Full wwPDB X-ray Structure Validation Report (i)

Aug 18, 2025 – 05:08 PM EDT

PDB ID	:	9BUA / pdb_00009bua
Title	:	SfbO reconstituted with Mn(II) anaerobically
Authors	:	Liu, C.; Rittle, J.
Deposited on	:	2024-05-16
Resolution	:	1.38 Å(reported)

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

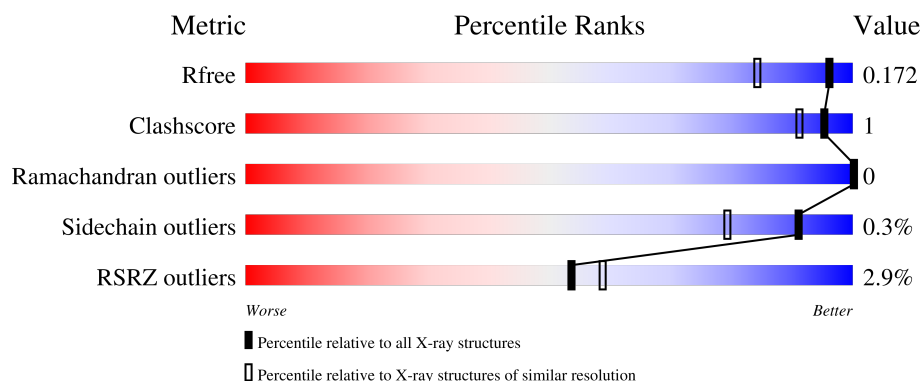|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
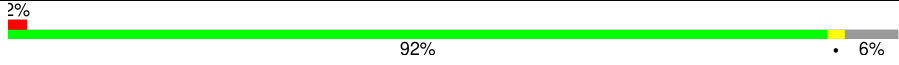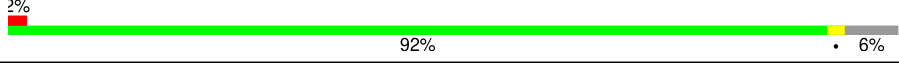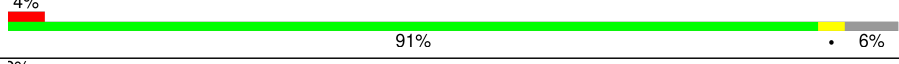*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.38 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		0.172
Clashscore		1
Ramachandran outliers		0
Sidechain outliers		0.3%
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	3869 (1.40-1.36)
Clashscore	180529	4183 (1.40-1.36)
Ramachandran outliers	177936	4116 (1.40-1.36)
Sidechain outliers	177891	4115 (1.40-1.36)
RSRZ outliers	164620	3867 (1.40-1.36)

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.

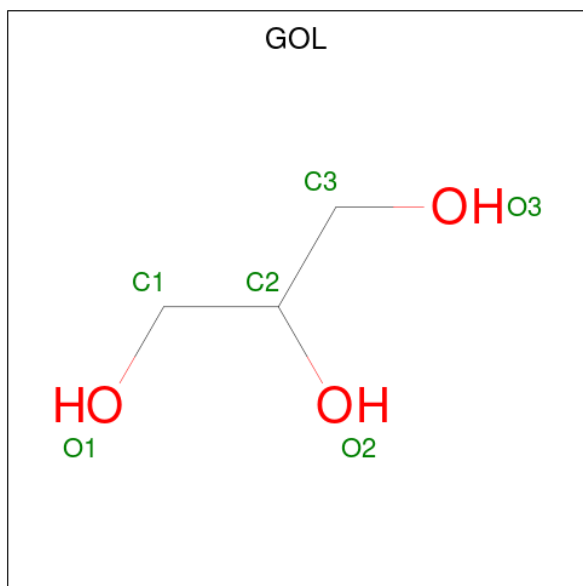| Mol	Chain	Length	Quality of chain
1	A	372	2% / 92% · 6%
1	B	372	2% / 92% · 6%
1	C	372	4% / 91% · 6%
1	D	372	2% / 92% · 5%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 23773 atoms, of which 10801 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 Amidohydrolase family protein.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	350	Total 5584	C 1863	H 2709	N 492	O 501	S 19	0	4	0
1	B	350	Total 5570	C 1863	H 2699	N 486	O 503	S 19	0	5	0
1	C	351	Total 5510	C 1846	H 2665	N 483	O 498	S 18	0	3	0
1	D	354	Total 5592	C 1868	H 2710	N 489	O 507	S 18	0	2	0

- Molecule 2 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total 9	C 3	H 3	O 3	0	0
2	A	1	Total 9	C 3	H 3	O 3	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	B	1	Total 9	C 3	H 3	O 3	0	0
2	B	1	Total 9	C 3	H 3	O 3	0	0
2	D	1	Total 9	C 3	H 3	O 3	0	0
2	D	1	Total 9	C 3	H 3	O 3	0	0

- Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O_4S) (labeled as "Ligand of Interest" by depositor).
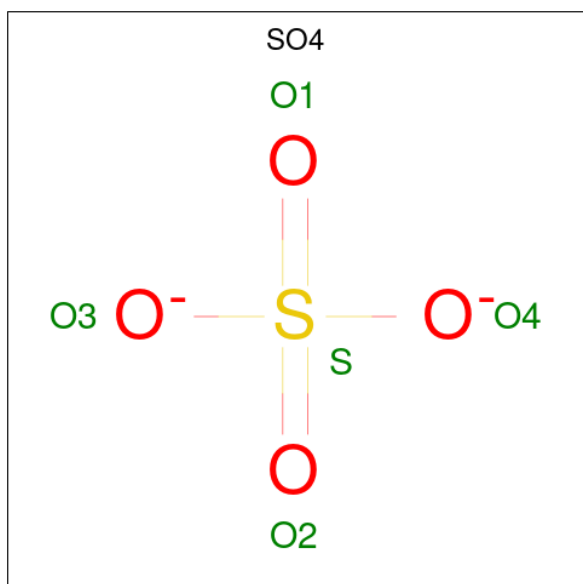
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0
3	D	1	Total 5	O 4	S 1	0	0

- 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	2	Total Mn 3 3	0	1
4	B	2	Total Mn 3 3	0	1
4	C	2	Total Mn 3 3	0	1
4	D	2	Total Mn 2 2	0	0
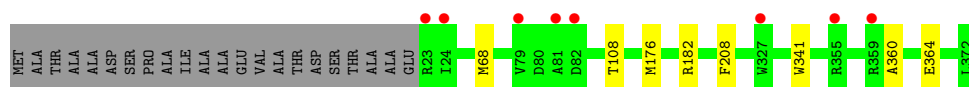
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	365	Total O 365 365	0	0
5	B	379	Total O 379 379	0	0
5	C	361	Total O 361 361	0	0
5	D	322	Total O 322 322	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.
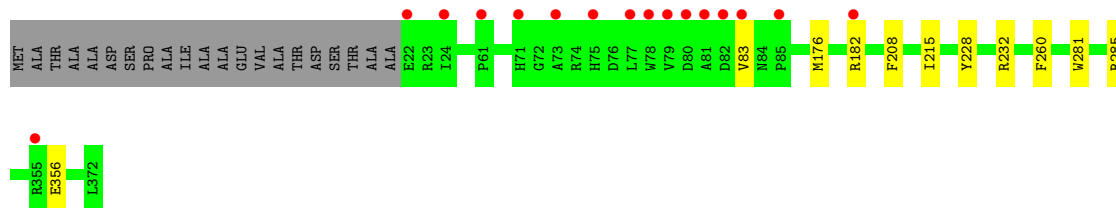
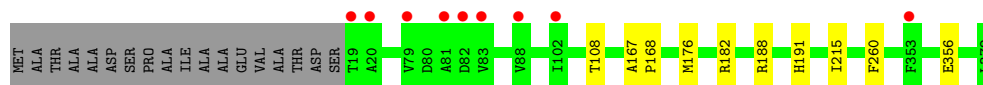• Molecule 1: Amidohydrolase family protein

• Molecule 1: Amidohydrolase family protein

• Molecule 1: Amidohydrolase family protein

• Molecule 1: Amidohydrolase family protein

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	86.25Å　　128.72Å　　138.96Å 90.00°　　90.00°　　90.00°	Depositor
Resolution (Å)	37.60　–　1.38 37.60　–　1.38	Depositor EDS
% Data completeness (in resolution range)	99.7 (37.60-1.38) 90.9 (37.60-1.38)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.68 (at 1.38Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.154　,　0.171 0.155　,　0.172	Depositor DCC
R_{free} test set	2089 reflections (0.66%)	wwPDB-VP
Wilson B-factor (Å^2)	14.9	Xtriage
Anisotropy	0.003	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 35.4	EDS
L-test for twinning[2]	$< |L| > = 0.48$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.98	EDS
Total number of atoms	23773	wwPDB-VP
Average B, all atoms (Å^2)	23.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.93% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[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: GOL, SO4, MN

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	0.41	0/3007	0.57	0/4111
1	B	0.37	0/3006	0.55	0/4112
1	C	0.39	1/2972 (0.0%)	0.58	1/4067 (0.0%)
1	D	0.33	0/3011	0.51	0/4120
All	All	0.37	1/11996 (0.0%)	0.55	1/16410 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	176	MET	SD-CE	-5.51	1.65	1.79

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	83	VAL	N-CA-C	7.40	118.33	107.37

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	2875	2709	2700	5	0
1	B	2871	2699	2691	5	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	2845	2665	2657	5	0
1	D	2882	2710	2699	7	0
2	A	12	6	16	0	0
2	B	12	6	16	0	0
2	D	12	6	15	0	0
3	A	5	0	0	0	0
3	B	10	0	0	0	0
3	C	5	0	0	0	0
3	D	5	0	0	0	0
4	A	3	0	0	1	0
4	B	3	0	0	1	0
4	C	3	0	0	1	0
4	D	2	0	0	0	0
5	A	365	0	0	2	0
5	B	379	0	0	2	0
5	C	361	0	0	1	0
5	D	322	0	0	1	0
All	All	12972	10801	10794	25	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 1.

All (25) 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)
4:B:406[B]:MN:MN	5:B:502:HOH:O	1.32	0.86
4:C:403[B]:MN:MN	5:C:501:HOH:O	1.39	0.80
4:A:405[B]:MN:MN	5:A:502:HOH:O	1.38	0.80
1:B:108:THR:HB	1:B:176[B]:MET:HE1	1.82	0.61
1:A:108:THR:HB	1:A:176[B]:MET:HE1	1.91	0.52
1:D:108:THR:HG22	1:D:176:MET:HE1	1.95	0.48
1:A:68:MET:HG3	1:A:341:TRP:CE2	2.52	0.45
1:B:215:ILE:HD12	1:B:215:ILE:C	2.42	0.45
1:C:228:TYR:CZ	1:C:232:ARG:HD2	2.52	0.44
1:C:208:PHE:CD1	1:C:208:PHE:C	2.96	0.44
1:B:108:THR:HG22	1:B:176[A]:MET:HE1	2.00	0.43
1:B:271:PRO:HD3	1:B:326:ILE:HG22	1.99	0.43
1:B:176[B]:MET:HE3	1:B:207:HIS:HB2	2.00	0.43
1:C:215:ILE:C	1:C:215:ILE:HD12	2.45	0.42
1:D:215:ILE:C	1:D:215:ILE:HD12	2.44	0.42
1:A:182[A]:ARG:HD3	5:A:685:HOH:O	2.19	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:281:TRP:O	1:C:285:ARG:HG3	2.19	0.42
1:D:182:ARG:HD3	5:D:569:HOH:O	2.20	0.41
1:D:356:GLU:H	1:D:356:GLU:CD	2.28	0.41
5:B:736:HOH:O	1:D:182:ARG:HD2	2.20	0.41
1:D:167:ALA:N	1:D:168:PRO:HD2	2.35	0.41
1:A:208:PHE:CD1	1:A:208:PHE:C	2.99	0.41
1:A:360:ALA:HA	1:A:364:GLU:HB2	2.03	0.41
1:D:188:ARG:HA	1:D:191:HIS:CD2	2.56	0.41
1:C:182:ARG:NE	1:C:215:ILE:HD13	2.34	0.41

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	352/372 (95%)	346 (98%)	6 (2%)	0	100	100
1	B	353/372 (95%)	346 (98%)	7 (2%)	0	100	100
1	C	352/372 (95%)	346 (98%)	6 (2%)	0	100	100
1	D	354/372 (95%)	349 (99%)	5 (1%)	0	100	100
All	All	1411/1488 (95%)	1387 (98%)	24 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	298/309 (96%)	298 (100%)	0	100	100
1	B	298/309 (96%)	297 (100%)	1 (0%)	91	79
1	C	292/309 (94%)	290 (99%)	2 (1%)	81	61
1	D	298/309 (96%)	297 (100%)	1 (0%)	91	79
All	All	1186/1236 (96%)	1182 (100%)	4 (0%)	91	79

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	260	PHE
1	C	260	PHE
1	C	356	GLU
1	D	260	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	101	GLN
1	B	312	ASN
1	C	71	HIS
1	D	48	HIS
1	D	71	HIS

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 ⓘ

There are no oligosaccharides in this entry.

