



# wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 20, 2026 – 09:19 AM UTC

PDB ID : 9HAO / pdb\_00009hao  
Title : BDM91531 inhibitor bound to the transmembrane domain of AcrB  
Authors : Mueller, R.T.; Herrmann, A.; Pos, K.M.  
Deposited on : 2024-11-04  
Resolution : 1.94 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](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.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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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	:	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

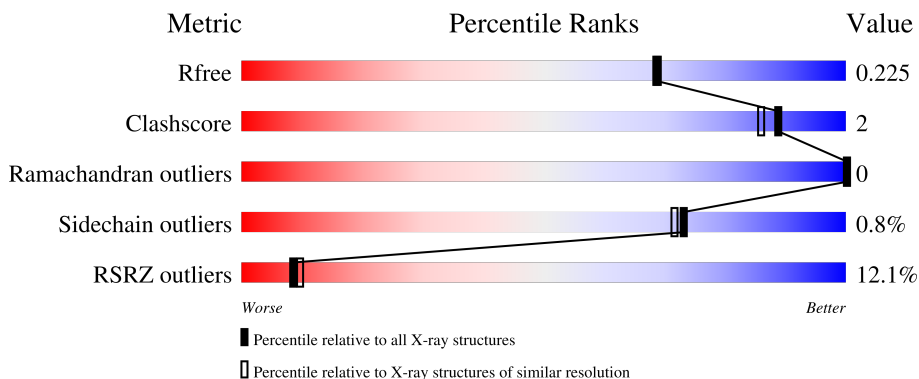
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.94 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	1452 (1.94-1.94)
Clashscore	190562	1494 (1.94-1.94)
Ramachandran outliers	187476	1479 (1.94-1.94)
Sidechain outliers	187428	1479 (1.94-1.94)
RSRZ outliers	180081	1453 (1.94-1.94)

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  $\geq 3$ , 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	1057	<div> <div>22%</div> <div>89%</div> <div>8%</div> </div>
1	B	1057	<div> <div>9%</div> <div>94%</div> <div>• •</div> </div>
1	C	1057	<div> <div>5%</div> <div>93%</div> <div>• •</div> </div>
2	D	169	<div> <div>8%</div> <div>89%</div> <div>• 8%</div> </div>
2	E	169	<div> <div>14%</div> <div>89%</div> <div>• 9%</div> </div>

## 2 Entry composition

There are 16 unique types of molecules in this entry. The entry contains 56249 atoms, of which 27795 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 Multidrug efflux pump subunit AcrB.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	1031	Total	C	H	N	O	S	0	2	0
			15866	5055	8012	1295	1459	45			
1	B	1034	Total	C	H	N	O	S	0	2	0
			15880	5060	8017	1297	1461	45			
1	C	1034	Total	C	H	N	O	S	0	2	0
			15907	5066	8033	1303	1461	44			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1050	LEU	-	expression tag	UNP P31224
A	1051	GLU	-	expression tag	UNP P31224
A	1052	HIS	-	expression tag	UNP P31224
A	1053	HIS	-	expression tag	UNP P31224
A	1054	HIS	-	expression tag	UNP P31224
A	1055	HIS	-	expression tag	UNP P31224
A	1056	HIS	-	expression tag	UNP P31224
A	1057	HIS	-	expression tag	UNP P31224
B	1050	LEU	-	expression tag	UNP P31224
B	1051	GLU	-	expression tag	UNP P31224
B	1052	HIS	-	expression tag	UNP P31224
B	1053	HIS	-	expression tag	UNP P31224
B	1054	HIS	-	expression tag	UNP P31224
B	1055	HIS	-	expression tag	UNP P31224
B	1056	HIS	-	expression tag	UNP P31224
B	1057	HIS	-	expression tag	UNP P31224
C	1050	LEU	-	expression tag	UNP P31224
C	1051	GLU	-	expression tag	UNP P31224
C	1052	HIS	-	expression tag	UNP P31224
C	1053	HIS	-	expression tag	UNP P31224
C	1054	HIS	-	expression tag	UNP P31224
C	1055	HIS	-	expression tag	UNP P31224
C	1056	HIS	-	expression tag	UNP P31224

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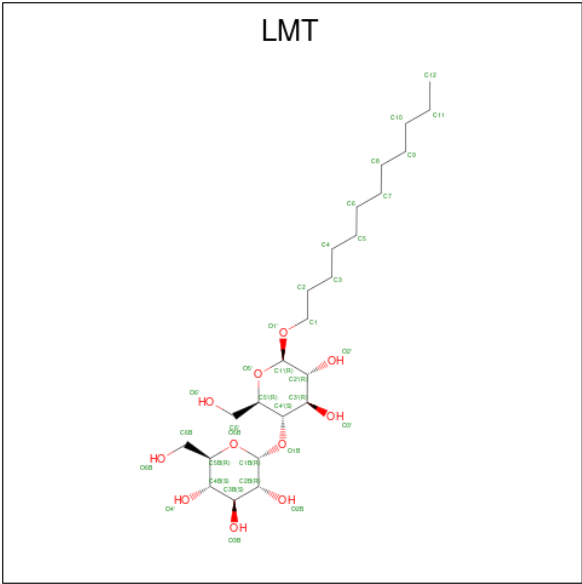
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Chain	Residue	Modelled	Actual	Comment	Reference
C	1057	HIS	-	expression tag	UNP P31224

- Molecule 2 is a protein called DARPIN.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	D	155	Total	C	H	N	O	S	0	0	0
			2329	739	1156	205	228	1			
2	E	153	Total	C	H	N	O	S	0	0	0
			2306	732	1147	203	223	1			

- Molecule 3 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: C<sub>24</sub>H<sub>46</sub>O<sub>11</sub>).



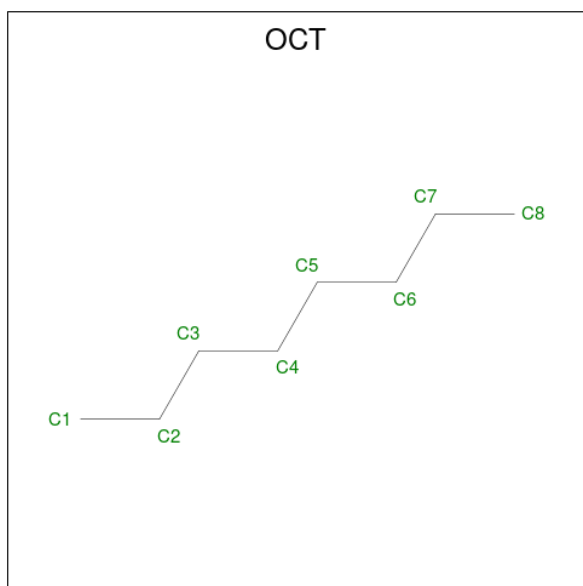
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	H	O	0	0
			81	24	46	11		
3	A	1	Total	C	H	O	0	0
			81	24	46	11		
3	A	1	Total	C	H	O	0	0
			81	24	46	11		
3	B	1	Total	C	H	O	0	0
			81	24	46	11		
3	B	1	Total	C	H	O	0	0
			81	24	46	11		
3	B	1	Total	C	H	O	0	0
			81	24	46	11		
3	C	1	Total	C	H	O	0	0
			81	24	46	11		

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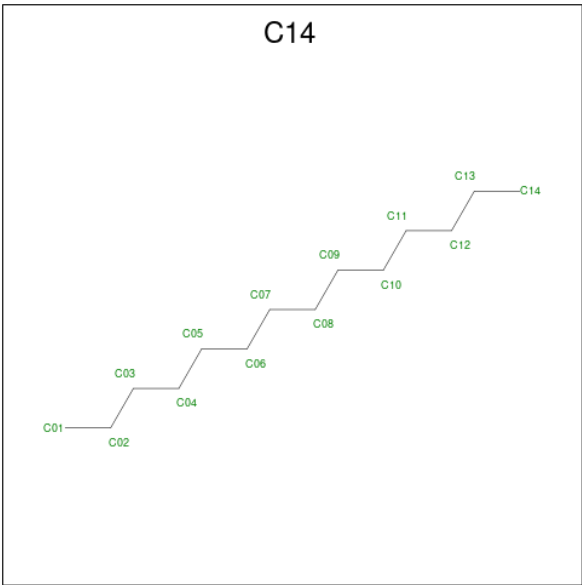
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	C	1	Total	C	H	O	0	0
			81	24	46	11		

- Molecule 4 is N-OCTANE (CCD ID: OCT) (formula: C<sub>8</sub>H<sub>18</sub>).



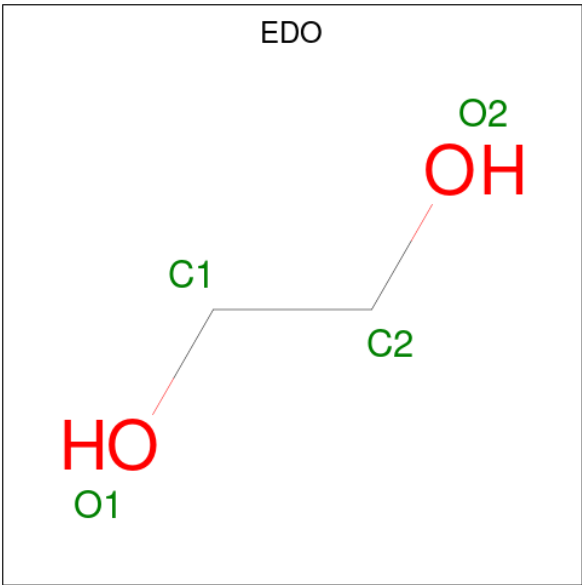
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	H	0	0
			26	8	18		
4	A	1	Total	C	H	0	0
			26	8	18		
4	B	1	Total	C	H	0	0
			26	8	18		
4	C	1	Total	C	H	0	0
			26	8	18		
4	C	1	Total	C	H	0	0
			26	8	18		
4	C	1	Total	C	H	0	0
			26	8	18		
4	C	1	Total	C	H	0	0
			26	8	18		
4	C	1	Total	C	H	0	0
			26	8	18		

- Molecule 5 is TETRADECANE (CCD ID: C14) (formula: C<sub>14</sub>H<sub>30</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	H	0	0
			44	14	30		
5	C	1	Total	C	H	0	0
			44	14	30		

- Molecule 6 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



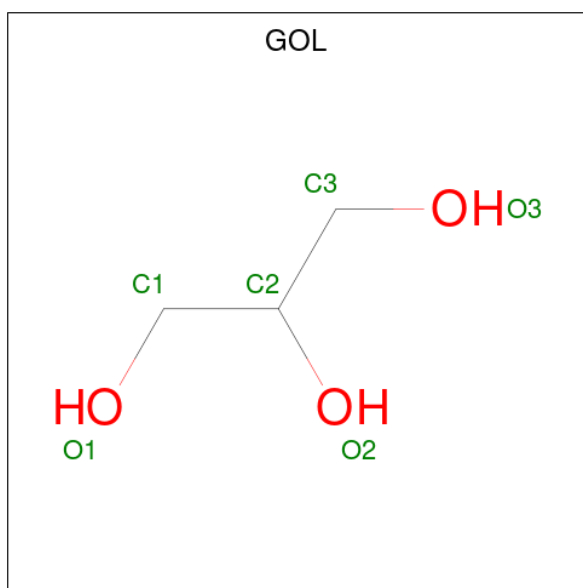
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	B	1	Total	C	H	O	0	0
			10	2	6	2		
6	C	1	Total	C	H	O	0	0
			10	2	6	2		
6	C	1	Total	C	H	O	0	0
			10	2	6	2		
6	C	1	Total	C	H	O	0	0
			10	2	6	2		
6	C	1	Total	C	H	O	0	0
			10	2	6	2		

- Molecule 7 is GLYCEROL (CCD ID: GOL) (formula:  $C_3H_8O_3$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			13	3	7	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	A	1	Total	C	H	O	0	0
			13	3	7	3		
7	A	1	Total	C	H	O	0	0
			14	3	8	3		
7	B	1	Total	C	H	O	0	0
			14	3	8	3		
7	B	1	Total	C	H	O	0	0
			14	3	8	3		
7	B	1	Total	C	H	O	0	0
			14	3	8	3		
7	B	1	Total	C	H	O	0	0
			13	3	7	3		
7	B	1	Total	C	H	O	0	0
			14	3	8	3		
7	B	1	Total	C	H	O	0	0
			14	3	8	3		

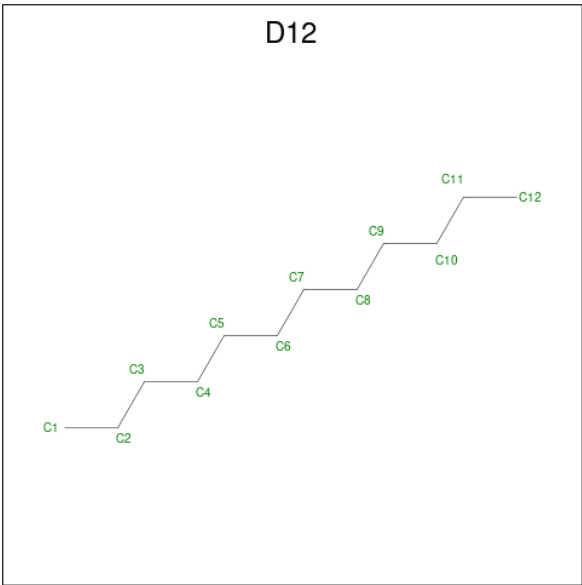
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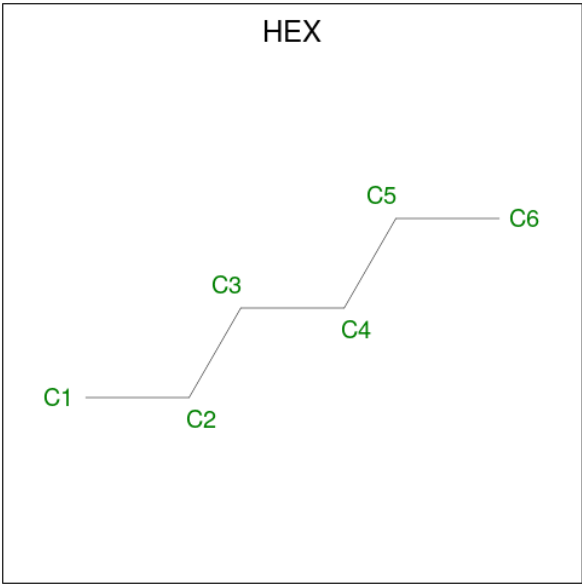
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	B	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			13	3	7	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	C	1	Total	C	H	O	0	0
			14	3	8	3		
7	D	1	Total	C	H	O	0	0
			13	3	7	3		
7	D	1	Total	C	H	O	0	0
			14	3	8	3		
7	D	1	Total	C	H	O	0	0
			14	3	8	3		
7	D	1	Total	C	H	O	0	0
			14	3	8	3		

- Molecule 8 is DODECANE (CCD ID: D12) (formula: C<sub>12</sub>H<sub>26</sub>).



