WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Sep 29, 2025 – 12:36 PM EDT

PDB ID	:	9BPL / pdb_00009bpl
Title	:	Crystal structure of Adenylosuccinate Lyase from Leishmania major
Authors	:	Rosa e Silva, I.; Mantovani, M.; Nagem, R.; Cardona, A.; Reboredo, E.; Thiemann, O.
Deposited on	:	2024-05-07
Resolution	:	1.97 Å(reported)

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

|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

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 1.97 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.
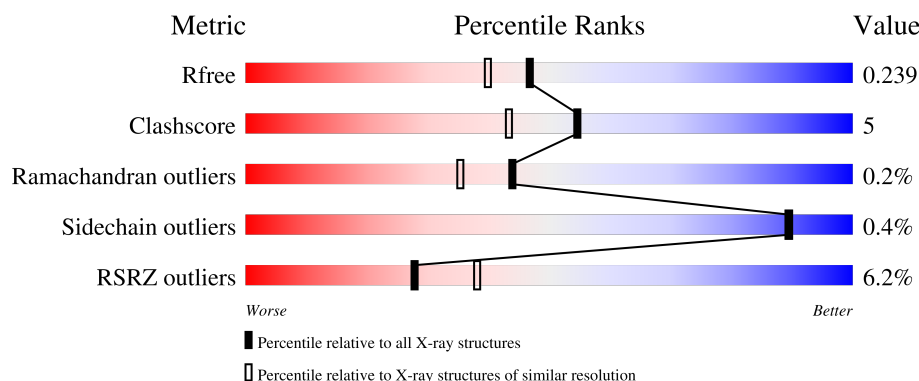
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1356 (1.98-1.98)
Clashscore	180529	1437 (1.98-1.98)
Ramachandran outliers	177936	1426 (1.98-1.98)
Sidechain outliers	177891	1426 (1.98-1.98)
RSRZ outliers	164620	1356 (1.98-1.98)

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	479	9% / 81% 11% 7%
1	B	479	2% / 83% 10% 7%

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

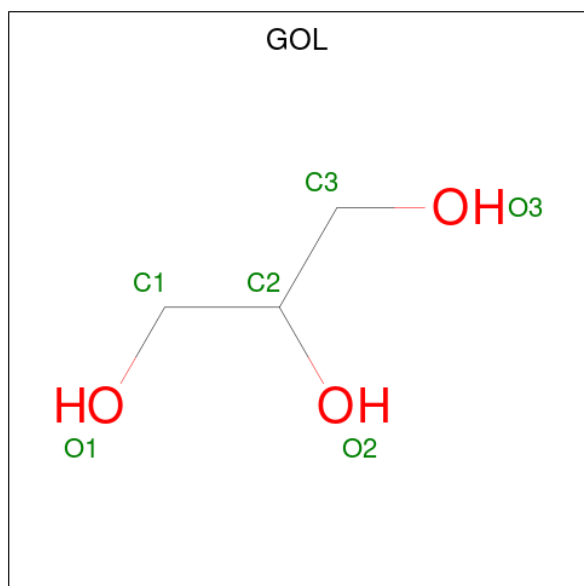| Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	GOL	A	501	-	-	X	-

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 7552 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 Adenylosuccinate lyase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	445	Total	C	N	O	S	0	5	0
			3538	2270	601	651	16			
1	B	444	Total	C	N	O	S	0	5	0
			3551	2277	604	654	16			

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

GOL

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			6	3	3		
2	A	1	Total	C	O	0	0
			6	3	3		
2	B	1	Total	C	O	0	0
			6	3	3		
2	B	1	Total	C	O	0	0
			6	3	3		

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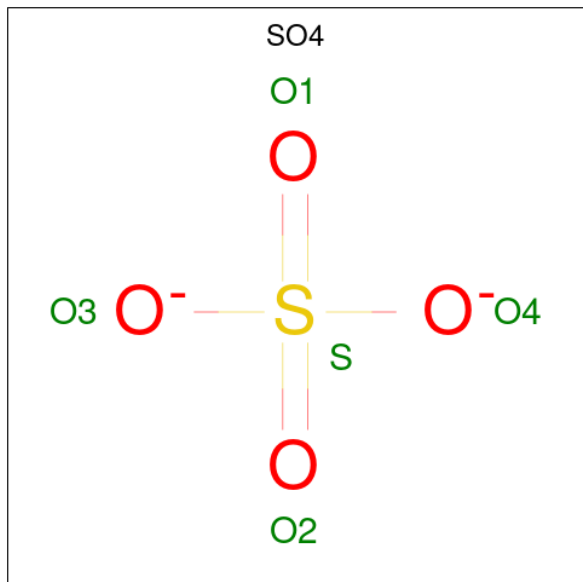
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 5	O 4	S 1	0	0
3	A	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Mg 1	0	0
4	B	1	Total 1	Mg 1	0	0

- Molecule 5 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total 1	Cl 1	0	0
5	B	1	Total 1	Cl 1	0	0

- Molecule 6 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P).

