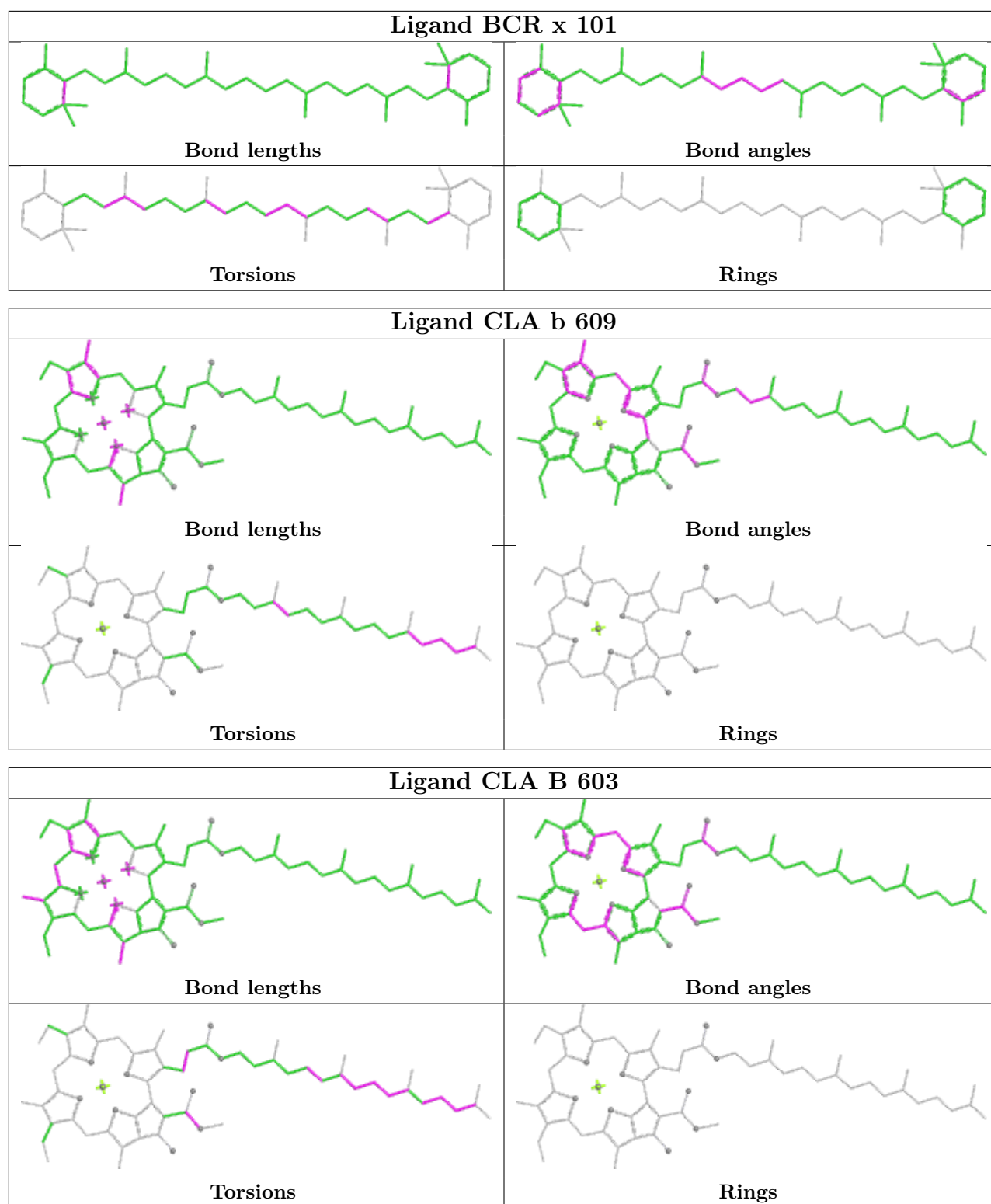
| Ligand BCR b 617                                                                    |              |
|-------------------------------------------------------------------------------------|--------------|
|    | Bond lengths |
|   | Bond angles  |
|   | Torsions     |
|  | Rings        |

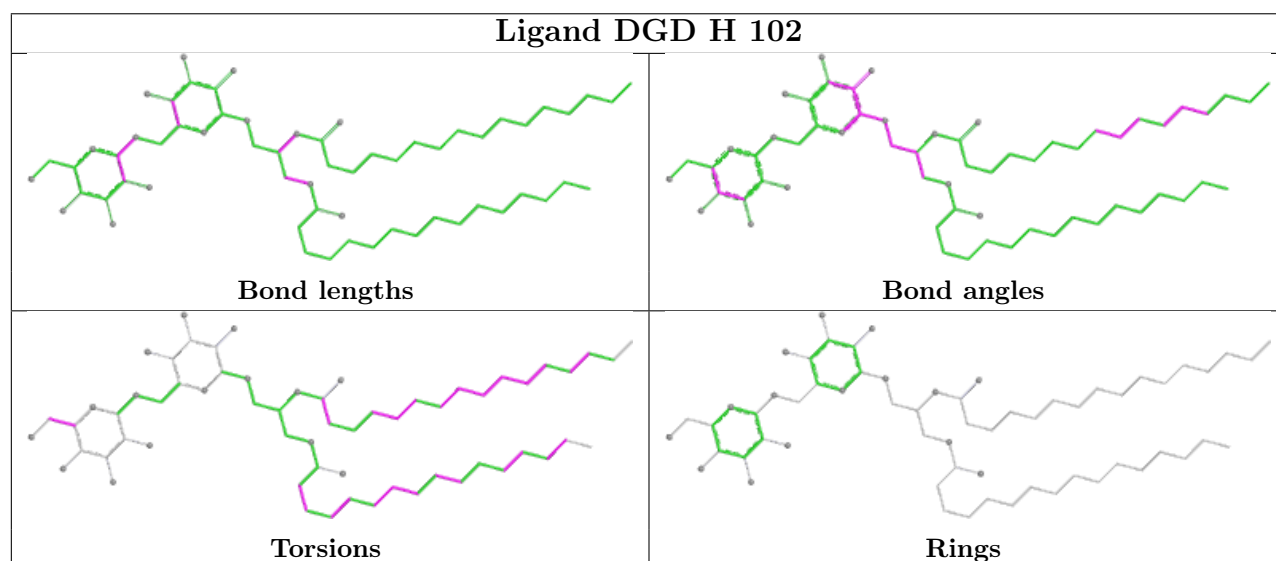
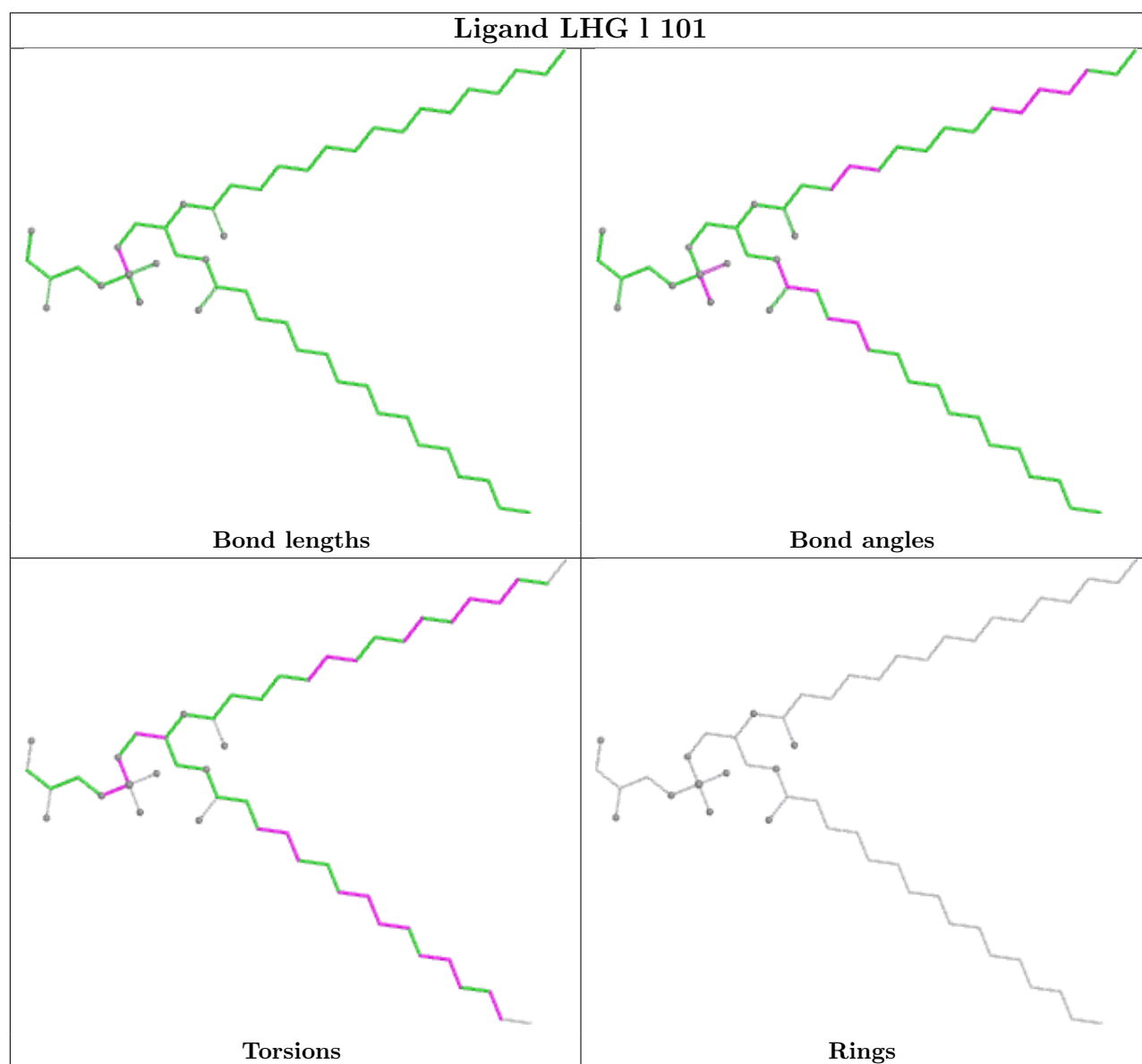
| Ligand PL9 d 406                                                                     |              |
|--------------------------------------------------------------------------------------|--------------|
|   | Bond lengths |
|  | Bond angles  |
|   | Torsions     |
|  | Rings        |

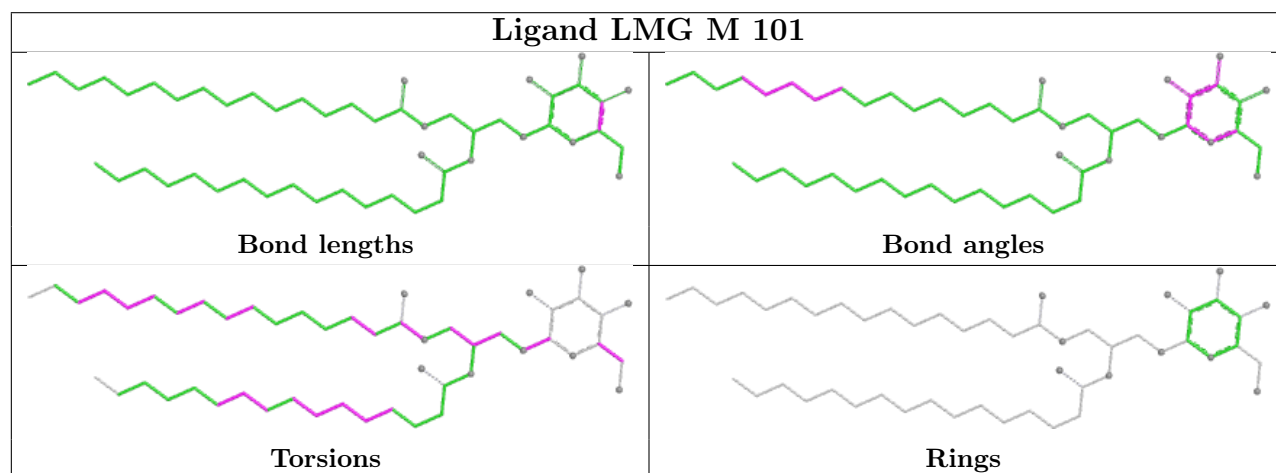
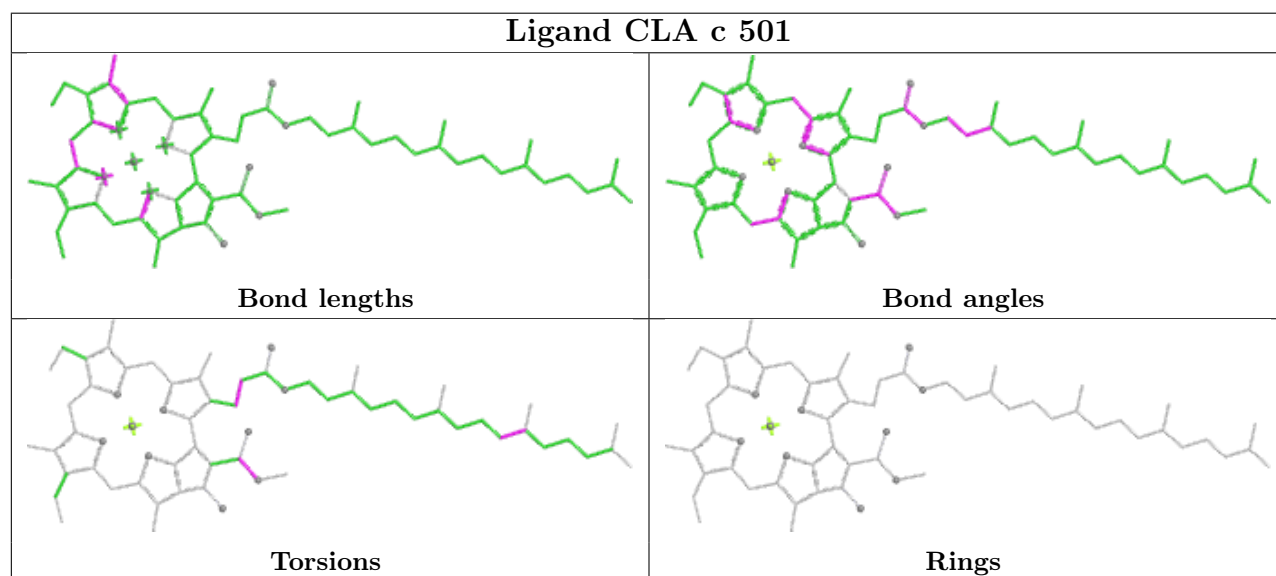
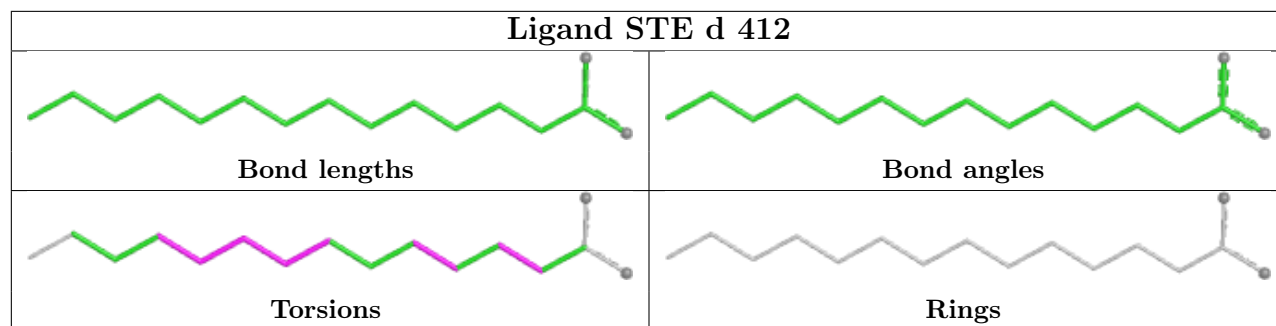
| Ligand STE C 519                                                                     |              |
|--------------------------------------------------------------------------------------|--------------|
|   | Bond lengths |
|  | Bond angles  |
|   | Torsions     |
|  | Rings        |

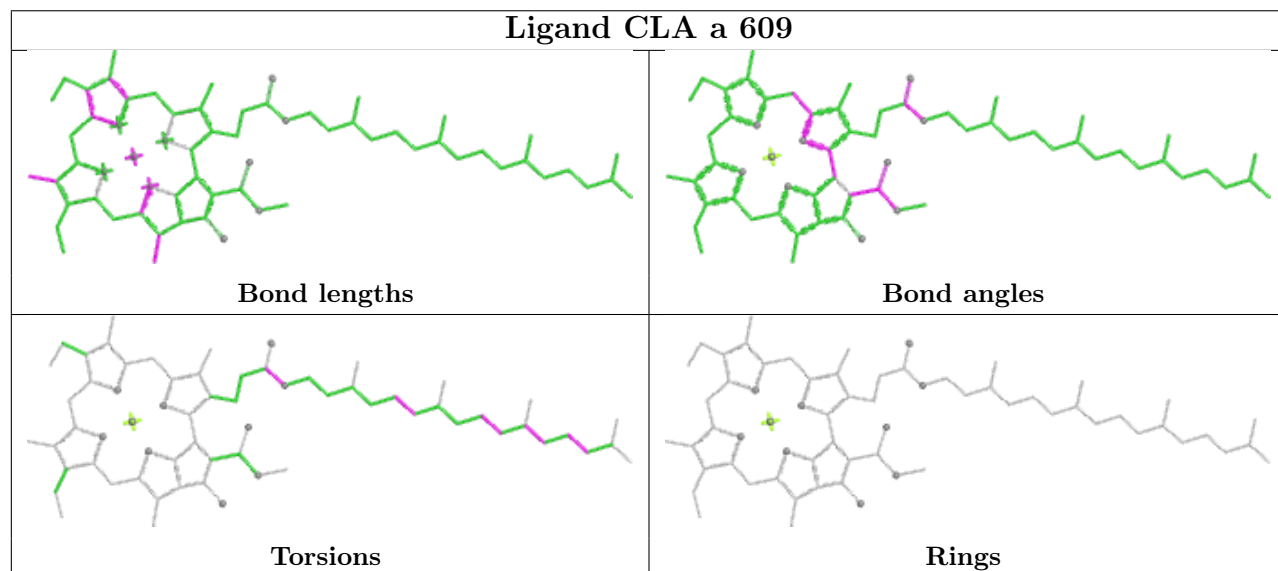
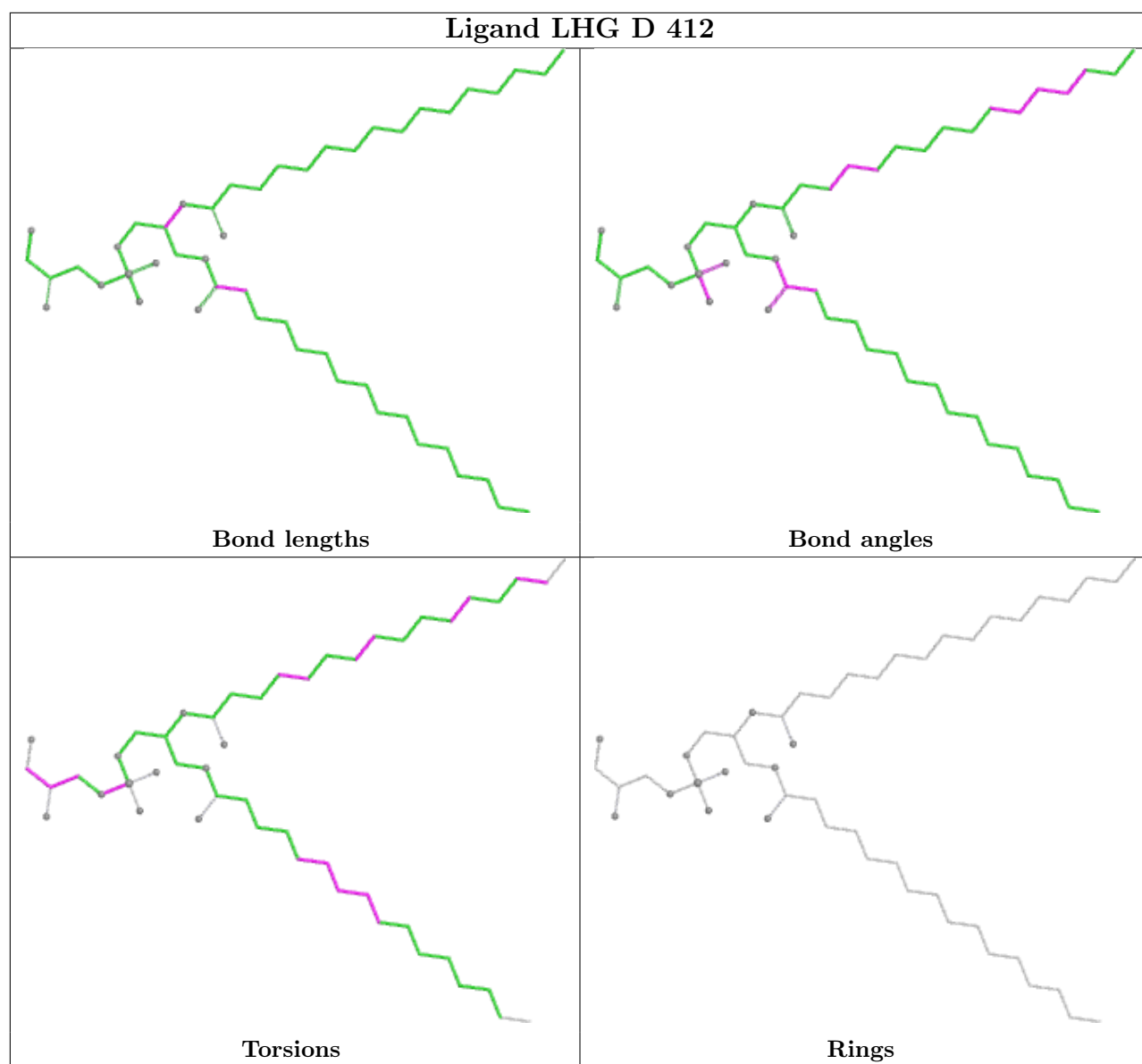


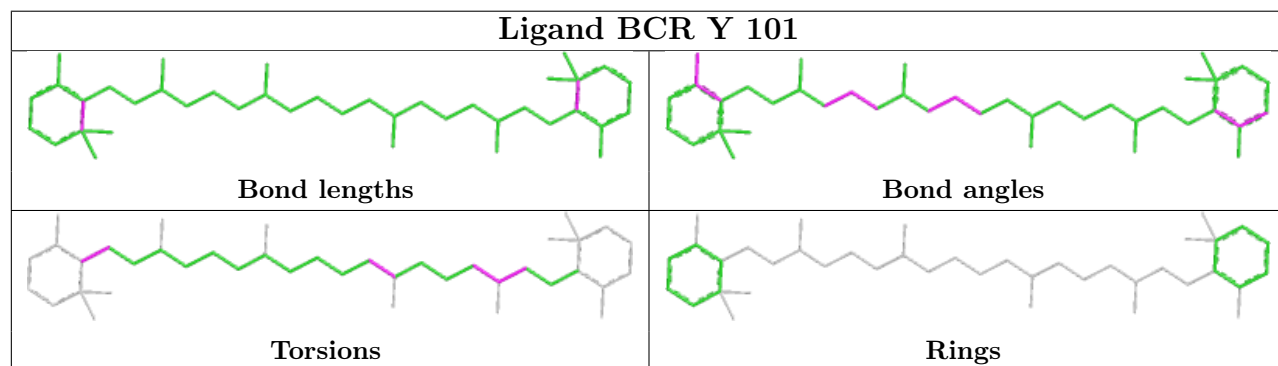
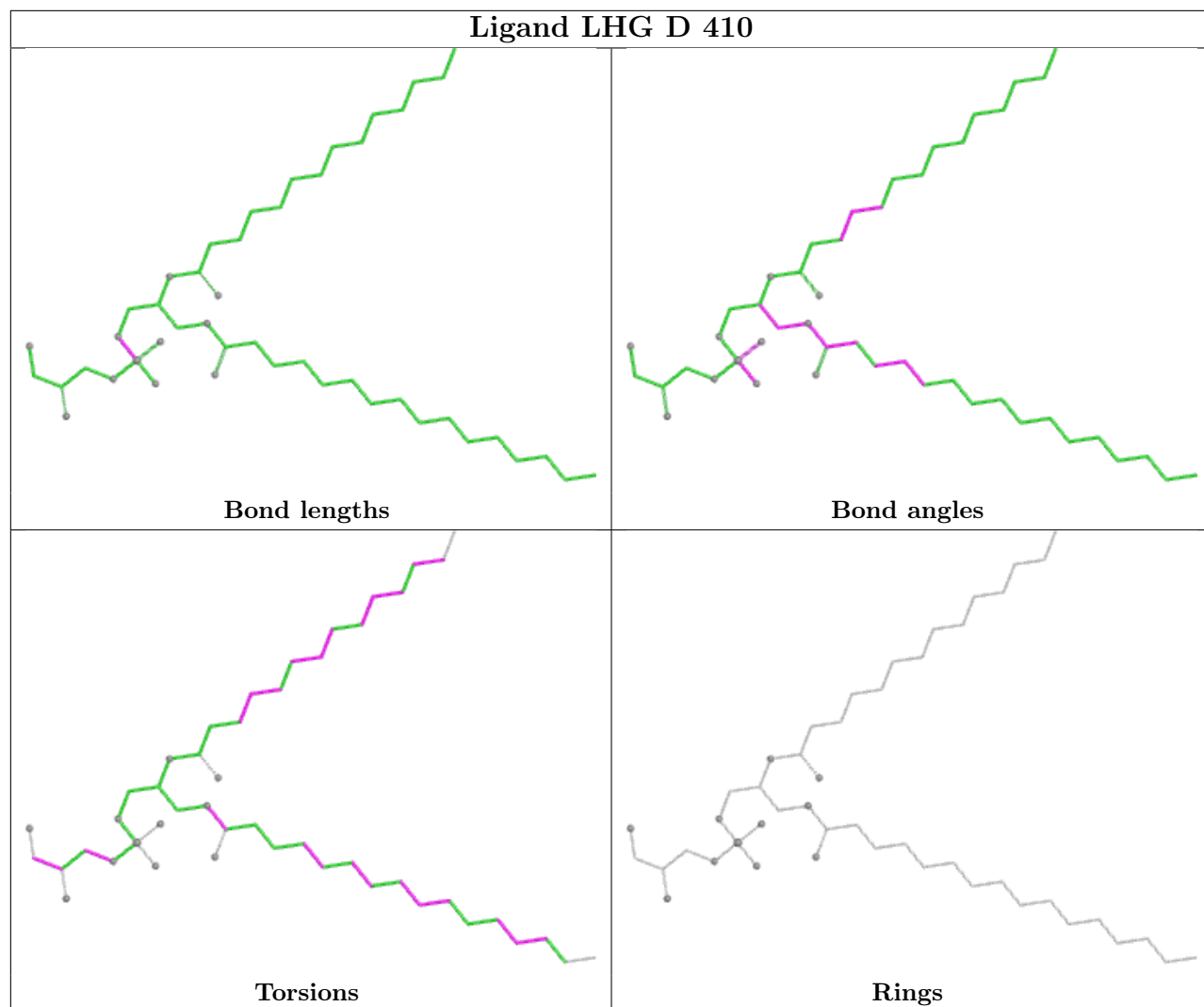


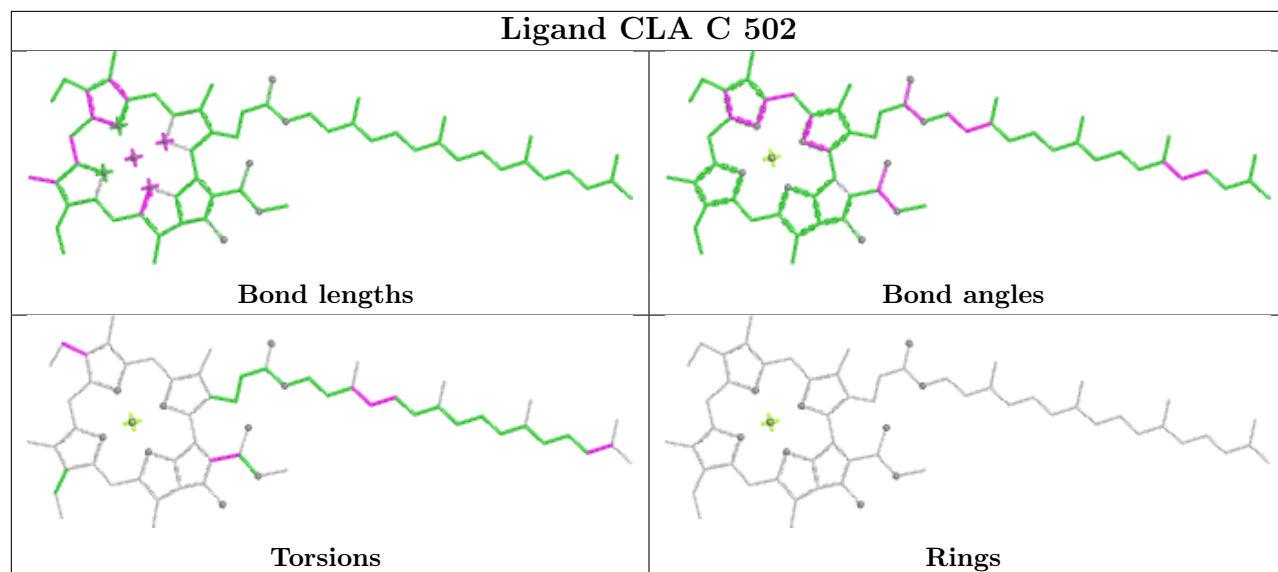
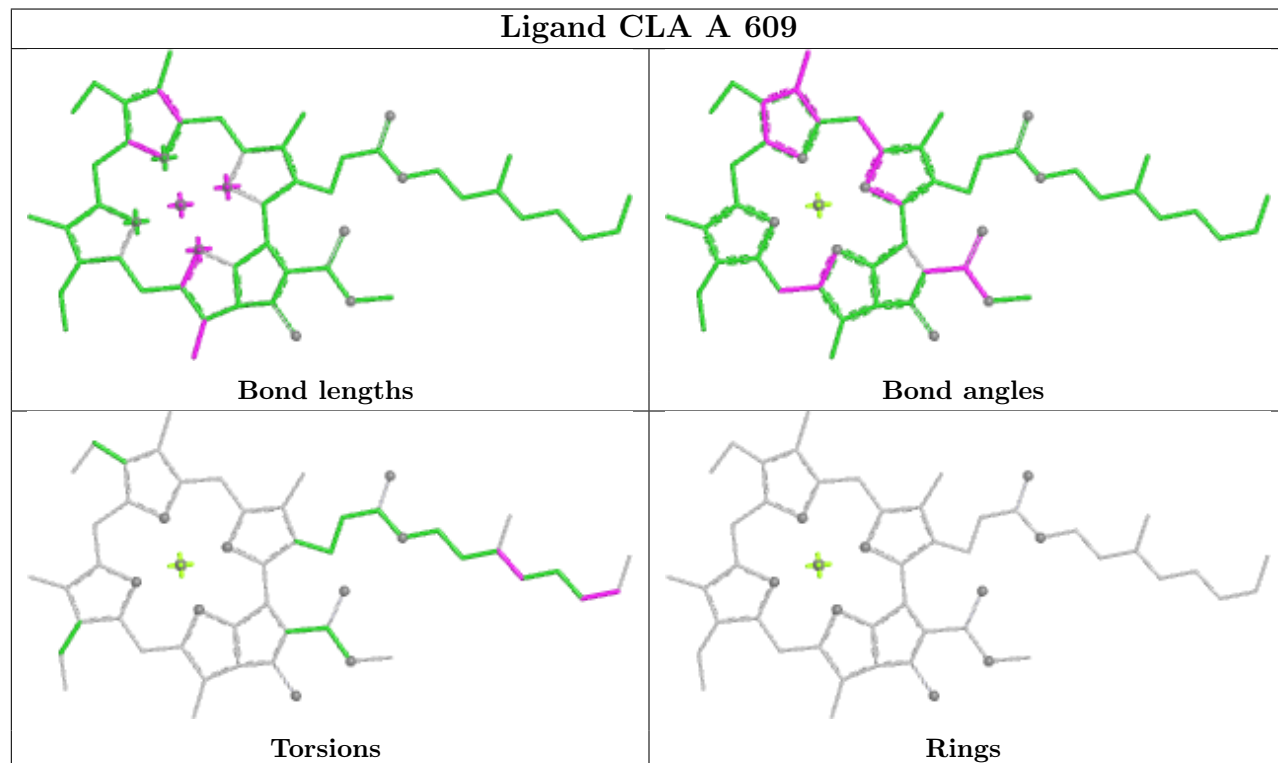


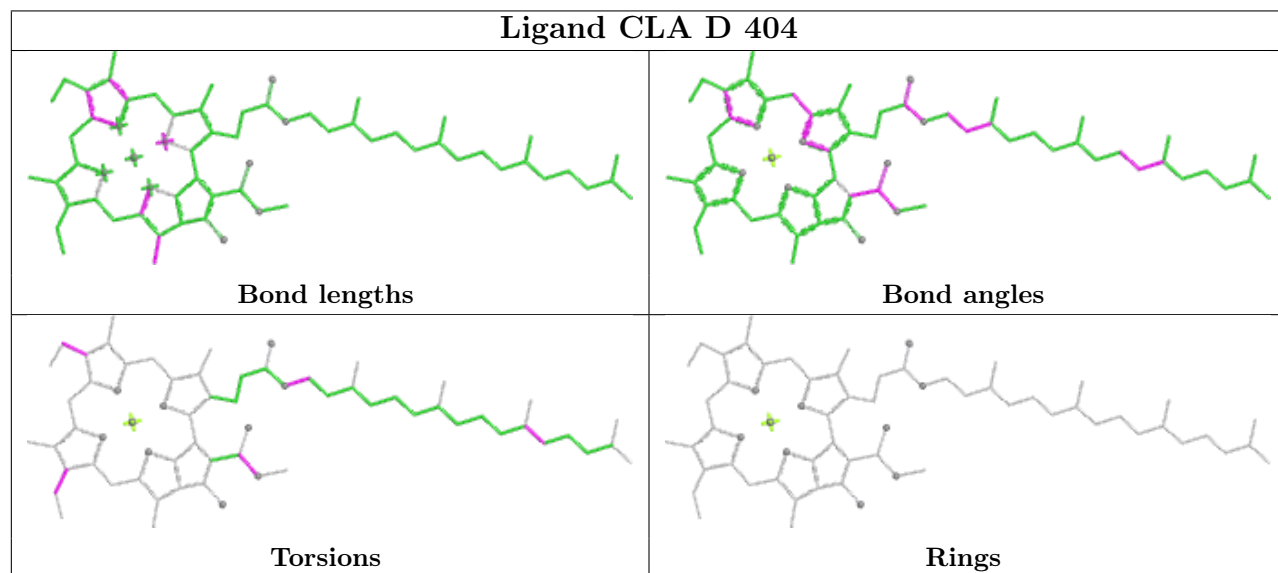
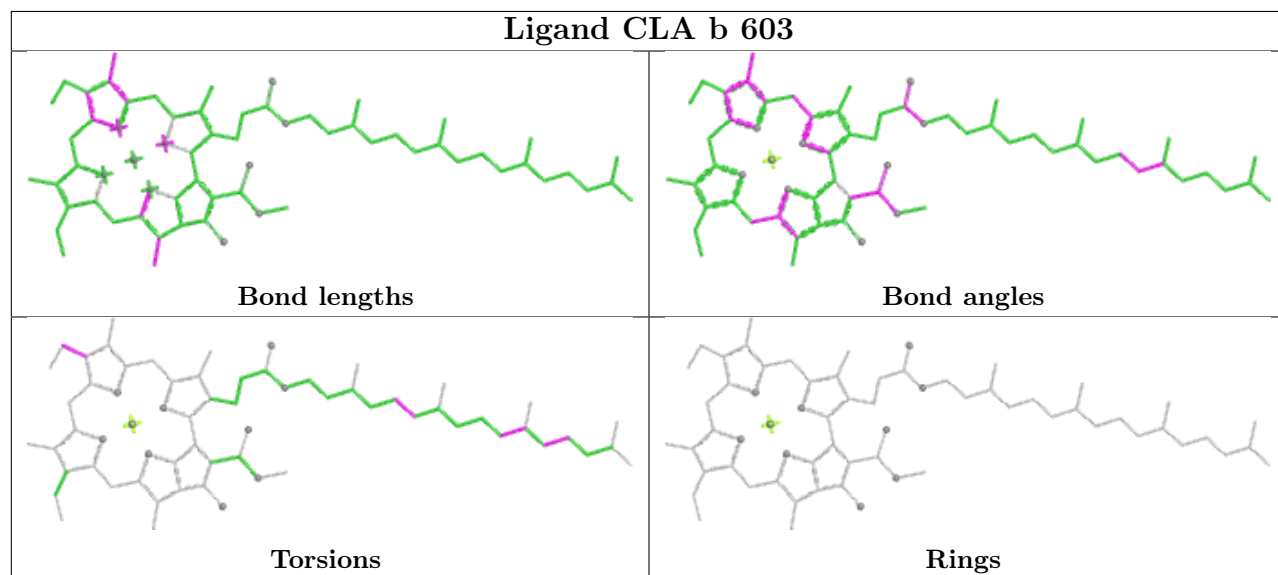
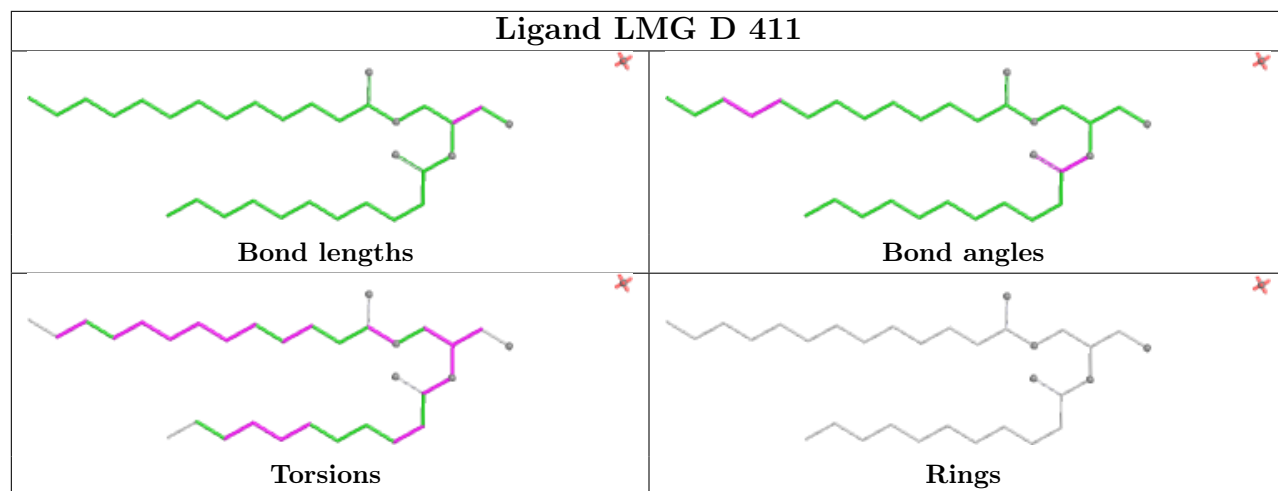




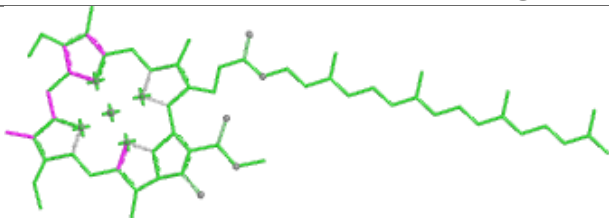
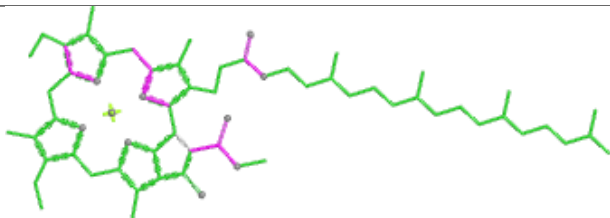
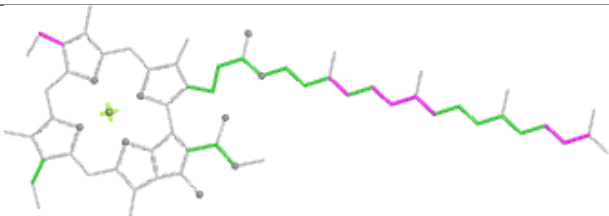
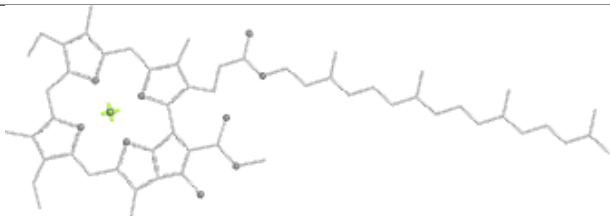


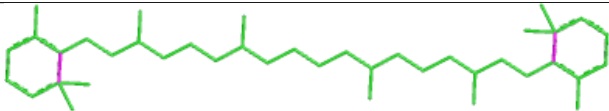
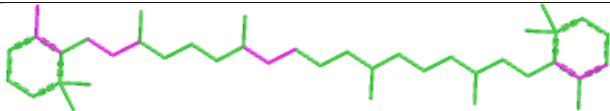
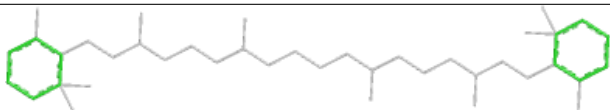


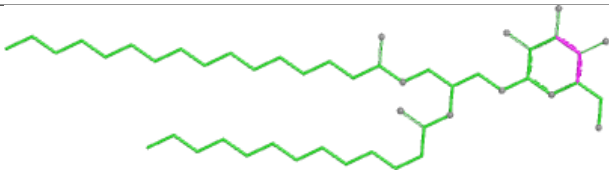
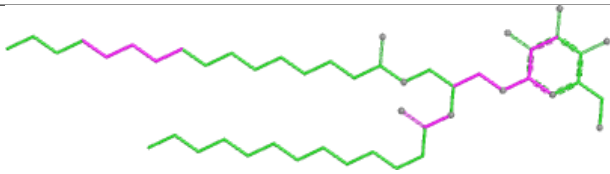
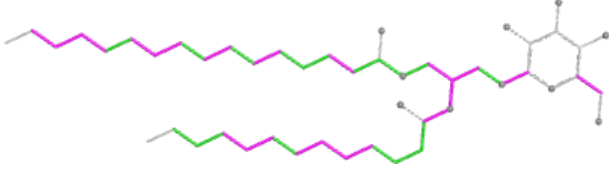
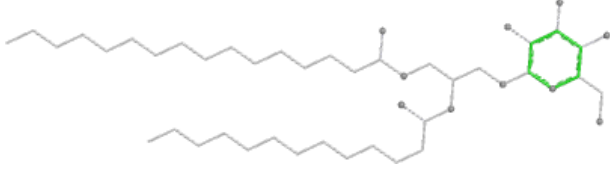
**Ligand CLA C 502****Ligand CLA A 609**

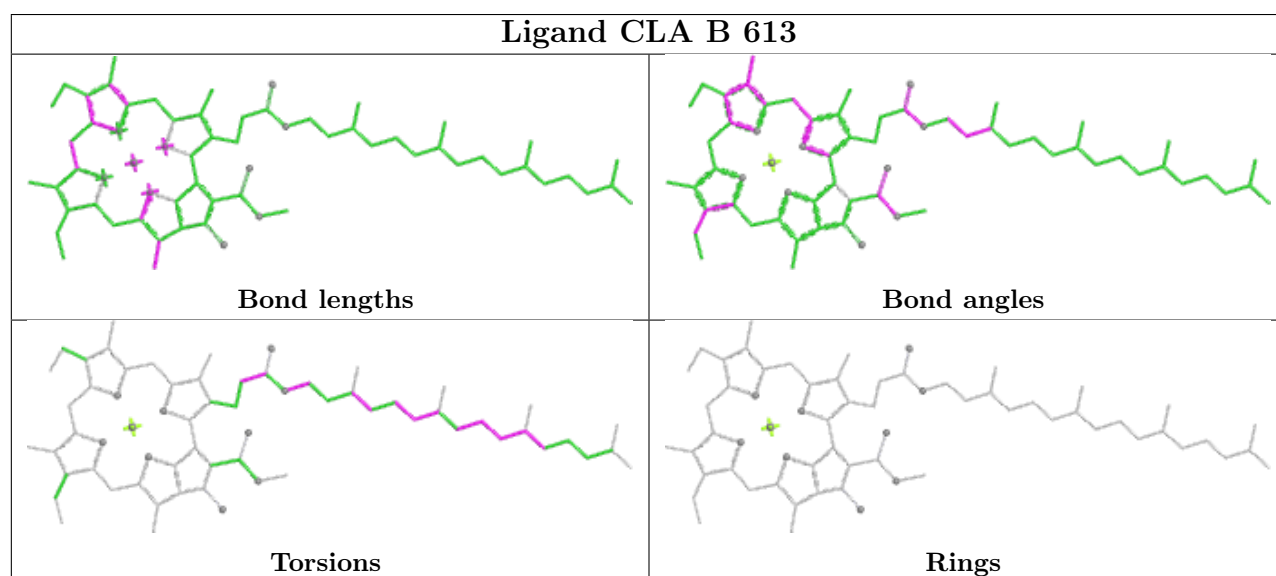
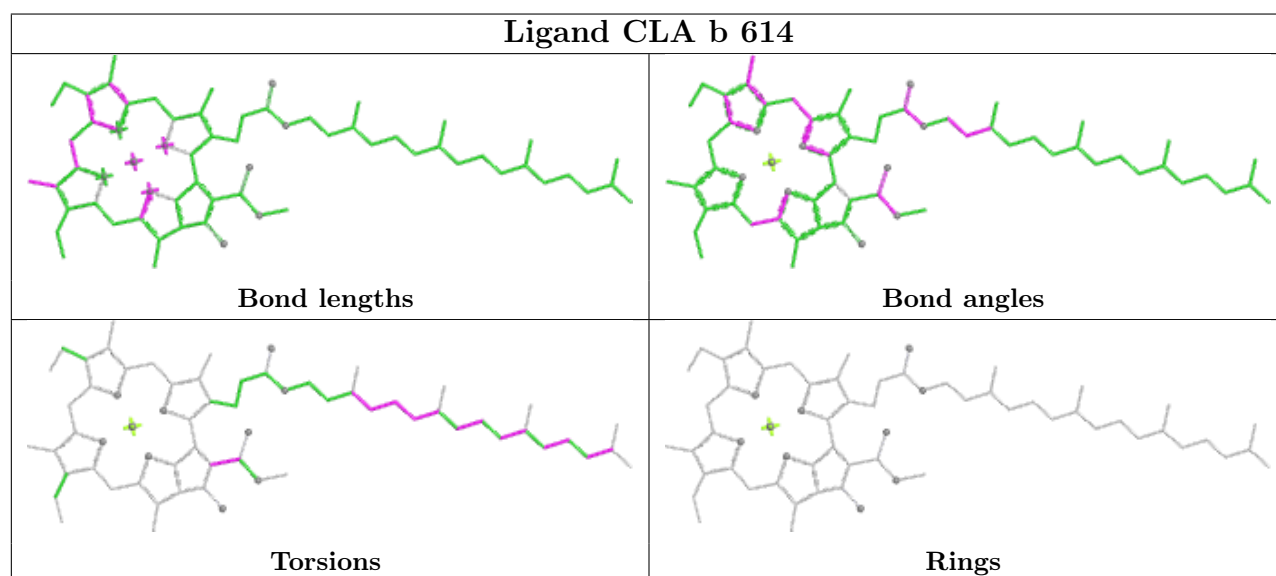
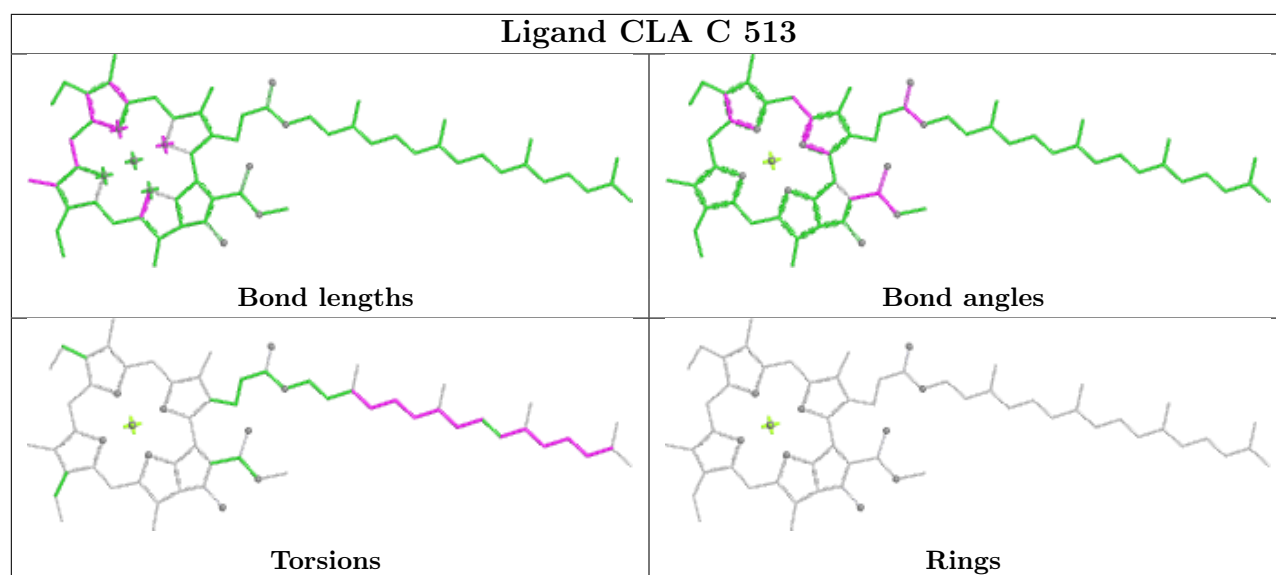


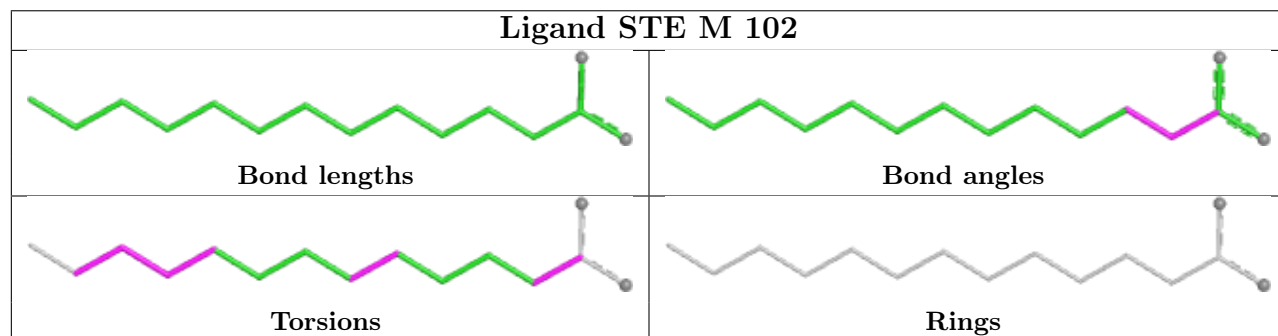
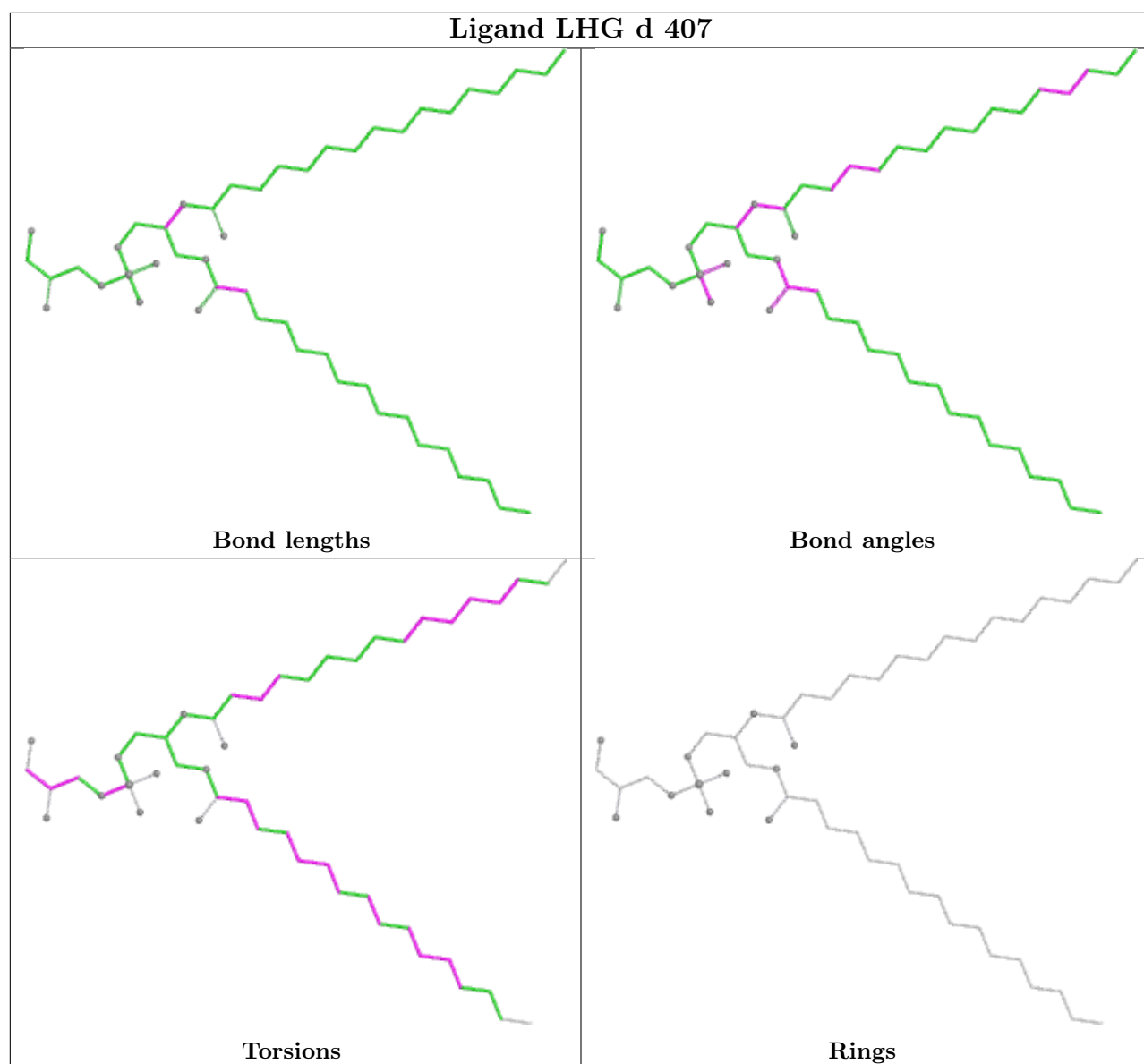


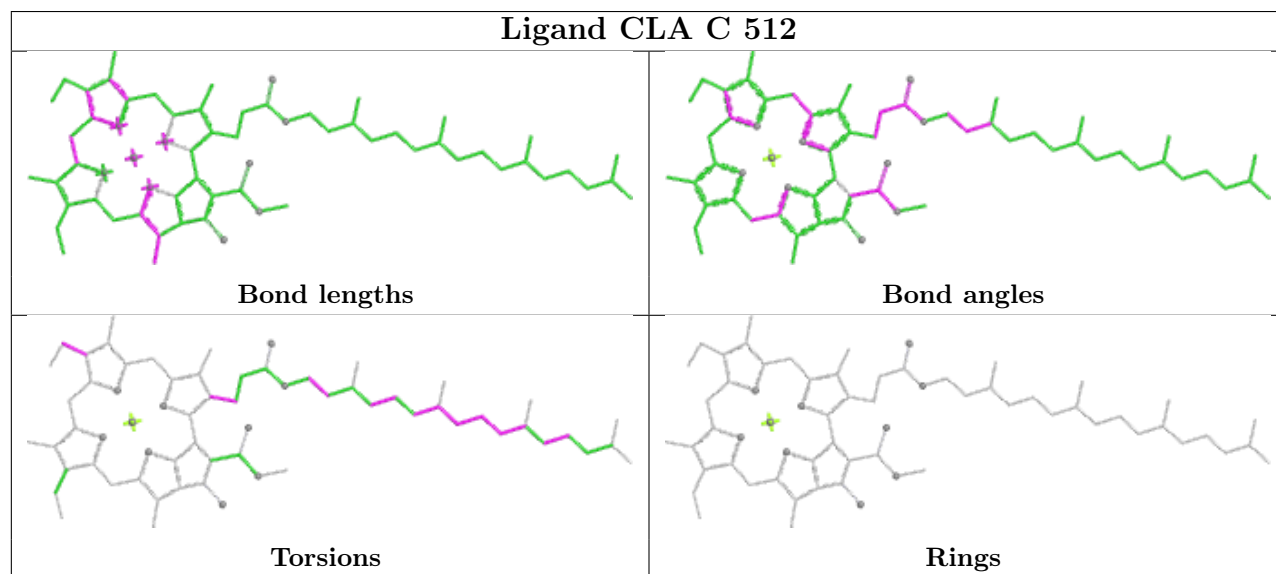
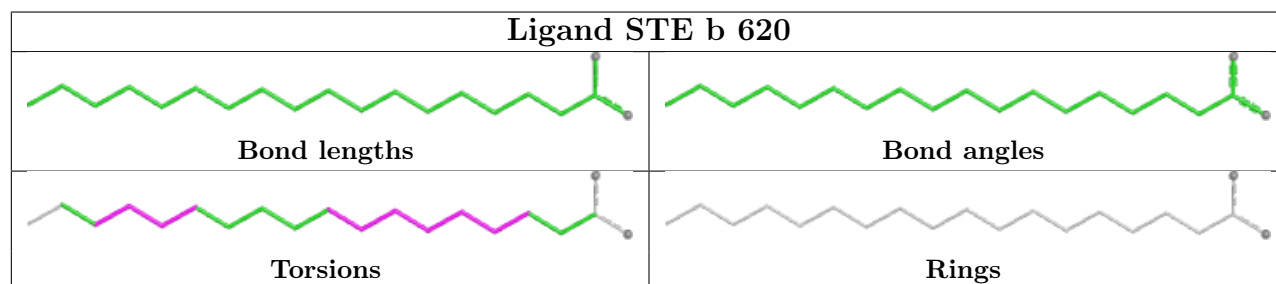
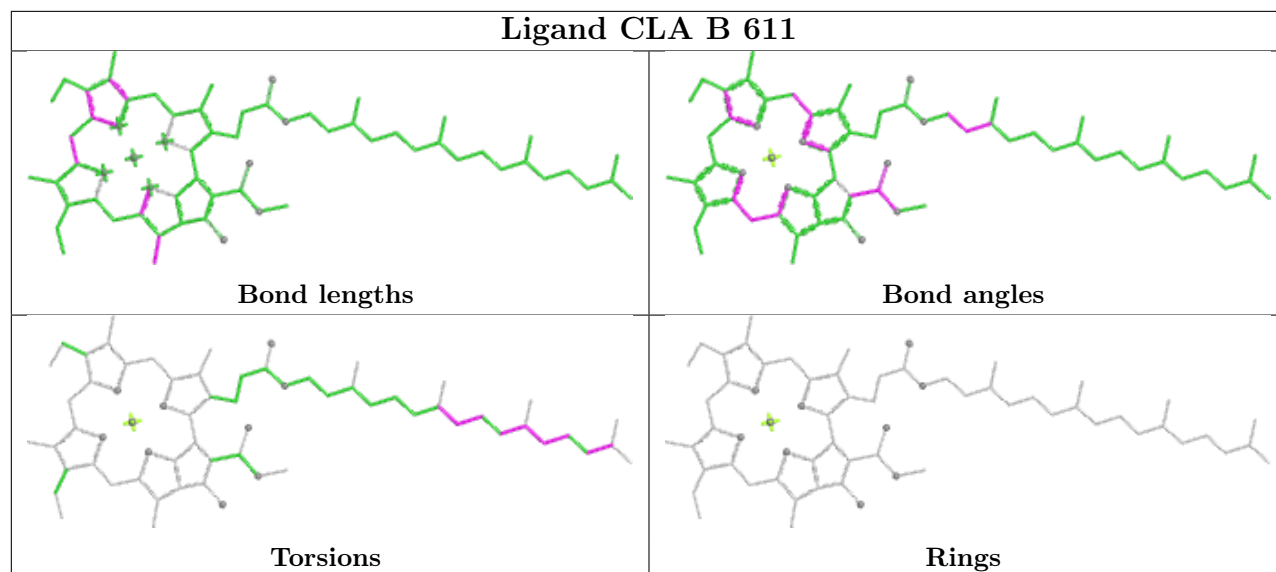
| Ligand CLA c 505                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

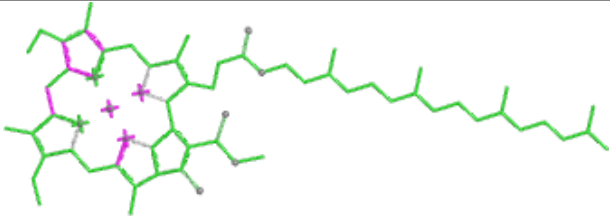
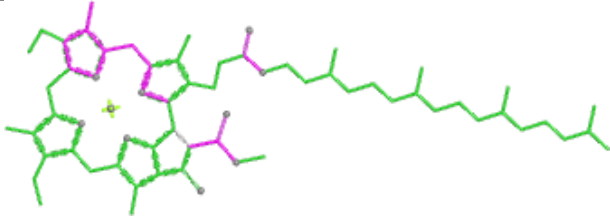
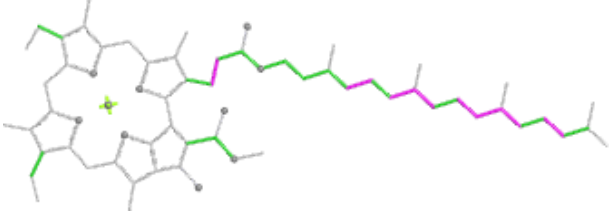
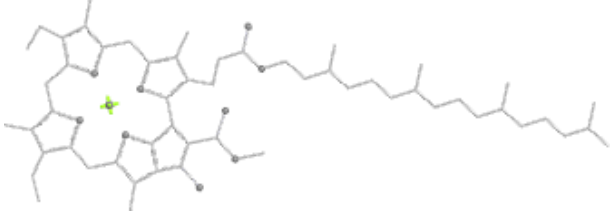
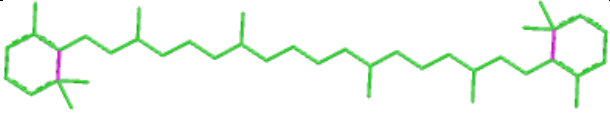
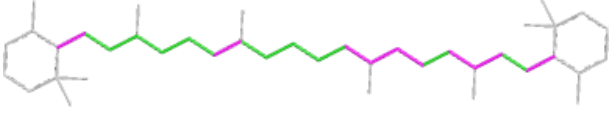
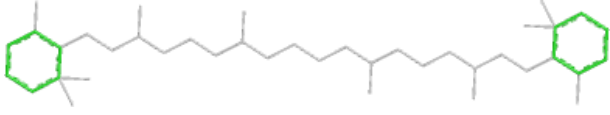
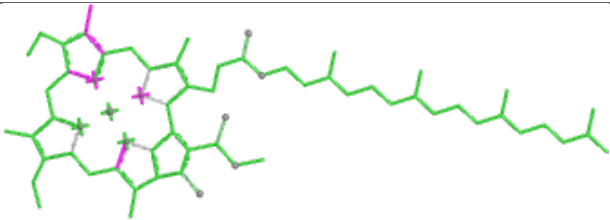
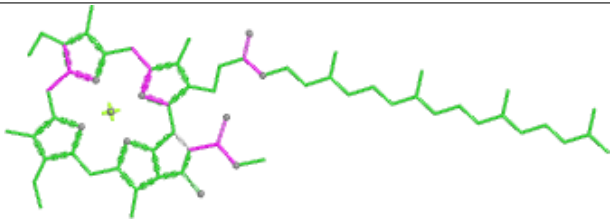
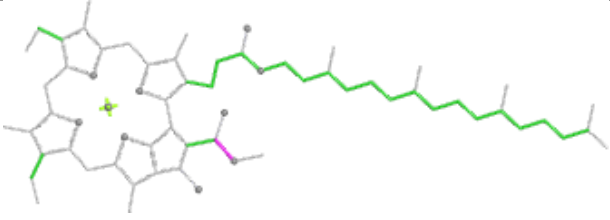
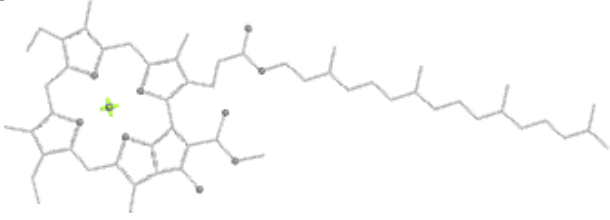
| Ligand BCR T 101                                                                   |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                       | Bond angles                                                                         |
|  |  |
| Torsions                                                                           | Rings                                                                               |

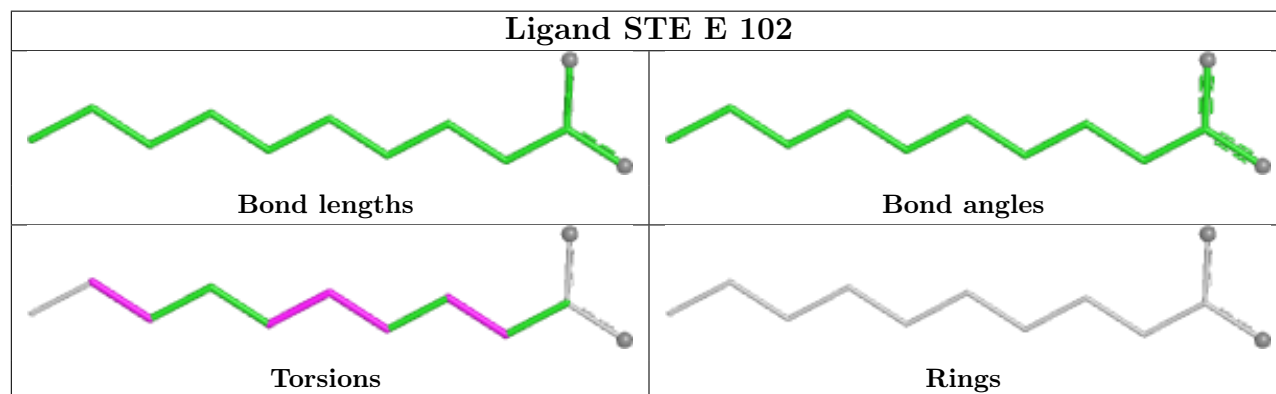
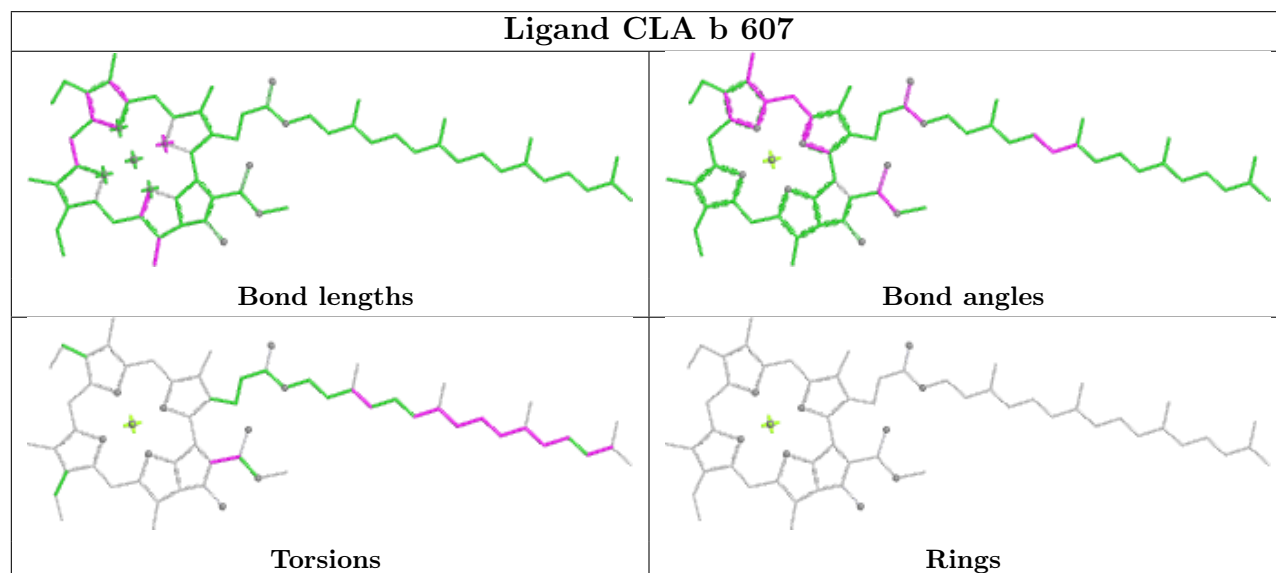
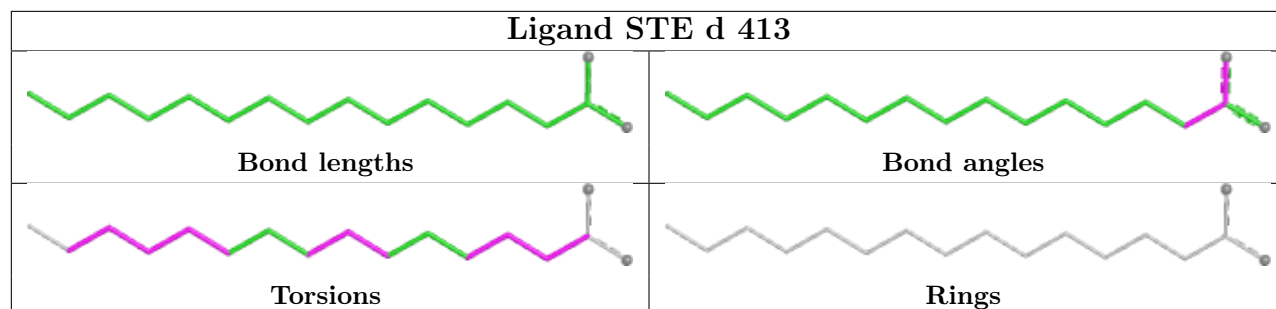
| Ligand LMG A 612                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |



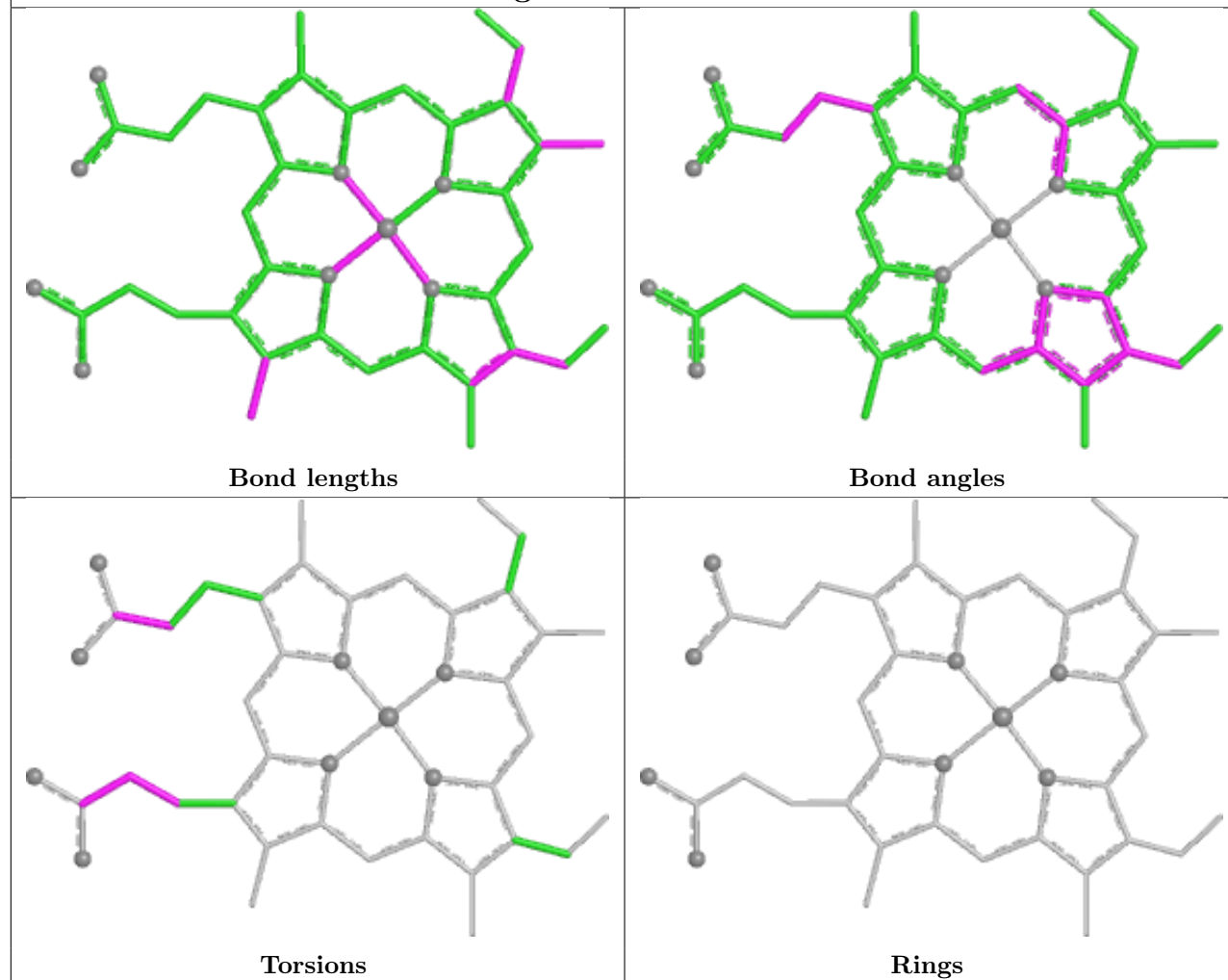




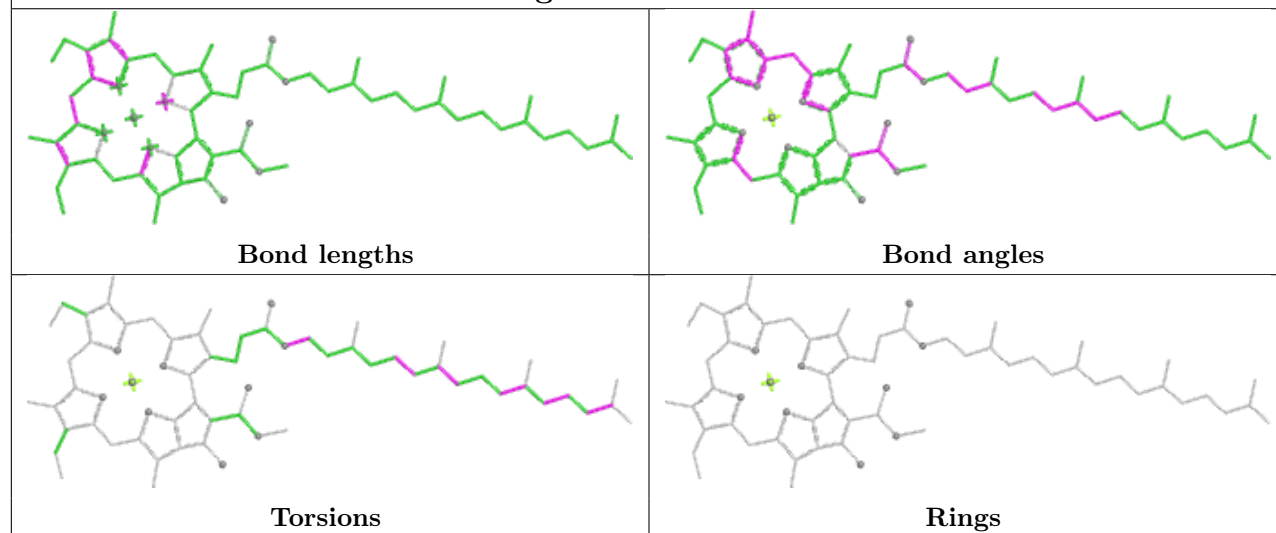
| Ligand CLA b 606                                                                                        |                                                                                                         |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  <p>Bond lengths</p>   |  <p>Bond angles</p>   |
|  <p>Torsions</p>       |  <p>Rings</p>         |
| Ligand BCR K 102                                                                                        |                                                                                                         |
|  <p>Bond lengths</p>   |  <p>Bond angles</p>   |
|  <p>Torsions</p>      |  <p>Rings</p>        |
| Ligand CLA a 612                                                                                        |                                                                                                         |
|  <p>Bond lengths</p> |  <p>Bond angles</p> |
|  <p>Torsions</p>     |  <p>Rings</p>       |

