# W O R L D W I D E
# wwPDB
## P R O T E I N   D A T A   B A N K

# Full wwPDB X-ray Structure Validation Report (i)

Mar 9, 2026 – 10:28 AM JST

|  |  |  |
|---|---|---|
| PDB ID | : | 9VBW / pdb_00009vbw |
| Title | : | Lectin FRIL from Lablab purpureus complexed to Lewis X tetrasaccharide |
| Authors | : | Nguyen, V.H.T.; Chen, T.H.; Chen, X.; Liu, Y.M.; Ma, C. |
| Deposited on | : | 2025-06-05 |
| Resolution | : | 2.49 Å(reported) |

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

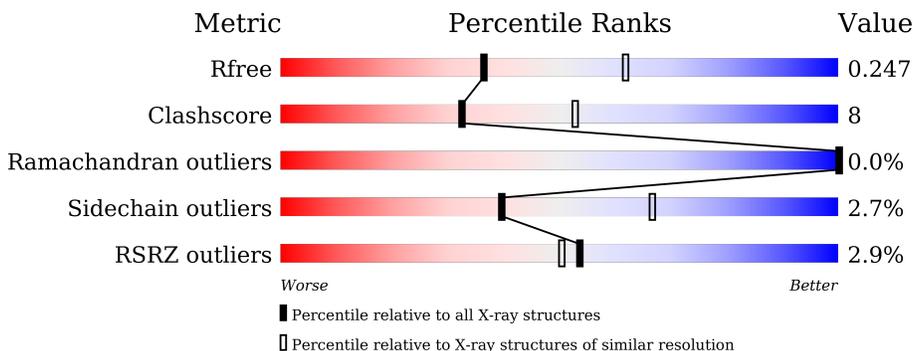|  |  |  |
|---|---|---|
| MolProbity | : | 4-5-2 with Phenix2.0 |
| Mogul | : | 1.8.5 (274361), CSD as541be (2020) |
| Xtriage (Phenix) | : | 2.0 |
| EDS | : | 3.0 |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| CCP4 | : | 9.0.010 (Gargrove) |
| Density-Fitness | : | 1.0.12 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.48.1 |

# 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 2.49 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.
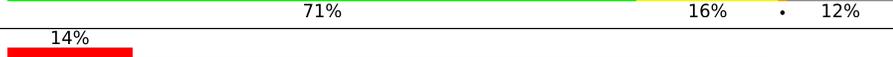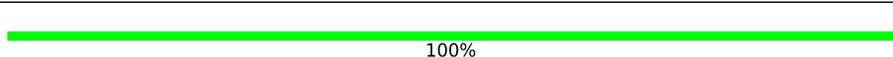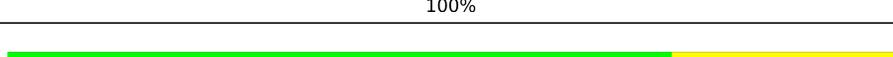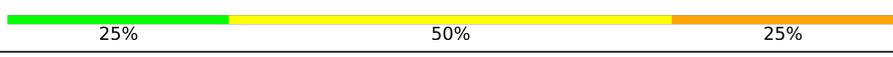
| Metric | Percentile Ranks | Value |
|---|---|---|
| Rfree | | 0.247 |
| Clashscore | | 8 |
| Ramachandran outliers | | 0.0% |
| Sidechain outliers | | 2.7% |
| RSRZ outliers | | 2.9% |

*Worse* — *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|---|---|---|
| R$_{free}$ | 164625 | 5504 (2.50-2.50) |
| Clashscore | 180529 | 6282 (2.50-2.50) |
| Ramachandran outliers | 177936 | 6191 (2.50-2.50) |
| Sidechain outliers | 177891 | 6193 (2.50-2.50) |
| RSRZ outliers | 164620 | 5504 (2.50-2.50) |

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 >=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 <=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 | 264 | 2% — 70% / 17% • 12% |
| 1 | B | 264 | 2% — 66% / 20% • 11% |
| 1 | C | 264 | 4% — 66% / 22% • 11% |
| 1 | D | 264 | 2% — 71% / 17% 12% |
| 1 | E | 264 | % — 68% / 20% • 11% |
| 1 | F | 264 | 3% — 70% / 18% 11% |

*Continued from previous page...*

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | G | 264 | %  75%  13%  12% |
| 1 | H | 264 | 69%  18%  12% |
| 1 | I | 264 | 2%  72%  15%  12% |
| 1 | J | 264 | %  71%  16%  12% |
| 1 | K | 264 | 14%  62%  24%  11% |
| 1 | L | 264 | 5%  66%  21%  11% |
| 1 | M | 264 | %  73%  14%  12% |
| 1 | N | 264 | %  73%  14%  12% |
| 1 | O | 264 | 2%  72%  16%  11% |
| 1 | P | 264 | 2%  69%  18%  12% |
| 2 | a | 4 | 100% |
| 2 | b | 4 | 50%  50% |
| 2 | c | 4 | 50%  50% |
| 2 | d | 4 | 100% |
| 2 | e | 4 | 100% |
| 2 | f | 4 | 75%  25% |
| 2 | g | 4 | 25%  50%  25% |
| 2 | h | 4 | 100% |
| 2 | i | 4 | 75%  25% |
| 2 | j | 4 | 100% |
| 2 | k | 4 | 25%  50%  25% |
| 2 | l | 4 | 100% |
| 2 | m | 4 | 100% |
| 2 | n | 4 | 75%  25% |
| 2 | o | 4 | 100% |
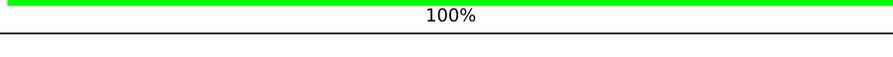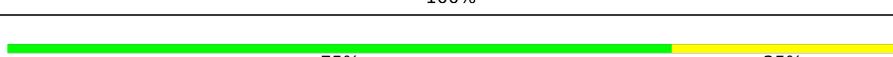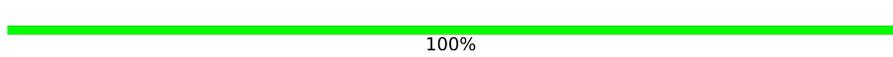
*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 2 | p | 4 | 75% 25% |

# 2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 30738 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 Flt3 receptor-interacting lectin.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---------|---------|-------|
| 1 | A | 233 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1817 | 1160 | 301 | 356 | | | |
| 1 | E | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |
| 1 | C | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |
| 1 | G | 232 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1812 | 1157 | 300 | 355 | | | |
| 1 | I | 232 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1812 | 1157 | 300 | 355 | | | |
| 1 | M | 232 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1812 | 1157 | 300 | 355 | | | |
| 1 | H | 232 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1812 | 1157 | 300 | 355 | | | |
| 1 | D | 233 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1817 | 1160 | 301 | 356 | | | |
| 1 | J | 232 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1812 | 1157 | 300 | 355 | | | |
| 1 | P | 232 | Total | C | N | O | 0 | 1 | 0 |
| | | | 1823 | 1163 | 304 | 356 | | | |
| 1 | L | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |
| 1 | O | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |
| 1 | B | 234 | Total | C | N | O | 0 | 1 | 0 |
| | | | 1830 | 1167 | 304 | 359 | | | |
| 1 | F | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |
| 1 | N | 233 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1817 | 1160 | 301 | 356 | | | |
| 1 | K | 234 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1822 | 1163 | 302 | 357 | | | |

There are 48 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| A | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| A | 195 | THR | SER | variant | UNP Q9ZTA9 |
| A | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| E | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| E | 195 | THR | SER | variant | UNP Q9ZTA9 |
| E | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| C | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| C | 195 | THR | SER | variant | UNP Q9ZTA9 |
| C | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| G | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| G | 195 | THR | SER | variant | UNP Q9ZTA9 |
| G | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| I | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| I | 195 | THR | SER | variant | UNP Q9ZTA9 |
| I | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| M | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| M | 195 | THR | SER | variant | UNP Q9ZTA9 |
| M | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| H | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| H | 195 | THR | SER | variant | UNP Q9ZTA9 |
| H | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| D | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| D | 195 | THR | SER | variant | UNP Q9ZTA9 |
| D | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| J | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| J | 195 | THR | SER | variant | UNP Q9ZTA9 |
| J | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| P | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| P | 195 | THR | SER | variant | UNP Q9ZTA9 |
| P | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| L | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| L | 195 | THR | SER | variant | UNP Q9ZTA9 |
| L | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| O | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| O | 195 | THR | SER | variant | UNP Q9ZTA9 |
| O | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| B | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| B | 195 | THR | SER | variant | UNP Q9ZTA9 |
| B | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| F | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| F | 195 | THR | SER | variant | UNP Q9ZTA9 |
| F | 198 | PRO | ALA | variant | UNP Q9ZTA9 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| N | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| N | 195 | THR | SER | variant | UNP Q9ZTA9 |
| N | 198 | PRO | ALA | variant | UNP Q9ZTA9 |
| K | 33 | LEU | VAL | variant | UNP Q9ZTA9 |
| K | 195 | THR | SER | variant | UNP Q9ZTA9 |
| K | 198 | PRO | ALA | variant | UNP Q9ZTA9 |

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



| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---------|---------|-------|
| 2 | a | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | e | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | c | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | g | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | i | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | m | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | h | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | d | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | j | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | n | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | p | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | l | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | o | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 2 | k | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | b | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |
| 2 | f | 4 | Total 47 | C 26 | N 1 | O 20 | 0 | 0 | 0 |

- Molecule 3 is CALCIUM ION (CCD ID: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|---|---|---|---|---|---|---|
| 3 | A | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | E | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | C | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | G | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | I | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | M | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | H | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | D | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | J | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | P | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | L | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | O | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | B | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | F | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | N | 1 | Total 1 | Ca 1 | 0 | 0 |
| 3 | K | 1 | Total 1 | Ca 1 | 0 | 0 |

- Molecule 4 is MANGANESE (II) ION (CCD ID: MN) (formula: Mn) (labeled as "Ligand of Interest" by depositor).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---------|---------|
| 4 | A | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | E | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | C | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | G | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | I | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | M | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | H | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | D | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | J | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | P | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | L | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | O | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | B | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | F | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | N | 1 | Total 1 | Mn 1 | 0 | 0 |
| 4 | K | 1 | Total 1 | Mn 1 | 0 | 0 |

- Molecule 5 is water.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---------|---------|
| 5 | A | 50 | Total 50 | O 50 | 0 | 0 |
| 5 | E | 46 | Total 46 | O 46 | 0 | 0 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-------|---------|---------|
| 5 | C | 51 | Total 51 | O 51 | 0 | 0 |
| 5 | G | 63 | Total 63 | O 63 | 0 | 0 |
| 5 | I | 45 | Total 45 | O 45 | 0 | 0 |
| 5 | M | 74 | Total 74 | O 74 | 0 | 0 |
| 5 | H | 66 | Total 66 | O 66 | 0 | 0 |
| 5 | D | 58 | Total 58 | O 58 | 0 | 0 |
| 5 | J | 79 | Total 79 | O 79 | 0 | 0 |
| 5 | P | 41 | Total 41 | O 41 | 0 | 0 |
| 5 | L | 45 | Total 45 | O 45 | 0 | 0 |
| 5 | O | 51 | Total 51 | O 51 | 0 | 0 |
| 5 | B | 44 | Total 44 | O 44 | 0 | 0 |
| 5 | F | 42 | Total 42 | O 42 | 0 | 0 |
| 5 | N | 78 | Total 78 | O 78 | 0 | 0 |
| 5 | K | 25 | Total 25 | O 25 | 0 | 0 |

# 3 Residue-property plots ⓘ

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

• Molecule 1: Flt3 receptor-interacting lectin

Chain A:

• Molecule 1: Flt3 receptor-interacting lectin

Chain E:

• Molecule 1: Flt3 receptor-interacting lectin

Chain C:

• Molecule 1: Flt3 receptor-interacting lectin

Chain G:



• Molecule 1: Flt3 receptor-interacting lectin

Chain I:



• Molecule 1: Flt3 receptor-interacting lectin

Chain M:



• Molecule 1: Flt3 receptor-interacting lectin

Chain H:



• Molecule 1: Flt3 receptor-interacting lectin

Chain D:

ALA S131 N151 I155 W170 H181 Y184 N185 S186 V187 V193 Y196 S200 K201 P202 L211 W218 V219 R220 T235 V236 L245 N248 V249 A250 LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain J:

71% 16% 12%

A1 Q21 T27 L31 Q32 L33 P42 A47 G48 R49 V50 D61 V64 L65 T66 Y80 T81 I92 V98 I99 H102 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN THR THR THR LYS ALA ALA S131 S132 N133 V134 Y147 W172 Q173

N174 T179 A180 H181 S186 R190 V193 T194 T195 K201 T204 L205 S206 E217 W218 V219 R220 L223 K231 E232 R233 V236 S243 W246 T247 N248 V249 ALA LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain P:

2%

69% 18% 12%

A1 Q2 S7 K10 F11 D12 Q15 L18 H23 T27 N28 N29 V30 L31 Q32 L33 T34 K35 G40 N41 P42 V43 S44 R49 V50 R57 L58 W59 A63 T66 P79 P95 I99 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN

THR THR LYS ALA ALA S131 P150 N151 Y152 I155 V159 K169 W170 D171 A178 S186 R190 Y196 Y197 P202 S206 Y207 D208 L211 E217 W218 V219 R220 L223 D230 K231 E232 R233 N234 T235 V236 S240 T247 N248 V249 ALA LYS LYS

GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain L:

5%

66% 21% 11%

A1 K10 F11 D12 D17 L18 I19 F20 Q21 S26 T27 N28 N29 V30 L31 T34 P42 V43 S44 A47 G48 R49 V50 L51 R57 D61 S62 A63 T66 T70 I84 A85 D86 G87 P95 I99 H102 G103 G104 A112 N113 THR LEU ASN ASN

SER SER THR SER GLU ASN GLN THR THR THR LYS ALA A130 S131 V134 N144 Y147 G148 I155 A168 K169 W170 T179 A180 H181 S186 K189 V193 T194 T195 Y196 P202 A203 T204 L205 D208 I209 E210 R220 V221 G222 L223 S226 T227 G228 K231

T235 V236 F241 T247 N248 V249 A250 LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain O:

2%

72% 16% 11%

A1 Q2 F11 D12 P13 N14 Q15 E16 D17 L18 Q21 G22 H23 A24 T25 S26 N29 V30 L31 T34 K35 S44 A47 G48 R49 V50 R57 L58 W59 E60 D61 L65 T66 Y80 T81 S82 P95 I99 H102 N113 THR LEU ASN ASN SER SER THR

SER GLU ASN GLN THR THR THR LYS A129 A178 S186 V187 R190 T194 Y197 T204 D208 H212 E217 R220 T235 V236 T247 N248 V249 ALA LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain B:

2%

66%          20%      11%

A1 Q2 S7 F8 T9 N14 T27 L31 Q32 L33 T34 S44 A47 G48 R49 V50 A54 R57 E60 D61 T66 L88 A89 F90 F91 I92 A93 P94 P95 I99 H102 A112 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN THR THR

THR LYS A129 A130 S131 R163 A178 S186 K189 R190 L191 Y196 Y197 S200 K201 P202 S206 Y207 D208 I209 E210 L211 V219 R220 V221 G222 L223 S224 A225 S226 T227 G228 Q229 D230 K231 E232 R233 N234 T235 V236 S240 F241 T242 S243 N248 V249 ALA LYS LYS GLU

ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain F:

3%

70%          18%      11%

A1 Q2 S7 F8 T9 K10 F11 D12 Q15 E16 D17 L18 T27 L31 Q32 L33 A47 G48 R49 V50 S53 A54 R57 V64 L65 T66 R83 I84 A85 D86 P94 I99 H102 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN THR THR

THR LYS A129 A130 N133 V134 K169 W170 D171 W172 Q173 K176 I177 A178 N185 S186 V187 S188 K189 R190 Y196 Y197 S206 Y207 D208 I209 E210 E217 R220 Q229 D230 T235 V249 ALA LYS LYS ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain N:

%

73%          14%      12%

A1 K10 F11 D12 Q15 E16 D17 L18 T27 L31 Q32 L33 T34 K35 L36 A47 G48 R49 V50 L56 V64 L65 T66 N73 A85 D86 P95 I99 H102 A112 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN THR THR THR LYS ALA

ALA S131 R163 H181 S186 V193 V219 R220 V236 H237 S238 S243 W246 T247 N248 V249 A250 LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 1: Flt3 receptor-interacting lectin

Chain K:

14%

62%          24%      11%

A1 Q2 F11 D12 Q15 L18 G22 S26 N29 V30 L31 Q32 L33 T34 K35 V43 S44 S45 S46 A47 G48 R49 V50 L56 R57 E60 D61 S62 T66 E75 I76 S82 R83 I84 A85 D86 P95 I99 S100 Y101 H102 G103 G104 F105 L106 G107

L108 F109 P110 N111 A112 N113 THR LEU ASN ASN SER SER THR SER GLU ASN GLN THR THR THR LYS A129 A130 S131 S132 N133 V134 T141 Y142 L143 N144 P145 D146 Y147 G148 N151 T167 A168 A178 H181 I182 S186 R190 L191 S192 V193 Y197 L205 D208

L211 V219 R220 S224 A225 S226 T227 G228 Q229 D230 N234 T235 V236 T242 N248 V249 ALA LYS LYS GLU ASN GLU ASN LYS TYR ILE THR ARG GLY VAL LEU

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain a:　　　　　100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain e:　　　　　100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain c:　　　　　50%　　　　　50%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain g:　　25%　　　　50%　　　　25%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain i:　　　　　75%　　　　　25%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain m:　　　　　100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain h: 100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain d: 100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain j: 100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain n: 75% 25%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain p: 75% 25%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain l: 100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain o:

100%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain k:

25%　　　　50%　　　　25%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain b:

50%　　　　50%

MAN1 NAG2 FUC3 GAL4

• Molecule 2: alpha-L-fucopyranose-(1-3)-[beta-D-galactopyranose-(1-4)]2-acetamido-2-deoxy-beta-D-glucopyranose-(1-2)-alpha-D-mannopyranose

Chain f:

75%　　　　25%

MAN1 NAG2 FUC3 GAL4

# 4 Data and refinement statistics (i)

| Property | Value | Source |
|---|---|---|
| Space group | P 1 21 1 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 121.83Å    75.24Å    241.81Å<br>90.00°    95.97°    90.00° | Depositor |
| Resolution (Å) | 29.14  –  2.49<br>29.14  –  2.49 | Depositor<br>EDS |
| % Data completeness<br>(in resolution range) | 83.5 (29.14-2.49)<br>83.5 (29.14-2.49) | Depositor<br>EDS |
| $R_{merge}$ | 0.08 | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| $< I/\sigma(I) >$ [1] | 2.20 (at 2.48Å) | Xtriage |
| Refinement program | PHENIX (1.14_3260: ???) | Depositor |
| R, $R_{free}$ | 0.207  ,  0.246<br>0.206  ,  0.247 | Depositor<br>DCC |
| $R_{free}$ test set | 2000 reflections (1.30%) | wwPDB-VP |
| Wilson B-factor (Å$^2$) | 38.9 | Xtriage |
| Anisotropy | 0.036 | Xtriage |
| Bulk solvent $k_{sol}$(e/Å$^3$), $B_{sol}$(Å$^2$) | 0.32 , 39.3 | EDS |
| L-test for twinning[2] | $< |L| > = 0.46, < L^2 > = 0.29$ | Xtriage |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| $F_o,F_c$ correlation | 0.94 | EDS |
| Total number of atoms | 30738 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 41.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 53.82 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.9897e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

---

[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ 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: NAG, MN, GAL, FUC, CA, MAN

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 | 0.18 | 0/1867 | 0.47 | 0/2554 |
| 1 | B | 0.19 | 0/1880 | 0.50 | 0/2572 |
| 1 | C | 0.27 | 1/1872 (0.1%) | 0.54 | 1/2561 (0.0%) |
| 1 | D | 0.18 | 0/1867 | 0.48 | 0/2554 |
| 1 | E | 0.18 | 0/1872 | 0.46 | 0/2561 |
| 1 | F | 0.20 | 0/1872 | 0.48 | 0/2561 |
| 1 | G | 0.17 | 0/1862 | 0.48 | 0/2547 |
| 1 | H | 0.18 | 0/1862 | 0.48 | 0/2547 |
| 1 | I | 0.18 | 0/1862 | 0.47 | 0/2547 |
| 1 | J | 0.19 | 0/1862 | 0.53 | 0/2547 |
| 1 | K | 0.22 | 0/1872 | 0.53 | 0/2561 |
| 1 | L | 0.26 | 0/1872 | 0.54 | 0/2561 |
| 1 | M | 0.18 | 0/1862 | 0.49 | 0/2547 |
| 1 | N | 0.18 | 0/1867 | 0.47 | 0/2554 |
| 1 | O | 0.19 | 0/1872 | 0.50 | 0/2561 |
| 1 | P | 0.21 | 0/1873 | 0.52 | 0/2561 |
| All | All | 0.20 | 1/29896 (0.0%) | 0.50 | 1/40896 (0.0%) |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-----|-------------|----------|
| 1 | C | 231 | LYS | CG-CD | -6.51 | 1.32 | 1.52 |

All (1) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 1 | C | 231 | LYS | N-CA-C | 5.32 | 116.88 | 108.96 |

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts ⓘ

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | A | 1817 | 0 | 1744 | 32 | 0 |
| 1 | B | 1830 | 0 | 1754 | 42 | 0 |
| 1 | C | 1822 | 0 | 1749 | 45 | 1 |
| 1 | D | 1817 | 0 | 1744 | 27 | 0 |
| 1 | E | 1822 | 0 | 1749 | 33 | 0 |
| 1 | F | 1822 | 0 | 1749 | 33 | 0 |
| 1 | G | 1812 | 0 | 1739 | 22 | 0 |
| 1 | H | 1812 | 0 | 1738 | 32 | 0 |
| 1 | I | 1812 | 0 | 1738 | 23 | 1 |
| 1 | J | 1812 | 0 | 1738 | 26 | 0 |
| 1 | K | 1822 | 0 | 1749 | 42 | 1 |
| 1 | L | 1822 | 0 | 1749 | 34 | 1 |
| 1 | M | 1812 | 0 | 1738 | 20 | 1 |
| 1 | N | 1817 | 0 | 1744 | 21 | 1 |
| 1 | O | 1822 | 0 | 1749 | 26 | 1 |
| 1 | P | 1823 | 0 | 1750 | 36 | 1 |
| 2 | a | 47 | 0 | 42 | 0 | 0 |
| 2 | b | 47 | 0 | 42 | 2 | 0 |
| 2 | c | 47 | 0 | 42 | 4 | 0 |
| 2 | d | 47 | 0 | 42 | 0 | 0 |
| 2 | e | 47 | 0 | 42 | 0 | 0 |
| 2 | f | 47 | 0 | 42 | 0 | 0 |
| 2 | g | 47 | 0 | 42 | 2 | 0 |
| 2 | h | 47 | 0 | 42 | 0 | 0 |
| 2 | i | 47 | 0 | 42 | 0 | 0 |
| 2 | j | 47 | 0 | 42 | 0 | 0 |
| 2 | k | 47 | 0 | 42 | 4 | 0 |
| 2 | l | 47 | 0 | 42 | 0 | 0 |
| 2 | m | 47 | 0 | 42 | 0 | 0 |
| 2 | n | 47 | 0 | 42 | 0 | 0 |
| 2 | o | 47 | 0 | 42 | 0 | 0 |
| 2 | p | 47 | 0 | 42 | 0 | 0 |
| 3 | A | 1 | 0 | 0 | 0 | 0 |
| 3 | B | 1 | 0 | 0 | 0 | 0 |
| 3 | C | 1 | 0 | 0 | 0 | 0 |
| 3 | D | 1 | 0 | 0 | 0 | 0 |
| 3 | E | 1 | 0 | 0 | 0 | 0 |

*Continued on next page...*

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

*Continued from previous page...*

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3 | F | 1 | 0 | 0 | 0 | 0 |
| 3 | G | 1 | 0 | 0 | 0 | 0 |
| 3 | H | 1 | 0 | 0 | 0 | 0 |
| 3 | I | 1 | 0 | 0 | 0 | 0 |
| 3 | J | 1 | 0 | 0 | 0 | 0 |
| 3 | K | 1 | 0 | 0 | 0 | 0 |
| 3 | L | 1 | 0 | 0 | 0 | 0 |
| 3 | M | 1 | 0 | 0 | 0 | 0 |
| 3 | N | 1 | 0 | 0 | 0 | 0 |
| 3 | O | 1 | 0 | 0 | 0 | 0 |
| 3 | P | 1 | 0 | 0 | 0 | 0 |
| 4 | A | 1 | 0 | 0 | 0 | 0 |
| 4 | B | 1 | 0 | 0 | 0 | 0 |
| 4 | C | 1 | 0 | 0 | 0 | 0 |
| 4 | D | 1 | 0 | 0 | 0 | 0 |
| 4 | E | 1 | 0 | 0 | 0 | 0 |
| 4 | F | 1 | 0 | 0 | 0 | 0 |
| 4 | G | 1 | 0 | 0 | 0 | 0 |
| 4 | H | 1 | 0 | 0 | 0 | 0 |
| 4 | I | 1 | 0 | 0 | 0 | 0 |
| 4 | J | 1 | 0 | 0 | 0 | 0 |
| 4 | K | 1 | 0 | 0 | 0 | 0 |
| 4 | L | 1 | 0 | 0 | 0 | 0 |
| 4 | M | 1 | 0 | 0 | 0 | 0 |
| 4 | N | 1 | 0 | 0 | 0 | 0 |
| 4 | O | 1 | 0 | 0 | 0 | 0 |
| 4 | P | 1 | 0 | 0 | 0 | 0 |
| 5 | A | 50 | 0 | 0 | 4 | 0 |
| 5 | B | 44 | 0 | 0 | 4 | 0 |
| 5 | C | 51 | 0 | 0 | 1 | 0 |
| 5 | D | 58 | 0 | 0 | 3 | 0 |
| 5 | E | 46 | 0 | 0 | 1 | 0 |
| 5 | F | 42 | 0 | 0 | 0 | 0 |
| 5 | G | 63 | 0 | 0 | 2 | 0 |
| 5 | H | 66 | 0 | 0 | 1 | 0 |
| 5 | I | 45 | 0 | 0 | 2 | 0 |
| 5 | J | 79 | 0 | 0 | 6 | 0 |
| 5 | K | 25 | 0 | 0 | 2 | 0 |
| 5 | L | 45 | 0 | 0 | 2 | 0 |
| 5 | M | 74 | 0 | 0 | 1 | 0 |
| 5 | N | 78 | 0 | 0 | 2 | 0 |
| 5 | O | 51 | 0 | 0 | 2 | 0 |

*Continued from previous page...*

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 5 | P | 41 | 0 | 0 | 2 | 0 |
| All | All | 30738 | 0 | 28593 | 453 | 4 |

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 8.

