



# Full wwPDB X-ray Structure Validation Report ⓘ

Sep 25, 2023 – 01:37 AM EDT

PDB ID : 5W1X  
Title : Crystal Structure of Humanpapillomavirus18 (HPV18) Capsid L1 Pentamers  
Bound to Heparin Oligosaccharides  
Authors : Chen, X.S.; Dasgupta, J.  
Deposited on : 2017-06-05  
Resolution : 3.37 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.35.1  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35.1

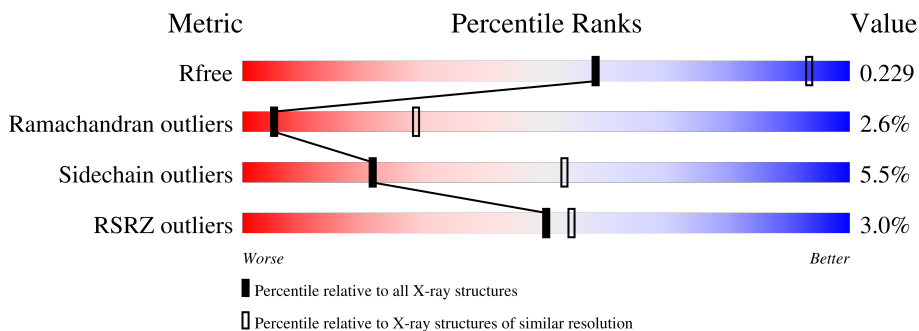
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.37 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



| Metric                | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|--------------------------|----------------------------------------------------|
| $R_{free}$            | 130704                   | 1691 (3.46-3.30)                                   |
| Ramachandran outliers | 138981                   | 1732 (3.46-3.30)                                   |
| Sidechain outliers    | 138945                   | 1731 (3.46-3.30)                                   |
| RSRZ outliers         | 127900                   | 1635 (3.46-3.30)                                   |

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

| Mol | Chain | Length | Quality of chain                                                                     |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 1   | A     | 427    |  |
| 1   | B     | 427    |  |
| 1   | C     | 427    |  |
| 1   | D     | 427    |  |
| 1   | E     | 427    |  |
| 1   | F     | 427    |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | G     | 427    | <br>4% 92% 6% .. |
| 1   | H     | 427    | <br>3% 91% 7% .  |
| 1   | I     | 427    | <br>2% 93% 6% .  |
| 1   | J     | 427    | <br>2% 94% . .   |
| 1   | K     | 427    | <br>3% 91% 7% .  |
| 1   | L     | 427    | <br>3% 90% 8% .  |
| 1   | M     | 427    | <br>3% 89% 9% .. |
| 1   | N     | 427    | <br>2% 92% 6% .. |
| 1   | O     | 427    | <br>5% 92% 7% .  |
| 2   | P     | 2      | <br>100%         |
| 2   | S     | 2      | <br>100%         |
| 2   | T     | 2      | <br>100%         |
| 2   | U     | 2      | <br>100%         |
| 2   | W     | 2      | <br>100%         |
| 2   | Y     | 2      | <br>100%         |
| 2   | Z     | 2      | <br>100%         |
| 2   | a     | 2      | <br>100%         |
| 2   | d     | 2      | <br>100%         |
| 2   | i     | 2      | <br>100%         |
| 2   | j     | 2      | <br>100%         |
| 2   | k     | 2      | <br>100%         |
| 2   | l     | 2      | <br>100%         |
| 2   | m     | 2      | <br>100%         |
| 2   | n     | 2      | <br>100%         |
| 2   | o     | 2      | <br>100%         |

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| Mol | Chain | Length | Quality of chain                                                                                                                                                                   |
|-----|-------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2   | q     | 2      |  100%                                                                                            |
| 2   | r     | 2      |  100%                                                                                            |
| 2   | s     | 2      |  100%                                                                                            |
| 3   | Q     | 4      |  100%                                                                                            |
| 3   | R     | 4      |  100%                                                                                            |
| 3   | V     | 4      |  100%                                                                                            |
| 3   | X     | 4      |  100%                                                                                            |
| 3   | b     | 4      |  100%                                                                                            |
| 3   | c     | 4      |  100%                                                                                            |
| 3   | g     | 4      |  100%                                                                                            |
| 3   | h     | 4      |  100%                                                                                            |
| 3   | p     | 4      |  100%                                                                                           |
| 4   | e     | 6      |  100%                                                                                          |
| 5   | f     | 10     |  90%  10% |

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

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 2   | JHM  | P     | 1   | -         | -        | -       | X                |
| 2   | IDS  | P     | 2   | -         | -        | -       | X                |
| 2   | JHM  | S     | 1   | -         | -        | -       | X                |
| 2   | IDS  | S     | 2   | -         | -        | -       | X                |
| 2   | JHM  | T     | 1   | -         | -        | -       | X                |
| 2   | IDS  | T     | 2   | -         | -        | -       | X                |
| 2   | JHM  | U     | 1   | -         | -        | -       | X                |
| 2   | IDS  | U     | 2   | -         | -        | -       | X                |
| 2   | JHM  | W     | 1   | -         | -        | -       | X                |
| 2   | IDS  | W     | 2   | -         | -        | -       | X                |
| 2   | JHM  | Y     | 1   | -         | -        | -       | X                |
| 2   | IDS  | Y     | 2   | -         | -        | -       | X                |
| 2   | JHM  | Z     | 1   | -         | -        | -       | X                |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 2   | IDS  | Z     | 2   | -         | -        | -       | X                |
| 2   | JHM  | a     | 1   | -         | -        | -       | X                |
| 2   | IDS  | a     | 2   | -         | -        | -       | X                |
| 2   | JHM  | d     | 1   | -         | -        | -       | X                |
| 2   | IDS  | d     | 2   | -         | -        | -       | X                |
| 2   | JHM  | i     | 1   | -         | -        | -       | X                |
| 2   | IDS  | i     | 2   | -         | -        | -       | X                |
| 2   | JHM  | j     | 1   | -         | -        | -       | X                |
| 2   | IDS  | j     | 2   | -         | -        | -       | X                |
| 2   | JHM  | k     | 1   | -         | -        | -       | X                |
| 2   | IDS  | k     | 2   | -         | -        | -       | X                |
| 2   | JHM  | l     | 1   | -         | -        | -       | X                |
| 2   | IDS  | l     | 2   | -         | -        | -       | X                |
| 2   | JHM  | m     | 1   | -         | -        | -       | X                |
| 2   | IDS  | m     | 2   | -         | -        | -       | X                |
| 2   | JHM  | n     | 1   | -         | -        | -       | X                |
| 2   | IDS  | n     | 2   | -         | -        | -       | X                |
| 2   | JHM  | o     | 1   | -         | -        | -       | X                |
| 2   | JHM  | q     | 1   | -         | -        | -       | X                |
| 2   | IDS  | q     | 2   | -         | -        | -       | X                |
| 2   | JHM  | r     | 1   | -         | -        | -       | X                |
| 2   | IDS  | r     | 2   | -         | -        | -       | X                |
| 2   | JHM  | s     | 1   | -         | -        | -       | X                |
| 2   | IDS  | s     | 2   | -         | -        | -       | X                |
| 3   | JHM  | Q     | 1   | -         | -        | -       | X                |
| 3   | IDS  | Q     | 2   | -         | -        | -       | X                |
| 3   | JHM  | Q     | 3   | -         | -        | -       | X                |
| 3   | IDS  | Q     | 4   | -         | -        | -       | X                |
| 3   | JHM  | R     | 1   | -         | -        | -       | X                |
| 3   | IDS  | R     | 2   | -         | -        | -       | X                |
| 3   | JHM  | R     | 3   | -         | -        | -       | X                |
| 3   | IDS  | R     | 4   | -         | -        | -       | X                |
| 3   | JHM  | V     | 1   | -         | -        | -       | X                |
| 3   | IDS  | V     | 2   | -         | -        | -       | X                |
| 3   | JHM  | V     | 3   | -         | -        | -       | X                |
| 3   | JHM  | X     | 1   | -         | -        | -       | X                |
| 3   | IDS  | X     | 2   | -         | -        | -       | X                |
| 3   | JHM  | X     | 3   | -         | -        | -       | X                |
| 3   | IDS  | X     | 4   | -         | -        | -       | X                |
| 3   | JHM  | b     | 1   | -         | -        | -       | X                |
| 3   | IDS  | b     | 2   | -         | -        | -       | X                |
| 3   | IDS  | b     | 4   | -         | -        | -       | X                |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 3   | JHM  | c     | 1   | -         | -        | -       | X                |
| 3   | IDS  | c     | 2   | -         | -        | -       | X                |
| 3   | JHM  | c     | 3   | -         | -        | -       | X                |
| 3   | IDS  | c     | 4   | -         | -        | -       | X                |
| 3   | JHM  | g     | 1   | -         | -        | -       | X                |
| 3   | IDS  | g     | 2   | -         | -        | -       | X                |
| 3   | JHM  | g     | 3   | -         | -        | -       | X                |
| 3   | IDS  | g     | 4   | -         | -        | -       | X                |
| 3   | JHM  | h     | 1   | -         | -        | -       | X                |
| 3   | IDS  | h     | 2   | -         | -        | -       | X                |
| 3   | JHM  | h     | 3   | -         | -        | -       | X                |
| 3   | IDS  | h     | 4   | -         | -        | -       | X                |
| 3   | JHM  | p     | 1   | -         | -        | -       | X                |
| 3   | IDS  | p     | 2   | -         | -        | -       | X                |
| 3   | JHM  | p     | 3   | -         | -        | -       | X                |
| 3   | IDS  | p     | 4   | -         | -        | -       | X                |
| 4   | JHM  | e     | 1   | -         | -        | -       | X                |
| 4   | IDS  | e     | 2   | -         | -        | -       | X                |
| 4   | IDS  | e     | 4   | -         | -        | -       | X                |
| 4   | JHM  | e     | 5   | -         | -        | -       | X                |
| 4   | IDS  | e     | 6   | -         | -        | -       | X                |
| 5   | JHM  | f     | 1   | -         | -        | -       | X                |
| 5   | IDS  | f     | 10  | -         | -        | -       | X                |
| 5   | IDS  | f     | 2   | -         | -        | -       | X                |
| 5   | JHM  | f     | 3   | -         | -        | -       | X                |
| 5   | IDS  | f     | 4   | -         | -        | -       | X                |
| 5   | JHM  | f     | 5   | -         | -        | -       | X                |
| 5   | IDS  | f     | 6   | -         | -        | -       | X                |
| 5   | JHM  | f     | 7   | -         | -        | -       | X                |
| 5   | IDS  | f     | 8   | -         | -        | -       | X                |
| 5   | JHM  | f     | 9   | -         | -        | -       | X                |

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 51075 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Major capsid protein L1.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |         |       |
| 1   | A     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | B     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | C     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | D     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | E     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | F     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | G     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | H     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | I     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | J     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | K     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | L     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | M     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | N     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |
| 1   | O     | 422      | 3315  | 2092 | 561 | 642 | 20 | 0       | 0       | 0     |

There are 135 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| A     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| A     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| A     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| A     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| A     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| A     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| A     | 435     | SER      | -      | linker              | UNP Q5G244 |
| A     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| A     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| B     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| B     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| B     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| B     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| B     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| B     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| B     | 435     | SER      | -      | linker              | UNP Q5G244 |
| B     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| B     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| C     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| C     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| C     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| C     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| C     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| C     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| C     | 435     | SER      | -      | linker              | UNP Q5G244 |
| C     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| C     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| D     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| D     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| D     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| D     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| D     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| D     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| D     | 435     | SER      | -      | linker              | UNP Q5G244 |
| D     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| D     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| E     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| E     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| E     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| E     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| E     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| E     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| E     | 435     | SER      | -      | linker              | UNP Q5G244 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| E     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| E     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| F     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| F     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| F     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| F     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| F     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| F     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| F     | 435     | SER      | -      | linker              | UNP Q5G244 |
| F     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| F     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| G     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| G     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| G     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| G     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| G     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| G     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| G     | 435     | SER      | -      | linker              | UNP Q5G244 |
| G     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| G     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| H     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| H     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| H     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| H     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| H     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| H     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| H     | 435     | SER      | -      | linker              | UNP Q5G244 |
| H     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| H     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| I     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| I     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| I     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| I     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| I     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| I     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| I     | 435     | SER      | -      | linker              | UNP Q5G244 |
| I     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| I     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| J     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| J     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| J     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| J     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |

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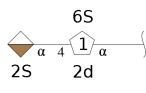
| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| J     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| J     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| J     | 435     | SER      | -      | linker              | UNP Q5G244 |
| J     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| J     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| K     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| K     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| K     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| K     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| K     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| K     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| K     | 435     | SER      | -      | linker              | UNP Q5G244 |
| K     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| K     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| L     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| L     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| L     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| L     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| L     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| L     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| L     | 435     | SER      | -      | linker              | UNP Q5G244 |
| L     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| L     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| M     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| M     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| M     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| M     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| M     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| M     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| M     | 435     | SER      | -      | linker              | UNP Q5G244 |
| M     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| M     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| N     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |
| N     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| N     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| N     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| N     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| N     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| N     | 435     | SER      | -      | linker              | UNP Q5G244 |
| N     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| N     | 437     | GLY      | -      | linker              | UNP Q5G244 |
| O     | 20      | ALA      | -      | expression tag      | UNP Q5G244 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| O     | 47      | ASP      | ASN    | engineered mutation | UNP Q5G244 |
| O     | 175     | SER      | CYS    | engineered mutation | UNP Q5G244 |
| O     | 393     | GLN      | HIS    | engineered mutation | UNP Q5G244 |
| O     | 433     | GLY      | -      | linker              | UNP Q5G244 |
| O     | 434     | GLY      | -      | linker              | UNP Q5G244 |
| O     | 435     | SER      | -      | linker              | UNP Q5G244 |
| O     | 436     | GLY      | -      | linker              | UNP Q5G244 |
| O     | 437     | GLY      | -      | linker              | UNP Q5G244 |

- Molecule 2 is an oligosaccharide called 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose.



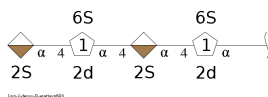
| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|---|---------|---------|-------|
|     |       |          | Total | C  | O  | S |         |         |       |
| 2   | P     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | S     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | T     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | U     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | W     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | Y     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | Z     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | a     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | d     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | i     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | j     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |
| 2   | k     | 2        | 30    | 12 | 16 | 2 | 0       | 0       | 0     |

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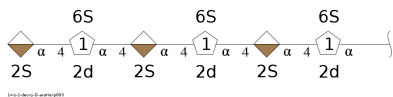
| Mol | Chain | Residues | Atoms       |         |         |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------------|---------|---------|--------|---------|---------|-------|
|     |       |          | Total       | C       | O       | S      |         |         |       |
| 2   | l     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | m     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | n     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | o     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | q     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | r     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |
| 2   | s     | 2        | Total<br>30 | C<br>12 | O<br>16 | S<br>2 | 0       | 0       | 0     |

- Molecule 3 is an oligosaccharide called 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose.



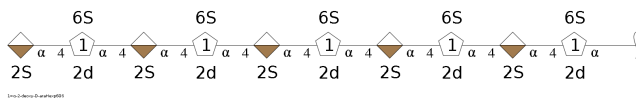
| Mol | Chain | Residues | Atoms       |         |         |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------------|---------|---------|--------|---------|---------|-------|
|     |       |          | Total       | C       | O       | S      |         |         |       |
| 3   | Q     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | R     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | V     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | X     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | b     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | c     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | g     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | h     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |
| 3   | p     | 4        | Total<br>60 | C<br>24 | O<br>32 | S<br>4 | 0       | 0       | 0     |

- Molecule 4 is an oligosaccharide called 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose.



| Mol | Chain | Residues | Atoms |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|---|---------|---------|-------|
|     |       |          | Total | C  | O  | S |         |         |       |
| 4   | e     | 6        | 90    | 36 | 48 | 6 | 0       | 0       | 0     |

- Molecule 5 is an oligosaccharide called 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose.

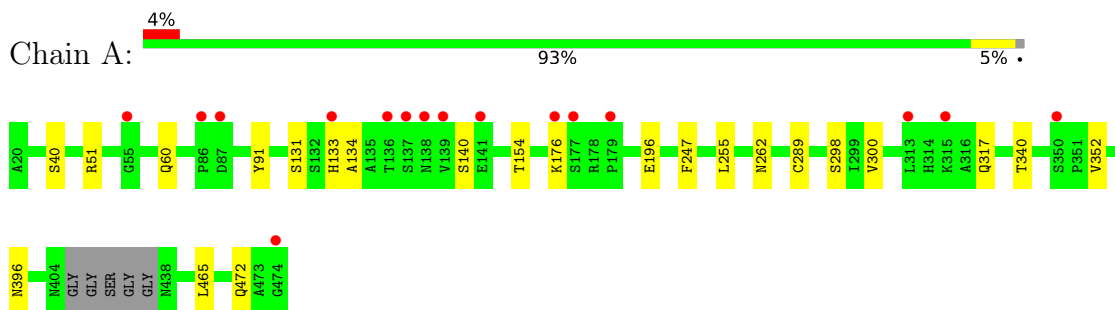


| Mol | Chain | Residues | Atoms |    |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|---------|-------|
|     |       |          | Total | C  | O  | S  |         |         |       |
| 5   | f     | 10       | 150   | 60 | 80 | 10 | 0       | 0       | 0     |

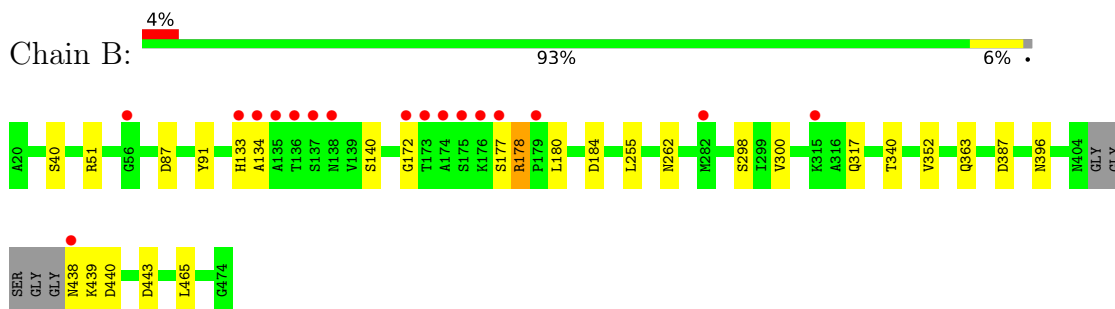
### 3 Residue-property plots [i](#)

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

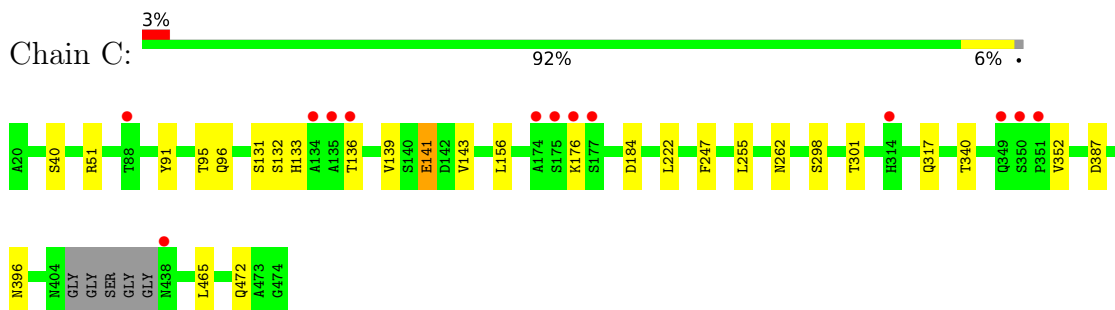
- Molecule 1: Major capsid protein L1



- Molecule 1: Major capsid protein L1

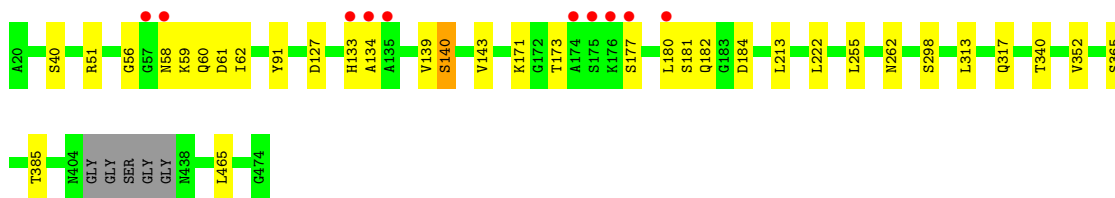


- Molecule 1: Major capsid protein L1

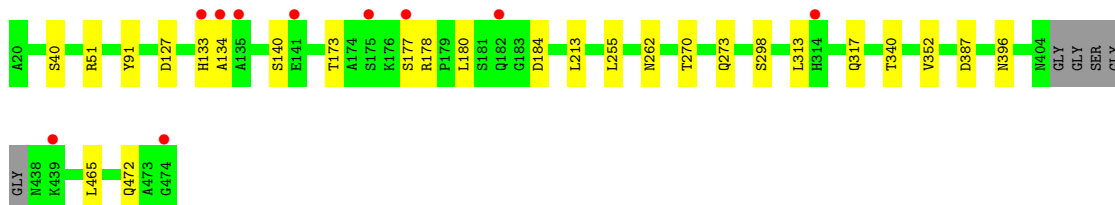


- Molecule 1: Major capsid protein L1

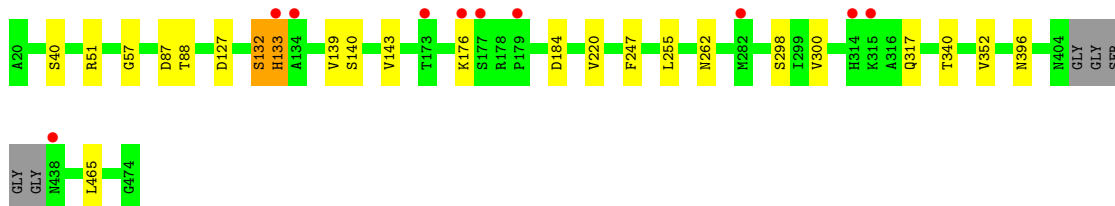
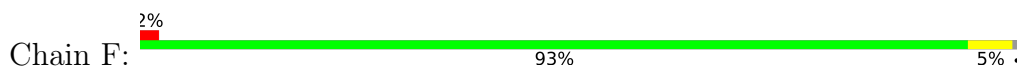




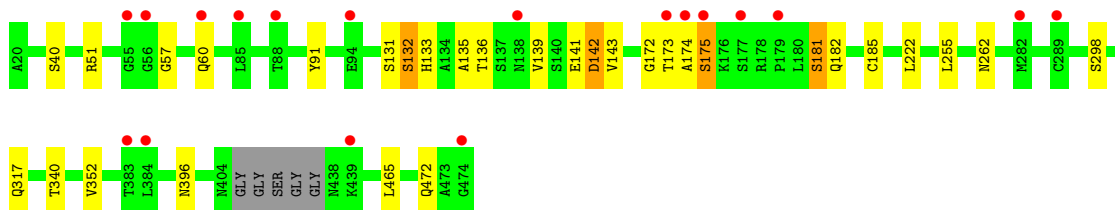
- Molecule 1: Major capsid protein L1



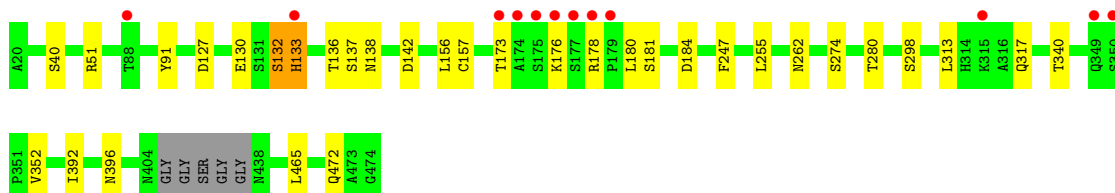
- Molecule 1: Major capsid protein L1



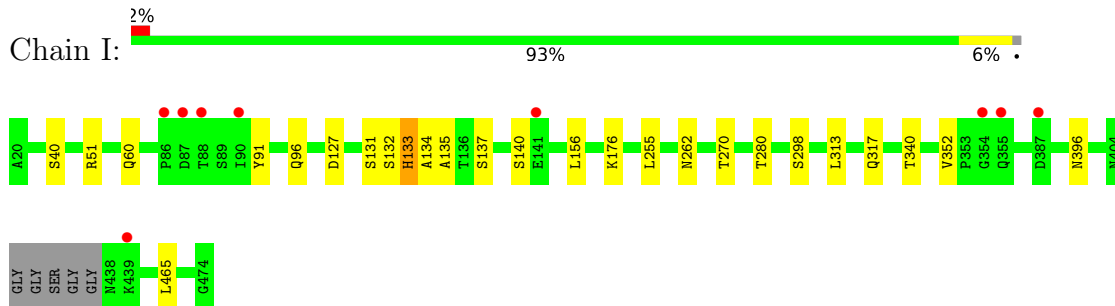
- Molecule 1: Major capsid protein L1



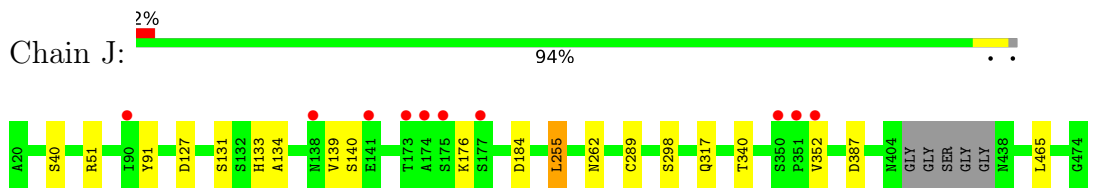
- Molecule 1: Major capsid protein L1



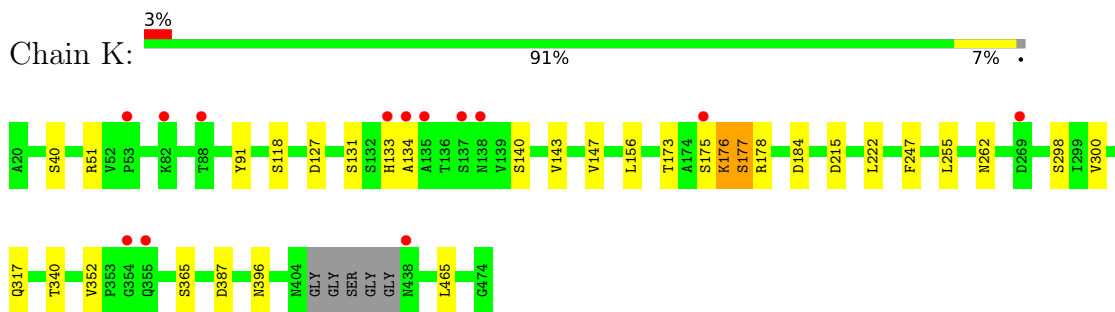
• Molecule 1: Major capsid protein L1



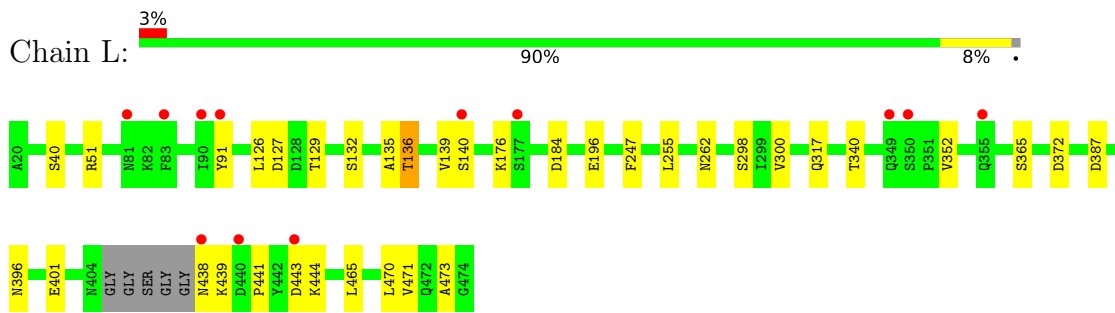
• Molecule 1: Major capsid protein L1



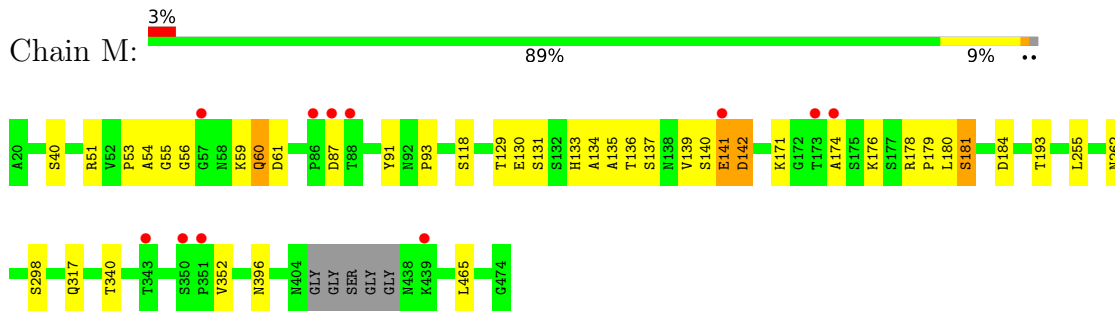
• Molecule 1: Major capsid protein L1



• Molecule 1: Major capsid protein L1

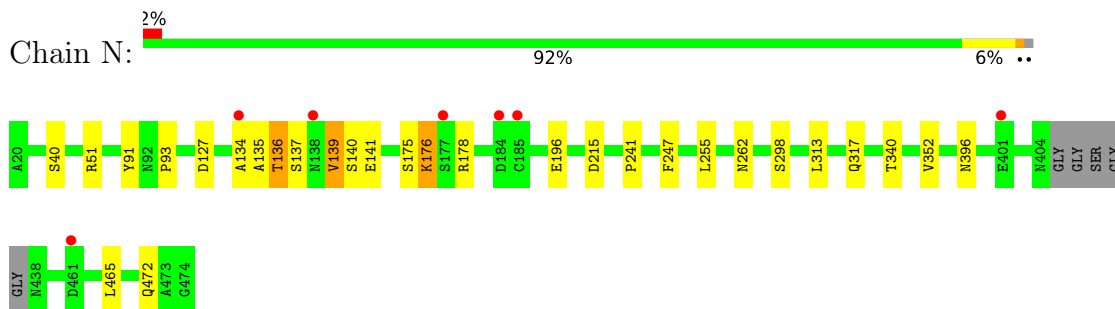


• Molecule 1: Major capsid protein L1

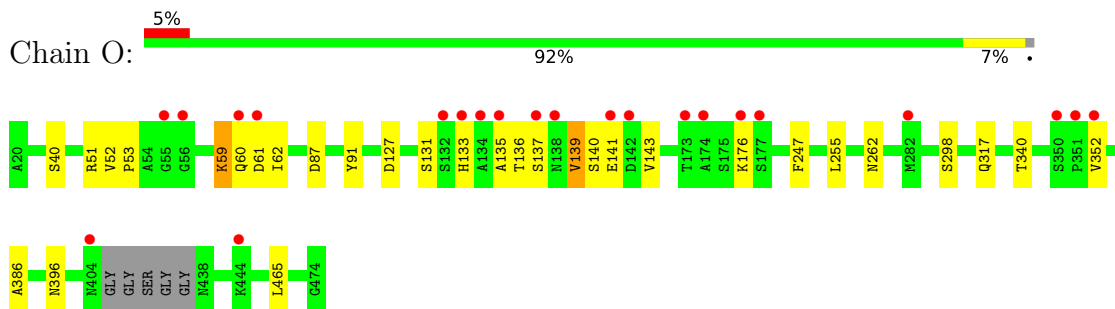




- Molecule 1: Major capsid protein L1



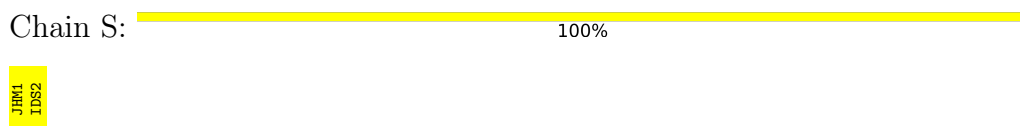
- Molecule 1: Major capsid protein L1



- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose



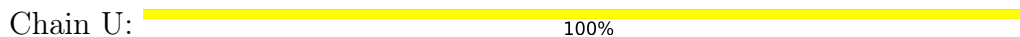
- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose



- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose




- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose



JHM1  
IDS2

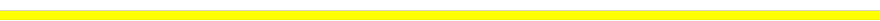
- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain W:  100%JHM1  
IDS2

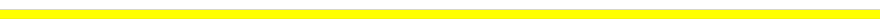
- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain Y:  100%JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain Z:  100%JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain a:  100%JHM1  
IDS2


- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain d:  100%JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

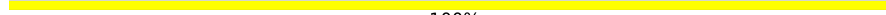
Chain i:  100%JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain j:  100%

JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain k:  100%

JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain l:  100%

JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain m:  100%

JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain n:  100%


JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain o:  100%


JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain q:  100%


JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain r:  100%

JHM1  
IDS2

- Molecule 2: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain s:  100%


JHM1  
IDS2

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain Q:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain R:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain V:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain X:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain b:  100%

JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain c:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain g:  100%

JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain h:  100%


JHM1  
IDS2  
JHM3  
IDS4

- Molecule 3: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain p:  100%

JHM1  
IDS2  
JHM3  
IDS4

- Molecule 4: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain e:  100%

JHM1  
IDS2  
JHM3  
IDS4  
JHM5  
IDS6

- Molecule 5: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-alpha-D-glucopyranose

Chain f:

90%

10%

JHM1  
IDS2  
JHM3  
IDS4  
JHM5  
IDS6  
JHM7  
IDS8  
JHM9  
IDS10

## 4 Data and refinement statistics i

| Property                                                                | Value                                                       | Source           |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------|
| Space group                                                             | P 1                                                         | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 80.99Å 106.49Å 237.66Å<br>88.46° 85.75° 69.02°              | Depositor        |
| Resolution (Å)                                                          | 42.79 – 3.37<br>42.79 – 3.37                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 89.3 (42.79-3.37)<br>84.3 (42.79-3.37)                      | Depositor<br>EDS |
| $R_{merge}$                                                             | 0.08                                                        | Depositor        |
| $R_{sym}$                                                               | (Not available)                                             | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 3.50 (at 3.40Å)                                             | Xtrriage         |
| Refinement program                                                      | PHENIX 1.8.4_1496                                           | Depositor        |
| R, $R_{free}$                                                           | 0.171 , 0.234<br>0.171 , 0.229                              | Depositor<br>DCC |
| $R_{free}$ test set                                                     | 4610 reflections (4.96%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 60.2                                                        | Xtrriage         |
| Anisotropy                                                              | 0.424                                                       | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.26 , 44.5                                                 | EDS              |
| L-test for twinning <sup>2</sup>                                        | $\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$ | Xtrriage         |
| Estimated twinning fraction                                             | 0.017 for -h,-h+k,-l                                        | Xtrriage         |
| $F_o, F_c$ correlation                                                  | 0.91                                                        | EDS              |
| Total number of atoms                                                   | 51075                                                       | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 80.0                                                        | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.47% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: JHM, IDS

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

| Mol | Chain | Bond lengths |         | Bond angles |                |
|-----|-------|--------------|---------|-------------|----------------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5        |
| 1   | A     | 0.25         | 0/3400  | 0.42        | 0/4622         |
| 1   | B     | 0.26         | 0/3400  | 0.45        | 1/4622 (0.0%)  |
| 1   | C     | 0.25         | 0/3400  | 0.44        | 0/4622         |
| 1   | D     | 0.28         | 0/3400  | 0.46        | 0/4622         |
| 1   | E     | 0.25         | 0/3400  | 0.44        | 0/4622         |
| 1   | F     | 0.25         | 0/3400  | 0.43        | 0/4622         |
| 1   | G     | 0.24         | 0/3400  | 0.44        | 0/4622         |
| 1   | H     | 0.25         | 0/3400  | 0.45        | 0/4622         |
| 1   | I     | 0.25         | 0/3400  | 0.44        | 0/4622         |
| 1   | J     | 0.24         | 0/3400  | 0.42        | 1/4622 (0.0%)  |
| 1   | K     | 0.24         | 0/3400  | 0.43        | 0/4622         |
| 1   | L     | 0.27         | 0/3400  | 0.48        | 0/4622         |
| 1   | M     | 0.29         | 0/3400  | 0.46        | 0/4622         |
| 1   | N     | 0.25         | 0/3400  | 0.46        | 0/4622         |
| 1   | O     | 0.27         | 0/3400  | 0.46        | 0/4622         |
| All | All   | 0.26         | 0/51000 | 0.45        | 2/69330 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | H     | 0                   | 1                   |

There are no bond length outliers.

All (2) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 1   | B     | 178 | ARG  | NE-CZ-NH1 | 5.73 | 123.17      | 120.30   |

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| Mol | Chain | Res | Type | Atoms    | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|------|-------------|----------|
| 1   | J     | 255 | LEU  | CA-CB-CG | 5.11 | 127.06      | 115.30   |

There are no chirality outliers.