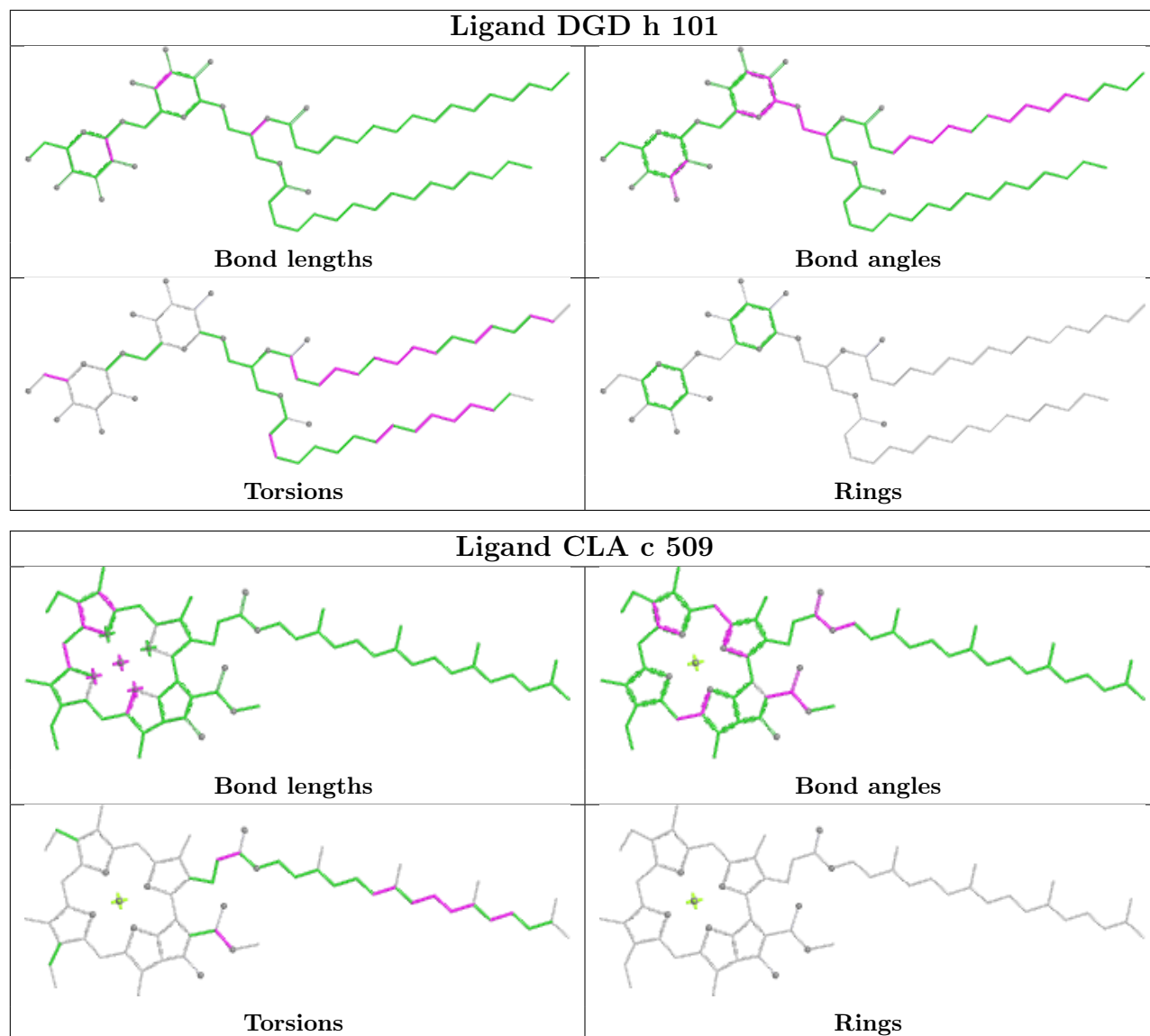


## Ligand HEM f 101

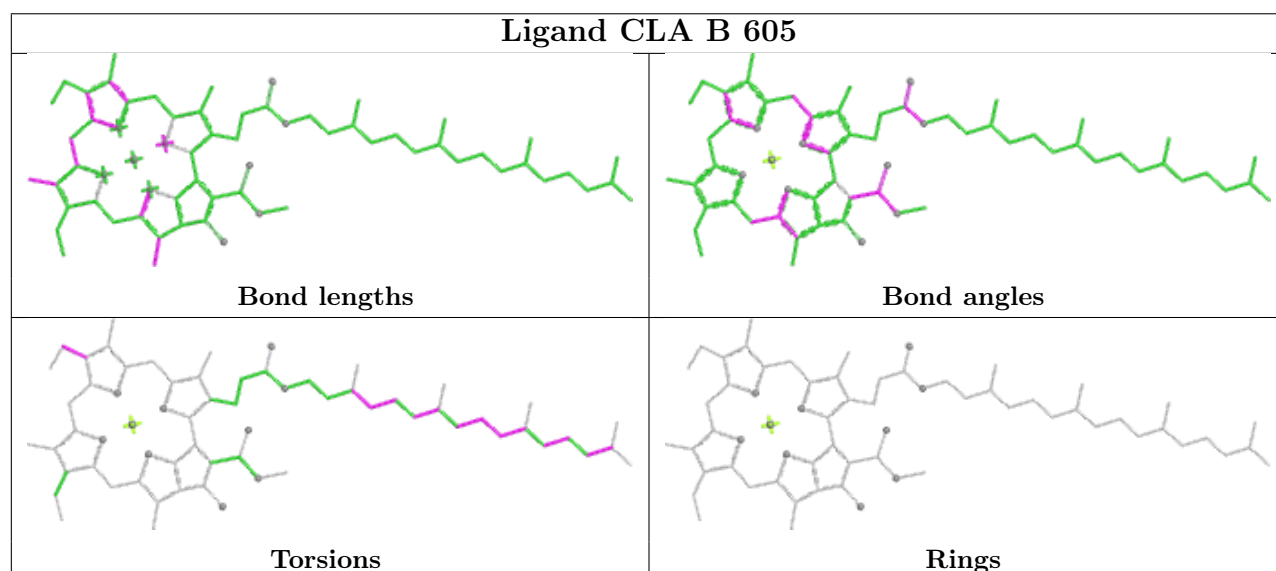
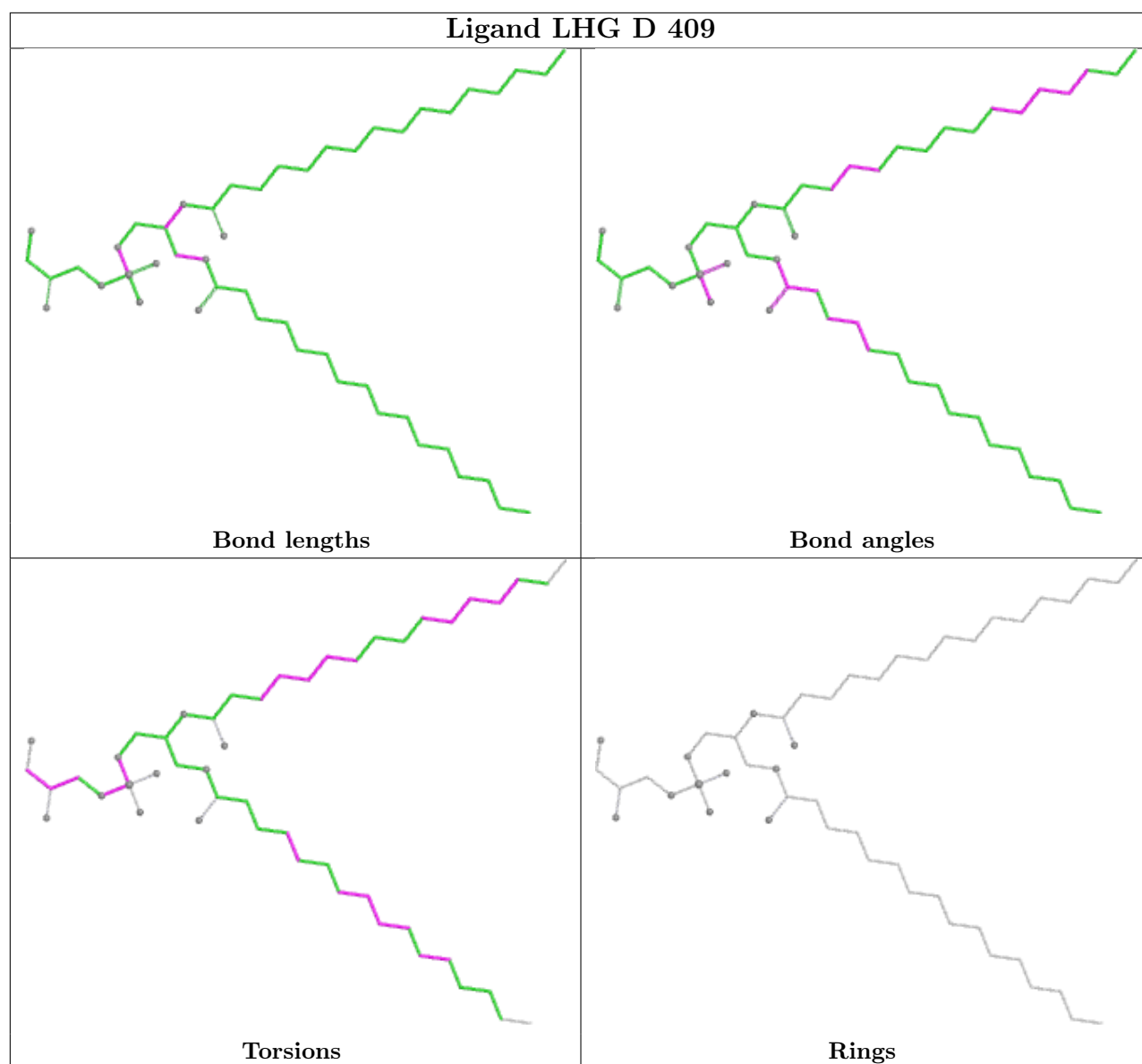


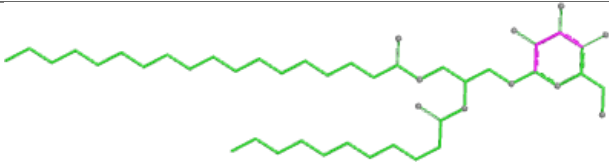
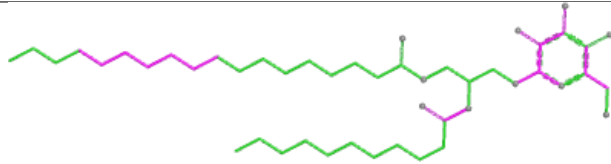
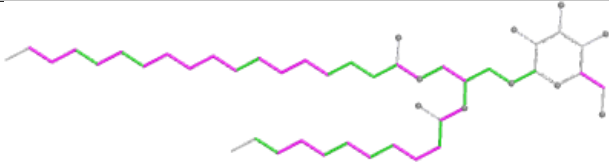
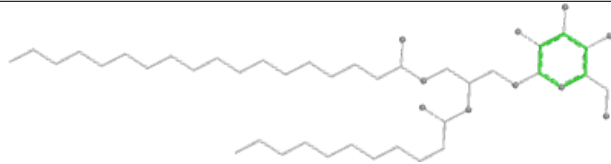
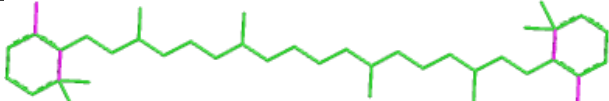
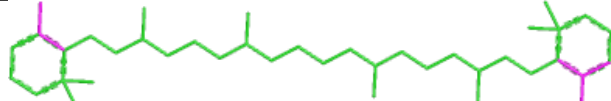
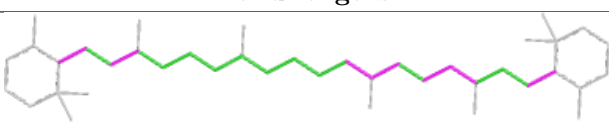
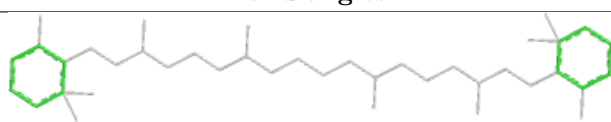
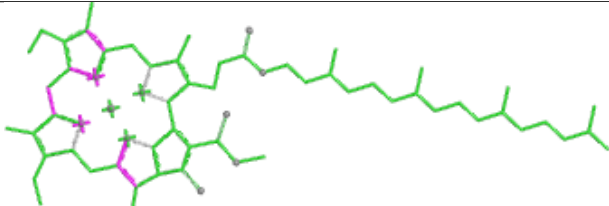
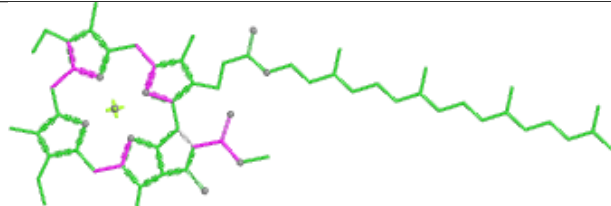
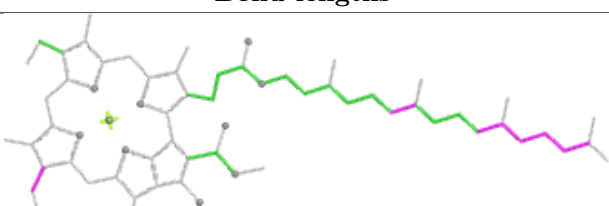
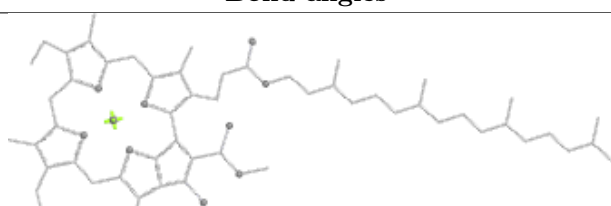
## Ligand CLA b 608



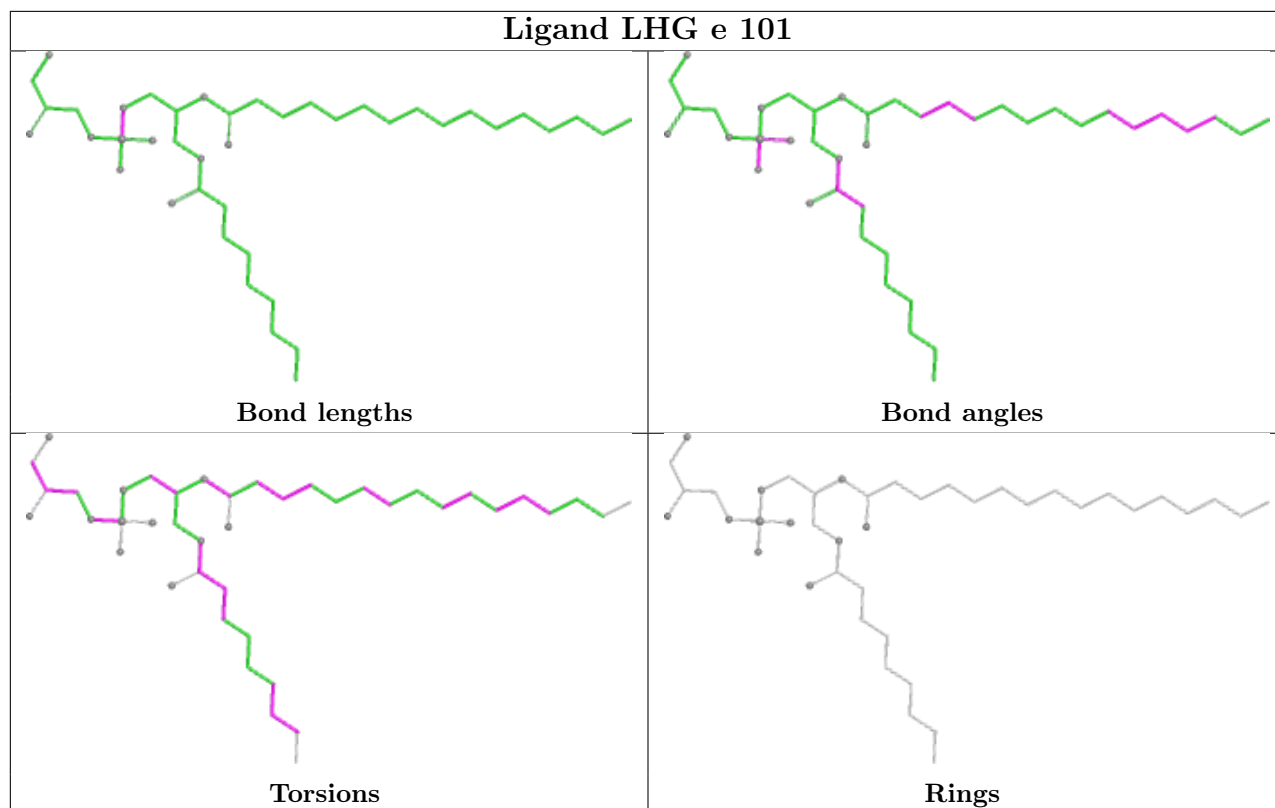




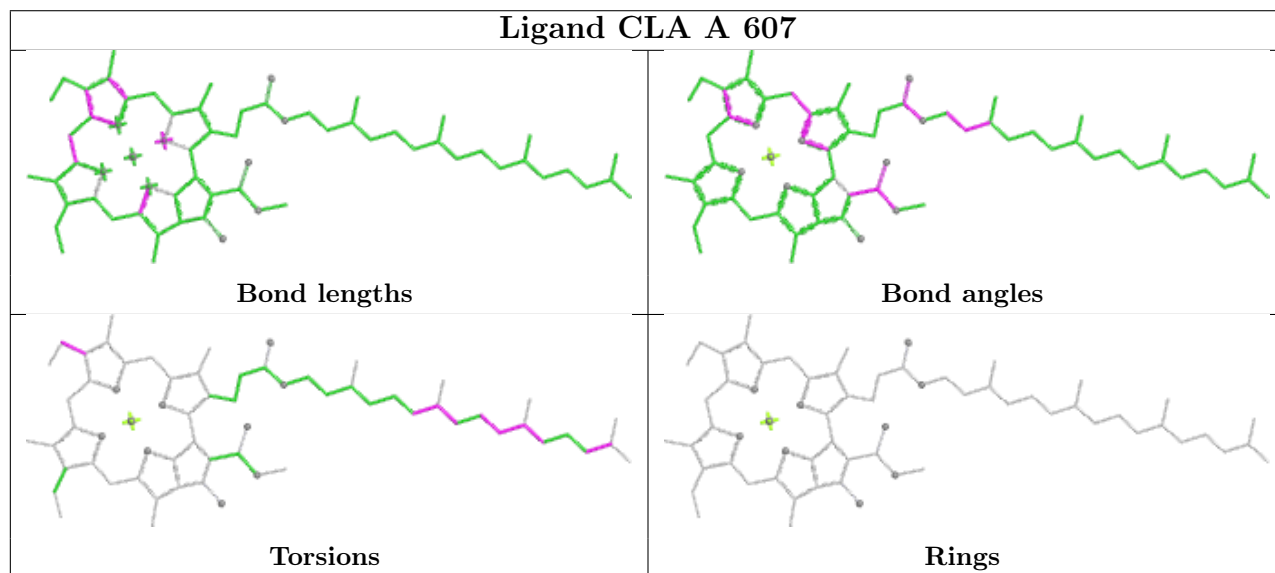


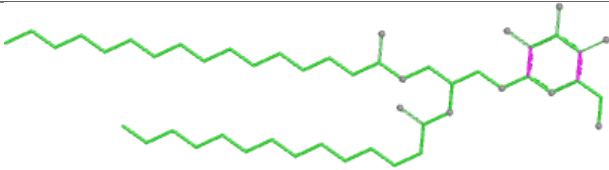
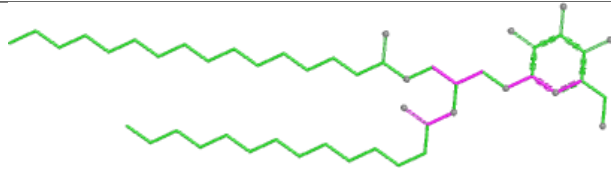
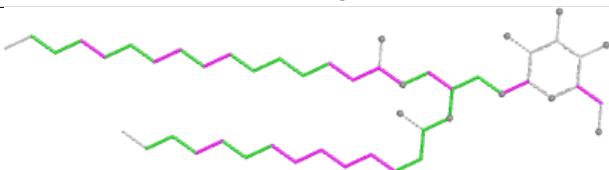
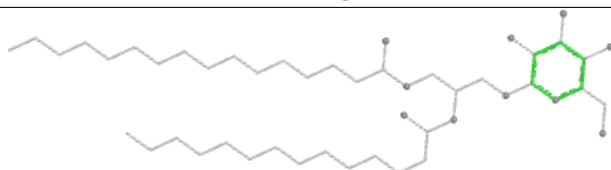
| Ligand LMG c 522                                                                                        |                                                                                                         |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  <p>Bond lengths</p>   |  <p>Bond angles</p>   |
|  <p>Torsions</p>       |  <p>Rings</p>         |
| Ligand BCR k 101                                                                                        |                                                                                                         |
|  <p>Bond lengths</p>   |  <p>Bond angles</p>   |
|  <p>Torsions</p>       |  <p>Rings</p>         |
| Ligand CLA D 403                                                                                        |                                                                                                         |
|  <p>Bond lengths</p> |  <p>Bond angles</p> |
|  <p>Torsions</p>     |  <p>Rings</p>       |

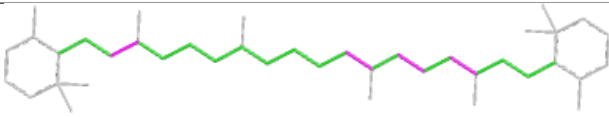
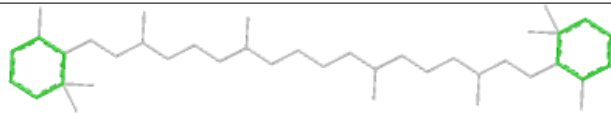
## Ligand LHG e 101

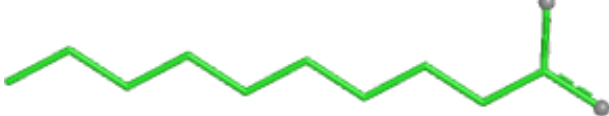
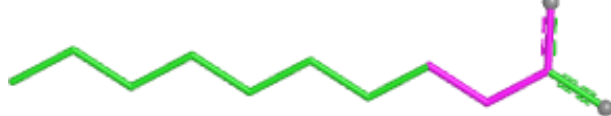
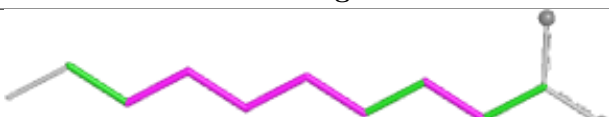
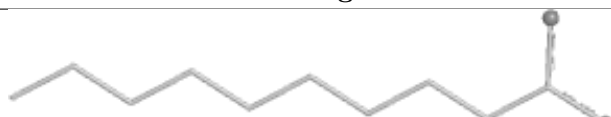


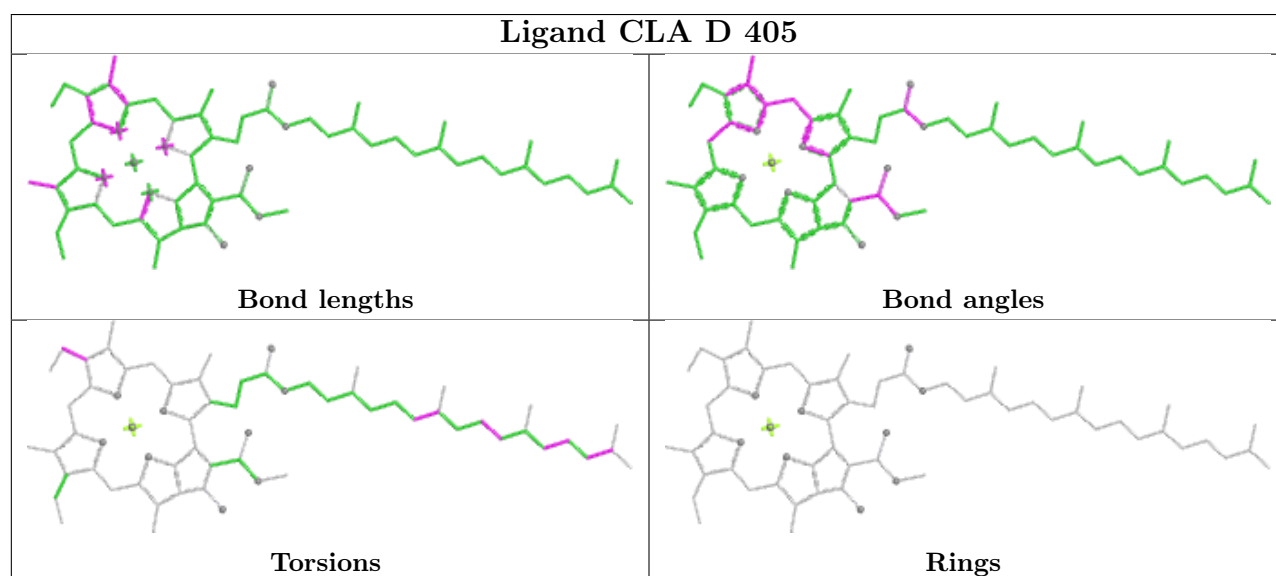
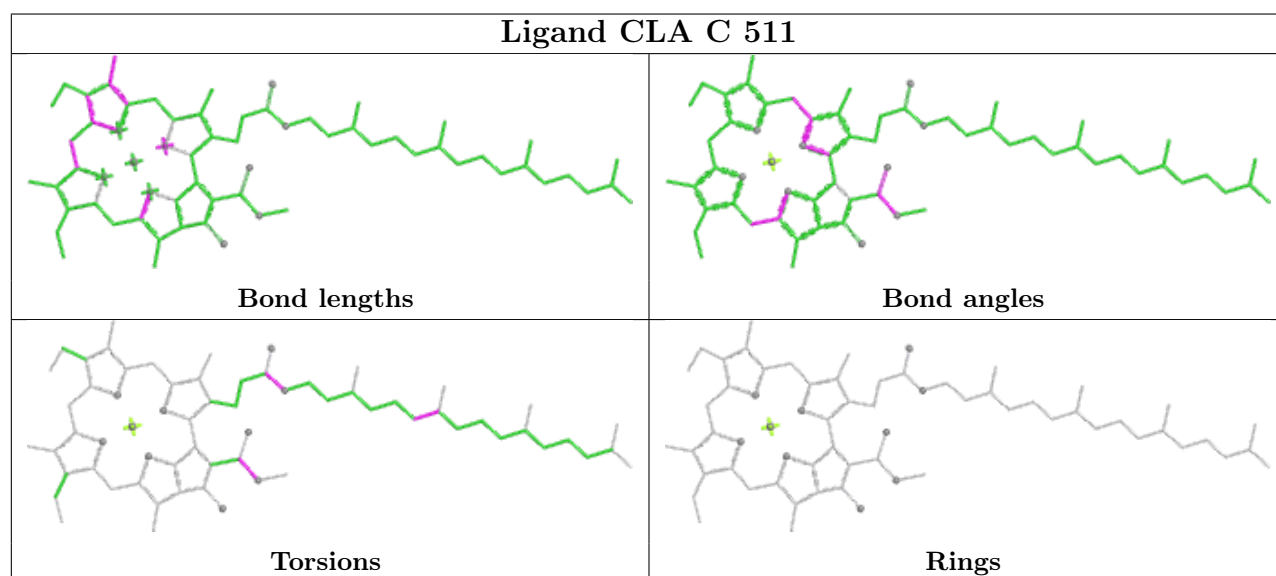
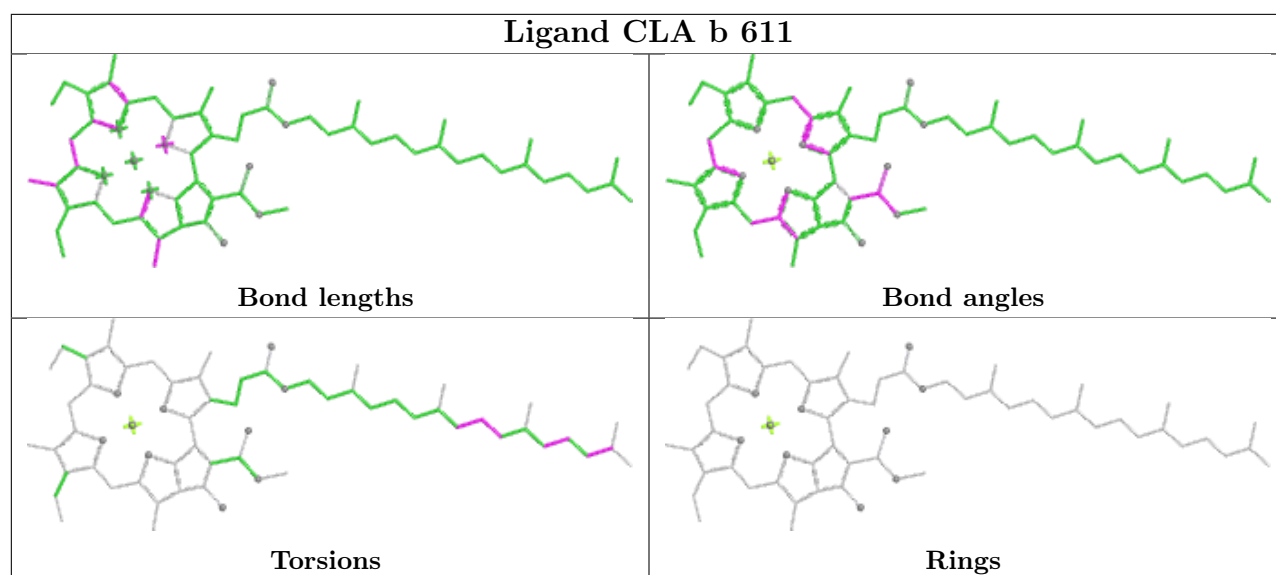
## Ligand CLA A 607

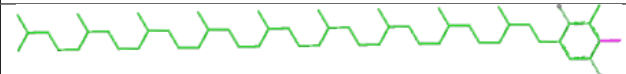
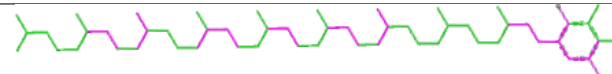
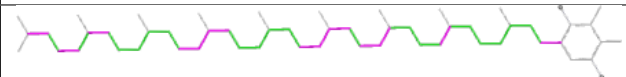


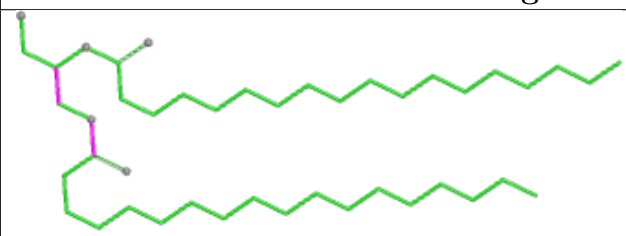
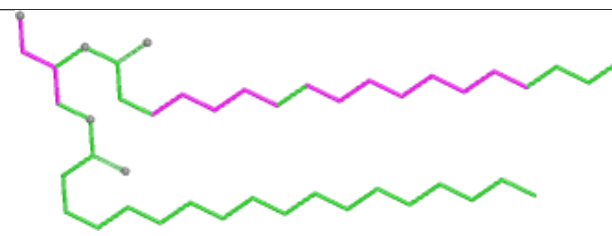
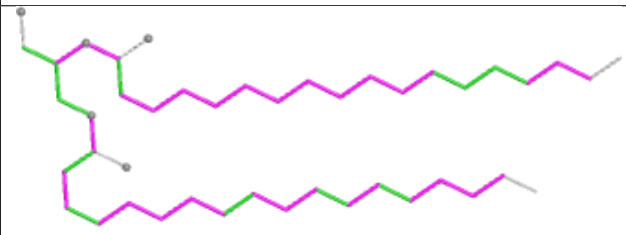
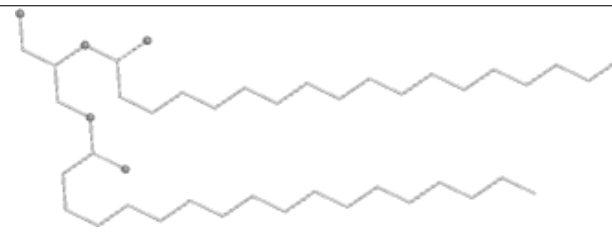
| Ligand LMG c 524                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

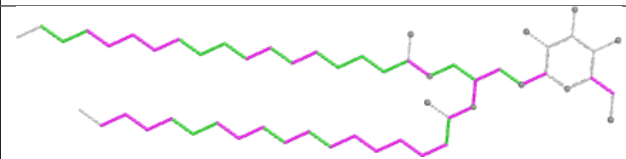
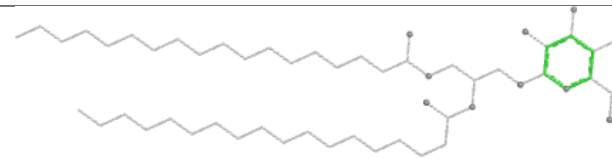
| Ligand BCR c 515                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

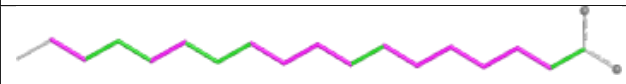
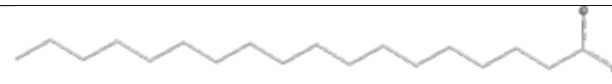
| Ligand STE C 520                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |



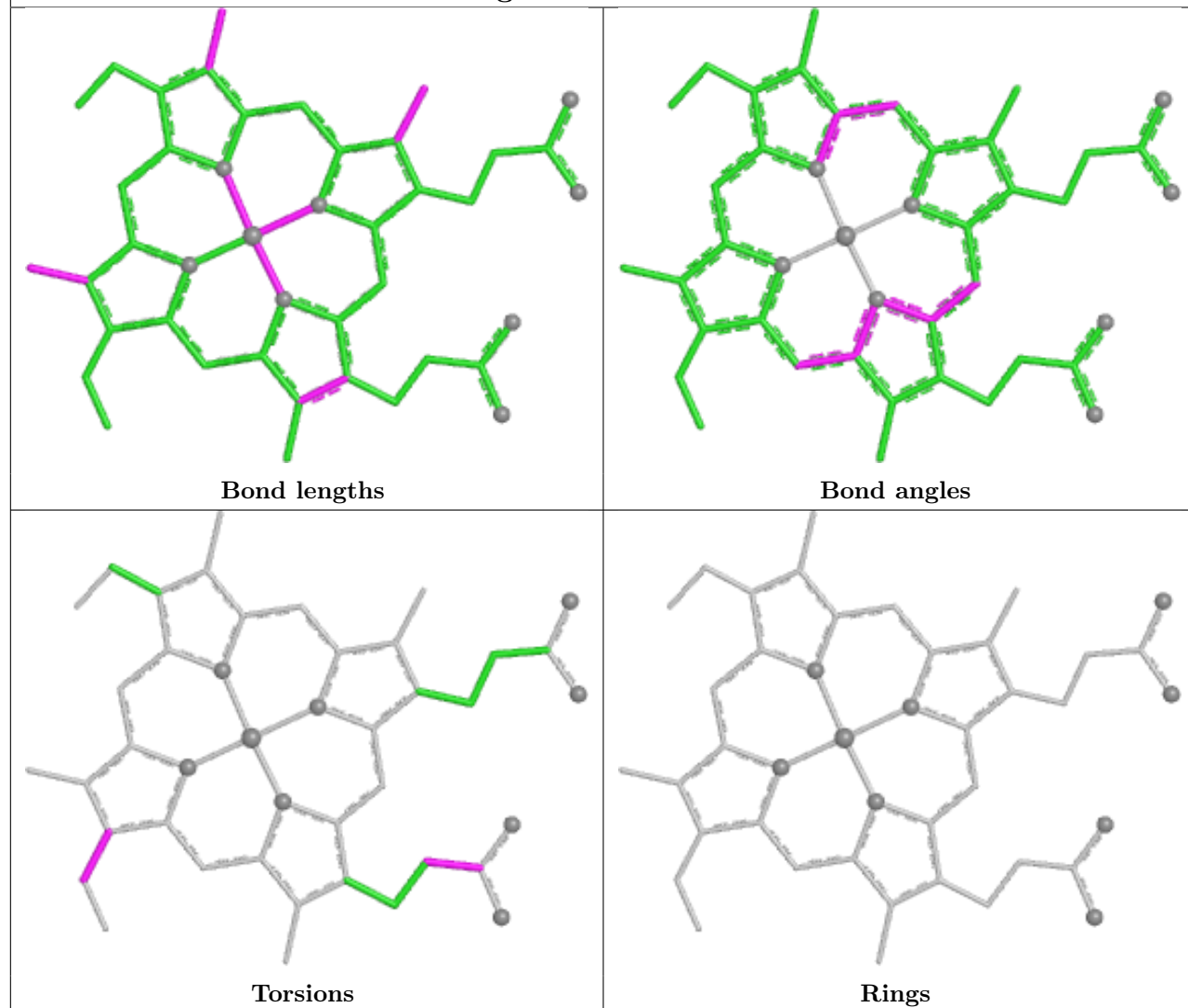
| Ligand PL9 a 611                                                                                  |                                                                                                   |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <br>Bond lengths | <br>Bond angles |
| <br>Torsions     | <br>Rings       |

| Ligand DGD a 615                                                                                  |                                                                                                   |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <br>Bond lengths | <br>Bond angles |
| <br>Torsions    | <br>Rings      |

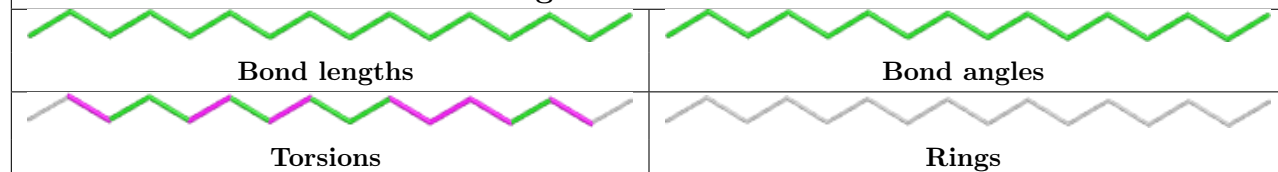
| Ligand LMG b 621                                                                                    |                                                                                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <br>Bond lengths | <br>Bond angles |
| <br>Torsions     | <br>Rings       |

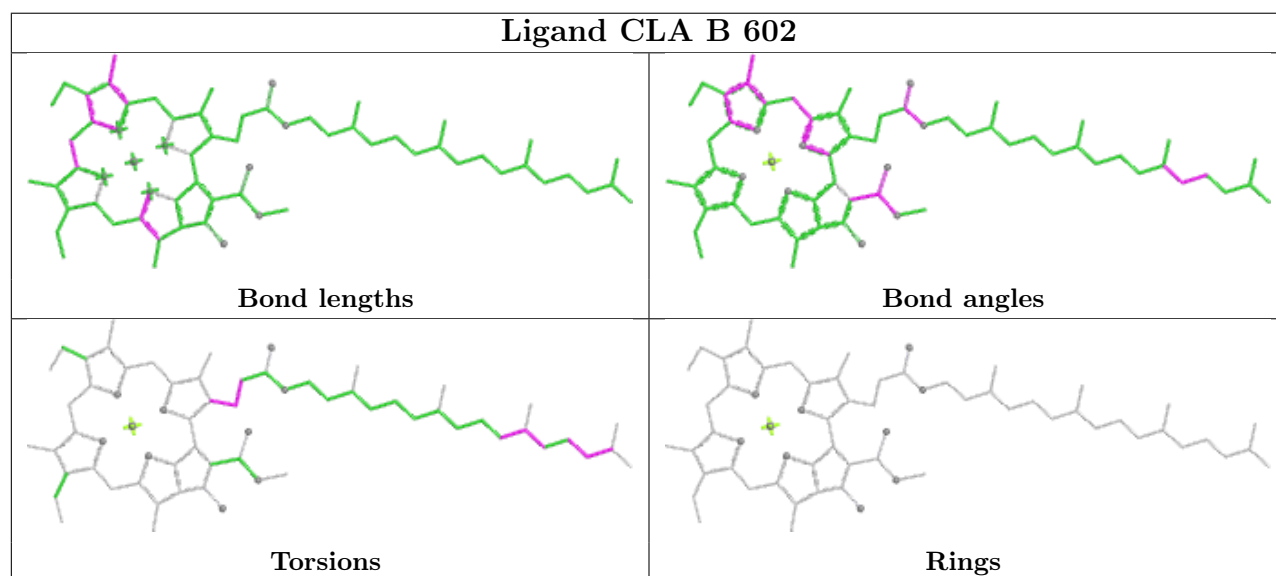
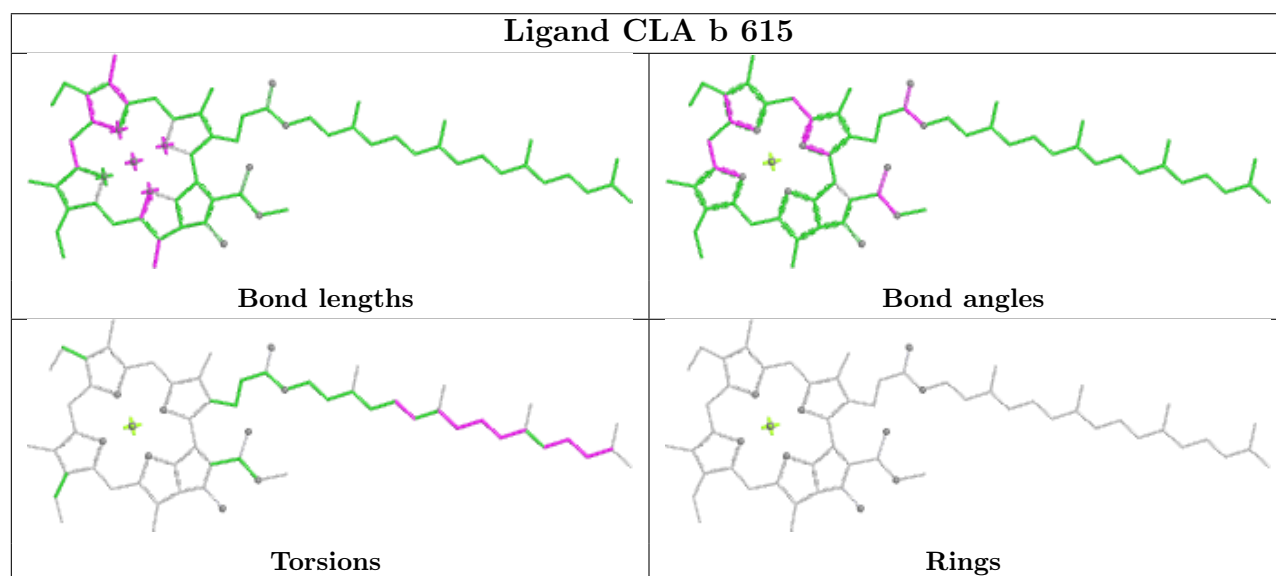
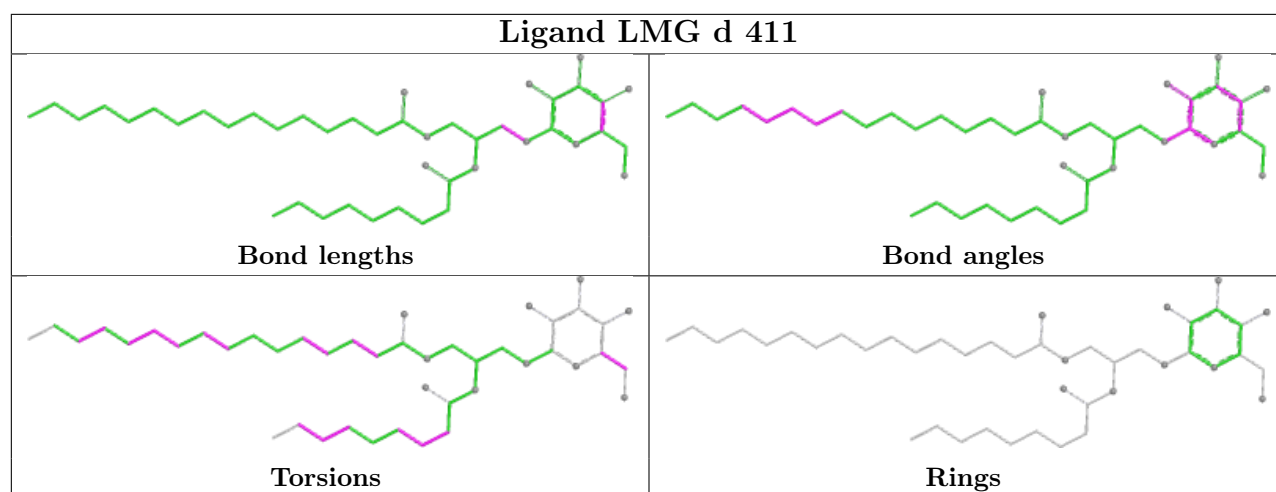
| Ligand STE x 102                                                                                    |                                                                                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <br>Bond lengths | <br>Bond angles |
| <br>Torsions     | <br>Rings       |

## Ligand HEC v 201

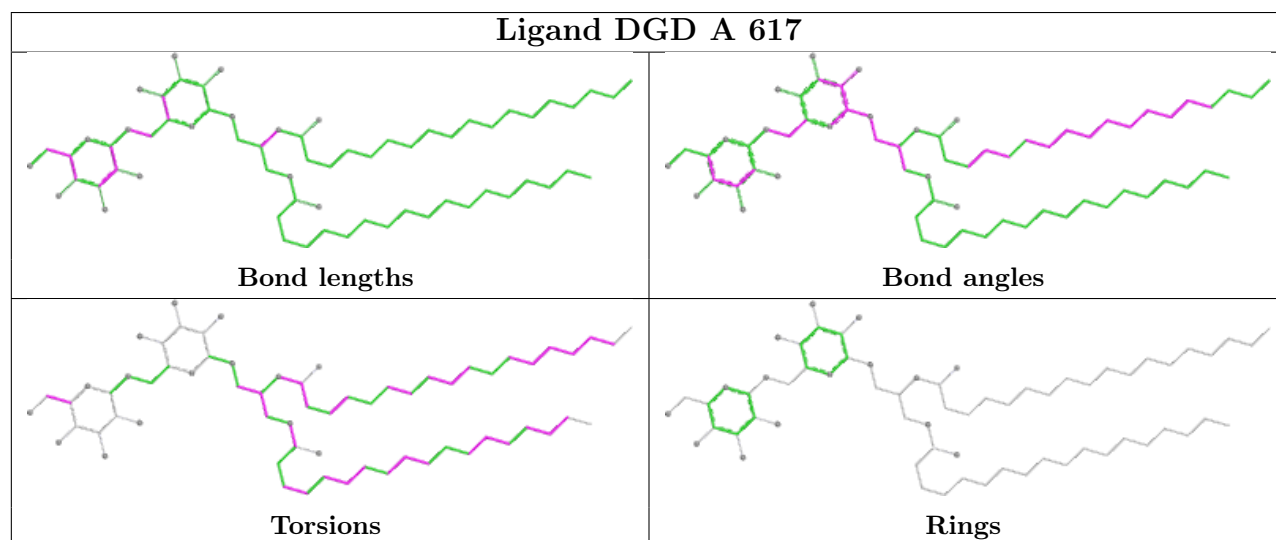
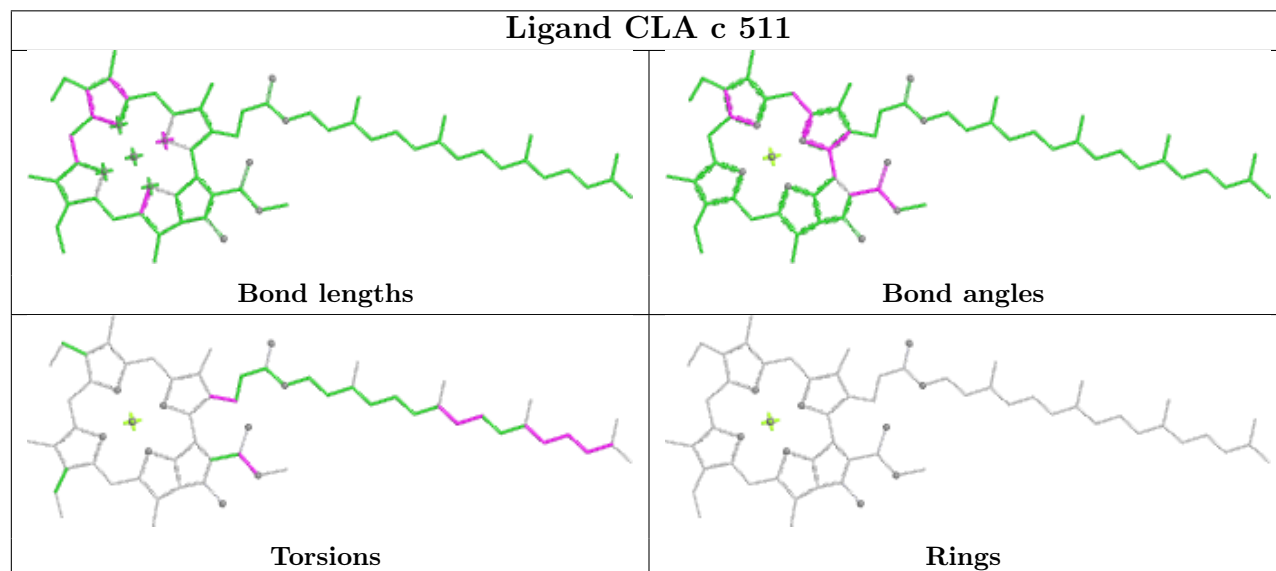
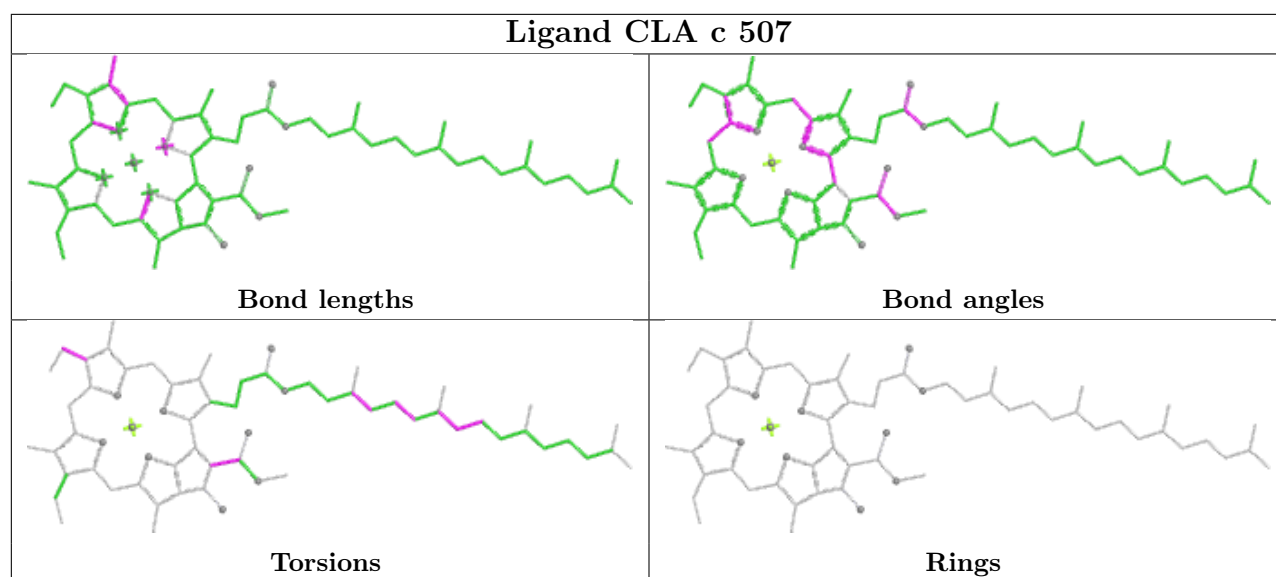


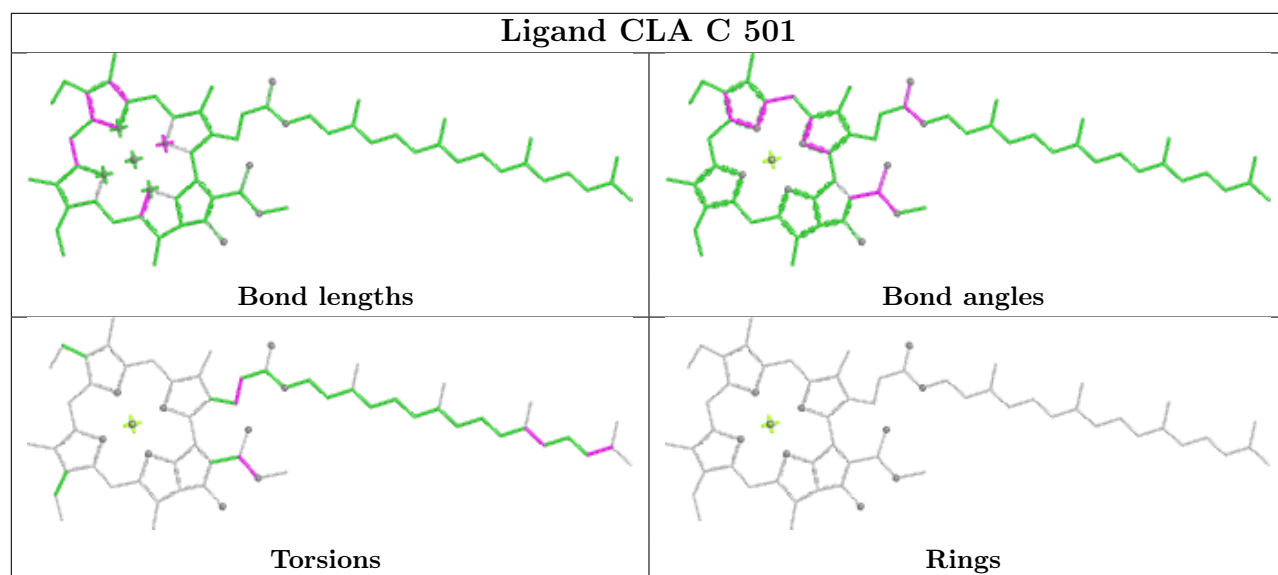
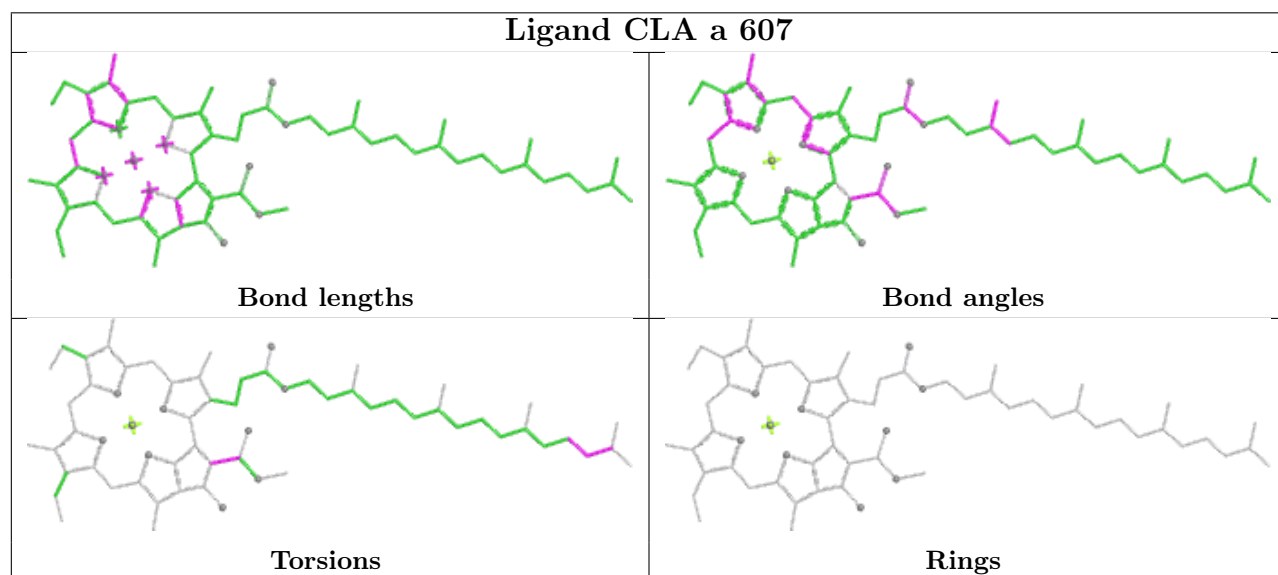
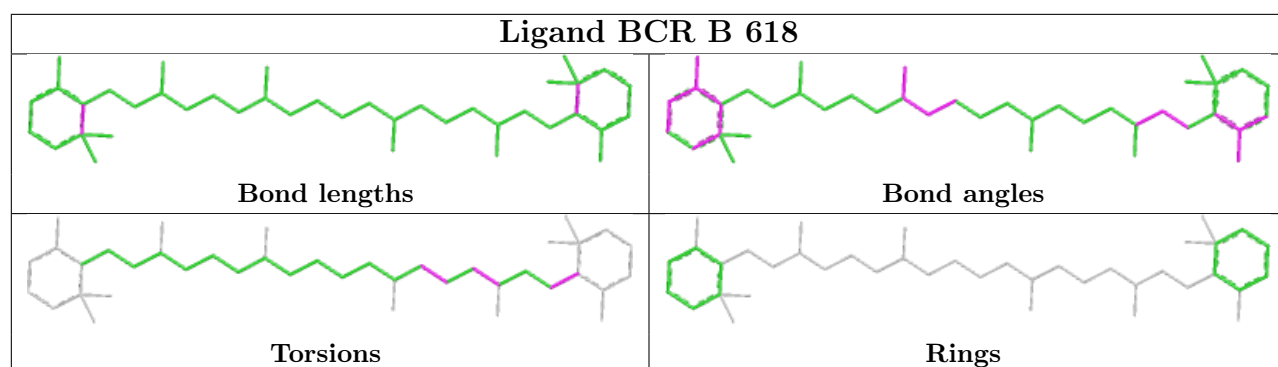
## Ligand STE T 102

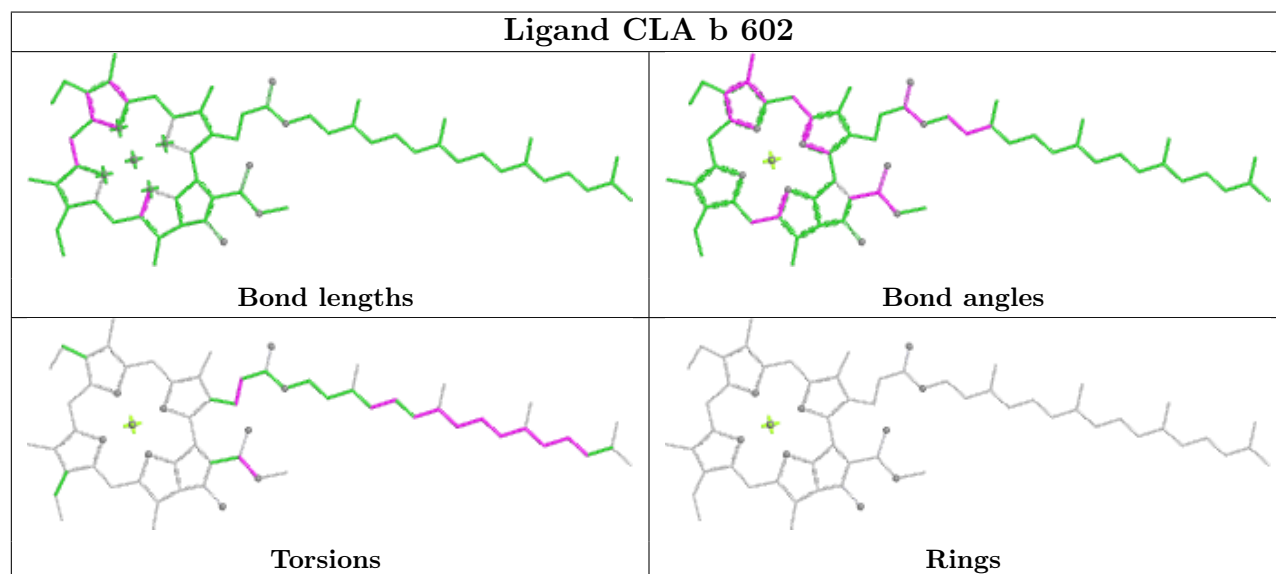
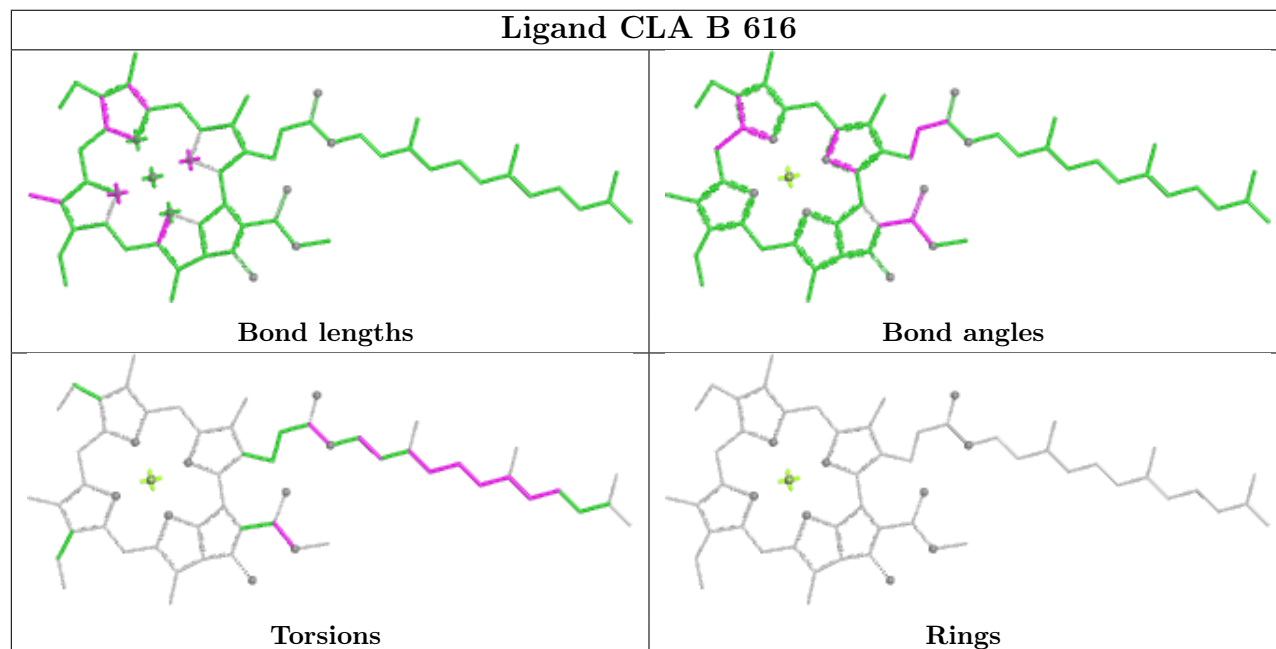
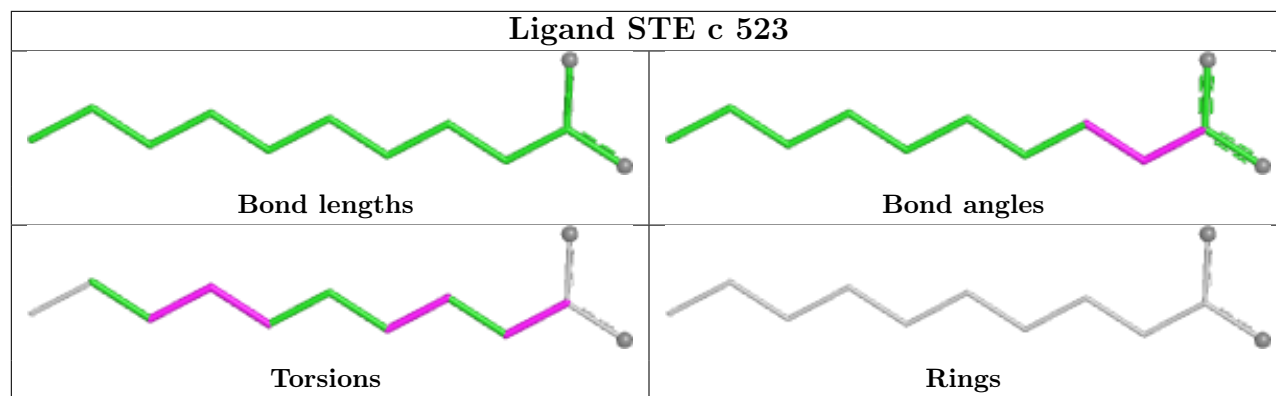


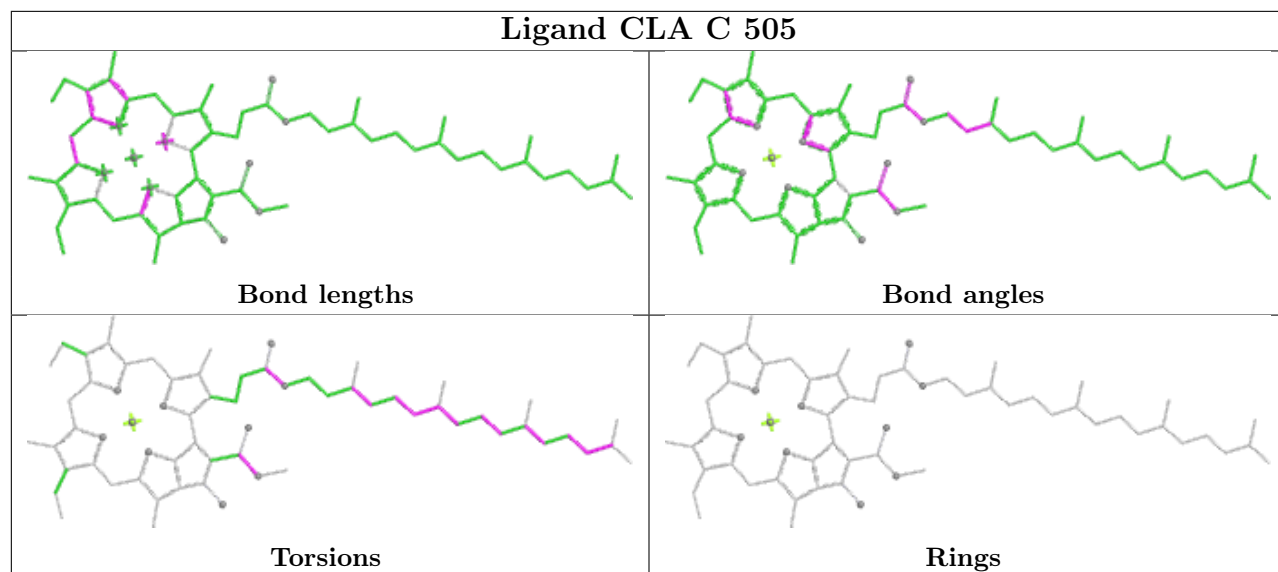
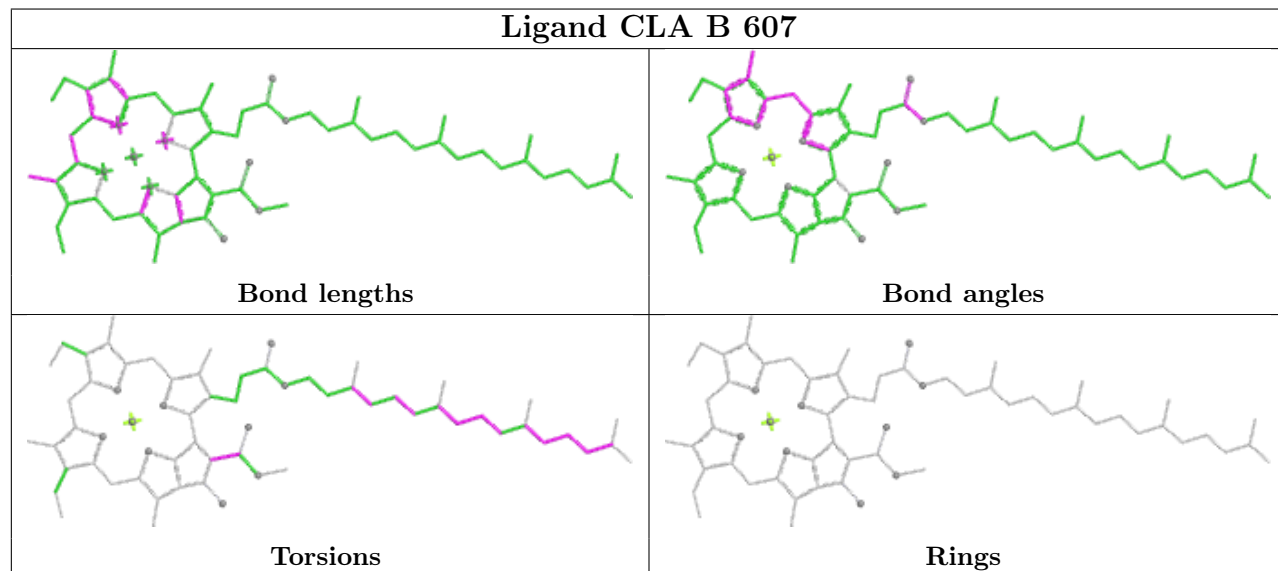




