



Full wwPDB EM Validation Report ⓘ

Nov 17, 2022 – 01:17 AM EST

PDB ID : 7LBG
EMDB ID : EMD-23254
Title : CryoEM structure of the HCMV Trimer gHgLgO in complex with human Transforming growth factor beta receptor type 3 and neutralizing fabs 13H11 and MSL-109
Authors : Kschonsak, M.; Rouge, L.; Arthur, C.P.; Hoangdung, H.; Patel, N.; Kim, I.; Johnson, M.; Kraft, E.; Rohou, A.L.; Gill, A.; Martinez-Martin, N.; Payandeh, J.; Ciferri, C.
Deposited on : 2021-01-07
Resolution : 2.60 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

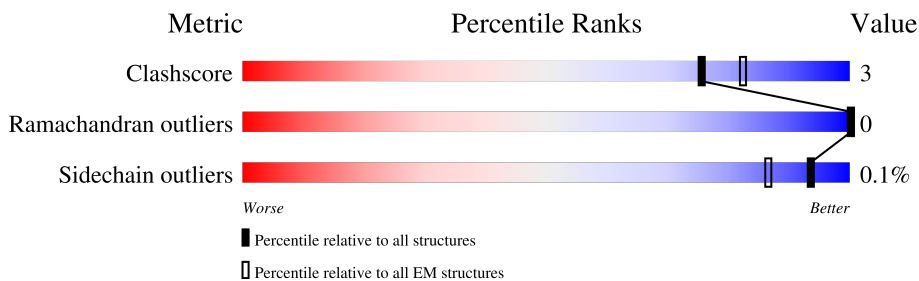
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance

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

The reported resolution of this entry is 2.60 Å.

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



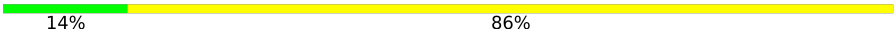
| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore | 158937 | 4297 |
| Ramachandran outliers | 154571 | 4023 |
| Sidechain outliers | 154315 | 3826 |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | A | 767 | 77% 5% 17% |
| 2 | B | 278 | 79% 5% 16% |
| 3 | C | 504 | 54% 5% 41% |
| 4 | D | 787 | 17% 80% |
| 5 | E | 237 | 42% 55% |
| 6 | F | 250 | 45% 52% |
| 7 | G | 257 | 39% 57% |
| 8 | H | 257 | 45% 5% 50% |
| 9 | I | 2 | 100% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 10 | J | 7 |  14% 86% |

2 Entry composition i

There are 11 unique types of molecules in this entry. The entry contains 14586 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Envelope glycoprotein H.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 635 | 5118 | 3283 | 867 | 944 | 24 | 0 | 0 |

There are 52 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| A | 716 | GLY | - | expression tag | UNP Q6SW67 |
| A | 717 | THR | - | expression tag | UNP Q6SW67 |
| A | 718 | LYS | - | expression tag | UNP Q6SW67 |
| A | 719 | LEU | - | expression tag | UNP Q6SW67 |
| A | 720 | GLY | - | expression tag | UNP Q6SW67 |
| A | 721 | PRO | - | expression tag | UNP Q6SW67 |
| A | 722 | GLU | - | expression tag | UNP Q6SW67 |
| A | 723 | GLN | - | expression tag | UNP Q6SW67 |
| A | 724 | LYS | - | expression tag | UNP Q6SW67 |
| A | 725 | LEU | - | expression tag | UNP Q6SW67 |
| A | 726 | ILE | - | expression tag | UNP Q6SW67 |
| A | 727 | SER | - | expression tag | UNP Q6SW67 |
| A | 728 | GLU | - | expression tag | UNP Q6SW67 |
| A | 729 | GLU | - | expression tag | UNP Q6SW67 |
| A | 730 | ASP | - | expression tag | UNP Q6SW67 |
| A | 731 | LEU | - | expression tag | UNP Q6SW67 |
| A | 732 | ASN | - | expression tag | UNP Q6SW67 |
| A | 733 | SER | - | expression tag | UNP Q6SW67 |
| A | 734 | ALA | - | expression tag | UNP Q6SW67 |
| A | 735 | VAL | - | expression tag | UNP Q6SW67 |
| A | 736 | ASP | - | expression tag | UNP Q6SW67 |
| A | 737 | GLY | - | expression tag | UNP Q6SW67 |
| A | 738 | SER | - | expression tag | UNP Q6SW67 |
| A | 739 | GLY | - | expression tag | UNP Q6SW67 |
| A | 740 | LEU | - | expression tag | UNP Q6SW67 |
| A | 741 | ASN | - | expression tag | UNP Q6SW67 |
| A | 742 | ASP | - | expression tag | UNP Q6SW67 |
| A | 743 | ILE | - | expression tag | UNP Q6SW67 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| A | 744 | PHE | - | expression tag | UNP Q6SW67 |
| A | 745 | GLU | - | expression tag | UNP Q6SW67 |
| A | 746 | ALA | - | expression tag | UNP Q6SW67 |
| A | 747 | GLN | - | expression tag | UNP Q6SW67 |
| A | 748 | LYS | - | expression tag | UNP Q6SW67 |
| A | 749 | ILE | - | expression tag | UNP Q6SW67 |
| A | 750 | GLU | - | expression tag | UNP Q6SW67 |
| A | 751 | TRP | - | expression tag | UNP Q6SW67 |
| A | 752 | HIS | - | expression tag | UNP Q6SW67 |
| A | 753 | GLU | - | expression tag | UNP Q6SW67 |
| A | 754 | ASN | - | expression tag | UNP Q6SW67 |
| A | 755 | LEU | - | expression tag | UNP Q6SW67 |
| A | 756 | TYR | - | expression tag | UNP Q6SW67 |
| A | 757 | PHE | - | expression tag | UNP Q6SW67 |
| A | 758 | GLN | - | expression tag | UNP Q6SW67 |
| A | 759 | GLY | - | expression tag | UNP Q6SW67 |
| A | 760 | HIS | - | expression tag | UNP Q6SW67 |
| A | 761 | HIS | - | expression tag | UNP Q6SW67 |
| A | 762 | HIS | - | expression tag | UNP Q6SW67 |
| A | 763 | HIS | - | expression tag | UNP Q6SW67 |
| A | 764 | HIS | - | expression tag | UNP Q6SW67 |
| A | 765 | HIS | - | expression tag | UNP Q6SW67 |
| A | 766 | HIS | - | expression tag | UNP Q6SW67 |
| A | 767 | HIS | - | expression tag | UNP Q6SW67 |

