



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 7, 2020 – 02:29 am BST

PDB ID : 6IGS  
Title : Crystal structure of HPRT from *F. tularensis* with Zinc  
Authors : Pavithra, G.C.; Kundapura, S.V.; Ramagopal, U.A.  
Deposited on : 2018-09-25  
Resolution : 2.16 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](mailto: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.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.11  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

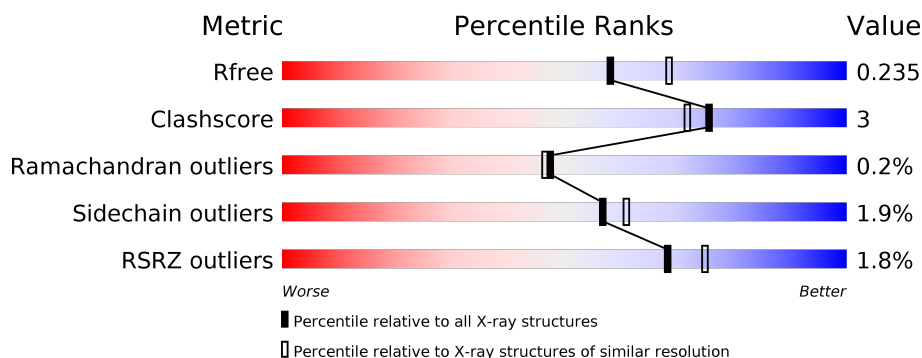
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.16 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))
$R_{free}$	130704	1479 (2.16-2.16)
Clashscore	141614	1585 (2.16-2.16)
Ramachandran outliers	138981	1560 (2.16-2.16)
Sidechain outliers	138945	1559 (2.16-2.16)
RSRZ outliers	127900	1456 (2.16-2.16)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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	177	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 2%, orange 8%, yellow 8%, green 82%, grey 0%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>2%</span> <span>82%</span> <span>8%</span> <span>8%</span> </div> </div>
1	B	177	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 2%, orange 14%, yellow 6%, green 80%, grey 0%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>2%</span> <span>80%</span> <span>14%</span> <span>6%</span> </div> </div>
1	C	177	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 2%, orange 6%, yellow 8%, green 84%, grey 0%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>2%</span> <span>84%</span> <span>6%</span> <span>8%</span> </div> </div>
1	D	177	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 3%, orange 11%, yellow 11%, green 77%, grey 0%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>3%</span> <span>77%</span> <span>11%</span> <span>11%</span> </div> </div>

## 2 Entry composition [i](#)

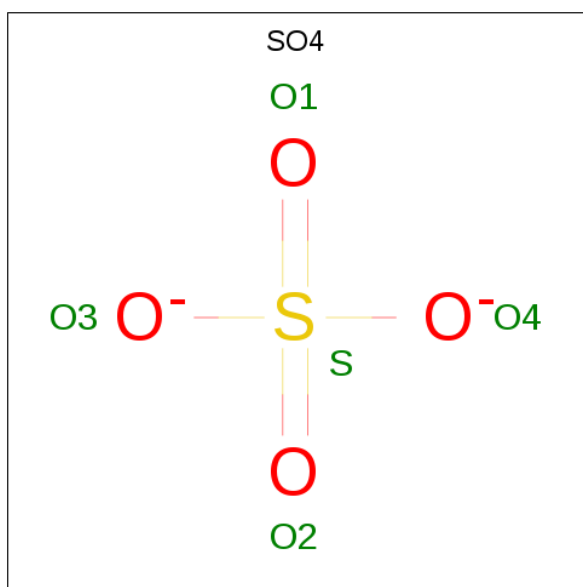
There are 4 unique types of molecules in this entry. The entry contains 5512 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Hypoxanthine phosphoribosyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	162	Total	C	N	O	S	0	2	0
			1334	866	212	252	4			
1	B	167	Total	C	N	O	S	0	1	0
			1363	880	216	264	3			
1	C	163	Total	C	N	O	S	0	1	0
			1323	859	213	248	3			
1	D	158	Total	C	N	O	S	0	0	0
			1285	833	204	245	3			

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S) (labeled as "Ligand of Interest" by author).



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

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	B	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		
2	D	1	Total	O	S	0	0
			5	4	1		
2	D	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by author).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	2	Total	Zn	0	0
			2	2		
3	A	2	Total	Zn	0	0
			2	2		
3	D	2	Total	Zn	0	0
			2	2		
3	C	2	Total	Zn	0	0
			2	2		

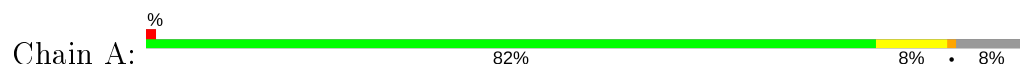
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	44	Total	O	0	0
			44	44		
4	B	50	Total	O	0	0
			50	50		
4	C	34	Total	O	0	0
			34	34		
4	D	36	Total	O	0	0
			36	36		

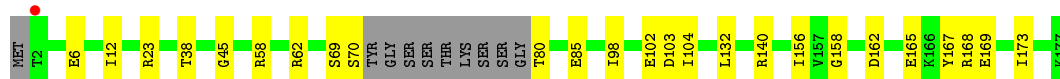
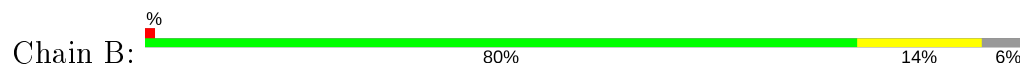
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

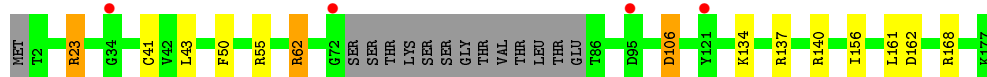
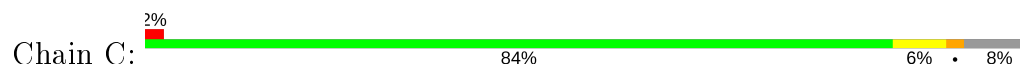
- Molecule 1: Hypoxanthine phosphoribosyltransferase



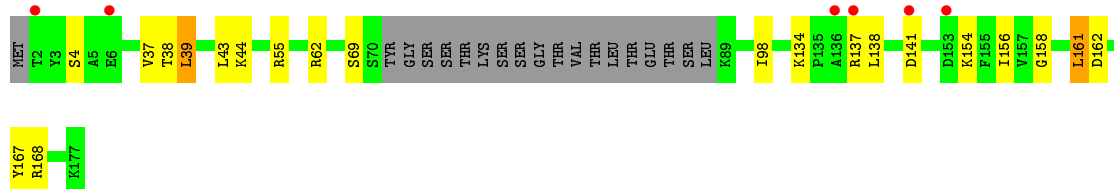
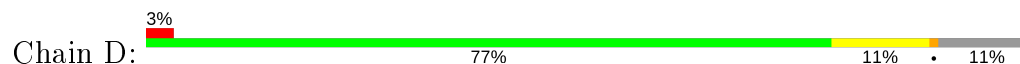
- Molecule 1: Hypoxanthine phosphoribosyltransferase



- Molecule 1: Hypoxanthine phosphoribosyltransferase



- Molecule 1: Hypoxanthine phosphoribosyltransferase



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	78.76 Å 90.19 Å 113.71 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	37.24 – 2.16 37.21 – 2.16	Depositor EDS
% Data completeness (in resolution range)	92.7 (37.24-2.16) 92.8 (37.21-2.16)	Depositor EDS
$R_{merge}$	0.09	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	5.10 (at 2.16 Å)	Xtriage
Refinement program	REFMAC 5.8.0230	Depositor
R, $R_{free}$	0.183 , 0.232 0.190 , 0.235	Depositor DCC
$R_{free}$ test set	1965 reflections (4.77%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	24.9	Xtriage
Anisotropy	0.224	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 40.8	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	5512	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.27% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  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: ZN, SO4

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	0.85	1/1360 (0.1%)	0.89	0/1833
1	B	0.98	3/1385 (0.2%)	1.03	7/1869 (0.4%)
1	C	0.85	0/1346	0.96	4/1815 (0.2%)
1	D	0.83	0/1307	0.93	4/1762 (0.2%)
All	All	0.88	4/5398 (0.1%)	0.95	15/7279 (0.2%)

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	C	0	3
1	D	0	2
All	All	0	6

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	169	GLU	CD-OE1	7.42	1.33	1.25
1	B	85	GLU	CD-OE1	5.72	1.31	1.25
1	B	165	GLU	CD-OE1	5.20	1.31	1.25
1	A	169	GLU	CD-OE1	5.05	1.31	1.25

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	23	ARG	NE-CZ-NH1	9.01	124.81	120.30
1	B	58	ARG	NE-CZ-NH2	-7.07	116.77	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	62	ARG	NE-CZ-NH2	-6.98	116.81	120.30
1	D	62	ARG	NE-CZ-NH1	6.42	123.51	120.30
1	B	58	ARG	NE-CZ-NH1	6.10	123.35	120.30
1	C	106	ASP	CB-CA-C	5.93	122.26	110.40
1	C	62	ARG	NE-CZ-NH2	-5.82	117.39	120.30
1	D	62	ARG	NE-CZ-NH2	-5.71	117.44	120.30
1	D	55	ARG	NE-CZ-NH2	-5.64	117.48	120.30
1	B	140	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	B	102	GLU	N-CA-CB	-5.58	100.56	110.60
1	C	55	ARG	NE-CZ-NH2	-5.35	117.63	120.30
1	D	168	ARG	NE-CZ-NH2	-5.18	117.71	120.30
1	C	23	ARG	NE-CZ-NH2	-5.02	117.79	120.30
1	B	23	ARG	NE-CZ-NH2	-5.01	117.79	120.30

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	140	ARG	Sidechain
1	C	140	ARG	Sidechain
1	C	23	ARG	Sidechain
1	C	62	ARG	Sidechain
1	D	137	ARG	Sidechain
1	D	162	ASP	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	1334	0	1344	9	0
1	B	1363	0	1370	7	0
1	C	1323	0	1325	6	0
1	D	1285	0	1282	13	0
2	A	10	0	0	0	0
2	B	5	0	0	0	0
2	C	10	0	0	0	0
2	D	10	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	2	0	0	0	0
3	D	2	0	0	0	0
4	A	44	0	0	0	0
4	B	50	0	0	0	0
4	C	34	0	0	0	0
4	D	36	0	0	0	0
All	All	5512	0	5321	33	0