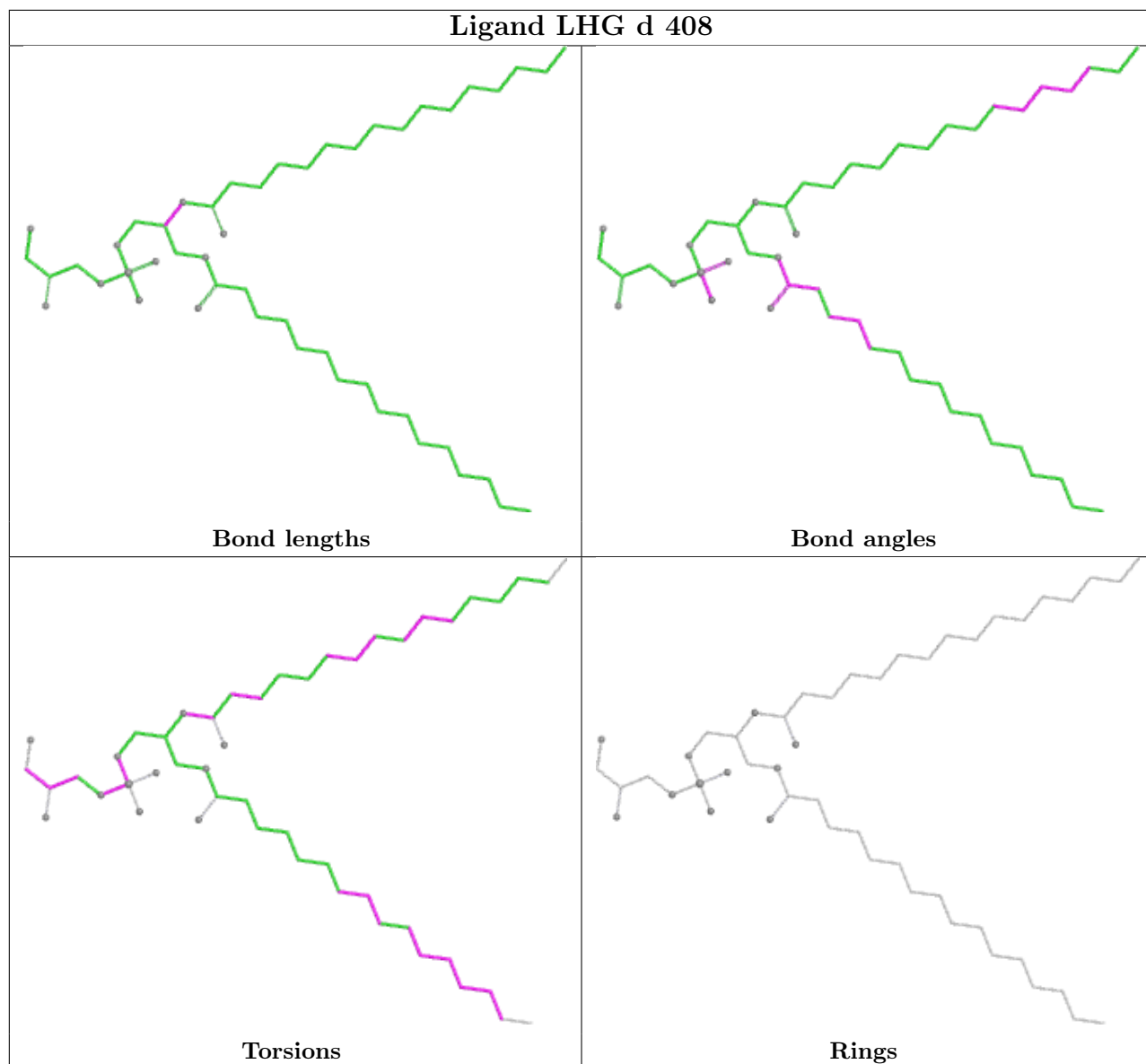




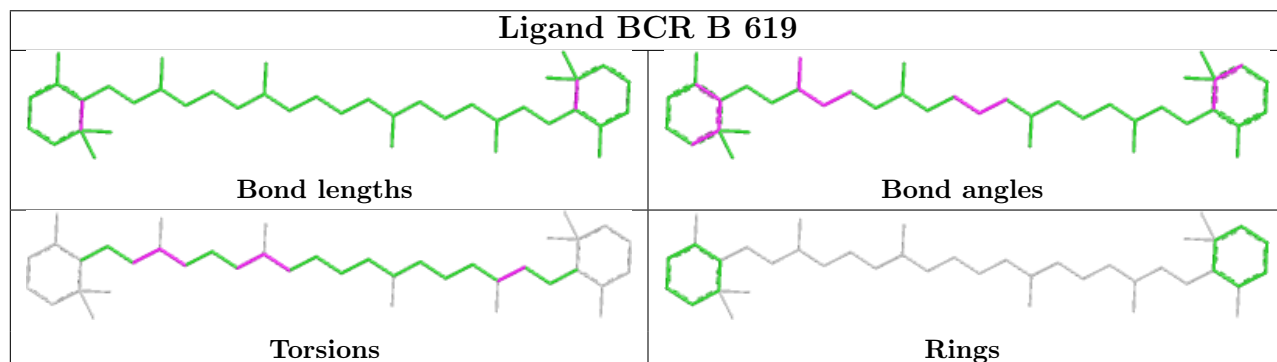


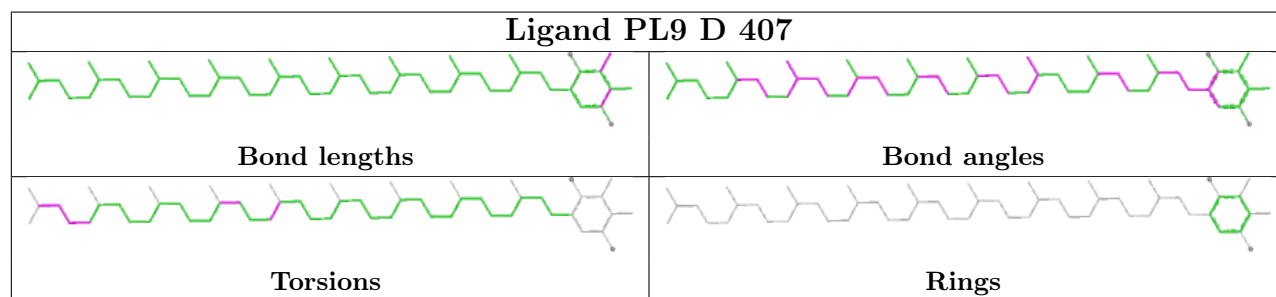
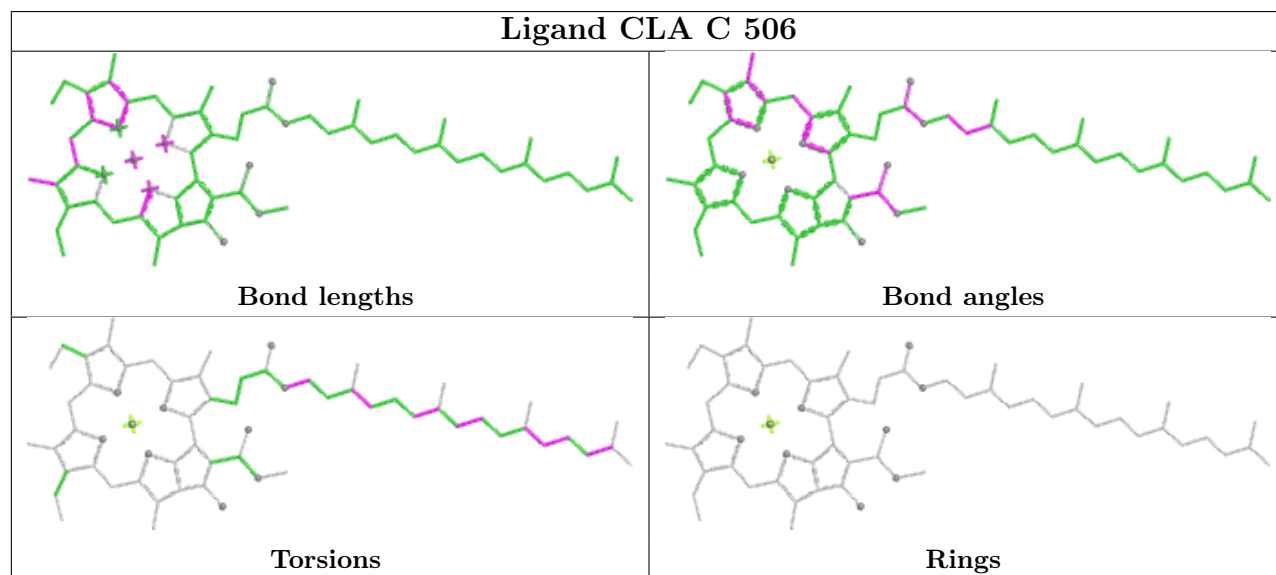
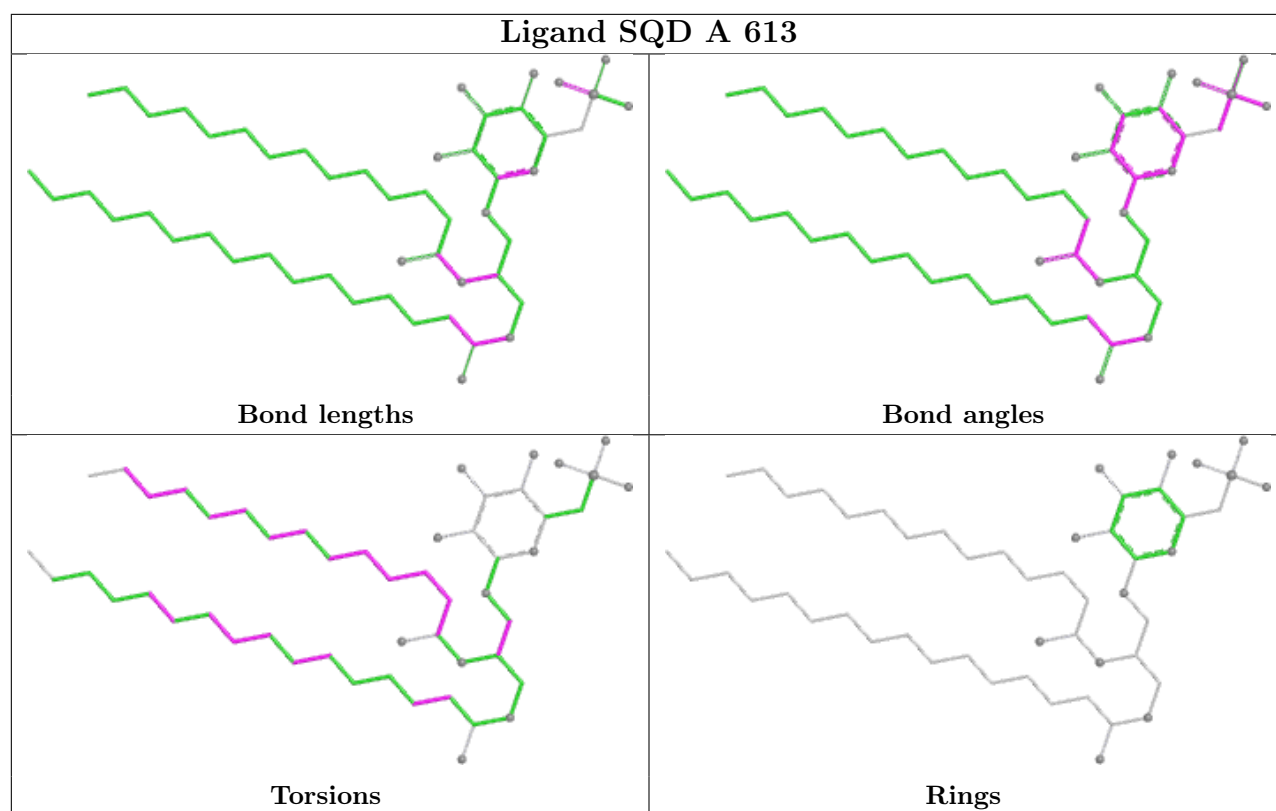
**Ligand CLA C 505****Ligand CLA B 607**

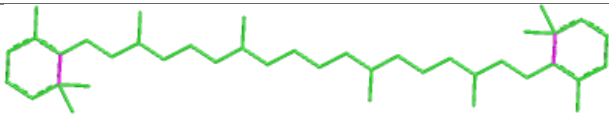
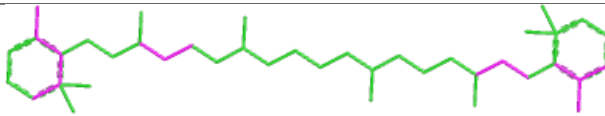
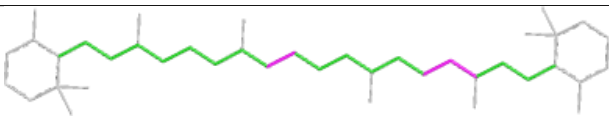
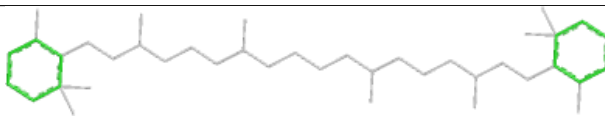
## Ligand LHG d 408

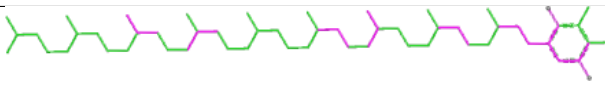
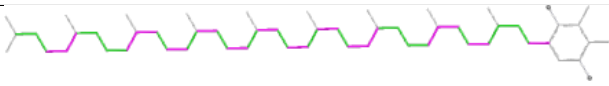
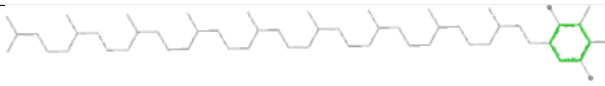


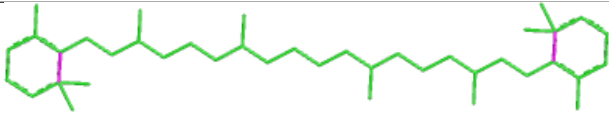
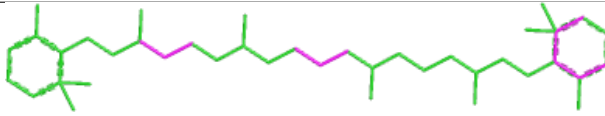
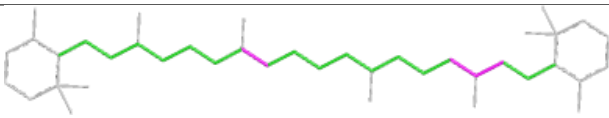
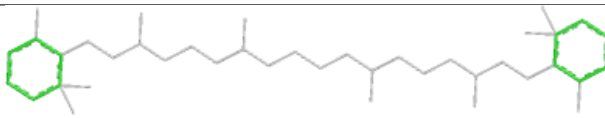
## Ligand BCR B 619

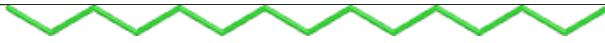




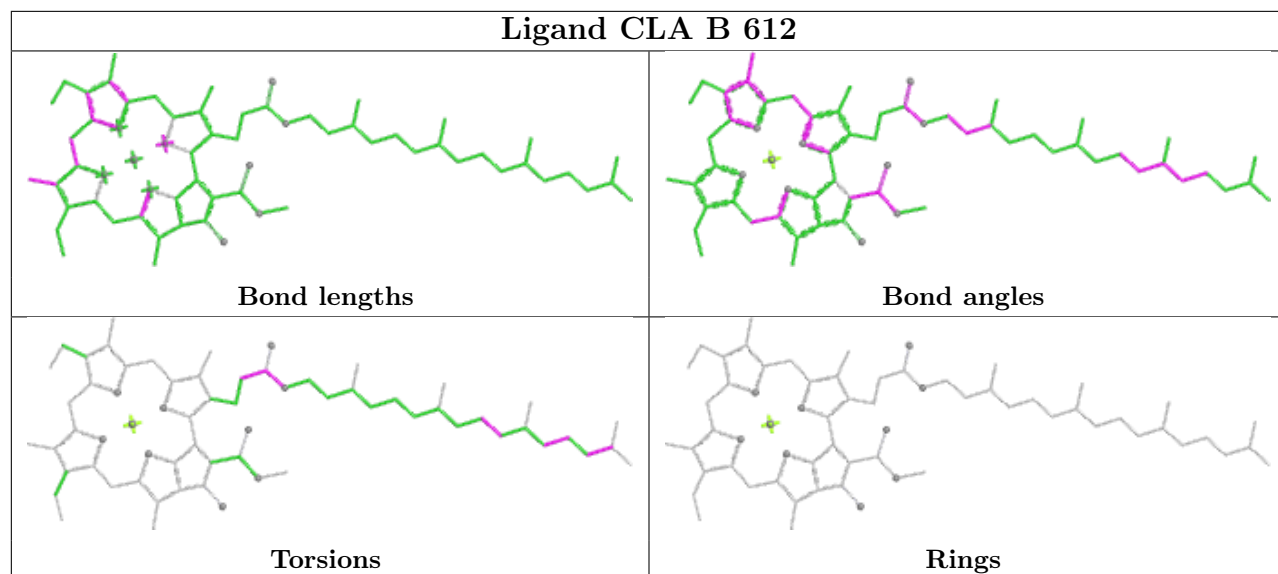
| Ligand BCR c 516                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand PL9 A 611                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

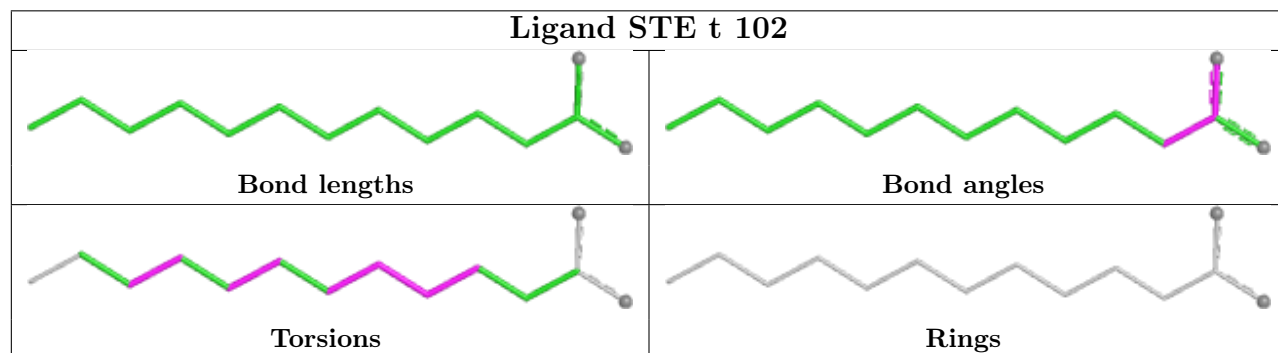
| Ligand BCR b 619                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

| Ligand STE I 101                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

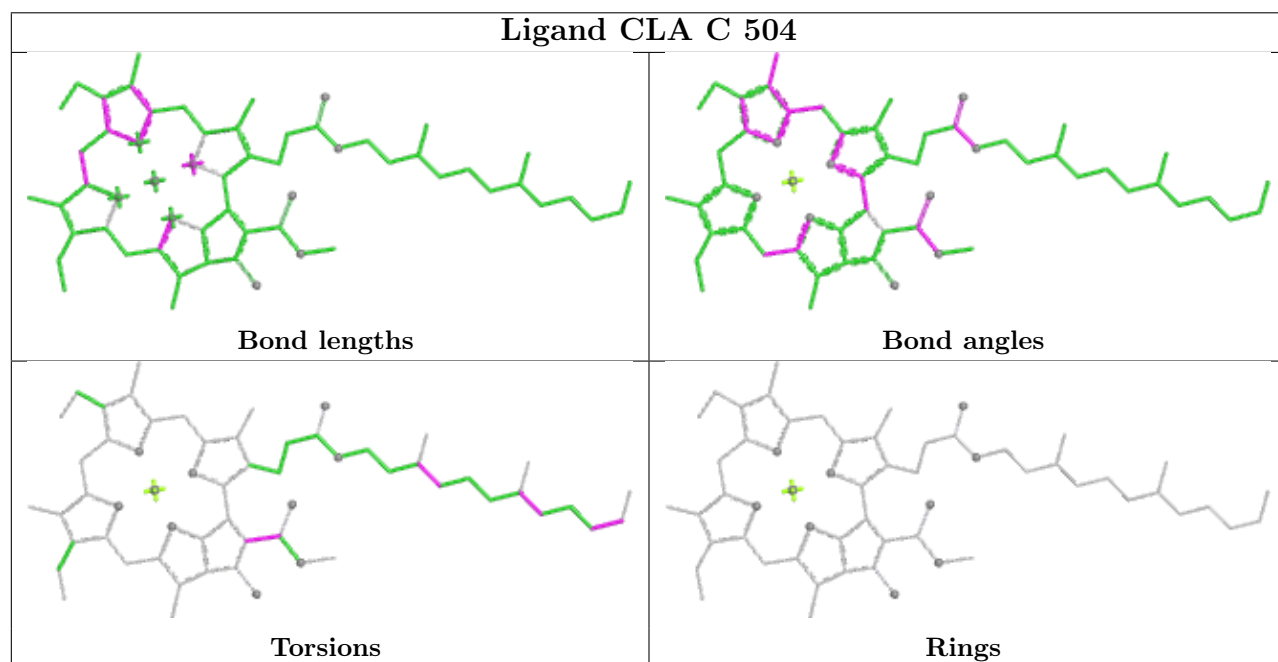
## Ligand CLA B 612



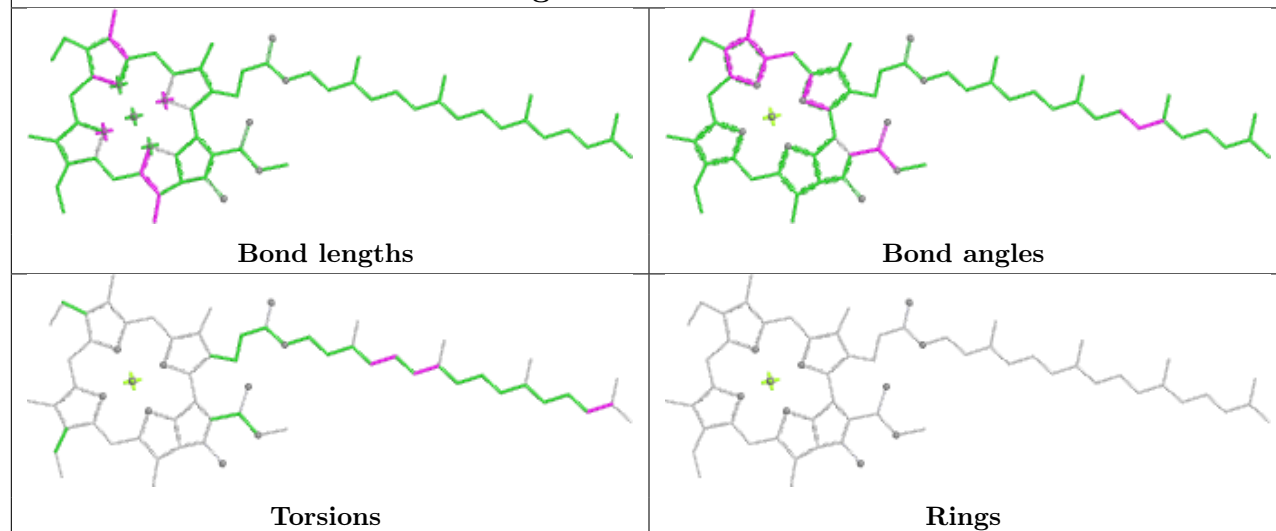
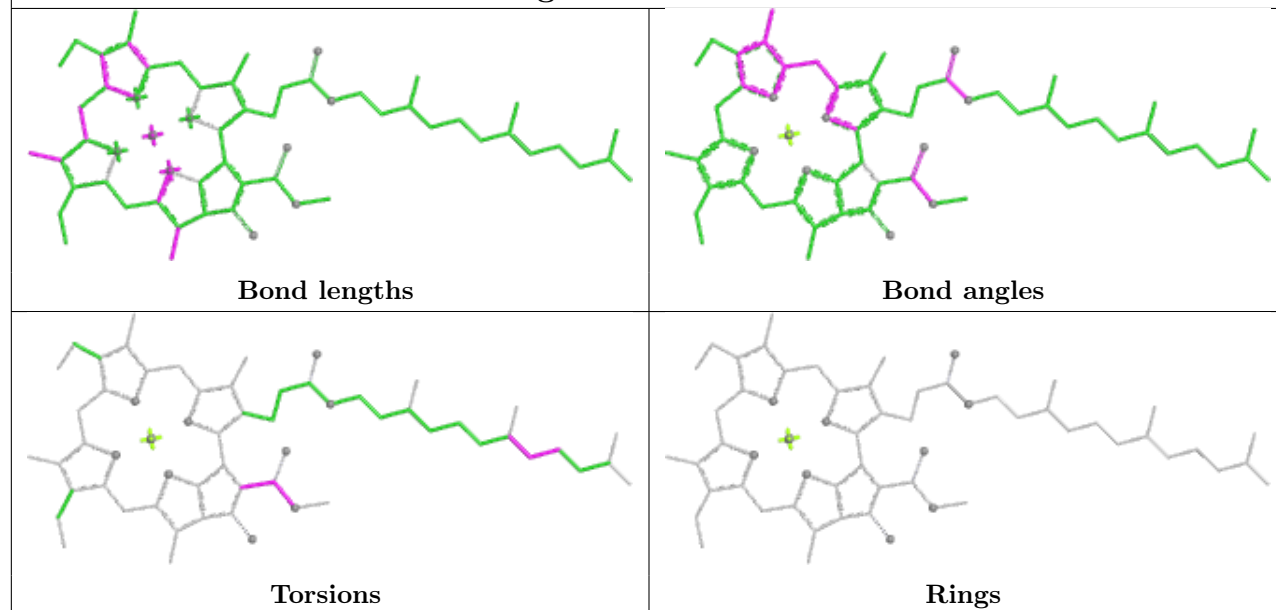
## Ligand STE t 102

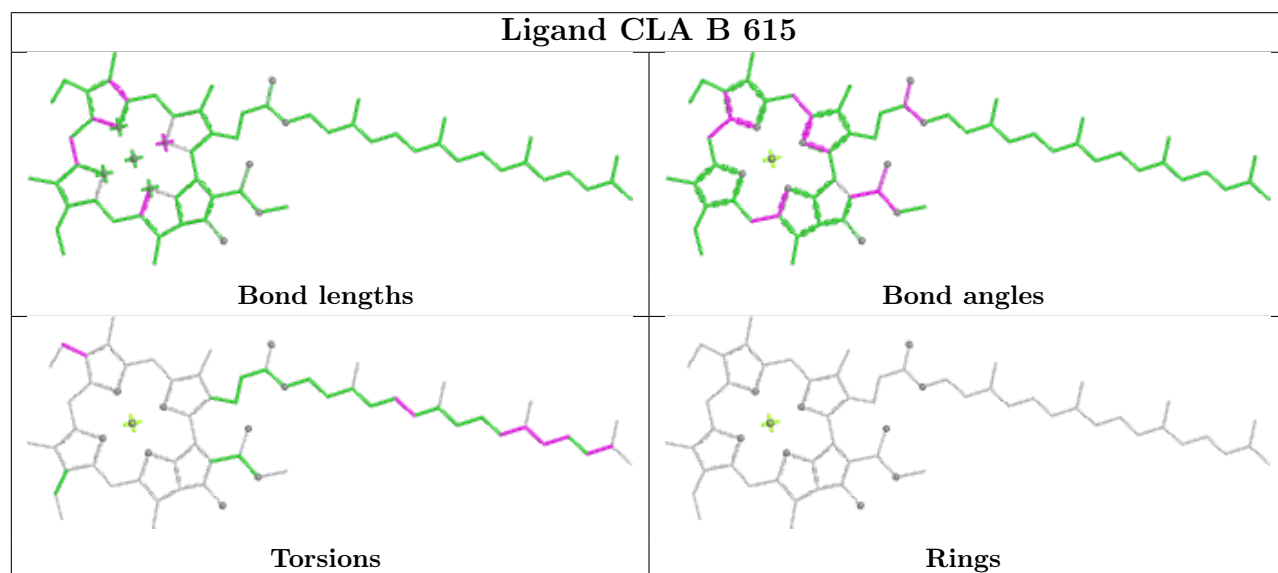
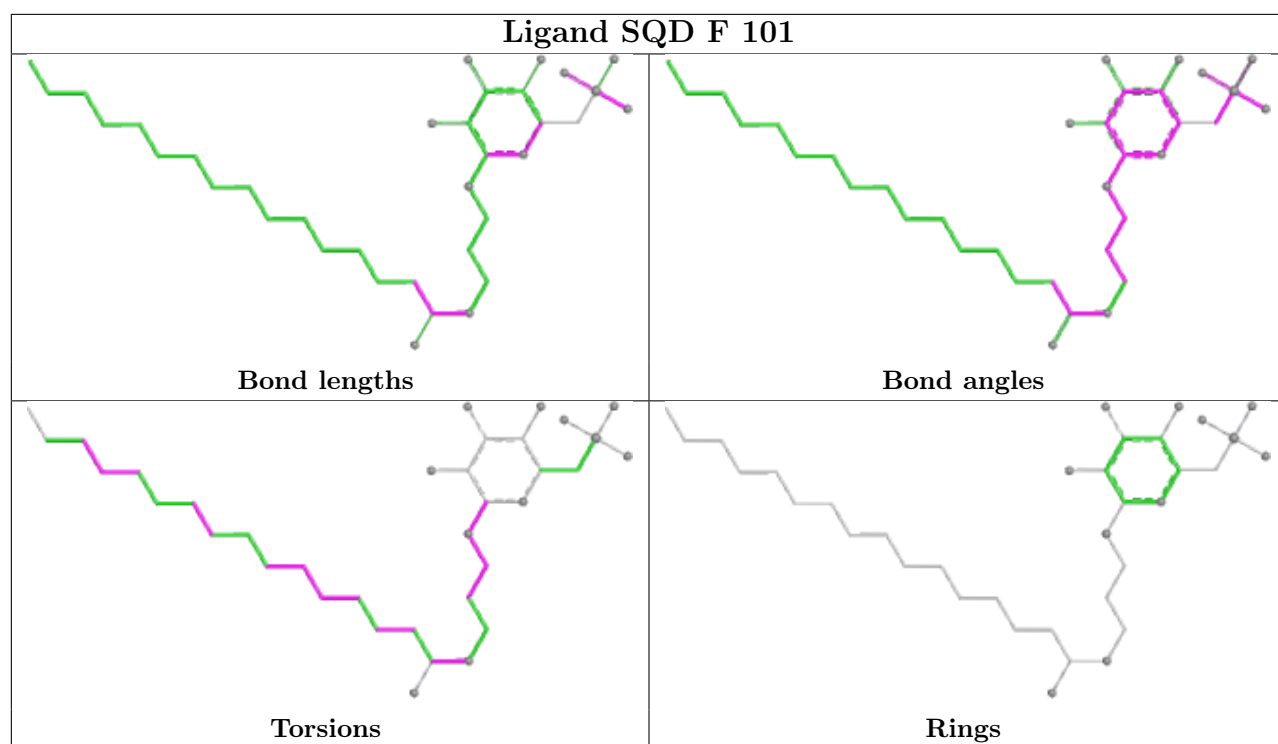


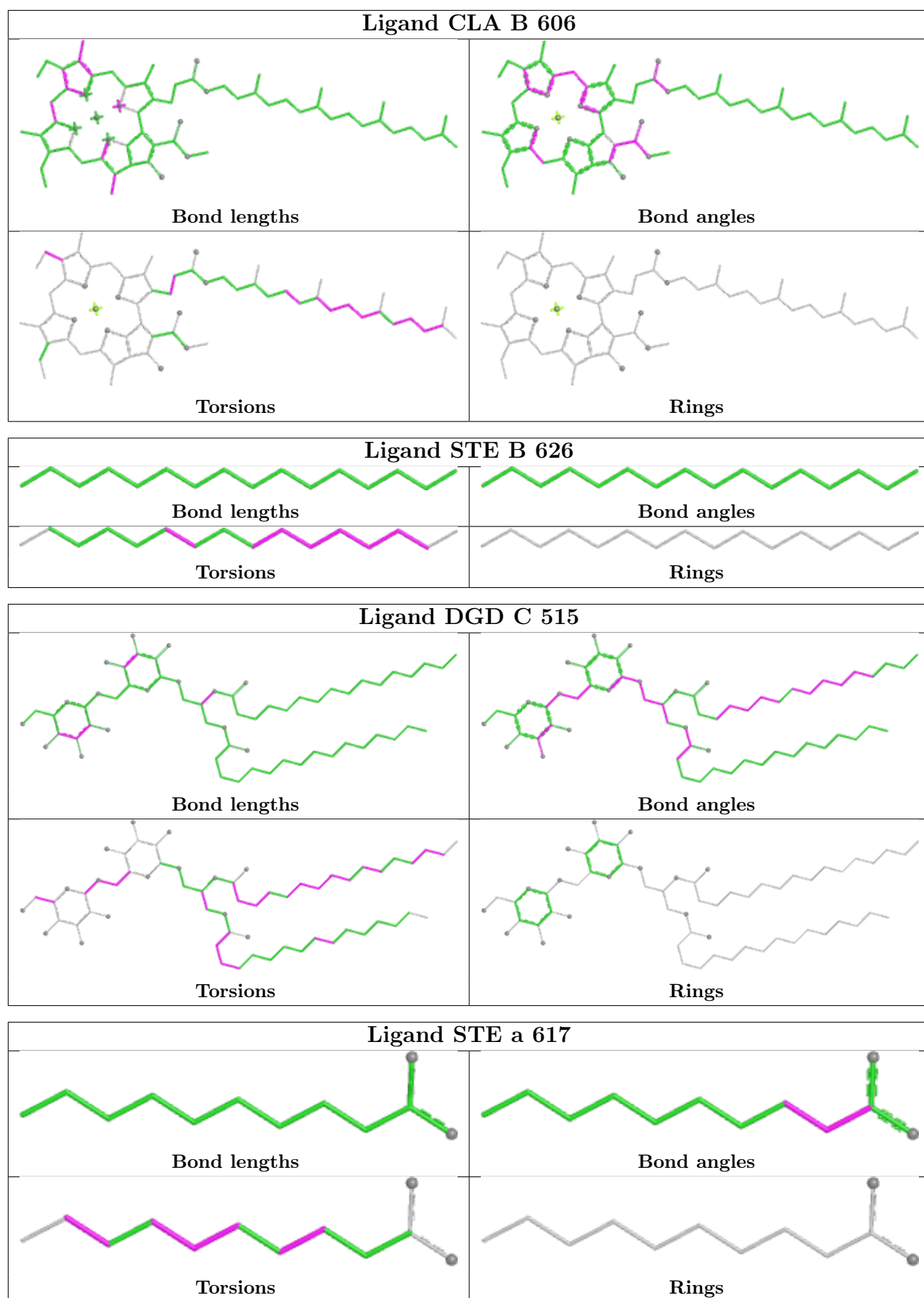
## Ligand CLA C 504

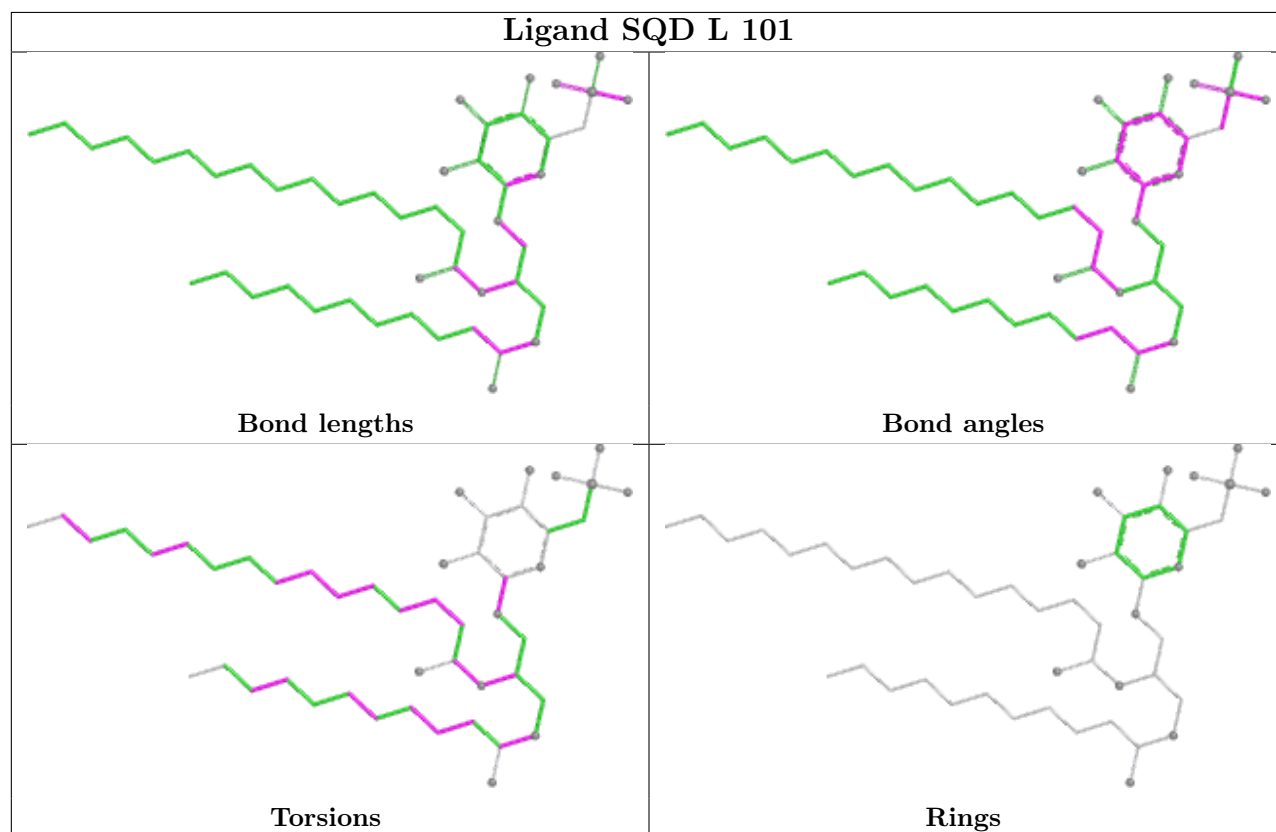
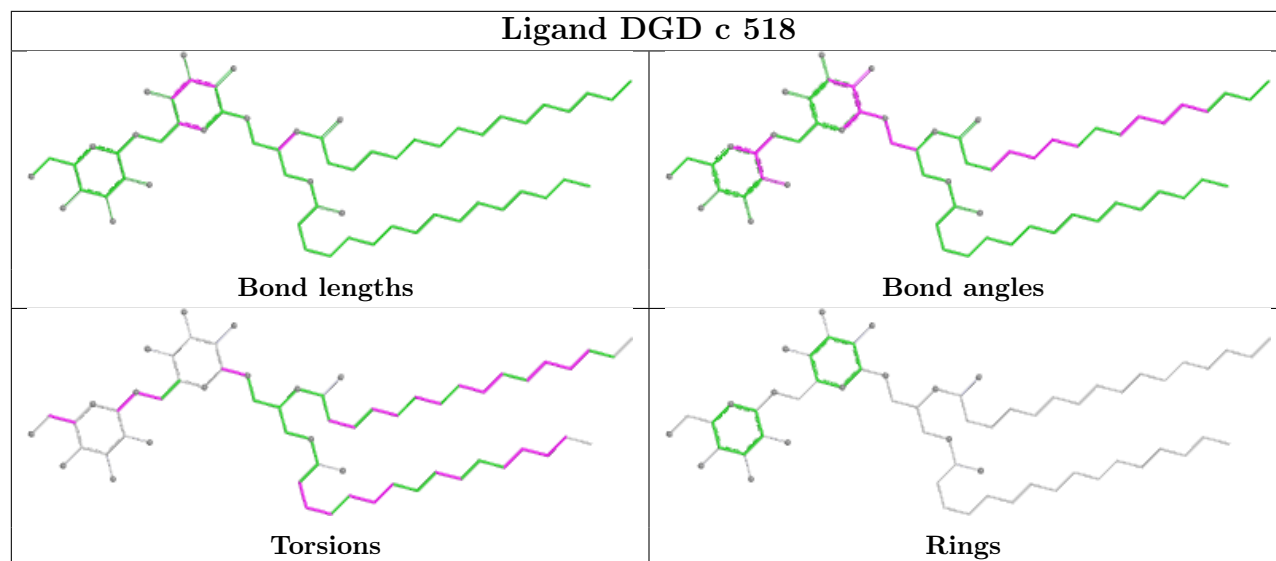


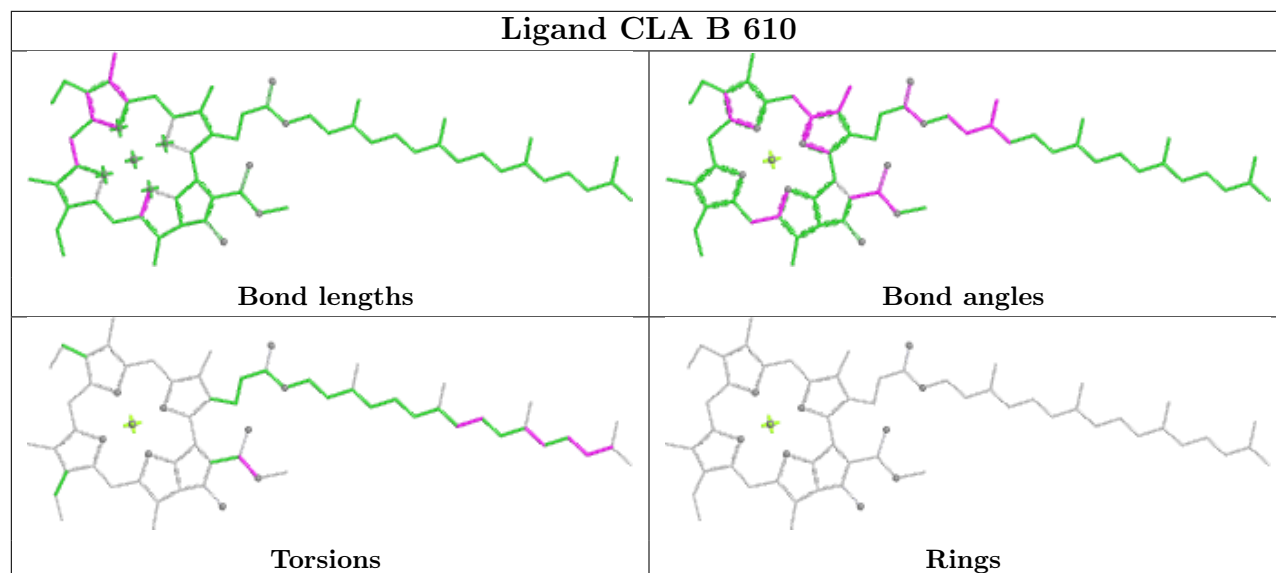
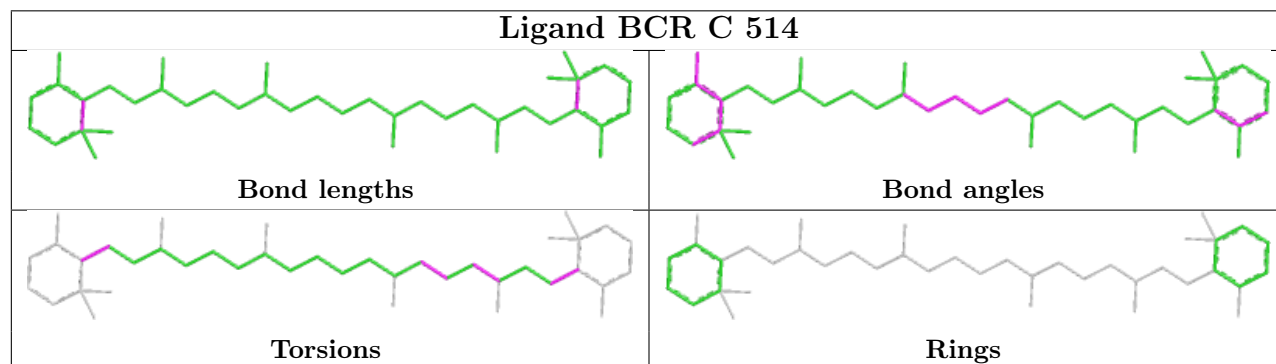
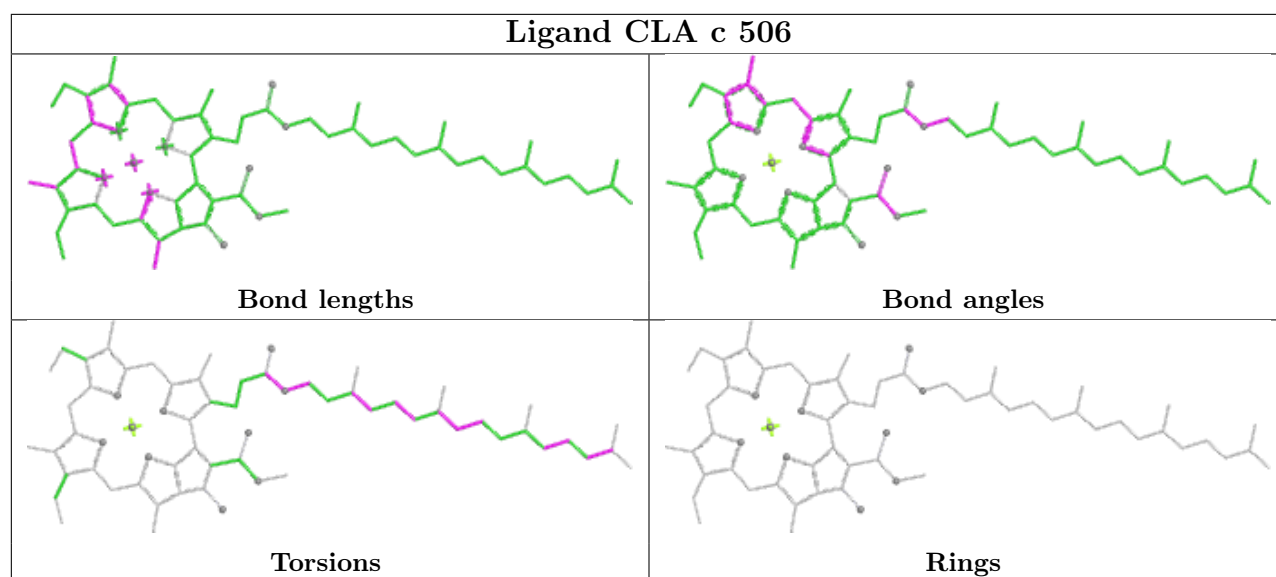


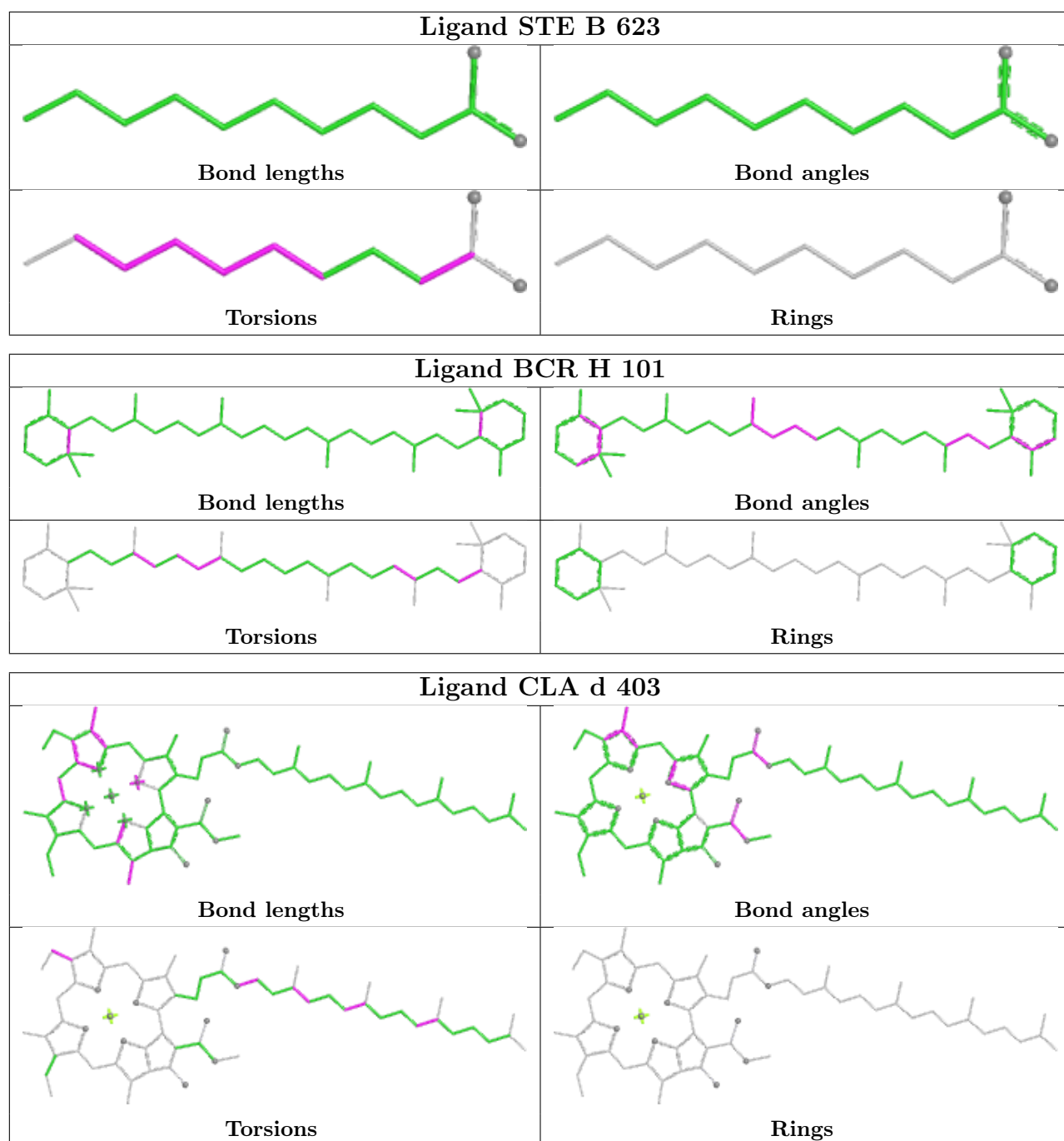
**Ligand CLA B 608****Ligand CLA c 504**

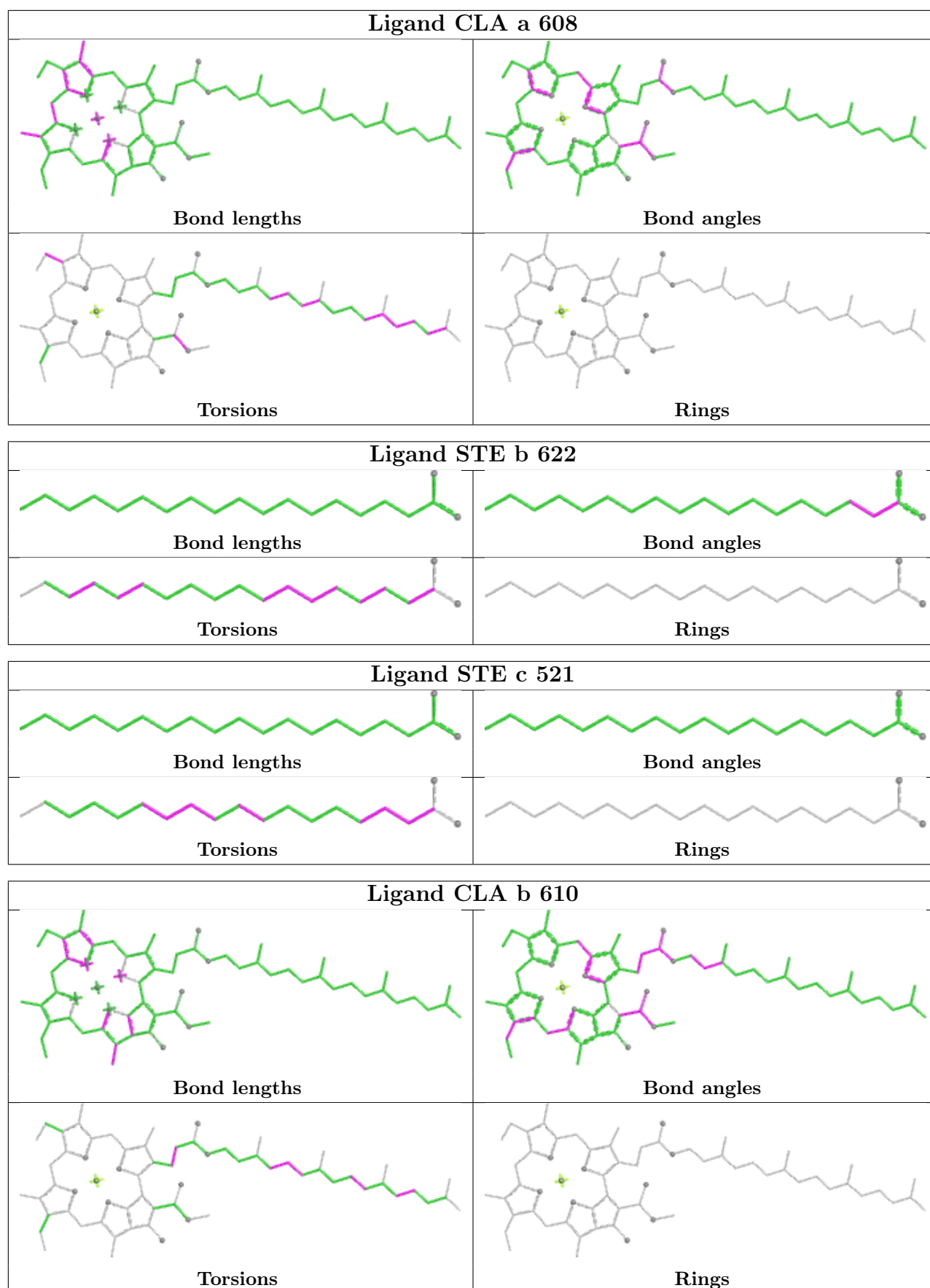


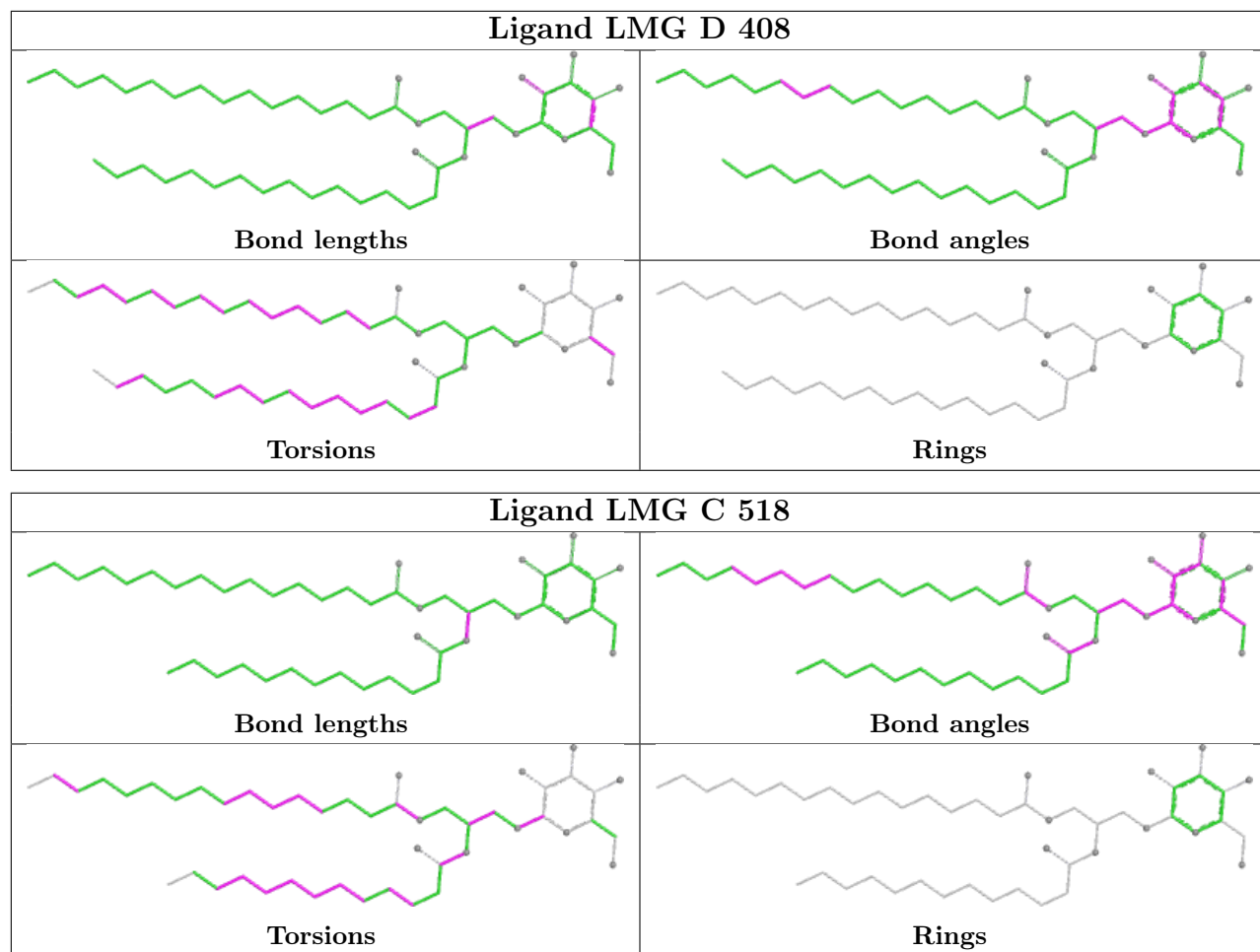




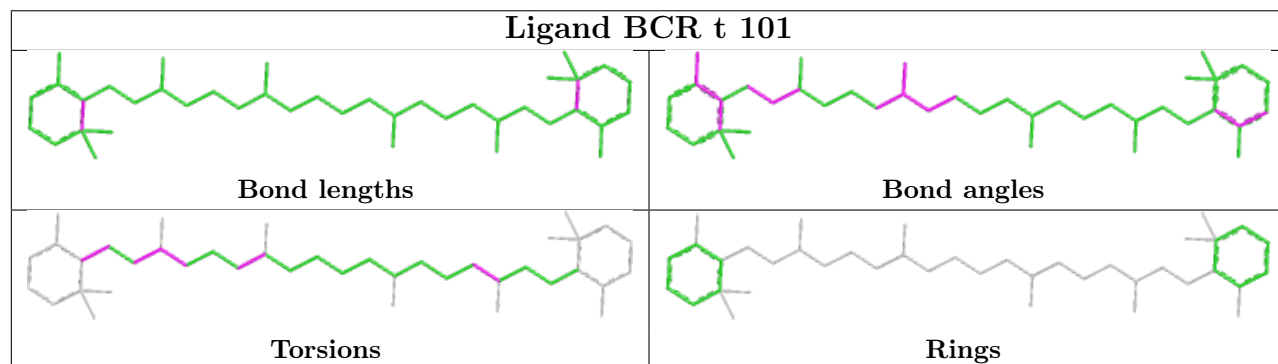
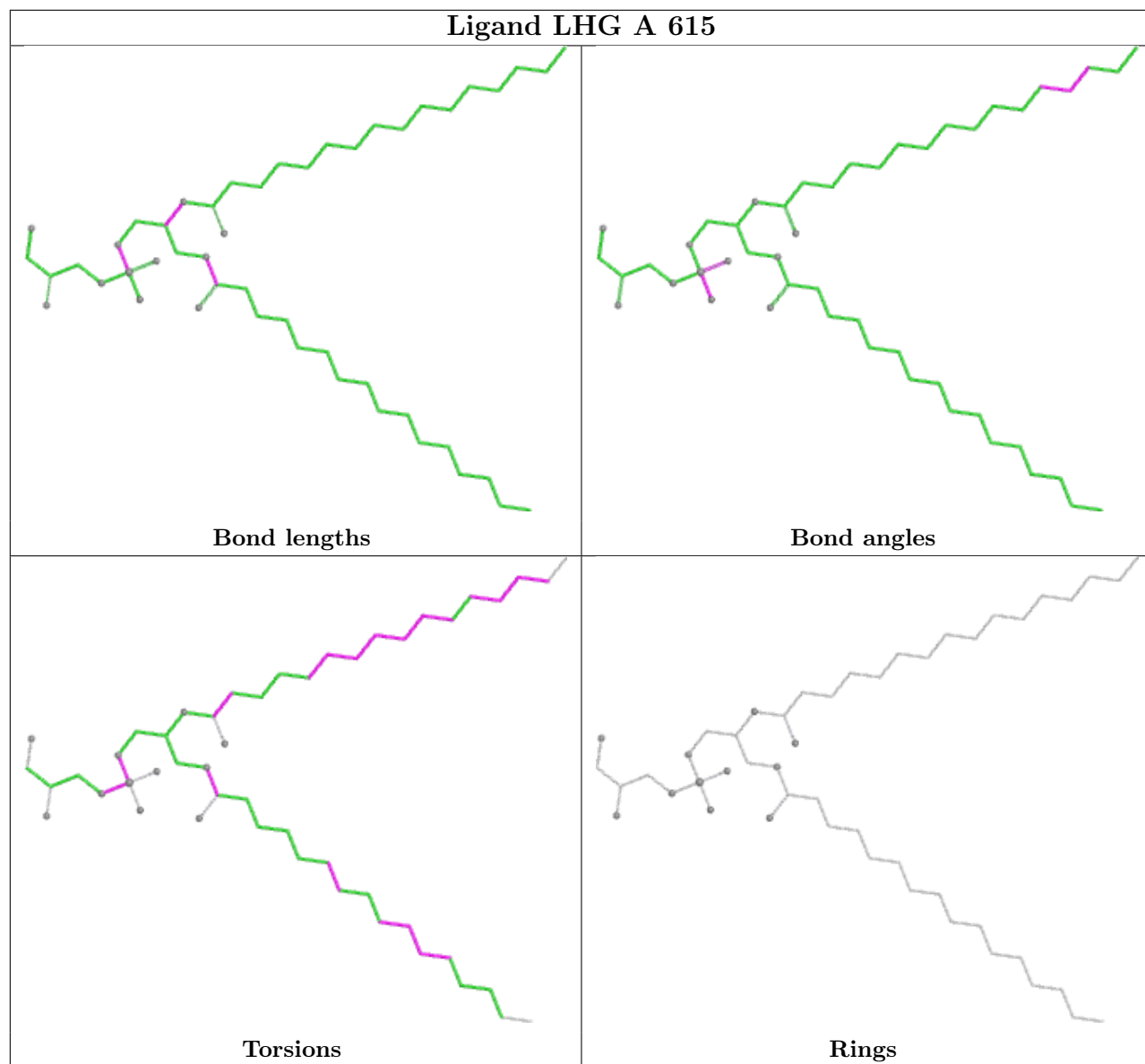


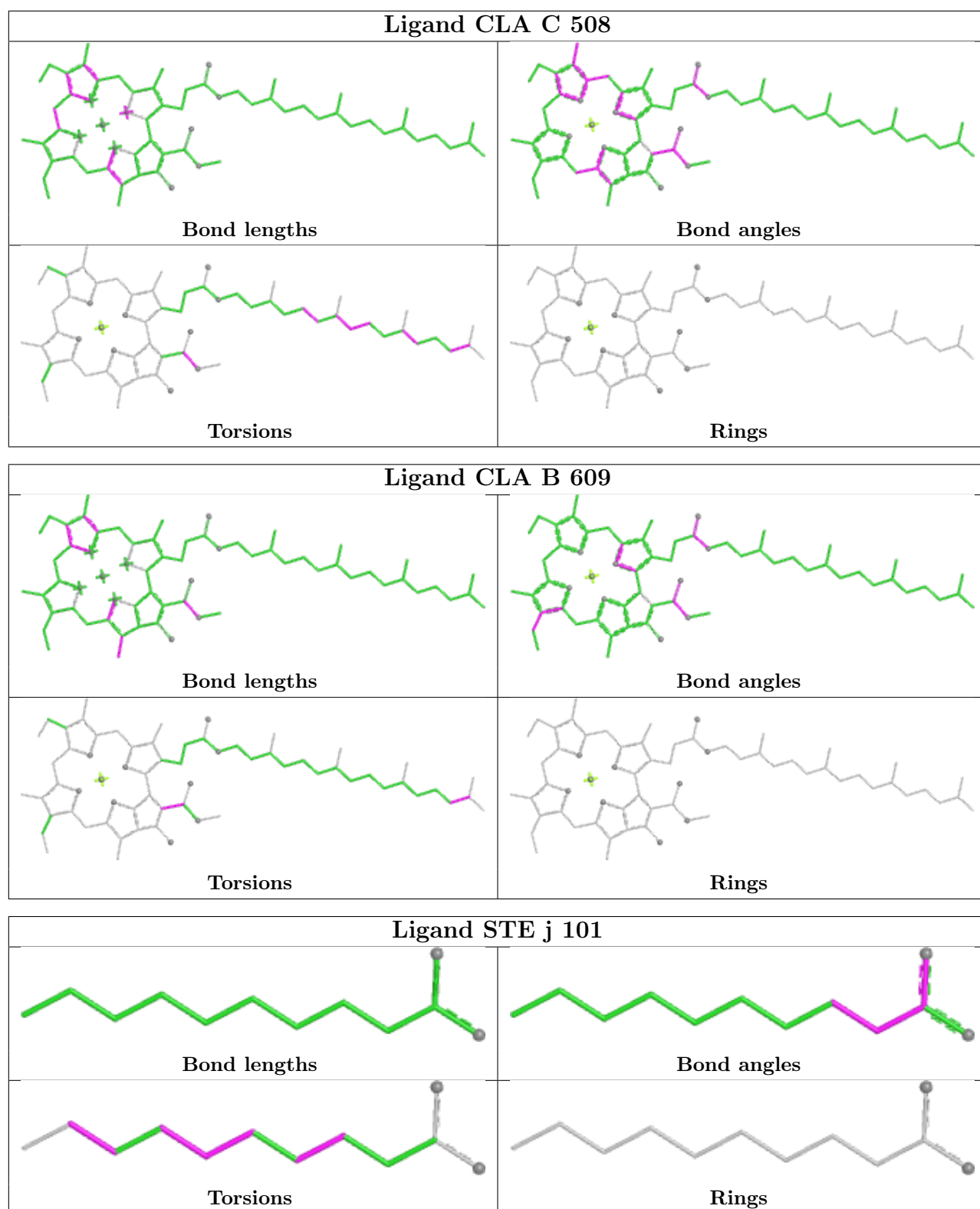


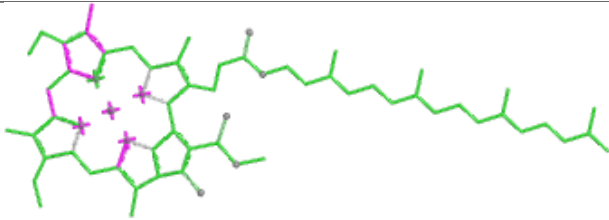
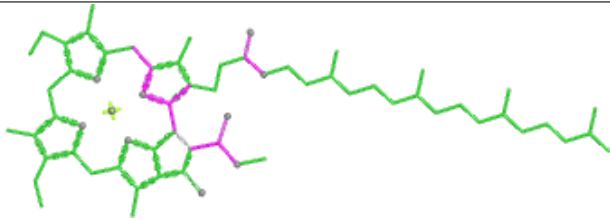
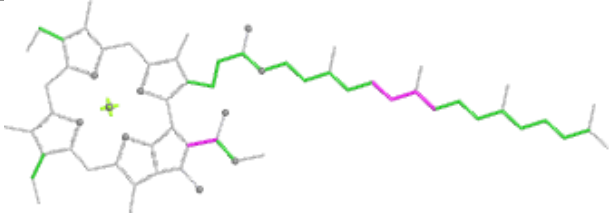
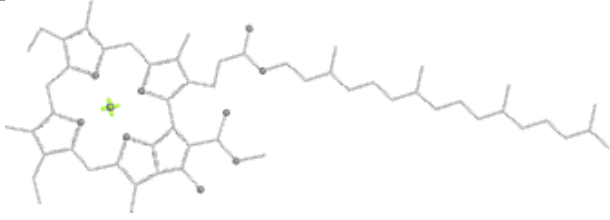




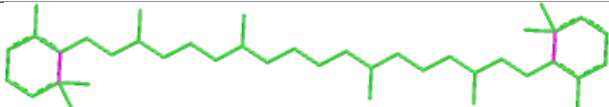
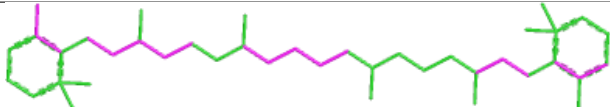
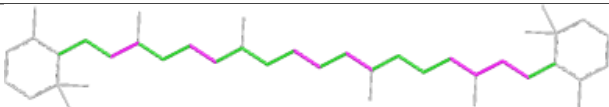
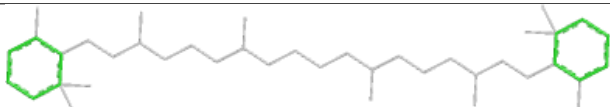


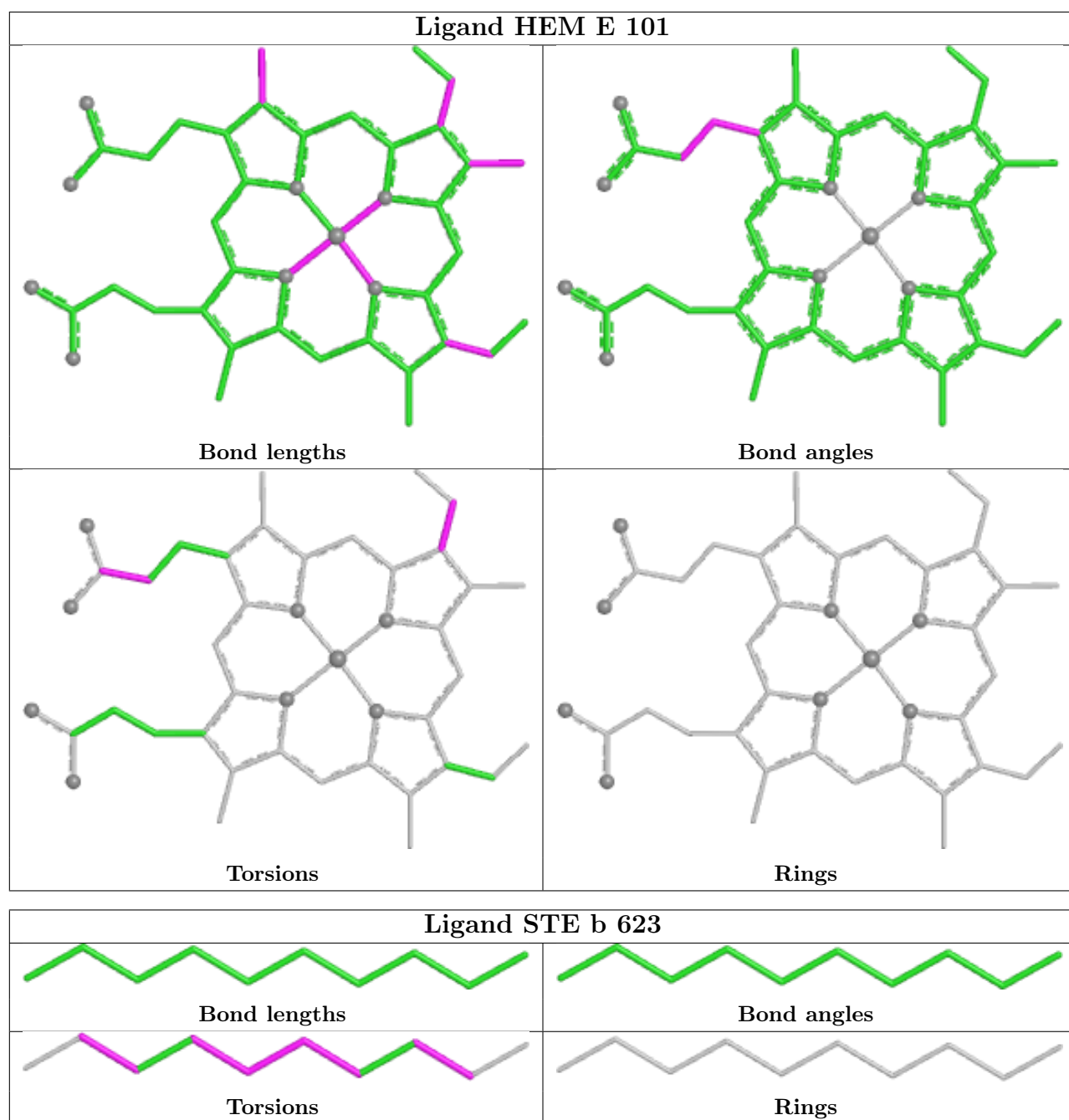




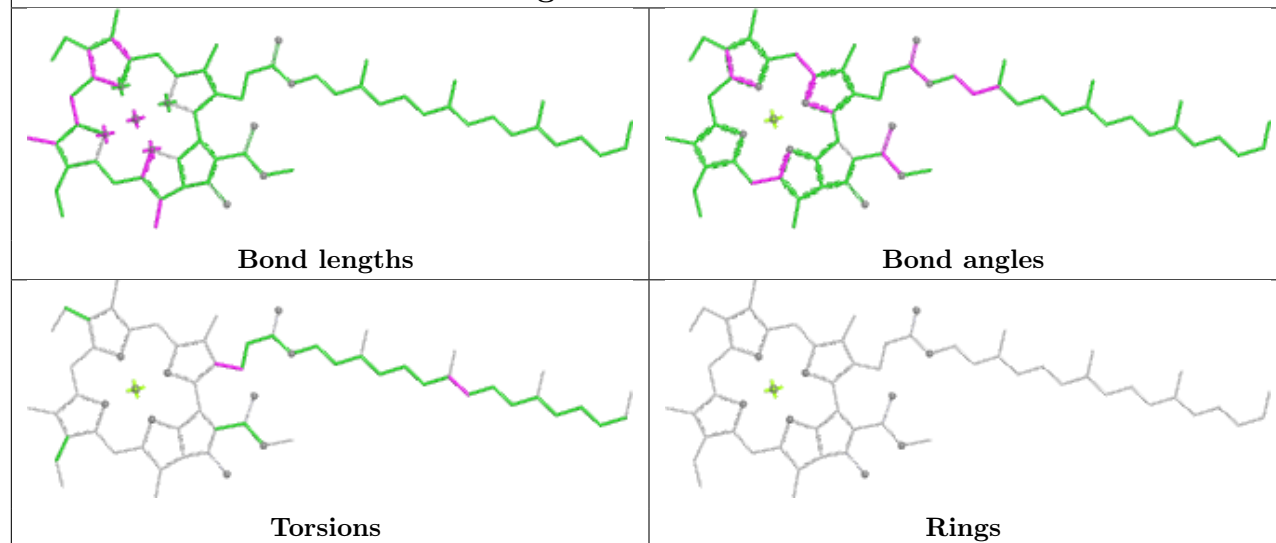
| Ligand CLA C 507                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand STE T 103                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

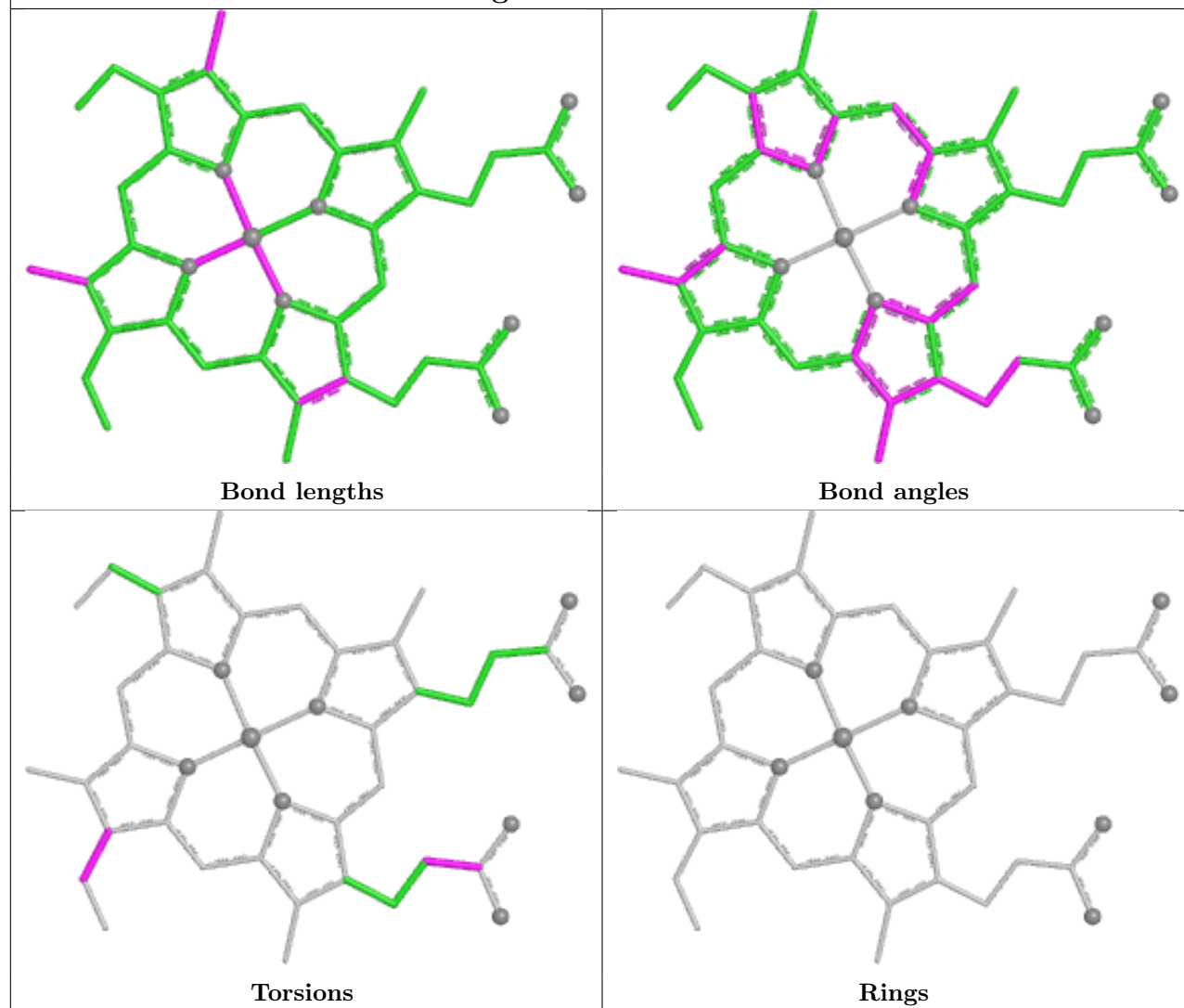
| Ligand BCR K 101                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