All (1) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 1   | H     | 133 | HIS  | Peptide |

## 5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed      | Favoured  | Allowed | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|---------|----------|-------------|----|
| 1   | A     | 418/427 (98%) | 383 (92%) | 28 (7%) | 7 (2%)   | 9           | 36 |
| 1   | B     | 418/427 (98%) | 380 (91%) | 30 (7%) | 8 (2%)   | 8           | 34 |
| 1   | C     | 418/427 (98%) | 379 (91%) | 31 (7%) | 8 (2%)   | 8           | 34 |
| 1   | D     | 418/427 (98%) | 376 (90%) | 32 (8%) | 10 (2%)  | 6           | 30 |
| 1   | E     | 418/427 (98%) | 382 (91%) | 31 (7%) | 5 (1%)   | 13          | 44 |
| 1   | F     | 418/427 (98%) | 382 (91%) | 28 (7%) | 8 (2%)   | 8           | 34 |
| 1   | G     | 418/427 (98%) | 372 (89%) | 30 (7%) | 16 (4%)  | 3           | 21 |
| 1   | H     | 418/427 (98%) | 371 (89%) | 37 (9%) | 10 (2%)  | 6           | 30 |
| 1   | I     | 418/427 (98%) | 378 (90%) | 29 (7%) | 11 (3%)  | 5           | 28 |
| 1   | J     | 418/427 (98%) | 383 (92%) | 28 (7%) | 7 (2%)   | 9           | 36 |
| 1   | K     | 418/427 (98%) | 382 (91%) | 28 (7%) | 8 (2%)   | 8           | 34 |
| 1   | L     | 418/427 (98%) | 372 (89%) | 31 (7%) | 15 (4%)  | 3           | 22 |

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| Mol | Chain | Analysed        | Favoured   | Allowed  | Outliers | Percentiles |    |
|-----|-------|-----------------|------------|----------|----------|-------------|----|
| 1   | M     | 418/427 (98%)   | 374 (90%)  | 23 (6%)  | 21 (5%)  | 2           | 15 |
| 1   | N     | 418/427 (98%)   | 377 (90%)  | 27 (6%)  | 14 (3%)  | 4           | 24 |
| 1   | O     | 418/427 (98%)   | 372 (89%)  | 34 (8%)  | 12 (3%)  | 4           | 26 |
| All | All   | 6270/6405 (98%) | 5663 (90%) | 447 (7%) | 160 (3%) | 5           | 28 |

All (160) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | B     | 40  | SER  |
| 1   | B     | 177 | SER  |
| 1   | C     | 132 | SER  |
| 1   | C     | 133 | HIS  |
| 1   | C     | 139 | VAL  |
| 1   | C     | 298 | SER  |
| 1   | D     | 56  | GLY  |
| 1   | D     | 60  | GLN  |
| 1   | D     | 177 | SER  |
| 1   | F     | 40  | SER  |
| 1   | G     | 40  | SER  |
| 1   | G     | 131 | SER  |
| 1   | G     | 142 | ASP  |
| 1   | G     | 173 | THR  |
| 1   | G     | 298 | SER  |
| 1   | H     | 40  | SER  |
| 1   | H     | 138 | ASN  |
| 1   | I     | 40  | SER  |
| 1   | I     | 132 | SER  |
| 1   | I     | 133 | HIS  |
| 1   | I     | 134 | ALA  |
| 1   | I     | 137 | SER  |
| 1   | J     | 40  | SER  |
| 1   | K     | 40  | SER  |
| 1   | K     | 176 | LYS  |
| 1   | L     | 40  | SER  |
| 1   | L     | 135 | ALA  |
| 1   | L     | 139 | VAL  |
| 1   | L     | 140 | SER  |
| 1   | L     | 471 | VAL  |
| 1   | M     | 40  | SER  |
| 1   | M     | 55  | GLY  |
| 1   | M     | 131 | SER  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | M            | 136        | THR         |
| 1          | M            | 140        | SER         |
| 1          | M            | 142        | ASP         |
| 1          | N            | 40         | SER         |
| 1          | N            | 135        | ALA         |
| 1          | N            | 136        | THR         |
| 1          | N            | 137        | SER         |
| 1          | N            | 176        | LYS         |
| 1          | O            | 40         | SER         |
| 1          | O            | 137        | SER         |
| 1          | O            | 139        | VAL         |
| 1          | A            | 40         | SER         |
| 1          | A            | 298        | SER         |
| 1          | B            | 172        | GLY         |
| 1          | B            | 298        | SER         |
| 1          | B            | 443        | ASP         |
| 1          | C            | 40         | SER         |
| 1          | C            | 131        | SER         |
| 1          | D            | 40         | SER         |
| 1          | D            | 181        | SER         |
| 1          | D            | 298        | SER         |
| 1          | E            | 40         | SER         |
| 1          | E            | 134        | ALA         |
| 1          | F            | 133        | HIS         |
| 1          | F            | 298        | SER         |
| 1          | G            | 135        | ALA         |
| 1          | G            | 141        | GLU         |
| 1          | G            | 172        | GLY         |
| 1          | G            | 181        | SER         |
| 1          | G            | 182        | GLN         |
| 1          | H            | 132        | SER         |
| 1          | H            | 133        | HIS         |
| 1          | H            | 137        | SER         |
| 1          | H            | 173        | THR         |
| 1          | I            | 131        | SER         |
| 1          | I            | 135        | ALA         |
| 1          | I            | 298        | SER         |
| 1          | J            | 134        | ALA         |
| 1          | J            | 140        | SER         |
| 1          | K            | 177        | SER         |
| 1          | K            | 298        | SER         |
| 1          | L            | 126        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L            | 136        | THR         |
| 1          | L            | 298        | SER         |
| 1          | L            | 470        | LEU         |
| 1          | L            | 473        | ALA         |
| 1          | M            | 54         | ALA         |
| 1          | M            | 56         | GLY         |
| 1          | M            | 134        | ALA         |
| 1          | M            | 137        | SER         |
| 1          | M            | 139        | VAL         |
| 1          | N            | 134        | ALA         |
| 1          | N            | 141        | GLU         |
| 1          | N            | 298        | SER         |
| 1          | O            | 135        | ALA         |
| 1          | O            | 298        | SER         |
| 1          | A            | 134        | ALA         |
| 1          | B            | 134        | ALA         |
| 1          | B            | 140        | SER         |
| 1          | D            | 140        | SER         |
| 1          | D            | 182        | GLN         |
| 1          | E            | 140        | SER         |
| 1          | E            | 298        | SER         |
| 1          | F            | 132        | SER         |
| 1          | F            | 140        | SER         |
| 1          | G            | 132        | SER         |
| 1          | I            | 140        | SER         |
| 1          | J            | 131        | SER         |
| 1          | J            | 298        | SER         |
| 1          | K            | 131        | SER         |
| 1          | K            | 140        | SER         |
| 1          | L            | 132        | SER         |
| 1          | L            | 443        | ASP         |
| 1          | M            | 130        | GLU         |
| 1          | M            | 179        | PRO         |
| 1          | M            | 298        | SER         |
| 1          | N            | 139        | VAL         |
| 1          | N            | 140        | SER         |
| 1          | N            | 175        | SER         |
| 1          | O            | 60         | GLN         |
| 1          | O            | 131        | SER         |
| 1          | O            | 141        | GLU         |
| 1          | A            | 140        | SER         |
| 1          | C            | 141        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | G            | 175        | SER         |
| 1          | H            | 142        | ASP         |
| 1          | H            | 298        | SER         |
| 1          | K            | 134        | ALA         |
| 1          | L            | 401        | GLU         |
| 1          | M            | 60         | GLN         |
| 1          | M            | 141        | GLU         |
| 1          | M            | 181        | SER         |
| 1          | O            | 53         | PRO         |
| 1          | O            | 59         | LYS         |
| 1          | A            | 131        | SER         |
| 1          | B            | 352        | VAL         |
| 1          | D            | 134        | ALA         |
| 1          | E            | 352        | VAL         |
| 1          | G            | 174        | ALA         |
| 1          | H            | 130        | GLU         |
| 1          | I            | 60         | GLN         |
| 1          | M            | 135        | ALA         |
| 1          | M            | 174        | ALA         |
| 1          | N            | 352        | VAL         |
| 1          | O            | 386        | ALA         |
| 1          | A            | 60         | GLN         |
| 1          | A            | 352        | VAL         |
| 1          | C            | 352        | VAL         |
| 1          | G            | 60         | GLN         |
| 1          | G            | 352        | VAL         |
| 1          | H            | 352        | VAL         |
| 1          | J            | 352        | VAL         |
| 1          | L            | 352        | VAL         |
| 1          | M            | 352        | VAL         |
| 1          | D            | 352        | VAL         |
| 1          | F            | 352        | VAL         |
| 1          | J            | 139        | VAL         |
| 1          | M            | 93         | PRO         |
| 1          | N            | 93         | PRO         |
| 1          | I            | 352        | VAL         |
| 1          | K            | 352        | VAL         |
| 1          | F            | 139        | VAL         |
| 1          | L            | 441        | PRO         |
| 1          | N            | 241        | PRO         |
| 1          | F            | 57         | GLY         |
| 1          | G            | 57         | GLY         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | O     | 352 | VAL  |

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

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

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

| Mol | Chain | Analysed         | Rotameric  | Outliers | Percentiles |    |
|-----|-------|------------------|------------|----------|-------------|----|
| 1   | A     | 369/370 (100%)   | 353 (96%)  | 16 (4%)  | 29          | 60 |
| 1   | B     | 369/370 (100%)   | 350 (95%)  | 19 (5%)  | 24          | 55 |
| 1   | C     | 369/370 (100%)   | 348 (94%)  | 21 (6%)  | 20          | 52 |
| 1   | D     | 369/370 (100%)   | 344 (93%)  | 25 (7%)  | 16          | 46 |
| 1   | E     | 369/370 (100%)   | 348 (94%)  | 21 (6%)  | 20          | 52 |
| 1   | F     | 369/370 (100%)   | 351 (95%)  | 18 (5%)  | 25          | 57 |
| 1   | G     | 369/370 (100%)   | 350 (95%)  | 19 (5%)  | 24          | 55 |
| 1   | H     | 369/370 (100%)   | 345 (94%)  | 24 (6%)  | 17          | 48 |
| 1   | I     | 369/370 (100%)   | 353 (96%)  | 16 (4%)  | 29          | 60 |
| 1   | J     | 369/370 (100%)   | 356 (96%)  | 13 (4%)  | 36          | 65 |
| 1   | K     | 369/370 (100%)   | 343 (93%)  | 26 (7%)  | 15          | 45 |
| 1   | L     | 369/370 (100%)   | 347 (94%)  | 22 (6%)  | 19          | 50 |
| 1   | M     | 369/370 (100%)   | 345 (94%)  | 24 (6%)  | 17          | 48 |
| 1   | N     | 369/370 (100%)   | 351 (95%)  | 18 (5%)  | 25          | 57 |
| 1   | O     | 369/370 (100%)   | 348 (94%)  | 21 (6%)  | 20          | 52 |
| All | All   | 5535/5550 (100%) | 5232 (94%) | 303 (6%) | 21          | 53 |

All (303) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 51  | ARG  |
| 1   | A     | 91  | TYR  |
| 1   | A     | 133 | HIS  |
| 1   | A     | 154 | THR  |
| 1   | A     | 176 | LYS  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 196        | GLU         |
| 1          | A            | 247        | PHE         |
| 1          | A            | 255        | LEU         |
| 1          | A            | 262        | ASN         |
| 1          | A            | 289        | CYS         |
| 1          | A            | 300        | VAL         |
| 1          | A            | 317        | GLN         |
| 1          | A            | 340        | THR         |
| 1          | A            | 396        | ASN         |
| 1          | A            | 465        | LEU         |
| 1          | A            | 472        | GLN         |
| 1          | B            | 51         | ARG         |
| 1          | B            | 87         | ASP         |
| 1          | B            | 91         | TYR         |
| 1          | B            | 133        | HIS         |
| 1          | B            | 178        | ARG         |
| 1          | B            | 180        | LEU         |
| 1          | B            | 184        | ASP         |
| 1          | B            | 255        | LEU         |
| 1          | B            | 262        | ASN         |
| 1          | B            | 300        | VAL         |
| 1          | B            | 317        | GLN         |
| 1          | B            | 340        | THR         |
| 1          | B            | 363        | GLN         |
| 1          | B            | 387        | ASP         |
| 1          | B            | 396        | ASN         |
| 1          | B            | 438        | ASN         |
| 1          | B            | 439        | LYS         |
| 1          | B            | 440        | ASP         |
| 1          | B            | 465        | LEU         |
| 1          | C            | 51         | ARG         |
| 1          | C            | 91         | TYR         |
| 1          | C            | 95         | THR         |
| 1          | C            | 96         | GLN         |
| 1          | C            | 136        | THR         |
| 1          | C            | 141        | GLU         |
| 1          | C            | 143        | VAL         |
| 1          | C            | 156        | LEU         |
| 1          | C            | 176        | LYS         |
| 1          | C            | 184        | ASP         |
| 1          | C            | 222        | LEU         |
| 1          | C            | 247        | PHE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 255        | LEU         |
| 1          | C            | 262        | ASN         |
| 1          | C            | 301        | THR         |
| 1          | C            | 317        | GLN         |
| 1          | C            | 340        | THR         |
| 1          | C            | 387        | ASP         |
| 1          | C            | 396        | ASN         |
| 1          | C            | 465        | LEU         |
| 1          | C            | 472        | GLN         |
| 1          | D            | 51         | ARG         |
| 1          | D            | 58         | ASN         |
| 1          | D            | 59         | LYS         |
| 1          | D            | 61         | ASP         |
| 1          | D            | 62         | ILE         |
| 1          | D            | 91         | TYR         |
| 1          | D            | 127        | ASP         |
| 1          | D            | 133        | HIS         |
| 1          | D            | 139        | VAL         |
| 1          | D            | 140        | SER         |
| 1          | D            | 143        | VAL         |
| 1          | D            | 171        | LYS         |
| 1          | D            | 173        | THR         |
| 1          | D            | 180        | LEU         |
| 1          | D            | 184        | ASP         |
| 1          | D            | 213        | LEU         |
| 1          | D            | 222        | LEU         |
| 1          | D            | 255        | LEU         |
| 1          | D            | 262        | ASN         |
| 1          | D            | 313        | LEU         |
| 1          | D            | 317        | GLN         |
| 1          | D            | 340        | THR         |
| 1          | D            | 365        | SER         |
| 1          | D            | 385        | THR         |
| 1          | D            | 465        | LEU         |
| 1          | E            | 51         | ARG         |
| 1          | E            | 91         | TYR         |
| 1          | E            | 127        | ASP         |
| 1          | E            | 133        | HIS         |
| 1          | E            | 173        | THR         |
| 1          | E            | 177        | SER         |
| 1          | E            | 178        | ARG         |
| 1          | E            | 180        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 184        | ASP         |
| 1          | E            | 213        | LEU         |
| 1          | E            | 255        | LEU         |
| 1          | E            | 262        | ASN         |
| 1          | E            | 270        | THR         |
| 1          | E            | 273        | GLN         |
| 1          | E            | 313        | LEU         |
| 1          | E            | 317        | GLN         |
| 1          | E            | 340        | THR         |
| 1          | E            | 387        | ASP         |
| 1          | E            | 396        | ASN         |
| 1          | E            | 465        | LEU         |
| 1          | E            | 472        | GLN         |
| 1          | F            | 51         | ARG         |
| 1          | F            | 87         | ASP         |
| 1          | F            | 88         | THR         |
| 1          | F            | 127        | ASP         |
| 1          | F            | 132        | SER         |
| 1          | F            | 133        | HIS         |
| 1          | F            | 143        | VAL         |
| 1          | F            | 176        | LYS         |
| 1          | F            | 184        | ASP         |
| 1          | F            | 220        | VAL         |
| 1          | F            | 247        | PHE         |
| 1          | F            | 255        | LEU         |
| 1          | F            | 262        | ASN         |
| 1          | F            | 300        | VAL         |
| 1          | F            | 317        | GLN         |
| 1          | F            | 340        | THR         |
| 1          | F            | 396        | ASN         |
| 1          | F            | 465        | LEU         |
| 1          | G            | 51         | ARG         |
| 1          | G            | 91         | TYR         |
| 1          | G            | 132        | SER         |
| 1          | G            | 133        | HIS         |
| 1          | G            | 136        | THR         |
| 1          | G            | 139        | VAL         |
| 1          | G            | 142        | ASP         |
| 1          | G            | 143        | VAL         |
| 1          | G            | 175        | SER         |
| 1          | G            | 181        | SER         |
| 1          | G            | 185        | CYS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | G            | 222        | LEU         |
| 1          | G            | 255        | LEU         |
| 1          | G            | 262        | ASN         |
| 1          | G            | 317        | GLN         |
| 1          | G            | 340        | THR         |
| 1          | G            | 396        | ASN         |
| 1          | G            | 465        | LEU         |
| 1          | G            | 472        | GLN         |
| 1          | H            | 51         | ARG         |
| 1          | H            | 91         | TYR         |
| 1          | H            | 127        | ASP         |
| 1          | H            | 132        | SER         |
| 1          | H            | 136        | THR         |
| 1          | H            | 156        | LEU         |
| 1          | H            | 157        | CYS         |
| 1          | H            | 176        | LYS         |
| 1          | H            | 178        | ARG         |
| 1          | H            | 180        | LEU         |
| 1          | H            | 181        | SER         |
| 1          | H            | 184        | ASP         |
| 1          | H            | 247        | PHE         |
| 1          | H            | 255        | LEU         |
| 1          | H            | 262        | ASN         |
| 1          | H            | 274        | SER         |
| 1          | H            | 280        | THR         |
| 1          | H            | 313        | LEU         |
| 1          | H            | 317        | GLN         |
| 1          | H            | 340        | THR         |
| 1          | H            | 392        | ILE         |
| 1          | H            | 396        | ASN         |
| 1          | H            | 465        | LEU         |
| 1          | H            | 472        | GLN         |
| 1          | I            | 51         | ARG         |
| 1          | I            | 91         | TYR         |
| 1          | I            | 96         | GLN         |
| 1          | I            | 127        | ASP         |
| 1          | I            | 133        | HIS         |
| 1          | I            | 156        | LEU         |
| 1          | I            | 176        | LYS         |
| 1          | I            | 255        | LEU         |
| 1          | I            | 262        | ASN         |
| 1          | I            | 270        | THR         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | I            | 280        | THR         |
| 1          | I            | 313        | LEU         |
| 1          | I            | 317        | GLN         |
| 1          | I            | 340        | THR         |
| 1          | I            | 396        | ASN         |
| 1          | I            | 465        | LEU         |
| 1          | J            | 51         | ARG         |
| 1          | J            | 91         | TYR         |
| 1          | J            | 127        | ASP         |
| 1          | J            | 133        | HIS         |
| 1          | J            | 176        | LYS         |
| 1          | J            | 184        | ASP         |
| 1          | J            | 255        | LEU         |
| 1          | J            | 262        | ASN         |
| 1          | J            | 289        | CYS         |
| 1          | J            | 317        | GLN         |
| 1          | J            | 340        | THR         |
| 1          | J            | 387        | ASP         |
| 1          | J            | 465        | LEU         |
| 1          | K            | 51         | ARG         |
| 1          | K            | 91         | TYR         |
| 1          | K            | 118        | SER         |
| 1          | K            | 127        | ASP         |
| 1          | K            | 133        | HIS         |
| 1          | K            | 143        | VAL         |
| 1          | K            | 147        | VAL         |
| 1          | K            | 156        | LEU         |
| 1          | K            | 173        | THR         |
| 1          | K            | 175        | SER         |
| 1          | K            | 176        | LYS         |
| 1          | K            | 177        | SER         |
| 1          | K            | 178        | ARG         |
| 1          | K            | 184        | ASP         |
| 1          | K            | 215        | ASP         |
| 1          | K            | 222        | LEU         |
| 1          | K            | 247        | PHE         |
| 1          | K            | 255        | LEU         |
| 1          | K            | 262        | ASN         |
| 1          | K            | 300        | VAL         |
| 1          | K            | 317        | GLN         |
| 1          | K            | 340        | THR         |
| 1          | K            | 365        | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | K            | 387        | ASP         |
| 1          | K            | 396        | ASN         |
| 1          | K            | 465        | LEU         |
| 1          | L            | 51         | ARG         |
| 1          | L            | 91         | TYR         |
| 1          | L            | 127        | ASP         |
| 1          | L            | 129        | THR         |
| 1          | L            | 136        | THR         |
| 1          | L            | 176        | LYS         |
| 1          | L            | 184        | ASP         |
| 1          | L            | 196        | GLU         |
| 1          | L            | 247        | PHE         |
| 1          | L            | 255        | LEU         |
| 1          | L            | 262        | ASN         |
| 1          | L            | 300        | VAL         |
| 1          | L            | 317        | GLN         |
| 1          | L            | 340        | THR         |
| 1          | L            | 365        | SER         |
| 1          | L            | 372        | ASP         |
| 1          | L            | 387        | ASP         |
| 1          | L            | 396        | ASN         |
| 1          | L            | 438        | ASN         |
| 1          | L            | 439        | LYS         |
| 1          | L            | 444        | LYS         |
| 1          | L            | 465        | LEU         |
| 1          | M            | 51         | ARG         |
| 1          | M            | 59         | LYS         |
| 1          | M            | 60         | GLN         |
| 1          | M            | 61         | ASP         |
| 1          | M            | 87         | ASP         |
| 1          | M            | 91         | TYR         |
| 1          | M            | 118        | SER         |
| 1          | M            | 129        | THR         |
| 1          | M            | 133        | HIS         |
| 1          | M            | 141        | GLU         |
| 1          | M            | 142        | ASP         |
| 1          | M            | 171        | LYS         |
| 1          | M            | 176        | LYS         |
| 1          | M            | 178        | ARG         |
| 1          | M            | 180        | LEU         |
| 1          | M            | 181        | SER         |
| 1          | M            | 184        | ASP         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | M            | 193        | THR         |
| 1          | M            | 255        | LEU         |
| 1          | M            | 262        | ASN         |
| 1          | M            | 317        | GLN         |
| 1          | M            | 340        | THR         |
| 1          | M            | 396        | ASN         |
| 1          | M            | 465        | LEU         |
| 1          | N            | 51         | ARG         |
| 1          | N            | 91         | TYR         |
| 1          | N            | 127        | ASP         |
| 1          | N            | 136        | THR         |
| 1          | N            | 139        | VAL         |
| 1          | N            | 176        | LYS         |
| 1          | N            | 178        | ARG         |
| 1          | N            | 196        | GLU         |
| 1          | N            | 215        | ASP         |
| 1          | N            | 247        | PHE         |
| 1          | N            | 255        | LEU         |
| 1          | N            | 262        | ASN         |
| 1          | N            | 313        | LEU         |
| 1          | N            | 317        | GLN         |
| 1          | N            | 340        | THR         |
| 1          | N            | 396        | ASN         |
| 1          | N            | 465        | LEU         |
| 1          | N            | 472        | GLN         |
| 1          | O            | 51         | ARG         |
| 1          | O            | 52         | VAL         |
| 1          | O            | 59         | LYS         |
| 1          | O            | 61         | ASP         |
| 1          | O            | 62         | ILE         |
| 1          | O            | 87         | ASP         |
| 1          | O            | 91         | TYR         |
| 1          | O            | 127        | ASP         |
| 1          | O            | 133        | HIS         |
| 1          | O            | 136        | THR         |
| 1          | O            | 139        | VAL         |
| 1          | O            | 140        | SER         |
| 1          | O            | 143        | VAL         |
| 1          | O            | 176        | LYS         |
| 1          | O            | 247        | PHE         |
| 1          | O            | 255        | LEU         |
| 1          | O            | 262        | ASN         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | O     | 317 | GLN  |
| 1   | O     | 340 | THR  |
| 1   | O     | 396 | ASN  |
| 1   | O     | 465 | LEU  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (220) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 60  | GLN  |
| 1   | A     | 69  | GLN  |
| 1   | A     | 153 | GLN  |
| 1   | A     | 182 | GLN  |
| 1   | A     | 192 | ASN  |
| 1   | A     | 262 | ASN  |
| 1   | A     | 273 | GLN  |
| 1   | A     | 305 | GLN  |
| 1   | A     | 308 | ASN  |
| 1   | A     | 317 | GLN  |
| 1   | A     | 321 | ASN  |
| 1   | A     | 326 | HIS  |
| 1   | A     | 341 | ASN  |
| 1   | A     | 349 | GLN  |
| 1   | A     | 367 | HIS  |
| 1   | A     | 396 | ASN  |
| 1   | B     | 69  | GLN  |
| 1   | B     | 92  | ASN  |
| 1   | B     | 153 | GLN  |
| 1   | B     | 262 | ASN  |
| 1   | B     | 308 | ASN  |
| 1   | B     | 317 | GLN  |
| 1   | B     | 326 | HIS  |
| 1   | B     | 341 | ASN  |
| 1   | B     | 367 | HIS  |
| 1   | B     | 396 | ASN  |
| 1   | B     | 462 | GLN  |
| 1   | C     | 69  | GLN  |
| 1   | C     | 138 | ASN  |
| 1   | C     | 153 | GLN  |
| 1   | C     | 182 | GLN  |
| 1   | C     | 262 | ASN  |
| 1   | C     | 308 | ASN  |
| 1   | C     | 317 | GLN  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 321        | ASN         |
| 1          | C            | 326        | HIS         |
| 1          | C            | 341        | ASN         |
| 1          | C            | 349        | GLN         |
| 1          | C            | 367        | HIS         |
| 1          | C            | 396        | ASN         |
| 1          | C            | 462        | GLN         |
| 1          | D            | 69         | GLN         |
| 1          | D            | 153        | GLN         |
| 1          | D            | 192        | ASN         |
| 1          | D            | 259        | HIS         |
| 1          | D            | 262        | ASN         |
| 1          | D            | 273        | GLN         |
| 1          | D            | 308        | ASN         |
| 1          | D            | 317        | GLN         |
| 1          | D            | 326        | HIS         |
| 1          | D            | 341        | ASN         |
| 1          | D            | 367        | HIS         |
| 1          | D            | 396        | ASN         |
| 1          | D            | 462        | GLN         |
| 1          | E            | 69         | GLN         |
| 1          | E            | 153        | GLN         |
| 1          | E            | 182        | GLN         |
| 1          | E            | 254        | GLN         |
| 1          | E            | 262        | ASN         |
| 1          | E            | 308        | ASN         |
| 1          | E            | 317        | GLN         |
| 1          | E            | 321        | ASN         |
| 1          | E            | 326        | HIS         |
| 1          | E            | 341        | ASN         |
| 1          | E            | 367        | HIS         |
| 1          | E            | 396        | ASN         |
| 1          | E            | 462        | GLN         |
| 1          | F            | 69         | GLN         |
| 1          | F            | 153        | GLN         |
| 1          | F            | 182        | GLN         |
| 1          | F            | 254        | GLN         |
| 1          | F            | 262        | ASN         |
| 1          | F            | 273        | GLN         |
| 1          | F            | 308        | ASN         |
| 1          | F            | 317        | GLN         |
| 1          | F            | 321        | ASN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | F            | 326        | HIS         |
| 1          | F            | 327        | ASN         |
| 1          | F            | 341        | ASN         |
| 1          | F            | 367        | HIS         |
| 1          | F            | 396        | ASN         |
| 1          | F            | 462        | GLN         |
| 1          | G            | 69         | GLN         |
| 1          | G            | 92         | ASN         |
| 1          | G            | 133        | HIS         |
| 1          | G            | 153        | GLN         |
| 1          | G            | 254        | GLN         |
| 1          | G            | 262        | ASN         |
| 1          | G            | 273        | GLN         |
| 1          | G            | 308        | ASN         |
| 1          | G            | 317        | GLN         |
| 1          | G            | 326        | HIS         |
| 1          | G            | 327        | ASN         |
| 1          | G            | 341        | ASN         |
| 1          | G            | 367        | HIS         |
| 1          | G            | 396        | ASN         |
| 1          | G            | 462        | GLN         |
| 1          | H            | 69         | GLN         |
| 1          | H            | 92         | ASN         |
| 1          | H            | 133        | HIS         |
| 1          | H            | 153        | GLN         |
| 1          | H            | 182        | GLN         |
| 1          | H            | 192        | ASN         |
| 1          | H            | 254        | GLN         |
| 1          | H            | 262        | ASN         |
| 1          | H            | 308        | ASN         |
| 1          | H            | 317        | GLN         |
| 1          | H            | 326        | HIS         |
| 1          | H            | 341        | ASN         |
| 1          | H            | 367        | HIS         |
| 1          | H            | 396        | ASN         |
| 1          | H            | 462        | GLN         |
| 1          | I            | 69         | GLN         |
| 1          | I            | 153        | GLN         |
| 1          | I            | 182        | GLN         |
| 1          | I            | 226        | GLN         |
| 1          | I            | 254        | GLN         |
| 1          | I            | 262        | ASN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | I            | 273        | GLN         |
| 1          | I            | 308        | ASN         |
| 1          | I            | 317        | GLN         |
| 1          | I            | 321        | ASN         |
| 1          | I            | 326        | HIS         |
| 1          | I            | 341        | ASN         |
| 1          | I            | 367        | HIS         |
| 1          | I            | 396        | ASN         |
| 1          | I            | 462        | GLN         |
| 1          | J            | 69         | GLN         |
| 1          | J            | 138        | ASN         |
| 1          | J            | 153        | GLN         |
| 1          | J            | 182        | GLN         |
| 1          | J            | 192        | ASN         |
| 1          | J            | 254        | GLN         |
| 1          | J            | 262        | ASN         |
| 1          | J            | 308        | ASN         |
| 1          | J            | 317        | GLN         |
| 1          | J            | 321        | ASN         |
| 1          | J            | 326        | HIS         |
| 1          | J            | 327        | ASN         |
| 1          | J            | 341        | ASN         |
| 1          | J            | 349        | GLN         |
| 1          | J            | 367        | HIS         |
| 1          | J            | 396        | ASN         |
| 1          | J            | 462        | GLN         |
| 1          | K            | 69         | GLN         |
| 1          | K            | 153        | GLN         |
| 1          | K            | 182        | GLN         |
| 1          | K            | 254        | GLN         |
| 1          | K            | 262        | ASN         |
| 1          | K            | 308        | ASN         |
| 1          | K            | 317        | GLN         |
| 1          | K            | 326        | HIS         |
| 1          | K            | 341        | ASN         |
| 1          | K            | 349        | GLN         |
| 1          | K            | 367        | HIS         |
| 1          | K            | 396        | ASN         |
| 1          | K            | 462        | GLN         |
| 1          | L            | 69         | GLN         |
| 1          | L            | 153        | GLN         |
| 1          | L            | 182        | GLN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L            | 192        | ASN         |
| 1          | L            | 254        | GLN         |
| 1          | L            | 262        | ASN         |
| 1          | L            | 308        | ASN         |
| 1          | L            | 317        | GLN         |
| 1          | L            | 321        | ASN         |
| 1          | L            | 326        | HIS         |
| 1          | L            | 341        | ASN         |
| 1          | L            | 349        | GLN         |
| 1          | L            | 367        | HIS         |
| 1          | L            | 396        | ASN         |
| 1          | L            | 438        | ASN         |
| 1          | L            | 462        | GLN         |
| 1          | M            | 60         | GLN         |
| 1          | M            | 69         | GLN         |
| 1          | M            | 92         | ASN         |
| 1          | M            | 153        | GLN         |
| 1          | M            | 182        | GLN         |
| 1          | M            | 254        | GLN         |
| 1          | M            | 262        | ASN         |
| 1          | M            | 273        | GLN         |
| 1          | M            | 308        | ASN         |
| 1          | M            | 317        | GLN         |
| 1          | M            | 321        | ASN         |
| 1          | M            | 326        | HIS         |
| 1          | M            | 327        | ASN         |
| 1          | M            | 341        | ASN         |
| 1          | M            | 367        | HIS         |
| 1          | M            | 393        | GLN         |
| 1          | M            | 396        | ASN         |
| 1          | M            | 462        | GLN         |
| 1          | N            | 69         | GLN         |
| 1          | N            | 92         | ASN         |
| 1          | N            | 153        | GLN         |
| 1          | N            | 182        | GLN         |
| 1          | N            | 254        | GLN         |
| 1          | N            | 262        | ASN         |
| 1          | N            | 273        | GLN         |
| 1          | N            | 308        | ASN         |
| 1          | N            | 317        | GLN         |
| 1          | N            | 321        | ASN         |
| 1          | N            | 326        | HIS         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | N     | 341 | ASN  |
| 1   | N     | 349 | GLN  |
| 1   | N     | 367 | HIS  |
| 1   | N     | 396 | ASN  |
| 1   | N     | 462 | GLN  |
| 1   | O     | 69  | GLN  |
| 1   | O     | 153 | GLN  |
| 1   | O     | 262 | ASN  |
| 1   | O     | 273 | GLN  |
| 1   | O     | 308 | ASN  |
| 1   | O     | 317 | GLN  |
| 1   | O     | 319 | HIS  |
| 1   | O     | 321 | ASN  |
| 1   | O     | 327 | ASN  |
| 1   | O     | 341 | ASN  |
| 1   | O     | 367 | HIS  |
| 1   | O     | 396 | ASN  |
| 1   | O     | 462 | GLN  |

### 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](#)

90 monosaccharides 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 |
| 2   | JHM  | P     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 2   | IDS  | P     | 2   | 2    | 15,15,17     | 1.95 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 3   | JHM  | Q     | 1   | 3    | 15,15,15     | 1.10 | 2 (13%)  | 18,22,22    | 1.27 | 2 (11%)  |
| 3   | IDS  | Q     | 2   | 3    | 16,16,17     | 2.16 | 3 (18%)  | 17,24,26    | 5.21 | 5 (29%)  |
| 3   | JHM  | Q     | 3   | 3    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | IDS  | Q     | 4   | 3    | 15,15,17     | 1.98 | 2 (13%)  | 15,22,26    | 2.35 | 4 (26%)  |
| 3   | JHM  | R     | 1   | 3    | 15,15,15     | 1.09 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 3   | IDS  | R     | 2   | 3    | 16,16,17     | 2.11 | 2 (12%)  | 17,24,26    | 4.08 | 5 (29%)  |
| 3   | JHM  | R     | 3   | 3    | 14,14,15     | 0.97 | 1 (7%)   | 18,20,22    | 1.43 | 3 (16%)  |
| 3   | IDS  | R     | 4   | 3    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | S     | 1   | 2    | 15,15,15     | 1.10 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | S     | 2   | 2    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.34 | 4 (26%)  |
| 2   | JHM  | T     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.26 | 2 (11%)  |
| 2   | IDS  | T     | 2   | 2    | 15,15,17     | 1.95 | 2 (13%)  | 15,22,26    | 2.35 | 4 (26%)  |
| 2   | JHM  | U     | 1   | 2    | 15,15,15     | 1.09 | 2 (13%)  | 18,22,22    | 1.26 | 2 (11%)  |
| 2   | IDS  | U     | 2   | 2    | 15,15,17     | 1.96 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 3   | JHM  | V     | 1   | 3    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 3   | IDS  | V     | 2   | 3    | 16,16,17     | 2.04 | 2 (12%)  | 17,24,26    | 3.30 | 5 (29%)  |
| 3   | JHM  | V     | 3   | 3    | 14,14,15     | 0.94 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | IDS  | V     | 4   | 3    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | W     | 1   | 2    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.26 | 2 (11%)  |
| 2   | IDS  | W     | 2   | 2    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.34 | 4 (26%)  |
| 3   | JHM  | X     | 1   | 3    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.26 | 2 (11%)  |
| 3   | IDS  | X     | 2   | 3    | 16,16,17     | 1.91 | 2 (12%)  | 17,24,26    | 3.90 | 5 (29%)  |
| 3   | JHM  | X     | 3   | 3    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.41 | 3 (16%)  |
| 3   | IDS  | X     | 4   | 3    | 15,15,17     | 1.96 | 2 (13%)  | 15,22,26    | 2.35 | 4 (26%)  |
| 2   | JHM  | Y     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 2   | IDS  | Y     | 2   | 2    | 15,15,17     | 1.93 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 2   | JHM  | Z     | 1   | 2    | 15,15,15     | 1.10 | 2 (13%)  | 18,22,22    | 1.27 | 2 (11%)  |
| 2   | IDS  | Z     | 2   | 2    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.35 | 4 (26%)  |
| 2   | JHM  | a     | 1   | 2    | 15,15,15     | 1.09 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | a     | 2   | 2    | 15,15,17     | 1.96 | 1 (6%)   | 15,22,26    | 2.33 | 4 (26%)  |
| 3   | JHM  | b     | 1   | 3    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 3   | IDS  | b     | 2   | 3    | 16,16,17     | 1.89 | 1 (6%)   | 17,24,26    | 3.08 | 4 (23%)  |
| 3   | JHM  | b     | 3   | 3    | 14,14,15     | 0.98 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | IDS  | b     | 4   | 3    | 15,15,17     | 1.96 | 1 (6%)   | 15,22,26    | 2.31 | 4 (26%)  |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 3   | JHM  | c     | 1   | 3    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 3   | IDS  | c     | 2   | 3    | 16,16,17     | 2.26 | 3 (18%)  | 17,24,26    | 5.62 | 5 (29%)  |
| 3   | JHM  | c     | 3   | 3    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.43 | 3 (16%)  |
| 3   | IDS  | c     | 4   | 3    | 15,15,17     | 1.96 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | d     | 1   | 2    | 15,15,15     | 1.06 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | d     | 2   | 2    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.31 | 4 (26%)  |
| 4   | JHM  | e     | 1   | 4    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 4   | IDS  | e     | 2   | 4    | 16,16,17     | 2.27 | 3 (18%)  | 17,24,26    | 3.24 | 6 (35%)  |
| 4   | JHM  | e     | 3   | 4    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.41 | 3 (16%)  |
| 4   | IDS  | e     | 4   | 4    | 16,16,17     | 1.94 | 2 (12%)  | 17,24,26    | 3.11 | 6 (35%)  |
| 4   | JHM  | e     | 5   | 4    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 4   | IDS  | e     | 6   | 4    | 15,15,17     | 1.98 | 2 (13%)  | 15,22,26    | 2.34 | 4 (26%)  |
| 5   | JHM  | f     | 1   | 5    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 5   | IDS  | f     | 10  | 5    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.33 | 4 (26%)  |
| 5   | IDS  | f     | 2   | 5    | 16,16,17     | 2.26 | 2 (12%)  | 17,24,26    | 3.59 | 4 (23%)  |
| 5   | JHM  | f     | 3   | 5    | 14,14,15     | 0.97 | 1 (7%)   | 18,20,22    | 1.41 | 3 (16%)  |
| 5   | IDS  | f     | 4   | 5    | 16,16,17     | 2.21 | 2 (12%)  | 17,24,26    | 3.30 | 4 (23%)  |
| 5   | JHM  | f     | 5   | 5    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.43 | 3 (16%)  |
| 5   | IDS  | f     | 6   | 5    | 16,16,17     | 1.88 | 1 (6%)   | 17,24,26    | 3.66 | 4 (23%)  |
| 5   | JHM  | f     | 7   | 5    | 14,14,15     | 0.96 | 1 (7%)   | 18,20,22    | 1.41 | 3 (16%)  |
| 5   | IDS  | f     | 8   | 5    | 16,16,17     | 2.04 | 2 (12%)  | 17,24,26    | 3.63 | 4 (23%)  |
| 5   | JHM  | f     | 9   | 5    | 14,14,15     | 0.95 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | JHM  | g     | 1   | 3    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 3   | IDS  | g     | 2   | 3    | 16,16,17     | 1.89 | 1 (6%)   | 17,24,26    | 4.15 | 5 (29%)  |
| 3   | JHM  | g     | 3   | 3    | 14,14,15     | 0.96 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | IDS  | g     | 4   | 3    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 3   | JHM  | h     | 1   | 3    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 3   | IDS  | h     | 2   | 3    | 16,16,17     | 1.88 | 1 (6%)   | 17,24,26    | 2.87 | 5 (29%)  |
| 3   | JHM  | h     | 3   | 3    | 14,14,15     | 0.96 | 1 (7%)   | 18,20,22    | 1.43 | 3 (16%)  |
| 3   | IDS  | h     | 4   | 3    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | i     | 1   | 2    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | i     | 2   | 2    | 15,15,17     | 1.99 | 2 (13%)  | 15,22,26    | 2.35 | 4 (26%)  |
| 2   | JHM  | j     | 1   | 2    | 15,15,15     | 1.06 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 2   | IDS  | j     | 2   | 2    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | k     | 1   | 2    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 2   | IDS  | k     | 2   | 2    | 15,15,17     | 1.93 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 2   | JHM  | l     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | l     | 2   | 2    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.31 | 4 (26%)  |
| 2   | JHM  | m     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | m     | 2   | 2    | 15,15,17     | 1.95 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 2   | JHM  | n     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | n     | 2   | 2    | 15,15,17     | 1.93 | 1 (6%)   | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | o     | 1   | 2    | 15,15,15     | 1.09 | 2 (13%)  | 18,22,22    | 1.24 | 2 (11%)  |
| 2   | IDS  | o     | 2   | 2    | 15,15,17     | 1.94 | 1 (6%)   | 15,22,26    | 2.32 | 4 (26%)  |
| 3   | JHM  | p     | 1   | 3    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 3   | IDS  | p     | 2   | 3    | 16,16,17     | 1.96 | 2 (12%)  | 17,24,26    | 3.04 | 5 (29%)  |
| 3   | JHM  | p     | 3   | 3    | 14,14,15     | 0.94 | 1 (7%)   | 18,20,22    | 1.42 | 3 (16%)  |
| 3   | IDS  | p     | 4   | 3    | 15,15,17     | 1.96 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | q     | 1   | 2    | 15,15,15     | 1.07 | 2 (13%)  | 18,22,22    | 1.26 | 2 (11%)  |
| 2   | IDS  | q     | 2   | 2    | 15,15,17     | 1.96 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | r     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | r     | 2   | 2    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |
| 2   | JHM  | s     | 1   | 2    | 15,15,15     | 1.08 | 2 (13%)  | 18,22,22    | 1.25 | 2 (11%)  |
| 2   | IDS  | s     | 2   | 2    | 15,15,17     | 1.97 | 2 (13%)  | 15,22,26    | 2.33 | 4 (26%)  |

