



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 5, 2026 – 06:51 PM UTC

PDB ID : 1JMU / pdb_00001jmu
Title : Crystal Structure of the Reovirus mu1/sigma3 Complex
Authors : Liemann, S.; Nibert, M.L.; Harrison, S.C.
Deposited on : 2001-07-20
Resolution : 2.80 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

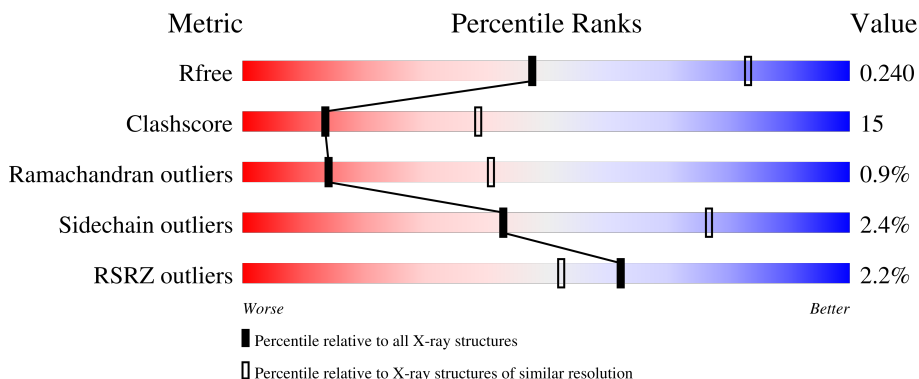
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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.



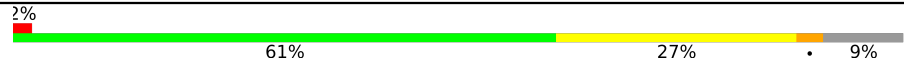

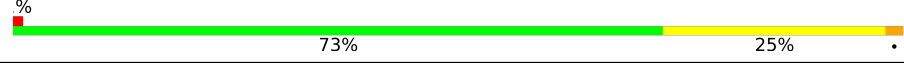

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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 $\leq 5\%$. 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	41	 46% 32% 20%
1	C	41	 51% 27% 20%
1	E	41	 46% 32% 20%
2	B	666	 2% 62% 27% 9%
2	D	666	 4% 62% 27% 9%

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Mol	Chain	Length	Quality of chain
2	F	666	
3	G	366	
3	H	366	
3	I	366	

2 Entry composition i

There are 8 unique types of molecules in this entry. The entry contains 23657 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 PROTEIN MU-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	33	230	141	37	51	1	0	0	0
1	C	33	230	141	37	51	1	0	0	0
1	E	33	230	141	37	51	1	0	0	0

- Molecule 2 is a protein called PROTEIN MU-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	608	4641	2950	770	903	18	0	0	0
2	D	608	4641	2950	770	903	18	0	0	0
2	F	608	4641	2950	770	903	18	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	272	PRO	LEU	SEE REMARK 999	UNP P11077
B	284	LYS	ARG	SEE REMARK 999	UNP P11077
B	344	LEU	PRO	SEE REMARK 999	UNP P11077
B	359	PHE	LEU	SEE REMARK 999	UNP P11077
D	272	PRO	LEU	SEE REMARK 999	UNP P11077
D	284	LYS	ARG	SEE REMARK 999	UNP P11077
D	344	LEU	PRO	SEE REMARK 999	UNP P11077
D	359	PHE	LEU	SEE REMARK 999	UNP P11077
F	272	PRO	LEU	SEE REMARK 999	UNP P11077
F	284	LYS	ARG	SEE REMARK 999	UNP P11077
F	344	LEU	PRO	SEE REMARK 999	UNP P11077
F	359	PHE	LEU	SEE REMARK 999	UNP P11077

- Molecule 3 is a protein called SIGMA 3 PROTEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	G	366	Total 2888	C 1820	N 508	O 532	S 28	0	0	0
3	H	366	Total 2888	C 1820	N 508	O 532	S 28	0	0	0
3	I	366	Total 2888	C 1820	N 508	O 532	S 28	0	0	0