- Molecule 2 is a protein called Envelope glycoprotein L.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 2 | B | 234 | 1843 | 1174 | 320 | 341 | 8 | 0 | 0 |

- Molecule 3 is a protein called Envelope glycoprotein O.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 3 | C | 296 | 2462 | 1587 | 423 | 436 | 16 | 0 | 0 |

There are 40 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| C | 465 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 466 | SER | - | expression tag | UNP Q8BCU3 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| C | 467 | GLU | - | expression tag | UNP Q8BCU3 |
| C | 468 | ASN | - | expression tag | UNP Q8BCU3 |
| C | 469 | LEU | - | expression tag | UNP Q8BCU3 |
| C | 470 | TYR | - | expression tag | UNP Q8BCU3 |
| C | 471 | PHE | - | expression tag | UNP Q8BCU3 |
| C | 472 | GLN | - | expression tag | UNP Q8BCU3 |
| C | 473 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 474 | SER | - | expression tag | UNP Q8BCU3 |
| C | 475 | ALA | - | expression tag | UNP Q8BCU3 |
| C | 476 | TRP | - | expression tag | UNP Q8BCU3 |
| C | 477 | SER | - | expression tag | UNP Q8BCU3 |
| C | 478 | HIS | - | expression tag | UNP Q8BCU3 |
| C | 479 | PRO | - | expression tag | UNP Q8BCU3 |
| C | 480 | GLN | - | expression tag | UNP Q8BCU3 |
| C | 481 | PHE | - | expression tag | UNP Q8BCU3 |
| C | 482 | GLU | - | expression tag | UNP Q8BCU3 |
| C | 483 | LYS | - | expression tag | UNP Q8BCU3 |
| C | 484 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 485 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 486 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 487 | SER | - | expression tag | UNP Q8BCU3 |
| C | 488 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 489 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 490 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 491 | SER | - | expression tag | UNP Q8BCU3 |
| C | 492 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 493 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 494 | GLY | - | expression tag | UNP Q8BCU3 |
| C | 495 | SER | - | expression tag | UNP Q8BCU3 |
| C | 496 | ALA | - | expression tag | UNP Q8BCU3 |
| C | 497 | TRP | - | expression tag | UNP Q8BCU3 |
| C | 498 | SER | - | expression tag | UNP Q8BCU3 |
| C | 499 | HIS | - | expression tag | UNP Q8BCU3 |
| C | 500 | PRO | - | expression tag | UNP Q8BCU3 |
| C | 501 | GLN | - | expression tag | UNP Q8BCU3 |
| C | 502 | PHE | - | expression tag | UNP Q8BCU3 |
| C | 503 | GLU | - | expression tag | UNP Q8BCU3 |
| C | 504 | LYS | - | expression tag | UNP Q8BCU3 |

- Molecule 4 is a protein called Transforming growth factor beta receptor type 3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 4 | D | 156 | 1235 | 788 | 221 | 224 | 2 | 0 | 0 |

There are 6 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| D | 782 | HIS | - | expression tag | UNP Q03167 |
| D | 783 | HIS | - | expression tag | UNP Q03167 |
| D | 784 | HIS | - | expression tag | UNP Q03167 |
| D | 785 | HIS | - | expression tag | UNP Q03167 |
| D | 786 | HIS | - | expression tag | UNP Q03167 |
| D | 787 | HIS | - | expression tag | UNP Q03167 |

- Molecule 5 is a protein called Fab 13H11 light chain.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 5 | E | 106 | 798 | 506 | 132 | 157 | 3 | 0 | 0 |

- Molecule 6 is a protein called Fab 13H11 heavy chain.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 6 | F | 121 | 927 | 583 | 161 | 178 | 5 | 0 | 0 |

- Molecule 7 is a protein called Fab MSL-109 light chain.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 7 | G | 111 | 850 | 534 | 143 | 169 | 4 | 0 | 0 |

- Molecule 8 is a protein called Fab MSL-109 heavy chain.