All (453) 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) |
|--------|--------|--------------------------|-------------------|
| 1:F:2:GLN:HE22 | 1:F:57:ARG:HB3 | 1.09 | 1.09 |
| 1:B:2:GLN:HE22 | 1:B:57:ARG:HB3 | 1.00 | 1.08 |
| 1:F:2:GLN:NE2 | 1:F:57:ARG:HB3 | 1.83 | 0.92 |
| 1:B:2:GLN:NE2 | 1:B:57:ARG:HB3 | 1.85 | 0.91 |
| 1:A:21:GLN:OE1 | 1:A:49:ARG:NH1 | 2.08 | 0.85 |
| 1:C:2:GLN:NE2 | 1:D:17:ASP:OD2 | 2.10 | 0.83 |
| 1:F:53:SER:O | 1:F:220:ARG:NH1 | 2.14 | 0.81 |
| 1:E:54:ALA:HB2 | 1:F:54:ALA:HB2 | 1.61 | 0.81 |
| 1:A:54:ALA:HB2 | 1:B:54:ALA:HB2 | 1.64 | 0.80 |
| 1:D:47:ALA:HB2 | 1:D:102:HIS:HB3 | 1.63 | 0.80 |
| 1:H:61:ASP:OD2 | 1:J:147:TYR:OH | 1.99 | 0.80 |
| 1:O:57:ARG:NH2 | 1:O:217:GLU:OE2 | 2.16 | 0.77 |
| 1:C:57:ARG:NH2 | 1:I:146:ASP:OD2 | 2.20 | 0.75 |
| 1:D:2:GLN:NE2 | 5:D:402:HOH:O | 2.19 | 0.75 |
| 1:D:53:SER:O | 1:D:220:ARG:NH1 | 2.19 | 0.74 |
| 1:E:150:PRO:HG3 | 1:E:167:THR:HG21 | 1.67 | 0.74 |
| 1:K:105:PHE:HE2 | 2:k:2:NAG:H61 | 1.51 | 0.74 |
| 1:I:143:LEU:HD11 | 1:I:151:ASN:HA | 1.70 | 0.74 |
| 1:G:31:LEU:HB2 | 1:G:236:VAL:HB | 1.69 | 0.73 |
| 1:I:10:LYS:NZ | 1:I:12:ASP:OD1 | 2.22 | 0.73 |
| 1:K:47:ALA:HB2 | 1:K:102:HIS:HB3 | 1.69 | 0.73 |
| 1:L:49:ARG:HD3 | 1:L:99:ILE:HG13 | 1.71 | 0.73 |
| 1:C:227:THR:HB | 1:C:231:LYS:HG2 | 1.71 | 0.72 |
| 1:J:49:ARG:HD3 | 1:J:99:ILE:HG13 | 1.72 | 0.72 |
| 1:K:111:ASN:ND2 | 1:K:130:ALA:O | 2.22 | 0.71 |
| 1:G:111:ASN:ND2 | 5:G:401:HOH:O | 2.15 | 0.71 |
| 1:D:31:LEU:HB2 | 1:D:236:VAL:HB | 1.73 | 0.71 |
| 1:M:10:LYS:NZ | 1:M:12:ASP:OD1 | 2.24 | 0.70 |
| 1:L:26:SER:HB3 | 1:L:31:LEU:HD23 | 1.73 | 0.70 |
| 1:C:92:ILE:HD12 | 1:C:221:VAL:HG12 | 1.74 | 0.70 |
| 1:L:47:ALA:HB2 | 1:L:102:HIS:HB3 | 1.74 | 0.70 |
| 1:I:31:LEU:HB2 | 1:I:236:VAL:HB | 1.73 | 0.69 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L:95:PRO:O | 1:L:220:ARG:NH1 | 2.25 | 0.69 |
| 1:C:165:LYS:NZ | 5:C:401:HOH:O | 2.24 | 0.69 |
| 1:B:14[B]:ASN:ND2 | 5:B:404:HOH:O | 2.25 | 0.69 |
| 1:K:66:THR:HG22 | 1:K:186:SER:HB3 | 1.75 | 0.69 |
| 1:O:49:ARG:HD3 | 1:O:99:ILE:HG13 | 1.74 | 0.69 |
| 1:H:166:VAL:HG22 | 1:H:205:LEU:HD11 | 1.73 | 0.68 |
| 1:F:2:GLN:HE22 | 1:F:57:ARG:CB | 1.96 | 0.68 |
| 1:H:49:ARG:HD3 | 1:H:99:ILE:HG13 | 1.76 | 0.68 |
| 1:C:133:ASN:HD21 | 1:C:216:PRO:HD3 | 1.58 | 0.68 |
| 1:G:49:ARG:HD3 | 1:G:99:ILE:HG13 | 1.74 | 0.67 |
| 1:P:169:LYS:NZ | 1:P:171:ASP:OD1 | 2.23 | 0.67 |
| 1:P:10:LYS:NZ | 1:P:12:ASP:OD1 | 2.28 | 0.67 |
| 1:A:47:ALA:HB2 | 1:A:102:HIS:HB3 | 1.76 | 0.67 |
| 1:D:49:ARG:HD3 | 1:D:99:ILE:HG13 | 1.75 | 0.66 |
| 1:K:31:LEU:HB2 | 1:K:236:VAL:HB | 1.77 | 0.66 |
| 1:K:242:THR:OG1 | 5:K:401:HOH:O | 2.14 | 0.66 |
| 1:M:31:LEU:HB2 | 1:M:236:VAL:HB | 1.77 | 0.66 |
| 1:B:49:ARG:HD3 | 1:B:99:ILE:HG13 | 1.78 | 0.65 |
| 1:O:66:THR:HG22 | 1:O:186:SER:HB3 | 1.76 | 0.65 |
| 1:P:190[B]:ARG:NE | 1:P:208:ASP:OD1 | 2.30 | 0.65 |
| 1:A:169:LYS:O | 5:A:401:HOH:O | 2.14 | 0.65 |
| 1:A:201:LYS:NZ | 5:A:404:HOH:O | 2.25 | 0.65 |
| 1:B:112:ALA:O | 1:B:163:ARG:NE | 2.28 | 0.64 |
| 1:B:190:ARG:HE | 1:B:206:SER:HB3 | 1.63 | 0.64 |
| 1:D:151:ASN:ND2 | 5:D:404:HOH:O | 2.29 | 0.64 |
| 1:E:47:ALA:HB2 | 1:E:102:HIS:HB3 | 1.80 | 0.64 |
| 1:H:44:SER:HB2 | 1:H:228:GLY:O | 1.97 | 0.64 |
| 1:O:61:ASP:OD1 | 5:O:401:HOH:O | 2.15 | 0.63 |
| 1:P:11:PHE:O | 1:P:29:ASN:HA | 1.99 | 0.62 |
| 1:K:110:PRO:HD3 | 1:K:132:SER:HB2 | 1.80 | 0.62 |
| 1:A:150:PRO:HG3 | 1:A:167:THR:HG21 | 1.80 | 0.62 |
| 1:L:11:PHE:O | 1:L:29:ASN:HA | 2.00 | 0.62 |
| 1:A:213:THR:HA | 1:O:44:SER:HB2 | 1.80 | 0.62 |
| 1:G:1:ALA:HA | 1:H:9:THR:HG22 | 1.81 | 0.62 |
| 1:A:248:ASN:ND2 | 1:C:200:SER:O | 2.32 | 0.61 |
| 1:N:10:LYS:NZ | 1:N:12:ASP:OD1 | 2.33 | 0.61 |
| 1:H:66:THR:HG22 | 1:H:186:SER:HB3 | 1.82 | 0.61 |
| 1:P:41:ASN:HA | 1:P:233:ARG:NH2 | 2.16 | 0.61 |
| 1:B:92:ILE:HD12 | 1:B:221:VAL:HG12 | 1.83 | 0.61 |
| 1:F:66:THR:HG22 | 1:F:186:SER:HB3 | 1.82 | 0.61 |
| 1:C:31:LEU:HB3 | 1:C:236:VAL:HB | 1.82 | 0.61 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:G:17:ASP:OD2 | 1:H:2:GLN:NE2 | 2.34 | 0.61 |
| 1:L:186:SER:O | 5:L:401:HOH:O | 2.16 | 0.61 |
| 1:K:106:LEU:O | 1:K:224:SER:OG | 2.19 | 0.60 |
| 1:C:47:ALA:HB2 | 1:C:102:HIS:HB3 | 1.82 | 0.60 |
| 1:P:49:ARG:HD3 | 1:P:99:ILE:HG13 | 1.82 | 0.60 |
| 1:F:18:LEU:HD13 | 1:F:50:VAL:HG21 | 1.84 | 0.60 |
| 1:C:49:ARG:HD3 | 1:C:99:ILE:HG13 | 1.83 | 0.60 |
| 1:C:44:SER:HA | 1:C:231:LYS:HD3 | 1.82 | 0.60 |
| 1:J:31:LEU:HD11 | 1:J:50:VAL:HG21 | 1.84 | 0.60 |
| 1:K:75:GLU:HG3 | 1:K:235:THR:HG23 | 1.82 | 0.60 |
| 1:B:230:ASP:H | 2:b:1:MAN:HO6 | 1.48 | 0.60 |
| 1:E:20:PHE:O | 5:E:401:HOH:O | 2.16 | 0.60 |
| 1:P:59:TRP:O | 1:P:217:GLU:HG3 | 2.01 | 0.59 |
| 1:E:190:ARG:HG3 | 1:G:190:ARG:HG3 | 1.83 | 0.59 |
| 1:P:66:THR:HG22 | 1:P:186:SER:HB3 | 1.84 | 0.59 |
| 1:N:49:ARG:HD3 | 1:N:99:ILE:HG13 | 1.84 | 0.59 |
| 1:N:47:ALA:HB2 | 1:N:102:HIS:HB3 | 1.84 | 0.59 |
| 1:K:49:ARG:HD3 | 1:K:99:ILE:HG13 | 1.84 | 0.59 |
| 1:M:47:ALA:HB2 | 1:M:102:HIS:HB3 | 1.85 | 0.58 |
| 1:A:135:VAL:HB | 1:A:215:LEU:HD11 | 1.85 | 0.58 |
| 1:B:14[A]:ASN:OD1 | 1:B:14[A]:ASN:N | 2.26 | 0.58 |
| 1:G:47:ALA:HB2 | 1:G:102:HIS:HB3 | 1.85 | 0.58 |
| 1:C:54:ALA:HB2 | 1:D:54:ALA:HB2 | 1.85 | 0.58 |
| 1:O:13:PRO:HA | 1:O:26:SER:OG | 2.03 | 0.58 |
| 1:B:232:GLU:OE2 | 1:B:234:ASN:ND2 | 2.32 | 0.57 |
| 1:K:18:LEU:HD13 | 1:K:50:VAL:HG21 | 1.86 | 0.57 |
| 1:H:112:ALA:O | 1:H:163:ARG:HD3 | 2.04 | 0.57 |
| 1:L:144:ASN:HB3 | 1:L:147:TYR:HD2 | 1.69 | 0.57 |
| 1:M:28:ASN:ND2 | 5:M:404:HOH:O | 2.36 | 0.57 |
| 1:F:49:ARG:HD3 | 1:F:99:ILE:HG13 | 1.86 | 0.57 |
| 1:M:44:SER:HB2 | 1:M:228:GLY:O | 2.04 | 0.57 |
| 1:C:10:LYS:NZ | 1:C:12:ASP:OD1 | 2.37 | 0.56 |
| 1:K:103:GLY:C | 1:K:105:PHE:H | 2.12 | 0.56 |
| 1:C:43:VAL:C | 1:C:231:LYS:HD3 | 2.31 | 0.56 |
| 1:P:79:PRO:HD3 | 1:P:233:ARG:NH1 | 2.21 | 0.56 |
| 1:D:1:ALA:N | 1:D:245:LEU:O | 2.34 | 0.56 |
| 1:A:49:ARG:HD3 | 1:A:99:ILE:HG13 | 1.88 | 0.56 |
| 1:J:47:ALA:HB2 | 1:J:102:HIS:HB3 | 1.88 | 0.56 |
| 1:B:34:THR:HG21 | 1:B:227:THR:HG23 | 1.88 | 0.56 |
| 1:G:57:ARG:NH2 | 1:M:146:ASP:OD2 | 2.35 | 0.56 |
| 1:G:54:ALA:HB2 | 1:H:54:ALA:HB2 | 1.88 | 0.55 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:P:40:GLY:O | 1:P:233:ARG:NE | 2.38 | 0.55 |
| 1:I:140:ASP:HB3 | 1:I:154:HIS:CE1 | 2.41 | 0.55 |
| 1:K:95:PRO:O | 1:K:220:ARG:NH1 | 2.39 | 0.55 |
| 1:F:169:LYS:NZ | 1:F:171:ASP:OD1 | 2.39 | 0.55 |
| 1:C:133:ASN:ND2 | 1:C:216:PRO:HD3 | 2.22 | 0.55 |
| 1:A:65:LEU:HD13 | 1:A:187:VAL:HG23 | 1.89 | 0.54 |
| 1:A:66:THR:HG22 | 1:A:186:SER:HB3 | 1.89 | 0.54 |
| 1:M:49:ARG:HD3 | 1:M:99:ILE:HG13 | 1.88 | 0.54 |
| 1:H:190:ARG:HD2 | 1:F:188:SER:HB2 | 1.88 | 0.54 |
| 1:I:47:ALA:HB2 | 1:I:102:HIS:HB3 | 1.89 | 0.54 |
| 1:E:196:TYR:HB3 | 1:E:202:PRO:HB3 | 1.90 | 0.54 |
| 1:A:190:ARG:HG3 | 1:C:190:ARG:HG3 | 1.90 | 0.54 |
| 1:L:66:THR:HG22 | 1:L:186:SER:HB3 | 1.90 | 0.54 |
| 1:I:49:ARG:HD3 | 1:I:99:ILE:HG13 | 1.90 | 0.54 |
| 1:O:60:GLU:HG2 | 1:O:61:ASP:N | 2.22 | 0.54 |
| 1:J:42:PRO:HG3 | 1:J:233:ARG:HG3 | 1.90 | 0.54 |
| 1:D:10:LYS:HE3 | 1:D:12:ASP:OD1 | 2.09 | 0.53 |
| 1:K:11:PHE:O | 1:K:29:ASN:HA | 2.09 | 0.53 |
| 1:K:190:ARG:HD3 | 1:K:208:ASP:OD1 | 2.08 | 0.53 |
| 1:L:223:LEU:HD13 | 1:L:236:VAL:HG21 | 1.91 | 0.53 |
| 1:H:47:ALA:HB2 | 1:H:102:HIS:HB3 | 1.90 | 0.53 |
| 1:B:196:TYR:HB3 | 1:B:202:PRO:HB3 | 1.91 | 0.53 |
| 1:N:31:LEU:HB3 | 1:N:236:VAL:HB | 1.90 | 0.53 |
| 1:B:7:SER:HA | 1:B:240:SER:HA | 1.91 | 0.53 |
| 1:B:66:THR:HG22 | 1:B:186:SER:HB3 | 1.90 | 0.52 |
| 1:E:155:ILE:HG23 | 1:E:170:TRP:HB2 | 1.91 | 0.52 |
| 1:E:49:ARG:HD3 | 1:E:99:ILE:HG13 | 1.90 | 0.52 |
| 1:E:95:PRO:O | 1:E:220:ARG:NH1 | 2.42 | 0.52 |
| 1:K:62:SER:HB2 | 1:K:248:ASN:OD1 | 2.10 | 0.52 |
| 1:A:95:PRO:O | 1:A:220:ARG:NH1 | 2.43 | 0.52 |
| 1:C:61:ASP:OD2 | 1:I:147:TYR:OH | 2.17 | 0.52 |
| 1:L:31:LEU:O | 1:L:235:THR:HA | 2.10 | 0.52 |
| 1:B:31:LEU:HD11 | 1:B:50:VAL:HG21 | 1.90 | 0.52 |
| 1:P:95:PRO:O | 1:P:220:ARG:NH1 | 2.43 | 0.52 |
| 1:B:47:ALA:HB2 | 1:B:102:HIS:HB3 | 1.91 | 0.52 |
| 1:K:85:ALA:HA | 1:K:142:TYR:HB2 | 1.92 | 0.52 |
| 1:E:196:TYR:CE1 | 1:G:64:VAL:HG21 | 2.45 | 0.52 |
| 1:C:65:LEU:HD23 | 1:C:246:TRP:HB2 | 1.91 | 0.52 |
| 1:C:60:GLU:OE2 | 1:C:62:SER:OG | 2.29 | 0.51 |
| 1:H:33:LEU:O | 1:H:48:GLY:HA3 | 2.10 | 0.51 |
| 1:P:178:ALA:HB2 | 1:P:197:TYR:CE1 | 2.45 | 0.51 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:J:64:VAL:CG1 | 1:J:248:ASN:HB2 | 2.40 | 0.51 |
| 1:P:44:SER:OG | 5:P:401:HOH:O | 2.17 | 0.51 |
| 1:E:9:THR:OG1 | 1:F:1:ALA:HA | 2.10 | 0.51 |
| 1:E:168:ALA:HB2 | 1:E:205:LEU:HD13 | 1.92 | 0.51 |
| 1:C:57:ARG:HD3 | 1:C:218:TRP:CZ2 | 2.45 | 0.51 |
| 1:B:95:PRO:O | 1:B:220:ARG:NH1 | 2.41 | 0.51 |
| 1:J:42:PRO:O | 1:J:231:LYS:HD2 | 2.11 | 0.51 |
| 1:A:7:SER:O | 1:B:2:GLN:HA | 2.10 | 0.51 |
| 1:A:164:SER:OG | 5:A:402:HOH:O | 2.19 | 0.51 |
| 1:L:19:ILE:HB | 1:L:51:LEU:HB2 | 1.93 | 0.51 |
| 1:E:57:ARG:HG3 | 1:E:218:TRP:CZ2 | 2.45 | 0.51 |
| 1:A:31:LEU:HB3 | 1:A:236:VAL:HB | 1.92 | 0.51 |
| 1:O:190:ARG:HD3 | 1:O:208:ASP:OD1 | 2.10 | 0.51 |
| 1:N:15:GLN:HG2 | 1:N:18:LEU:HD12 | 1.93 | 0.51 |
| 1:K:229:GLN:HB3 | 2:k:1:MAN:H62 | 1.93 | 0.51 |
| 1:F:10:LYS:NZ | 1:F:12:ASP:OD1 | 2.43 | 0.51 |
| 1:E:111:ASN:ND2 | 1:E:130:ALA:O | 2.41 | 0.50 |
| 1:D:33:LEU:O | 1:D:48:GLY:HA3 | 2.10 | 0.50 |
| 1:K:31:LEU:O | 1:K:235:THR:HA | 2.11 | 0.50 |
| 1:C:189:LYS:HD3 | 1:C:210:GLU:HG2 | 1.93 | 0.50 |
| 1:G:66:THR:HG22 | 1:G:186:SER:HB3 | 1.92 | 0.50 |
| 1:H:168:ALA:HB2 | 1:H:205:LEU:HD13 | 1.92 | 0.50 |
| 1:E:64:VAL:HG21 | 1:G:196:TYR:CE1 | 2.46 | 0.50 |
| 1:G:5:SER:OG | 1:H:5:SER:HB2 | 2.11 | 0.50 |
| 1:C:92:ILE:HB | 1:C:135:VAL:HG12 | 1.93 | 0.50 |
| 5:G:407:HOH:O | 1:M:145:PRO:HG2 | 2.10 | 0.50 |
| 1:E:135:VAL:CG1 | 1:E:215:LEU:HD11 | 2.42 | 0.50 |
| 1:J:21:GLN:HB2 | 1:J:49:ARG:HB2 | 1.94 | 0.50 |
| 1:J:231:LYS:NZ | 5:J:410:HOH:O | 2.45 | 0.49 |
| 1:H:196:TYR:CE1 | 1:F:64:VAL:HG21 | 2.47 | 0.49 |
| 1:A:9:THR:OG1 | 1:B:1:ALA:HA | 2.12 | 0.49 |
| 1:H:31:LEU:HB3 | 1:H:236:VAL:HB | 1.93 | 0.49 |
| 1:P:57:ARG:HD3 | 1:P:218:TRP:CZ2 | 2.48 | 0.49 |
| 1:L:43:VAL:C | 1:L:231:LYS:HD3 | 2.37 | 0.49 |
| 1:A:155:ILE:HG23 | 1:A:170:TRP:HB2 | 1.93 | 0.49 |
| 1:B:60:GLU:HG2 | 1:B:61:ASP:N | 2.28 | 0.49 |
| 1:J:61:ASP:OD1 | 5:J:401:HOH:O | 2.20 | 0.49 |
| 1:J:33:LEU:O | 1:J:48:GLY:HA3 | 2.13 | 0.49 |
| 1:P:31:LEU:CD2 | 1:P:33:LEU:HG | 2.43 | 0.49 |
| 1:F:94:PRO:HD3 | 1:F:133:ASN:O | 2.13 | 0.49 |
| 1:P:1:ALA:HB2 | 1:P:247:THR:OG1 | 2.13 | 0.49 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:P:18:LEU:HD13 | 1:P:50:VAL:HG21 | 1.95 | 0.49 |
| 1:L:113:ASN:HD21 | 1:L:131:SER:HB3 | 1.77 | 0.48 |
| 1:K:234:ASN:N | 5:K:404:HOH:O | 2.44 | 0.48 |
| 1:O:15:GLN:HG2 | 1:O:18:LEU:HD12 | 1.95 | 0.48 |
| 1:A:64:VAL:HG11 | 1:C:196:TYR:CE1 | 2.48 | 0.48 |
| 1:F:47:ALA:HB2 | 1:F:102:HIS:HB3 | 1.94 | 0.48 |
| 1:C:230:ASP:N | 2:c:1:MAN:O6 | 2.38 | 0.48 |
| 1:C:75:GLU:HG3 | 1:C:235:THR:HB | 1.95 | 0.48 |
| 1:J:217:GLU:OE2 | 5:J:401:HOH:O | 2.20 | 0.48 |
| 1:F:83:ARG:O | 1:F:230:ASP:HB3 | 2.14 | 0.48 |
| 1:F:178:ALA:HB2 | 1:F:197:TYR:CE1 | 2.49 | 0.48 |
| 1:J:65:LEU:HD13 | 1:J:246:TRP:CE3 | 2.48 | 0.48 |
| 1:E:33:LEU:O | 1:E:48:GLY:HA3 | 2.13 | 0.48 |
| 1:E:65:LEU:HD13 | 1:E:187:VAL:HG23 | 1.96 | 0.48 |
| 1:P:31:LEU:HD21 | 1:P:33:LEU:HG | 1.96 | 0.48 |
| 1:J:220:ARG:HG2 | 5:J:412:HOH:O | 2.14 | 0.47 |
| 1:B:190:ARG:HD3 | 1:B:208:ASP:OD1 | 2.14 | 0.47 |
| 1:N:66:THR:HG22 | 1:N:186:SER:HB3 | 1.95 | 0.47 |
| 1:P:18:LEU:HB3 | 1:P:50:VAL:HG22 | 1.96 | 0.47 |
| 1:P:23:HIS:CD2 | 1:P:35:LYS:HE3 | 2.49 | 0.47 |
| 1:N:95:PRO:HA | 1:N:220:ARG:HB2 | 1.97 | 0.47 |
| 1:A:133:ASN:HB2 | 1:O:80:TYR:CD1 | 2.50 | 0.47 |
| 1:P:79:PRO:HD3 | 1:P:233:ARG:HH12 | 1.79 | 0.47 |
| 1:L:248:ASN:CG | 1:L:249:VAL:H | 2.21 | 0.47 |
| 1:K:45:SER:HA | 1:K:102:HIS:CD2 | 2.49 | 0.47 |
| 1:K:178:ALA:HB2 | 1:K:197:TYR:CE1 | 2.49 | 0.47 |
| 1:I:178:ALA:HB2 | 1:I:197:TYR:CE1 | 2.49 | 0.47 |
| 1:N:33:LEU:O | 1:N:48:GLY:HA3 | 2.15 | 0.47 |
| 1:E:66:THR:HG22 | 1:E:186:SER:HB3 | 1.96 | 0.47 |
| 1:C:227:THR:CB | 1:C:231:LYS:HG2 | 2.41 | 0.47 |
| 1:G:45:SER:HB3 | 2:g:3:FUC:H61 | 1.95 | 0.47 |
| 1:D:184:TYR:OH | 5:D:401:HOH:O | 2.17 | 0.47 |
| 1:L:196:TYR:HB3 | 1:L:202:PRO:HB3 | 1.96 | 0.47 |
| 1:C:85:ALA:HB3 | 1:C:230:ASP:O | 2.14 | 0.47 |
| 1:I:132:SER:O | 5:I:401:HOH:O | 2.20 | 0.47 |
| 1:I:150:PRO:HD2 | 1:I:154:HIS:CE1 | 2.49 | 0.47 |
| 1:N:35:LYS:O | 5:N:401:HOH:O | 2.20 | 0.47 |
| 1:N:181:HIS:O | 1:N:193:VAL:HA | 2.14 | 0.47 |
| 1:C:190:ARG:HD3 | 1:C:208:ASP:OD1 | 2.15 | 0.47 |
| 1:E:11:PHE:CG | 1:E:31:LEU:HG | 2.50 | 0.46 |
| 1:D:57:ARG:HD3 | 1:D:218:TRP:CE2 | 2.50 | 0.46 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:N:18:LEU:HB3 | 1:N:50:VAL:HG22 | 1.97 | 0.46 |
| 1:E:12:ASP:OD2 | 1:F:57:ARG:NH1 | 2.48 | 0.46 |
| 1:C:30:VAL:HG11 | 1:C:235:THR:HG23 | 1.96 | 0.46 |
| 1:H:65:LEU:HD13 | 1:H:187:VAL:HG23 | 1.98 | 0.46 |
| 1:L:10:LYS:HB2 | 1:L:29:ASN:HB2 | 1.96 | 0.46 |
| 1:A:2:GLN:HA | 1:B:7:SER:O | 2.16 | 0.46 |
| 1:L:44:SER:N | 1:L:231:LYS:HD3 | 2.30 | 0.46 |
| 1:O:1:ALA:O | 1:O:2:GLN:HG3 | 2.16 | 0.46 |
| 1:F:33:LEU:O | 1:F:48:GLY:HA3 | 2.15 | 0.46 |
| 1:N:113:ASN:O | 5:N:402:HOH:O | 2.21 | 0.46 |
| 1:E:59:TRP:HB2 | 1:E:212:HIS:HB2 | 1.97 | 0.46 |
| 1:H:64:VAL:HG11 | 1:F:196:TYR:CE1 | 2.51 | 0.46 |
| 1:H:178:ALA:HB2 | 1:H:197:TYR:CE1 | 2.50 | 0.46 |
| 1:K:144:ASN:C | 1:K:146:ASP:N | 2.73 | 0.46 |
| 1:A:190:ARG:HE | 1:A:206:SER:HB3 | 1.79 | 0.46 |
| 1:I:169:LYS:NZ | 1:I:171:ASP:OD1 | 2.45 | 0.46 |
| 1:L:155:ILE:HG23 | 1:L:170:TRP:HB2 | 1.96 | 0.46 |
| 1:O:47:ALA:HB2 | 1:O:102:HIS:HB3 | 1.98 | 0.46 |
| 1:K:168:ALA:HB2 | 1:K:205:LEU:HD13 | 1.97 | 0.46 |
| 1:G:61:ASP:OD2 | 1:M:147:TYR:OH | 2.25 | 0.46 |
| 1:A:178:ALA:HB2 | 1:A:197:TYR:CE1 | 2.51 | 0.46 |
| 1:P:31:LEU:HD22 | 1:P:236:VAL:HB | 1.98 | 0.46 |
| 1:K:47:ALA:HB2 | 1:K:102:HIS:CB | 2.42 | 0.46 |
| 1:B:189:LYS:HD3 | 1:B:210:GLU:HG2 | 1.98 | 0.46 |
| 1:J:172:TRP:CZ2 | 1:J:174:ASN:HA | 2.51 | 0.45 |
| 1:B:201:LYS:HG3 | 5:B:444:HOH:O | 2.15 | 0.45 |
| 1:D:57:ARG:HD3 | 1:D:218:TRP:CZ2 | 2.52 | 0.45 |
| 1:D:181:HIS:O | 1:D:193:VAL:HA | 2.16 | 0.45 |
| 1:J:92:ILE:HG22 | 1:J:219:VAL:HG21 | 1.98 | 0.45 |
| 1:J:179:THR:O | 1:J:195:THR:HA | 2.16 | 0.45 |
| 1:G:9:THR:OG1 | 1:H:1:ALA:HA | 2.16 | 0.45 |
| 1:D:200:SER:O | 1:B:248:ASN:ND2 | 2.49 | 0.45 |
| 1:K:103:GLY:C | 1:K:105:PHE:N | 2.74 | 0.45 |
| 1:A:196:TYR:HB3 | 1:A:202:PRO:HB3 | 1.99 | 0.45 |
| 1:E:94:PRO:HD3 | 1:E:133:ASN:O | 2.17 | 0.45 |
| 1:O:21:GLN:HB2 | 1:O:49:ARG:HB2 | 1.99 | 0.45 |
| 1:D:248:ASN:ND2 | 1:B:200:SER:O | 2.50 | 0.45 |
| 1:O:1:ALA:HB2 | 1:O:247:THR:OG1 | 2.16 | 0.45 |
| 1:K:57:ARG:NE | 1:K:60:GLU:HG3 | 2.32 | 0.45 |
| 1:P:31:LEU:O | 1:P:235:THR:HA | 2.16 | 0.45 |
| 1:M:33:LEU:O | 1:M:48:GLY:HA3 | 2.16 | 0.45 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:H:10:LYS:NZ | 1:H:12:ASP:OD1 | 2.49 | 0.45 |
| 1:I:18:LEU:HD22 | 1:I:50:VAL:HG13 | 1.99 | 0.45 |
| 1:P:7:SER:HA | 1:P:240:SER:HA | 1.98 | 0.45 |
| 1:P:15:GLN:HG2 | 1:P:18:LEU:HD12 | 1.98 | 0.45 |
| 1:P:230:ASP:OD1 | 5:P:402:HOH:O | 2.21 | 0.45 |
| 1:A:9:THR:O | 5:A:403:HOH:O | 2.21 | 0.45 |
| 1:E:31:LEU:HB2 | 1:E:236:VAL:HB | 1.98 | 0.45 |
| 1:M:113:ASN:HB2 | 1:H:28:ASN:OD1 | 2.17 | 0.45 |
| 1:L:57:ARG:NH2 | 5:L:402:HOH:O | 2.24 | 0.45 |
| 1:B:229:GLN:N | 2:b:1:MAN:O6 | 2.50 | 0.45 |
| 1:K:211:LEU:HD23 | 1:K:211:LEU:HA | 1.79 | 0.45 |
| 1:E:93:ALA:HB2 | 1:E:134:VAL:HG22 | 1.99 | 0.44 |
| 1:A:1:ALA:HA | 1:B:9:THR:OG1 | 2.16 | 0.44 |
| 1:G:194:THR:HB | 1:G:204:THR:HG22 | 1.98 | 0.44 |
| 1:L:85:ALA:HA | 1:L:86:ASP:HA | 1.80 | 0.44 |
| 1:N:112:ALA:O | 1:N:163:ARG:NH2 | 2.50 | 0.44 |
| 1:K:56:LEU:HG | 1:K:219:VAL:HG23 | 2.00 | 0.44 |
| 1:M:181:HIS:O | 1:M:193:VAL:HA | 2.17 | 0.44 |
| 1:O:60:GLU:HG2 | 1:O:61:ASP:H | 1.83 | 0.44 |
| 1:C:241:PHE:CE1 | 1:C:243:SER:HB2 | 2.53 | 0.44 |
| 1:M:56:LEU:HD23 | 1:M:57:ARG:C | 2.42 | 0.44 |
| 1:E:7:SER:O | 1:F:2:GLN:HA | 2.17 | 0.44 |
| 1:C:229:GLN:N | 2:c:1:MAN:O6 | 2.51 | 0.44 |
| 1:C:231:LYS:HE2 | 1:C:231:LYS:HB2 | 1.62 | 0.44 |
| 1:F:15:GLN:HG2 | 1:F:18:LEU:HD12 | 1.99 | 0.44 |
| 1:N:64:VAL:CG1 | 1:N:248:ASN:HB2 | 2.48 | 0.44 |
| 1:K:33:LEU:O | 1:K:48:GLY:HA3 | 2.18 | 0.44 |
| 1:K:35:LYS:HB3 | 1:K:43:VAL:HG22 | 2.00 | 0.44 |
| 1:I:65:LEU:HD13 | 1:I:187:VAL:HG23 | 1.98 | 0.44 |
| 1:M:190:ARG:HD3 | 1:M:208:ASP:OD1 | 2.18 | 0.44 |
| 1:P:41:ASN:HA | 1:P:233:ARG:HH21 | 1.81 | 0.44 |
| 1:L:63:ALA:HA | 1:L:247:THR:HA | 2.00 | 0.44 |
| 1:B:33:LEU:O | 1:B:48:GLY:HA3 | 2.18 | 0.44 |
| 1:B:44:SER:HB2 | 1:B:228:GLY:O | 2.16 | 0.44 |
| 1:P:211:LEU:HD23 | 1:P:211:LEU:HA | 1.84 | 0.44 |
| 1:B:90:PHE:CZ | 1:B:92:ILE:HD11 | 2.53 | 0.44 |
| 1:C:101:TYR:CE2 | 2:c:4:GAL:H3 | 2.52 | 0.44 |
| 1:I:66:THR:HG22 | 1:I:186:SER:HB3 | 1.98 | 0.44 |
| 1:J:190:ARG:NH1 | 1:J:206:SER:OG | 2.51 | 0.44 |
| 1:P:63:ALA:HA | 1:P:247:THR:HA | 1.99 | 0.44 |
| 1:C:110:PRO:HD3 | 1:C:132:SER:HB3 | 2.00 | 0.43 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:155:ILE:HG23 | 1:C:170:TRP:HB2 | 2.00 | 0.43 |
| 1:H:196:TYR:HB3 | 1:H:202:PRO:HB3 | 2.00 | 0.43 |
| 1:K:101:TYR:CE2 | 2:k:4:GAL:H3 | 2.52 | 0.43 |
| 1:J:64:VAL:HG11 | 1:J:248:ASN:HB2 | 2.00 | 0.43 |
| 1:L:70:THR:HB | 1:L:241:PHE:HD1 | 1.83 | 0.43 |
| 1:L:181:HIS:O | 1:L:193:VAL:HA | 2.19 | 0.43 |
| 1:F:185:ASN:HB3 | 1:F:188:SER:OG | 2.18 | 0.43 |
| 1:N:85:ALA:HA | 1:N:86:ASP:HA | 1.79 | 0.43 |
| 1:G:33:LEU:O | 1:G:48:GLY:HA3 | 2.17 | 0.43 |
| 1:D:66:THR:HG22 | 1:D:186:SER:HB3 | 1.99 | 0.43 |
| 1:F:31:LEU:O | 1:F:235:THR:HA | 2.17 | 0.43 |
| 1:H:11:PHE:O | 1:H:29:ASN:HA | 2.18 | 0.43 |
| 1:O:31:LEU:HB3 | 1:O:236:VAL:HB | 2.01 | 0.43 |
| 1:A:31:LEU:O | 1:A:235:THR:HA | 2.18 | 0.43 |
| 1:O:59:TRP:HB2 | 1:O:212:HIS:HB2 | 2.01 | 0.43 |
| 1:N:64:VAL:HG11 | 1:N:248:ASN:HB2 | 2.00 | 0.43 |
| 1:P:190[B]:ARG:NH2 | 1:P:208:ASP:OD1 | 2.52 | 0.43 |
| 1:O:190:ARG:HA | 1:O:190:ARG:HD2 | 1.88 | 0.43 |
| 1:I:41:ASN:HD21 | 1:J:80:TYR:HD1 | 1.66 | 0.43 |
| 1:F:190:ARG:HD3 | 1:F:208:ASP:OD1 | 2.18 | 0.43 |
| 1:K:83:ARG:O | 1:K:230:ASP:HB3 | 2.18 | 0.43 |
| 1:E:179:THR:O | 1:E:195:THR:HA | 2.19 | 0.43 |
| 1:I:33:LEU:O | 1:I:48:GLY:HA3 | 2.18 | 0.43 |
| 1:M:15:GLN:HG2 | 1:M:18:LEU:HD12 | 2.01 | 0.43 |
| 1:D:64:VAL:HG11 | 1:B:196:TYR:CE1 | 2.54 | 0.43 |
| 1:P:223:LEU:HD13 | 1:P:236:VAL:HG21 | 2.01 | 0.43 |
| 1:A:10:LYS:HE2 | 1:B:249:VAL:HG21 | 2.01 | 0.42 |
| 1:C:30:VAL:CG1 | 1:C:235:THR:HG23 | 2.49 | 0.42 |
| 1:J:66:THR:HG22 | 1:J:186:SER:HB3 | 2.01 | 0.42 |
| 1:L:112:ALA:HB2 | 1:L:147:TYR:CD1 | 2.54 | 0.42 |
| 1:F:173:GLN:OE1 | 1:F:176:LYS:HD2 | 2.19 | 0.42 |
| 1:K:85:ALA:HA | 1:K:86:ASP:HA | 1.81 | 0.42 |
| 1:A:131:SER:OG | 1:A:132:SER:N | 2.52 | 0.42 |
| 1:A:168:ALA:HB2 | 1:A:205:LEU:HD13 | 2.00 | 0.42 |
| 1:C:33:LEU:O | 1:C:48:GLY:HA3 | 2.19 | 0.42 |
| 1:P:150:PRO:HB2 | 1:P:152:TYR:CZ | 2.53 | 0.42 |
| 1:O:23:HIS:ND1 | 1:O:35:LYS:HE3 | 2.34 | 0.42 |
| 1:O:178:ALA:HB2 | 1:O:197:TYR:CE1 | 2.54 | 0.42 |
| 1:B:178:ALA:HB2 | 1:B:197:TYR:CE1 | 2.54 | 0.42 |
| 1:B:223:LEU:HD13 | 1:B:236:VAL:HG21 | 2.01 | 0.42 |
| 1:I:31:LEU:O | 1:I:235:THR:HA | 2.19 | 0.42 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------|--------|--------------------------|-------------------|
| 1:P:196:TYR:HB3 | 1:P:202:PRO:HB3 | 2.00 | 0.42 |
| 1:L:189:LYS:HE3 | 1:L:210:GLU:OE2 | 2.19 | 0.42 |
| 1:E:211:LEU:HD23 | 1:E:211:LEU:HA | 1.88 | 0.42 |
| 1:C:93:ALA:HB2 | 1:C:134:VAL:HG22 | 2.02 | 0.42 |
| 1:P:190[B]:ARG:HD3 | 1:P:190[B]:ARG:HA | 1.88 | 0.42 |
| 1:F:85:ALA:HA | 1:F:86:ASP:HA | 1.78 | 0.42 |
| 1:C:101:TYR:CZ | 2:c:4:GAL:H3 | 2.55 | 0.42 |
| 1:H:56:LEU:HD23 | 1:H:57:ARG:C | 2.44 | 0.42 |
| 1:H:204:THR:HG23 | 1:F:187:VAL:HG13 | 2.02 | 0.42 |
| 1:D:155:ILE:HG23 | 1:D:170:TRP:HB2 | 2.02 | 0.42 |
| 1:N:163:ARG:CZ | 1:N:163:ARG:HB2 | 2.49 | 0.42 |
| 1:E:57:ARG:NH2 | 1:F:12:ASP:OD2 | 2.53 | 0.42 |
| 1:I:75:GLU:HG2 | 1:I:237:HIS:NE2 | 2.34 | 0.42 |
| 1:D:11:PHE:O | 1:D:29:ASN:HA | 2.20 | 0.42 |
| 1:D:31:LEU:O | 1:D:235:THR:HA | 2.20 | 0.42 |
| 1:B:211:LEU:HD23 | 1:B:211:LEU:HA | 1.81 | 0.42 |
| 1:N:65:LEU:HD13 | 1:N:246:TRP:CE3 | 2.55 | 0.42 |
| 1:L:50:VAL:O | 1:L:222:GLY:HA3 | 2.19 | 0.42 |
| 1:K:56:LEU:C | 1:K:56:LEU:HD12 | 2.45 | 0.42 |
| 1:I:57:ARG:HD3 | 1:I:218:TRP:CZ2 | 2.54 | 0.42 |
| 1:D:65:LEU:HD13 | 1:D:187:VAL:HG23 | 2.02 | 0.42 |
| 1:D:211:LEU:HD23 | 1:D:211:LEU:HA | 1.73 | 0.42 |
| 1:O:95:PRO:O | 1:O:220:ARG:NH1 | 2.51 | 0.42 |
| 1:E:1:ALA:HA | 1:F:9:THR:OG1 | 2.20 | 0.42 |
| 1:E:64:VAL:CG1 | 1:E:248:ASN:HB2 | 2.49 | 0.42 |
| 1:L:112:ALA:O | 1:L:113:ASN:C | 2.62 | 0.42 |
| 1:K:12:ASP:O | 1:K:15:GLN:HG2 | 2.20 | 0.42 |
| 1:K:76:ILE:HG21 | 1:K:141:THR:HG21 | 2.01 | 0.42 |
| 1:C:90:PHE:CZ | 1:C:92:ILE:HD11 | 2.55 | 0.41 |
| 1:G:113:ASN:HD21 | 1:G:131:SER:N | 2.17 | 0.41 |
| 1:M:194:THR:HB | 1:M:204:THR:HG22 | 2.02 | 0.41 |
| 1:O:194:THR:HB | 1:O:204:THR:HG22 | 2.01 | 0.41 |
| 1:H:211:LEU:HD23 | 1:H:211:LEU:HA | 1.80 | 0.41 |
| 1:L:194:THR:HB | 1:L:204:THR:HG22 | 2.02 | 0.41 |
| 1:L:21:GLN:HB2 | 1:L:49:ARG:HB2 | 2.01 | 0.41 |
| 1:K:228:GLY:C | 2:k:2:NAG:H83 | 2.45 | 0.41 |
| 2:g:2:NAG:H61 | 2:g:4:GAL:C1 | 2.51 | 0.41 |
| 1:C:21:GLN:HB2 | 1:C:49:ARG:HB2 | 2.02 | 0.41 |
| 1:I:143:LEU:HB2 | 5:I:440:HOH:O | 2.20 | 0.41 |
| 1:H:34:THR:OG1 | 5:H:401:HOH:O | 2.22 | 0.41 |
| 1:H:93:ALA:O | 1:H:219:VAL:HG22 | 2.20 | 0.41 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:J:131:SER:OG | 1:J:132:SER:N | 2.44 | 0.41 |
| 1:O:11:PHE:O | 1:O:29:ASN:HA | 2.19 | 0.41 |
| 1:B:93:ALA:O | 1:B:219:VAL:HG22 | 2.21 | 0.41 |
| 1:B:249:VAL:O | 5:B:401:HOH:O | 2.21 | 0.41 |
| 1:L:42:PRO:HB2 | 1:L:231:LYS:HB3 | 2.03 | 0.41 |
| 1:L:168:ALA:HB2 | 1:L:205:LEU:HD13 | 2.03 | 0.41 |
| 1:O:57:ARG:NH1 | 5:O:406:HOH:O | 2.32 | 0.41 |
| 1:B:34:THR:HB | 5:B:406:HOH:O | 2.20 | 0.41 |
| 1:N:73:ASN:HB2 | 1:N:238:SER:OG | 2.20 | 0.41 |
| 1:A:51:LEU:HD22 | 1:A:220:ARG:HB3 | 2.02 | 0.41 |
| 1:C:194:THR:HB | 1:C:204:THR:HG22 | 2.02 | 0.41 |
| 1:G:150:PRO:HD2 | 1:G:154:HIS:CE1 | 2.56 | 0.41 |
| 1:G:211:LEU:HD23 | 1:G:211:LEU:HA | 1.90 | 0.41 |
| 1:L:189:LYS:O | 1:L:208:ASP:HA | 2.21 | 0.41 |
| 1:O:65:LEU:HD13 | 1:O:187:VAL:HG23 | 2.02 | 0.41 |
| 1:B:241:PHE:CE1 | 1:B:243:SER:HB2 | 2.55 | 0.41 |
| 1:D:15:GLN:HG2 | 1:D:18:LEU:HD12 | 2.01 | 0.41 |
| 1:D:196:TYR:HB3 | 1:D:202:PRO:HB3 | 2.02 | 0.41 |
| 1:E:2:GLN:HA | 1:F:7:SER:O | 2.20 | 0.41 |
| 1:E:44:SER:OG | 1:E:231:LYS:HE3 | 2.21 | 0.41 |
| 1:G:56:LEU:HD23 | 1:G:57:ARG:C | 2.45 | 0.41 |
| 1:I:11:PHE:O | 1:I:29:ASN:HA | 2.20 | 0.41 |
| 1:I:85:ALA:HA | 1:I:86:ASP:HA | 1.85 | 0.41 |
| 1:H:205:LEU:HD12 | 1:H:205:LEU:HA | 1.95 | 0.41 |
| 1:L:12:ASP:O | 1:L:26:SER:OG | 2.33 | 0.41 |
| 1:L:179:THR:O | 1:L:195:THR:HA | 2.21 | 0.41 |
| 1:H:103:GLY:O | 1:H:226:SER:OG | 2.38 | 0.41 |
| 1:F:189:LYS:HE2 | 1:F:210:GLU:OE2 | 2.21 | 0.41 |
| 1:C:90:PHE:CE2 | 1:C:92:ILE:HD11 | 2.56 | 0.40 |
| 1:M:11:PHE:O | 1:M:29:ASN:HA | 2.21 | 0.40 |
| 1:M:85:ALA:HA | 1:M:86:ASP:HA | 1.83 | 0.40 |
| 1:N:56:LEU:HD11 | 1:N:243:SER:OG | 2.21 | 0.40 |
| 1:C:57:ARG:HD3 | 1:C:218:TRP:CE2 | 2.56 | 0.40 |
| 1:J:31:LEU:HB3 | 1:J:236:VAL:HB | 2.03 | 0.40 |
| 1:P:155:ILE:HG23 | 1:P:170:TRP:HB2 | 2.02 | 0.40 |
| 1:B:88:LEU:HD22 | 1:B:225:ALA:HB2 | 2.04 | 0.40 |
| 1:K:109:PHE:CE1 | 1:K:134:VAL:HG13 | 2.56 | 0.40 |
| 1:K:112:ALA:HB2 | 1:K:147:TYR:CD1 | 2.57 | 0.40 |
| 1:M:158:ASP:HB3 | 1:M:161:SER:O | 2.21 | 0.40 |
| 1:F:15:GLN:HG3 | 1:F:17:ASP:OD1 | 2.20 | 0.40 |
| 1:K:181:HIS:O | 1:K:193:VAL:HA | 2.21 | 0.40 |

