wwPDB EM Validation Summary Report

Mar 10, 2022 – 04:09 pm GMT

PDB ID	:	7O0X
EMDB ID	:	EMD-12682
Title	:	Cryo-EM structure (model_2b) of the RC-dLH complex from Gemmatimonas phototrophica at 2.44 A
Authors	:	Qian, P.; Koblizek, M.
Deposited on	:	2021-03-28
Resolution	:	2.44 Å(reported)
Based on initial models	:	6ET5, 5Y5S, 1LGH

This is a wwPDB EM 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/EMValidationReportHelp
with specific help available everywhere you see the (i) symbol.

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

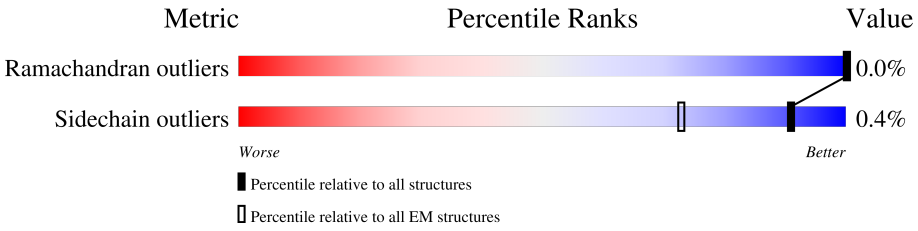
EMDB validation analysis	:	0.0.0.dev97
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.27

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.44 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)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	AA	54	89% · 9%
1	AB	54	89% · 9%
1	AC	54	87% · 11%
1	AD	54	87% · 11%
1	AE	54	89% · 9%
1	AF	54	89% · 9%
1	AG	54	89% · 9%
1	AH	54	89% · 9%
1	AI	54	89% · 9%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	AJ	54	89% 9%
1	AK	54	89% 9%
1	AL	54	89% 9%
1	AM	54	89% 9%
1	AN	54	89% 9%
1	AO	54	91% 9%
1	AP	54	89% 9%
1	AQ	54	89% 9%
1	AR	54	89% 9%
1	AS	54	89% 9%
1	AT	54	91% 9%
1	AU	54	91% 9%
1	AV	54	89% 9%
1	AW	54	91% 9%
1	AX	54	91% 9%
2	BA	44	89% 11%
2	BB	44	91% 9%
2	BC	44	89% 11%
2	BD	44	91% 9%
2	BE	44	91% 9%
2	BF	44	89% 11%
2	BG	44	89% 11%
2	BH	44	86% 11%
2	BI	44	91% 9%
2	BJ	44	89% 11%

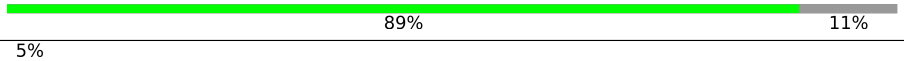
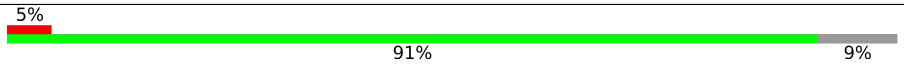
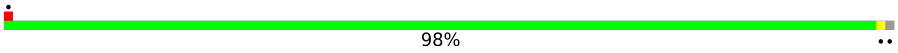
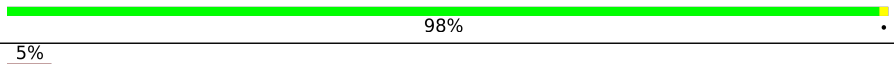
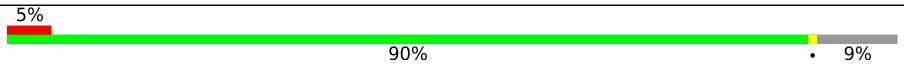
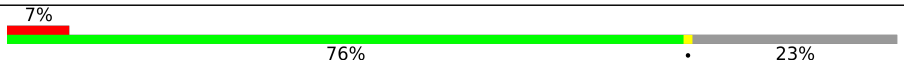
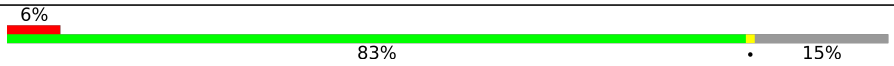
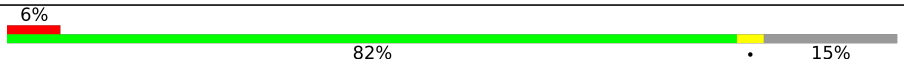
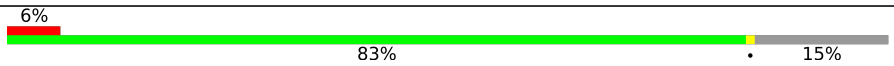
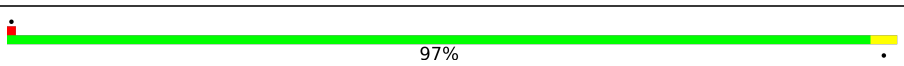
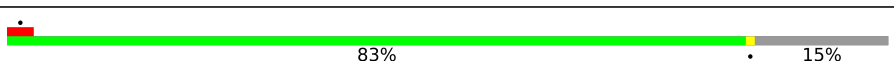
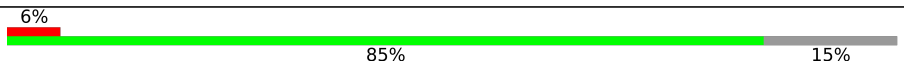
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	BK	44	86% 11%
2	BL	44	89% 11%
2	BM	44	89% 11%
2	BN	44	89% 11%
2	BO	44	89% 11%
2	BP	44	89% 11%
2	BQ	44	91% 9%
2	BR	44	91% 9%
2	BS	44	91% 9%
2	BT	44	91% 9%
2	BU	44	89% 11%
2	BV	44	91% 9%
2	BW	44	91% 9%
2	BX	44	89% 11%
2	ba	44	11% 86% 11%
2	bb	44	7% 89% 11%
2	bc	44	5% 89% 11%
2	bd	44	89% 11%
2	be	44	89% 11%
2	bf	44	89% 11%
2	bg	44	89% 11%
2	bh	44	89% 11%
2	bi	44	89% 11%
2	bj	44	5% 89% 11%
2	bk	44	89% 11%

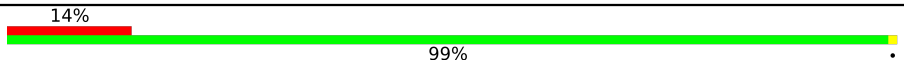
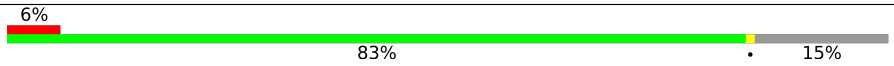
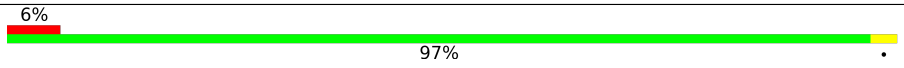
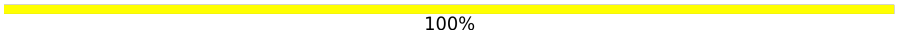
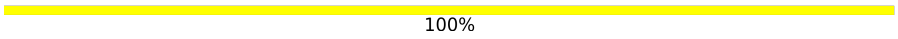
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	bl	44	
2	bm	44	
2	bn	44	
2	bo	44	
2	bp	44	
3	C	354	
4	C1	202	
5	C2	125	
6	H1	67	
7	H2	181	
8	L	274	
9	M	367	
10	aa	71	
11	ab	71	
11	ac	71	
11	ad	71	
11	ae	71	
11	af	71	
11	ag	71	
11	ah	71	
11	ai	71	
11	aj	71	
11	ak	71	
11	al	71	
11	am	71	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
11	an	71	
11	ao	71	
11	ap	71	
12	CG	2	
12	MG	2	

2 Entry composition (i)

There are 28 unique types of molecules in this entry. The entry contains 56446 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 LHh-alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	AA	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AB	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AC	48	Total	C	N	O	S	0	0
			384	256	64	60	4		
1	AD	48	Total	C	N	O	S	0	0
			384	256	64	60	4		
1	AE	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AF	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AG	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AH	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AI	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AJ	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AK	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AL	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AM	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AN	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AO	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AP	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AQ	49	Total	C	N	O	S	0	0
			391	261	65	61	4		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
1	AR	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AS	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AT	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AU	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AV	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AW	49	Total	C	N	O	S	0	0
			391	261	65	61	4		
1	AX	49	Total	C	N	O	S	0	0
			391	261	65	61	4		

- Molecule 2 is a protein called Light-harvesting protein B:885 subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	BA	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BB	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BC	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BD	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BE	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BF	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BG	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BH	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BI	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BJ	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BK	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BL	39	Total	C	N	O	S	0	0
			323	213	55	53	2		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	BM	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BN	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BO	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BP	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BQ	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BR	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BS	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BT	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BU	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	BV	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BW	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	BX	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	ba	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bb	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bc	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bd	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	be	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bf	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bg	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bh	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bi	39	Total	C	N	O	S	0	0
			323	213	55	53	2		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	bj	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bk	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bl	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bm	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bn	40	Total	C	N	O	S	0	0
			327	215	56	54	2		
2	bo	39	Total	C	N	O	S	0	0
			323	213	55	53	2		
2	bp	39	Total	C	N	O	S	0	0
			323	213	55	53	2		

- Molecule 3 is a protein called MULTIHEME_CYTC domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	299	Total	C	N	O	S	0	0
			2325	1464	419	423	19		

- Molecule 4 is a protein called RC-S.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	C1	103	Total	C	N	O	S	0	0
			806	506	151	145	4		

- Molecule 5 is a protein called RC-U.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	C2	99	Total	C	N	O	S	0	0
			766	483	148	132	3		

- Molecule 6 is a protein called PRCH domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	H1	62	Total	C	N	O	S	0	0
			522	343	89	88	2		

- Molecule 7 is a protein called RC-Hc.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H2	180	Total	C	N	O	S	0	0
			1404	894	239	267	4		

- Molecule 8 is a protein called Photosynthetic reaction center L subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	L	273	Total	C	N	O	S	0	0
			2165	1457	351	347	10		

- Molecule 9 is a protein called RC-M.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	M	335	Total	C	N	O	S	0	0
			2694	1789	442	453	10		

- Molecule 10 is a protein called LHC domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	aa	55	Total	C	N	O	S	0	0
			433	284	76	71	2		

- Molecule 11 is a protein called LHC domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	ab	58	Total	C	N	O	S	0	0
			455	298	79	75	3		
11	ac	56	Total	C	N	O	S	0	0
			443	290	77	73	3		
11	ad	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	ae	58	Total	C	N	O	S	0	0
			455	298	79	75	3		
11	af	58	Total	C	N	O	S	0	0
			455	298	79	75	3		
11	ag	58	Total	C	N	O	S	0	0
			455	298	79	75	3		
11	ah	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	ai	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	aj	60	Total	C	N	O	S	0	0
			465	304	81	77	3		

Continued on next page...

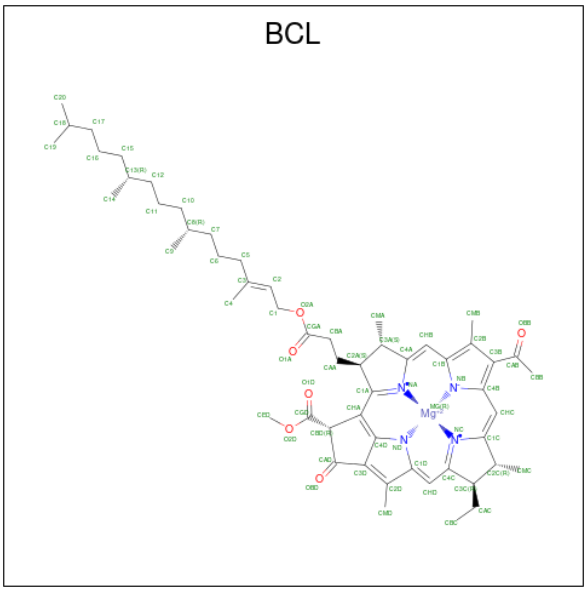
Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
11	ak	71	Total	C	N	O	S	0	0
			542	352	95	91	4		
11	al	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	am	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	an	71	Total	C	N	O	S	0	0
			542	352	95	91	4		
11	ao	60	Total	C	N	O	S	0	0
			465	304	81	77	3		
11	ap	71	Total	C	N	O	S	0	0
			543	352	95	92	4		

- Molecule 12 is an oligosaccharide called alpha-L-rhamnopyranose-(1-4)-alpha-D-mannopyra nose.

Mol	Chain	Residues	Atoms			AltConf	Trace
12	MG	2	Total	C	O	0	0
			21	12	9		
12	CG	2	Total	C	O	0	0
			21	12	9		

- Molecule 13 is BACTERIOCHLOROPHYLL A (three-letter code: BCL) (formula: $C_{55}H_{74}MgN_4O_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
13	AA	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AA	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AB	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AB	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AC	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AC	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AD	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AD	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AE	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AE	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AF	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AF	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AG	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AG	1	Total	C	Mg	N	O	0
			132	110	2	8	12	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
13	AH	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AH	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AI	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AI	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AJ	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AJ	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AK	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AK	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AL	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AL	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AM	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AM	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AN	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AN	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AO	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AO	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AP	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AP	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AQ	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AQ	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AQ	1	Total	C	Mg	N	O	0
			198	165	3	12	18	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
13	AR	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	AS	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AS	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AS	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AT	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	AU	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AU	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AV	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AV	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	AW	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AW	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AW	1	Total	C	Mg	N	O	0
			198	165	3	12	18	
13	AX	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BA	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BB	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BC	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BD	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BE	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BF	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BG	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BH	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
13	BI	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BJ	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BK	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BL	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BM	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BN	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BO	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BP	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BQ	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BR	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BS	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BT	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BU	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BV	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BW	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	BX	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	L	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	L	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	M	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	M	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
13	aa	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

Continued on next page...

Continued from previous page...

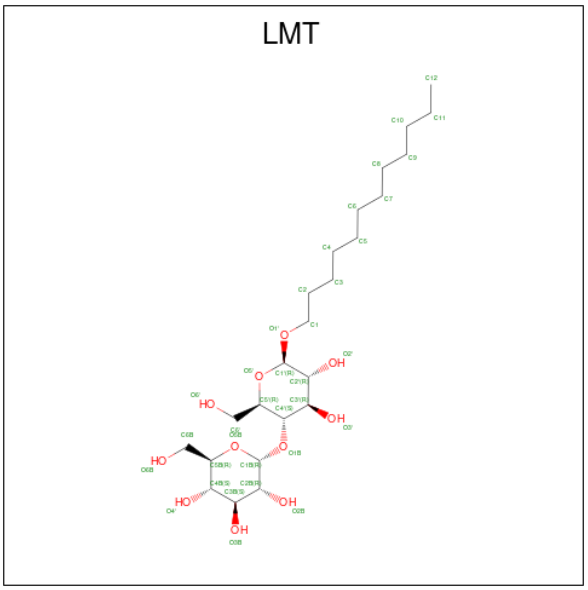
Mol	Chain	Residues	Atoms					AltConf
13	ab	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ac	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ad	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ae	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	af	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ag	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ah	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ai	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	aj	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ak	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	al	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	am	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	an	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ao	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ap	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	ba	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bb	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bc	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bd	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	be	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bf	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
13	bg	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bh	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bi	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bj	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bk	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bl	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bm	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bn	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bo	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
13	bp	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

- Molecule 14 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).



Mol	Chain	Residues	Atoms			AltConf
14	AA	1	Total	C	O	0
			35	24	11	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
14	AB	1	Total C O 70 48 22	0
14	AB	1	Total C O 70 48 22	0
14	AD	1	Total C O 70 48 22	0
14	AD	1	Total C O 70 48 22	0
14	AF	1	Total C O 35 24 11	0
14	AG	1	Total C O 35 24 11	0
14	AH	1	Total C O 105 72 33	0
14	AH	1	Total C O 105 72 33	0
14	AH	1	Total C O 105 72 33	0
14	AI	1	Total C O 35 24 11	0
14	AJ	1	Total C O 35 24 11	0
14	AK	1	Total C O 35 24 11	0
14	AL	1	Total C O 35 24 11	0
14	AN	1	Total C O 70 48 22	0
14	AN	1	Total C O 70 48 22	0
14	AO	1	Total C O 35 24 11	0
14	AP	1	Total C O 35 24 11	0
14	AR	1	Total C O 35 24 11	0
14	AS	1	Total C O 35 24 11	0
14	AT	1	Total C O 35 24 11	0
14	AU	1	Total C O 35 24 11	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
14	AV	1	Total C O 35 24 11	0
14	AW	1	Total C O 35 24 11	0
14	BA	1	Total C O 140 96 44	0
14	BA	1	Total C O 140 96 44	0
14	BA	1	Total C O 140 96 44	0
14	BA	1	Total C O 140 96 44	0
14	BB	1	Total C O 70 48 22	0
14	BB	1	Total C O 70 48 22	0
14	BC	1	Total C O 70 48 22	0
14	BC	1	Total C O 70 48 22	0
14	BD	1	Total C O 140 96 44	0
14	BD	1	Total C O 140 96 44	0
14	BD	1	Total C O 140 96 44	0
14	BD	1	Total C O 140 96 44	0
14	BE	1	Total C O 140 96 44	0
14	BE	1	Total C O 140 96 44	0
14	BE	1	Total C O 140 96 44	0
14	BE	1	Total C O 140 96 44	0
14	BF	1	Total C O 105 72 33	0
14	BF	1	Total C O 105 72 33	0
14	BF	1	Total C O 105 72 33	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
14	BG	1	Total	C	O	0
			70	48	22	
14	BG	1	Total	C	O	0
			70	48	22	
14	BH	1	Total	C	O	0
			105	72	33	
14	BH	1	Total	C	O	0
			105	72	33	
14	BH	1	Total	C	O	0
			105	72	33	
14	BI	1	Total	C	O	0
			140	96	44	
14	BI	1	Total	C	O	0
			140	96	44	
14	BI	1	Total	C	O	0
			140	96	44	
14	BI	1	Total	C	O	0
			140	96	44	
14	BJ	1	Total	C	O	0
			70	48	22	
14	BJ	1	Total	C	O	0
			70	48	22	
14	BK	1	Total	C	O	0
			140	96	44	
14	BK	1	Total	C	O	0
			140	96	44	
14	BK	1	Total	C	O	0
			140	96	44	
14	BK	1	Total	C	O	0
			140	96	44	
14	BL	1	Total	C	O	0
			105	72	33	
14	BL	1	Total	C	O	0
			105	72	33	
14	BL	1	Total	C	O	0
			105	72	33	
14	BM	1	Total	C	O	0
			70	48	22	
14	BM	1	Total	C	O	0
			70	48	22	
14	BN	1	Total	C	O	0
			140	96	44	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
14	BN	1	Total C O 140 96 44	0
14	BN	1	Total C O 140 96 44	0
14	BN	1	Total C O 140 96 44	0
14	BO	1	Total C O 70 48 22	0
14	BO	1	Total C O 70 48 22	0
14	BP	1	Total C O 140 96 44	0
14	BP	1	Total C O 140 96 44	0
14	BP	1	Total C O 140 96 44	0
14	BP	1	Total C O 140 96 44	0
14	BQ	1	Total C O 70 48 22	0
14	BQ	1	Total C O 70 48 22	0
14	BR	1	Total C O 140 96 44	0
14	BR	1	Total C O 140 96 44	0
14	BR	1	Total C O 140 96 44	0
14	BR	1	Total C O 140 96 44	0
14	BS	1	Total C O 105 72 33	0
14	BS	1	Total C O 105 72 33	0
14	BS	1	Total C O 105 72 33	0
14	BT	1	Total C O 105 72 33	0
14	BT	1	Total C O 105 72 33	0
14	BT	1	Total C O 105 72 33	0

Continued on next page...

Continued from previous page...

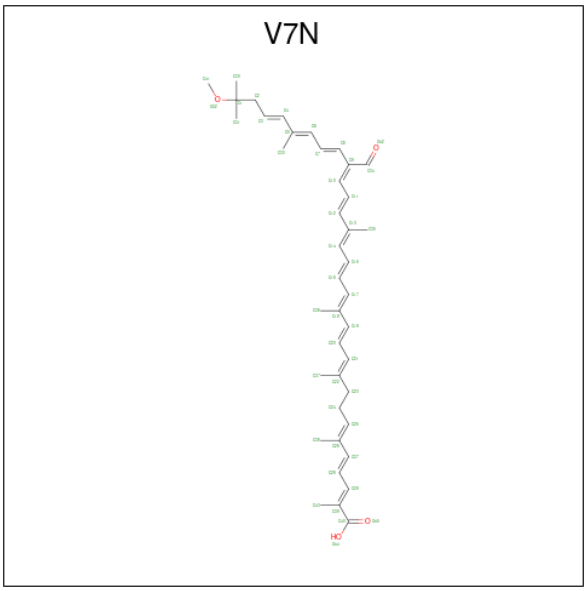
Mol	Chain	Residues	Atoms	AltConf
14	BU	1	Total C O 105 72 33	0
14	BU	1	Total C O 105 72 33	0
14	BU	1	Total C O 105 72 33	0
14	BV	1	Total C O 70 48 22	0
14	BV	1	Total C O 70 48 22	0
14	BW	1	Total C O 140 96 44	0
14	BW	1	Total C O 140 96 44	0
14	BW	1	Total C O 140 96 44	0
14	BW	1	Total C O 140 96 44	0
14	BX	1	Total C O 70 48 22	0
14	BX	1	Total C O 70 48 22	0
14	L	1	Total C O 175 120 55	0
14	L	1	Total C O 175 120 55	0
14	L	1	Total C O 175 120 55	0
14	L	1	Total C O 175 120 55	0
14	L	1	Total C O 175 120 55	0
14	M	1	Total C O 35 24 11	0
14	ac	1	Total C O 35 24 11	0
14	bb	1	Total C O 35 24 11	0
14	bc	1	Total C O 35 24 11	0
14	bd	1	Total C O 35 24 11	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
14	bf	1	Total	C	O	0
			70	48	22	
14	bf	1	Total	C	O	0
			70	48	22	
14	bg	1	Total	C	O	0
			35	24	11	
14	bh	1	Total	C	O	0
			70	48	22	
14	bh	1	Total	C	O	0
			70	48	22	
14	bj	1	Total	C	O	0
			35	24	11	
14	bk	1	Total	C	O	0
			35	24	11	
14	bl	1	Total	C	O	0
			70	48	22	
14	bl	1	Total	C	O	0
			70	48	22	
14	bm	1	Total	C	O	0
			35	24	11	
14	bn	1	Total	C	O	0
			35	24	11	
14	bo	1	Total	C	O	0
			35	24	11	
14	bp	1	Total	C	O	0
			35	24	11	

- Molecule 15 is (2 {E},4 {E},6 {E},10 {E},12 {E},14 {E},16 {E},18 {E},20 {E},22 {Z},24 {E},26 {E},28 {E})-23-methanoyl-31-methoxy-2,6,10,14,19,27,31-heptamethyl-dotriaconta-2,4,6,10,12,14,16,18,20,22,24,26,28-tridecaenoic acid (three-letter code: V7N) (formula: $C_{41}H_{54}O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
15	AE	1	Total C O 45 41 4	0
15	AH	1	Total C O 45 41 4	0
15	AT	1	Total C O 45 41 4	0
15	BA	1	Total C O 45 41 4	0
15	BB	1	Total C O 45 41 4	0
15	BC	1	Total C O 45 41 4	0
15	BD	1	Total C O 45 41 4	0
15	BE	1	Total C O 45 41 4	0
15	BG	1	Total C O 45 41 4	0
15	BH	1	Total C O 45 41 4	0
15	BJ	1	Total C O 45 41 4	0
15	BK	1	Total C O 45 41 4	0
15	BL	1	Total C O 45 41 4	0
15	BM	1	Total C O 45 41 4	0

Continued on next page...

Continued from previous page...

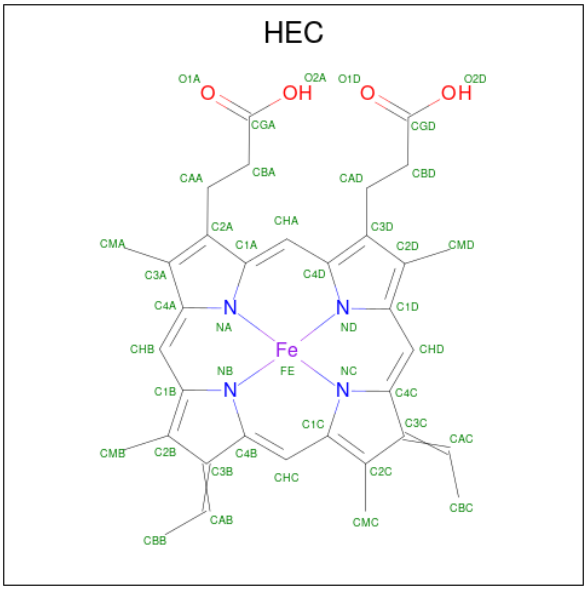
Mol	Chain	Residues	Atoms			AltConf
15	BN	1	Total	C	O	0
			45	41	4	
15	BO	1	Total	C	O	0
			45	41	4	
15	BP	1	Total	C	O	0
			45	41	4	
15	BQ	1	Total	C	O	0
			45	41	4	
15	BR	1	Total	C	O	0
			45	41	4	
15	BS	1	Total	C	O	0
			45	41	4	
15	BT	1	Total	C	O	0
			45	41	4	
15	BV	1	Total	C	O	0
			45	41	4	
15	BW	1	Total	C	O	0
			45	41	4	
15	BX	1	Total	C	O	0
			45	41	4	
15	ba	1	Total	C	O	0
			45	41	4	
15	bb	1	Total	C	O	0
			45	41	4	
15	bc	1	Total	C	O	0
			45	41	4	
15	bd	1	Total	C	O	0
			45	41	4	
15	be	1	Total	C	O	0
			45	41	4	
15	bf	1	Total	C	O	0
			45	41	4	
15	bg	1	Total	C	O	0
			45	41	4	
15	bh	1	Total	C	O	0
			45	41	4	
15	bi	1	Total	C	O	0
			45	41	4	
15	bj	1	Total	C	O	0
			45	41	4	
15	bk	1	Total	C	O	0
			45	41	4	

Continued on next page...

Continued from previous page...

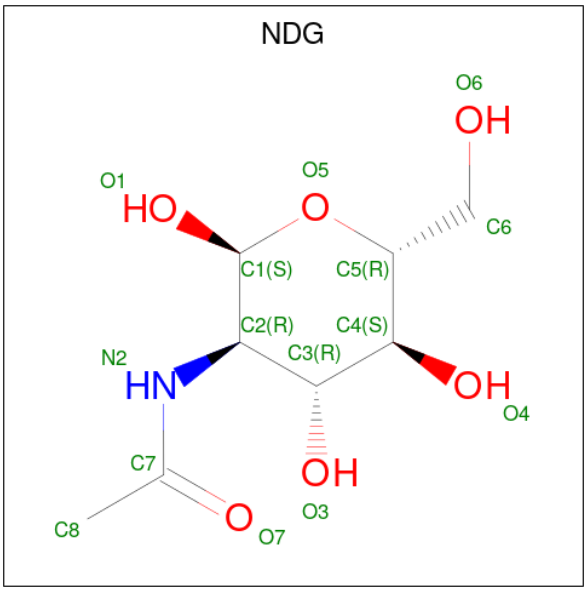
Mol	Chain	Residues	Atoms	AltConf
15	bl	1	Total C O 45 41 4	0
15	bm	1	Total C O 45 41 4	0
15	bn	1	Total C O 45 41 4	0
15	bo	1	Total C O 45 41 4	0
15	bp	1	Total C O 45 41 4	0

- Molecule 16 is HEME C (three-letter code: HEC) (formula: $C_{34}H_{34}FeN_4O_4$) (labeled as "Ligand of Interest" by depositor).



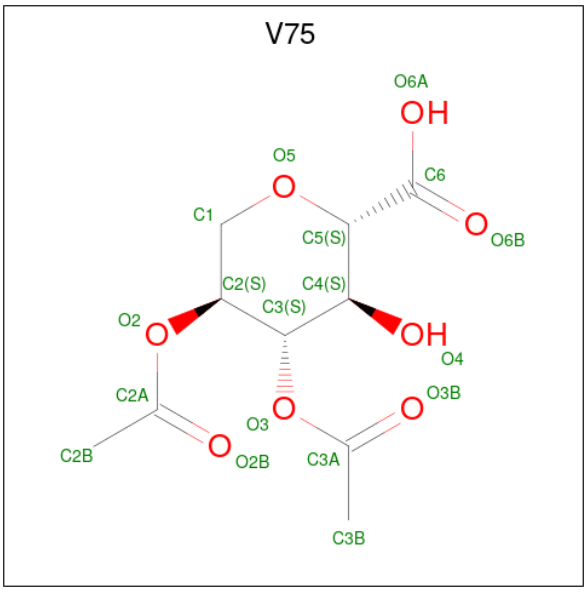
Mol	Chain	Residues	Atoms	AltConf
16	C	1	Total C Fe N O 172 136 4 16 16	0
16	C	1	Total C Fe N O 172 136 4 16 16	0
16	C	1	Total C Fe N O 172 136 4 16 16	0
16	C	1	Total C Fe N O 172 136 4 16 16	0

- Molecule 17 is 2-acetamido-2-deoxy-alpha-D-glucopyranose (three-letter code: NDG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				AltConf
17	C	1	Total	C	N	O	0
			14	8	1	5	
17	C1	1	Total	C	N	O	0
			14	8	1	5	

- Molecule 18 is (2 {S},3 {S},4 {S},5 {S})-4,5-diacetyloxy-3-oxidanyl-oxane-2-carboxylic acid (three-letter code: V75) (formula: $C_{10}H_{14}O_8$) (labeled as "Ligand of Interest" by depositor).



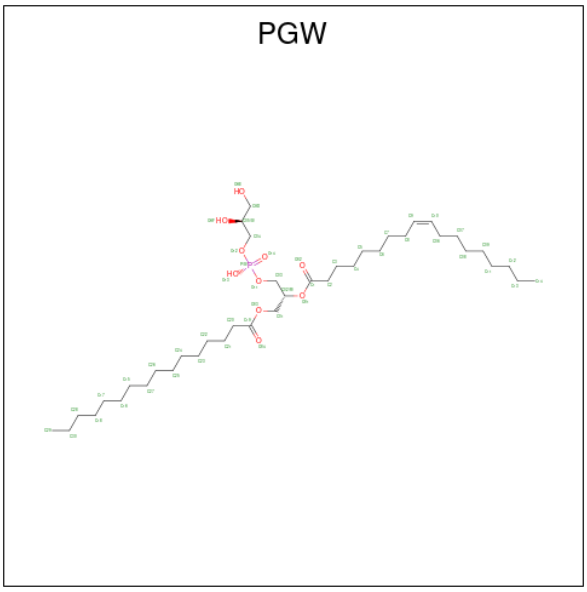
Mol	Chain	Residues	Atoms			AltConf
18	C	1	Total	C	O	0
			18	10	8	

Continued on next page...

Continued from previous page...

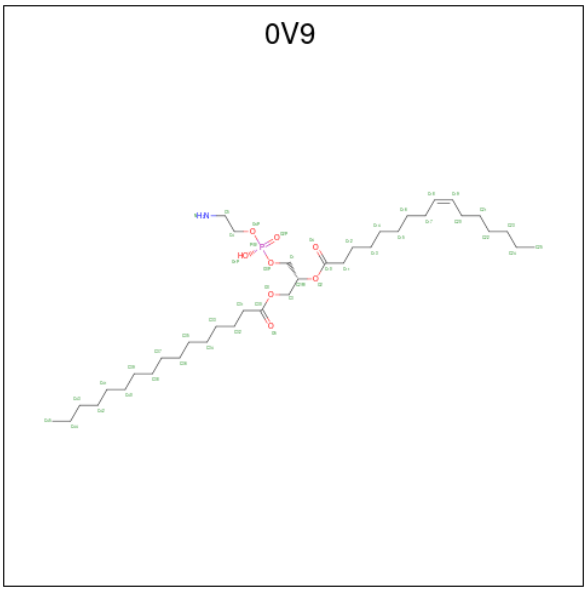
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
18	M	1	18	10	8	0

- Molecule 19 is (1R)-2-{[(S)-{[(2S)-2,3-dihydroxypropyl]oxy}(hydroxy)phosphoryl]oxy}-1-[(hexadecanoyloxy)methyl]ethyl (9Z)-octadec-9-enoate (three-letter code: PGW) (formula: $C_{40}H_{77}O_{10}P$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
19	H1	1	51	40	10	1	0

- Molecule 20 is (19R,22S)-25-amino-22-hydroxy-22-oxido-16-oxo-17,21,23-trioxa-22lambda 5 -phosphapentacosan-19-yl (9Z)-hexadec-9-enoate (three-letter code: 0V9) (formula: $C_{37}H_{72}NO_8P$) (labeled as "Ligand of Interest" by depositor).



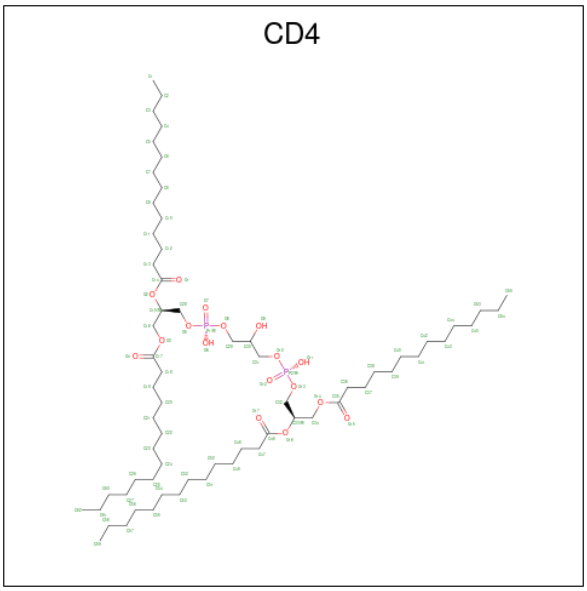
Mol	Chain	Residues	Atoms					AltConf
20	H1	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	L	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	aj	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	ba	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	ba	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	bb	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bc	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	be	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	be	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	bf	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bg	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bh	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bi	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bj	1	Total	C	N	O	P	0
			45	35	1	8	1	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
20	bk	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	bk	1	Total	C	N	O	P	0
			90	70	2	16	2	
20	bl	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bm	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bn	1	Total	C	N	O	P	0
			45	35	1	8	1	
20	bo	1	Total	C	N	O	P	0
			45	35	1	8	1	

- Molecule 21 is (2R,5R,11R,14R)-5,8,11-trihydroxy-5,11-dioxido-17-oxo-2,14-bis(tetradecanoyloxy)-4,6,10,12,16-pentaoxa-5,11-diphosphatriacont-1-yl tetradecanoate (three-letter code: CD4) (formula: $C_{65}H_{126}O_{17}P_2$).



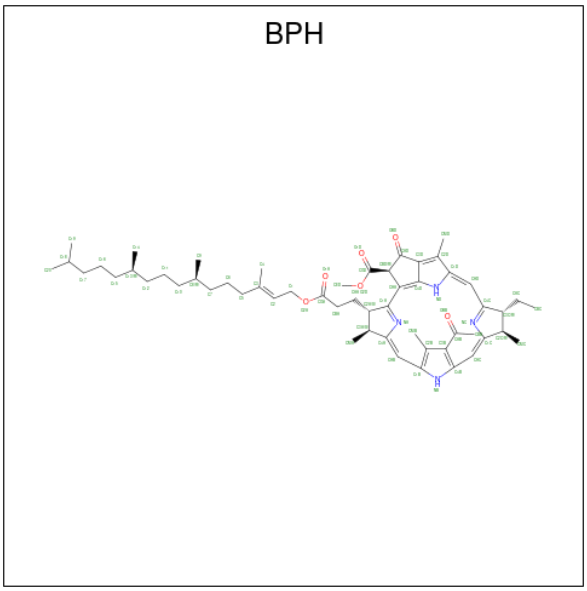
Mol	Chain	Residues	Atoms				AltConf
21	H1	1	Total	C	O	P	0
			84	65	17	2	
21	M	1	Total	C	O	P	0
			84	65	17	2	
21	ad	1	Total	C	O	P	0
			84	65	17	2	
21	af	1	Total	C	O	P	0
			168	130	34	4	

Continued on next page...

Continued from previous page...

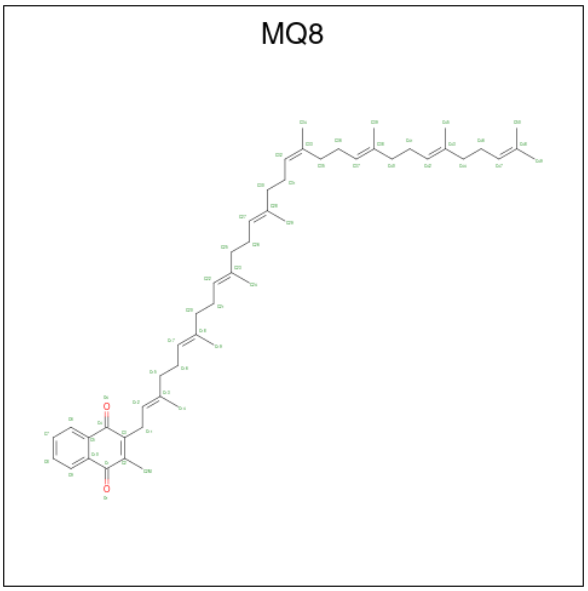
Mol	Chain	Residues	Atoms				AltConf
21	af	1	Total	C	O	P	0
			168	130	34	4	
21	ai	1	Total	C	O	P	0
			84	65	17	2	

- Molecule 22 is BACTERIOPHEOPHYTIN A (three-letter code: BPH) (formula: $C_{55}H_{76}N_4O_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
22	L	1	Total	C	N	O	0
			65	55	4	6	
22	M	1	Total	C	N	O	0
			65	55	4	6	

- Molecule 23 is MENAQUINONE 8 (three-letter code: MQ8) (formula: $C_{51}H_{72}O_2$).

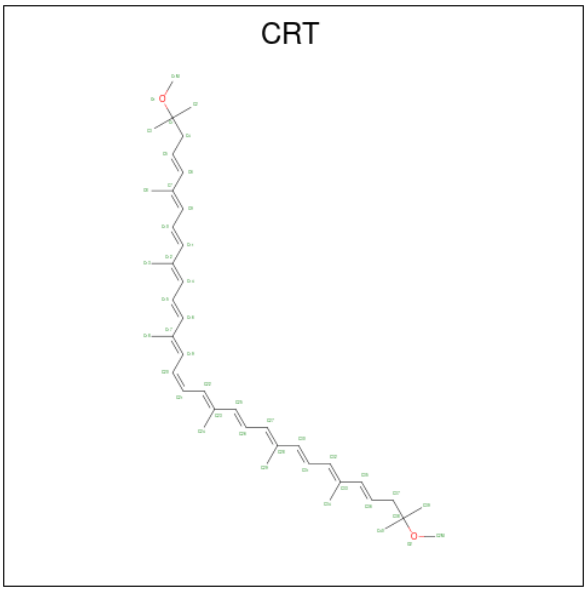


Mol	Chain	Residues	Atoms	AltConf
23	L	1	Total C O 53 51 2	0
23	M	1	Total C O 53 51 2	0
23	an	1	Total C O 53 51 2	0

- Molecule 24 is FE (III) ION (three-letter code: FE) (formula: Fe).

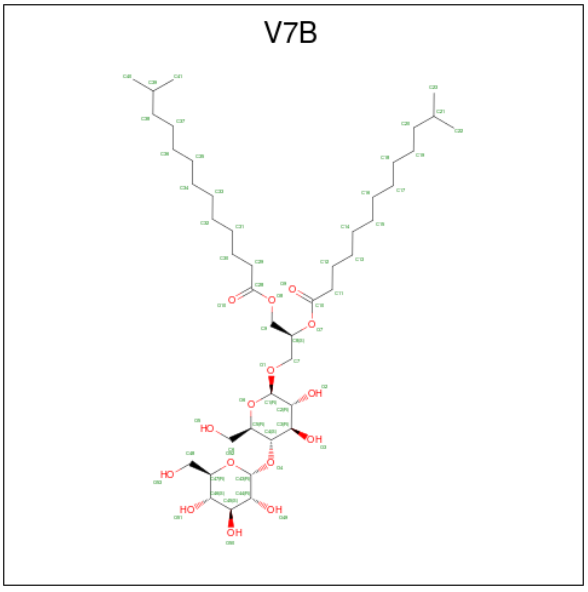
Mol	Chain	Residues	Atoms	AltConf
24	M	1	Total Fe 1 1	0

- Molecule 25 is SPIRILLOXANTHIN (three-letter code: CRT) (formula: $C_{42}H_{60}O_2$).



Mol	Chain	Residues	Atoms			AltConf
25	M	1	Total	C	O	0
			44	42	2	

- Molecule 26 is [(2 {S})-3-[(2 {R},3 {R},4 {R},5 {S},6 {R})-6-(hydroxymethyl)-5-[(2 {R},3 {R},4 {S},5 {S},6 {R})-6-(hydroxymethyl)-3,4,5-tris(oxidanyl)oxan-2-yl]oxy-3,4-bis(oxidanyl)oxan-2-yl]oxy-2-(12-methyltridecanoyloxy)propyl] 12-methyltridecanoate (three-letter code: V7B) (formula: $C_{43}H_{80}O_{15}$) (labeled as "Ligand of Interest" by depositor).



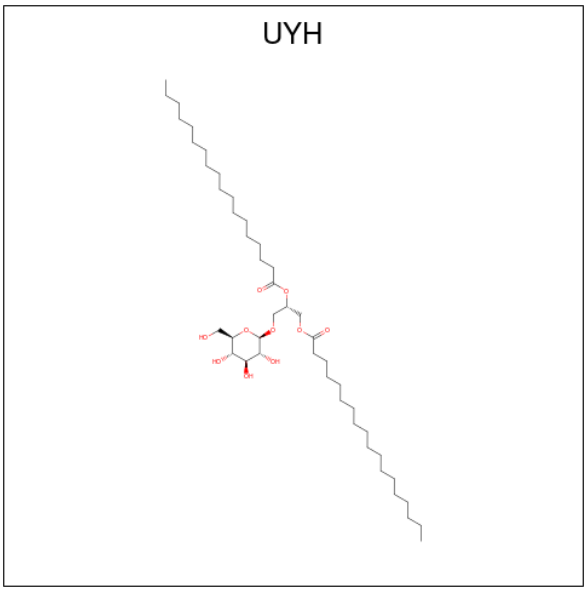
Mol	Chain	Residues	Atoms			AltConf
26	af	1	Total	C	O	0
			58	43	15	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			AltConf
26	ag	1	Total	C	O	0
			58	43	15	

- Molecule 27 is [(2 {S})-3-[(2 {R},3 {R},4 {S},5 {S},6 {R})-6-(hydroxymethyl)-3,4,5-tris(oxidanyl)oxan-2-yl]oxy-2-octadecanoyloxy-propyl] octadecanoate (three-letter code: UYH) (formula: $C_{45}H_{86}O_{10}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
27	ai	1	Total	C	O	0
			55	45	10	

- Molecule 28 is water.

Mol	Chain	Residues	Atoms		AltConf
28	AA	3	Total	O	0
			3	3	
28	AB	3	Total	O	0
			3	3	
28	AC	2	Total	O	0
			2	2	
28	AD	5	Total	O	0
			5	5	
28	AG	2	Total	O	0
			2	2	
28	AH	3	Total	O	0
			3	3	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
28	AI	3	Total O 3 3	0
28	AJ	6	Total O 6 6	0
28	AK	3	Total O 3 3	0
28	AL	3	Total O 3 3	0
28	AM	4	Total O 4 4	0
28	AN	3	Total O 3 3	0
28	AO	2	Total O 2 2	0
28	AP	3	Total O 3 3	0
28	AQ	5	Total O 5 5	0
28	AR	2	Total O 2 2	0
28	AS	5	Total O 5 5	0
28	AT	7	Total O 7 7	0
28	AV	6	Total O 6 6	0
28	AW	6	Total O 6 6	0
28	AX	5	Total O 5 5	0
28	BD	1	Total O 1 1	0
28	BE	1	Total O 1 1	0
28	BF	1	Total O 1 1	0
28	BO	1	Total O 1 1	0
28	BW	1	Total O 1 1	0
28	C	98	Total O 98 98	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
28	C1	48	Total O 48 48	0
28	C2	3	Total O 3 3	0
28	H1	9	Total O 9 9	0
28	H2	35	Total O 35 35	0
28	L	53	Total O 53 53	0
28	M	59	Total O 59 59	0
28	aa	3	Total O 3 3	0
28	ab	3	Total O 3 3	0
28	ac	4	Total O 4 4	0
28	ad	9	Total O 9 9	0
28	ae	7	Total O 7 7	0
28	af	7	Total O 7 7	0
28	ag	7	Total O 7 7	0
28	ah	6	Total O 6 6	0
28	ai	3	Total O 3 3	0
28	aj	6	Total O 6 6	0
28	ak	14	Total O 14 14	0
28	al	8	Total O 8 8	0
28	am	8	Total O 8 8	0
28	an	5	Total O 5 5	0
28	ao	2	Total O 2 2	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
28	ap	8	Total O 8 8	0
28	bb	2	Total O 2 2	0
28	bc	2	Total O 2 2	0
28	bd	1	Total O 1 1	0
28	be	1	Total O 1 1	0
28	bf	1	Total O 1 1	0
28	bg	1	Total O 1 1	0
28	bh	2	Total O 2 2	0
28	bi	3	Total O 3 3	0
28	bk	4	Total O 4 4	0
28	bl	3	Total O 3 3	0
28	bm	4	Total O 4 4	0
28	bn	3	Total O 3 3	0
28	bo	2	Total O 2 2	0
28	bp	1	Total O 1 1	0

3 Residue-property plots (i)

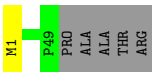
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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: LHh-alpha

Chain AA:

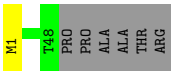
- Molecule 1: LHh-alpha

Chain AB:



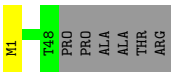
- Molecule 1: LHh-alpha

Chain AC:



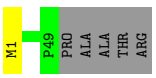
- Molecule 1: LHh-alpha

Chain AD:



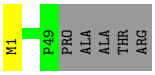
- Molecule 1: LHh-alpha

Chain AE:



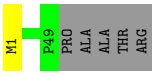
- Molecule 1: LHh-alpha

Chain AF:



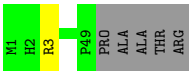
• Molecule 1: LHh-alpha

Chain AG:



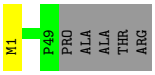
• Molecule 1: LHh-alpha

Chain AH:



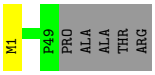
• Molecule 1: LHh-alpha

Chain AI:



• Molecule 1: LHh-alpha

Chain AJ:

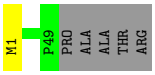


• Molecule 1: LHh-alpha

Chain AK:

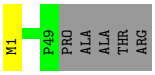
• Molecule 1: LHh-alpha

Chain AL:



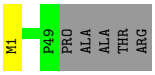
• Molecule 1: LHh-alpha

Chain AM:



• Molecule 1: LHh-alpha

Chain AN:

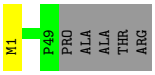


• Molecule 1: LHh-alpha

Chain AO:

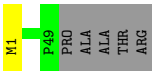
• Molecule 1: LHh-alpha

Chain AP:



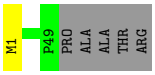
• Molecule 1: LHh-alpha

Chain AQ:



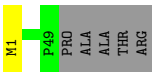
• Molecule 1: LHh-alpha

Chain AR:



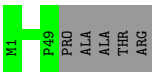
• Molecule 1: LHh-alpha

Chain AS:



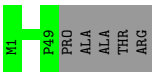
• Molecule 1: LHh-alpha

Chain AT:



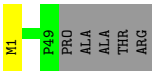
• Molecule 1: LHh-alpha

Chain AU:



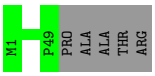
• Molecule 1: LHh-alpha

Chain AV:



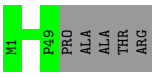
• Molecule 1: LHh-alpha

Chain AW:



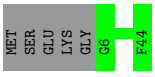
• Molecule 1: LHh-alpha

Chain AX:



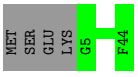
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BA:



• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BB:

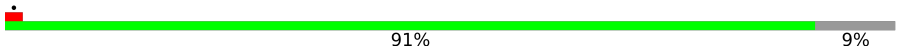


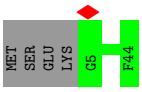
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BC:

• Molecule 2: Light-harvesting protein B:885 subunit beta

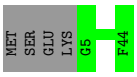
Chain BD:





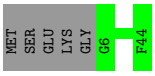
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BE:



• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BF:

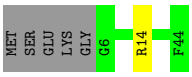


• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BG:

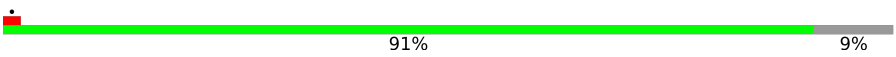
• Molecule 2: Light-harvesting protein B:885 subunit beta

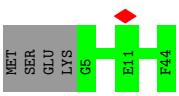
Chain BH:



• Molecule 2: Light-harvesting protein B:885 subunit beta

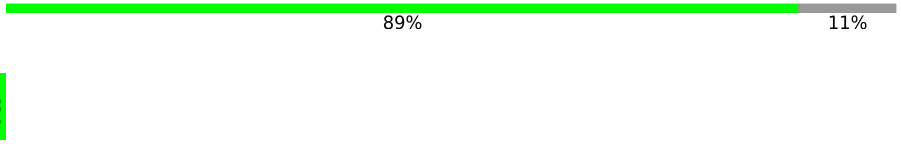
Chain BI:





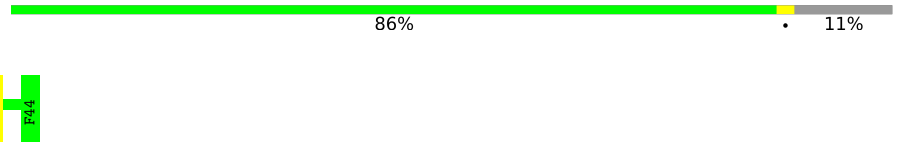
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BJ:



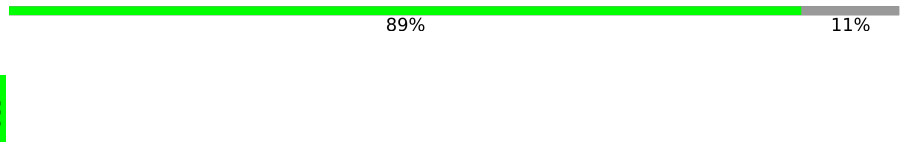
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BK:



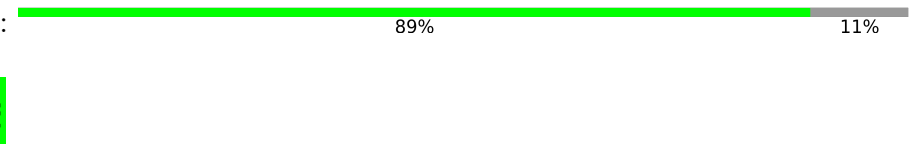
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BL:



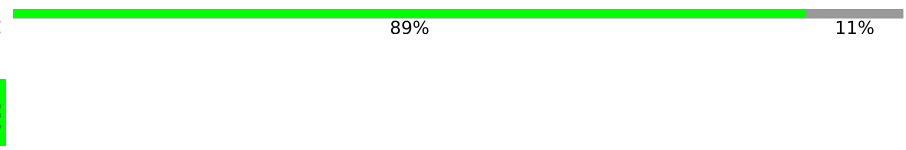
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BM:



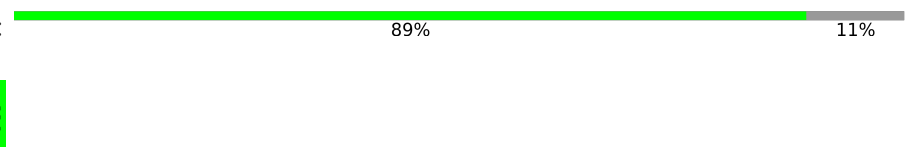
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BN:



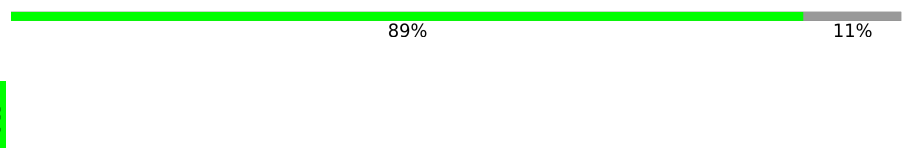
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BO:



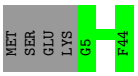
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BP:



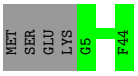
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BQ:



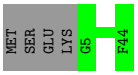
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BR:



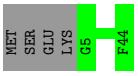
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BS:



• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BT:

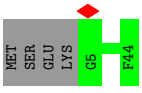


• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BU:

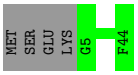
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BV:



• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BW:

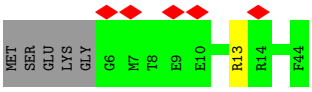


• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain BX:

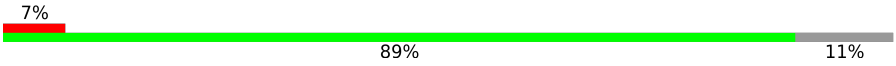
• Molecule 2: Light-harvesting protein B:885 subunit beta

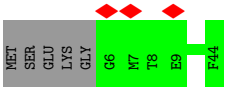
Chain ba:



• Molecule 2: Light-harvesting protein B:885 subunit beta

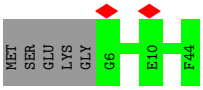
Chain bb:





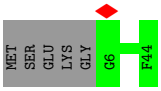
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bc:



• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bd:



• Molecule 2: Light-harvesting protein B:885 subunit beta

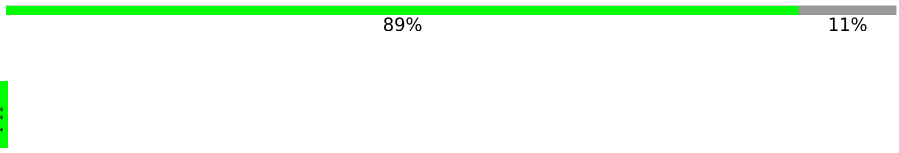
Chain be:

• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bf:

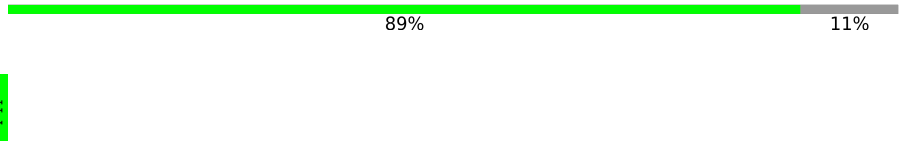
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bg:



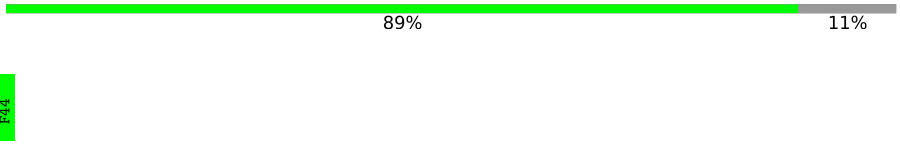
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bh:



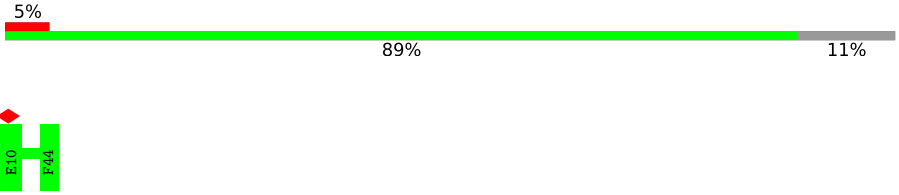
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bi:



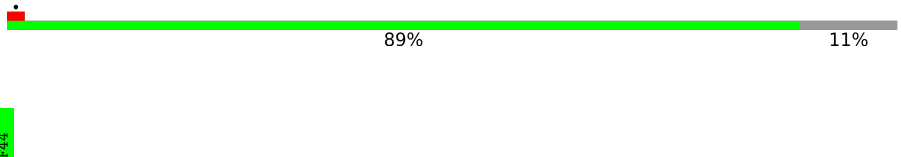
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bj:



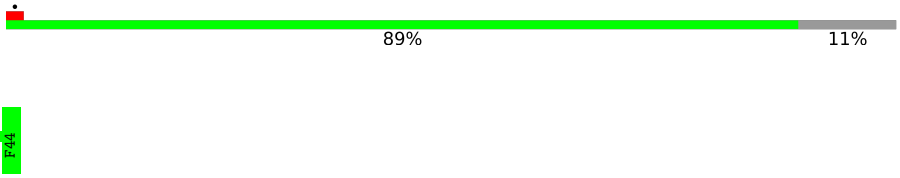
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bk:



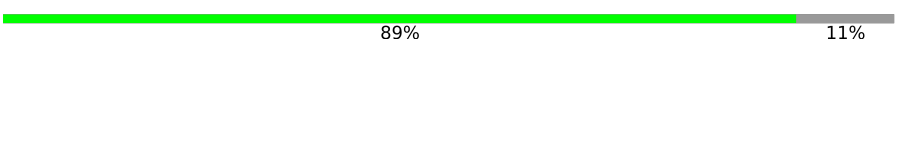
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bl:



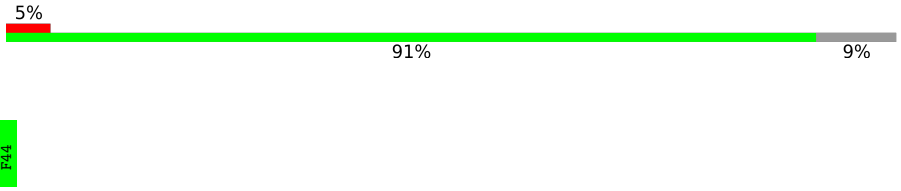
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bm:



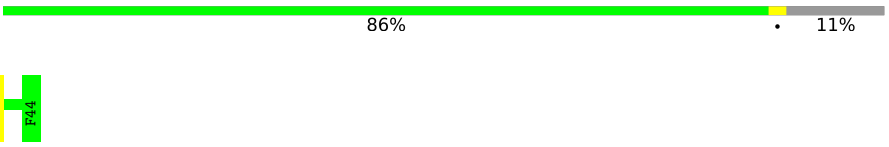
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bn:



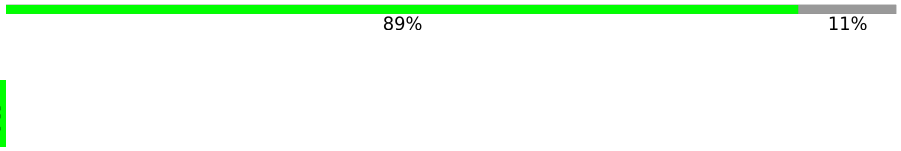
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bo:



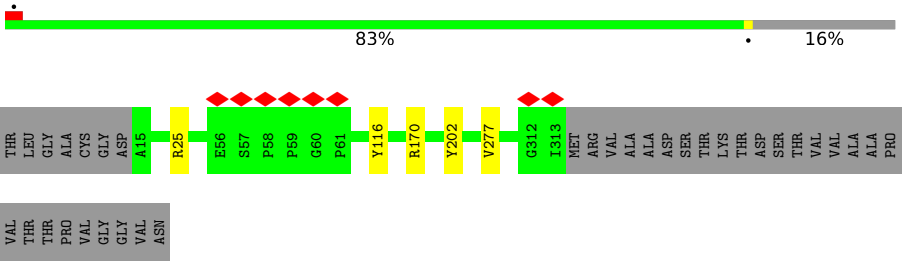
• Molecule 2: Light-harvesting protein B:885 subunit beta

Chain bp:



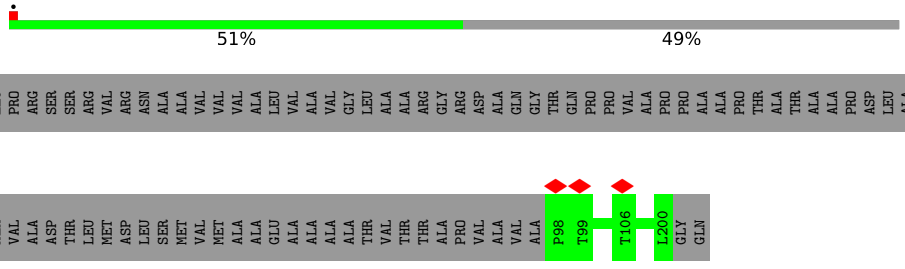
• Molecule 3: MULTIHEME_CYTC domain-containing protein

Chain C:



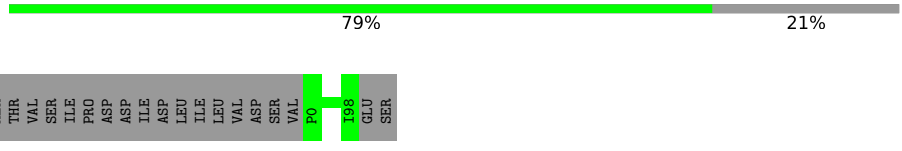
• Molecule 4: RC-S

Chain C1:



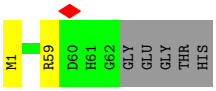
• Molecule 5: RC-U

Chain C2:



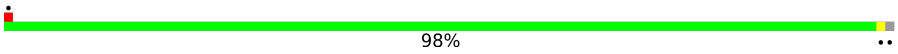
• Molecule 6: PRCH domain-containing protein

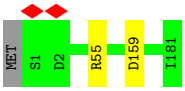
Chain H1:



• Molecule 7: RC-Hc

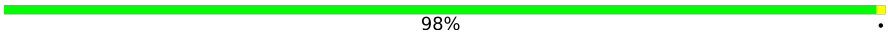
Chain H2:

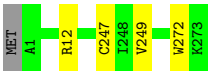




• Molecule 8: Photosynthetic reaction center L subunit

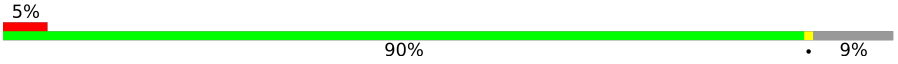
Chain L:

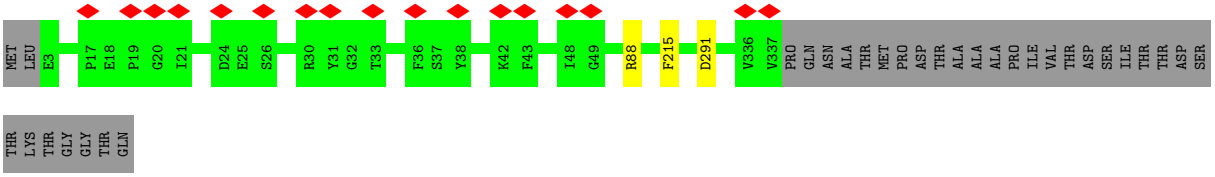




• Molecule 9: RC-M

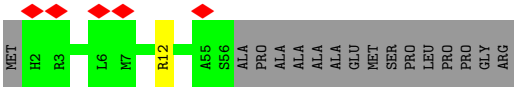
Chain M:





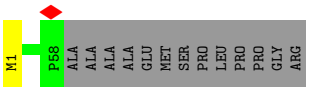
• Molecule 10: LHC domain-containing protein

Chain aa:



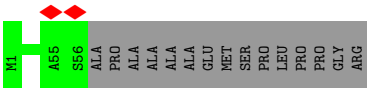
• Molecule 11: LHC domain-containing protein

Chain ab:



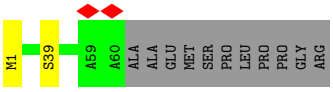
• Molecule 11: LHC domain-containing protein

Chain ac:



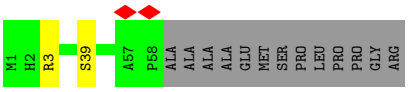
• Molecule 11: LHC domain-containing protein

Chain ad:



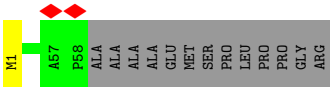
• Molecule 11: LHC domain-containing protein

Chain ae:



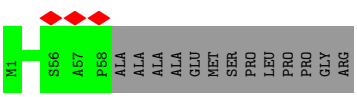
• Molecule 11: LHC domain-containing protein

Chain af:



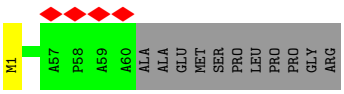
• Molecule 11: LHC domain-containing protein

Chain ag:



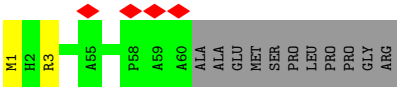
• Molecule 11: LHC domain-containing protein

Chain ah:



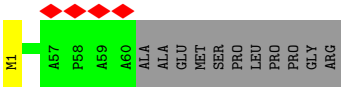
• Molecule 11: LHC domain-containing protein

Chain ai:



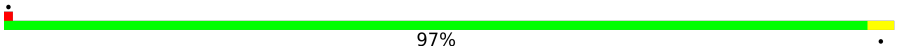
• Molecule 11: LHC domain-containing protein

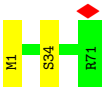
Chain aj:



• Molecule 11: LHC domain-containing protein

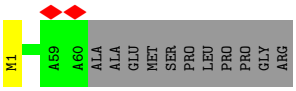
Chain ak:





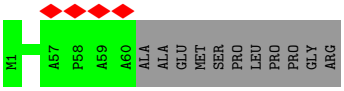
• Molecule 11: LHC domain-containing protein

Chain al:



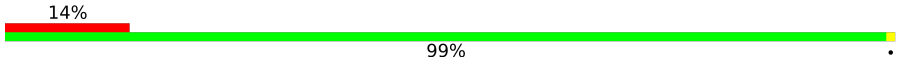
• Molecule 11: LHC domain-containing protein

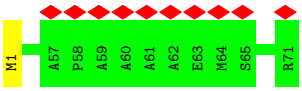
Chain am:



• Molecule 11: LHC domain-containing protein

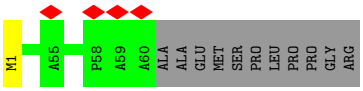
Chain an:





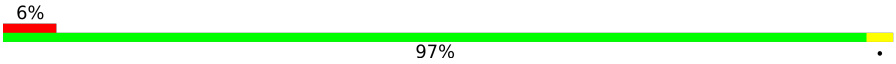
• Molecule 11: LHC domain-containing protein

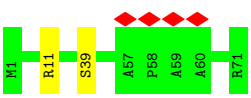
Chain ao:



• Molecule 11: LHC domain-containing protein

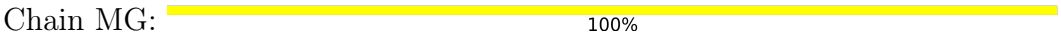
Chain ap:





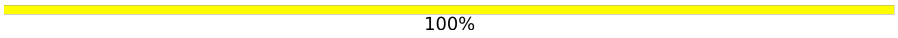
• Molecule 12: alpha-L-rhamnopyranose-(1-4)-alpha-D-mannopyranose

Chain MG:



• Molecule 12: alpha-L-rhamnopyranose-(1-4)-alpha-D-mannopyranose

Chain CG:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	73853	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	24.8	Depositor
Minimum defocus (nm)	-800	Depositor
Maximum defocus (nm)	-2400	Depositor
Magnification	120000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.204	Depositor
Minimum map value	-0.061	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0292	Depositor
Map size (Å)	399.784, 399.784, 399.784	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.99946, 0.99946, 0.99946	Depositor

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: HEC, CRT, V7B, NDG, UYH, RAM, LMT, MAN, FE, 0V9, BCL, FME, BPH, CD4, PGW, V75, MQ8, V7N

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	AA	0.24	0/396	0.49	0/541
1	AB	0.24	0/396	0.50	0/541
1	AC	0.25	0/388	0.53	0/529
1	AD	0.25	0/388	0.52	0/529
1	AE	0.24	0/396	0.52	0/541
1	AF	0.24	0/396	0.50	0/541
1	AG	0.25	0/396	0.50	0/541
1	AH	0.24	0/396	0.51	0/541
1	AI	0.24	0/396	0.50	0/541
1	AJ	0.24	0/396	0.52	0/541
1	AK	0.25	0/396	0.51	0/541
1	AL	0.24	0/396	0.52	0/541
1	AM	0.24	0/396	0.48	0/541
1	AN	0.24	0/396	0.53	0/541
1	AO	0.23	0/396	0.50	0/541
1	AP	0.24	0/396	0.49	0/541
1	AQ	0.24	0/396	0.51	0/541
1	AR	0.24	0/396	0.50	0/541
1	AS	0.24	0/396	0.53	0/541
1	AT	0.24	0/396	0.52	0/541
1	AU	0.24	0/396	0.50	0/541
1	AV	0.24	0/396	0.51	0/541
1	AW	0.24	0/396	0.53	0/541
1	AX	0.24	0/396	0.51	0/541
2	BA	0.24	0/336	0.50	0/456
2	BB	0.25	0/340	0.49	0/461
2	BC	0.24	0/336	0.49	0/456
2	BD	0.25	0/340	0.50	0/461
2	BE	0.25	0/340	0.49	0/461
2	BF	0.24	0/336	0.50	0/456
2	BG	0.24	0/336	0.49	0/456

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
2	BH	0.24	0/336	0.48	0/456
2	BI	0.25	0/340	0.49	0/461
2	BJ	0.24	0/336	0.49	0/456
2	BK	0.24	0/336	0.50	0/456
2	BL	0.25	0/336	0.54	0/456
2	BM	0.25	0/336	0.51	0/456
2	BN	0.25	0/336	0.51	0/456
2	BO	0.24	0/336	0.51	0/456
2	BP	0.24	0/336	0.51	0/456
2	BQ	0.24	0/340	0.50	0/461
2	BR	0.26	0/340	0.52	0/461
2	BS	0.24	0/340	0.49	0/461
2	BT	0.24	0/340	0.52	0/461
2	BU	0.24	0/336	0.50	0/456
2	BV	0.24	0/340	0.50	0/461
2	BW	0.24	0/340	0.49	0/461
2	BX	0.24	0/336	0.48	0/456
2	ba	0.25	0/336	0.53	0/456
2	bb	0.24	0/336	0.49	0/456
2	bc	0.25	0/336	0.51	0/456
2	bd	0.26	0/336	0.49	0/456
2	be	0.26	0/336	0.53	0/456
2	bf	0.24	0/336	0.48	0/456
2	bg	0.26	0/336	0.51	0/456
2	bh	0.24	0/336	0.49	0/456
2	bi	0.27	0/336	0.51	0/456
2	bj	0.27	0/336	0.52	0/456
2	bk	0.26	0/336	0.52	0/456
2	bl	0.25	0/336	0.49	0/456
2	bm	0.26	0/336	0.50	0/456
2	bn	0.25	0/340	0.50	0/461
2	bo	0.25	0/336	0.49	0/456
2	bp	0.25	0/336	0.49	0/456
3	C	0.27	0/2392	0.55	0/3263
4	C1	0.24	0/826	0.58	0/1128
5	C2	0.24	0/787	0.56	0/1075
6	H1	0.27	0/531	0.52	0/717
7	H2	0.25	0/1443	0.55	0/1970
8	L	0.25	0/2252	0.51	0/3081
9	M	0.26	0/2795	0.54	0/3824
10	aa	0.24	0/444	0.54	0/605
11	ab	0.25	0/457	0.51	0/624
11	ac	0.26	0/444	0.55	0/605

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
11	ad	0.25	0/467	0.54	0/638
11	ae	0.26	0/457	0.53	0/624
11	af	0.25	0/457	0.52	0/624
11	ag	0.25	0/457	0.56	0/624
11	ah	0.26	0/467	0.54	0/638
11	ai	0.25	0/467	0.53	0/638
11	aj	0.25	0/467	0.55	0/638
11	ak	0.27	0/547	0.53	0/748
11	al	0.26	0/467	0.54	0/638
11	am	0.26	0/467	0.53	0/638
11	an	0.26	0/547	0.55	0/748
11	ao	0.26	0/467	0.55	0/638
11	ap	0.25	0/548	0.55	0/748
All	All	0.25	0/41625	0.52	0/56729

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	AH	0	1
2	BH	0	1
2	bo	0	1
3	C	0	1
6	H1	0	1
7	H2	0	1
8	L	0	1
9	M	0	1
11	ae	0	1
11	ai	0	1
All	All	0	10

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 10 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AH	3	ARG	Sidechain
2	BH	14	ARG	Sidechain

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Group
3	C	170	ARG	Sidechain
6	H1	59	ARG	Sidechain
7	H2	55	ARG	Sidechain

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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 PDB entries followed by that with respect to all EM entries.

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	AA	47/54 (87%)	47 (100%)	0	0	100	100
1	AB	47/54 (87%)	47 (100%)	0	0	100	100
1	AC	46/54 (85%)	46 (100%)	0	0	100	100
1	AD	46/54 (85%)	46 (100%)	0	0	100	100
1	AE	47/54 (87%)	47 (100%)	0	0	100	100
1	AF	47/54 (87%)	47 (100%)	0	0	100	100
1	AG	47/54 (87%)	47 (100%)	0	0	100	100
1	AH	47/54 (87%)	47 (100%)	0	0	100	100
1	AI	47/54 (87%)	47 (100%)	0	0	100	100
1	AJ	47/54 (87%)	47 (100%)	0	0	100	100
1	AK	47/54 (87%)	47 (100%)	0	0	100	100
1	AL	47/54 (87%)	46 (98%)	1 (2%)	0	100	100
1	AM	47/54 (87%)	47 (100%)	0	0	100	100
1	AN	47/54 (87%)	47 (100%)	0	0	100	100
1	AO	47/54 (87%)	46 (98%)	1 (2%)	0	100	100
1	AP	47/54 (87%)	47 (100%)	0	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	AQ	47/54 (87%)	47 (100%)	0	0	100	100
1	AR	47/54 (87%)	47 (100%)	0	0	100	100
1	AS	47/54 (87%)	47 (100%)	0	0	100	100
1	AT	47/54 (87%)	47 (100%)	0	0	100	100
1	AU	47/54 (87%)	47 (100%)	0	0	100	100
1	AV	47/54 (87%)	47 (100%)	0	0	100	100
1	AW	47/54 (87%)	46 (98%)	1 (2%)	0	100	100
1	AX	47/54 (87%)	47 (100%)	0	0	100	100
2	BA	37/44 (84%)	36 (97%)	1 (3%)	0	100	100
2	BB	38/44 (86%)	37 (97%)	1 (3%)	0	100	100
2	BC	37/44 (84%)	37 (100%)	0	0	100	100
2	BD	38/44 (86%)	38 (100%)	0	0	100	100
2	BE	38/44 (86%)	38 (100%)	0	0	100	100
2	BF	37/44 (84%)	37 (100%)	0	0	100	100
2	BG	37/44 (84%)	37 (100%)	0	0	100	100
2	BH	37/44 (84%)	37 (100%)	0	0	100	100
2	BI	38/44 (86%)	38 (100%)	0	0	100	100
2	BJ	37/44 (84%)	37 (100%)	0	0	100	100
2	BK	37/44 (84%)	37 (100%)	0	0	100	100
2	BL	37/44 (84%)	37 (100%)	0	0	100	100
2	BM	37/44 (84%)	37 (100%)	0	0	100	100
2	BN	37/44 (84%)	37 (100%)	0	0	100	100
2	BO	37/44 (84%)	37 (100%)	0	0	100	100
2	BP	37/44 (84%)	37 (100%)	0	0	100	100
2	BQ	38/44 (86%)	38 (100%)	0	0	100	100
2	BR	38/44 (86%)	38 (100%)	0	0	100	100
2	BS	38/44 (86%)	38 (100%)	0	0	100	100
2	BT	38/44 (86%)	38 (100%)	0	0	100	100
2	BU	37/44 (84%)	37 (100%)	0	0	100	100
2	BV	38/44 (86%)	38 (100%)	0	0	100	100
2	BW	38/44 (86%)	38 (100%)	0	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	BX	37/44 (84%)	37 (100%)	0	0	100	100
2	ba	37/44 (84%)	37 (100%)	0	0	100	100
2	bb	37/44 (84%)	37 (100%)	0	0	100	100
2	bc	37/44 (84%)	37 (100%)	0	0	100	100
2	bd	37/44 (84%)	37 (100%)	0	0	100	100
2	be	37/44 (84%)	37 (100%)	0	0	100	100
2	bf	37/44 (84%)	37 (100%)	0	0	100	100
2	bg	37/44 (84%)	37 (100%)	0	0	100	100
2	bh	37/44 (84%)	37 (100%)	0	0	100	100
2	bi	37/44 (84%)	37 (100%)	0	0	100	100
2	bj	37/44 (84%)	37 (100%)	0	0	100	100
2	bk	37/44 (84%)	36 (97%)	1 (3%)	0	100	100
2	bl	37/44 (84%)	37 (100%)	0	0	100	100
2	bm	37/44 (84%)	37 (100%)	0	0	100	100
2	bn	38/44 (86%)	37 (97%)	1 (3%)	0	100	100
2	bo	37/44 (84%)	36 (97%)	1 (3%)	0	100	100
2	bp	37/44 (84%)	37 (100%)	0	0	100	100
3	C	297/354 (84%)	283 (95%)	13 (4%)	1 (0%)	41	49
4	C1	101/202 (50%)	97 (96%)	4 (4%)	0	100	100
5	C2	97/125 (78%)	96 (99%)	1 (1%)	0	100	100
6	H1	60/67 (90%)	60 (100%)	0	0	100	100
7	H2	178/181 (98%)	173 (97%)	5 (3%)	0	100	100
8	L	271/274 (99%)	263 (97%)	8 (3%)	0	100	100
9	M	333/367 (91%)	324 (97%)	9 (3%)	0	100	100
10	aa	53/71 (75%)	53 (100%)	0	0	100	100
11	ab	56/71 (79%)	55 (98%)	1 (2%)	0	100	100
11	ac	54/71 (76%)	52 (96%)	2 (4%)	0	100	100
11	ad	58/71 (82%)	57 (98%)	1 (2%)	0	100	100
11	ae	56/71 (79%)	55 (98%)	1 (2%)	0	100	100
11	af	56/71 (79%)	55 (98%)	1 (2%)	0	100	100
11	ag	56/71 (79%)	55 (98%)	1 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	ah	58/71 (82%)	58 (100%)	0	0	100	100
11	ai	58/71 (82%)	56 (97%)	2 (3%)	0	100	100
11	aj	58/71 (82%)	57 (98%)	1 (2%)	0	100	100
11	ak	69/71 (97%)	66 (96%)	3 (4%)	0	100	100
11	al	58/71 (82%)	57 (98%)	1 (2%)	0	100	100
11	am	58/71 (82%)	57 (98%)	1 (2%)	0	100	100
11	an	69/71 (97%)	64 (93%)	5 (7%)	0	100	100
11	ao	58/71 (82%)	57 (98%)	1 (2%)	0	100	100
11	ap	69/71 (97%)	69 (100%)	0	0	100	100
All	All	4898/5762 (85%)	4828 (99%)	69 (1%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	25	ARG

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 PDB entries followed by that with respect to all EM entries.

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	AA	38/41 (93%)	38 (100%)	0	100	100
1	AB	38/41 (93%)	38 (100%)	0	100	100
1	AC	37/41 (90%)	37 (100%)	0	100	100
1	AD	37/41 (90%)	37 (100%)	0	100	100
1	AE	38/41 (93%)	38 (100%)	0	100	100
1	AF	38/41 (93%)	38 (100%)	0	100	100
1	AG	38/41 (93%)	38 (100%)	0	100	100
1	AH	38/41 (93%)	38 (100%)	0	100	100
1	AI	38/41 (93%)	38 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	AJ	38/41 (93%)	38 (100%)	0	100	100
1	AK	38/41 (93%)	38 (100%)	0	100	100
1	AL	38/41 (93%)	38 (100%)	0	100	100
1	AM	38/41 (93%)	38 (100%)	0	100	100
1	AN	38/41 (93%)	38 (100%)	0	100	100
1	AO	38/41 (93%)	38 (100%)	0	100	100
1	AP	38/41 (93%)	38 (100%)	0	100	100
1	AQ	38/41 (93%)	38 (100%)	0	100	100
1	AR	38/41 (93%)	38 (100%)	0	100	100
1	AS	38/41 (93%)	38 (100%)	0	100	100
1	AT	38/41 (93%)	38 (100%)	0	100	100
1	AU	38/41 (93%)	38 (100%)	0	100	100
1	AV	38/41 (93%)	38 (100%)	0	100	100
1	AW	38/41 (93%)	38 (100%)	0	100	100
1	AX	38/41 (93%)	38 (100%)	0	100	100
2	BA	31/35 (89%)	31 (100%)	0	100	100
2	BB	31/35 (89%)	31 (100%)	0	100	100
2	BC	31/35 (89%)	31 (100%)	0	100	100
2	BD	31/35 (89%)	31 (100%)	0	100	100
2	BE	31/35 (89%)	31 (100%)	0	100	100
2	BF	31/35 (89%)	31 (100%)	0	100	100
2	BG	31/35 (89%)	31 (100%)	0	100	100
2	BH	31/35 (89%)	31 (100%)	0	100	100
2	BI	31/35 (89%)	31 (100%)	0	100	100
2	BJ	31/35 (89%)	31 (100%)	0	100	100
2	BK	31/35 (89%)	30 (97%)	1 (3%)	39	50
2	BL	31/35 (89%)	31 (100%)	0	100	100
2	BM	31/35 (89%)	31 (100%)	0	100	100
2	BN	31/35 (89%)	31 (100%)	0	100	100
2	BO	31/35 (89%)	31 (100%)	0	100	100
2	BP	31/35 (89%)	31 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	BQ	31/35 (89%)	31 (100%)	0	100	100
2	BR	31/35 (89%)	31 (100%)	0	100	100
2	BS	31/35 (89%)	31 (100%)	0	100	100
2	BT	31/35 (89%)	31 (100%)	0	100	100
2	BU	31/35 (89%)	31 (100%)	0	100	100
2	BV	31/35 (89%)	31 (100%)	0	100	100
2	BW	31/35 (89%)	31 (100%)	0	100	100
2	BX	31/35 (89%)	31 (100%)	0	100	100
2	ba	31/35 (89%)	30 (97%)	1 (3%)	39	50
2	bb	31/35 (89%)	31 (100%)	0	100	100
2	bc	31/35 (89%)	31 (100%)	0	100	100
2	bd	31/35 (89%)	31 (100%)	0	100	100
2	be	31/35 (89%)	31 (100%)	0	100	100
2	bf	31/35 (89%)	31 (100%)	0	100	100
2	bg	31/35 (89%)	31 (100%)	0	100	100
2	bh	31/35 (89%)	31 (100%)	0	100	100
2	bi	31/35 (89%)	31 (100%)	0	100	100
2	bj	31/35 (89%)	31 (100%)	0	100	100
2	bk	31/35 (89%)	31 (100%)	0	100	100
2	bl	31/35 (89%)	31 (100%)	0	100	100
2	bm	31/35 (89%)	31 (100%)	0	100	100
2	bn	31/35 (89%)	31 (100%)	0	100	100
2	bo	31/35 (89%)	31 (100%)	0	100	100
2	bp	31/35 (89%)	31 (100%)	0	100	100
3	C	245/285 (86%)	242 (99%)	3 (1%)	71	81
4	C1	88/156 (56%)	88 (100%)	0	100	100
5	C2	70/95 (74%)	70 (100%)	0	100	100
6	H1	50/53 (94%)	50 (100%)	0	100	100
7	H2	150/151 (99%)	149 (99%)	1 (1%)	84	90
8	L	215/216 (100%)	212 (99%)	3 (1%)	67	78
9	M	273/299 (91%)	271 (99%)	2 (1%)	84	90

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	aa	45/55 (82%)	44 (98%)	1 (2%)	52 64
11	ab	46/54 (85%)	46 (100%)	0	100 100
11	ac	45/54 (83%)	45 (100%)	0	100 100
11	ad	46/54 (85%)	45 (98%)	1 (2%)	52 64
11	ae	46/54 (85%)	45 (98%)	1 (2%)	52 64
11	af	46/54 (85%)	46 (100%)	0	100 100
11	ag	46/54 (85%)	46 (100%)	0	100 100
11	ah	46/54 (85%)	46 (100%)	0	100 100
11	ai	46/54 (85%)	46 (100%)	0	100 100
11	aj	46/54 (85%)	46 (100%)	0	100 100
11	ak	54/54 (100%)	53 (98%)	1 (2%)	57 69
11	al	46/54 (85%)	46 (100%)	0	100 100
11	am	46/54 (85%)	46 (100%)	0	100 100
11	an	54/54 (100%)	54 (100%)	0	100 100
11	ao	46/54 (85%)	46 (100%)	0	100 100
11	ap	54/54 (100%)	52 (96%)	2 (4%)	34 45
All	All	3999/4504 (89%)	3982 (100%)	17 (0%)	91 94

5 of 17 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
11	ap	11	ARG
2	ba	13	ARG
8	L	272	TRP
9	M	215	PHE
9	M	291	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 9 such sidechains are listed below:

Mol	Chain	Res	Type
8	L	116	HIS
9	M	110	ASN
5	C2	24	HIS
7	H2	12	ASN
7	H2	119	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

40 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
11	FME	ad	1	11	8,9,10	0.90	0	7,9,11	1.31	1 (14%)
1	FME	AW	1	1	8,9,10	0.89	0	7,9,11	0.96	0
1	FME	AG	1	1	8,9,10	0.89	0	7,9,11	1.22	1 (14%)
11	FME	ae	1	11	8,9,10	0.92	0	7,9,11	0.91	0
1	FME	AH	1	1	8,9,10	0.93	0	7,9,11	0.97	0
1	FME	AR	1	1	8,9,10	0.94	0	7,9,11	0.96	1 (14%)
1	FME	AK	1	1	8,9,10	0.92	0	7,9,11	1.10	1 (14%)
11	FME	ab	1	11	8,9,10	0.91	0	7,9,11	1.30	1 (14%)
1	FME	AM	1	1	8,9,10	0.93	0	7,9,11	1.01	1 (14%)
1	FME	AD	1	1	8,9,10	0.92	0	7,9,11	1.12	1 (14%)
11	FME	ag	1	11	8,9,10	0.90	0	7,9,11	1.01	0
11	FME	ah	1	11	8,9,10	0.92	0	7,9,11	1.21	1 (14%)
1	FME	AV	1	1	8,9,10	0.96	0	7,9,11	0.95	1 (14%)
11	FME	an	1	11	8,9,10	0.96	0	7,9,11	1.03	1 (14%)
1	FME	AO	1	1	8,9,10	0.94	0	7,9,11	0.95	0
11	FME	aj	1	11	8,9,10	0.92	0	7,9,11	1.14	1 (14%)
11	FME	ap	1	11	8,9,10	0.92	0	7,9,11	0.99	0
1	FME	AU	1	1	8,9,10	0.96	0	7,9,11	0.95	0
1	FME	AX	1	1	8,9,10	0.97	0	7,9,11	0.90	0
1	FME	AI	1	1	8,9,10	0.95	0	7,9,11	0.98	1 (14%)
1	FME	AB	1	1	8,9,10	0.91	0	7,9,11	1.08	1 (14%)
11	FME	ao	1	11	8,9,10	0.94	0	7,9,11	1.06	1 (14%)
11	FME	ai	1	11	8,9,10	0.95	0	7,9,11	1.17	1 (14%)
11	FME	ak	1	11	8,9,10	0.94	0	7,9,11	1.02	1 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	FME	AL	1	1	8,9,10	0.93	0	7,9,11	1.09	1 (14%)
1	FME	AN	1	1	8,9,10	0.91	0	7,9,11	1.10	1 (14%)
1	FME	AP	1	1	8,9,10	0.91	0	7,9,11	1.04	1 (14%)
1	FME	AS	1	1	8,9,10	0.93	0	7,9,11	1.15	1 (14%)
11	FME	am	1	11	8,9,10	0.93	0	7,9,11	0.70	0
1	FME	AF	1	1	8,9,10	0.91	0	7,9,11	1.36	2 (28%)
1	FME	AT	1	1	8,9,10	0.94	0	7,9,11	0.90	0
1	FME	AC	1	1	8,9,10	0.91	0	7,9,11	1.37	2 (28%)
6	FME	H1	1	6	8,9,10	0.92	0	7,9,11	1.13	1 (14%)
1	FME	AE	1	1	8,9,10	0.93	0	7,9,11	1.08	1 (14%)
1	FME	AQ	1	1	8,9,10	0.91	0	7,9,11	1.21	1 (14%)
11	FME	ac	1	11	8,9,10	0.96	0	7,9,11	1.02	0
11	FME	al	1	11	8,9,10	0.94	0	7,9,11	1.14	1 (14%)
1	FME	AJ	1	1	8,9,10	0.93	0	7,9,11	1.04	1 (14%)
1	FME	AA	1	1	8,9,10	0.93	0	7,9,11	1.08	1 (14%)
11	FME	af	1	11	8,9,10	0.91	0	7,9,11	1.29	1 (14%)

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
11	FME	ad	1	11	-	2/7/9/11	-
1	FME	AW	1	1	-	3/7/9/11	-
1	FME	AG	1	1	-	1/7/9/11	-
11	FME	ae	1	11	-	0/7/9/11	-
1	FME	AH	1	1	-	0/7/9/11	-
1	FME	AR	1	1	-	0/7/9/11	-
1	FME	AK	1	1	-	1/7/9/11	-
11	FME	ab	1	11	-	0/7/9/11	-
1	FME	AM	1	1	-	2/7/9/11	-
1	FME	AD	1	1	-	1/7/9/11	-
11	FME	ag	1	11	-	1/7/9/11	-
11	FME	ah	1	11	-	1/7/9/11	-
1	FME	AV	1	1	-	0/7/9/11	-
11	FME	an	1	11	-	0/7/9/11	-
1	FME	AO	1	1	-	0/7/9/11	-
11	FME	aj	1	11	-	0/7/9/11	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	FME	ap	1	11	-	1/7/9/11	-
1	FME	AU	1	1	-	0/7/9/11	-
1	FME	AX	1	1	-	1/7/9/11	-
1	FME	AI	1	1	-	0/7/9/11	-
1	FME	AB	1	1	-	2/7/9/11	-
11	FME	ao	1	11	-	0/7/9/11	-
11	FME	ai	1	11	-	0/7/9/11	-
11	FME	ak	1	11	-	1/7/9/11	-
1	FME	AL	1	1	-	0/7/9/11	-
1	FME	AN	1	1	-	2/7/9/11	-
1	FME	AP	1	1	-	1/7/9/11	-
1	FME	AS	1	1	-	1/7/9/11	-
11	FME	am	1	11	-	1/7/9/11	-
1	FME	AF	1	1	-	1/7/9/11	-
1	FME	AT	1	1	-	1/7/9/11	-
1	FME	AC	1	1	-	0/7/9/11	-
6	FME	H1	1	6	-	2/7/9/11	-
1	FME	AE	1	1	-	0/7/9/11	-
1	FME	AQ	1	1	-	1/7/9/11	-
11	FME	ac	1	11	-	1/7/9/11	-
11	FME	al	1	11	-	0/7/9/11	-
1	FME	AJ	1	1	-	0/7/9/11	-
1	FME	AA	1	1	-	1/7/9/11	-
11	FME	af	1	11	-	0/7/9/11	-

There are no bond length outliers.

The worst 5 of 31 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	ad	1	FME	C-CA-N	2.85	114.88	109.73
11	af	1	FME	C-CA-N	2.85	114.87	109.73
11	ab	1	FME	C-CA-N	2.77	114.72	109.73
11	ah	1	FME	C-CA-N	2.64	114.49	109.73
1	AC	1	FME	C-CA-N	2.58	114.39	109.73

There are no chirality outliers.

5 of 29 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	ah	1	FME	O-C-CA-CB
1	AB	1	FME	O-C-CA-CB

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
1	AK	1	FME	O-C-CA-CB
1	AM	1	FME	O-C-CA-CB
1	AN	1	FME	O-C-CA-CB

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

4 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
12	MAN	CG	1	3,18,12	11,11,12	0.81	1 (9%)	15,15,17	1.06	1 (6%)
12	RAM	CG	2	12	10,10,11	1.76	2 (20%)	14,14,16	0.81	0
12	MAN	MG	1	9,18,12	11,11,12	0.92	0	15,15,17	1.15	1 (6%)
12	RAM	MG	2	12	10,10,11	1.85	3 (30%)	14,14,16	2.17	4 (28%)

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
12	MAN	CG	1	3,18,12	-	2/2/19/22	0/1/1/1
12	RAM	CG	2	12	-	-	0/1/1/1
12	MAN	MG	1	9,18,12	-	0/2/19/22	0/1/1/1
12	RAM	MG	2	12	-	-	0/1/1/1

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	MG	2	RAM	O5-C1	4.43	1.50	1.43
12	CG	2	RAM	O5-C1	4.34	1.50	1.43
12	MG	2	RAM	C2-C3	-2.66	1.48	1.52
12	CG	2	RAM	C2-C3	-2.38	1.49	1.52
12	CG	1	MAN	O5-C1	-2.23	1.40	1.43

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	MG	2	RAM	O5-C5-C4	4.15	116.97	109.52
12	MG	2	RAM	C6-C5-C4	-4.12	105.45	113.07
12	MG	2	RAM	C3-C4-C5	3.84	115.76	109.77
12	MG	1	MAN	C1-O5-C5	3.37	116.76	112.19
12	MG	2	RAM	C1-C2-C3	2.59	112.85	109.67

There are no chirality outliers.

All (2) torsion outliers are listed below:

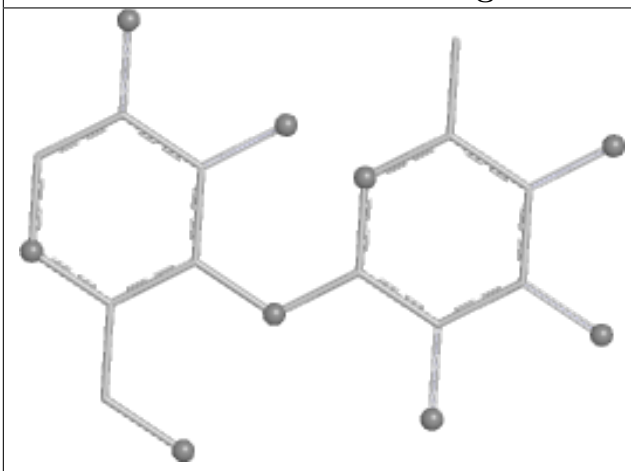
Mol	Chain	Res	Type	Atoms
12	CG	1	MAN	O5-C5-C6-O6
12	CG	1	MAN	C4-C5-C6-O6

There are no ring outliers.

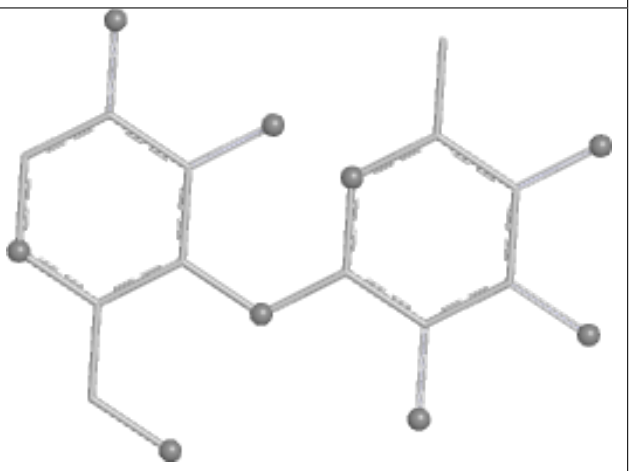
No monomer is involved in short contacts.