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

All (33) 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:C:106:ASP:OD2	1:C:134:LYS:NZ	1.64	1.30
1:A:112:HIS:HE1	1:A:139:GLU:OE2	1.58	0.82
1:B:38:THR:HB	1:B:98:ILE:HD13	1.73	0.70
1:D:156:ILE:HD12	1:D:156:ILE:O	1.92	0.70
1:A:112:HIS:CE1	1:A:140:ARG:CZ	2.80	0.65
1:D:156:ILE:CD1	1:D:161:LEU:HD12	2.26	0.65
1:A:137:ARG:NH1	1:A:153:ASP:OD1	2.34	0.61
1:D:161:LEU:HD23	1:D:161:LEU:N	2.16	0.59
1:A:32:TYR:OH	1:A:127:LYS:HE2	2.07	0.54
1:B:132:LEU:HD13	1:B:156:ILE:CD1	2.41	0.51
1:A:45:GLY:HA3	1:A:103:ASP:OD2	2.12	0.48
1:A:158:GLY:HA2	1:A:167:TYR:O	2.15	0.46
1:D:37:VAL:HG12	1:D:39:LEU:HD23	1.97	0.46
1:D:156:ILE:HD12	1:D:156:ILE:C	2.36	0.46
1:D:156:ILE:HD13	1:D:161:LEU:HD12	1.97	0.46
1:C:156:ILE:HD11	1:C:161:LEU:HD22	1.98	0.45
1:B:158:GLY:HA2	1:B:167:TYR:O	2.15	0.45
1:D:158:GLY:HA2	1:D:167:TYR:O	2.16	0.45
1:D:134:LYS:HE2	1:D:154:LYS:O	2.16	0.45
1:B:45:GLY:HA3	1:B:103:ASP:OD2	2.18	0.44
1:C:41:CYS:HB2	1:C:50:PHE:CD1	2.53	0.43
1:C:156:ILE:CD1	1:C:161:LEU:HD22	2.49	0.43
1:D:138:LEU:HD12	1:D:138:LEU:HA	1.92	0.43
1:D:43:LEU:HB3	1:D:44:LYS:HA	2.01	0.42
1:A:161:LEU:HD12	1:A:161:LEU:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:104:ILE:HD13	1:B:104:ILE:HG21	1.87	0.42
1:C:162:ASP:HB3	1:C:168:ARG:HG3	2.02	0.41
1:C:43:LEU:HD13	1:D:43:LEU:HD13	2.03	0.41
1:B:12:ILE:HB	1:B:173:ILE:HB	2.03	0.41
1:A:104:ILE:HD11	1:A:134:LYS:HE3	2.01	0.41
1:D:38:THR:HB	1:D:98:ILE:HD13	2.03	0.40
1:A:63:THR:OG1	1:B:168:ARG:HD2	2.22	0.40
1:D:4:SER:HB2	1:D:167:TYR:CD1	2.57	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	160/177 (90%)	154 (96%)	6 (4%)	0	100	100
1	B	164/177 (93%)	158 (96%)	6 (4%)	0	100	100
1	C	160/177 (90%)	152 (95%)	8 (5%)	0	100	100
1	D	154/177 (87%)	150 (97%)	3 (2%)	1 (1%)	25	18
All	All	638/708 (90%)	614 (96%)	23 (4%)	1 (0%)	47	46

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	69	SER

### 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	146/160 (91%)	144 (99%)	2 (1%)	67	72
1	B	151/160 (94%)	146 (97%)	5 (3%)	38	37
1	C	142/160 (89%)	141 (99%)	1 (1%)	84	89
1	D	140/160 (88%)	137 (98%)	3 (2%)	53	57
All	All	579/640 (90%)	568 (98%)	11 (2%)	57	61

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	102	GLU
1	A	139	GLU
1	B	6	GLU
1	B	69	SER
1	B	70	SER
1	B	80	THR
1	B	162	ASP
1	C	137	ARG
1	D	39	LEU
1	D	141	ASP
1	D	161	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	112	HIS
1	D	64	GLN

### 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 carbohydrates in this entry.

## 5.6 Ligand geometry

Of 15 ligands modelled in this entry, 8 are monoatomic - leaving 7 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	SO4	D	202	-	4,4,4	0.41	0	6,6,6	0.22	0
2	SO4	A	202	-	4,4,4	0.33	0	6,6,6	0.59	0
2	SO4	C	202	-	4,4,4	0.41	0	6,6,6	0.48	0
2	SO4	B	201	-	4,4,4	0.34	0	6,6,6	0.77	0
2	SO4	D	201	-	4,4,4	0.32	0	6,6,6	1.04	0
2	SO4	A	201	-	4,4,4	0.39	0	6,6,6	0.36	0
2	SO4	C	201	-	4,4,4	0.32	0	6,6,6	0.91	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

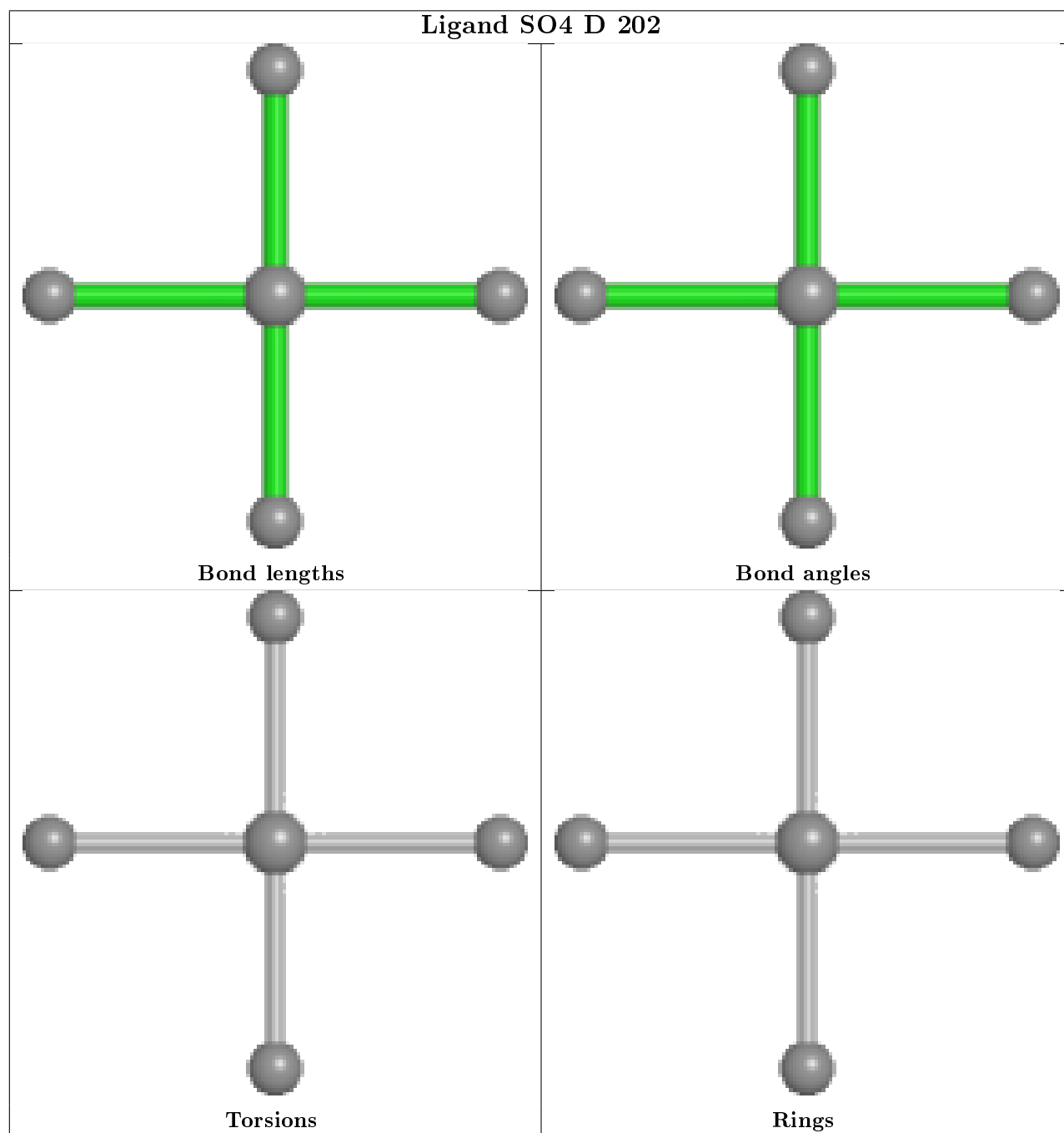
There are no torsion outliers.

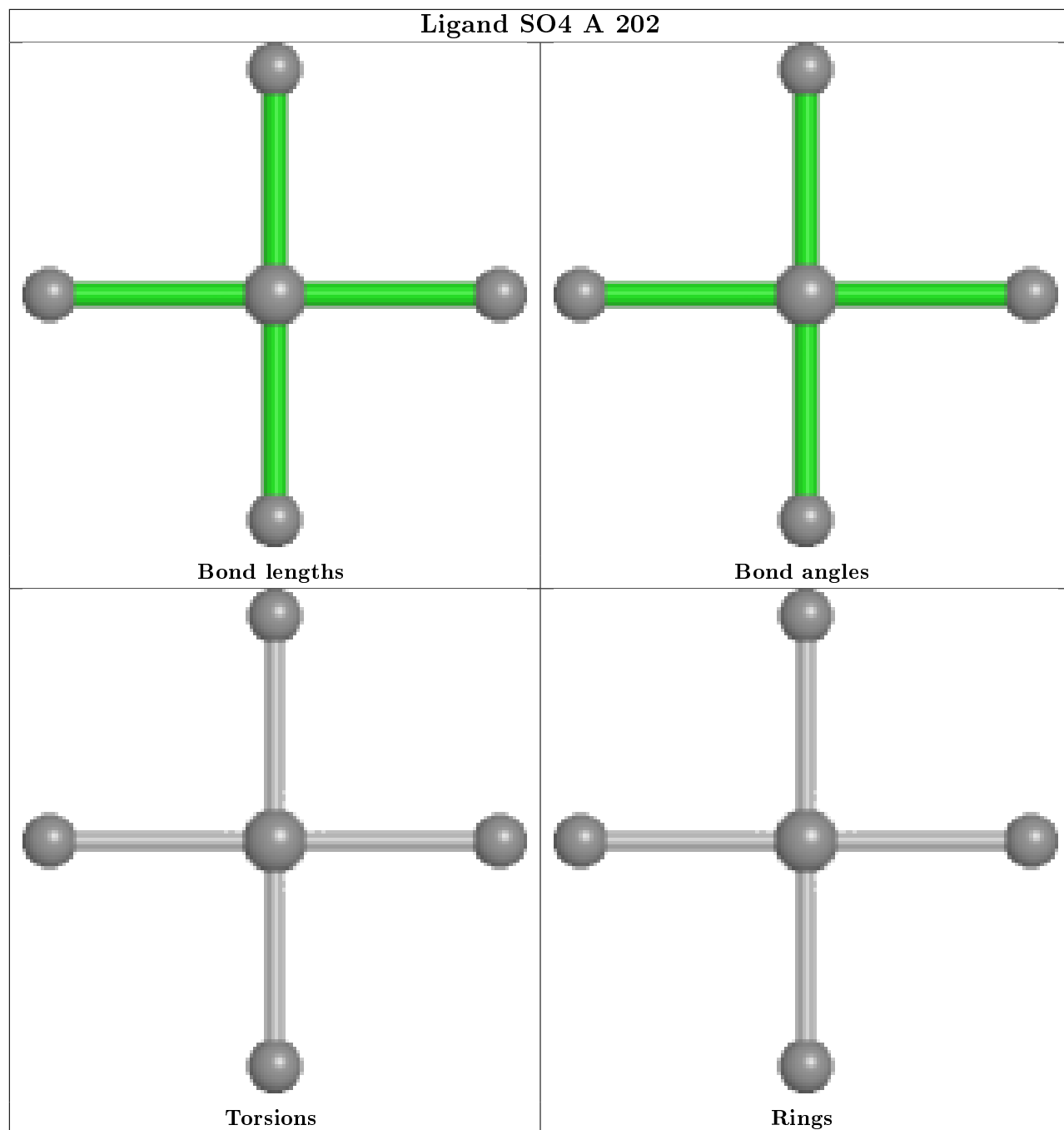
There are no ring outliers.