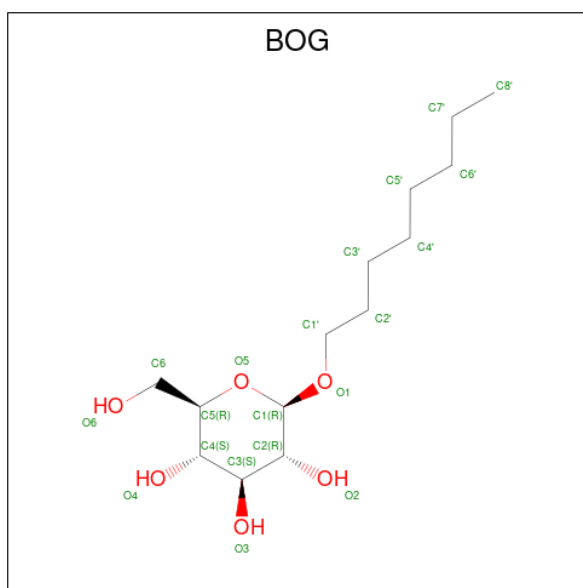
There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	104	CYS	ALA	engineered mutation	UNP Q86292
G	325	ASN	ASP	SEE REMARK 999	UNP Q86292
H	104	CYS	ALA	engineered mutation	UNP Q86292
H	325	ASN	ASP	SEE REMARK 999	UNP Q86292
I	104	CYS	ALA	engineered mutation	UNP Q86292
I	325	ASN	ASP	SEE REMARK 999	UNP Q86292

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

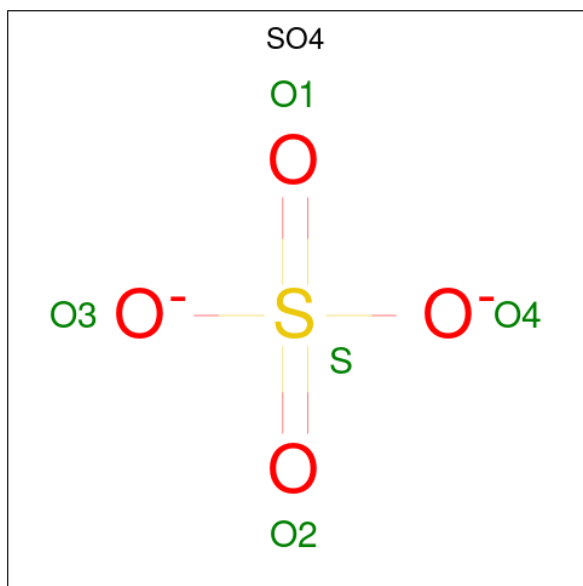
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total 1	Cl 1	0

- Molecule 5 is octyl beta-D-glucopyranoside (CCD ID: BOG) (formula: C₁₄H₂₈O₆).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	B	1	Total	C	O	0	0
			20	14	6		
5	D	1	Total	C	O	0	0
			20	14	6		
5	F	1	Total	C	O	0	0
			20	14	6		

- Molecule 6 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



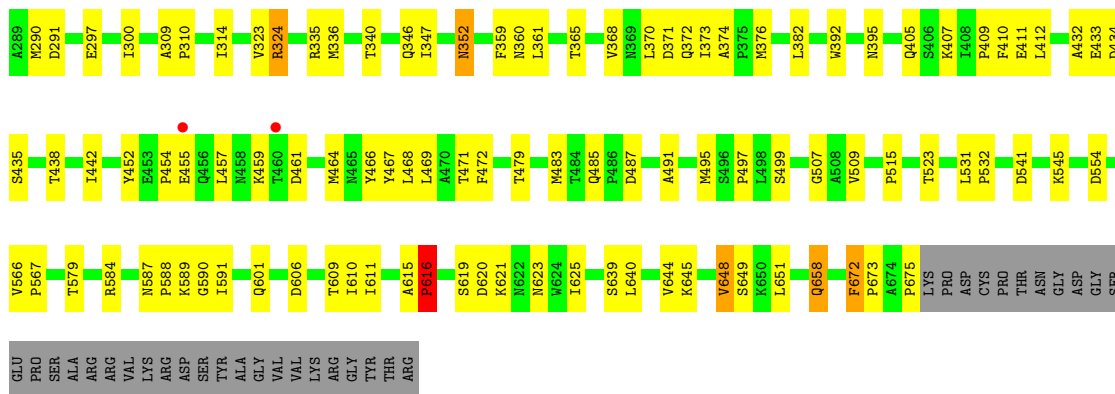
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	B	1	Total	O	S	0	0
			5	4	1		
6	D	1	Total	O	S	0	0
			5	4	1		
6	F	1	Total	O	S	0	0
			5	4	1		
6	G	1	Total	O	S	0	0
			5	4	1		
6	G	1	Total	O	S	0	0
			5	4	1		
6	H	1	Total	O	S	0	0
			5	4	1		
6	H	1	Total	O	S	0	0
			5	4	1		
6	I	1	Total	O	S	0	0
			5	4	1		
6	I	1	Total	O	S	0	0
			5	4	1		

- Molecule 7 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	G	1	Total Zn 1 1	0	0
7	H	1	Total Zn 1 1	0	0
7	I	1	Total Zn 1 1	0	0

- Molecule 8 is water.