5.6　Ligand geometry ⓘ

Of 22 ligands modelled in this entry, 11 are monoatomic - leaving 11 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
2	GOL	D	402	-	5,5,5	1.01	0	5,5,5	1.31	1 (20%)
3	SO4	B	403	-	4,4,4	0.32	0	6,6,6	0.29	0
3	SO4	B	404	-	4,4,4	0.24	0	6,6,6	0.08	0
2	GOL	B	401	-	5,5,5	1.25	1 (20%)	5,5,5	1.02	0
3	SO4	D	403	-	4,4,4	0.36	0	6,6,6	0.41	0
3	SO4	A	403	-	4,4,4	0.21	0	6,6,6	0.29	0
3	SO4	C	401	4	4,4,4	0.46	0	6,6,6	0.49	0
2	GOL	D	401	-	5,5,5	1.30	1 (20%)	5,5,5	1.04	0
2	GOL	B	402	-	5,5,5	0.95	0	5,5,5	1.13	0
2	GOL	A	401	-	5,5,5	0.75	0	5,5,5	1.05	0
2	GOL	A	402	-	5,5,5	1.05	0	5,5,5	0.97	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	GOL	D	402	-	-	2/4/4/4	-
2	GOL	B	401	-	-	2/4/4/4	-
2	GOL	D	401	-	-	4/4/4/4	-
2	GOL	B	402	-	-	3/4/4/4	-
2	GOL	A	401	-	-	0/4/4/4	-
2	GOL	A	402	-	-	2/4/4/4	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	401	GOL	O2-C2	-2.63	1.35	1.43
2	B	401	GOL	O2-C2	-2.17	1.37	1.43

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	402	GOL	C3-C2-C1	-2.65	102.08	111.80

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	401	GOL	O1-C1-C2-C3
2	D	401	GOL	O1-C1-C2-C3
2	D	401	GOL	C1-C2-C3-O3
2	D	402	GOL	C1-C2-C3-O3
2	A	402	GOL	O1-C1-C2-C3
2	B	402	GOL	C1-C2-C3-O3
2	D	401	GOL	O1-C1-C2-O2
2	D	401	GOL	O2-C2-C3-O3
2	D	402	GOL	O2-C2-C3-O3
2	A	402	GOL	O1-C1-C2-O2
2	B	402	GOL	O2-C2-C3-O3
2	B	401	GOL	O1-C1-C2-O2
2	B	402	GOL	O1-C1-C2-C3
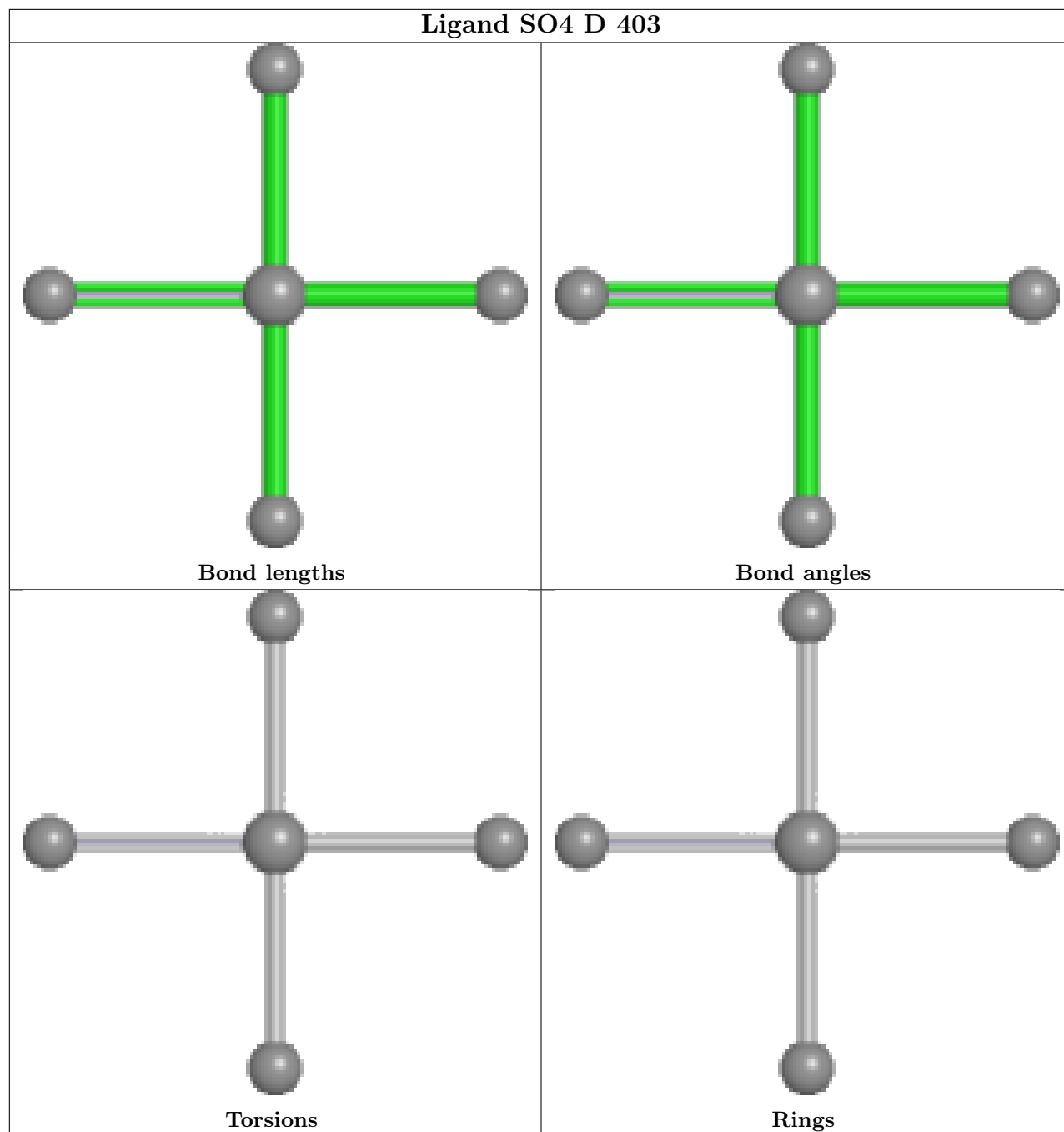
There are no ring outliers.
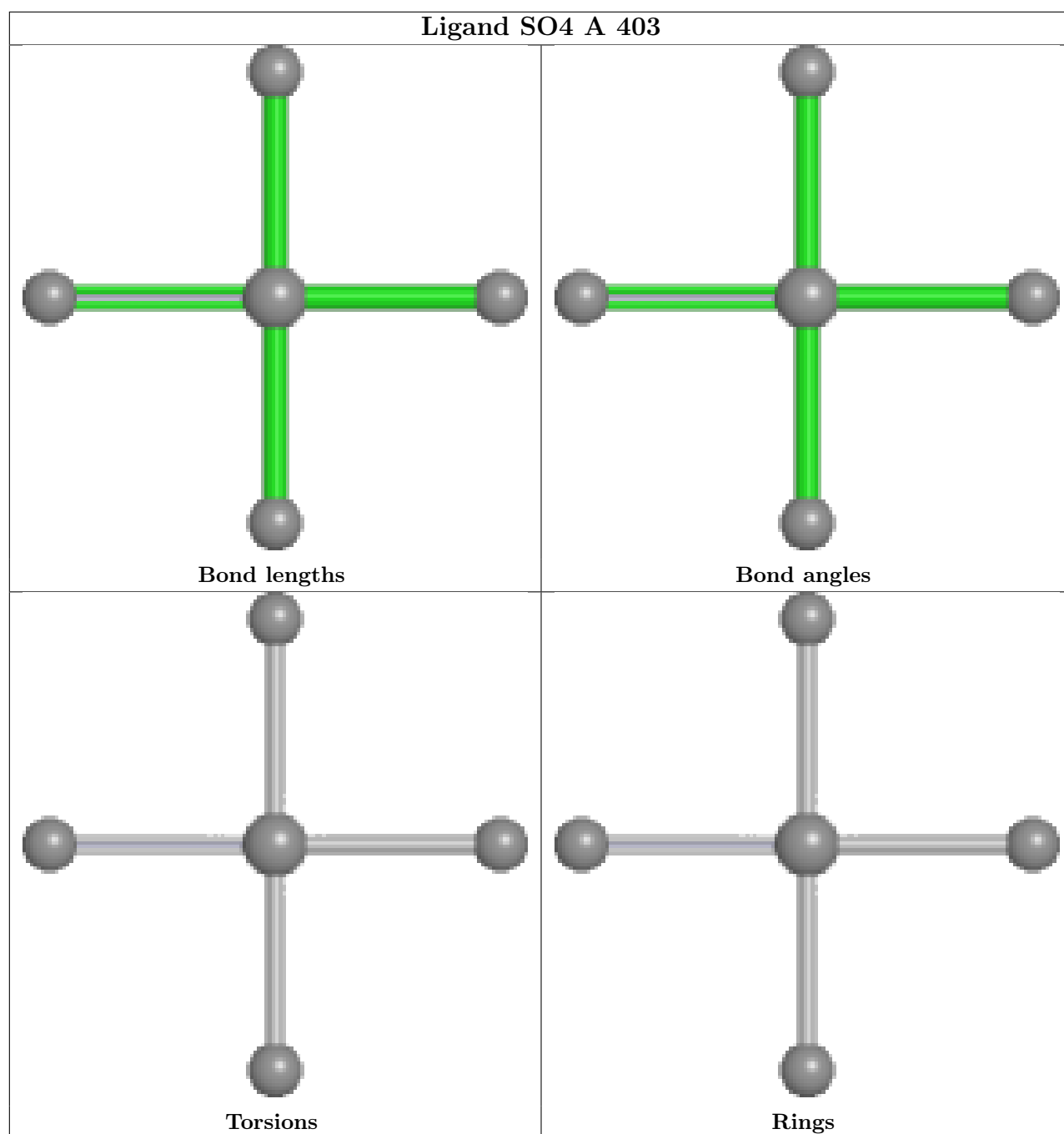
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand SO4 B 403