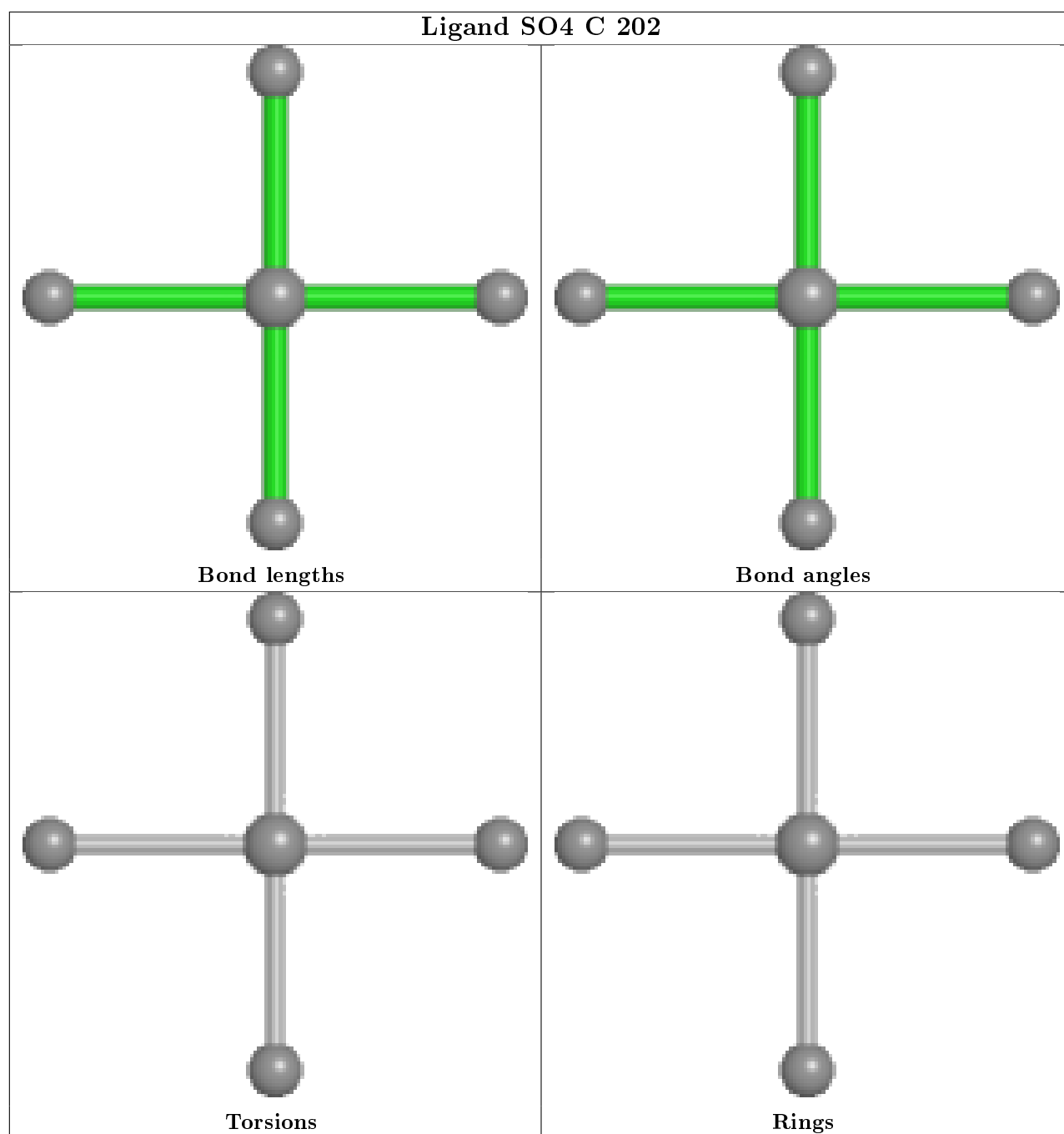
No monomer is involved in short contacts.

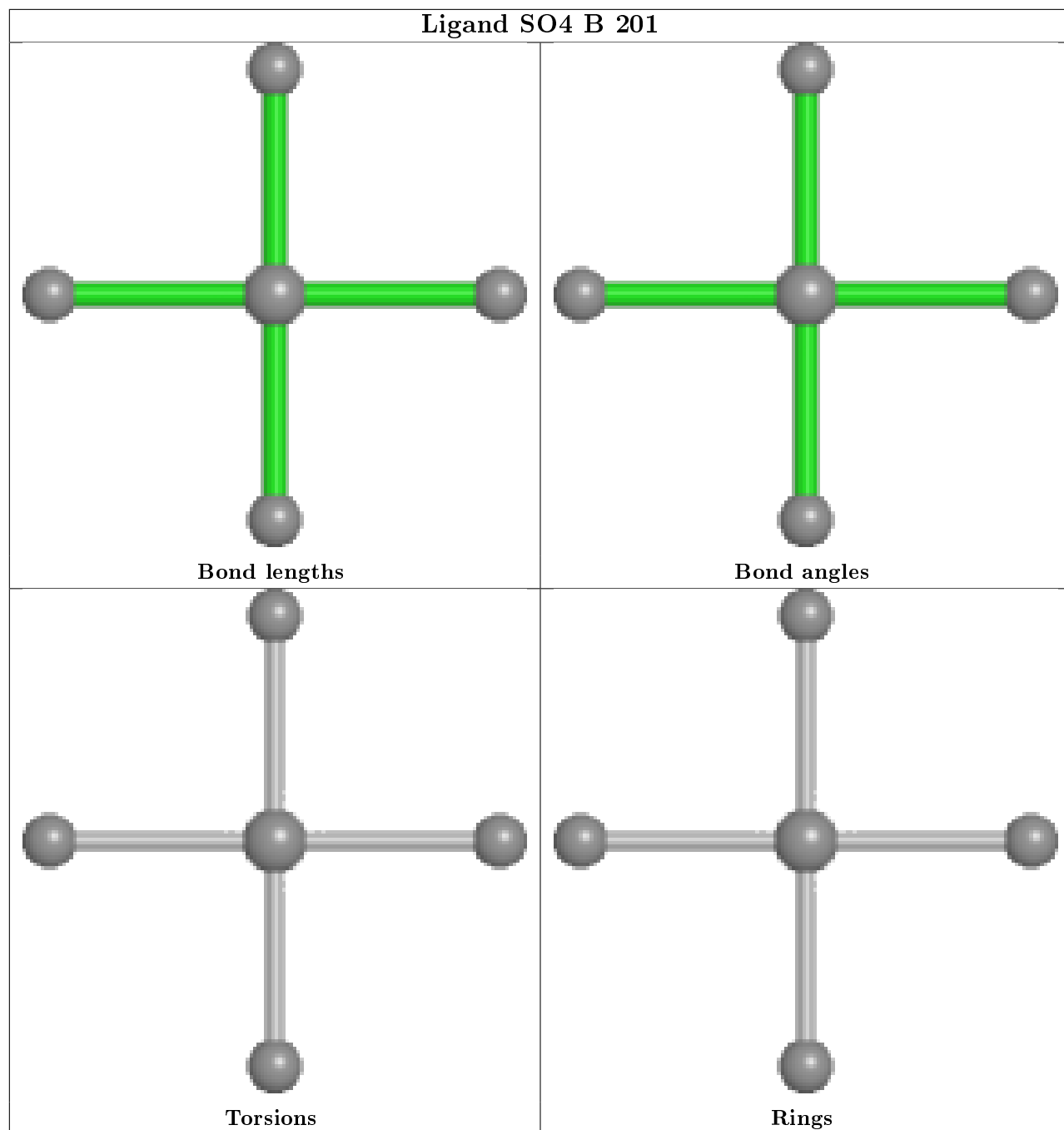
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight  $> 250$  and outliers as shown on the validation Tables will also be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

