Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2025 – 10:12 PM EST

PDB ID	:	9EHU
Title	:	Crystal structure of the Gamak virus attachment protein head domain
Authors	:	Lindenberger, J.; Acharya, P.
Deposited on	:	2024-11-25
Resolution	:	1.42 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

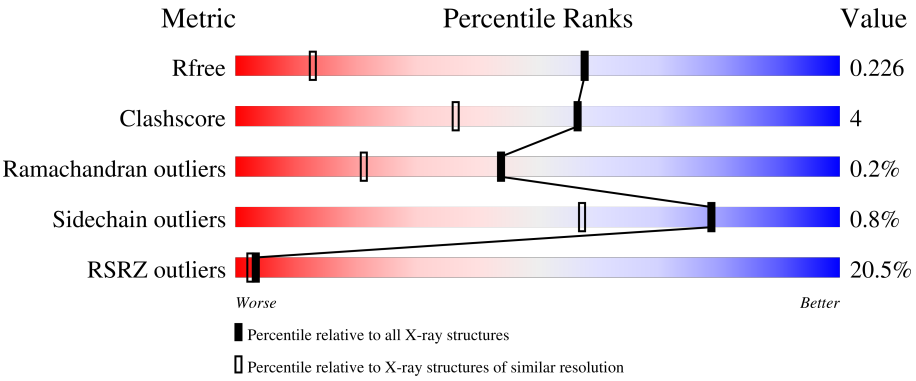
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.4

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.42 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	3500 (1.44-1.40)
Clashscore	180529	3801 (1.44-1.40)
Ramachandran outliers	177936	3734 (1.44-1.40)
Sidechain outliers	177891	3733 (1.44-1.40)
RSRZ outliers	164620	3499 (1.44-1.40)

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	473	20%, 88%, 9%
2	B	2	100%

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 3757 atoms, of which 1 is hydrogen 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.

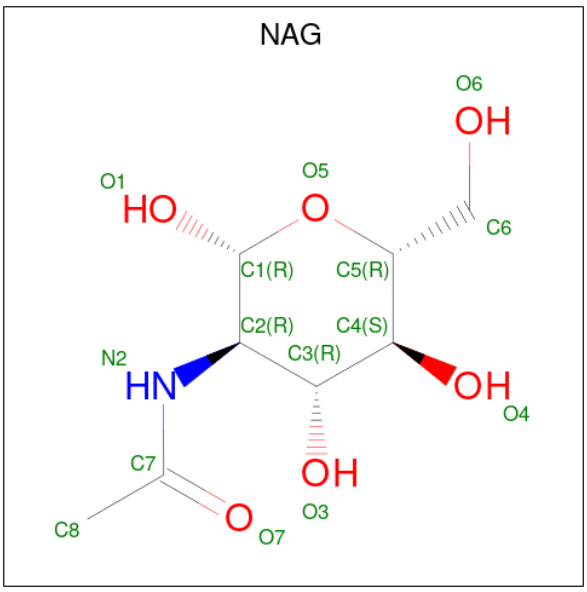
- Molecule 1 is a protein called Gamak virus attachment protein head domain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	458	Total	C	N	O	S	0	0	0
			3462	2201	568	670	23			

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

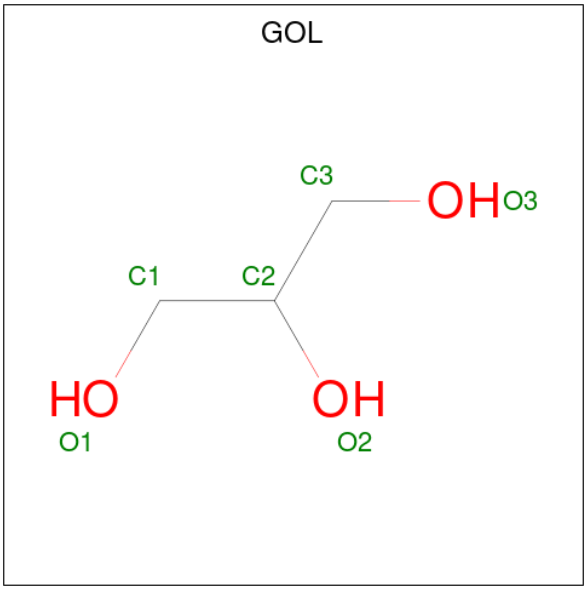
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	B	2	Total	C	N	O	0	0	0
			28	16	2	10			

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



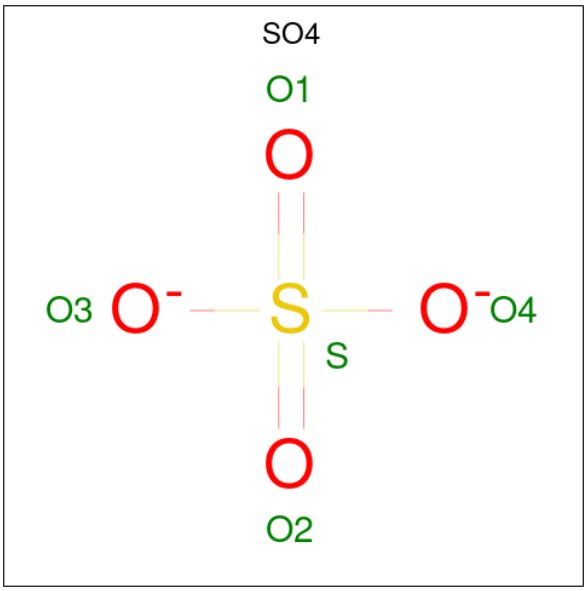
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O 14 8 1 5	0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C H O 7 3 1 3	0	0
4	A	1	Total C O 6 3 3	0	0

- Molecule 5 is SULFATE ION (three-letter code: SO4) (formula: O_4S) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total O S 5 4 1	0	0
5	A	1	Total O S 5 4 1	0	0
5	A	1	Total O S 5 4 1	0	0

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total Mg 1 1	0	0

- Molecule 7 is water.

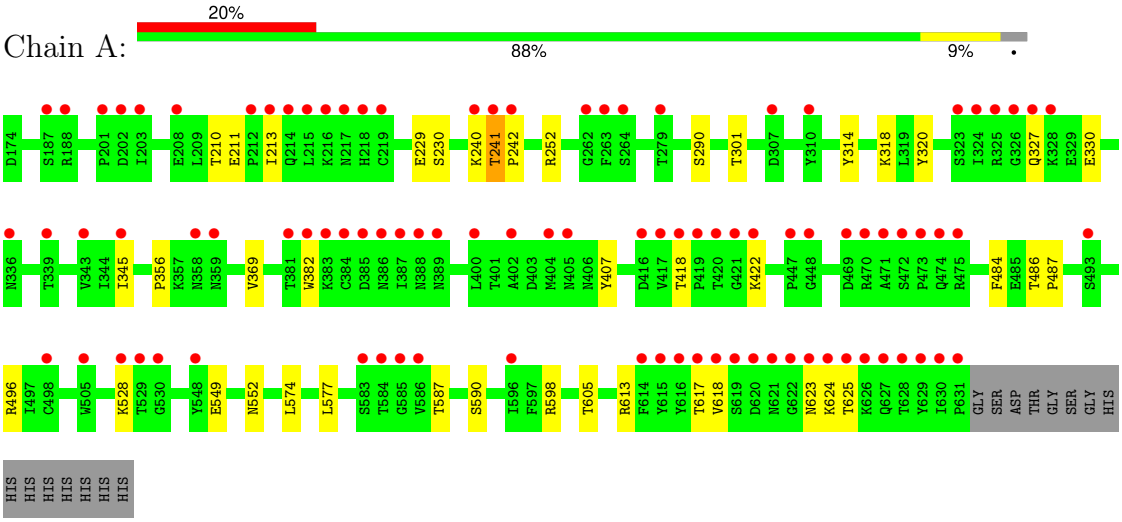
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	224	Total O 224 224	0	0

3 Residue-property plots (i)

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

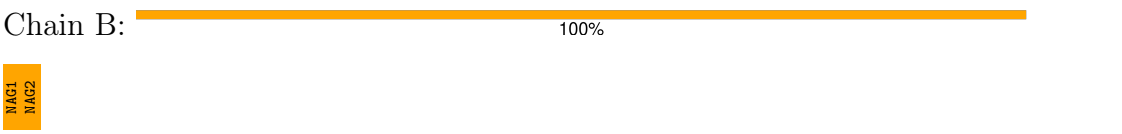
• Molecule 1: Gamak virus attachment protein head domain

Chain A:



• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α, β, γ	85.48Å 85.48Å 162.62Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	67.38 – 1.42 67.38 – 1.42	Depositor EDS
% Data completeness (in resolution range)	97.1 (67.38-1.42) 97.3 (67.38-1.42)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.15 (at 1.42Å)	Xtriage
Refinement program	PHENIX 1.21rc1_5127	Depositor
R, R_{free}	0.209 , 0.227 0.209 , 0.226	Depositor DCC
R_{free} test set	6649 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å^2)	20.5	Xtriage
Anisotropy	0.018	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 31.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.025 for -h,-k,l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	3757	wwPDB-VP
Average B, all atoms (Å^2)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.44% 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: NAG, GOL, SO4, MG

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	0.33	0/3545	0.62	0/4844

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3462	0	3307	30	0
2	B	28	0	25	1	0
3	A	14	0	13	0	0
4	A	12	1	16	1	0
5	A	15	0	0	0	0
6	A	1	0	0	0	0
7	A	224	0	0	1	0
All	All	3756	1	3361	31	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 4.