PO4

O3

O⁻

O2 O⁻ — P ═ O O1

P

O⁻

O4

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

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	208	Total 208	O 208	0	0
7	B	207	Total 207	O 207	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: Adenylosuccinate lyase

Chain A:

- Molecule 1: Adenylosuccinate lyase

Chain B:
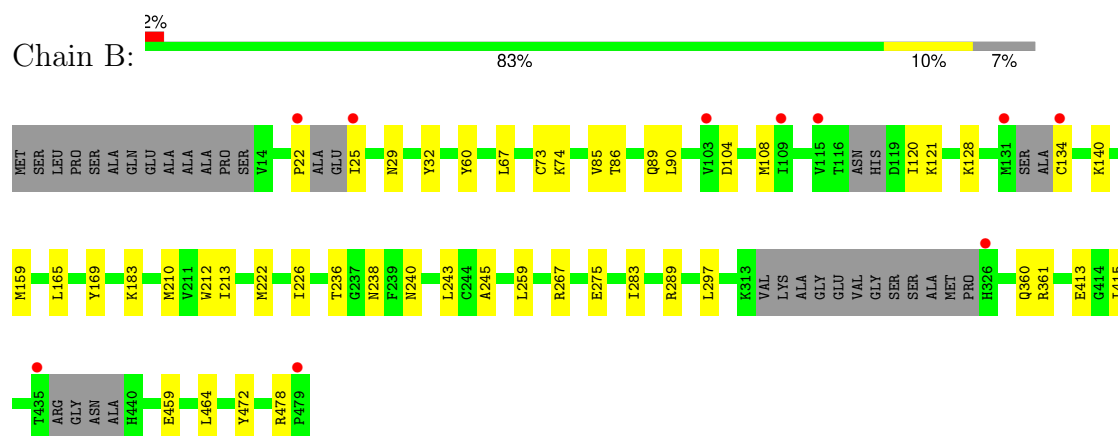
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	I 41 2 2	Depositor
Cell constants a, b, c, α, β, γ	130.02Å 130.02Å 316.77Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	25.25 – 1.97 25.25 – 1.97	Depositor EDS
% Data completeness (in resolution range)	99.4 (25.25-1.97) 99.3 (25.25-1.97)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.86 (at 1.96Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158, PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.211 , 0.239 0.210 , 0.239	Depositor DCC
R_{free} test set	4732 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å^2)	30.8	Xtriage
Anisotropy	0.431	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 48.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	7552	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.99% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CL, MG, SO4, PO4, GOL

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	0.35	0/3622	0.55	0/4909
1	B	0.34	0/3636	0.55	0/4929
All	All	0.35	0/7258	0.55	0/9838

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	360	GLN	Peptide
1	B	360	GLN	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3538	0	3511	38	0
1	B	3551	0	3545	29	0
2	A	12	0	16	6	0
2	B	12	0	16	3	0
3	A	10	0	0	0	0
3	B	5	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
6	A	5	0	0	0	0
7	A	208	0	0	0	0
7	B	207	0	0	0	0
All	All	7552	0	7088	67	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 5.