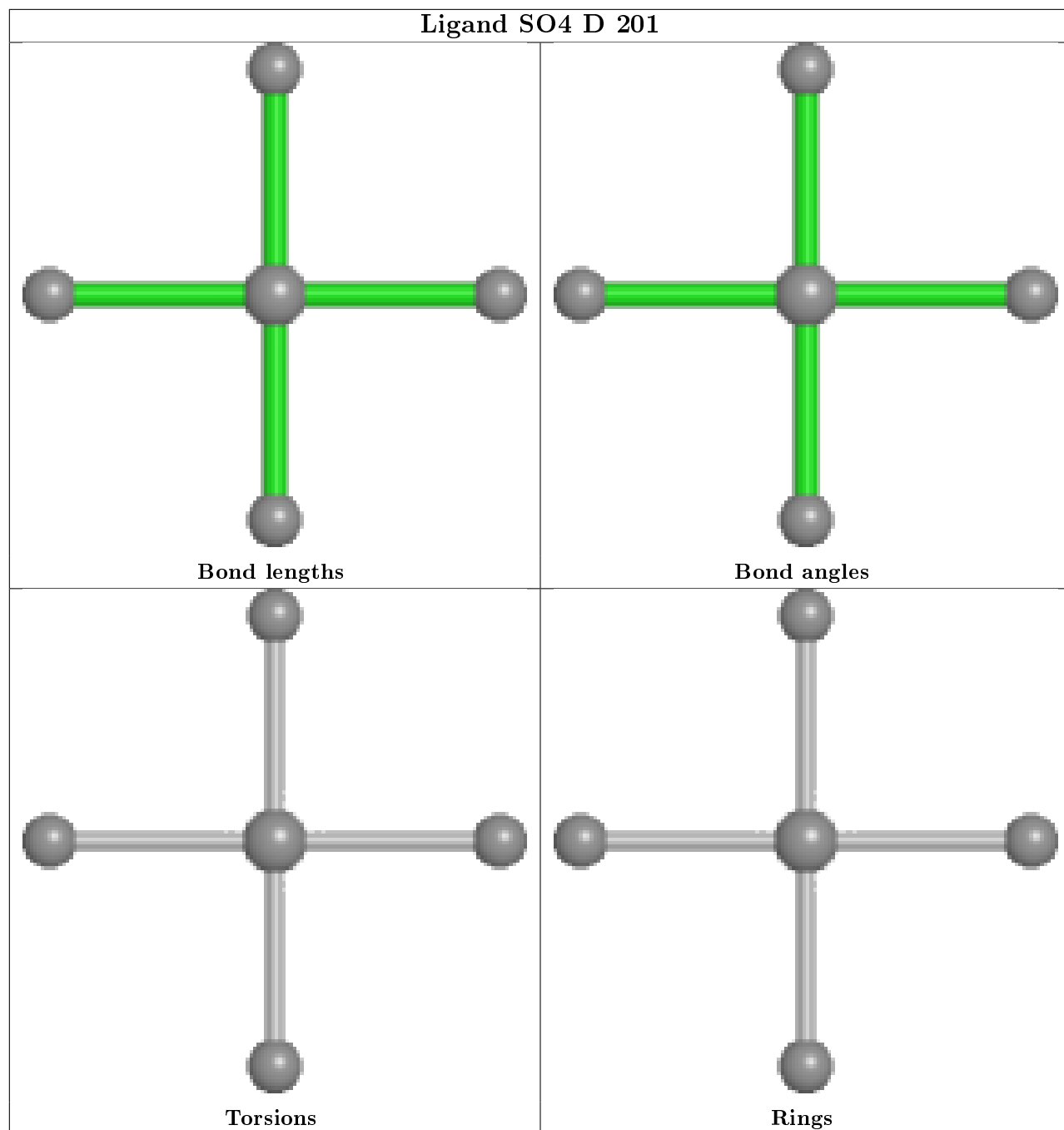


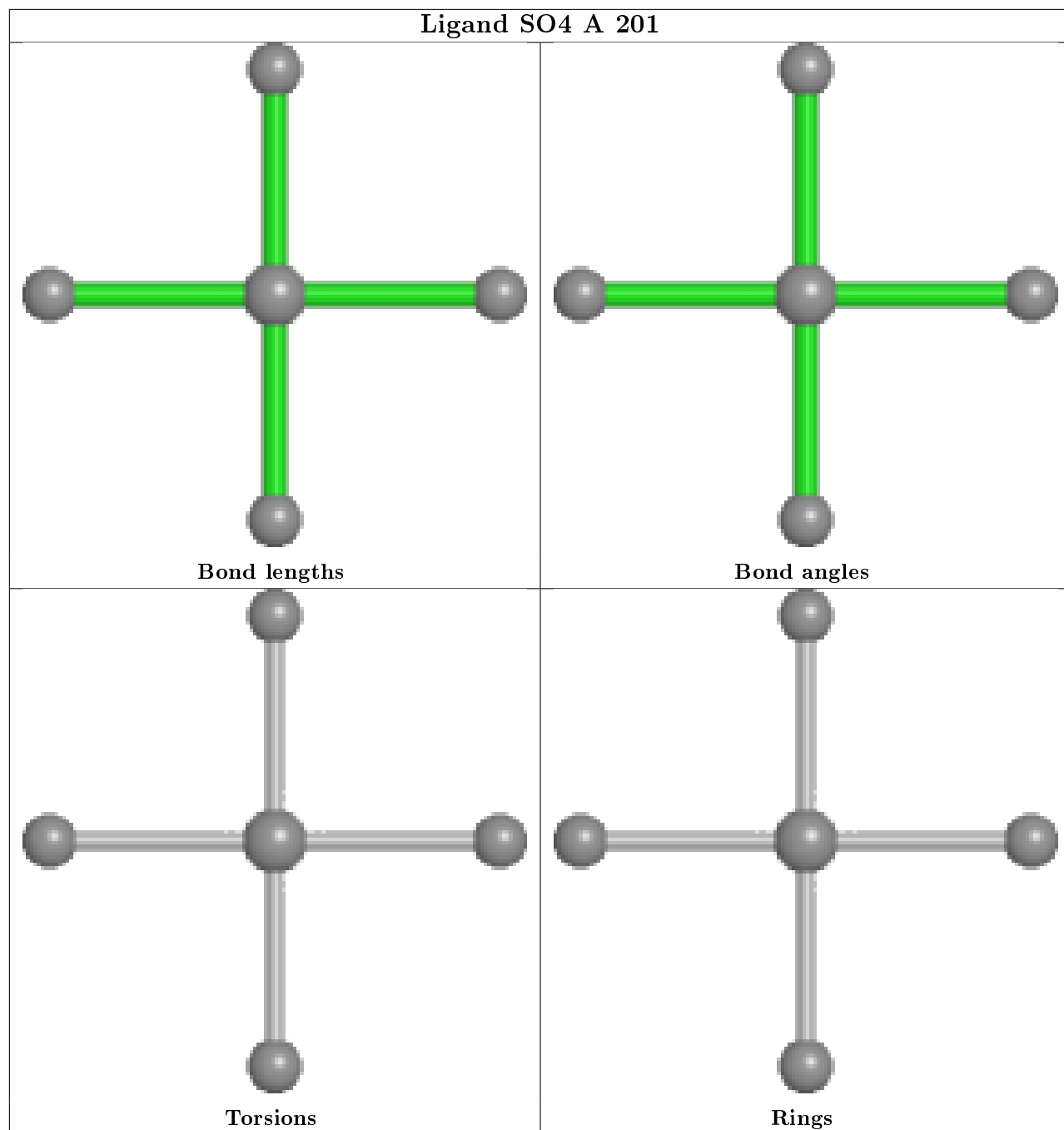


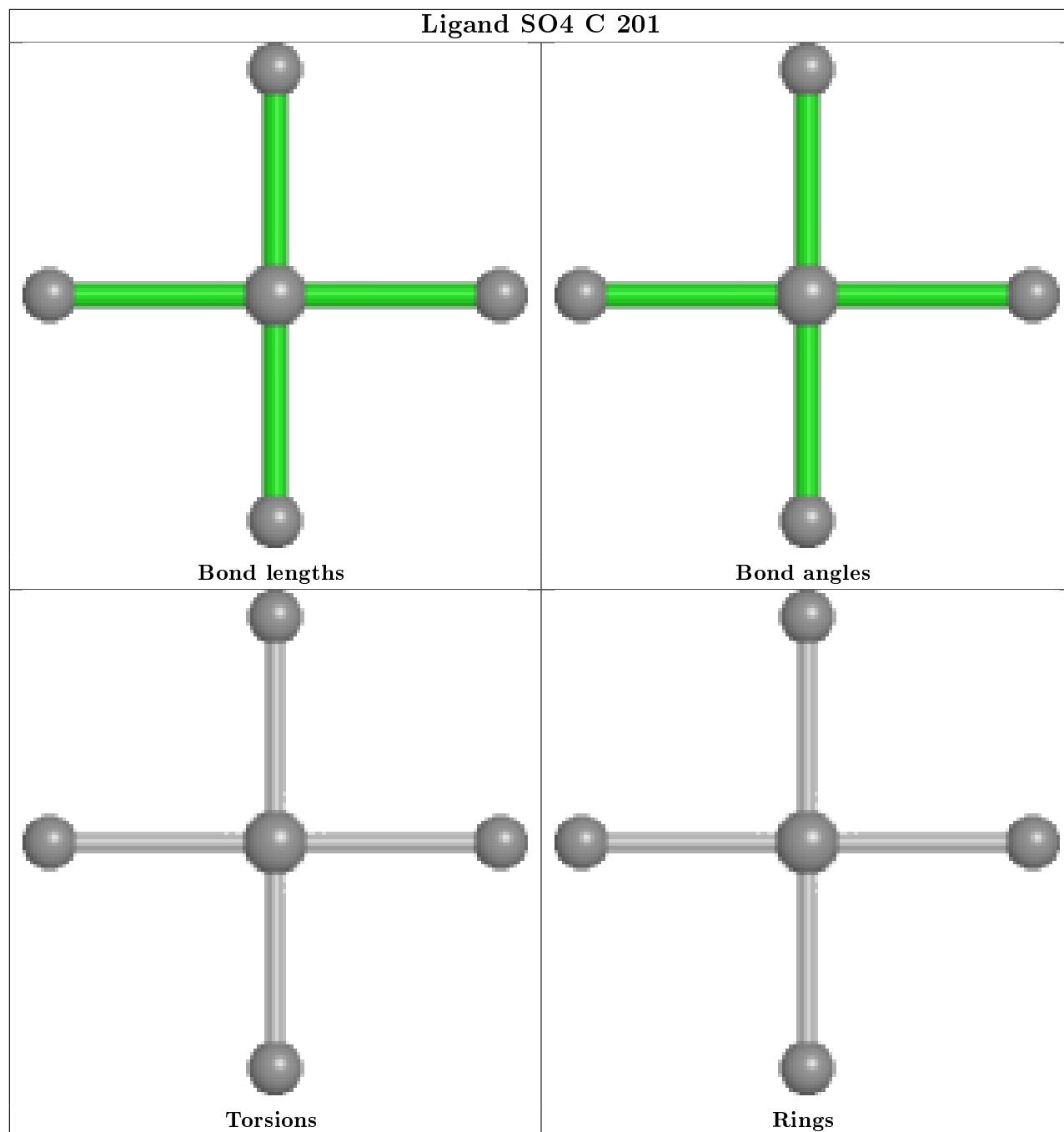












## 5.7 Other polymers [i](#)

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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	162/177 (91%)	-0.14	1 (0%) 89 91	11, 28, 60, 90	0
1	B	167/177 (94%)	-0.36	1 (0%) 89 91	10, 21, 39, 57	0
1	C	163/177 (92%)	-0.09	4 (2%) 57 65	13, 34, 65, 89	0
1	D	158/177 (89%)	-0.06	6 (3%) 40 49	14, 31, 63, 77	0
All	All	650/708 (91%)	-0.17	12 (1%) 68 75	10, 28, 60, 90	0

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	141	ASP	4.4
1	D	153	ASP	2.7
1	D	2	THR	2.6
1	D	137	ARG	2.5
1	C	95	ASP	2.5
1	D	136	ALA	2.3
1	C	121	TYR	2.2
1	C	72	GLY	2.1
1	C	34	GLY	2.1
1	B	2	THR	2.1
1	D	141	ASP	2.0
1	D	6	GLU	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 carbohydrates in this entry.