*Continued on next page...*

*Continued from previous page...*

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:D:51:LEU:HD22 | 1:D:220:ARG:HB3 | 2.02 | 0.40 |
| 1:J:98:VAL:O | 5:J:402:HOH:O | 2.22 | 0.40 |
| 1:J:181:HIS:O | 1:J:193:VAL:HA | 2.21 | 0.40 |
| 1:J:243:SER:OG | 5:J:403:HOH:O | 2.22 | 0.40 |
| 1:C:181:HIS:O | 1:C:193:VAL:HA | 2.22 | 0.40 |
| 1:M:12:ASP:O | 1:M:26:SER:OG | 2.39 | 0.40 |
| 1:H:73:ASN:HA | 1:H:178:ALA:O | 2.22 | 0.40 |
| 1:P:57:ARG:NH2 | 1:P:217:GLU:OE2 | 2.54 | 0.40 |
| 1:O:31:LEU:O | 1:O:235:THR:HA | 2.22 | 0.40 |
| 1:N:36:LEU:HD21 | 1:N:233:ARG:HG2 | 2.03 | 0.40 |
| 1:K:182:ILE:HA | 1:K:192:SER:O | 2.22 | 0.40 |

All (4) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:M:2:GLN:NE2 | 1:N:17:ASP:OD2[1_465] | 2.12 | 0.08 |
| 1:P:2:GLN:NE2 | 1:O:17:ASP:OD2[1_565] | 2.16 | 0.04 |
| 1:C:147:TYR:OH | 1:I:61:ASP:OD2[1_545] | 2.19 | 0.01 |
| 1:L:17:ASP:OD2 | 1:K:2:GLN:NE2[1_565] | 2.19 | 0.01 |

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | A | 229/264 (87%) | 221 (96%) | 8 (4%) | 0 | 100 | 100 |
| 1 | B | 231/264 (88%) | 222 (96%) | 9 (4%) | 0 | 100 | 100 |
| 1 | C | 230/264 (87%) | 224 (97%) | 6 (3%) | 0 | 100 | 100 |
| 1 | D | 229/264 (87%) | 223 (97%) | 6 (3%) | 0 | 100 | 100 |
| 1 | E | 230/264 (87%) | 222 (96%) | 8 (4%) | 0 | 100 | 100 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|----------|----------|---------|----------|-------------|---|
| 1 | F | 230/264 (87%) | 225 (98%) | 5 (2%) | 0 | 100 | 100 |
| 1 | G | 228/264 (86%) | 224 (98%) | 4 (2%) | 0 | 100 | 100 |
| 1 | H | 228/264 (86%) | 223 (98%) | 5 (2%) | 0 | 100 | 100 |
| 1 | I | 228/264 (86%) | 223 (98%) | 5 (2%) | 0 | 100 | 100 |
| 1 | J | 228/264 (86%) | 222 (97%) | 6 (3%) | 0 | 100 | 100 |
| 1 | K | 230/264 (87%) | 223 (97%) | 7 (3%) | 0 | 100 | 100 |
| 1 | L | 230/264 (87%) | 219 (95%) | 10 (4%) | 1 (0%) | 30 | 49 |
| 1 | M | 228/264 (86%) | 223 (98%) | 5 (2%) | 0 | 100 | 100 |
| 1 | N | 229/264 (87%) | 222 (97%) | 7 (3%) | 0 | 100 | 100 |
| 1 | O | 230/264 (87%) | 223 (97%) | 7 (3%) | 0 | 100 | 100 |
| 1 | P | 229/264 (87%) | 222 (97%) | 7 (3%) | 0 | 100 | 100 |
| All | All | 3667/4224 (87%) | 3561 (97%) | 105 (3%) | 1 (0%) | 100 | 100 |

All (1) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | L | 249 | VAL |

### 5.3.2 Protein sidechains ⓘ

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------|-----------|----------|-------------|---|
| 1 | A | 203/231 (88%) | 198 (98%) | 5 (2%) | 42 | 69 |
| 1 | B | 204/231 (88%) | 196 (96%) | 8 (4%) | 27 | 52 |
| 1 | C | 203/231 (88%) | 198 (98%) | 5 (2%) | 42 | 69 |
| 1 | D | 203/231 (88%) | 198 (98%) | 5 (2%) | 42 | 69 |
| 1 | E | 203/231 (88%) | 195 (96%) | 8 (4%) | 27 | 52 |
| 1 | F | 203/231 (88%) | 199 (98%) | 4 (2%) | 50 | 75 |
| 1 | G | 203/231 (88%) | 199 (98%) | 4 (2%) | 50 | 75 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------|-----------|----------|-------------|---|
| 1 | H | 203/231 (88%) | 196 (97%) | 7 (3%) | 32 | 58 |
| 1 | I | 203/231 (88%) | 199 (98%) | 4 (2%) | 50 | 75 |
| 1 | J | 203/231 (88%) | 193 (95%) | 10 (5%) | 21 | 42 |
| 1 | K | 203/231 (88%) | 195 (96%) | 8 (4%) | 27 | 52 |
| 1 | L | 203/231 (88%) | 198 (98%) | 5 (2%) | 42 | 69 |
| 1 | M | 203/231 (88%) | 200 (98%) | 3 (2%) | 60 | 82 |
| 1 | N | 203/231 (88%) | 198 (98%) | 5 (2%) | 42 | 69 |
| 1 | O | 203/231 (88%) | 199 (98%) | 4 (2%) | 50 | 75 |
| 1 | P | 204/231 (88%) | 199 (98%) | 5 (2%) | 42 | 69 |
| All | All | 3250/3696 (88%) | 3160 (97%) | 90 (3%) | 40 | 65 |

All (90) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 25 | THR |
| 1 | A | 34 | THR |
| 1 | A | 50 | VAL |
| 1 | A | 64 | VAL |
| 1 | A | 167 | THR |
| 1 | E | 27 | THR |
| 1 | E | 34 | THR |
| 1 | E | 43 | VAL |
| 1 | E | 50 | VAL |
| 1 | E | 57 | ARG |
| 1 | E | 135 | VAL |
| 1 | E | 167 | THR |
| 1 | E | 214 | VAL |
| 1 | C | 30 | VAL |
| 1 | C | 34 | THR |
| 1 | C | 50 | VAL |
| 1 | C | 65 | LEU |
| 1 | C | 219 | VAL |
| 1 | G | 34 | THR |
| 1 | G | 50 | VAL |
| 1 | G | 134 | VAL |
| 1 | G | 159 | VAL |
| 1 | I | 50 | VAL |
| 1 | I | 143 | LEU |
| 1 | I | 190 | ARG |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | I | 219 | VAL |
| 1 | M | 25 | THR |
| 1 | M | 34 | THR |
| 1 | M | 50 | VAL |
| 1 | H | 9 | THR |
| 1 | H | 34 | THR |
| 1 | H | 50 | VAL |
| 1 | H | 167 | THR |
| 1 | H | 219 | VAL |
| 1 | H | 223 | LEU |
| 1 | H | 249 | VAL |
| 1 | D | 34 | THR |
| 1 | D | 43 | VAL |
| 1 | D | 50 | VAL |
| 1 | D | 64 | VAL |
| 1 | D | 219 | VAL |
| 1 | J | 27 | THR |
| 1 | J | 65 | LEU |
| 1 | J | 81 | THR |
| 1 | J | 134 | VAL |
| 1 | J | 190 | ARG |
| 1 | J | 201 | LYS |
| 1 | J | 204 | THR |
| 1 | J | 219 | VAL |
| 1 | J | 223 | LEU |
| 1 | J | 249 | VAL |
| 1 | P | 27 | THR |
| 1 | P | 31 | LEU |
| 1 | P | 50 | VAL |
| 1 | P | 159 | VAL |
| 1 | P | 235 | THR |
| 1 | L | 27 | THR |
| 1 | L | 34 | THR |
| 1 | L | 50 | VAL |
| 1 | L | 134 | VAL |
| 1 | L | 235 | THR |
| 1 | O | 25 | THR |
| 1 | O | 34 | THR |
| 1 | O | 50 | VAL |
| 1 | O | 235 | THR |
| 1 | B | 14[A] | ASN |
| 1 | B | 14[B] | ASN |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | B | 27 | THR |
| 1 | B | 34 | THR |
| 1 | B | 88 | LEU |
| 1 | B | 191 | LEU |
| 1 | B | 219 | VAL |
| 1 | B | 249 | VAL |
| 1 | F | 27 | THR |
| 1 | F | 134 | VAL |
| 1 | F | 235 | THR |
| 1 | F | 249 | VAL |
| 1 | N | 27 | THR |
| 1 | N | 50 | VAL |
| 1 | N | 65 | LEU |
| 1 | N | 131 | SER |
| 1 | N | 219 | VAL |
| 1 | K | 34 | THR |
| 1 | K | 43 | VAL |
| 1 | K | 56 | LEU |
| 1 | K | 86 | ASP |
| 1 | K | 132 | SER |
| 1 | K | 134 | VAL |
| 1 | K | 167 | THR |
| 1 | K | 235 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 133 | ASN |
| 1 | A | 212 | HIS |
| 1 | C | 41 | ASN |
| 1 | C | 133 | ASN |
| 1 | G | 2 | GLN |
| 1 | G | 41 | ASN |
| 1 | I | 41 | ASN |
| 1 | M | 14 | ASN |
| 1 | H | 41 | ASN |
| 1 | H | 133 | ASN |
| 1 | D | 41 | ASN |
| 1 | J | 41 | ASN |
| 1 | J | 181 | HIS |
| 1 | P | 14 | ASN |
| 1 | P | 212 | HIS |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | L | 113 | ASN |
| 1 | B | 2 | GLN |
| 1 | F | 2 | GLN |
| 1 | F | 229 | GLN |
| 1 | N | 14 | ASN |
| 1 | N | 41 | ASN |
| 1 | K | 133 | ASN |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates ⓘ

64 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 | MAN | a | 1 | 2 | 12,12,12 | 0.37 | 0 | 17,17,17 | 0.49 | 0 |
| 2 | NAG | a | 2 | 2 | 14,14,15 | 0.43 | 0 | 17,19,21 | 0.74 | 0 |
| 2 | FUC | a | 3 | 2 | 10,10,11 | 0.44 | 0 | 14,14,16 | 0.35 | 0 |
| 2 | GAL | a | 4 | 2 | 11,11,12 | 0.46 | 0 | 15,15,17 | 0.42 | 0 |
| 2 | MAN | b | 1 | 2 | 12,12,12 | 0.40 | 0 | 17,17,17 | 0.38 | 0 |
| 2 | NAG | b | 2 | 2 | 14,14,15 | 0.42 | 0 | 17,19,21 | 1.26 | 3 (17%) |
| 2 | FUC | b | 3 | 2 | 10,10,11 | 0.44 | 0 | 14,14,16 | 0.41 | 0 |
| 2 | GAL | b | 4 | 2 | 11,11,12 | 0.53 | 0 | 15,15,17 | 0.59 | 0 |
| 2 | MAN | c | 1 | 2 | 12,12,12 | 0.10 | 0 | 17,17,17 | 0.44 | 0 |
| 2 | NAG | c | 2 | 2 | 14,14,15 | 0.44 | 0 | 17,19,21 | 0.74 | 0 |
| 2 | FUC | c | 3 | 2 | 10,10,11 | 0.43 | 0 | 14,14,16 | 0.55 | 0 |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | #\|Z\| > 2 | Counts | RMSZ | #\|Z\| > 2 |
| 2 | GAL | c | 4 | 2 | 11,11,12 | 0.48 | 0 | 15,15,17 | 0.53 | 0 |
| 2 | MAN | d | 1 | 2 | 12,12,12 | 0.25 | 0 | 17,17,17 | 0.52 | 0 |
| 2 | NAG | d | 2 | 2 | 14,14,15 | 0.44 | 0 | 17,19,21 | 0.82 | 0 |
| 2 | FUC | d | 3 | 2 | 10,10,11 | 0.48 | 0 | 14,14,16 | 0.40 | 0 |
| 2 | GAL | d | 4 | 2 | 11,11,12 | 0.56 | 0 | 15,15,17 | 0.46 | 0 |
| 2 | MAN | e | 1 | 2 | 12,12,12 | 0.30 | 0 | 17,17,17 | 0.50 | 0 |
| 2 | NAG | e | 2 | 2 | 14,14,15 | 0.45 | 0 | 17,19,21 | 0.83 | 0 |
| 2 | FUC | e | 3 | 2 | 10,10,11 | 0.46 | 0 | 14,14,16 | 0.37 | 0 |
| 2 | GAL | e | 4 | 2 | 11,11,12 | 0.50 | 0 | 15,15,17 | 0.42 | 0 |
| 2 | MAN | f | 1 | 2 | 12,12,12 | 0.18 | 0 | 17,17,17 | 0.54 | 0 |
| 2 | NAG | f | 2 | 2 | 14,14,15 | 0.39 | 0 | 17,19,21 | 1.04 | 2 (11%) |
| 2 | FUC | f | 3 | 2 | 10,10,11 | 0.45 | 0 | 14,14,16 | 0.44 | 0 |
| 2 | GAL | f | 4 | 2 | 11,11,12 | 0.51 | 0 | 15,15,17 | 0.43 | 0 |
| 2 | MAN | g | 1 | 2 | 12,12,12 | 0.31 | 0 | 17,17,17 | 0.48 | 0 |
| 2 | NAG | g | 2 | 2 | 14,14,15 | 0.45 | 0 | 17,19,21 | 1.04 | 0 |
| 2 | FUC | g | 3 | 2 | 10,10,11 | 0.84 | 1 (10%) | 14,14,16 | 0.70 | 0 |
| 2 | GAL | g | 4 | 2 | 11,11,12 | 0.44 | 0 | 15,15,17 | 0.55 | 0 |
| 2 | MAN | h | 1 | 2 | 12,12,12 | 0.25 | 0 | 17,17,17 | 0.54 | 0 |
| 2 | NAG | h | 2 | 2 | 14,14,15 | 0.46 | 0 | 17,19,21 | 0.76 | 0 |
| 2 | FUC | h | 3 | 2 | 10,10,11 | 0.46 | 0 | 14,14,16 | 0.36 | 0 |
| 2 | GAL | h | 4 | 2 | 11,11,12 | 0.63 | 0 | 15,15,17 | 0.42 | 0 |
| 2 | MAN | i | 1 | 2 | 12,12,12 | 0.19 | 0 | 17,17,17 | 0.49 | 0 |
| 2 | NAG | i | 2 | 2 | 14,14,15 | 0.44 | 0 | 17,19,21 | 0.89 | 1 (5%) |
| 2 | FUC | i | 3 | 2 | 10,10,11 | 0.51 | 0 | 14,14,16 | 0.43 | 0 |
| 2 | GAL | i | 4 | 2 | 11,11,12 | 0.49 | 0 | 15,15,17 | 0.45 | 0 |
| 2 | MAN | j | 1 | 2 | 12,12,12 | 0.30 | 0 | 17,17,17 | 0.54 | 0 |
| 2 | NAG | j | 2 | 2 | 14,14,15 | 0.46 | 0 | 17,19,21 | 0.77 | 0 |
| 2 | FUC | j | 3 | 2 | 10,10,11 | 0.41 | 0 | 14,14,16 | 0.38 | 0 |
| 2 | GAL | j | 4 | 2 | 11,11,12 | 0.41 | 0 | 15,15,17 | 0.59 | 0 |
| 2 | MAN | k | 1 | 2 | 12,12,12 | 0.36 | 0 | 17,17,17 | 0.43 | 0 |
| 2 | NAG | k | 2 | 2 | 14,14,15 | 0.33 | 0 | 17,19,21 | 1.07 | 1 (5%) |
| 2 | FUC | k | 3 | 2 | 10,10,11 | 0.58 | 0 | 14,14,16 | 0.36 | 0 |
| 2 | GAL | k | 4 | 2 | 11,11,12 | 0.53 | 0 | 15,15,17 | 0.45 | 0 |
| 2 | MAN | l | 1 | 2 | 12,12,12 | 0.12 | 0 | 17,17,17 | 0.48 | 0 |
| 2 | NAG | l | 2 | 2 | 14,14,15 | 0.42 | 0 | 17,19,21 | 0.67 | 0 |
| 2 | FUC | l | 3 | 2 | 10,10,11 | 0.42 | 0 | 14,14,16 | 0.42 | 0 |
| 2 | GAL | l | 4 | 2 | 11,11,12 | 0.43 | 0 | 15,15,17 | 0.45 | 0 |
| 2 | MAN | m | 1 | 2 | 12,12,12 | 0.31 | 0 | 17,17,17 | 0.53 | 0 |
| 2 | NAG | m | 2 | 2 | 14,14,15 | 0.46 | 0 | 17,19,21 | 0.87 | 0 |
| 2 | FUC | m | 3 | 2 | 10,10,11 | 0.49 | 0 | 14,14,16 | 0.39 | 0 |
| 2 | GAL | m | 4 | 2 | 11,11,12 | 0.44 | 0 | 15,15,17 | 0.60 | 0 |
| 2 | MAN | n | 1 | 2 | 12,12,12 | 0.30 | 0 | 17,17,17 | 0.53 | 0 |

| Mol | Type | Chain | Res | Link | Bond lengths | | | | Bond angles | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | #\|Z\| > 2 | | Counts | RMSZ | #\|Z\| > 2 | |
| 2 | NAG | n | 2 | 2 | 14,14,15 | 0.41 | 0 | | 17,19,21 | 1.21 | 3 (17%) | |
| 2 | FUC | n | 3 | 2 | 10,10,11 | 0.52 | 0 | | 14,14,16 | 0.35 | 0 | |
| 2 | GAL | n | 4 | 2 | 11,11,12 | 0.57 | 0 | | 15,15,17 | 0.44 | 0 | |
| 2 | MAN | o | 1 | 2 | 12,12,12 | 0.23 | 0 | | 17,17,17 | 0.45 | 0 | |
| 2 | NAG | o | 2 | 2 | 14,14,15 | 0.45 | 0 | | 17,19,21 | 0.67 | 0 | |
| 2 | FUC | o | 3 | 2 | 10,10,11 | 0.48 | 0 | | 14,14,16 | 0.33 | 0 | |
| 2 | GAL | o | 4 | 2 | 11,11,12 | 0.54 | 0 | | 15,15,17 | 0.47 | 0 | |
| 2 | MAN | p | 1 | 2 | 12,12,12 | 0.23 | 0 | | 17,17,17 | 0.49 | 0 | |
| 2 | NAG | p | 2 | 2 | 14,14,15 | 0.45 | 0 | | 17,19,21 | 0.96 | 1 (5%) | |
| 2 | FUC | p | 3 | 2 | 10,10,11 | 0.48 | 0 | | 14,14,16 | 0.37 | 0 | |
| 2 | GAL | p | 4 | 2 | 11,11,12 | 0.40 | 0 | | 15,15,17 | 0.41 | 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 |
|---|---|---|---|---|---|---|---|
| 2 | MAN | a | 1 | 2 | - | 2/2/22/22 | 0/1/1/1 |
| 2 | NAG | a | 2 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 2 | FUC | a | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | a | 4 | 2 | - | 1/2/19/22 | 0/1/1/1 |
| 2 | MAN | b | 1 | 2 | - | 2/2/22/22 | 0/1/1/1 |
| 2 | NAG | b | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | b | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | b | 4 | 2 | - | 0/2/19/22 | 0/1/1/1 |
| 2 | MAN | c | 1 | 2 | - | 2/2/22/22 | 0/1/1/1 |
| 2 | NAG | c | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | c | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | c | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | d | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | d | 2 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 2 | FUC | d | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | d | 4 | 2 | - | 0/2/19/22 | 0/1/1/1 |
| 2 | MAN | e | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | e | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | e | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | e | 4 | 2 | - | 1/2/19/22 | 0/1/1/1 |
| 2 | MAN | f | 1 | 2 | - | 2/2/22/22 | 0/1/1/1 |
| 2 | NAG | f | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | f | 3 | 2 | - | - | 0/1/1/1 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 2 | GAL | f | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | g | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | g | 2 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 2 | FUC | g | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | g | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | h | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | h | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | h | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | h | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | i | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | i | 2 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 2 | FUC | i | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | i | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | j | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | j | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | j | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | j | 4 | 2 | - | 0/2/19/22 | 0/1/1/1 |
| 2 | MAN | k | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | k | 2 | 2 | - | 1/6/23/26 | 0/1/1/1 |
| 2 | FUC | k | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | k | 4 | 2 | - | 0/2/19/22 | 0/1/1/1 |
| 2 | MAN | l | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | l | 2 | 2 | - | 1/6/23/26 | 0/1/1/1 |
| 2 | FUC | l | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | l | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | m | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | m | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | m | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | m | 4 | 2 | - | 0/2/19/22 | 0/1/1/1 |
| 2 | MAN | n | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | n | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | n | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | n | 4 | 2 | - | 2/2/19/22 | 0/1/1/1 |
| 2 | MAN | o | 1 | 2 | - | 1/2/22/22 | 0/1/1/1 |
| 2 | NAG | o | 2 | 2 | - | 2/6/23/26 | 0/1/1/1 |
| 2 | FUC | o | 3 | 2 | - | - | 0/1/1/1 |
| 2 | GAL | o | 4 | 2 | - | 1/2/19/22 | 0/1/1/1 |
| 2 | MAN | p | 1 | 2 | - | 0/2/22/22 | 0/1/1/1 |
| 2 | NAG | p | 2 | 2 | - | 0/6/23/26 | 0/1/1/1 |
| 2 | FUC | p | 3 | 2 | - | - | 0/1/1/1 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 2 | GAL | p | 4 | 2 | - | 1/2/19/22 | 0/1/1/1 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|---|-------------|----------|
| 2 | g | 3 | FUC | C2-C3 | -2.45 | 1.48 | 1.52 |

All (11) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------|---|-------------|----------|
| 2 | n | 2 | NAG | O5-C1-C2 | 3.42 | 116.69 | 111.29 |
| 2 | b | 2 | NAG | O5-C1-C2 | 3.41 | 116.67 | 111.29 |
| 2 | p | 2 | NAG | O3-C3-C2 | -3.00 | 103.25 | 109.47 |
| 2 | f | 2 | NAG | O5-C1-C2 | 2.74 | 115.61 | 111.29 |
| 2 | k | 2 | NAG | C2-N2-C7 | 2.71 | 126.76 | 122.90 |
| 2 | b | 2 | NAG | O4-C4-C3 | -2.43 | 104.74 | 110.35 |
| 2 | n | 2 | NAG | O4-C4-C3 | -2.26 | 105.12 | 110.35 |
| 2 | b | 2 | NAG | O3-C3-C2 | -2.12 | 105.07 | 109.47 |
| 2 | f | 2 | NAG | O4-C4-C3 | -2.10 | 105.49 | 110.35 |
| 2 | n | 2 | NAG | O3-C3-C2 | -2.04 | 105.24 | 109.47 |
| 2 | i | 2 | NAG | O4-C4-C3 | -2.02 | 105.68 | 110.35 |

There are no chirality outliers.