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 B 404

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 D 403

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 A 403

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 C 401

Bond lengths

Bond angles

Torsions

Rings
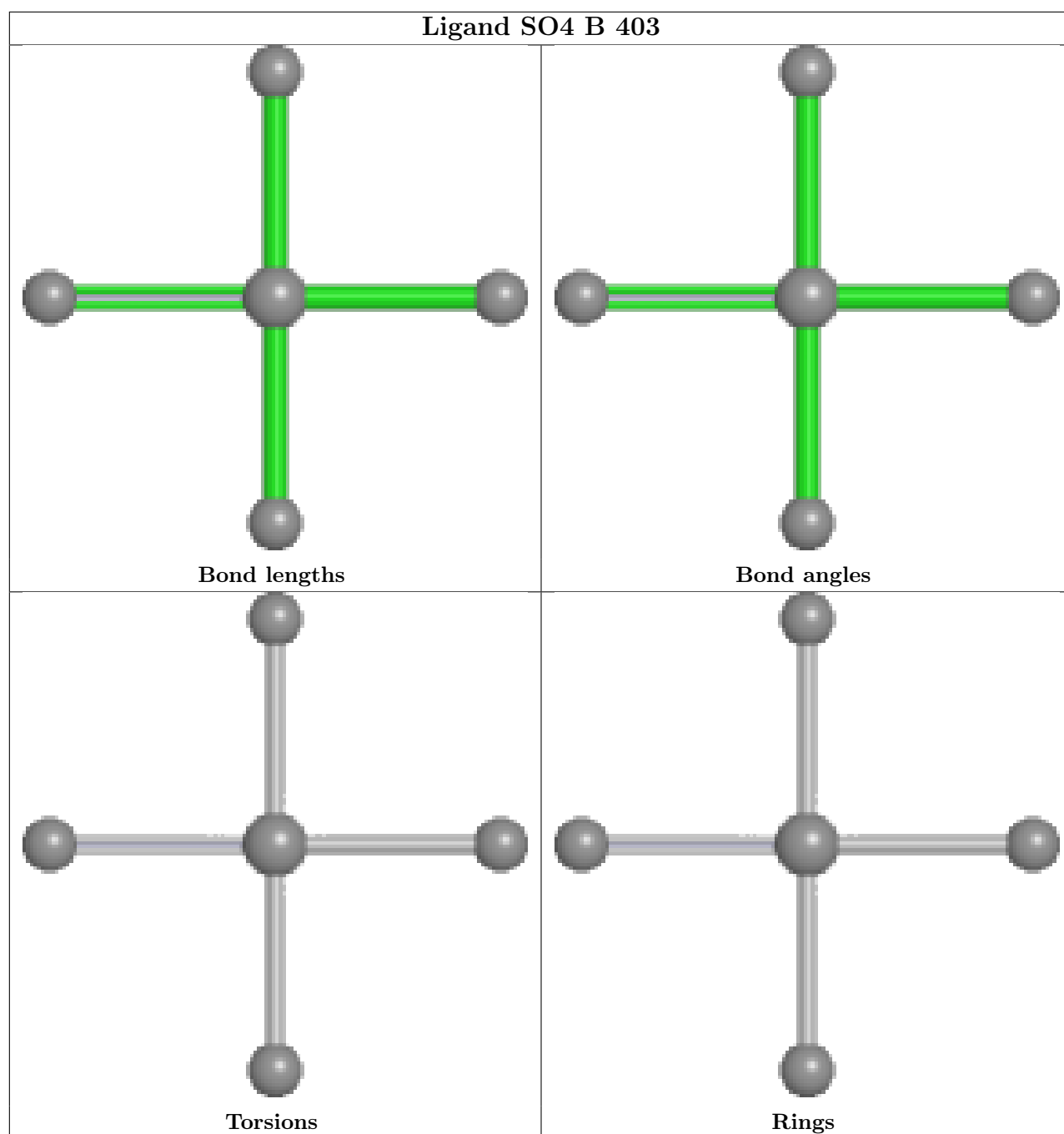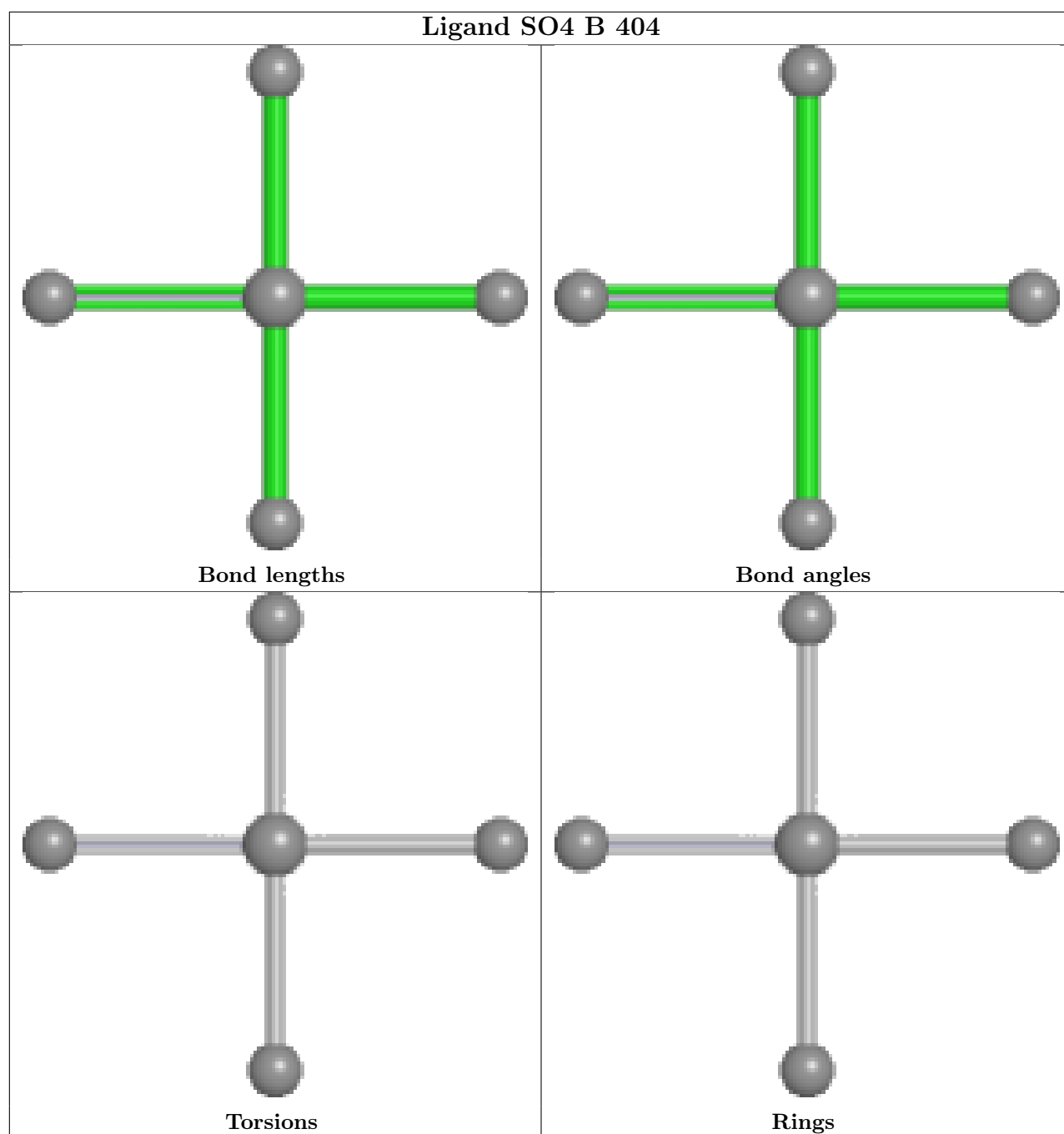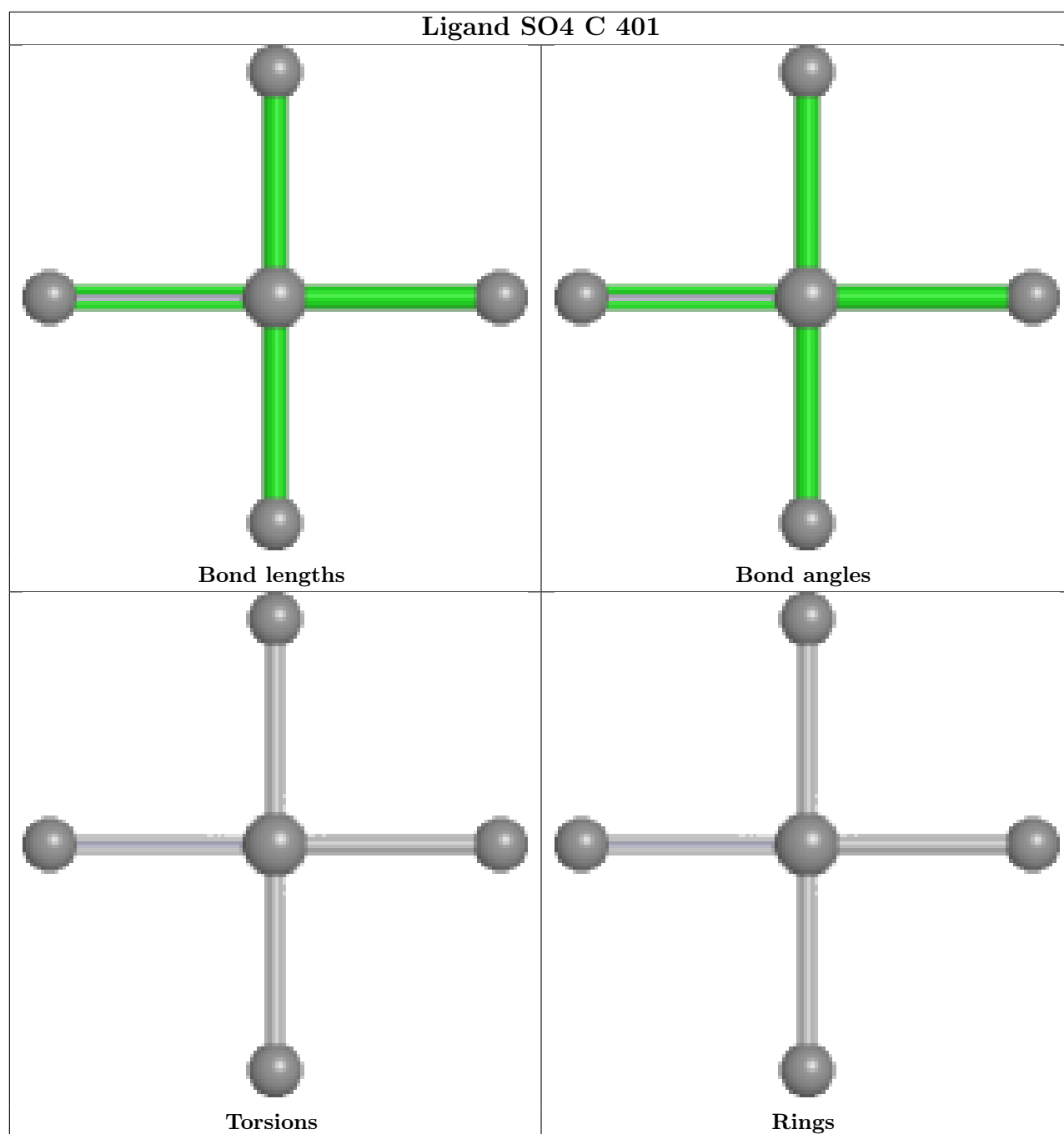
5.7 Other polymers ⓘ

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	350/372 (94%)	-0.16	8 (2%)	61	66	9, 19, 38, 72	3 (0%)
1	B	350/372 (94%)	-0.16	8 (2%)	61	66	8, 18, 36, 76	4 (1%)
1	C	351/372 (94%)	-0.06	16 (4%)	38	42	13, 19, 37, 85	2 (0%)
1	D	354/372 (95%)	0.15	9 (2%)	58	63	11, 23, 43, 69	1 (0%)
All	All	1405/1488 (94%)	-0.06	41 (2%)	54	59	8, 20, 39, 85	10 (0%)

All (41) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	79	VAL	8.9
1	C	77[A]	LEU	7.8
1	B	79	VAL	7.4
1	C	78	TRP	7.3
1	D	79	VAL	7.1
1	A	79	VAL	6.7
1	C	80	ASP	6.0
1	C	83	VAL	5.5
1	D	19	THR	5.0
1	C	81	ALA	4.7
1	B	81	ALA	4.5
1	C	82	ASP	4.2
1	C	75	HIS	3.8
1	A	23	ARG	3.6
1	B	82	ASP	3.6
1	A	81	ALA	3.6
1	D	81	ALA	3.6
1	C	182	ARG	3.4
1	A	82	ASP	3.3
1	B	351	ALA	3.1
1	B	83	VAL	3.1

Continued on next page...