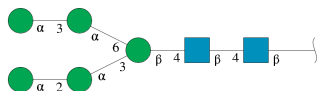
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 8 | H | 129 | 1005 | 637 | 165 | 200 | 3 | 0 | 0 |

- Molecule 9 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



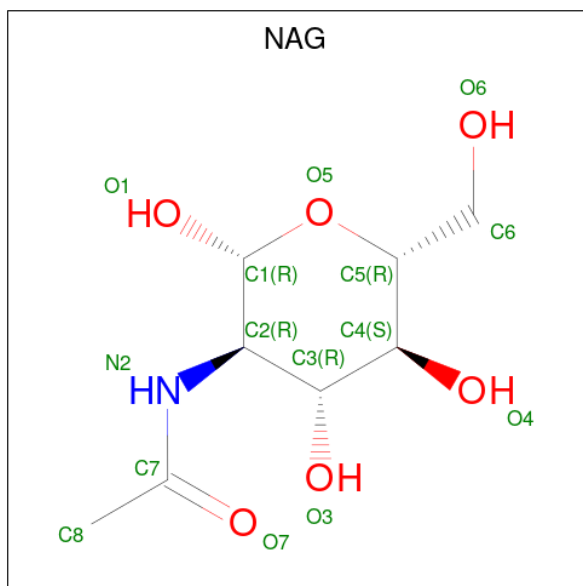
| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|----|---------|-------|
| | | | Total | C | N | O | | |
| 9 | I | 2 | 27 | 15 | 2 | 10 | 0 | 0 |

- Molecule 10 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|----|---------|-------|
| | | | Total | C | N | O | | |
| 10 | J | 7 | 83 | 46 | 2 | 35 | 0 | 0 |

- Molecule 11 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆).

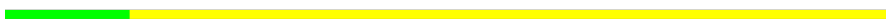


| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|----|---|----|---------|
| | | | Total | C | N | O | |
| 11 | A | 1 | 70 | 40 | 5 | 25 | 0 |

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| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|--------------|---------|---------|---------|---------|
| | | | Total | C | N | O | |
| 11 | A | 1 | Total 70 | C 40 | N 5 | O 25 | 0 |
| 11 | A | 1 | Total 70 | C 40 | N 5 | O 25 | 0 |
| 11 | A | 1 | Total 70 | C 40 | N 5 | O 25 | 0 |
| 11 | A | 1 | Total 70 | C 40 | N 5 | O 25 | 0 |
| 11 | B | 1 | Total 14 | C 8 | N 1 | O 5 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |
| 11 | C | 1 | Total 154 | C 88 | N 11 | O 55 | 0 |

Chain J:  14% 86%

| |
|------|
| MAN1 |
| MAN2 |
| MAN3 |
| MAN4 |
| MAN5 |
| MAN6 |
| MAN7 |

4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 2737199 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 50 | Depositor |
| Minimum defocus (nm) | Not provided | |
| Maximum defocus (nm) | Not provided | |
| Magnification | 165000 | Depositor |
| Image detector | GATAN K2 SUMMIT (4k x 4k) | Depositor |

