wwPDB EM Validation Summary Report (i)

Oct 14, 2024 – 10:20 AM EDT

PDB ID	:	8TOW
EMDB ID	:	EMD-41460
Title	:	Structure of a mutated photosystem II complex reveals perturbation of the oxygen-evolving complex
Authors	:	Flesher, D.A.; Liu, J.; Wang, J.; Gisriel, C.J.; Yang, K.R.; Batista, V.S.; Debus, R.J.; Brudvig, G.W.
Deposited on	:	2023-08-04
Resolution	:	2.14 Å(reported)

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 types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

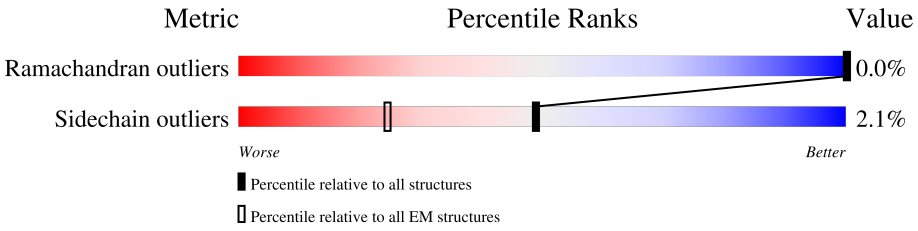
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 2.14 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.



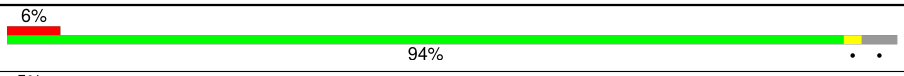
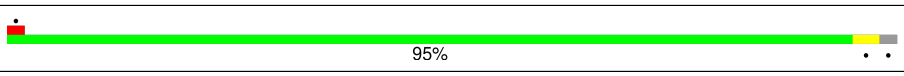
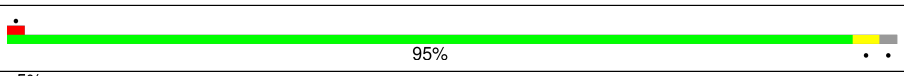
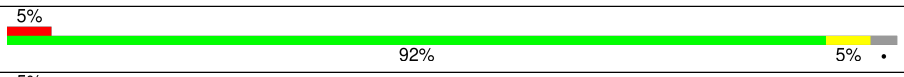
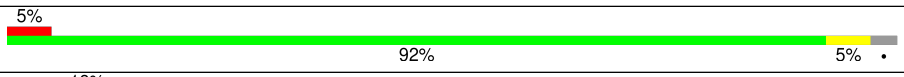
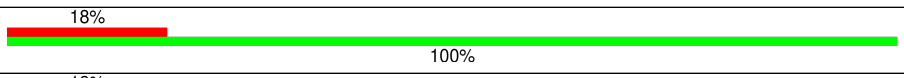
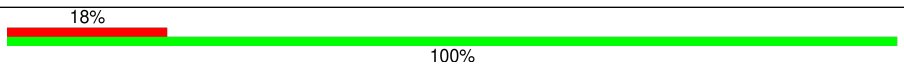
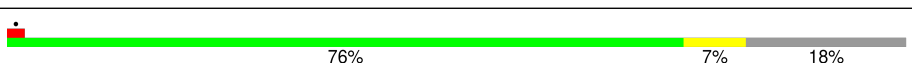
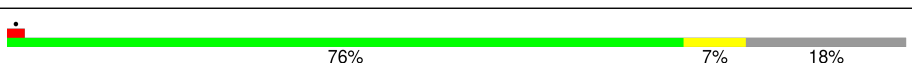
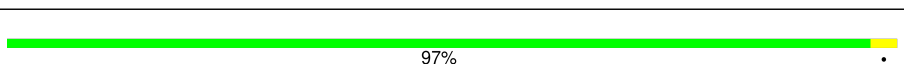
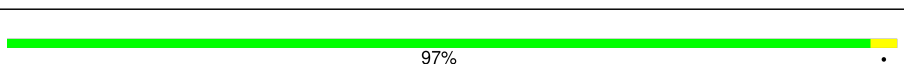
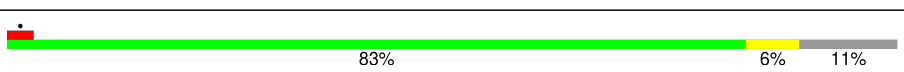
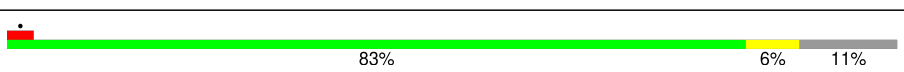
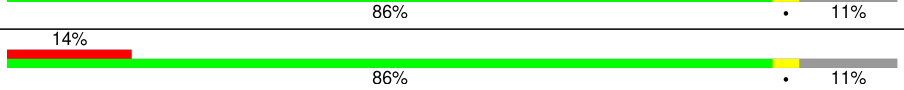
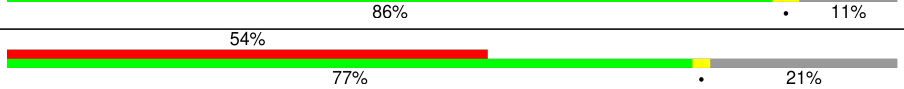
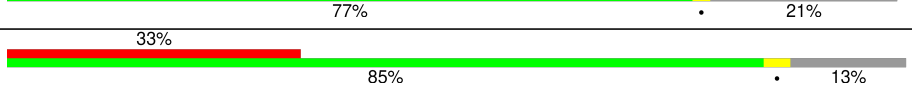
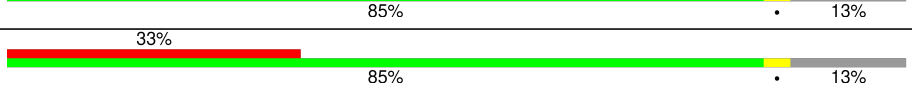
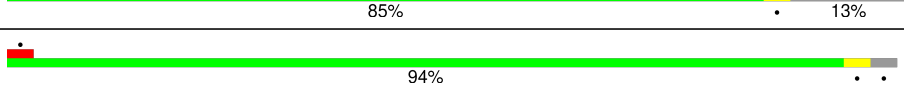
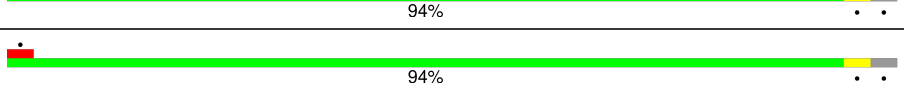
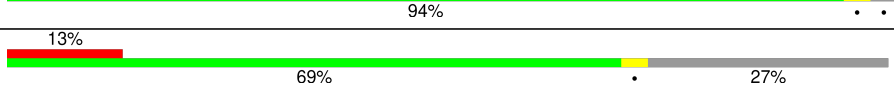
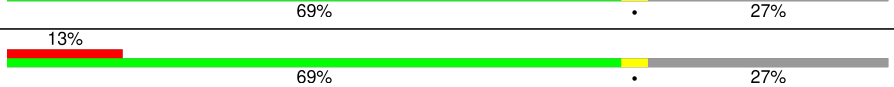
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	A	360	92% 7%
1	a	360	92% 7%
2	B	507	98%
2	b	507	98%
3	C	460	5% 96%
3	c	460	5% 96%
4	D	352	96%
4	d	352	96%
5	E	81	6% 94%

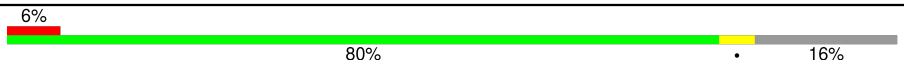
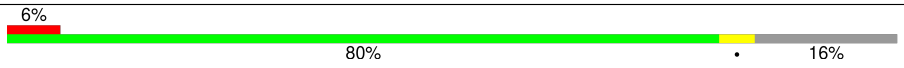
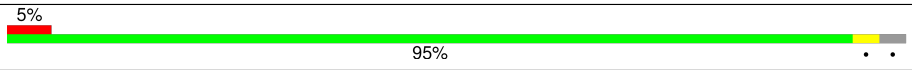
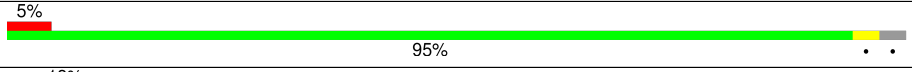
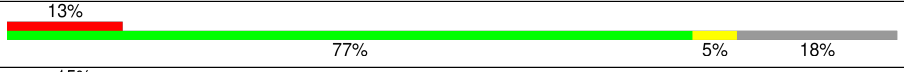
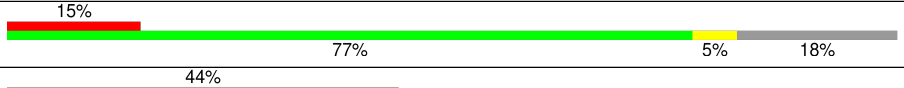
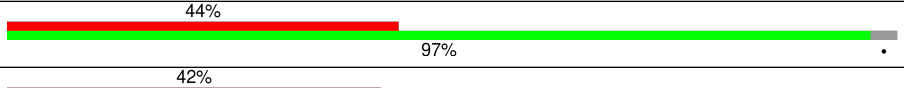
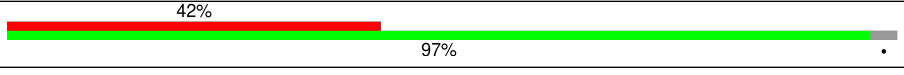
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
5	e	81	
6	F	44	
6	f	44	
7	H	64	
7	h	64	
8	I	38	
8	i	38	
9	J	39	
9	j	39	
10	K	45	
10	k	45	
11	L	39	
11	l	39	
12	M	35	
12	m	35	
13	O	274	
13	o	274	
14	Q	149	
14	q	149	
15	R	39	
15	r	39	
16	T	31	
16	t	31	
17	U	131	
17	u	131	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
18	V	160	
18	v	160	
19	X	39	
19	x	39	
20	Y	39	
20	y	39	
21	Z	62	
21	z	62	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	405	X	-	-	-
25	CLA	A	406	X	-	-	-
25	CLA	A	408	X	-	-	-
25	CLA	B	601	X	-	-	-
25	CLA	B	602	X	-	-	-
25	CLA	B	603	X	-	-	-
25	CLA	B	604	X	-	-	-
25	CLA	B	605	X	-	-	-
25	CLA	B	606	X	-	-	-
25	CLA	B	607	X	-	-	-
25	CLA	B	608	X	-	-	-
25	CLA	B	609	X	-	-	-
25	CLA	B	610	X	-	-	-
25	CLA	B	611	X	-	-	-
25	CLA	B	612	X	-	-	-
25	CLA	B	613	X	-	-	-
25	CLA	B	614	X	-	-	-
25	CLA	B	615	X	-	-	-
25	CLA	B	616	X	-	-	-
25	CLA	C	502	X	-	-	-
25	CLA	C	503	X	-	-	-
25	CLA	C	504	X	-	-	-
25	CLA	C	505	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	C	506	X	-	-	-
25	CLA	C	507	X	-	-	-
25	CLA	C	508	X	-	-	-
25	CLA	C	509	X	-	-	-
25	CLA	C	510	X	-	-	-
25	CLA	C	511	X	-	-	-
25	CLA	C	512	X	-	-	-
25	CLA	C	513	X	-	-	-
25	CLA	C	514	X	-	-	-
25	CLA	D	401	X	-	-	-
25	CLA	D	403	X	-	-	-
25	CLA	D	404	X	-	-	-
25	CLA	a	405	X	-	-	-
25	CLA	a	406	X	-	-	-
25	CLA	a	408	X	-	-	-
25	CLA	b	601	X	-	-	-
25	CLA	b	602	X	-	-	-
25	CLA	b	603	X	-	-	-
25	CLA	b	604	X	-	-	-
25	CLA	b	605	X	-	-	-
25	CLA	b	606	X	-	-	-
25	CLA	b	607	X	-	-	-
25	CLA	b	608	X	-	-	-
25	CLA	b	609	X	-	-	-
25	CLA	b	610	X	-	-	-
25	CLA	b	611	X	-	-	-
25	CLA	b	612	X	-	-	-
25	CLA	b	613	X	-	-	-
25	CLA	b	614	X	-	-	-
25	CLA	b	615	X	-	-	-
25	CLA	b	616	X	-	-	-
25	CLA	c	502	X	-	-	-
25	CLA	c	503	X	-	-	-
25	CLA	c	504	X	-	-	-
25	CLA	c	505	X	-	-	-
25	CLA	c	506	X	-	-	-
25	CLA	c	507	X	-	-	-
25	CLA	c	508	X	-	-	-
25	CLA	c	509	X	-	-	-
25	CLA	c	510	X	-	-	-
25	CLA	c	511	X	-	-	-
25	CLA	c	512	X	-	-	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	c	513	X	-	-	-
25	CLA	c	514	X	-	-	-
25	CLA	d	401	X	-	-	-
25	CLA	d	403	X	-	-	-
25	CLA	d	404	X	-	-	-

2 Entry composition (i)

There are 38 unique types of molecules in this entry. The entry contains 54914 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 Photosystem II protein D1 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	334	Total 2640	C 1728	N 431	O 466	S 15	2	0
1	a	334	Total 2640	C 1728	N 431	O 466	S 15	2	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	170	GLU	ASP	conflict	UNP P16033
a	170	GLU	ASP	conflict	UNP P16033

- Molecule 2 is a protein called Photosystem II CP47 reaction center protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	506	Total 3958	C 2584	N 662	O 699	S 13	0	0
2	b	506	Total 3958	C 2584	N 662	O 699	S 13	0	0

- Molecule 3 is a protein called Photosystem II CP43 reaction center protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	450	Total 3493	C 2293	N 584	O 603	S 13	0	0
3	c	450	Total 3493	C 2293	N 584	O 603	S 13	0	0

- Molecule 4 is a protein called Photosystem II D2 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	341	Total 2726	C 1807	N 443	O 464	S 12	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
4	d	341	Total	C	N	O	S	0	0
			2726	1807	443	464	12		

- Molecule 5 is a protein called Cytochrome b559 subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	78	Total	C	N	O	S	0	0
			645	419	104	121	1		
5	e	78	Total	C	N	O	S	0	0
			645	419	104	121	1		

- Molecule 6 is a protein called Cytochrome b559 subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	35	Total	C	N	O	S	0	0
			279	189	46	43	1		
6	f	35	Total	C	N	O	S	0	0
			279	189	46	43	1		

- Molecule 7 is a protein called Photosystem II reaction center protein H.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	63	Total	C	N	O	S	0	0
			494	328	79	85	2		
7	h	63	Total	C	N	O	S	0	0
			494	328	79	85	2		

- Molecule 8 is a protein called Photosystem II reaction center protein I.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	37	Total	C	N	O	S	0	0
			297	201	46	49	1		
8	i	37	Total	C	N	O	S	0	0
			297	201	46	49	1		

- Molecule 9 is a protein called Photosystem II reaction center protein J.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	39	Total	C	N	O	S	0	0
			279	188	43	46	2		
9	j	39	Total	C	N	O	S	0	0
			279	188	43	46	2		

- Molecule 10 is a protein called Photosystem II reaction center protein K.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	K	37	Total	C	N	O	0	0
			299	210	42	47		
10	k	37	Total	C	N	O	0	0
			299	210	42	47		

- Molecule 11 is a protein called Photosystem II reaction center protein L.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	39	Total	C	N	O	S	0	0
			316	204	54	57	1		
11	l	39	Total	C	N	O	S	0	0
			316	204	54	57	1		

- Molecule 12 is a protein called Photosystem II reaction center protein M.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	31	Total	C	N	O	S	0	0
			245	169	36	39	1		
12	m	31	Total	C	N	O	S	0	0
			245	169	36	39	1		

- Molecule 13 is a protein called Photosystem II manganese-stabilizing polypeptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	O	243	Total	C	N	O	S	0	0
			1873	1186	305	379	3		
13	o	243	Total	C	N	O	S	0	0
			1873	1186	305	379	3		

- Molecule 14 is a protein called Sll1638 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Q	118	Total	C	N	O	S	0	0
			911	573	163	173	2		
14	q	118	Total	C	N	O	S	0	0
			911	573	163	173	2		

- Molecule 15 is a protein called Photosystem II protein Y.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	R	34	Total 258	C 170	N 45	O 43	0	0
15	r	34	Total 258	C 170	N 45	O 43	0	0

- Molecule 16 is a protein called Photosystem II reaction center protein T.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	T	30	Total 241	C 163	N 36	O 40	S 2	0	0
16	t	30	Total 241	C 163	N 36	O 40	S 2	0	0

- Molecule 17 is a protein called Photosystem II 12 kDa extrinsic protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	U	95	Total 740	C 461	N 123	O 156	0	0
17	u	95	Total 740	C 461	N 123	O 156	0	0

- Molecule 18 is a protein called Cytochrome c-550.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	V	135	Total 1065	C 665	N 179	O 218	S 3	0	0
18	v	135	Total 1065	C 665	N 179	O 218	S 3	0	0

- Molecule 19 is a protein called Photosystem II reaction center X protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	X	38	Total 288	C 193	N 46	O 48	S 1	0	0
19	x	38	Total 288	C 193	N 46	O 48	S 1	0	0

- Molecule 20 is a protein called Photosystem II reaction center protein Ycf12.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	Y	32	Total 242	C 165	N 37	O 40	0	0

Continued on next page...

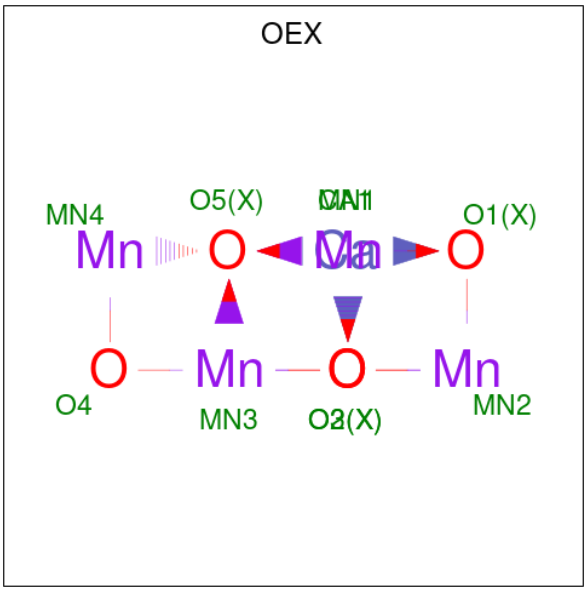
Continued from previous page...

Mol	Chain	Residues	Atoms				AltConf	Trace
20	y	32	Total 242	C 165	N 37	O 40	0	0

- Molecule 21 is a protein called Photosystem II reaction center protein Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Z	60	Total 460	C 317	N 70	O 72	S 1	0	0
21	z	60	Total 460	C 317	N 70	O 72	S 1	0	0

- Molecule 22 is CA-MN4-O5 CLUSTER (three-letter code: OEX) (formula: $CaMn_4O_5$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
22	A	1	Total 10	Ca 1	Mn 4	O 5	0
22	a	1	Total 10	Ca 1	Mn 4	O 5	0

- Molecule 23 is FE (II) ION (three-letter code: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms		AltConf
23	A	1	Total 1	Fe 1	0

Continued on next page...

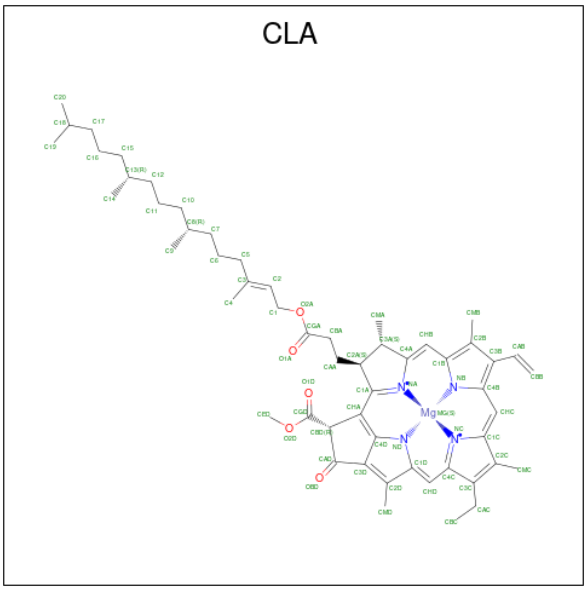
Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
23	a	1	Total Fe 1 1	0

- Molecule 24 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	AltConf
24	A	2	Total Cl 2 2	0
24	a	2	Total Cl 2 2	0

- Molecule 25 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).



Mol	Chain	Residues	Atoms	AltConf
25	A	1	Total C Mg N O 65 55 1 4 5	0
25	A	1	Total C Mg N O 65 55 1 4 5	0
25	A	1	Total C Mg N O 60 50 1 4 5	0
25	B	1	Total C Mg N O 45 35 1 4 5	0
25	B	1	Total C Mg N O 65 55 1 4 5	0
25	B	1	Total C Mg N O 65 55 1 4 5	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 60	C 50	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	B	1	Total 60	C 50	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 55	C 45	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	C	1	Total 65	C 55	Mg 1	N 4	O 5	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
25	C	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	C	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	C	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	C	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
25	C	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	D	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	D	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	D	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	a	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	a	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	a	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	

Continued on next page...

Continued from previous page...

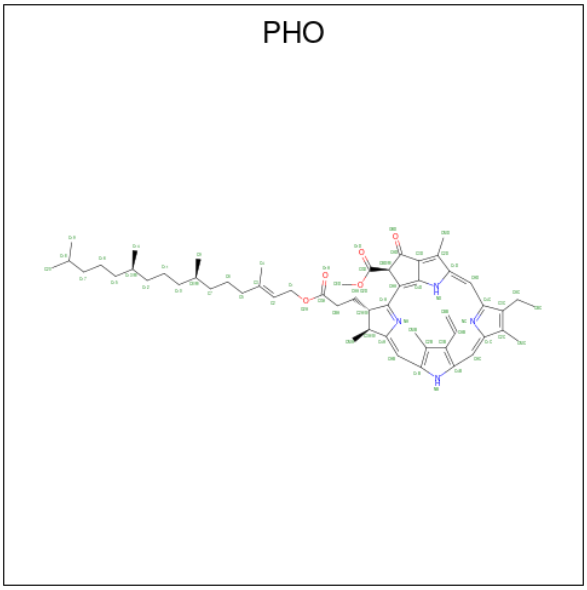
Mol	Chain	Residues	Atoms					AltConf
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	b	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
25	c	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	d	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	d	1	Total	C	Mg	N	O	0
			65	55	1	4	5	

Continued on next page...

Continued from previous page...

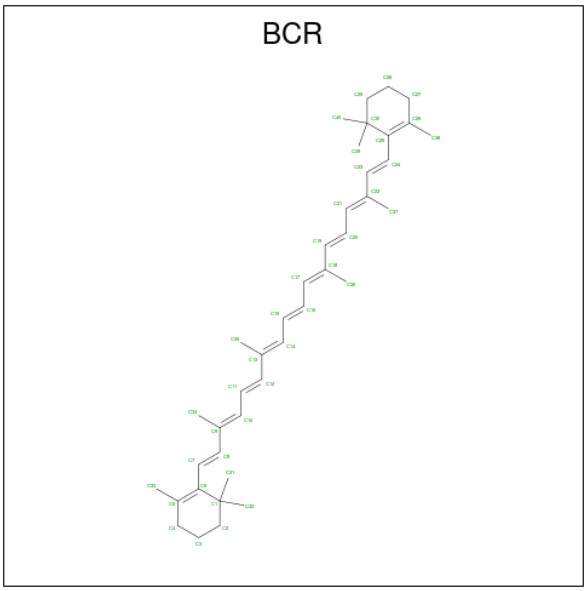
Mol	Chain	Residues	Atoms					AltConf
25	d	1	Total	C	Mg	N	O	0
			65	55	1	4	5	

- Molecule 26 is PHEOPHYTIN A (three-letter code: PHO) (formula: $C_{55}H_{74}N_4O_5$).



Mol	Chain	Residues	Atoms					AltConf
26	A	1	Total	C	N	O		0
			64	55	4	5		
26	D	1	Total	C	N	O		0
			64	55	4	5		
26	a	1	Total	C	N	O		0
			64	55	4	5		
26	d	1	Total	C	N	O		0
			64	55	4	5		

- Molecule 27 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).



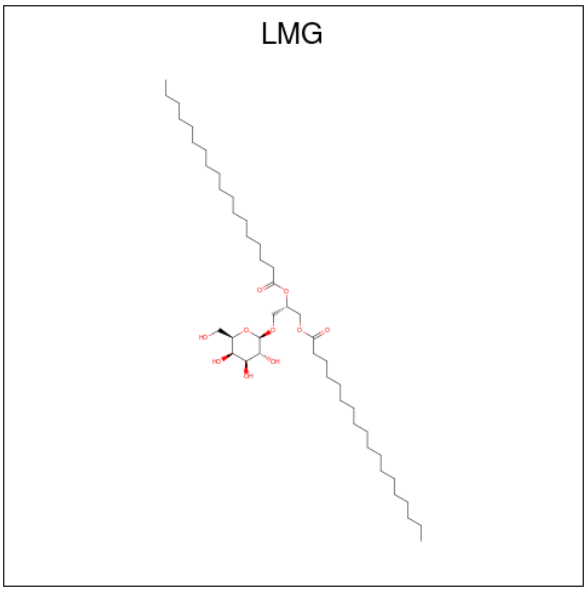
Mol	Chain	Residues	Atoms	AltConf
27	A	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	C	1	Total C 40 40	0
27	F	1	Total C 40 40	0
27	K	1	Total C 40 40	0
27	K	1	Total C 40 40	0
27	Z	1	Total C 40 40	0
27	a	1	Total C 40 40	0
27	b	1	Total C 40 40	0
27	b	1	Total C 40 40	0
27	b	1	Total C 40 40	0
27	c	1	Total C 40 40	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
27	f	1	Total C 40 40	0
27	k	1	Total C 40 40	0
27	k	1	Total C 40 40	0
27	z	1	Total C 40 40	0

- Molecule 28 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$).



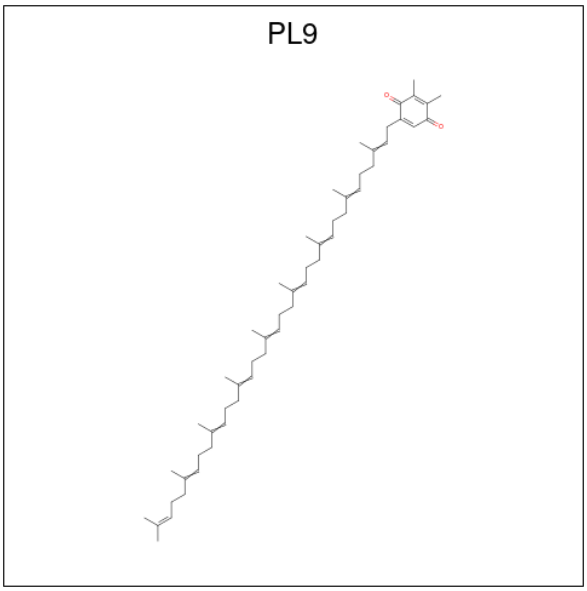
Mol	Chain	Residues	Atoms	AltConf
28	A	1	Total C O 51 41 10	0
28	A	1	Total C O 36 26 10	0
28	B	1	Total C O 51 41 10	0
28	C	1	Total C O 51 41 10	0
28	C	1	Total C O 49 39 10	0
28	D	1	Total C O 44 34 10	0
28	H	1	Total C O 47 37 10	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
28	a	1	Total C O 51 41 10	0
28	a	1	Total C O 36 26 10	0
28	b	1	Total C O 51 41 10	0
28	c	1	Total C O 51 41 10	0
28	c	1	Total C O 49 39 10	0
28	d	1	Total C O 44 34 10	0
28	h	1	Total C O 47 37 10	0

- Molecule 29 is 2,3-DIMETHYL-5-(3,7,11,15,19,23,27,31,35-NONAMETHYL-2,6,10,14,18,22,26,30,34-HEXATRIACONTANONAENYL-2,5-CYCLOHEXADIENE-1,4-DIONE-2,3-DIMETHYL-5-SOLANESYL-1,4-BENZOQUINONE (three-letter code: PL9) (formula: $C_{53}H_{80}O_2$).



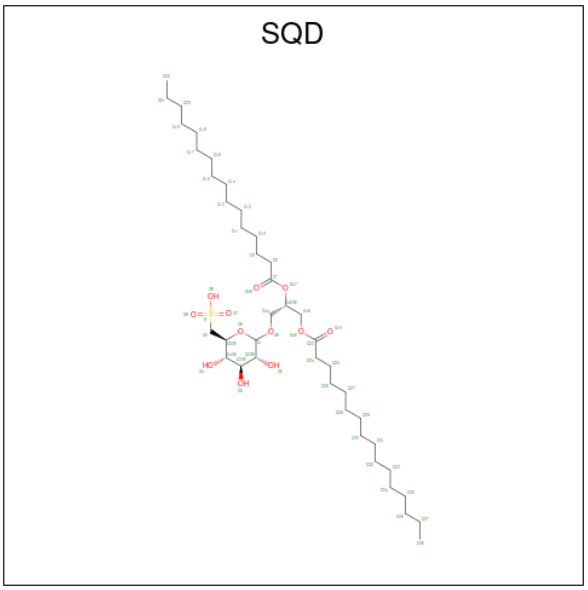
Mol	Chain	Residues	Atoms	AltConf
29	A	1	Total C O 55 53 2	0
29	D	1	Total C O 55 53 2	0
29	a	1	Total C O 55 53 2	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
29	d	1	Total C O 55 53 2	0

- Molecule 30 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: $C_{41}H_{78}O_{12}S$).



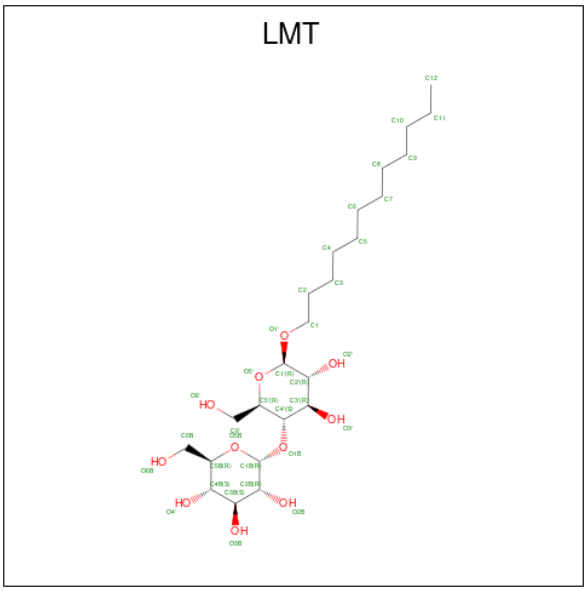
Mol	Chain	Residues	Atoms	AltConf
30	A	1	Total C O S 54 41 12 1	0
30	A	1	Total C O S 48 35 12 1	0
30	B	1	Total C O S 54 41 12 1	0
30	C	1	Total C O S 54 41 12 1	0
30	F	1	Total C O S 34 21 12 1	0
30	H	1	Total C O S 54 41 12 1	0
30	K	1	Total C O 41 32 9	0
30	a	1	Total C O S 54 41 12 1	0
30	a	1	Total C O S 48 35 12 1	0
30	b	1	Total C O S 54 41 12 1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
30	c	1	Total C O S 54 41 12 1	0
30	f	1	Total C O S 34 21 12 1	0
30	h	1	Total C O S 54 41 12 1	0
30	k	1	Total C O 41 32 9	0

- Molecule 31 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).



Mol	Chain	Residues	Atoms	AltConf
31	A	1	Total C O 35 24 11	0
31	A	1	Total C O 24 18 6	0
31	B	1	Total C O 35 24 11	0
31	B	1	Total C O 24 18 6	0
31	B	1	Total C O 35 24 11	0
31	B	1	Total C O 24 18 6	0
31	B	1	Total C O 35 24 11	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
31	C	1	Total C O 24 18 6	0
31	C	1	Total C O 35 24 11	0
31	C	1	Total C O 21 15 6	0
31	D	1	Total C O 24 18 6	0
31	D	1	Total C O 35 24 11	0
31	D	1	Total C O 35 24 11	0
31	E	1	Total C O 22 16 6	0
31	E	1	Total C O 35 24 11	0
31	F	1	Total C O 35 24 11	0
31	H	1	Total C O 24 18 6	0
31	I	1	Total C O 24 18 6	0
31	I	1	Total C O 24 18 6	0
31	I	1	Total C O 35 24 11	0
31	I	1	Total C O 22 16 6	0
31	J	1	Total C O 24 18 6	0
31	K	1	Total C O 35 24 11	0
31	M	1	Total C O 35 24 11	0
31	M	1	Total C O 24 18 6	0
31	T	1	Total C O 24 18 6	0
31	X	1	Total C O 24 18 6	0
31	X	1	Total C O 22 17 5	0

Continued on next page...

Continued from previous page...

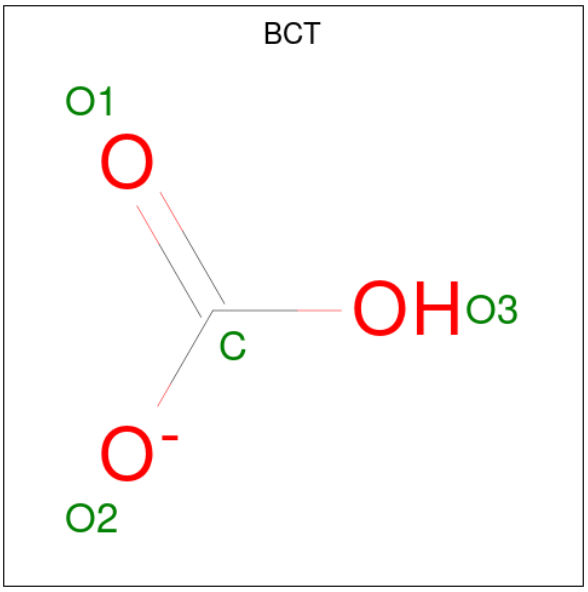
Mol	Chain	Residues	Atoms	AltConf
31	X	1	Total C O 22 16 6	0
31	X	1	Total C O 19 13 6	0
31	X	1	Total C O 19 13 6	0
31	Y	1	Total C O 21 15 6	0
31	a	1	Total C O 35 24 11	0
31	a	1	Total C O 24 18 6	0
31	b	1	Total C O 35 24 11	0
31	b	1	Total C O 24 18 6	0
31	b	1	Total C O 35 24 11	0
31	b	1	Total C O 24 18 6	0
31	b	1	Total C O 35 24 11	0
31	c	1	Total C O 24 18 6	0
31	c	1	Total C O 35 24 11	0
31	c	1	Total C O 21 15 6	0
31	d	1	Total C O 24 18 6	0
31	d	1	Total C O 35 24 11	0
31	d	1	Total C O 35 24 11	0
31	e	1	Total C O 22 16 6	0
31	e	1	Total C O 35 24 11	0
31	f	1	Total C O 35 24 11	0
31	h	1	Total C O 24 18 6	0

Continued on next page...

Continued from previous page...

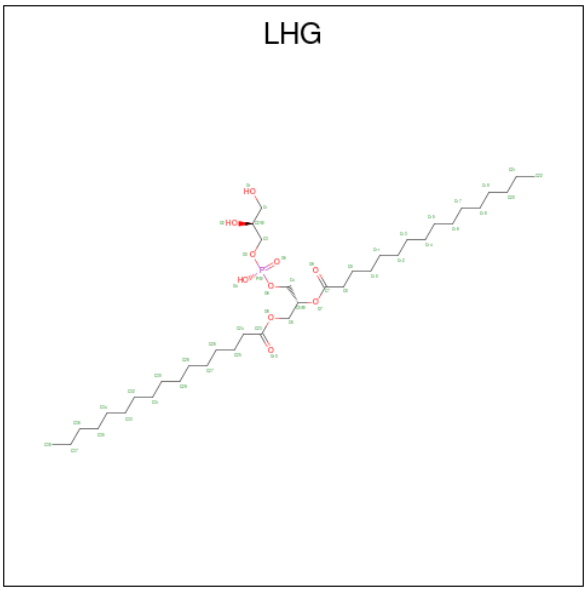
Mol	Chain	Residues	Atoms			AltConf
31	i	1	Total	C	O	0
			24	18	6	
31	i	1	Total	C	O	0
			24	18	6	
31	i	1	Total	C	O	0
			35	24	11	
31	i	1	Total	C	O	0
			22	16	6	
31	j	1	Total	C	O	0
			24	18	6	
31	k	1	Total	C	O	0
			35	24	11	
31	m	1	Total	C	O	0
			35	24	11	
31	m	1	Total	C	O	0
			24	18	6	
31	t	1	Total	C	O	0
			24	18	6	
31	x	1	Total	C	O	0
			24	18	6	
31	x	1	Total	C	O	0
			22	17	5	
31	x	1	Total	C	O	0
			22	16	6	
31	x	1	Total	C	O	0
			19	13	6	
31	x	1	Total	C	O	0
			19	13	6	
31	y	1	Total	C	O	0
			21	15	6	

- Molecule 32 is BICARBONATE ION (three-letter code: BCT) (formula: CHO_3).



Mol	Chain	Residues	Atoms			AltConf
32	A	1	Total	C	O	0
			4	1	3	
32	a	1	Total	C	O	0
			4	1	3	

- Molecule 33 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$).



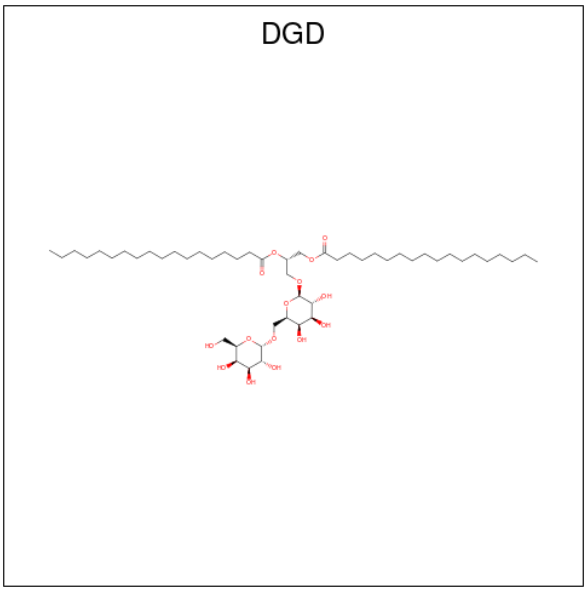
Mol	Chain	Residues	Atoms				AltConf
33	B	1	Total	C	O	P	0
			49	38	10	1	

Continued on next page...

Continued from previous page...

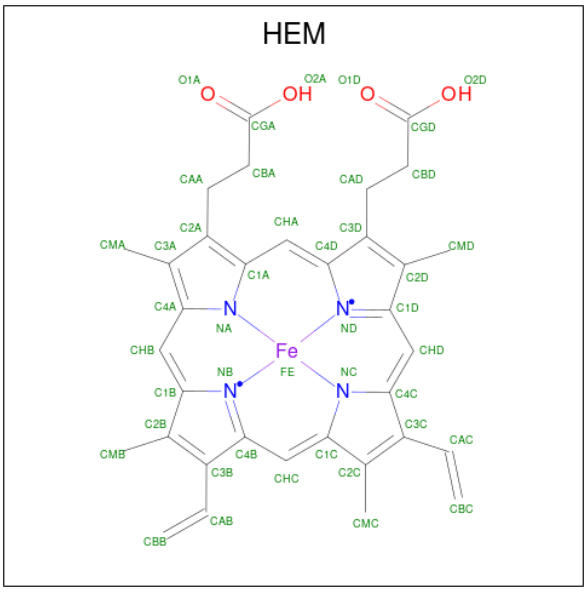
Mol	Chain	Residues	Atoms				AltConf
33	B	1	Total	C	O	P	0
			49	38	10	1	
33	D	1	Total	C	O	P	0
			49	38	10	1	
33	D	1	Total	C	O	P	0
			49	38	10	1	
33	D	1	Total	C	O	P	0
			49	38	10	1	
33	E	1	Total	C	O	P	0
			40	29	10	1	
33	Z	1	Total	C	O	P	0
			36	27	8	1	
33	b	1	Total	C	O	P	0
			49	38	10	1	
33	b	1	Total	C	O	P	0
			49	38	10	1	
33	d	1	Total	C	O	P	0
			49	38	10	1	
33	d	1	Total	C	O	P	0
			49	38	10	1	
33	d	1	Total	C	O	P	0
			49	38	10	1	
33	e	1	Total	C	O	P	0
			40	29	10	1	
33	z	1	Total	C	O	P	0
			36	27	8	1	

- Molecule 34 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).



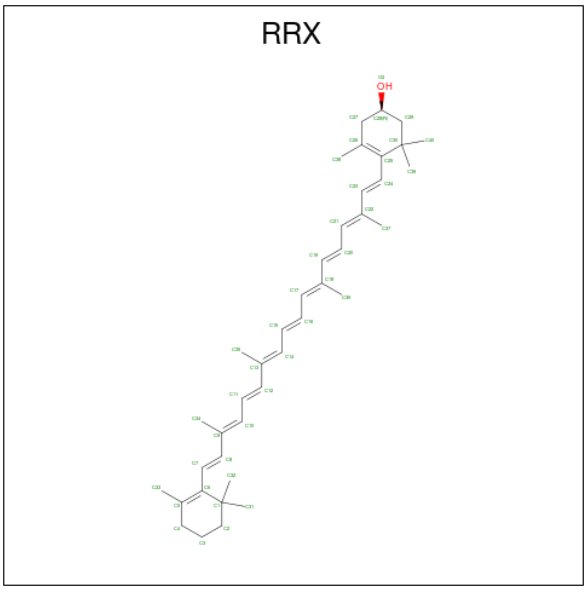
Mol	Chain	Residues	Atoms	AltConf
34	C	1	Total C O 62 47 15	0
34	C	1	Total C O 62 47 15	0
34	C	1	Total C O 62 47 15	0
34	H	1	Total C O 62 47 15	0
34	c	1	Total C O 62 47 15	0
34	c	1	Total C O 62 47 15	0
34	c	1	Total C O 62 47 15	0
34	h	1	Total C O 62 47 15	0

- Molecule 35 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



Mol	Chain	Residues	Atoms					AltConf
35	E	1	Total	C	Fe	N	O	0
			43	34	1	4	4	
35	V	1	Total	C	Fe	N	O	0
			43	34	1	4	4	
35	e	1	Total	C	Fe	N	O	0
			43	34	1	4	4	
35	v	1	Total	C	Fe	N	O	0
			43	34	1	4	4	

- Molecule 36 is (3R)-beta,beta-caroten-3-ol (three-letter code: RRX) (formula: $C_{40}H_{56}O$).



Mol	Chain	Residues	Atoms	AltConf
36	H	1	Total C O 41 40 1	0
36	h	1	Total C O 41 40 1	0

- Molecule 37 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	AltConf
37	K	1	Total Ca 1 1	0
37	U	1	Total Ca 1 1	0
37	V	1	Total Ca 1 1	0
37	k	1	Total Ca 1 1	0
37	u	1	Total Ca 1 1	0
37	v	1	Total Ca 1 1	0

- Molecule 38 is water.

Mol	Chain	Residues	Atoms	AltConf
38	A	127	Total O 127 127	0
38	B	127	Total O 127 127	0
38	C	107	Total O 107 107	0
38	D	132	Total O 132 132	0
38	E	8	Total O 8 8	0
38	F	4	Total O 4 4	0
38	H	17	Total O 17 17	0
38	I	1	Total O 1 1	0
38	J	2	Total O 2 2	0
38	L	14	Total O 14 14	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
38	M	6	Total O 6 6	0
38	O	37	Total O 37 37	0
38	T	12	Total O 12 12	0
38	U	21	Total O 21 21	0
38	V	17	Total O 17 17	0
38	X	3	Total O 3 3	0
38	a	127	Total O 127 127	0
38	b	127	Total O 127 127	0
38	c	107	Total O 107 107	0
38	d	132	Total O 132 132	0
38	e	8	Total O 8 8	0
38	f	4	Total O 4 4	0
38	h	17	Total O 17 17	0
38	i	1	Total O 1 1	0
38	j	2	Total O 2 2	0
38	l	14	Total O 14 14	0
38	m	6	Total O 6 6	0
38	o	37	Total O 37 37	0
38	t	12	Total O 12 12	0
38	u	21	Total O 21 21	0
38	v	17	Total O 17 17	0

Continued on next page...

Continued from previous page...

