



## wwPDB EM Validation Summary Report ⓘ

Mar 9, 2026 – 05:34 PM UTC

PDB ID : 7SC9 / pdb\_00007sc9  
EMDB ID : EMD-25030  
Title : Synechocystis PCC 6803 Phycobilisome core, complex with OCP  
Authors : Sauer, P.V.; Sutter, M.; Dominguez-Martin, M.A.; Kirst, H.; Kerfeld, C.A.  
Deposited on : 2021-09-27  
Resolution : 2.60 Å(reported)

This is a wwPDB EM 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/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

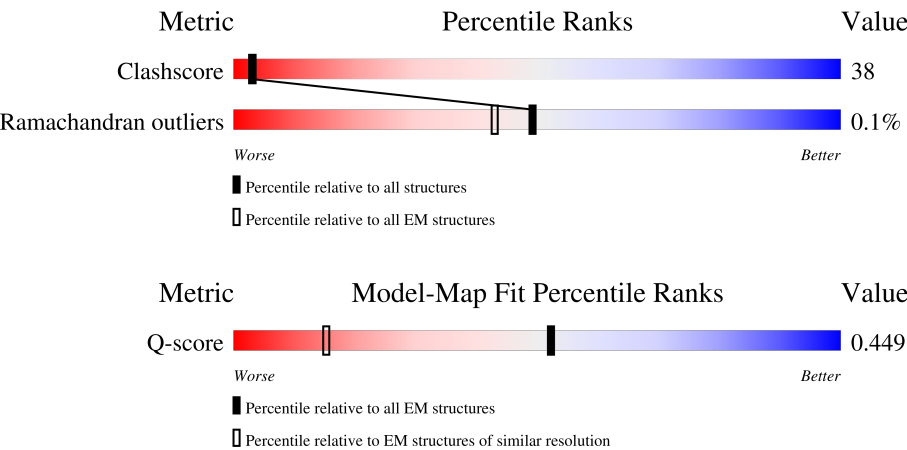
EMDB validation analysis : 0.0.1.dev132  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01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

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 2.60 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.



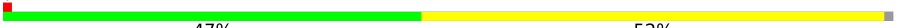
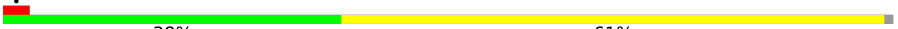
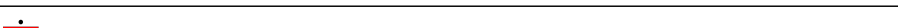
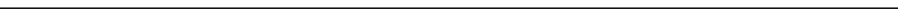
| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) | Similar EM resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-----------------------------|----------------------------------------------------------|
| Clashscore            | 229148                      | 23984                       | -                                                        |
| Ramachandran outliers | 224038                      | 23583                       | -                                                        |
| Q-score               | -                           | 25397                       | 8728 ( 2.10 - 3.10 )                                     |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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 EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain                                                             |
|-----|-------|--------|------------------------------------------------------------------------------|
| 1   | AA    | 161    | <div><div>87%</div><div><div>41%</div><div>58%</div><div>.</div></div></div> |
| 1   | AC    | 161    | <div><div>87%</div><div><div>37%</div><div>63%</div><div>.</div></div></div> |
| 1   | AH    | 161    | <div><div>50%</div><div>50%</div><div>.</div></div>                          |
| 1   | AJ    | 161    | <div><div>49%</div><div>50%</div><div>.</div></div>                          |
| 1   | AN    | 161    | <div><div>43%</div><div>56%</div><div>.</div></div>                          |

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| Mol | Chain | Length | Quality of chain                                                                                 |
|-----|-------|--------|--------------------------------------------------------------------------------------------------|
| 1   | AP    | 161    |  53% 46%       |
| 1   | AR    | 161    |  42% 57%       |
| 1   | AV    | 161    |  34% 65%       |
| 1   | AX    | 161    |  47% 52%       |
| 1   | AZ    | 161    |  38% 61%       |
| 1   | BI    | 161    |  60% 50%       |
| 1   | BK    | 161    |  61% 39%       |
| 1   | BP    | 161    |  46% 53%       |
| 1   | BR    | 161    |  48% 51%       |
| 1   | BV    | 161    |  41% 58%       |
| 1   | BX    | 161    |  53% 47%       |
| 1   | BZ    | 161    |  46% 53%       |
| 1   | CC    | 161    |  39% 61%     |
| 1   | CE    | 161    |  34% 66%     |
| 1   | CG    | 161    |  48% 52%     |
| 1   | CR    | 161    |  6% 37% 63%  |
| 1   | CT    | 161    |  44% 55%     |
| 1   | CV    | 161    |  47% 52%     |
| 1   | CY    | 161    |  11% 26% 73% |
| 1   | DA    | 161    |  48% 52%     |
| 1   | DC    | 161    |  52% 47%     |
| 1   | DJ    | 161    |  8% 30% 70%  |
| 1   | DL    | 161    |  37% 61%     |
| 1   | DN    | 161    |  49% 50%     |
| 1   | DQ    | 161    |  7% 31% 68%  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | DS    | 161    |                  |
| 1   | DU    | 161    |                  |
| 2   | AB    | 161    |                  |
| 2   | AD    | 161    |                  |
| 2   | AF    | 161    |                  |
| 2   | AI    | 161    |                  |
| 2   | AL    | 161    |                  |
| 2   | AO    | 161    |                  |
| 2   | AQ    | 161    |                  |
| 2   | AS    | 161    |                  |
| 2   | AU    | 161    |                  |
| 2   | AW    | 161    |                  |
| 2   | AY    | 161    |                  |
| 2   | BJ    | 161    |                  |
| 2   | BL    | 161    |                  |
| 2   | BN    | 161    |                  |
| 2   | BQ    | 161    |                  |
| 2   | BT    | 161    |                  |
| 2   | BW    | 161    |                  |
| 2   | BY    | 161    |                  |
| 2   | CA    | 161    |                  |
| 2   | CD    | 161    |                  |
| 2   | CF    | 161    |                  |
| 2   | CH    | 161    |                  |
| 2   | CS    | 161    |                  |

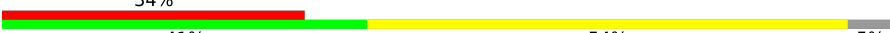
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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 2   | CU    | 161    |                  |
| 2   | CW    | 161    |                  |
| 2   | CZ    | 161    |                  |
| 2   | DB    | 161    |                  |
| 2   | DD    | 161    |                  |
| 2   | DK    | 161    |                  |
| 2   | DM    | 161    |                  |
| 2   | DO    | 161    |                  |
| 2   | DR    | 161    |                  |
| 2   | DT    | 161    |                  |
| 2   | DV    | 161    |                  |
| 3   | AE    | 161    |                  |
| 3   | BM    | 161    |                  |
| 4   | AK    | 169    |                  |
| 4   | BS    | 169    |                  |
| 5   | BA    | 67     |                  |
| 5   | BB    | 67     |                  |
| 5   | CJ    | 67     |                  |
| 5   | CK    | 67     |                  |
| 5   | DF    | 67     |                  |
| 5   | DX    | 67     |                  |
| 6   | BD    | 896    |                  |
| 6   | CM    | 896    |                  |
| 7   | BF    | 121    |                  |
| 7   | CO    | 121    |                  |

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| Mol | Chain | Length | Quality of chain                                                                                  |
|-----|-------|--------|---------------------------------------------------------------------------------------------------|
| 8   | BG    | 249    |  11% 12% 77%    |
| 8   | CP    | 249    |  12% 10% 77%    |
| 8   | DG    | 249    |  8% 13% 9% 78%  |
| 8   | DH    | 249    |  13% 8% 78%     |
| 8   | DY    | 249    |  9% 10% 12% 78% |
| 8   | DZ    | 249    |  12% 10% 78%    |
| 9   | BH    | 317    |  34% 41% 54% 5% |
| 9   | CQ    | 317    |  29% 40% 54% 5% |
| 9   | DI    | 317    |  34% 28% 65% 7% |
| 9   | EA    | 317    |  29% 31% 63% 7% |

## 2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 117470 atoms, of which 208 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Allophycocyanin alpha chain.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 1   | AA    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AC    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AH    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AJ    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AN    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AP    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AR    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AV    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AX    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | AZ    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BI    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BK    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BP    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BR    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BV    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BX    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | BZ    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 1   | CC    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CE    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CG    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CR    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CT    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CV    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | CY    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DA    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DC    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DJ    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DL    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DN    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DQ    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DS    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |
| 1   | DU    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1210  | 754 | 207 | 242 | 7 |         |       |

- Molecule 2 is a protein called Allophycocyanin beta chain.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2   | AB    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AD    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AF    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AI    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2   | AL    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AO    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AQ    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AS    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AU    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AW    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | AY    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BJ    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BL    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BN    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BQ    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BT    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BW    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | BY    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CA    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CD    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CF    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CH    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CS    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CU    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | CW    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2   | CZ    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DB    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DD    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DK    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DM    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DO    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DR    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DT    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |
| 2   | DV    | 161      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1206  | 757 | 202 | 240 | 7 |         |       |

- Molecule 3 is a protein called Allophycocyanin subunit alpha-B.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 3   | AE    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1254  | 797 | 212 | 241 | 4 |         |       |
| 3   | BM    | 160      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1254  | 797 | 212 | 241 | 4 |         |       |

- Molecule 4 is a protein called Allophycocyanin subunit beta-18.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 4   | AK    | 169      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1322  | 825 | 229 | 259 | 9 |         |       |
| 4   | BS    | 169      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1322  | 825 | 229 | 259 | 9 |         |       |

- Molecule 5 is a protein called Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core.

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 5   | BA    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |

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| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 5   | BB    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |
| 5   | CJ    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |
| 5   | CK    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |
| 5   | DF    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |
| 5   | DX    | 67       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 546   | 343 | 104 | 94 | 5 |         |       |

There are 6 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| BA    | 36      | TRP      | SER    | conflict | UNP Q01950 |
| BB    | 36      | TRP      | SER    | conflict | UNP Q01950 |
| CJ    | 36      | TRP      | SER    | conflict | UNP Q01950 |
| CK    | 36      | TRP      | SER    | conflict | UNP Q01950 |
| DF    | 36      | TRP      | SER    | conflict | UNP Q01950 |
| DX    | 36      | TRP      | SER    | conflict | UNP Q01950 |

- Molecule 6 is a protein called Phycobiliprotein ApcE.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 6   | BD    | 850      | Total | C    | N    | O    | S  | 0       | 0     |
|     |       |          | 6761  | 4299 | 1183 | 1262 | 17 |         |       |
| 6   | CM    | 850      | Total | C    | N    | O    | S  | 0       | 0     |
|     |       |          | 6761  | 4299 | 1183 | 1262 | 17 |         |       |

- Molecule 7 is a protein called Sll1873 protein.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 7   | BF    | 36       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 277   | 172 | 55 | 49 | 1 |         |       |
| 7   | CO    | 36       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 277   | 172 | 55 | 49 | 1 |         |       |

- Molecule 8 is a protein called Phycobilisome rod-core linker polypeptide CpcG.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 8   | BG    | 57       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 451   | 282 | 87 | 80 | 2 |         |       |

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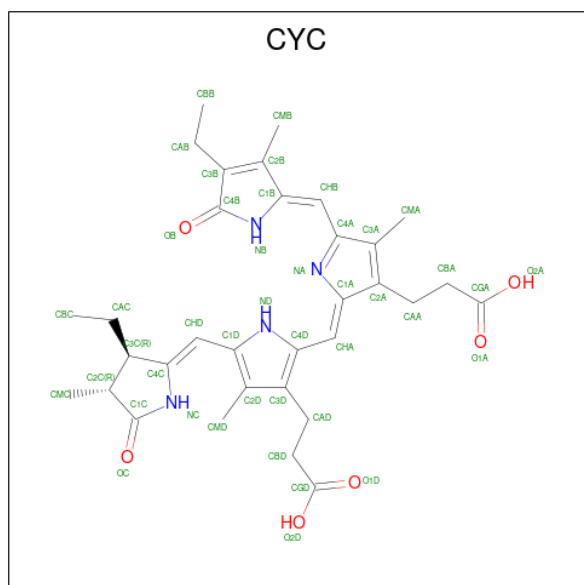
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| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 8   | CP    | 57       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 451   | 282 | 87 | 80 | 2 |         |       |
| 8   | DG    | 54       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 426   | 266 | 83 | 75 | 2 |         |       |
| 8   | DH    | 54       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 426   | 266 | 83 | 75 | 2 |         |       |
| 8   | DY    | 54       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 426   | 266 | 83 | 75 | 2 |         |       |
| 8   | DZ    | 54       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 426   | 266 | 83 | 75 | 2 |         |       |

- Molecule 9 is a protein called Orange carotenoid-binding protein.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 9   | BH    | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2302  | 1474 | 388 | 429 | 11 |         |       |
| 9   | CQ    | 300      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2302  | 1474 | 388 | 429 | 11 |         |       |
| 9   | DI    | 296      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2280  | 1459 | 387 | 423 | 11 |         |       |
| 9   | EA    | 296      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2280  | 1459 | 387 | 423 | 11 |         |       |

- Molecule 10 is PHYCOCYANOBILIN (CCD ID: CYC) (formula:  $C_{33}H_{40}N_4O_6$ ) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms |    |   |   | AltConf |
|-----|-------|----------|-------|----|---|---|---------|
| 10  | AA    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AB    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AC    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AD    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AE    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AF    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AH    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AI    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AJ    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AK    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AL    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AN    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AO    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AP    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AQ    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AR    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AU    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AV    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AW    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AX    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AY    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | AZ    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |

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| Mol | Chain | Residues | Atoms       |         |        |        | AltConf |
|-----|-------|----------|-------------|---------|--------|--------|---------|
| 10  | BD    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BD    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BI    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BJ    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BK    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BL    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BM    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BN    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BP    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BQ    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BR    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BS    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BT    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BV    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BW    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BX    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BY    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | BZ    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CC    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CD    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CE    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |

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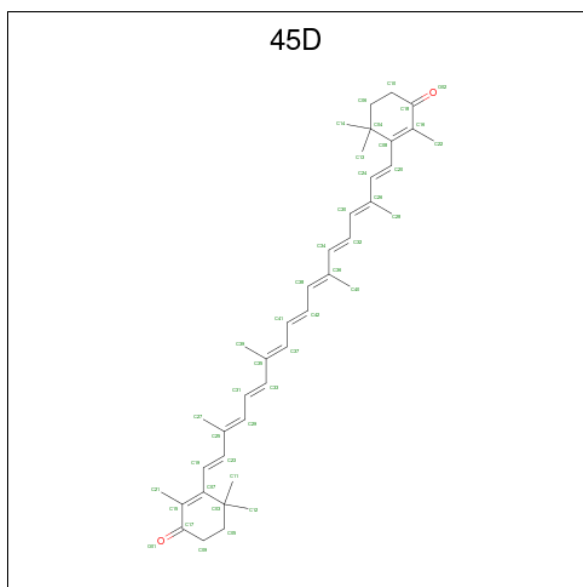
| Mol | Chain | Residues | Atoms       |         |        |        | AltConf |
|-----|-------|----------|-------------|---------|--------|--------|---------|
| 10  | CF    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CG    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CH    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CM    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CM    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CR    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CS    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CT    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CU    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CV    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CW    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CY    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | CZ    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DA    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DB    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DC    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DD    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DJ    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DK    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DL    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |
| 10  | DM    | 1        | Total<br>43 | C<br>33 | N<br>4 | O<br>6 | 0       |

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| Mol | Chain | Residues | Atoms |    |   |   | AltConf |
|-----|-------|----------|-------|----|---|---|---------|
| 10  | DN    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DO    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DQ    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DR    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DS    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DT    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DU    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |
| 10  | DV    | 1        | Total | C  | N | O | 0       |
|     |       |          | 43    | 33 | 4 | 6 |         |

- Molecule 11 is beta,beta-carotene-4,4'-dione (CCD ID: 45D) (formula:  $C_{40}H_{52}O_2$ ) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms |    |    |   | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
| 11  | BH    | 1        | Total | C  | H  | O | 0       |
|     |       |          | 94    | 40 | 52 | 2 |         |
| 11  | CQ    | 1        | Total | C  | H  | O | 0       |
|     |       |          | 94    | 40 | 52 | 2 |         |
| 11  | DI    | 1        | Total | C  | H  | O | 0       |
|     |       |          | 94    | 40 | 52 | 2 |         |

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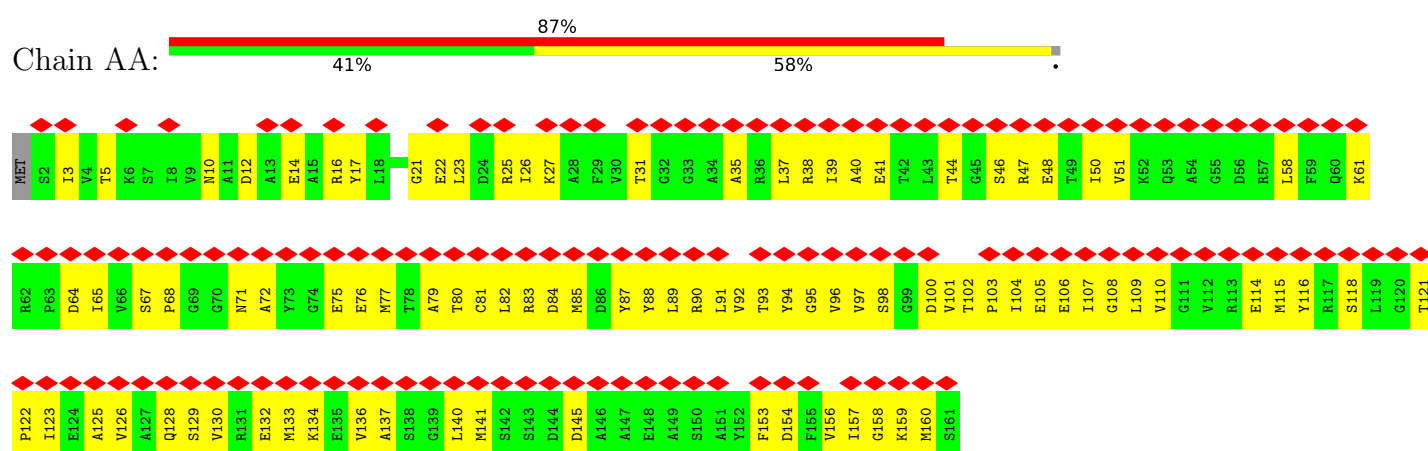
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| Mol | Chain | Residues | Atoms |    |    |   | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
|     |       |          | Total | C  | H  | O |         |
| 11  | EA    | 1        | 94    | 40 | 52 | 2 | 0       |

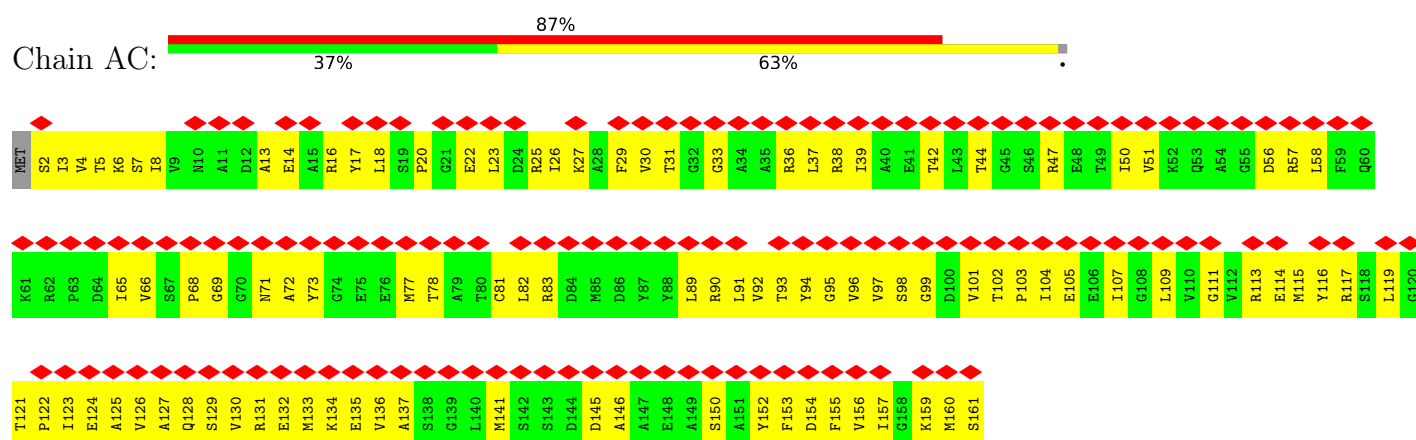
### 3 Residue-property plots

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

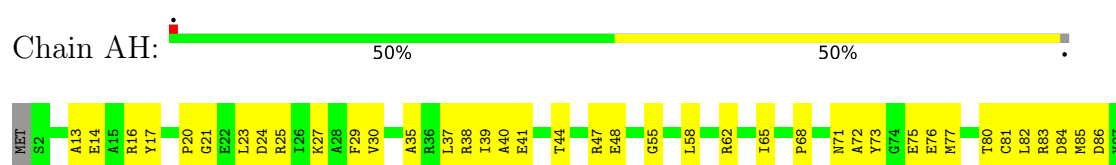
#### • Molecule 1: Allophycocyanin alpha chain



#### • Molecule 1: Allophycocyanin alpha chain



#### • Molecule 1: Allophycocyanin alpha chain

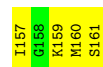




• Molecule 1: Allophycocyanin alpha chain



• Molecule 1: Allophycocyanin alpha chain



• Molecule 1: Allophycocyanin alpha chain



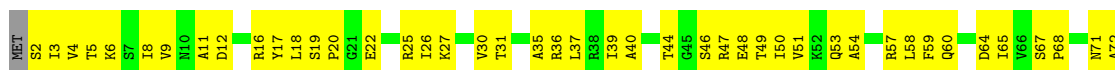
• Molecule 1: Allophycocyanin alpha chain





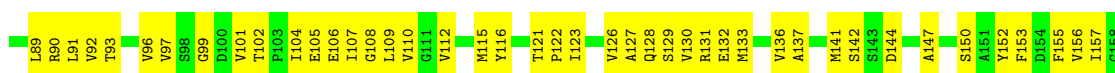
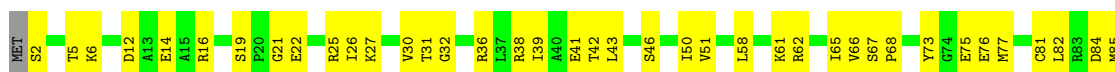
• Molecule 1: Allophycocyanin alpha chain

Chain AV: 34% 65%



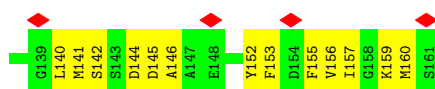
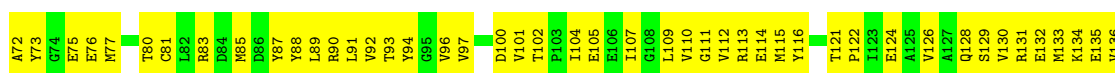
• Molecule 1: Allophycocyanin alpha chain

Chain AX: 47% 52%



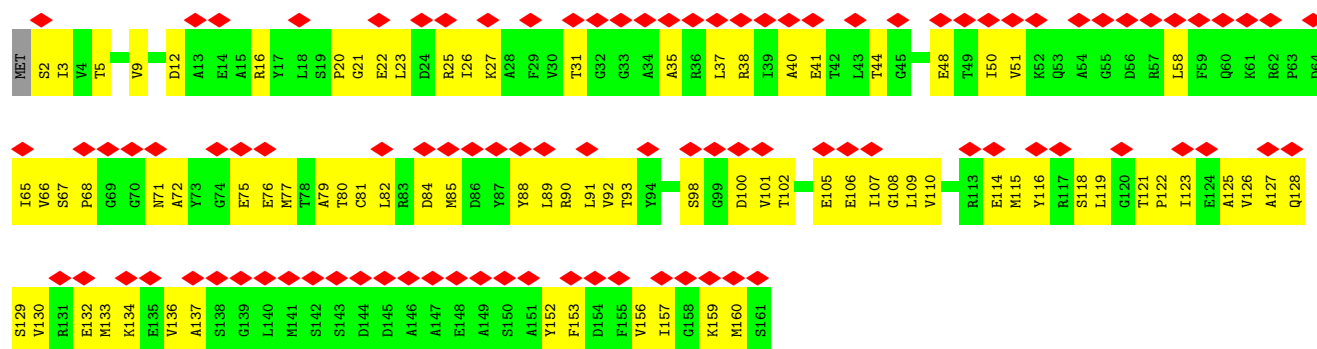
• Molecule 1: Allophycocyanin alpha chain

Chain AZ: 38% 61%



• Molecule 1: Allophycocyanin alpha chain

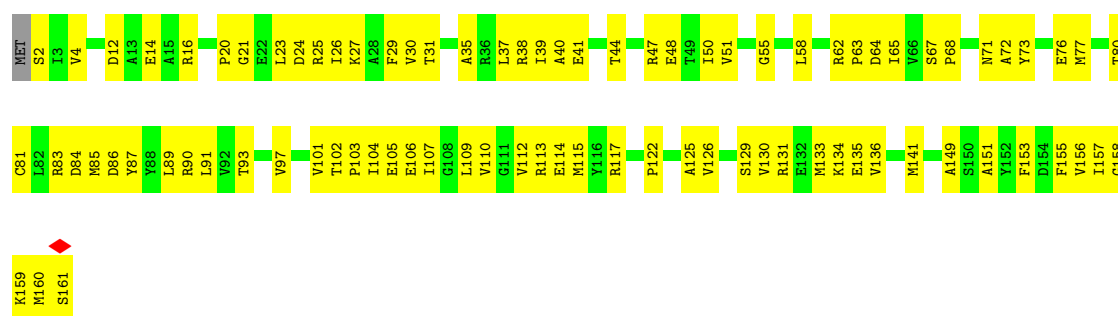
Chain BI: 60% 50% 50%



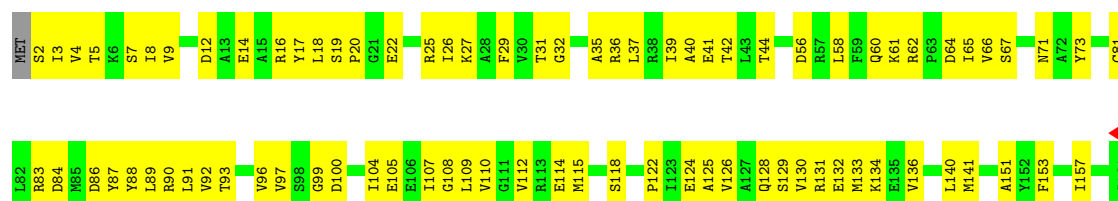
• Molecule 1: Allophycocyanin alpha chain



• Molecule 1: Allophycocyanin alpha chain



• Molecule 1: Allophycocyanin alpha chain



Chain BV:  41%  58%

| MET  | S2   | I3   | V4   | T5   | K6   | S7   | I8   | V9   | N10  | A11 | L18 | E22 | R25 | I26 | K27 | V30 | T31 | G32 | G33  | A34  | A35  | R36  | L37  | R38  | I39  | T44  | G45  | S46  | R47  | E48  | T49  | V50  | V51  | K52  | Q53  | D56  | R57  | L58  | F59  | G60  | R61  | R62  | P63  | D64  | I65  | V66  | S67  | P68  | M71  | A72  | S76  |      |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| M77  | T80  | C81  | L82  | R83  | D84  | M85  | D86  | R87  | Y88  | L89 | R90 | L91 | V92 | T93 | Y94 | V97 | S98 | G99 | D100 | V101 | T102 | P103 | I104 | E105 | E106 | I107 | G108 | L109 | R113 | E114 | M115 | Y116 | L119 | G120 | T121 | P122 | I123 | E124 | A125 | V126 | Q128 | S129 | V130 | R131 | E132 | I133 | M134 | E135 | V136 | L140 | M141 | S142 |
| D145 | A146 | Y152 | F153 | D154 | I157 | G158 | K159 | M160 | S161 |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Chain BX:

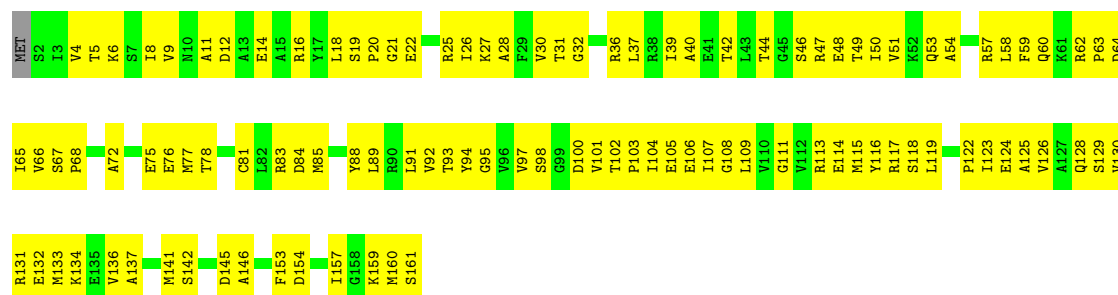
| Category | Value |
|----------|-------|
| Green    | 53%   |
| Yellow   | 47%   |

Chain BZ:  46%  53%

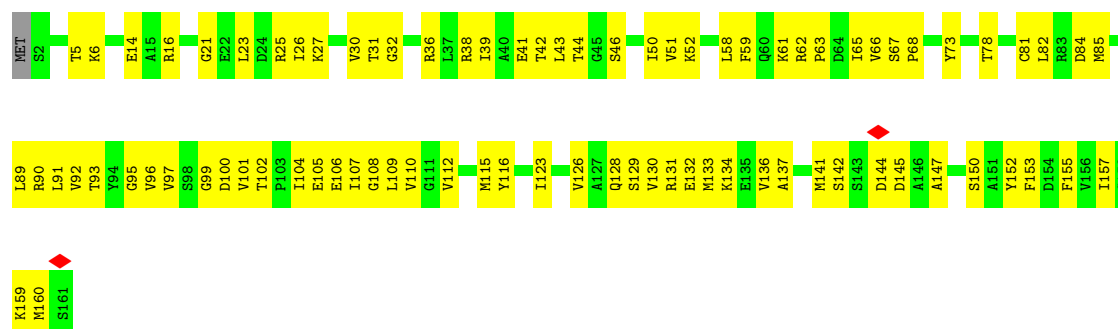
| Chain | Count | Percentage |
|-------|-------|------------|
| F183  | 1     | 0.00%      |
| D154  | 1     | 0.00%      |
| F155  | 1     | 0.00%      |
| V156  | 1     | 0.00%      |
| M160  | 1     | 0.00%      |
| S161  | 1     | 0.00%      |
| T80   | 1     | 0.00%      |
| C81   | 1     | 0.00%      |
| L82   | 1     | 0.00%      |
| R83   | 1     | 0.00%      |
| D84   | 1     | 0.00%      |
| M85   | 1     | 0.00%      |
| D86   | 1     | 0.00%      |
| Y87   | 1     | 0.00%      |
| Y88   | 1     | 0.00%      |
| L89   | 1     | 0.00%      |
| R90   | 1     | 0.00%      |
| L91   | 1     | 0.00%      |
| V92   | 1     | 0.00%      |
| T93   | 1     | 0.00%      |
| Y94   | 1     | 0.00%      |
| G95   | 1     | 0.00%      |
| V96   | 1     | 0.00%      |
| V97   | 1     | 0.00%      |
| S99   | 1     | 0.00%      |
| G99   | 1     | 0.00%      |
| D100  | 1     | 0.00%      |
| V101  | 1     | 0.00%      |
| T104  | 1     | 0.00%      |
| E105  | 1     | 0.00%      |
| G108  | 1     | 0.00%      |
| L109  | 1     | 0.00%      |
| M115  | 1     | 0.00%      |
| S118  | 1     | 0.00%      |
| P122  | 1     | 0.00%      |
| I123  | 1     | 0.00%      |
| E124  | 1     | 0.00%      |
| A125  | 1     | 0.00%      |
| V126  | 1     | 0.00%      |
| A127  | 1     | 0.00%      |
| Q128  | 1     | 0.00%      |
| S129  | 1     | 0.00%      |
| V130  | 1     | 0.00%      |
| R131  | 1     | 0.00%      |
| E132  | 1     | 0.00%      |
| M133  | 1     | 0.00%      |
| K134  | 1     | 0.00%      |
| E135  | 1     | 0.00%      |
| V136  | 1     | 0.00%      |
| A137  | 1     | 0.00%      |
| S138  | 1     | 0.00%      |
| M141  | 1     | 0.00%      |
| D145  | 1     | 0.00%      |
| A146  | 1     | 0.00%      |
| A147  | 1     | 0.00%      |
| E148  | 1     | 0.00%      |
| A151  | 1     | 0.00%      |
| X152  | 1     | 0.00%      |
| T89   | 1     | 0.00%      |
| S2    | 1     | 0.00%      |
| I3    | 1     | 0.00%      |
| V4    | 1     | 0.00%      |
| A11   | 1     | 0.00%      |
| E14   | 1     | 0.00%      |
| A15   | 1     | 0.00%      |
| R16   | 1     | 0.00%      |
| V17   | 1     | 0.00%      |
| L18   | 1     | 0.00%      |
| S19   | 1     | 0.00%      |
| E22   | 1     | 0.00%      |
| L23   | 1     | 0.00%      |
| D24   | 1     | 0.00%      |
| R25   | 1     | 0.00%      |
| I26   | 1     | 0.00%      |
| K27   | 1     | 0.00%      |
| T31   | 1     | 0.00%      |
| A35   | 1     | 0.00%      |
| R36   | 1     | 0.00%      |
| L37   | 1     | 0.00%      |
| R38   | 1     | 0.00%      |
| T39   | 1     | 0.00%      |
| A40   | 1     | 0.00%      |
| E41   | 1     | 0.00%      |
| T42   | 1     | 0.00%      |
| L43   | 1     | 0.00%      |
| T44   | 1     | 0.00%      |
| G45   | 1     | 0.00%      |
| S46   | 1     | 0.00%      |
| R47   | 1     | 0.00%      |
| E48   | 1     | 0.00%      |
| T49   | 1     | 0.00%      |
| L50   | 1     | 0.00%      |
| V51   | 1     | 0.00%      |
| K52   | 1     | 0.00%      |
| L58   | 1     | 0.00%      |
| R62   | 1     | 0.00%      |
| P63   | 1     | 0.00%      |
| D64   | 1     | 0.00%      |
| T65   | 1     | 0.00%      |
| V66   | 1     | 0.00%      |
| S67   | 1     | 0.00%      |
| P68   | 1     | 0.00%      |
| N71   | 1     | 0.00%      |
| A72   | 1     | 0.00%      |
| Y73   | 1     | 0.00%      |
| E76   | 1     | 0.00%      |
| M77   | 1     | 0.00%      |
| T78   | 1     | 0.00%      |
| A79   | 1     | 0.00%      |

Chain CC: 

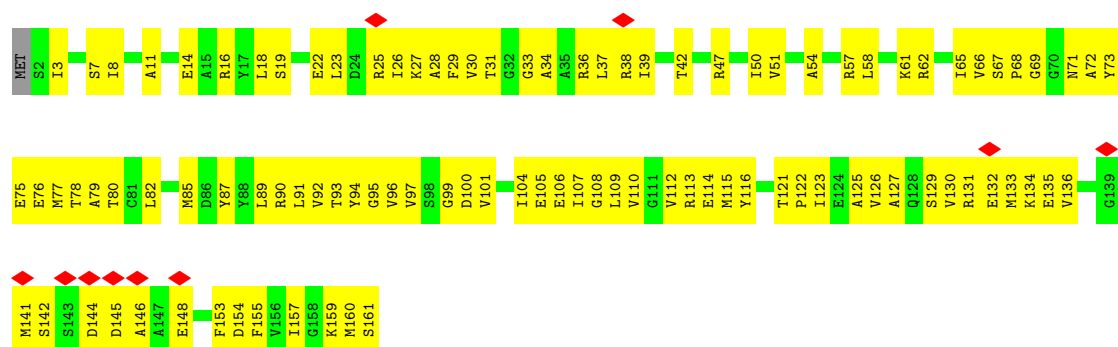
- Molecule 1: Allophycocyanin alpha chain

Chain CE:  34% 66%

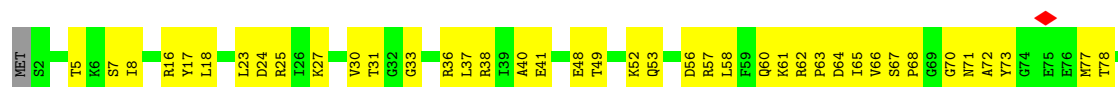
- Molecule 1: Allophycocyanin alpha chain

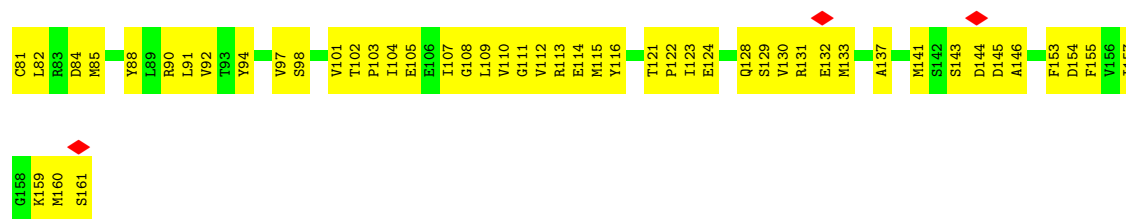
Chain CG:  48% 52%

- Molecule 1: Allophycocyanin alpha chain

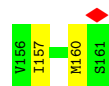
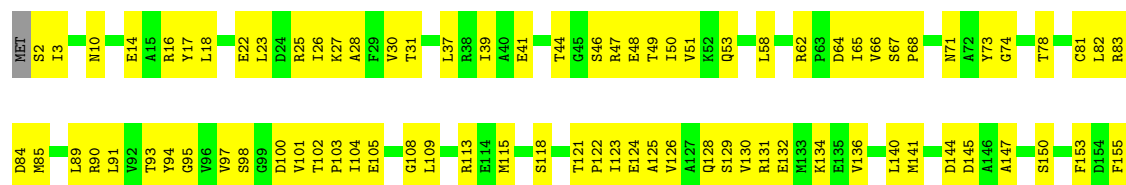
Chain CR:  6% 37% 63%

- Molecule 1: Allophycocyanin alpha chain

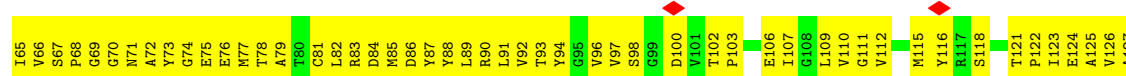
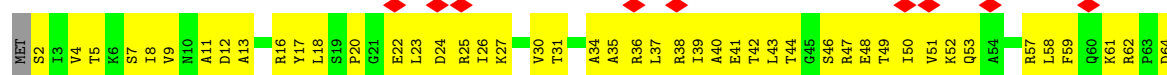
Chain CT:  44% 55%



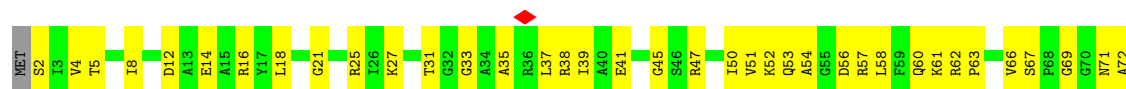
• Molecule 1: Allophycocyanin alpha chain



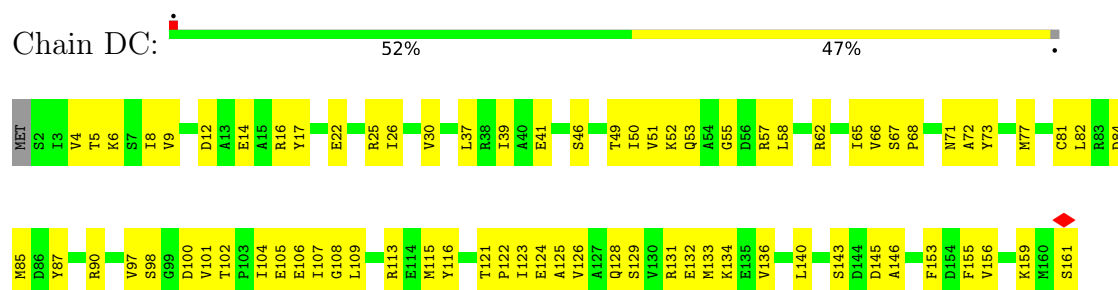
• Molecule 1: Allophycocyanin alpha chain



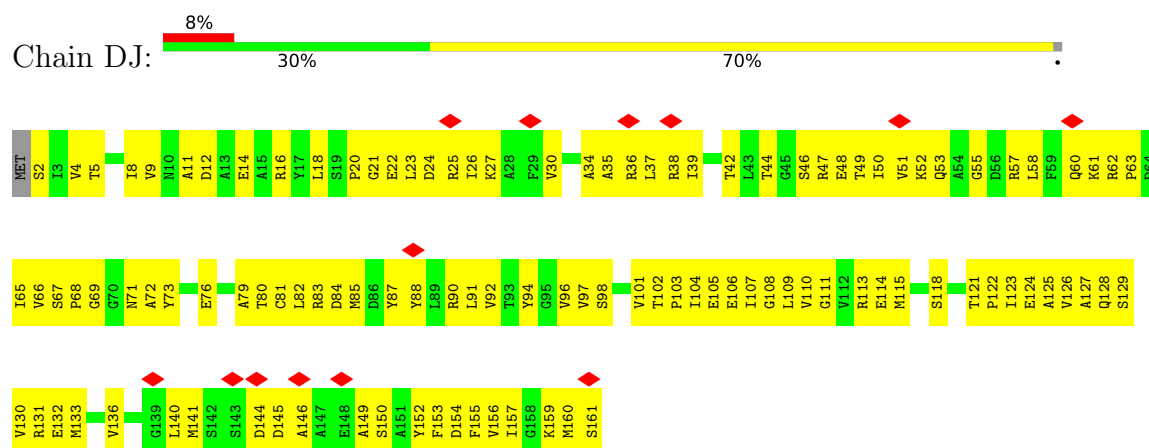
• Molecule 1: Allophycocyanin alpha chain



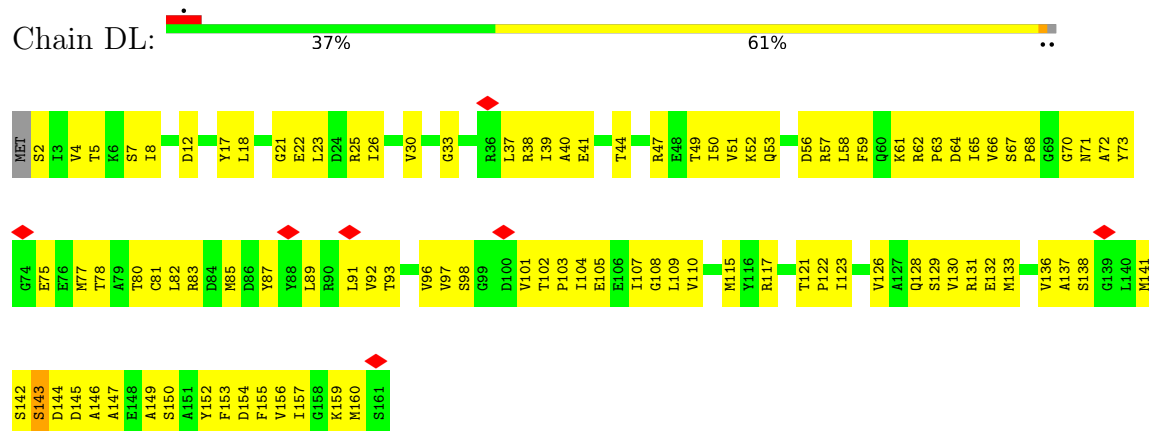
- Molecule 1: Allophycocyanin alpha chain



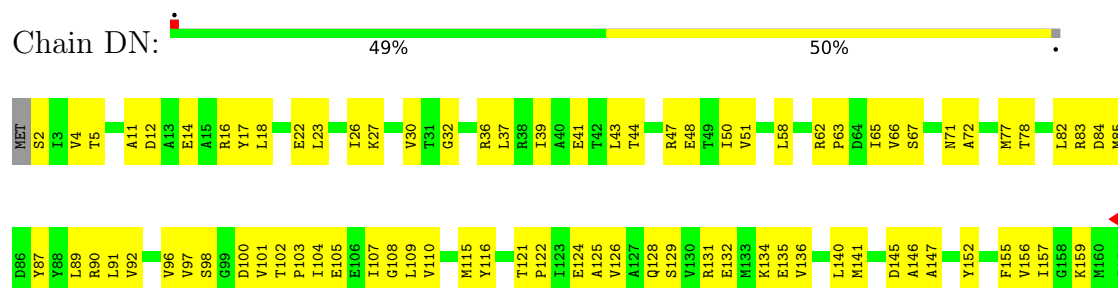
- Molecule 1: Allophycocyanin alpha chain



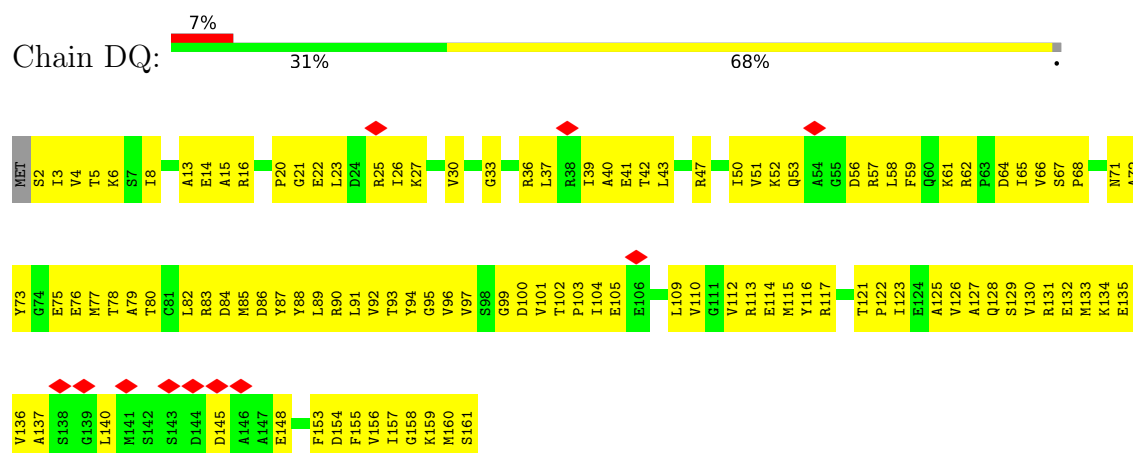
- Molecule 1: Allophycocyanin alpha chain



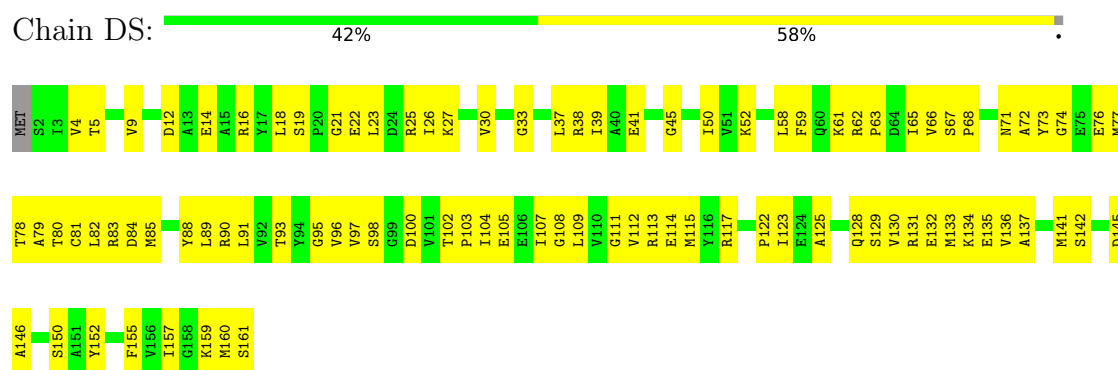
- Molecule 1: Allophycocyanin alpha chain



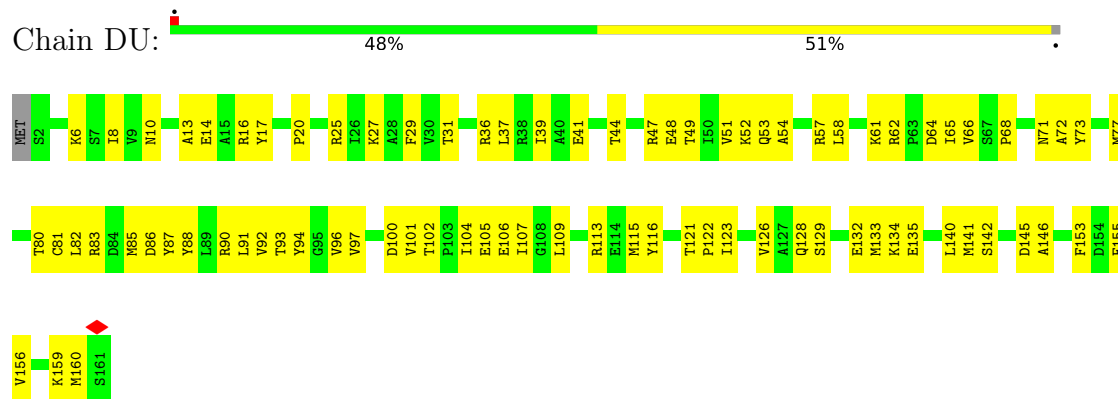
- Molecule 1: Allophycocyanin alpha chain



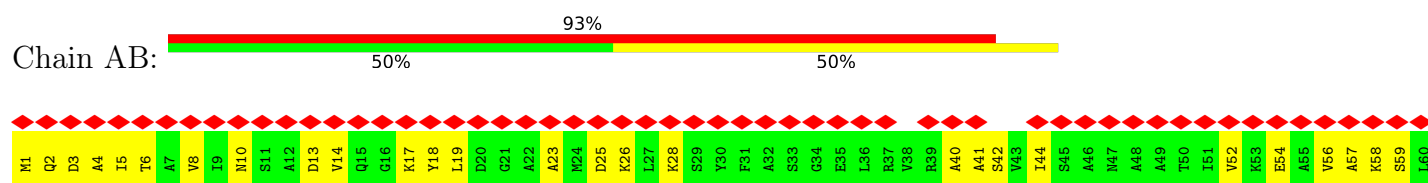
- Molecule 1: Allophycocyanin alpha chain

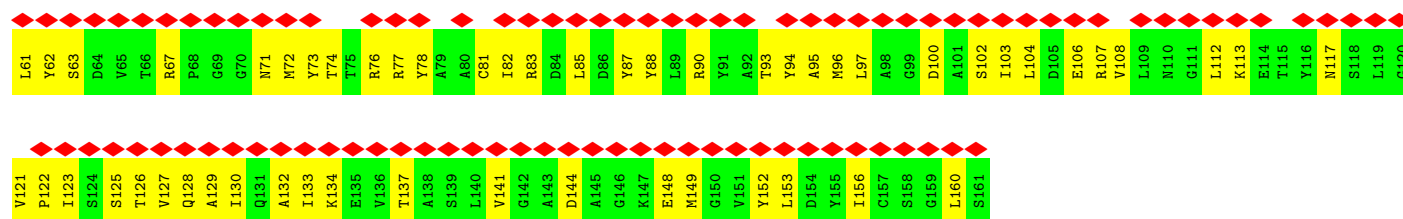


- Molecule 1: Allophycocyanin alpha chain

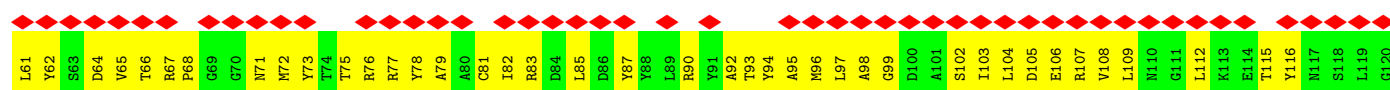
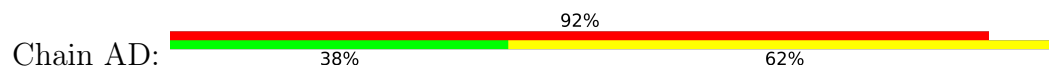


- Molecule 2: Allophycocyanin beta chain

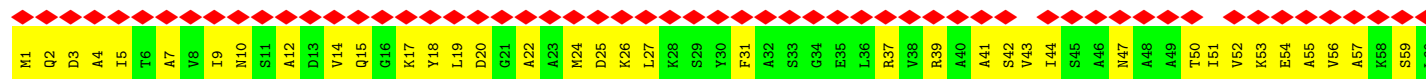
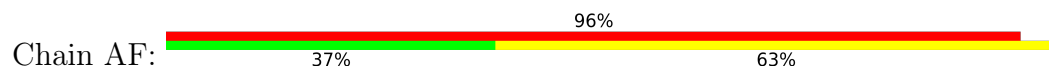




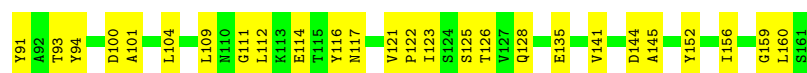
• Molecule 2: Allophycocyanin beta chain



• Molecule 2: Allophycocyanin beta chain

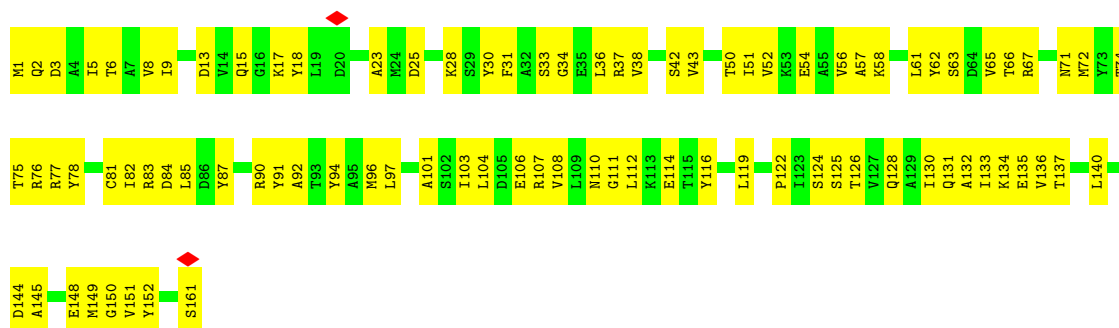


• Molecule 2: Allophycocyanin beta chain



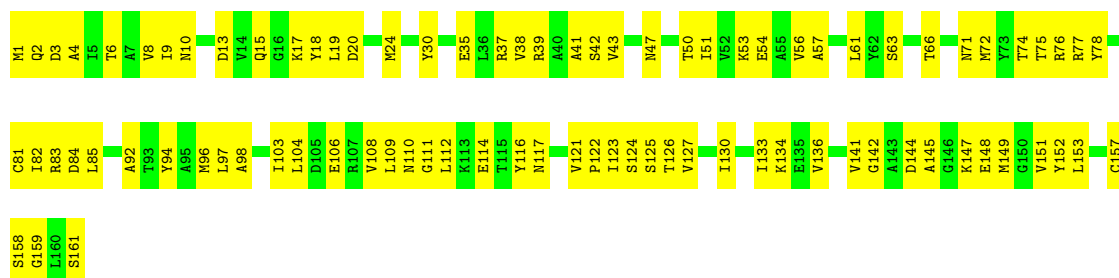
• Molecule 2: Allophycocyanin beta chain





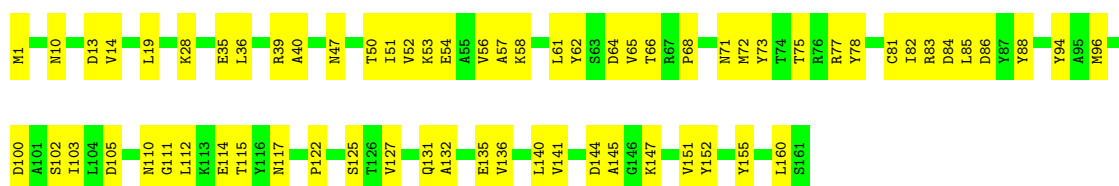
• Molecule 2: Allophycocyanin beta chain

Chain AO: 47% 53%



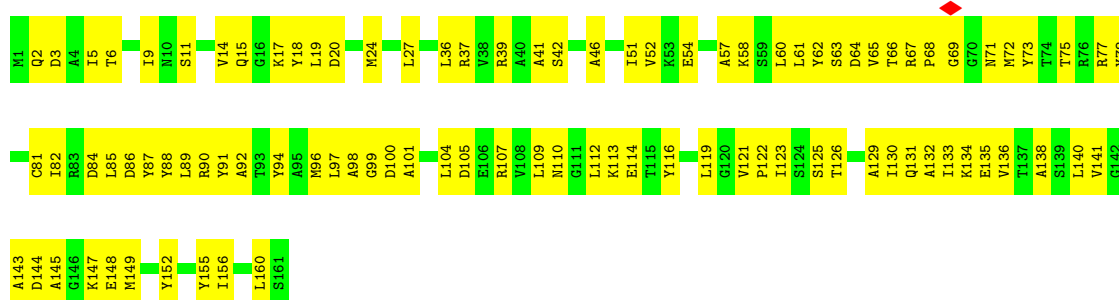
• Molecule 2: Allophycocyanin beta chain