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

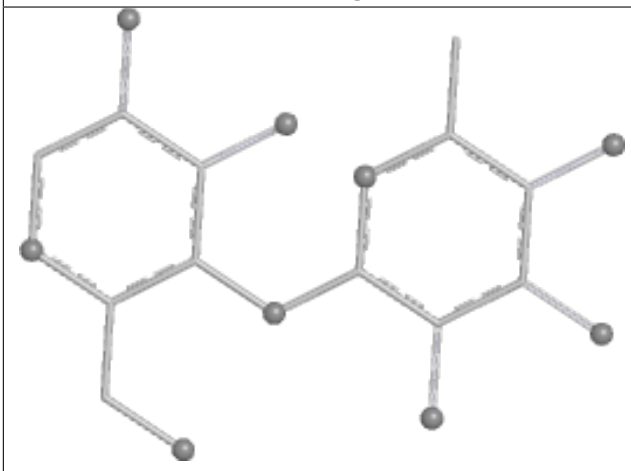
Oligosaccharide Chain MG



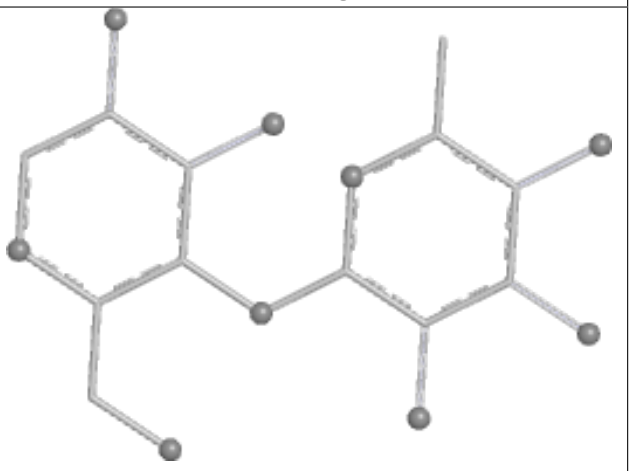
Bond lengths



Bond angles

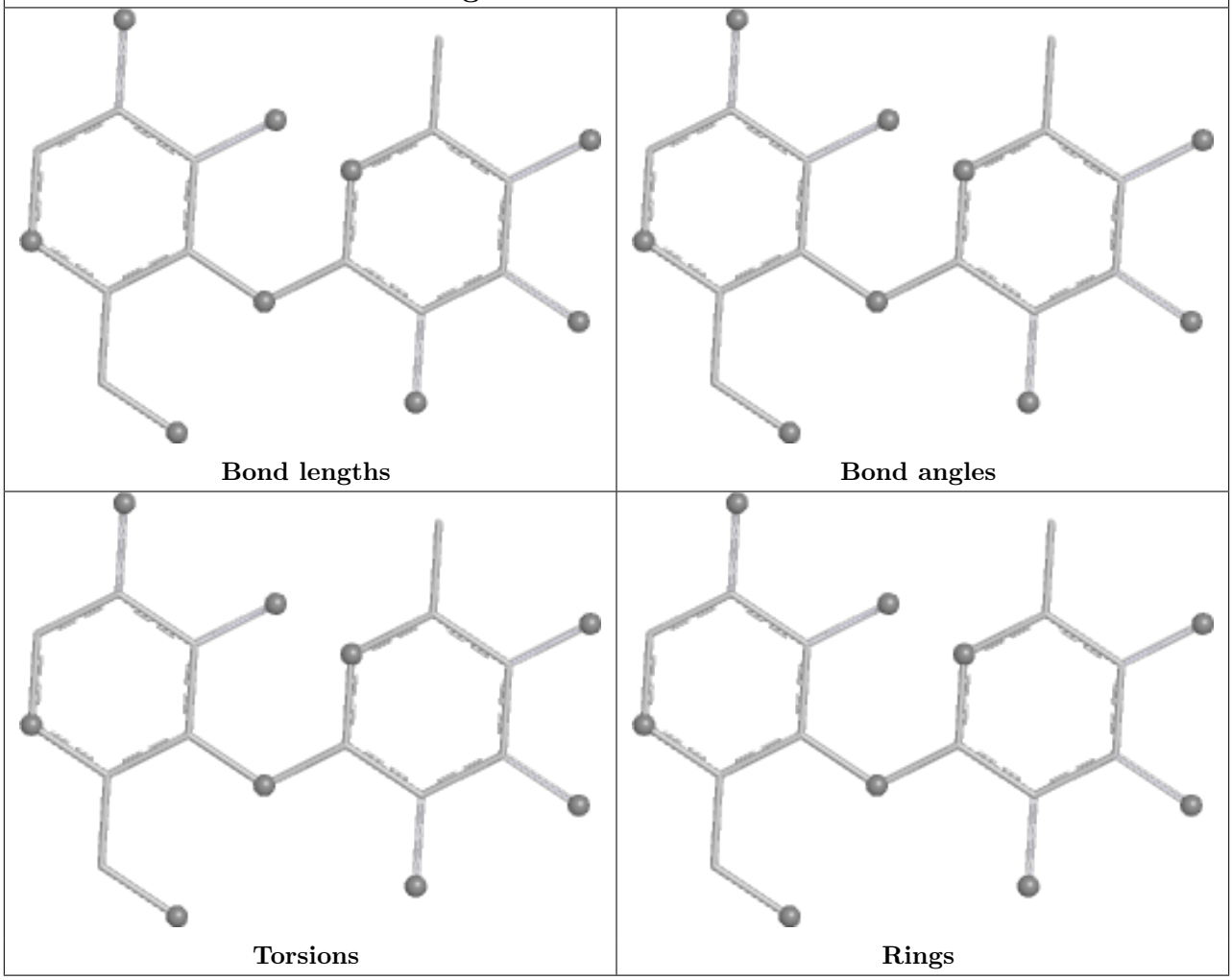


Torsions



Rings

Oligosaccharide Chain CG



Bond lengths | Bond angles

Torsions | Rings

5.6 Ligand geometry

Of 312 ligands modelled in this entry, 1 is monoatomic - leaving 311 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	$\#\|Z\| > 2$
13	BCL	AV	103	28	58,74,74	1.26	3 (5%)	69,115,115	1.38	11 (15%)
13	BCL	ak	1001	-	58,74,74	1.23	4 (6%)	69,115,115	1.35	10 (14%)
15	V7N	AE	1003	-	40,44,44	2.10	10 (25%)	40,54,54	1.50	7 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
20	0V9	ba	102	-	44,44,46	0.75	1 (2%)	47,49,51	0.87	1 (2%)
14	LMT	bl	101	-	36,36,36	1.10	4 (11%)	47,47,47	1.06	5 (10%)
13	BCL	ac	102	-	58,74,74	1.24	3 (5%)	69,115,115	1.36	10 (14%)
14	LMT	AP	102	-	36,36,36	1.09	5 (13%)	47,47,47	0.91	0
13	BCL	AN	104	-	58,74,74	1.22	4 (6%)	69,115,115	1.35	9 (13%)
13	BCL	AW	104	-	58,74,74	1.26	5 (8%)	69,115,115	1.46	13 (18%)
13	BCL	AG	102	-	58,74,74	1.26	4 (6%)	69,115,115	1.43	11 (15%)
14	LMT	BS	1002	-	36,36,36	1.10	5 (13%)	47,47,47	0.92	2 (4%)
14	LMT	BI	103	-	36,36,36	1.11	5 (13%)	47,47,47	0.89	1 (2%)
13	BCL	BV	1004	-	58,74,74	1.22	3 (5%)	69,115,115	1.36	11 (15%)
14	LMT	BL	1002	-	36,36,36	1.08	4 (11%)	47,47,47	1.07	3 (6%)
14	LMT	BT	1002	-	36,36,36	1.12	5 (13%)	47,47,47	0.90	2 (4%)
23	MQ8	L	309	-	54,54,54	0.62	0	66,69,69	0.83	3 (4%)
14	LMT	BD	105	-	36,36,36	1.09	5 (13%)	47,47,47	0.91	2 (4%)
13	BCL	bf	105	-	58,74,74	1.25	3 (5%)	69,115,115	1.31	10 (14%)
13	BCL	bk	105	-	58,74,74	1.25	3 (5%)	69,115,115	1.48	13 (18%)
15	V7N	BN	1001	-	40,44,44	2.06	10 (25%)	40,54,54	1.82	9 (22%)
13	BCL	AD	1002	-	58,74,74	1.26	3 (5%)	69,115,115	1.40	10 (14%)
13	BCL	bg	104	-	58,74,74	1.22	3 (5%)	69,115,115	1.30	11 (15%)
14	LMT	BM	1002	-	36,36,36	1.08	5 (13%)	47,47,47	0.86	1 (2%)
13	BCL	AQ	103	-	58,74,74	1.29	5 (8%)	69,115,115	1.66	13 (18%)
13	BCL	BH	1003	-	58,74,74	1.23	3 (5%)	69,115,115	1.42	12 (17%)
14	LMT	BB	103	-	36,36,36	1.10	5 (13%)	47,47,47	0.98	2 (4%)
20	0V9	L	310	-	44,44,46	0.75	1 (2%)	47,49,51	0.82	1 (2%)
23	MQ8	M	407	-	54,54,54	0.63	0	66,69,69	0.63	0
14	LMT	BR	1005	-	36,36,36	1.10	5 (13%)	47,47,47	0.89	0
13	BCL	aa	1001	-	58,74,74	1.27	4 (6%)	69,115,115	1.36	10 (14%)
14	LMT	BV	1002	-	36,36,36	1.11	5 (13%)	47,47,47	0.88	1 (2%)
13	BCL	AH	102	-	58,74,74	1.22	3 (5%)	69,115,115	1.36	9 (13%)
15	V7N	BD	101	-	40,44,44	2.07	9 (22%)	40,54,54	1.67	9 (22%)
14	LMT	BN	1003	-	36,36,36	1.09	5 (13%)	47,47,47	0.98	2 (4%)
14	LMT	BL	1003	-	36,36,36	1.09	5 (13%)	47,47,47	0.94	2 (4%)
13	BCL	BM	1004	-	58,74,74	1.26	3 (5%)	69,115,115	1.47	11 (15%)
15	V7N	BX	1001	-	40,44,44	2.12	10 (25%)	40,54,54	1.51	7 (17%)
13	BCL	AS	104	28	58,74,74	1.25	3 (5%)	69,115,115	1.51	13 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
14	LMT	BE	103	-	36,36,36	1.08	5 (13%)	47,47,47	0.85	1 (2%)
15	V7N	BA	101	-	40,44,44	2.06	10 (25%)	40,54,54	1.53	8 (20%)
13	BCL	BE	104	-	58,74,74	1.22	3 (5%)	69,115,115	1.49	13 (18%)
14	LMT	BH	1005	-	36,36,36	1.12	5 (13%)	47,47,47	0.90	2 (4%)
17	NDG	C1	301	18	14,14,15	0.66	0	17,19,21	0.87	1 (5%)
20	0V9	bk	104	-	44,44,46	0.73	1 (2%)	47,49,51	0.98	3 (6%)
26	V7B	ag	1002	-	59,59,59	0.93	5 (8%)	75,75,75	1.29	8 (10%)
13	BCL	bp	103	-	58,74,74	1.27	3 (5%)	69,115,115	1.37	11 (15%)
13	BCL	be	104	-	58,74,74	1.24	3 (5%)	69,115,115	1.30	10 (14%)
14	LMT	bh	101	-	36,36,36	1.08	4 (11%)	47,47,47	1.01	3 (6%)
15	V7N	bd	101	-	40,44,44	2.09	9 (22%)	40,54,54	1.48	8 (20%)
14	LMT	AF	1003	-	36,36,36	1.09	5 (13%)	47,47,47	0.88	1 (2%)
13	BCL	AS	102	28	58,74,74	1.25	5 (8%)	69,115,115	1.41	10 (14%)
22	BPH	L	301	-	64,70,70	0.85	3 (4%)	76,101,101	1.09	7 (9%)
14	LMT	BV	1003	-	36,36,36	1.08	5 (13%)	47,47,47	0.88	1 (2%)
13	BCL	AU	103	-	58,74,74	1.24	4 (6%)	69,115,115	1.35	9 (13%)
15	V7N	bc	104	-	40,44,44	2.12	11 (27%)	40,54,54	1.59	8 (20%)
19	PGW	H1	1001	-	50,50,50	0.46	0	53,56,56	1.04	3 (5%)
14	LMT	BA	103	-	36,36,36	1.07	5 (13%)	47,47,47	0.93	2 (4%)
13	BCL	BA	104	-	58,74,74	1.20	3 (5%)	69,115,115	1.59	12 (17%)
14	LMT	AI	101	-	36,36,36	1.09	4 (11%)	47,47,47	0.82	0
14	LMT	BK	1002	-	36,36,36	1.09	5 (13%)	47,47,47	0.93	2 (4%)
14	LMT	BB	102	-	36,36,36	1.10	5 (13%)	47,47,47	0.84	1 (2%)
13	BCL	BQ	1003	-	58,74,74	1.21	3 (5%)	69,115,115	1.34	9 (13%)
20	0V9	bf	103	-	44,44,46	0.75	1 (2%)	47,49,51	0.88	3 (6%)
13	BCL	AR	101	-	58,74,74	1.23	4 (6%)	69,115,115	1.33	9 (13%)
15	V7N	bl	102	-	40,44,44	2.12	10 (25%)	40,54,54	1.49	8 (20%)
14	LMT	BO	1002	-	36,36,36	1.10	5 (13%)	47,47,47	0.87	1 (2%)
15	V7N	bo	101	-	40,44,44	2.13	12 (30%)	40,54,54	1.48	8 (20%)
13	BCL	ad	102	-	58,74,74	1.23	3 (5%)	69,115,115	1.38	9 (13%)
20	0V9	bo	104	-	44,44,46	0.74	1 (2%)	47,49,51	0.82	1 (2%)
21	CD4	H1	1003	-	83,83,83	0.46	0	89,95,95	0.94	3 (3%)
14	LMT	bc	101	-	36,36,36	1.08	5 (13%)	47,47,47	1.05	4 (8%)
13	BCL	bd	103	-	58,74,74	1.25	3 (5%)	69,115,115	1.36	10 (14%)
14	LMT	BD	103	-	36,36,36	1.09	5 (13%)	47,47,47	0.86	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
14	LMT	BP	1002	-	36,36,36	1.09	4 (11%)	47,47,47	0.91	1 (2%)
13	BCL	AB	103	28	58,74,74	1.26	4 (6%)	69,115,115	1.47	13 (18%)
13	BCL	bm	103	-	58,74,74	1.24	3 (5%)	69,115,115	1.33	10 (14%)
13	BCL	BN	1006	-	58,74,74	1.21	3 (5%)	69,115,115	1.40	10 (14%)
20	0V9	ba	104	-	44,44,46	0.76	1 (2%)	47,49,51	0.90	1 (2%)
14	LMT	bp	101	-	36,36,36	1.10	4 (11%)	47,47,47	1.09	3 (6%)
14	LMT	AW	102	-	36,36,36	1.08	4 (11%)	47,47,47	0.95	3 (6%)
15	V7N	BE	101	-	40,44,44	2.12	11 (27%)	40,54,54	1.42	7 (17%)
15	V7N	ba	101	-	40,44,44	2.16	10 (25%)	40,54,54	1.48	8 (20%)
14	LMT	BU	1002	-	36,36,36	1.10	5 (13%)	47,47,47	0.85	1 (2%)
13	BCL	AN	102	28	58,74,74	1.26	4 (6%)	69,115,115	1.37	11 (15%)
13	BCL	BR	1003	-	58,74,74	1.23	3 (5%)	69,115,115	1.30	10 (14%)
20	0V9	bh	104	-	44,44,46	0.73	1 (2%)	47,49,51	0.83	2 (4%)
13	BCL	AX	101	-	58,74,74	1.24	3 (5%)	69,115,115	1.40	9 (13%)
14	LMT	BX	1002	-	36,36,36	1.10	5 (13%)	47,47,47	0.87	2 (4%)
18	V75	M	409	17,12	15,18,18	1.89	6 (40%)	19,25,25	1.67	2 (10%)
13	BCL	ab	1001	-	58,74,74	1.27	4 (6%)	69,115,115	1.37	11 (15%)
14	LMT	AN	103	-	36,36,36	1.05	5 (13%)	47,47,47	0.97	2 (4%)
13	BCL	AL	103	-	58,74,74	1.30	5 (8%)	69,115,115	1.52	13 (18%)
14	LMT	AB	102	-	36,36,36	1.11	4 (11%)	47,47,47	0.82	2 (4%)
13	BCL	bo	102	-	58,74,74	1.24	3 (5%)	69,115,115	1.31	10 (14%)
14	LMT	AT	101	-	36,36,36	1.09	5 (13%)	47,47,47	0.86	2 (4%)
15	V7N	BQ	1001	-	40,44,44	2.07	9 (22%)	40,54,54	1.48	8 (20%)
14	LMT	BW	1004	-	36,36,36	1.08	4 (11%)	47,47,47	0.88	0
13	BCL	AU	102	-	58,74,74	1.25	5 (8%)	69,115,115	1.50	13 (18%)
14	LMT	M	402	-	36,36,36	1.11	5 (13%)	47,47,47	0.92	2 (4%)
13	BCL	BG	1004	-	58,74,74	1.25	3 (5%)	69,115,115	1.40	11 (15%)
13	BCL	bj	104	-	58,74,74	1.24	3 (5%)	69,115,115	1.33	11 (15%)
15	V7N	AH	105	-	40,44,44	2.10	9 (22%)	40,54,54	1.41	7 (17%)
16	HEC	C	1004	3	26,50,50	2.15	3 (11%)	18,82,82	2.26	5 (27%)
15	V7N	BP	1001	-	40,44,44	2.04	10 (25%)	40,54,54	1.65	9 (22%)
15	V7N	BB	101	-	40,44,44	2.05	10 (25%)	40,54,54	1.54	7 (17%)
14	LMT	BF	101	-	36,36,36	1.08	5 (13%)	47,47,47	1.10	3 (6%)
13	BCL	AH	101	-	58,74,74	1.26	4 (6%)	69,115,115	1.43	10 (14%)
13	BCL	M	403	-	58,74,74	1.21	3 (5%)	69,115,115	1.30	11 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
14	LMT	BC	102	-	36,36,36	1.08	5 (13%)	47,47,47	0.90	1 (2%)
15	V7N	BW	1001	-	40,44,44	2.06	10 (25%)	40,54,54	1.49	8 (20%)
14	LMT	BK	1005	-	36,36,36	1.11	5 (13%)	47,47,47	0.95	2 (4%)
13	BCL	AE	1001	-	58,74,74	1.26	4 (6%)	69,115,115	1.35	10 (14%)
14	LMT	bo	103	-	36,36,36	1.08	5 (13%)	47,47,47	0.88	1 (2%)
15	V7N	BV	1001	-	40,44,44	2.11	10 (25%)	40,54,54	1.43	8 (20%)
14	LMT	BH	1002	-	36,36,36	1.08	5 (13%)	47,47,47	0.87	0
14	LMT	AK	101	-	36,36,36	1.11	5 (13%)	47,47,47	0.95	1 (2%)
20	0V9	bj	103	-	44,44,46	0.78	1 (2%)	47,49,51	0.92	2 (4%)
13	BCL	BF	104	-	58,74,74	1.22	3 (5%)	69,115,115	1.29	10 (14%)
13	BCL	bc	103	-	58,74,74	1.26	3 (5%)	69,115,115	1.35	12 (17%)
13	BCL	bl	105	-	58,74,74	1.26	3 (5%)	69,115,115	1.30	10 (14%)
13	BCL	AK	103	-	58,74,74	1.25	4 (6%)	69,115,115	1.35	11 (15%)
26	V7B	af	101	-	59,59,59	0.87	3 (5%)	75,75,75	1.12	5 (6%)
14	LMT	BN	1005	-	36,36,36	1.09	5 (13%)	47,47,47	0.93	2 (4%)
16	HEC	C	1003	3	26,50,50	2.11	3 (11%)	18,82,82	2.10	4 (22%)
15	V7N	bp	102	-	40,44,44	2.17	10 (25%)	40,54,54	1.51	7 (17%)
13	BCL	bn	103	-	58,74,74	1.25	3 (5%)	69,115,115	1.30	10 (14%)
13	BCL	AQ	102	28	58,74,74	1.25	4 (6%)	69,115,115	1.33	11 (15%)
13	BCL	AP	103	28	58,74,74	1.27	3 (5%)	69,115,115	1.40	11 (15%)
14	LMT	BI	105	-	36,36,36	1.10	5 (13%)	47,47,47	0.89	1 (2%)
14	LMT	AG	101	-	36,36,36	1.13	5 (13%)	47,47,47	1.09	3 (6%)
13	BCL	AM	102	-	58,74,74	1.24	4 (6%)	69,115,115	1.35	9 (13%)
20	0V9	H1	1002	-	44,44,46	0.76	1 (2%)	47,49,51	0.82	2 (4%)
15	V7N	bg	101	-	40,44,44	2.13	10 (25%)	40,54,54	1.62	9 (22%)
15	V7N	BK	1001	-	40,44,44	2.10	10 (25%)	40,54,54	1.48	8 (20%)
13	BCL	AO	101	-	58,74,74	1.32	5 (8%)	69,115,115	1.31	9 (13%)
13	BCL	AC	1001	-	58,74,74	1.24	4 (6%)	69,115,115	1.32	9 (13%)
15	V7N	AT	103	-	40,44,44	2.22	10 (25%)	40,54,54	1.60	9 (22%)
14	LMT	BG	1002	-	36,36,36	1.09	4 (11%)	47,47,47	0.82	0
13	BCL	AB	101	-	58,74,74	1.24	3 (5%)	69,115,115	1.46	11 (15%)
13	BCL	BP	1004	-	58,74,74	1.21	3 (5%)	69,115,115	1.43	13 (18%)
13	BCL	M	405	-	58,74,74	1.19	3 (5%)	69,115,115	1.40	9 (13%)
14	LMT	ac	101	-	36,36,36	1.10	4 (11%)	47,47,47	0.85	1 (2%)
13	BCL	ai	102	-	58,74,74	1.23	3 (5%)	69,115,115	1.41	12 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
13	BCL	BU	1004	-	58,74,74	1.22	3 (5%)	69,115,115	1.34	10 (14%)
13	BCL	L	308	-	58,74,74	1.20	3 (5%)	69,115,115	1.25	10 (14%)
14	LMT	bg	103	-	36,36,36	1.08	5 (13%)	47,47,47	1.01	2 (4%)
16	HEC	C	1001	3	26,50,50	2.11	3 (11%)	18,82,82	2.26	5 (27%)
14	LMT	bl	104	-	36,36,36	1.08	5 (13%)	47,47,47	0.90	2 (4%)
14	LMT	bm	104	-	36,36,36	1.08	4 (11%)	47,47,47	0.96	2 (4%)
14	LMT	bf	104	-	36,36,36	1.11	5 (13%)	47,47,47	0.85	2 (4%)
13	BCL	AW	103	-	58,74,74	1.23	3 (5%)	69,115,115	1.37	9 (13%)
20	0V9	bc	102	-	44,44,46	0.75	1 (2%)	47,49,51	0.89	3 (6%)
13	BCL	aj	102	-	58,74,74	1.23	3 (5%)	69,115,115	1.47	13 (18%)
15	V7N	BR	1001	-	40,44,44	2.08	9 (22%)	40,54,54	1.72	10 (25%)
14	LMT	BU	1003	-	36,36,36	1.09	5 (13%)	47,47,47	1.03	3 (6%)
14	LMT	BH	1004	-	36,36,36	1.08	5 (13%)	47,47,47	0.91	1 (2%)
15	V7N	BS	1001	-	40,44,44	2.05	10 (25%)	40,54,54	1.60	9 (22%)
14	LMT	AH	103	-	36,36,36	1.12	5 (13%)	47,47,47	0.80	0
14	LMT	BF	102	-	36,36,36	1.09	5 (13%)	47,47,47	0.99	2 (4%)
14	LMT	L	307	-	36,36,36	1.08	4 (11%)	47,47,47	0.95	2 (4%)
14	LMT	BL	1005	-	36,36,36	1.06	5 (13%)	47,47,47	1.00	2 (4%)
21	CD4	ai	103	-	83,83,83	0.49	0	89,95,95	1.07	7 (7%)
13	BCL	BC	103	-	58,74,74	1.22	3 (5%)	69,115,115	1.34	10 (14%)
15	V7N	BC	101	-	40,44,44	2.11	9 (22%)	40,54,54	1.56	7 (17%)
14	LMT	BP	1003	-	36,36,36	1.10	5 (13%)	47,47,47	0.86	1 (2%)
17	NDG	C	1005	18	14,14,15	0.64	0	17,19,21	1.05	2 (11%)
14	LMT	BI	102	-	36,36,36	1.08	5 (13%)	47,47,47	0.82	0
14	LMT	BD	102	-	36,36,36	1.08	5 (13%)	47,47,47	0.92	2 (4%)
14	LMT	AN	101	-	36,36,36	1.09	4 (11%)	47,47,47	1.00	3 (6%)
14	LMT	BA	105	-	36,36,36	1.08	4 (11%)	47,47,47	0.92	2 (4%)
13	BCL	AC	1002	-	58,74,74	1.27	5 (8%)	69,115,115	1.44	11 (15%)
13	BCL	BT	1004	-	58,74,74	1.23	3 (5%)	69,115,115	1.45	15 (21%)
14	LMT	AH	106	-	36,36,36	1.11	5 (13%)	47,47,47	1.07	5 (10%)
13	BCL	AE	1002	-	58,74,74	1.22	3 (5%)	69,115,115	1.32	9 (13%)
14	LMT	BO	1003	-	36,36,36	1.06	5 (13%)	47,47,47	0.93	2 (4%)
13	BCL	an	102	-	58,74,74	1.24	4 (6%)	69,115,115	1.35	10 (14%)
20	0V9	be	103	-	44,44,46	0.75	1 (2%)	47,49,51	0.82	0
14	LMT	BK	1006	-	36,36,36	1.08	5 (13%)	47,47,47	1.00	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
14	LMT	BM	1003	-	36,36,36	1.09	5 (13%)	47,47,47	0.85	1 (2%)
14	LMT	AV	101	-	36,36,36	1.12	4 (11%)	47,47,47	1.02	3 (6%)
14	LMT	BP	1005	-	36,36,36	1.08	5 (13%)	47,47,47	0.82	1 (2%)
14	LMT	AB	104	-	36,36,36	1.10	5 (13%)	47,47,47	0.97	2 (4%)
15	V7N	bj	101	-	40,44,44	2.12	9 (22%)	40,54,54	1.48	7 (17%)
13	BCL	ah	1001	-	58,74,74	1.26	4 (6%)	69,115,115	1.33	9 (13%)
13	BCL	BO	1004	-	58,74,74	1.22	3 (5%)	69,115,115	1.34	11 (15%)
14	LMT	bb	102	-	36,36,36	1.13	5 (13%)	47,47,47	0.93	3 (6%)
14	LMT	AO	103	-	36,36,36	1.08	5 (13%)	47,47,47	0.92	0
14	LMT	BX	1003	-	36,36,36	1.07	5 (13%)	47,47,47	0.93	1 (2%)
14	LMT	BE	106	-	36,36,36	1.12	5 (13%)	47,47,47	0.93	2 (4%)
14	LMT	L	302	-	36,36,36	1.10	5 (13%)	47,47,47	0.97	1 (2%)
14	LMT	AU	101	-	36,36,36	1.10	5 (13%)	47,47,47	0.83	0
14	LMT	bk	101	-	36,36,36	1.08	5 (13%)	47,47,47	0.97	2 (4%)
13	BCL	ba	103	-	58,74,74	1.26	3 (5%)	69,115,115	1.34	10 (14%)
14	LMT	BR	1004	-	36,36,36	1.08	5 (13%)	47,47,47	0.98	2 (4%)
14	LMT	bn	102	-	36,36,36	1.10	5 (13%)	47,47,47	0.86	1 (2%)
13	BCL	BK	1003	-	58,74,74	1.20	3 (5%)	69,115,115	1.38	9 (13%)
21	CD4	ad	101	-	83,83,83	0.47	0	89,95,95	1.07	5 (5%)
13	BCL	AD	1001	28	58,74,74	1.25	4 (6%)	69,115,115	1.39	10 (14%)
13	BCL	AJ	101	-	58,74,74	1.24	3 (5%)	69,115,115	1.34	9 (13%)
14	LMT	BN	1002	-	36,36,36	1.08	5 (13%)	47,47,47	0.96	2 (4%)
20	0V9	bm	102	-	44,44,46	0.75	1 (2%)	47,49,51	0.91	1 (2%)
13	BCL	AG	103	-	58,74,74	1.23	3 (5%)	69,115,115	1.36	9 (13%)
20	0V9	bl	103	-	44,44,46	0.76	1 (2%)	47,49,51	0.85	0
14	LMT	L	304	-	36,36,36	1.05	4 (11%)	47,47,47	0.93	1 (2%)
14	LMT	BQ	1004	-	36,36,36	1.11	5 (13%)	47,47,47	0.89	2 (4%)
20	0V9	bi	102	-	44,44,46	0.76	1 (2%)	47,49,51	0.82	2 (4%)
15	V7N	BM	1001	-	40,44,44	2.05	10 (25%)	40,54,54	1.70	8 (20%)
13	BCL	BB	104	-	58,74,74	1.22	3 (5%)	69,115,115	1.42	12 (17%)
14	LMT	BG	1003	-	36,36,36	1.10	4 (11%)	47,47,47	0.84	1 (2%)
14	LMT	bh	103	-	36,36,36	1.08	5 (13%)	47,47,47	0.98	1 (2%)
13	BCL	al	1001	-	58,74,74	1.27	4 (6%)	69,115,115	1.40	9 (13%)
14	LMT	BS	1004	-	36,36,36	1.09	4 (11%)	47,47,47	0.88	1 (2%)
13	BCL	ap	1001	-	58,74,74	1.26	4 (6%)	69,115,115	1.34	9 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
14	LMT	AD	1003	-	36,36,36	1.07	5 (13%)	47,47,47	0.95	3 (6%)
13	BCL	ae	1001	-	58,74,74	1.24	4 (6%)	69,115,115	1.38	9 (13%)
14	LMT	BW	1002	-	36,36,36	1.09	5 (13%)	47,47,47	0.92	0
13	BCL	AQ	101	-	58,74,74	1.21	3 (5%)	69,115,115	1.34	9 (13%)
14	LMT	BA	106	-	36,36,36	1.07	5 (13%)	47,47,47	1.02	3 (6%)
13	BCL	AT	102	-	58,74,74	1.23	3 (5%)	69,115,115	1.38	9 (13%)
13	BCL	AP	101	-	58,74,74	1.23	4 (6%)	69,115,115	1.38	9 (13%)
14	LMT	BD	104	-	36,36,36	1.08	4 (11%)	47,47,47	0.86	1 (2%)
15	V7N	bb	101	-	40,44,44	2.15	10 (25%)	40,54,54	1.73	8 (20%)
15	V7N	bk	103	-	40,44,44	2.21	10 (25%)	40,54,54	1.37	6 (15%)
13	BCL	AA	1002	28	58,74,74	1.26	3 (5%)	69,115,115	1.41	12 (17%)
13	BCL	L	303	-	58,74,74	1.23	3 (5%)	69,115,115	1.30	10 (14%)
15	V7N	bh	102	-	40,44,44	2.09	9 (22%)	40,54,54	1.53	7 (17%)
20	0V9	aj	101	-	44,44,46	0.76	1 (2%)	47,49,51	0.85	2 (4%)
13	BCL	AO	102	-	58,74,74	1.23	4 (6%)	69,115,115	1.36	9 (13%)
15	V7N	BJ	1001	-	40,44,44	2.06	10 (25%)	40,54,54	1.52	8 (20%)
14	LMT	BE	102	-	36,36,36	1.09	5 (13%)	47,47,47	0.90	2 (4%)
14	LMT	BP	1006	-	36,36,36	1.07	4 (11%)	47,47,47	0.99	2 (4%)
13	BCL	AK	102	-	58,74,74	1.22	3 (5%)	69,115,115	1.35	9 (13%)
15	V7N	bn	101	-	40,44,44	2.15	9 (22%)	40,54,54	1.50	9 (22%)
13	BCL	AF	1002	-	58,74,74	1.27	4 (6%)	69,115,115	1.35	11 (15%)
27	UYH	ai	101	-	55,55,55	2.11	14 (25%)	63,63,63	1.01	3 (4%)
14	LMT	bj	102	-	36,36,36	1.11	5 (13%)	47,47,47	0.90	2 (4%)
13	BCL	AI	103	-	58,74,74	1.21	4 (6%)	69,115,115	1.34	9 (13%)
20	0V9	bb	104	-	44,44,46	0.76	1 (2%)	47,49,51	0.86	1 (2%)
13	BCL	BS	1005	-	58,74,74	1.24	4 (6%)	69,115,115	1.41	11 (15%)
20	0V9	be	102	-	44,44,46	0.77	1 (2%)	47,49,51	0.95	3 (6%)
13	BCL	AF	1001	-	58,74,74	1.23	3 (5%)	69,115,115	1.41	11 (15%)
13	BCL	AL	101	-	58,74,74	1.22	4 (6%)	69,115,115	1.36	9 (13%)
15	V7N	BT	1001	-	40,44,44	2.10	10 (25%)	40,54,54	1.47	8 (20%)
13	BCL	BW	1003	-	58,74,74	1.24	3 (5%)	69,115,115	1.38	11 (15%)
14	LMT	BR	1002	-	36,36,36	1.09	5 (13%)	47,47,47	0.91	1 (2%)
14	LMT	BC	104	-	36,36,36	1.08	4 (11%)	47,47,47	0.89	1 (2%)
14	LMT	BN	1004	-	36,36,36	1.11	5 (13%)	47,47,47	0.86	0
14	LMT	BE	105	-	36,36,36	1.07	5 (13%)	47,47,47	0.88	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
21	CD4	af	104	-	83,83,83	0.49	0	89,95,95	1.04	4 (4%)
14	LMT	AD	1004	-	36,36,36	1.10	4 (11%)	47,47,47	0.86	2 (4%)
15	V7N	be	101	-	40,44,44	2.05	10 (25%)	40,54,54	1.57	7 (17%)
16	HEC	C	1002	3	26,50,50	2.15	3 (11%)	18,82,82	2.04	6 (33%)
13	BCL	af	102	-	58,74,74	1.28	4 (6%)	69,115,115	1.35	10 (14%)
15	V7N	bi	101	-	40,44,44	2.12	10 (25%)	40,54,54	1.49	8 (20%)
14	LMT	BT	1005	-	36,36,36	1.07	5 (13%)	47,47,47	0.97	2 (4%)
13	BCL	AA	1001	-	58,74,74	1.22	3 (5%)	69,115,115	1.40	10 (14%)
22	BPH	M	406	-	64,70,70	0.85	3 (4%)	76,101,101	1.09	6 (7%)
13	BCL	AI	102	-	58,74,74	1.29	5 (8%)	69,115,115	1.37	9 (13%)
14	LMT	BW	1005	-	36,36,36	1.08	5 (13%)	47,47,47	1.40	4 (8%)
15	V7N	bf	102	-	40,44,44	2.13	11 (27%)	40,54,54	1.48	8 (20%)
21	CD4	af	103	-	83,83,83	0.49	0	89,95,95	1.07	5 (5%)
14	LMT	BK	1004	-	36,36,36	1.08	5 (13%)	47,47,47	1.12	3 (6%)
13	BCL	ao	1001	-	58,74,74	1.24	3 (5%)	69,115,115	1.37	9 (13%)
13	BCL	ag	1001	-	58,74,74	1.25	4 (6%)	69,115,115	1.35	10 (14%)
14	LMT	AA	1003	-	36,36,36	1.07	5 (13%)	47,47,47	0.99	1 (2%)
14	LMT	BQ	1002	-	36,36,36	1.10	4 (11%)	47,47,47	0.91	3 (6%)
13	BCL	bb	103	-	58,74,74	1.23	3 (5%)	69,115,115	1.29	11 (15%)
14	LMT	BT	1003	-	36,36,36	1.09	5 (13%)	47,47,47	0.85	1 (2%)
18	V75	C	1006	17,12	15,18,18	1.81	6 (40%)	19,25,25	1.71	2 (10%)
13	BCL	BJ	1004	-	58,74,74	1.23	3 (5%)	69,115,115	1.44	12 (17%)
15	V7N	BO	1001	-	40,44,44	2.10	10 (25%)	40,54,54	1.41	7 (17%)
20	0V9	bg	102	-	44,44,46	0.75	1 (2%)	47,49,51	0.82	2 (4%)
25	CRT	M	408	-	41,43,43	0.55	0	50,54,54	0.65	0
14	LMT	AL	102	-	36,36,36	1.09	4 (11%)	47,47,47	0.82	0
13	BCL	AS	101	-	58,74,74	1.23	3 (5%)	69,115,115	1.34	9 (13%)
15	V7N	BL	1001	-	40,44,44	2.12	10 (25%)	40,54,54	1.45	7 (17%)
20	0V9	bn	104	-	44,44,46	0.75	1 (2%)	47,49,51	0.92	2 (4%)
13	BCL	am	1001	-	58,74,74	1.23	3 (5%)	69,115,115	1.35	9 (13%)
13	BCL	BD	106	-	58,74,74	1.24	3 (5%)	69,115,115	1.36	10 (14%)
14	LMT	AJ	103	-	36,36,36	1.09	5 (13%)	47,47,47	0.85	1 (2%)
23	MQ8	an	101	-	54,54,54	0.63	0	66,69,69	1.15	7 (10%)
13	BCL	AM	101	28	58,74,74	1.29	5 (8%)	69,115,115	1.44	13 (18%)
15	V7N	bm	101	-	40,44,44	2.11	9 (22%)	40,54,54	1.53	8 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
21	CD4	M	404	-	83,83,83	0.46	0	89,95,95	1.06	5 (5%)
15	V7N	BH	1001	-	40,44,44	2.11	11 (27%)	40,54,54	1.60	9 (22%)
14	LMT	BU	1001	-	36,36,36	1.07	4 (11%)	47,47,47	0.89	1 (2%)
13	BCL	BI	104	-	58,74,74	1.23	3 (5%)	69,115,115	1.39	10 (14%)
14	LMT	BF	103	-	36,36,36	1.08	5 (13%)	47,47,47	0.90	1 (2%)
20	0V9	bk	102	-	44,44,46	0.77	1 (2%)	47,49,51	0.80	1 (2%)
14	LMT	AR	102	-	36,36,36	1.08	4 (11%)	47,47,47	1.06	3 (6%)
14	LMT	L	305	-	36,36,36	1.11	5 (13%)	47,47,47	0.83	0
13	BCL	bh	105	-	58,74,74	1.23	3 (5%)	69,115,115	1.32	11 (15%)
14	LMT	BJ	1002	-	36,36,36	1.06	5 (13%)	47,47,47	1.02	2 (4%)
15	V7N	BG	1001	-	40,44,44	2.12	10 (25%)	40,54,54	1.54	7 (17%)
14	LMT	L	306	-	36,36,36	1.09	5 (13%)	47,47,47	0.85	1 (2%)
14	LMT	bd	102	-	36,36,36	1.11	5 (13%)	47,47,47	0.86	1 (2%)
13	BCL	BX	1004	-	58,74,74	1.22	3 (5%)	69,115,115	1.34	11 (15%)
13	BCL	AW	101	28	58,74,74	1.27	4 (6%)	69,115,115	1.42	12 (17%)
13	BCL	bi	103	-	58,74,74	1.22	3 (5%)	69,115,115	1.33	12 (17%)
14	LMT	BJ	1003	-	36,36,36	1.07	5 (13%)	47,47,47	0.80	1 (2%)
13	BCL	AJ	102	28	58,74,74	1.27	3 (5%)	69,115,115	1.52	14 (20%)
14	LMT	BS	1003	-	36,36,36	1.08	5 (13%)	47,47,47	0.88	0
14	LMT	BA	102	-	36,36,36	1.09	4 (11%)	47,47,47	0.93	2 (4%)
14	LMT	BR	1006	-	36,36,36	1.10	5 (13%)	47,47,47	1.02	2 (4%)
14	LMT	BI	101	-	36,36,36	1.09	5 (13%)	47,47,47	0.91	1 (2%)
13	BCL	AV	102	-	58,74,74	1.23	4 (6%)	69,115,115	1.33	9 (13%)
13	BCL	BL	1004	-	58,74,74	1.21	3 (5%)	69,115,115	1.33	10 (14%)
14	LMT	AS	103	-	36,36,36	1.09	5 (13%)	47,47,47	0.94	2 (4%)
14	LMT	bf	101	-	36,36,36	1.14	5 (13%)	47,47,47	0.92	2 (4%)
14	LMT	BW	1006	-	36,36,36	1.07	4 (11%)	47,47,47	1.15	4 (8%)
14	LMT	AH	104	-	36,36,36	1.10	4 (11%)	47,47,47	0.81	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
13	BCL	AV	103	28	-	6/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
13	BCL	ak	1001	-	-	6/37/137/137	-
15	V7N	AE	1003	-	-	3/49/53/53	-
20	0V9	ba	102	-	-	8/48/48/50	-
14	LMT	bl	101	-	-	2/21/61/61	0/2/2/2
13	BCL	ac	102	-	-	2/37/137/137	-
14	LMT	AP	102	-	-	7/21/61/61	0/2/2/2
13	BCL	AN	104	-	-	1/37/137/137	-
13	BCL	AW	104	-	-	14/37/137/137	-
13	BCL	AG	102	-	-	12/37/137/137	-
14	LMT	BS	1002	-	-	3/21/61/61	0/2/2/2
14	LMT	BI	103	-	-	2/21/61/61	0/2/2/2
13	BCL	BV	1004	-	-	9/37/137/137	-
14	LMT	BL	1002	-	-	10/21/61/61	0/2/2/2
14	LMT	BT	1002	-	-	5/21/61/61	0/2/2/2
23	MQ8	L	309	-	-	10/47/67/67	0/2/2/2
14	LMT	BD	105	-	-	8/21/61/61	0/2/2/2
13	BCL	bf	105	-	-	3/37/137/137	-
13	BCL	bk	105	-	-	8/37/137/137	-
15	V7N	BN	1001	-	-	8/49/53/53	-
13	BCL	AD	1002	-	-	2/37/137/137	-
13	BCL	bg	104	-	-	8/37/137/137	-
14	LMT	BM	1002	-	-	1/21/61/61	0/2/2/2
13	BCL	AQ	103	-	-	10/37/137/137	-
13	BCL	BH	1003	-	-	9/37/137/137	-
14	LMT	BB	103	-	-	5/21/61/61	0/2/2/2
20	0V9	L	310	-	-	10/48/48/50	-
23	MQ8	M	407	-	-	0/47/67/67	0/2/2/2
14	LMT	BR	1005	-	-	3/21/61/61	0/2/2/2
13	BCL	aa	1001	-	-	3/37/137/137	-
14	LMT	BV	1002	-	-	2/21/61/61	0/2/2/2
13	BCL	AH	102	-	-	0/37/137/137	-
15	V7N	BD	101	-	-	3/49/53/53	-
14	LMT	BN	1003	-	-	5/21/61/61	0/2/2/2
14	LMT	BL	1003	-	-	4/21/61/61	0/2/2/2
13	BCL	BM	1004	-	-	3/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
15	V7N	BX	1001	-	-	5/49/53/53	-
13	BCL	AS	104	28	-	9/37/137/137	-
14	LMT	BE	103	-	-	3/21/61/61	0/2/2/2
15	V7N	BA	101	-	-	4/49/53/53	-
13	BCL	BE	104	-	-	3/37/137/137	-
14	LMT	BH	1005	-	-	4/21/61/61	0/2/2/2
17	NDG	C1	301	18	-	0/6/23/26	0/1/1/1
20	0V9	bk	104	-	-	11/48/48/50	-
26	V7B	ag	1002	-	-	15/48/88/88	0/2/2/2
13	BCL	bp	103	-	-	11/37/137/137	-
13	BCL	be	104	-	-	6/37/137/137	-
14	LMT	bh	101	-	-	9/21/61/61	0/2/2/2
15	V7N	bd	101	-	-	5/49/53/53	-
14	LMT	AF	1003	-	-	5/21/61/61	0/2/2/2
13	BCL	AS	102	28	-	7/37/137/137	-
22	BPH	L	301	-	-	4/54/105/105	0/5/6/6
14	LMT	BV	1003	-	-	1/21/61/61	0/2/2/2
13	BCL	AU	103	-	-	4/37/137/137	-
15	V7N	bc	104	-	-	9/49/53/53	-
19	PGW	H1	1001	-	-	15/55/55/55	-
14	LMT	BA	103	-	-	7/21/61/61	0/2/2/2
13	BCL	BA	104	-	-	9/37/137/137	-
14	LMT	AI	101	-	-	4/21/61/61	0/2/2/2
14	LMT	BK	1002	-	-	5/21/61/61	0/2/2/2
14	LMT	BB	102	-	-	3/21/61/61	0/2/2/2
13	BCL	BQ	1003	-	-	7/37/137/137	-
20	0V9	bf	103	-	-	11/48/48/50	-
13	BCL	AR	101	-	-	3/37/137/137	-
15	V7N	bl	102	-	-	8/49/53/53	-
14	LMT	BO	1002	-	-	5/21/61/61	0/2/2/2
15	V7N	bo	101	-	-	3/49/53/53	-
13	BCL	ad	102	-	-	6/37/137/137	-
20	0V9	bo	104	-	-	8/48/48/50	-
21	CD4	H1	1003	-	-	17/94/94/94	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	LMT	bc	101	-	-	11/21/61/61	0/2/2/2
13	BCL	bd	103	-	-	4/37/137/137	-
14	LMT	BD	103	-	-	4/21/61/61	0/2/2/2
14	LMT	BP	1002	-	-	5/21/61/61	0/2/2/2
13	BCL	AB	103	28	-	7/37/137/137	-
13	BCL	bm	103	-	-	8/37/137/137	-
13	BCL	BN	1006	-	-	9/37/137/137	-
20	0V9	ba	104	-	-	12/48/48/50	-
14	LMT	bp	101	-	-	9/21/61/61	0/2/2/2
14	LMT	AW	102	-	-	3/21/61/61	0/2/2/2
15	V7N	BE	101	-	-	3/49/53/53	-
15	V7N	ba	101	-	-	7/49/53/53	-
14	LMT	BU	1002	-	-	1/21/61/61	0/2/2/2
13	BCL	AN	102	28	-	6/37/137/137	-
13	BCL	BR	1003	-	-	7/37/137/137	-
20	0V9	bh	104	-	-	11/48/48/50	-
13	BCL	AX	101	-	-	4/37/137/137	-
14	LMT	BX	1002	-	-	3/21/61/61	0/2/2/2
18	V75	M	409	17,12	-	0/8/29/29	0/1/1/1
13	BCL	ab	1001	-	-	4/37/137/137	-
14	LMT	AN	103	-	-	6/21/61/61	0/2/2/2
13	BCL	AL	103	-	-	8/37/137/137	-
14	LMT	AB	102	-	-	3/21/61/61	0/2/2/2
13	BCL	bo	102	-	-	4/37/137/137	-
14	LMT	AT	101	-	-	3/21/61/61	0/2/2/2
15	V7N	BQ	1001	-	-	4/49/53/53	-
14	LMT	BW	1004	-	-	4/21/61/61	0/2/2/2
13	BCL	AU	102	-	-	7/37/137/137	-
14	LMT	M	402	-	-	3/21/61/61	0/2/2/2
13	BCL	BG	1004	-	-	12/37/137/137	-
13	BCL	bj	104	-	-	10/37/137/137	-
15	V7N	AH	105	-	-	6/49/53/53	-
16	HEC	C	1004	3	-	0/6/54/54	-
15	V7N	BP	1001	-	-	4/49/53/53	-
15	V7N	BB	101	-	-	3/49/53/53	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	LMT	BF	101	-	-	3/21/61/61	0/2/2/2
13	BCL	AH	101	-	-	12/37/137/137	-
13	BCL	M	403	-	-	5/37/137/137	-
14	LMT	BC	102	-	-	3/21/61/61	0/2/2/2
15	V7N	BW	1001	-	-	5/49/53/53	-
14	LMT	BK	1005	-	-	2/21/61/61	0/2/2/2
13	BCL	AE	1001	-	-	11/37/137/137	-
14	LMT	bo	103	-	-	3/21/61/61	0/2/2/2
15	V7N	BV	1001	-	-	5/49/53/53	-
14	LMT	BH	1002	-	-	2/21/61/61	0/2/2/2
14	LMT	AK	101	-	-	5/21/61/61	0/2/2/2
20	0V9	bj	103	-	-	6/48/48/50	-
13	BCL	BF	104	-	-	6/37/137/137	-
13	BCL	bc	103	-	-	7/37/137/137	-
13	BCL	bl	105	-	-	8/37/137/137	-
13	BCL	AK	103	-	-	14/37/137/137	-
26	V7B	af	101	-	-	14/48/88/88	0/2/2/2
14	LMT	BN	1005	-	-	2/21/61/61	0/2/2/2
16	HEC	C	1003	3	-	0/6/54/54	-
15	V7N	bp	102	-	-	5/49/53/53	-
13	BCL	bn	103	-	-	5/37/137/137	-
13	BCL	AQ	102	28	-	6/37/137/137	-
13	BCL	AP	103	28	-	6/37/137/137	-
14	LMT	BI	105	-	-	2/21/61/61	0/2/2/2
14	LMT	AG	101	-	-	6/21/61/61	0/2/2/2
13	BCL	AM	102	-	-	6/37/137/137	-
20	0V9	H1	1002	-	-	10/48/48/50	-
15	V7N	bg	101	-	-	6/49/53/53	-
15	V7N	BK	1001	-	-	3/49/53/53	-
13	BCL	AO	101	-	-	11/37/137/137	-
13	BCL	AC	1001	-	-	6/37/137/137	-
15	V7N	AT	103	-	-	6/49/53/53	-
14	LMT	BG	1002	-	-	4/21/61/61	0/2/2/2
13	BCL	AB	101	-	-	2/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
13	BCL	BP	1004	-	-	8/37/137/137	-
13	BCL	M	405	-	-	4/37/137/137	-
14	LMT	ac	101	-	-	4/21/61/61	0/2/2/2
13	BCL	ai	102	-	-	6/37/137/137	-
13	BCL	BU	1004	-	-	12/37/137/137	-
13	BCL	L	308	-	-	1/37/137/137	-
14	LMT	bg	103	-	-	6/21/61/61	0/2/2/2
16	HEC	C	1001	3	-	0/6/54/54	-
14	LMT	bl	104	-	-	3/21/61/61	0/2/2/2
14	LMT	bm	104	-	-	7/21/61/61	0/2/2/2
14	LMT	bf	104	-	-	6/21/61/61	0/2/2/2
13	BCL	AW	103	-	-	4/37/137/137	-
20	0V9	bc	102	-	-	15/48/48/50	-
13	BCL	aj	102	-	-	5/37/137/137	-
15	V7N	BR	1001	-	-	5/49/53/53	-
14	LMT	BU	1003	-	-	4/21/61/61	0/2/2/2
14	LMT	BH	1004	-	-	4/21/61/61	0/2/2/2
15	V7N	BS	1001	-	-	6/49/53/53	-
14	LMT	AH	103	-	-	3/21/61/61	0/2/2/2
14	LMT	BF	102	-	-	5/21/61/61	0/2/2/2
14	LMT	L	307	-	-	6/21/61/61	0/2/2/2
14	LMT	BL	1005	-	-	5/21/61/61	0/2/2/2
21	CD4	ai	103	-	-	19/94/94/94	-
13	BCL	BC	103	-	-	3/37/137/137	-
15	V7N	BC	101	-	-	3/49/53/53	-
14	LMT	BP	1003	-	-	5/21/61/61	0/2/2/2
17	NDG	C	1005	18	-	0/6/23/26	0/1/1/1
14	LMT	BI	102	-	-	4/21/61/61	0/2/2/2
14	LMT	BD	102	-	-	3/21/61/61	0/2/2/2
14	LMT	AN	101	-	-	2/21/61/61	0/2/2/2
14	LMT	BA	105	-	-	4/21/61/61	0/2/2/2
13	BCL	AC	1002	-	-	10/37/137/137	-
13	BCL	BT	1004	-	-	9/37/137/137	-
14	LMT	AH	106	-	-	3/21/61/61	0/2/2/2
13	BCL	AE	1002	-	-	1/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	LMT	BO	1003	-	-	4/21/61/61	0/2/2/2
13	BCL	an	102	-	-	3/37/137/137	-
20	0V9	be	103	-	-	12/48/48/50	-
14	LMT	BK	1006	-	-	3/21/61/61	0/2/2/2
14	LMT	BM	1003	-	-	2/21/61/61	0/2/2/2
14	LMT	AV	101	-	-	3/21/61/61	0/2/2/2
14	LMT	BP	1005	-	-	4/21/61/61	0/2/2/2
14	LMT	AB	104	-	-	7/21/61/61	0/2/2/2
15	V7N	bj	101	-	-	2/49/53/53	-
13	BCL	ah	1001	-	-	7/37/137/137	-
13	BCL	BO	1004	-	-	8/37/137/137	-
14	LMT	bb	102	-	-	6/21/61/61	0/2/2/2
14	LMT	AO	103	-	-	4/21/61/61	0/2/2/2
14	LMT	BX	1003	-	-	8/21/61/61	0/2/2/2
14	LMT	BE	106	-	-	2/21/61/61	0/2/2/2
14	LMT	L	302	-	-	6/21/61/61	0/2/2/2
14	LMT	AU	101	-	-	5/21/61/61	0/2/2/2
14	LMT	bk	101	-	-	7/21/61/61	0/2/2/2
13	BCL	ba	103	-	-	10/37/137/137	-
14	LMT	BR	1004	-	-	7/21/61/61	0/2/2/2
14	LMT	bn	102	-	-	2/21/61/61	0/2/2/2
13	BCL	BK	1003	-	-	12/37/137/137	-
21	CD4	ad	101	-	-	21/94/94/94	-
13	BCL	AD	1001	28	-	5/37/137/137	-
13	BCL	AJ	101	-	-	0/37/137/137	-
14	LMT	BN	1002	-	-	8/21/61/61	0/2/2/2
20	0V9	bm	102	-	-	11/48/48/50	-
13	BCL	AG	103	-	-	5/37/137/137	-
20	0V9	bl	103	-	-	12/48/48/50	-
14	LMT	L	304	-	-	3/21/61/61	0/2/2/2
14	LMT	BQ	1004	-	-	3/21/61/61	0/2/2/2
20	0V9	bi	102	-	-	7/48/48/50	-
15	V7N	BM	1001	-	-	7/49/53/53	-
13	BCL	BB	104	-	-	7/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	LMT	BG	1003	-	-	4/21/61/61	0/2/2/2
14	LMT	bh	103	-	-	1/21/61/61	0/2/2/2
13	BCL	al	1001	-	-	6/37/137/137	-
14	LMT	BS	1004	-	-	3/21/61/61	0/2/2/2
13	BCL	ap	1001	-	-	11/37/137/137	-
14	LMT	AD	1003	-	-	6/21/61/61	0/2/2/2
13	BCL	ae	1001	-	-	9/37/137/137	-
14	LMT	BW	1002	-	-	3/21/61/61	0/2/2/2
13	BCL	AQ	101	-	-	3/37/137/137	-
14	LMT	BA	106	-	-	7/21/61/61	0/2/2/2
13	BCL	AT	102	-	-	1/37/137/137	-
13	BCL	AP	101	-	-	5/37/137/137	-
14	LMT	BD	104	-	-	2/21/61/61	0/2/2/2
15	V7N	bb	101	-	-	17/49/53/53	-
15	V7N	bk	103	-	-	8/49/53/53	-
13	BCL	AA	1002	28	-	9/37/137/137	-
13	BCL	L	303	-	-	4/37/137/137	-
15	V7N	bh	102	-	-	5/49/53/53	-
20	0V9	aj	101	-	-	16/48/48/50	-
13	BCL	AO	102	-	-	3/37/137/137	-
15	V7N	BJ	1001	-	-	4/49/53/53	-
14	LMT	BE	102	-	-	5/21/61/61	0/2/2/2
14	LMT	BP	1006	-	-	3/21/61/61	0/2/2/2
13	BCL	AK	102	-	-	1/37/137/137	-
15	V7N	bn	101	-	-	5/49/53/53	-
13	BCL	AF	1002	-	-	10/37/137/137	-
27	UYH	ai	101	-	-	9/50/70/70	0/1/1/1
14	LMT	bj	102	-	-	5/21/61/61	0/2/2/2
13	BCL	AI	103	-	-	6/37/137/137	-
20	0V9	bb	104	-	-	10/48/48/50	-
13	BCL	BS	1005	-	-	8/37/137/137	-
20	0V9	be	102	-	-	16/48/48/50	-
13	BCL	AF	1001	-	-	7/37/137/137	-
13	BCL	AL	101	-	-	1/37/137/137	-
15	V7N	BT	1001	-	-	3/49/53/53	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
13	BCL	BW	1003	-	-	5/37/137/137	-
14	LMT	BR	1002	-	-	5/21/61/61	0/2/2/2
14	LMT	BC	104	-	-	6/21/61/61	0/2/2/2
14	LMT	BN	1004	-	-	4/21/61/61	0/2/2/2
14	LMT	BE	105	-	-	2/21/61/61	0/2/2/2
21	CD4	af	104	-	-	20/94/94/94	-
14	LMT	AD	1004	-	-	1/21/61/61	0/2/2/2
15	V7N	be	101	-	-	6/49/53/53	-
16	HEC	C	1002	3	-	0/6/54/54	-
13	BCL	af	102	-	-	3/37/137/137	-
15	V7N	bi	101	-	-	3/49/53/53	-
14	LMT	BT	1005	-	-	6/21/61/61	0/2/2/2
13	BCL	AA	1001	-	-	3/37/137/137	-
22	BPH	M	406	-	-	6/54/105/105	0/5/6/6
13	BCL	AI	102	-	-	8/37/137/137	-
14	LMT	BW	1005	-	-	6/21/61/61	0/2/2/2
15	V7N	bf	102	-	-	3/49/53/53	-
21	CD4	af	103	-	-	30/94/94/94	-
14	LMT	BK	1004	-	-	7/21/61/61	0/2/2/2
13	BCL	ao	1001	-	-	7/37/137/137	-
13	BCL	ag	1001	-	-	5/37/137/137	-
14	LMT	AA	1003	-	-	7/21/61/61	0/2/2/2
14	LMT	BQ	1002	-	-	1/21/61/61	0/2/2/2
13	BCL	bb	103	-	-	5/37/137/137	-
14	LMT	BT	1003	-	-	4/21/61/61	0/2/2/2
18	V75	C	1006	17,12	-	0/8/29/29	0/1/1/1
13	BCL	BJ	1004	-	-	8/37/137/137	-
15	V7N	BO	1001	-	-	6/49/53/53	-
20	0V9	bg	102	-	-	15/48/48/50	-
25	CRT	M	408	-	-	3/51/51/51	-
14	LMT	AL	102	-	-	5/21/61/61	0/2/2/2
13	BCL	AS	101	-	-	7/37/137/137	-
15	V7N	BL	1001	-	-	7/49/53/53	-
20	0V9	bn	104	-	-	12/48/48/50	-
13	BCL	am	1001	-	-	2/37/137/137	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
13	BCL	BD	106	-	-	6/37/137/137	-
14	LMT	AJ	103	-	-	2/21/61/61	0/2/2/2
23	MQ8	an	101	-	-	4/47/67/67	0/2/2/2
13	BCL	AM	101	28	-	10/37/137/137	-
15	V7N	bm	101	-	-	4/49/53/53	-
21	CD4	M	404	-	-	21/94/94/94	-
15	V7N	BH	1001	-	-	4/49/53/53	-
14	LMT	BU	1001	-	-	5/21/61/61	0/2/2/2
13	BCL	BI	104	-	-	12/37/137/137	-
14	LMT	BF	103	-	-	1/21/61/61	0/2/2/2
20	0V9	bk	102	-	-	12/48/48/50	-
14	LMT	AR	102	-	-	11/21/61/61	0/2/2/2
14	LMT	L	305	-	-	7/21/61/61	0/2/2/2
13	BCL	bh	105	-	-	6/37/137/137	-
14	LMT	BJ	1002	-	-	6/21/61/61	0/2/2/2
15	V7N	BG	1001	-	-	5/49/53/53	-
14	LMT	L	306	-	-	3/21/61/61	0/2/2/2
14	LMT	bd	102	-	-	8/21/61/61	0/2/2/2
13	BCL	BX	1004	-	-	6/37/137/137	-
13	BCL	AW	101	28	-	8/37/137/137	-
13	BCL	bi	103	-	-	6/37/137/137	-
14	LMT	BJ	1003	-	-	2/21/61/61	0/2/2/2
13	BCL	AJ	102	28	-	11/37/137/137	-
14	LMT	BS	1003	-	-	6/21/61/61	0/2/2/2
14	LMT	BA	102	-	-	2/21/61/61	0/2/2/2
14	LMT	BR	1006	-	-	2/21/61/61	0/2/2/2
14	LMT	BI	101	-	-	2/21/61/61	0/2/2/2
13	BCL	AV	102	-	-	3/37/137/137	-
13	BCL	BL	1004	-	-	6/37/137/137	-
14	LMT	AS	103	-	-	8/21/61/61	0/2/2/2
14	LMT	bf	101	-	-	7/21/61/61	0/2/2/2
14	LMT	BW	1006	-	-	9/21/61/61	0/2/2/2
14	LMT	AH	104	-	-	2/21/61/61	0/2/2/2

The worst 5 of 1406 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	ba	101	V7N	C28-C27	7.01	1.52	1.34
15	BV	1001	V7N	C28-C27	7.01	1.52	1.34
15	bp	102	V7N	C28-C27	7.00	1.52	1.34
15	bl	102	V7N	C28-C27	6.99	1.52	1.34
15	bg	101	V7N	C28-C27	6.99	1.52	1.34

The worst 5 of 1771 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	BA	104	BCL	C1-C2-C3	6.57	137.41	126.04
13	AQ	103	BCL	C1-O2A-CGA	6.47	133.42	116.44
15	bb	101	V7N	C28-C27-C26	-6.45	108.29	126.42
15	BG	1001	V7N	C28-C27-C26	-6.35	108.57	126.42
14	BW	1005	LMT	C1-O1'-C1'	5.92	123.66	113.84

There are no chirality outliers.

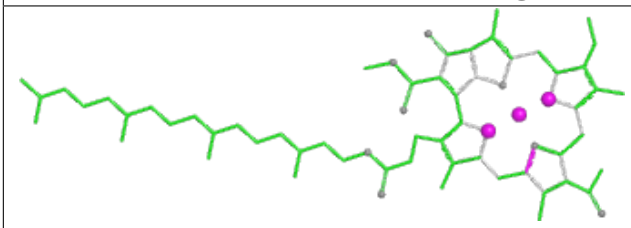
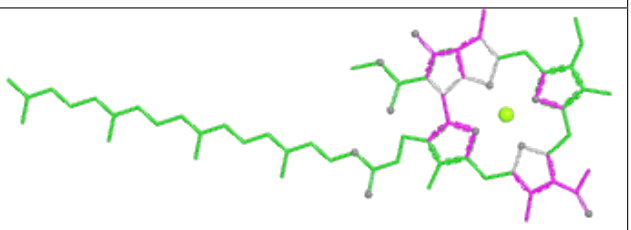
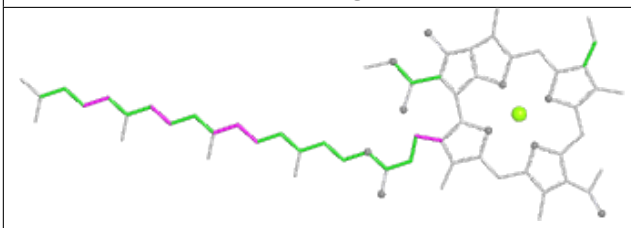
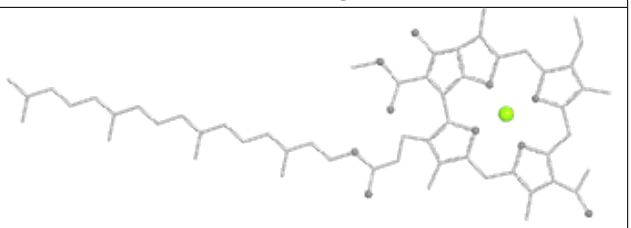
5 of 1852 torsion outliers are listed below:

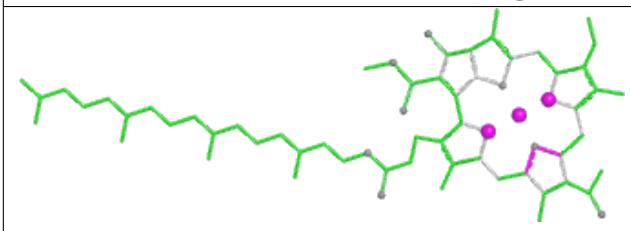
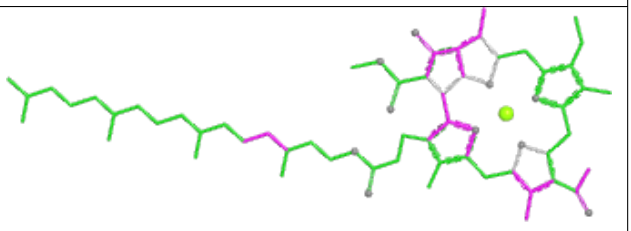
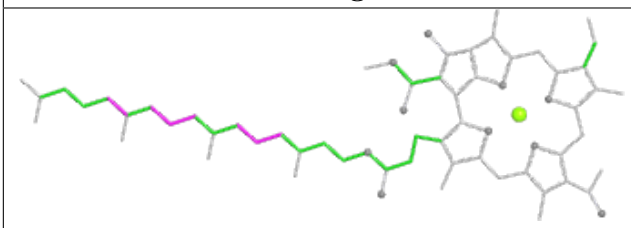
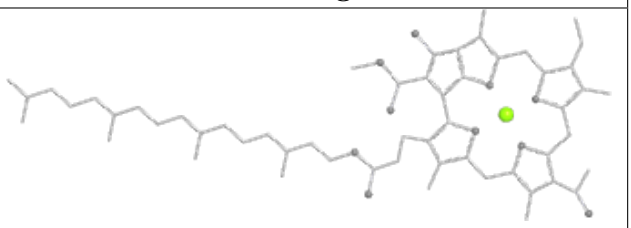
Mol	Chain	Res	Type	Atoms
13	AB	103	BCL	C1A-C2A-CAA-CBA
13	AB	103	BCL	C3A-C2A-CAA-CBA
13	AD	1001	BCL	C3A-C2A-CAA-CBA
13	AF	1002	BCL	C1A-C2A-CAA-CBA
13	AG	102	BCL	C1A-C2A-CAA-CBA

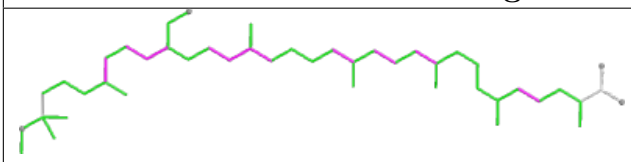
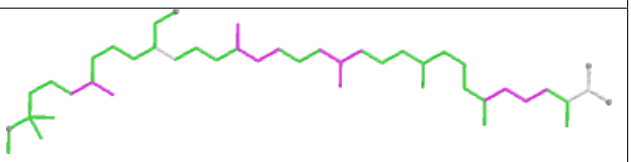
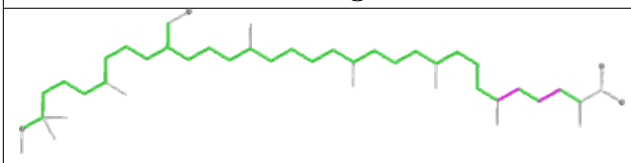
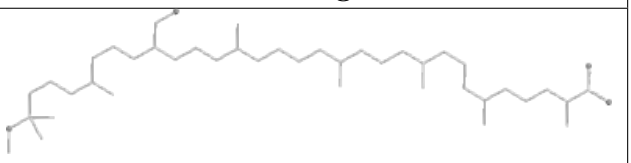
There are no ring outliers.

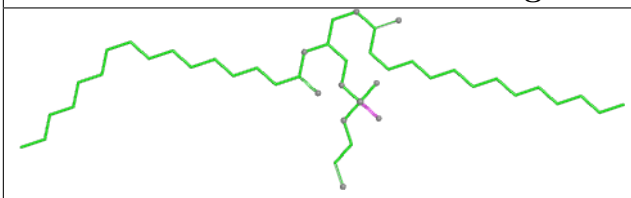
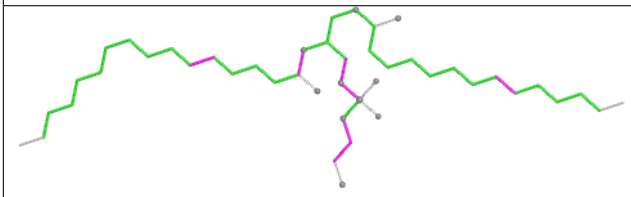
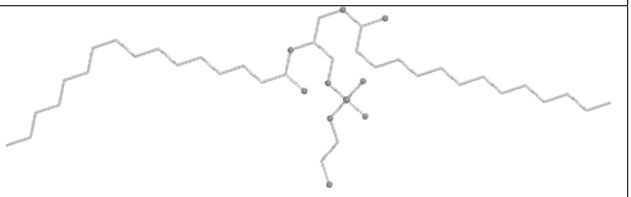
No monomer is involved in short contacts.

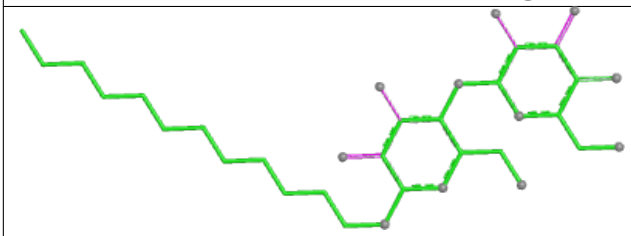
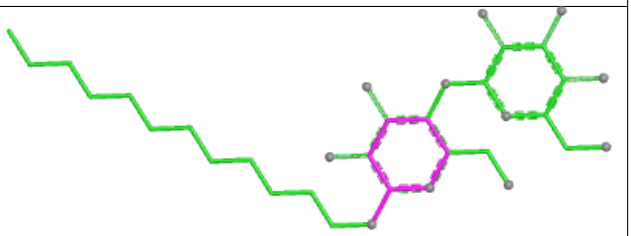
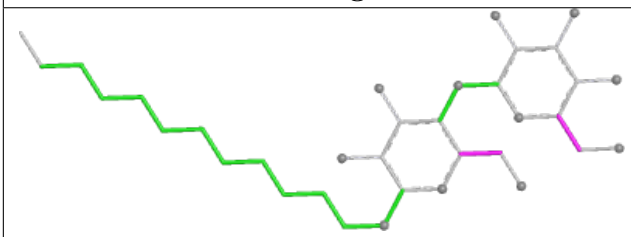
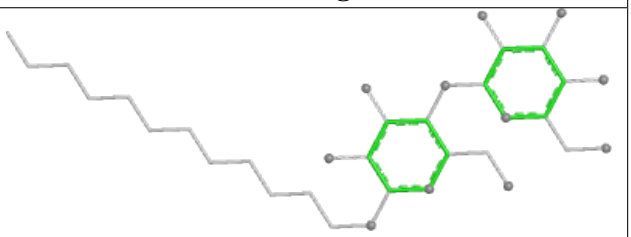
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

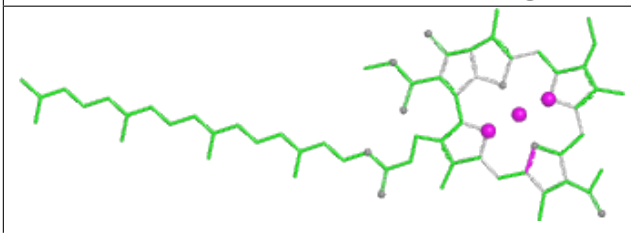
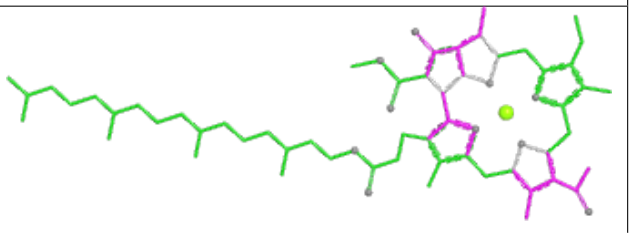
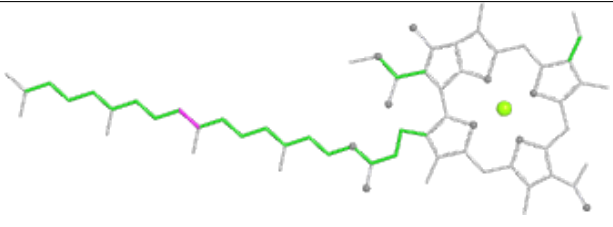
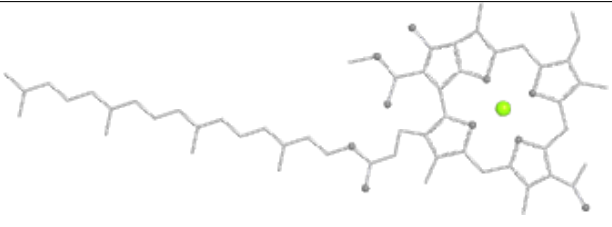
Ligand BCL AV 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL ak 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

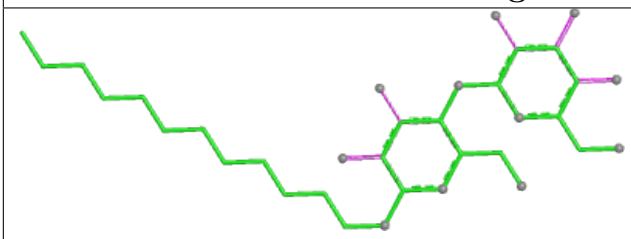
Ligand V7N AE 1003	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand 0V9 ba 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

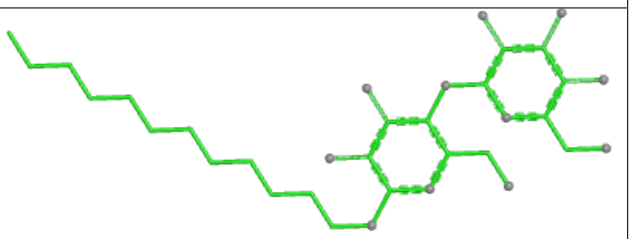
Ligand LMT bl 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL ac 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