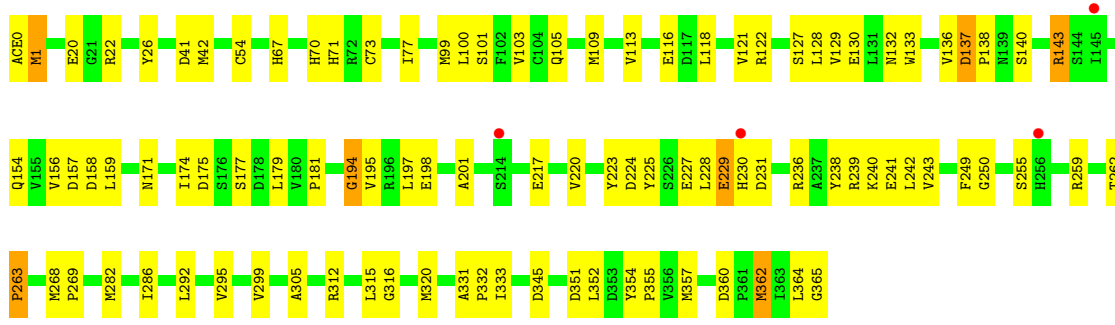
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	5	Total O 5 5	0	0
8	B	42	Total O 42 42	0	0
8	C	2	Total O 2 2	0	0
8	D	46	Total O 46 46	0	0
8	E	1	Total O 1 1	0	0
8	F	56	Total O 56 56	0	0
8	G	41	Total O 41 41	0	0
8	H	45	Total O 45 45	0	0
8	I	33	Total O 33 33	0	0



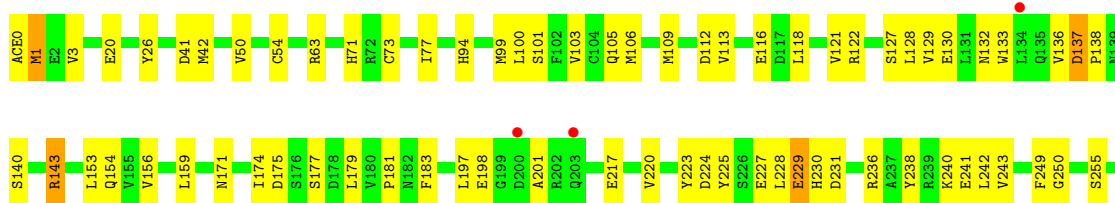
• Molecule 3: SIGMA 3 PROTEIN



• Molecule 3: SIGMA 3 PROTEIN



• Molecule 3: SIGMA 3 PROTEIN





4 Data and refinement statistics i

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	180.29Å 184.94Å 284.32Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	35.00 – 2.80 35.00 – 2.81	Depositor EDS
% Data completeness (in resolution range)	93.6 (35.00-2.80) 93.6 (35.00-2.81)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.87 (at 2.81Å)	Xtrriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.216 , 0.241 0.216 , 0.240	Depositor DCC
R_{free} test set	5422 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	49.0	Xtrriage
Anisotropy	0.838	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 39.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.006 for k,h,-l	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	23657	wwPDB-VP
Average B, all atoms (Å ²)	55.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.39% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ACE, ZN, SO4, CL, BOG

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	0.48	0/233	1.02	1/317 (0.3%)
1	C	0.47	0/233	1.00	1/317 (0.3%)
1	E	0.41	0/233	1.01	1/317 (0.3%)
2	B	0.55	2/4737 (0.0%)	0.96	18/6466 (0.3%)
2	D	0.55	2/4737 (0.0%)	0.96	16/6466 (0.2%)
2	F	0.55	2/4737 (0.0%)	0.97	20/6466 (0.3%)
3	G	0.51	0/2958	0.95	11/4007 (0.3%)
3	H	0.51	0/2958	0.96	13/4007 (0.3%)
3	I	0.49	0/2958	0.97	15/4007 (0.4%)
All	All	0.53	6/23784 (0.0%)	0.96	96/32370 (0.3%)

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	258	MET	SD-CE	6.07	1.94	1.79
2	F	173	MET	SD-CE	5.44	1.93	1.79
2	F	116	MET	SD-CE	5.25	1.92	1.79
2	D	173	MET	SD-CE	5.24	1.92	1.79
2	B	173	MET	SD-CE	5.16	1.92	1.79