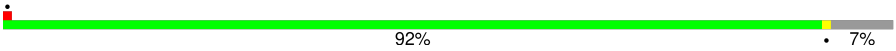
Mol	Chain	Residues	Atoms		AltConf
38	x	3	Total	O	0
			3	3	

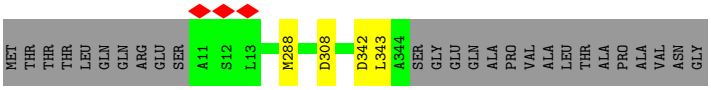
3 Residue-property plots (i)

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: Photosystem II protein D1 2

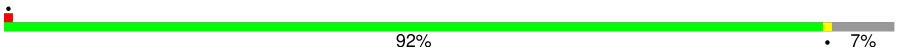
Chain A:

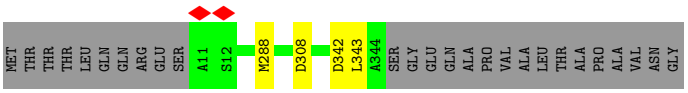




• Molecule 1: Photosystem II protein D1 2

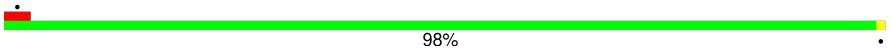
Chain a:

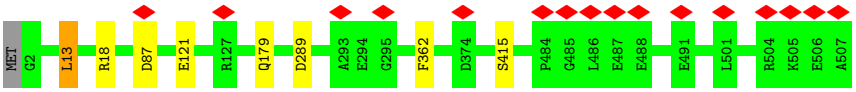




• Molecule 2: Photosystem II CP47 reaction center protein

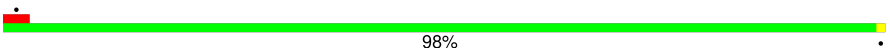
Chain B:

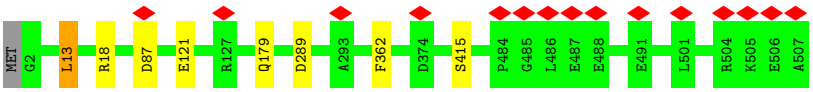




• Molecule 2: Photosystem II CP47 reaction center protein

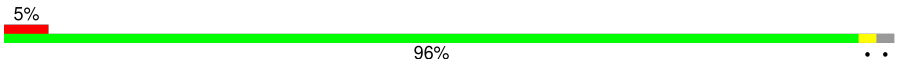
Chain b:

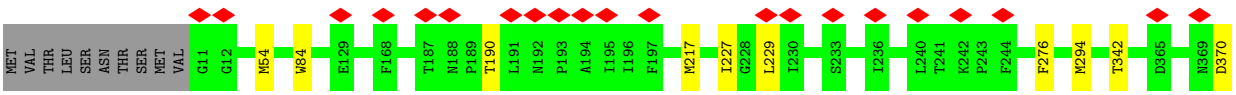




• Molecule 3: Photosystem II CP43 reaction center protein

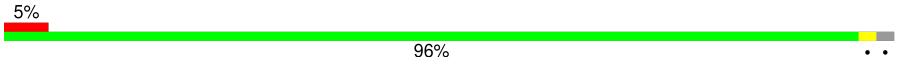
Chain C:





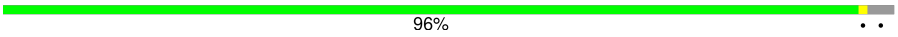
• Molecule 3: Photosystem II CP43 reaction center protein

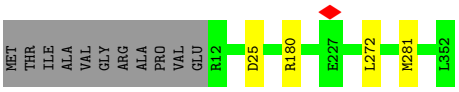
Chain c:



• Molecule 4: Photosystem II D2 protein

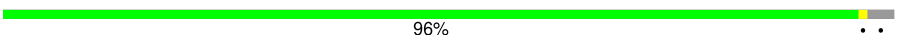
Chain D:

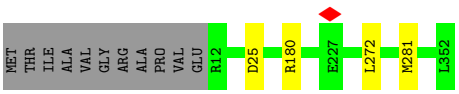




• Molecule 4: Photosystem II D2 protein

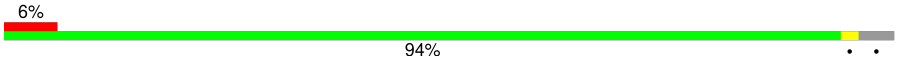
Chain d:

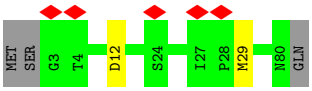




• Molecule 5: Cytochrome b559 subunit alpha

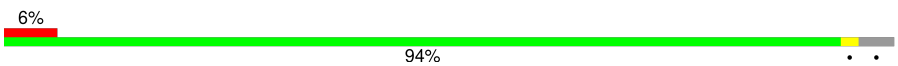
Chain E:

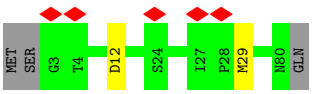




• Molecule 5: Cytochrome b559 subunit alpha

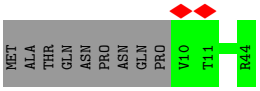
Chain e:





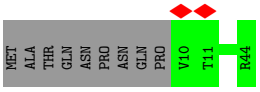
• Molecule 6: Cytochrome b559 subunit beta

Chain F:



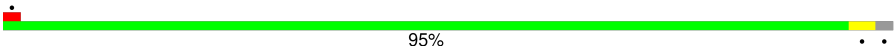
• Molecule 6: Cytochrome b559 subunit beta

Chain f:



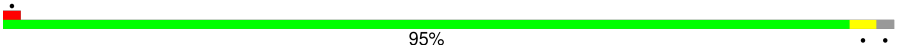
• Molecule 7: Photosystem II reaction center protein H

Chain H:



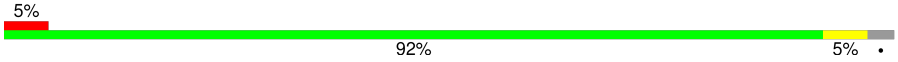
• Molecule 7: Photosystem II reaction center protein H

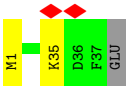
Chain h:



• Molecule 8: Photosystem II reaction center protein I

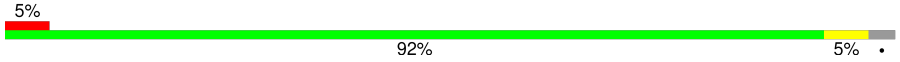
Chain I:

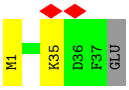




• Molecule 8: Photosystem II reaction center protein I

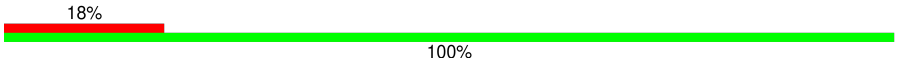
Chain i:

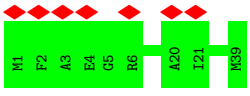




• Molecule 9: Photosystem II reaction center protein J

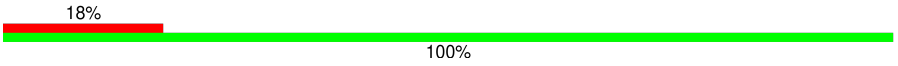
Chain J:

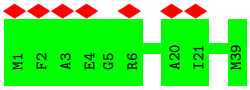




• Molecule 9: Photosystem II reaction center protein J

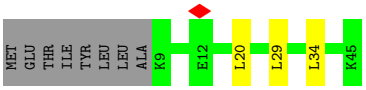
Chain j:





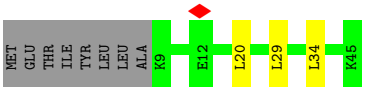
• Molecule 10: Photosystem II reaction center protein K

Chain K:



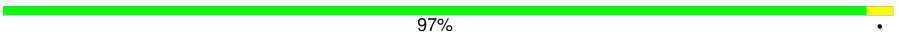
• Molecule 10: Photosystem II reaction center protein K

Chain k:



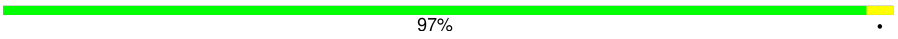
• Molecule 11: Photosystem II reaction center protein L

Chain L:



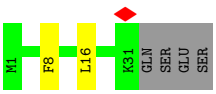
• Molecule 11: Photosystem II reaction center protein L

Chain l:



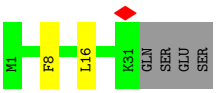
• Molecule 12: Photosystem II reaction center protein M

Chain M:



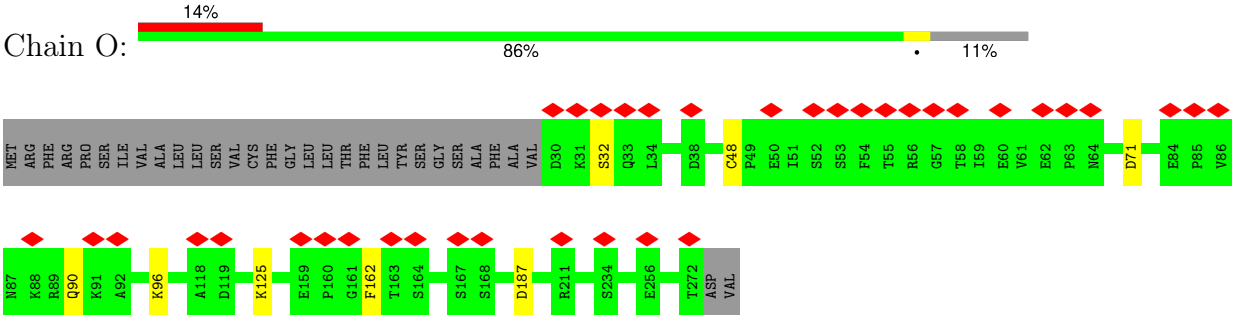
• Molecule 12: Photosystem II reaction center protein M

Chain m:



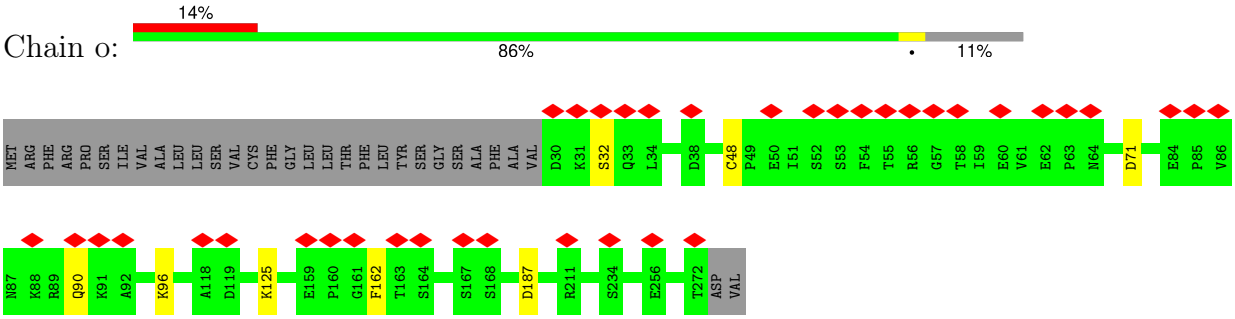
• Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain O:



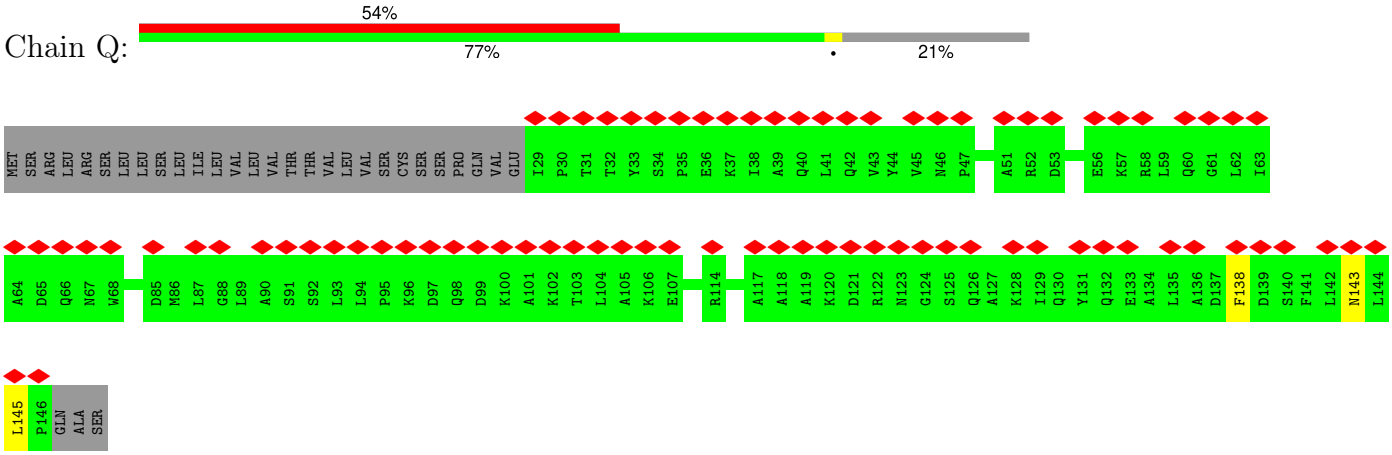
• Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain o:



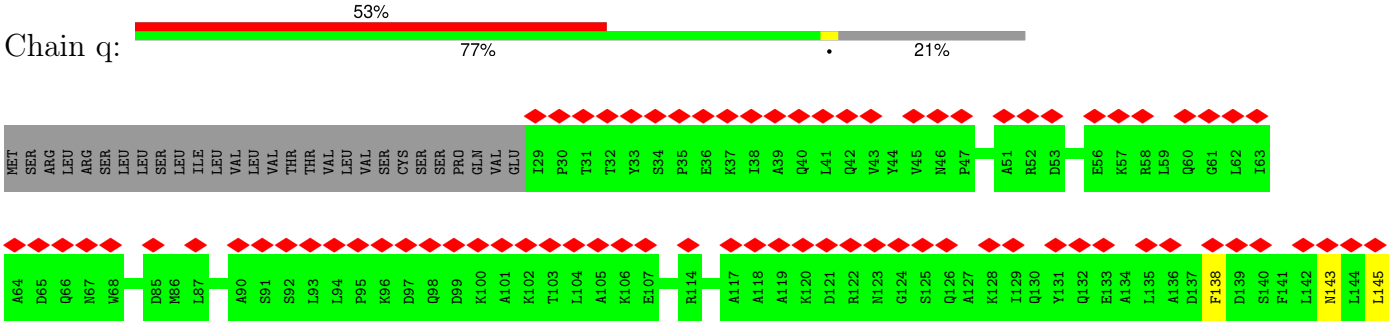
• Molecule 14: Sll1638 protein

Chain Q:



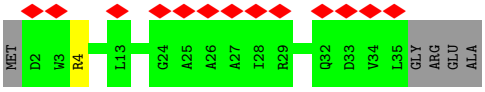
• Molecule 14: Sll1638 protein

Chain q:



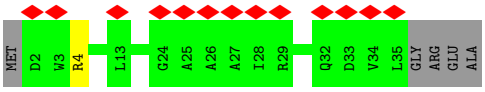
• Molecule 15: Photosystem II protein Y

Chain R:



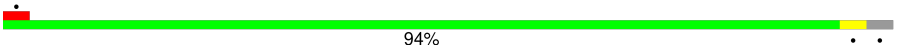
• Molecule 15: Photosystem II protein Y

Chain r:



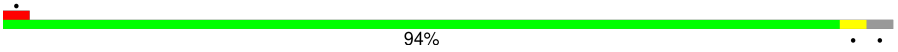
• Molecule 16: Photosystem II reaction center protein T

Chain T:



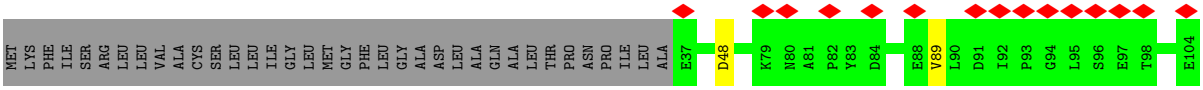
• Molecule 16: Photosystem II reaction center protein T

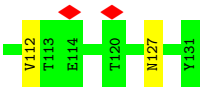
Chain t:



• Molecule 17: Photosystem II 12 kDa extrinsic protein

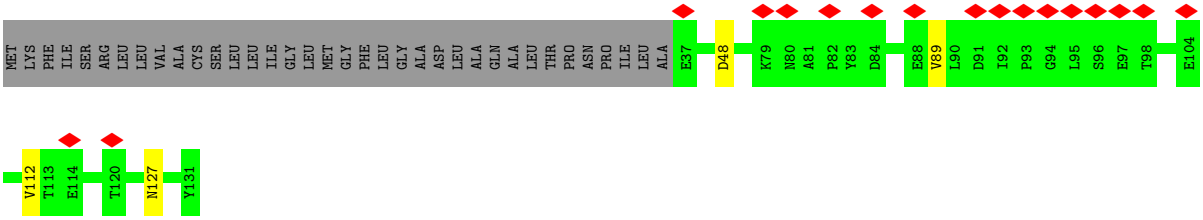
Chain U:



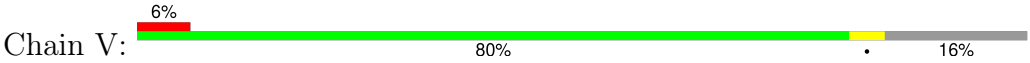


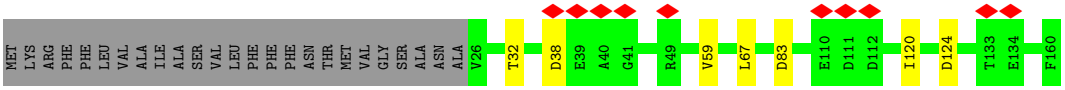
• Molecule 17: Photosystem II 12 kDa extrinsic protein

Chain u:

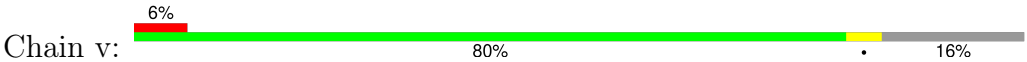


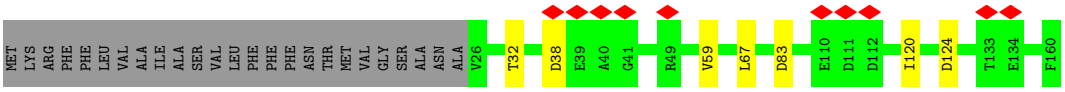
• Molecule 18: Cytochrome c-550



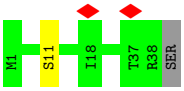


• Molecule 18: Cytochrome c-550

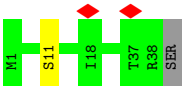




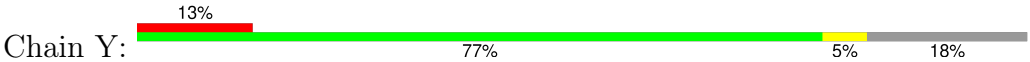
• Molecule 19: Photosystem II reaction center X protein

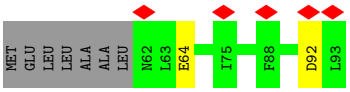


• Molecule 19: Photosystem II reaction center X protein

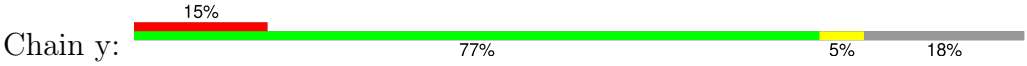


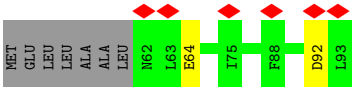
• Molecule 20: Photosystem II reaction center protein Ycf12



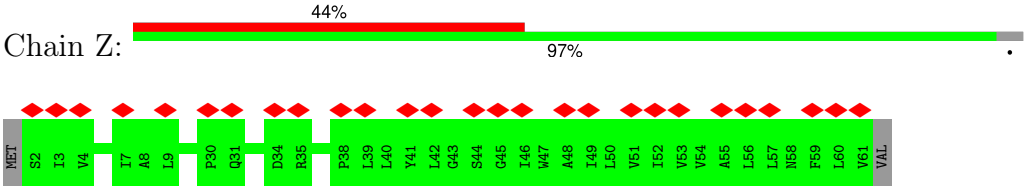


• Molecule 20: Photosystem II reaction center protein Ycf12

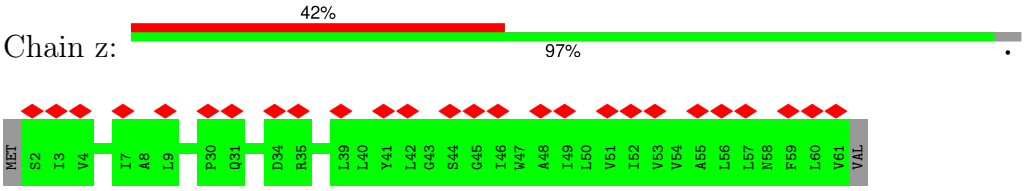




• Molecule 21: Photosystem II reaction center protein Z



• Molecule 21: Photosystem II reaction center protein Z



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	129229	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 ($e^-/Å^2$)	38	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.070	Depositor
Minimum map value	-0.026	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.00432	Depositor
Map size (Å)	297.0, 297.0, 297.0	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.825, 0.825, 0.825	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: LMG, SQD, PL9, CLA, FE2, OEX, FME, BCT, HEM, DGD, LHG, RRX, CA, PHO, BCR, LMT, CL

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.42	0/2724	0.62	2/3710 (0.1%)
1	a	0.42	0/2724	0.62	2/3710 (0.1%)
2	B	0.37	0/4091	0.57	1/5568 (0.0%)
2	b	0.38	0/4091	0.57	1/5568 (0.0%)
3	C	0.38	0/3608	0.60	1/4912 (0.0%)
3	c	0.38	0/3608	0.60	1/4912 (0.0%)
4	D	0.39	0/2823	0.60	2/3843 (0.1%)
4	d	0.39	0/2823	0.60	2/3843 (0.1%)
5	E	0.40	0/664	0.71	2/906 (0.2%)
5	e	0.40	0/664	0.71	2/906 (0.2%)
6	F	0.38	0/288	0.59	0/393
6	f	0.38	0/288	0.59	0/393
7	H	0.34	0/506	0.58	0/687
7	h	0.34	0/506	0.58	0/687
8	I	0.33	0/294	0.56	0/397
8	i	0.33	0/294	0.56	0/397
9	J	0.30	0/278	0.55	0/375
9	j	0.30	0/278	0.55	0/375
10	K	0.41	0/310	0.94	3/424 (0.7%)
10	k	0.42	0/310	0.94	3/424 (0.7%)
11	L	0.40	0/322	0.53	0/435
11	l	0.40	0/322	0.53	0/435
12	M	0.35	0/239	0.67	1/325 (0.3%)
12	m	0.35	0/239	0.67	1/325 (0.3%)
13	O	0.35	0/1911	0.64	1/2590 (0.0%)
13	o	0.35	0/1911	0.64	1/2590 (0.0%)
14	Q	0.28	0/925	0.54	1/1250 (0.1%)
14	q	0.28	0/925	0.54	1/1250 (0.1%)
15	R	0.27	0/262	0.59	0/361
15	r	0.27	0/262	0.59	0/361
16	T	0.34	0/236	0.48	0/321

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
16	t	0.34	0/236	0.48	0/321
17	U	0.32	0/751	0.58	0/1018
17	u	0.32	0/751	0.58	0/1018
18	V	0.33	0/1086	0.60	1/1476 (0.1%)
18	v	0.34	0/1086	0.60	1/1476 (0.1%)
19	X	0.32	0/293	0.59	0/399
19	x	0.31	0/293	0.59	0/399
20	Y	0.37	0/247	0.60	0/335
20	y	0.37	0/247	0.60	0/335
21	Z	0.36	0/472	0.48	0/649
21	z	0.36	0/472	0.48	0/649
All	All	0.37	0/44660	0.60	30/60748 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	a	0	2
All	All	0	4

There are no bond length outliers.

The worst 5 of 30 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	k	29	LEU	CA-CB-CG	7.40	132.33	115.30
10	K	29	LEU	CA-CB-CG	7.40	132.31	115.30
5	e	12	ASP	CB-CG-OD1	7.37	124.93	118.30
5	E	12	ASP	CB-CG-OD1	7.36	124.93	118.30
1	A	288	MET	CG-SD-CE	6.74	110.99	100.20

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	342	ASP	Mainchain
1	a	342	ASP	Mainchain

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	A	333/360 (92%)	327 (98%)	6 (2%)	0	100	100
1	a	333/360 (92%)	327 (98%)	6 (2%)	0	100	100
2	B	504/507 (99%)	497 (99%)	7 (1%)	0	100	100
2	b	504/507 (99%)	497 (99%)	7 (1%)	0	100	100
3	C	448/460 (97%)	439 (98%)	9 (2%)	0	100	100
3	c	448/460 (97%)	439 (98%)	9 (2%)	0	100	100
4	D	339/352 (96%)	332 (98%)	7 (2%)	0	100	100
4	d	339/352 (96%)	332 (98%)	7 (2%)	0	100	100
5	E	76/81 (94%)	74 (97%)	2 (3%)	0	100	100
5	e	76/81 (94%)	74 (97%)	2 (3%)	0	100	100
6	F	33/44 (75%)	33 (100%)	0	0	100	100
6	f	33/44 (75%)	33 (100%)	0	0	100	100
7	H	61/64 (95%)	59 (97%)	2 (3%)	0	100	100
7	h	61/64 (95%)	59 (97%)	2 (3%)	0	100	100
8	I	35/38 (92%)	33 (94%)	2 (6%)	0	100	100
8	i	35/38 (92%)	33 (94%)	2 (6%)	0	100	100
9	J	37/39 (95%)	37 (100%)	0	0	100	100
9	j	37/39 (95%)	37 (100%)	0	0	100	100
10	K	35/45 (78%)	34 (97%)	1 (3%)	0	100	100
10	k	35/45 (78%)	34 (97%)	1 (3%)	0	100	100
11	L	37/39 (95%)	37 (100%)	0	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	l	37/39 (95%)	37 (100%)	0	0	100	100
12	M	29/35 (83%)	28 (97%)	1 (3%)	0	100	100
12	m	29/35 (83%)	28 (97%)	1 (3%)	0	100	100
13	O	241/274 (88%)	225 (93%)	15 (6%)	1 (0%)	30	26
13	o	241/274 (88%)	225 (93%)	15 (6%)	1 (0%)	30	26
14	Q	116/149 (78%)	112 (97%)	4 (3%)	0	100	100
14	q	116/149 (78%)	112 (97%)	4 (3%)	0	100	100
15	R	32/39 (82%)	32 (100%)	0	0	100	100
15	r	32/39 (82%)	32 (100%)	0	0	100	100
16	T	28/31 (90%)	28 (100%)	0	0	100	100
16	t	28/31 (90%)	28 (100%)	0	0	100	100
17	U	93/131 (71%)	91 (98%)	2 (2%)	0	100	100
17	u	93/131 (71%)	91 (98%)	2 (2%)	0	100	100
18	V	133/160 (83%)	128 (96%)	5 (4%)	0	100	100
18	v	133/160 (83%)	128 (96%)	5 (4%)	0	100	100
19	X	36/39 (92%)	36 (100%)	0	0	100	100
19	x	36/39 (92%)	36 (100%)	0	0	100	100
20	Y	30/39 (77%)	30 (100%)	0	0	100	100
20	y	30/39 (77%)	30 (100%)	0	0	100	100
21	Z	58/62 (94%)	58 (100%)	0	0	100	100
21	z	58/62 (94%)	58 (100%)	0	0	100	100
All	All	5468/5976 (92%)	5340 (98%)	126 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
13	O	32	SER
13	o	32	SER

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	A	274/293 (94%)	272 (99%)	2 (1%)	81	85
1	a	274/293 (94%)	272 (99%)	2 (1%)	81	85
2	B	403/404 (100%)	395 (98%)	8 (2%)	50	53
2	b	403/404 (100%)	395 (98%)	8 (2%)	50	53
3	C	351/361 (97%)	342 (97%)	9 (3%)	41	41
3	c	351/361 (97%)	342 (97%)	9 (3%)	41	41
4	D	277/285 (97%)	275 (99%)	2 (1%)	81	85
4	d	277/285 (97%)	275 (99%)	2 (1%)	81	85
5	E	70/73 (96%)	70 (100%)	0	100	100
5	e	70/73 (96%)	70 (100%)	0	100	100
6	F	28/37 (76%)	28 (100%)	0	100	100
6	f	28/37 (76%)	28 (100%)	0	100	100
7	H	53/54 (98%)	51 (96%)	2 (4%)	28	26
7	h	53/54 (98%)	51 (96%)	2 (4%)	28	26
8	I	32/33 (97%)	31 (97%)	1 (3%)	35	34
8	i	32/33 (97%)	31 (97%)	1 (3%)	35	34
9	J	24/24 (100%)	24 (100%)	0	100	100
9	j	24/24 (100%)	24 (100%)	0	100	100
10	K	31/38 (82%)	31 (100%)	0	100	100
10	k	31/38 (82%)	31 (100%)	0	100	100
11	L	36/36 (100%)	35 (97%)	1 (3%)	38	38
11	l	36/36 (100%)	35 (97%)	1 (3%)	38	38
12	M	27/31 (87%)	26 (96%)	1 (4%)	29	27
12	m	27/31 (87%)	26 (96%)	1 (4%)	29	27
13	O	207/233 (89%)	201 (97%)	6 (3%)	37	36
13	o	207/233 (89%)	201 (97%)	6 (3%)	37	36
14	Q	93/128 (73%)	91 (98%)	2 (2%)	47	49
14	q	93/128 (73%)	91 (98%)	2 (2%)	47	49
15	R	26/29 (90%)	25 (96%)	1 (4%)	28	26
15	r	26/29 (90%)	25 (96%)	1 (4%)	28	26

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
16	T	24/25 (96%)	24 (100%)	0	100 100
16	t	24/25 (96%)	24 (100%)	0	100 100
17	U	83/111 (75%)	79 (95%)	4 (5%)	21 18
17	u	83/111 (75%)	79 (95%)	4 (5%)	21 18
18	V	117/137 (85%)	111 (95%)	6 (5%)	20 16
18	v	117/137 (85%)	111 (95%)	6 (5%)	20 16
19	X	32/33 (97%)	31 (97%)	1 (3%)	35 34
19	x	32/33 (97%)	31 (97%)	1 (3%)	35 34
20	Y	25/30 (83%)	23 (92%)	2 (8%)	10 5
20	y	25/30 (83%)	23 (92%)	2 (8%)	10 5
21	Z	49/52 (94%)	49 (100%)	0	100 100
21	z	49/52 (94%)	49 (100%)	0	100 100
All	All	4524/4894 (92%)	4428 (98%)	96 (2%)	49 51

5 of 96 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	b	415	SER
8	i	35	LYS
3	c	84	TRP
3	c	342	THR
13	o	71	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 32 such sidechains are listed below:

Mol	Chain	Res	Type
14	q	143	ASN
17	u	56	ASN
14	Q	143	ASN
13	O	227	GLN
17	u	127	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

8 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	$\#\|Z\| > 2$
9	FME	j	1	9	6,7,10	0.83	0	2,7,11	0.67	0
16	FME	T	1	16	8,9,10	0.88	0	8,9,11	1.04	1 (12%)
16	FME	t	1	16	8,9,10	0.88	0	8,9,11	1.04	1 (12%)
8	FME	i	1	8	8,9,10	0.98	0	8,9,11	1.13	1 (12%)
12	FME	M	1	12	8,9,10	0.99	0	8,9,11	0.93	0
12	FME	m	1	12	8,9,10	0.98	0	8,9,11	0.93	0
8	FME	I	1	8	8,9,10	0.99	0	8,9,11	1.13	1 (12%)
9	FME	J	1	9	6,7,10	0.82	0	2,7,11	0.67	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
9	FME	j	1	9	-	3/5/6/11	-
16	FME	T	1	16	-	4/7/9/11	-
16	FME	t	1	16	-	4/7/9/11	-
8	FME	i	1	8	-	2/7/9/11	-
12	FME	M	1	12	-	0/7/9/11	-
12	FME	m	1	12	-	0/7/9/11	-
8	FME	I	1	8	-	2/7/9/11	-
9	FME	J	1	9	-	3/5/6/11	-

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	i	1	FME	C-CA-N	2.50	114.31	109.50
8	I	1	FME	C-CA-N	2.48	114.28	109.50
16	T	1	FME	C-CA-N	2.10	113.55	109.50
16	t	1	FME	C-CA-N	2.10	113.55	109.50

There are no chirality outliers.

5 of 18 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	J	1	FME	N-CA-CB-CG
9	J	1	FME	C-CA-CB-CG
16	T	1	FME	N-CA-CB-CG
9	j	1	FME	N-CA-CB-CG
9	j	1	FME	C-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 232 ligands modelled in this entry, 12 are monoatomic - leaving 220 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	$\#\|Z\| > 2$
30	SQD	h	103	-	52,54,54	0.94	3 (5%)	62,65,65	1.53	8 (12%)
25	CLA	B	611	-	63,73,73	2.22	18 (28%)	74,113,113	2.48	24 (32%)
31	LMT	b	624	-	24,24,36	1.04	3 (12%)	29,29,47	0.90	0
34	DGD	C	516	-	63,63,67	1.33	8 (12%)	77,77,81	0.93	2 (2%)
36	RRX	h	101	-	42,42,42	1.33	8 (19%)	56,58,58	1.39	9 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
28	LMG	B	621	-	51,51,55	1.46	8 (15%)	59,59,63	1.03	2 (3%)
31	LMT	C	525	-	21,21,36	1.01	1 (4%)	26,26,47	1.28	2 (7%)
22	OEX	A	401	1,3,38	0,15,15	-	-	-		
25	CLA	A	405	-	63,73,73	2.21	18 (28%)	74,113,113	2.53	25 (33%)
25	CLA	b	613	-	63,73,73	2.22	20 (31%)	74,113,113	2.55	25 (33%)
28	LMG	b	621	-	51,51,55	1.46	8 (15%)	59,59,63	1.03	2 (3%)
33	LHG	B	628	-	48,48,48	0.93	2 (4%)	51,54,54	1.01	3 (5%)
25	CLA	C	507	-	63,73,73	2.25	20 (31%)	74,113,113	2.49	24 (32%)
27	BCR	A	409	-	41,41,41	2.64	6 (14%)	56,56,56	6.48	20 (35%)
31	LMT	c	524	-	36,36,36	1.18	4 (11%)	47,47,47	1.18	3 (6%)
34	DGD	h	104	-	63,63,67	1.34	8 (12%)	77,77,81	0.97	3 (3%)
34	DGD	C	517	-	63,63,67	1.33	8 (12%)	77,77,81	1.08	5 (6%)
28	LMG	h	105	-	47,47,55	1.41	6 (12%)	55,55,63	1.39	7 (12%)
25	CLA	a	406	38	63,73,73	2.29	21 (33%)	74,113,113	2.54	24 (32%)
27	BCR	B	617	-	41,41,41	2.69	6 (14%)	56,56,56	6.53	16 (28%)
27	BCR	b	619	-	41,41,41	2.70	6 (14%)	56,56,56	6.55	22 (39%)
31	LMT	X	101	-	24,24,36	1.05	2 (8%)	29,29,47	1.06	1 (3%)
25	CLA	c	504	-	63,73,73	2.33	21 (33%)	74,113,113	2.53	26 (35%)
35	HEM	v	201	18	42,50,50	1.49	7 (16%)	46,82,82	2.20	12 (26%)
27	BCR	k	102	-	41,41,41	2.61	6 (14%)	56,56,56	6.89	21 (37%)
31	LMT	E	101	-	22,22,36	1.08	2 (9%)	27,27,47	1.16	3 (11%)
26	PHO	A	407	-	50,69,69	1.04	4 (8%)	48,99,99	1.14	4 (8%)
26	PHO	d	402	-	50,69,69	1.01	4 (8%)	48,99,99	1.31	7 (14%)
25	CLA	B	613	-	63,73,73	2.22	20 (31%)	74,113,113	2.55	25 (33%)
31	LMT	i	101	-	24,24,36	1.06	2 (8%)	29,29,47	1.06	2 (6%)
25	CLA	C	505	38	63,73,73	2.24	19 (30%)	74,113,113	2.57	27 (36%)
28	LMG	A	414	-	36,36,55	1.11	2 (5%)	44,44,63	1.19	3 (6%)
27	BCR	f	101	-	41,41,41	2.60	6 (14%)	56,56,56	6.63	22 (39%)
25	CLA	b	602	-	63,73,73	2.26	19 (30%)	74,113,113	2.46	24 (32%)
25	CLA	d	404	-	63,73,73	2.27	20 (31%)	74,113,113	2.48	24 (32%)
28	LMG	c	523	-	49,49,55	1.44	6 (12%)	57,57,63	1.22	4 (7%)
28	LMG	D	409	-	43,43,55	1.30	5 (11%)	51,51,63	1.11	3 (5%)
31	LMT	I	101	-	24,24,36	1.06	2 (8%)	29,29,47	1.06	2 (6%)
25	CLA	B	610	38	63,73,73	2.31	20 (31%)	74,113,113	2.51	29 (39%)
31	LMT	B	629	-	36,36,36	1.18	5 (13%)	47,47,47	1.00	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
29	PL9	d	405	-	55,55,55	1.20	5 (9%)	68,69,69	1.42	11 (16%)
31	LMT	i	104	-	22,22,36	1.05	2 (9%)	27,27,47	1.05	0
31	LMT	m	102	-	24,24,36	1.07	2 (8%)	29,29,47	1.08	1 (3%)
31	LMT	B	625	-	36,36,36	1.23	6 (16%)	47,47,47	1.06	1 (2%)
25	CLA	C	509	-	63,73,73	2.27	19 (30%)	74,113,113	2.36	24 (32%)
31	LMT	B	624	-	24,24,36	1.04	3 (12%)	29,29,47	0.90	0
25	CLA	b	611	-	63,73,73	2.22	18 (28%)	74,113,113	2.48	24 (32%)
33	LHG	Z	102	-	35,35,48	1.15	2 (5%)	38,40,54	1.16	3 (7%)
25	CLA	B	603	-	63,73,73	2.28	18 (28%)	74,113,113	2.49	25 (33%)
27	BCR	C	515	-	41,41,41	2.66	6 (14%)	56,56,56	6.60	16 (28%)
33	LHG	D	406	-	48,48,48	0.91	3 (6%)	51,54,54	0.99	3 (5%)
25	CLA	C	508	38	63,73,73	2.25	20 (31%)	74,113,113	2.50	27 (36%)
33	LHG	D	408	-	48,48,48	0.91	2 (4%)	51,54,54	0.96	2 (3%)
31	LMT	I	104	-	22,22,36	1.05	2 (9%)	27,27,47	1.05	0
25	CLA	C	514	-	63,73,73	2.32	18 (28%)	74,113,113	2.42	24 (32%)
31	LMT	D	412	-	36,36,36	1.17	5 (13%)	47,47,47	0.95	1 (2%)
31	LMT	H	102	-	24,24,36	1.07	2 (8%)	29,29,47	1.12	2 (6%)
33	LHG	E	102	-	39,39,48	1.03	2 (5%)	42,45,54	1.12	3 (7%)
30	SQD	b	620	-	52,54,54	0.41	0	62,65,65	0.44	0
25	CLA	B	609	-	63,73,73	2.30	20 (31%)	74,113,113	2.47	24 (32%)
27	BCR	a	409	-	41,41,41	2.64	6 (14%)	56,56,56	6.48	20 (35%)
25	CLA	b	610	38	63,73,73	2.31	19 (30%)	74,113,113	2.51	29 (39%)
29	PL9	A	411	-	55,55,55	1.10	4 (7%)	68,69,69	1.46	11 (16%)
33	LHG	e	102	-	39,39,48	1.03	2 (5%)	42,45,54	1.12	3 (7%)
25	CLA	C	502	-	63,73,73	2.28	20 (31%)	74,113,113	2.53	26 (35%)
25	CLA	a	405	-	63,73,73	2.21	18 (28%)	74,113,113	2.53	25 (33%)
31	LMT	D	411	-	36,36,36	1.17	5 (13%)	47,47,47	0.92	0
31	LMT	b	623	-	36,36,36	1.18	4 (11%)	47,47,47	1.10	4 (8%)
25	CLA	B	601	38	43,53,73	2.62	20 (46%)	50,89,113	2.92	20 (40%)
31	LMT	J	101	-	24,24,36	1.04	3 (12%)	29,29,47	1.19	4 (13%)
31	LMT	b	625	-	36,36,36	1.23	6 (16%)	47,47,47	1.06	1 (2%)
31	LMT	y	101	-	21,21,36	1.10	2 (9%)	26,26,47	1.05	1 (3%)
31	LMT	e	101	-	22,22,36	1.09	2 (9%)	27,27,47	1.16	3 (11%)
31	LMT	c	522	-	24,24,36	1.14	4 (16%)	29,29,47	1.33	5 (17%)
31	LMT	d	410	-	24,24,36	0.99	2 (8%)	29,29,47	1.21	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
32	BCT	a	417	-	3,3,3	1.15	0	2,3,3	4.17	2 (100%)
30	SQD	H	103	-	52,54,54	0.94	3 (5%)	62,65,65	1.53	8 (12%)
28	LMG	A	410	-	51,51,55	1.48	8 (15%)	59,59,63	1.11	3 (5%)
31	LMT	t	101	-	24,24,36	1.09	2 (8%)	29,29,47	1.16	2 (6%)
33	LHG	d	408	-	48,48,48	0.91	2 (4%)	51,54,54	0.96	2 (3%)
36	RRX	H	101	-	42,42,42	1.33	8 (19%)	56,58,58	1.39	9 (16%)
34	DGD	c	516	-	63,63,67	1.33	8 (12%)	77,77,81	0.93	2 (2%)
30	SQD	A	412	-	52,54,54	0.96	3 (5%)	62,65,65	1.69	15 (24%)
25	CLA	B	606	-	58,68,73	2.40	20 (34%)	68,107,113	2.51	25 (36%)
25	CLA	c	514	-	63,73,73	2.32	18 (28%)	74,113,113	2.41	24 (32%)
31	LMT	X	103	-	22,22,36	1.01	2 (9%)	27,27,47	1.28	3 (11%)
31	LMT	x	102	-	22,22,36	1.10	2 (9%)	27,27,47	1.05	1 (3%)
25	CLA	C	511	-	63,73,73	2.27	20 (31%)	74,113,113	2.61	29 (39%)
25	CLA	b	616	-	58,68,73	2.35	18 (31%)	68,107,113	2.65	27 (39%)
31	LMT	D	410	-	24,24,36	0.99	2 (8%)	29,29,47	1.21	4 (13%)
31	LMT	f	103	-	36,36,36	1.20	6 (16%)	47,47,47	1.02	2 (4%)
31	LMT	E	103	-	36,36,36	1.23	6 (16%)	47,47,47	1.57	6 (12%)
25	CLA	B	605	-	63,73,73	2.24	19 (30%)	74,113,113	2.61	24 (32%)
25	CLA	b	606	-	58,68,73	2.40	20 (34%)	68,107,113	2.51	25 (36%)
34	DGD	H	104	-	63,63,67	1.34	8 (12%)	77,77,81	0.97	3 (3%)
31	LMT	i	103	-	36,36,36	1.19	5 (13%)	47,47,47	0.93	1 (2%)
31	LMT	b	626	-	24,24,36	1.01	2 (8%)	29,29,47	0.90	0
28	LMG	H	105	-	47,47,55	1.41	6 (12%)	55,55,63	1.39	7 (12%)
27	BCR	b	618	-	41,41,41	2.68	6 (14%)	56,56,56	6.46	20 (35%)
31	LMT	I	102	-	24,24,36	1.03	3 (12%)	29,29,47	1.06	1 (3%)
35	HEM	V	201	18	42,50,50	1.49	7 (16%)	46,82,82	2.20	12 (26%)
33	LHG	b	628	-	48,48,48	0.93	2 (4%)	51,54,54	1.00	3 (5%)
25	CLA	B	608	-	63,73,73	2.28	20 (31%)	74,113,113	2.47	25 (33%)
31	LMT	K	105	-	36,36,36	1.20	6 (16%)	47,47,47	1.22	5 (10%)
31	LMT	x	101	-	24,24,36	1.04	2 (8%)	29,29,47	1.06	1 (3%)
26	PHO	D	402	-	50,69,69	1.00	4 (8%)	48,99,99	1.31	7 (14%)
31	LMT	M	101	-	36,36,36	1.17	6 (16%)	47,47,47	1.04	2 (4%)
35	HEM	E	104	6,5	42,50,50	1.33	6 (14%)	46,82,82	1.90	11 (23%)
30	SQD	A	413	-	46,48,54	1.00	3 (6%)	56,59,65	1.86	12 (21%)
25	CLA	b	603	-	63,73,73	2.28	18 (28%)	74,113,113	2.49	25 (33%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	b	604	-	63,73,73	2.24	17 (26%)	74,113,113	2.54	27 (36%)
25	CLA	c	506	-	53,63,73	2.47	19 (35%)	62,101,113	2.82	25 (40%)
25	CLA	b	615	-	63,73,73	2.24	19 (30%)	74,113,113	2.58	26 (35%)
25	CLA	b	608	-	63,73,73	2.28	20 (31%)	74,113,113	2.47	25 (33%)
25	CLA	c	510	-	63,73,73	2.32	21 (33%)	74,113,113	2.55	25 (33%)
28	LMG	d	409	-	43,43,55	1.30	5 (11%)	51,51,63	1.11	3 (5%)
30	SQD	a	412	-	52,54,54	0.96	3 (5%)	62,65,65	1.69	15 (24%)
31	LMT	b	629	-	36,36,36	1.18	5 (13%)	47,47,47	1.00	1 (2%)
29	PL9	a	411	-	55,55,55	1.10	4 (7%)	68,69,69	1.46	11 (16%)
31	LMT	i	102	-	24,24,36	1.04	3 (12%)	29,29,47	1.07	1 (3%)
30	SQD	F	102	-	32,34,54	1.20	4 (12%)	42,45,65	1.97	11 (26%)
30	SQD	a	413	-	46,48,54	1.00	3 (6%)	56,59,65	1.86	12 (21%)
31	LMT	c	525	-	21,21,36	1.00	1 (4%)	26,26,47	1.28	2 (7%)
31	LMT	A	416	-	24,24,36	1.07	3 (12%)	29,29,47	1.00	1 (3%)
31	LMT	B	626	-	24,24,36	1.01	2 (8%)	29,29,47	0.91	0
27	BCR	B	618	-	41,41,41	2.68	6 (14%)	56,56,56	6.46	20 (35%)
25	CLA	C	513	-	48,58,73	2.63	20 (41%)	56,95,113	2.83	19 (33%)
25	CLA	C	504	-	63,73,73	2.33	21 (33%)	74,113,113	2.53	26 (35%)
27	BCR	k	103	-	41,41,41	2.64	6 (14%)	56,56,56	6.56	26 (46%)
28	LMG	C	523	-	49,49,55	1.44	6 (12%)	57,57,63	1.22	4 (7%)
31	LMT	x	104	-	19,19,36	1.20	3 (15%)	24,24,47	1.06	1 (4%)
31	LMT	X	105	-	19,19,36	1.12	2 (10%)	24,24,47	1.00	0
31	LMT	A	415	-	36,36,36	1.19	5 (13%)	47,47,47	1.01	3 (6%)
31	LMT	x	105	-	19,19,36	1.12	2 (10%)	24,24,47	1.00	0
25	CLA	c	512	3	63,73,73	2.31	21 (33%)	74,113,113	2.64	26 (35%)
25	CLA	D	401	38	63,73,73	2.25	20 (31%)	74,113,113	2.54	25 (33%)
25	CLA	b	609	-	63,73,73	2.30	20 (31%)	74,113,113	2.46	24 (32%)
25	CLA	B	604	-	63,73,73	2.24	17 (26%)	74,113,113	2.54	27 (36%)
31	LMT	k	105	-	36,36,36	1.20	6 (16%)	47,47,47	1.22	5 (10%)
32	BCT	A	417	-	3,3,3	1.15	0	2,3,3	4.18	2 (100%)
27	BCR	c	515	-	41,41,41	2.66	6 (14%)	56,56,56	6.60	16 (28%)
25	CLA	B	614	-	63,73,73	2.28	19 (30%)	74,113,113	2.53	24 (32%)
28	LMG	c	519	-	51,51,55	1.47	8 (15%)	59,59,63	1.12	3 (5%)
30	SQD	K	101	-	41,41,54	1.04	3 (7%)	49,49,65	1.77	9 (18%)
25	CLA	b	612	-	63,73,73	2.30	20 (31%)	74,113,113	2.49	25 (33%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
33	LHG	b	627	-	48,48,48	0.94	2 (4%)	51,54,54	1.06	2 (3%)
25	CLA	b	607	38	63,73,73	2.22	20 (31%)	74,113,113	2.53	27 (36%)
25	CLA	b	614	-	63,73,73	2.28	19 (30%)	74,113,113	2.53	24 (32%)
34	DGD	c	517	-	63,63,67	1.33	8 (12%)	77,77,81	1.08	5 (6%)
25	CLA	b	605	-	63,73,73	2.24	19 (30%)	74,113,113	2.61	23 (31%)
33	LHG	d	406	-	48,48,48	0.92	3 (6%)	51,54,54	0.99	3 (5%)
27	BCR	K	103	-	41,41,41	2.64	6 (14%)	56,56,56	6.56	26 (46%)
30	SQD	f	102	-	32,34,54	1.20	4 (12%)	42,45,65	1.97	11 (26%)
25	CLA	A	408	-	58,68,73	2.40	19 (32%)	68,107,113	2.65	23 (33%)
30	SQD	C	501	-	52,54,54	0.93	4 (7%)	62,65,65	1.62	9 (14%)
31	LMT	x	103	-	22,22,36	1.01	2 (9%)	27,27,47	1.28	3 (11%)
31	LMT	B	623	-	36,36,36	1.18	4 (11%)	47,47,47	1.10	4 (8%)
25	CLA	C	506	-	53,63,73	2.47	19 (35%)	62,101,113	2.82	25 (40%)
25	CLA	C	510	-	63,73,73	2.32	21 (33%)	74,113,113	2.55	25 (33%)
25	CLA	a	408	-	58,68,73	2.40	19 (32%)	68,107,113	2.65	23 (33%)
25	CLA	c	505	38	63,73,73	2.24	19 (30%)	74,113,113	2.57	27 (36%)
31	LMT	m	101	-	36,36,36	1.17	6 (16%)	47,47,47	1.04	2 (4%)
25	CLA	D	403	-	63,73,73	2.27	19 (30%)	74,113,113	2.60	23 (31%)
25	CLA	B	612	-	63,73,73	2.30	20 (31%)	74,113,113	2.49	25 (33%)
25	CLA	B	607	38	63,73,73	2.22	20 (31%)	74,113,113	2.54	27 (36%)
35	HEM	e	104	6,5	42,50,50	1.34	6 (14%)	46,82,82	1.90	11 (23%)
31	LMT	C	524	-	36,36,36	1.18	4 (11%)	47,47,47	1.18	3 (6%)
25	CLA	c	513	-	48,58,73	2.62	20 (41%)	56,95,113	2.83	19 (33%)
31	LMT	F	103	-	36,36,36	1.20	6 (16%)	47,47,47	1.02	2 (4%)
31	LMT	I	103	-	36,36,36	1.18	5 (13%)	47,47,47	0.93	1 (2%)
30	SQD	B	620	-	52,54,54	0.41	0	62,65,65	0.44	0
34	DGD	C	518	-	63,63,67	1.33	8 (12%)	77,77,81	1.05	3 (3%)
30	SQD	k	101	-	41,41,54	1.04	3 (7%)	49,49,65	1.77	9 (18%)
30	SQD	c	501	-	52,54,54	0.94	4 (7%)	62,65,65	1.63	9 (14%)
25	CLA	C	503	-	63,73,73	2.23	18 (28%)	74,113,113	2.46	28 (37%)
25	CLA	C	512	3	63,73,73	2.32	21 (33%)	74,113,113	2.64	26 (35%)
28	LMG	C	519	-	51,51,55	1.47	8 (15%)	59,59,63	1.12	3 (5%)
25	CLA	D	404	-	63,73,73	2.26	20 (31%)	74,113,113	2.47	24 (32%)
25	CLA	d	403	-	63,73,73	2.27	19 (30%)	74,113,113	2.60	23 (31%)
25	CLA	A	406	38	63,73,73	2.29	20 (31%)	74,113,113	2.54	24 (32%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	B	602	-	63,73,73	2.26	19 (30%)	74,113,113	2.46	24 (32%)
25	CLA	c	511	-	63,73,73	2.27	20 (31%)	74,113,113	2.61	29 (39%)
27	BCR	z	101	-	41,41,41	2.64	6 (14%)	56,56,56	6.49	20 (35%)
26	PHO	a	407	-	50,69,69	1.04	4 (8%)	48,99,99	1.14	4 (8%)
25	CLA	B	615	-	63,73,73	2.24	19 (30%)	74,113,113	2.57	26 (35%)
31	LMT	Y	101	-	21,21,36	1.10	2 (9%)	26,26,47	1.05	1 (3%)
31	LMT	X	102	-	22,22,36	1.09	2 (9%)	27,27,47	1.05	1 (3%)
33	LHG	z	102	-	35,35,48	1.15	2 (5%)	38,40,54	1.16	3 (7%)
25	CLA	c	507	-	63,73,73	2.25	20 (31%)	74,113,113	2.49	24 (32%)
25	CLA	b	601	38	43,53,73	2.62	20 (46%)	50,89,113	2.93	21 (42%)
25	CLA	B	616	-	58,68,73	2.35	18 (31%)	68,107,113	2.65	27 (39%)
25	CLA	c	508	38	63,73,73	2.25	19 (30%)	74,113,113	2.50	27 (36%)
27	BCR	Z	101	-	41,41,41	2.64	6 (14%)	56,56,56	6.49	20 (35%)
27	BCR	K	102	-	41,41,41	2.61	6 (14%)	56,56,56	6.89	21 (37%)
27	BCR	F	101	-	41,41,41	2.60	6 (14%)	56,56,56	6.63	22 (39%)
31	LMT	a	416	-	24,24,36	1.06	3 (12%)	29,29,47	1.00	1 (3%)
31	LMT	h	102	-	24,24,36	1.07	2 (8%)	29,29,47	1.11	2 (6%)
33	LHG	D	407	-	48,48,48	0.91	2 (4%)	51,54,54	1.07	4 (7%)
25	CLA	c	502	-	63,73,73	2.28	20 (31%)	74,113,113	2.53	26 (35%)
34	DGD	c	518	-	63,63,67	1.33	8 (12%)	77,77,81	1.05	3 (3%)
31	LMT	a	415	-	36,36,36	1.19	5 (13%)	47,47,47	1.01	3 (6%)
28	LMG	a	410	-	51,51,55	1.48	8 (15%)	59,59,63	1.11	3 (5%)
28	LMG	a	414	-	36,36,55	1.12	2 (5%)	44,44,63	1.19	3 (6%)
31	LMT	M	102	-	24,24,36	1.06	2 (8%)	29,29,47	1.08	1 (3%)
25	CLA	d	401	38	63,73,73	2.24	20 (31%)	74,113,113	2.54	25 (33%)
31	LMT	X	104	-	19,19,36	1.20	3 (15%)	24,24,47	1.06	1 (4%)
22	OEX	a	401	1,3,38	0,15,15	-	-	-		
25	CLA	c	503	-	63,73,73	2.24	18 (28%)	74,113,113	2.46	28 (37%)
25	CLA	c	509	-	63,73,73	2.27	19 (30%)	74,113,113	2.36	24 (32%)
31	LMT	e	103	-	36,36,36	1.22	6 (16%)	47,47,47	1.57	6 (12%)
33	LHG	B	627	-	48,48,48	0.95	2 (4%)	51,54,54	1.06	2 (3%)
31	LMT	T	101	-	24,24,36	1.09	2 (8%)	29,29,47	1.16	2 (6%)
31	LMT	d	411	-	36,36,36	1.17	5 (13%)	47,47,47	0.92	0
31	LMT	C	522	-	24,24,36	1.15	5 (20%)	29,29,47	1.32	5 (17%)
29	PL9	D	405	-	55,55,55	1.20	5 (9%)	68,69,69	1.41	11 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
31	LMT	j	101	-	24,24,36	1.04	3 (12%)	29,29,47	1.19	4 (13%)
31	LMT	d	412	-	36,36,36	1.17	5 (13%)	47,47,47	0.95	1 (2%)
33	LHG	d	407	-	48,48,48	0.91	2 (4%)	51,54,54	1.07	4 (7%)
27	BCR	B	619	-	41,41,41	2.70	6 (14%)	56,56,56	6.55	22 (39%)
27	BCR	b	617	-	41,41,41	2.69	6 (14%)	56,56,56	6.53	16 (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
30	SQD	h	103	-	-	16/49/69/69	0/1/1/1
25	CLA	B	611	-	1/1/15/20	9/37/115/115	-
31	LMT	b	624	-	-	9/15/35/61	0/1/1/2
34	DGD	C	516	-	-	14/51/91/95	0/2/2/2
36	RRX	h	101	-	-	15/29/65/65	0/2/2/2
28	LMG	B	621	-	-	7/46/66/70	0/1/1/1
31	LMT	C	525	-	-	8/12/32/61	0/1/1/2
25	CLA	A	405	-	1/1/15/20	9/37/115/115	-
25	CLA	b	613	-	1/1/15/20	8/37/115/115	-
28	LMG	b	621	-	-	7/46/66/70	0/1/1/1
33	LHG	B	628	-	-	24/53/53/53	-
25	CLA	C	507	-	1/1/15/20	14/37/115/115	-
27	BCR	A	409	-	-	9/29/63/63	0/2/2/2
31	LMT	c	524	-	-	10/21/61/61	0/2/2/2
34	DGD	h	104	-	-	11/51/91/95	0/2/2/2
34	DGD	C	517	-	-	17/51/91/95	0/2/2/2
28	LMG	h	105	-	-	17/42/62/70	0/1/1/1
25	CLA	a	406	38	1/1/15/20	11/37/115/115	-
27	BCR	B	617	-	-	6/29/63/63	0/2/2/2
27	BCR	b	619	-	-	11/29/63/63	0/2/2/2
31	LMT	X	101	-	-	6/15/35/61	0/1/1/2
25	CLA	c	504	-	1/1/15/20	5/37/115/115	-
35	HEM	v	201	18	-	2/12/54/54	-
27	BCR	k	102	-	-	15/29/63/63	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
31	LMT	E	101	-	-	5/13/33/61	0/1/1/2
26	PHO	A	407	-	-	7/37/103/103	0/5/6/6
26	PHO	d	402	-	-	4/37/103/103	0/5/6/6
25	CLA	B	613	-	1/1/15/20	8/37/115/115	-
31	LMT	i	101	-	-	11/15/35/61	0/1/1/2
25	CLA	C	505	38	1/1/15/20	13/37/115/115	-
28	LMG	A	414	-	-	6/31/51/70	0/1/1/1
27	BCR	f	101	-	-	9/29/63/63	0/2/2/2
25	CLA	b	602	-	1/1/15/20	15/37/115/115	-
25	CLA	d	404	-	1/1/15/20	11/37/115/115	-
28	LMG	c	523	-	-	17/44/64/70	0/1/1/1
28	LMG	D	409	-	-	14/38/58/70	0/1/1/1
31	LMT	I	101	-	-	11/15/35/61	0/1/1/2
25	CLA	B	610	38	1/1/15/20	10/37/115/115	-
31	LMT	B	629	-	-	10/21/61/61	0/2/2/2
29	PL9	d	405	-	-	9/53/73/73	0/1/1/1
31	LMT	i	104	-	-	9/13/33/61	0/1/1/2
31	LMT	m	102	-	-	4/15/35/61	0/1/1/2
31	LMT	B	625	-	-	11/21/61/61	0/2/2/2
25	CLA	C	509	-	1/1/15/20	9/37/115/115	-
31	LMT	B	624	-	-	9/15/35/61	0/1/1/2
25	CLA	b	611	-	1/1/15/20	9/37/115/115	-
33	LHG	Z	102	-	-	24/37/37/53	-
25	CLA	B	603	-	1/1/15/20	17/37/115/115	-
27	BCR	C	515	-	-	9/29/63/63	0/2/2/2
33	LHG	D	406	-	-	24/53/53/53	-
25	CLA	C	508	38	1/1/15/20	10/37/115/115	-
33	LHG	D	408	-	-	24/53/53/53	-
31	LMT	I	104	-	-	9/13/33/61	0/1/1/2
25	CLA	C	514	-	1/1/15/20	17/37/115/115	-
31	LMT	D	412	-	-	7/21/61/61	0/2/2/2
31	LMT	H	102	-	-	9/15/35/61	0/1/1/2
33	LHG	E	102	-	-	29/44/44/53	-
30	SQD	b	620	-	-	24/49/69/69	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	609	-	1/1/15/20	14/37/115/115	-
27	BCR	a	409	-	-	9/29/63/63	0/2/2/2
25	CLA	b	610	38	1/1/15/20	10/37/115/115	-
29	PL9	A	411	-	-	18/53/73/73	0/1/1/1
33	LHG	e	102	-	-	29/44/44/53	-
25	CLA	C	502	-	1/1/15/20	12/37/115/115	-
25	CLA	a	405	-	1/1/15/20	9/37/115/115	-
31	LMT	D	411	-	-	10/21/61/61	0/2/2/2
31	LMT	b	623	-	-	11/21/61/61	0/2/2/2
25	CLA	B	601	38	1/1/11/20	3/13/91/115	-
31	LMT	J	101	-	-	11/15/35/61	0/1/1/2
31	LMT	b	625	-	-	11/21/61/61	0/2/2/2
31	LMT	y	101	-	-	7/12/32/61	0/1/1/2
31	LMT	e	101	-	-	5/13/33/61	0/1/1/2
31	LMT	c	522	-	-	7/15/35/61	0/1/1/2
31	LMT	d	410	-	-	8/15/35/61	0/1/1/2
30	SQD	H	103	-	-	16/49/69/69	0/1/1/1
28	LMG	A	410	-	-	22/46/66/70	0/1/1/1
31	LMT	t	101	-	-	11/15/35/61	0/1/1/2
33	LHG	d	408	-	-	24/53/53/53	-
36	RRX	H	101	-	-	15/29/65/65	0/2/2/2
34	DGD	c	516	-	-	14/51/91/95	0/2/2/2
30	SQD	A	412	-	-	26/49/69/69	0/1/1/1
25	CLA	B	606	-	1/1/14/20	7/31/109/115	-
25	CLA	c	514	-	1/1/15/20	17/37/115/115	-
31	LMT	X	103	-	-	3/13/33/61	0/1/1/2
31	LMT	x	102	-	-	9/12/32/61	0/1/1/2
25	CLA	C	511	-	1/1/15/20	11/37/115/115	-
25	CLA	b	616	-	1/1/14/20	16/31/109/115	-
31	LMT	D	410	-	-	8/15/35/61	0/1/1/2
31	LMT	f	103	-	-	11/21/61/61	0/2/2/2
31	LMT	E	103	-	-	9/21/61/61	0/2/2/2
25	CLA	B	605	-	1/1/15/20	11/37/115/115	-
25	CLA	b	606	-	1/1/14/20	7/31/109/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
34	DGD	H	104	-	-	11/51/91/95	0/2/2/2
31	LMT	i	103	-	-	7/21/61/61	0/2/2/2
31	LMT	b	626	-	-	5/15/35/61	0/1/1/2
28	LMG	H	105	-	-	17/42/62/70	0/1/1/1
27	BCR	b	618	-	-	6/29/63/63	0/2/2/2
31	LMT	I	102	-	-	8/15/35/61	0/1/1/2
35	HEM	V	201	18	-	2/12/54/54	-
33	LHG	b	628	-	-	24/53/53/53	-
25	CLA	B	608	-	1/1/15/20	8/37/115/115	-
31	LMT	K	105	-	-	13/21/61/61	0/2/2/2
31	LMT	x	101	-	-	6/15/35/61	0/1/1/2
26	PHO	D	402	-	-	4/37/103/103	0/5/6/6
31	LMT	M	101	-	-	10/21/61/61	0/2/2/2
35	HEM	E	104	6,5	-	5/12/54/54	-
30	SQD	A	413	-	-	22/43/63/69	0/1/1/1
25	CLA	b	603	-	1/1/15/20	17/37/115/115	-
25	CLA	b	604	-	1/1/15/20	11/37/115/115	-
25	CLA	c	506	-	1/1/13/20	9/25/103/115	-
25	CLA	b	615	-	1/1/15/20	12/37/115/115	-
25	CLA	b	608	-	1/1/15/20	8/37/115/115	-
25	CLA	c	510	-	1/1/15/20	11/37/115/115	-
28	LMG	d	409	-	-	14/38/58/70	0/1/1/1
30	SQD	a	412	-	-	26/49/69/69	0/1/1/1
31	LMT	b	629	-	-	10/21/61/61	0/2/2/2
29	PL9	a	411	-	-	18/53/73/73	0/1/1/1
31	LMT	i	102	-	-	8/15/35/61	0/1/1/2
30	SQD	F	102	-	-	16/29/49/69	0/1/1/1
30	SQD	a	413	-	-	22/43/63/69	0/1/1/1
31	LMT	c	525	-	-	8/12/32/61	0/1/1/2
31	LMT	A	416	-	-	5/15/35/61	0/1/1/2
31	LMT	B	626	-	-	5/15/35/61	0/1/1/2
27	BCR	B	618	-	-	6/29/63/63	0/2/2/2
25	CLA	C	513	-	1/1/12/20	7/19/97/115	-
25	CLA	C	504	-	1/1/15/20	6/37/115/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	BCR	k	103	-	-	8/29/63/63	0/2/2/2
28	LMG	C	523	-	-	17/44/64/70	0/1/1/1
31	LMT	x	104	-	-	7/10/30/61	0/1/1/2
31	LMT	X	105	-	-	6/10/30/61	0/1/1/2
31	LMT	A	415	-	-	10/21/61/61	0/2/2/2
31	LMT	x	105	-	-	6/10/30/61	0/1/1/2
25	CLA	c	512	3	1/1/15/20	19/37/115/115	-
25	CLA	D	401	38	1/1/15/20	9/37/115/115	-
25	CLA	b	609	-	1/1/15/20	14/37/115/115	-
25	CLA	B	604	-	1/1/15/20	11/37/115/115	-
31	LMT	k	105	-	-	13/21/61/61	0/2/2/2
27	BCR	c	515	-	-	9/29/63/63	0/2/2/2
25	CLA	B	614	-	1/1/15/20	14/37/115/115	-
28	LMG	c	519	-	-	17/46/66/70	0/1/1/1
30	SQD	K	101	-	-	21/35/55/69	0/1/1/1
25	CLA	b	612	-	1/1/15/20	10/37/115/115	-
33	LHG	b	627	-	-	30/53/53/53	-
25	CLA	b	607	38	1/1/15/20	10/37/115/115	-
25	CLA	b	614	-	1/1/15/20	14/37/115/115	-
34	DGD	c	517	-	-	17/51/91/95	0/2/2/2
25	CLA	b	605	-	1/1/15/20	11/37/115/115	-
33	LHG	d	406	-	-	24/53/53/53	-
27	BCR	K	103	-	-	8/29/63/63	0/2/2/2
30	SQD	f	102	-	-	16/29/49/69	0/1/1/1
25	CLA	A	408	-	1/1/14/20	14/31/109/115	-
30	SQD	C	501	-	-	28/49/69/69	0/1/1/1
31	LMT	x	103	-	-	3/13/33/61	0/1/1/2
31	LMT	B	623	-	-	11/21/61/61	0/2/2/2
25	CLA	C	506	-	1/1/13/20	9/25/103/115	-
25	CLA	C	510	-	1/1/15/20	11/37/115/115	-
25	CLA	a	408	-	1/1/14/20	14/31/109/115	-
25	CLA	c	505	38	1/1/15/20	13/37/115/115	-
31	LMT	m	101	-	-	10/21/61/61	0/2/2/2
25	CLA	D	403	-	1/1/15/20	9/37/115/115	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	612	-	1/1/15/20	10/37/115/115	-
25	CLA	B	607	38	1/1/15/20	10/37/115/115	-
35	HEM	e	104	6,5	-	5/12/54/54	-
31	LMT	C	524	-	-	10/21/61/61	0/2/2/2
25	CLA	c	513	-	1/1/12/20	7/19/97/115	-
31	LMT	F	103	-	-	11/21/61/61	0/2/2/2
31	LMT	I	103	-	-	7/21/61/61	0/2/2/2
30	SQD	B	620	-	-	24/49/69/69	0/1/1/1
34	DGD	C	518	-	-	16/51/91/95	0/2/2/2
30	SQD	k	101	-	-	21/35/55/69	0/1/1/1
30	SQD	c	501	-	-	28/49/69/69	0/1/1/1
25	CLA	C	503	-	1/1/15/20	9/37/115/115	-
25	CLA	C	512	3	1/1/15/20	19/37/115/115	-
28	LMG	C	519	-	-	17/46/66/70	0/1/1/1
25	CLA	D	404	-	1/1/15/20	11/37/115/115	-
25	CLA	d	403	-	1/1/15/20	9/37/115/115	-
25	CLA	A	406	38	1/1/15/20	11/37/115/115	-
25	CLA	B	602	-	1/1/15/20	15/37/115/115	-
25	CLA	c	511	-	1/1/15/20	11/37/115/115	-
27	BCR	z	101	-	-	8/29/63/63	0/2/2/2
26	PHO	a	407	-	-	7/37/103/103	0/5/6/6
25	CLA	B	615	-	1/1/15/20	12/37/115/115	-
31	LMT	Y	101	-	-	7/12/32/61	0/1/1/2
31	LMT	X	102	-	-	9/12/32/61	0/1/1/2
33	LHG	z	102	-	-	24/37/37/53	-
25	CLA	c	507	-	1/1/15/20	14/37/115/115	-
25	CLA	b	601	38	1/1/11/20	3/13/91/115	-
25	CLA	B	616	-	1/1/14/20	16/31/109/115	-
25	CLA	c	508	38	1/1/15/20	10/37/115/115	-
27	BCR	Z	101	-	-	8/29/63/63	0/2/2/2
27	BCR	K	102	-	-	15/29/63/63	0/2/2/2
27	BCR	F	101	-	-	9/29/63/63	0/2/2/2
31	LMT	a	416	-	-	5/15/35/61	0/1/1/2
31	LMT	h	102	-	-	9/15/35/61	0/1/1/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
33	LHG	D	407	-	-	25/53/53/53	-
25	CLA	c	502	-	1/1/15/20	12/37/115/115	-
34	DGD	c	518	-	-	16/51/91/95	0/2/2/2
31	LMT	a	415	-	-	10/21/61/61	0/2/2/2
28	LMG	a	410	-	-	22/46/66/70	0/1/1/1
28	LMG	a	414	-	-	6/31/51/70	0/1/1/1
31	LMT	M	102	-	-	4/15/35/61	0/1/1/2
25	CLA	d	401	38	1/1/15/20	10/37/115/115	-
31	LMT	X	104	-	-	7/10/30/61	0/1/1/2
25	CLA	c	509	-	1/1/15/20	9/37/115/115	-
25	CLA	c	503	-	1/1/15/20	9/37/115/115	-
31	LMT	e	103	-	-	9/21/61/61	0/2/2/2
33	LHG	B	627	-	-	30/53/53/53	-
31	LMT	T	101	-	-	11/15/35/61	0/1/1/2
31	LMT	d	411	-	-	10/21/61/61	0/2/2/2
31	LMT	C	522	-	-	7/15/35/61	0/1/1/2
29	PL9	D	405	-	-	9/53/73/73	0/1/1/1
31	LMT	j	101	-	-	11/15/35/61	0/1/1/2
31	LMT	d	412	-	-	7/21/61/61	0/2/2/2
33	LHG	d	407	-	-	25/53/53/53	-
27	BCR	B	619	-	-	11/29/63/63	0/2/2/2
27	BCR	b	617	-	-	6/29/63/63	0/2/2/2