All (39) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------|
| 2 | a | 2 | NAG | C4-C5-C6-O6 |
| 2 | c | 1 | MAN | O5-C5-C6-O6 |
| 2 | n | 4 | GAL | O5-C5-C6-O6 |
| 2 | i | 4 | GAL | C4-C5-C6-O6 |
| 2 | l | 4 | GAL | C4-C5-C6-O6 |
| 2 | b | 1 | MAN | O5-C5-C6-O6 |
| 2 | g | 4 | GAL | C4-C5-C6-O6 |
| 2 | c | 4 | GAL | C4-C5-C6-O6 |
| 2 | a | 2 | NAG | O5-C5-C6-O6 |
| 2 | c | 1 | MAN | C4-C5-C6-O6 |
| 2 | n | 4 | GAL | C4-C5-C6-O6 |
| 2 | b | 1 | MAN | C4-C5-C6-O6 |
| 2 | h | 4 | GAL | O5-C5-C6-O6 |
| 2 | g | 4 | GAL | O5-C5-C6-O6 |
| 2 | c | 4 | GAL | O5-C5-C6-O6 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------|
| 2 | h | 4 | GAL | C4-C5-C6-O6 |
| 2 | i | 4 | GAL | O5-C5-C6-O6 |
| 2 | l | 4 | GAL | O5-C5-C6-O6 |
| 2 | e | 4 | GAL | O5-C5-C6-O6 |
| 2 | o | 4 | GAL | O5-C5-C6-O6 |
| 2 | i | 2 | NAG | C4-C5-C6-O6 |
| 2 | p | 4 | GAL | O5-C5-C6-O6 |
| 2 | a | 4 | GAL | O5-C5-C6-O6 |
| 2 | k | 2 | NAG | C3-C2-N2-C7 |
| 2 | g | 2 | NAG | C4-C5-C6-O6 |
| 2 | g | 2 | NAG | O5-C5-C6-O6 |
| 2 | f | 4 | GAL | C4-C5-C6-O6 |
| 2 | o | 2 | NAG | C4-C5-C6-O6 |
| 2 | d | 2 | NAG | C4-C5-C6-O6 |
| 2 | i | 2 | NAG | O5-C5-C6-O6 |
| 2 | f | 4 | GAL | O5-C5-C6-O6 |
| 2 | o | 2 | NAG | O5-C5-C6-O6 |
| 2 | d | 2 | NAG | O5-C5-C6-O6 |
| 2 | f | 1 | MAN | C4-C5-C6-O6 |
| 2 | f | 1 | MAN | O5-C5-C6-O6 |
| 2 | a | 1 | MAN | C4-C5-C6-O6 |
| 2 | l | 2 | NAG | C4-C5-C6-O6 |
| 2 | a | 1 | MAN | O5-C5-C6-O6 |
| 2 | o | 1 | MAN | C4-C5-C6-O6 |

There are no ring outliers.

9 monomers are involved in 12 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | c | 1 | MAN | 2 | 0 |
| 2 | g | 4 | GAL | 1 | 0 |
| 2 | k | 4 | GAL | 1 | 0 |
| 2 | g | 2 | NAG | 1 | 0 |
| 2 | g | 3 | FUC | 1 | 0 |
| 2 | k | 2 | NAG | 2 | 0 |
| 2 | k | 1 | MAN | 1 | 0 |
| 2 | c | 4 | GAL | 2 | 0 |
| 2 | b | 1 | MAN | 2 | 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.

## Oligosaccharide Chain a



Bond lengths



Bond angles



Torsions



Rings

## Oligosaccharide Chain e


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain c



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain g


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain i


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain m


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain h



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain d


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain j


**Bond lengths**


**Bond angles**


**Torsions**


**Rings**

## Oligosaccharide Chain n



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain p



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain l



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain o



**Bond lengths**



**Bond angles**



**Torsions**



**Rings**

## Oligosaccharide Chain k


Bond lengths


Bond angles


Torsions


Rings

## Oligosaccharide Chain b


**Bond lengths**


**Bond angles**


**Torsions**


**Rings**

**Oligosaccharide Chain f**



Bond lengths



Bond angles



Torsions



Rings

## 5.6 Ligand geometry ⓘ

Of 32 ligands modelled in this entry, 32 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

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, $95^{th}$ 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(Å²) | Q<0.9 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | A | 233/264 (88%) | 0.14 | 4 (1%) | 69 | 65 | 26, 44, 62, 77 | 0 |
| 1 | B | 234/264 (88%) | 0.07 | 4 (1%) | 69 | 65 | 25, 42, 60, 78 | 1 (0%) |
| 1 | C | 234/264 (88%) | 0.18 | 11 (4%) | 37 | 34 | 28, 42, 59, 92 | 0 |
| 1 | D | 233/264 (88%) | 0.11 | 4 (1%) | 69 | 65 | 25, 38, 57, 68 | 0 |
| 1 | E | 234/264 (88%) | 0.01 | 2 (0%) | 81 | 78 | 21, 39, 58, 80 | 0 |
| 1 | F | 234/264 (88%) | 0.23 | 7 (2%) | 52 | 49 | 23, 43, 61, 78 | 0 |
| 1 | G | 232/264 (87%) | -0.25 | 3 (1%) | 74 | 71 | 23, 31, 48, 70 | 0 |
| 1 | H | 232/264 (87%) | -0.24 | 1 (0%) | 89 | 86 | 22, 31, 48, 68 | 0 |
| 1 | I | 232/264 (87%) | 0.10 | 5 (2%) | 62 | 59 | 26, 40, 58, 71 | 0 |
| 1 | J | 232/264 (87%) | -0.12 | 2 (0%) | 81 | 78 | 22, 34, 53, 77 | 0 |
| 1 | K | 234/264 (88%) | 0.92 | 37 (15%) | 6 | 6 | 32, 61, 88, 98 | 0 |
| 1 | L | 234/264 (88%) | 0.51 | 12 (5%) | 34 | 32 | 29, 50, 68, 73 | 0 |
| 1 | M | 232/264 (87%) | -0.23 | 2 (0%) | 81 | 78 | 22, 29, 48, 69 | 0 |
| 1 | N | 233/264 (88%) | -0.24 | 3 (1%) | 74 | 71 | 23, 29, 46, 68 | 0 |
| 1 | O | 234/264 (88%) | -0.02 | 6 (2%) | 57 | 54 | 22, 39, 55, 68 | 0 |
| 1 | P | 232/264 (87%) | 0.27 | 5 (2%) | 62 | 59 | 19, 46, 65, 71 | 1 (0%) |
| All | All | 3729/4224 (88%) | 0.09 | 108 (2%) | 54 | 50 | 19, 39, 64, 98 | 2 (0%) |

All (108) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
| --- | --- | --- | --- | --- |
| 1 | I | 1 | ALA | 5.5 |
| 1 | K | 249 | VAL | 4.8 |
| 1 | K | 130 | ALA | 4.6 |
| 1 | I | 249 | VAL | 4.4 |
| 1 | K | 48 | GLY | 4.3 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | O | 2 | GLN | 4.0 |
| 1 | L | 249 | VAL | 4.0 |
| 1 | P | 1 | ALA | 3.7 |
| 1 | D | 249 | VAL | 3.7 |
| 1 | N | 1 | ALA | 3.6 |
| 1 | K | 143 | LEU | 3.5 |
| 1 | L | 62 | SER | 3.5 |
| 1 | C | 130 | ALA | 3.5 |
| 1 | C | 1 | ALA | 3.5 |
| 1 | K | 104 | GLY | 3.4 |
| 1 | L | 1 | ALA | 3.4 |
| 1 | M | 1 | ALA | 3.4 |
| 1 | K | 1 | ALA | 3.3 |
| 1 | K | 230 | ASP | 3.3 |
| 1 | C | 44 | SER | 3.3 |
| 1 | B | 130 | ALA | 3.3 |
| 1 | F | 1 | ALA | 3.3 |
| 1 | K | 82 | SER | 3.2 |
| 1 | K | 102 | HIS | 3.2 |
| 1 | K | 129 | ALA | 3.1 |
| 1 | A | 1 | ALA | 3.1 |
| 1 | F | 249 | VAL | 3.1 |
| 1 | E | 129 | ALA | 3.1 |
| 1 | B | 131 | SER | 3.1 |
| 1 | L | 61 | ASP | 3.1 |
| 1 | K | 22 | GLY | 3.0 |
| 1 | K | 43 | VAL | 3.0 |
| 1 | K | 105 | PHE | 3.0 |
| 1 | L | 250 | ALA | 3.0 |
| 1 | O | 82 | SER | 3.0 |
| 1 | K | 248 | ASN | 3.0 |
| 1 | O | 1 | ALA | 2.9 |
| 1 | L | 84 | ILE | 2.9 |
| 1 | P | 206 | SER | 2.9 |
| 1 | K | 47 | ALA | 2.9 |
| 1 | D | 1 | ALA | 2.8 |
| 1 | K | 142 | TYR | 2.8 |
| 1 | I | 2 | GLN | 2.8 |
| 1 | N | 250 | ALA | 2.8 |
| 1 | K | 85 | ALA | 2.8 |
| 1 | K | 106 | LEU | 2.7 |
| 1 | C | 45 | SER | 2.7 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | K | 131 | SER | 2.7 |
| 1 | A | 163 | ARG | 2.7 |
| 1 | L | 87 | GLY | 2.7 |
| 1 | K | 132 | SER | 2.7 |
| 1 | K | 147 | TYR | 2.7 |
| 1 | L | 228 | GLY | 2.7 |
| 1 | K | 146 | ASP | 2.6 |
| 1 | F | 130 | ALA | 2.6 |
| 1 | B | 2 | GLN | 2.6 |
| 1 | M | 248 | ASN | 2.6 |
| 1 | C | 249 | VAL | 2.5 |
| 1 | G | 147 | TYR | 2.5 |
| 1 | K | 148 | GLY | 2.5 |
| 1 | K | 228 | GLY | 2.5 |
| 1 | A | 249 | VAL | 2.5 |
| 1 | J | 249 | VAL | 2.5 |
| 1 | P | 231 | LYS | 2.5 |
| 1 | C | 146 | ASP | 2.5 |
| 1 | H | 1 | ALA | 2.4 |
| 1 | J | 1 | ALA | 2.4 |
| 1 | A | 130 | ALA | 2.4 |
| 1 | K | 227 | THR | 2.4 |
| 1 | G | 113 | ASN | 2.3 |
| 1 | K | 101 | TYR | 2.3 |
| 1 | N | 249 | VAL | 2.3 |
| 1 | K | 99 | ILE | 2.3 |
| 1 | K | 84 | ILE | 2.3 |
| 1 | L | 148 | GLY | 2.3 |
| 1 | P | 233 | ARG | 2.3 |
| 1 | K | 83 | ARG | 2.3 |
| 1 | K | 45 | SER | 2.3 |
| 1 | K | 113 | ASN | 2.2 |
| 1 | F | 229 | GLN | 2.2 |
| 1 | L | 226 | SER | 2.2 |
| 1 | O | 61 | ASP | 2.2 |
| 1 | B | 14[A] | ASN | 2.2 |
| 1 | G | 1 | ALA | 2.2 |
| 1 | D | 7 | SER | 2.2 |
| 1 | F | 206 | SER | 2.2 |
| 1 | I | 13 | PRO | 2.2 |
| 1 | F | 217 | GLU | 2.2 |
| 1 | K | 144 | ASN | 2.2 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | E | 249 | VAL | 2.2 |
| 1 | P | 43 | VAL | 2.2 |
| 1 | K | 44 | SER | 2.2 |
| 1 | K | 226 | SER | 2.2 |
| 1 | C | 43 | VAL | 2.2 |
| 1 | C | 38 | SER | 2.1 |
| 1 | K | 26 | SER | 2.1 |
| 1 | I | 145 | PRO | 2.1 |
| 1 | O | 249 | VAL | 2.1 |
| 1 | C | 199 | GLY | 2.1 |
| 1 | O | 129 | ALA | 2.1 |
| 1 | K | 107 | GLY | 2.1 |
| 1 | C | 231 | LYS | 2.1 |
| 1 | D | 28 | ASN | 2.1 |
| 1 | F | 86 | ASP | 2.1 |
| 1 | K | 151 | ASN | 2.1 |
| 1 | C | 129 | ALA | 2.0 |
| 1 | L | 104 | GLY | 2.0 |
| 1 | L | 130 | ALA | 2.0 |

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

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

## 6.3 Carbohydrates ⓘ

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, $95^{th}$ 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($Å^2$) | Q<0.9 |
|-----|------|-------|-----|-------|------|-----|----------------|-------|
| 2 | MAN | a | 1 | 12/12 | - | - | 49,54,58,59 | 0 |
| 2 | NAG | a | 2 | 14/15 | - | - | 49,53,63,64 | 0 |
| 2 | FUC | a | 3 | 10/11 | - | - | 57,62,63,64 | 0 |
| 2 | GAL | a | 4 | 11/12 | - | - | 53,56,66,75 | 0 |
| 2 | MAN | e | 1 | 12/12 | - | - | 43,52,55,56 | 0 |
| 2 | NAG | e | 2 | 14/15 | - | - | 47,54,61,65 | 0 |
| 2 | FUC | e | 3 | 10/11 | - | - | 50,53,57,63 | 0 |
| 2 | GAL | e | 4 | 11/12 | - | - | 47,53,58,63 | 0 |
| 2 | MAN | c | 1 | 12/12 | - | - | 36,42,55,56 | 0 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|-----|------|-------|-----|-------|------|-----|------------------|-------|
| 2 | NAG | c | 2 | 14/15 | - | - | 35,41,53,57 | 0 |
| 2 | FUC | c | 3 | 10/11 | - | - | 55,58,63,66 | 0 |
| 2 | GAL | c | 4 | 11/12 | - | - | 45,52,62,66 | 0 |
| 2 | MAN | g | 1 | 12/12 | - | - | 24,31,41,50 | 0 |
| 2 | NAG | g | 2 | 14/15 | - | - | 31,39,43,51 | 0 |
| 2 | FUC | g | 3 | 10/11 | - | - | 61,73,88,105 | 0 |
| 2 | GAL | g | 4 | 11/12 | - | - | 33,42,47,55 | 0 |
| 2 | MAN | i | 1 | 12/12 | - | - | 39,45,56,60 | 0 |
| 2 | NAG | i | 2 | 14/15 | - | - | 41,49,54,54 | 0 |
| 2 | FUC | i | 3 | 10/11 | - | - | 45,55,58,63 | 0 |
| 2 | GAL | i | 4 | 11/12 | - | - | 58,61,68,74 | 0 |
| 2 | MAN | m | 1 | 12/12 | - | - | 27,32,43,45 | 0 |
| 2 | NAG | m | 2 | 14/15 | - | - | 25,37,46,49 | 0 |
| 2 | FUC | m | 3 | 10/11 | - | - | 39,50,54,58 | 0 |
| 2 | GAL | m | 4 | 11/12 | - | - | 36,46,51,54 | 0 |
| 2 | MAN | h | 1 | 12/12 | - | - | 28,33,41,43 | 0 |
| 2 | NAG | h | 2 | 14/15 | - | - | 28,37,41,46 | 0 |
| 2 | FUC | h | 3 | 10/11 | - | - | 37,40,41,41 | 0 |
| 2 | GAL | h | 4 | 11/12 | - | - | 43,50,52,57 | 0 |
| 2 | MAN | d | 1 | 12/12 | - | - | 42,48,52,55 | 0 |
| 2 | NAG | d | 2 | 14/15 | - | - | 29,34,41,41 | 0 |
| 2 | FUC | d | 3 | 10/11 | - | - | 34,40,47,53 | 0 |
| 2 | GAL | d | 4 | 11/12 | - | - | 36,46,52,59 | 0 |
| 2 | MAN | j | 1 | 12/12 | - | - | 30,36,43,45 | 0 |
| 2 | NAG | j | 2 | 14/15 | - | - | 23,32,42,42 | 0 |
| 2 | FUC | j | 3 | 10/11 | - | - | 38,42,52,56 | 0 |
| 2 | GAL | j | 4 | 11/12 | - | - | 39,43,48,60 | 0 |
| 2 | MAN | n | 1 | 12/12 | - | - | 26,36,44,52 | 0 |
| 2 | NAG | n | 2 | 14/15 | - | - | 22,33,42,43 | 0 |
| 2 | FUC | n | 3 | 10/11 | - | - | 38,47,53,60 | 0 |
| 2 | GAL | n | 4 | 11/12 | - | - | 40,48,58,75 | 0 |
| 2 | MAN | p | 1 | 12/12 | - | - | 55,60,65,65 | 0 |
| 2 | NAG | p | 2 | 14/15 | - | - | 49,53,65,67 | 0 |
| 2 | FUC | p | 3 | 10/11 | - | - | 49,52,56,63 | 0 |
| 2 | GAL | p | 4 | 11/12 | - | - | 54,58,72,77 | 0 |
| 2 | MAN | l | 1 | 12/12 | - | - | 51,61,65,71 | 0 |
| 2 | NAG | l | 2 | 14/15 | - | - | 61,62,65,68 | 0 |
| 2 | FUC | l | 3 | 10/11 | - | - | 63,68,73,78 | 0 |
| 2 | GAL | l | 4 | 11/12 | - | - | 66,72,79,79 | 0 |
| 2 | MAN | o | 1 | 12/12 | - | - | 43,46,53,54 | 0 |
| 2 | NAG | o | 2 | 14/15 | - | - | 47,52,57,60 | 0 |
| 2 | FUC | o | 3 | 10/11 | - | - | 45,51,57,64 | 0 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|-----|------|-------|-----|-------|------|-----|------------------|-------|
| 2 | GAL | o | 4 | 11/12 | - | - | 50,57,68,76 | 0 |
| 2 | MAN | k | 1 | 12/12 | - | - | 78,82,83,85 | 0 |
| 2 | NAG | k | 2 | 14/15 | - | - | 68,85,100,103 | 0 |
| 2 | FUC | k | 3 | 10/11 | - | - | 97,98,102,103 | 0 |
| 2 | GAL | k | 4 | 11/12 | - | - | 97,100,105,106 | 0 |
| 2 | MAN | b | 1 | 12/12 | - | - | 44,51,60,71 | 0 |
| 2 | NAG | b | 2 | 14/15 | - | - | 42,53,64,83 | 0 |
| 2 | FUC | b | 3 | 10/11 | - | - | 47,54,61,62 | 0 |
| 2 | GAL | b | 4 | 11/12 | - | - | 91,91,97,101 | 0 |
| 2 | MAN | f | 1 | 12/12 | - | - | 47,49,51,51 | 0 |
| 2 | NAG | f | 2 | 14/15 | - | - | 48,51,58,59 | 0 |
| 2 | FUC | f | 3 | 10/11 | - | - | 44,48,51,54 | 0 |
| 2 | GAL | f | 4 | 11/12 | - | - | 49,53,61,65 | 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.
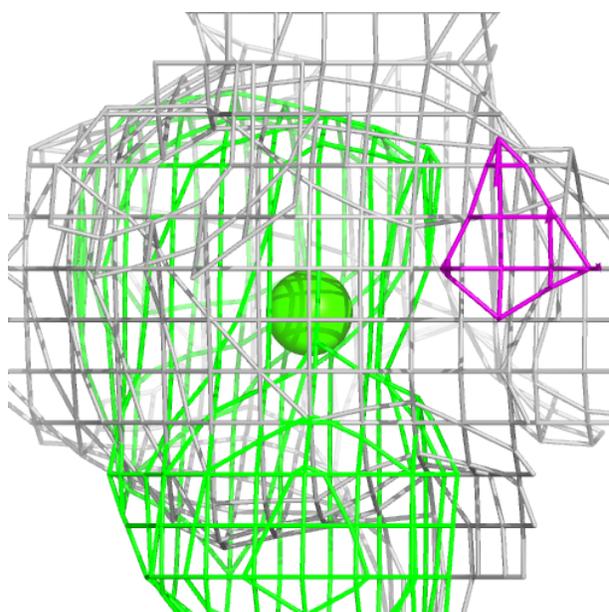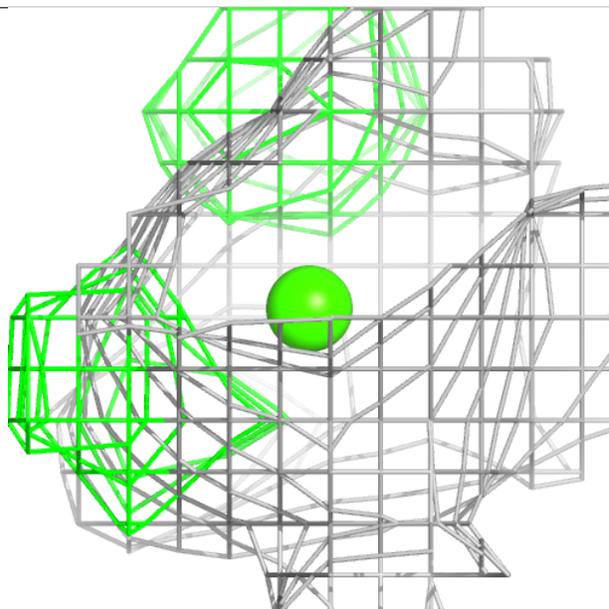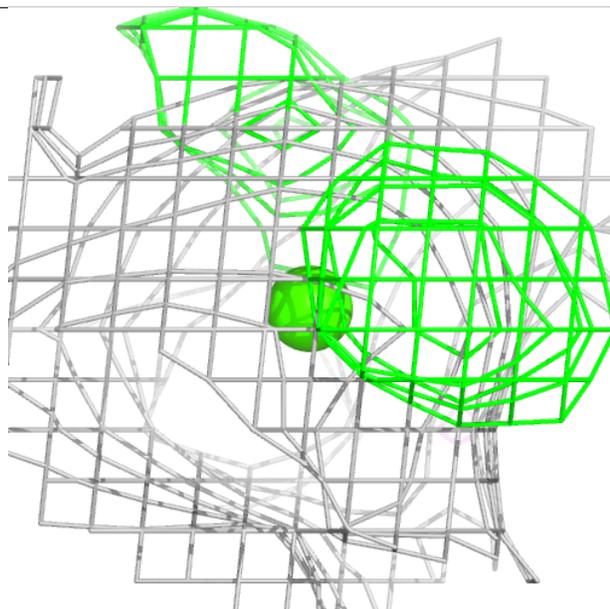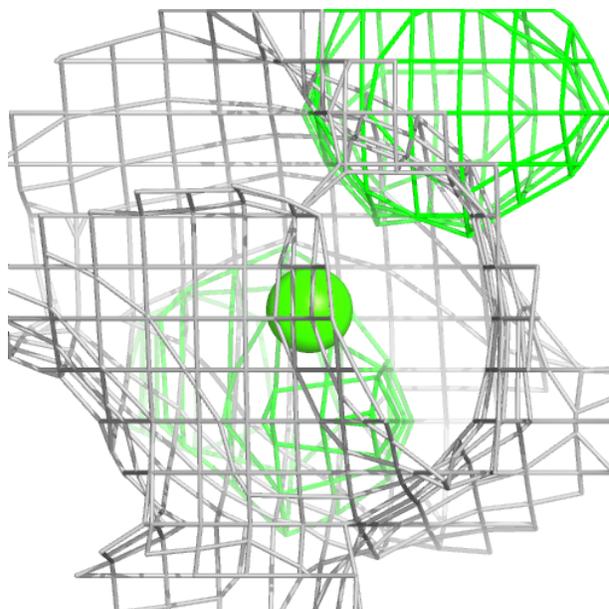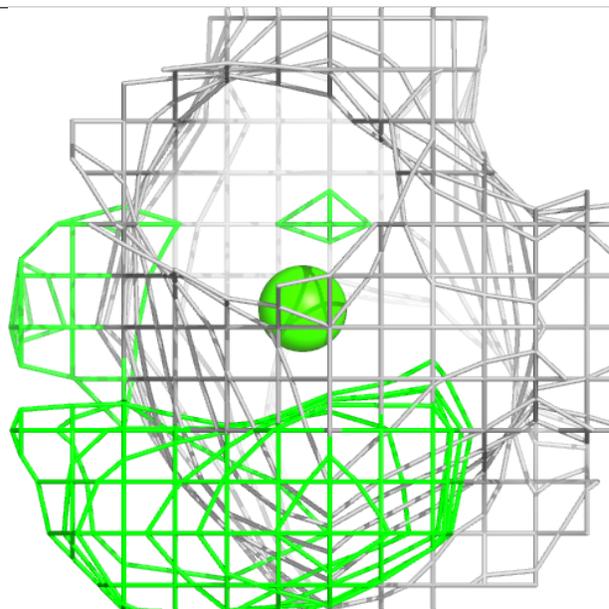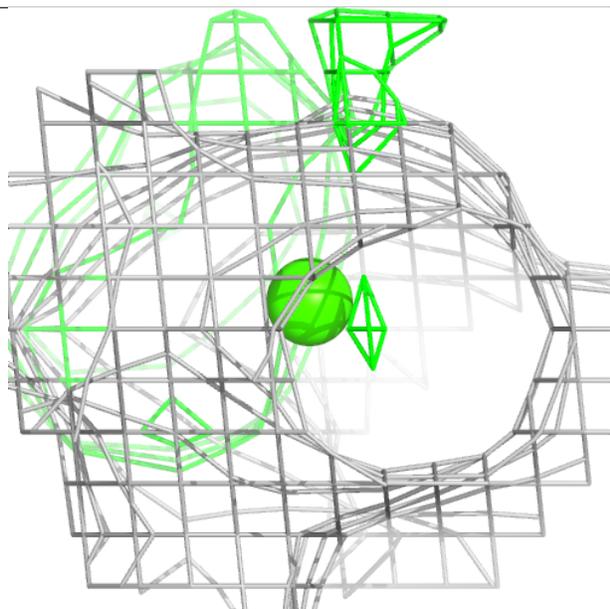


**Electron density around Chain a:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
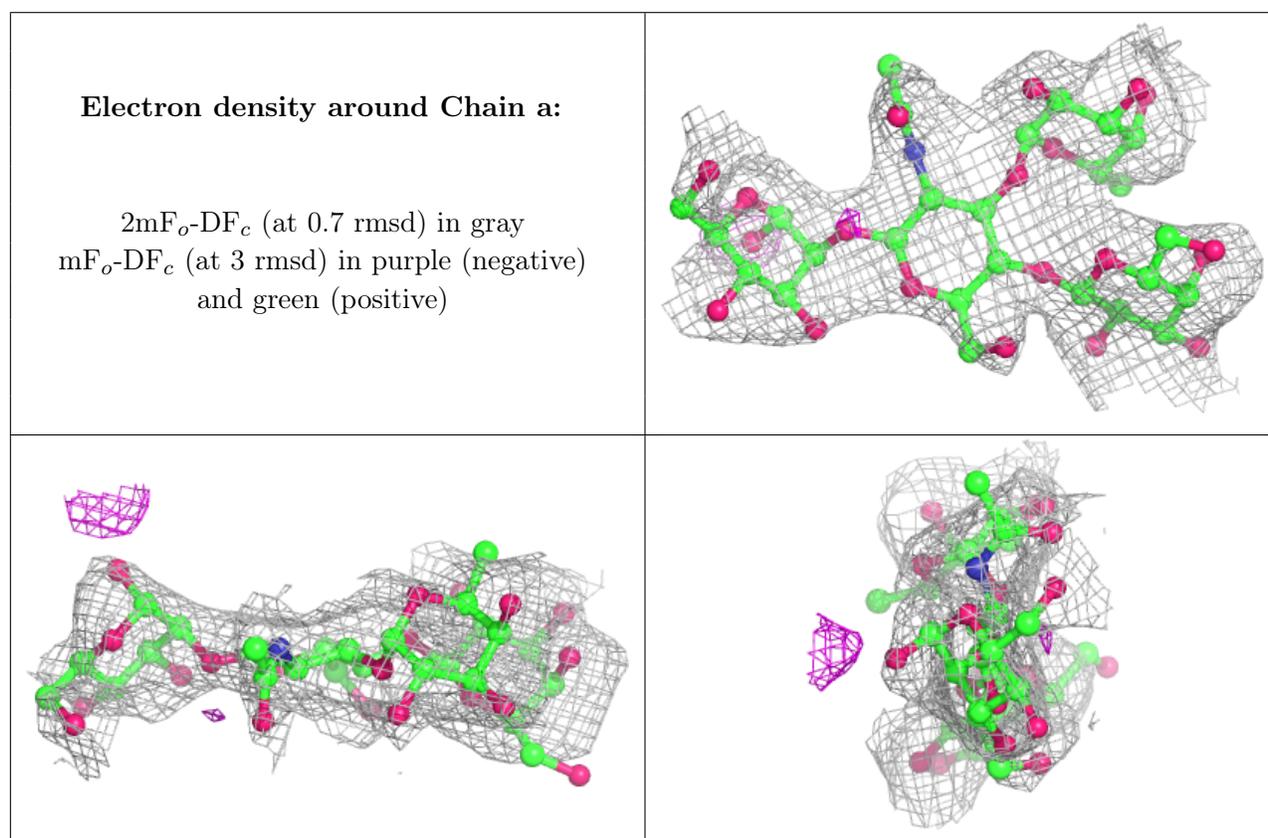
**Electron density around Chain e:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
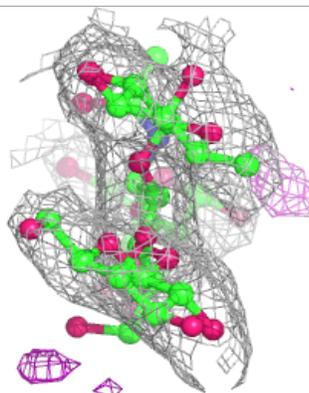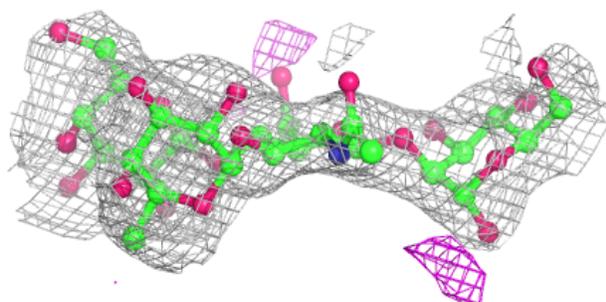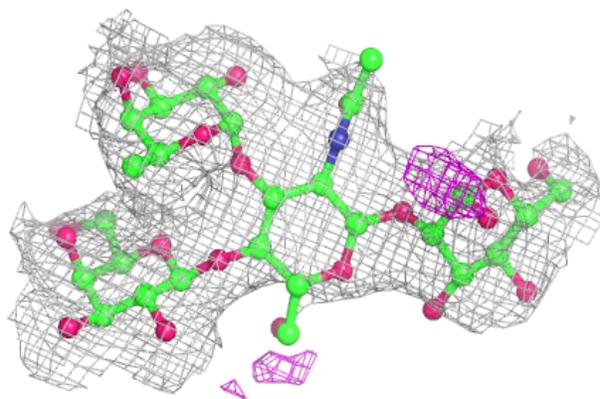
**Electron density around Chain c:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
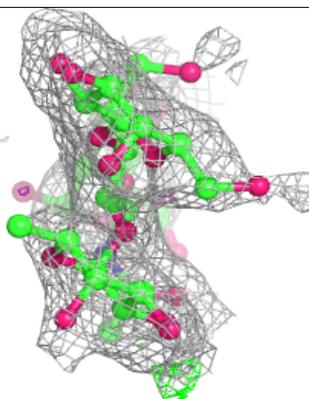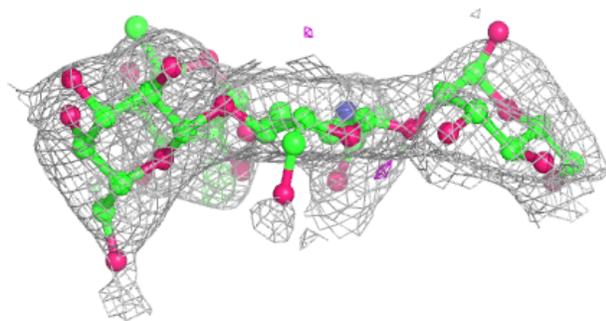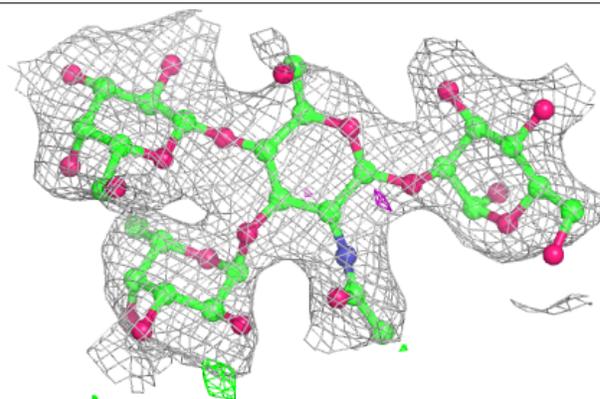
**Electron density around Chain g:**