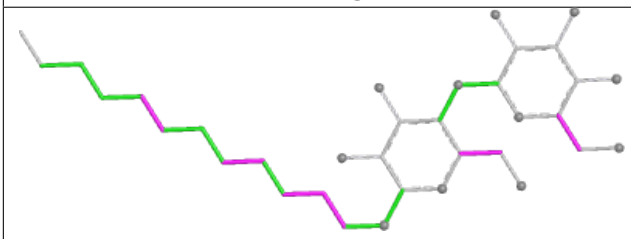
Ligand LMT AP 102



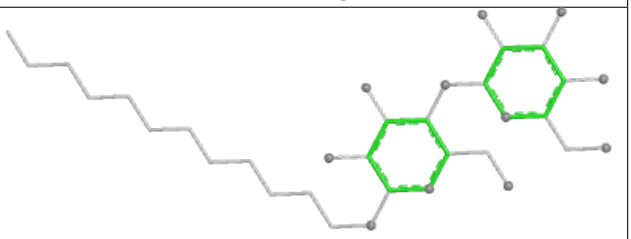
Bond lengths



Bond angles

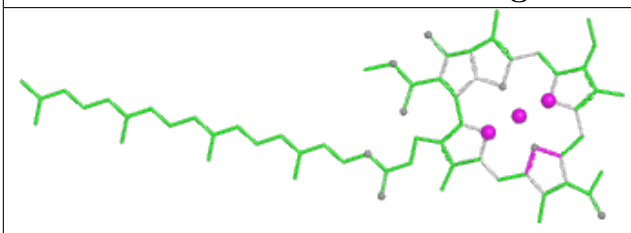


Torsions

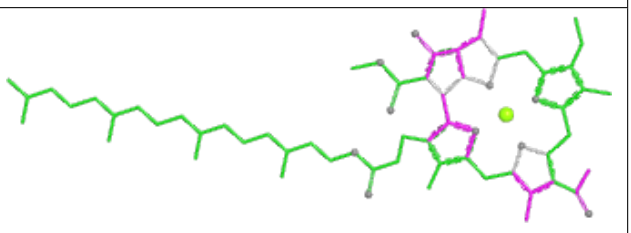


Rings

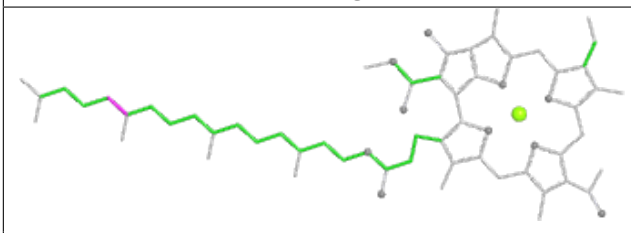
Ligand BCL AN 104



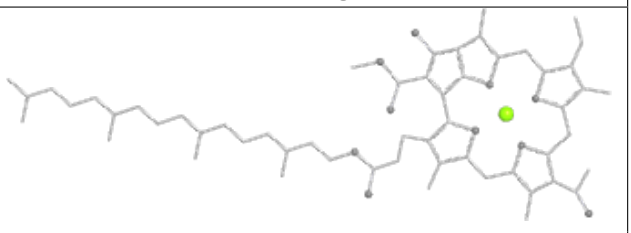
Bond lengths



Bond angles

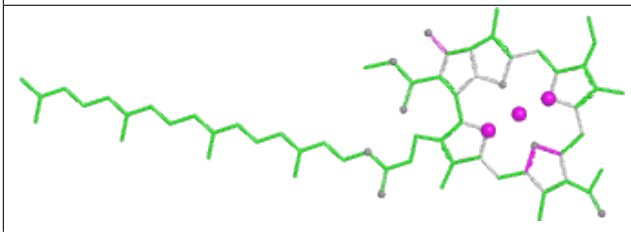


Torsions

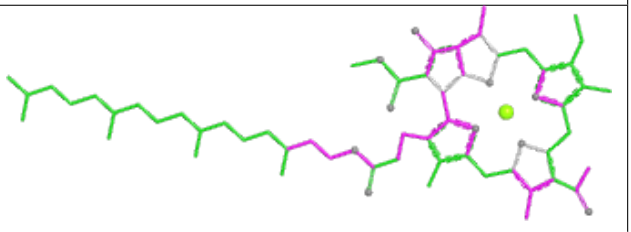


Rings

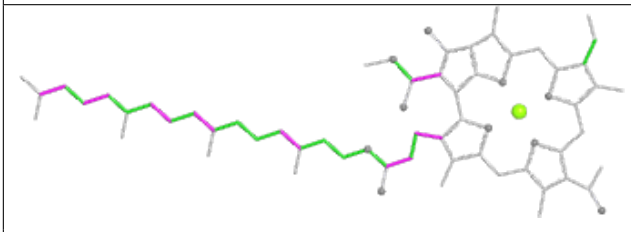
Ligand BCL AW 104



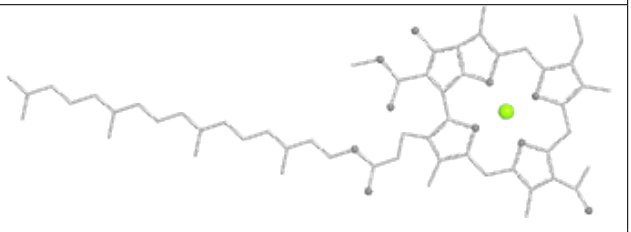
Bond lengths



Bond angles

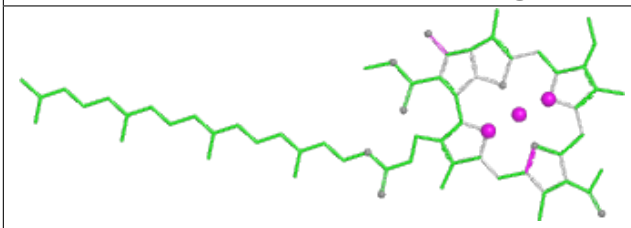


Torsions

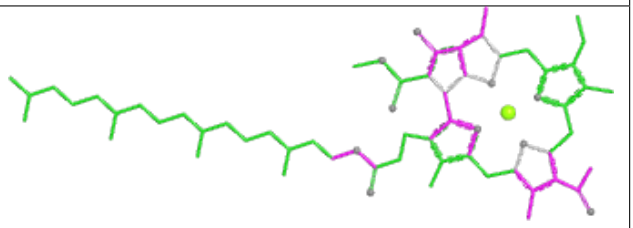


Rings

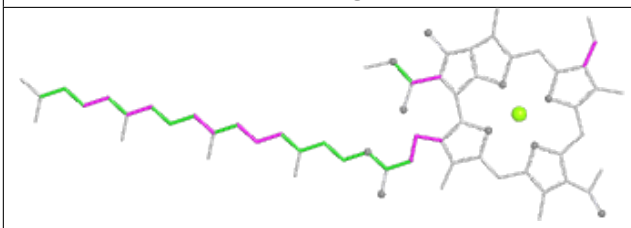
Ligand BCL AG 102



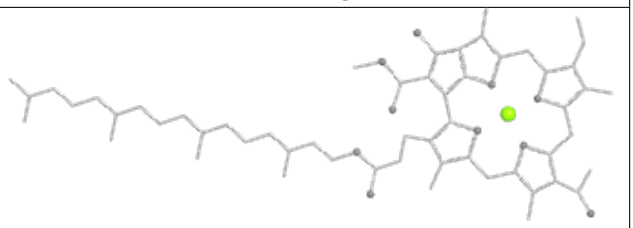
Bond lengths



Bond angles

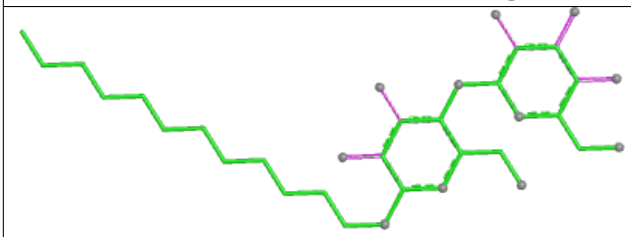


Torsions

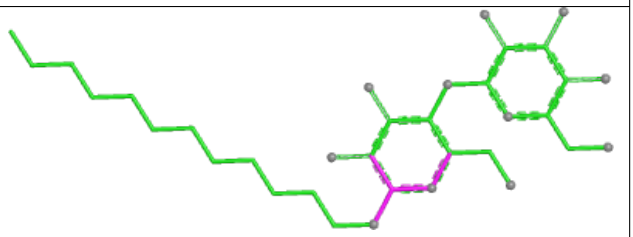


Rings

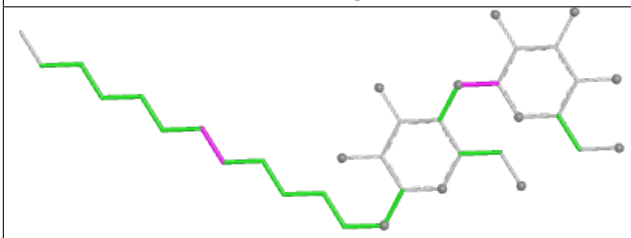
Ligand LMT BS 1002



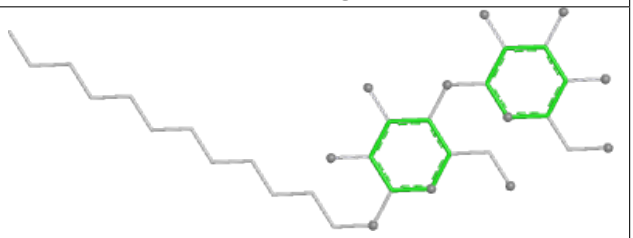
Bond lengths



Bond angles

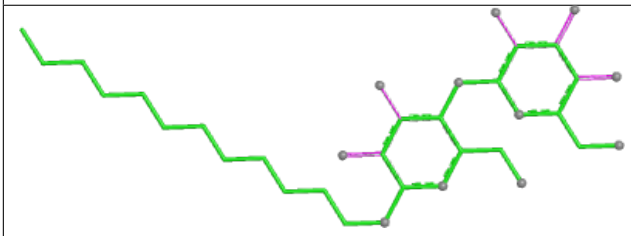


Torsions

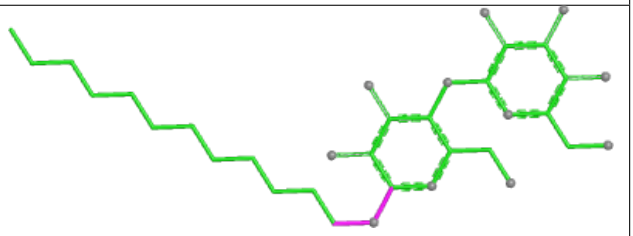


Rings

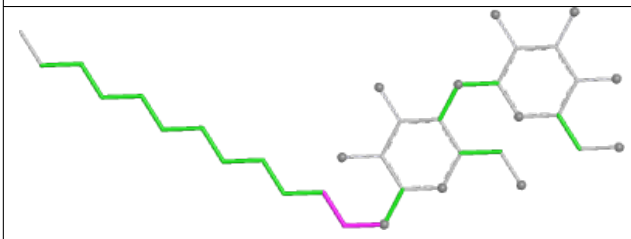
Ligand LMT BI 103



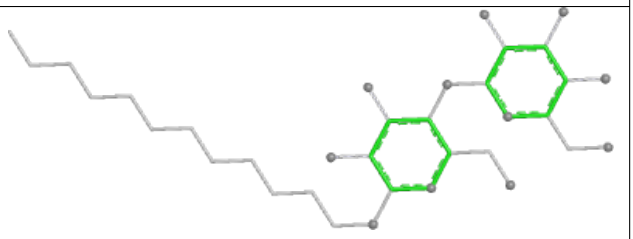
Bond lengths



Bond angles

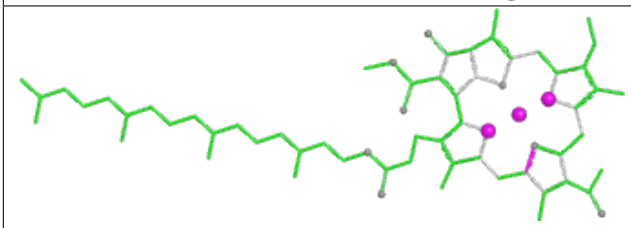


Torsions

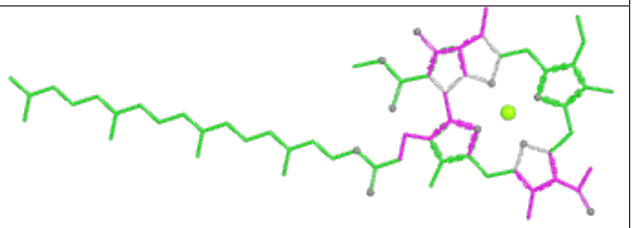


Rings

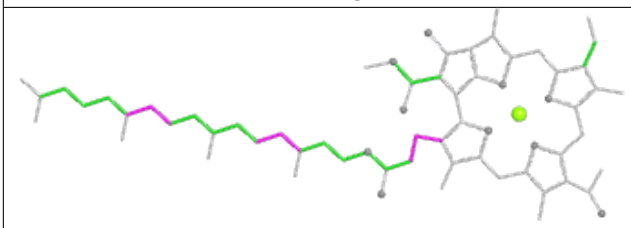
Ligand BCL BV 1004



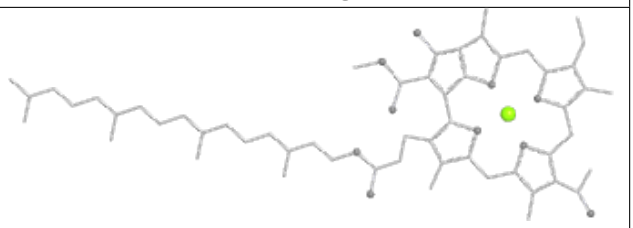
Bond lengths



Bond angles

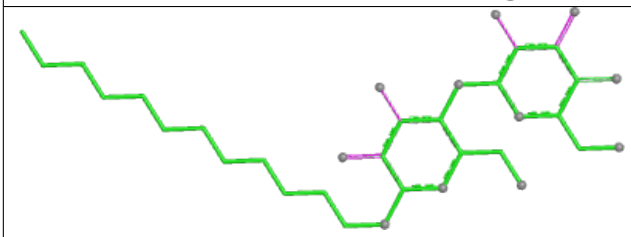


Torsions

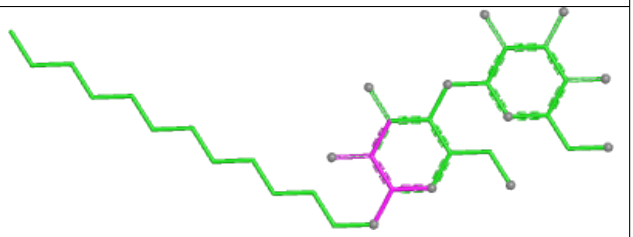


Rings

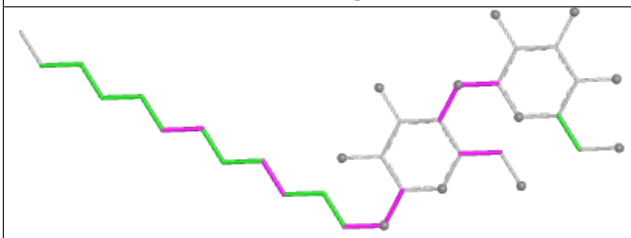
Ligand LMT BL 1002



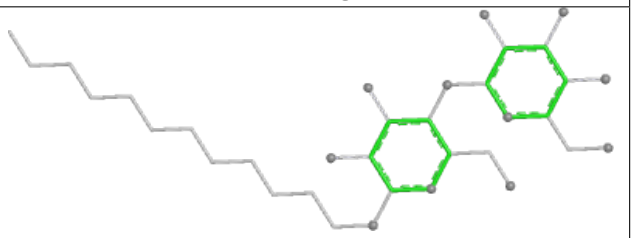
Bond lengths



Bond angles

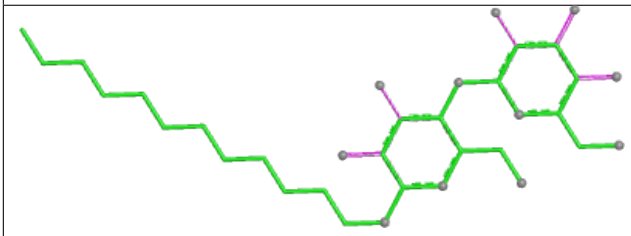


Torsions

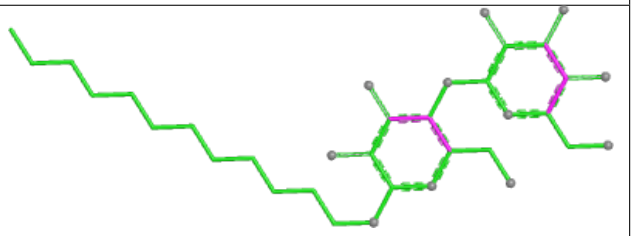


Rings

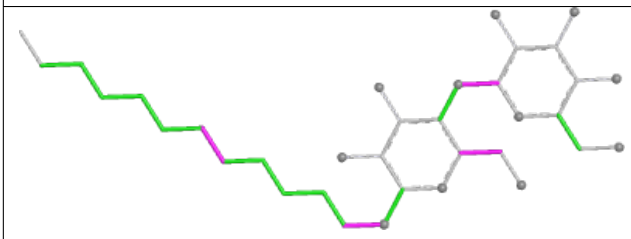
Ligand LMT BT 1002



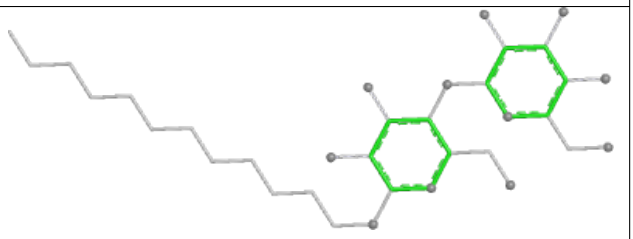
Bond lengths



Bond angles

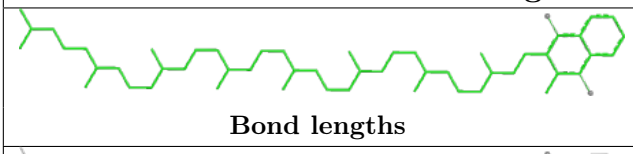


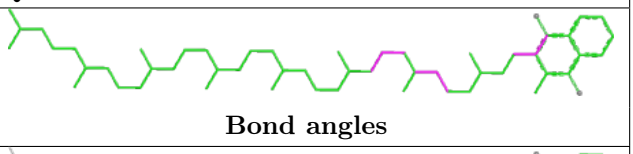
Torsions

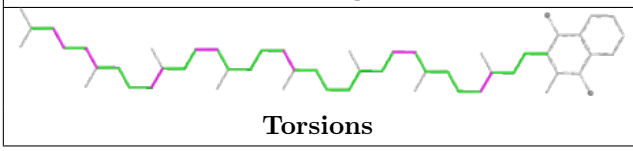


Rings

Ligand MQ8 L 309

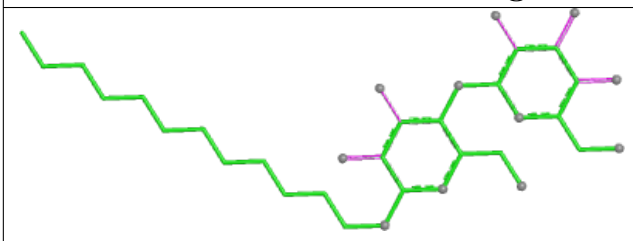

Bond lengths

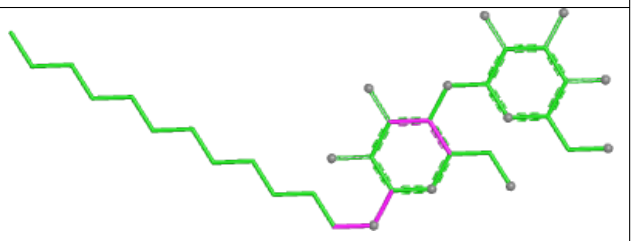

Bond angles

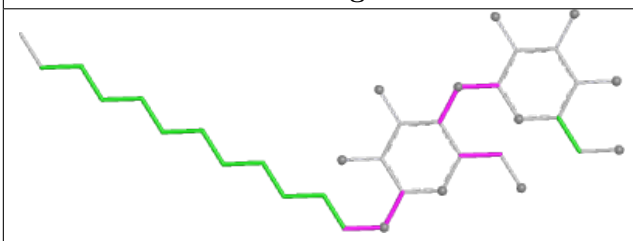

Torsions

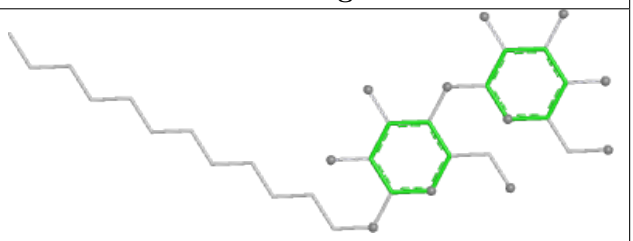

Rings

Ligand LMT BD 105

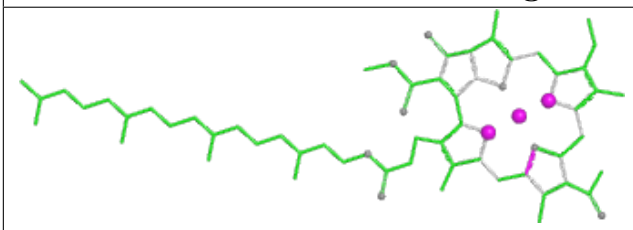

Bond lengths

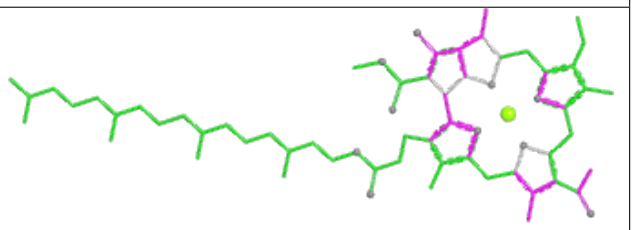

Bond angles

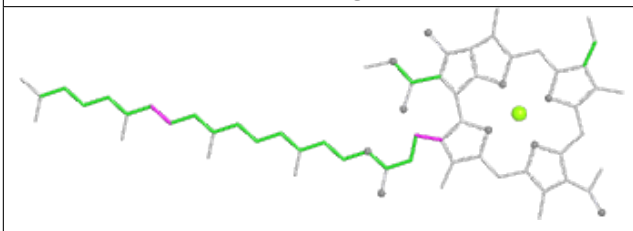

Torsions

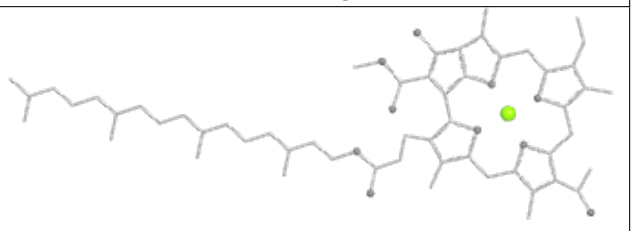

Rings

Ligand BCL bf 105

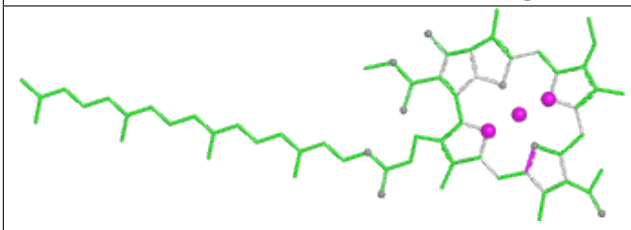

Bond lengths


Bond angles

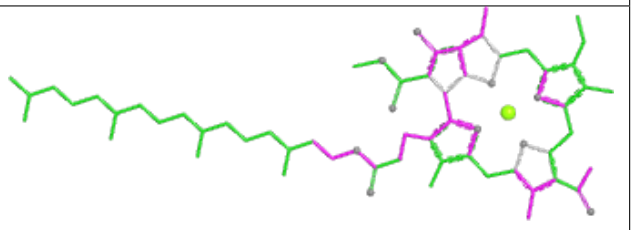

Torsions


Rings

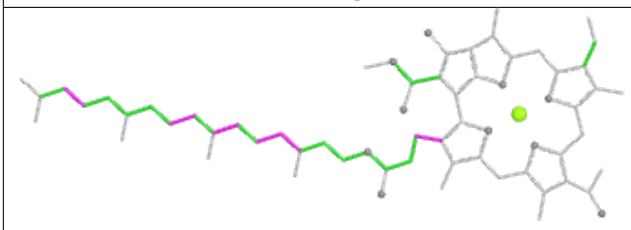
Ligand BCL bk 105



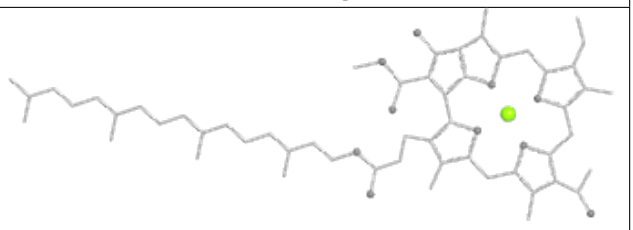
Bond lengths



Bond angles

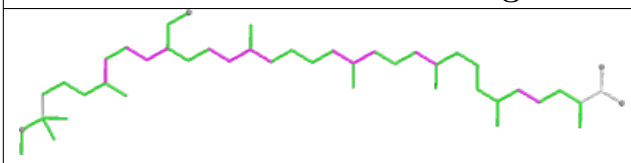


Torsions

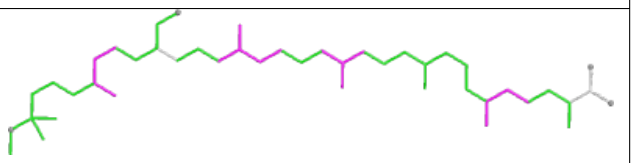


Rings

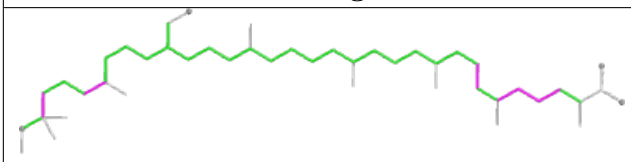
Ligand V7N BN 1001



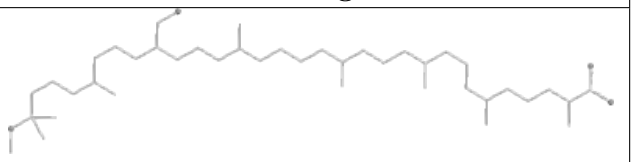
Bond lengths



Bond angles

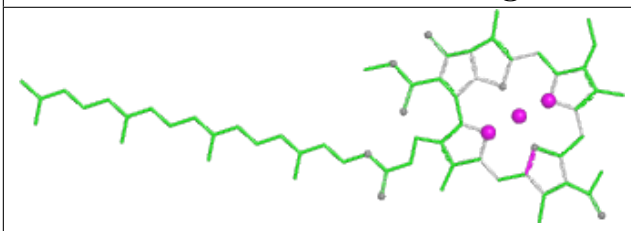


Torsions

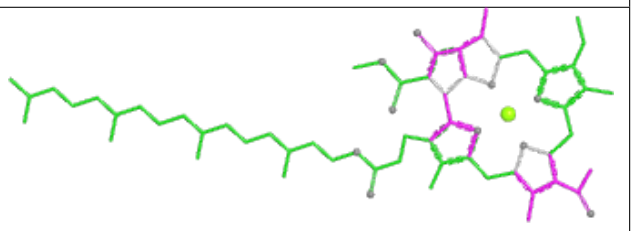


Rings

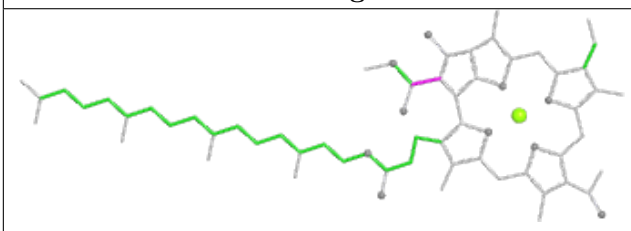
Ligand BCL AD 1002



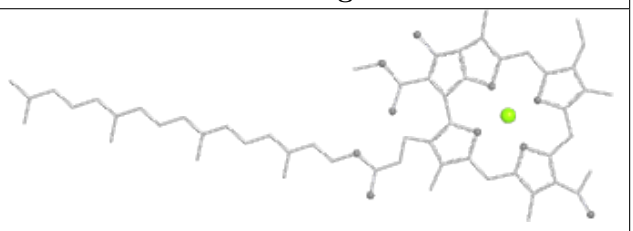
Bond lengths



Bond angles

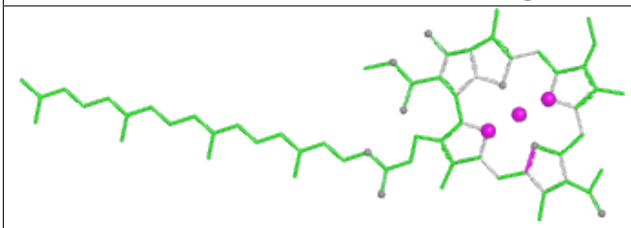


Torsions

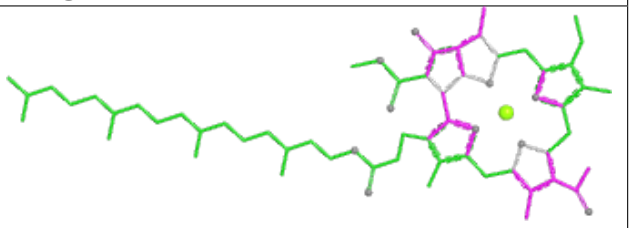


Rings

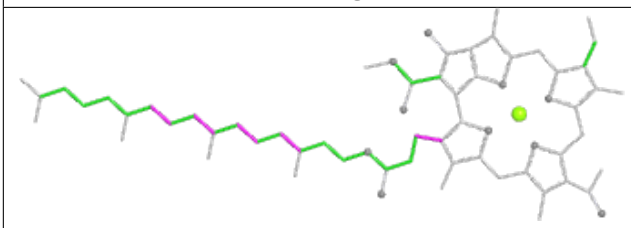
Ligand BCL bg 104



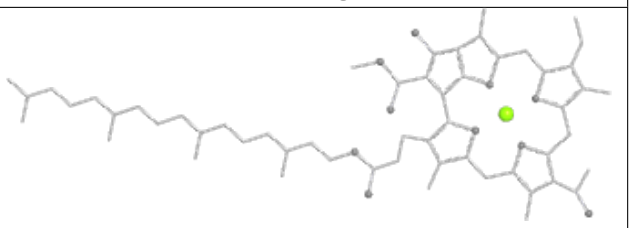
Bond lengths



Bond angles

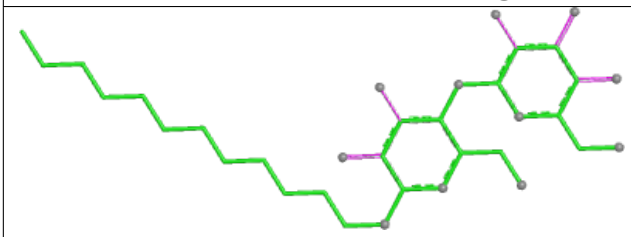


Torsions

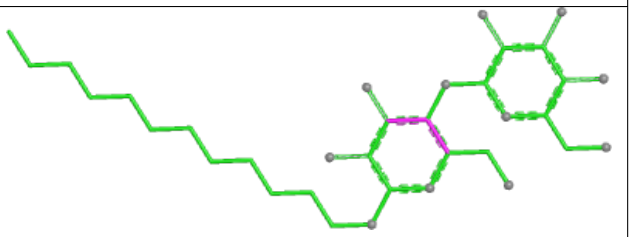


Rings

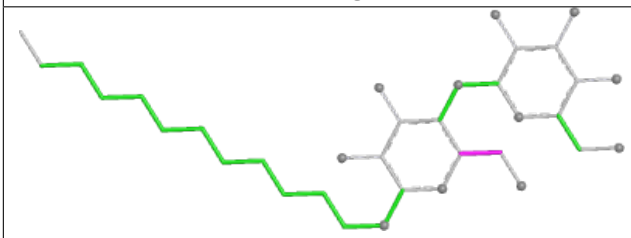
Ligand LMT BM 1002



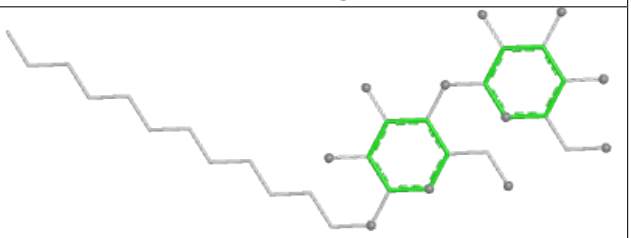
Bond lengths



Bond angles

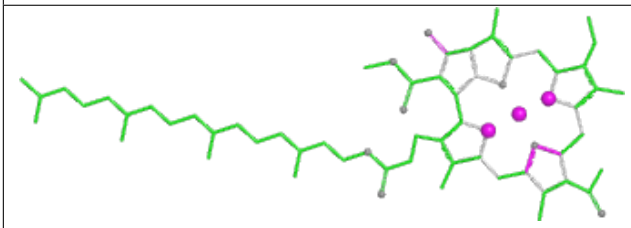


Torsions

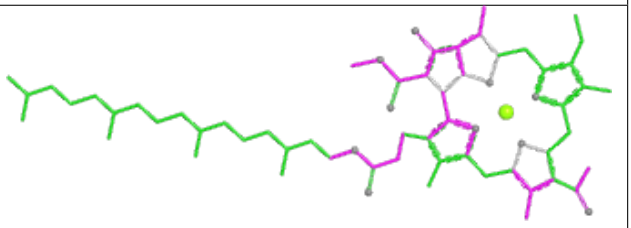


Rings

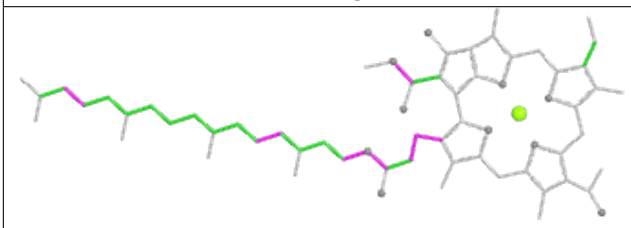
Ligand BCL AQ 103



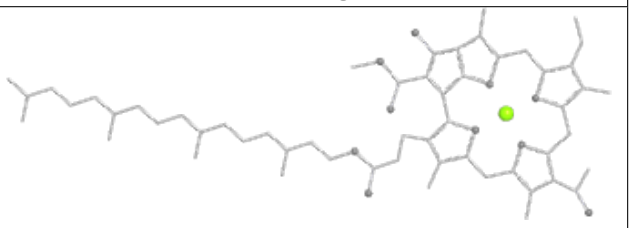
Bond lengths



Bond angles

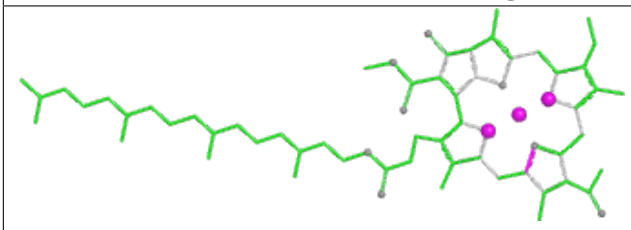


Torsions

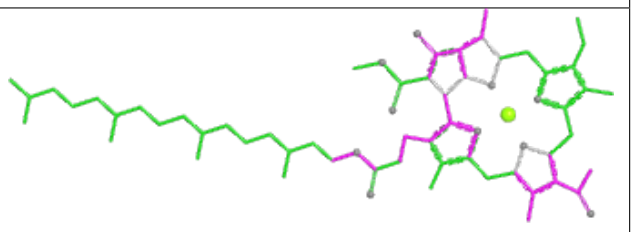


Rings

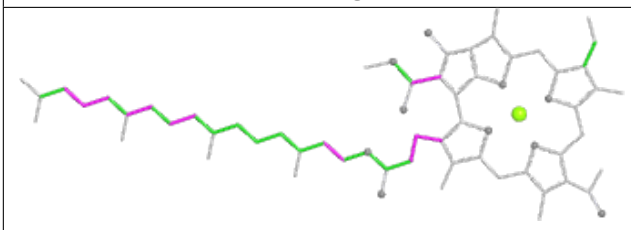
Ligand BCL BH 1003



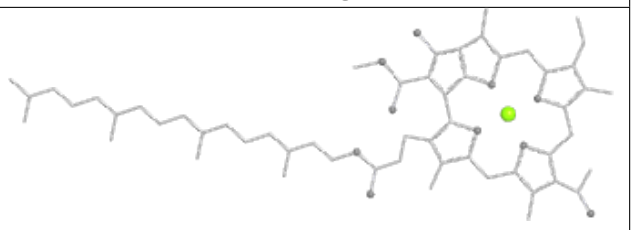
Bond lengths



Bond angles

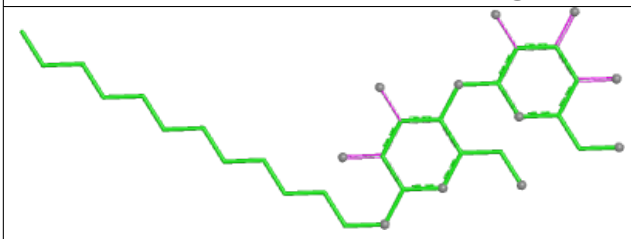


Torsions

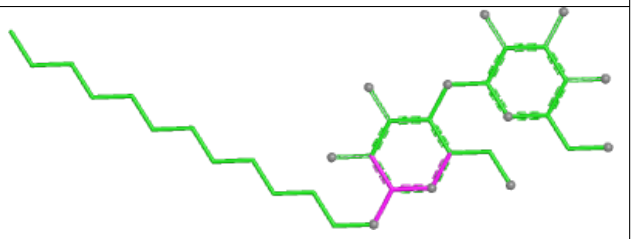


Rings

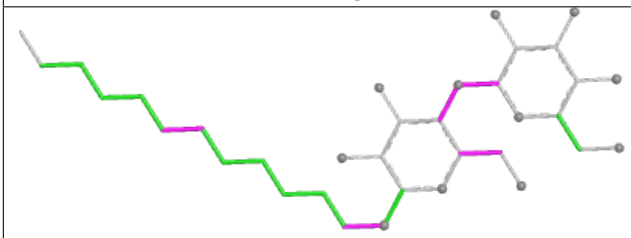
Ligand LMT BB 103



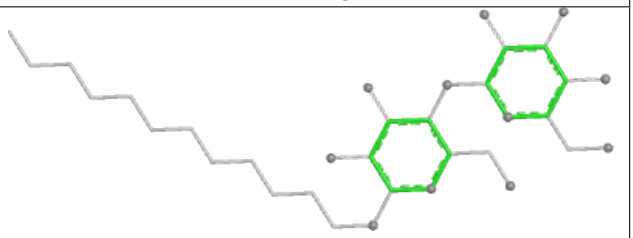
Bond lengths



Bond angles

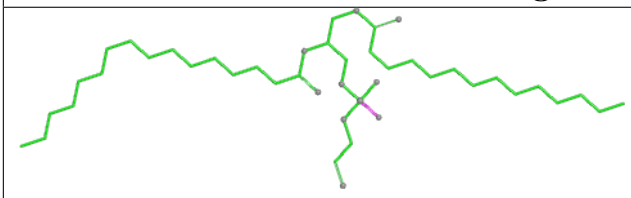


Torsions



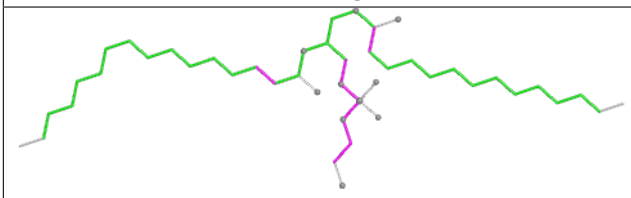
Rings

Ligand 0V9 L 310

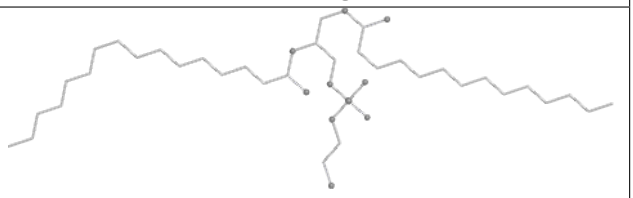


Bond lengths

Bond angles

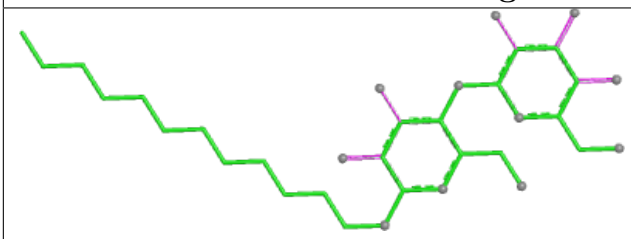


Torsions

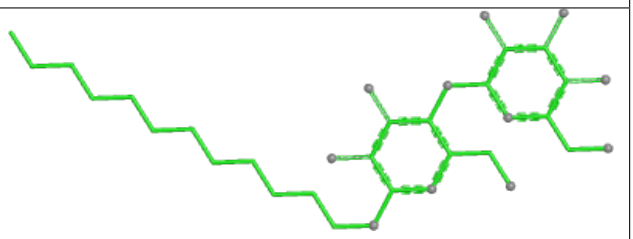


Rings

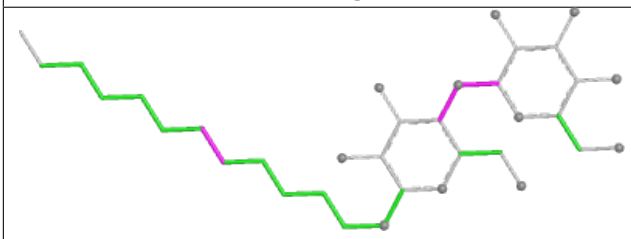
Ligand LMT BR 1005



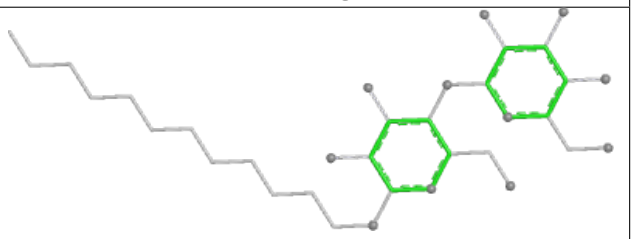
Bond lengths



Bond angles

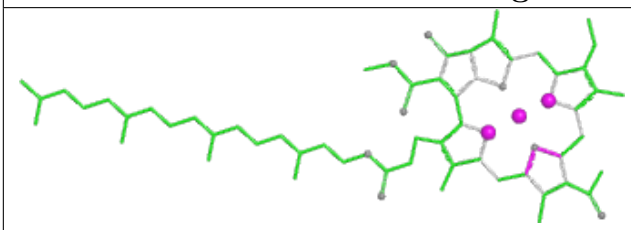


Torsions

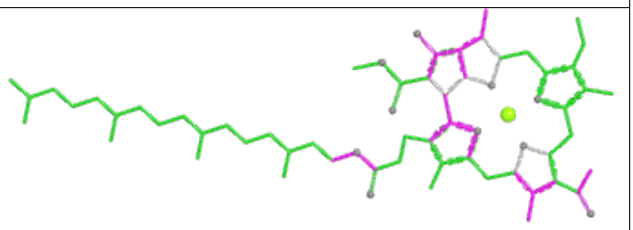


Rings

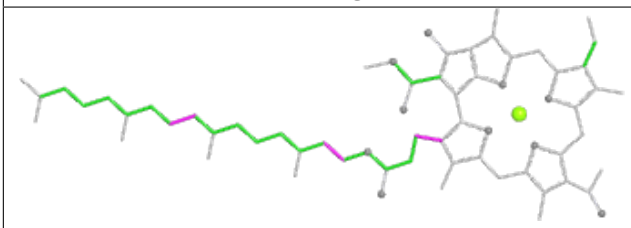
Ligand BCL aa 1001



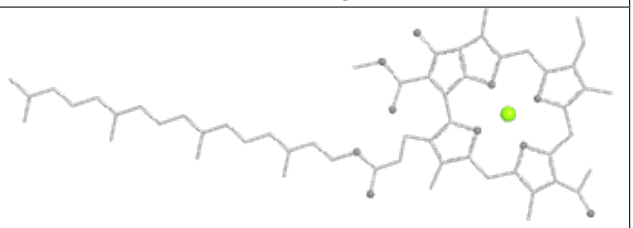
Bond lengths



Bond angles

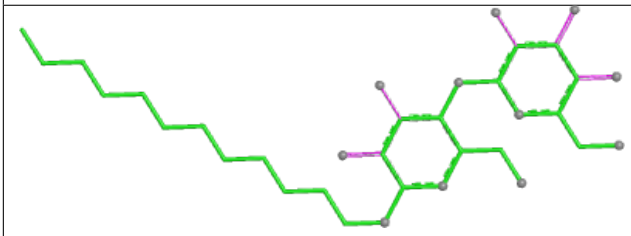


Torsions

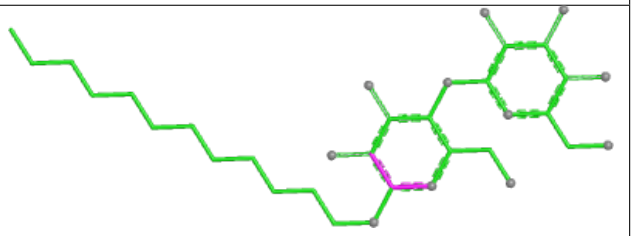


Rings

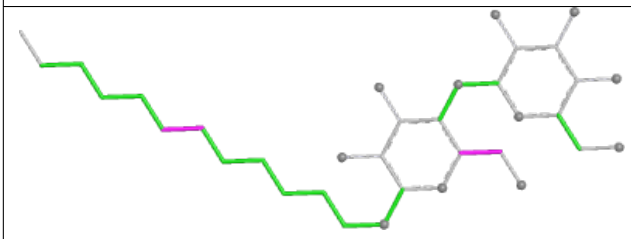
Ligand LMT BV 1002



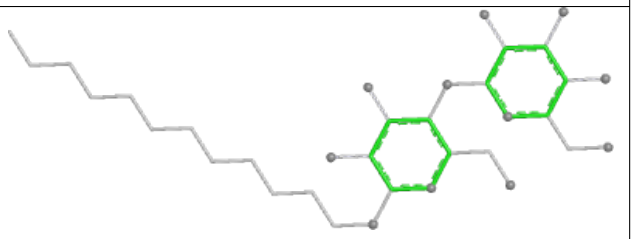
Bond lengths



Bond angles

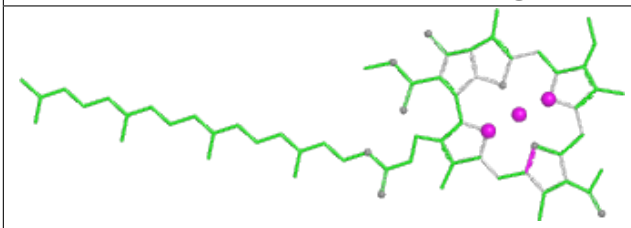


Torsions

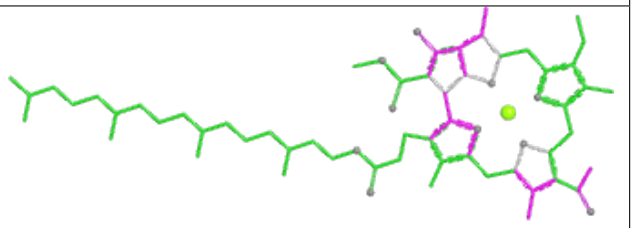


Rings

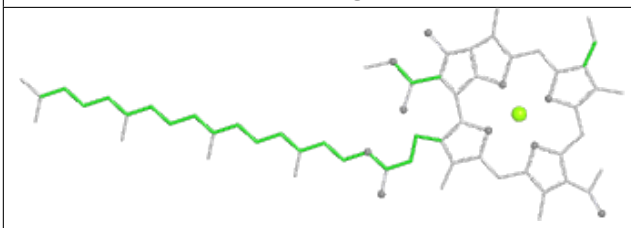
Ligand BCL AH 102



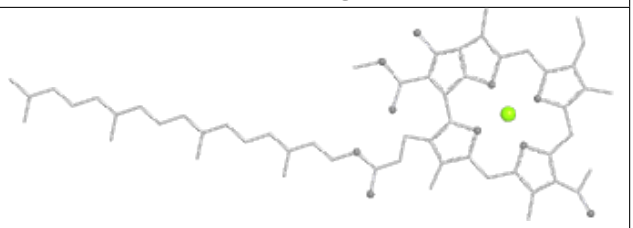
Bond lengths



Bond angles

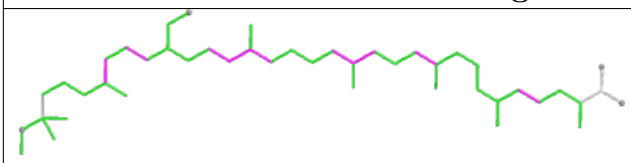


Torsions

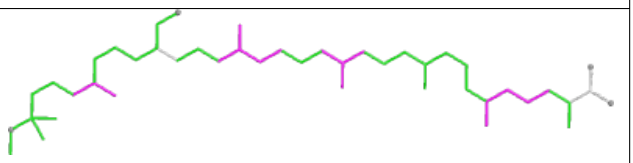


Rings

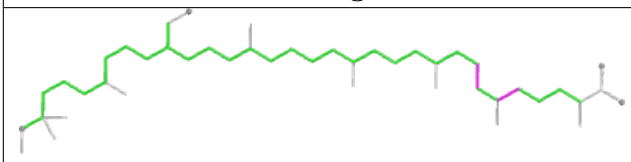
Ligand V7N BD 101



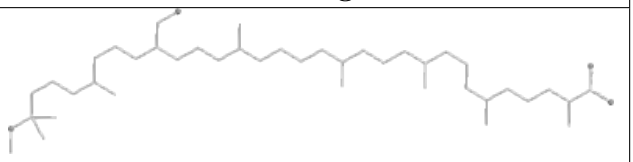
Bond lengths



Bond angles

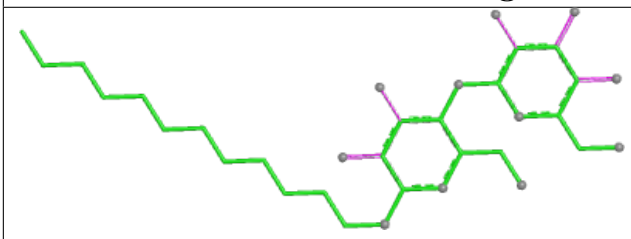


Torsions

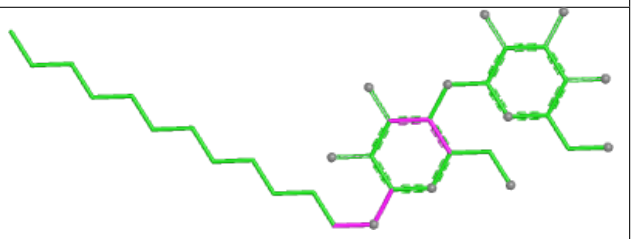


Rings

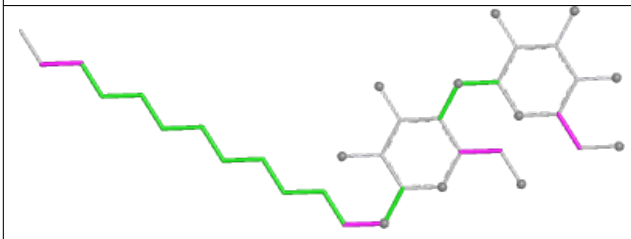
Ligand LMT BN 1003



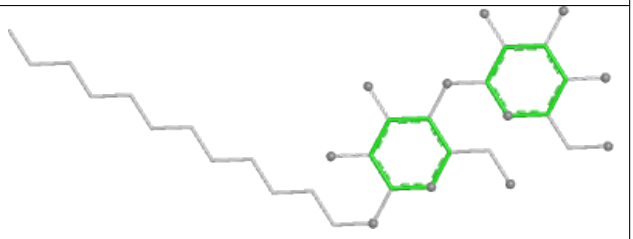
Bond lengths



Bond angles

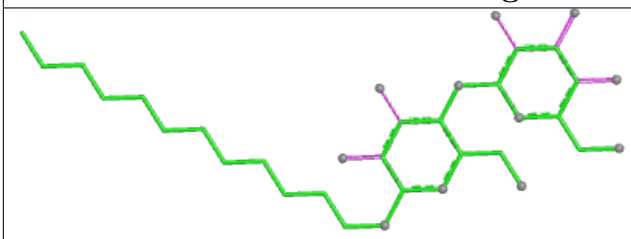


Torsions

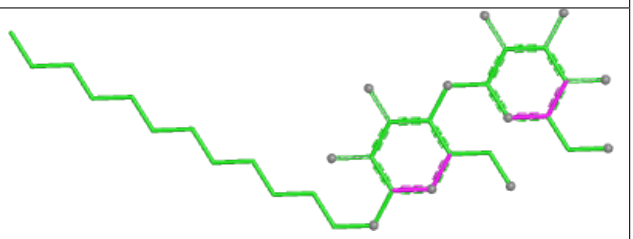


Rings

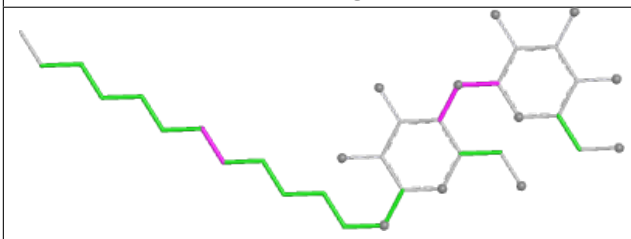
Ligand LMT BL 1003



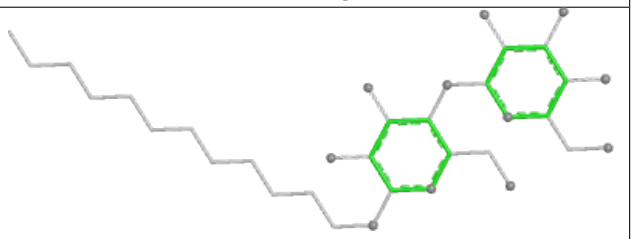
Bond lengths



Bond angles

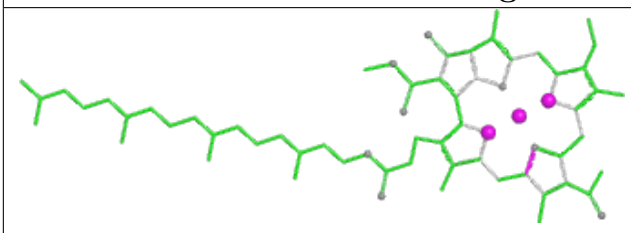


Torsions

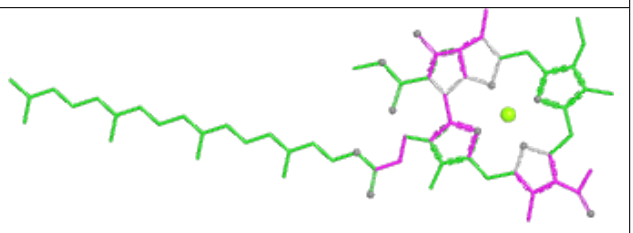


Rings

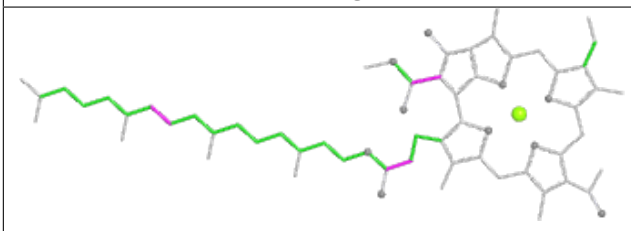
Ligand BCL BM 1004



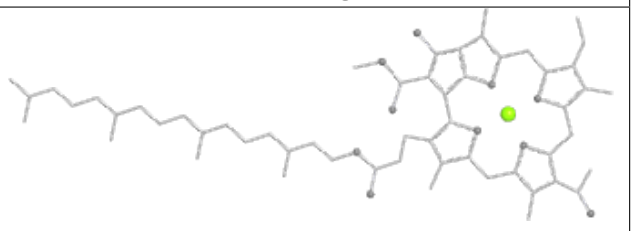
Bond lengths



Bond angles

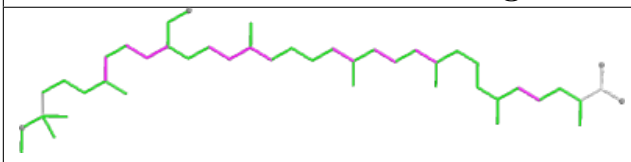


Torsions

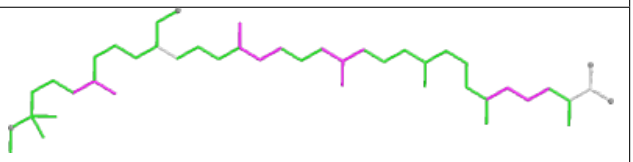


Rings

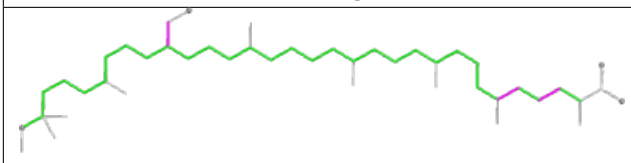
Ligand V7N BX 1001



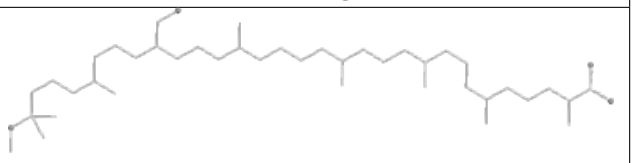
Bond lengths



Bond angles

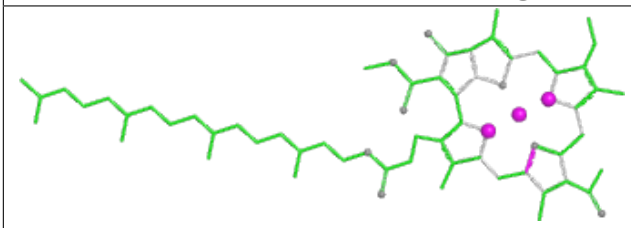


Torsions

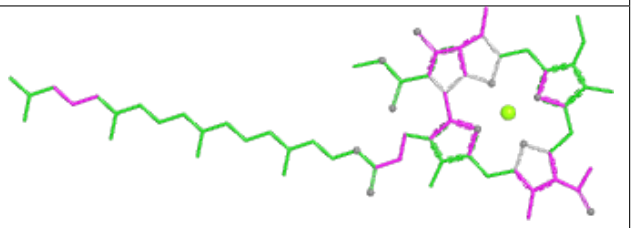


Rings

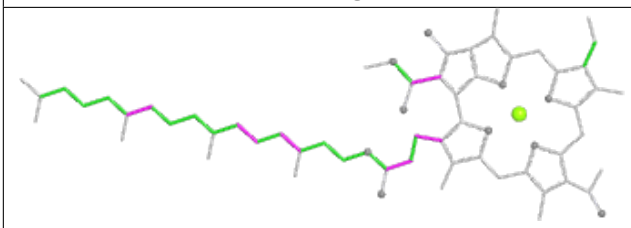
Ligand BCL AS 104



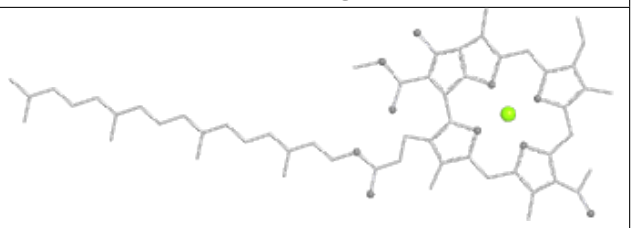
Bond lengths



Bond angles

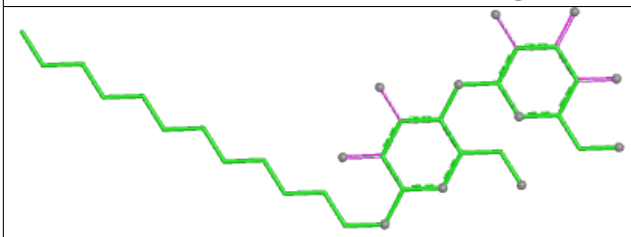


Torsions

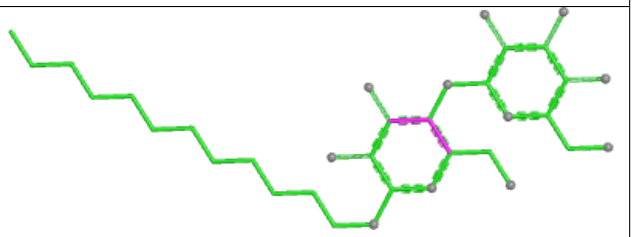


Rings

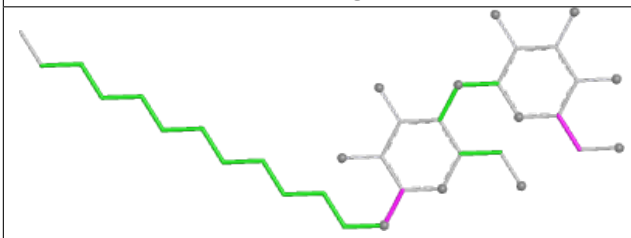
Ligand LMT BE 103



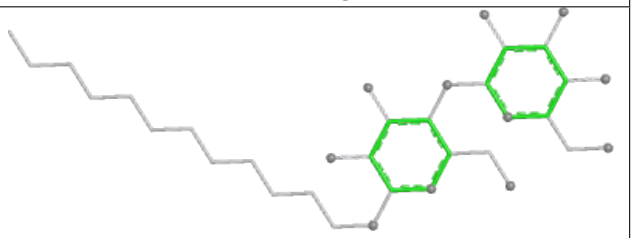
Bond lengths



Bond angles

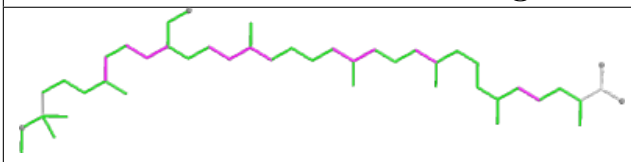


Torsions

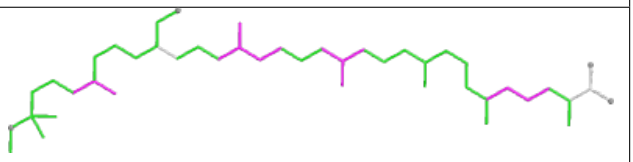


Rings

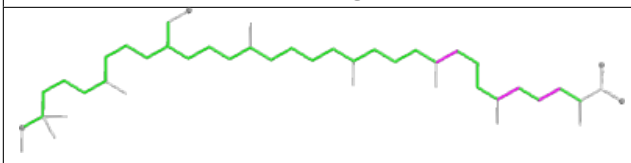
Ligand V7N BA 101



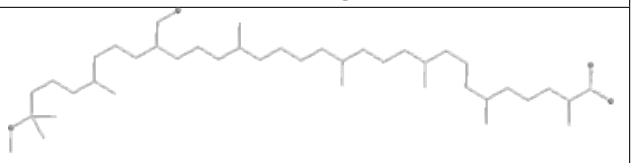
Bond lengths



Bond angles

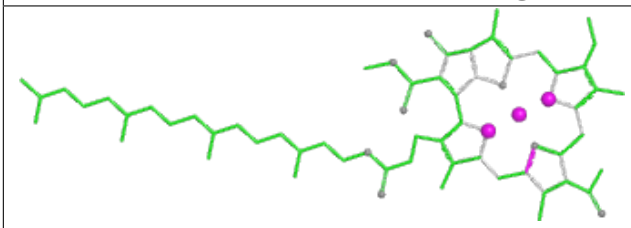


Torsions

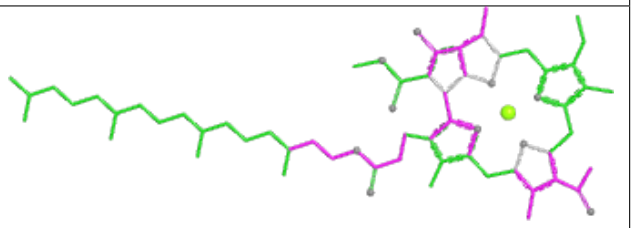


Rings

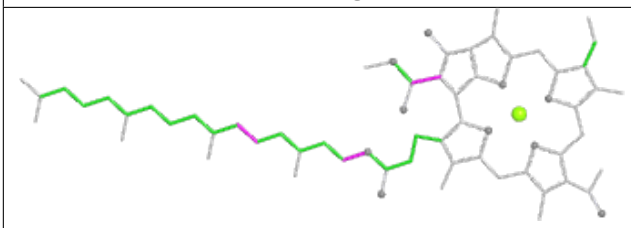
Ligand BCL BE 104



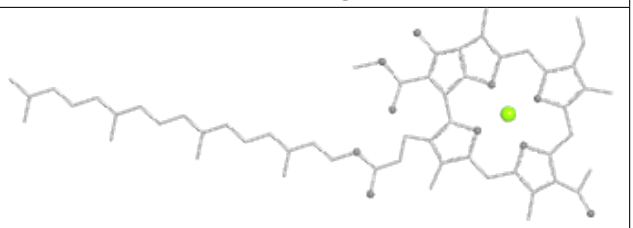
Bond lengths



Bond angles

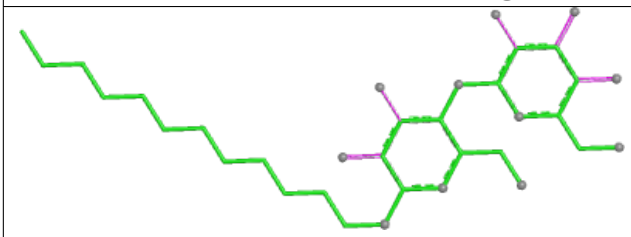


Torsions

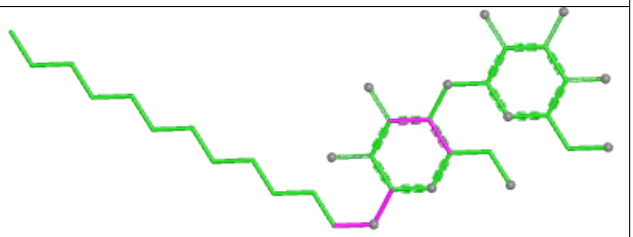


Rings

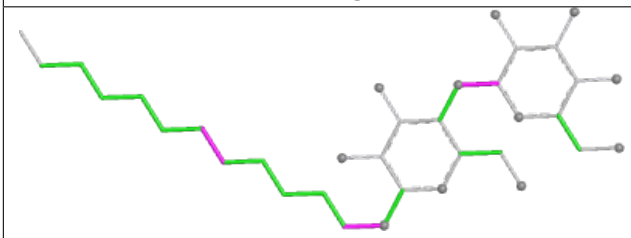
Ligand LMT BH 1005



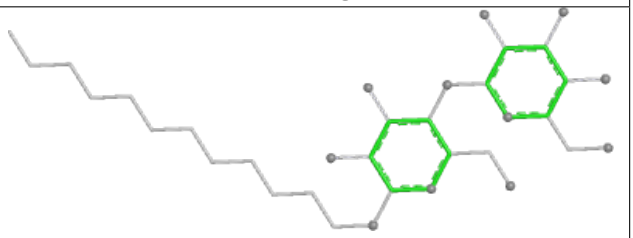
Bond lengths



Bond angles

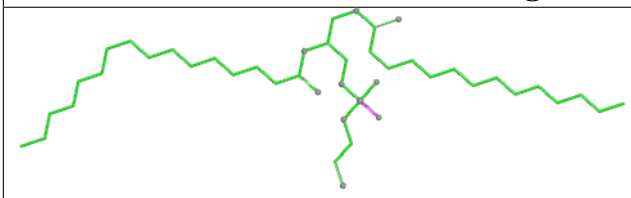


Torsions

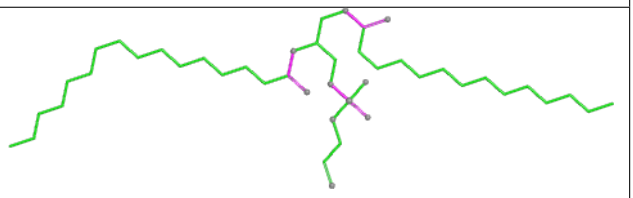


Rings

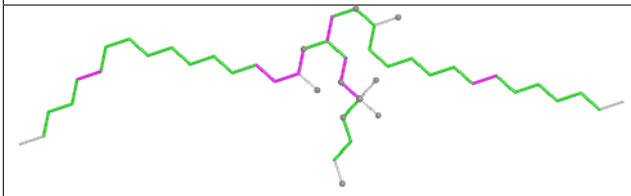
Ligand 0V9 bk 104



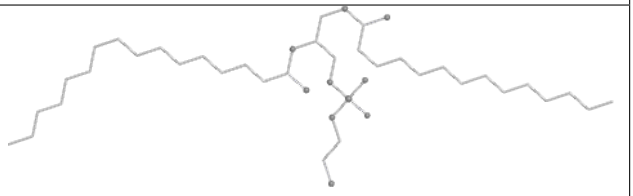
Bond lengths



Bond angles

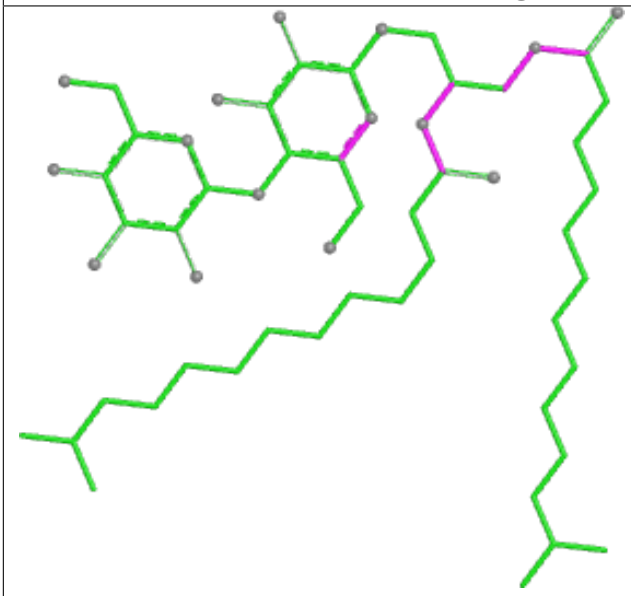


Torsions

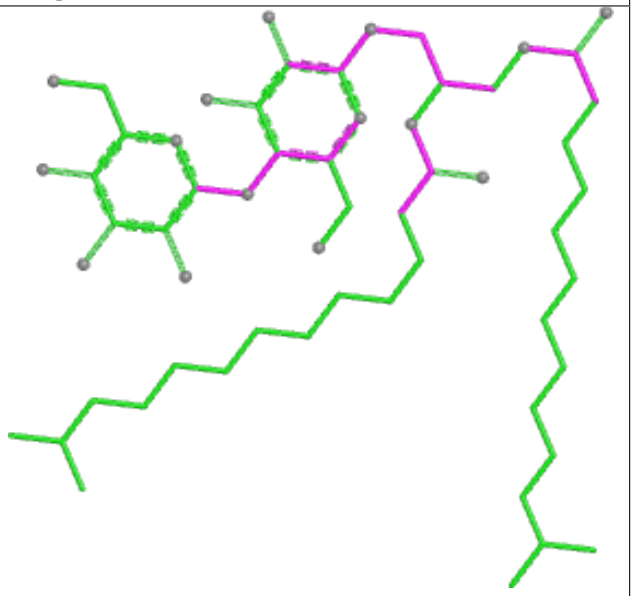


Rings

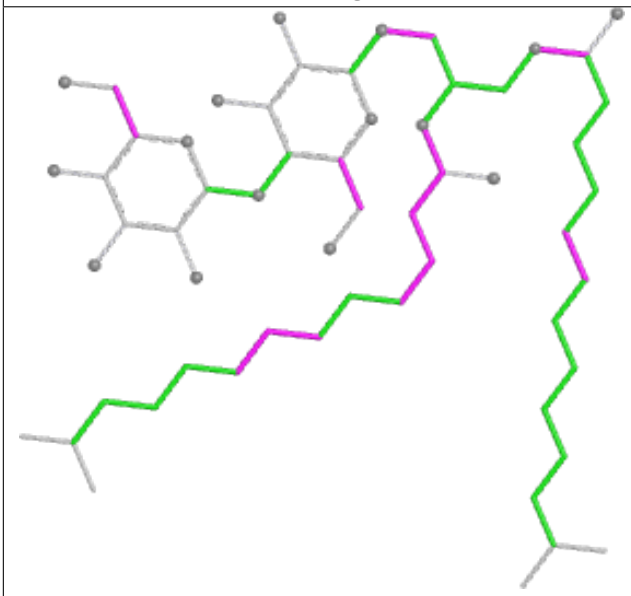
Ligand V7B ag 1002



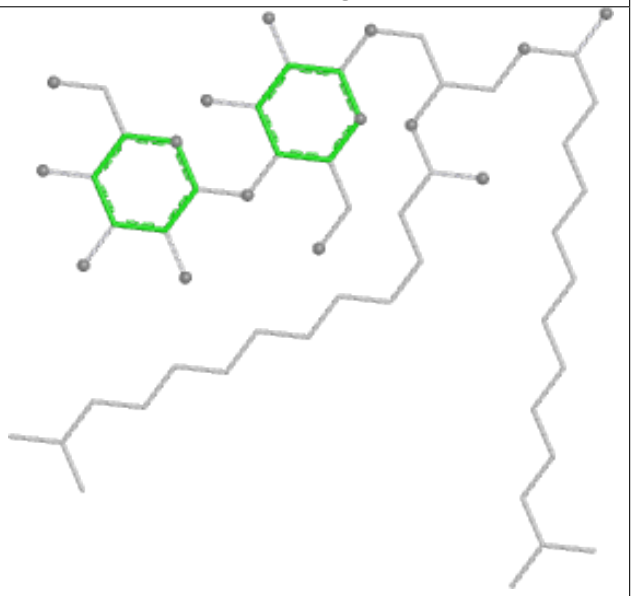
Bond lengths



Bond angles

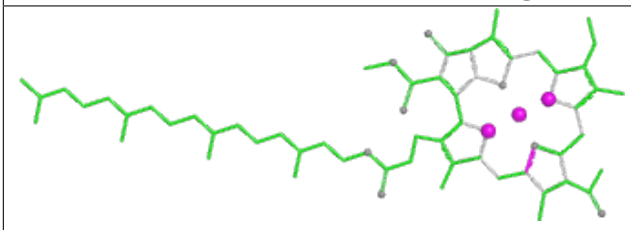


Torsions

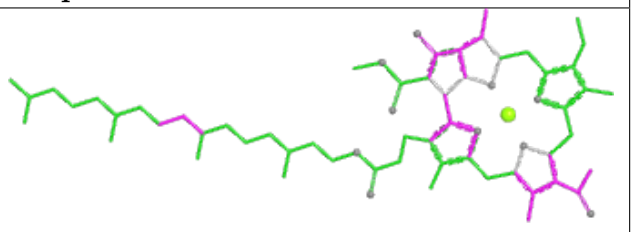


Rings

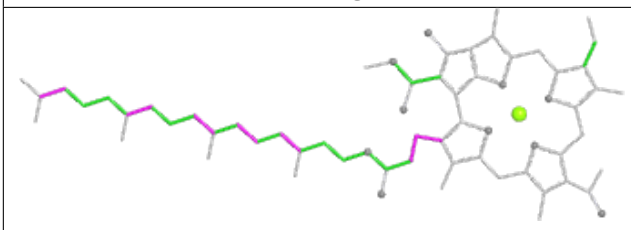
Ligand BCL bp 103



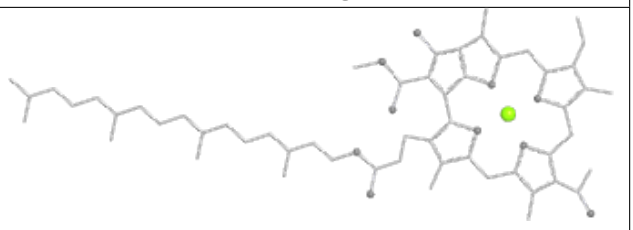
Bond lengths



Bond angles

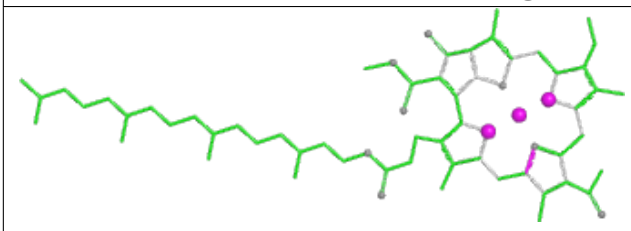


Torsions

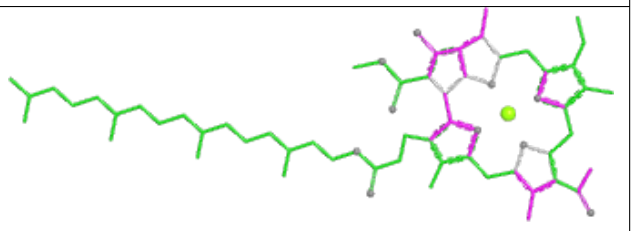


Rings

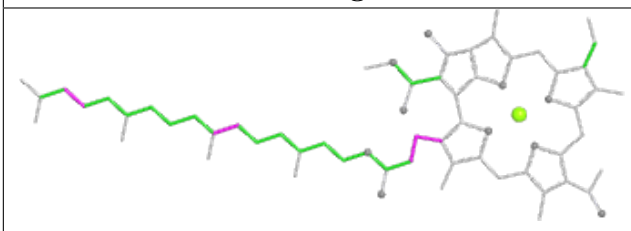
Ligand BCL be 104



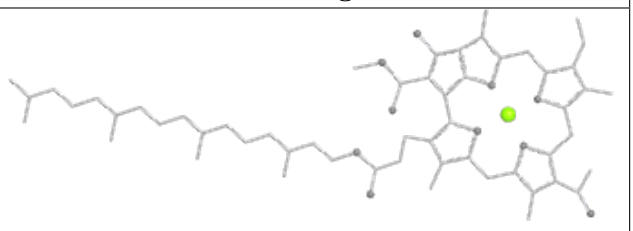
Bond lengths



Bond angles

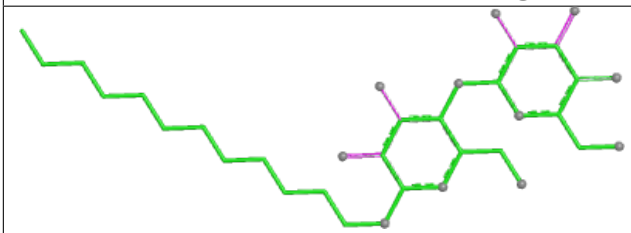


Torsions

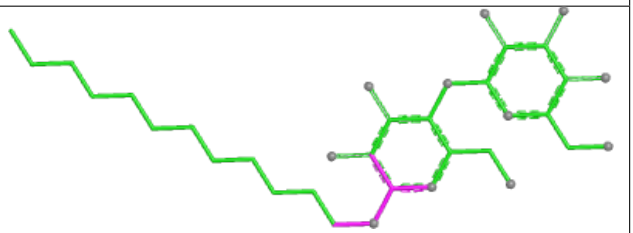


Rings

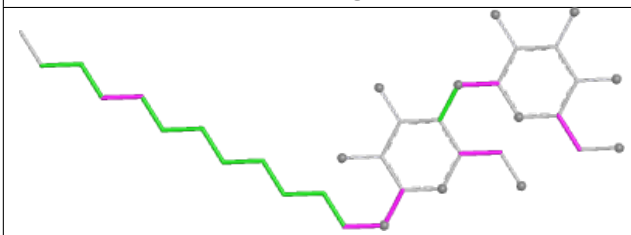
Ligand LMT bh 101



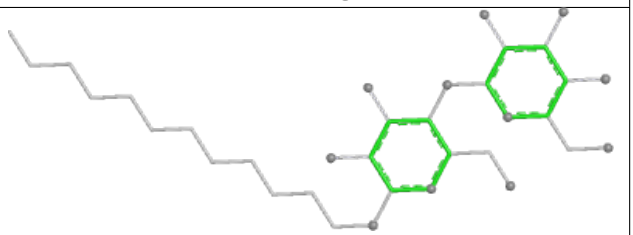
Bond lengths



Bond angles

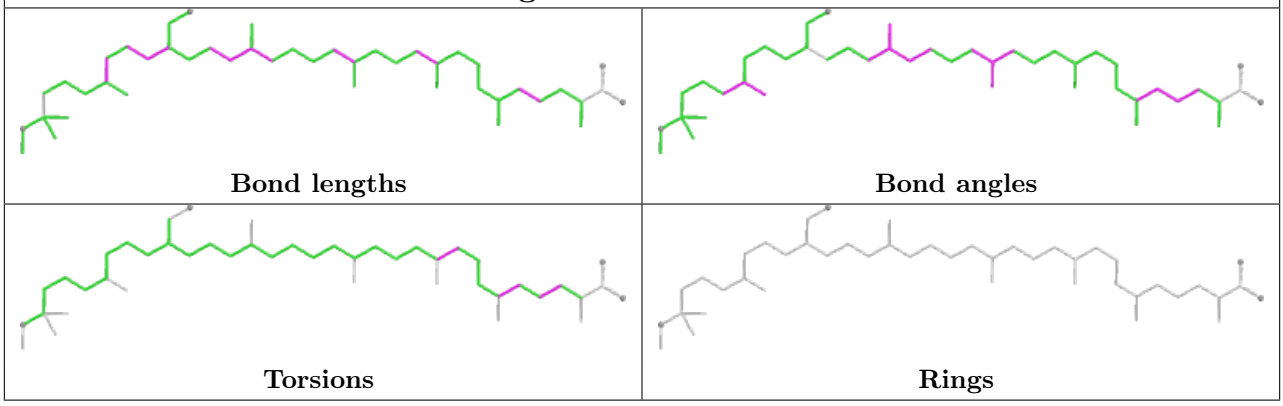


Torsions

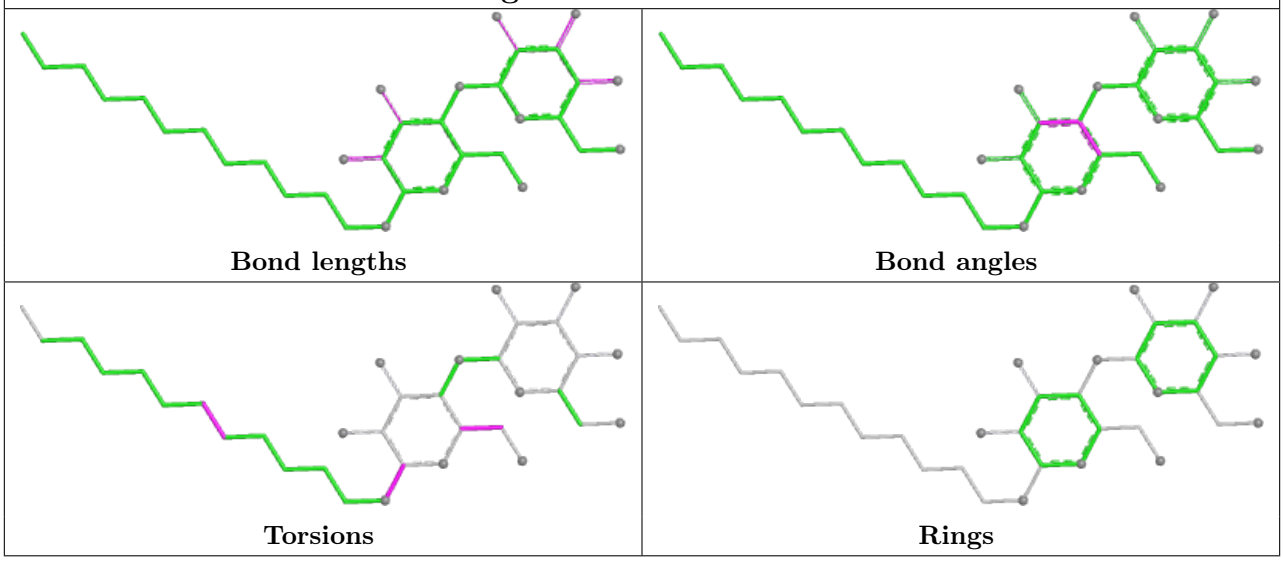


Rings

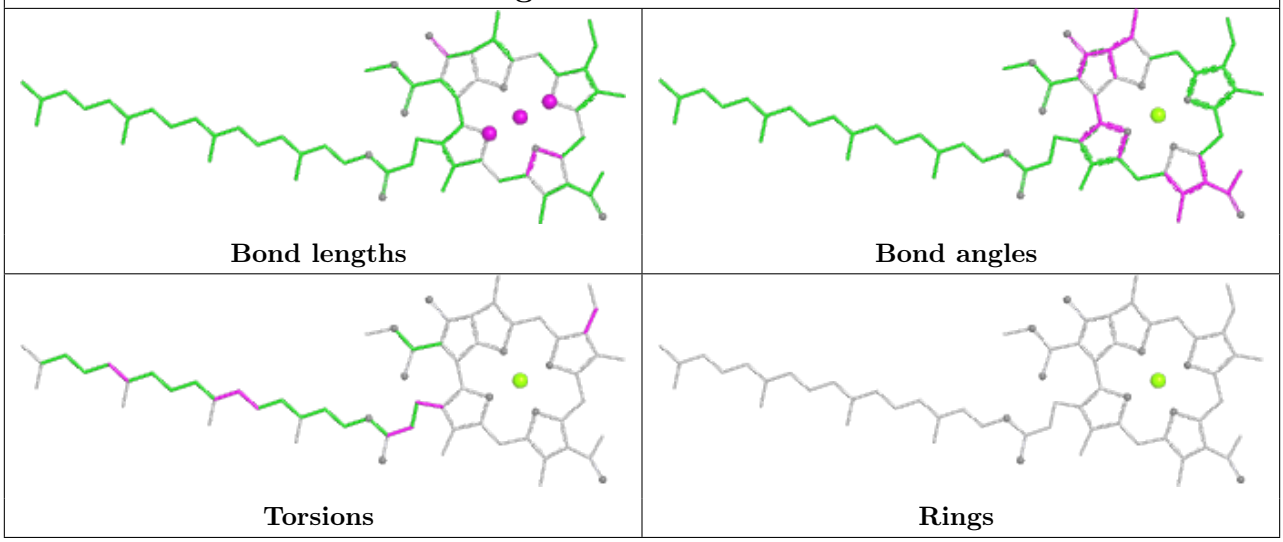
Ligand V7N bd 101



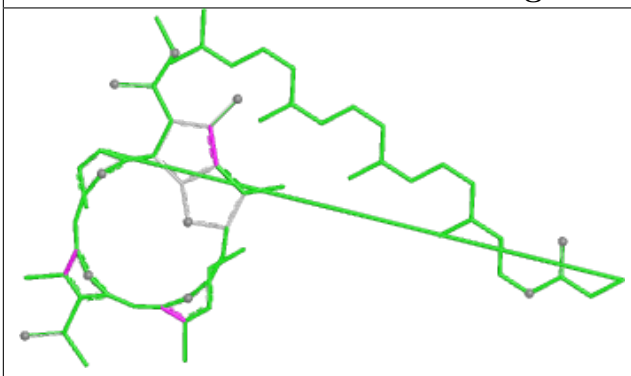
Ligand LMT AF 1003



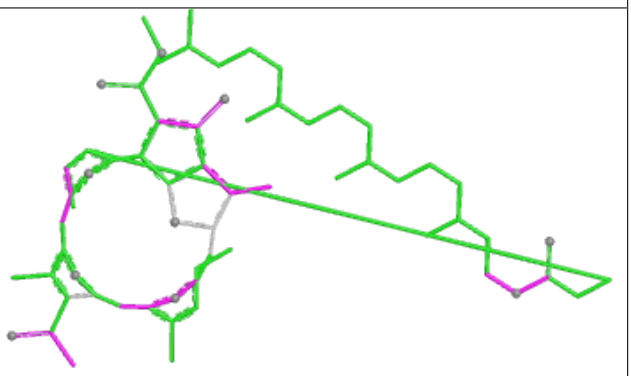
Ligand BCL AS 102



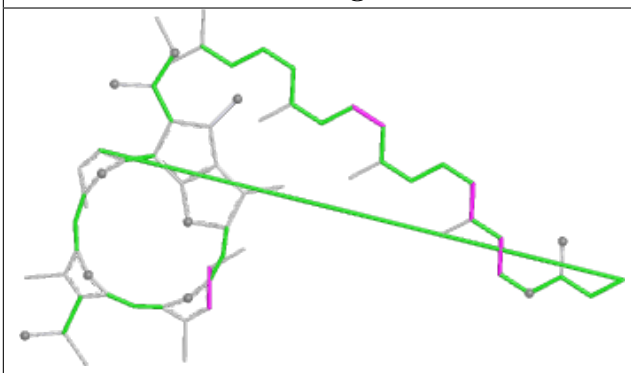
Ligand BPH L 301



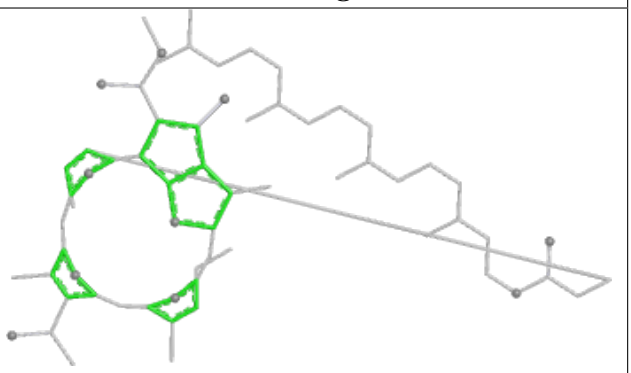
Bond lengths



Bond angles

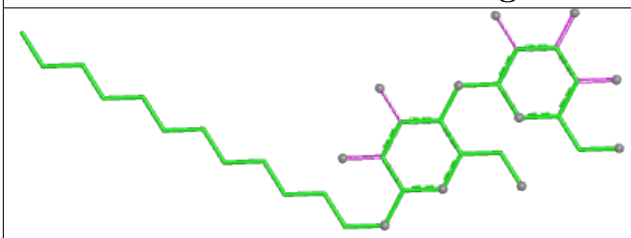


Torsions

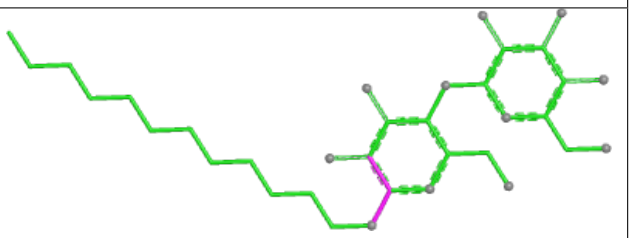


Rings

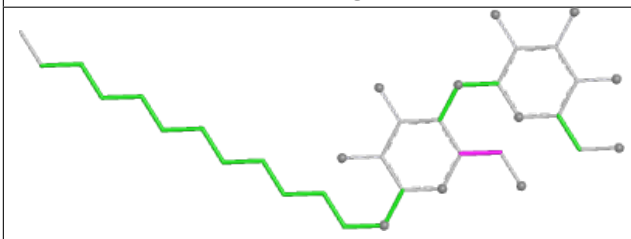
Ligand LMT BV 1003



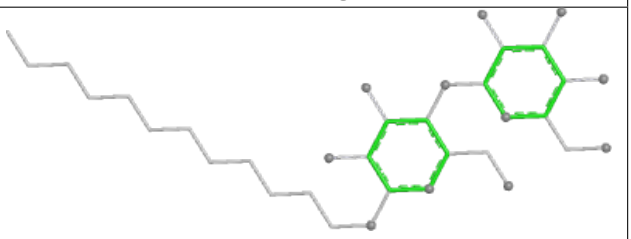
Bond lengths



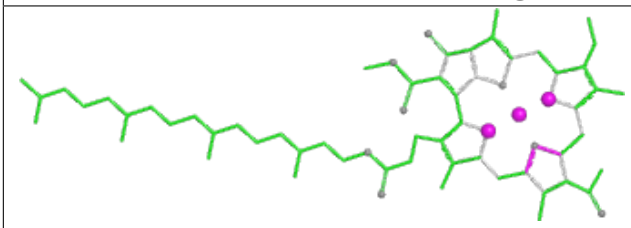
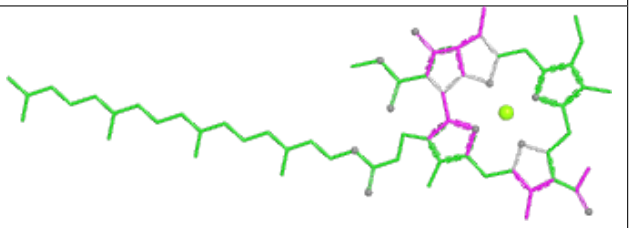
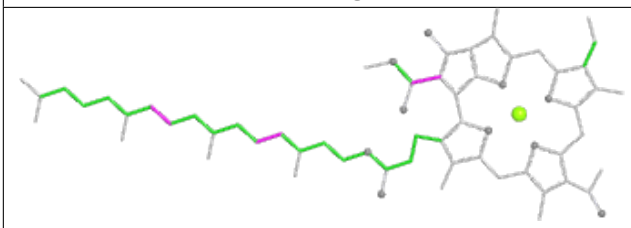
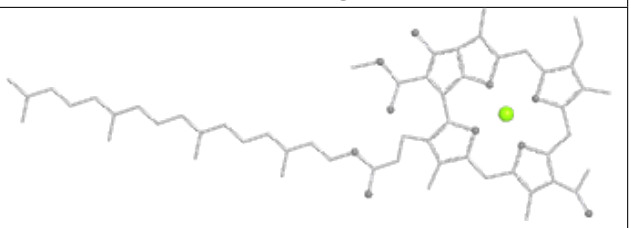
Bond angles

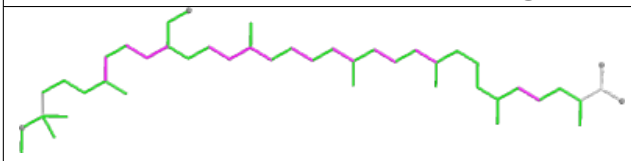
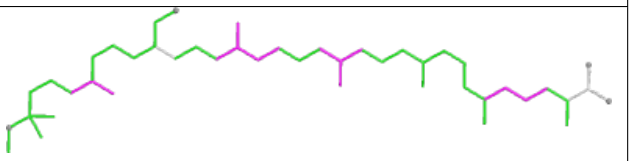
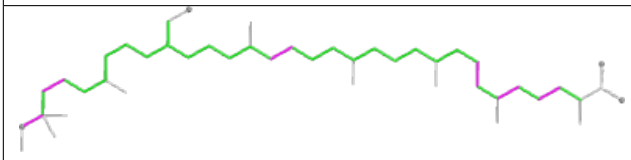
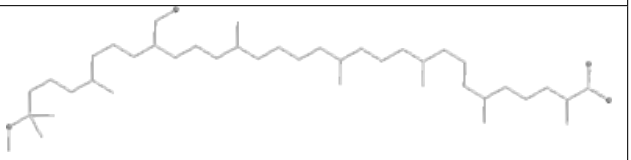


Torsions

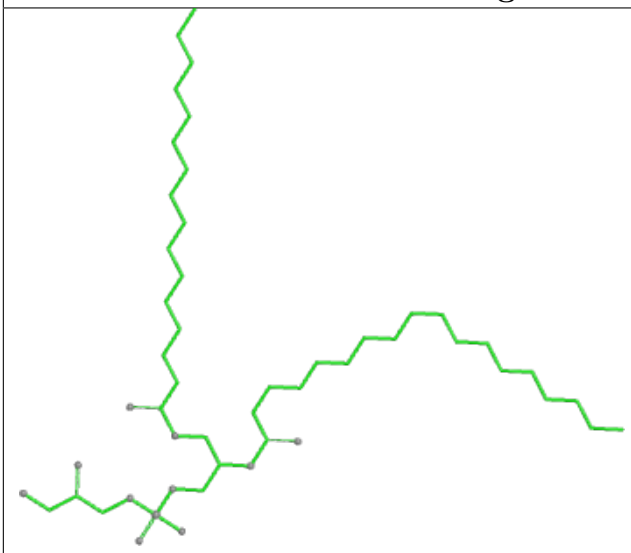


Rings

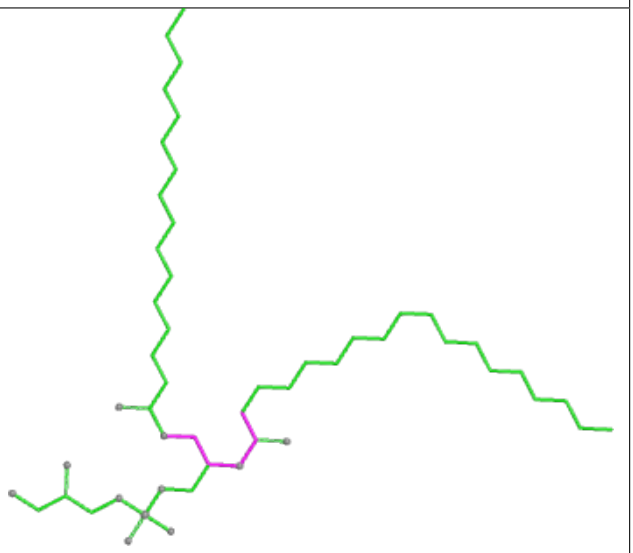
Ligand BCL AU 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand V7N bc 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

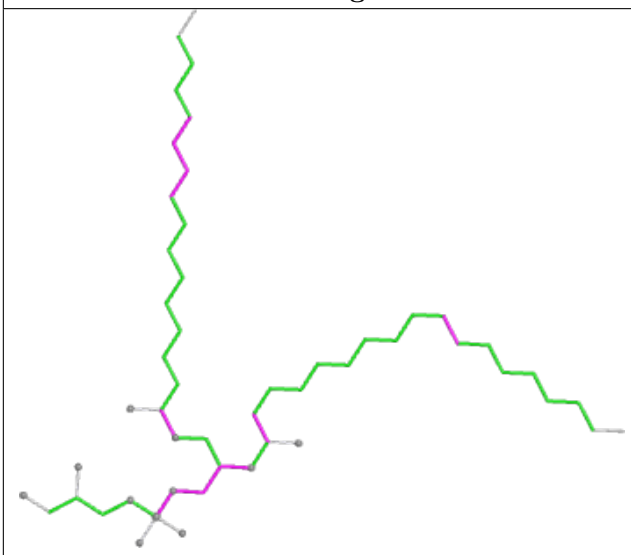
Ligand PGW H1 1001



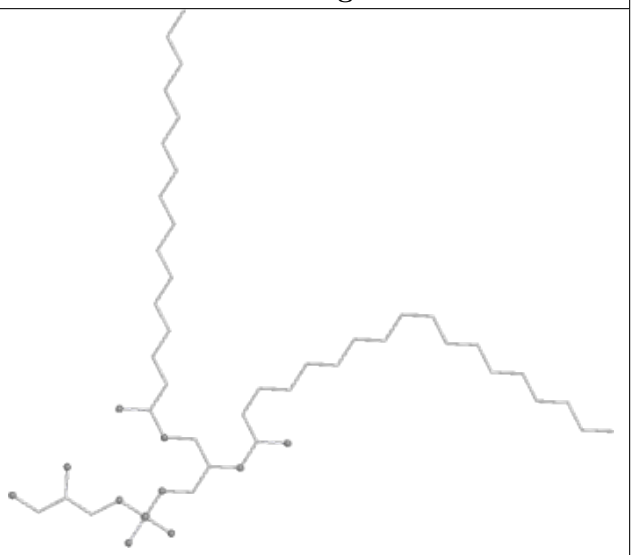
Bond lengths



Bond angles

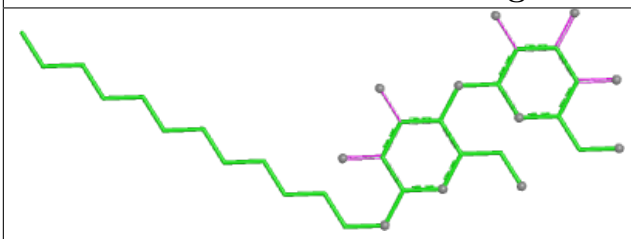


Torsions

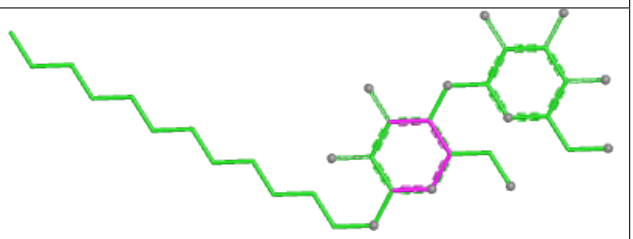


Rings

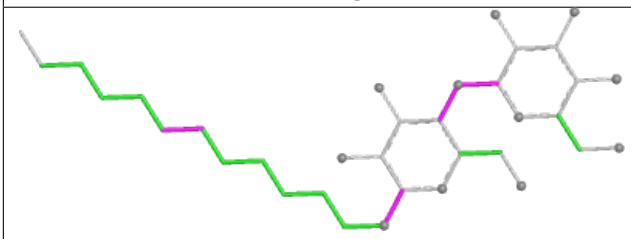
Ligand LMT BA 103



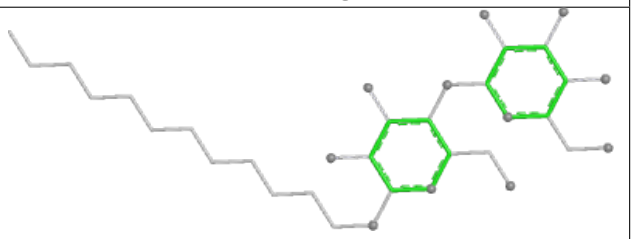
Bond lengths



Bond angles

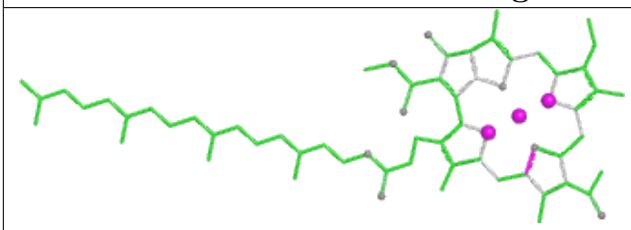


Torsions

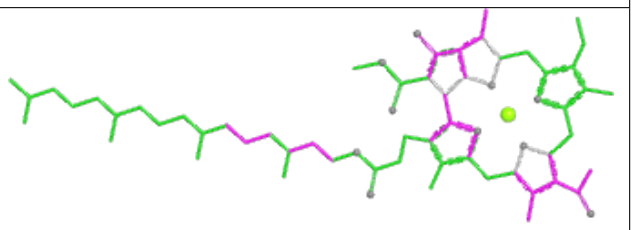


Rings

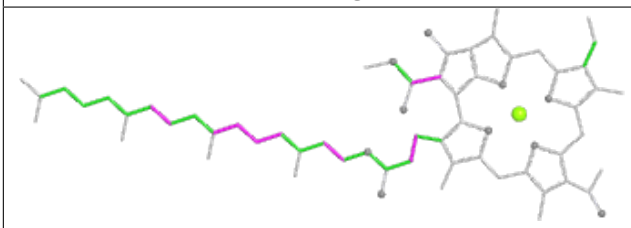
Ligand BCL BA 104



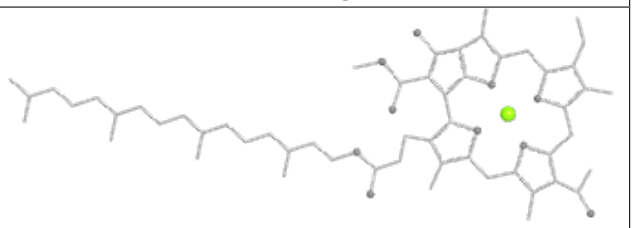
Bond lengths



Bond angles

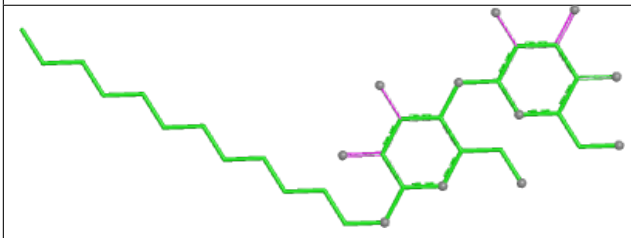


Torsions

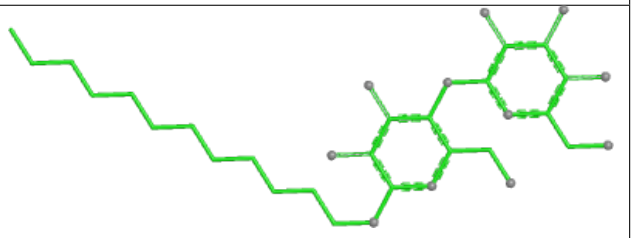


Rings

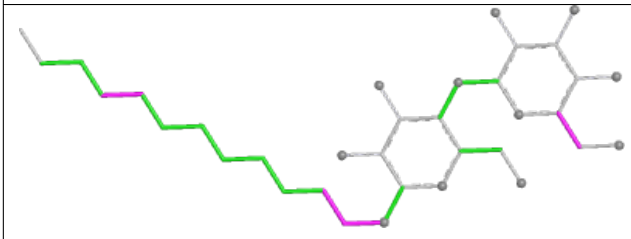
Ligand LMT AI 101



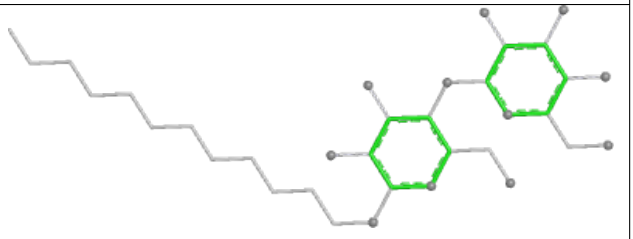
Bond lengths



Bond angles

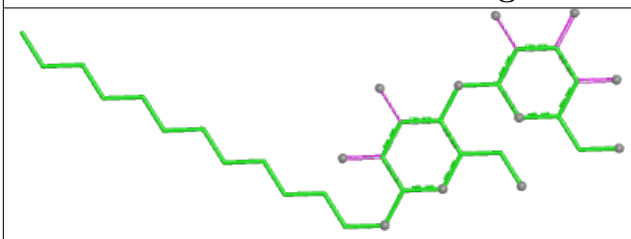


Torsions

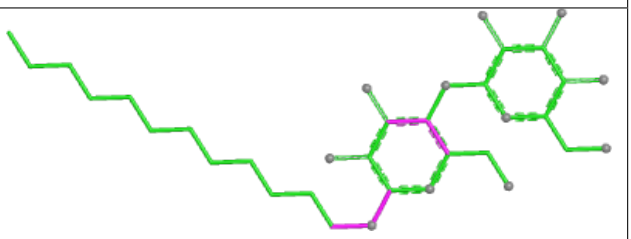


Rings

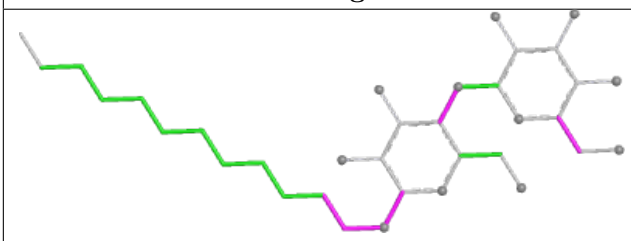
Ligand LMT BK 1002



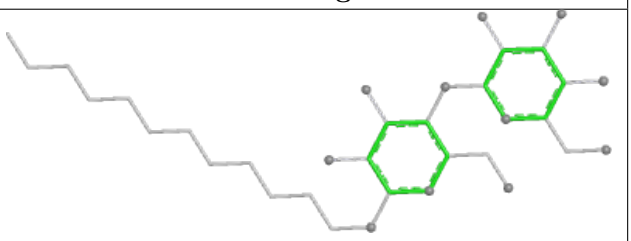
Bond lengths



Bond angles

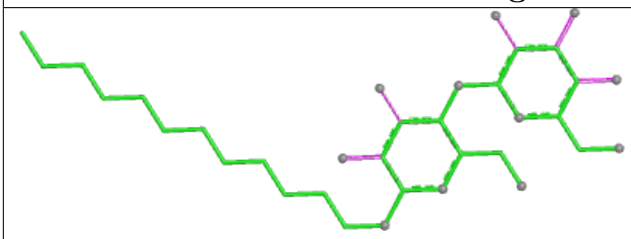


Torsions

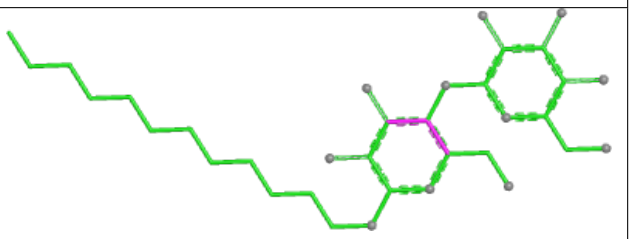


Rings

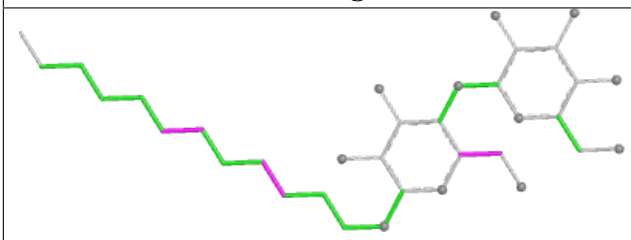
Ligand LMT BB 102



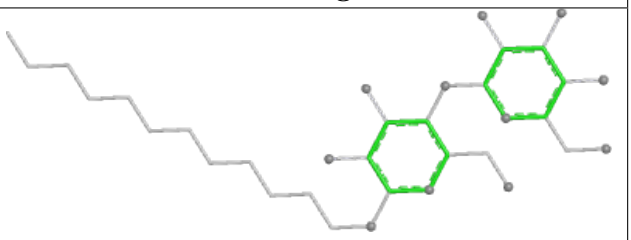
Bond lengths



Bond angles

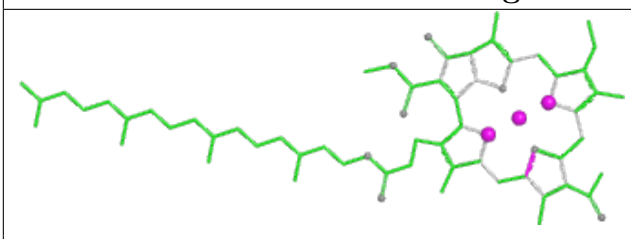


Torsions

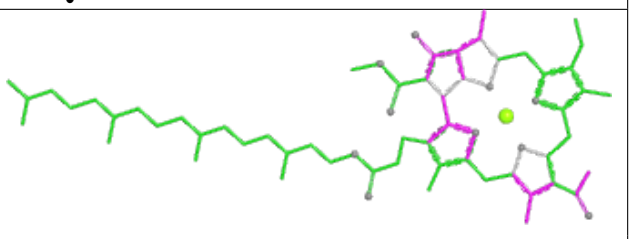


Rings

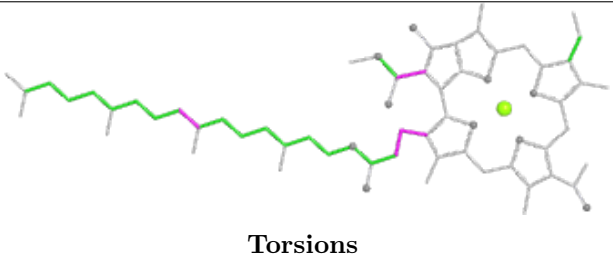
Ligand BCL BQ 1003



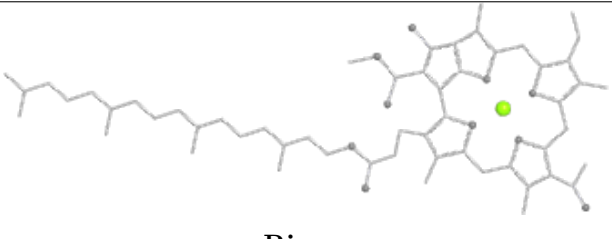
Bond lengths



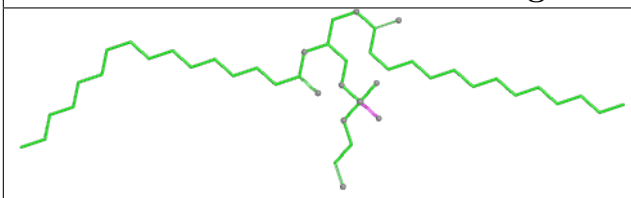
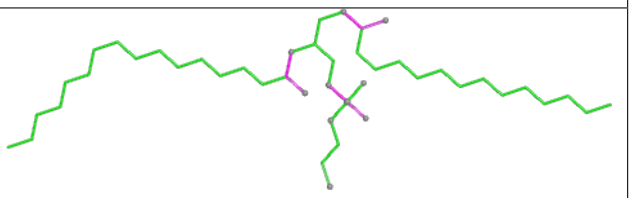
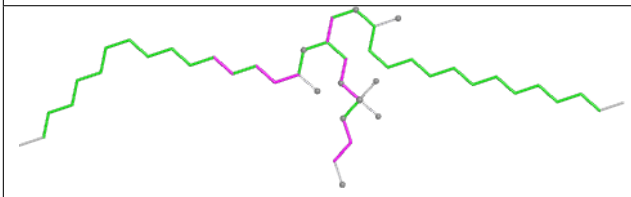
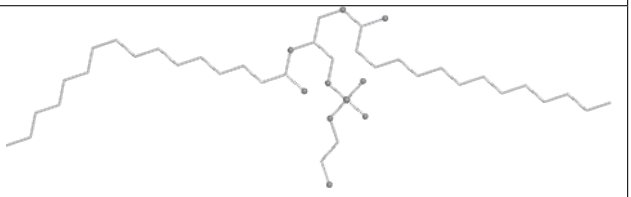
Bond angles

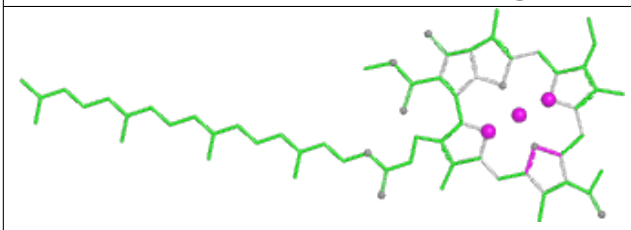
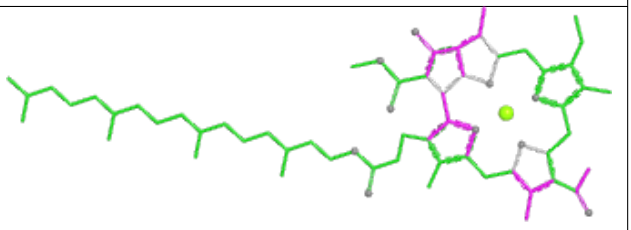
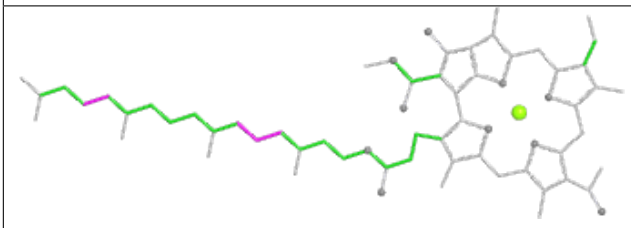
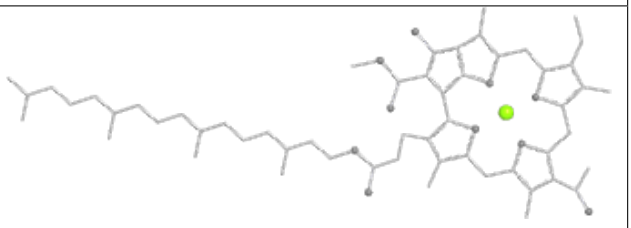


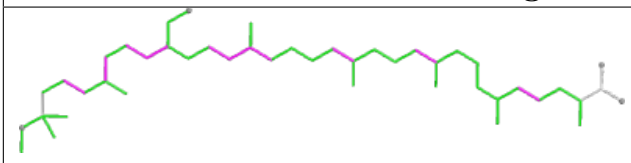
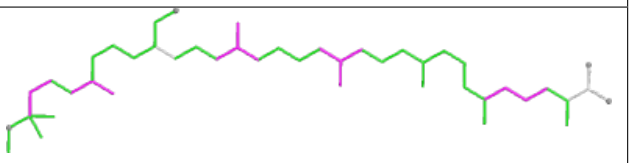
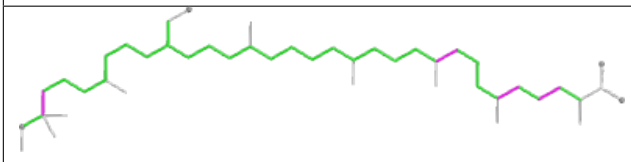
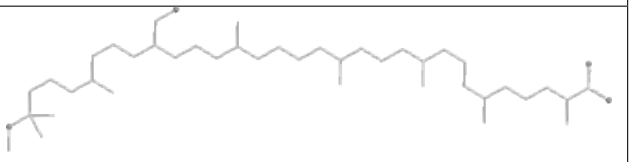
Torsions



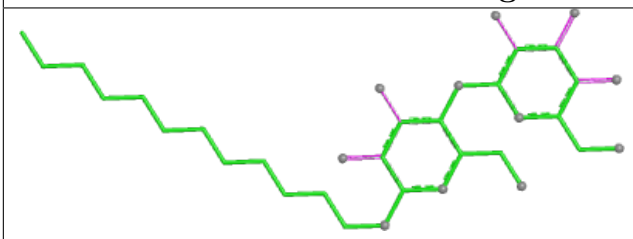
Rings

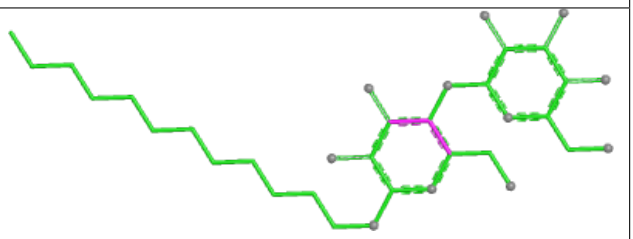
Ligand 0V9 bf 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

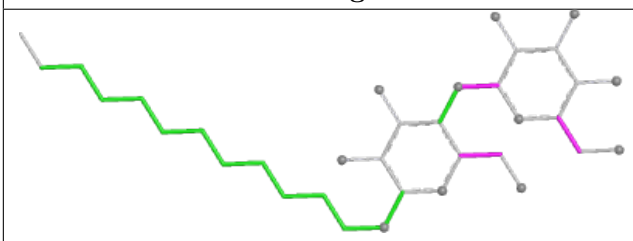
Ligand BCL AR 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

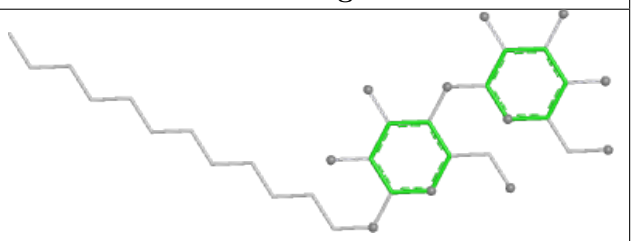
Ligand V7N bl 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT BO 1002

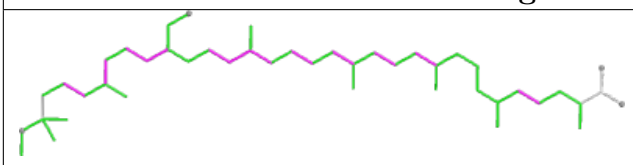

Bond lengths

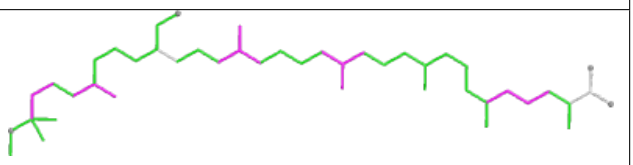

Bond angles

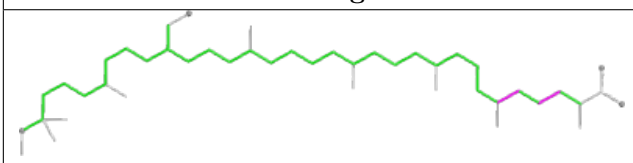

Torsions

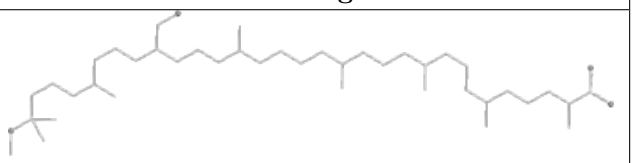

Rings

Ligand V7N bo 101

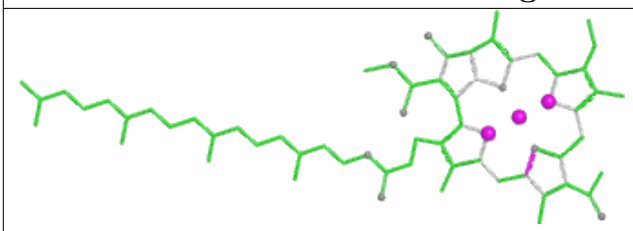

Bond lengths

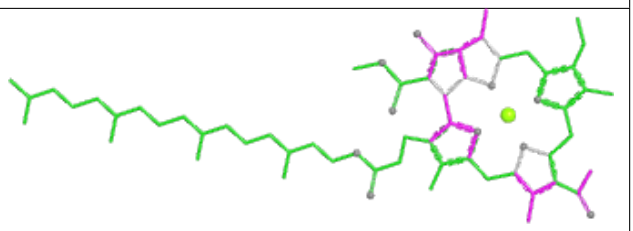

Bond angles

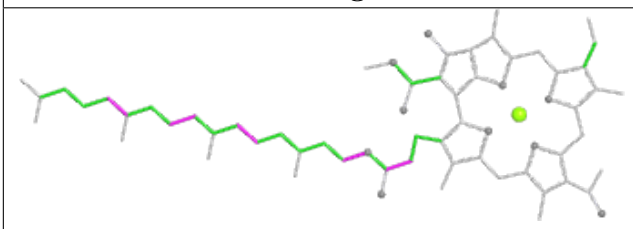

Torsions

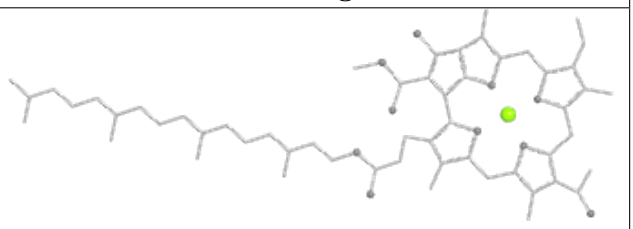

Rings

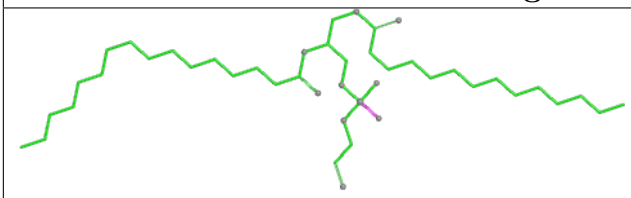
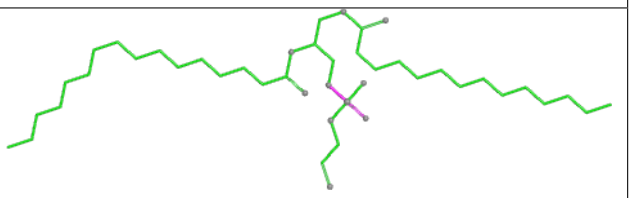
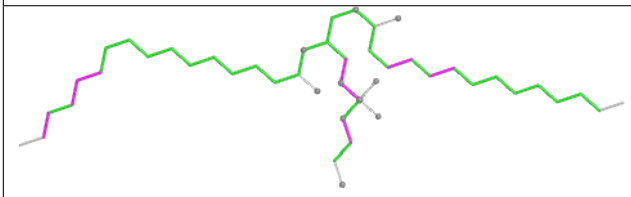
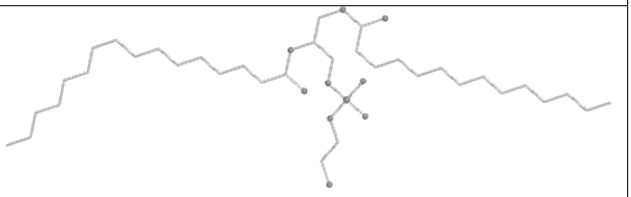
Ligand BCL ad 102

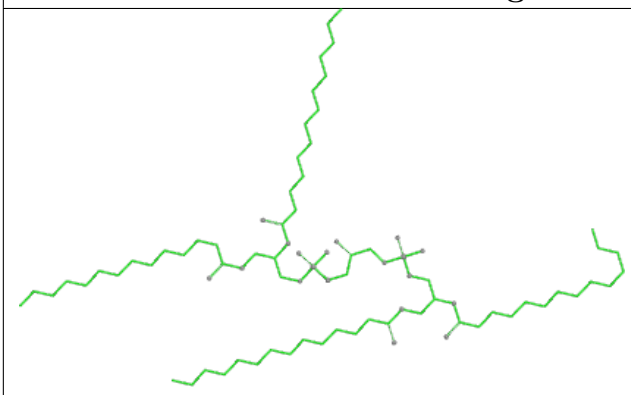
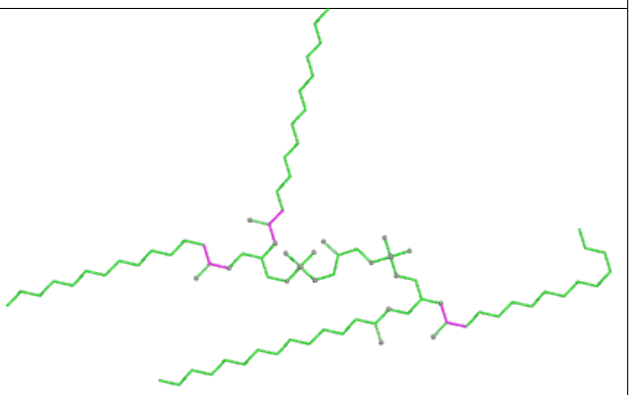
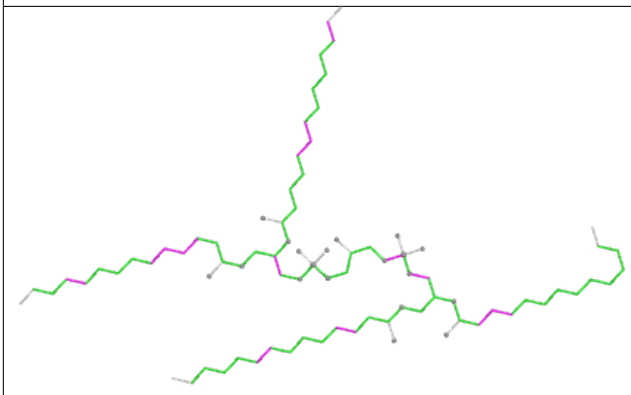
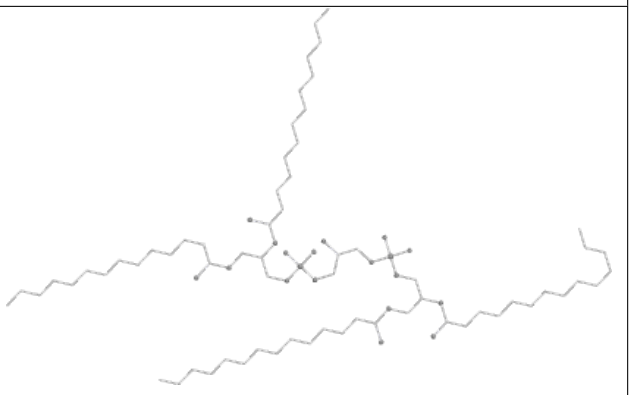

Bond lengths


Bond angles

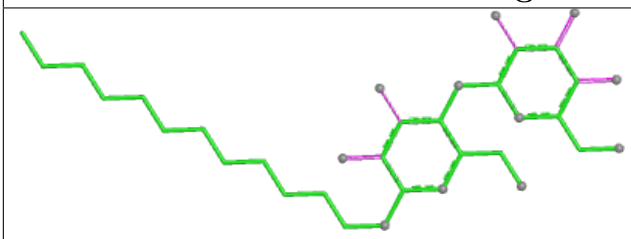

Torsions

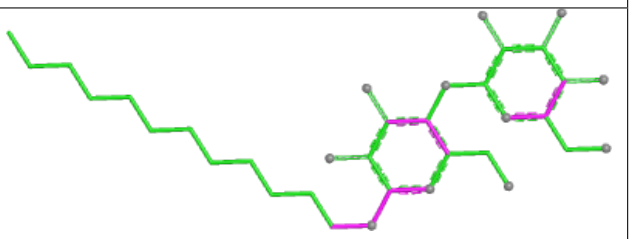

Rings

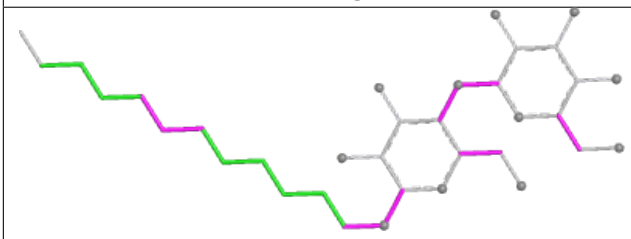
Ligand 0V9 bo 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

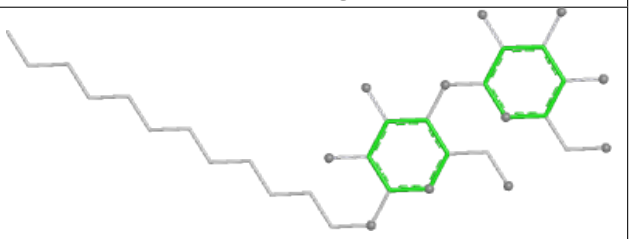
Ligand CD4 H1 1003	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT bc 101

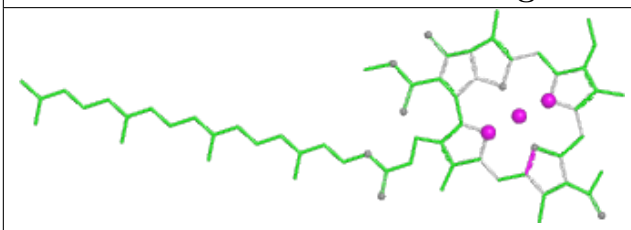

Bond lengths

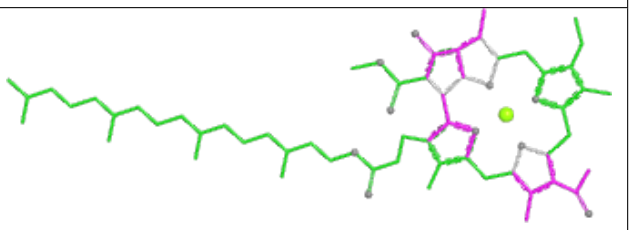

Bond angles

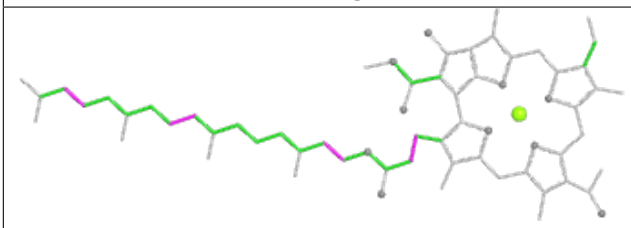

Torsions

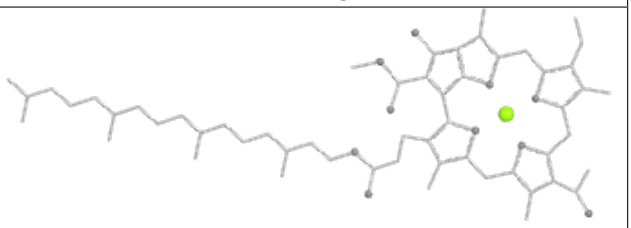

Rings

Ligand BCL bd 103

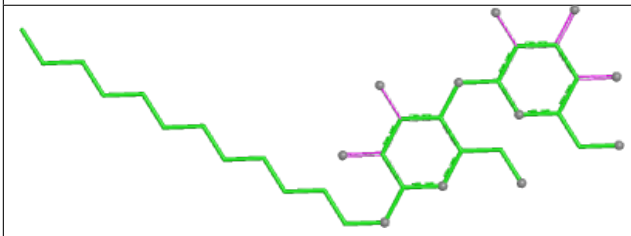

Bond lengths

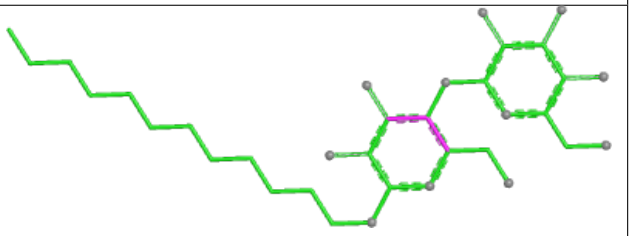

Bond angles

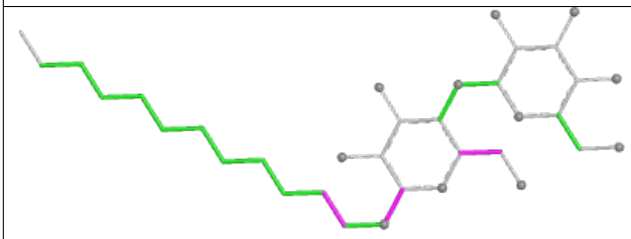

Torsions

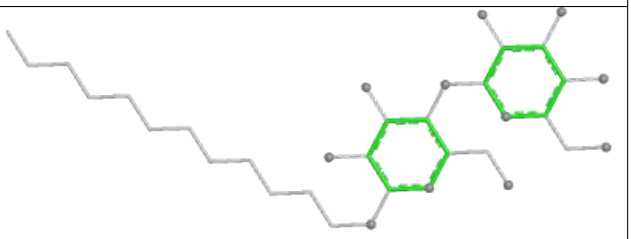

Rings

Ligand LMT BD 103

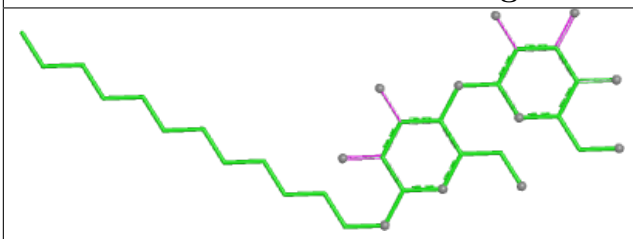

Bond lengths


Bond angles

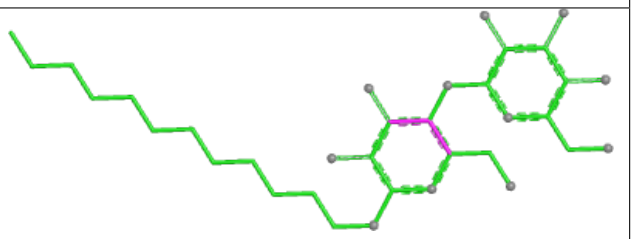

Torsions


Rings

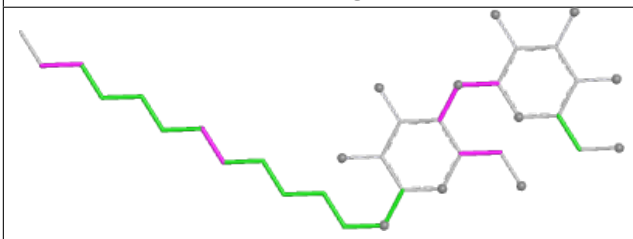
Ligand LMT BP 1002



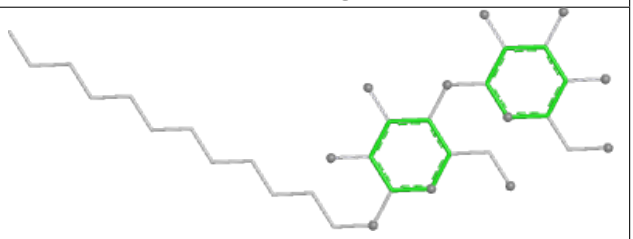
Bond lengths



Bond angles

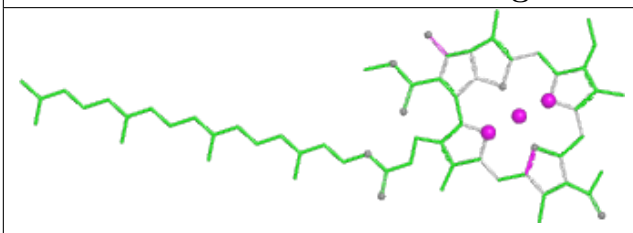


Torsions

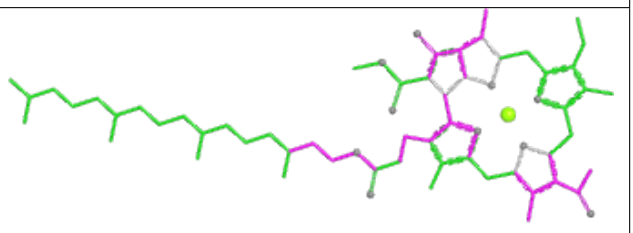


Rings

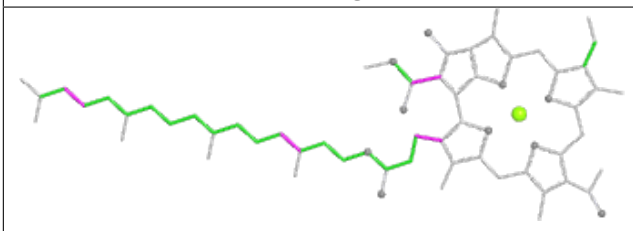
Ligand BCL AB 103



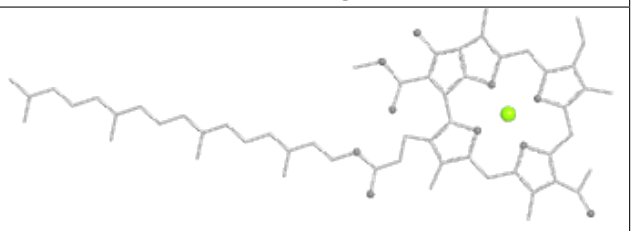
Bond lengths



Bond angles

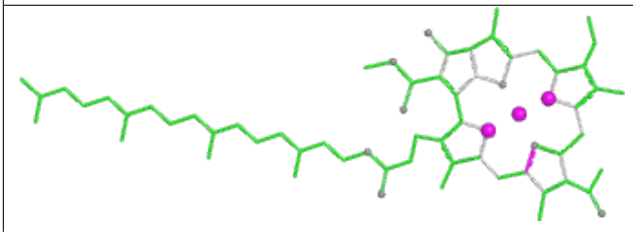


Torsions

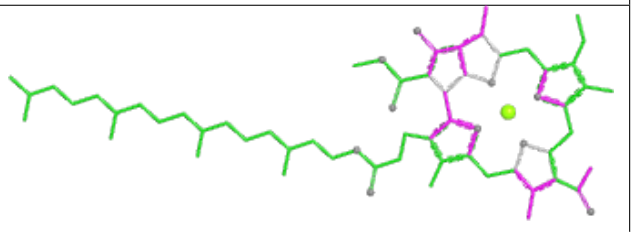


Rings

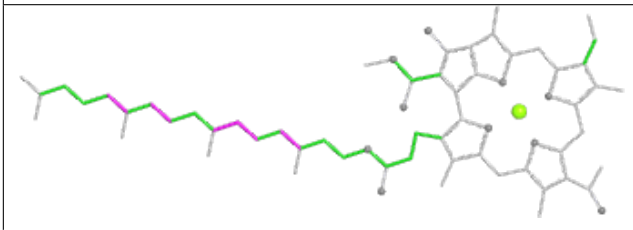
Ligand BCL bm 103



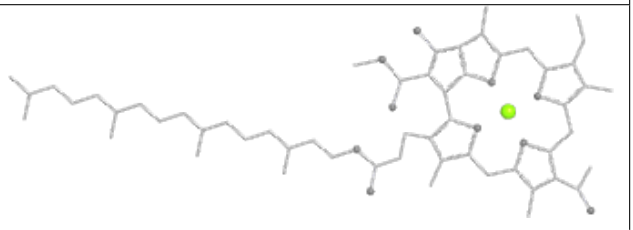
Bond lengths



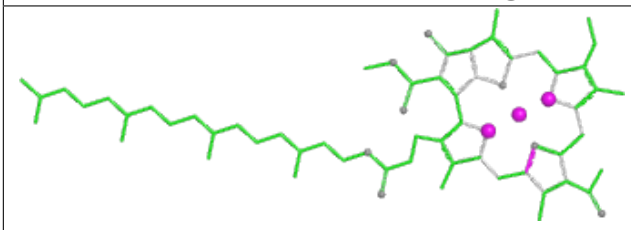
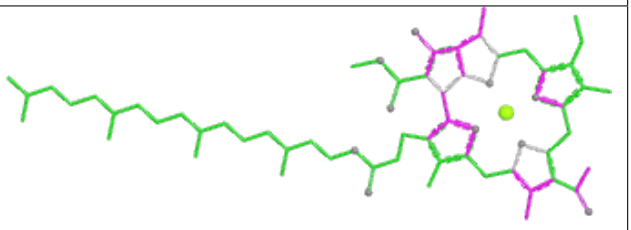
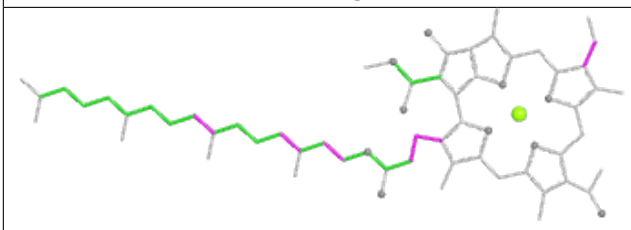
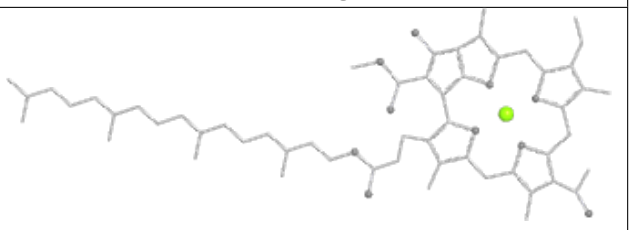
Bond angles