All (31) 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:A:241:THR:CB	1:A:242:PRO:HD2	2.25	0.67
1:A:241:THR:CB	1:A:242:PRO:CD	2.74	0.66
1:A:618:VAL:HG22	1:A:624:LYS:HG3	1.81	0.63
1:A:618:VAL:HG13	1:A:624:LYS:CD	2.29	0.62
1:A:369:VAL:HG22	1:A:407:TYR:O	2.00	0.61
1:A:623:ASN:O	1:A:624:LYS:HD3	2.01	0.61
1:A:618:VAL:HG13	1:A:624:LYS:HD2	1.87	0.57
1:A:301:THR:HG22	1:A:314:TYR:HA	1.86	0.57
1:A:213:ILE:HG13	1:A:587:THR:HG22	1.88	0.55
1:A:528:LYS:NZ	7:A:802:HOH:O	2.40	0.53
1:A:229:GLU:O	1:A:230:SER:HB3	2.09	0.51
1:A:327:GLN:OE1	1:A:330:GLU:CG	2.59	0.51
1:A:617:THR:OG1	1:A:625:THR:HG23	2.11	0.50
1:A:418:THR:HG23	1:A:422:LYS:O	2.12	0.50
1:A:240:LYS:HG3	1:A:241:THR:CB	2.42	0.49
1:A:496:ARG:O	4:A:706:GOL:H31	2.13	0.49
1:A:623:ASN:C	1:A:624:LYS:HD3	2.33	0.48
1:A:618:VAL:HG13	1:A:624:LYS:HD3	1.94	0.48
1:A:605:THR:HB	1:A:613:ARG:HG2	1.97	0.47
1:A:210:THR:HG23	1:A:590:SER:HB3	1.98	0.45
1:A:327:GLN:OE1	1:A:330:GLU:HG2	2.16	0.45
2:B:1:NAG:O4	2:B:2:NAG:H61	2.18	0.43
1:A:318:LYS:HE3	1:A:330:GLU:HB3	2.00	0.43
1:A:574:LEU:C	1:A:574:LEU:HD12	2.39	0.42
1:A:290:SER:HB3	1:A:356:PRO:HG3	2.00	0.42
1:A:345:ILE:HD13	1:A:345:ILE:HA	1.85	0.41
1:A:577:LEU:C	1:A:577:LEU:HD12	2.41	0.40
1:A:211:GLU:OE2	1:A:252:ARG:NH2	2.52	0.40
1:A:486:THR:HB	1:A:487:PRO:HD2	2.03	0.40
1:A:318:LYS:HE2	1:A:320:TYR:CZ	2.56	0.40
1:A:549:GLU:OE2	1:A:552:ASN:ND2	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	456/473 (96%)	445 (98%)	10 (2%)	1 (0%)	44 21

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	241	THR

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	377/417 (90%)	374 (99%)	3 (1%)	79 57

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	382	TRP
1	A	484	PHE
1	A	598	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

2 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	NAG	B	1	1,2	14,14,15	0.73	0	17,19,21	1.28	3 (17%)
2	NAG	B	2	2	14,14,15	0.66	0	17,19,21	1.25	1 (5%)

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	NAG	B	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	B	2	2	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2	NAG	C1-O5-C5	3.54	116.93	112.19
2	B	1	NAG	O5-C1-C2	-2.74	107.04	111.29
2	B	1	NAG	C1-O5-C5	2.32	115.29	112.19
2	B	1	NAG	O4-C4-C3	-2.06	105.51	110.38

There are no chirality outliers.

All (2) torsion outliers are listed below:

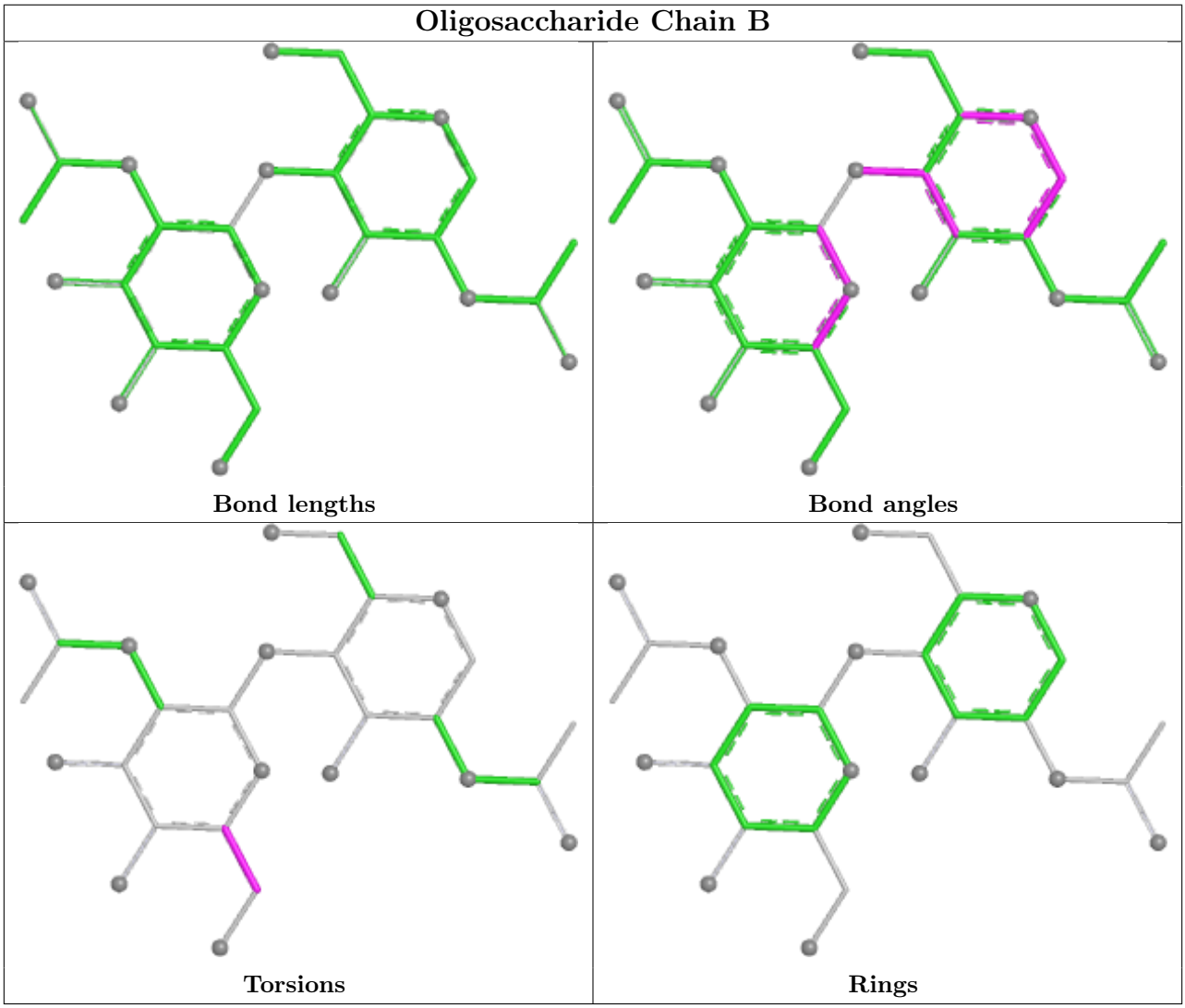
Mol	Chain	Res	Type	Atoms
2	B	2	NAG	C4-C5-C6-O6
2	B	2	NAG	O5-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	2	NAG	1	0
2	B	1	NAG	1	0

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



5.6 Ligand geometry (i)

Of 7 ligands modelled in this entry, 1 is monoatomic - leaving 6 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	$\#\|Z\| > 2$
5	SO4	A	704	-	4,4,4	0.64	0	6,6,6	0.25	0
5	SO4	A	705	-	4,4,4	0.66	0	6,6,6	0.12	0
4	GOL	A	706	-	5,5,5	0.48	0	5,5,5	1.20	0
5	SO4	A	703	-	4,4,4	0.66	0	6,6,6	0.27	0
3	NAG	A	701	1	14,14,15	0.74	0	17,19,21	0.91	1 (5%)
4	GOL	A	702	-	5,5,5	0.30	0	5,5,5	0.43	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
4	GOL	A	702	-	-	0/4/4/4	-
4	GOL	A	706	-	-	2/4/4/4	-
3	NAG	A	701	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	701	NAG	C1-O5-C5	2.68	115.77	112.19

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	706	GOL	C1-C2-C3-O3
4	A	706	GOL	O2-C2-C3-O3

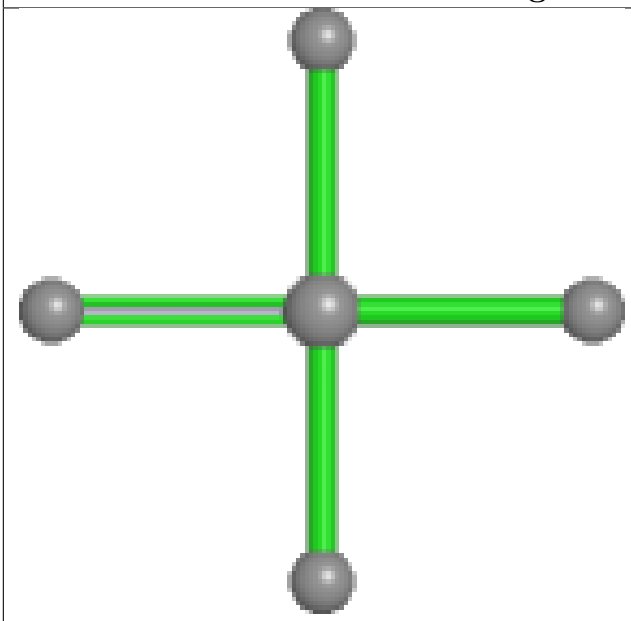
There are no ring outliers.