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
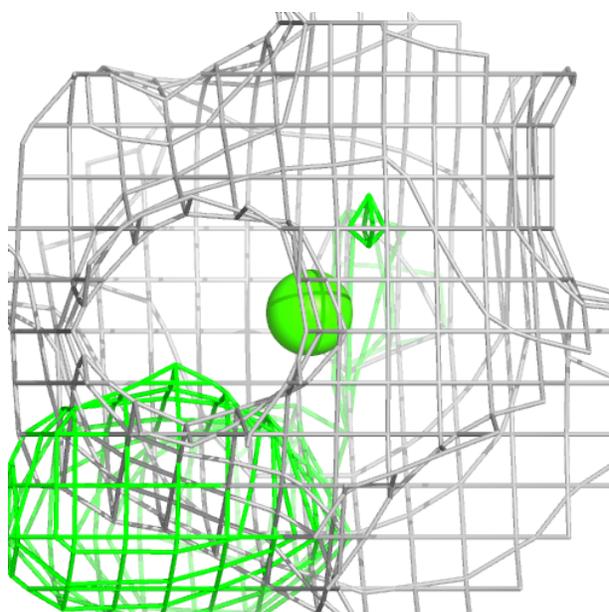$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative)
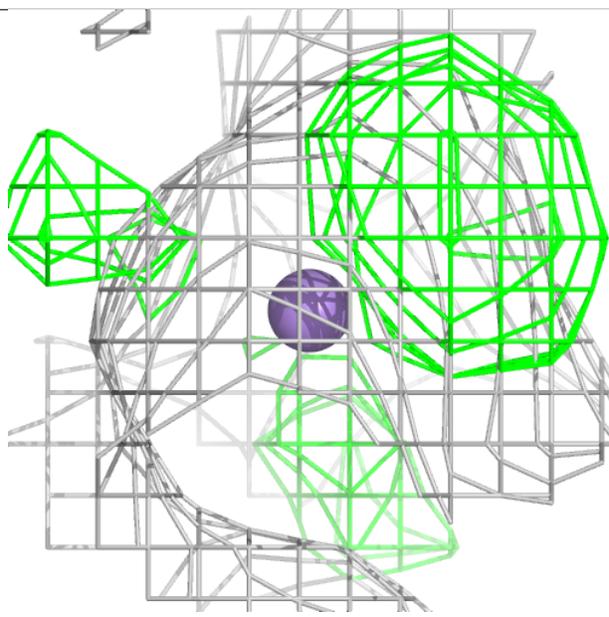and green (positive)
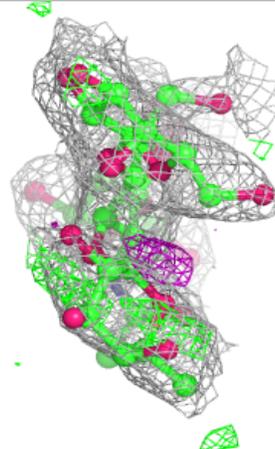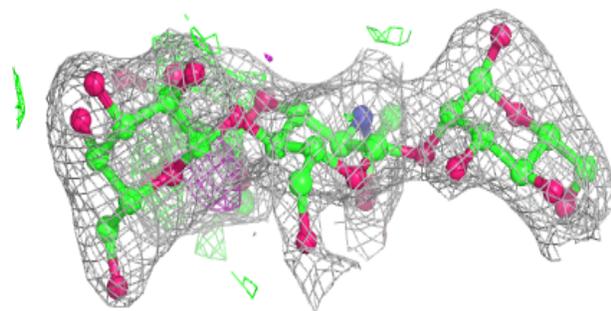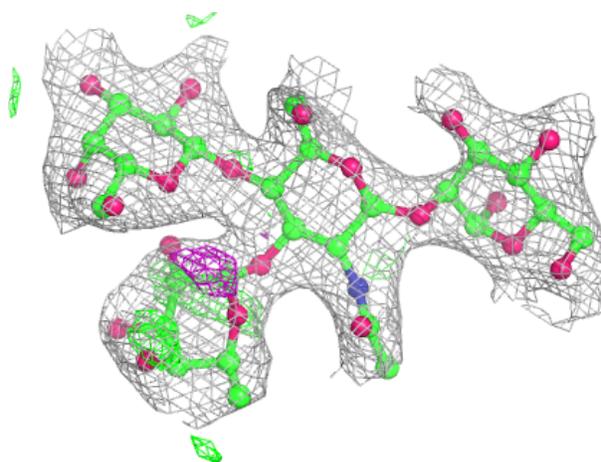
**Electron density around Chain i:**

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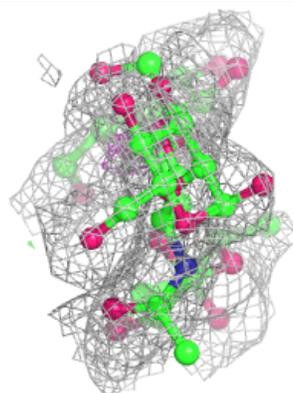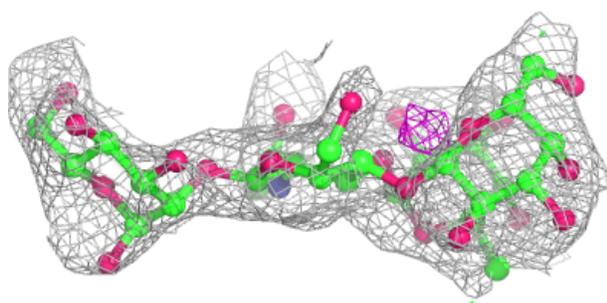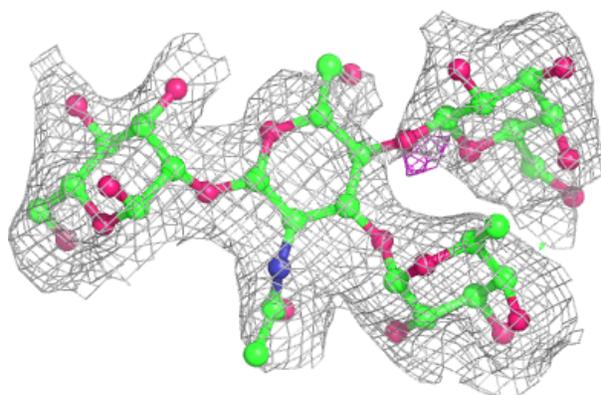


**Electron density around Chain m:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
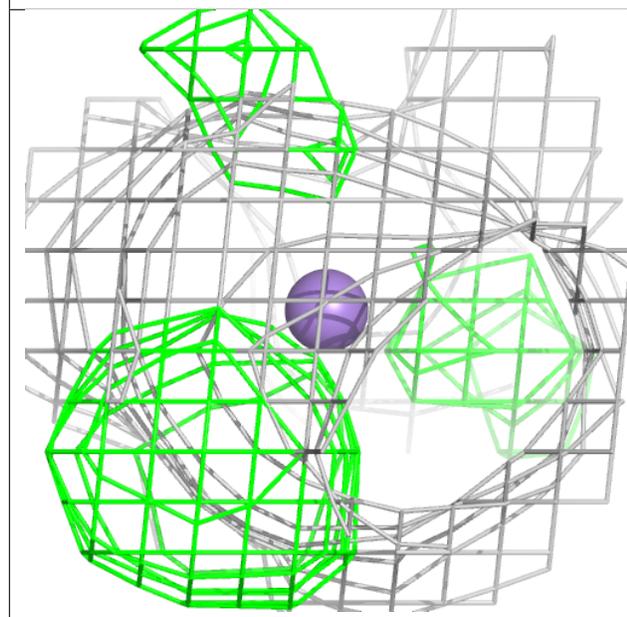$mF_o-DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
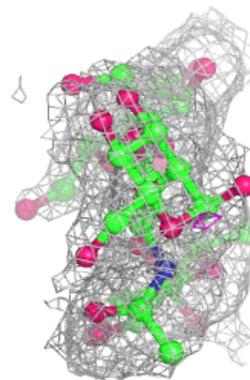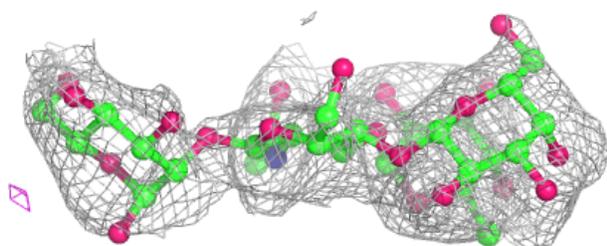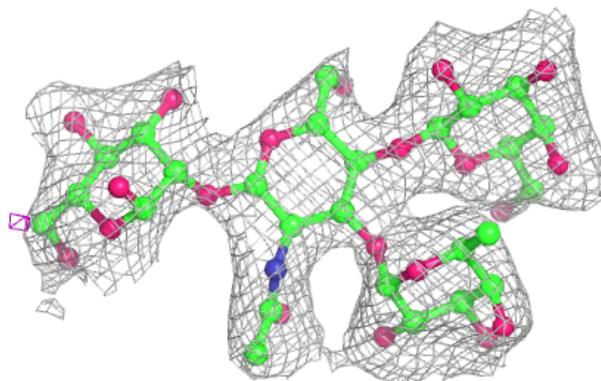
**Electron density around Chain h:**

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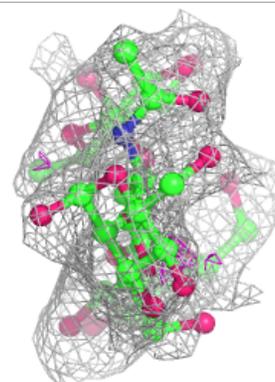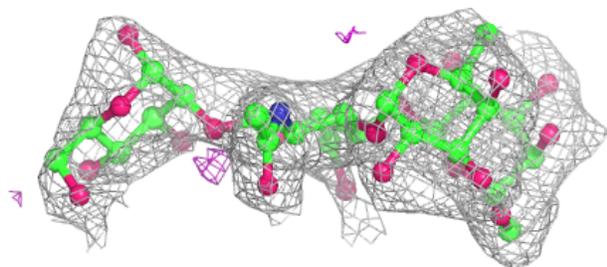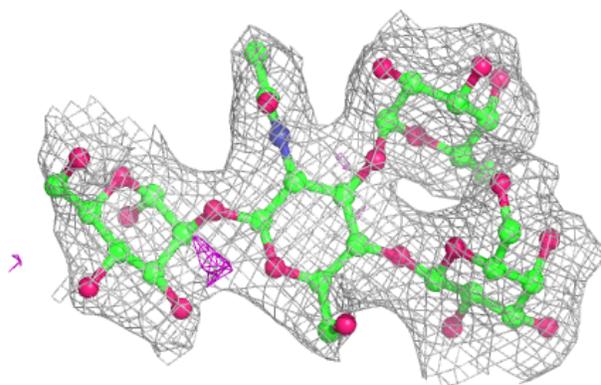


**Electron density around Chain d:**

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative)
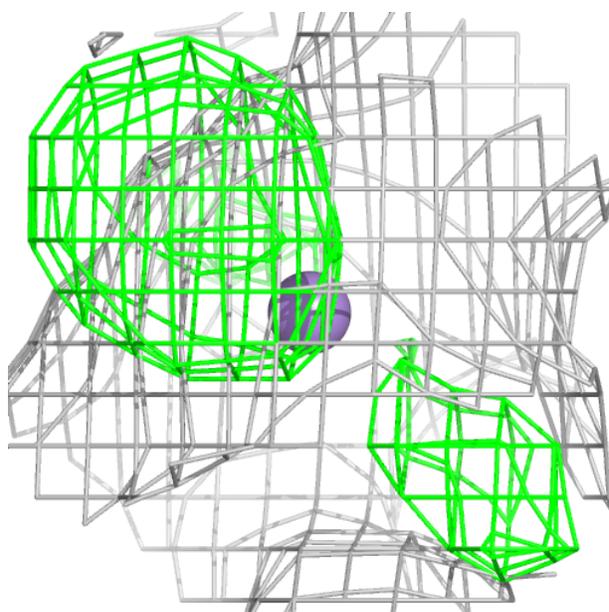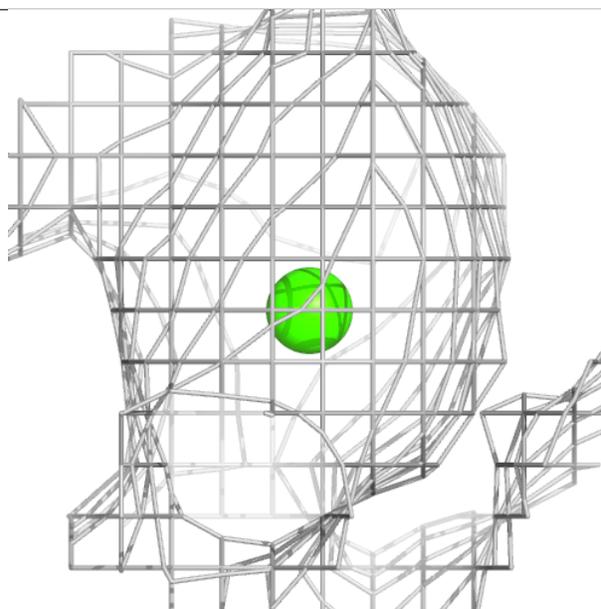and green (positive)
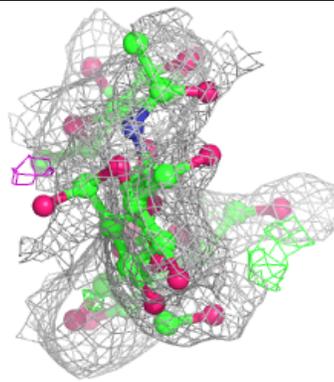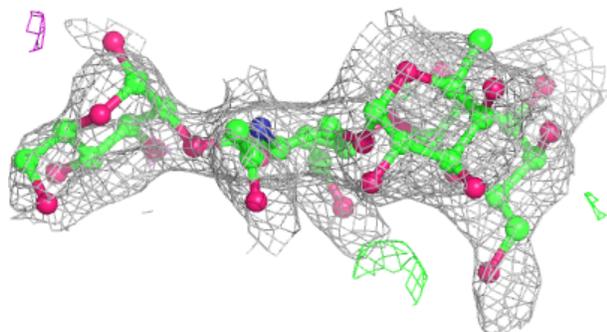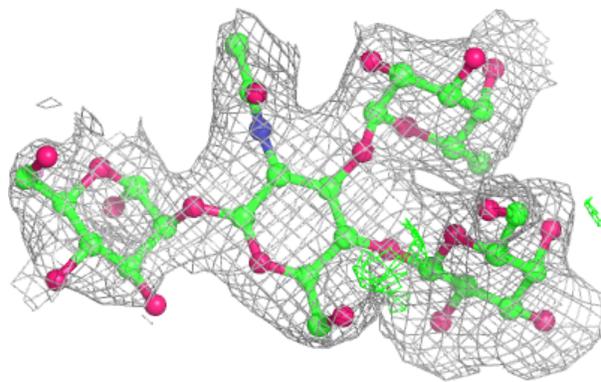
**Electron density around Chain j:**

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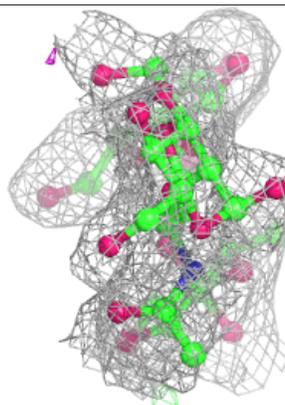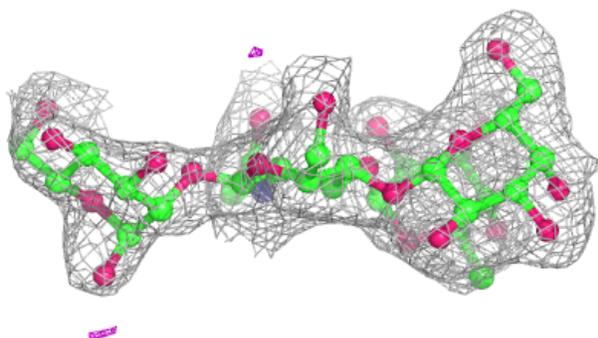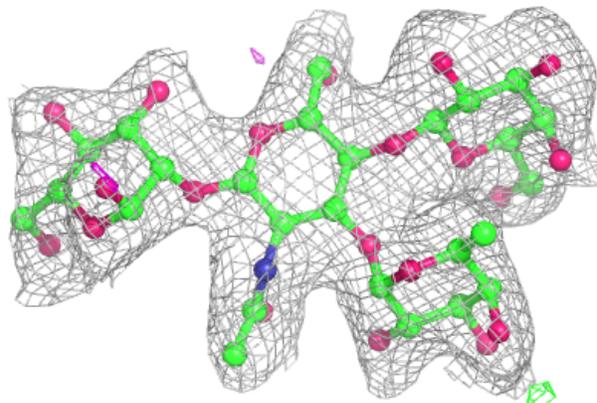


**Electron density around Chain n:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
$mF_o-DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
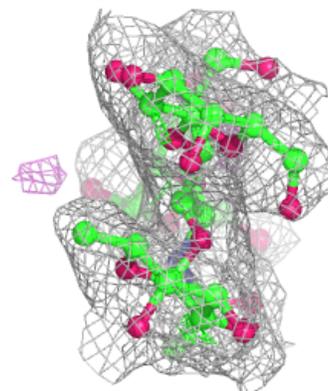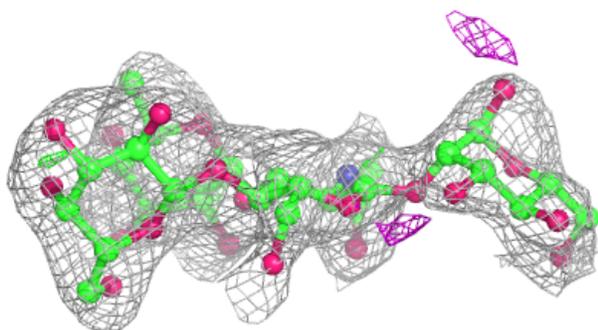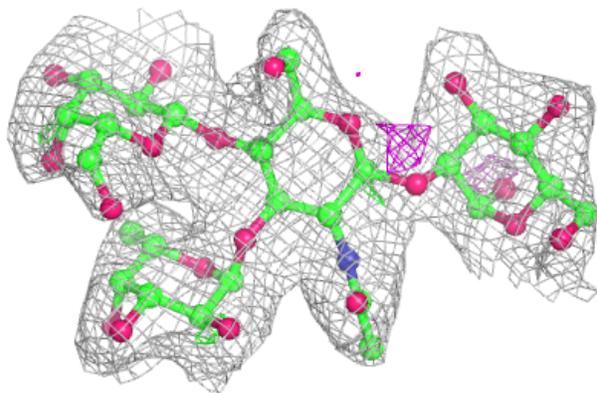
Electron density around Chain p:

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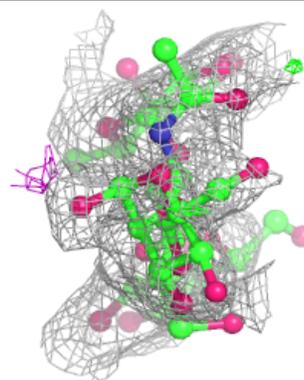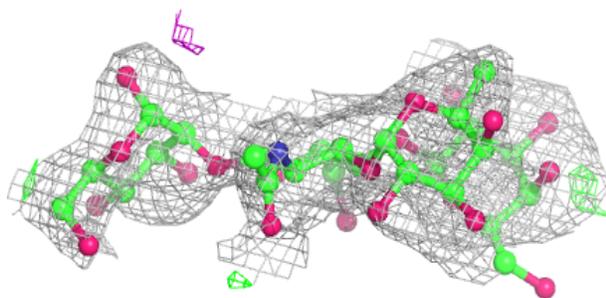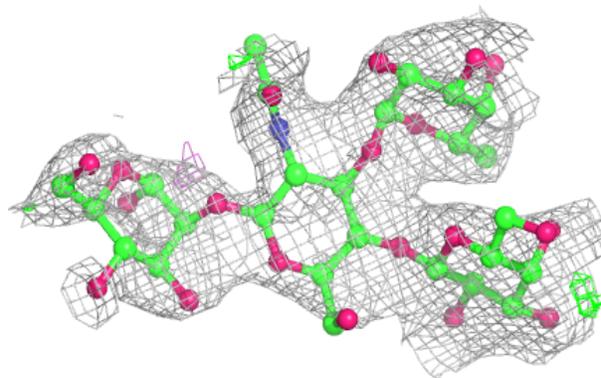


Electron density around Chain l:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
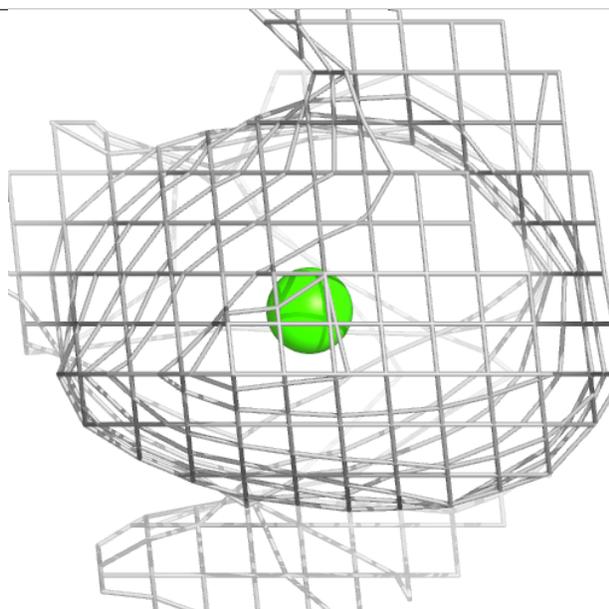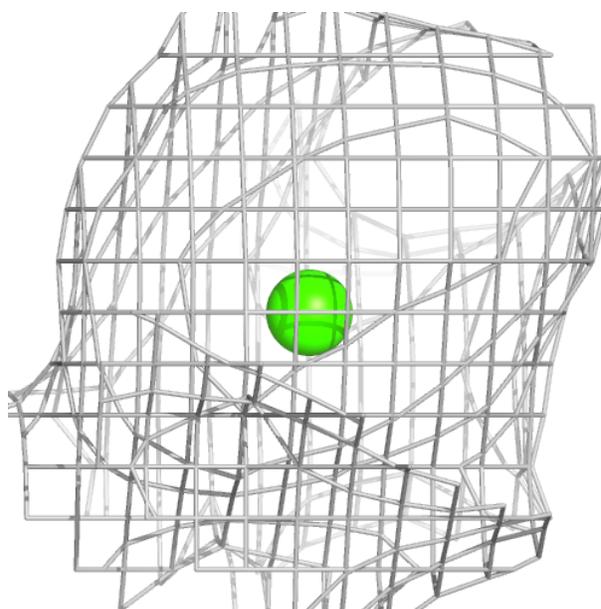and green (positive)
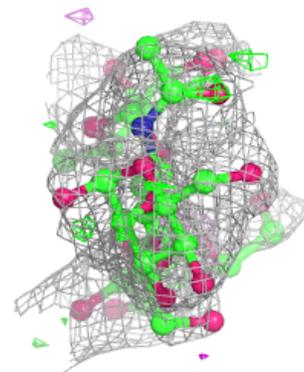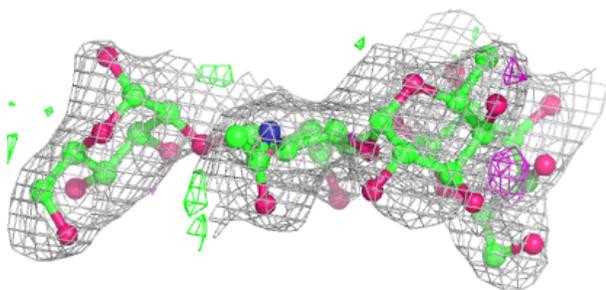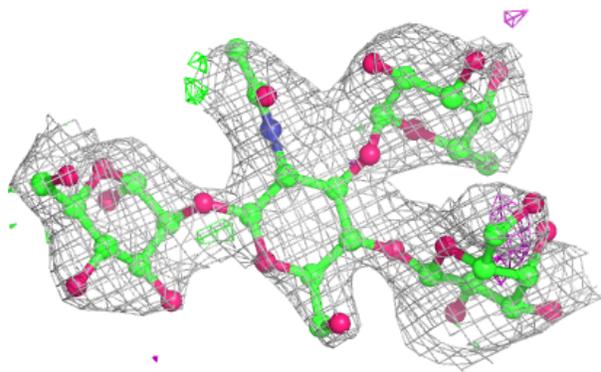
**Electron density around Chain o:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
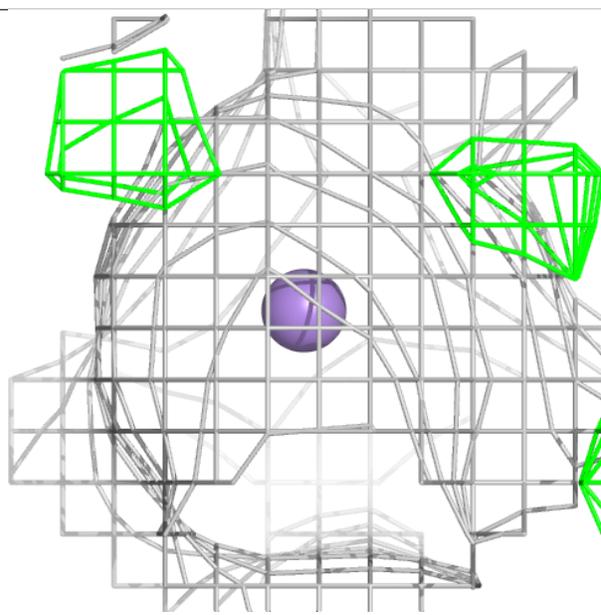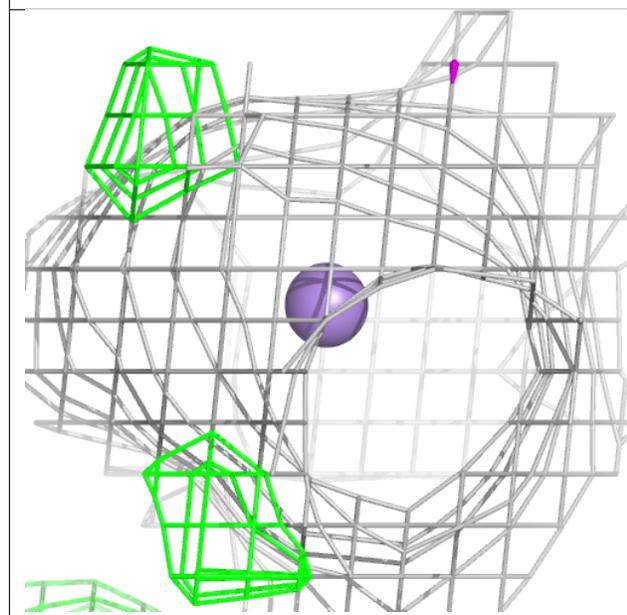and green (positive)
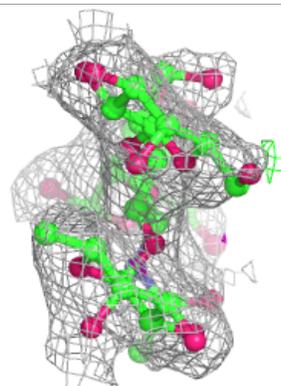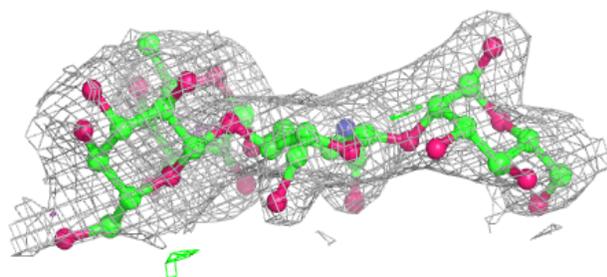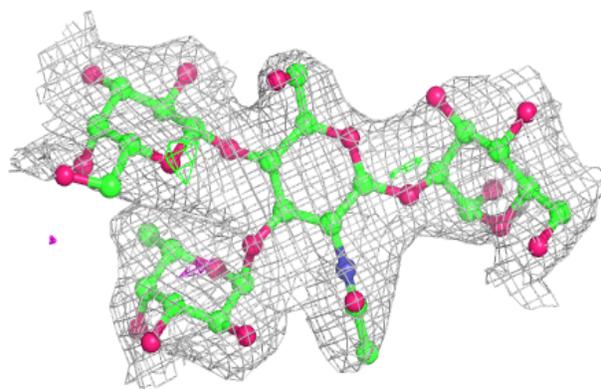


**Electron density around Chain k:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
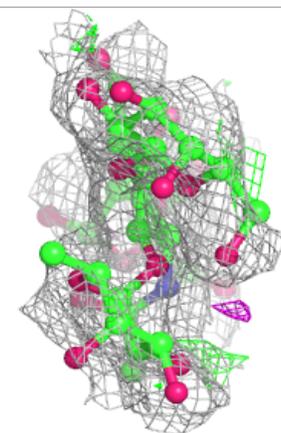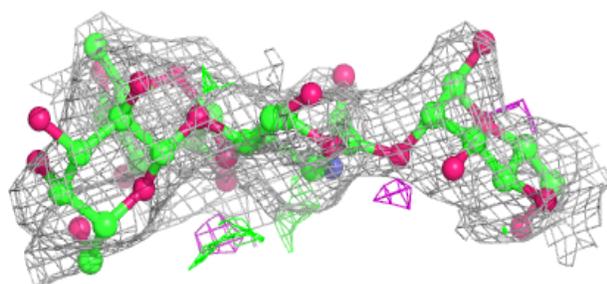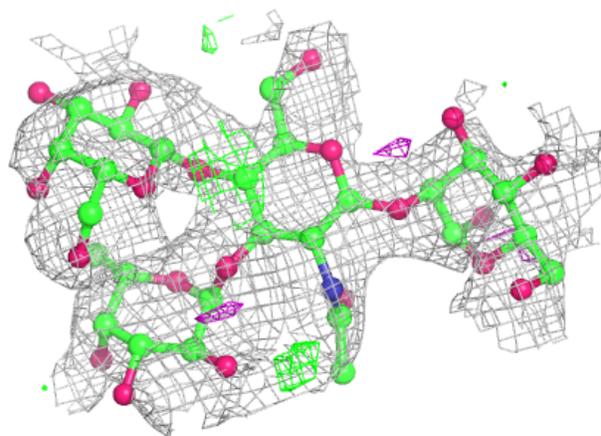
**Electron density around Chain b:**

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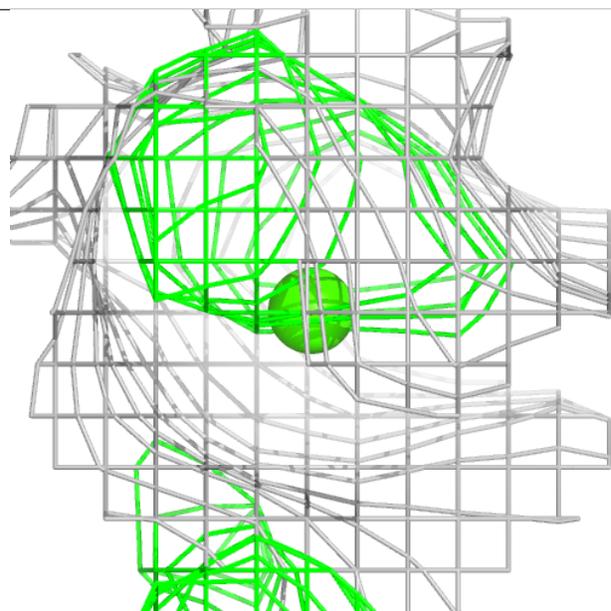and green (positive)
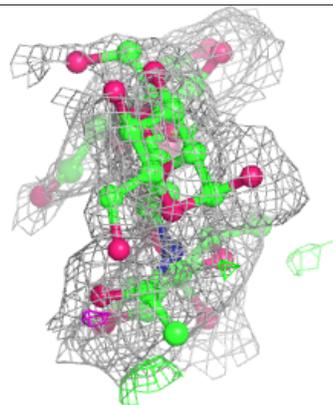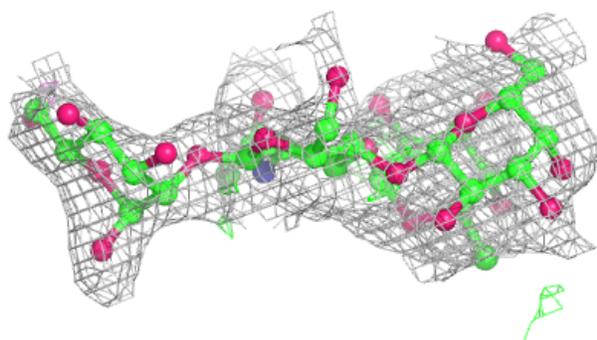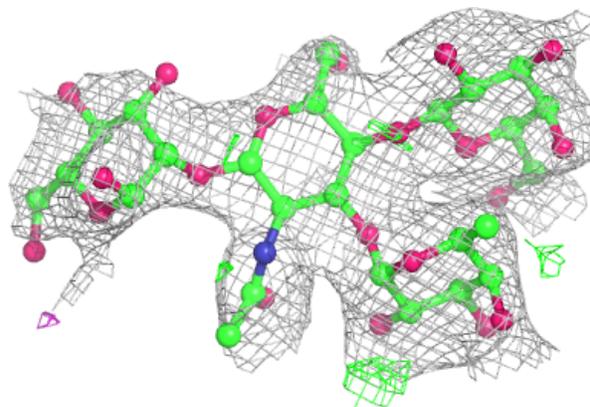