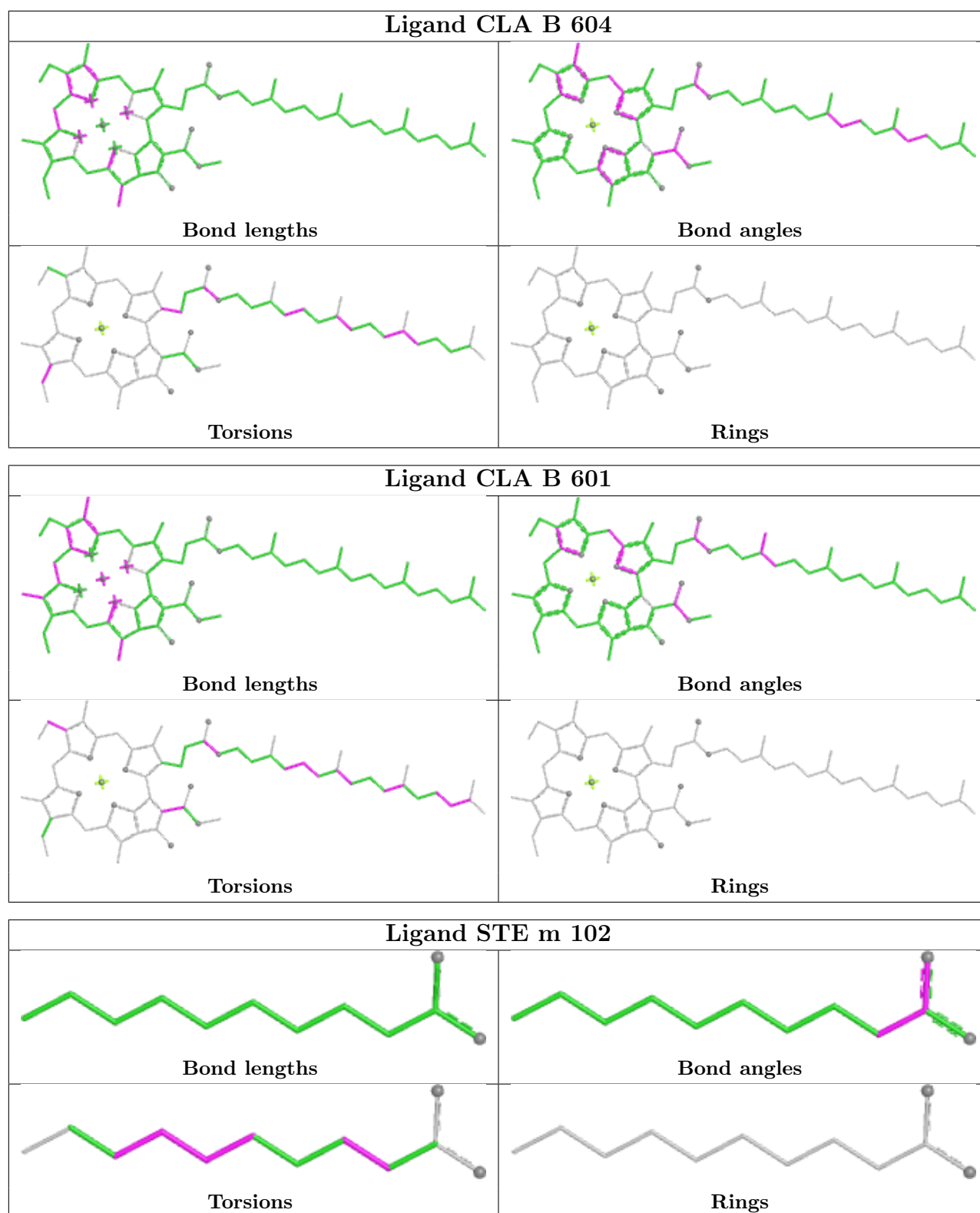


## Ligand CLA c 508

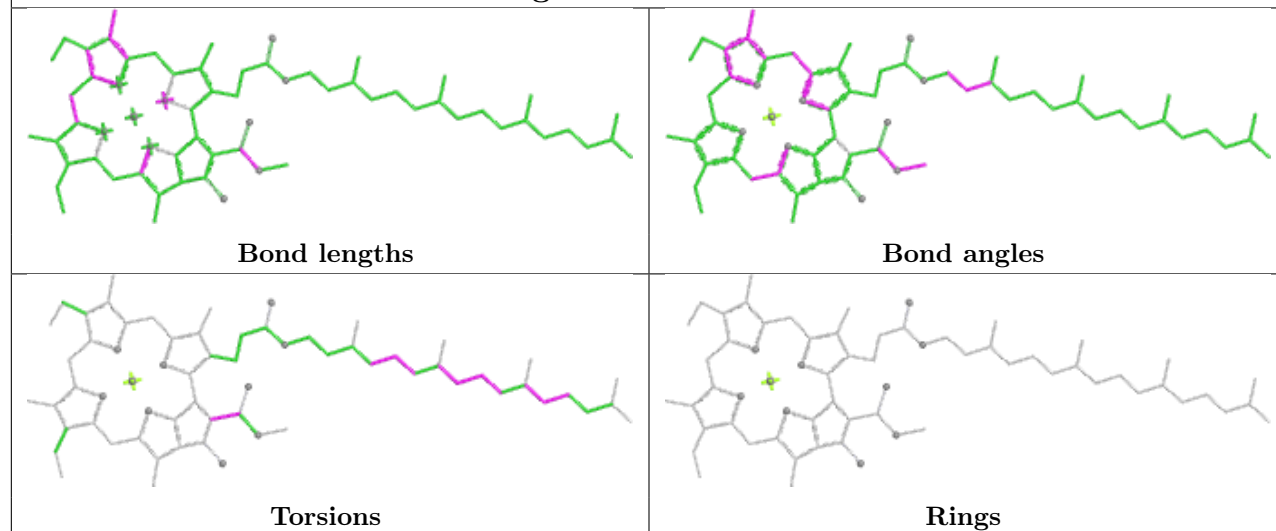


## Ligand HEC V 201

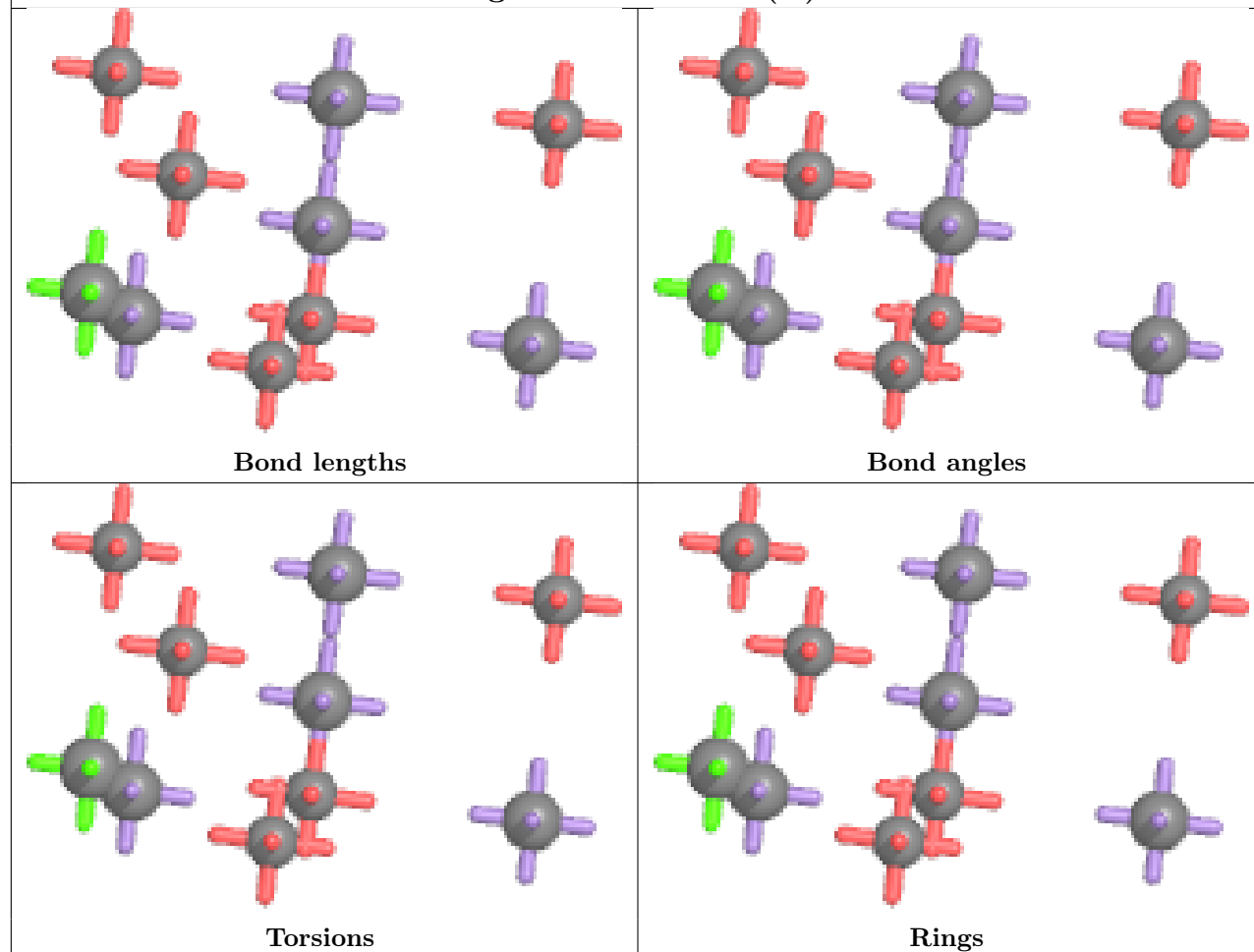


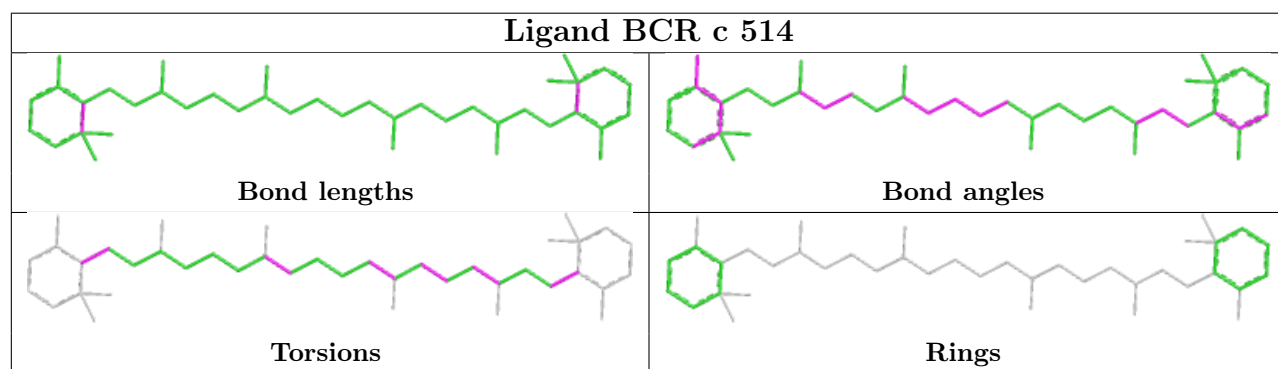
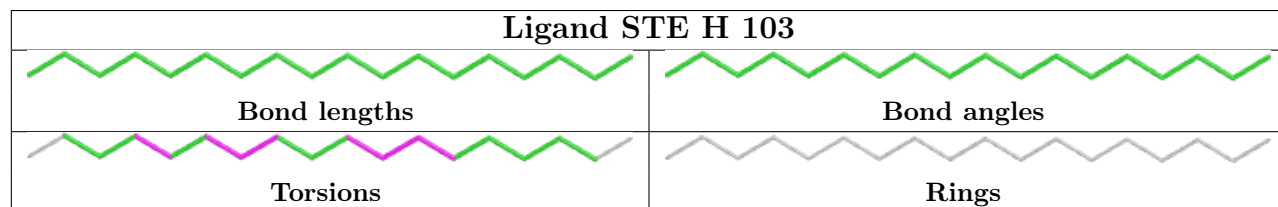
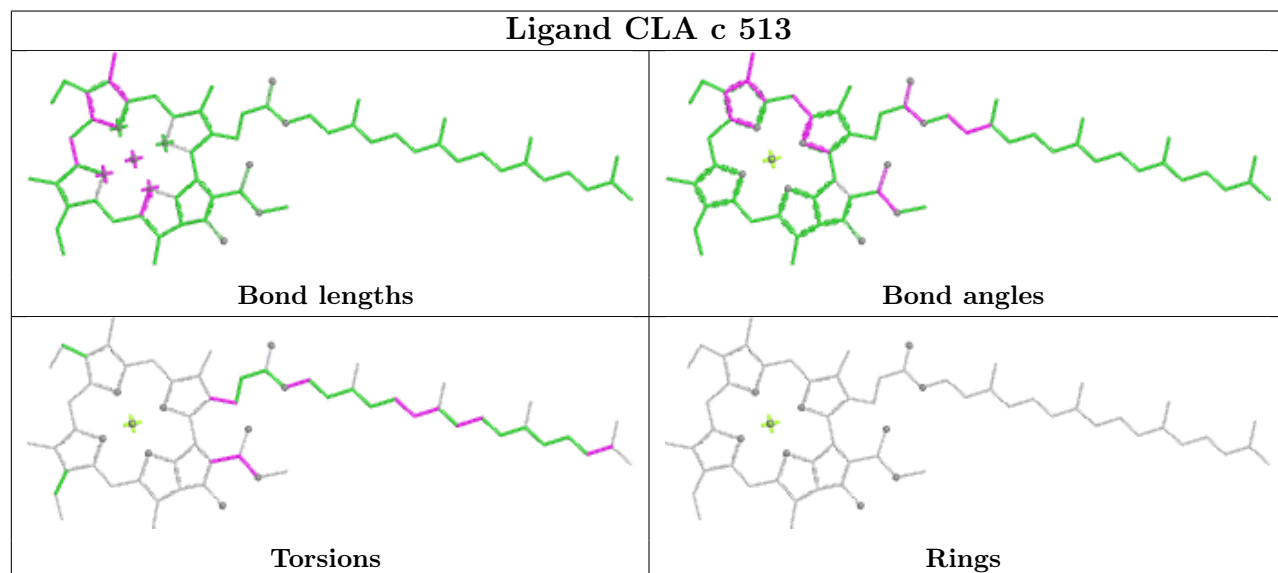
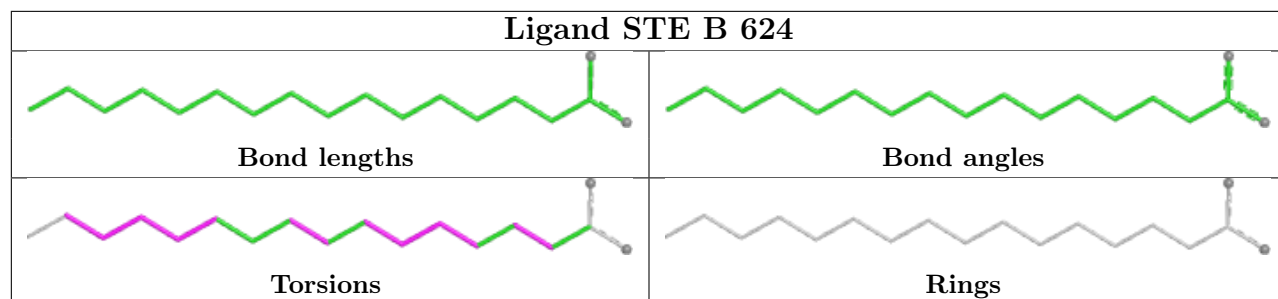


## Ligand CLA C 509

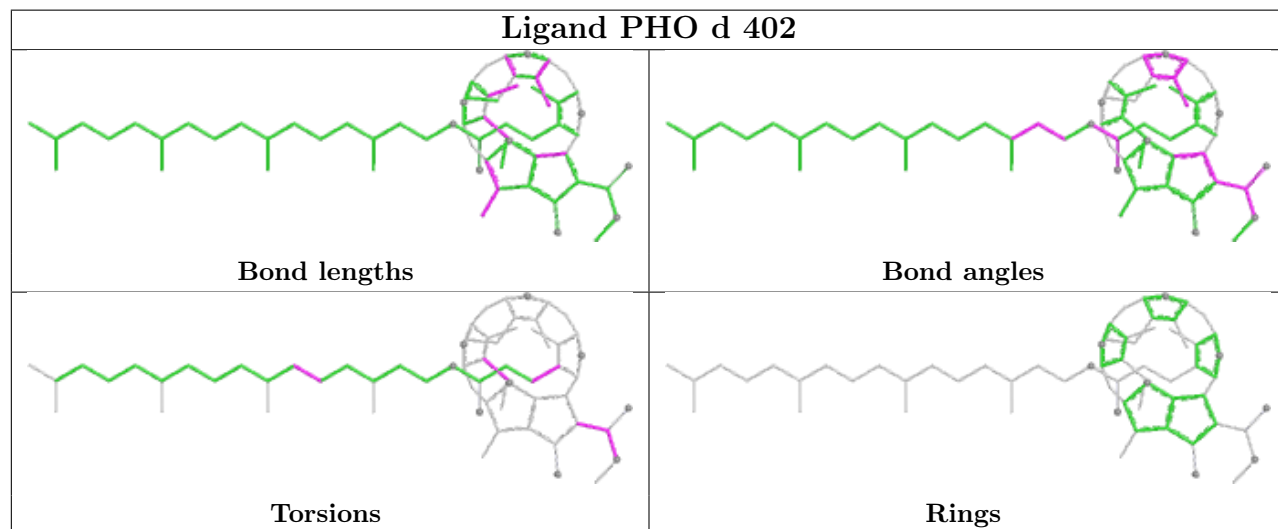
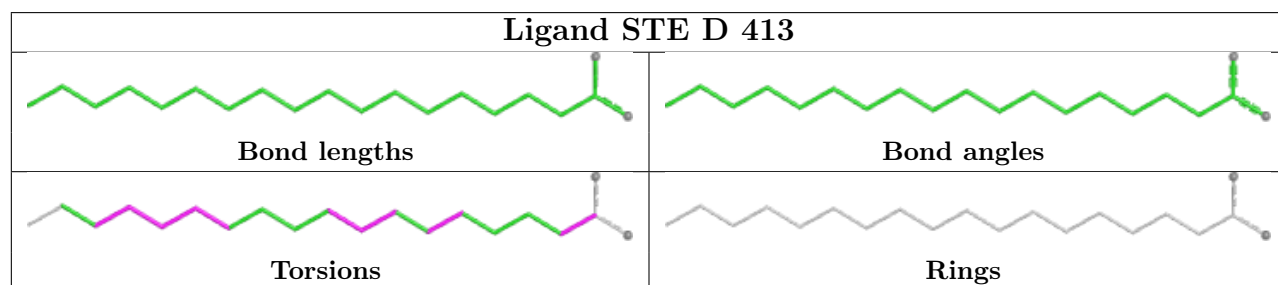
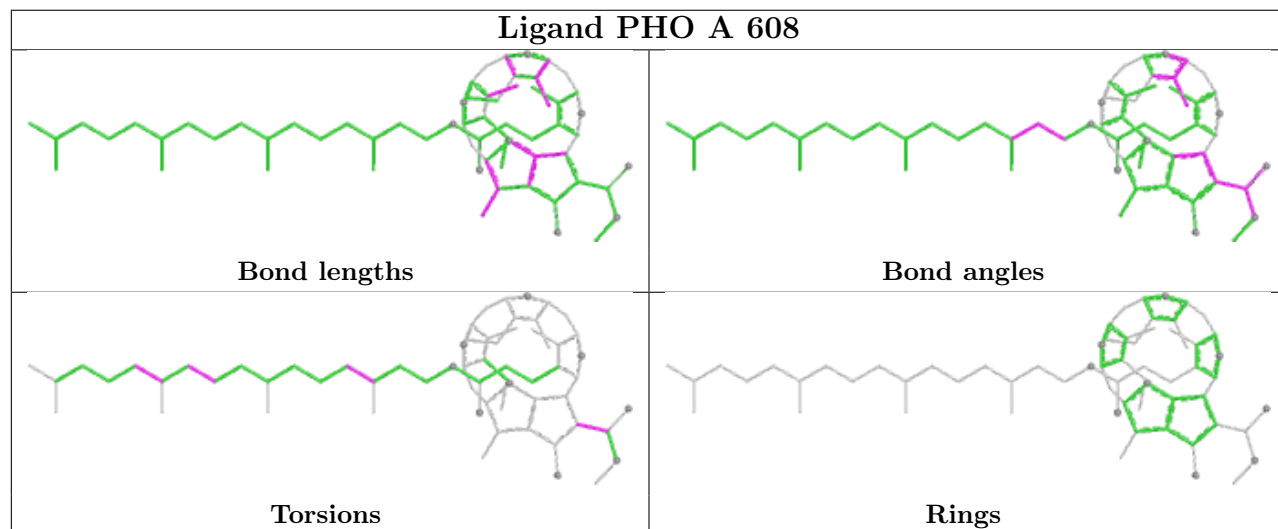
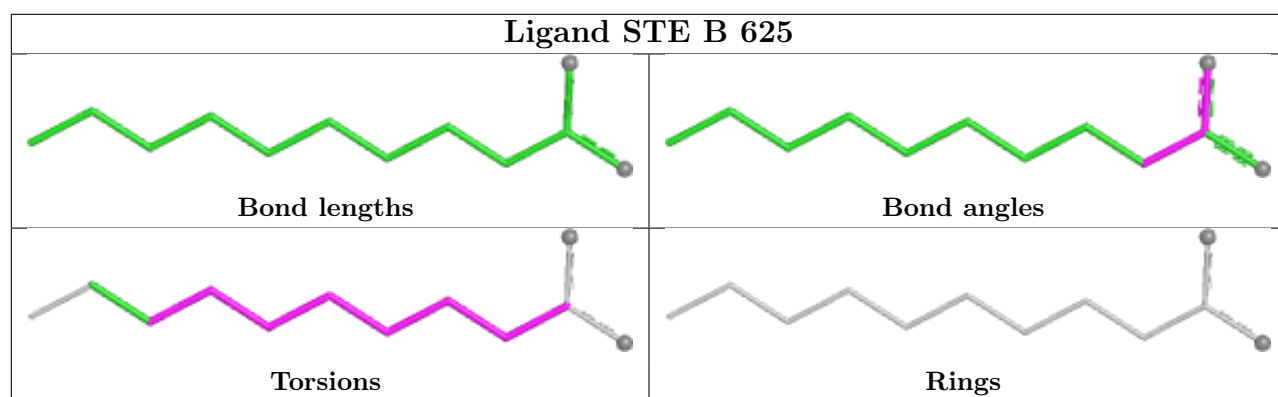


## Ligand OEX A 602 (A)

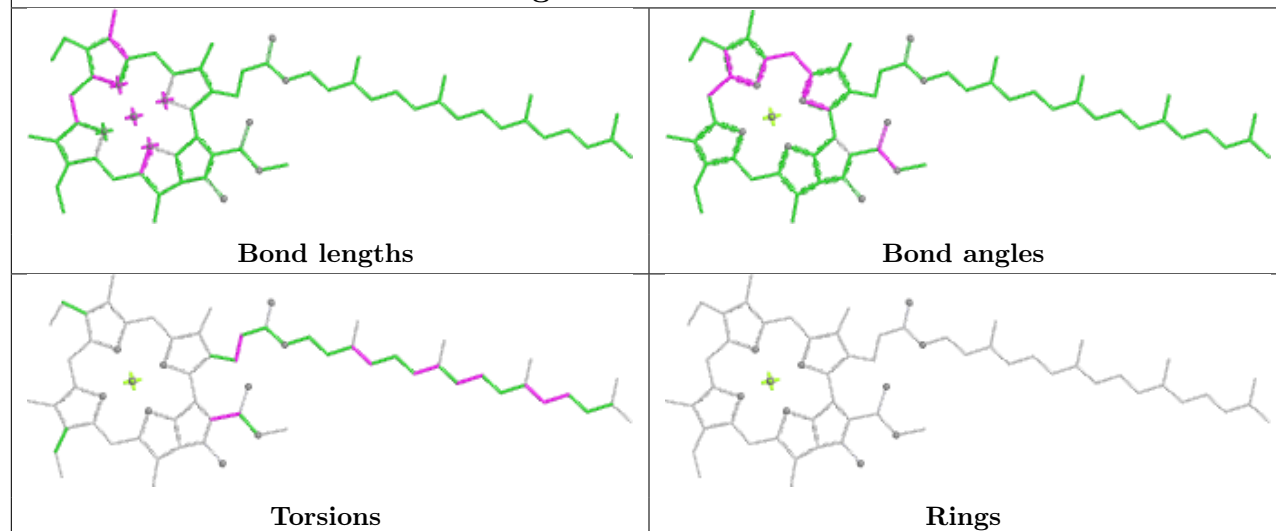




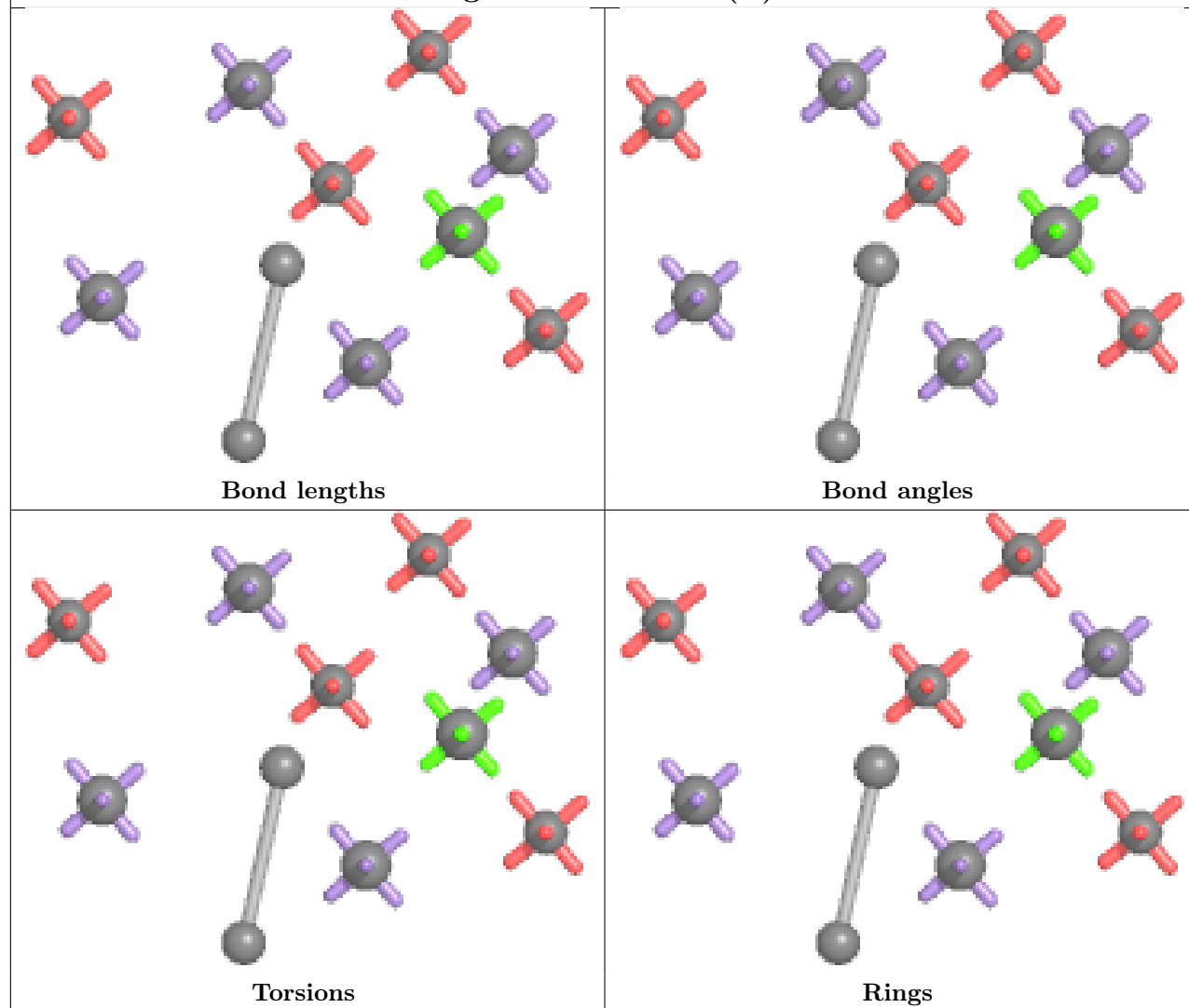




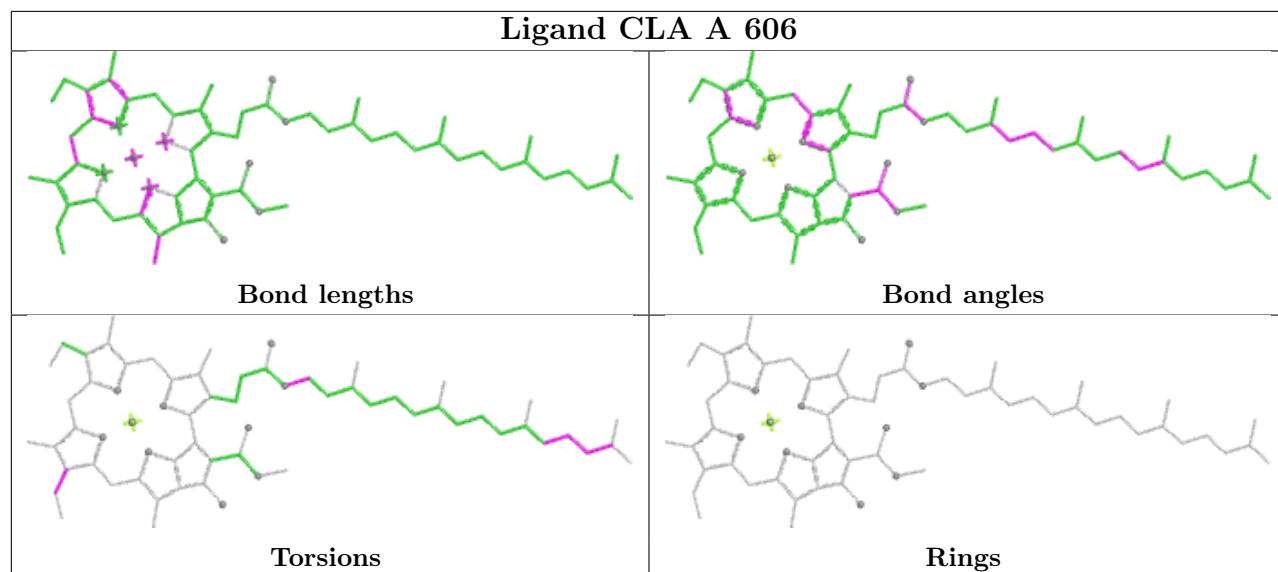
## Ligand CLA B 614



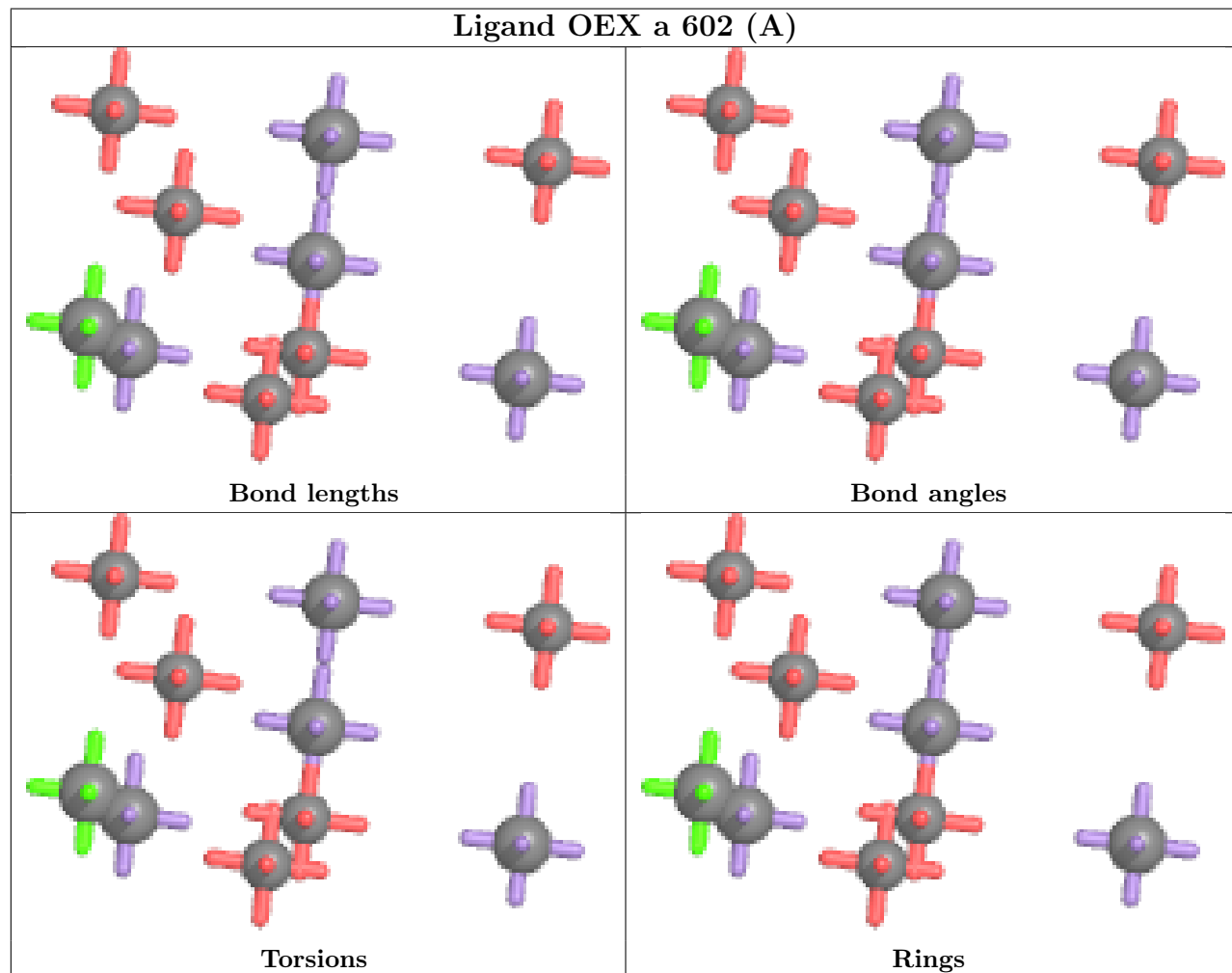
## Ligand OEY A 601 (B)

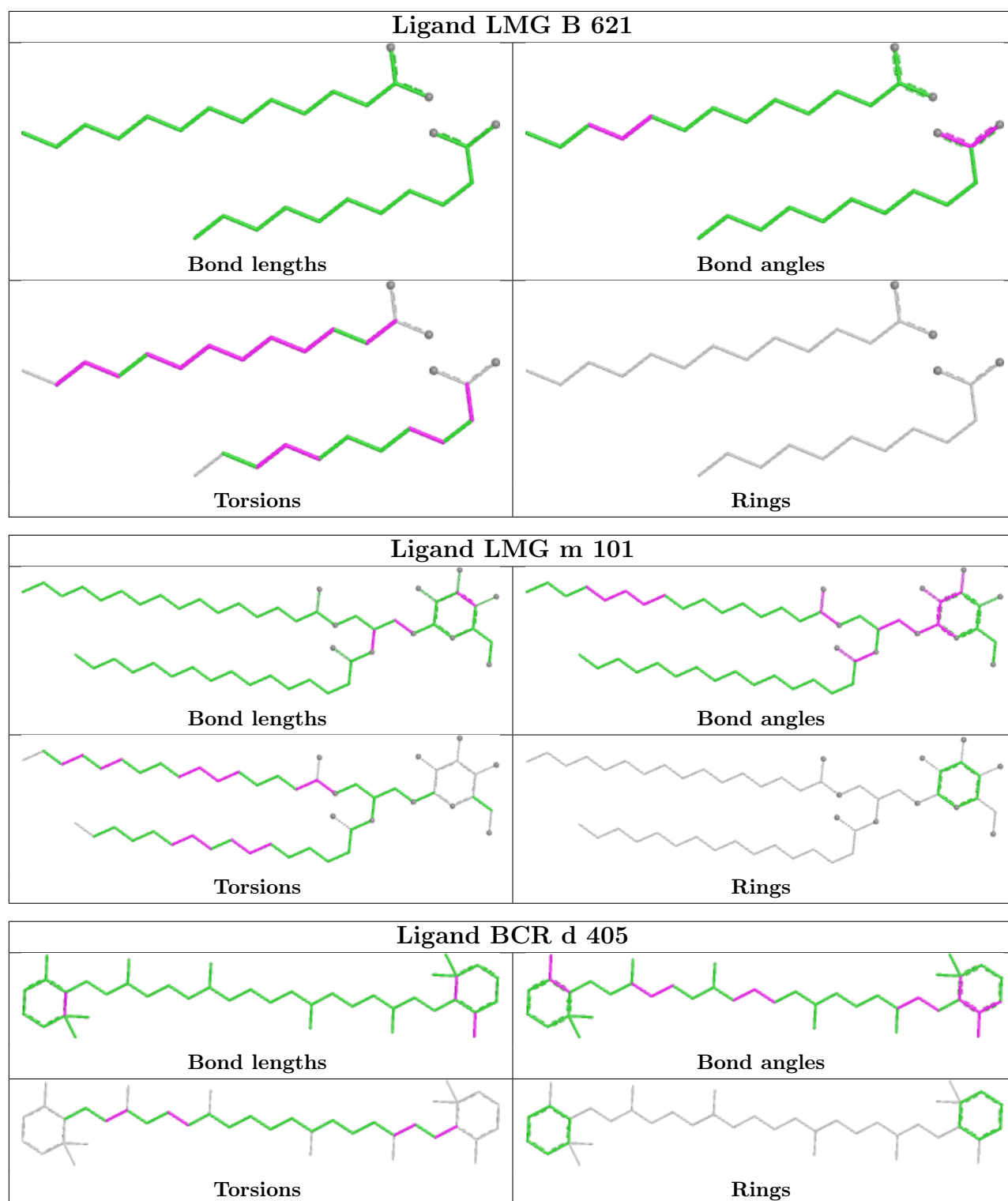


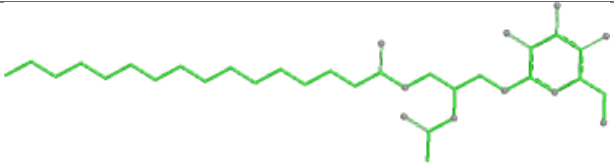
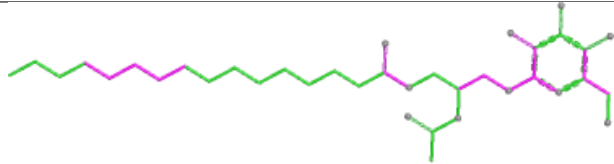
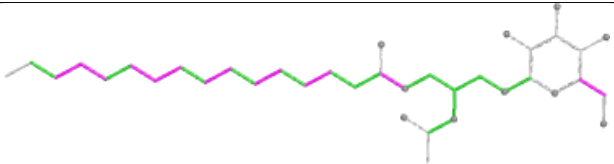
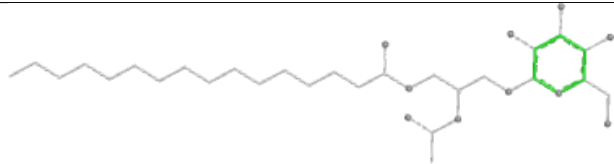
## Ligand CLA A 606

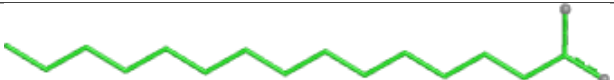
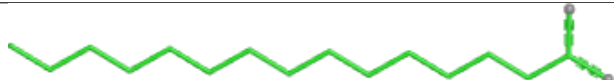
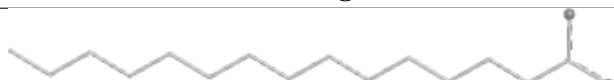


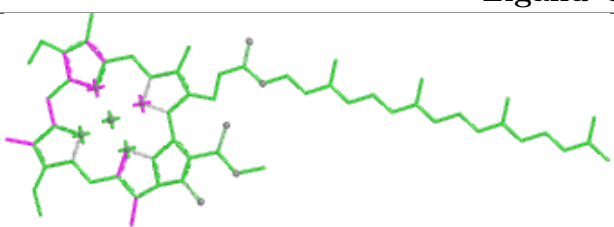
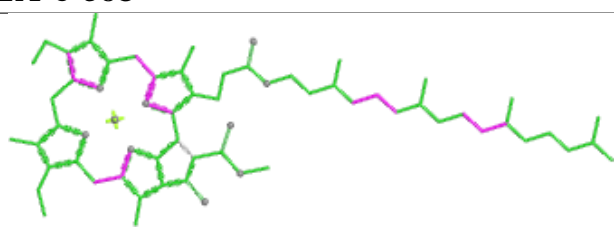
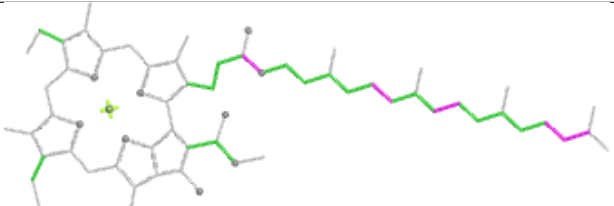
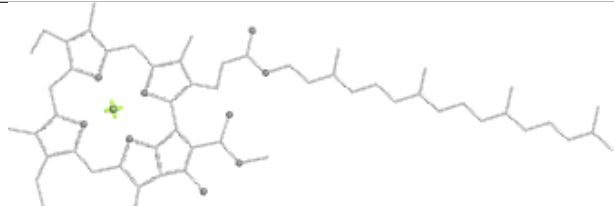
## Ligand OEX a 602 (A)



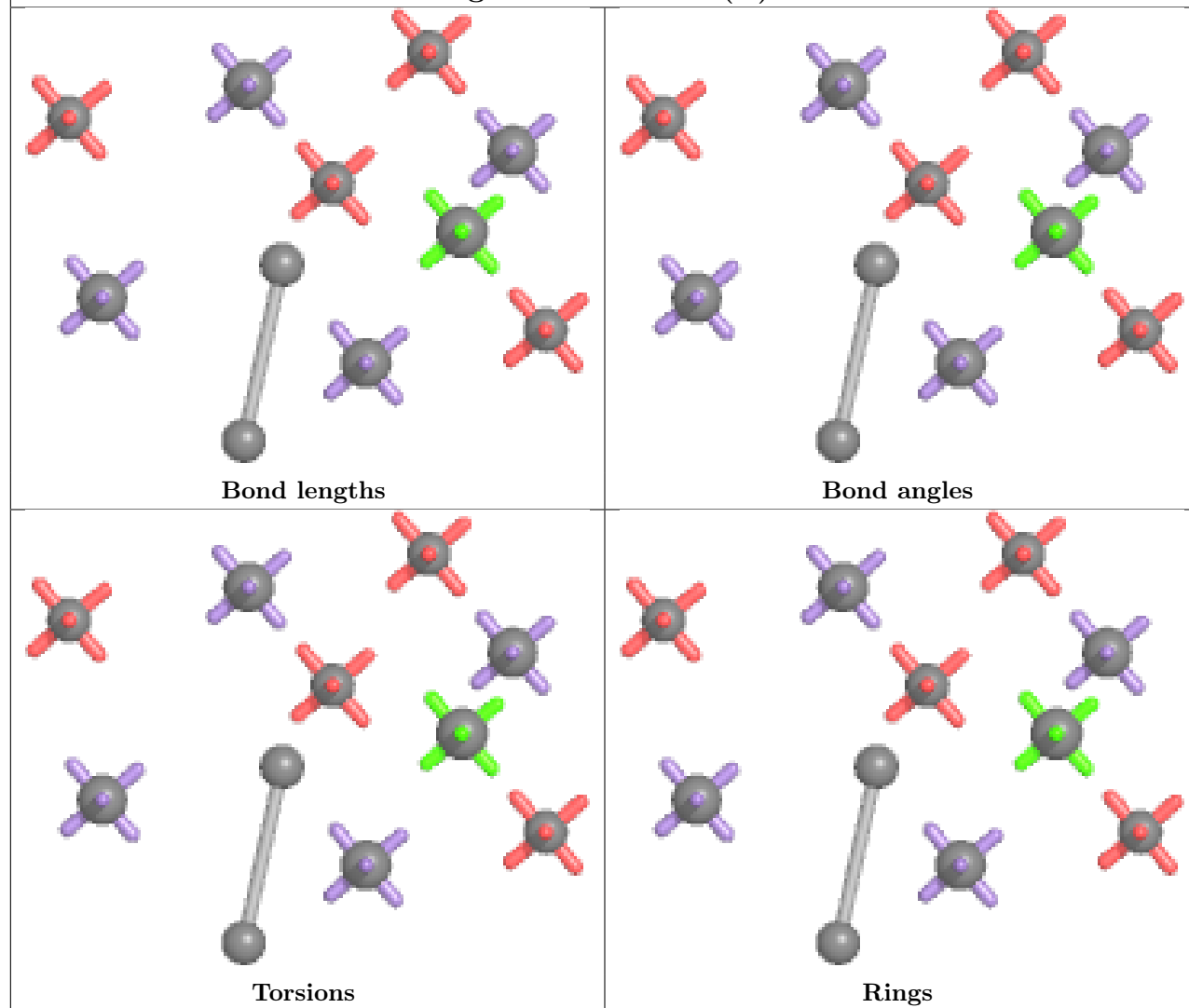


| Ligand LMG c 520                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

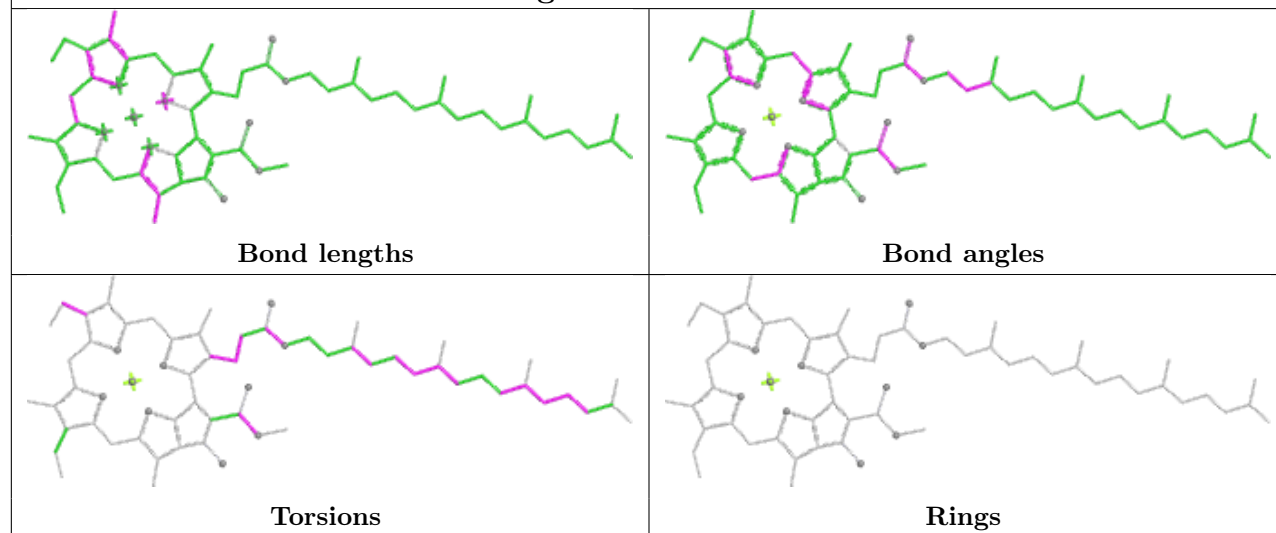
| Ligand STE B 620                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

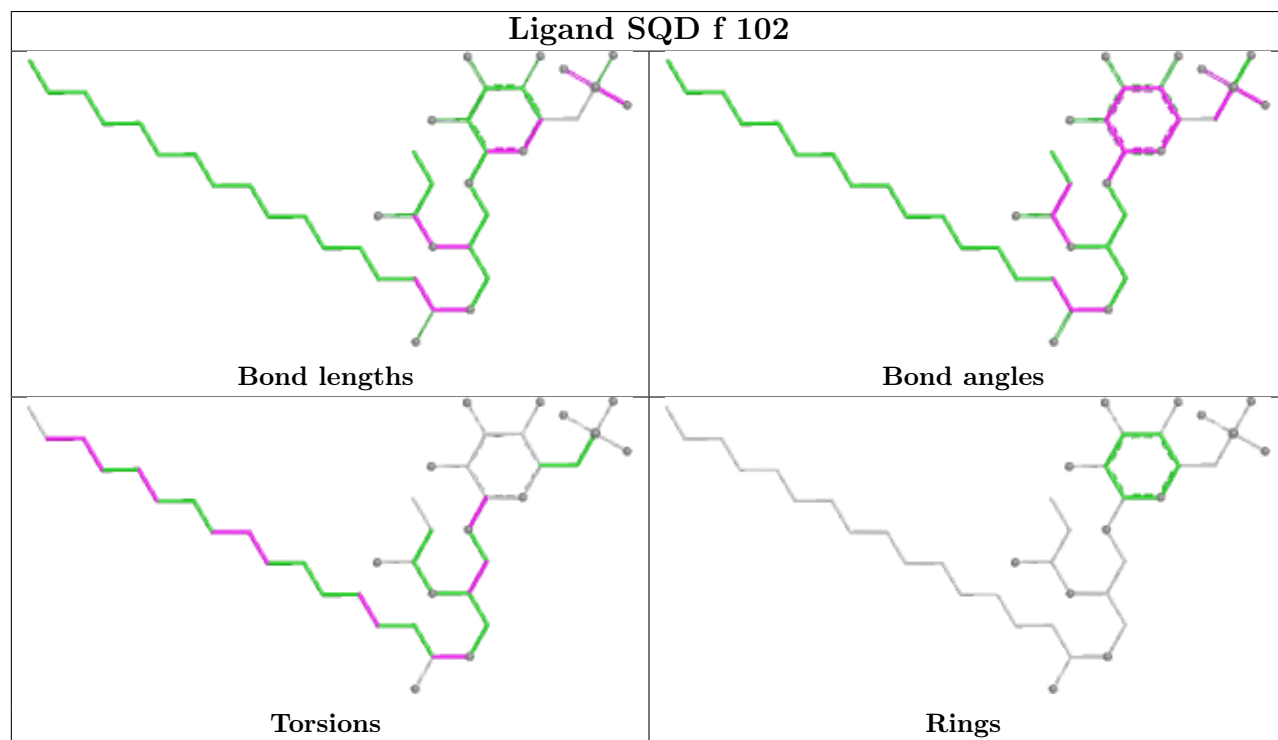
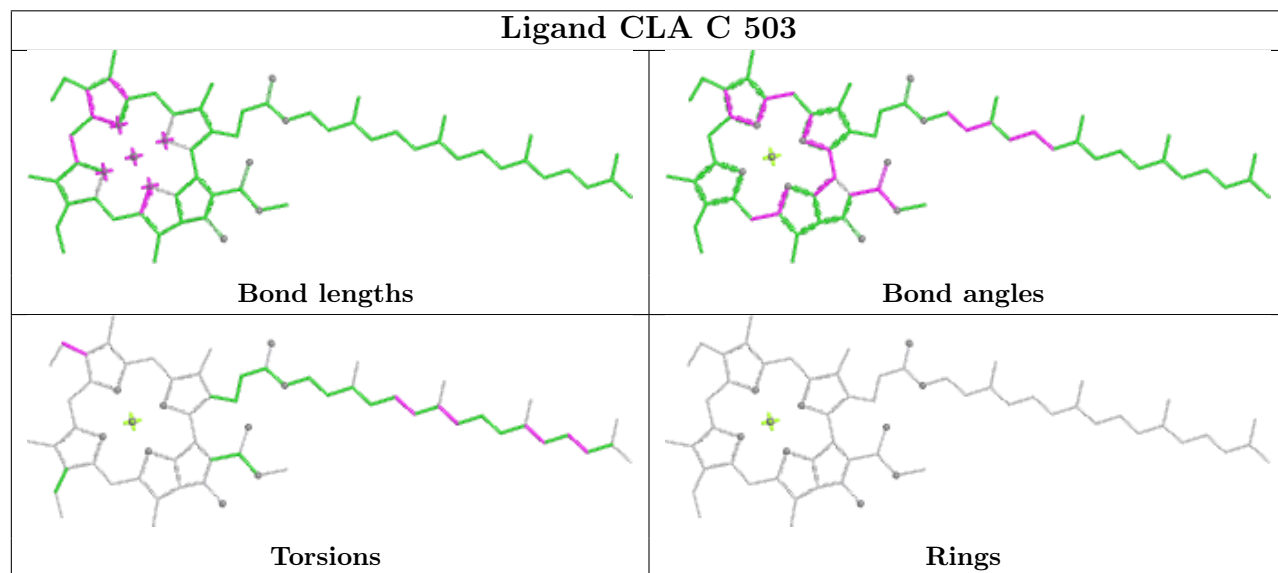
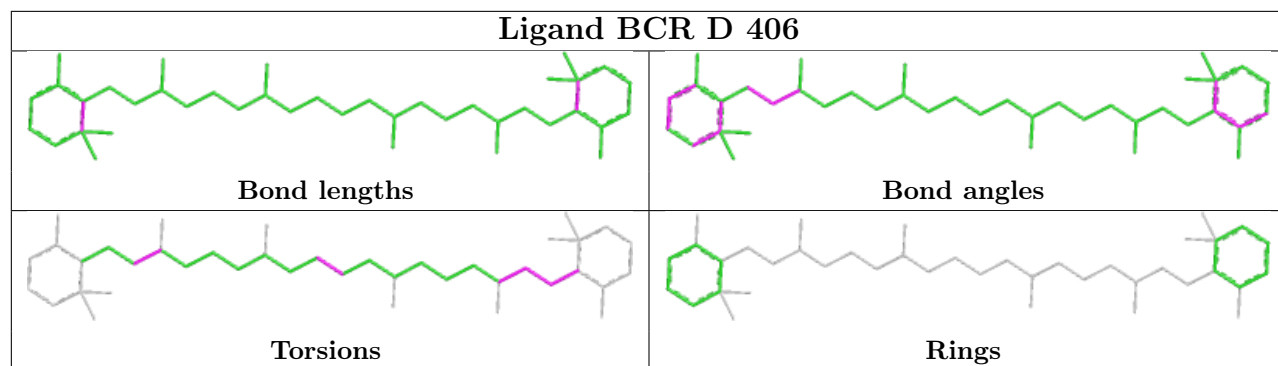
| Ligand CLA c 503                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

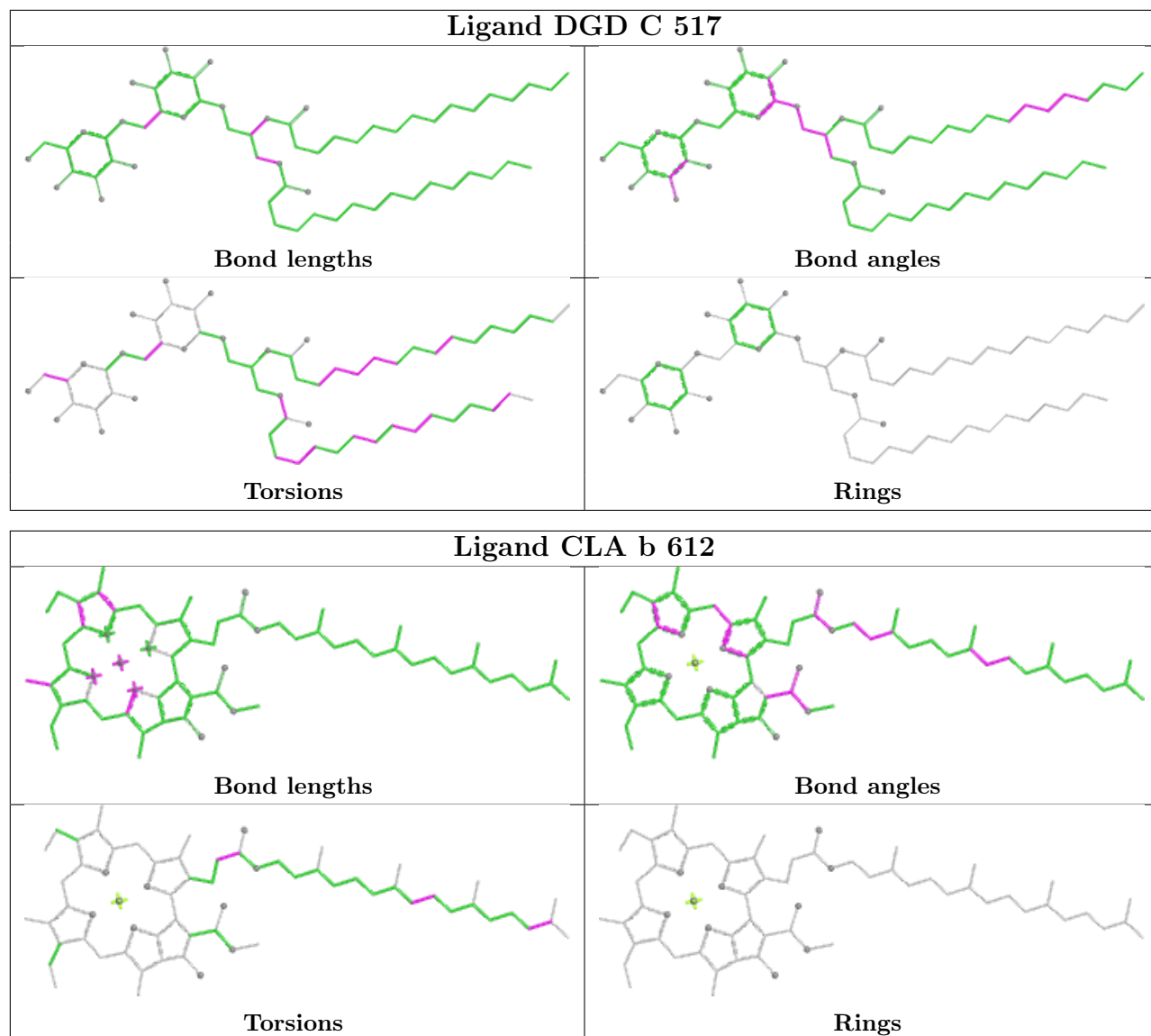
## Ligand OEY a 601 (B)



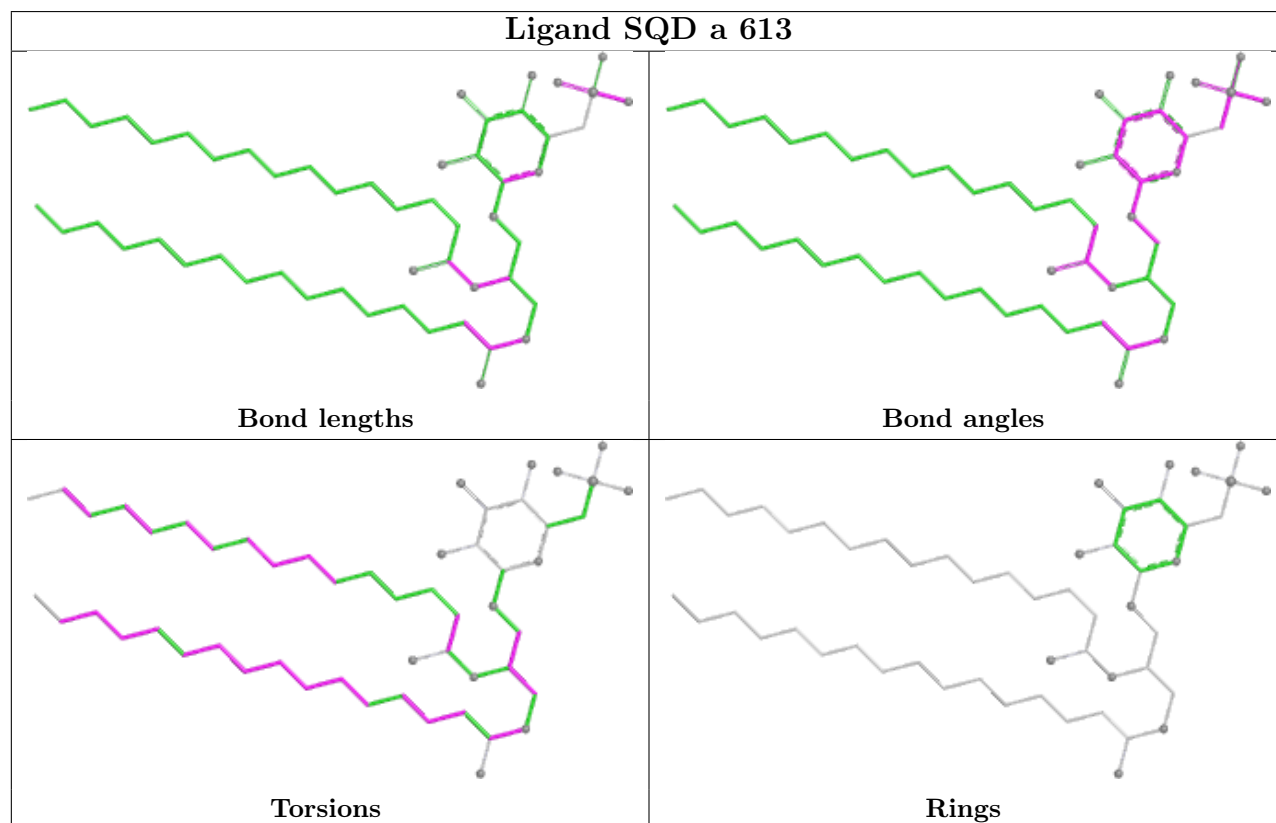
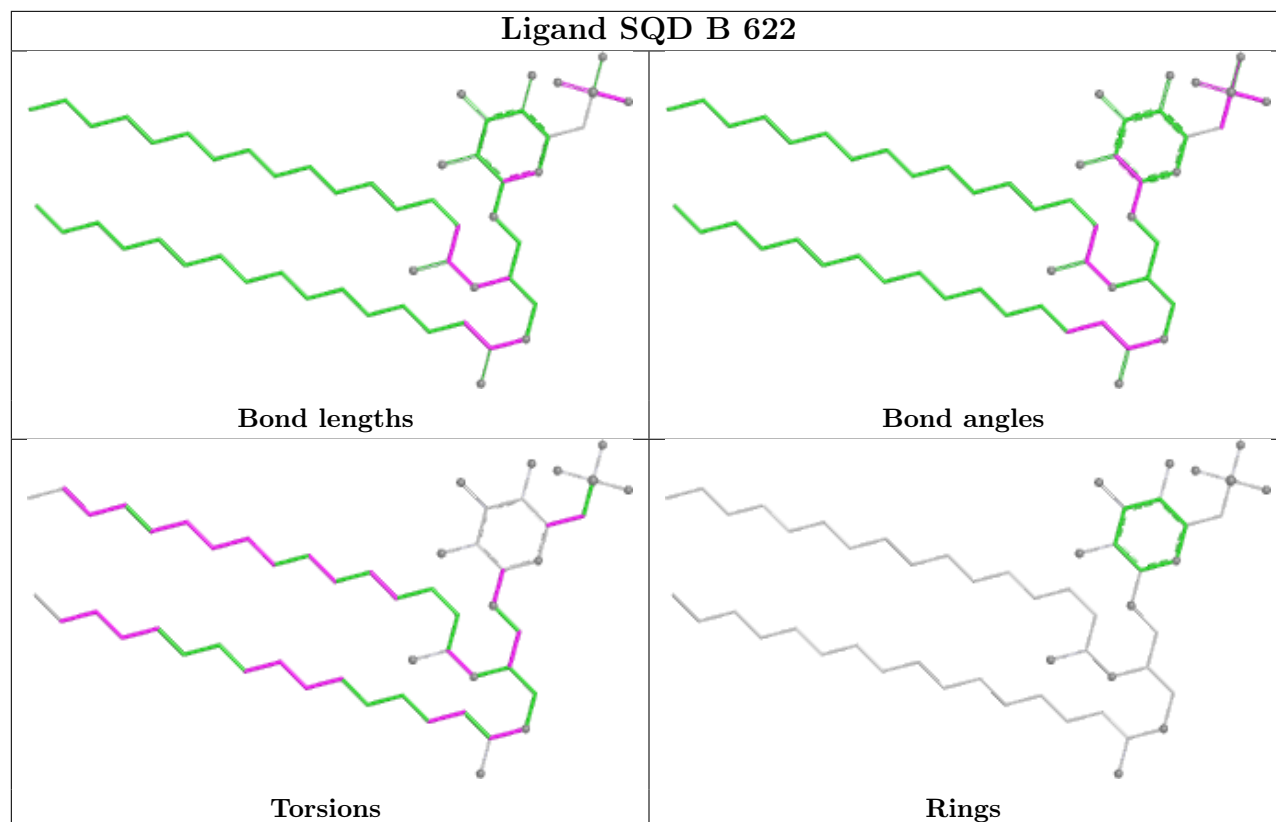
## Ligand CLA c 512

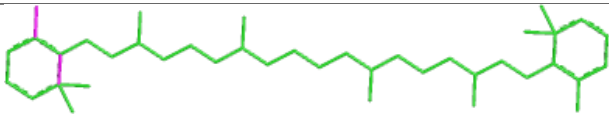
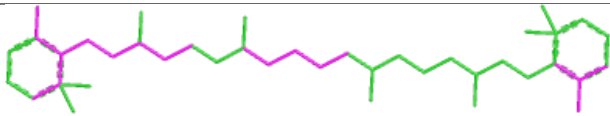
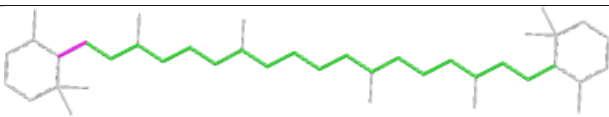
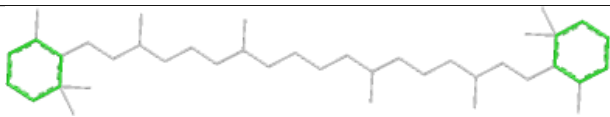


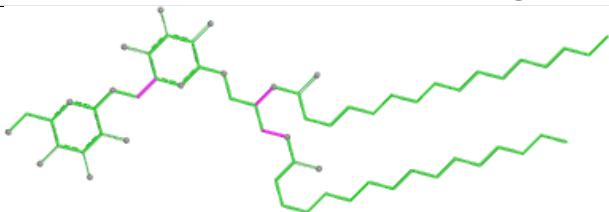
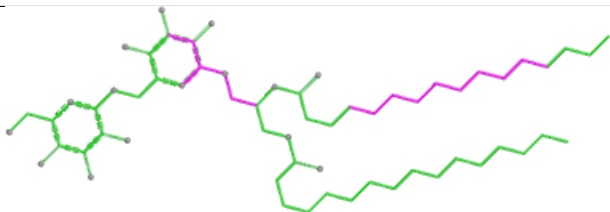
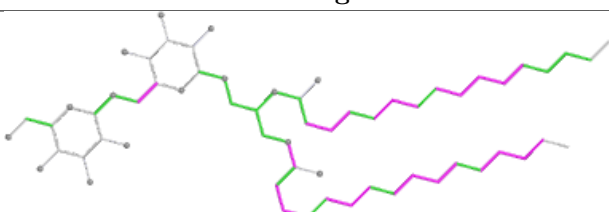
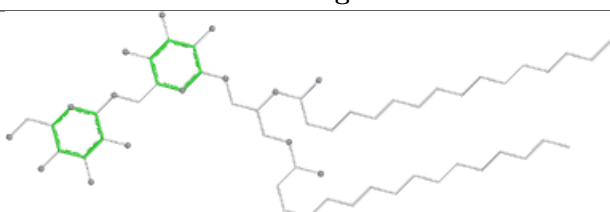


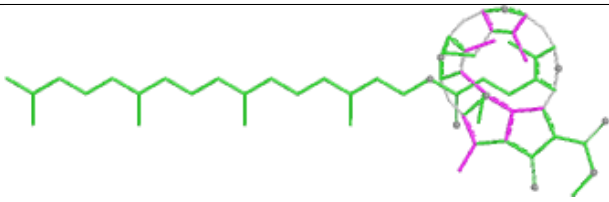
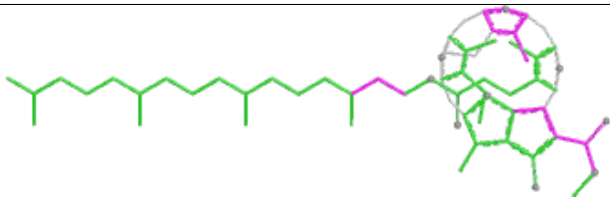
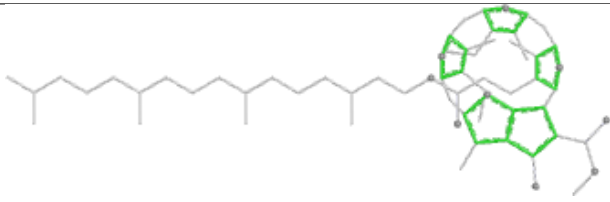


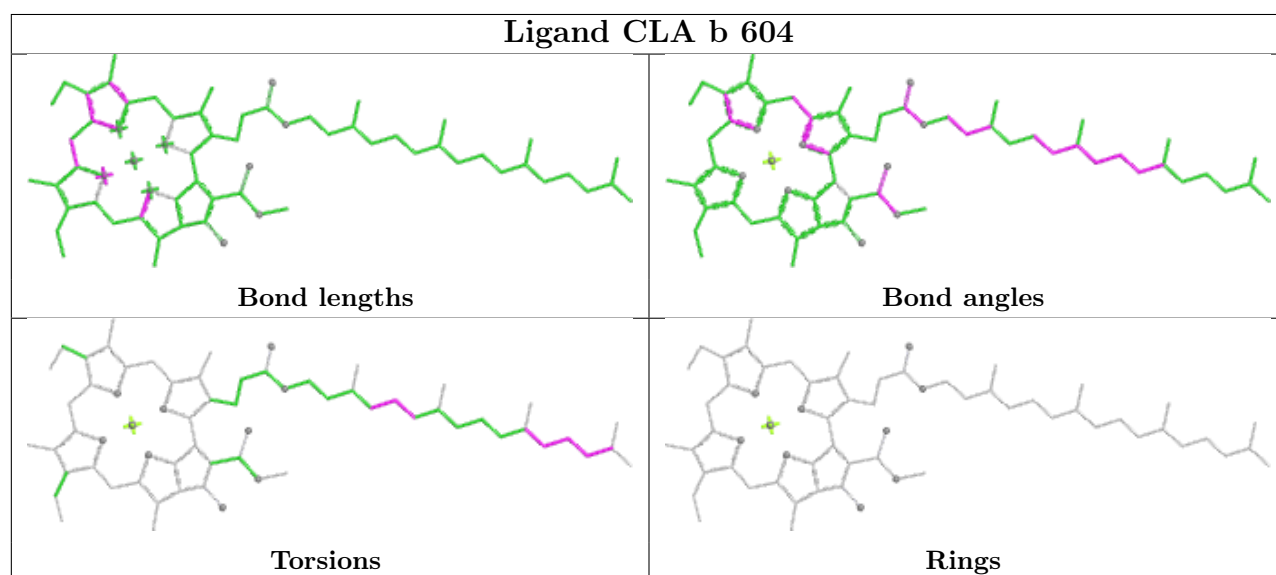
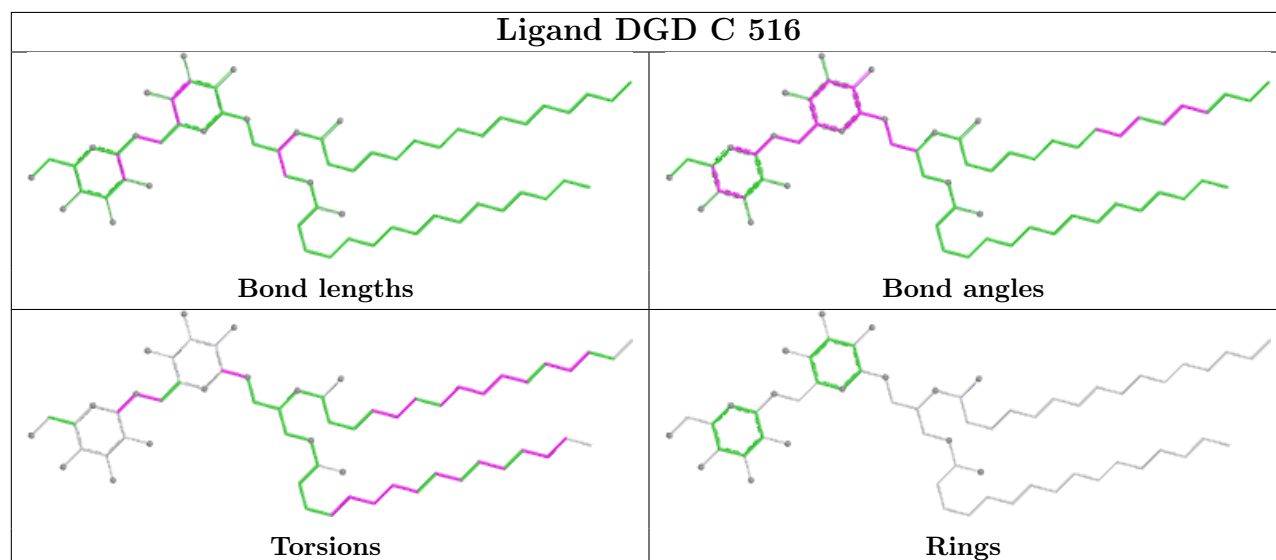
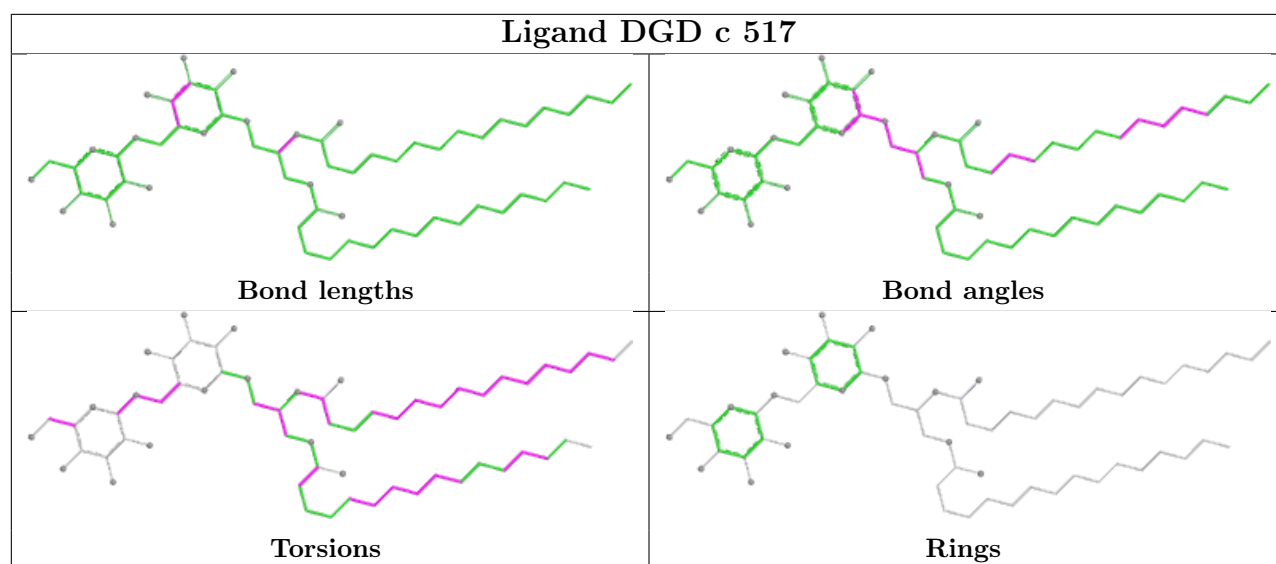