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

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	22	GLU	3.0
1	C	61	PRO	3.0
1	C	71	HIS	2.8
1	B	78	TRP	2.8
1	A	327	TRP	2.7
1	B	75	HIS	2.7
1	A	24	ILE	2.6
1	A	355	ARG	2.5
1	C	24	ILE	2.5
1	C	85	PRO	2.5
1	C	355	ARG	2.4
1	B	67	ASN	2.4
1	C	73	ALA	2.4
1	D	20	ALA	2.3
1	D	102	ILE	2.3
1	D	88	VAL	2.2
1	D	353	PHE	2.2
1	D	83	VAL	2.1
1	D	82	ASP	2.1
1	A	359	ARG	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 ⓘ

There are no oligosaccharides in this entry.

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, 95th 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
3	SO4	B	404	5/5	0.74	0.13	86,87,89,89	0
2	GOL	B	402	6/6	0.83	0.23	23,46,55,61	0
2	GOL	A	401	6/6	0.86	0.16	24,52,64,69	0

Continued on next page...
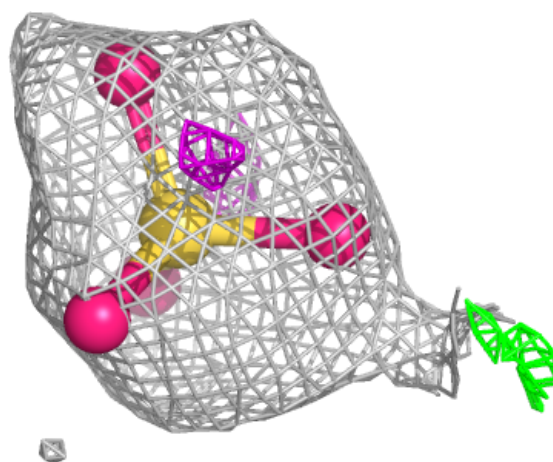
Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	GOL	B	401	6/6	0.89	0.13	23,31,36,37	0
2	GOL	D	402	6/6	0.90	0.14	27,34,55,65	0
2	GOL	D	401	6/6	0.90	0.14	26,40,49,57	0
3	SO4	C	401	5/5	0.90	0.14	22,26,31,32	0
2	GOL	A	402	6/6	0.91	0.12	25,37,46,46	0
3	SO4	D	403	5/5	0.96	0.10	21,24,27,28	0
3	SO4	B	403	5/5	0.97	0.08	21,22,25,25	0
3	SO4	A	403	5/5	0.98	0.06	23,24,24,26	0
4	MN	A	404	1/1	1.00	0.02	15,15,15,15	0
4	MN	A	405[A]	1/1	1.00	0.02	16,16,16,16	1
4	MN	A	405[B]	1/1	1.00	0.02	17,17,17,17	1
4	MN	B	405	1/1	1.00	0.01	16,16,16,16	0
4	MN	B	406[A]	1/1	1.00	0.02	13,13,13,13	1
4	MN	B	406[B]	1/1	1.00	0.02	20,20,20,20	1
4	MN	C	402	1/1	1.00	0.02	16,16,16,16	0
4	MN	C	403[A]	1/1	1.00	0.03	14,14,14,14	1
4	MN	C	403[B]	1/1	1.00	0.03	25,25,25,25	1
4	MN	D	404	1/1	1.00	0.02	19,19,19,19	0
4	MN	D	405	1/1	1.00	0.08	21,21,21,21	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.
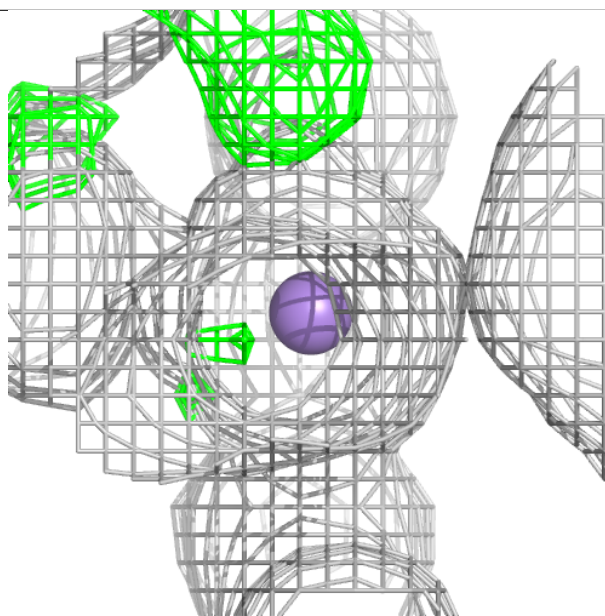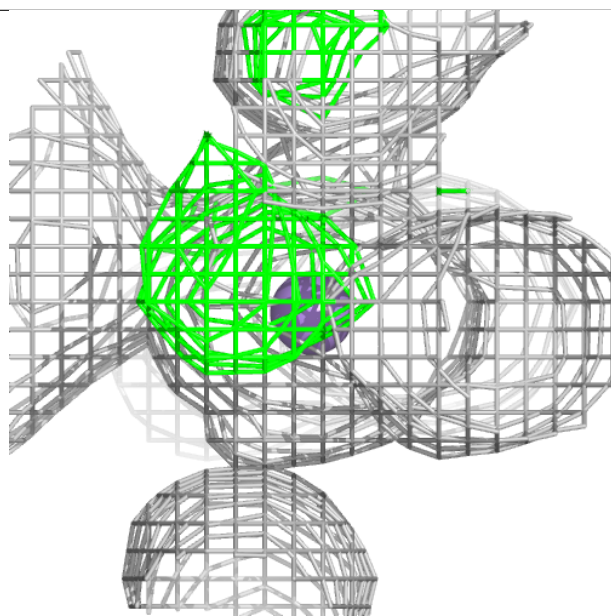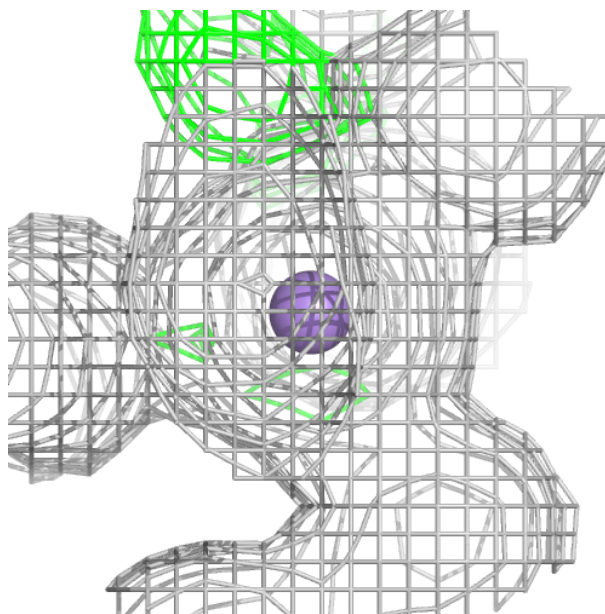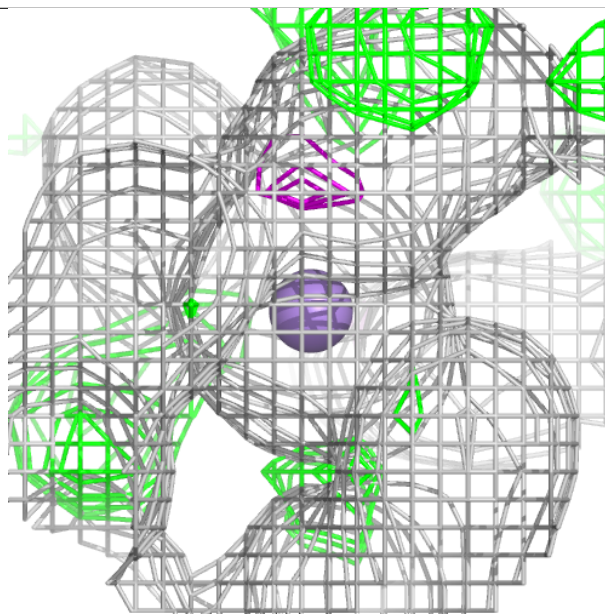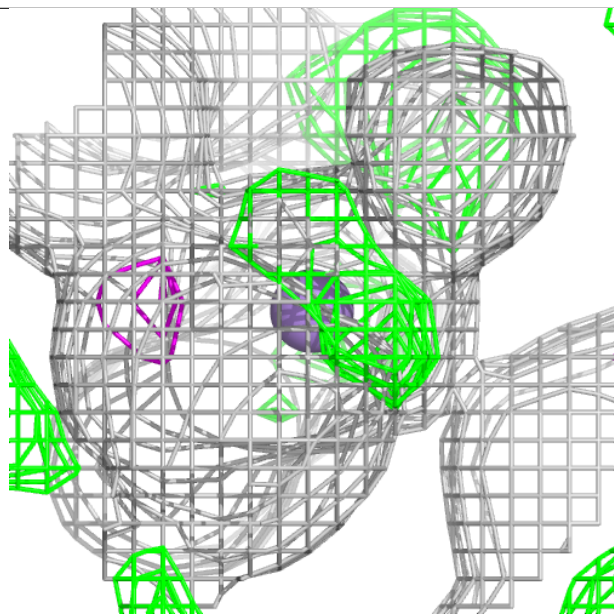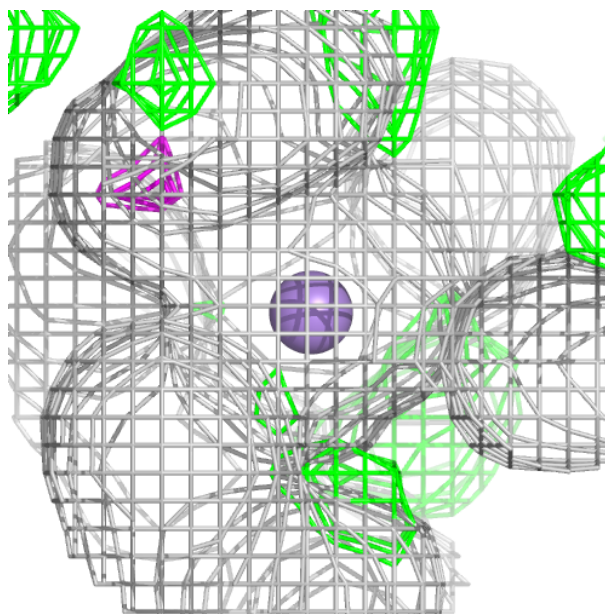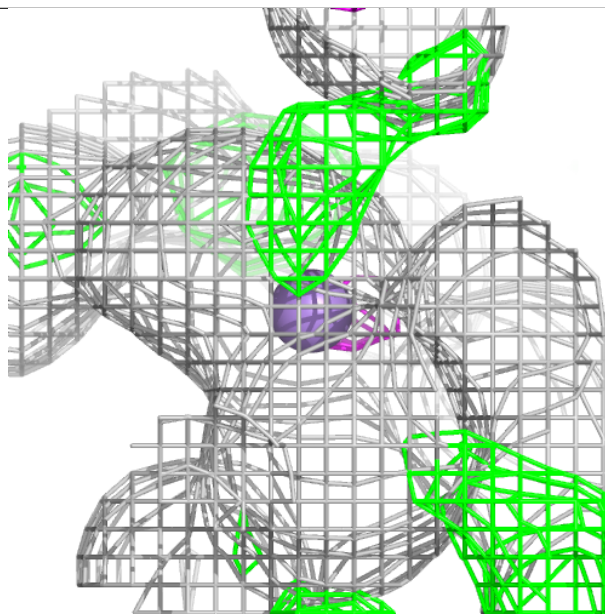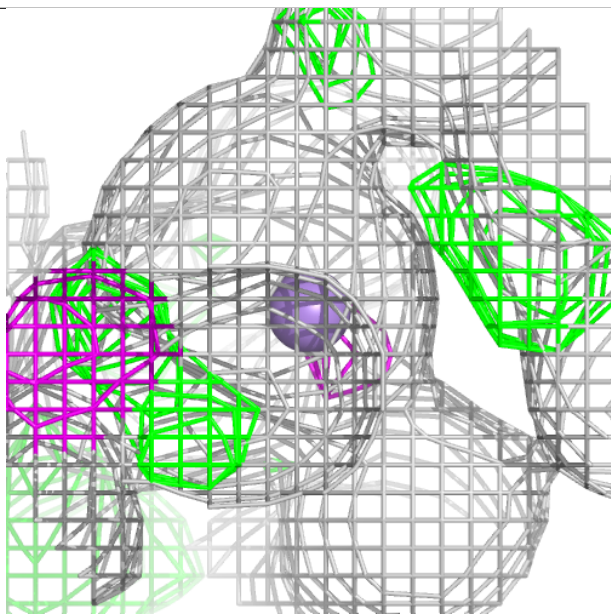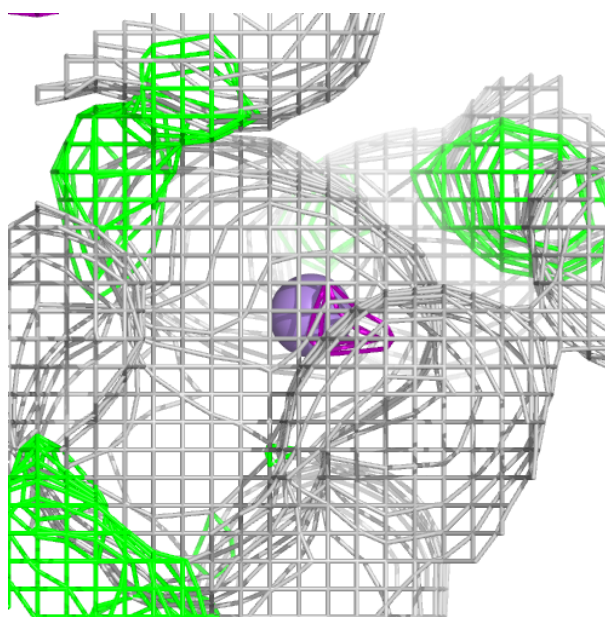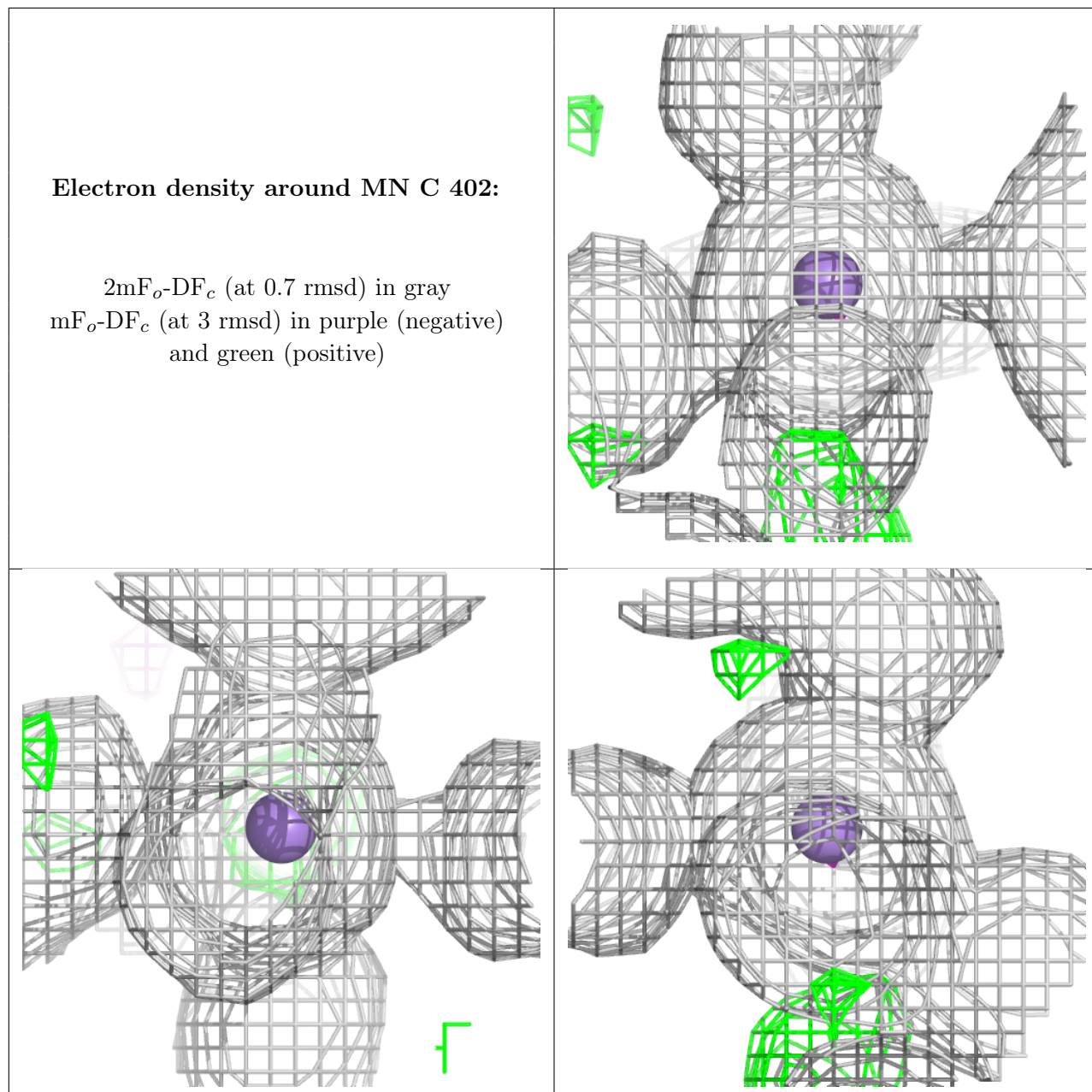