## 6.4 Ligands

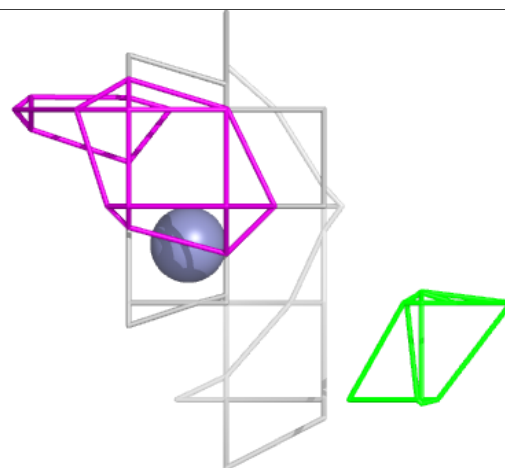
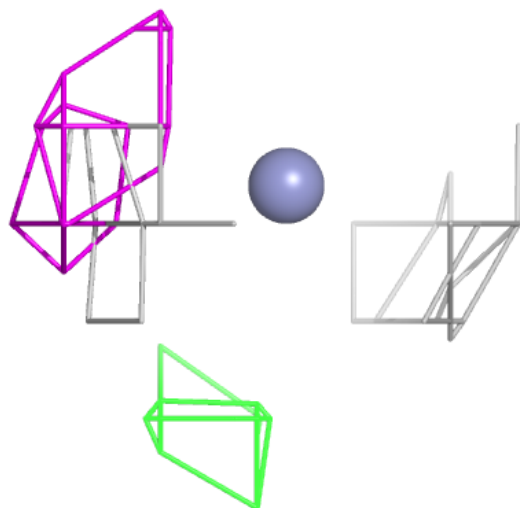
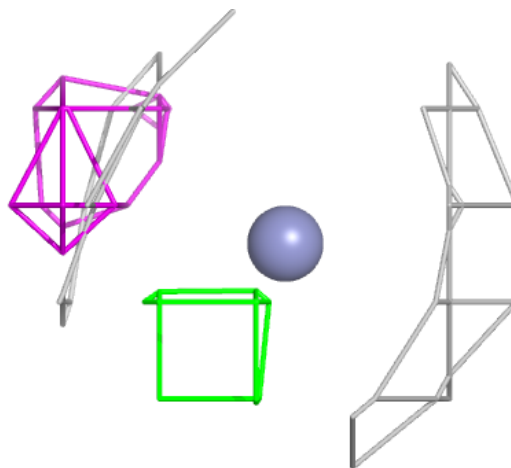
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	ZN	A	204	1/1	0.94	0.10	86,86,86,86	0
2	SO4	C	202	5/5	0.95	0.12	45,51,54,61	0
2	SO4	D	202	5/5	0.96	0.10	54,55,58,63	0
3	ZN	C	204	1/1	0.98	0.04	36,36,36,36	0
2	SO4	C	201	5/5	0.98	0.07	31,35,37,42	0
2	SO4	A	202	5/5	0.98	0.08	29,33,38,41	0
2	SO4	D	201	5/5	0.99	0.06	26,31,32,35	0
2	SO4	A	201	5/5	0.99	0.08	33,34,39,43	0
3	ZN	D	204	1/1	0.99	0.04	30,30,30,30	0
2	SO4	B	201	5/5	0.99	0.06	19,20,22,23	0
3	ZN	B	202	1/1	1.00	0.07	17,17,17,17	0
3	ZN	A	203	1/1	1.00	0.06	32,32,32,32	0
3	ZN	D	203	1/1	1.00	0.04	36,36,36,36	0
3	ZN	C	203	1/1	1.00	0.04	35,35,35,35	0
3	ZN	B	203	1/1	1.00	0.02	37,37,37,37	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.

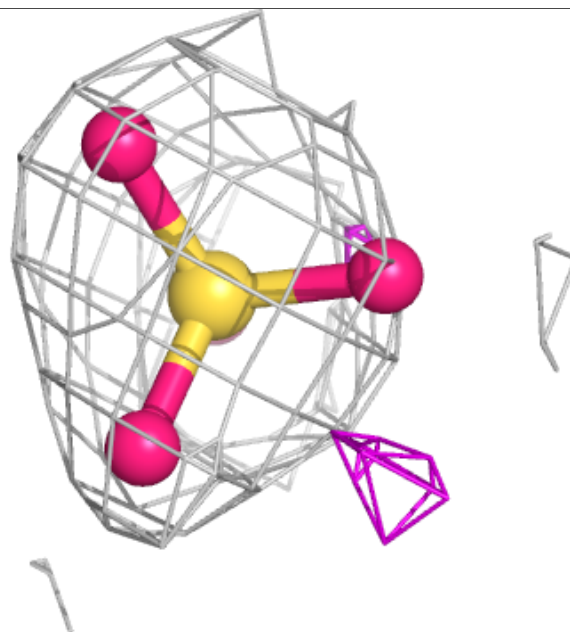
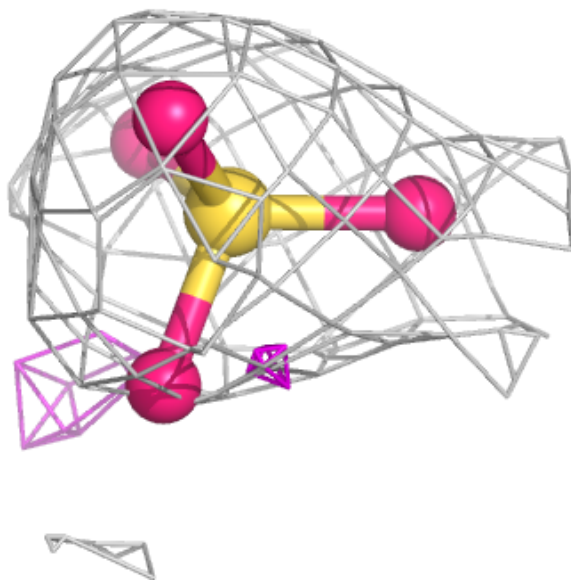
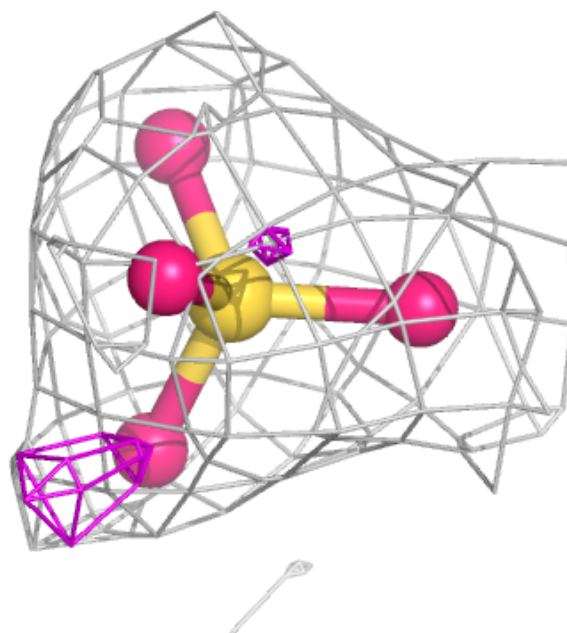
**Electron density around ZN A 204:**

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



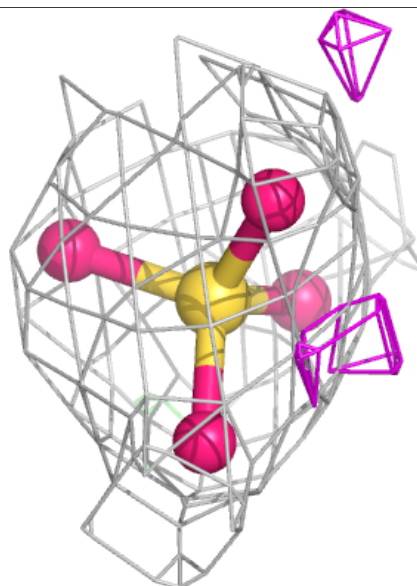
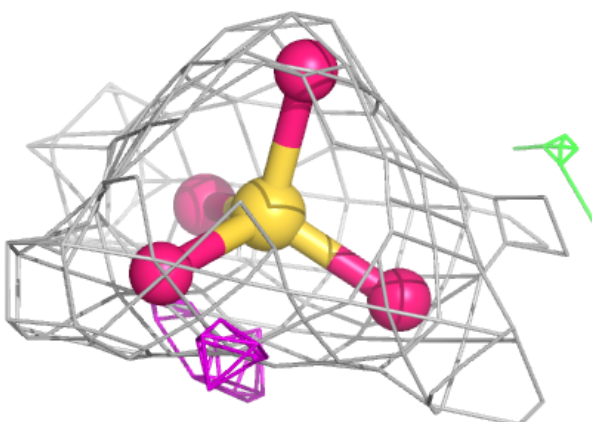
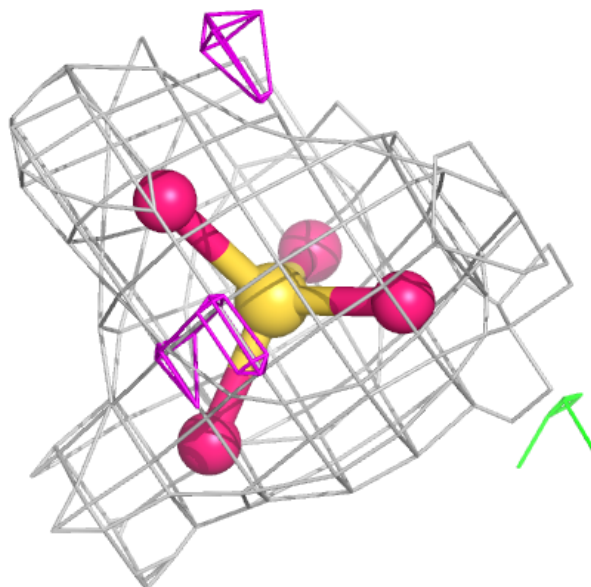
**Electron density around SO4 C 202:**

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



**Electron density around SO4 D 202:**

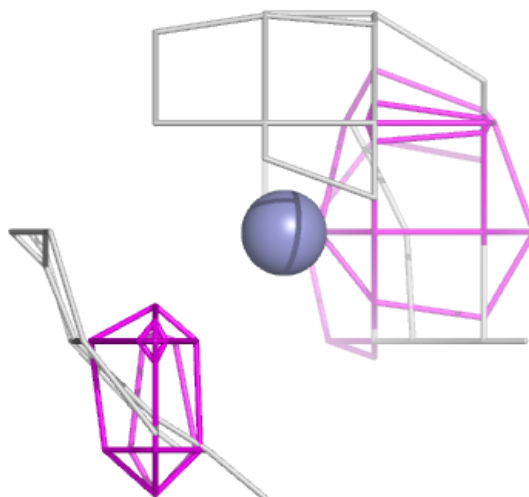
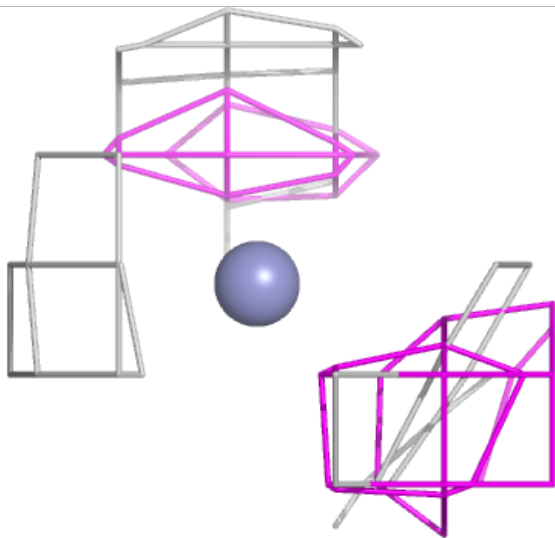
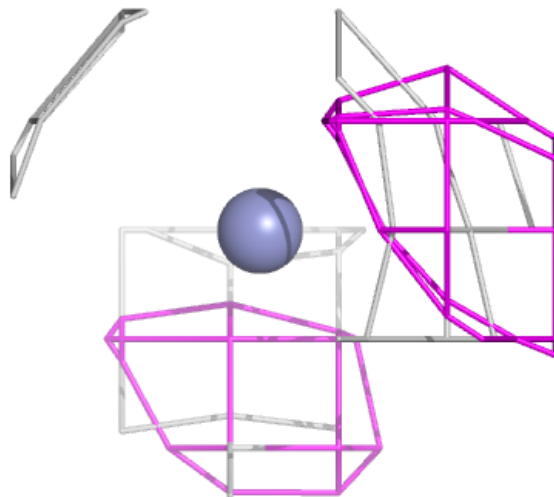
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