The worst 5 of 1980 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	Z	101	BCR	C8-C9	-8.72	1.27	1.46
27	z	101	BCR	C8-C9	-8.72	1.27	1.46
27	B	619	BCR	C8-C9	-8.48	1.27	1.46
27	b	619	BCR	C8-C9	-8.48	1.27	1.46
27	B	617	BCR	C8-C9	-8.48	1.27	1.46

The worst 5 of 2620 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
27	k	102	BCR	C16-C17-C18	23.42	160.12	127.28
27	K	102	BCR	C16-C17-C18	23.40	160.10	127.28

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
27	K	102	BCR	C20-C21-C22	23.22	159.84	127.28
27	k	102	BCR	C20-C21-C22	23.20	159.81	127.28
27	C	515	BCR	C20-C21-C22	21.80	157.85	127.28

5 of 70 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
25	A	405	CLA	ND
25	A	406	CLA	ND
25	A	408	CLA	ND
25	B	601	CLA	ND
25	B	602	CLA	ND

5 of 2568 torsion outliers are listed below:

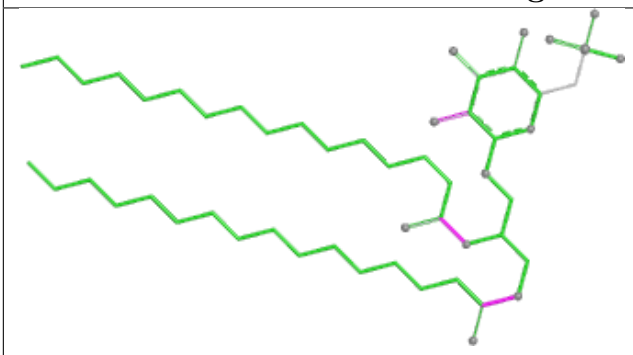
Mol	Chain	Res	Type	Atoms
25	A	405	CLA	CBD-CGD-O2D-CED
25	B	601	CLA	C1A-C2A-CAA-CBA
25	B	601	CLA	C3A-C2A-CAA-CBA
25	B	614	CLA	CAD-CBD-CGD-O1D
25	B	614	CLA	CAD-CBD-CGD-O2D

There are no ring outliers.

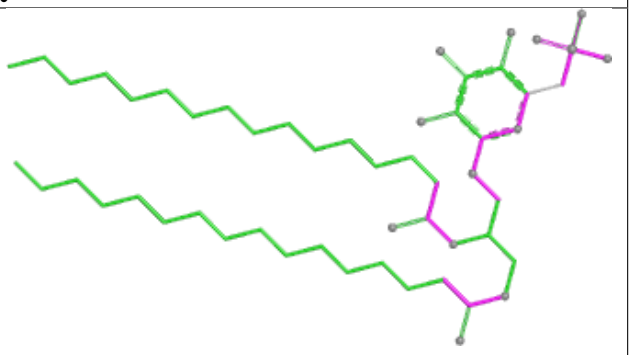
No monomer is involved in short contacts.

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.