The worst 5 of 96 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	H	20	GLU	N-CA-C	-8.47	101.63	114.16
3	I	20	GLU	N-CA-C	-8.12	102.14	114.16
2	B	134	SER	CA-C-N	8.09	129.96	119.84
2	B	134	SER	C-N-CA	8.09	129.96	119.84
2	D	134	SER	CA-C-N	8.06	129.91	119.84

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	230	0	227	17	0
1	C	230	0	227	15	0
1	E	230	0	227	16	0
2	B	4641	0	4673	169	0
2	D	4641	0	4673	166	0
2	F	4641	0	4673	174	0
3	G	2888	0	2814	70	0
3	H	2888	0	2814	67	0
3	I	2888	0	2814	68	0
4	A	1	0	0	0	0
5	B	20	0	28	2	0
5	D	20	0	28	1	0
5	F	20	0	28	1	0
6	B	5	0	0	0	0
6	D	5	0	0	0	0
6	F	5	0	0	0	0
6	G	10	0	0	0	0
6	H	10	0	0	0	0
6	I	10	0	0	0	0
7	G	1	0	0	0	0
7	H	1	0	0	0	0
7	I	1	0	0	0	0
8	A	5	0	0	2	0
8	B	42	0	0	0	0
8	C	2	0	0	0	0
8	D	46	0	0	0	0
8	E	1	0	0	0	0
8	F	56	0	0	3	0
8	G	41	0	0	0	0
8	H	45	0	0	1	0
8	I	33	0	0	2	0
All	All	23657	0	23226	682	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 15.

The worst 5 of 682 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)
2:B:66:MET:HE1	2:B:144:VAL:HG11	1.18	1.13
2:F:66:MET:HE1	2:F:144:VAL:HG11	1.18	1.11
2:D:66:MET:HE1	2:D:144:VAL:HG11	1.17	1.07
3:H:109:MET:HE2	3:H:129:VAL:HG13	1.37	1.06
2:D:153:ARG:HH11	2:D:153:ARG:HB2	1.24	1.03

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	31/41 (76%)	28 (90%)	3 (10%)	0	100	100
1	C	31/41 (76%)	28 (90%)	3 (10%)	0	100	100
1	E	31/41 (76%)	27 (87%)	4 (13%)	0	100	100
2	B	604/666 (91%)	560 (93%)	38 (6%)	6 (1%)	12	38
2	D	604/666 (91%)	561 (93%)	37 (6%)	6 (1%)	12	38
2	F	604/666 (91%)	561 (93%)	36 (6%)	7 (1%)	10	34
3	G	364/366 (100%)	336 (92%)	25 (7%)	3 (1%)	16	44
3	H	364/366 (100%)	336 (92%)	25 (7%)	3 (1%)	16	44
3	I	364/366 (100%)	336 (92%)	26 (7%)	2 (0%)	24	55
All	All	2997/3219 (93%)	2773 (92%)	197 (7%)	27 (1%)	14	41

5 of 27 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	616	PRO
2	D	616	PRO
2	F	616	PRO
3	G	1	MET
3	H	1	MET

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	28/34 (82%)	28 (100%)	0	100	100
1	C	28/34 (82%)	28 (100%)	0	100	100
1	E	28/34 (82%)	28 (100%)	0	100	100
2	B	513/561 (91%)	498 (97%)	15 (3%)	37	73
2	D	513/561 (91%)	498 (97%)	15 (3%)	37	73
2	F	513/561 (91%)	498 (97%)	15 (3%)	37	73
3	G	317/317 (100%)	311 (98%)	6 (2%)	50	81
3	H	317/317 (100%)	312 (98%)	5 (2%)	55	83
3	I	317/317 (100%)	311 (98%)	6 (2%)	50	81
All	All	2574/2736 (94%)	2512 (98%)	62 (2%)	43	77

5 of 62 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	D	648	VAL
3	H	345	ASP
2	F	201	THR
3	H	229	GLU
3	I	217	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 52 such sidechains are listed below:

Mol	Chain	Res	Type
2	F	658	GLN
3	G	171	ASN
3	I	256	HIS
3	G	7	ASN
3	G	111	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 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 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$
6	SO4	G	504	-	4,4,4	0.63	0	6,6,6	0.13	0
5	BOG	F	709	-	20,20,20	1.48	5 (25%)	25,25,25	0.69	0
6	SO4	B	710	-	4,4,4	0.50	0	6,6,6	0.18	0
6	SO4	D	710	-	4,4,4	0.53	0	6,6,6	0.10	0
6	SO4	I	509	-	4,4,4	0.64	0	6,6,6	0.11	0
6	SO4	H	508	-	4,4,4	0.67	0	6,6,6	0.14	0
5	BOG	D	709	-	20,20,20	1.40	4 (20%)	25,25,25	0.68	0
6	SO4	G	507	-	4,4,4	0.64	0	6,6,6	0.12	0
6	SO4	H	505	-	4,4,4	0.72	0	6,6,6	0.12	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	BOG	B	709	-	20,20,20	1.42	3 (15%)	25,25,25	0.70	0
6	SO4	F	710	-	4,4,4	0.51	0	6,6,6	0.14	0
6	SO4	I	506	-	4,4,4	0.71	0	6,6,6	0.11	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
5	BOG	B	709	-	-	2/11/31/31	0/1/1/1
5	BOG	D	709	-	-	2/11/31/31	0/1/1/1
5	BOG	F	709	-	-	2/11/31/31	0/1/1/1

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	F	709	BOG	O5-C1	3.37	1.50	1.41
5	D	709	BOG	O5-C1	3.36	1.50	1.41
5	B	709	BOG	O5-C1	3.16	1.50	1.41
5	B	709	BOG	O1-C1	3.04	1.45	1.40
5	F	709	BOG	C4-C5	2.89	1.59	1.53

There are no bond angle outliers.

There are no chirality outliers.

5 of 6 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	709	BOG	O1-C1'-C2'-C3'
5	F	709	BOG	O1-C1'-C2'-C3'
5	F	709	BOG	C3'-C4'-C5'-C6'
5	D	709	BOG	O1-C1'-C2'-C3'
5	D	709	BOG	C3'-C4'-C5'-C6'

There are no ring outliers.

3 monomers are involved in 4 short contacts:

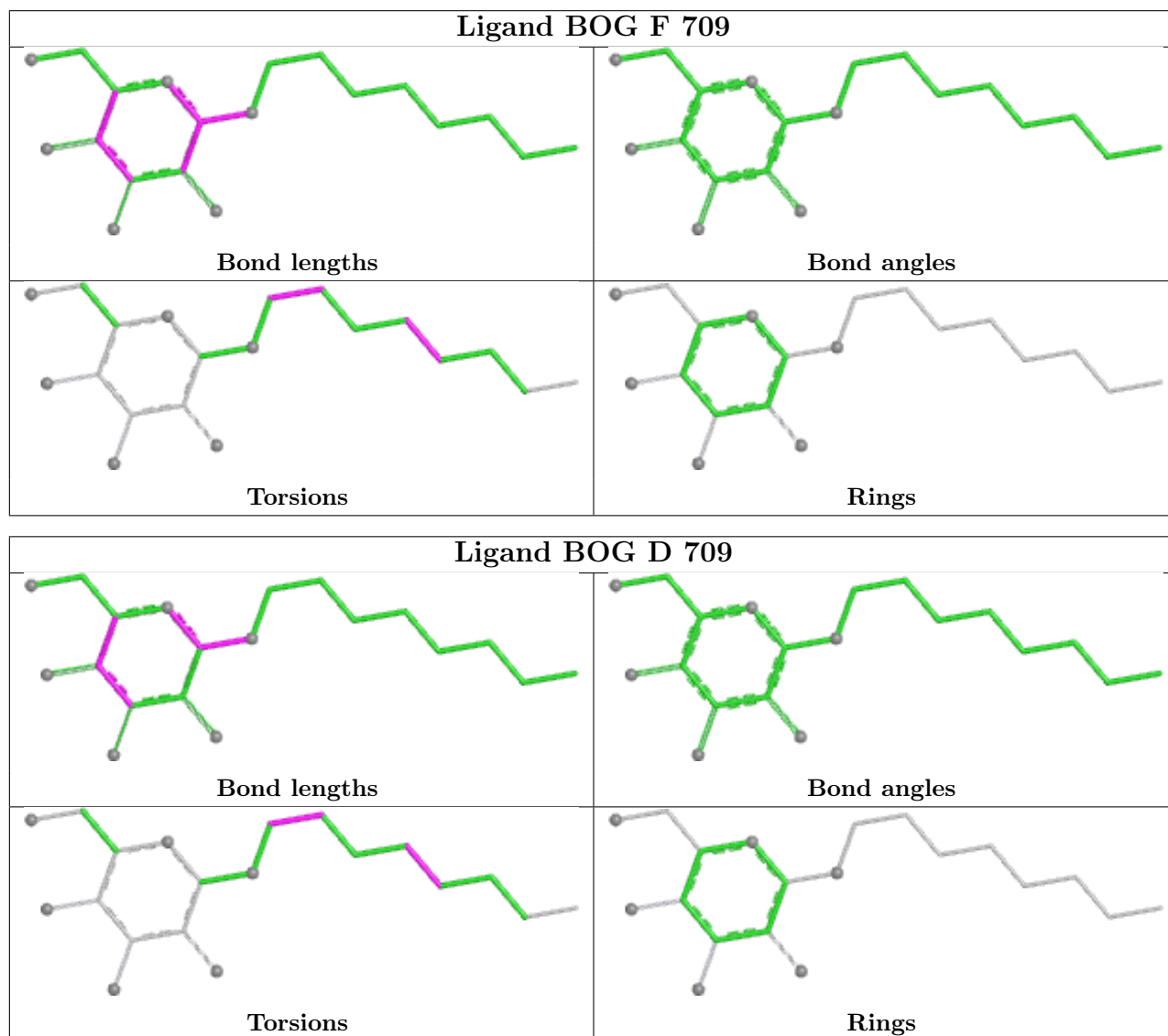
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	F	709	BOG	1	0
5	D	709	BOG	1	0