Chain AQ: 59% 41%

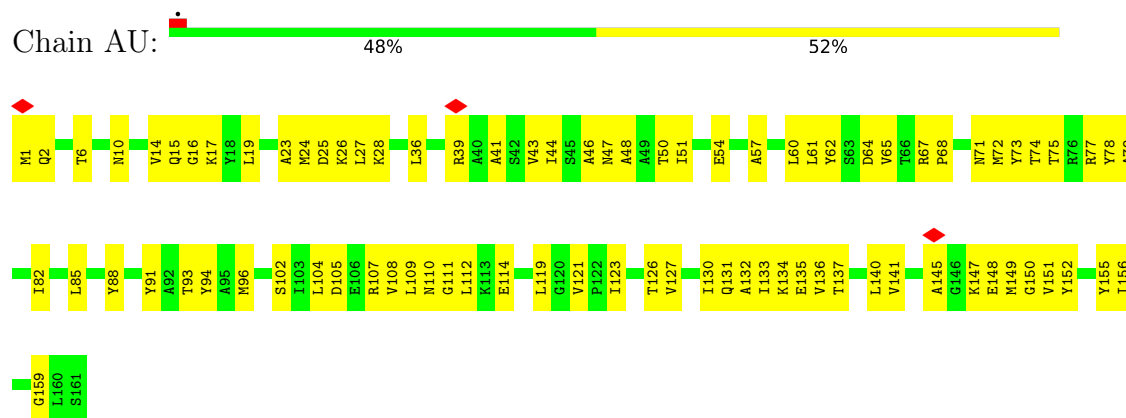


• Molecule 2: Allophycocyanin beta chain

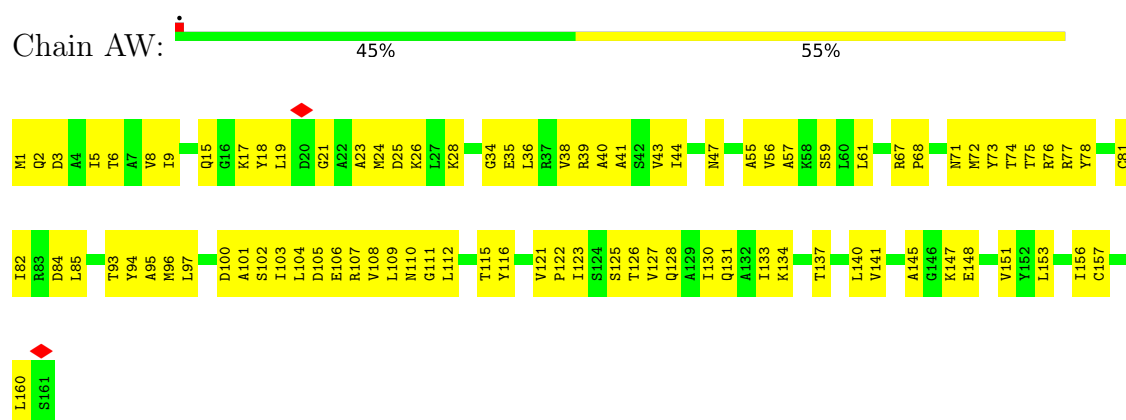
Chain AS: 41% 59%



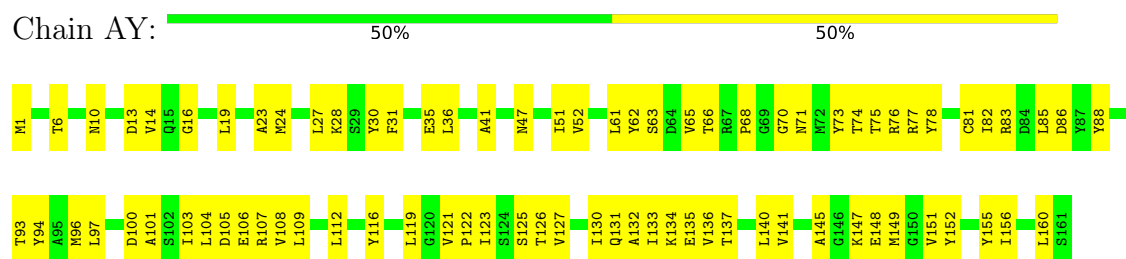
• Molecule 2: Allophycocyanin beta chain



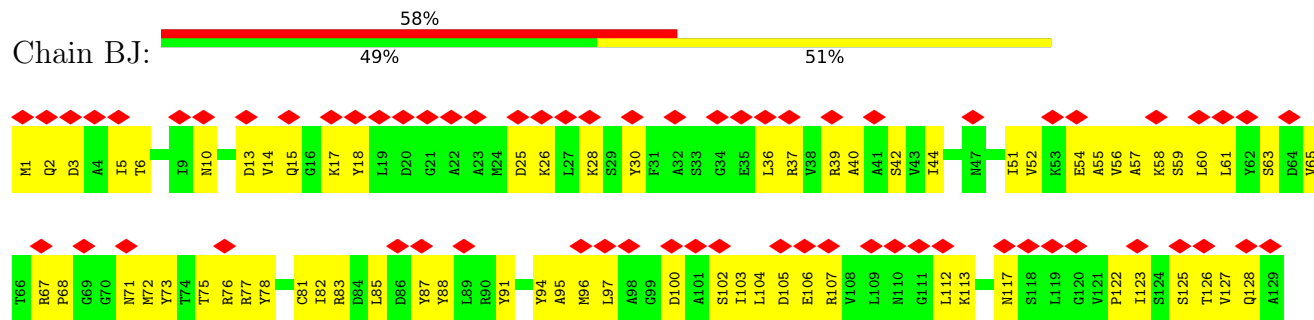
• Molecule 2: Allophycocyanin beta chain

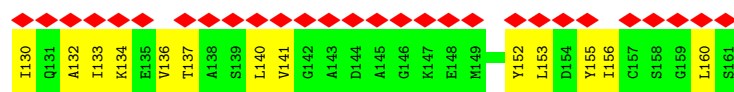


• Molecule 2: Allophycocyanin beta chain

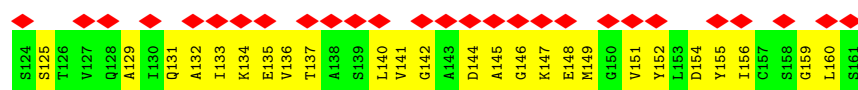
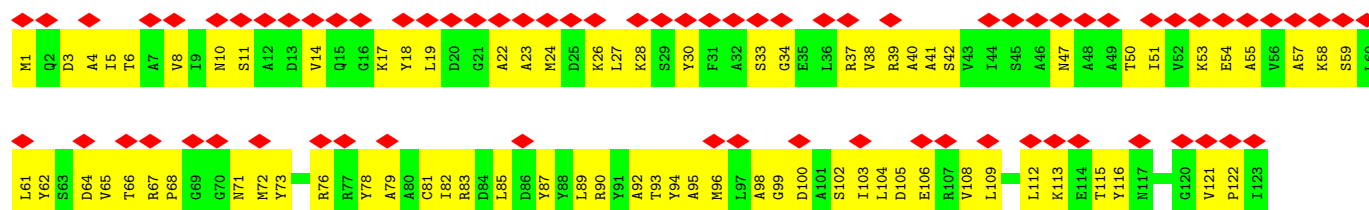
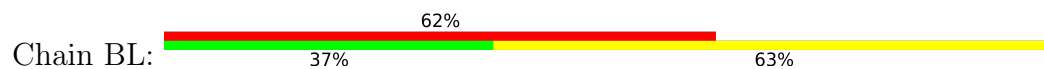


• Molecule 2: Allophycocyanin beta chain

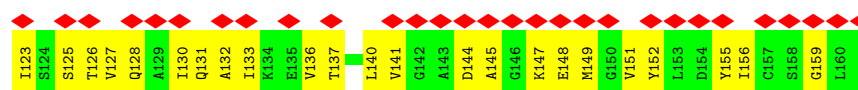
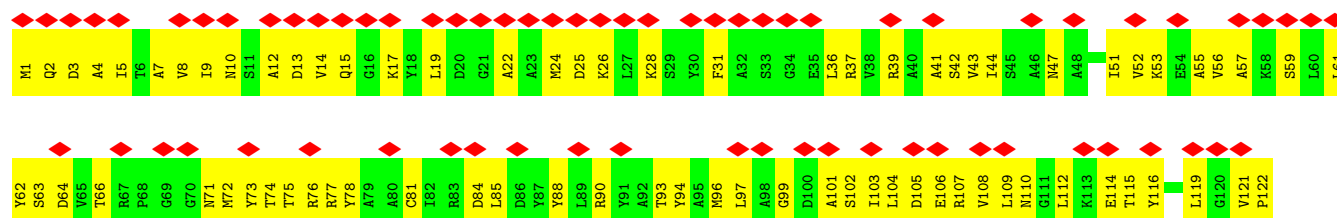




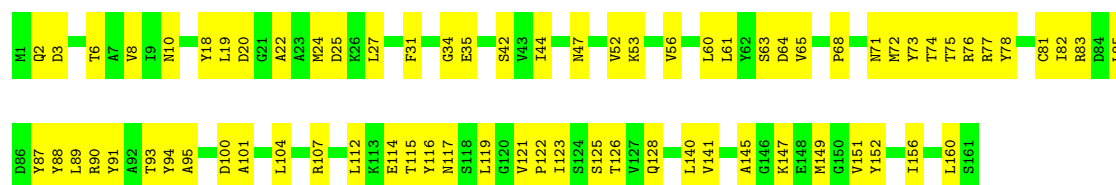
• Molecule 2: Allophycocyanin beta chain



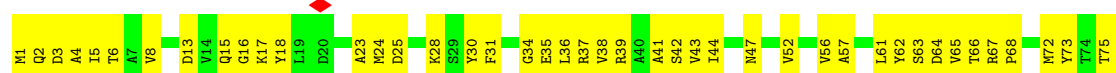
• Molecule 2: Allophycocyanin beta chain

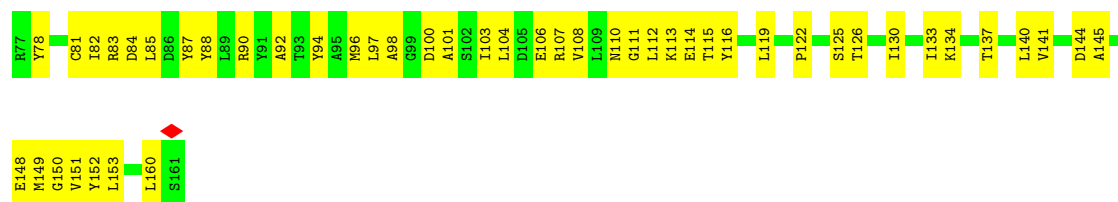


• Molecule 2: Allophycocyanin beta chain



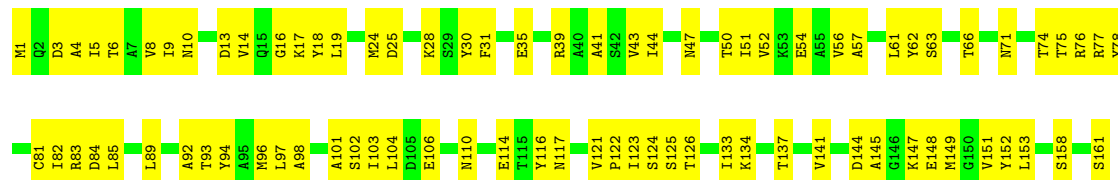
• Molecule 2: Allophycocyanin beta chain





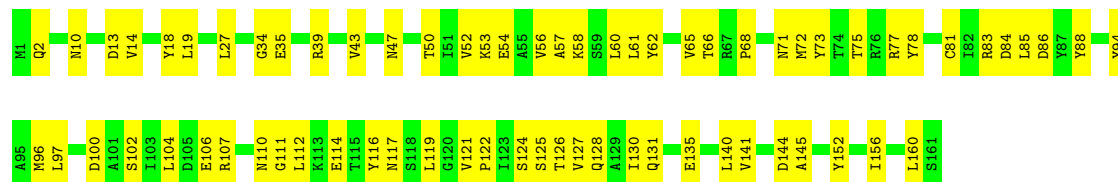
• Molecule 2: Allophycocyanin beta chain

Chain BW: 49% 51%



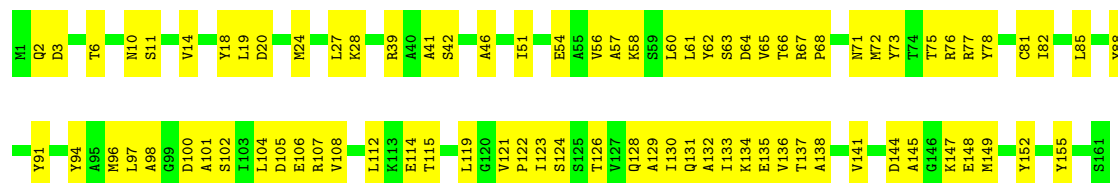
• Molecule 2: Allophycocyanin beta chain

Chain BY: 57% 43%



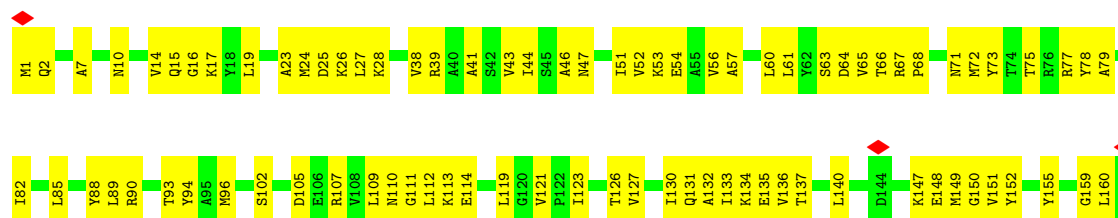
• Molecule 2: Allophycocyanin beta chain

Chain CA: 49% 51%

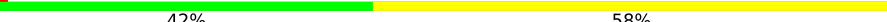


• Molecule 2: Allophycocyanin beta chain

Chain CD: 48% 52%



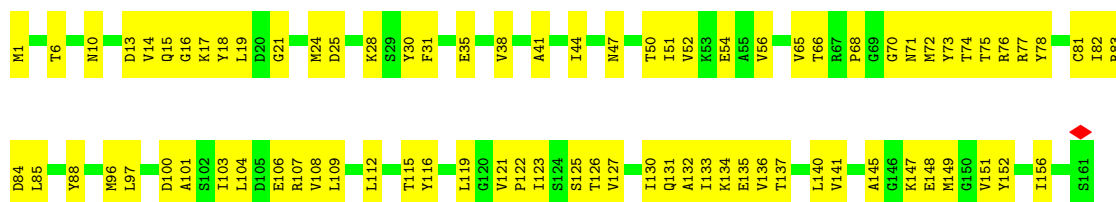
• Molecule 2: Allophycocyanin beta chain

Chain CF:  42% 58%



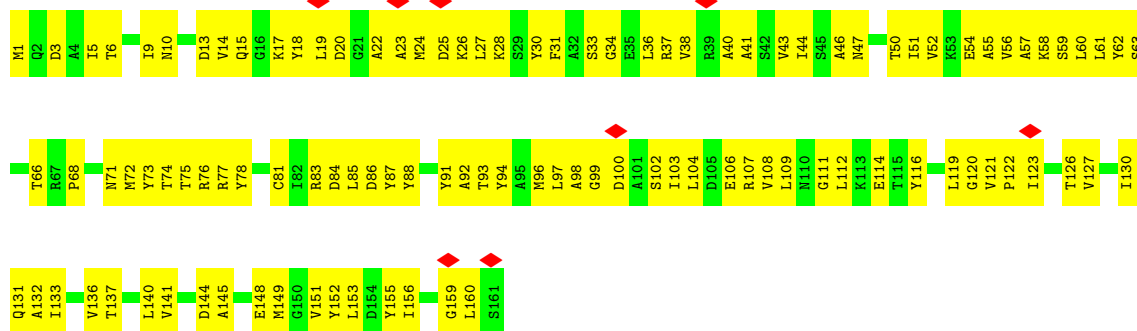
• Molecule 2: Allophycocyanin beta chain

Chain CH:  50% 50%



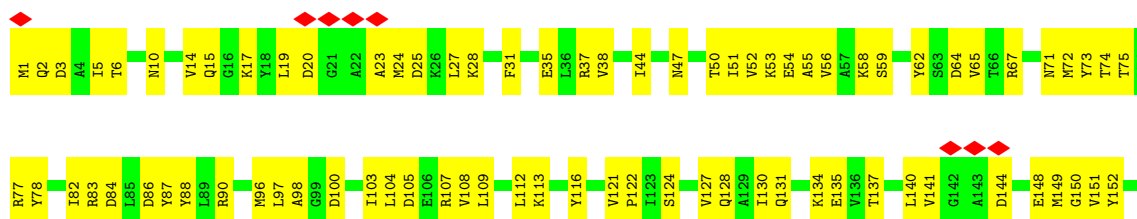
• Molecule 2: Allophycocyanin beta chain

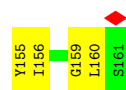
Chain CS:  5% 32% 68%



• Molecule 2: Allophycocyanin beta chain

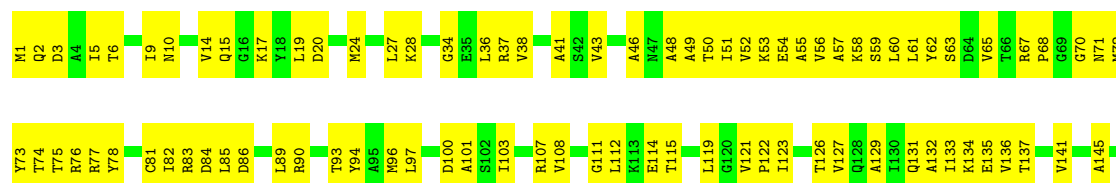
Chain CU:  6% 48% 52%





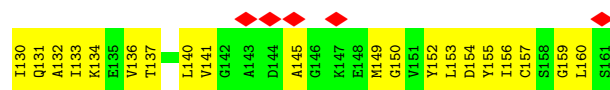
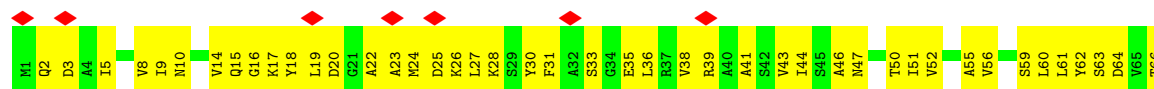
• Molecule 2: Allophycocyanin beta chain

Chain CW: 43% 57%



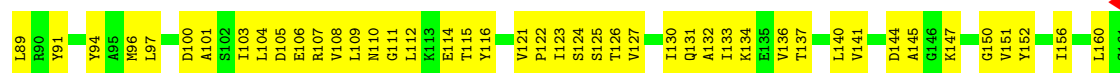
• Molecule 2: Allophycocyanin beta chain

Chain CZ: 8% 31% 69%



• Molecule 2: Allophycocyanin beta chain

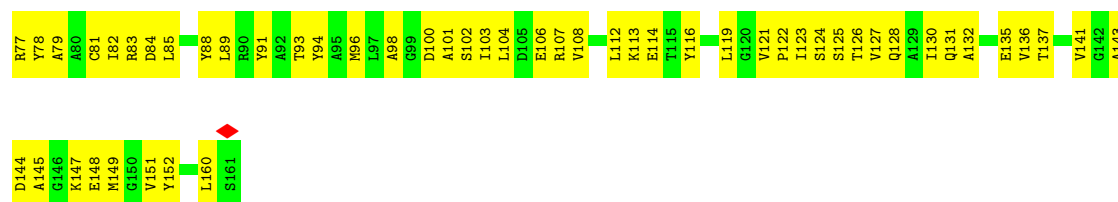
Chain DB: 47% 53%



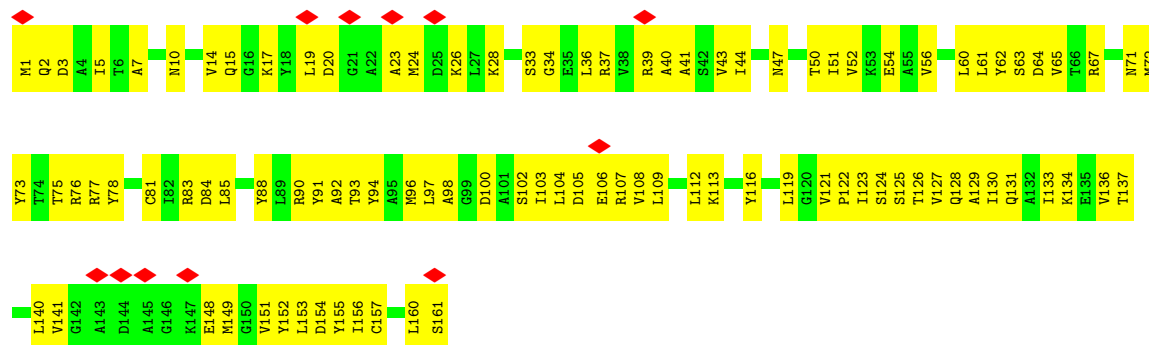
• Molecule 2: Allophycocyanin beta chain

Chain DD: 43% 57%





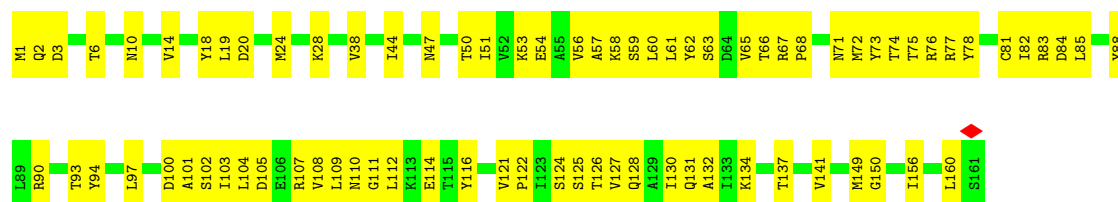
• Molecule 2: Allophycocyanin beta chain



• Molecule 2: Allophycocyanin beta chain

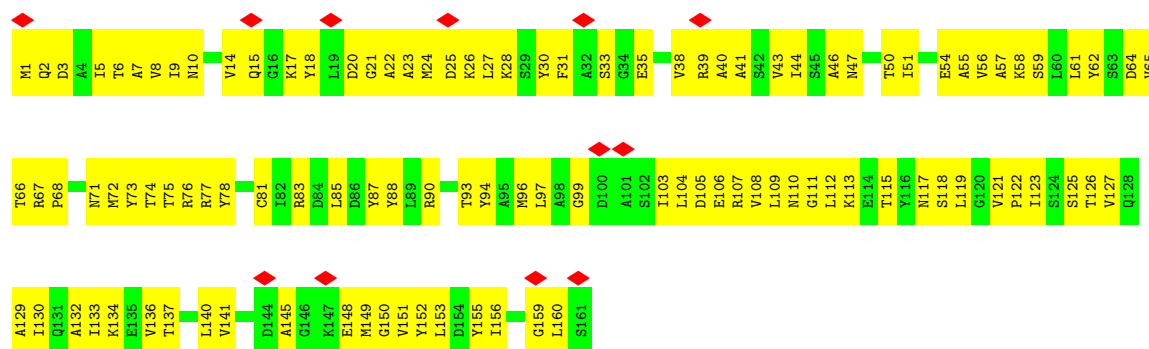


• Molecule 2: Allophycocyanin beta chain



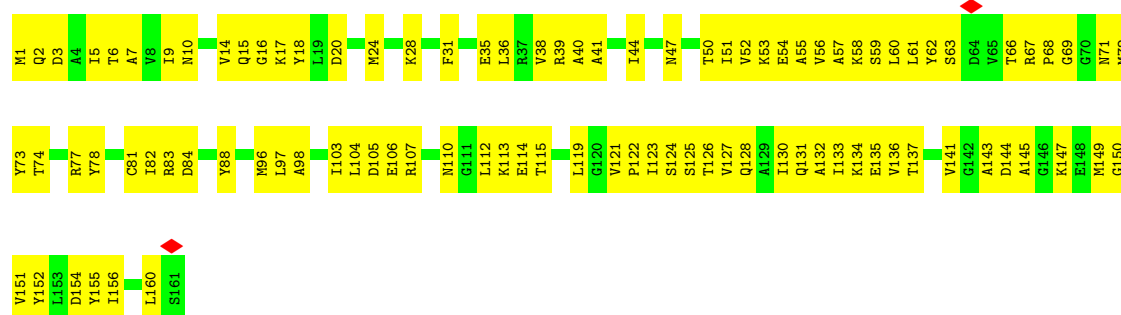
• Molecule 2: Allophycocyanin beta chain





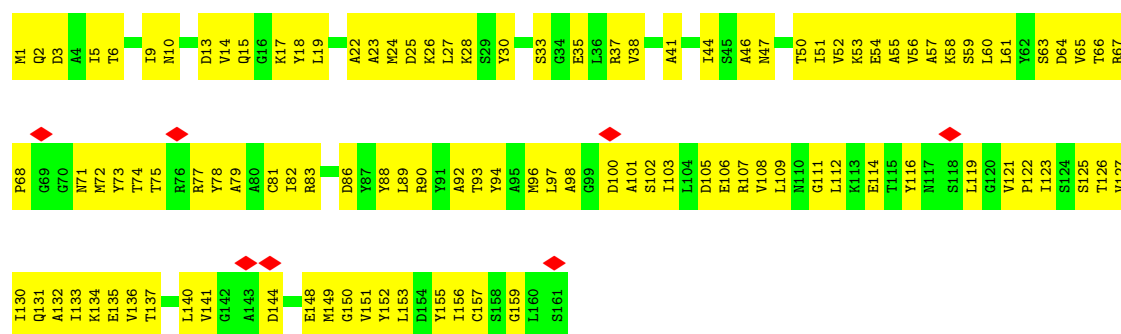
• Molecule 2: Allophycocyanin beta chain

Chain DT: 40% 60%



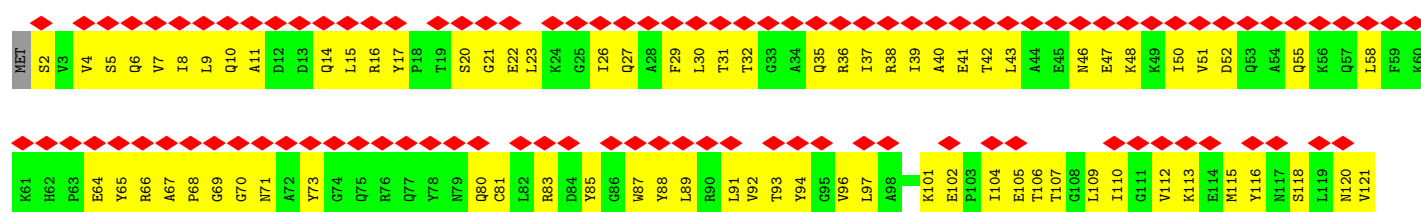
• Molecule 2: Allophycocyanin beta chain

Chain DV: 32% 68%



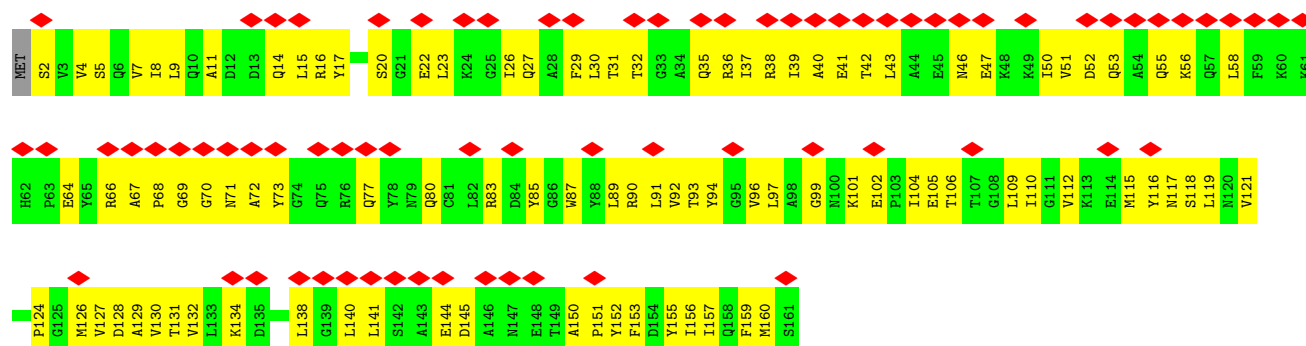
• Molecule 3: Allophycocyanin subunit alpha-B

Chain AE: 40% 84% 60%

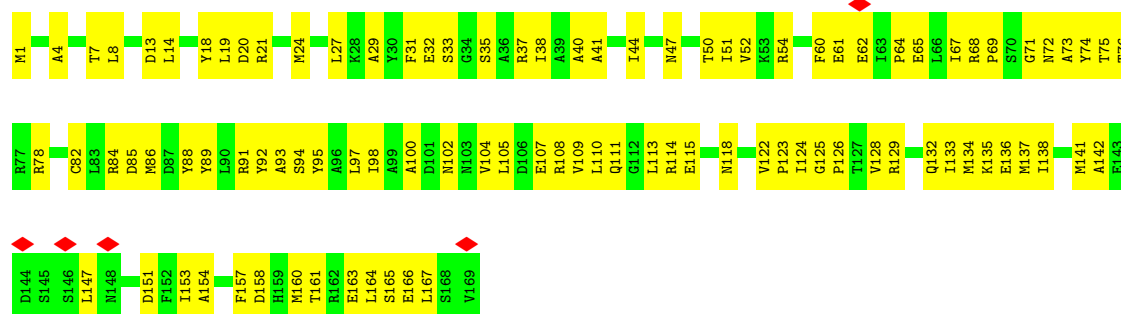




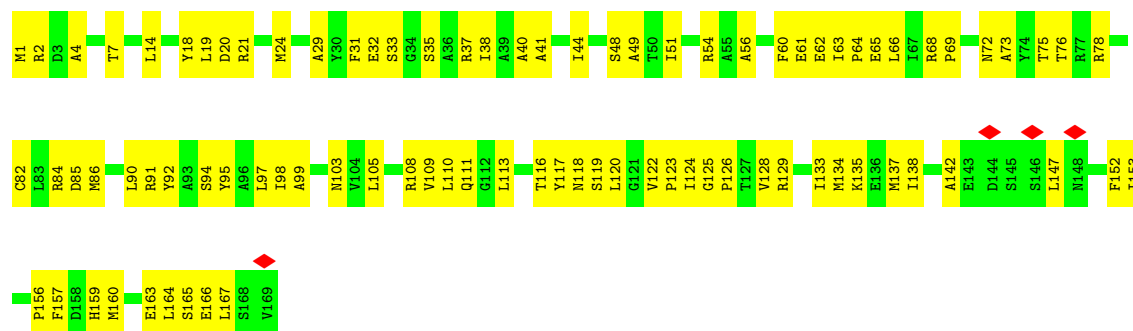
• Molecule 3: Allophycocyanin subunit alpha-B



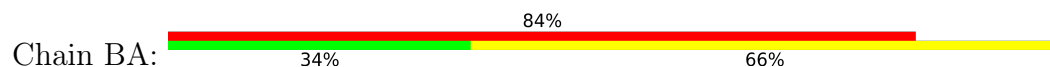
• Molecule 4: Allophycocyanin subunit beta-18

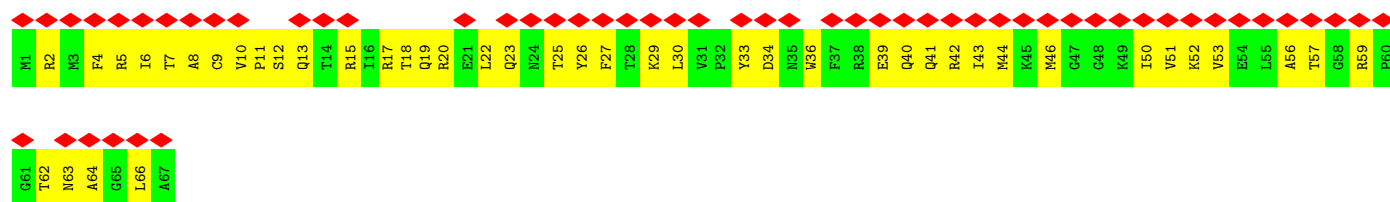


• Molecule 4: Allophycocyanin subunit beta-18

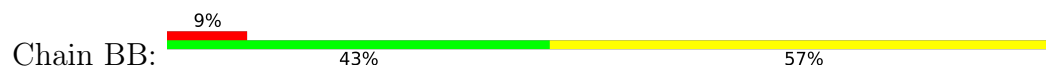


• Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core

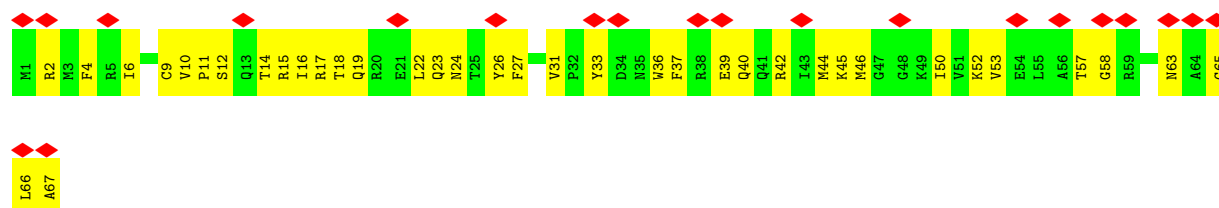




- Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core



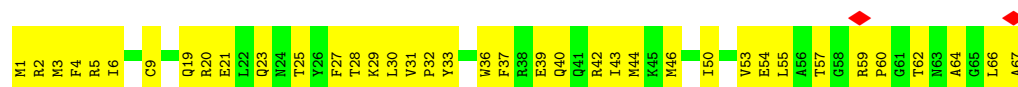
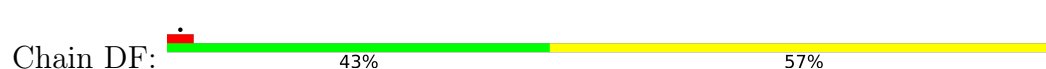
- Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core



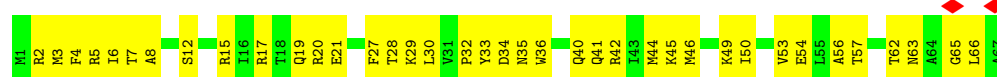
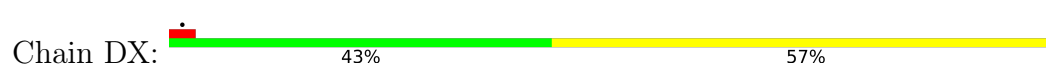
- Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core



- Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core

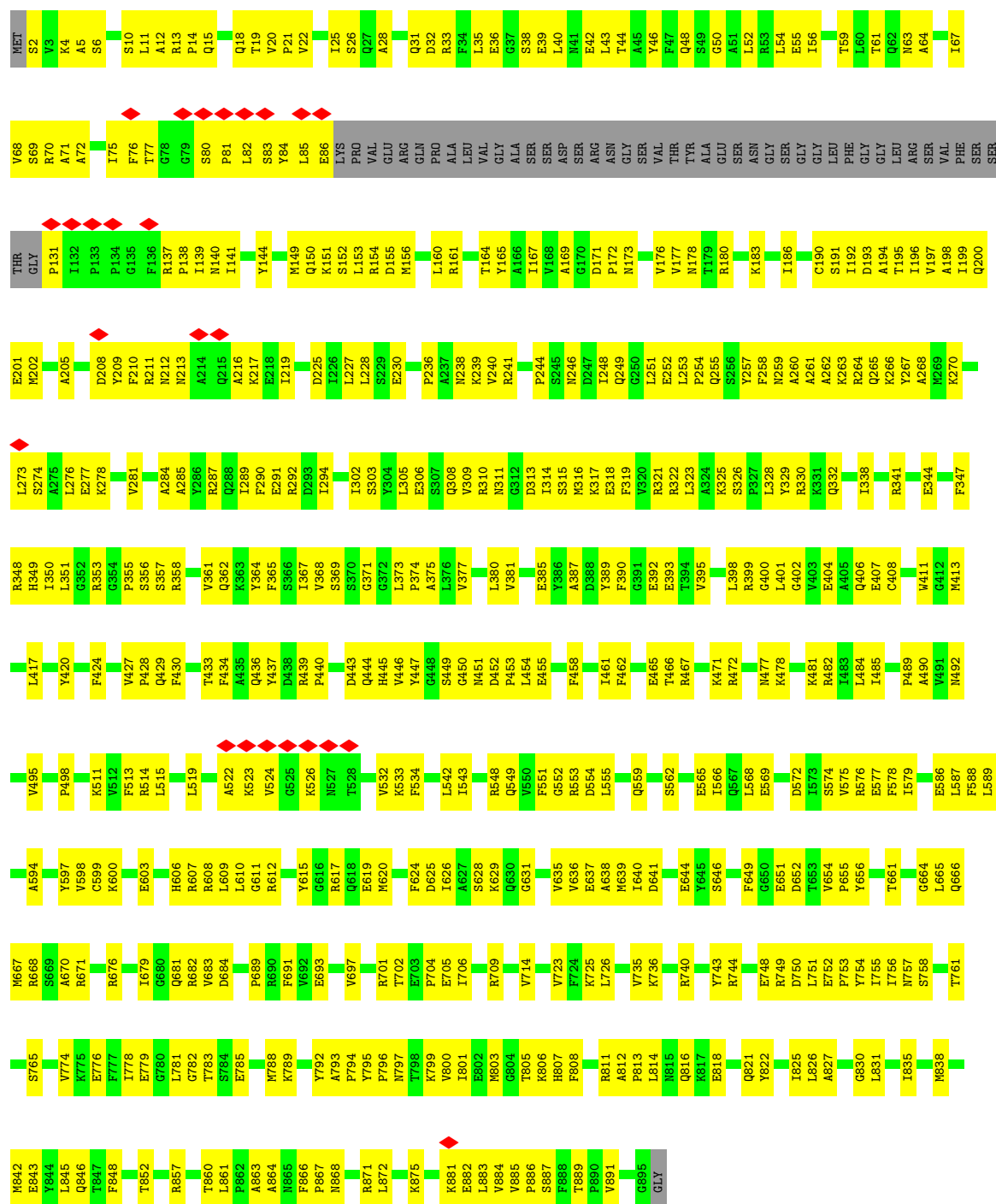


- Molecule 5: Phycobilisome 7.8 kDa linker polypeptide, allophycocyanin-associated, core



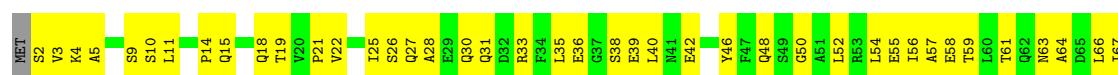
- Molecule 6: Phycobiliprotein ApcE

Chain BD: 

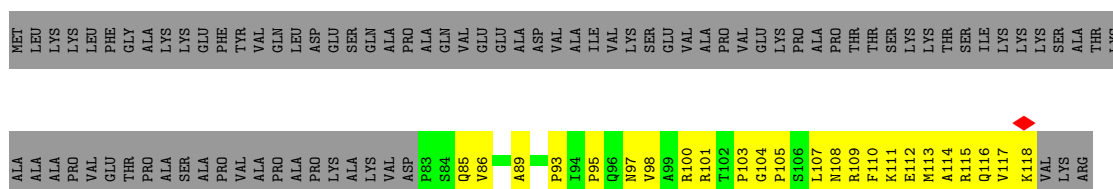


• Molecule 6: Phycobiliprotein ApcE

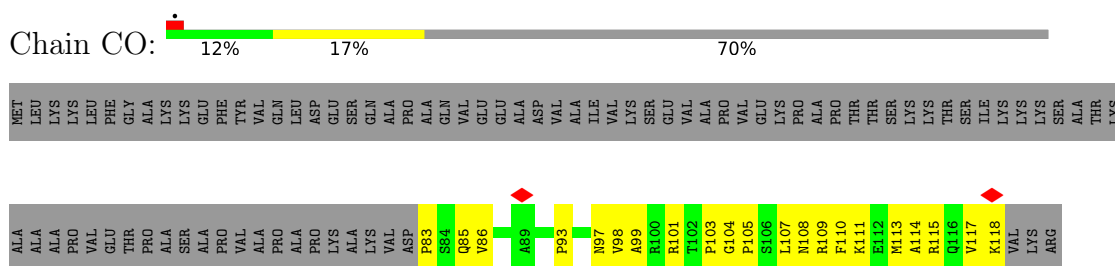
Chain CM: 



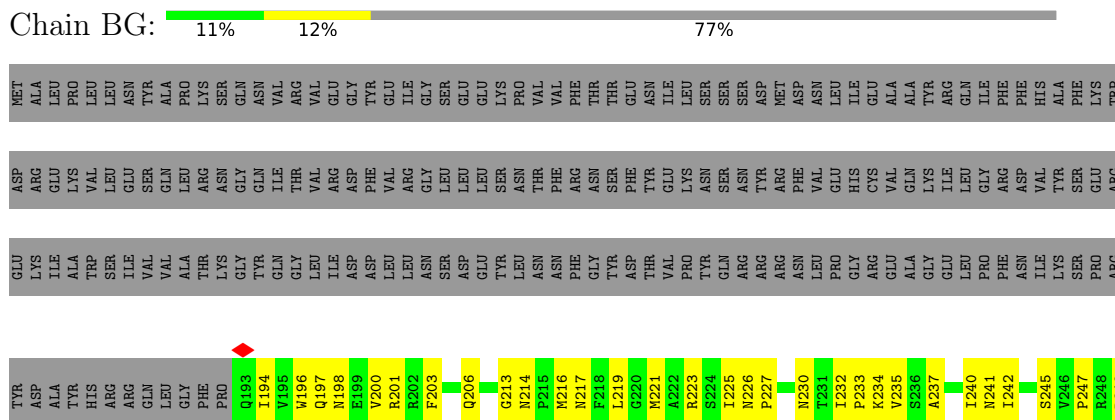
- Molecule 7: Sll1873 protein



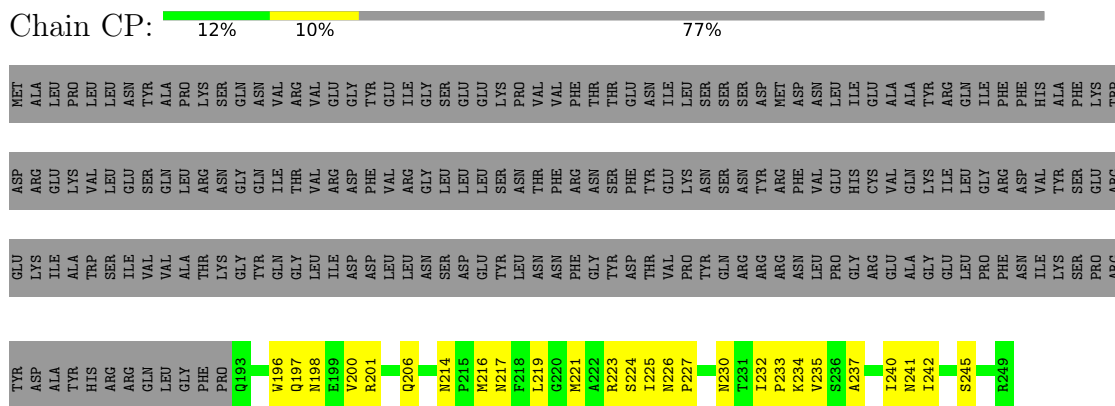
- Molecule 7: Sll1873 protein



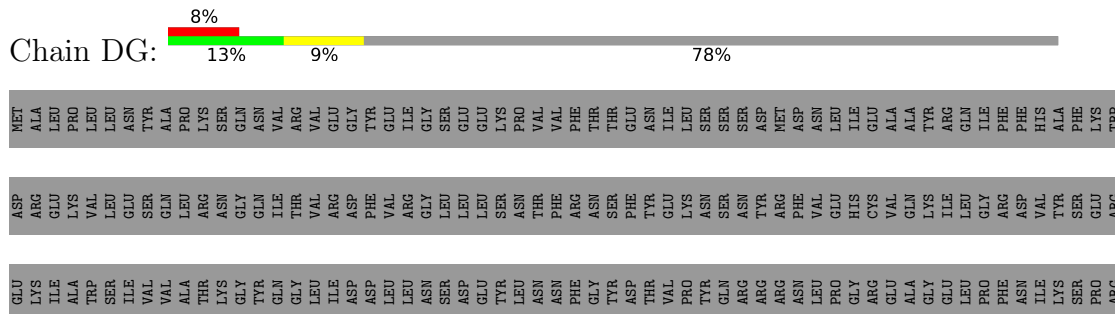
- Molecule 8: Phycobilisome rod-core linker polypeptide CpcG

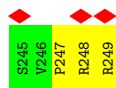


- Molecule 8: Phycobilisome rod-core linker polypeptide CpcG

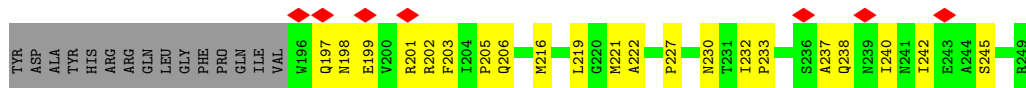


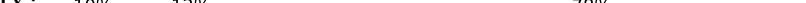
- Molecule 8: Phycobilisome rod-core linker polypeptide CpcG

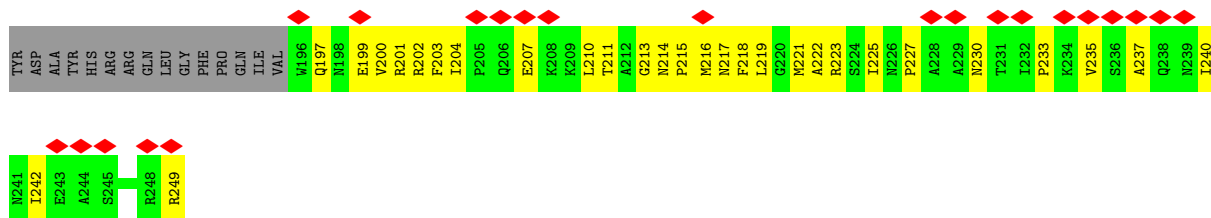


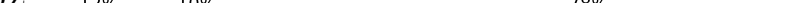


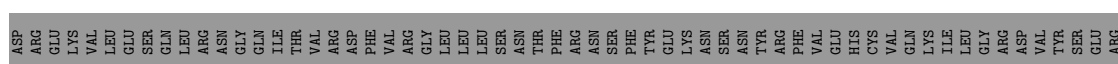
Chain DH: 

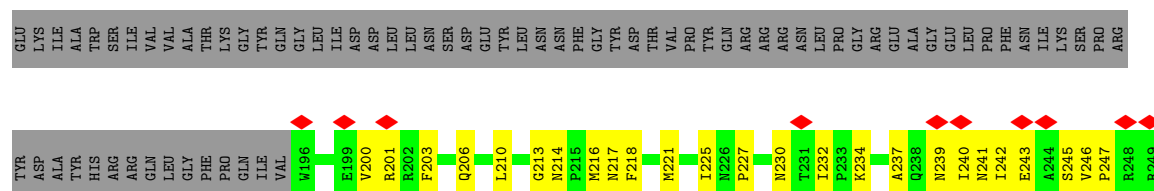


Chain DY: 

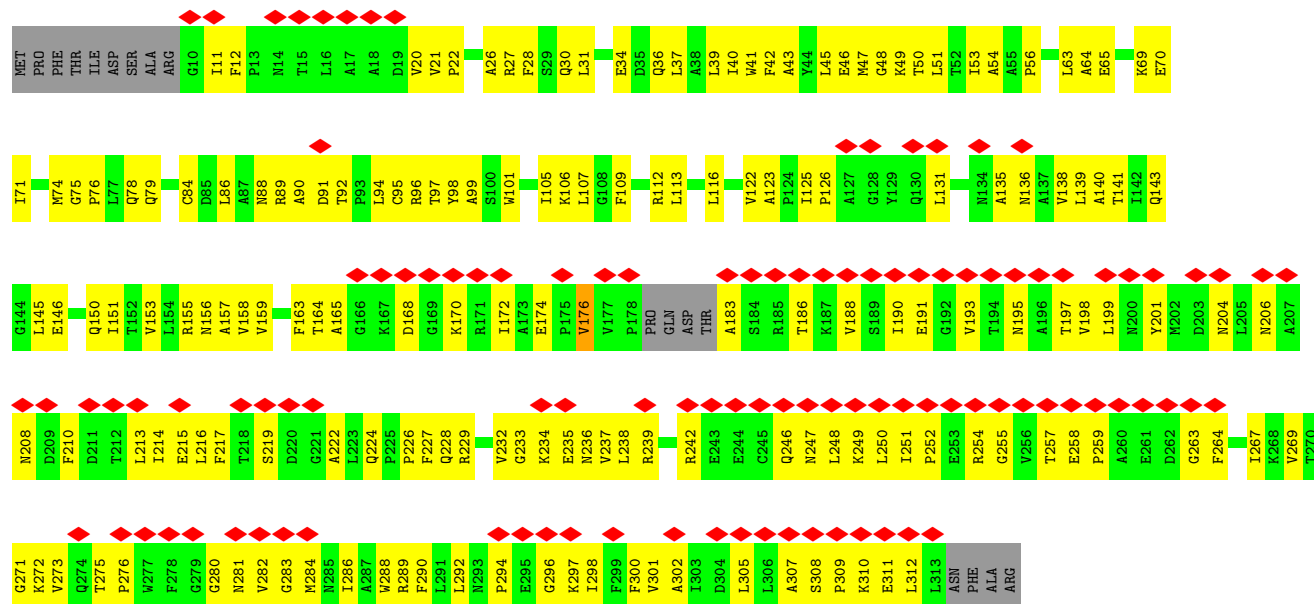
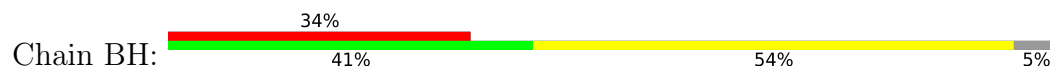


Chain DZ: 

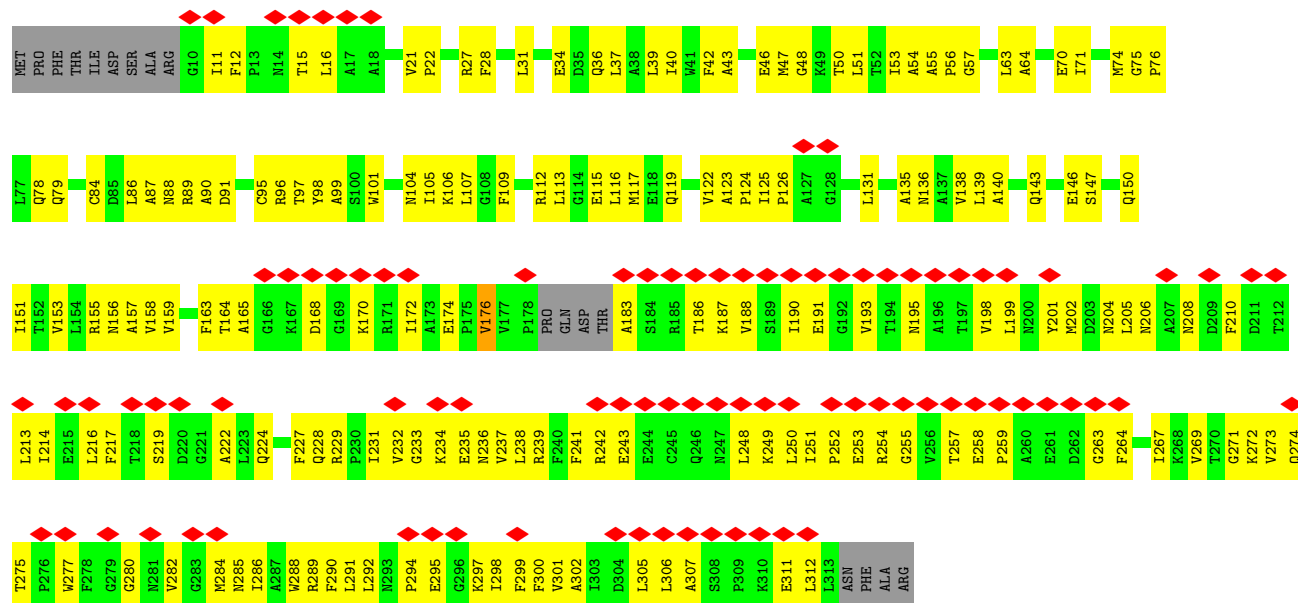




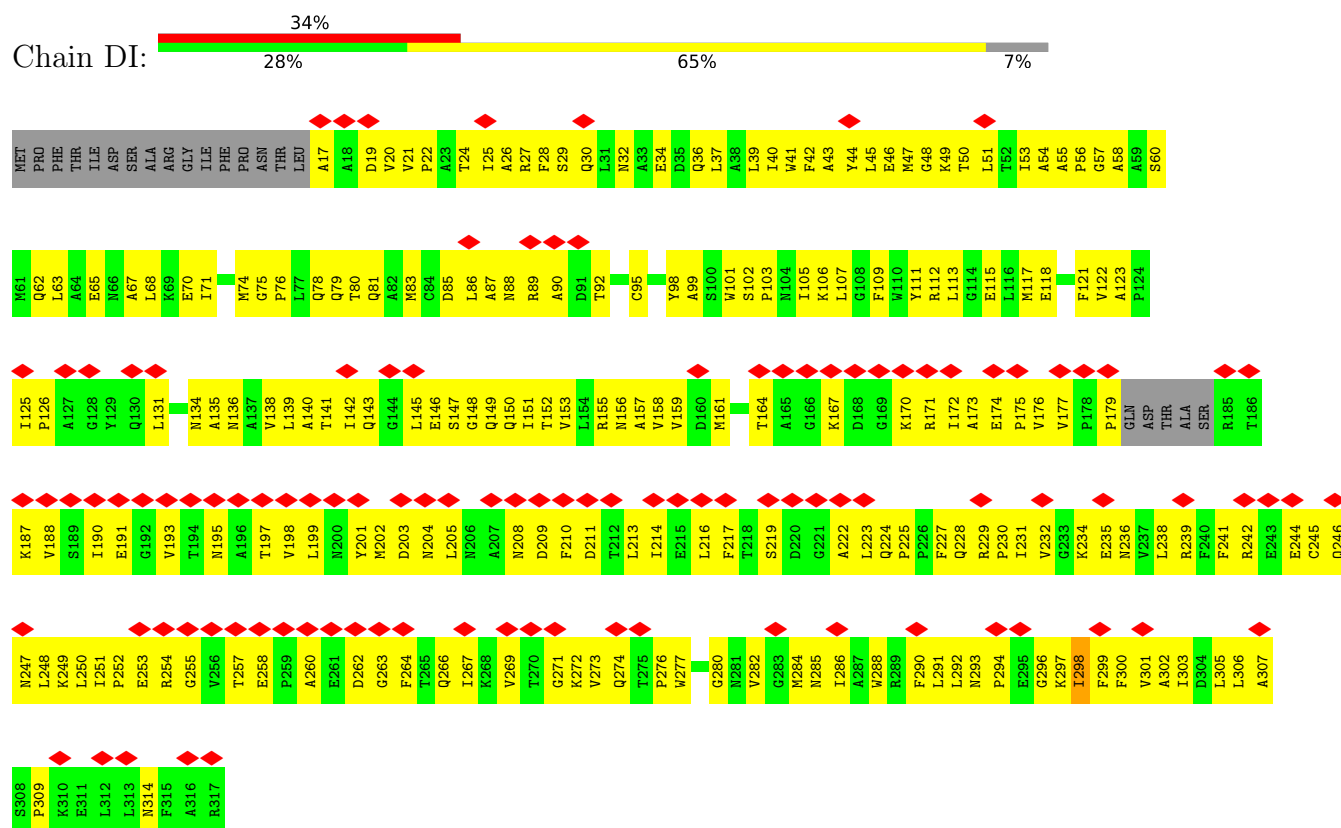
• Molecule 9: Orange carotenoid-binding protein



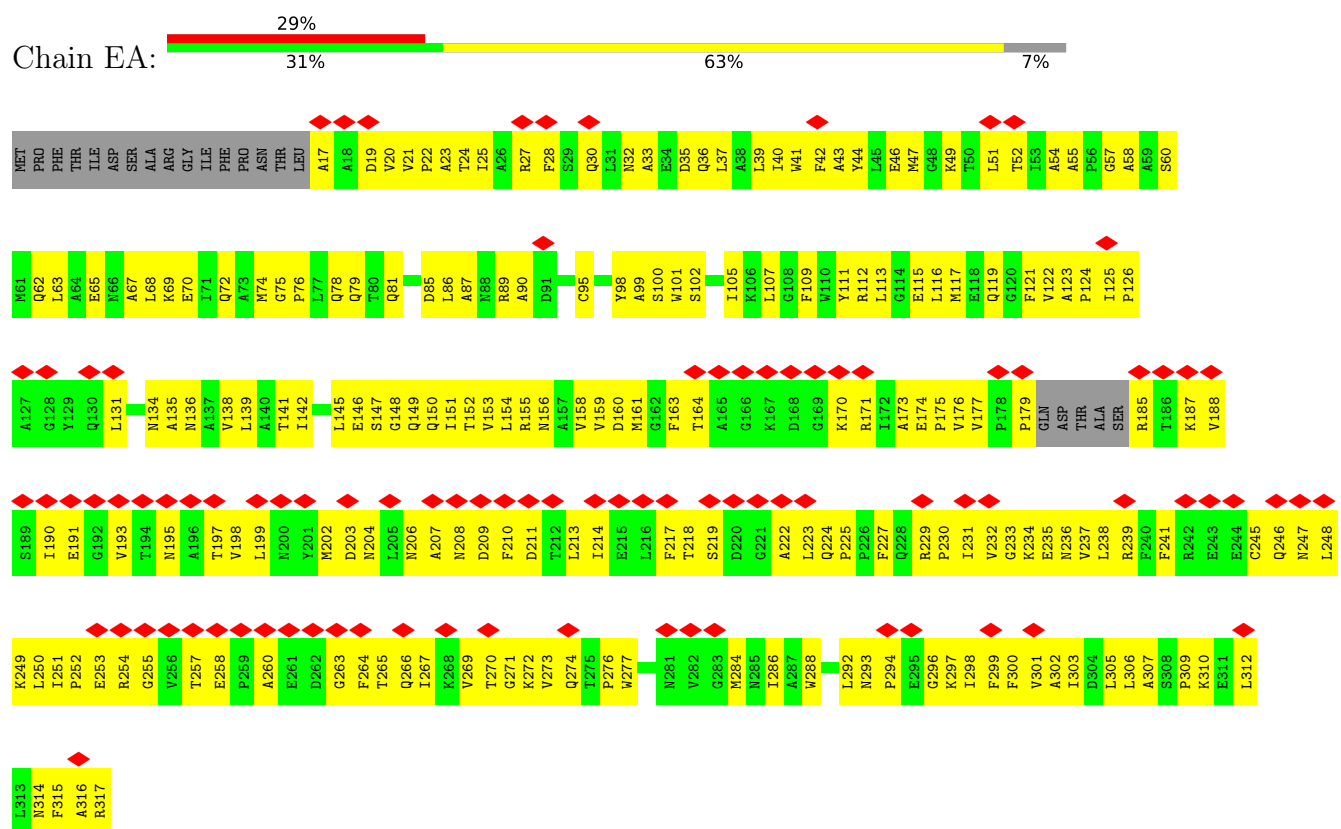
• Molecule 9: Orange carotenoid-binding protein