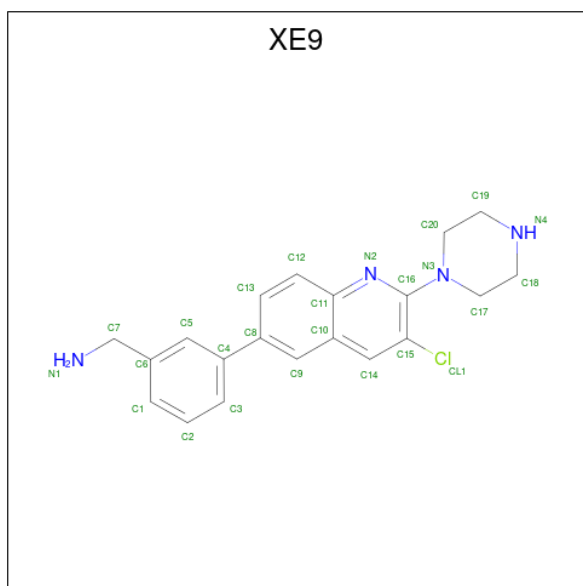
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	A	1	Total	C	H	0	0
			38	12	26		
8	A	1	Total	C	H	0	0
			38	12	26		
8	B	1	Total	C	H	0	0
			38	12	26		
8	B	1	Total	C	H	0	0
			38	12	26		

- Molecule 9 is HEXANE (CCD ID: HEX) (formula: C<sub>6</sub>H<sub>14</sub>).



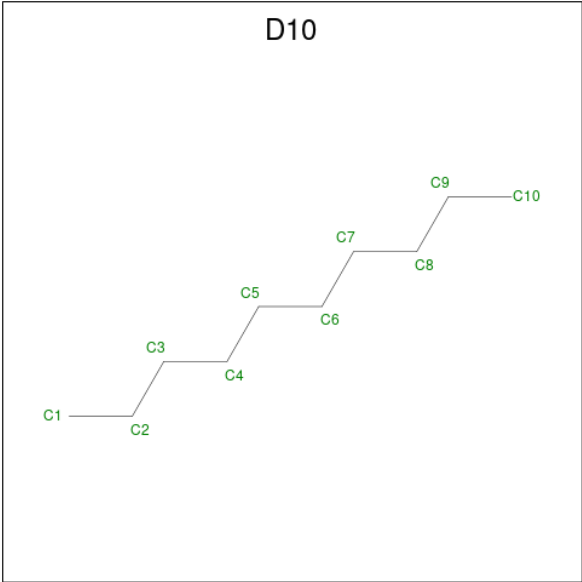
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	A	1	Total	C	H	0	0
			20	6	14		
9	A	1	Total	C	H	0	0
			20	6	14		
9	B	1	Total	C	H	0	0
			20	6	14		
9	B	1	Total	C	H	0	0
			20	6	14		
9	B	1	Total	C	H	0	0
			20	6	14		
9	C	1	Total	C	H	0	0
			20	6	14		
9	C	1	Total	C	H	0	0
			20	6	14		
9	C	1	Total	C	H	0	0
			20	6	14		

- Molecule 10 is [3-(3-chloranyl-2-piperazin-1-yl-quinolin-6-yl)phenyl]methanamine (CCD ID: XE9) (formula:  $C_{20}H_{21}ClN_4$ ) (labeled as "Ligand of Interest" by depositor).



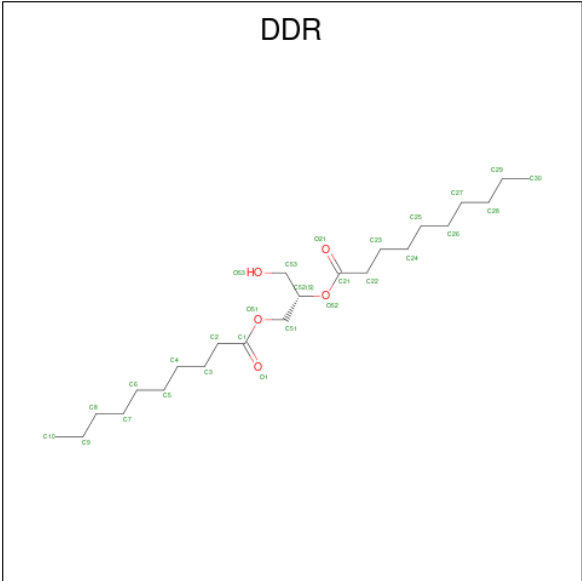
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
10	A	1	Total	C	Cl	H	N	
			48	20	1	23	4	
								0
								0

- Molecule 11 is DECANE (CCD ID: D10) (formula:  $C_{10}H_{22}$ ).



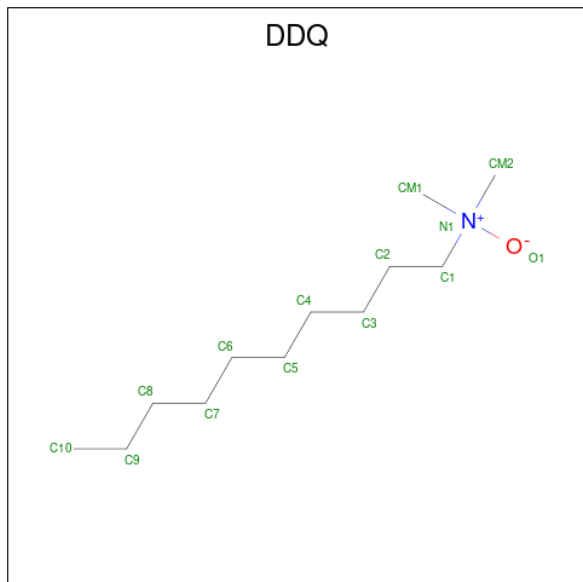
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
11	A	1	Total	C	H	0	0
			32	10	22		
11	B	1	Total	C	H	0	0
			32	10	22		

- Molecule 12 is (2S)-3-hydroxypropane-1,2-diyl didecanoate (CCD ID: DDR) (formula: C<sub>23</sub>H<sub>44</sub>O<sub>5</sub>).



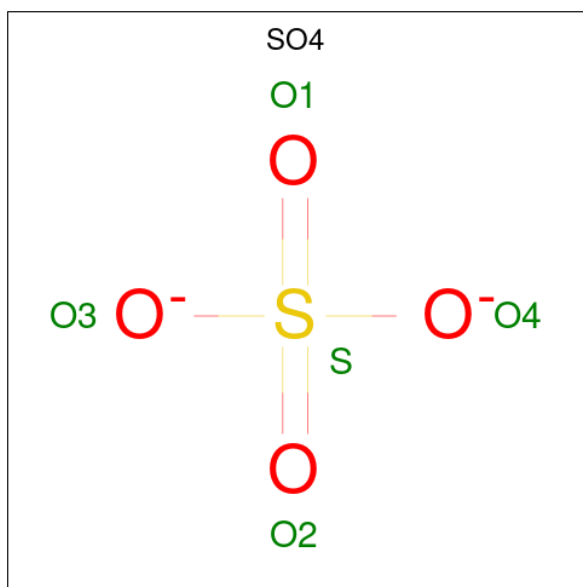
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
12	B	1	Total	C	H	O	0	0
			72	23	44	5		

- Molecule 13 is DECYLAMINE-N,N-DIMETHYL-N-OXIDE (CCD ID: DDQ) (formula:  $C_{12}H_{27}NO$ ).



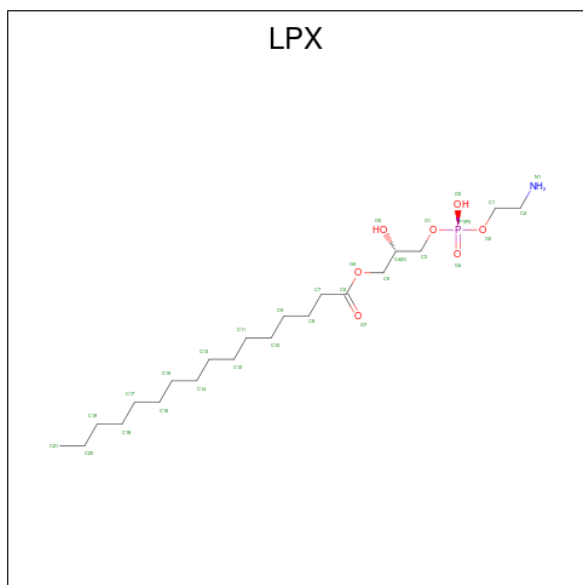
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
13	B	1	Total	C	H	N	O	0	0
			41	12	27	1	1		
13	C	1	Total	C	H	N	O	0	0
			41	12	27	1	1		

- Molecule 14 is SULFATE ION (CCD ID: SO4) (formula:  $O_4S$ ).



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

- Molecule 15 is (2S)-3-{[(R)-(2-aminoethoxy)(hydroxy)phosphoryl]oxy}-2-hydroxypropyl hexadecanoate (CCD ID: LPX) (formula: C<sub>21</sub>H<sub>44</sub>NO<sub>7</sub>P).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
15	C	1	Total C H N O P 73 21 43 1 7 1	0	0
15	C	1	Total C H N O P 73 21 43 1 7 1	0	0

- Molecule 16 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
16	A	487	Total O 487 487	0	0
16	B	465	Total O 465 465	0	0
16	C	530	Total O 530 530	0	0
16	D	84	Total O 84 84	0	0

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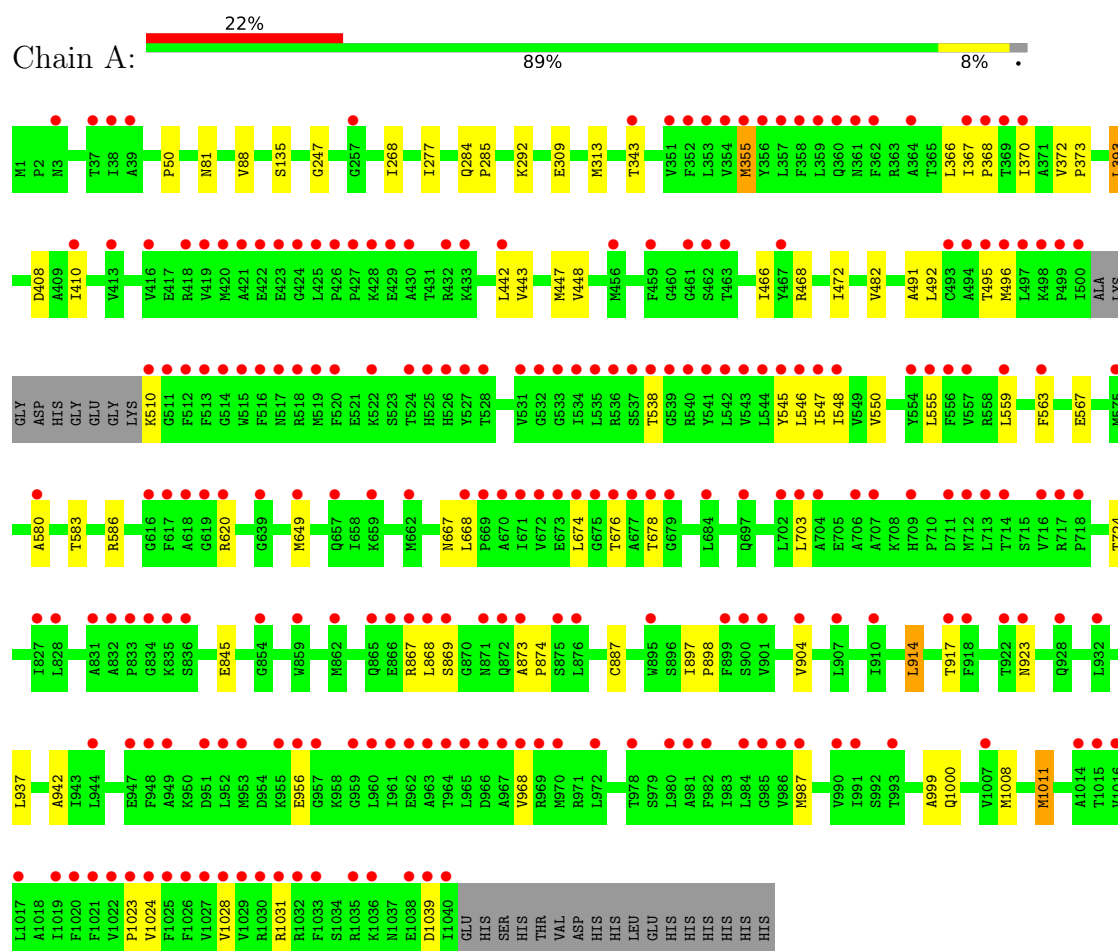
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
16	E	31	Total	O	0	0
			31	31		