**Electron density around Chain f:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
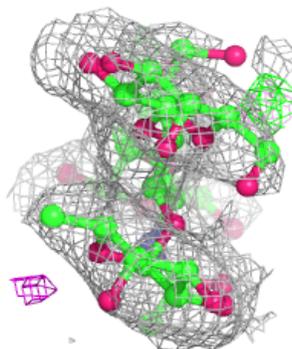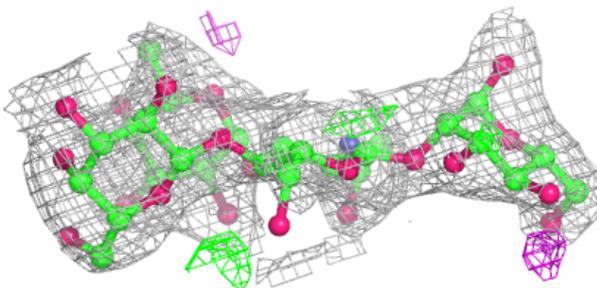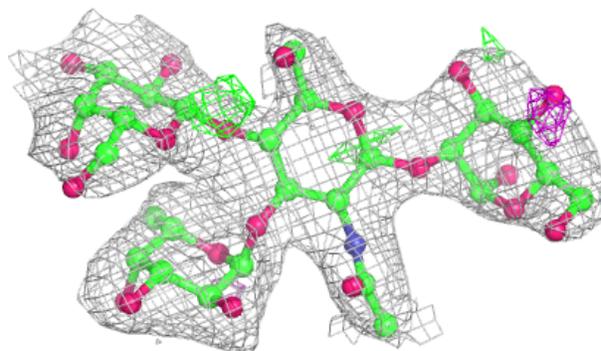
## 6.4 Ligands ⓘ

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

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors($\text{Å}^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 3 | CA | K | 301 | 1/1 | 0.90 | 0.09 | 70,70,70,70 | 0 |
| 3 | CA | O | 301 | 1/1 | 0.91 | 0.09 | 43,43,43,43 | 0 |
| 3 | CA | H | 301 | 1/1 | 0.93 | 0.10 | 24,24,24,24 | 0 |
| 3 | CA | E | 301 | 1/1 | 0.95 | 0.12 | 37,37,37,37 | 0 |
| 3 | CA | B | 301 | 1/1 | 0.96 | 0.10 | 45,45,45,45 | 0 |
| 3 | CA | F | 301 | 1/1 | 0.96 | 0.07 | 42,42,42,42 | 0 |
| 3 | CA | M | 301 | 1/1 | 0.96 | 0.07 | 23,23,23,23 | 0 |
| 4 | MN | K | 302 | 1/1 | 0.96 | 0.06 | 68,68,68,68 | 0 |
| 3 | CA | J | 301 | 1/1 | 0.97 | 0.09 | 26,26,26,26 | 0 |
| 3 | CA | P | 301 | 1/1 | 0.97 | 0.09 | 51,51,51,51 | 0 |
| 3 | CA | L | 301 | 1/1 | 0.97 | 0.05 | 46,46,46,46 | 0 |
| 4 | MN | A | 302 | 1/1 | 0.97 | 0.04 | 48,48,48,48 | 0 |
| 4 | MN | C | 302 | 1/1 | 0.97 | 0.04 | 42,42,42,42 | 0 |
| 4 | MN | G | 302 | 1/1 | 0.97 | 0.06 | 32,32,32,32 | 0 |
| 3 | CA | G | 301 | 1/1 | 0.97 | 0.10 | 22,22,22,22 | 0 |
| 3 | CA | D | 301 | 1/1 | 0.98 | 0.12 | 26,26,26,26 | 0 |
| 3 | CA | I | 301 | 1/1 | 0.98 | 0.11 | 32,32,32,32 | 0 |
| 3 | CA | C | 301 | 1/1 | 0.98 | 0.09 | 38,38,38,38 | 0 |
| 4 | MN | M | 302 | 1/1 | 0.98 | 0.08 | 33,33,33,33 | 0 |
| 3 | CA | A | 301 | 1/1 | 0.98 | 0.04 | 27,27,27,27 | 0 |
| 4 | MN | I | 302 | 1/1 | 0.99 | 0.03 | 35,35,35,35 | 0 |
| 3 | CA | N | 301 | 1/1 | 0.99 | 0.10 | 21,21,21,21 | 0 |
| 4 | MN | H | 302 | 1/1 | 0.99 | 0.02 | 27,27,27,27 | 0 |
| 4 | MN | J | 302 | 1/1 | 0.99 | 0.04 | 33,33,33,33 | 0 |
| 4 | MN | P | 302 | 1/1 | 0.99 | 0.02 | 46,46,46,46 | 0 |
| 4 | MN | L | 302 | 1/1 | 0.99 | 0.03 | 52,52,52,52 | 0 |
| 4 | MN | O | 302 | 1/1 | 0.99 | 0.02 | 45,45,45,45 | 0 |
| 4 | MN | B | 302 | 1/1 | 0.99 | 0.04 | 42,42,42,42 | 0 |
| 4 | MN | F | 302 | 1/1 | 0.99 | 0.02 | 40,40,40,40 | 0 |
| 4 | MN | N | 302 | 1/1 | 0.99 | 0.06 | 27,27,27,27 | 0 |
| 4 | MN | E | 302 | 1/1 | 0.99 | 0.03 | 42,42,42,42 | 0 |
| 4 | MN | D | 302 | 1/1 | 1.00 | 0.04 | 35,35,35,35 | 0 |

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.
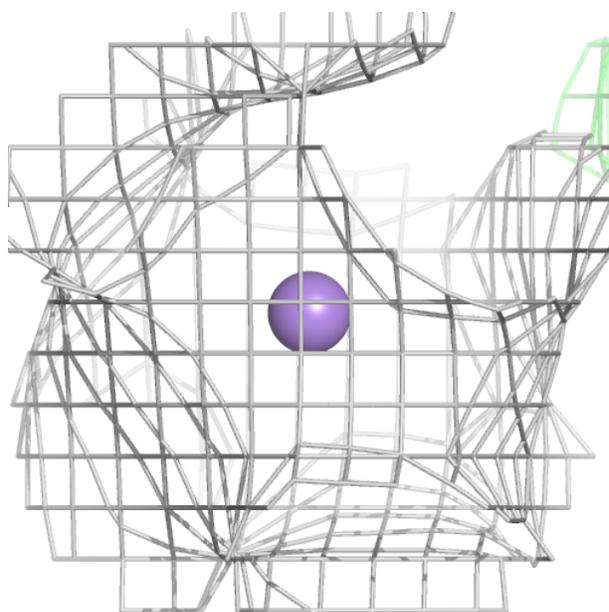
**Electron density around CA K 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
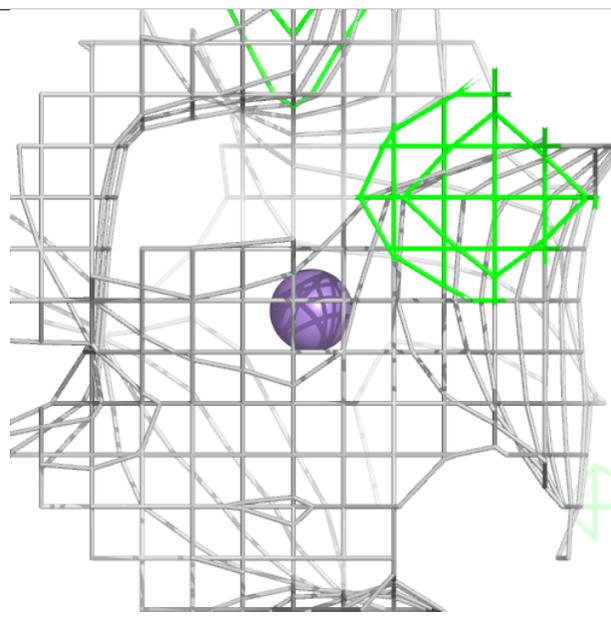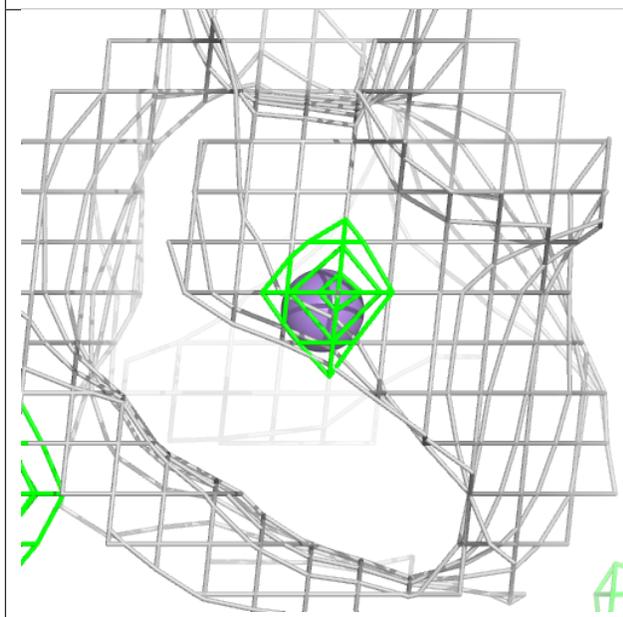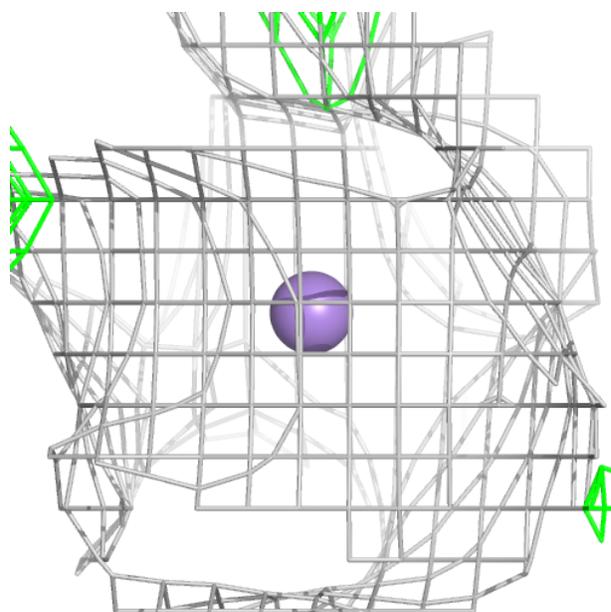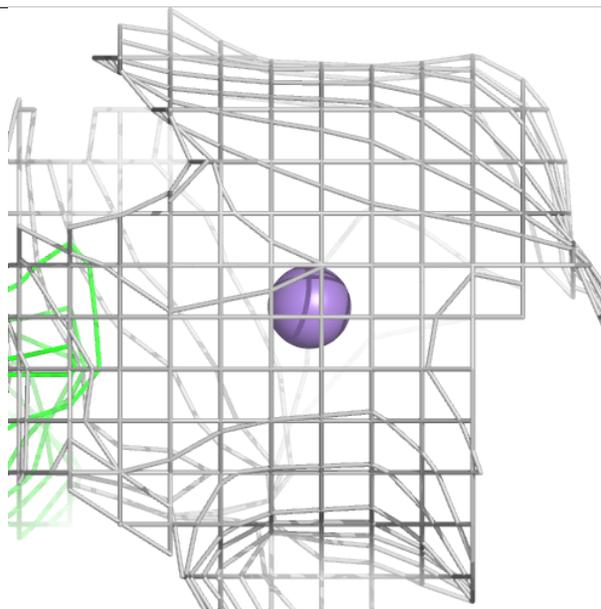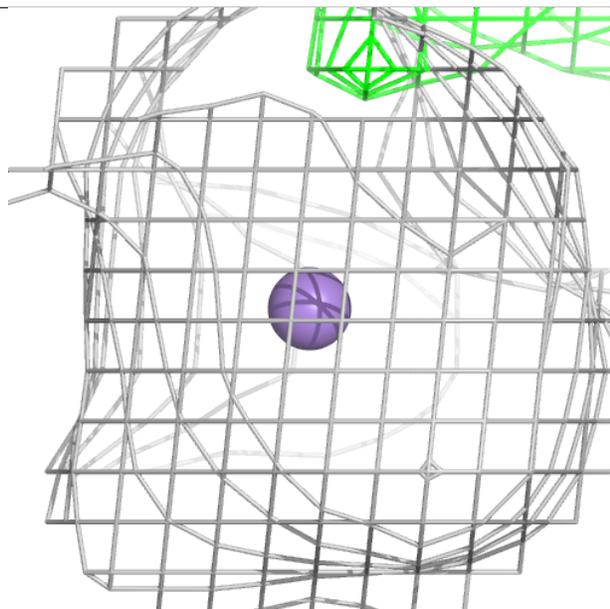$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
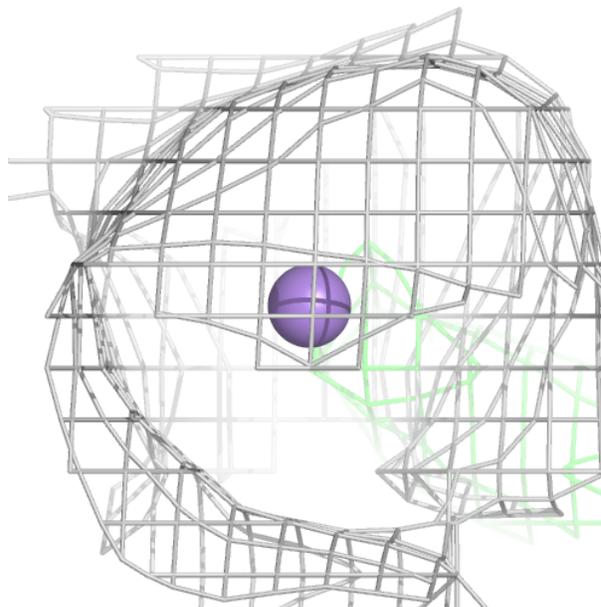and green (positive)
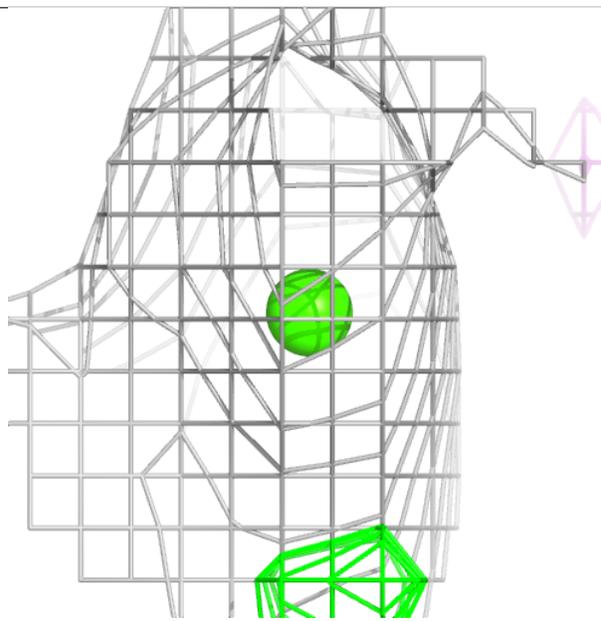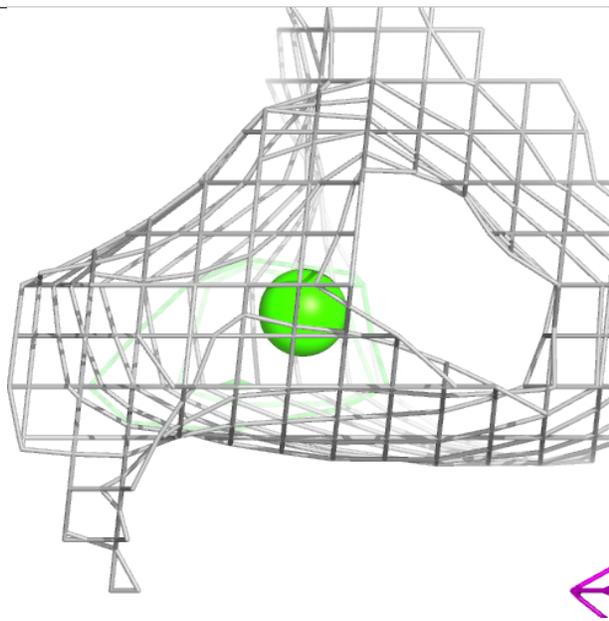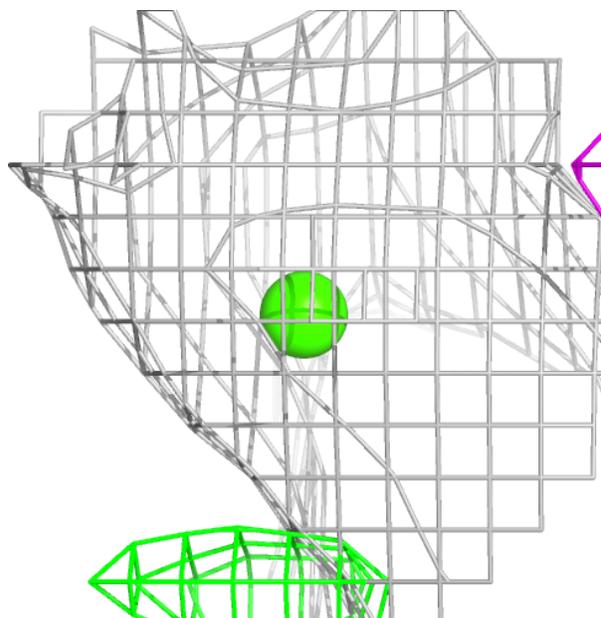
**Electron density around CA O 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
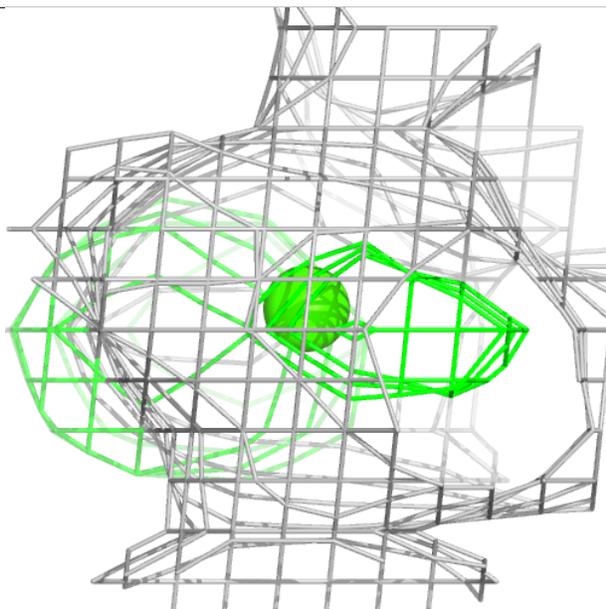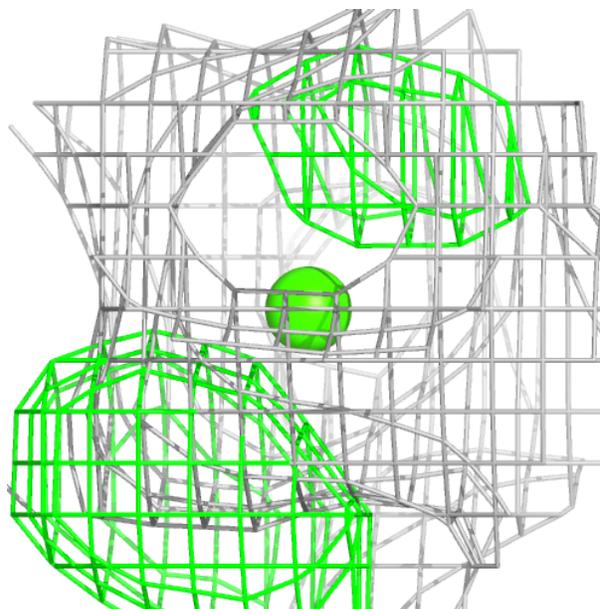
**Electron density around CA H 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
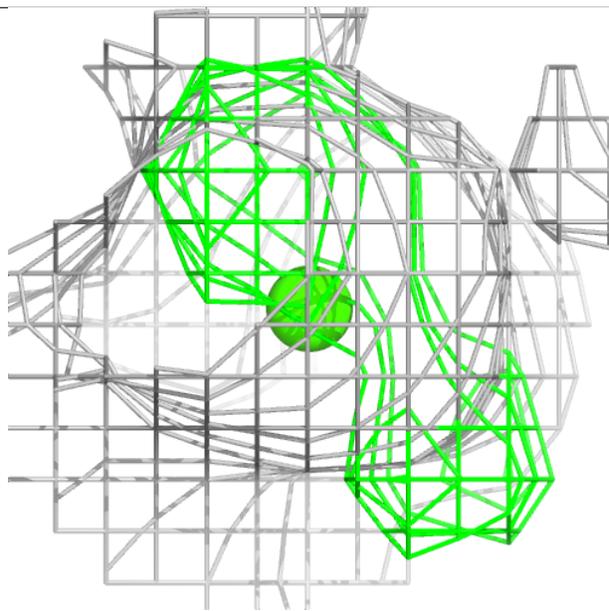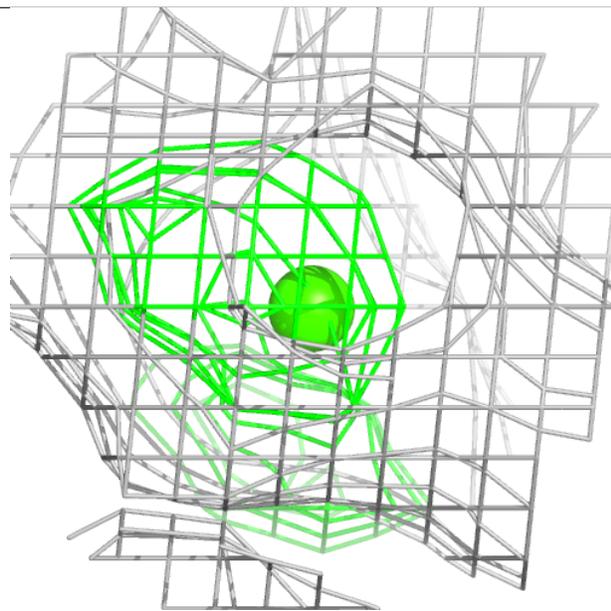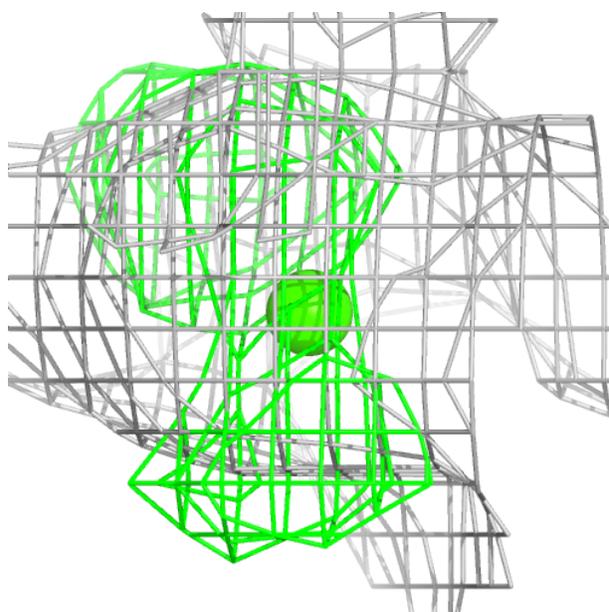
**Electron density around CA E 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
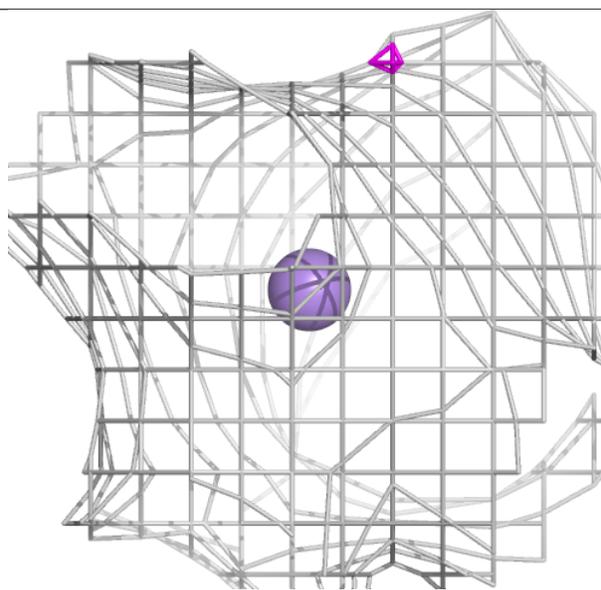$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
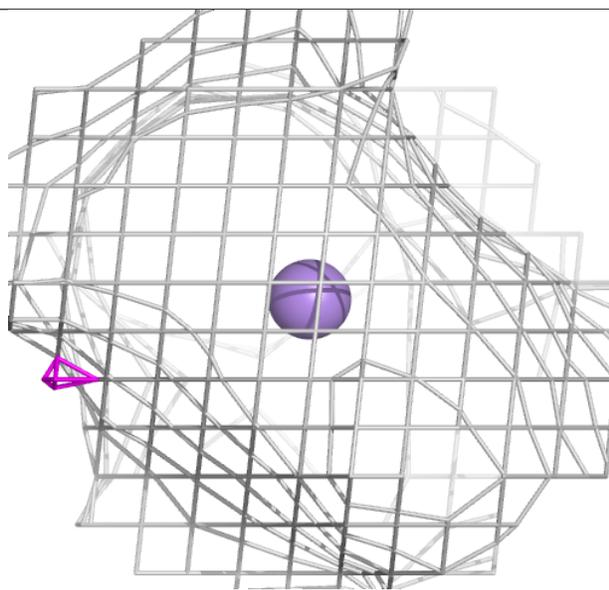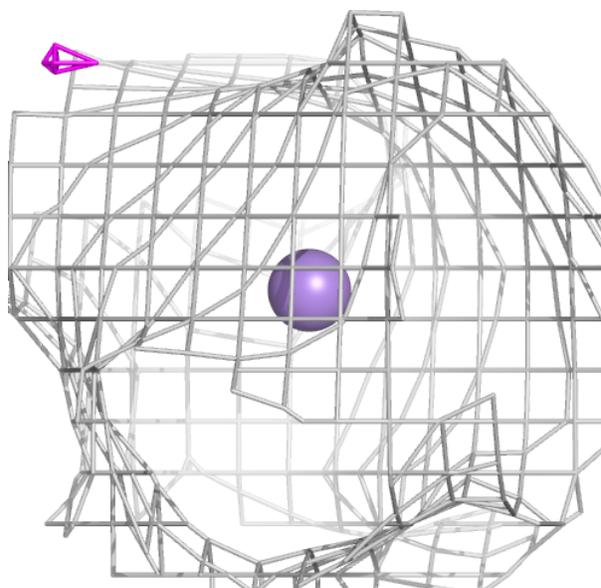and green (positive)
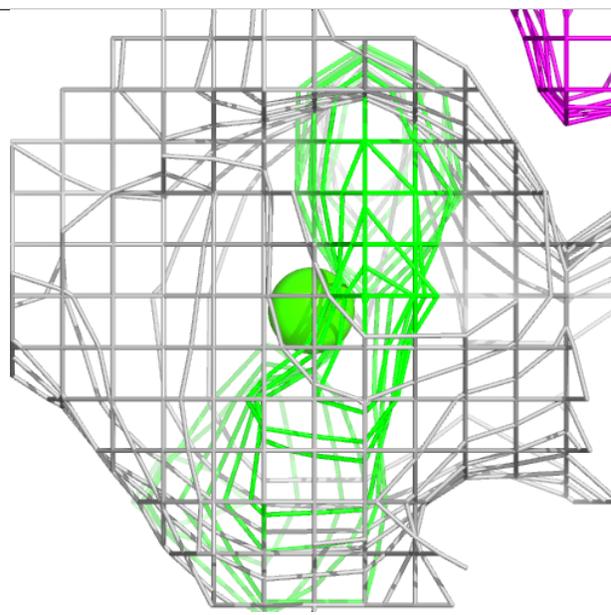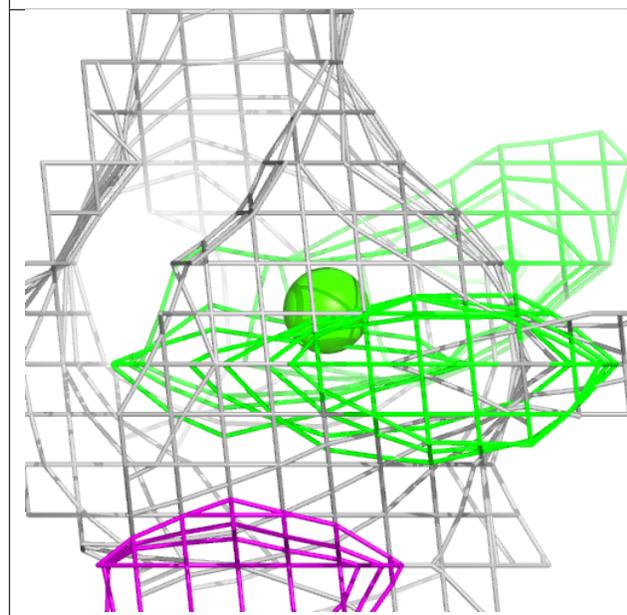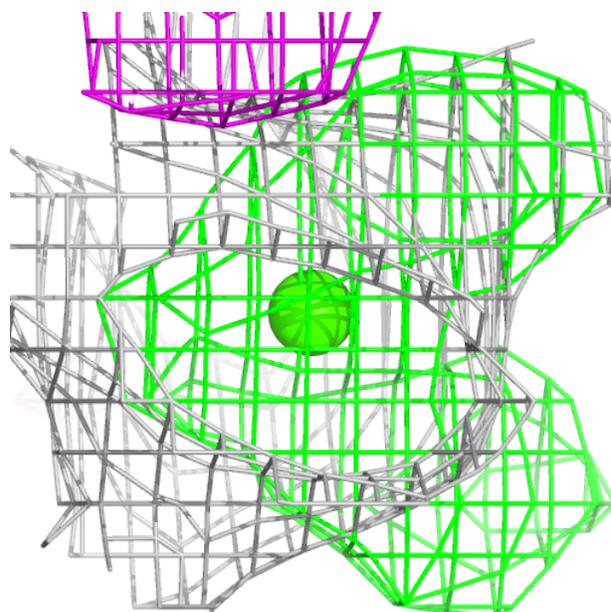
**Electron density around CA B 301:**