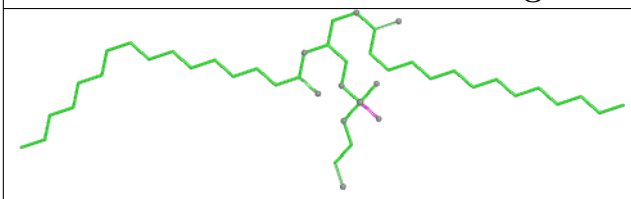
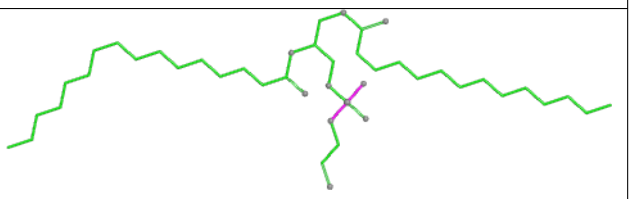
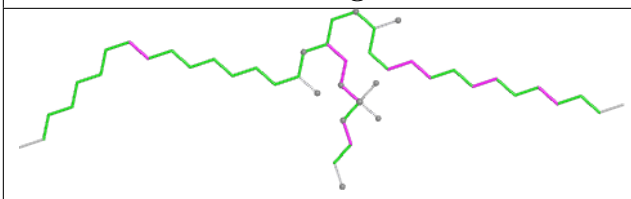
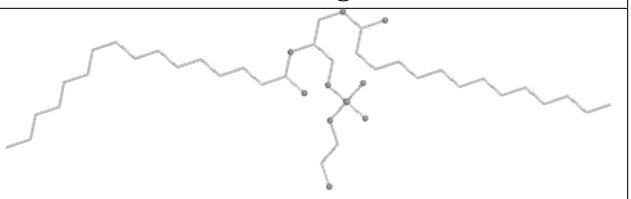


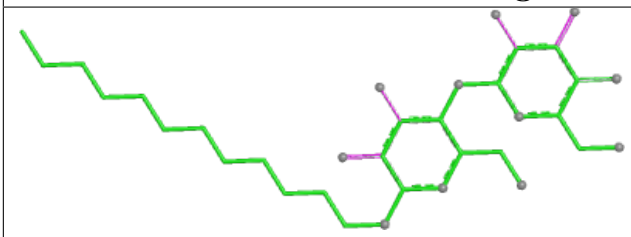
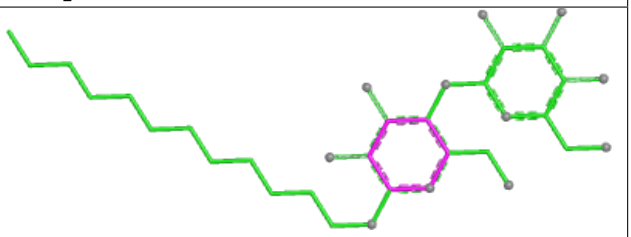
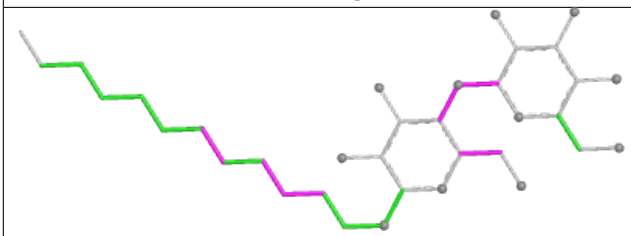
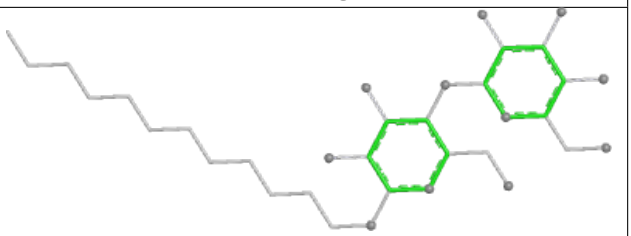
Torsions



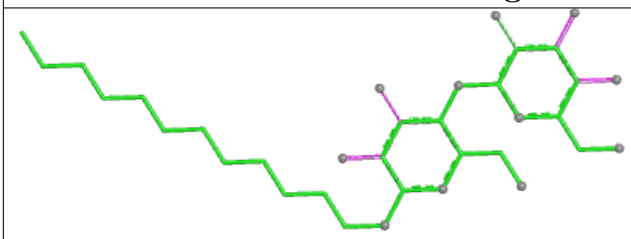
Rings

Ligand BCL BN 1006	
 Bond lengths	 Bond angles
 Torsions	 Rings

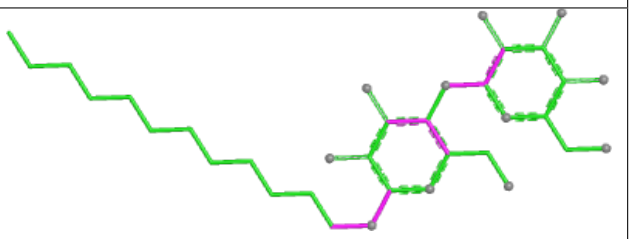
Ligand 0V9 ba 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT bp 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

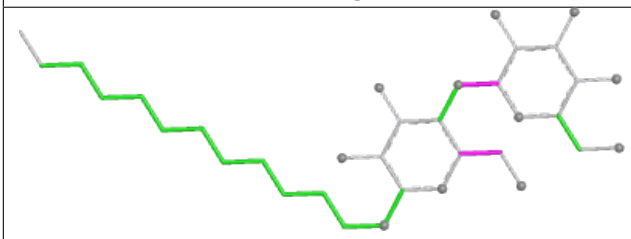
Ligand LMT AW 102



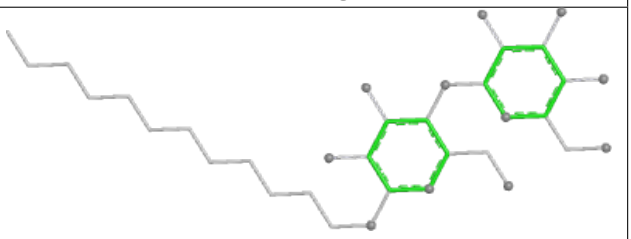
Bond lengths



Bond angles

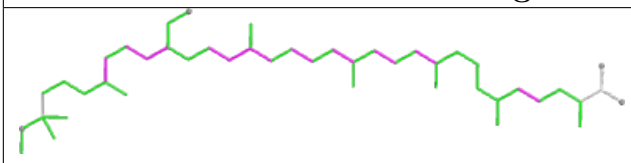


Torsions

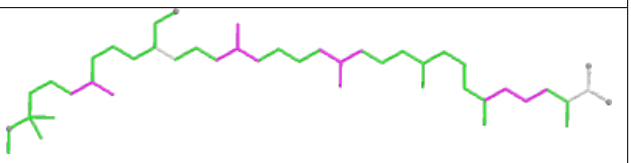


Rings

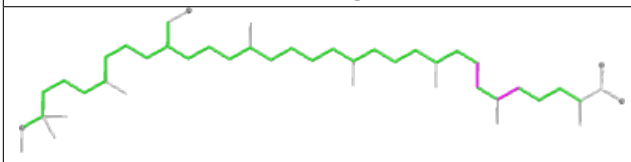
Ligand V7N BE 101



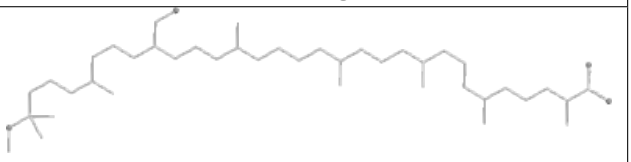
Bond lengths



Bond angles

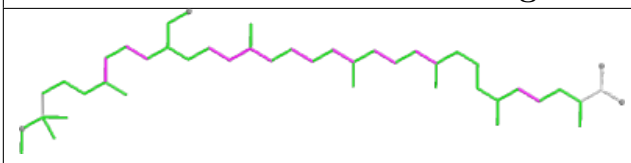


Torsions

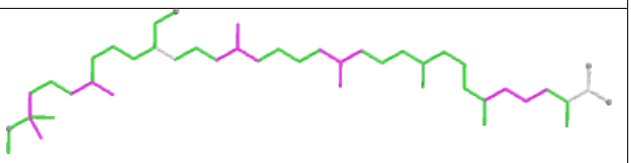


Rings

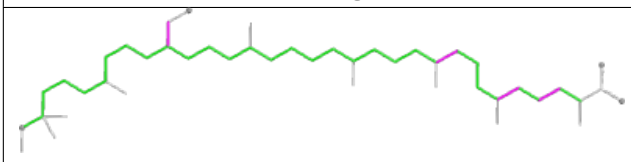
Ligand V7N ba 101



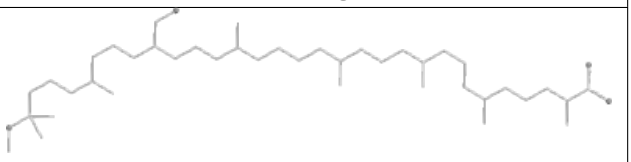
Bond lengths



Bond angles

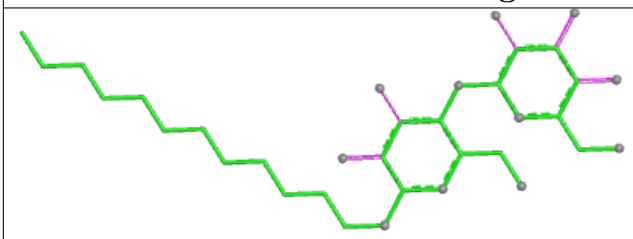


Torsions

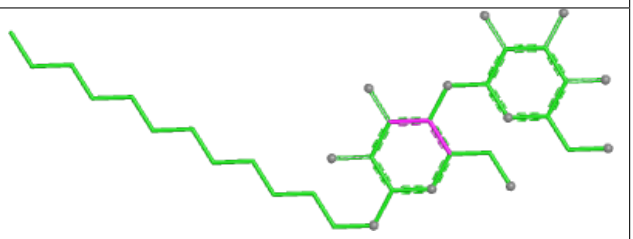


Rings

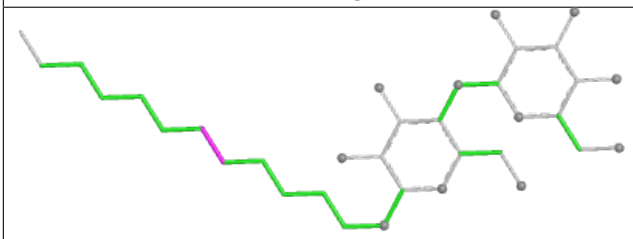
Ligand LMT BU 1002



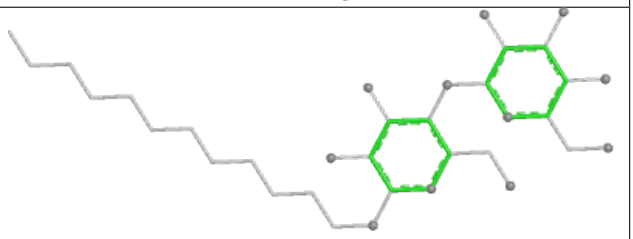
Bond lengths



Bond angles

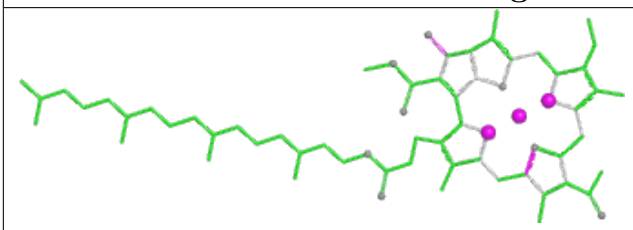


Torsions

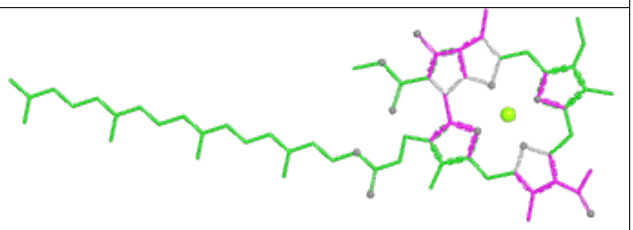


Rings

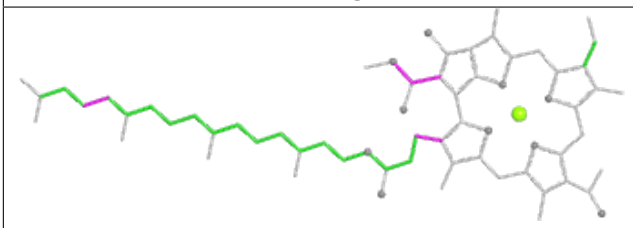
Ligand BCL AN 102



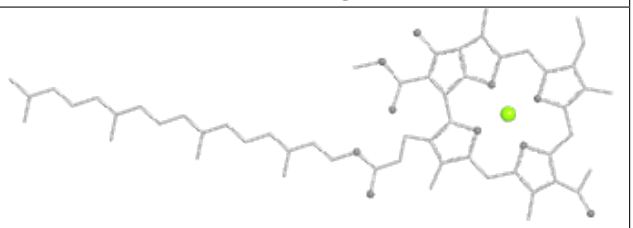
Bond lengths



Bond angles

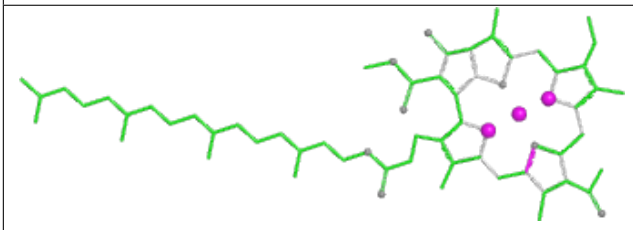


Torsions

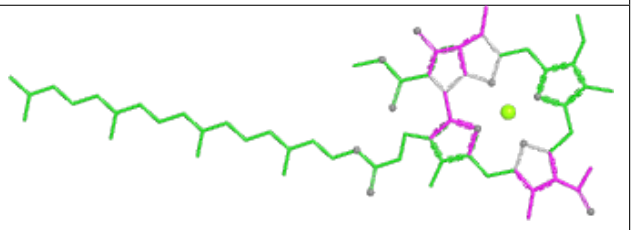


Rings

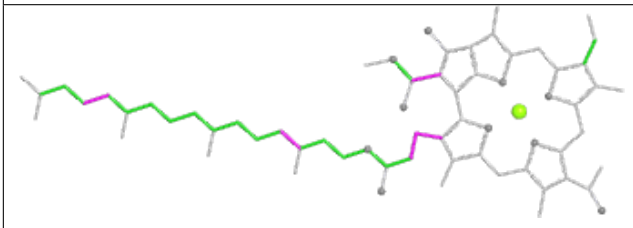
Ligand BCL BR 1003



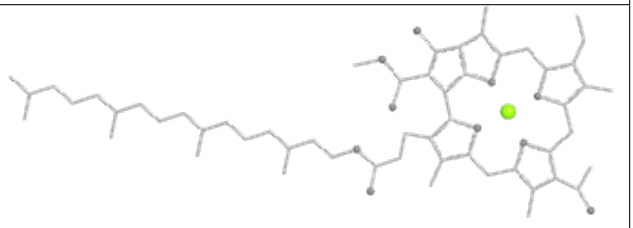
Bond lengths



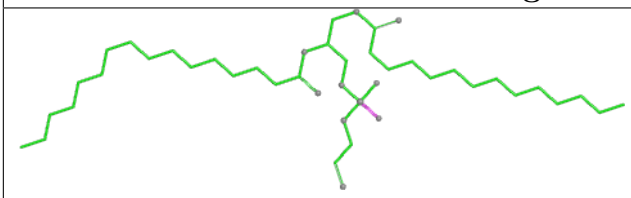
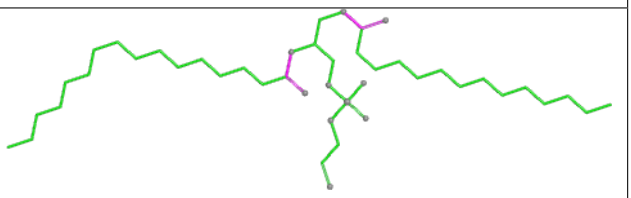
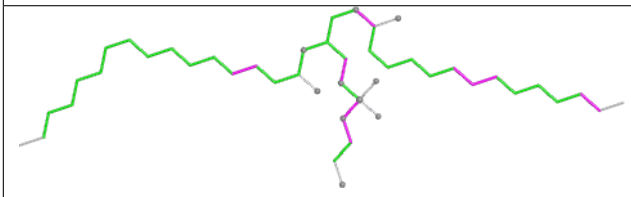
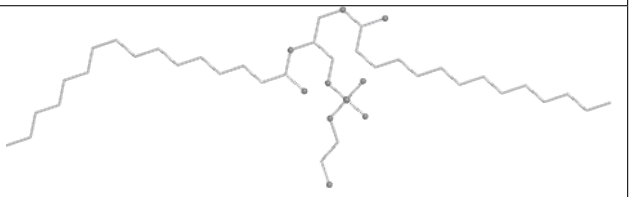
Bond angles

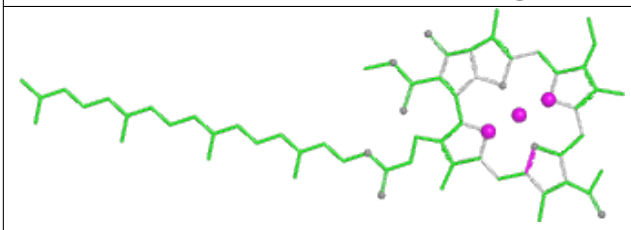
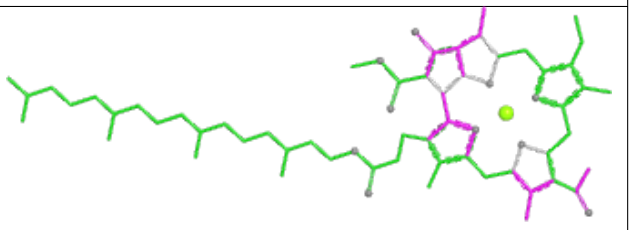
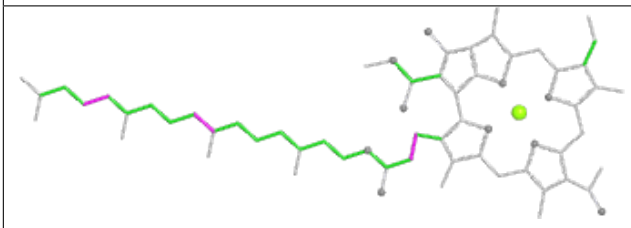
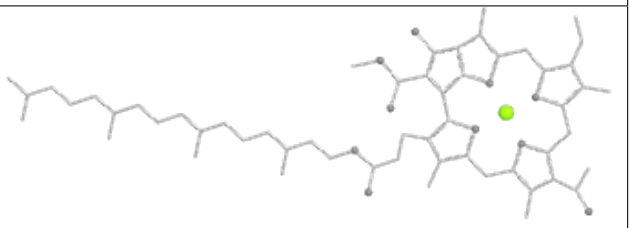


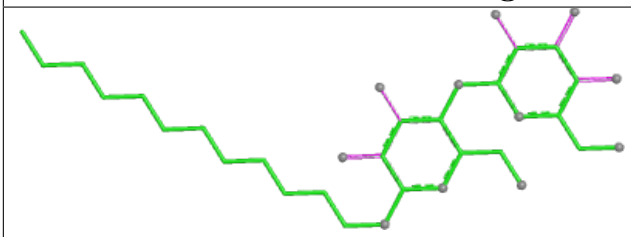
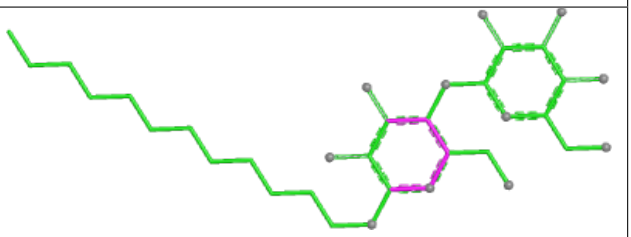
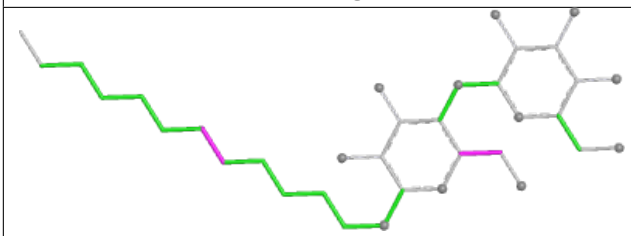
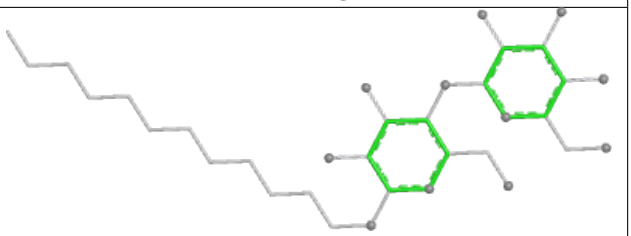
Torsions



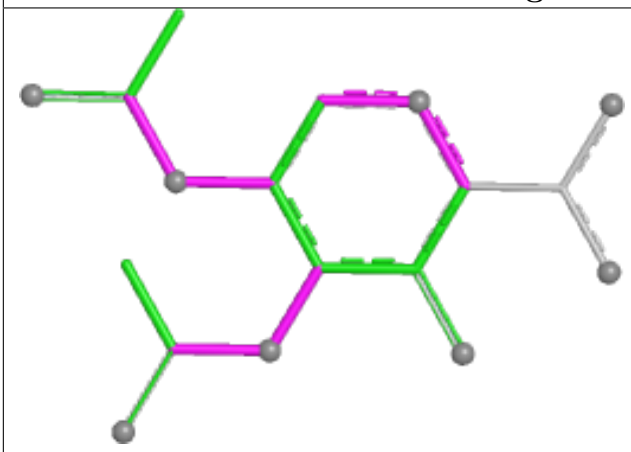
Rings

Ligand 0V9 bh 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

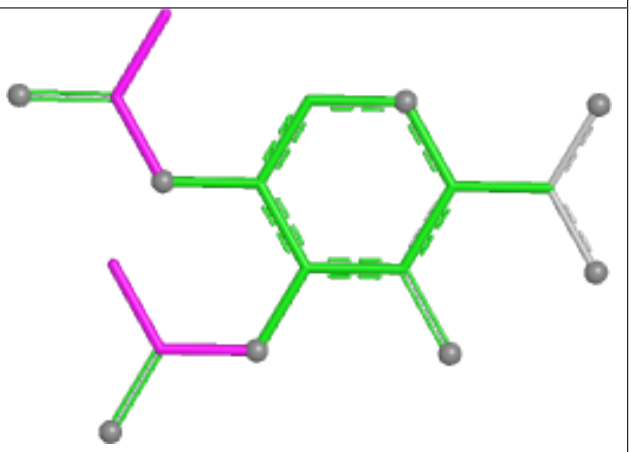
Ligand BCL AX 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT BX 1002	
 Bond lengths	 Bond angles
 Torsions	 Rings

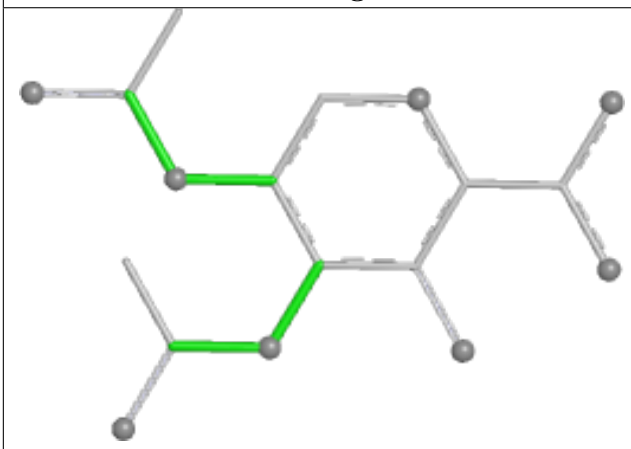
Ligand V75 M 409



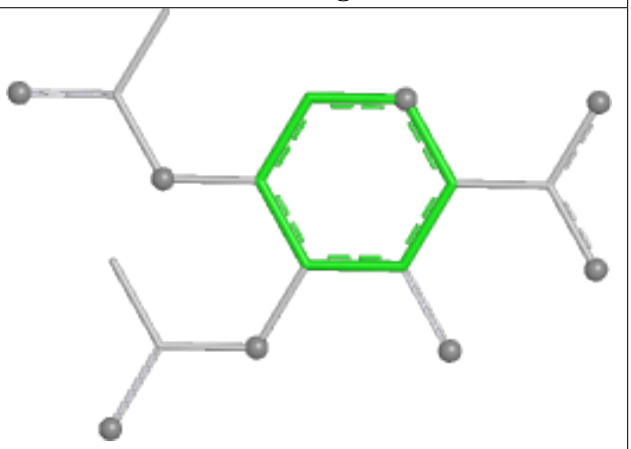
Bond lengths



Bond angles

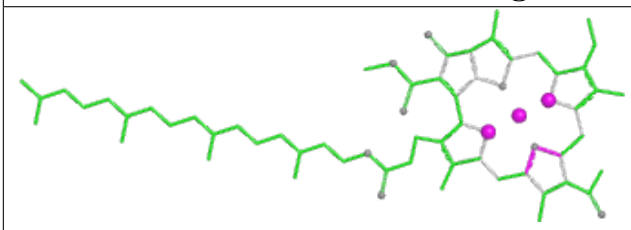


Torsions

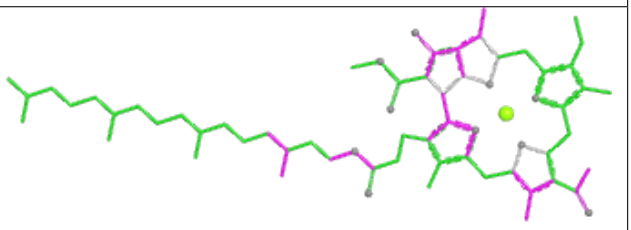


Rings

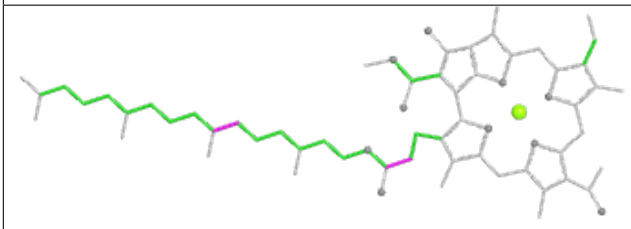
Ligand BCL ab 1001



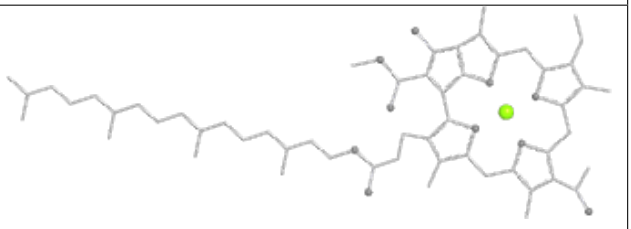
Bond lengths



Bond angles

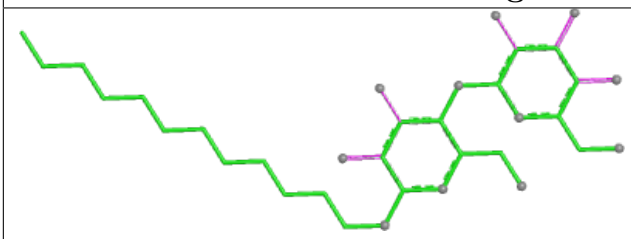


Torsions

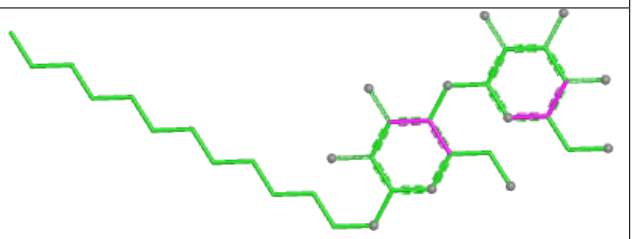


Rings

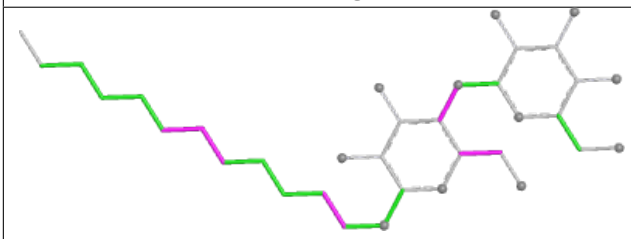
Ligand LMT AN 103



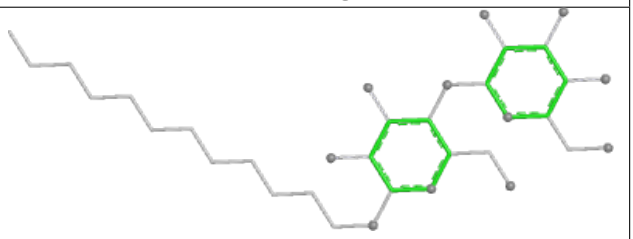
Bond lengths



Bond angles

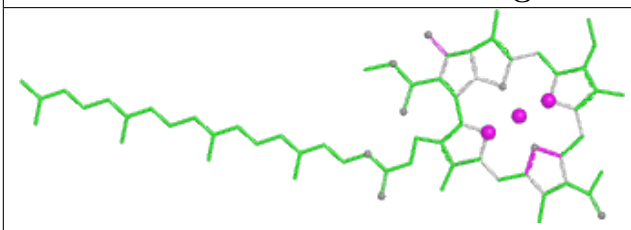


Torsions

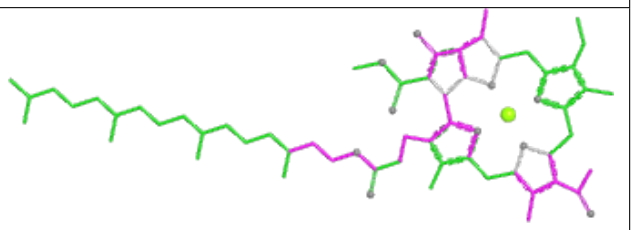


Rings

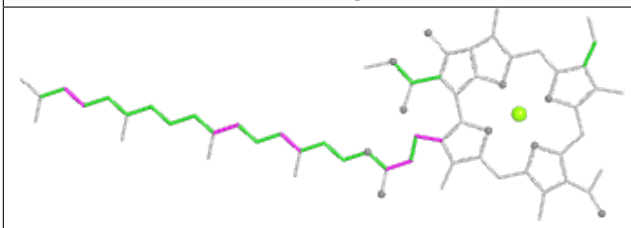
Ligand BCL AL 103



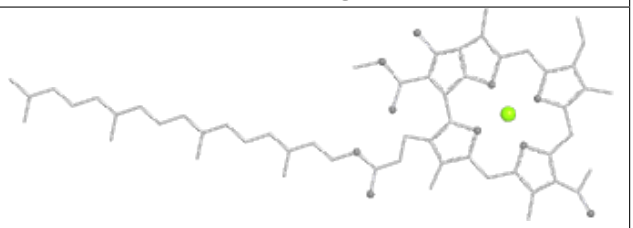
Bond lengths



Bond angles

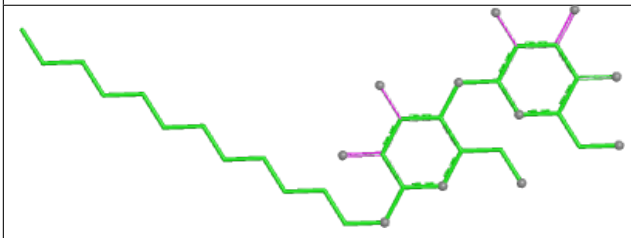


Torsions

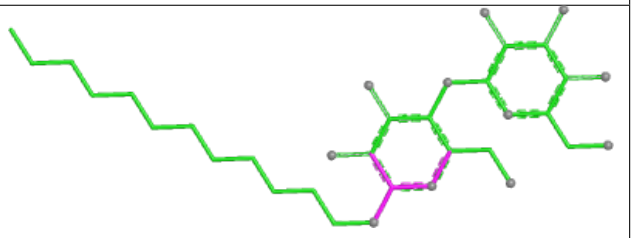


Rings

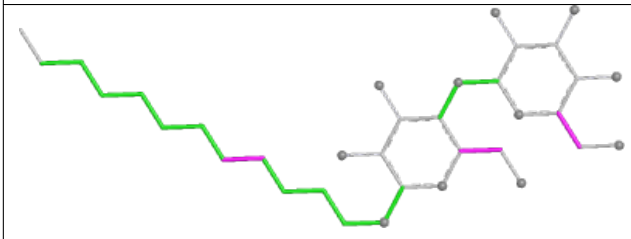
Ligand LMT AB 102



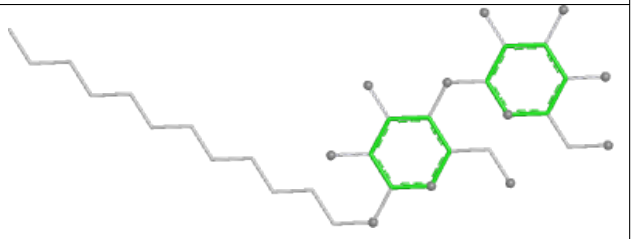
Bond lengths



Bond angles

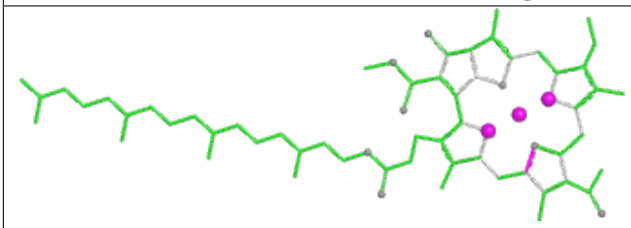


Torsions

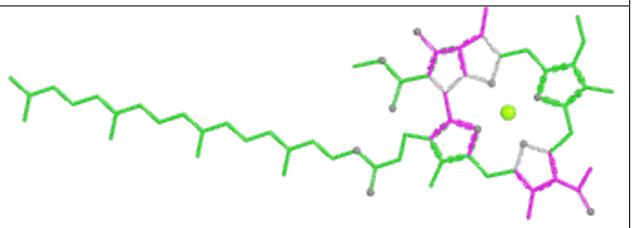


Rings

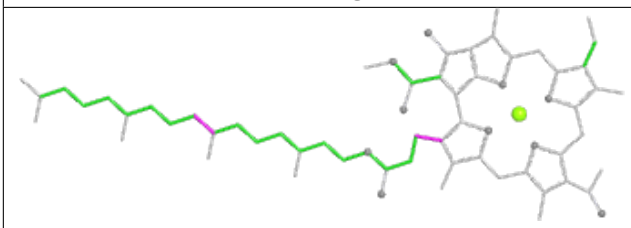
Ligand BCL bo 102



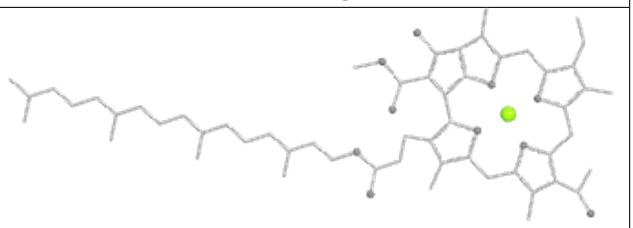
Bond lengths



Bond angles

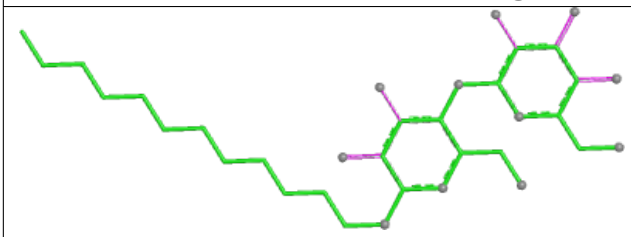


Torsions

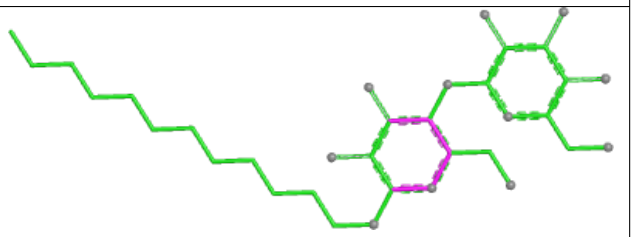


Rings

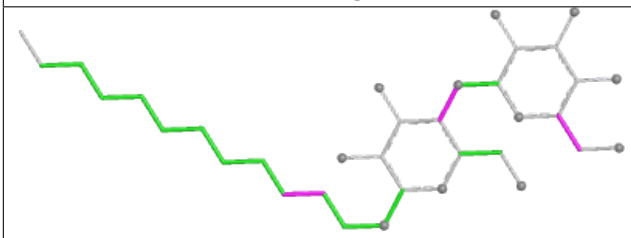
Ligand LMT AT 101



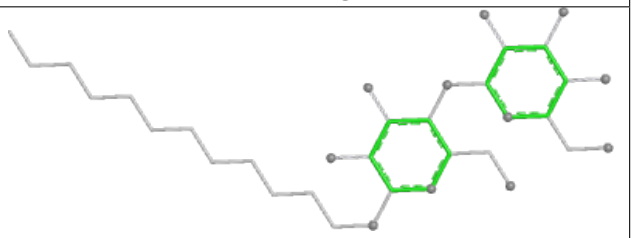
Bond lengths



Bond angles

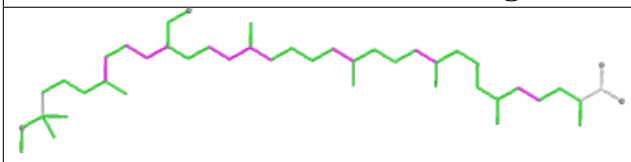


Torsions

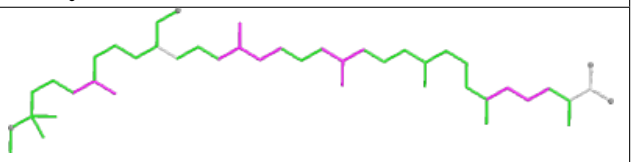


Rings

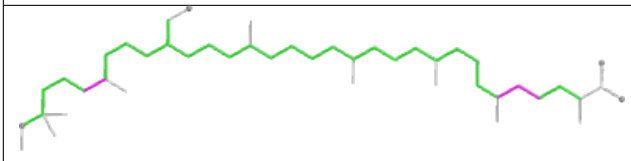
Ligand V7N BQ 1001



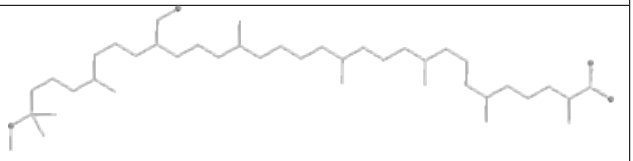
Bond lengths



Bond angles

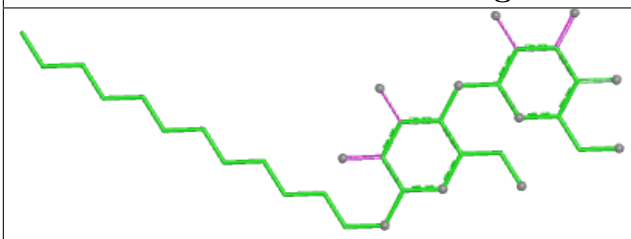


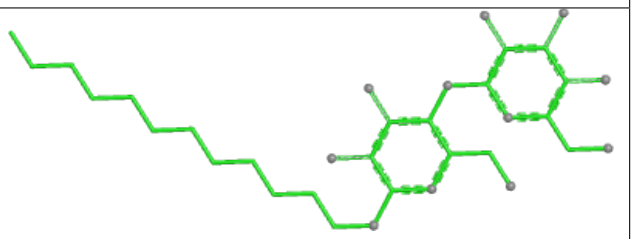
Torsions

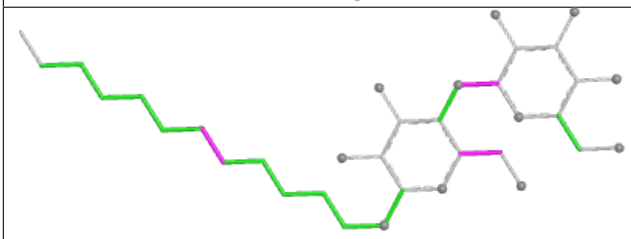


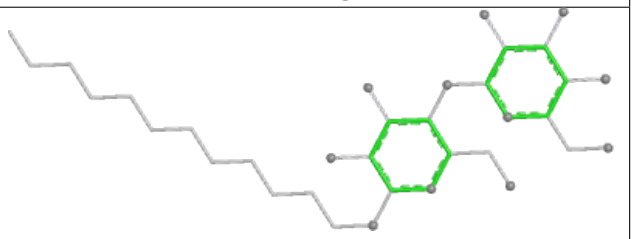
Rings

Ligand LMT BW 1004

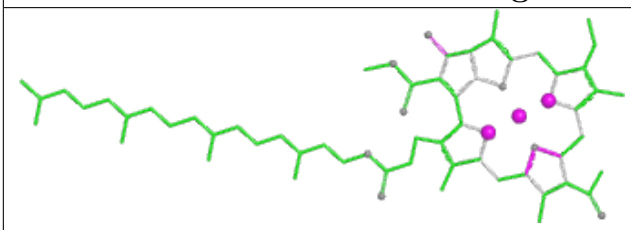

Bond lengths

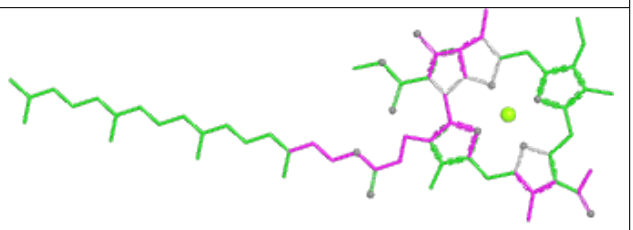

Bond angles

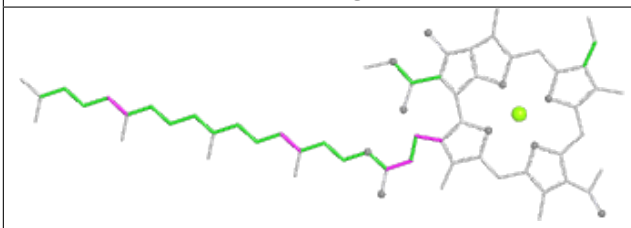

Torsions

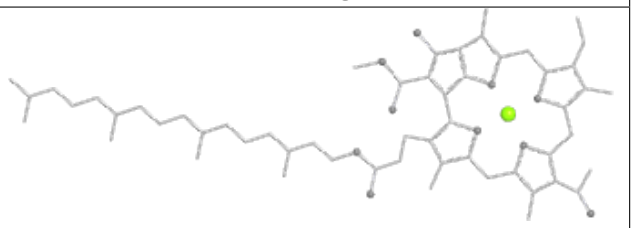

Rings

Ligand BCL AU 102

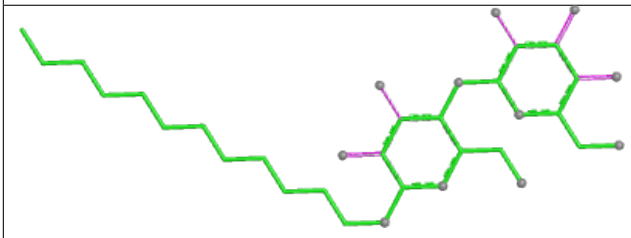

Bond lengths

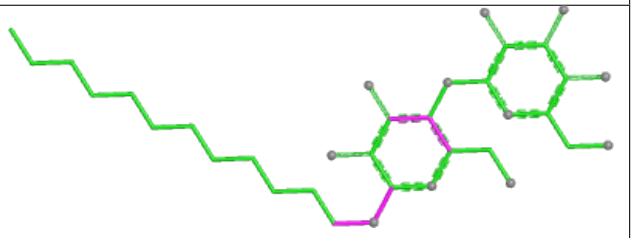

Bond angles

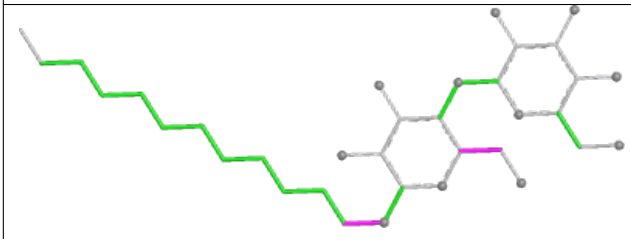

Torsions

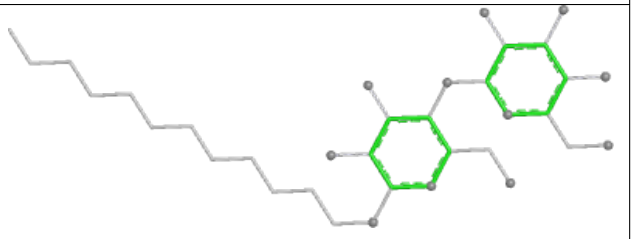

Rings

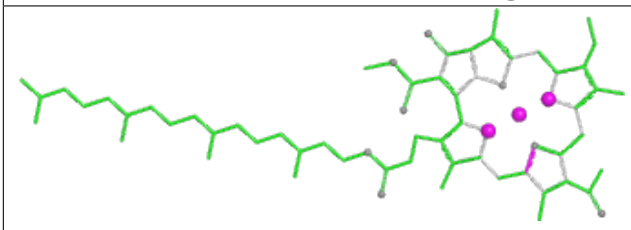
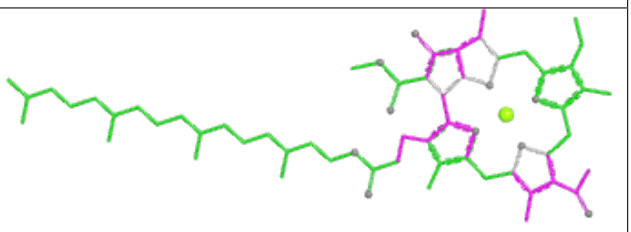
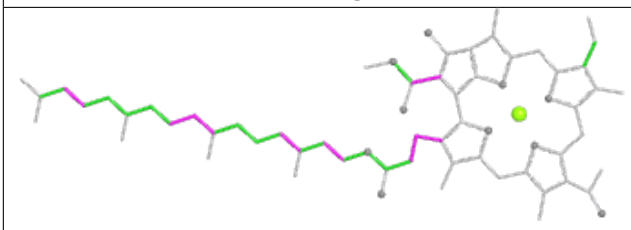
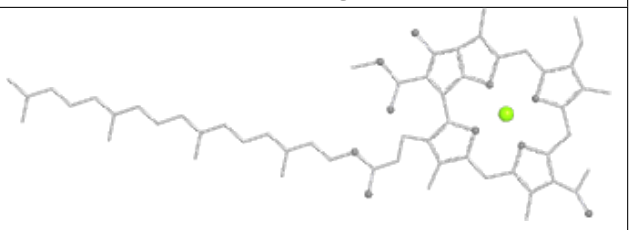
Ligand LMT M 402

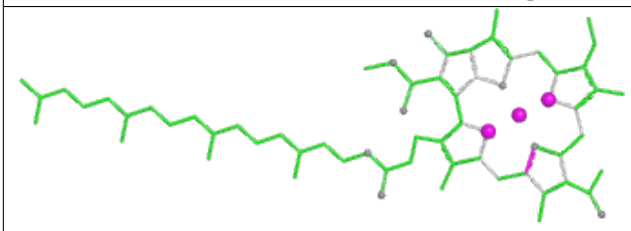
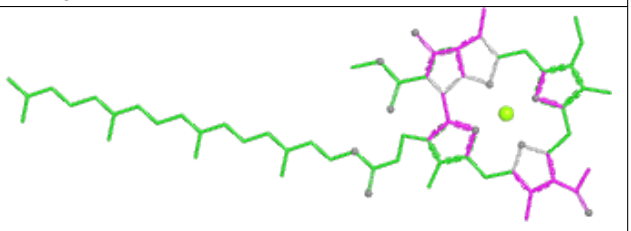
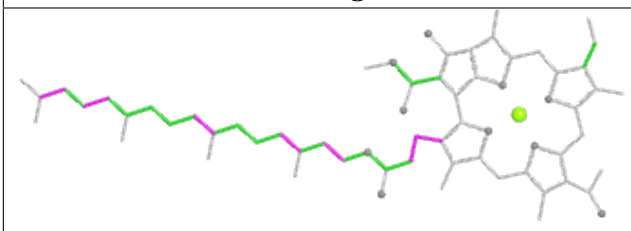
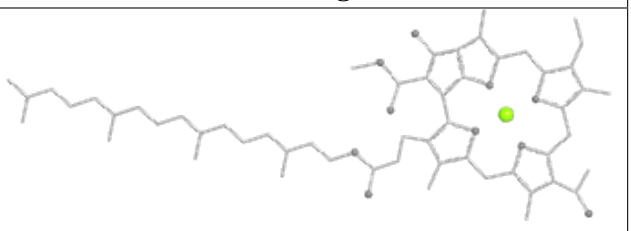

Bond lengths

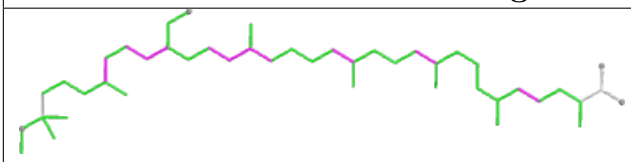
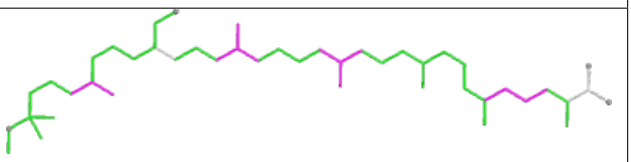
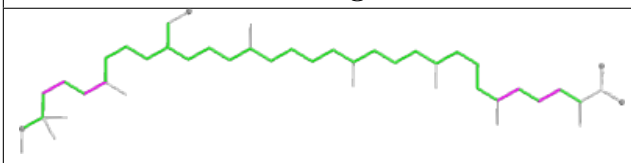
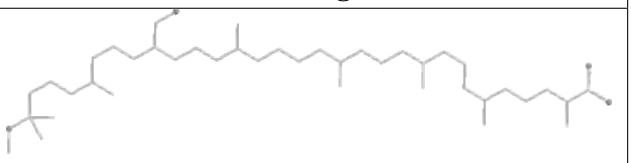

Bond angles

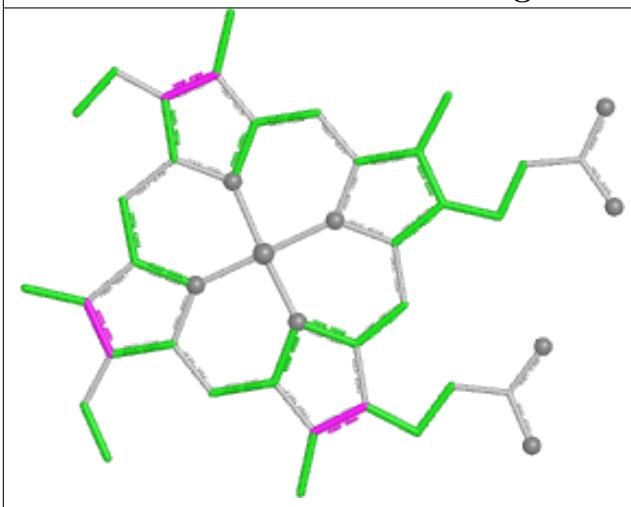
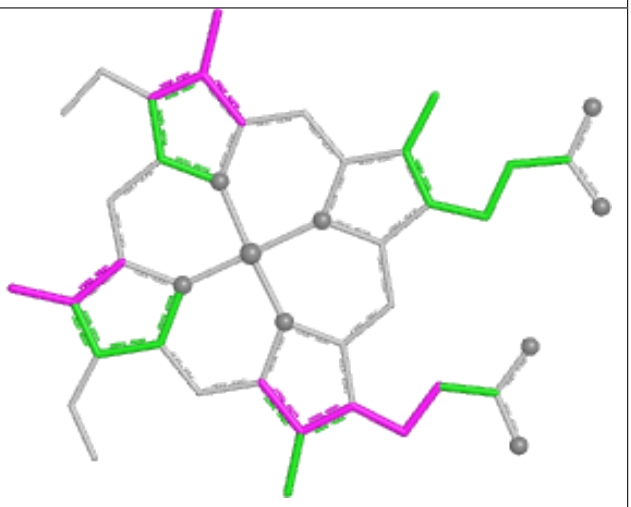
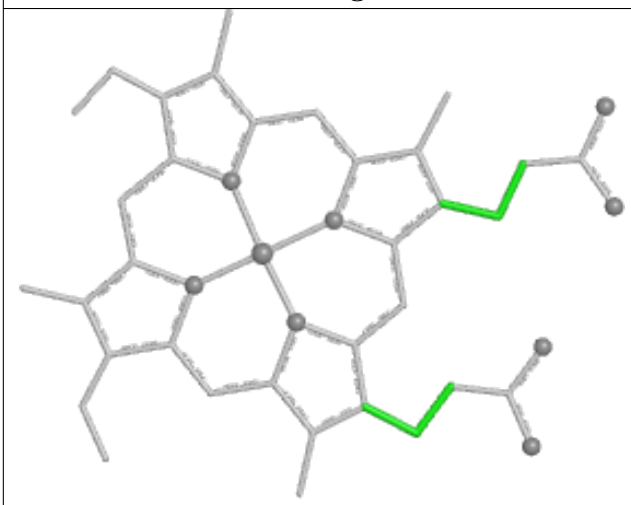
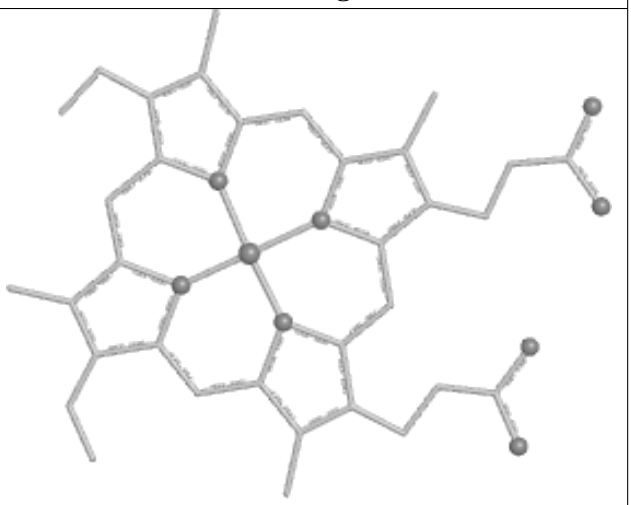

Torsions

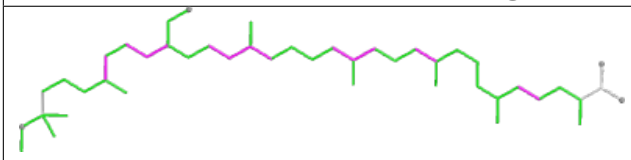
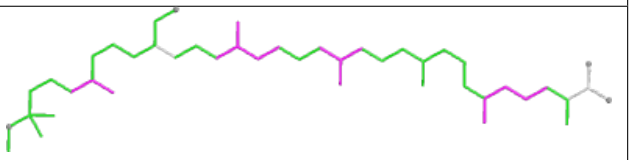
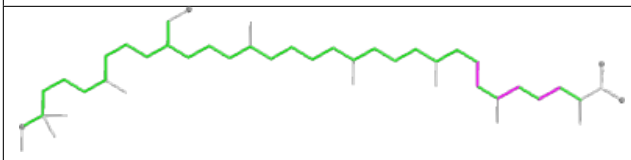
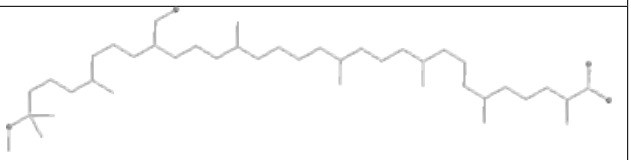

Rings

Ligand BCL BG 1004	
 Bond lengths	 Bond angles
 Torsions	 Rings

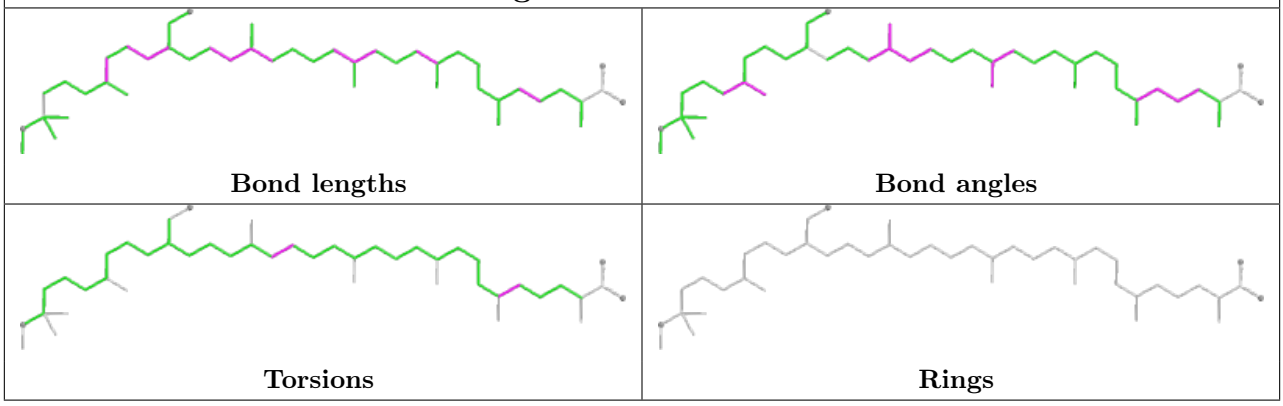
Ligand BCL bj 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand V7N AH 105	
 Bond lengths	 Bond angles
 Torsions	 Rings

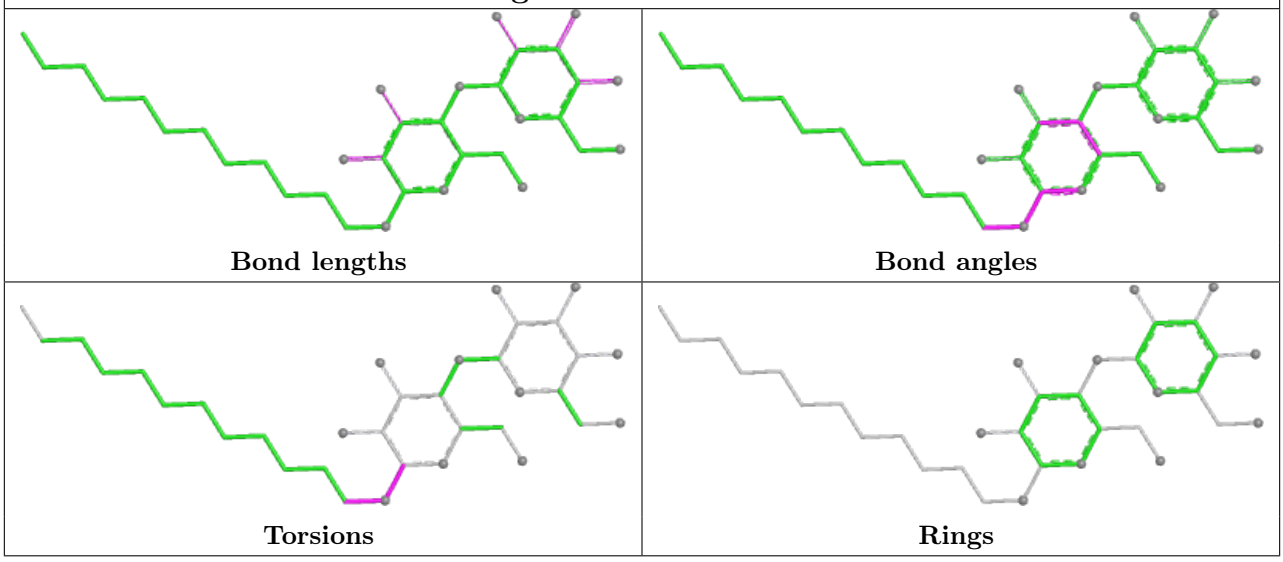
Ligand HEC C 1004	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand V7N BP 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

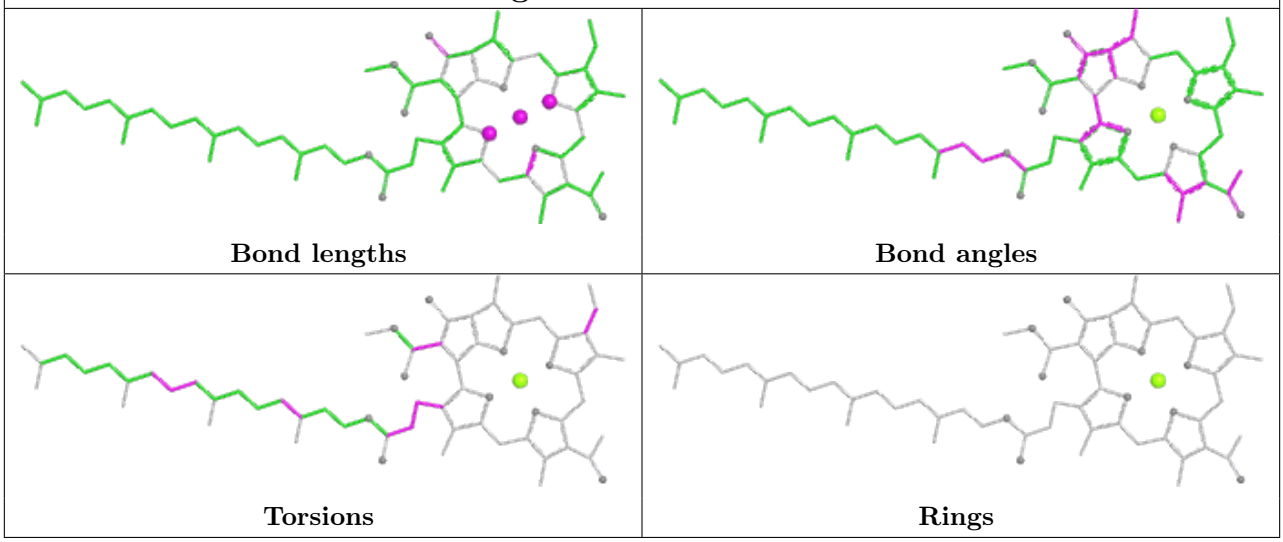
Ligand V7N BB 101



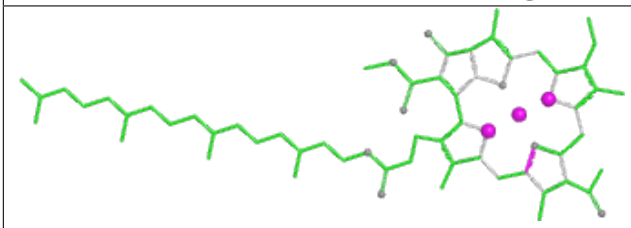
Ligand LMT BF 101



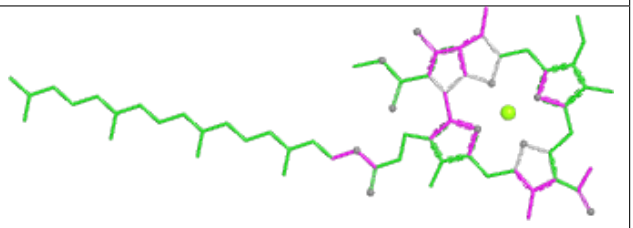
Ligand BCL AH 101



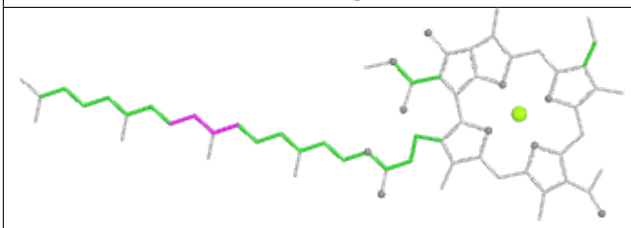
Ligand BCL M 403



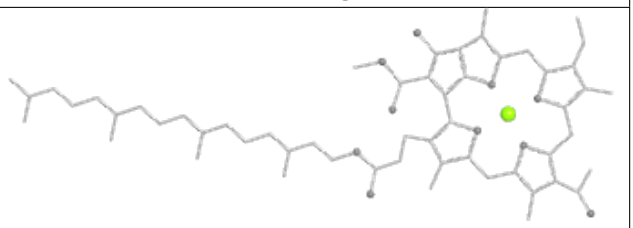
Bond lengths



Bond angles

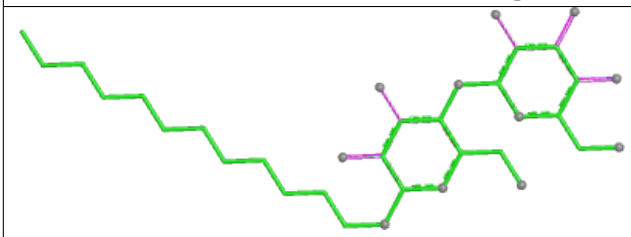


Torsions

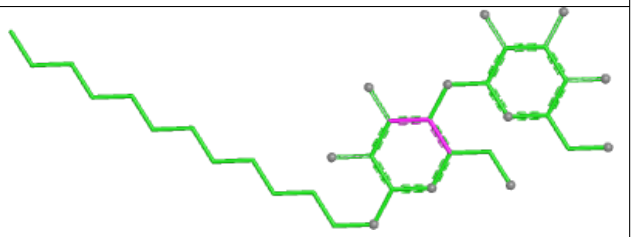


Rings

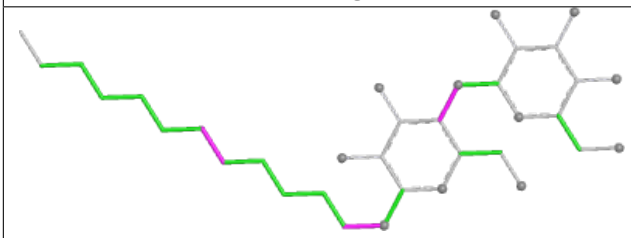
Ligand LMT BC 102



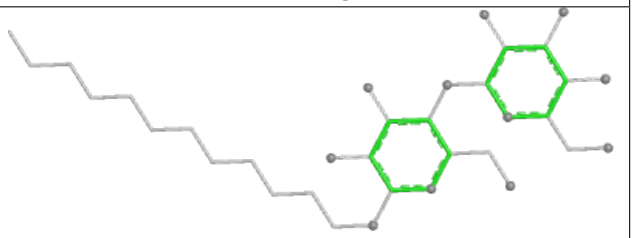
Bond lengths



Bond angles

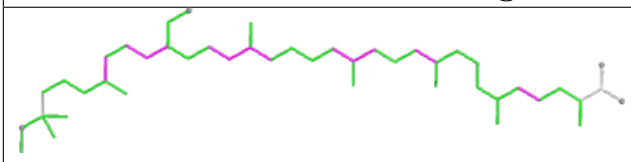


Torsions

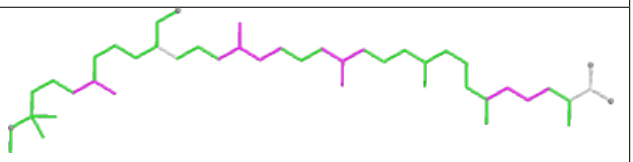


Rings

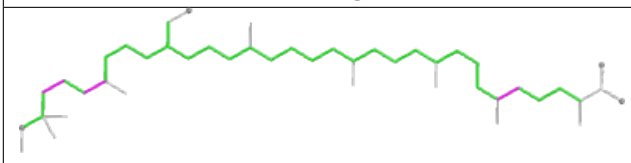
Ligand V7N BW 1001



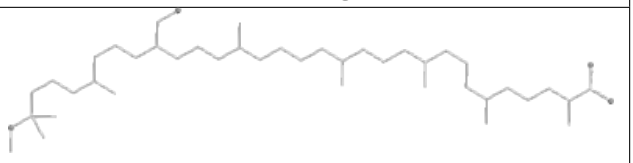
Bond lengths



Bond angles

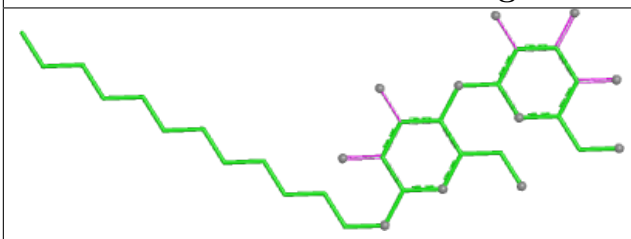


Torsions

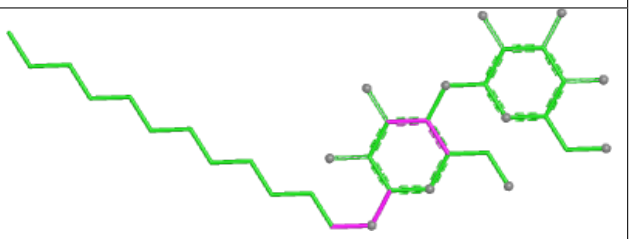


Rings

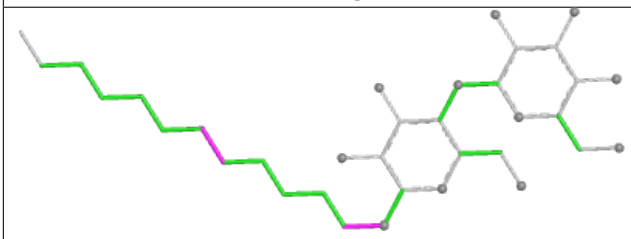
Ligand LMT BK 1005



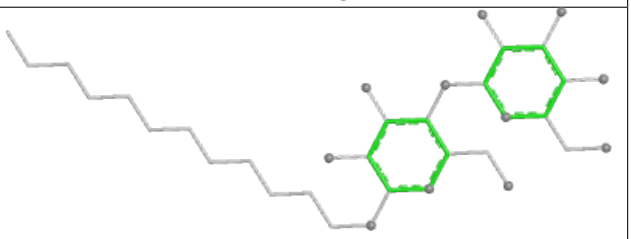
Bond lengths



Bond angles

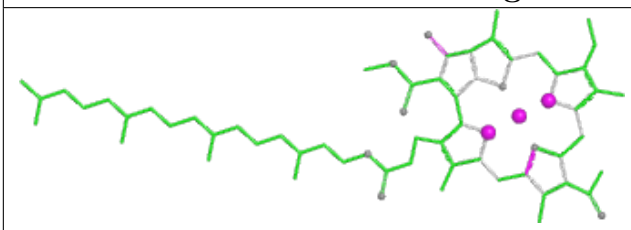


Torsions

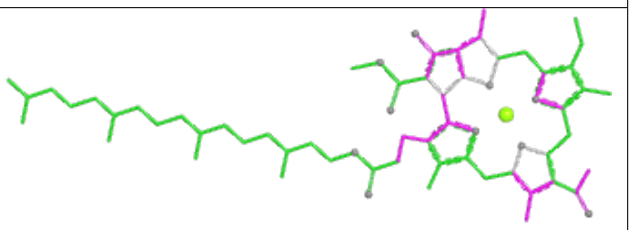


Rings

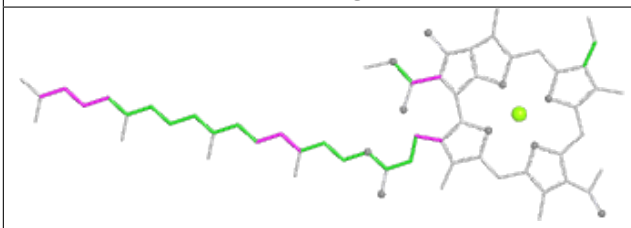
Ligand BCL AE 1001



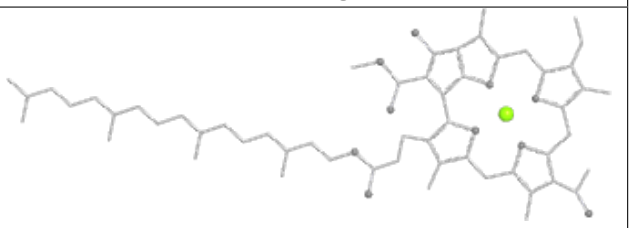
Bond lengths



Bond angles

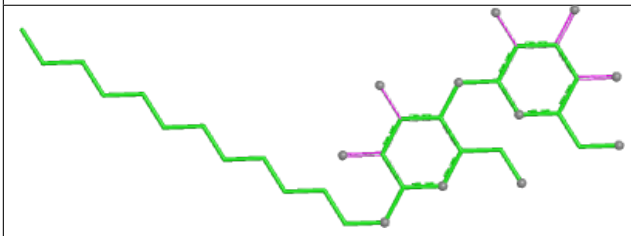


Torsions

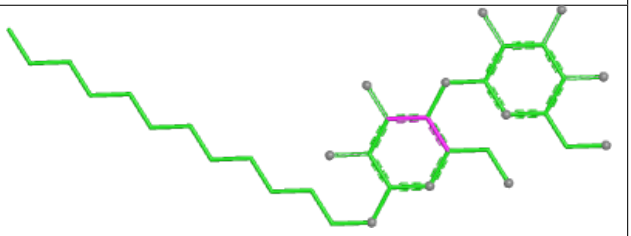


Rings

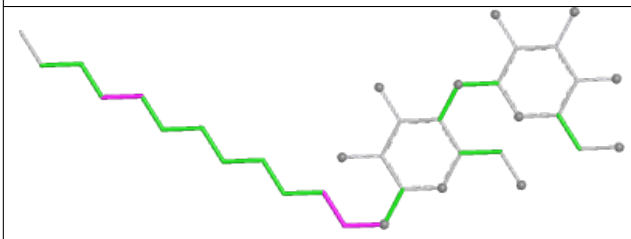
Ligand LMT bo 103



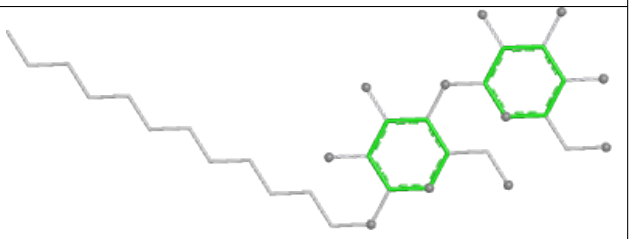
Bond lengths



Bond angles

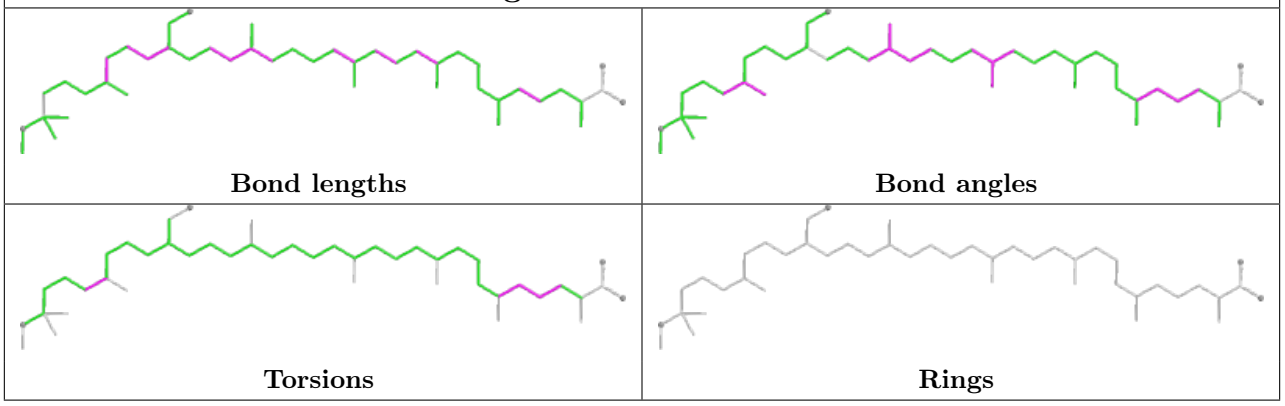


Torsions

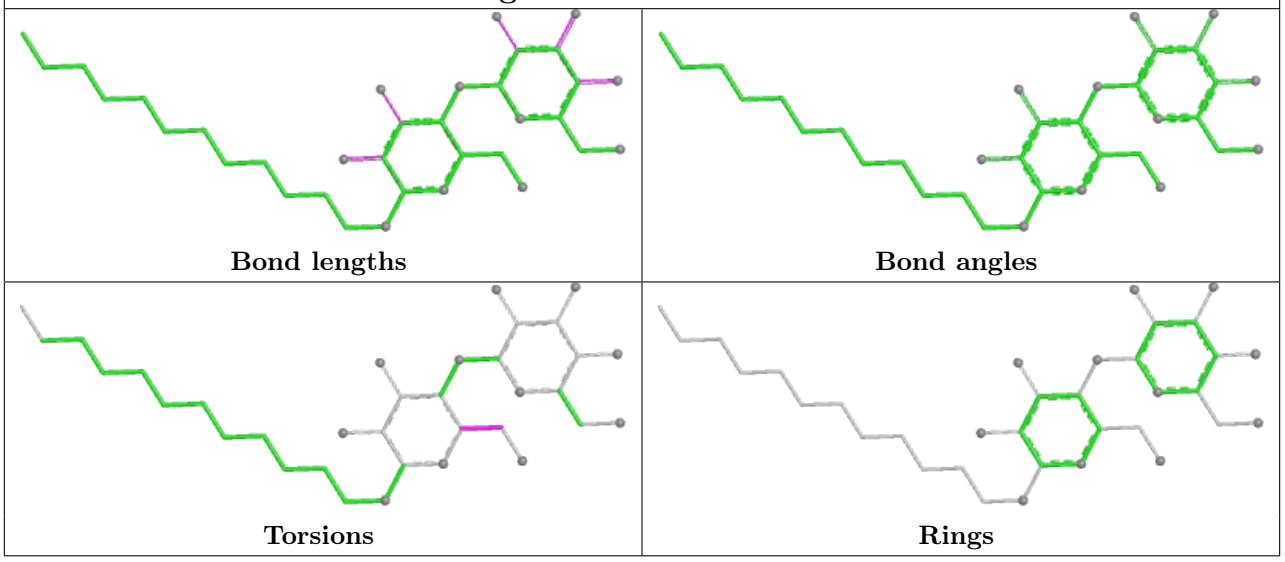


Rings

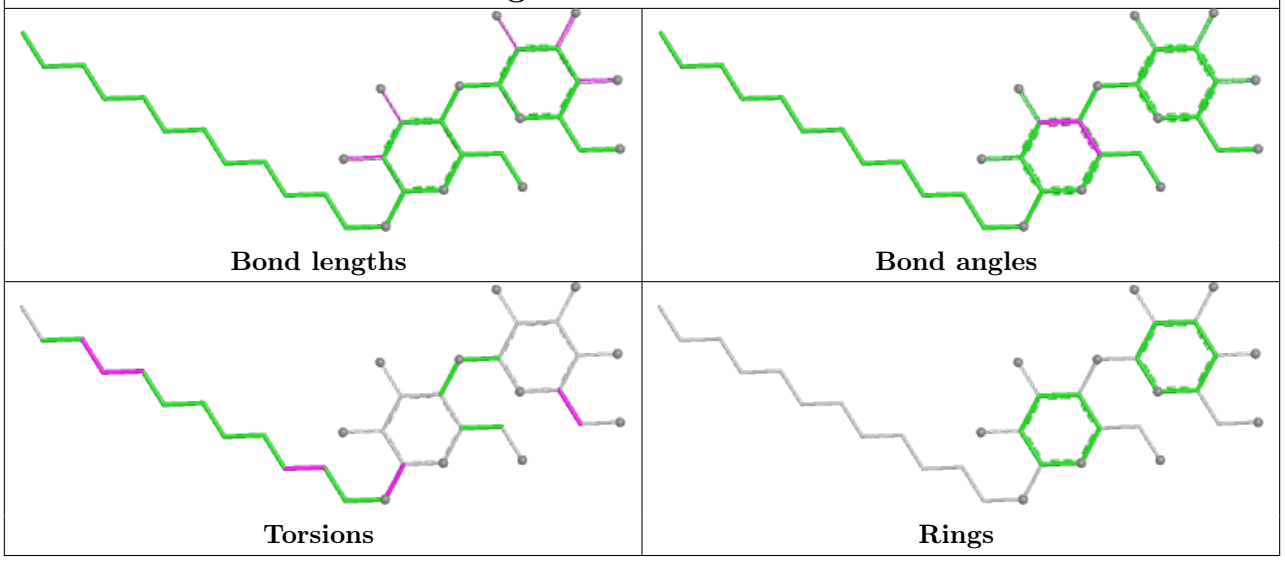
Ligand V7N BV 1001

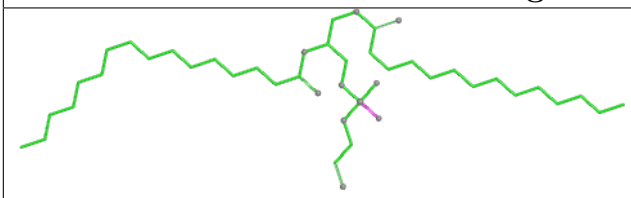
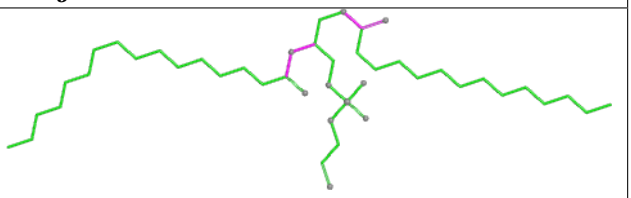
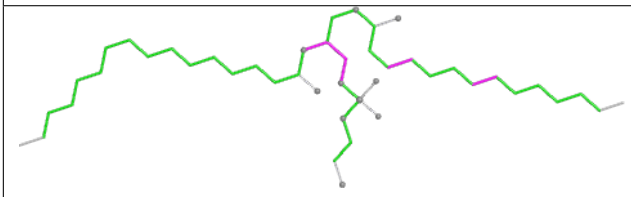
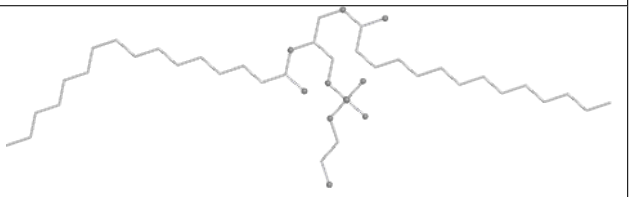


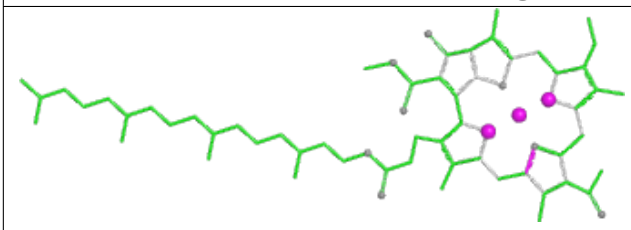
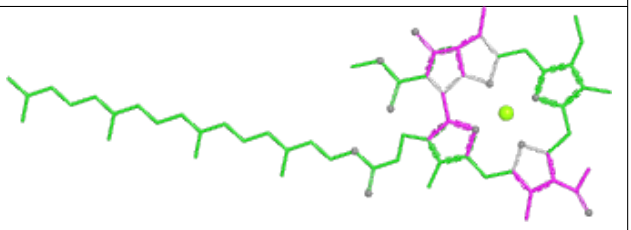
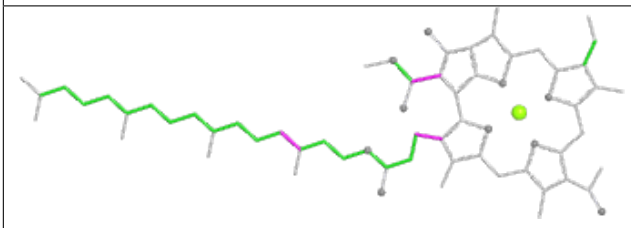
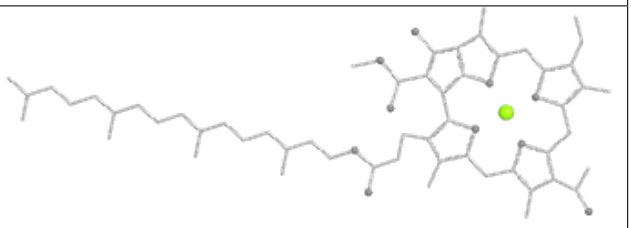
Ligand LMT BH 1002

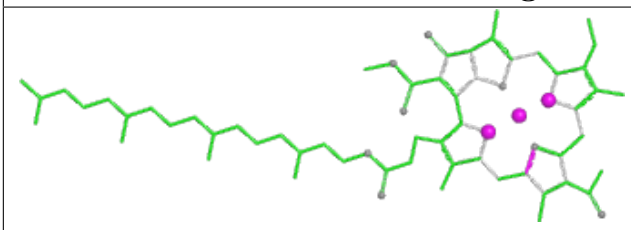
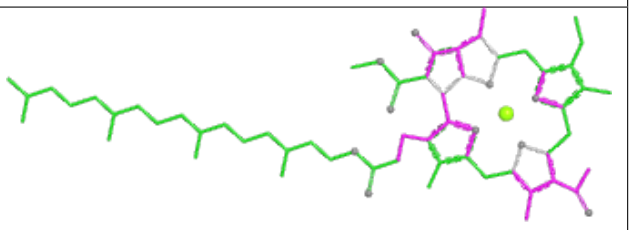
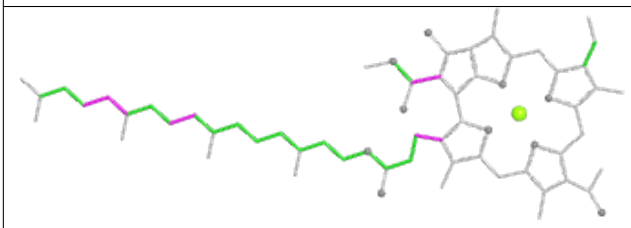
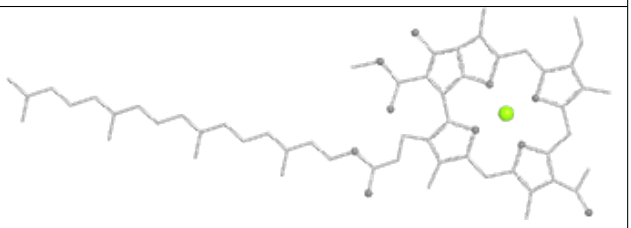


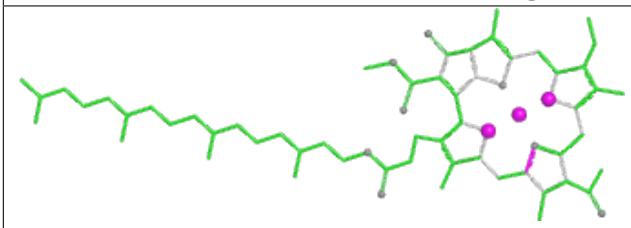
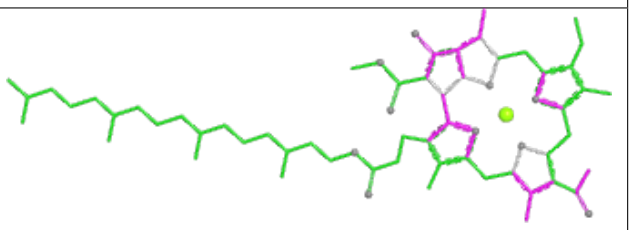
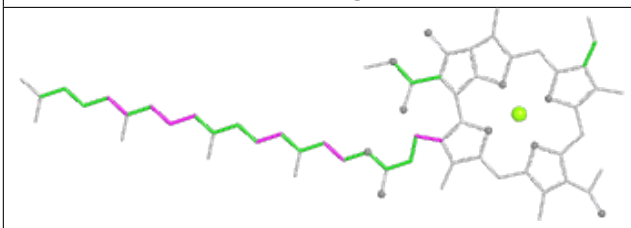
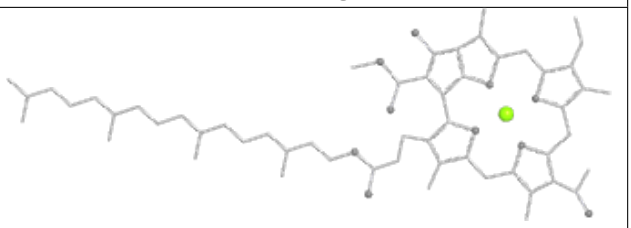
Ligand LMT AK 101

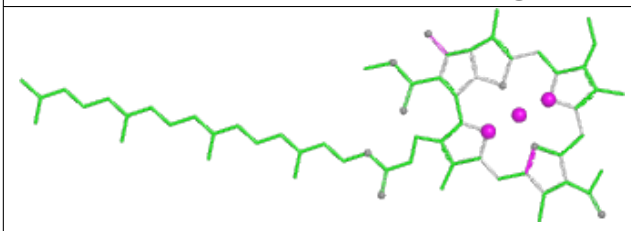
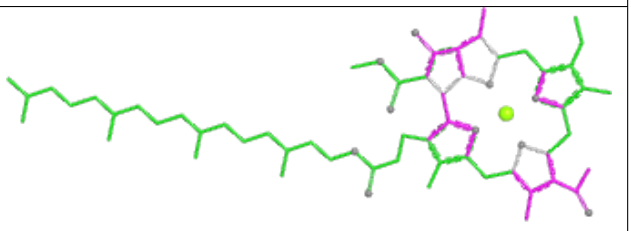
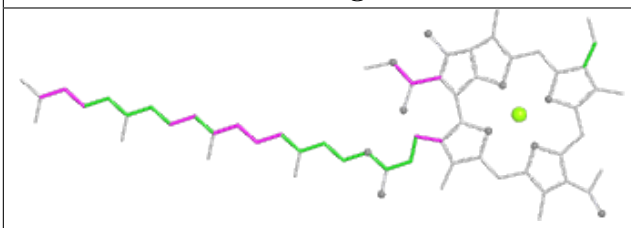
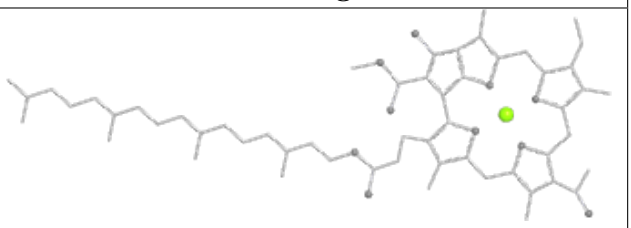


Ligand 0V9 bj 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

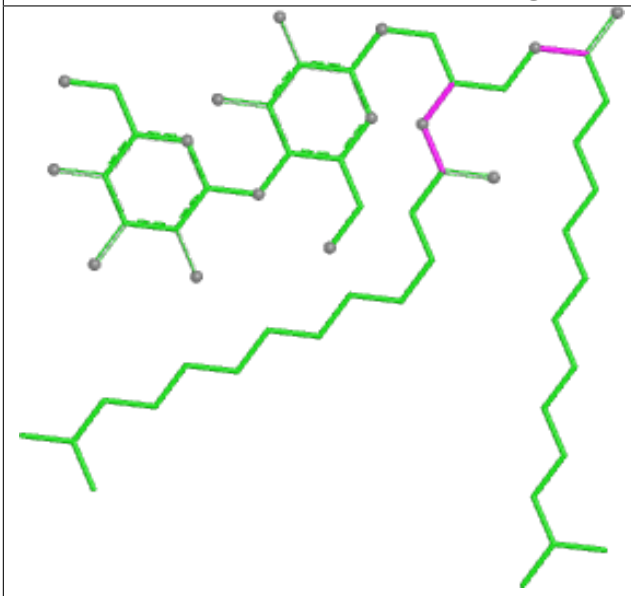
Ligand BCL BF 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL bc 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

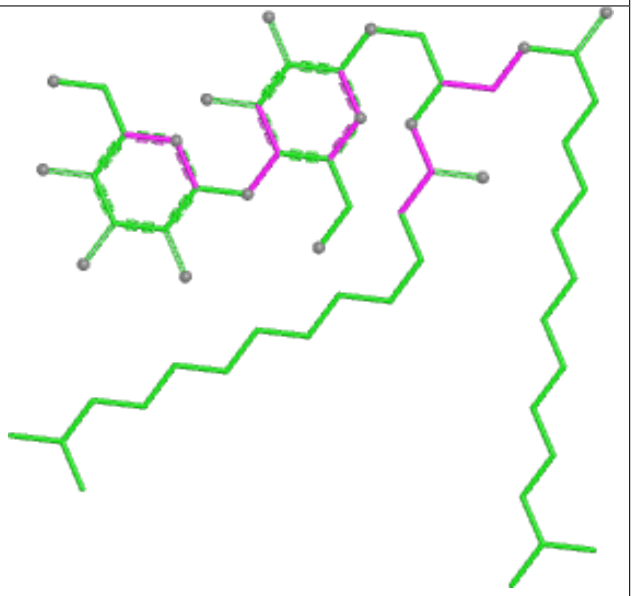
Ligand BCL bl 105	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL AK 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