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, MAN, NAG

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 | 0/5235 | 0.49 | 0/7124 |
| 2 | B | 0.26 | 0/1887 | 0.52 | 0/2576 |
| 3 | C | 0.26 | 0/2529 | 0.52 | 0/3432 |
| 4 | D | 0.25 | 0/1264 | 0.49 | 0/1717 |
| 5 | E | 0.27 | 0/816 | 0.48 | 0/1111 |
| 6 | F | 0.26 | 0/947 | 0.49 | 0/1284 |
| 7 | G | 0.26 | 0/868 | 0.50 | 0/1180 |
| 8 | H | 0.28 | 0/1030 | 0.51 | 0/1396 |
| All | All | 0.26 | 0/14576 | 0.50 | 0/19820 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 5118 | 0 | 5087 | 25 | 0 |
| 2 | B | 1843 | 0 | 1829 | 9 | 0 |
| 3 | C | 2462 | 0 | 2427 | 21 | 0 |
| 4 | D | 1235 | 0 | 1233 | 16 | 0 |
| 5 | E | 798 | 0 | 788 | 4 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 6 | F | 927 | 0 | 903 | 6 | 0 |
| 7 | G | 850 | 0 | 831 | 5 | 0 |
| 8 | H | 1005 | 0 | 942 | 7 | 0 |
| 9 | I | 27 | 0 | 24 | 4 | 0 |
| 10 | J | 83 | 0 | 70 | 0 | 0 |
| 11 | A | 70 | 0 | 65 | 0 | 0 |
| 11 | B | 14 | 0 | 13 | 0 | 0 |
| 11 | C | 154 | 0 | 143 | 3 | 0 |
| All | All | 14586 | 0 | 14355 | 90 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (90) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:C:431:ASN:HD21 | 9:I:1:NAG:C2 | 1.84 | 0.90 |
| 1:A:365:ARG:NH2 | 1:A:368:ASP:OD2 | 2.08 | 0.86 |
| 3:C:431:ASN:ND2 | 9:I:1:NAG:C2 | 2.45 | 0.79 |
| 1:A:624:CYS:SG | 1:A:625:GLU:N | 2.57 | 0.78 |
| 3:C:360:HIS:ND1 | 3:C:459:LEU:O | 2.19 | 0.74 |
| 7:G:34:LEU:O | 7:G:133:GLU:N | 2.21 | 0.73 |
| 8:H:75:ASN:ND2 | 8:H:77:ASP:OD1 | 2.29 | 0.66 |
| 9:I:1:NAG:C2 | 9:I:1:NAG:O5 | 2.43 | 0.66 |
| 1:A:222:LEU:HD23 | 6:F:56:TYR:CE1 | 2.31 | 0.66 |
| 3:C:431:ASN:ND2 | 9:I:1:NAG:O5 | 2.30 | 0.65 |
| 5:E:128:ASP:OD1 | 5:E:129:ILE:N | 2.28 | 0.65 |
| 8:H:90:ARG:NH2 | 8:H:113:ASP:OD2 | 2.31 | 0.64 |
| 1:A:537:ARG:NH1 | 1:A:661:GLN:OE1 | 2.30 | 0.64 |
| 1:A:103:GLU:OE2 | 1:A:107:ASN:ND2 | 2.30 | 0.64 |
| 1:A:84:TYR:CE2 | 1:A:85:ASN:ND2 | 2.68 | 0.62 |
| 8:H:51:THR:HG22 | 8:H:53:SER:H | 1.64 | 0.62 |
| 4:D:209:LEU:HD23 | 4:D:210:ALA:N | 2.15 | 0.62 |
| 4:D:52:CYS:SG | 4:D:198:ASN:N | 2.73 | 0.61 |
| 2:B:142:SER:O | 3:C:184:ASN:ND2 | 2.31 | 0.60 |
| 3:C:100:ARG:NH2 | 3:C:104:ILE:O | 2.36 | 0.59 |
| 1:A:56:THR:OG1 | 1:A:72:ARG:NH2 | 2.36 | 0.59 |
| 3:C:243:LYS:HA | 11:C:605:NAG:H83 | 1.85 | 0.58 |
| 8:H:47:ALA:HB2 | 8:H:52:PHE:CE2 | 2.38 | 0.58 |
| 1:A:84:TYR:CD2 | 1:A:85:ASN:ND2 | 2.71 | 0.57 |
| 7:G:61:LEU:HD22 | 7:G:99:PHE:CG | 2.39 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:D:165:ARG:O | 4:D:169:GLY:N | 2.38 | 0.56 |
| 1:A:220:ASP:N | 1:A:386:GLN:OE1 | 2.36 | 0.54 |
| 1:A:315:ASN:OD1 | 1:A:319:ARG:NH1 | 2.42 | 0.53 |
| 4:D:114:LEU:HD23 | 4:D:135:VAL:CG1 | 2.39 | 0.52 |
| 4:D:114:LEU:HD12 | 4:D:114:LEU:O | 2.11 | 0.50 |
| 2:B:61:GLU:OE1 | 2:B:62:GLY:O | 2.31 | 0.49 |
| 4:D:55:ARG:NH1 | 4:D:193:PHE:O | 2.37 | 0.49 |
| 1:A:316:SER:OG | 1:A:317:PHE:N | 2.45 | 0.49 |
| 1:A:507:LEU:HD21 | 1:A:554:ILE:HD12 | 1.95 | 0.48 |
| 1:A:134:SER:O | 1:A:270:ARG:NH2 | 2.47 | 0.48 |
| 5:E:73:ALA:O | 5:E:74:ALA:HB3 | 2.13 | 0.48 |
| 4:D:116:THR:O | 4:D:116:THR:HG23 | 2.14 | 0.48 |
| 7:G:25:ILE:HD12 | 7:G:118:GLN:OE1 | 2.14 | 0.47 |
| 1:A:183:THR:O | 1:A:361:VAL:N | 2.48 | 0.47 |
| 3:C:243:LYS:CA | 11:C:605:NAG:H83 | 2.44 | 0.47 |
| 1:A:195:CYS:N | 1:A:209:THR:O | 2.38 | 0.46 |
| 4:D:70:ARG:NH2 | 4:D:155:HIS:O | 2.49 | 0.46 |
| 7:G:78:LEU:O | 7:G:79:ALA:HB3 | 2.16 | 0.46 |
| 2:B:129:ASP:OD1 | 2:B:130:THR:N | 2.49 | 0.46 |
| 1:A:470:MET:O | 1:A:474:VAL:HG13 | 2.16 | 0.45 |
| 1:A:344:TYR:CG | 1:A:380:MET:SD | 3.09 | 0.45 |
| 3:C:196:VAL:HG12 | 3:C:197:ASP:N | 2.32 | 0.45 |
| 5:E:92:THR:O | 5:E:92:THR:HG22 | 2.16 | 0.45 |
| 4:D:70:ARG:NE | 4:D:176:GLU:OE2 | 2.43 | 0.45 |
| 7:G:36:VAL:CG1 | 7:G:106:VAL:HG21 | 2.46 | 0.45 |
| 3:C:104:ILE:HD13 | 3:C:128:ASN:HA | 1.97 | 0.44 |
| 4:D:57:THR:HA | 4:D:60:LEU:HD12 | 2.00 | 0.44 |
| 8:H:24:GLU:O | 8:H:26:GLN:OE1 | 2.35 | 0.44 |
| 2:B:92:THR:N | 2:B:93:PRO:CD | 2.80 | 0.44 |
| 3:C:88:GLN:N | 3:C:88:GLN:OE1 | 2.50 | 0.44 |
| 1:A:294:ASP:OD2 | 1:A:335:ARG:NH1 | 2.49 | 0.44 |
| 2:B:63:ASP:OD1 | 2:B:65:TYR:O | 2.35 | 0.44 |
| 2:B:141:TYR:HA | 3:C:184:ASN:OD1 | 2.17 | 0.44 |
| 3:C:346:ASP:O | 3:C:346:ASP:OD1 | 2.35 | 0.44 |
| 5:E:53:ASN:O | 5:E:54:ASN:OD1 | 2.35 | 0.44 |
| 4:D:57:THR:HG23 | 4:D:189:GLU:OE1 | 2.17 | 0.43 |
| 3:C:245:LYS:O | 3:C:249:ARG:HG3 | 2.19 | 0.43 |
| 6:F:129:SER:O | 6:F:131:VAL:N | 2.51 | 0.43 |
| 2:B:118:GLN:HB3 | 2:B:153:THR:HG23 | 1.99 | 0.43 |
| 1:A:371:ALA:O | 1:A:375:GLN:HG2 | 2.18 | 0.43 |
| 4:D:158:GLU:HG2 | 4:D:159:HIS:N | 2.34 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:103:GLU:CD | 2:B:103:GLU:H | 2.21 | 0.43 |
| 6:F:85:GLN:HA | 6:F:85:GLN:OE1 | 2.18 | 0.43 |
| 6:F:56:TYR:HB3 | 6:F:73:ILE:HD11 | 2.01 | 0.42 |
| 1:A:114:THR:HG23 | 1:A:117:ARG:H | 1.83 | 0.42 |
| 2:B:125:LEU:O | 2:B:131:ALA:HB2 | 2.19 | 0.42 |
| 4:D:114:LEU:HD23 | 4:D:135:VAL:HG13 | 2.01 | 0.42 |
| 3:C:245:LYS:HD3 | 3:C:249:ARG:NH2 | 2.35 | 0.42 |
| 6:F:60:VAL:HG12 | 6:F:61:ARG:N | 2.34 | 0.42 |
| 3:C:381:TYR:HB3 | 3:C:410:LYS:HD2 | 2.01 | 0.41 |
| 1:A:209:THR:CG2 | 1:A:255:ARG:HH12 | 2.33 | 0.41 |
| 4:D:209:LEU:HD23 | 4:D:210:ALA:C | 2.41 | 0.41 |
| 1:A:222:LEU:HD12 | 1:A:222:LEU:N | 2.36 | 0.41 |
| 1:A:451:HIS:HB2 | 1:A:490:VAL:HG13 | 2.03 | 0.41 |
| 3:C:330:TRP:O | 3:C:334:THR:HG23 | 2.20 | 0.41 |
| 4:D:129:VAL:HG22 | 4:D:149:GLU:O | 2.21 | 0.41 |
| 3:C:174:ASN:O | 3:C:253:ARG:NH1 | 2.45 | 0.41 |
| 1:A:335:ARG:O | 1:A:338:VAL:HG22 | 2.22 | 0.40 |
| 4:D:90:ILE:HD13 | 4:D:207:ASN:OD1 | 2.21 | 0.40 |
| 8:H:141:ASP:OD1 | 8:H:141:ASP:N | 2.54 | 0.40 |
| 3:C:225:VAL:HA | 3:C:228:MET:HG2 | 2.02 | 0.40 |
| 1:A:222:LEU:HD23 | 6:F:56:TYR:HE1 | 1.80 | 0.40 |
| 3:C:240:ASN:OD1 | 11:C:605:NAG:H2 | 2.22 | 0.40 |
| 3:C:329:THR:O | 3:C:333:THR:HG23 | 2.20 | 0.40 |
| 8:H:125:TYR:O | 8:H:134:SER:OG | 2.31 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