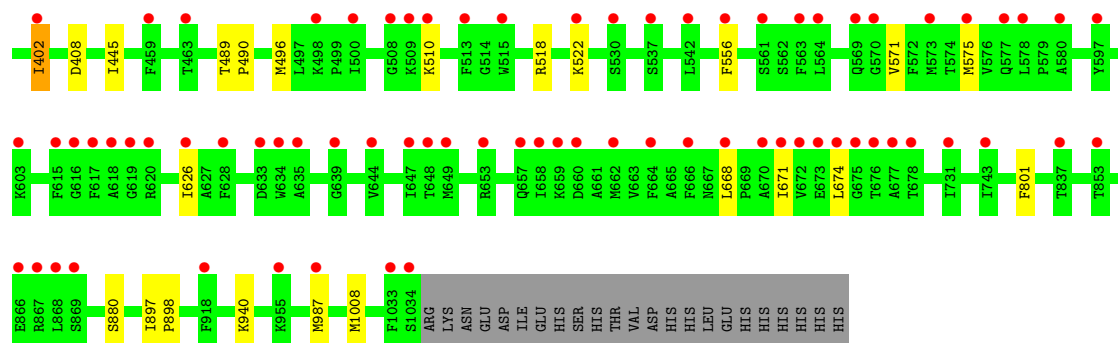
### 3 Residue-property plots [i](#)

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.

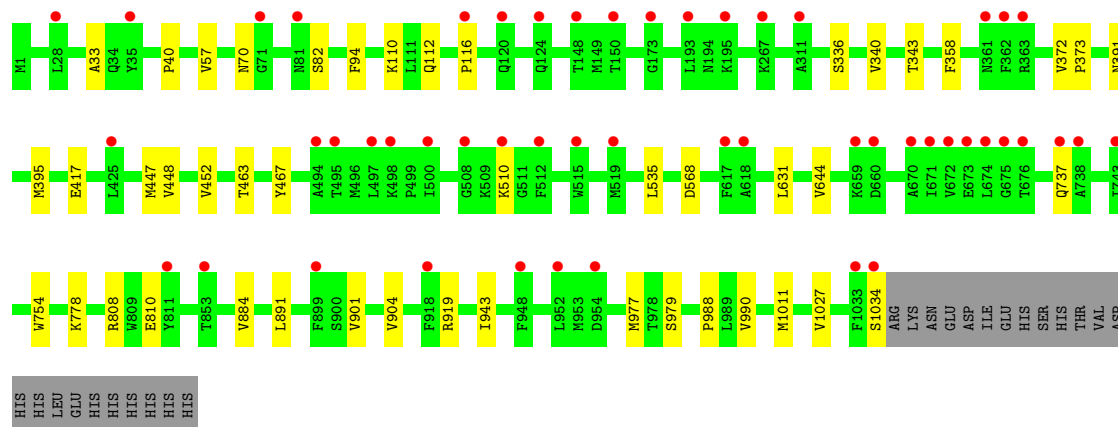
#### • Molecule 1: Multidrug efflux pump subunit AcrB



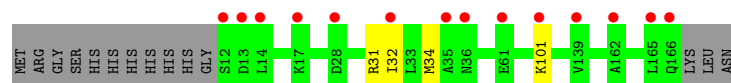
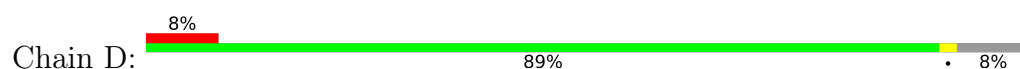




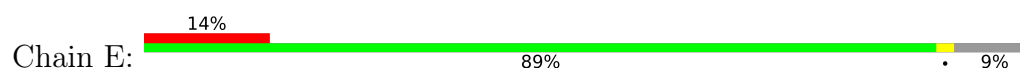
- Molecule 1: Multidrug efflux pump subunit AcrB



- Molecule 2: DARPIN



- Molecule 2: DARPIN



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	146.18Å 161.14Å 244.39Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.38 – 1.94 49.38 – 1.94	Depositor EDS
% Data completeness (in resolution range)	99.1 (49.38-1.94) 99.1 (49.38-1.94)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.42 (at 1.94Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, $R_{free}$	0.202 , 0.225 0.202 , 0.225	Depositor DCC
$R_{free}$ test set	20979 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	41.6	Xtriage
Anisotropy	0.320	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.38 , 39.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	56249	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.99% 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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: DDQ, XE9, LPX, D12, EDO, HEX, SO4, DDR, LMT, GOL, C14, OCT, D10

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	0.17	0/8013	0.34	0/10880
1	B	0.16	0/8025	0.33	0/10897
1	C	0.18	0/8027	0.36	0/10900
2	D	0.15	0/1192	0.31	0/1621
2	E	0.13	0/1178	0.26	0/1602
All	All	0.17	0/26435	0.34	0/35900

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 [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	7854	8012	7997	51	0
1	B	7863	8017	8006	21	0
1	C	7874	8033	8032	27	0
2	D	1173	1156	1156	2	0
2	E	1159	1147	1147	2	0
3	A	105	138	134	0	0
3	B	105	138	136	1	0
3	C	70	92	88	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	16	36	36	0	0
4	B	8	18	18	0	0
4	C	40	90	90	0	0
5	A	14	30	30	0	0
5	C	14	30	30	0	0
6	A	4	6	6	0	0
6	B	36	54	54	0	0
6	C	16	24	24	0	0
7	A	90	118	120	1	0
7	B	48	63	64	0	0
7	C	72	95	96	0	0
7	D	24	31	32	0	0
8	A	24	52	52	0	0
8	B	24	52	52	0	0
9	A	12	28	28	0	0
9	B	18	42	42	0	0
9	C	18	42	42	0	0
10	A	25	23	0	1	0
11	A	10	22	22	0	0
11	B	10	22	22	0	0
12	B	28	44	44	0	0
13	B	14	27	27	0	0
13	C	14	27	27	0	0
14	B	5	0	0	0	0
14	C	10	0	0	0	0
15	C	60	86	86	1	0
16	A	487	0	0	2	0
16	B	465	0	0	1	0
16	C	530	0	0	2	0
16	D	84	0	0	0	0
16	E	31	0	0	0	0
All	All	28454	27795	27740	101	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 2.

The worst 5 of 101 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:987:MET:HE3	1:A:1008:MET:HE1	1.66	0.77
1:A:555:LEU:HD22	1:A:917:THR:HG21	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:979:SER:HA	1:C:1011:MET:HE3	1.78	0.65
1:A:81:ASN:ND2	16:A:1204:HOH:O	2.30	0.64
1:A:538:THR:HG23	1:A:1024:VAL:HG13	1.79	0.64

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	1029/1057 (97%)	1005 (98%)	24 (2%)	0	100	100
1	B	1034/1057 (98%)	1015 (98%)	19 (2%)	0	100	100
1	C	1034/1057 (98%)	1016 (98%)	18 (2%)	0	100	100
2	D	153/169 (90%)	152 (99%)	1 (1%)	0	100	100
2	E	151/169 (89%)	149 (99%)	2 (1%)	0	100	100
All	All	3401/3509 (97%)	3337 (98%)	64 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	843/863 (98%)	835 (99%)	8 (1%)	70	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	842/863 (98%)	833 (99%)	9 (1%)	65	60
1	C	842/863 (98%)	838 (100%)	4 (0%)	81	82
2	D	120/132 (91%)	119 (99%)	1 (1%)	73	71
2	E	118/132 (89%)	118 (100%)	0	100	100
All	All	2765/2853 (97%)	2743 (99%)	22 (1%)	73	71

5 of 22 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	556	PHE
1	C	417	GLU
1	B	880	SER
1	C	510	LYS
1	A	914	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 21 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	577	GLN
1	C	81	ASN
1	C	596	HIS
1	C	89	GLN
1	B	1000	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 oligosaccharides in this entry.