• Molecule 9: Orange carotenoid-binding protein



• Molecule 9: Orange carotenoid-binding protein



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|-----------------------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, C1                               | Depositor |
| Number of particles used             | 340839                                  | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | TFS KRIOS                               | Depositor |
| Voltage (kV)                         | 300                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 50                                      | Depositor |
| Minimum defocus (nm)                 | 500                                     | Depositor |
| Maximum defocus (nm)                 | 1600                                    | Depositor |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K3 (6k x 4k)                      | Depositor |
| Maximum map value                    | 2.199                                   | Depositor |
| Minimum map value                    | -0.742                                  | Depositor |
| Average map value                    | 0.021                                   | Depositor |
| Map value standard deviation         | 0.113                                   | Depositor |
| Recommended contour level            | 0.437                                   | Depositor |
| Map size (Å)                         | 377.99997, 377.99997, 377.99997         | wwPDB     |
| Map dimensions                       | 360, 360, 360                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 1.05, 1.05, 1.05                        | Depositor |

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CYC, 45D

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   | AA    | 0.10         | 0/1225  | 0.24        | 0/1652  |
| 1   | AC    | 0.12         | 0/1225  | 0.29        | 0/1652  |
| 1   | AH    | 0.16         | 0/1225  | 0.28        | 0/1652  |
| 1   | AJ    | 0.20         | 0/1225  | 0.29        | 0/1652  |
| 1   | AN    | 0.16         | 0/1225  | 0.33        | 0/1652  |
| 1   | AP    | 0.18         | 0/1225  | 0.27        | 0/1652  |
| 1   | AR    | 0.16         | 0/1225  | 0.28        | 0/1652  |
| 1   | AV    | 0.14         | 0/1225  | 0.29        | 0/1652  |
| 1   | AX    | 0.14         | 0/1225  | 0.27        | 0/1652  |
| 1   | AZ    | 0.14         | 0/1225  | 0.24        | 0/1652  |
| 1   | BI    | 0.11         | 0/1225  | 0.22        | 0/1652  |
| 1   | BK    | 0.14         | 0/1225  | 0.32        | 0/1652  |
| 1   | BP    | 0.16         | 0/1225  | 0.28        | 0/1652  |
| 1   | BR    | 0.19         | 0/1225  | 0.29        | 0/1652  |
| 1   | BV    | 0.17         | 0/1225  | 0.32        | 0/1652  |
| 1   | BX    | 0.19         | 0/1225  | 0.26        | 0/1652  |
| 1   | BZ    | 0.17         | 0/1225  | 0.27        | 0/1652  |
| 1   | CC    | 0.14         | 0/1225  | 0.25        | 0/1652  |
| 1   | CE    | 0.14         | 0/1225  | 0.28        | 0/1652  |
| 1   | CG    | 0.16         | 0/1225  | 0.28        | 0/1652  |
| 1   | CR    | 0.15         | 0/1225  | 0.32        | 0/1652  |
| 1   | CT    | 0.15         | 0/1225  | 0.36        | 0/1652  |
| 1   | CV    | 0.16         | 0/1225  | 0.30        | 0/1652  |
| 1   | CY    | 0.16         | 0/1225  | 0.36        | 0/1652  |
| 1   | DA    | 0.17         | 0/1225  | 0.35        | 0/1652  |
| 1   | DC    | 0.18         | 0/1225  | 0.29        | 0/1652  |
| 1   | DJ    | 0.15         | 0/1225  | 0.31        | 0/1652  |
| 1   | DL    | 0.15         | 0/1225  | 0.33        | 0/1652  |
| 1   | DN    | 0.16         | 0/1225  | 0.27        | 0/1652  |
| 1   | DQ    | 0.15         | 0/1225  | 0.33        | 0/1652  |
| 1   | DS    | 0.17         | 0/1225  | 0.33        | 0/1652  |
| 1   | DU    | 0.18         | 0/1225  | 0.30        | 0/1652  |

| Mol | Chain | Bond lengths |         | Bond angles |         |
|-----|-------|--------------|---------|-------------|---------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5 |
| 2   | AB    | 0.11         | 0/1220  | 0.26        | 0/1650  |
| 2   | AD    | 0.12         | 0/1220  | 0.29        | 0/1650  |
| 2   | AF    | 0.10         | 0/1220  | 0.26        | 0/1650  |
| 2   | AI    | 0.19         | 0/1220  | 0.27        | 0/1650  |
| 2   | AL    | 0.16         | 0/1220  | 0.28        | 0/1650  |
| 2   | AO    | 0.20         | 0/1220  | 0.30        | 0/1650  |
| 2   | AQ    | 0.19         | 0/1220  | 0.26        | 0/1650  |
| 2   | AS    | 0.18         | 0/1220  | 0.32        | 0/1650  |
| 2   | AU    | 0.15         | 0/1220  | 0.31        | 0/1650  |
| 2   | AW    | 0.14         | 0/1220  | 0.27        | 0/1650  |
| 2   | AY    | 0.15         | 0/1220  | 0.29        | 0/1650  |
| 2   | BJ    | 0.11         | 0/1220  | 0.26        | 0/1650  |
| 2   | BL    | 0.13         | 0/1220  | 0.30        | 0/1650  |
| 2   | BN    | 0.11         | 0/1220  | 0.24        | 0/1650  |
| 2   | BQ    | 0.20         | 0/1220  | 0.27        | 0/1650  |
| 2   | BT    | 0.18         | 0/1220  | 0.30        | 0/1650  |
| 2   | BW    | 0.20         | 0/1220  | 0.30        | 0/1650  |
| 2   | BY    | 0.19         | 0/1220  | 0.25        | 0/1650  |
| 2   | CA    | 0.19         | 0/1220  | 0.36        | 0/1650  |
| 2   | CD    | 0.15         | 0/1220  | 0.29        | 0/1650  |
| 2   | CF    | 0.15         | 0/1220  | 0.28        | 0/1650  |
| 2   | CH    | 0.15         | 0/1220  | 0.28        | 0/1650  |
| 2   | CS    | 0.14         | 0/1220  | 0.35        | 0/1650  |
| 2   | CU    | 0.16         | 0/1220  | 0.29        | 0/1650  |
| 2   | CW    | 0.15         | 0/1220  | 0.28        | 0/1650  |
| 2   | CZ    | 0.17         | 0/1220  | 0.36        | 0/1650  |
| 2   | DB    | 0.18         | 0/1220  | 0.32        | 0/1650  |
| 2   | DD    | 0.15         | 0/1220  | 0.28        | 0/1650  |
| 2   | DK    | 0.14         | 0/1220  | 0.33        | 0/1650  |
| 2   | DM    | 0.16         | 0/1220  | 0.29        | 0/1650  |
| 2   | DO    | 0.15         | 0/1220  | 0.31        | 0/1650  |
| 2   | DR    | 0.16         | 0/1220  | 0.32        | 0/1650  |
| 2   | DT    | 0.17         | 0/1220  | 0.32        | 0/1650  |
| 2   | DV    | 0.16         | 0/1220  | 0.37        | 0/1650  |
| 3   | AE    | 0.13         | 0/1277  | 0.31        | 0/1730  |
| 3   | BM    | 0.16         | 0/1277  | 0.36        | 0/1730  |
| 4   | AK    | 0.18         | 0/1341  | 0.31        | 0/1813  |
| 4   | BS    | 0.18         | 0/1341  | 0.31        | 0/1813  |
| 5   | BA    | 0.13         | 0/555   | 0.28        | 0/743   |
| 5   | BB    | 0.13         | 0/555   | 0.29        | 0/743   |
| 5   | CJ    | 0.13         | 0/555   | 0.25        | 0/743   |
| 5   | CK    | 0.13         | 0/555   | 0.27        | 0/743   |
| 5   | DF    | 0.18         | 0/555   | 0.29        | 0/743   |

| Mol | Chain | Bond lengths |          | Bond angles |          |
|-----|-------|--------------|----------|-------------|----------|
|     |       | RMSZ         | # Z  >5  | RMSZ        | # Z  >5  |
| 5   | DX    | 0.16         | 0/555    | 0.29        | 0/743    |
| 6   | BD    | 0.18         | 0/6907   | 0.32        | 0/9337   |
| 6   | CM    | 0.19         | 0/6907   | 0.33        | 0/9337   |
| 7   | BF    | 0.12         | 0/283    | 0.26        | 0/381    |
| 7   | CO    | 0.14         | 0/283    | 0.30        | 0/381    |
| 8   | BG    | 0.14         | 0/459    | 0.31        | 0/620    |
| 8   | CP    | 0.15         | 0/459    | 0.30        | 0/620    |
| 8   | DG    | 0.14         | 0/434    | 0.33        | 0/587    |
| 8   | DH    | 0.14         | 0/434    | 0.38        | 0/587    |
| 8   | DY    | 0.14         | 0/434    | 0.31        | 0/587    |
| 8   | DZ    | 0.15         | 0/434    | 0.30        | 0/587    |
| 9   | BH    | 0.13         | 0/2349   | 0.31        | 0/3195   |
| 9   | CQ    | 0.14         | 0/2349   | 0.31        | 0/3195   |
| 9   | DI    | 0.12         | 0/2327   | 0.30        | 0/3164   |
| 9   | EA    | 0.12         | 0/2327   | 0.29        | 0/3164   |
| All | All   | 0.16         | 0/115632 | 0.30        | 0/156250 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | AA    | 1210  | 0        | 1210     | 109     | 0            |
| 1   | AC    | 1210  | 0        | 1210     | 135     | 0            |
| 1   | AH    | 1210  | 0        | 1210     | 104     | 0            |
| 1   | AJ    | 1210  | 0        | 1210     | 90      | 0            |
| 1   | AN    | 1210  | 0        | 1210     | 119     | 0            |
| 1   | AP    | 1210  | 0        | 1210     | 83      | 0            |
| 1   | AR    | 1210  | 0        | 1211     | 97      | 0            |
| 1   | AV    | 1210  | 0        | 1210     | 125     | 0            |
| 1   | AX    | 1210  | 0        | 1210     | 100     | 0            |
| 1   | AZ    | 1210  | 0        | 1210     | 107     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | BI    | 1210  | 0        | 1210     | 86      | 0            |
| 1   | BK    | 1210  | 0        | 1210     | 138     | 0            |
| 1   | BP    | 1210  | 0        | 1210     | 99      | 0            |
| 1   | BR    | 1210  | 0        | 1210     | 91      | 0            |
| 1   | BV    | 1210  | 0        | 1210     | 121     | 0            |
| 1   | BX    | 1210  | 0        | 1210     | 72      | 0            |
| 1   | BZ    | 1210  | 0        | 1210     | 100     | 0            |
| 1   | CC    | 1210  | 0        | 1210     | 111     | 0            |
| 1   | CE    | 1210  | 0        | 1210     | 132     | 0            |
| 1   | CG    | 1210  | 0        | 1210     | 105     | 0            |
| 1   | CR    | 1210  | 0        | 1210     | 152     | 0            |
| 1   | CT    | 1210  | 0        | 1210     | 105     | 0            |
| 1   | CV    | 1210  | 0        | 1210     | 93      | 0            |
| 1   | CY    | 1210  | 0        | 1210     | 186     | 0            |
| 1   | DA    | 1210  | 0        | 1210     | 135     | 0            |
| 1   | DC    | 1210  | 0        | 1210     | 80      | 0            |
| 1   | DJ    | 1210  | 0        | 1210     | 156     | 0            |
| 1   | DL    | 1210  | 0        | 1210     | 131     | 0            |
| 1   | DN    | 1210  | 0        | 1210     | 85      | 0            |
| 1   | DQ    | 1210  | 0        | 1210     | 169     | 0            |
| 1   | DS    | 1210  | 0        | 1210     | 122     | 0            |
| 1   | DU    | 1210  | 0        | 1210     | 102     | 0            |
| 2   | AB    | 1206  | 0        | 1218     | 85      | 0            |
| 2   | AD    | 1206  | 0        | 1218     | 125     | 0            |
| 2   | AF    | 1206  | 0        | 1218     | 120     | 0            |
| 2   | AI    | 1206  | 0        | 1218     | 76      | 0            |
| 2   | AL    | 1206  | 0        | 1218     | 102     | 0            |
| 2   | AO    | 1206  | 0        | 1218     | 93      | 0            |
| 2   | AQ    | 1206  | 0        | 1218     | 59      | 0            |
| 2   | AS    | 1206  | 0        | 1218     | 117     | 0            |
| 2   | AU    | 1206  | 0        | 1218     | 98      | 0            |
| 2   | AW    | 1206  | 0        | 1218     | 111     | 0            |
| 2   | AY    | 1206  | 0        | 1218     | 91      | 0            |
| 2   | BJ    | 1206  | 0        | 1218     | 85      | 0            |
| 2   | BL    | 1206  | 0        | 1218     | 120     | 0            |
| 2   | BN    | 1206  | 0        | 1218     | 124     | 0            |
| 2   | BQ    | 1206  | 0        | 1218     | 83      | 0            |
| 2   | BT    | 1206  | 0        | 1218     | 106     | 0            |
| 2   | BW    | 1206  | 0        | 1218     | 99      | 0            |
| 2   | BY    | 1206  | 0        | 1218     | 72      | 0            |
| 2   | CA    | 1206  | 0        | 1218     | 102     | 0            |
| 2   | CD    | 1206  | 0        | 1218     | 100     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2   | CF    | 1206  | 0        | 1218     | 129     | 0            |
| 2   | CH    | 1206  | 0        | 1218     | 87      | 0            |
| 2   | CS    | 1206  | 0        | 1218     | 139     | 0            |
| 2   | CU    | 1206  | 0        | 1218     | 84      | 0            |
| 2   | CW    | 1206  | 0        | 1218     | 117     | 0            |
| 2   | CZ    | 1206  | 0        | 1218     | 152     | 0            |
| 2   | DB    | 1206  | 0        | 1218     | 110     | 0            |
| 2   | DD    | 1206  | 0        | 1218     | 108     | 0            |
| 2   | DK    | 1206  | 0        | 1218     | 124     | 0            |
| 2   | DM    | 1206  | 0        | 1218     | 101     | 0            |
| 2   | DO    | 1206  | 0        | 1218     | 91      | 0            |
| 2   | DR    | 1206  | 0        | 1218     | 141     | 0            |
| 2   | DT    | 1206  | 0        | 1218     | 113     | 0            |
| 2   | DV    | 1206  | 0        | 1218     | 134     | 0            |
| 3   | AE    | 1254  | 0        | 1250     | 124     | 0            |
| 3   | BM    | 1254  | 0        | 1250     | 129     | 0            |
| 4   | AK    | 1322  | 0        | 1311     | 131     | 0            |
| 4   | BS    | 1322  | 0        | 1311     | 123     | 0            |
| 5   | BA    | 546   | 0        | 568      | 78      | 0            |
| 5   | BB    | 546   | 0        | 568      | 43      | 0            |
| 5   | CJ    | 546   | 0        | 568      | 67      | 0            |
| 5   | CK    | 546   | 0        | 568      | 36      | 0            |
| 5   | DF    | 546   | 0        | 568      | 54      | 0            |
| 5   | DX    | 546   | 0        | 568      | 48      | 0            |
| 6   | BD    | 6761  | 0        | 6739     | 544     | 0            |
| 6   | CM    | 6761  | 0        | 6739     | 548     | 0            |
| 7   | BF    | 277   | 0        | 283      | 37      | 0            |
| 7   | CO    | 277   | 0        | 283      | 37      | 0            |
| 8   | BG    | 451   | 0        | 465      | 34      | 0            |
| 8   | CP    | 451   | 0        | 465      | 26      | 0            |
| 8   | DG    | 426   | 0        | 437      | 48      | 0            |
| 8   | DH    | 426   | 0        | 437      | 45      | 0            |
| 8   | DY    | 426   | 0        | 437      | 40      | 0            |
| 8   | DZ    | 426   | 0        | 437      | 51      | 0            |
| 9   | BH    | 2302  | 0        | 2310     | 202     | 0            |
| 9   | CQ    | 2302  | 0        | 2310     | 199     | 0            |
| 9   | DI    | 2280  | 0        | 2286     | 259     | 0            |
| 9   | EA    | 2280  | 0        | 2286     | 222     | 0            |
| 10  | AA    | 43    | 0        | 37       | 15      | 0            |
| 10  | AB    | 43    | 0        | 37       | 14      | 0            |
| 10  | AC    | 43    | 0        | 37       | 10      | 0            |
| 10  | AD    | 43    | 0        | 37       | 14      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 10  | AE    | 43    | 0        | 37       | 9       | 0            |
| 10  | AF    | 43    | 0        | 37       | 10      | 0            |
| 10  | AH    | 43    | 0        | 37       | 14      | 0            |
| 10  | AI    | 43    | 0        | 37       | 11      | 0            |
| 10  | AJ    | 43    | 0        | 37       | 7       | 0            |
| 10  | AK    | 43    | 0        | 37       | 14      | 0            |
| 10  | AL    | 43    | 0        | 37       | 10      | 0            |
| 10  | AN    | 43    | 0        | 37       | 11      | 0            |
| 10  | AO    | 43    | 0        | 37       | 7       | 0            |
| 10  | AP    | 43    | 0        | 37       | 10      | 0            |
| 10  | AQ    | 43    | 0        | 37       | 8       | 0            |
| 10  | AR    | 43    | 0        | 38       | 9       | 0            |
| 10  | AU    | 43    | 0        | 37       | 14      | 0            |
| 10  | AV    | 43    | 0        | 37       | 17      | 0            |
| 10  | AW    | 43    | 0        | 37       | 10      | 0            |
| 10  | AX    | 43    | 0        | 37       | 9       | 0            |
| 10  | AY    | 43    | 0        | 37       | 15      | 0            |
| 10  | AZ    | 43    | 0        | 37       | 8       | 0            |
| 10  | BD    | 86    | 0        | 74       | 23      | 0            |
| 10  | BI    | 43    | 0        | 37       | 15      | 0            |
| 10  | BJ    | 43    | 0        | 37       | 11      | 0            |
| 10  | BK    | 43    | 0        | 37       | 16      | 0            |
| 10  | BL    | 43    | 0        | 37       | 15      | 0            |
| 10  | BM    | 43    | 0        | 37       | 11      | 0            |
| 10  | BN    | 43    | 0        | 37       | 16      | 0            |
| 10  | BP    | 43    | 0        | 37       | 14      | 0            |
| 10  | BQ    | 43    | 0        | 37       | 15      | 0            |
| 10  | BR    | 43    | 0        | 37       | 6       | 0            |
| 10  | BS    | 43    | 0        | 37       | 11      | 0            |
| 10  | BT    | 43    | 0        | 37       | 10      | 0            |
| 10  | BV    | 43    | 0        | 37       | 14      | 0            |
| 10  | BW    | 43    | 0        | 37       | 8       | 0            |
| 10  | BX    | 43    | 0        | 37       | 10      | 0            |
| 10  | BY    | 43    | 0        | 37       | 9       | 0            |
| 10  | BZ    | 43    | 0        | 37       | 12      | 0            |
| 10  | CC    | 43    | 0        | 37       | 7       | 0            |
| 10  | CD    | 43    | 0        | 37       | 10      | 0            |
| 10  | CE    | 43    | 0        | 37       | 12      | 0            |
| 10  | CF    | 43    | 0        | 37       | 10      | 0            |
| 10  | CG    | 43    | 0        | 37       | 11      | 0            |
| 10  | CH    | 43    | 0        | 37       | 13      | 0            |
| 10  | CM    | 86    | 0        | 74       | 23      | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 10  | CR    | 43     | 0        | 37       | 7       | 0            |
| 10  | CS    | 43     | 0        | 37       | 7       | 0            |
| 10  | CT    | 43     | 0        | 37       | 13      | 0            |
| 10  | CU    | 43     | 0        | 37       | 8       | 0            |
| 10  | CV    | 43     | 0        | 37       | 11      | 0            |
| 10  | CW    | 43     | 0        | 37       | 12      | 0            |
| 10  | CY    | 43     | 0        | 37       | 12      | 0            |
| 10  | CZ    | 43     | 0        | 37       | 15      | 0            |
| 10  | DA    | 43     | 0        | 37       | 10      | 0            |
| 10  | DB    | 43     | 0        | 37       | 12      | 0            |
| 10  | DC    | 43     | 0        | 37       | 14      | 0            |
| 10  | DD    | 43     | 0        | 37       | 19      | 0            |
| 10  | DJ    | 43     | 0        | 37       | 13      | 0            |
| 10  | DK    | 43     | 0        | 37       | 8       | 0            |
| 10  | DL    | 43     | 0        | 37       | 11      | 0            |
| 10  | DM    | 43     | 0        | 37       | 8       | 0            |
| 10  | DN    | 43     | 0        | 37       | 15      | 0            |
| 10  | DO    | 43     | 0        | 37       | 9       | 0            |
| 10  | DQ    | 43     | 0        | 37       | 12      | 0            |
| 10  | DR    | 43     | 0        | 37       | 14      | 0            |
| 10  | DS    | 43     | 0        | 37       | 10      | 0            |
| 10  | DT    | 43     | 0        | 37       | 13      | 0            |
| 10  | DU    | 43     | 0        | 37       | 12      | 0            |
| 10  | DV    | 43     | 0        | 37       | 12      | 0            |
| 11  | BH    | 42     | 52       | 52       | 4       | 0            |
| 11  | CQ    | 42     | 52       | 52       | 6       | 0            |
| 11  | DI    | 42     | 52       | 52       | 14      | 0            |
| 11  | EA    | 42     | 52       | 52       | 12      | 0            |
| All | All   | 117262 | 208      | 117450   | 8971    | 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 38.

The worst 5 of 8971 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) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:BH:214:ILE:HD13 | 9:BH:238:LEU:HD22 | 1.27                     | 1.12              |
| 9:CQ:214:ILE:HD13 | 9:CQ:238:LEU:HD22 | 1.28                     | 1.12              |
| 6:CM:700:ILE:HG21 | 2:DB:147:LYS:HE2  | 1.36                     | 1.06              |
| 2:DV:41:ALA:HB2   | 2:DV:97:LEU:HD21  | 1.37                     | 1.04              |
| 1:CR:50:ILE:HD13  | 1:CR:136:VAL:HG12 | 1.39                     | 1.04              |

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 PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed      | Favoured   | Allowed | Outliers | Percentiles |     |
|-----|-------|---------------|------------|---------|----------|-------------|-----|
| 1   | AA    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | AC    | 158/161 (98%) | 153 (97%)  | 5 (3%)  | 0        | 100         | 100 |
| 1   | AH    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | AN    | 4/161 (2%)    | 4 (100%)   | 0       | 0        | 100         | 100 |
| 1   | AP    | 21/161 (13%)  | 21 (100%)  | 0       | 0        | 100         | 100 |
| 1   | AX    | 158/161 (98%) | 158 (100%) | 0       | 0        | 100         | 100 |
| 1   | AZ    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | BI    | 158/161 (98%) | 158 (100%) | 0       | 0        | 100         | 100 |
| 1   | BK    | 158/161 (98%) | 152 (96%)  | 6 (4%)  | 0        | 100         | 100 |
| 1   | BP    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | BR    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | BV    | 158/161 (98%) | 154 (98%)  | 4 (2%)  | 0        | 100         | 100 |
| 1   | BX    | 109/161 (68%) | 107 (98%)  | 2 (2%)  | 0        | 100         | 100 |
| 1   | CG    | 56/161 (35%)  | 56 (100%)  | 0       | 0        | 100         | 100 |
| 1   | CR    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | CT    | 158/161 (98%) | 153 (97%)  | 5 (3%)  | 0        | 100         | 100 |
| 1   | CV    | 158/161 (98%) | 156 (99%)  | 2 (1%)  | 0        | 100         | 100 |
| 1   | CY    | 158/161 (98%) | 156 (99%)  | 2 (1%)  | 0        | 100         | 100 |
| 1   | DA    | 158/161 (98%) | 154 (98%)  | 4 (2%)  | 0        | 100         | 100 |
| 1   | DC    | 158/161 (98%) | 156 (99%)  | 2 (1%)  | 0        | 100         | 100 |
| 1   | DJ    | 129/161 (80%) | 128 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 1   | DL    | 142/161 (88%) | 135 (95%)  | 6 (4%)  | 1 (1%)   | 18          | 38  |

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| Mol | Chain | Analysed      | Favoured   | Allowed | Outliers | Percentiles |     |
|-----|-------|---------------|------------|---------|----------|-------------|-----|
| 2   | AB    | 159/161 (99%) | 159 (100%) | 0       | 0        | 100         | 100 |
| 2   | AD    | 159/161 (99%) | 155 (98%)  | 4 (2%)  | 0        | 100         | 100 |
| 2   | AF    | 159/161 (99%) | 158 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 2   | AI    | 151/161 (94%) | 146 (97%)  | 5 (3%)  | 0        | 100         | 100 |
| 2   | AO    | 10/161 (6%)   | 10 (100%)  | 0       | 0        | 100         | 100 |
| 2   | AW    | 43/161 (27%)  | 42 (98%)   | 1 (2%)  | 0        | 100         | 100 |
| 2   | AY    | 159/161 (99%) | 159 (100%) | 0       | 0        | 100         | 100 |
| 2   | BJ    | 159/161 (99%) | 159 (100%) | 0       | 0        | 100         | 100 |
| 2   | BL    | 159/161 (99%) | 155 (98%)  | 4 (2%)  | 0        | 100         | 100 |
| 2   | BN    | 159/161 (99%) | 157 (99%)  | 2 (1%)  | 0        | 100         | 100 |
| 2   | BQ    | 159/161 (99%) | 156 (98%)  | 3 (2%)  | 0        | 100         | 100 |
| 2   | BT    | 159/161 (99%) | 155 (98%)  | 4 (2%)  | 0        | 100         | 100 |
| 2   | BW    | 159/161 (99%) | 157 (99%)  | 2 (1%)  | 0        | 100         | 100 |
| 2   | CH    | 13/161 (8%)   | 12 (92%)   | 1 (8%)  | 0        | 100         | 100 |
| 2   | CS    | 159/161 (99%) | 156 (98%)  | 3 (2%)  | 0        | 100         | 100 |
| 2   | CU    | 159/161 (99%) | 154 (97%)  | 5 (3%)  | 0        | 100         | 100 |
| 2   | CW    | 159/161 (99%) | 153 (96%)  | 6 (4%)  | 0        | 100         | 100 |
| 2   | CZ    | 159/161 (99%) | 147 (92%)  | 12 (8%) | 0        | 100         | 100 |
| 2   | DB    | 159/161 (99%) | 149 (94%)  | 9 (6%)  | 1 (1%)   | 21          | 42  |
| 2   | DD    | 159/161 (99%) | 154 (97%)  | 5 (3%)  | 0        | 100         | 100 |
| 2   | DK    | 142/161 (88%) | 139 (98%)  | 3 (2%)  | 0        | 100         | 100 |
| 2   | DM    | 152/161 (94%) | 149 (98%)  | 3 (2%)  | 0        | 100         | 100 |
| 3   | AE    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 3   | BM    | 158/161 (98%) | 157 (99%)  | 1 (1%)  | 0        | 100         | 100 |
| 4   | BS    | 167/169 (99%) | 161 (96%)  | 6 (4%)  | 0        | 100         | 100 |
| 5   | BA    | 65/67 (97%)   | 64 (98%)   | 1 (2%)  | 0        | 100         | 100 |
| 5   | BB    | 65/67 (97%)   | 65 (100%)  | 0       | 0        | 100         | 100 |
| 5   | DF    | 40/67 (60%)   | 38 (95%)   | 2 (5%)  | 0        | 100         | 100 |
| 6   | BD    | 846/896 (94%) | 803 (95%)  | 43 (5%) | 0        | 100         | 100 |
| 6   | CM    | 753/896 (84%) | 703 (93%)  | 50 (7%) | 0        | 100         | 100 |
| 7   | BF    | 34/121 (28%)  | 30 (88%)   | 4 (12%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed         | Favoured   | Allowed  | Outliers | Percentiles |     |
|-----|-------|------------------|------------|----------|----------|-------------|-----|
| 7   | CO    | 34/121 (28%)     | 34 (100%)  | 0        | 0        | 100         | 100 |
| 8   | BG    | 55/249 (22%)     | 52 (94%)   | 3 (6%)   | 0        | 100         | 100 |
| 8   | CP    | 55/249 (22%)     | 51 (93%)   | 4 (7%)   | 0        | 100         | 100 |
| 8   | DH    | 12/249 (5%)      | 9 (75%)    | 3 (25%)  | 0        | 100         | 100 |
| 9   | BH    | 296/317 (93%)    | 283 (96%)  | 12 (4%)  | 1 (0%)   | 36          | 58  |
| 9   | CQ    | 280/317 (88%)    | 266 (95%)  | 13 (5%)  | 1 (0%)   | 30          | 51  |
| 9   | DI    | 265/317 (84%)    | 252 (95%)  | 12 (4%)  | 1 (0%)   | 30          | 51  |
| 9   | EA    | 5/317 (2%)       | 4 (80%)    | 1 (20%)  | 0        | 100         | 100 |
| All | All   | 9332/11825 (79%) | 9053 (97%) | 274 (3%) | 5 (0%)   | 49          | 70  |

All (5) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | BH    | 176 | VAL  |
| 9   | CQ    | 176 | VAL  |
| 1   | DL    | 143 | SER  |
| 2   | DB    | 75  | THR  |
| 9   | DI    | 298 | ILE  |

### 5.3.2 Protein sidechains [i](#)

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

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

76 ligands are modelled in this entry.

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

| Mol | Type | Chain | Res | Link | Bond lengths |      |             | Bond angles |      |             |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
|     |      |       |     |      | Counts       | RMSZ | # $ Z  > 2$ | Counts      | RMSZ | # $ Z  > 2$ |
| 10  | CYC  | BX    | 200 | 1    | 46,46,46     | 0.23 | 0           | 63,67,67    | 0.70 | 3 (4%)      |
| 10  | CYC  | AH    | 200 | 1    | 46,46,46     | 0.23 | 0           | 63,67,67    | 0.66 | 3 (4%)      |
| 10  | CYC  | BD    | 902 | 6    | 46,46,46     | 0.24 | 0           | 63,67,67    | 0.71 | 2 (3%)      |
| 10  | CYC  | AL    | 200 | 2    | 46,46,46     | 0.23 | 0           | 63,67,67    | 0.64 | 2 (3%)      |
| 10  | CYC  | CC    | 200 | 1    | 46,46,46     | 0.19 | 0           | 63,67,67    | 0.54 | 2 (3%)      |
| 10  | CYC  | DN    | 200 | 1    | 46,46,46     | 0.28 | 0           | 63,67,67    | 0.71 | 2 (3%)      |
| 10  | CYC  | BV    | 200 | 1    | 46,46,46     | 0.20 | 0           | 63,67,67    | 0.67 | 2 (3%)      |
| 10  | CYC  | BP    | 200 | 1    | 46,46,46     | 0.24 | 0           | 63,67,67    | 0.70 | 3 (4%)      |
| 10  | CYC  | AP    | 200 | 1    | 46,46,46     | 0.21 | 0           | 63,67,67    | 0.66 | 3 (4%)      |
| 10  | CYC  | BK    | 200 | 1    | 46,46,46     | 0.21 | 0           | 63,67,67    | 0.42 | 1 (1%)      |
| 10  | CYC  | BL    | 200 | 2    | 46,46,46     | 0.24 | 0           | 63,67,67    | 0.82 | 3 (4%)      |
| 10  | CYC  | AX    | 200 | 1    | 46,46,46     | 0.22 | 0           | 63,67,67    | 0.70 | 3 (4%)      |
| 10  | CYC  | BI    | 200 | 1    | 46,46,46     | 0.24 | 0           | 63,67,67    | 0.47 | 1 (1%)      |
| 10  | CYC  | DS    | 200 | 1    | 46,46,46     | 0.26 | 0           | 63,67,67    | 0.75 | 2 (3%)      |
| 10  | CYC  | DT    | 200 | 2    | 46,46,46     | 0.27 | 0           | 63,67,67    | 0.78 | 4 (6%)      |
| 10  | CYC  | DC    | 200 | 1    | 46,46,46     | 0.31 | 0           | 63,67,67    | 0.73 | 2 (3%)      |
| 10  | CYC  | CD    | 200 | 2    | 46,46,46     | 0.29 | 0           | 63,67,67    | 1.09 | 3 (4%)      |
| 10  | CYC  | AF    | 200 | 2    | 46,46,46     | 0.26 | 0           | 63,67,67    | 0.87 | 3 (4%)      |
| 10  | CYC  | AR    | 200 | -    | 46,46,46     | 0.21 | 0           | 63,67,67    | 0.58 | 1 (1%)      |
| 10  | CYC  | CE    | 200 | 1    | 46,46,46     | 0.22 | 0           | 63,67,67    | 0.72 | 3 (4%)      |
| 10  | CYC  | AE    | 200 | 3    | 46,46,46     | 0.21 | 0           | 63,67,67    | 0.62 | 2 (3%)      |
| 10  | CYC  | AW    | 200 | 2    | 46,46,46     | 0.24 | 0           | 63,67,67    | 0.85 | 2 (3%)      |
| 10  | CYC  | BW    | 200 | 2    | 46,46,46     | 0.21 | 0           | 63,67,67    | 0.75 | 2 (3%)      |
| 10  | CYC  | BS    | 200 | 4    | 46,46,46     | 0.28 | 0           | 63,67,67    | 0.87 | 3 (4%)      |
| 10  | CYC  | AD    | 200 | 2    | 46,46,46     | 0.23 | 0           | 63,67,67    | 0.63 | 2 (3%)      |
| 10  | CYC  | CS    | 200 | 2    | 46,46,46     | 0.22 | 0           | 63,67,67    | 0.67 | 2 (3%)      |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 10  | CYC  | DK    | 200 | 2    | 46,46,46     | 0.19 | 0        | 63,67,67    | 0.57 | 2 (3%)   |
| 10  | CYC  | DM    | 200 | 2    | 46,46,46     | 0.24 | 0        | 63,67,67    | 0.73 | 3 (4%)   |
| 10  | CYC  | BY    | 200 | 2    | 46,46,46     | 0.27 | 0        | 63,67,67    | 0.86 | 3 (4%)   |
| 10  | CYC  | AI    | 200 | 2    | 46,46,46     | 0.27 | 0        | 63,67,67    | 0.81 | 3 (4%)   |
| 10  | CYC  | AV    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.67 | 2 (3%)   |
| 10  | CYC  | BR    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.64 | 3 (4%)   |
| 10  | CYC  | BQ    | 200 | 2    | 46,46,46     | 0.24 | 0        | 63,67,67    | 0.91 | 3 (4%)   |
| 10  | CYC  | AA    | 200 | 1    | 46,46,46     | 0.21 | 0        | 63,67,67    | 0.61 | 3 (4%)   |
| 10  | CYC  | AQ    | 200 | 2    | 46,46,46     | 0.26 | 0        | 63,67,67    | 0.84 | 3 (4%)   |
| 10  | CYC  | CG    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.68 | 3 (4%)   |
| 10  | CYC  | CM    | 901 | 2    | 46,46,46     | 0.29 | 0        | 63,67,67    | 0.97 | 3 (4%)   |
| 10  | CYC  | CZ    | 200 | 2    | 46,46,46     | 0.23 | 0        | 63,67,67    | 0.79 | 2 (3%)   |
| 11  | 45D  | BH    | 400 | -    | 43,43,43     | 0.97 | 2 (4%)   | 54,60,60    | 1.57 | 12 (22%) |
| 11  | 45D  | CQ    | 400 | -    | 43,43,43     | 0.97 | 1 (2%)   | 54,60,60    | 1.50 | 14 (25%) |
| 10  | CYC  | DJ    | 200 | 1    | 46,46,46     | 0.23 | 0        | 63,67,67    | 0.46 | 1 (1%)   |
| 10  | CYC  | DL    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.72 | 2 (3%)   |
| 10  | CYC  | DQ    | 200 | 1    | 46,46,46     | 0.23 | 0        | 63,67,67    | 0.48 | 1 (1%)   |
| 10  | CYC  | CH    | 200 | 2    | 46,46,46     | 0.21 | 0        | 63,67,67    | 0.64 | 2 (3%)   |
| 10  | CYC  | AC    | 200 | 1    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.55 | 1 (1%)   |
| 10  | CYC  | CT    | 200 | 1    | 46,46,46     | 0.21 | 0        | 63,67,67    | 0.76 | 3 (4%)   |
| 10  | CYC  | CY    | 200 | 1    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.65 | 2 (3%)   |
| 10  | CYC  | AU    | 200 | 2    | 46,46,46     | 0.27 | 0        | 63,67,67    | 1.08 | 3 (4%)   |
| 10  | CYC  | AO    | 200 | 2    | 46,46,46     | 0.23 | 0        | 63,67,67    | 0.82 | 3 (4%)   |
| 10  | CYC  | AZ    | 200 | 1    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.52 | 2 (3%)   |
| 10  | CYC  | BT    | 200 | 2    | 46,46,46     | 0.26 | 0        | 63,67,67    | 0.78 | 2 (3%)   |
| 10  | CYC  | AB    | 200 | 2    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.65 | 2 (3%)   |
| 10  | CYC  | AY    | 200 | 2    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.58 | 2 (3%)   |
| 10  | CYC  | BZ    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.70 | 3 (4%)   |
| 10  | CYC  | AJ    | 200 | 1    | 46,46,46     | 0.21 | 0        | 63,67,67    | 0.66 | 3 (4%)   |
| 10  | CYC  | CV    | 200 | 1    | 46,46,46     | 0.25 | 0        | 63,67,67    | 0.61 | 2 (3%)   |
| 10  | CYC  | CR    | 200 | 1    | 46,46,46     | 0.28 | 0        | 63,67,67    | 0.73 | 3 (4%)   |
| 10  | CYC  | DD    | 200 | 2    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.56 | 2 (3%)   |
| 10  | CYC  | DU    | 200 | 1    | 46,46,46     | 0.31 | 0        | 63,67,67    | 0.74 | 2 (3%)   |
| 10  | CYC  | DO    | 200 | 2    | 46,46,46     | 0.25 | 0        | 63,67,67    | 0.85 | 3 (4%)   |
| 10  | CYC  | AN    | 200 | 1    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.72 | 3 (4%)   |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 10  | CYC  | AK    | 200 | 4    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.79 | 3 (4%)   |
| 10  | CYC  | DV    | 200 | 2    | 46,46,46     | 0.21 | 0        | 63,67,67    | 0.55 | 2 (3%)   |
| 10  | CYC  | DB    | 200 | 2    | 46,46,46     | 0.26 | 0        | 63,67,67    | 0.84 | 4 (6%)   |
| 11  | 45D  | DI    | 400 | -    | 43,43,43     | 0.96 | 2 (4%)   | 54,60,60    | 1.50 | 12 (22%) |
| 10  | CYC  | CU    | 200 | 2    | 46,46,46     | 0.26 | 0        | 63,67,67    | 0.79 | 3 (4%)   |
| 10  | CYC  | DR    | 200 | 2    | 46,46,46     | 0.28 | 0        | 63,67,67    | 0.93 | 3 (4%)   |
| 10  | CYC  | CW    | 200 | 2    | 46,46,46     | 0.28 | 0        | 63,67,67    | 0.93 | 3 (4%)   |
| 10  | CYC  | BJ    | 200 | 2    | 46,46,46     | 0.20 | 0        | 63,67,67    | 0.61 | 2 (3%)   |
| 10  | CYC  | DA    | 200 | 1    | 46,46,46     | 0.22 | 0        | 63,67,67    | 0.75 | 2 (3%)   |
| 10  | CYC  | BN    | 200 | 2    | 46,46,46     | 0.26 | 0        | 63,67,67    | 0.88 | 3 (4%)   |
| 11  | 45D  | EA    | 400 | -    | 43,43,43     | 1.00 | 3 (6%)   | 54,60,60    | 1.49 | 10 (18%) |
| 10  | CYC  | CM    | 902 | 6    | 46,46,46     | 0.25 | 0        | 63,67,67    | 0.76 | 2 (3%)   |
| 10  | CYC  | BD    | 901 | 2    | 46,46,46     | 0.25 | 0        | 63,67,67    | 0.87 | 3 (4%)   |
| 10  | CYC  | BM    | 200 | 3    | 46,46,46     | 0.23 | 0        | 63,67,67    | 0.73 | 3 (4%)   |
| 10  | CYC  | CF    | 200 | 2    | 46,46,46     | 0.25 | 0        | 63,67,67    | 0.85 | 4 (6%)   |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions    | Rings   |
|-----|------|-------|-----|------|---------|-------------|---------|
| 10  | CYC  | BX    | 200 | 1    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AH    | 200 | 1    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BD    | 902 | 6    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AL    | 200 | 2    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CC    | 200 | 1    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | DN    | 200 | 1    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BV    | 200 | 1    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BP    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AP    | 200 | 1    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BK    | 200 | 1    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BL    | 200 | 2    | -       | 14/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AX    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BI    | 200 | 1    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DS    | 200 | 1    | -       | 7/26/74/74  | 0/4/4/4 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions    | Rings   |
|-----|------|-------|-----|------|---------|-------------|---------|
| 10  | CYC  | DT    | 200 | 2    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DC    | 200 | 1    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CD    | 200 | 2    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AF    | 200 | 2    | -       | 7/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AR    | 200 | -    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CE    | 200 | 1    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AE    | 200 | 3    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AW    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BW    | 200 | 2    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BS    | 200 | 4    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AD    | 200 | 2    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CS    | 200 | 2    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | DK    | 200 | 2    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | DM    | 200 | 2    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BY    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AI    | 200 | 2    | -       | 7/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AV    | 200 | 1    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BR    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BQ    | 200 | 2    | -       | 9/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AA    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AQ    | 200 | 2    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CG    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CM    | 901 | 2    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CZ    | 200 | 2    | -       | 13/26/74/74 | 0/4/4/4 |
| 11  | 45D  | BH    | 400 | -    | -       | 16/29/69/69 | 0/2/2/2 |
| 11  | 45D  | CQ    | 400 | -    | -       | 15/29/69/69 | 0/2/2/2 |
| 10  | CYC  | DJ    | 200 | 1    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DL    | 200 | 1    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DQ    | 200 | 1    | -       | 16/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CH    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AC    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CT    | 200 | 1    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CY    | 200 | 1    | -       | 13/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AU    | 200 | 2    | -       | 7/26/74/74  | 0/4/4/4 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions    | Rings   |
|-----|------|-------|-----|------|---------|-------------|---------|
| 10  | CYC  | AO    | 200 | 2    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | AZ    | 200 | 1    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BT    | 200 | 2    | -       | 15/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AB    | 200 | 2    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AY    | 200 | 2    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BZ    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AJ    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CV    | 200 | 1    | -       | 5/26/74/74  | 0/4/4/4 |
| 10  | CYC  | CR    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DD    | 200 | 2    | -       | 7/26/74/74  | 0/4/4/4 |
| 10  | CYC  | DU    | 200 | 1    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DO    | 200 | 2    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AN    | 200 | 1    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | AK    | 200 | 4    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DV    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DB    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 11  | 45D  | DI    | 400 | -    | -       | 15/29/69/69 | 0/2/2/2 |
| 10  | CYC  | CU    | 200 | 2    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | DR    | 200 | 2    | -       | 11/26/74/74 | 0/4/4/4 |
| 10  | CYC  | CW    | 200 | 2    | -       | 12/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BJ    | 200 | 2    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | DA    | 200 | 1    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BN    | 200 | 2    | -       | 8/26/74/74  | 0/4/4/4 |
| 11  | 45D  | EA    | 400 | -    | -       | 16/29/69/69 | 0/2/2/2 |
| 10  | CYC  | CM    | 902 | 6    | -       | 7/26/74/74  | 0/4/4/4 |
| 10  | CYC  | BD    | 901 | 2    | -       | 10/26/74/74 | 0/4/4/4 |
| 10  | CYC  | BM    | 200 | 3    | -       | 8/26/74/74  | 0/4/4/4 |
| 10  | CYC  | CF    | 200 | 2    | -       | 10/26/74/74 | 0/4/4/4 |

The worst 5 of 8 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 11  | EA    | 400 | 45D  | C34-C36 | 3.69 | 1.53        | 1.46     |
| 11  | DI    | 400 | 45D  | C34-C36 | 3.51 | 1.53        | 1.46     |
| 11  | BH    | 400 | 45D  | C34-C36 | 3.50 | 1.53        | 1.46     |
| 11  | CQ    | 400 | 45D  | C34-C36 | 3.47 | 1.53        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 11  | BH    | 400 | 45D  | C09-C17 | 2.17 | 1.53        | 1.50     |

The worst 5 of 226 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|------|-------------|----------|
| 10  | AU    | 200 | CYC  | C1D-CHD-C4C | 5.73 | 137.54      | 127.76   |
| 10  | CD    | 200 | CYC  | C1D-CHD-C4C | 5.72 | 137.52      | 127.76   |
| 10  | DR    | 200 | CYC  | C1D-CHD-C4C | 5.66 | 137.42      | 127.76   |
| 10  | CW    | 200 | CYC  | C1B-CHB-C4A | 5.34 | 141.17      | 128.06   |
| 10  | CM    | 901 | CYC  | C1B-CHB-C4A | 5.23 | 140.90      | 128.06   |

There are no chirality outliers.

5 of 800 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 10  | AA    | 200 | CYC  | NA-C4A-CHB-C1B  |
| 10  | AA    | 200 | CYC  | C3A-C4A-CHB-C1B |
| 10  | AA    | 200 | CYC  | NC-C4C-CHD-C1D  |
| 10  | AA    | 200 | CYC  | C3C-C4C-CHD-C1D |
| 10  | AB    | 200 | CYC  | NA-C4A-CHB-C1B  |

There are no ring outliers.

76 monomers are involved in 861 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 10  | BX    | 200 | CYC  | 10      | 0            |
| 10  | AH    | 200 | CYC  | 14      | 0            |
| 10  | BD    | 902 | CYC  | 12      | 0            |
| 10  | AL    | 200 | CYC  | 10      | 0            |
| 10  | CC    | 200 | CYC  | 7       | 0            |
| 10  | DN    | 200 | CYC  | 15      | 0            |
| 10  | BV    | 200 | CYC  | 14      | 0            |
| 10  | BP    | 200 | CYC  | 14      | 0            |
| 10  | AP    | 200 | CYC  | 10      | 0            |
| 10  | BK    | 200 | CYC  | 16      | 0            |
| 10  | BL    | 200 | CYC  | 15      | 0            |
| 10  | AX    | 200 | CYC  | 9       | 0            |
| 10  | BI    | 200 | CYC  | 15      | 0            |
| 10  | DS    | 200 | CYC  | 10      | 0            |
| 10  | DT    | 200 | CYC  | 13      | 0            |
| 10  | DC    | 200 | CYC  | 14      | 0            |

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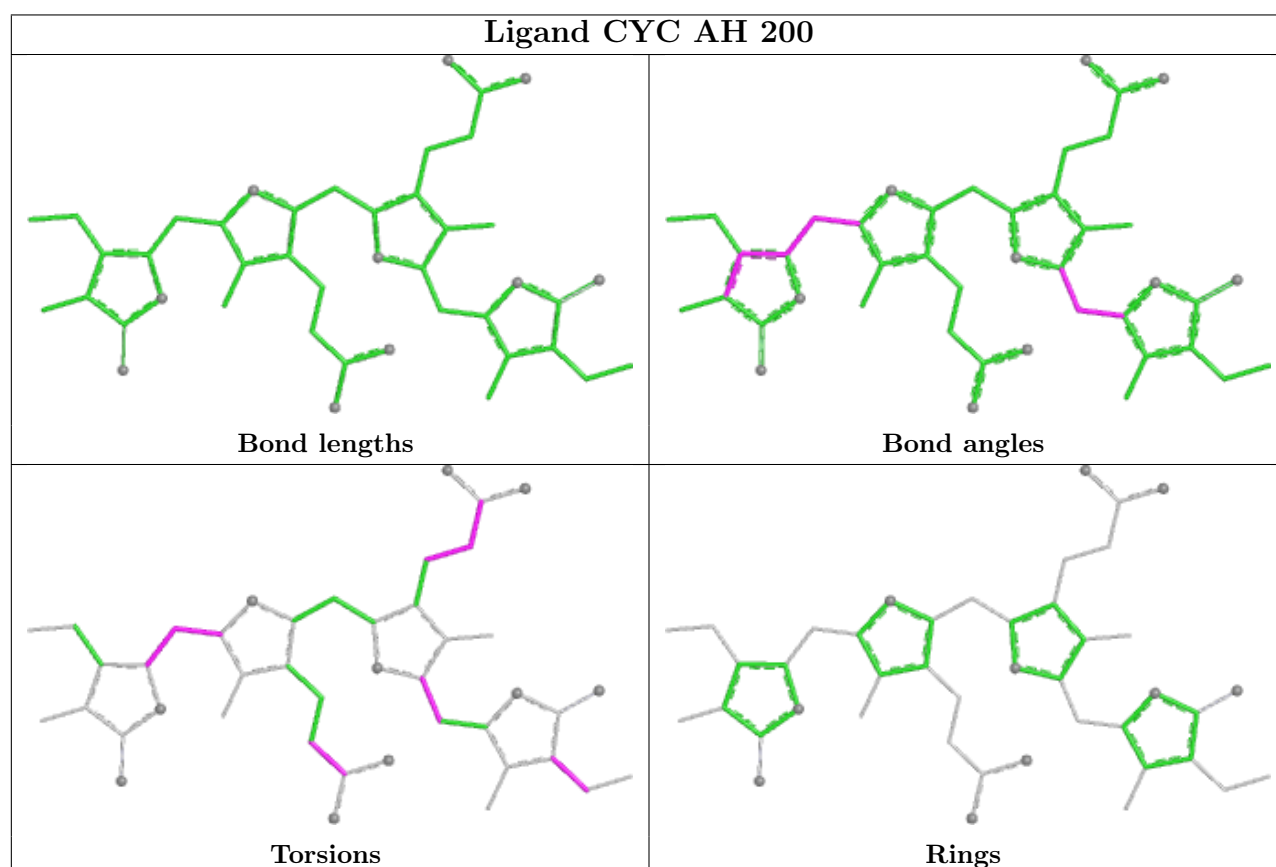
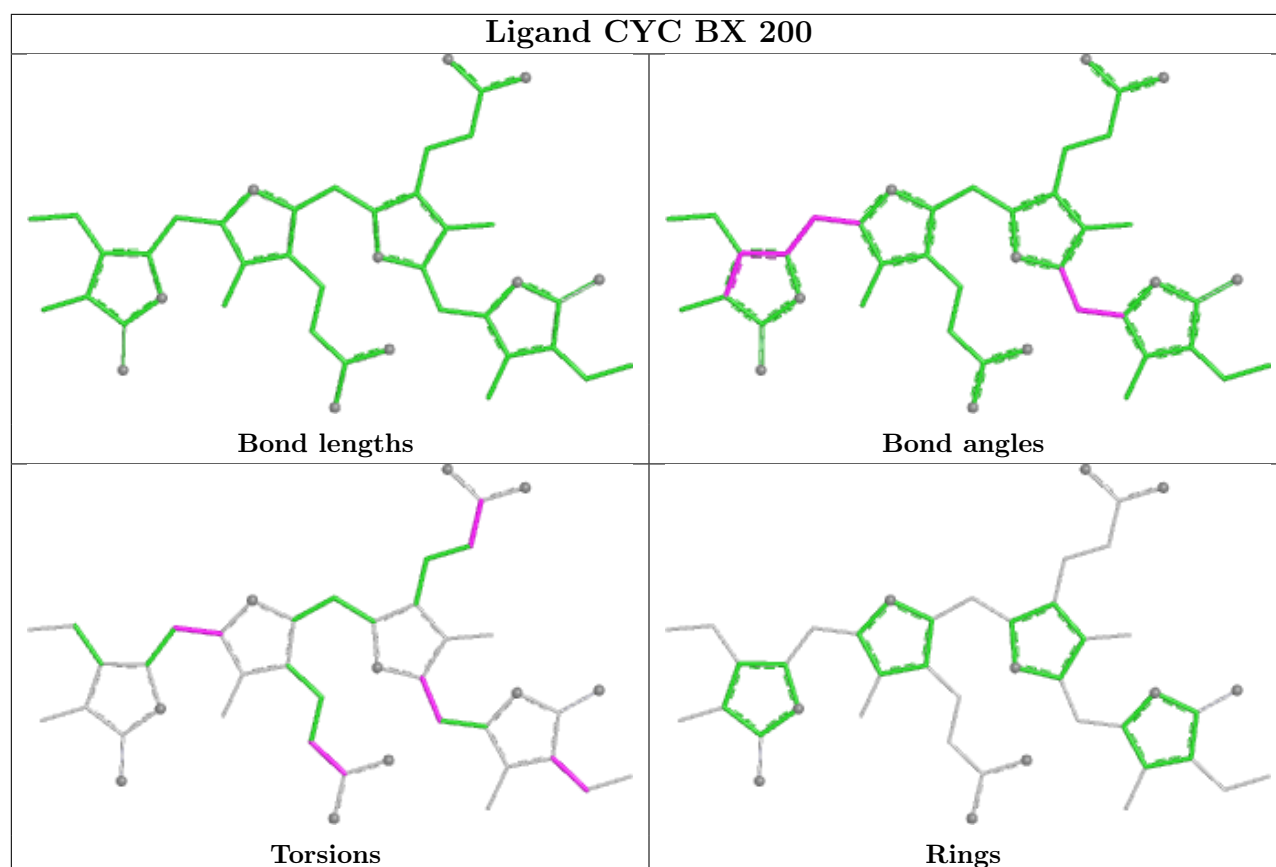
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 10  | CD    | 200 | CYC  | 10      | 0            |
| 10  | AF    | 200 | CYC  | 10      | 0            |
| 10  | AR    | 200 | CYC  | 9       | 0            |
| 10  | CE    | 200 | CYC  | 12      | 0            |
| 10  | AE    | 200 | CYC  | 9       | 0            |
| 10  | AW    | 200 | CYC  | 10      | 0            |
| 10  | BW    | 200 | CYC  | 8       | 0            |
| 10  | BS    | 200 | CYC  | 11      | 0            |
| 10  | AD    | 200 | CYC  | 14      | 0            |
| 10  | CS    | 200 | CYC  | 7       | 0            |
| 10  | DK    | 200 | CYC  | 8       | 0            |
| 10  | DM    | 200 | CYC  | 8       | 0            |
| 10  | BY    | 200 | CYC  | 9       | 0            |
| 10  | AI    | 200 | CYC  | 11      | 0            |
| 10  | AV    | 200 | CYC  | 17      | 0            |
| 10  | BR    | 200 | CYC  | 6       | 0            |
| 10  | BQ    | 200 | CYC  | 15      | 0            |
| 10  | AA    | 200 | CYC  | 15      | 0            |
| 10  | AQ    | 200 | CYC  | 8       | 0            |
| 10  | CG    | 200 | CYC  | 11      | 0            |
| 10  | CM    | 901 | CYC  | 11      | 0            |
| 10  | CZ    | 200 | CYC  | 15      | 0            |
| 11  | BH    | 400 | 45D  | 4       | 0            |
| 11  | CQ    | 400 | 45D  | 6       | 0            |
| 10  | DJ    | 200 | CYC  | 13      | 0            |
| 10  | DL    | 200 | CYC  | 11      | 0            |
| 10  | DQ    | 200 | CYC  | 12      | 0            |
| 10  | CH    | 200 | CYC  | 13      | 0            |
| 10  | AC    | 200 | CYC  | 10      | 0            |
| 10  | CT    | 200 | CYC  | 13      | 0            |
| 10  | CY    | 200 | CYC  | 12      | 0            |
| 10  | AU    | 200 | CYC  | 14      | 0            |
| 10  | AO    | 200 | CYC  | 7       | 0            |
| 10  | AZ    | 200 | CYC  | 8       | 0            |
| 10  | BT    | 200 | CYC  | 10      | 0            |
| 10  | AB    | 200 | CYC  | 14      | 0            |
| 10  | AY    | 200 | CYC  | 15      | 0            |
| 10  | BZ    | 200 | CYC  | 12      | 0            |
| 10  | AJ    | 200 | CYC  | 7       | 0            |
| 10  | CV    | 200 | CYC  | 11      | 0            |
| 10  | CR    | 200 | CYC  | 7       | 0            |
| 10  | DD    | 200 | CYC  | 19      | 0            |