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

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|-----|-------|---------------|-----------|---------|----------|---|
| 1 | A | 621/767 (81%) | 602 (97%) | 19 (3%) | 0 | 100 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|---------|----------|-------------|-----|
| 2 | B | 230/278 (83%) | 220 (96%) | 10 (4%) | 0 | 100 | 100 |
| 3 | C | 288/504 (57%) | 279 (97%) | 9 (3%) | 0 | 100 | 100 |
| 4 | D | 152/787 (19%) | 146 (96%) | 6 (4%) | 0 | 100 | 100 |
| 5 | E | 104/237 (44%) | 96 (92%) | 8 (8%) | 0 | 100 | 100 |
| 6 | F | 119/250 (48%) | 114 (96%) | 5 (4%) | 0 | 100 | 100 |
| 7 | G | 109/257 (42%) | 106 (97%) | 3 (3%) | 0 | 100 | 100 |
| 8 | H | 127/257 (49%) | 125 (98%) | 2 (2%) | 0 | 100 | 100 |
| All | All | 1750/3337 (52%) | 1688 (96%) | 62 (4%) | 0 | 100 | 100 |

There are no Ramachandran outliers to report.

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

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 | 580/692 (84%) | 580 (100%) | 0 | 100 | 100 |
| 2 | B | 201/238 (84%) | 201 (100%) | 0 | 100 | 100 |
| 3 | C | 276/460 (60%) | 276 (100%) | 0 | 100 | 100 |
| 4 | D | 139/696 (20%) | 139 (100%) | 0 | 100 | 100 |
| 5 | E | 89/204 (44%) | 89 (100%) | 0 | 100 | 100 |
| 6 | F | 101/211 (48%) | 100 (99%) | 1 (1%) | 76 | 90 |
| 7 | G | 97/225 (43%) | 97 (100%) | 0 | 100 | 100 |
| 8 | H | 107/216 (50%) | 107 (100%) | 0 | 100 | 100 |
| All | All | 1590/2942 (54%) | 1589 (100%) | 1 (0%) | 93 | 98 |

All (1) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 6 | F | 95 | ARG |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | C | 431 | ASN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