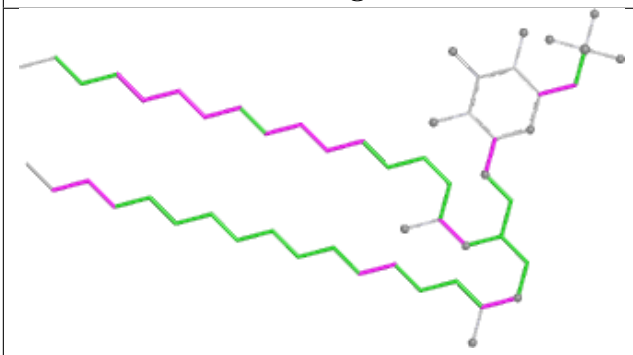
Ligand SQD h 103



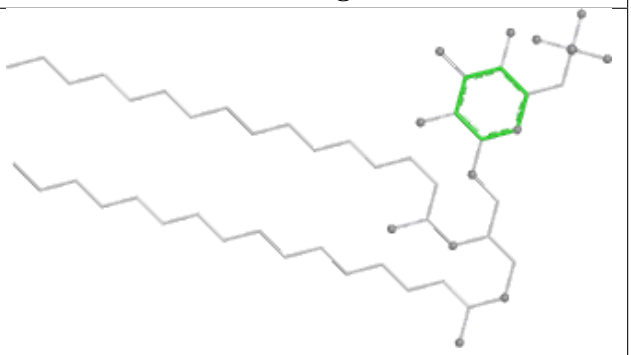
Bond lengths



Bond angles

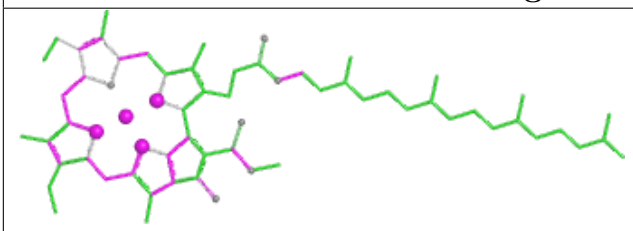


Torsions

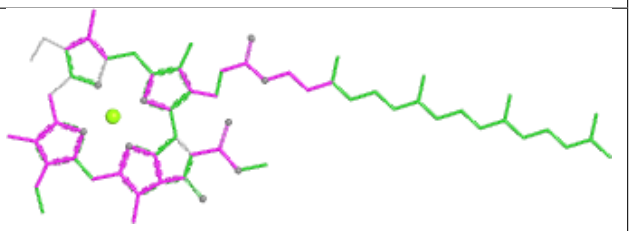


Rings

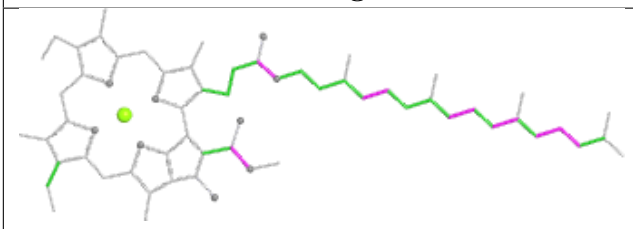
Ligand CLA B 611



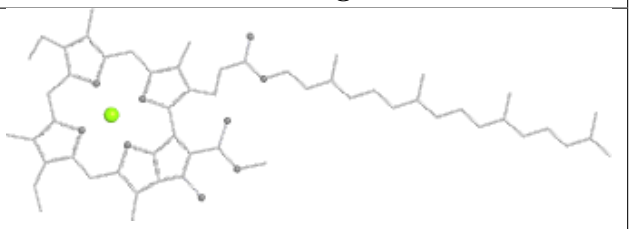
Bond lengths



Bond angles

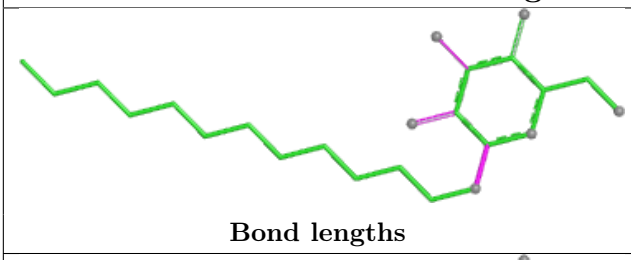


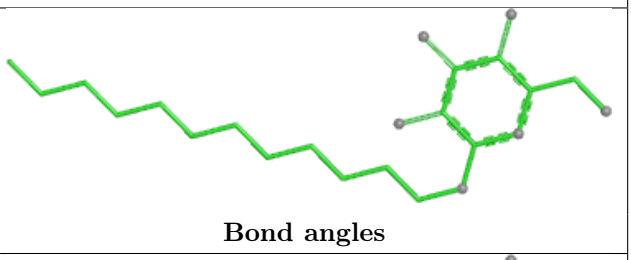
Torsions

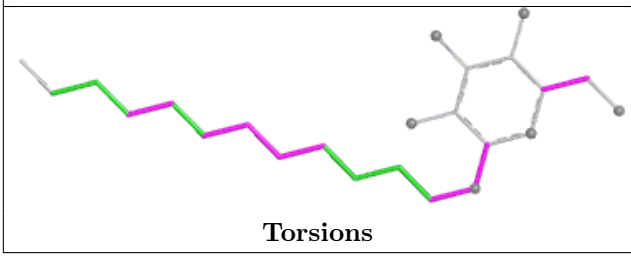


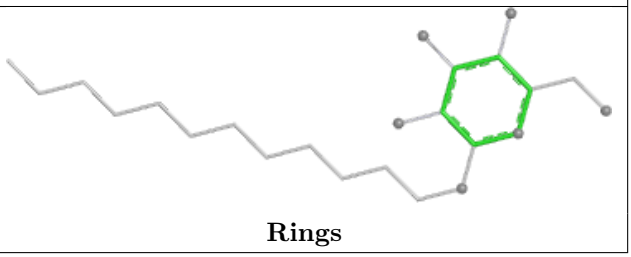
Rings

Ligand LMT b 624

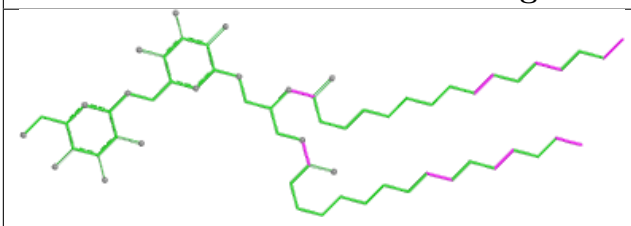

Bond lengths

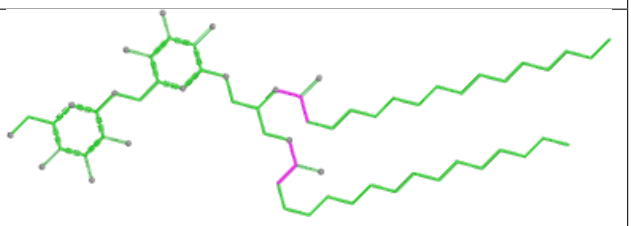

Bond angles

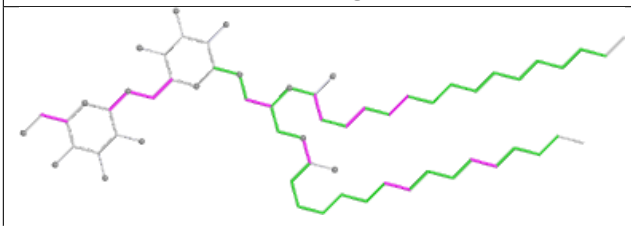

Torsions

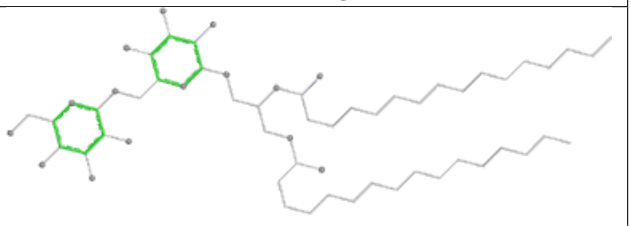

Rings

Ligand DGD C 516

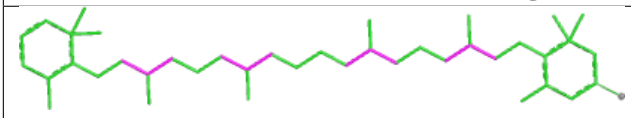

Bond lengths

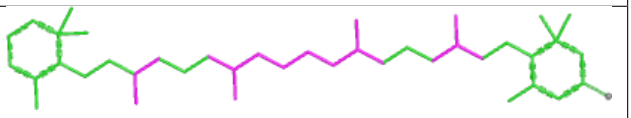

Bond angles

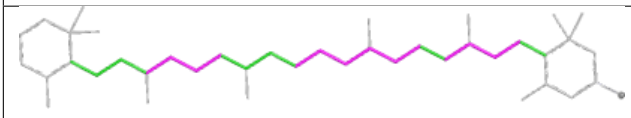

Torsions

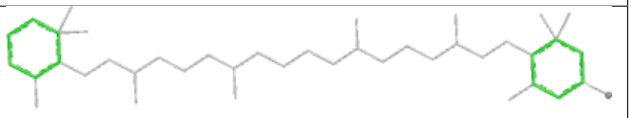

Rings

Ligand RRX h 101

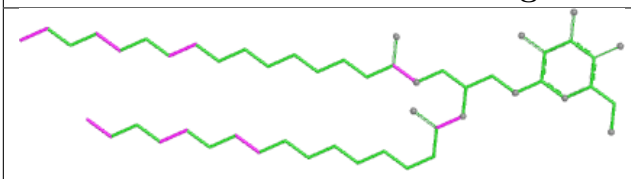

Bond lengths


Bond angles

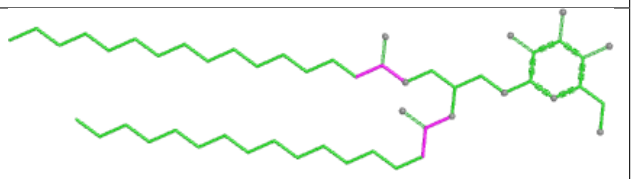

Torsions


Rings

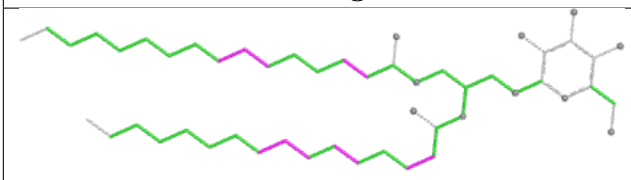
Ligand LMG B 621



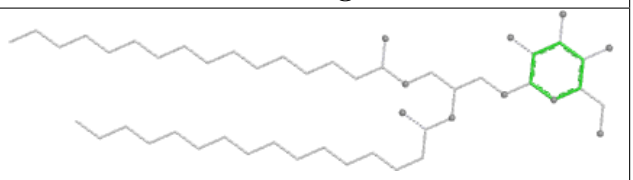
Bond lengths



Bond angles

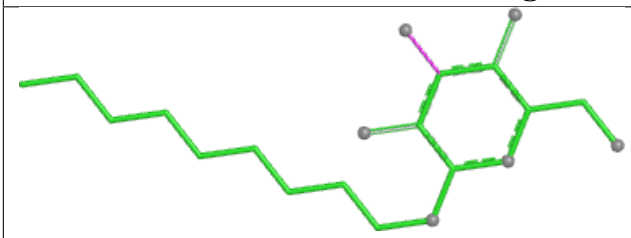


Torsions

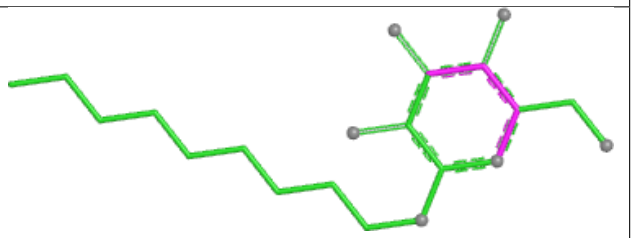


Rings

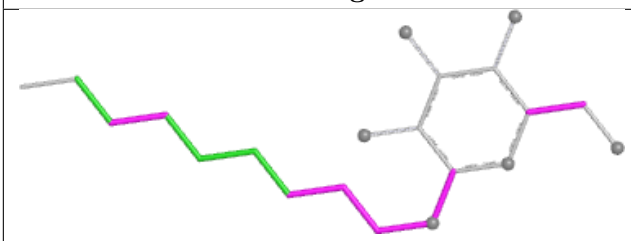
Ligand LMT C 525



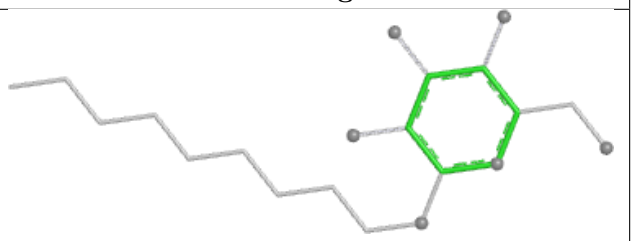
Bond lengths



Bond angles

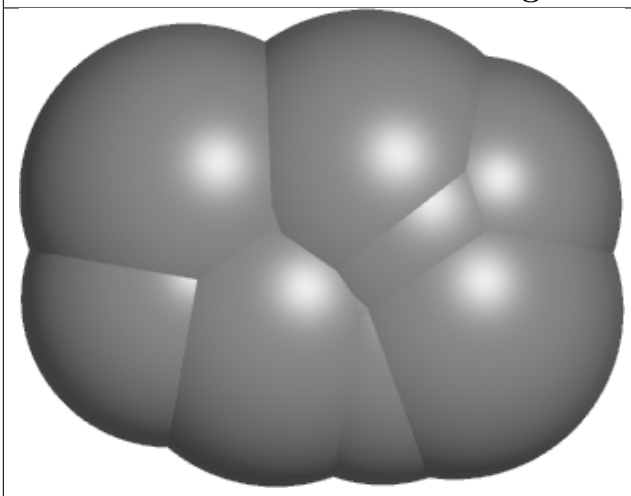


Torsions

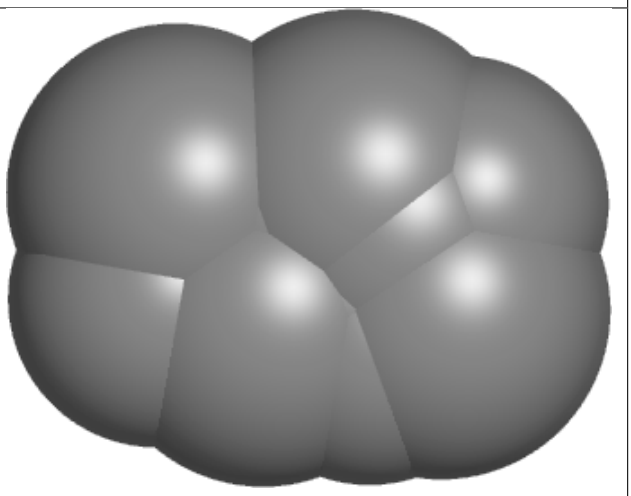


Rings

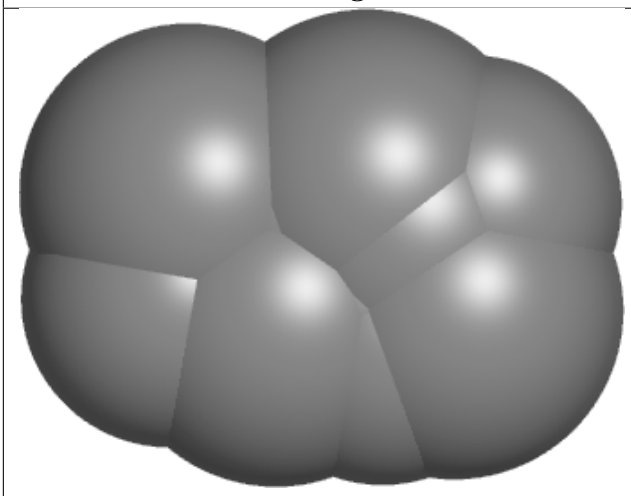
Ligand OEX A 401



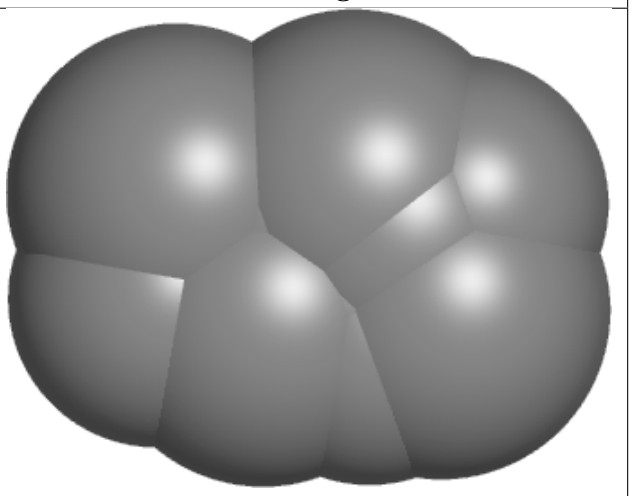
Bond lengths



Bond angles

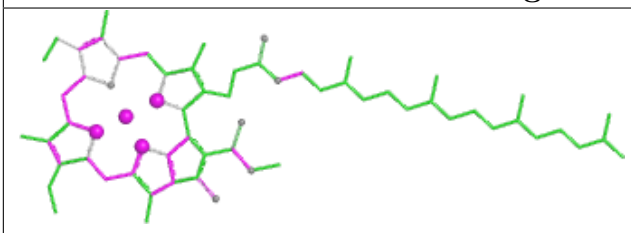


Torsions

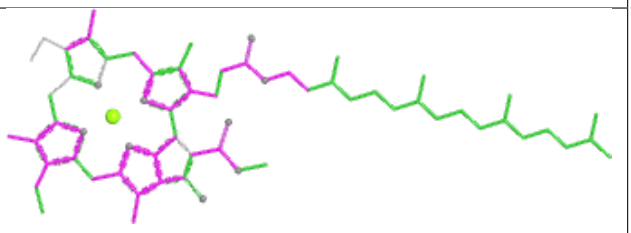


Rings

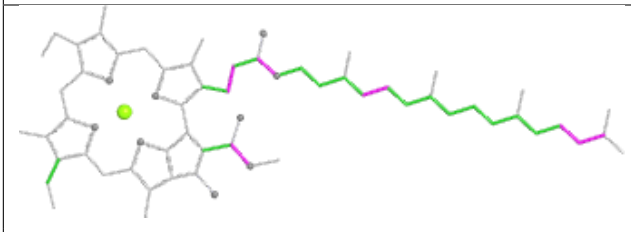
Ligand CLA A 405



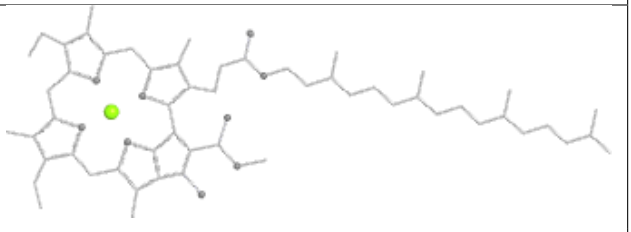
Bond lengths



Bond angles

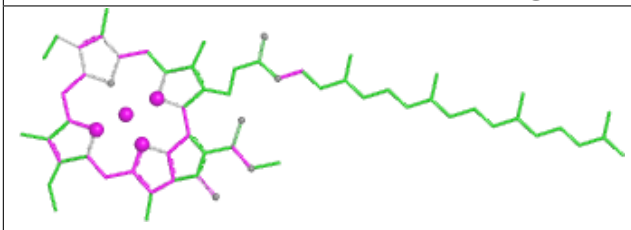


Torsions

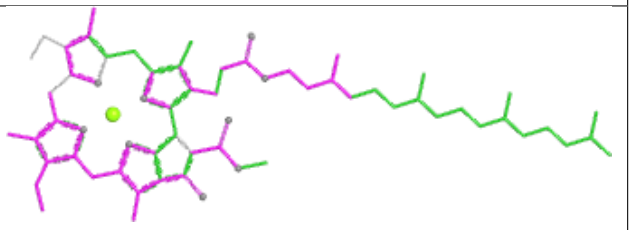


Rings

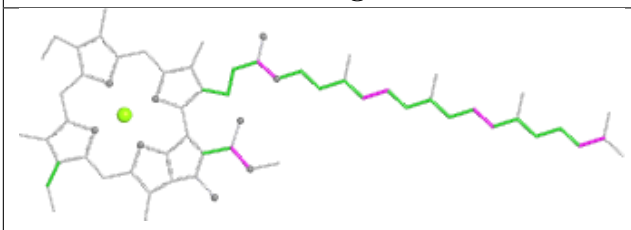
Ligand CLA b 613



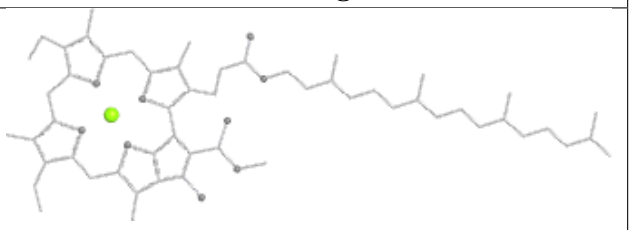
Bond lengths



Bond angles

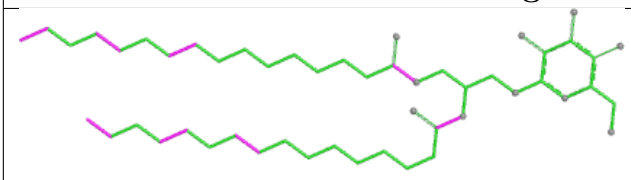


Torsions

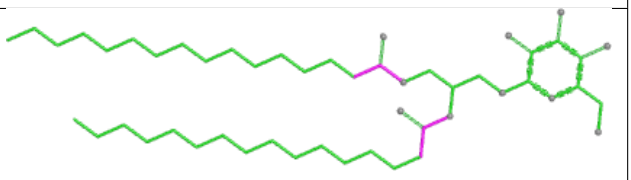


Rings

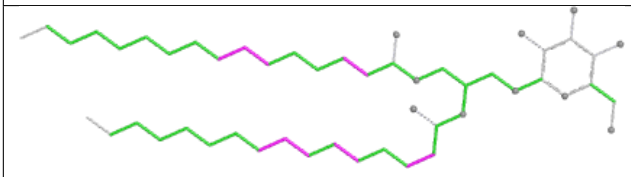
Ligand LMG b 621



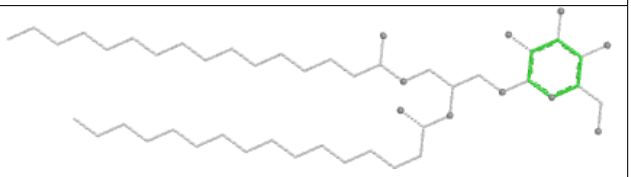
Bond lengths



Bond angles

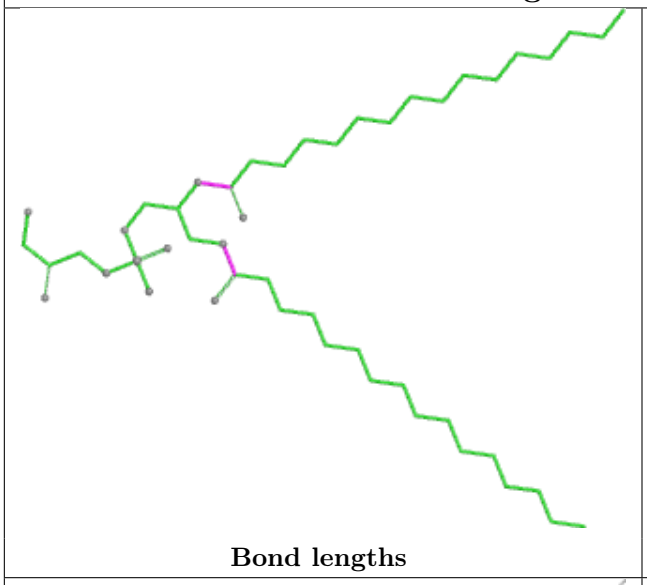


Torsions

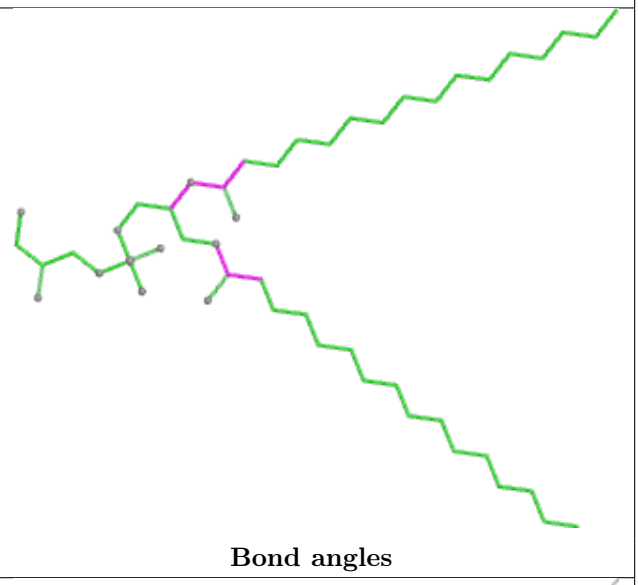


Rings

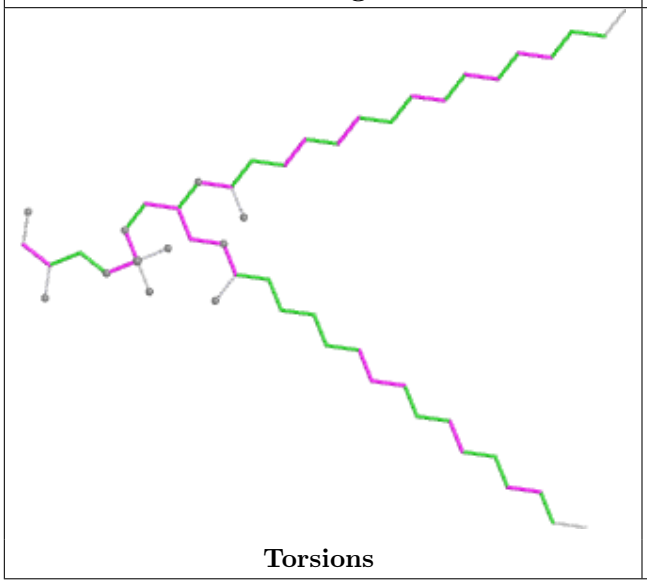
Ligand LHG B 628



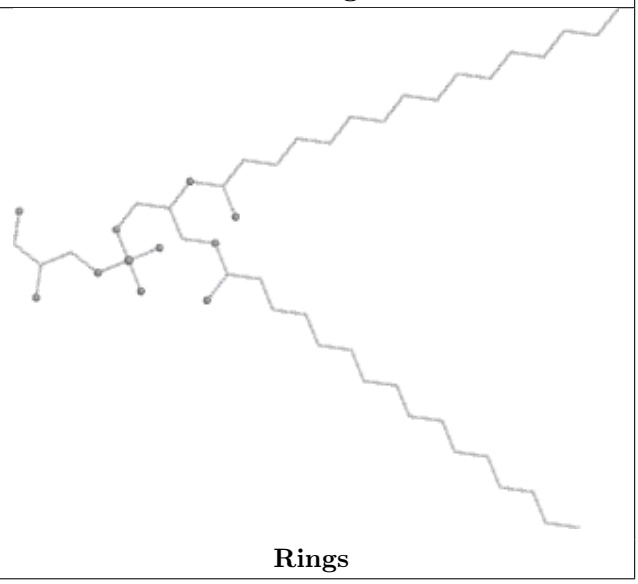
Bond lengths



Bond angles

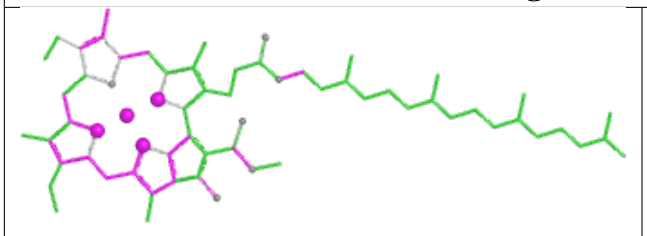


Torsions

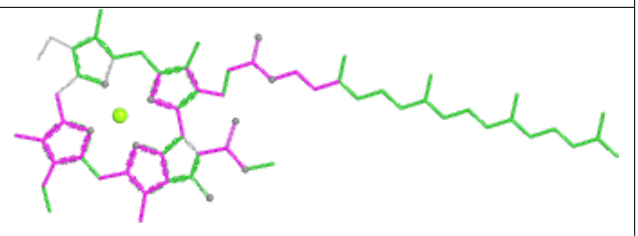


Rings

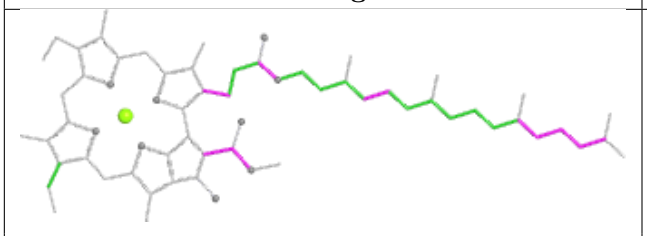
Ligand CLA C 507



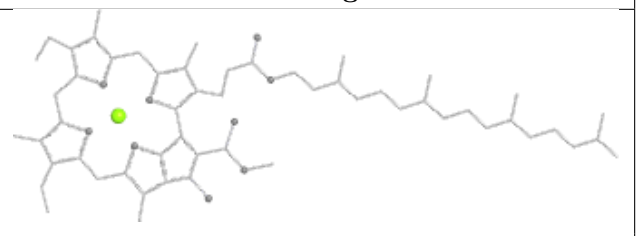
Bond lengths



Bond angles

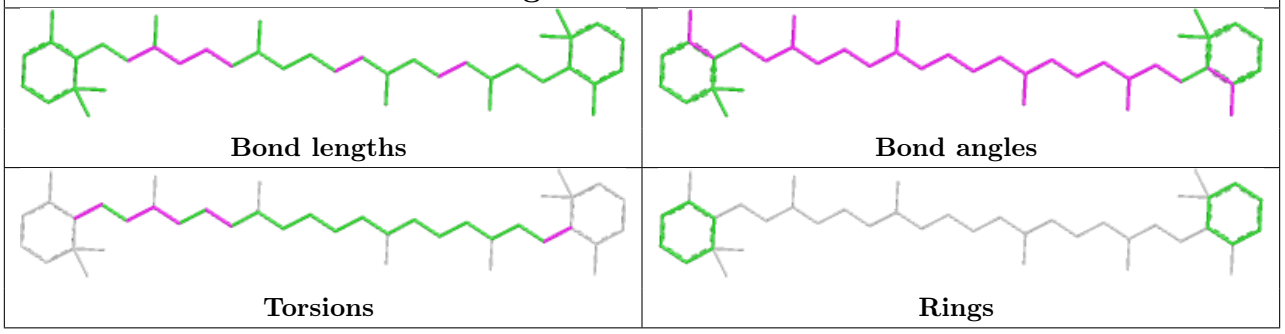


Torsions

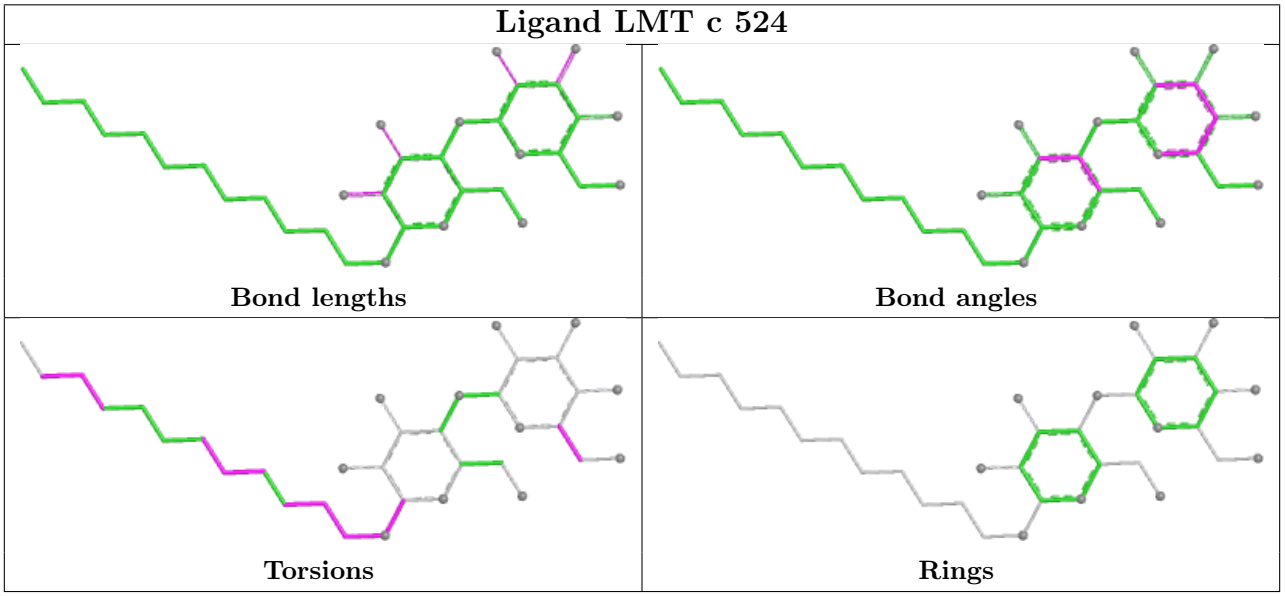


Rings

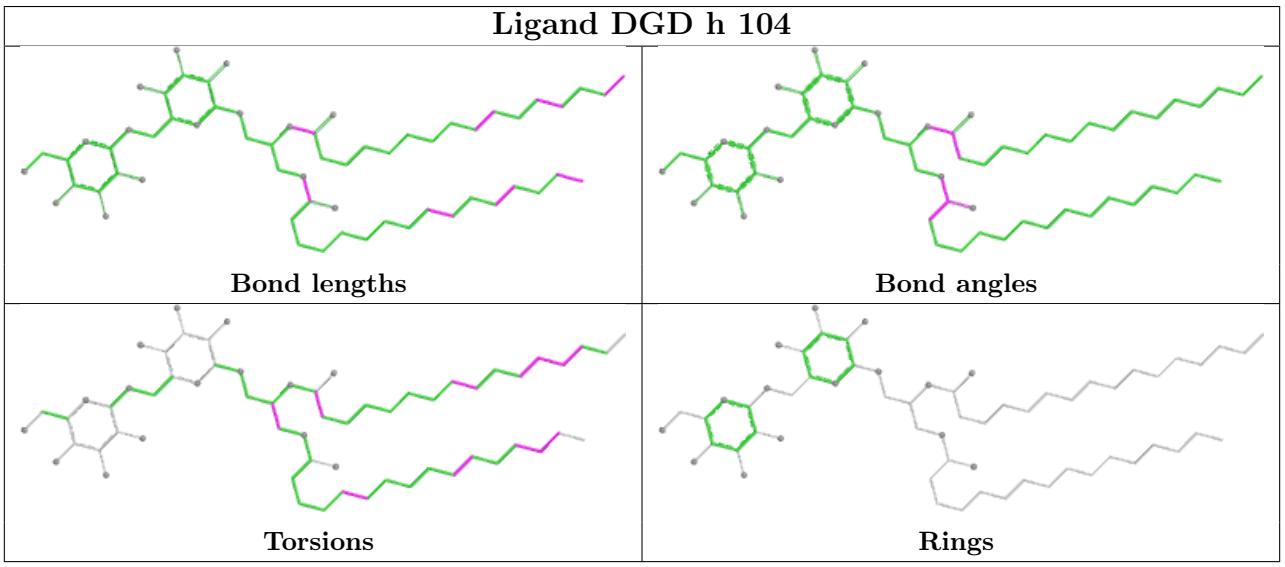
Ligand BCR A 409



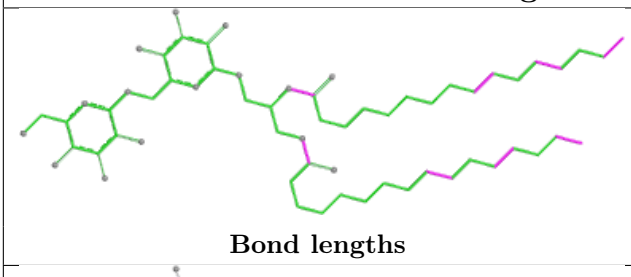
Ligand LMT c 524



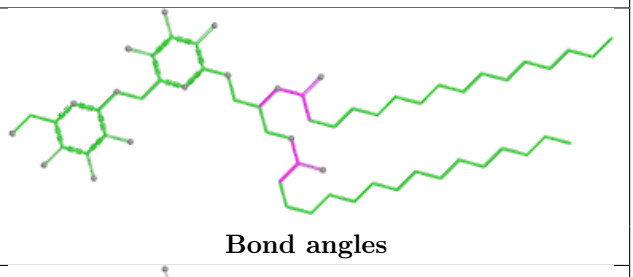
Ligand DGD h 104



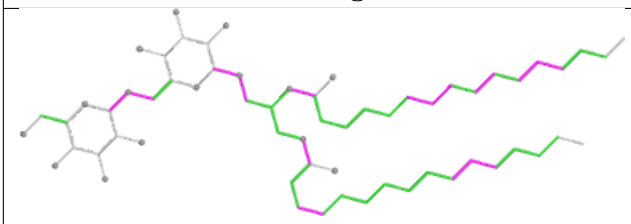
Ligand DGD C 517



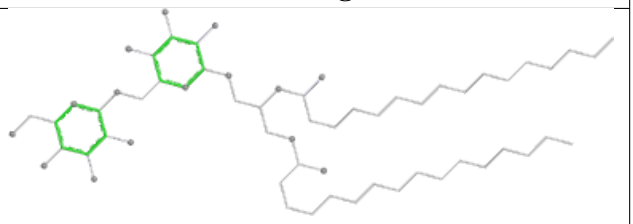
Bond lengths



Bond angles

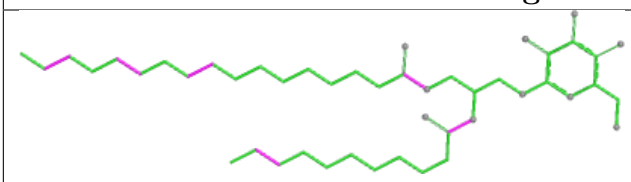


Torsions

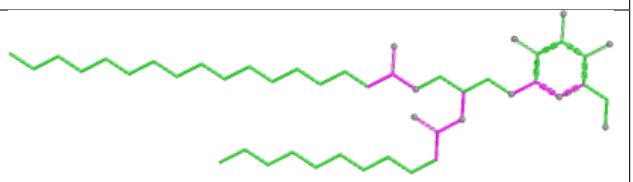


Rings

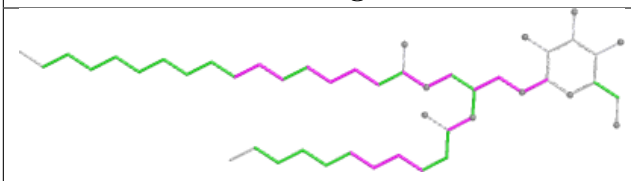
Ligand LMG h 105



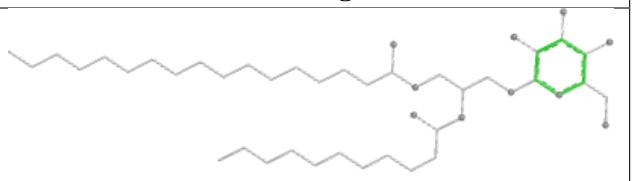
Bond lengths



Bond angles

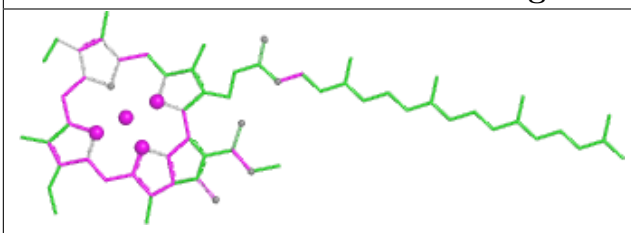


Torsions

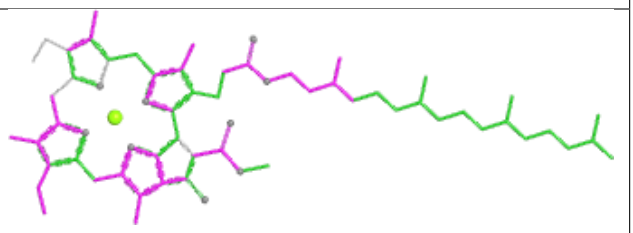


Rings

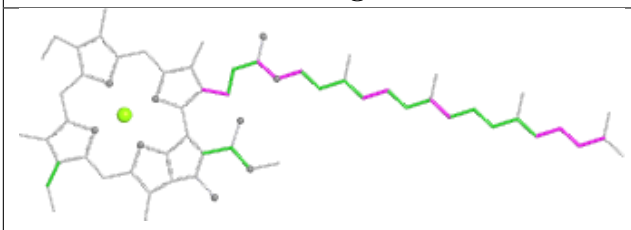
Ligand CLA a 406



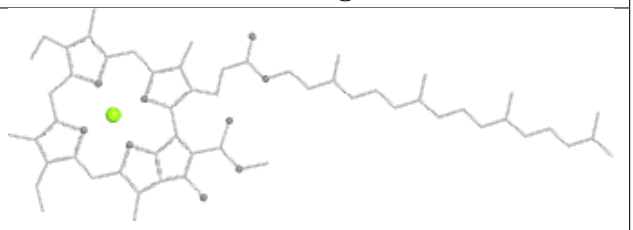
Bond lengths



Bond angles

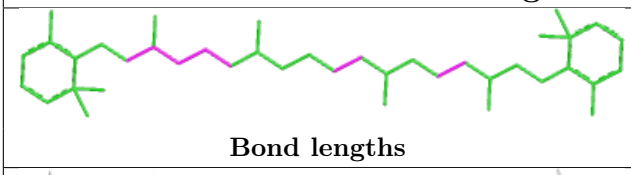


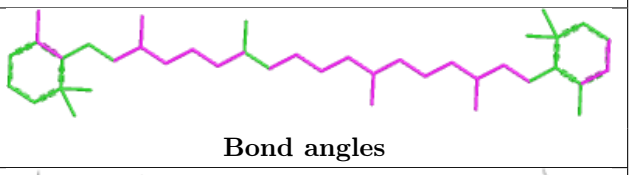
Torsions

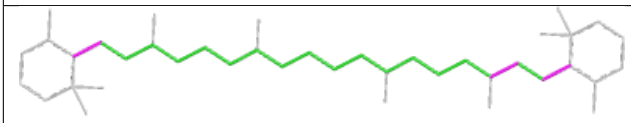


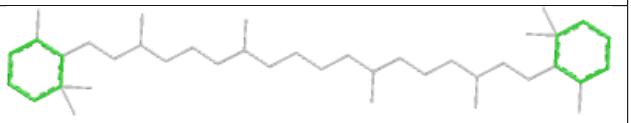
Rings

Ligand BCR B 617

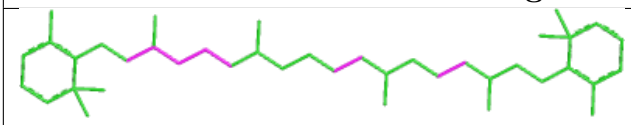

Bond lengths

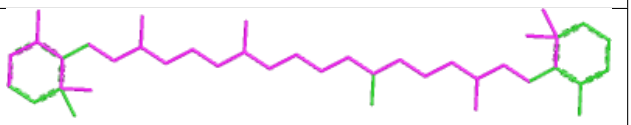

Bond angles

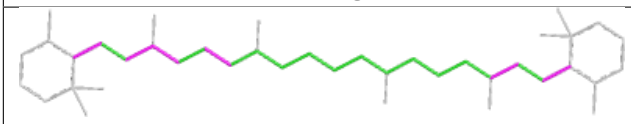

Torsions

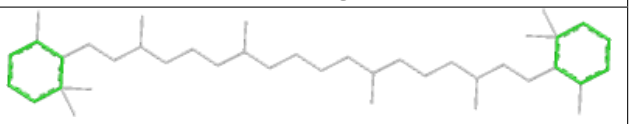

Rings

Ligand BCR b 619

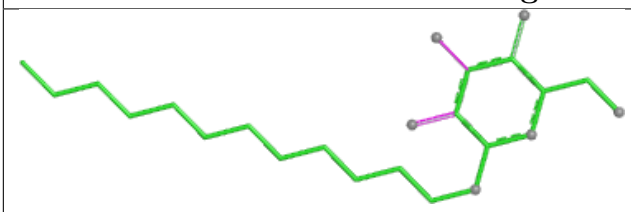

Bond lengths

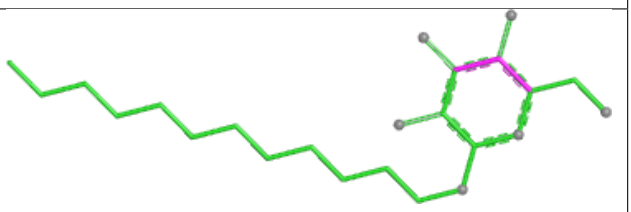

Bond angles

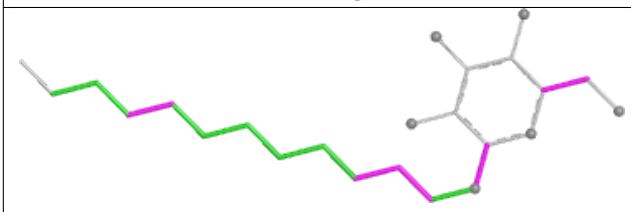

Torsions

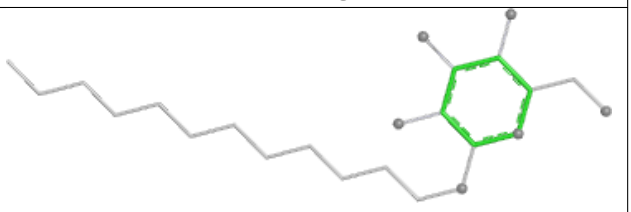

Rings

Ligand LMT X 101

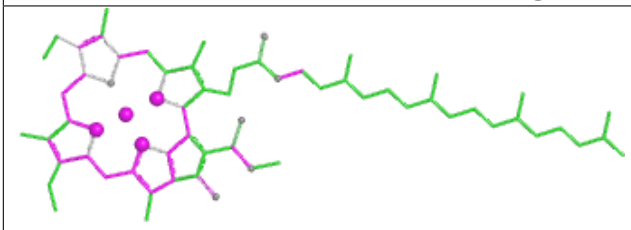

Bond lengths


Bond angles

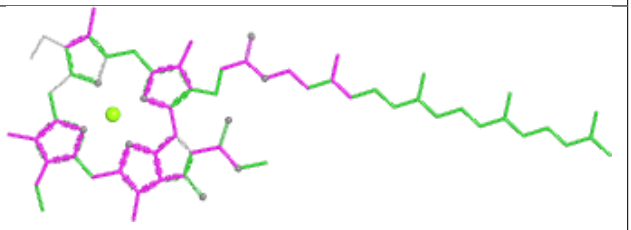

Torsions


Rings

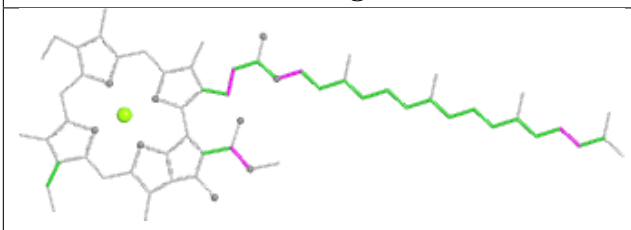
Ligand CLA c 504



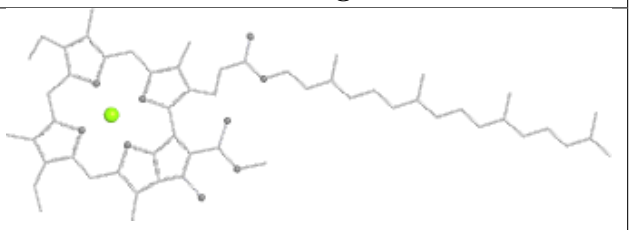
Bond lengths



Bond angles

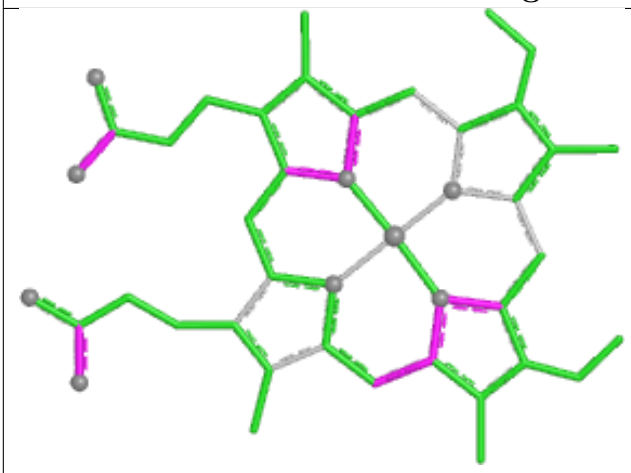


Torsions

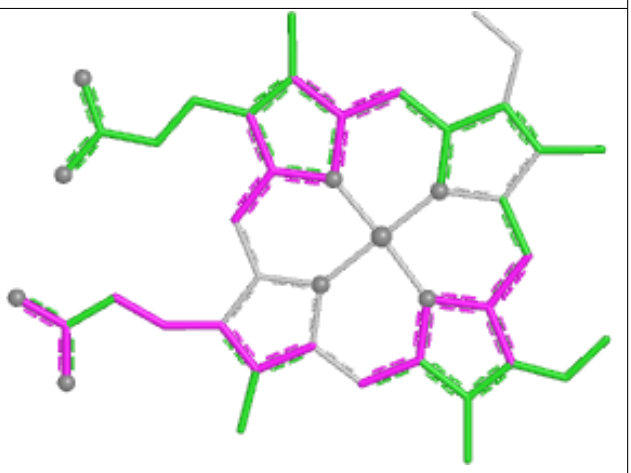


Rings

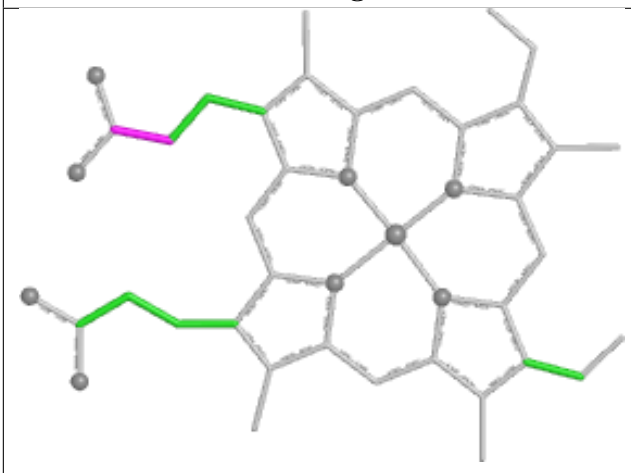
Ligand HEM v 201



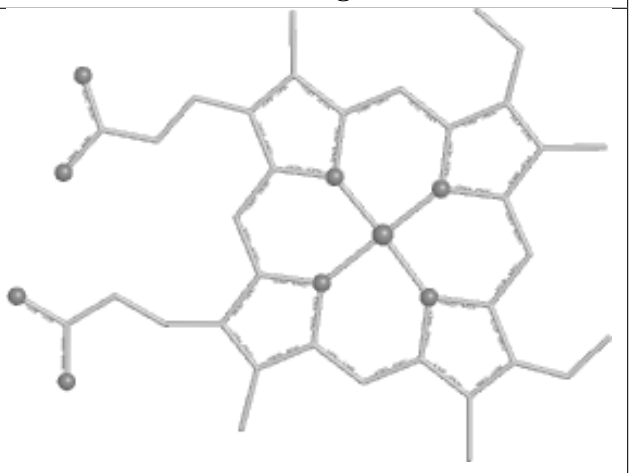
Bond lengths