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   |
|-----|------|-------|-----|------|---------|-----------|---------|
| 2   | JHM  | P     | 1   | 2    | -       | 2/6/22/22 | 0/1/1/1 |
| 2   | IDS  | P     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 3   | JHM  | Q     | 1   | 3    | -       | 0/6/22/22 | 0/1/1/1 |
| 3   | IDS  | Q     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | Q     | 3   | 3    | -       | 0/6/20/22 | 0/1/1/1 |
| 3   | IDS  | Q     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 3   | JHM  | R     | 1   | 3    | -       | 2/6/22/22 | 0/1/1/1 |
| 3   | IDS  | R     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | R     | 3   | 3    | -       | 0/6/20/22 | 0/1/1/1 |
| 3   | IDS  | R     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | S     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | S     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|-----|------|---------|-----------|---------|
| 2   | JHM  | T     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | T     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | U     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | U     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 3   | JHM  | V     | 1   | 3    | -       | 2/6/22/22 | 0/1/1/1 |
| 3   | IDS  | V     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | V     | 3   | 3    | -       | 0/6/20/22 | 0/1/1/1 |
| 3   | IDS  | V     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | W     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | W     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 3   | JHM  | X     | 1   | 3    | -       | 0/6/22/22 | 0/1/1/1 |
| 3   | IDS  | X     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | X     | 3   | 3    | -       | 2/6/20/22 | 0/1/1/1 |
| 3   | IDS  | X     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | Y     | 1   | 2    | -       | 2/6/22/22 | 0/1/1/1 |
| 2   | IDS  | Y     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | Z     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | Z     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | a     | 1   | 2    | -       | 2/6/22/22 | 0/1/1/1 |
| 2   | IDS  | a     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 3   | JHM  | b     | 1   | 3    | -       | 2/6/22/22 | 0/1/1/1 |
| 3   | IDS  | b     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | b     | 3   | 3    | -       | 2/6/20/22 | 0/1/1/1 |
| 3   | IDS  | b     | 4   | 3    | -       | 1/9/22/29 | 0/1/1/1 |
| 3   | JHM  | c     | 1   | 3    | -       | 0/6/22/22 | 0/1/1/1 |
| 3   | IDS  | c     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | c     | 3   | 3    | -       | 1/6/20/22 | 0/1/1/1 |
| 3   | IDS  | c     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | d     | 1   | 2    | -       | 2/6/22/22 | 0/1/1/1 |
| 2   | IDS  | d     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 4   | JHM  | e     | 1   | 4    | -       | 1/6/22/22 | 0/1/1/1 |
| 4   | IDS  | e     | 2   | 4    | -       | 0/9/26/29 | 0/1/1/1 |
| 4   | JHM  | e     | 3   | 4    | -       | 1/6/20/22 | 0/1/1/1 |
| 4   | IDS  | e     | 4   | 4    | -       | 0/9/26/29 | 0/1/1/1 |
| 4   | JHM  | e     | 5   | 4    | -       | 1/6/20/22 | 0/1/1/1 |
| 4   | IDS  | e     | 6   | 4    | -       | 0/9/22/29 | 0/1/1/1 |
| 5   | JHM  | f     | 1   | 5    | -       | 2/6/22/22 | 0/1/1/1 |
| 5   | IDS  | f     | 10  | 5    | -       | 1/9/22/29 | 0/1/1/1 |
| 5   | IDS  | f     | 2   | 5    | -       | 0/9/26/29 | 0/1/1/1 |
| 5   | JHM  | f     | 3   | 5    | -       | 2/6/20/22 | 0/1/1/1 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|-----|------|---------|-----------|---------|
| 5   | IDS  | f     | 4   | 5    | -       | 0/9/26/29 | 0/1/1/1 |
| 5   | JHM  | f     | 5   | 5    | -       | 0/6/20/22 | 0/1/1/1 |
| 5   | IDS  | f     | 6   | 5    | -       | 0/9/26/29 | 0/1/1/1 |
| 5   | JHM  | f     | 7   | 5    | -       | 2/6/20/22 | 0/1/1/1 |
| 5   | IDS  | f     | 8   | 5    | -       | 0/9/26/29 | 0/1/1/1 |
| 5   | JHM  | f     | 9   | 5    | -       | 2/6/20/22 | 0/1/1/1 |
| 3   | JHM  | g     | 1   | 3    | -       | 2/6/22/22 | 0/1/1/1 |
| 3   | IDS  | g     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | g     | 3   | 3    | -       | 0/6/20/22 | 0/1/1/1 |
| 3   | IDS  | g     | 4   | 3    | -       | 1/9/22/29 | 0/1/1/1 |
| 3   | JHM  | h     | 1   | 3    | -       | 2/6/22/22 | 0/1/1/1 |
| 3   | IDS  | h     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | h     | 3   | 3    | -       | 0/6/20/22 | 0/1/1/1 |
| 3   | IDS  | h     | 4   | 3    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | i     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | i     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | j     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | j     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | k     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | k     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | l     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | l     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | m     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | m     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | n     | 1   | 2    | -       | 0/6/22/22 | 0/1/1/1 |
| 2   | IDS  | n     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 2   | JHM  | o     | 1   | 2    | -       | 2/6/22/22 | 0/1/1/1 |
| 2   | IDS  | o     | 2   | 2    | -       | 1/9/22/29 | 0/1/1/1 |
| 3   | JHM  | p     | 1   | 3    | -       | 1/6/22/22 | 0/1/1/1 |
| 3   | IDS  | p     | 2   | 3    | -       | 0/9/26/29 | 0/1/1/1 |
| 3   | JHM  | p     | 3   | 3    | -       | 1/6/20/22 | 0/1/1/1 |
| 3   | IDS  | p     | 4   | 3    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | q     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | q     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | r     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | r     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |
| 2   | JHM  | s     | 1   | 2    | -       | 1/6/22/22 | 0/1/1/1 |
| 2   | IDS  | s     | 2   | 2    | -       | 0/9/22/29 | 0/1/1/1 |

All (150) bond length outliers are listed below:



| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 3   | g     | 2   | IDS  | O2-C2 | -6.59 | 1.37        | 1.47     |
| 2   | i     | 2   | IDS  | O2-C2 | -6.59 | 1.37        | 1.47     |
| 3   | Q     | 4   | IDS  | O2-C2 | -6.57 | 1.37        | 1.47     |
| 2   | m     | 2   | IDS  | O2-C2 | -6.56 | 1.37        | 1.47     |
| 3   | b     | 4   | IDS  | O2-C2 | -6.55 | 1.37        | 1.47     |
| 2   | P     | 2   | IDS  | O2-C2 | -6.55 | 1.37        | 1.47     |
| 4   | e     | 2   | IDS  | O2-C2 | -6.55 | 1.37        | 1.47     |
| 2   | a     | 2   | IDS  | O2-C2 | -6.54 | 1.37        | 1.47     |
| 3   | b     | 2   | IDS  | O2-C2 | -6.54 | 1.37        | 1.47     |
| 4   | e     | 4   | IDS  | O2-C2 | -6.53 | 1.37        | 1.47     |
| 3   | R     | 2   | IDS  | O2-C2 | -6.52 | 1.37        | 1.47     |
| 5   | f     | 2   | IDS  | O2-C2 | -6.52 | 1.37        | 1.47     |
| 2   | s     | 2   | IDS  | O2-C2 | -6.52 | 1.37        | 1.47     |
| 3   | p     | 2   | IDS  | O2-C2 | -6.52 | 1.37        | 1.47     |
| 5   | f     | 6   | IDS  | O2-C2 | -6.52 | 1.37        | 1.47     |
| 2   | W     | 2   | IDS  | O2-C2 | -6.51 | 1.37        | 1.47     |
| 2   | j     | 2   | IDS  | O2-C2 | -6.51 | 1.37        | 1.47     |
| 2   | Z     | 2   | IDS  | O2-C2 | -6.51 | 1.37        | 1.47     |
| 4   | e     | 6   | IDS  | O2-C2 | -6.51 | 1.37        | 1.47     |
| 2   | o     | 2   | IDS  | O2-C2 | -6.51 | 1.37        | 1.47     |
| 2   | r     | 2   | IDS  | O2-C2 | -6.50 | 1.37        | 1.47     |
| 5   | f     | 4   | IDS  | O2-C2 | -6.50 | 1.37        | 1.47     |
| 3   | V     | 4   | IDS  | O2-C2 | -6.50 | 1.37        | 1.47     |
| 3   | h     | 4   | IDS  | O2-C2 | -6.50 | 1.37        | 1.47     |
| 3   | h     | 2   | IDS  | O2-C2 | -6.49 | 1.37        | 1.47     |
| 2   | l     | 2   | IDS  | O2-C2 | -6.48 | 1.37        | 1.47     |
| 3   | g     | 4   | IDS  | O2-C2 | -6.48 | 1.37        | 1.47     |
| 2   | n     | 2   | IDS  | O2-C2 | -6.48 | 1.37        | 1.47     |
| 3   | R     | 4   | IDS  | O2-C2 | -6.48 | 1.37        | 1.47     |
| 5   | f     | 10  | IDS  | O2-C2 | -6.47 | 1.37        | 1.47     |
| 3   | X     | 4   | IDS  | O2-C2 | -6.47 | 1.37        | 1.47     |
| 3   | X     | 2   | IDS  | O2-C2 | -6.47 | 1.37        | 1.47     |
| 3   | c     | 2   | IDS  | O2-C2 | -6.46 | 1.37        | 1.47     |
| 3   | c     | 4   | IDS  | O2-C2 | -6.46 | 1.37        | 1.47     |
| 2   | Y     | 2   | IDS  | O2-C2 | -6.46 | 1.37        | 1.47     |
| 2   | k     | 2   | IDS  | O2-C2 | -6.46 | 1.37        | 1.47     |
| 3   | Q     | 2   | IDS  | O2-C2 | -6.46 | 1.37        | 1.47     |
| 2   | U     | 2   | IDS  | O2-C2 | -6.45 | 1.37        | 1.47     |
| 5   | f     | 8   | IDS  | O2-C2 | -6.44 | 1.37        | 1.47     |
| 3   | p     | 4   | IDS  | O2-C2 | -6.44 | 1.37        | 1.47     |
| 3   | V     | 2   | IDS  | O2-C2 | -6.44 | 1.37        | 1.47     |
| 2   | d     | 2   | IDS  | O2-C2 | -6.44 | 1.37        | 1.47     |
| 2   | q     | 2   | IDS  | O2-C2 | -6.44 | 1.37        | 1.47     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 2   | S     | 2   | IDS  | O2-C2  | -6.43 | 1.37        | 1.47     |
| 2   | T     | 2   | IDS  | O2-C2  | -6.42 | 1.37        | 1.47     |
| 5   | f     | 2   | IDS  | O4-C4  | 5.04  | 1.54        | 1.43     |
| 4   | e     | 2   | IDS  | O4-C4  | 4.94  | 1.54        | 1.43     |
| 3   | c     | 2   | IDS  | O4-C4  | 4.94  | 1.54        | 1.43     |
| 5   | f     | 4   | IDS  | O4-C4  | 4.65  | 1.53        | 1.43     |
| 3   | Q     | 2   | IDS  | O4-C4  | 4.22  | 1.52        | 1.43     |
| 3   | R     | 2   | IDS  | O4-C4  | 3.80  | 1.51        | 1.43     |
| 3   | V     | 2   | IDS  | O4-C4  | 3.33  | 1.50        | 1.43     |
| 5   | f     | 8   | IDS  | O4-C4  | 3.30  | 1.50        | 1.43     |
| 3   | b     | 3   | JHM  | C3-C4  | 2.24  | 1.55        | 1.52     |
| 2   | n     | 1   | JHM  | O1-C1  | 2.22  | 1.45        | 1.39     |
| 2   | s     | 1   | JHM  | O1-C1  | 2.22  | 1.45        | 1.39     |
| 2   | a     | 1   | JHM  | O1-C1  | 2.21  | 1.45        | 1.39     |
| 3   | X     | 1   | JHM  | O1-C1  | 2.21  | 1.45        | 1.39     |
| 3   | Q     | 1   | JHM  | C3-C4  | 2.21  | 1.55        | 1.52     |
| 3   | c     | 1   | JHM  | O1-C1  | 2.20  | 1.45        | 1.39     |
| 4   | e     | 4   | IDS  | O6B-C6 | -2.20 | 1.23        | 1.30     |
| 2   | W     | 1   | JHM  | O1-C1  | 2.20  | 1.45        | 1.39     |
| 2   | Z     | 1   | JHM  | O1-C1  | 2.20  | 1.45        | 1.39     |
| 2   | d     | 1   | JHM  | O1-C1  | 2.20  | 1.45        | 1.39     |
| 3   | Q     | 1   | JHM  | O1-C1  | 2.19  | 1.45        | 1.39     |
| 2   | S     | 1   | JHM  | O1-C1  | 2.19  | 1.45        | 1.39     |
| 2   | o     | 1   | JHM  | O1-C1  | 2.19  | 1.45        | 1.39     |
| 2   | Y     | 1   | JHM  | O1-C1  | 2.19  | 1.45        | 1.39     |
| 2   | i     | 1   | JHM  | O1-C1  | 2.19  | 1.45        | 1.39     |
| 3   | X     | 2   | IDS  | O6B-C6 | -2.19 | 1.23        | 1.30     |
| 2   | W     | 2   | IDS  | O6B-C6 | -2.19 | 1.23        | 1.30     |
| 2   | k     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 2   | l     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 4   | e     | 6   | IDS  | O6B-C6 | -2.18 | 1.23        | 1.30     |
| 2   | j     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 3   | c     | 2   | IDS  | O6B-C6 | -2.18 | 1.23        | 1.30     |
| 3   | p     | 4   | IDS  | O6B-C6 | -2.18 | 1.23        | 1.30     |
| 2   | m     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 2   | U     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 5   | f     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 2   | P     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 2   | T     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |
| 2   | Z     | 2   | IDS  | O6B-C6 | -2.18 | 1.23        | 1.30     |
| 3   | V     | 4   | IDS  | O6B-C6 | -2.18 | 1.23        | 1.30     |
| 3   | h     | 1   | JHM  | O1-C1  | 2.18  | 1.45        | 1.39     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 2   | Z     | 1   | JHM  | C3-C4  | 2.17  | 1.55        | 1.52     |
| 2   | s     | 2   | IDS  | O6B-C6 | -2.17 | 1.23        | 1.30     |
| 2   | q     | 1   | JHM  | O1-C1  | 2.17  | 1.45        | 1.39     |
| 2   | q     | 2   | IDS  | O6B-C6 | -2.17 | 1.23        | 1.30     |
| 4   | e     | 2   | IDS  | O6B-C6 | -2.17 | 1.23        | 1.30     |
| 4   | e     | 1   | JHM  | O1-C1  | 2.17  | 1.45        | 1.39     |
| 2   | r     | 1   | JHM  | O1-C1  | 2.17  | 1.45        | 1.39     |
| 3   | R     | 3   | JHM  | C3-C4  | 2.17  | 1.55        | 1.52     |
| 3   | R     | 1   | JHM  | O1-C1  | 2.17  | 1.45        | 1.39     |
| 2   | S     | 2   | IDS  | O6B-C6 | -2.17 | 1.23        | 1.30     |
| 5   | f     | 1   | JHM  | C3-C4  | 2.17  | 1.55        | 1.52     |
| 3   | p     | 1   | JHM  | O1-C1  | 2.17  | 1.45        | 1.39     |
| 3   | p     | 2   | IDS  | O4-C4  | 2.16  | 1.48        | 1.43     |
| 3   | V     | 1   | JHM  | O1-C1  | 2.16  | 1.45        | 1.39     |
| 3   | b     | 1   | JHM  | O1-C1  | 2.16  | 1.45        | 1.39     |
| 3   | g     | 1   | JHM  | O1-C1  | 2.16  | 1.45        | 1.39     |
| 3   | R     | 4   | IDS  | O6B-C6 | -2.16 | 1.23        | 1.30     |
| 2   | r     | 2   | IDS  | O6B-C6 | -2.16 | 1.23        | 1.30     |
| 3   | X     | 4   | IDS  | O6B-C6 | -2.16 | 1.23        | 1.30     |
| 2   | i     | 2   | IDS  | O6B-C6 | -2.15 | 1.23        | 1.30     |
| 2   | T     | 2   | IDS  | O6B-C6 | -2.15 | 1.23        | 1.30     |
| 3   | Q     | 4   | IDS  | O6B-C6 | -2.15 | 1.23        | 1.30     |
| 3   | Q     | 2   | IDS  | O6B-C6 | -2.15 | 1.23        | 1.30     |
| 3   | c     | 4   | IDS  | O6B-C6 | -2.14 | 1.23        | 1.30     |
| 2   | U     | 2   | IDS  | O6B-C6 | -2.14 | 1.23        | 1.30     |
| 4   | e     | 5   | JHM  | C3-C4  | 2.14  | 1.55        | 1.52     |
| 3   | h     | 3   | JHM  | C3-C4  | 2.14  | 1.55        | 1.52     |
| 2   | Y     | 1   | JHM  | C3-C4  | 2.14  | 1.55        | 1.52     |
| 2   | U     | 1   | JHM  | C3-C4  | 2.14  | 1.55        | 1.52     |
| 3   | X     | 1   | JHM  | C3-C4  | 2.13  | 1.55        | 1.52     |
| 5   | f     | 7   | JHM  | C3-C4  | 2.13  | 1.55        | 1.52     |
| 3   | c     | 1   | JHM  | C3-C4  | 2.13  | 1.55        | 1.52     |
| 5   | f     | 3   | JHM  | C3-C4  | 2.13  | 1.55        | 1.52     |
| 2   | a     | 1   | JHM  | C3-C4  | 2.12  | 1.55        | 1.52     |
| 3   | b     | 1   | JHM  | C3-C4  | 2.12  | 1.55        | 1.52     |
| 2   | T     | 1   | JHM  | C3-C4  | 2.12  | 1.55        | 1.52     |
| 2   | P     | 1   | JHM  | C3-C4  | 2.11  | 1.55        | 1.52     |
| 3   | V     | 1   | JHM  | C3-C4  | 2.11  | 1.55        | 1.52     |
| 4   | e     | 3   | JHM  | C3-C4  | 2.11  | 1.55        | 1.52     |
| 5   | f     | 5   | JHM  | C3-C4  | 2.11  | 1.55        | 1.52     |
| 2   | S     | 1   | JHM  | C3-C4  | 2.11  | 1.55        | 1.52     |
| 3   | X     | 3   | JHM  | C3-C4  | 2.10  | 1.55        | 1.52     |

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| Mol | Chain | Res | Type | Atoms | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 3   | g     | 3   | JHM  | C3-C4 | 2.10 | 1.55        | 1.52     |
| 2   | d     | 1   | JHM  | C3-C4 | 2.10 | 1.55        | 1.52     |
| 2   | l     | 1   | JHM  | C3-C4 | 2.10 | 1.55        | 1.52     |
| 2   | s     | 1   | JHM  | C3-C4 | 2.09 | 1.55        | 1.52     |
| 3   | R     | 1   | JHM  | C3-C4 | 2.09 | 1.55        | 1.52     |
| 3   | V     | 3   | JHM  | C3-C4 | 2.09 | 1.55        | 1.52     |
| 3   | Q     | 3   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 2   | i     | 1   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 4   | e     | 1   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 3   | g     | 1   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 2   | q     | 1   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 2   | r     | 1   | JHM  | C3-C4 | 2.08 | 1.55        | 1.52     |
| 2   | o     | 1   | JHM  | C3-C4 | 2.07 | 1.55        | 1.52     |
| 3   | p     | 1   | JHM  | C3-C4 | 2.07 | 1.55        | 1.52     |
| 2   | m     | 1   | JHM  | C3-C4 | 2.07 | 1.55        | 1.52     |
| 2   | j     | 1   | JHM  | C3-C4 | 2.06 | 1.55        | 1.52     |
| 3   | h     | 1   | JHM  | C3-C4 | 2.06 | 1.55        | 1.52     |
| 5   | f     | 9   | JHM  | C3-C4 | 2.06 | 1.55        | 1.52     |
| 3   | p     | 3   | JHM  | C3-C4 | 2.06 | 1.55        | 1.52     |
| 2   | k     | 1   | JHM  | C3-C4 | 2.05 | 1.55        | 1.52     |
| 2   | W     | 1   | JHM  | C3-C4 | 2.04 | 1.55        | 1.52     |
| 2   | n     | 1   | JHM  | C3-C4 | 2.03 | 1.55        | 1.52     |
| 3   | c     | 3   | JHM  | C3-C4 | 2.03 | 1.55        | 1.52     |

All (297) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 3   | c     | 2   | IDS  | O4-C4-C5 | 20.18 | 155.01      | 109.74   |
| 3   | Q     | 2   | IDS  | O4-C4-C5 | 18.11 | 150.35      | 109.74   |
| 3   | R     | 2   | IDS  | O4-C4-C3 | 14.12 | 143.00      | 110.35   |
| 3   | g     | 2   | IDS  | O4-C4-C5 | 13.52 | 140.07      | 109.74   |
| 3   | X     | 2   | IDS  | O4-C4-C3 | 13.36 | 141.24      | 110.35   |
| 5   | f     | 6   | IDS  | O4-C4-C5 | 12.23 | 137.18      | 109.74   |
| 5   | f     | 8   | IDS  | O4-C4-C5 | 11.94 | 136.52      | 109.74   |
| 5   | f     | 2   | IDS  | O4-C4-C5 | 11.83 | 136.26      | 109.74   |
| 5   | f     | 4   | IDS  | O4-C4-C5 | 10.27 | 132.78      | 109.74   |
| 4   | e     | 2   | IDS  | O4-C4-C3 | 9.54  | 132.40      | 110.35   |
| 3   | V     | 2   | IDS  | O4-C4-C5 | 9.05  | 130.04      | 109.74   |
| 3   | b     | 2   | IDS  | O4-C4-C5 | 9.03  | 130.00      | 109.74   |
| 3   | p     | 2   | IDS  | O4-C4-C5 | 8.58  | 128.97      | 109.74   |
| 4   | e     | 4   | IDS  | O4-C4-C5 | 7.80  | 127.24      | 109.74   |
| 3   | Q     | 2   | IDS  | O4-C4-C3 | -7.34 | 93.39       | 110.35   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 3   | c     | 2   | IDS  | O4-C4-C3 | -7.20 | 93.71       | 110.35   |
| 3   | b     | 2   | IDS  | C2-O2-S  | 7.13  | 127.21      | 117.91   |
| 2   | a     | 2   | IDS  | C2-O2-S  | 7.12  | 127.20      | 117.91   |
| 3   | g     | 2   | IDS  | C2-O2-S  | 7.11  | 127.19      | 117.91   |
| 2   | S     | 2   | IDS  | C2-O2-S  | 7.10  | 127.17      | 117.91   |
| 2   | Z     | 2   | IDS  | C2-O2-S  | 7.09  | 127.16      | 117.91   |
| 3   | h     | 4   | IDS  | C2-O2-S  | 7.09  | 127.16      | 117.91   |
| 2   | j     | 2   | IDS  | C2-O2-S  | 7.09  | 127.16      | 117.91   |
| 2   | k     | 2   | IDS  | C2-O2-S  | 7.09  | 127.16      | 117.91   |
| 5   | f     | 10  | IDS  | C2-O2-S  | 7.08  | 127.15      | 117.91   |
| 2   | i     | 2   | IDS  | C2-O2-S  | 7.08  | 127.14      | 117.91   |
| 4   | e     | 6   | IDS  | C2-O2-S  | 7.08  | 127.14      | 117.91   |
| 4   | e     | 2   | IDS  | C2-O2-S  | 7.08  | 127.14      | 117.91   |
| 3   | Q     | 4   | IDS  | C2-O2-S  | 7.07  | 127.14      | 117.91   |
| 4   | e     | 4   | IDS  | C2-O2-S  | 7.07  | 127.14      | 117.91   |
| 5   | f     | 8   | IDS  | C2-O2-S  | 7.07  | 127.13      | 117.91   |
| 2   | Y     | 2   | IDS  | C2-O2-S  | 7.06  | 127.12      | 117.91   |
| 2   | T     | 2   | IDS  | C2-O2-S  | 7.06  | 127.12      | 117.91   |
| 3   | p     | 2   | IDS  | C2-O2-S  | 7.06  | 127.12      | 117.91   |
| 5   | f     | 2   | IDS  | C2-O2-S  | 7.06  | 127.11      | 117.91   |
| 3   | Q     | 2   | IDS  | C2-O2-S  | 7.06  | 127.11      | 117.91   |
| 2   | n     | 2   | IDS  | C2-O2-S  | 7.05  | 127.11      | 117.91   |
| 5   | f     | 6   | IDS  | C2-O2-S  | 7.05  | 127.11      | 117.91   |
| 3   | c     | 2   | IDS  | C2-O2-S  | 7.05  | 127.11      | 117.91   |
| 3   | R     | 4   | IDS  | C2-O2-S  | 7.05  | 127.10      | 117.91   |
| 3   | X     | 4   | IDS  | C2-O2-S  | 7.05  | 127.10      | 117.91   |
| 2   | l     | 2   | IDS  | C2-O2-S  | 7.05  | 127.10      | 117.91   |
| 2   | q     | 2   | IDS  | C2-O2-S  | 7.05  | 127.10      | 117.91   |
| 3   | c     | 4   | IDS  | C2-O2-S  | 7.05  | 127.10      | 117.91   |
| 2   | P     | 2   | IDS  | C2-O2-S  | 7.04  | 127.10      | 117.91   |
| 3   | R     | 2   | IDS  | C2-O2-S  | 7.04  | 127.10      | 117.91   |
| 2   | U     | 2   | IDS  | C2-O2-S  | 7.04  | 127.10      | 117.91   |
| 3   | g     | 4   | IDS  | C2-O2-S  | 7.04  | 127.10      | 117.91   |
| 2   | o     | 2   | IDS  | C2-O2-S  | 7.04  | 127.09      | 117.91   |
| 3   | b     | 4   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 2   | r     | 2   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 2   | m     | 2   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 3   | V     | 4   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 3   | p     | 4   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 2   | W     | 2   | IDS  | C2-O2-S  | 7.03  | 127.08      | 117.91   |
| 3   | h     | 2   | IDS  | C2-O2-S  | 7.03  | 127.07      | 117.91   |
| 3   | X     | 2   | IDS  | C2-O2-S  | 7.02  | 127.07      | 117.91   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 5   | f     | 4   | IDS  | C2-O2-S  | 7.01  | 127.06      | 117.91   |
| 2   | d     | 2   | IDS  | C2-O2-S  | 7.01  | 127.05      | 117.91   |
| 3   | V     | 2   | IDS  | C2-O2-S  | 7.01  | 127.05      | 117.91   |
| 2   | s     | 2   | IDS  | C2-O2-S  | 7.00  | 127.05      | 117.91   |
| 3   | h     | 2   | IDS  | O4-C4-C3 | 6.77  | 126.00      | 110.35   |
| 3   | g     | 2   | IDS  | O4-C4-C3 | -5.50 | 97.63       | 110.35   |
| 3   | V     | 2   | IDS  | O4-C4-C3 | -4.99 | 98.82       | 110.35   |
| 4   | e     | 4   | IDS  | O4-C4-C3 | 4.98  | 121.86      | 110.35   |
| 3   | h     | 2   | IDS  | O4-C4-C5 | 3.95  | 118.59      | 109.74   |
| 5   | f     | 5   | JHM  | C2-C3-C4 | -3.50 | 107.13      | 111.16   |
| 3   | p     | 3   | JHM  | C2-C3-C4 | -3.49 | 107.14      | 111.16   |
| 5   | f     | 9   | JHM  | C2-C3-C4 | -3.49 | 107.15      | 111.16   |
| 5   | f     | 3   | JHM  | C2-C3-C4 | -3.49 | 107.15      | 111.16   |
| 3   | h     | 3   | JHM  | C2-C3-C4 | -3.48 | 107.16      | 111.16   |
| 3   | g     | 3   | JHM  | C2-C3-C4 | -3.48 | 107.16      | 111.16   |
| 5   | f     | 7   | JHM  | C2-C3-C4 | -3.47 | 107.17      | 111.16   |
| 3   | Q     | 3   | JHM  | C2-C3-C4 | -3.47 | 107.17      | 111.16   |
| 3   | b     | 3   | JHM  | C2-C3-C4 | -3.46 | 107.18      | 111.16   |
| 4   | e     | 5   | JHM  | C2-C3-C4 | -3.46 | 107.19      | 111.16   |
| 3   | R     | 3   | JHM  | C2-C3-C4 | -3.45 | 107.20      | 111.16   |
| 3   | c     | 3   | JHM  | C2-C3-C4 | -3.44 | 107.20      | 111.16   |
| 3   | V     | 3   | JHM  | C2-C3-C4 | -3.44 | 107.21      | 111.16   |
| 3   | X     | 3   | JHM  | C2-C3-C4 | -3.43 | 107.21      | 111.16   |
| 4   | e     | 3   | JHM  | C2-C3-C4 | -3.41 | 107.23      | 111.16   |
| 3   | R     | 1   | JHM  | C3-C4-C5 | -3.35 | 106.64      | 109.97   |
| 3   | Q     | 1   | JHM  | C3-C4-C5 | -3.33 | 106.65      | 109.97   |
| 3   | b     | 1   | JHM  | C3-C4-C5 | -3.33 | 106.65      | 109.97   |
| 3   | b     | 3   | JHM  | C3-C4-C5 | -3.32 | 106.66      | 109.97   |
| 2   | d     | 1   | JHM  | C3-C4-C5 | -3.31 | 106.67      | 109.97   |
| 2   | a     | 1   | JHM  | C3-C4-C5 | -3.31 | 106.68      | 109.97   |
| 2   | Z     | 1   | JHM  | C3-C4-C5 | -3.30 | 106.69      | 109.97   |
| 2   | o     | 1   | JHM  | C3-C4-C5 | -3.29 | 106.70      | 109.97   |
| 2   | U     | 1   | JHM  | C3-C4-C5 | -3.28 | 106.70      | 109.97   |
| 5   | f     | 1   | JHM  | C3-C4-C5 | -3.28 | 106.70      | 109.97   |
| 3   | R     | 3   | JHM  | C3-C4-C5 | -3.27 | 106.71      | 109.97   |
| 2   | P     | 1   | JHM  | C3-C4-C5 | -3.27 | 106.71      | 109.97   |
| 2   | W     | 1   | JHM  | C3-C4-C5 | -3.26 | 106.72      | 109.97   |
| 3   | h     | 3   | JHM  | C3-C4-C5 | -3.26 | 106.72      | 109.97   |
| 2   | q     | 1   | JHM  | C3-C4-C5 | -3.26 | 106.72      | 109.97   |
| 2   | m     | 1   | JHM  | C3-C4-C5 | -3.25 | 106.73      | 109.97   |
| 2   | Y     | 1   | JHM  | C3-C4-C5 | -3.25 | 106.73      | 109.97   |
| 3   | c     | 3   | JHM  | C3-C4-C5 | -3.24 | 106.74      | 109.97   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 2   | i     | 1   | JHM  | C3-C4-C5 | -3.24 | 106.74      | 109.97   |
| 5   | f     | 9   | JHM  | C3-C4-C5 | -3.24 | 106.74      | 109.97   |
| 3   | p     | 3   | JHM  | C3-C4-C5 | -3.24 | 106.74      | 109.97   |
| 5   | f     | 5   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 2   | r     | 1   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 3   | V     | 1   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 3   | X     | 1   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 3   | g     | 1   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 4   | e     | 3   | JHM  | C3-C4-C5 | -3.23 | 106.75      | 109.97   |
| 4   | e     | 5   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 2   | s     | 1   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 2   | n     | 1   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 3   | X     | 3   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 2   | T     | 1   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 3   | Q     | 3   | JHM  | C3-C4-C5 | -3.22 | 106.76      | 109.97   |
| 2   | S     | 1   | JHM  | C3-C4-C5 | -3.21 | 106.77      | 109.97   |
| 3   | c     | 1   | JHM  | C3-C4-C5 | -3.21 | 106.77      | 109.97   |
| 4   | e     | 1   | JHM  | C3-C4-C5 | -3.21 | 106.77      | 109.97   |
| 2   | k     | 1   | JHM  | C3-C4-C5 | -3.20 | 106.78      | 109.97   |
| 5   | f     | 7   | JHM  | C3-C4-C5 | -3.20 | 106.78      | 109.97   |
| 3   | V     | 3   | JHM  | C3-C4-C5 | -3.20 | 106.78      | 109.97   |
| 3   | p     | 1   | JHM  | C3-C4-C5 | -3.19 | 106.79      | 109.97   |
| 3   | h     | 1   | JHM  | C3-C4-C5 | -3.19 | 106.79      | 109.97   |
| 3   | g     | 3   | JHM  | C3-C4-C5 | -3.19 | 106.80      | 109.97   |
| 5   | f     | 3   | JHM  | C3-C4-C5 | -3.18 | 106.80      | 109.97   |
| 2   | l     | 1   | JHM  | C3-C4-C5 | -3.18 | 106.80      | 109.97   |
| 2   | j     | 1   | JHM  | C3-C4-C5 | -3.13 | 106.85      | 109.97   |
| 4   | e     | 2   | IDS  | O4-C4-C5 | 2.94  | 116.34      | 109.74   |
| 3   | c     | 2   | IDS  | C1-C2-C3 | 2.91  | 113.76      | 109.40   |
| 3   | Q     | 2   | IDS  | C1-C2-C3 | 2.91  | 113.75      | 109.40   |
| 3   | b     | 2   | IDS  | C1-C2-C3 | 2.90  | 113.74      | 109.40   |
| 4   | e     | 2   | IDS  | C1-C2-C3 | 2.89  | 113.71      | 109.40   |
| 3   | g     | 2   | IDS  | C1-C2-C3 | 2.88  | 113.71      | 109.40   |
| 3   | R     | 2   | IDS  | C1-C2-C3 | 2.88  | 113.70      | 109.40   |
| 3   | V     | 2   | IDS  | C1-C2-C3 | 2.87  | 113.70      | 109.40   |
| 5   | f     | 8   | IDS  | C1-C2-C3 | 2.87  | 113.69      | 109.40   |
| 5   | f     | 6   | IDS  | C1-C2-C3 | 2.87  | 113.69      | 109.40   |
| 3   | X     | 2   | IDS  | C1-C2-C3 | 2.87  | 113.69      | 109.40   |
| 4   | e     | 4   | IDS  | C1-C2-C3 | 2.86  | 113.68      | 109.40   |
| 3   | h     | 2   | IDS  | C1-C2-C3 | 2.86  | 113.67      | 109.40   |
| 5   | f     | 2   | IDS  | C1-C2-C3 | 2.85  | 113.66      | 109.40   |
| 3   | p     | 2   | IDS  | C1-C2-C3 | 2.84  | 113.65      | 109.40   |