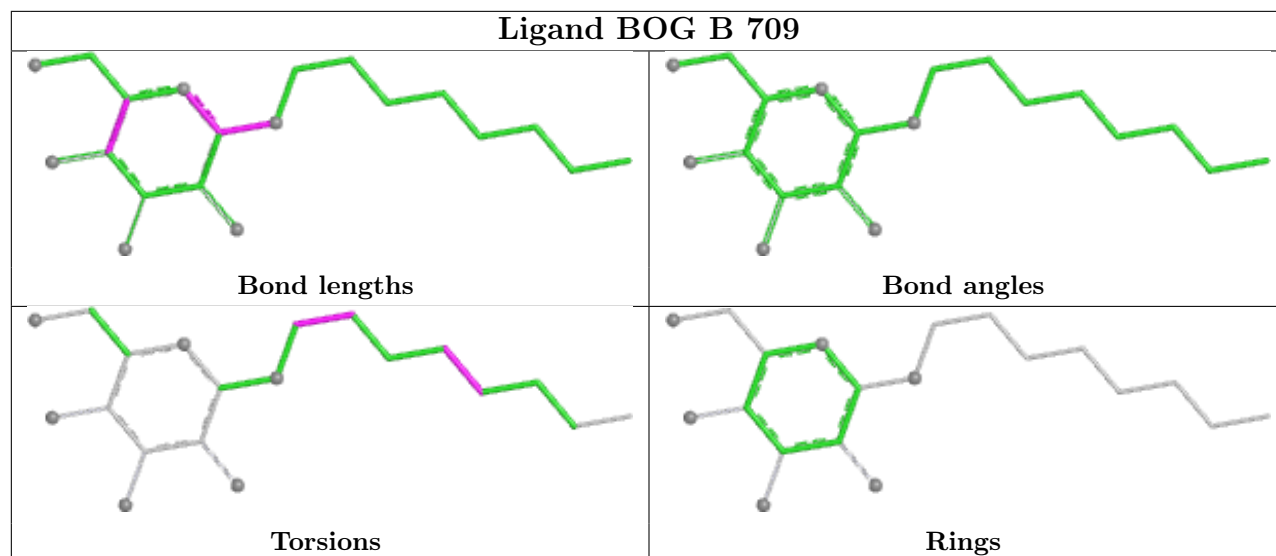
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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	709	BOG	2	0

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 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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	33/41 (80%)	0.47	0 100 100	51, 59, 71, 73	0
1	C	33/41 (80%)	0.29	0 100 100	52, 58, 70, 72	0
1	E	33/41 (80%)	0.28	0 100 100	53, 60, 70, 73	0
2	B	608/666 (91%)	0.11	15 (2%) 58 48	32, 50, 87, 126	0
2	D	608/666 (91%)	0.13	28 (4%) 37 29	32, 50, 87, 125	0
2	F	608/666 (91%)	0.10	13 (2%) 63 54	33, 50, 87, 125	0
3	G	365/366 (99%)	0.09	3 (0%) 82 75	34, 52, 84, 115	0
3	H	365/366 (99%)	0.18	4 (1%) 78 70	34, 52, 84, 114	0
3	I	365/366 (99%)	0.13	4 (1%) 78 70	36, 53, 84, 115	0
All	All	3018/3219 (93%)	0.13	67 (2%) 62 52	32, 51, 86, 126	0