All (67) 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:144:HIS:CD2	1:A:147:LEU:HB2	2.18	0.79
2:A:506:GOL:O3	2:A:506:GOL:O1	2.01	0.75
1:B:73:CYS:SG	1:B:85:VAL:HG21	2.27	0.74
1:B:210[A]:MET:HE1	1:B:478:ARG:HB3	1.71	0.72
1:A:47:ALA:HB1	1:A:168:HIS:CE1	2.26	0.71
2:B:505:GOL:O3	2:B:505:GOL:O1	2.02	0.66
1:A:85:VAL:HA	1:A:89:GLN:OE1	1.97	0.64
2:A:501:GOL:O3	2:A:501:GOL:O1	2.14	0.64
1:A:138:ALA:O	1:A:140:LYS:N	2.32	0.63
1:A:257:LEU:HD21	1:A:261:LYS:HE3	1.81	0.63
1:A:131:MET:HB3	1:A:134:CYS:HA	1.80	0.62
1:A:413:GLU:HG2	1:A:472:TYR:OH	2.01	0.61
2:B:502:GOL:O3	2:B:502:GOL:O1	2.20	0.58
1:A:291:HIS:O	1:A:295[A]:MET:HG3	2.05	0.57
1:A:67:LEU:HD21	1:A:98:PHE:CZ	2.40	0.57
1:B:165:LEU:HA	1:B:169:TYR:HB3	1.88	0.56
1:A:30:PRO:HG3	1:A:42:LYS:HE2	1.88	0.56
1:A:210[A]:MET:HG2	2:A:501:GOL:H31	1.89	0.55
1:B:74:LYS:HE2	1:B:90:LEU:HD12	1.89	0.55
1:A:63:GLN:HG3	1:A:98:PHE:CD2	2.42	0.54
1:A:96:THR:O	1:A:130:LYS:NZ	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:413:GLU:HG3	1:B:472:TYR:OH	2.07	0.54
1:B:210[A]:MET:HE1	1:B:478:ARG:CB	2.36	0.54
1:A:76:VAL:HG12	1:A:79:ILE:HG13	1.89	0.53
1:A:63:GLN:O	1:A:67:LEU:HD23	2.08	0.53
1:A:210[B]:MET:HG2	2:A:501:GOL:H31	1.91	0.53
1:B:29:ASN:HB3	1:B:32:TYR:CD1	2.44	0.52
1:B:259:LEU:HD22	1:B:267:ARG:HB2	1.91	0.52
1:A:156:SER:HA	1:A:159:MET:HE2	1.93	0.50
1:A:144:HIS:CD2	1:A:144:HIS:O	2.65	0.50
1:A:29:ASN:HB3	1:A:32:TYR:CD2	2.47	0.49
1:A:415:ILE:HG23	1:A:464:LEU:HD22	1.94	0.49
1:B:415:ILE:HG23	1:B:464:LEU:HD22	1.94	0.49
1:B:104:ASP:O	1:B:108:MET:HG3	2.11	0.49
1:A:144:HIS:O	1:A:144:HIS:HD2	1.95	0.49
1:B:128:LYS:O	1:B:140:LYS:HD2	2.13	0.49
1:B:60:TYR:HD2	1:B:159:MET:HE2	1.79	0.47
1:B:121:LYS:HD3	1:B:121:LYS:HA	1.71	0.47
1:B:120:ILE:HG23	1:B:121:LYS:HE2	1.97	0.47
1:B:222[B]:MET:HE2	1:B:289:ARG:NH2	2.30	0.47
1:A:238:ASN:HB2	1:A:240:ASN:OD1	2.15	0.46
1:A:475:TYR:CZ	1:B:243:LEU:HD13	2.51	0.46
1:B:86:THR:OG1	1:B:89:GLN:HG3	2.16	0.45
1:A:201:SER:O	1:B:236:THR:HG21	2.16	0.45
1:A:213:ILE:HG21	2:A:501:GOL:H32	1.98	0.45
1:A:118:HIS:O	1:A:121:LYS:HB2	2.16	0.45
1:A:113:GLU:HA	1:A:116:THR:HG23	1.98	0.45
1:A:417:THR:HG22	1:B:245:ALA:HB2	1.98	0.45
1:B:22:PRO:HG2	1:B:25:ILE:HG23	1.99	0.45
1:B:222[B]:MET:HE2	1:B:289:ARG:HH21	1.83	0.44
1:A:76:VAL:HG12	1:A:76:VAL:O	2.18	0.43
1:A:51:TYR:O	1:A:160:LEU:HD13	2.19	0.43
1:A:51:TYR:CE1	1:A:163:ASP:HB3	2.54	0.43
1:A:210[B]:MET:HB3	2:A:501:GOL:O2	2.20	0.42
1:A:222[B]:MET:HE2	1:A:289:ARG:NH2	2.35	0.42
1:A:282:ALA:HB1	1:B:222[B]:MET:HE1	2.03	0.41
1:B:459:GLU:CD	1:B:459:GLU:H	2.27	0.41
1:B:238:ASN:HB2	1:B:240:ASN:OD1	2.20	0.41
1:A:60:TYR:OH	1:A:163:ASP:OD2	2.28	0.41
1:A:207:LYS:O	1:A:210[A]:MET:HB2	2.21	0.41
1:B:213:ILE:CG2	2:B:502:GOL:H2	2.51	0.41
1:B:67:LEU:HD23	1:B:67:LEU:HA	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:212:TRP:CZ2	1:B:297:LEU:HA	2.55	0.41
1:A:454:GLU:HG3	1:A:455:GLY:N	2.36	0.41
1:B:226:ILE:HG21	1:B:283:ILE:HG13	2.02	0.41
1:A:76:VAL:CG1	1:A:79:ILE:HG13	2.51	0.40
1:B:183:LYS:HA	1:B:183:LYS:HD3	1.93	0.40

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	434/479 (91%)	420 (97%)	13 (3%)	1 (0%)	44	35
1	B	437/479 (91%)	422 (97%)	14 (3%)	1 (0%)	44	35
All	All	871/958 (91%)	842 (97%)	27 (3%)	2 (0%)	44	35

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	361	ARG
1	B	361	ARG

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	375/404 (93%)	374 (100%)	1 (0%)	91	91
1	B	380/404 (94%)	378 (100%)	2 (0%)	86	86
All	All	755/808 (93%)	752 (100%)	3 (0%)	89	89

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

Mol	Chain	Res	Type
1	A	103	VAL
1	B	134	CYS
1	B	275	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	144	HIS
1	A	167	HIS
1	A	168	HIS
1	A	339	ASN
1	A	440	HIS
1	A	447	HIS
1	B	168	HIS
1	B	407	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 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	#$|Z| > 2$
3	SO4	B	501	-	4,4,4	0.29	0	6,6,6	0.30	0
6	PO4	A	507	-	4,4,4	0.95	0	6,6,6	0.50	0
2	GOL	B	505	-	5,5,5	0.67	0	5,5,5	0.58	0
3	SO4	A	502	-	4,4,4	0.27	0	6,6,6	0.19	0
2	GOL	A	501	-	5,5,5	0.70	0	5,5,5	1.26	1 (20%)
2	GOL	A	506	-	5,5,5	0.59	0	5,5,5	0.41	0
2	GOL	B	502	-	5,5,5	0.75	0	5,5,5	1.08	0
3	SO4	A	503	-	4,4,4	0.27	0	6,6,6	0.05	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	A	506	-	-	3/4/4/4	-
2	GOL	A	501	-	-	4/4/4/4	-
2	GOL	B	502	-	-	4/4/4/4	-
2	GOL	B	505	-	-	4/4/4/4	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	501	GOL	O2-C2-C1	-2.35	99.46	109.18