## 5.6 Ligand geometry

94 ligands 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	$\# Z  > 2$
7	GOL	A	1108	-	5,5,5	0.98	0	5,5,5	0.97	0
7	GOL	C	1104	-	5,5,5	0.80	0	5,5,5	1.17	1 (20%)
7	GOL	C	1127	-	5,5,5	0.85	0	5,5,5	1.15	1 (20%)
7	GOL	A	1116	-	5,5,5	0.80	0	5,5,5	1.01	0
6	EDO	B	1226	-	3,3,3	0.51	0	2,2,2	0.33	0
11	D10	B	1204	-	9,9,9	0.27	0	8,8,8	0.12	0
7	GOL	C	1118	-	5,5,5	0.86	0	5,5,5	1.10	0
3	LMT	B	1202	-	36,36,36	1.06	4 (11%)	47,47,47	0.93	1 (2%)
7	GOL	C	1126	-	5,5,5	0.99	0	5,5,5	1.05	0
8	D12	B	1221	-	11,11,11	0.26	0	10,10,10	0.15	0
7	GOL	A	1125	-	5,5,5	0.83	0	5,5,5	1.13	0
7	GOL	C	1125	-	5,5,5	0.95	0	5,5,5	1.00	0
6	EDO	B	1212	-	3,3,3	0.43	0	2,2,2	0.34	0
7	GOL	B	1219	-	5,5,5	0.94	0	5,5,5	0.95	0
6	EDO	A	1106	-	3,3,3	0.43	0	2,2,2	0.40	0
7	GOL	D	203	-	5,5,5	0.87	0	5,5,5	1.06	0
7	GOL	C	1120	-	5,5,5	0.91	0	5,5,5	1.12	0
7	GOL	A	1111	-	5,5,5	0.91	0	5,5,5	1.04	0
7	GOL	A	1121	-	5,5,5	0.96	0	5,5,5	1.05	0
14	SO4	C	1121	-	4,4,4	0.23	0	6,6,6	0.14	0
8	D12	B	1222	-	11,11,11	0.29	0	10,10,10	0.18	0
6	EDO	C	1112	-	3,3,3	0.38	0	2,2,2	0.52	0
6	EDO	C	1113	-	3,3,3	0.41	0	2,2,2	0.43	0
8	D12	A	1120	-	11,11,11	0.28	0	10,10,10	0.13	0
7	GOL	D	201	-	5,5,5	0.86	0	5,5,5	1.03	0
7	GOL	A	1126	-	5,5,5	0.99	0	5,5,5	0.99	0
4	OCT	C	1116	-	7,7,7	0.26	0	6,6,6	0.20	0
7	GOL	A	1112	-	5,5,5	0.95	0	5,5,5	1.02	0
4	OCT	A	1107	-	7,7,7	0.28	0	6,6,6	0.19	0
7	GOL	C	1124	-	5,5,5	0.92	0	5,5,5	0.99	0
7	GOL	A	1110	-	5,5,5	0.98	0	5,5,5	1.01	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
7	GOL	B	1217	-	5,5,5	1.13	0	5,5,5	0.69	0
13	DDQ	B	1214	-	11,13,13	0.78	1 (9%)	12,15,15	0.30	0
12	DDR	B	1207	-	27,27,27	0.37	0	29,29,29	0.44	0
6	EDO	C	1101	-	3,3,3	0.44	0	2,2,2	0.35	0
7	GOL	B	1211	-	5,5,5	1.04	0	5,5,5	0.97	0
3	LMT	C	1105	-	36,36,36	1.14	5 (13%)	47,47,47	0.94	2 (4%)
9	HEX	C	1128	-	5,5,5	0.29	0	4,4,4	0.15	0
7	GOL	B	1210	-	5,5,5	0.96	0	5,5,5	1.11	0
4	OCT	C	1132	-	7,7,7	0.29	0	6,6,6	0.10	0
6	EDO	B	1206	-	3,3,3	0.46	0	2,2,2	0.30	0
5	C14	A	1104	-	13,13,13	0.27	0	12,12,12	0.14	0
15	LPX	C	1109	-	29,29,29	0.92	2 (6%)	31,33,33	0.84	1 (3%)
7	GOL	D	202	-	5,5,5	0.84	0	5,5,5	1.14	1 (20%)
9	HEX	C	1129	-	5,5,5	0.29	0	4,4,4	0.14	0
7	GOL	A	1117	-	5,5,5	1.06	0	5,5,5	0.82	0
6	EDO	B	1205	-	3,3,3	0.47	0	2,2,2	0.34	0
6	EDO	B	1225	-	3,3,3	0.39	0	2,2,2	0.39	0
7	GOL	B	1216	-	5,5,5	0.92	0	5,5,5	0.94	0
14	SO4	B	1215	-	4,4,4	0.23	0	6,6,6	0.15	0
7	GOL	A	1109	-	5,5,5	0.97	0	5,5,5	0.96	0
9	HEX	A	1119	-	5,5,5	0.28	0	4,4,4	0.15	0
7	GOL	D	204	-	5,5,5	0.90	0	5,5,5	1.11	0
6	EDO	C	1114	-	3,3,3	0.50	0	2,2,2	0.21	0
15	LPX	C	1107	-	29,29,29	0.91	2 (6%)	31,33,33	0.87	1 (3%)
7	GOL	C	1123	-	5,5,5	0.85	0	5,5,5	0.96	0
7	GOL	C	1131	-	5,5,5	0.95	0	5,5,5	1.07	0
3	LMT	B	1209	-	36,36,36	1.05	4 (11%)	47,47,47	1.13	3 (6%)
3	LMT	A	1101	-	36,36,36	1.13	5 (13%)	47,47,47	0.90	3 (6%)
7	GOL	C	1117	-	5,5,5	0.90	0	5,5,5	1.05	0
4	OCT	C	1102	-	7,7,7	0.26	0	6,6,6	0.18	0
13	DDQ	C	1130	-	11,13,13	0.80	1 (9%)	12,15,15	0.44	0
7	GOL	A	1127	-	5,5,5	1.02	0	5,5,5	0.89	0
7	GOL	A	1114	-	5,5,5	0.91	0	5,5,5	1.02	0
6	EDO	B	1201	-	3,3,3	0.41	0	2,2,2	0.38	0
7	GOL	B	1208	-	5,5,5	0.97	0	5,5,5	1.09	0
10	XE9	A	1122	-	28,28,28	1.23	5 (17%)	37,39,39	0.91	1 (2%)
6	EDO	B	1227	-	3,3,3	0.44	0	2,2,2	0.39	0
6	EDO	B	1213	-	3,3,3	0.45	0	2,2,2	0.33	0
9	HEX	B	1223	-	5,5,5	0.28	0	4,4,4	0.14	0
8	D12	A	1118	-	11,11,11	0.29	0	10,10,10	0.11	0
3	LMT	B	1203	-	36,36,36	1.10	4 (11%)	47,47,47	1.00	2 (4%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
7	GOL	A	1115	-	5,5,5	0.99	0	5,5,5	1.15	1 (20%)
9	HEX	C	1103	-	5,5,5	0.28	0	4,4,4	0.14	0
9	HEX	B	1229	-	5,5,5	0.28	0	4,4,4	0.14	0
6	EDO	B	1228	-	3,3,3	0.43	0	2,2,2	0.32	0
3	LMT	C	1110	-	36,36,36	1.04	3 (8%)	47,47,47	0.86	0
11	D10	A	1124	-	9,9,9	0.27	0	8,8,8	0.21	0
9	HEX	A	1123	-	5,5,5	0.29	0	4,4,4	0.14	0
5	C14	C	1108	-	13,13,13	0.26	0	12,12,12	0.20	0
14	SO4	C	1115	-	4,4,4	0.25	0	6,6,6	0.11	0
7	GOL	B	1218	-	5,5,5	1.01	0	5,5,5	1.00	0
7	GOL	A	1128	-	5,5,5	0.97	0	5,5,5	1.02	0
4	OCT	C	1106	-	7,7,7	0.25	0	6,6,6	0.23	0
4	OCT	B	1230	-	7,7,7	0.27	0	6,6,6	0.12	0
3	LMT	A	1102	-	36,36,36	1.07	5 (13%)	47,47,47	0.93	1 (2%)
3	LMT	A	1105	-	36,36,36	1.10	4 (11%)	47,47,47	1.00	1 (2%)
9	HEX	B	1224	-	5,5,5	0.30	0	4,4,4	0.15	0
7	GOL	B	1220	-	5,5,5	0.91	0	5,5,5	1.07	0
4	OCT	A	1103	-	7,7,7	0.27	0	6,6,6	0.16	0
4	OCT	C	1122	-	7,7,7	0.25	0	6,6,6	0.16	0
7	GOL	C	1119	-	5,5,5	0.98	0	5,5,5	1.06	0
7	GOL	A	1113	-	5,5,5	1.01	0	5,5,5	0.97	0
7	GOL	C	1111	-	5,5,5	1.04	0	5,5,5	0.78	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
7	GOL	A	1108	-	-	2/4/4/4	-
7	GOL	C	1104	-	-	2/4/4/4	-
7	GOL	C	1127	-	-	2/4/4/4	-
7	GOL	A	1116	-	-	2/4/4/4	-
6	EDO	B	1226	-	-	0/1/1/1	-
11	D10	B	1204	-	-	4/7/7/7	-
7	GOL	C	1118	-	-	4/4/4/4	-
3	LMT	B	1202	-	-	8/21/61/61	0/2/2/2
7	GOL	C	1126	-	-	2/4/4/4	-
8	D12	B	1221	-	-	4/9/9/9	-
7	GOL	A	1125	-	-	0/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	GOL	C	1125	-	-	3/4/4/4	-
6	EDO	B	1212	-	-	0/1/1/1	-
7	GOL	B	1219	-	-	0/4/4/4	-
6	EDO	A	1106	-	-	1/1/1/1	-
7	GOL	D	203	-	-	0/4/4/4	-
7	GOL	C	1120	-	-	1/4/4/4	-
7	GOL	A	1111	-	-	0/4/4/4	-
7	GOL	A	1121	-	-	1/4/4/4	-
8	D12	B	1222	-	-	5/9/9/9	-
6	EDO	C	1112	-	-	0/1/1/1	-
6	EDO	C	1113	-	-	0/1/1/1	-
8	D12	A	1120	-	-	3/9/9/9	-
7	GOL	D	201	-	-	0/4/4/4	-
7	GOL	A	1126	-	-	2/4/4/4	-
4	OCT	C	1116	-	-	1/5/5/5	-
7	GOL	A	1112	-	-	2/4/4/4	-
4	OCT	A	1107	-	-	0/5/5/5	-
7	GOL	C	1124	-	-	2/4/4/4	-
7	GOL	A	1110	-	-	0/4/4/4	-
7	GOL	B	1217	-	-	1/4/4/4	-
13	DDQ	B	1214	-	-	3/11/11/11	-
12	DDR	B	1207	-	-	15/29/29/29	-
6	EDO	C	1101	-	-	0/1/1/1	-
7	GOL	B	1211	-	-	2/4/4/4	-
3	LMT	C	1105	-	-	11/21/61/61	0/2/2/2
9	HEX	C	1128	-	-	1/3/3/3	-
7	GOL	B	1210	-	-	2/4/4/4	-
4	OCT	C	1132	-	-	1/5/5/5	-
6	EDO	B	1206	-	-	1/1/1/1	-
5	C14	A	1104	-	-	3/11/11/11	-
15	LPX	C	1109	-	-	17/31/31/31	-
7	GOL	D	202	-	-	2/4/4/4	-
9	HEX	C	1129	-	-	1/3/3/3	-
7	GOL	A	1117	-	-	3/4/4/4	-
6	EDO	B	1205	-	-	0/1/1/1	-
6	EDO	B	1225	-	-	1/1/1/1	-
7	GOL	B	1216	-	-	0/4/4/4	-
7	GOL	A	1109	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
9	HEX	A	1119	-	-	0/3/3/3	-
7	GOL	D	204	-	-	2/4/4/4	-
6	EDO	C	1114	-	-	1/1/1/1	-
15	LPX	C	1107	-	-	8/31/31/31	-
7	GOL	C	1123	-	-	0/4/4/4	-
7	GOL	C	1131	-	-	0/4/4/4	-
3	LMT	B	1209	-	-	11/21/61/61	0/2/2/2
3	LMT	A	1101	-	-	8/21/61/61	0/2/2/2
7	GOL	C	1117	-	-	2/4/4/4	-
4	OCT	C	1102	-	-	0/5/5/5	-
13	DDQ	C	1130	-	-	2/11/11/11	-
7	GOL	A	1127	-	-	0/4/4/4	-
7	GOL	A	1114	-	-	2/4/4/4	-
6	EDO	B	1201	-	-	0/1/1/1	-
7	GOL	B	1208	-	-	2/4/4/4	-
10	XE9	A	1122	-	-	6/10/18/18	0/4/4/4
6	EDO	B	1227	-	-	0/1/1/1	-
6	EDO	B	1213	-	-	0/1/1/1	-
9	HEX	B	1223	-	-	1/3/3/3	-
8	D12	A	1118	-	-	6/9/9/9	-
3	LMT	B	1203	-	-	11/21/61/61	0/2/2/2
7	GOL	A	1115	-	-	2/4/4/4	-
9	HEX	C	1103	-	-	0/3/3/3	-
9	HEX	B	1229	-	-	1/3/3/3	-
6	EDO	B	1228	-	-	0/1/1/1	-
3	LMT	C	1110	-	-	11/21/61/61	0/2/2/2
11	D10	A	1124	-	-	2/7/7/7	-
9	HEX	A	1123	-	-	1/3/3/3	-
5	C14	C	1108	-	-	3/11/11/11	-
7	GOL	B	1218	-	-	1/4/4/4	-
7	GOL	A	1128	-	-	2/4/4/4	-
4	OCT	C	1106	-	-	0/5/5/5	-
4	OCT	B	1230	-	-	3/5/5/5	-
3	LMT	A	1102	-	-	9/21/61/61	0/2/2/2
3	LMT	A	1105	-	-	7/21/61/61	0/2/2/2
9	HEX	B	1224	-	-	2/3/3/3	-
7	GOL	B	1220	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	OCT	A	1103	-	-	0/5/5/5	-
4	OCT	C	1122	-	-	3/5/5/5	-
7	GOL	C	1119	-	-	2/4/4/4	-
7	GOL	A	1113	-	-	2/4/4/4	-
7	GOL	C	1111	-	-	2/4/4/4	-

The worst 5 of 45 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	A	1122	XE9	C16-N3	3.00	1.45	1.37
3	A	1101	LMT	O3'-C3'	-2.80	1.36	1.43
3	C	1105	LMT	O3'-C3'	-2.69	1.36	1.43
3	B	1202	LMT	O3'-C3'	-2.63	1.36	1.43
3	A	1105	LMT	O3'-C3'	-2.59	1.36	1.43

The worst 5 of 20 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1105	LMT	C3'-C4'-C5'	-2.93	104.43	110.93
3	B	1203	LMT	O5B-C5B-C4B	2.74	114.64	109.70
15	C	1107	LPX	O6-C6-C7	2.54	119.58	111.83
15	C	1109	LPX	O6-C6-C7	2.43	119.26	111.83
3	A	1101	LMT	C3'-C4'-C5'	-2.36	105.70	110.93

There are no chirality outliers.

5 of 234 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1101	LMT	C2'-C1'-O1'-C1
3	A	1101	LMT	O5'-C1'-O1'-C1
3	A	1102	LMT	O5'-C1'-O1'-C1
3	B	1202	LMT	O5'-C1'-O1'-C1
3	B	1202	LMT	C2-C1-O1'-C1'

There are no ring outliers.