The worst 5 of 67 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	F	131	LEU	4.6
2	D	133	VAL	4.3
2	B	439	ALA	4.3
2	D	43	PRO	4.2
2	B	133	VAL	4.1

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](#)

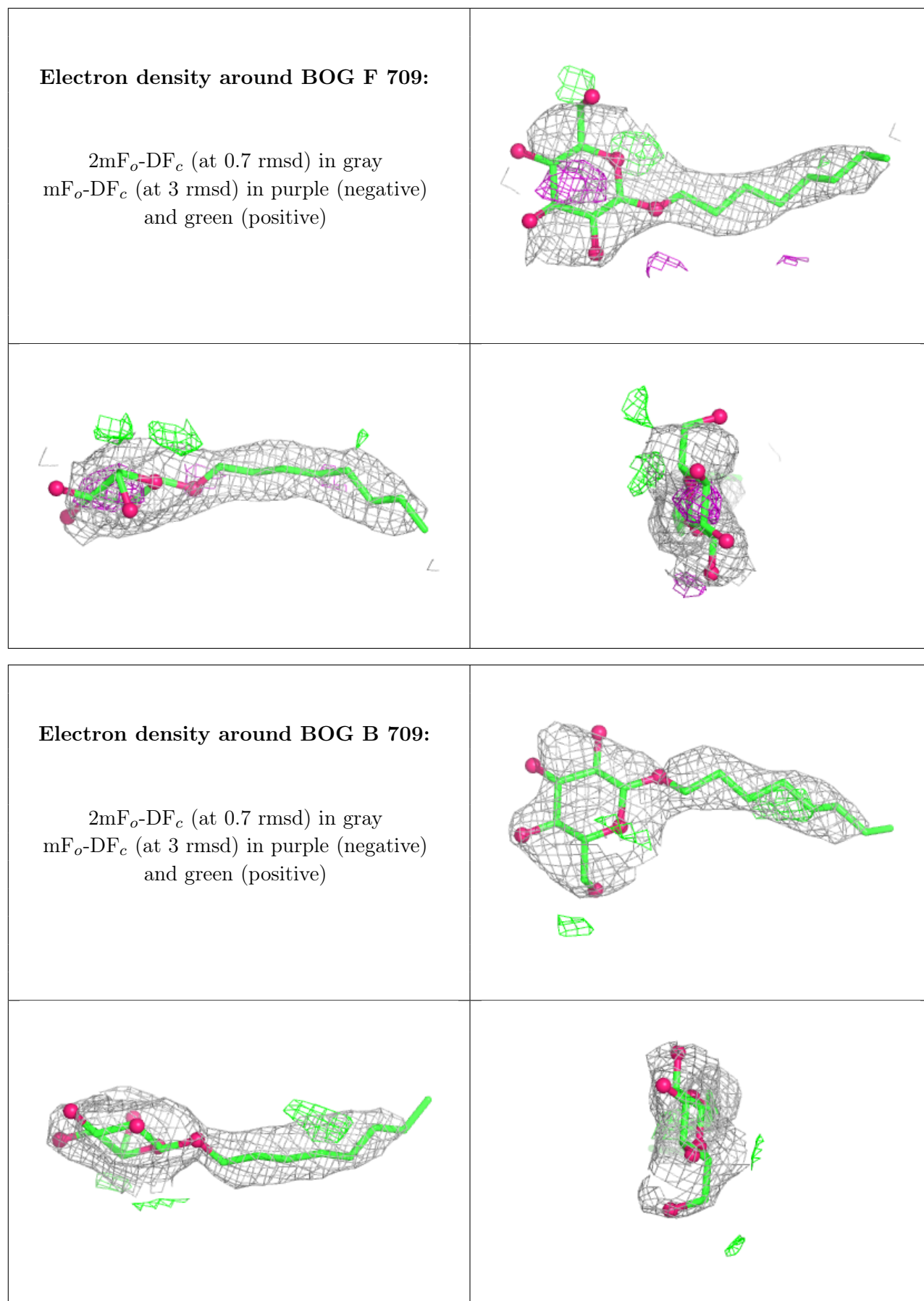
There are no oligosaccharides in this entry.