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	GOL	C1-C2-C3-O3
2	A	501	GOL	O2-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
2	B	502	GOL	C1-C2-C3-O3
2	B	502	GOL	O2-C2-C3-O3
2	B	505	GOL	C1-C2-C3-O3
2	B	505	GOL	O1-C1-C2-O2
2	A	501	GOL	O1-C1-C2-C3
2	A	506	GOL	O1-C1-C2-C3
2	A	506	GOL	C1-C2-C3-O3
2	B	502	GOL	O1-C1-C2-C3
2	B	505	GOL	O1-C1-C2-C3
2	A	501	GOL	O1-C1-C2-O2
2	A	506	GOL	O1-C1-C2-O2
2	B	502	GOL	O1-C1-C2-O2
2	B	505	GOL	O2-C2-C3-O3

There are no ring outliers.

4 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	505	GOL	1	0
2	A	501	GOL	5	0
2	A	506	GOL	1	0
2	B	502	GOL	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 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 501

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 A 502

Bond lengths

Bond angles

Torsions

Rings

Ligand SO4 A 503

Bond lengths

Bond angles

Torsions

Rings
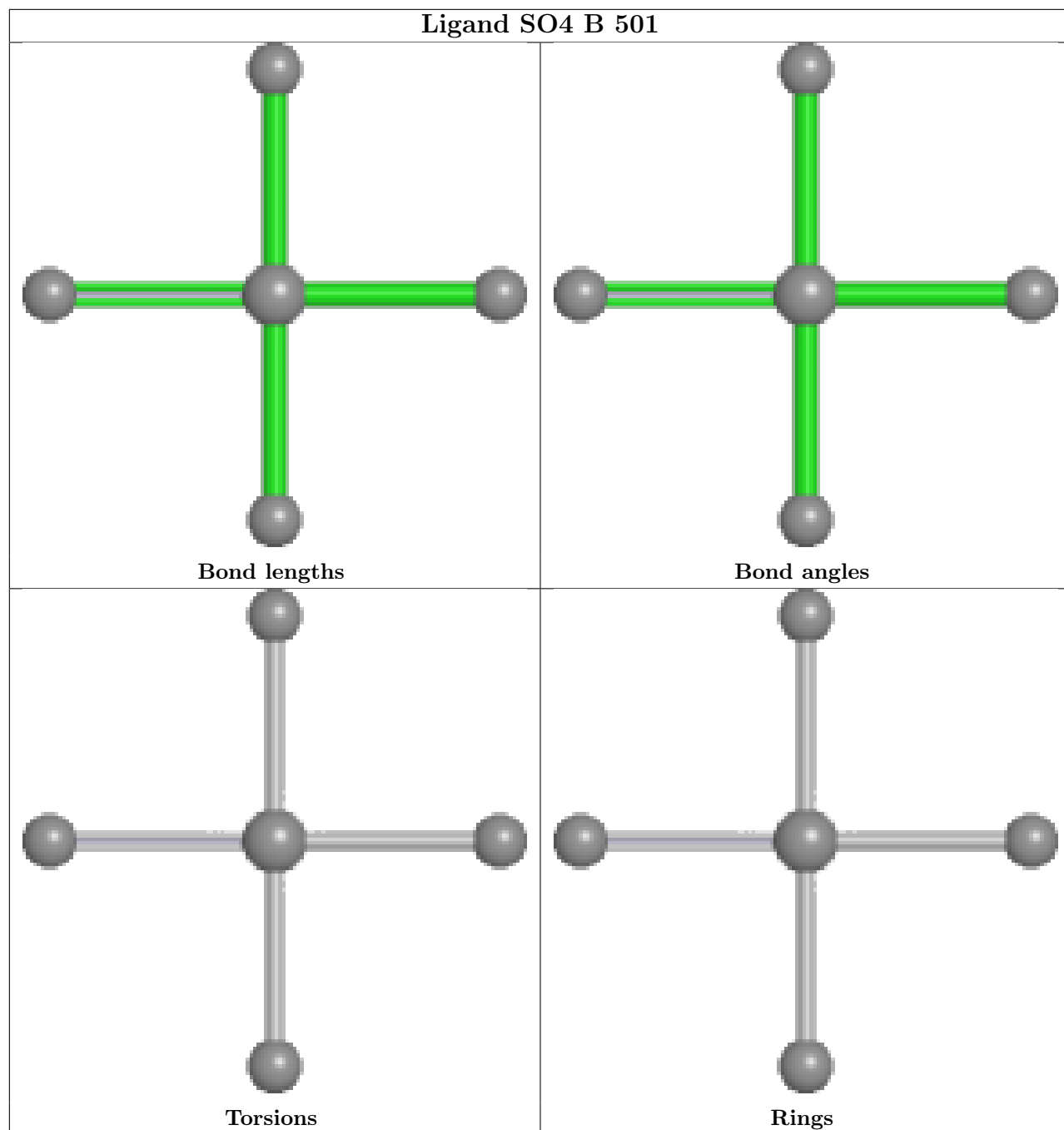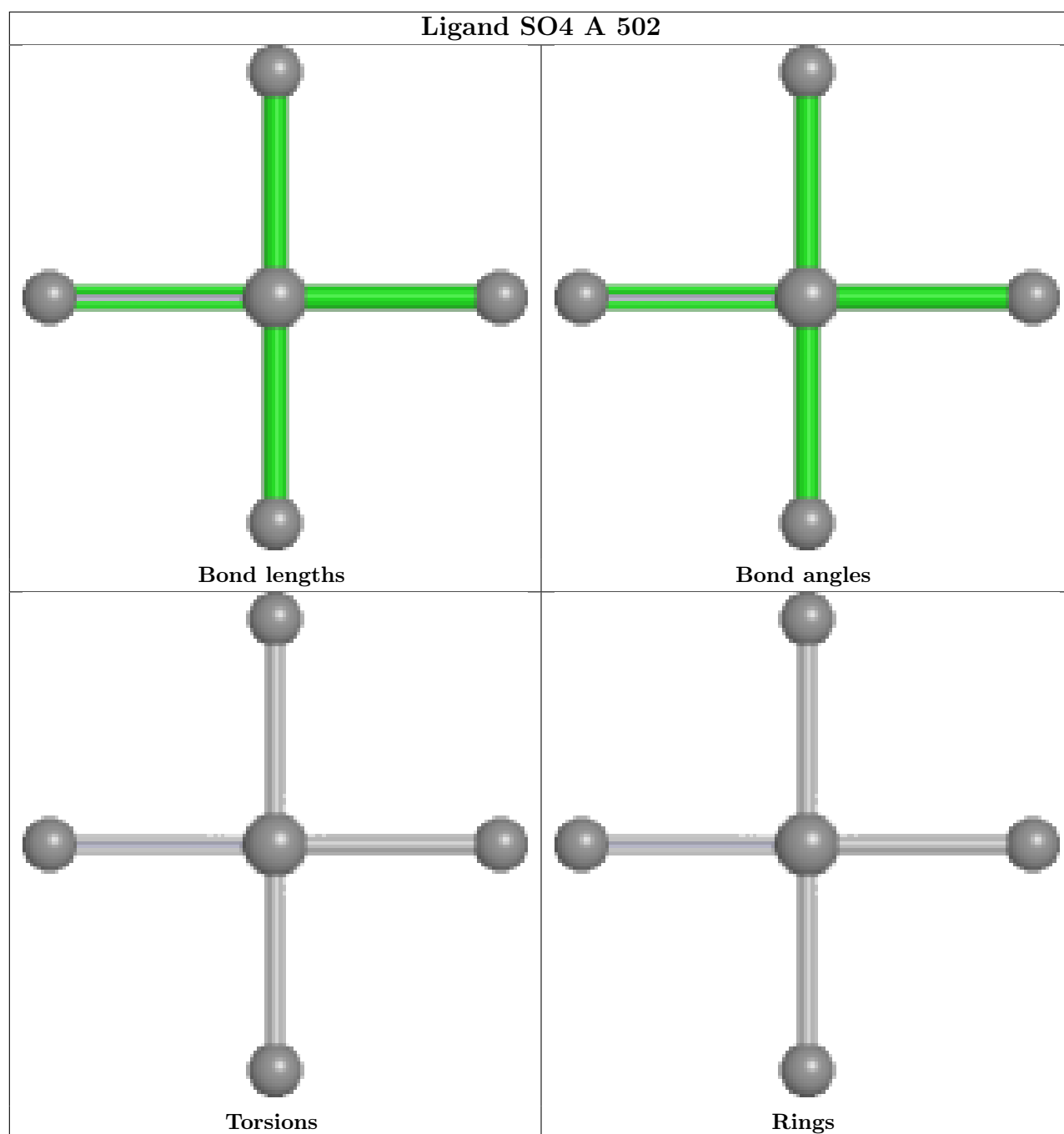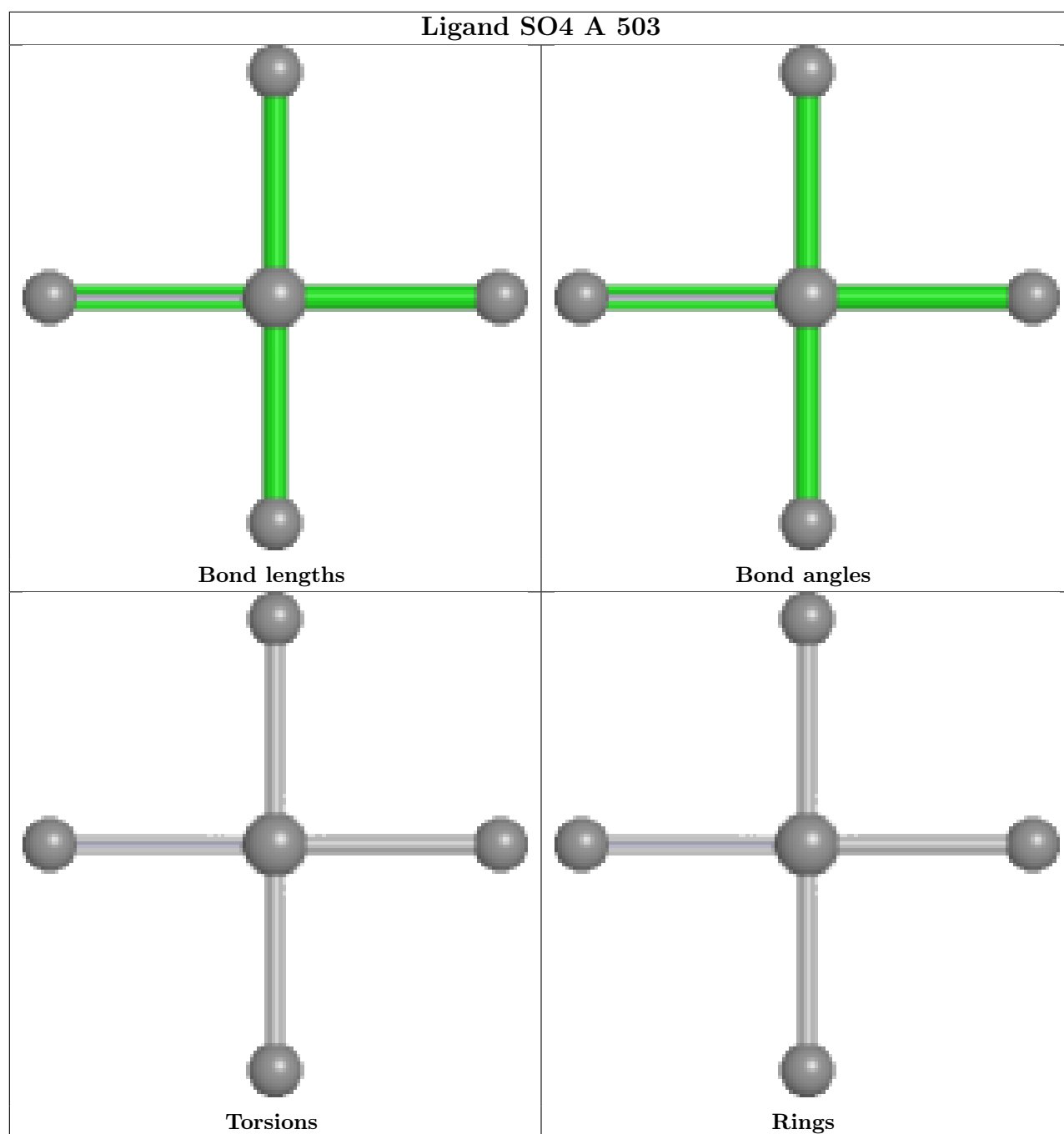
5.7 Other polymers ⓘ