1 monomer is involved in 1 short contact:

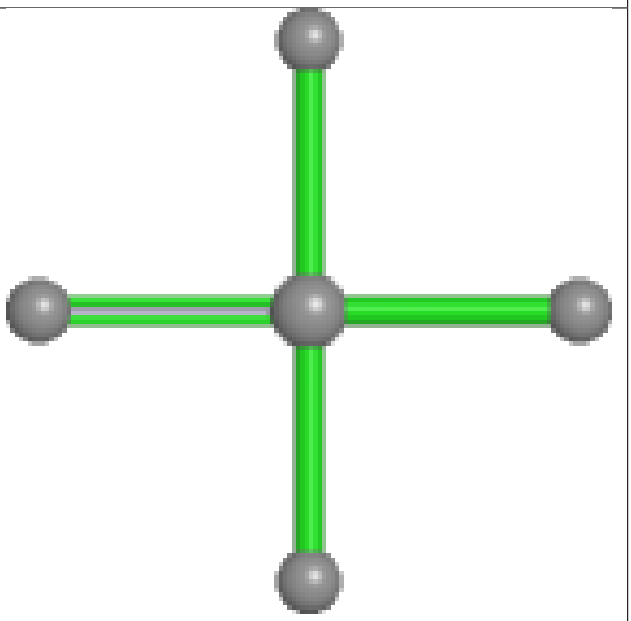
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	706	GOL	1	0