Electron density around SO4 B 404:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
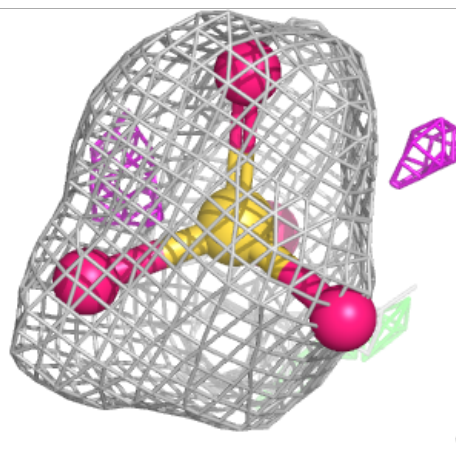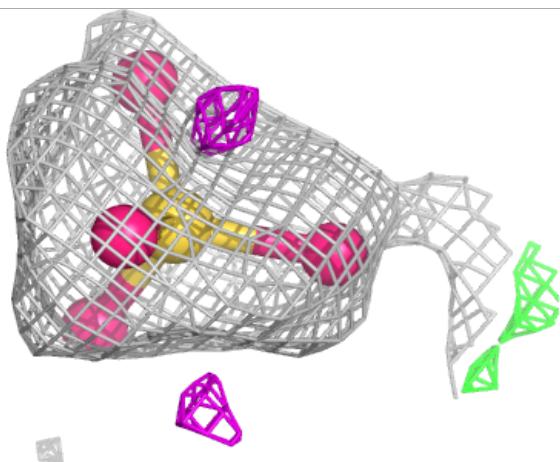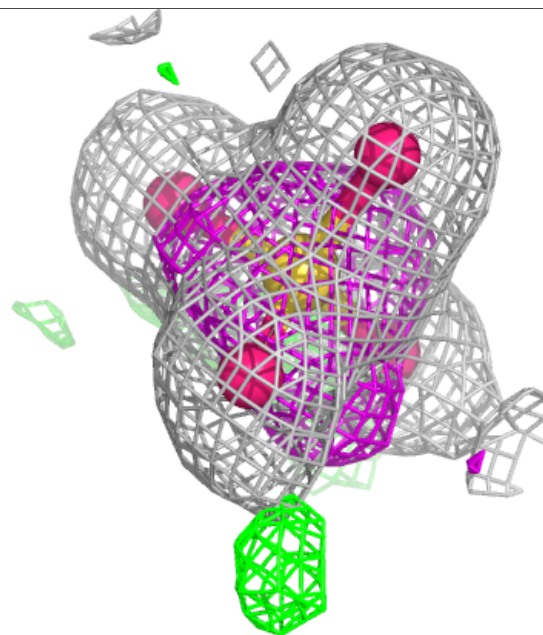
Electron density around SO4 C 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
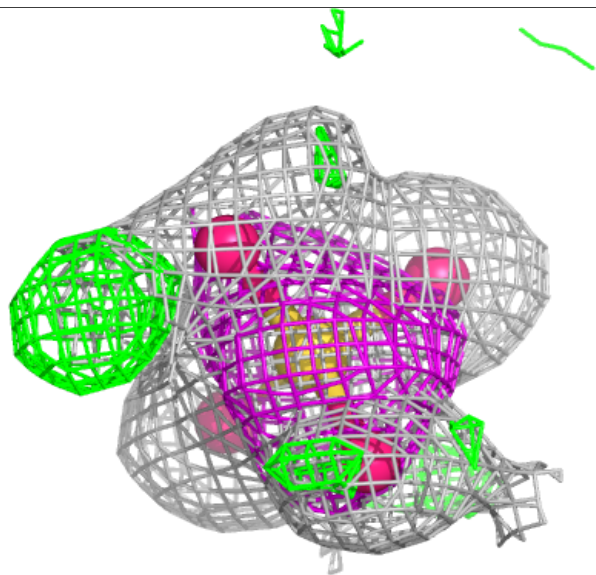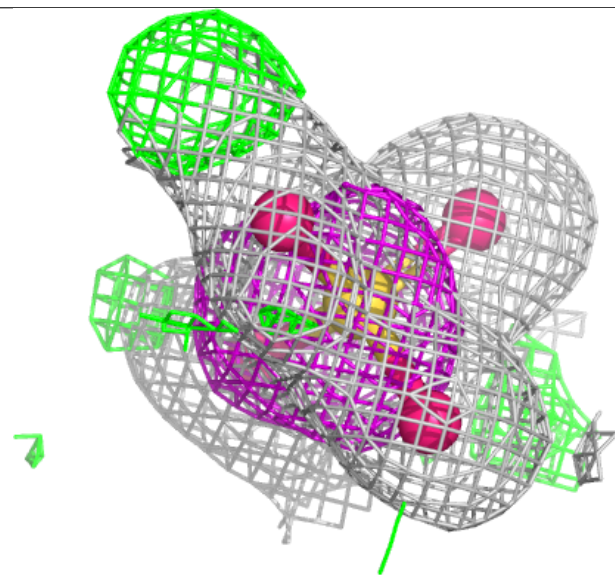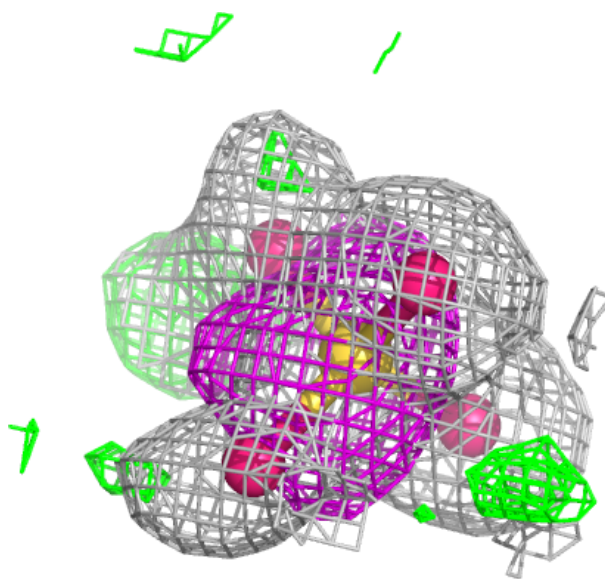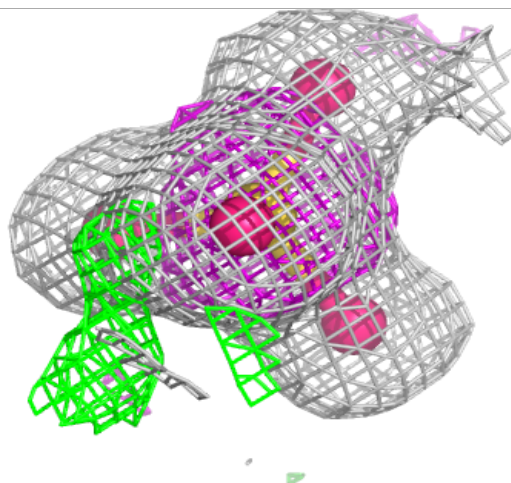
Electron density around SO4 D 403:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
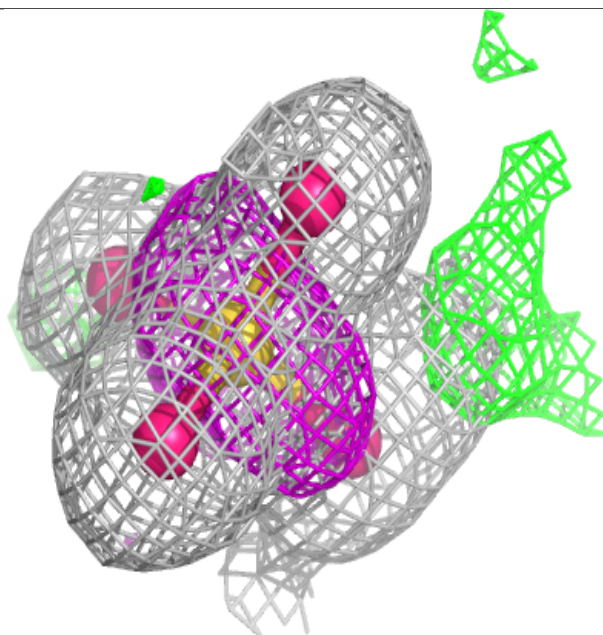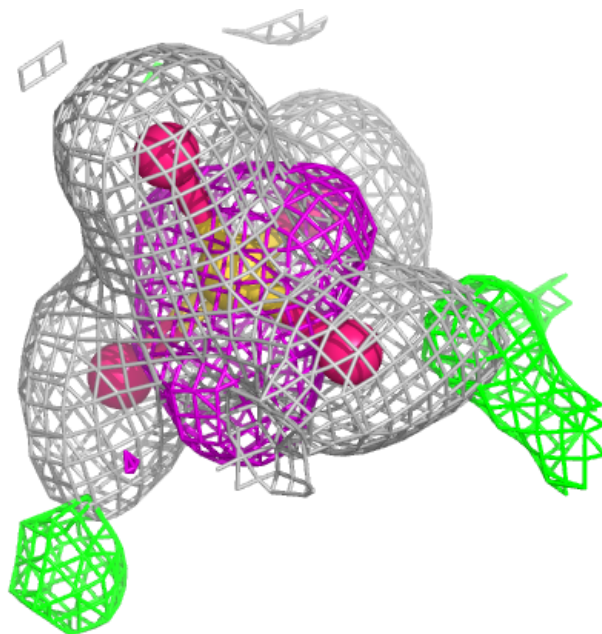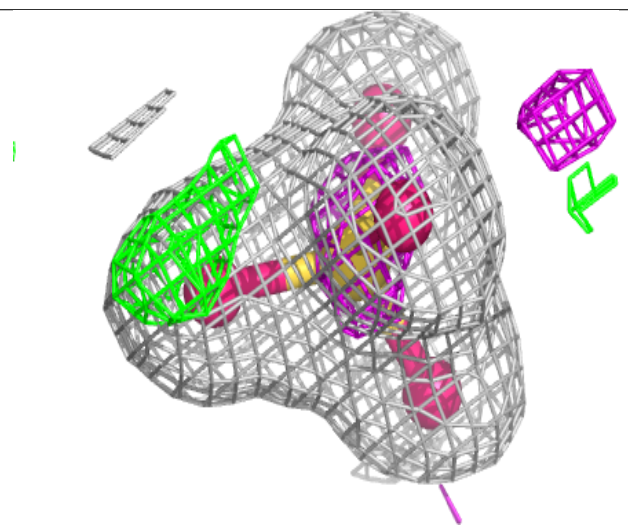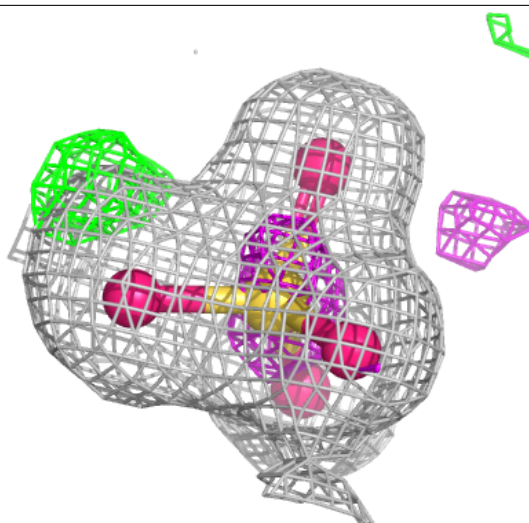
Electron density around SO4 B 403:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
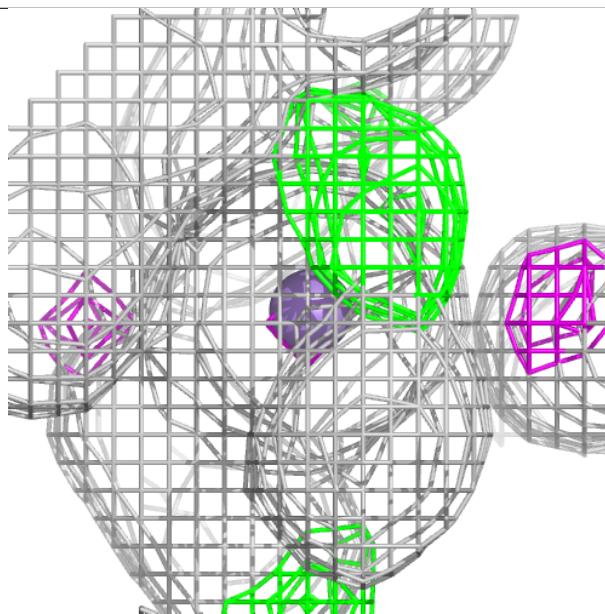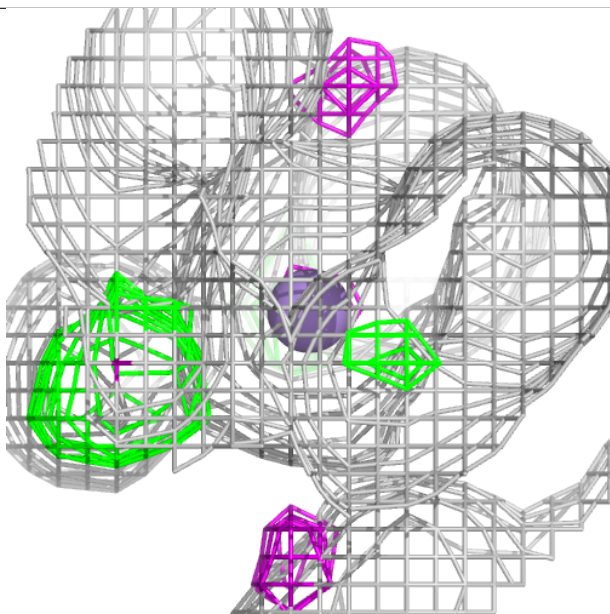mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
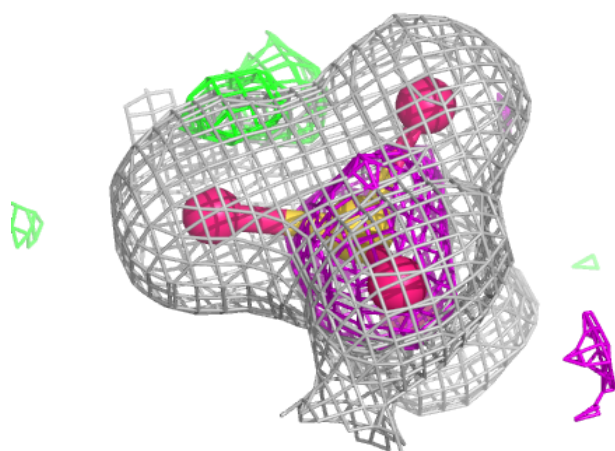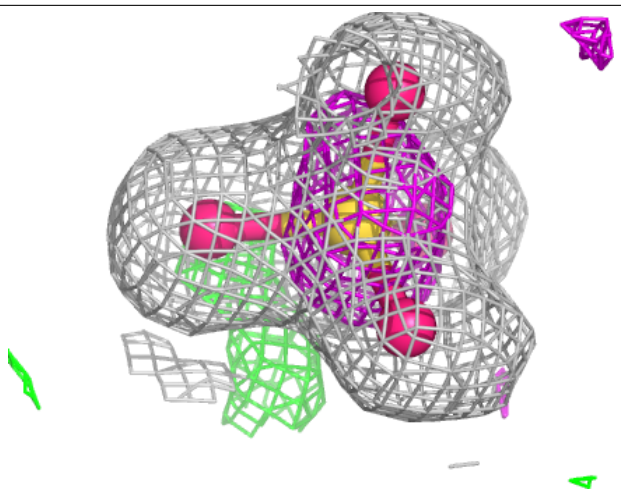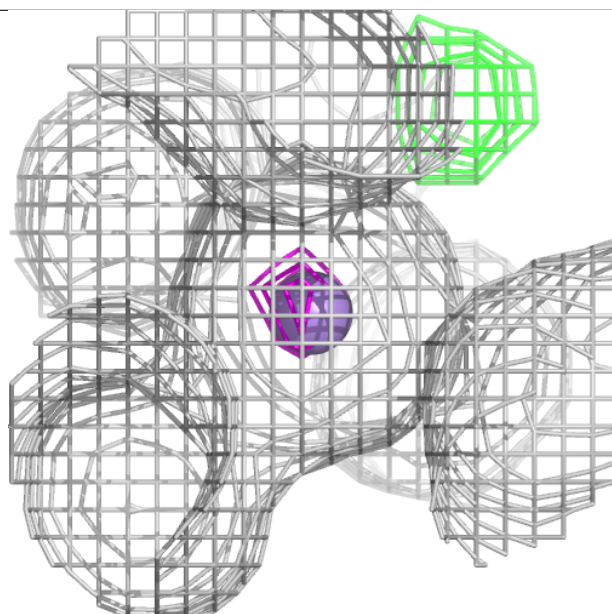
Electron density around SO4 A 403:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
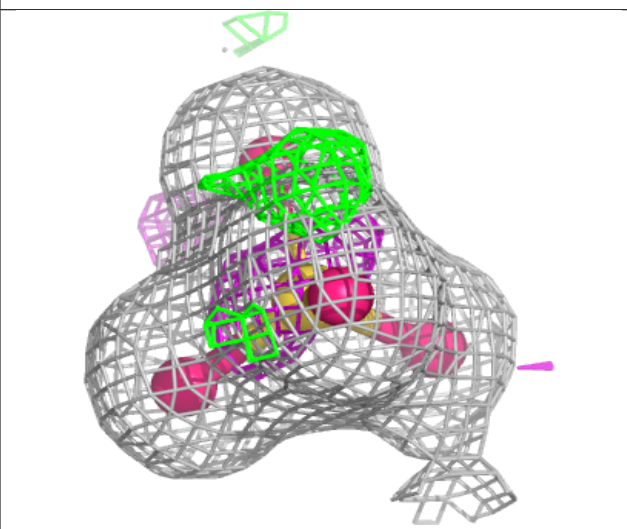
Electron density around MN A 404:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
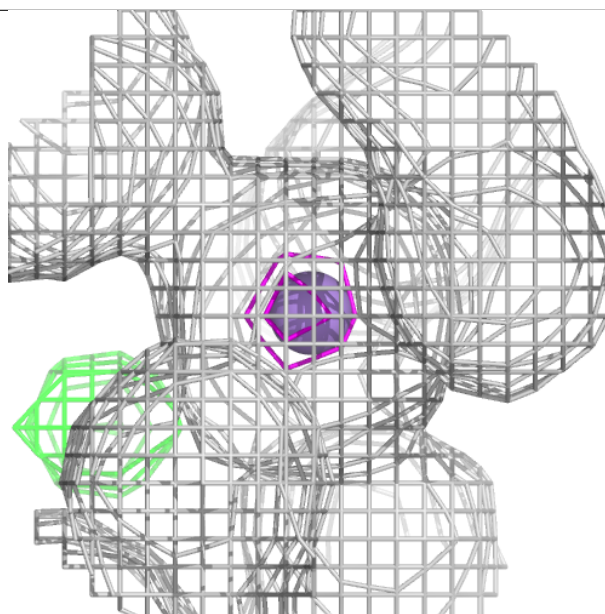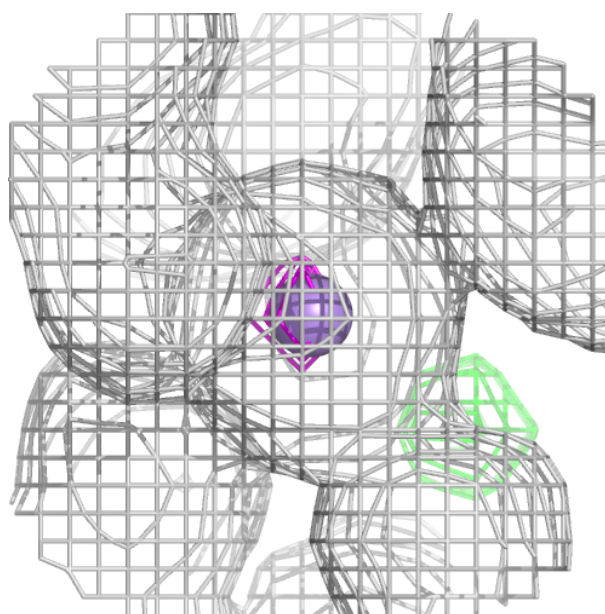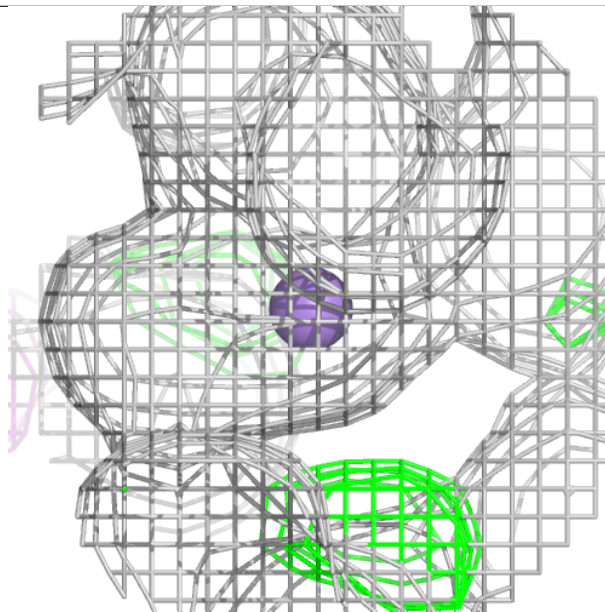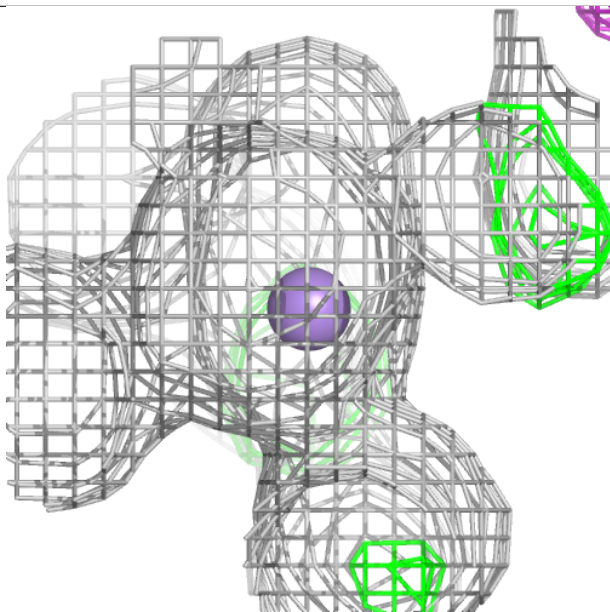
Electron density around MN A 405 (A):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
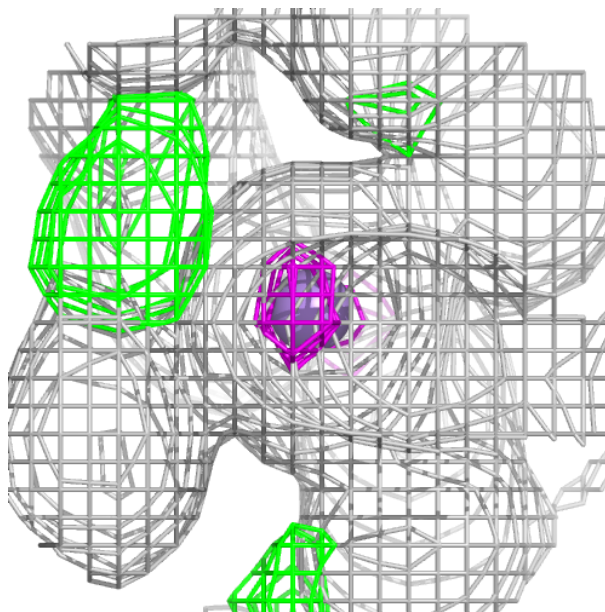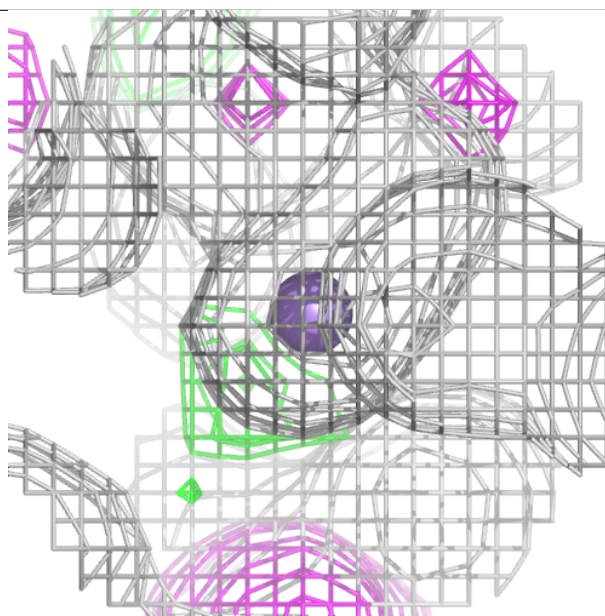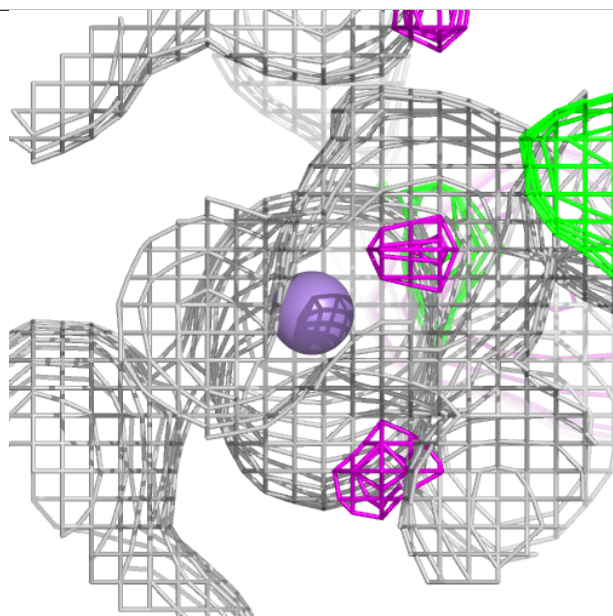mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
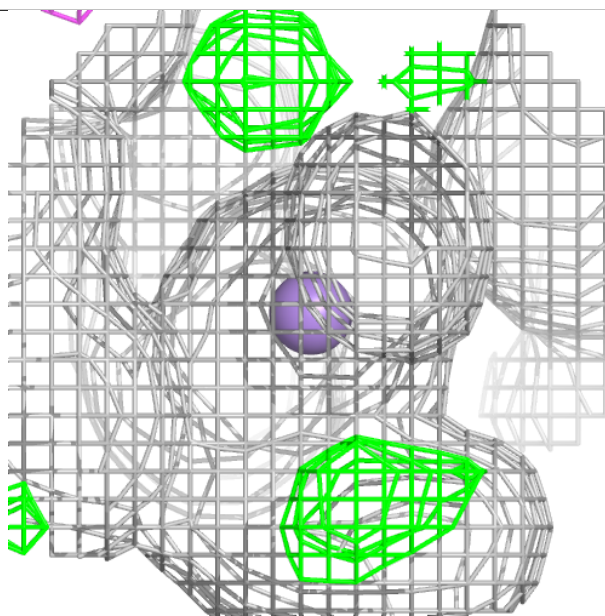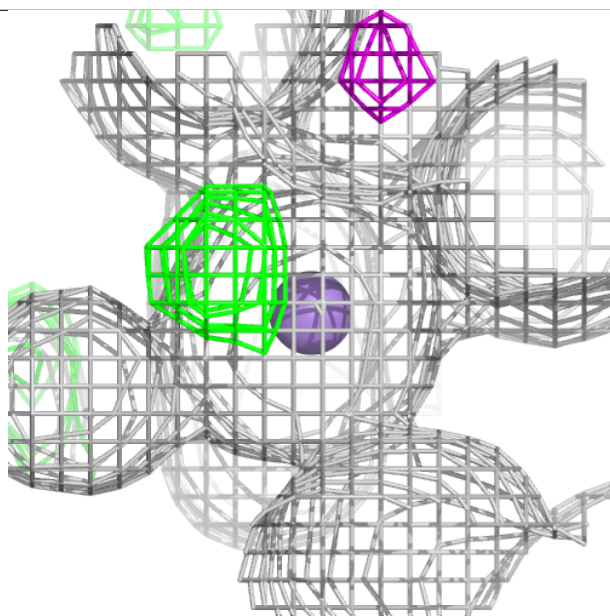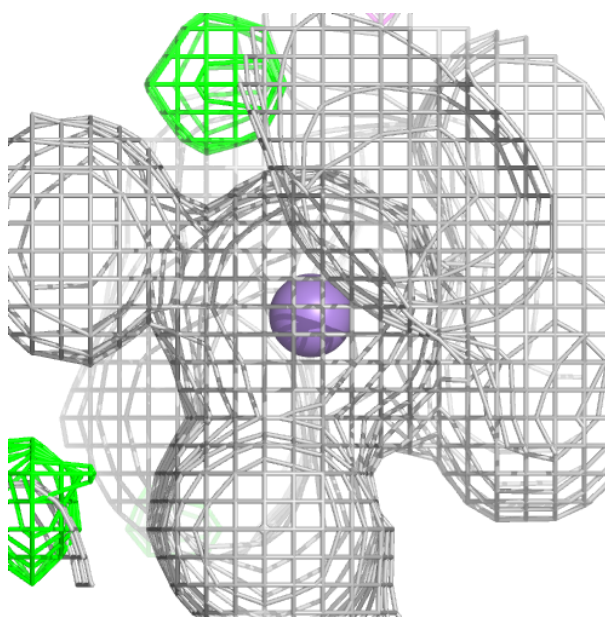
Electron density around MN A 405 (B):