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	445/479 (92%)	0.39	45 (10%)	14	20	14, 41, 71, 83	5 (1%)
1	B	444/479 (92%)	0.11	10 (2%)	61	70	14, 39, 66, 79	5 (1%)
All	All	889/958 (92%)	0.25	55 (6%)	28	38	14, 40, 69, 83	10 (1%)

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	96	THR	5.4
1	A	118	HIS	4.3
1	A	86	THR	4.0
1	A	97	THR	4.0
1	B	25	ILE	3.7
1	A	88	ALA	3.6
1	B	134	CYS	3.6
1	A	116	THR	3.5
1	B	131	MET	3.4
1	B	479	PRO	3.4
1	A	90	LEU	3.3
1	A	479	PRO	3.3
1	A	69	PHE	3.1
1	A	120	ILE	3.1
1	A	93	LEU	3.1
1	A	131	MET	3.0
1	B	22	PRO	3.0
1	A	134	CYS	3.0
1	A	91	GLU	2.9
1	A	135	GLY	2.9
1	A	23	ALA	2.7
1	A	129	ASP	2.7
1	A	125	TYR	2.6
1	B	115	VAL	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	326	HIS	2.6
1	A	80	THR	2.6
1	A	103	VAL	2.6
1	A	98	PHE	2.6
1	A	85	VAL	2.6
1	A	119	ASP	2.6
1	A	82	LEU	2.6
1	A	78	VAL	2.5
1	A	127	LEU	2.5
1	A	434	LEU	2.5
1	A	89	GLN	2.5
1	A	325	PRO	2.5
1	B	103	VAL	2.5
1	A	76	VAL	2.4
1	A	83	ARG	2.4
1	A	478	ARG	2.4
1	A	138	ALA	2.4
1	A	439	ALA	2.3
1	A	428	TYR	2.3
1	A	67	LEU	2.3
1	A	87	ASP	2.3
1	B	109	ILE	2.2
1	A	420[A]	ARG	2.2
1	A	73	CYS	2.2
1	A	68	TYR	2.2
1	B	435	THR	2.1
1	A	326	HIS	2.1
1	A	26	SER	2.1
1	A	84	GLY	2.1
1	A	115	VAL	2.0
1	A	432	LYS	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)

There are no oligosaccharides in this entry.