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
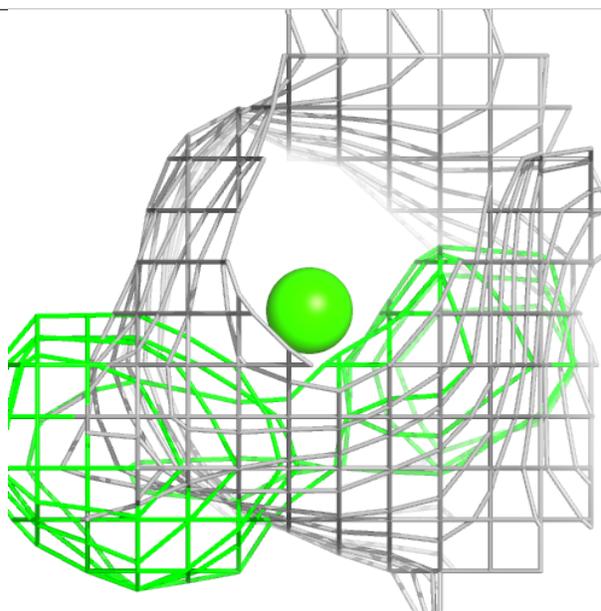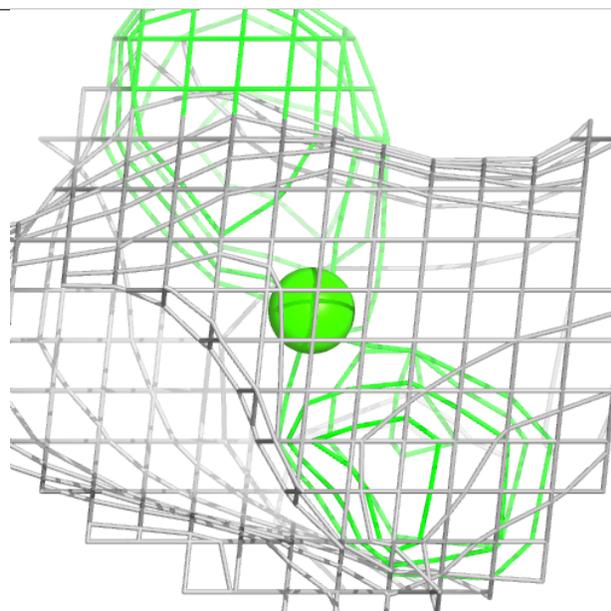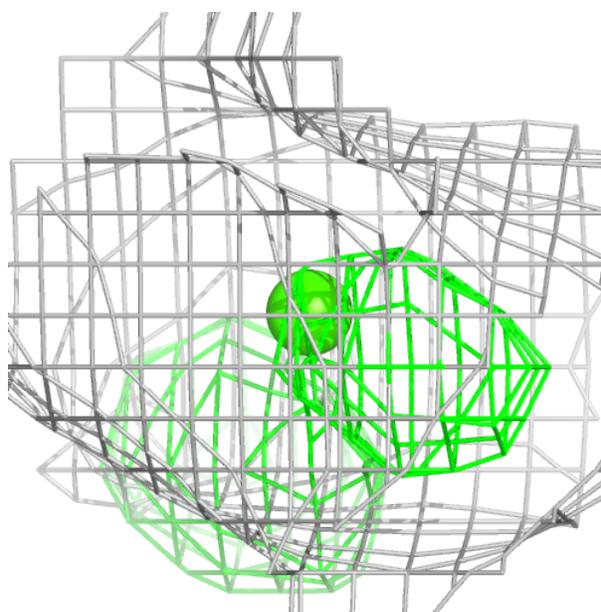
**Electron density around CA F 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
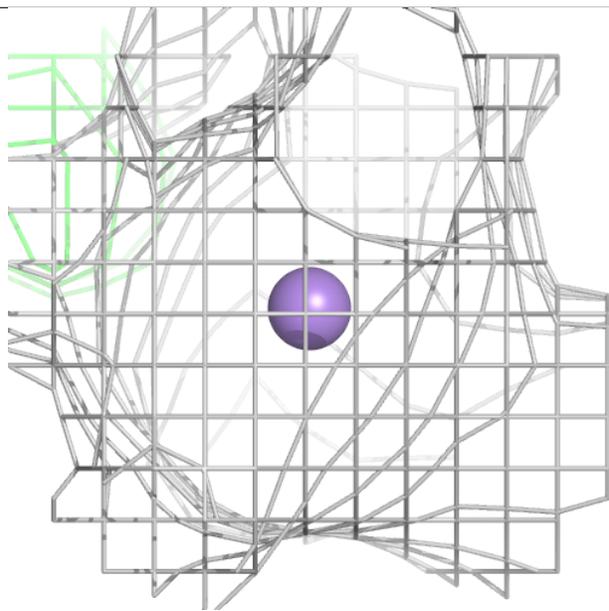and green (positive)
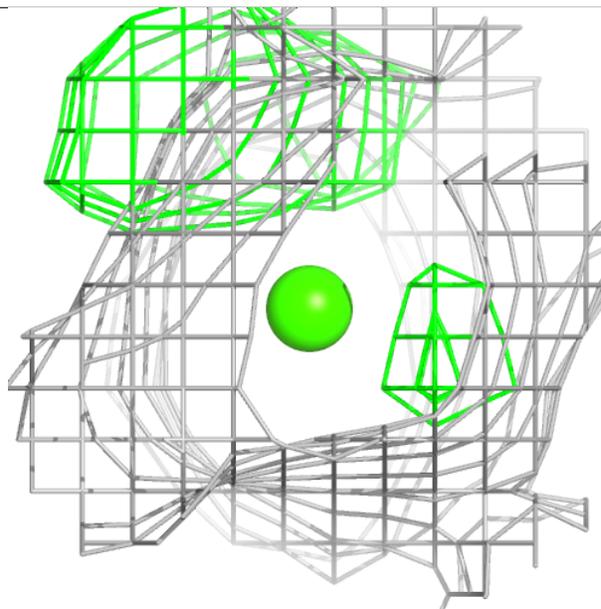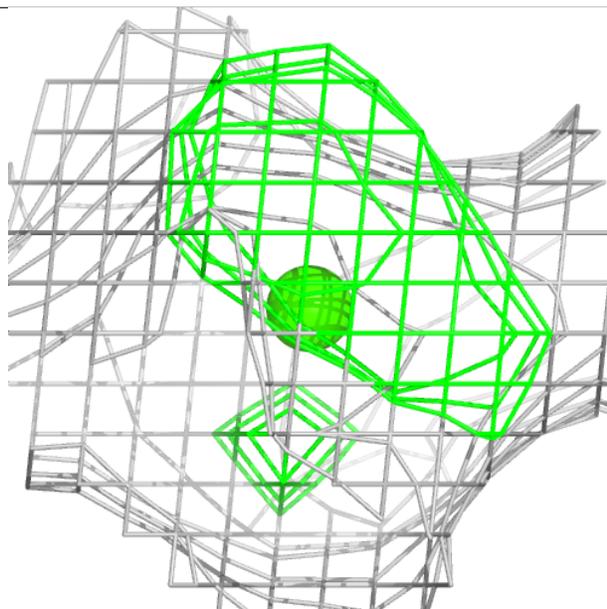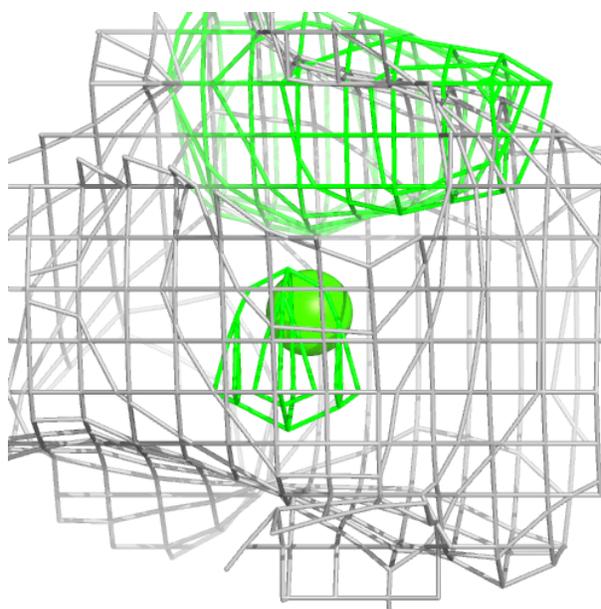
**Electron density around CA M 301:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
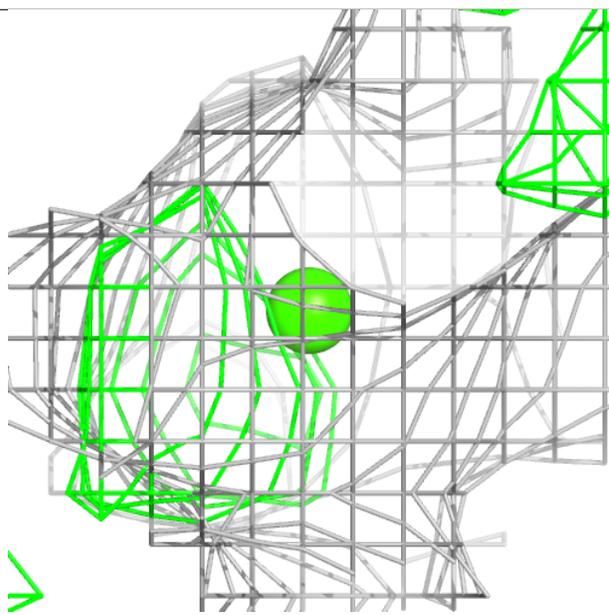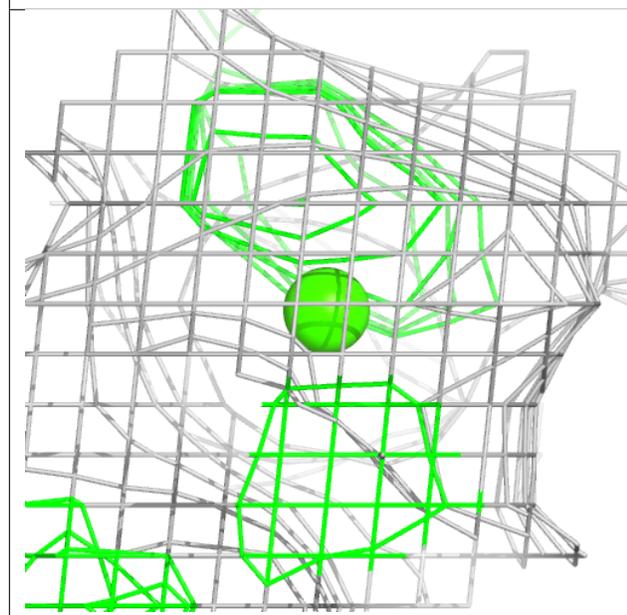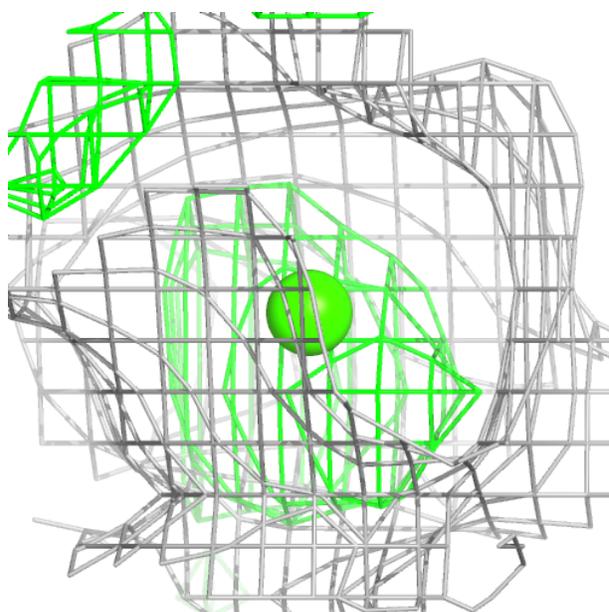
**Electron density around MN K 302:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
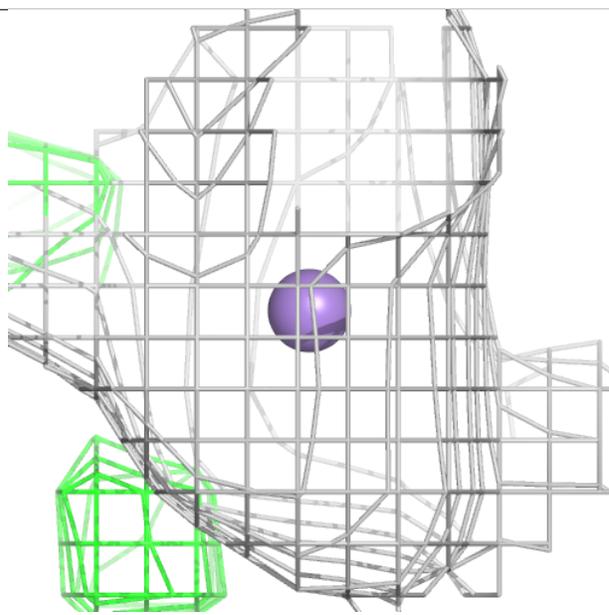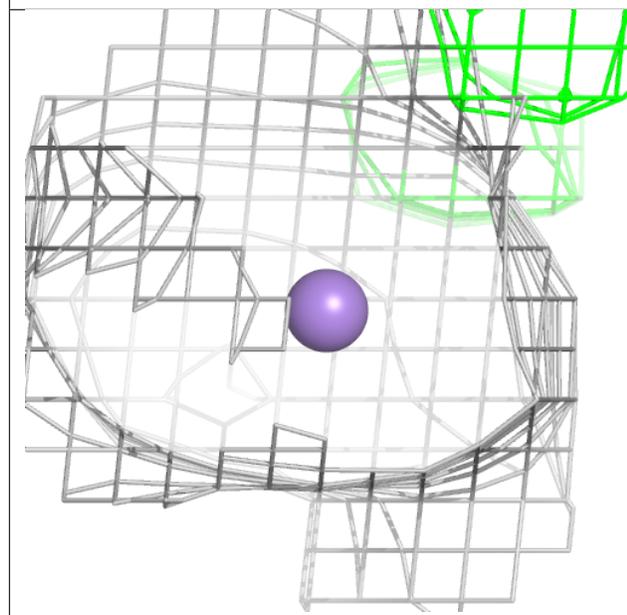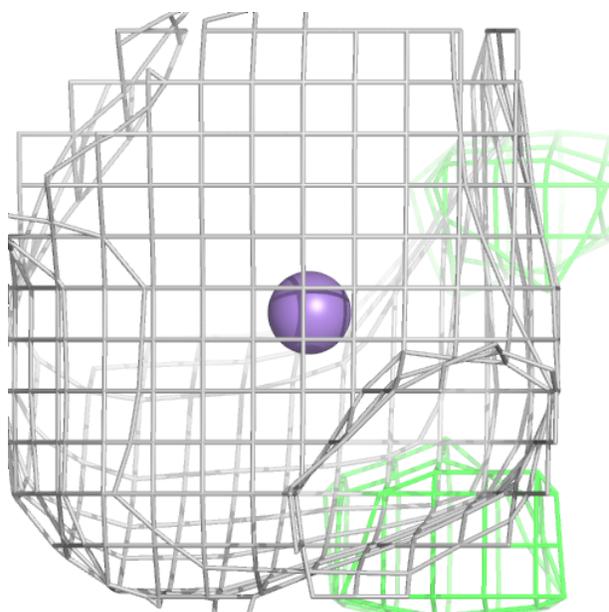
Electron density around CA J 301:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
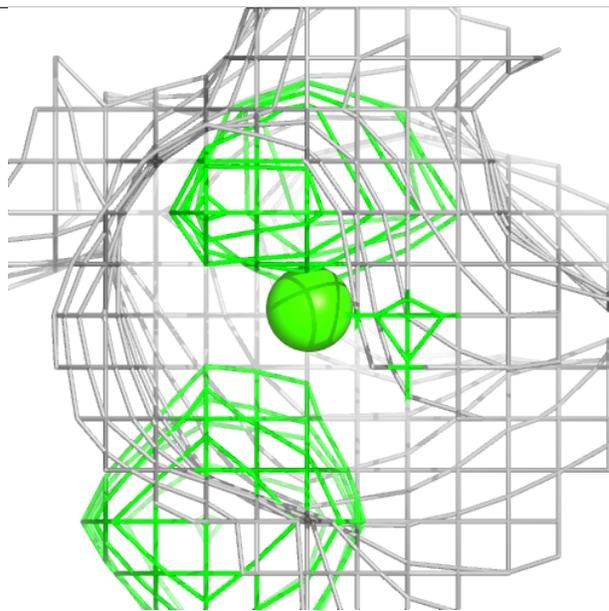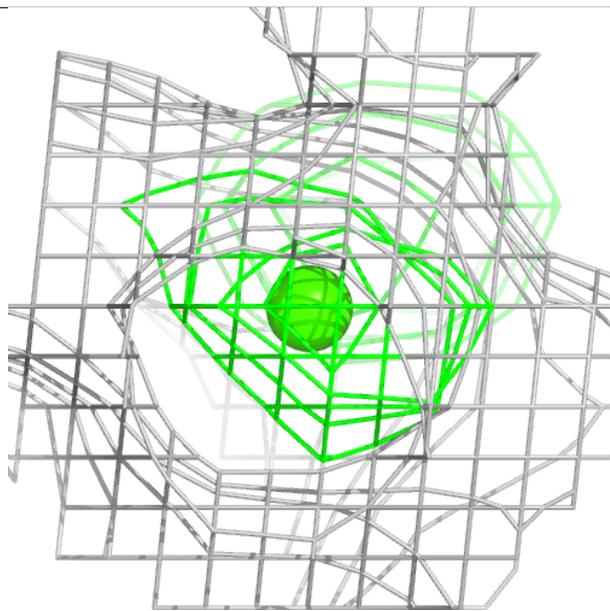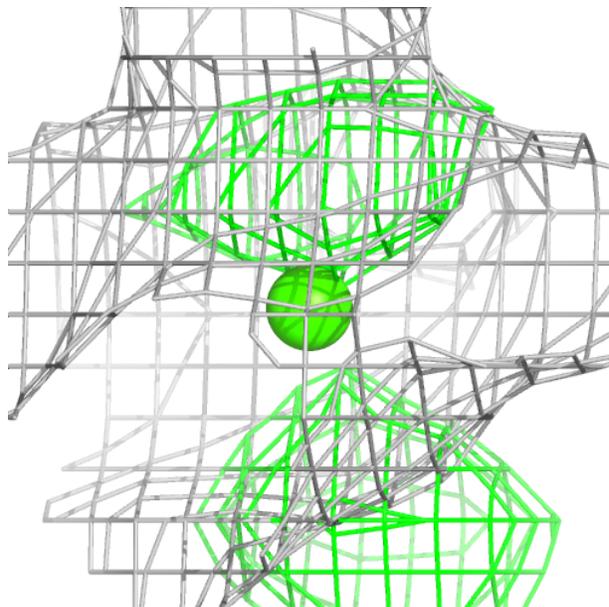
**Electron density around CA P 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
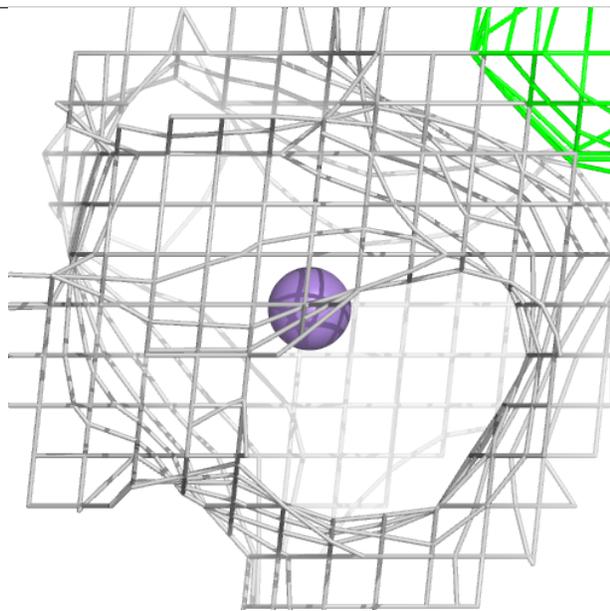$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
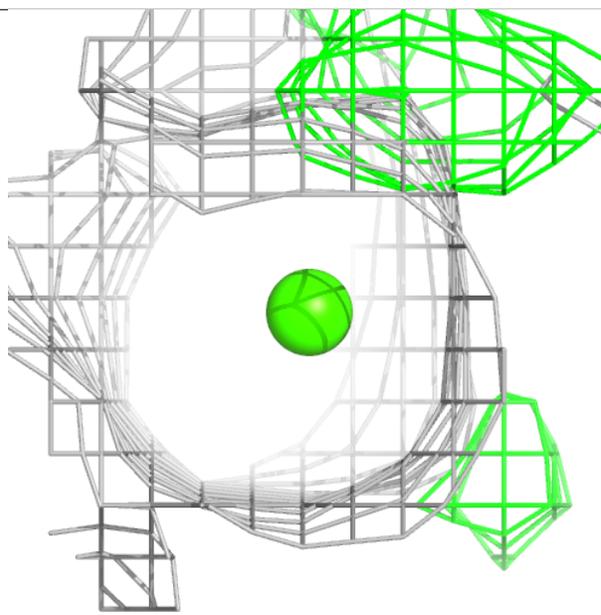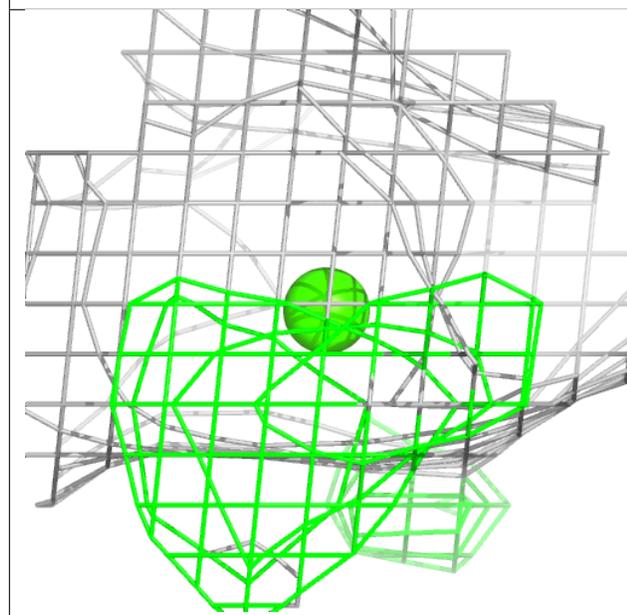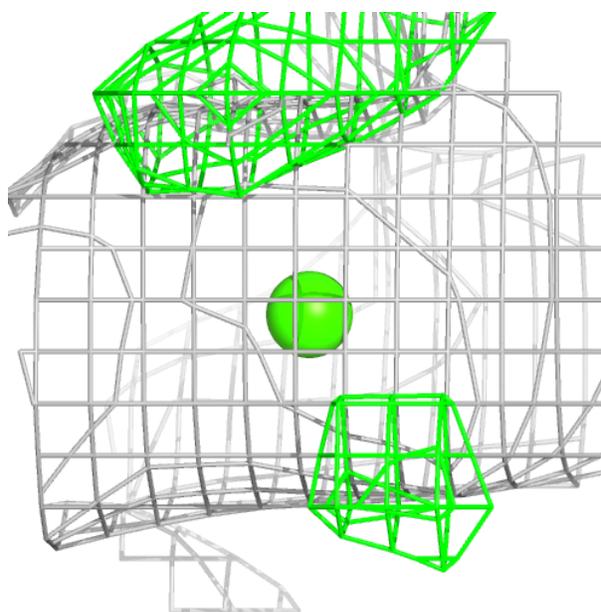
**Electron density around CA L 301:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
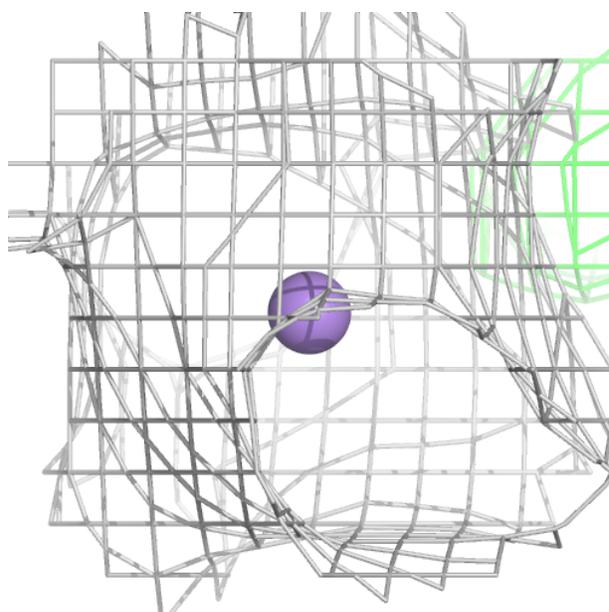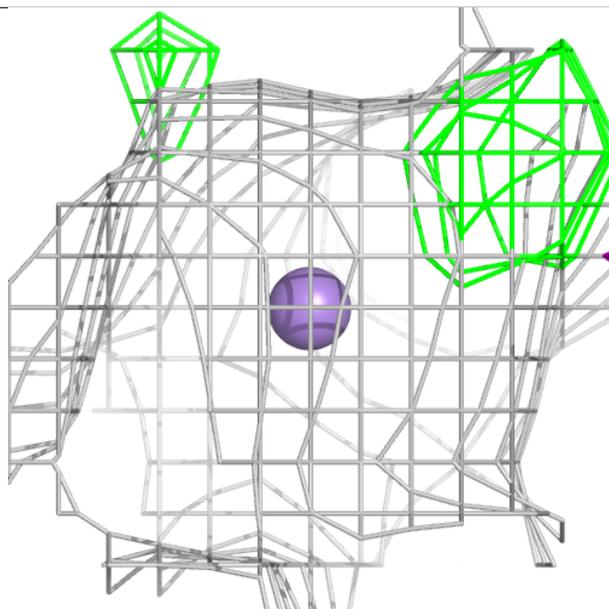and green (positive)
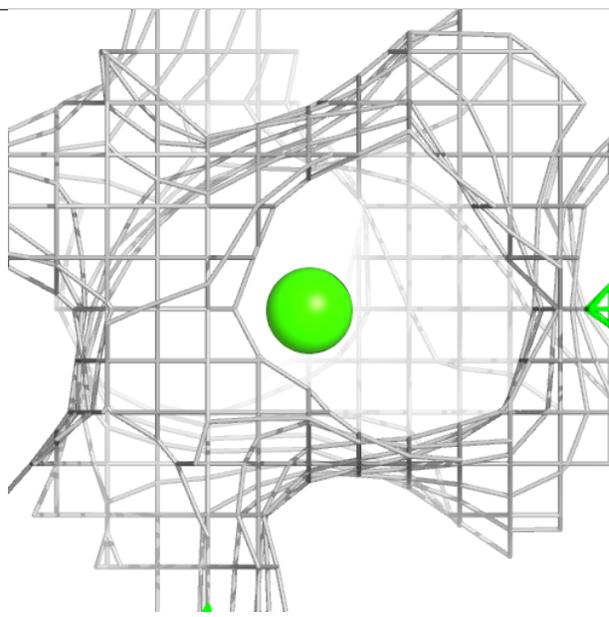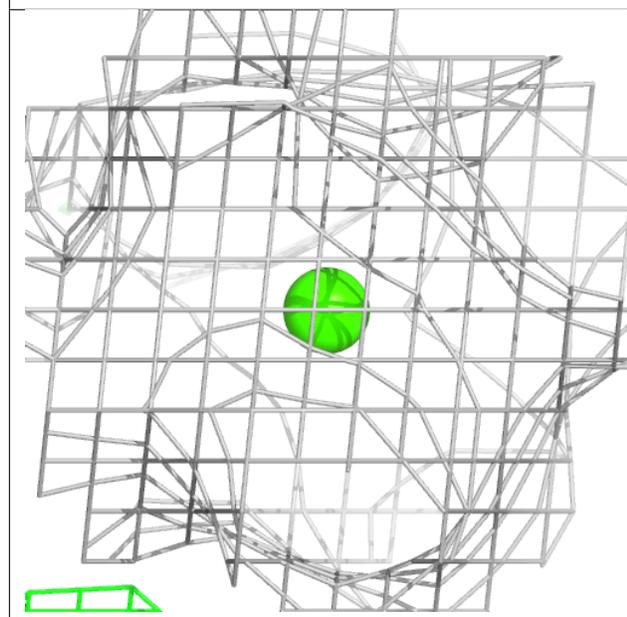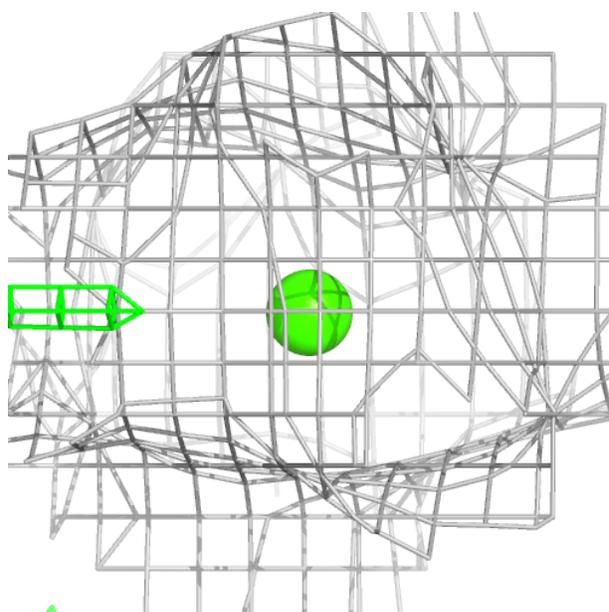
**Electron density around MN A 302:**