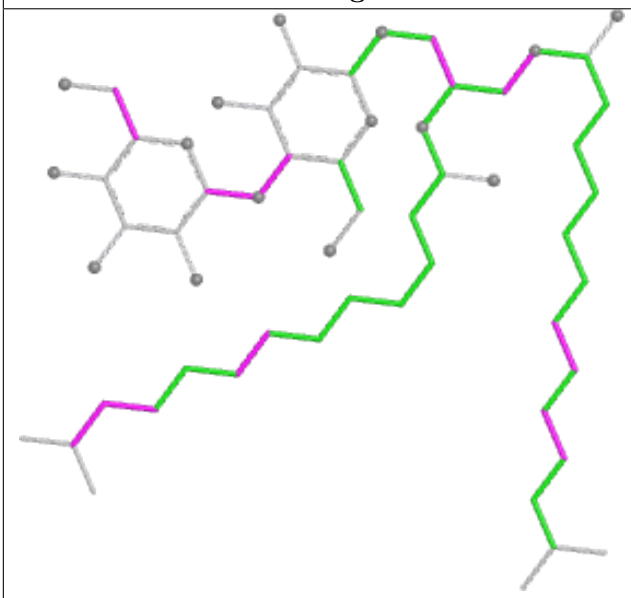
Ligand V7B af 101



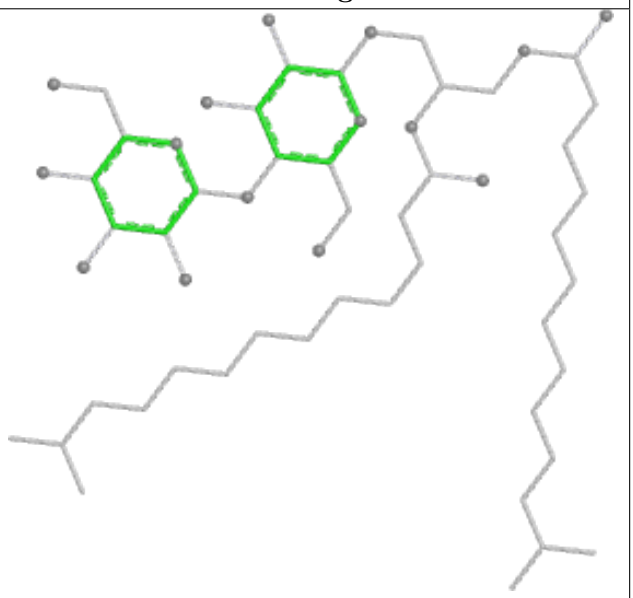
Bond lengths



Bond angles

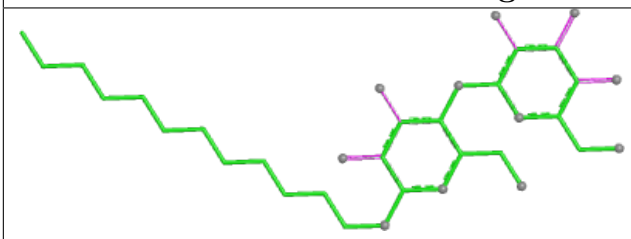


Torsions

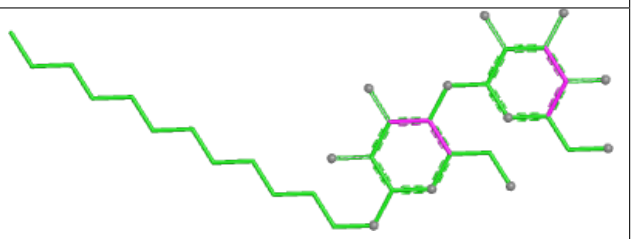


Rings

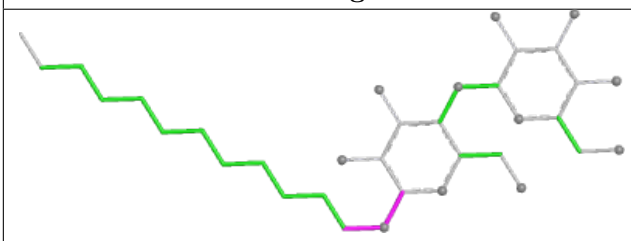
Ligand LMT BN 1005



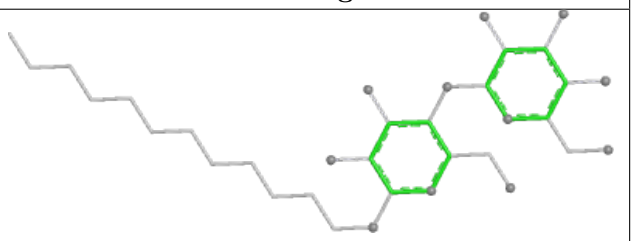
Bond lengths



Bond angles

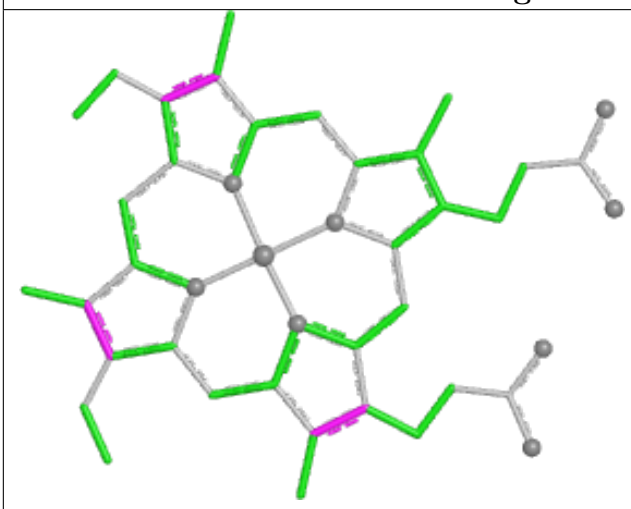


Torsions

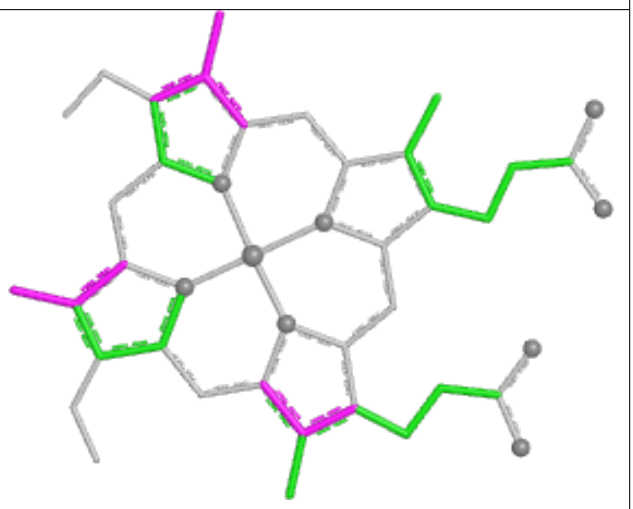


Rings

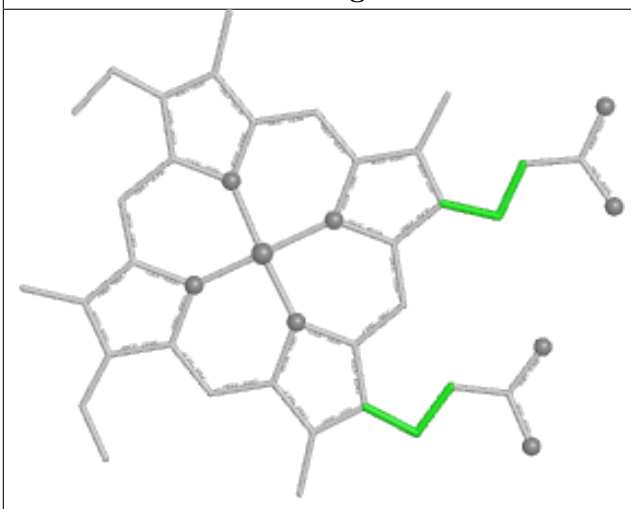
Ligand HEC C 1003



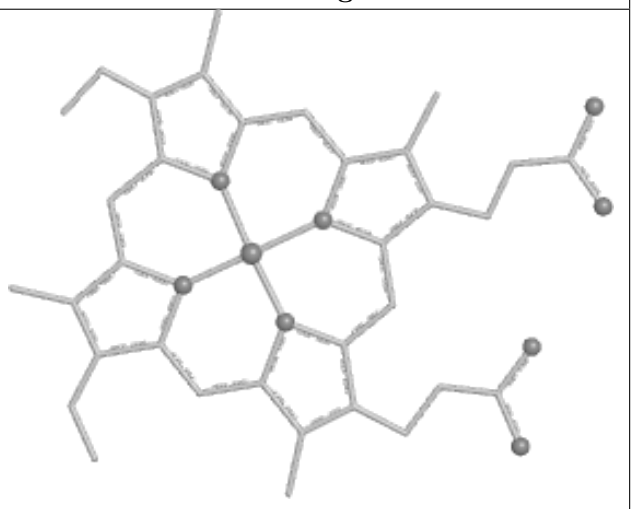
Bond lengths



Bond angles

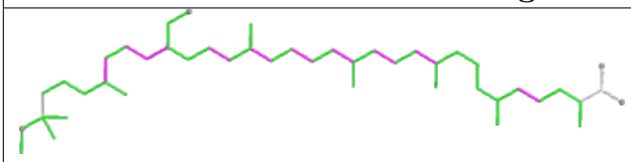


Torsions

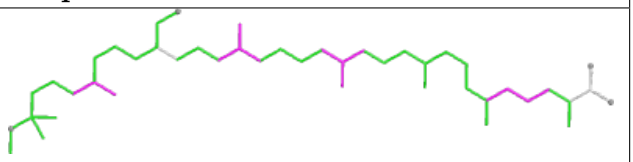


Rings

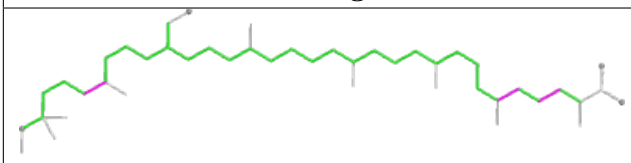
Ligand V7N bp 102



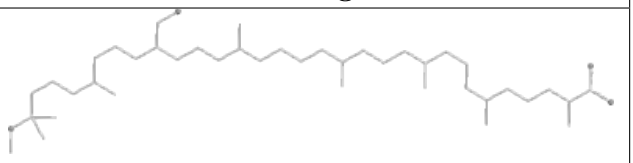
Bond lengths



Bond angles

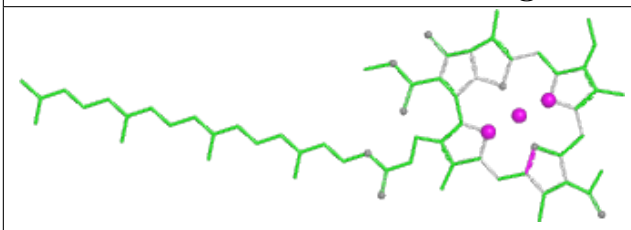


Torsions

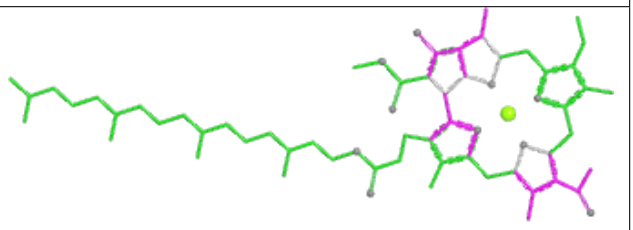


Rings

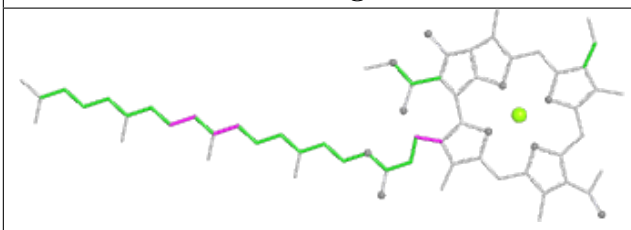
Ligand BCL bn 103



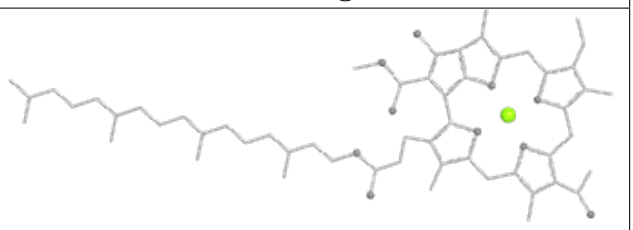
Bond lengths



Bond angles

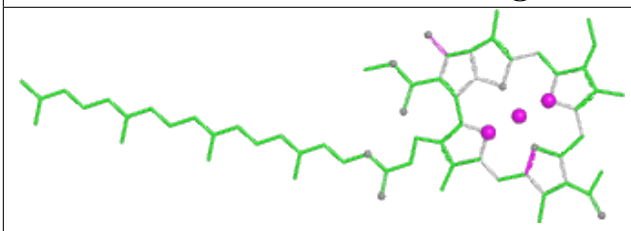


Torsions

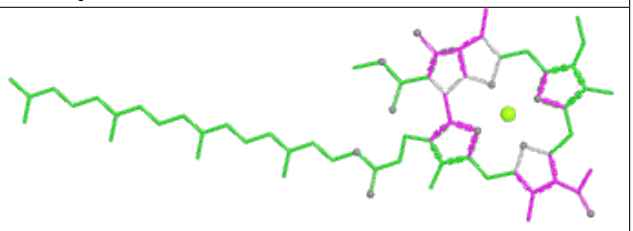


Rings

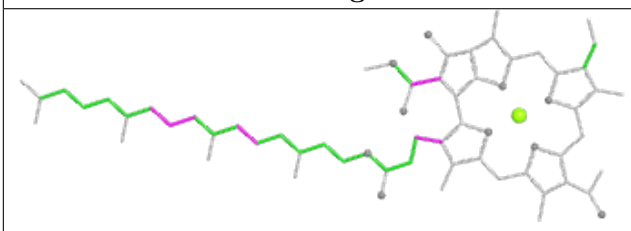
Ligand BCL AQ 102



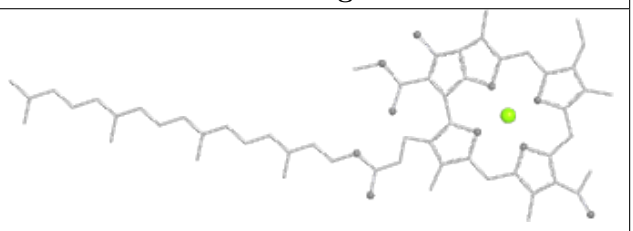
Bond lengths



Bond angles

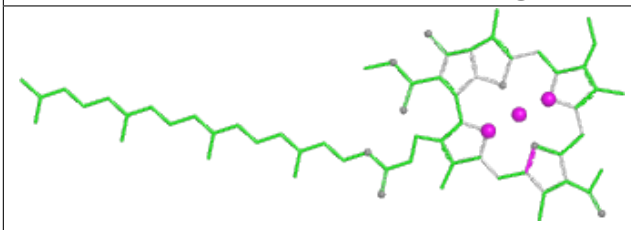


Torsions

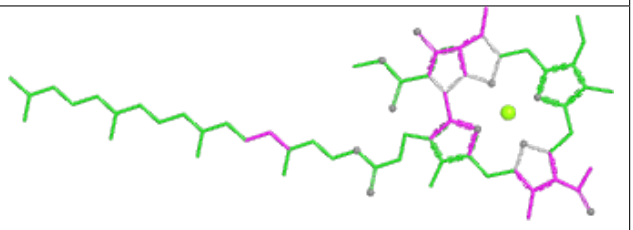


Rings

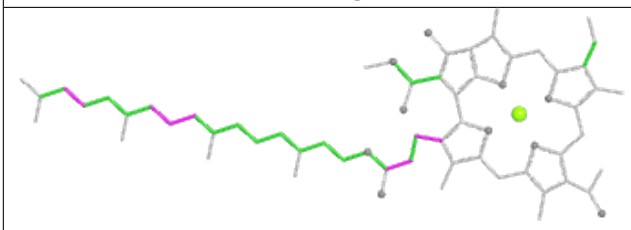
Ligand BCL AP 103



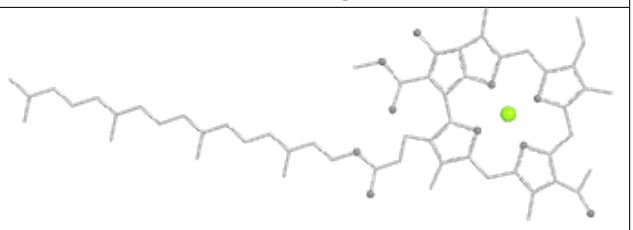
Bond lengths



Bond angles

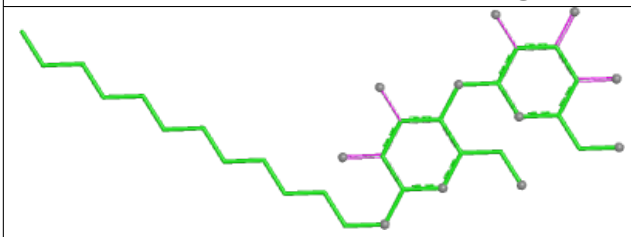


Torsions

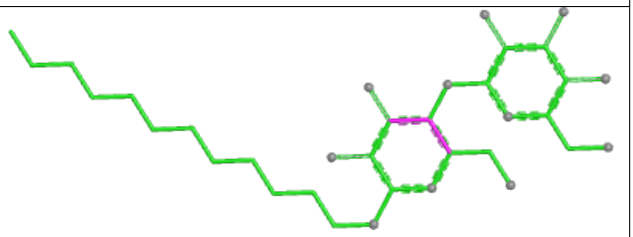


Rings

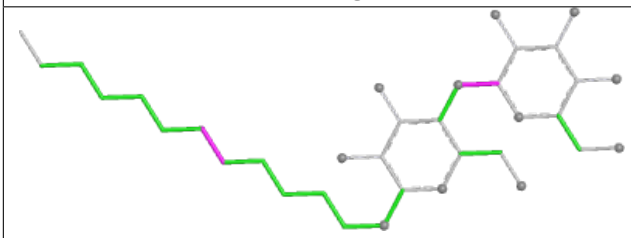
Ligand LMT BI 105



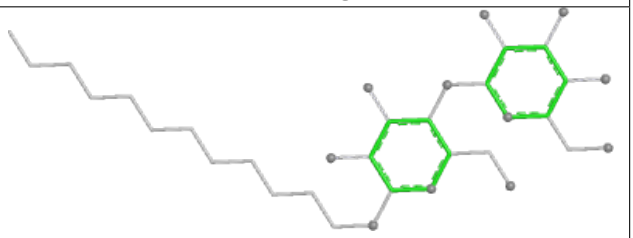
Bond lengths



Bond angles

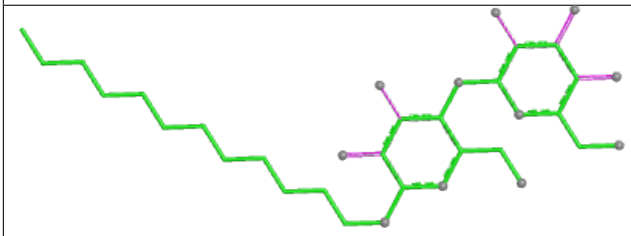


Torsions

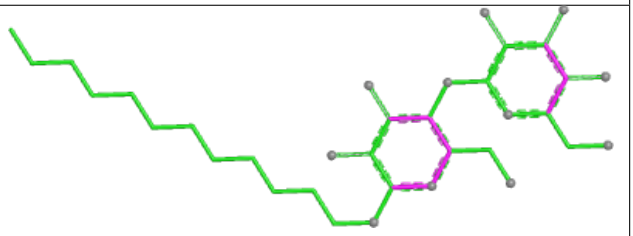


Rings

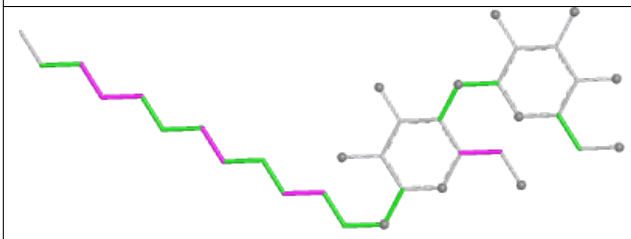
Ligand LMT AG 101



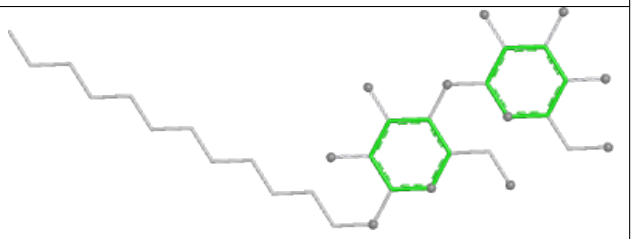
Bond lengths



Bond angles

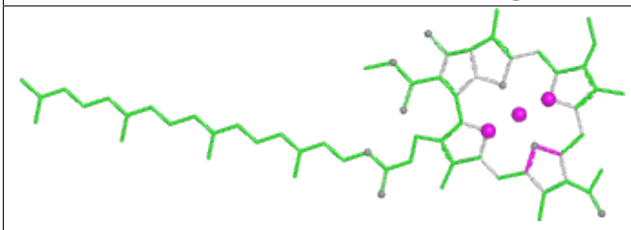


Torsions

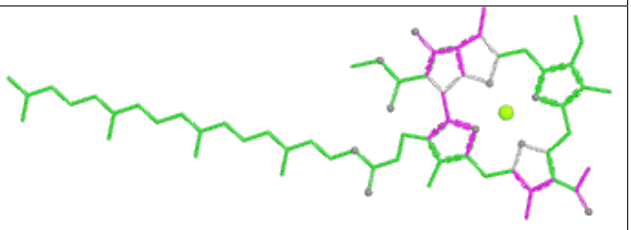


Rings

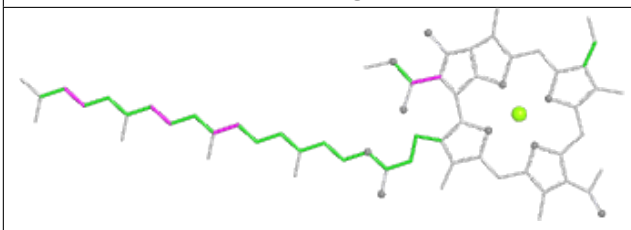
Ligand BCL AM 102



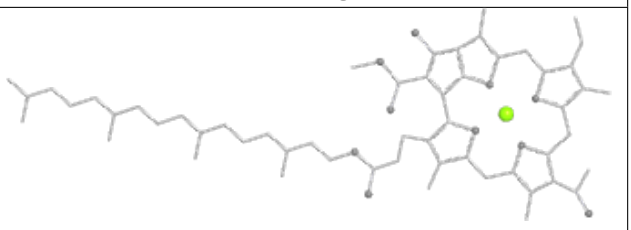
Bond lengths



Bond angles

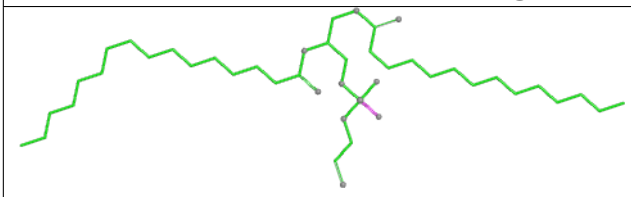


Torsions

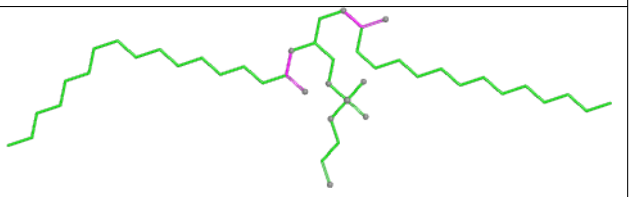


Rings

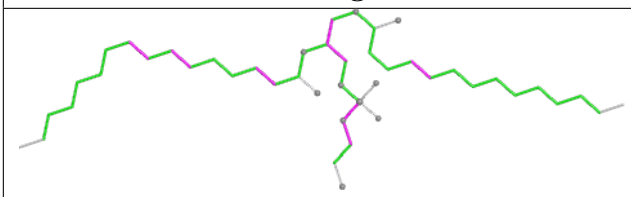
Ligand 0V9 H1 1002



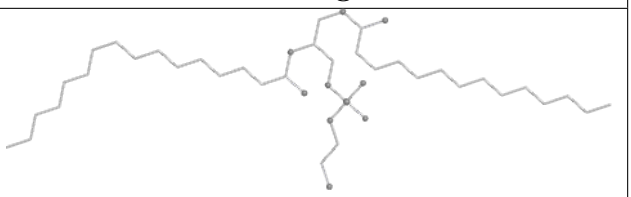
Bond lengths



Bond angles

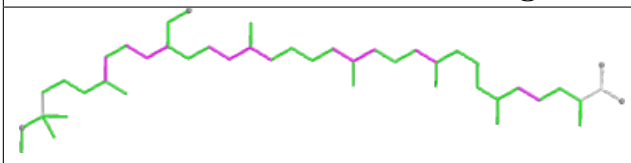


Torsions

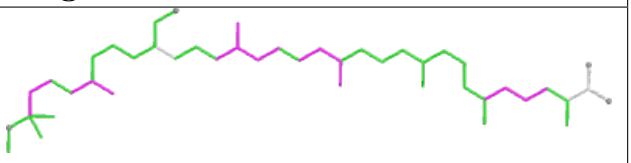


Rings

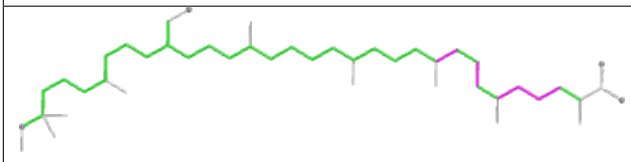
Ligand V7N bg 101



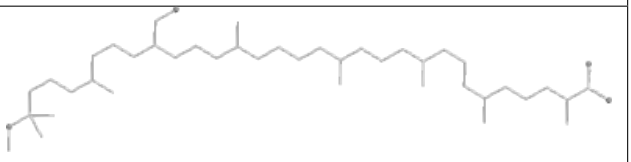
Bond lengths



Bond angles

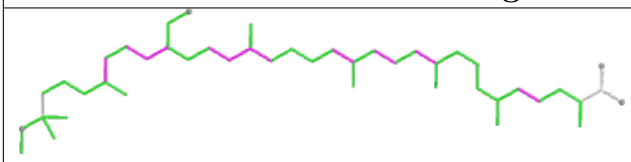


Torsions

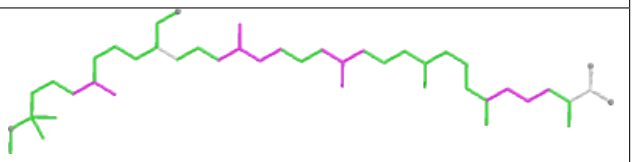


Rings

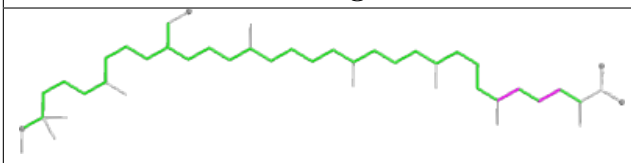
Ligand V7N BK 1001



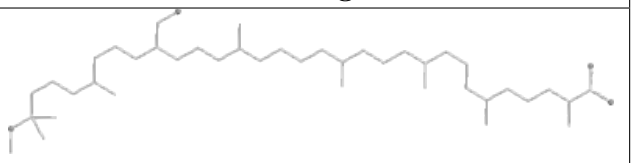
Bond lengths



Bond angles

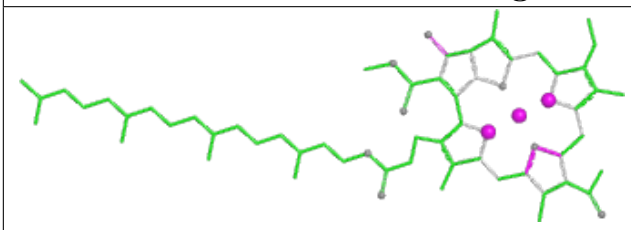


Torsions

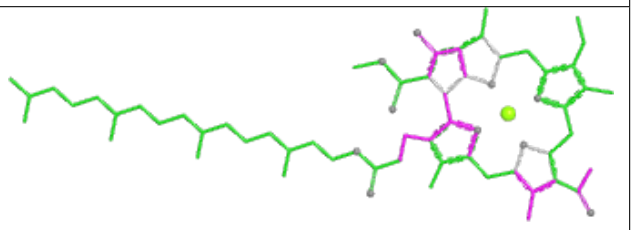


Rings

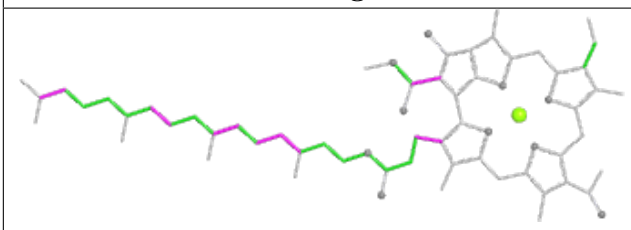
Ligand BCL AO 101



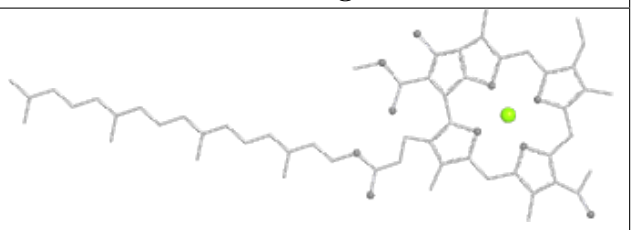
Bond lengths



Bond angles

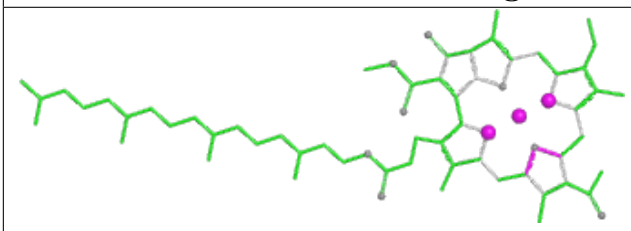


Torsions

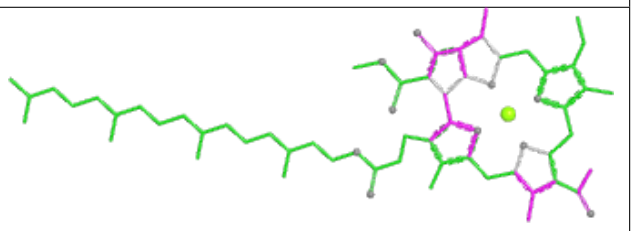


Rings

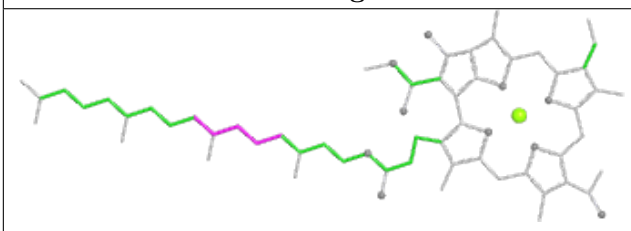
Ligand BCL AC 1001



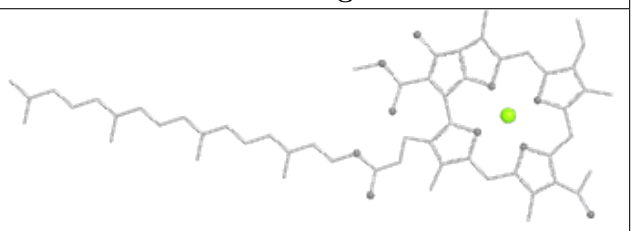
Bond lengths



Bond angles

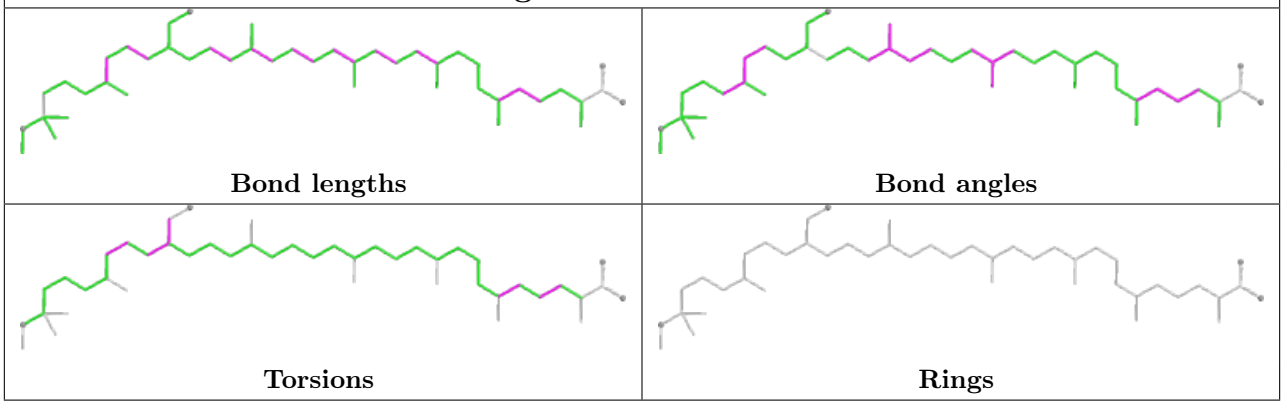


Torsions

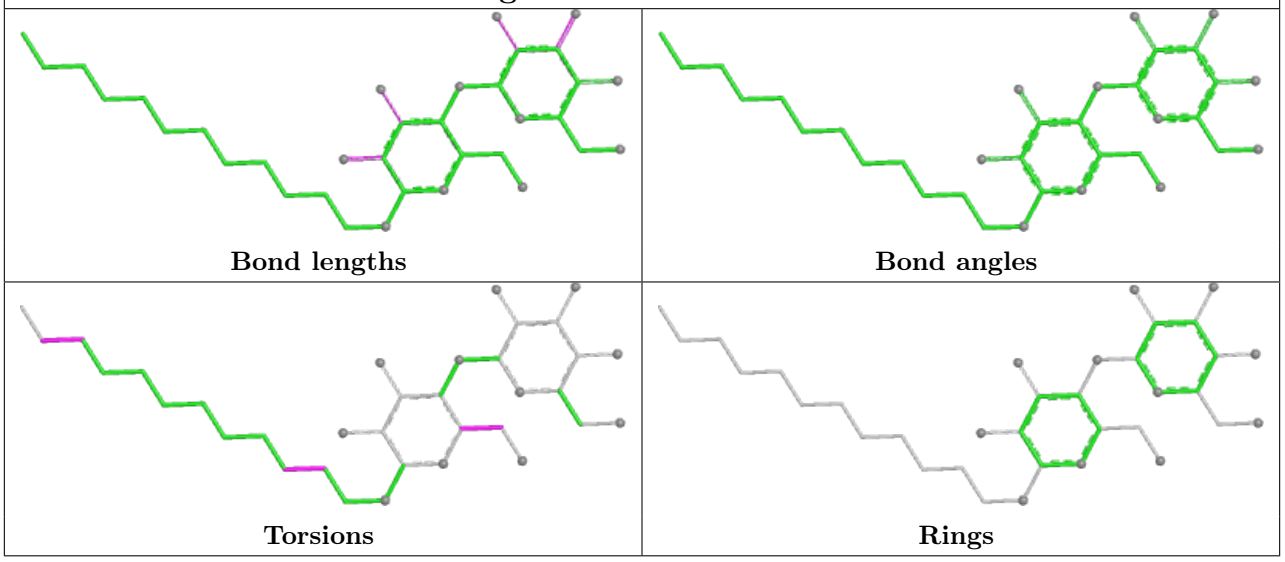


Rings

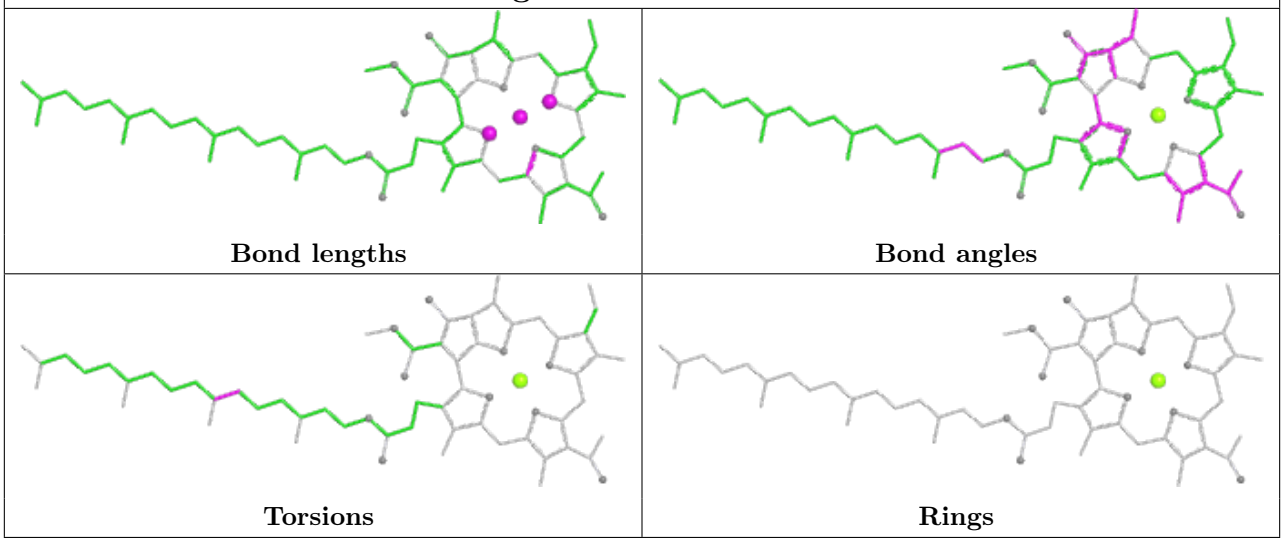
Ligand V7N AT 103



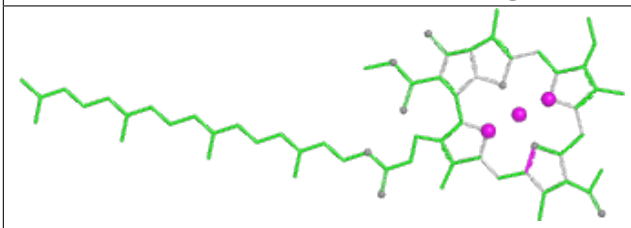
Ligand LMT BG 1002



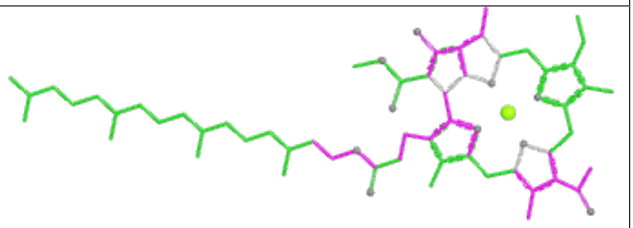
Ligand BCL AB 101



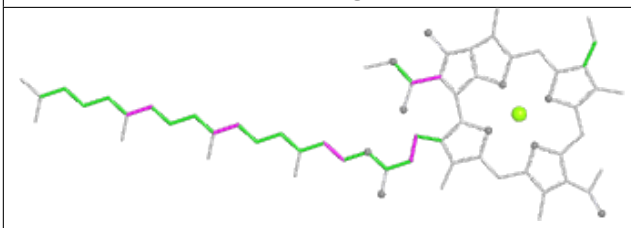
Ligand BCL BP 1004



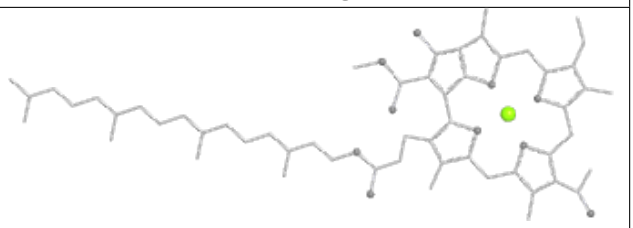
Bond lengths



Bond angles

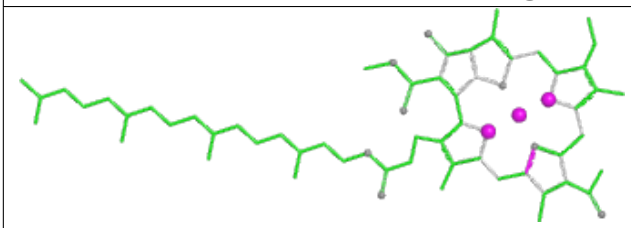


Torsions

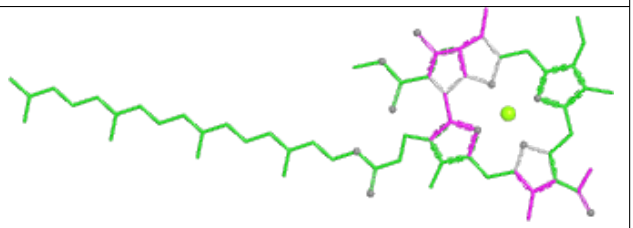


Rings

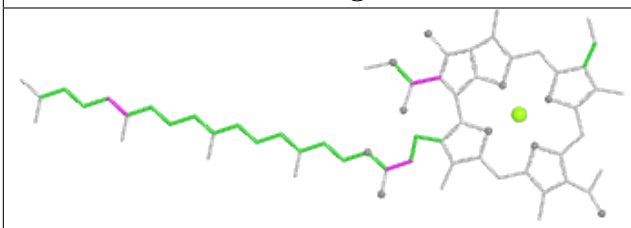
Ligand BCL M 405



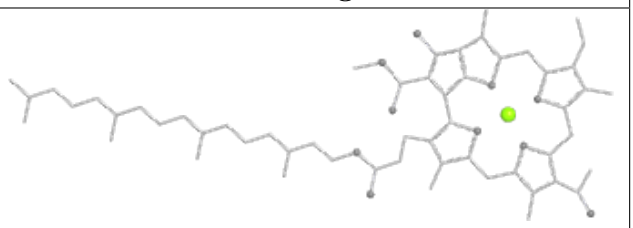
Bond lengths



Bond angles

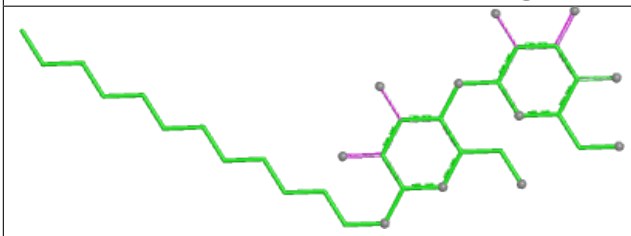


Torsions

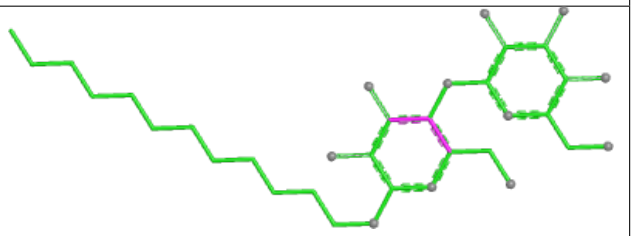


Rings

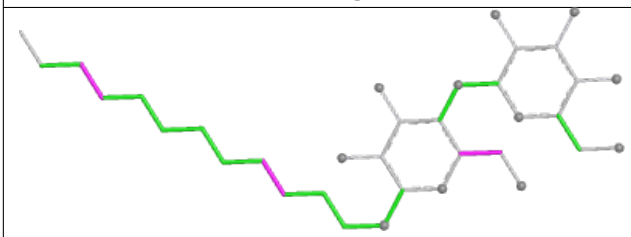
Ligand LMT ac 101



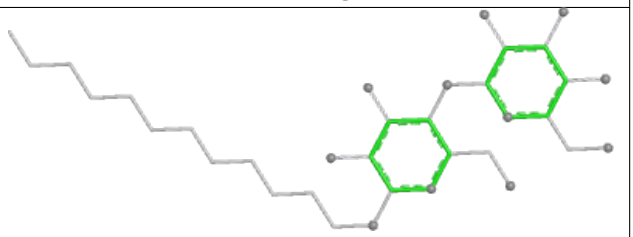
Bond lengths



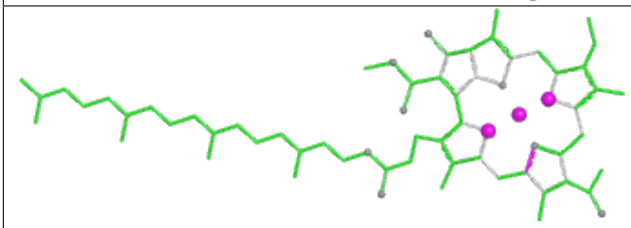
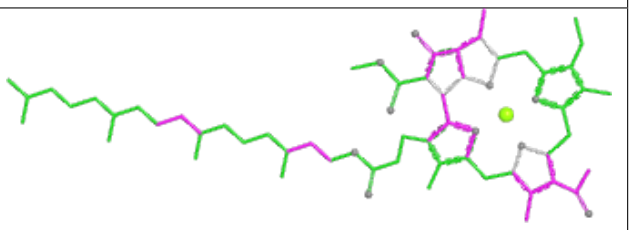
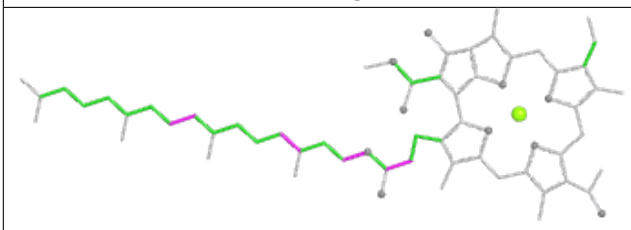
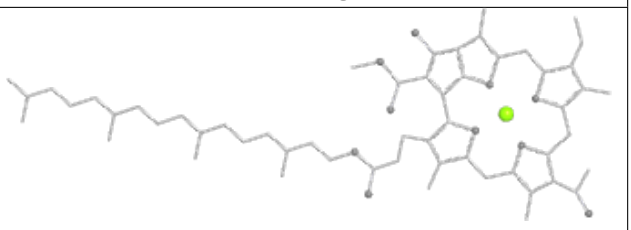
Bond angles

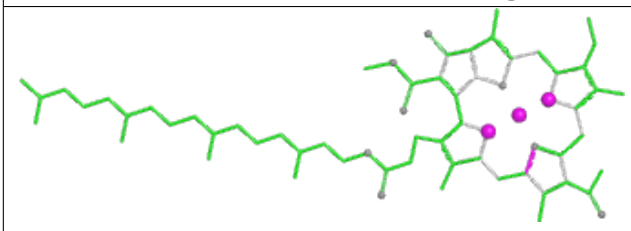
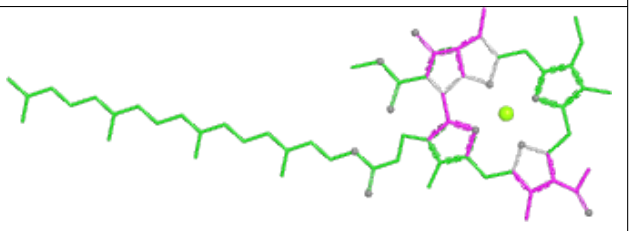
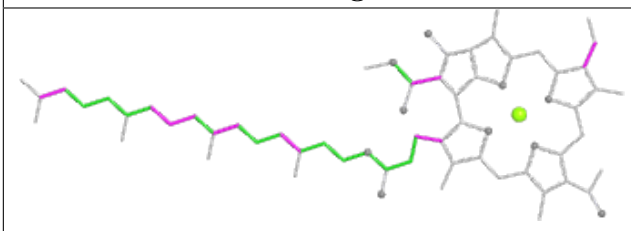
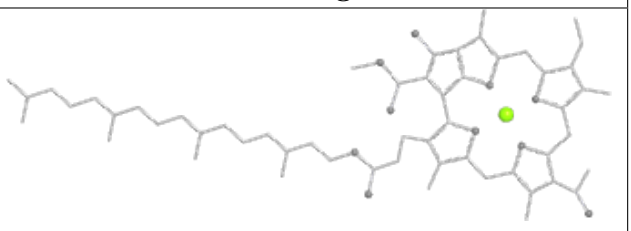


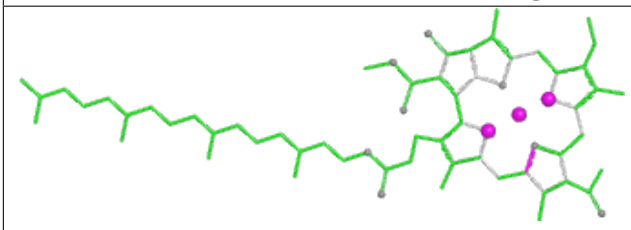
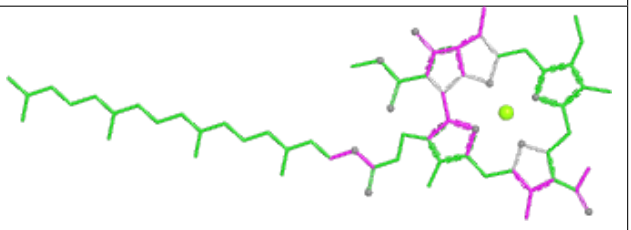
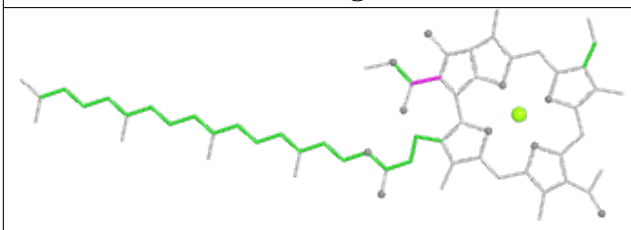
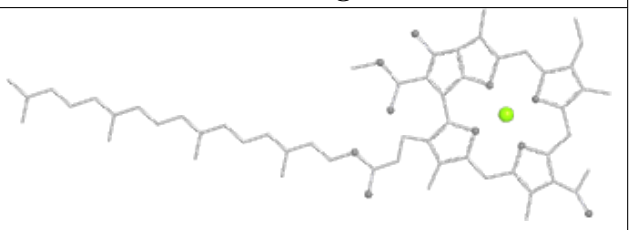
Torsions



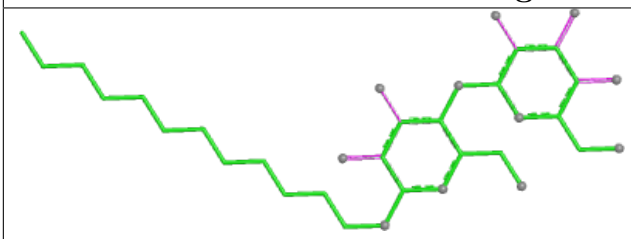
Rings

Ligand BCL ai 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

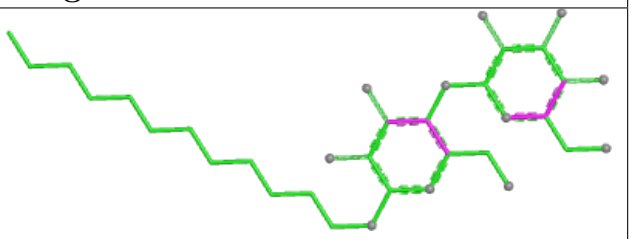
Ligand BCL BU 1004	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL L 308	
 Bond lengths	 Bond angles
 Torsions	 Rings

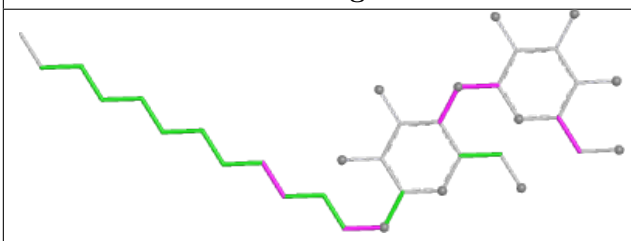
Ligand LMT bg 103



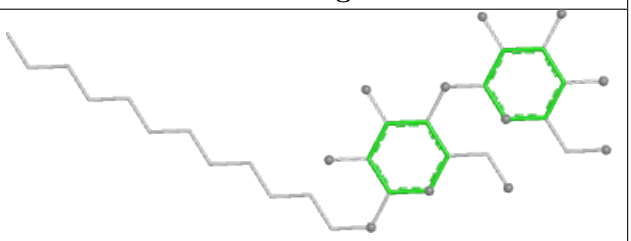
Bond lengths



Bond angles

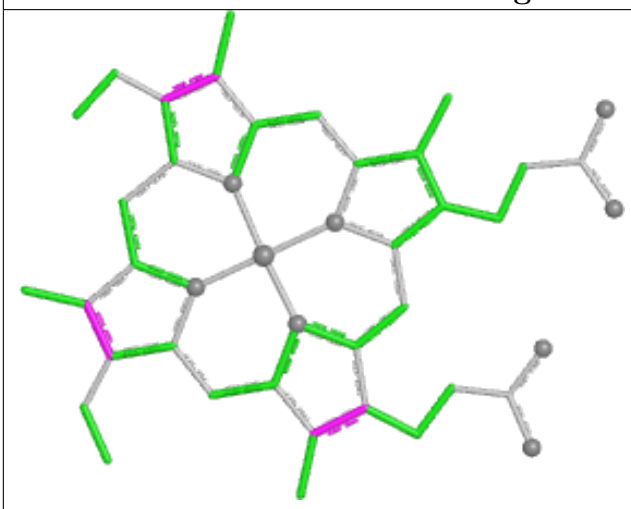


Torsions

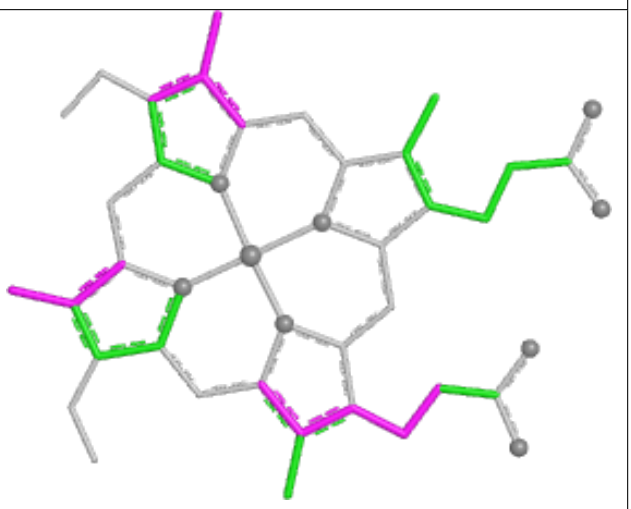


Rings

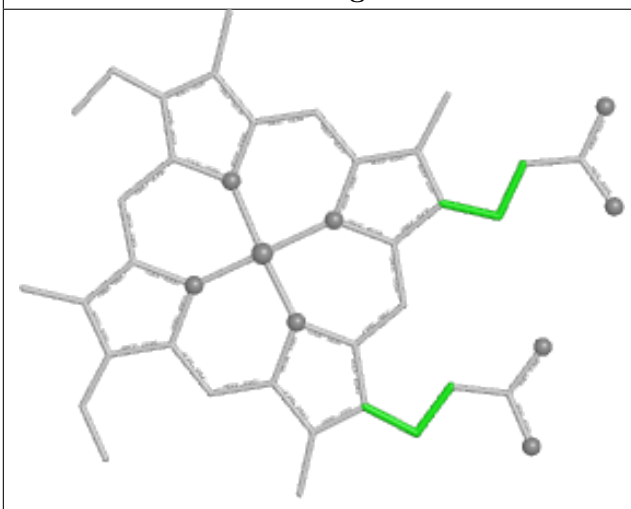
Ligand HEC C 1001



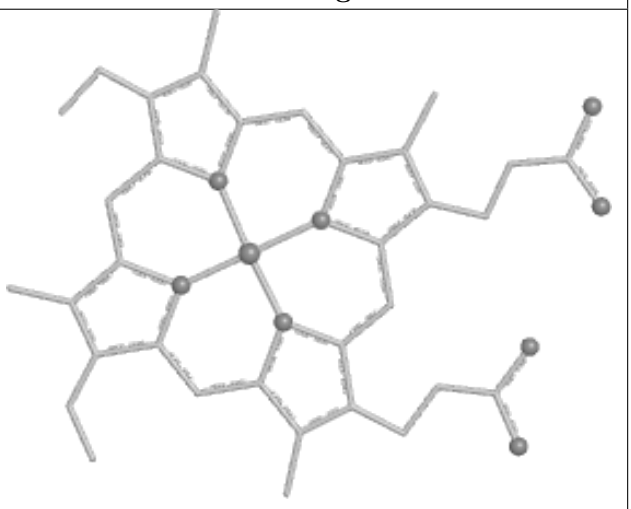
Bond lengths



Bond angles

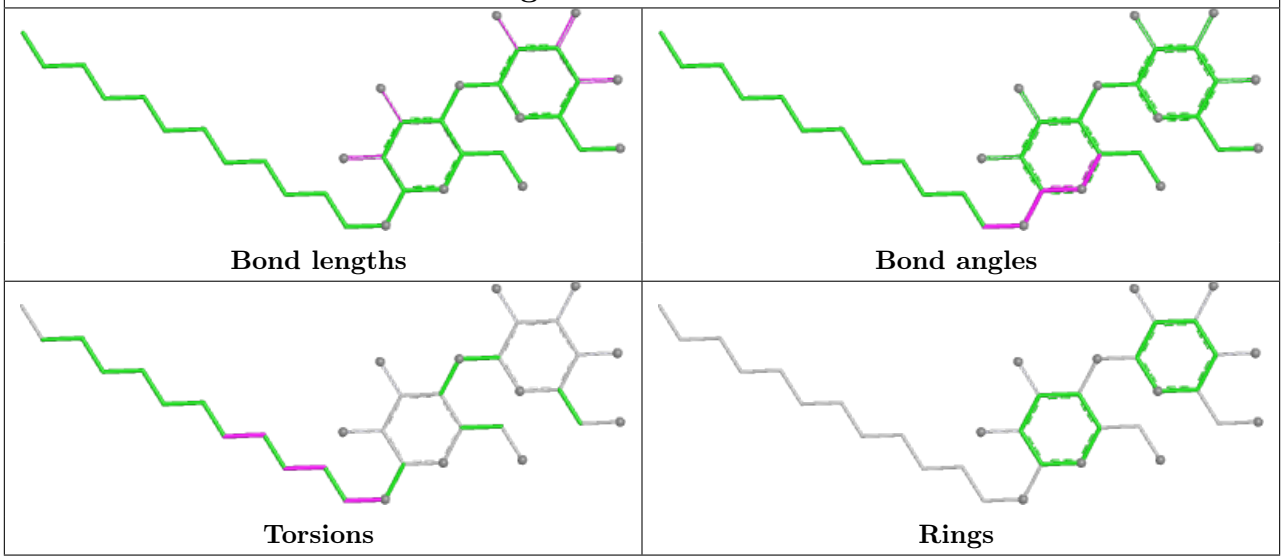


Torsions

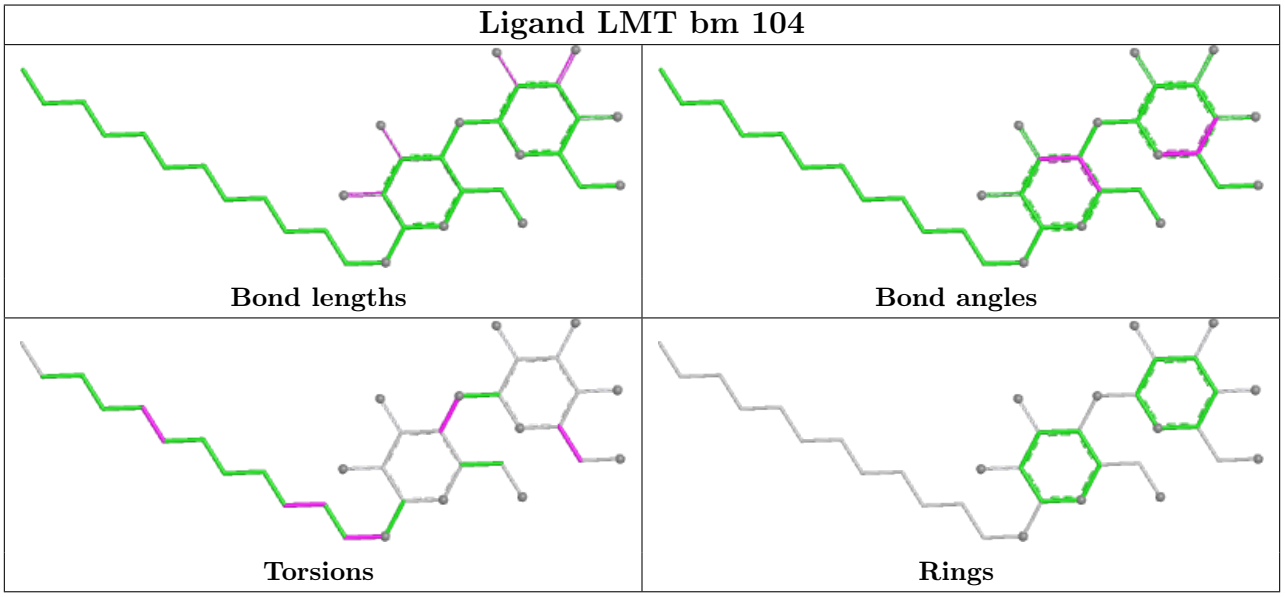


Rings

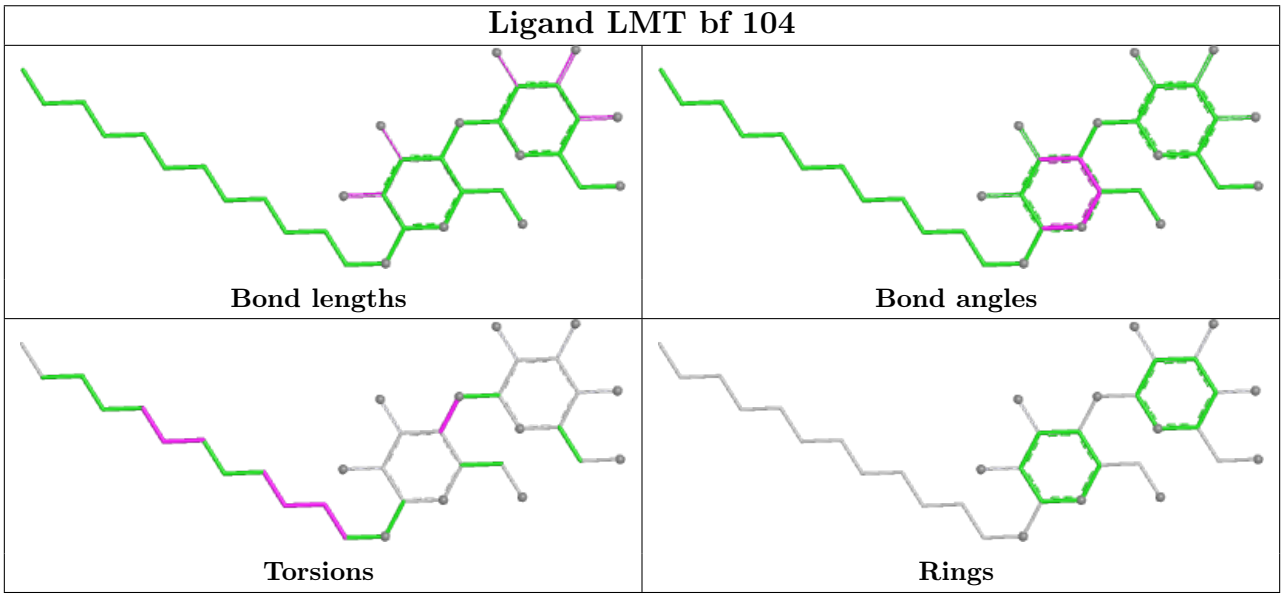
Ligand LMT bl 104



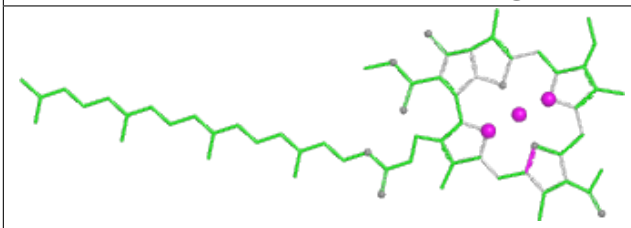
Ligand LMT bm 104



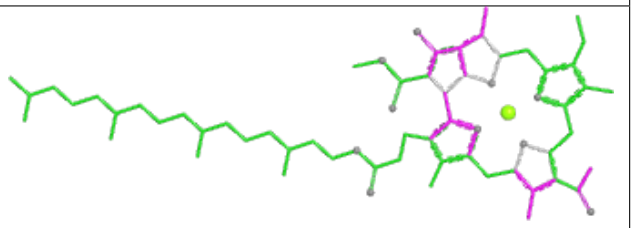
Ligand LMT bf 104



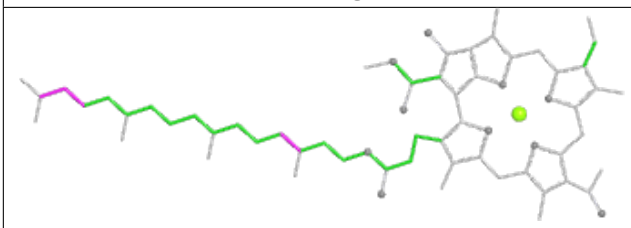
Ligand BCL AW 103



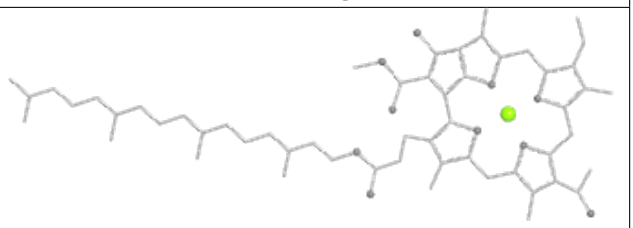
Bond lengths



Bond angles

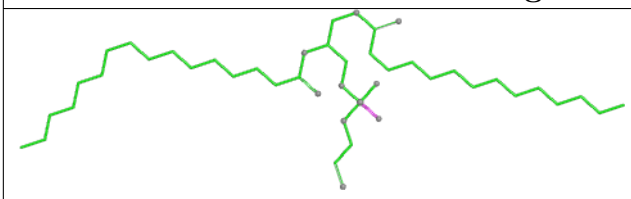


Torsions

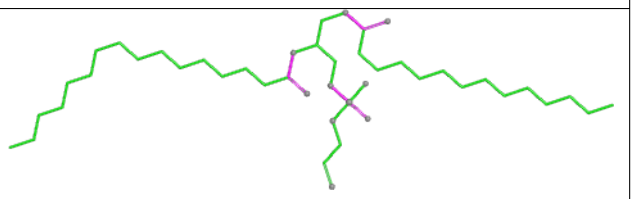


Rings

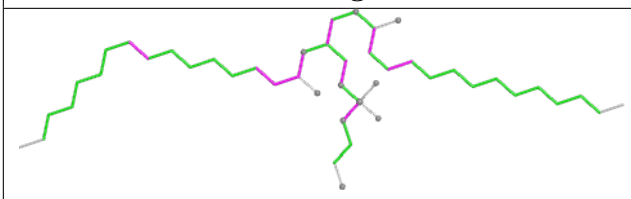
Ligand 0V9 bc 102



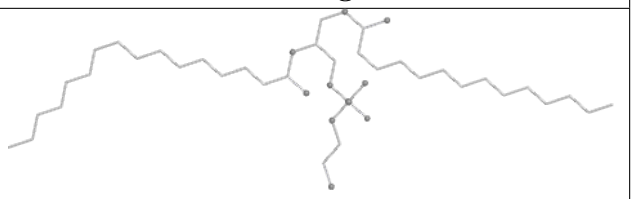
Bond lengths



Bond angles

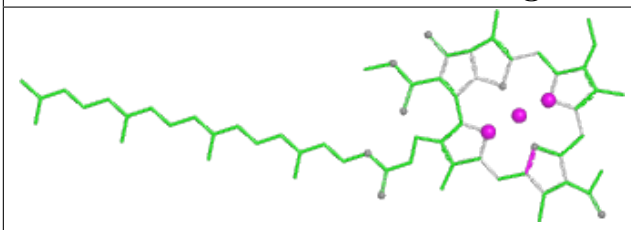


Torsions

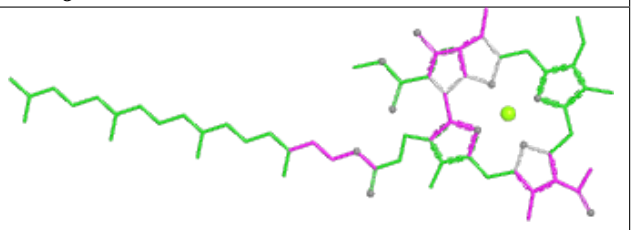


Rings

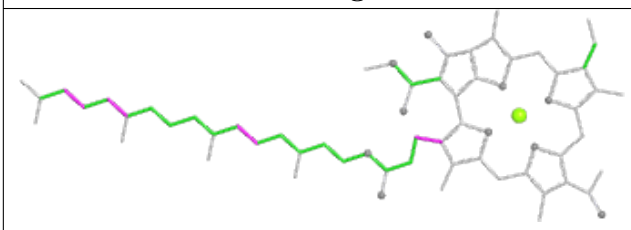
Ligand BCL aj 102



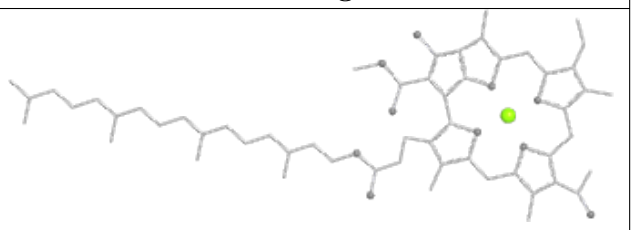
Bond lengths



Bond angles

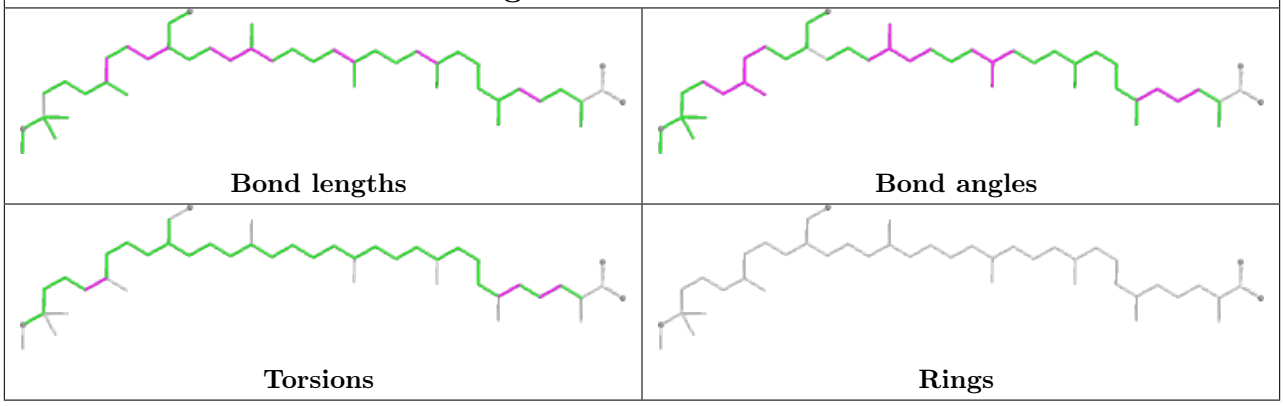


Torsions

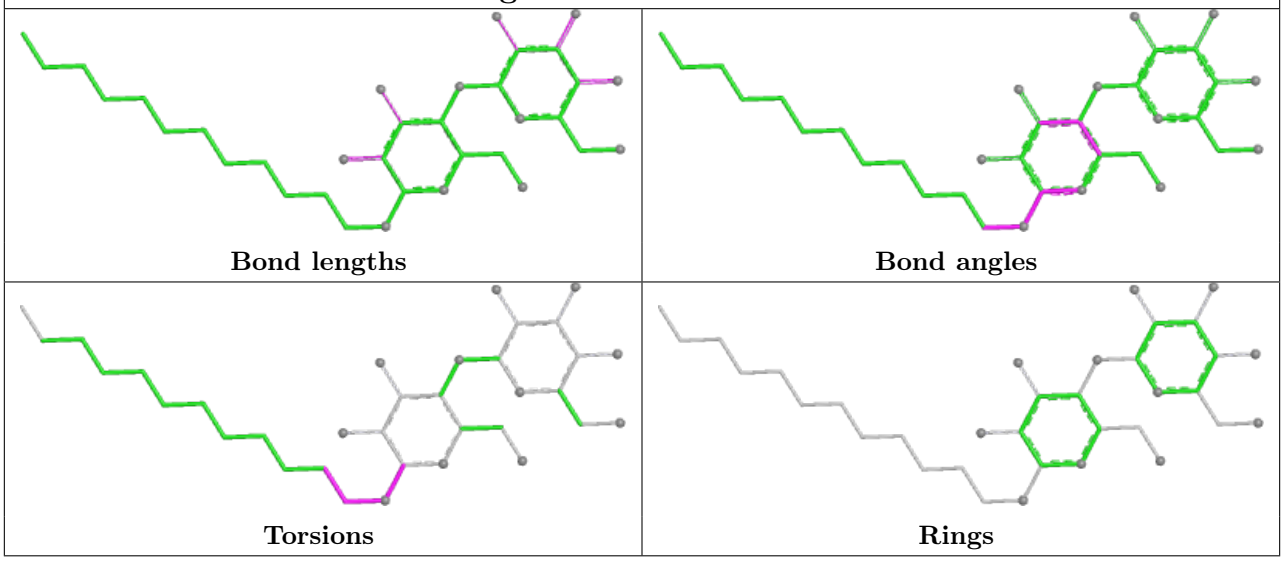


Rings

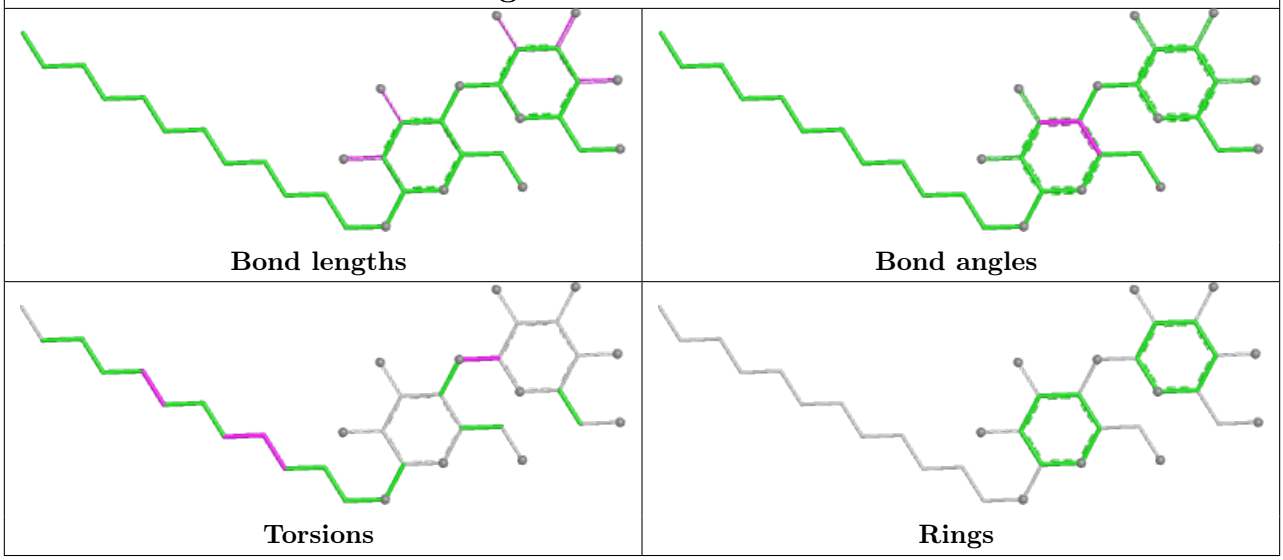
Ligand V7N BR 1001



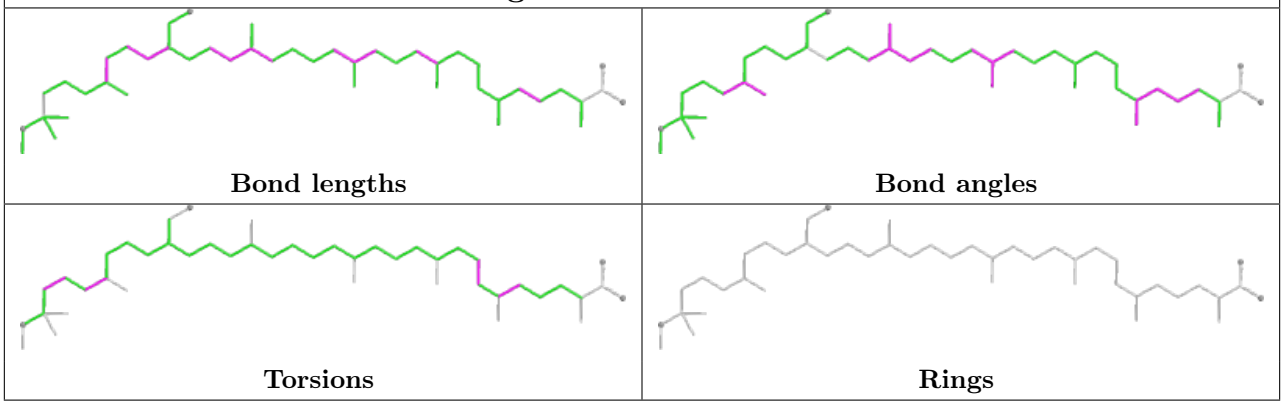
Ligand LMT BU 1003



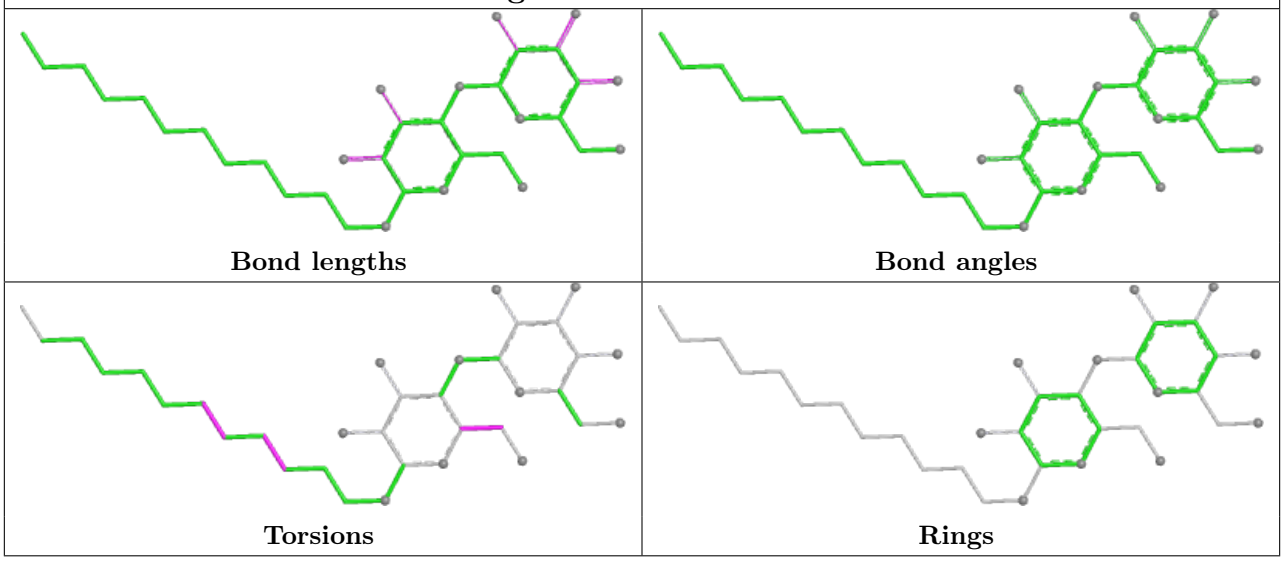
Ligand LMT BH 1004



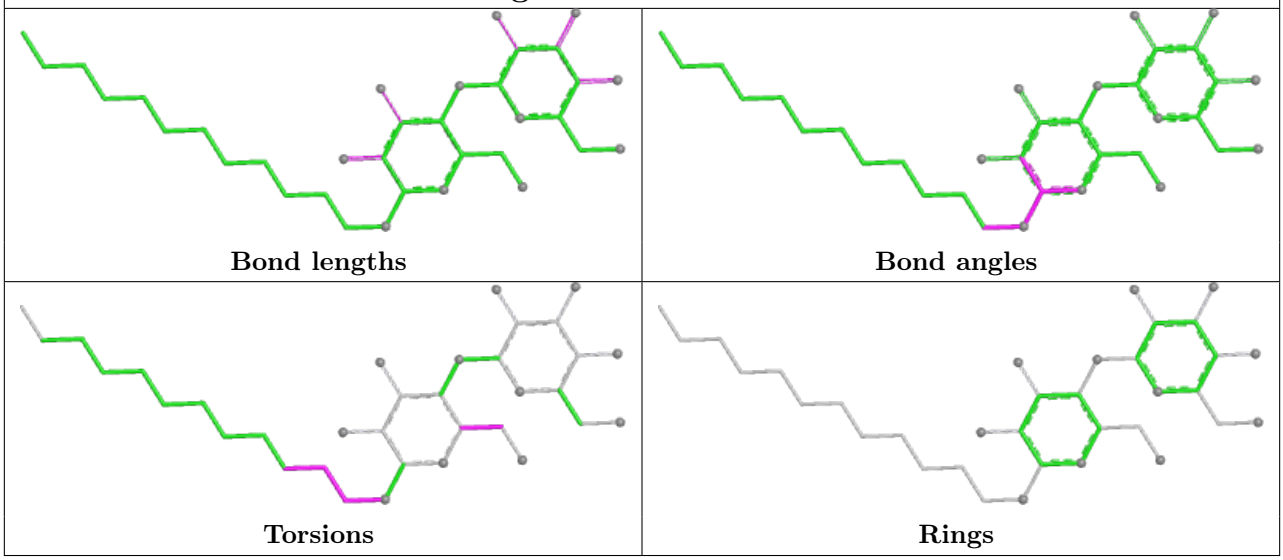
Ligand V7N BS 1001

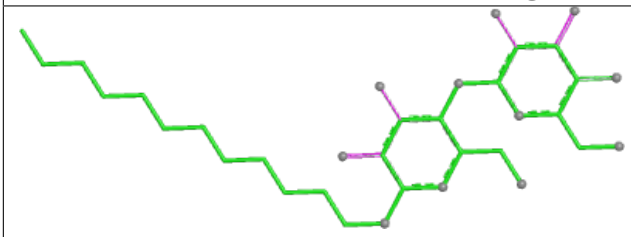
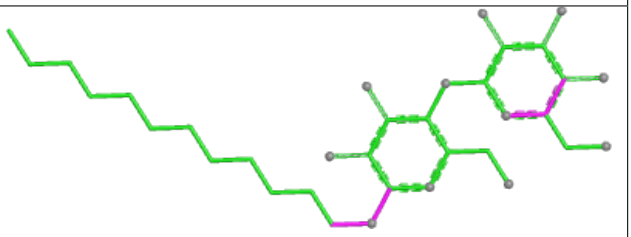
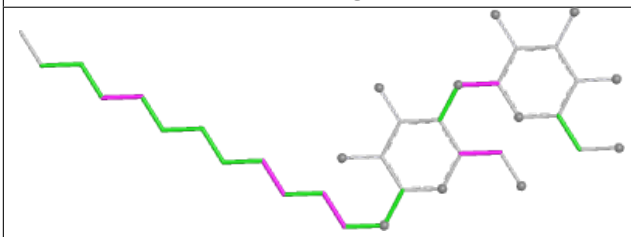
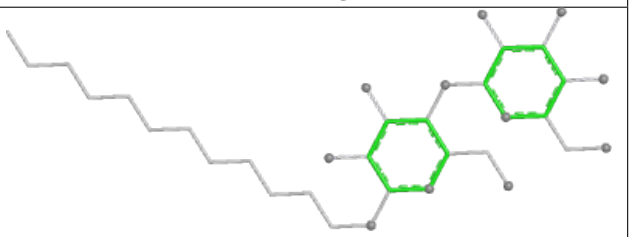


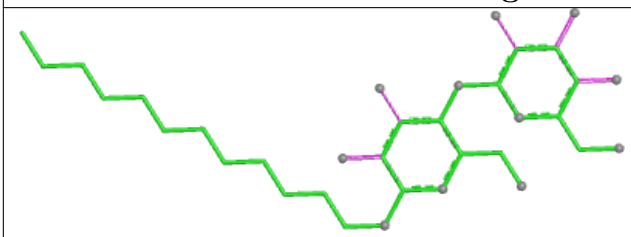
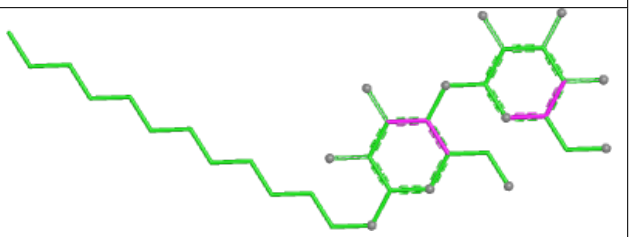
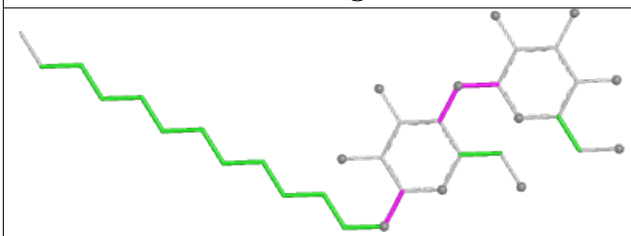
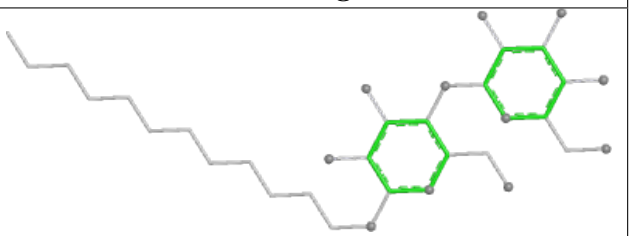
Ligand LMT AH 103

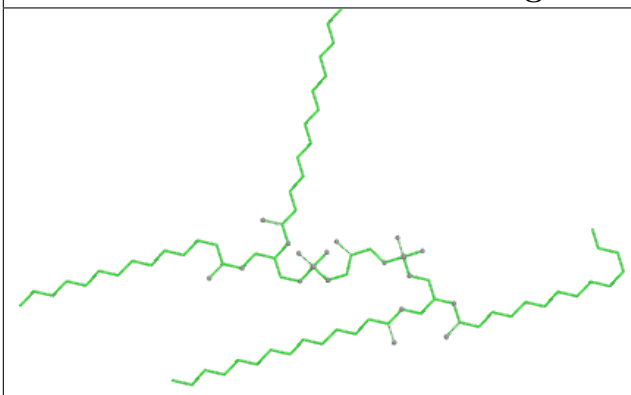
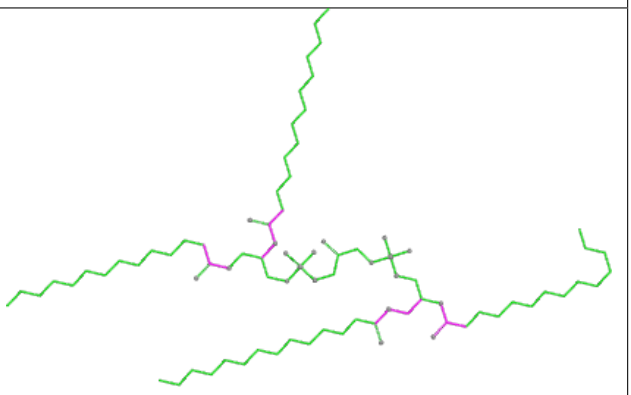
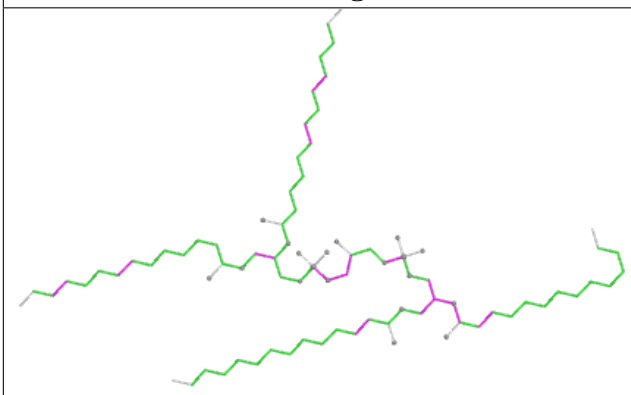
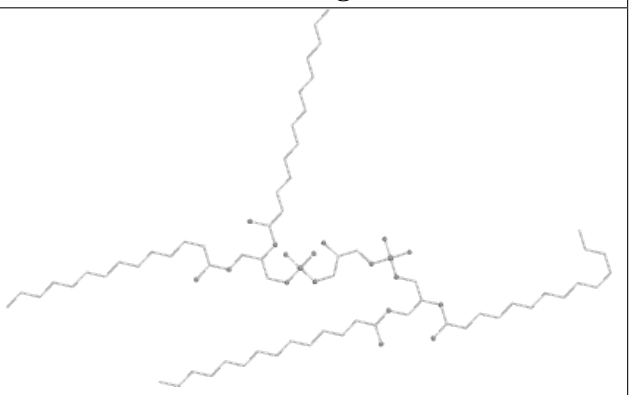


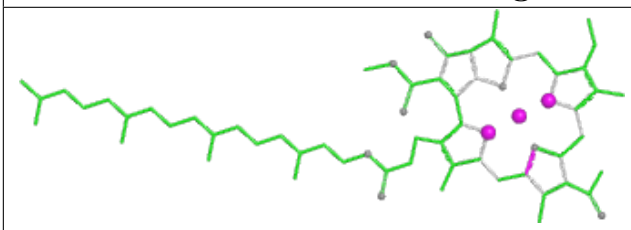
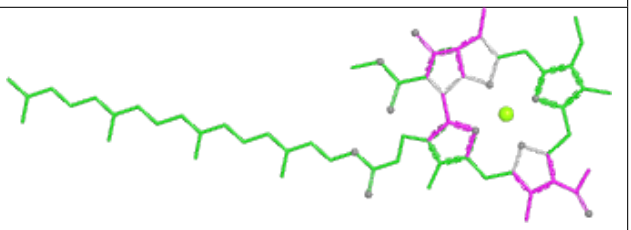
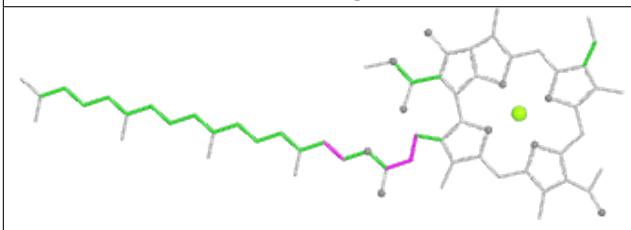
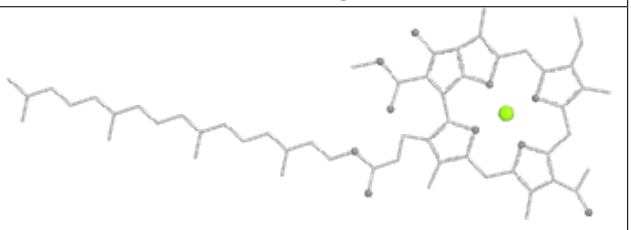
Ligand LMT BF 102



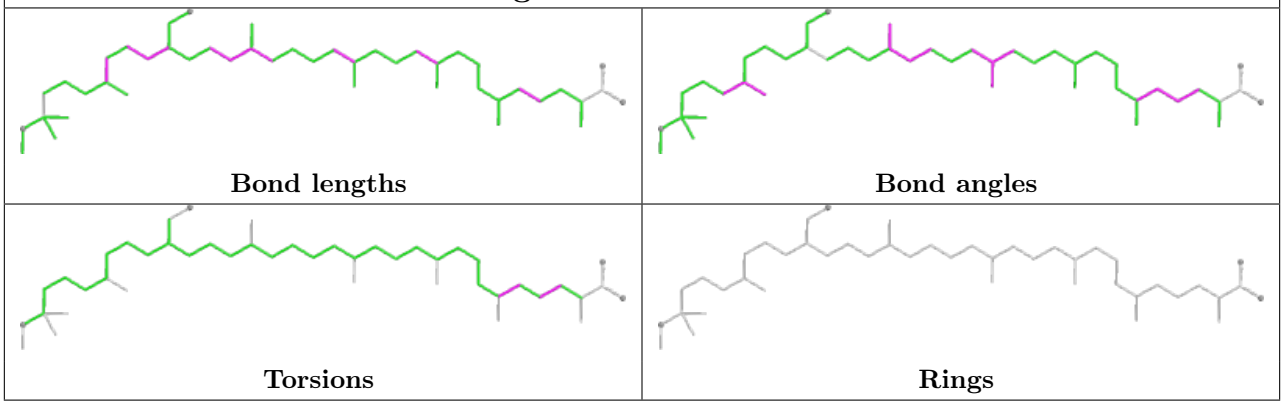
Ligand LMT L 307	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT BL 1005	
 Bond lengths	 Bond angles
 Torsions	 Rings

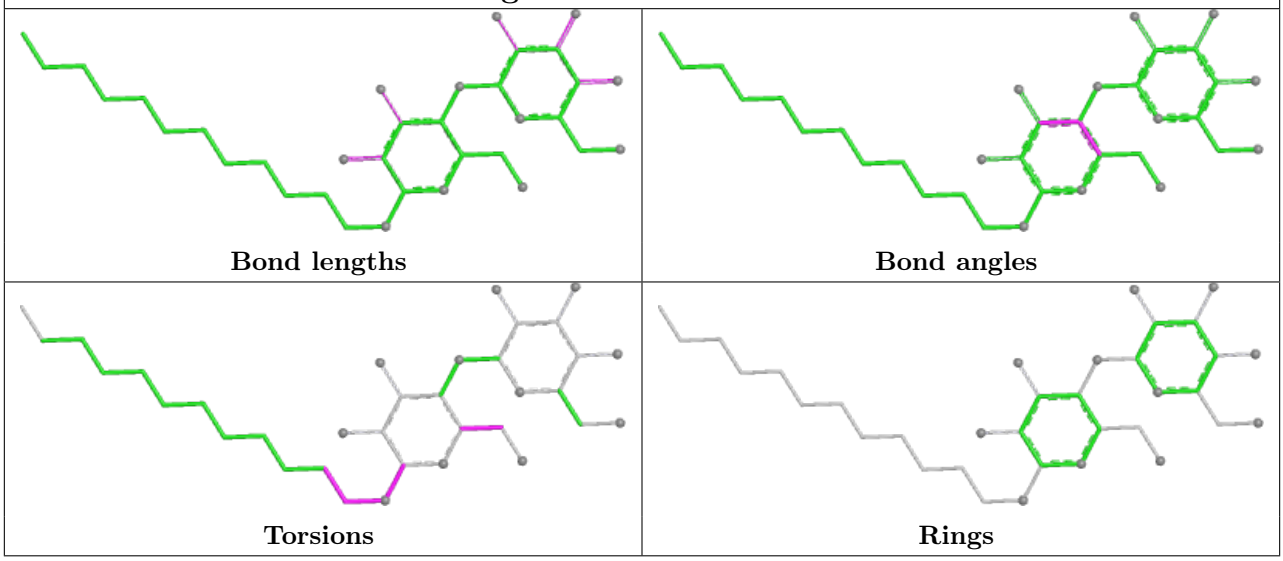
Ligand CD4 ai 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL BC 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

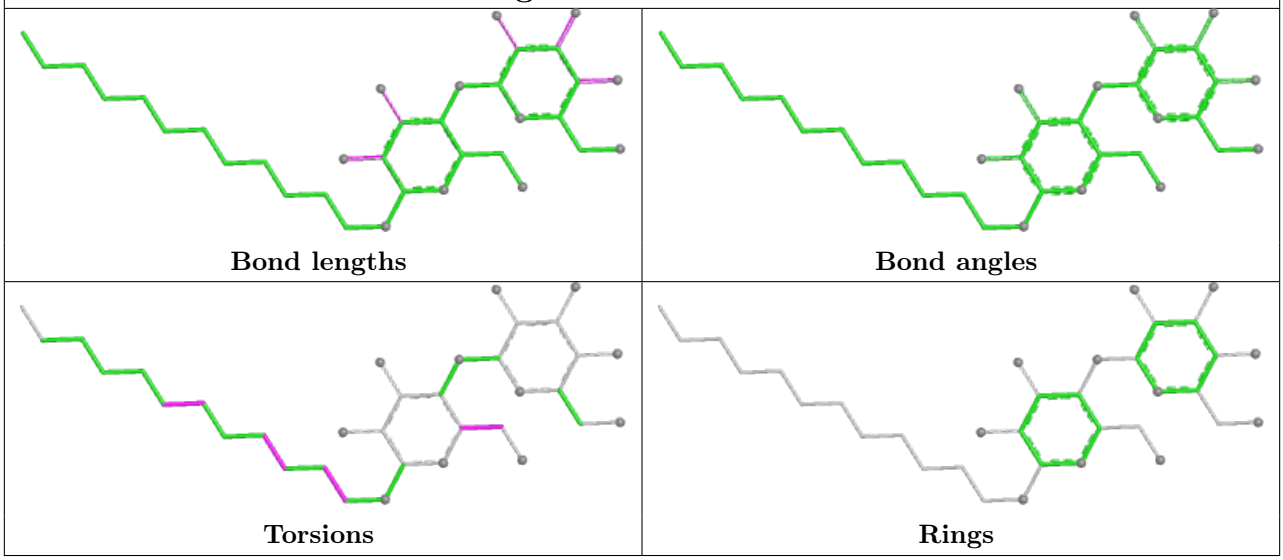
Ligand V7N BC 101



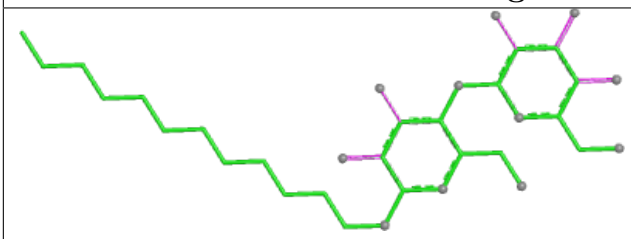
Ligand LMT BP 1003



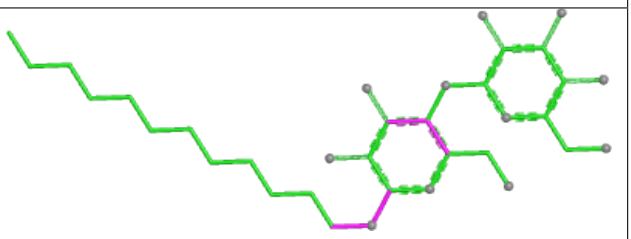
Ligand LMT BI 102



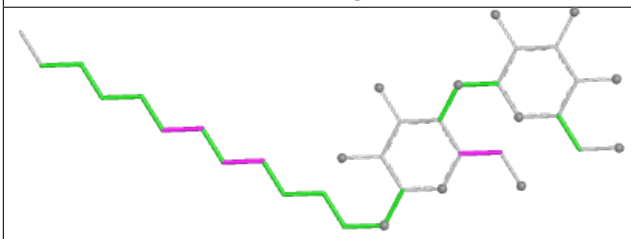
Ligand LMT BD 102



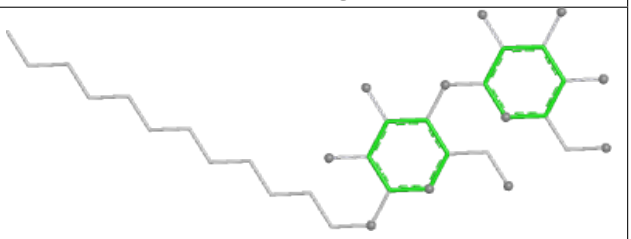
Bond lengths



Bond angles

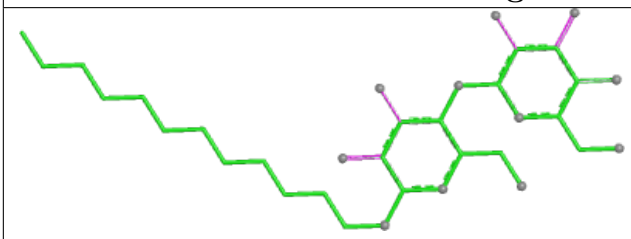


Torsions

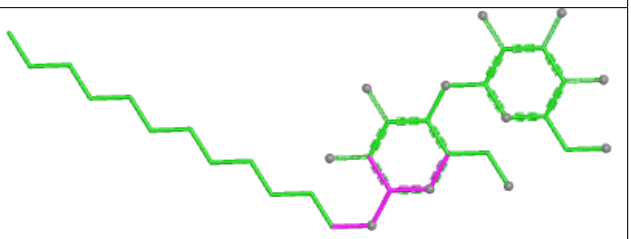


Rings

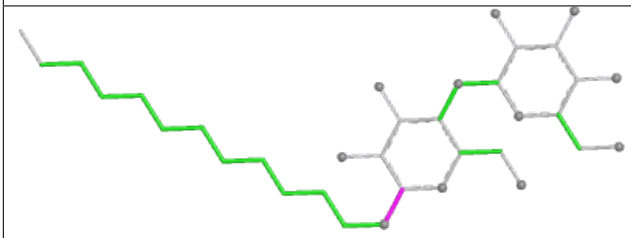
Ligand LMT AN 101



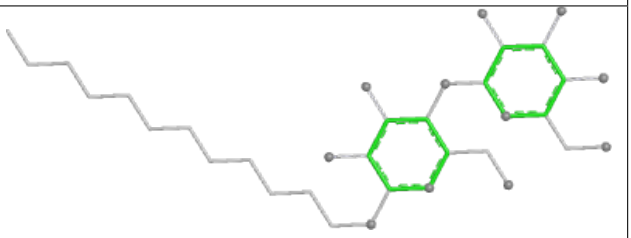
Bond lengths



Bond angles

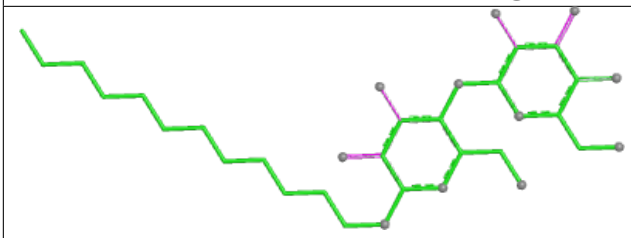


Torsions

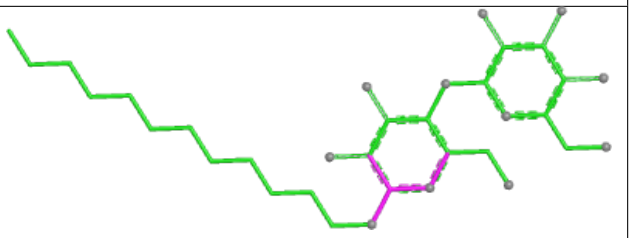


Rings

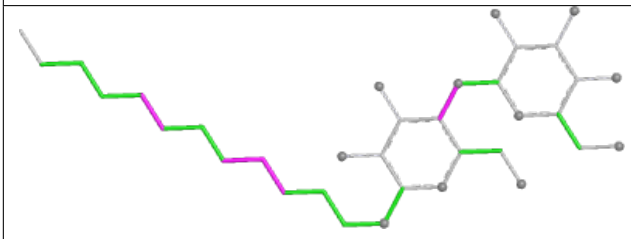
Ligand LMT BA 105



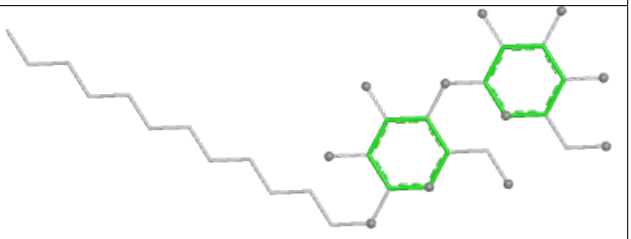
Bond lengths



Bond angles

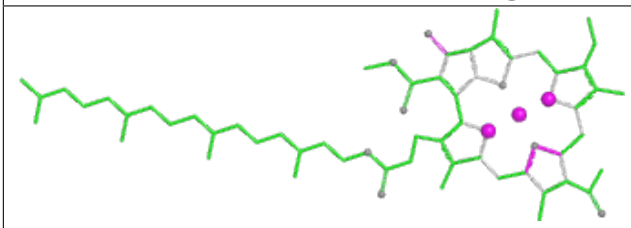


Torsions

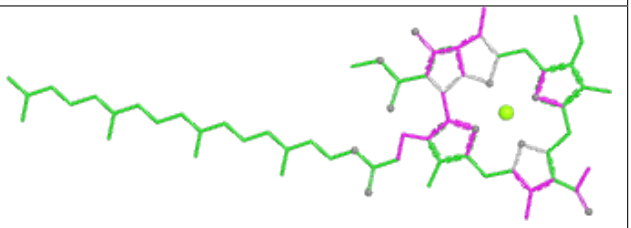


Rings

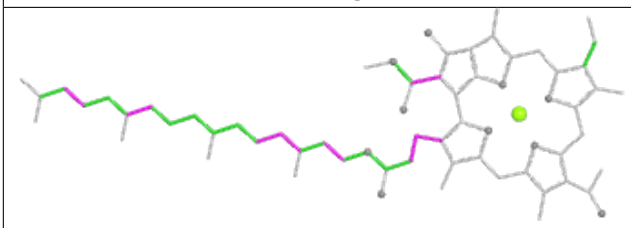
Ligand BCL AC 1002



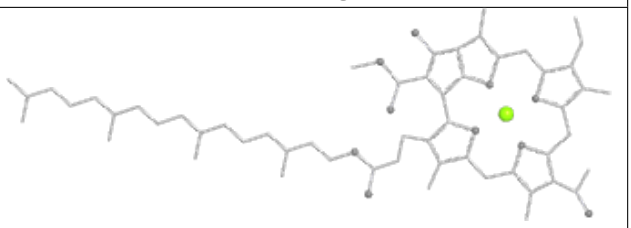
Bond lengths



Bond angles

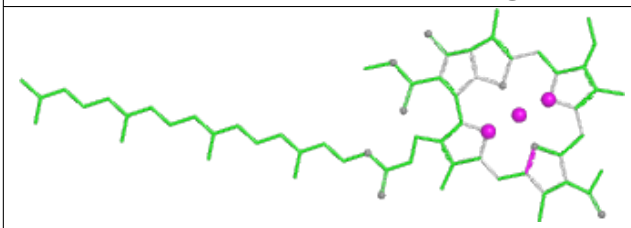


Torsions

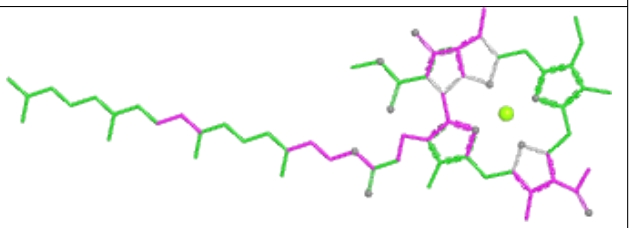


Rings

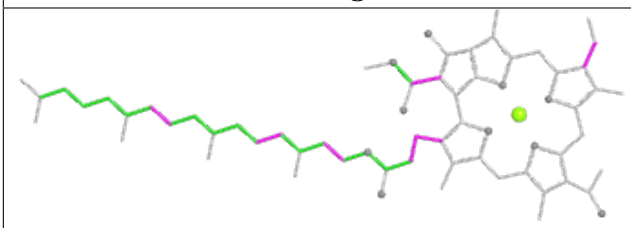
Ligand BCL BT 1004



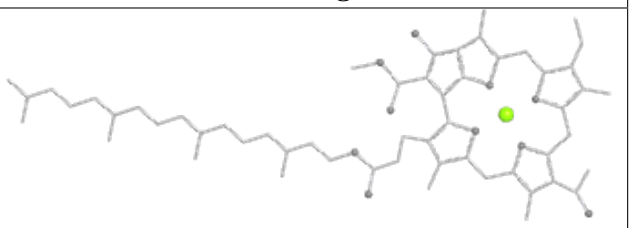
Bond lengths



Bond angles

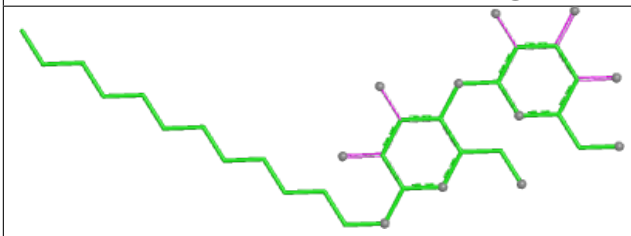


Torsions

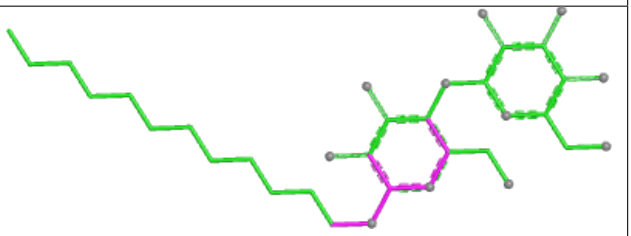


Rings

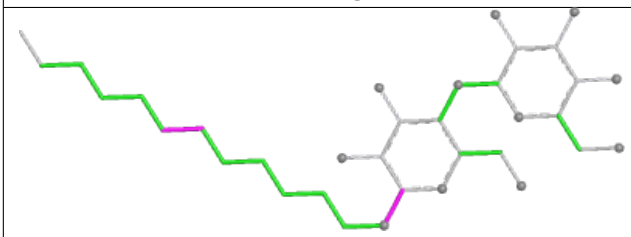
Ligand LMT AH 106



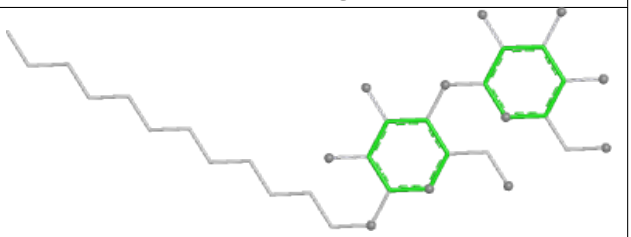
Bond lengths



Bond angles

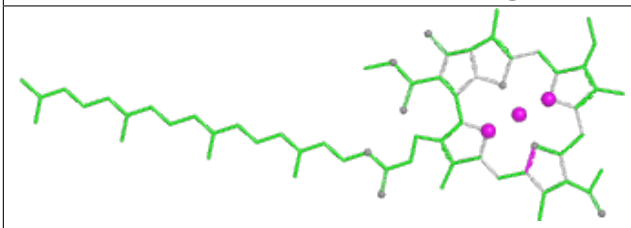


Torsions

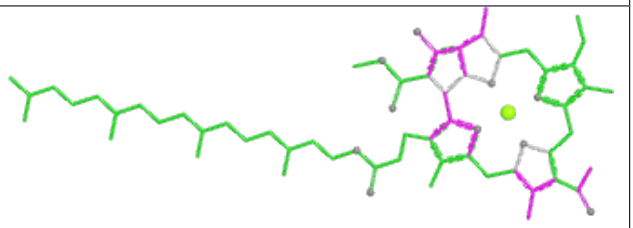


Rings

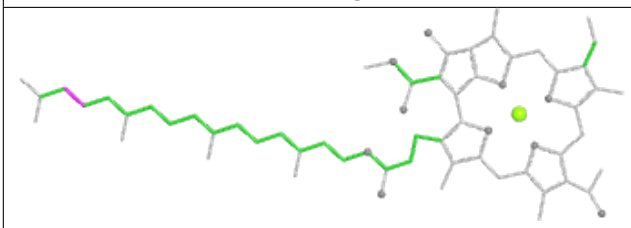
Ligand BCL AE 1002



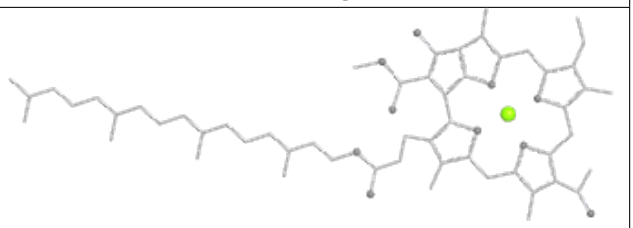
Bond lengths



Bond angles

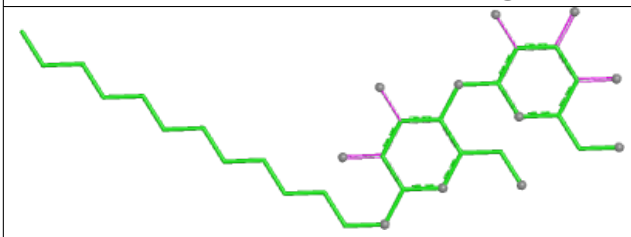


Torsions

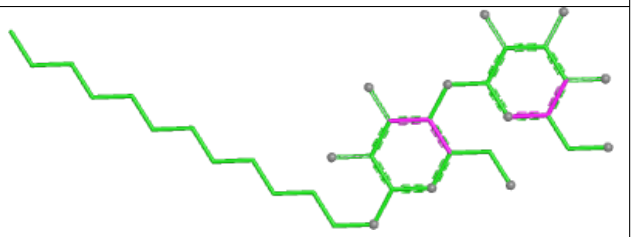


Rings

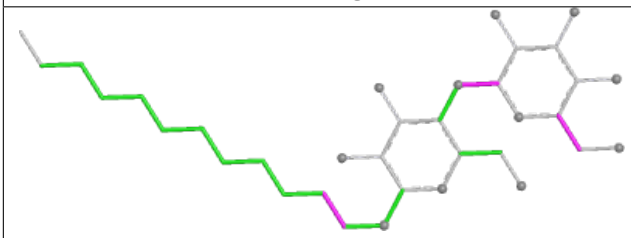
Ligand LMT BO 1003



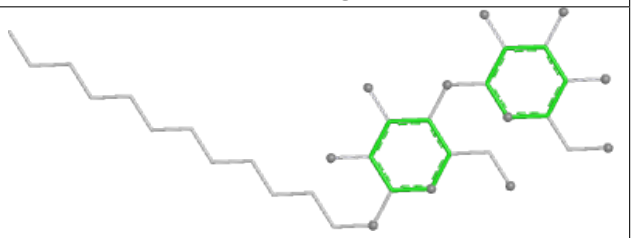
Bond lengths



Bond angles

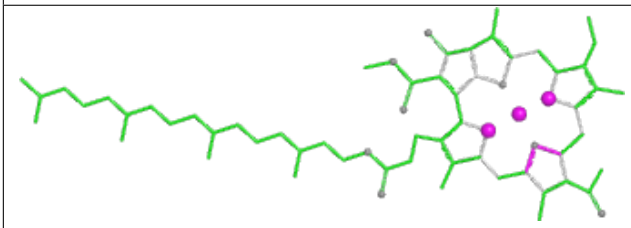


Torsions

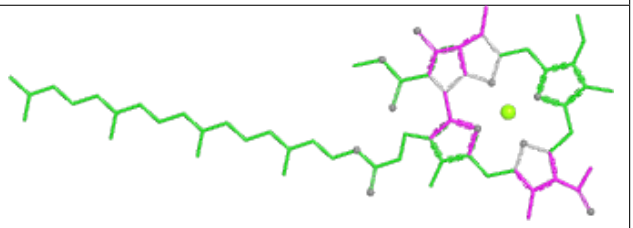


Rings

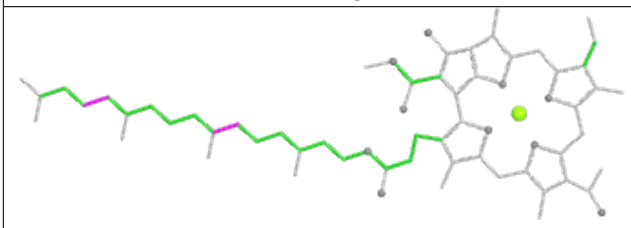
Ligand BCL an 102



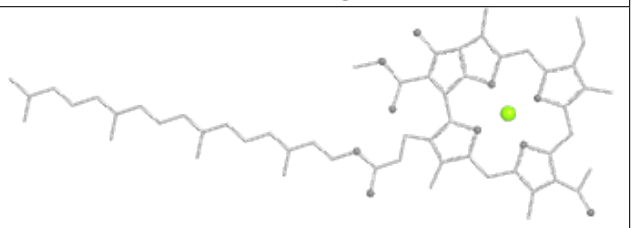
Bond lengths



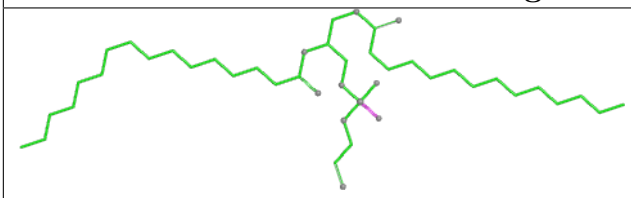
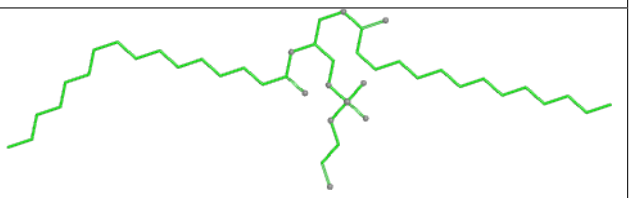
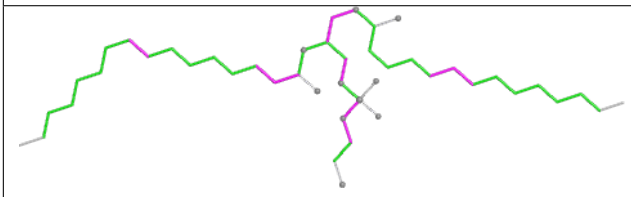
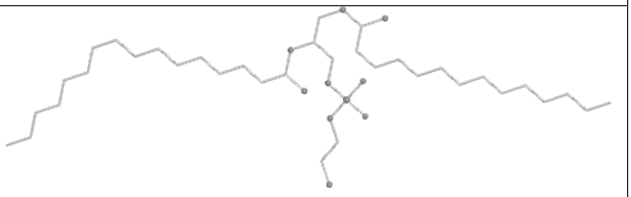
Bond angles