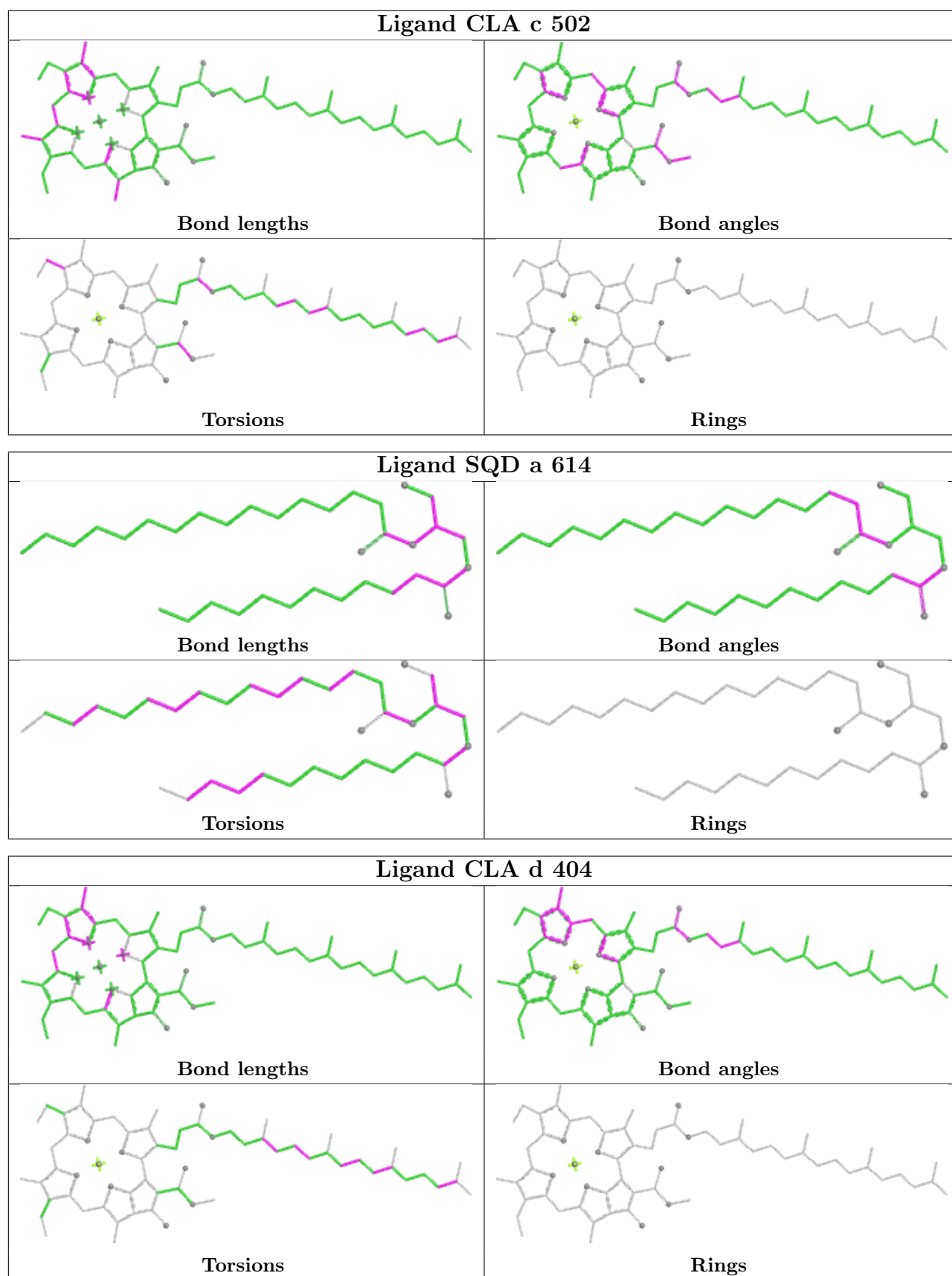


| Ligand BCR A 610                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

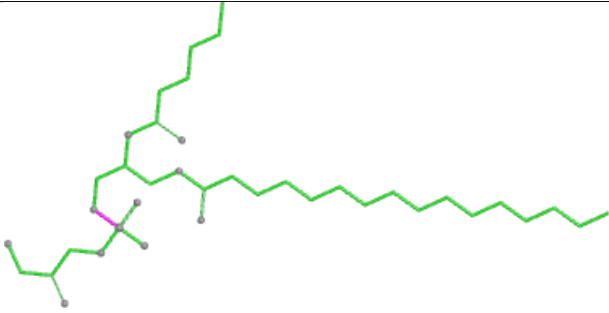
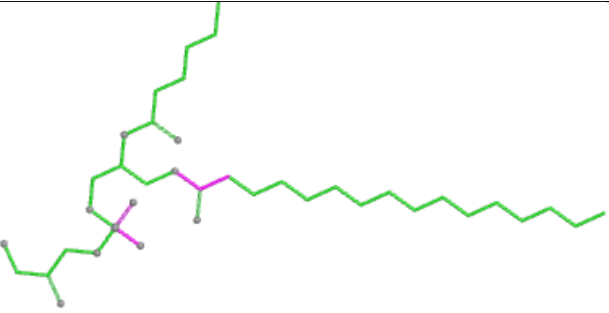
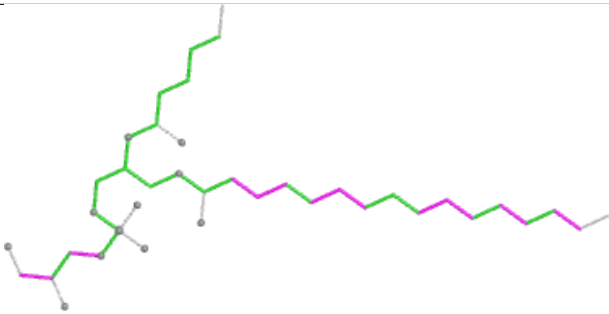
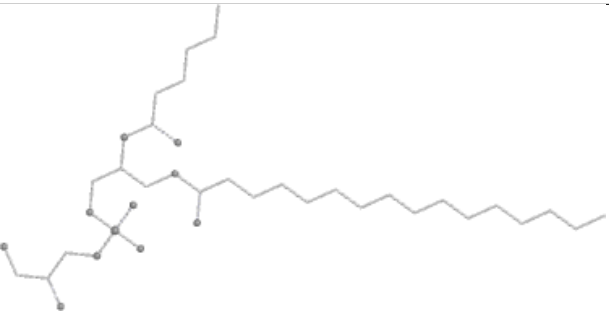
| Ligand DGD c 519                                                                   |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                       | Bond angles                                                                         |
|  |  |
| Torsions                                                                           | Rings                                                                               |

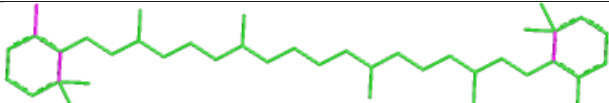
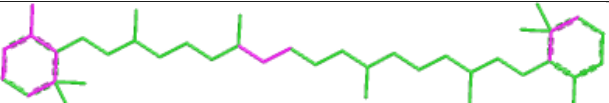
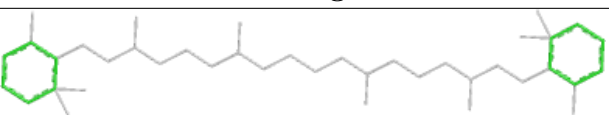
| Ligand PHO D 402                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

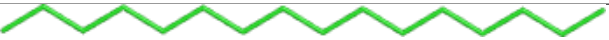
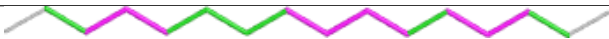


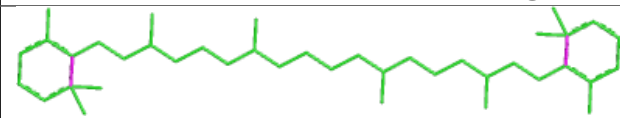
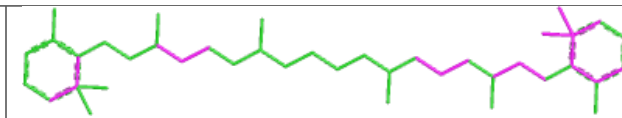
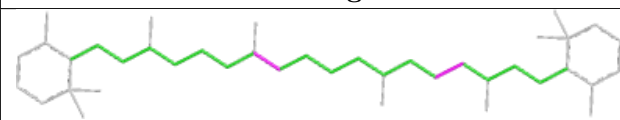
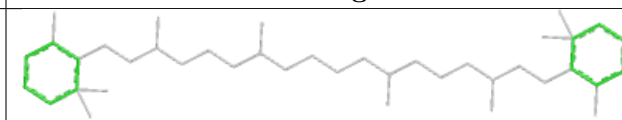


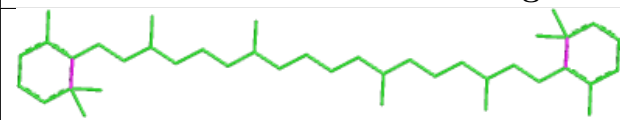
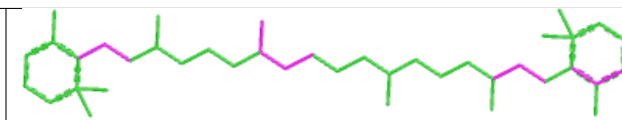
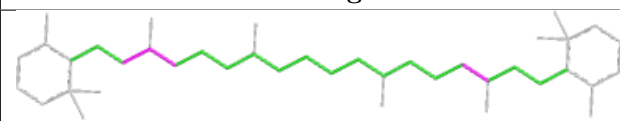
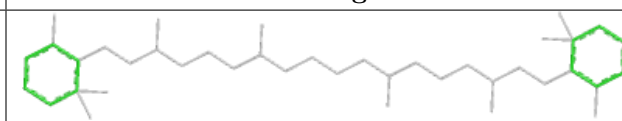
| Ligand STE l 102                                                                                  |  |                                                                                                   |  |
|---------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|
| <br>Bond lengths |  | <br>Bond angles |  |
| <br>Torsions     |  | <br>Rings       |  |

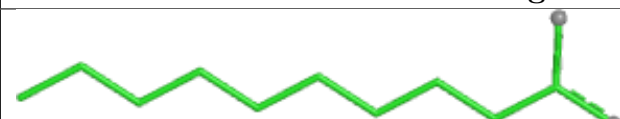
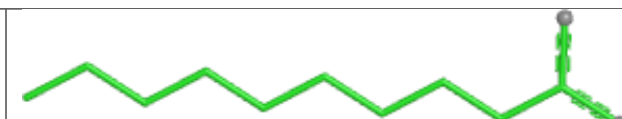
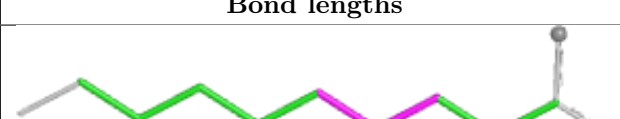
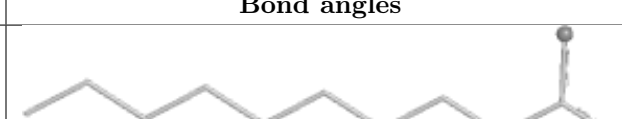
| Ligand LHG d 409                                                                                  |  |                                                                                                   |  |
|---------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|
| <br>Bond lengths |  | <br>Bond angles |  |
| <br>Torsions    |  | <br>Rings      |  |

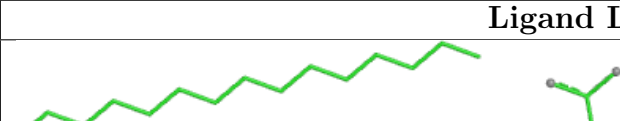
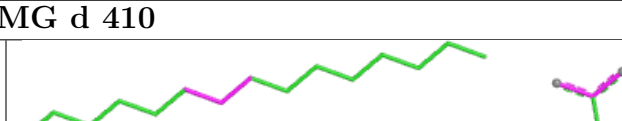
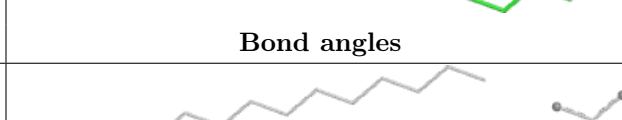
| Ligand BCR B 617                                                                                    |  |                                                                                                     |  |
|-----------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|--|
| <br>Bond lengths |  | <br>Bond angles |  |
| <br>Torsions     |  | <br>Rings       |  |

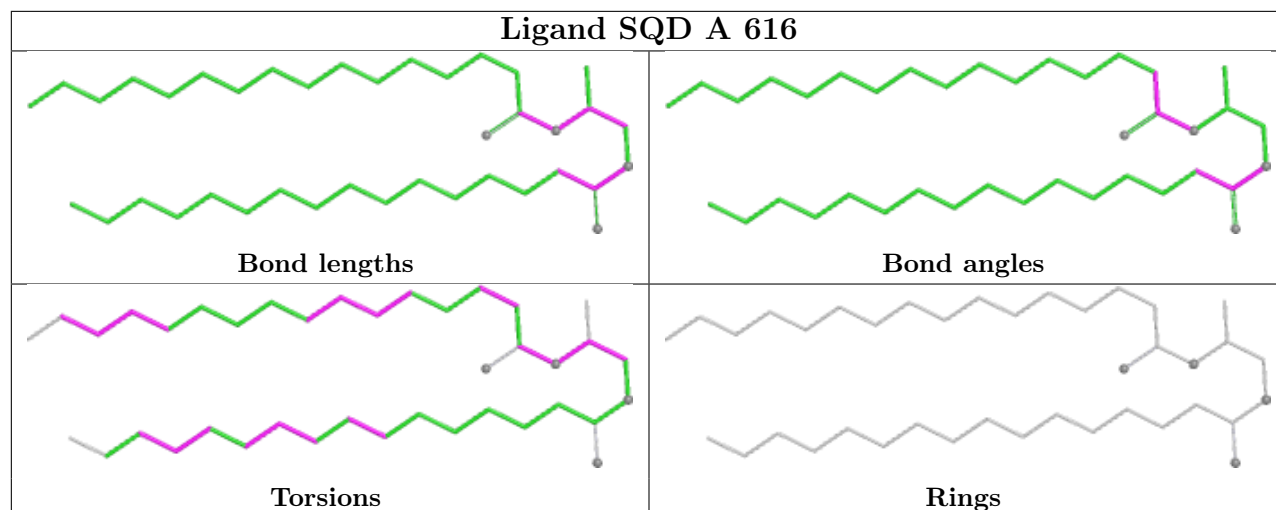
| Ligand STE C 521                                                                                    |  |                                                                                                     |  |
|-----------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|--|
| <br>Bond lengths |  | <br>Bond angles |  |
| <br>Torsions     |  | <br>Rings       |  |

| Ligand BCR a 610                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand BCR b 618                                                                  |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |
| Bond lengths                                                                      | Bond angles                                                                        |
|  |  |
| Torsions                                                                          | Rings                                                                              |

| Ligand STE J 101                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |   |
| Bond lengths                                                                        | Bond angles                                                                          |
|  |  |
| Torsions                                                                            | Rings                                                                                |

| Ligand LMG d 410                                                                    |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
| 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     | 334/344 (97%) | -0.40  | 0 100 100    | 13, 31, 52, 80        | 64 (19%) |
| 1   | a     | 334/344 (97%) | -0.30  | 2 (0%) 85 87 | 13, 33, 58, 76        | 64 (19%) |
| 2   | B     | 505/510 (99%) | -0.33  | 2 (0%) 88 90 | 19, 35, 62, 88        | 4 (0%)   |
| 2   | b     | 505/510 (99%) | -0.18  | 5 (0%) 79 81 | 27, 38, 71, 111       | 0        |
| 3   | C     | 442/461 (95%) | -0.25  | 0 100 100    | 15, 38, 54, 79        | 11 (2%)  |
| 3   | c     | 451/461 (97%) | -0.14  | 1 (0%) 91 92 | 15, 41, 62, 97        | 12 (2%)  |
| 4   | D     | 341/352 (96%) | -0.40  | 1 (0%) 90 91 | 15, 33, 50, 78        | 2 (0%)   |
| 4   | d     | 341/352 (96%) | -0.29  | 0 100 100    | 16, 36, 59, 81        | 3 (0%)   |
| 5   | E     | 82/84 (97%)   | 0.44   | 3 (3%) 45 47 | 36, 53, 69, 85        | 1 (1%)   |
| 5   | e     | 82/84 (97%)   | 0.43   | 1 (1%) 76 78 | 41, 59, 79, 85        | 0        |
| 6   | F     | 34/45 (75%)   | 0.08   | 1 (2%) 53 56 | 41, 47, 63, 85        | 0        |
| 6   | f     | 34/45 (75%)   | 0.24   | 0 100 100    | 44, 52, 78, 94        | 0        |
| 7   | H     | 65/66 (98%)   | -0.08  | 2 (3%) 51 54 | 36, 42, 58, 75        | 0        |
| 7   | h     | 63/66 (95%)   | 0.21   | 2 (3%) 50 53 | 41, 50, 61, 64        | 0        |
| 8   | I     | 35/38 (92%)   | -0.22  | 0 100 100    | 34, 40, 67, 83        | 0        |
| 8   | i     | 35/38 (92%)   | -0.10  | 1 (2%) 53 56 | 33, 42, 72, 80        | 0        |
| 9   | J     | 36/40 (90%)   | 0.00   | 0 100 100    | 36, 51, 78, 88        | 0        |
| 9   | j     | 36/40 (90%)   | 0.39   | 1 (2%) 55 57 | 42, 53, 86, 98        | 0        |
| 10  | K     | 37/46 (80%)   | 0.16   | 0 100 100    | 46, 54, 71, 83        | 0        |
| 10  | k     | 37/46 (80%)   | 0.34   | 0 100 100    | 49, 56, 70, 83        | 0        |
| 11  | L     | 37/37 (100%)  | -0.42  | 0 100 100    | 27, 32, 63, 68        | 0        |
| 11  | l     | 36/37 (97%)   | -0.51  | 0 100 100    | 28, 33, 66, 88        | 0        |
| 12  | M     | 32/36 (88%)   | -0.40  | 0 100 100    | 30, 36, 58, 70        | 0        |
| 12  | m     | 31/36 (86%)   | -0.41  | 0 100 100    | 28, 35, 52, 67        | 0        |

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| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9    |
|-----|-------|-----------------|--------|---------------|-----------------------|----------|
| 13  | O     | 244/272 (89%)   | -0.09  | 2 (0%) 82 84  | 29, 43, 79, 132       | 1 (0%)   |
| 13  | o     | 244/272 (89%)   | -0.07  | 1 (0%) 88 90  | 29, 42, 82, 123       | 0        |
| 14  | T     | 29/32 (90%)     | -0.40  | 1 (3%) 48 50  | 29, 34, 60, 72        | 0        |
| 14  | t     | 29/32 (90%)     | -0.36  | 1 (3%) 48 50  | 29, 34, 73, 89        | 0        |
| 15  | U     | 97/134 (72%)    | -0.06  | 0 100 100     | 33, 45, 69, 86        | 0        |
| 15  | u     | 97/134 (72%)    | -0.15  | 1 (1%) 79 81  | 32, 42, 58, 87        | 0        |
| 16  | V     | 137/163 (84%)   | -0.18  | 0 100 100     | 32, 42, 55, 80        | 0        |
| 16  | v     | 137/163 (84%)   | -0.01  | 0 100 100     | 35, 48, 67, 85        | 0        |
| 17  | Y     | 27/46 (58%)     | 0.96   | 2 (7%) 20 22  | 55, 72, 92, 96        | 0        |
| 17  | y     | 30/46 (65%)     | 0.76   | 0 100 100     | 62, 75, 88, 94        | 0        |
| 18  | X     | 38/41 (92%)     | 0.06   | 1 (2%) 57 60  | 42, 52, 69, 78        | 0        |
| 18  | x     | 39/41 (95%)     | 0.32   | 2 (5%) 33 35  | 51, 61, 87, 99        | 0        |
| 19  | Z     | 62/62 (100%)    | 0.85   | 3 (4%) 35 38  | 55, 69, 108, 124      | 0        |
| 19  | z     | 62/62 (100%)    | 0.73   | 3 (4%) 35 38  | 61, 71, 112, 117      | 0        |
| 20  | R     | 34/41 (82%)     | 0.96   | 3 (8%) 15 16  | 64, 75, 84, 93        | 0        |
| 20  | r     | 31/41 (75%)     | 1.36   | 4 (12%) 7 8   | 75, 94, 112, 117      | 0        |
| All | All   | 5302/5700 (93%) | -0.14  | 46 (0%) 81 83 | 13, 40, 74, 132       | 162 (3%) |

The worst 5 of 46 RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 20  | R     | 35  | LEU  | 4.3  |
| 9   | j     | 6   | GLY  | 3.9  |
| 14  | t     | 30  | THR  | 3.5  |
| 19  | Z     | 62  | VAL  | 3.5  |
| 13  | O     | 60  | ARG  | 3.1  |

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

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(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 14  | FME  | t     | 1   | 10/11 | 0.92 | 0.09 | 33,40,56,70                | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 14  | FME  | T     | 1   | 10/11 | 0.94 | 0.09 | 29,41,54,64                 | 0     |
| 8   | FME  | I     | 1   | 10/11 | 0.94 | 0.09 | 38,46,49,50                 | 0     |
| 12  | FME  | M     | 1   | 10/11 | 0.95 | 0.09 | 39,47,62,64                 | 0     |
| 12  | FME  | m     | 1   | 10/11 | 0.96 | 0.09 | 30,46,64,66                 | 0     |
| 8   | FME  | i     | 1   | 10/11 | 0.96 | 0.08 | 36,49,53,53                 | 0     |

## 6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.4 Ligands [i](#)

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 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 33  | STE  | b     | 622 | 20/20 | 0.74 | 0.17 | 47,58,69,70                 | 0     |
| 33  | STE  | H     | 103 | 18/20 | 0.75 | 0.19 | 47,63,69,73                 | 0     |
| 31  | LHG  | A     | 614 | 49/49 | 0.76 | 0.16 | 54,76,98,103                | 0     |
| 29  | LMG  | b     | 621 | 55/55 | 0.78 | 0.17 | 53,65,77,85                 | 0     |
| 33  | STE  | x     | 102 | 20/20 | 0.78 | 0.15 | 45,53,60,64                 | 0     |
| 29  | LMG  | c     | 522 | 48/55 | 0.80 | 0.15 | 45,69,89,93                 | 0     |
| 33  | STE  | m     | 102 | 12/20 | 0.80 | 0.18 | 50,56,67,69                 | 0     |
| 33  | STE  | a     | 616 | 10/20 | 0.80 | 0.15 | 37,55,60,62                 | 0     |
| 32  | DGD  | a     | 615 | 44/66 | 0.81 | 0.14 | 36,51,70,72                 | 0     |
| 33  | STE  | B     | 626 | 16/20 | 0.81 | 0.15 | 42,59,71,72                 | 0     |
| 28  | PL9  | A     | 611 | 55/55 | 0.81 | 0.17 | 42,61,74,85                 | 0     |
| 33  | STE  | I     | 101 | 15/20 | 0.81 | 0.16 | 39,48,61,65                 | 0     |
| 29  | LMG  | d     | 410 | 23/55 | 0.82 | 0.17 | 41,59,69,72                 | 0     |
| 33  | STE  | E     | 102 | 12/20 | 0.82 | 0.15 | 60,67,83,84                 | 0     |
| 33  | STE  | b     | 623 | 10/20 | 0.82 | 0.13 | 43,50,62,63                 | 0     |
| 33  | STE  | c     | 521 | 20/20 | 0.82 | 0.13 | 42,54,83,83                 | 0     |
| 33  | STE  | c     | 523 | 12/20 | 0.82 | 0.12 | 54,62,72,77                 | 0     |
| 31  | LHG  | e     | 101 | 42/49 | 0.82 | 0.14 | 57,77,97,102                | 0     |
| 30  | SQD  | a     | 614 | 36/54 | 0.82 | 0.14 | 35,55,66,72                 | 0     |
| 29  | LMG  | A     | 612 | 48/55 | 0.83 | 0.12 | 45,57,68,75                 | 0     |
| 33  | STE  | J     | 101 | 12/20 | 0.83 | 0.14 | 46,54,61,64                 | 0     |
| 33  | STE  | T     | 102 | 16/20 | 0.83 | 0.14 | 36,47,61,66                 | 0     |
| 33  | STE  | d     | 412 | 16/20 | 0.83 | 0.14 | 48,54,75,77                 | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 29  | LMG  | D     | 411 | 33/55 | 0.83 | 0.14 | 41,52,69,74                 | 0     |
| 28  | PL9  | a     | 611 | 55/55 | 0.83 | 0.16 | 43,64,79,85                 | 0     |
| 32  | DGD  | A     | 617 | 66/66 | 0.84 | 0.12 | 45,57,67,74                 | 0     |
| 33  | STE  | a     | 617 | 12/20 | 0.84 | 0.12 | 52,58,64,66                 | 0     |
| 25  | CLA  | b     | 601 | 65/65 | 0.84 | 0.12 | 49,64,78,89                 | 0     |
| 33  | STE  | B     | 620 | 17/20 | 0.85 | 0.12 | 38,47,64,66                 | 0     |
| 30  | SQD  | A     | 616 | 39/54 | 0.86 | 0.13 | 39,49,72,77                 | 0     |
| 30  | SQD  | f     | 102 | 41/54 | 0.86 | 0.14 | 63,78,89,92                 | 0     |
| 33  | STE  | j     | 101 | 12/20 | 0.86 | 0.13 | 49,55,61,67                 | 0     |
| 33  | STE  | T     | 103 | 15/20 | 0.86 | 0.14 | 44,53,64,66                 | 0     |
| 33  | STE  | C     | 521 | 16/20 | 0.86 | 0.13 | 37,49,64,65                 | 0     |
| 33  | STE  | D     | 413 | 20/20 | 0.87 | 0.12 | 37,46,70,81                 | 0     |
| 33  | STE  | b     | 620 | 20/20 | 0.87 | 0.11 | 38,52,71,73                 | 0     |
| 29  | LMG  | c     | 520 | 37/55 | 0.87 | 0.12 | 45,64,74,77                 | 0     |
| 33  | STE  | C     | 519 | 12/20 | 0.87 | 0.12 | 34,42,52,53                 | 0     |
| 33  | STE  | B     | 624 | 18/20 | 0.87 | 0.12 | 40,49,78,85                 | 0     |
| 33  | STE  | C     | 520 | 12/20 | 0.88 | 0.11 | 43,49,57,58                 | 0     |
| 29  | LMG  | c     | 524 | 49/55 | 0.88 | 0.10 | 40,56,68,73                 | 0     |
| 33  | STE  | B     | 625 | 12/20 | 0.88 | 0.12 | 44,59,64,67                 | 0     |
| 30  | SQD  | B     | 622 | 54/54 | 0.88 | 0.11 | 40,57,82,93                 | 0     |
| 25  | CLA  | B     | 601 | 65/65 | 0.88 | 0.11 | 37,53,75,87                 | 0     |
| 29  | LMG  | M     | 101 | 51/55 | 0.89 | 0.10 | 31,46,62,65                 | 0     |
| 29  | LMG  | B     | 621 | 28/55 | 0.89 | 0.12 | 38,48,58,70                 | 0     |
| 29  | LMG  | m     | 101 | 51/55 | 0.89 | 0.10 | 34,49,64,70                 | 0     |
| 29  | LMG  | C     | 518 | 48/55 | 0.89 | 0.12 | 45,63,73,78                 | 0     |
| 27  | BCR  | d     | 405 | 40/40 | 0.89 | 0.12 | 39,49,78,87                 | 0     |
| 30  | SQD  | F     | 101 | 36/54 | 0.89 | 0.12 | 49,66,74,77                 | 0     |
| 30  | SQD  | L     | 101 | 49/54 | 0.89 | 0.10 | 37,55,73,77                 | 0     |
| 33  | STE  | t     | 102 | 14/20 | 0.89 | 0.11 | 36,49,54,61                 | 0     |
| 33  | STE  | B     | 623 | 12/20 | 0.89 | 0.12 | 41,51,60,68                 | 0     |
| 27  | BCR  | x     | 101 | 40/40 | 0.90 | 0.11 | 42,54,65,71                 | 0     |
| 33  | STE  | l     | 102 | 18/20 | 0.90 | 0.12 | 36,44,63,66                 | 0     |
| 33  | STE  | M     | 103 | 10/20 | 0.90 | 0.11 | 41,44,50,50                 | 0     |
| 30  | SQD  | a     | 613 | 54/54 | 0.90 | 0.10 | 40,57,71,73                 | 0     |
| 33  | STE  | d     | 413 | 17/20 | 0.90 | 0.12 | 46,51,62,65                 | 0     |
| 27  | BCR  | Y     | 101 | 40/40 | 0.91 | 0.10 | 46,52,61,64                 | 0     |
| 32  | DGD  | h     | 101 | 62/66 | 0.91 | 0.09 | 38,45,53,53                 | 0     |
| 27  | BCR  | c     | 514 | 40/40 | 0.91 | 0.10 | 44,55,64,66                 | 0     |
| 25  | CLA  | C     | 513 | 65/65 | 0.91 | 0.10 | 44,56,83,89                 | 0     |
| 27  | BCR  | k     | 101 | 40/40 | 0.91 | 0.11 | 47,57,64,68                 | 0     |
| 27  | BCR  | B     | 618 | 40/40 | 0.91 | 0.09 | 29,36,47,50                 | 0     |
| 27  | BCR  | D     | 406 | 40/40 | 0.91 | 0.10 | 34,41,66,70                 | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 27  | BCR  | H     | 101 | 40/40 | 0.91 | 0.09 | 35,43,50,55                 | 0     |
| 32  | DGD  | c     | 518 | 62/66 | 0.92 | 0.09 | 37,48,74,80                 | 0     |
| 27  | BCR  | K     | 102 | 40/40 | 0.92 | 0.11 | 39,49,63,65                 | 0     |
| 27  | BCR  | C     | 514 | 40/40 | 0.92 | 0.09 | 32,39,47,47                 | 0     |
| 33  | STE  | M     | 102 | 15/20 | 0.92 | 0.10 | 37,46,62,67                 | 0     |
| 32  | DGD  | C     | 516 | 62/66 | 0.92 | 0.10 | 38,47,83,95                 | 0     |
| 32  | DGD  | H     | 102 | 62/66 | 0.92 | 0.09 | 34,42,49,53                 | 0     |
| 27  | BCR  | K     | 101 | 40/40 | 0.92 | 0.11 | 49,56,60,61                 | 0     |
| 25  | CLA  | c     | 513 | 65/65 | 0.93 | 0.10 | 47,61,81,86                 | 0     |
| 27  | BCR  | A     | 610 | 40/40 | 0.93 | 0.08 | 27,34,40,43                 | 0     |
| 32  | DGD  | C     | 515 | 62/66 | 0.93 | 0.10 | 27,37,65,71                 | 0     |
| 27  | BCR  | T     | 101 | 40/40 | 0.93 | 0.07 | 31,37,49,53                 | 0     |
| 30  | SQD  | A     | 613 | 52/54 | 0.93 | 0.10 | 32,53,75,79                 | 0     |
| 25  | CLA  | C     | 503 | 65/65 | 0.93 | 0.08 | 33,42,47,53                 | 0     |
| 27  | BCR  | b     | 618 | 40/40 | 0.93 | 0.07 | 28,38,48,53                 | 0     |
| 29  | LMG  | D     | 408 | 51/55 | 0.93 | 0.10 | 33,47,64,71                 | 0     |
| 27  | BCR  | B     | 619 | 40/40 | 0.93 | 0.08 | 32,40,46,49                 | 0     |
| 27  | BCR  | c     | 516 | 40/40 | 0.93 | 0.11 | 45,53,58,66                 | 0     |
| 25  | CLA  | C     | 512 | 65/65 | 0.93 | 0.09 | 35,51,68,77                 | 0     |
| 25  | CLA  | c     | 509 | 65/65 | 0.93 | 0.10 | 38,45,55,58                 | 0     |
| 25  | CLA  | c     | 512 | 65/65 | 0.93 | 0.10 | 45,53,76,81                 | 0     |
| 34  | BCT  | a     | 606 | 4/4   | 0.93 | 0.08 | 34,40,44,49                 | 0     |
| 27  | BCR  | t     | 101 | 40/40 | 0.94 | 0.07 | 28,36,46,47                 | 0     |
| 25  | CLA  | c     | 508 | 64/65 | 0.94 | 0.09 | 32,43,73,90                 | 0     |
| 31  | LHG  | d     | 407 | 49/49 | 0.94 | 0.10 | 32,46,58,65                 | 0     |
| 31  | LHG  | d     | 409 | 39/49 | 0.94 | 0.09 | 32,43,54,58                 | 0     |
| 25  | CLA  | B     | 606 | 65/65 | 0.94 | 0.08 | 26,36,57,62                 | 0     |
| 28  | PL9  | D     | 407 | 55/55 | 0.94 | 0.07 | 23,32,38,45                 | 0     |
| 27  | BCR  | b     | 617 | 40/40 | 0.94 | 0.07 | 30,38,43,43                 | 0     |
| 25  | CLA  | c     | 511 | 65/65 | 0.94 | 0.09 | 40,52,61,64                 | 0     |
| 32  | DGD  | C     | 517 | 62/66 | 0.94 | 0.08 | 34,43,66,71                 | 0     |
| 27  | BCR  | b     | 619 | 40/40 | 0.94 | 0.08 | 33,42,57,60                 | 0     |
| 25  | CLA  | C     | 510 | 65/65 | 0.94 | 0.08 | 32,42,51,54                 | 0     |
| 27  | BCR  | c     | 515 | 40/40 | 0.94 | 0.08 | 34,41,48,55                 | 0     |
| 25  | CLA  | C     | 511 | 65/65 | 0.94 | 0.09 | 36,48,57,65                 | 0     |
| 25  | CLA  | c     | 506 | 65/65 | 0.94 | 0.08 | 36,44,74,78                 | 0     |
| 27  | BCR  | B     | 617 | 40/40 | 0.94 | 0.07 | 32,38,49,50                 | 0     |
| 25  | CLA  | a     | 608 | 65/65 | 0.95 | 0.09 | 31,38,79,85                 | 0     |
| 25  | CLA  | B     | 604 | 65/65 | 0.95 | 0.07 | 23,31,58,61                 | 0     |
| 25  | CLA  | b     | 606 | 65/65 | 0.95 | 0.07 | 28,38,58,64                 | 0     |
| 25  | CLA  | b     | 608 | 65/65 | 0.95 | 0.07 | 33,41,51,53                 | 0     |
| 25  | CLA  | b     | 614 | 65/65 | 0.95 | 0.08 | 25,37,60,65                 | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 25  | CLA  | b     | 615 | 65/65 | 0.95 | 0.08 | 29,40,50,51                 | 0     |
| 25  | CLA  | b     | 616 | 60/65 | 0.95 | 0.08 | 32,40,70,73                 | 0     |
| 29  | LMG  | d     | 411 | 44/55 | 0.95 | 0.08 | 39,45,71,76                 | 0     |
| 25  | CLA  | c     | 501 | 65/65 | 0.95 | 0.07 | 30,38,45,50                 | 0     |
| 27  | BCR  | a     | 610 | 40/40 | 0.95 | 0.06 | 24,31,40,44                 | 0     |
| 25  | CLA  | c     | 502 | 65/65 | 0.95 | 0.07 | 32,41,53,60                 | 0     |
| 25  | CLA  | c     | 503 | 65/65 | 0.95 | 0.07 | 33,44,49,53                 | 0     |
| 25  | CLA  | c     | 504 | 60/65 | 0.95 | 0.07 | 35,42,72,73                 | 0     |
| 25  | CLA  | c     | 505 | 65/65 | 0.95 | 0.07 | 29,39,54,58                 | 0     |
| 25  | CLA  | C     | 506 | 65/65 | 0.95 | 0.08 | 29,42,72,76                 | 0     |
| 25  | CLA  | c     | 507 | 65/65 | 0.95 | 0.08 | 30,40,50,56                 | 0     |
| 25  | CLA  | C     | 507 | 65/65 | 0.95 | 0.07 | 28,36,48,51                 | 0     |
| 25  | CLA  | C     | 508 | 65/65 | 0.95 | 0.08 | 30,39,82,89                 | 0     |
| 31  | LHG  | D     | 410 | 47/49 | 0.95 | 0.09 | 28,39,66,77                 | 0     |
| 31  | LHG  | D     | 412 | 49/49 | 0.95 | 0.09 | 30,40,54,58                 | 0     |
| 25  | CLA  | c     | 510 | 65/65 | 0.95 | 0.08 | 37,47,53,61                 | 0     |
| 25  | CLA  | C     | 509 | 65/65 | 0.95 | 0.08 | 31,39,52,58                 | 0     |
| 25  | CLA  | B     | 610 | 65/65 | 0.95 | 0.07 | 23,30,38,41                 | 0     |
| 31  | LHG  | l     | 101 | 49/49 | 0.95 | 0.08 | 31,42,48,53                 | 0     |
| 25  | CLA  | B     | 616 | 60/65 | 0.95 | 0.09 | 26,36,74,85                 | 0     |
| 25  | CLA  | d     | 404 | 65/65 | 0.95 | 0.08 | 32,41,75,81                 | 0     |
| 28  | PL9  | d     | 406 | 55/55 | 0.95 | 0.07 | 27,33,37,41                 | 0     |
| 26  | PHO  | d     | 401 | 64/64 | 0.95 | 0.06 | 24,31,36,38                 | 0     |
| 25  | CLA  | C     | 501 | 65/65 | 0.95 | 0.07 | 25,33,44,48                 | 0     |
| 25  | CLA  | C     | 502 | 65/65 | 0.95 | 0.07 | 32,39,48,53                 | 0     |
| 32  | DGD  | c     | 517 | 62/66 | 0.95 | 0.08 | 29,38,60,66                 | 0     |
| 25  | CLA  | a     | 607 | 65/65 | 0.95 | 0.07 | 23,30,38,50                 | 0     |
| 34  | BCT  | D     | 401 | 4/4   | 0.95 | 0.08 | 34,39,39,40                 | 0     |
| 32  | DGD  | c     | 519 | 62/66 | 0.95 | 0.08 | 32,45,68,76                 | 0     |
| 25  | CLA  | b     | 610 | 65/65 | 0.96 | 0.07 | 29,37,42,46                 | 0     |
| 25  | CLA  | b     | 611 | 65/65 | 0.96 | 0.06 | 26,33,46,53                 | 0     |
| 25  | CLA  | b     | 612 | 65/65 | 0.96 | 0.07 | 27,33,43,51                 | 0     |
| 25  | CLA  | b     | 613 | 65/65 | 0.96 | 0.07 | 23,31,61,67                 | 0     |
| 25  | CLA  | C     | 505 | 65/65 | 0.96 | 0.08 | 27,36,59,61                 | 0     |
| 25  | CLA  | B     | 608 | 65/65 | 0.96 | 0.06 | 24,31,45,50                 | 0     |
| 25  | CLA  | B     | 609 | 65/65 | 0.96 | 0.07 | 28,37,43,48                 | 0     |
| 25  | CLA  | B     | 602 | 65/65 | 0.96 | 0.07 | 29,37,48,53                 | 0     |
| 25  | CLA  | B     | 611 | 65/65 | 0.96 | 0.06 | 22,29,41,46                 | 0     |
| 25  | CLA  | B     | 612 | 65/65 | 0.96 | 0.07 | 24,31,39,44                 | 0     |
| 25  | CLA  | B     | 613 | 65/65 | 0.96 | 0.06 | 22,30,55,60                 | 0     |
| 25  | CLA  | B     | 614 | 65/65 | 0.96 | 0.07 | 27,35,61,74                 | 0     |
| 25  | CLA  | B     | 615 | 65/65 | 0.96 | 0.07 | 29,36,53,63                 | 0     |

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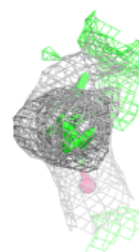
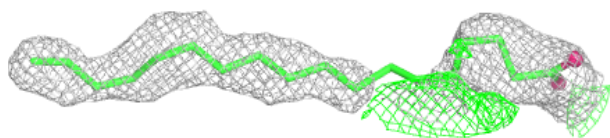
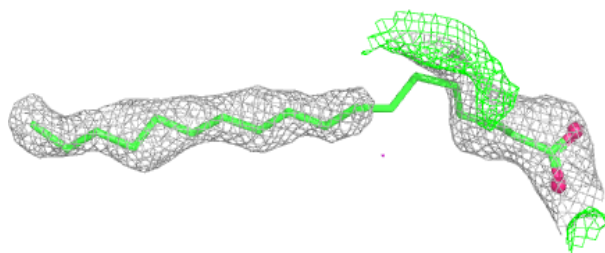
| Mol | Type | Chain | Res    | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|--------|-------|------|------|-----------------------------|-------|
| 25  | CLA  | D     | 405    | 65/65 | 0.96 | 0.07 | 28,36,81,92                 | 0     |
| 31  | LHG  | A     | 615    | 49/49 | 0.96 | 0.07 | 30,37,47,57                 | 0     |
| 31  | LHG  | D     | 409    | 49/49 | 0.96 | 0.07 | 27,36,44,52                 | 0     |
| 25  | CLA  | B     | 603    | 65/65 | 0.96 | 0.07 | 24,31,49,53                 | 0     |
| 25  | CLA  | A     | 607    | 65/65 | 0.96 | 0.09 | 26,32,83,88                 | 0     |
| 25  | CLA  | a     | 609    | 65/65 | 0.96 | 0.08 | 23,30,63,67                 | 0     |
| 31  | LHG  | d     | 408    | 49/49 | 0.96 | 0.07 | 30,40,47,57                 | 0     |
| 25  | CLA  | a     | 612    | 65/65 | 0.96 | 0.06 | 22,30,36,42                 | 0     |
| 25  | CLA  | B     | 605    | 65/65 | 0.96 | 0.06 | 23,31,40,42                 | 0     |
| 25  | CLA  | b     | 602    | 65/65 | 0.96 | 0.07 | 30,39,51,55                 | 0     |
| 25  | CLA  | d     | 403    | 65/65 | 0.96 | 0.07 | 25,33,46,55                 | 0     |
| 25  | CLA  | b     | 603    | 65/65 | 0.96 | 0.07 | 25,33,55,62                 | 0     |
| 26  | PHO  | A     | 608    | 64/64 | 0.96 | 0.05 | 20,28,33,39                 | 0     |
| 26  | PHO  | D     | 402    | 64/64 | 0.96 | 0.06 | 25,32,38,42                 | 0     |
| 25  | CLA  | b     | 604    | 65/65 | 0.96 | 0.08 | 25,33,63,76                 | 0     |
| 26  | PHO  | d     | 402    | 64/64 | 0.96 | 0.06 | 29,38,43,49                 | 0     |
| 25  | CLA  | b     | 605    | 65/65 | 0.96 | 0.07 | 22,35,43,46                 | 0     |
| 25  | CLA  | A     | 606    | 65/65 | 0.96 | 0.06 | 22,27,37,43                 | 0     |
| 25  | CLA  | C     | 504    | 59/65 | 0.96 | 0.07 | 32,39,66,71                 | 0     |
| 25  | CLA  | b     | 609    | 65/65 | 0.96 | 0.07 | 33,41,55,63                 | 0     |
| 35  | HEM  | f     | 101    | 43/43 | 0.96 | 0.09 | 47,59,75,85                 | 0     |
| 25  | CLA  | b     | 607    | 65/65 | 0.97 | 0.07 | 22,32,50,58                 | 0     |
| 25  | CLA  | D     | 404    | 65/65 | 0.97 | 0.06 | 21,29,45,48                 | 0     |
| 25  | CLA  | A     | 609    | 54/65 | 0.97 | 0.06 | 21,28,58,62                 | 0     |
| 25  | CLA  | B     | 607    | 65/65 | 0.97 | 0.07 | 20,29,52,58                 | 0     |
| 35  | HEM  | E     | 101    | 43/43 | 0.97 | 0.08 | 44,50,62,68                 | 0     |
| 25  | CLA  | D     | 403    | 65/65 | 0.97 | 0.05 | 21,27,38,44                 | 0     |
| 24  | CL   | a     | 604    | 1/1   | 0.98 | 0.05 | 32,32,32,32                 | 0     |
| 36  | HEC  | V     | 201    | 43/43 | 0.98 | 0.07 | 27,34,41,45                 | 0     |
| 36  | HEC  | v     | 201    | 43/43 | 0.98 | 0.07 | 31,38,43,50                 | 0     |
| 22  | OEX  | a     | 602[A] | 10/10 | 0.99 | 0.03 | 29,32,36,37                 | 10    |
| 23  | FE2  | a     | 603    | 1/1   | 0.99 | 0.02 | 38,38,38,38                 | 0     |
| 24  | CL   | A     | 604    | 1/1   | 0.99 | 0.04 | 33,33,33,33                 | 0     |
| 24  | CL   | A     | 605    | 1/1   | 0.99 | 0.08 | 34,34,34,34                 | 0     |
| 21  | OEY  | A     | 601[B] | 11/11 | 0.99 | 0.03 | 26,29,33,34                 | 11    |
| 24  | CL   | a     | 605    | 1/1   | 0.99 | 0.08 | 33,33,33,33                 | 0     |
| 21  | OEY  | a     | 601[B] | 11/11 | 0.99 | 0.03 | 27,30,33,38                 | 11    |
| 22  | OEX  | A     | 602[A] | 10/10 | 0.99 | 0.03 | 31,32,36,38                 | 10    |
| 23  | FE2  | A     | 603    | 1/1   | 1.00 | 0.01 | 32,32,32,32                 | 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.

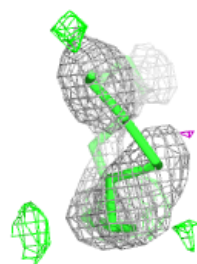
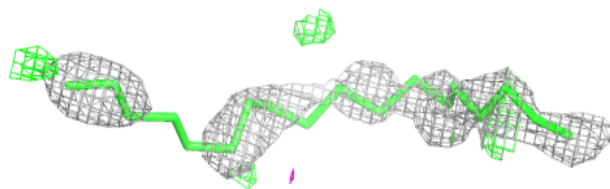
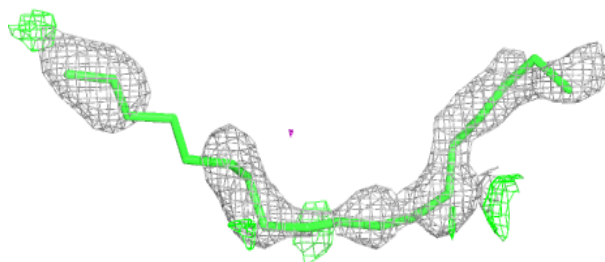
**Electron density around STE b 622:**

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



**Electron density around STE H 103:**

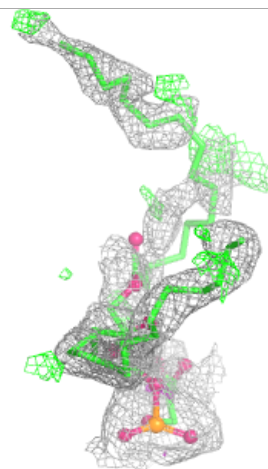
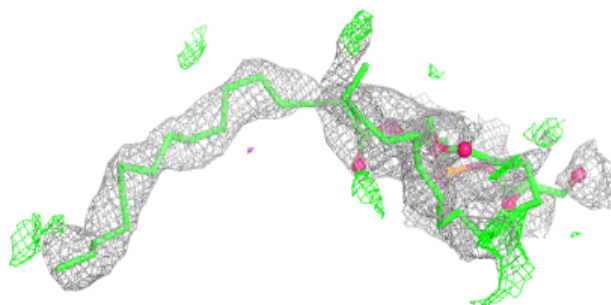
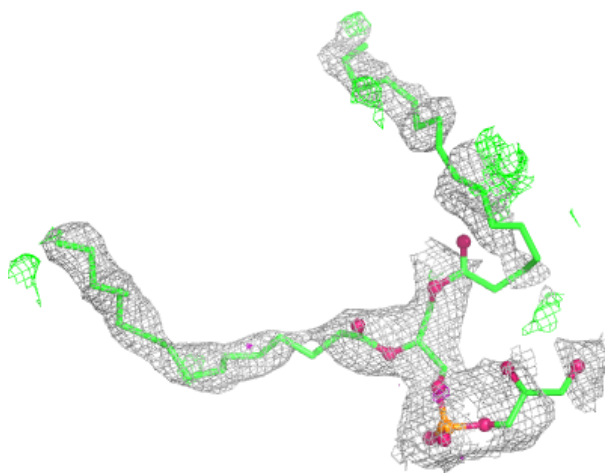
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





**Electron density around LHG A 614:**

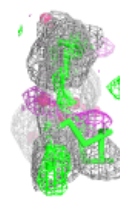
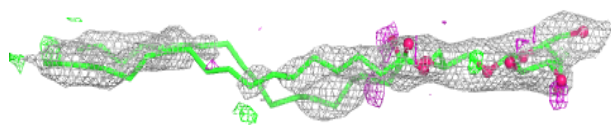
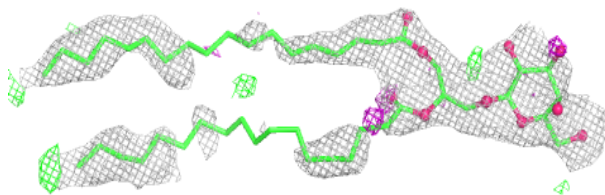
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



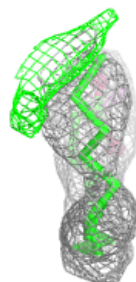
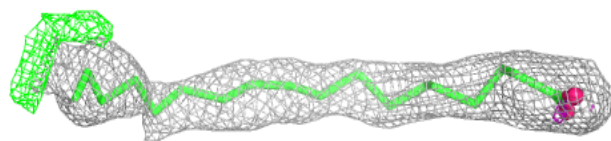
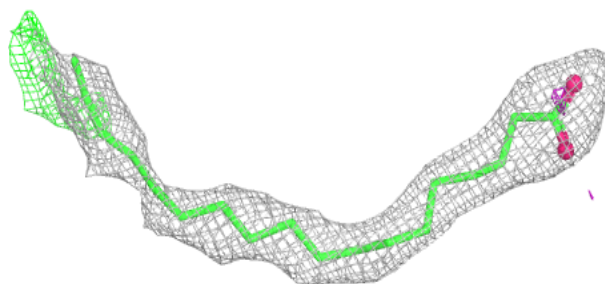


**Electron density around LMG b 621:**

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

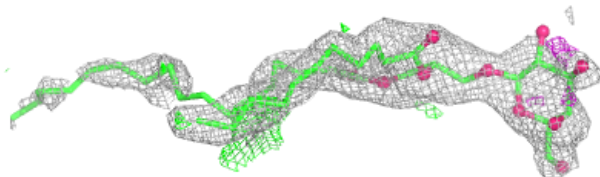
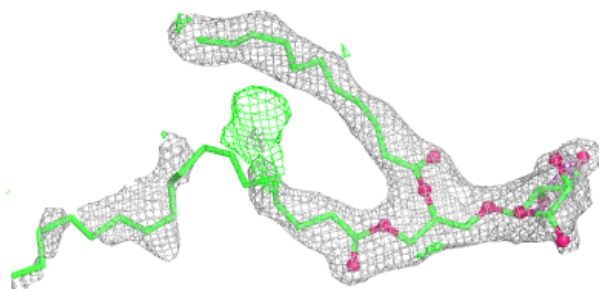
**Electron density around STE x 102:**

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

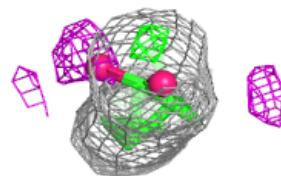
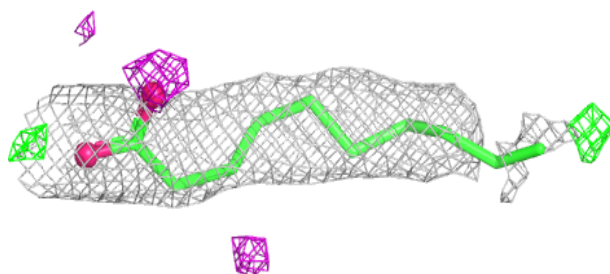
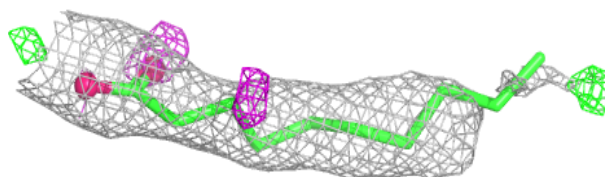


**Electron density around LMG c 522:**

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

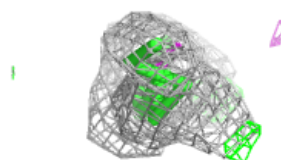
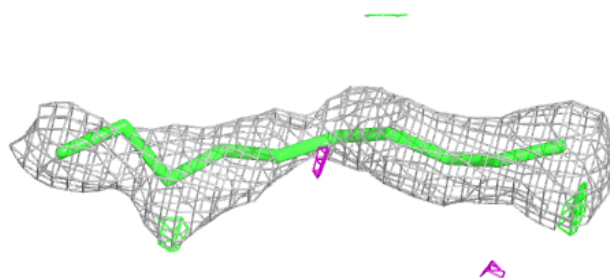
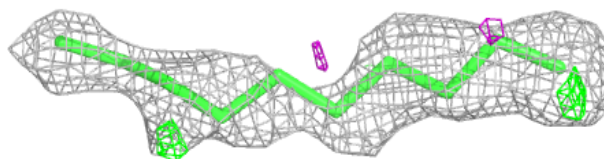
**Electron density around STE m 102:**

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

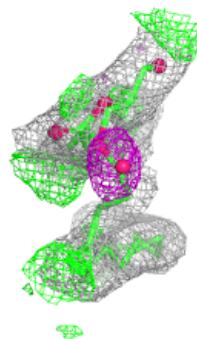
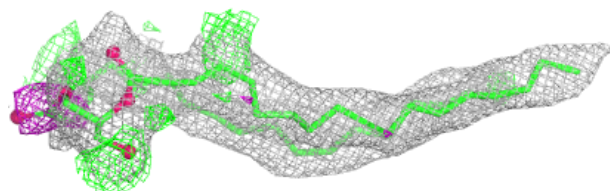
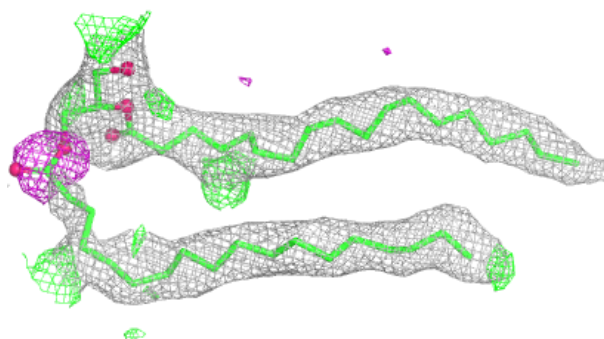


**Electron density around STE a 616:**

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

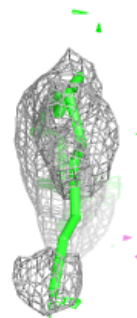
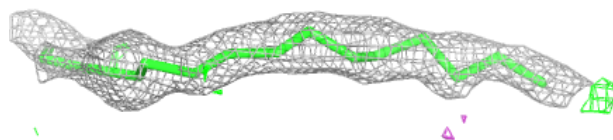
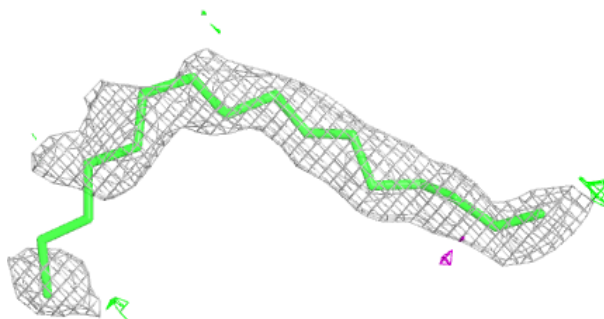
**Electron density around DGD a 615:**

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

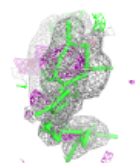
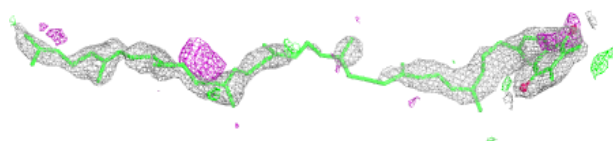
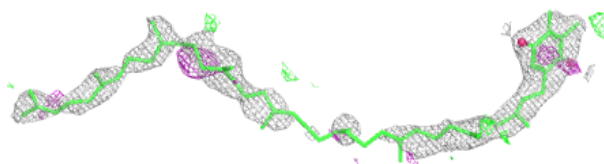


**Electron density around STE B 626:**

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

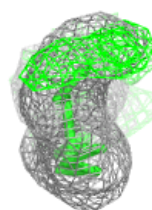
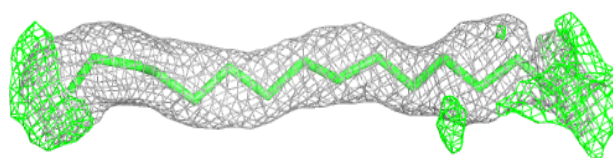
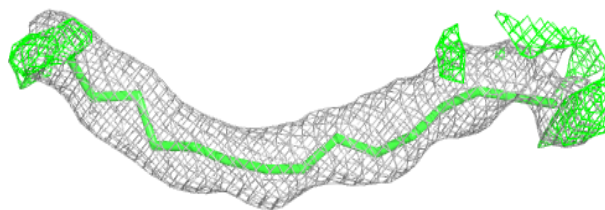
**Electron density around PL9 A 611:**

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

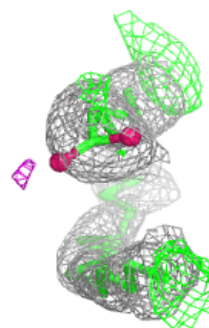
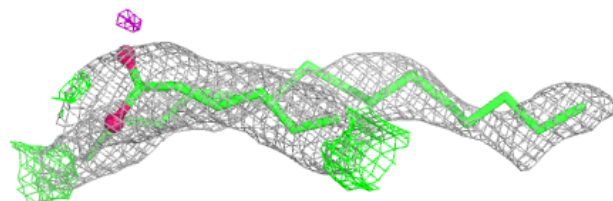
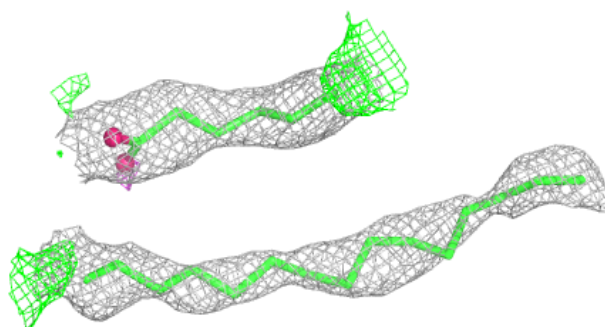


**Electron density around STE I 101:**

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

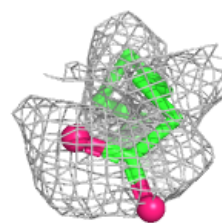
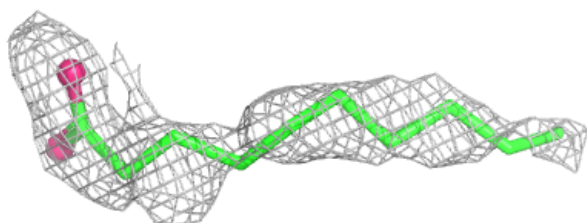
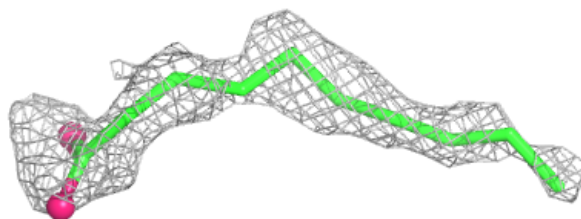
**Electron density around LMG d 410:**

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

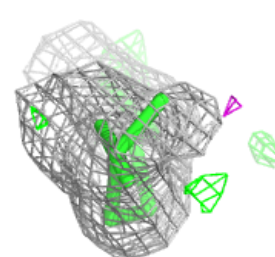
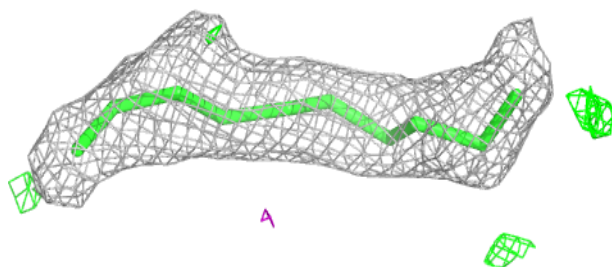
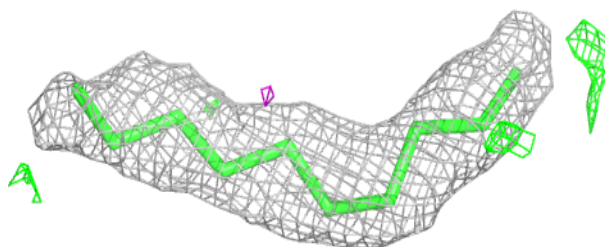


**Electron density around STE E 102:**

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

**Electron density around STE b 623:**

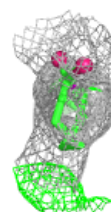
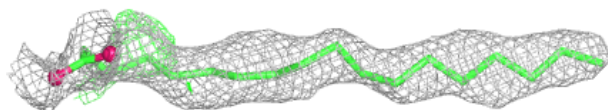
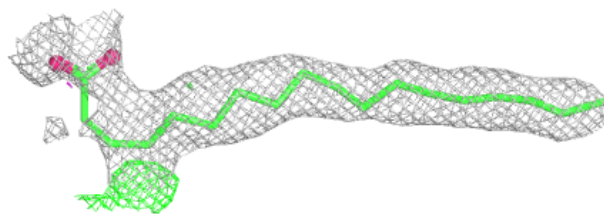
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



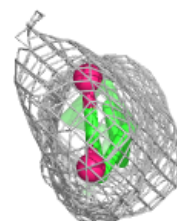
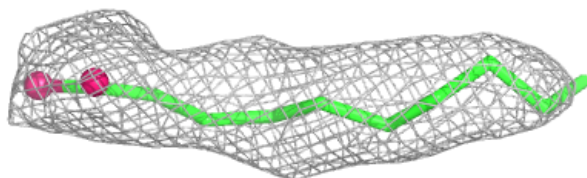
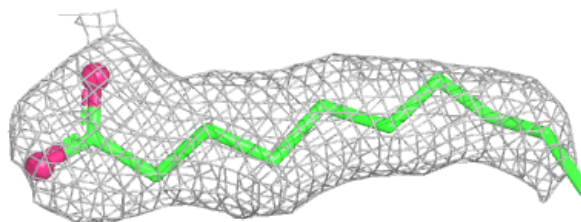


**Electron density around STE c 521:**

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

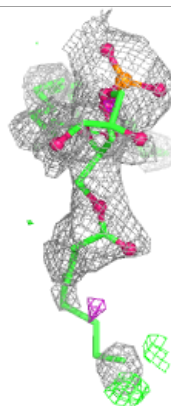
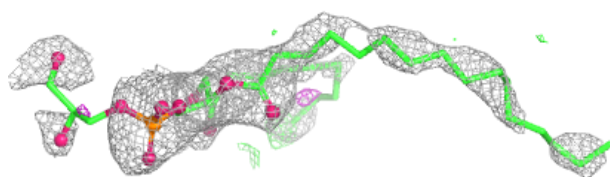
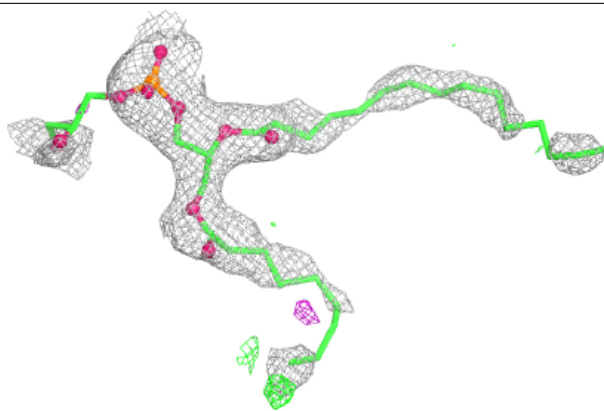
**Electron density around STE c 523:**

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



**Electron density around LHG e 101:**

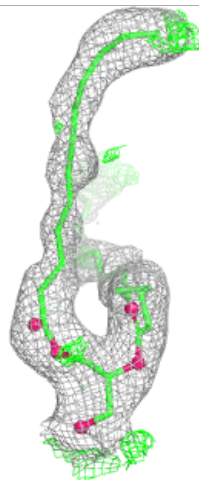
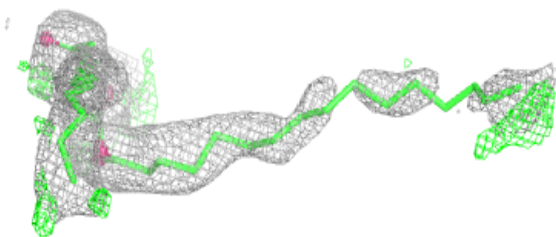
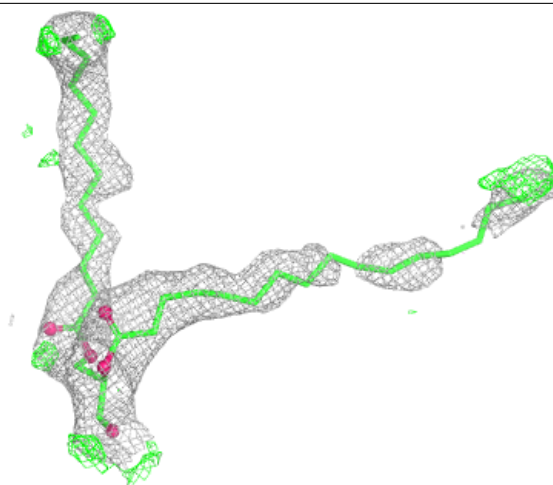
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





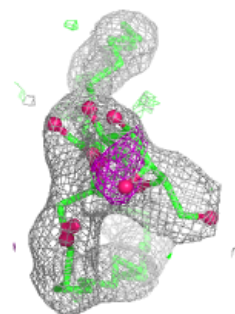
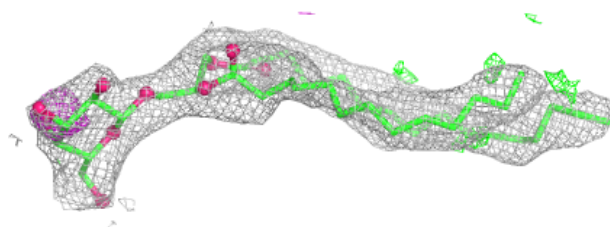
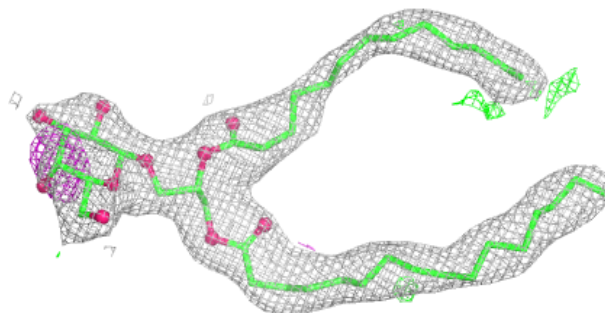
**Electron density around SQD a 614:**

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

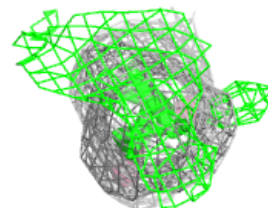
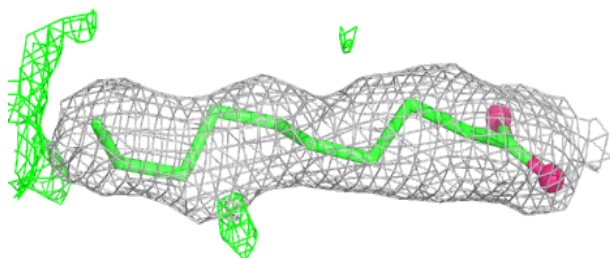
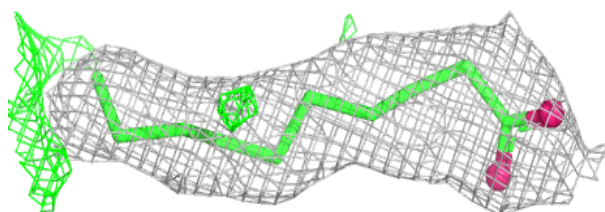


**Electron density around LMG A 612:**

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

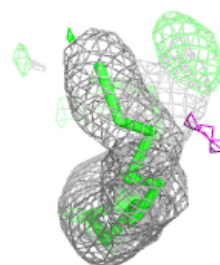
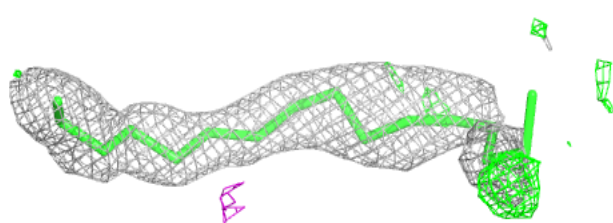
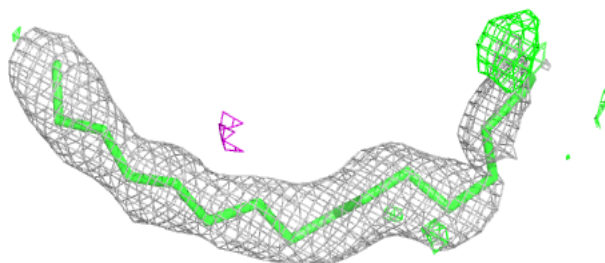
**Electron density around STE J 101:**

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

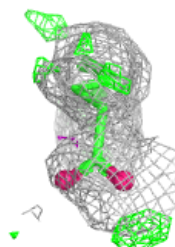
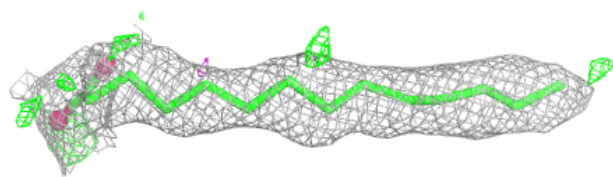
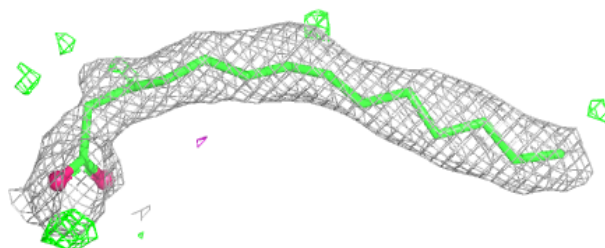


**Electron density around STE T 102:**

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

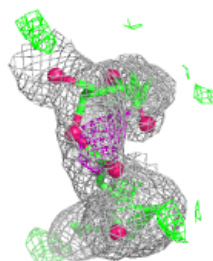
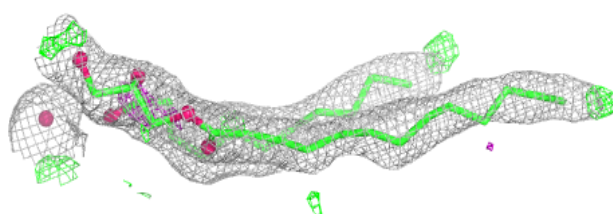
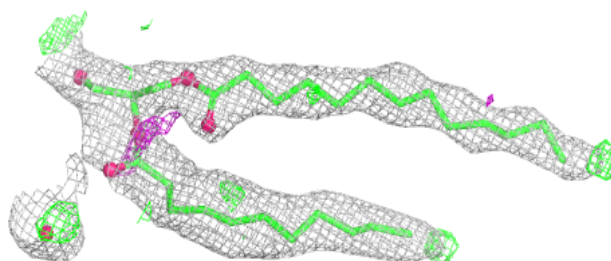
**Electron density around STE d 412:**

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

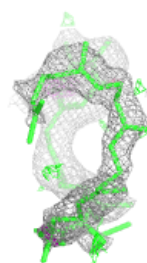
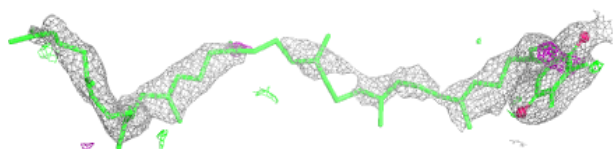
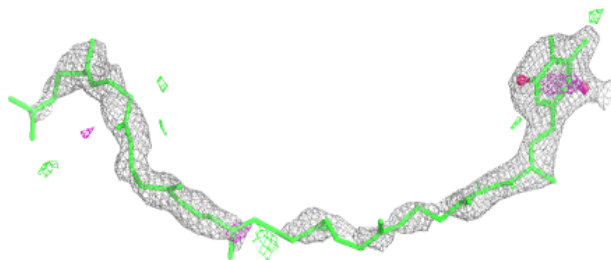


**Electron density around LMG D 411:**

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

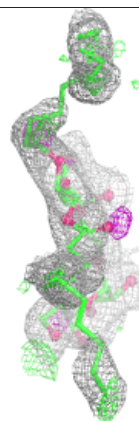
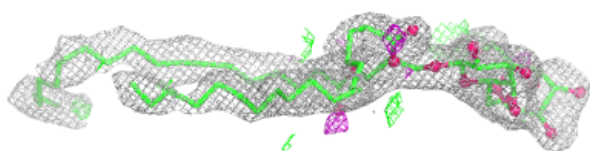
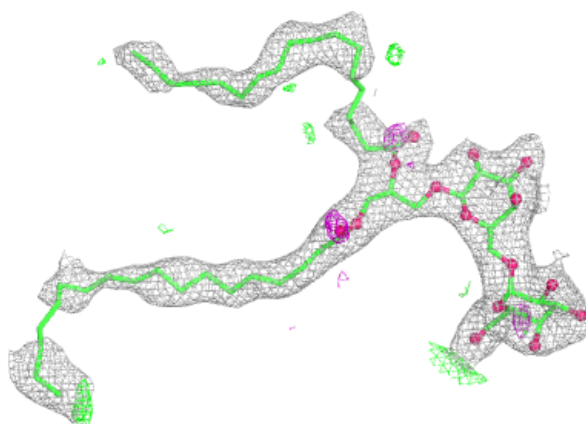
**Electron density around PL9 a 611:**

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

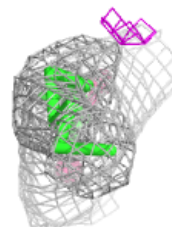
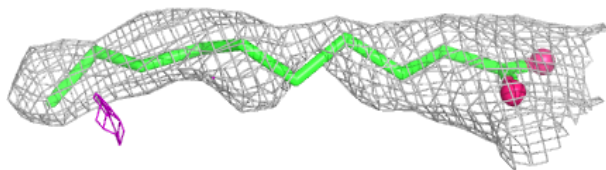
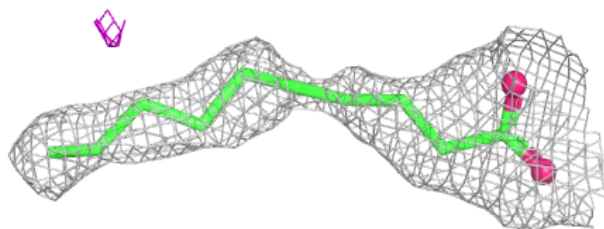