9 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 |
| 9 | NAG | I | 1 | 9 | 12,12,15 | 0.37 | 0 | 15,15,21 | 0.62 | 0 |
| 9 | NAG | I | 2 | 9 | 14,14,15 | 0.22 | 0 | 17,19,21 | 0.68 | 1 (5%) |
| 10 | NAG | J | 1 | 3,10 | 14,14,15 | 0.39 | 0 | 17,19,21 | 0.64 | 1 (5%) |
| 10 | NAG | J | 2 | 10 | 14,14,15 | 0.42 | 0 | 17,19,21 | 0.48 | 0 |
| 10 | BMA | J | 3 | 10 | 11,11,12 | 0.55 | 0 | 15,15,17 | 1.14 | 1 (6%) |
| 10 | MAN | J | 4 | 10 | 11,11,12 | 0.62 | 0 | 15,15,17 | 1.25 | 2 (13%) |
| 10 | MAN | J | 5 | 10 | 11,11,12 | 0.71 | 1 (9%) | 15,15,17 | 1.06 | 2 (13%) |
| 10 | MAN | J | 6 | 10 | 11,11,12 | 0.69 | 0 | 15,15,17 | 1.15 | 2 (13%) |
| 10 | MAN | J | 7 | 10 | 11,11,12 | 0.81 | 1 (9%) | 15,15,17 | 1.17 | 1 (6%) |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|------------|---------|
| 9 | NAG | I | 1 | 9 | - | 0/15/15/26 | - |
| 9 | NAG | I | 2 | 9 | - | 0/6/23/26 | 0/1/1/1 |
| 10 | NAG | J | 1 | 3,10 | - | 0/6/23/26 | 0/1/1/1 |
| 10 | NAG | J | 2 | 10 | - | 1/6/23/26 | 0/1/1/1 |
| 10 | BMA | J | 3 | 10 | - | 0/2/19/22 | 0/1/1/1 |
| 10 | MAN | J | 4 | 10 | - | 0/2/19/22 | 0/1/1/1 |
| 10 | MAN | J | 5 | 10 | - | 1/2/19/22 | 0/1/1/1 |
| 10 | MAN | J | 6 | 10 | - | 1/2/19/22 | 0/1/1/1 |
| 10 | MAN | J | 7 | 10 | - | 0/2/19/22 | 0/1/1/1 |

All (2) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 10 | J | 7 | MAN | C1-C2 | 2.25 | 1.57 | 1.52 |
| 10 | J | 5 | MAN | C1-C2 | 2.05 | 1.56 | 1.52 |

All (10) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 10 | J | 4 | MAN | C1-O5-C5 | 3.10 | 116.40 | 112.19 |
| 10 | J | 4 | MAN | O2-C2-C3 | -2.60 | 104.94 | 110.14 |
| 10 | J | 6 | MAN | O2-C2-C3 | -2.45 | 105.24 | 110.14 |
| 10 | J | 6 | MAN | C1-O5-C5 | 2.36 | 115.39 | 112.19 |
| 10 | J | 1 | NAG | C1-O5-C5 | 2.36 | 115.38 | 112.19 |
| 10 | J | 5 | MAN | O2-C2-C3 | -2.30 | 105.52 | 110.14 |
| 10 | J | 7 | MAN | O2-C2-C3 | -2.29 | 105.56 | 110.14 |
| 9 | I | 2 | NAG | C1-O5-C5 | 2.25 | 115.24 | 112.19 |
| 10 | J | 3 | BMA | C1-O5-C5 | 2.19 | 115.15 | 112.19 |
| 10 | J | 5 | MAN | C1-O5-C5 | 2.09 | 115.03 | 112.19 |

There are no chirality outliers.

All (3) torsion outliers are listed below:

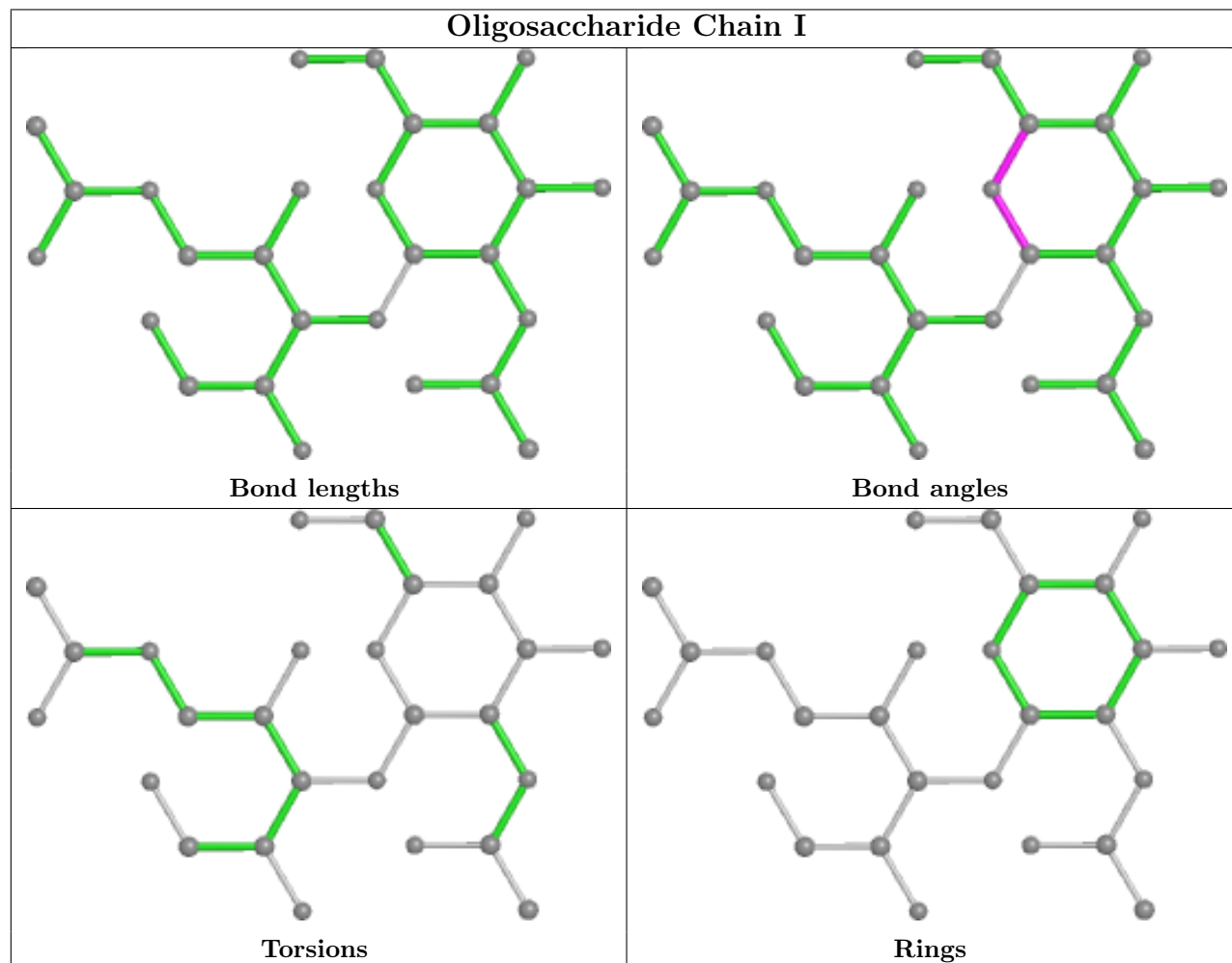
| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 10 | J | 5 | MAN | O5-C5-C6-O6 |
| 10 | J | 6 | MAN | O5-C5-C6-O6 |
| 10 | J | 2 | NAG | O5-C5-C6-O6 |