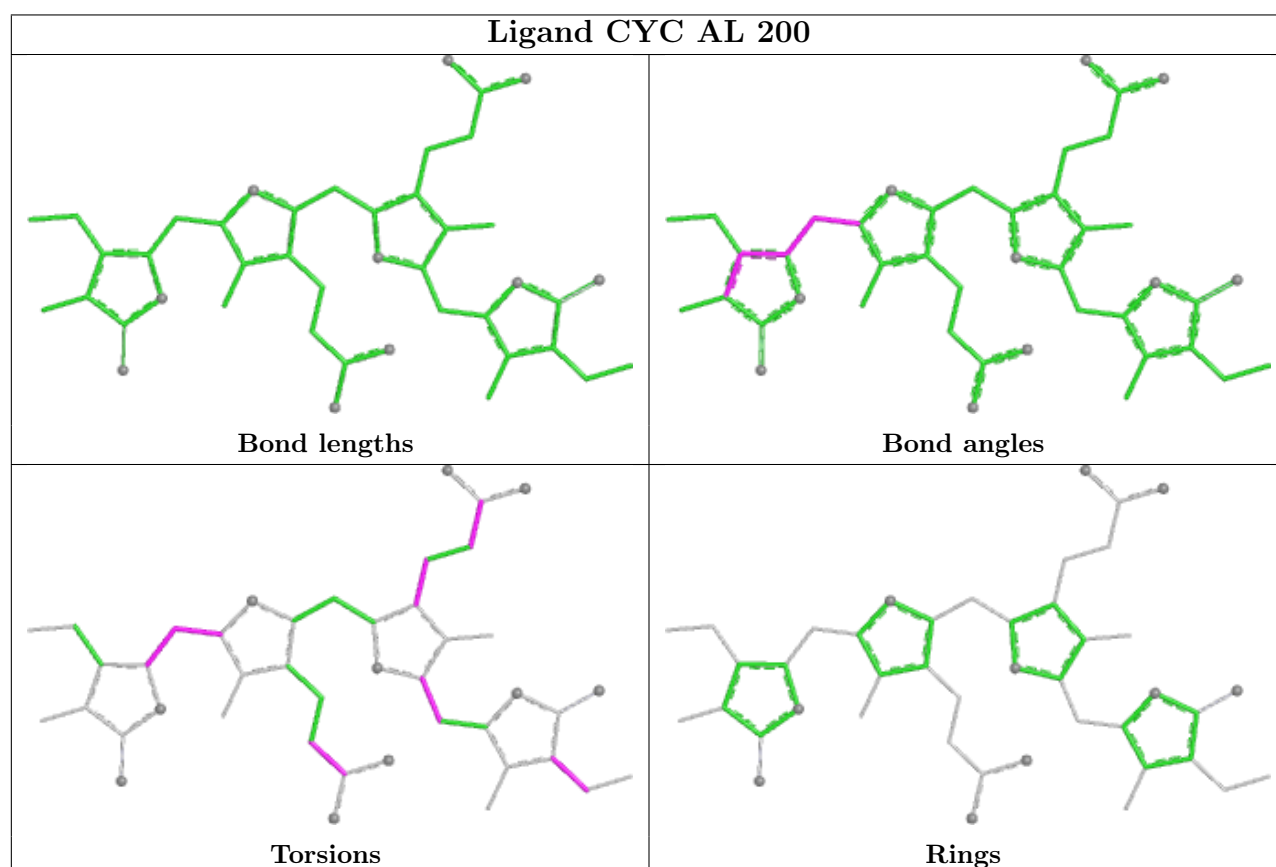
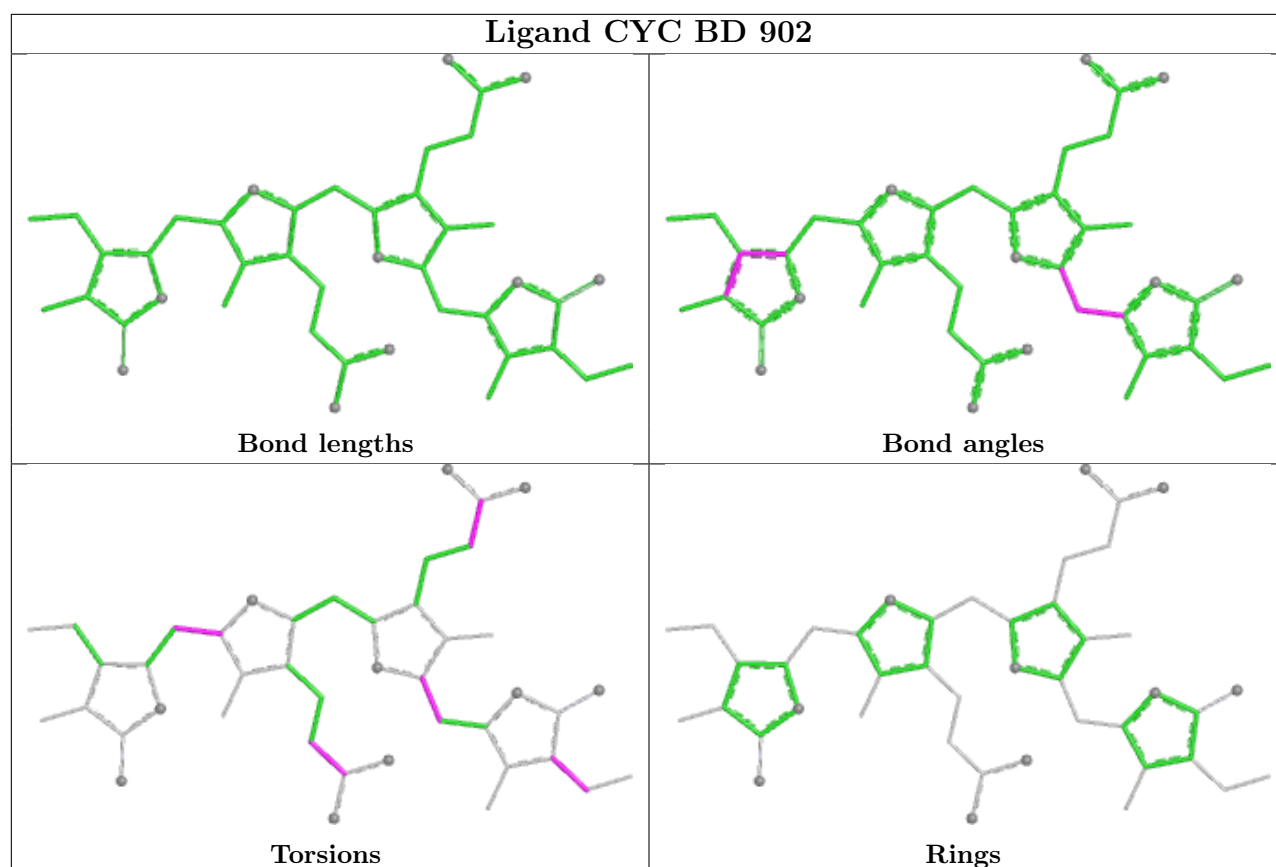
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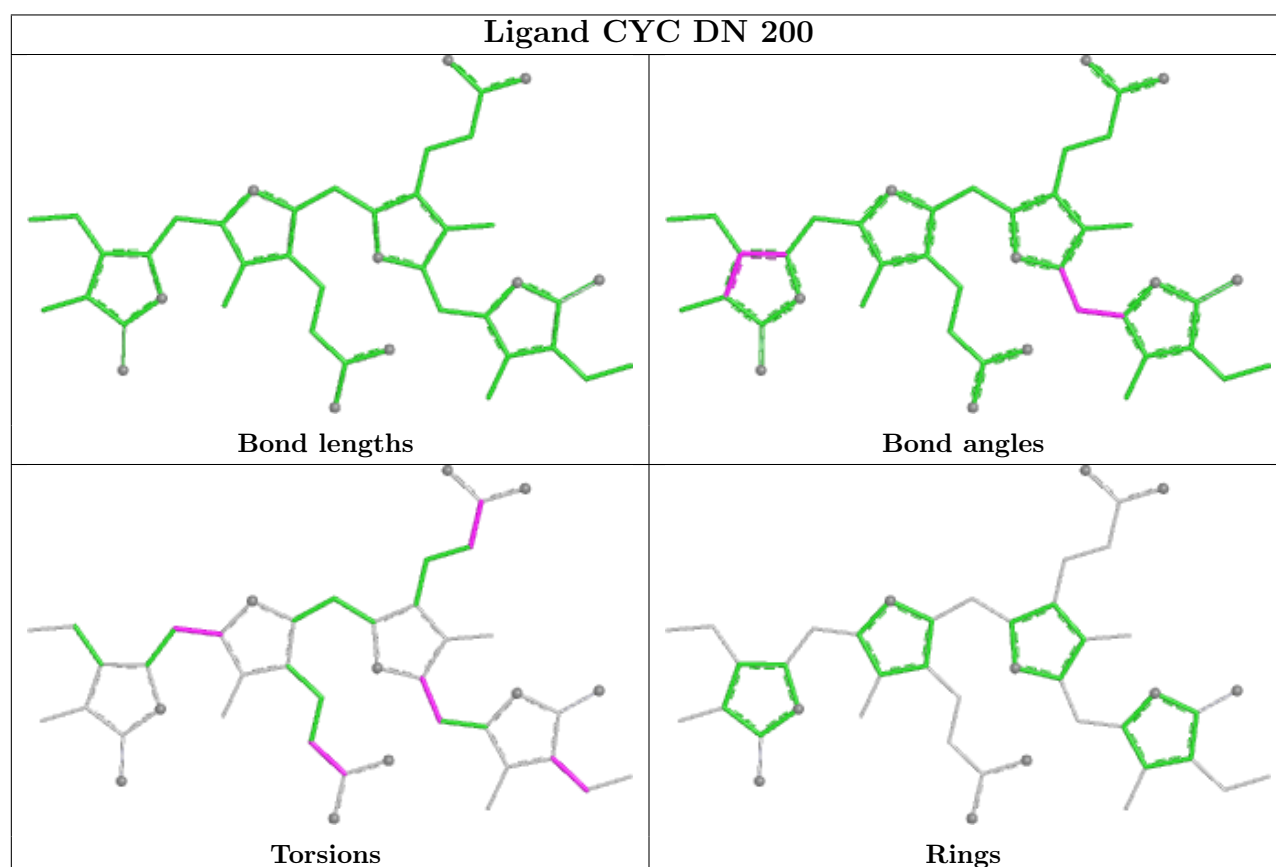
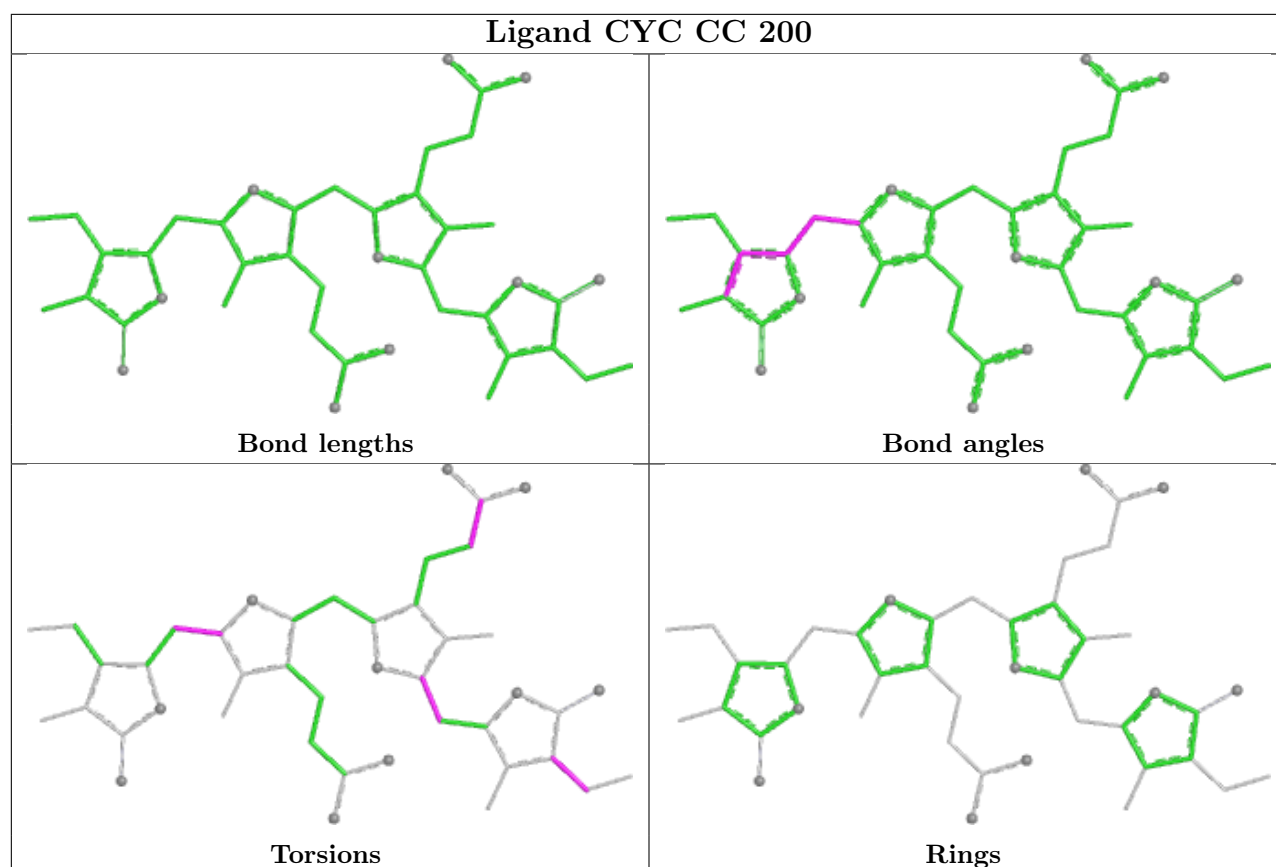
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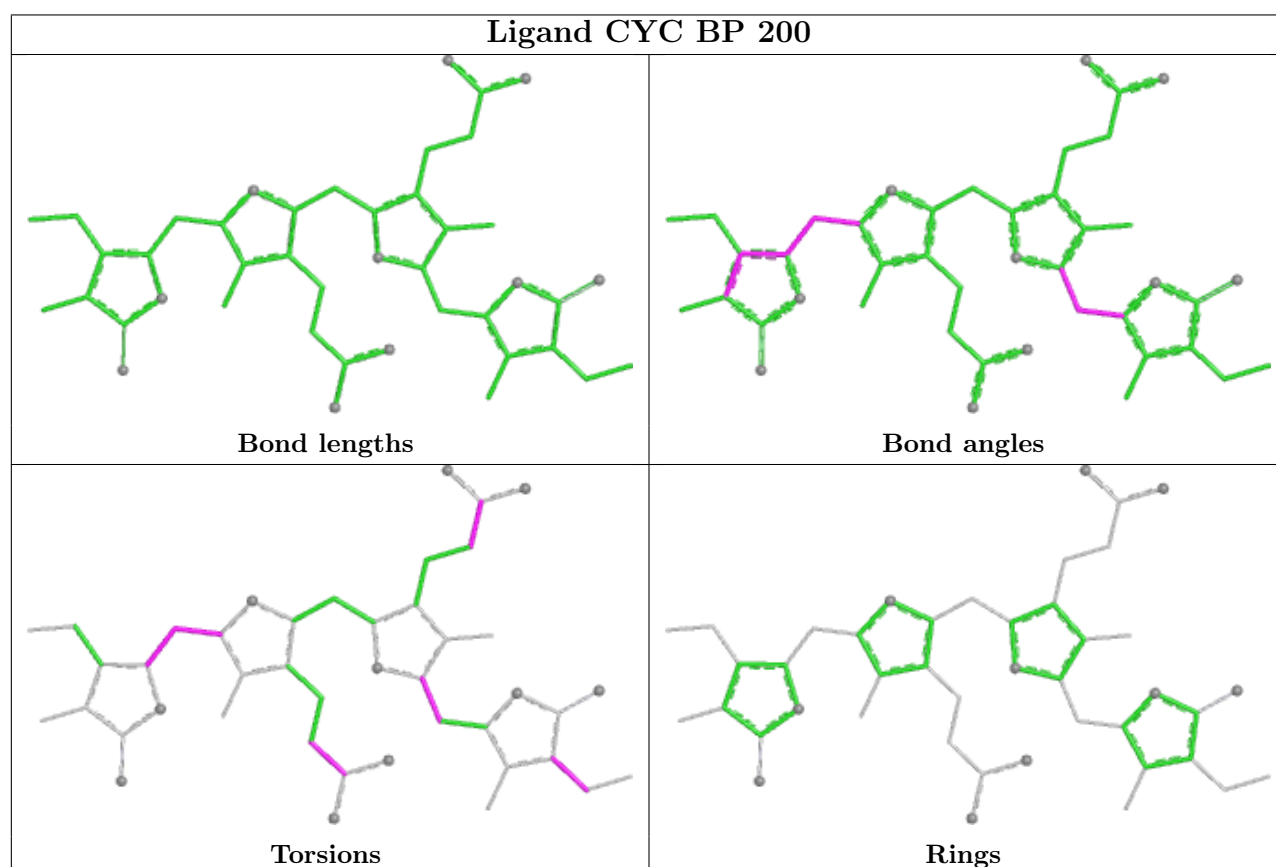
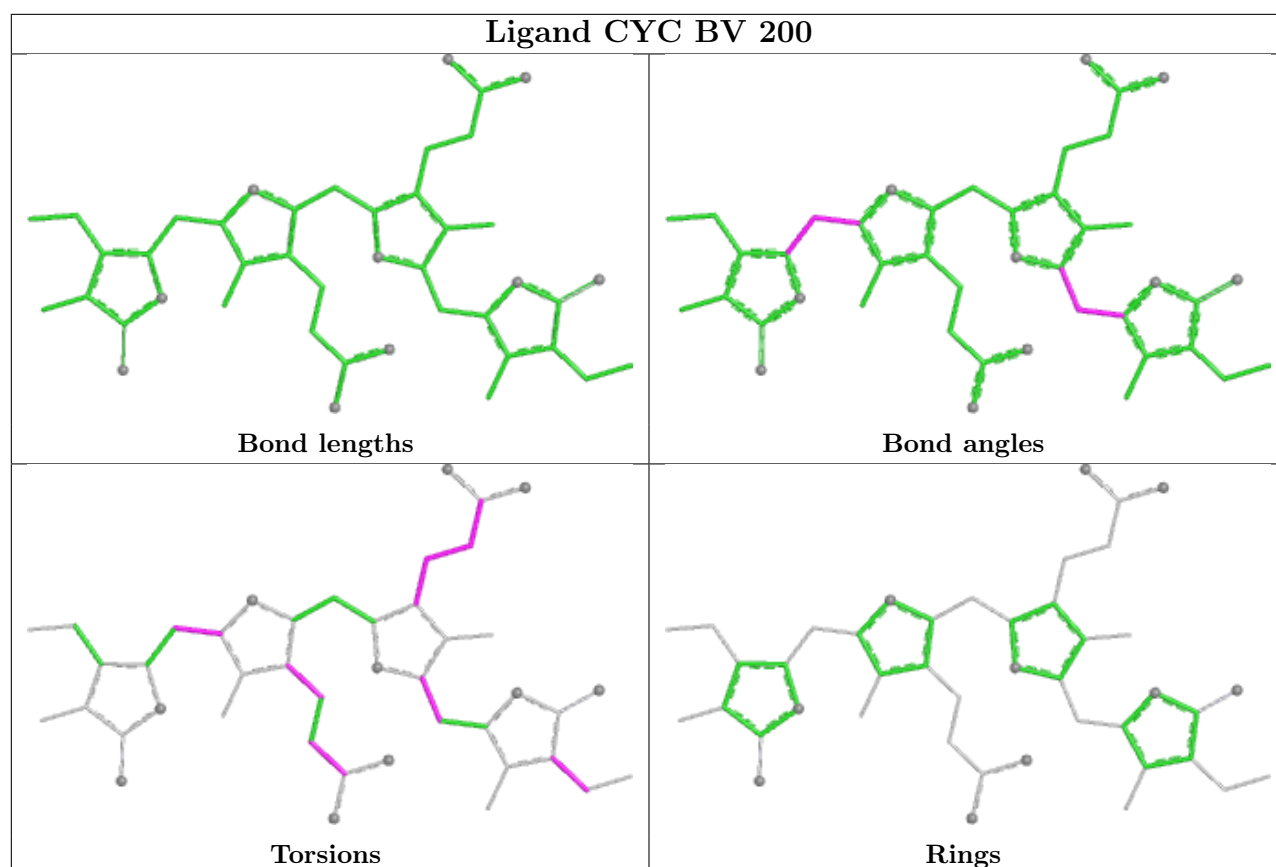
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 10  | DU    | 200 | CYC  | 12      | 0            |
| 10  | DO    | 200 | CYC  | 9       | 0            |
| 10  | AN    | 200 | CYC  | 11      | 0            |
| 10  | AK    | 200 | CYC  | 14      | 0            |
| 10  | DV    | 200 | CYC  | 12      | 0            |
| 10  | DB    | 200 | CYC  | 12      | 0            |
| 11  | DI    | 400 | 45D  | 14      | 0            |
| 10  | CU    | 200 | CYC  | 8       | 0            |
| 10  | DR    | 200 | CYC  | 14      | 0            |
| 10  | CW    | 200 | CYC  | 12      | 0            |
| 10  | BJ    | 200 | CYC  | 11      | 0            |
| 10  | DA    | 200 | CYC  | 10      | 0            |
| 10  | BN    | 200 | CYC  | 16      | 0            |
| 11  | EA    | 400 | 45D  | 12      | 0            |
| 10  | CM    | 902 | CYC  | 12      | 0            |
| 10  | BD    | 901 | CYC  | 11      | 0            |
| 10  | BM    | 200 | CYC  | 11      | 0            |
| 10  | CF    | 200 | CYC  | 10      | 0            |

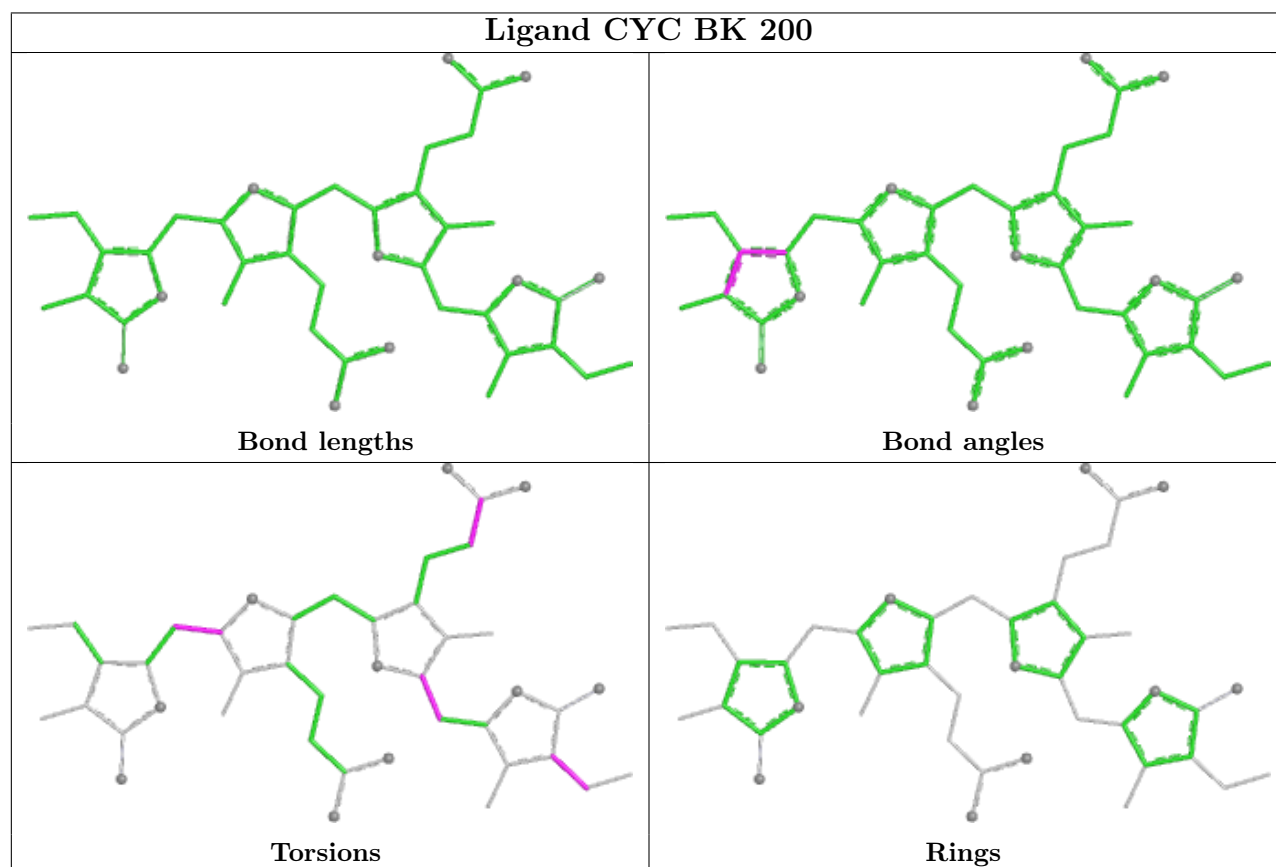
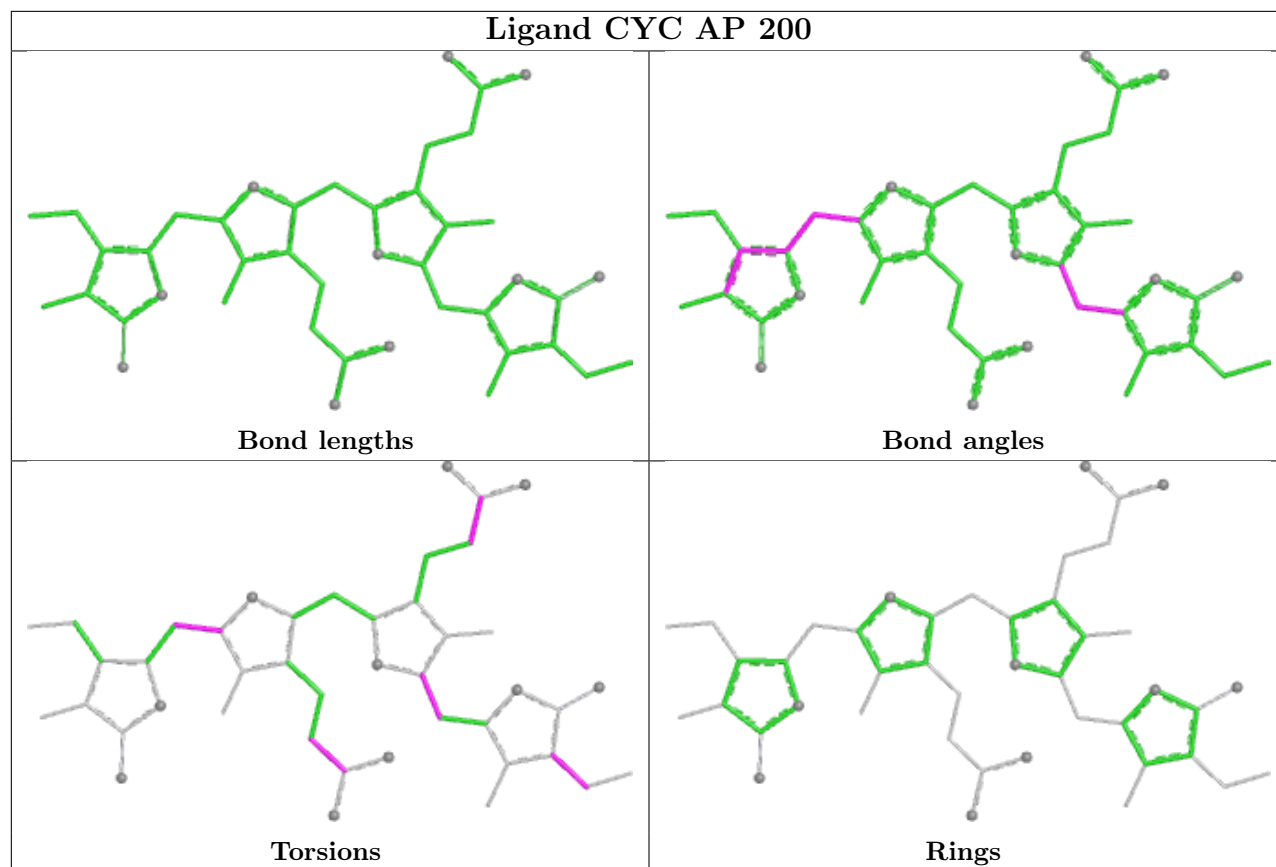
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

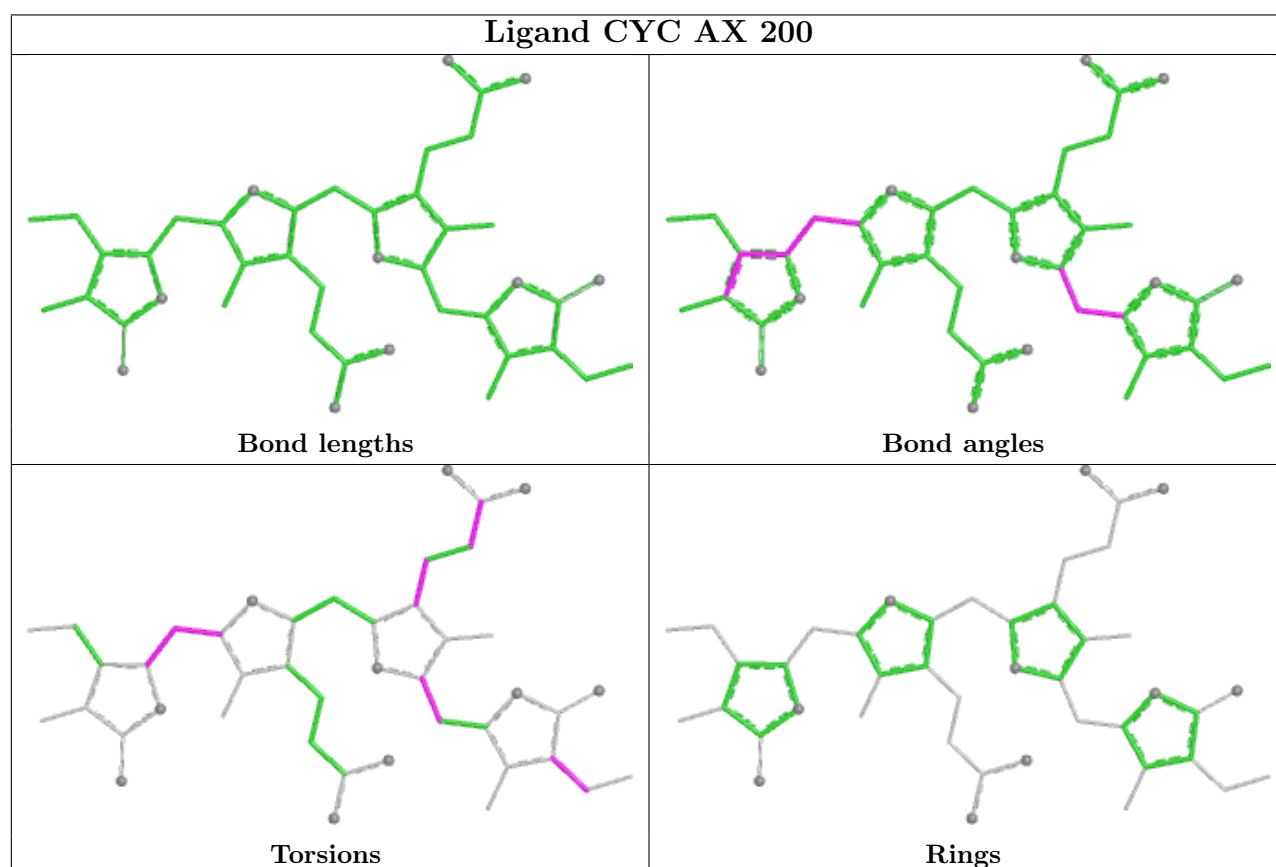
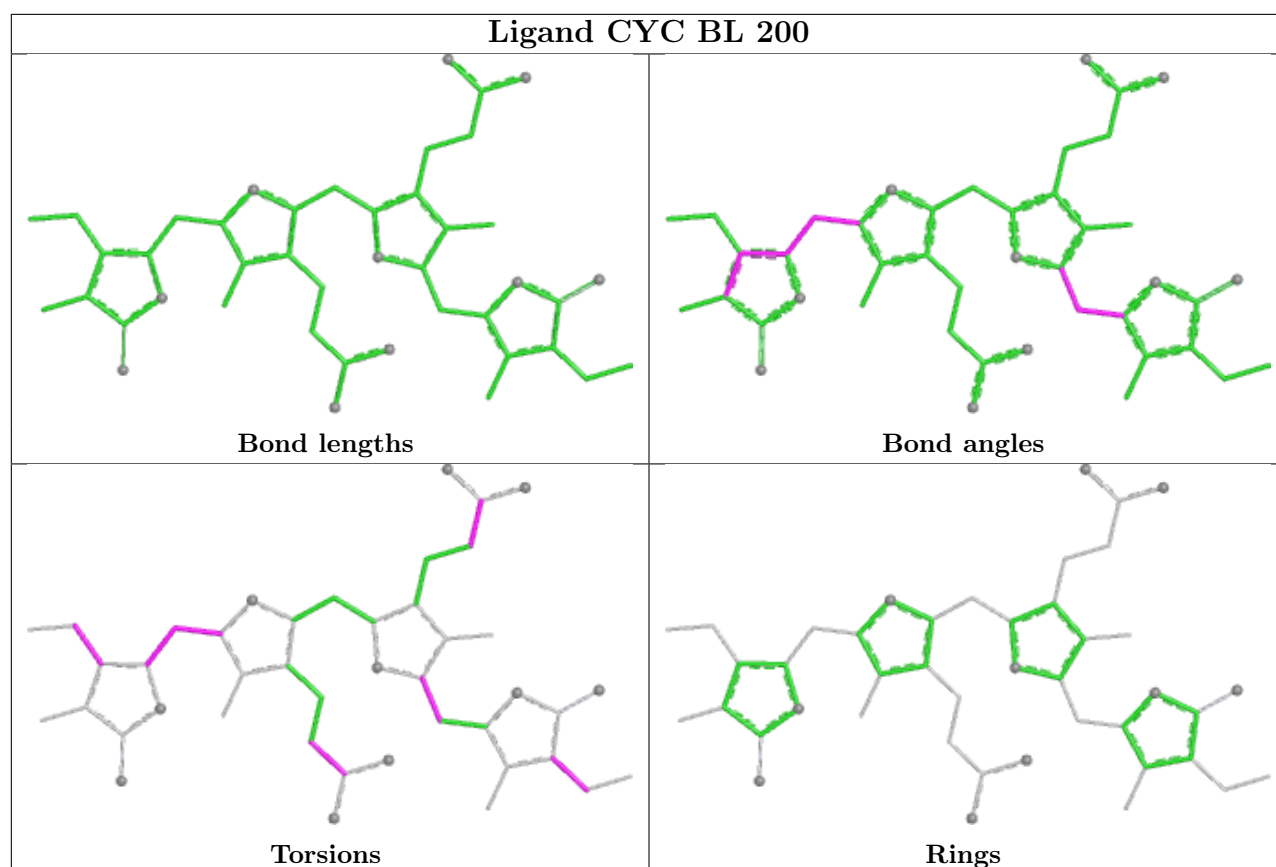


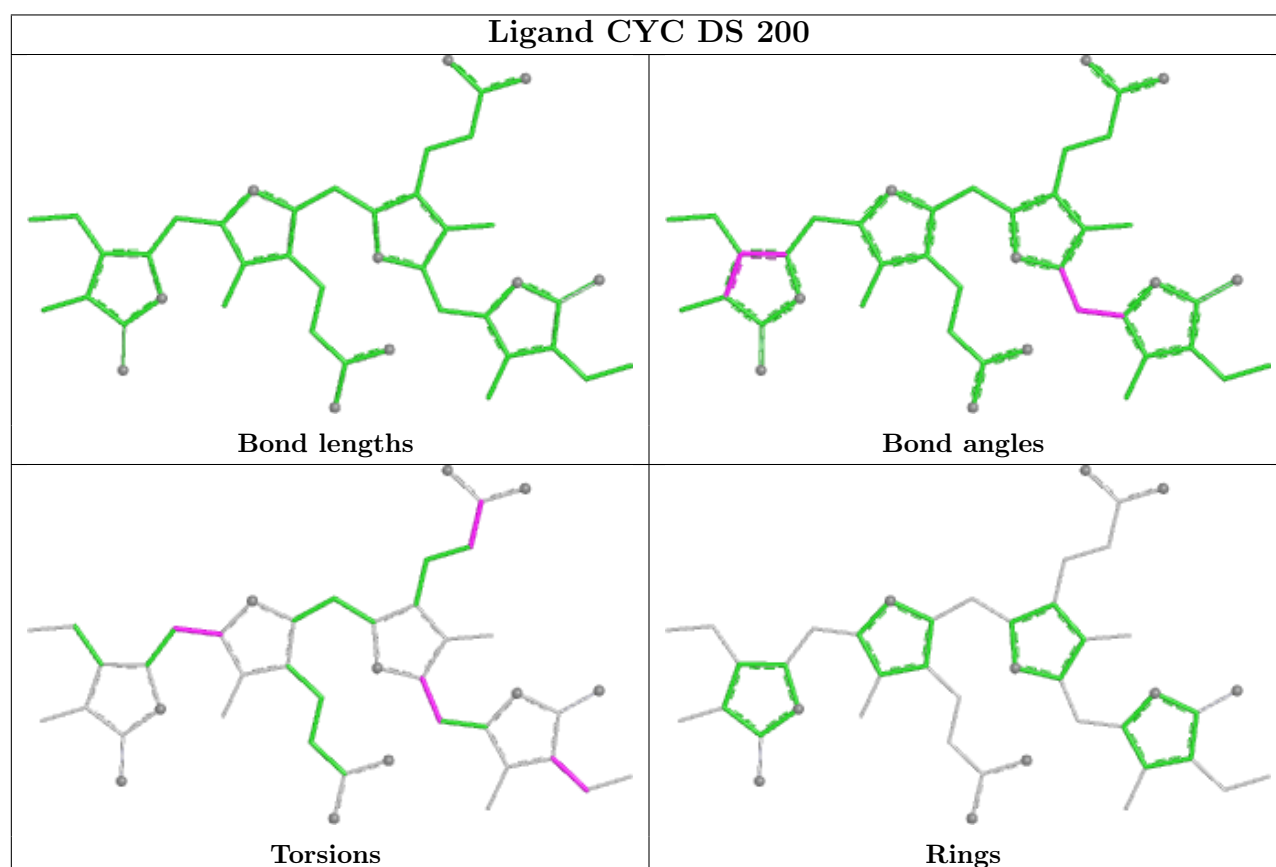
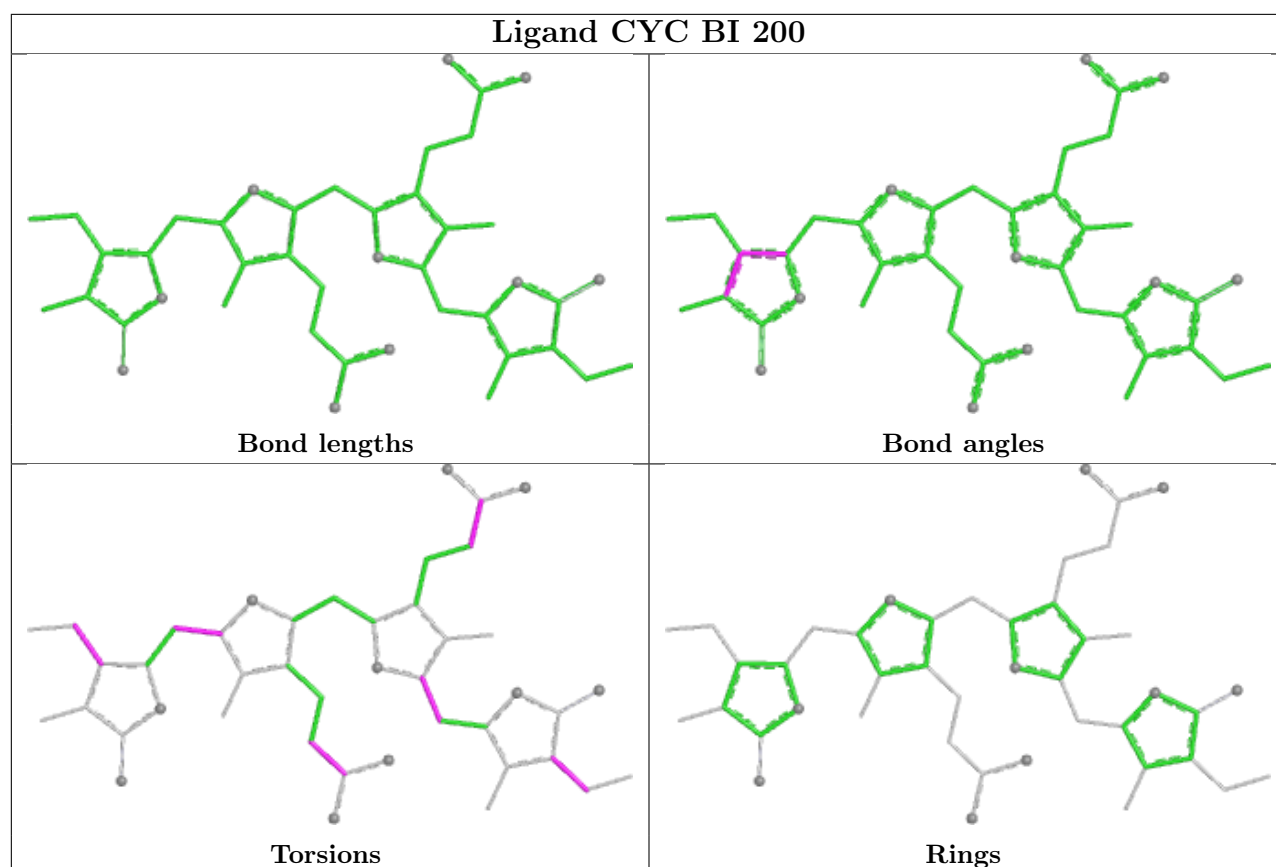


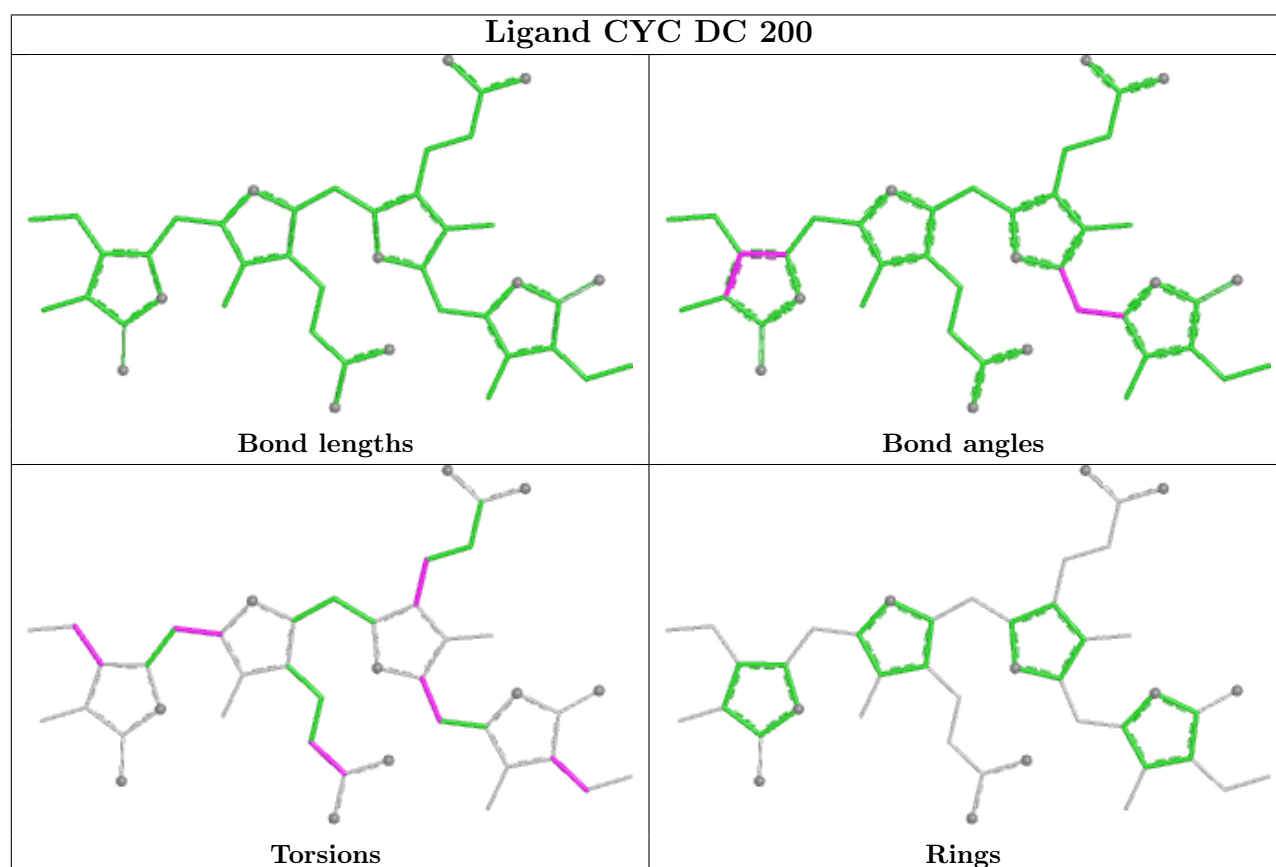
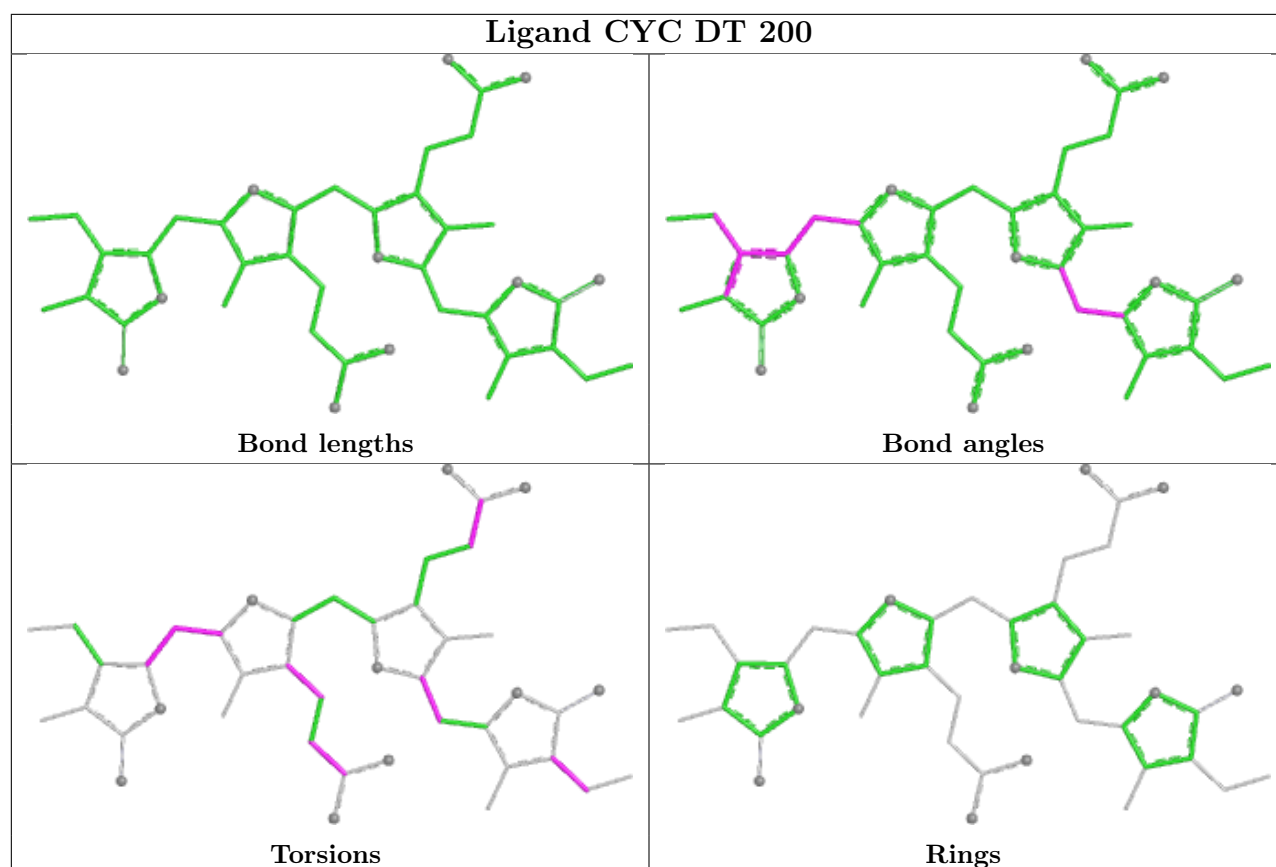


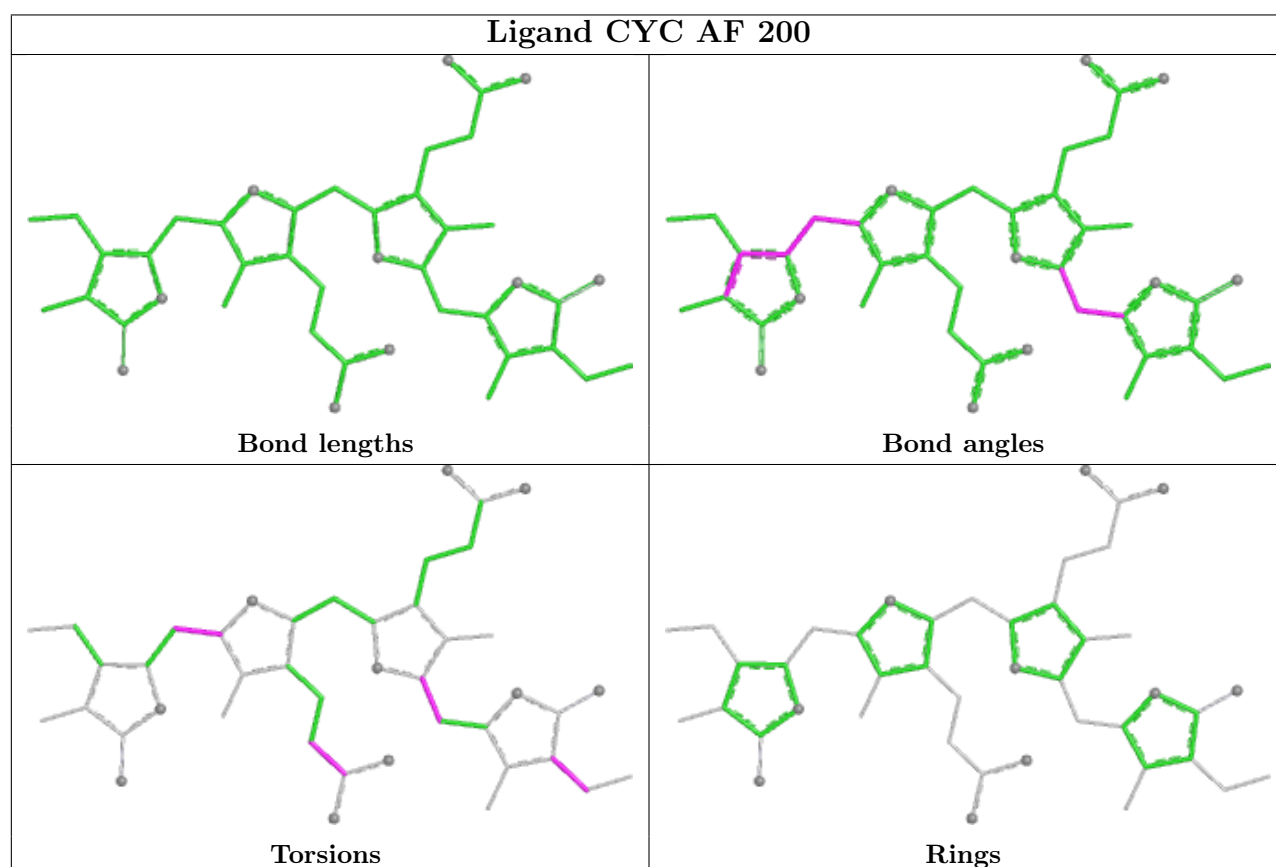
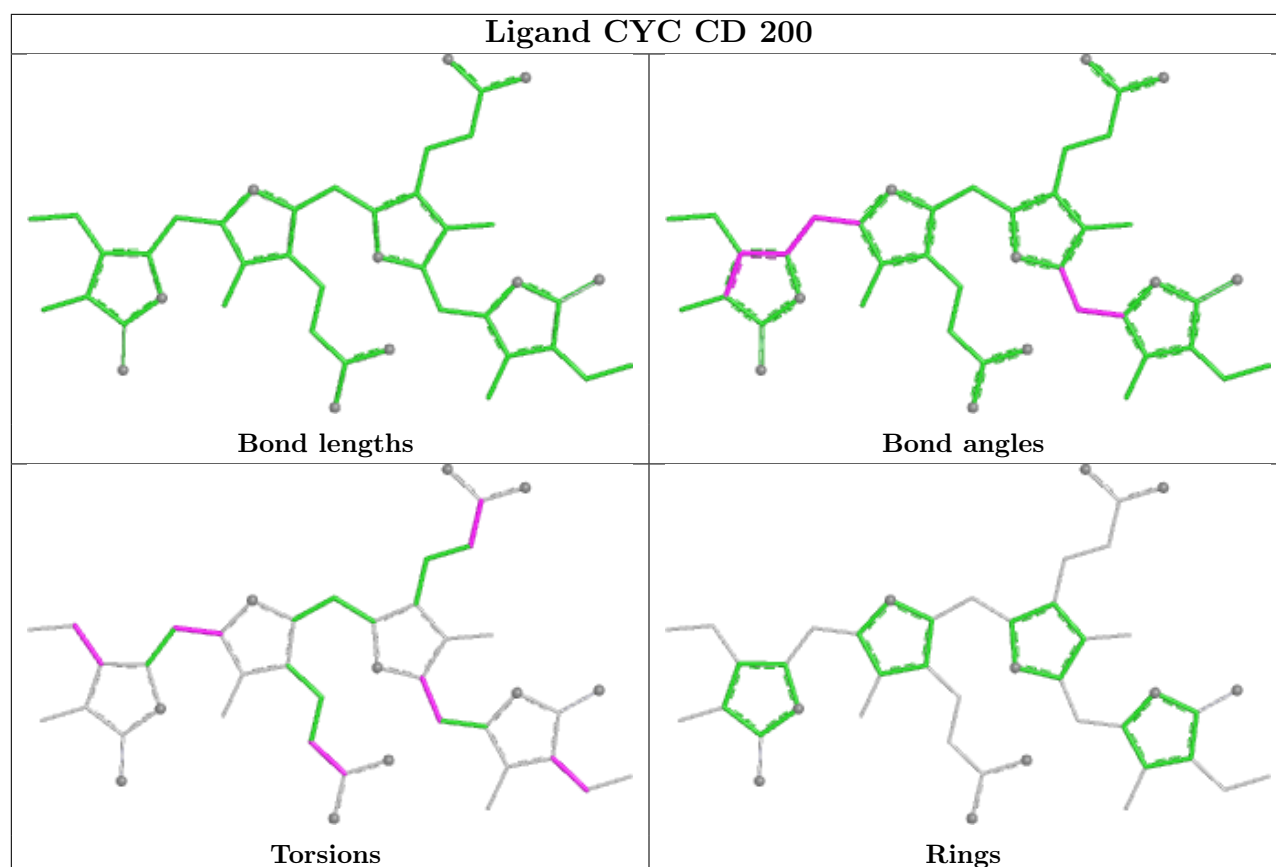


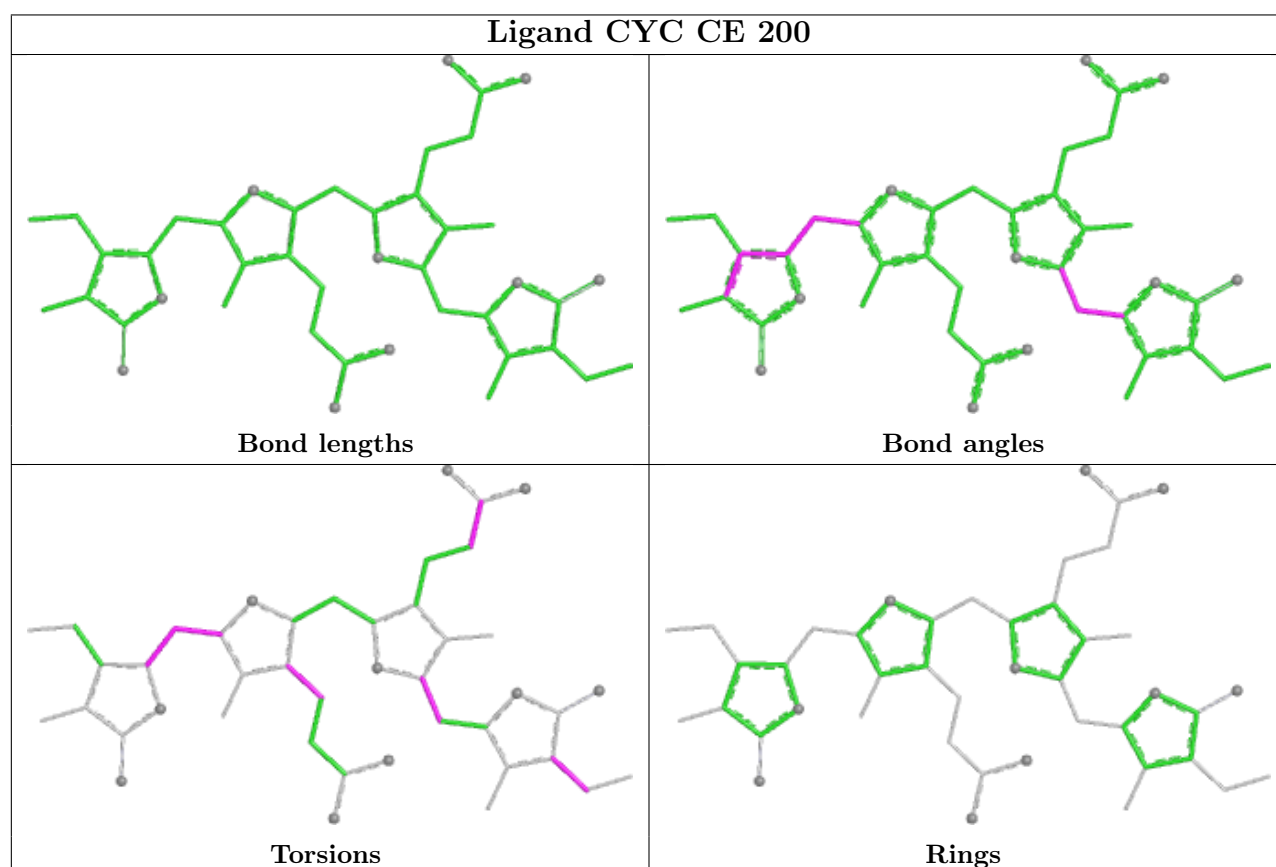
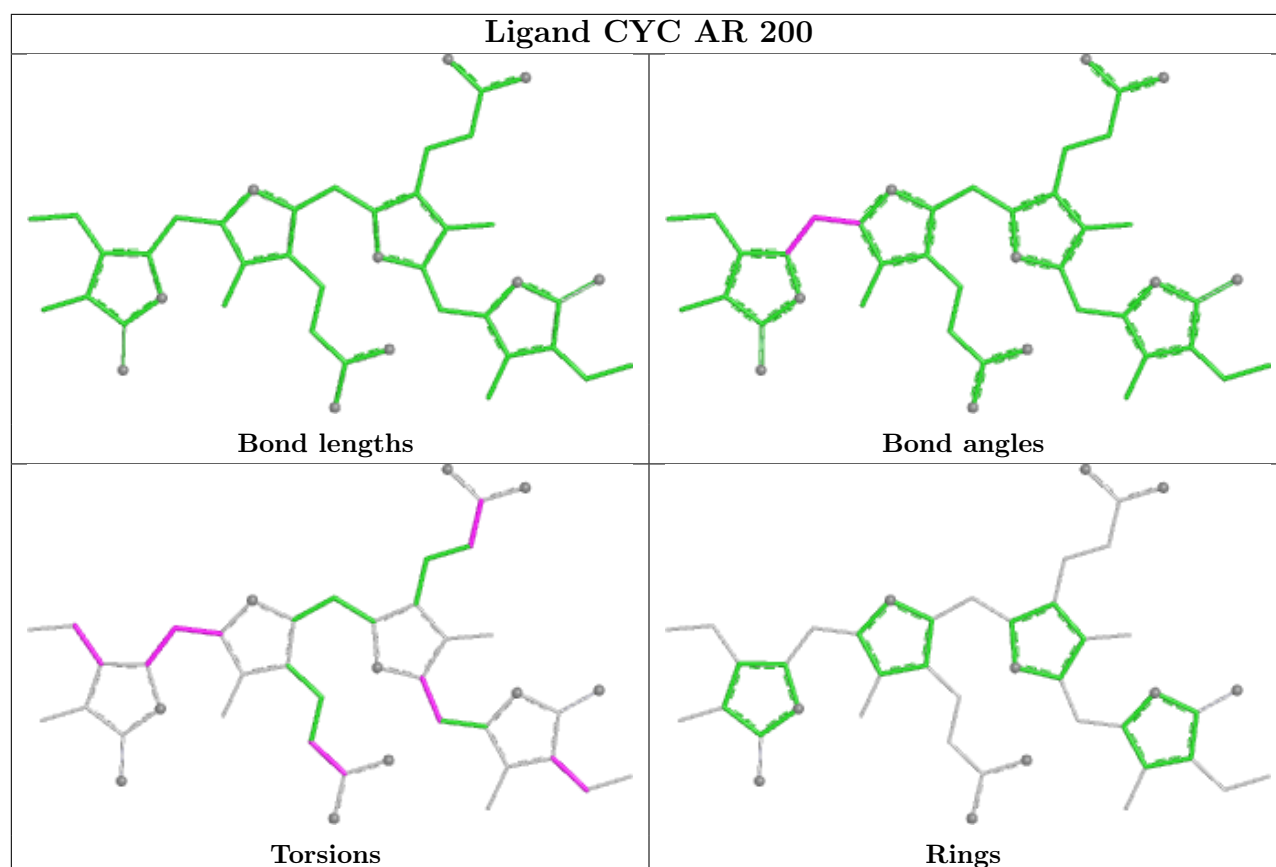