Bond angles

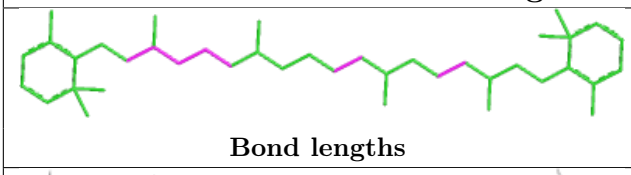


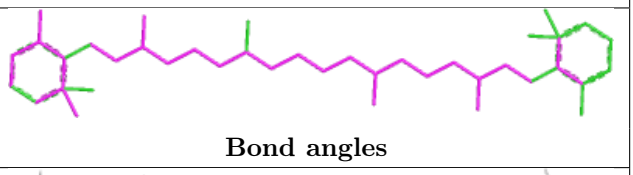
Torsions

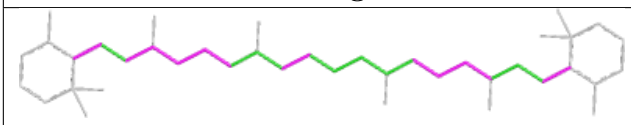


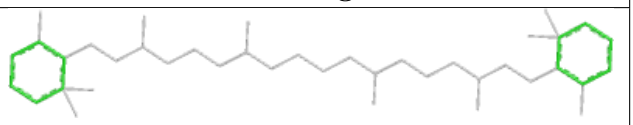
Rings

Ligand BCR k 102

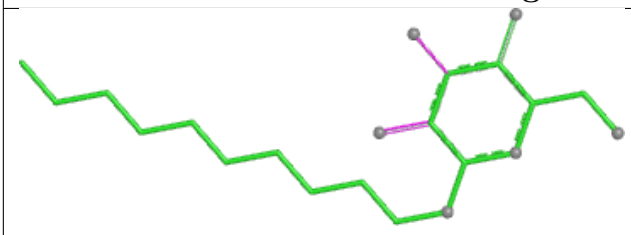

Bond lengths

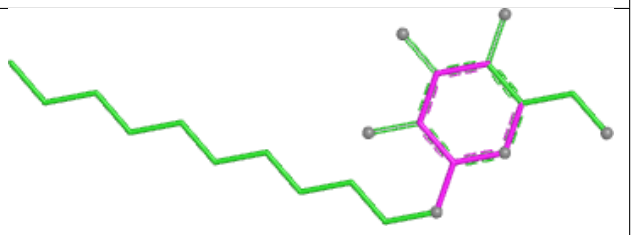

Bond angles

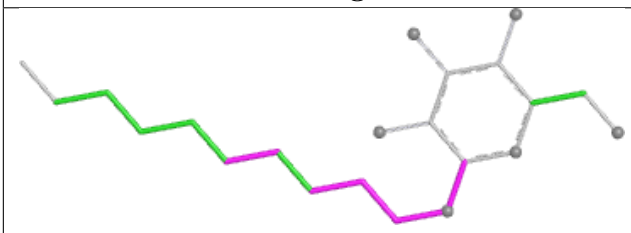

Torsions

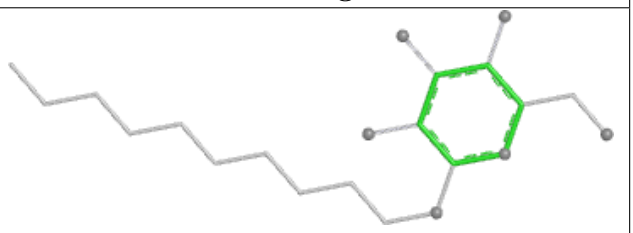

Rings

Ligand LMT E 101

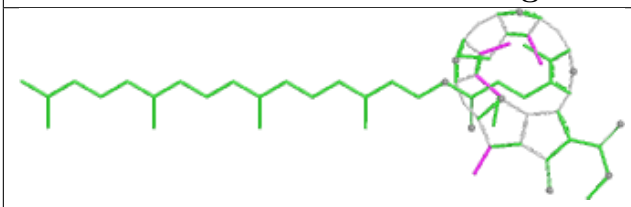

Bond lengths

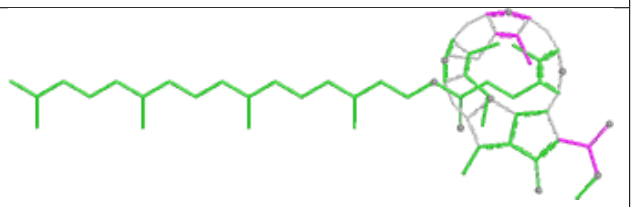

Bond angles

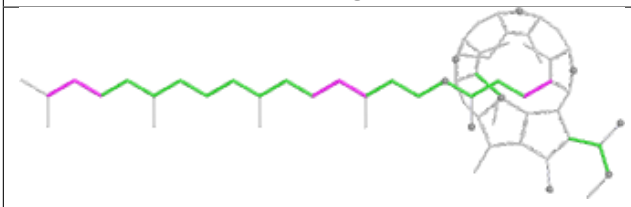

Torsions

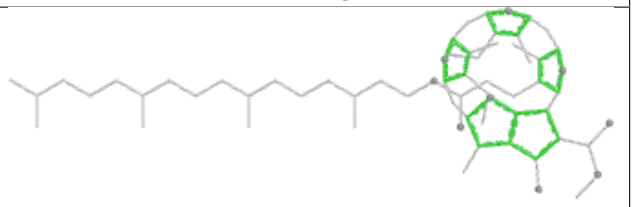

Rings

Ligand PHO A 407

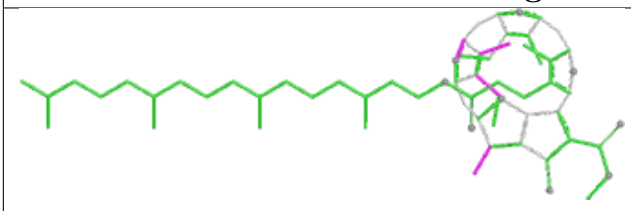

Bond lengths


Bond angles

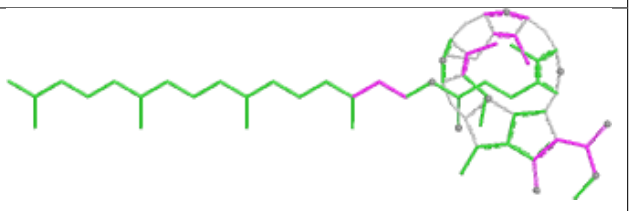

Torsions


Rings

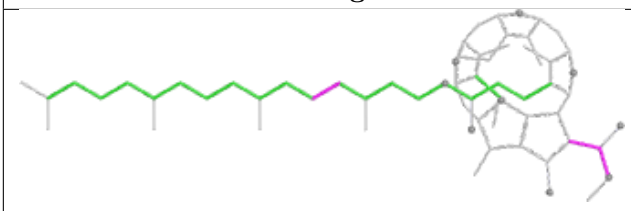
Ligand PHO d 402



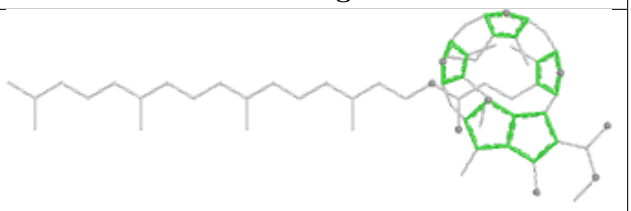
Bond lengths



Bond angles

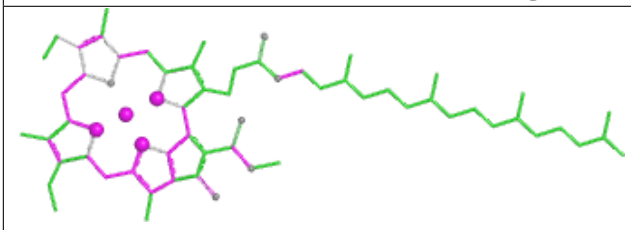


Torsions

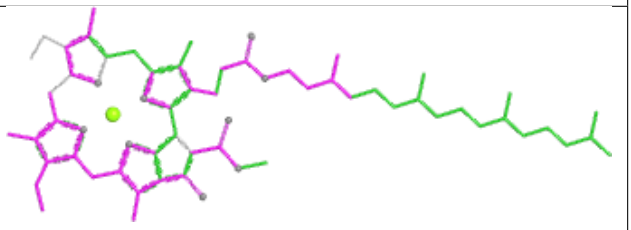


Rings

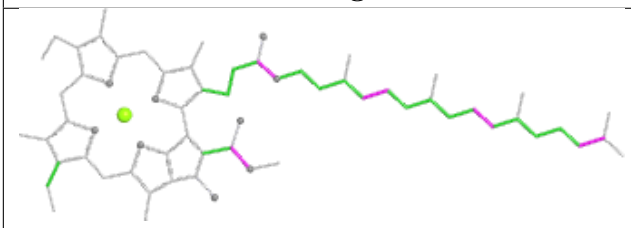
Ligand CLA B 613



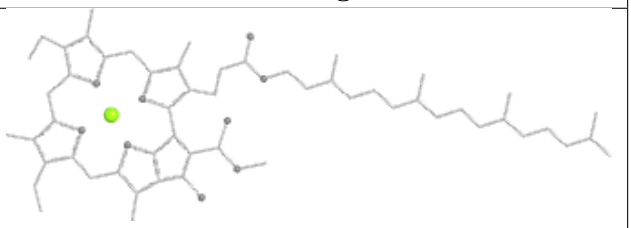
Bond lengths



Bond angles

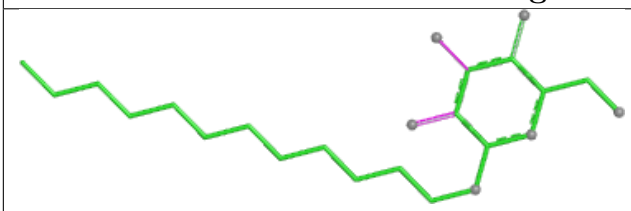


Torsions

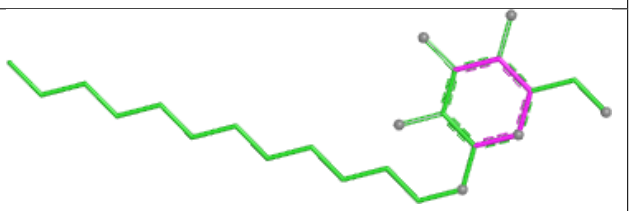


Rings

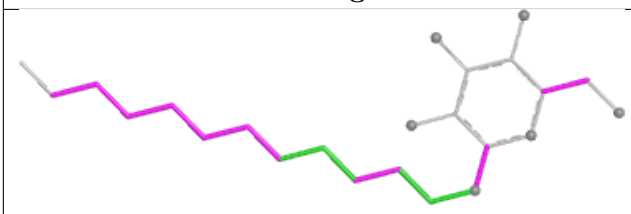
Ligand LMT i 101



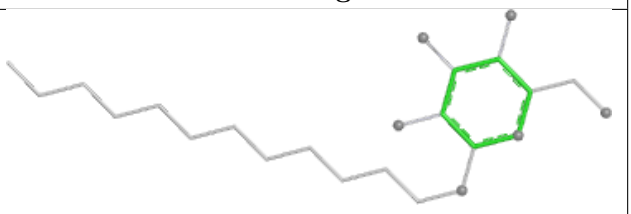
Bond lengths



Bond angles

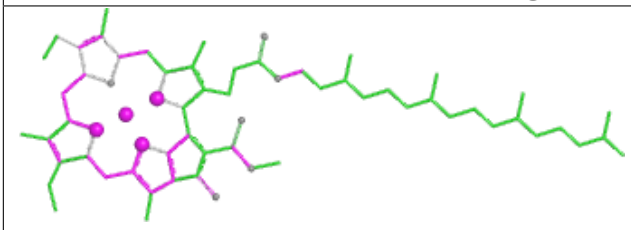


Torsions

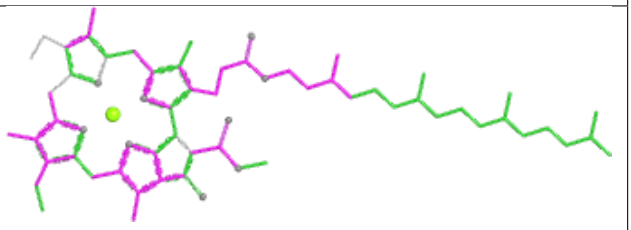


Rings

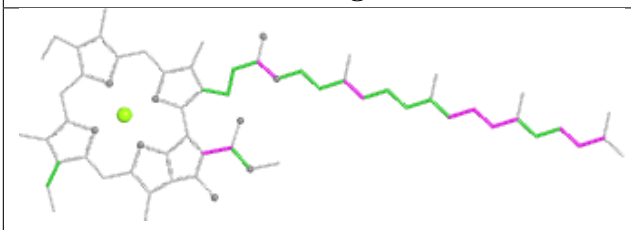
Ligand CLA C 505



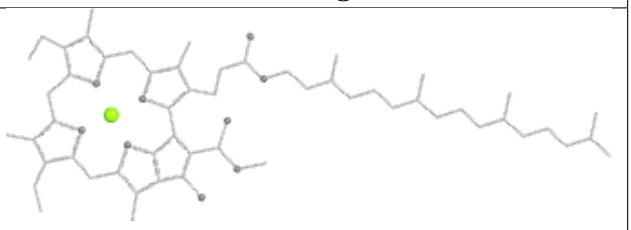
Bond lengths



Bond angles

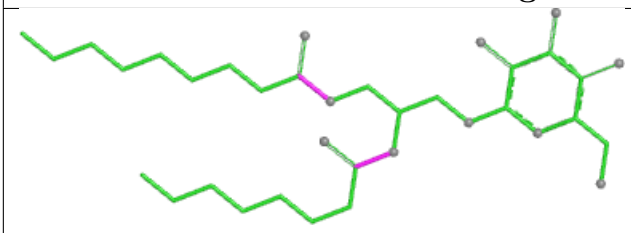


Torsions

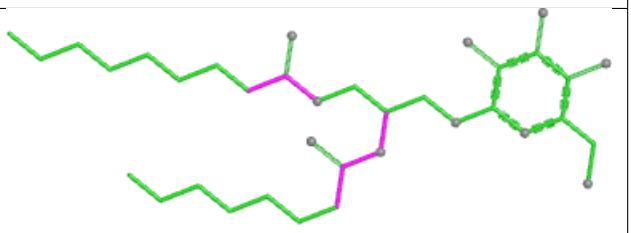


Rings

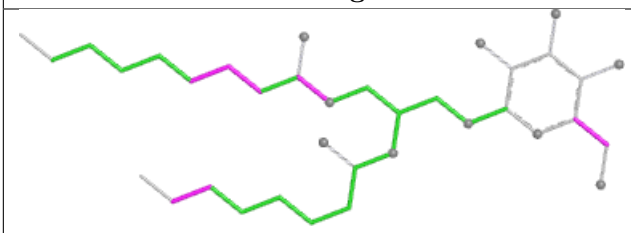
Ligand LMG A 414



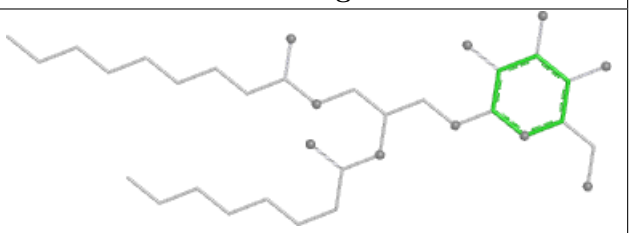
Bond lengths



Bond angles

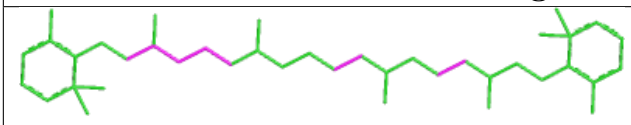


Torsions

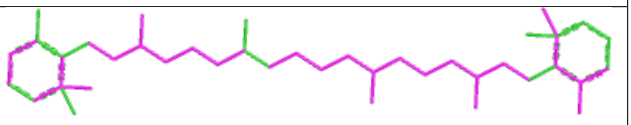


Rings

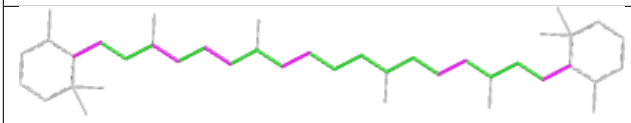
Ligand BCR f 101



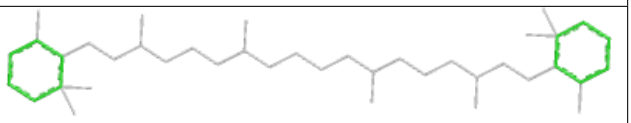
Bond lengths



Bond angles

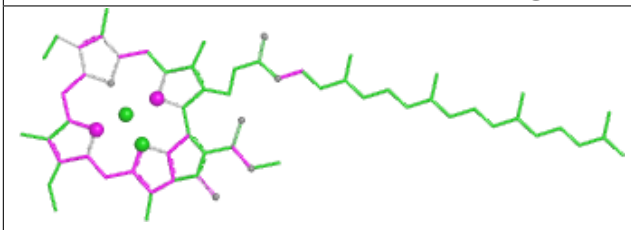


Torsions

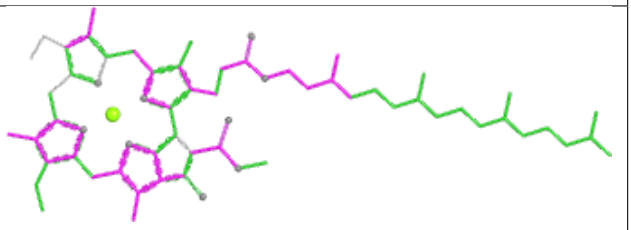


Rings

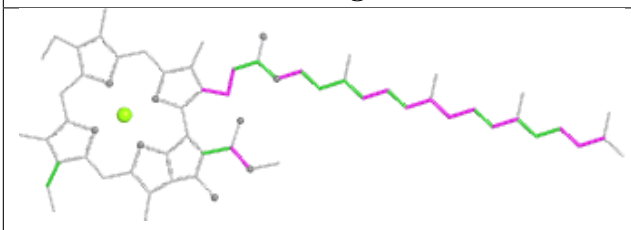
Ligand CLA b 602



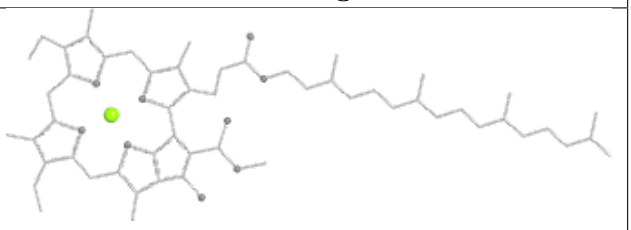
Bond lengths



Bond angles

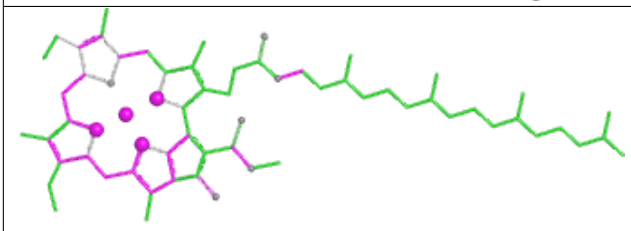


Torsions

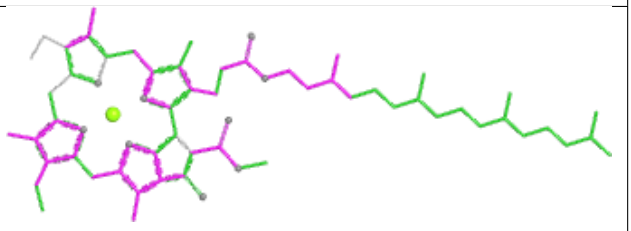


Rings

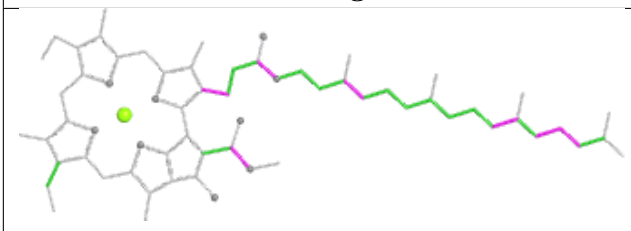
Ligand CLA d 404



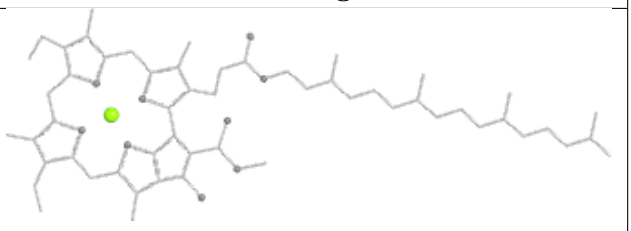
Bond lengths



Bond angles

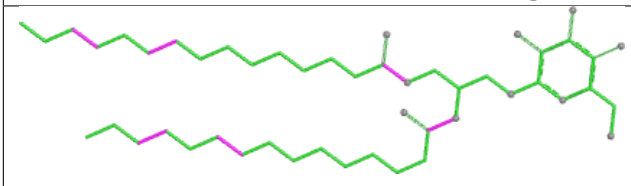


Torsions

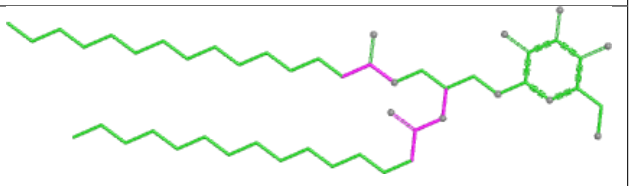


Rings

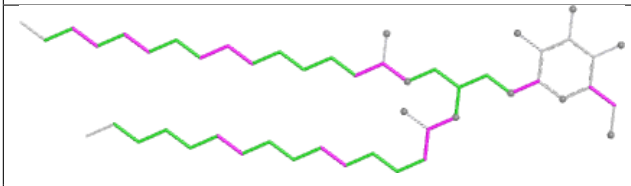
Ligand LMG c 523



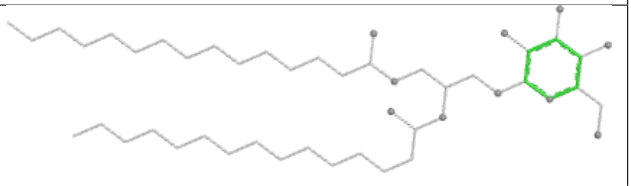
Bond lengths



Bond angles

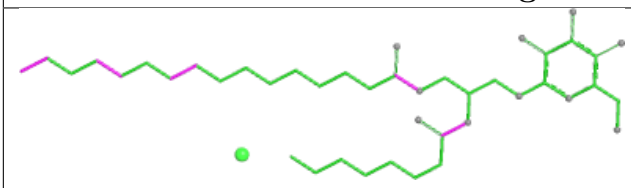


Torsions

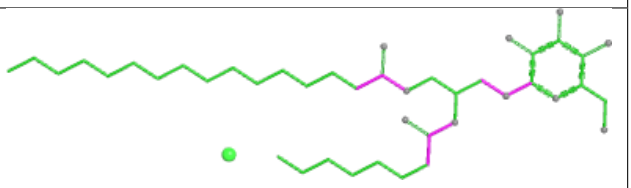


Rings

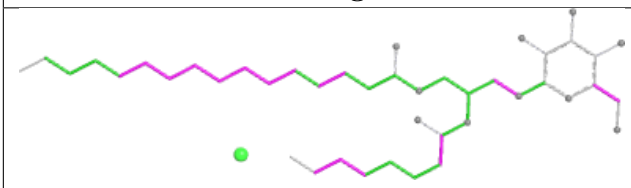
Ligand LMG D 409



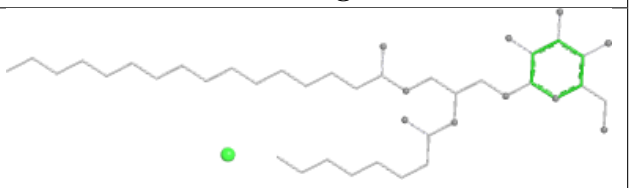
Bond lengths



Bond angles

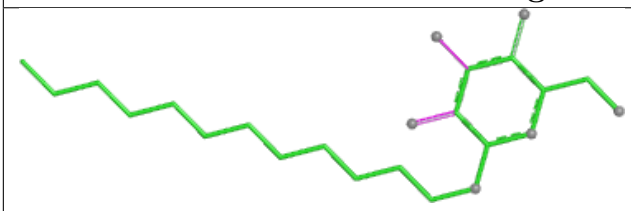


Torsions

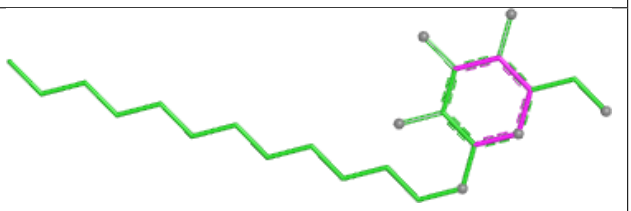


Rings

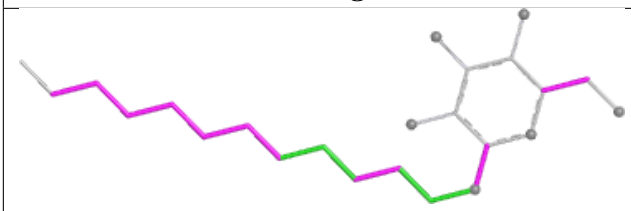
Ligand LMT I 101



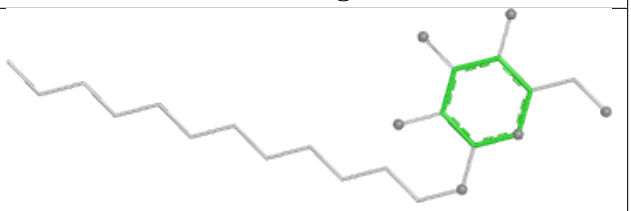
Bond lengths



Bond angles

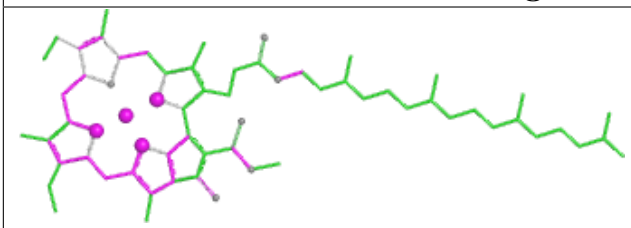


Torsions

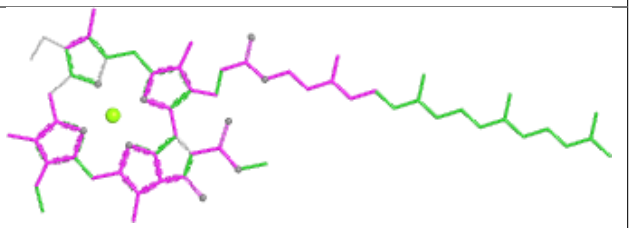


Rings

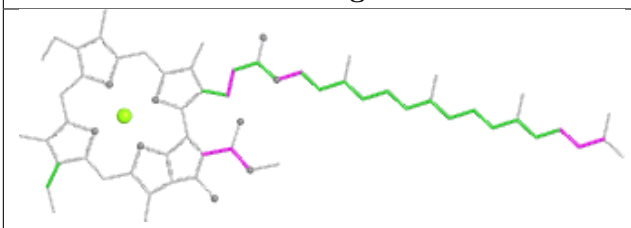
Ligand CLA B 610



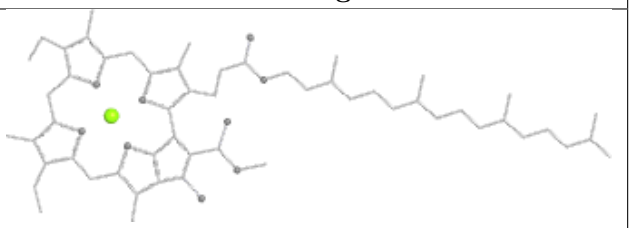
Bond lengths



Bond angles

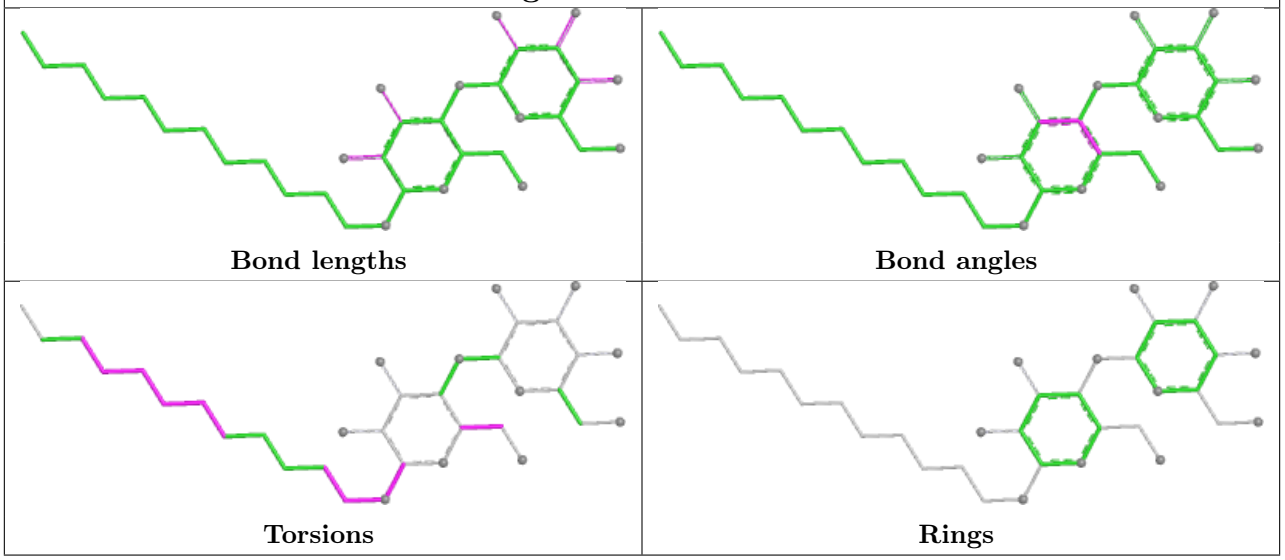


Torsions

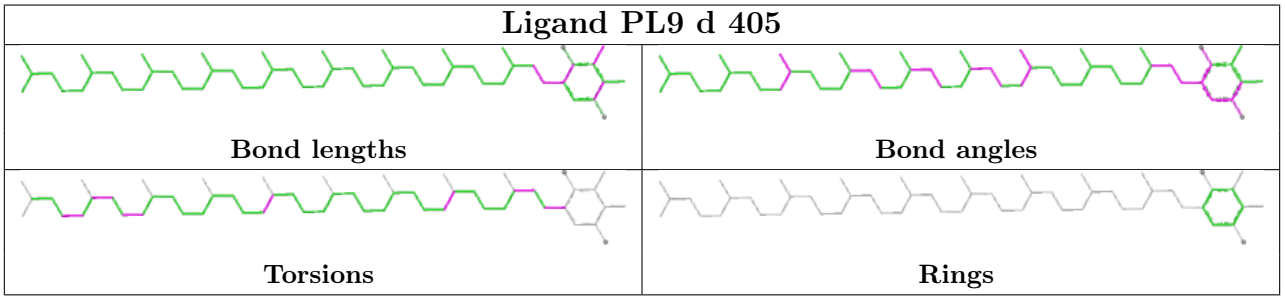


Rings

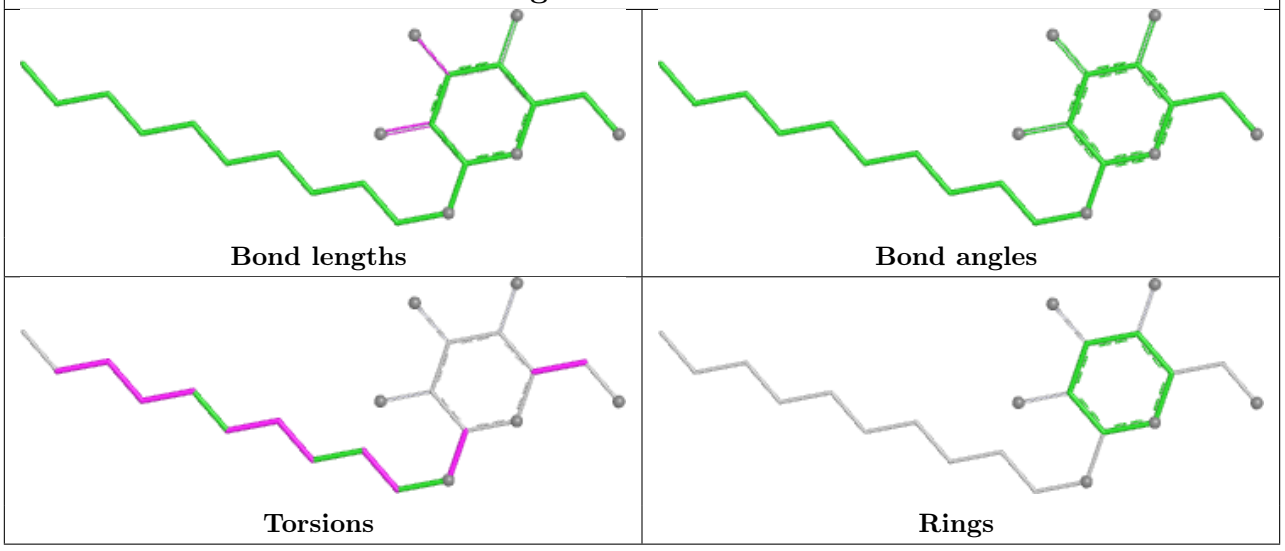
Ligand LMT B 629



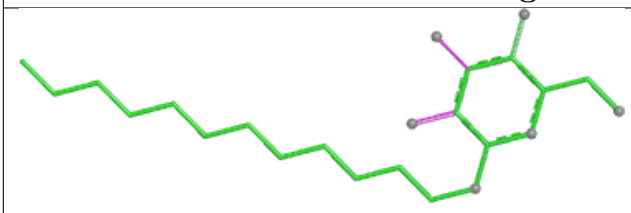
Ligand PL9 d 405



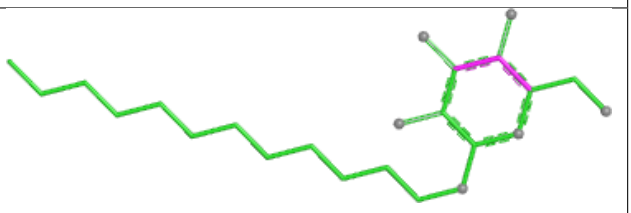
Ligand LMT i 104



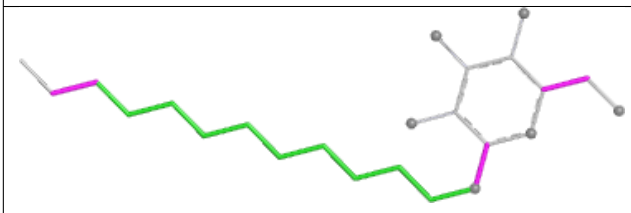
Ligand LMT m 102



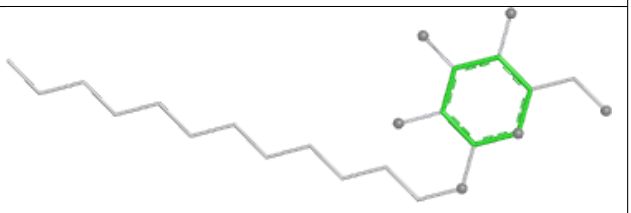
Bond lengths



Bond angles

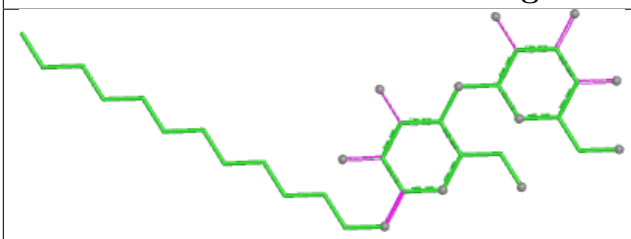


Torsions

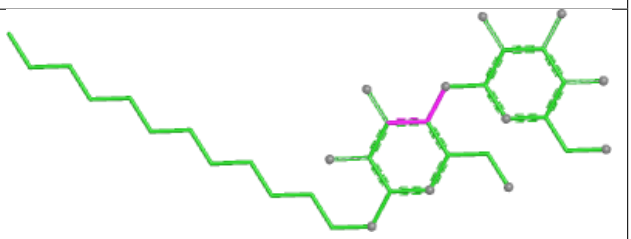


Rings

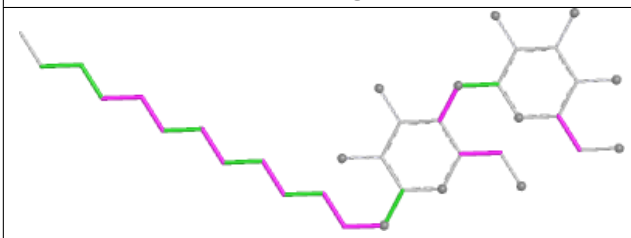
Ligand LMT B 625



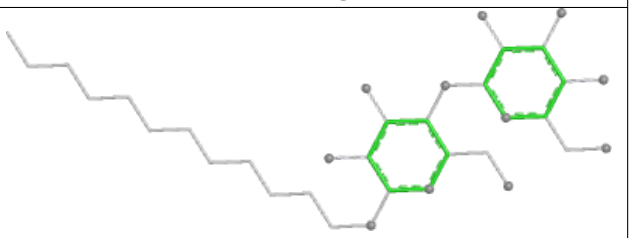
Bond lengths



Bond angles

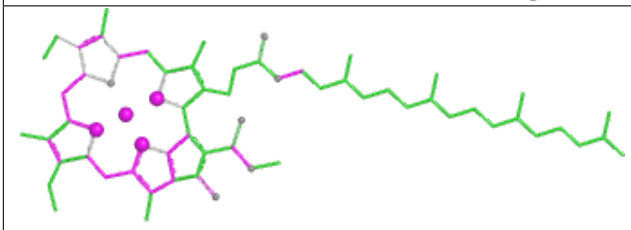


Torsions

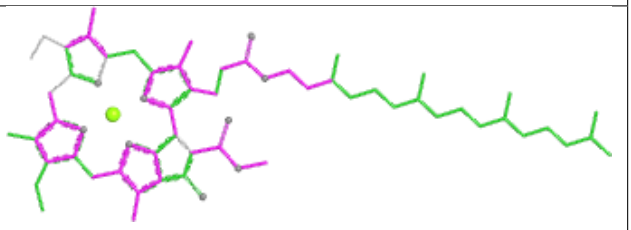


Rings

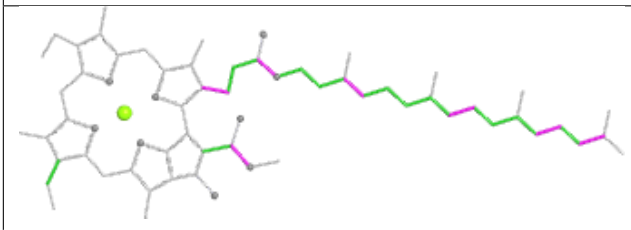
Ligand CLA C 509



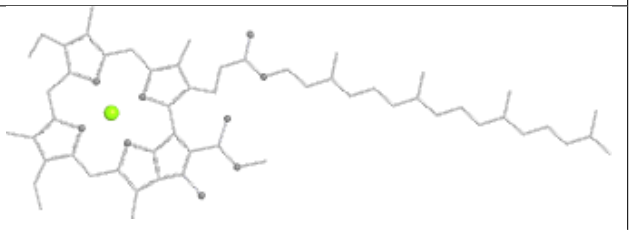
Bond lengths



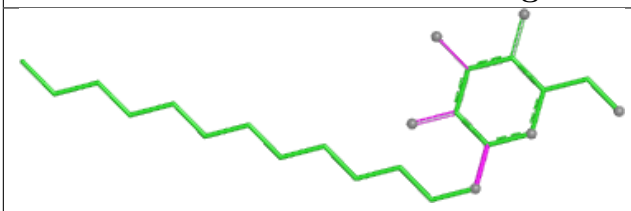
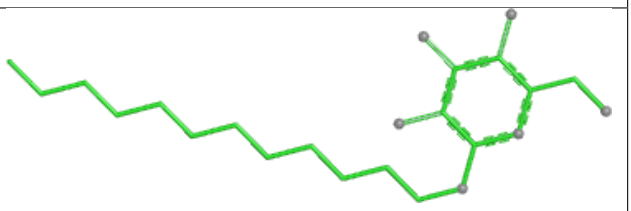
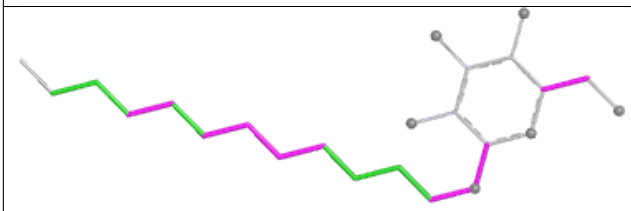
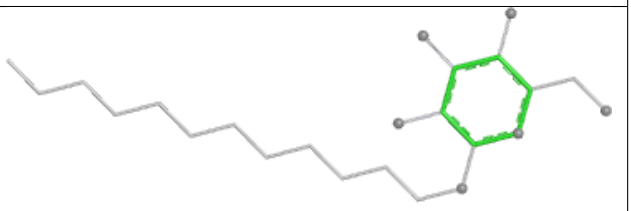
Bond angles

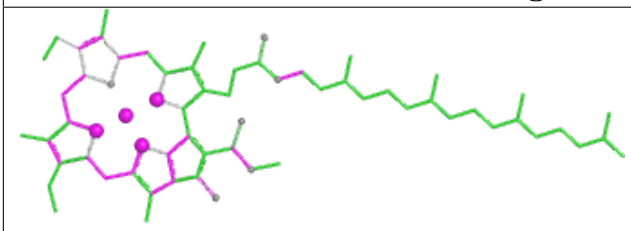
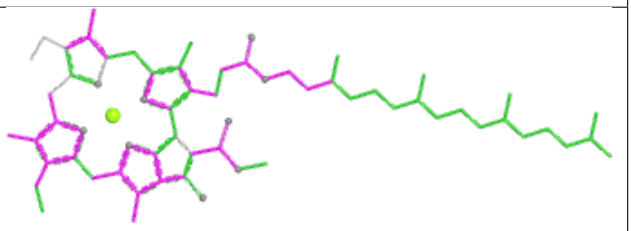
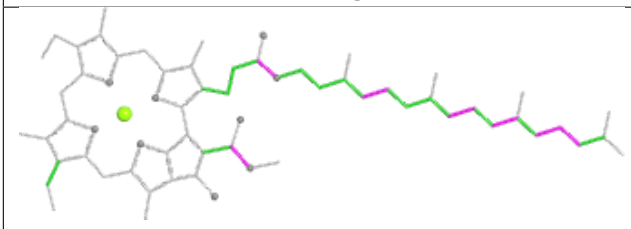
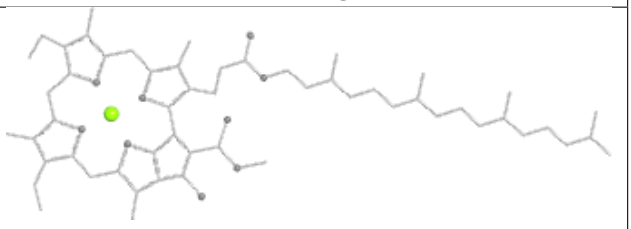


Torsions

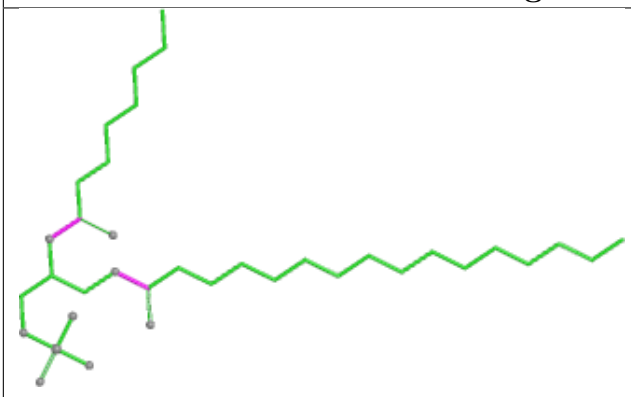


Rings

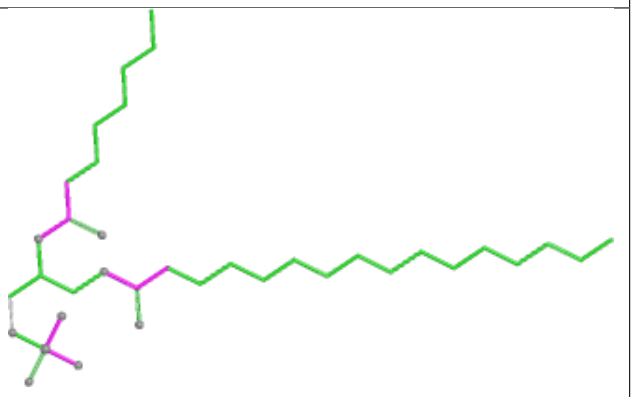
Ligand LMT B 624	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA b 611	
 Bond lengths	 Bond angles
 Torsions	 Rings