4 monomers are involved in 4 short contacts:

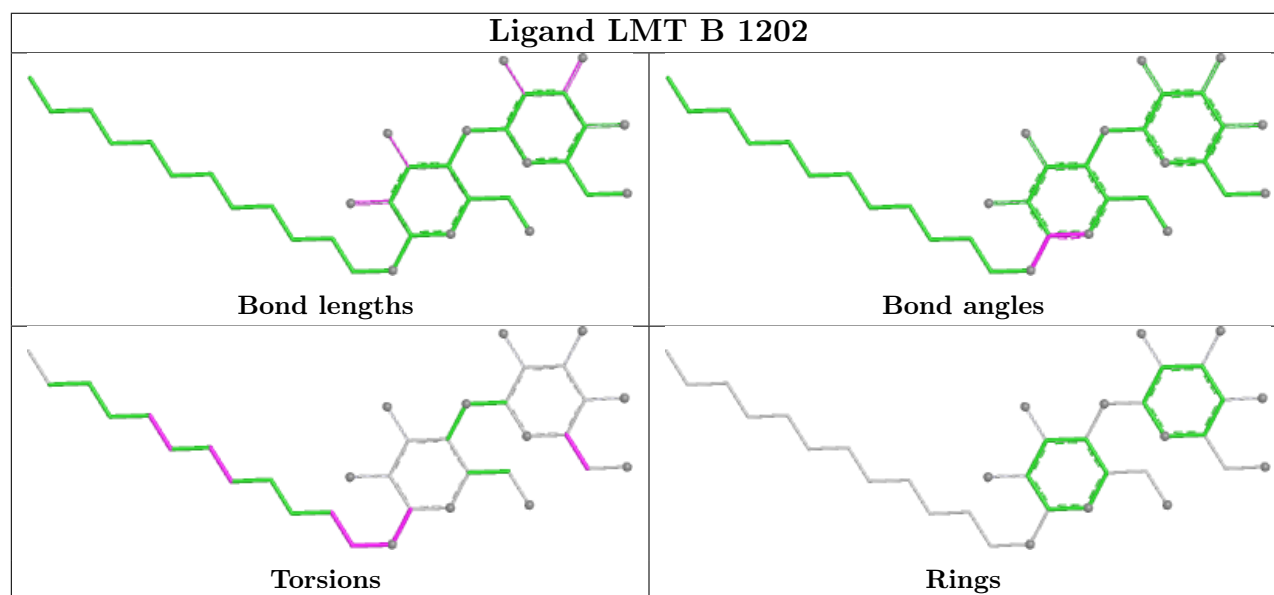
Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	C	1109	LPX	1	0
3	B	1209	LMT	1	0

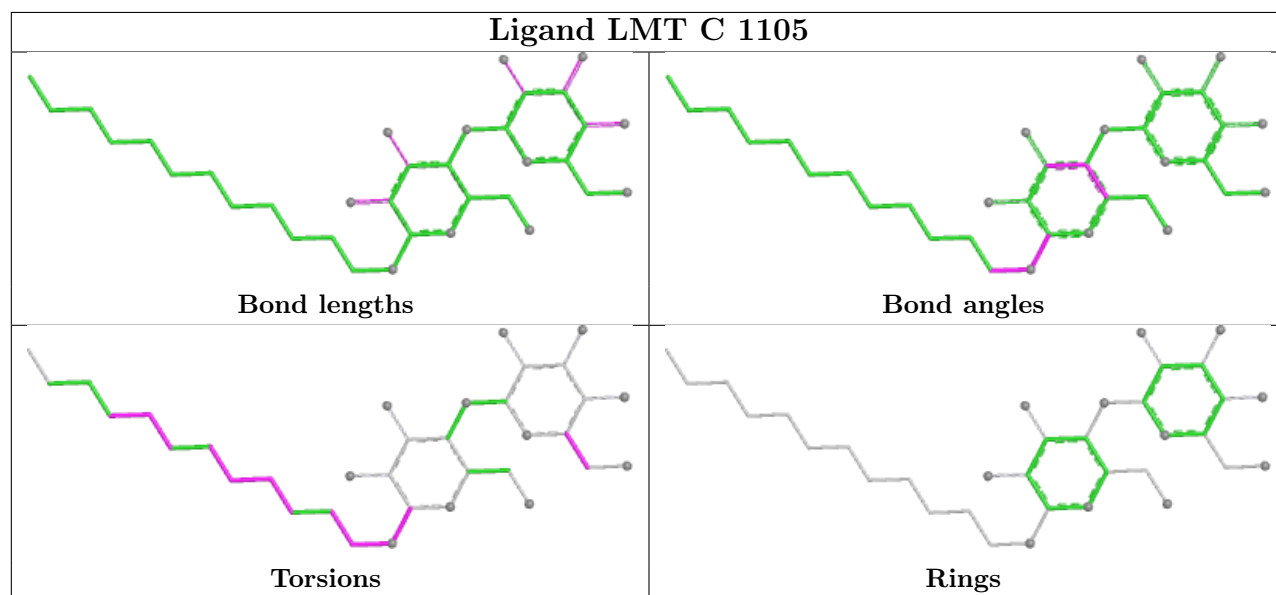
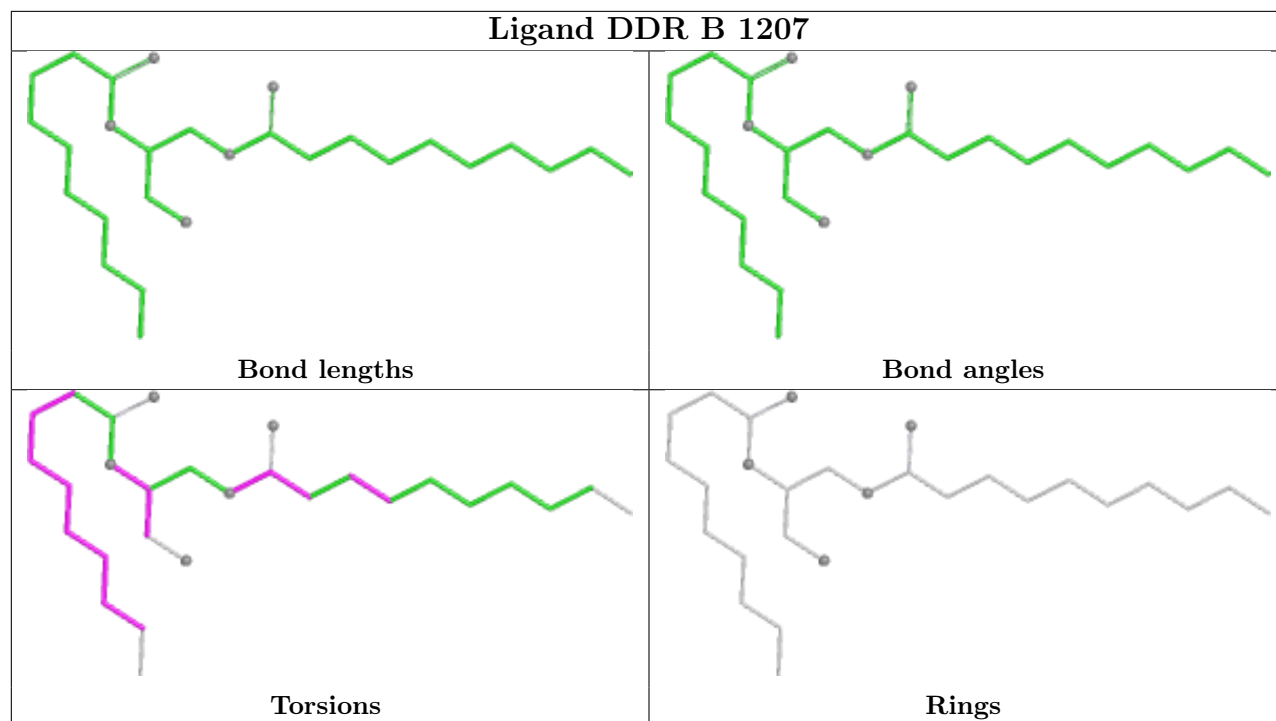
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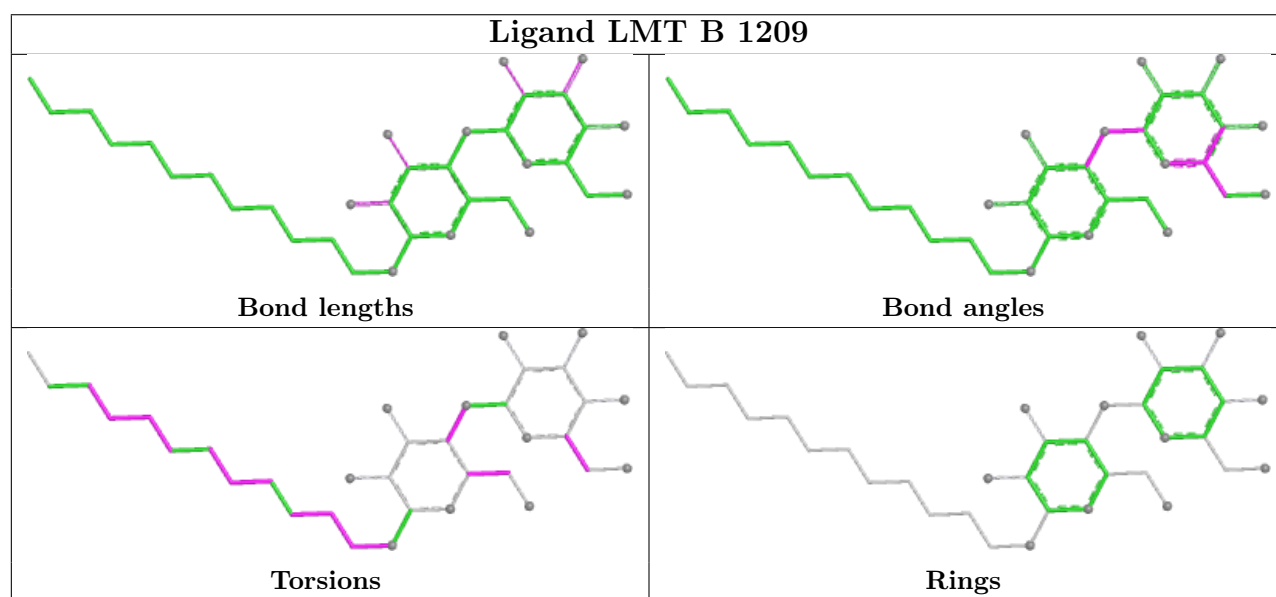
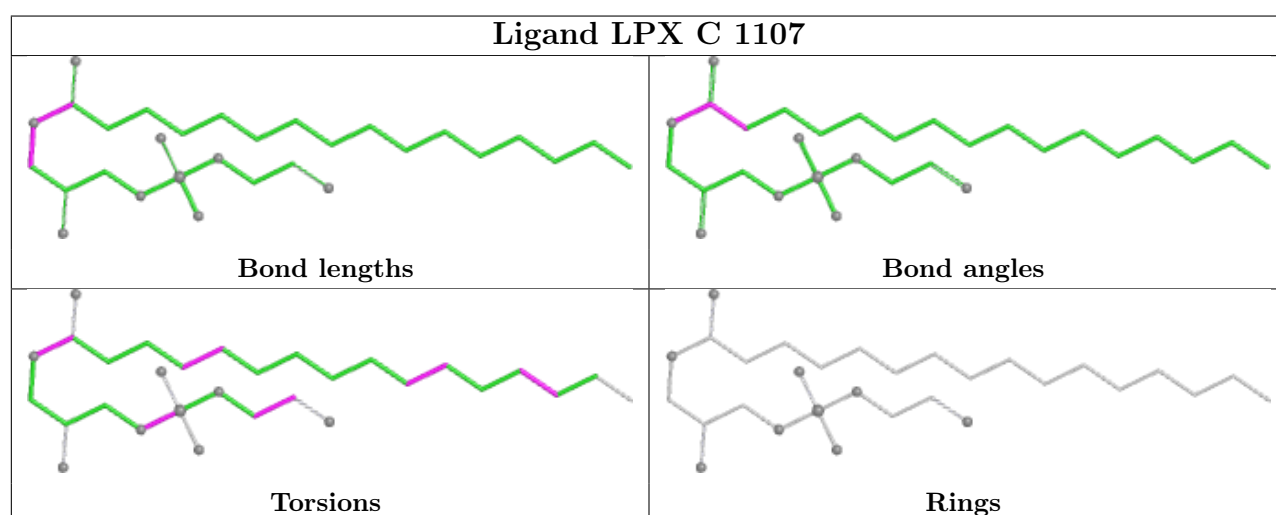
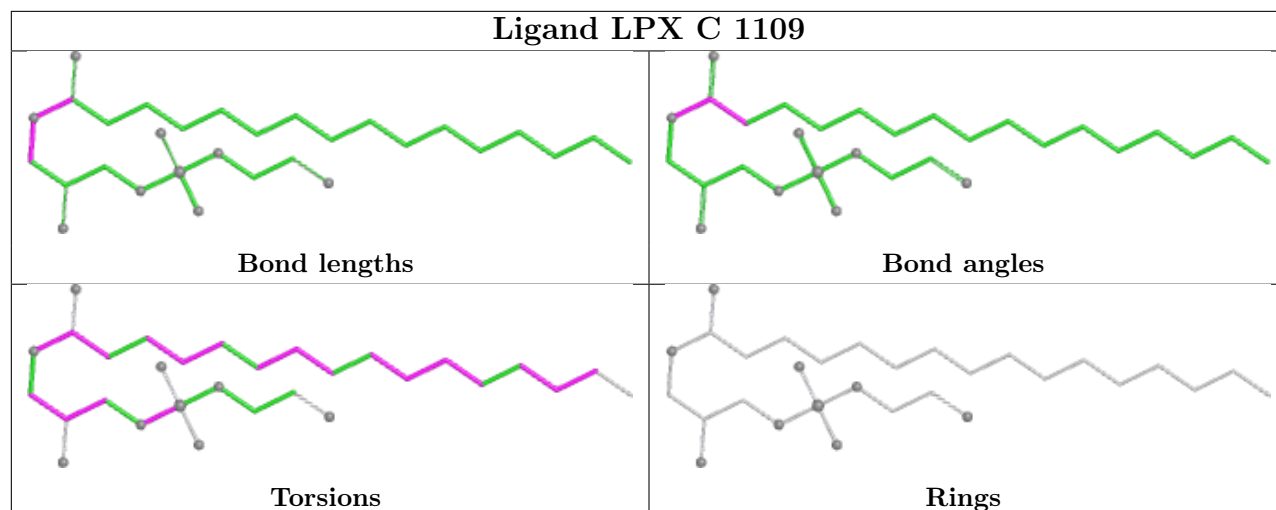
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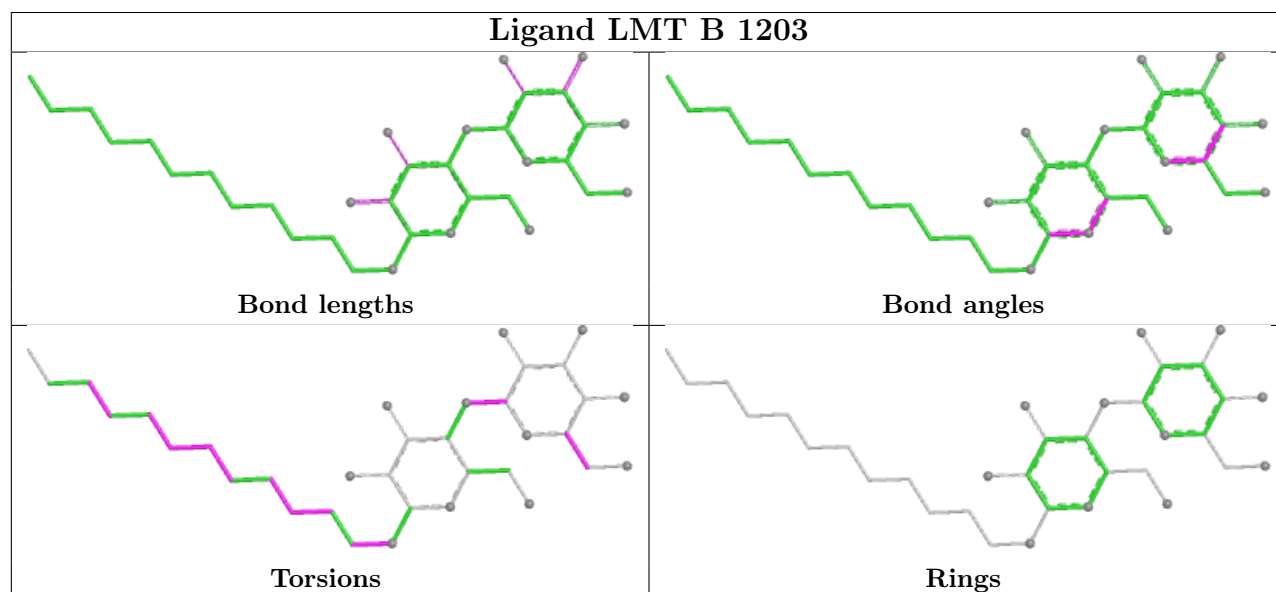
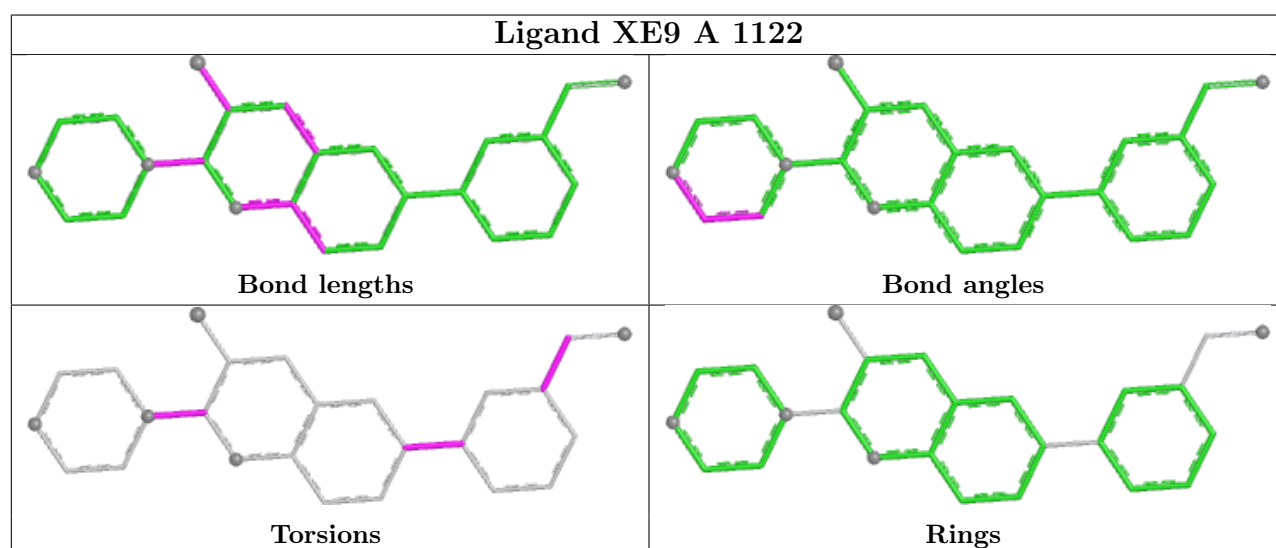
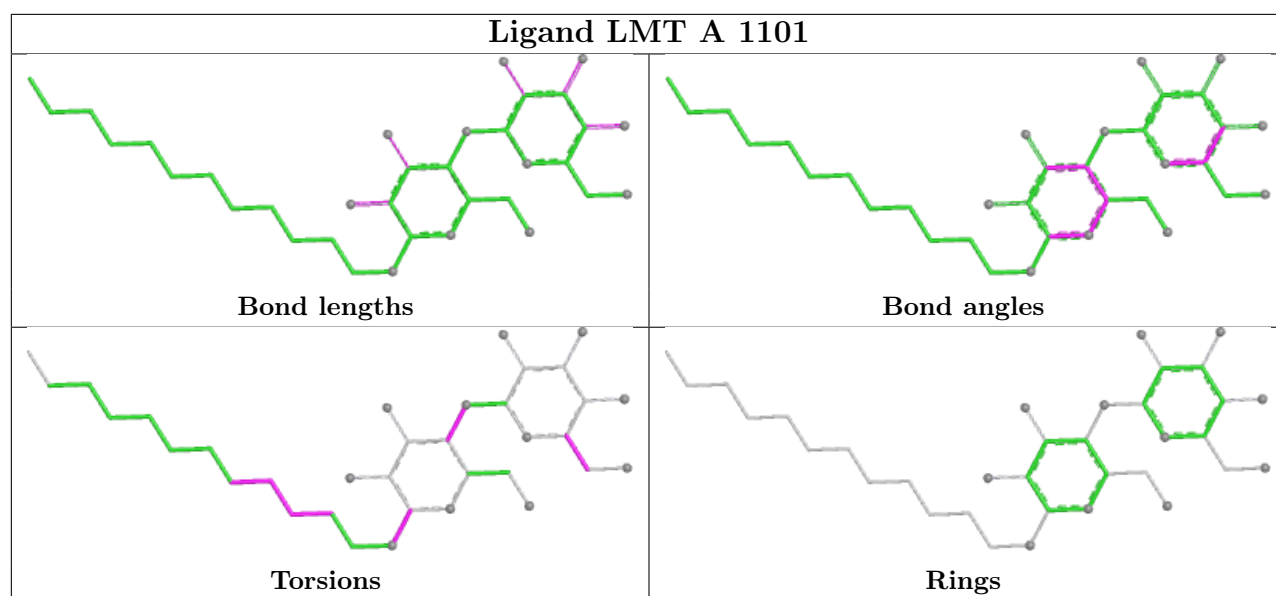
Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	A	1122	XE9	1	0
7	A	1115	GOL	1	0