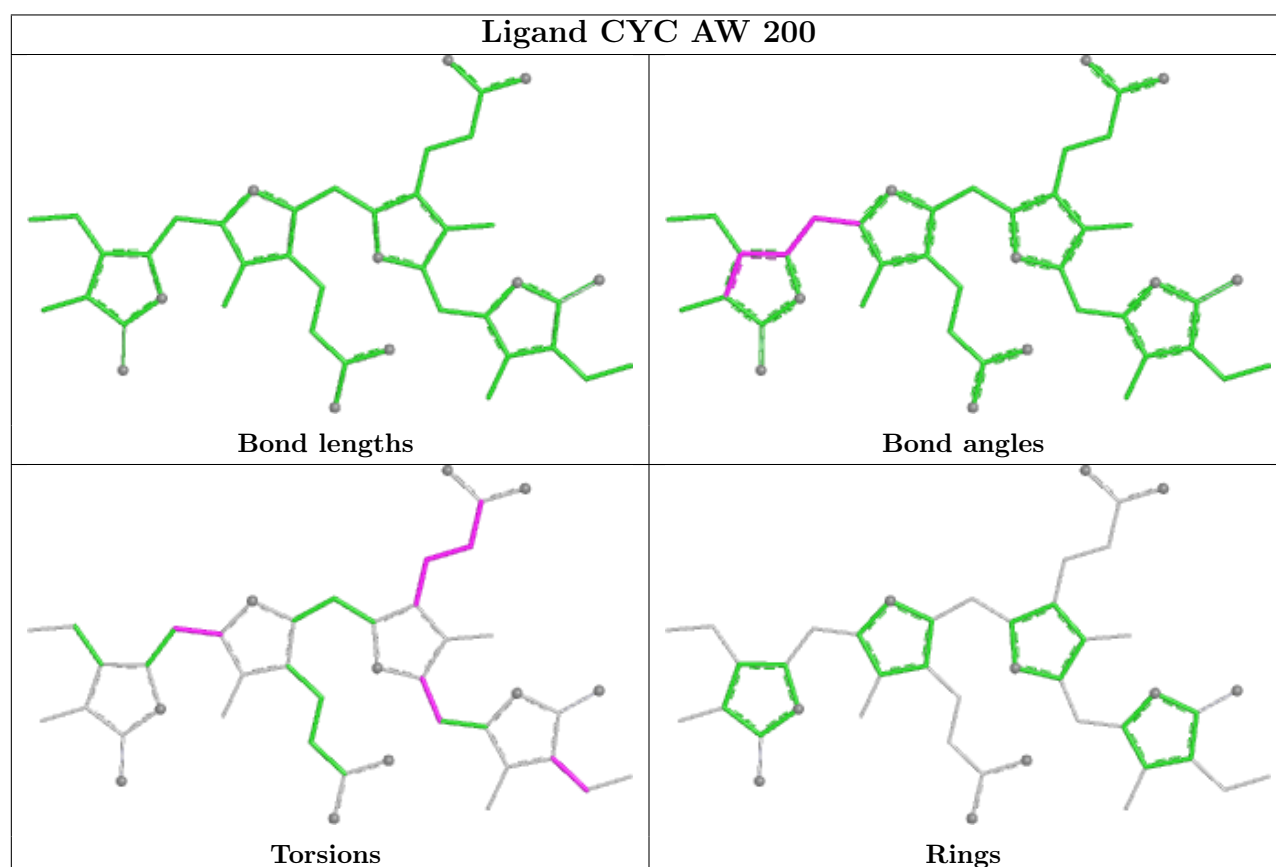
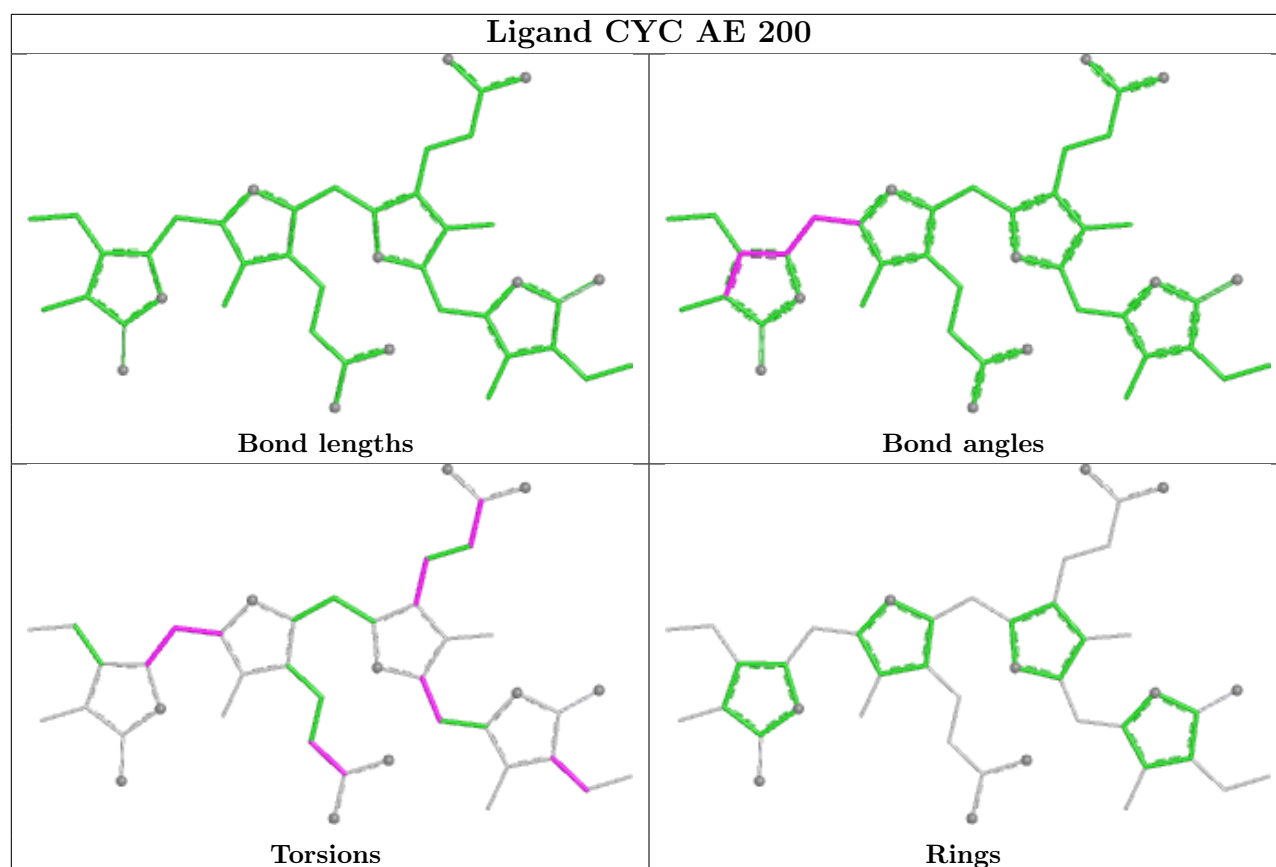


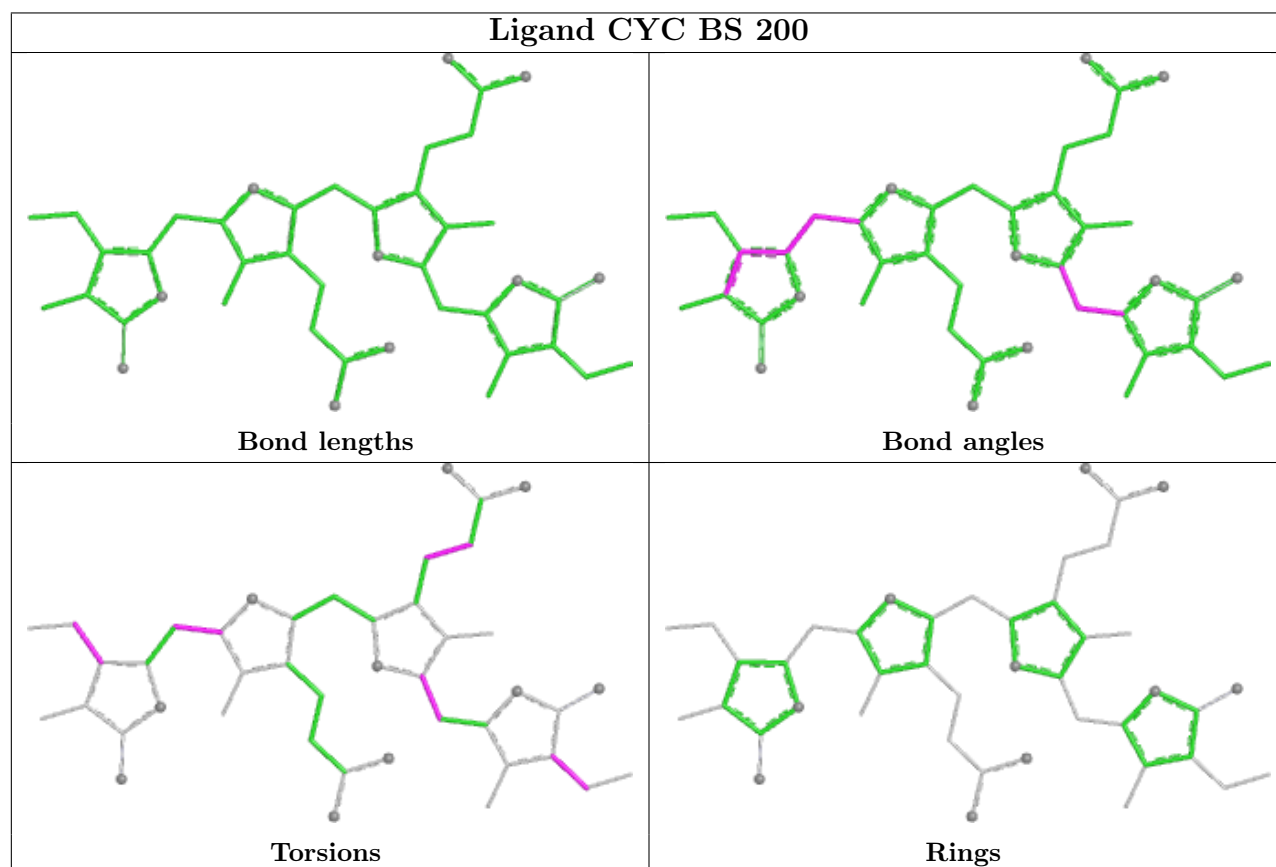
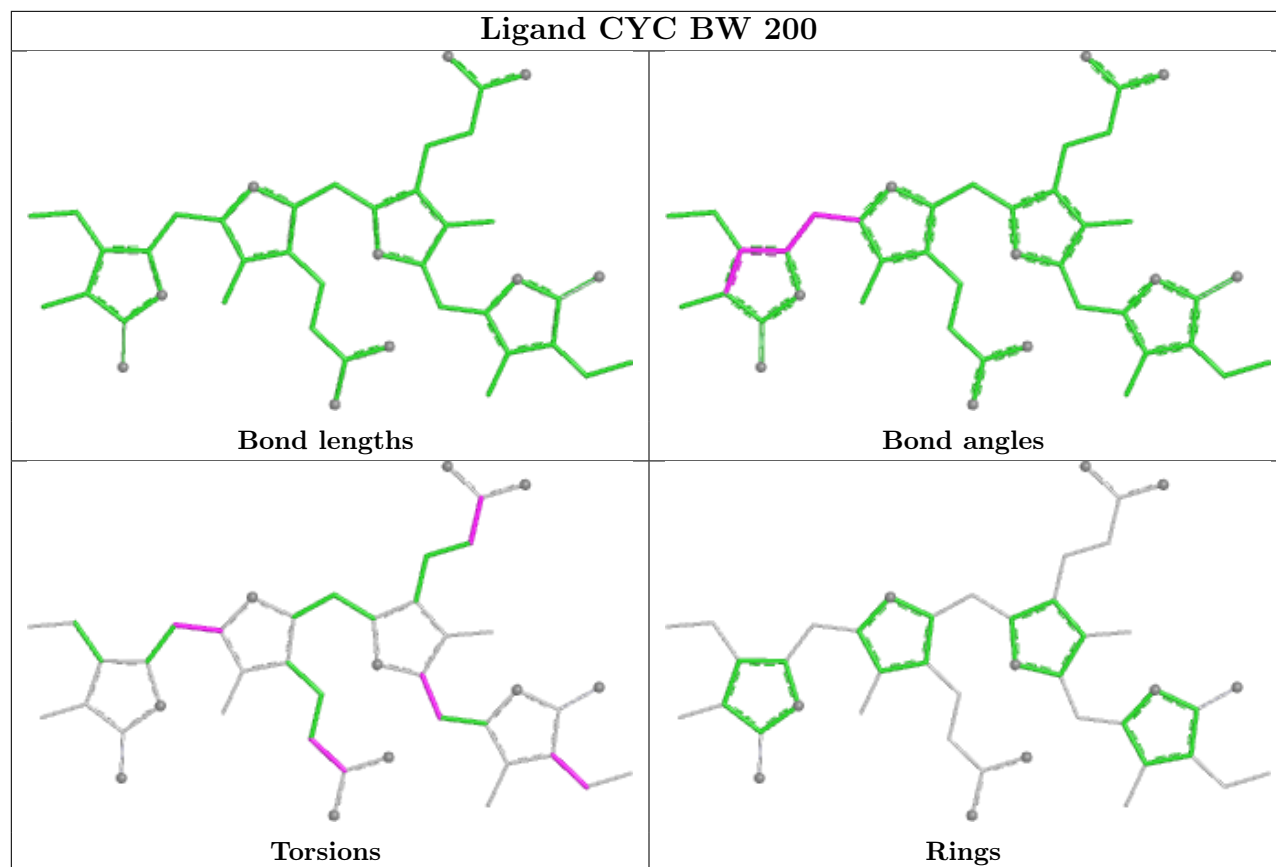




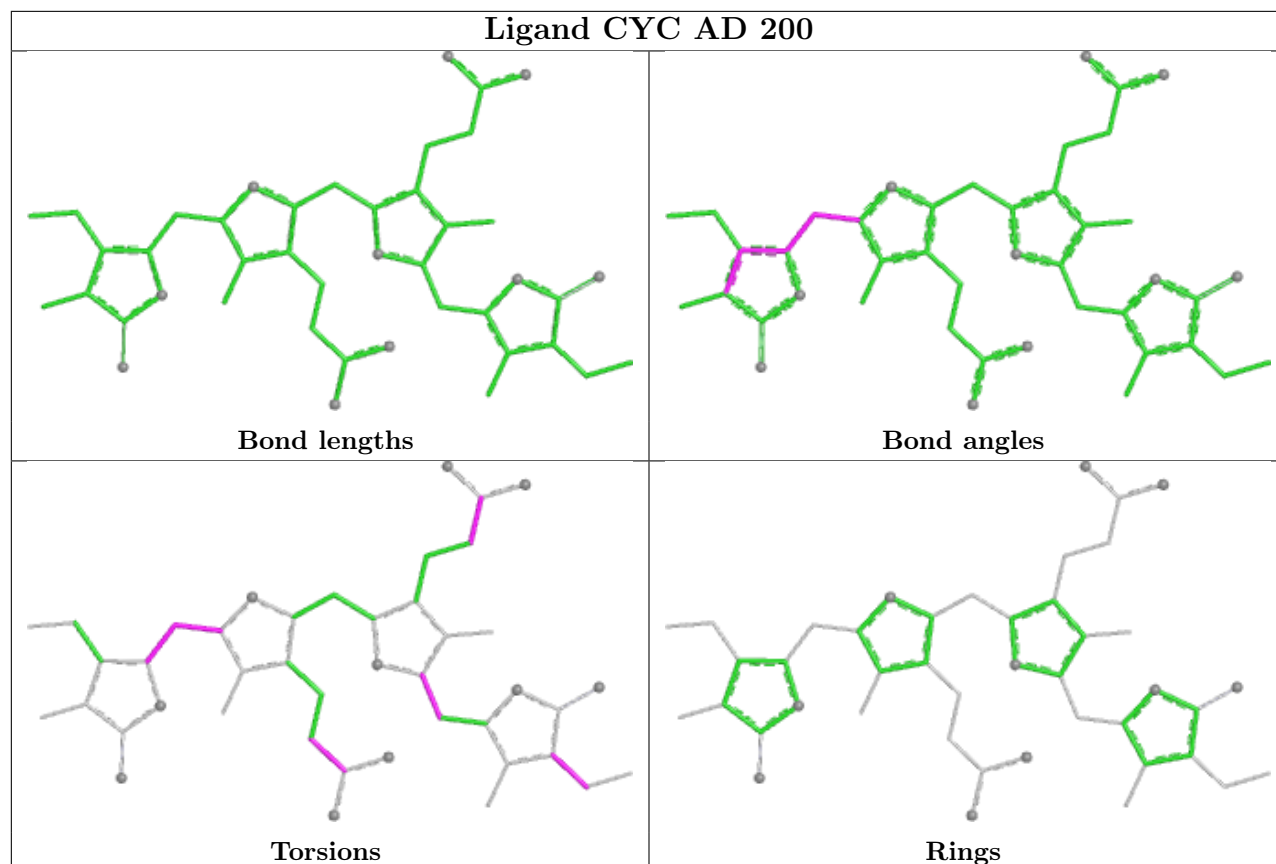




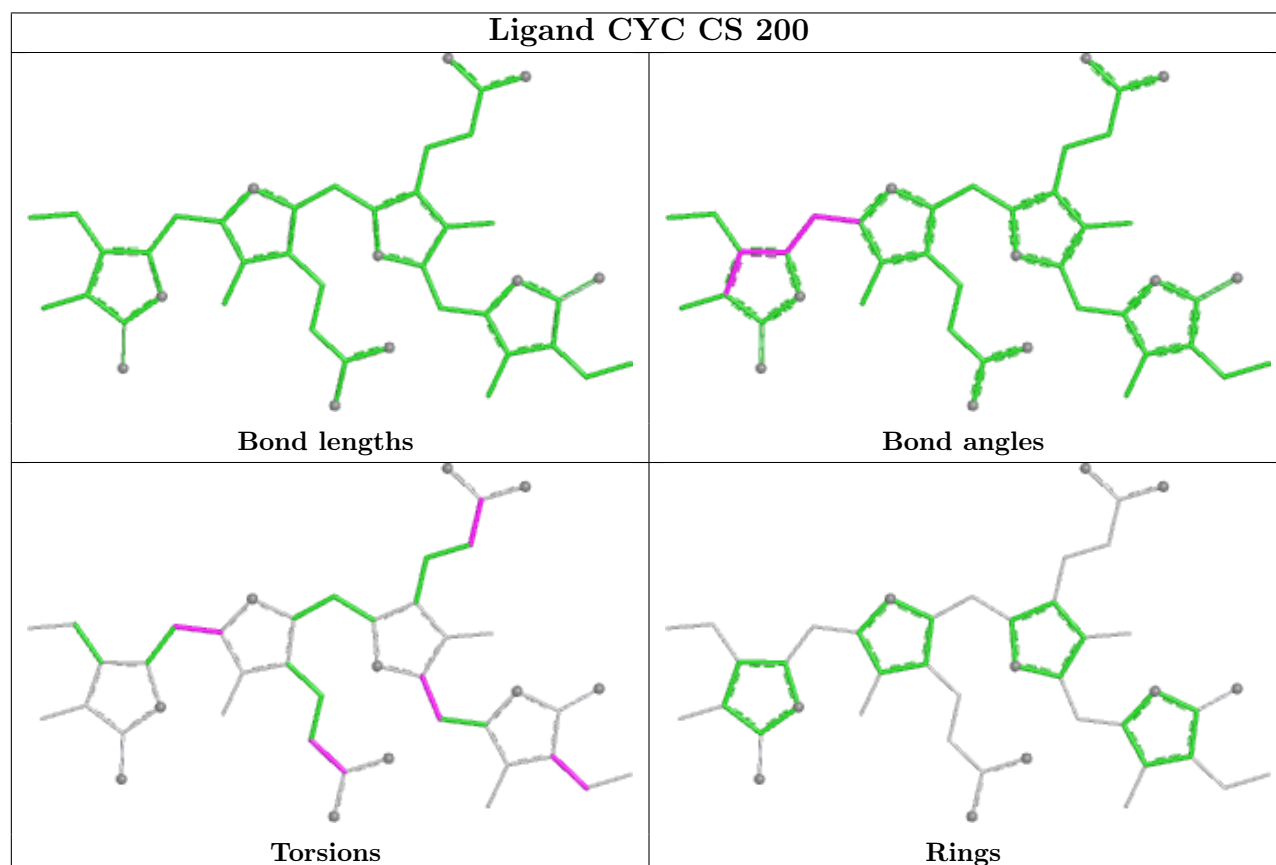


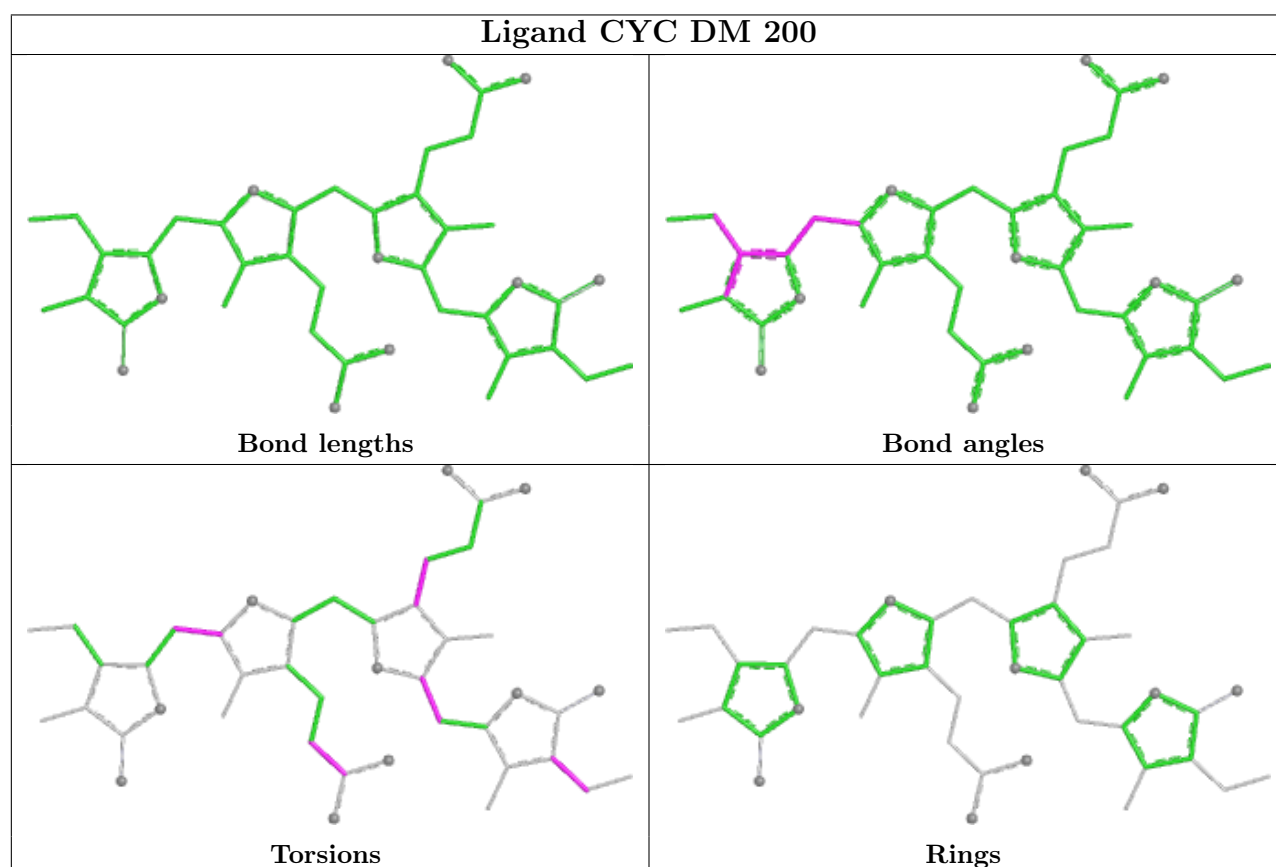
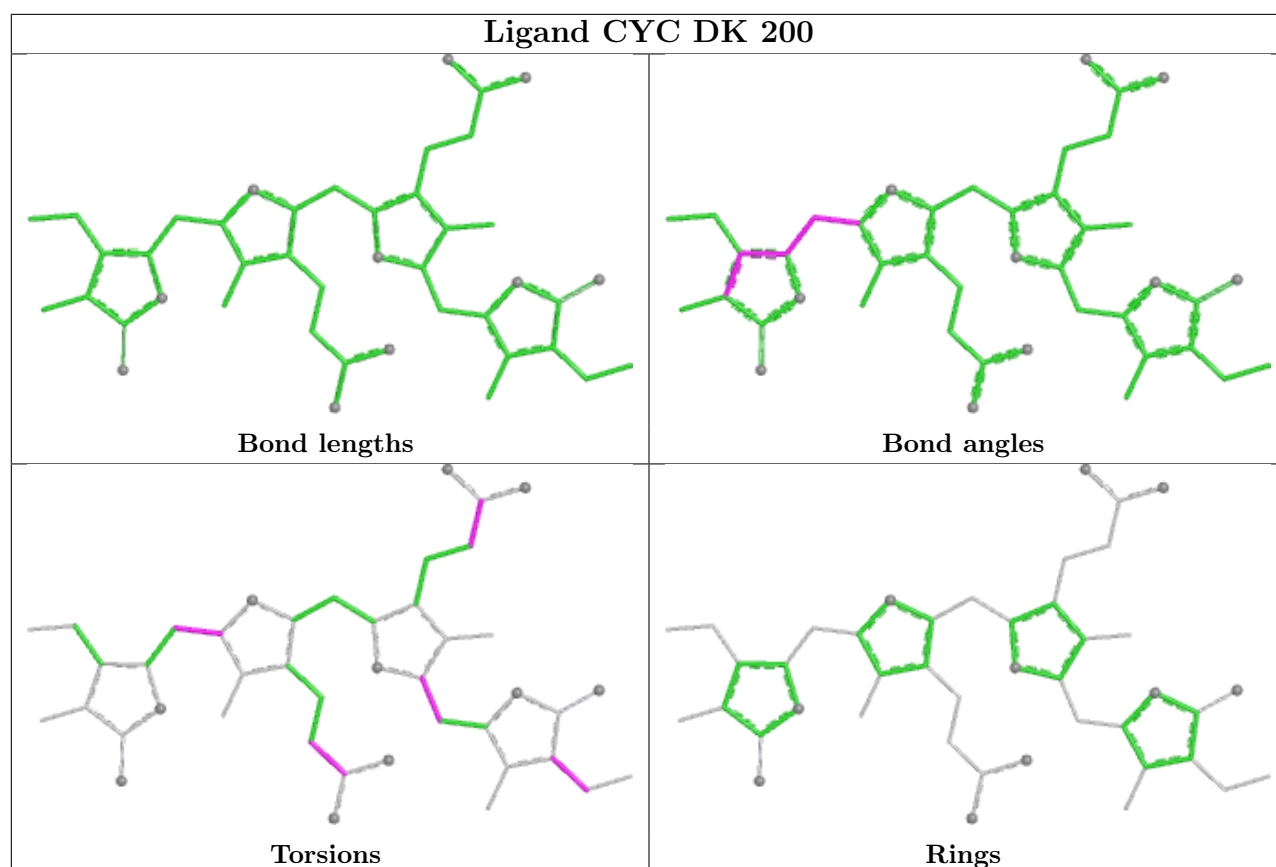


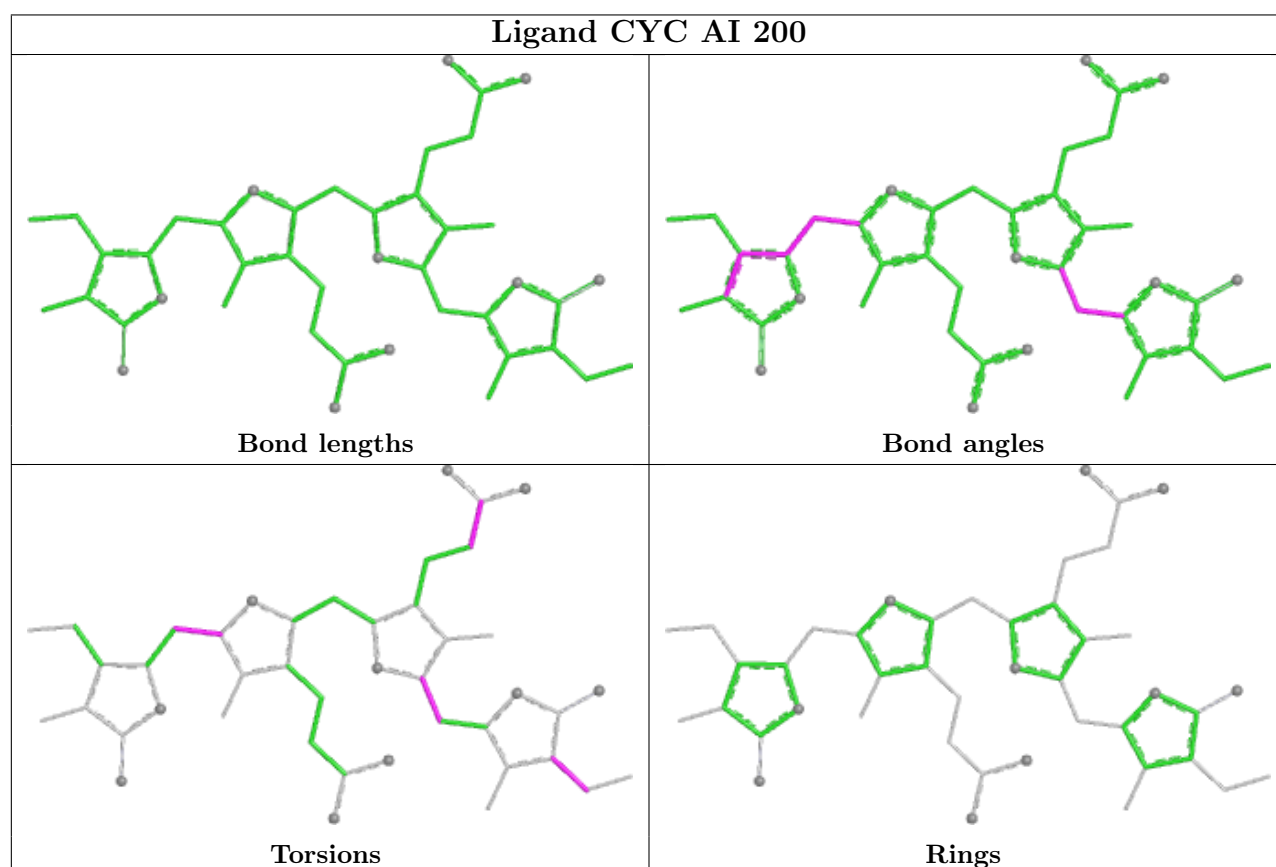
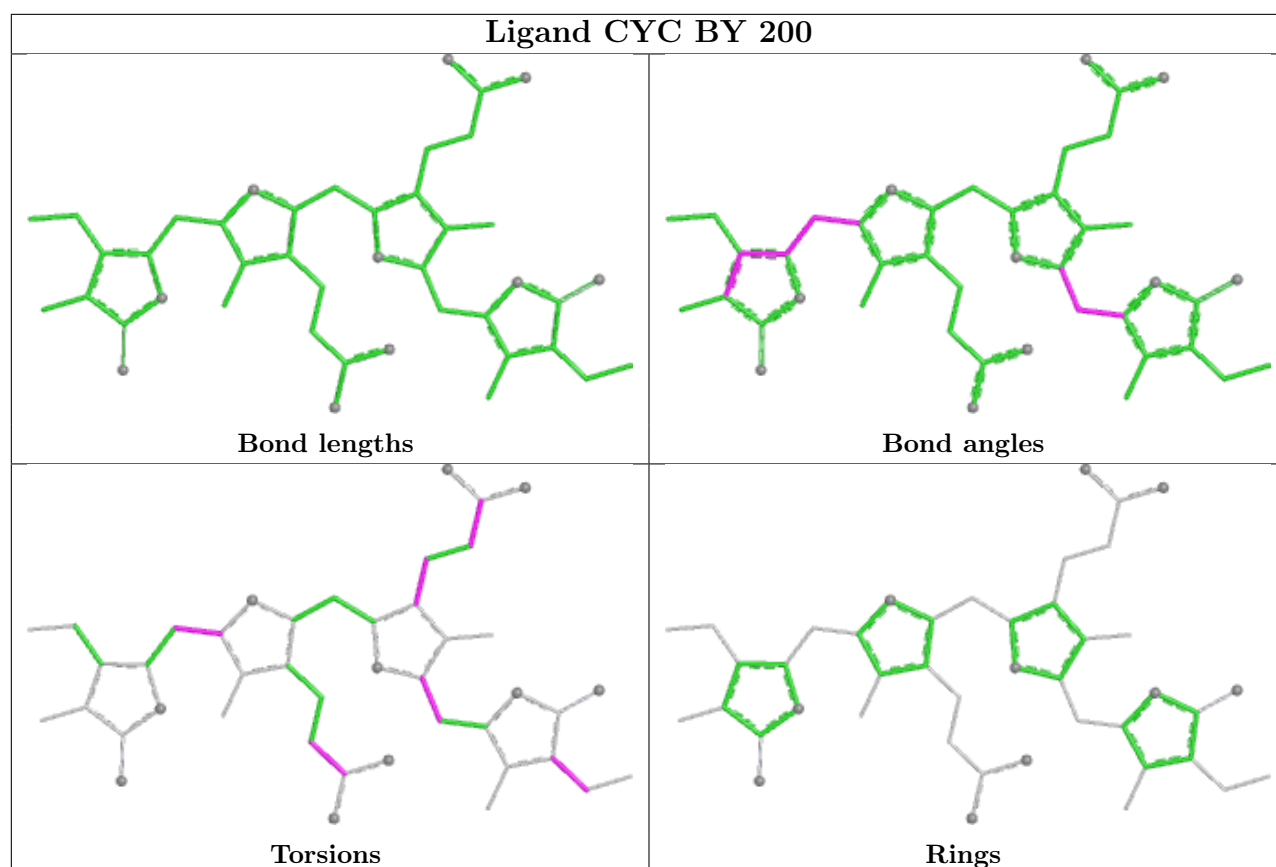
## Ligand CYC AD 200

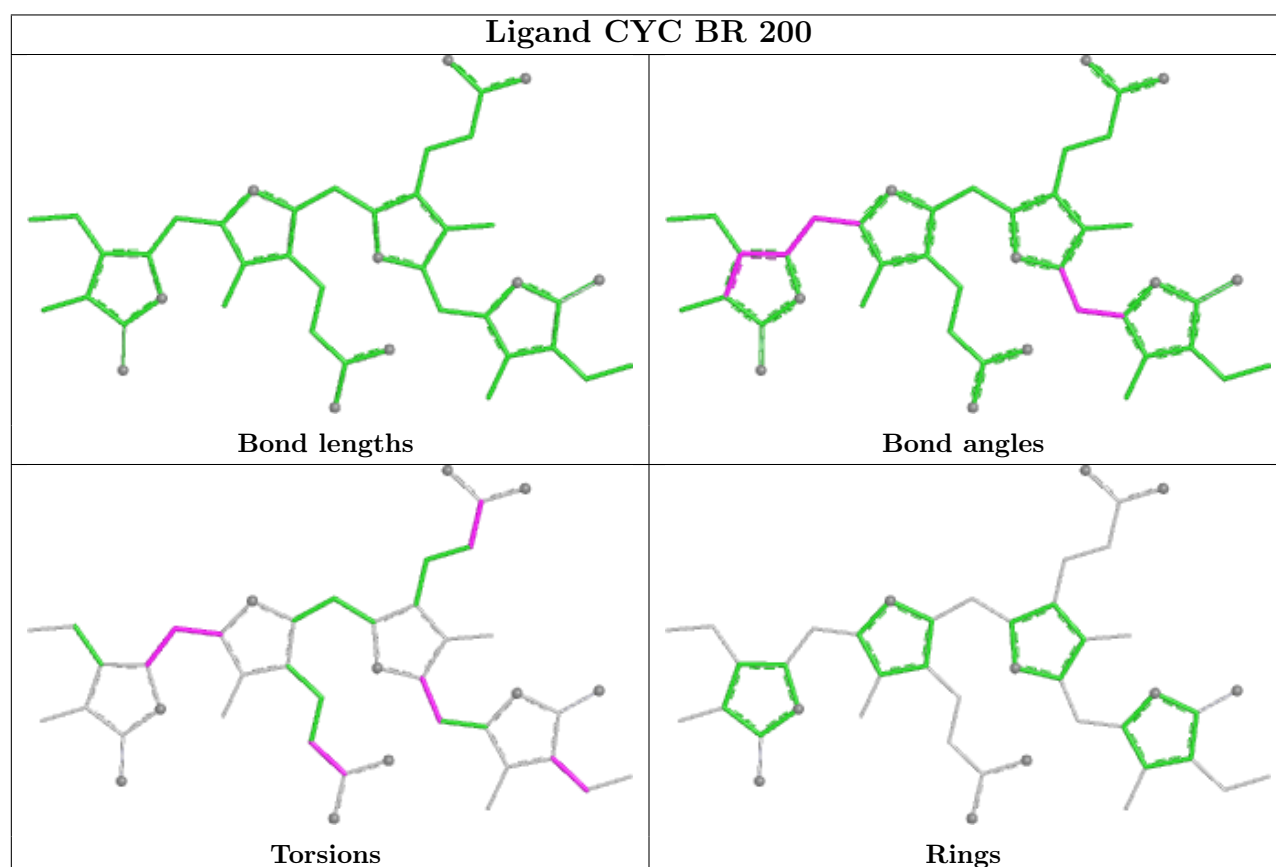
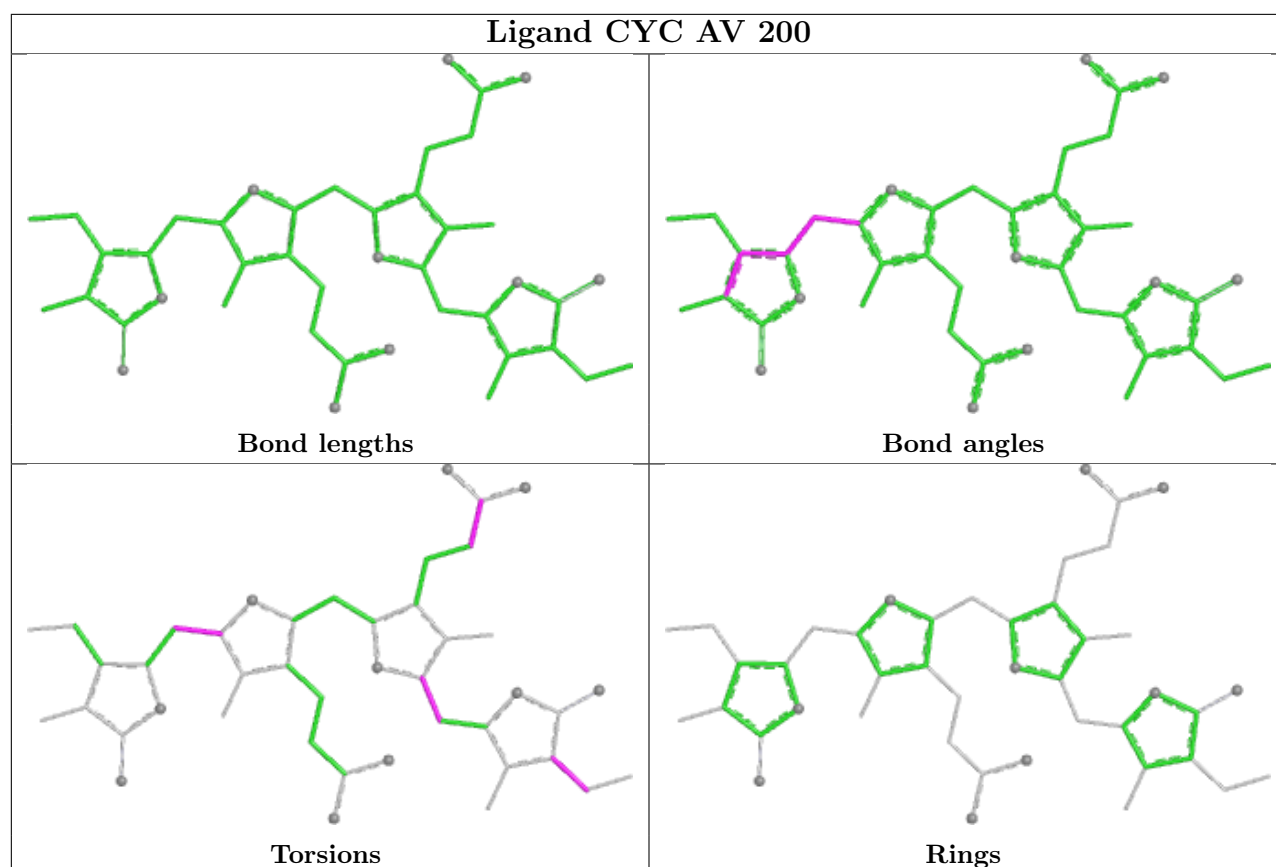


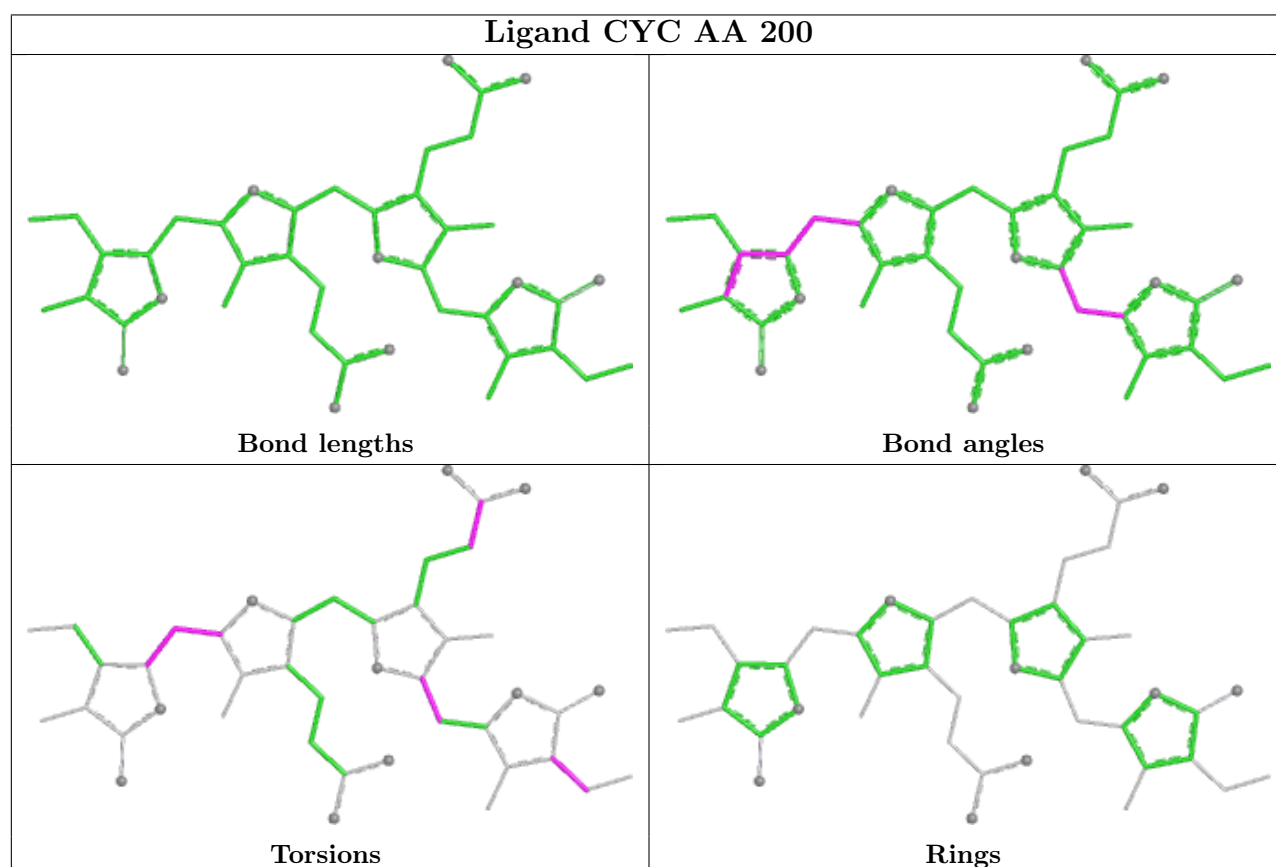
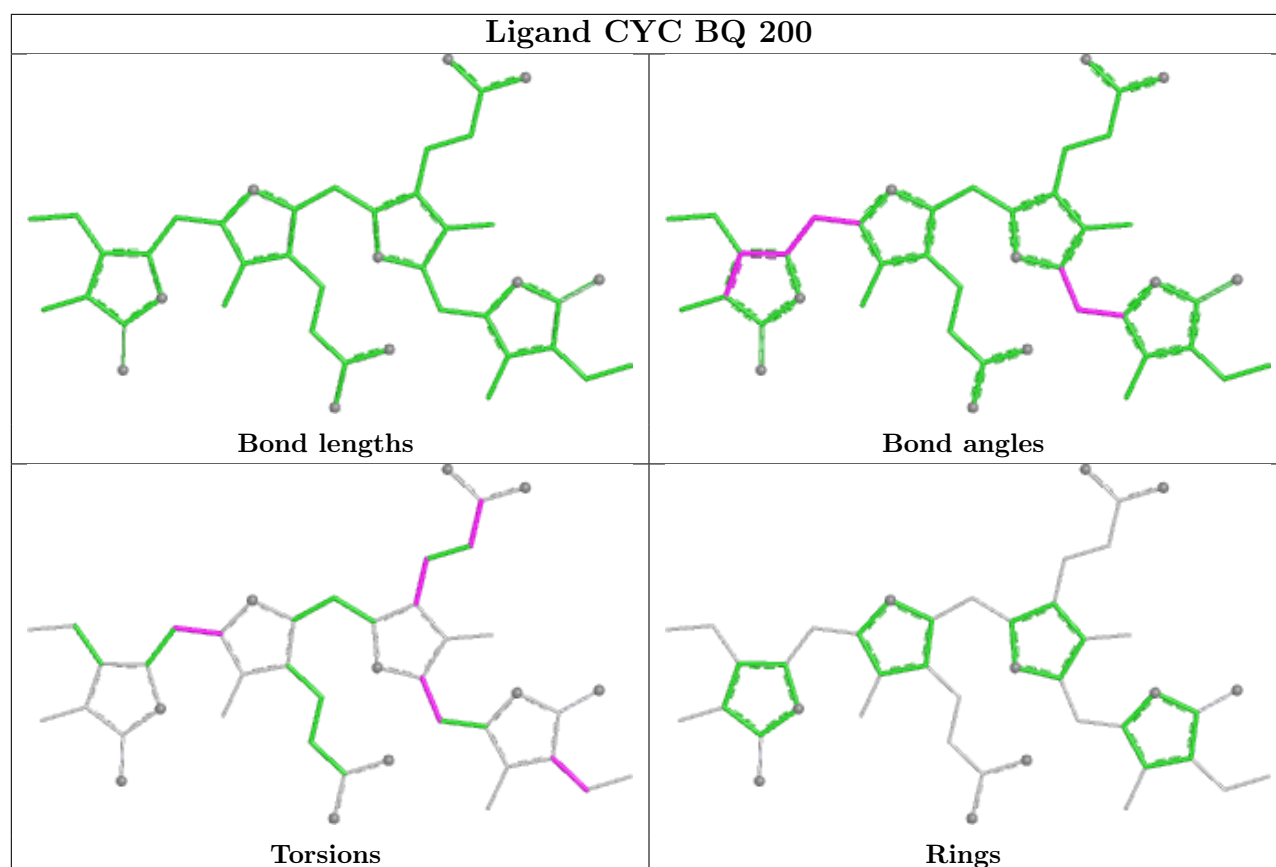
## Ligand CYC CS 200

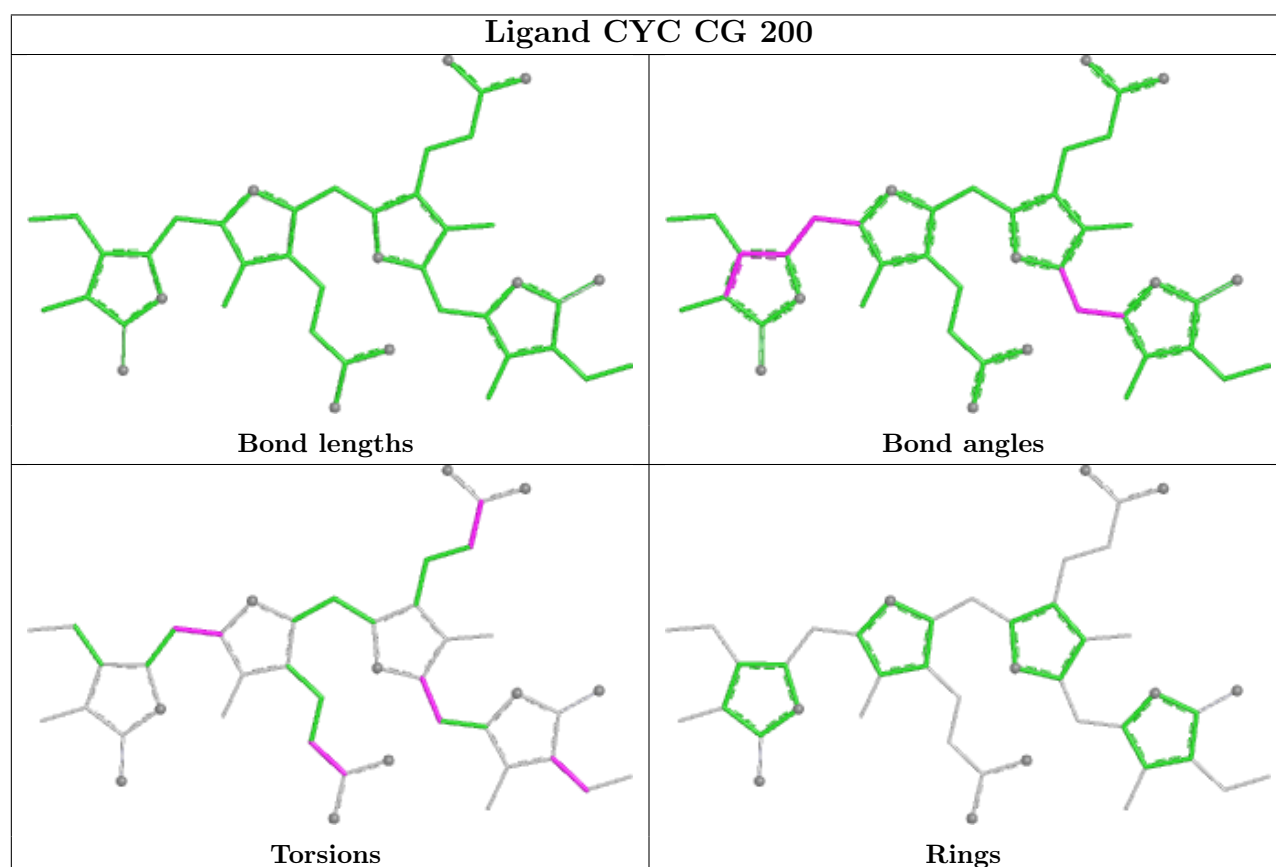
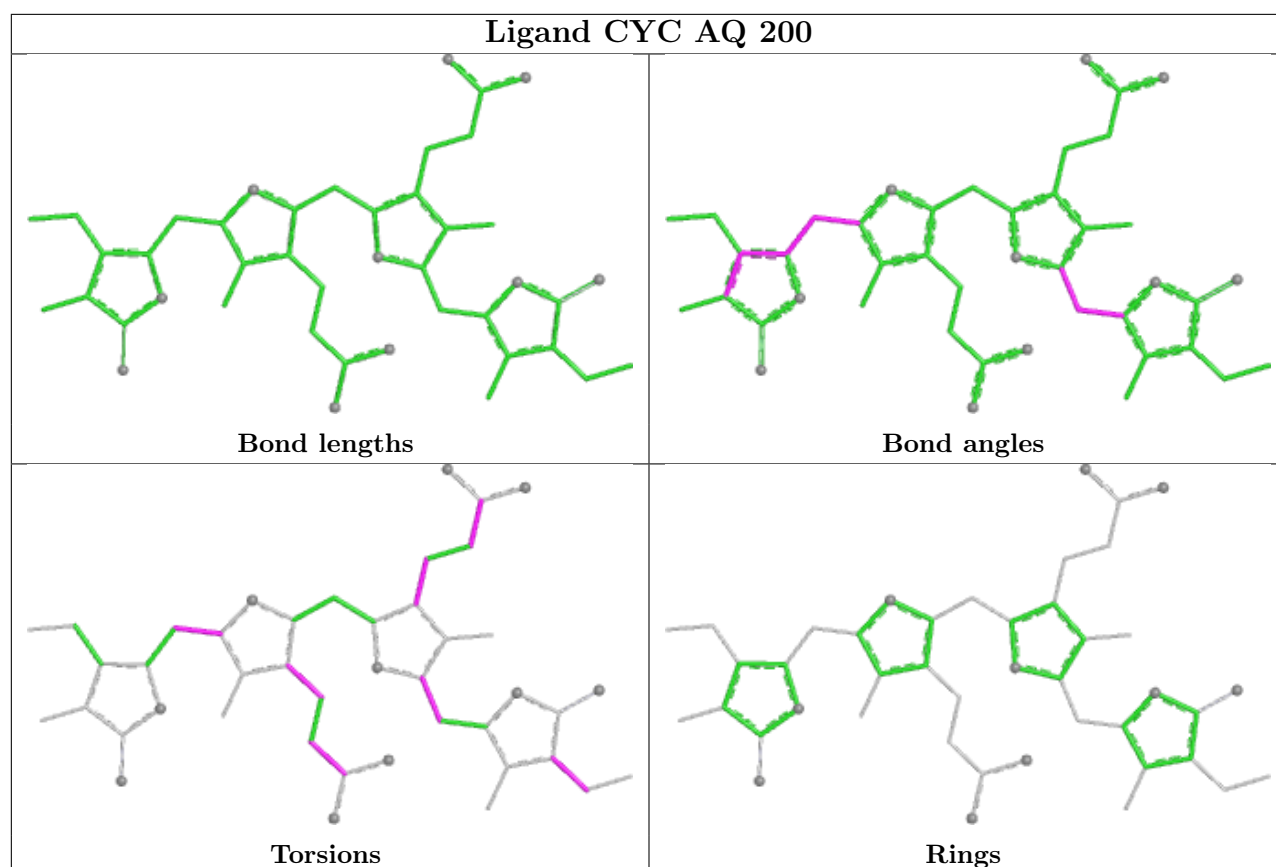