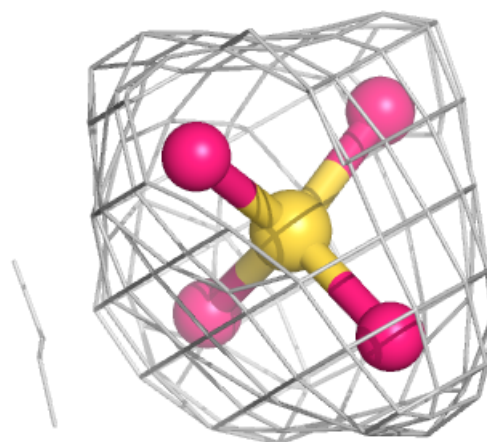
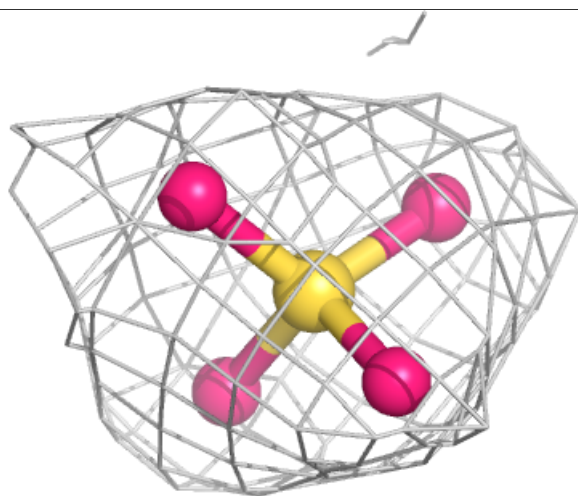
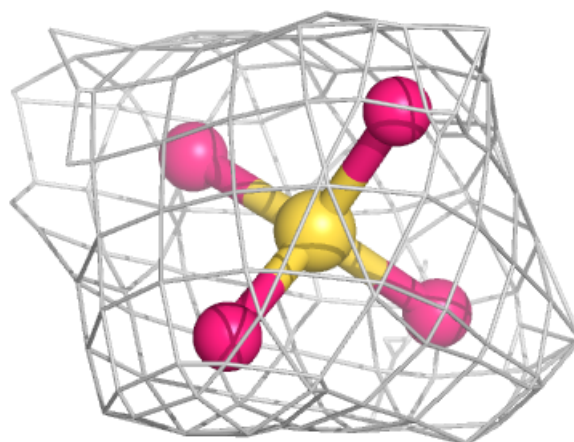
**Electron density around ZN C 204:**

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



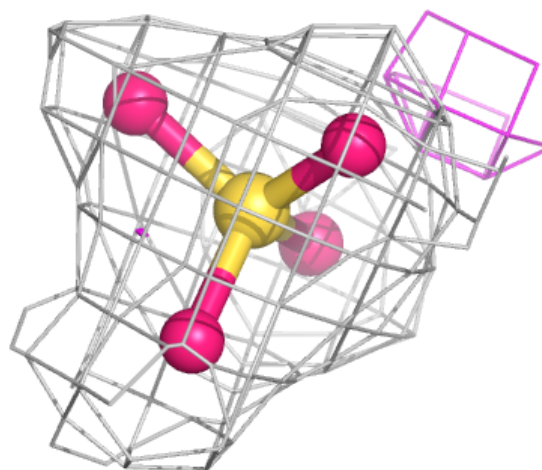
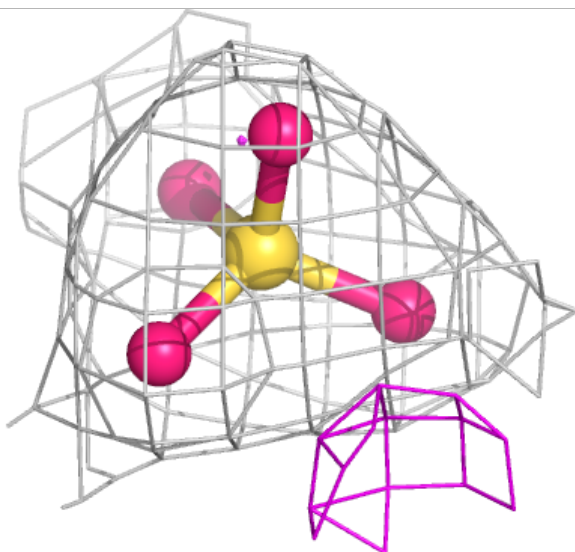
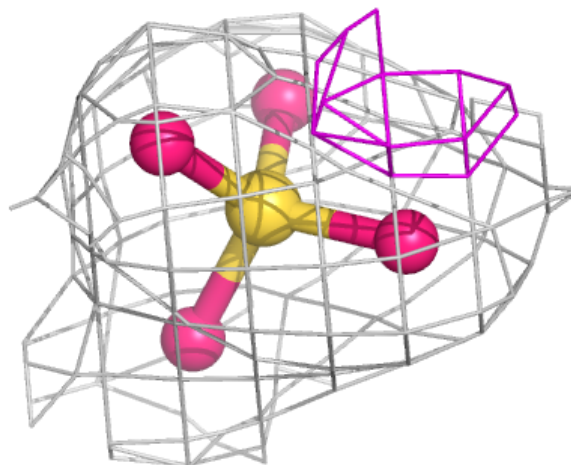
**Electron density around SO4 C 201:**

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



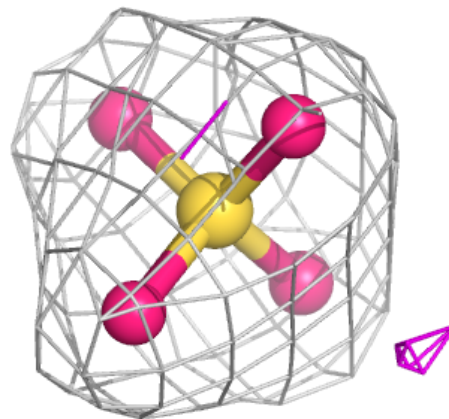
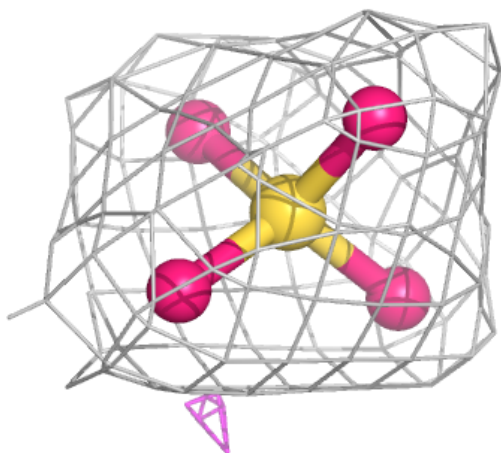
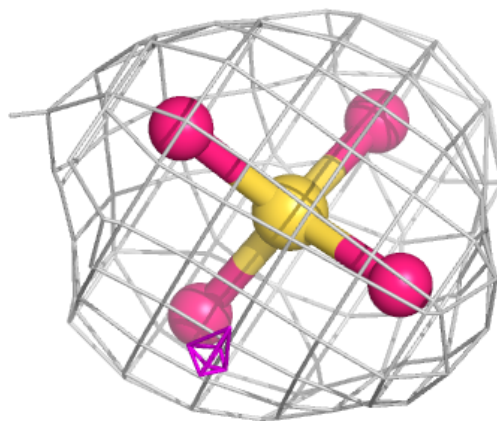
**Electron density around SO4 A 202:**

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



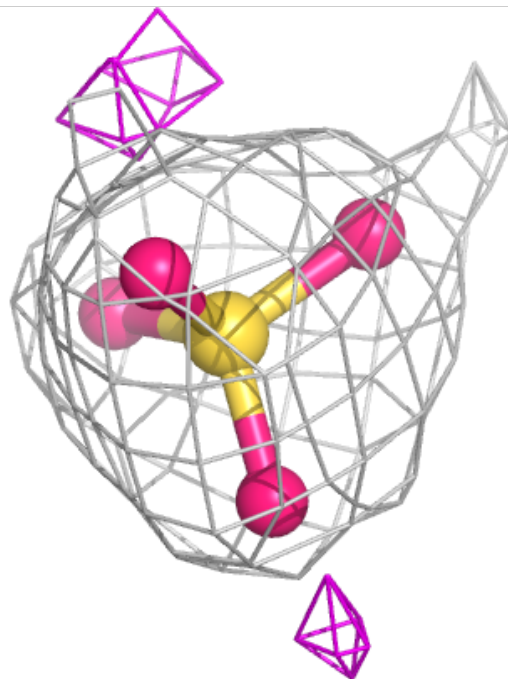
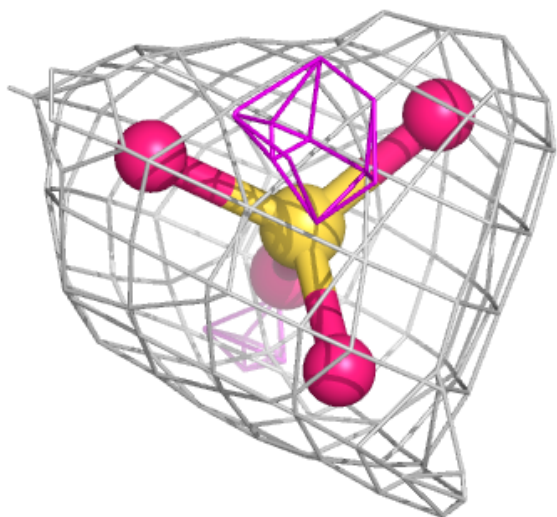
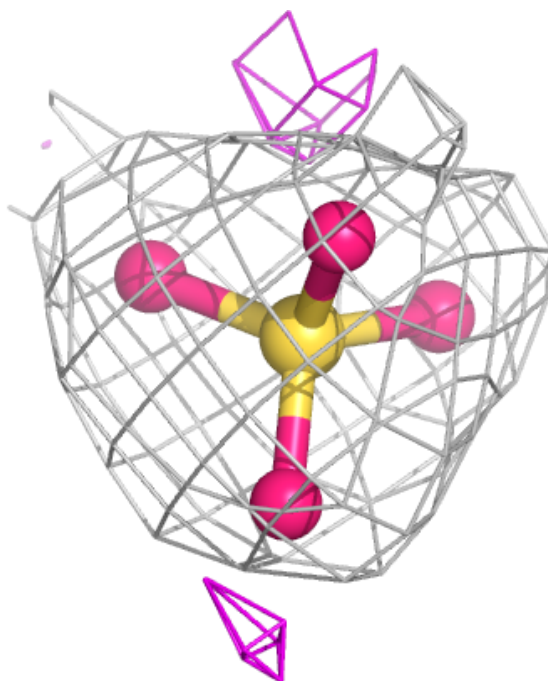
**Electron density around SO4 D 201:**