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| Mol | Chain | Res | Type | Atoms     | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 5   | f     | 4   | IDS  | C1-C2-C3  | 2.83 | 113.63      | 109.40   |
| 2   | W     | 2   | IDS  | O6B-C6-C5 | 2.82 | 121.07      | 113.03   |
| 2   | q     | 2   | IDS  | O6B-C6-C5 | 2.81 | 121.04      | 113.03   |
| 2   | Z     | 2   | IDS  | O6B-C6-C5 | 2.80 | 121.03      | 113.03   |
| 3   | p     | 4   | IDS  | O6B-C6-C5 | 2.80 | 121.02      | 113.03   |
| 4   | e     | 6   | IDS  | O6B-C6-C5 | 2.80 | 121.01      | 113.03   |
| 2   | s     | 2   | IDS  | O6B-C6-C5 | 2.79 | 120.99      | 113.03   |
| 3   | Q     | 4   | IDS  | O6B-C6-C5 | 2.79 | 120.99      | 113.03   |
| 2   | r     | 2   | IDS  | O6B-C6-C5 | 2.79 | 120.99      | 113.03   |
| 2   | i     | 2   | IDS  | O6B-C6-C5 | 2.79 | 120.98      | 113.03   |
| 3   | X     | 4   | IDS  | O6B-C6-C5 | 2.78 | 120.97      | 113.03   |
| 3   | R     | 4   | IDS  | O6B-C6-C5 | 2.78 | 120.96      | 113.03   |
| 3   | V     | 4   | IDS  | O6B-C6-C5 | 2.78 | 120.96      | 113.03   |
| 3   | c     | 4   | IDS  | O6B-C6-C5 | 2.78 | 120.95      | 113.03   |
| 2   | U     | 2   | IDS  | O6B-C6-C5 | 2.77 | 120.95      | 113.03   |
| 2   | T     | 2   | IDS  | O6B-C6-C5 | 2.77 | 120.94      | 113.03   |
| 2   | S     | 2   | IDS  | O6B-C6-C5 | 2.77 | 120.92      | 113.03   |
| 2   | k     | 2   | IDS  | C1-C2-C3  | 2.71 | 113.78      | 109.94   |
| 2   | Z     | 2   | IDS  | C1-C2-C3  | 2.70 | 113.76      | 109.94   |
| 3   | X     | 4   | IDS  | C1-C2-C3  | 2.69 | 113.75      | 109.94   |
| 2   | Y     | 2   | IDS  | C1-C2-C3  | 2.69 | 113.74      | 109.94   |
| 2   | U     | 2   | IDS  | C1-C2-C3  | 2.68 | 113.73      | 109.94   |
| 2   | W     | 2   | IDS  | C1-C2-C3  | 2.68 | 113.73      | 109.94   |
| 3   | p     | 4   | IDS  | C1-C2-C3  | 2.68 | 113.73      | 109.94   |
| 2   | a     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.71      | 109.94   |
| 2   | T     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | o     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | r     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | j     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | m     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | S     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 2   | n     | 2   | IDS  | C1-C2-C3  | 2.66 | 113.70      | 109.94   |
| 3   | R     | 4   | IDS  | C1-C2-C3  | 2.65 | 113.70      | 109.94   |
| 4   | e     | 6   | IDS  | C1-C2-C3  | 2.65 | 113.70      | 109.94   |
| 3   | b     | 4   | IDS  | C1-C2-C3  | 2.65 | 113.70      | 109.94   |
| 5   | f     | 10  | IDS  | C1-C2-C3  | 2.65 | 113.70      | 109.94   |
| 2   | l     | 2   | IDS  | C1-C2-C3  | 2.65 | 113.69      | 109.94   |
| 2   | d     | 2   | IDS  | C1-C2-C3  | 2.65 | 113.69      | 109.94   |
| 3   | h     | 4   | IDS  | C1-C2-C3  | 2.65 | 113.69      | 109.94   |
| 3   | c     | 4   | IDS  | C1-C2-C3  | 2.65 | 113.69      | 109.94   |
| 2   | P     | 2   | IDS  | C1-C2-C3  | 2.64 | 113.68      | 109.94   |
| 3   | g     | 4   | IDS  | C1-C2-C3  | 2.64 | 113.68      | 109.94   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 3   | V     | 4   | IDS  | C1-C2-C3   | 2.63  | 113.66      | 109.94   |
| 3   | Q     | 4   | IDS  | C1-C2-C3   | 2.62  | 113.65      | 109.94   |
| 2   | s     | 2   | IDS  | C1-C2-C3   | 2.62  | 113.64      | 109.94   |
| 2   | i     | 2   | IDS  | C1-C2-C3   | 2.61  | 113.63      | 109.94   |
| 2   | q     | 2   | IDS  | C1-C2-C3   | 2.60  | 113.62      | 109.94   |
| 2   | o     | 2   | IDS  | O6B-C6-C5  | 2.57  | 120.38      | 113.03   |
| 2   | j     | 2   | IDS  | O6B-C6-C5  | 2.56  | 120.35      | 113.03   |
| 2   | n     | 2   | IDS  | O6B-C6-C5  | 2.56  | 120.34      | 113.03   |
| 3   | h     | 4   | IDS  | O6B-C6-C5  | 2.55  | 120.32      | 113.03   |
| 5   | f     | 10  | IDS  | O6B-C6-C5  | 2.55  | 120.31      | 113.03   |
| 2   | k     | 2   | IDS  | O6B-C6-C5  | 2.55  | 120.31      | 113.03   |
| 3   | b     | 4   | IDS  | O6B-C6-C5  | 2.54  | 120.28      | 113.03   |
| 2   | a     | 2   | IDS  | O6B-C6-C5  | 2.54  | 120.28      | 113.03   |
| 2   | m     | 2   | IDS  | O6B-C6-C5  | 2.54  | 120.28      | 113.03   |
| 3   | g     | 4   | IDS  | O6B-C6-C5  | 2.53  | 120.26      | 113.03   |
| 2   | d     | 2   | IDS  | O6B-C6-C5  | 2.53  | 120.26      | 113.03   |
| 2   | P     | 2   | IDS  | O6B-C6-C5  | 2.53  | 120.25      | 113.03   |
| 2   | l     | 2   | IDS  | O6B-C6-C5  | 2.53  | 120.25      | 113.03   |
| 2   | Y     | 2   | IDS  | O6B-C6-C5  | 2.52  | 120.23      | 113.03   |
| 4   | e     | 1   | JHM  | C2-C3-C4   | -2.44 | 107.14      | 110.69   |
| 2   | j     | 1   | JHM  | C2-C3-C4   | -2.44 | 107.15      | 110.69   |
| 2   | Z     | 1   | JHM  | C2-C3-C4   | -2.43 | 107.15      | 110.69   |
| 3   | p     | 1   | JHM  | C2-C3-C4   | -2.43 | 107.15      | 110.69   |
| 3   | X     | 1   | JHM  | C2-C3-C4   | -2.43 | 107.16      | 110.69   |
| 3   | V     | 1   | JHM  | C2-C3-C4   | -2.43 | 107.16      | 110.69   |
| 2   | l     | 1   | JHM  | C2-C3-C4   | -2.43 | 107.16      | 110.69   |
| 2   | d     | 1   | JHM  | C2-C3-C4   | -2.42 | 107.16      | 110.69   |
| 2   | T     | 1   | JHM  | C2-C3-C4   | -2.42 | 107.17      | 110.69   |
| 3   | g     | 1   | JHM  | C2-C3-C4   | -2.42 | 107.17      | 110.69   |
| 3   | h     | 1   | JHM  | C2-C3-C4   | -2.41 | 107.18      | 110.69   |
| 2   | n     | 2   | IDS  | O6B-C6-O6A | -2.41 | 118.63      | 124.09   |
| 3   | Q     | 1   | JHM  | C2-C3-C4   | -2.41 | 107.19      | 110.69   |
| 2   | m     | 2   | IDS  | O6B-C6-O6A | -2.40 | 118.63      | 124.09   |
| 3   | c     | 1   | JHM  | C2-C3-C4   | -2.40 | 107.19      | 110.69   |
| 3   | b     | 1   | JHM  | C2-C3-C4   | -2.40 | 107.19      | 110.69   |
| 2   | P     | 1   | JHM  | C2-C3-C4   | -2.40 | 107.20      | 110.69   |
| 2   | q     | 2   | IDS  | O6B-C6-O6A | -2.40 | 118.64      | 124.09   |
| 2   | r     | 2   | IDS  | O6B-C6-O6A | -2.40 | 118.64      | 124.09   |
| 2   | k     | 1   | JHM  | C2-C3-C4   | -2.40 | 107.20      | 110.69   |
| 4   | e     | 2   | IDS  | O6B-C6-O6A | -2.40 | 118.65      | 124.09   |
| 2   | s     | 1   | JHM  | C2-C3-C4   | -2.40 | 107.20      | 110.69   |
| 2   | U     | 1   | JHM  | C2-C3-C4   | -2.39 | 107.20      | 110.69   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 2   | q     | 1   | JHM  | C2-C3-C4   | -2.39 | 107.21      | 110.69   |
| 5   | f     | 1   | JHM  | C2-C3-C4   | -2.39 | 107.21      | 110.69   |
| 2   | r     | 1   | JHM  | C2-C3-C4   | -2.39 | 107.21      | 110.69   |
| 2   | Y     | 1   | JHM  | C2-C3-C4   | -2.39 | 107.21      | 110.69   |
| 2   | i     | 2   | IDS  | O6B-C6-O6A | -2.39 | 118.67      | 124.09   |
| 3   | p     | 2   | IDS  | O6B-C6-O6A | -2.39 | 118.67      | 124.09   |
| 2   | o     | 2   | IDS  | O6B-C6-O6A | -2.39 | 118.67      | 124.09   |
| 2   | s     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.67      | 124.09   |
| 2   | W     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.68      | 124.09   |
| 2   | j     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.68      | 124.09   |
| 2   | a     | 1   | JHM  | C2-C3-C4   | -2.38 | 107.22      | 110.69   |
| 3   | R     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.69      | 124.09   |
| 2   | i     | 1   | JHM  | C2-C3-C4   | -2.38 | 107.23      | 110.69   |
| 2   | m     | 1   | JHM  | C2-C3-C4   | -2.38 | 107.23      | 110.69   |
| 3   | R     | 4   | IDS  | O6B-C6-O6A | -2.38 | 118.69      | 124.09   |
| 2   | n     | 1   | JHM  | C2-C3-C4   | -2.38 | 107.23      | 110.69   |
| 3   | V     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.69      | 124.09   |
| 2   | k     | 2   | IDS  | O6B-C6-O6A | -2.38 | 118.69      | 124.09   |
| 3   | h     | 4   | IDS  | O6B-C6-O6A | -2.38 | 118.69      | 124.09   |
| 3   | p     | 4   | IDS  | O6B-C6-O6A | -2.37 | 118.70      | 124.09   |
| 5   | f     | 2   | IDS  | O6B-C6-O6A | -2.37 | 118.70      | 124.09   |
| 2   | S     | 1   | JHM  | C2-C3-C4   | -2.37 | 107.24      | 110.69   |
| 2   | W     | 1   | JHM  | C2-C3-C4   | -2.37 | 107.24      | 110.69   |
| 3   | R     | 1   | JHM  | C2-C3-C4   | -2.37 | 107.24      | 110.69   |
| 3   | V     | 4   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 3   | X     | 2   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 4   | e     | 4   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 4   | e     | 6   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 3   | Q     | 4   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 2   | o     | 1   | JHM  | C2-C3-C4   | -2.37 | 107.24      | 110.69   |
| 5   | f     | 4   | IDS  | O6B-C6-O6A | -2.37 | 118.71      | 124.09   |
| 5   | f     | 10  | IDS  | O6B-C6-O6A | -2.36 | 118.72      | 124.09   |
| 2   | Z     | 2   | IDS  | O6B-C6-O6A | -2.36 | 118.72      | 124.09   |
| 2   | T     | 2   | IDS  | O6B-C6-O6A | -2.36 | 118.74      | 124.09   |
| 3   | b     | 2   | IDS  | O6B-C6-O6A | -2.36 | 118.74      | 124.09   |
| 3   | g     | 2   | IDS  | O6B-C6-O6A | -2.36 | 118.74      | 124.09   |
| 2   | U     | 2   | IDS  | O6B-C6-O6A | -2.35 | 118.74      | 124.09   |
| 5   | f     | 6   | IDS  | O6B-C6-O6A | -2.35 | 118.75      | 124.09   |
| 3   | h     | 2   | IDS  | O6B-C6-O6A | -2.35 | 118.75      | 124.09   |
| 2   | Y     | 2   | IDS  | O6B-C6-O6A | -2.35 | 118.76      | 124.09   |
| 3   | c     | 4   | IDS  | O6B-C6-O6A | -2.35 | 118.76      | 124.09   |
| 3   | g     | 4   | IDS  | O6B-C6-O6A | -2.35 | 118.76      | 124.09   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 3   | b     | 4   | IDS  | O6B-C6-O6A | -2.35 | 118.76      | 124.09   |
| 3   | X     | 4   | IDS  | O6B-C6-O6A | -2.34 | 118.77      | 124.09   |
| 2   | l     | 2   | IDS  | O6B-C6-O6A | -2.34 | 118.78      | 124.09   |
| 3   | Q     | 2   | IDS  | O6B-C6-O6A | -2.34 | 118.78      | 124.09   |
| 2   | S     | 2   | IDS  | O6B-C6-O6A | -2.34 | 118.78      | 124.09   |
| 2   | P     | 2   | IDS  | O6B-C6-O6A | -2.33 | 118.79      | 124.09   |
| 2   | a     | 2   | IDS  | O6B-C6-O6A | -2.33 | 118.80      | 124.09   |
| 2   | d     | 2   | IDS  | O6B-C6-O6A | -2.33 | 118.81      | 124.09   |
| 5   | f     | 8   | IDS  | O6B-C6-O6A | -2.32 | 118.81      | 124.09   |
| 3   | c     | 2   | IDS  | O6B-C6-O6A | -2.31 | 118.83      | 124.09   |
| 3   | c     | 3   | JHM  | C1-C2-C3   | -2.23 | 106.95      | 110.68   |
| 3   | p     | 2   | IDS  | O4-C4-C3   | 2.21  | 115.46      | 110.35   |
| 5   | f     | 3   | JHM  | C1-C2-C3   | -2.21 | 106.99      | 110.68   |
| 3   | g     | 3   | JHM  | C1-C2-C3   | -2.19 | 107.02      | 110.68   |
| 3   | b     | 3   | JHM  | C1-C2-C3   | -2.19 | 107.02      | 110.68   |
| 4   | e     | 5   | JHM  | C1-C2-C3   | -2.19 | 107.02      | 110.68   |
| 3   | R     | 3   | JHM  | C1-C2-C3   | -2.19 | 107.02      | 110.68   |
| 3   | X     | 3   | JHM  | C1-C2-C3   | -2.19 | 107.02      | 110.68   |
| 3   | R     | 2   | IDS  | O4-C4-C5   | -2.18 | 104.85      | 109.74   |
| 5   | f     | 7   | JHM  | C1-C2-C3   | -2.18 | 107.03      | 110.68   |
| 5   | f     | 9   | JHM  | C1-C2-C3   | -2.18 | 107.05      | 110.68   |
| 3   | Q     | 3   | JHM  | C1-C2-C3   | -2.17 | 107.06      | 110.68   |
| 5   | f     | 5   | JHM  | C1-C2-C3   | -2.17 | 107.06      | 110.68   |
| 3   | V     | 3   | JHM  | C1-C2-C3   | -2.17 | 107.06      | 110.68   |
| 4   | e     | 3   | JHM  | C1-C2-C3   | -2.17 | 107.06      | 110.68   |
| 3   | h     | 3   | JHM  | C1-C2-C3   | -2.16 | 107.08      | 110.68   |
| 3   | p     | 3   | JHM  | C1-C2-C3   | -2.11 | 107.15      | 110.68   |
| 4   | e     | 2   | IDS  | O6B-C6-C5  | 2.03  | 121.09      | 113.65   |
| 4   | e     | 4   | IDS  | O6B-C6-C5  | 2.03  | 121.09      | 113.65   |
| 3   | X     | 2   | IDS  | O6B-C6-C5  | 2.02  | 121.06      | 113.65   |

There are no chirality outliers.

All (60) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms      |
|-----|-------|-----|------|------------|
| 2   | P     | 1   | JHM  | C6-O6-S-O8 |
| 2   | Y     | 1   | JHM  | C6-O6-S-O8 |
| 2   | a     | 1   | JHM  | C6-O6-S-O8 |
| 2   | d     | 1   | JHM  | C6-O6-S-O8 |
| 2   | o     | 1   | JHM  | C6-O6-S-O8 |
| 3   | R     | 1   | JHM  | C6-O6-S-O8 |
| 3   | V     | 1   | JHM  | C6-O6-S-O8 |

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| Mol | Chain | Res | Type | Atoms        |
|-----|-------|-----|------|--------------|
| 3   | X     | 3   | JHM  | C6-O6-S-O8   |
| 3   | b     | 1   | JHM  | C6-O6-S-O8   |
| 3   | b     | 3   | JHM  | C6-O6-S-O8   |
| 3   | g     | 1   | JHM  | C6-O6-S-O8   |
| 3   | h     | 1   | JHM  | C6-O6-S-O8   |
| 5   | f     | 1   | JHM  | C6-O6-S-O8   |
| 5   | f     | 3   | JHM  | C6-O6-S-O8   |
| 5   | f     | 7   | JHM  | C6-O6-S-O8   |
| 5   | f     | 9   | JHM  | C6-O6-S-O8   |
| 2   | P     | 1   | JHM  | C6-O6-S-O7   |
| 2   | U     | 1   | JHM  | C6-O6-S-O9   |
| 2   | W     | 1   | JHM  | C6-O6-S-O9   |
| 2   | Y     | 1   | JHM  | C6-O6-S-O7   |
| 2   | a     | 1   | JHM  | C6-O6-S-O7   |
| 2   | d     | 1   | JHM  | C6-O6-S-O7   |
| 2   | j     | 1   | JHM  | C6-O6-S-O9   |
| 2   | k     | 1   | JHM  | C6-O6-S-O9   |
| 2   | l     | 1   | JHM  | C6-O6-S-O9   |
| 2   | o     | 1   | JHM  | C6-O6-S-O7   |
| 2   | q     | 1   | JHM  | C6-O6-S-O9   |
| 2   | r     | 1   | JHM  | C6-O6-S-O9   |
| 2   | s     | 1   | JHM  | C6-O6-S-O9   |
| 3   | R     | 1   | JHM  | C6-O6-S-O7   |
| 3   | V     | 1   | JHM  | C6-O6-S-O7   |
| 3   | X     | 3   | JHM  | C6-O6-S-O7   |
| 3   | b     | 1   | JHM  | C6-O6-S-O7   |
| 3   | b     | 3   | JHM  | C6-O6-S-O7   |
| 3   | c     | 3   | JHM  | C6-O6-S-O9   |
| 3   | g     | 1   | JHM  | C6-O6-S-O7   |
| 3   | h     | 1   | JHM  | C6-O6-S-O7   |
| 3   | p     | 1   | JHM  | C6-O6-S-O9   |
| 3   | p     | 3   | JHM  | C6-O6-S-O9   |
| 4   | e     | 1   | JHM  | C6-O6-S-O9   |
| 4   | e     | 3   | JHM  | C6-O6-S-O9   |
| 4   | e     | 5   | JHM  | C6-O6-S-O9   |
| 5   | f     | 1   | JHM  | C6-O6-S-O7   |
| 5   | f     | 3   | JHM  | C6-O6-S-O7   |
| 5   | f     | 7   | JHM  | C6-O6-S-O7   |
| 5   | f     | 9   | JHM  | C6-O6-S-O7   |
| 2   | P     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | Y     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | a     | 2   | IDS  | C4-C5-C6-O6A |

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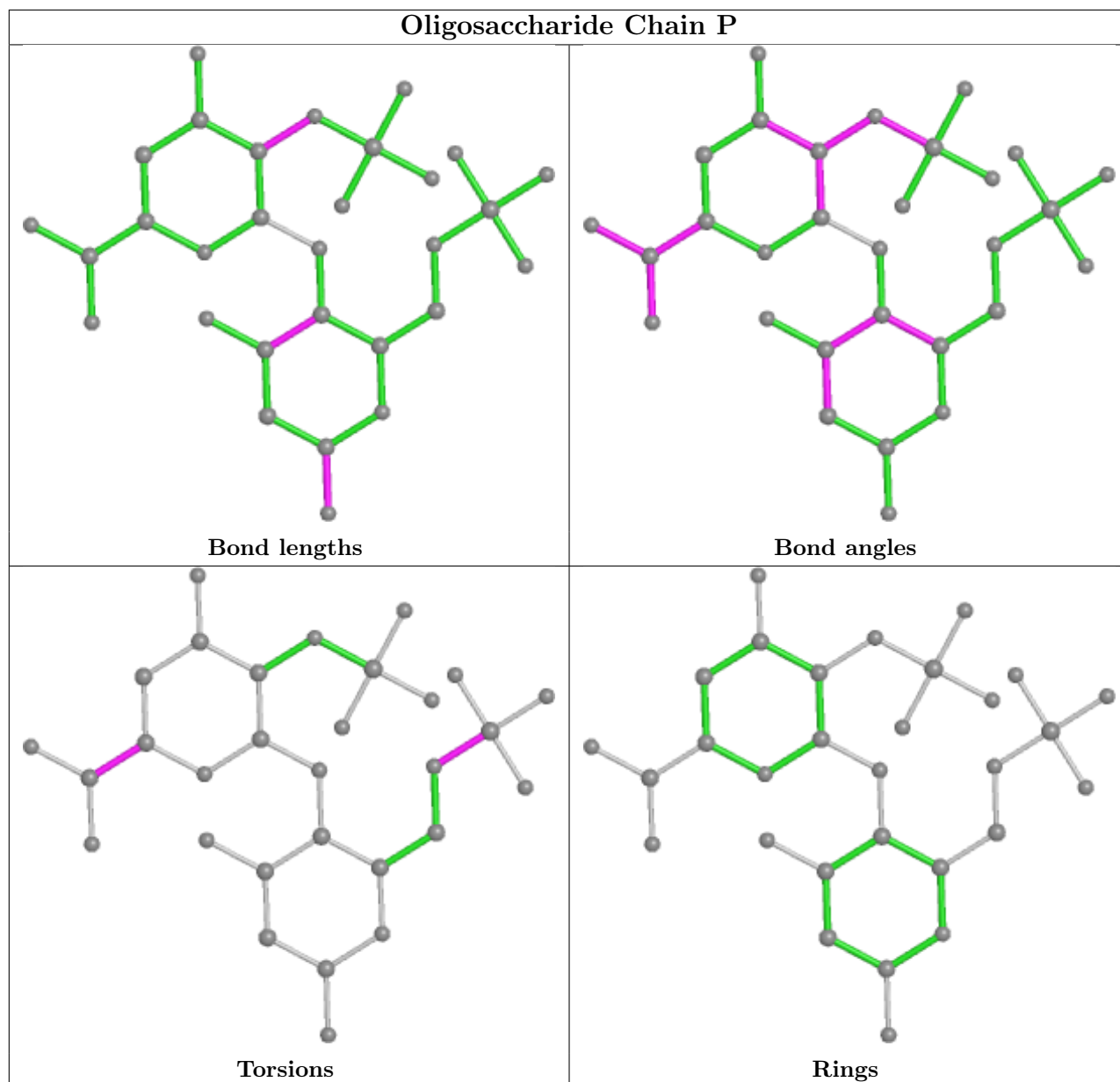
| Mol | Chain | Res | Type | Atoms        |
|-----|-------|-----|------|--------------|
| 2   | d     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | j     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | k     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | l     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | m     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | n     | 2   | IDS  | C4-C5-C6-O6A |
| 2   | o     | 2   | IDS  | C4-C5-C6-O6A |
| 3   | b     | 4   | IDS  | C4-C5-C6-O6A |
| 3   | g     | 4   | IDS  | C4-C5-C6-O6A |
| 3   | h     | 4   | IDS  | C4-C5-C6-O6A |
| 5   | f     | 10  | IDS  | C4-C5-C6-O6A |

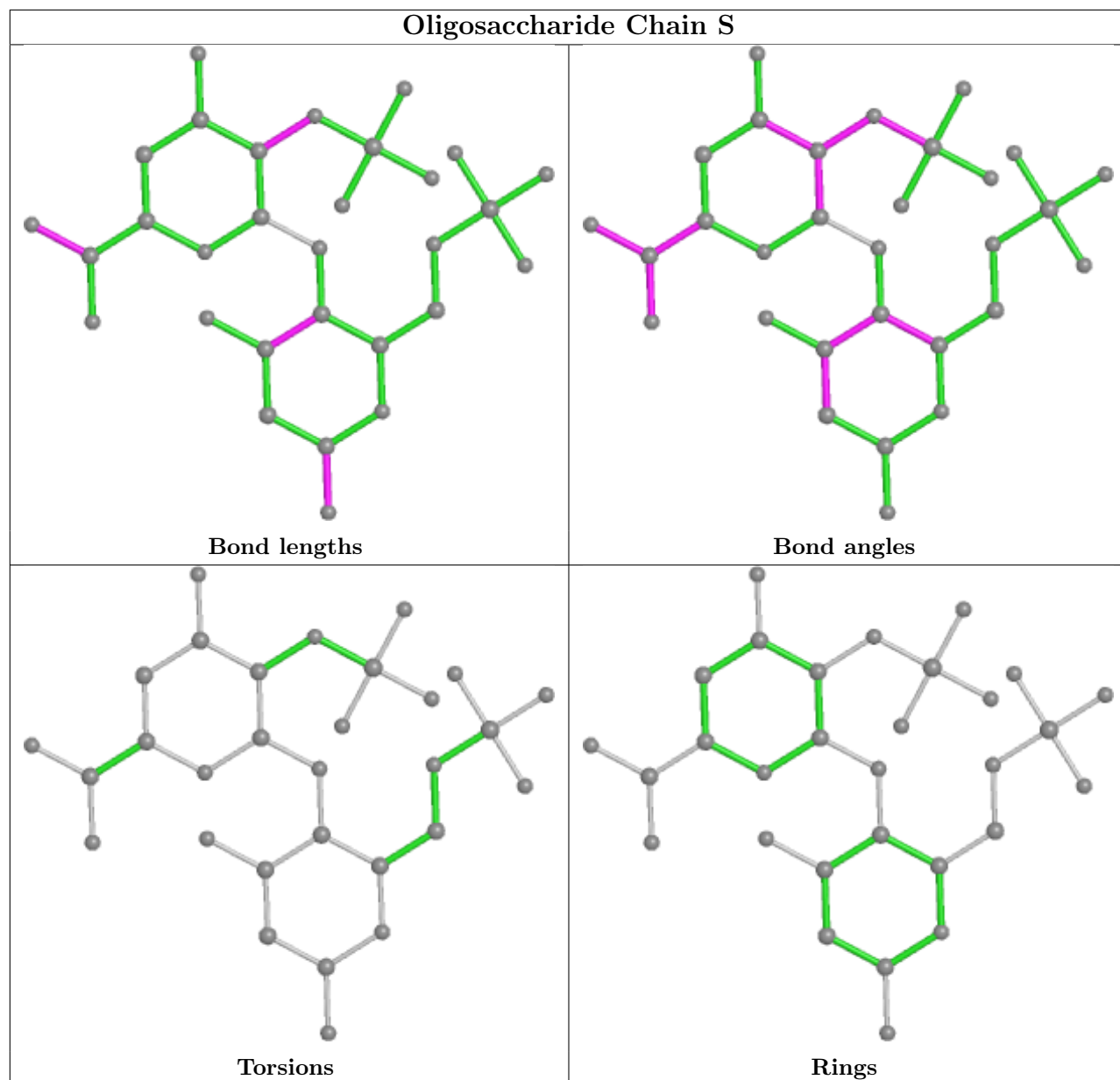
There are no ring outliers.

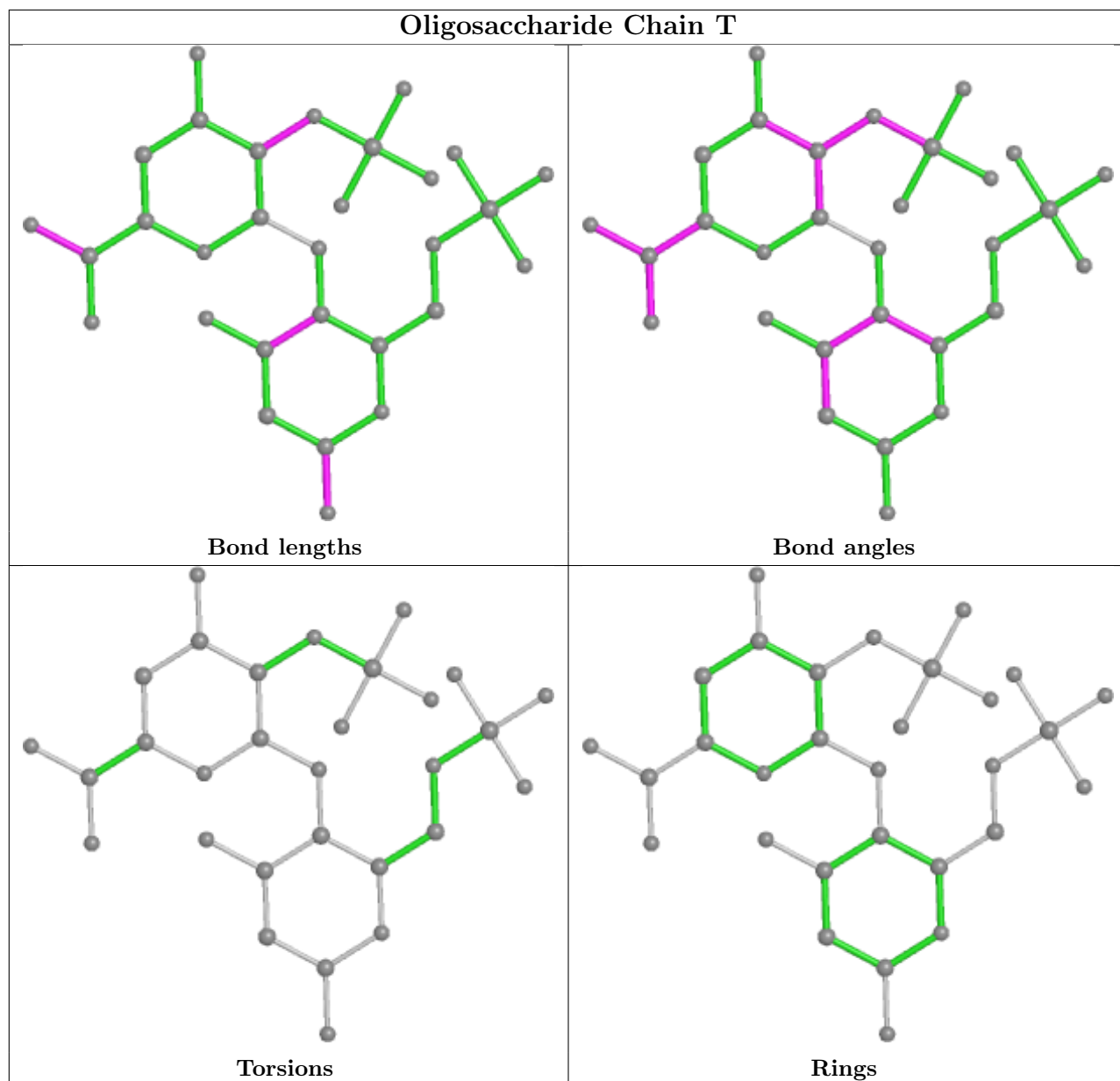
1 monomer is involved in 1 short contact:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 5   | f     | 3   | JHM  | 0       | 1            |

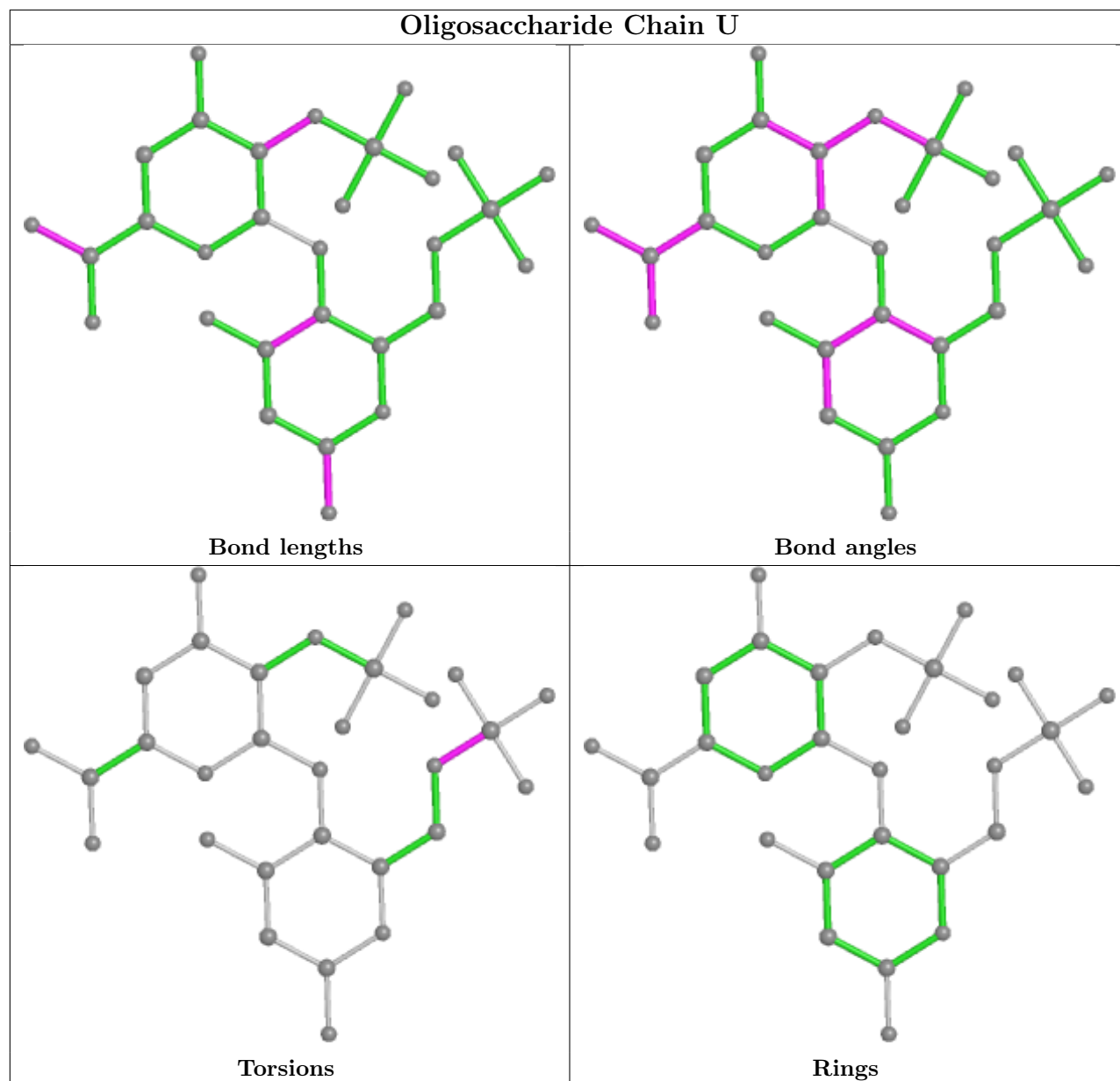
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