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
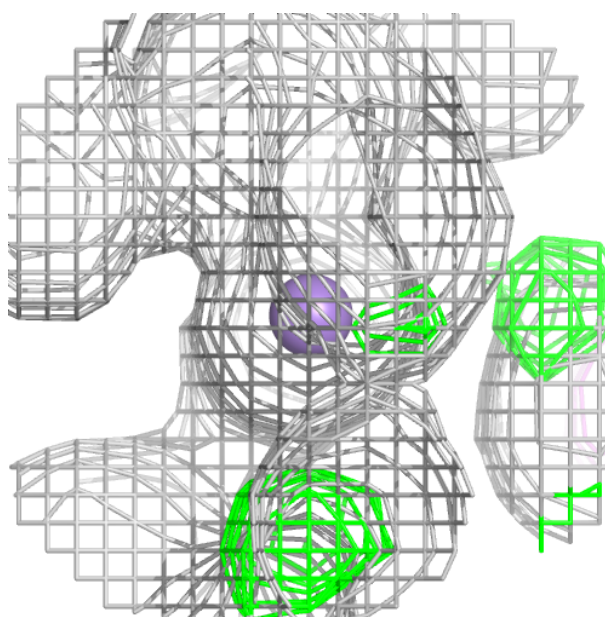
Electron density around MN B 405:

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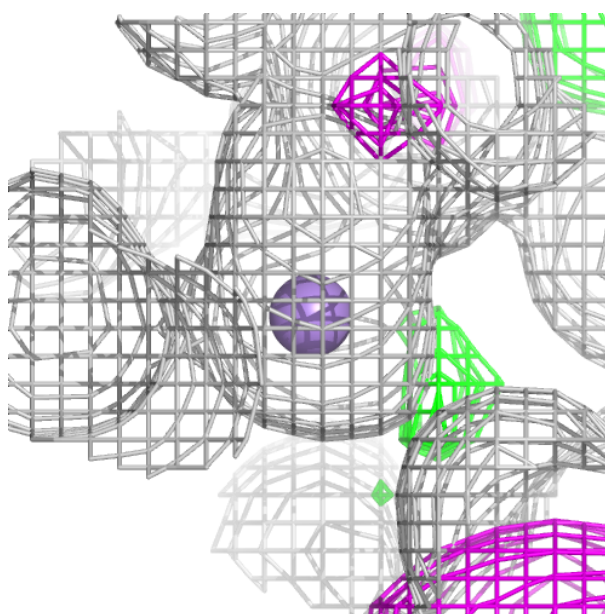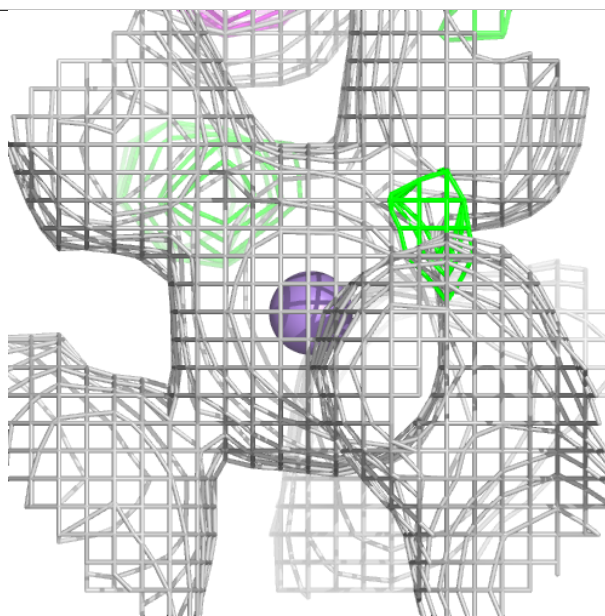and green (positive)