**Electron density around DGD A 617:**

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

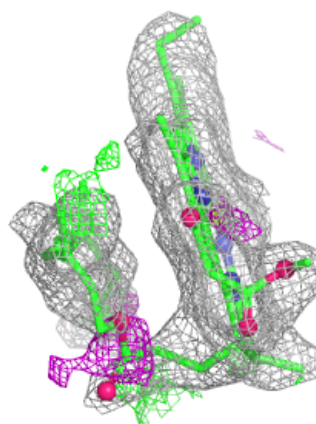
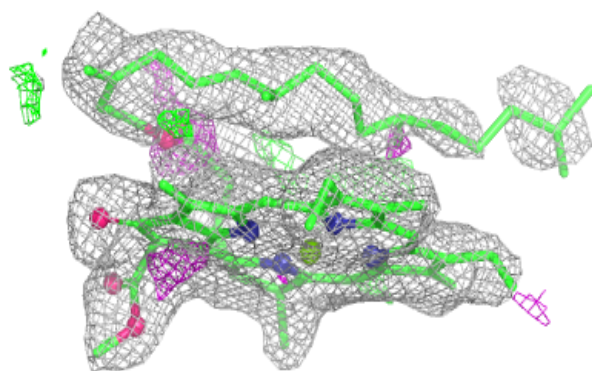
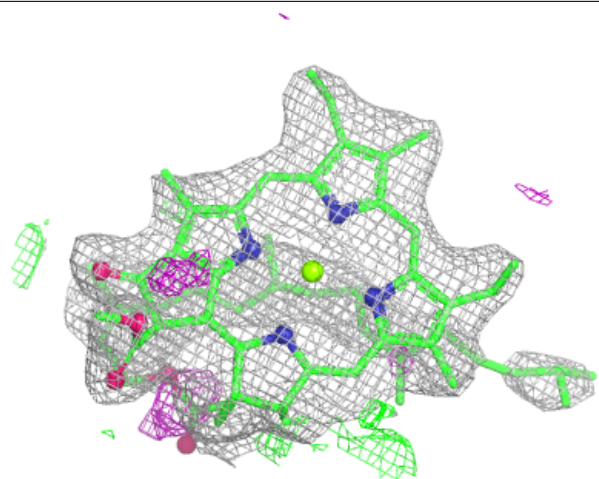
**Electron density around STE a 617:**

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



**Electron density around CLA b 601:**

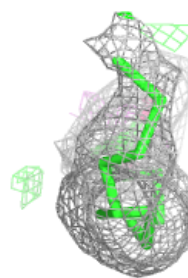
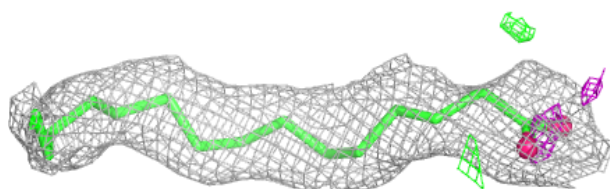
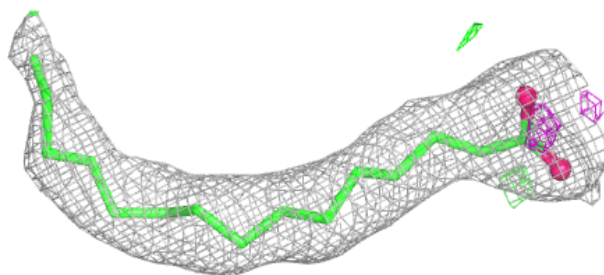
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





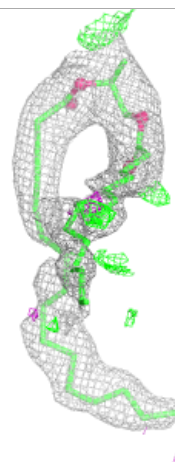
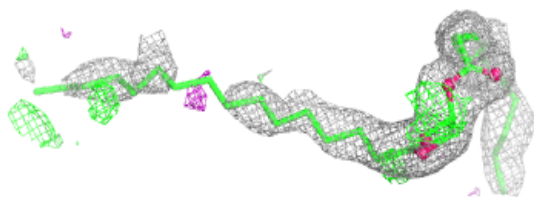
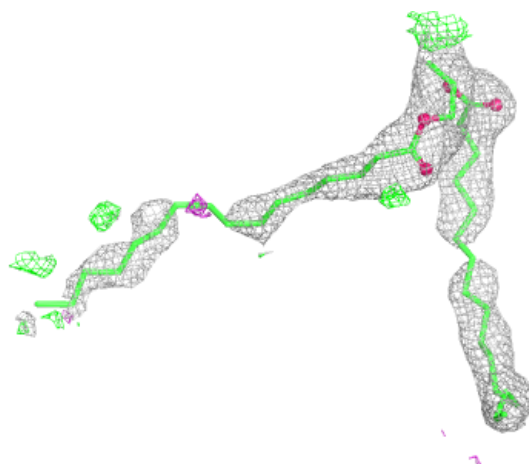
**Electron density around STE B 620:**

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



**Electron density around SQD A 616:**

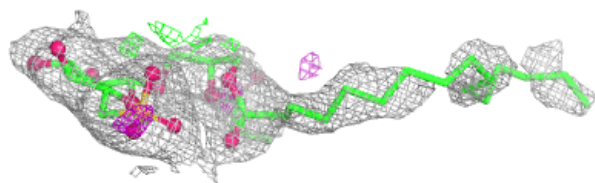
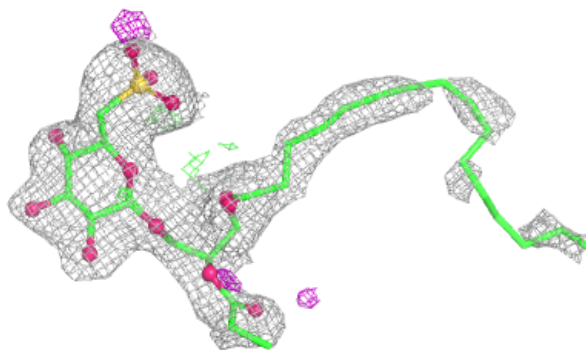
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



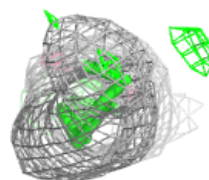
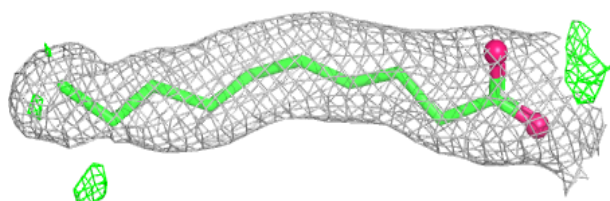
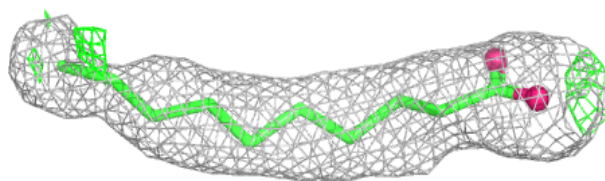


**Electron density around SQD f 102:**

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

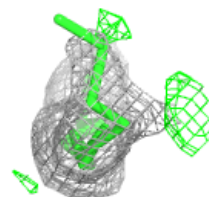
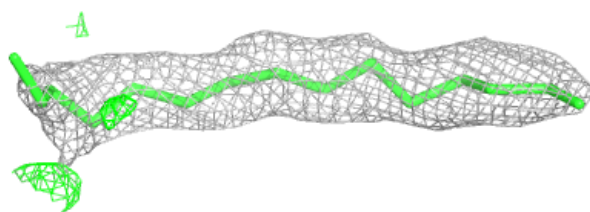
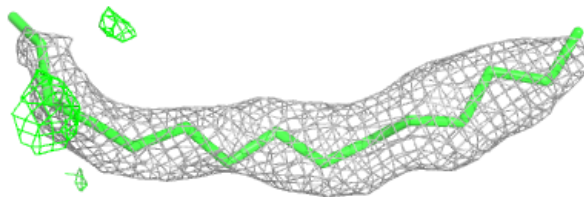
**Electron density around STE j 101:**

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

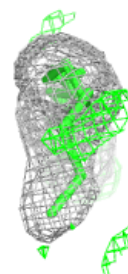
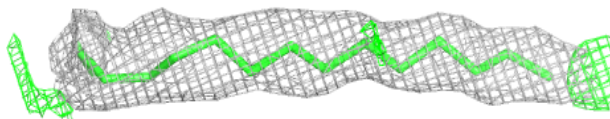
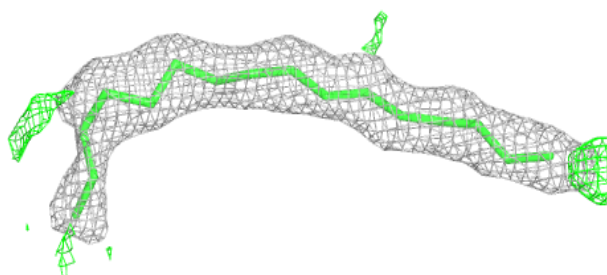


**Electron density around STE T 103:**

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

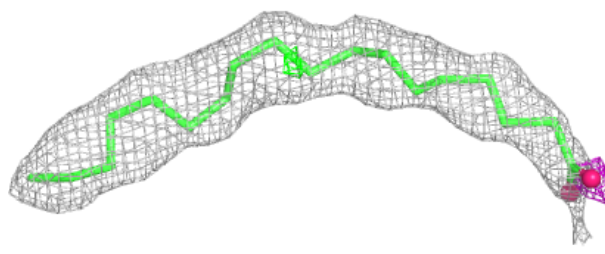
**Electron density around STE C 521:**

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

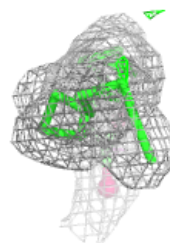
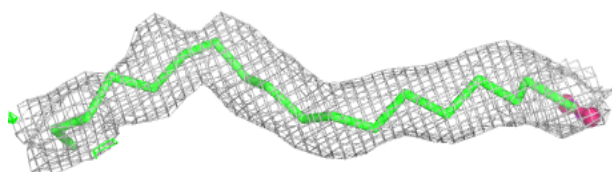
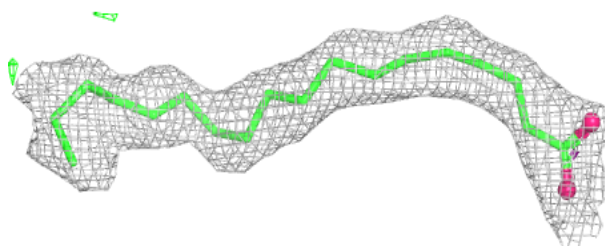


**Electron density around STE D 413:**

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

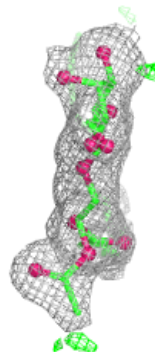
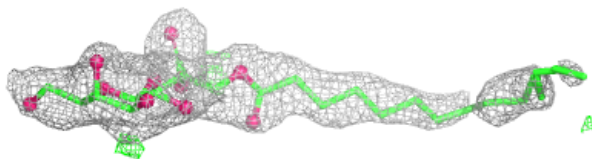
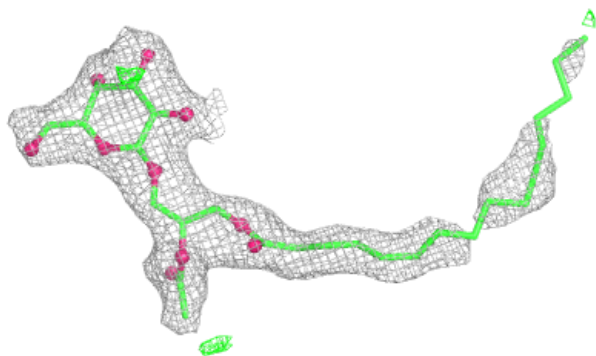
**Electron density around STE b 620:**

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

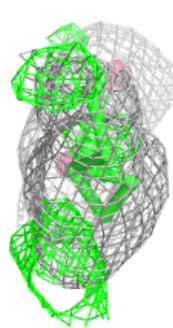
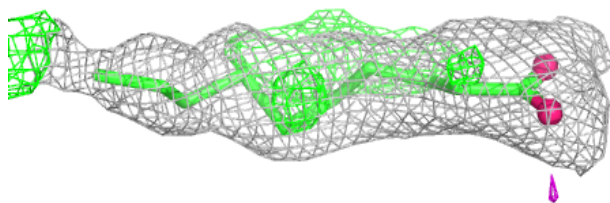
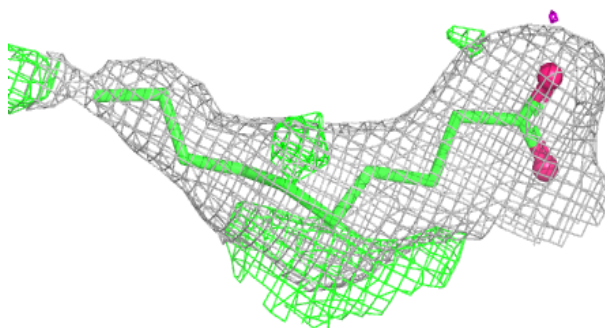


**Electron density around LMG c 520:**

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

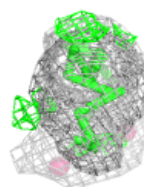
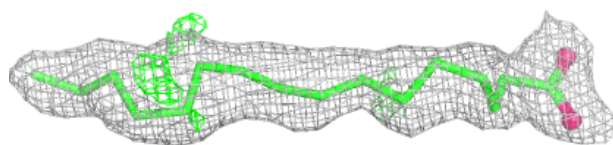
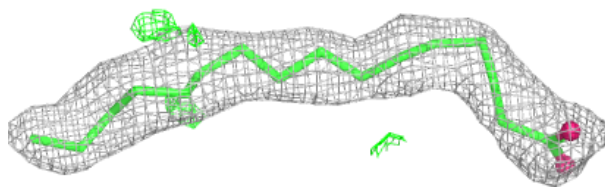
**Electron density around STE C 519:**

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

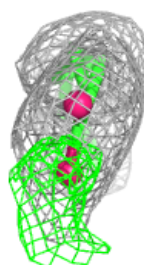
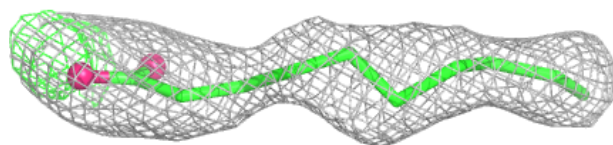
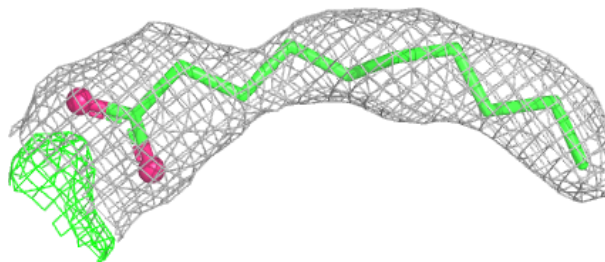


**Electron density around STE B 624:**

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

**Electron density around STE C 520:**

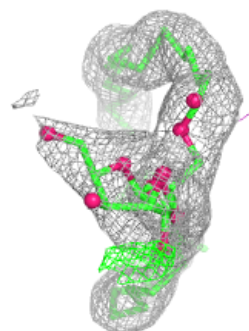
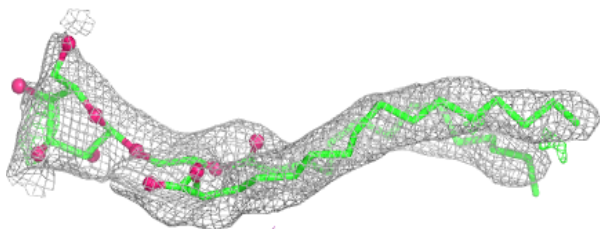
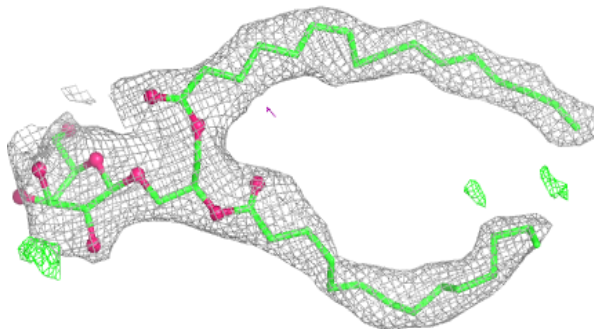
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



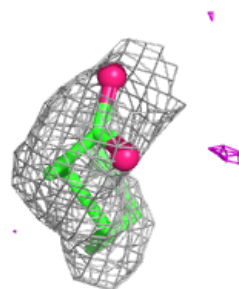
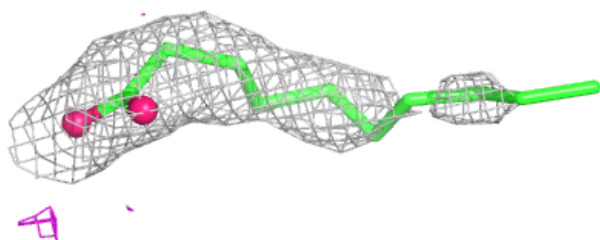


**Electron density around LMG c 524:**

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

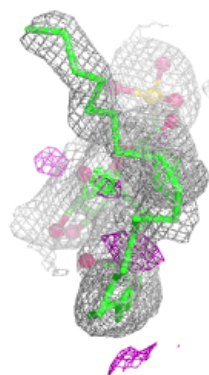
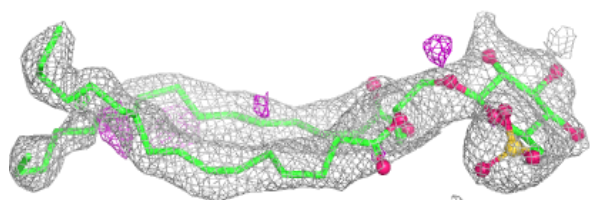
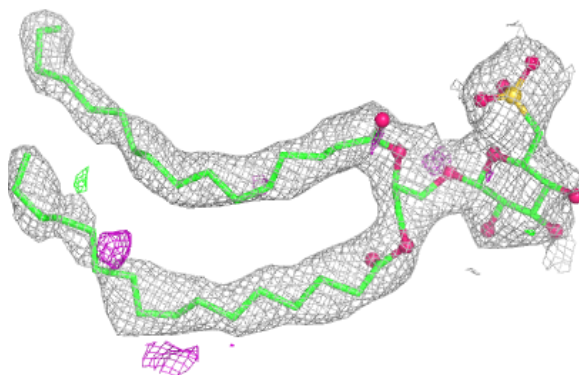
**Electron density around STE B 625:**

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

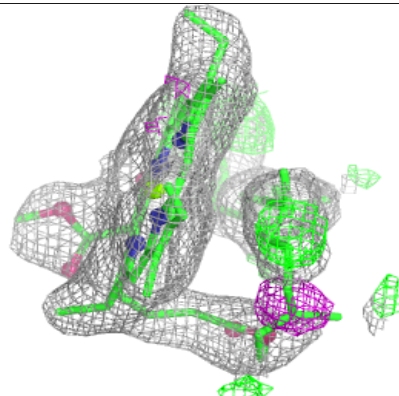
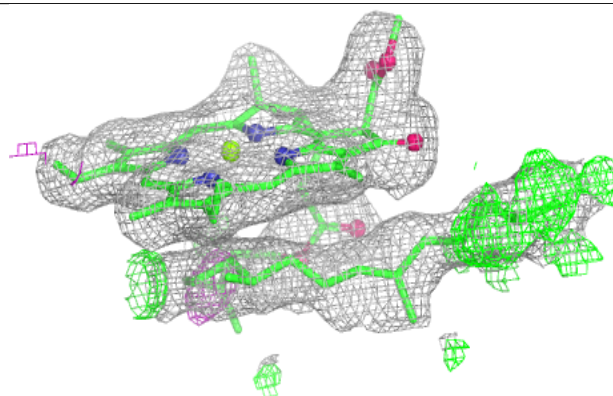
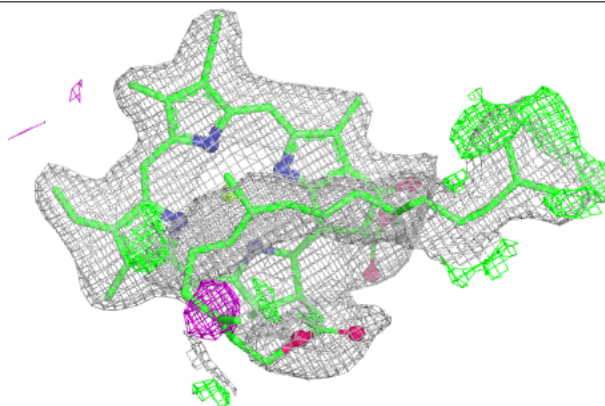


**Electron density around SQD B 622:**

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

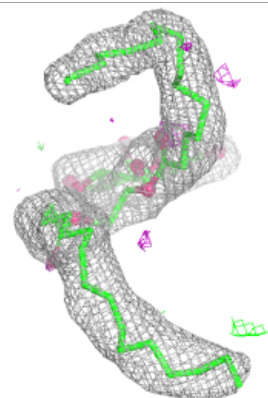
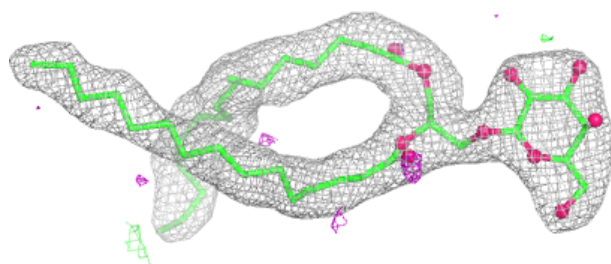
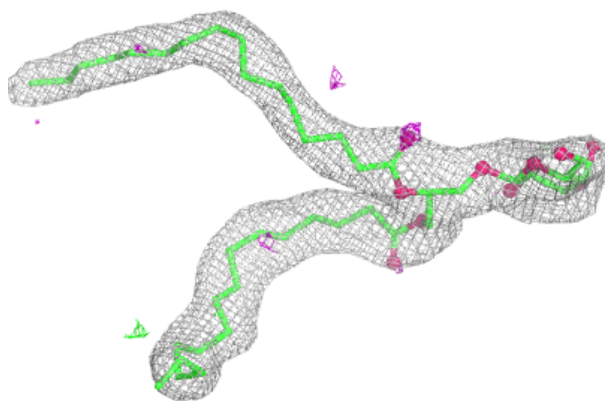
**Electron density around CLA B 601:**

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

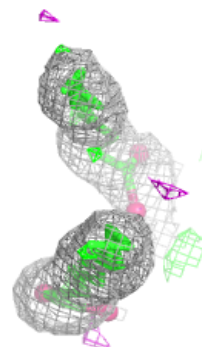
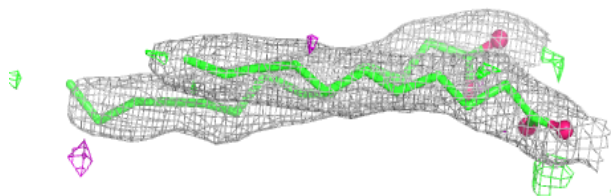
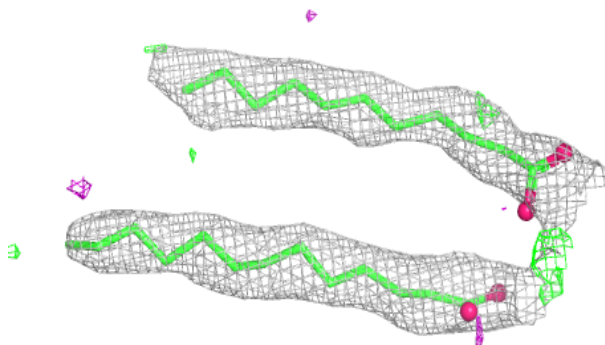


**Electron density around LMG M 101:**

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

**Electron density around LMG B 621:**

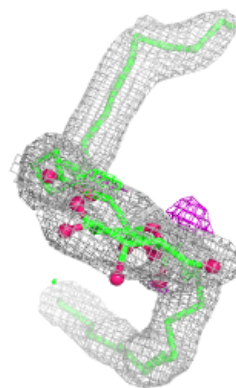
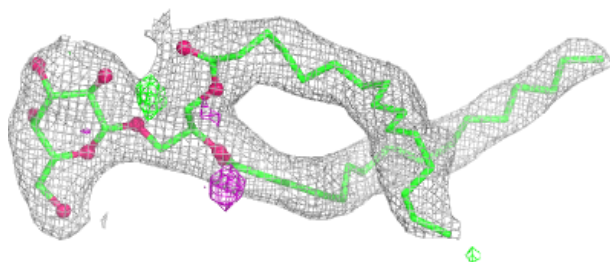
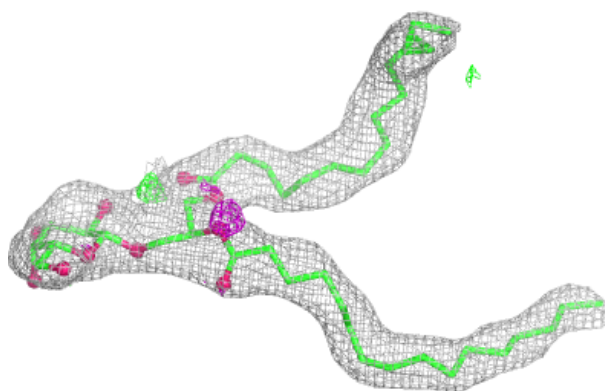
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



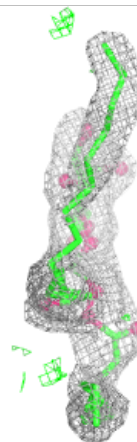
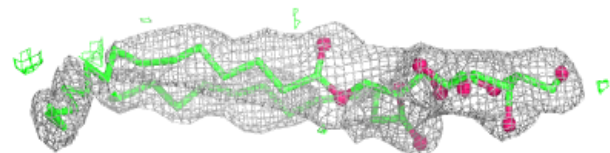
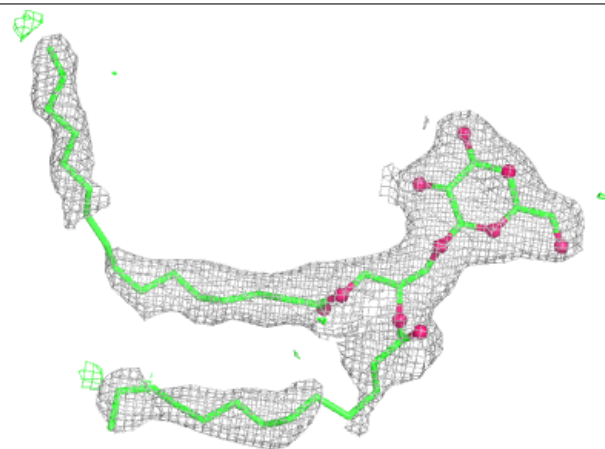


**Electron density around LMG m 101:**

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

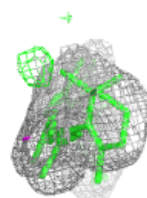
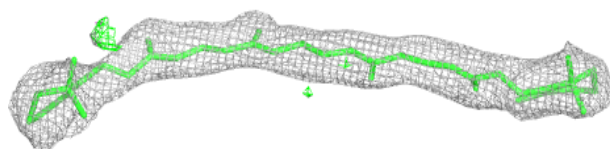
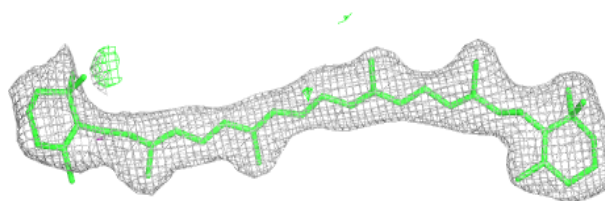
**Electron density around LMG C 518:**

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

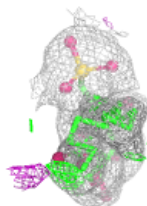
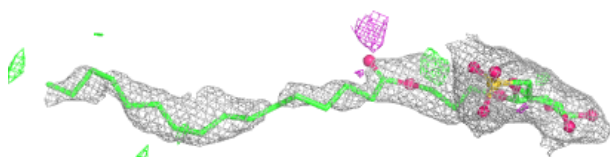
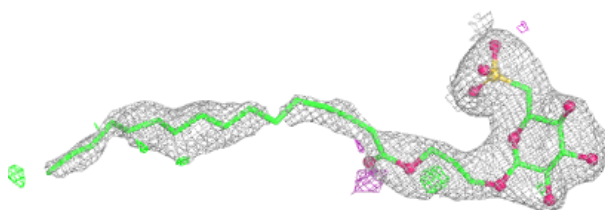


**Electron density around BCR d 405:**

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

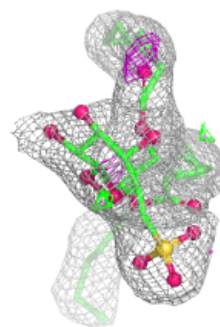
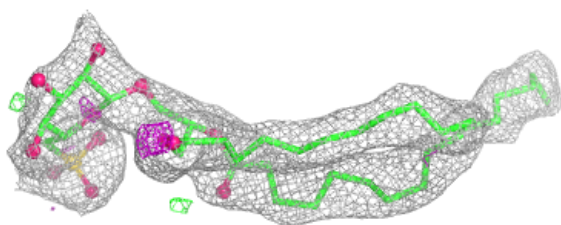
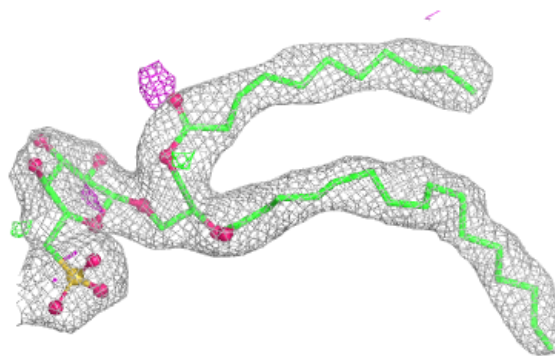
**Electron density around SQD F 101:**

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

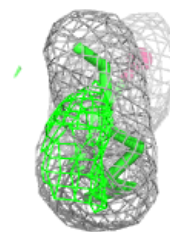
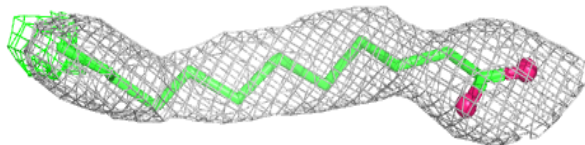
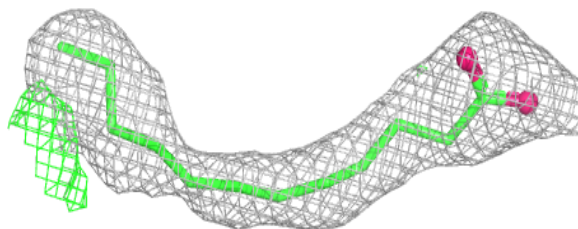


**Electron density around SQD L 101:**

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

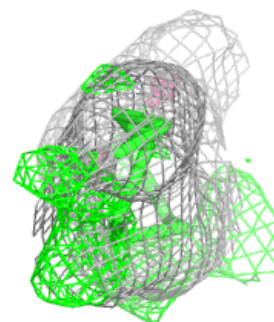
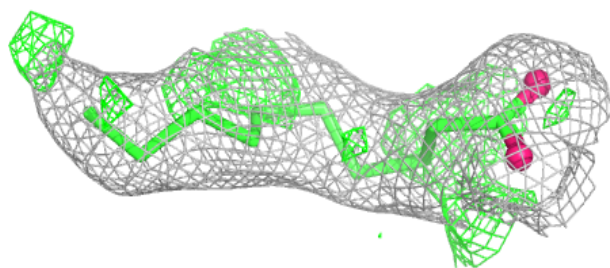
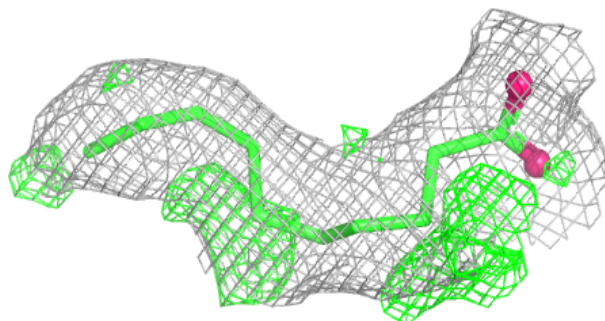
**Electron density around STE t 102:**

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

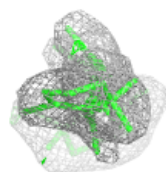
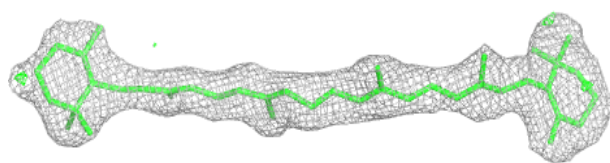
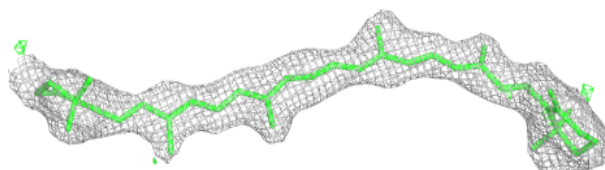


**Electron density around STE B 623:**

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

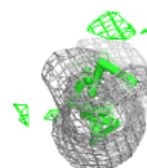
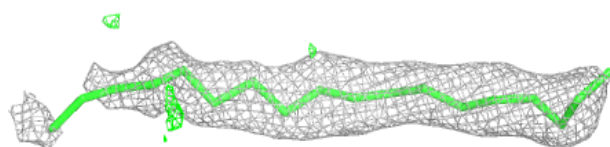
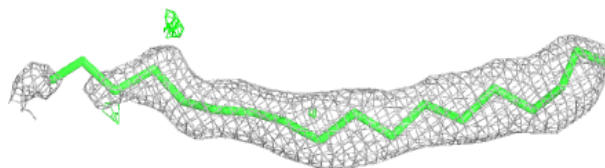
**Electron density around BCR x 101:**

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

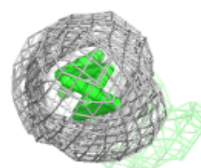
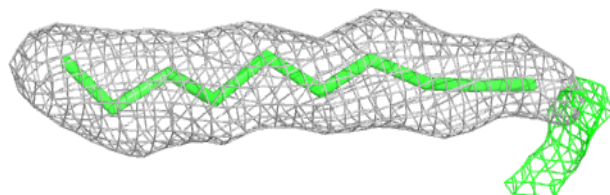
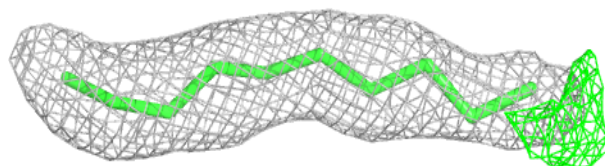


**Electron density around STE I 102:**

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

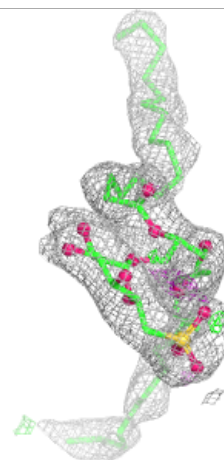
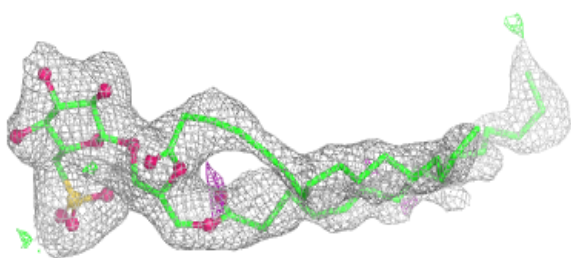
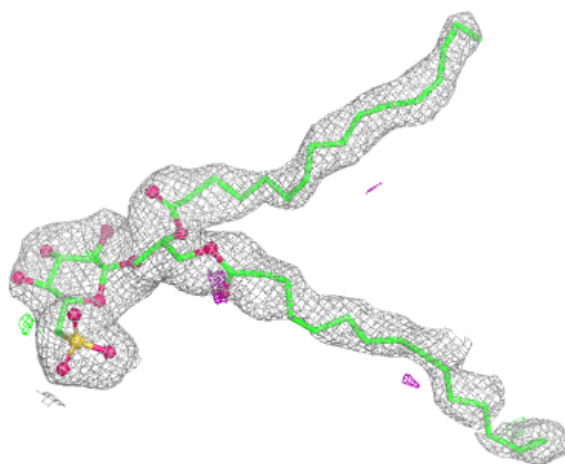
**Electron density around STE M 103:**

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



**Electron density around SQD a 613:**

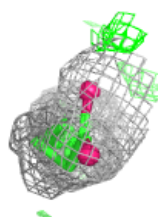
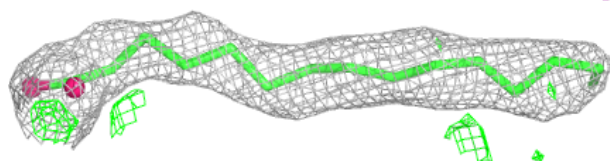
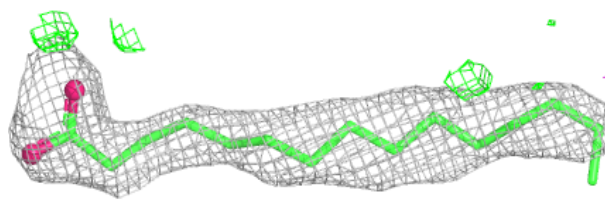
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



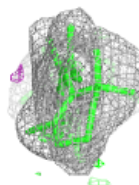
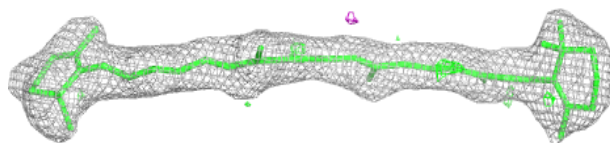
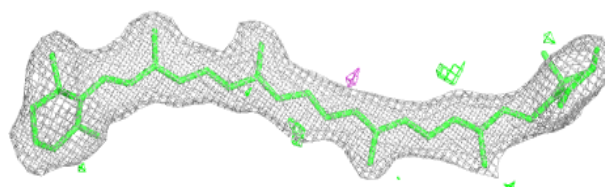


**Electron density around STE d 413:**

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

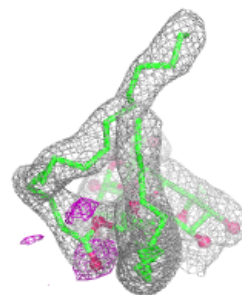
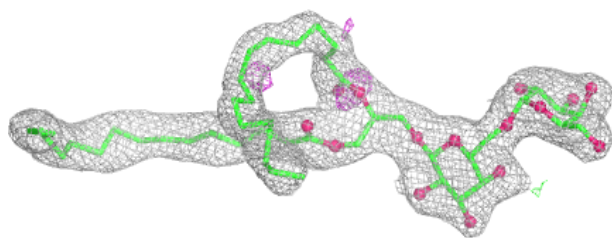
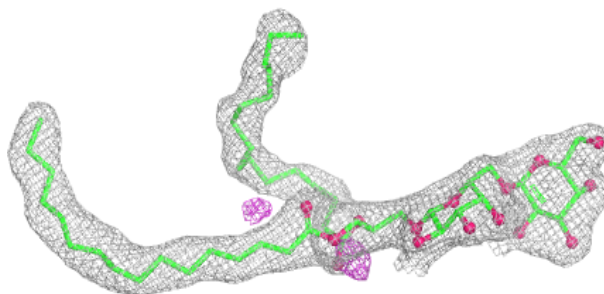
**Electron density around BCR Y 101:**

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

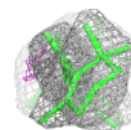
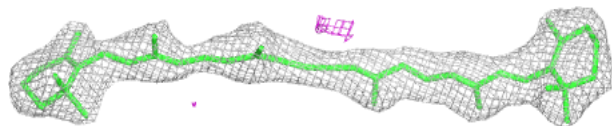
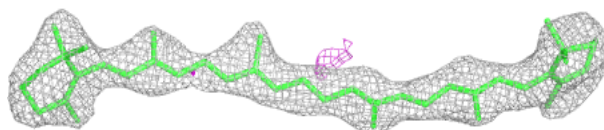


**Electron density around DGD h 101:**

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

**Electron density around BCR c 514:**

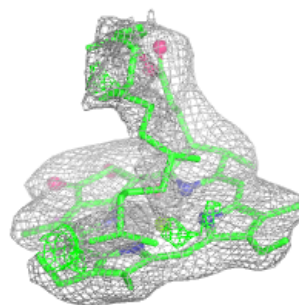
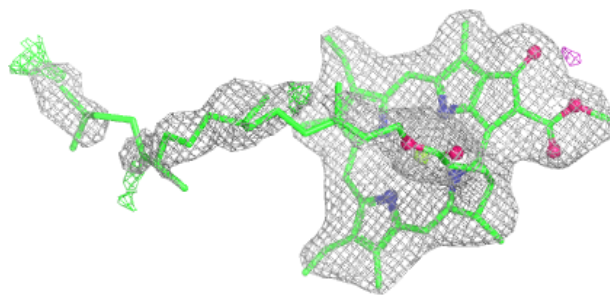
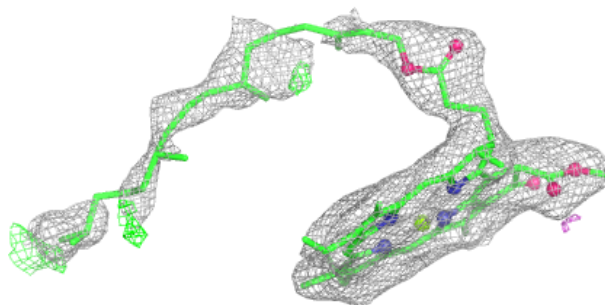
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



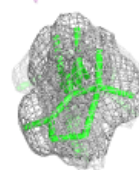
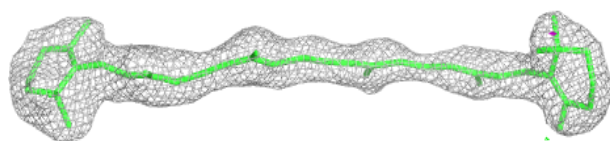
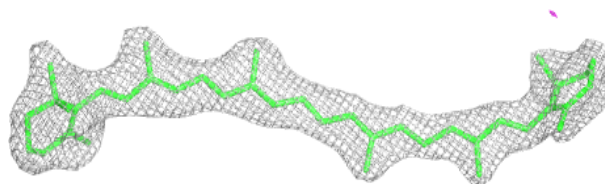


**Electron density around CLA C 513:**

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

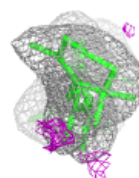
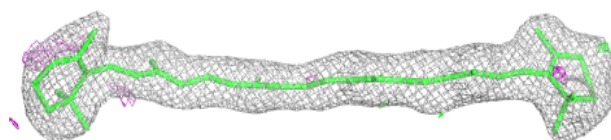
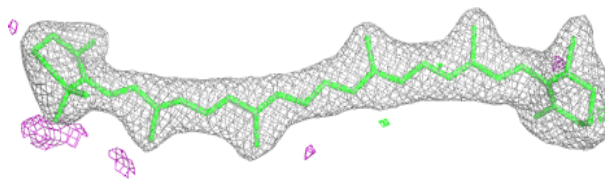
**Electron density around BCR k 101:**

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

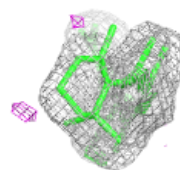
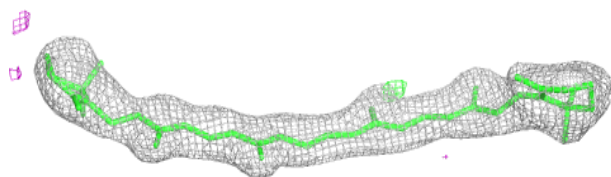
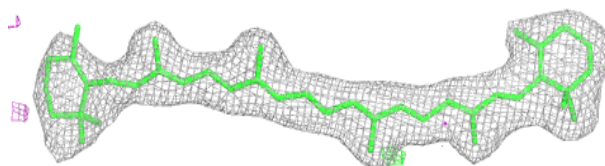


**Electron density around BCR B 618:**

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

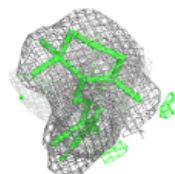
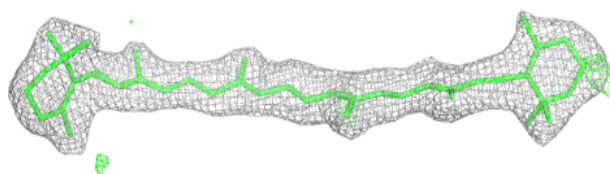
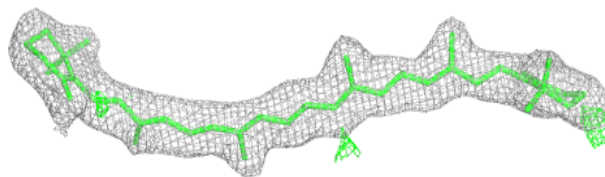
**Electron density around BCR D 406:**

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

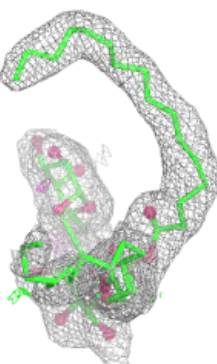
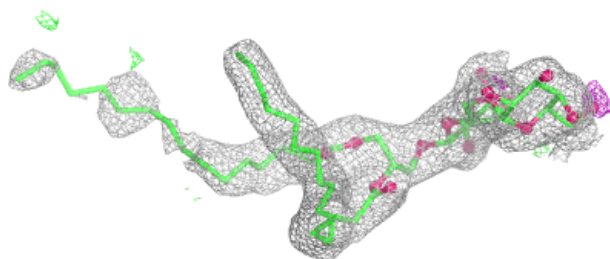
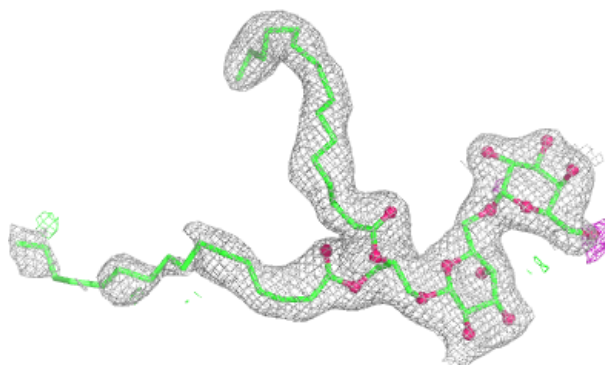


**Electron density around BCR H 101:**

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

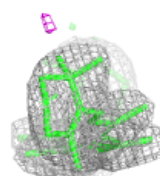
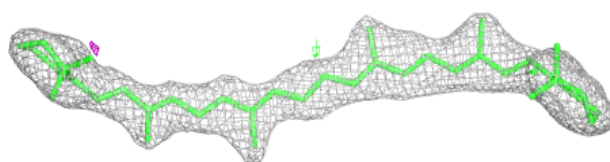
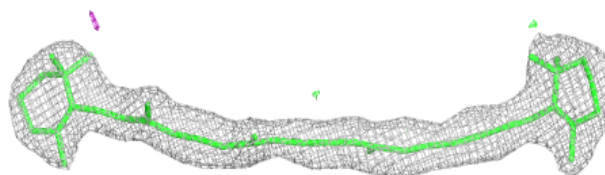
**Electron density around DGD c 518:**

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

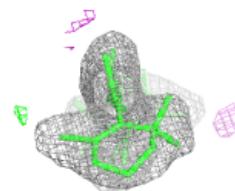
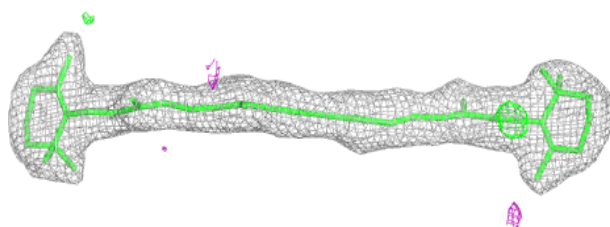
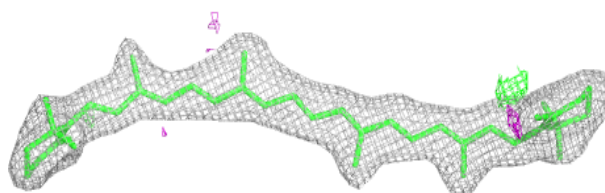


**Electron density around BCR K 102:**

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

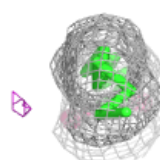
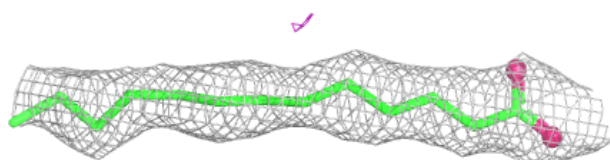
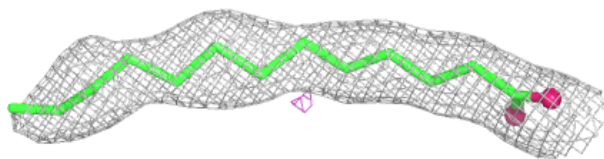
**Electron density around BCR C 514:**

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

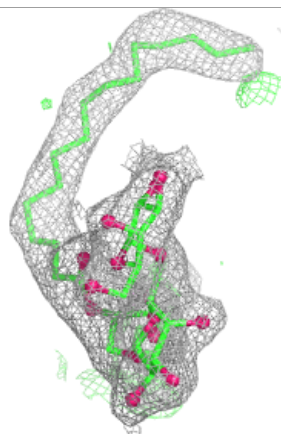
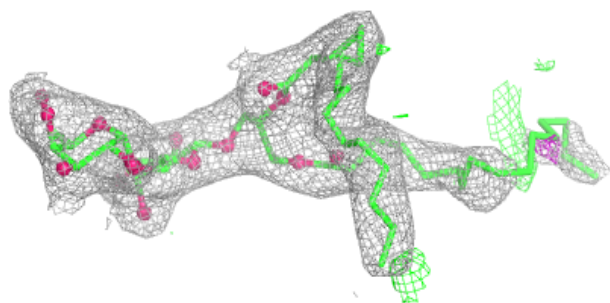
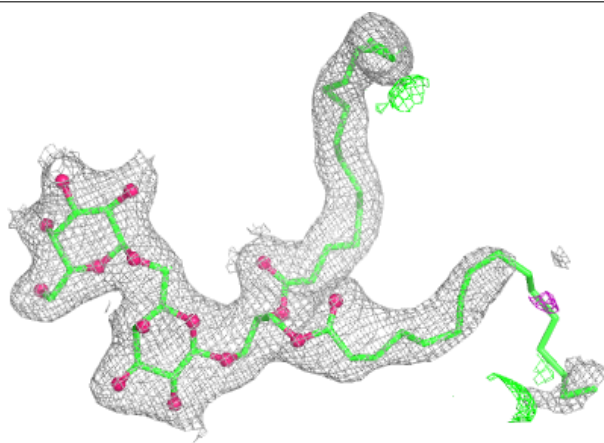


**Electron density around STE M 102:**

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

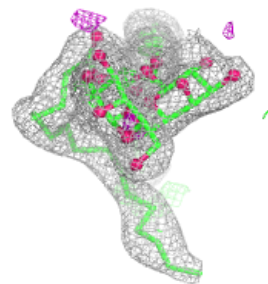
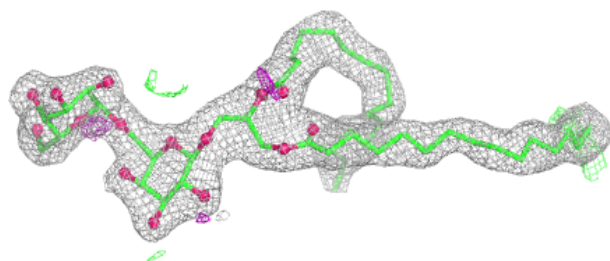
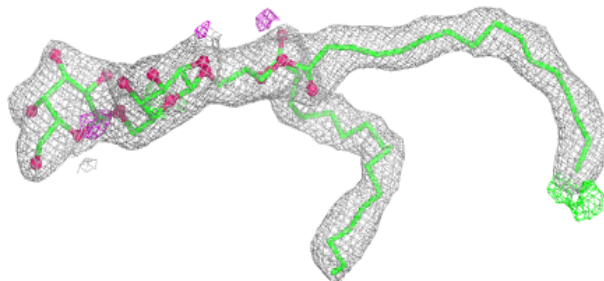
**Electron density around DGD C 516:**

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

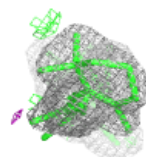
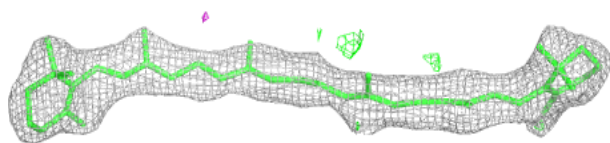
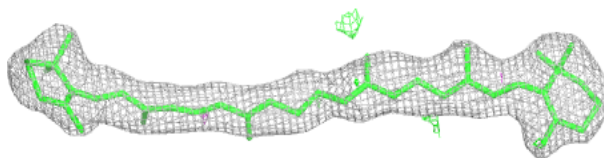


**Electron density around DGD H 102:**

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

**Electron density around BCR K 101:**

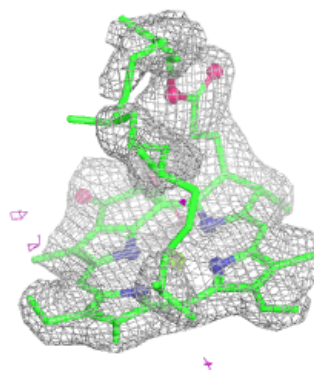
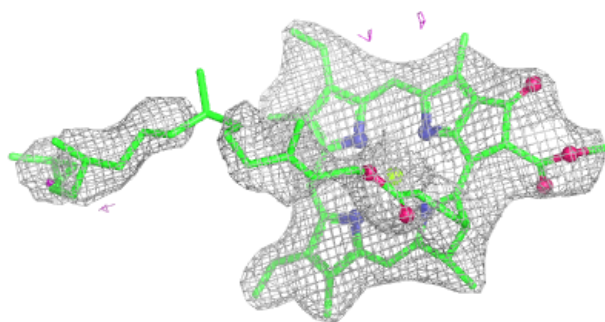
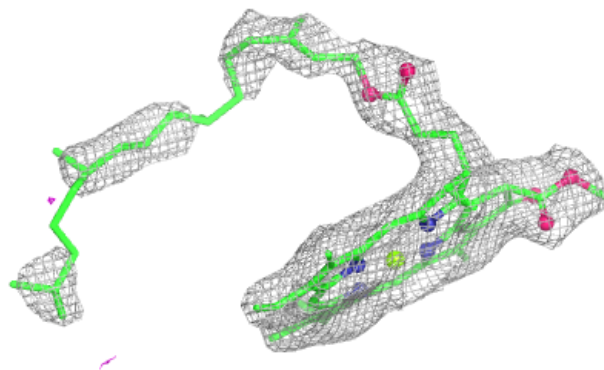
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



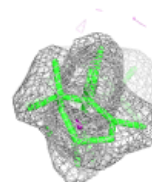
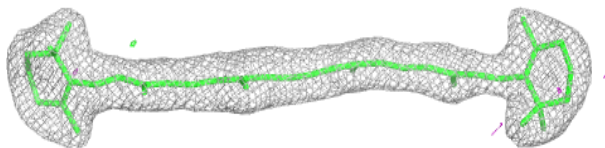
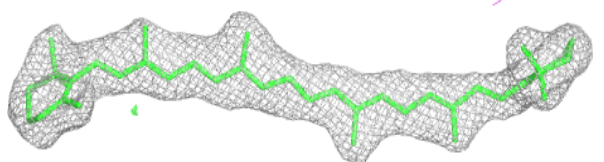


**Electron density around CLA c 513:**

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

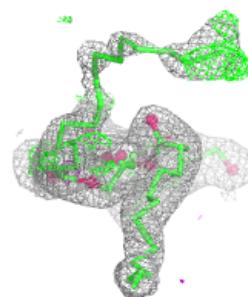
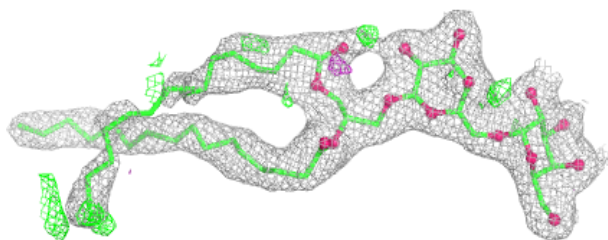
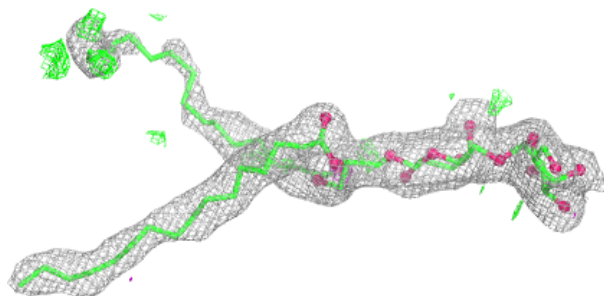
**Electron density around BCR A 610:**

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

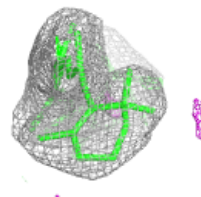
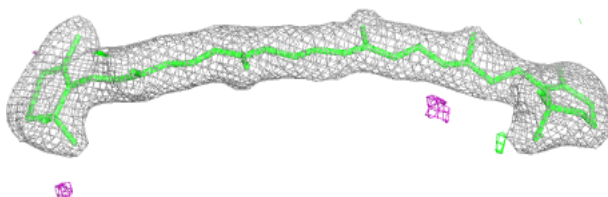
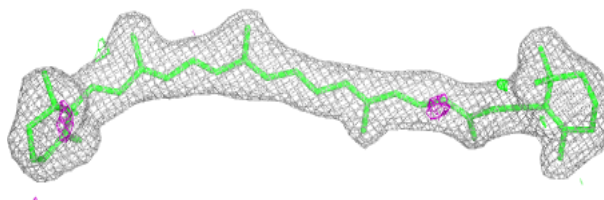


**Electron density around DGD C 515:**

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

**Electron density around BCR T 101:**

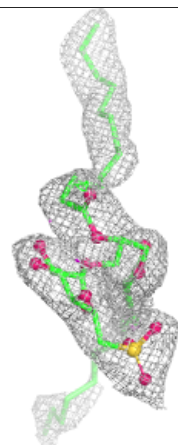
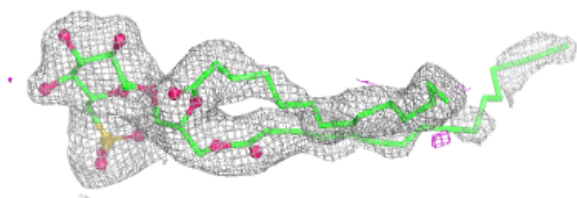
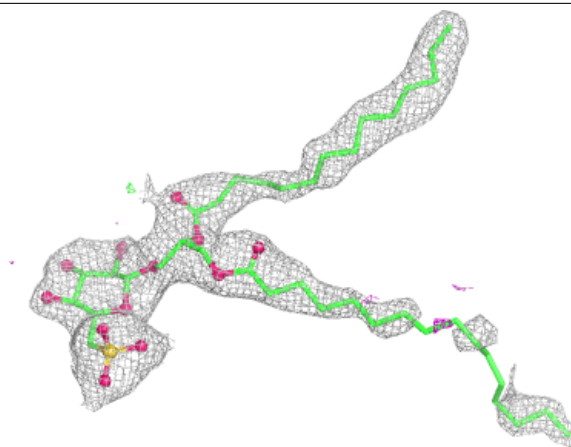
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





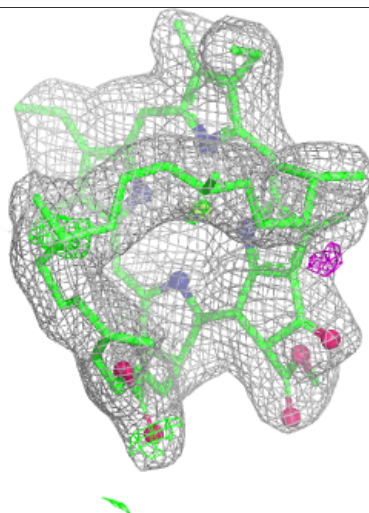
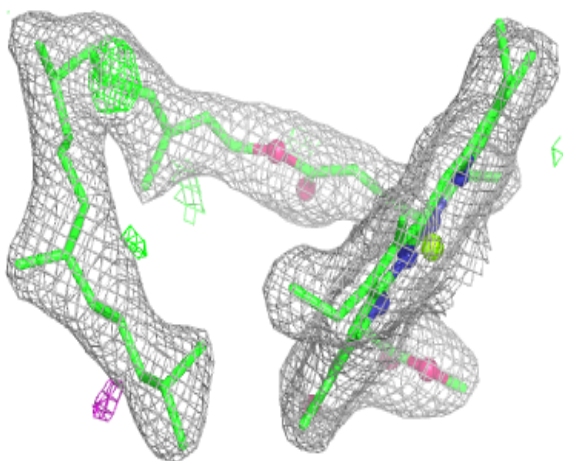
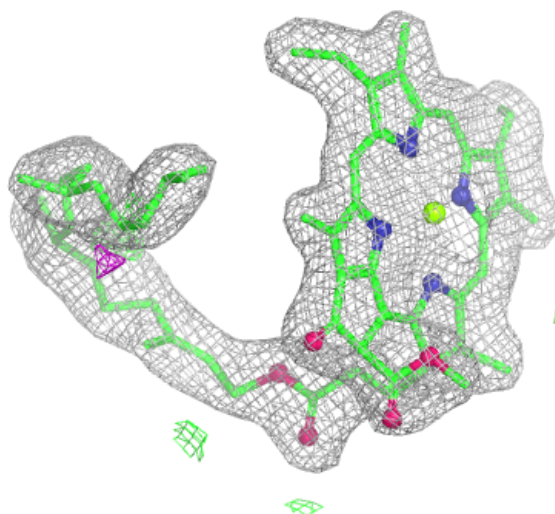
**Electron density around SQD A 613:**

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



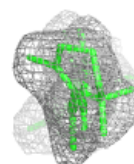
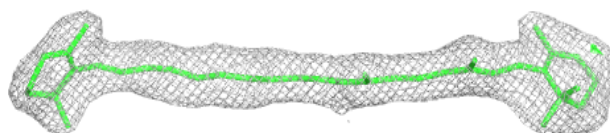
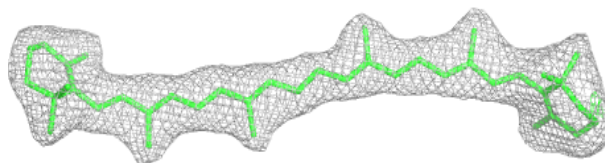
**Electron density around CLA C 503:**

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

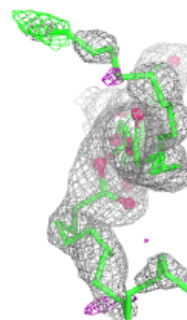
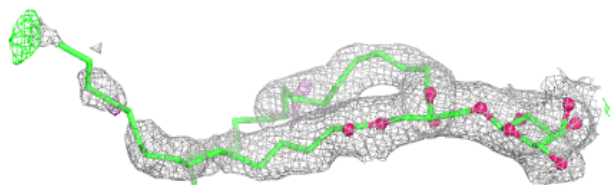
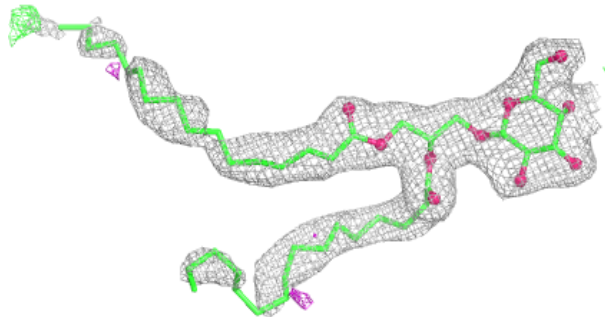


**Electron density around BCR b 618:**

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

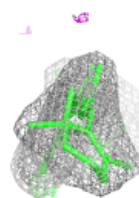
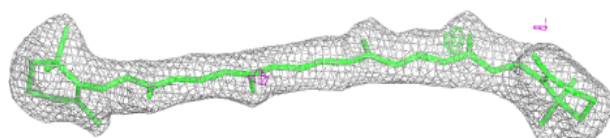
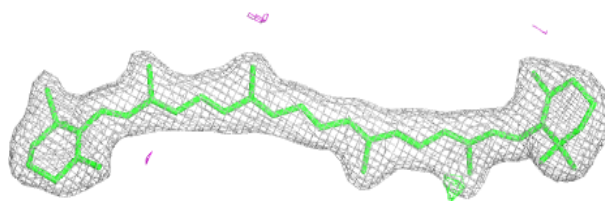
**Electron density around LMG D 408:**

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

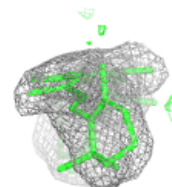
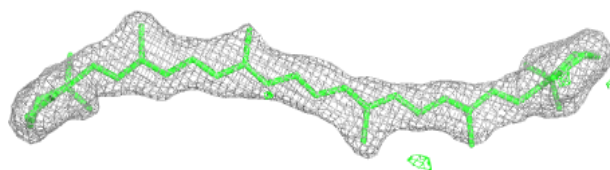
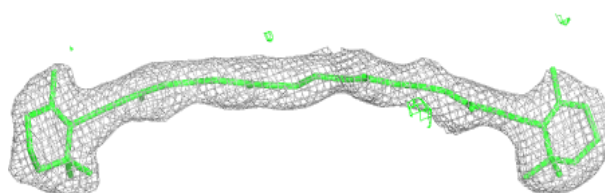


**Electron density around BCR B 619:**

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

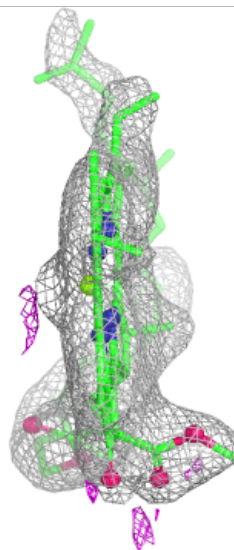
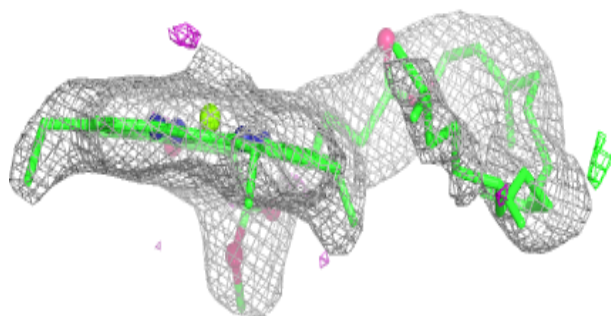
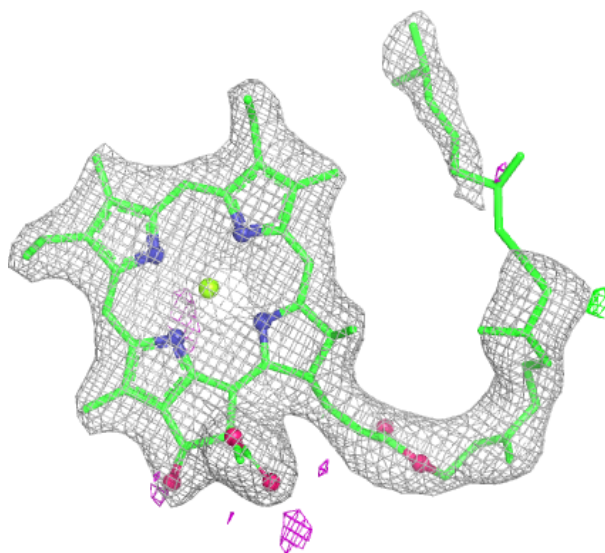
**Electron density around BCR c 516:**

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



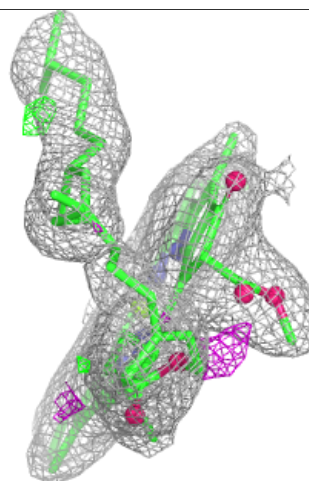
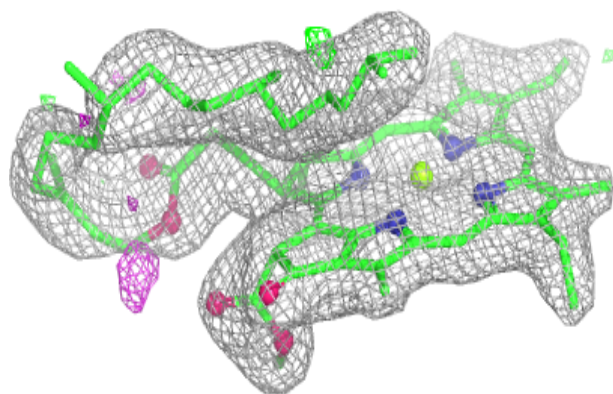
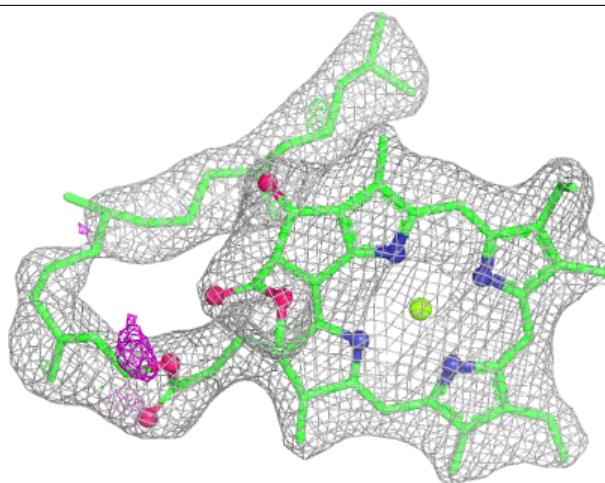
**Electron density around CLA C 512:**

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



**Electron density around CLA c 509:**

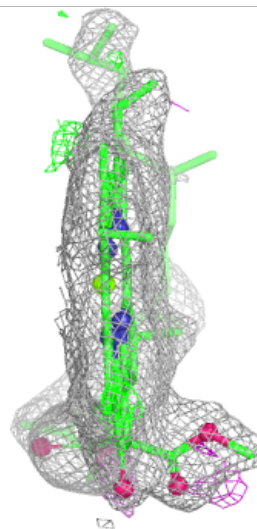
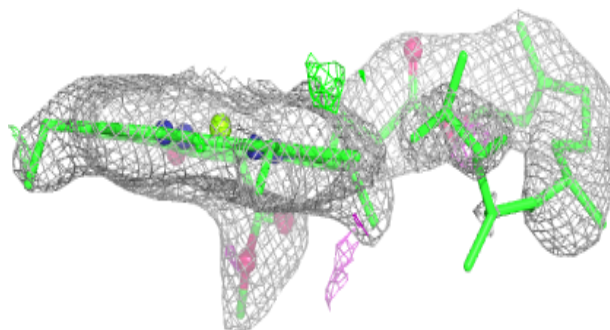
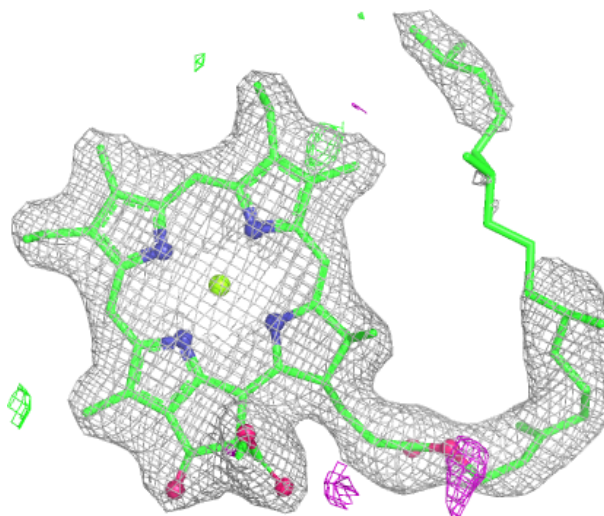
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





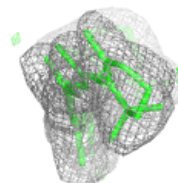
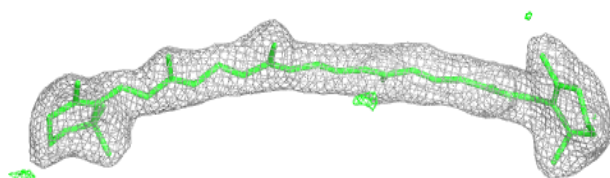
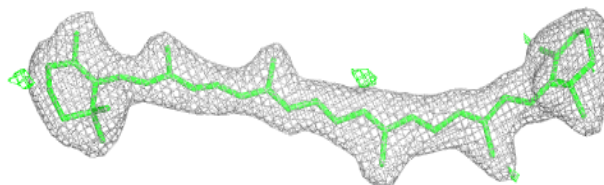
**Electron density around CLA c 512:**

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

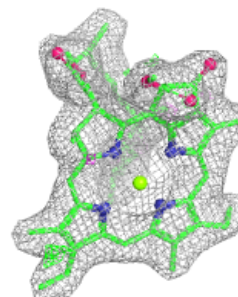
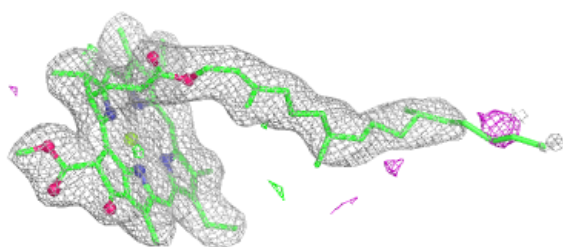
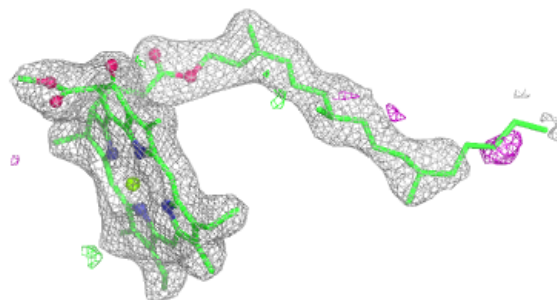