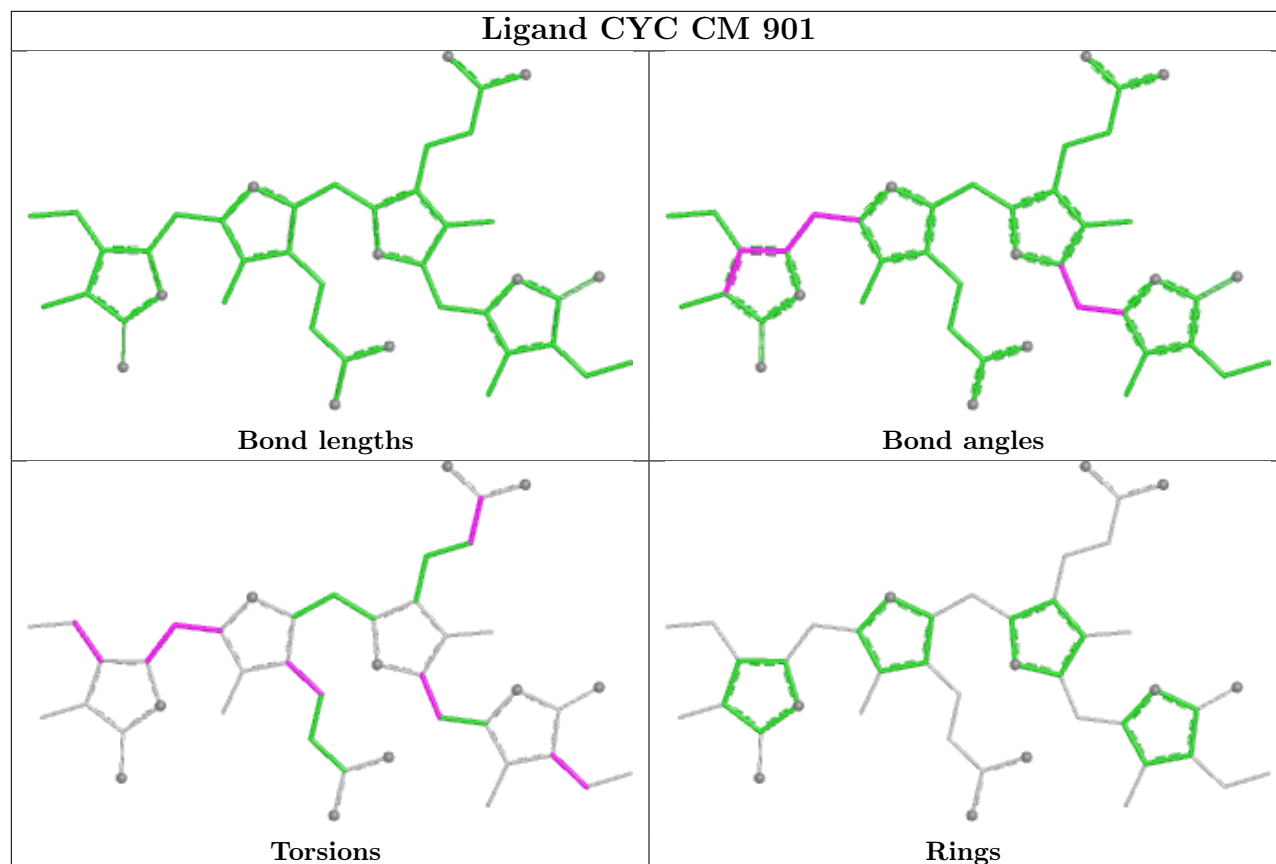




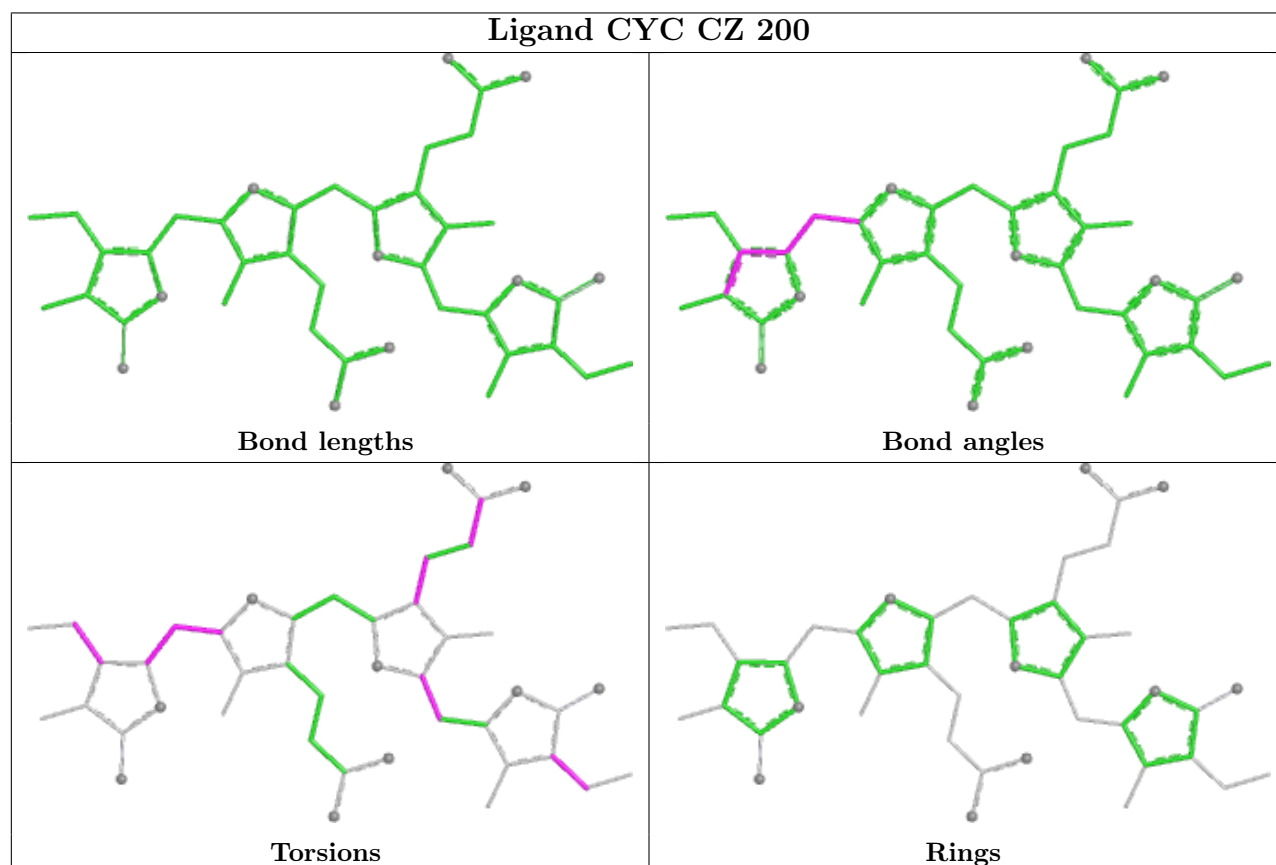


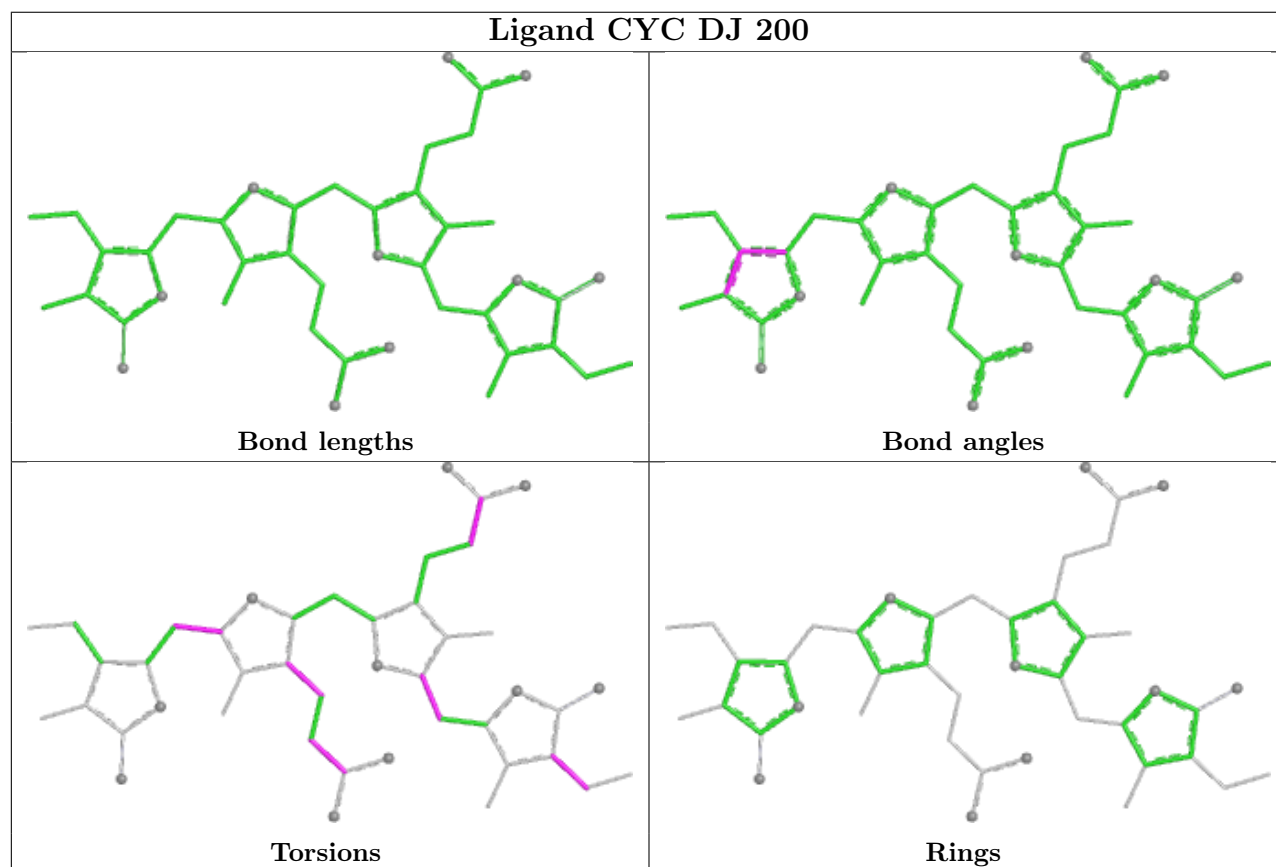
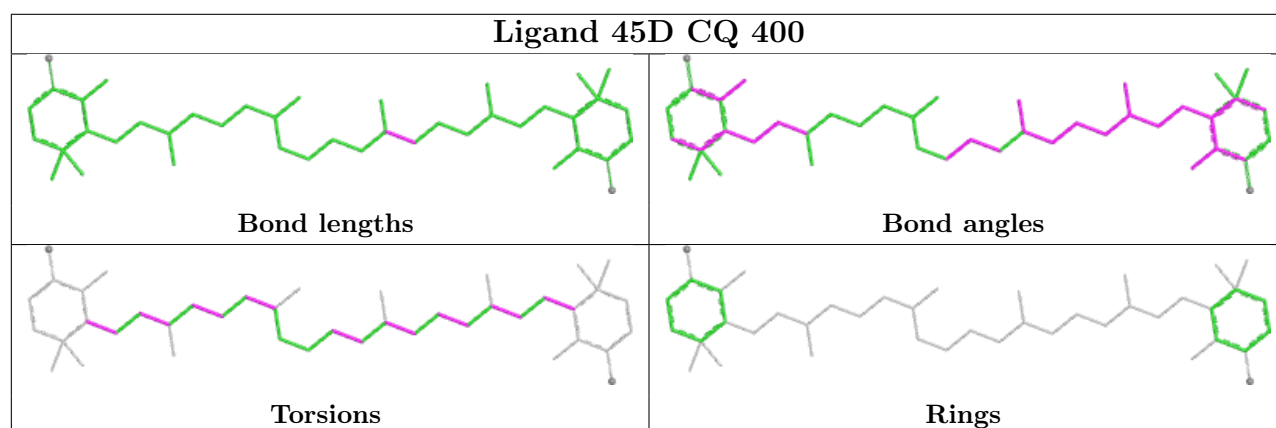
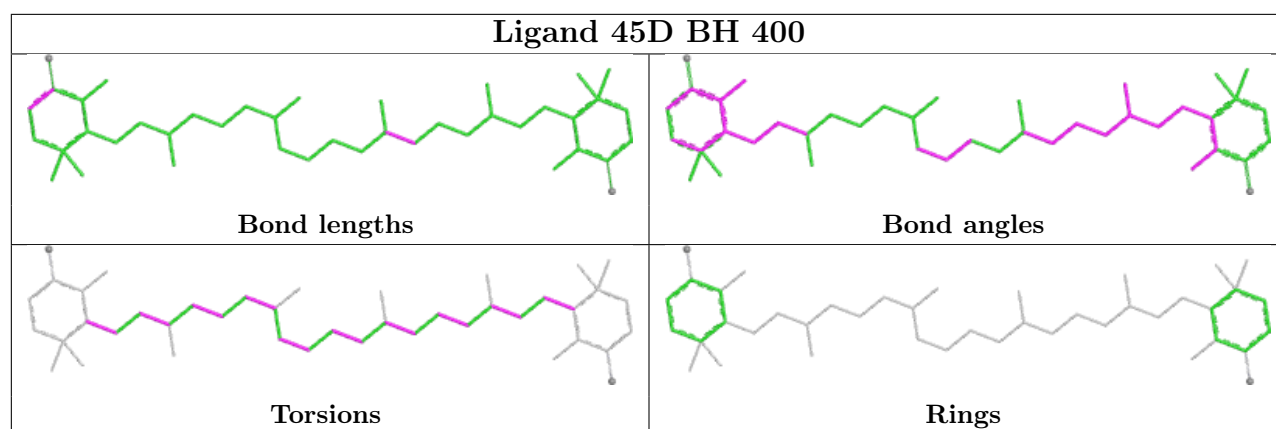


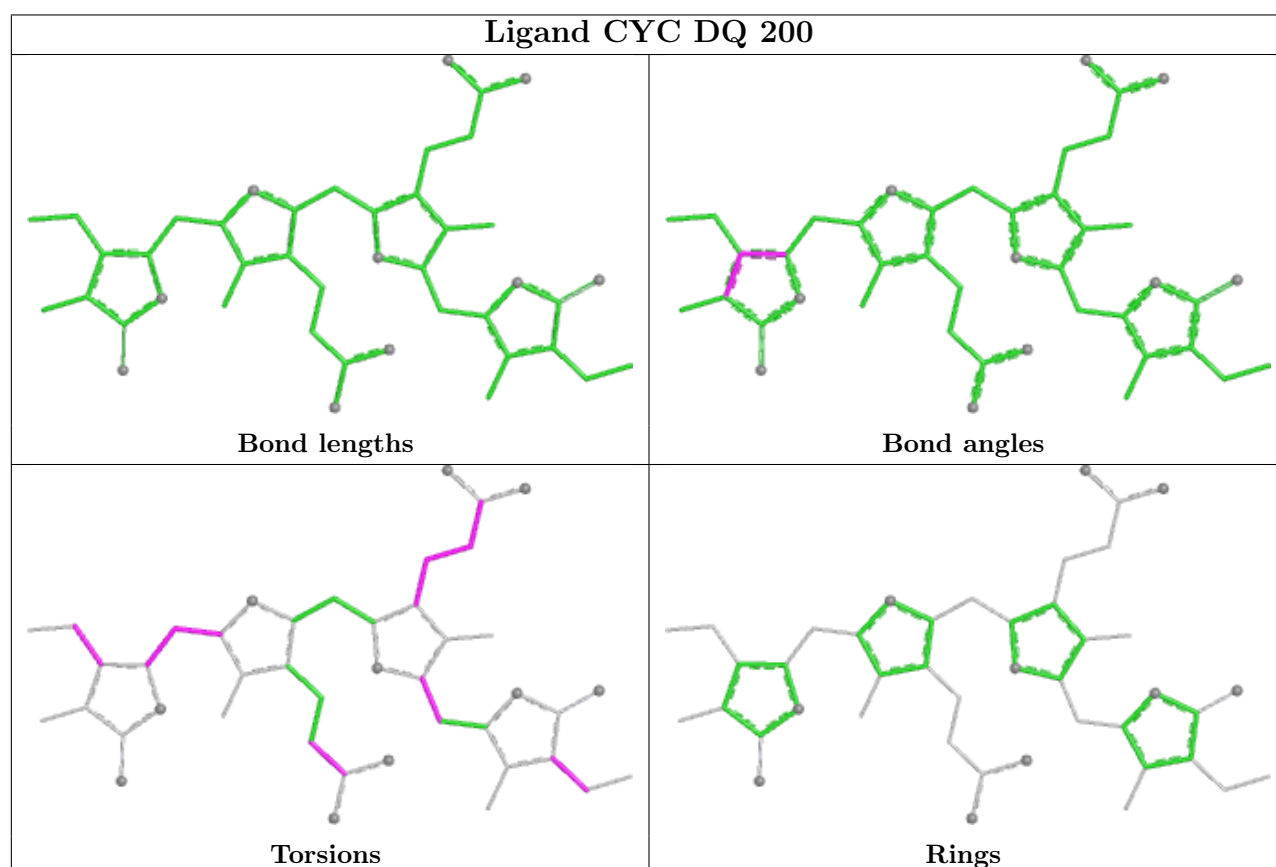
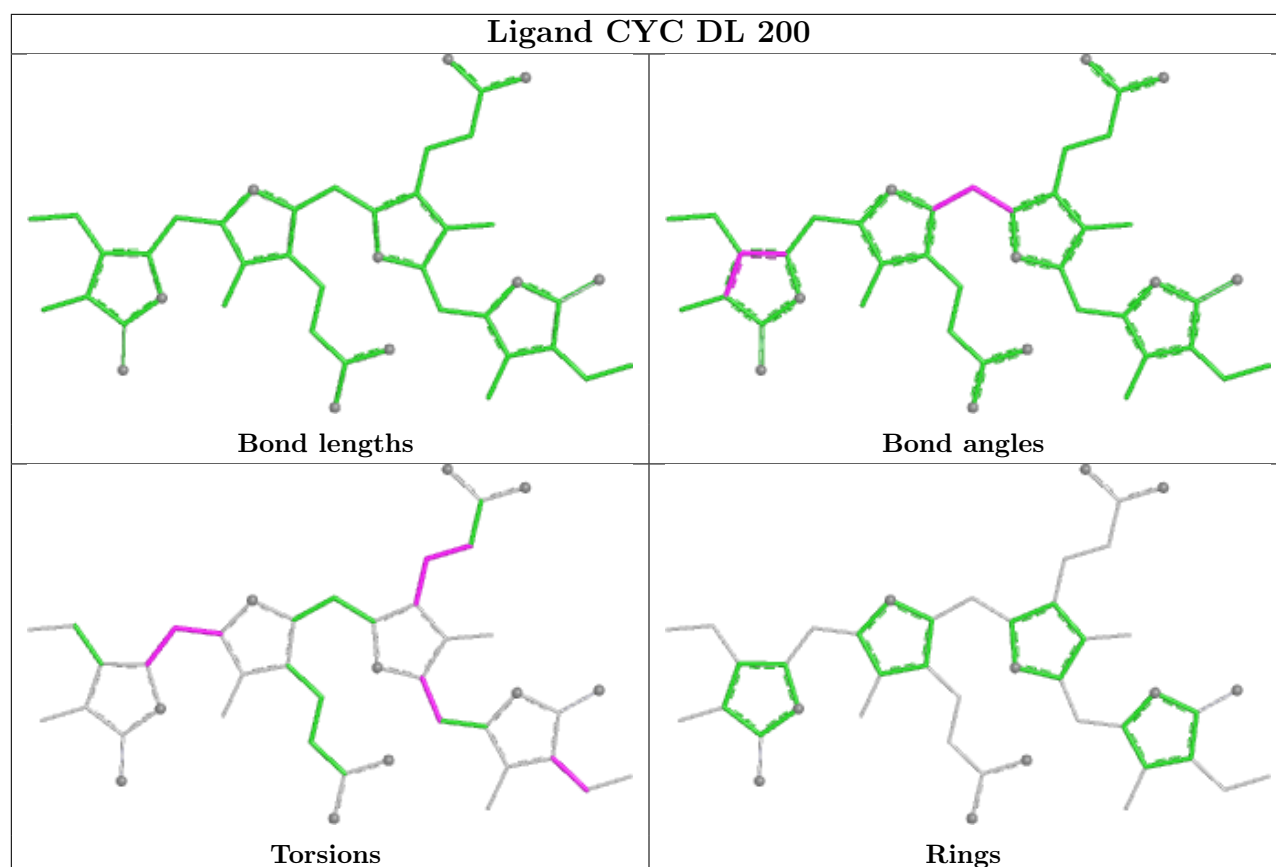
## Ligand CYC CM 901

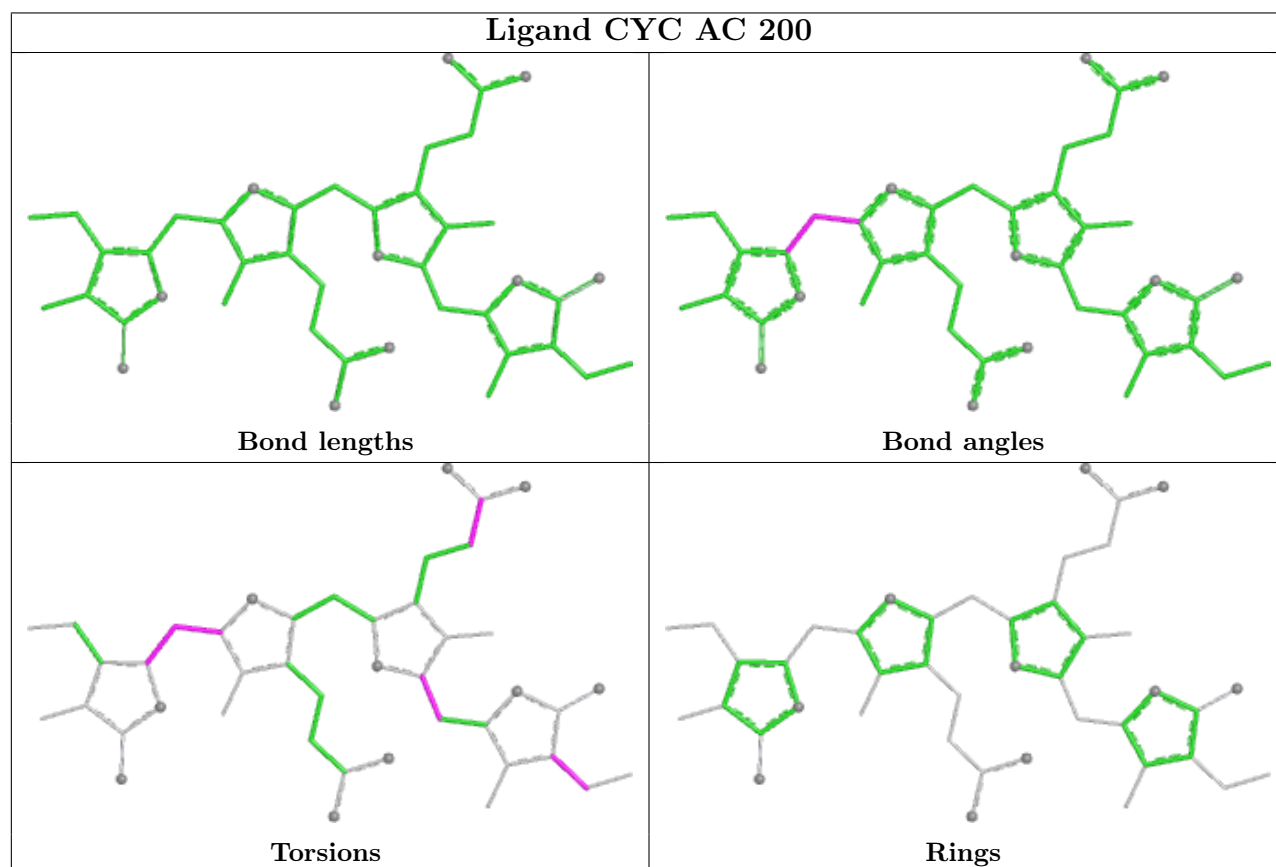
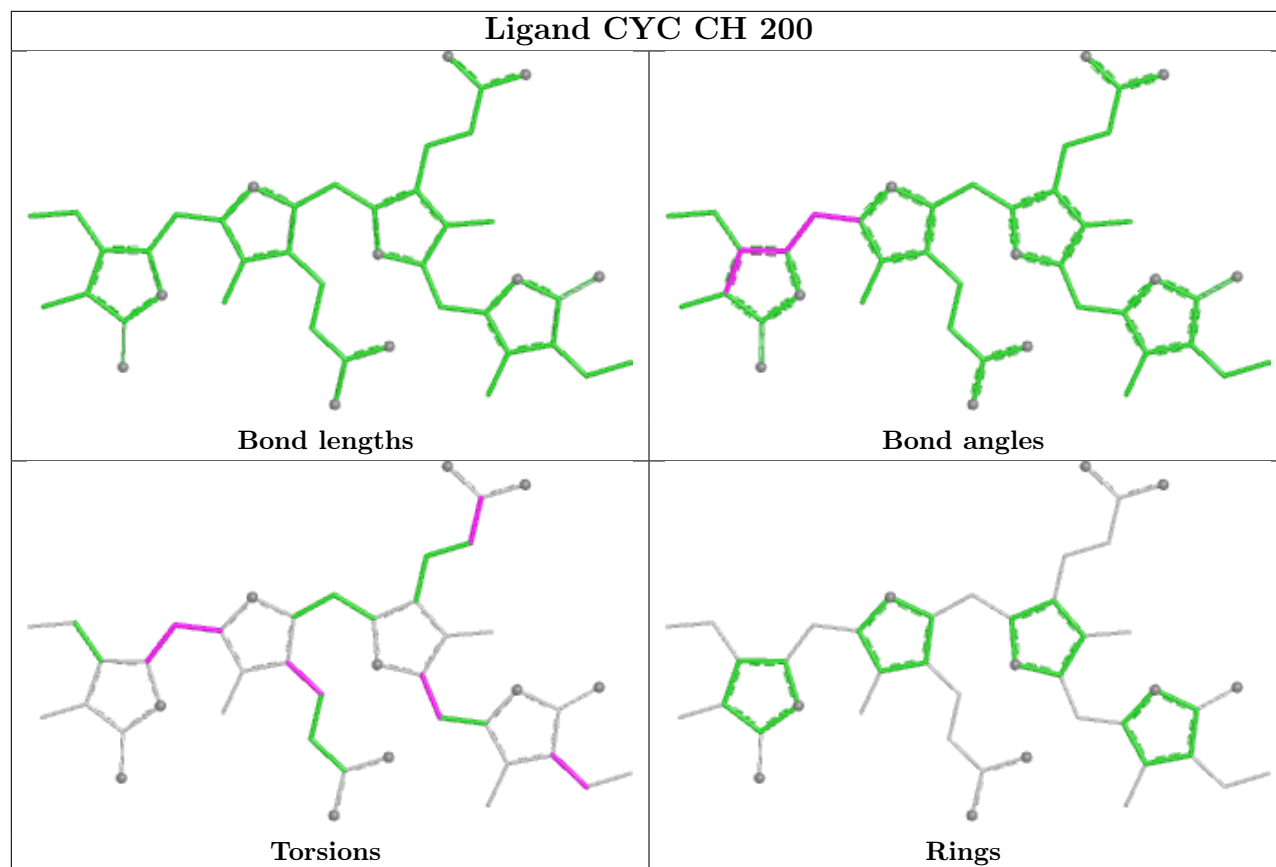


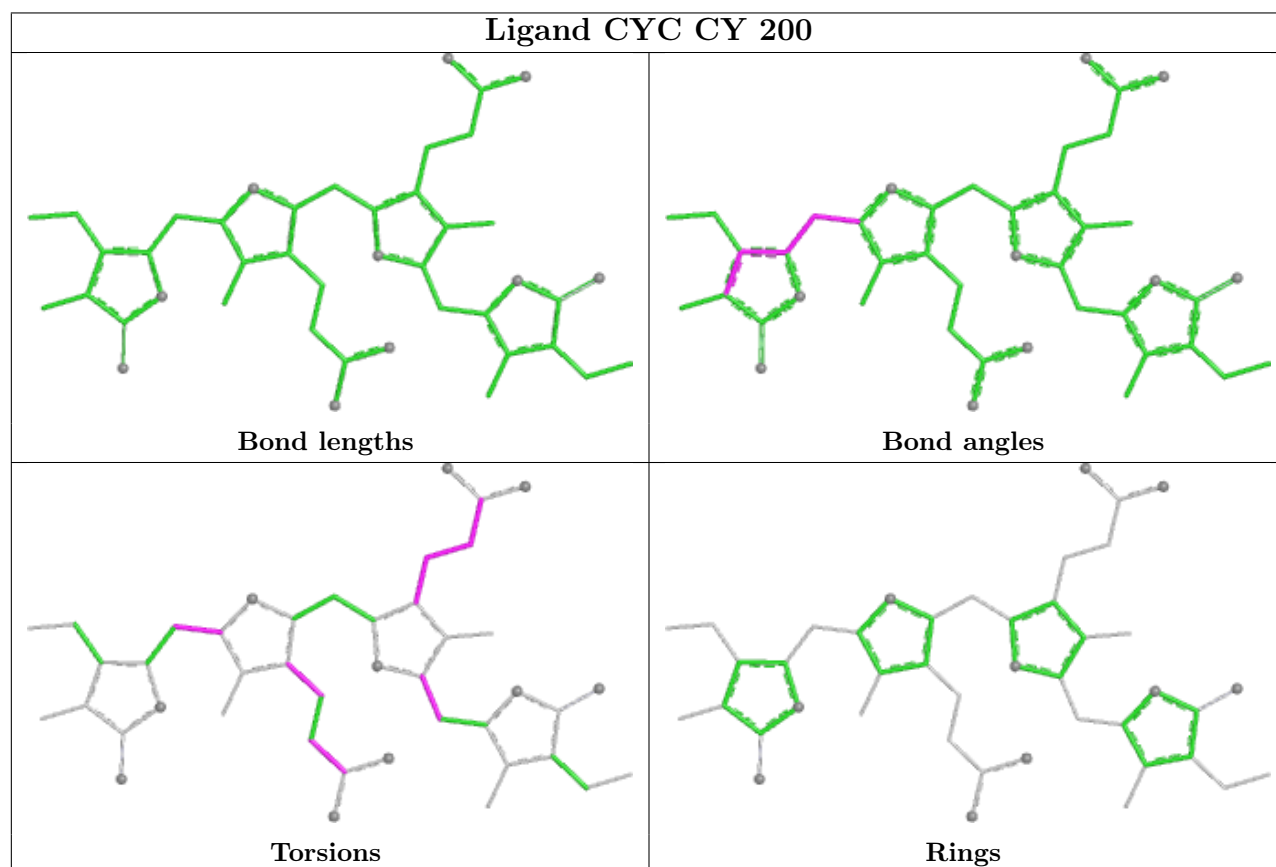
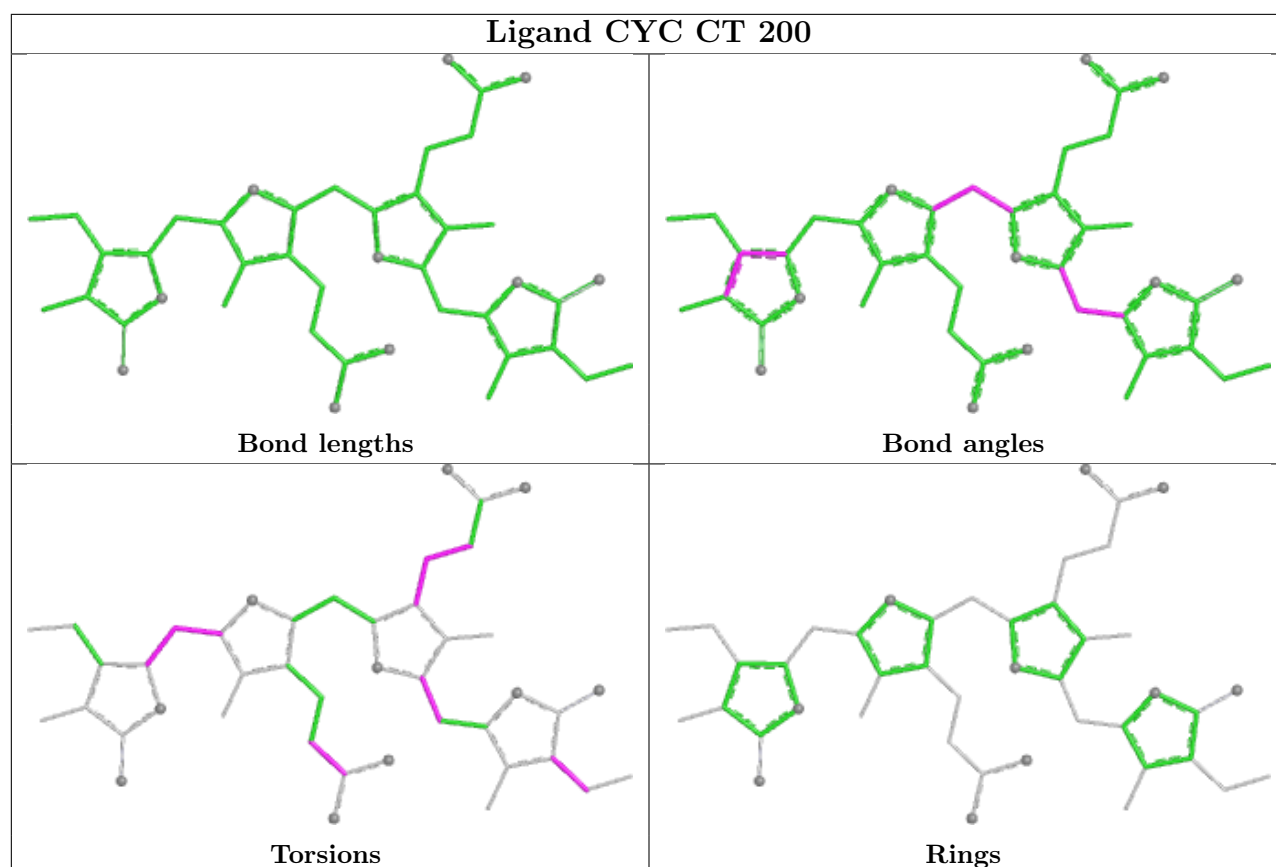
## Ligand CYC CZ 200

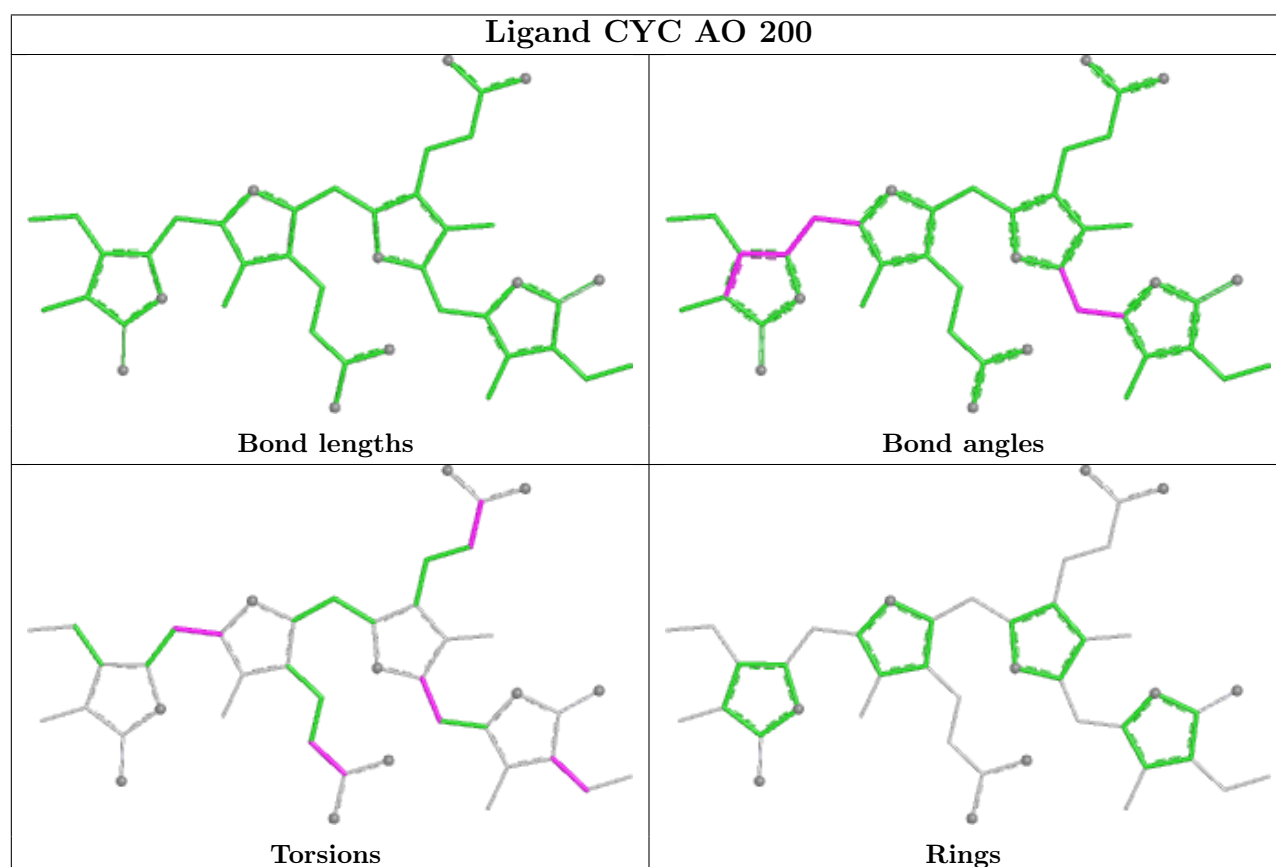
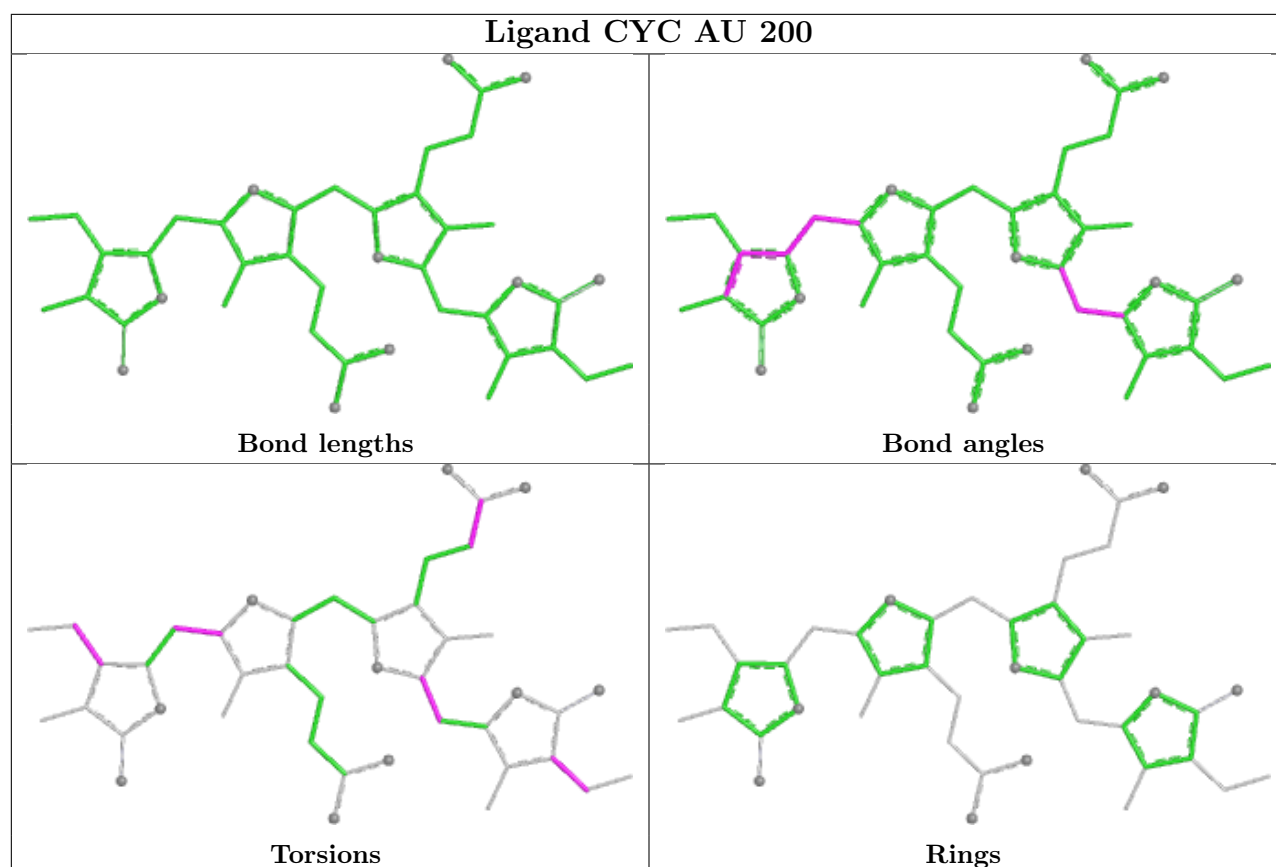


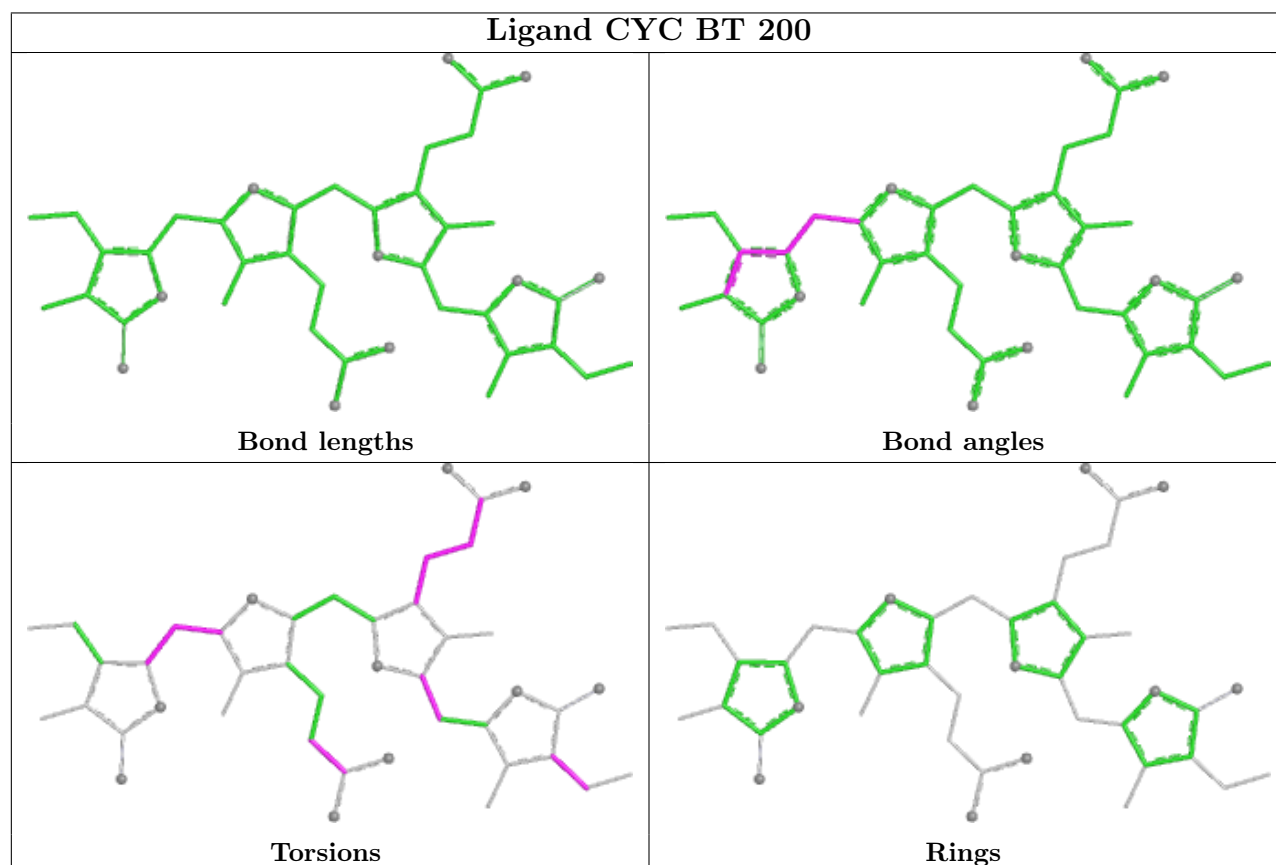
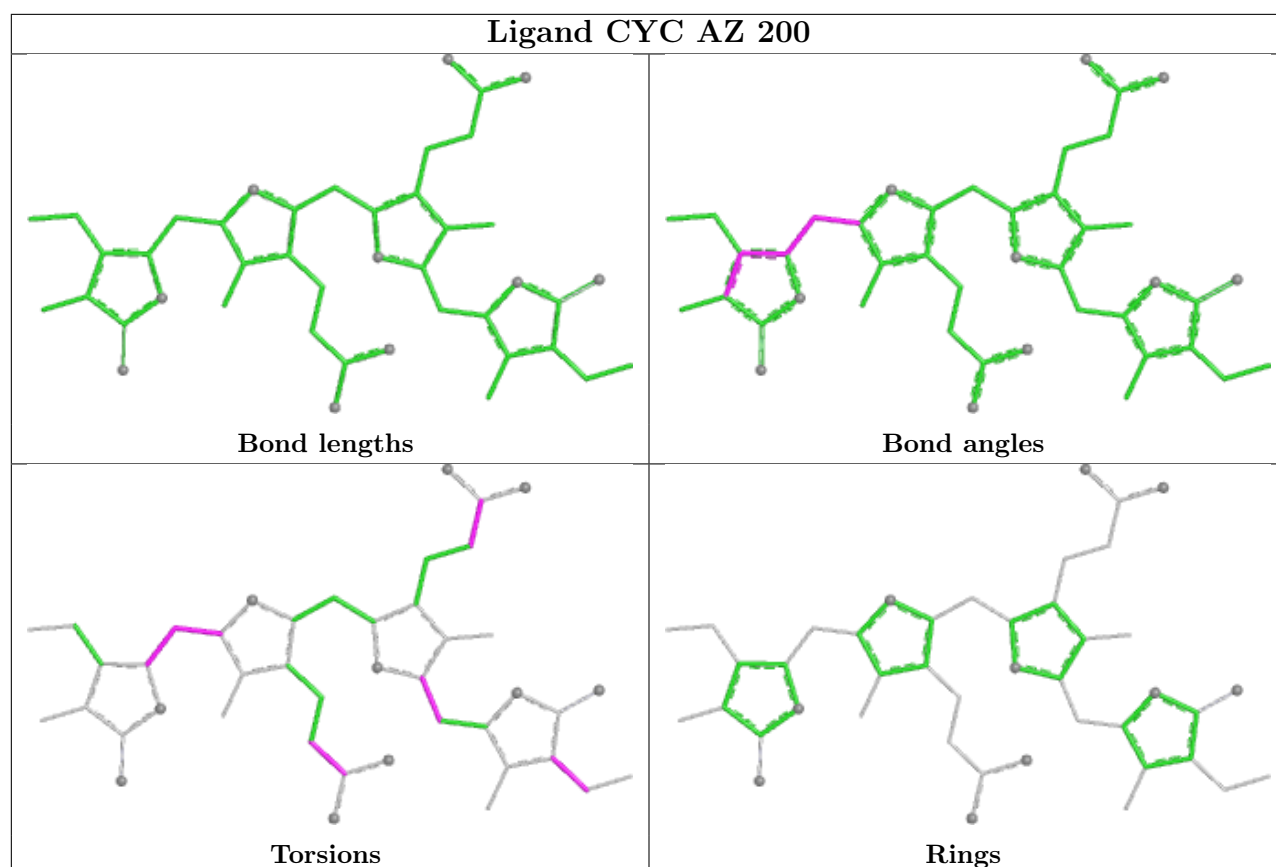




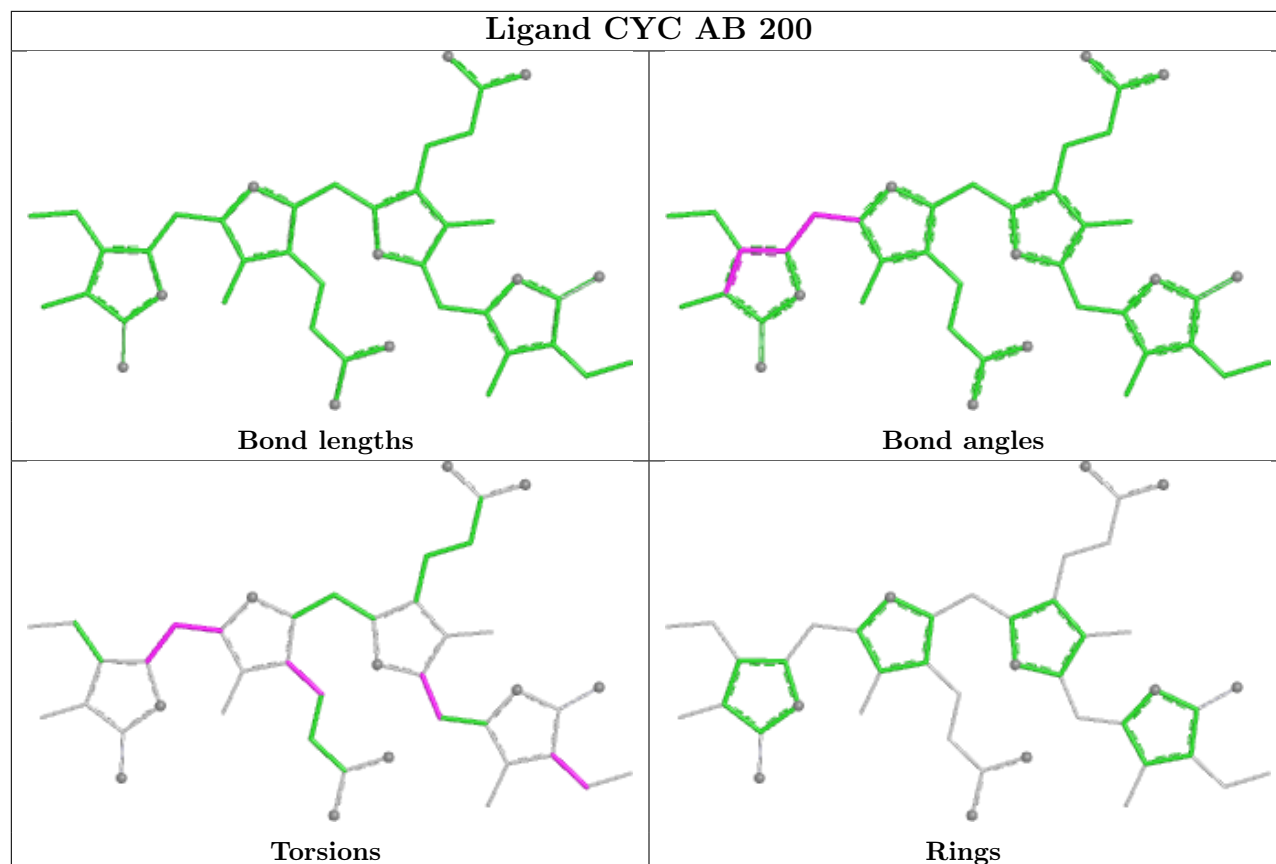




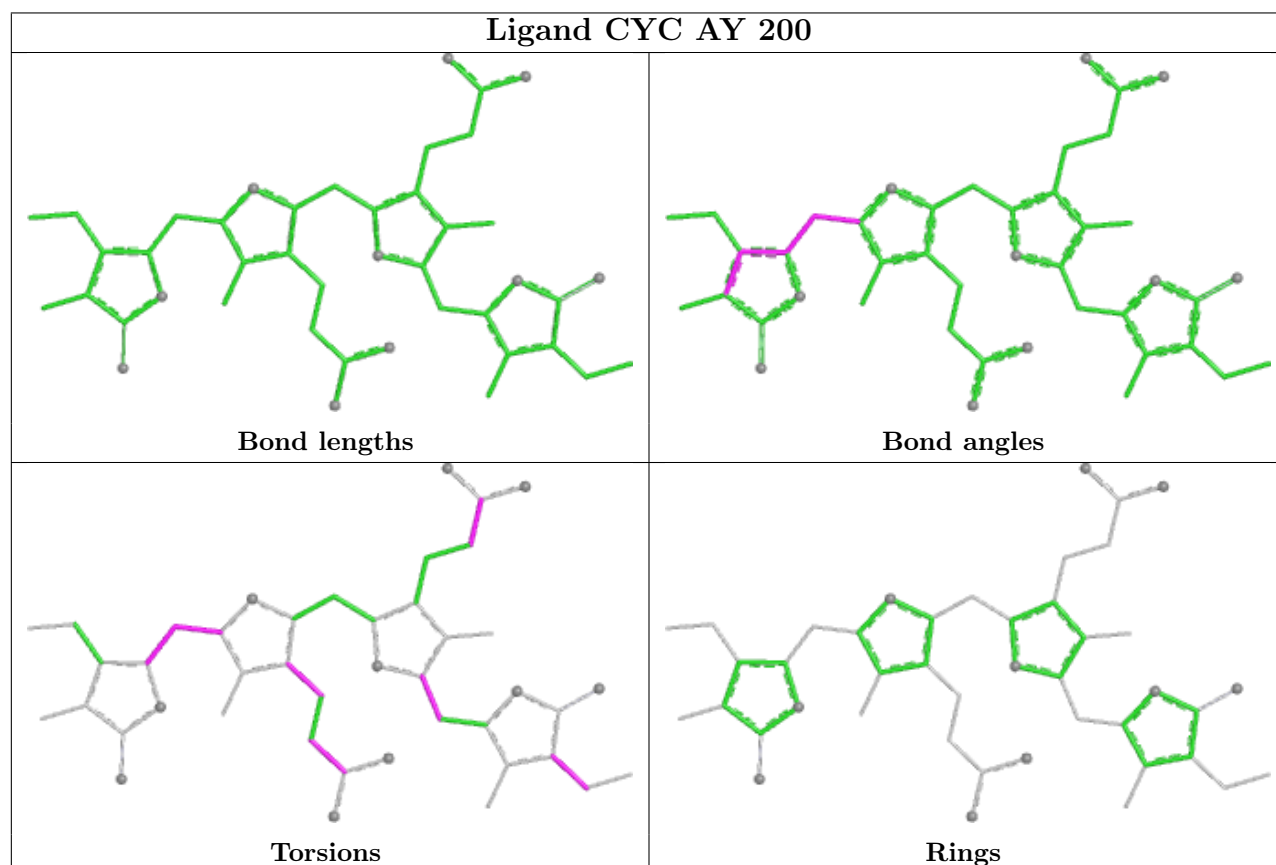


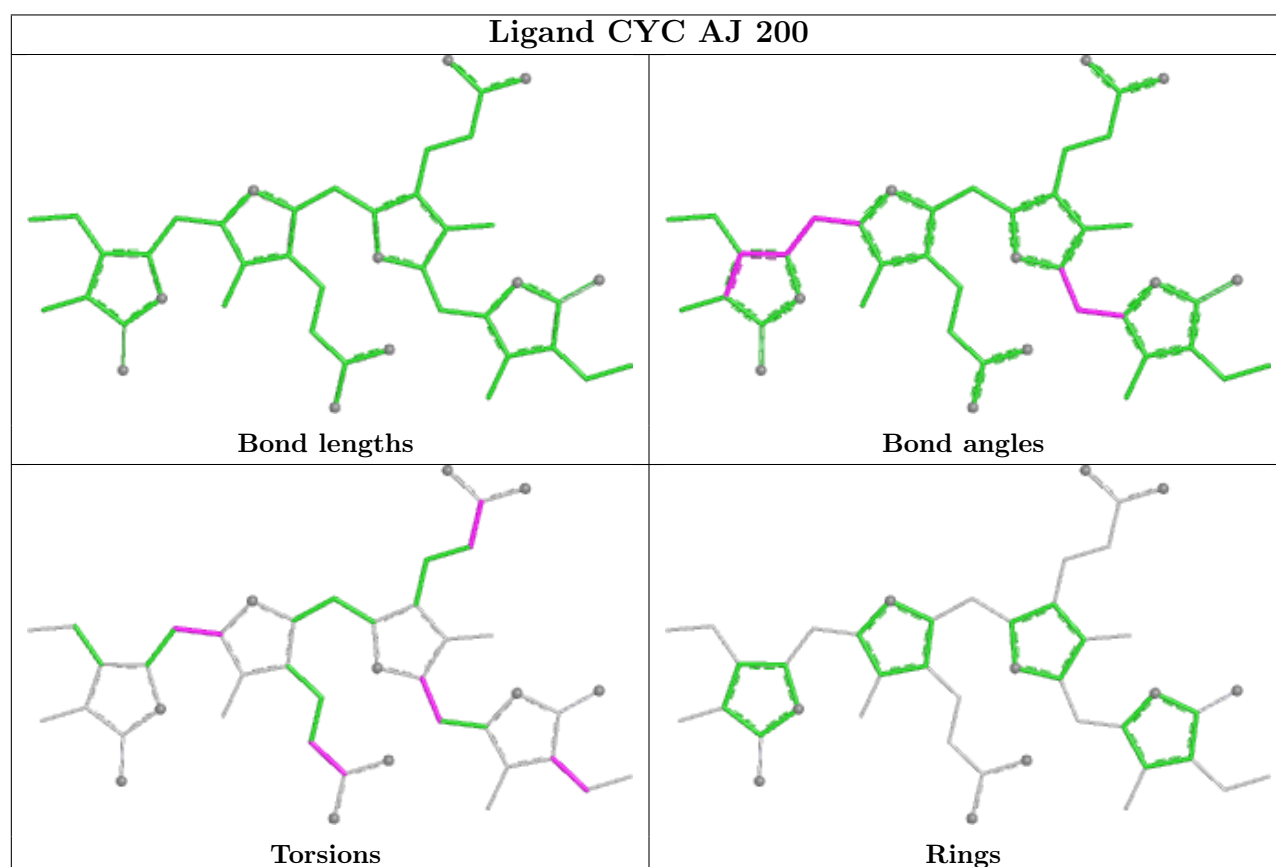
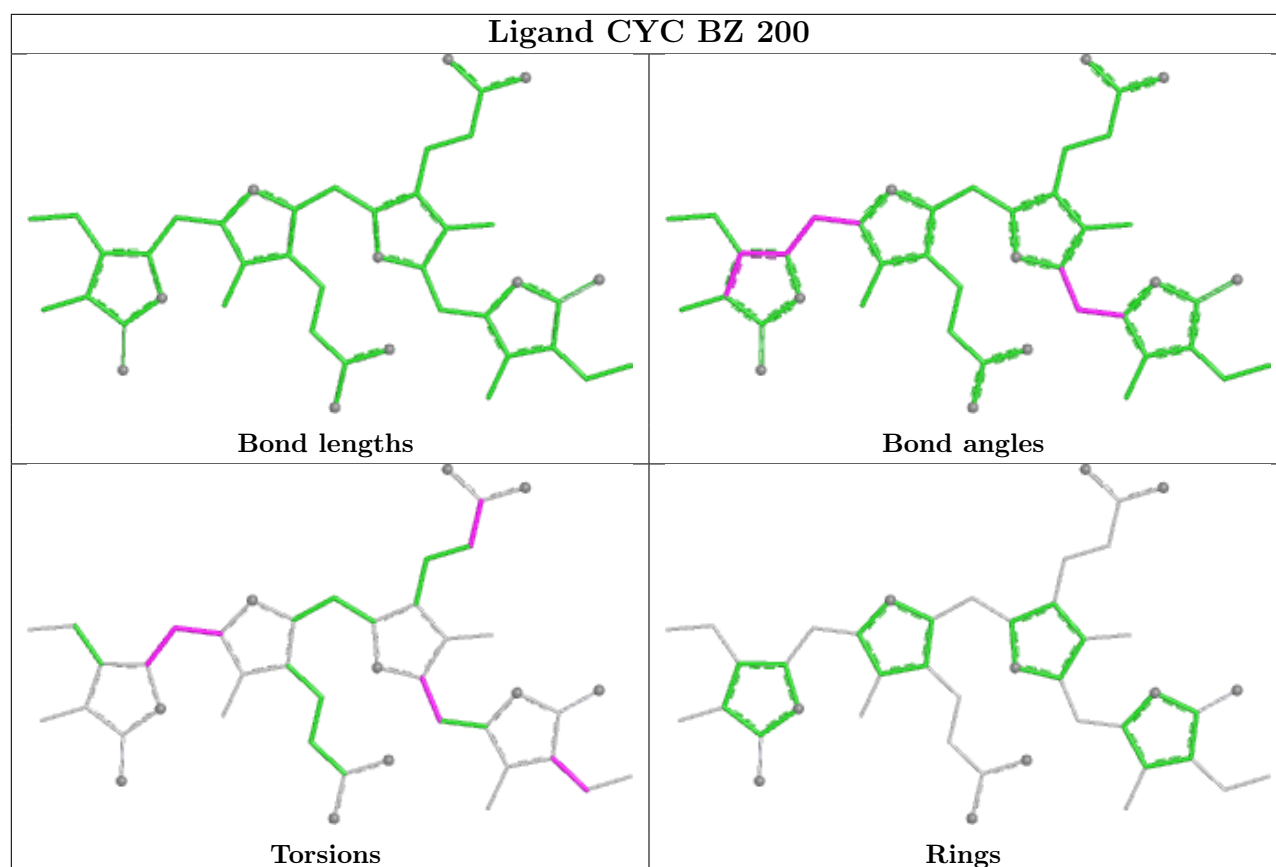