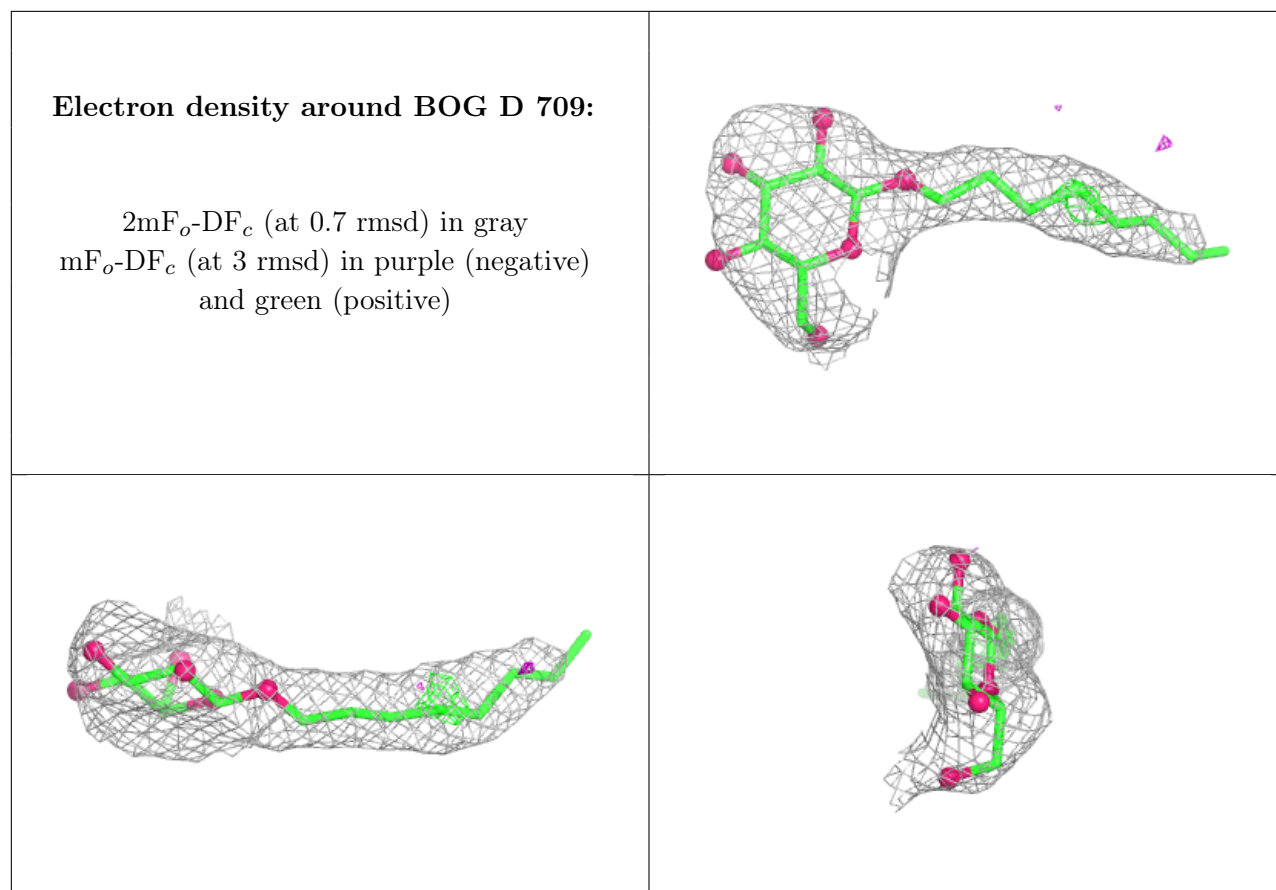
6.4 Ligands

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
6	SO4	I	506	5/5	0.77	0.24	114,114,114,114	0
5	BOG	F	709	20/20	0.80	0.21	70,91,94,95	0
6	SO4	I	509	5/5	0.82	0.15	101,101,102,102	0
5	BOG	B	709	20/20	0.83	0.19	70,91,94,94	0
6	SO4	G	504	5/5	0.83	0.13	112,112,112,112	0
6	SO4	H	508	5/5	0.84	0.21	100,101,101,102	0
6	SO4	G	507	5/5	0.84	0.14	100,101,101,101	0
6	SO4	H	505	5/5	0.84	0.14	114,114,114,115	0
6	SO4	B	710	5/5	0.86	0.11	69,69,70,71	0
5	BOG	D	709	20/20	0.90	0.15	68,89,92,93	0
6	SO4	D	710	5/5	0.90	0.09	69,69,70,70	0
4	CL	A	601	1/1	0.91	0.28	76,76,76,76	0
6	SO4	F	710	5/5	0.92	0.09	70,71,71,72	0
7	ZN	I	701	1/1	0.99	0.02	52,52,52,52	0
7	ZN	H	703	1/1	1.00	0.03	45,45,45,45	0
7	ZN	G	702	1/1	1.00	0.01	39,39,39,39	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.





6.5 Other polymers [i](#)

There are no such residues in this entry.