**Electron density around BCR t 101:**

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

**Electron density around CLA c 508:**

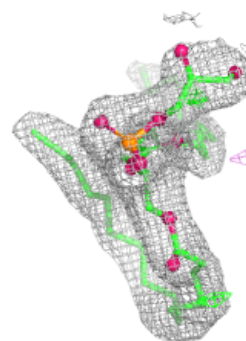
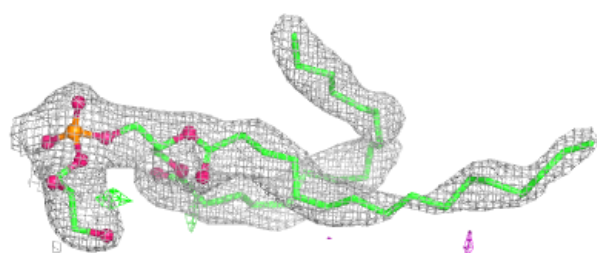
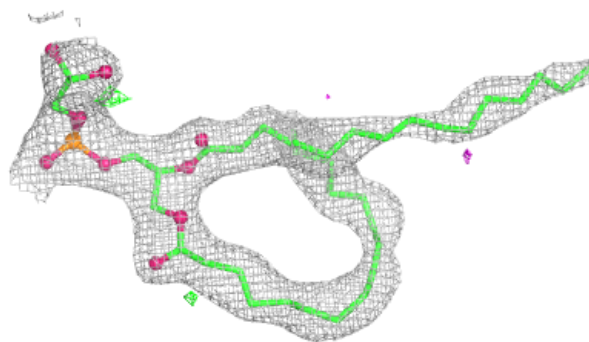
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



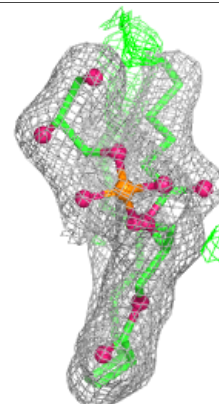
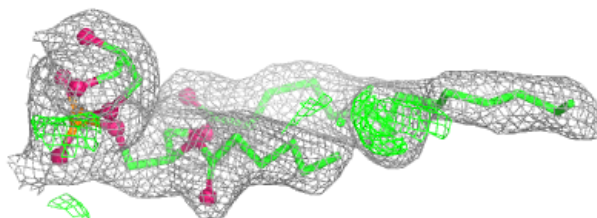
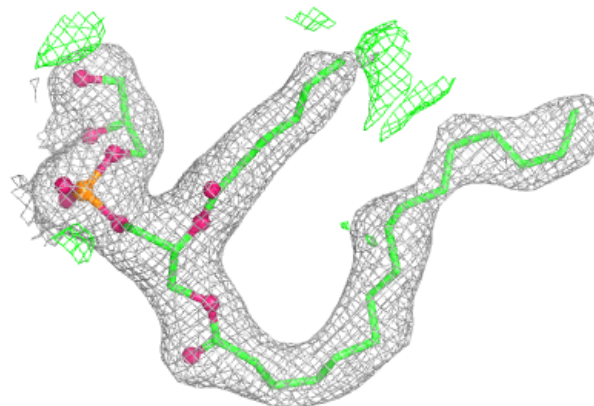


**Electron density around LHG d 407:**

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

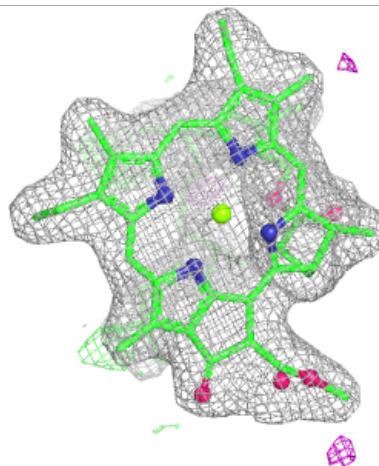
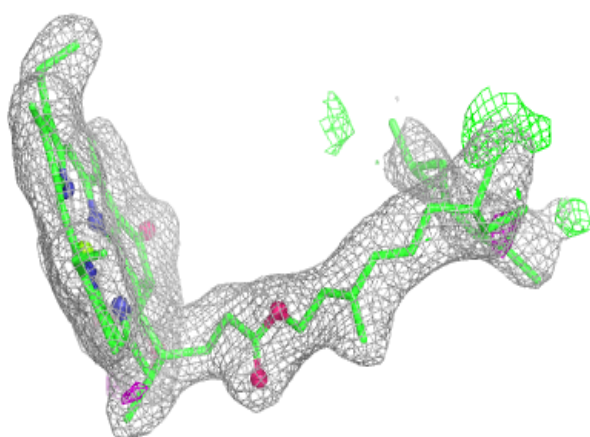
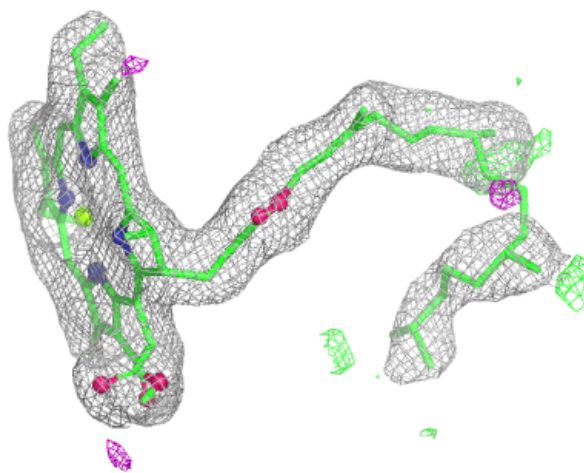
**Electron density around LHG d 409:**

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



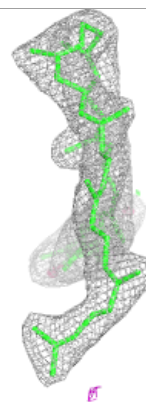
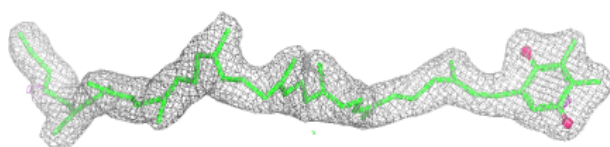
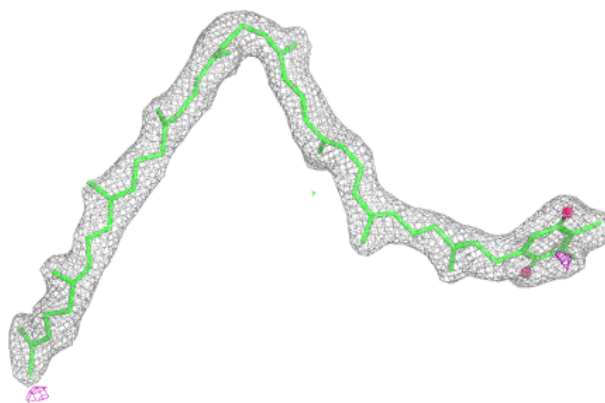
**Electron density around CLA B 606:**

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

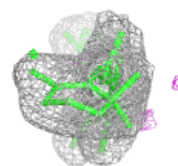
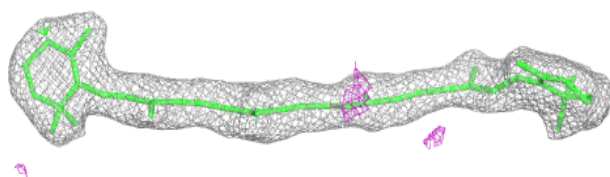
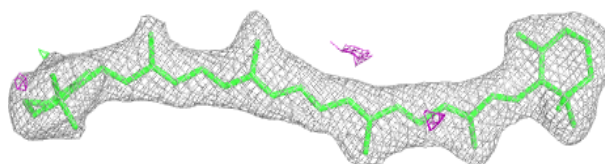


**Electron density around PL9 D 407:**

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

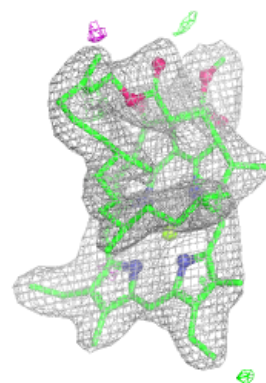
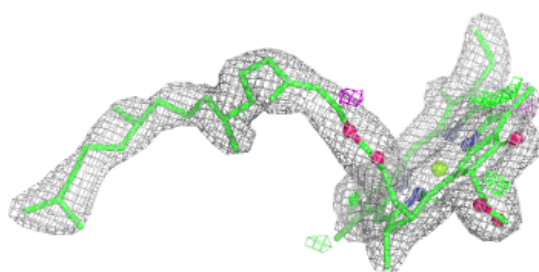
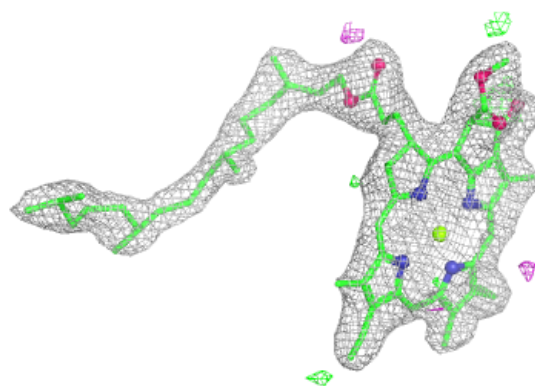
**Electron density around BCR b 617:**

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

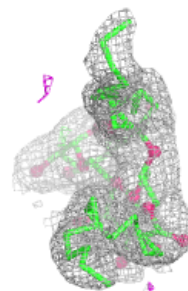
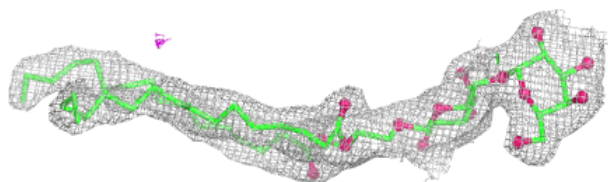
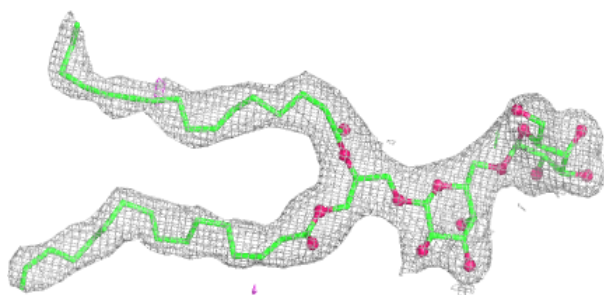


**Electron density around CLA c 511:**

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

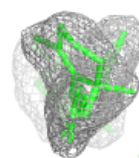
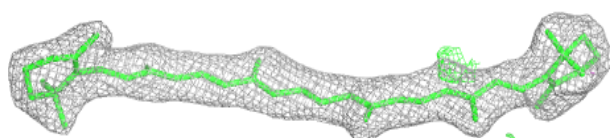
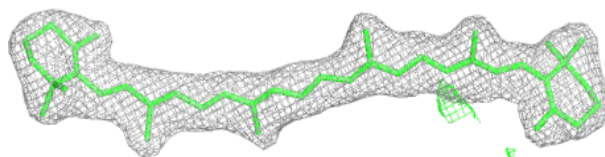
**Electron density around DGD C 517:**

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

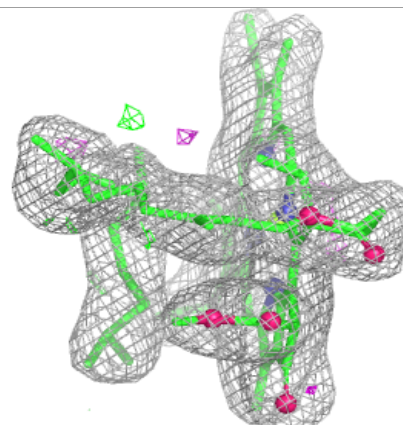
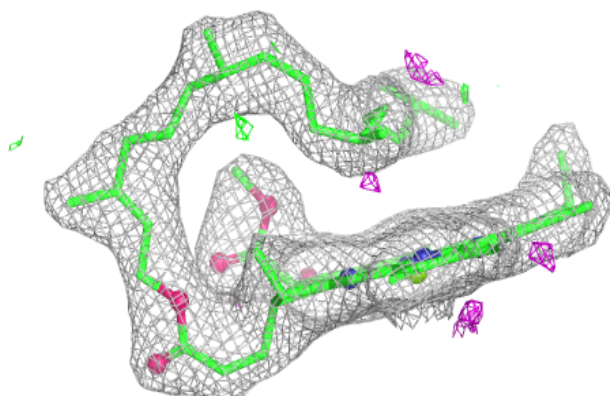
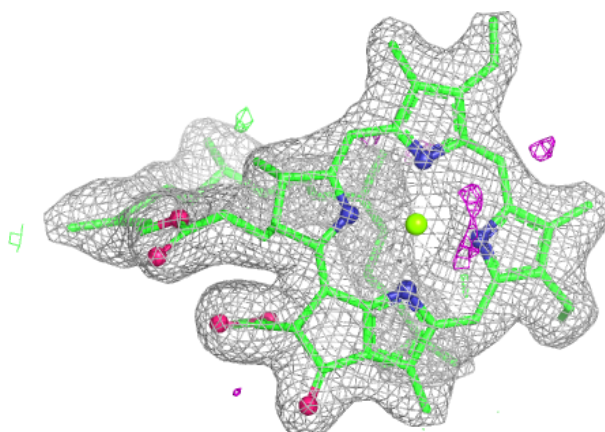


**Electron density around BCR b 619:**

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

**Electron density around CLA C 510:**

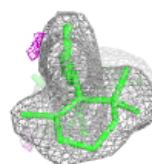
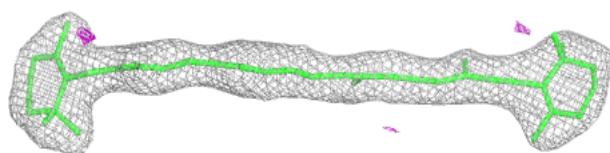
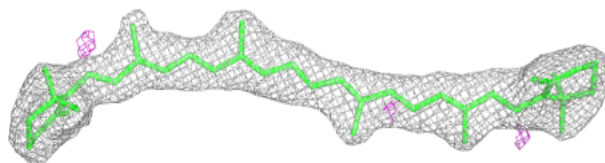
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



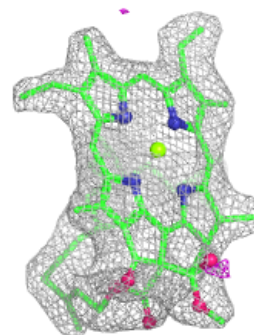
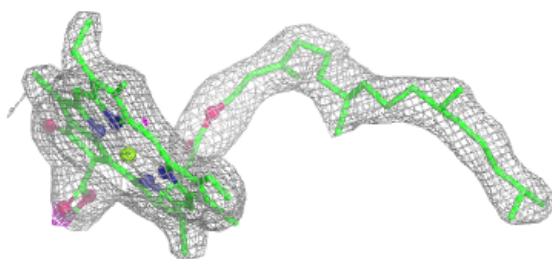
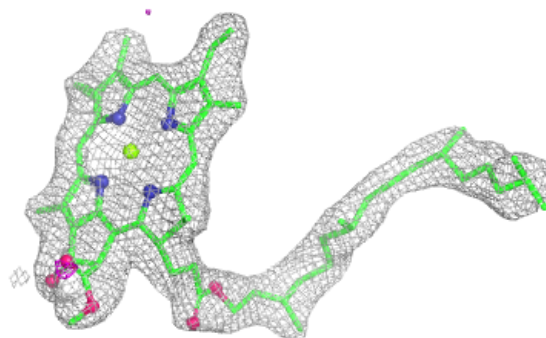


**Electron density around BCR c 515:**

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

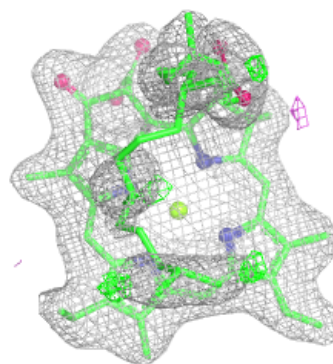
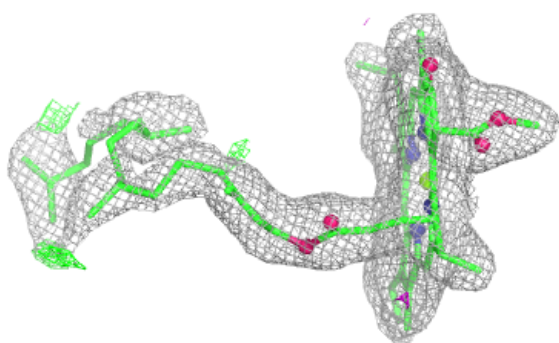
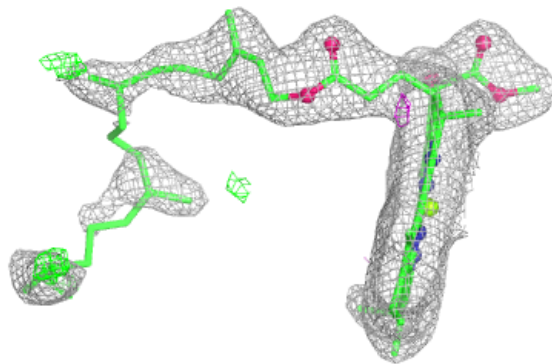
**Electron density around CLA C 511:**

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

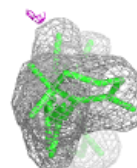
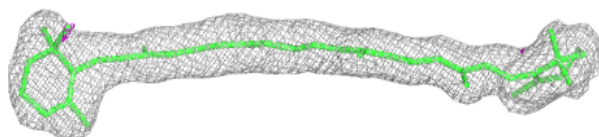
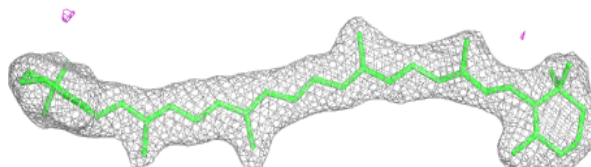


**Electron density around CLA c 506:**

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

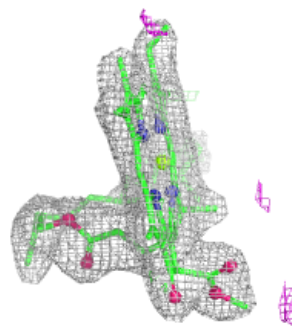
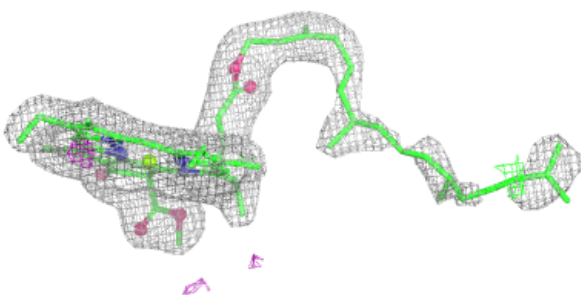
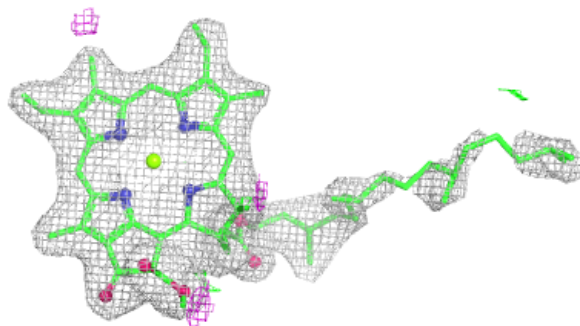
**Electron density around BCR B 617:**

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

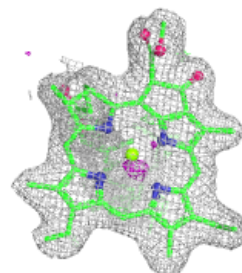
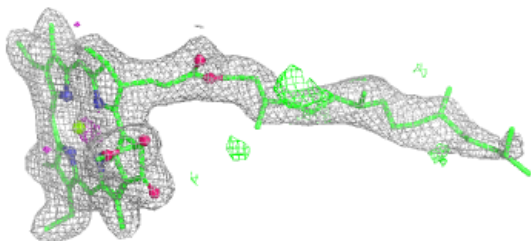
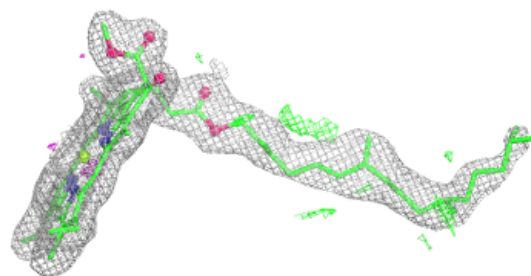


**Electron density around CLA a 608:**

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

**Electron density around CLA B 604:**

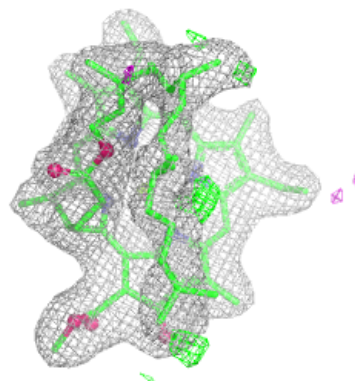
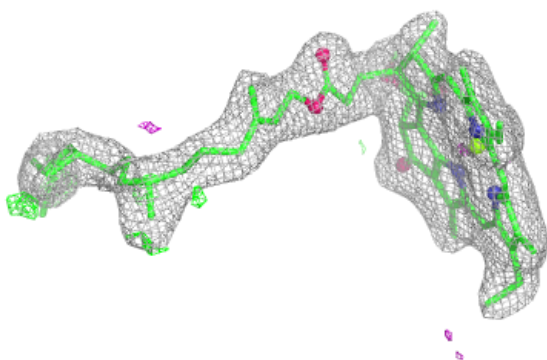
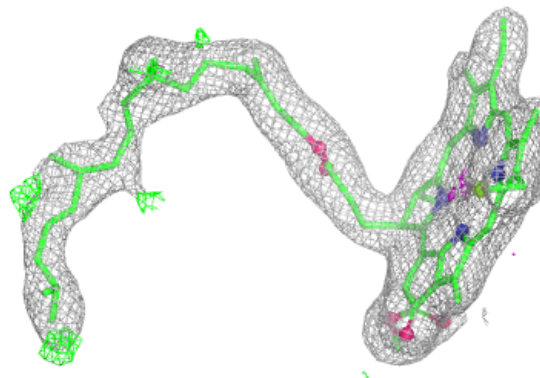
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



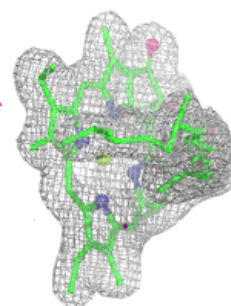
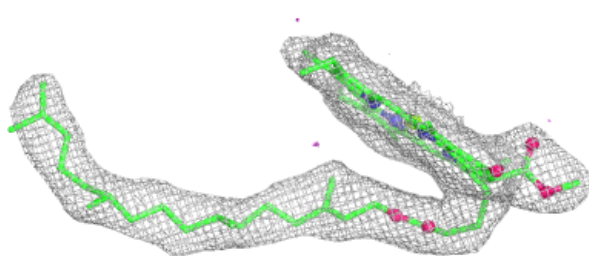
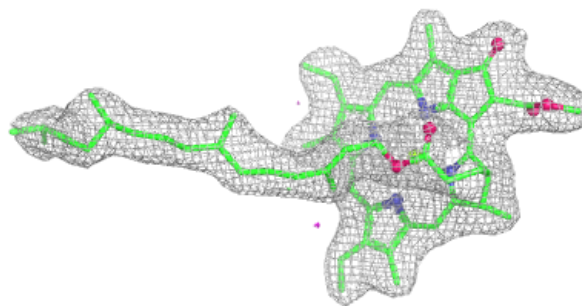


**Electron density around CLA b 606:**

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

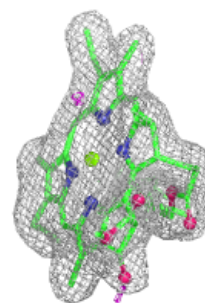
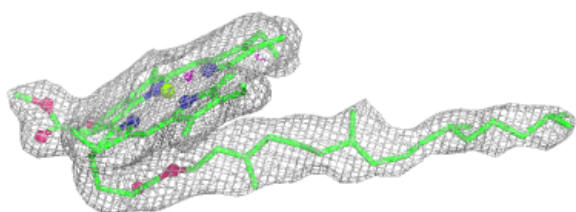
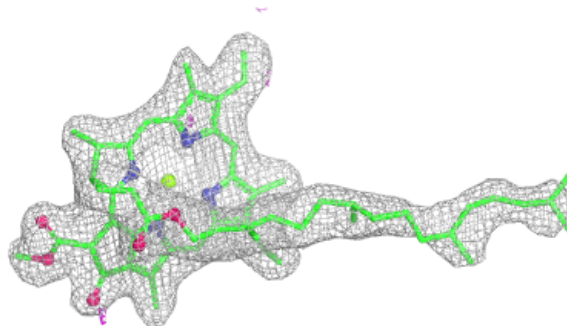
**Electron density around CLA b 608:**

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



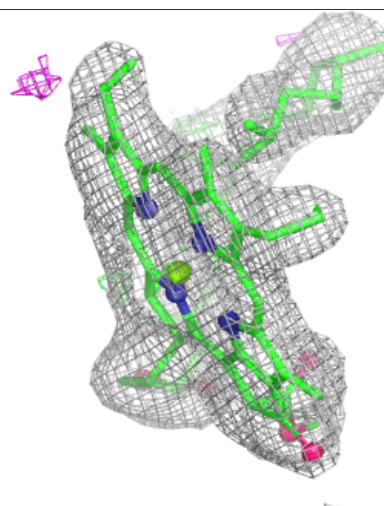
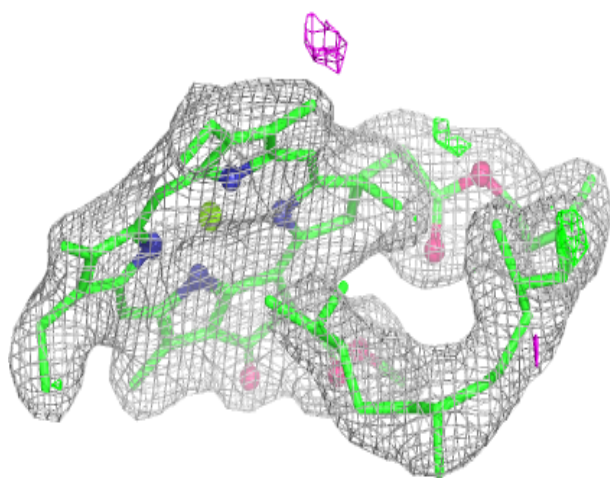
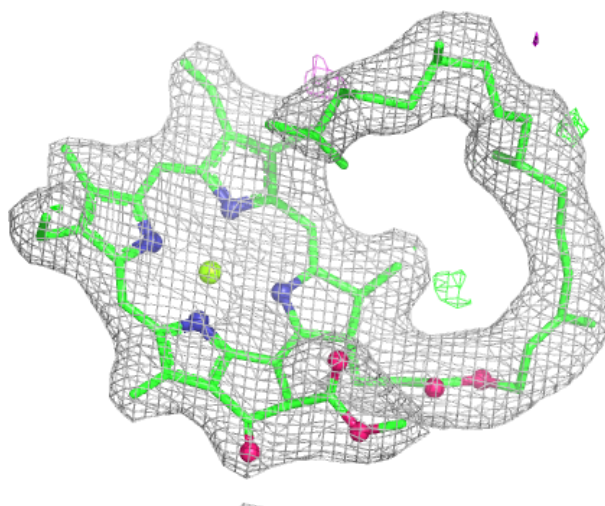
**Electron density around CLA b 614:**

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



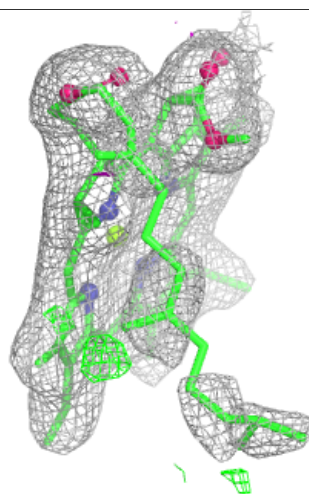
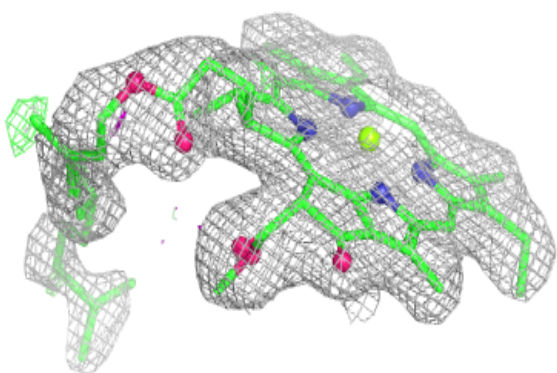
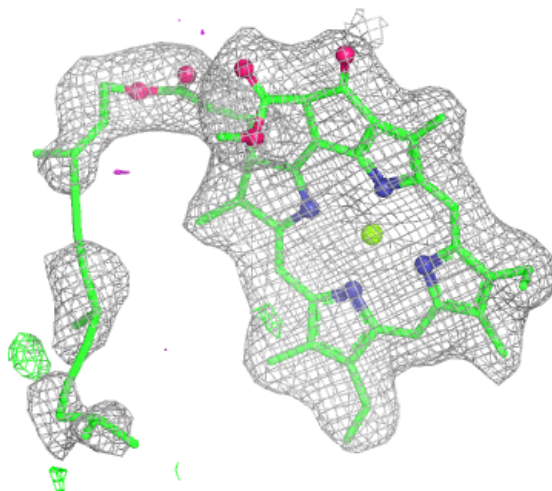
**Electron density around CLA b 615:**

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



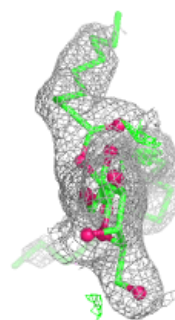
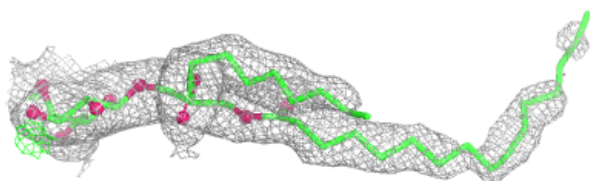
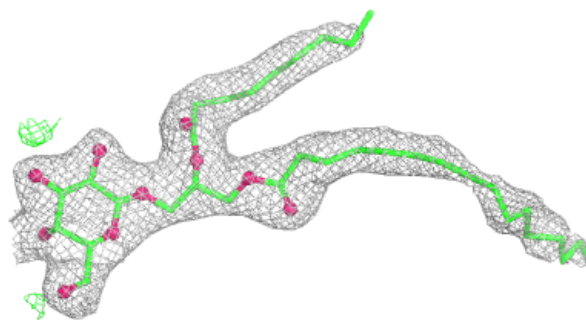
**Electron density around CLA b 616:**

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

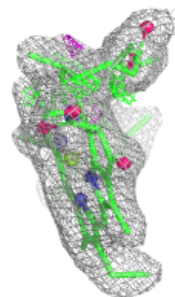
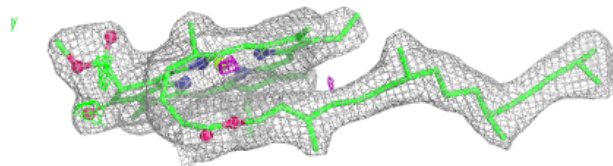
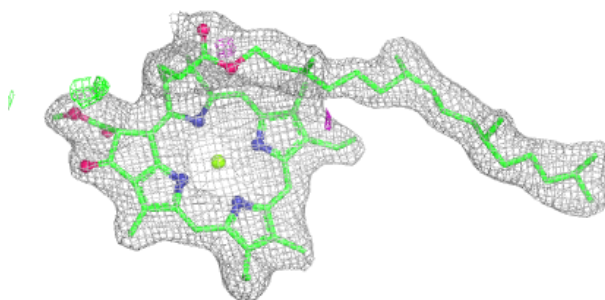


**Electron density around LMG d 411:**

$2mF_o-DF_c$  (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:**

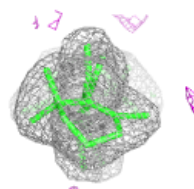
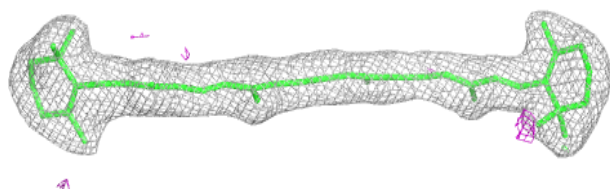
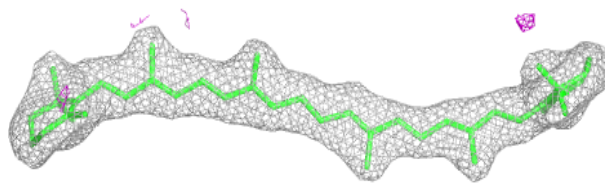
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



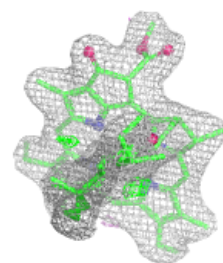
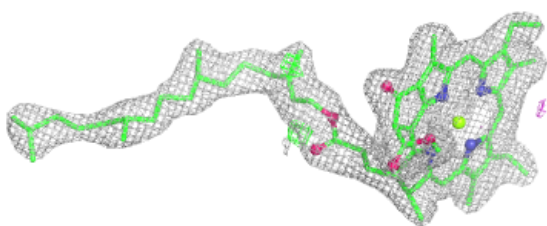
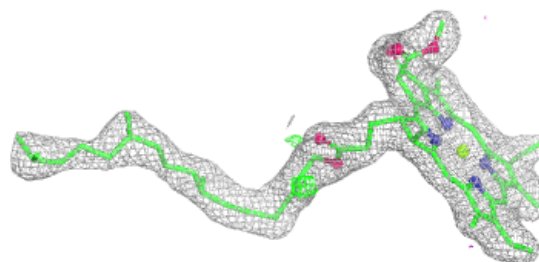


**Electron density around BCR a 610:**

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

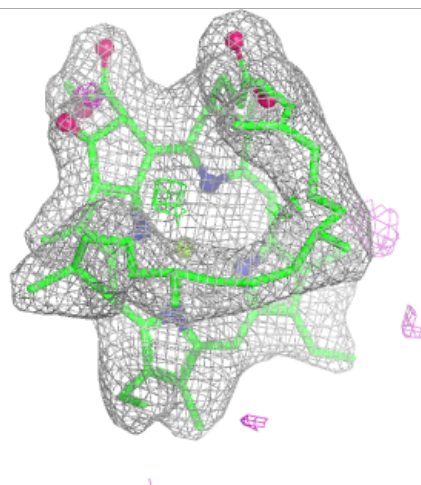
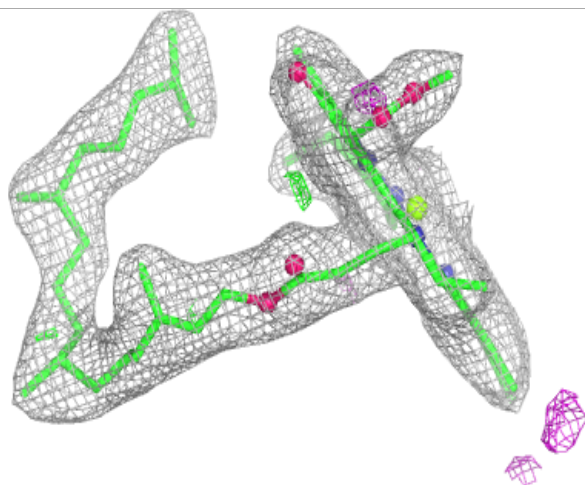
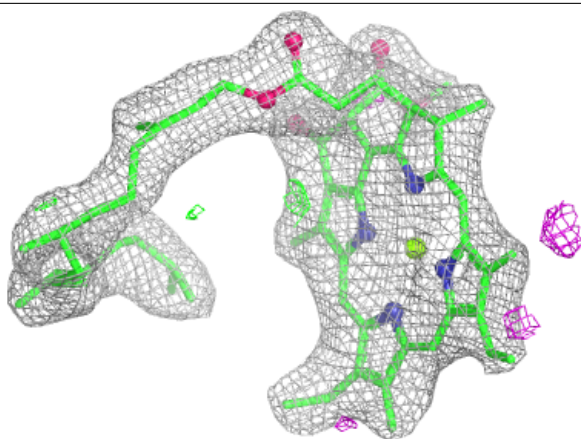
**Electron density around CLA c 502:**

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



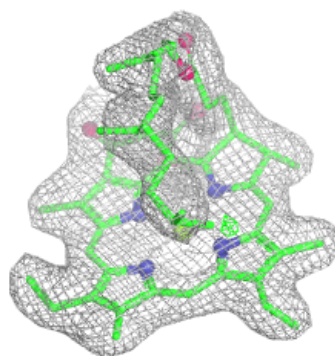
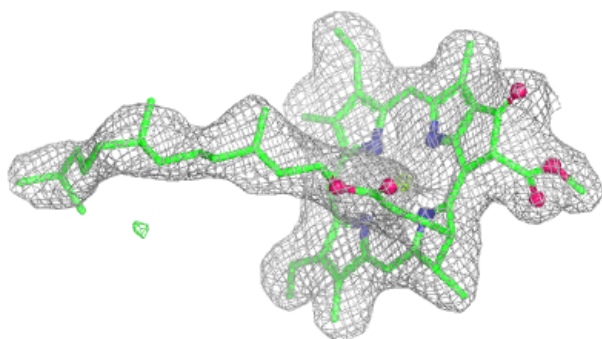
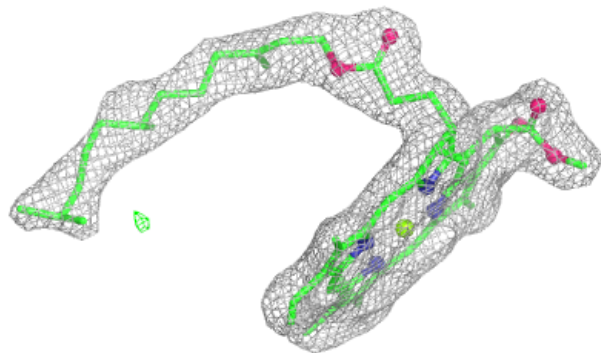
**Electron density around CLA c 503:**

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

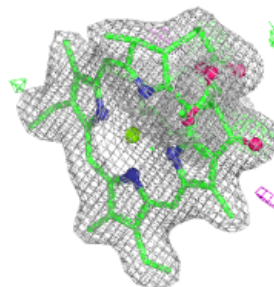
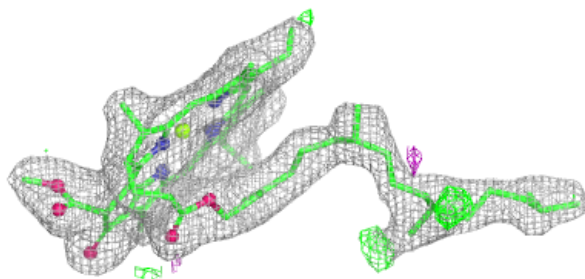
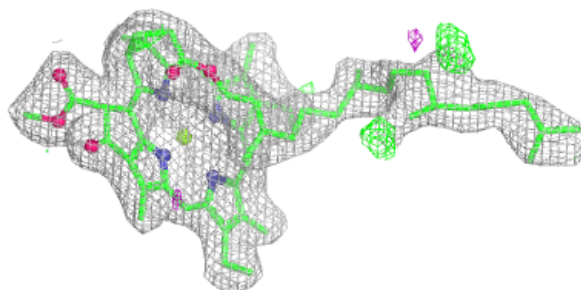


**Electron density around CLA c 504:**

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

**Electron density around CLA c 505:**

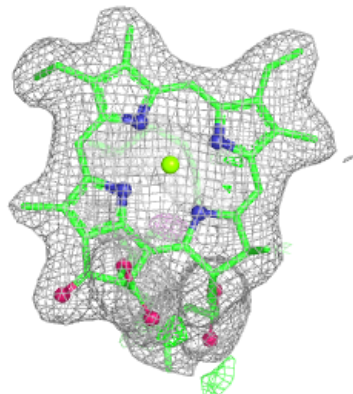
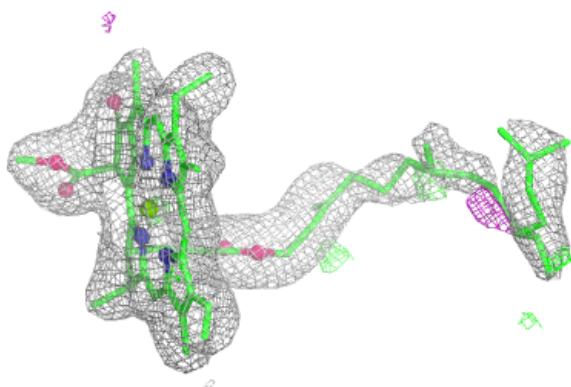
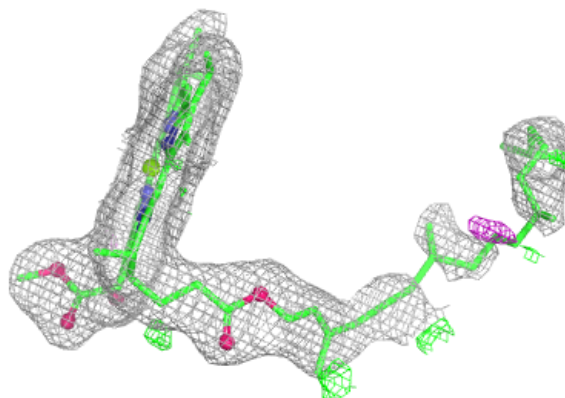
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





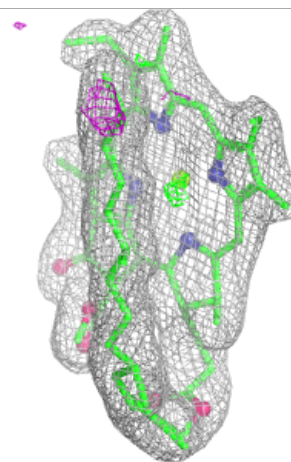
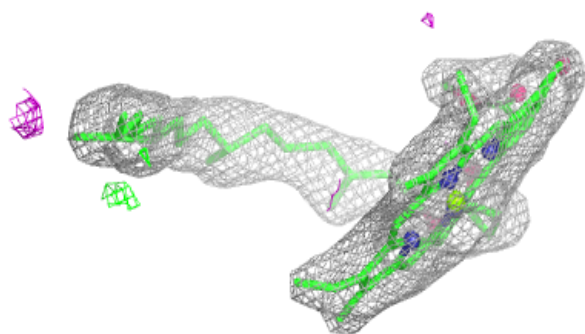
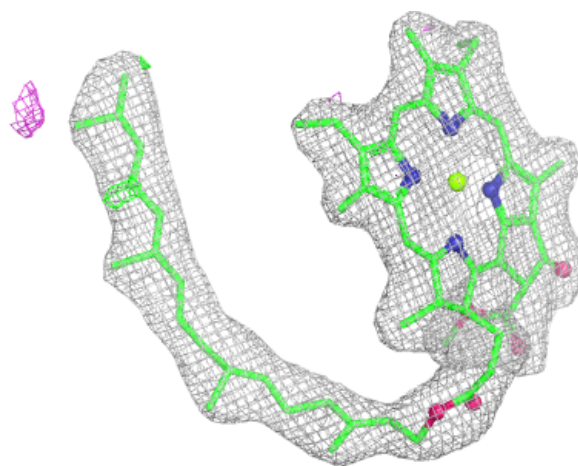
**Electron density around CLA C 506:**

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



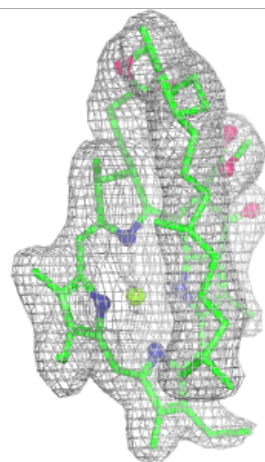
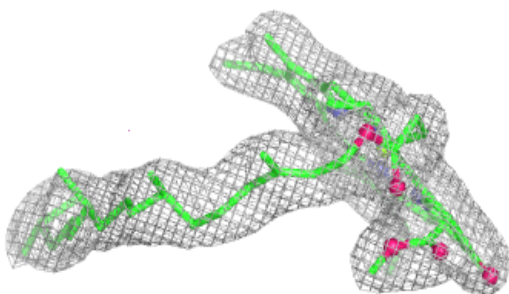
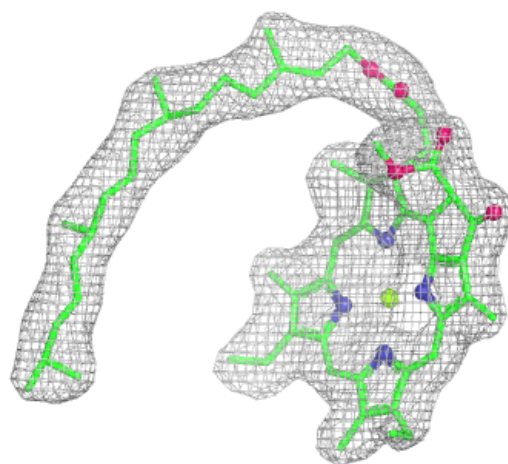
**Electron density around CLA c 507:**

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



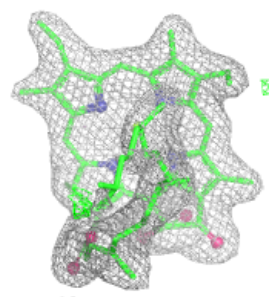
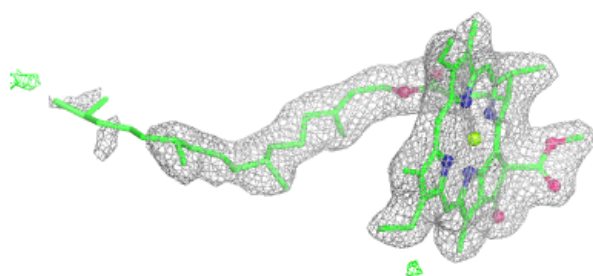
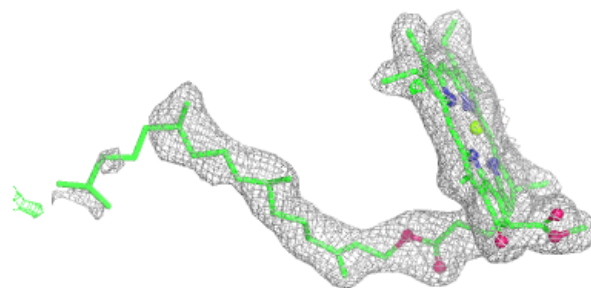
**Electron density around CLA C 507:**

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

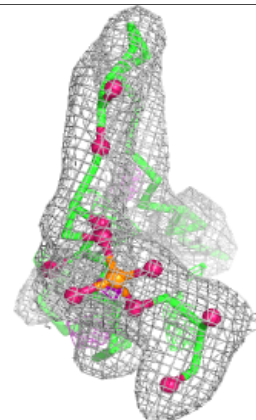
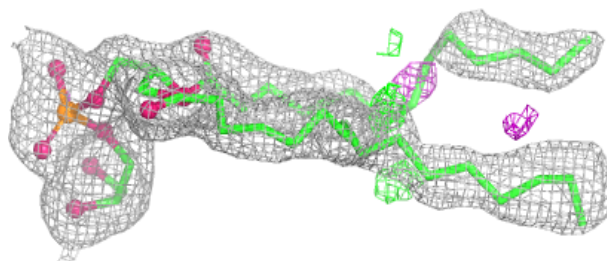
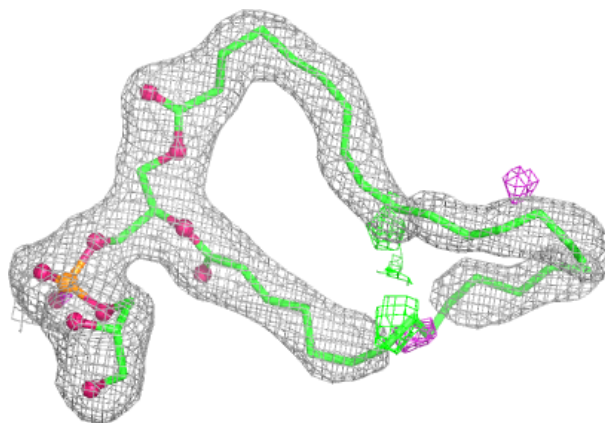


**Electron density around CLA C 508:**

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

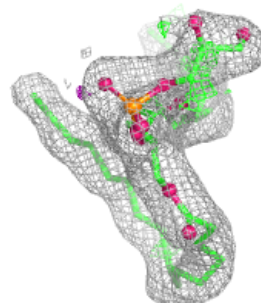
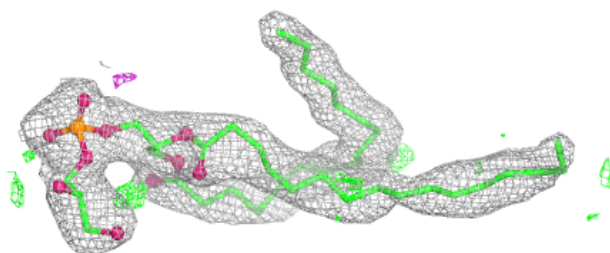
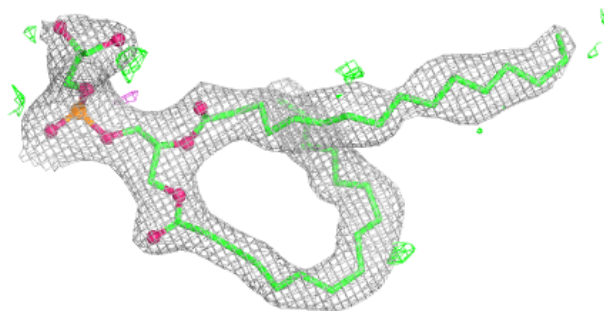
**Electron density around LHG D 410:**

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

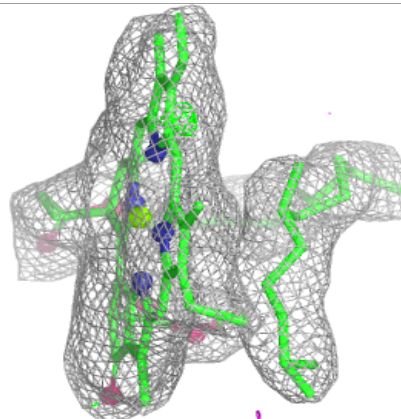
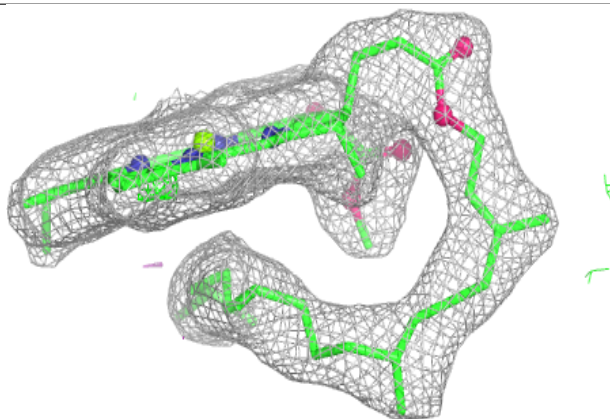
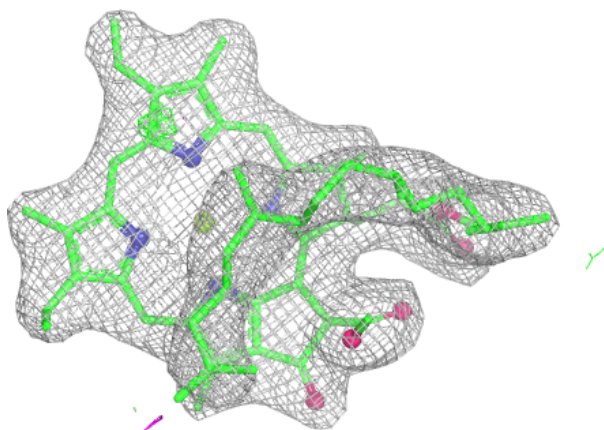


**Electron density around LHG D 412:**

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

**Electron density around CLA c 510:**

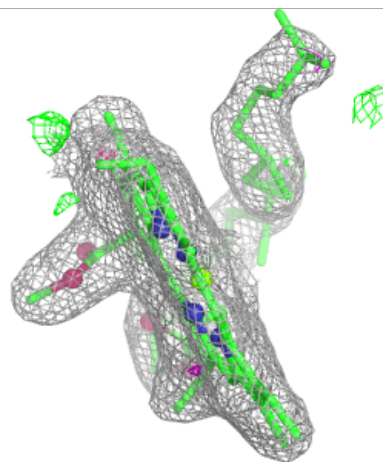
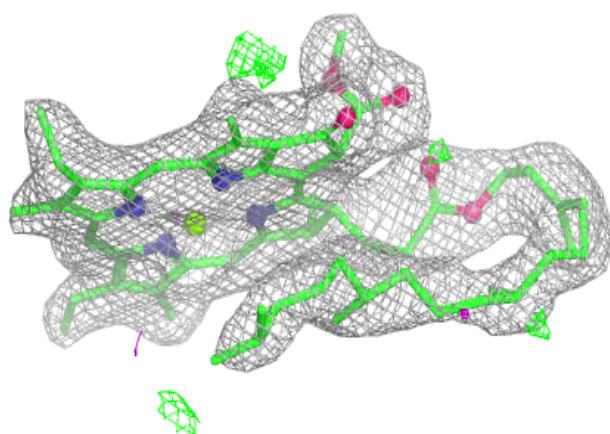
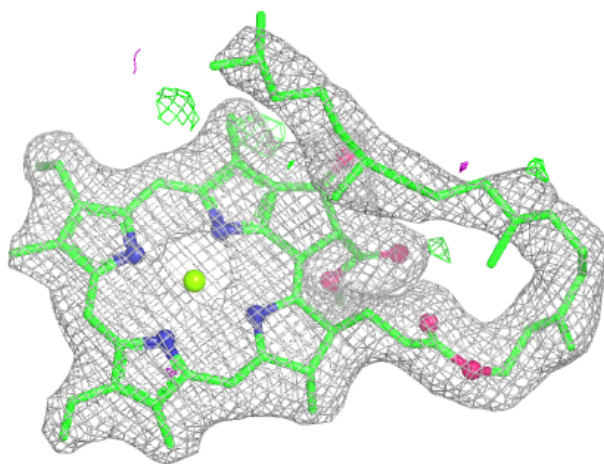
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





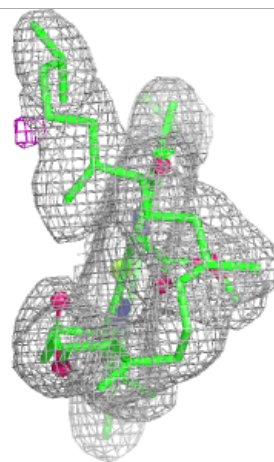
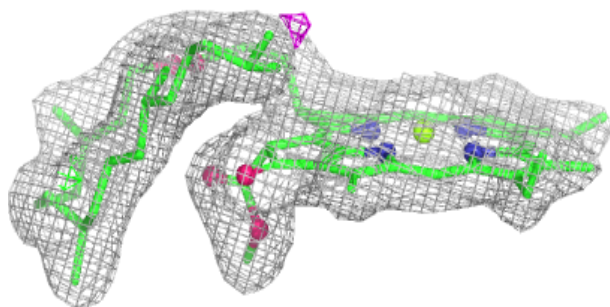
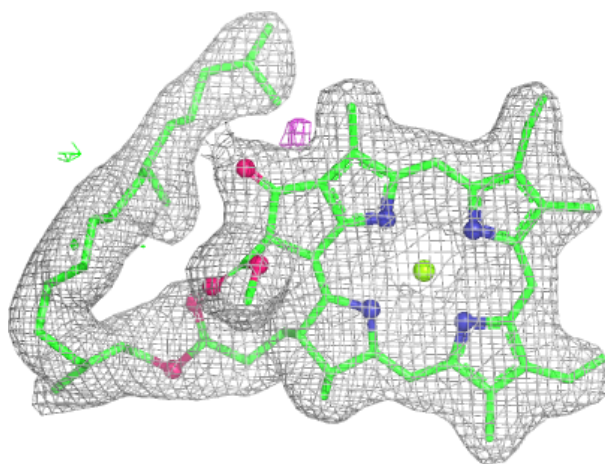
**Electron density around CLA C 509:**

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



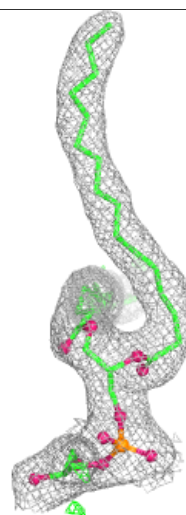
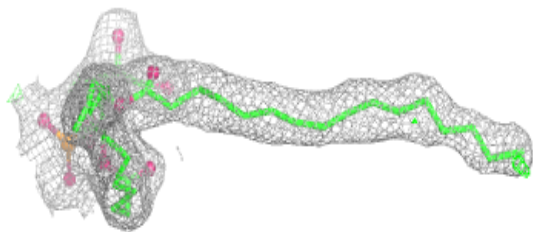
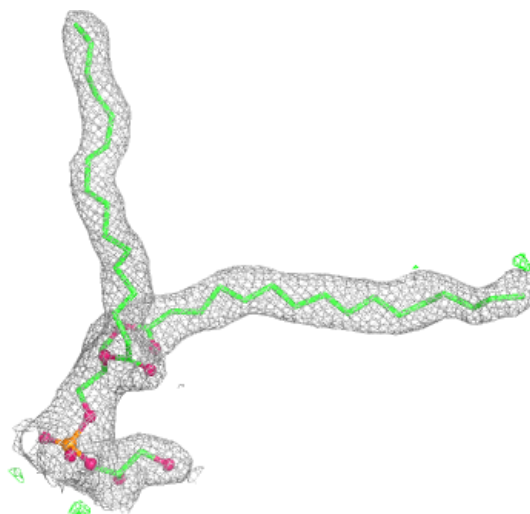
**Electron density around CLA B 610:**

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



**Electron density around LHG 1 101:**

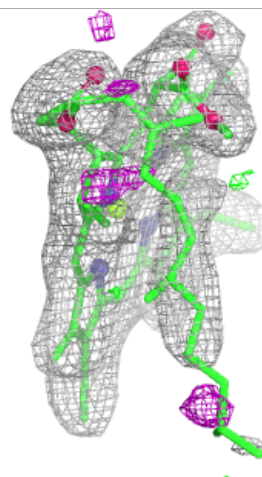
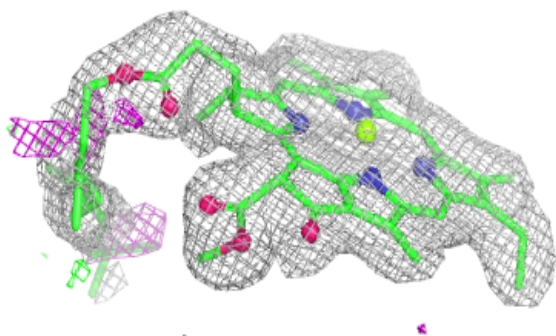
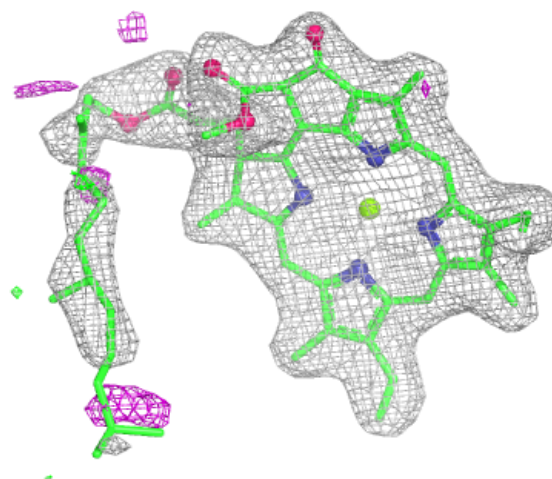
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





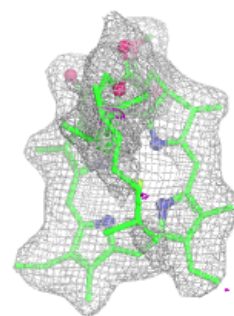
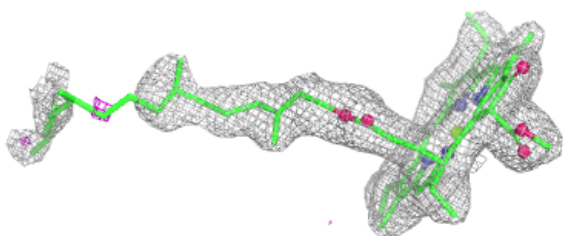
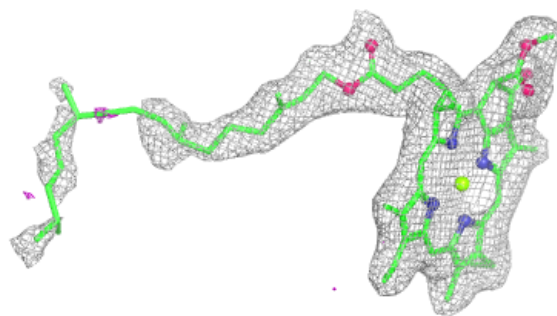
**Electron density around CLA B 616:**

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

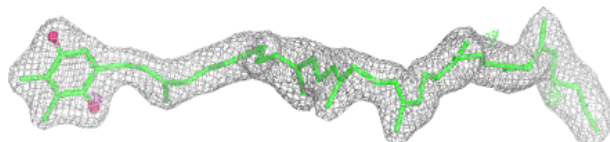
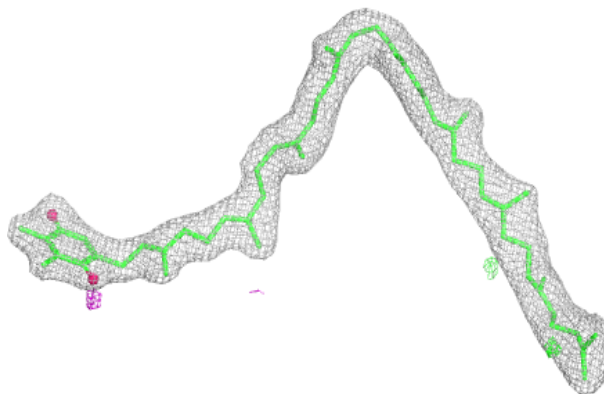


**Electron density around CLA d 404:**

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

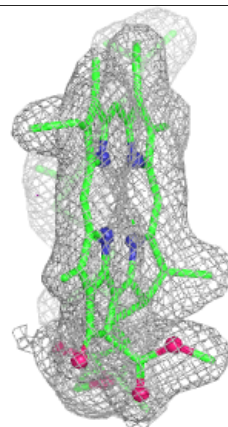
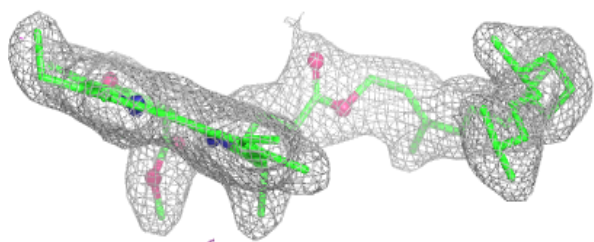
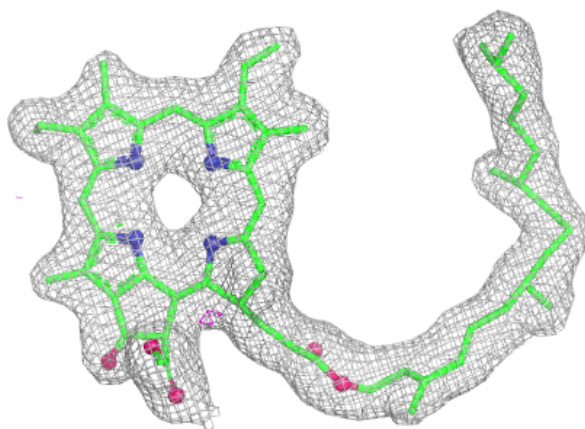
**Electron density around PL9 d 406:**

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

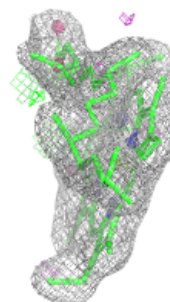
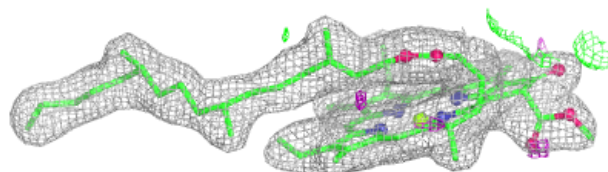
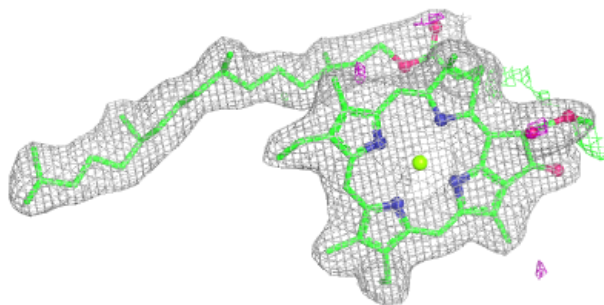


**Electron density around PHO d 401:**

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

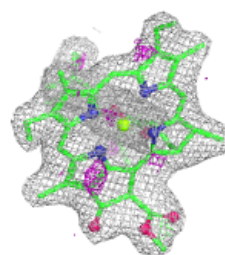
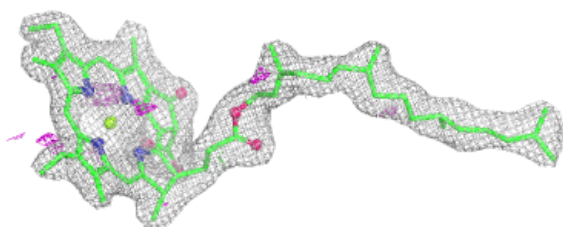
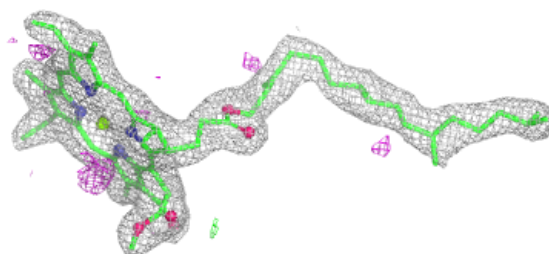
**Electron density around CLA C 501:**

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

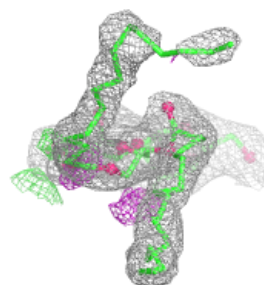
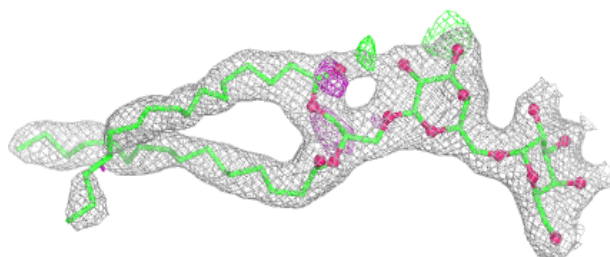
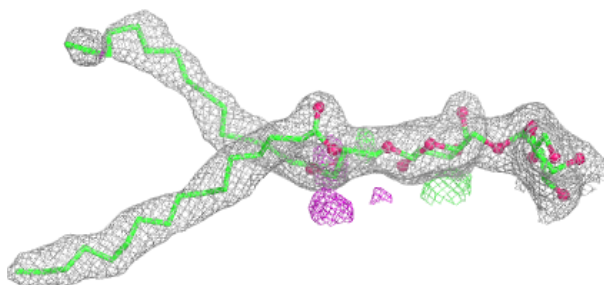


**Electron density around CLA C 502:**

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

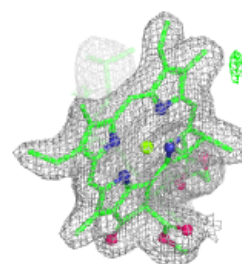
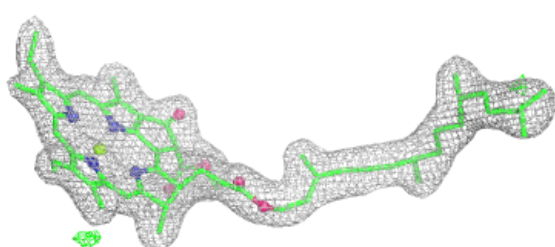
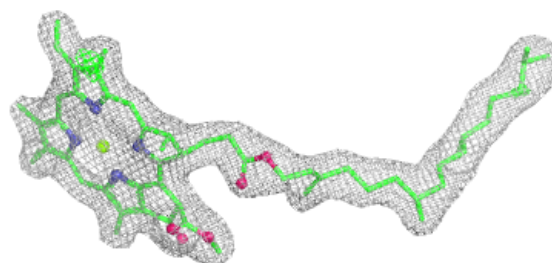
**Electron density around DGD c 517:**

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

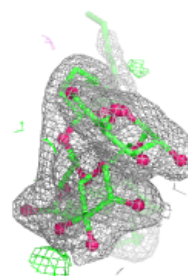
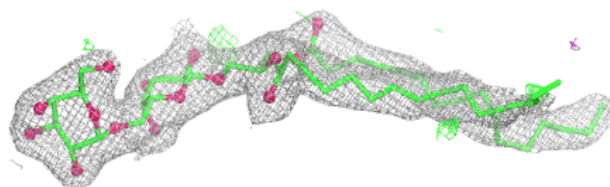
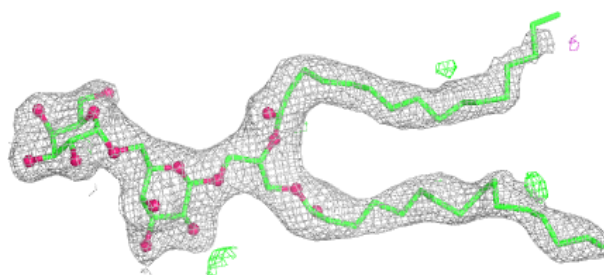


**Electron density around CLA a 607:**

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

**Electron density around DGD c 519:**

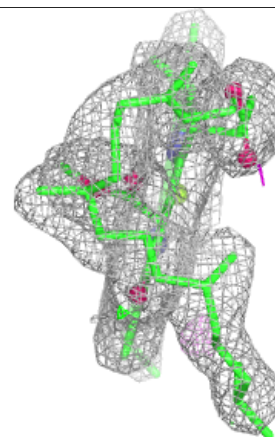
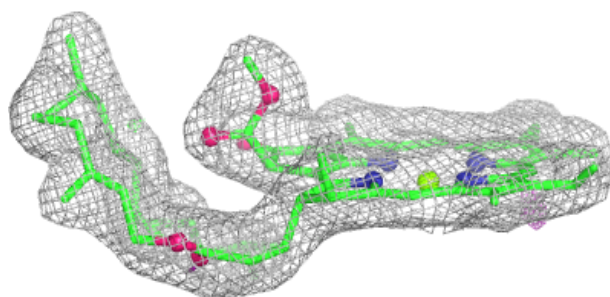
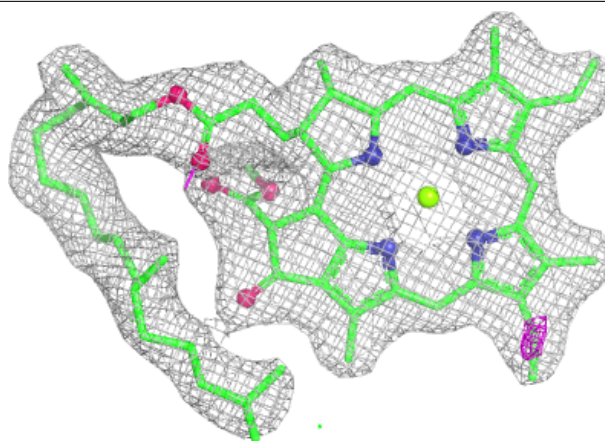
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





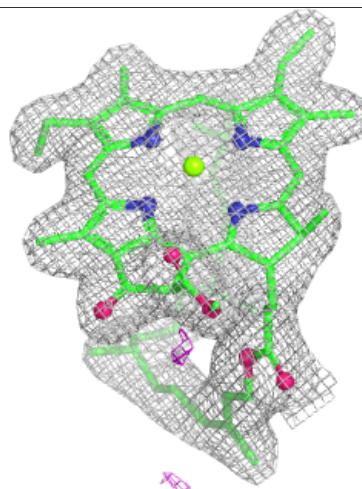
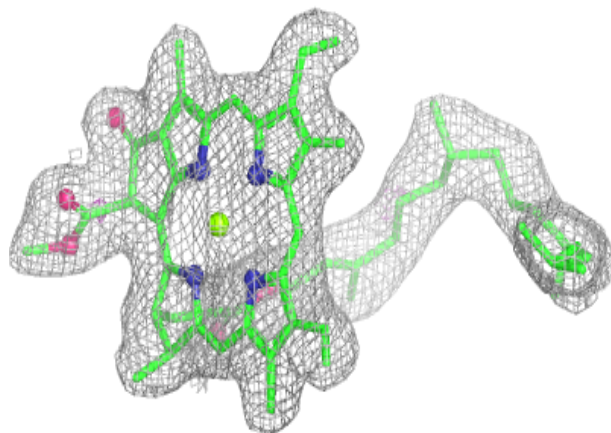
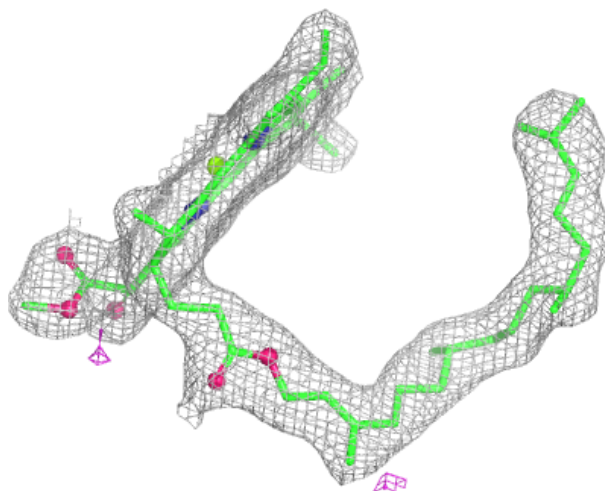
**Electron density around CLA b 610:**

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



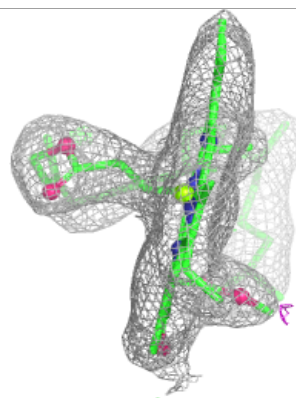
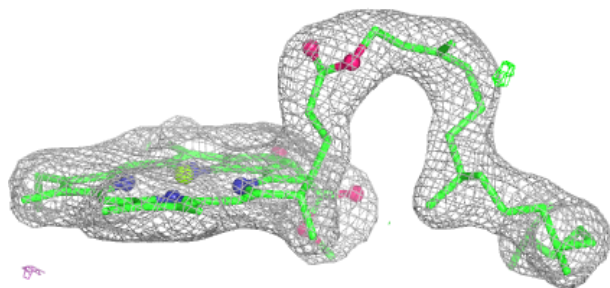
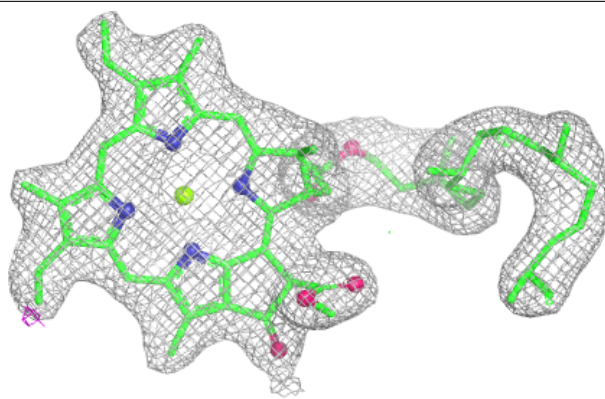
**Electron density around CLA b 611:**