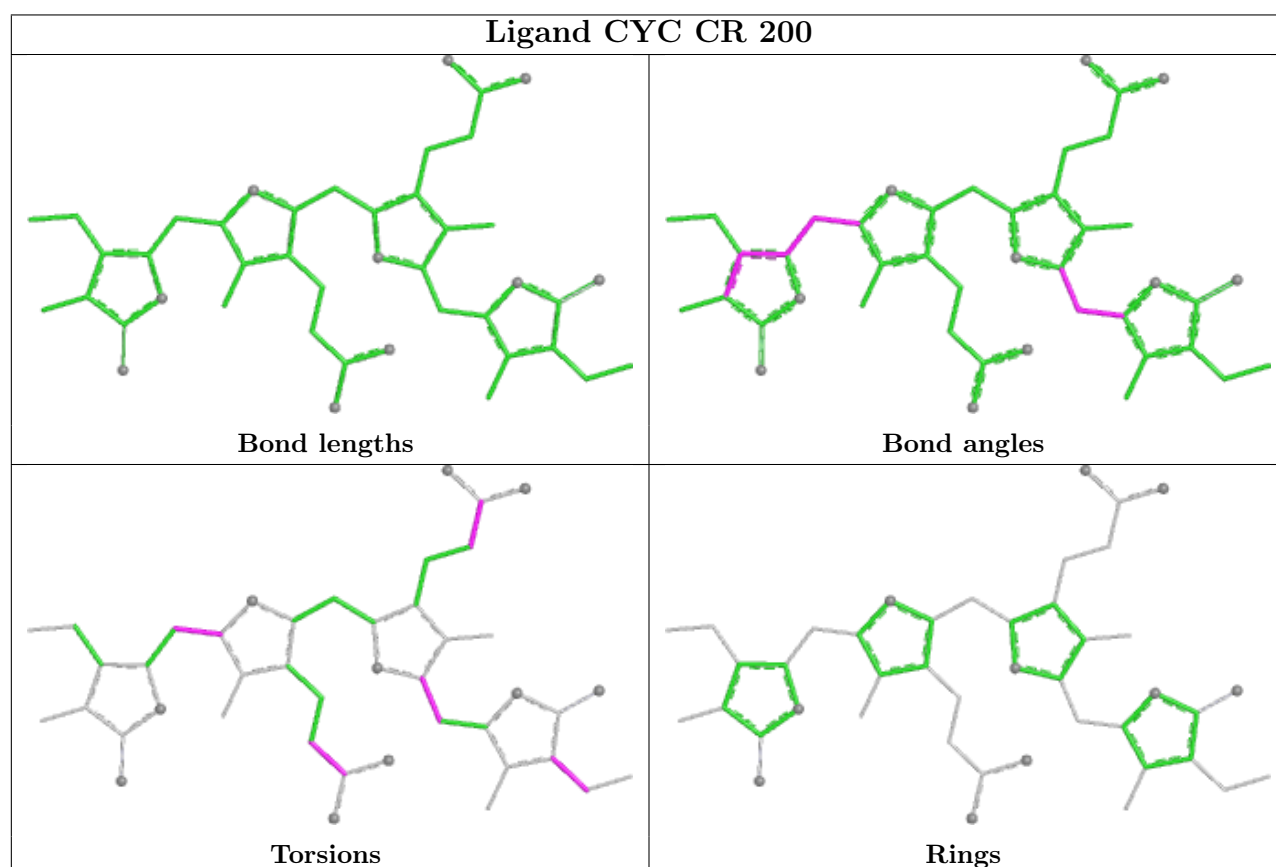
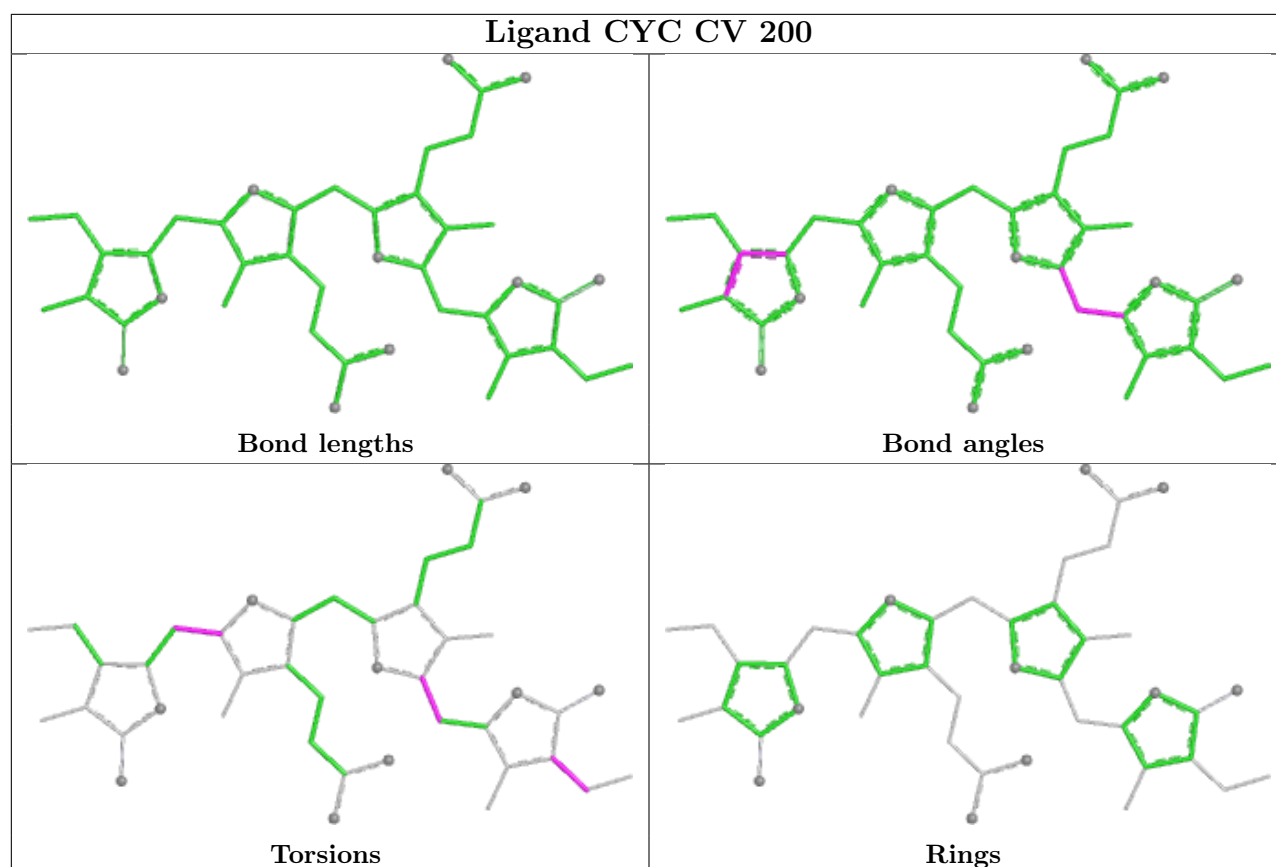
## Ligand CYC AB 200

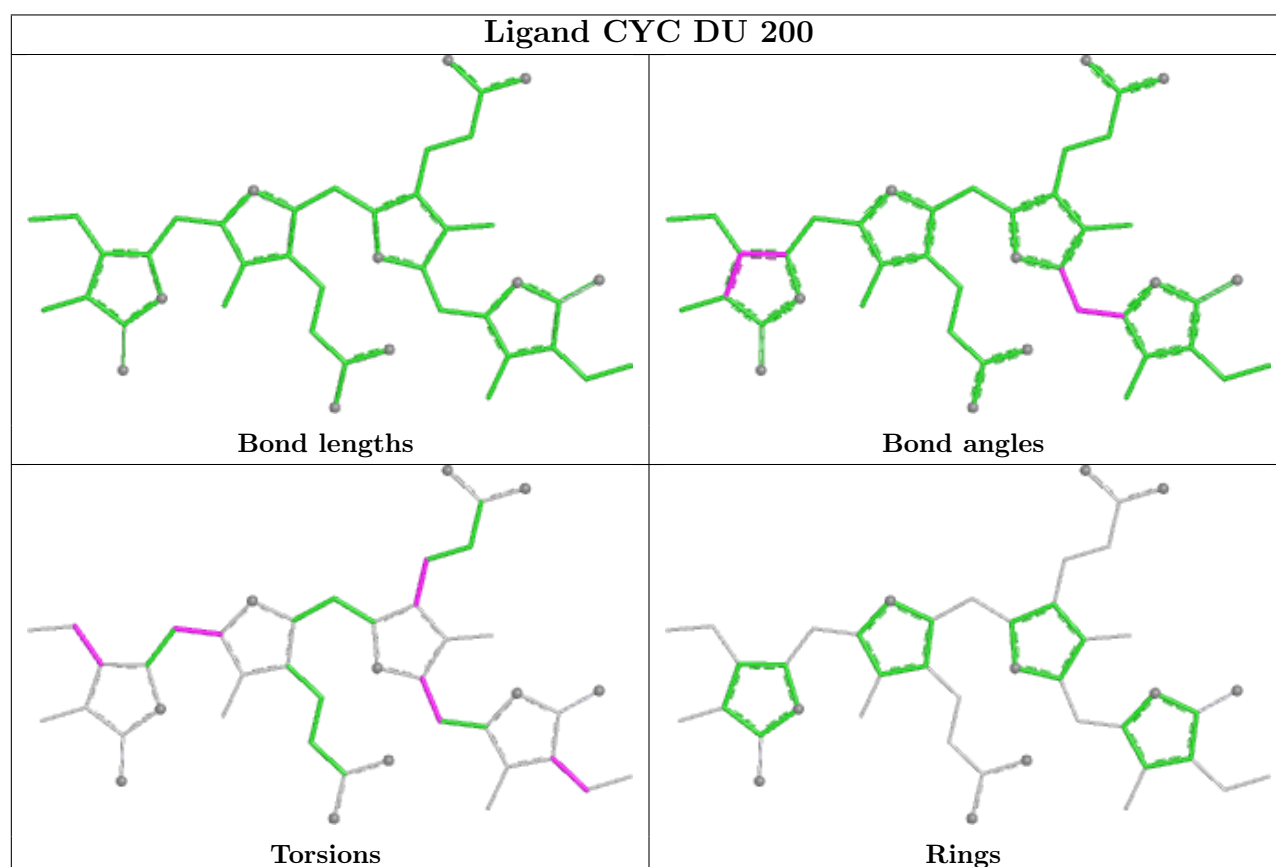
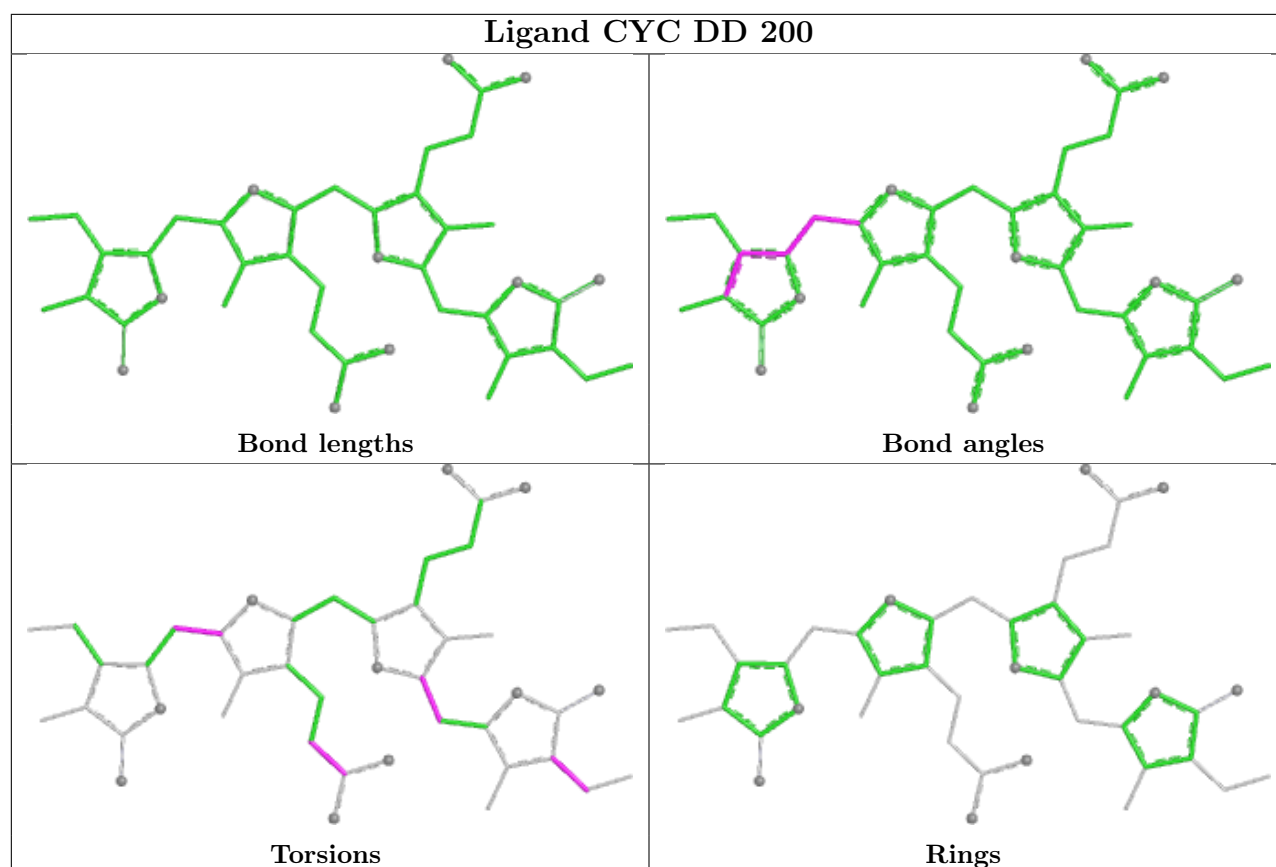


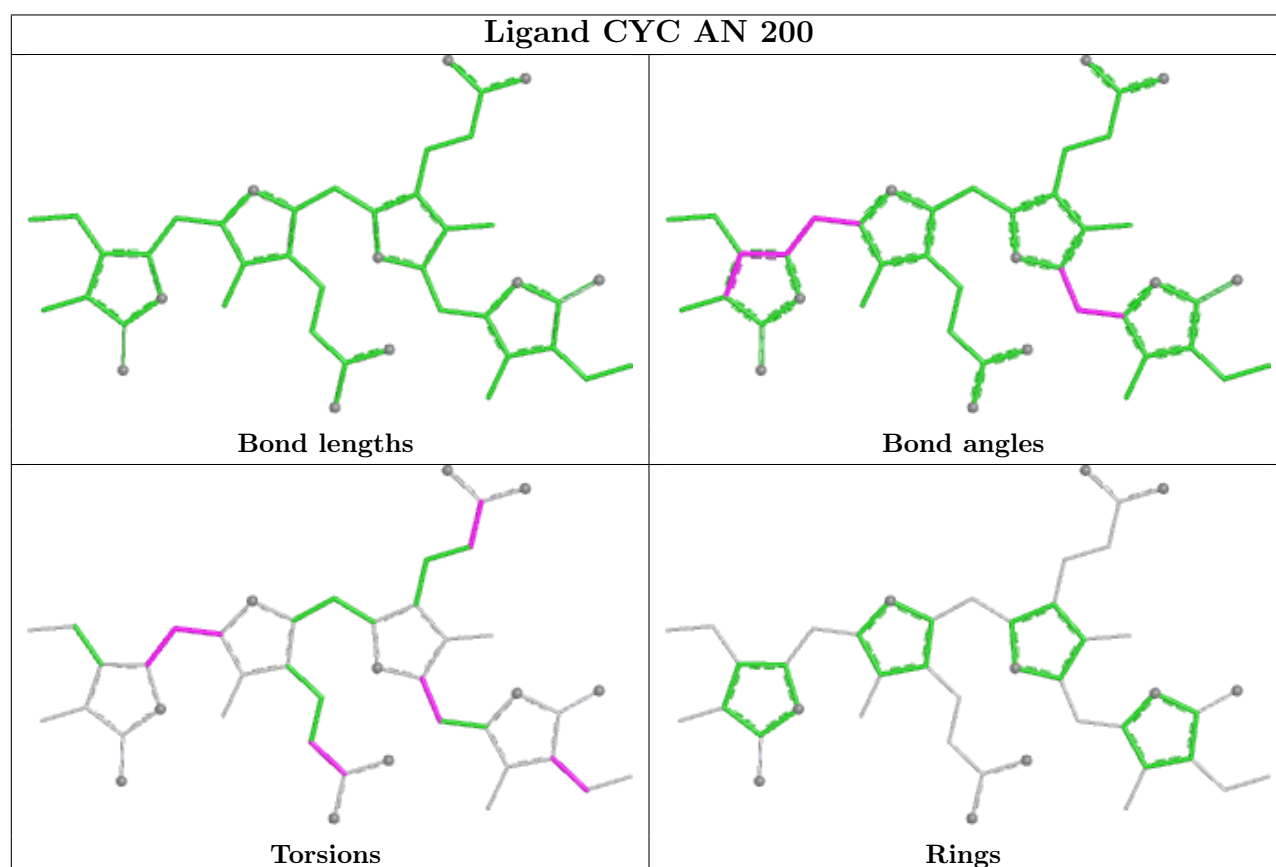
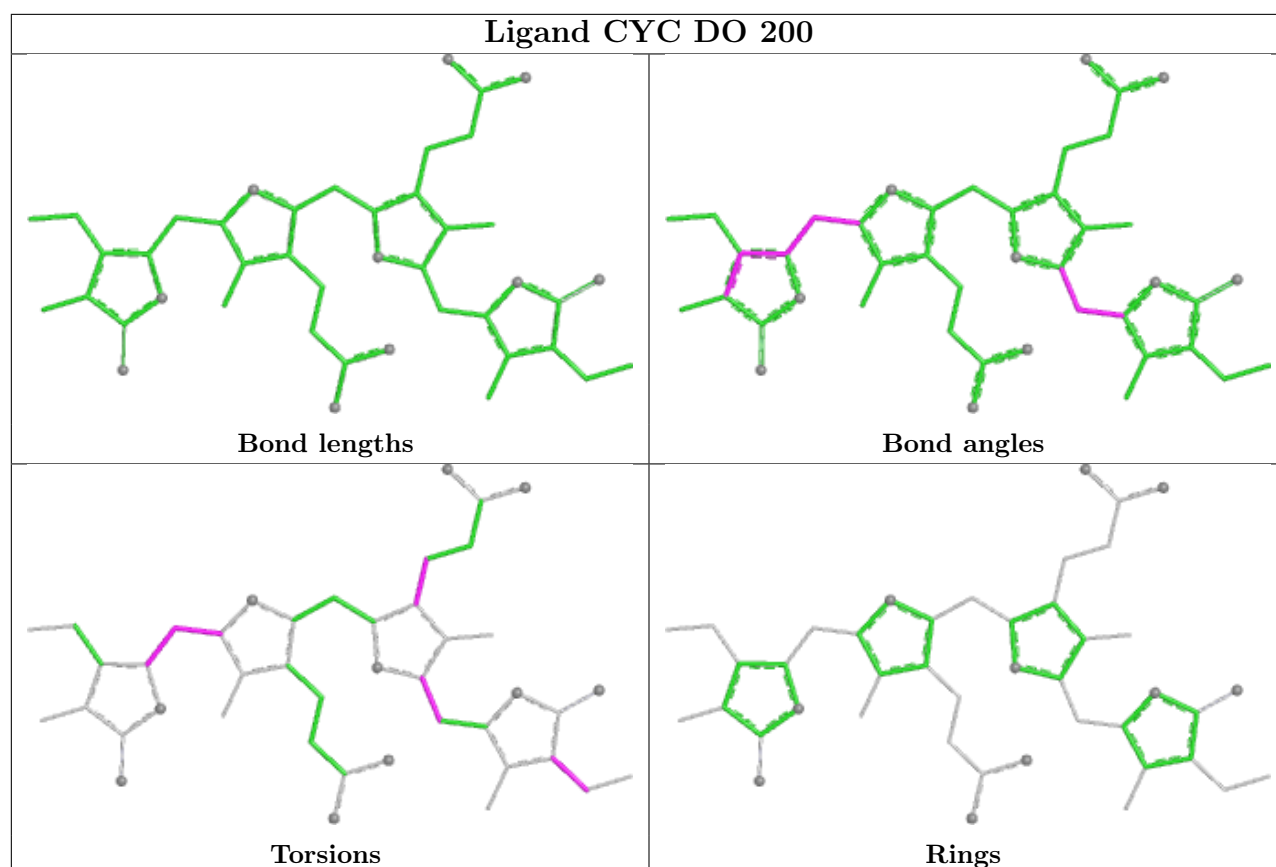
## Ligand CYC AY 200



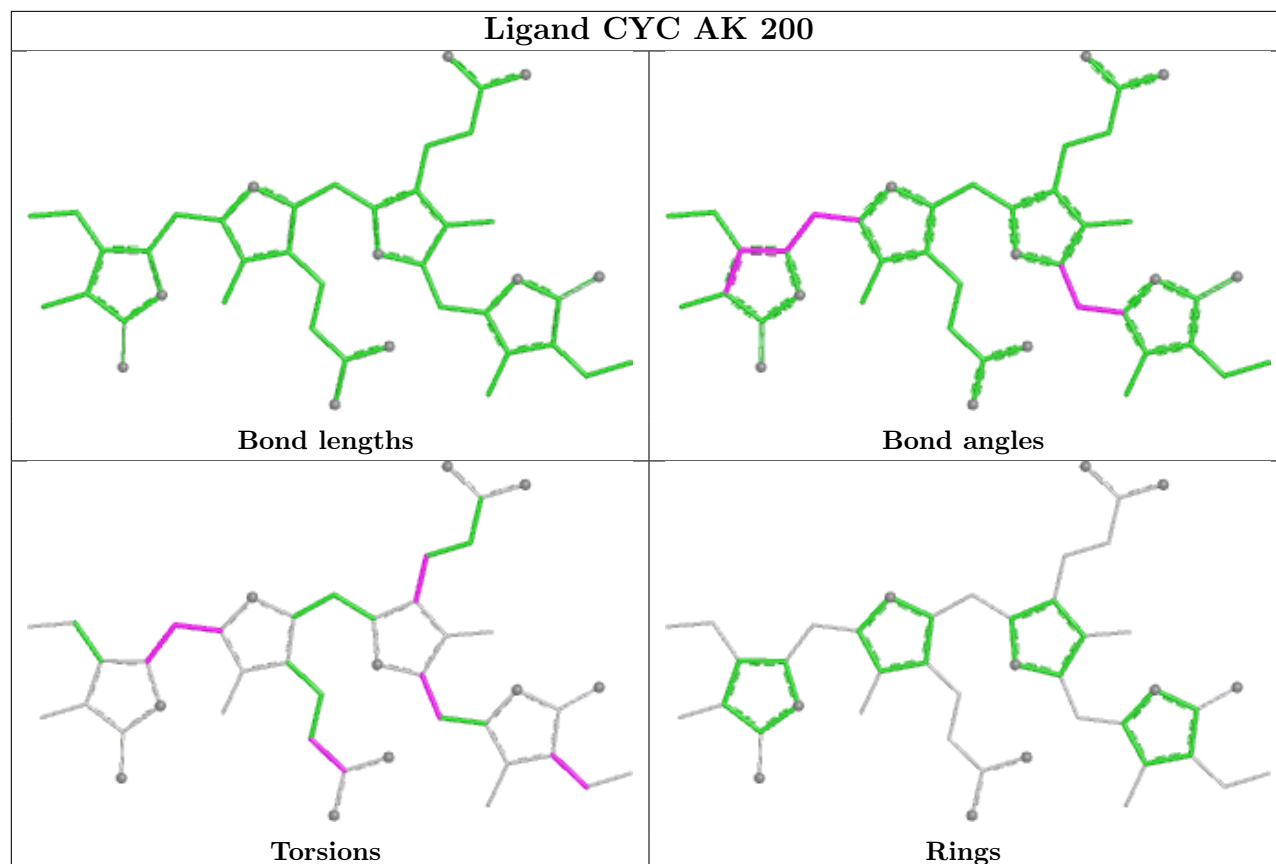




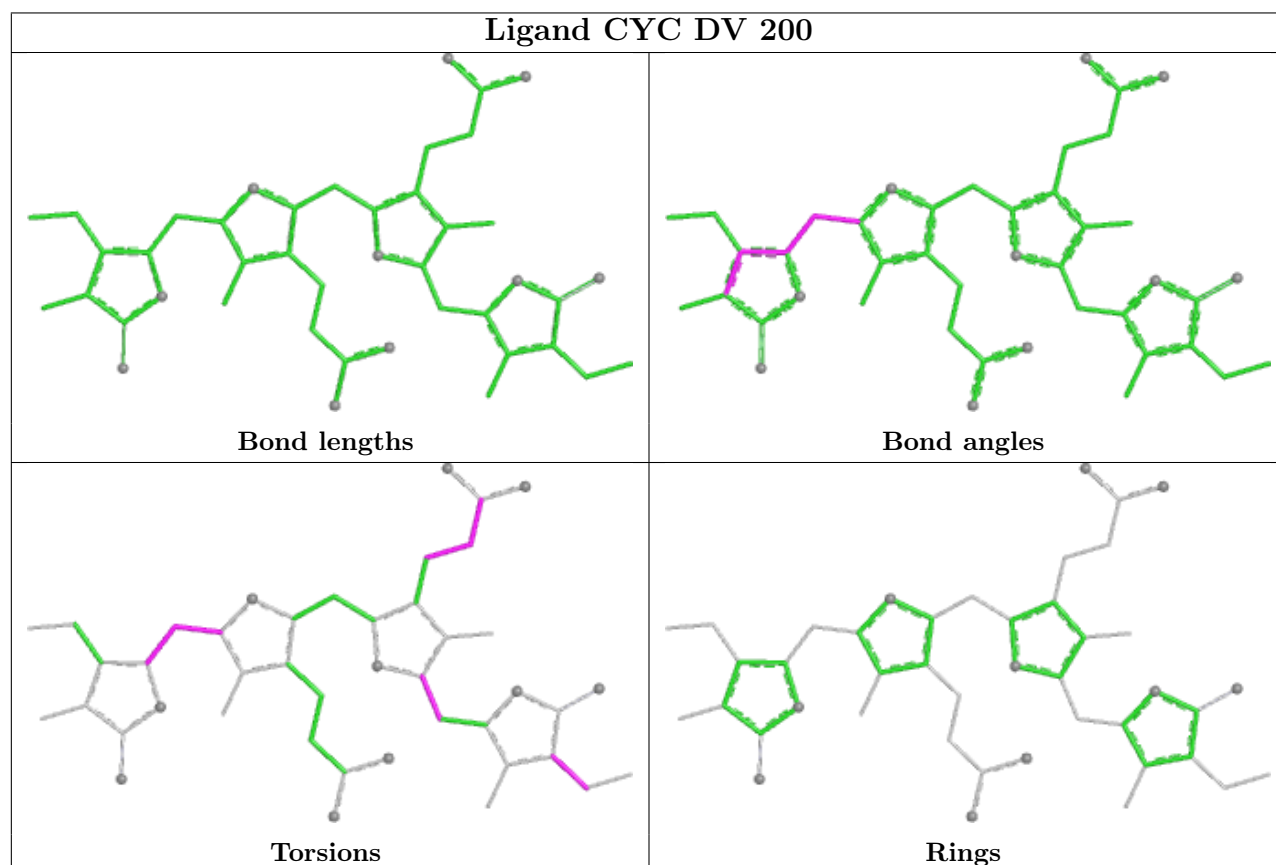


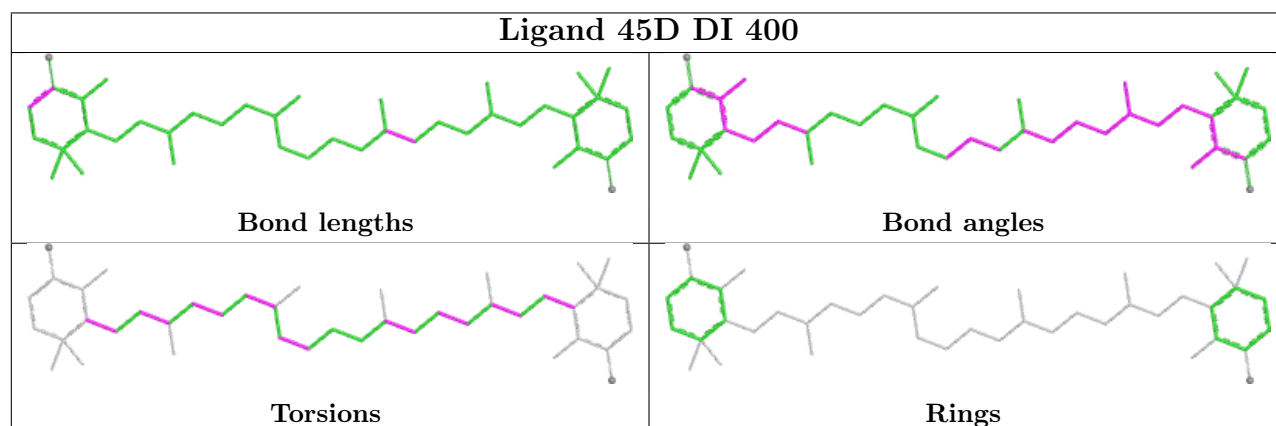
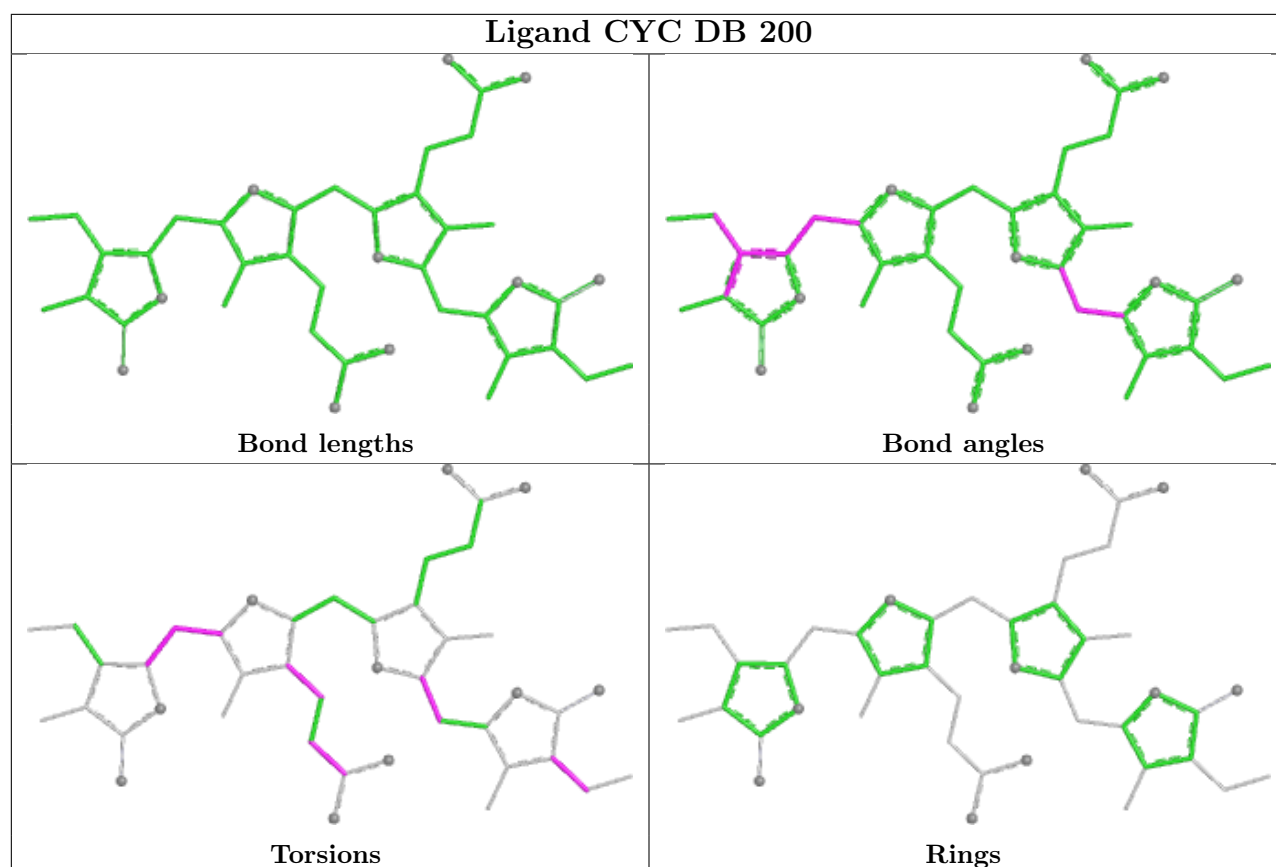


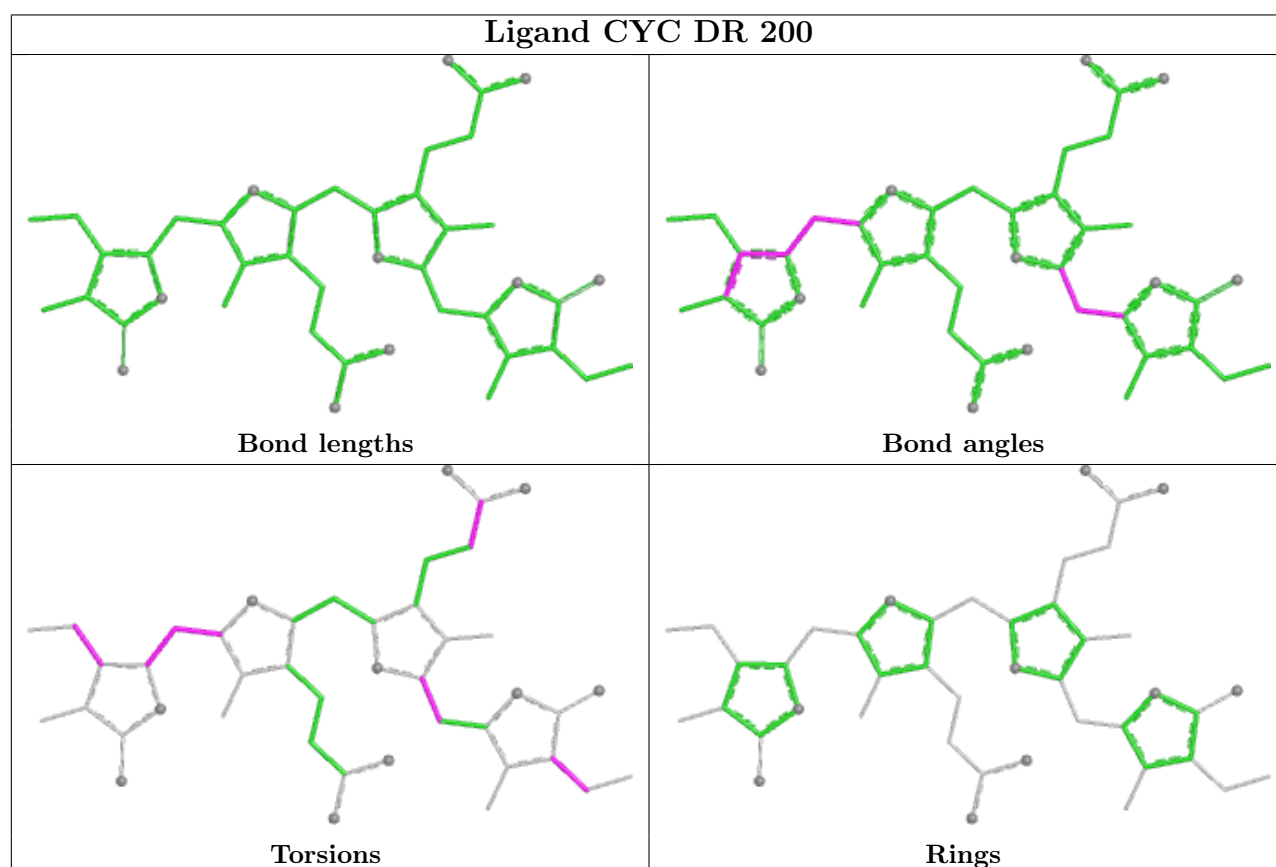
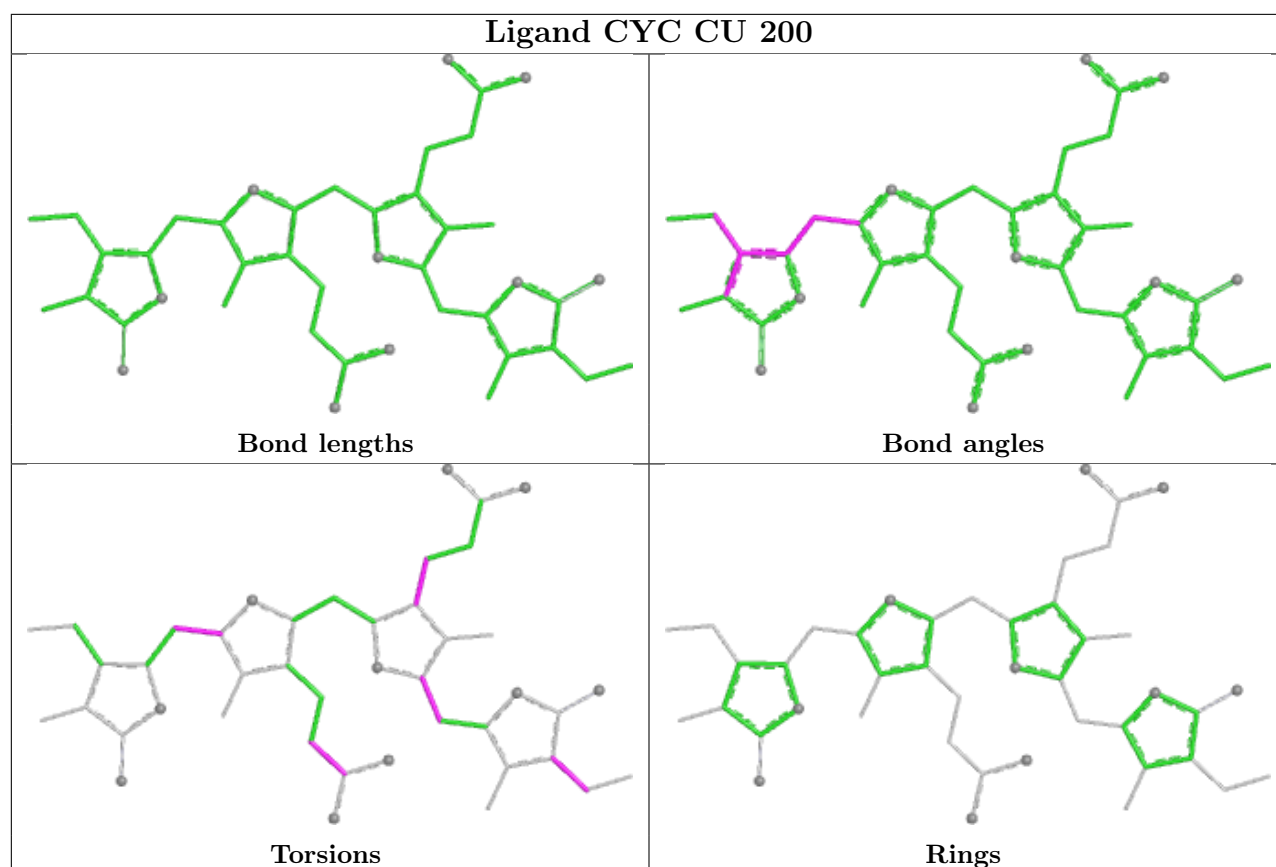
## Ligand CYC AK 200



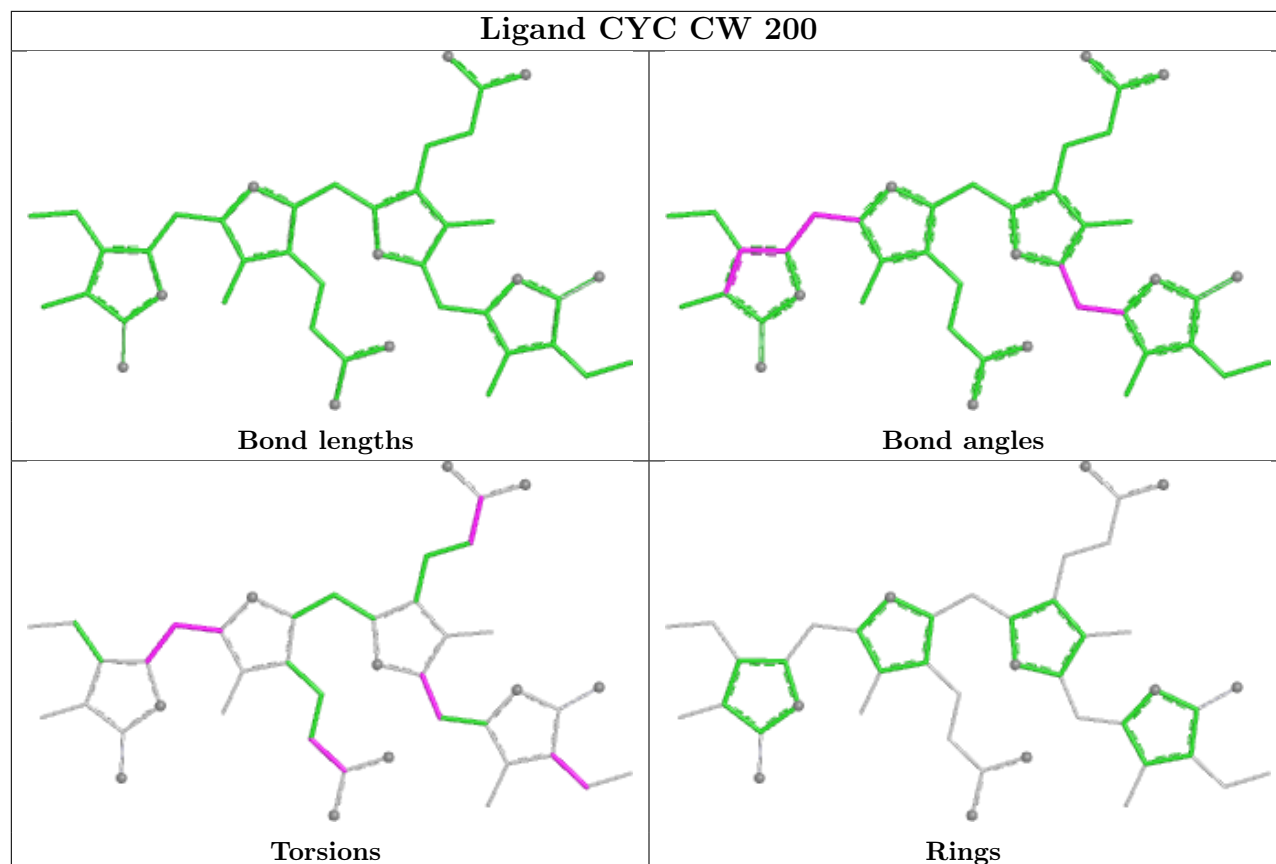
## Ligand CYC DV 200



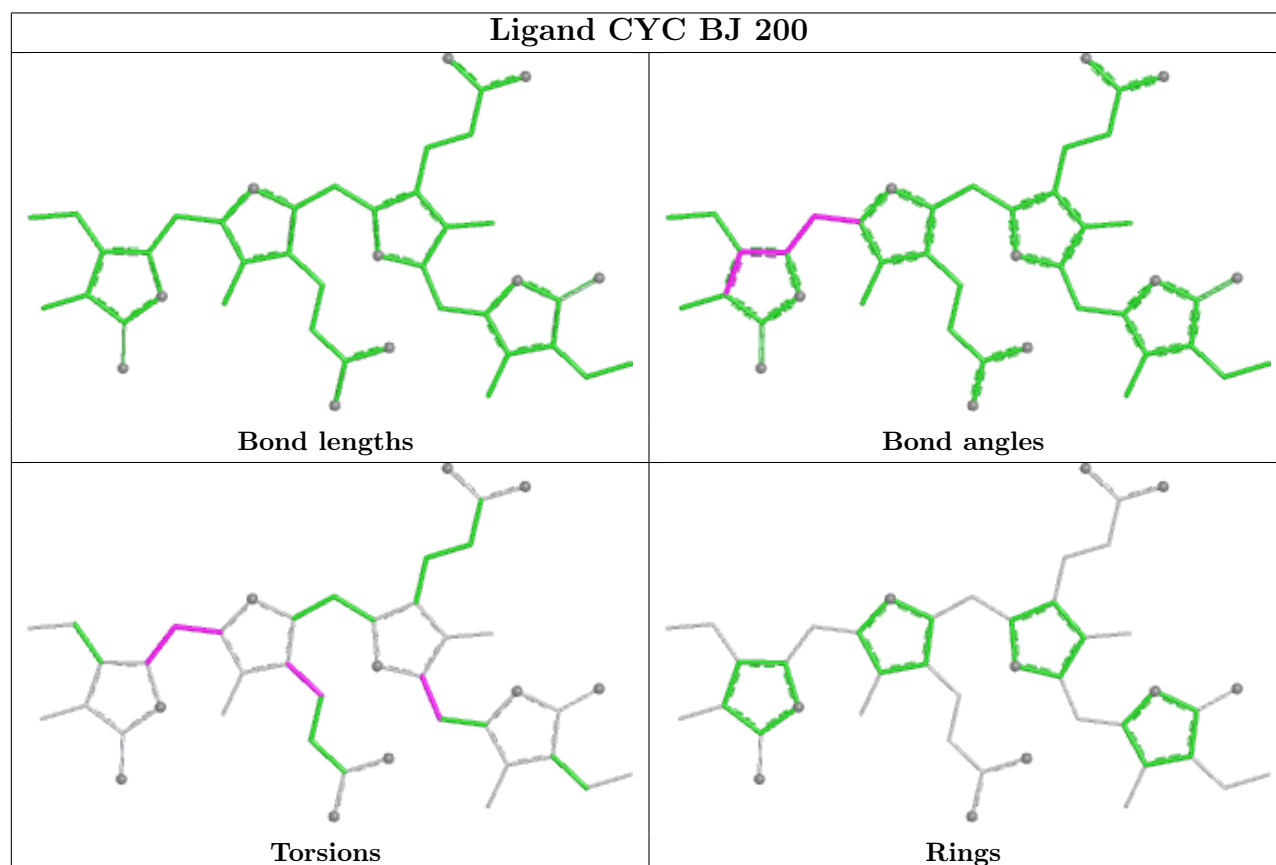


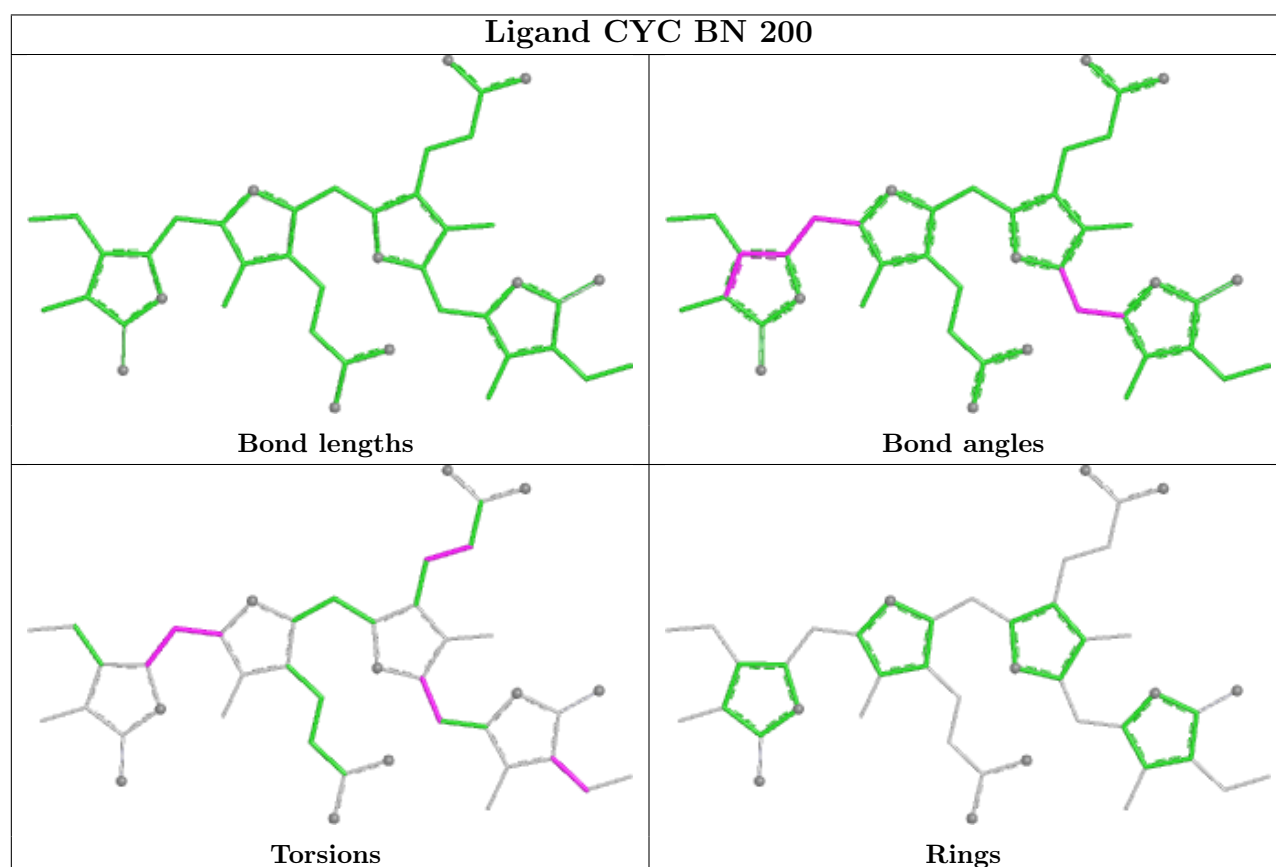
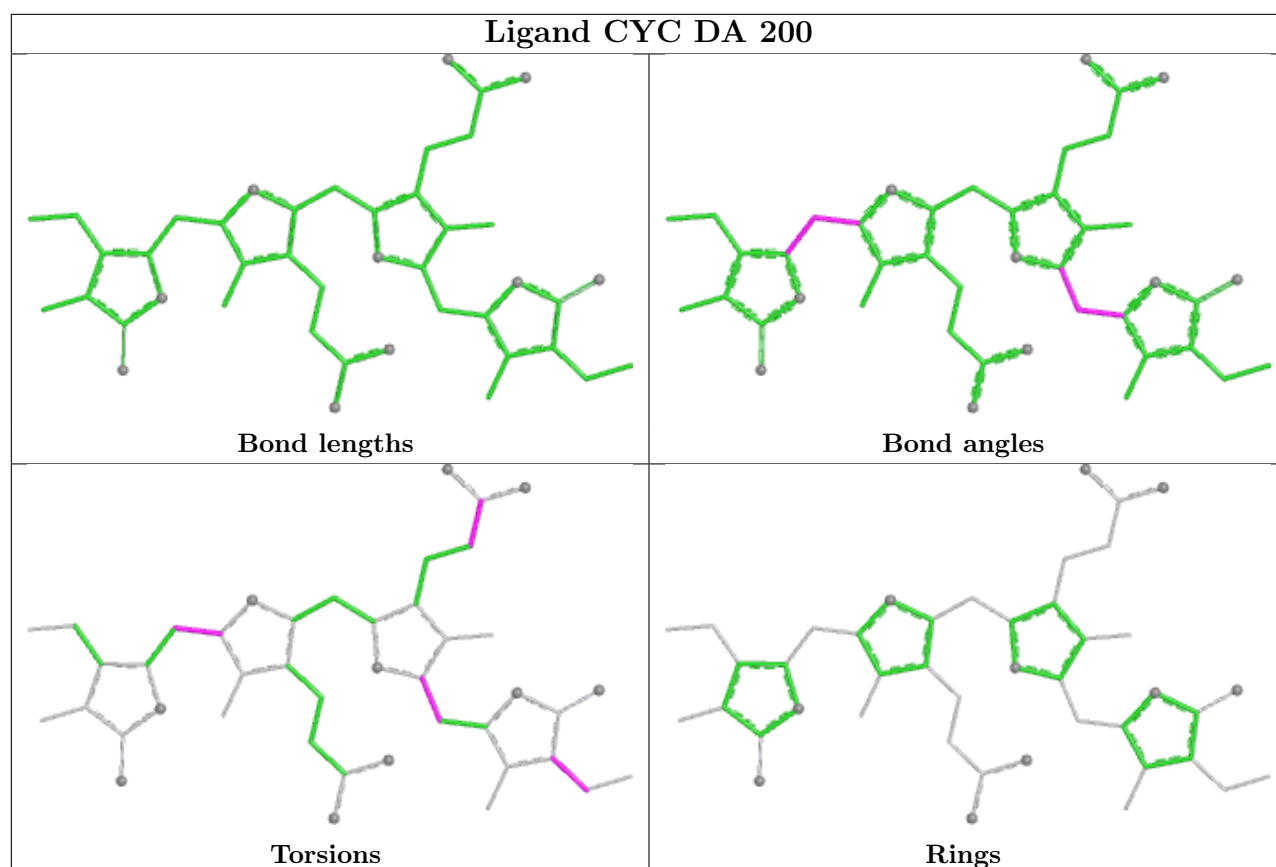