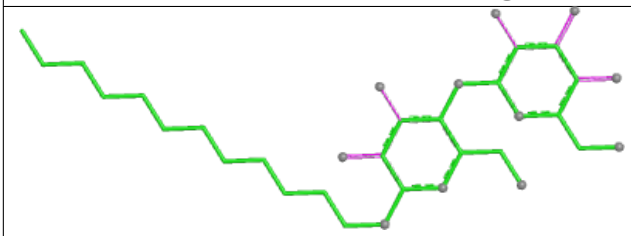
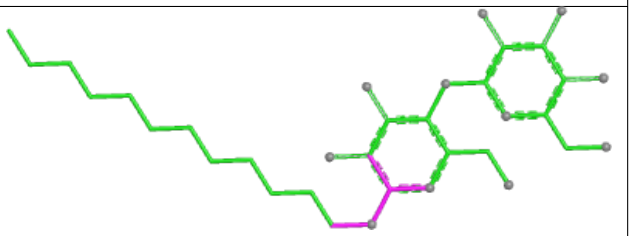
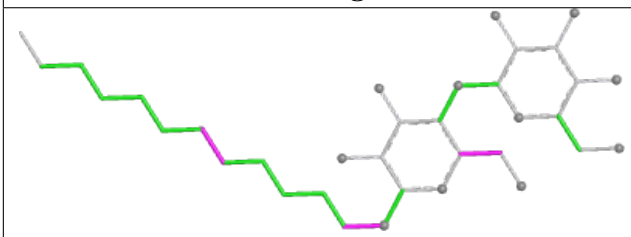
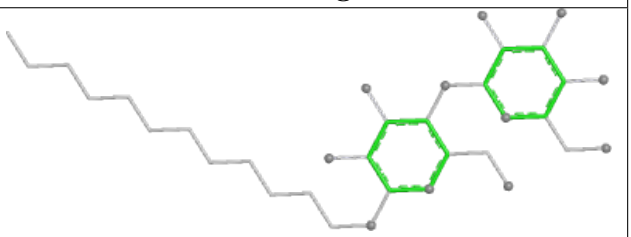


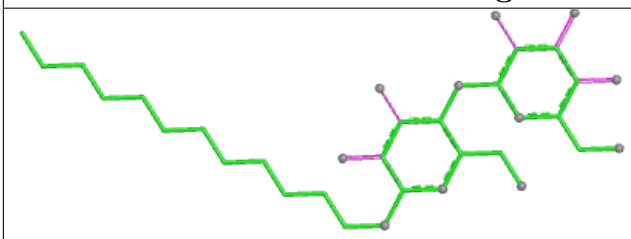
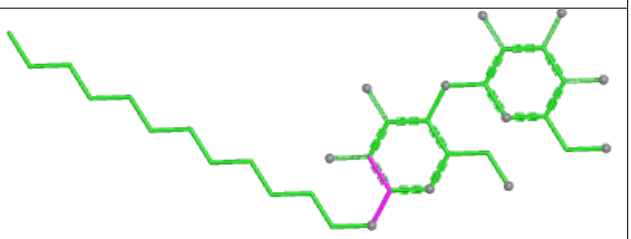
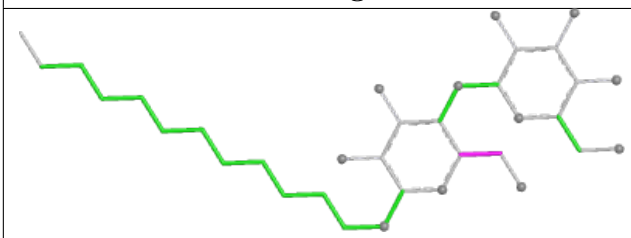
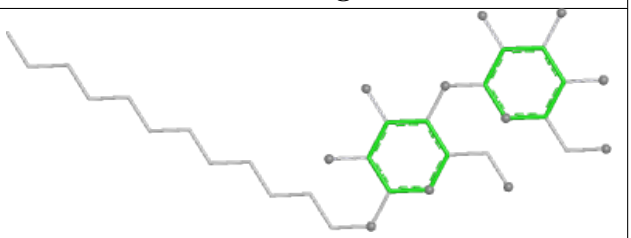
Torsions



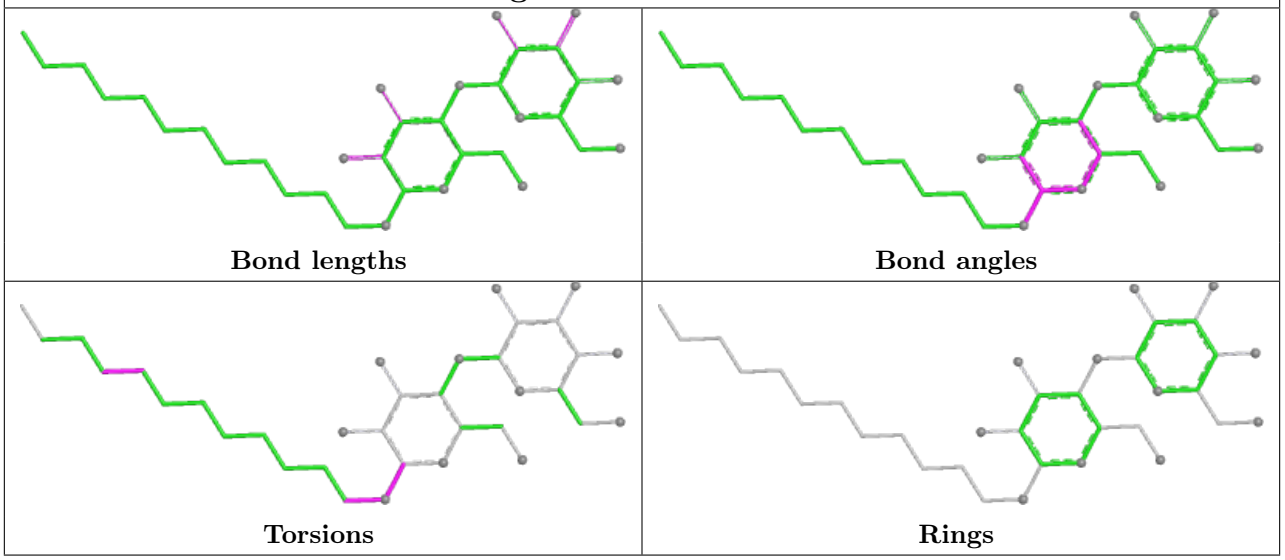
Rings

Ligand 0V9 be 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

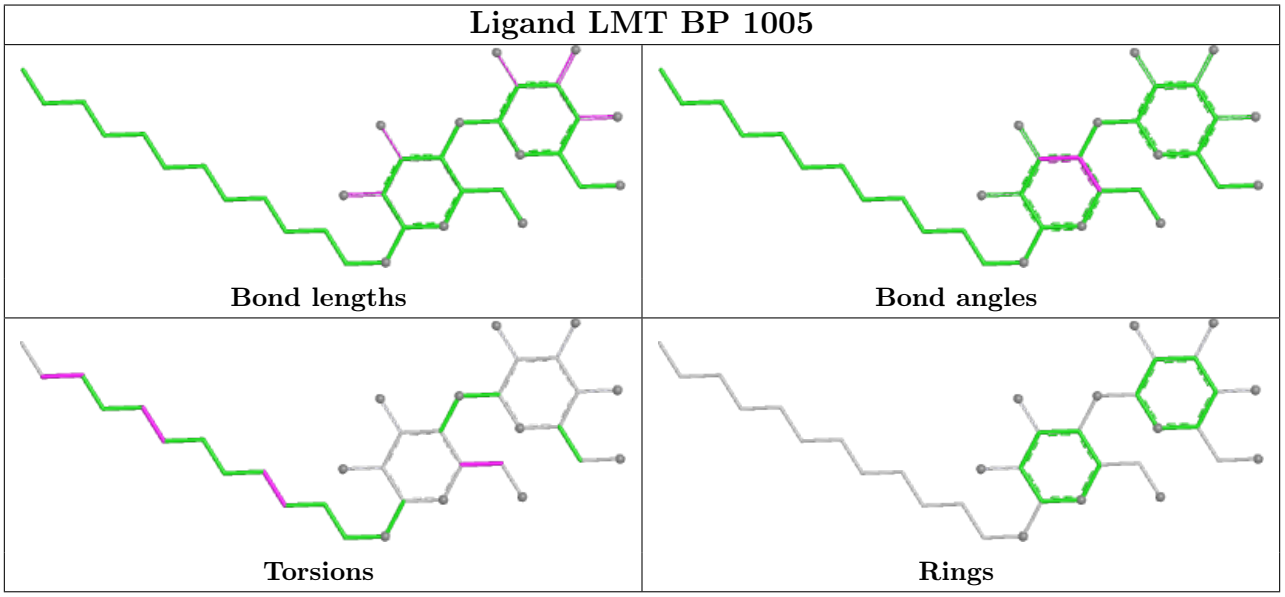
Ligand LMT BK 1006	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT BM 1003	
 Bond lengths	 Bond angles
 Torsions	 Rings

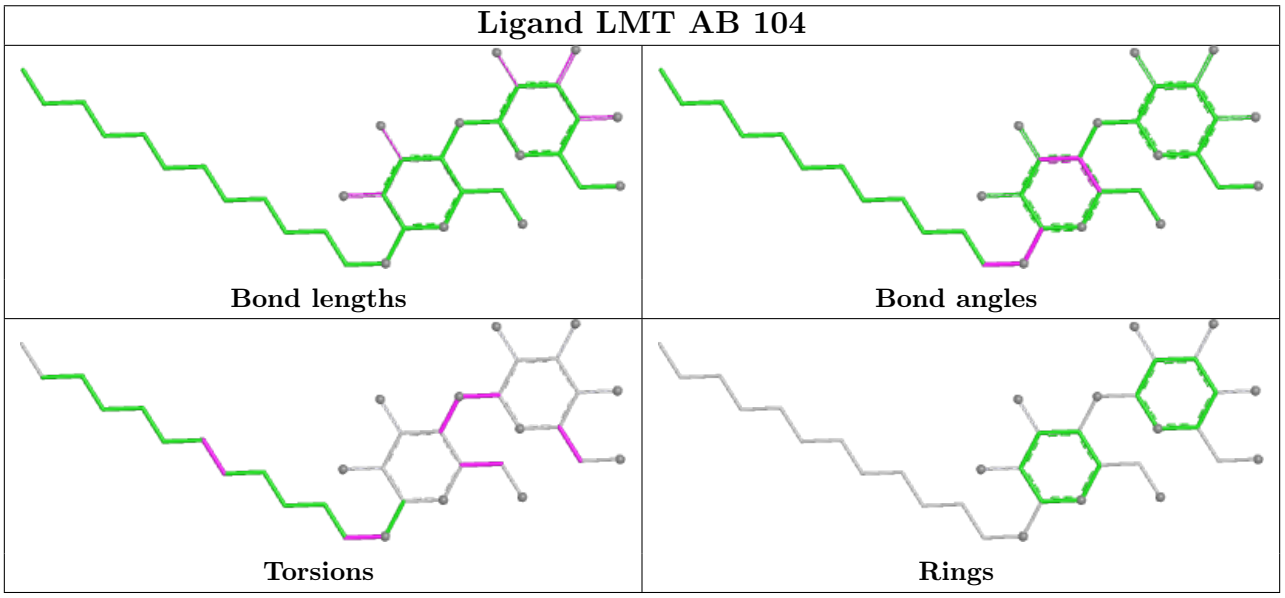
Ligand LMT AV 101



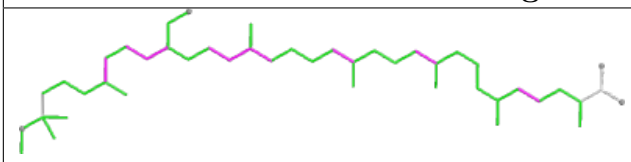
Ligand LMT BP 1005



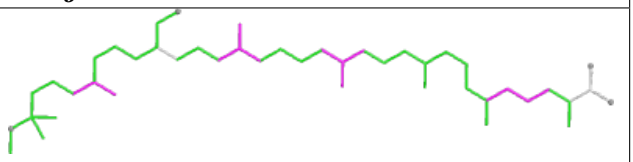
Ligand LMT AB 104



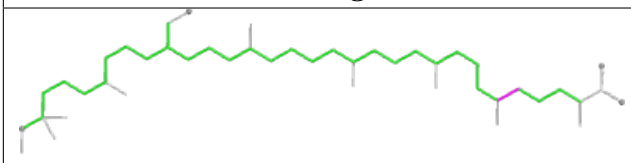
Ligand V7N bj 101



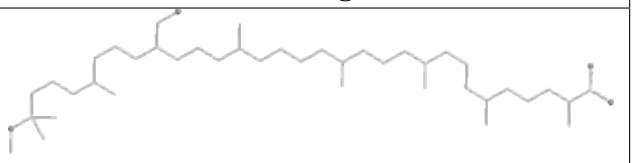
Bond lengths



Bond angles

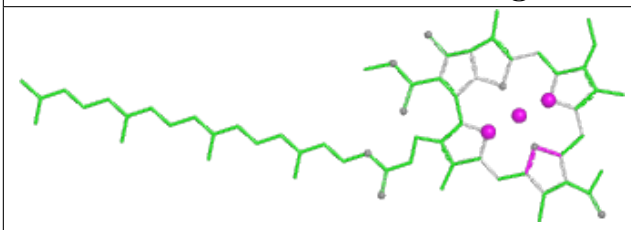


Torsions

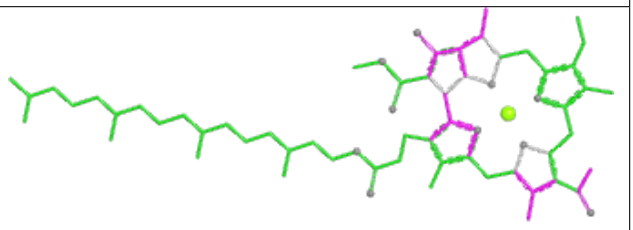


Rings

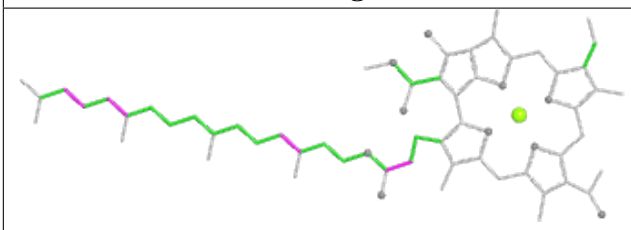
Ligand BCL ah 1001



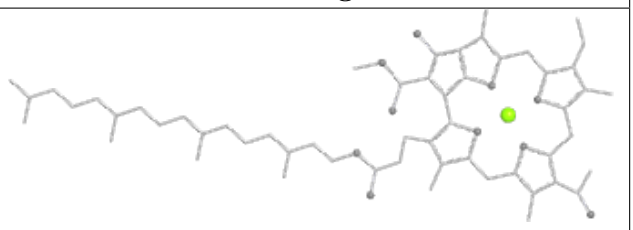
Bond lengths



Bond angles

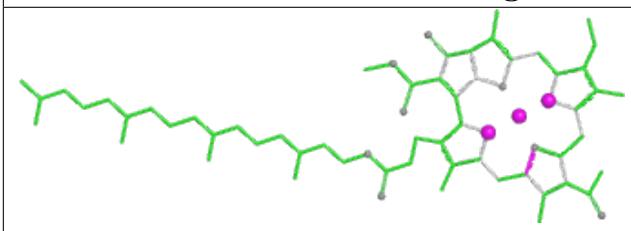


Torsions

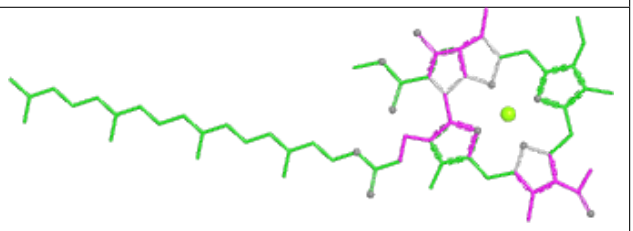


Rings

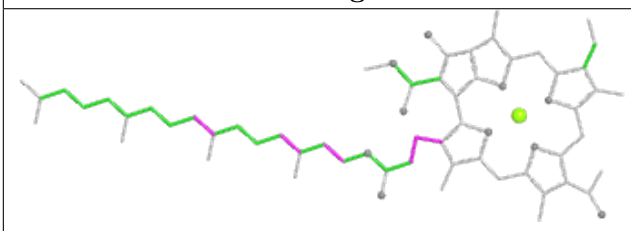
Ligand BCL BO 1004



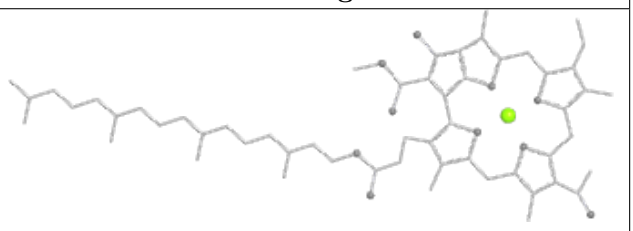
Bond lengths



Bond angles

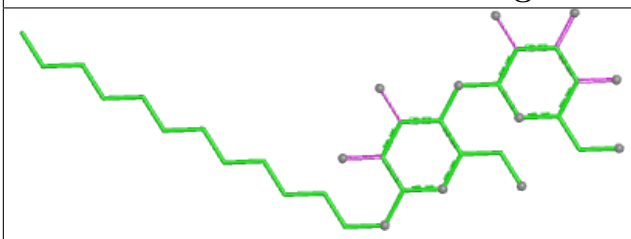


Torsions

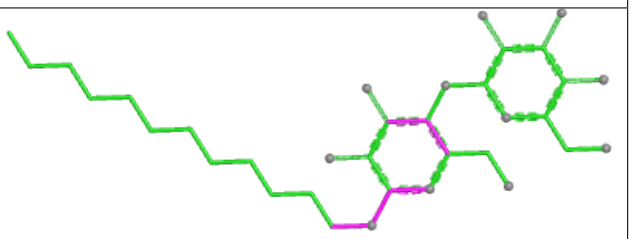


Rings

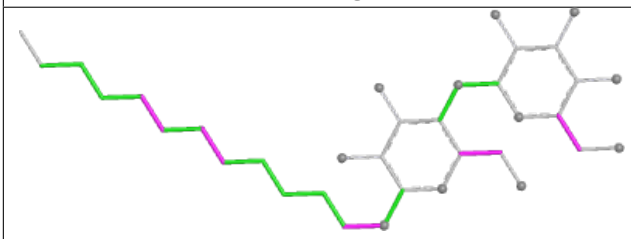
Ligand LMT bb 102



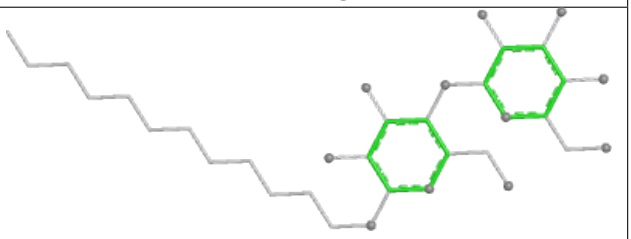
Bond lengths



Bond angles

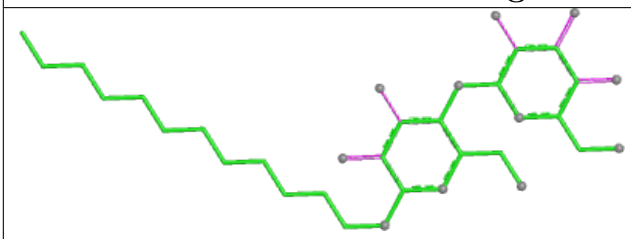


Torsions

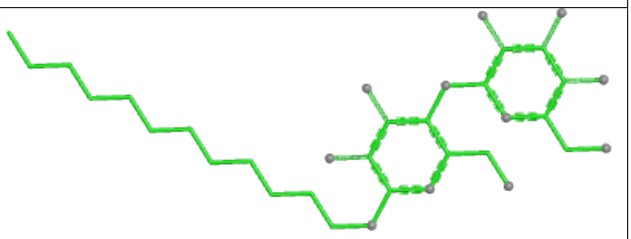


Rings

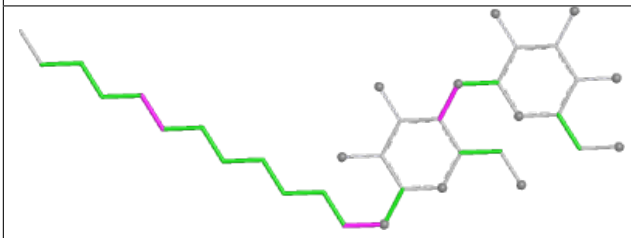
Ligand LMT AO 103



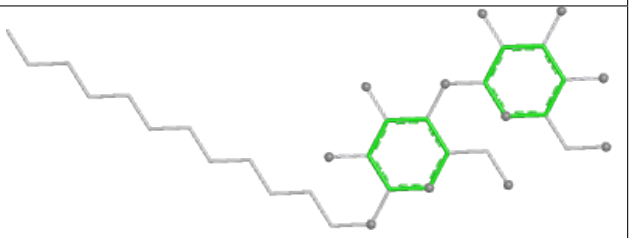
Bond lengths



Bond angles

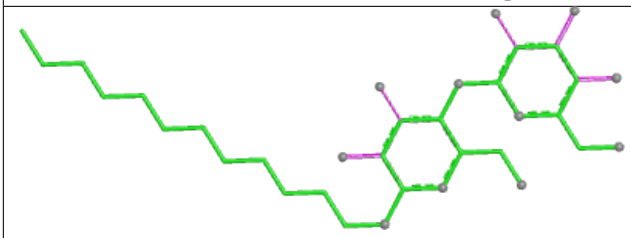


Torsions

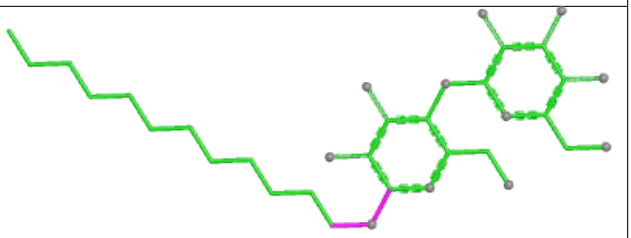


Rings

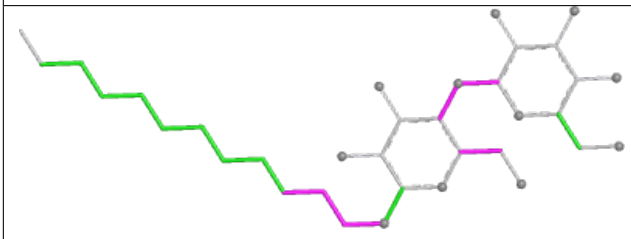
Ligand LMT BX 1003



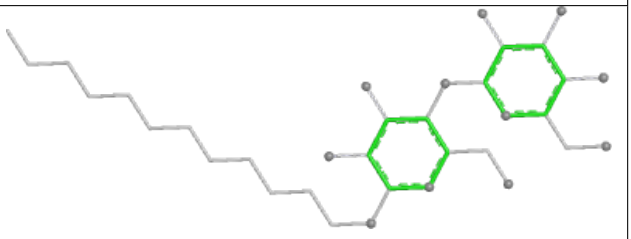
Bond lengths



Bond angles

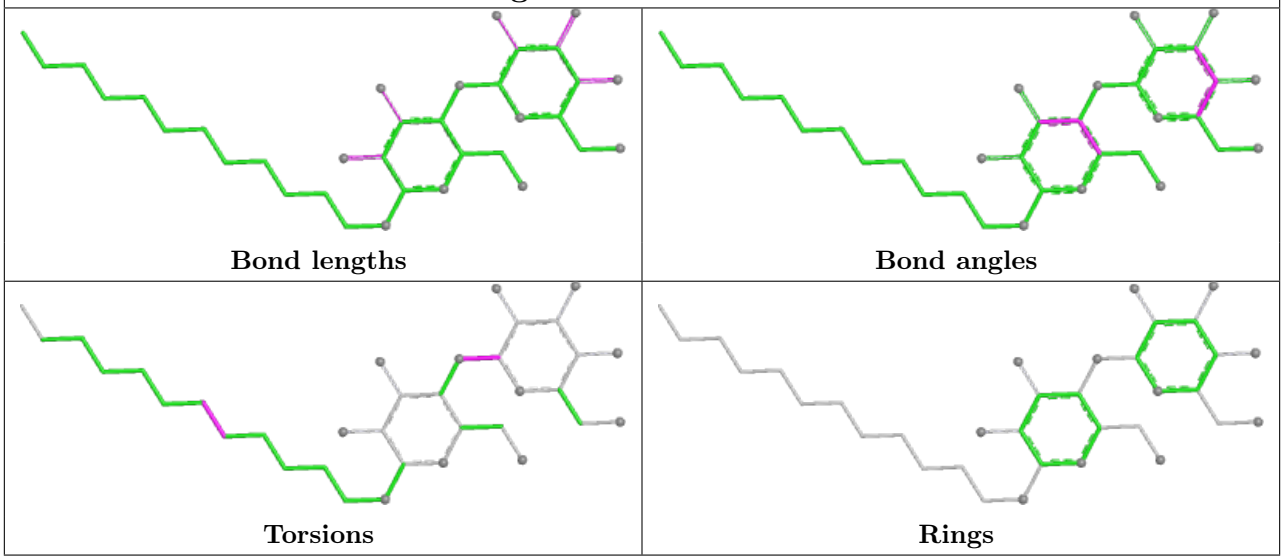


Torsions

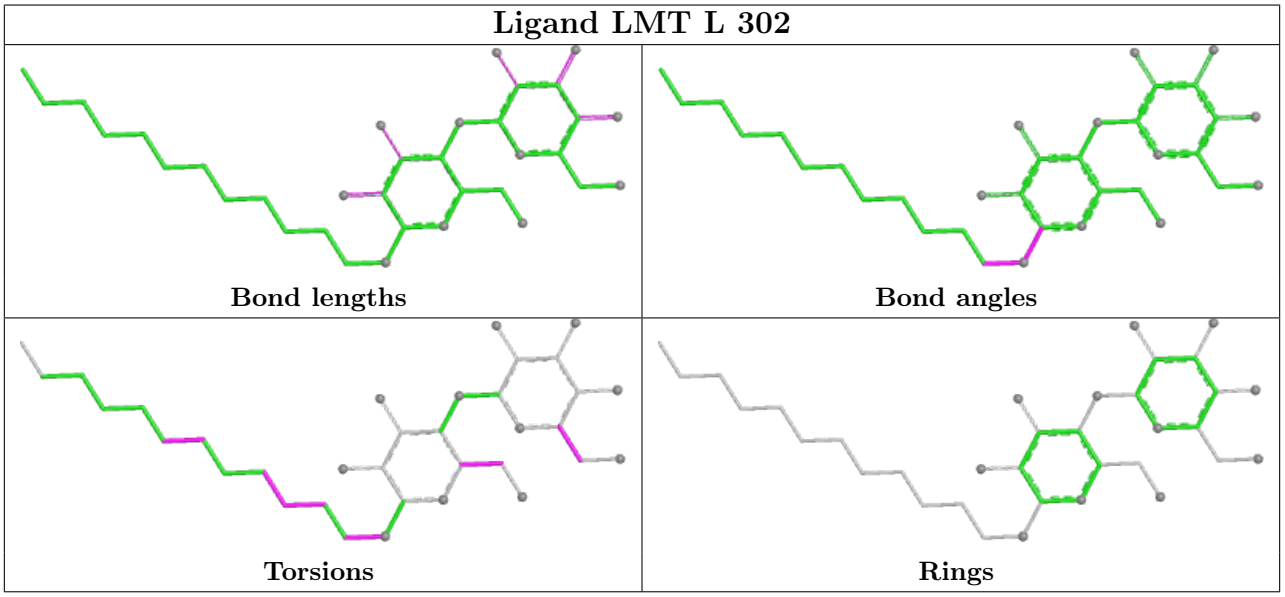


Rings

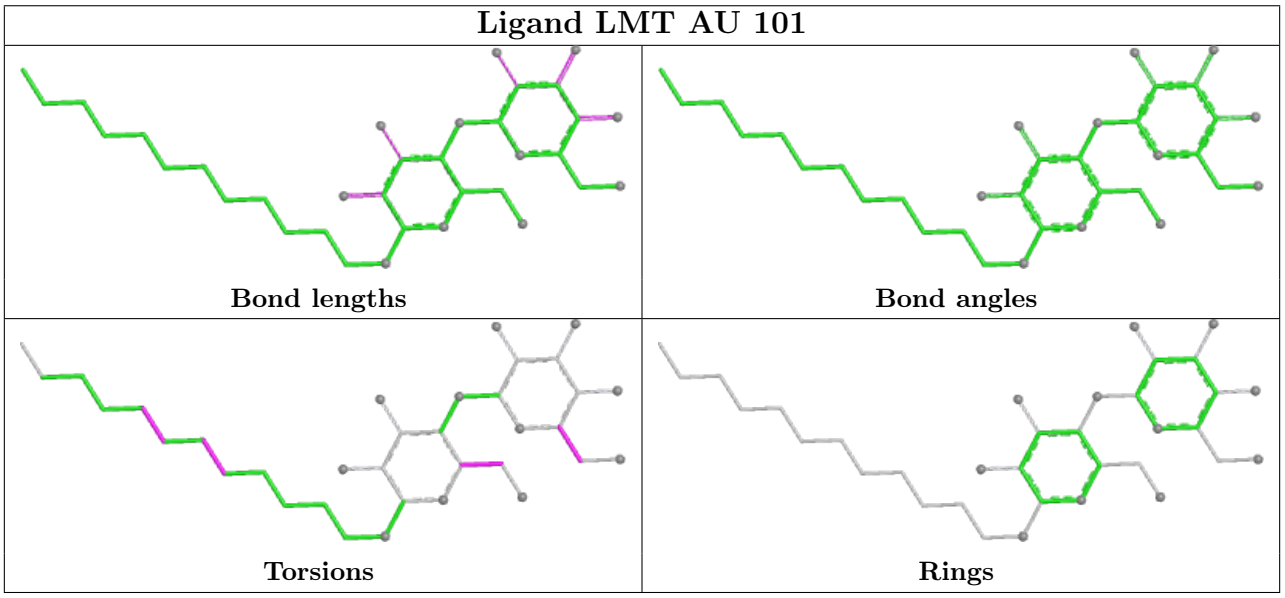
Ligand LMT BE 106



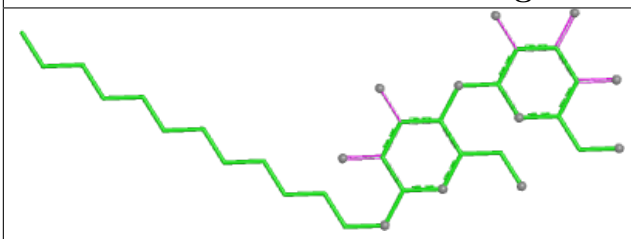
Ligand LMT L 302

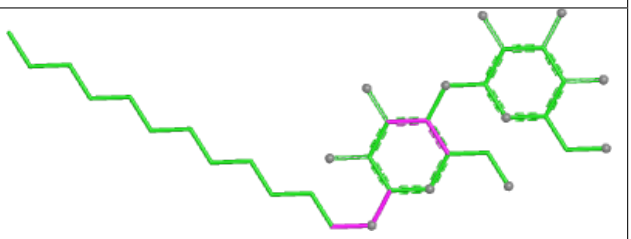


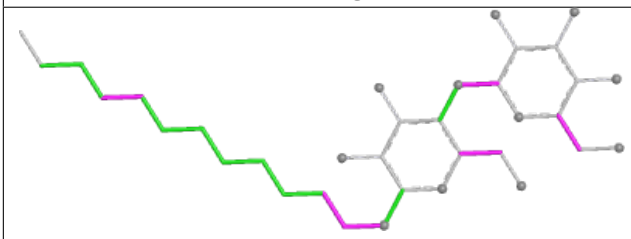
Ligand LMT AU 101

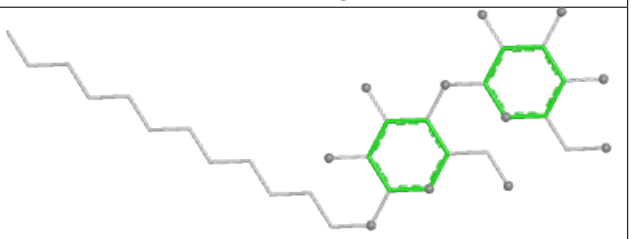


Ligand LMT bk 101

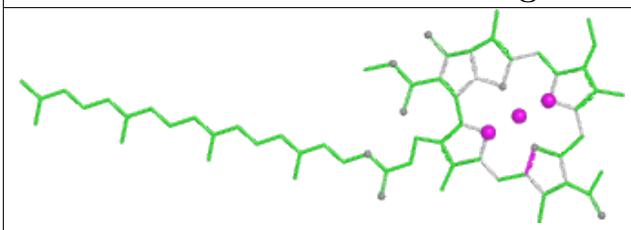

Bond lengths

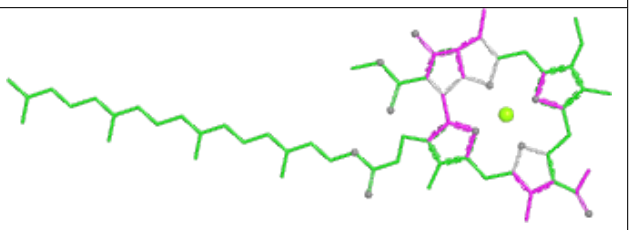

Bond angles

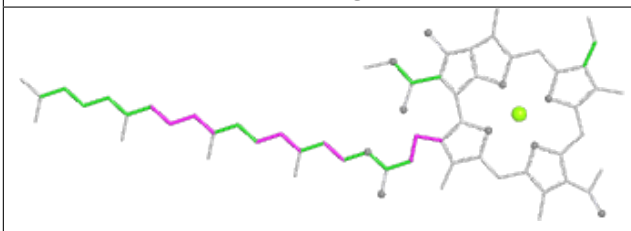

Torsions

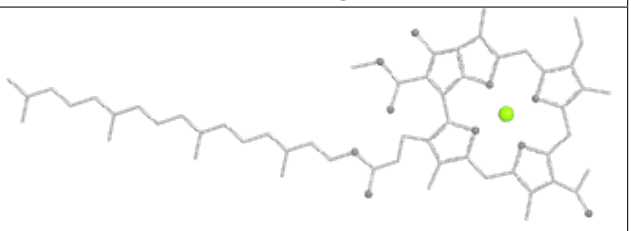

Rings

Ligand BCL ba 103

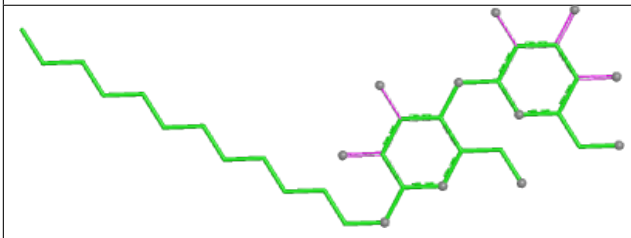

Bond lengths

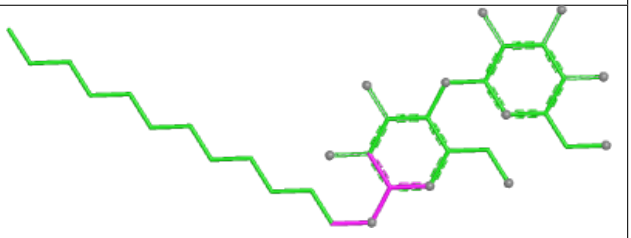

Bond angles

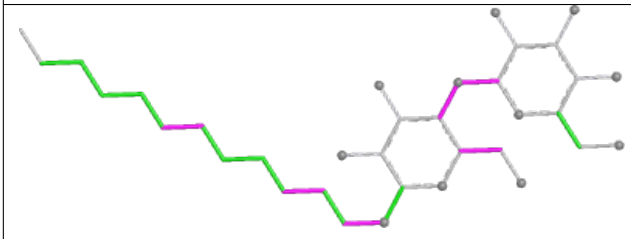

Torsions

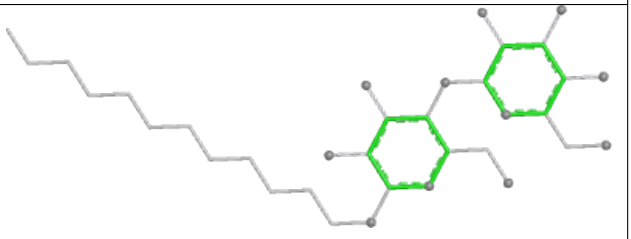

Rings

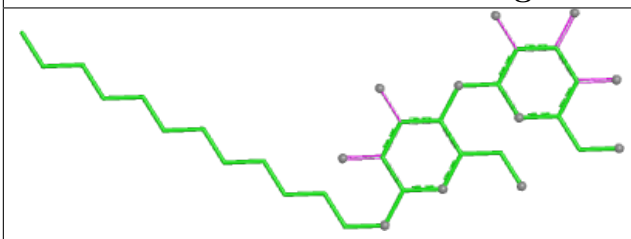
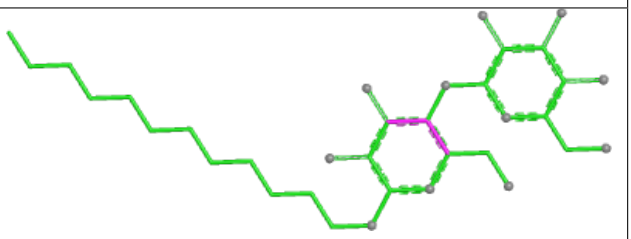
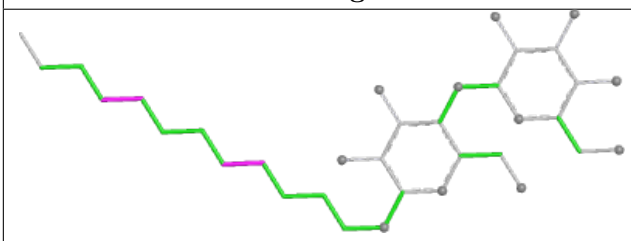
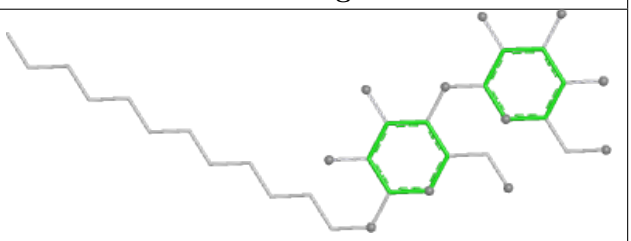
Ligand LMT BR 1004

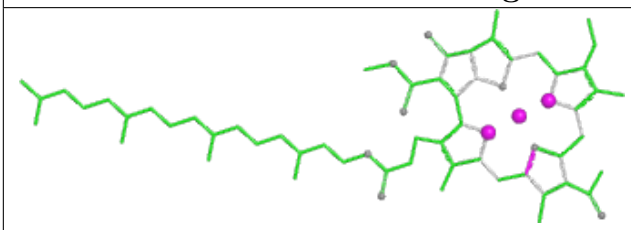
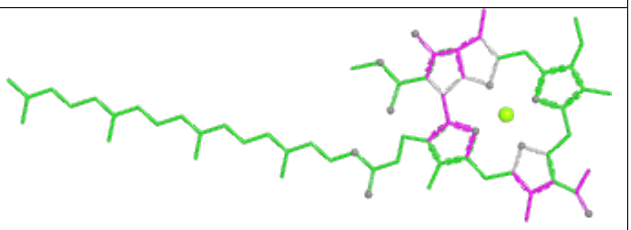
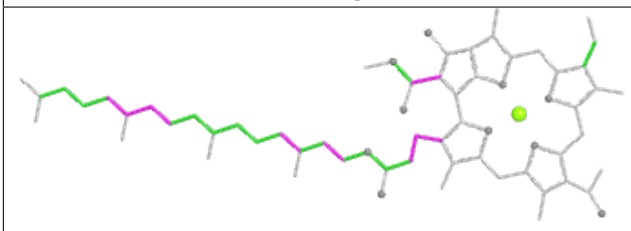
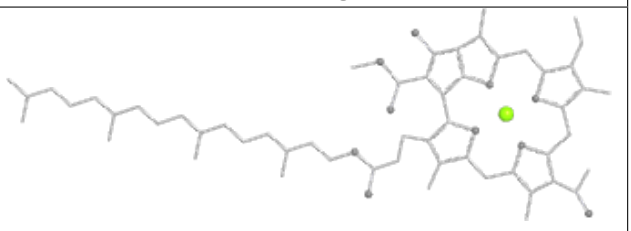

Bond lengths

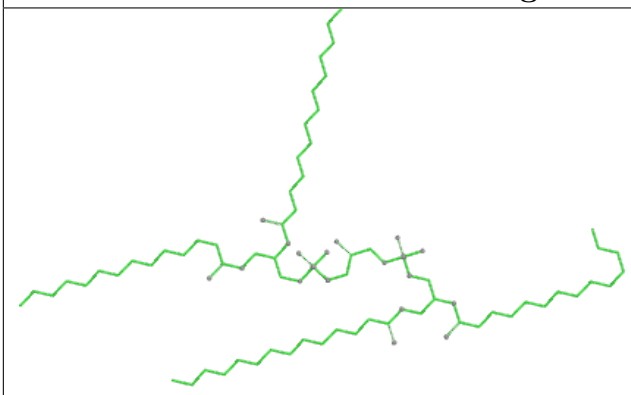
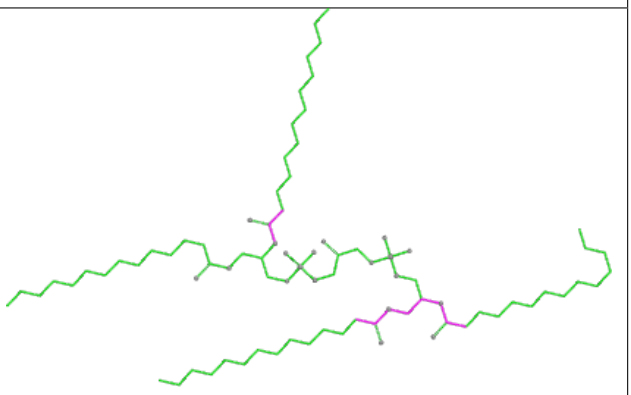
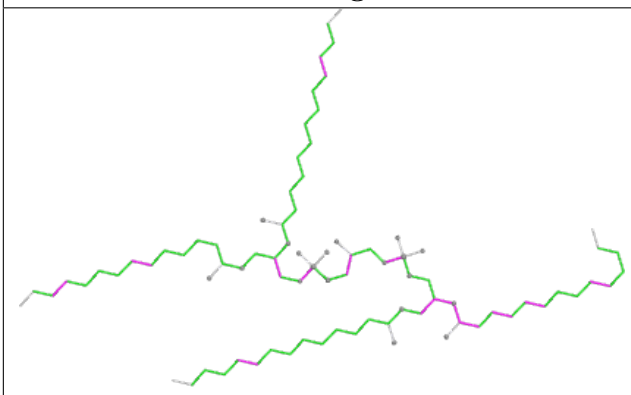
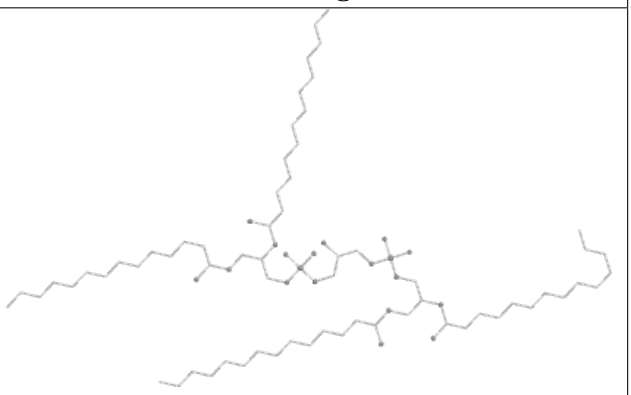

Bond angles

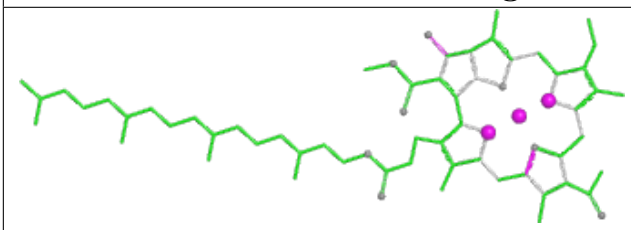
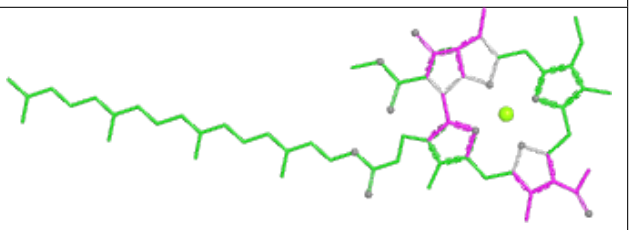
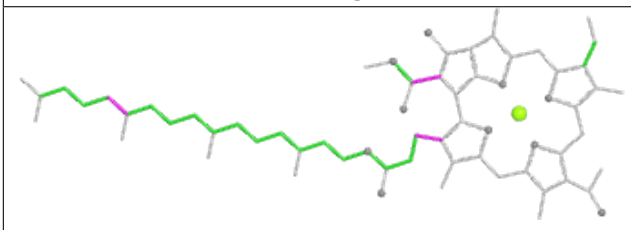
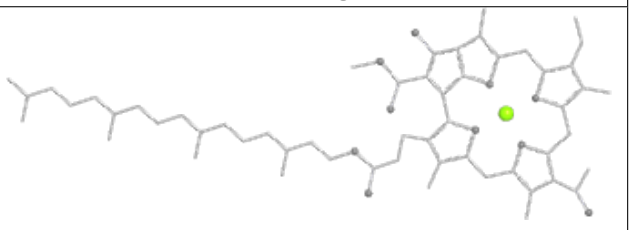

Torsions


Rings

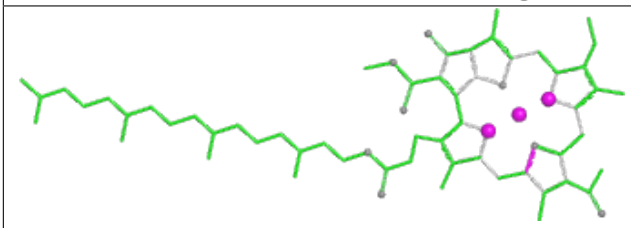
Ligand LMT bn 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL BK 1003	
 Bond lengths	 Bond angles
 Torsions	 Rings

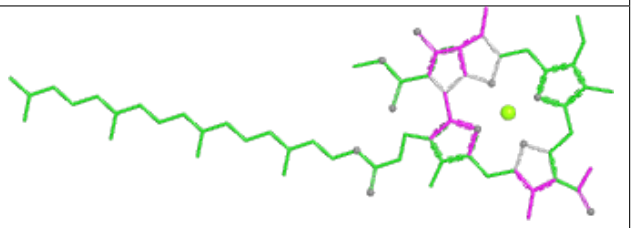
Ligand CD4 ad 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL AD 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

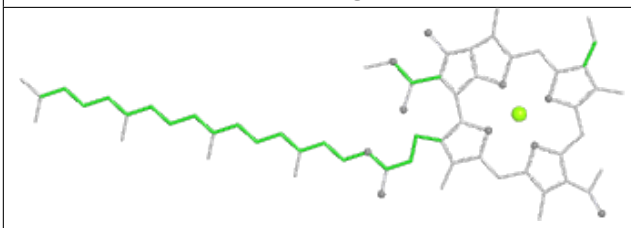
Ligand BCL AJ 101



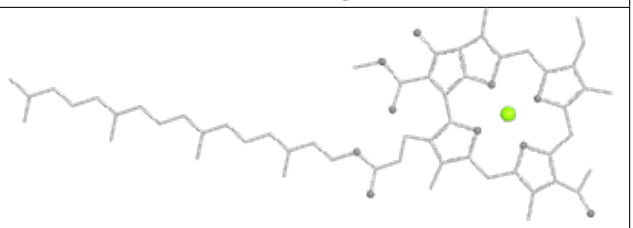
Bond lengths



Bond angles

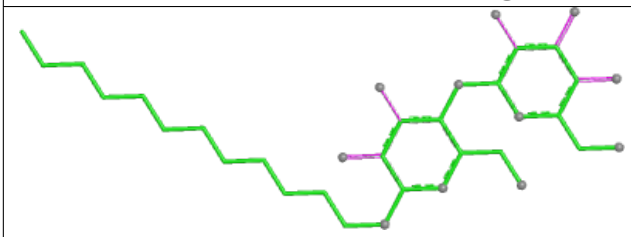


Torsions

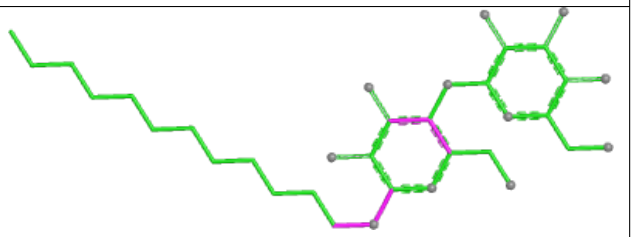


Rings

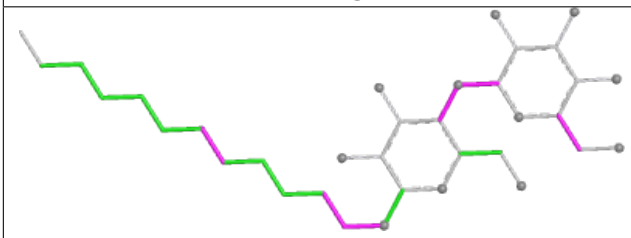
Ligand LMT BN 1002



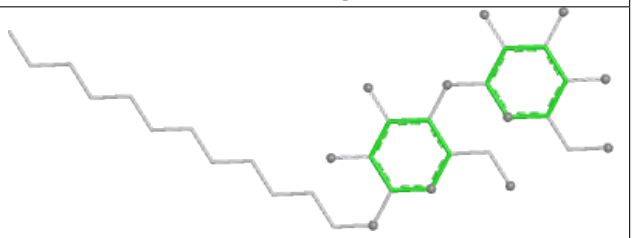
Bond lengths



Bond angles

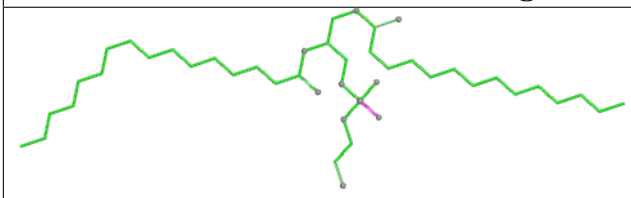


Torsions

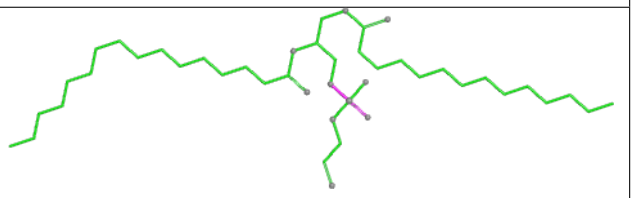


Rings

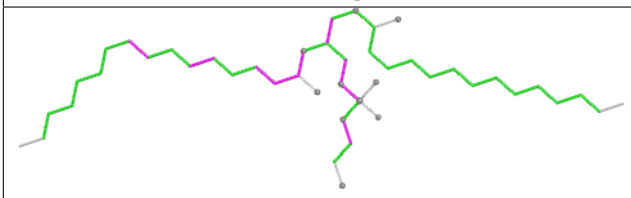
Ligand 0V9 bm 102



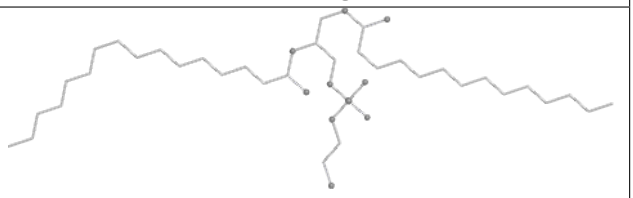
Bond lengths



Bond angles

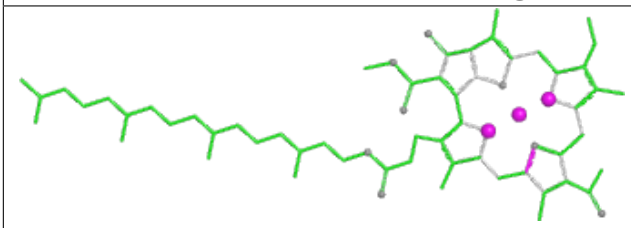


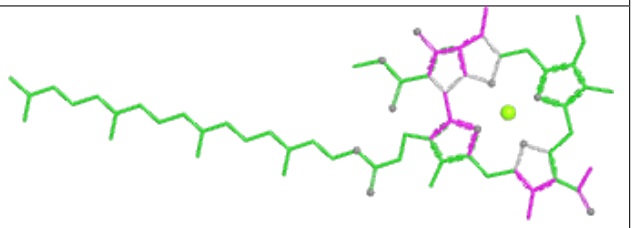
Torsions

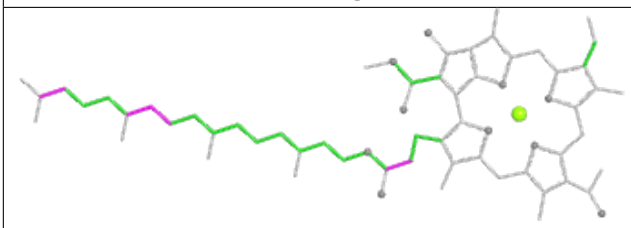


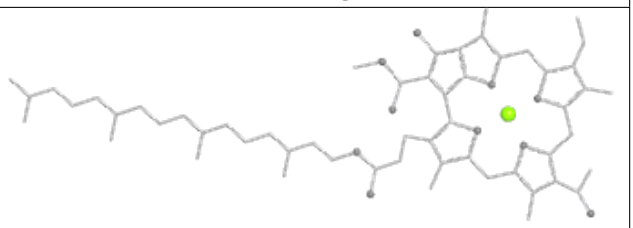
Rings

Ligand BCL AG 103

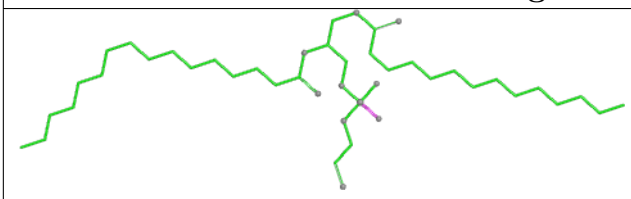

Bond lengths

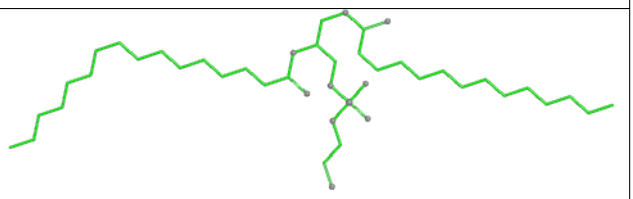

Bond angles

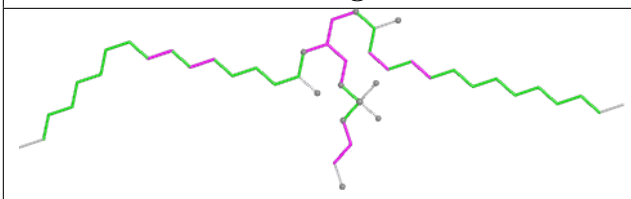

Torsions

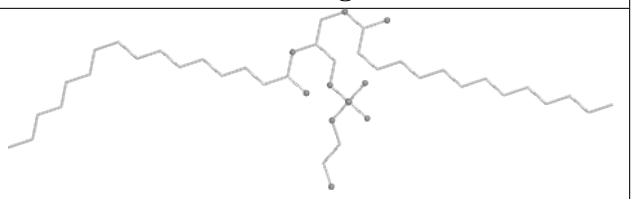

Rings

Ligand 0V9 bl 103

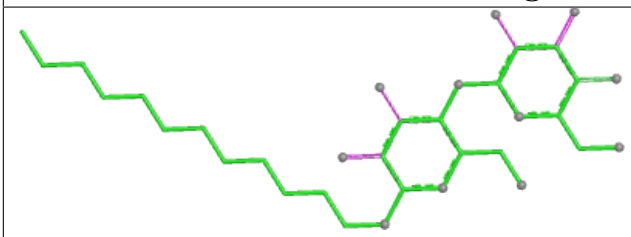

Bond lengths

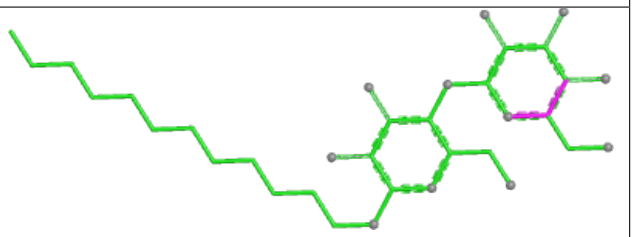

Bond angles

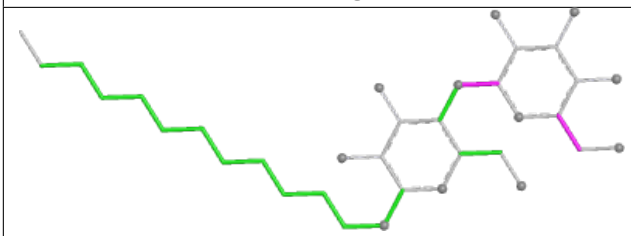

Torsions

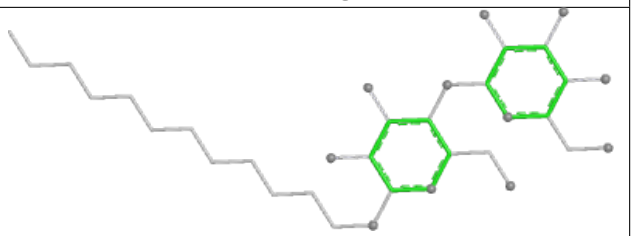

Rings

Ligand LMT L 304

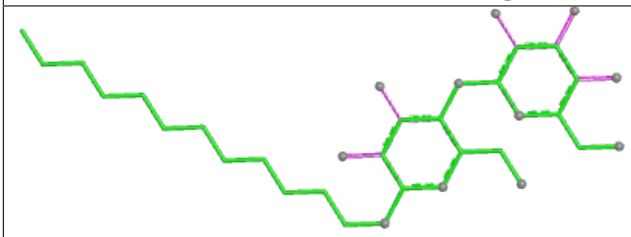

Bond lengths


Bond angles

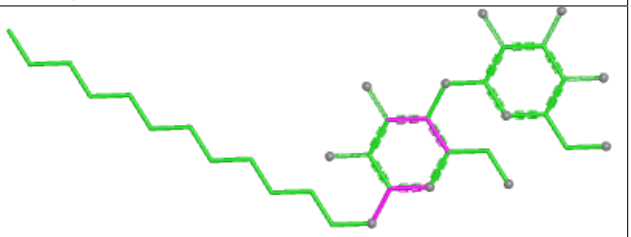

Torsions


Rings

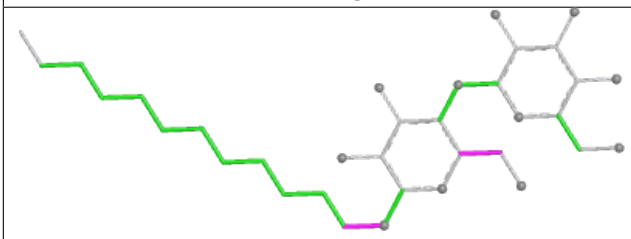
Ligand LMT BQ 1004



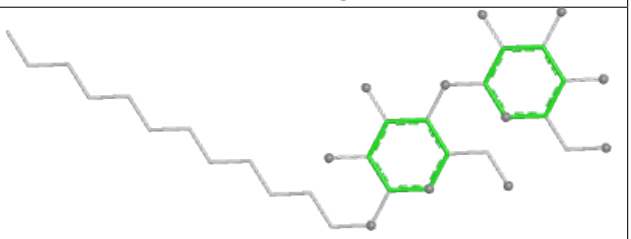
Bond lengths



Bond angles

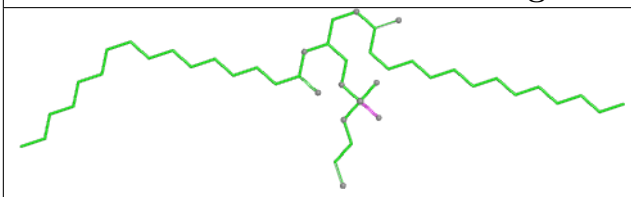


Torsions

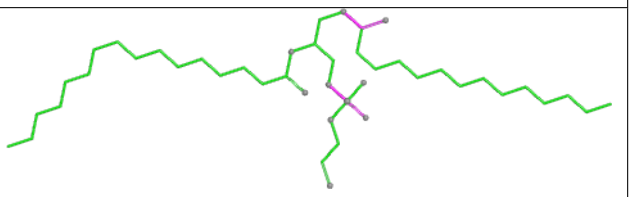


Rings

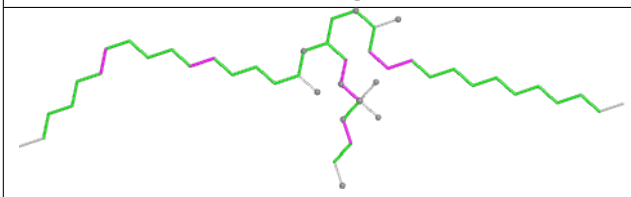
Ligand 0V9 bi 102



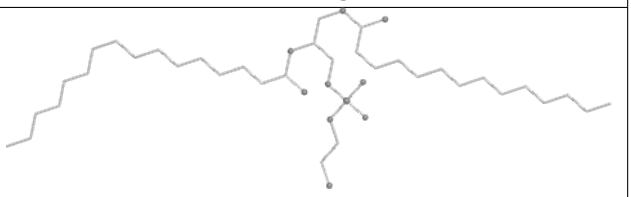
Bond lengths



Bond angles

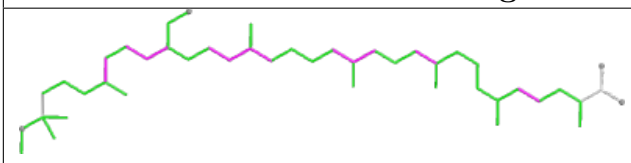


Torsions

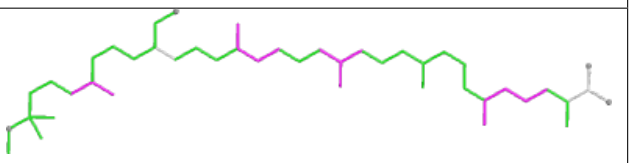


Rings

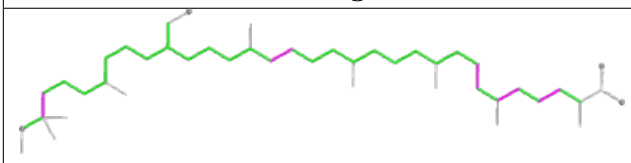
Ligand V7N BM 1001



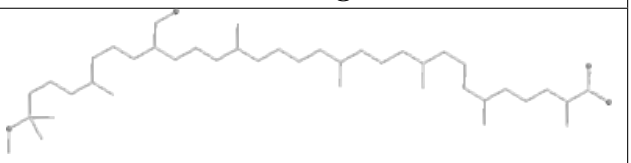
Bond lengths



Bond angles

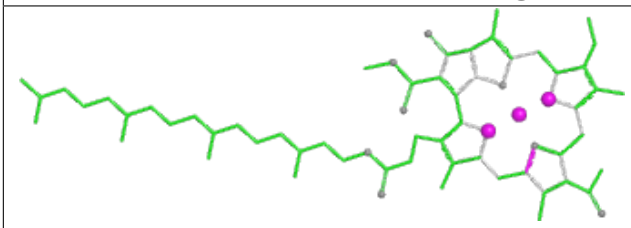


Torsions

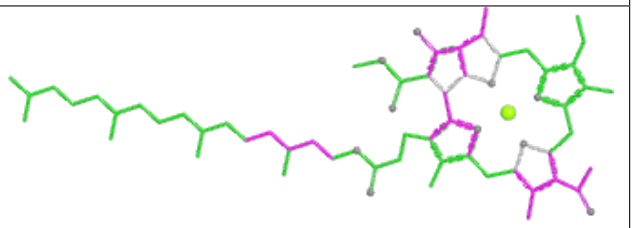


Rings

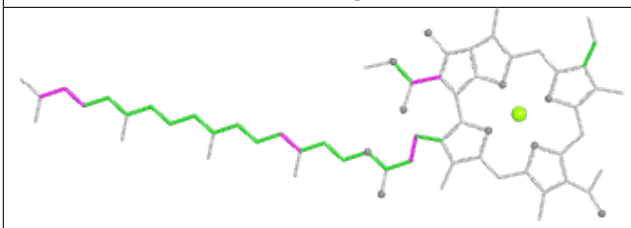
Ligand BCL BB 104



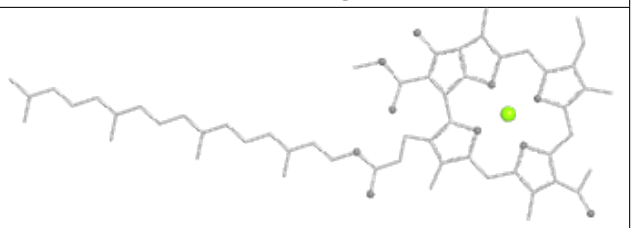
Bond lengths



Bond angles

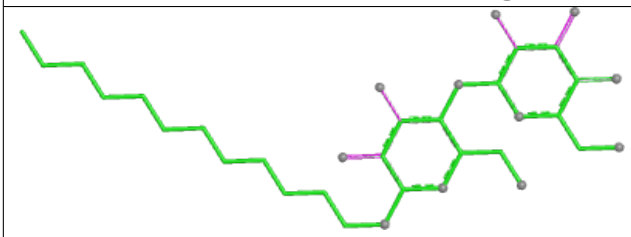


Torsions

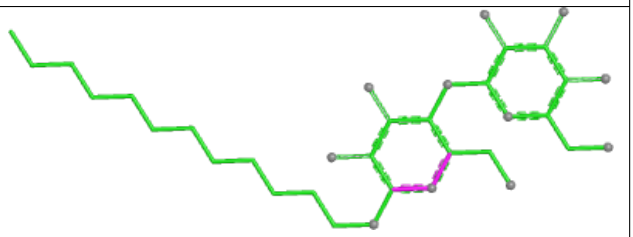


Rings

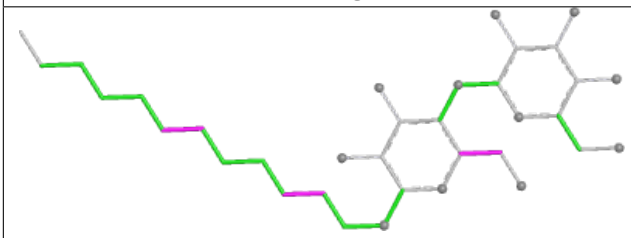
Ligand LMT BG 1003



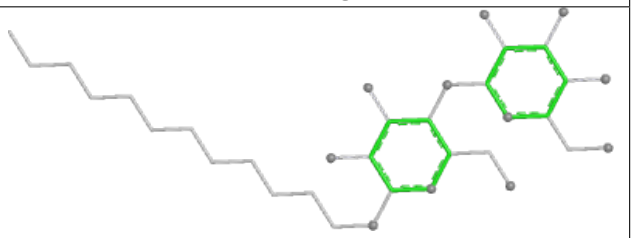
Bond lengths



Bond angles

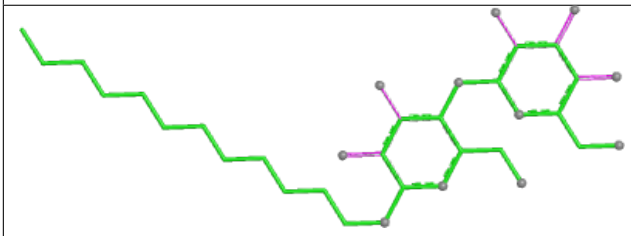


Torsions

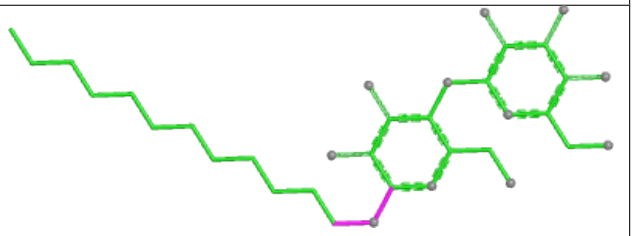


Rings

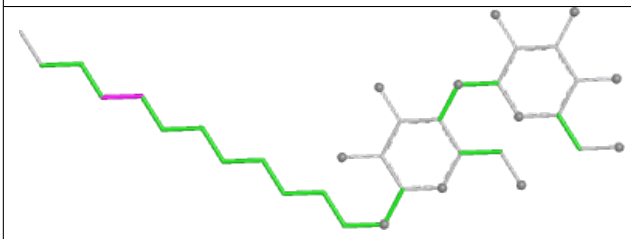
Ligand LMT bh 103



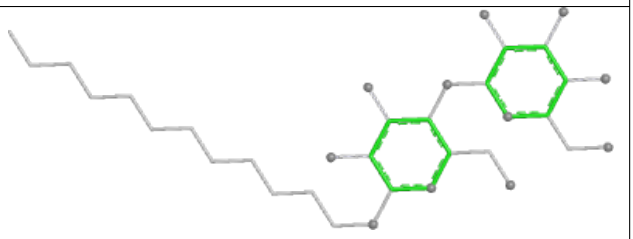
Bond lengths



Bond angles

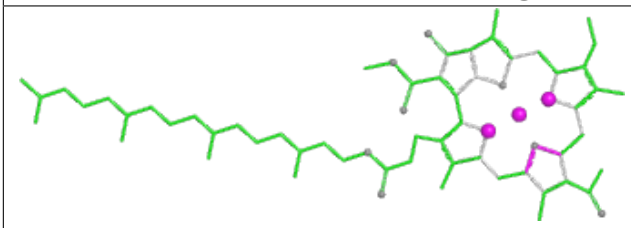


Torsions

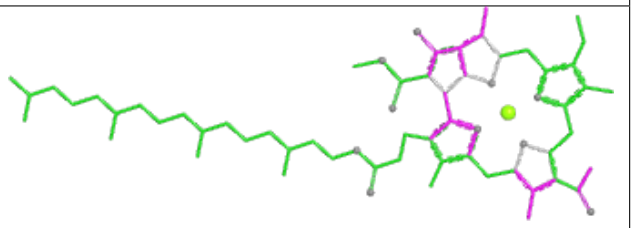


Rings

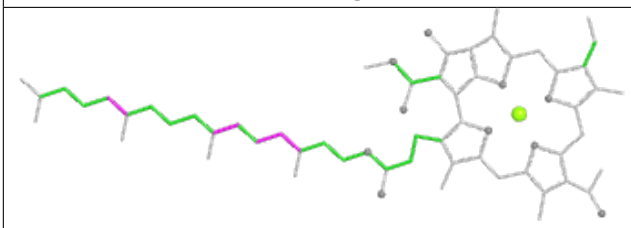
Ligand BCL al 1001



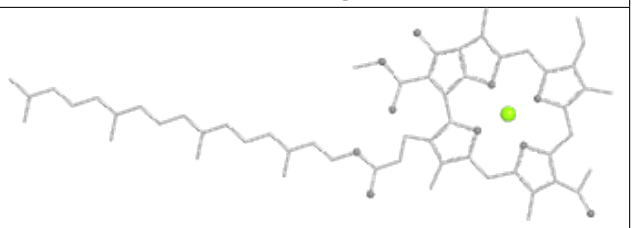
Bond lengths



Bond angles

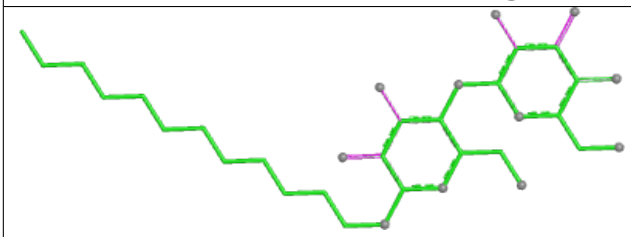


Torsions

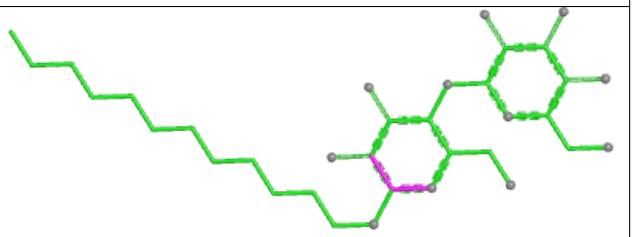


Rings

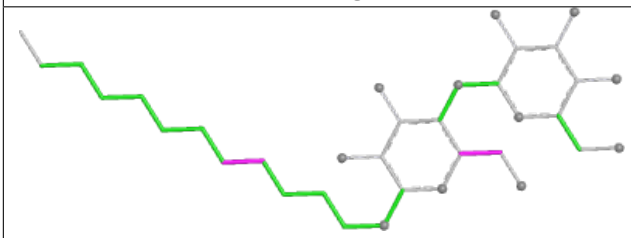
Ligand LMT BS 1004



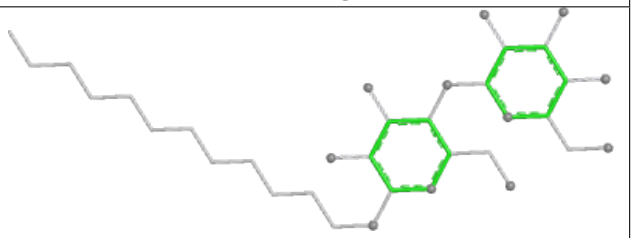
Bond lengths



Bond angles

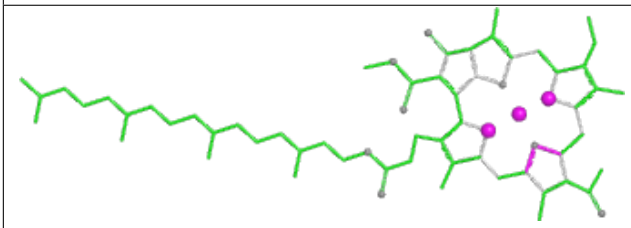


Torsions

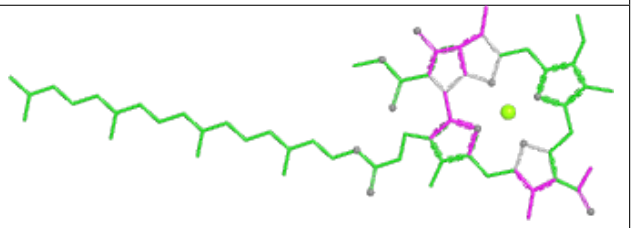


Rings

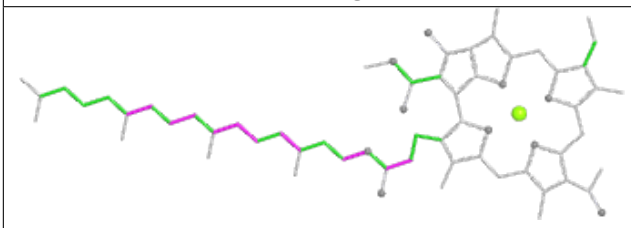
Ligand BCL ap 1001



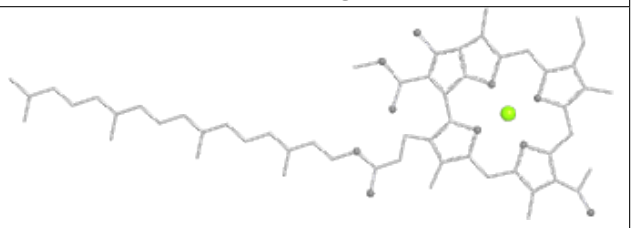
Bond lengths



Bond angles

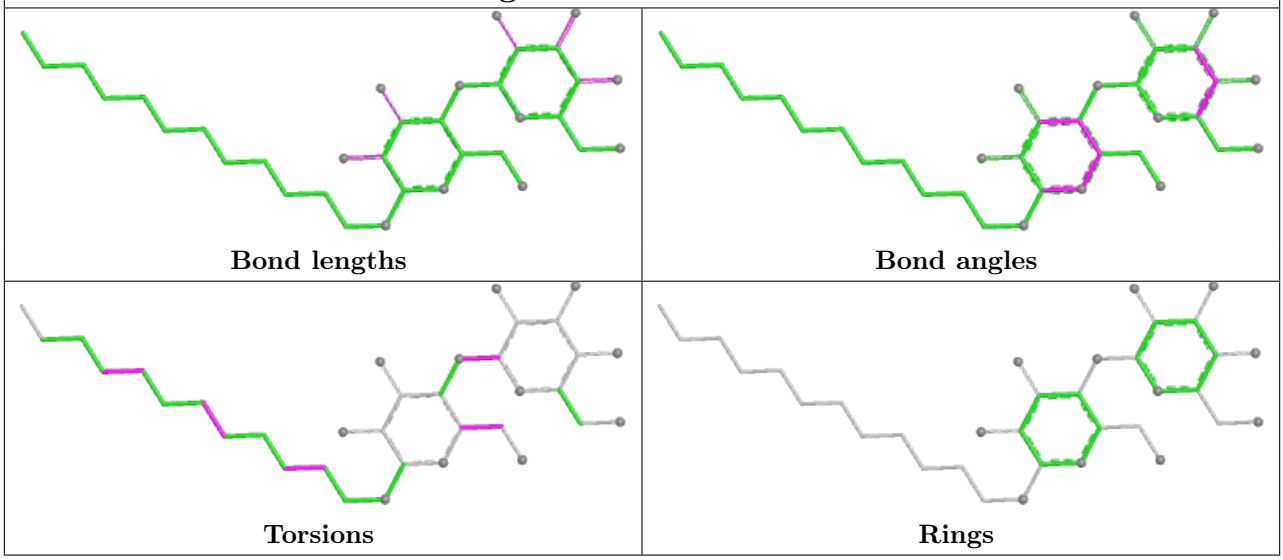


Torsions

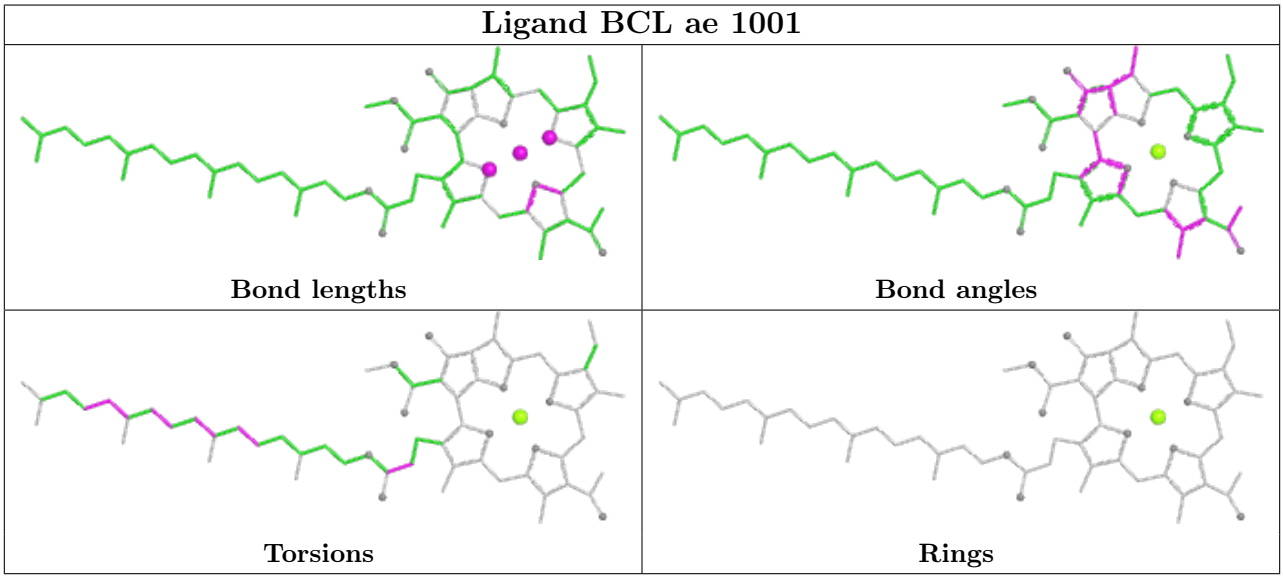


Rings

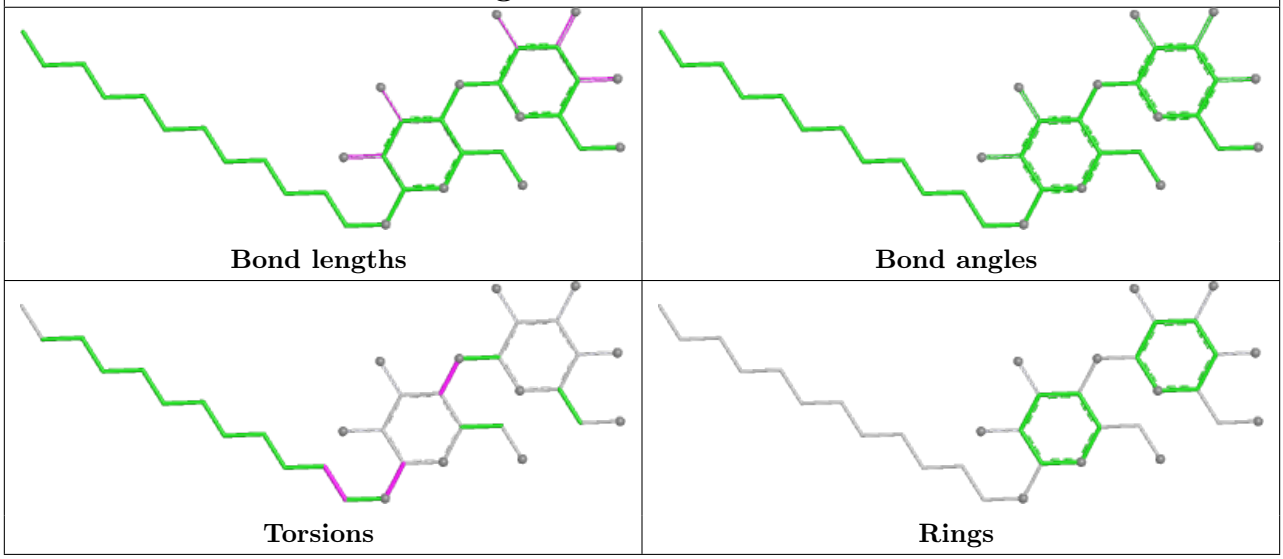
Ligand LMT AD 1003



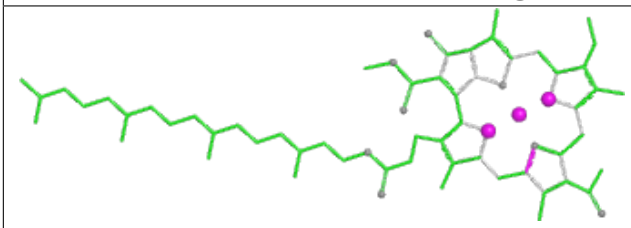
Ligand BCL ae 1001



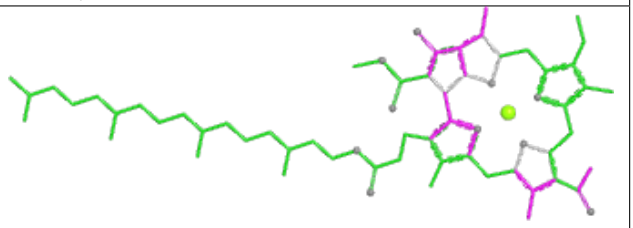
Ligand LMT BW 1002



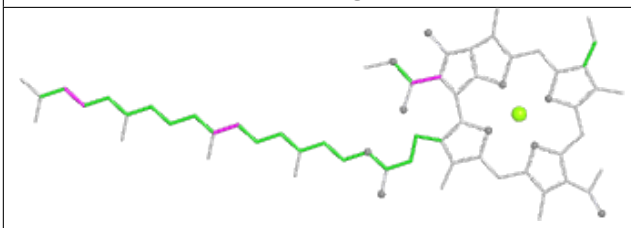
Ligand BCL AQ 101



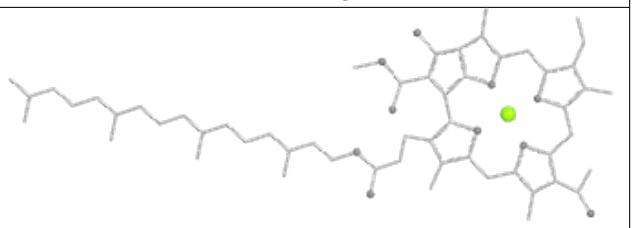
Bond lengths



Bond angles

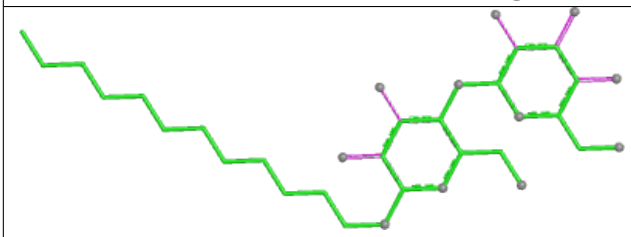


Torsions

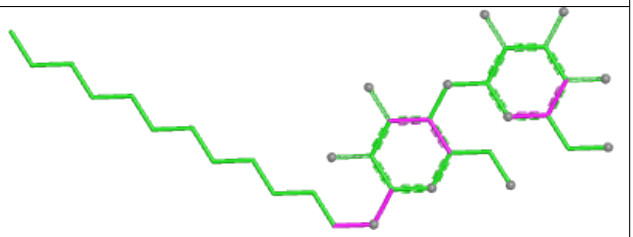


Rings

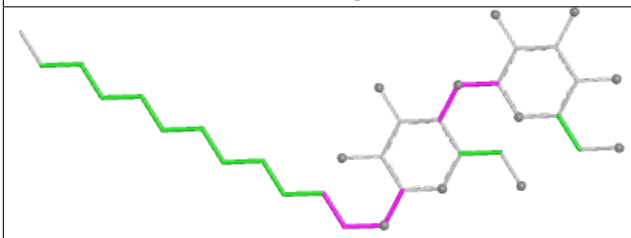
Ligand LMT BA 106



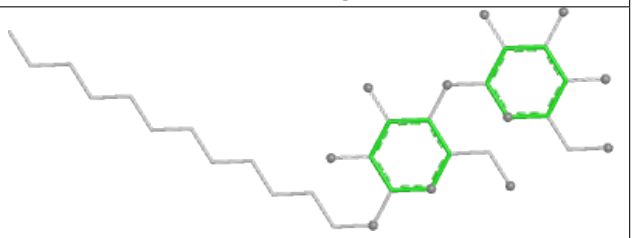
Bond lengths



Bond angles

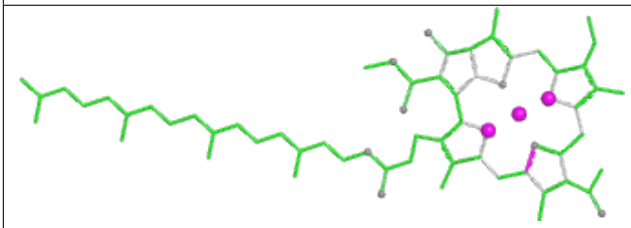


Torsions

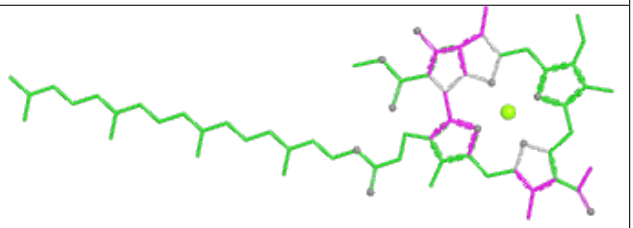


Rings

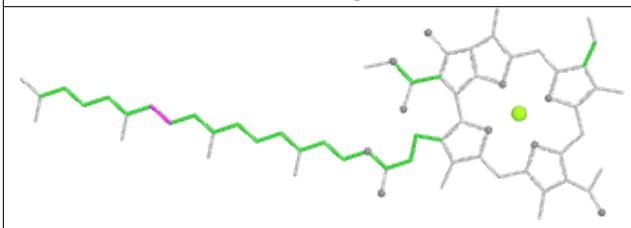
Ligand BCL AT 102



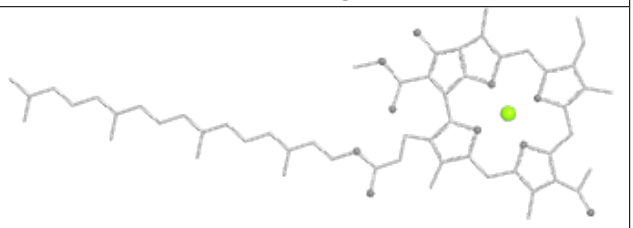
Bond lengths



Bond angles

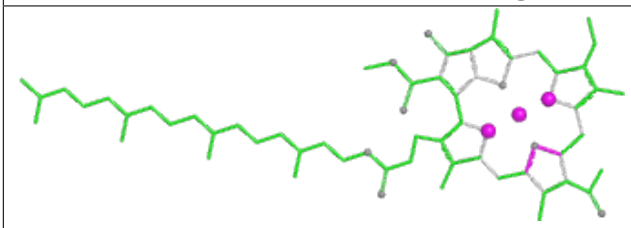


Torsions

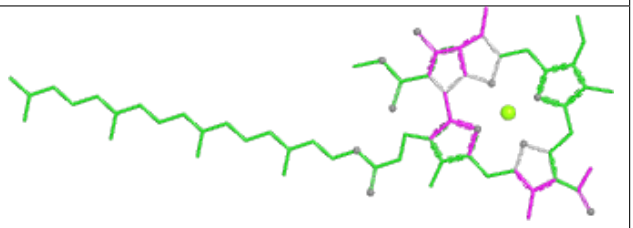


Rings

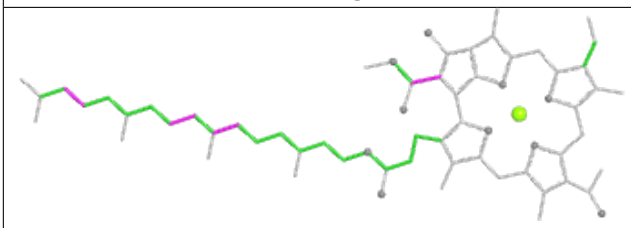
Ligand BCL AP 101



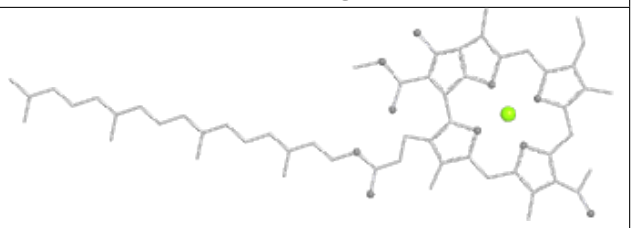
Bond lengths



Bond angles

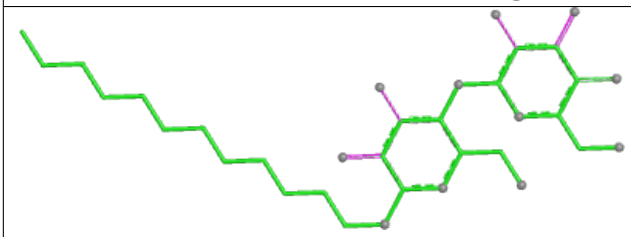


Torsions

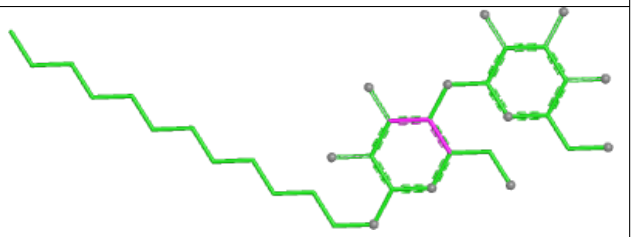


Rings

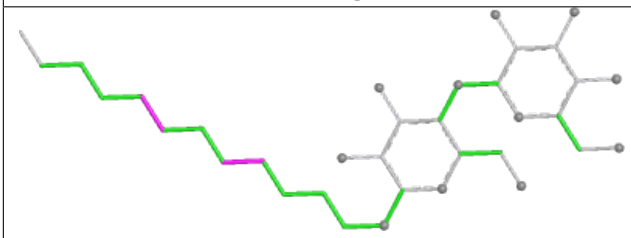
Ligand LMT BD 104



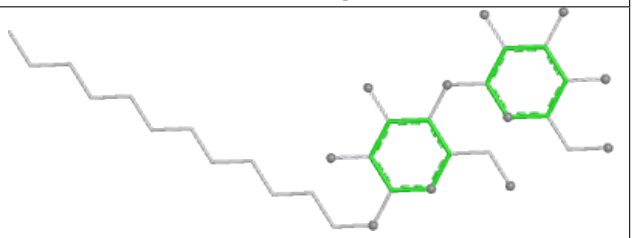
Bond lengths



Bond angles

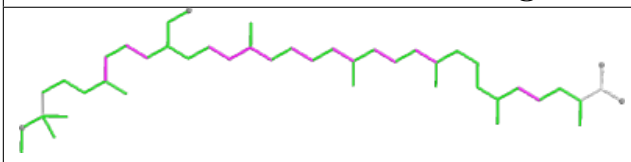


Torsions

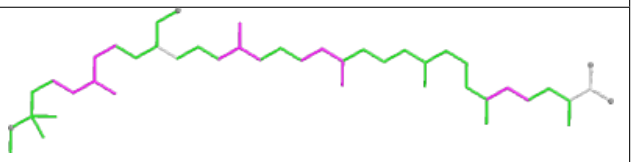


Rings

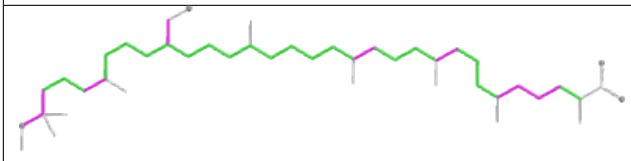
Ligand V7N bb 101



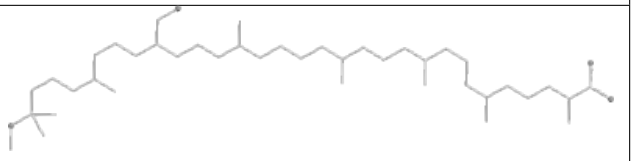
Bond lengths



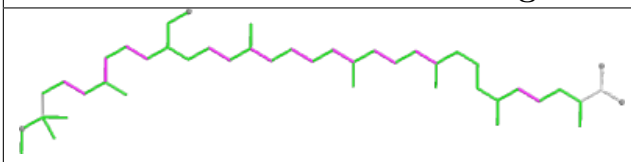
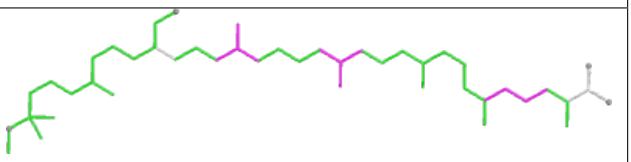
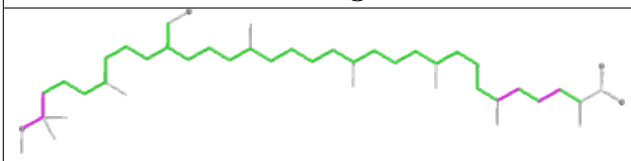
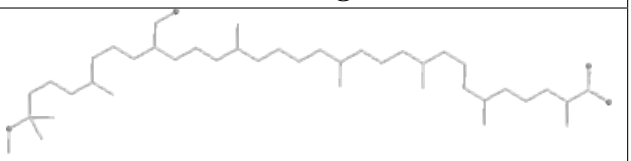
Bond angles

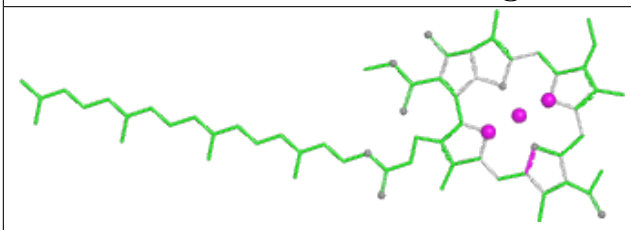
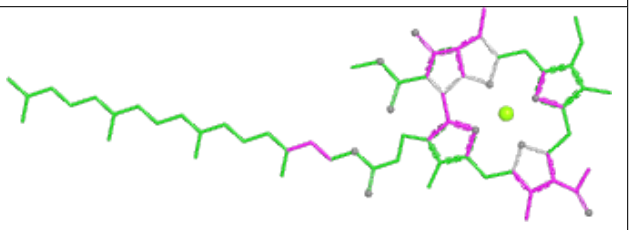
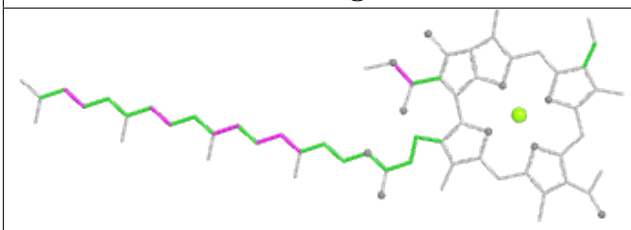
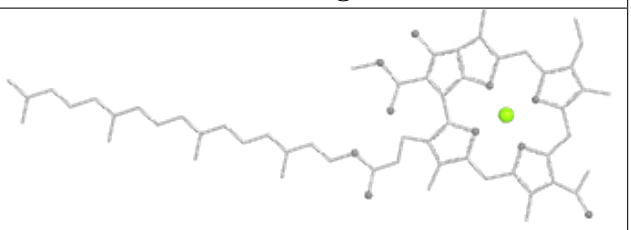