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



**Electron density around CLA b 612:**

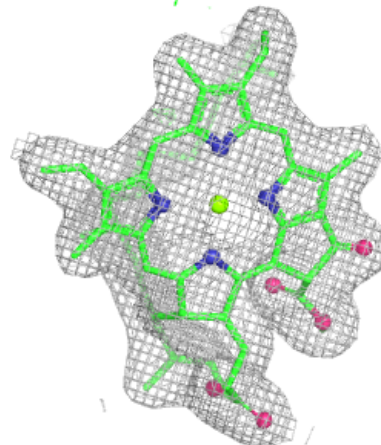
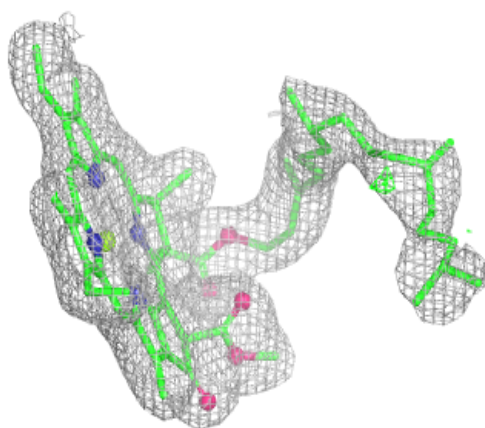
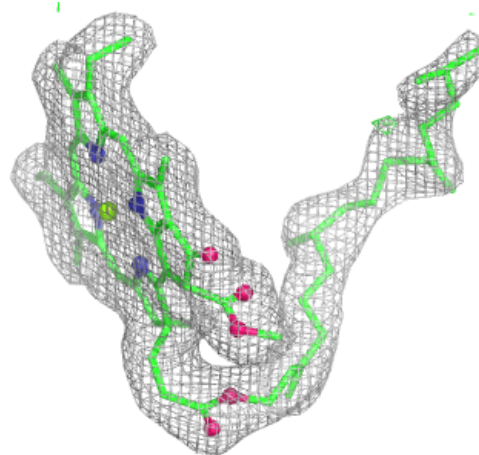
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





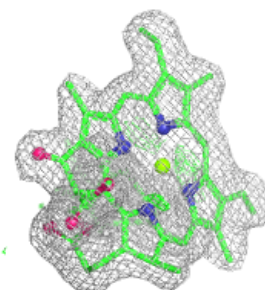
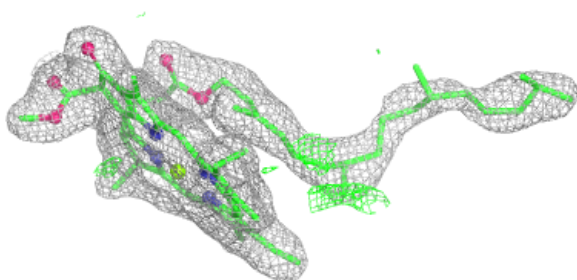
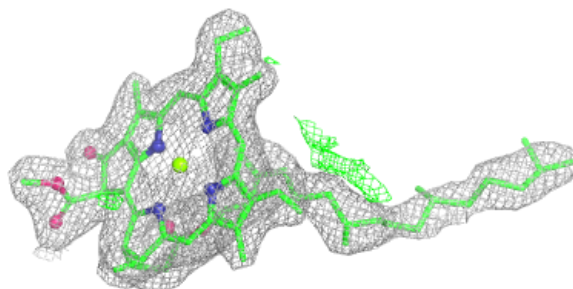
**Electron density around CLA b 613:**

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

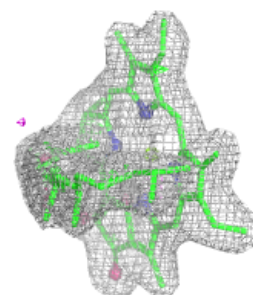
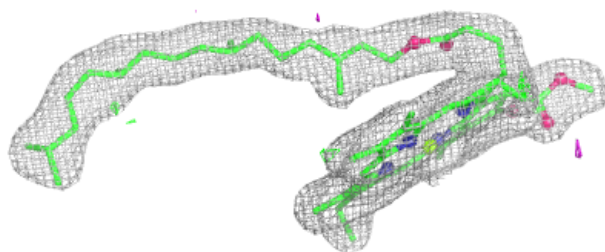
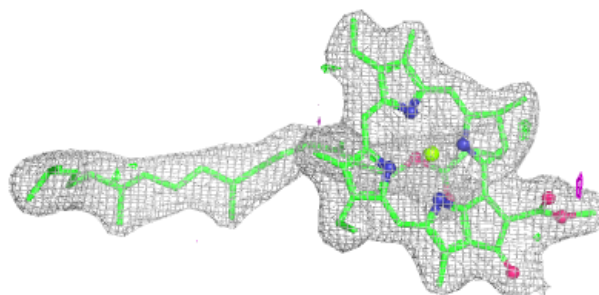


**Electron density around CLA C 505:**

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

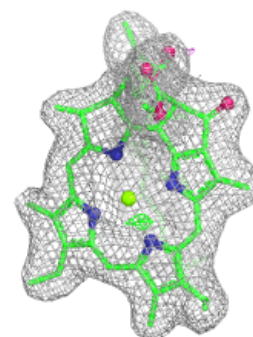
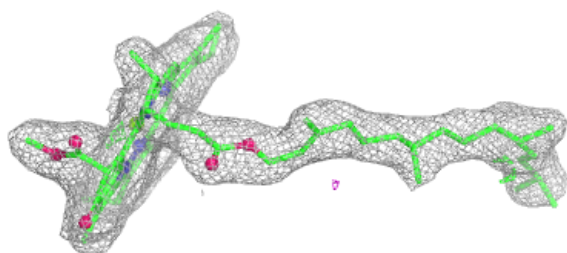
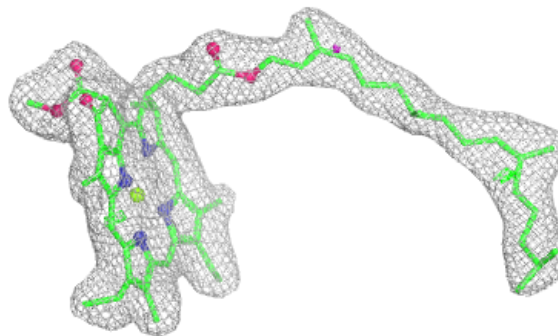
**Electron density around CLA B 608:**

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

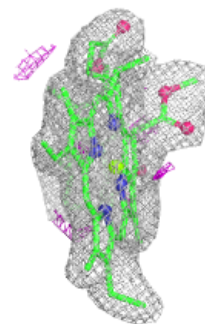
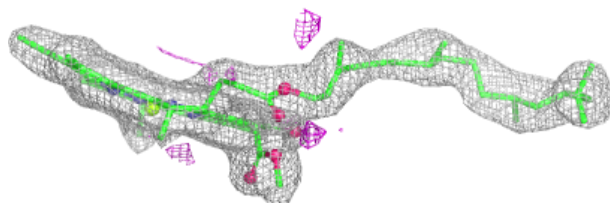
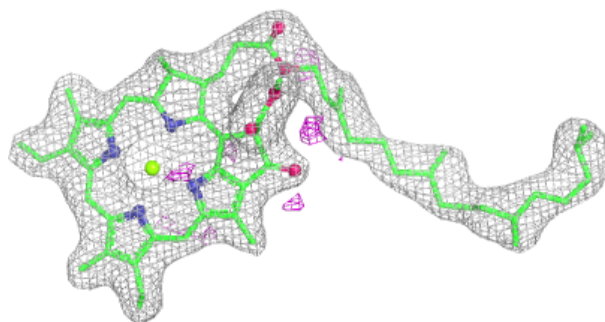


**Electron density around CLA B 609:**

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

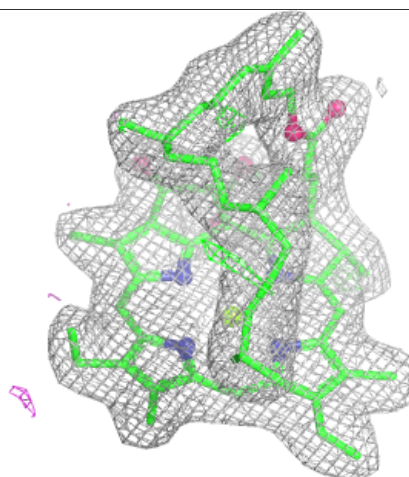
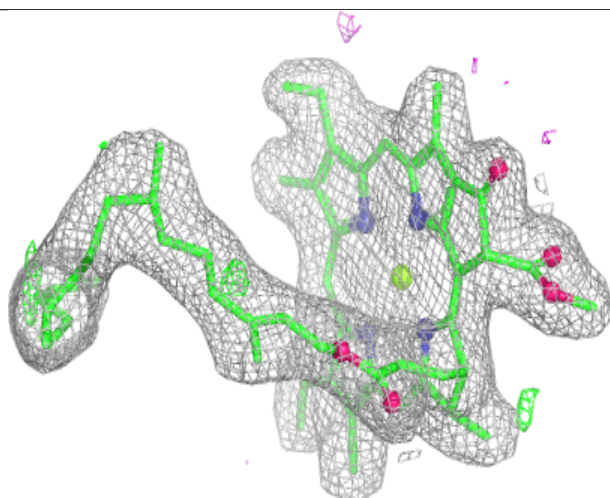
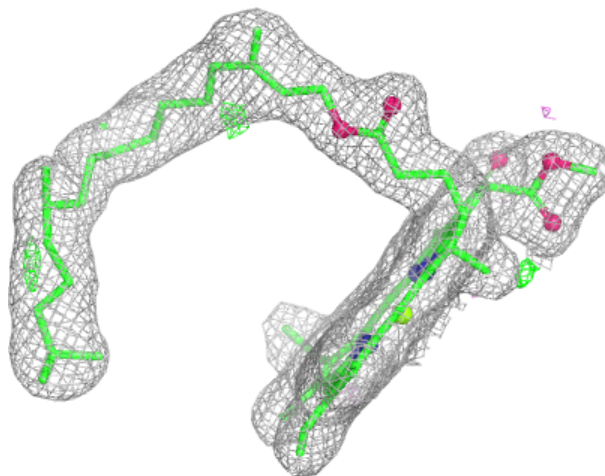
**Electron density around CLA B 602:**

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



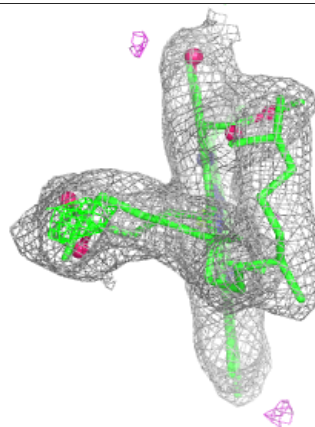
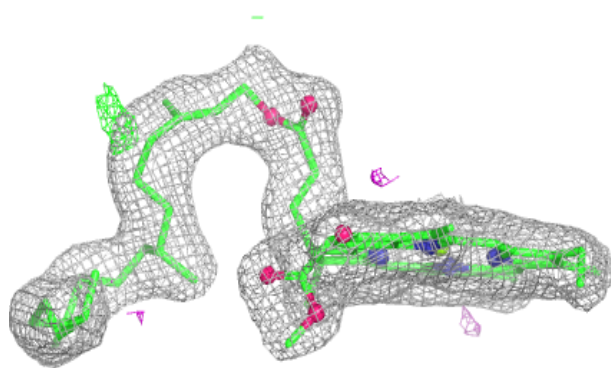
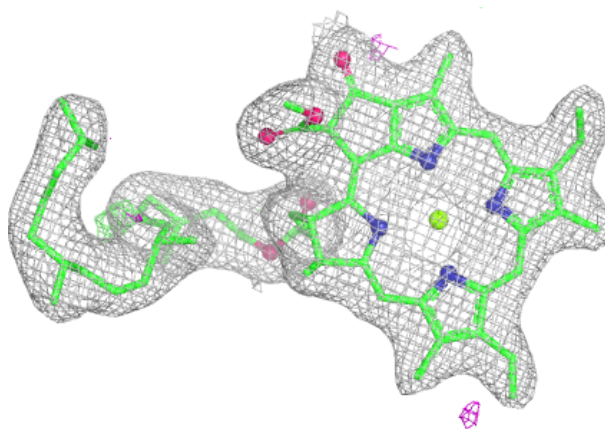
**Electron density around CLA B 611:**

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



**Electron density around CLA B 612:**

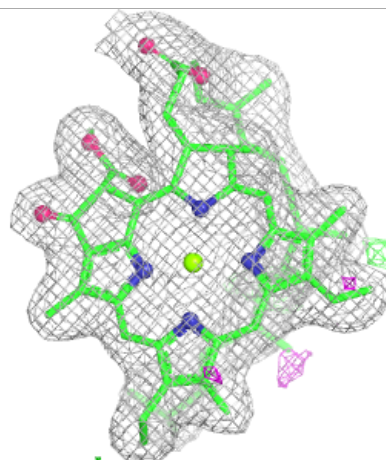
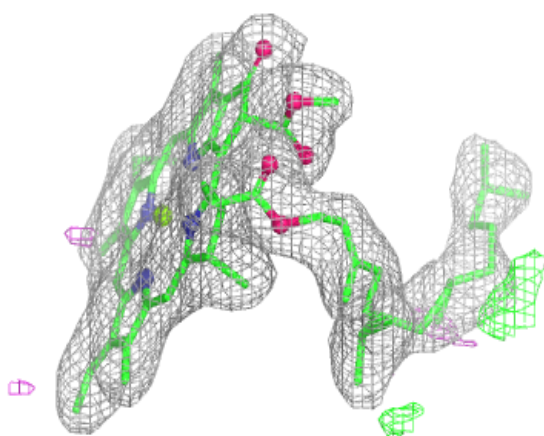
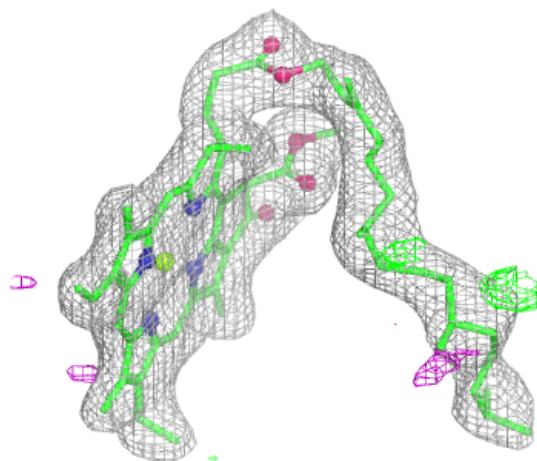
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





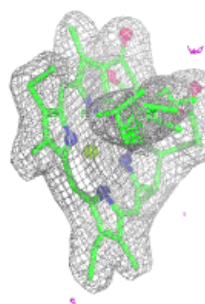
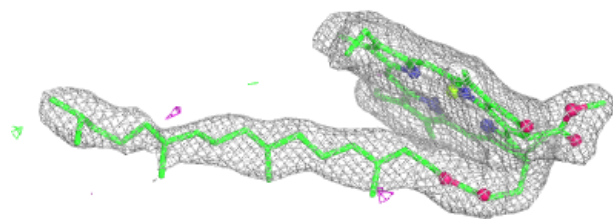
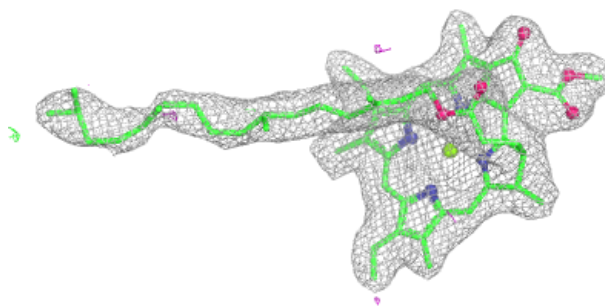
**Electron density around CLA B 613:**

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



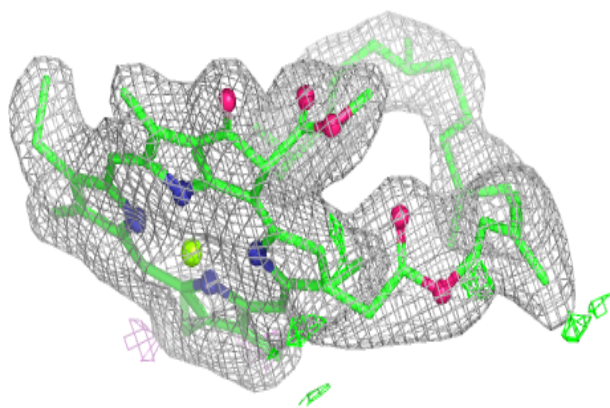
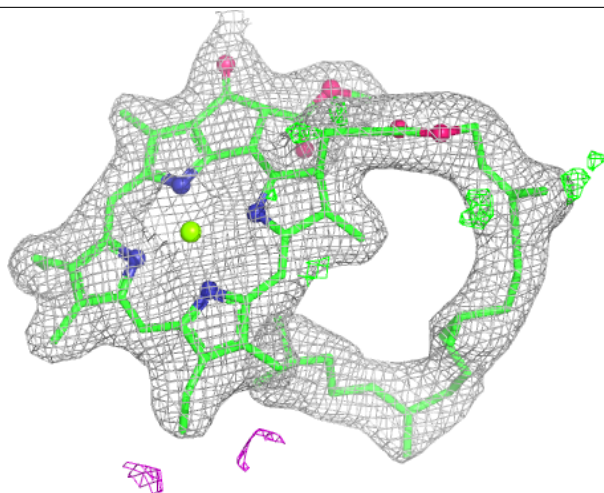
**Electron density around CLA B 614:**

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



**Electron density around CLA B 615:**

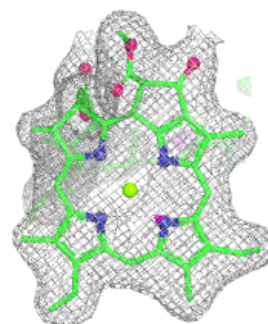
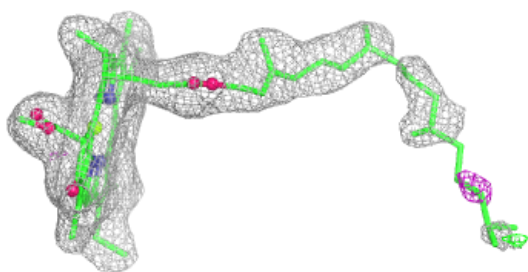
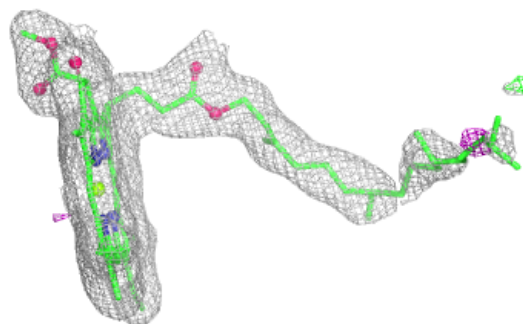
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





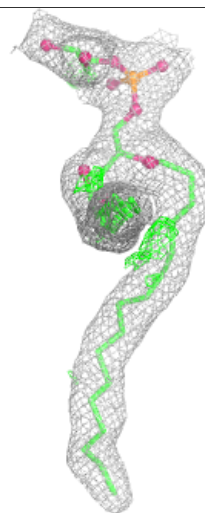
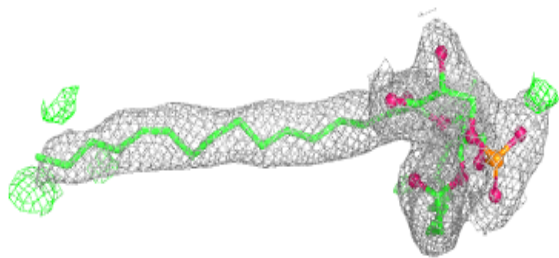
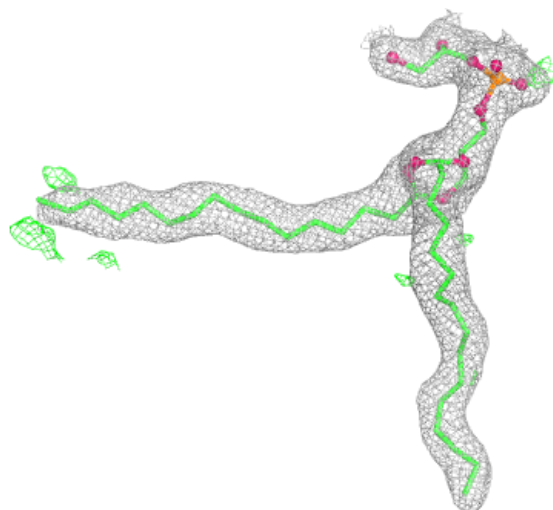
**Electron density around CLA D 405:**

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



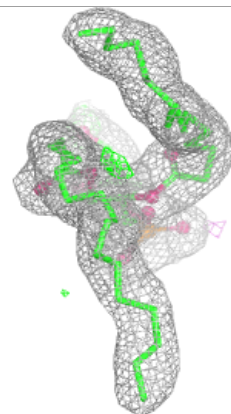
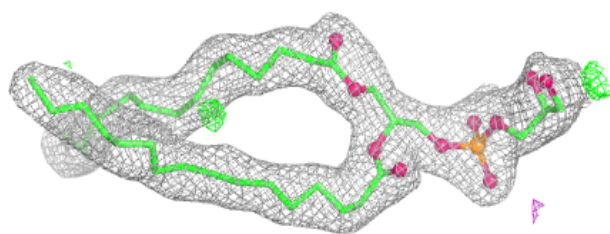
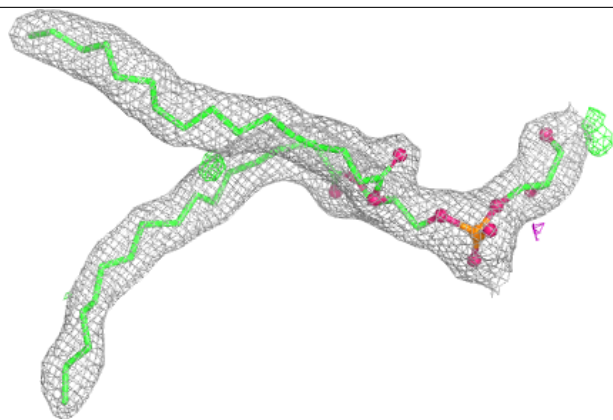
**Electron density around LHG A 615:**

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

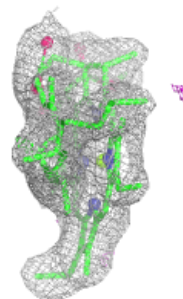
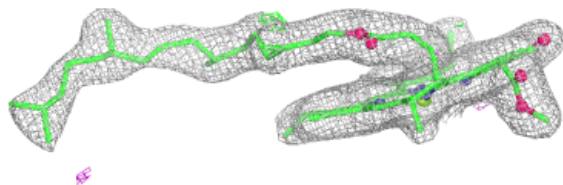
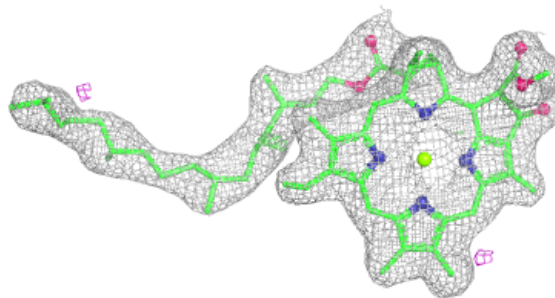


**Electron density around LHG D 409:**

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

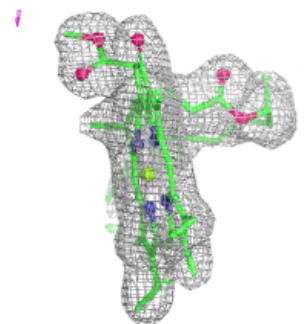
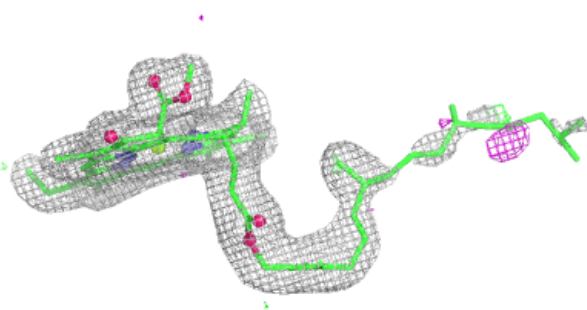
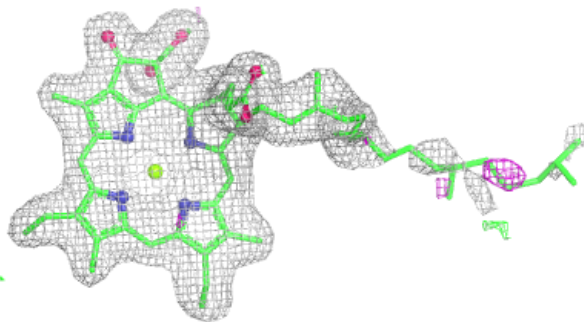
**Electron density around CLA B 603:**

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

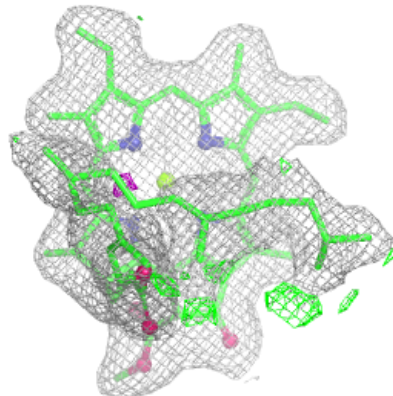
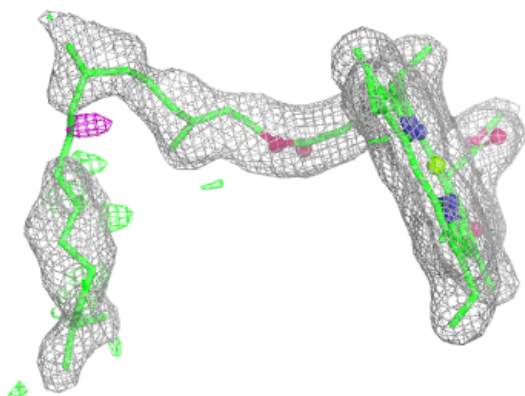
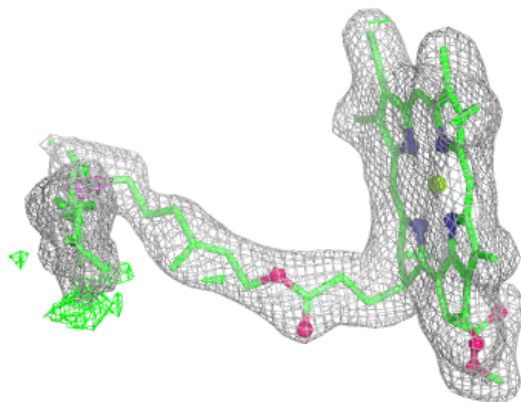


**Electron density around CLA A 607:**

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

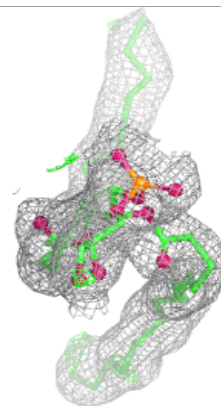
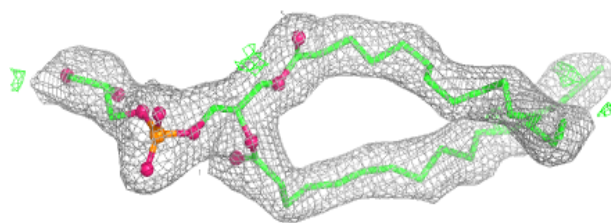
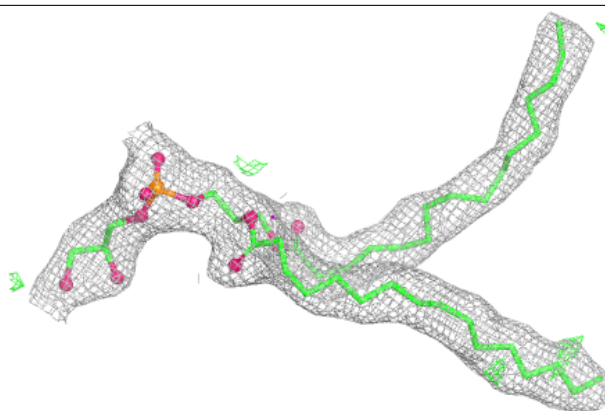
**Electron density around CLA a 609:**

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

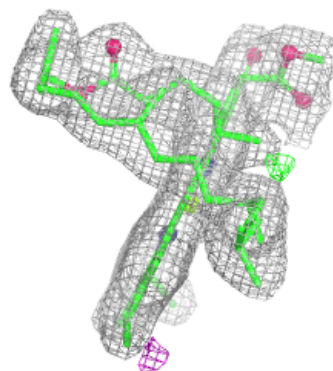
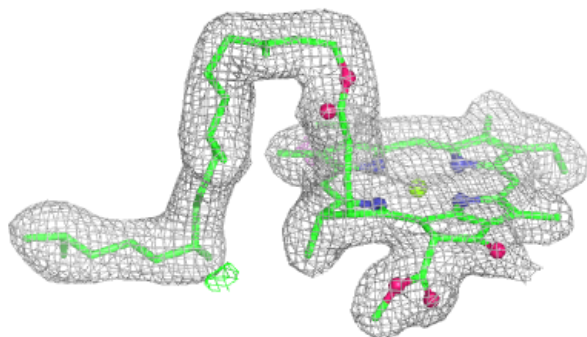
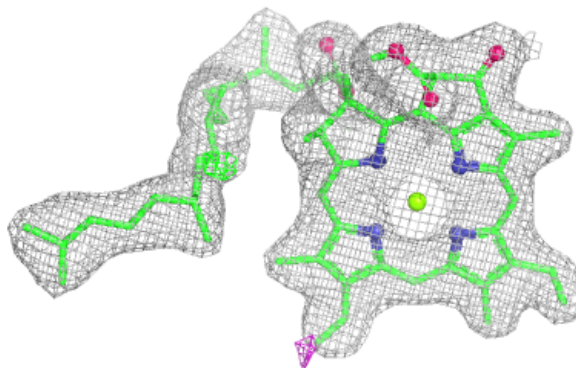


**Electron density around LHG d 408:**

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

**Electron density around CLA a 612:**

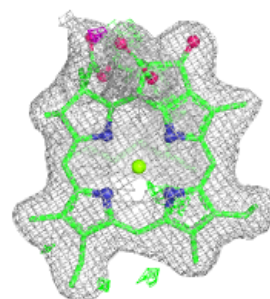
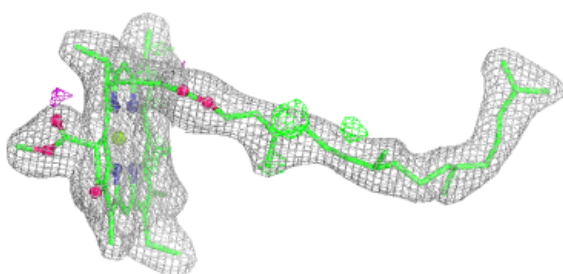
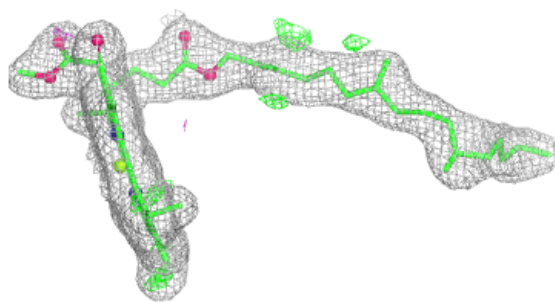
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



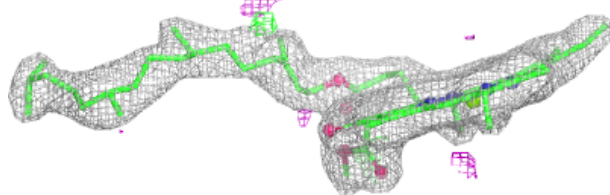
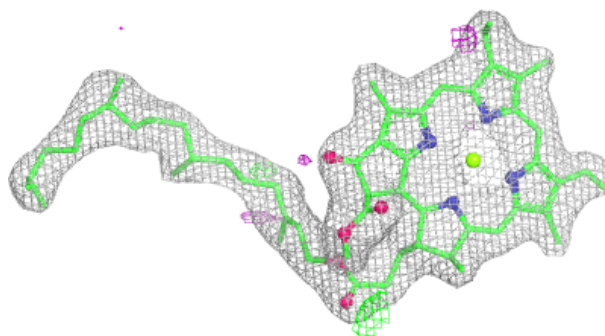


**Electron density around CLA B 605:**

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

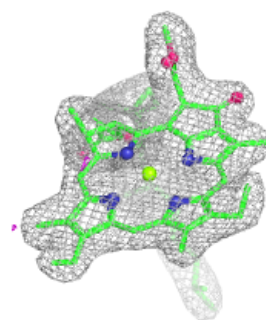
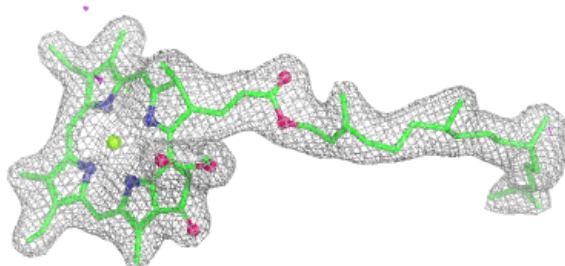
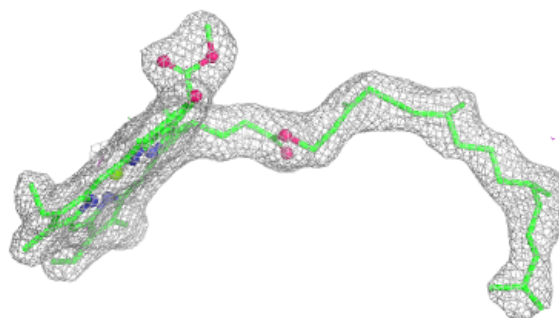
**Electron density around CLA b 602:**

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

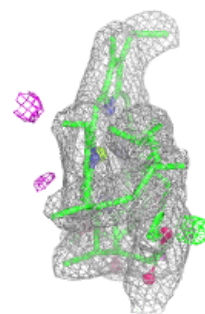
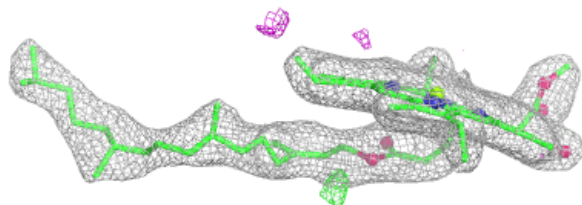
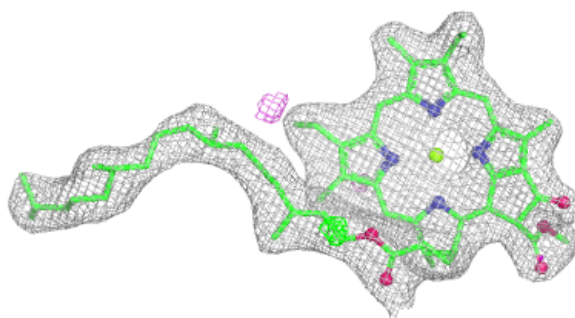


**Electron density around CLA d 403:**

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

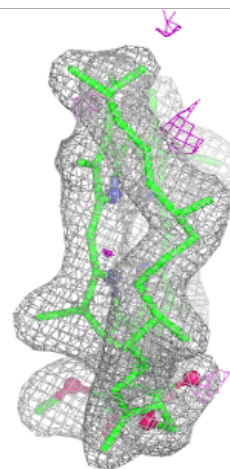
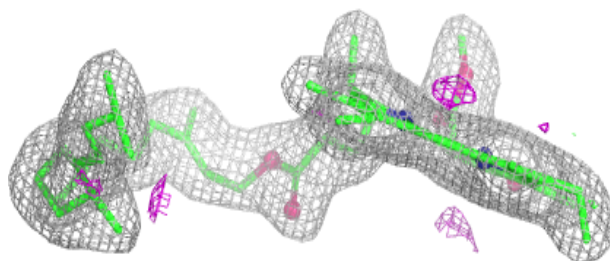
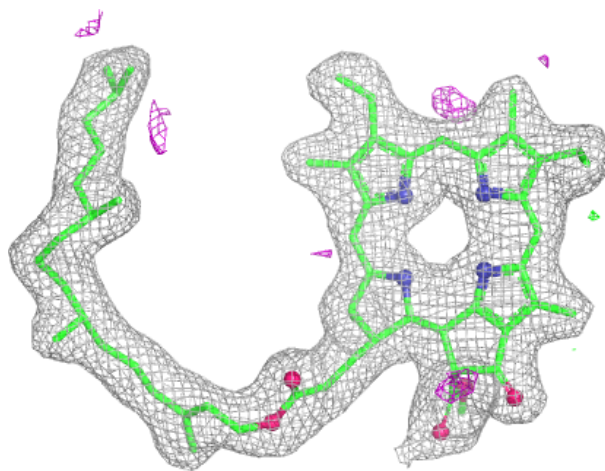
**Electron density around CLA b 603:**

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



**Electron density around PHO A 608:**

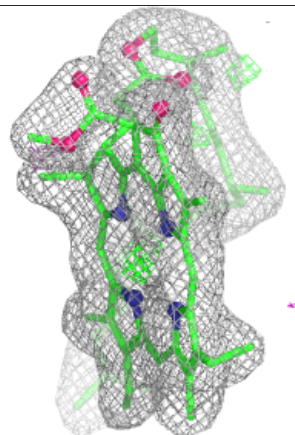
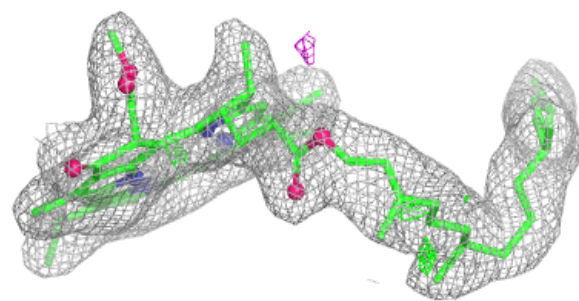
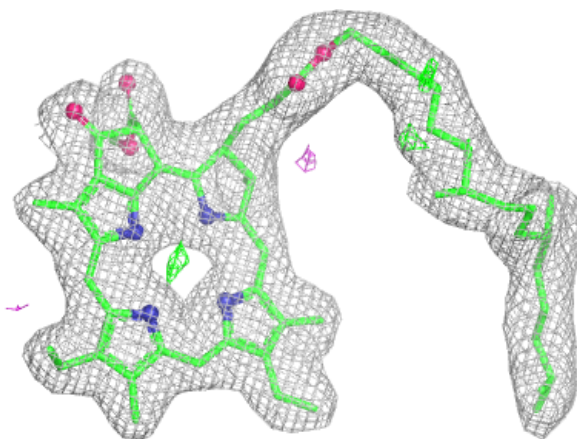
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





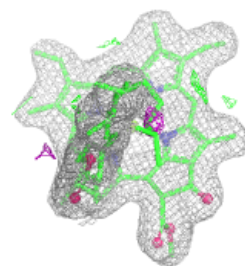
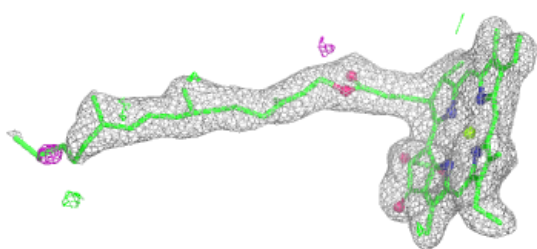
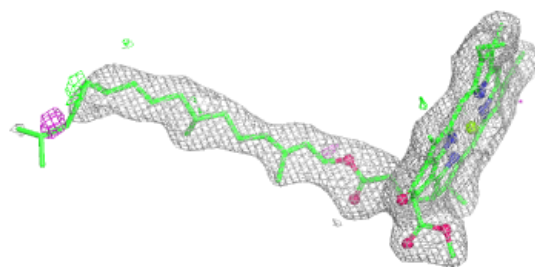
**Electron density around PHO D 402:**

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



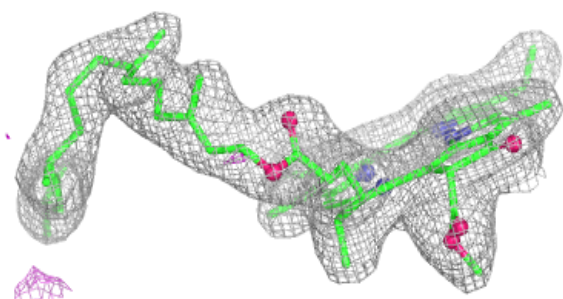
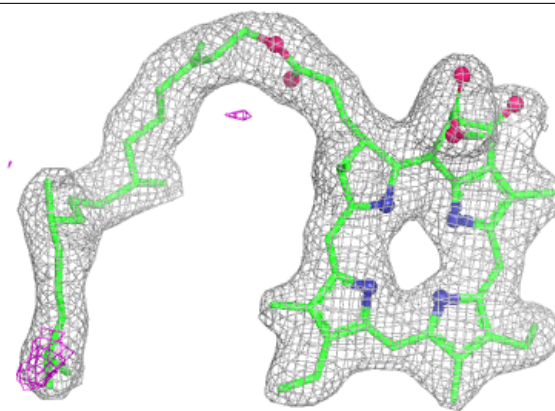
**Electron density around CLA b 604:**

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



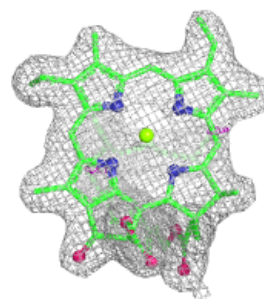
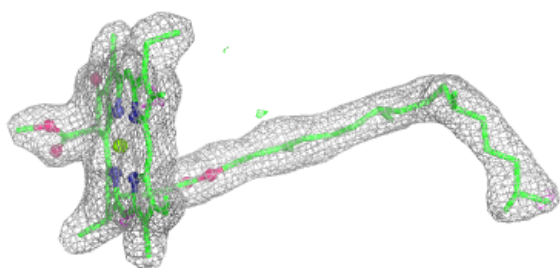
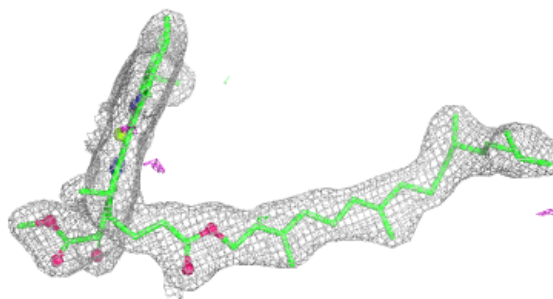
**Electron density around PHO d 402:**

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

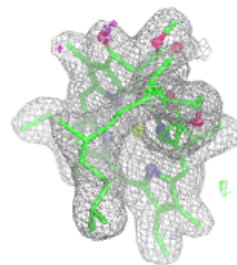
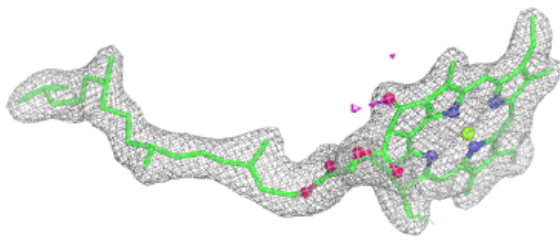
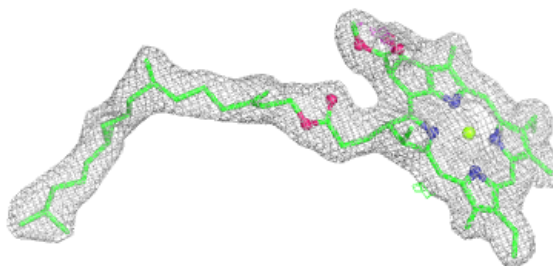


**Electron density around CLA b 605:**

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

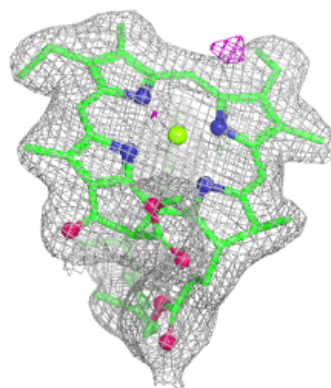
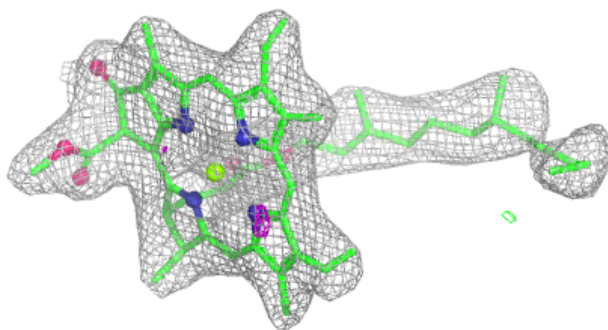
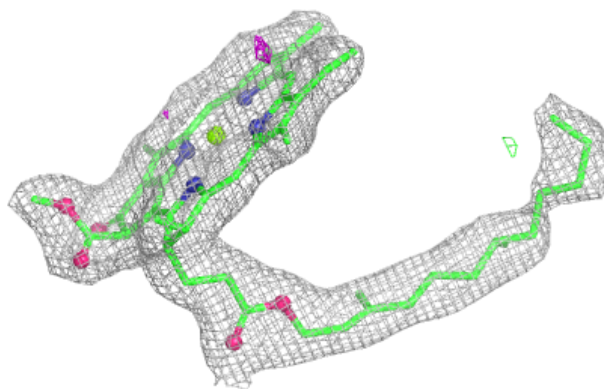
**Electron density around CLA A 606:**

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

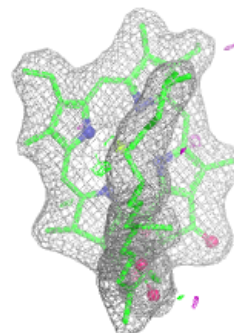
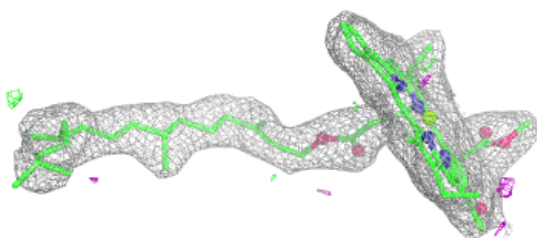
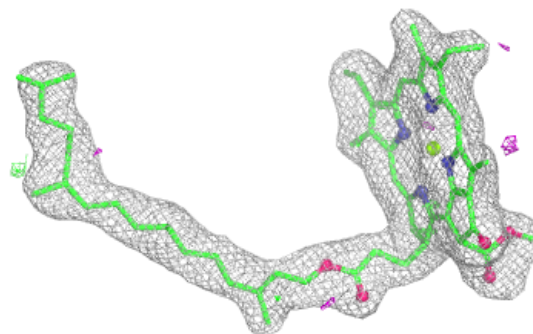


**Electron density around CLA C 504:**

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

**Electron density around CLA b 609:**

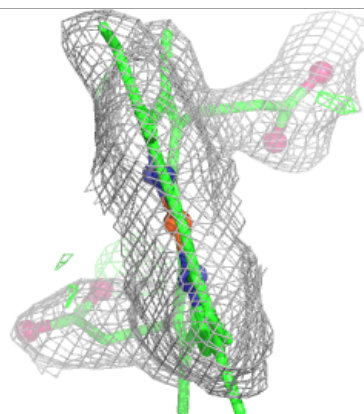
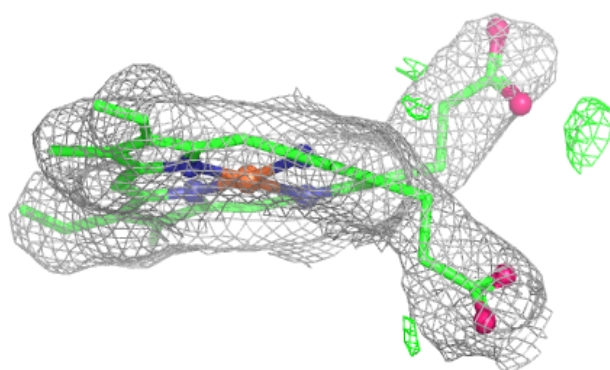
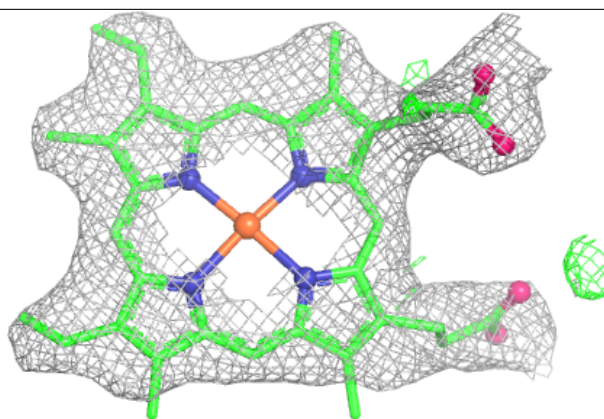
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



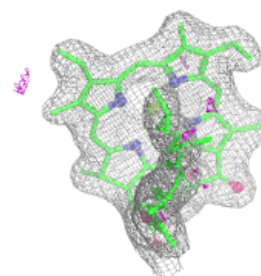
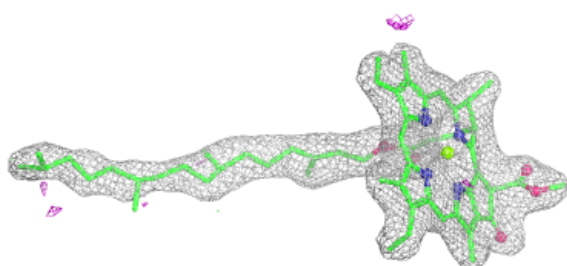
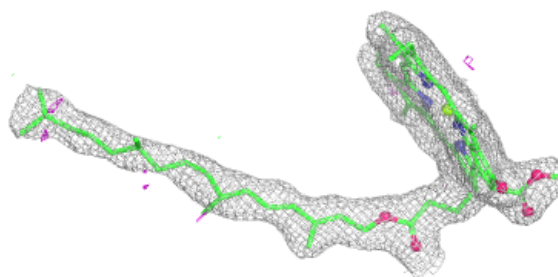


**Electron density around HEM f 101:**

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

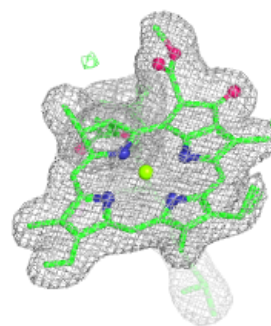
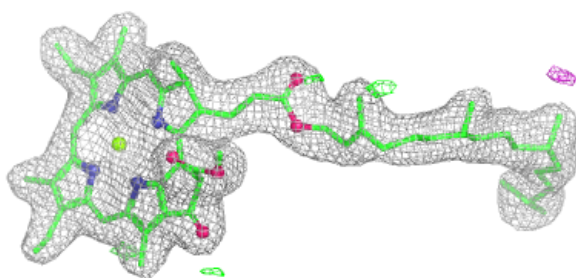
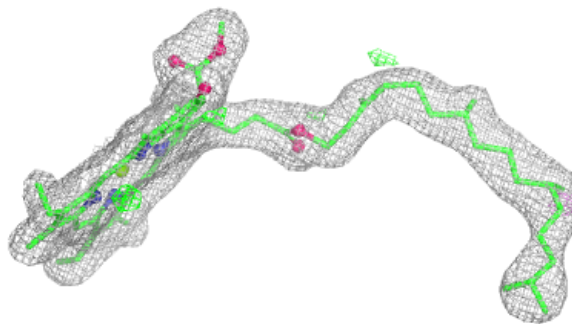
**Electron density around CLA b 607:**

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

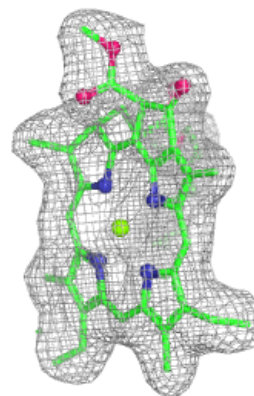
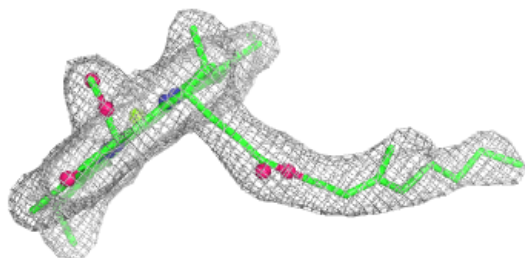
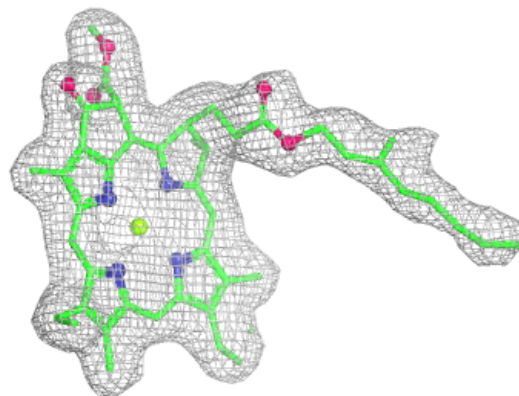


**Electron density around CLA D 404:**

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

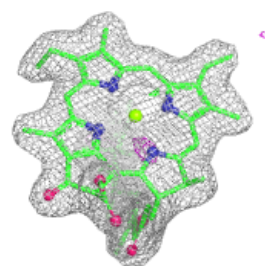
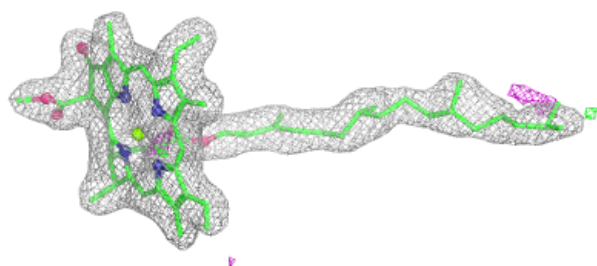
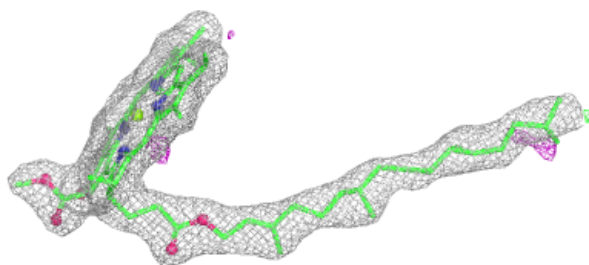
**Electron density around CLA A 609:**

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



**Electron density around CLA B 607:**

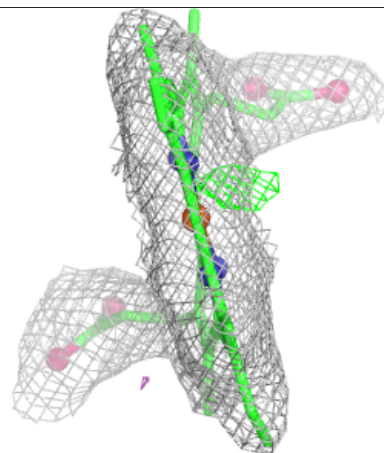
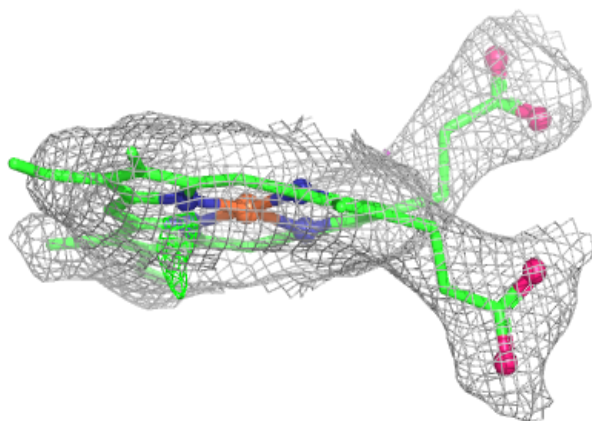
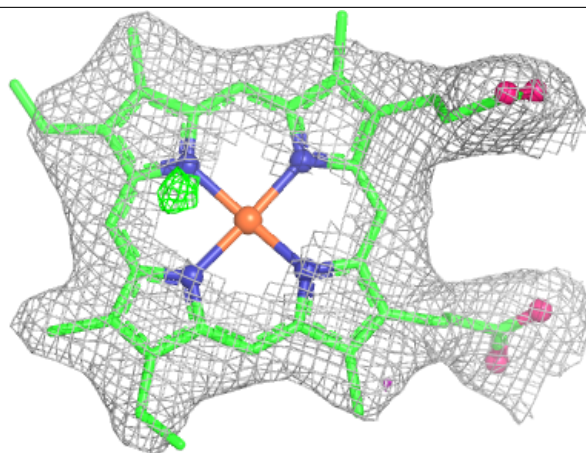
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





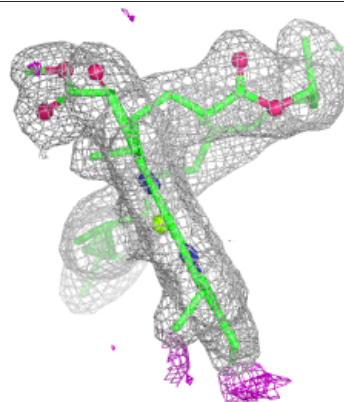
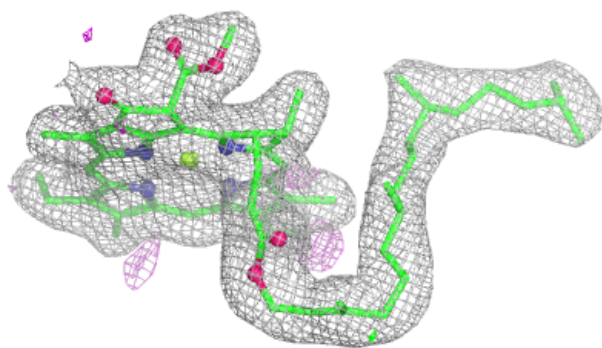
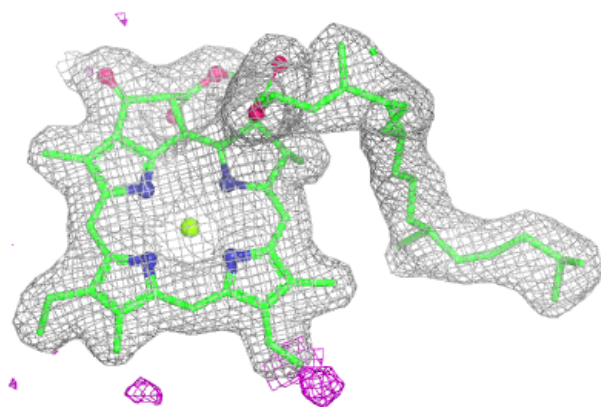
**Electron density around HEM E 101:**

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



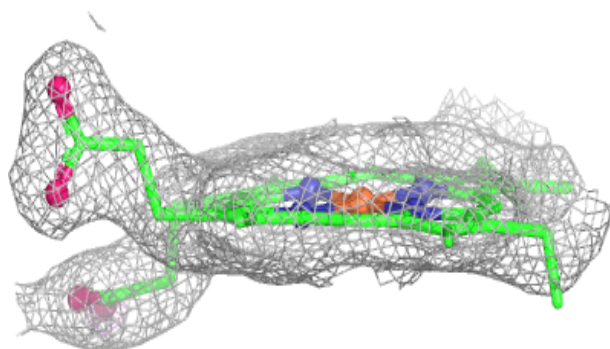
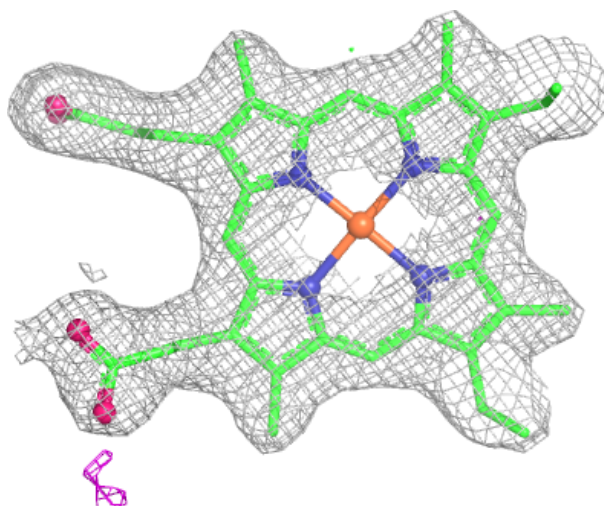
**Electron density around CLA D 403:**

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



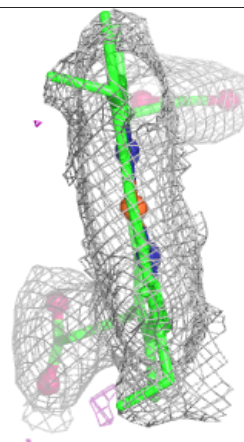
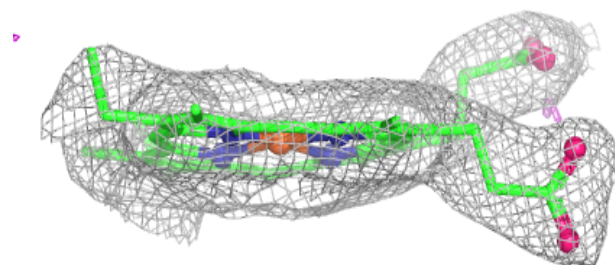
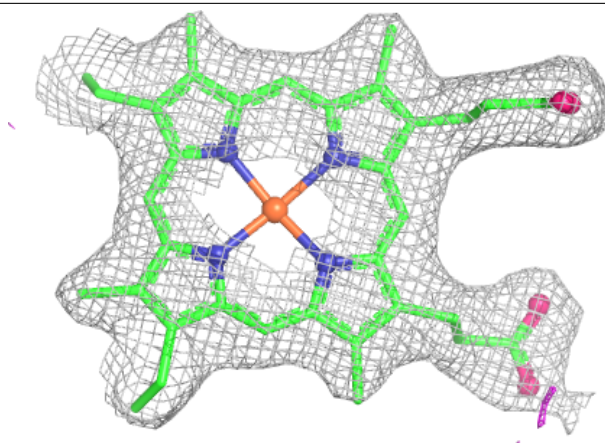
**Electron density around HEC V 201:**

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



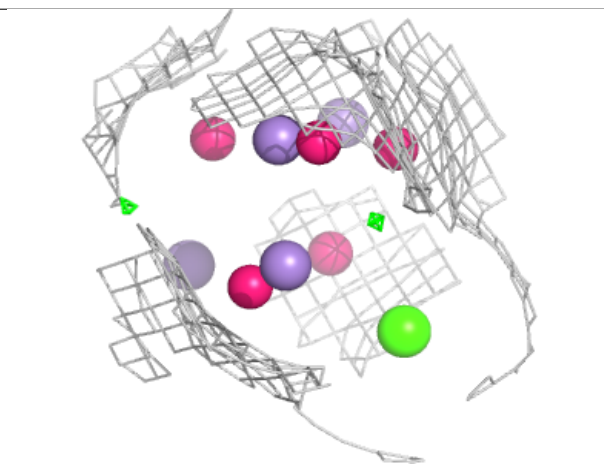
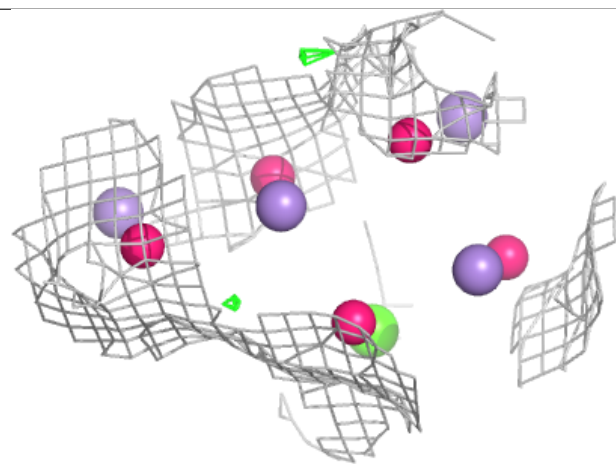
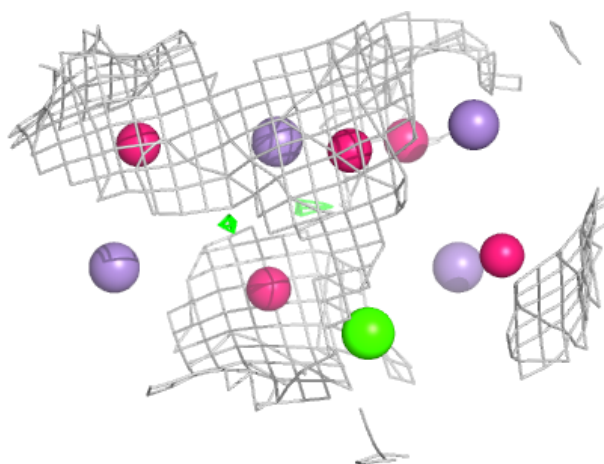
**Electron density around HEC v 201:**

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



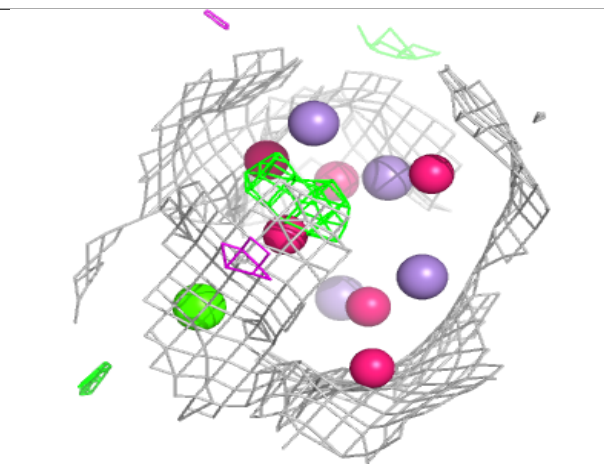
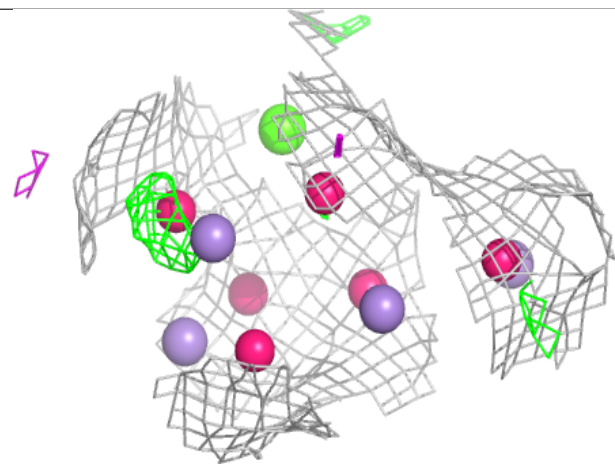
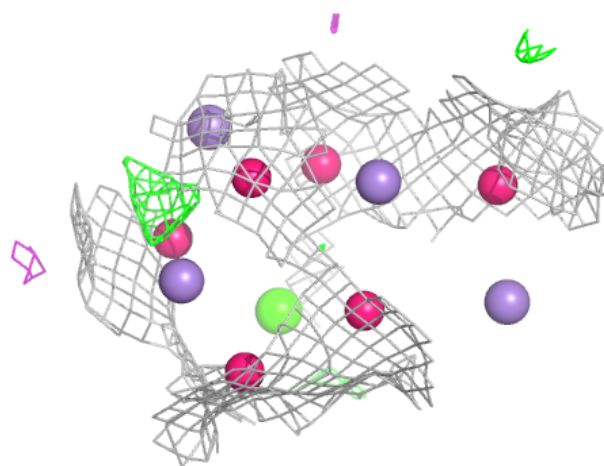
**Electron density around OEX a 602 (Å):**

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



**Electron density around OEY A 601 (B):**

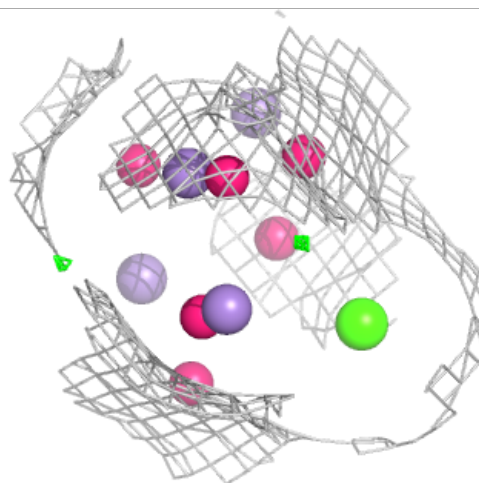
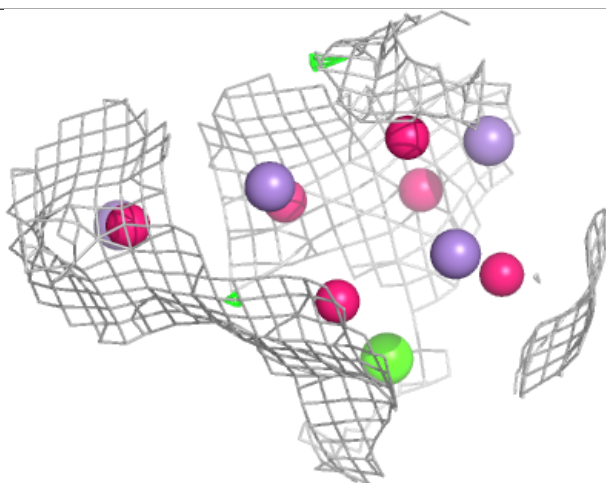
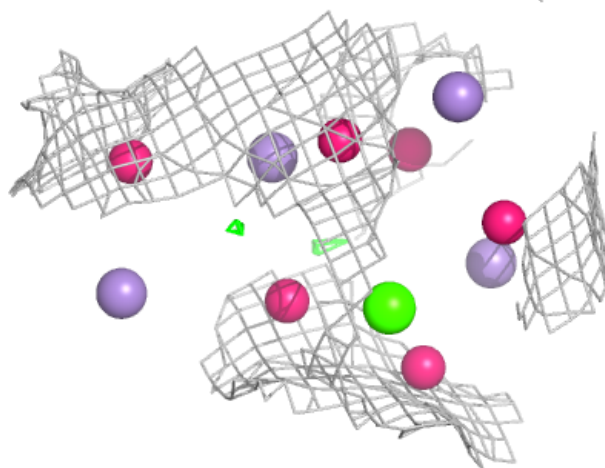
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

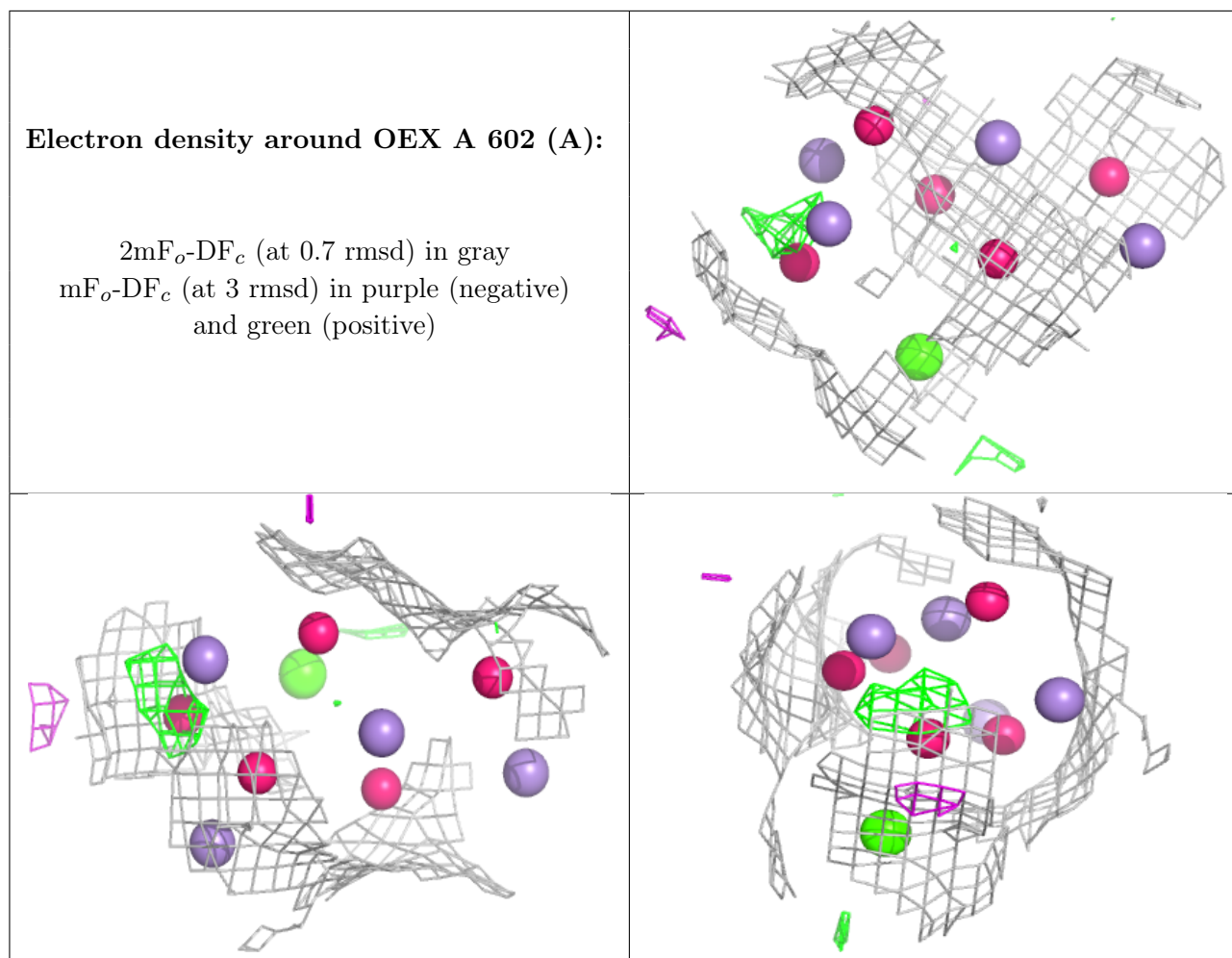




**Electron density around OEY a 601 (B):**

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





## 6.5 Other polymers [i](#)

There are no such residues in this entry.