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

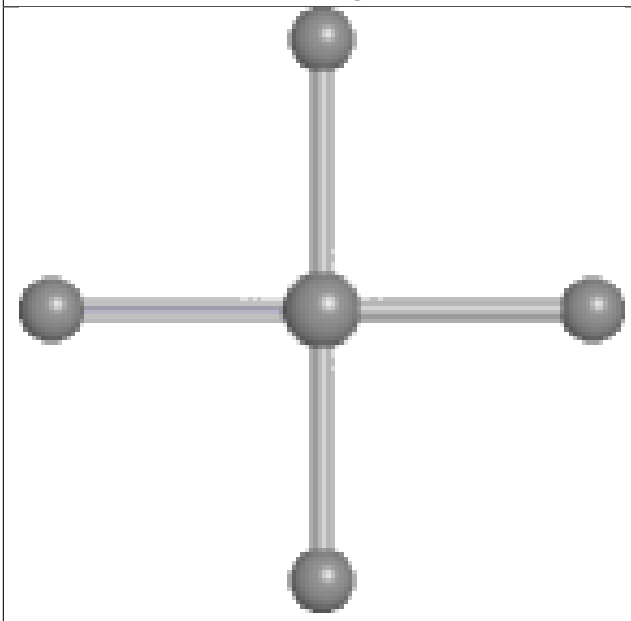
Ligand SO4 A 704



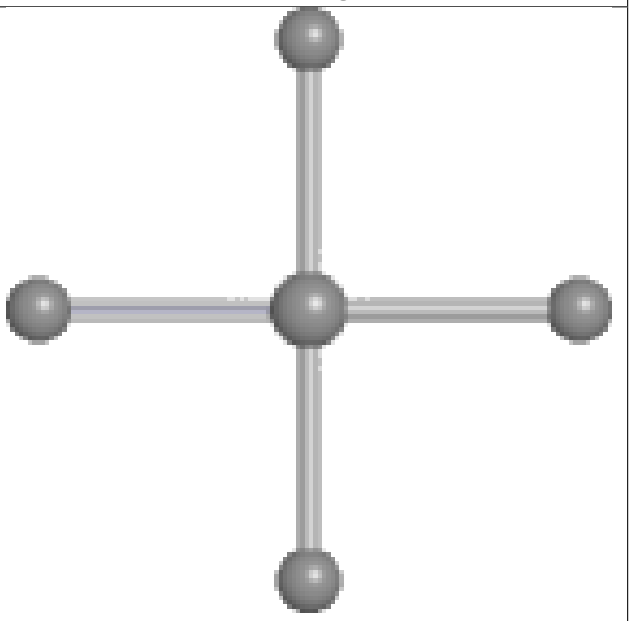
Bond lengths



Bond angles

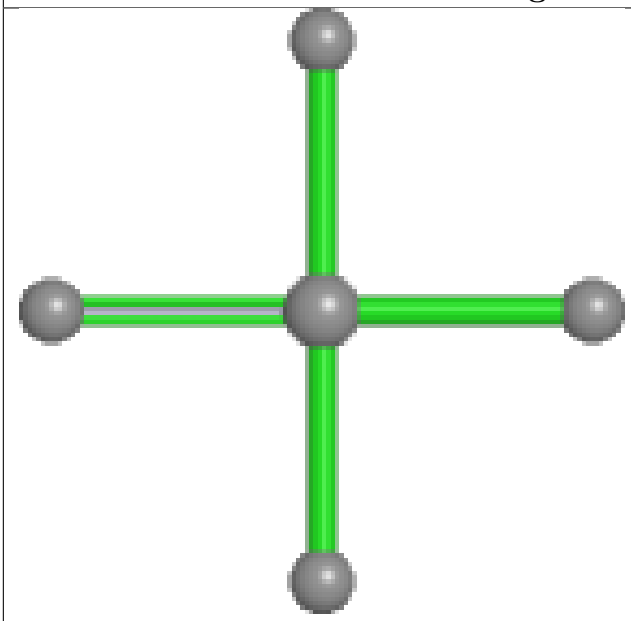


Torsions

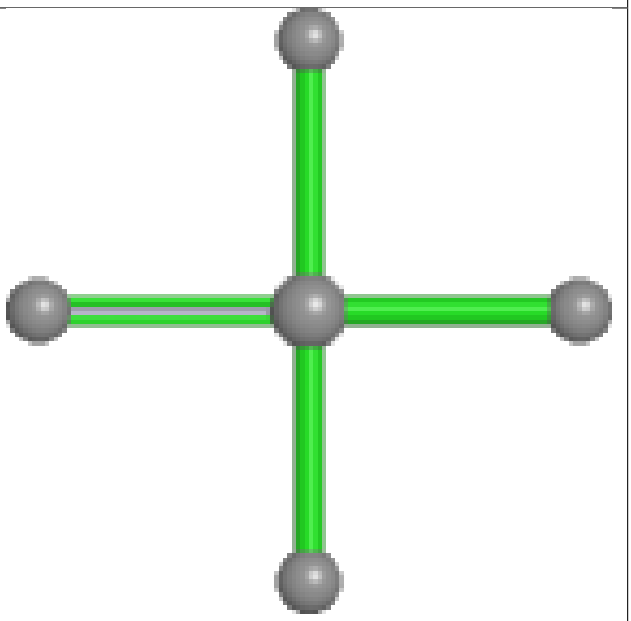


Rings

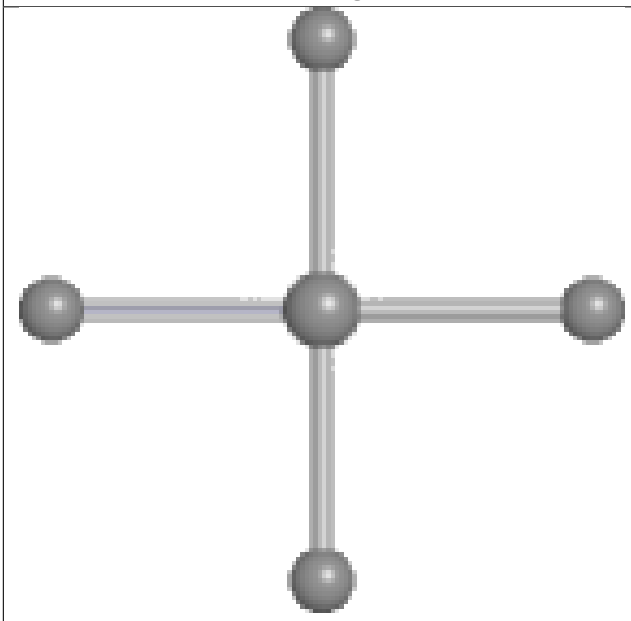
Ligand SO4 A 705



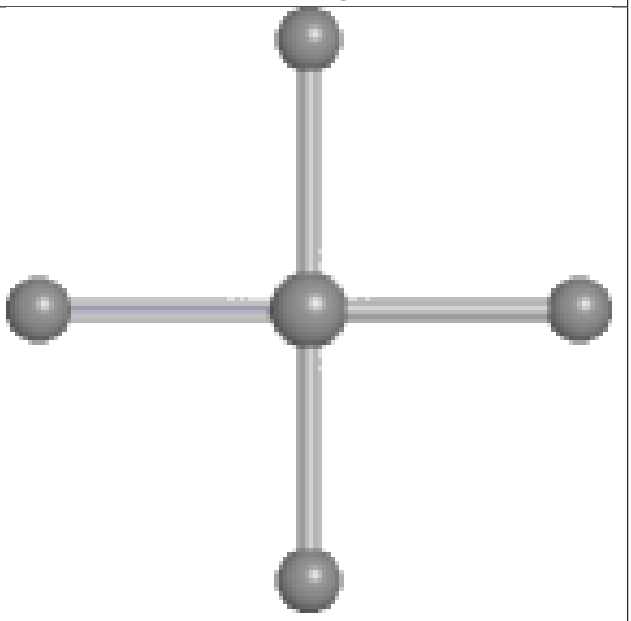
Bond lengths



Bond angles

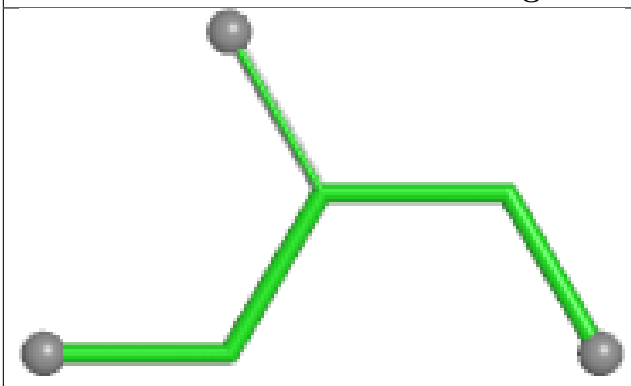


Torsions

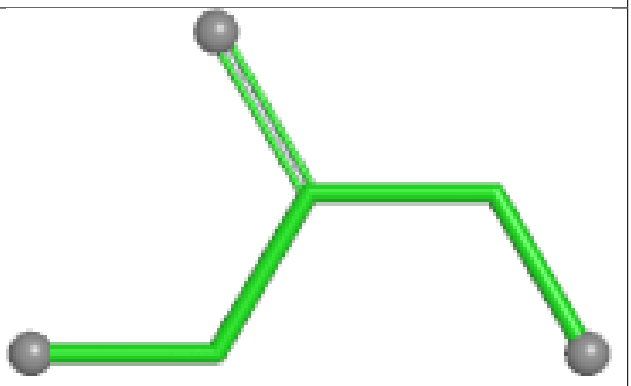


Rings

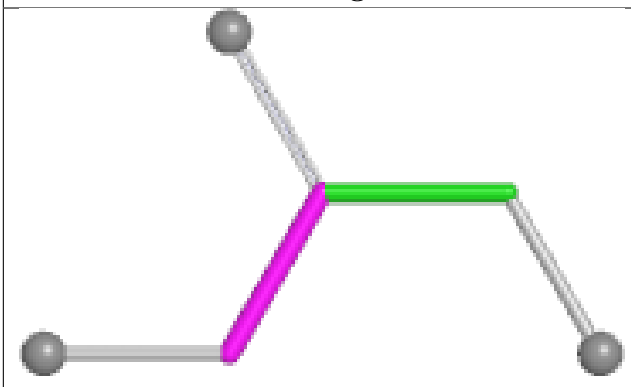
Ligand GOL A 706



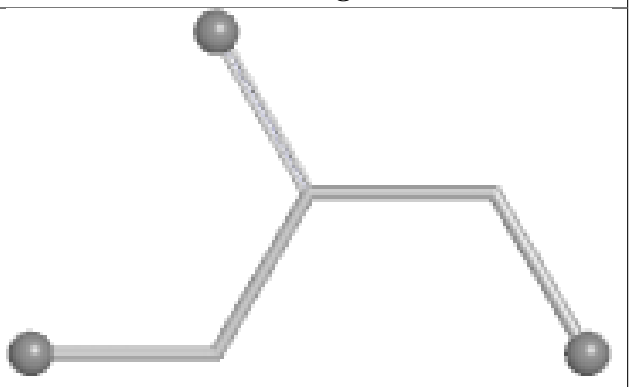
Bond lengths



Bond angles

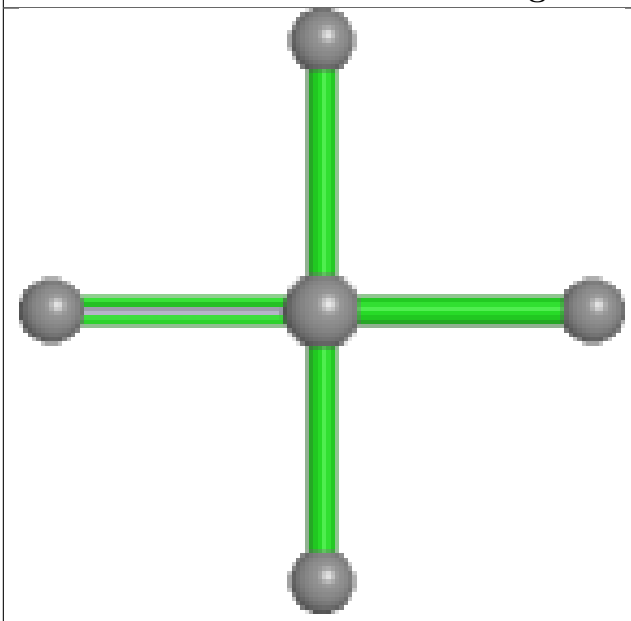


Torsions

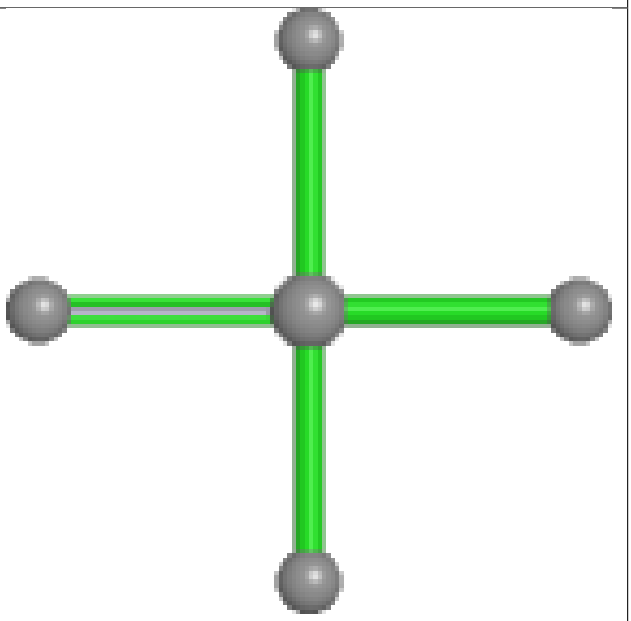


Rings

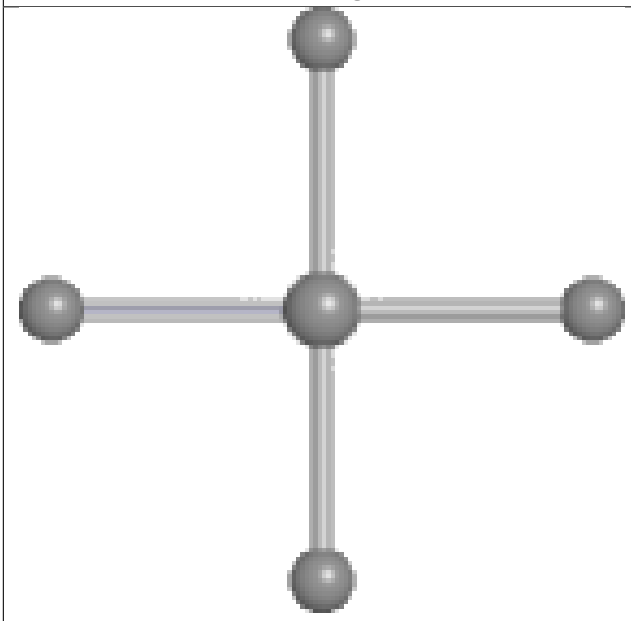
Ligand SO4 A 703



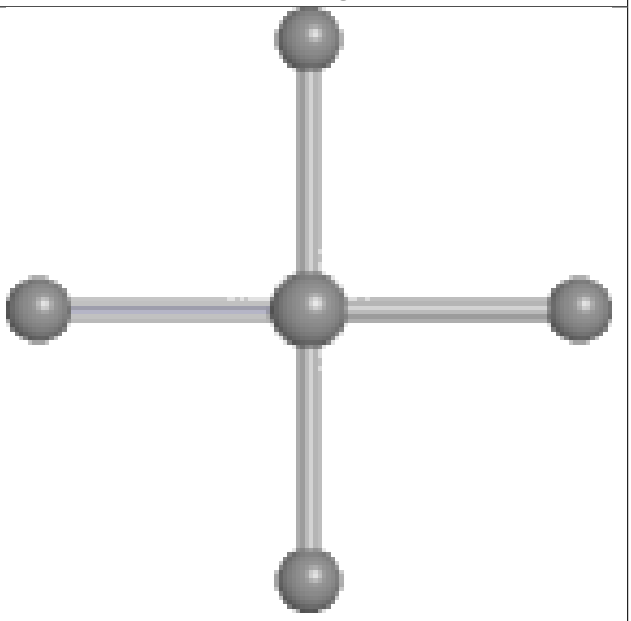
Bond lengths



Bond angles

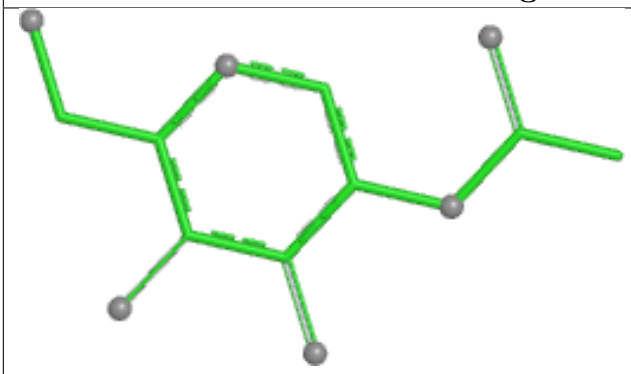


Torsions

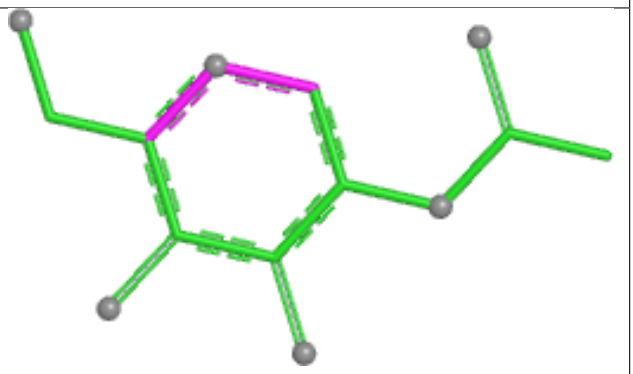


Rings

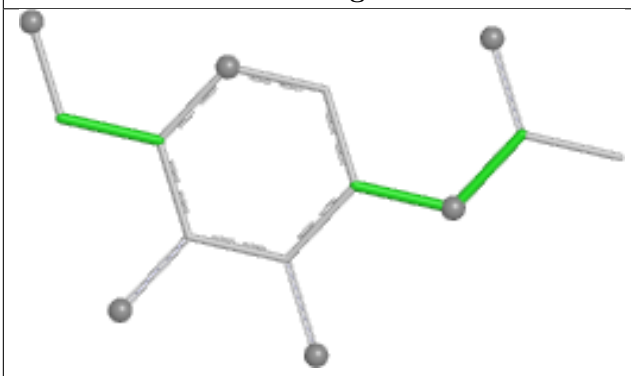
Ligand NAG A 701



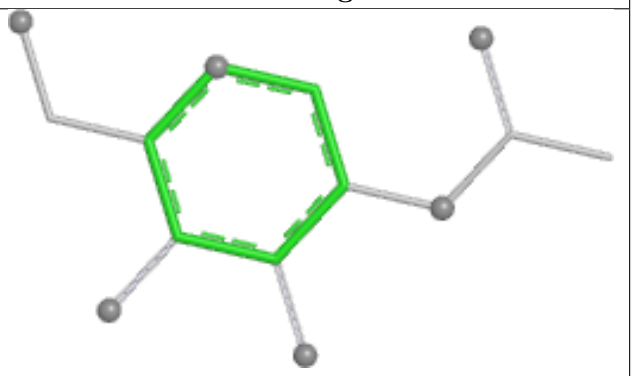
Bond lengths



Bond angles

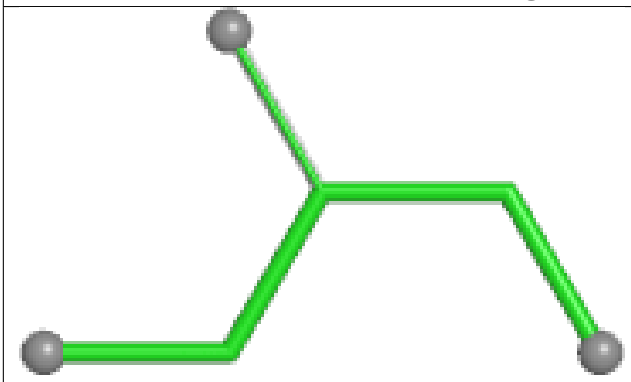


Torsions

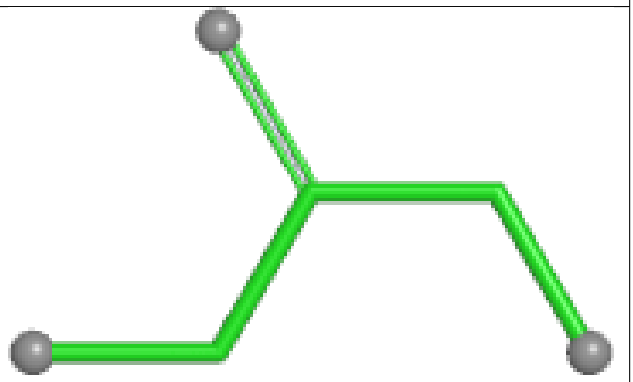


Rings

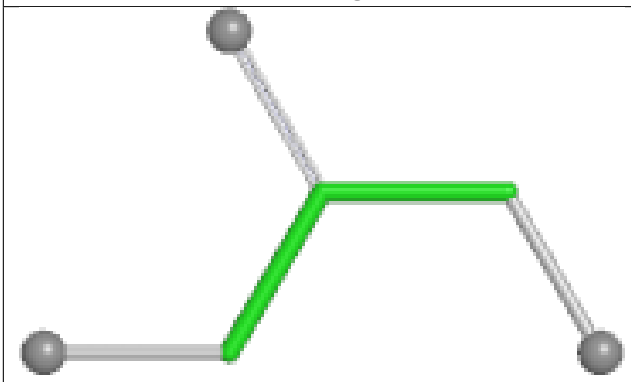
Ligand GOL A 702



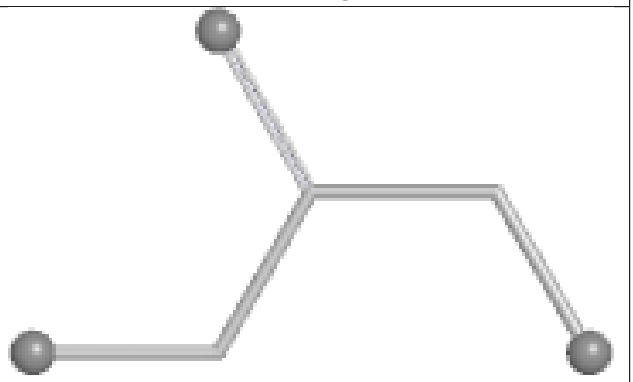
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{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(Å^2)	Q<0.9
1	A	458/473 (96%)	1.14	94 (20%)	3 2	15, 24, 51, 105	0

All (94) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	618	VAL	10.6
1	A	631	PRO	10.3