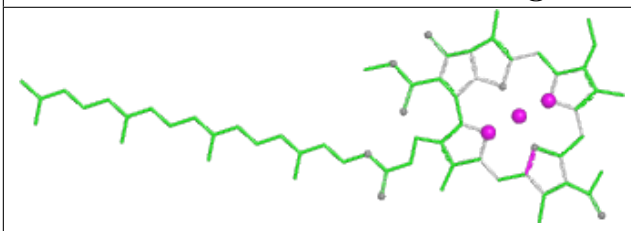
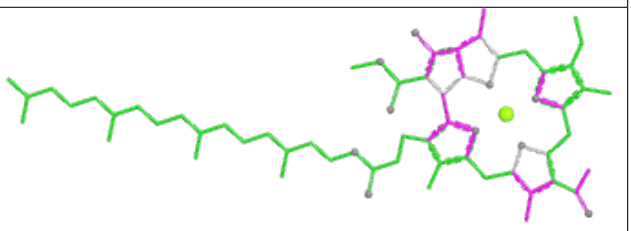
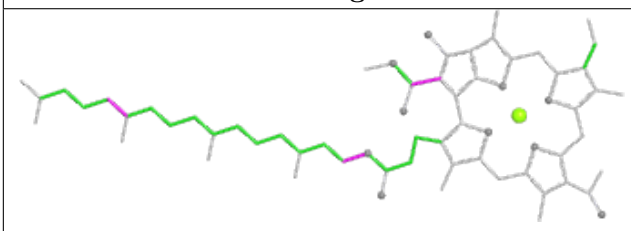
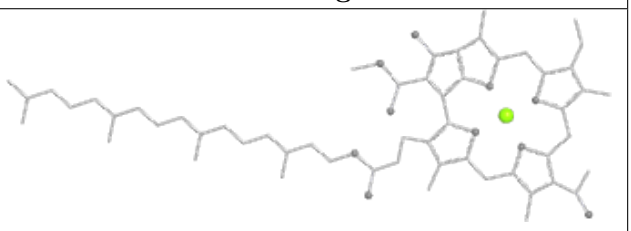
Torsions



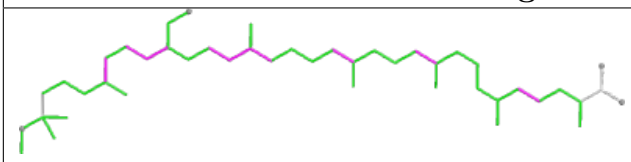
Rings

Ligand V7N bk 103	
 Bond lengths	 Bond angles
 Torsions	 Rings

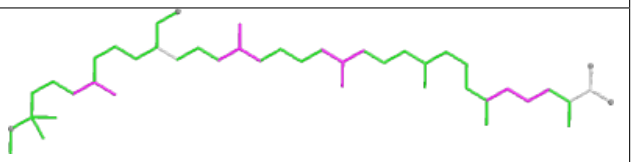
Ligand BCL AA 1002	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL L 303	
 Bond lengths	 Bond angles
 Torsions	 Rings

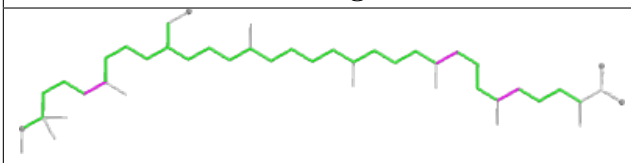
Ligand V7N bh 102



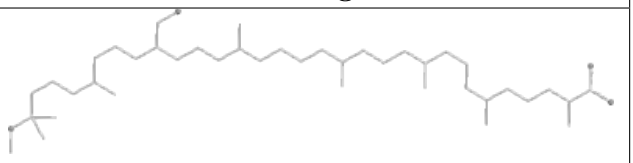
Bond lengths



Bond angles

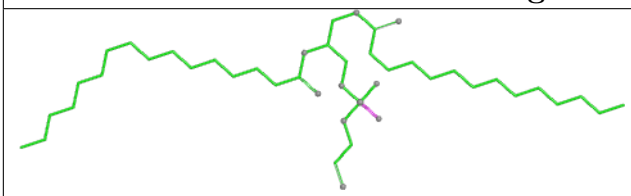


Torsions

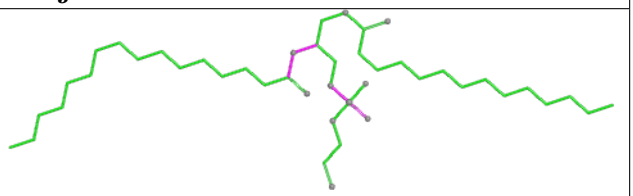


Rings

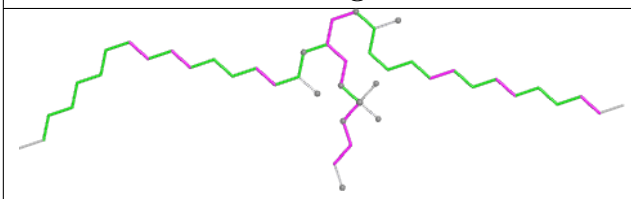
Ligand 0V9 aj 101



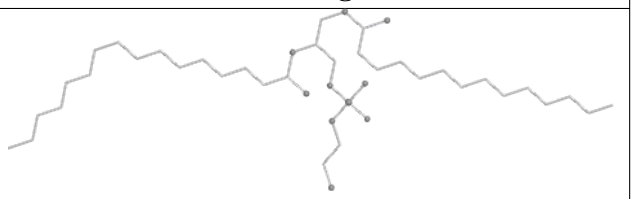
Bond lengths



Bond angles

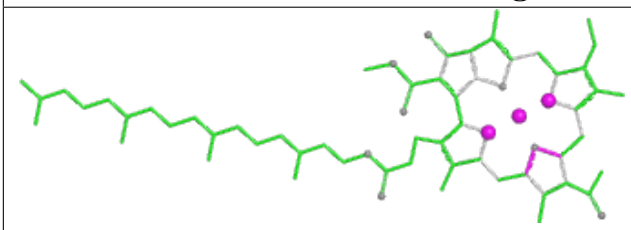


Torsions

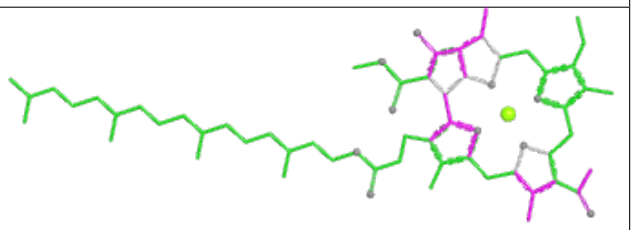


Rings

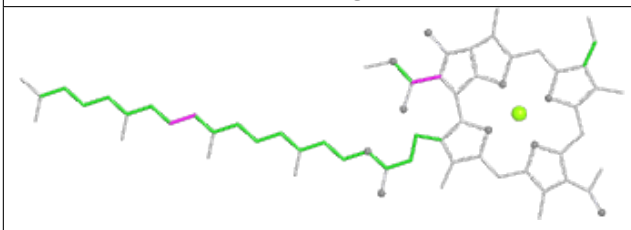
Ligand BCL AO 102



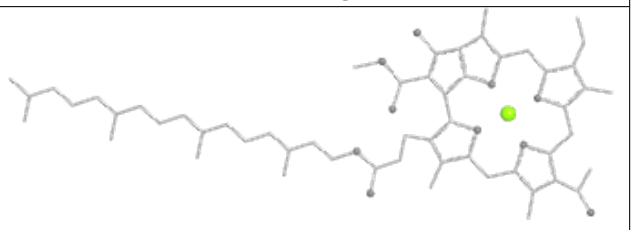
Bond lengths



Bond angles

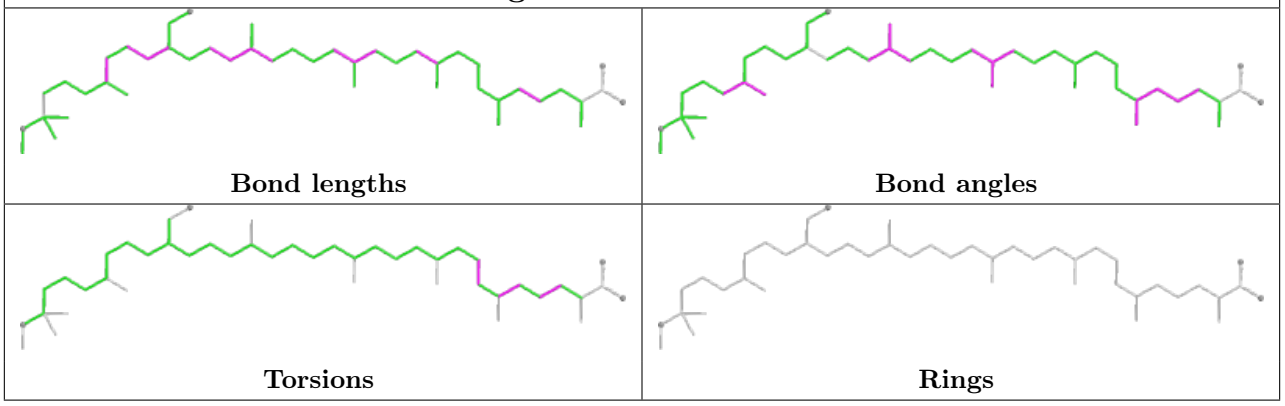


Torsions

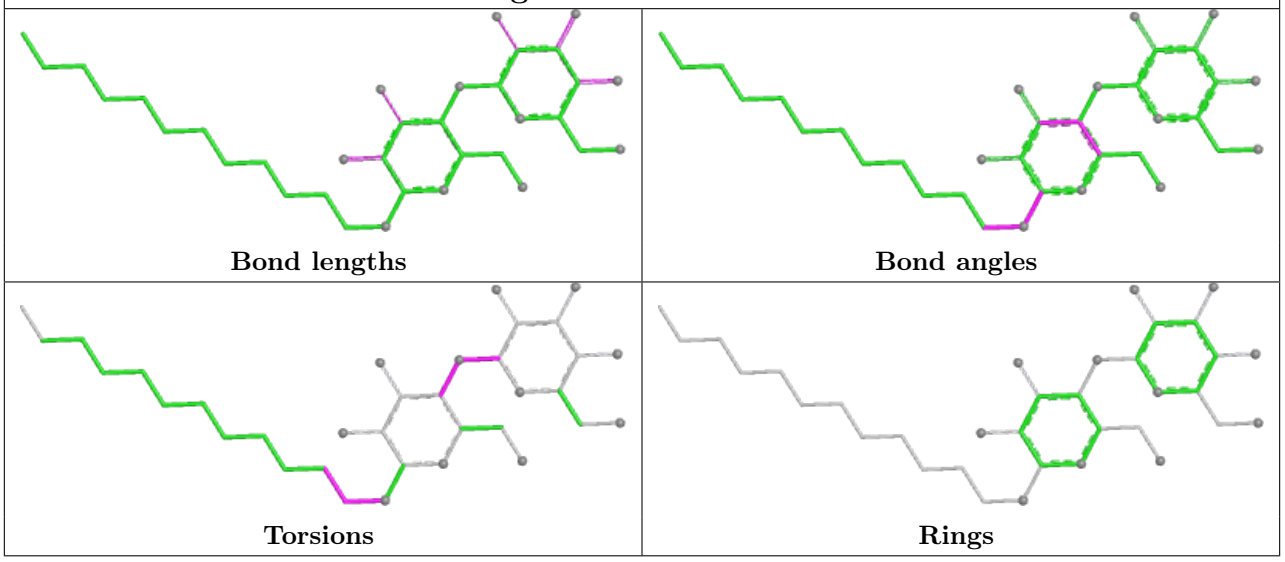


Rings

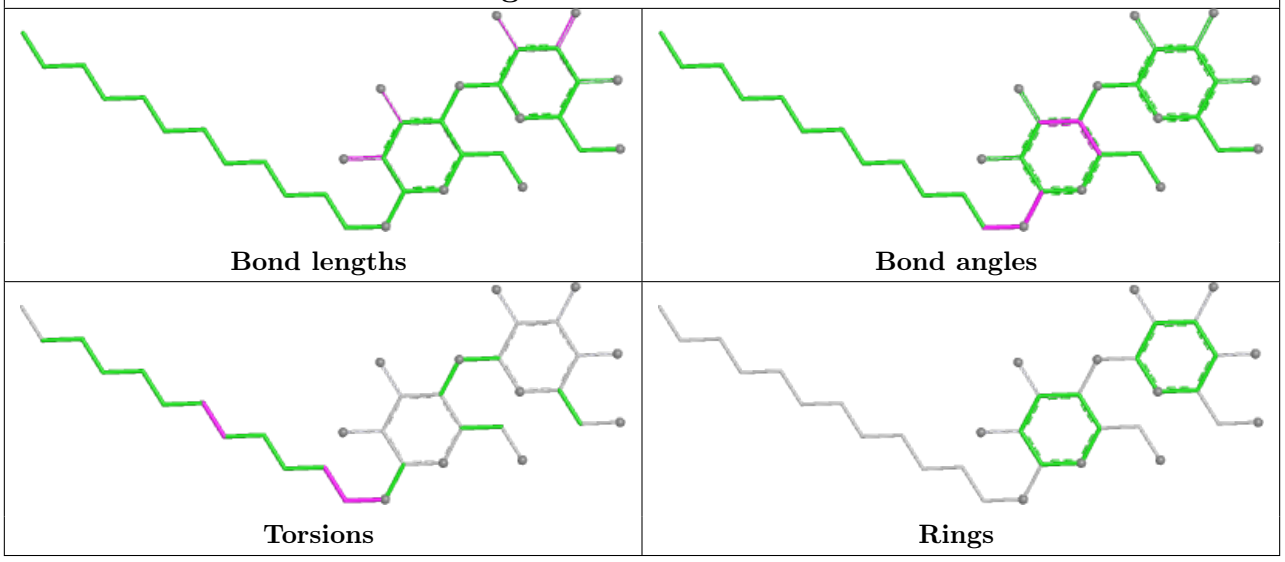
Ligand V7N BJ 1001

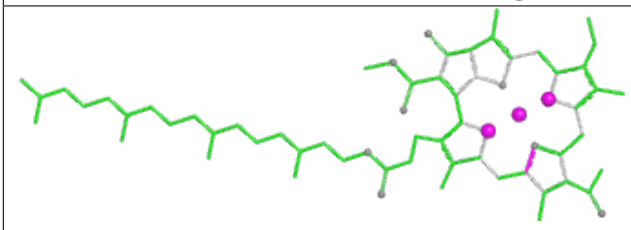
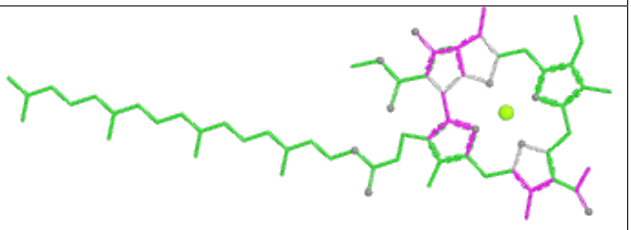
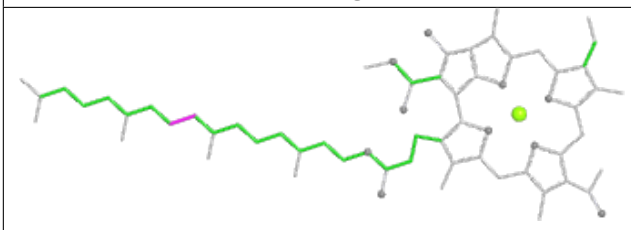
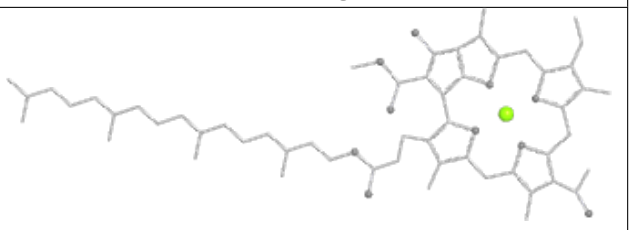


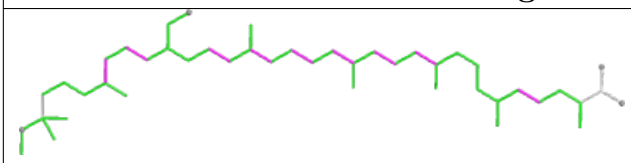
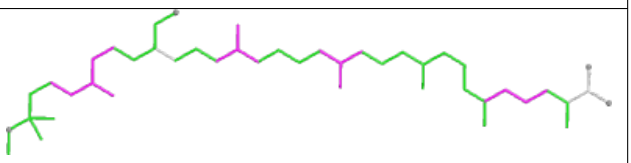
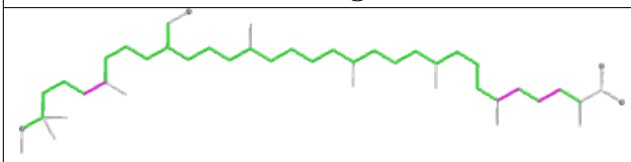
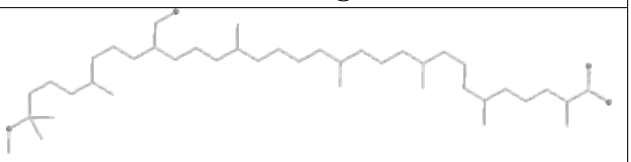
Ligand LMT BE 102

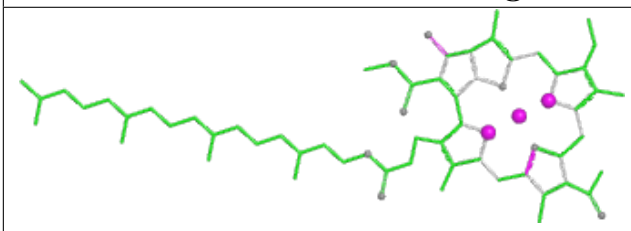
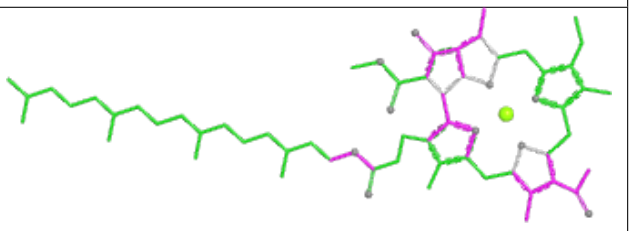
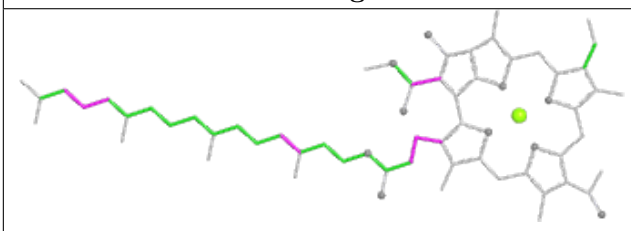
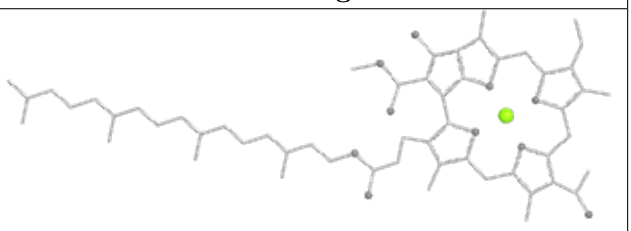


Ligand LMT BP 1006

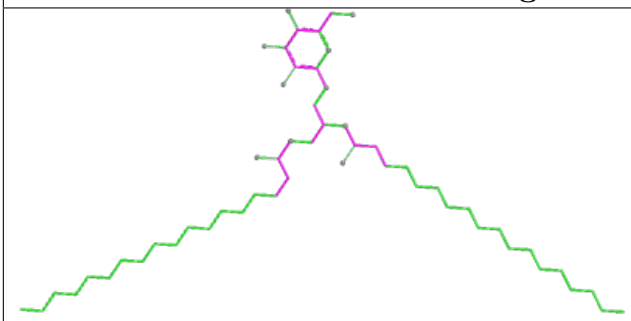


Ligand BCL AK 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

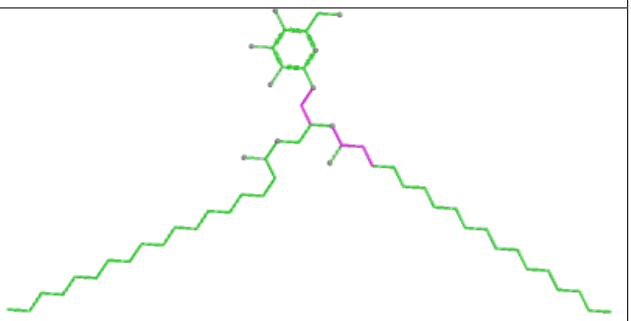
Ligand V7N bn 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL AF 1002	
 Bond lengths	 Bond angles
 Torsions	 Rings

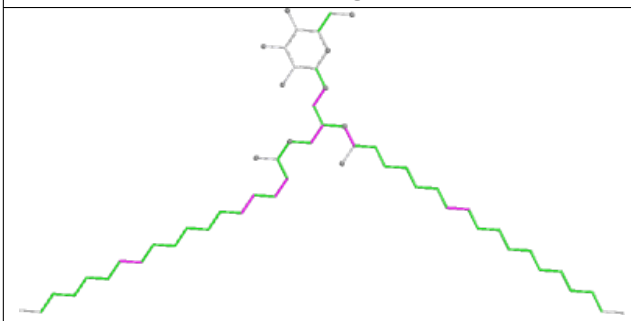
Ligand UYH ai 101



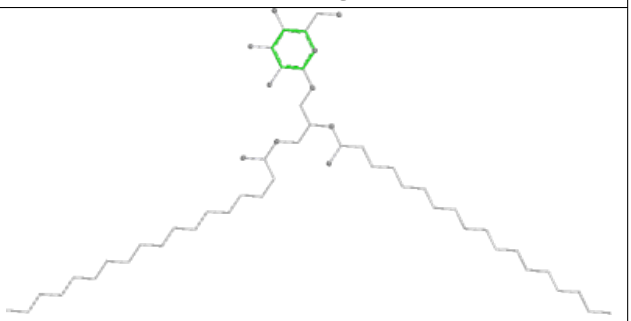
Bond lengths



Bond angles

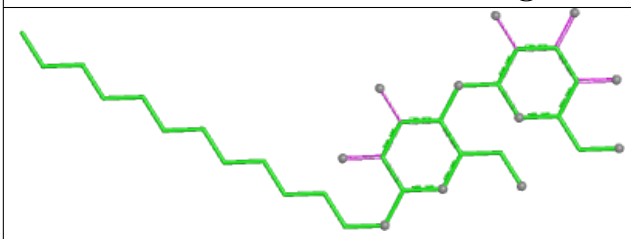


Torsions

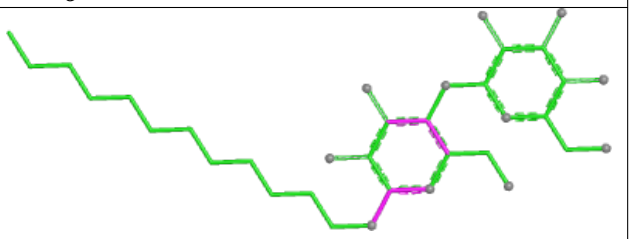


Rings

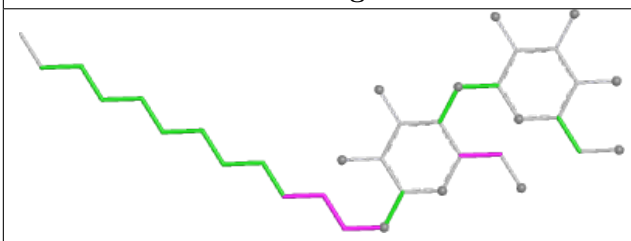
Ligand LMT bj 102



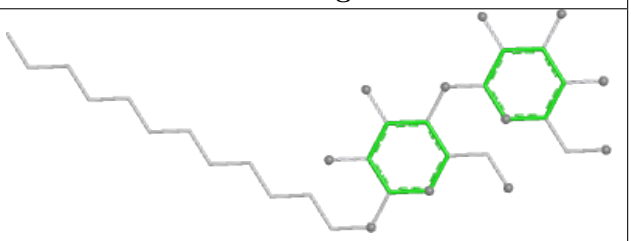
Bond lengths



Bond angles

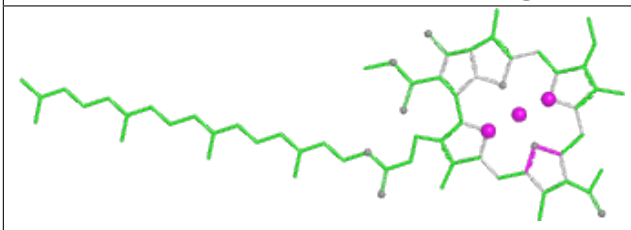


Torsions

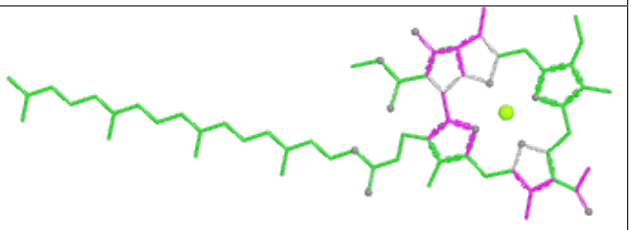


Rings

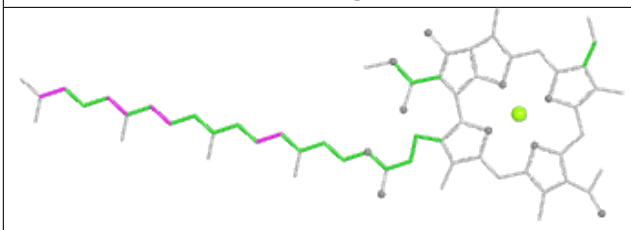
Ligand BCL AI 103



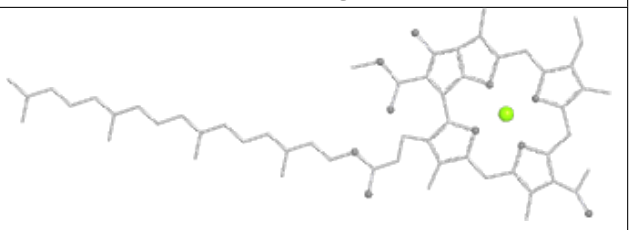
Bond lengths



Bond angles

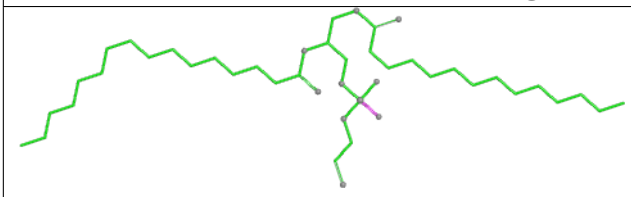


Torsions

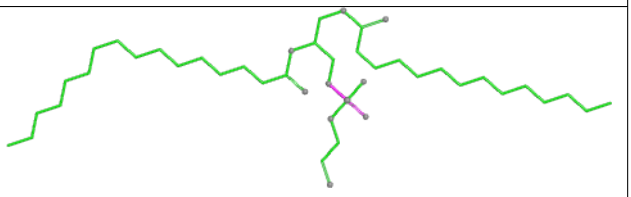


Rings

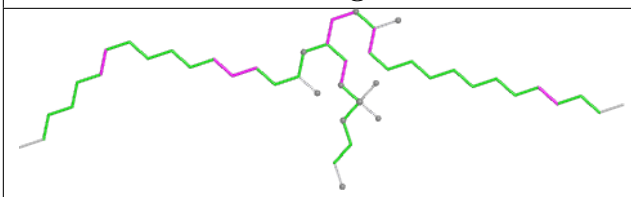
Ligand 0V9 bb 104



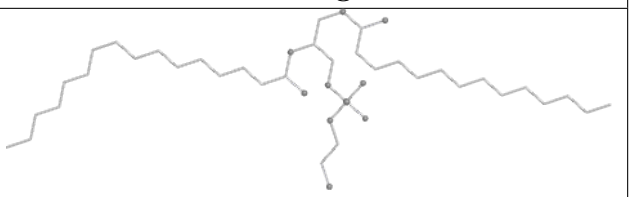
Bond lengths



Bond angles

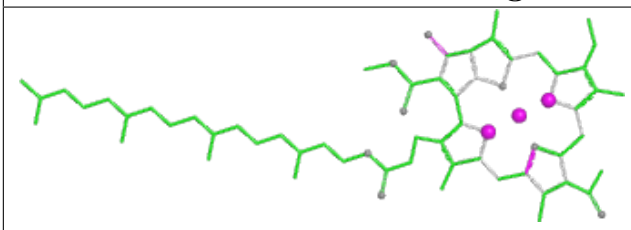


Torsions

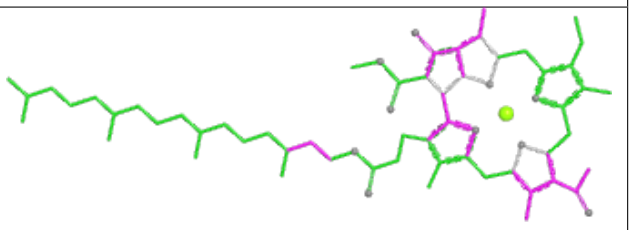


Rings

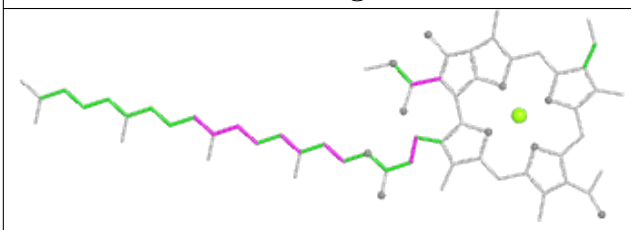
Ligand BCL BS 1005



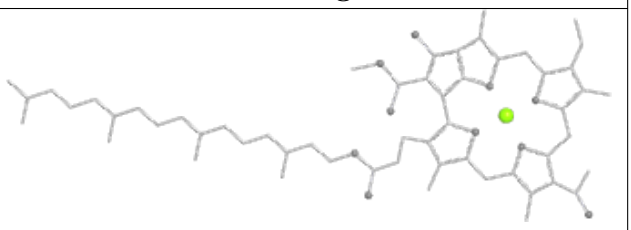
Bond lengths



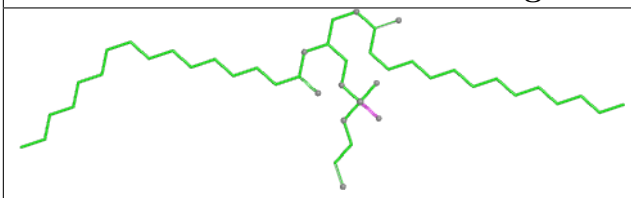
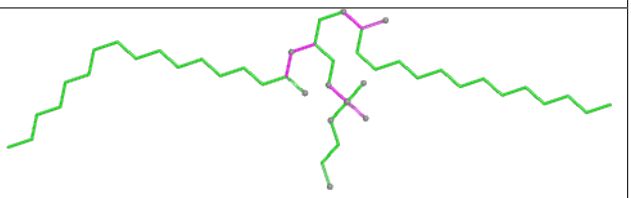
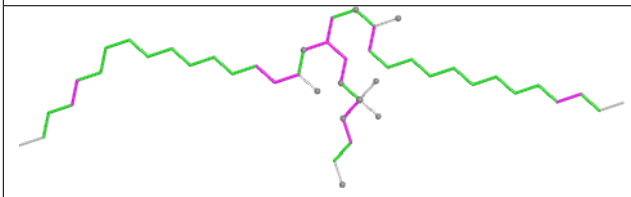
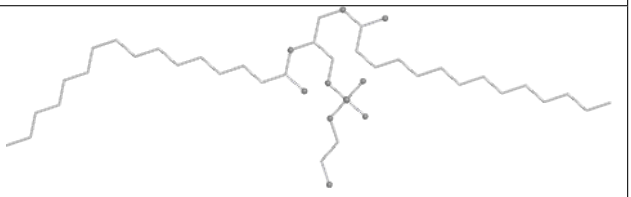
Bond angles

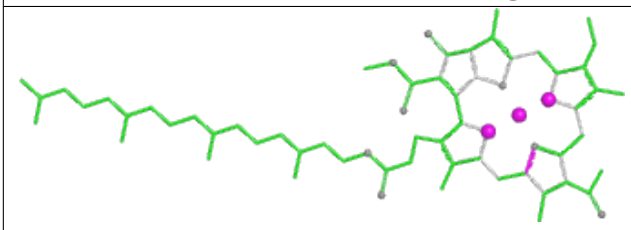
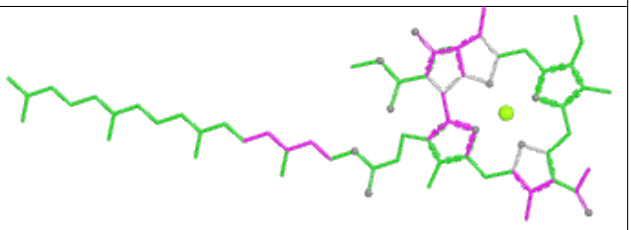
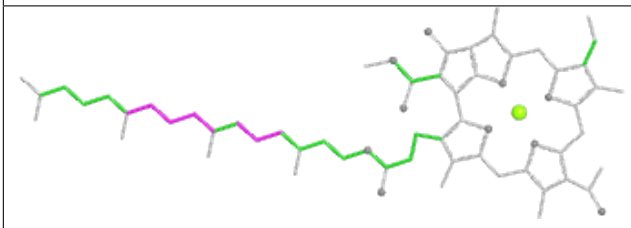
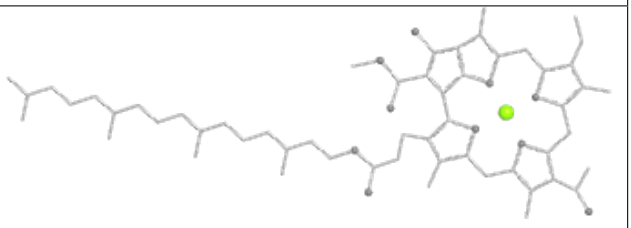


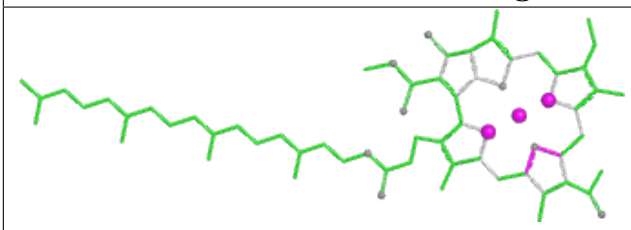
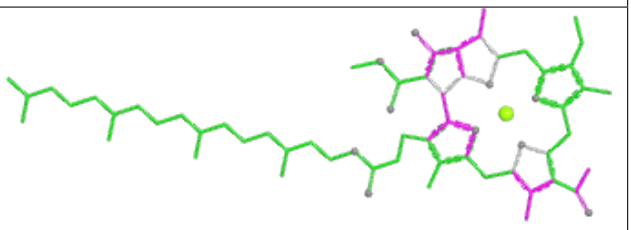
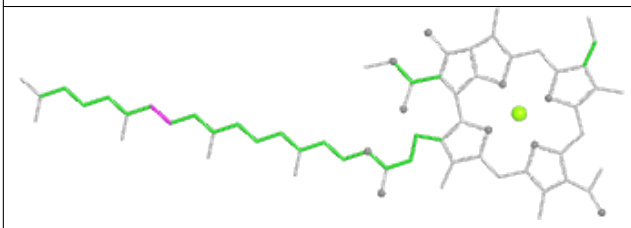
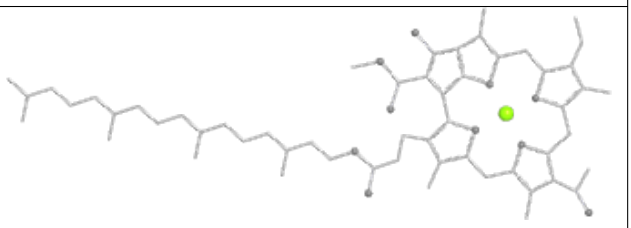
Torsions



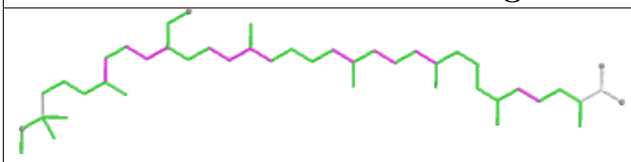
Rings

Ligand 0V9 be 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

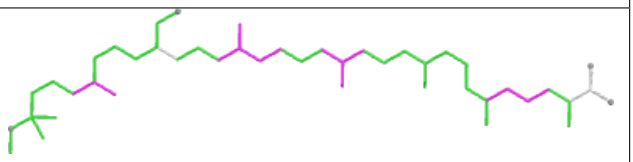
Ligand BCL AF 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL AL 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

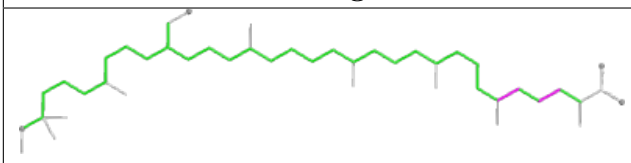
Ligand V7N BT 1001



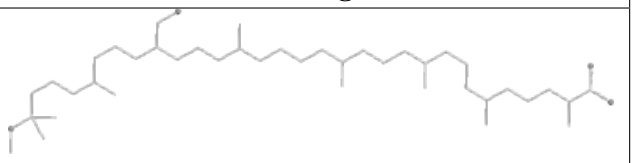
Bond lengths



Bond angles

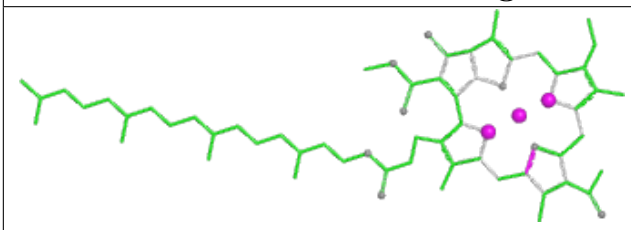


Torsions

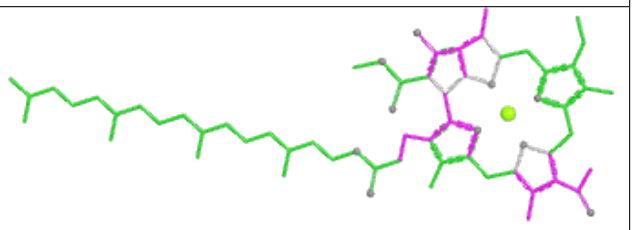


Rings

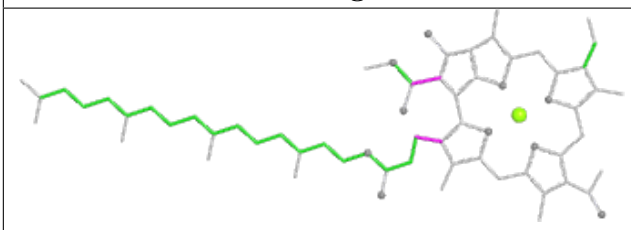
Ligand BCL BW 1003



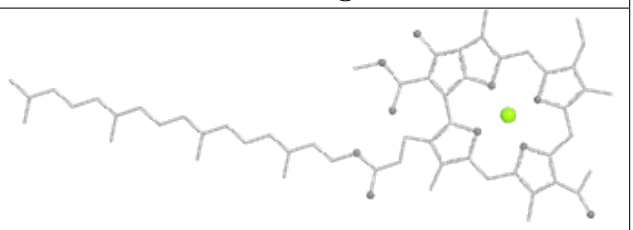
Bond lengths



Bond angles

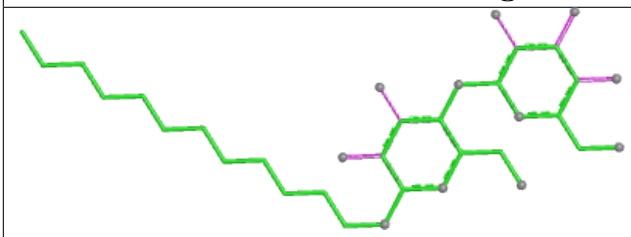


Torsions

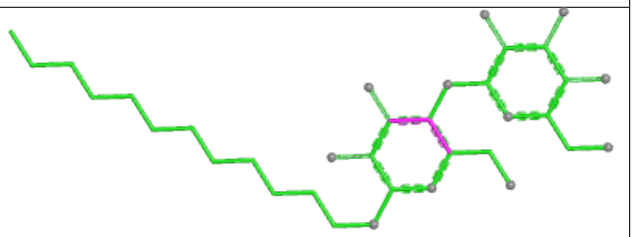


Rings

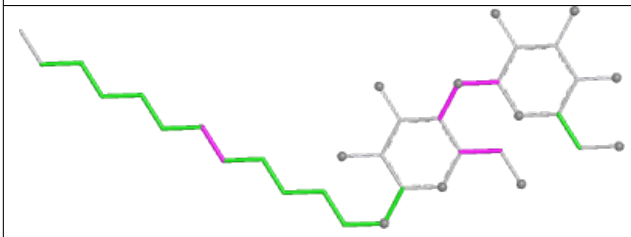
Ligand LMT BR 1002



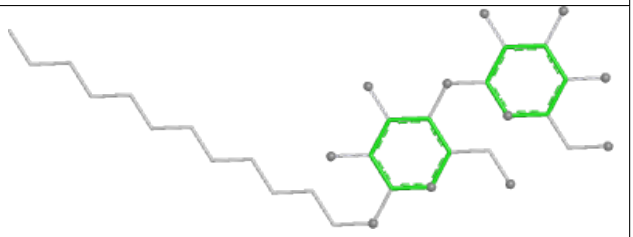
Bond lengths



Bond angles

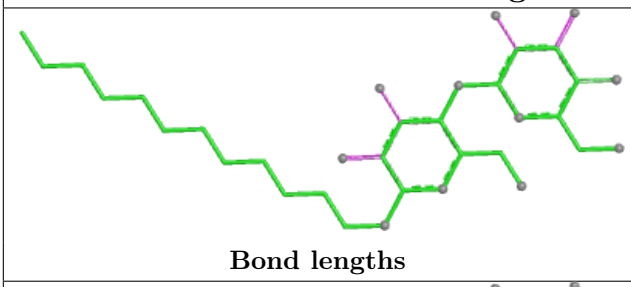


Torsions

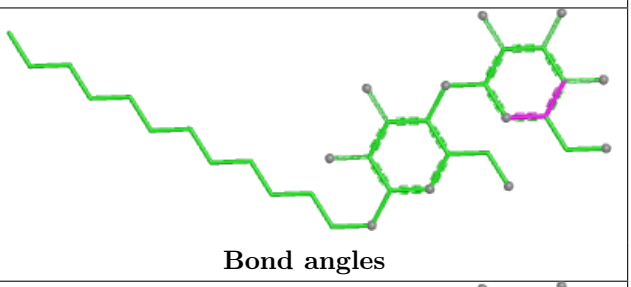


Rings

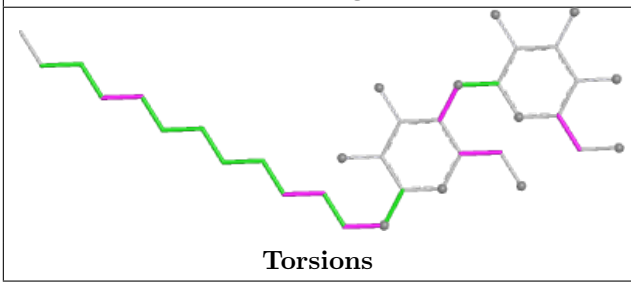
Ligand LMT BC 104



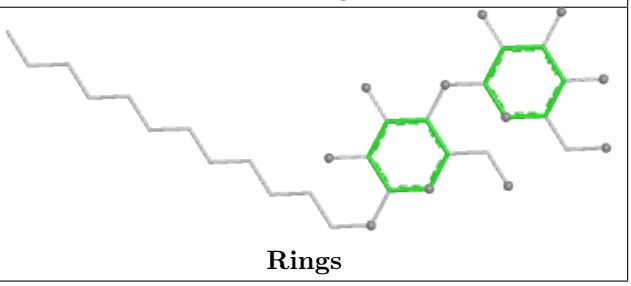
Bond lengths



Bond angles

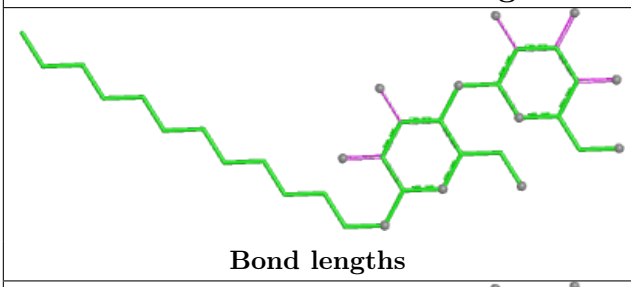


Torsions

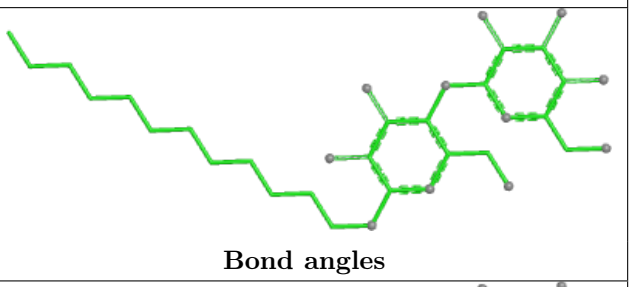


Rings

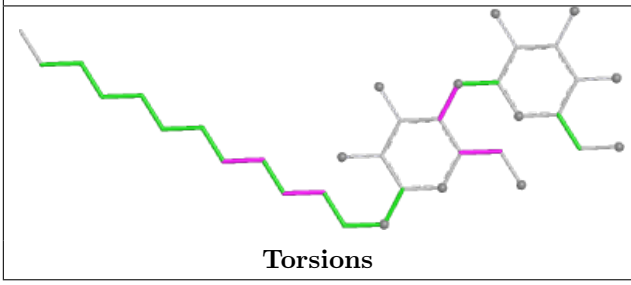
Ligand LMT BN 1004



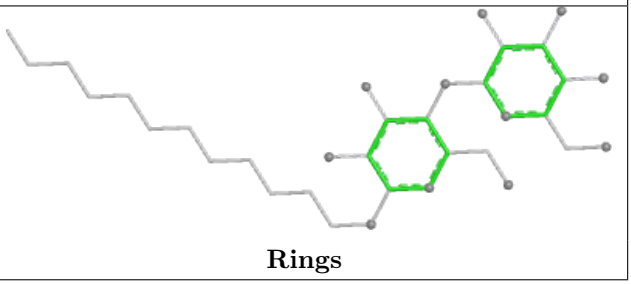
Bond lengths



Bond angles

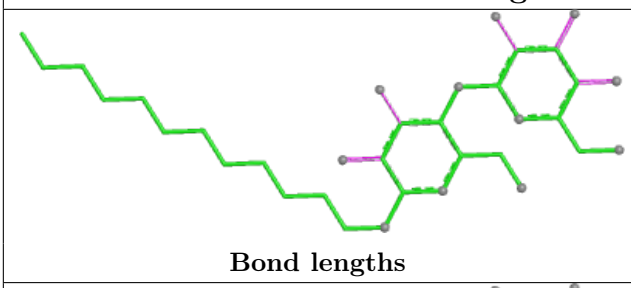


Torsions

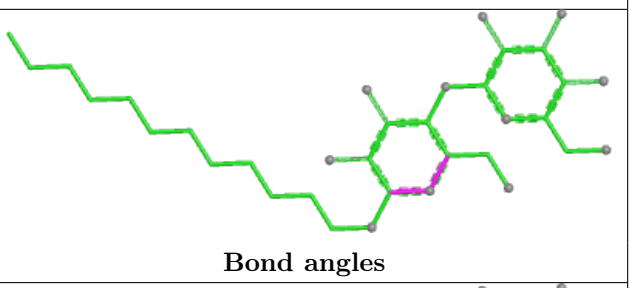


Rings

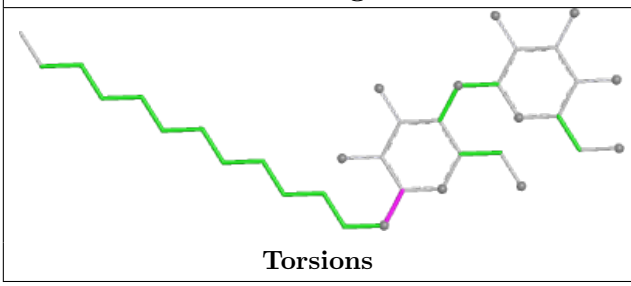
Ligand LMT BE 105



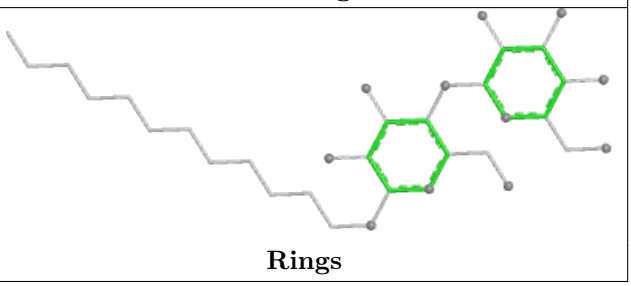
Bond lengths



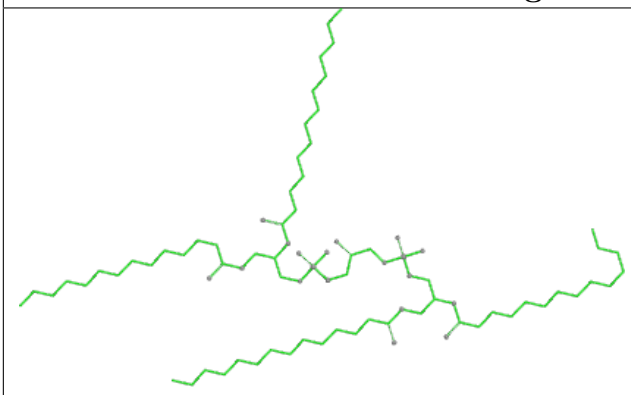
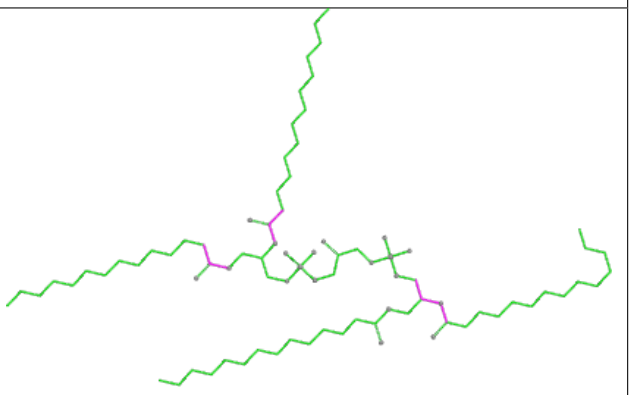
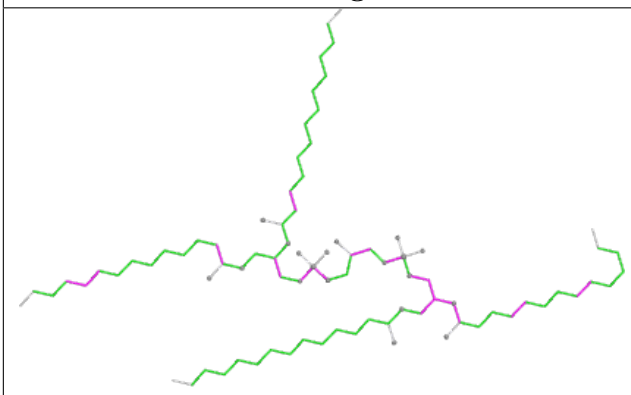
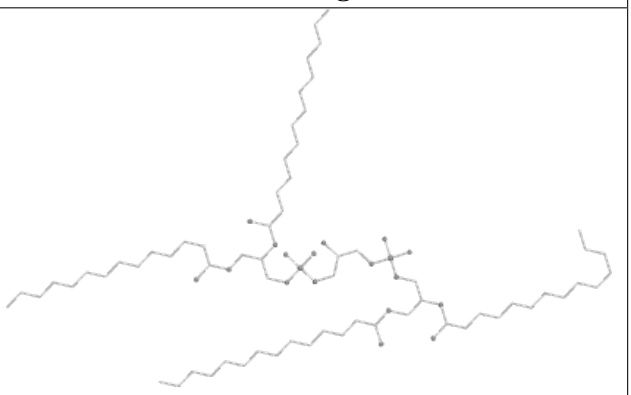
Bond angles

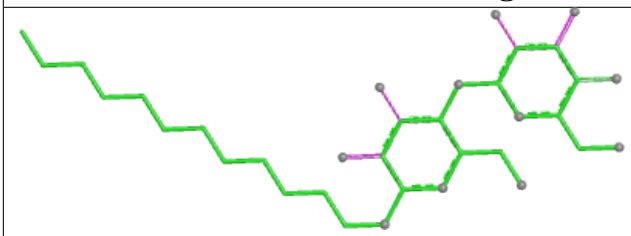
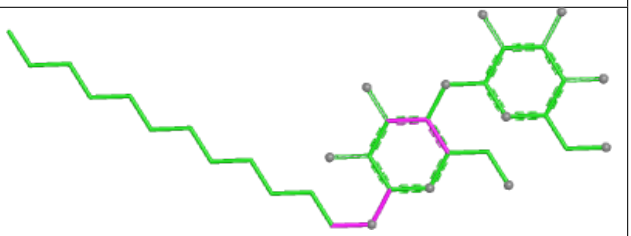
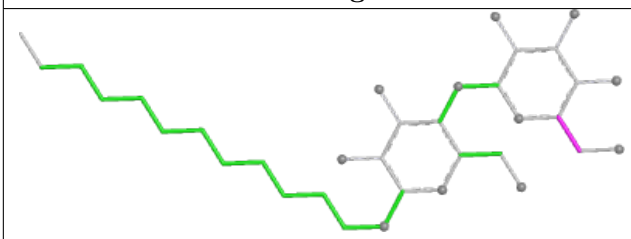
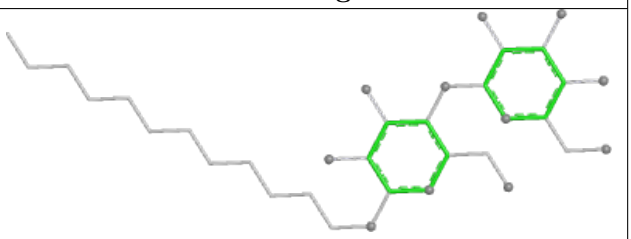


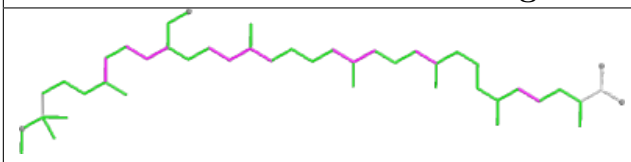
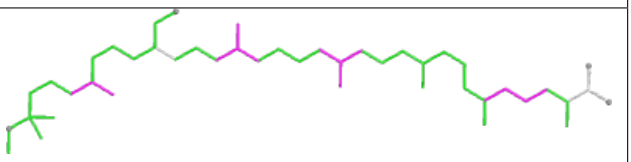
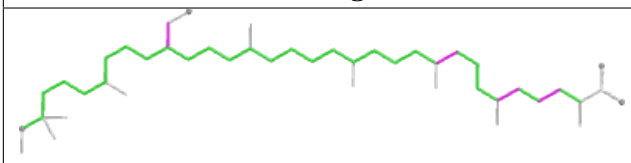
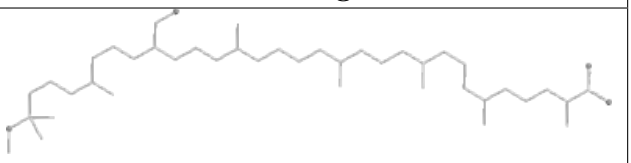
Torsions

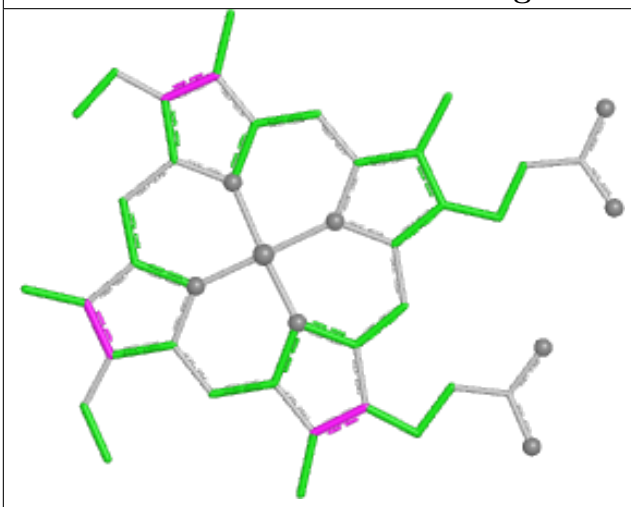
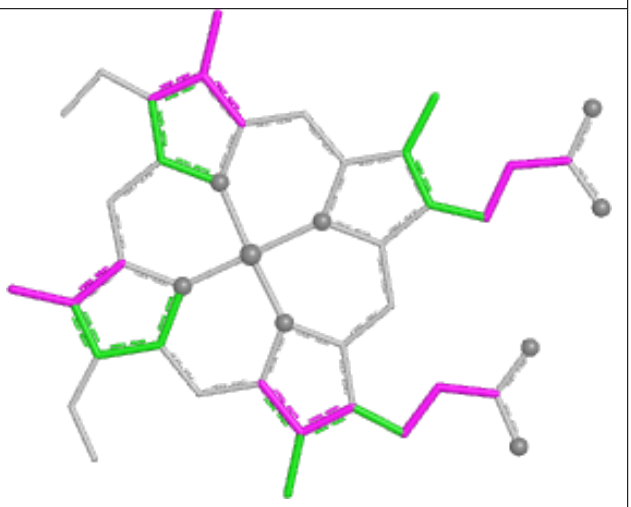
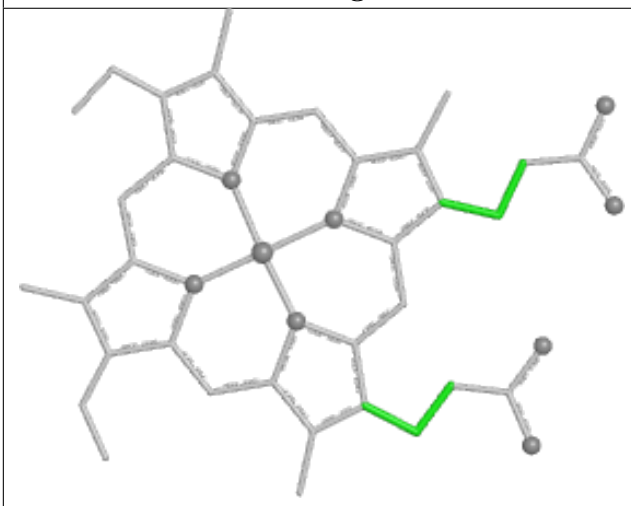
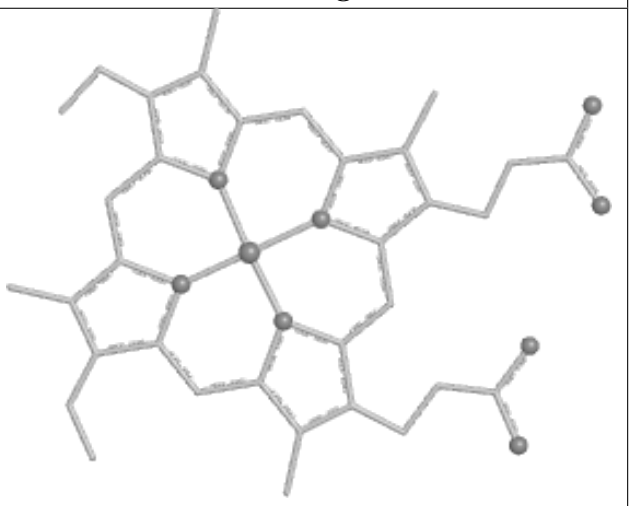


Rings

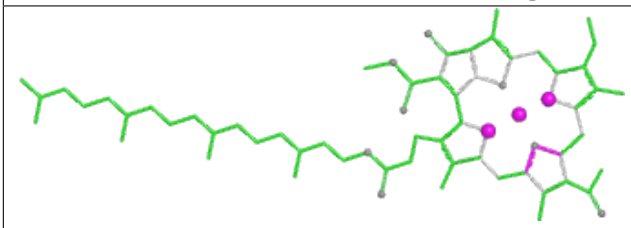
Ligand CD4 af 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT AD 1004	
 Bond lengths	 Bond angles
 Torsions	 Rings

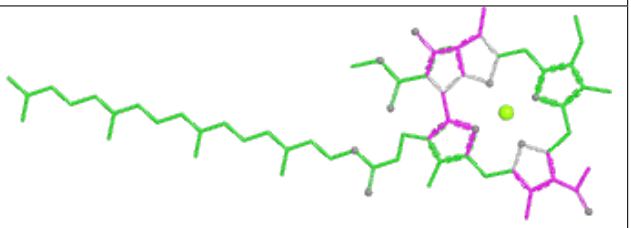
Ligand V7N be 101	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand HEC C 1002	
 Bond lengths	 Bond angles
 Torsions	 Rings

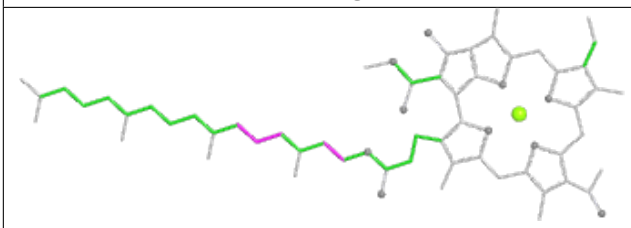
Ligand BCL af 102



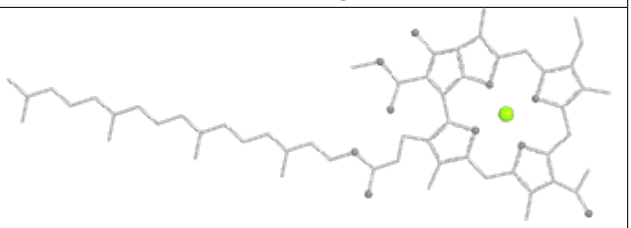
Bond lengths



Bond angles

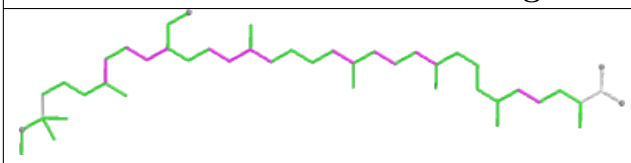


Torsions

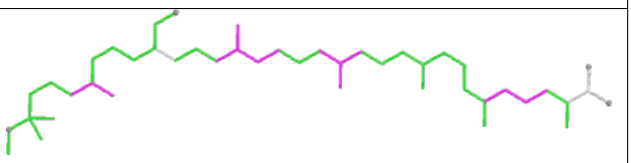


Rings

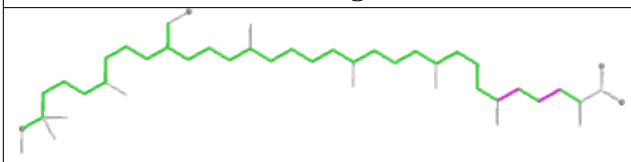
Ligand V7N bi 101



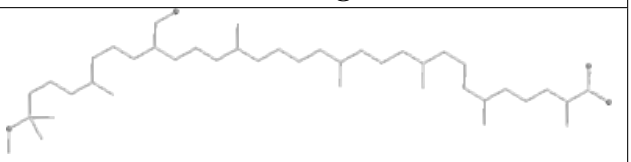
Bond lengths



Bond angles

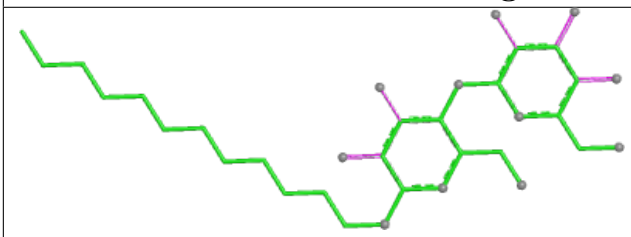


Torsions

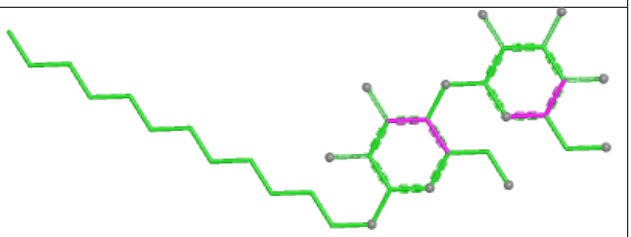


Rings

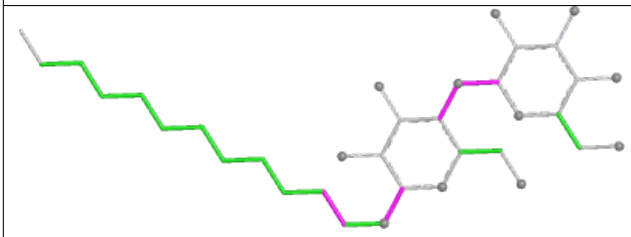
Ligand LMT BT 1005



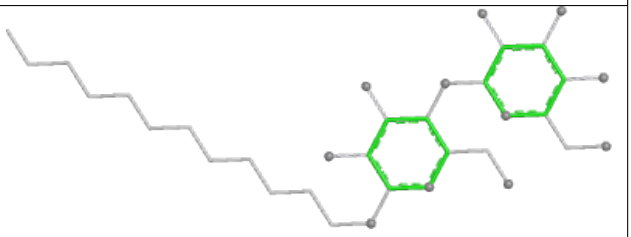
Bond lengths



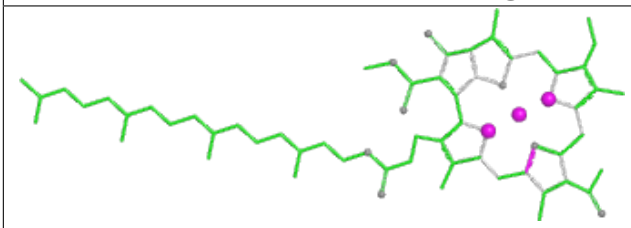
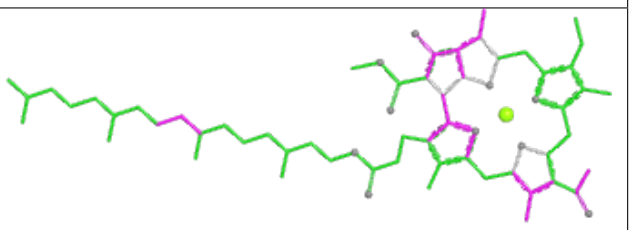
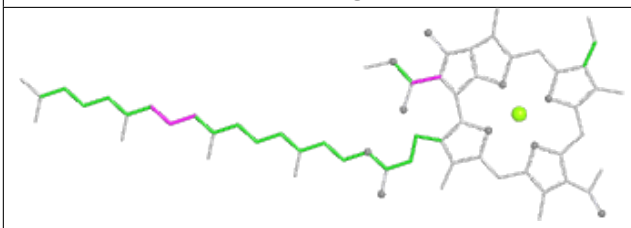
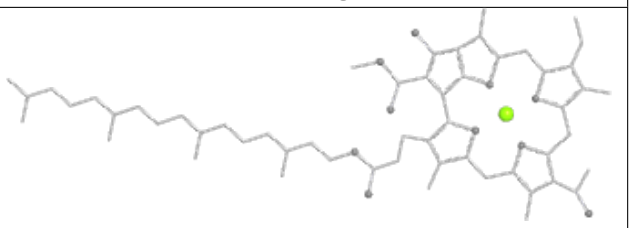
Bond angles

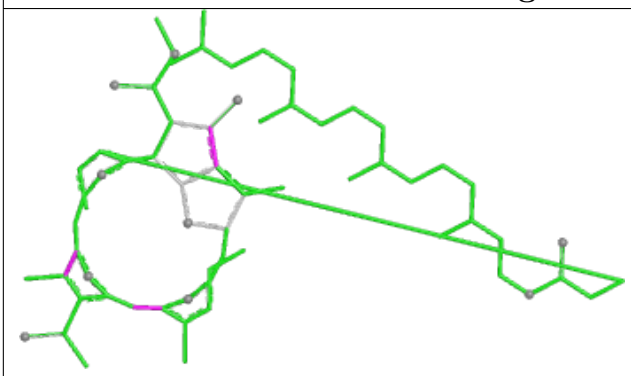
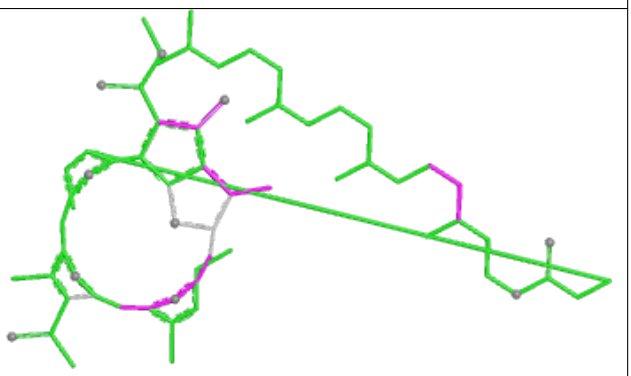
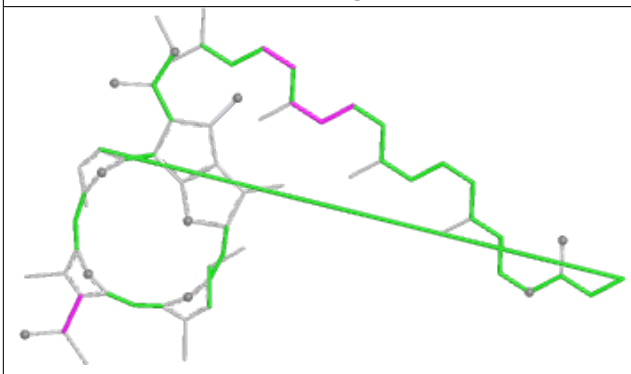
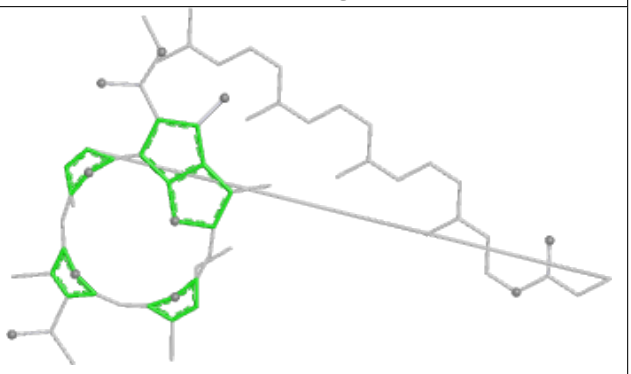


Torsions

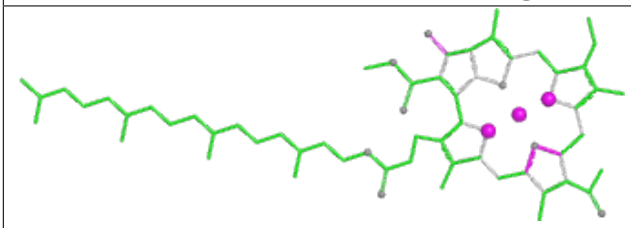


Rings

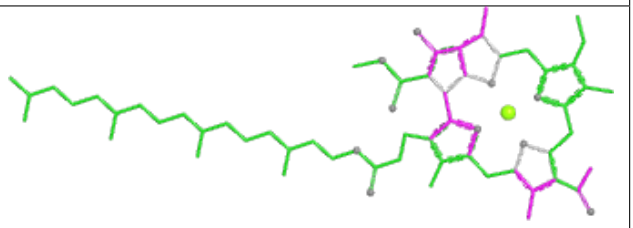
Ligand BCL AA 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BPH M 406	
 Bond lengths	 Bond angles
 Torsions	 Rings

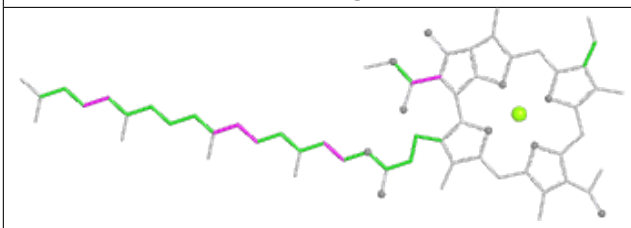
Ligand BCL AI 102



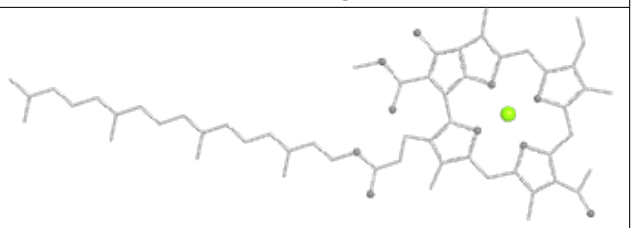
Bond lengths



Bond angles

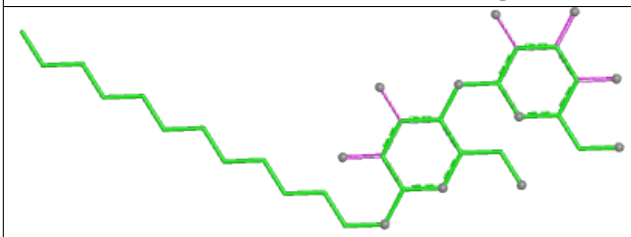


Torsions

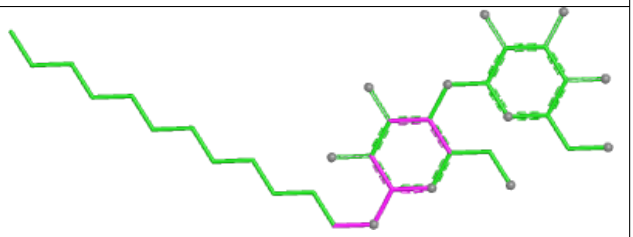


Rings

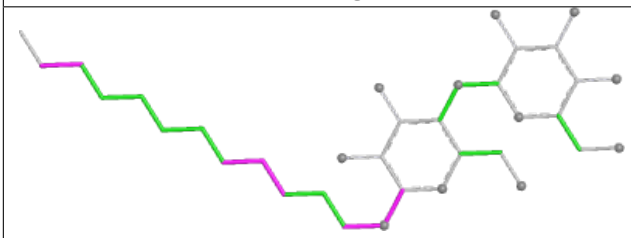
Ligand LMT BW 1005



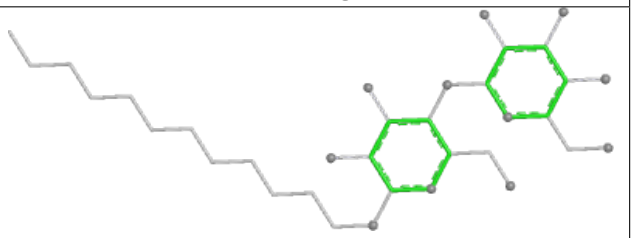
Bond lengths



Bond angles

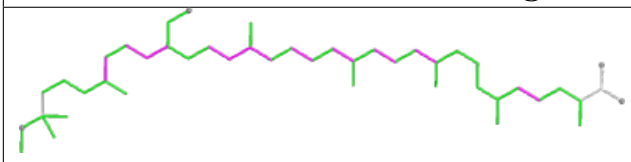


Torsions

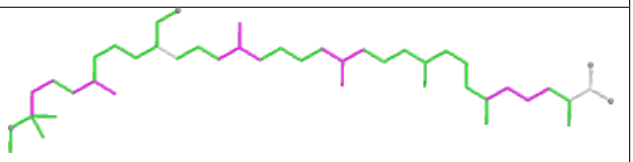


Rings

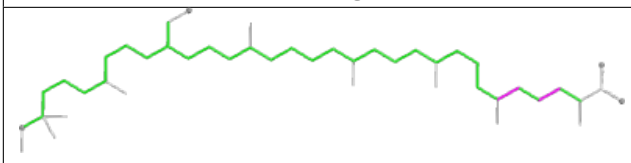
Ligand V7N bf 102



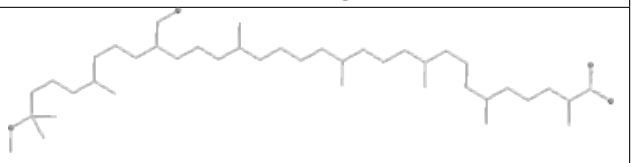
Bond lengths



Bond angles

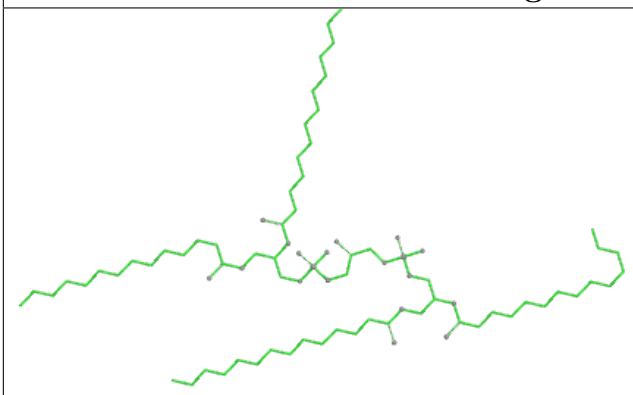


Torsions

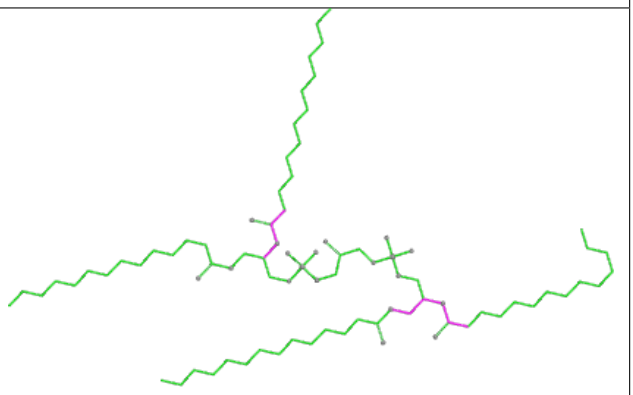


Rings

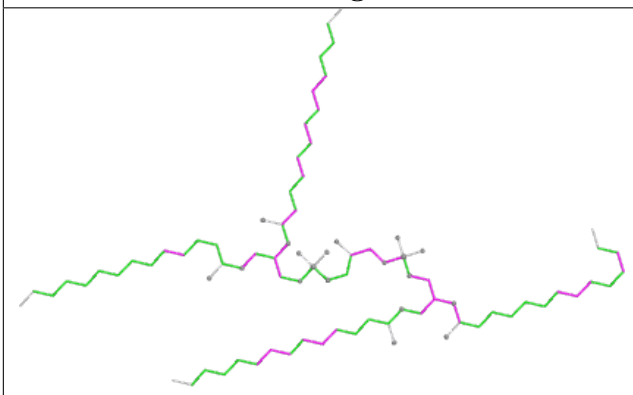
Ligand CD4 af 103



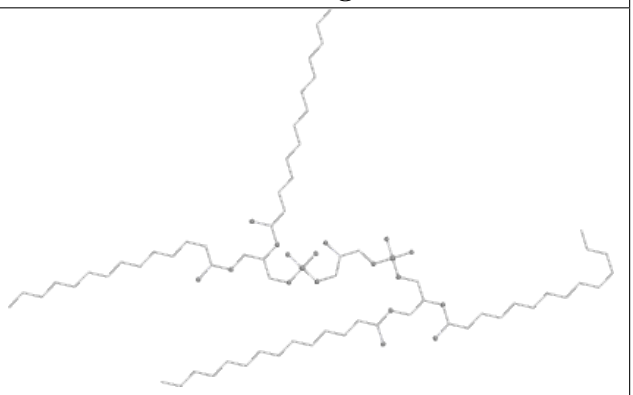
Bond lengths



Bond angles

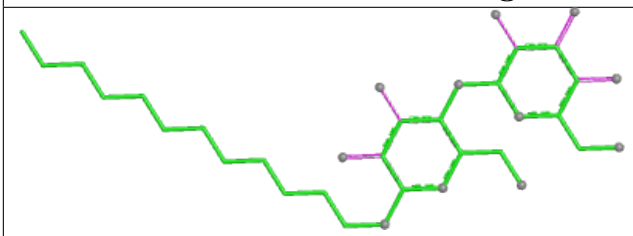


Torsions

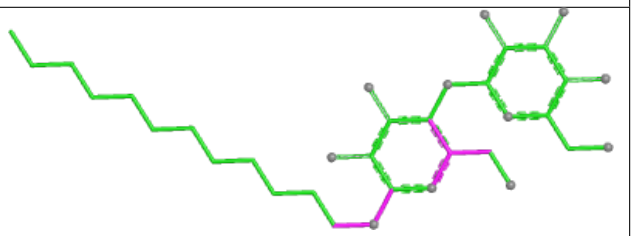


Rings

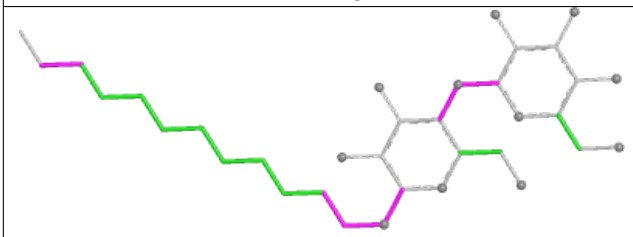
Ligand LMT BK 1004



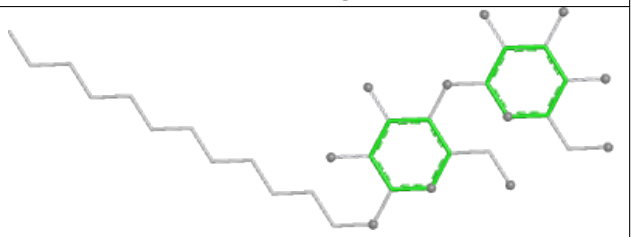
Bond lengths



Bond angles

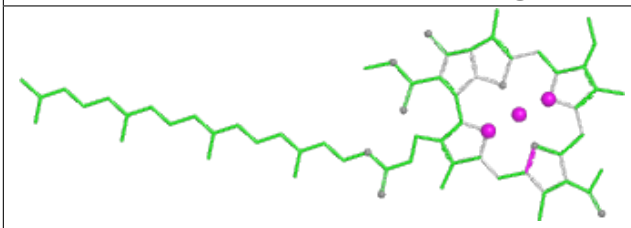


Torsions

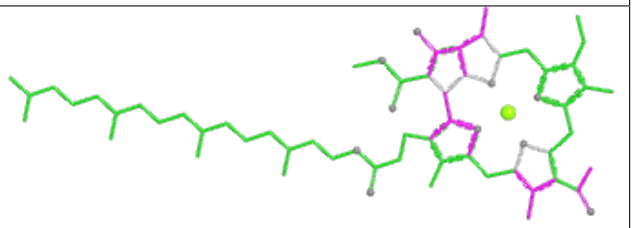


Rings

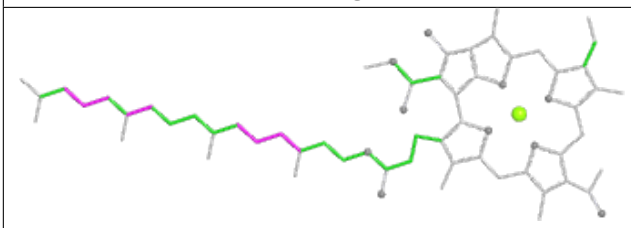
Ligand BCL ao 1001



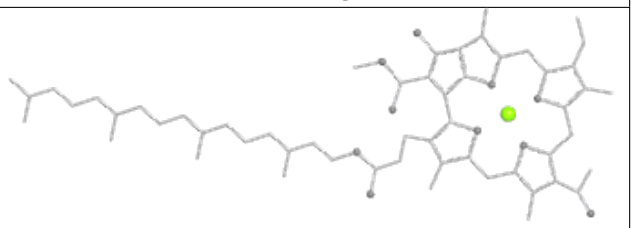
Bond lengths



Bond angles

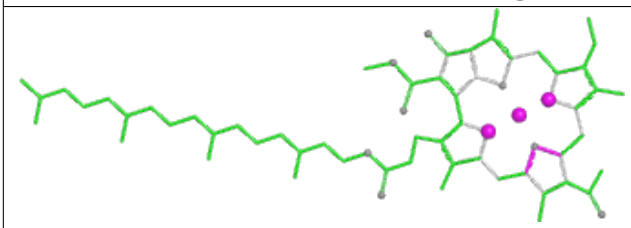


Torsions

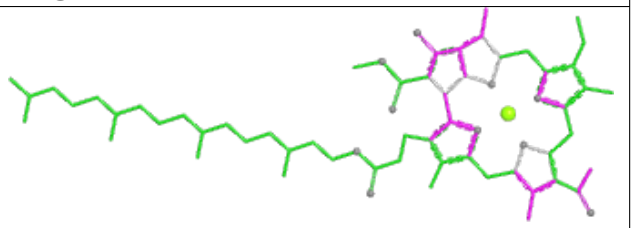


Rings

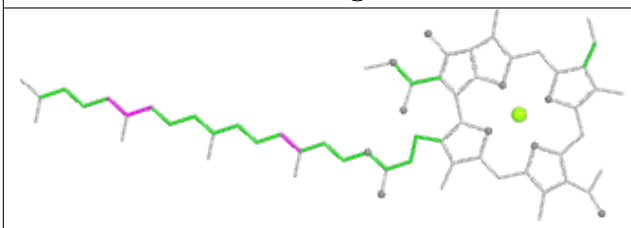
Ligand BCL ag 1001



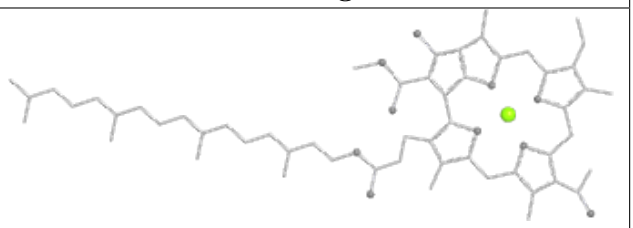
Bond lengths



Bond angles

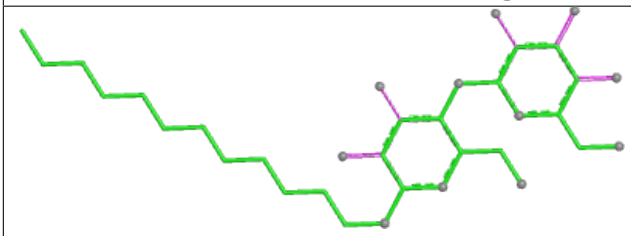


Torsions

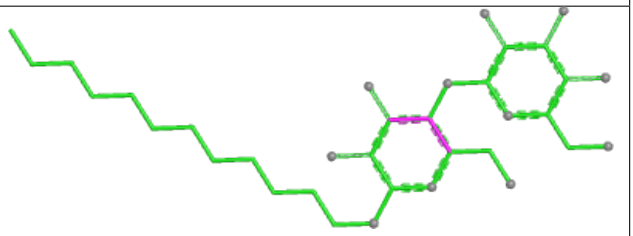


Rings

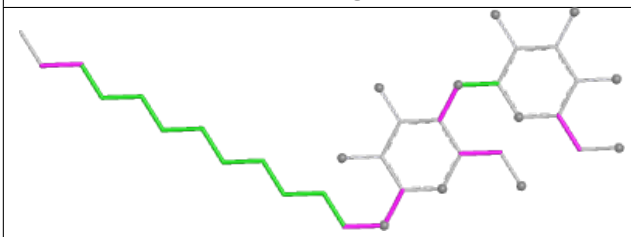
Ligand LMT AA 1003



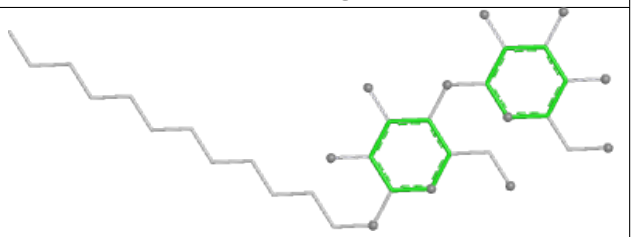
Bond lengths



Bond angles

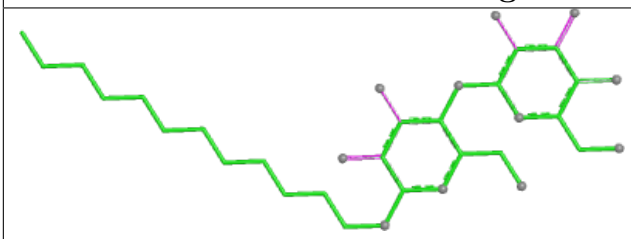


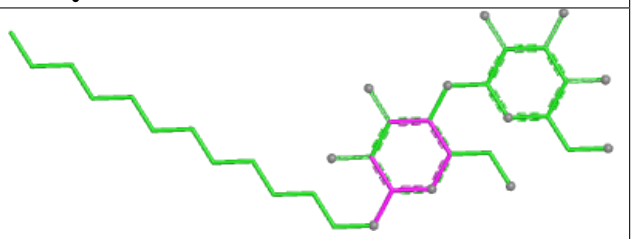
Torsions

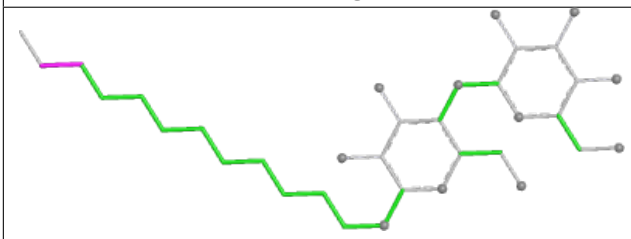


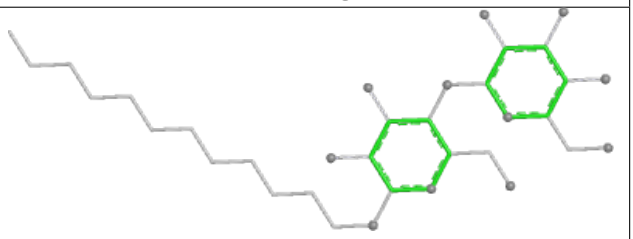
Rings

Ligand LMT BQ 1002

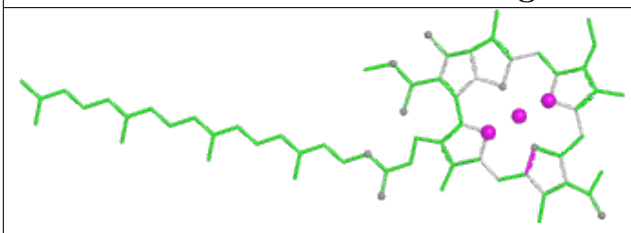

Bond lengths

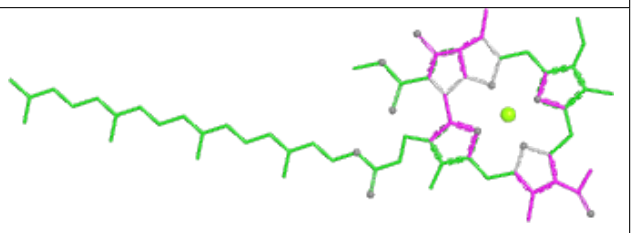

Bond angles

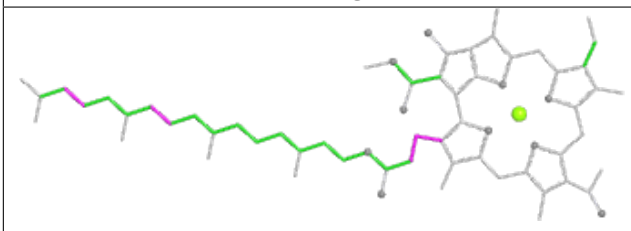

Torsions

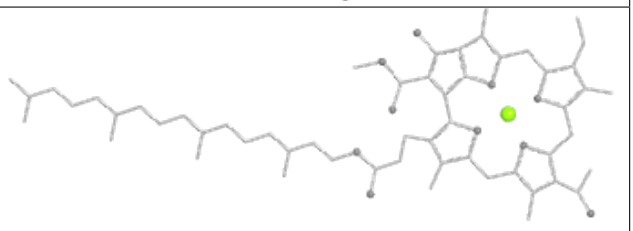

Rings

Ligand BCL bb 103

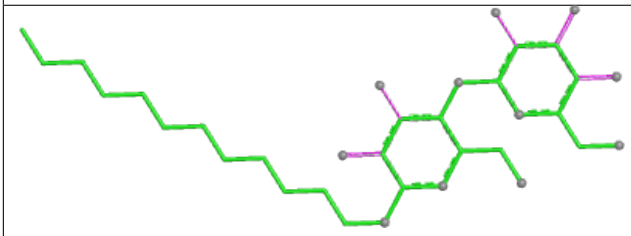

Bond lengths

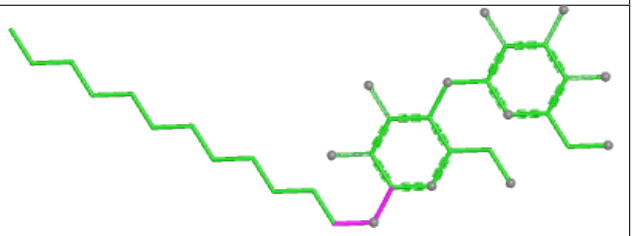

Bond angles

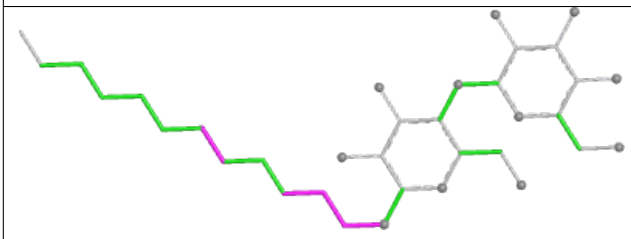

Torsions

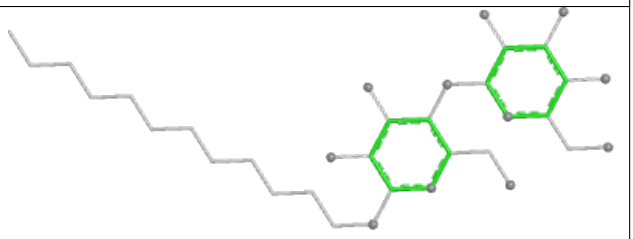

Rings

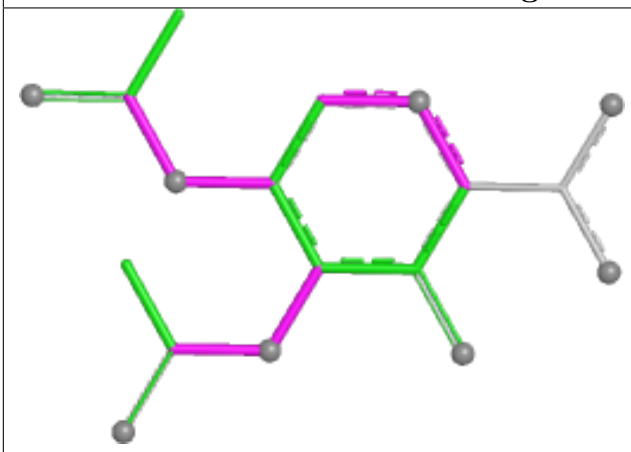
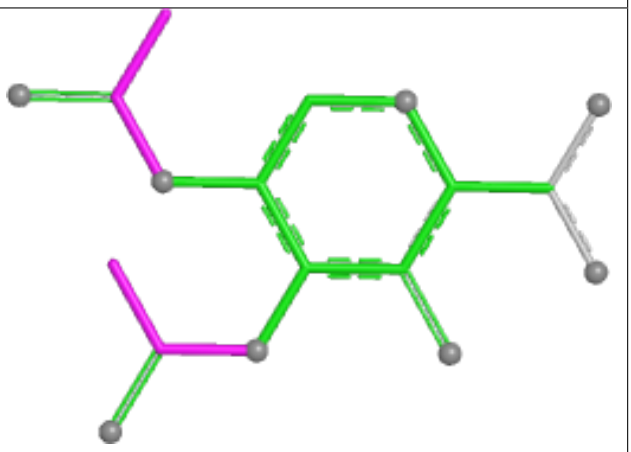
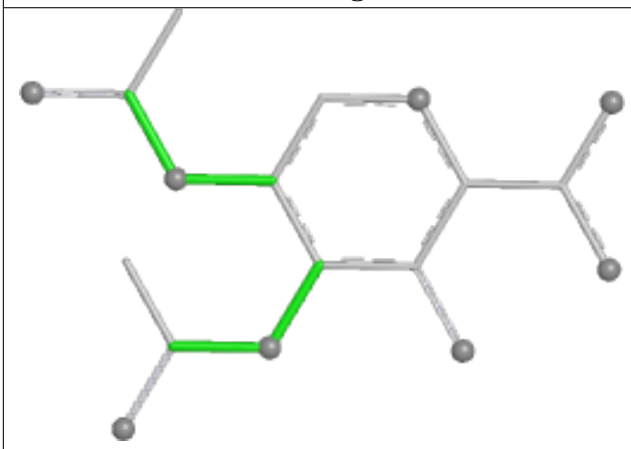
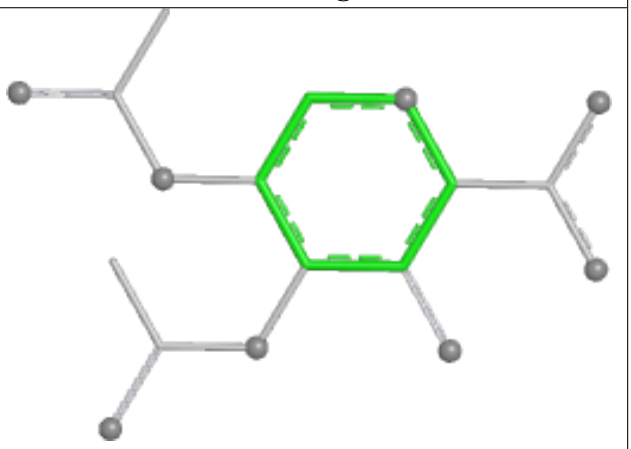
Ligand LMT BT 1003

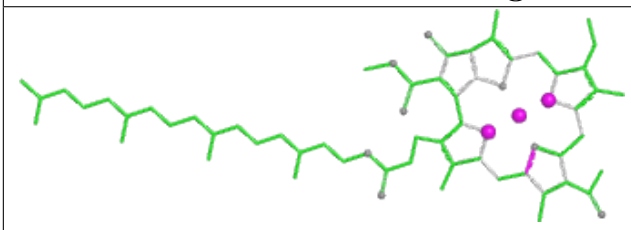
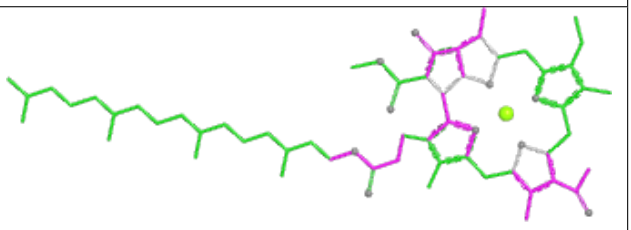
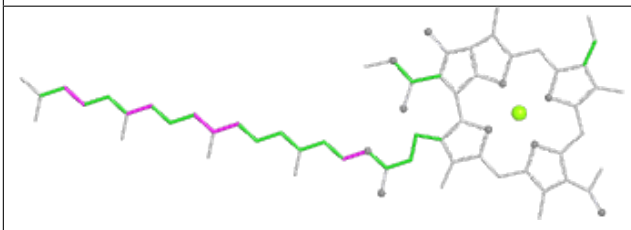
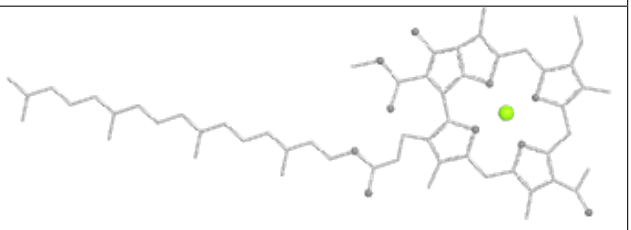

Bond lengths


Bond angles

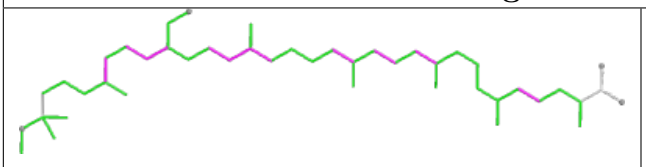

Torsions

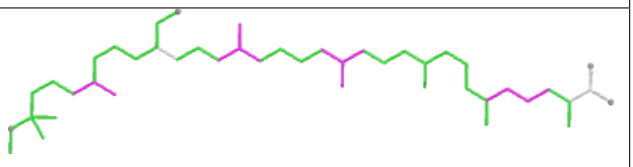

Rings

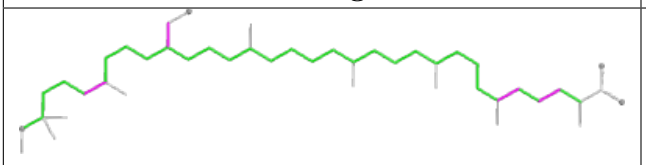
Ligand V75 C 1006	
	
Bond lengths	Bond angles
	
Torsions	Rings

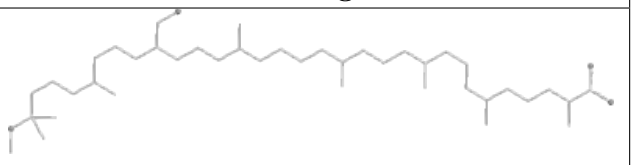
Ligand BCL BJ 1004	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand V7N BO 1001