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
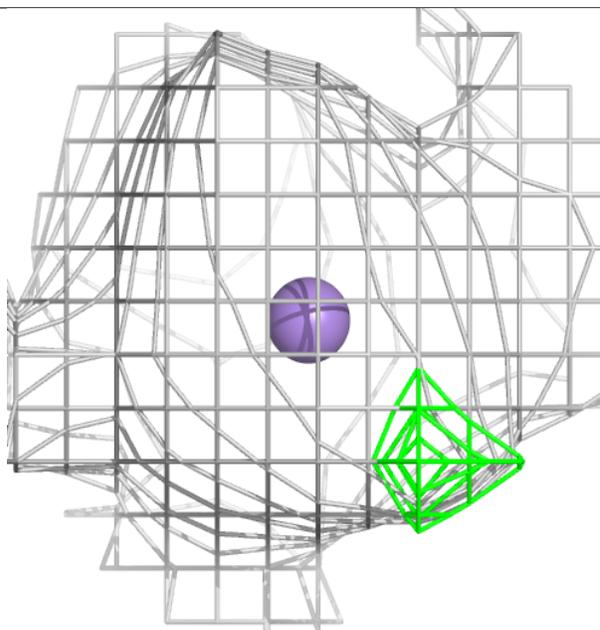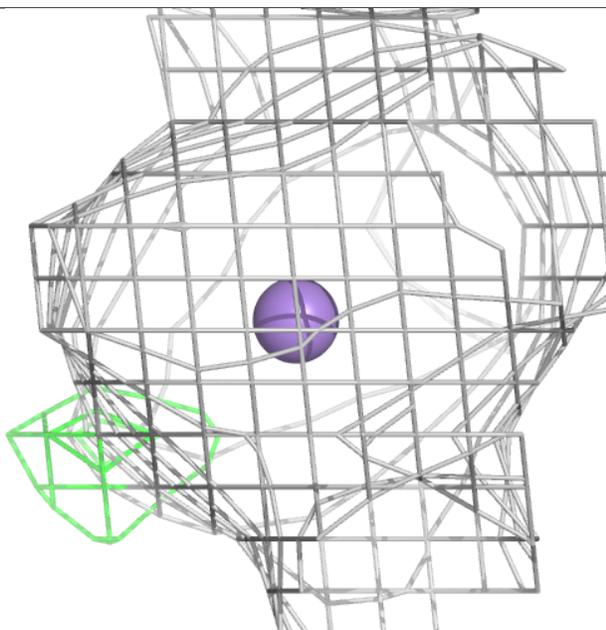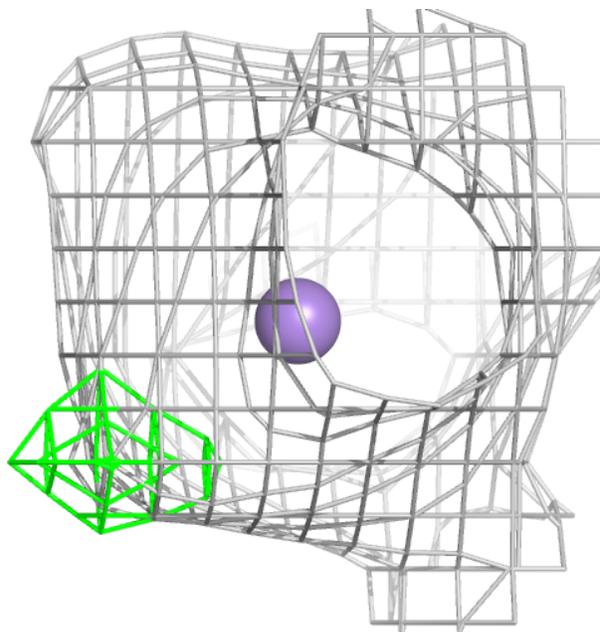
**Electron density around MN C 302:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
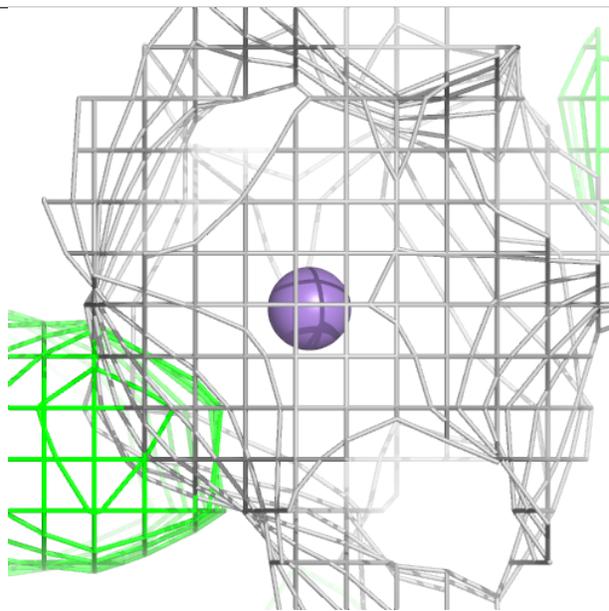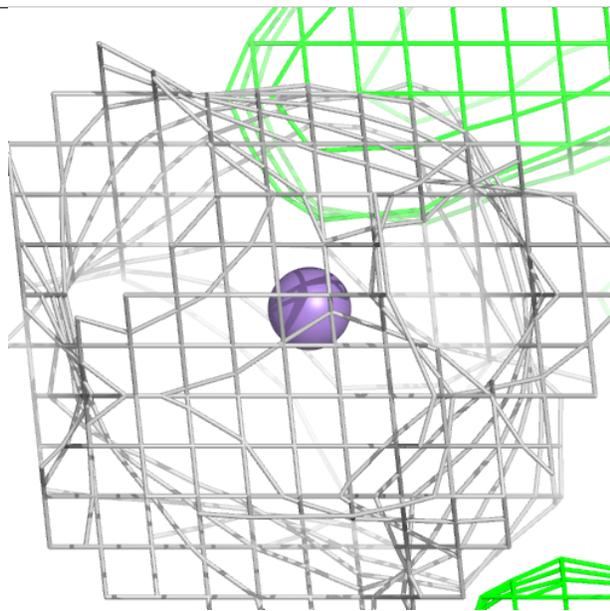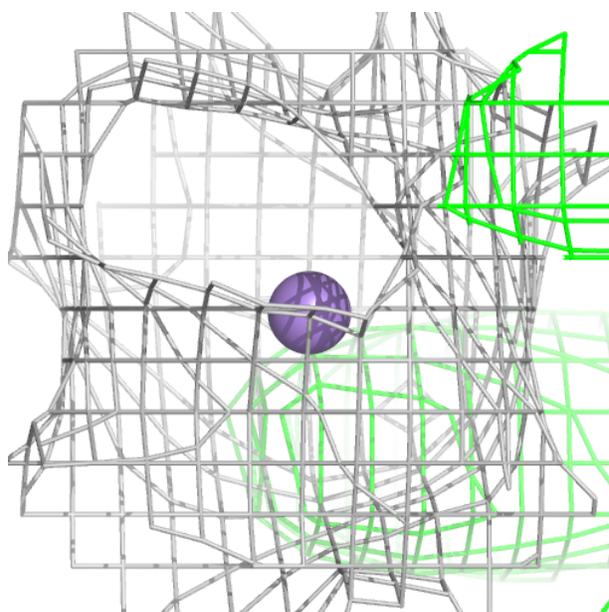
**Electron density around MN G 302:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
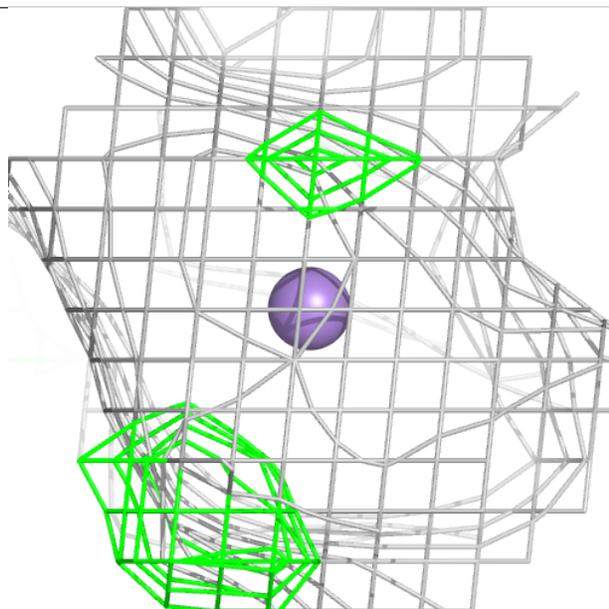$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
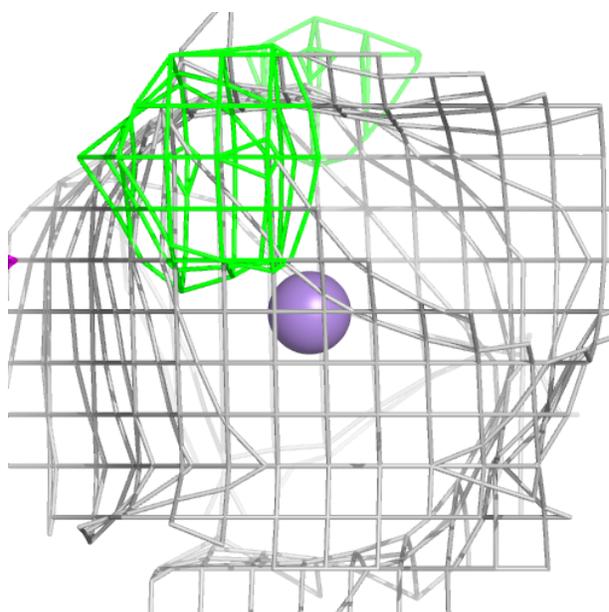and green (positive)
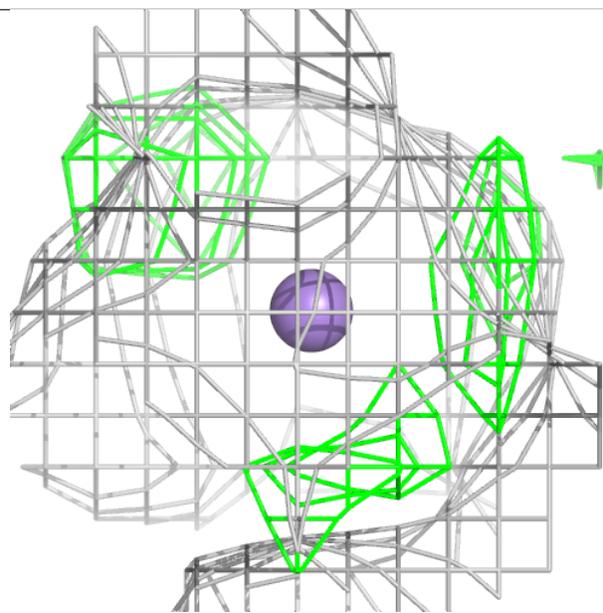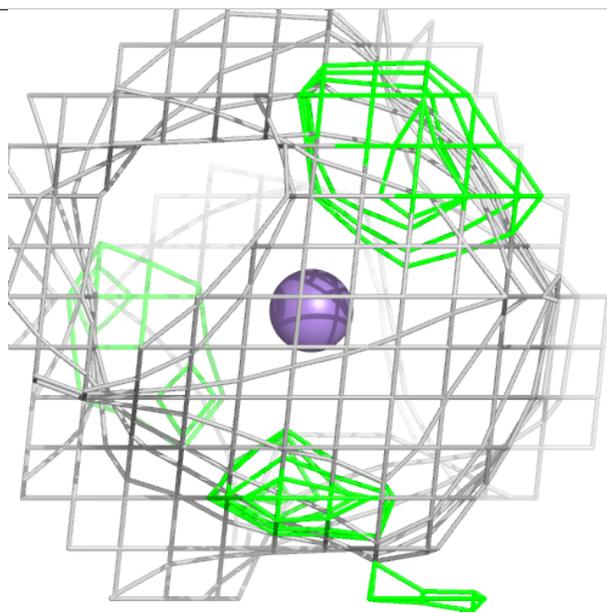
Electron density around CA G 301:

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
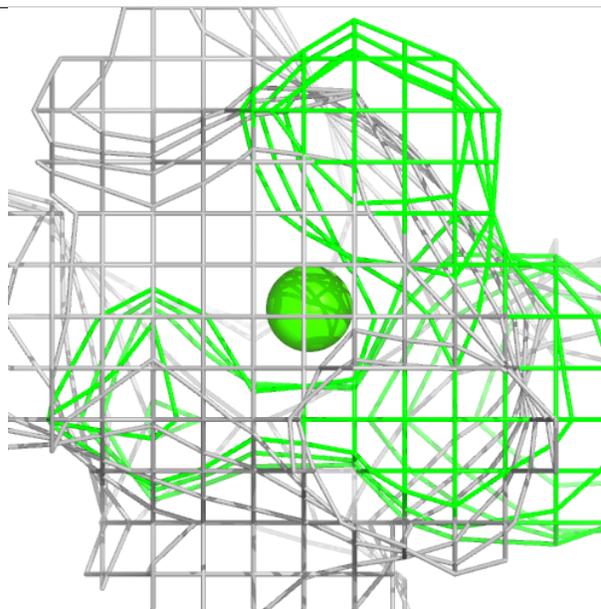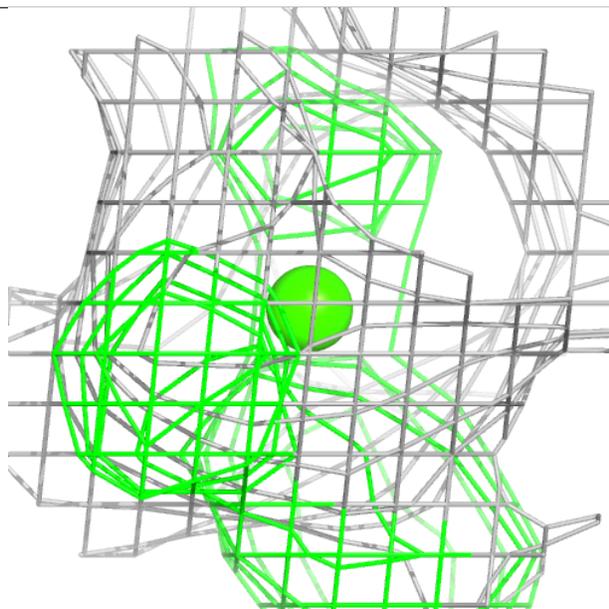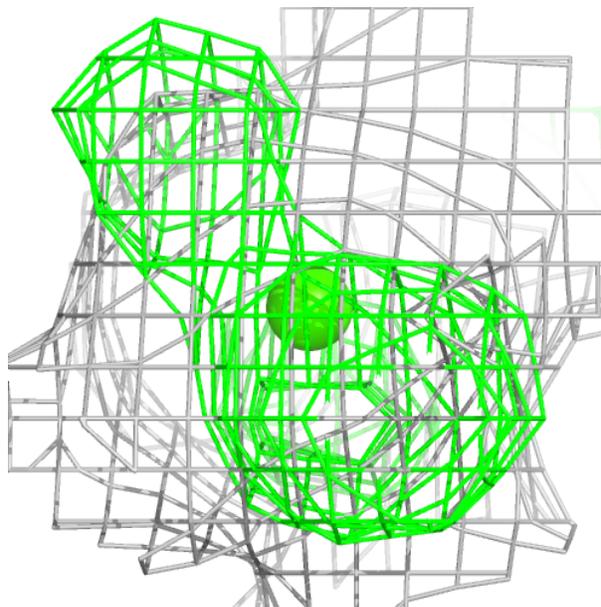
**Electron density around CA D 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
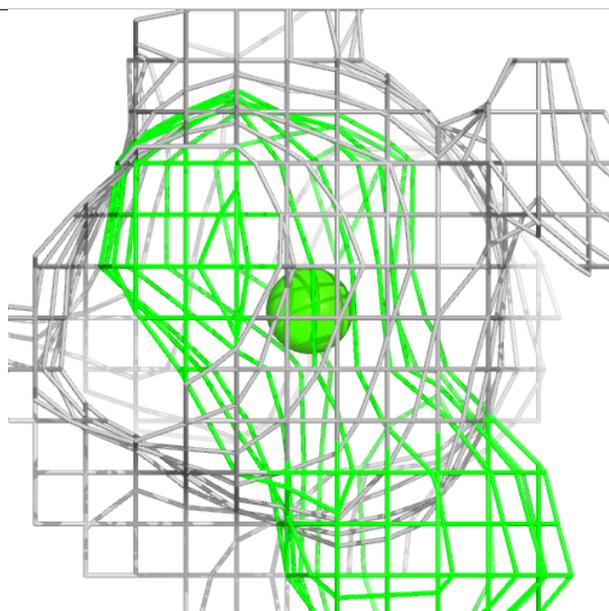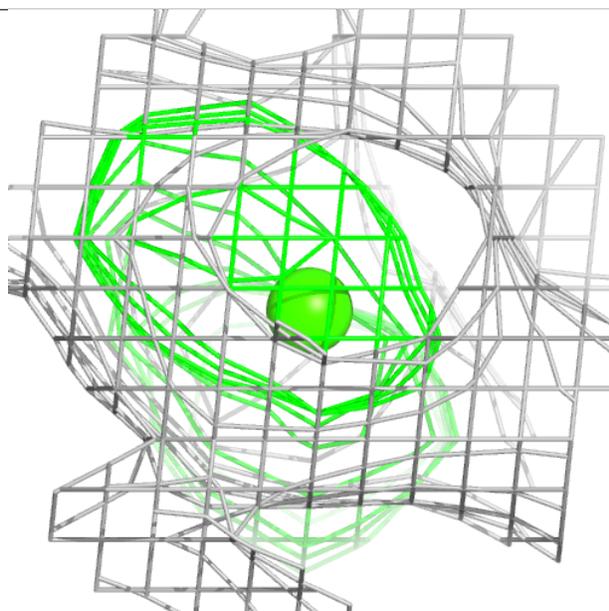
**Electron density around CA I 301:**

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

**Electron density around CA C 301:**

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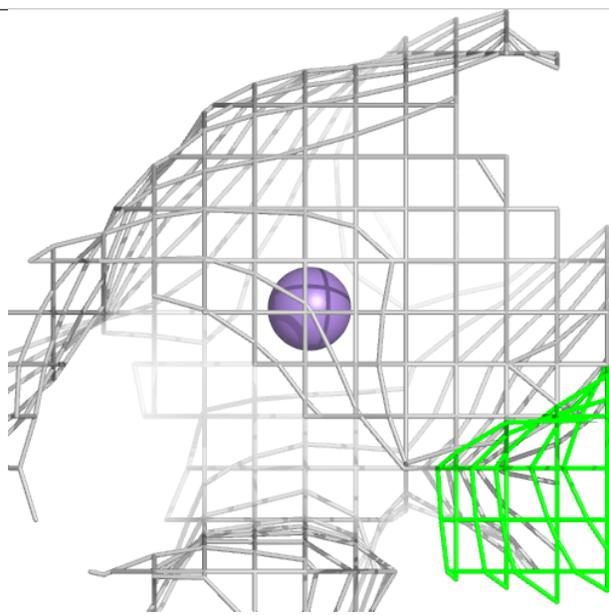$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
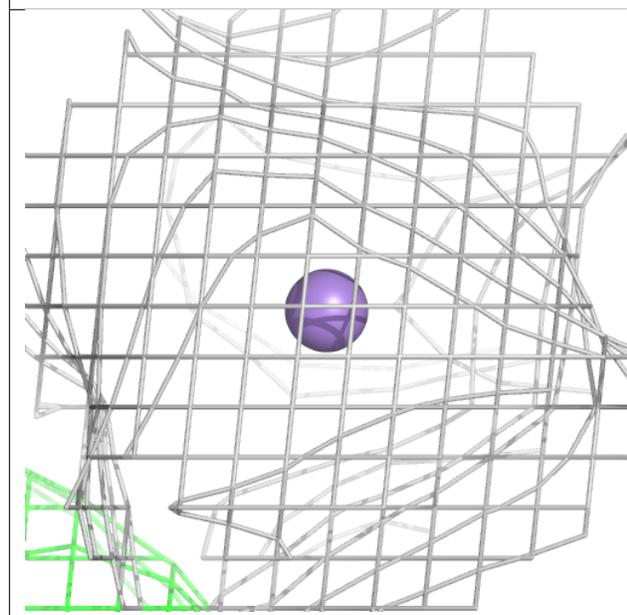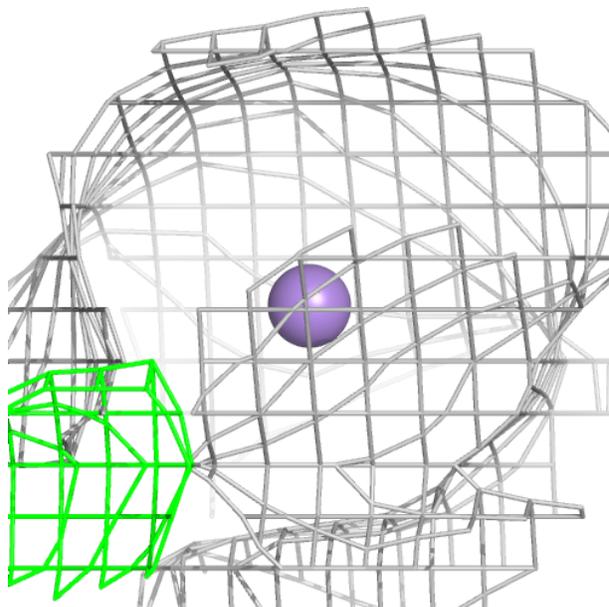and green (positive)

**Electron density around MN M 302:**

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
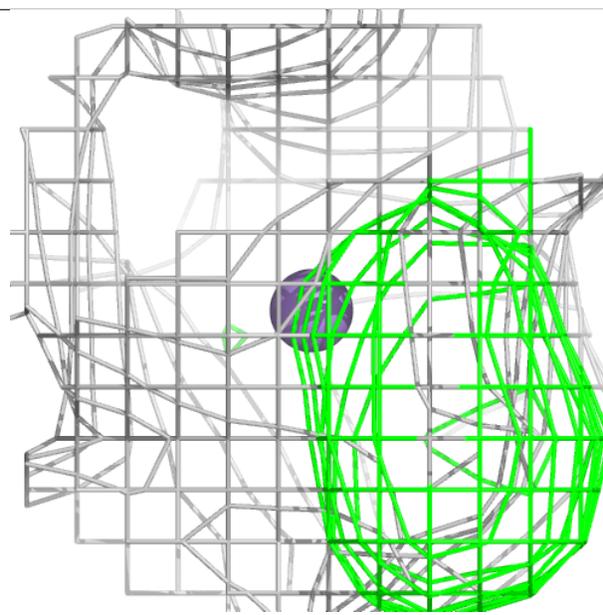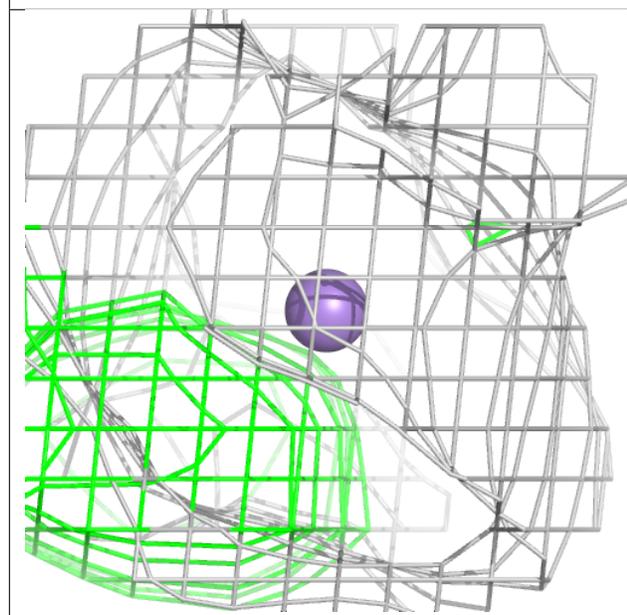and green (positive)

**Electron density around CA A 301:**

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

**Electron density around MN I 302:**

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

**Electron density around CA N 301:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
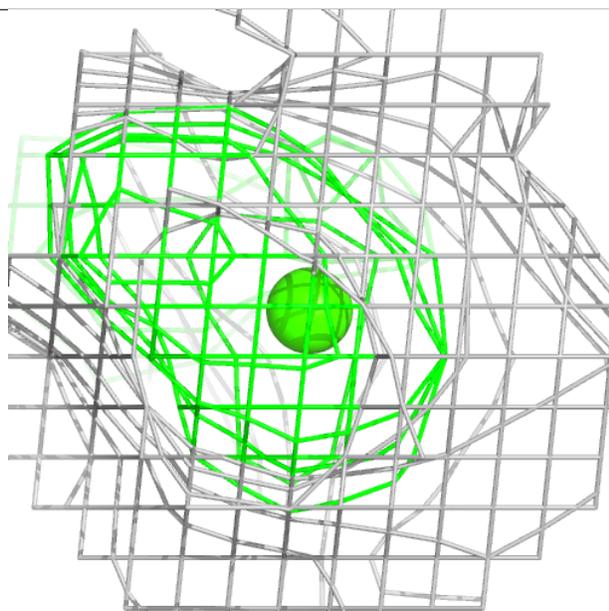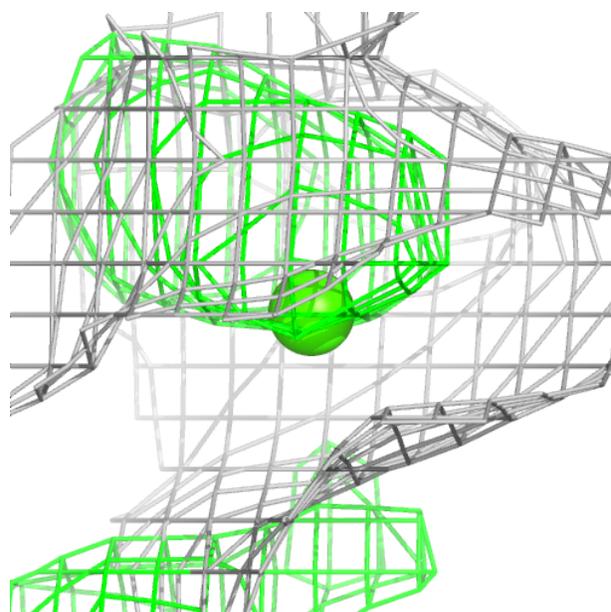
**Electron density around MN H 302:**

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
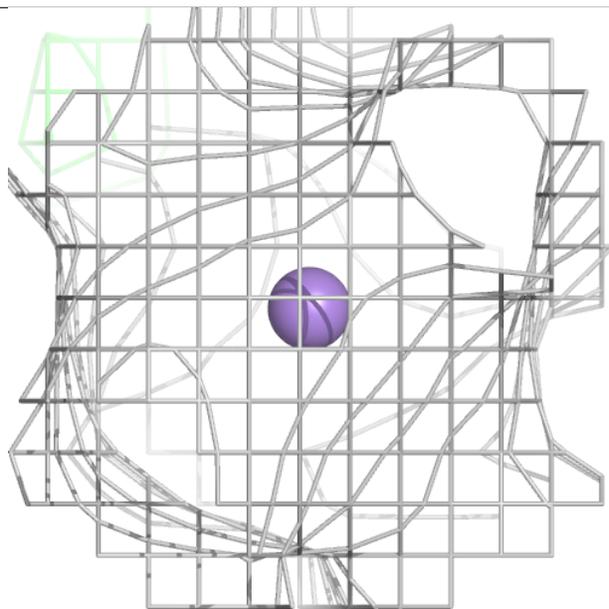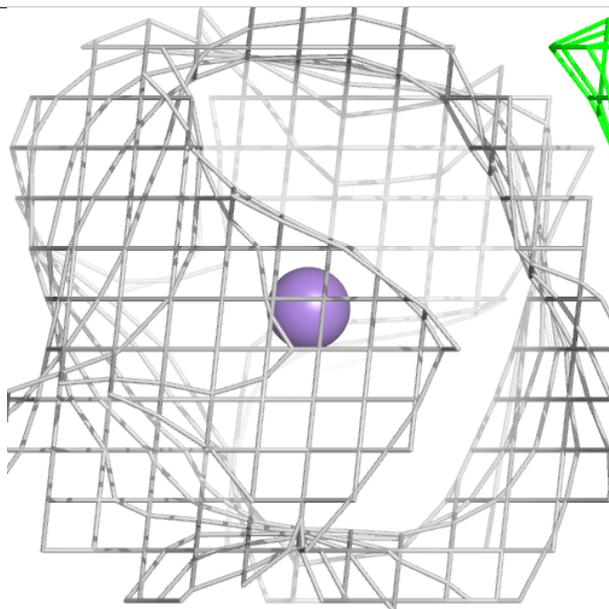
**Electron density around MN J 302:**

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

**Electron density around MN P 302:**

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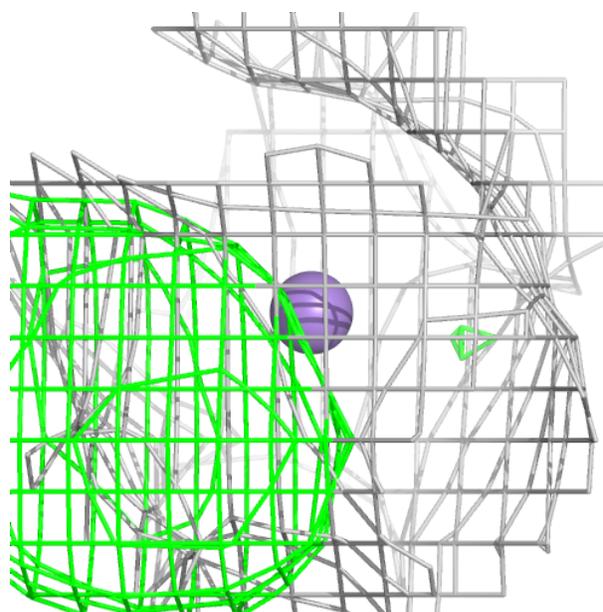$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around MN L 302:**

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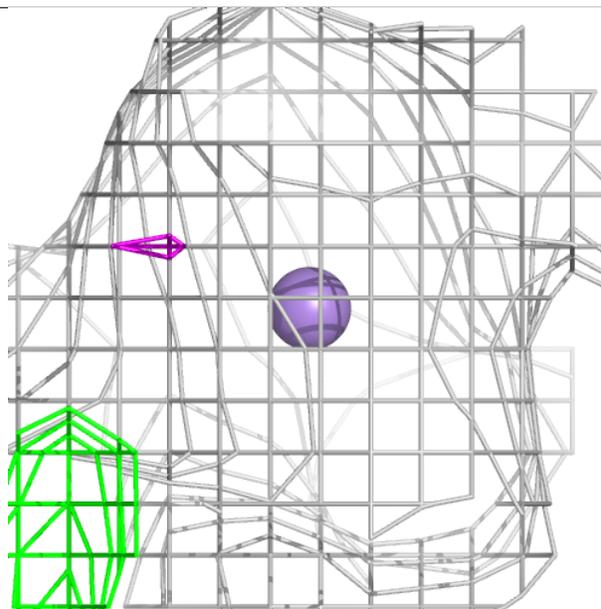and green (positive)

**Electron density around MN O 302:**

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

**Electron density around MN B 302:**

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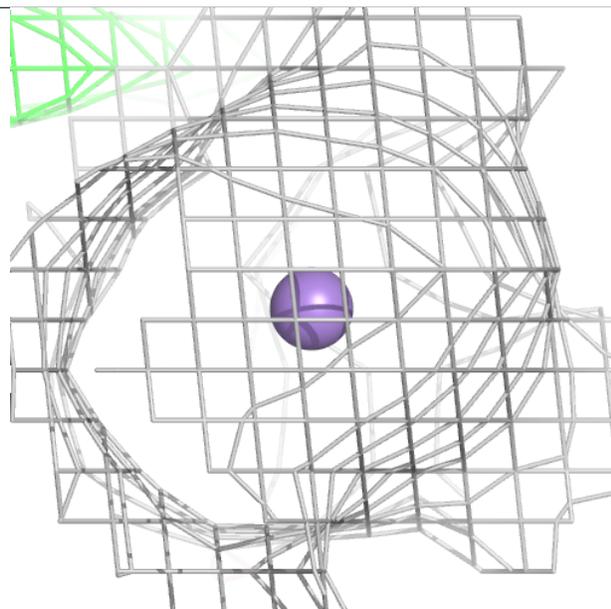$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
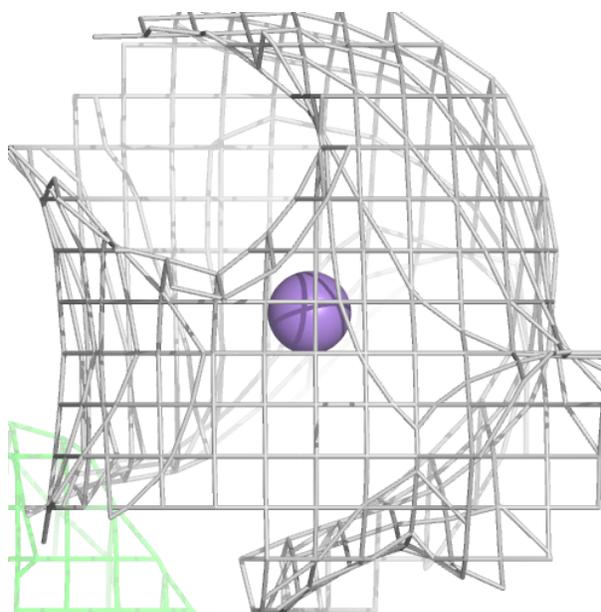and green (positive)

**Electron density around MN F 302:**

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

**Electron density around MN N 302:**

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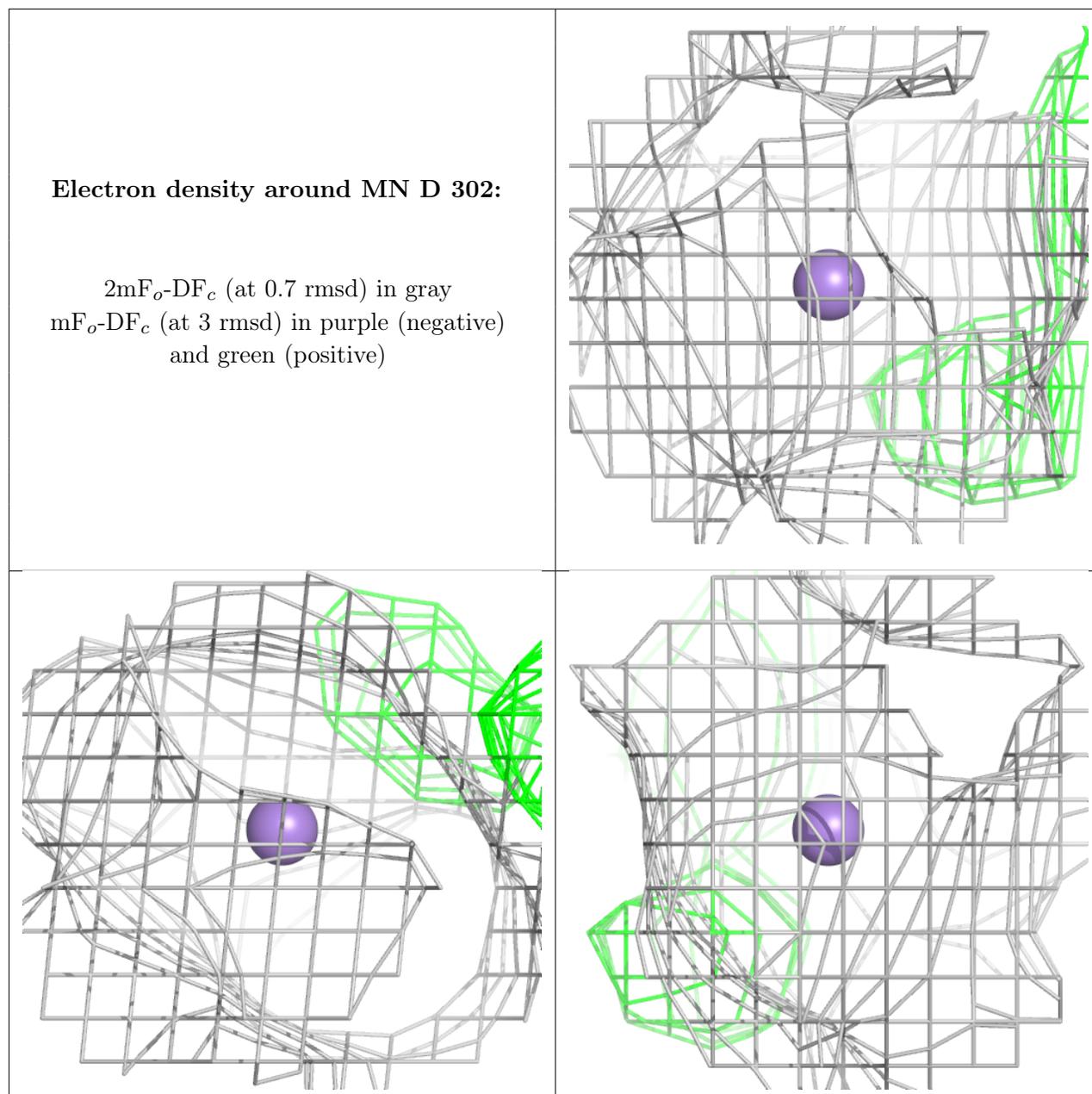and green (positive)

**Electron density around MN E 302:**

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

**Electron density around MN D 302:**

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



## 6.5 Other polymers (i)

There are no such residues in this entry.