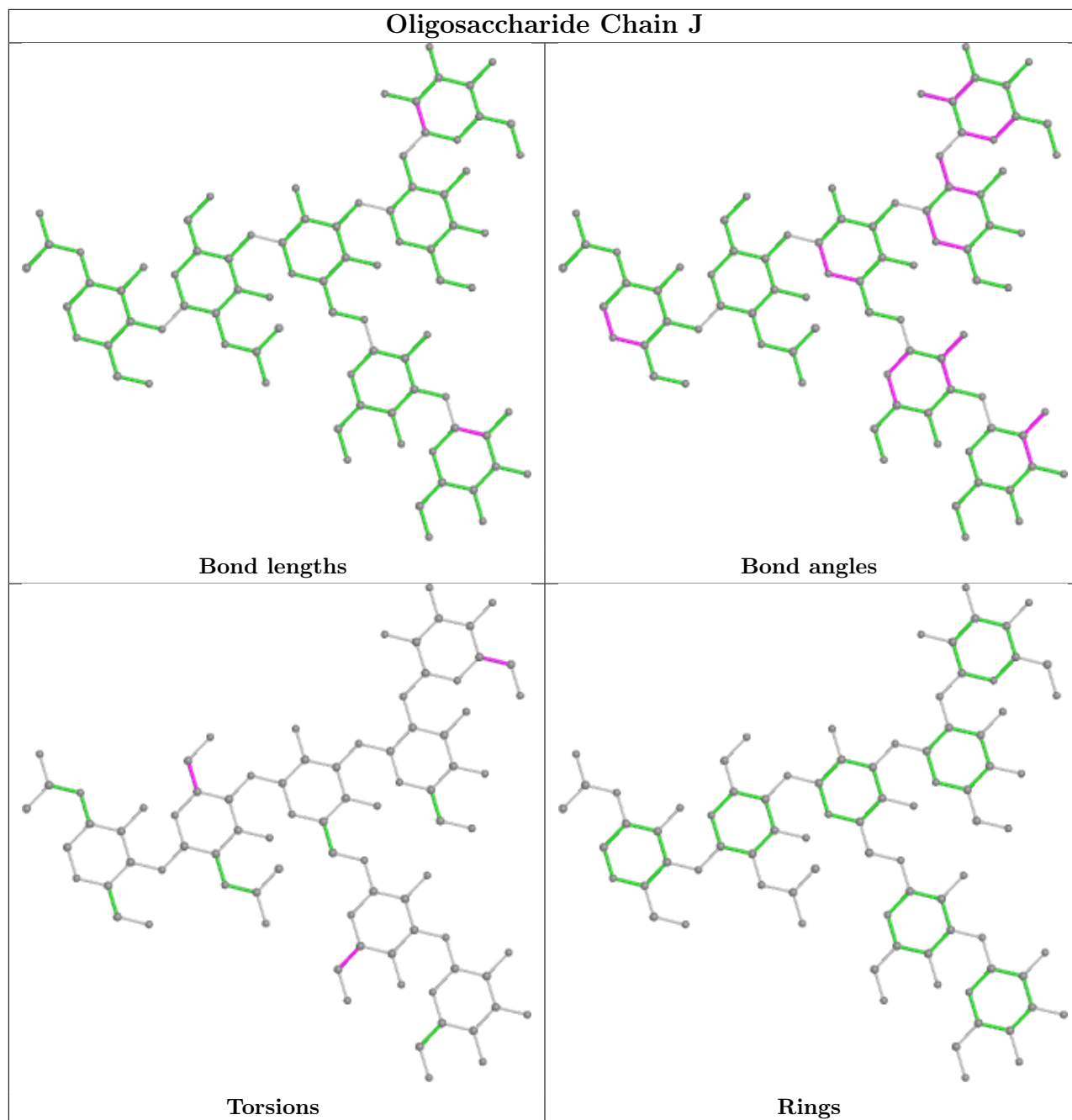
There are no ring outliers.

1 monomer is involved in 4 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 9 | I | 1 | NAG | 4 | 0 |

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





5.6 Ligand geometry [i](#)

17 ligands are modelled in this entry.