1	A	473	PRO	9.6
1	A	630	ILE	8.9
1	A	241	THR	8.7
1	A	629	TYR	7.7
1	A	619	SER	7.7
1	A	388	ASN	7.6
1	A	625	THR	7.4
1	A	387	ILE	6.9
1	A	617	THR	6.8
1	A	474	GLN	6.7
1	A	620	ASP	6.6
1	A	324	ILE	6.6
1	A	419	PRO	6.5
1	A	389	ASN	6.3
1	A	358	ASN	5.9
1	A	420	THR	5.7
1	A	386	ASN	5.5
1	A	622	GLY	5.4
1	A	201	PRO	5.4
1	A	326	GLY	5.4
1	A	471	ALA	5.2
1	A	623	ASN	5.0
1	A	621	ASN	4.9
1	A	328	LYS	4.9
1	A	624	LYS	4.9

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Mol	Chain	Res	Type	RSRZ
1	A	628	THR	4.7
1	A	418	THR	4.5
1	A	548	TYR	4.3
1	A	475	ARG	4.2
1	A	345	ILE	4.0
1	A	310	TYR	4.0
1	A	359	ASN	4.0
1	A	216	LYS	4.0
1	A	505	TRP	3.9
1	A	472	SER	3.8
1	A	596	ILE	3.7
1	A	627	GLN	3.7
1	A	336	ASN	3.6
1	A	385	ASP	3.6
1	A	616	TYR	3.6
1	A	402	ALA	3.5
1	A	470	ARG	3.5
1	A	327	GLN	3.3
1	A	215	LEU	3.2
1	A	323	SER	3.2
1	A	493	SER	3.1
1	A	325	ARG	3.1
1	A	626	LYS	3.0
1	A	262	GLY	3.0
1	A	382	TRP	2.9
1	A	218	HIS	2.9
1	A	615	TYR	2.9
1	A	530	GLY	2.9
1	A	187	SER	2.9
1	A	264	SER	2.8
1	A	208	GLU	2.8
1	A	404	MET	2.8
1	A	263	PHE	2.8
1	A	339	THR	2.8
1	A	384	CYS	2.7
1	A	214	GLN	2.7
1	A	614	PHE	2.7
1	A	584	THR	2.7
1	A	213	ILE	2.7
1	A	381	THR	2.6
1	A	583	SER	2.6
1	A	383	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	203	ILE	2.5
1	A	217	ASN	2.5
1	A	307	ASP	2.4
1	A	529	THR	2.4
1	A	417	VAL	2.4
1	A	416	ASP	2.4
1	A	448	GLY	2.3
1	A	586	VAL	2.3
1	A	212	PRO	2.3
1	A	469	ASP	2.3
1	A	422	LYS	2.3
1	A	498	CYS	2.2
1	A	405	ASN	2.2
1	A	279	THR	2.1
1	A	202	ASP	2.1
1	A	421	GLY	2.1
1	A	242	PRO	2.1
1	A	528	LYS	2.1
1	A	400	LEU	2.1
1	A	343	VAL	2.1
1	A	219	CYS	2.1
1	A	585	GLY	2.1
1	A	240	LYS	2.0
1	A	447	PRO	2.0
1	A	188	ARG	2.0