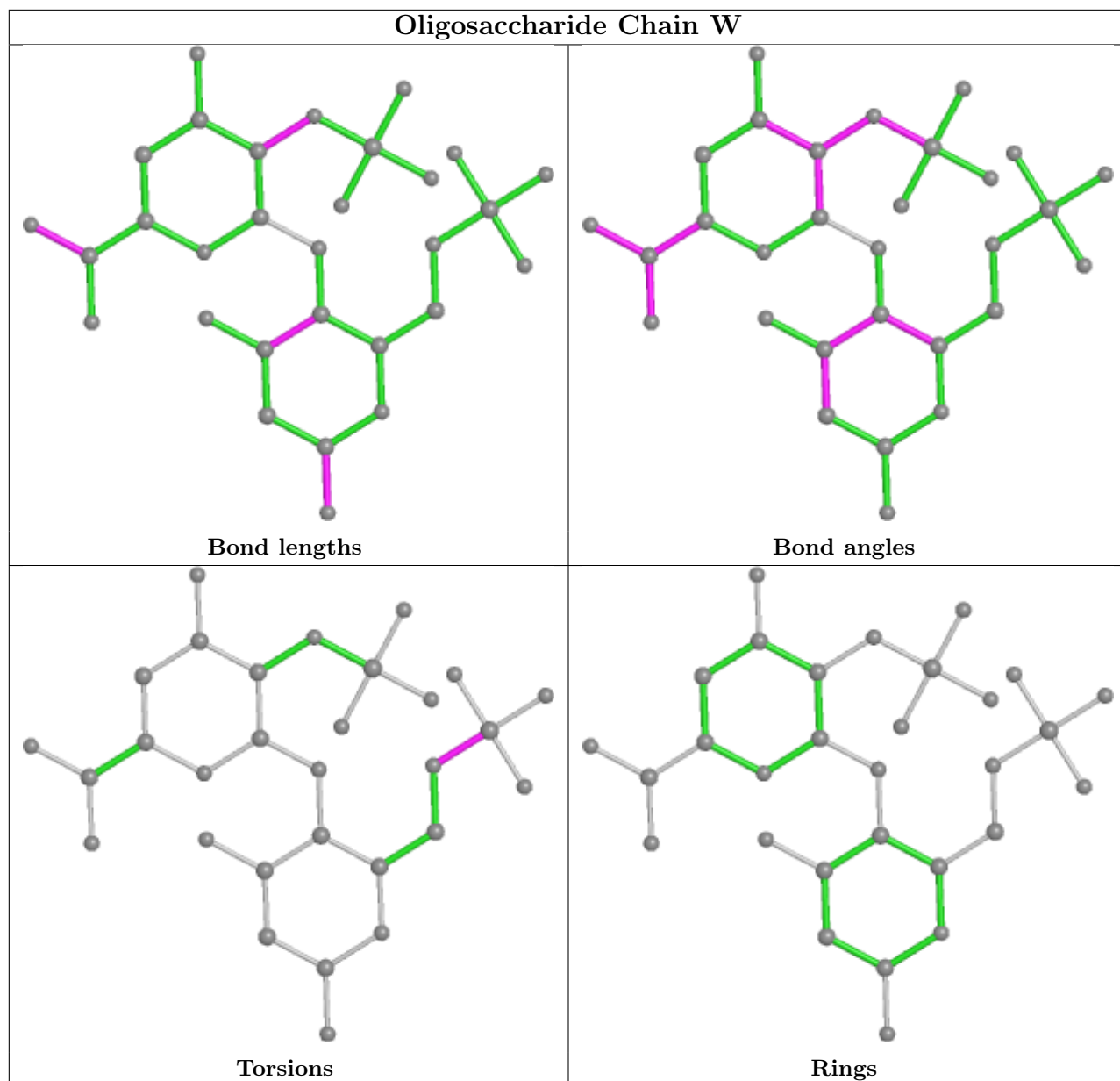


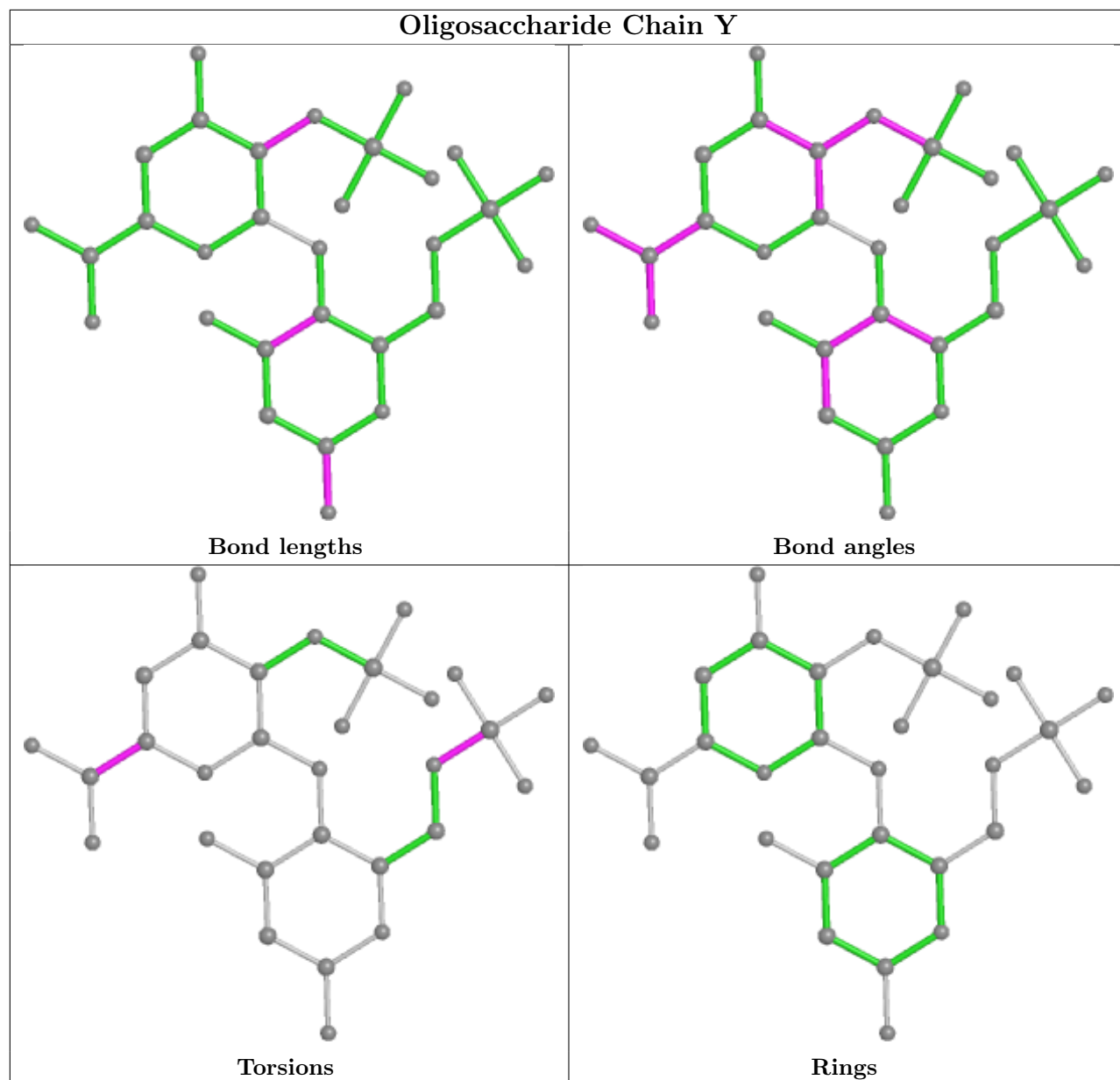


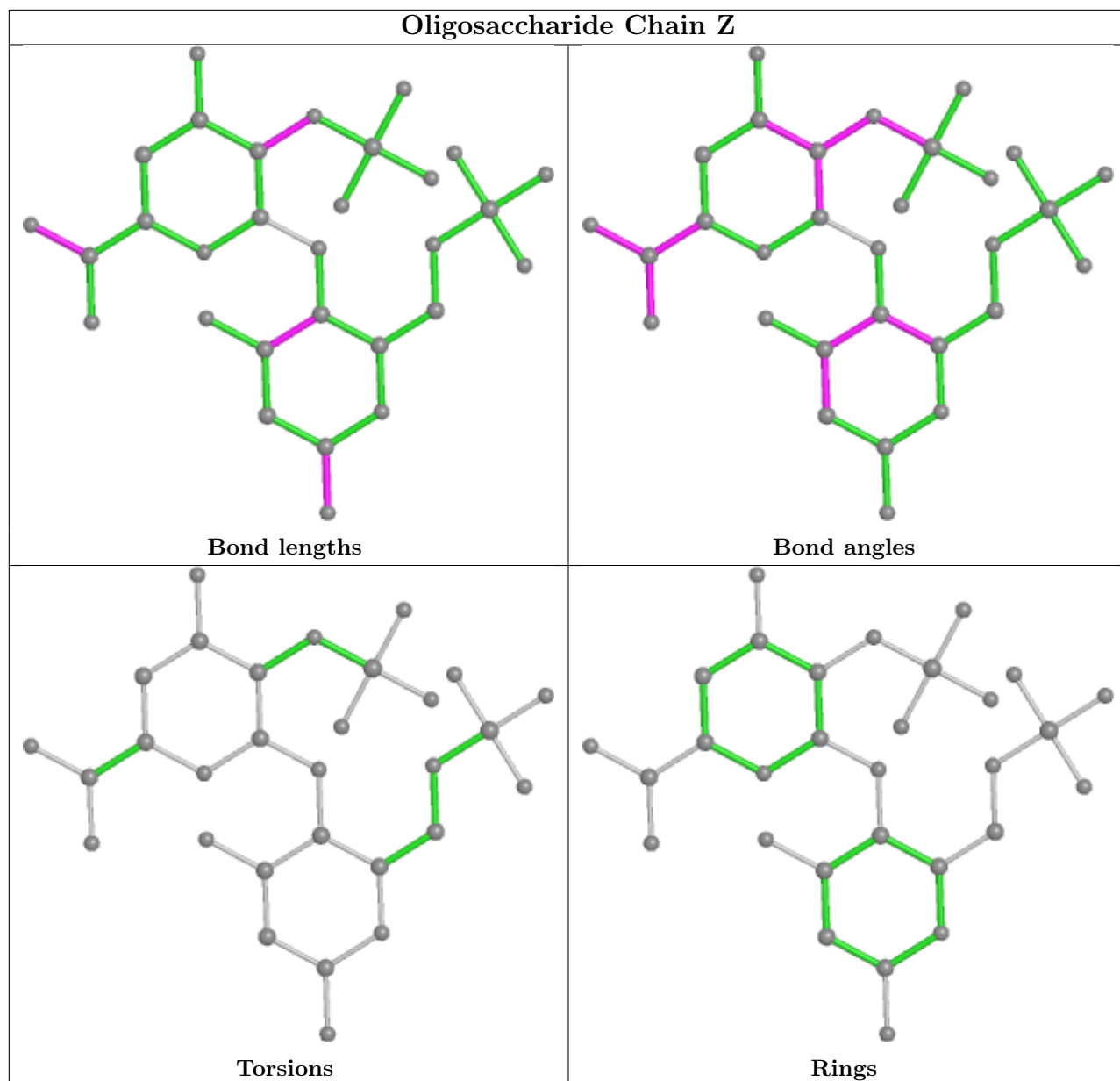


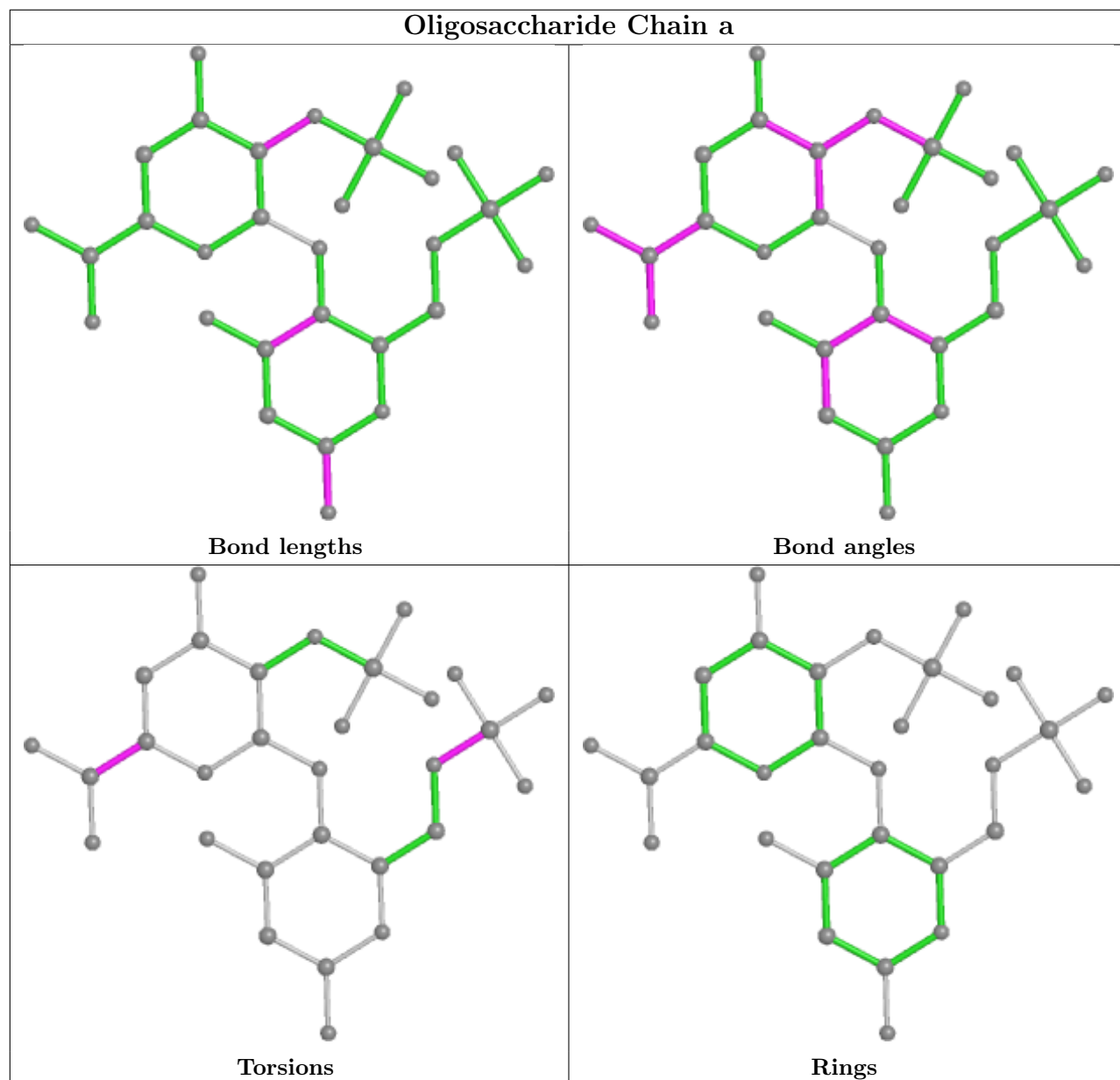


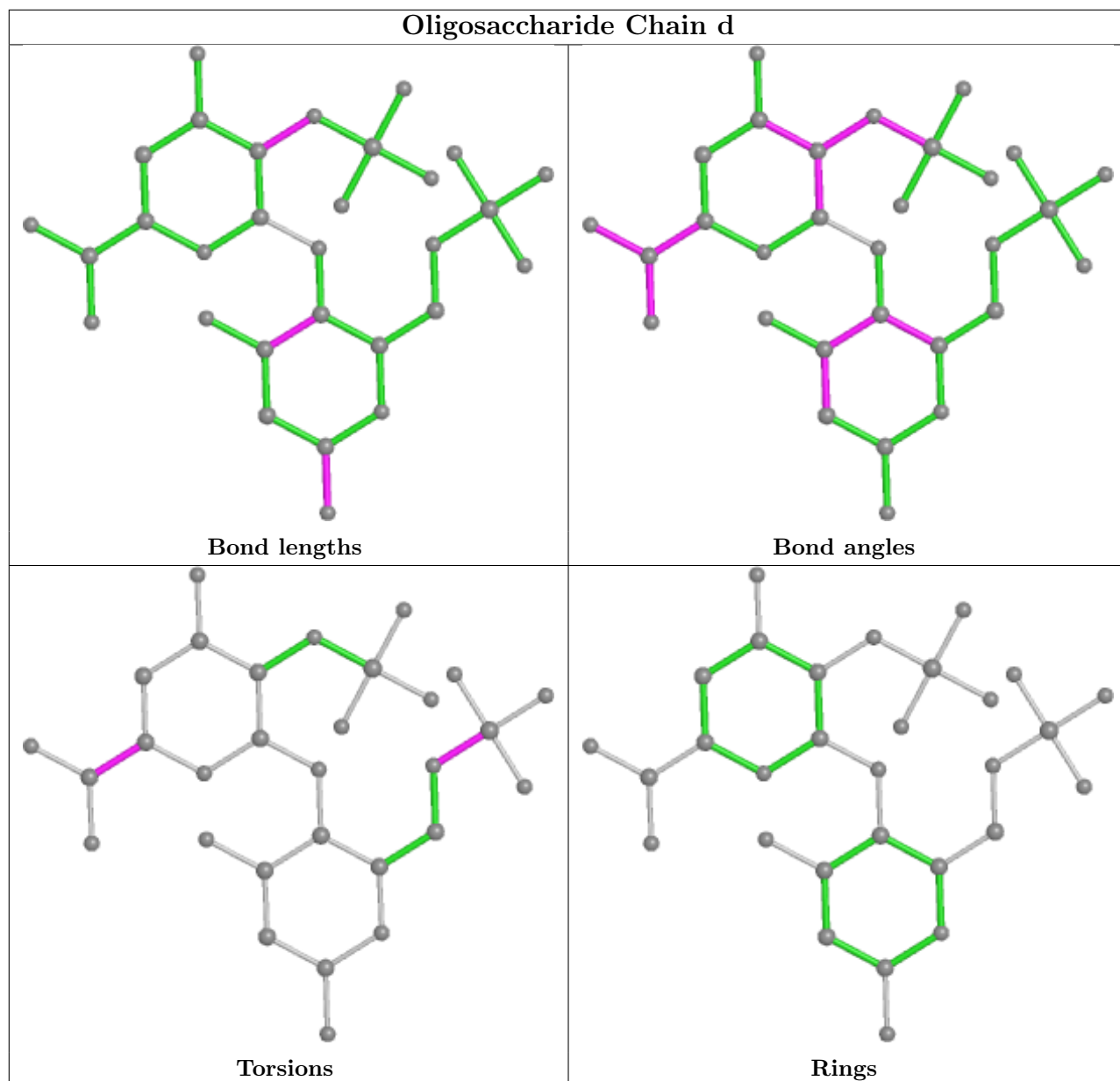


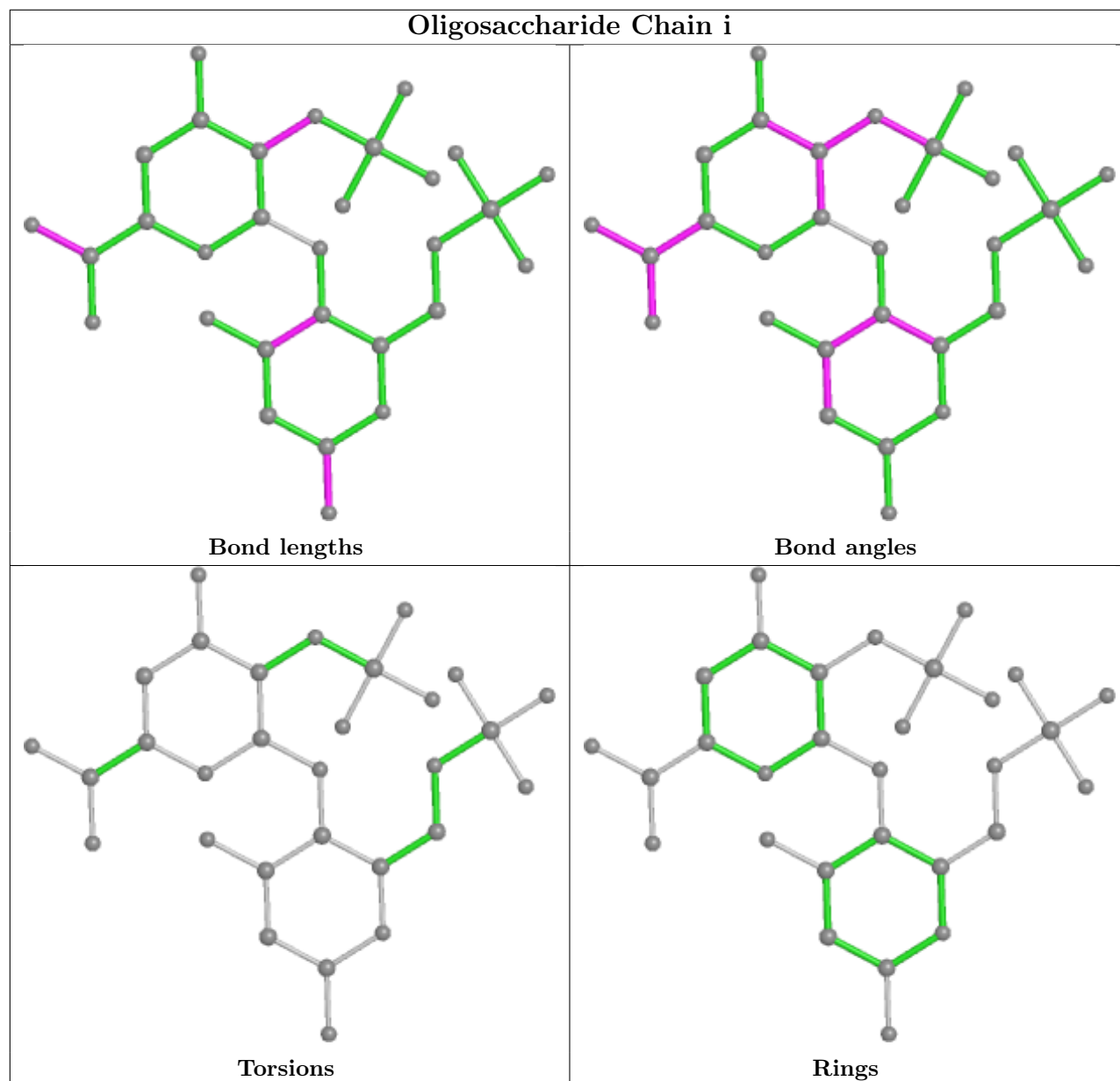


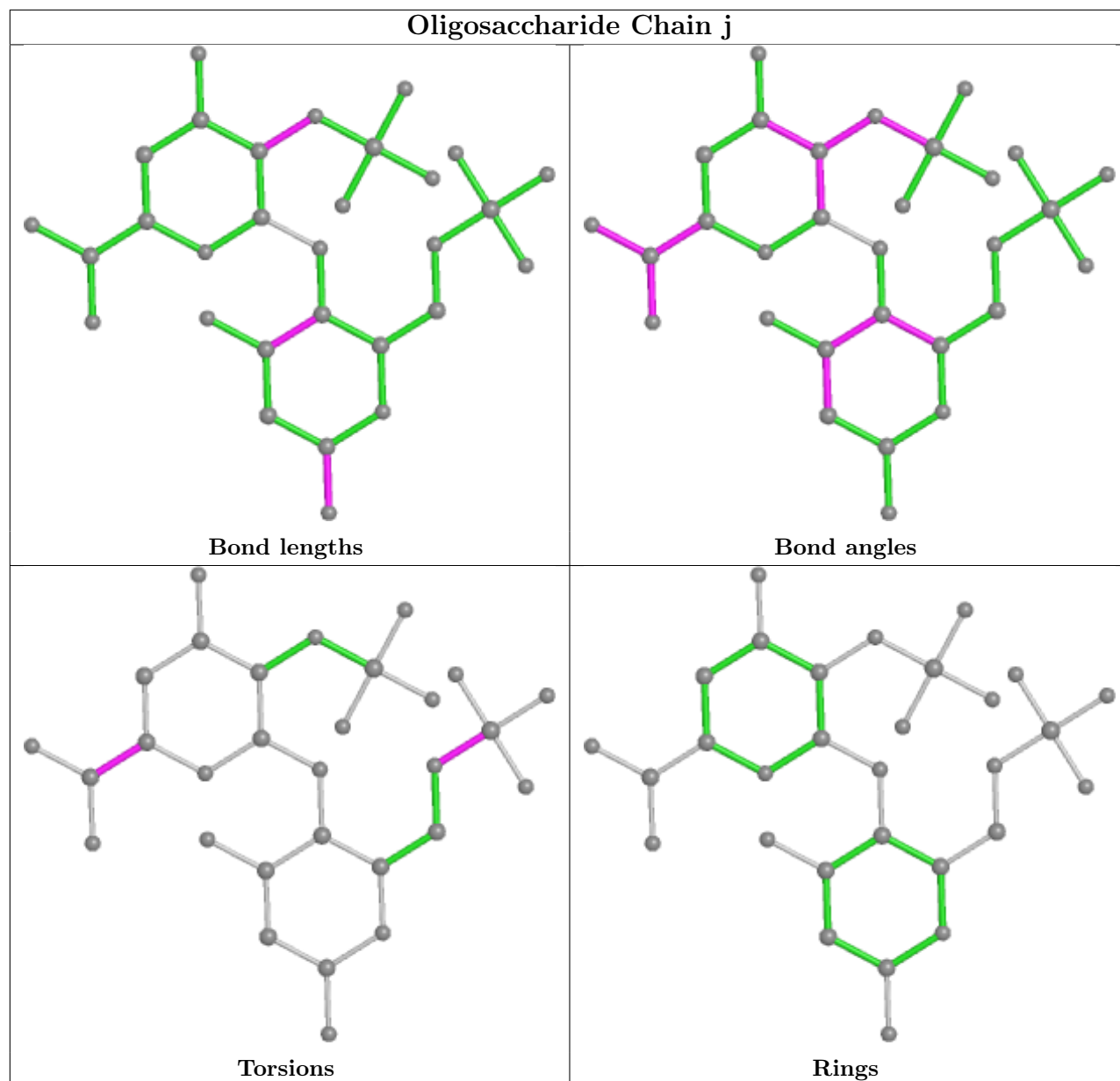




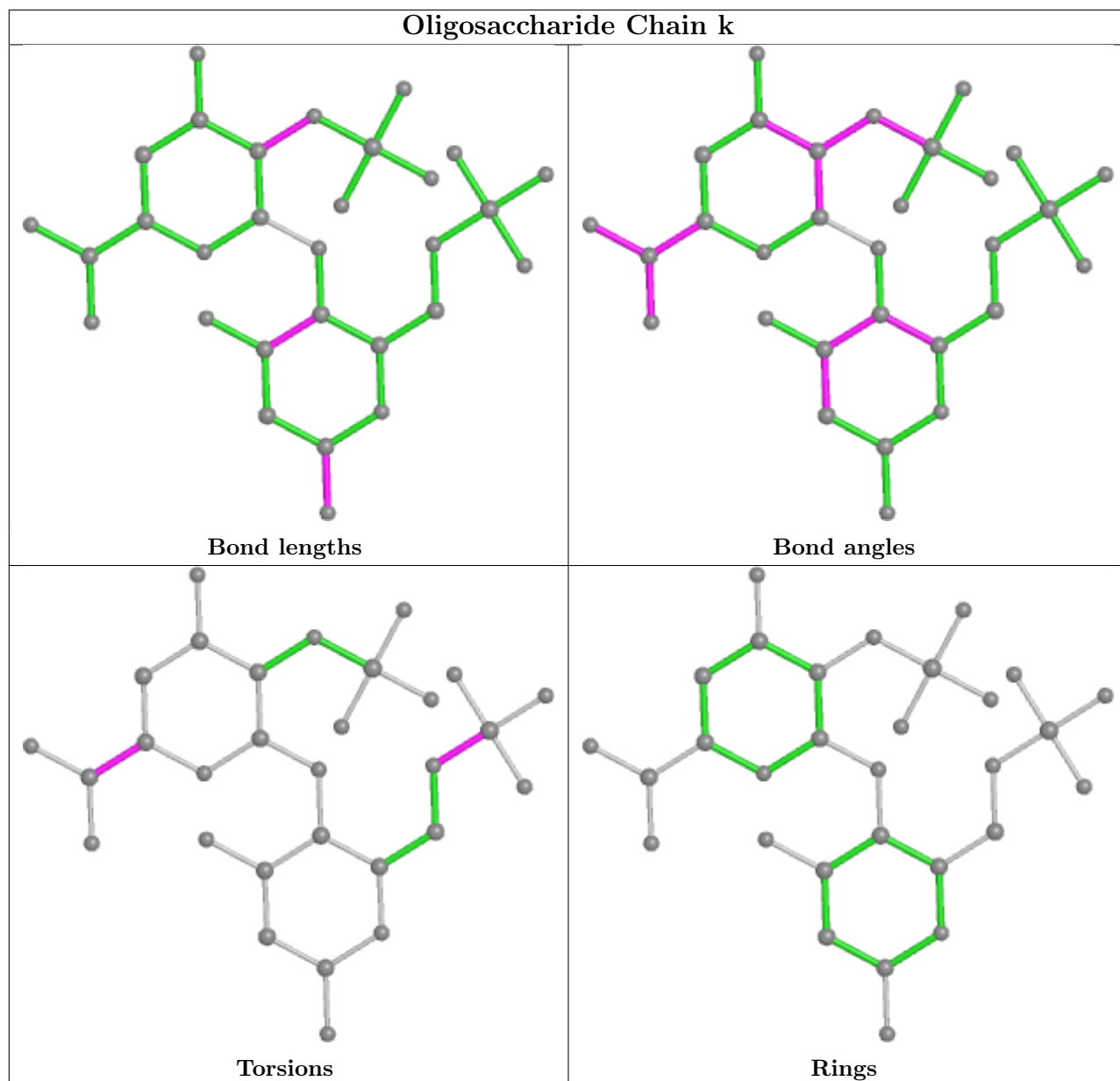


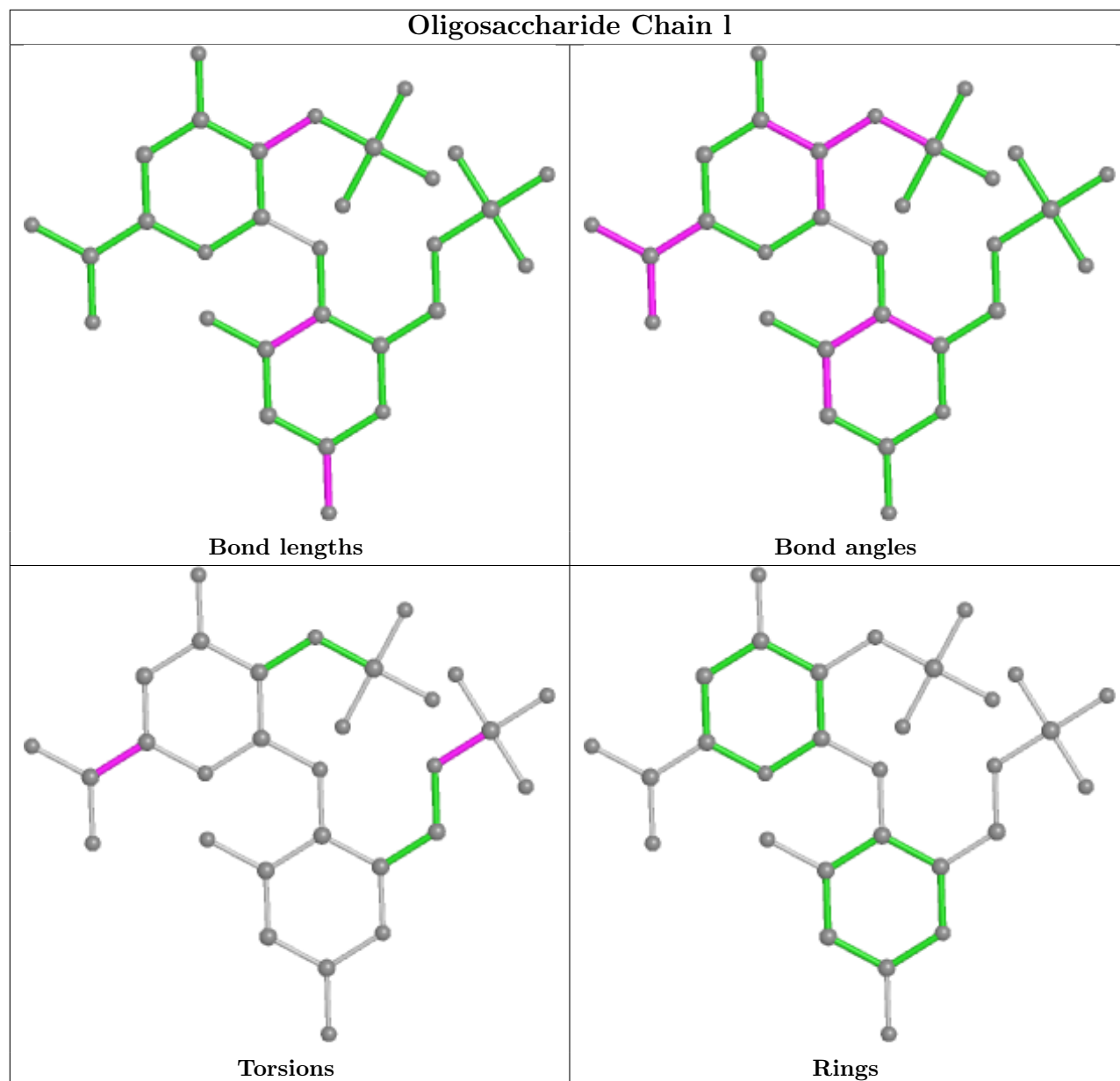


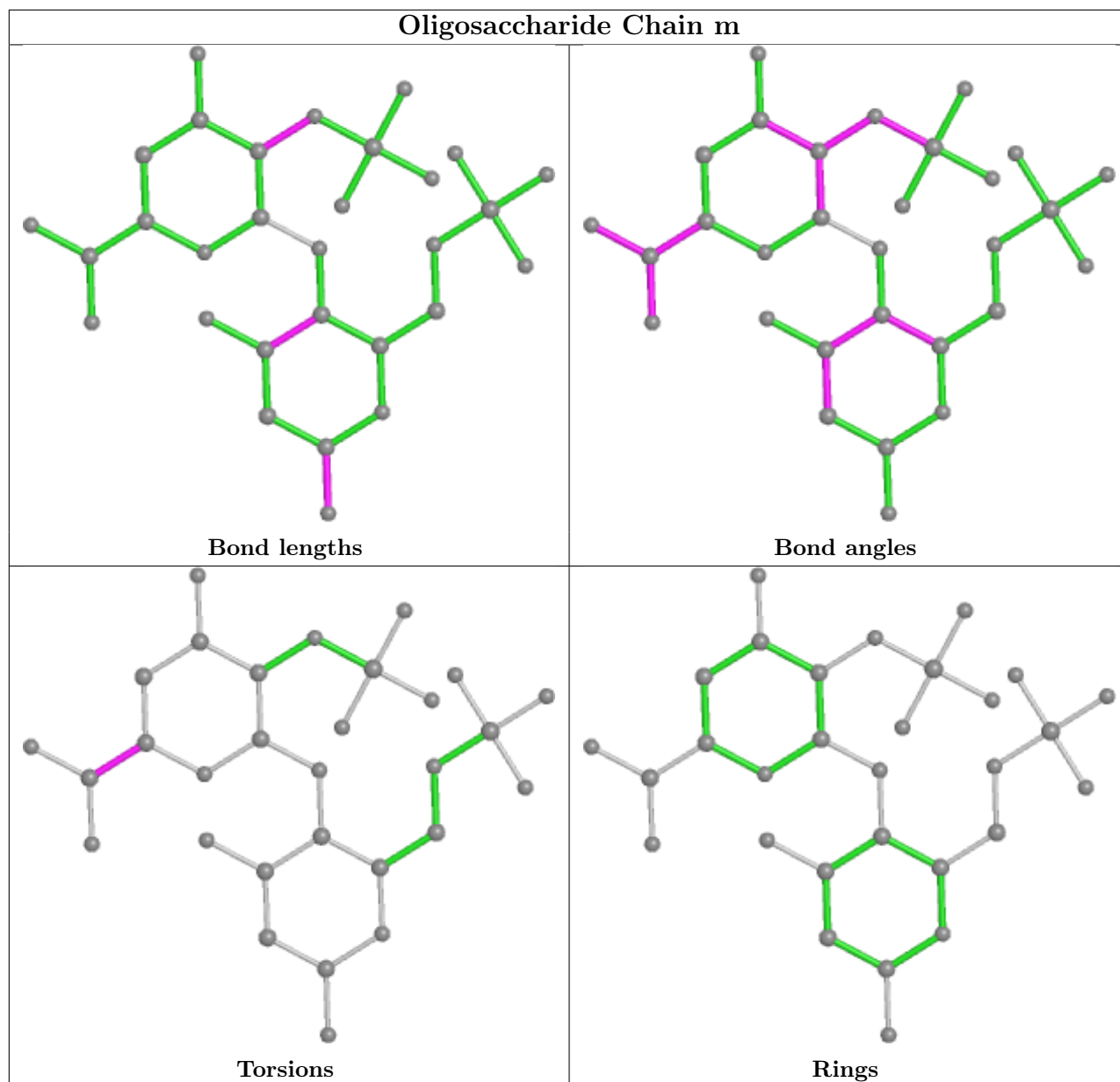


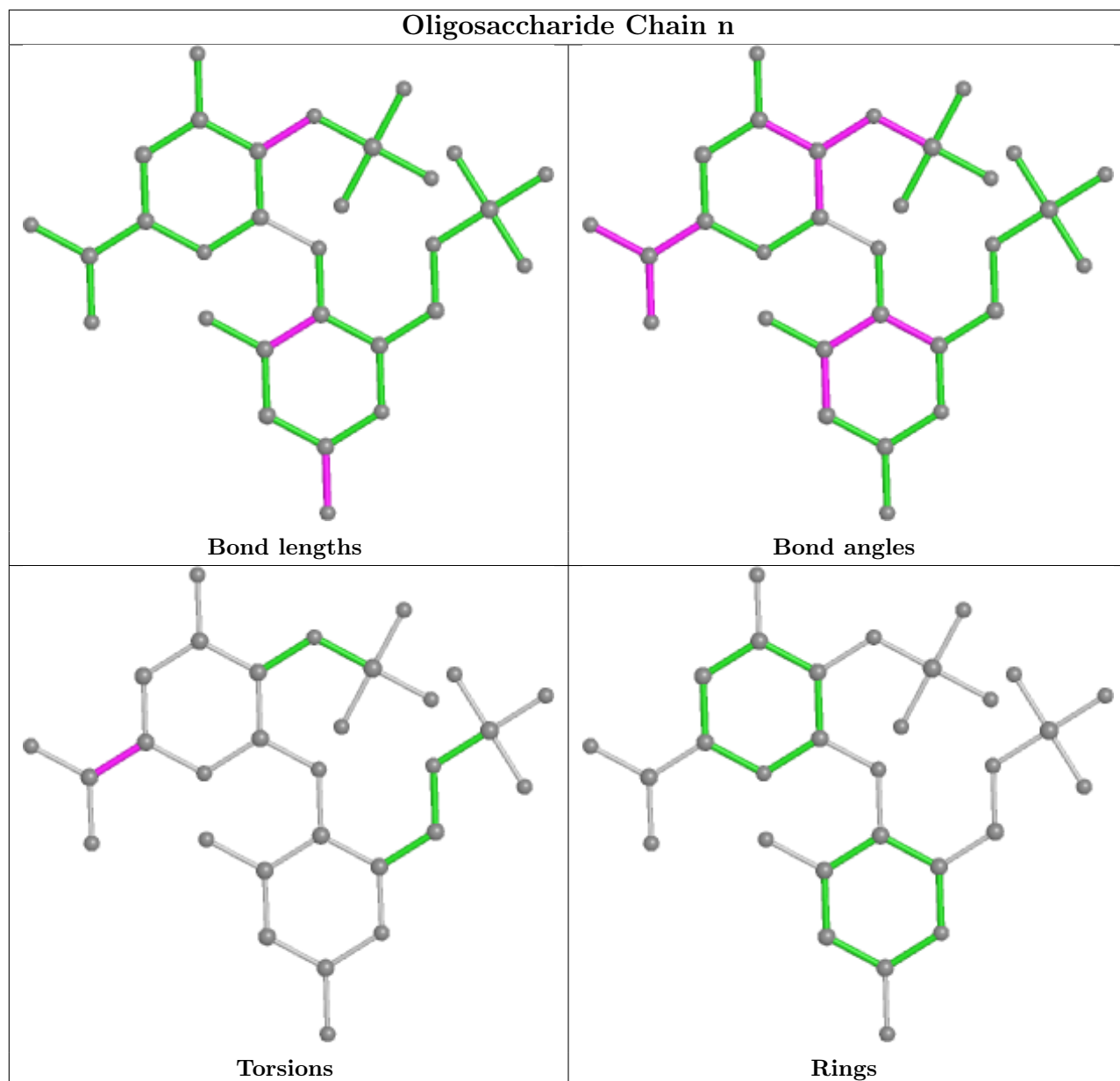


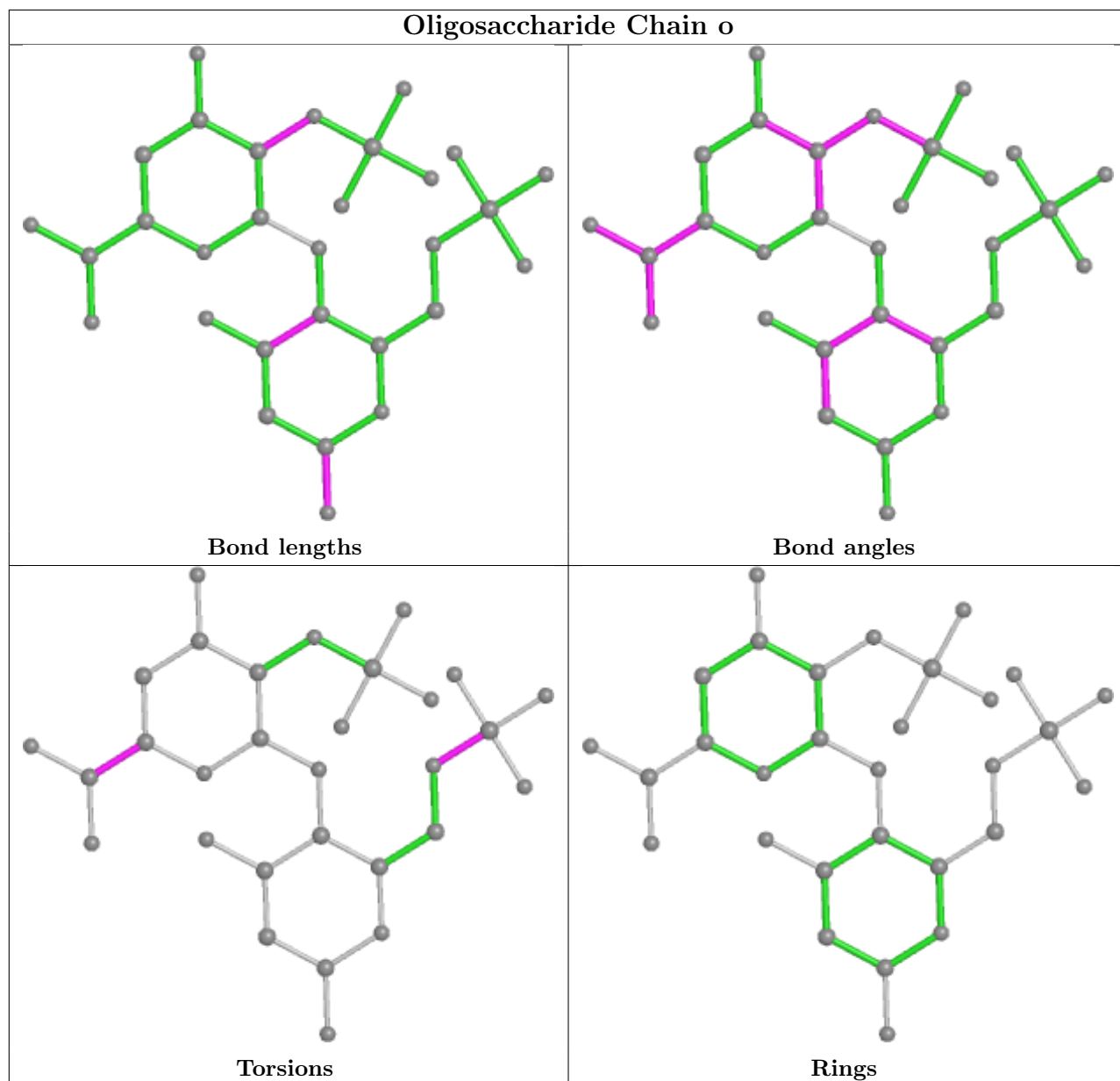


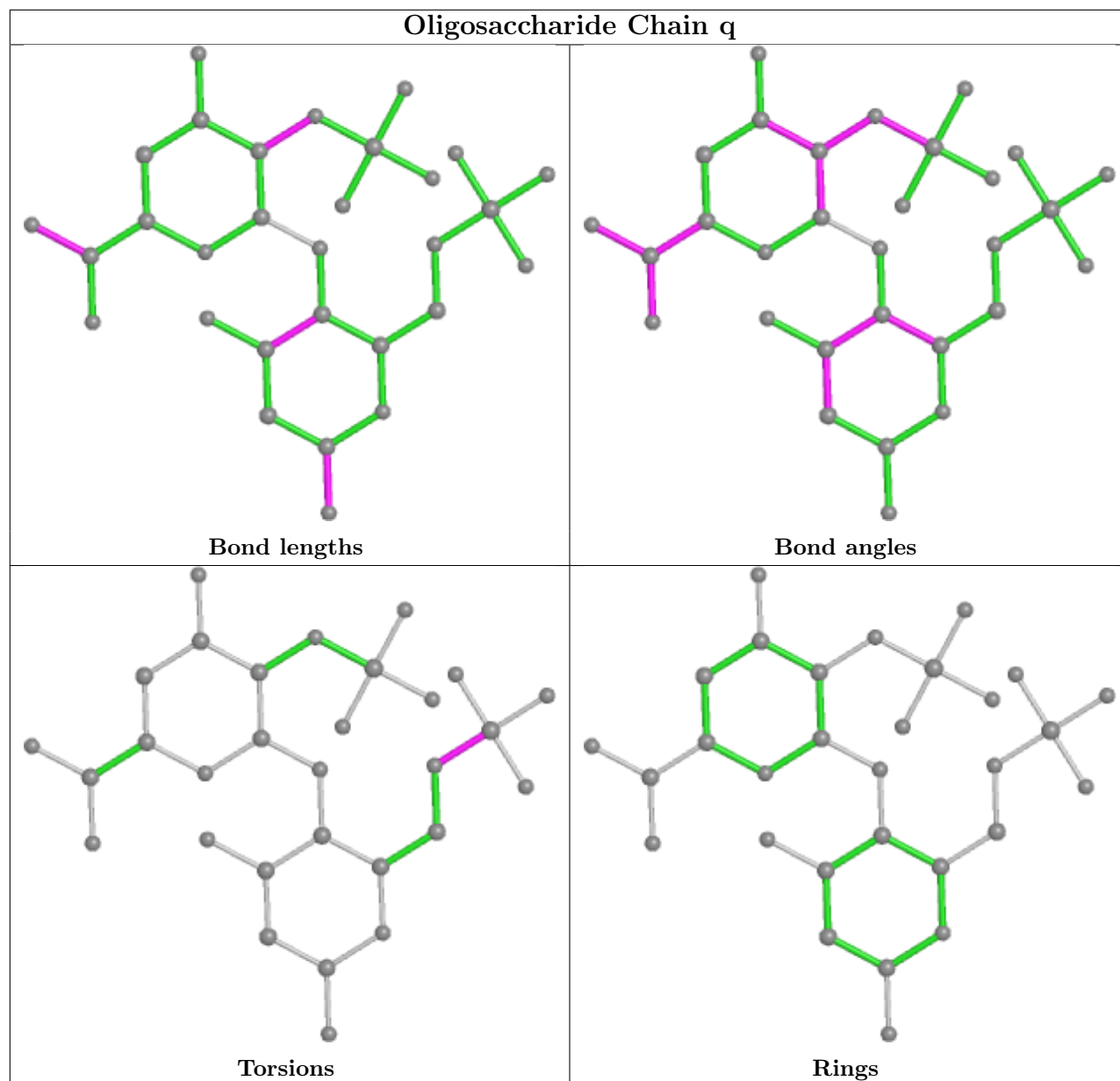


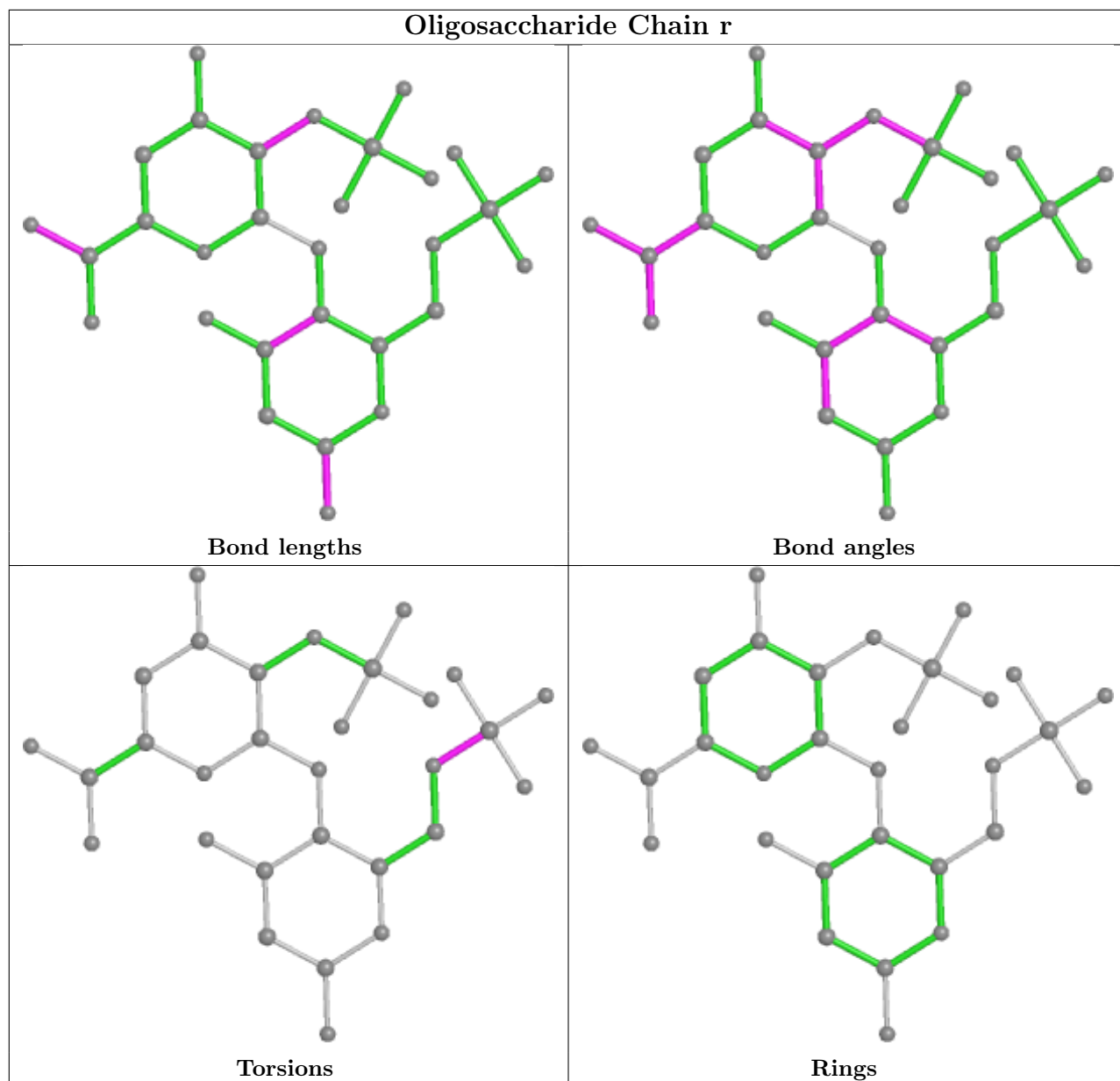


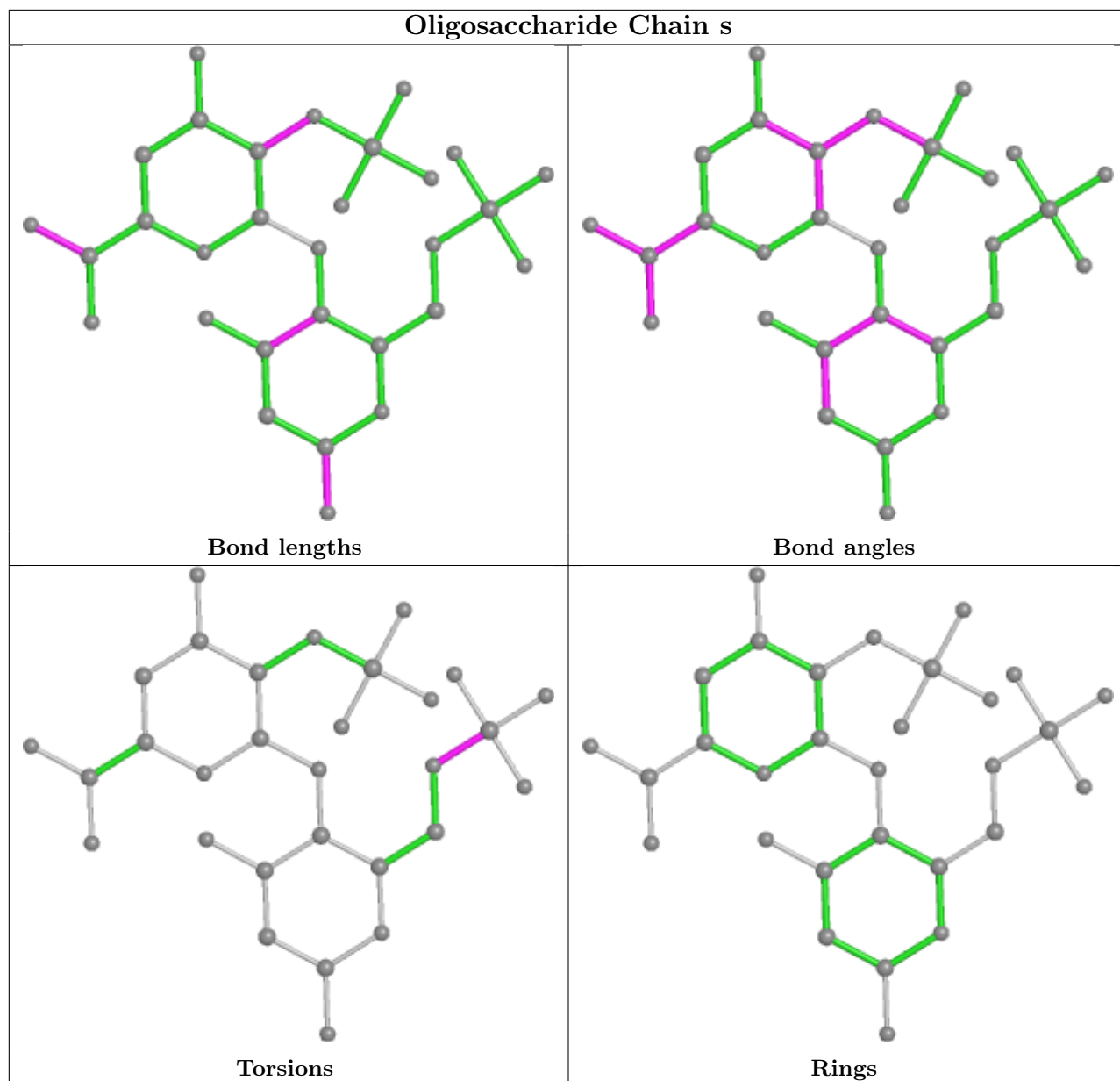




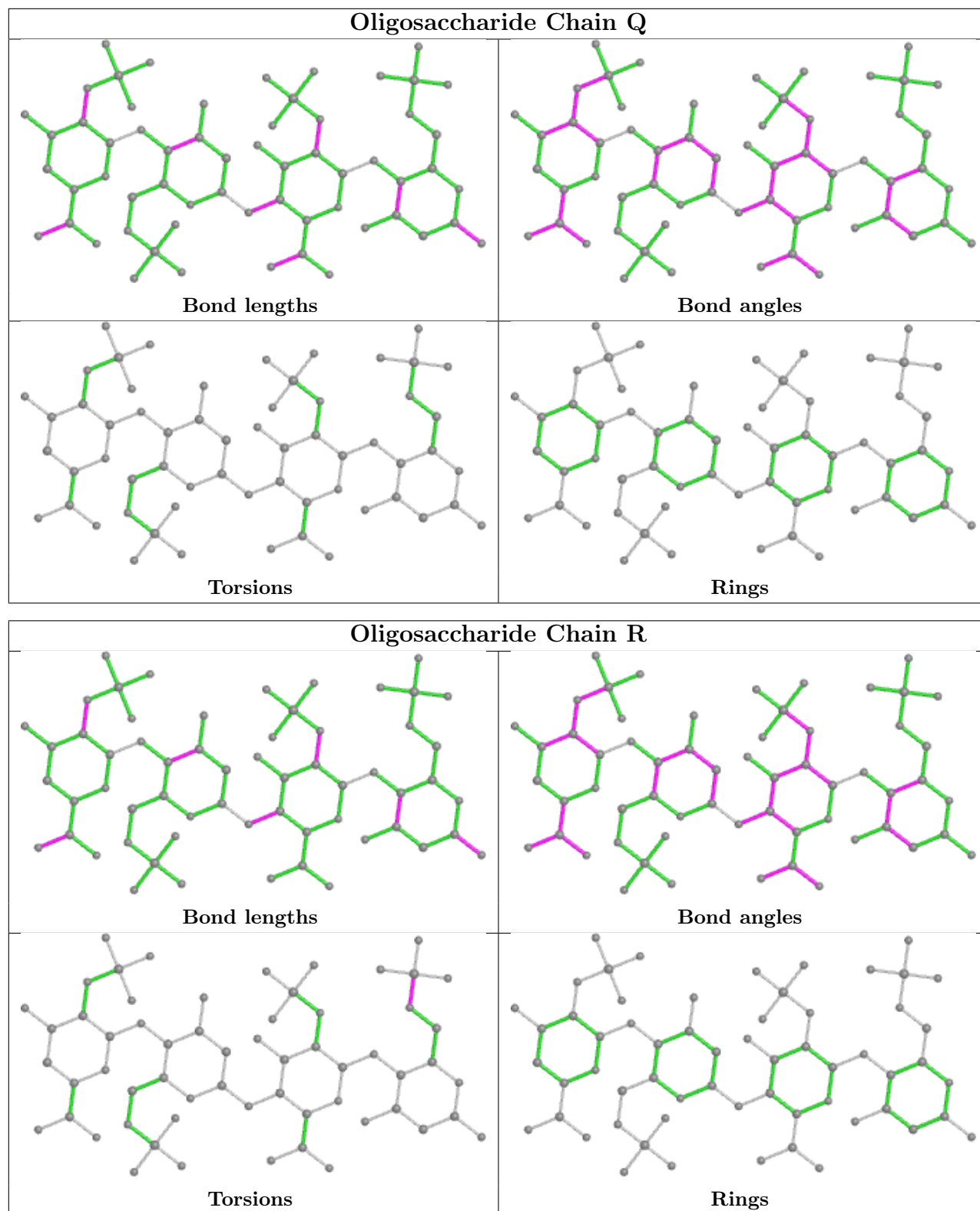


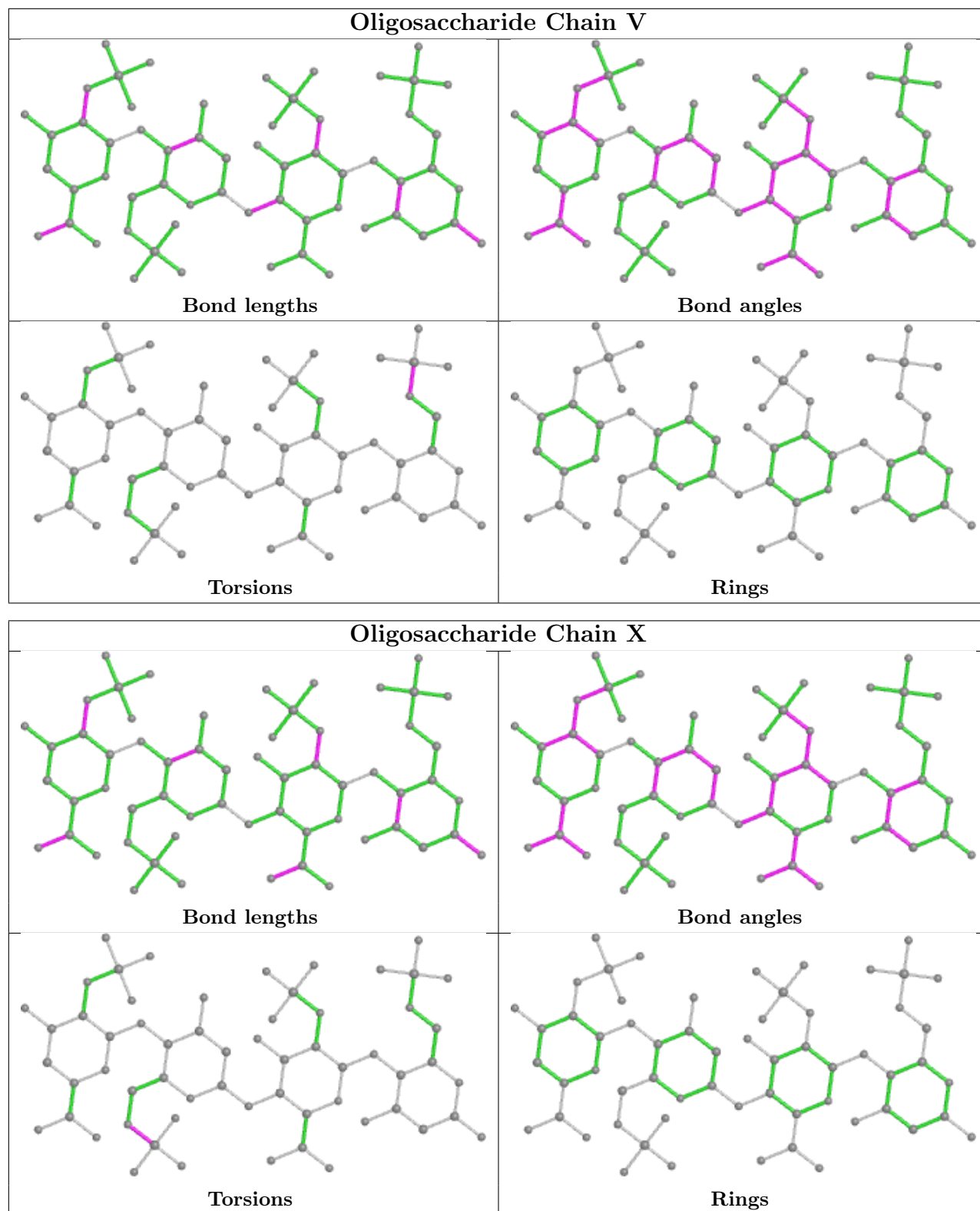


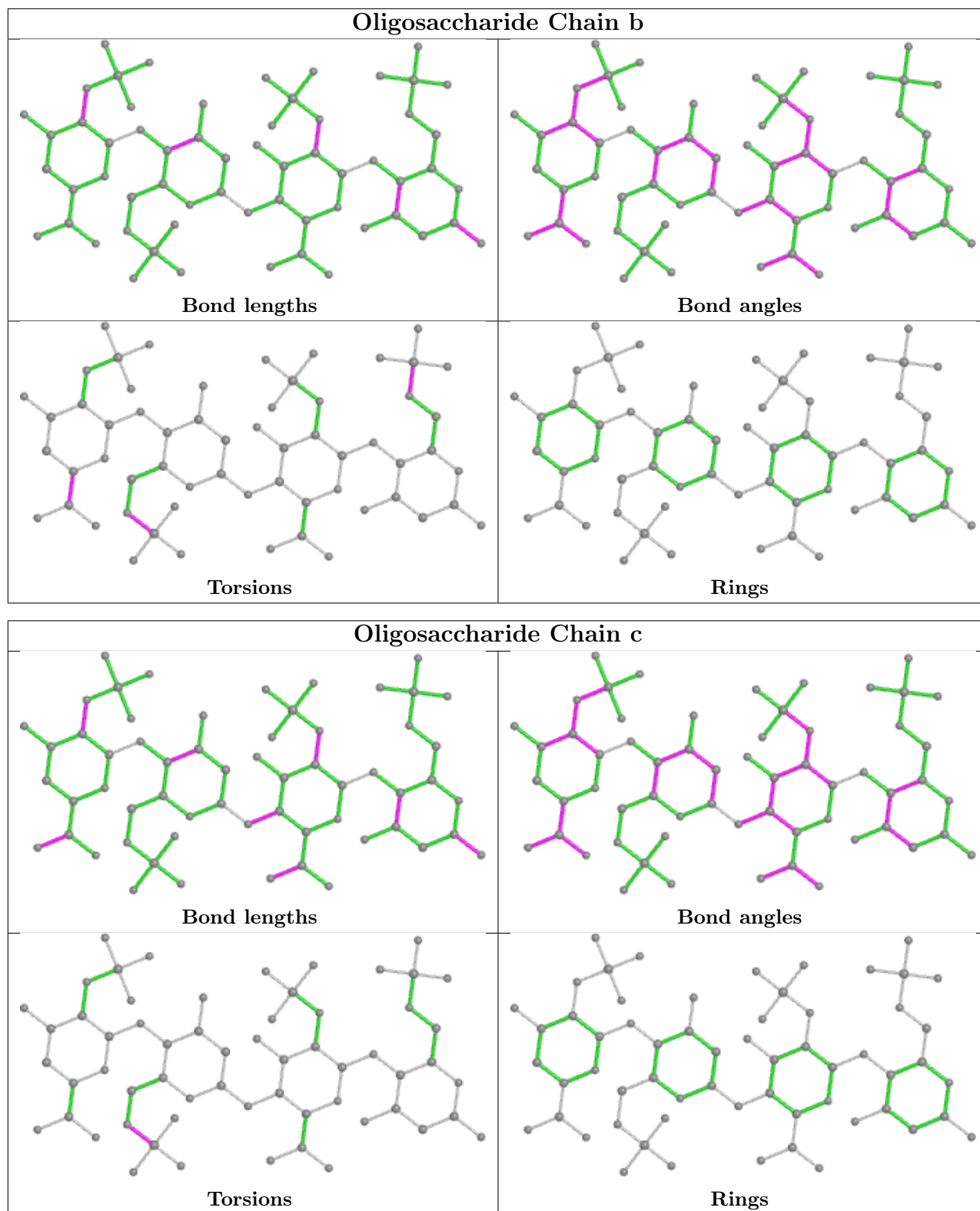


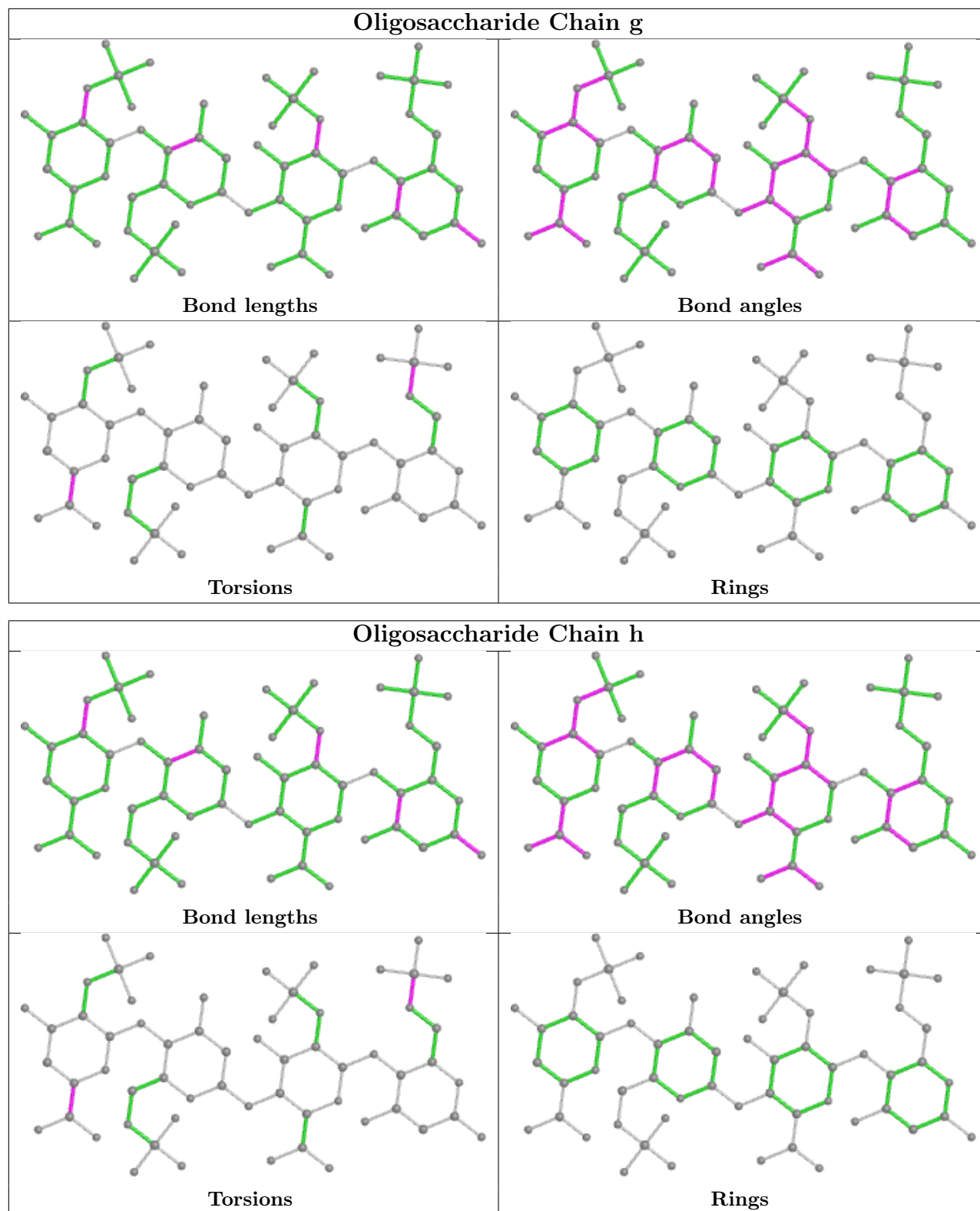


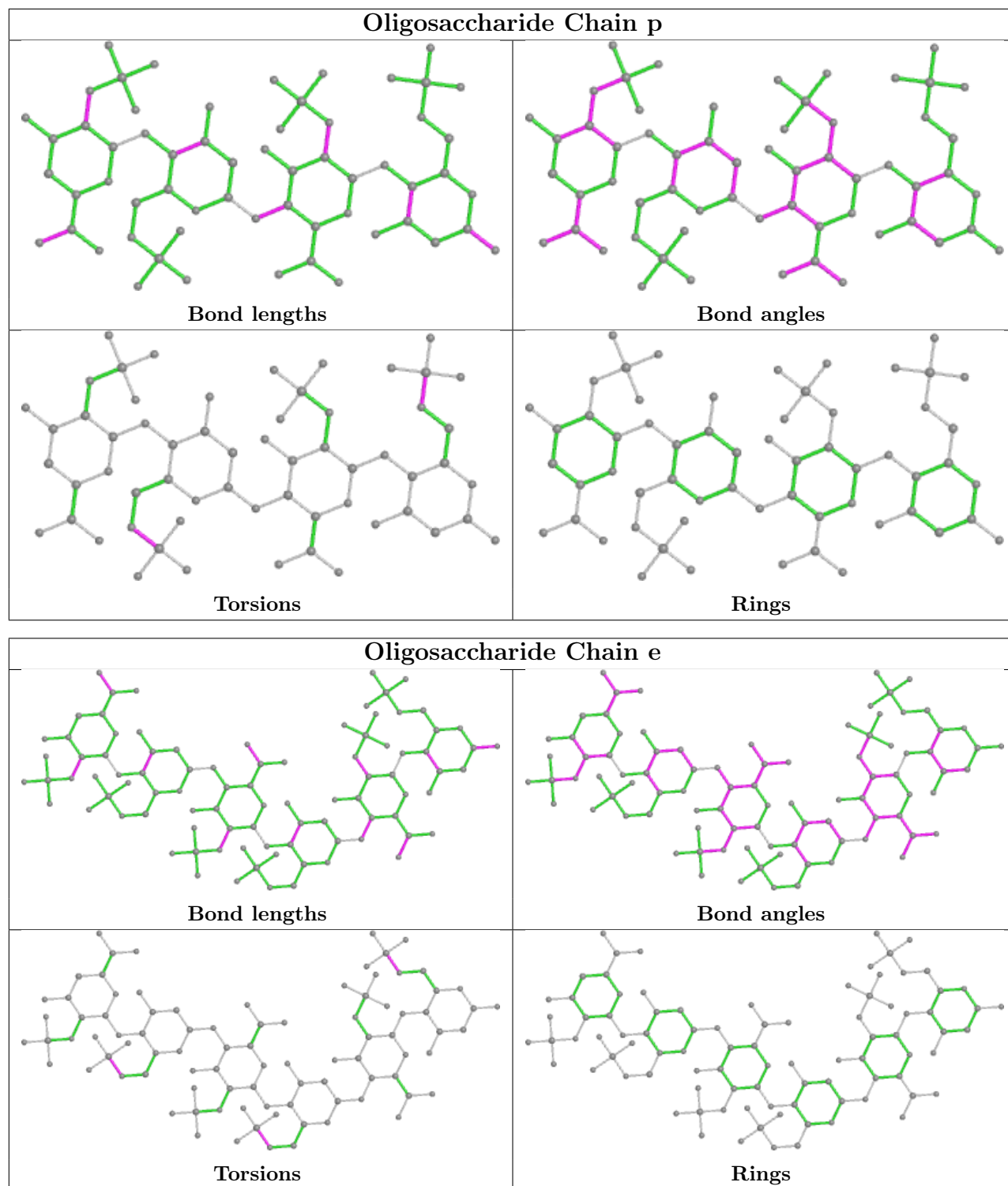


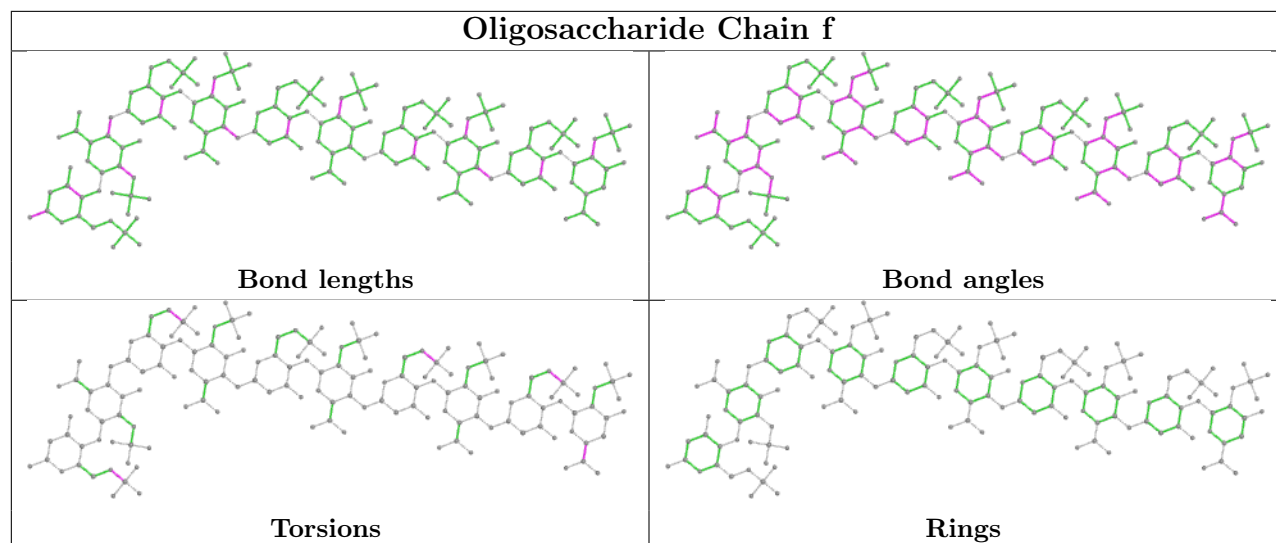












## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

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

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2        | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|----------------|-----------------------|-------|
| 1   | A     | 422/427 (98%)   | -0.11  | 16 (3%) 40 43  | 37, 75, 133, 159      | 0     |
| 1   | B     | 422/427 (98%)   | -0.14  | 17 (4%) 38 41  | 34, 72, 130, 174      | 0     |
| 1   | C     | 422/427 (98%)   | -0.20  | 13 (3%) 49 53  | 26, 63, 122, 162      | 0     |
| 1   | D     | 422/427 (98%)   | -0.27  | 10 (2%) 59 62  | 30, 64, 129, 174      | 0     |
| 1   | E     | 422/427 (98%)   | -0.27  | 10 (2%) 59 62  | 30, 66, 125, 160      | 0     |
| 1   | F     | 422/427 (98%)   | -0.22  | 10 (2%) 59 62  | 34, 75, 131, 166      | 0     |
| 1   | G     | 422/427 (98%)   | -0.02  | 18 (4%) 35 39  | 36, 77, 134, 203      | 0     |
| 1   | H     | 422/427 (98%)   | -0.19  | 12 (2%) 53 57  | 31, 64, 118, 150      | 0     |
| 1   | I     | 422/427 (98%)   | -0.25  | 9 (2%) 63 67   | 30, 64, 122, 143      | 0     |
| 1   | J     | 422/427 (98%)   | -0.08  | 10 (2%) 59 62  | 33, 70, 137, 164      | 0     |
| 1   | K     | 422/427 (98%)   | -0.10  | 13 (3%) 49 53  | 38, 74, 129, 168      | 0     |
| 1   | L     | 422/427 (98%)   | -0.09  | 12 (2%) 53 57  | 43, 72, 128, 157      | 0     |
| 1   | M     | 422/427 (98%)   | -0.10  | 11 (2%) 56 59  | 44, 76, 128, 147      | 0     |
| 1   | N     | 422/427 (98%)   | -0.16  | 7 (1%) 70 74   | 43, 79, 128, 151      | 0     |
| 1   | O     | 422/427 (98%)   | -0.03  | 22 (5%) 27 30  | 40, 77, 136, 169      | 0     |
| All | All   | 6330/6405 (98%) | -0.15  | 190 (3%) 50 54 | 26, 71, 129, 203      | 0     |

All (190) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | A     | 137 | SER  | 6.6  |
| 1   | D     | 135 | ALA  | 6.0  |
| 1   | H     | 177 | SER  | 5.9  |
| 1   | O     | 141 | GLU  | 5.8  |
| 1   | H     | 174 | ALA  | 5.6  |
| 1   | E     | 135 | ALA  | 5.6  |
| 1   | O     | 177 | SER  | 5.5  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | C            | 350        | SER         | 5.5         |
| 1          | B            | 134        | ALA         | 5.3         |
| 1          | O            | 351        | PRO         | 5.2         |
| 1          | O            | 133        | HIS         | 5.2         |
| 1          | B            | 137        | SER         | 5.0         |
| 1          | O            | 55         | GLY         | 5.0         |
| 1          | G            | 88         | THR         | 4.8         |
| 1          | J            | 174        | ALA         | 4.7         |
| 1          | M            | 86         | PRO         | 4.7         |
| 1          | D            | 133        | HIS         | 4.6         |
| 1          | O            | 56         | GLY         | 4.5         |
| 1          | D            | 134        | ALA         | 4.5         |
| 1          | E            | 134        | ALA         | 4.4         |
| 1          | C            | 174        | ALA         | 4.4         |
| 1          | E            | 177        | SER         | 4.3         |
| 1          | B            | 135        | ALA         | 4.3         |
| 1          | B            | 173        | THR         | 4.3         |
| 1          | C            | 88         | THR         | 4.3         |
| 1          | H            | 175        | SER         | 4.3         |
| 1          | D            | 175        | SER         | 4.3         |
| 1          | J            | 90         | ILE         | 4.2         |
| 1          | G            | 175        | SER         | 4.2         |
| 1          | H            | 176        | LYS         | 4.2         |
| 1          | A            | 138        | ASN         | 4.1         |
| 1          | B            | 133        | HIS         | 4.1         |
| 1          | A            | 136        | THR         | 4.0         |
| 1          | K            | 88         | THR         | 4.0         |
| 1          | O            | 350        | SER         | 4.0         |
| 1          | O            | 134        | ALA         | 4.0         |
| 1          | O            | 137        | SER         | 3.9         |
| 1          | J            | 351        | PRO         | 3.9         |
| 1          | E            | 474        | GLY         | 3.9         |
| 1          | C            | 176        | LYS         | 3.9         |
| 1          | M            | 174        | ALA         | 3.8         |
| 1          | B            | 177        | SER         | 3.8         |
| 1          | H            | 178        | ARG         | 3.8         |
| 1          | D            | 174        | ALA         | 3.8         |
| 1          | F            | 177        | SER         | 3.8         |
| 1          | C            | 135        | ALA         | 3.8         |
| 1          | A            | 86         | PRO         | 3.7         |
| 1          | M            | 343        | THR         | 3.7         |
| 1          | E            | 439        | LYS         | 3.7         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | G            | 55         | GLY         | 3.7         |
| 1          | G            | 384        | LEU         | 3.7         |
| 1          | I            | 86         | PRO         | 3.7         |
| 1          | K            | 134        | ALA         | 3.6         |
| 1          | L            | 438        | ASN         | 3.6         |
| 1          | O            | 176        | LYS         | 3.6         |
| 1          | B            | 56         | GLY         | 3.6         |
| 1          | B            | 175        | SER         | 3.6         |
| 1          | M            | 57         | GLY         | 3.6         |
| 1          | O            | 135        | ALA         | 3.5         |
| 1          | D            | 177        | SER         | 3.5         |
| 1          | N            | 177        | SER         | 3.5         |
| 1          | G            | 56         | GLY         | 3.5         |
| 1          | A            | 177        | SER         | 3.5         |
| 1          | A            | 133        | HIS         | 3.5         |
| 1          | E            | 141        | GLU         | 3.5         |
| 1          | M            | 87         | ASP         | 3.5         |
| 1          | I            | 90         | ILE         | 3.4         |
| 1          | M            | 173        | THR         | 3.4         |
| 1          | F            | 133        | HIS         | 3.4         |
| 1          | L            | 91         | TYR         | 3.4         |
| 1          | M            | 439        | LYS         | 3.4         |
| 1          | B            | 136        | THR         | 3.4         |
| 1          | O            | 404        | ASN         | 3.4         |
| 1          | E            | 314        | HIS         | 3.4         |