Electron density around MN B 406 (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 MN B 406 (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 MN C 402:

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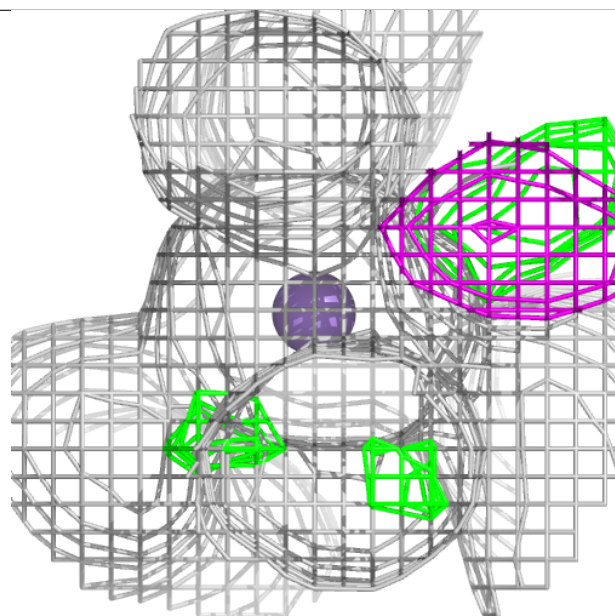$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
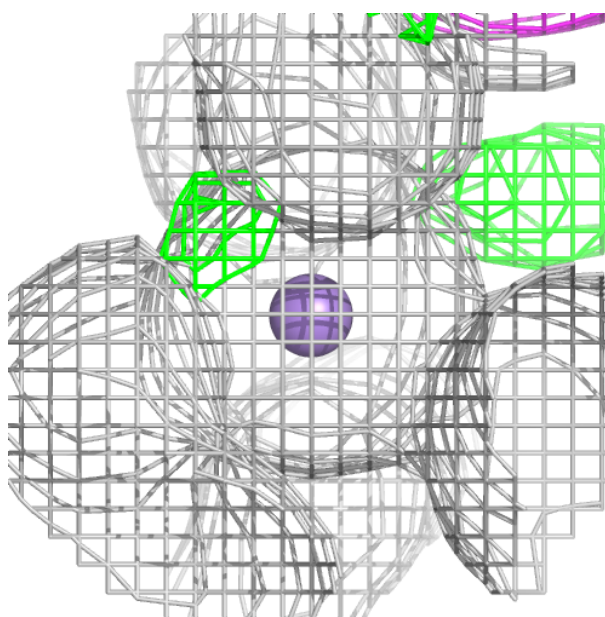and green (positive)

Electron density around MN C 403 (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 MN C 403 (B):

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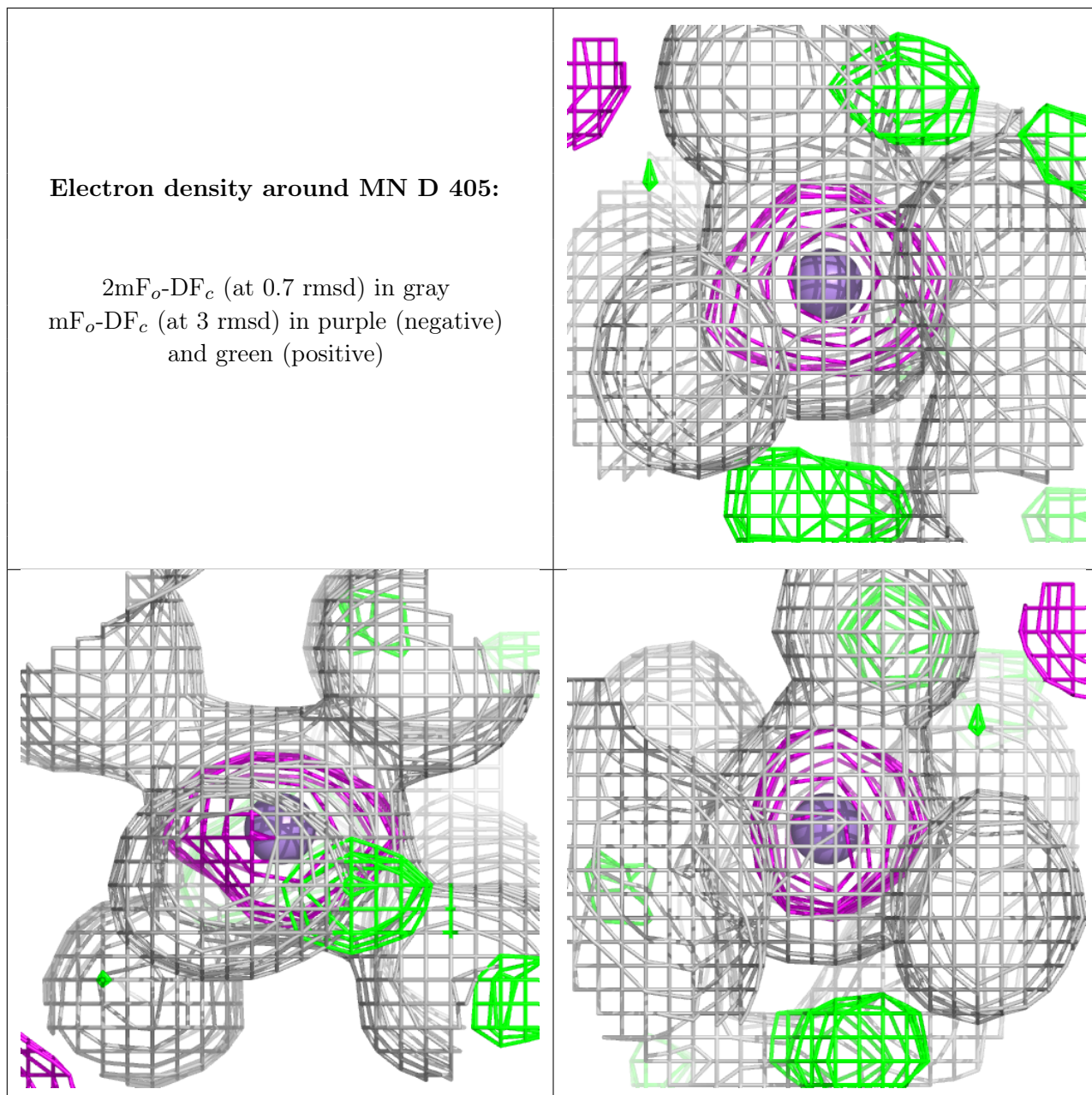and green (positive)

Electron density around MN D 404:

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

Electron density around MN D 405:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.