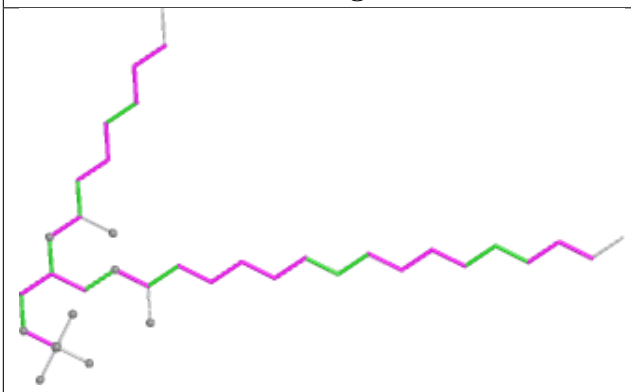
Ligand LHG Z 102



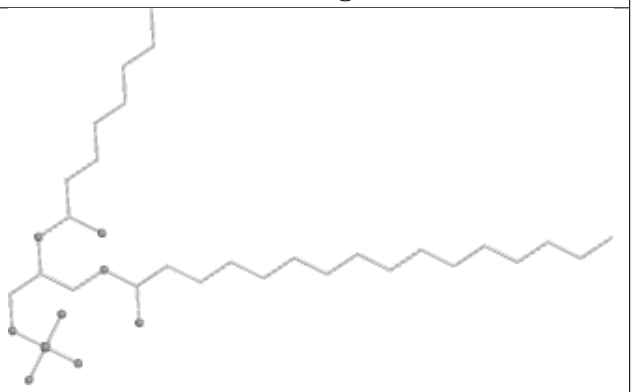
Bond lengths



Bond angles

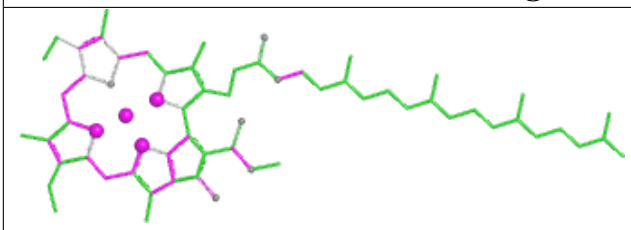


Torsions

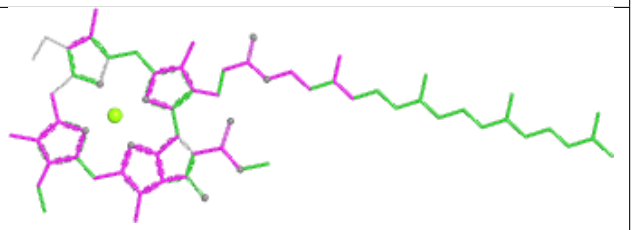


Rings

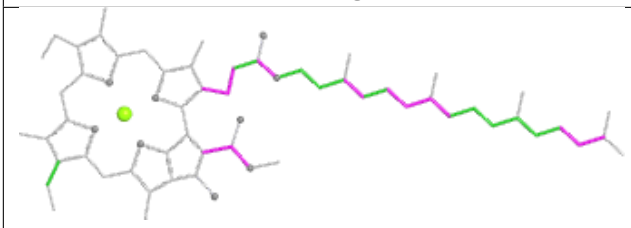
Ligand CLA B 603



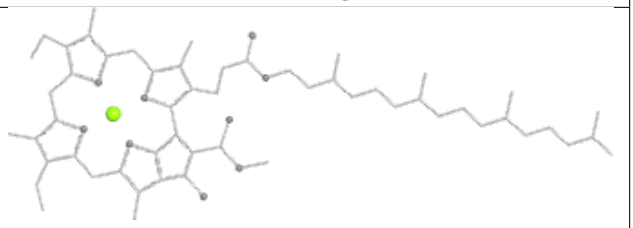
Bond lengths



Bond angles

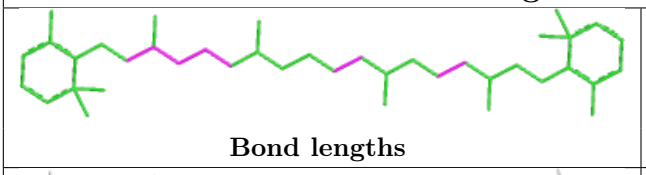


Torsions

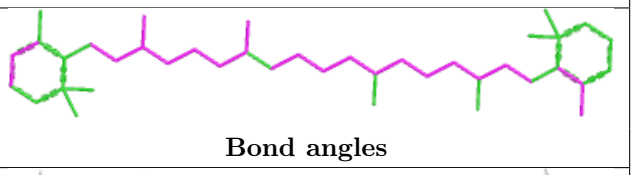


Rings

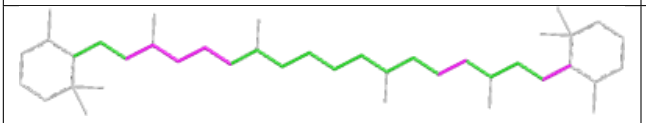
Ligand BCR C 515



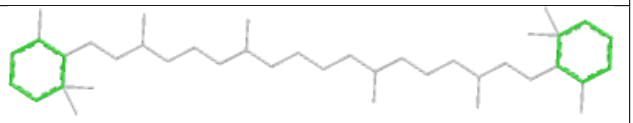
Bond lengths



Bond angles

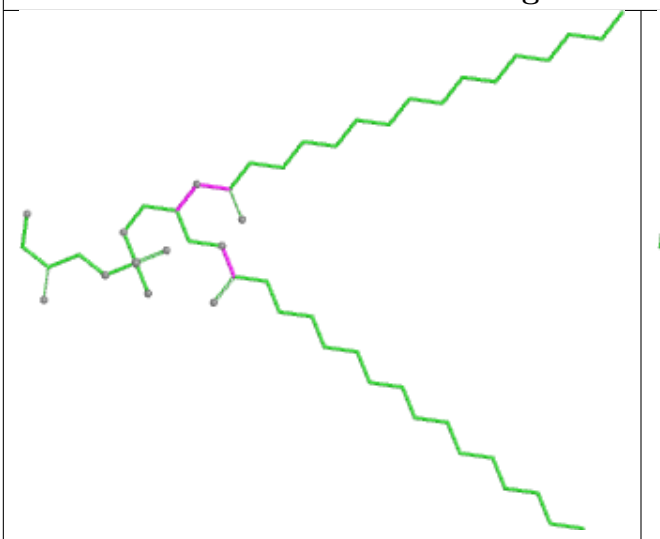


Torsions

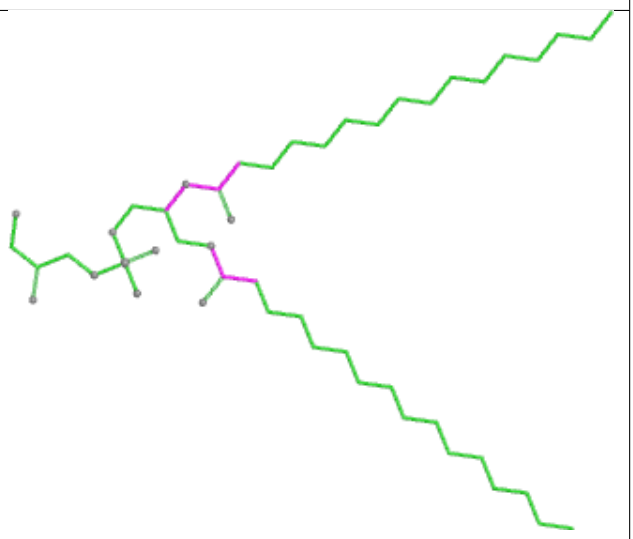


Rings

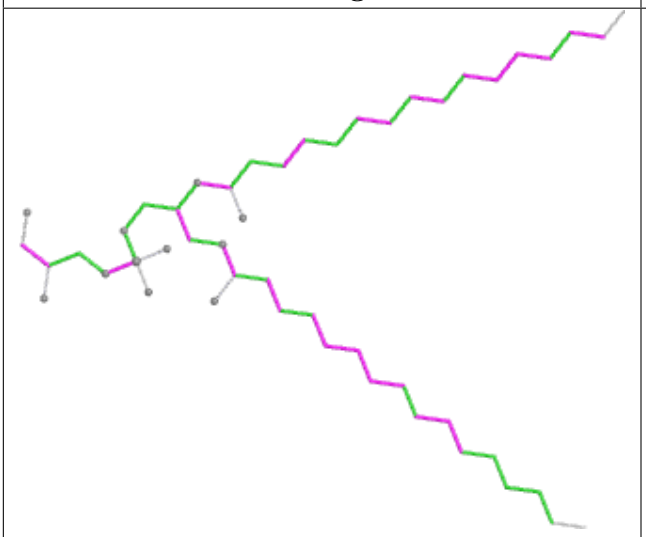
Ligand LHG D 406



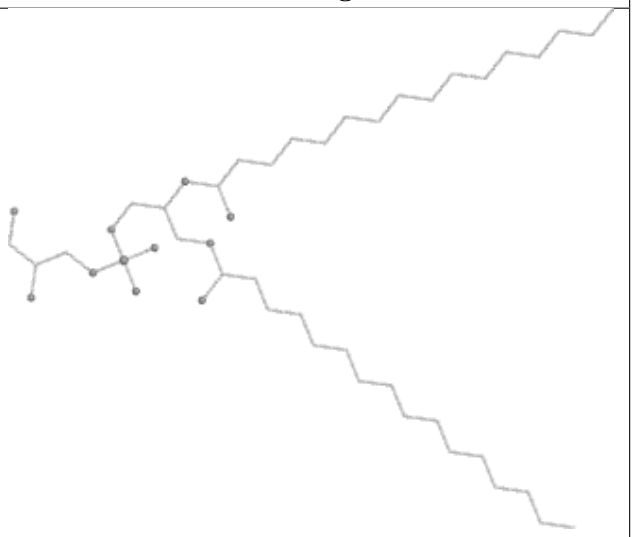
Bond lengths



Bond angles

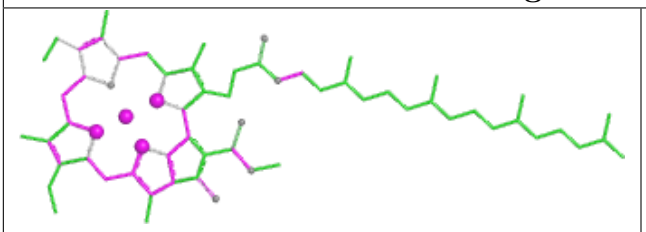


Torsions

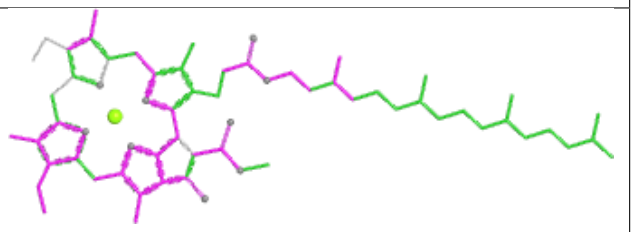


Rings

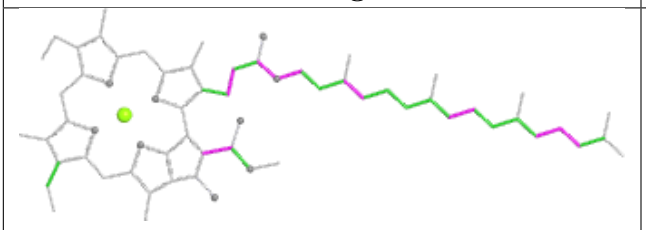
Ligand CLA C 508



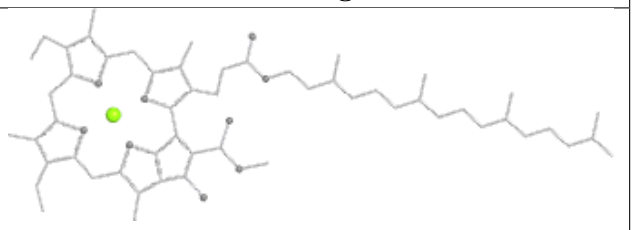
Bond lengths



Bond angles

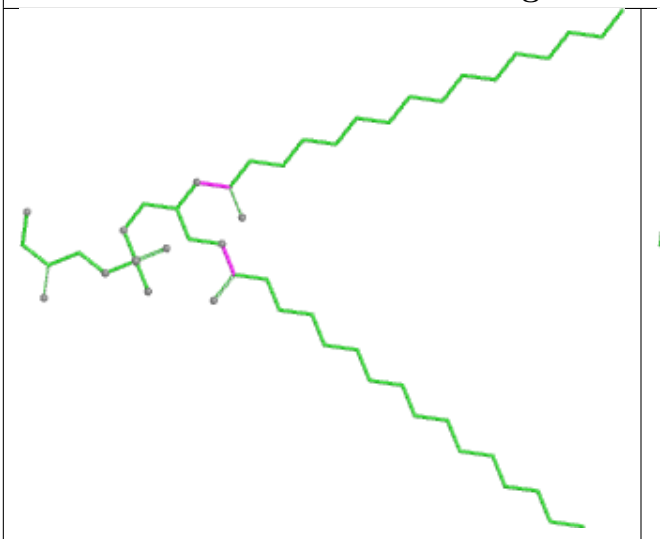


Torsions

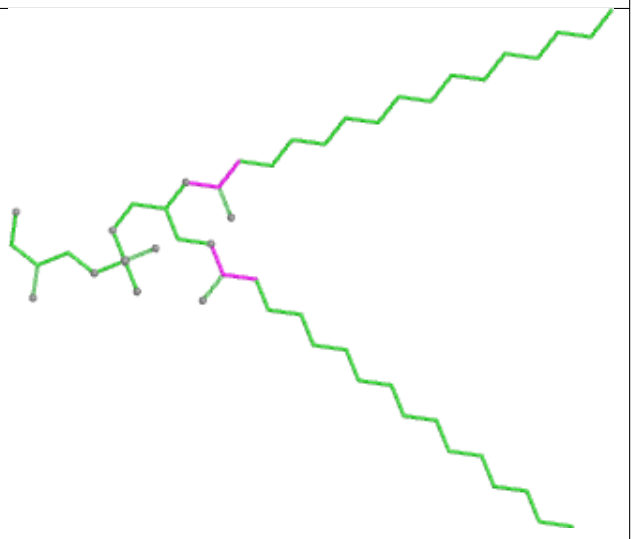


Rings

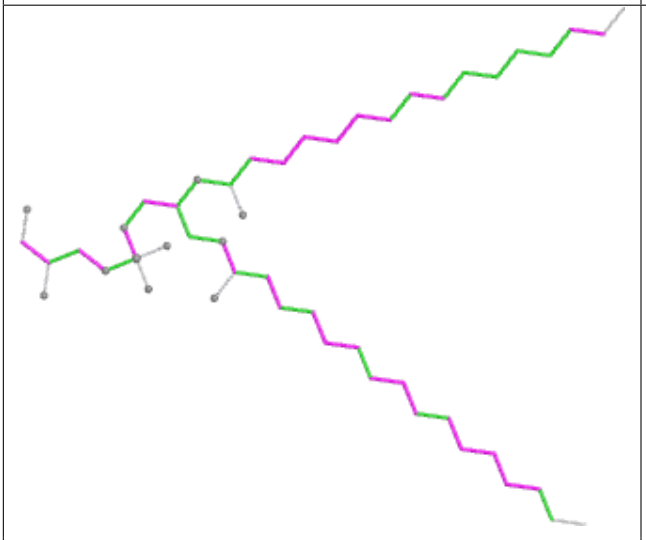
Ligand LHG D 408



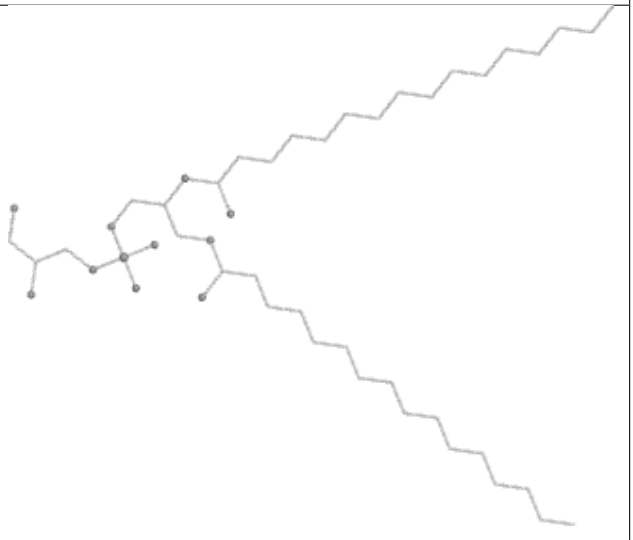
Bond lengths



Bond angles

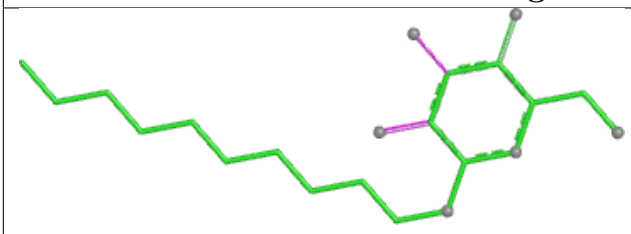


Torsions

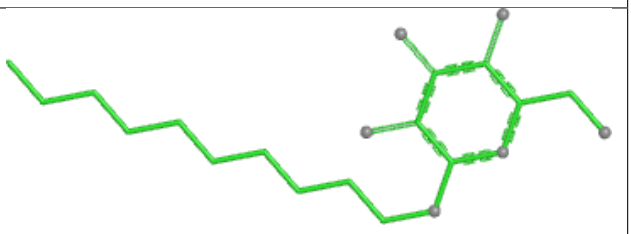


Rings

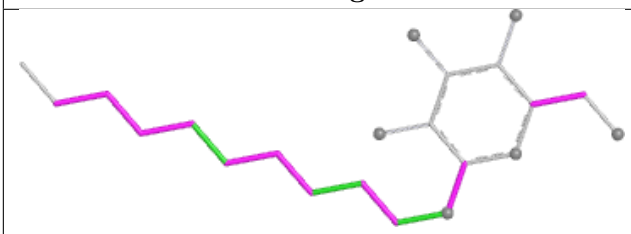
Ligand LMT I 104



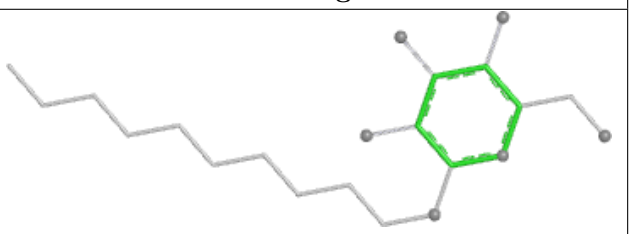
Bond lengths



Bond angles

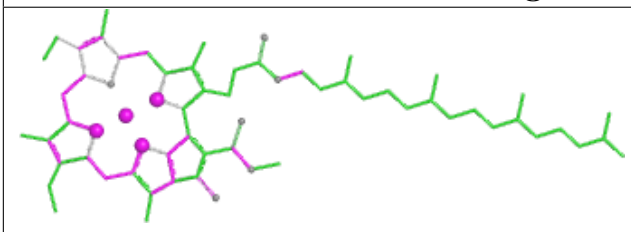


Torsions

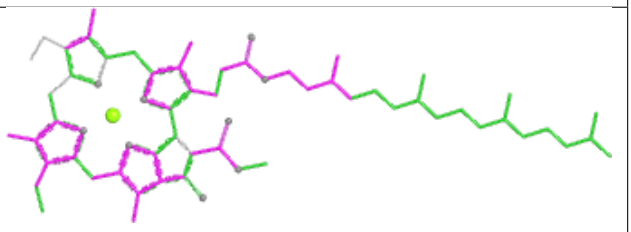


Rings

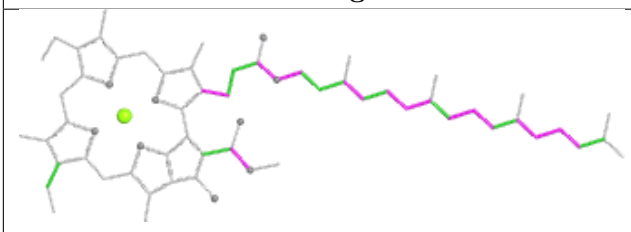
Ligand CLA C 514



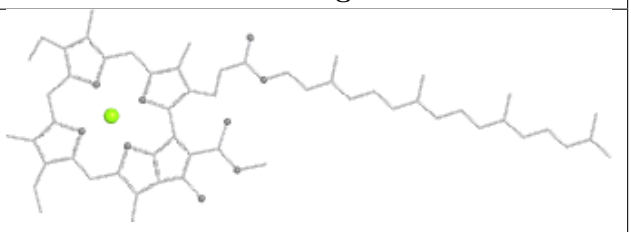
Bond lengths



Bond angles

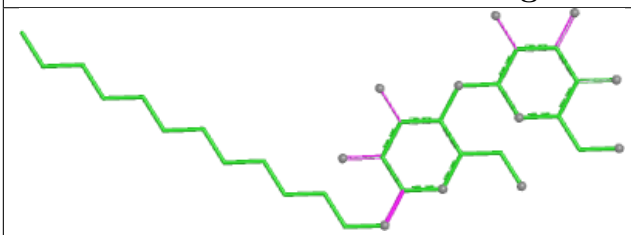


Torsions

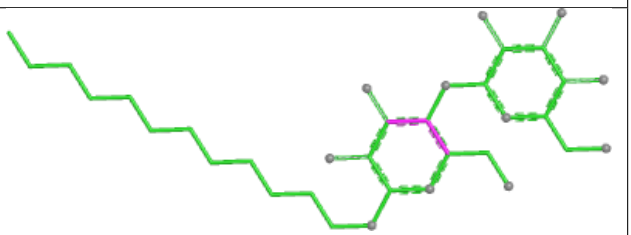


Rings

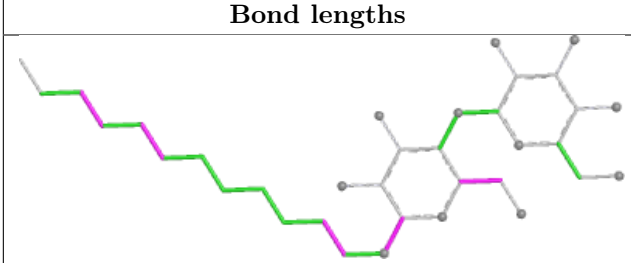
Ligand LMT D 412



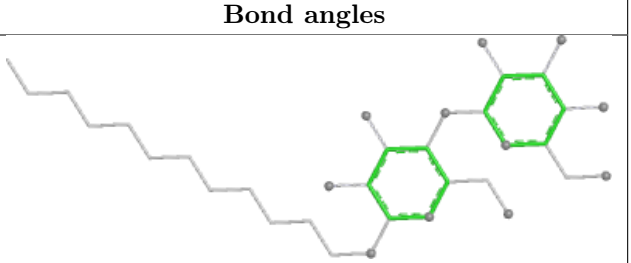
Bond lengths



Bond angles

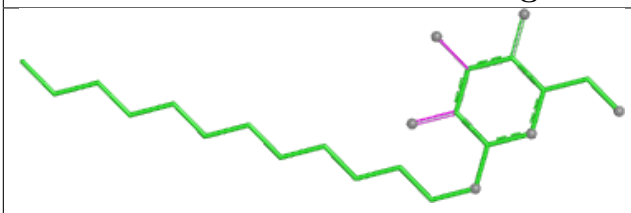


Torsions

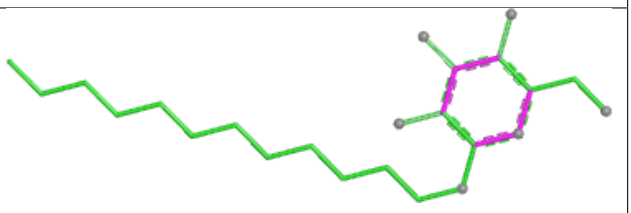


Rings

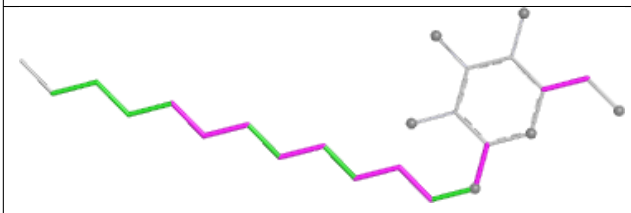
Ligand LMT H 102



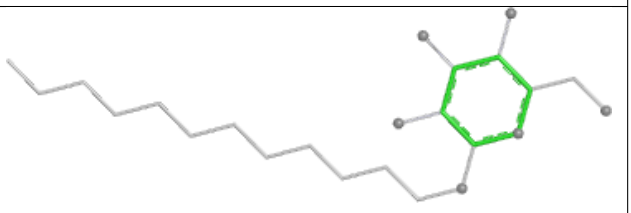
Bond lengths



Bond angles

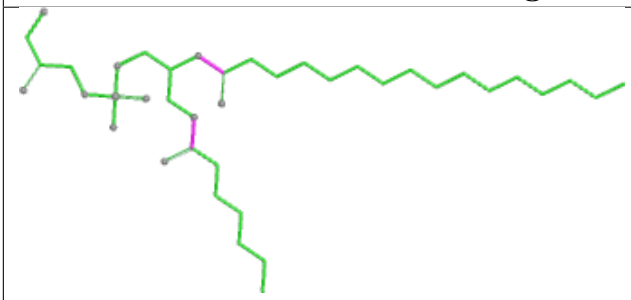


Torsions

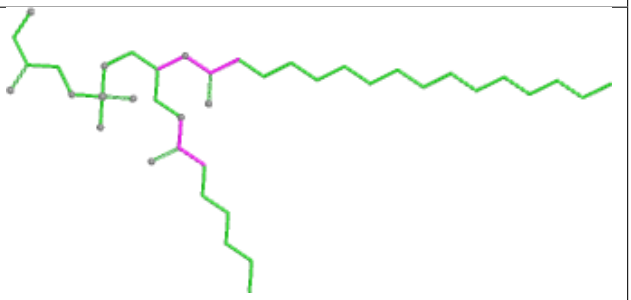


Rings

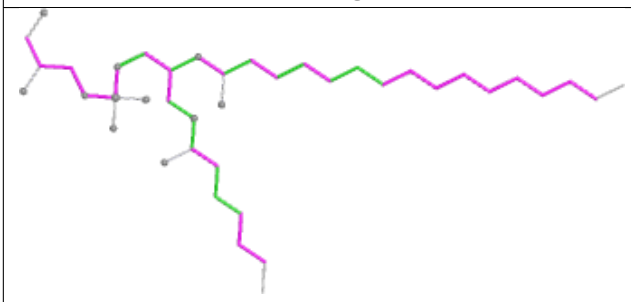
Ligand LHG E 102



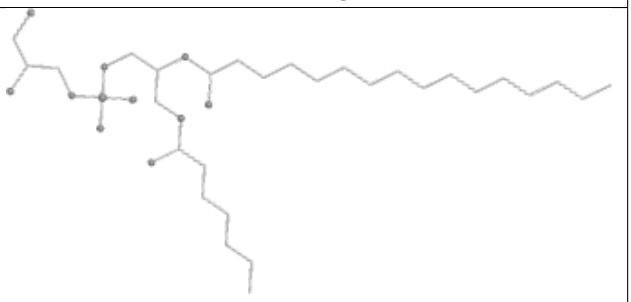
Bond lengths



Bond angles

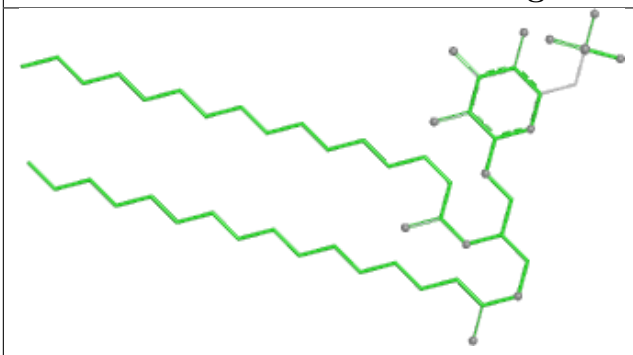


Torsions

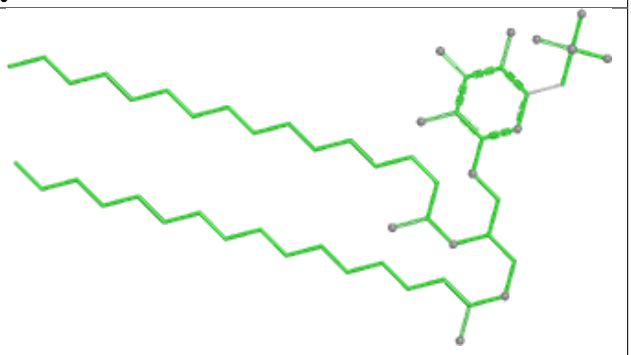


Rings

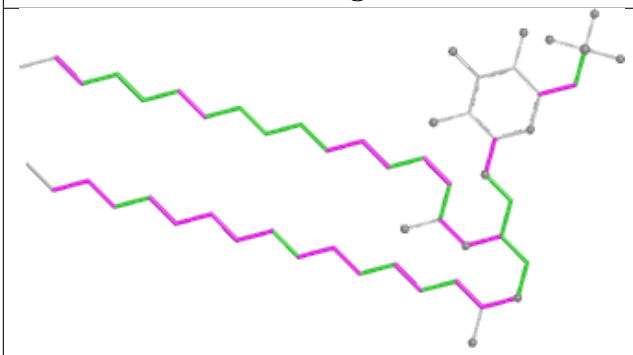
Ligand SQD b 620



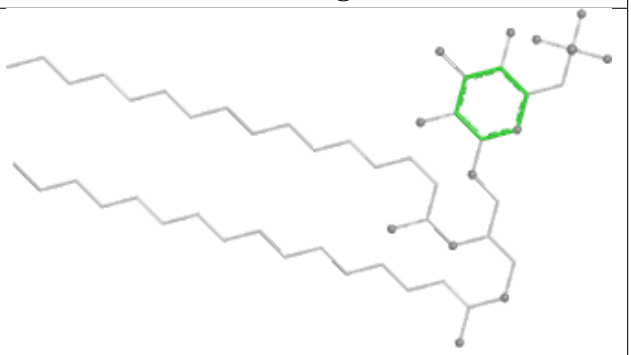
Bond lengths



Bond angles

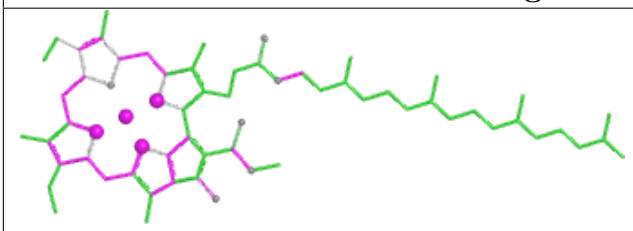


Torsions

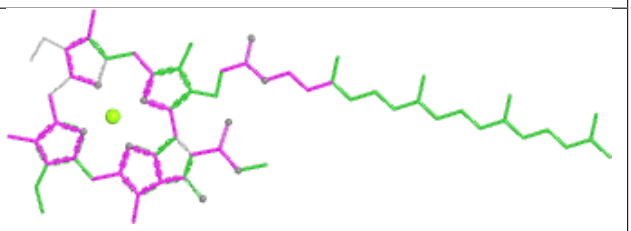


Rings

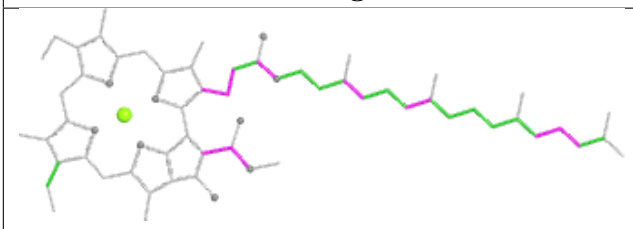
Ligand CLA B 609



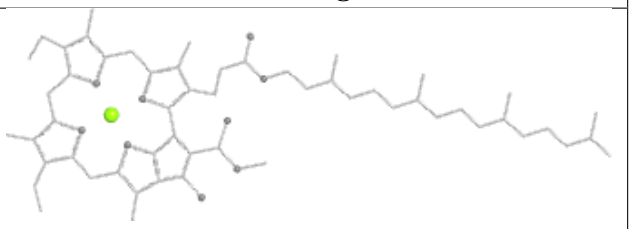
Bond lengths



Bond angles

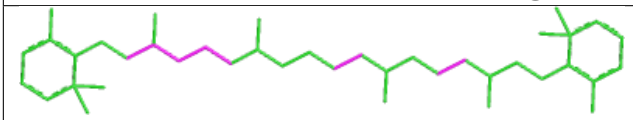


Torsions

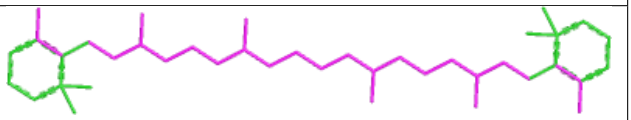


Rings

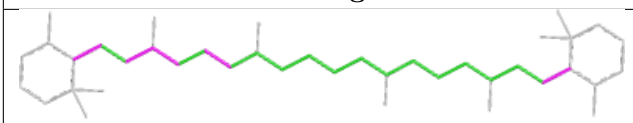
Ligand BCR a 409



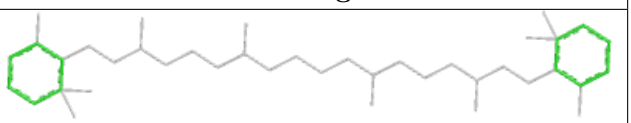
Bond lengths



Bond angles

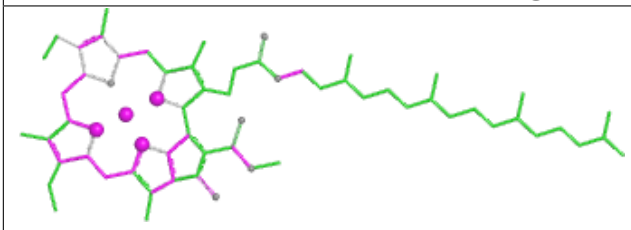


Torsions

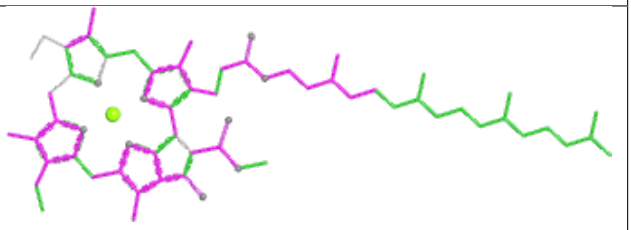


Rings

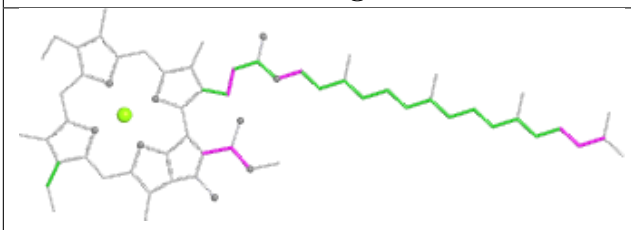
Ligand CLA b 610



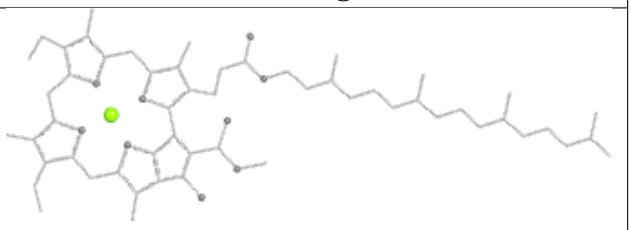
Bond lengths



Bond angles



Torsions

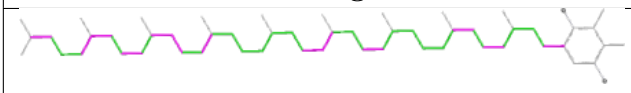


Rings

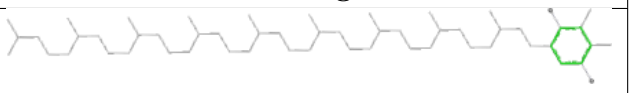
Ligand PL9 A 411

Bond lengths

Bond angles

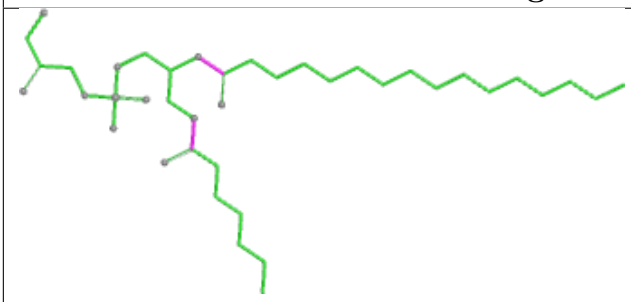


Torsions

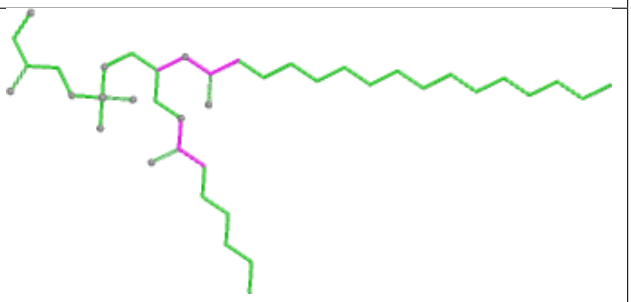


Rings

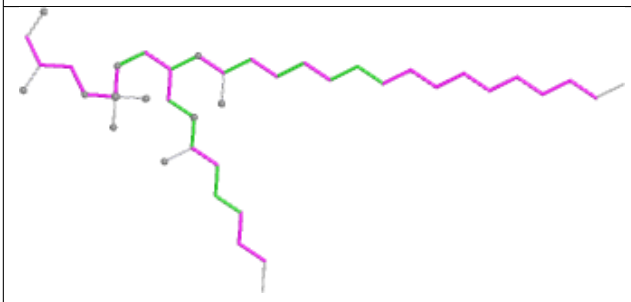
Ligand LHG e 102



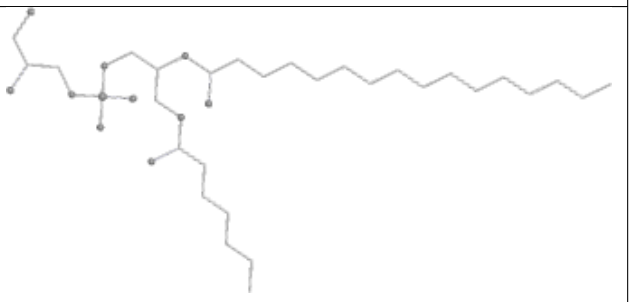
Bond lengths



Bond angles

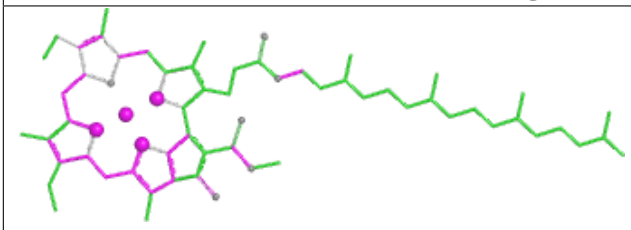


Torsions

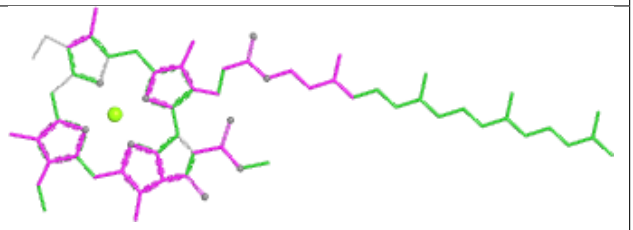


Rings

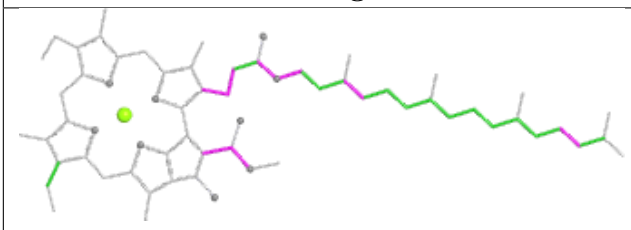
Ligand CLA C 502



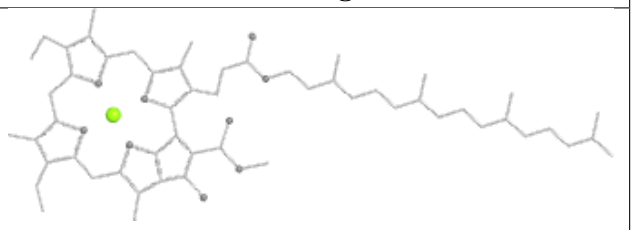
Bond lengths



Bond angles

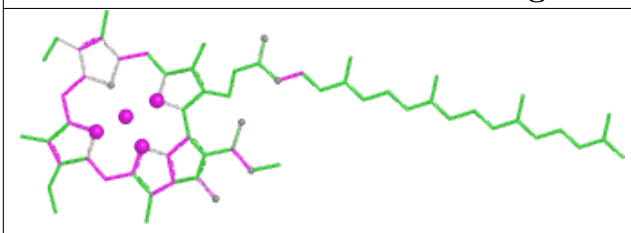


Torsions

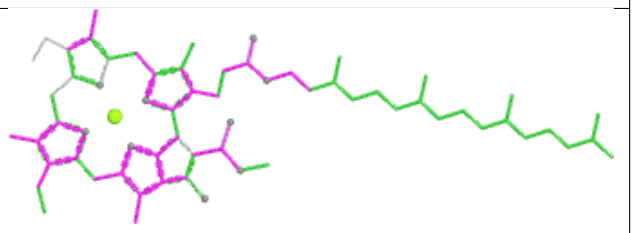


Rings

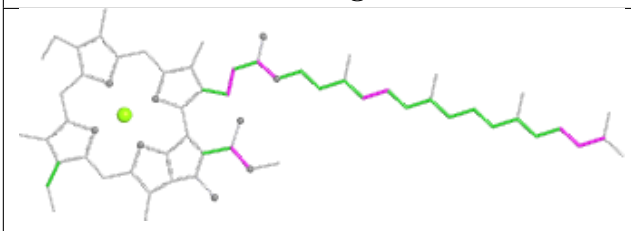
Ligand CLA a 405



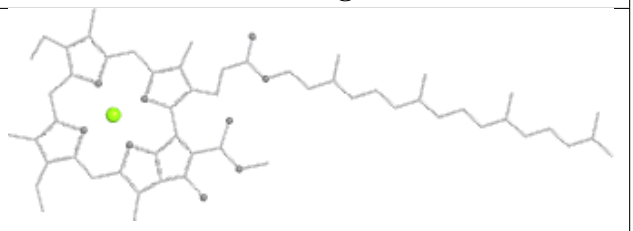
Bond lengths



Bond angles

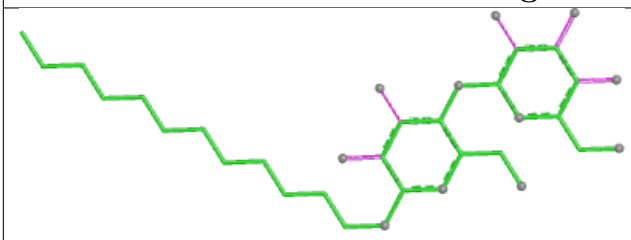


Torsions

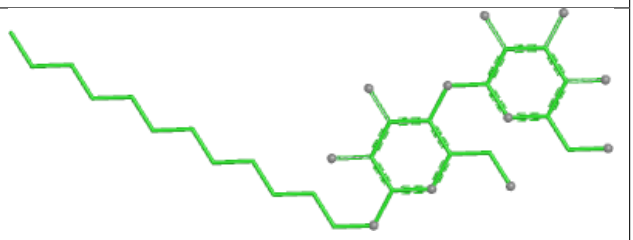


Rings

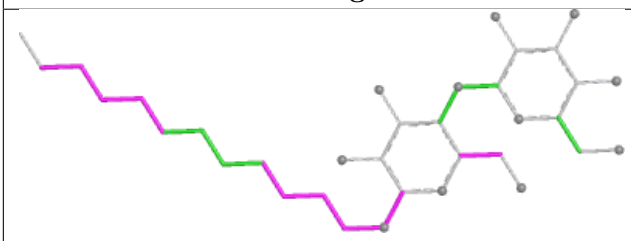
Ligand LMT D 411



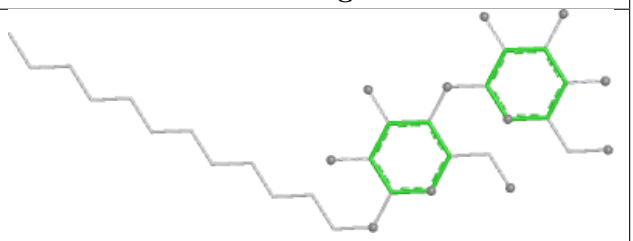
Bond lengths



Bond angles

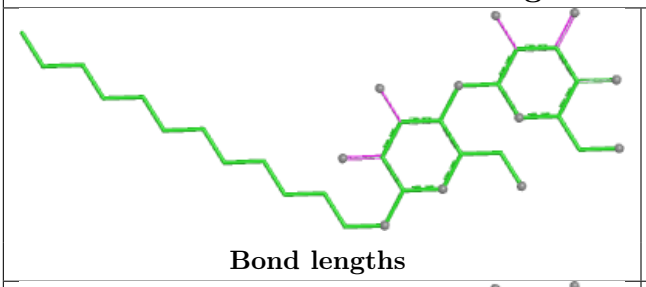


Torsions

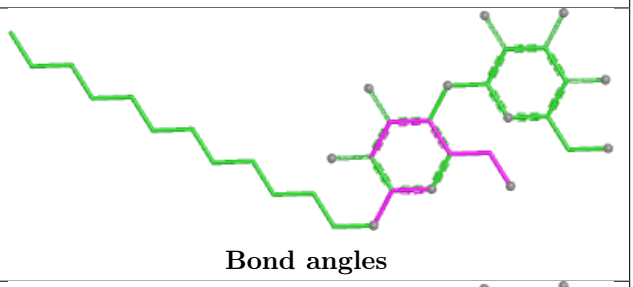


Rings

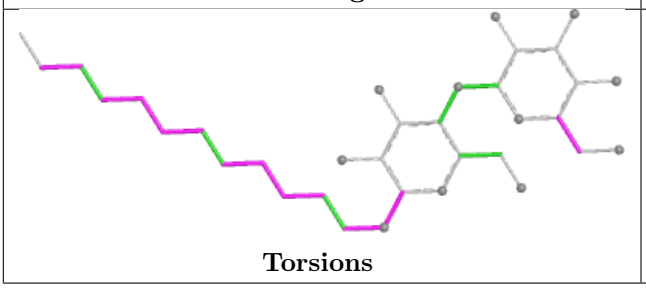
Ligand LMT b 623



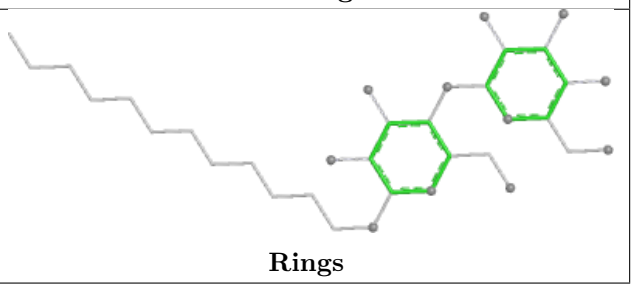
Bond lengths



Bond angles

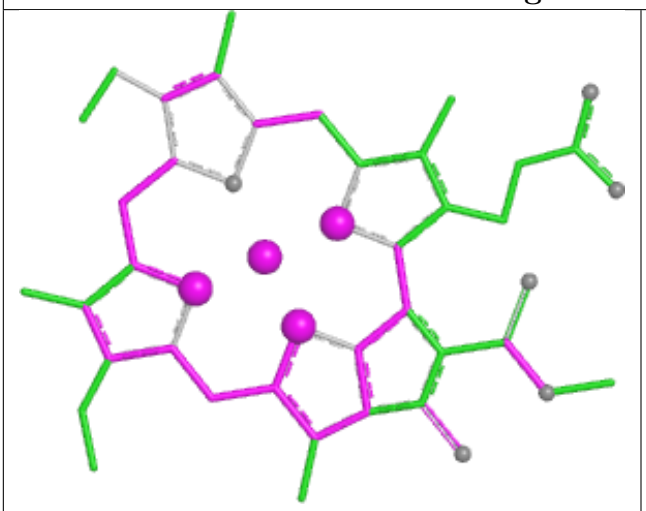


Torsions

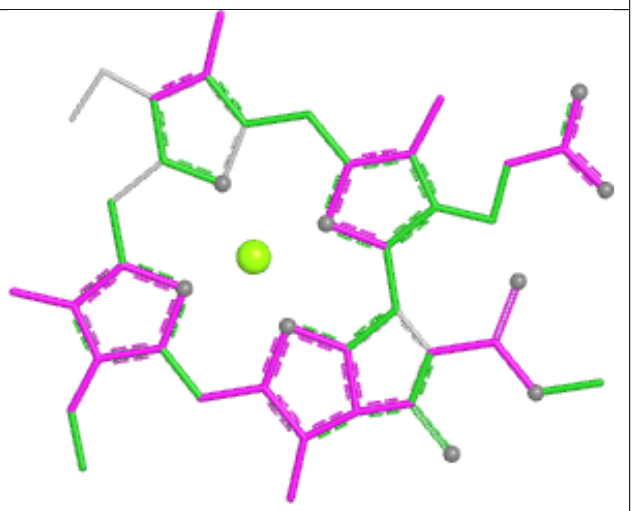


Rings

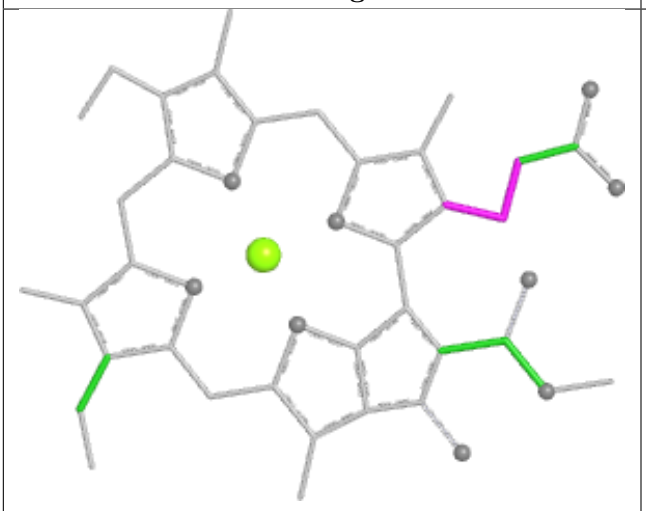
Ligand CLA B 601



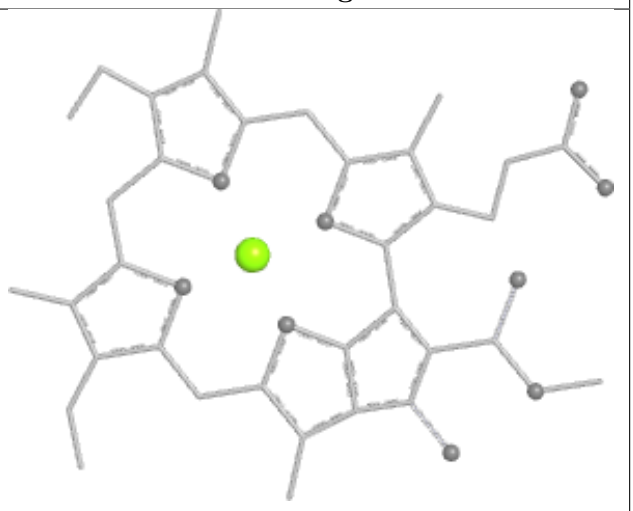
Bond lengths



Bond angles

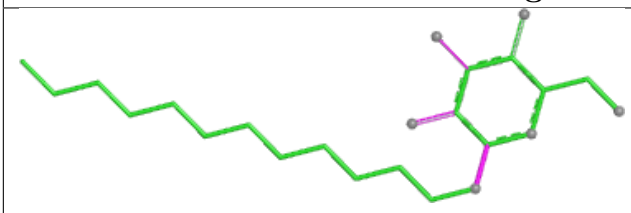


Torsions

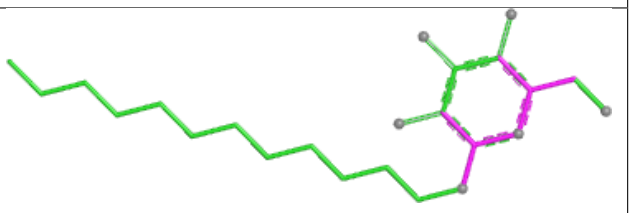


Rings

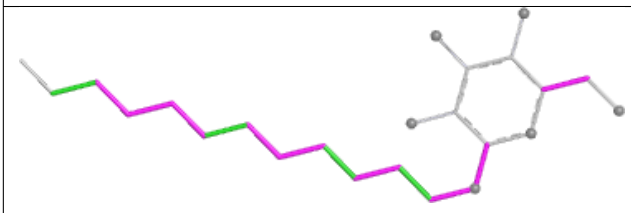
Ligand LMT J 101



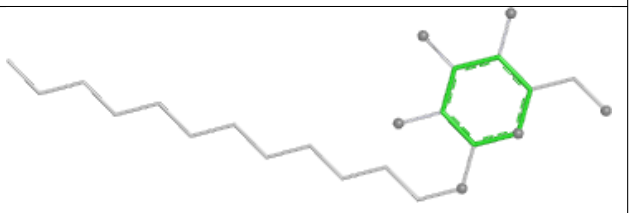
Bond lengths



Bond angles

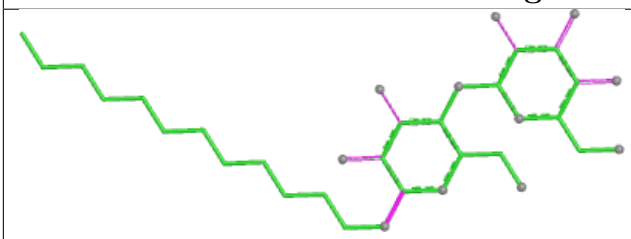


Torsions

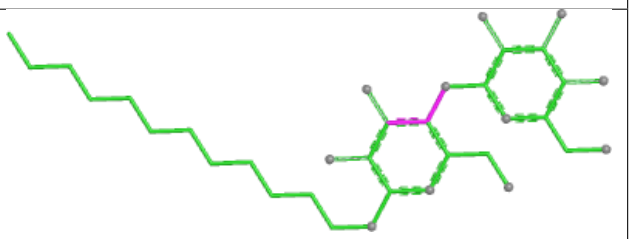


Rings

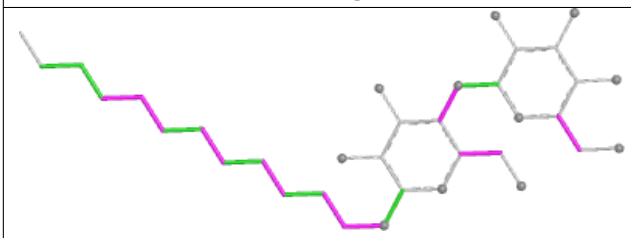
Ligand LMT b 625



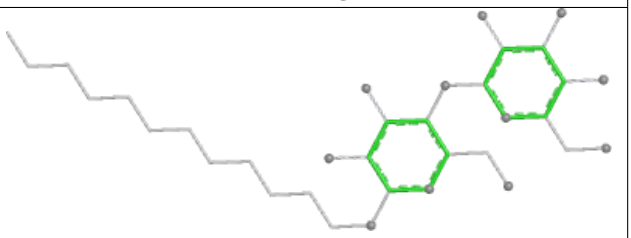
Bond lengths



Bond angles

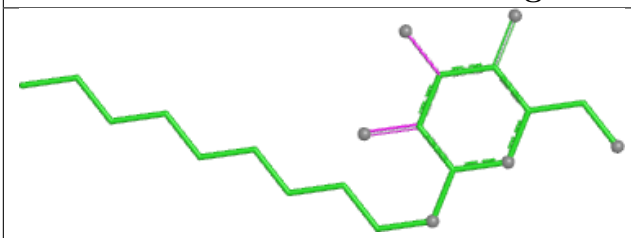


Torsions

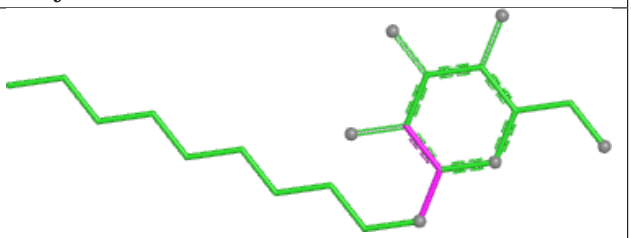


Rings

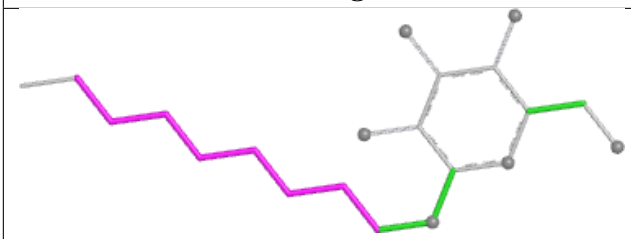
Ligand LMT y 101



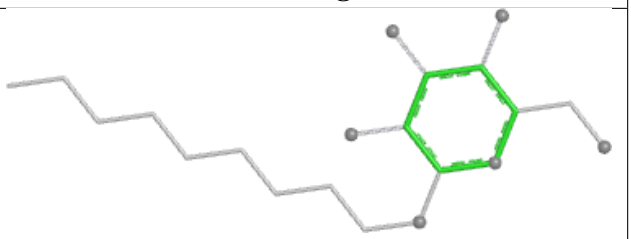
Bond lengths



Bond angles

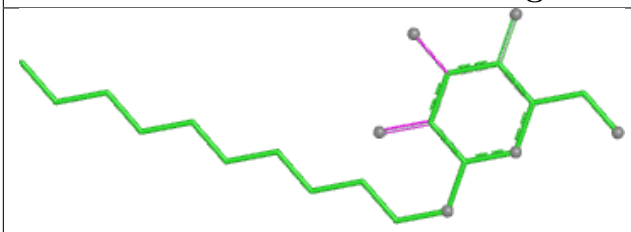


Torsions

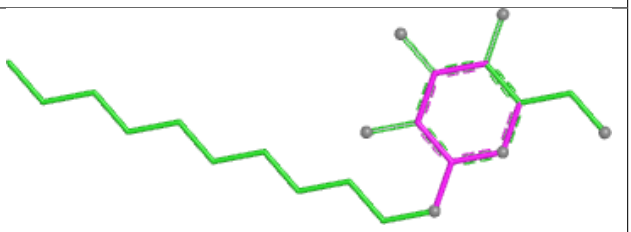


Rings

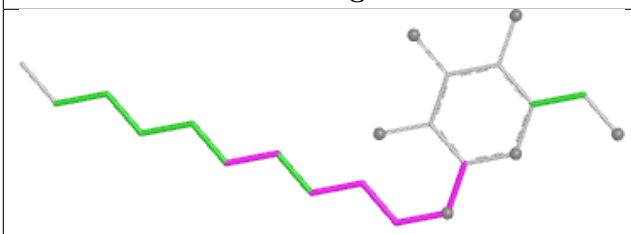
Ligand LMT e 101



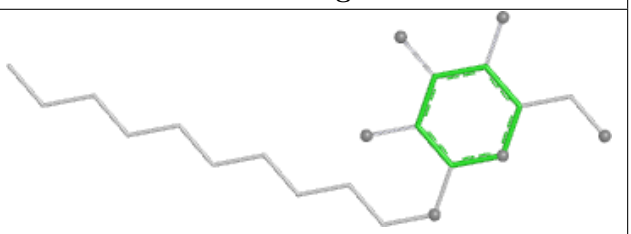
Bond lengths



Bond angles

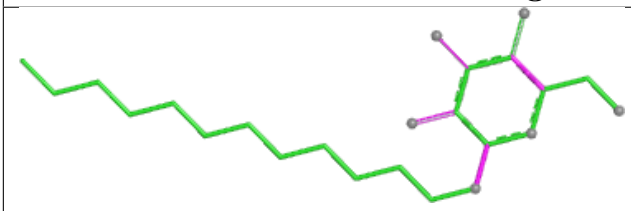


Torsions

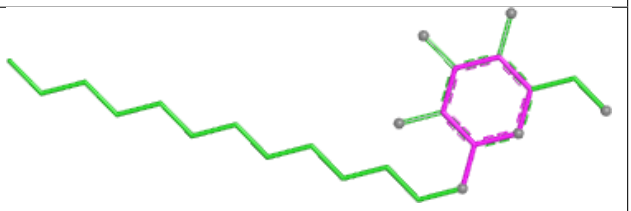


Rings

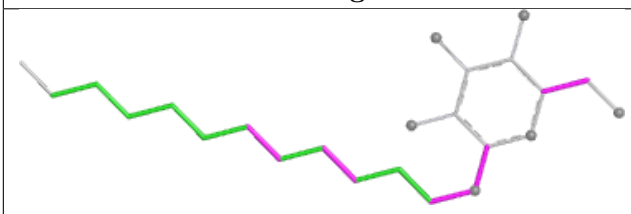
Ligand LMT c 522



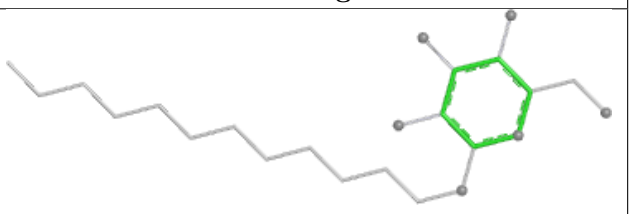
Bond lengths



Bond angles

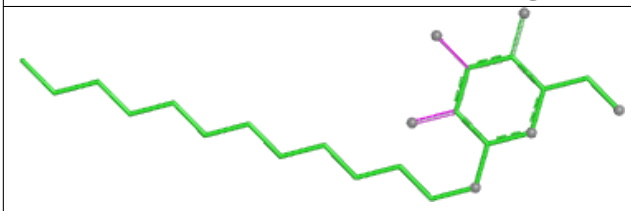


Torsions

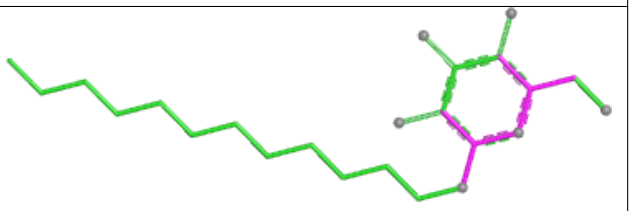


Rings

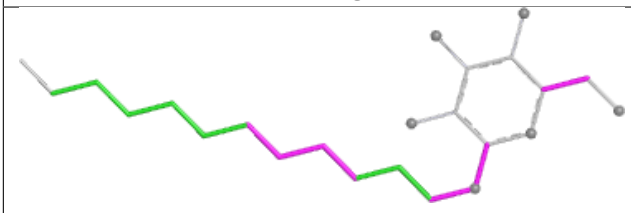
Ligand LMT d 410



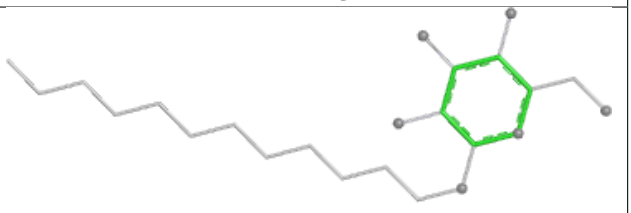
Bond lengths



Bond angles

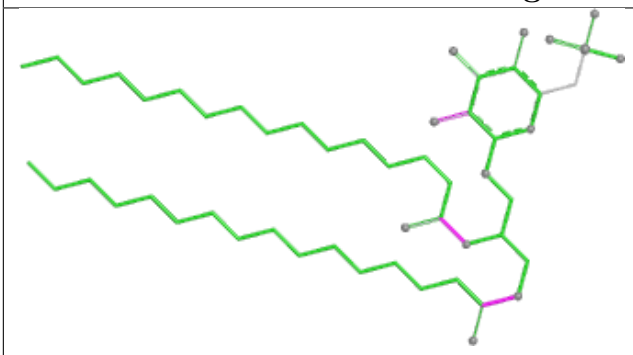


Torsions

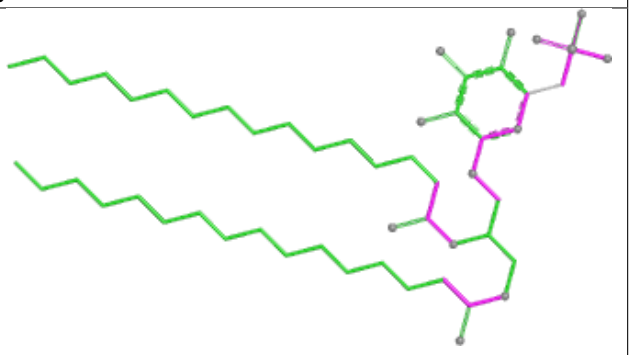


Rings

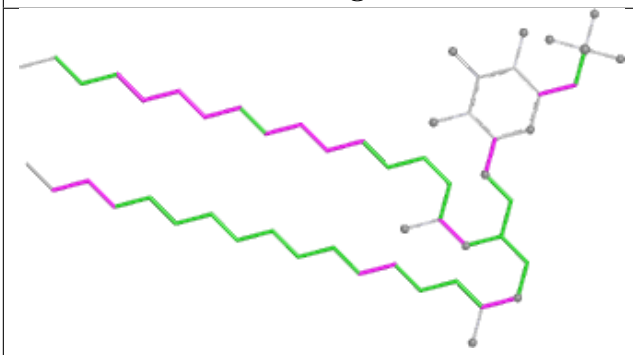
Ligand SQD H 103



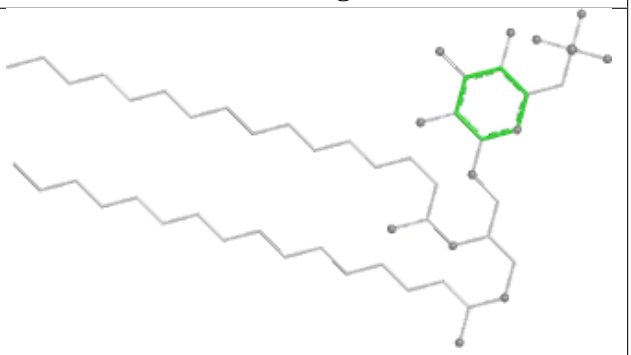
Bond lengths



Bond angles

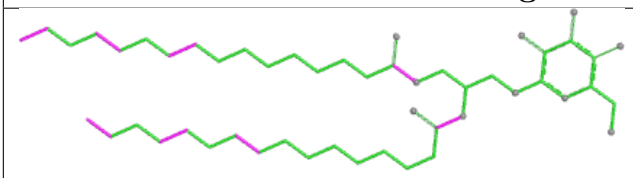


Torsions

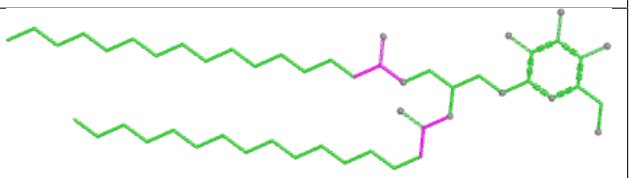


Rings

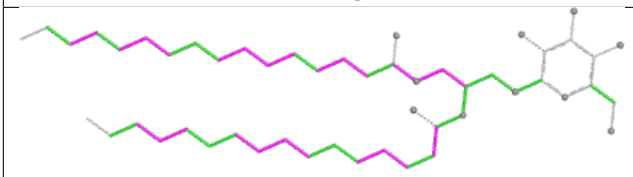
Ligand LMG A 410



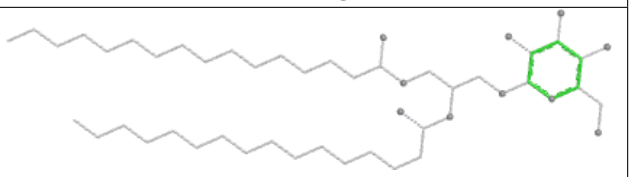
Bond lengths



Bond angles

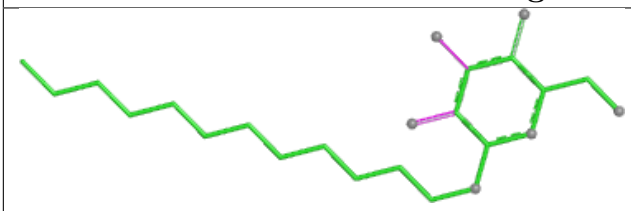


Torsions

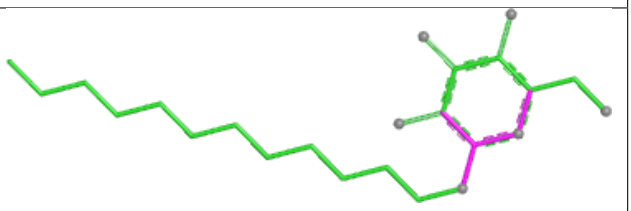


Rings

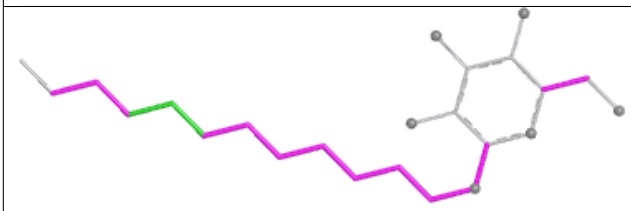
Ligand LMT t 101



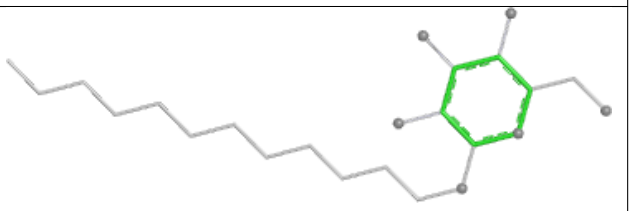
Bond lengths



Bond angles

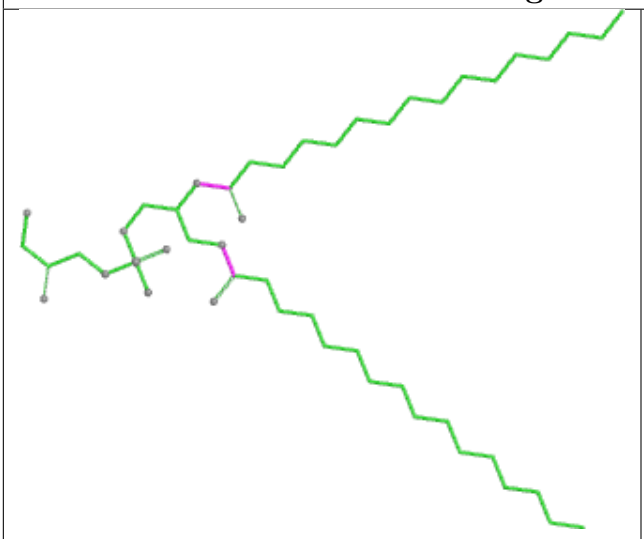


Torsions

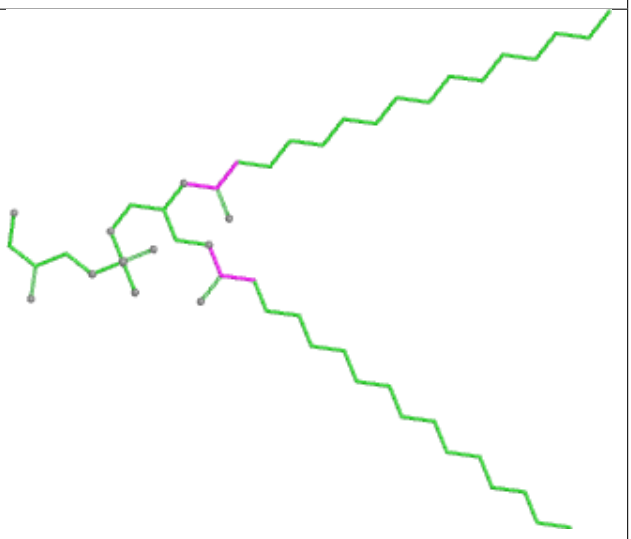


Rings

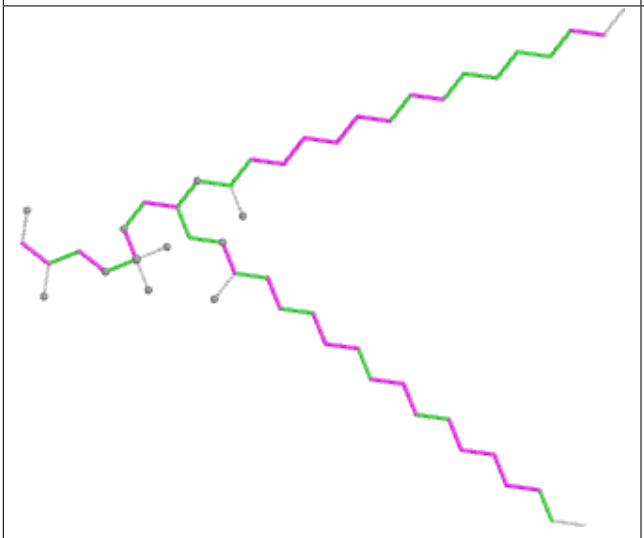
Ligand LHG d 408



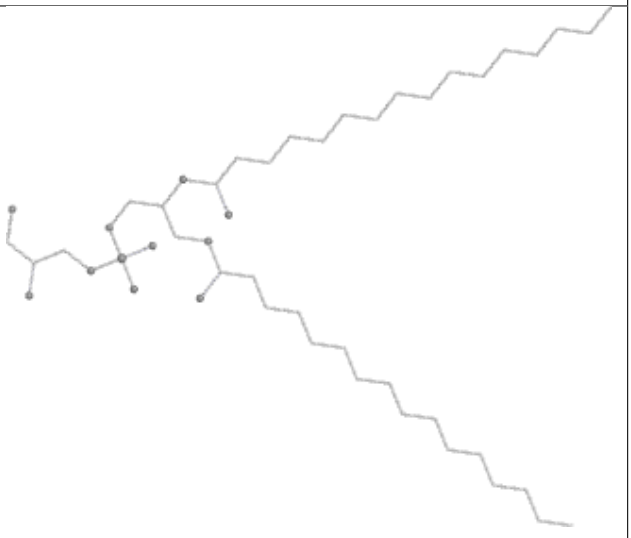
Bond lengths



Bond angles

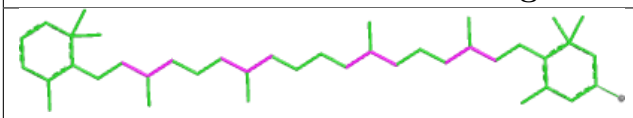


Torsions

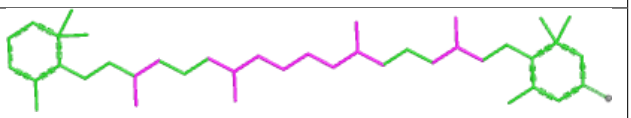


Rings

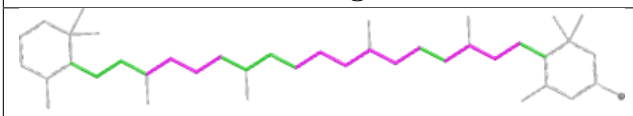
Ligand RRX H 101



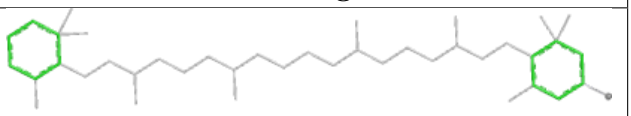
Bond lengths



Bond angles

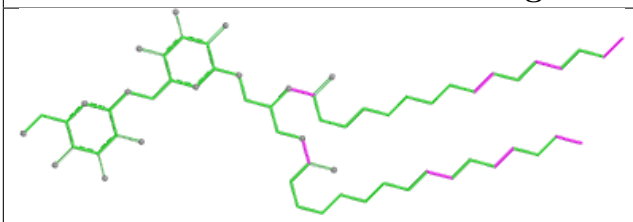


Torsions

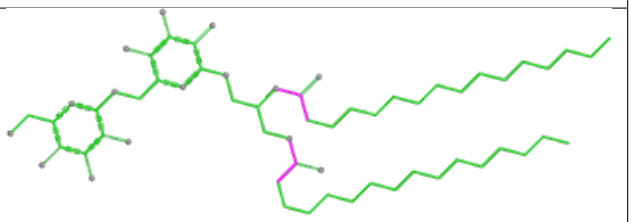


Rings

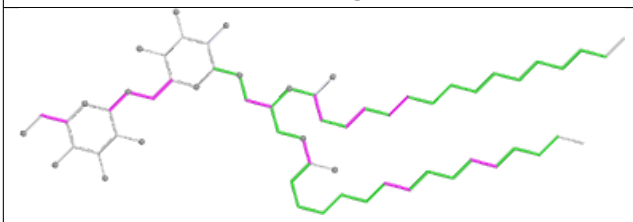
Ligand DGD c 516



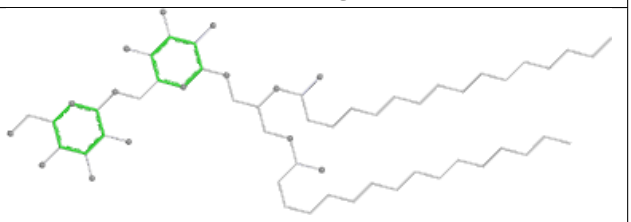
Bond lengths



Bond angles

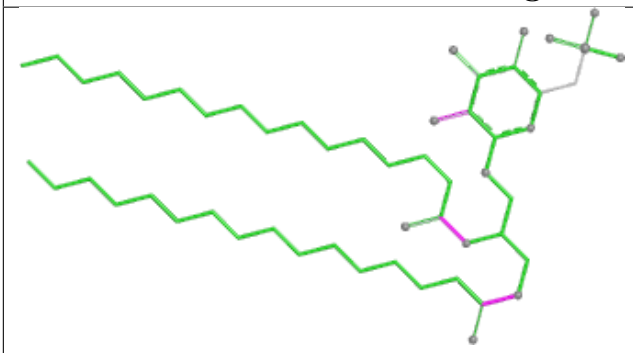


Torsions

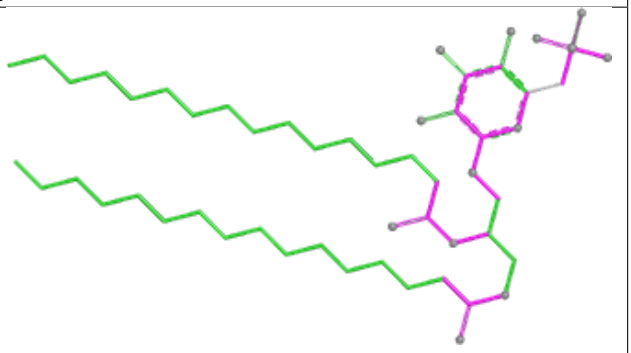


Rings

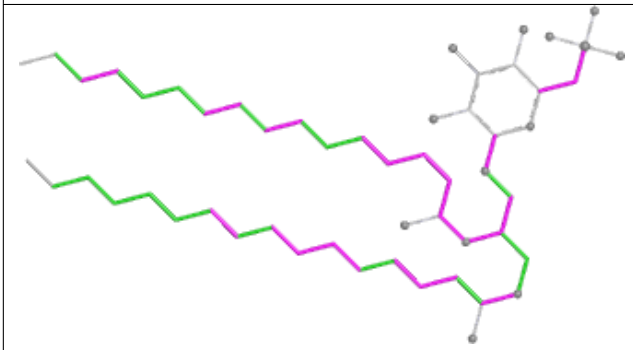
Ligand SQD A 412



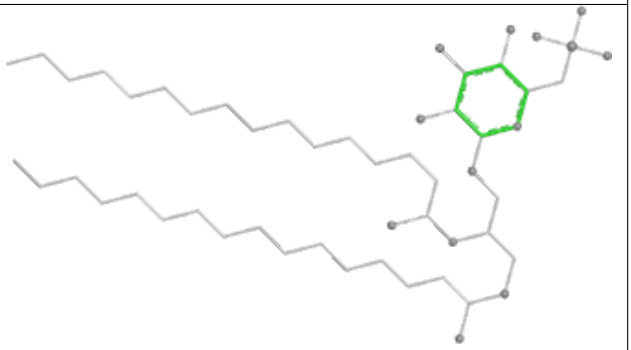
Bond lengths



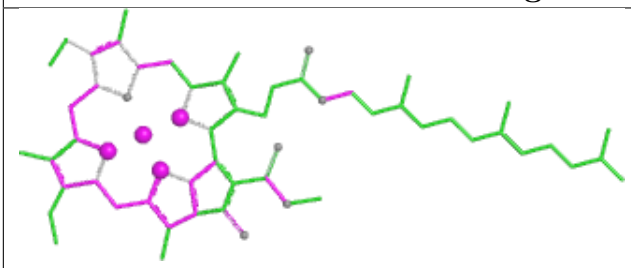
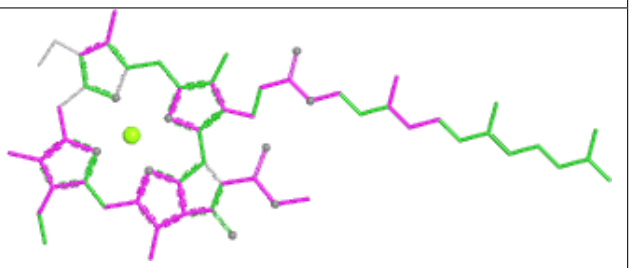
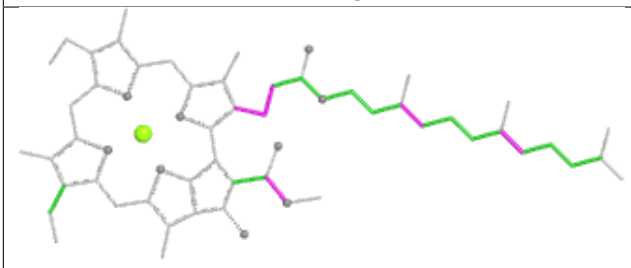
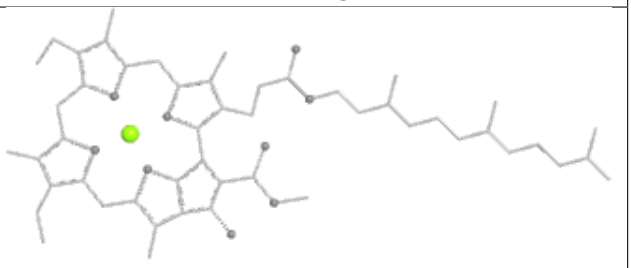
Bond angles

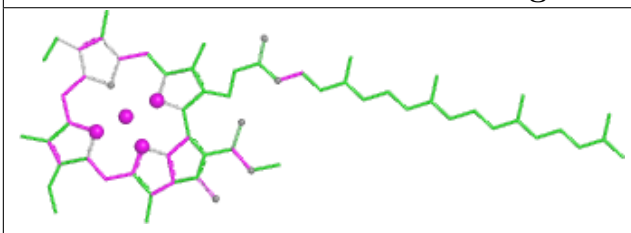
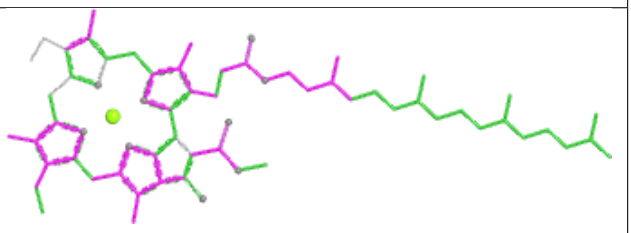
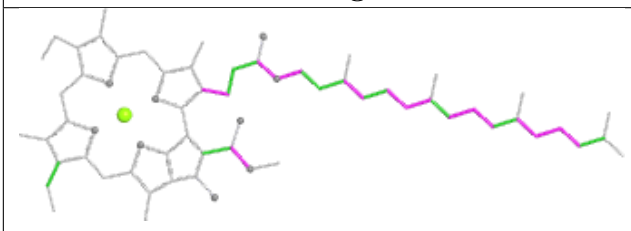
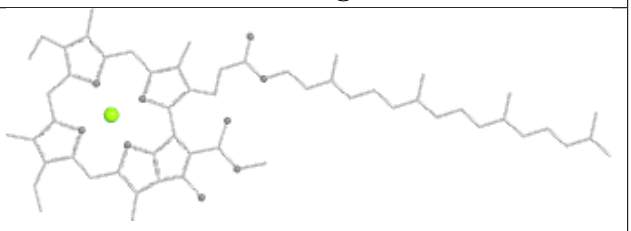


Torsions

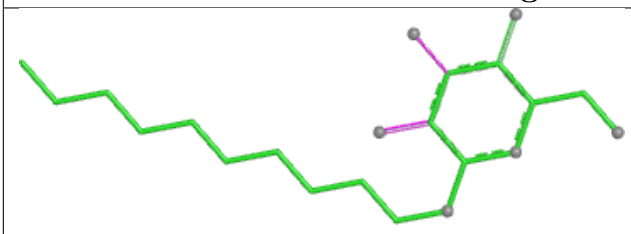


Rings

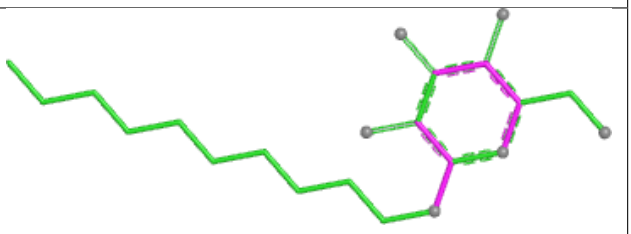
Ligand CLA B 606	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand CLA c 514	
	