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 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.

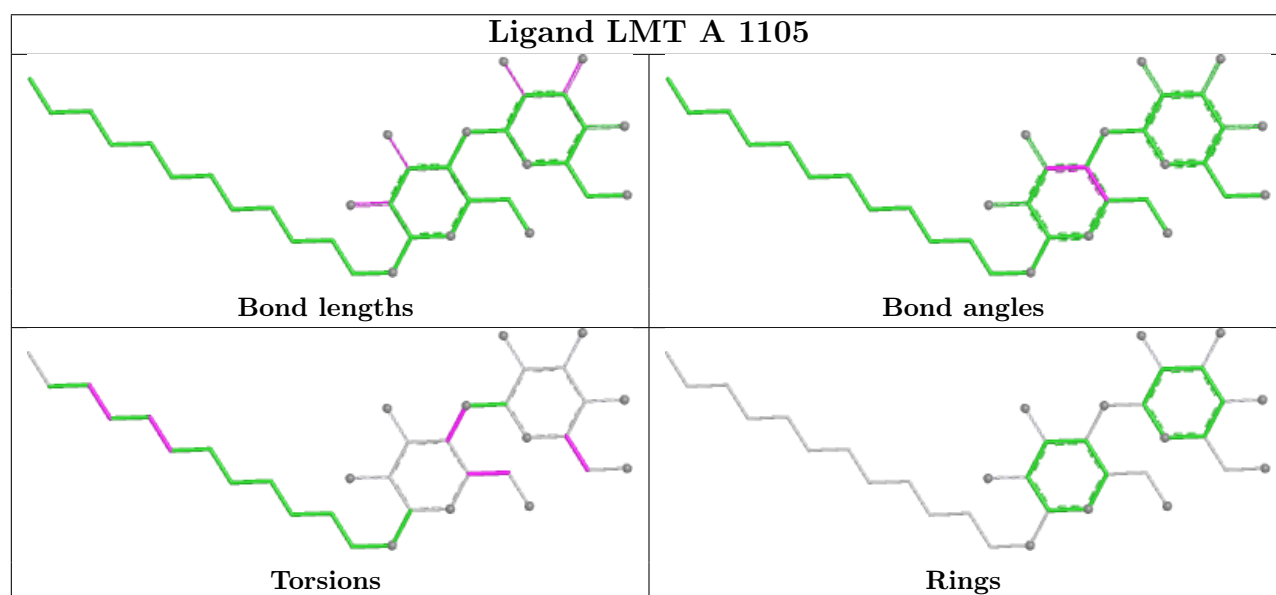
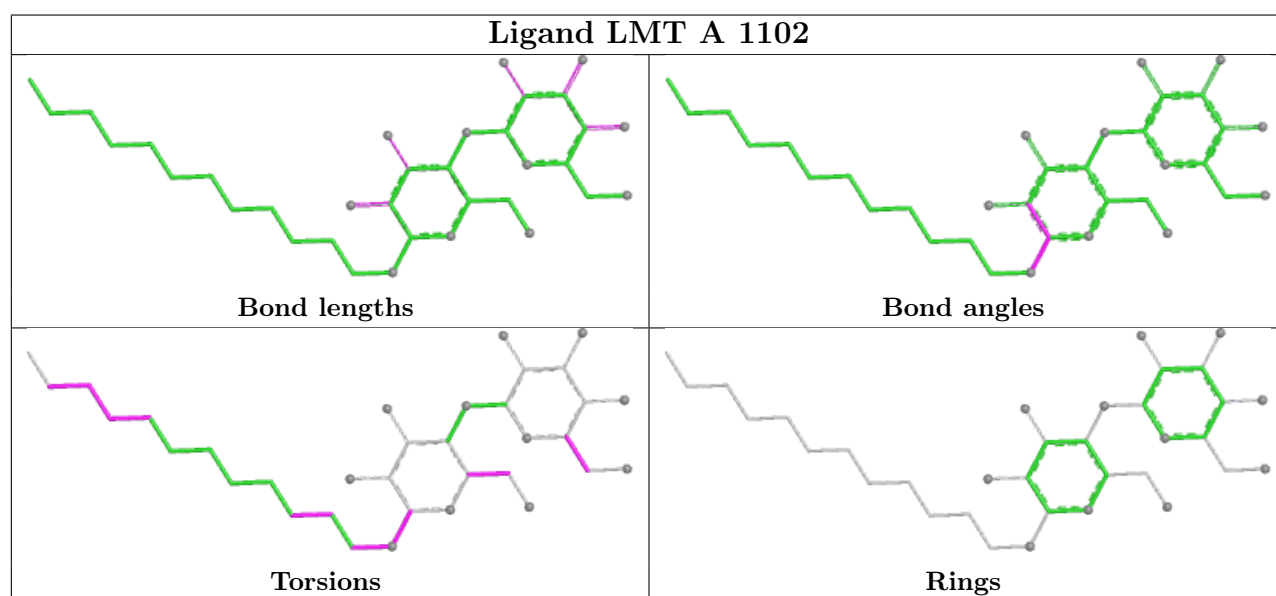
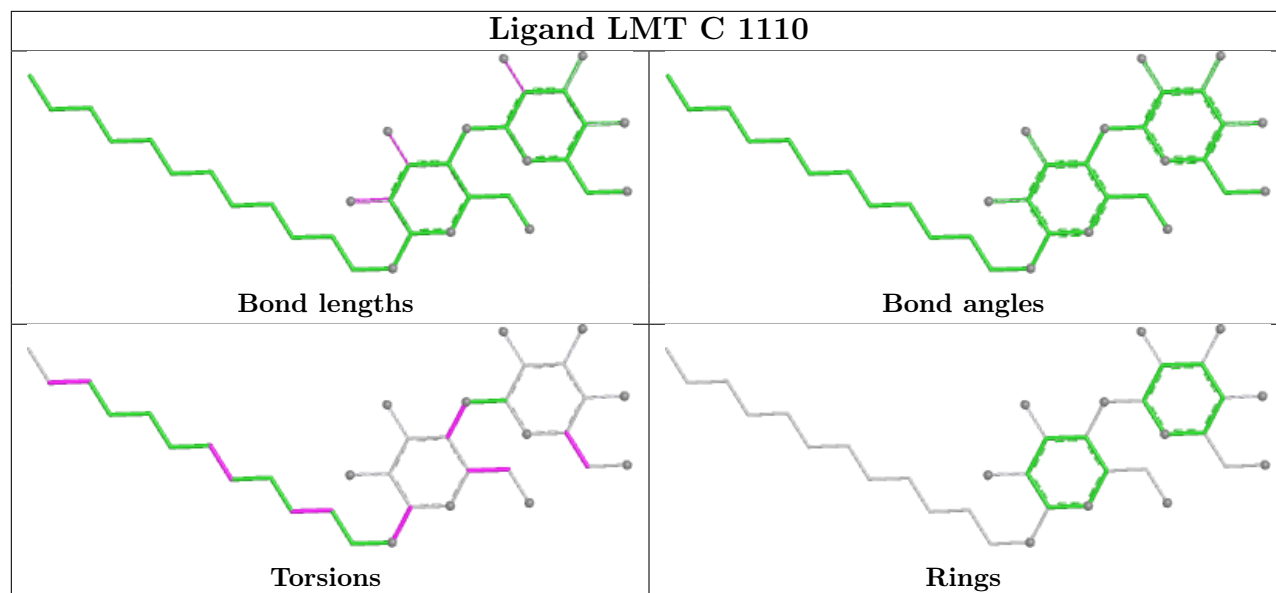