| 1          | A            | 87         | ASP         | 3.3         |
| 1          | O            | 173        | THR         | 3.3         |
| 1          | H            | 88         | THR         | 3.3         |
| 1          | O            | 282        | MET         | 3.3         |
| 1          | K            | 354        | GLY         | 3.3         |
| 1          | N            | 184        | ASP         | 3.3         |
| 1          | J            | 350        | SER         | 3.2         |
| 1          | D            | 176        | LYS         | 3.2         |
| 1          | B            | 174        | ALA         | 3.2         |
| 1          | O            | 174        | ALA         | 3.2         |
| 1          | O            | 138        | ASN         | 3.2         |
| 1          | C            | 134        | ALA         | 3.1         |
| 1          | A            | 141        | GLU         | 3.1         |
| 1          | A            | 350        | SER         | 3.1         |
| 1          | M            | 350        | SER         | 3.1         |
| 1          | H            | 173        | THR         | 3.0         |
| 1          | G            | 177        | SER         | 3.0         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | G            | 94         | GLU         | 3.0         |
| 1          | H            | 179        | PRO         | 2.9         |
| 1          | G            | 282        | MET         | 2.9         |
| 1          | K            | 135        | ALA         | 2.9         |
| 1          | J            | 352        | VAL         | 2.8         |
| 1          | C            | 136        | THR         | 2.8         |
| 1          | L            | 349        | GLN         | 2.8         |
| 1          | B            | 179        | PRO         | 2.8         |
| 1          | I            | 354        | GLY         | 2.8         |
| 1          | O            | 352        | VAL         | 2.8         |
| 1          | M            | 351        | PRO         | 2.8         |
| 1          | C            | 175        | SER         | 2.8         |
| 1          | G            | 383        | THR         | 2.8         |
| 1          | F            | 134        | ALA         | 2.7         |
| 1          | K            | 138        | ASN         | 2.7         |
| 1          | L            | 440        | ASP         | 2.7         |
| 1          | H            | 349        | GLN         | 2.7         |
| 1          | K            | 355        | GLN         | 2.7         |
| 1          | E            | 175        | SER         | 2.7         |
| 1          | C            | 438        | ASN         | 2.7         |
| 1          | E            | 182        | GLN         | 2.6         |
| 1          | L            | 350        | SER         | 2.6         |
| 1          | B            | 138        | ASN         | 2.6         |
| 1          | F            | 173        | THR         | 2.6         |
| 1          | O            | 61         | ASP         | 2.6         |
| 1          | A            | 55         | GLY         | 2.6         |
| 1          | B            | 172        | GLY         | 2.6         |
| 1          | C            | 177        | SER         | 2.6         |
| 1          | J            | 175        | SER         | 2.6         |
| 1          | G            | 173        | THR         | 2.6         |
| 1          | F            | 438        | ASN         | 2.5         |
| 1          | G            | 439        | LYS         | 2.5         |
| 1          | L            | 81         | ASN         | 2.5         |
| 1          | L            | 177        | SER         | 2.5         |
| 1          | J            | 138        | ASN         | 2.5         |
| 1          | G            | 289        | CYS         | 2.5         |
| 1          | M            | 141        | GLU         | 2.5         |
| 1          | H            | 133        | HIS         | 2.5         |
| 1          | G            | 174        | ALA         | 2.5         |
| 1          | G            | 60         | GLN         | 2.5         |
| 1          | A            | 315        | LYS         | 2.4         |
| 1          | D            | 180        | LEU         | 2.4         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | G            | 474        | GLY         | 2.4         |
| 1          | C            | 351        | PRO         | 2.4         |
| 1          | I            | 387        | ASP         | 2.4         |
| 1          | B            | 282        | MET         | 2.4         |
| 1          | K            | 137        | SER         | 2.4         |
| 1          | I            | 88         | THR         | 2.4         |
| 1          | O            | 142        | ASP         | 2.4         |
| 1          | B            | 315        | LYS         | 2.4         |
| 1          | G            | 85         | LEU         | 2.4         |
| 1          | I            | 355        | GLN         | 2.3         |
| 1          | F            | 282        | MET         | 2.3         |
| 1          | J            | 177        | SER         | 2.3         |
| 1          | B            | 438        | ASN         | 2.3         |
| 1          | I            | 141        | GLU         | 2.3         |
| 1          | H            | 315        | LYS         | 2.3         |
| 1          | K            | 82         | LYS         | 2.3         |
| 1          | K            | 133        | HIS         | 2.3         |
| 1          | F            | 179        | PRO         | 2.3         |
| 1          | J            | 141        | GLU         | 2.2         |
| 1          | L            | 140        | SER         | 2.2         |
| 1          | K            | 438        | ASN         | 2.2         |
| 1          | L            | 355        | GLN         | 2.2         |
| 1          | H            | 350        | SER         | 2.2         |
| 1          | F            | 315        | LYS         | 2.2         |
| 1          | O            | 444        | LYS         | 2.2         |
| 1          | C            | 314        | HIS         | 2.2         |
| 1          | A            | 139        | VAL         | 2.2         |
| 1          | C            | 349        | GLN         | 2.2         |
| 1          | D            | 57         | GLY         | 2.2         |
| 1          | F            | 176        | LYS         | 2.2         |
| 1          | N            | 185        | CYS         | 2.2         |
| 1          | K            | 175        | SER         | 2.2         |
| 1          | N            | 134        | ALA         | 2.2         |
| 1          | O            | 132        | SER         | 2.2         |
| 1          | D            | 58         | ASN         | 2.2         |
| 1          | L            | 90         | ILE         | 2.2         |
| 1          | I            | 439        | LYS         | 2.1         |
| 1          | G            | 138        | ASN         | 2.1         |
| 1          | F            | 314        | HIS         | 2.1         |
| 1          | K            | 53         | PRO         | 2.1         |
| 1          | N            | 401        | GLU         | 2.1         |
| 1          | I            | 87         | ASP         | 2.1         |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | J     | 173 | THR  | 2.1  |
| 1   | N     | 138 | ASN  | 2.1  |
| 1   | E     | 133 | HIS  | 2.1  |
| 1   | L     | 443 | ASP  | 2.1  |
| 1   | A     | 179 | PRO  | 2.1  |
| 1   | M     | 88  | THR  | 2.0  |
| 1   | K     | 269 | ASP  | 2.0  |
| 1   | O     | 60  | GLN  | 2.0  |
| 1   | A     | 176 | LYS  | 2.0  |
| 1   | A     | 474 | GLY  | 2.0  |
| 1   | N     | 461 | ASP  | 2.0  |
| 1   | L     | 83  | PHE  | 2.0  |
| 1   | G     | 179 | PRO  | 2.0  |
| 1   | B     | 176 | LYS  | 2.0  |
| 1   | A     | 313 | LEU  | 2.0  |