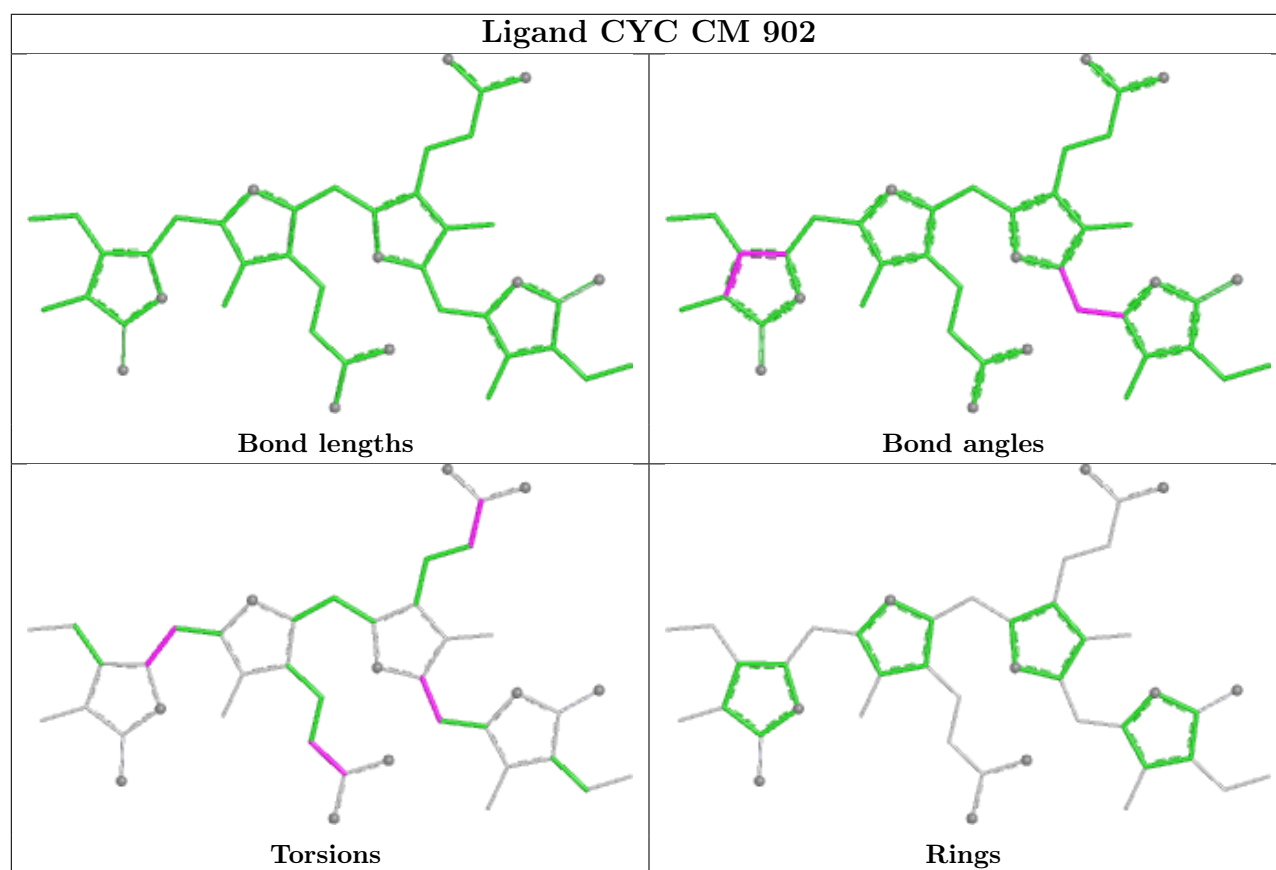
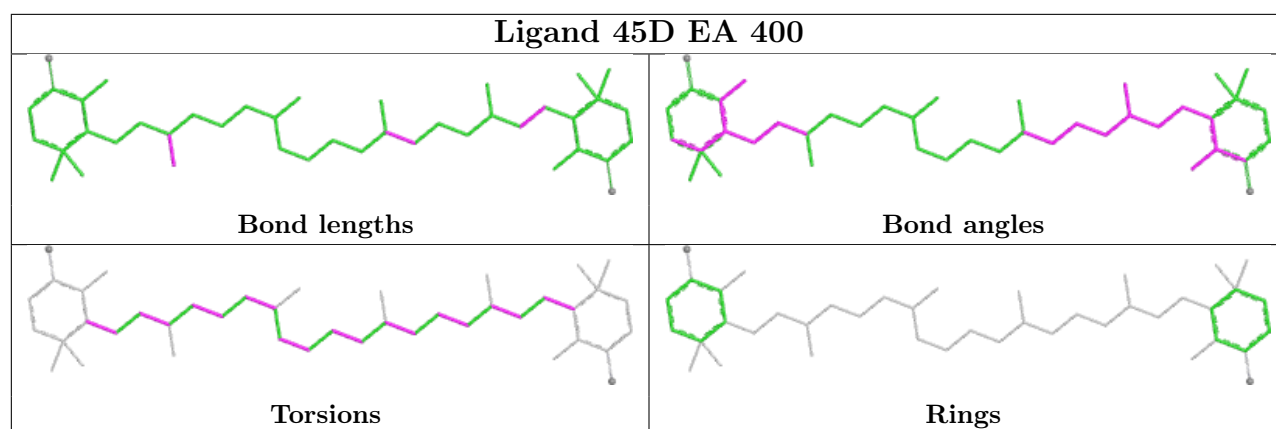
## Ligand CYC CW 200



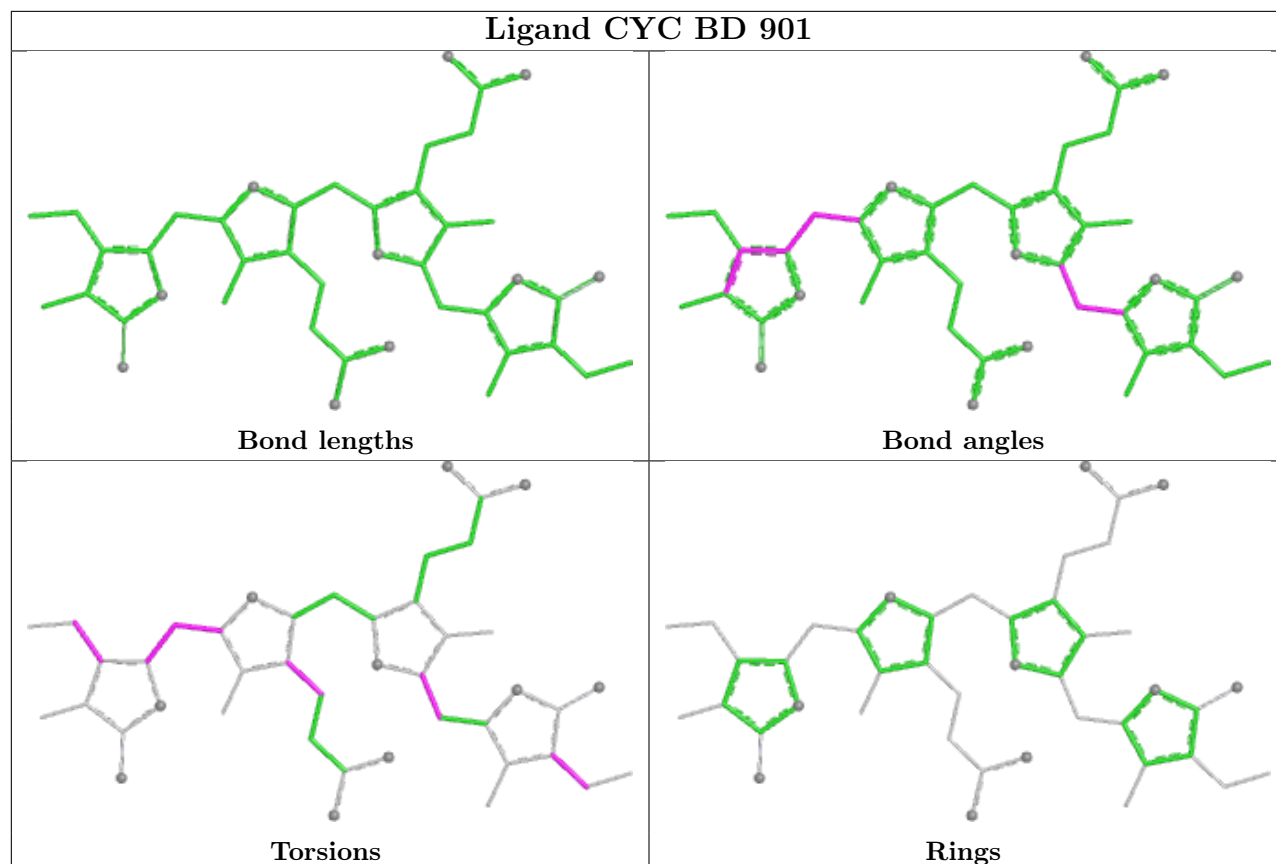
## Ligand CYC BJ 200



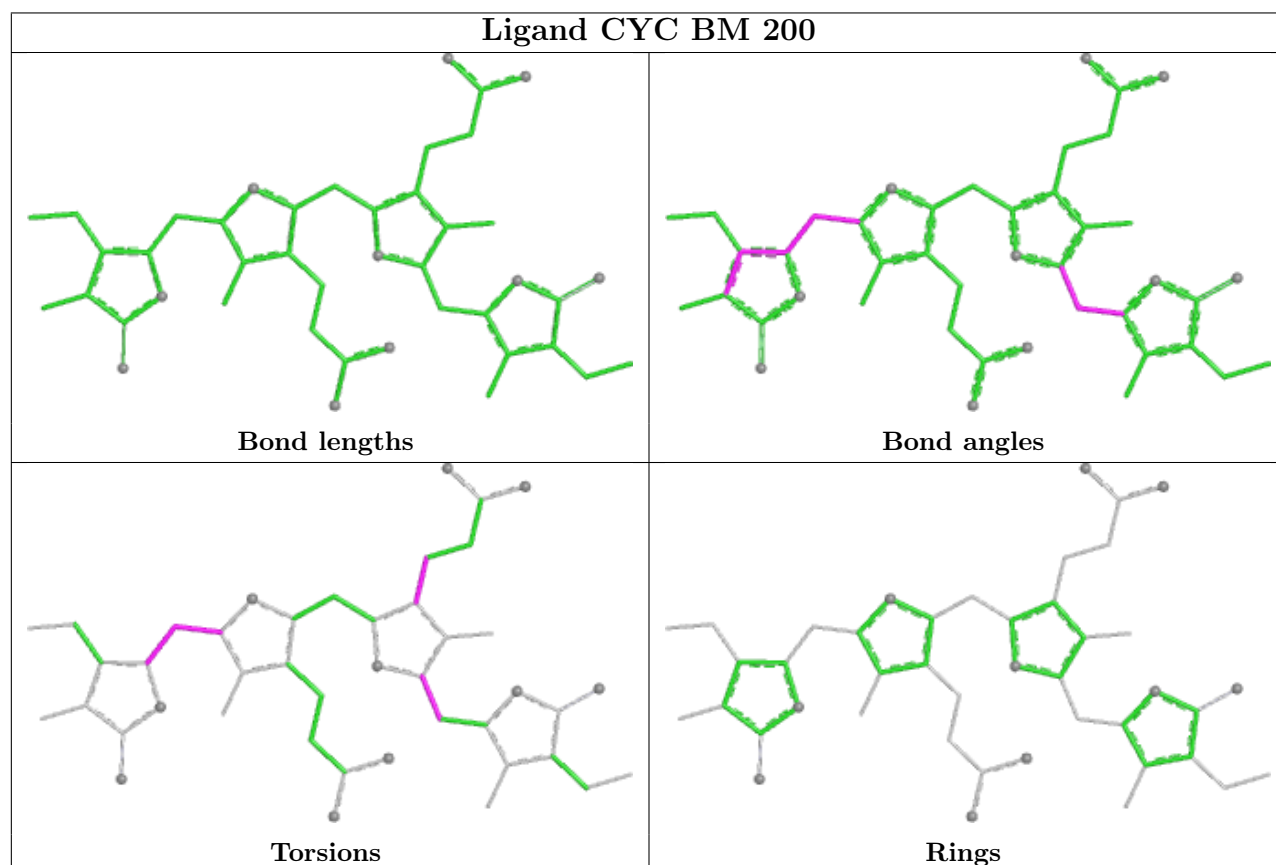


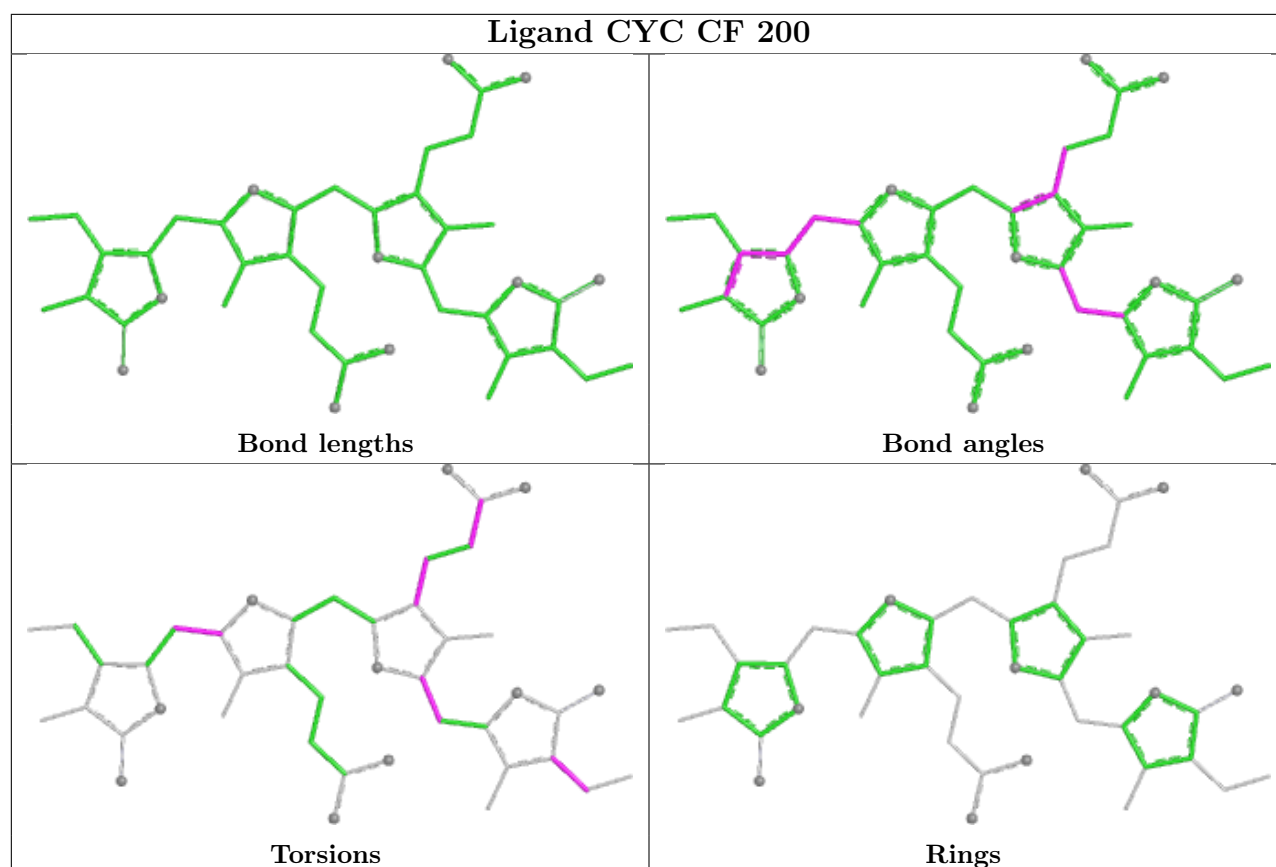


## Ligand CYC BD 901



## Ligand CYC BM 200





## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

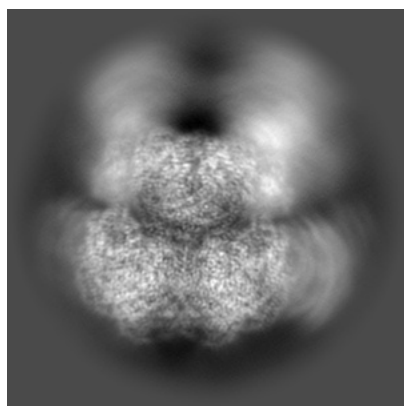
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25030. These allow visual inspection of the internal detail of the map and identification of artifacts.

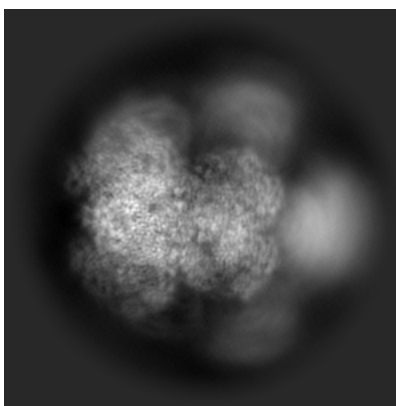
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

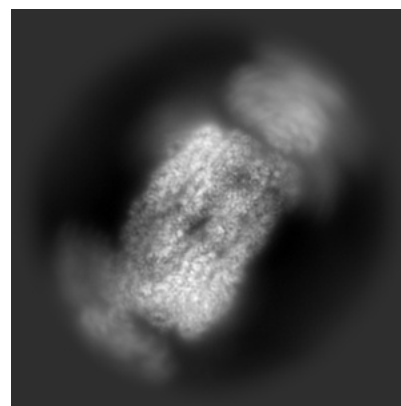
#### 6.1.1 Primary map



X

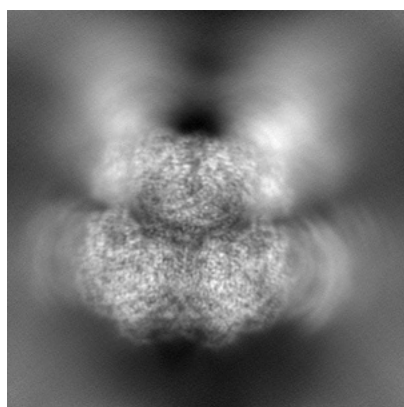


Y

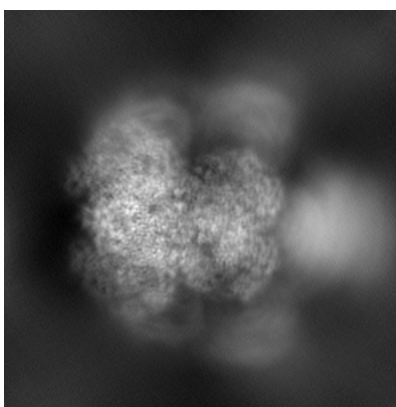


Z

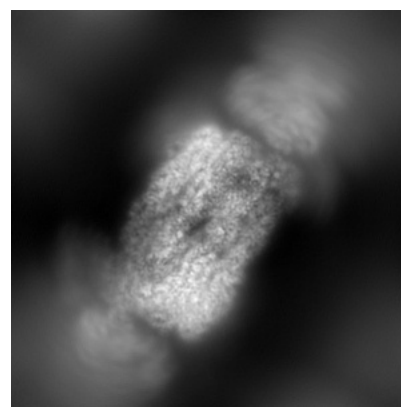
#### 6.1.2 Raw map



X



Y

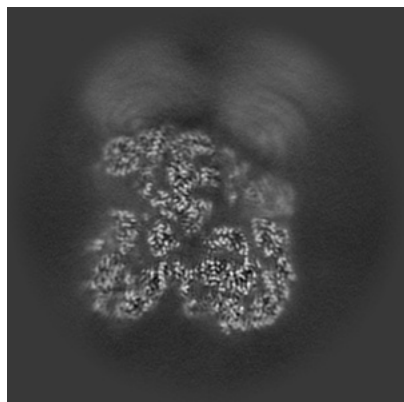


Z

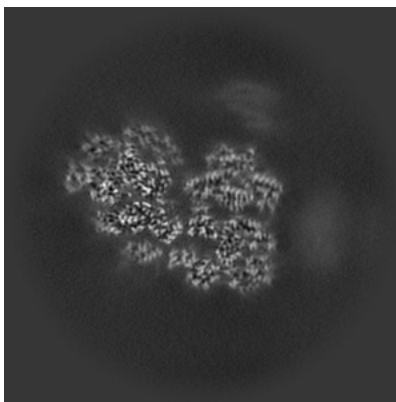
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

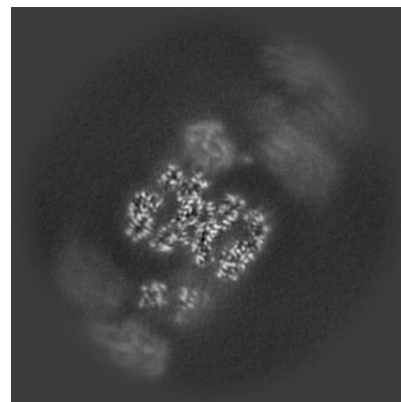
### 6.2.1 Primary map



X Index: 180

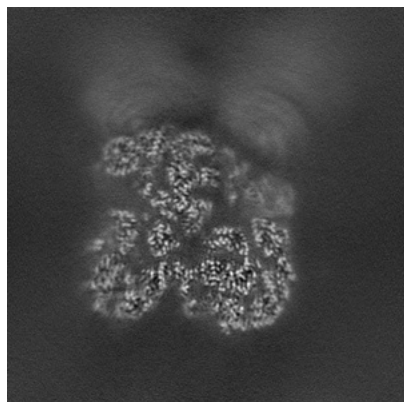


Y Index: 180

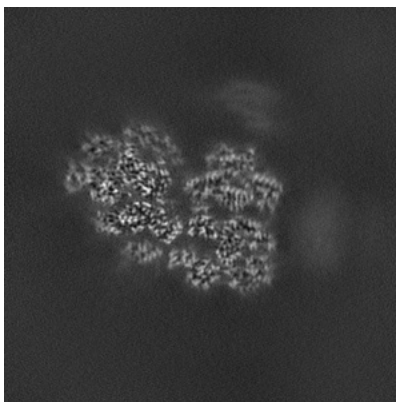


Z Index: 180

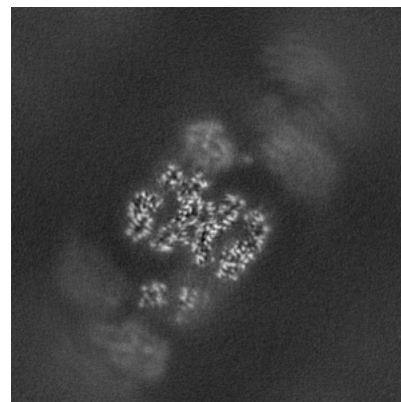
### 6.2.2 Raw map



X Index: 180



Y Index: 180

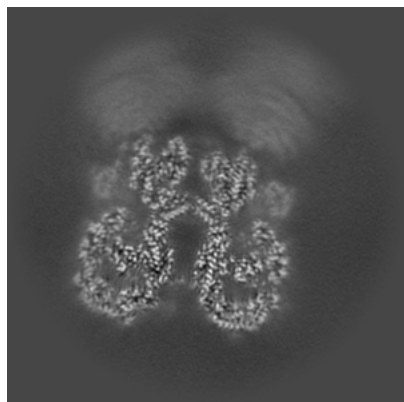


Z Index: 180

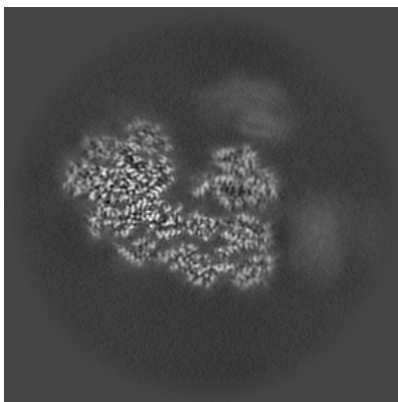
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

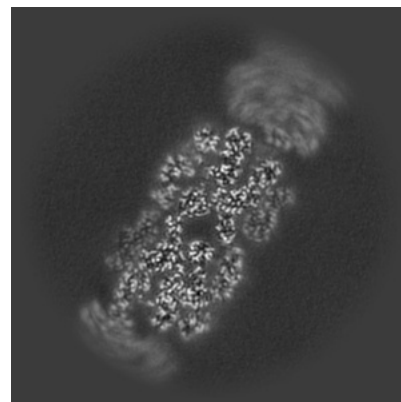
### 6.3.1 Primary map



X Index: 168

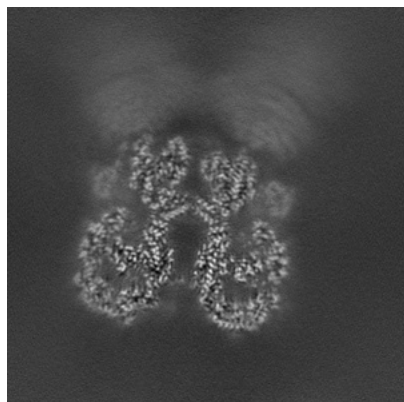


Y Index: 186

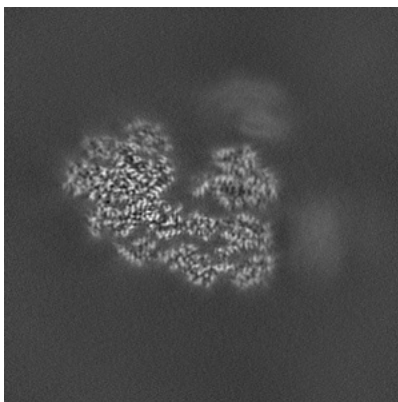


Z Index: 139

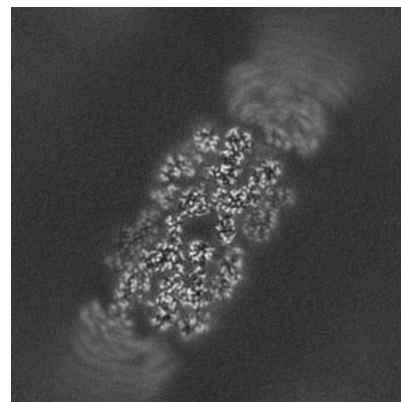
### 6.3.2 Raw map



X Index: 168



Y Index: 186

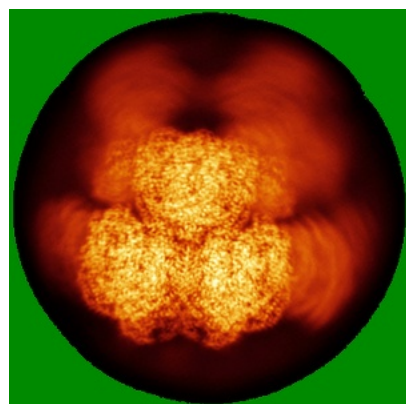


Z Index: 139

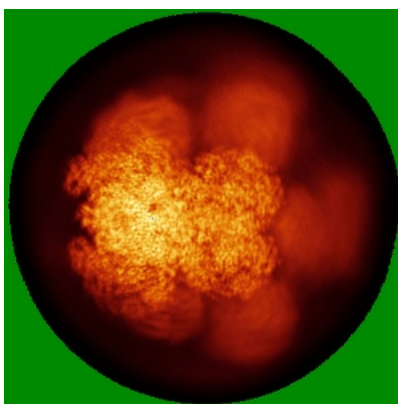
The images above show the largest variance slices of the map in three orthogonal directions.

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

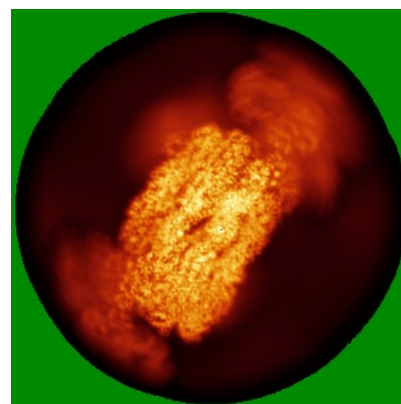
### 6.4.1 Primary map



X

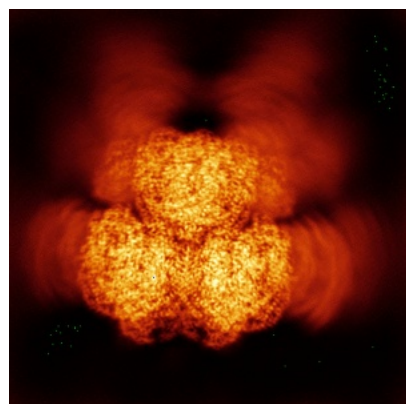


Y

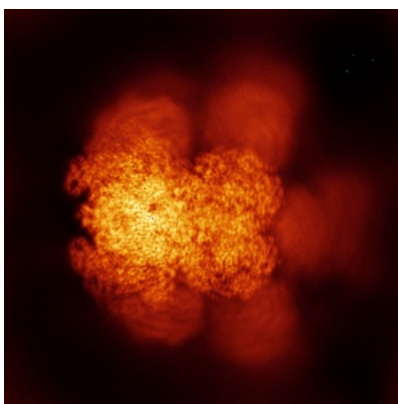


Z

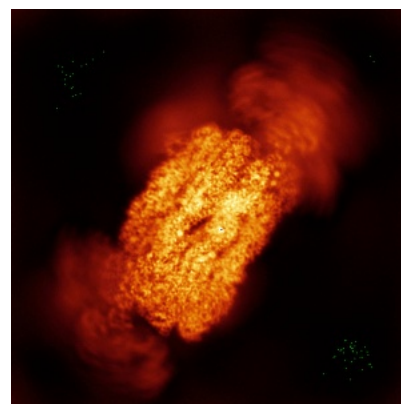
### 6.4.2 Raw map



X



Y

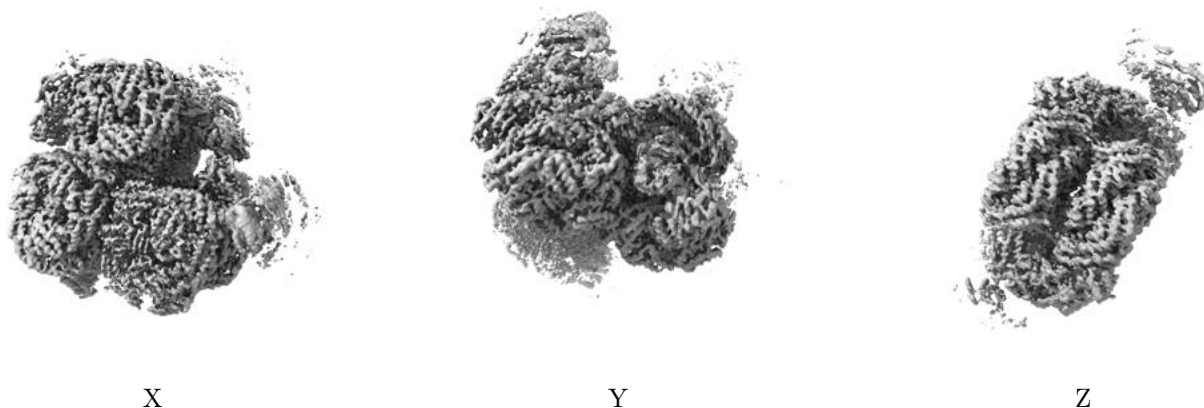


Z

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

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.437. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

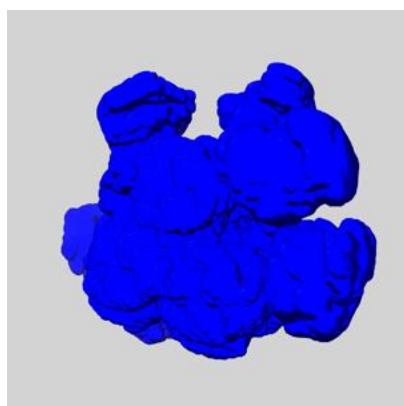
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

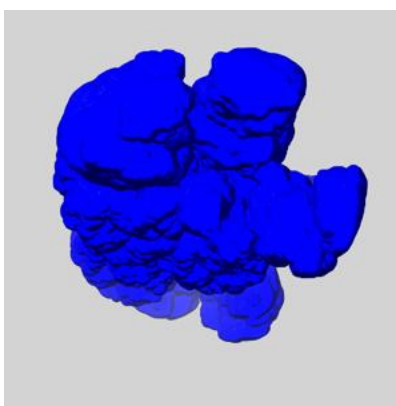
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

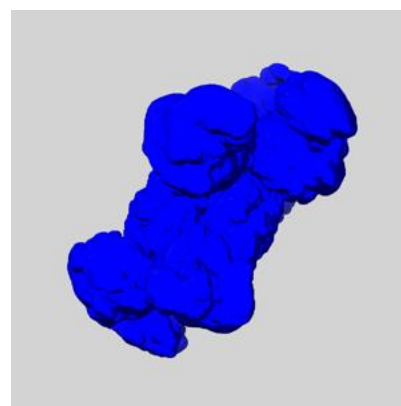
### 6.6.1 emd\_25030\_msk\_1.map [i](#)



X



Y

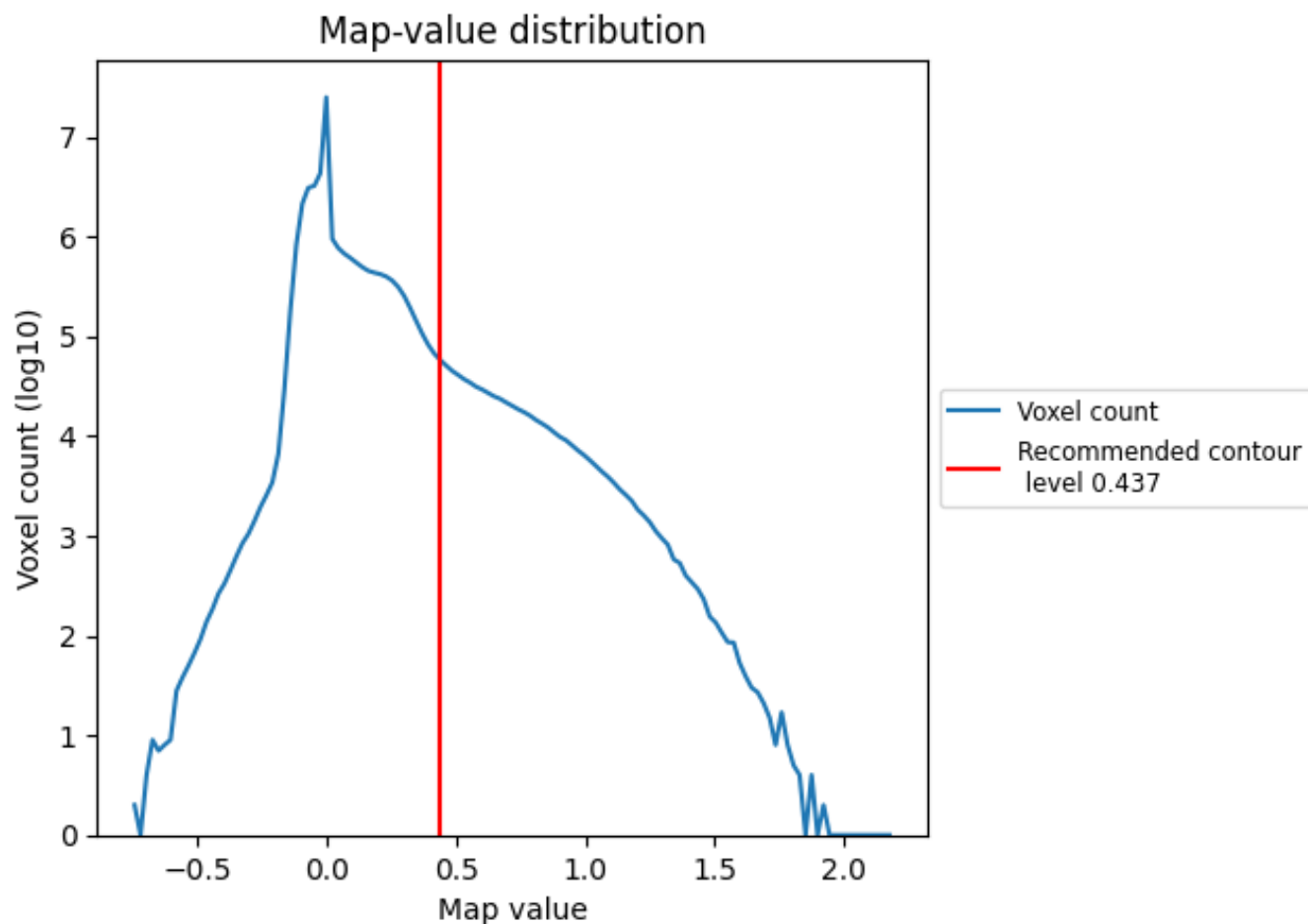


Z

## 7 Map analysis [i](#)

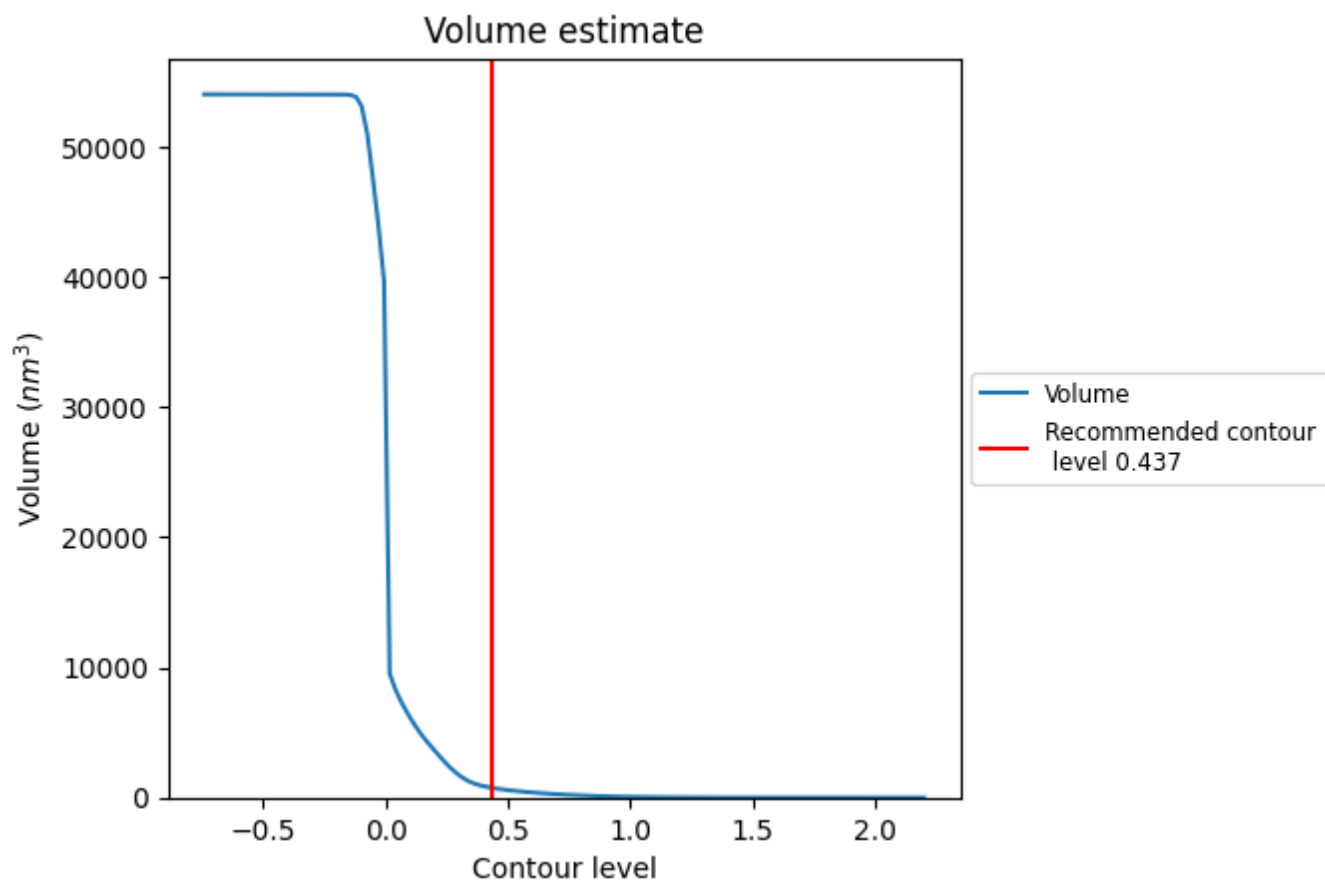
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

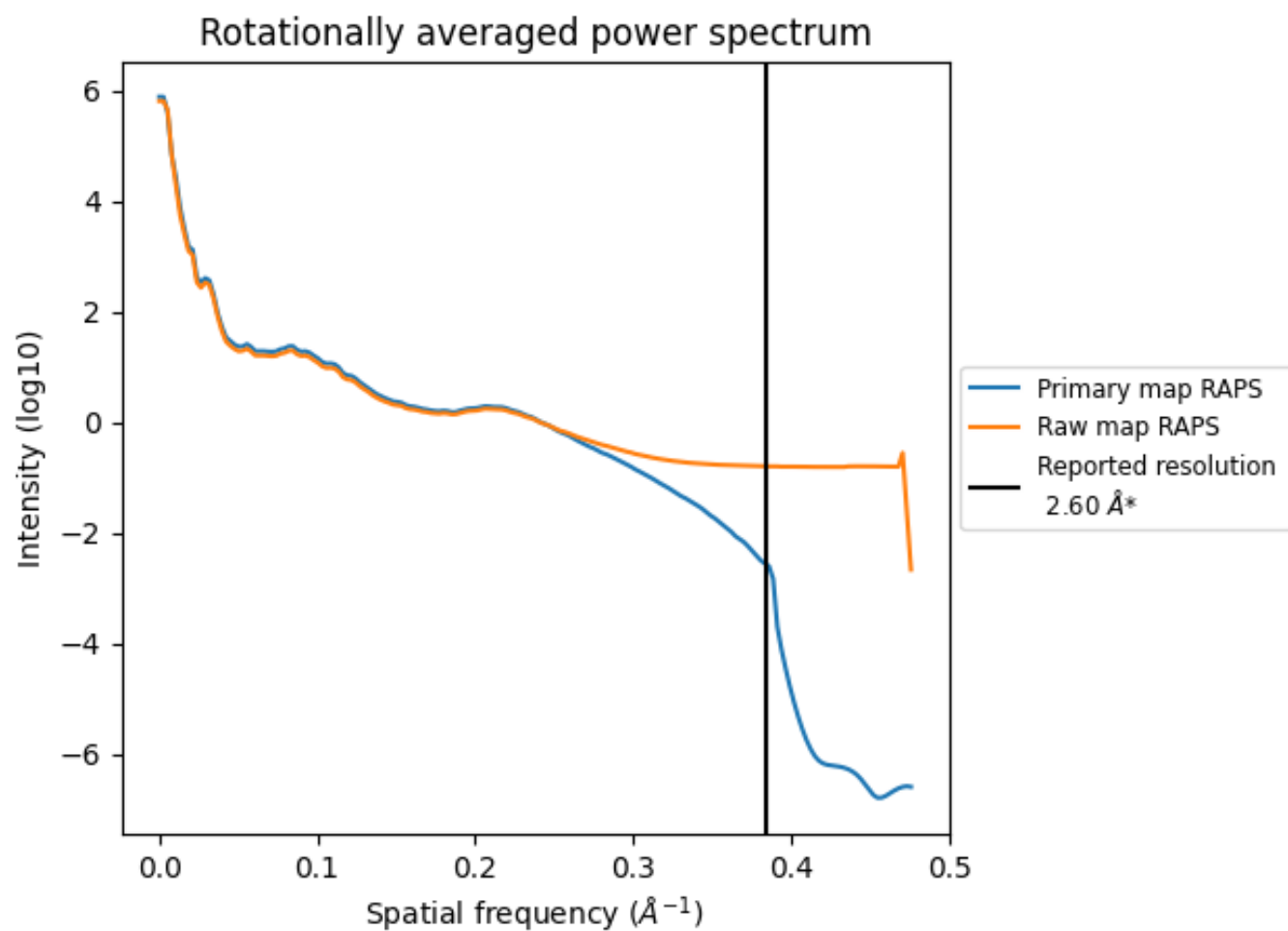
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 737 nm<sup>3</sup>; this corresponds to an approximate mass of 666 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum ⓘ

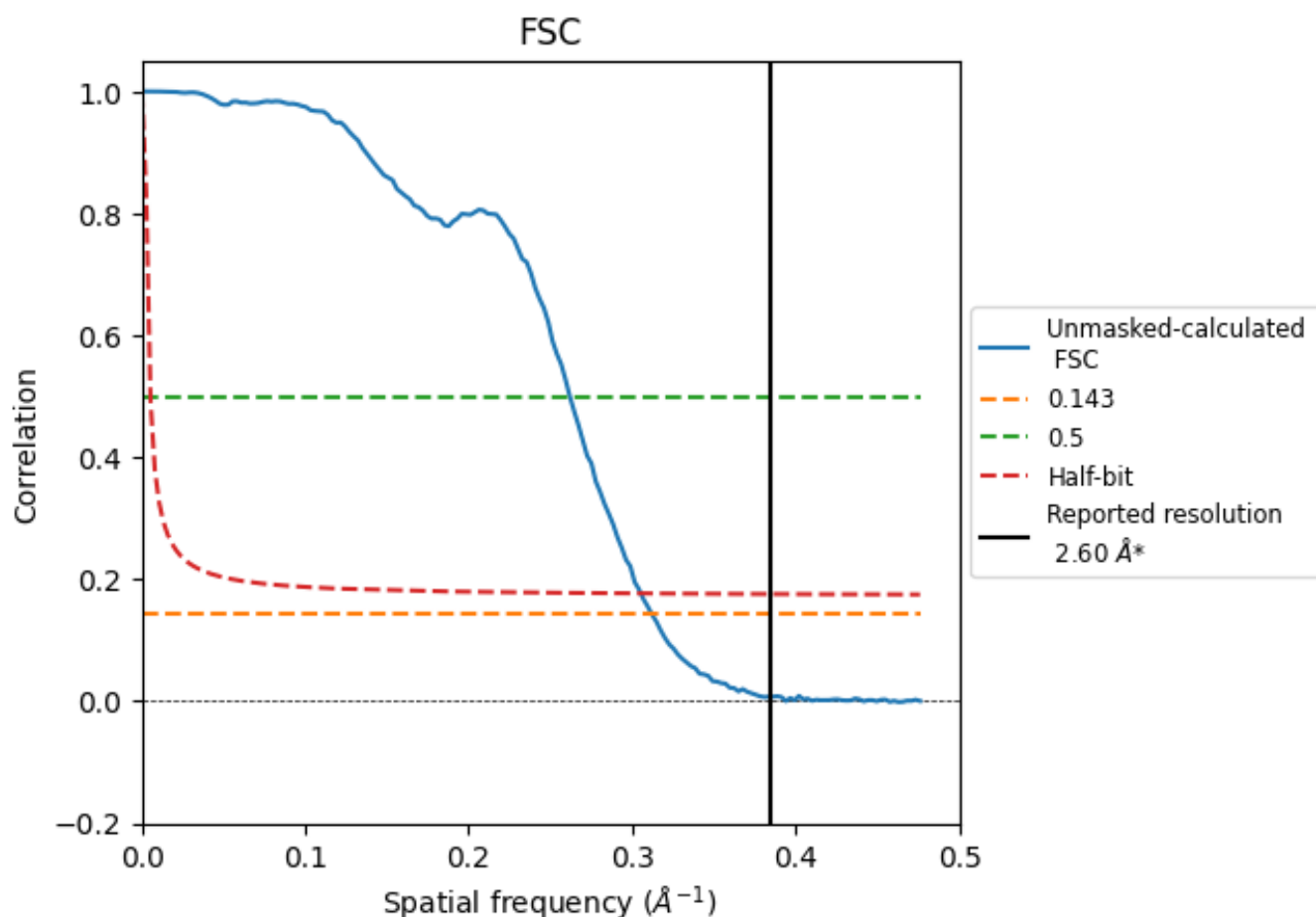


\*Reported resolution corresponds to spatial frequency of 0.385  $\text{\AA}^{-1}$

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.385 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

| Resolution estimate (Å)   | Estimation criterion (FSC cut-off) |      |          |
|---------------------------|------------------------------------|------|----------|
|                           | 0.143                              | 0.5  | Half-bit |
| Reported by author        | 2.60                               | -    | -        |
| Author-provided FSC curve | -                                  | -    | -        |
| Unmasked-calculated*      | 3.21                               | 3.82 | 3.28     |

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.21 differs from the reported value 2.6 by more than 10 %

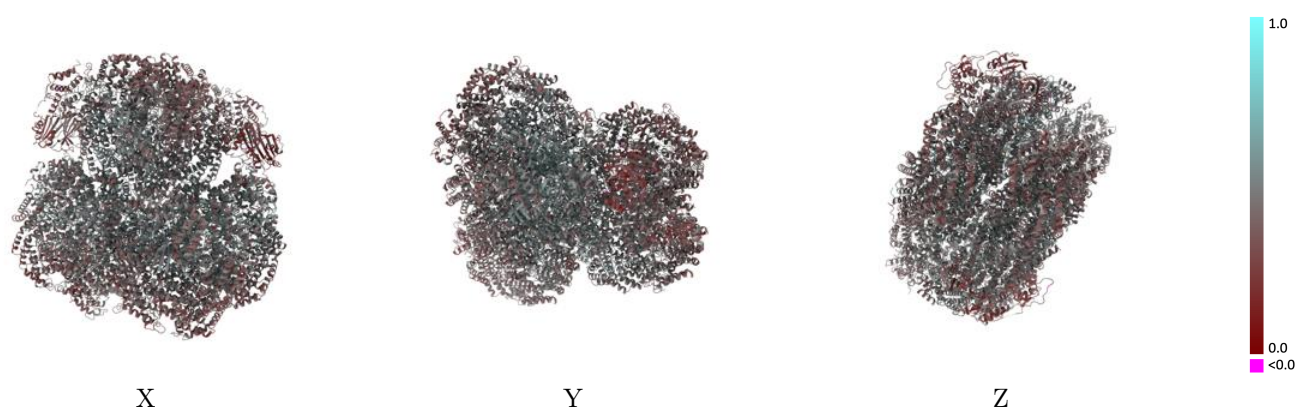
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-25030 and PDB model 7SC9. Per-residue inclusion information can be found in section 3 on page 18.

### 9.1 Map-model overlay [i](#)

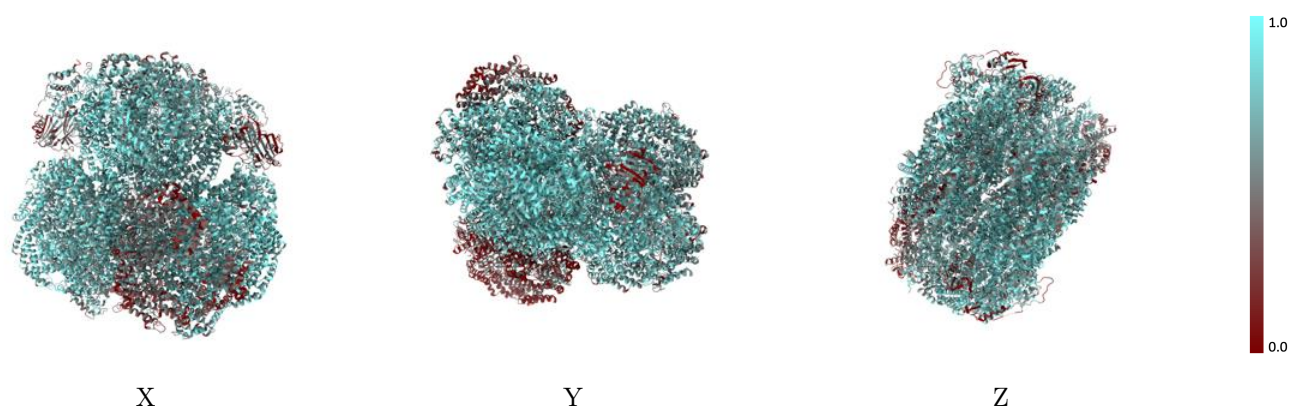
This section was not generated.

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



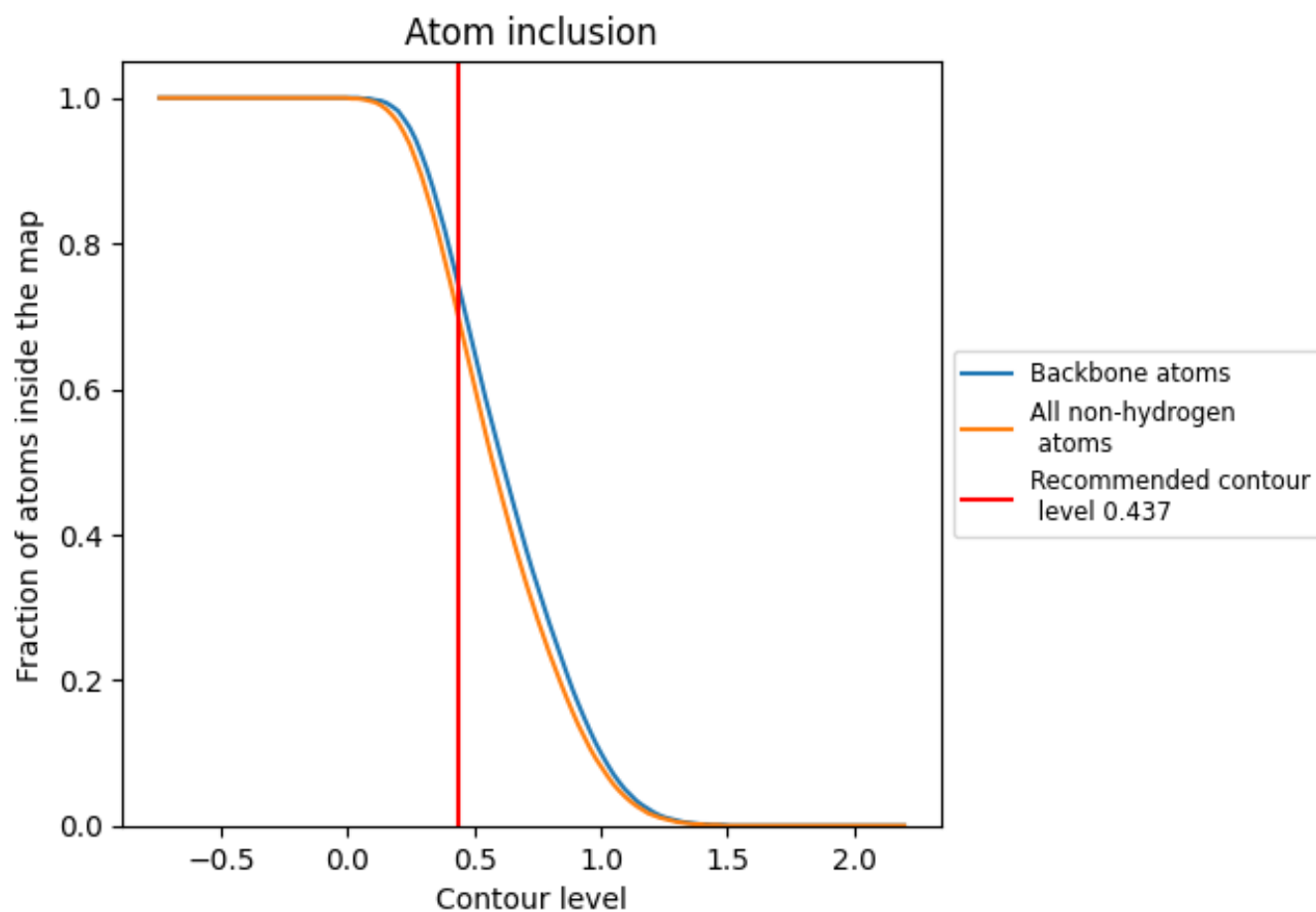
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.437).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 74% of all backbone atoms, 70% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.437) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion                                                                             | Q-score                                                                                    |
|-------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| All   |  0.7000   |  0.4490   |
| AA    |  0.1520   |  0.4250   |
| AB    |  0.1360   |  0.4150   |
| AC    |  0.1510   |  0.3650   |
| AD    |  0.1330   |  0.3650   |
| AE    |  0.1950   |  0.3820   |
| AF    |  0.1110   |  0.4160   |
| AH    |  0.7940   |  0.4590   |
| AI    |  0.8780   |  0.5300   |
| AJ    |  0.8590   |  0.5140   |
| AK    |  0.8170   |  0.4500   |
| AL    |  0.8520   |  0.4480   |
| AN    |  0.8150   |  0.4280   |
| AO    |  0.8740   |  0.5150   |
| AP    |  0.8640  |  0.5240  |
| AQ    |  0.8760 |  0.5290 |
| AR    |  0.8240 |  0.4710 |
| AS    |  0.8470 |  0.4560 |
| AU    |  0.7730 |  0.4120 |
| AV    |  0.7770 |  0.3790 |
| AW    |  0.8360 |  0.4240 |
| AX    |  0.8320 |  0.4630 |
| AY    |  0.8430 |  0.4670 |
| AZ    |  0.7550 |  0.4430 |
| BA    |  0.2260 |  0.4480 |
| BB    |  0.6910 |  0.4870 |
| BD    |  0.8150 |  0.4770 |
| BF    |  0.7100 |  0.4110 |
| BG    |  0.7790 |  0.4650 |
| BH    |  0.4920 |  0.3840 |
| BI    |  0.3540 |  0.4400 |
| BJ    |  0.3880 |  0.4340 |
| BK    |  0.3630 |  0.3980 |
| BL    |  0.3660 |  0.3950 |
| BM    |  0.4280 |  0.4030 |



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| Chain | Atom inclusion                                                                             | Q-score                                                                                    |
|-------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| BN    |  0.3660   |  0.4290   |
| BP    |  0.8290   |  0.4820   |
| BQ    |  0.8910   |  0.5340   |
| BR    |  0.8610   |  0.5150   |
| BS    |  0.8450   |  0.4730   |
| BT    |  0.8600   |  0.4790   |
| BV    |  0.8430   |  0.4430   |
| BW    |  0.8770   |  0.5250   |
| BX    |  0.8760   |  0.5350   |
| BY    |  0.8810   |  0.5450   |
| BZ    |  0.8640   |  0.5050   |
| CA    |  0.8620   |  0.4900   |
| CC    |  0.7390   |  0.4680   |
| CD    |  0.7860   |  0.4440   |
| CE    |  0.8190   |  0.4310   |
| CF    |  0.8330   |  0.4530   |
| CG    |  0.8620   |  0.4790   |
| CH    |  0.8350  |  0.4820  |
| CJ    |  0.4930 |  0.4900 |
| CK    |  0.7020 |  0.5160 |
| CM    |  0.8370 |  0.4890 |
| CO    |  0.7360 |  0.4290 |
| CP    |  0.7950 |  0.4820 |
| CQ    |  0.5480 |  0.3920 |
| CR    |  0.7290 |  0.3970 |
| CS    |  0.7170 |  0.4240 |
| CT    |  0.6720 |  0.4280 |
| CU    |  0.7300 |  0.4660 |
| CV    |  0.8490 |  0.4910 |
| CW    |  0.8240 |  0.4460 |
| CY    |  0.6870 |  0.4010 |
| CZ    |  0.6930 |  0.4120 |
| DA    |  0.8000 |  0.4400 |
| DB    |  0.8350 |  0.4930 |
| DC    |  0.8360 |  0.5030 |
| DD    |  0.7940 |  0.4570 |
| DF    |  0.8370 |  0.5040 |
| DG    |  0.4650 |  0.3670 |
| DH    |  0.6460 |  0.4310 |
| DI    |  0.4850 |  0.3140 |
| DJ    |  0.7160 |  0.4080 |
| DK    |  0.6920 |  0.4030 |

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| Chain | Atom inclusion                                                                           | Q-score                                                                                  |
|-------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| DL    |  0.7080 |  0.3920 |
| DM    |  0.7990 |  0.4600 |
| DN    |  0.8510 |  0.4840 |
| DO    |  0.8420 |  0.4730 |
| DQ    |  0.6830 |  0.3800 |
| DR    |  0.7130 |  0.4220 |
| DS    |  0.8300 |  0.4720 |
| DT    |  0.8240 |  0.4920 |
| DU    |  0.8310 |  0.4930 |
| DV    |  0.7550 |  0.4100 |
| DX    |  0.8290 |  0.5090 |
| DY    |  0.4460 |  0.4080 |
| DZ    |  0.6390 |  0.4060 |
| EA    |  0.5100 |  0.3400 |