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



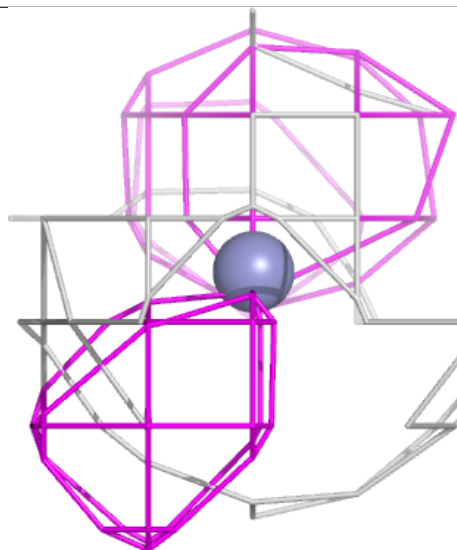
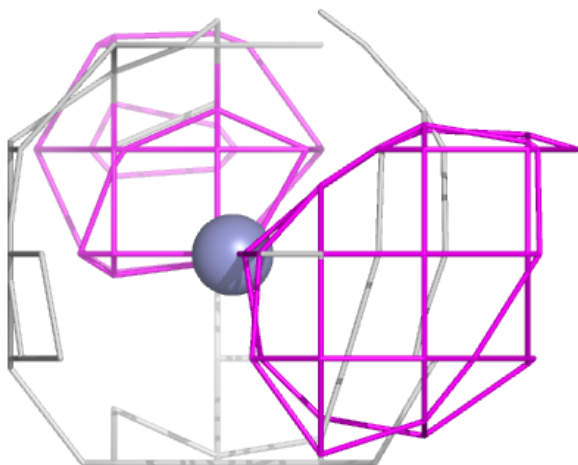
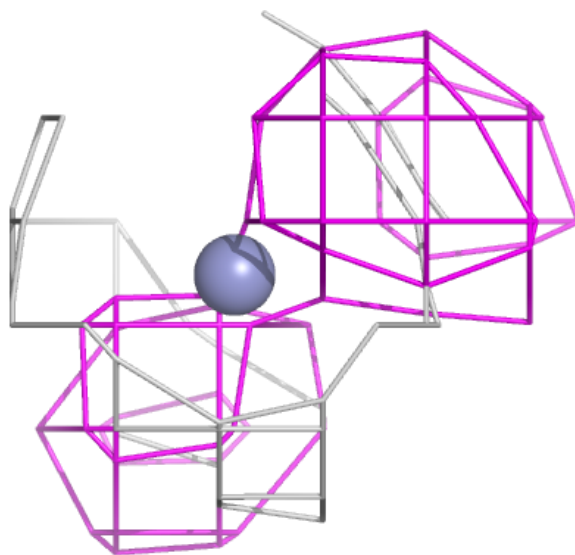
**Electron density around SO4 A 201:**

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



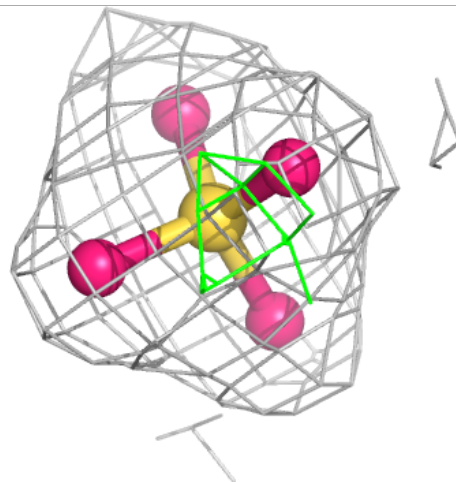
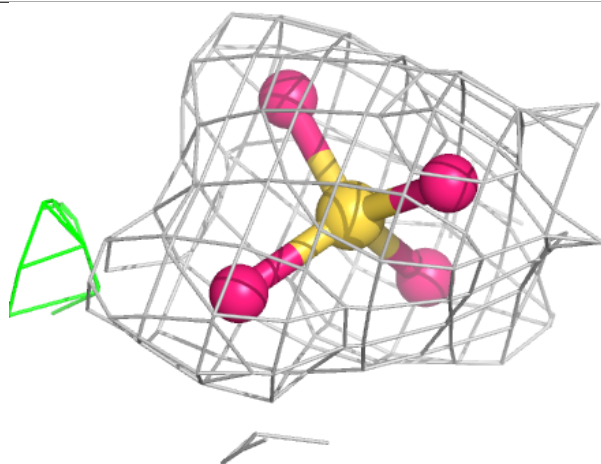
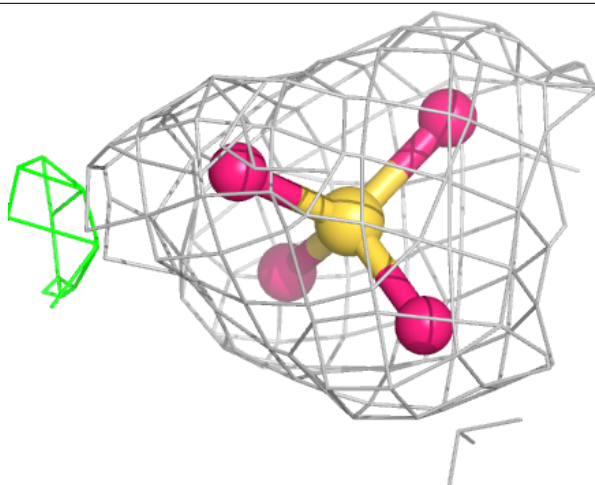
**Electron density around ZN D 204:**

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



**Electron density around SO4 B 201:**

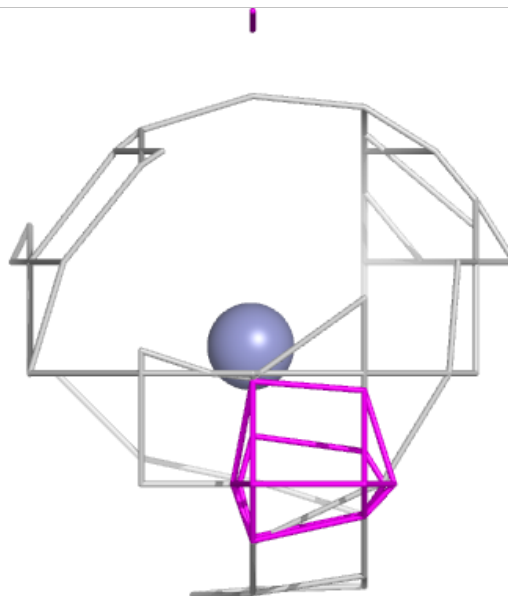
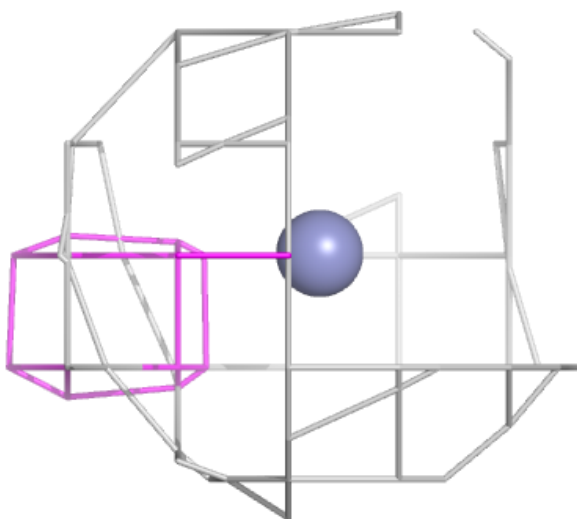
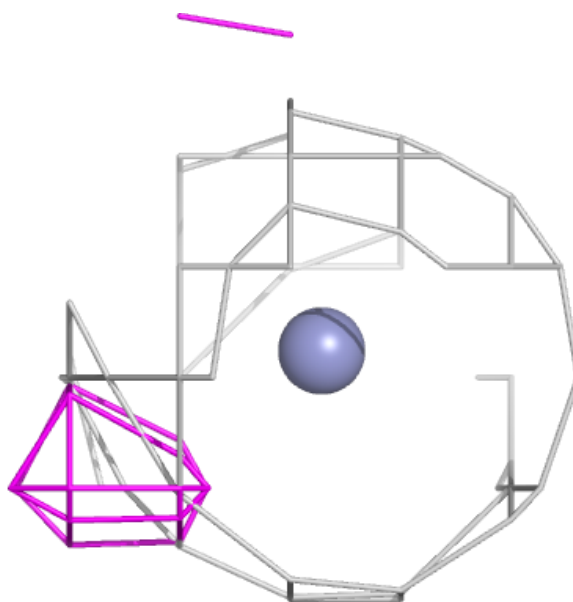
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





**Electron density around ZN B 202:**

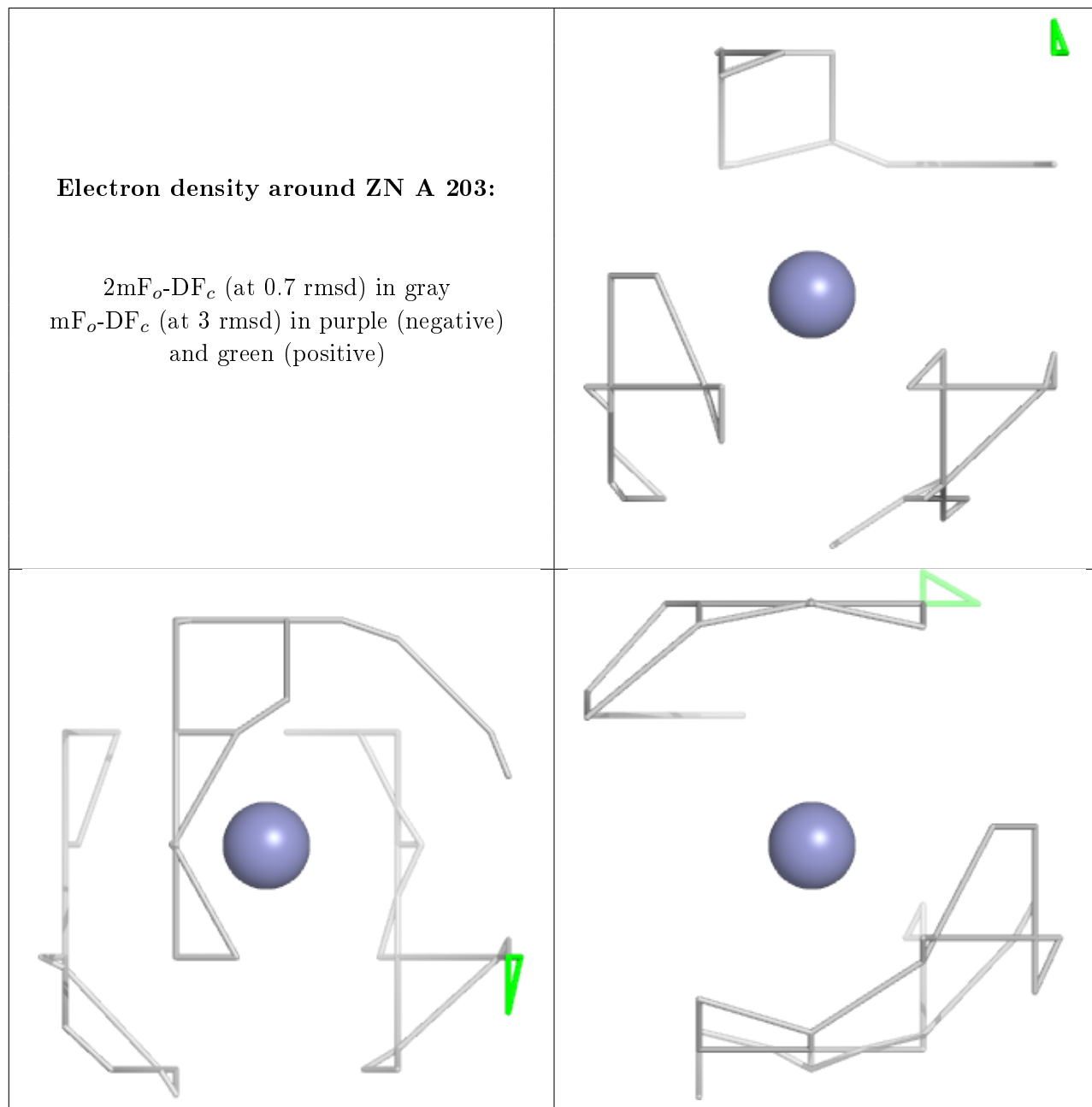
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