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

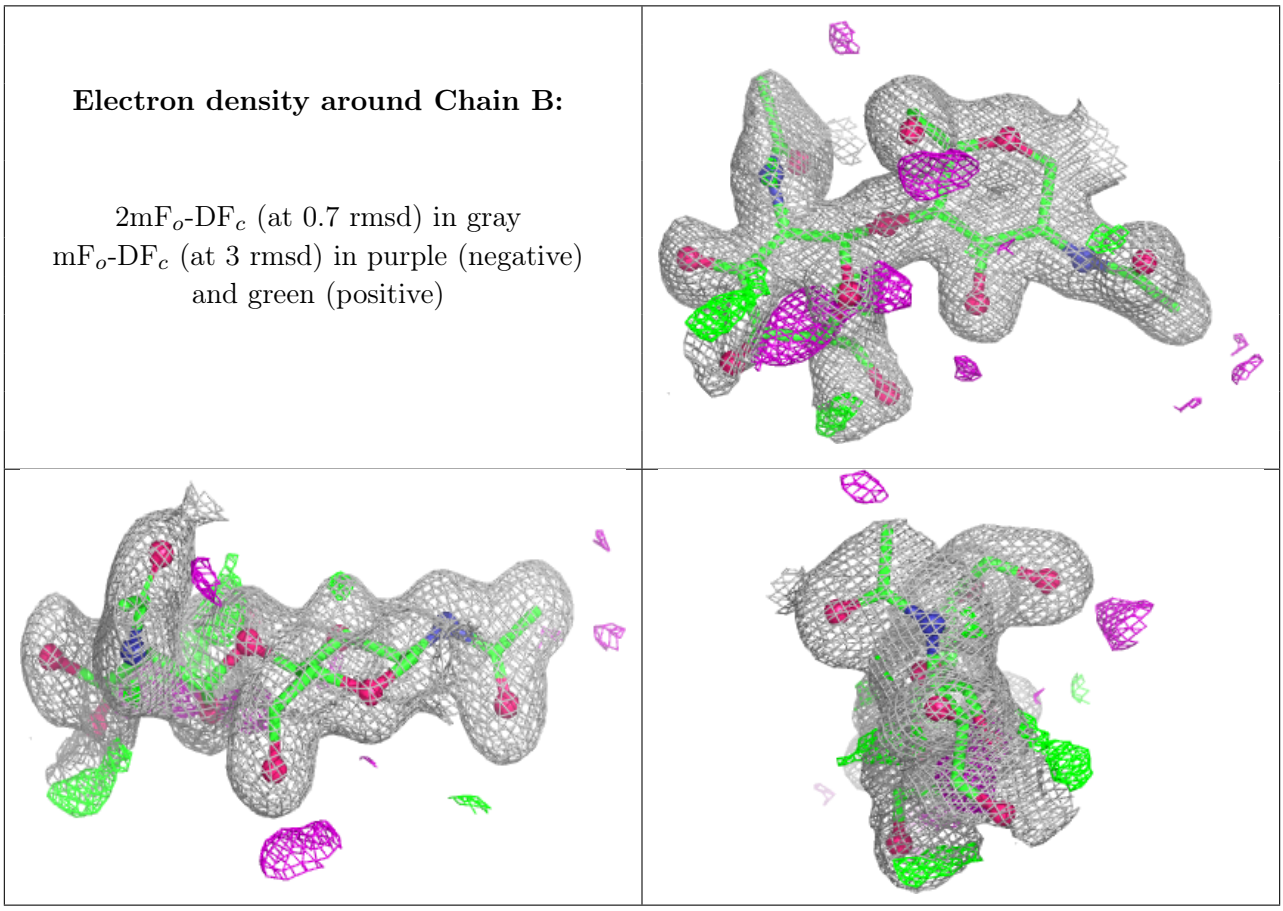
There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{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	NAG	B	2	14/15	0.74	0.21	34,39,50,50	0
2	NAG	B	1	14/15	0.95	0.09	23,25,29,32	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.



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.

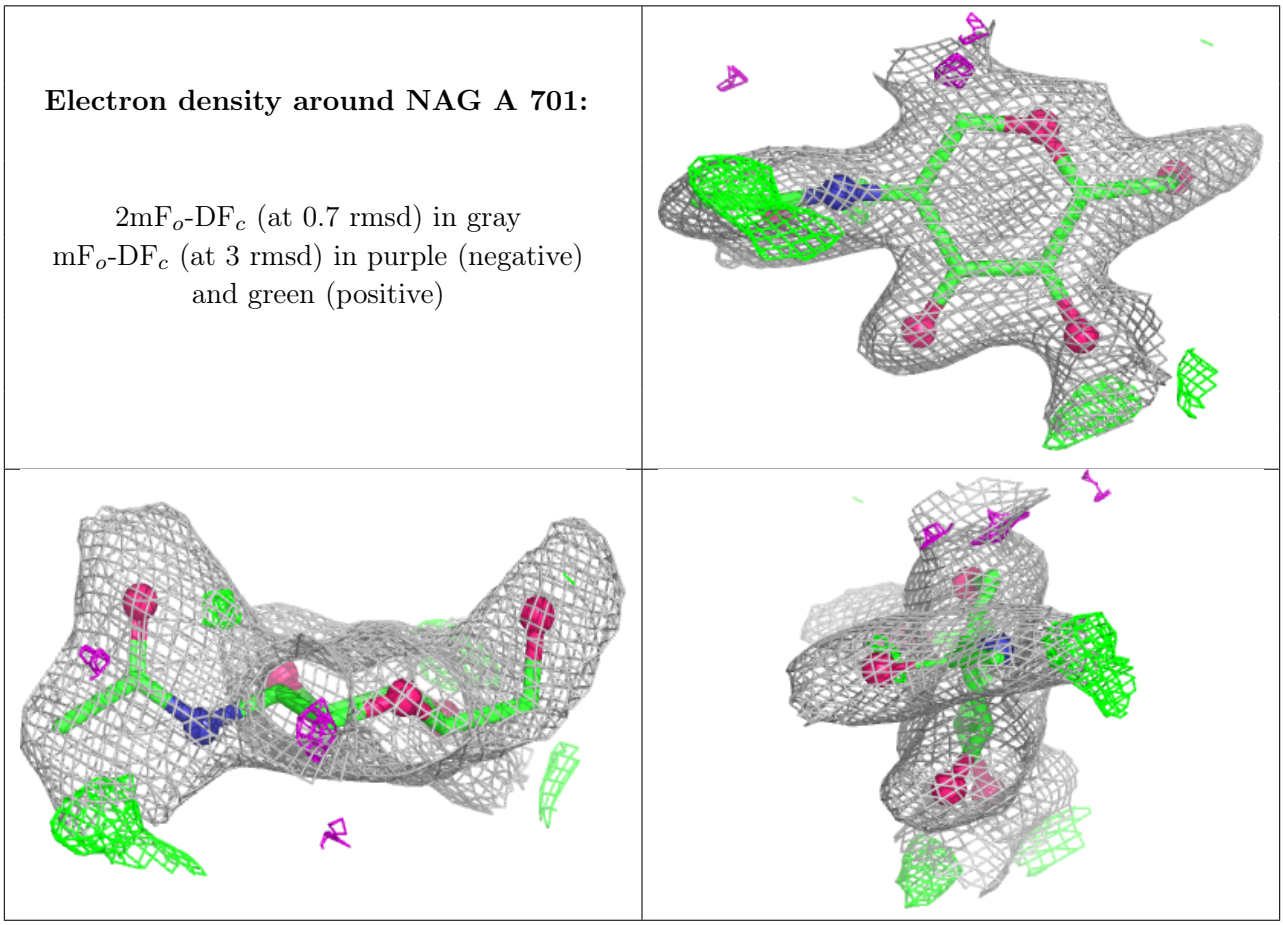
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	NAG	A	701	14/15	0.77	0.18	41,44,50,53	0
4	GOL	A	702	6/6	0.88	0.15	28,33,42,43	0
4	GOL	A	706	6/6	0.88	0.17	25,31,34,35	0
5	SO4	A	705	5/5	0.93	0.11	37,41,43,45	0
5	SO4	A	703	5/5	0.96	0.08	28,31,31,34	0
5	SO4	A	704	5/5	0.97	0.07	29,30,33,33	0
6	MG	A	707	1/1	0.98	0.10	22,22,22,22	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.

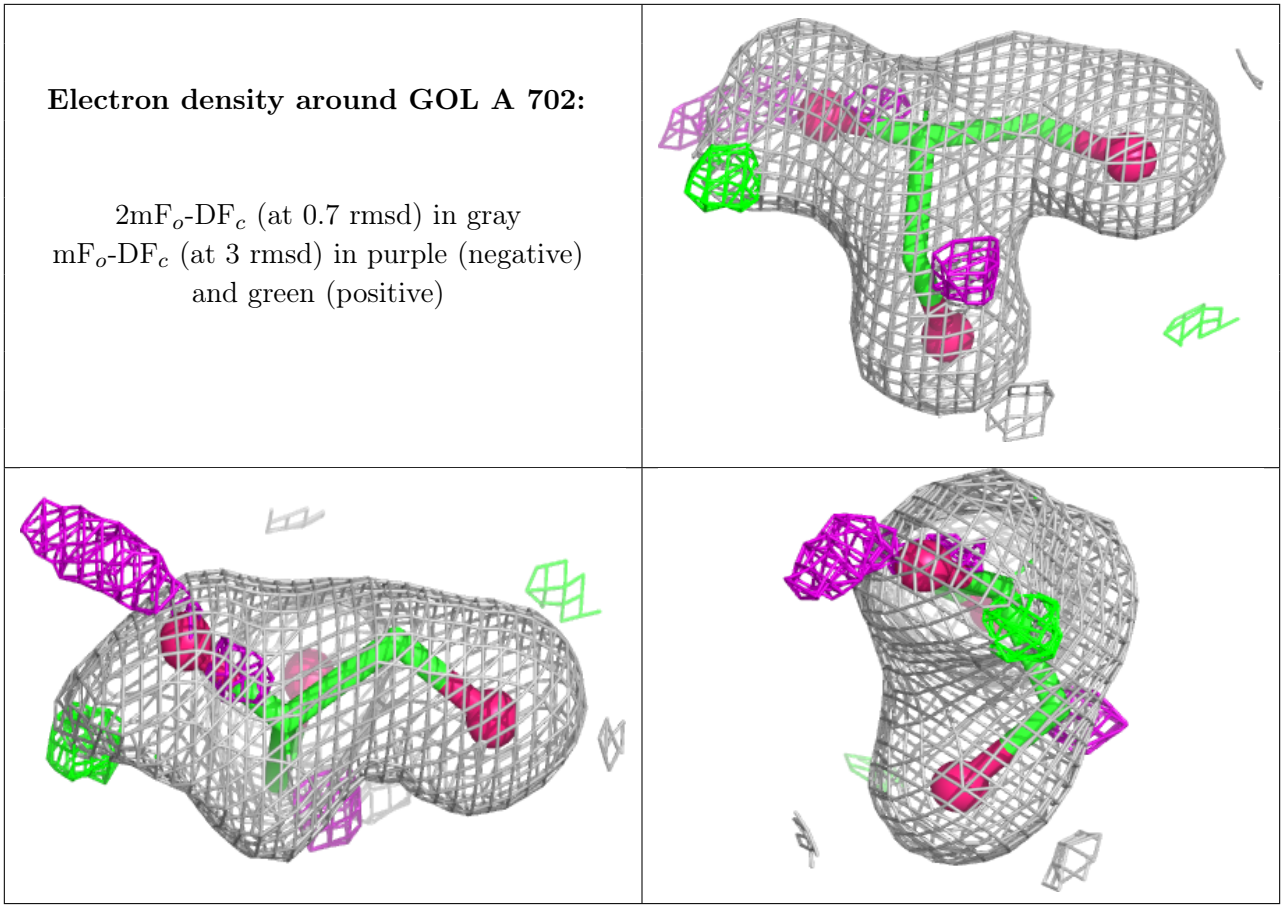
Electron density around NAG A 701:

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



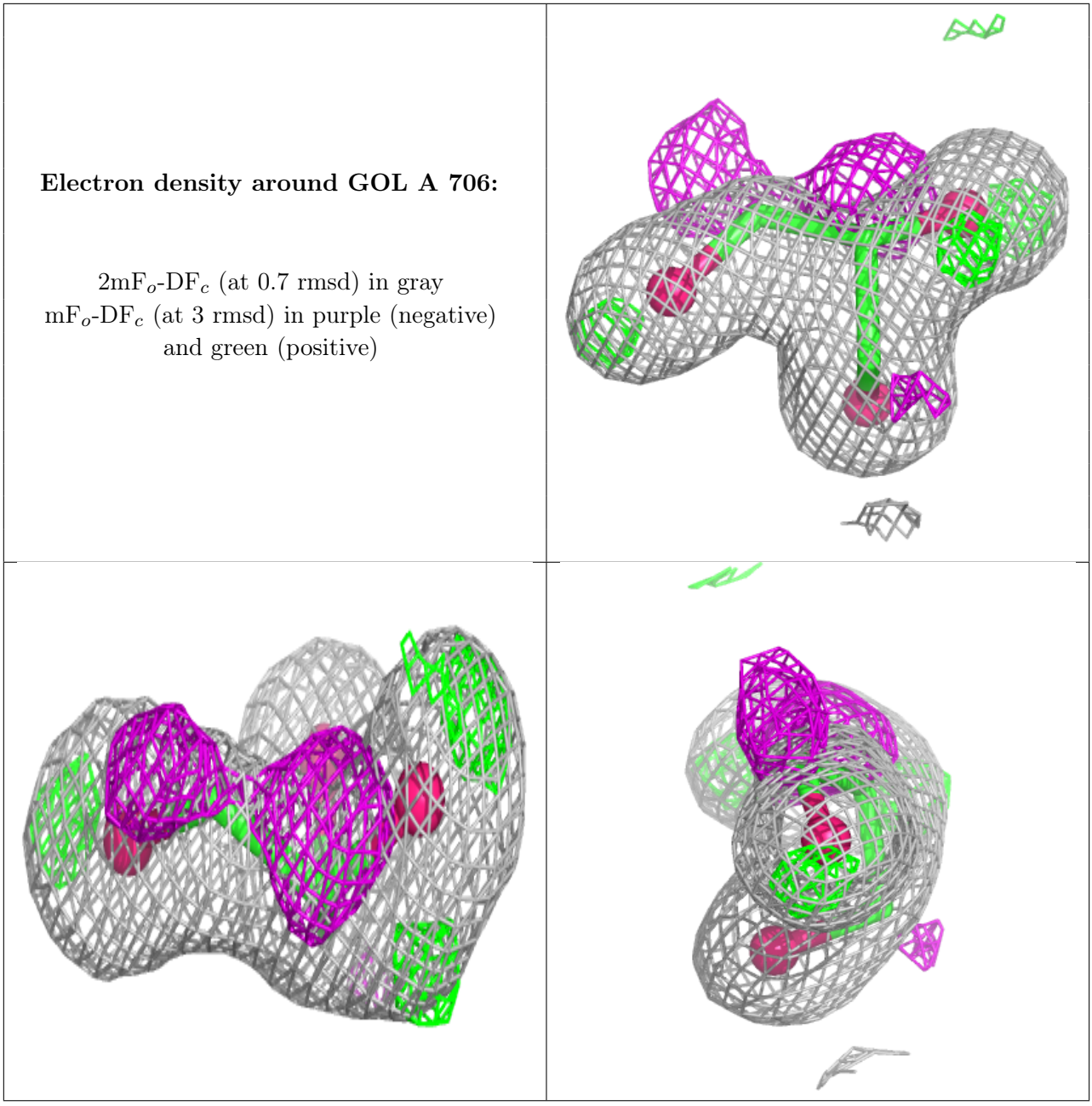
Electron density around GOL A 702:

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



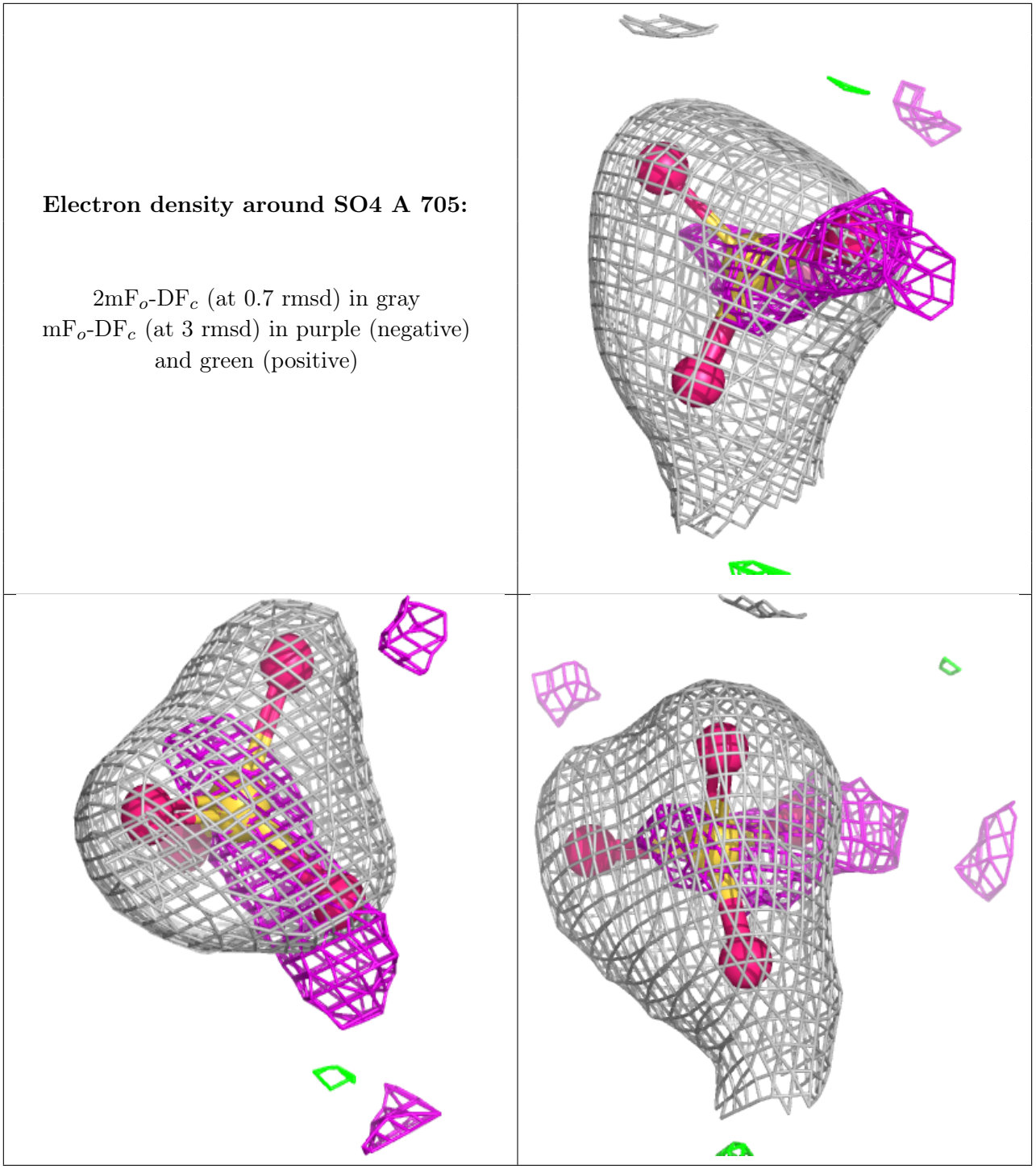
Electron density around GOL A 706:

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



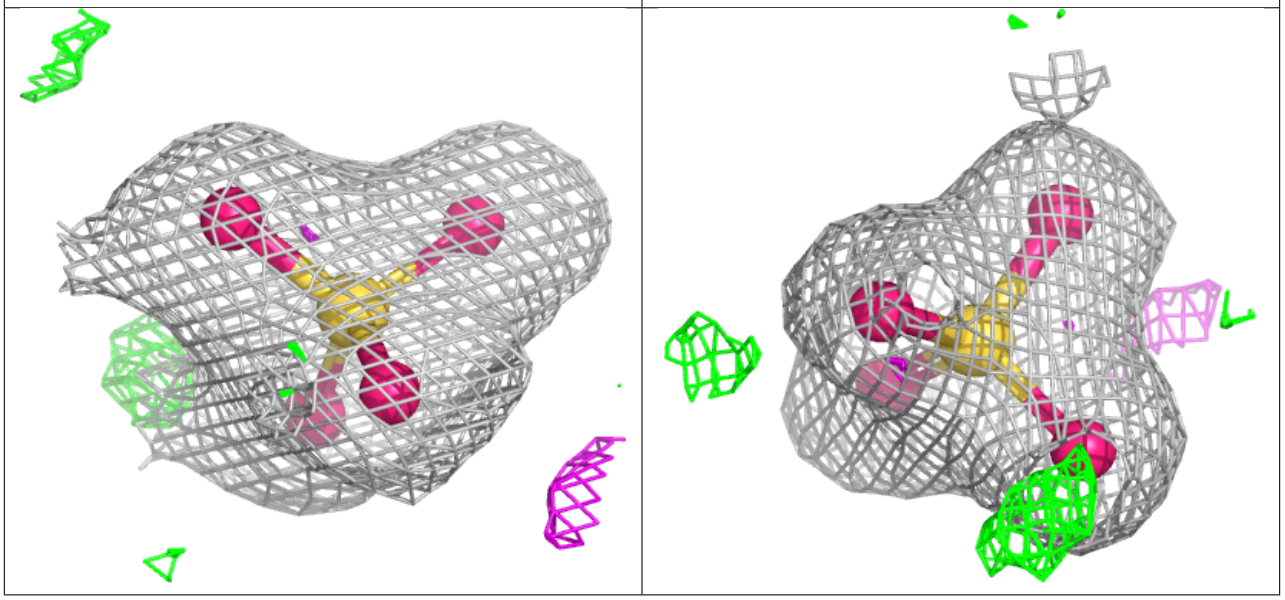
Electron density around SO4 A 705:

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



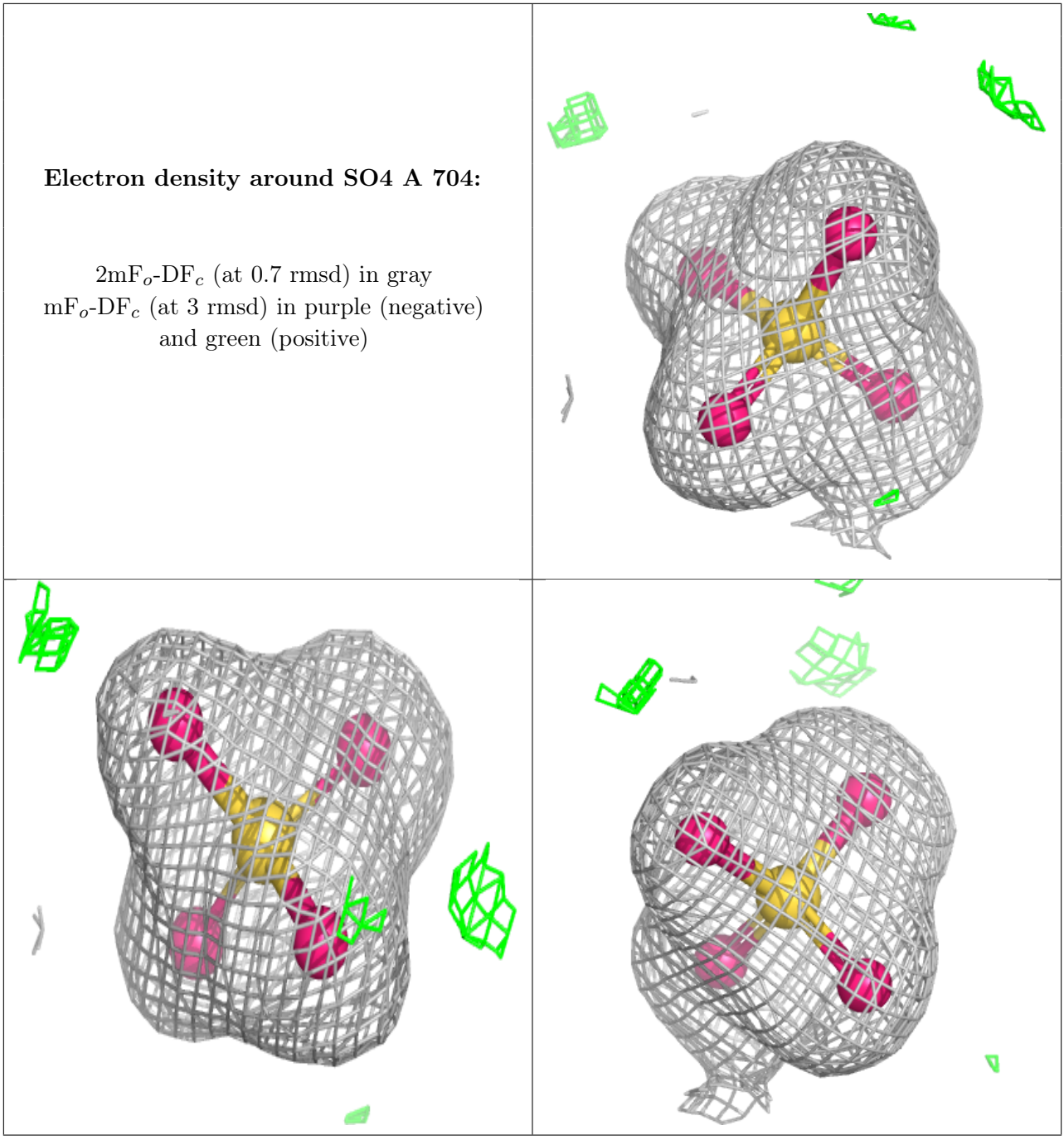
Electron density around SO4 A 703:

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



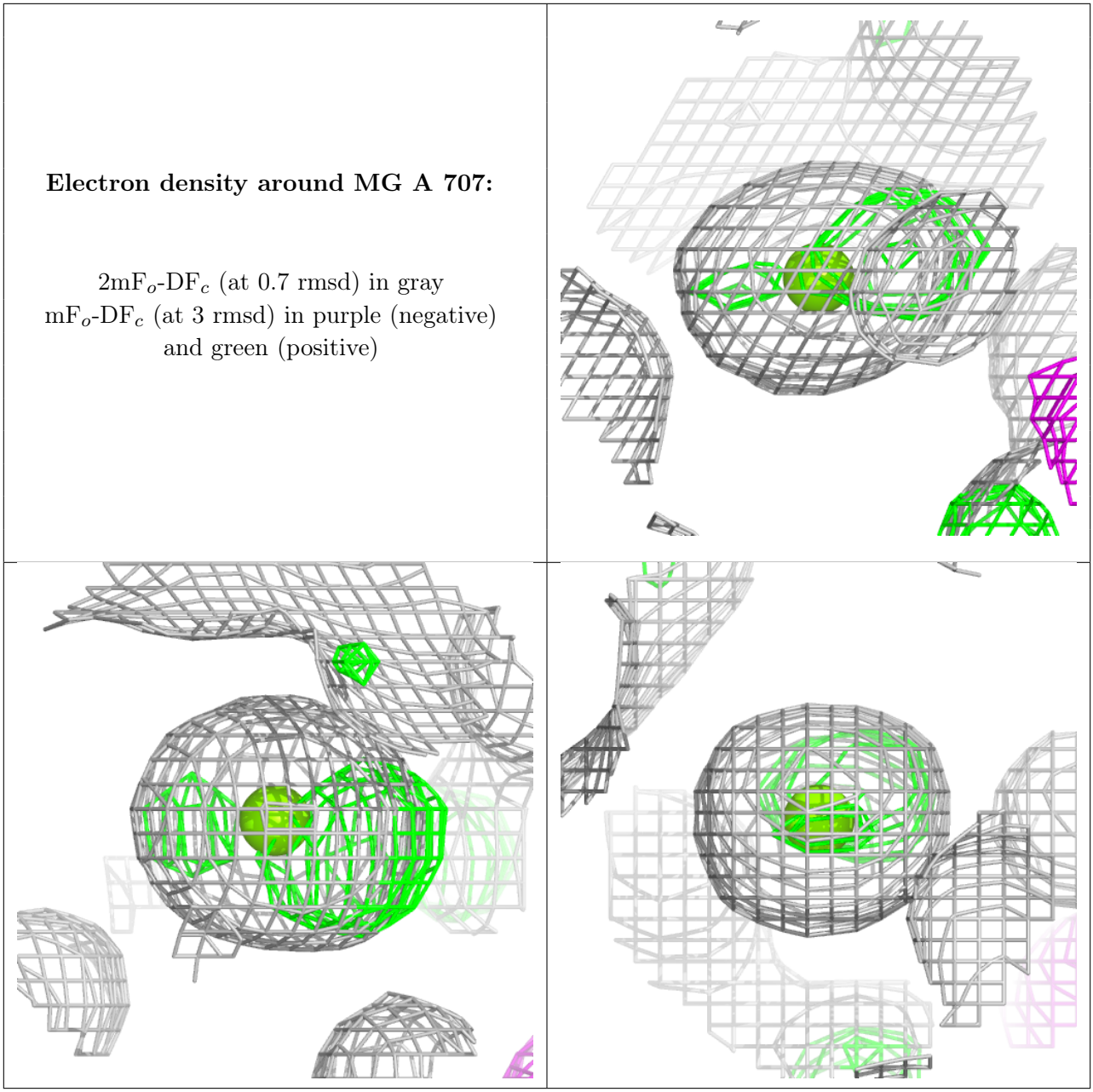
Electron density around SO4 A 704:

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



Electron density around MG A 707:

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



6.5 Other polymers (i)

There are no such residues in this entry.