## 5.7 Other polymers [i](#)

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, 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	1031/1057 (97%)	0.97	229 (22%) 2 2	27, 54, 112, 136	1 (0%)
1	B	1034/1057 (97%)	0.65	93 (8%) 15 17	23, 51, 78, 100	1 (0%)
1	C	1034/1057 (97%)	0.34	51 (4%) 35 39	27, 46, 69, 100	2 (0%)
2	D	155/169 (91%)	0.60	14 (9%) 15 17	42, 51, 74, 100	0
2	E	153/169 (90%)	1.27	24 (15%) 5 5	46, 65, 88, 100	0
All	All	3407/3509 (97%)	0.68	411 (12%) 8 10	23, 51, 89, 136	4 (0%)

The worst 5 of 411 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	676	THR	8.0
1	A	1040	ILE	7.8
1	B	674	LEU	7.7
2	E	14	LEU	7.6
1	A	421	ALA	6.8

### 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, 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( $\text{\AA}^2$ )	Q<0.9
3	LMT	C	1110	35/35	0.62	0.23	66,96,119,124	0
14	SO4	C	1121	5/5	0.66	0.18	70,75,91,98	0
7	GOL	C	1119	6/6	0.68	0.21	56,81,96,97	0
7	GOL	A	1113	6/6	0.72	0.17	57,75,83,90	0
3	LMT	B	1203	35/35	0.72	0.22	68,95,119,128	0
7	GOL	C	1131	6/6	0.72	0.19	71,85,94,97	0
6	EDO	B	1226	4/4	0.72	0.23	55,66,76,89	0
7	GOL	B	1220	6/6	0.73	0.18	71,86,100,102	0
8	D12	B	1221	12/12	0.74	0.25	55,75,101,101	0
9	HEX	B	1224	6/6	0.74	0.28	65,79,86,86	0
5	C14	A	1104	14/14	0.74	0.26	61,86,103,105	0
7	GOL	A	1110	6/6	0.75	0.22	70,84,96,99	0
7	GOL	C	1118	6/6	0.76	0.22	53,69,79,83	0
4	OCT	B	1230	8/8	0.76	0.24	57,78,93,93	0
7	GOL	A	1126	6/6	0.77	0.22	57,69,81,83	0
7	GOL	A	1114	6/6	0.77	0.22	41,65,79,80	0
9	HEX	A	1123	6/6	0.78	0.27	68,84,88,88	0
4	OCT	A	1107	8/8	0.78	0.21	61,76,86,86	0
9	HEX	C	1128	6/6	0.78	0.24	60,73,82,82	0
7	GOL	C	1125	6/6	0.78	0.18	56,69,78,82	0
15	LPX	C	1107	30/30	0.78	0.20	61,78,90,98	0
3	LMT	A	1102	35/35	0.79	0.17	69,94,113,118	0
7	GOL	B	1218	6/6	0.79	0.17	59,73,86,90	0
9	HEX	C	1129	6/6	0.79	0.21	58,79,88,88	0
13	DDQ	C	1130	14/14	0.79	0.21	52,79,101,107	0
7	GOL	B	1219	6/6	0.79	0.17	66,82,98,102	0
7	GOL	C	1120	6/6	0.79	0.14	64,77,90,99	0
5	C14	C	1108	14/14	0.80	0.24	48,65,103,104	0
7	GOL	B	1217	6/6	0.80	0.22	47,62,83,86	0
7	GOL	D	204	6/6	0.80	0.18	48,69,83,83	0
8	D12	A	1120	12/12	0.80	0.23	61,75,88,88	0
9	HEX	C	1103	6/6	0.81	0.22	68,83,87,87	0
7	GOL	B	1208	6/6	0.81	0.19	61,78,97,100	0
4	OCT	C	1106	8/8	0.81	0.27	53,69,80,86	0
11	D10	A	1124	10/10	0.81	0.22	56,73,93,93	0
13	DDQ	B	1214	14/14	0.81	0.21	50,69,99,109	0
4	OCT	C	1102	8/8	0.81	0.23	57,78,93,93	0
6	EDO	B	1227	4/4	0.81	0.18	52,63,72,72	0
7	GOL	A	1108	6/6	0.81	0.21	68,81,91,91	0
4	OCT	C	1132	8/8	0.82	0.26	57,70,80,80	0
7	GOL	B	1211	6/6	0.82	0.17	54,67,81,83	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	LMT	B	1209	35/35	0.82	0.15	54,88,126,131	0
6	EDO	C	1101	4/4	0.82	0.18	48,58,75,75	0
11	D10	B	1204	10/10	0.82	0.22	56,73,93,93	0
8	D12	B	1222	12/12	0.82	0.21	52,73,84,86	0
9	HEX	A	1119	6/6	0.82	0.21	68,84,88,88	0
3	LMT	A	1105	35/35	0.82	0.16	54,82,123,142	0
7	GOL	C	1127	6/6	0.82	0.17	59,70,81,89	0
15	LPX	C	1109	30/30	0.82	0.19	54,76,95,99	0
4	OCT	A	1103	8/8	0.83	0.23	68,82,94,94	0
6	EDO	B	1205	4/4	0.83	0.18	46,55,71,71	0
7	GOL	A	1109	6/6	0.83	0.19	51,66,79,83	0
6	EDO	B	1212	4/4	0.84	0.15	66,79,89,89	0
7	GOL	C	1123	6/6	0.84	0.18	57,68,77,85	0
3	LMT	B	1202	35/35	0.84	0.16	49,73,113,113	0
8	D12	A	1118	12/12	0.84	0.20	61,78,88,93	0
4	OCT	C	1116	8/8	0.85	0.19	64,80,82,86	0
3	LMT	A	1101	35/35	0.85	0.14	48,77,115,125	0
6	EDO	B	1225	4/4	0.85	0.17	57,69,74,77	0
9	HEX	B	1229	6/6	0.85	0.25	63,81,89,89	0
7	GOL	C	1124	6/6	0.85	0.17	47,60,75,84	0
6	EDO	C	1114	4/4	0.85	0.21	47,63,75,78	0
7	GOL	B	1216	6/6	0.85	0.13	63,76,87,94	0
7	GOL	A	1117	6/6	0.86	0.16	40,61,71,79	0
7	GOL	D	201	6/6	0.86	0.20	53,64,77,92	0
7	GOL	C	1104	6/6	0.86	0.18	61,73,84,86	0
7	GOL	A	1128	6/6	0.86	0.16	63,75,86,87	0
12	DDR	B	1207	28/28	0.86	0.20	58,74,84,86	0
6	EDO	C	1113	4/4	0.87	0.19	60,72,84,84	0
9	HEX	B	1223	6/6	0.87	0.18	63,81,89,89	0
7	GOL	A	1112	6/6	0.87	0.16	53,69,81,83	0
7	GOL	A	1121	6/6	0.87	0.13	52,67,81,84	0
6	EDO	B	1201	4/4	0.87	0.21	46,60,81,81	0
7	GOL	C	1126	6/6	0.88	0.14	54,64,72,77	0
6	EDO	A	1106	4/4	0.88	0.17	51,64,75,76	0
14	SO4	B	1215	5/5	0.88	0.11	51,63,83,89	0
3	LMT	C	1105	35/35	0.88	0.15	55,73,94,98	0
7	GOL	B	1210	6/6	0.88	0.16	42,51,70,75	0
7	GOL	A	1116	6/6	0.88	0.17	46,56,69,79	0
4	OCT	C	1122	8/8	0.89	0.19	57,70,80,80	0
7	GOL	D	202	6/6	0.90	0.14	61,73,79,82	0
7	GOL	D	203	6/6	0.90	0.17	50,68,81,82	0
6	EDO	B	1228	4/4	0.90	0.13	55,66,75,83	0

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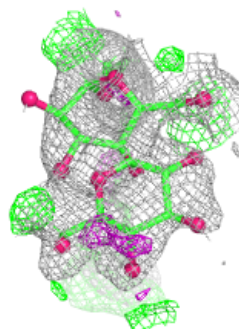
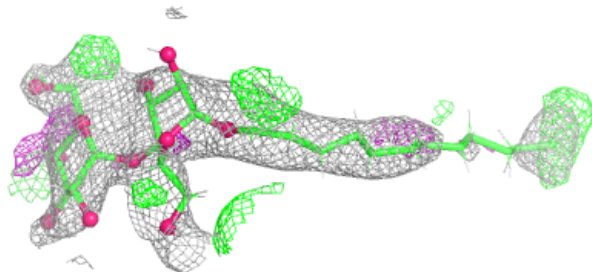
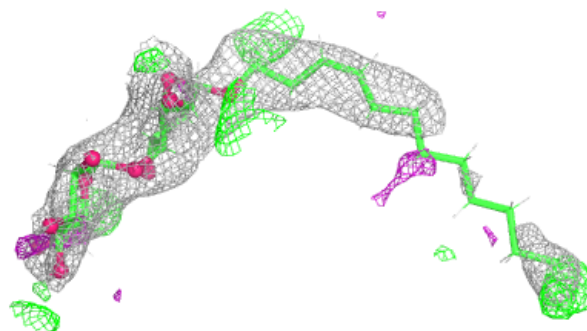
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
14	SO4	C	1115	5/5	0.90	0.10	66,67,77,78	0
7	GOL	C	1117	6/6	0.90	0.14	39,57,68,72	0
7	GOL	A	1111	6/6	0.90	0.13	43,70,83,84	0
6	EDO	B	1206	4/4	0.90	0.17	35,70,77,85	0
6	EDO	C	1112	4/4	0.91	0.18	48,57,70,70	0
6	EDO	B	1213	4/4	0.91	0.18	68,82,88,93	0
7	GOL	A	1115	6/6	0.93	0.12	34,45,62,65	0
7	GOL	A	1127	6/6	0.93	0.11	38,51,66,68	0
7	GOL	A	1125	6/6	0.93	0.12	35,52,63,69	0
10	XE9	A	1122	25/25	0.94	0.13	50,67,91,94	0
7	GOL	C	1111	6/6	0.95	0.09	38,51,63,63	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.