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

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

## 6.3 Carbohydrates [i](#)

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

| Mol | Type | Chain | Res | Atoms | RSCC  | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|-------|------|----------------------------|-------|
| 2   | JHM  | j     | 1   | 15/15 | -0.13 | 1.04 | 212,232,254,254            | 0     |
| 2   | IDS  | m     | 2   | 15/17 | -0.10 | 0.75 | 249,251,259,263            | 0     |
| 3   | JHM  | h     | 3   | 14/15 | -0.03 | 0.86 | 271,292,314,314            | 0     |
| 2   | JHM  | Y     | 1   | 15/15 | 0.09  | 0.89 | 235,255,276,277            | 0     |
| 2   | JHM  | i     | 1   | 15/15 | 0.12  | 0.89 | 228,247,270,272            | 0     |
| 2   | IDS  | U     | 2   | 15/17 | 0.16  | 1.19 | 260,261,269,273            | 0     |
| 2   | JHM  | U     | 1   | 15/15 | 0.19  | 0.68 | 235,256,278,278            | 0     |
| 2   | IDS  | a     | 2   | 15/17 | 0.20  | 0.66 | 211,213,221,225            | 0     |
| 5   | IDS  | f     | 4   | 16/17 | 0.21  | 0.86 | 238,318,323,327            | 0     |
| 3   | IDS  | p     | 4   | 15/17 | 0.22  | 0.69 | 221,222,230,234            | 0     |
| 3   | JHM  | R     | 1   | 15/15 | 0.24  | 0.59 | 224,245,267,269            | 0     |
| 2   | JHM  | T     | 1   | 15/15 | 0.24  | 0.64 | 203,225,247,247            | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 3   | IDS  | h     | 4   | 15/17 | 0.26 | 0.68 | 261,263,270,274            | 0     |
| 2   | JHM  | a     | 1   | 15/15 | 0.28 | 0.90 | 193,214,235,235            | 0     |
| 4   | IDS  | e     | 2   | 16/17 | 0.28 | 0.57 | 251,281,287,291            | 0     |
| 2   | IDS  | d     | 2   | 15/17 | 0.28 | 0.57 | 223,225,232,236            | 0     |
| 3   | JHM  | R     | 3   | 14/15 | 0.29 | 0.68 | 232,253,274,274            | 0     |
| 2   | JHM  | S     | 1   | 15/15 | 0.29 | 0.64 | 258,278,299,300            | 0     |
| 2   | JHM  | m     | 1   | 15/15 | 0.29 | 0.83 | 207,227,248,249            | 0     |
| 3   | JHM  | b     | 3   | 14/15 | 0.30 | 0.40 | 217,237,258,259            | 0     |
| 2   | IDS  | T     | 2   | 15/17 | 0.30 | 0.88 | 255,256,264,268            | 0     |
| 3   | JHM  | h     | 1   | 15/15 | 0.31 | 0.97 | 245,266,287,288            | 0     |
| 3   | JHM  | V     | 1   | 15/15 | 0.31 | 0.82 | 233,254,275,276            | 0     |
| 5   | JHM  | f     | 9   | 14/15 | 0.31 | 0.90 | 238,259,280,282            | 0     |
| 2   | IDS  | Y     | 2   | 15/17 | 0.32 | 0.56 | 226,227,235,239            | 0     |
| 2   | JHM  | r     | 1   | 15/15 | 0.32 | 0.73 | 198,219,240,240            | 0     |
| 2   | IDS  | r     | 2   | 15/17 | 0.32 | 0.91 | 270,272,280,283            | 0     |
| 3   | JHM  | X     | 3   | 14/15 | 0.32 | 0.56 | 200,219,242,243            | 0     |
| 2   | JHM  | n     | 1   | 15/15 | 0.33 | 0.62 | 185,205,226,227            | 0     |
| 2   | JHM  | q     | 1   | 15/15 | 0.33 | 0.81 | 235,255,277,278            | 0     |
| 3   | IDS  | Q     | 4   | 15/17 | 0.33 | 0.67 | 264,265,274,278            | 0     |
| 3   | JHM  | b     | 1   | 15/15 | 0.34 | 0.68 | 254,274,294,296            | 0     |
| 3   | IDS  | b     | 2   | 16/17 | 0.34 | 0.55 | 241,271,279,282            | 0     |
| 5   | JHM  | f     | 7   | 14/15 | 0.34 | 0.56 | 216,237,260,261            | 0     |
| 3   | IDS  | h     | 2   | 16/17 | 0.34 | 1.16 | 293,295,301,305            | 0     |
| 3   | IDS  | p     | 2   | 16/17 | 0.35 | 0.87 | 227,266,274,278            | 0     |
| 3   | JHM  | c     | 1   | 15/15 | 0.36 | 0.58 | 204,224,246,247            | 0     |
| 2   | IDS  | S     | 2   | 15/17 | 0.37 | 0.49 | 281,283,290,294            | 0     |
| 3   | IDS  | R     | 4   | 15/17 | 0.38 | 0.54 | 238,240,249,252            | 0     |
| 2   | JHM  | s     | 1   | 15/15 | 0.39 | 0.85 | 210,231,252,253            | 0     |
| 3   | JHM  | p     | 1   | 15/15 | 0.40 | 1.00 | 222,243,265,265            | 0     |
| 2   | IDS  | j     | 2   | 15/17 | 0.41 | 1.03 | 247,248,256,260            | 0     |
| 3   | IDS  | c     | 2   | 16/17 | 0.41 | 0.63 | 221,223,233,237            | 0     |
| 5   | JHM  | f     | 1   | 15/15 | 0.41 | 0.95 | 234,255,276,277            | 0     |
| 3   | IDS  | c     | 4   | 15/17 | 0.43 | 0.90 | 231,233,240,244            | 0     |
| 2   | IDS  | Z     | 2   | 15/17 | 0.43 | 0.57 | 252,254,262,266            | 0     |
| 2   | IDS  | i     | 2   | 15/17 | 0.43 | 0.49 | 261,264,269,273            | 0     |
| 4   | IDS  | e     | 4   | 16/17 | 0.43 | 0.60 | 249,286,292,296            | 0     |
| 3   | JHM  | p     | 3   | 14/15 | 0.45 | 0.73 | 204,224,246,246            | 0     |
| 3   | JHM  | c     | 3   | 14/15 | 0.45 | 0.59 | 214,234,257,257            | 0     |
| 2   | IDS  | l     | 2   | 15/17 | 0.45 | 0.63 | 260,261,269,274            | 0     |
| 3   | JHM  | g     | 1   | 15/15 | 0.45 | 0.86 | 217,238,258,259            | 0     |
| 3   | JHM  | g     | 3   | 14/15 | 0.46 | 0.42 | 228,248,270,270            | 0     |

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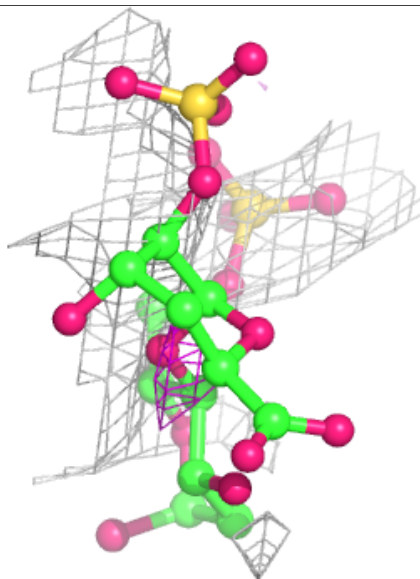
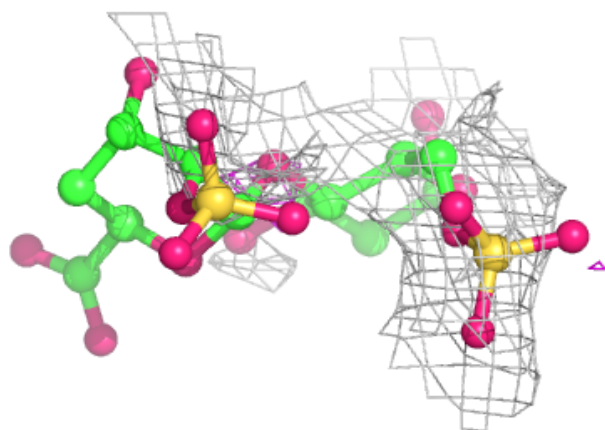
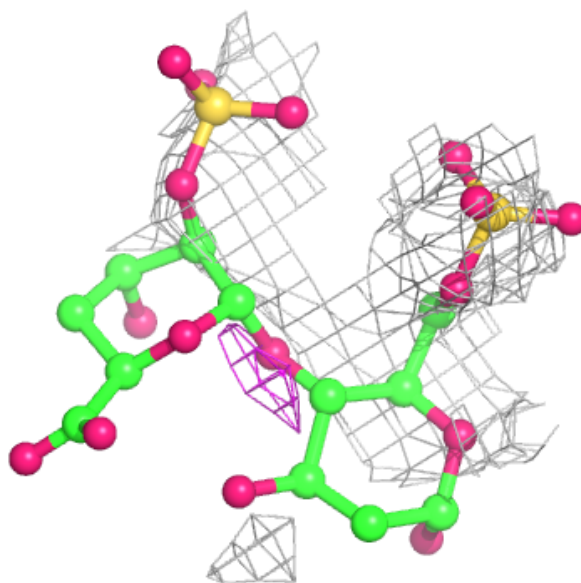
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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 2   | JHM  | Z     | 1   | 15/15 | 0.47 | 0.74 | 206,227,248,249             | 0     |
| 3   | IDS  | R     | 2   | 16/17 | 0.48 | 0.74 | 255,258,263,267             | 0     |
| 2   | IDS  | k     | 2   | 15/17 | 0.48 | 0.60 | 226,227,235,239             | 0     |
| 3   | JHM  | X     | 1   | 15/15 | 0.49 | 0.50 | 206,226,248,249             | 0     |
| 5   | IDS  | f     | 10  | 15/17 | 0.49 | 0.62 | 227,229,236,239             | 0     |
| 2   | IDS  | q     | 2   | 15/17 | 0.50 | 0.76 | 261,263,271,275             | 0     |
| 2   | IDS  | n     | 2   | 15/17 | 0.51 | 0.71 | 245,247,254,258             | 0     |
| 4   | JHM  | e     | 1   | 15/15 | 0.51 | 0.50 | 264,284,305,307             | 0     |
| 2   | JHM  | k     | 1   | 15/15 | 0.51 | 0.71 | 218,238,261,261             | 0     |
| 3   | JHM  | Q     | 3   | 14/15 | 0.52 | 0.50 | 213,233,255,255             | 0     |
| 2   | IDS  | W     | 2   | 15/17 | 0.52 | 0.64 | 219,221,228,231             | 0     |
| 2   | JHM  | l     | 1   | 15/15 | 0.52 | 0.51 | 224,244,266,266             | 0     |
| 5   | JHM  | f     | 3   | 14/15 | 0.52 | 0.70 | 225,245,267,268             | 0     |
| 5   | JHM  | f     | 5   | 14/15 | 0.53 | 0.60 | 214,234,255,256             | 0     |
| 2   | JHM  | o     | 1   | 15/15 | 0.53 | 0.70 | 220,240,261,262             | 0     |
| 2   | JHM  | W     | 1   | 15/15 | 0.55 | 0.69 | 223,243,265,266             | 0     |
| 5   | IDS  | f     | 8   | 16/17 | 0.56 | 0.54 | 186,189,199,262             | 0     |
| 3   | JHM  | V     | 3   | 14/15 | 0.56 | 0.56 | 210,231,253,254             | 0     |
| 3   | IDS  | Q     | 2   | 16/17 | 0.56 | 0.56 | 219,222,234,236             | 0     |
| 4   | JHM  | e     | 3   | 14/15 | 0.57 | 0.34 | 227,248,268,270             | 0     |
| 4   | IDS  | e     | 6   | 15/17 | 0.57 | 0.68 | 239,241,247,251             | 0     |
| 3   | IDS  | b     | 4   | 15/17 | 0.59 | 0.41 | 235,237,245,248             | 0     |
| 2   | JHM  | d     | 1   | 15/15 | 0.60 | 0.58 | 201,221,243,244             | 0     |
| 2   | IDS  | s     | 2   | 15/17 | 0.60 | 0.72 | 227,229,237,241             | 0     |
| 5   | IDS  | f     | 2   | 16/17 | 0.61 | 0.67 | 248,255,262,265             | 0     |
| 4   | JHM  | e     | 5   | 14/15 | 0.62 | 0.66 | 226,246,268,269             | 0     |
| 5   | IDS  | f     | 6   | 16/17 | 0.62 | 0.51 | 209,212,222,240             | 0     |
| 3   | IDS  | X     | 2   | 16/17 | 0.63 | 0.50 | 222,227,235,239             | 0     |
| 3   | IDS  | g     | 2   | 16/17 | 0.63 | 0.62 | 251,264,272,276             | 0     |
| 2   | JHM  | P     | 1   | 15/15 | 0.63 | 0.52 | 192,212,234,235             | 0     |
| 3   | JHM  | Q     | 1   | 15/15 | 0.64 | 0.70 | 194,215,236,236             | 0     |
| 3   | IDS  | X     | 4   | 15/17 | 0.68 | 0.85 | 230,232,239,243             | 0     |
| 2   | IDS  | P     | 2   | 15/17 | 0.68 | 0.66 | 267,270,276,279             | 0     |
| 3   | IDS  | V     | 2   | 16/17 | 0.68 | 0.62 | 234,267,274,278             | 0     |
| 3   | IDS  | g     | 4   | 15/17 | 0.69 | 0.55 | 238,240,248,252             | 0     |
| 3   | IDS  | V     | 4   | 15/17 | 0.79 | 0.34 | 273,275,282,286             | 0     |
| 2   | IDS  | o     | 2   | 15/17 | 0.80 | 0.36 | 214,215,224,228             | 0     |

The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

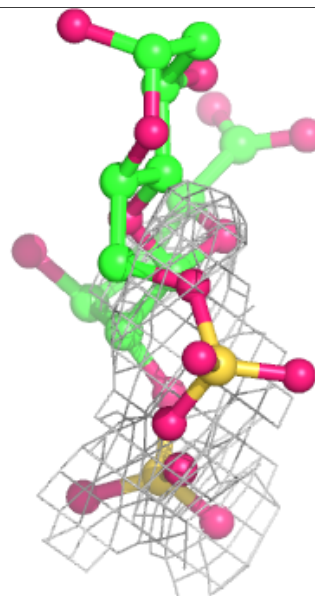
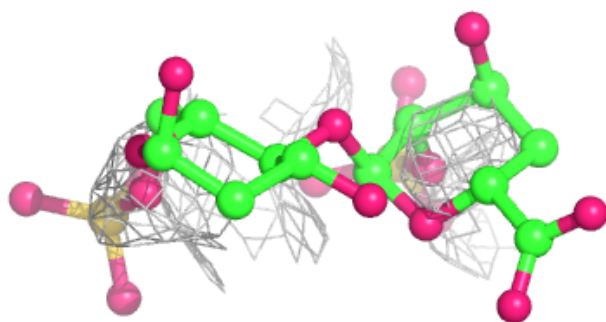
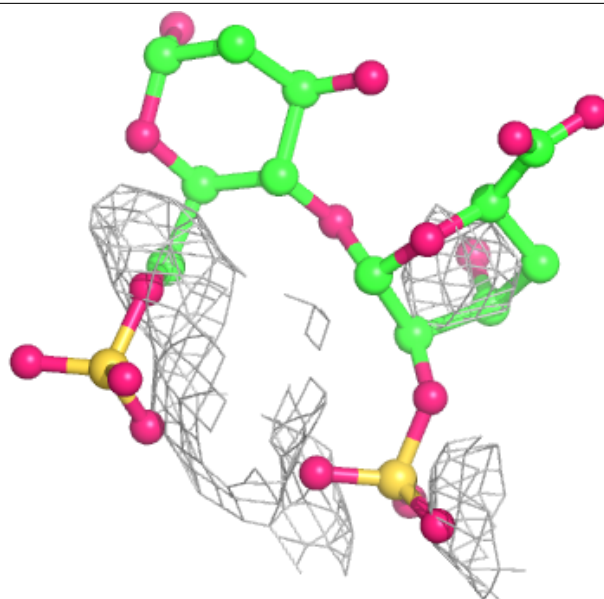
**Electron density around Chain P:**

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



**Electron density around Chain S:**

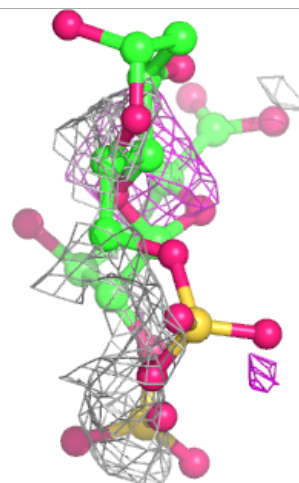
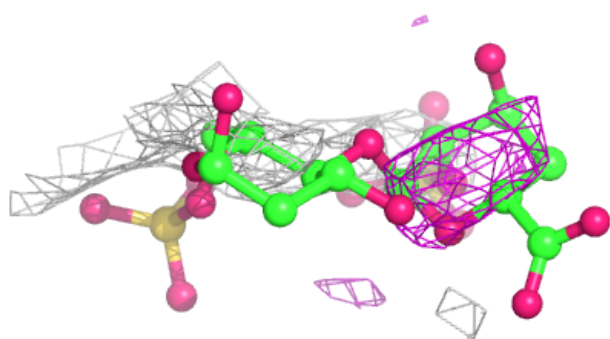
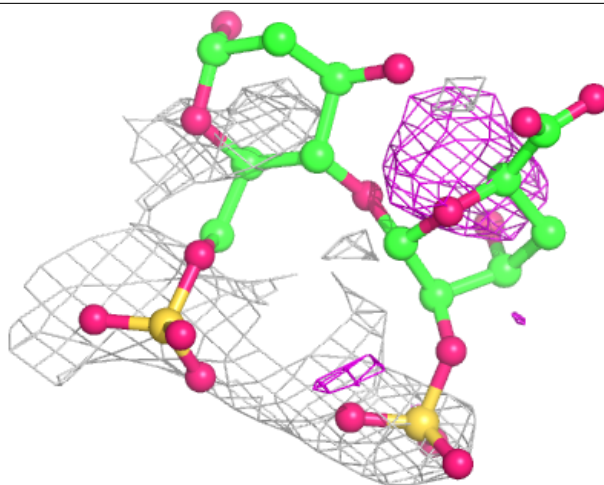
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





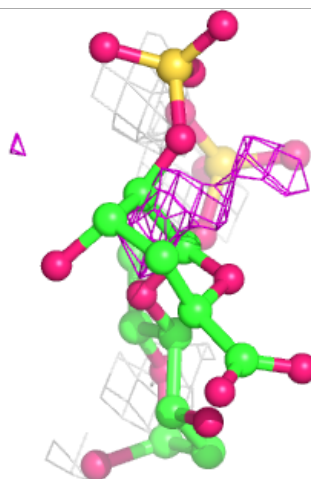
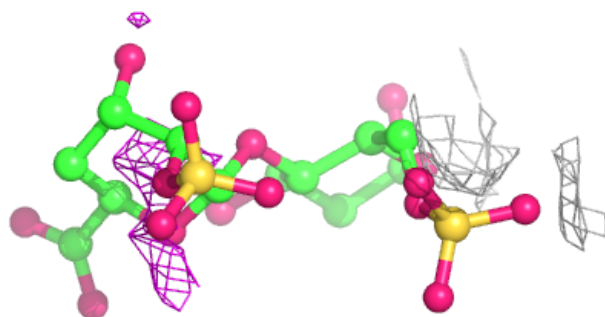
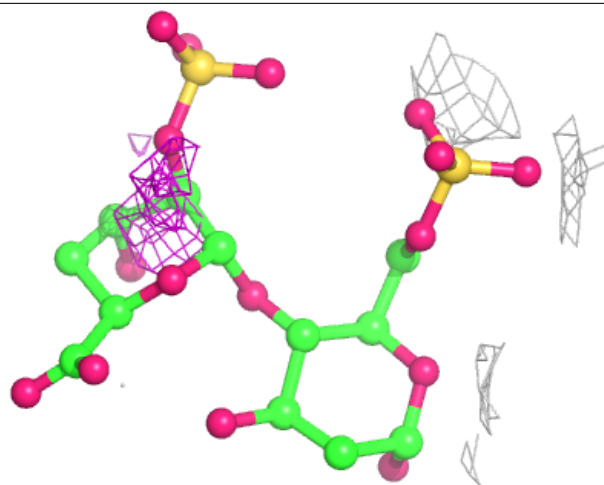
**Electron density around Chain T:**

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



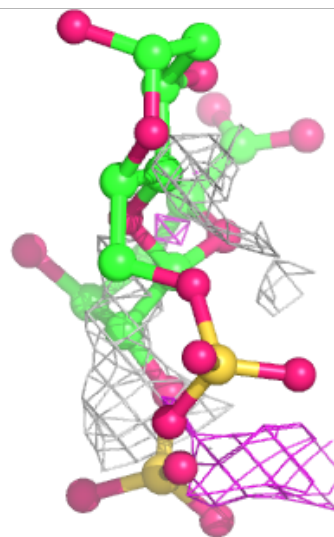
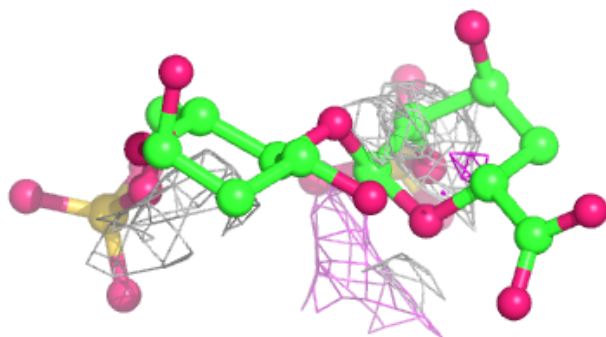
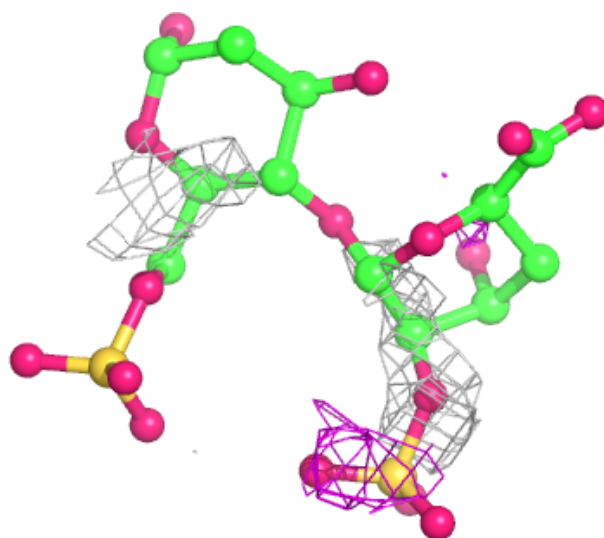
**Electron density around Chain U:**

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



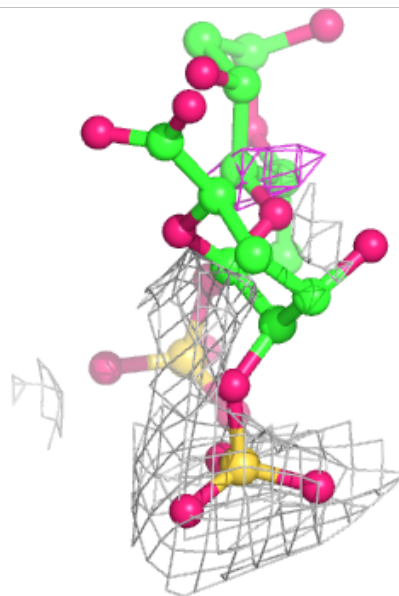
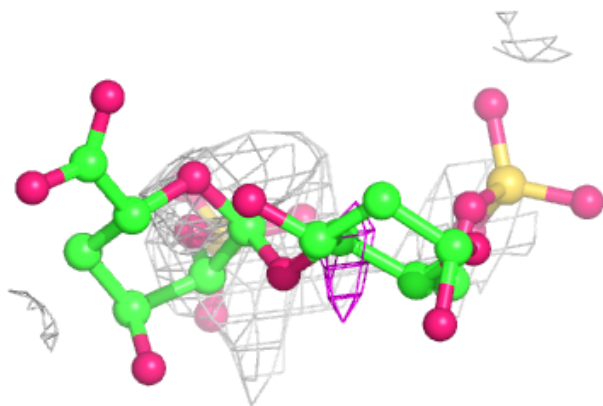
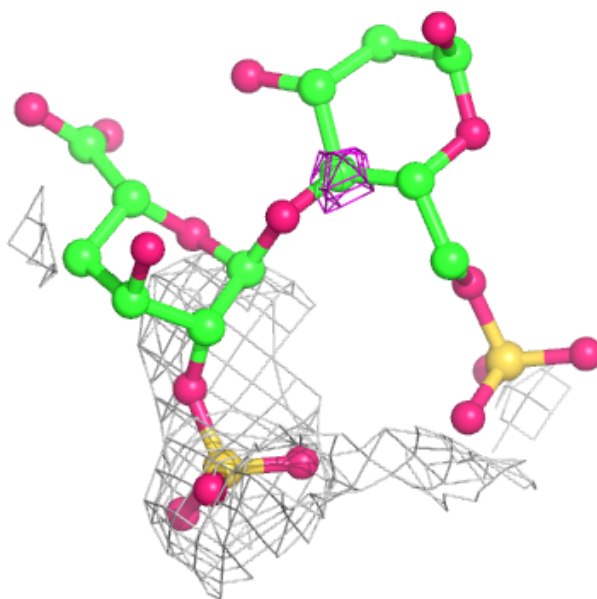
**Electron density around Chain W:**

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



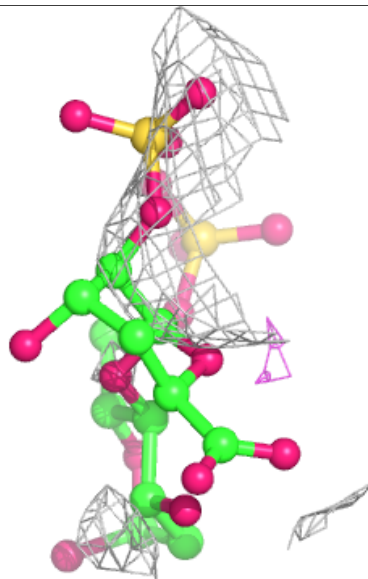
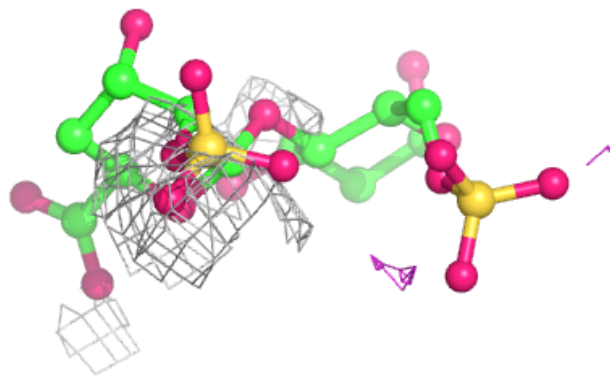
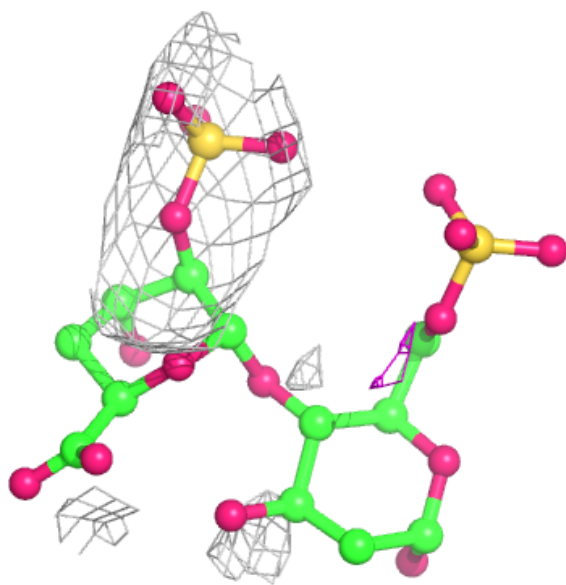
**Electron density around Chain Y:**

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



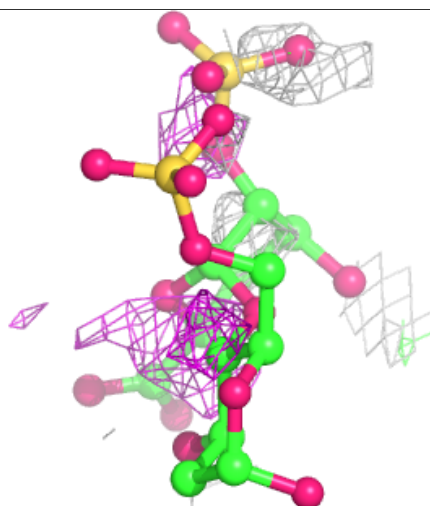
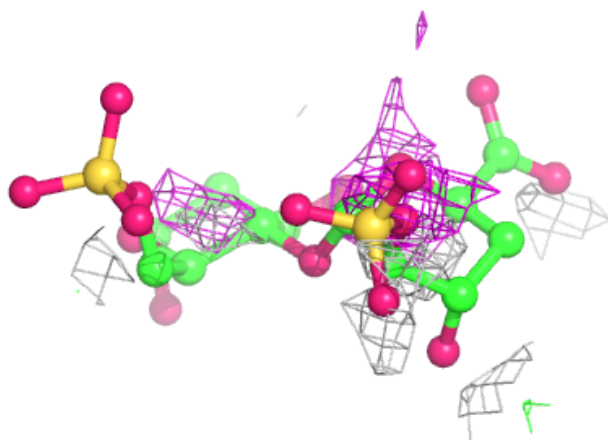
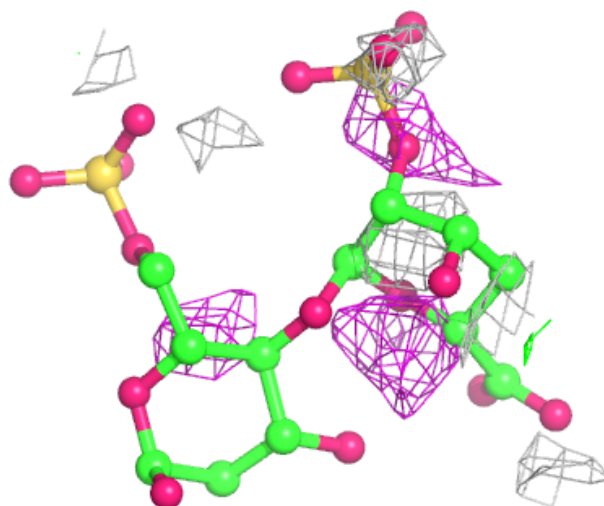
**Electron density around Chain Z:**

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



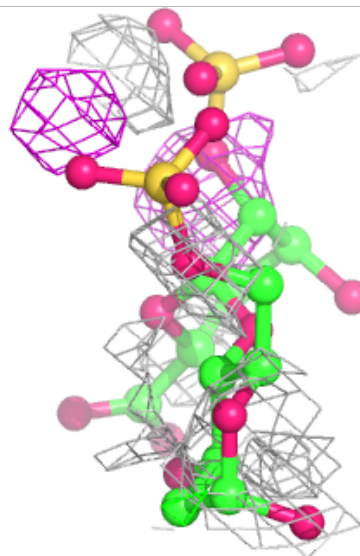
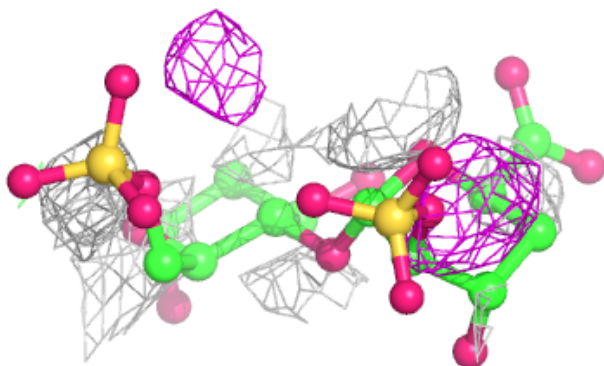
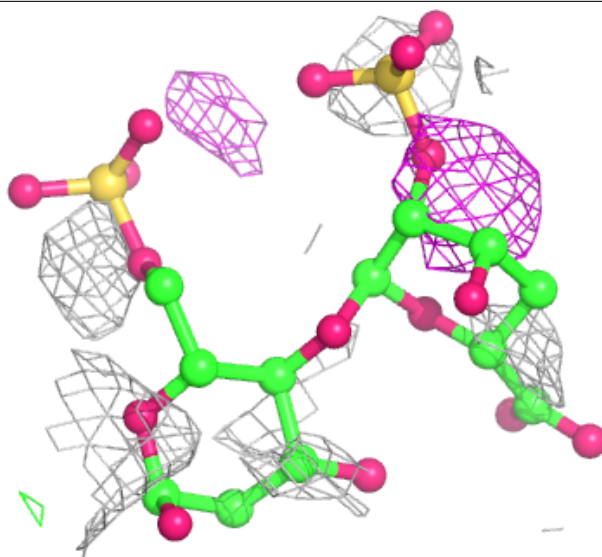
**Electron density around Chain a:**

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



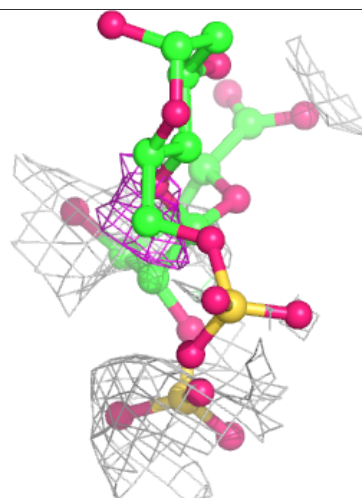
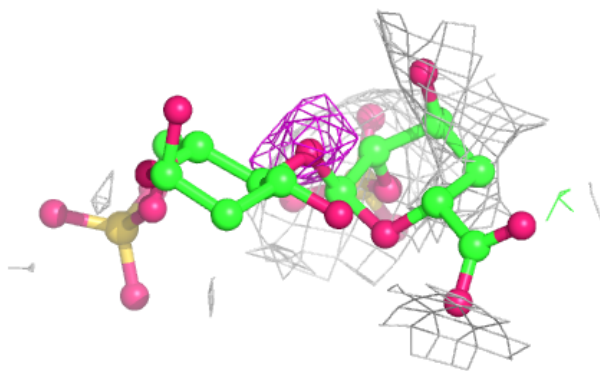
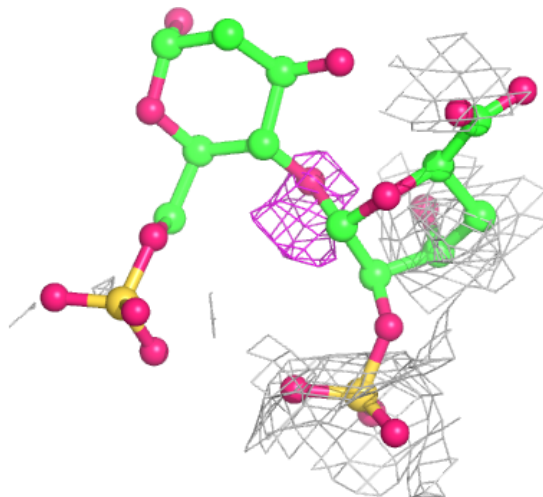
**Electron density around Chain d:**

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



**Electron density around Chain i:**

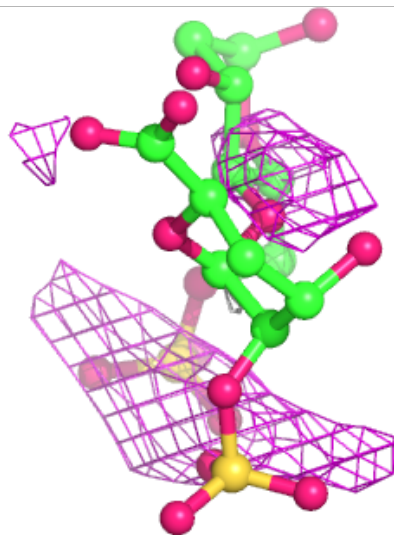
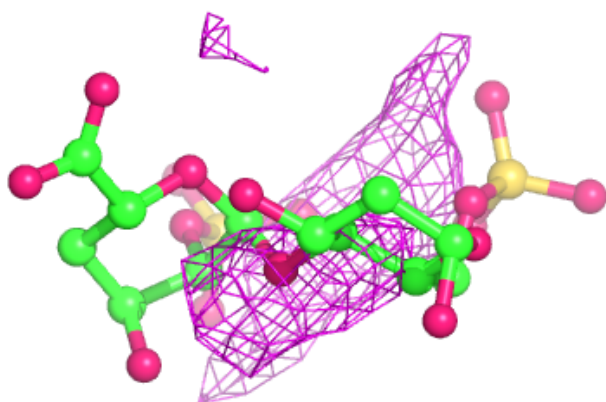
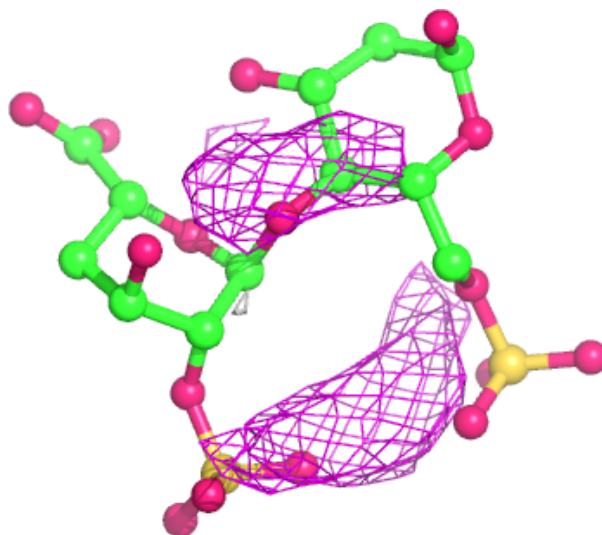
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