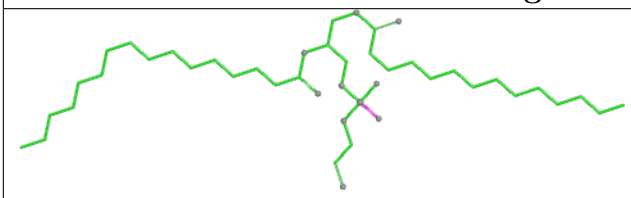

Bond lengths

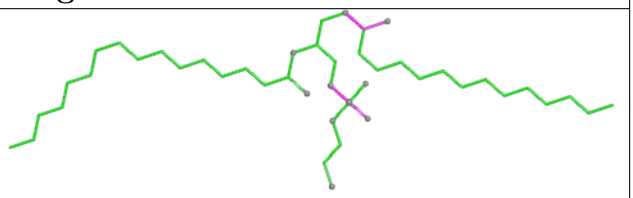

Bond angles

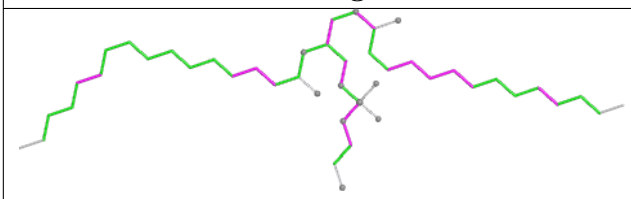

Torsions

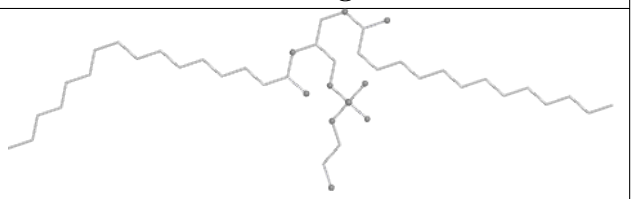

Rings

Ligand 0V9 bg 102

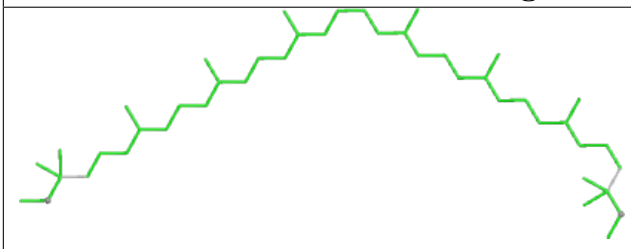

Bond lengths

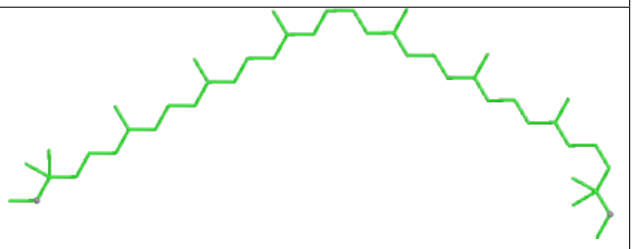

Bond angles

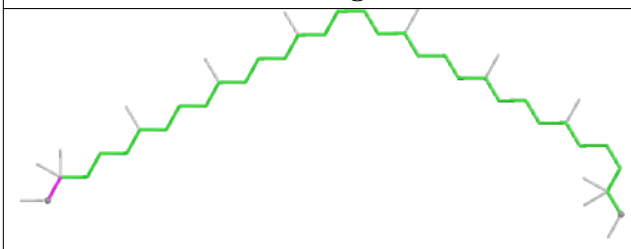

Torsions

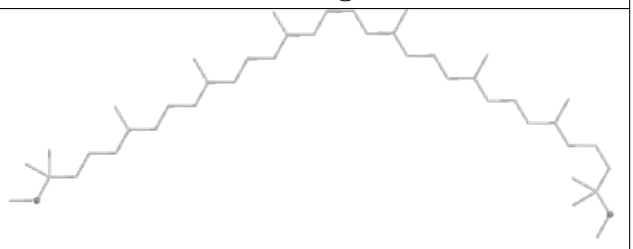

Rings

Ligand CRT M 408

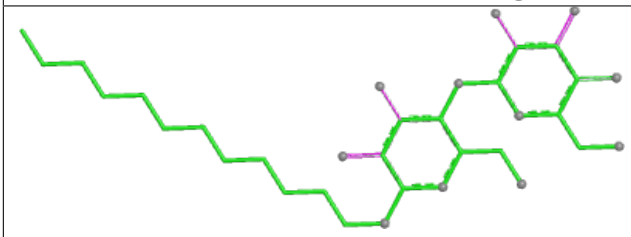

Bond lengths


Bond angles

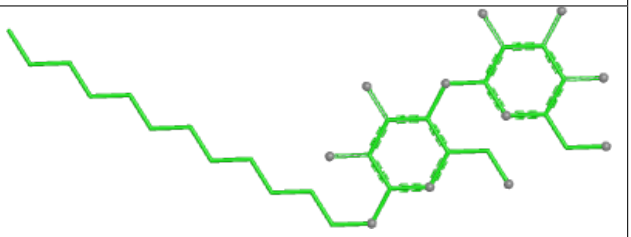

Torsions


Rings

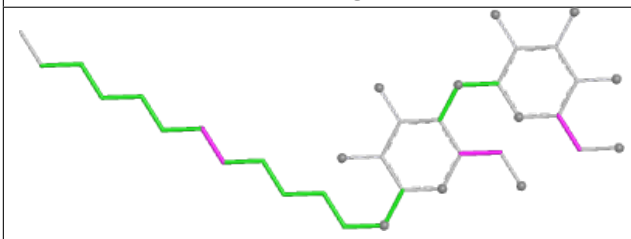
Ligand LMT AL 102



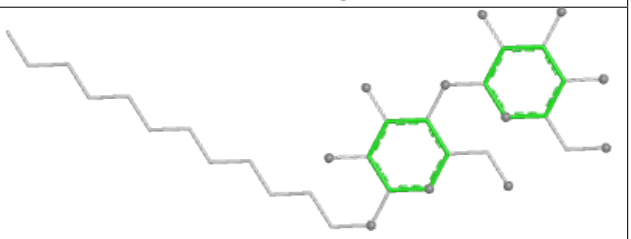
Bond lengths



Bond angles

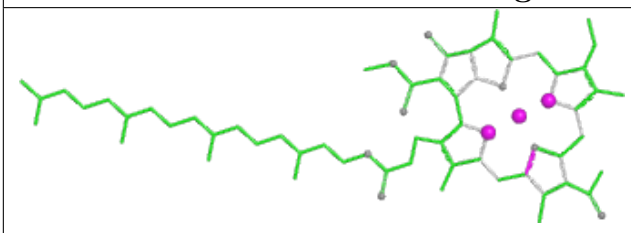


Torsions

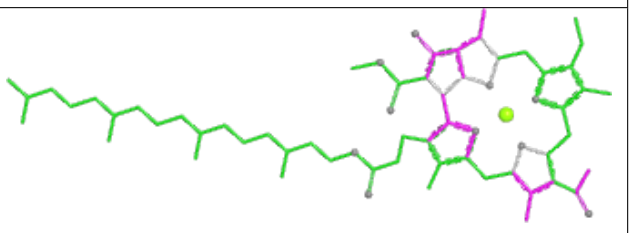


Rings

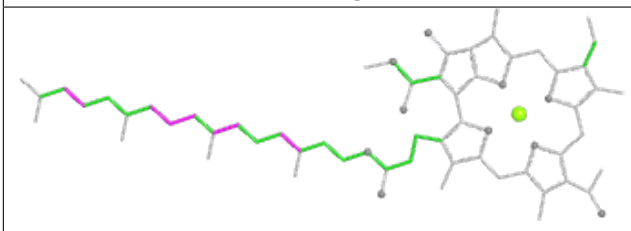
Ligand BCL AS 101



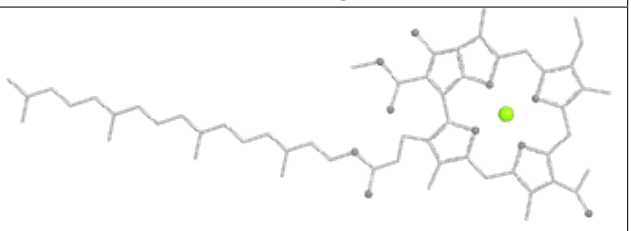
Bond lengths



Bond angles

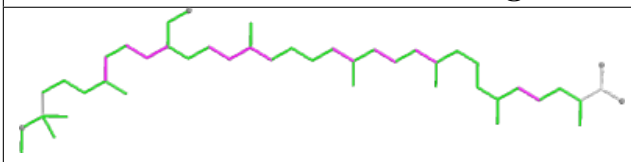


Torsions

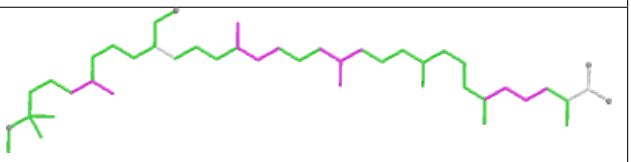


Rings

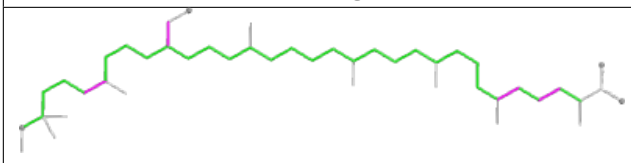
Ligand V7N BL 1001



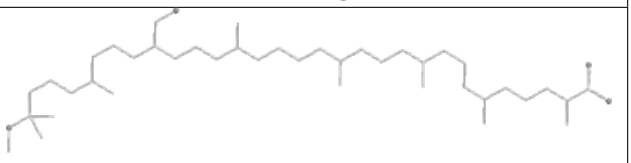
Bond lengths



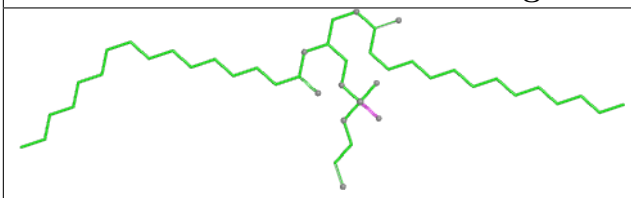
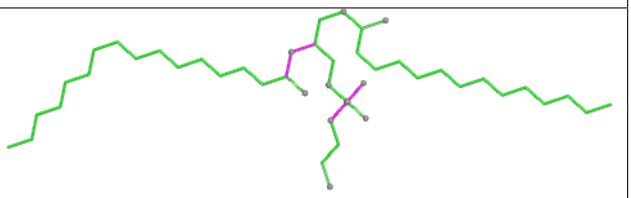
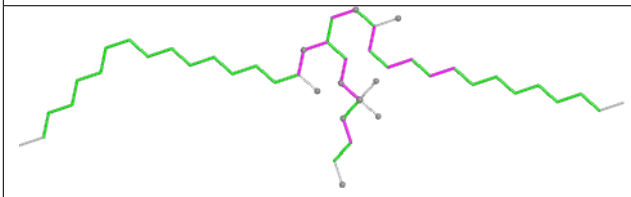
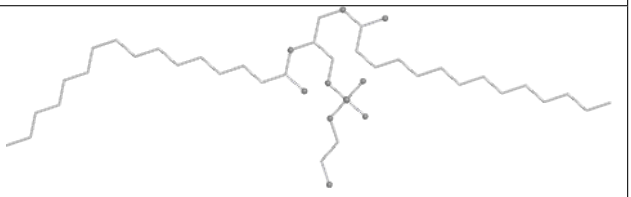
Bond angles

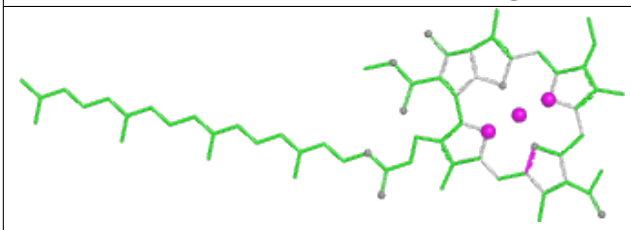
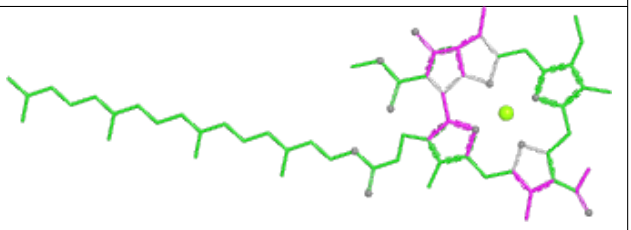
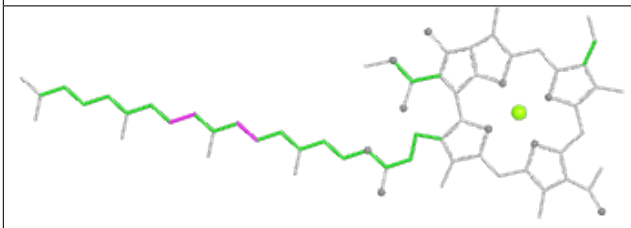
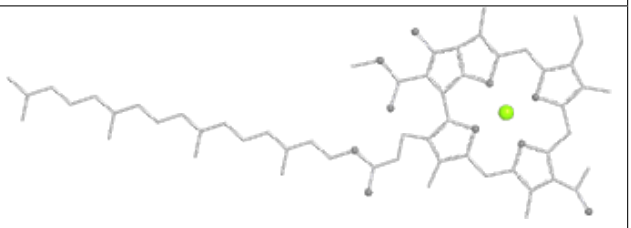


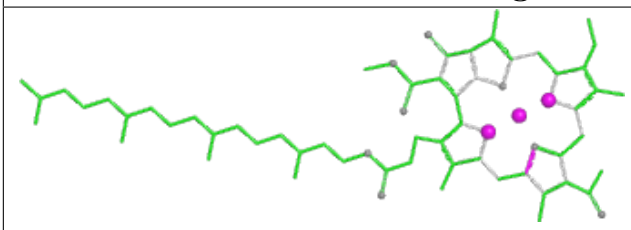
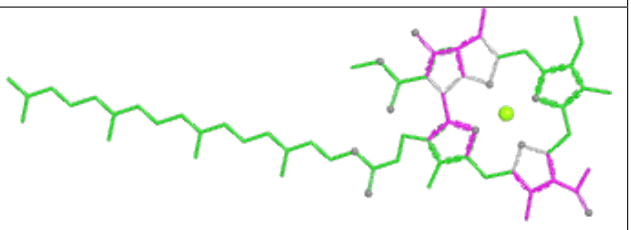
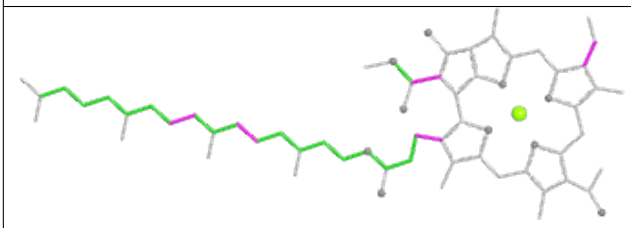
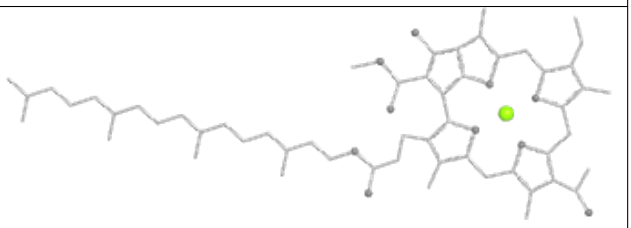
Torsions



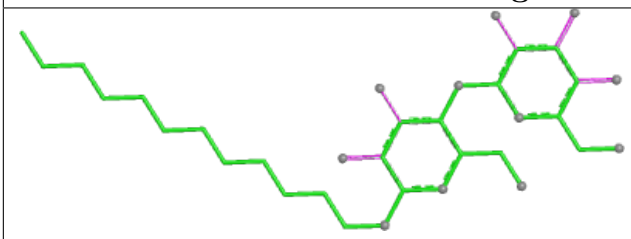
Rings

Ligand 0V9 bn 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

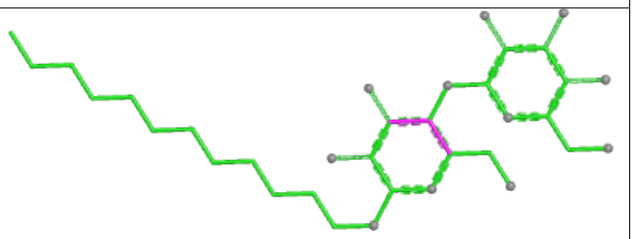
Ligand BCL am 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand BCL BD 106	
 Bond lengths	 Bond angles
 Torsions	 Rings

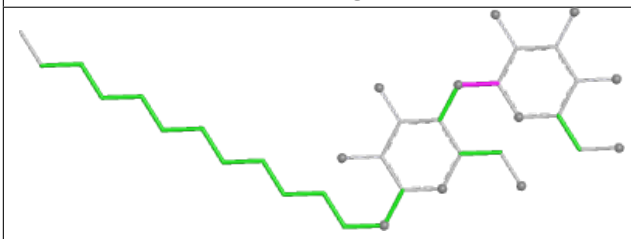
Ligand LMT AJ 103



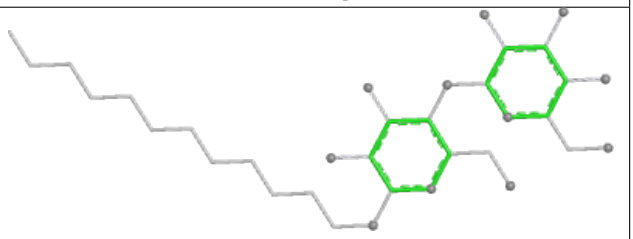
Bond lengths



Bond angles

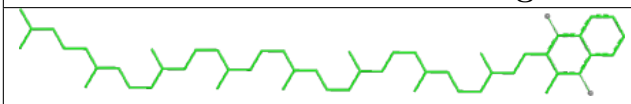


Torsions

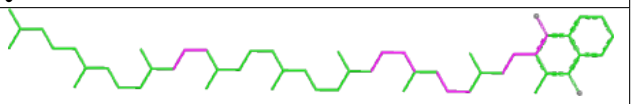


Rings

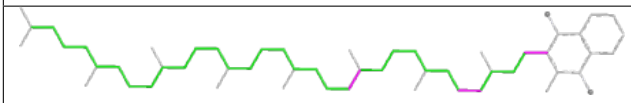
Ligand MQ8 an 101



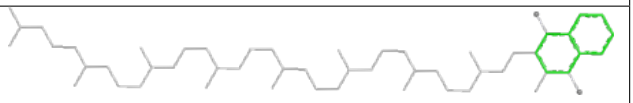
Bond lengths



Bond angles

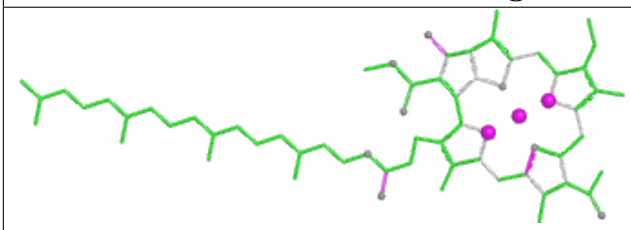


Torsions

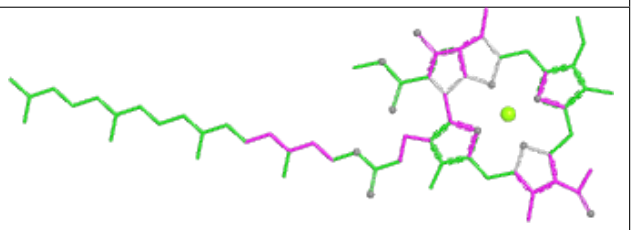


Rings

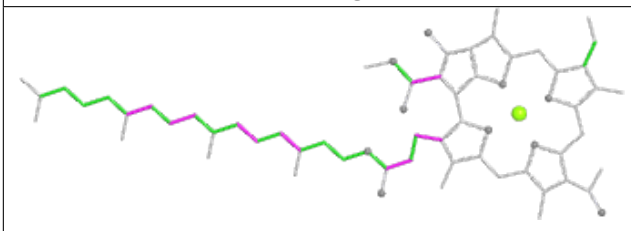
Ligand BCL AM 101



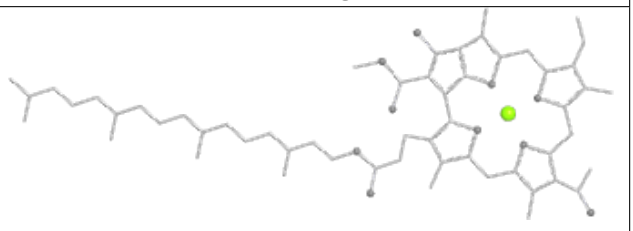
Bond lengths



Bond angles

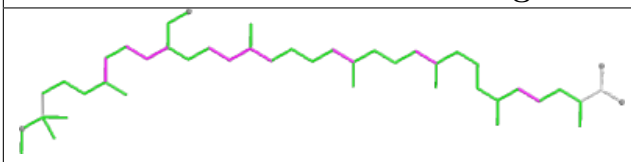


Torsions

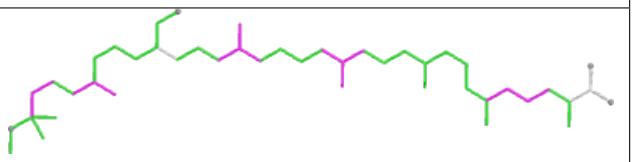


Rings

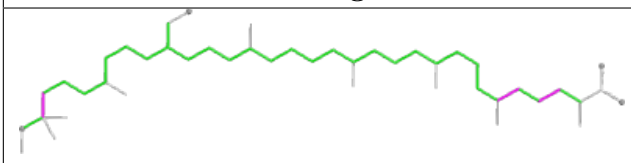
Ligand V7N bm 101



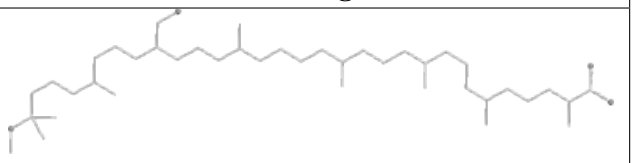
Bond lengths



Bond angles

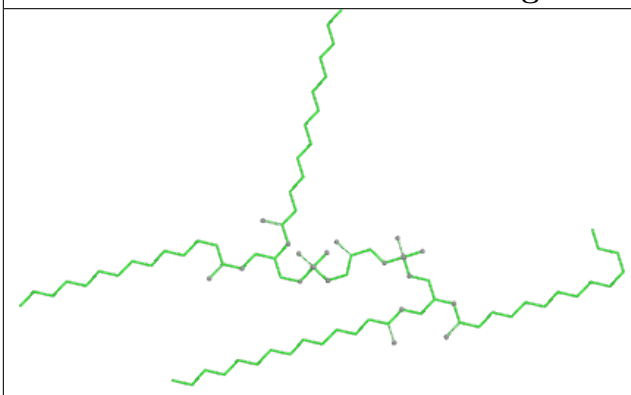


Torsions

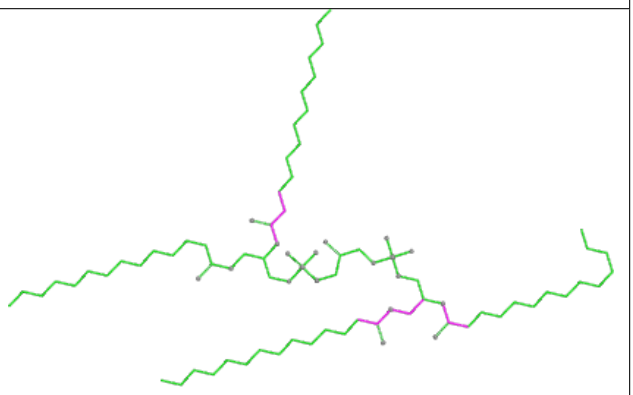


Rings

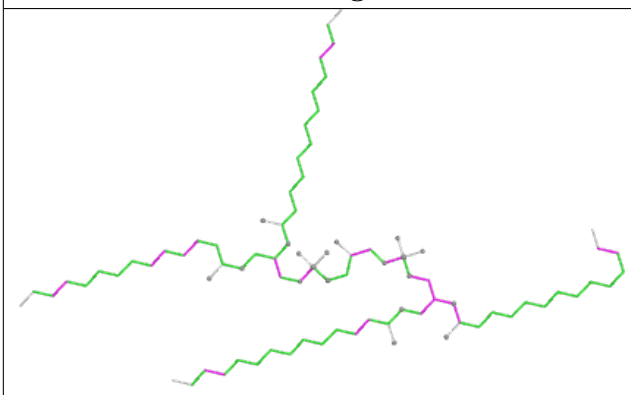
Ligand CD4 M 404



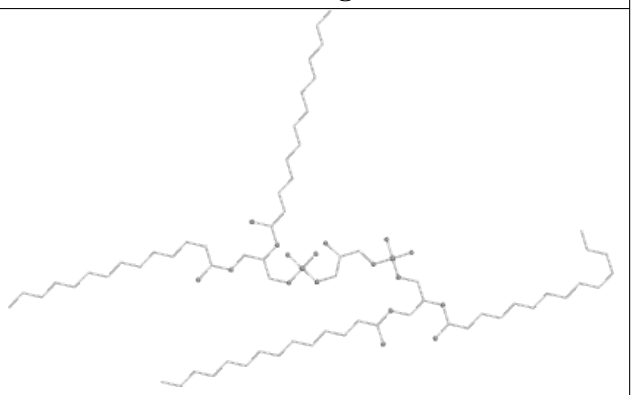
Bond lengths



Bond angles

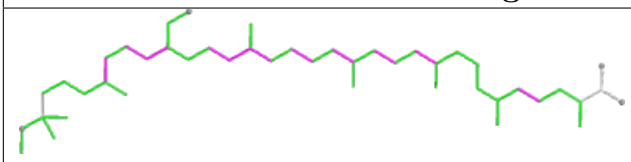


Torsions

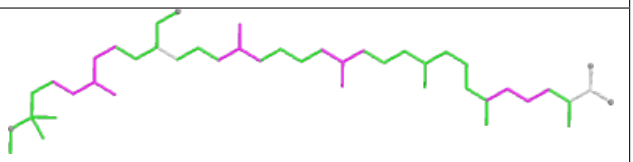


Rings

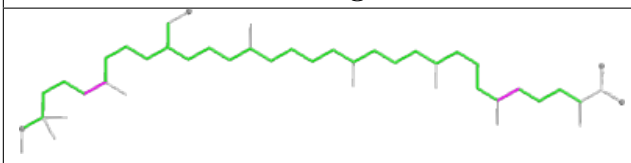
Ligand V7N BH 1001



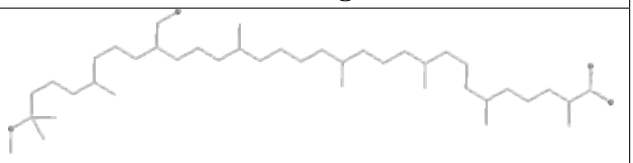
Bond lengths



Bond angles

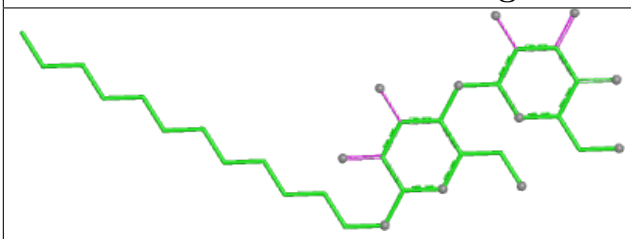


Torsions

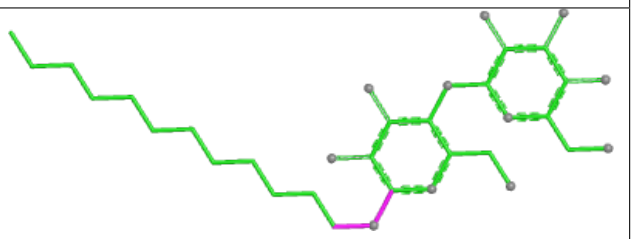


Rings

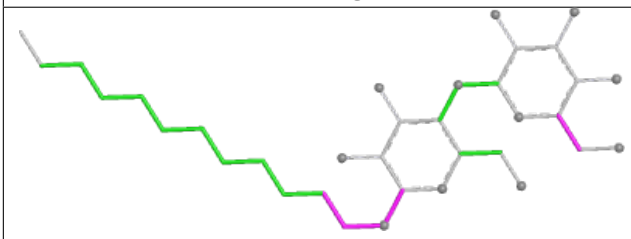
Ligand LMT BU 1001



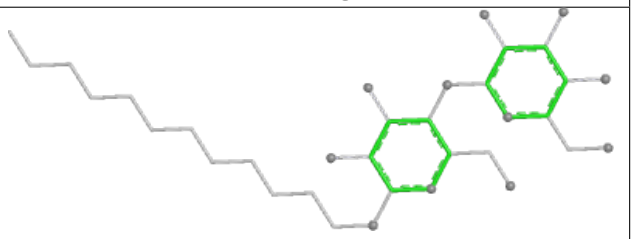
Bond lengths



Bond angles

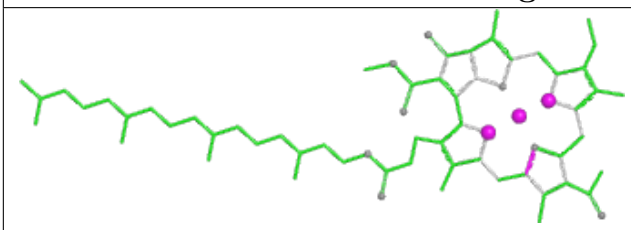


Torsions

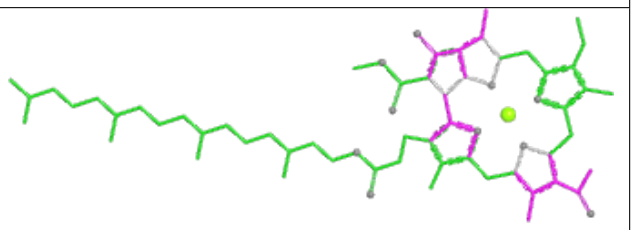


Rings

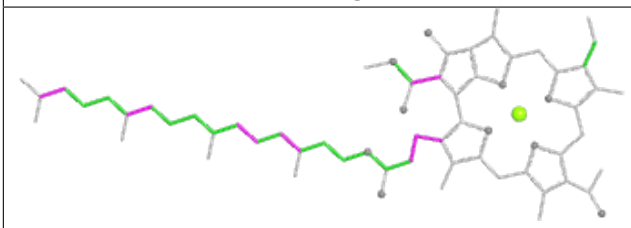
Ligand BCL BI 104



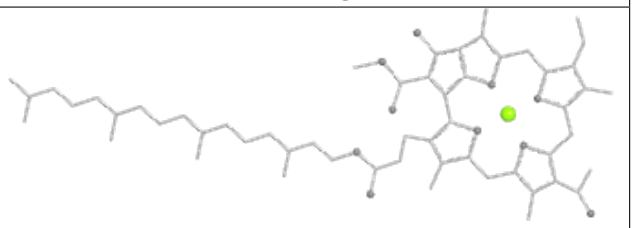
Bond lengths



Bond angles

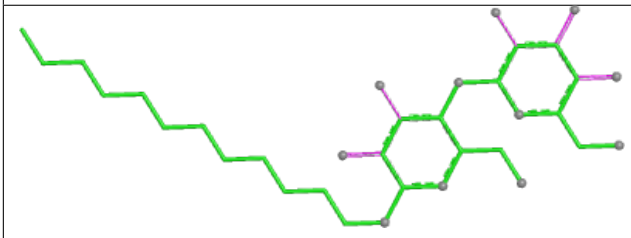


Torsions

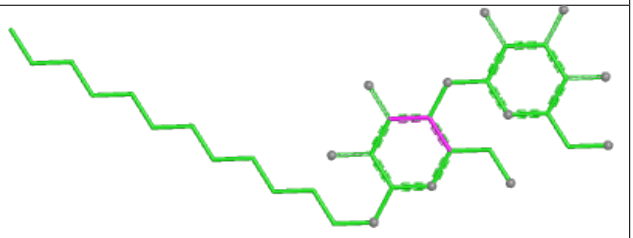


Rings

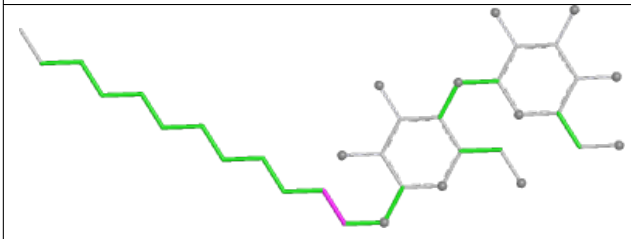
Ligand LMT BF 103



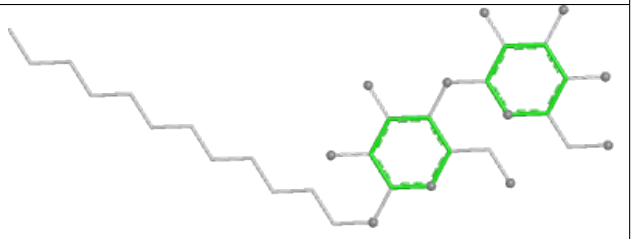
Bond lengths



Bond angles

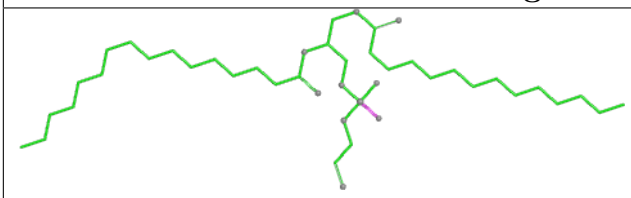


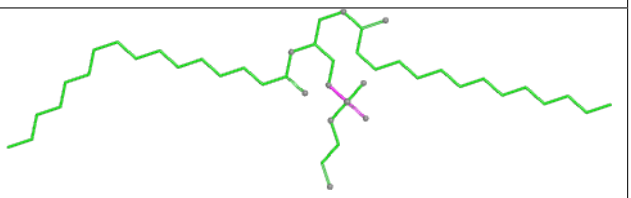
Torsions

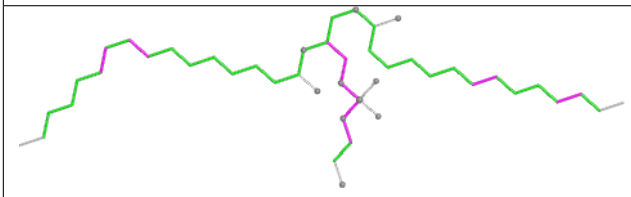


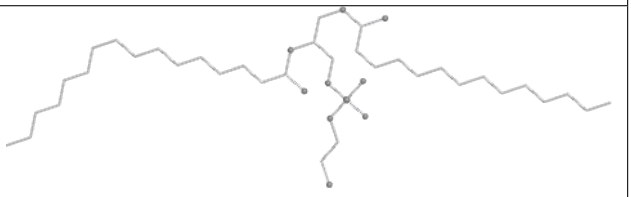
Rings

Ligand 0V9 bk 102

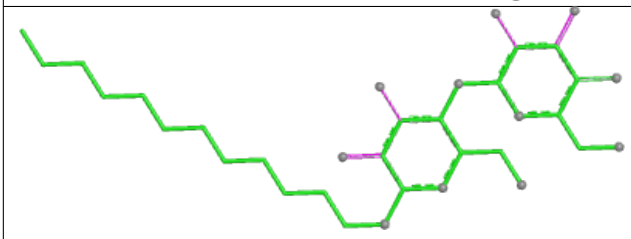

Bond lengths

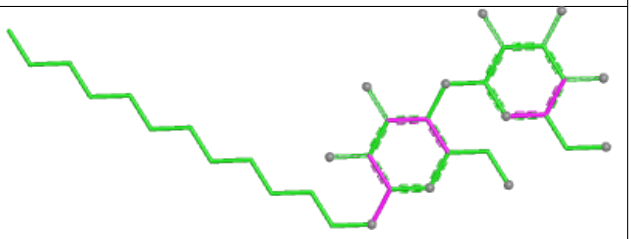

Bond angles

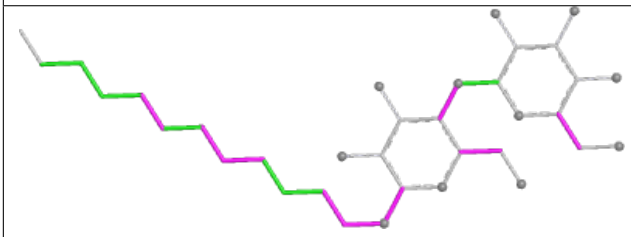

Torsions

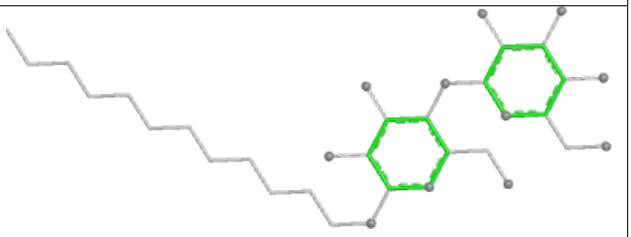

Rings

Ligand LMT AR 102

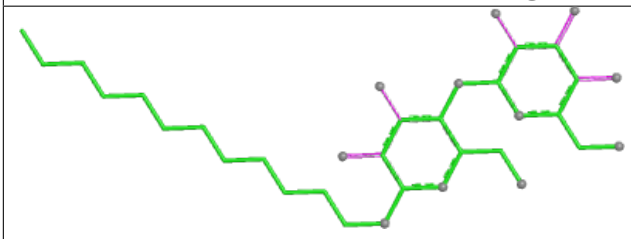

Bond lengths

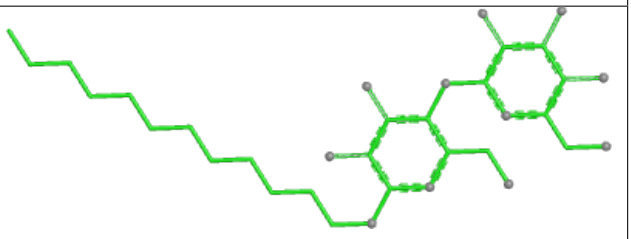

Bond angles

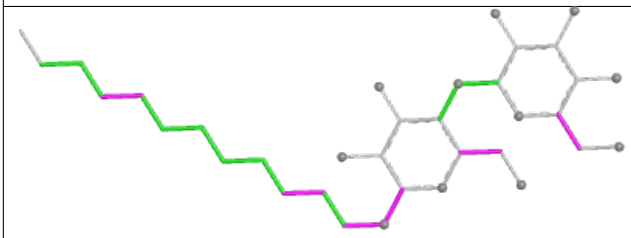

Torsions

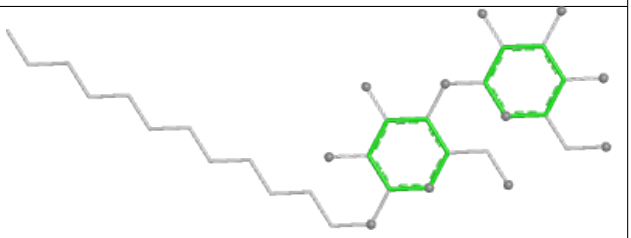

Rings

Ligand LMT L 305

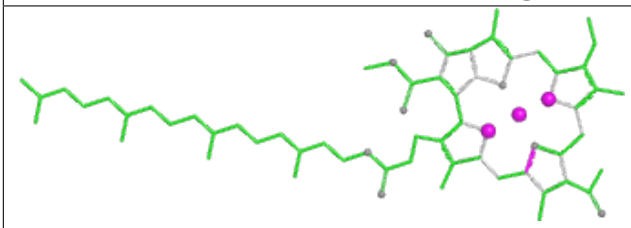

Bond lengths


Bond angles

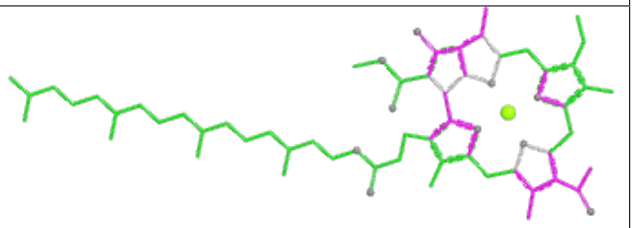

Torsions


Rings

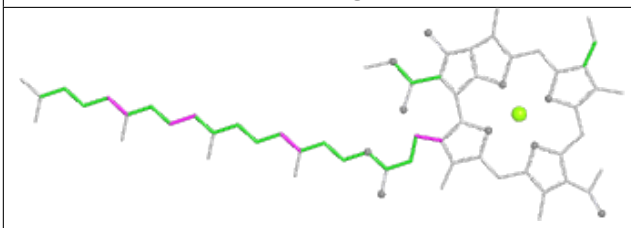
Ligand BCL bh 105



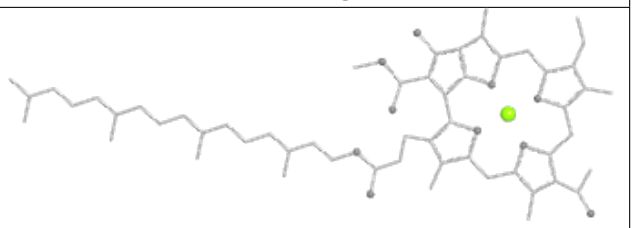
Bond lengths



Bond angles

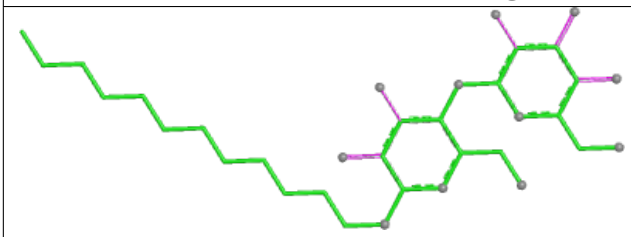


Torsions

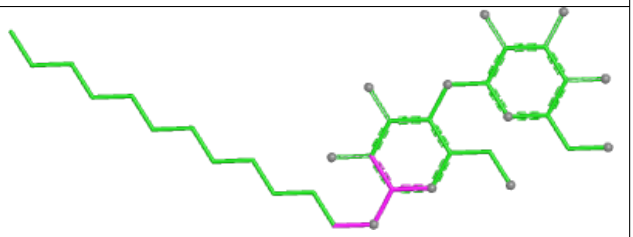


Rings

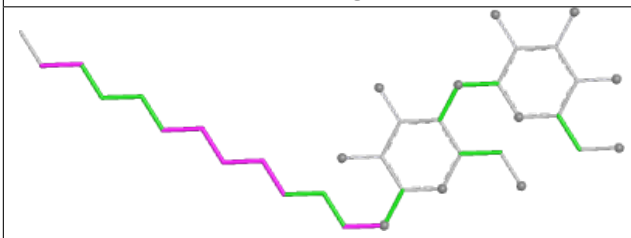
Ligand LMT BJ 1002



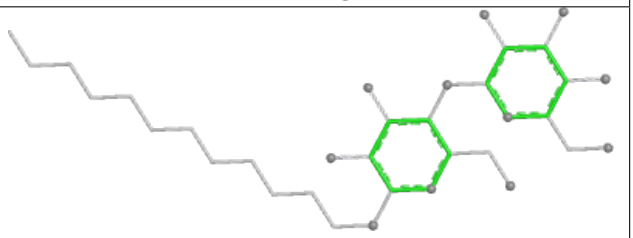
Bond lengths



Bond angles

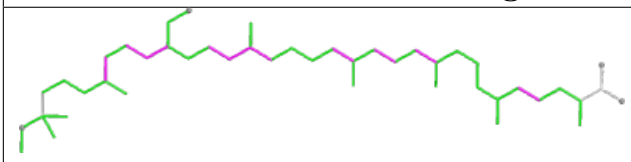


Torsions

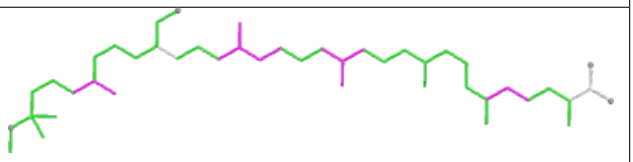


Rings

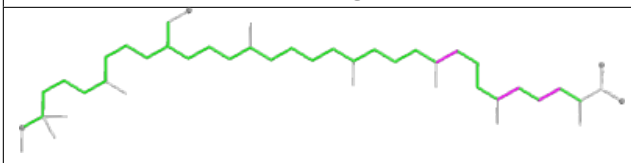
Ligand V7N BG 1001



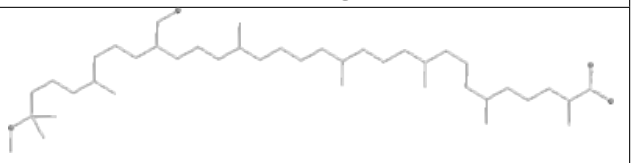
Bond lengths



Bond angles

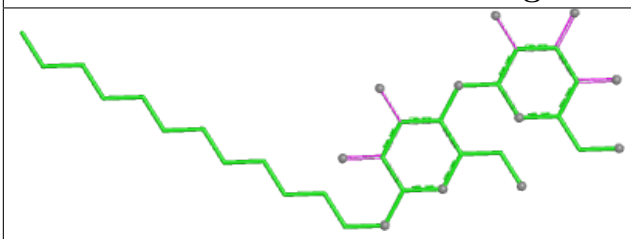


Torsions

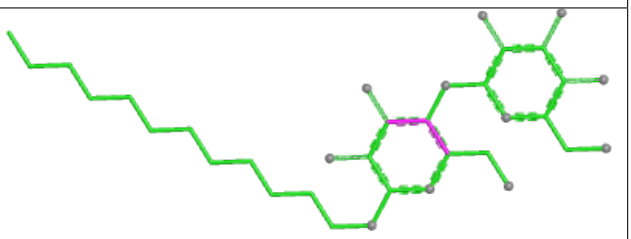


Rings

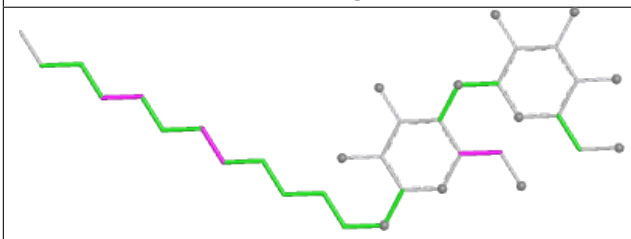
Ligand LMT L 306



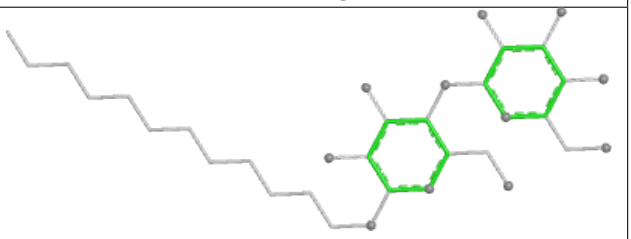
Bond lengths



Bond angles

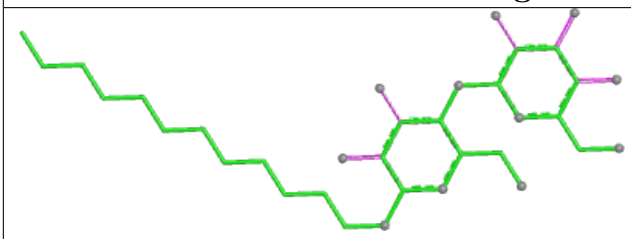


Torsions

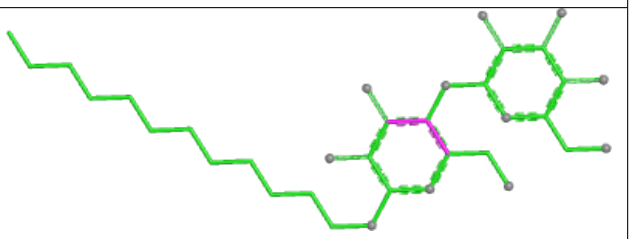


Rings

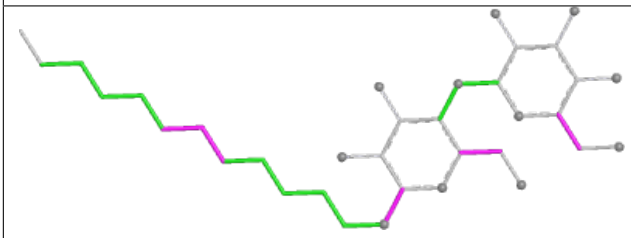
Ligand LMT bd 102



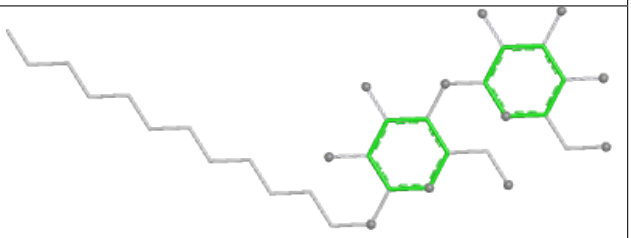
Bond lengths



Bond angles

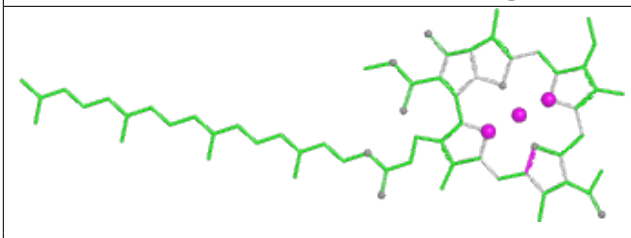


Torsions

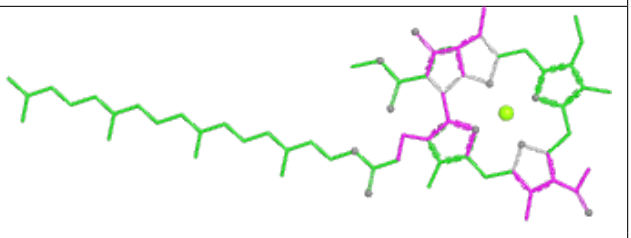


Rings

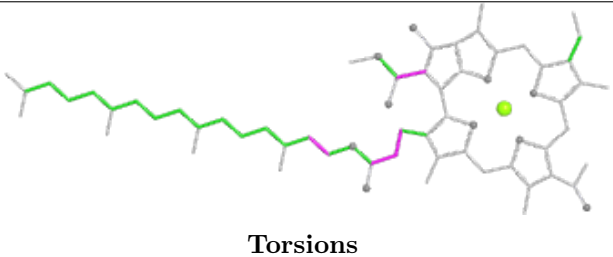
Ligand BCL BX 1004



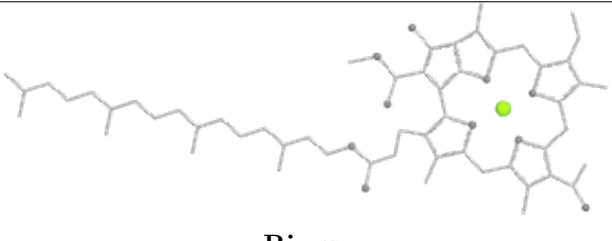
Bond lengths



Bond angles

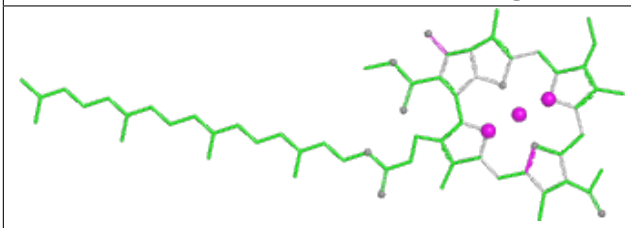


Torsions

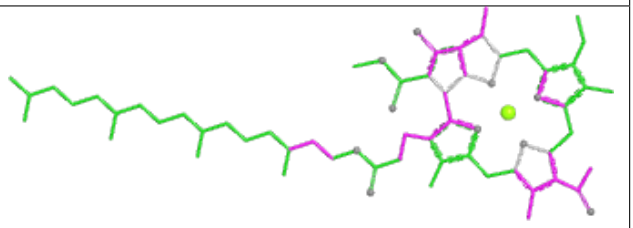


Rings

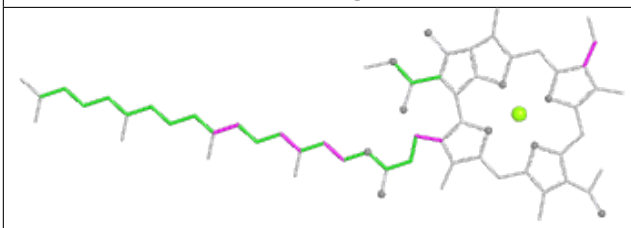
Ligand BCL AW 101



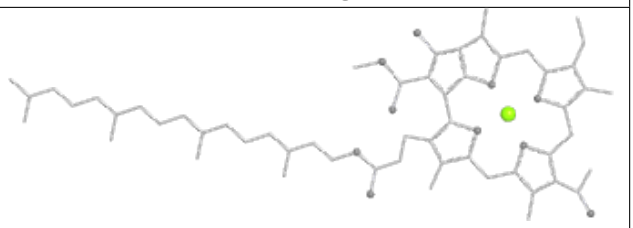
Bond lengths



Bond angles

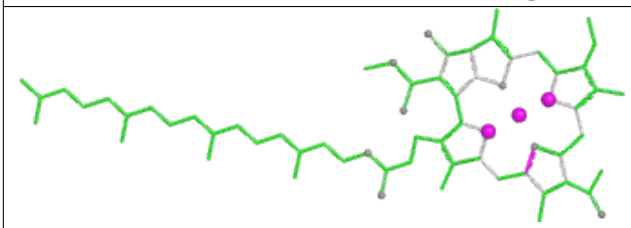


Torsions

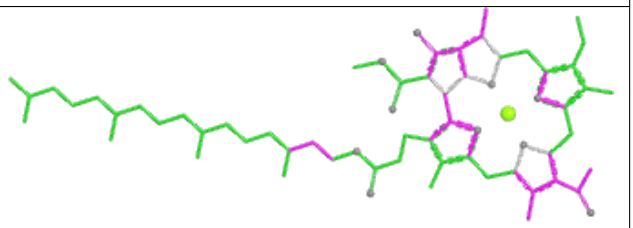


Rings

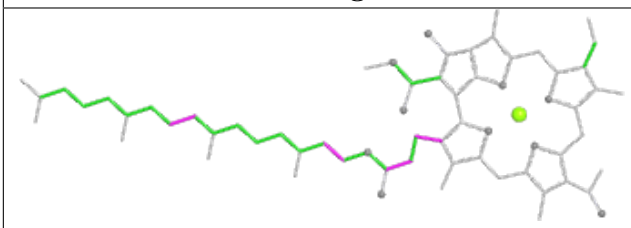
Ligand BCL bi 103



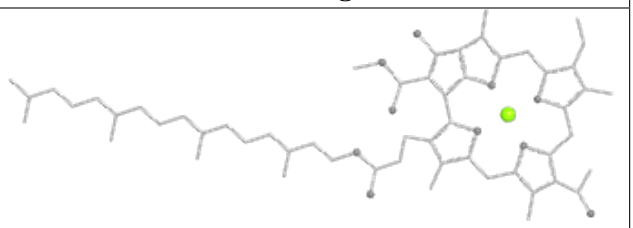
Bond lengths



Bond angles

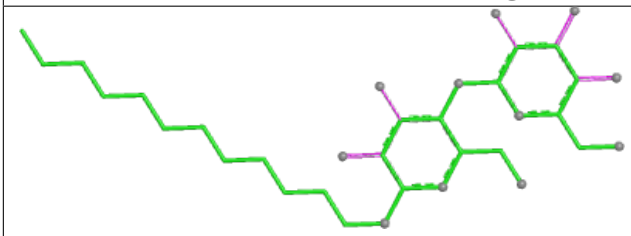


Torsions

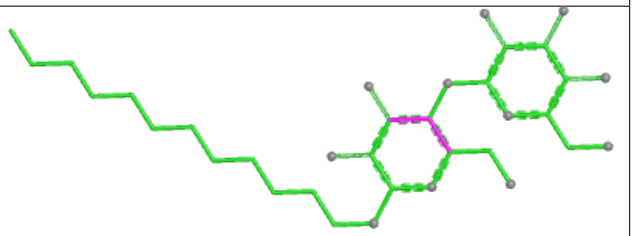


Rings

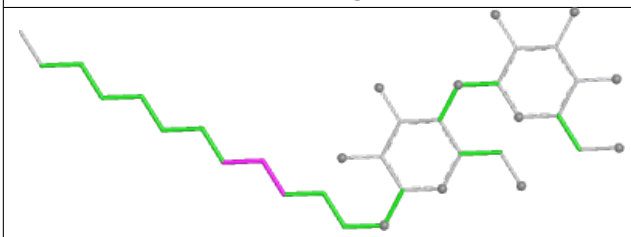
Ligand LMT BJ 1003



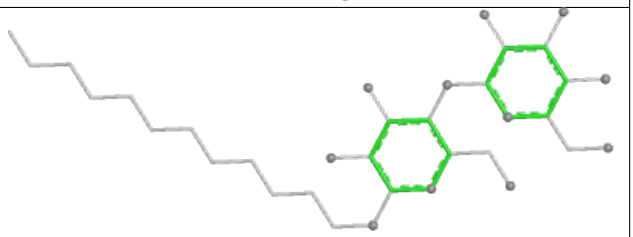
Bond lengths



Bond angles

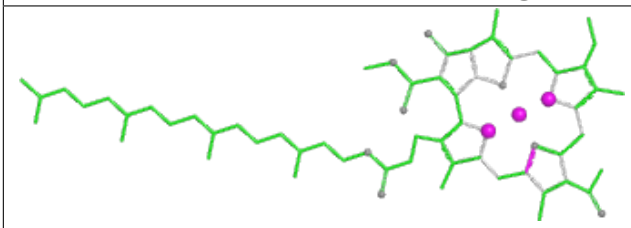


Torsions

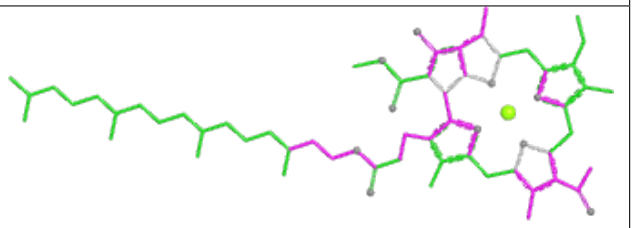


Rings

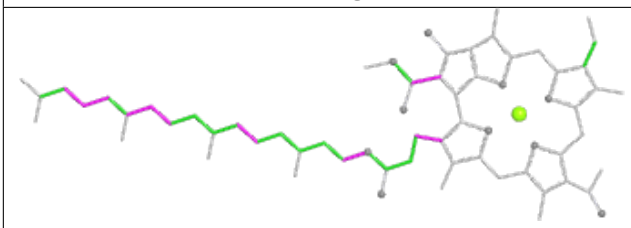
Ligand BCL AJ 102



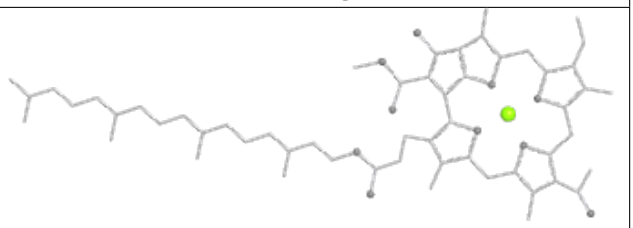
Bond lengths



Bond angles

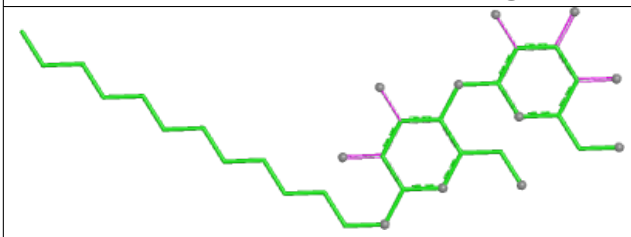


Torsions

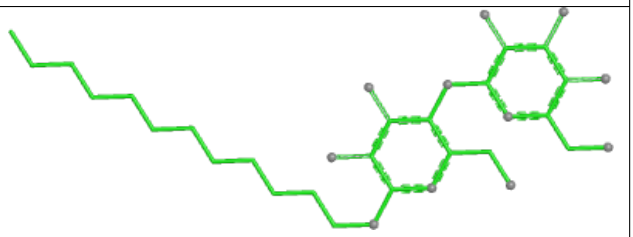


Rings

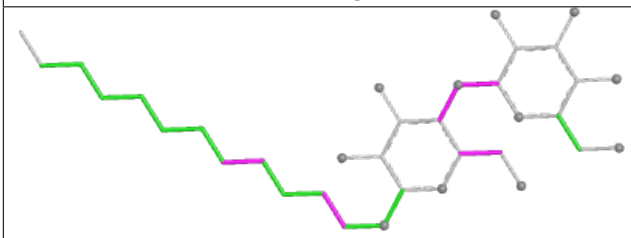
Ligand LMT BS 1003



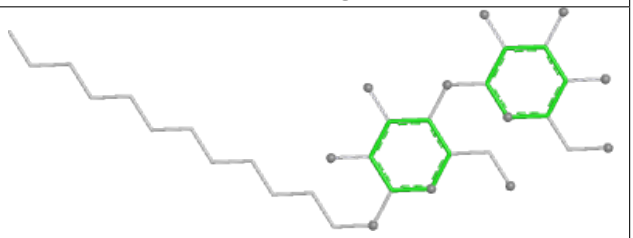
Bond lengths



Bond angles

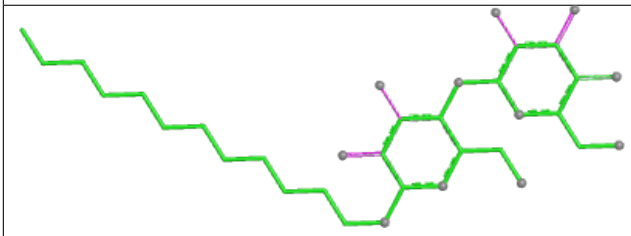


Torsions

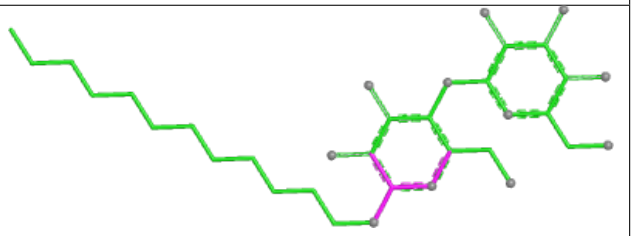


Rings

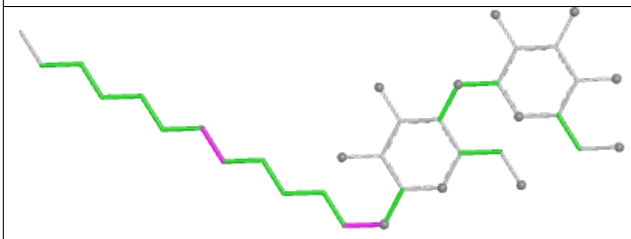
Ligand LMT BA 102



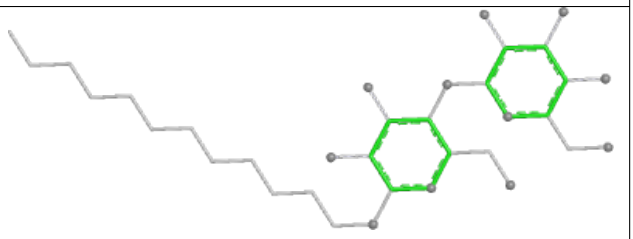
Bond lengths



Bond angles

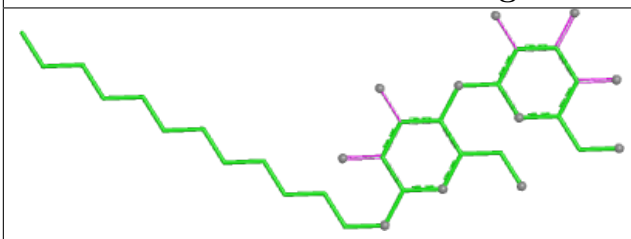


Torsions

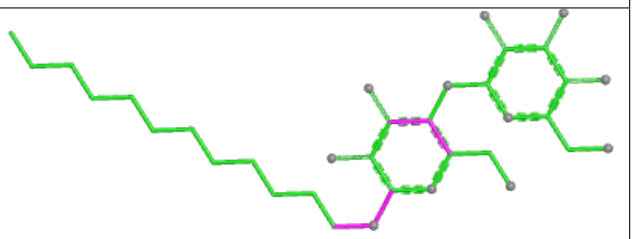


Rings

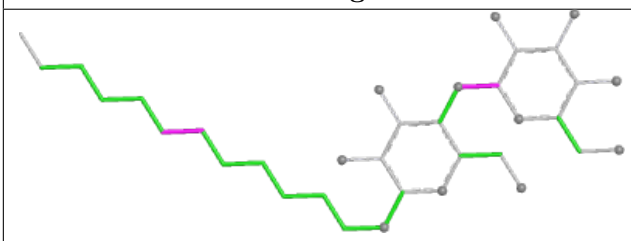
Ligand LMT BR 1006



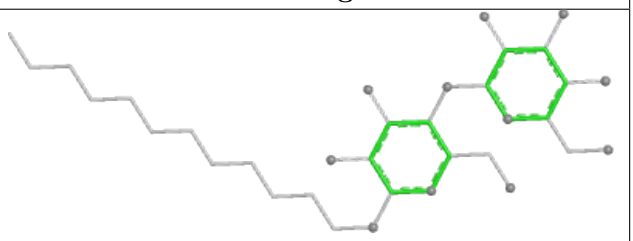
Bond lengths



Bond angles

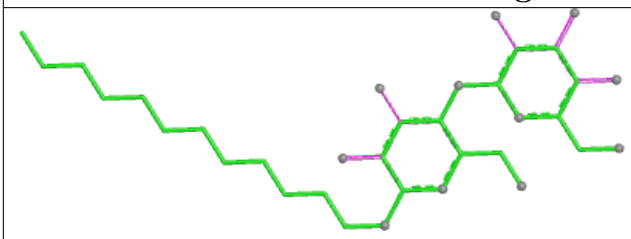


Torsions

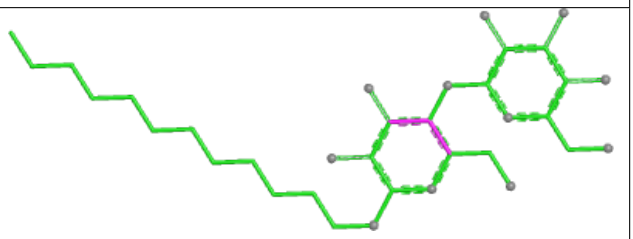


Rings

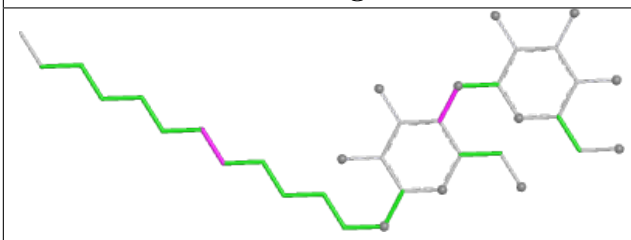
Ligand LMT BI 101



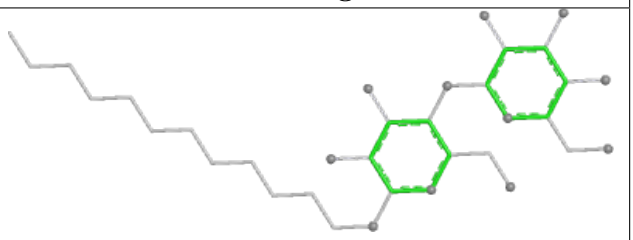
Bond lengths



Bond angles

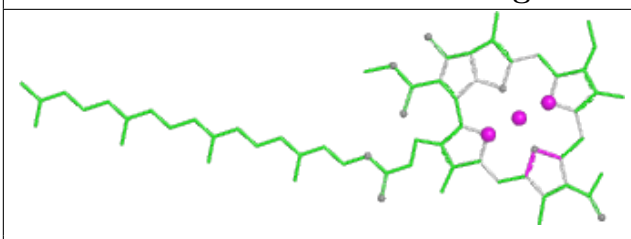


Torsions

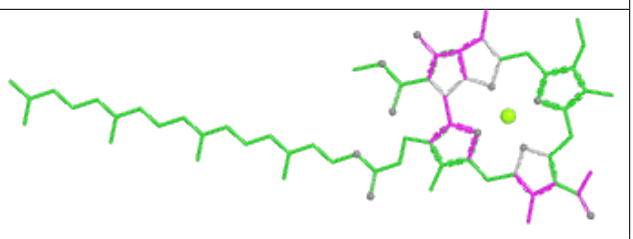


Rings

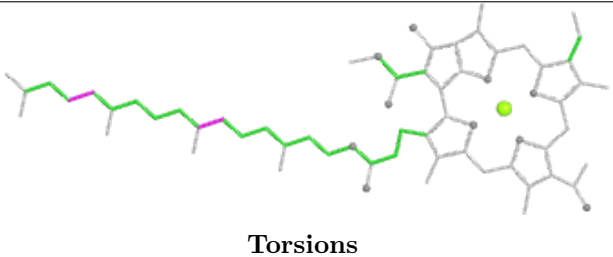
Ligand BCL AV 102



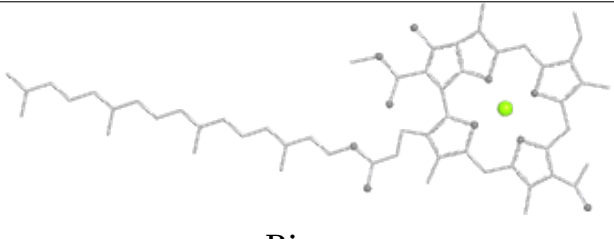
Bond lengths



Bond angles

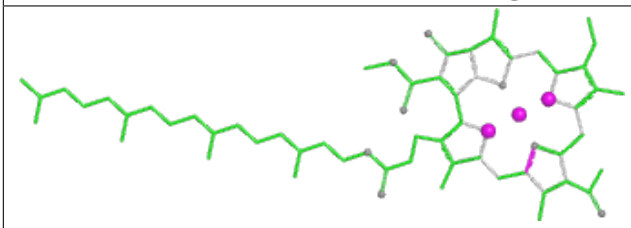


Torsions

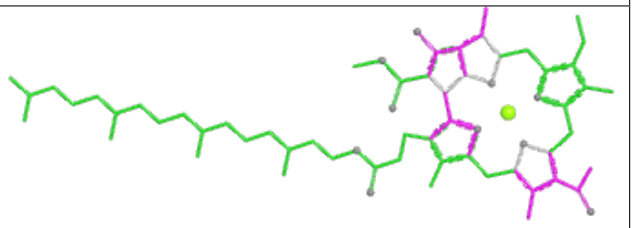


Rings

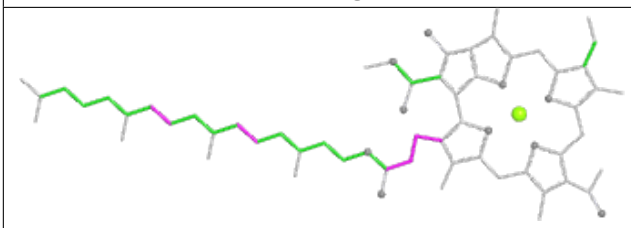
Ligand BCL BL 1004



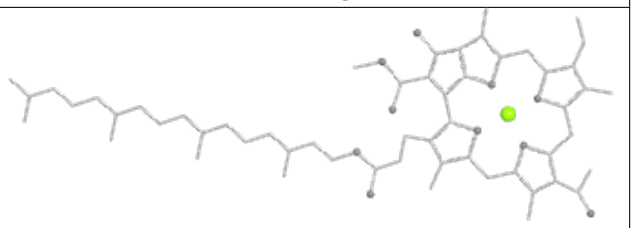
Bond lengths



Bond angles

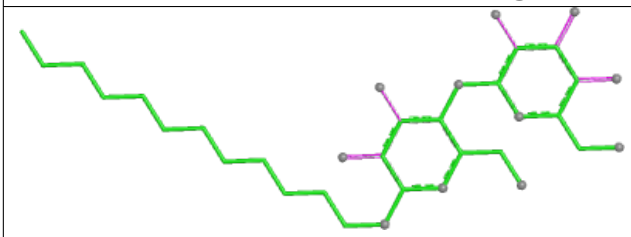


Torsions

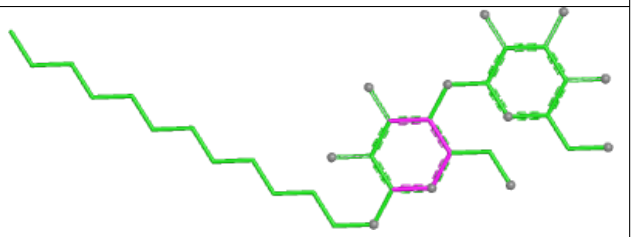


Rings

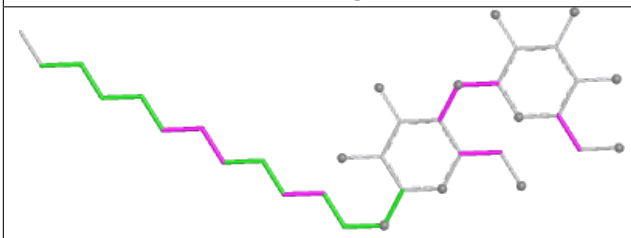
Ligand LMT AS 103



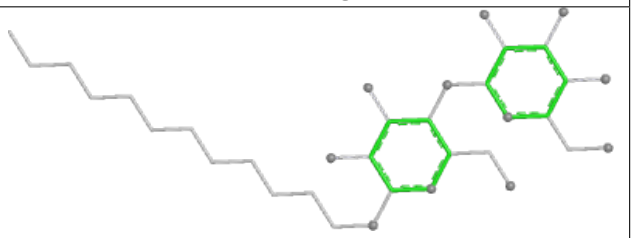
Bond lengths



Bond angles

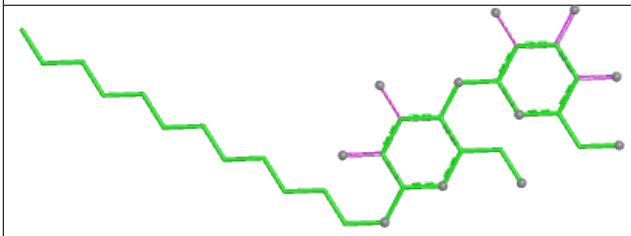


Torsions

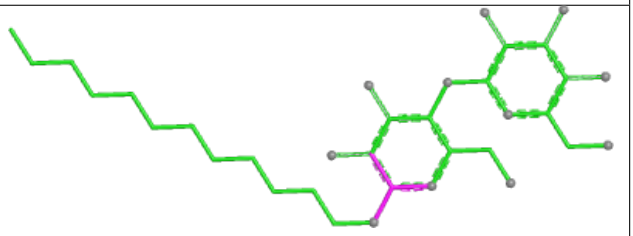


Rings

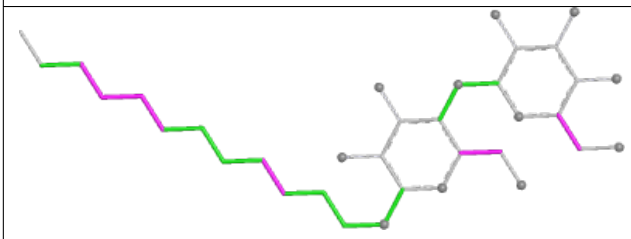
Ligand LMT bf 101



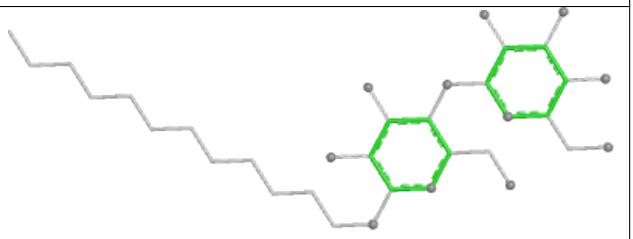
Bond lengths



Bond angles

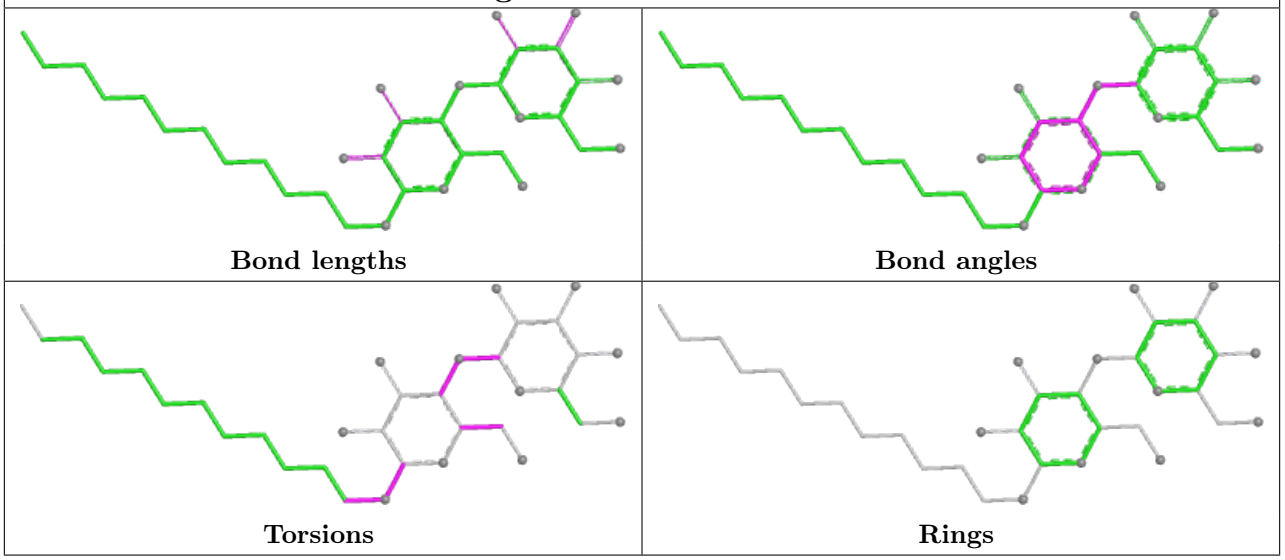


Torsions

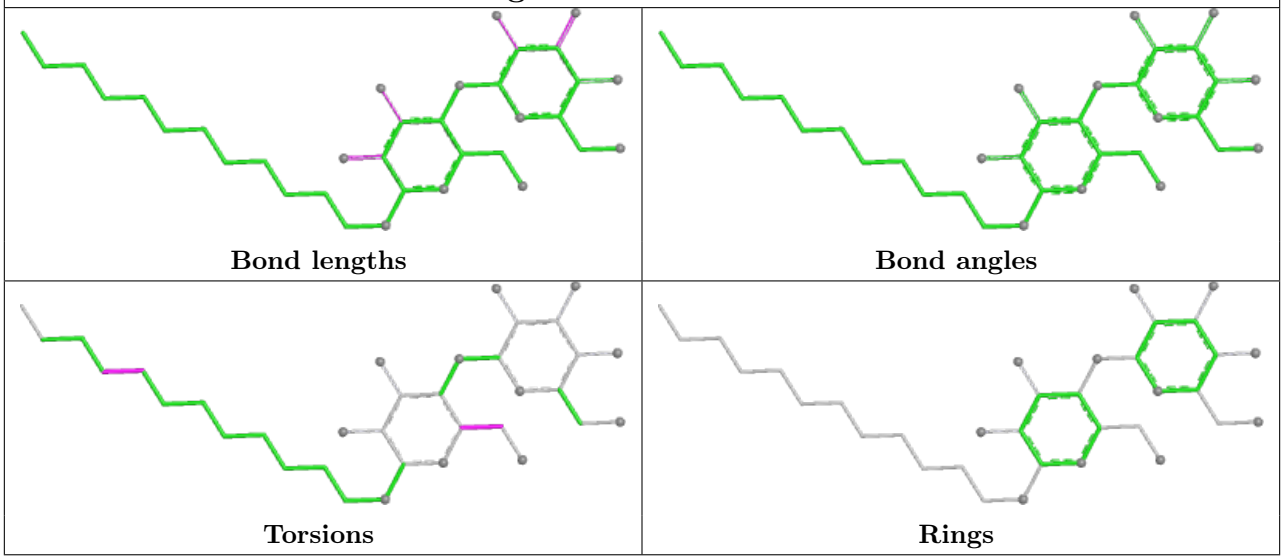


Rings

Ligand LMT BW 1006



Ligand LMT AH 104



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.

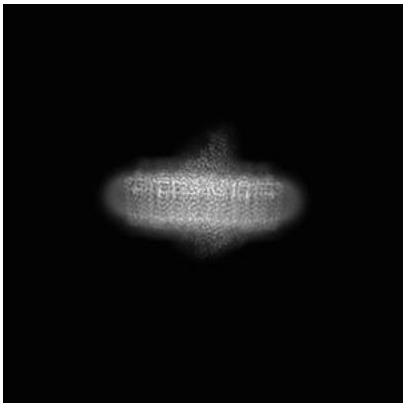
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-12682. These allow visual inspection of the internal detail of the map and identification of artifacts.

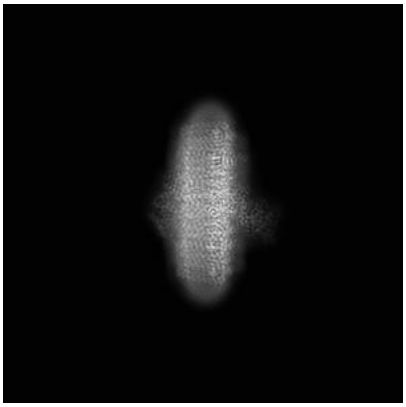
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

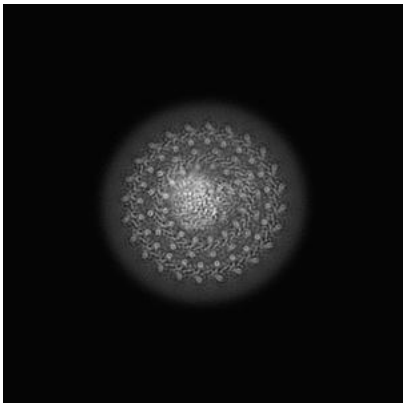
6.1.1 Primary map



X



Y

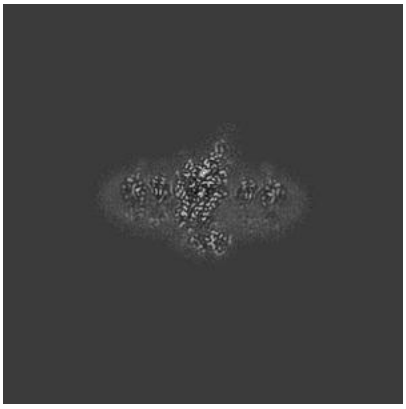


Z

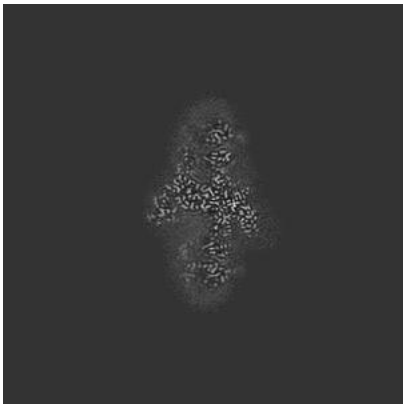
The images above show the map projected in three orthogonal directions.

6.2 Central slices

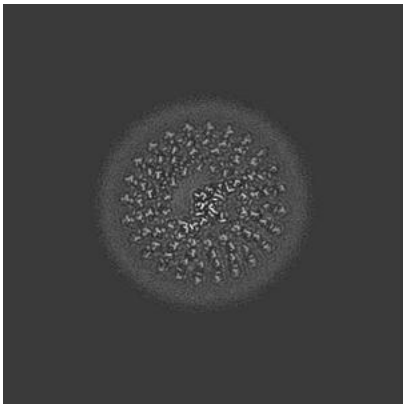
6.2.1 Primary map



X Index: 200



Y Index: 200

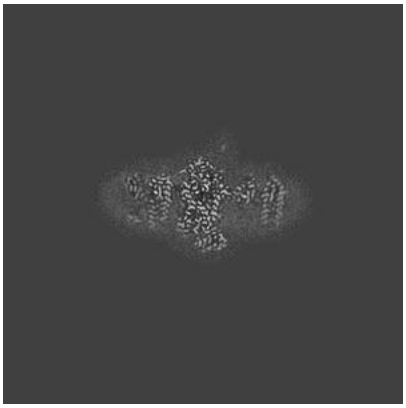


Z Index: 200

The images above show central slices of the map in three orthogonal directions.

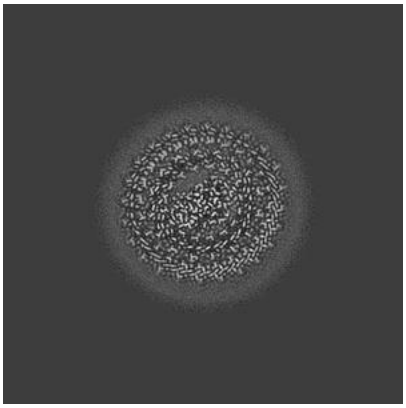
6.3 Largest variance slices (i)

6.3.1 Primary map



X Index: 206

Y Index: 210

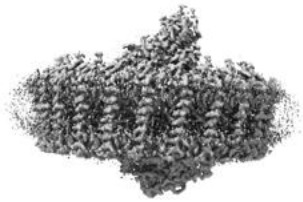


Z Index: 214

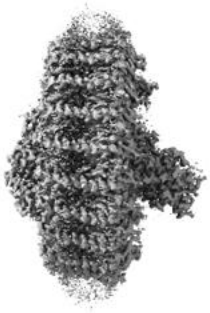
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

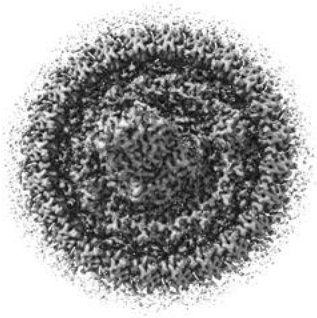
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0292. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

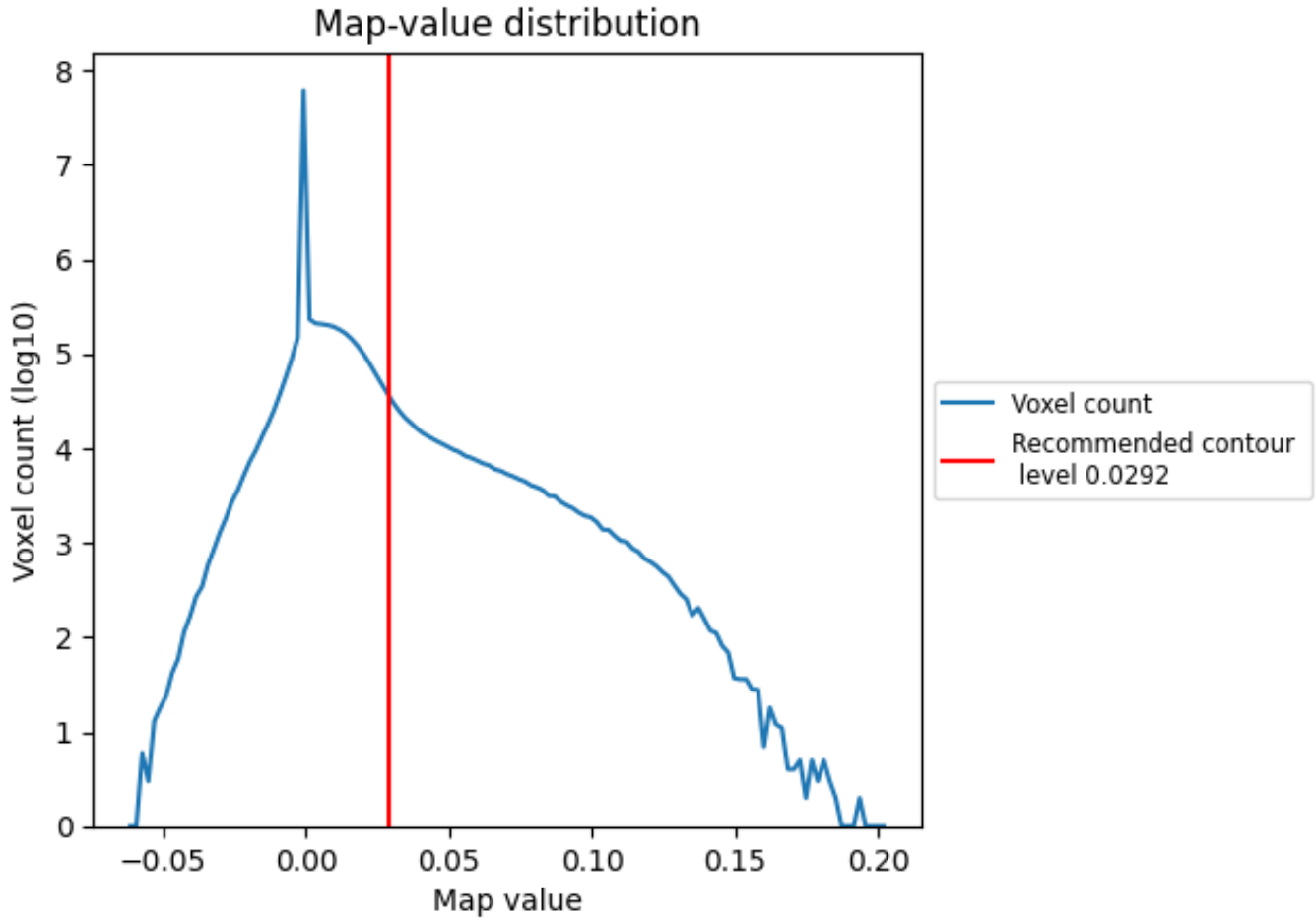
6.5 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

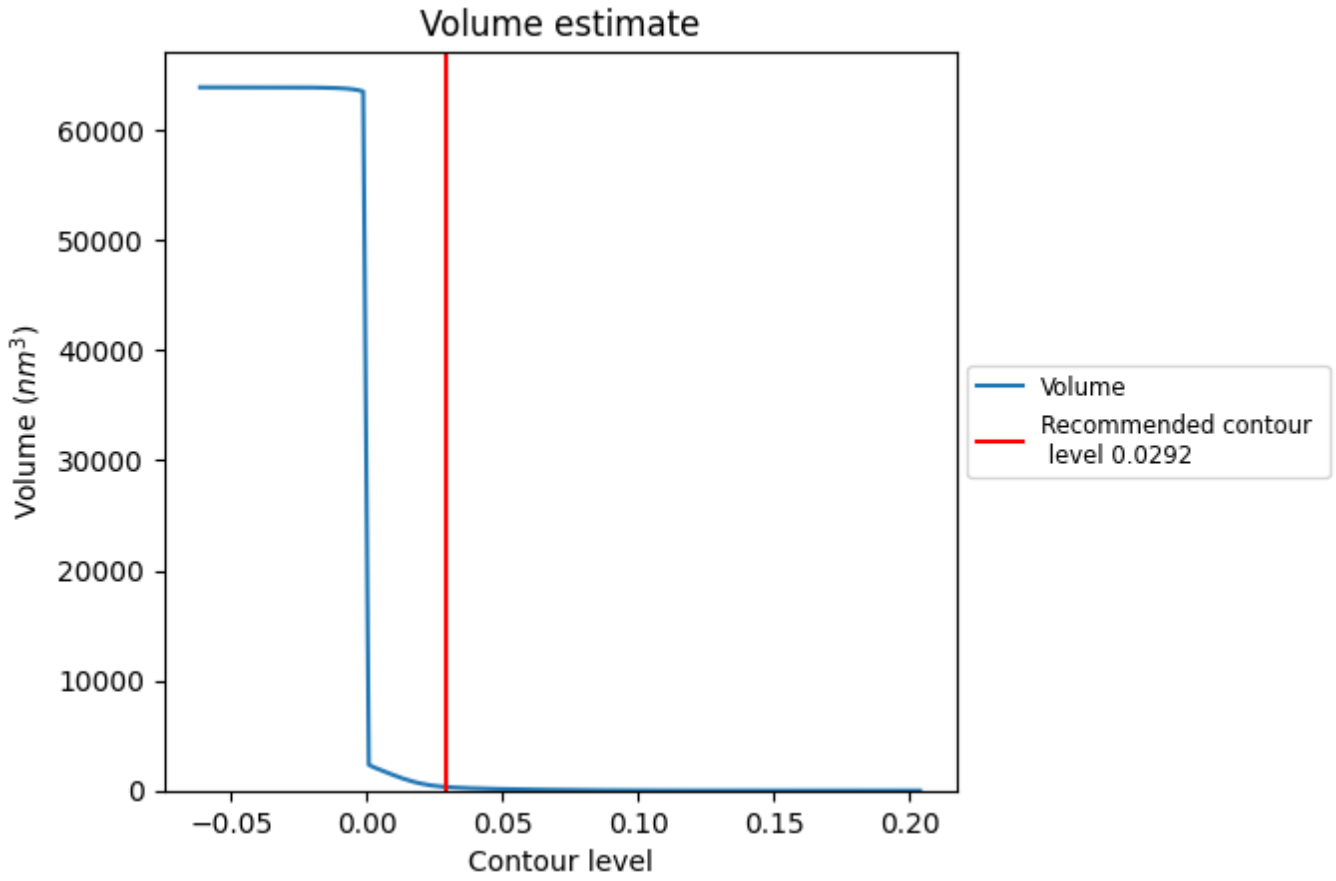
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

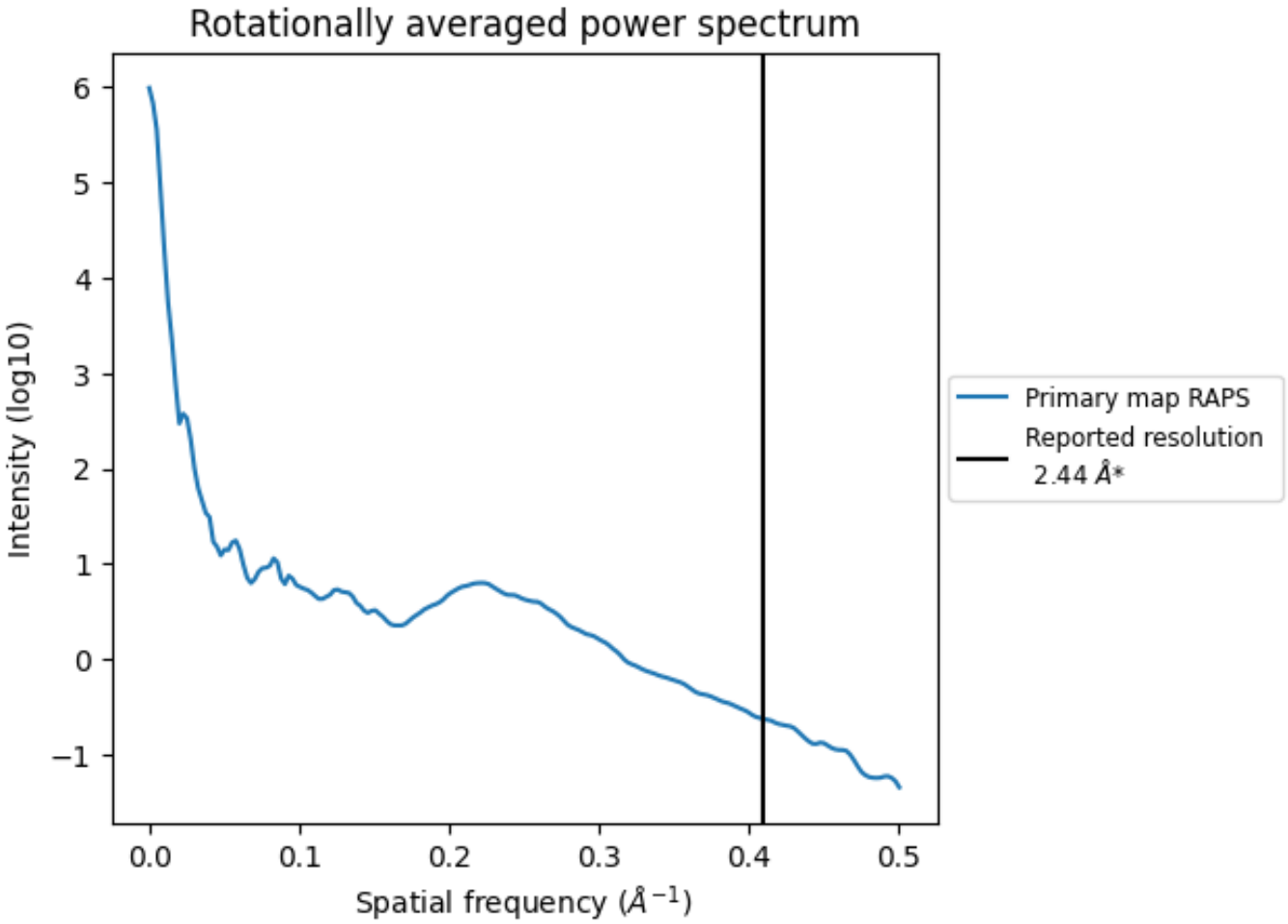
7.2 Volume estimate (i)



The volume at the recommended contour level is 327 nm^3; this corresponds to an approximate mass of 296 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

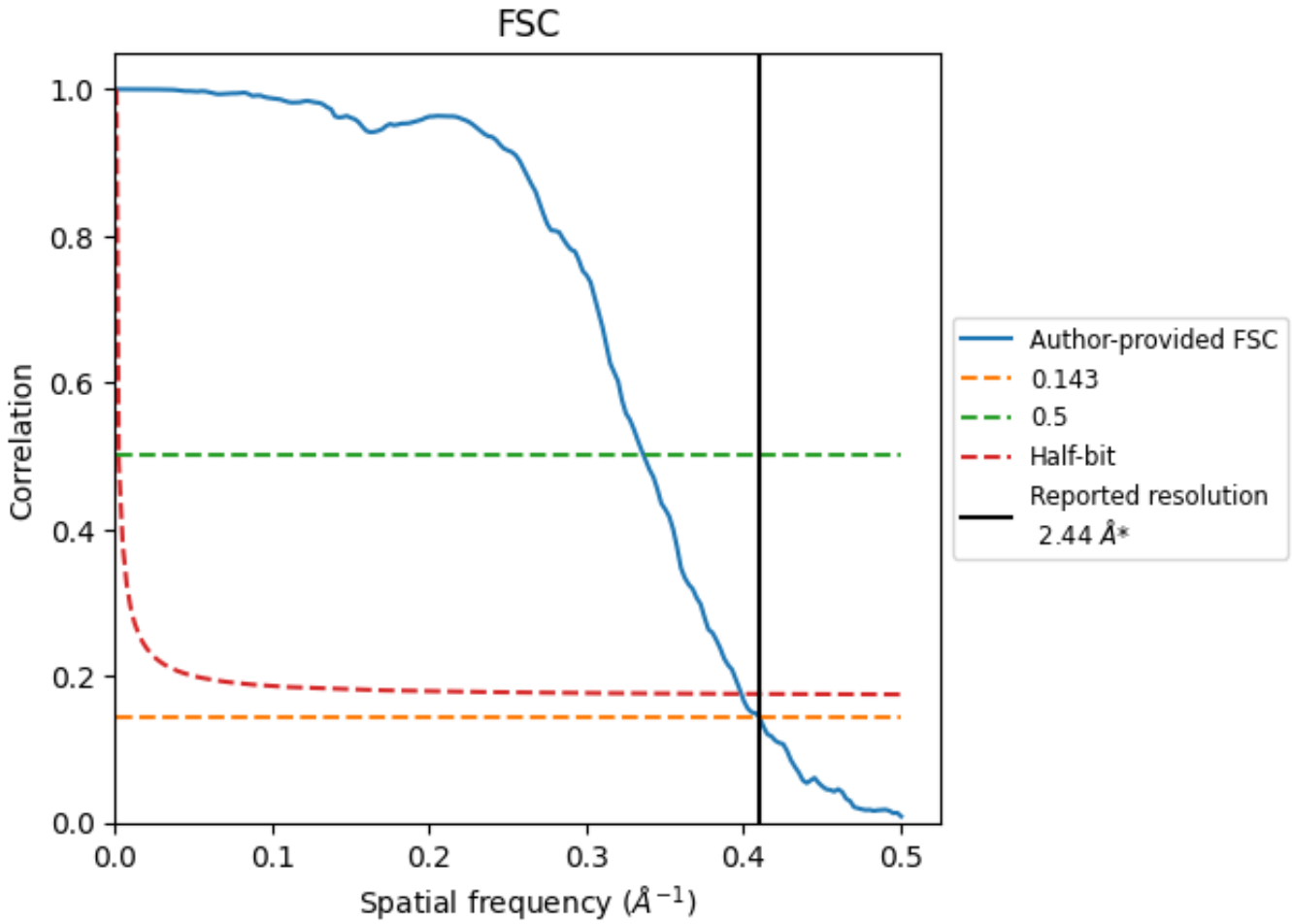


*Reported resolution corresponds to spatial frequency of 0.410 $Å^{-1}$

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.410 Å^{-1}

8.2 Resolution estimates (i)

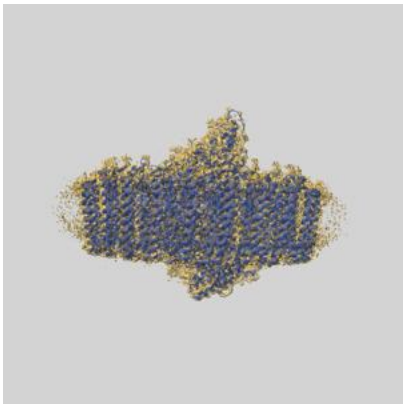
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.44	-	-
Author-provided FSC curve	2.44	2.97	2.51
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

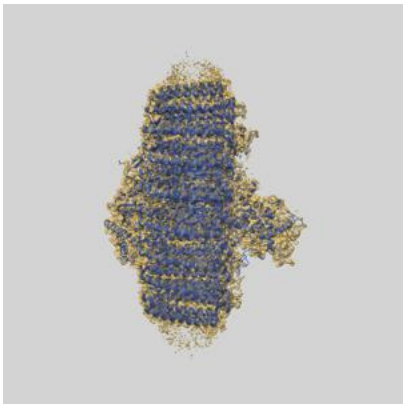
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-12682 and PDB model 7O0X. Per-residue inclusion information can be found in section 3 on page 39.

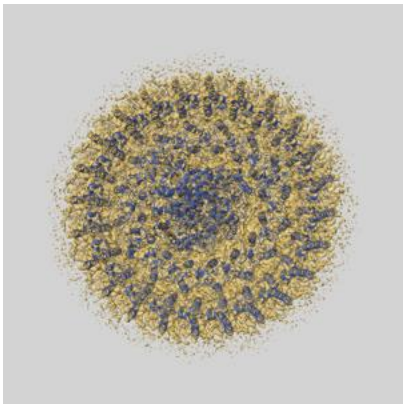
9.1 Map-model overlay



X



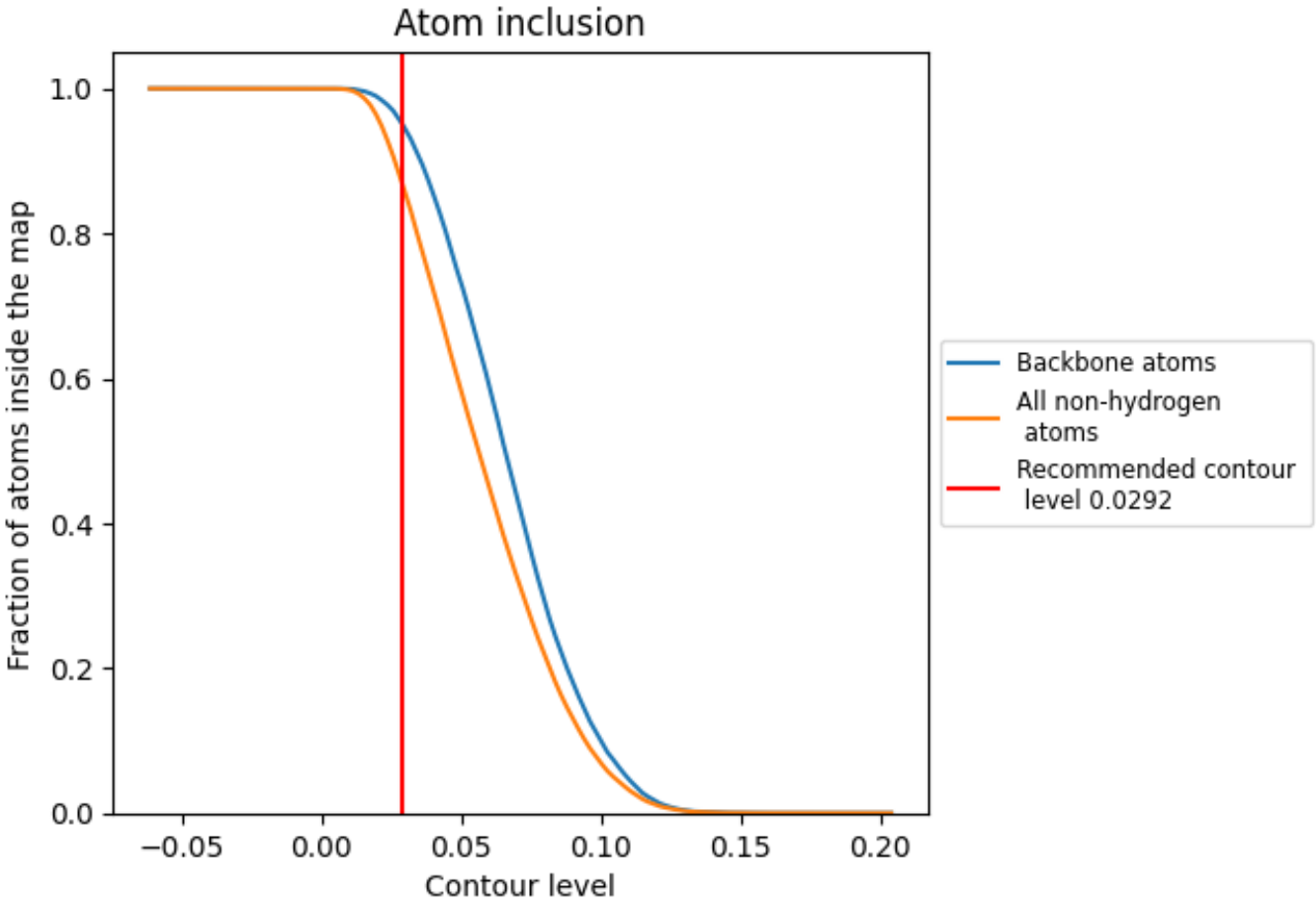
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0292 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.