6.4 Ligands (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, 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	A	503	5/5	0.72	0.11	73,75,83,85	0
2	GOL	A	501	6/6	0.81	0.16	43,48,54,54	0
2	GOL	B	502	6/6	0.82	0.15	42,46,47,55	0
2	GOL	B	505	6/6	0.86	0.15	41,43,46,49	0
5	CL	B	504	1/1	0.87	0.11	67,67,67,67	0
6	PO4	A	507	5/5	0.91	0.16	40,42,50,57	0
2	GOL	A	506	6/6	0.92	0.12	41,42,44,52	0
5	CL	A	505	1/1	0.93	0.09	64,64,64,64	0
3	SO4	B	501	5/5	0.95	0.12	33,33,37,39	0
3	SO4	A	502	5/5	0.97	0.12	37,39,40,46	0
4	MG	A	504	1/1	0.97	0.13	35,35,35,35	0
4	MG	B	503	1/1	0.97	0.07	38,38,38,38	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.
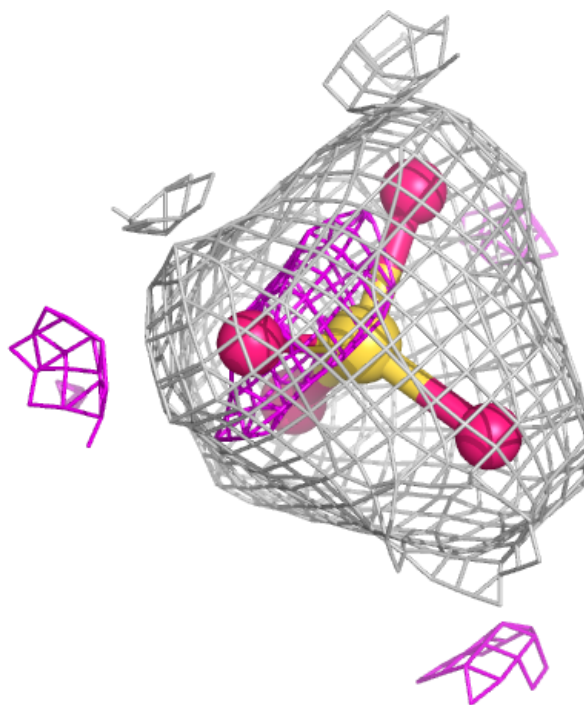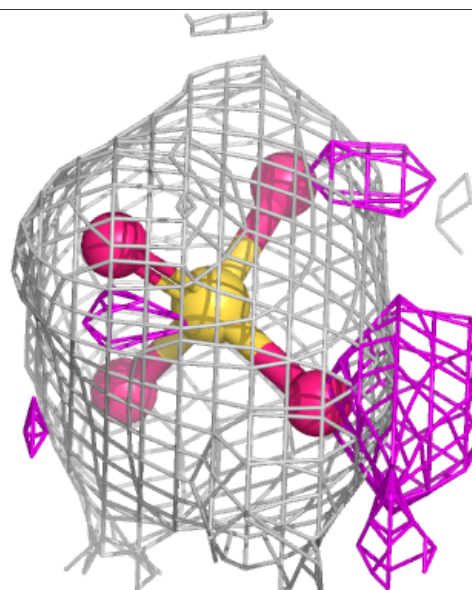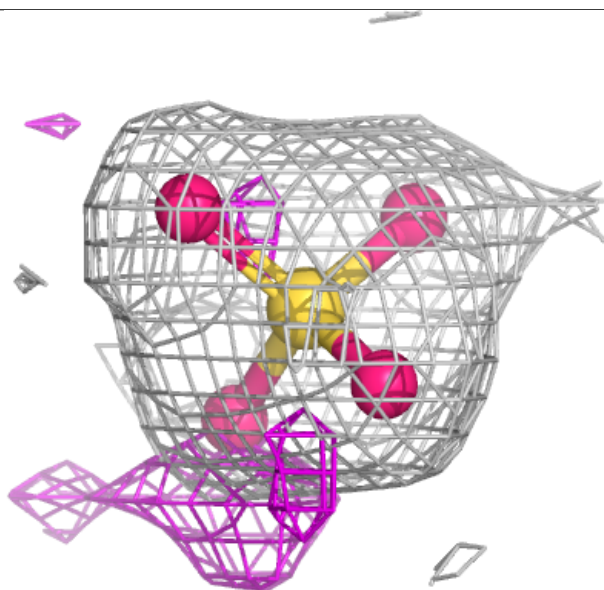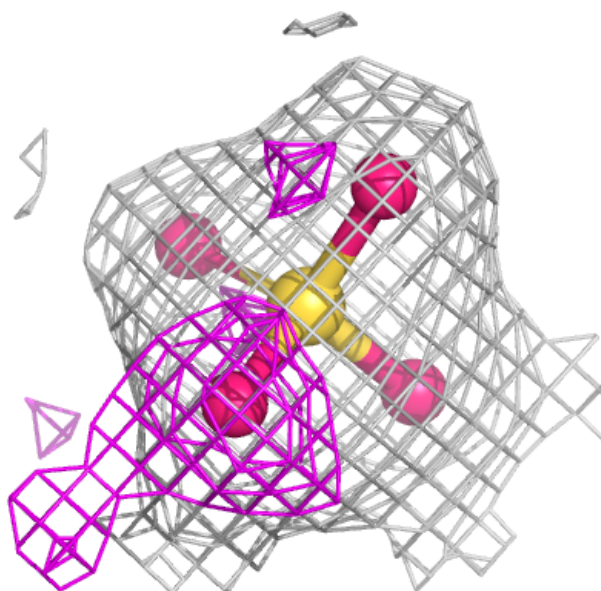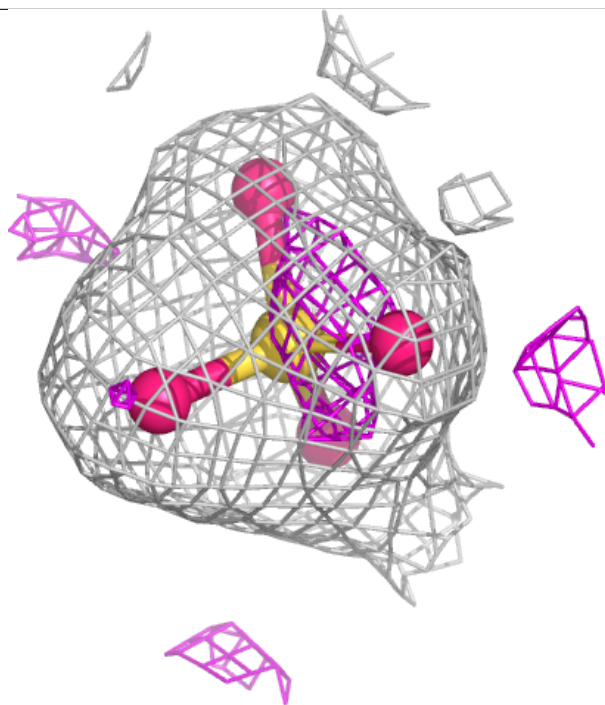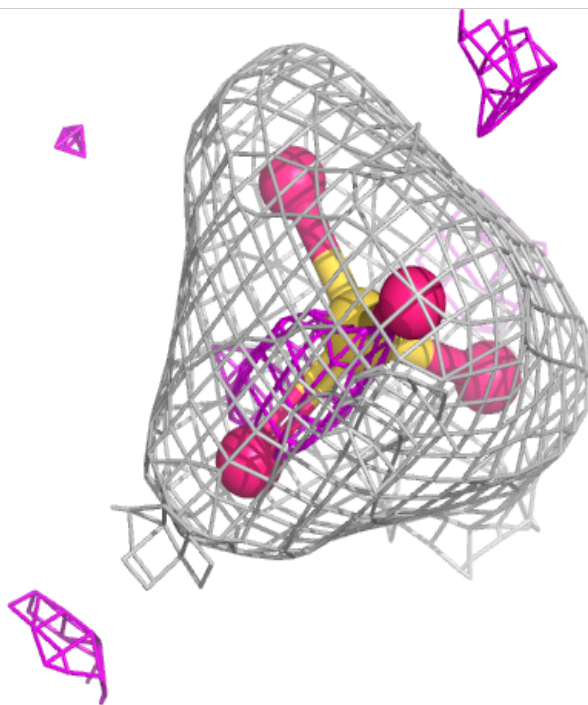
Electron density around SO4 A 503:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
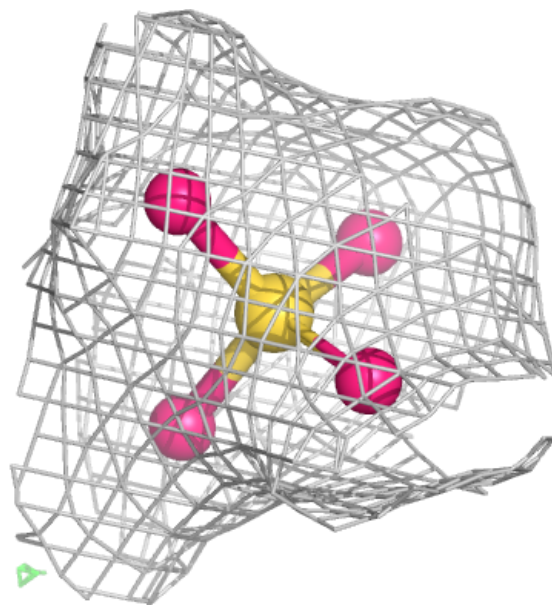
Electron density around SO4 B 501:

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

Electron density around SO4 A 502:

$2mF_o\text{-}DF_c$ (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.