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 11 | NAG | A | 804 | 1 | 14,14,15 | 0.20 | 0 | 17,19,21 | 0.56 | 0 |
| 11 | NAG | C | 601 | 3 | 14,14,15 | 0.23 | 0 | 17,19,21 | 0.64 | 1 (5%) |
| 11 | NAG | A | 802 | 1 | 14,14,15 | 0.26 | 0 | 17,19,21 | 0.68 | 1 (5%) |
| 11 | NAG | C | 610 | 3 | 14,14,15 | 0.30 | 0 | 17,19,21 | 0.67 | 1 (5%) |
| 11 | NAG | C | 605 | 3 | 14,14,15 | 0.58 | 0 | 17,19,21 | 1.18 | 1 (5%) |
| 11 | NAG | C | 609 | 3 | 14,14,15 | 0.21 | 0 | 17,19,21 | 0.60 | 0 |
| 11 | NAG | C | 606 | 3 | 14,14,15 | 0.25 | 0 | 17,19,21 | 0.69 | 1 (5%) |
| 11 | NAG | C | 602 | 3 | 14,14,15 | 0.19 | 0 | 17,19,21 | 0.53 | 0 |
| 11 | NAG | C | 611 | 3 | 14,14,15 | 0.28 | 0 | 17,19,21 | 0.39 | 0 |
| 11 | NAG | C | 604 | 3 | 14,14,15 | 0.27 | 0 | 17,19,21 | 0.53 | 0 |
| 11 | NAG | C | 603 | 3 | 14,14,15 | 0.36 | 0 | 17,19,21 | 0.82 | 1 (5%) |
| 11 | NAG | B | 301 | 2 | 14,14,15 | 0.29 | 0 | 17,19,21 | 0.49 | 0 |
| 11 | NAG | A | 803 | 1 | 14,14,15 | 0.17 | 0 | 17,19,21 | 0.52 | 0 |
| 11 | NAG | C | 607 | 3 | 14,14,15 | 0.31 | 0 | 17,19,21 | 0.93 | 1 (5%) |
| 11 | NAG | C | 608 | 3 | 14,14,15 | 0.18 | 0 | 17,19,21 | 0.57 | 0 |
| 11 | NAG | A | 801 | 1 | 14,14,15 | 0.27 | 0 | 17,19,21 | 0.51 | 0 |
| 11 | NAG | A | 805 | 1 | 14,14,15 | 0.41 | 0 | 17,19,21 | 0.42 | 0 |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 11 | NAG | A | 804 | 1 | - | 2/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 601 | 3 | - | 0/6/23/26 | 0/1/1/1 |
| 11 | NAG | A | 802 | 1 | - | 2/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 610 | 3 | - | 1/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 605 | 3 | - | 1/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 609 | 3 | - | 3/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 606 | 3 | - | 1/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 602 | 3 | - | 3/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 611 | 3 | - | 0/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 604 | 3 | - | 2/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 603 | 3 | - | 2/6/23/26 | 0/1/1/1 |
| 11 | NAG | B | 301 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 11 | NAG | A | 803 | 1 | - | 0/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 607 | 3 | - | 0/6/23/26 | 0/1/1/1 |
| 11 | NAG | C | 608 | 3 | - | 0/6/23/26 | 0/1/1/1 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 11 | NAG | A | 801 | 1 | - | 0/6/23/26 | 0/1/1/1 |
| 11 | NAG | A | 805 | 1 | - | 1/6/23/26 | 0/1/1/1 |

There are no bond length outliers.

All (7) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|------|-------------|----------|
| 11 | C | 605 | NAG | C1-O5-C5 | 4.63 | 118.47 | 112.19 |
| 11 | C | 607 | NAG | C1-O5-C5 | 3.29 | 116.65 | 112.19 |
| 11 | C | 603 | NAG | C1-O5-C5 | 3.12 | 116.42 | 112.19 |
| 11 | A | 802 | NAG | C1-O5-C5 | 2.50 | 115.59 | 112.19 |
| 11 | C | 606 | NAG | C1-O5-C5 | 2.41 | 115.46 | 112.19 |
| 11 | C | 610 | NAG | C1-O5-C5 | 2.32 | 115.33 | 112.19 |
| 11 | C | 601 | NAG | C1-O5-C5 | 2.30 | 115.31 | 112.19 |

There are no chirality outliers.

All (20) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 11 | C | 602 | NAG | O5-C5-C6-O6 |
| 11 | B | 301 | NAG | O5-C5-C6-O6 |
| 11 | A | 805 | NAG | O5-C5-C6-O6 |
| 11 | C | 609 | NAG | C4-C5-C6-O6 |
| 11 | C | 604 | NAG | O5-C5-C6-O6 |
| 11 | A | 802 | NAG | C4-C5-C6-O6 |
| 11 | C | 609 | NAG | O5-C5-C6-O6 |
| 11 | A | 802 | NAG | O5-C5-C6-O6 |
| 11 | C | 602 | NAG | C4-C5-C6-O6 |
| 11 | C | 603 | NAG | C4-C5-C6-O6 |
| 11 | A | 804 | NAG | C3-C2-N2-C7 |
| 11 | C | 602 | NAG | C3-C2-N2-C7 |
| 11 | C | 604 | NAG | C3-C2-N2-C7 |
| 11 | C | 605 | NAG | C3-C2-N2-C7 |
| 11 | C | 606 | NAG | C3-C2-N2-C7 |
| 11 | C | 609 | NAG | C3-C2-N2-C7 |
| 11 | C | 610 | NAG | C3-C2-N2-C7 |
| 11 | C | 603 | NAG | O5-C5-C6-O6 |
| 11 | B | 301 | NAG | C4-C5-C6-O6 |
| 11 | A | 804 | NAG | O5-C5-C6-O6 |

There are no ring outliers.

1 monomer is involved in 3 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 11 | C | 605 | NAG | 3 | 0 |

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-23254. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal surface views

This section was not generated.

6.5 Mask visualisation

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

7 Map analysis

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

7.1 Map-value distribution

This section was not generated.

7.2 Volume estimate versus contour level

This section was not generated.

7.3 Rotationally averaged power spectrum

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit

This section was not generated.