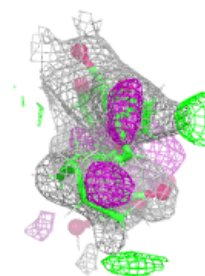
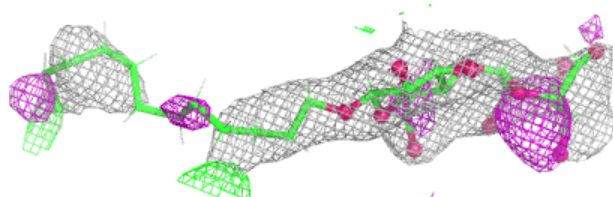
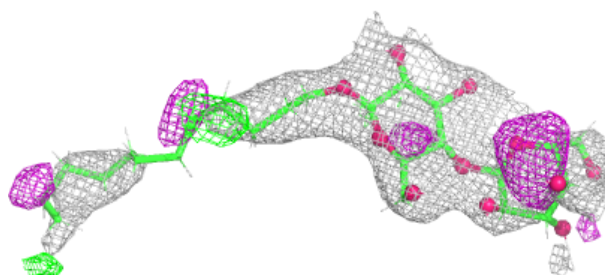
**Electron density around LMT C 1110:**

2mF<sub>o</sub>-DF<sub>c</sub> (at 0.7 rmsd) in gray  
mF<sub>o</sub>-DF<sub>c</sub> (at 3 rmsd) in purple (negative)  
and green (positive)

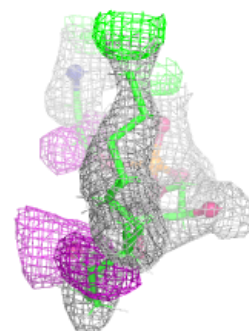
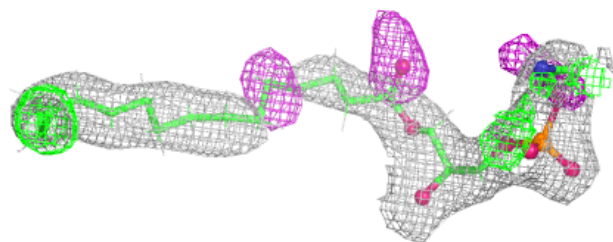
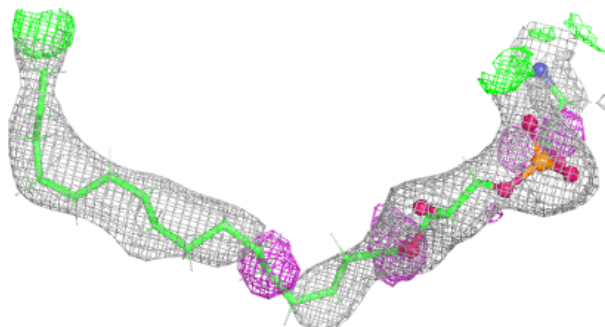


**Electron density around LMT B 1203:**

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

**Electron density around LPX C 1107:**

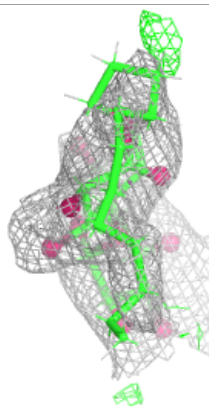
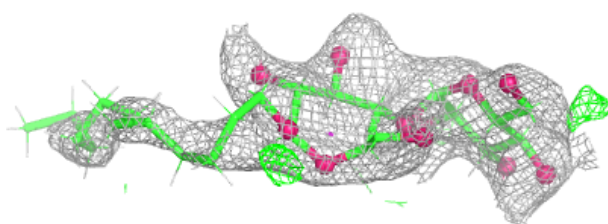
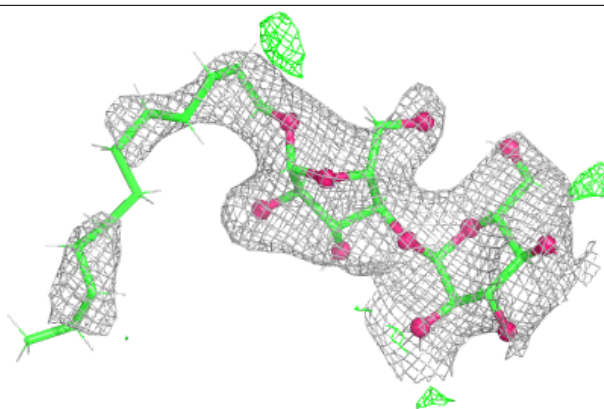
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



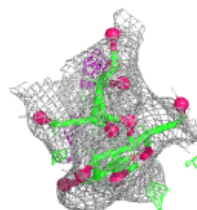
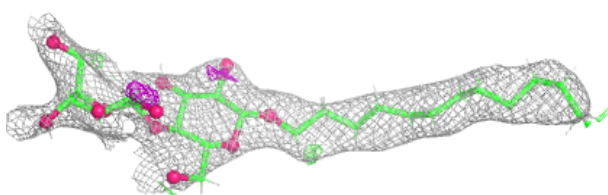
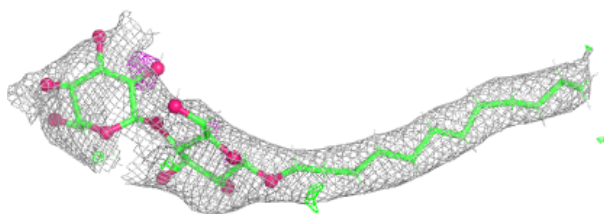


**Electron density around LMT A 1102:**

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

**Electron density around LMT B 1209:**

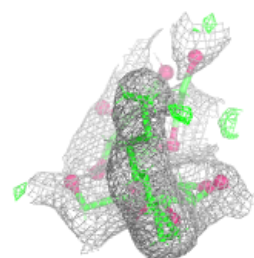
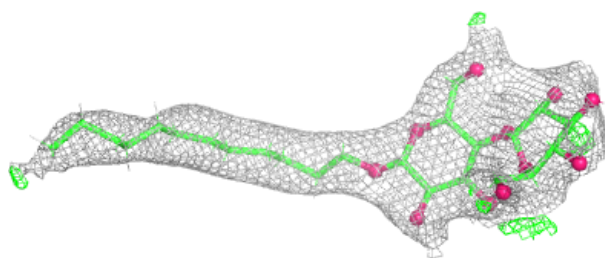
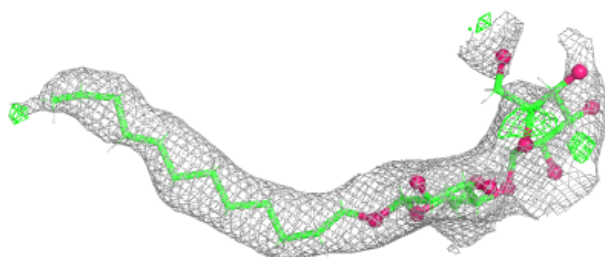
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



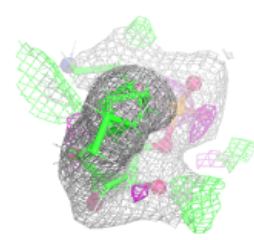
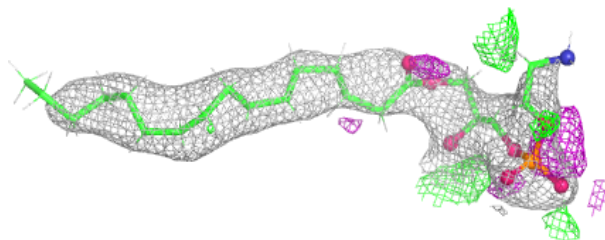
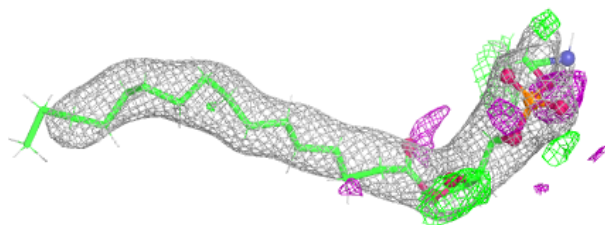


**Electron density around LMT A 1105:**

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

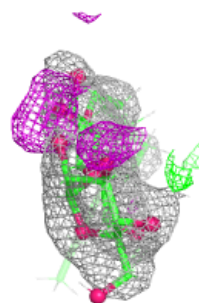
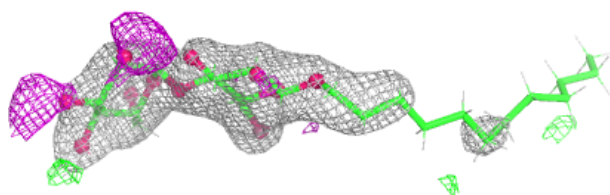
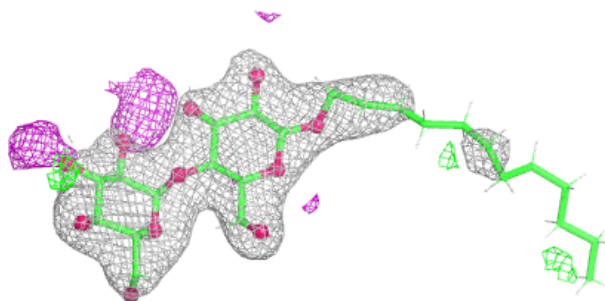
**Electron density around LPX C 1109:**

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

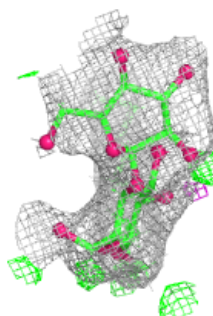
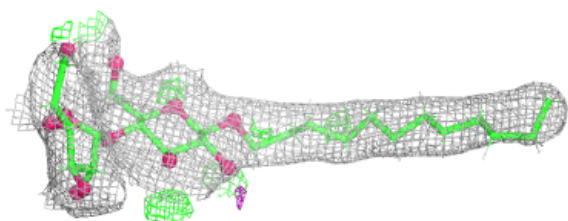
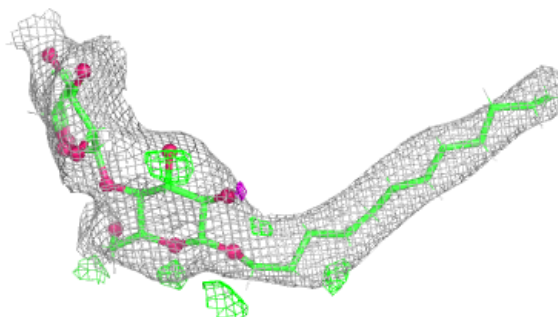


**Electron density around LMT B 1202:**

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

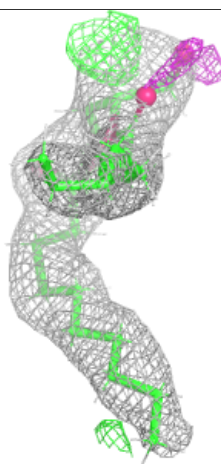
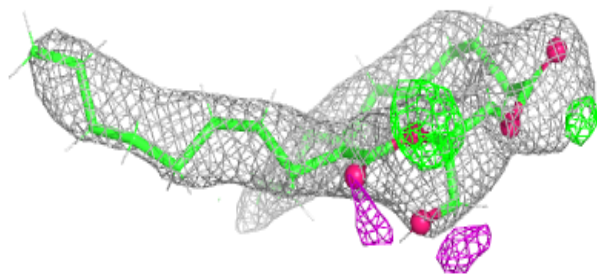
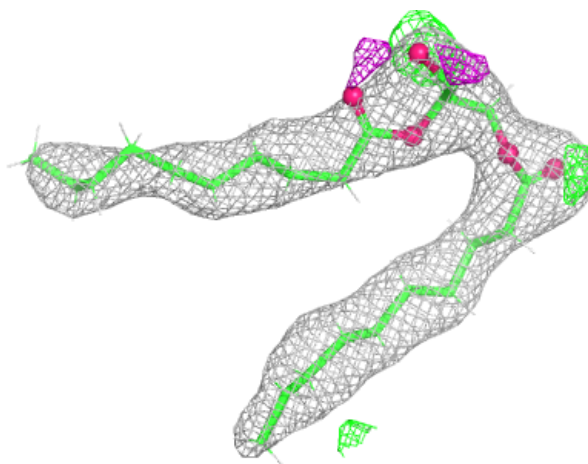
**Electron density around LMT A 1101:**

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



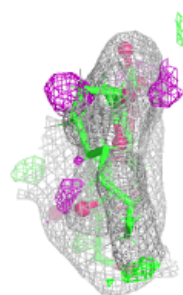
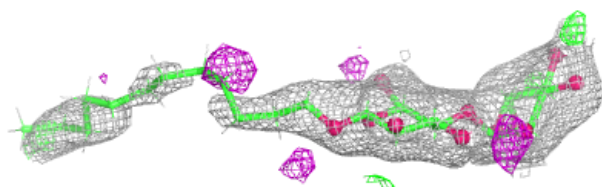
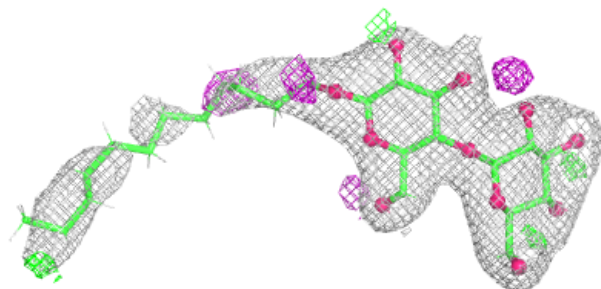
**Electron density around DDR B 1207:**

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

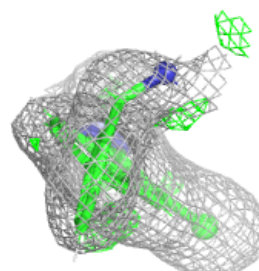
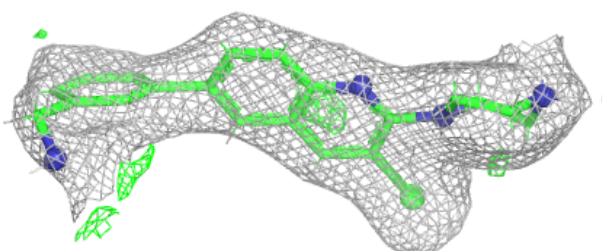
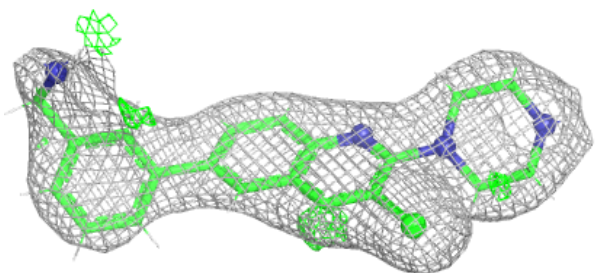


**Electron density around LMT C 1105:**

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

**Electron density around XE9 A 1122:**

$2mF_o-DF_c$  (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.