Bond lengths	Bond angles
	
Torsions	Rings

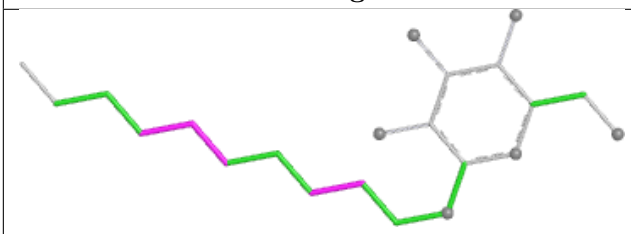
Ligand LMT X 103



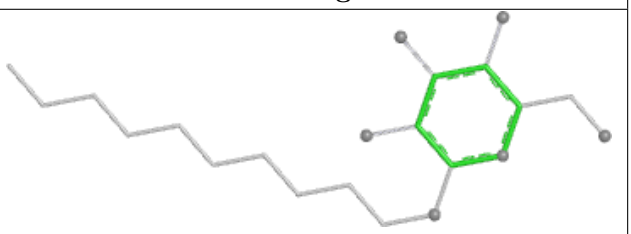
Bond lengths



Bond angles

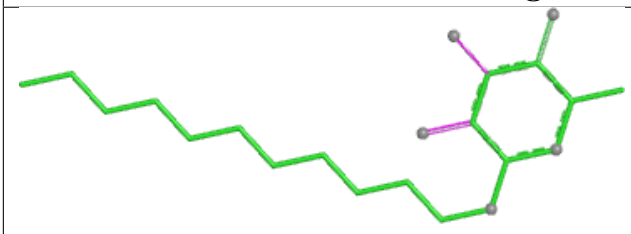


Torsions

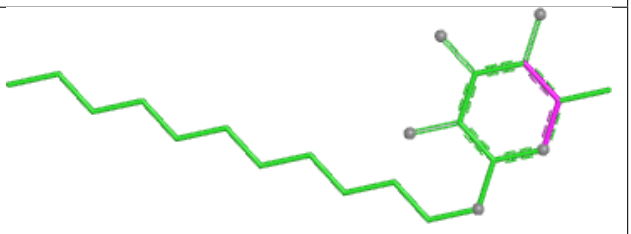


Rings

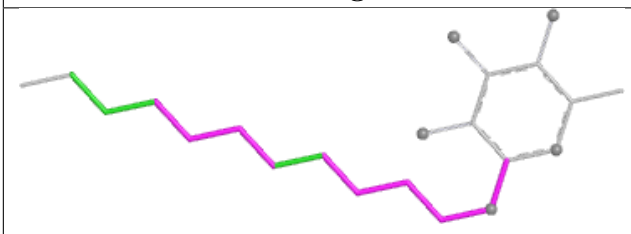
Ligand LMT x 102



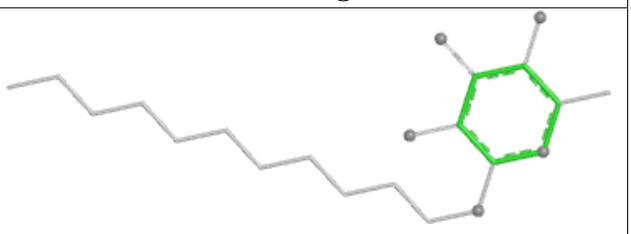
Bond lengths



Bond angles

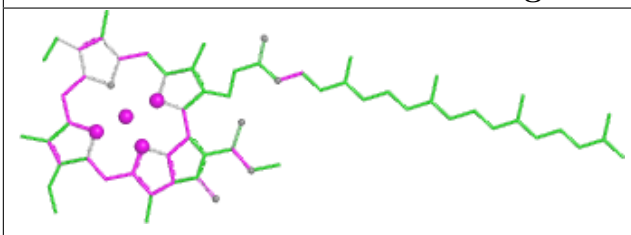


Torsions

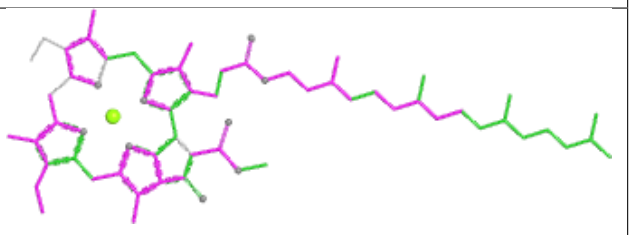


Rings

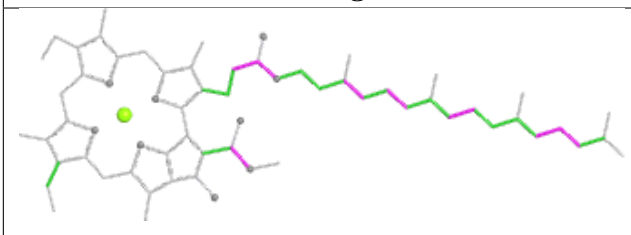
Ligand CLA C 511



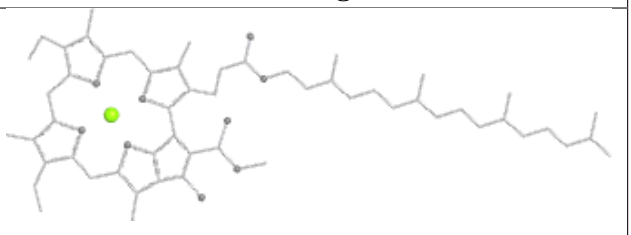
Bond lengths



Bond angles

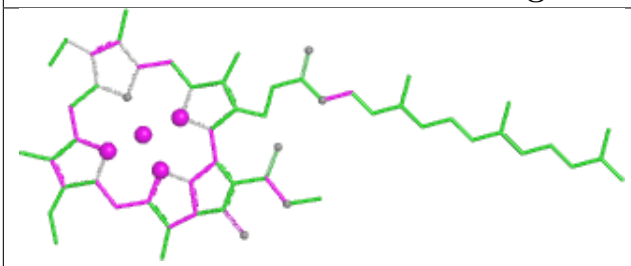


Torsions

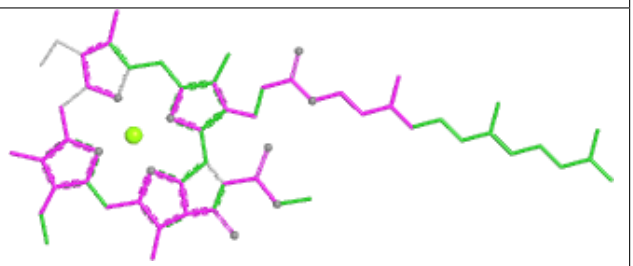


Rings

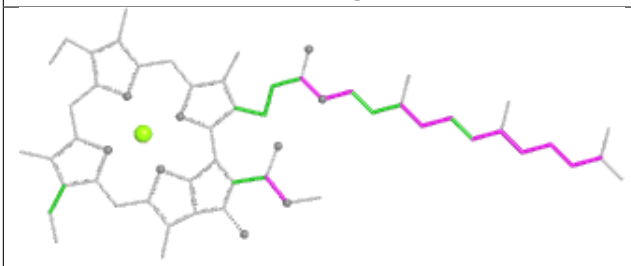
Ligand CLA b 616



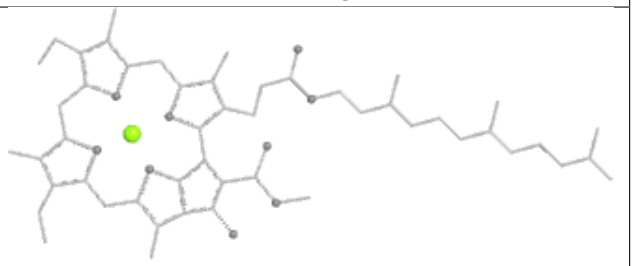
Bond lengths



Bond angles

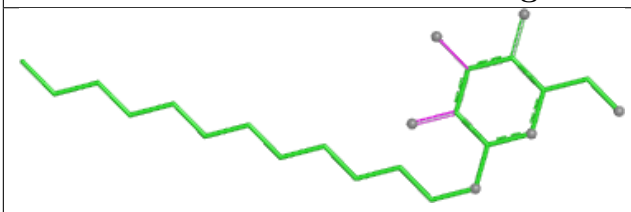


Torsions

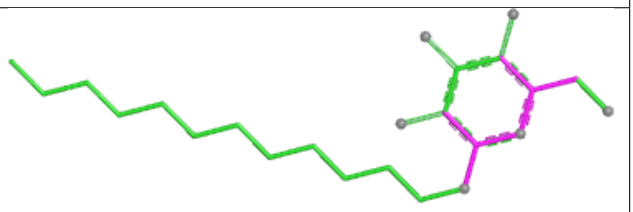


Rings

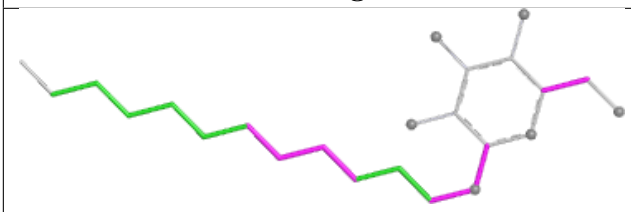
Ligand LMT D 410



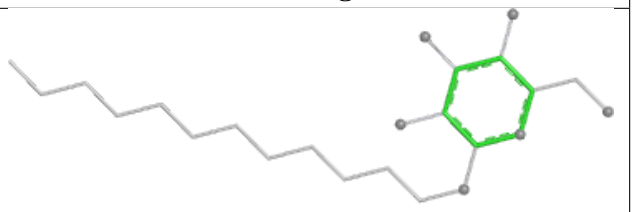
Bond lengths



Bond angles

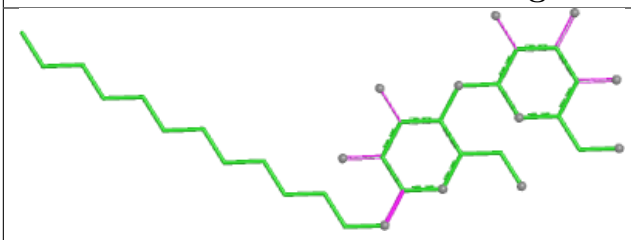


Torsions

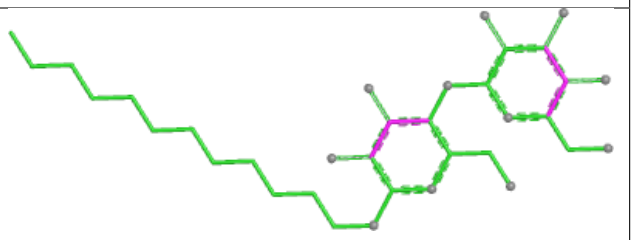


Rings

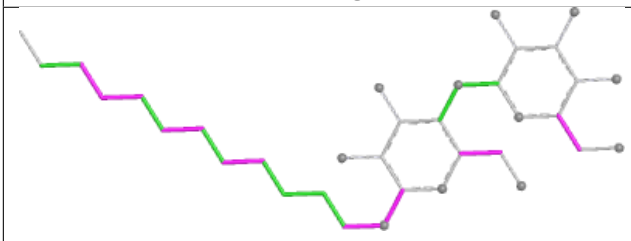
Ligand LMT f 103



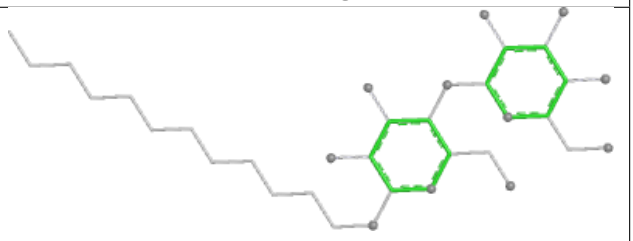
Bond lengths



Bond angles

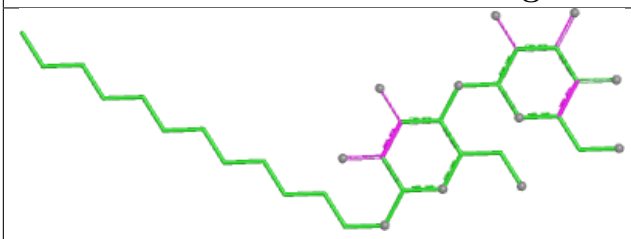


Torsions

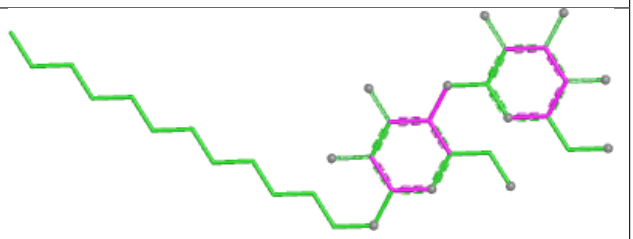


Rings

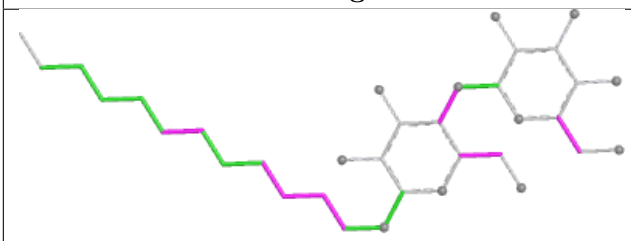
Ligand LMT E 103



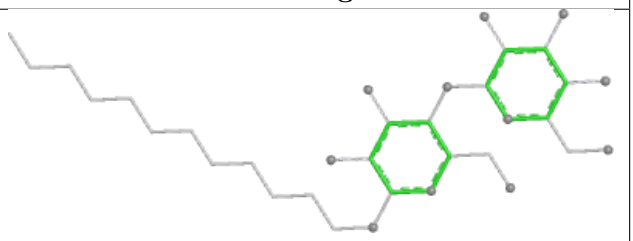
Bond lengths



Bond angles

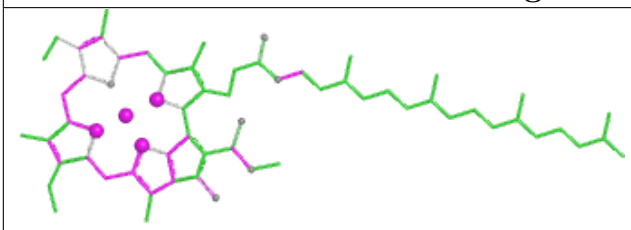


Torsions

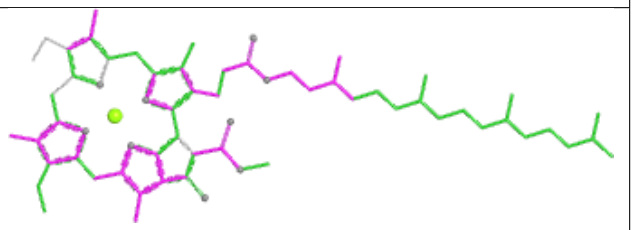


Rings

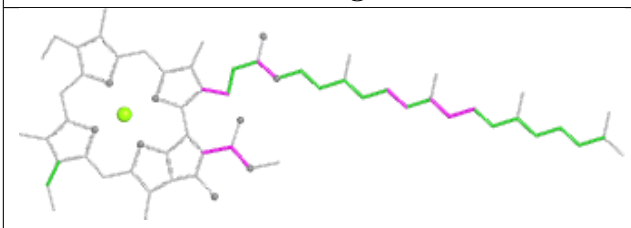
Ligand CLA B 605



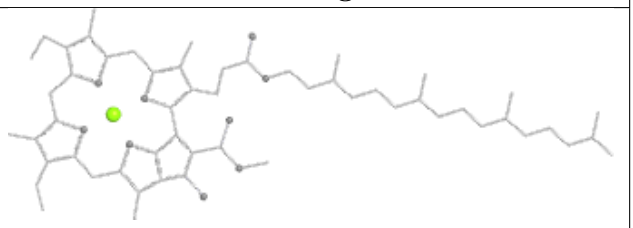
Bond lengths



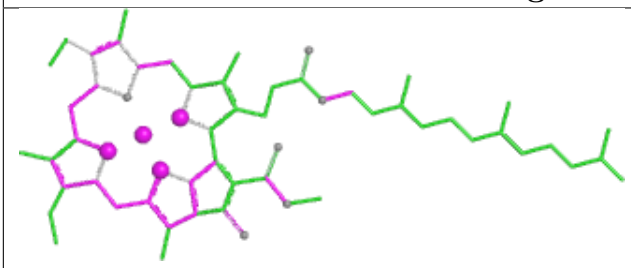
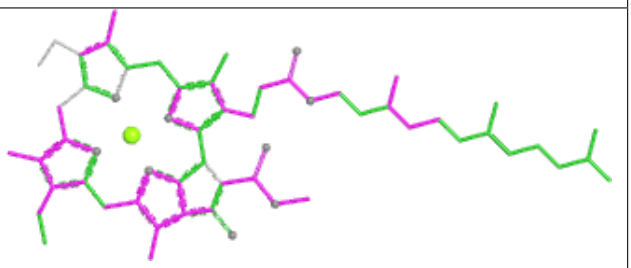
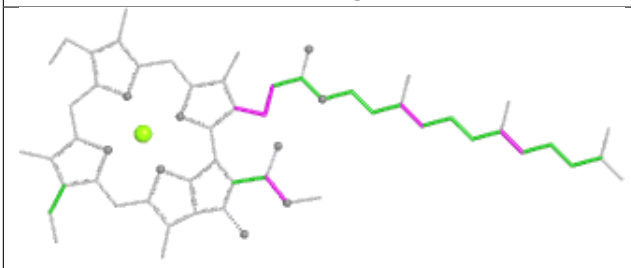
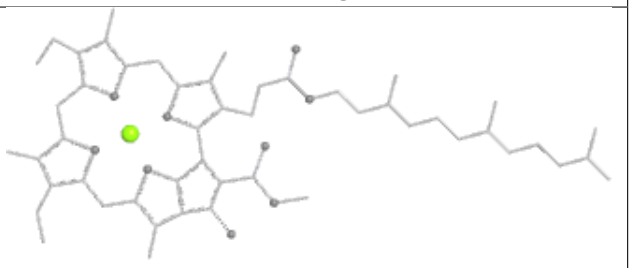
Bond angles

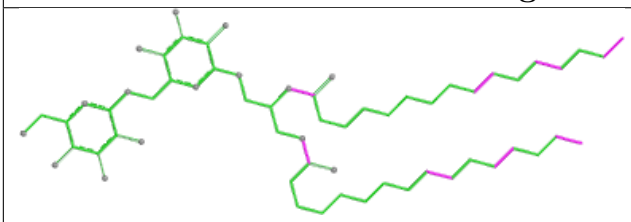
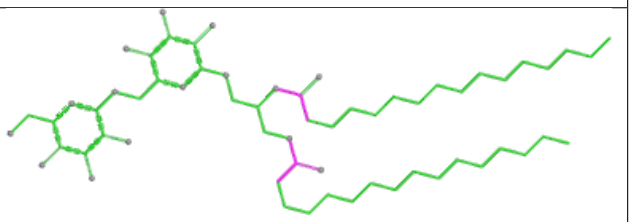
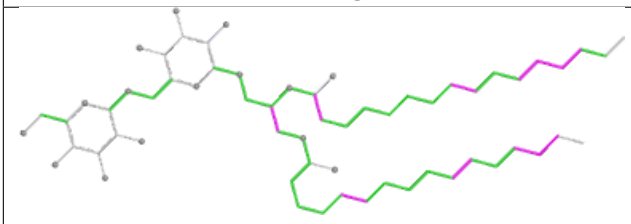
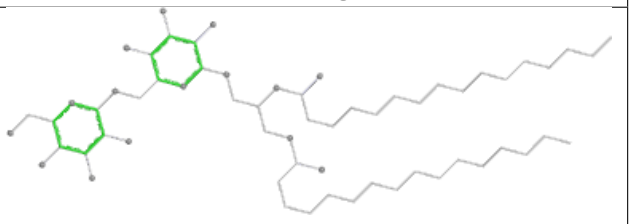


Torsions

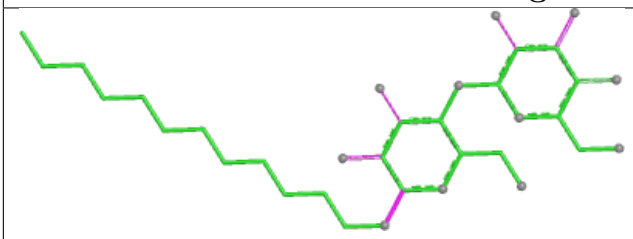


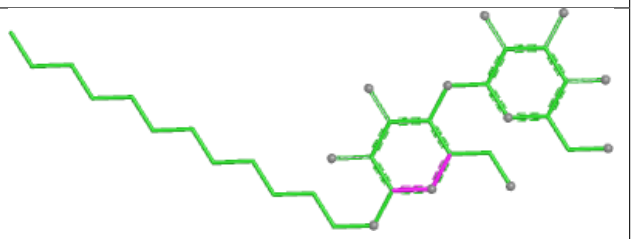
Rings

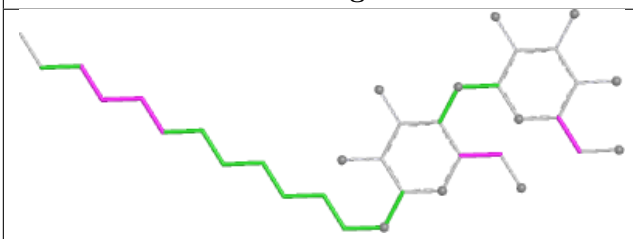
Ligand CLA b 606	
 Bond lengths	 Bond angles
 Torsions	 Rings

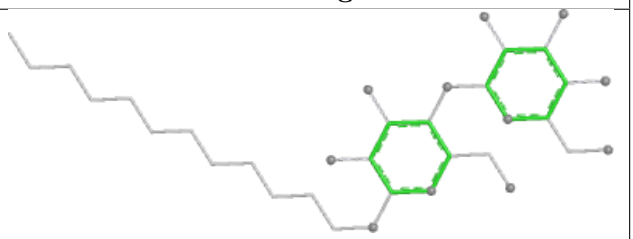
Ligand DGD H 104	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT i 103