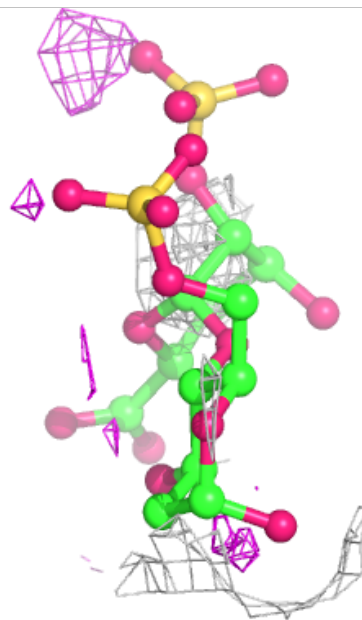
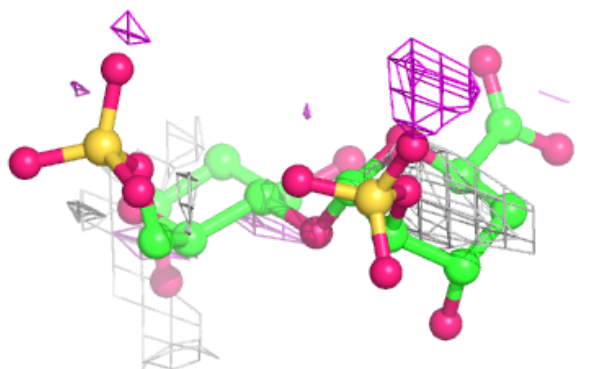
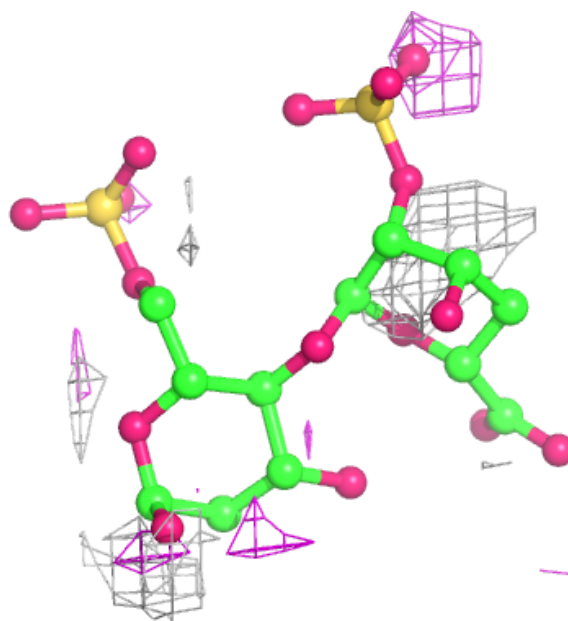
**Electron density around Chain j:**

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



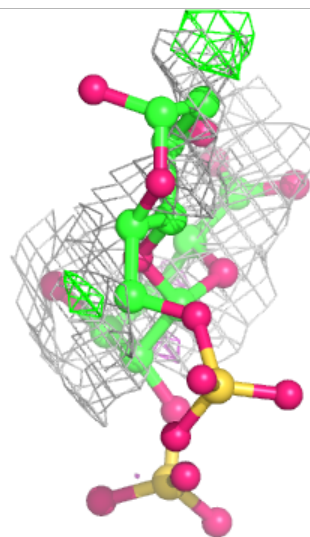
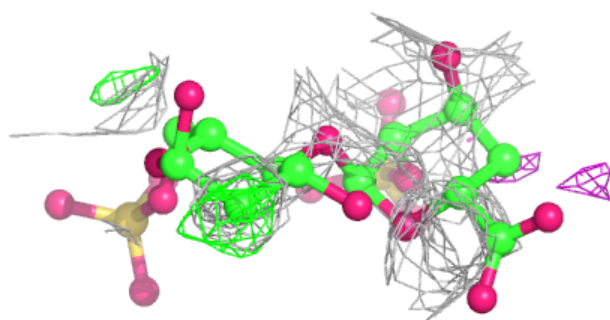
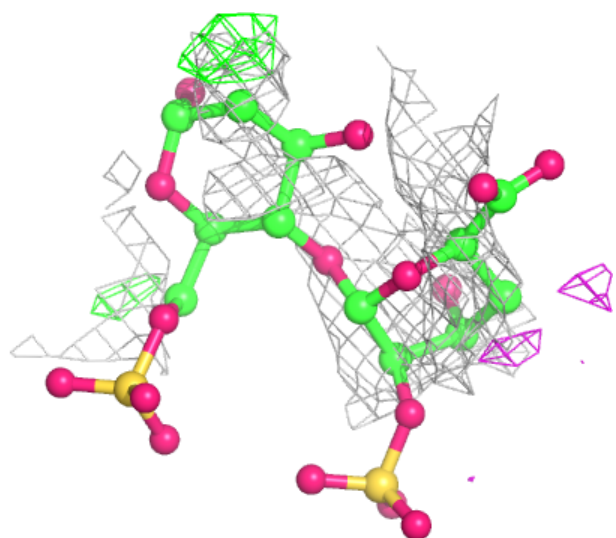
**Electron density around Chain k:**

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



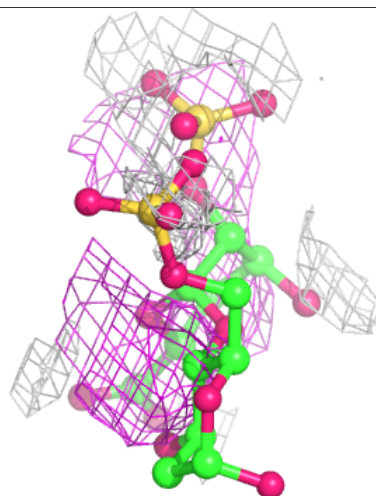
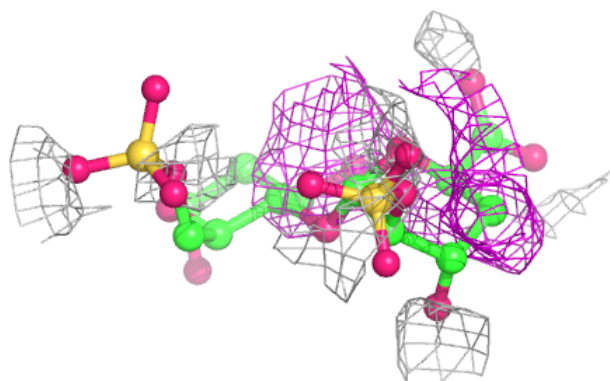
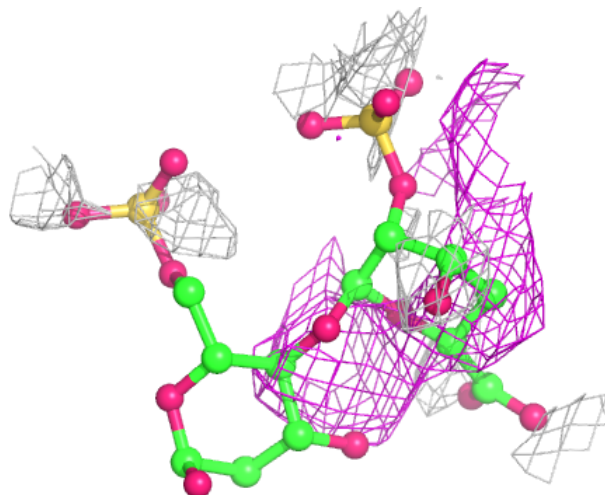
**Electron density around Chain 1:**

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



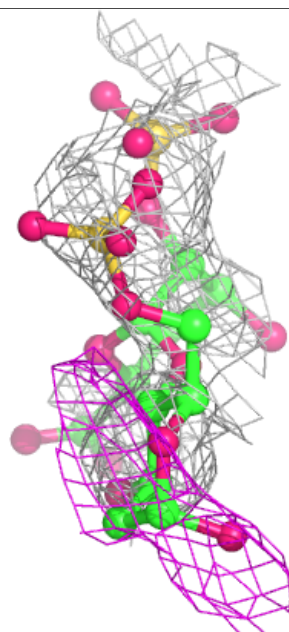
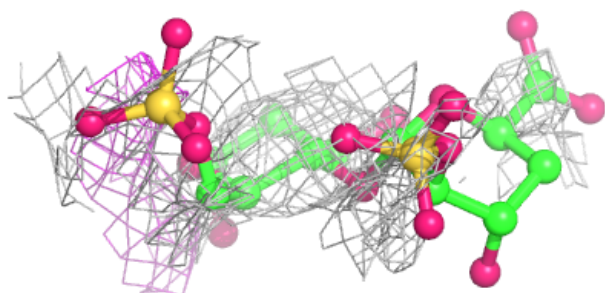
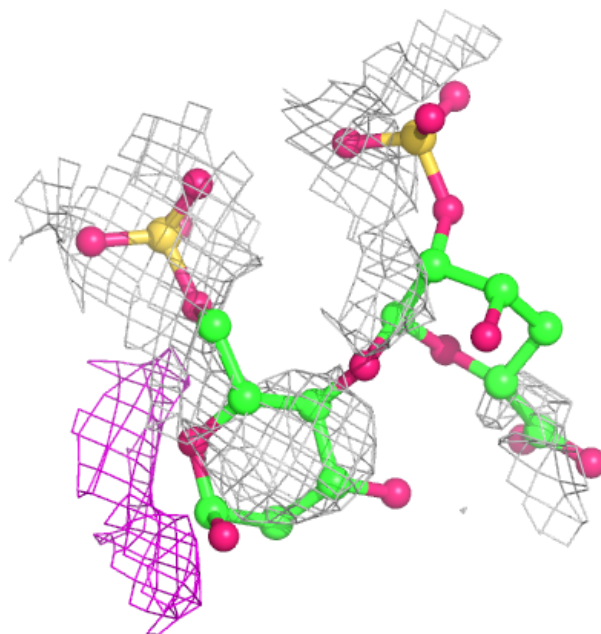
**Electron density around Chain m:**

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



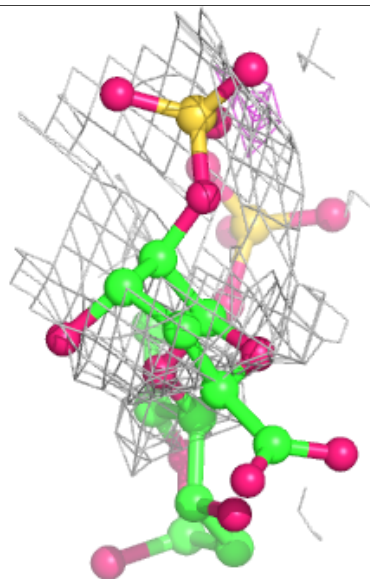
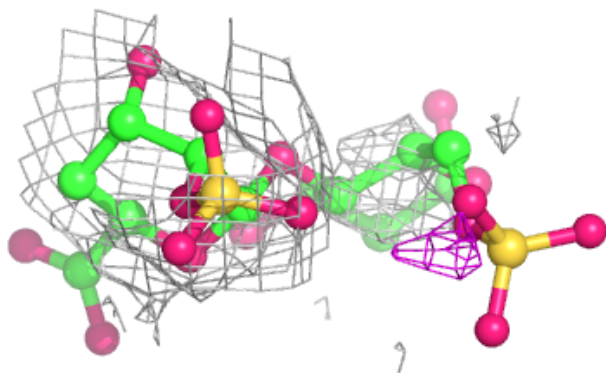
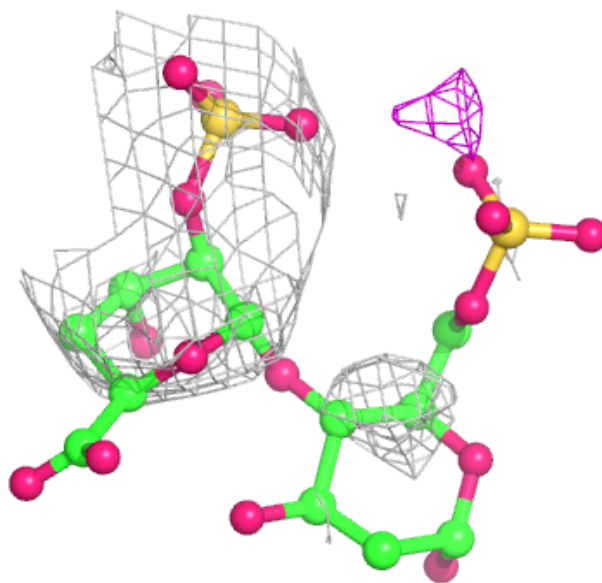
**Electron density around Chain n:**

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



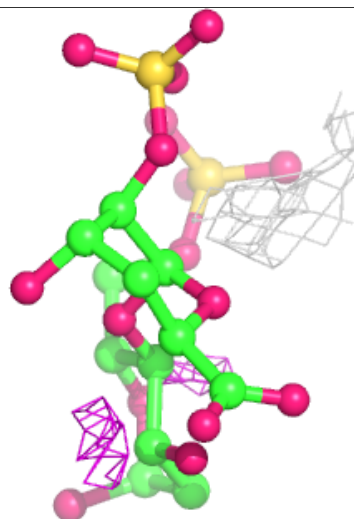
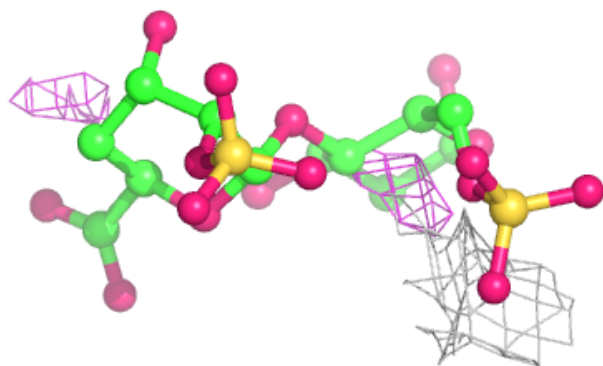
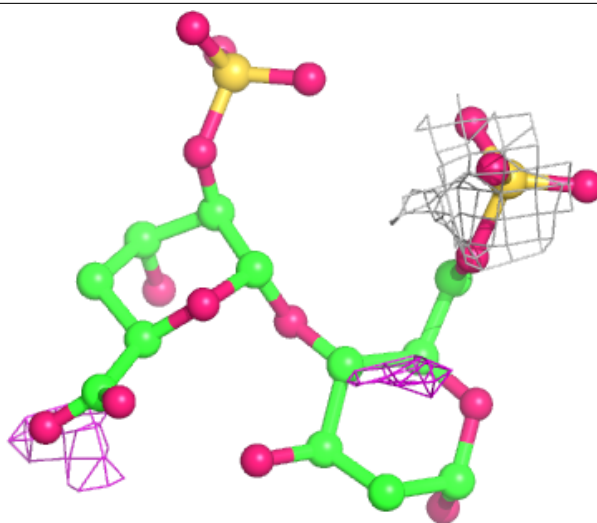
**Electron density around Chain o:**

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



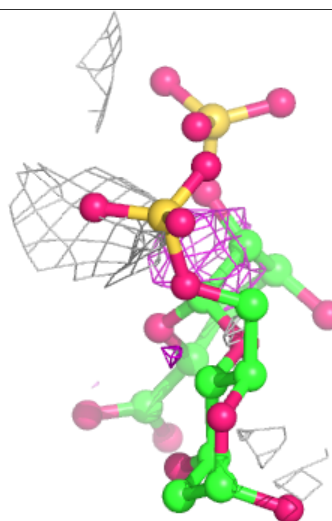
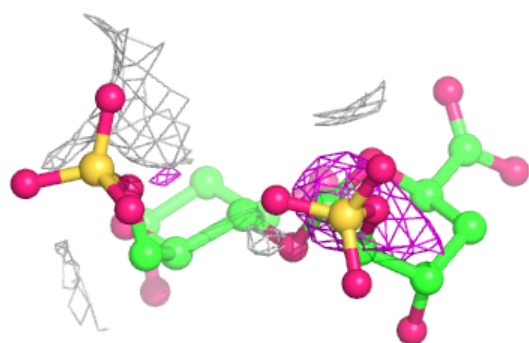
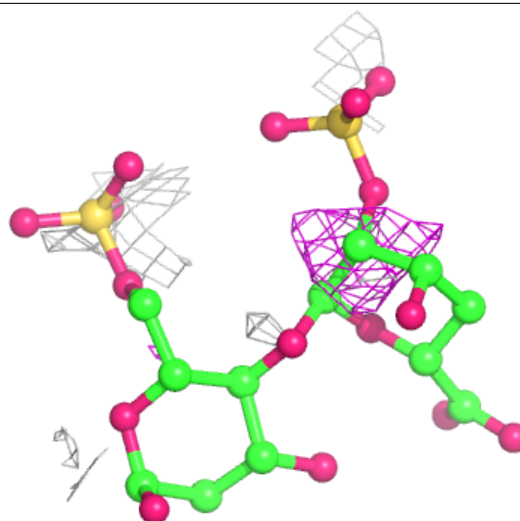
**Electron density around Chain q:**

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



**Electron density around Chain r:**

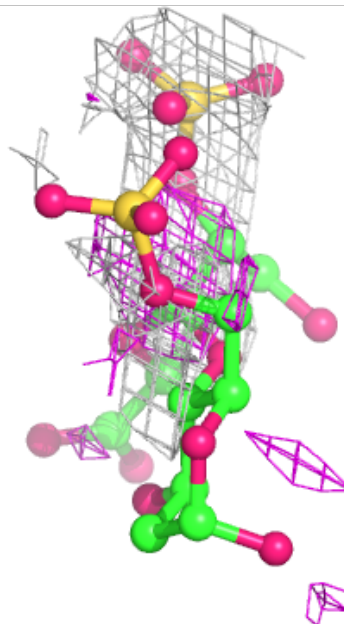
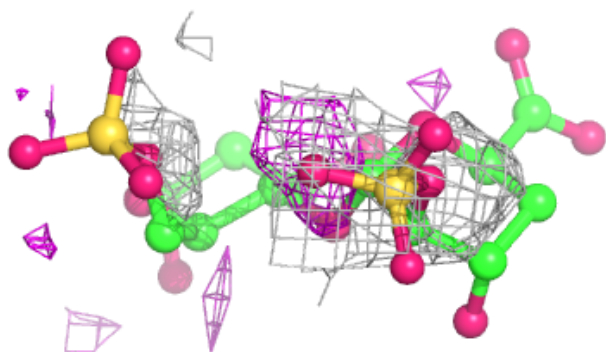
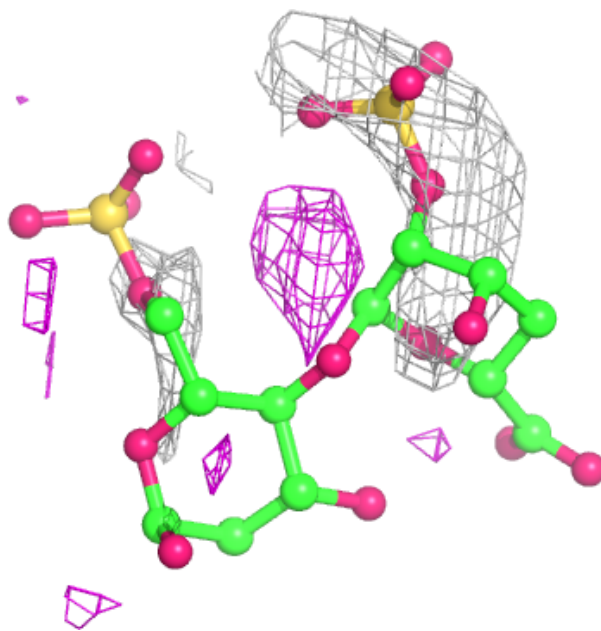
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





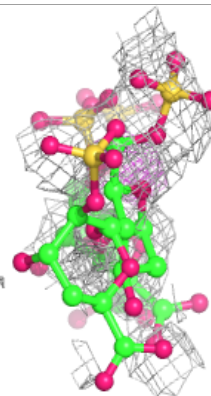
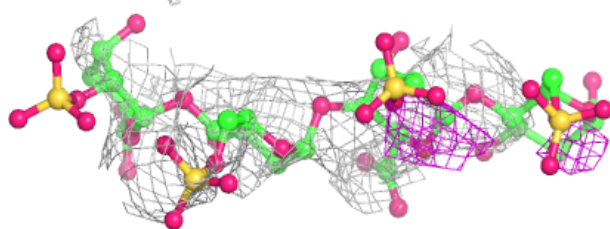
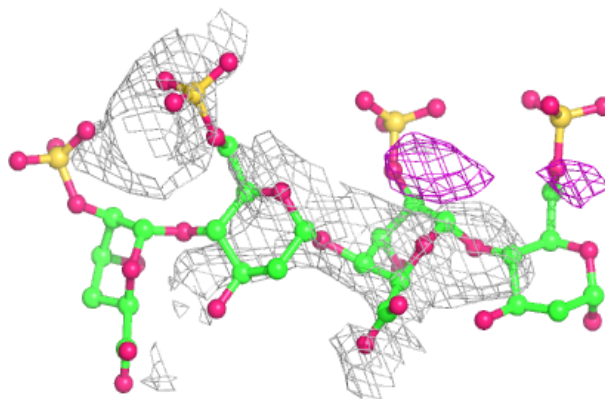
**Electron density around Chain s:**

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

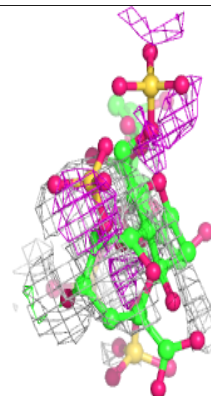
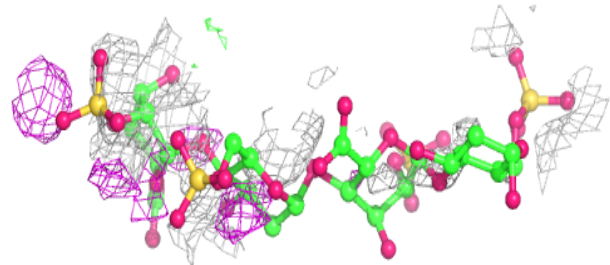
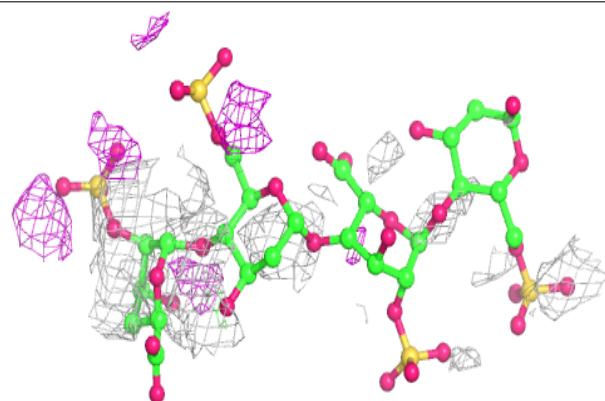


**Electron density around Chain Q:**

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

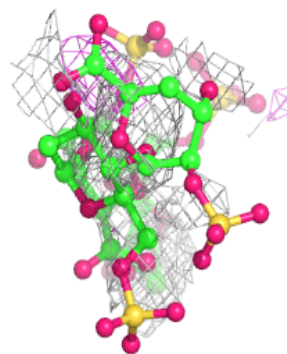
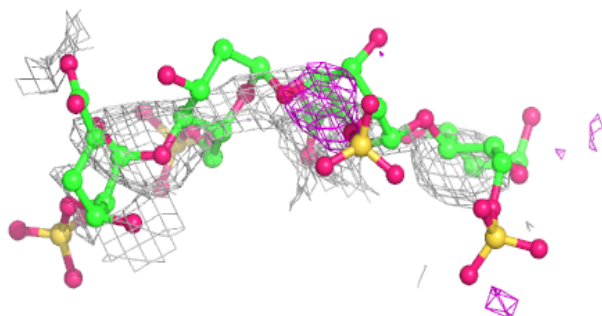
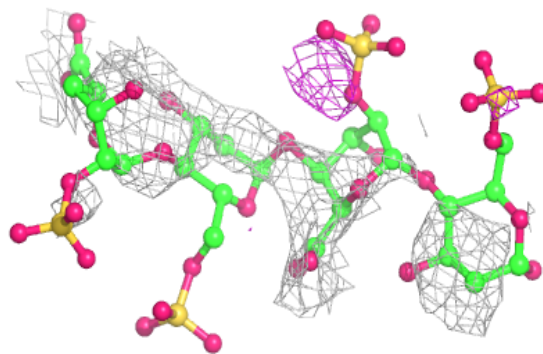
**Electron density around Chain R:**

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

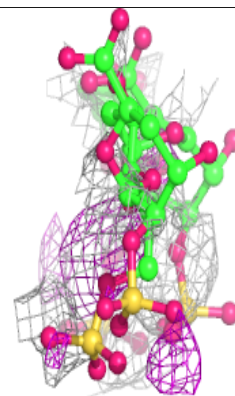
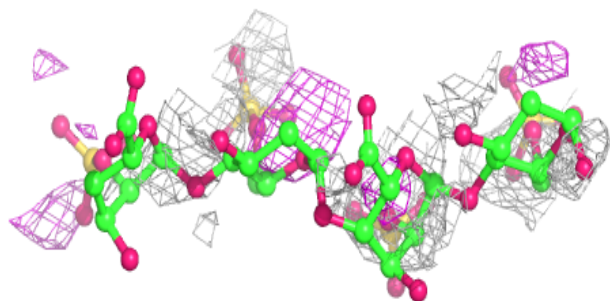
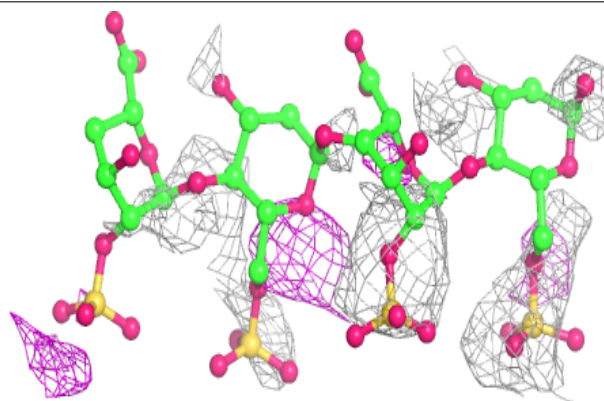


**Electron density around Chain V:**

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

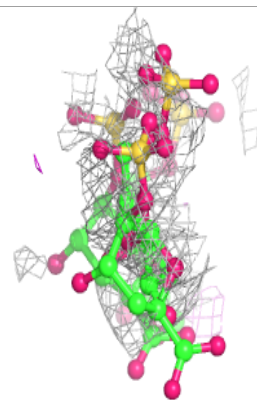
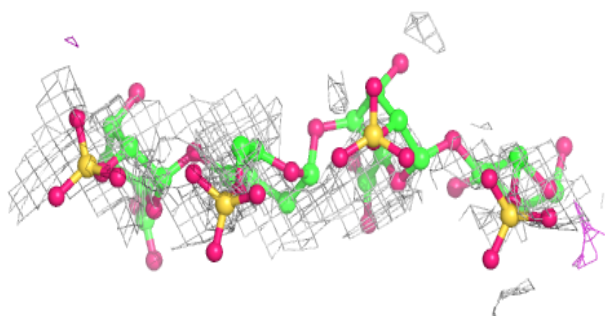
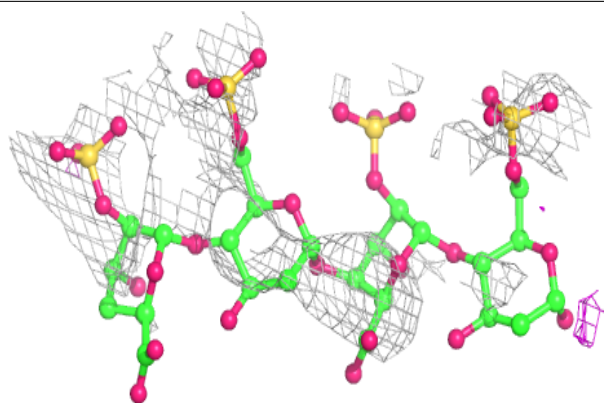
**Electron density around Chain X:**

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

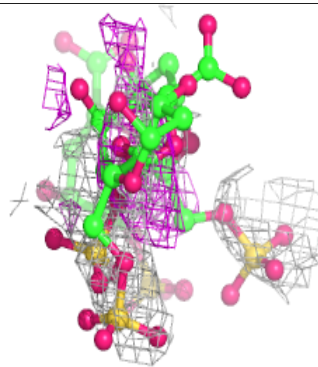
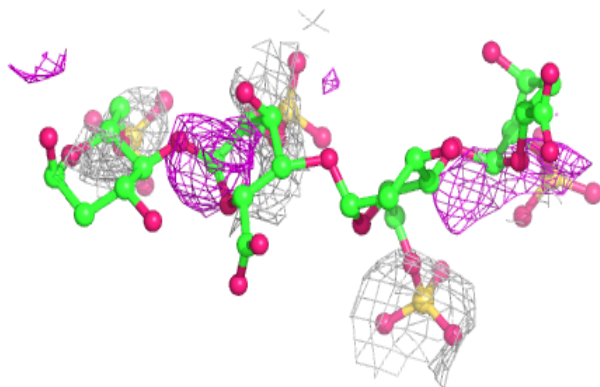
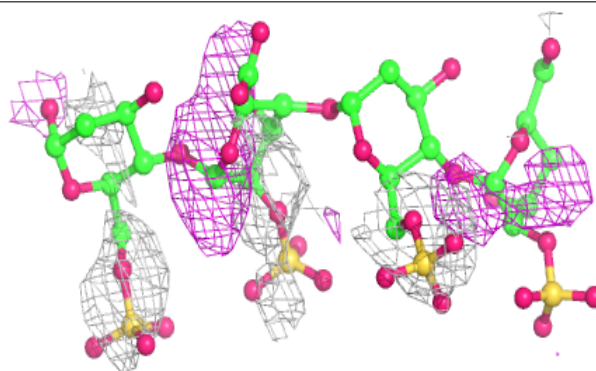


**Electron density around Chain b:**

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

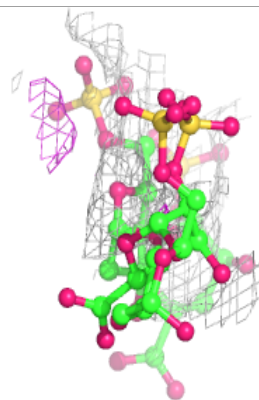
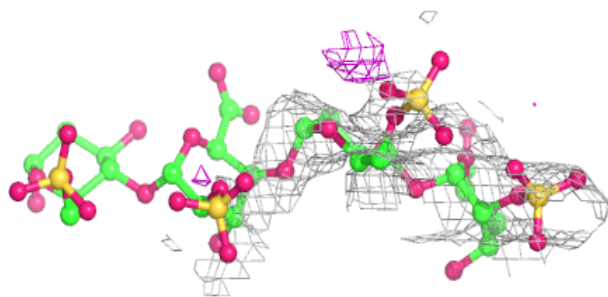
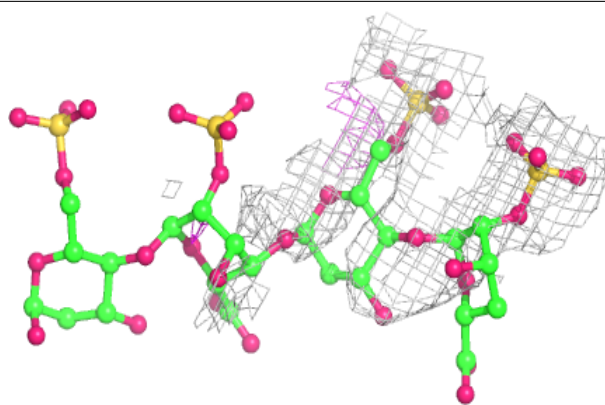
**Electron density around Chain c:**

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

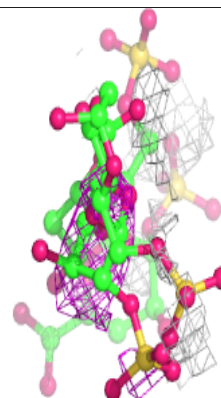
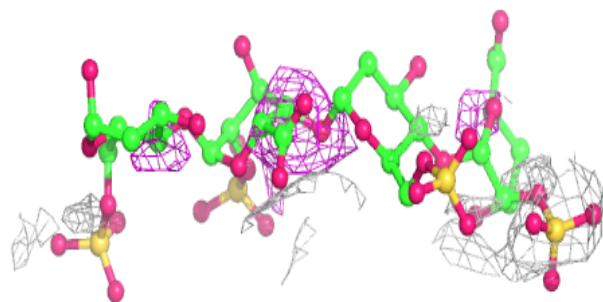
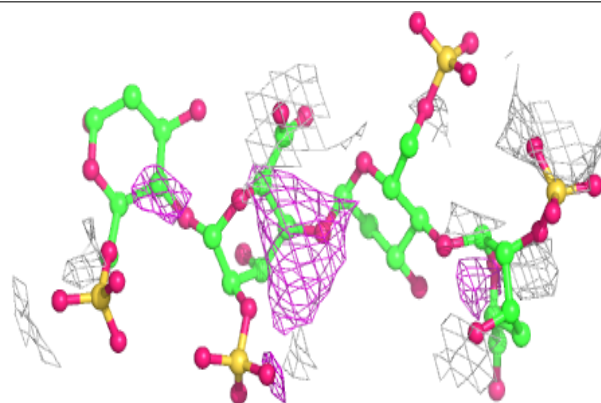


**Electron density around Chain g:**

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

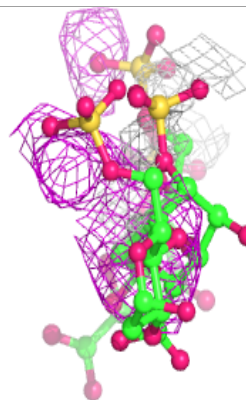
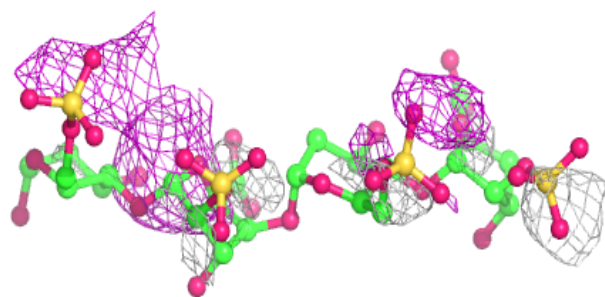
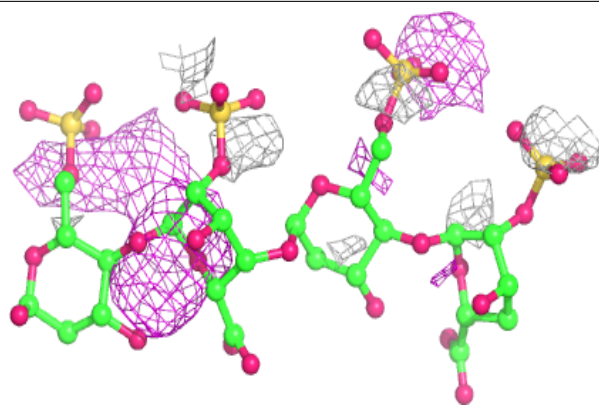
**Electron density around Chain h:**

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

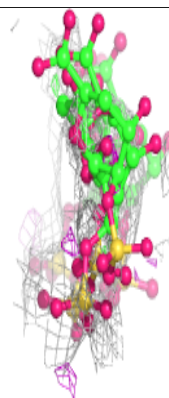
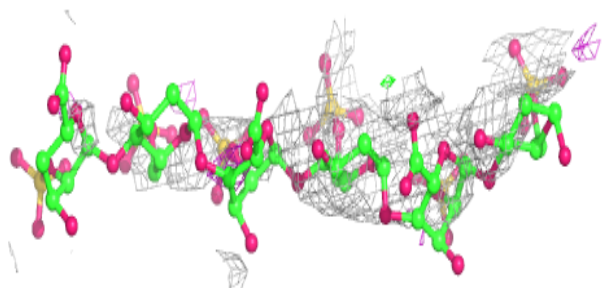
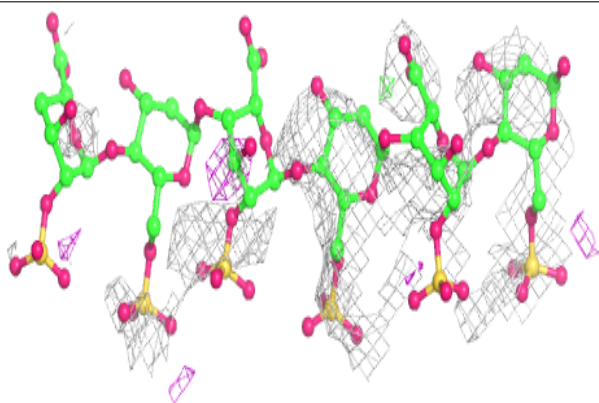


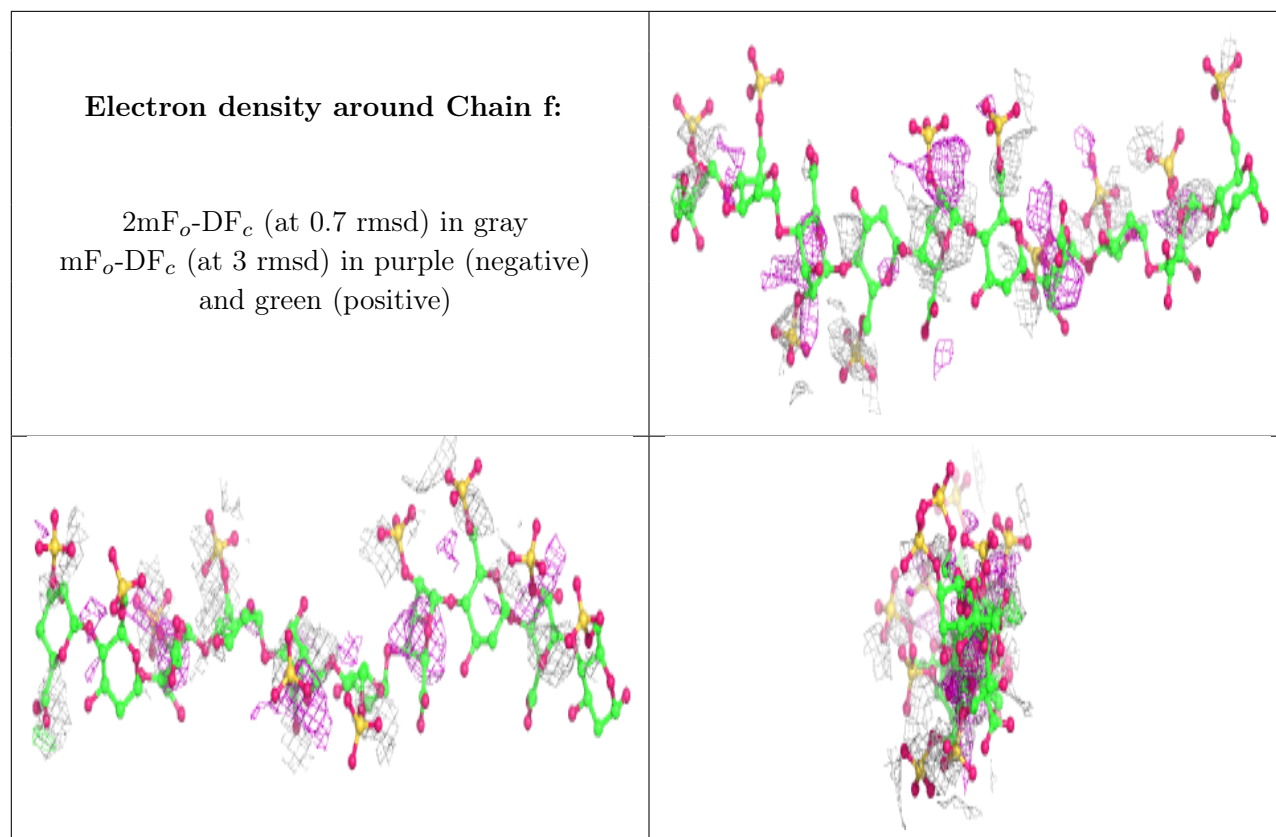
**Electron density around Chain p:**

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

**Electron density around Chain e:**

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





## 6.4 Ligands [i](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.