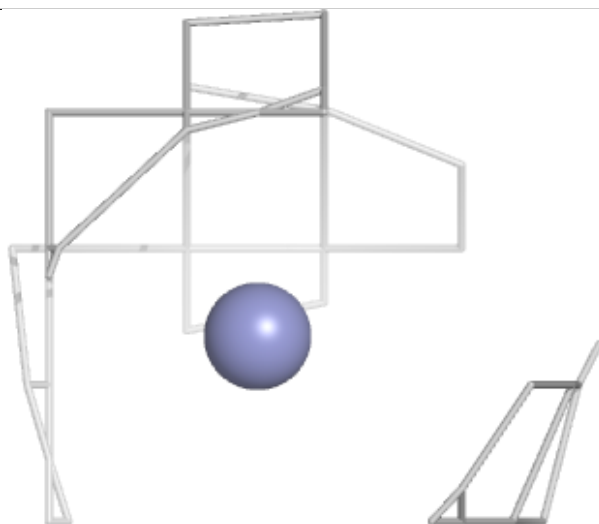
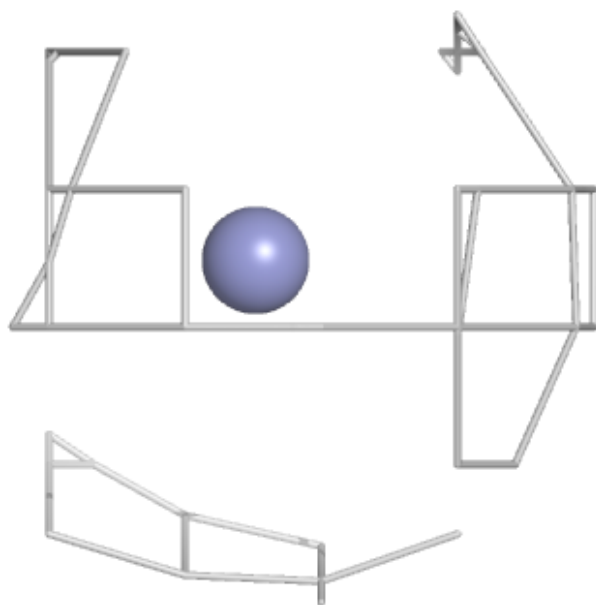
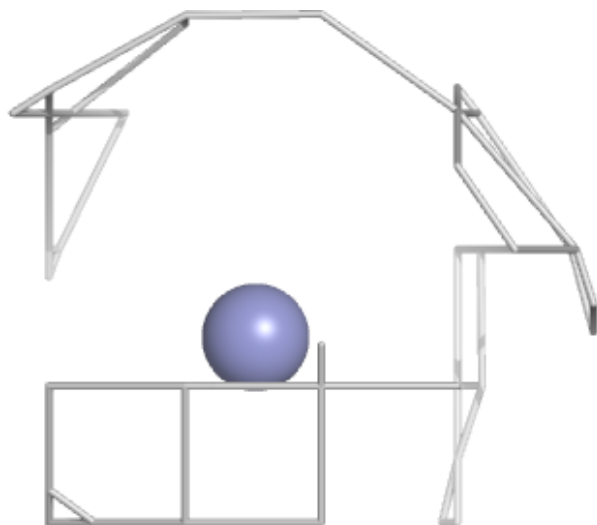
**Electron density around ZN A 203:**

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



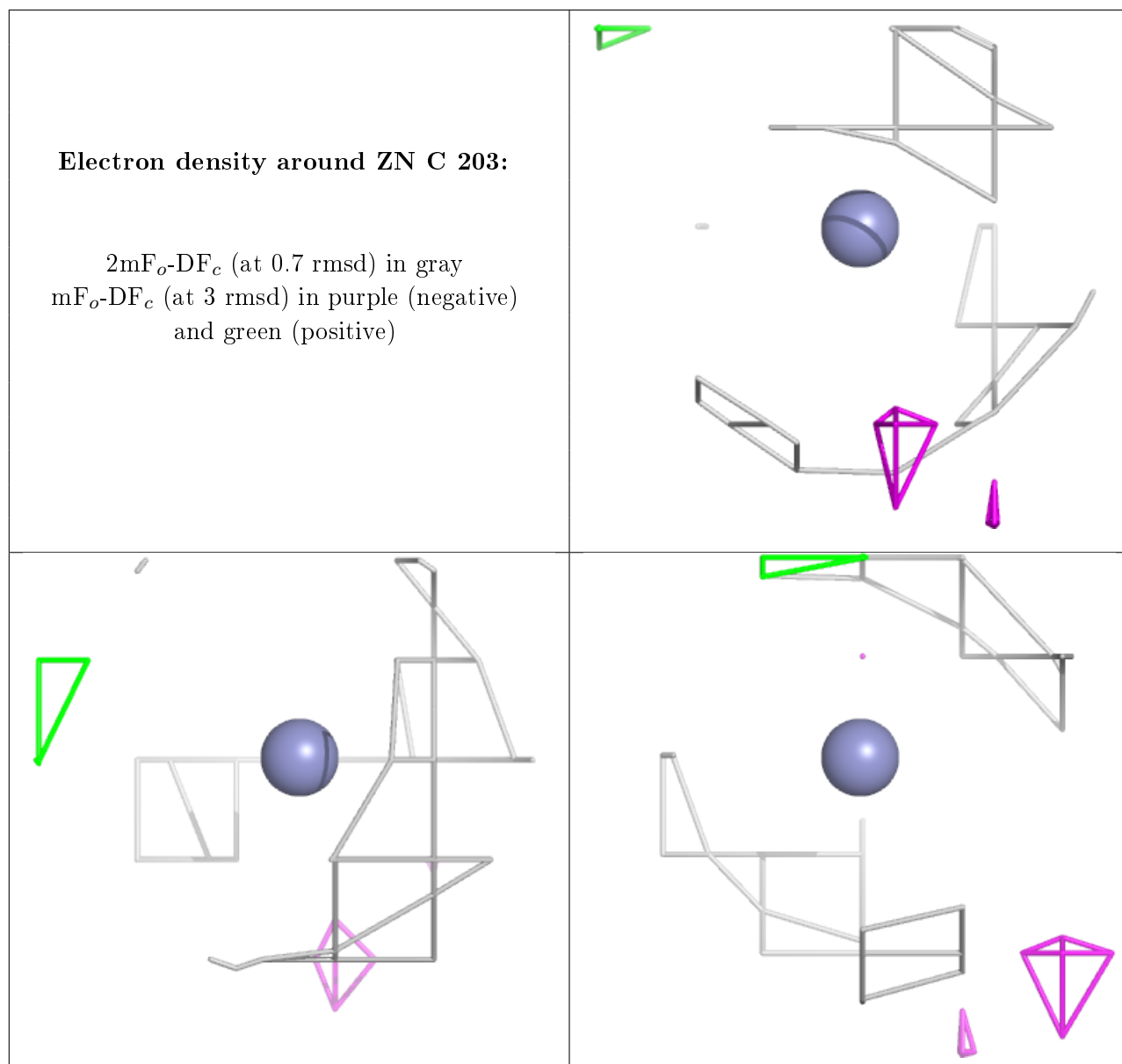
**Electron density around ZN D 203:**

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



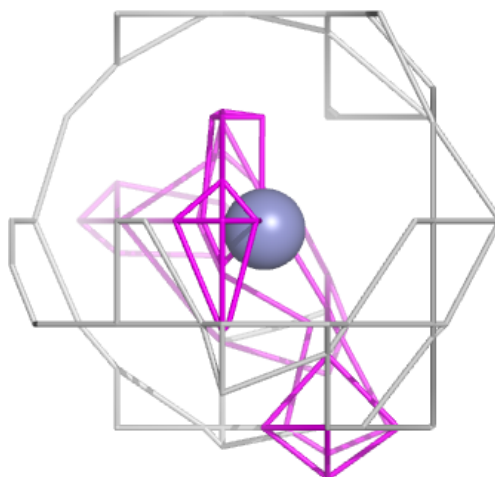
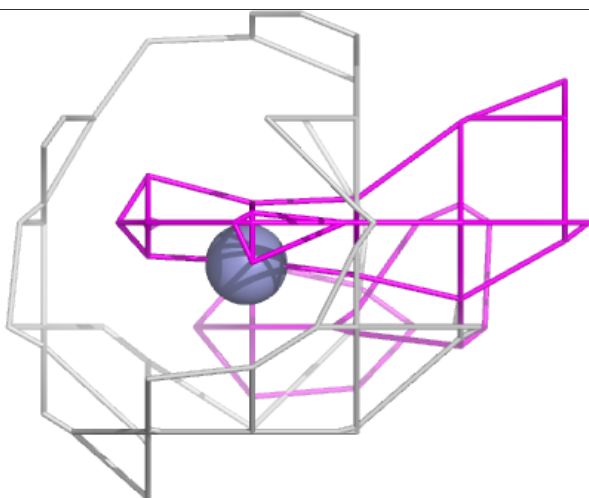
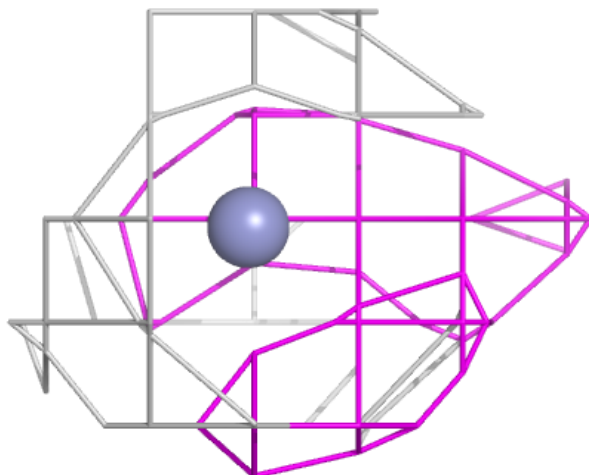
**Electron density around ZN C 203:**

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



**Electron density around ZN B 203:**

$2mF_o-DF_c$  (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.