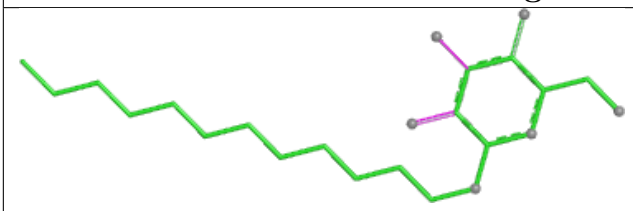

Bond lengths

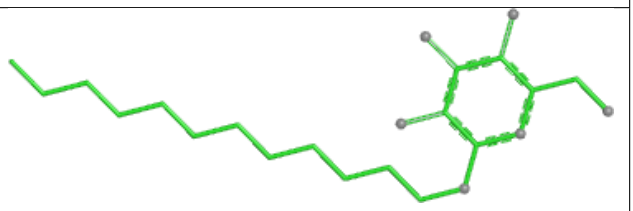

Bond angles

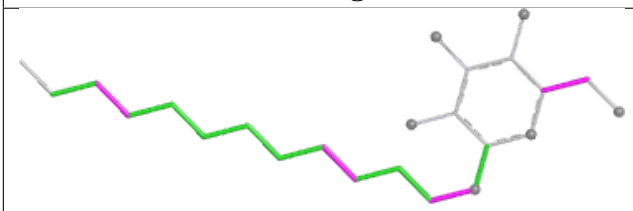

Torsions

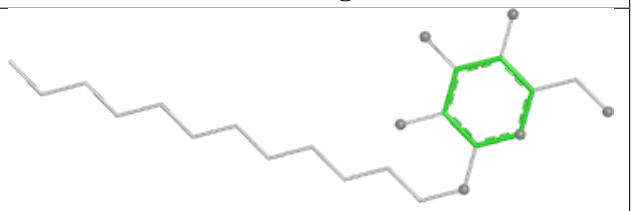

Rings

Ligand LMT b 626

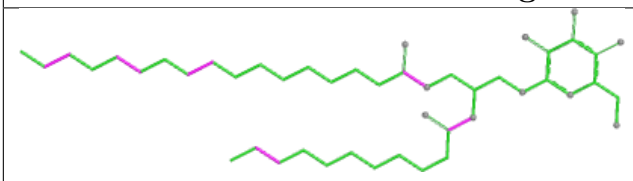

Bond lengths

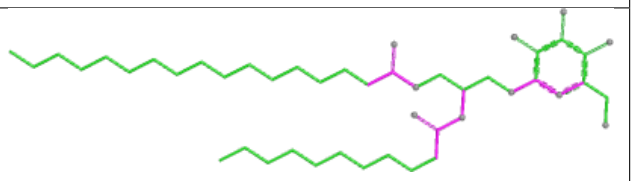

Bond angles

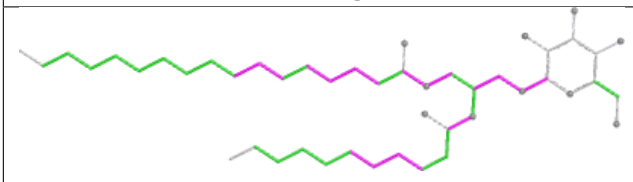

Torsions

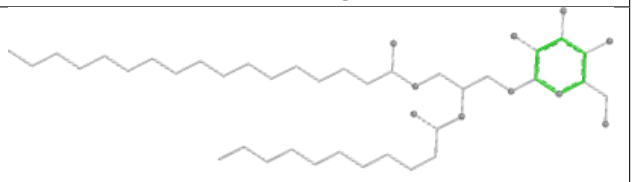

Rings

Ligand LMG H 105

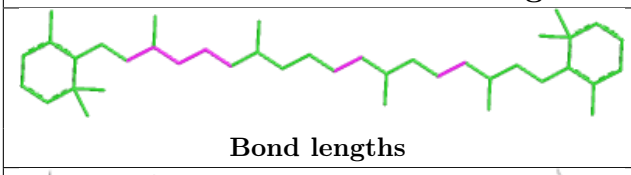

Bond lengths


Bond angles

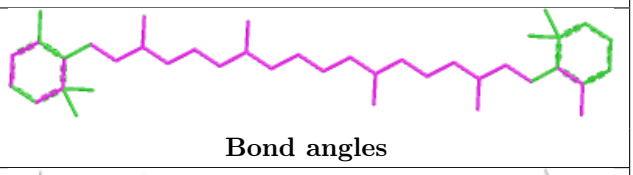

Torsions


Rings

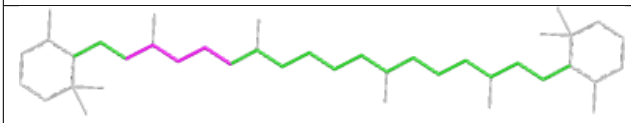
Ligand BCR b 618



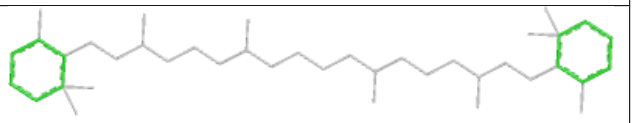
Bond lengths



Bond angles



Torsions

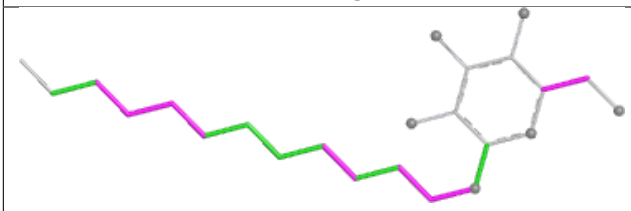


Rings

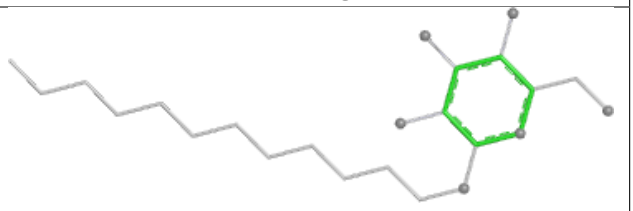
Ligand LMT I 102

Bond lengths

Bond angles

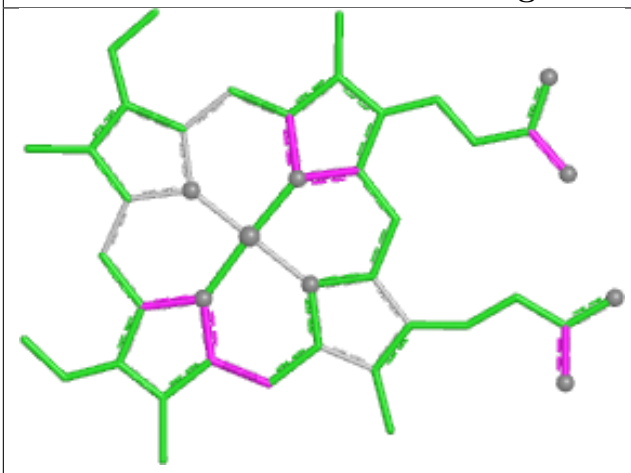


Torsions

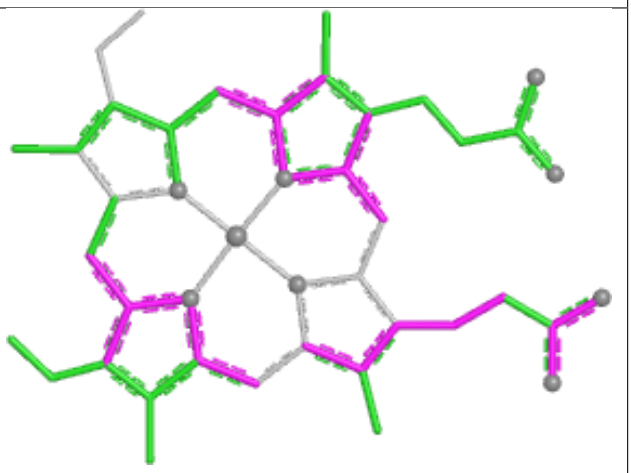


Rings

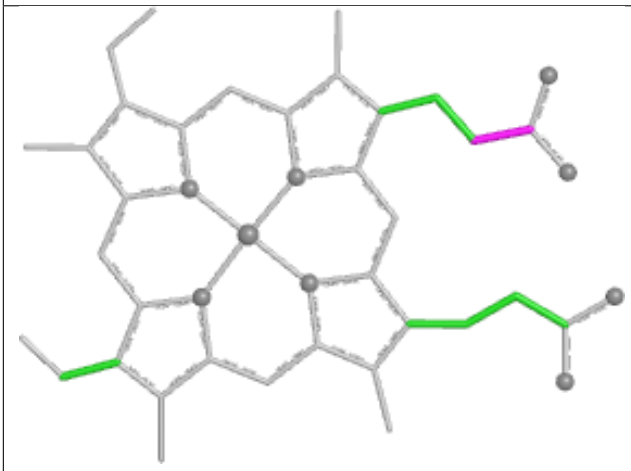
Ligand HEM V 201



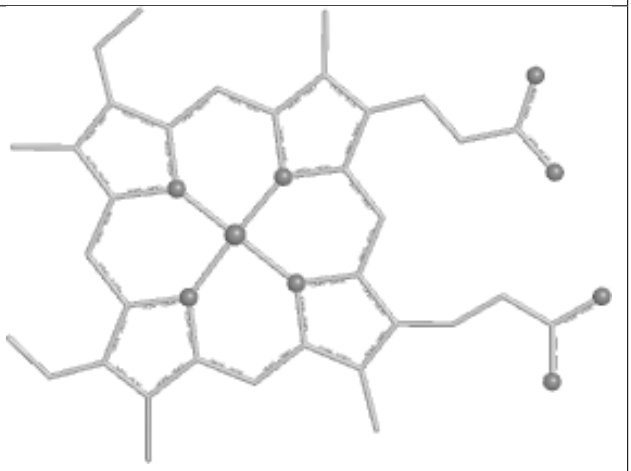
Bond lengths



Bond angles

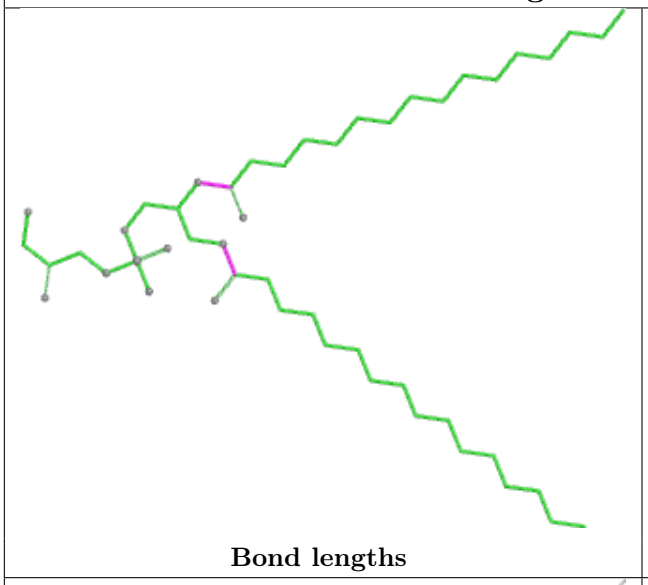


Torsions

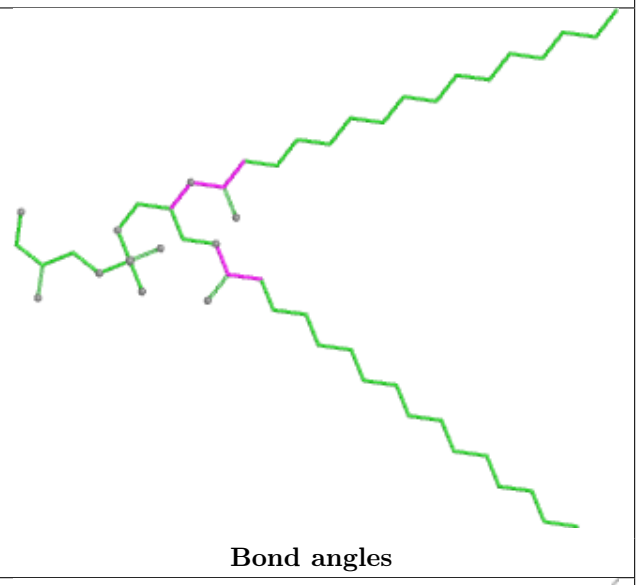


Rings

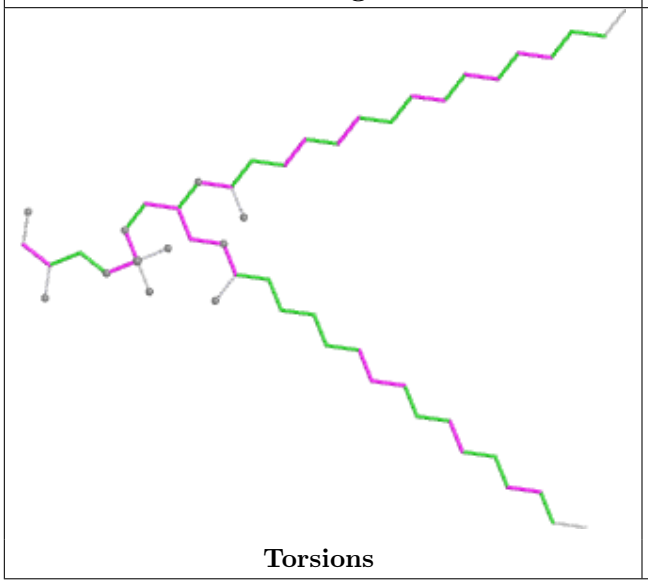
Ligand LHG b 628



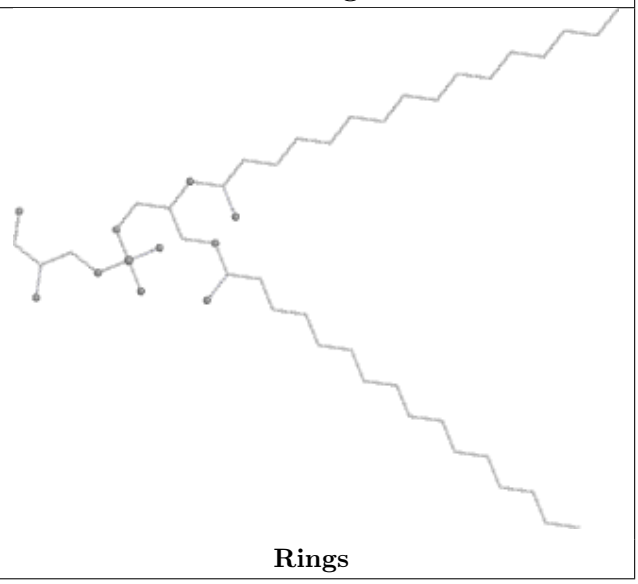
Bond lengths



Bond angles

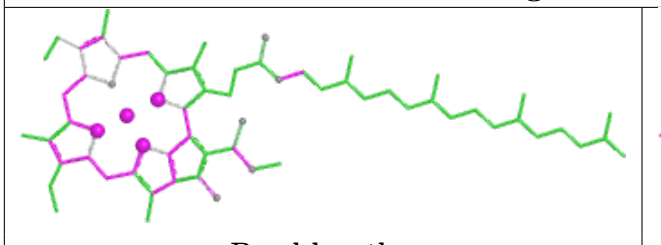


Torsions

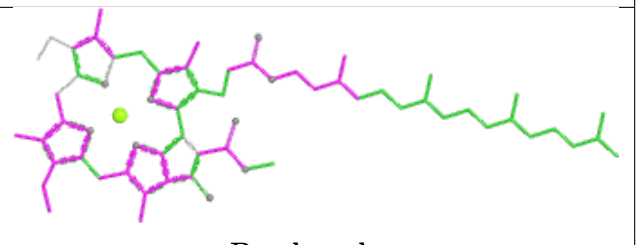


Rings

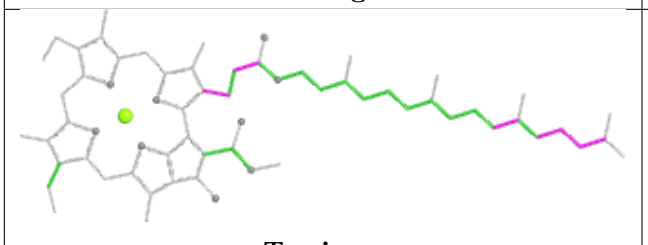
Ligand CLA B 608



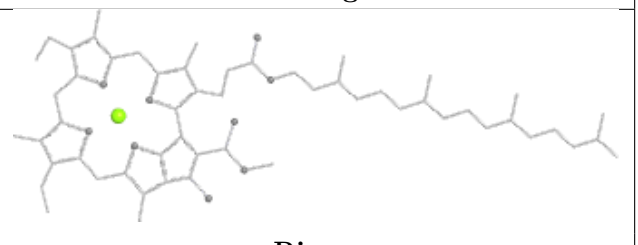
Bond lengths



Bond angles

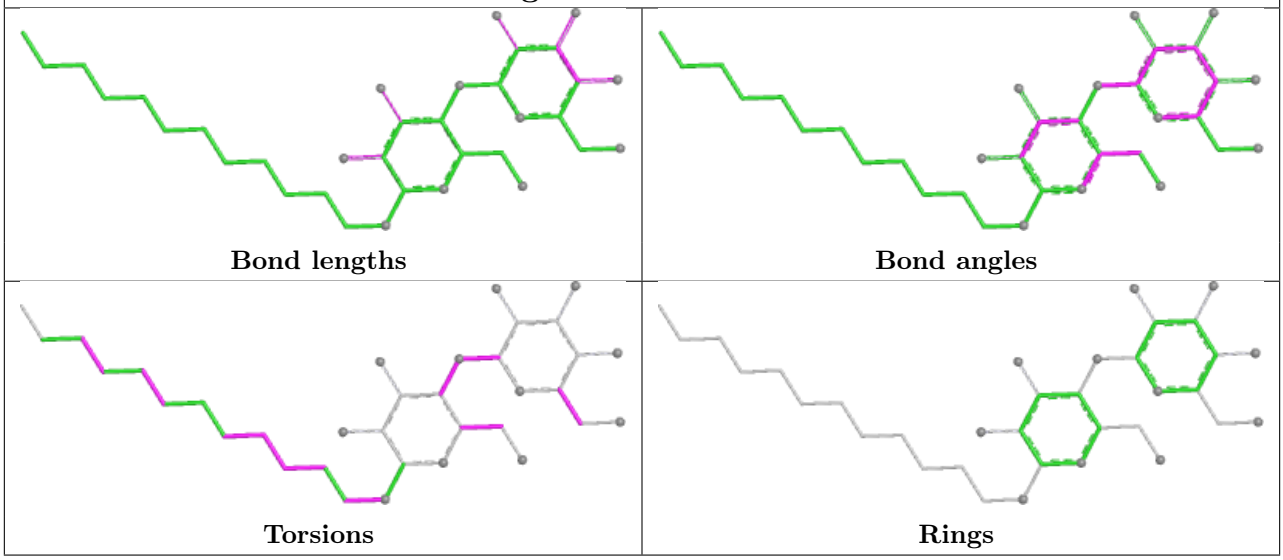


Torsions

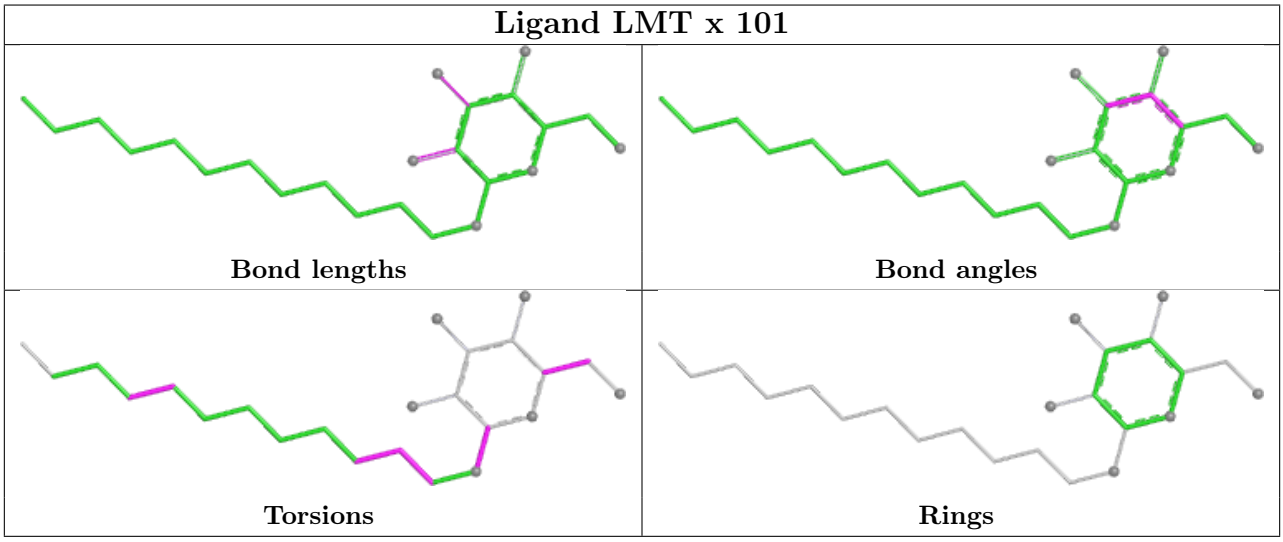


Rings

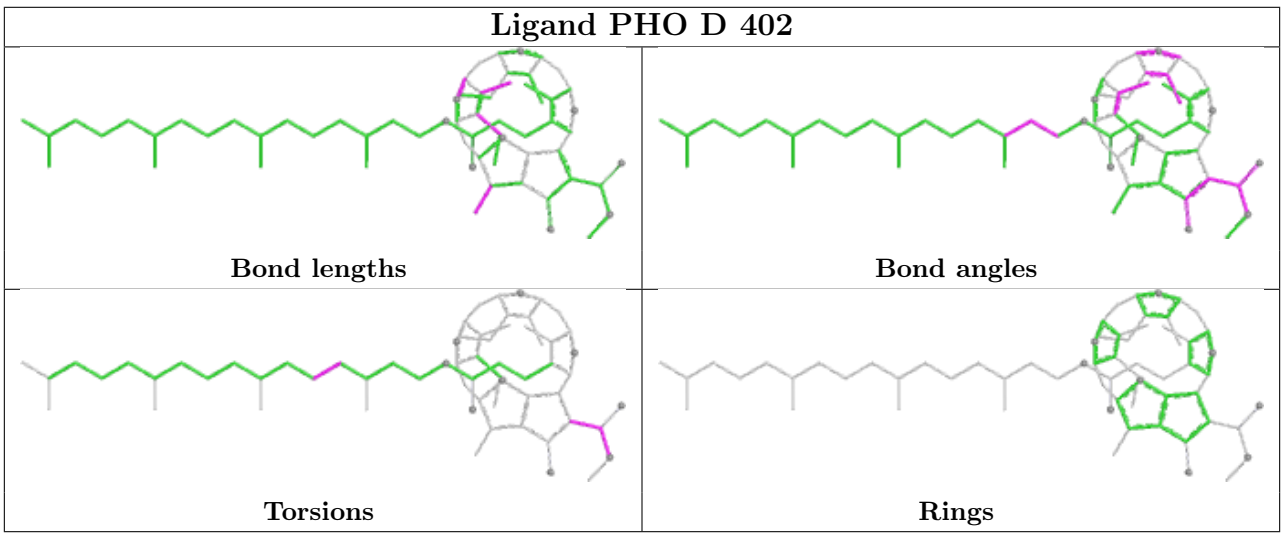
Ligand LMT K 105



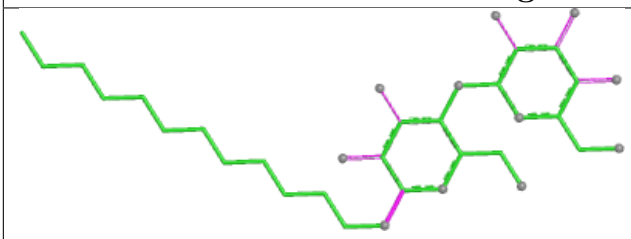
Ligand LMT x 101



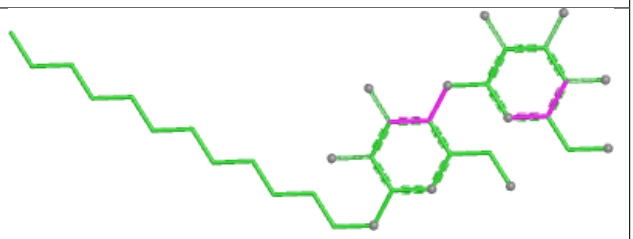
Ligand PHO D 402



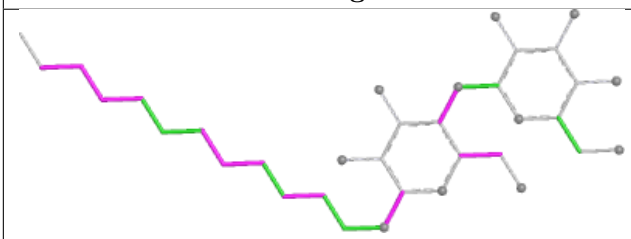
Ligand LMT M 101



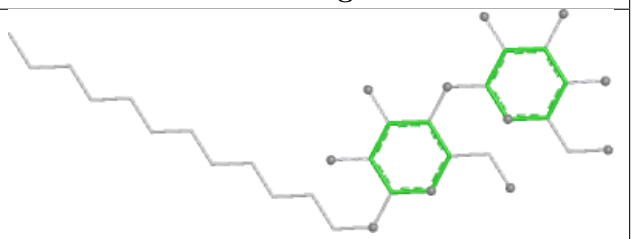
Bond lengths



Bond angles

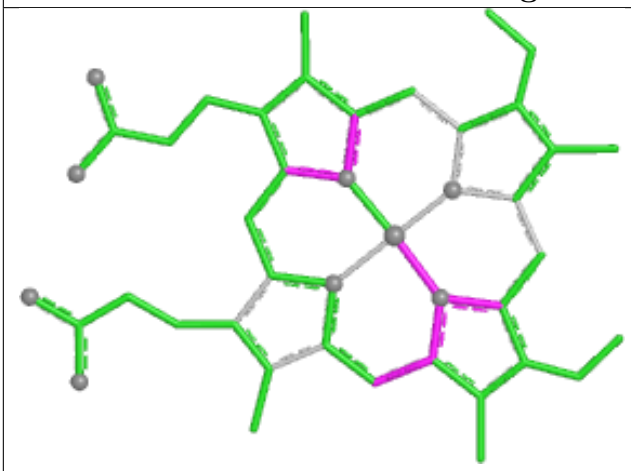


Torsions

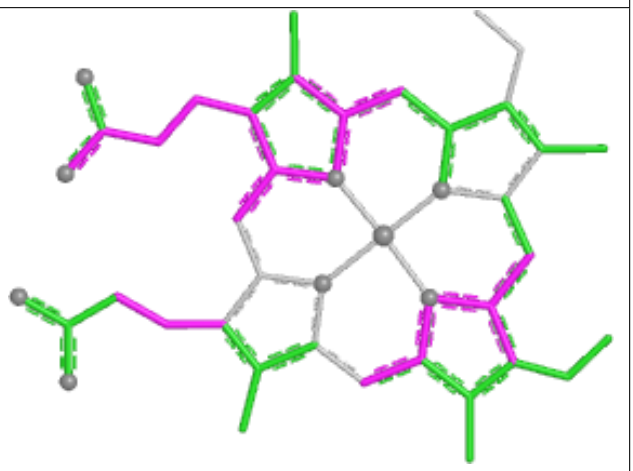


Rings

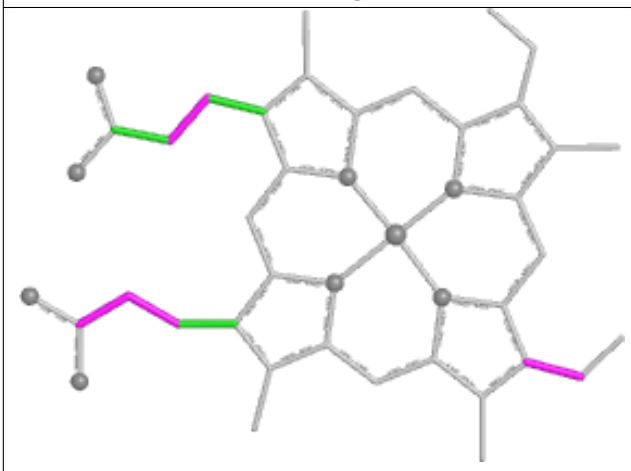
Ligand HEM E 104



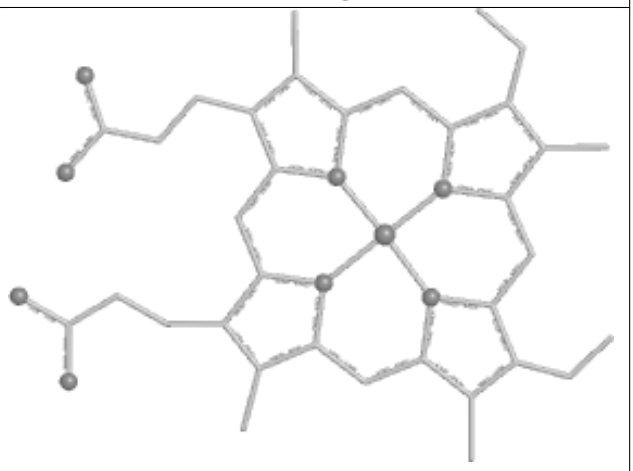
Bond lengths



Bond angles

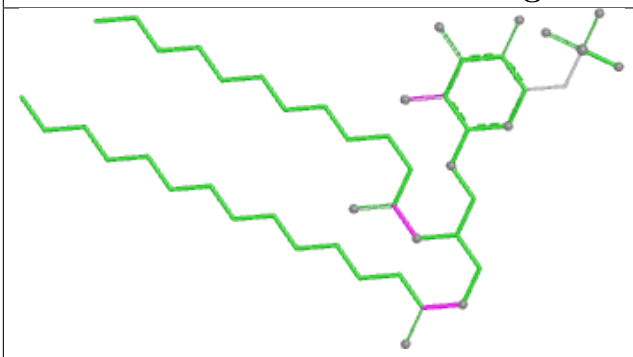


Torsions

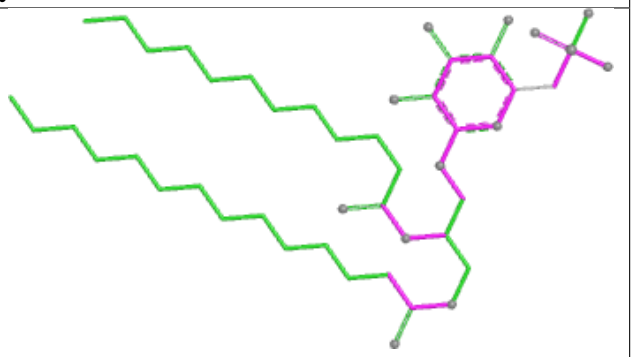


Rings

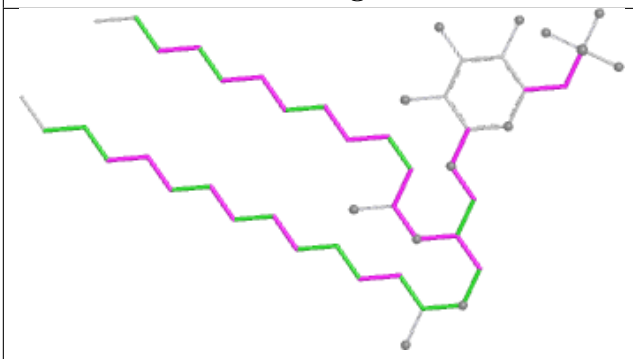
Ligand SQD A 413



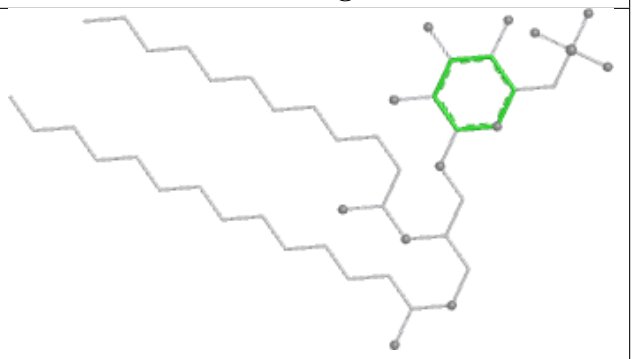
Bond lengths



Bond angles

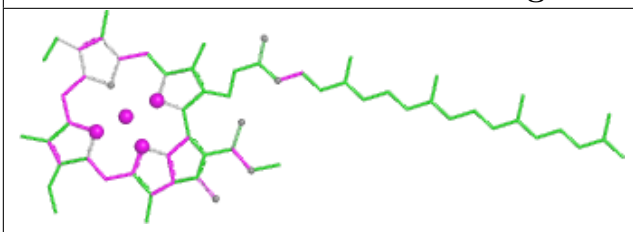


Torsions

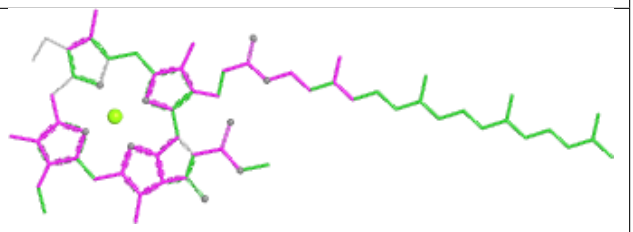


Rings

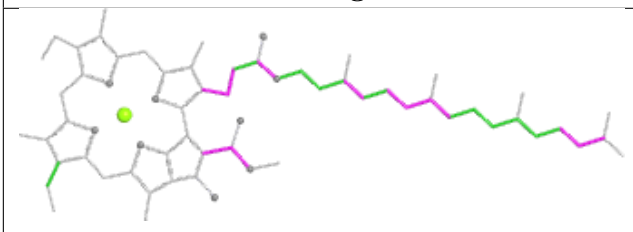
Ligand CLA b 603



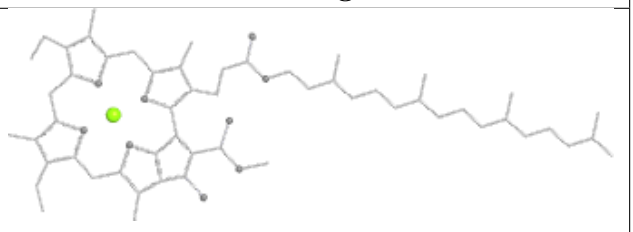
Bond lengths



Bond angles

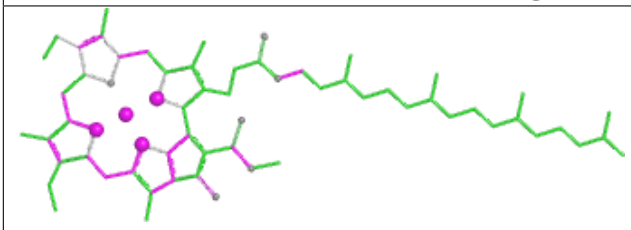


Torsions

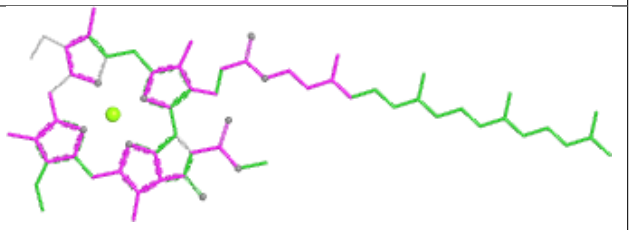


Rings

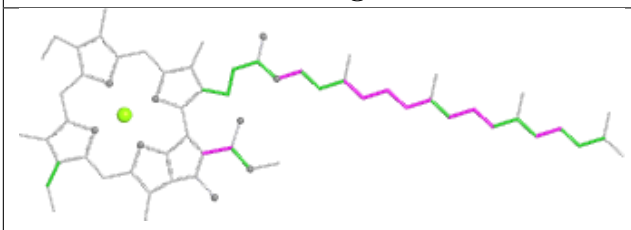
Ligand CLA b 604



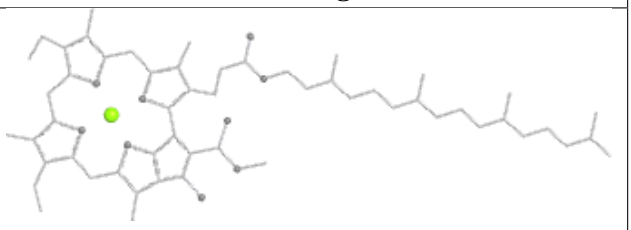
Bond lengths



Bond angles

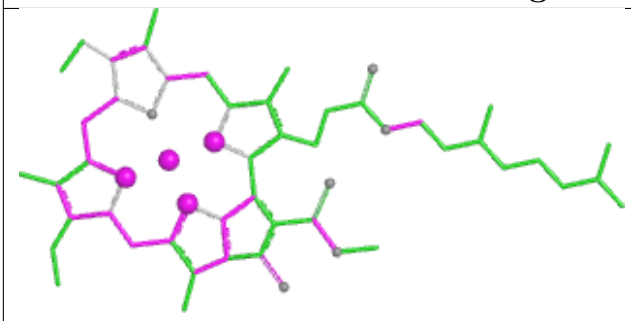


Torsions

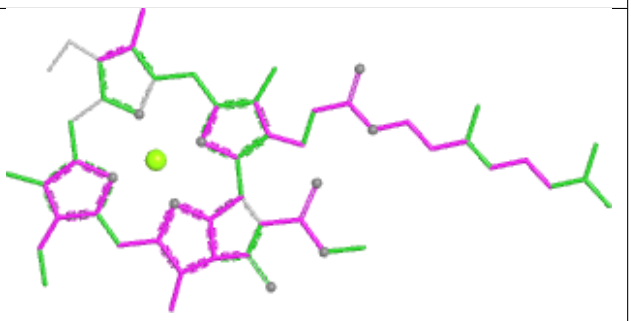


Rings

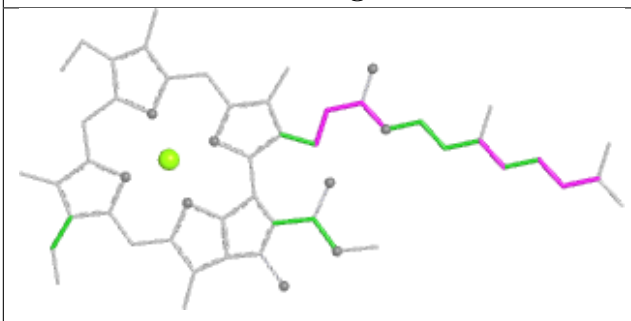
Ligand CLA c 506



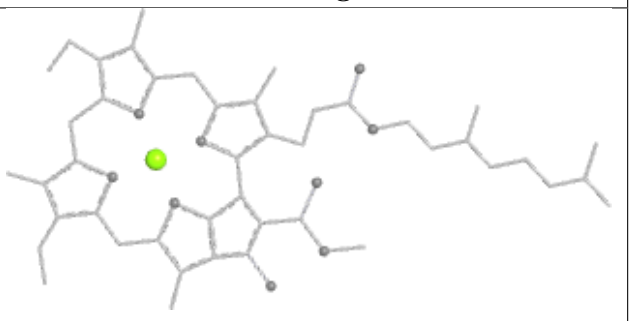
Bond lengths



Bond angles

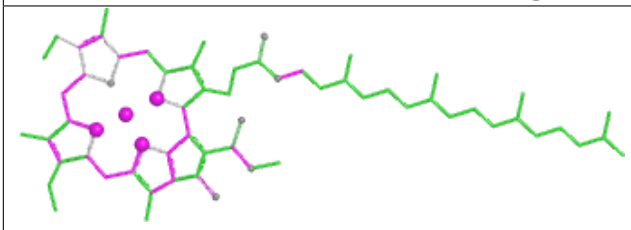


Torsions

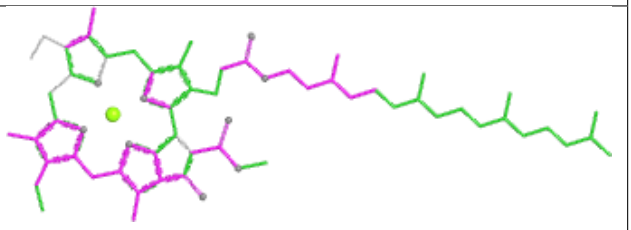


Rings

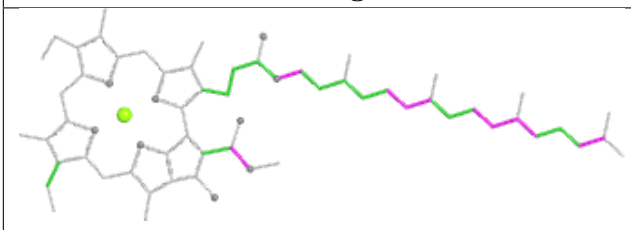
Ligand CLA b 615



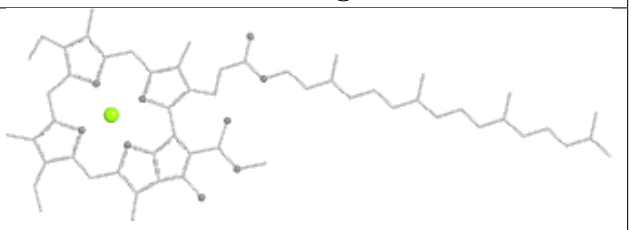
Bond lengths



Bond angles

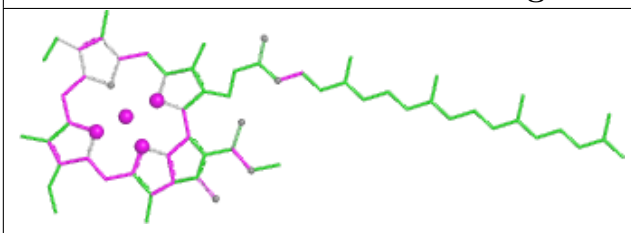


Torsions

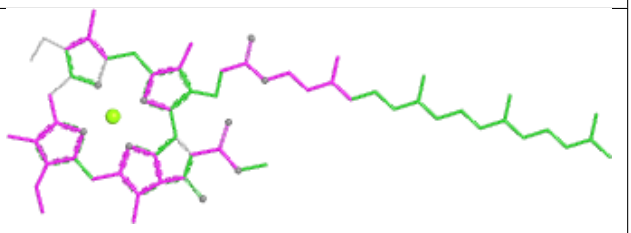


Rings

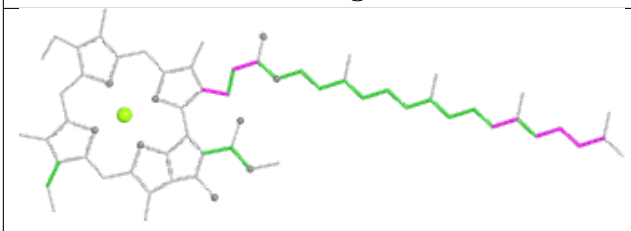
Ligand CLA b 608



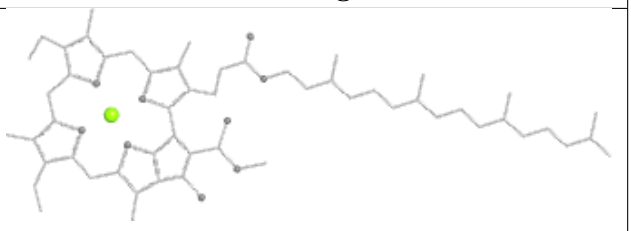
Bond lengths



Bond angles

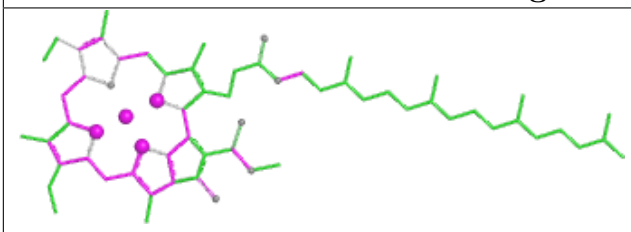


Torsions

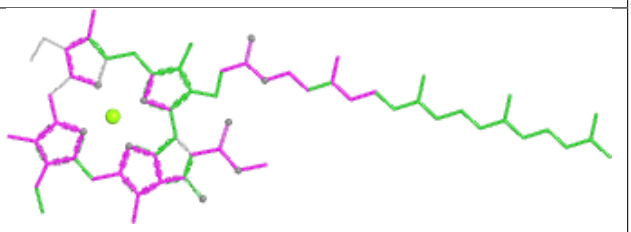


Rings

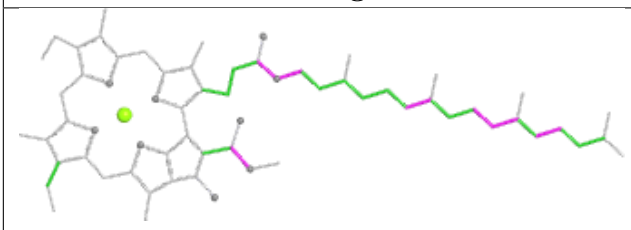
Ligand CLA c 510



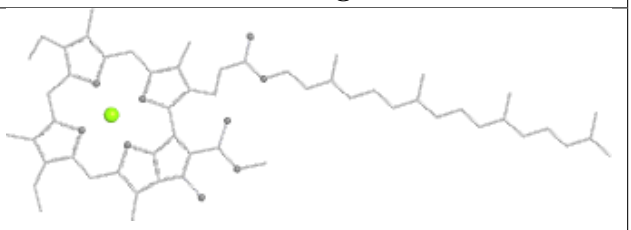
Bond lengths



Bond angles

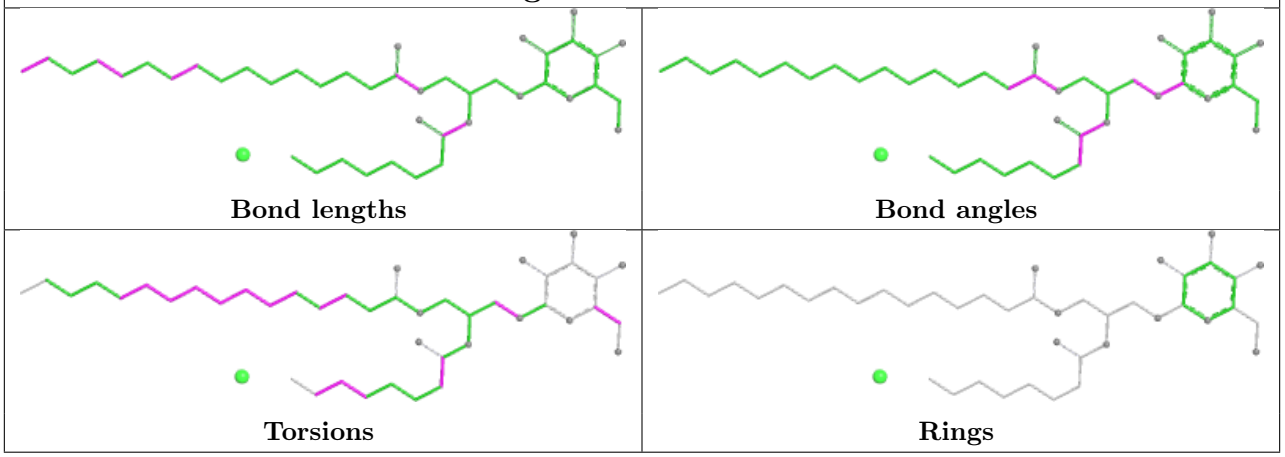


Torsions

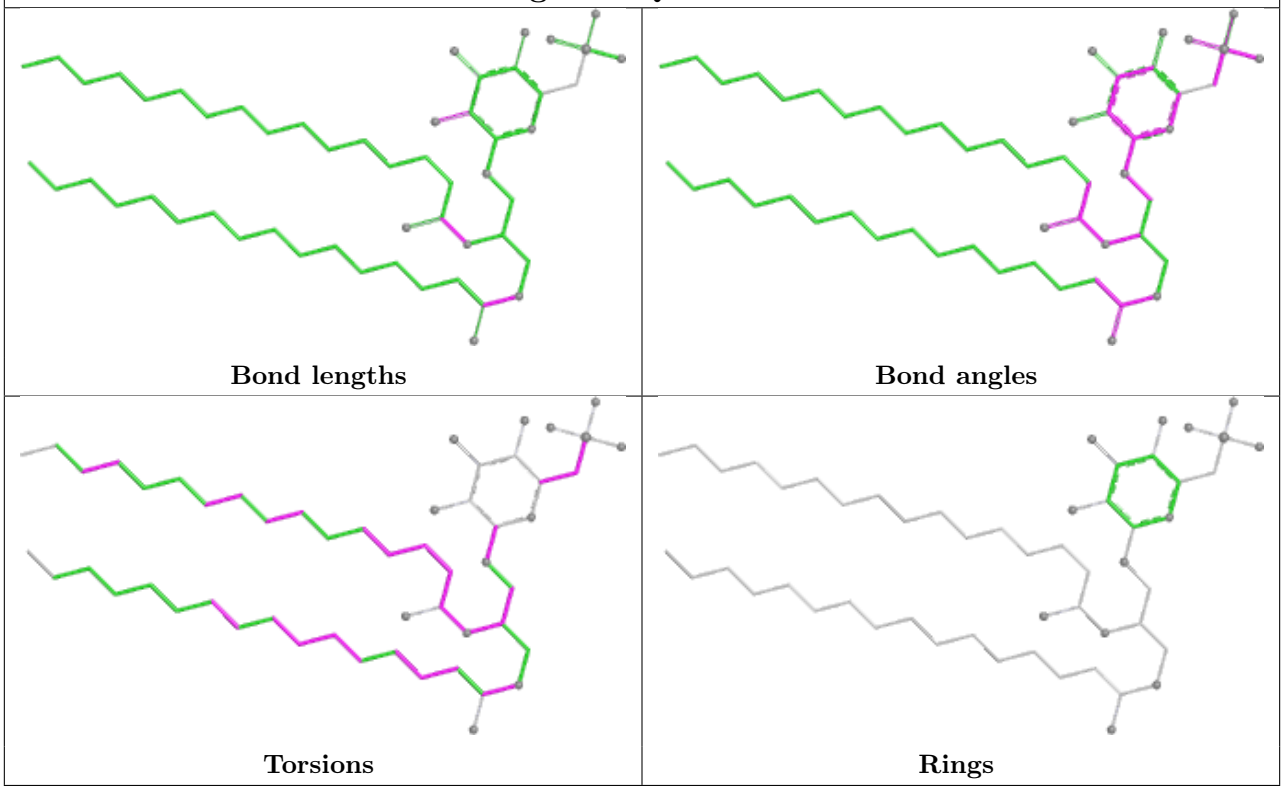


Rings

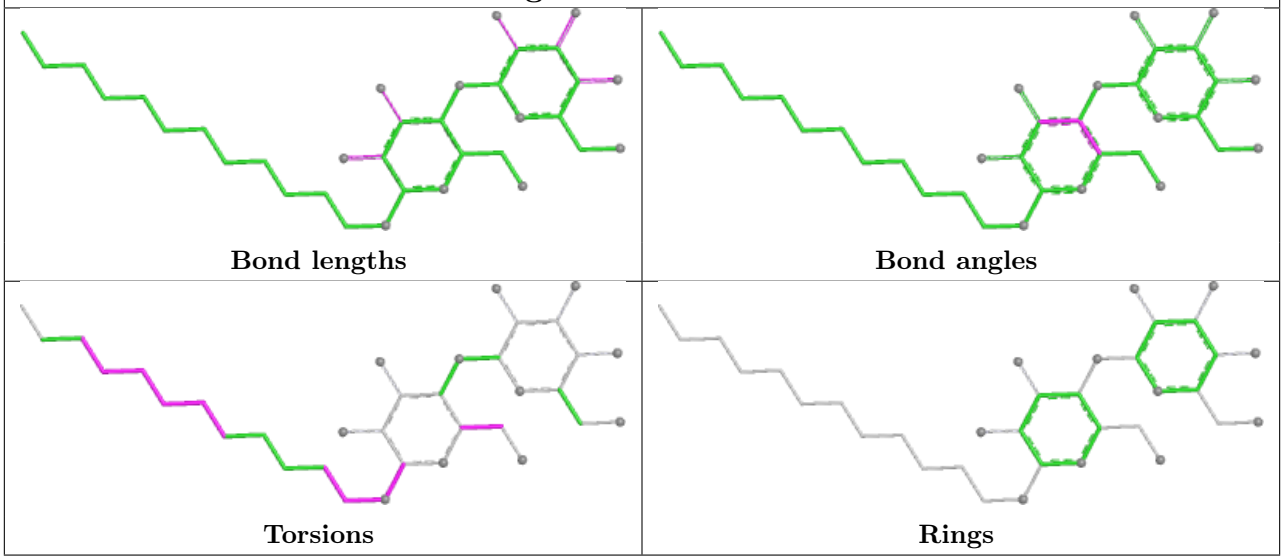
Ligand LMG d 409



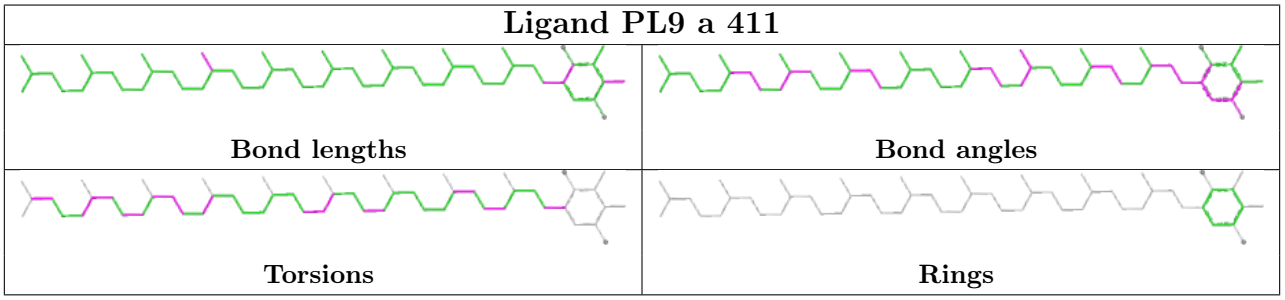
Ligand SQD a 412



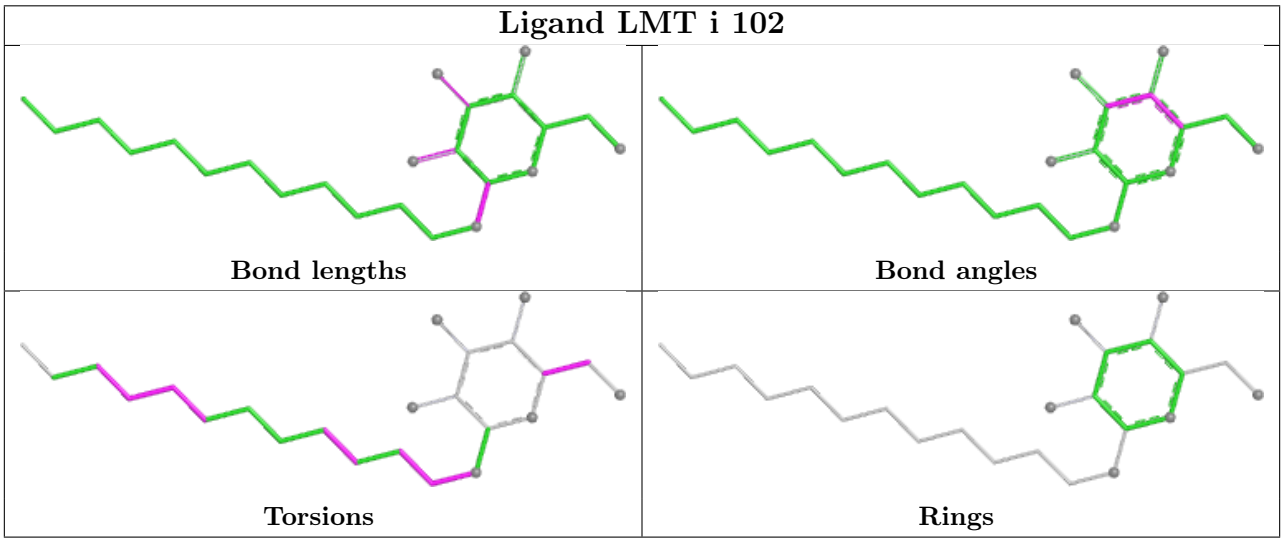
Ligand LMT b 629



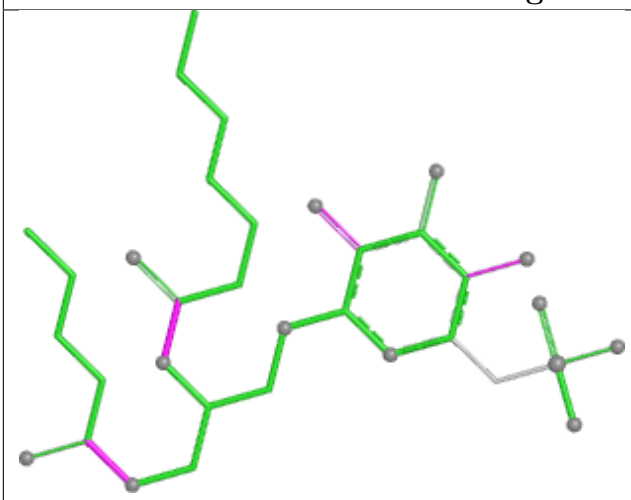
Ligand PL9 a 411



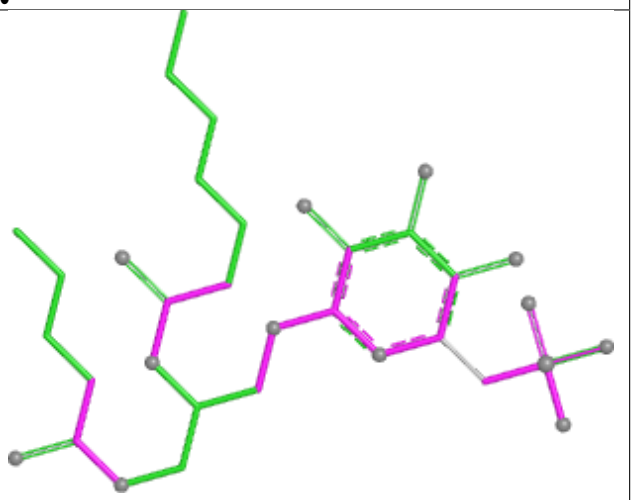
Ligand LMT i 102



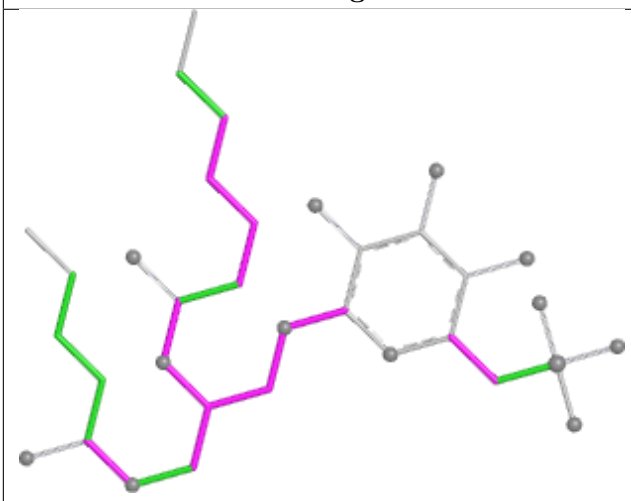
Ligand SQD F 102



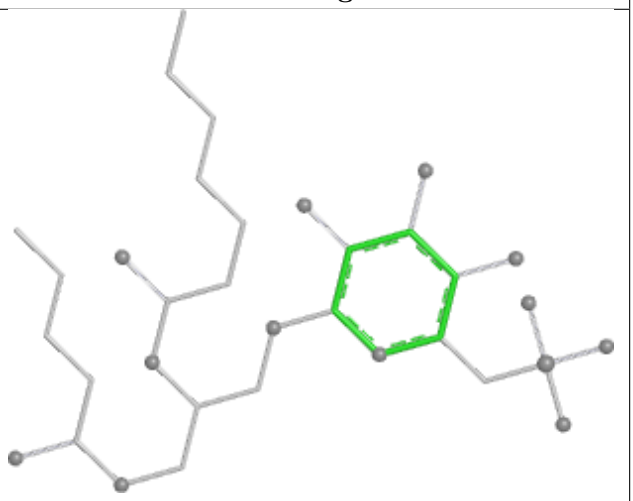
Bond lengths



Bond angles

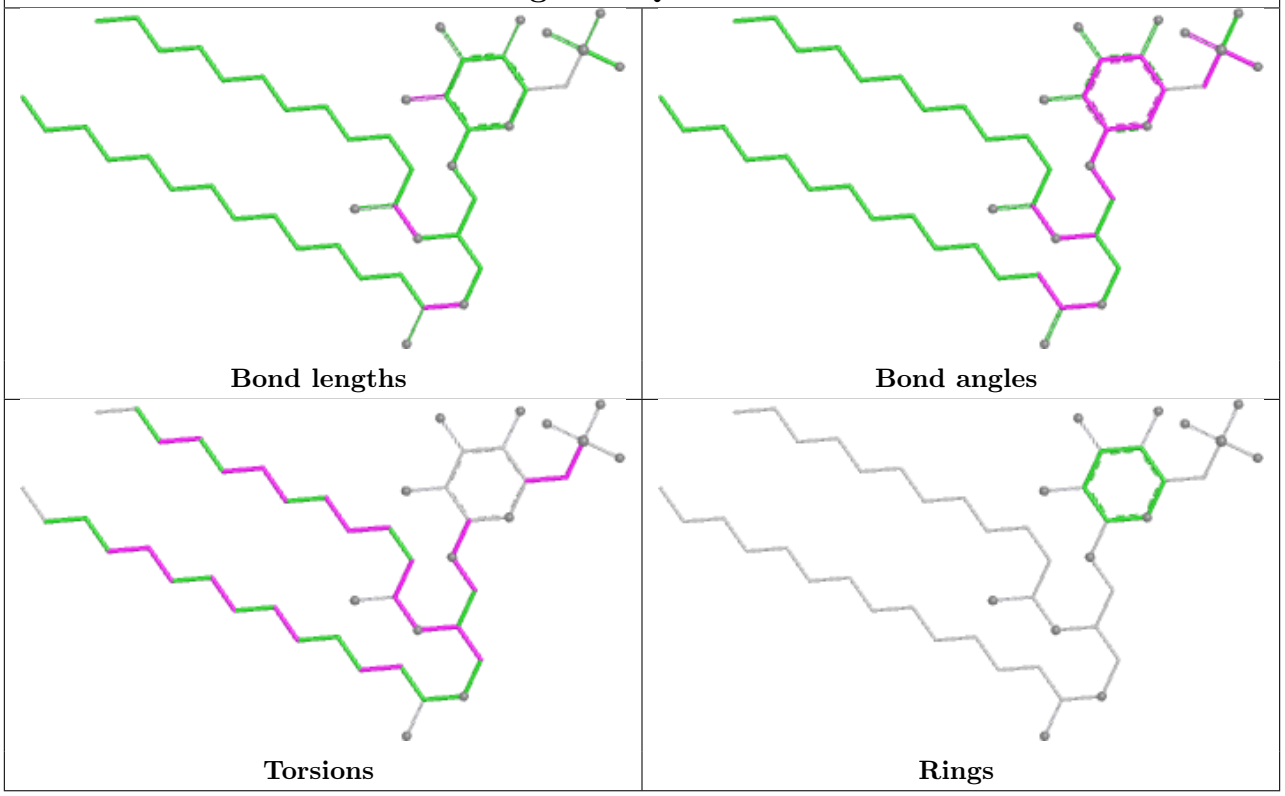


Torsions

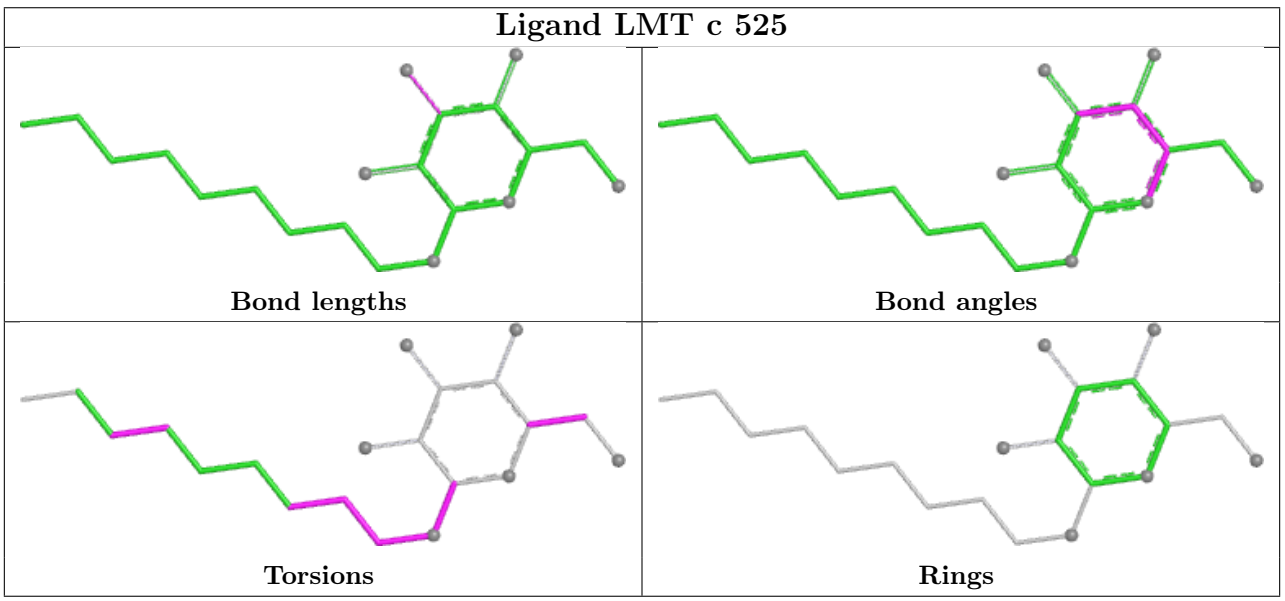


Rings

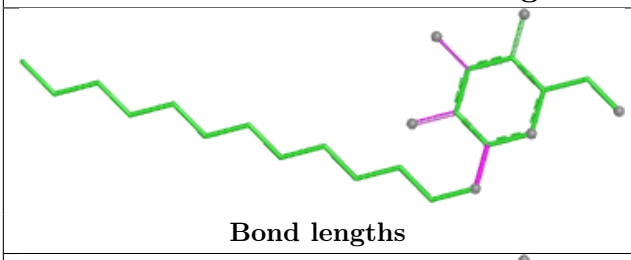
Ligand SQD a 413



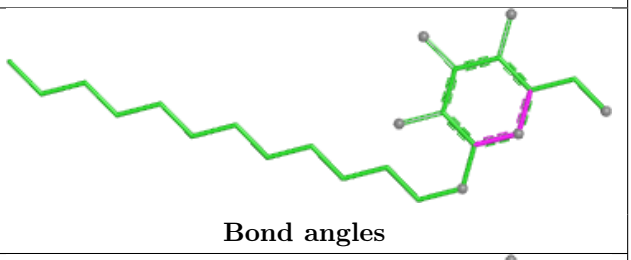
Ligand LMT c 525



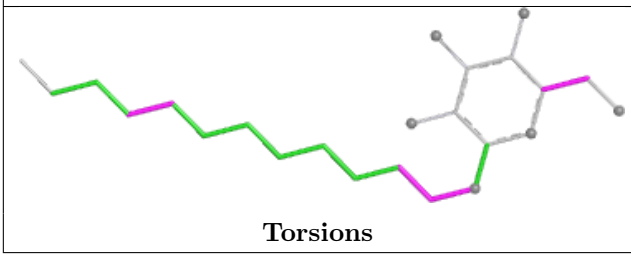
Ligand LMT A 416



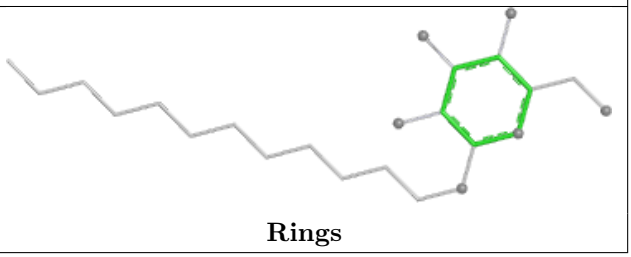
Bond lengths



Bond angles

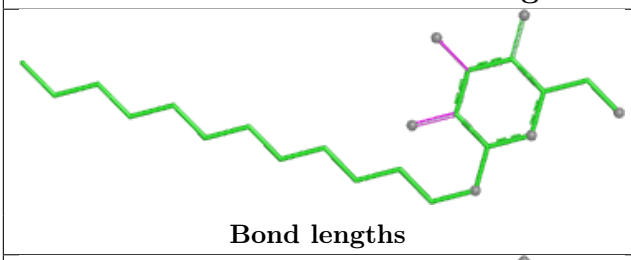


Torsions

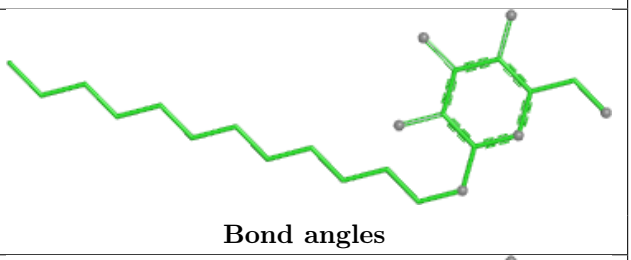


Rings

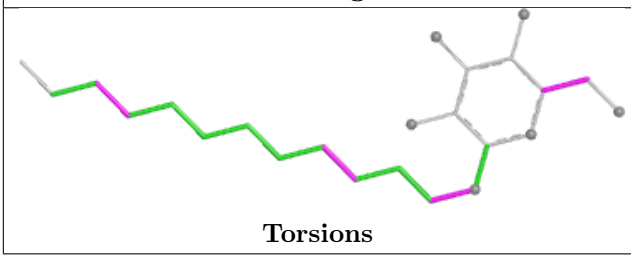
Ligand LMT B 626



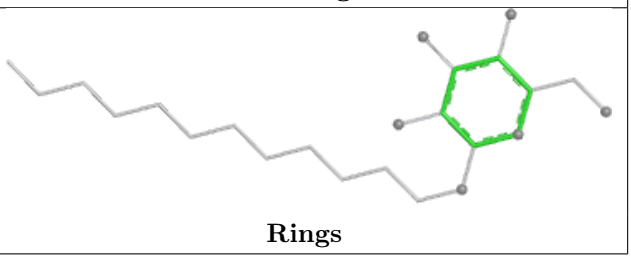
Bond lengths



Bond angles

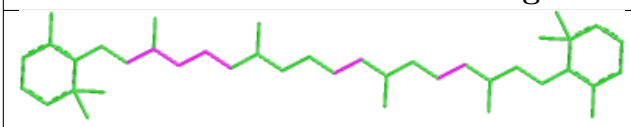


Torsions



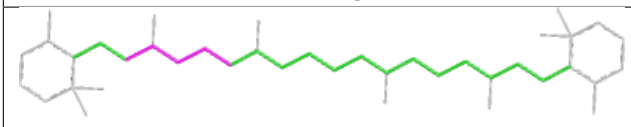
Rings

Ligand BCR B 618

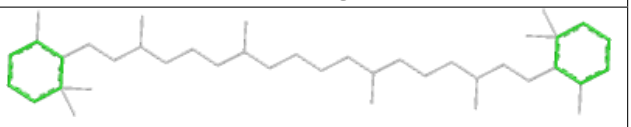


Bond lengths

Bond angles

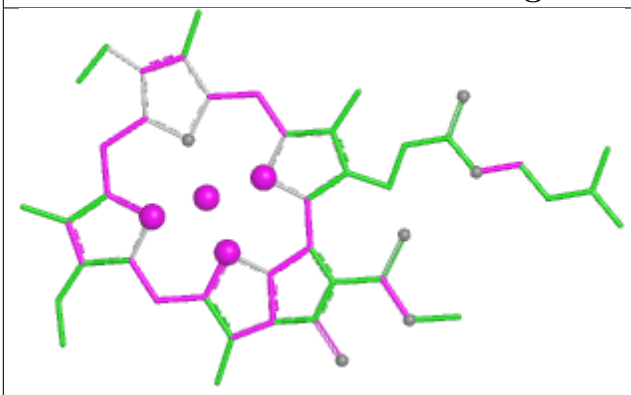


Torsions

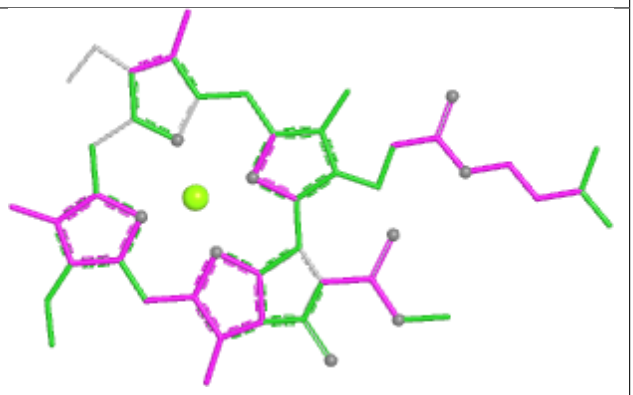


Rings

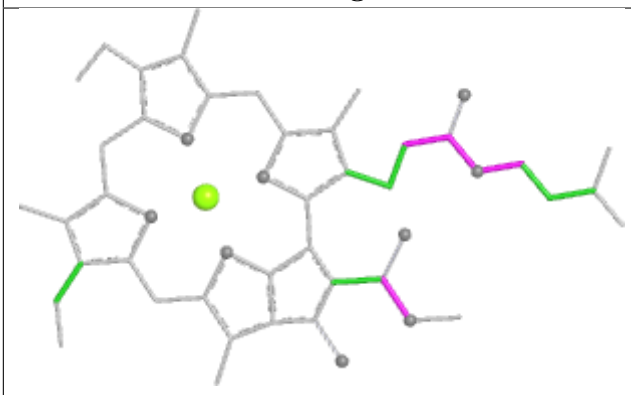
Ligand CLA C 513



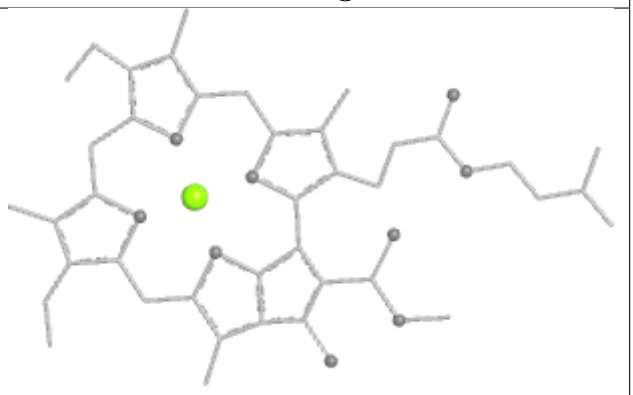
Bond lengths



Bond angles

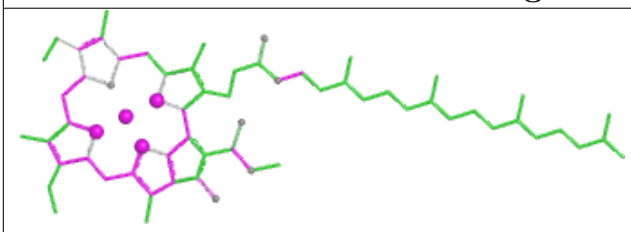


Torsions

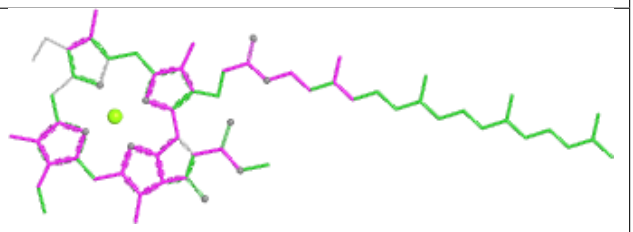


Rings

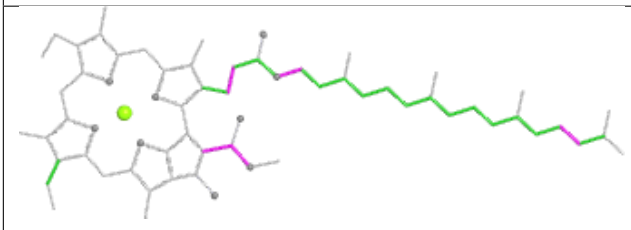
Ligand CLA C 504



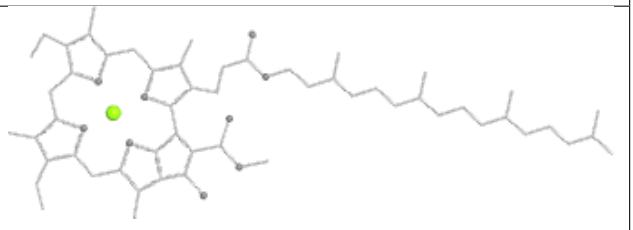
Bond lengths



Bond angles

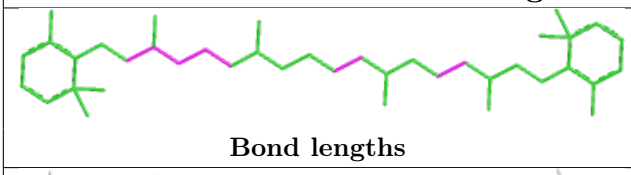


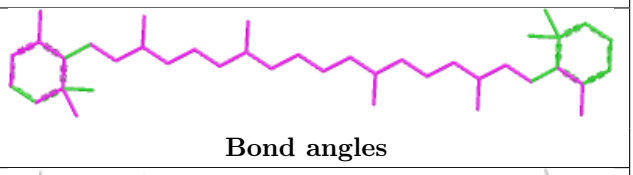
Torsions

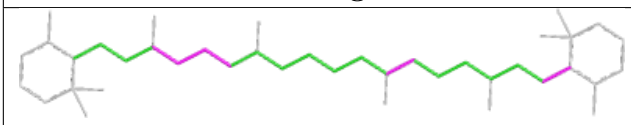


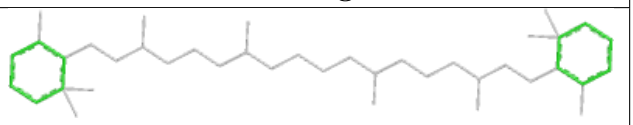
Rings

Ligand BCR k 103

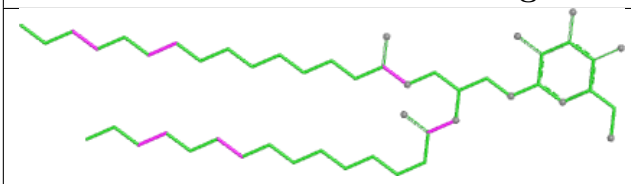

Bond lengths

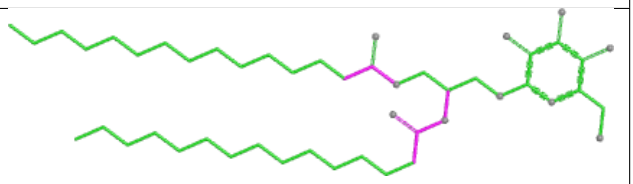

Bond angles

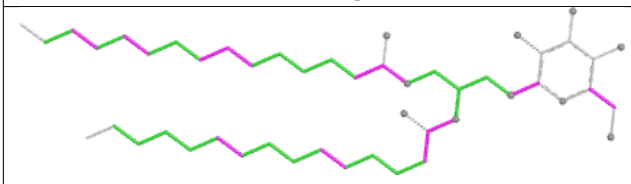

Torsions

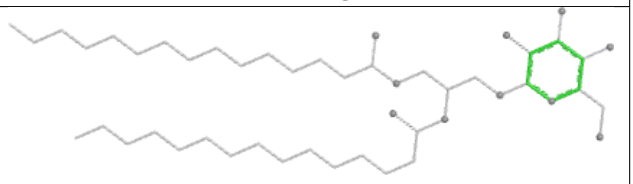

Rings

Ligand LMG C 523

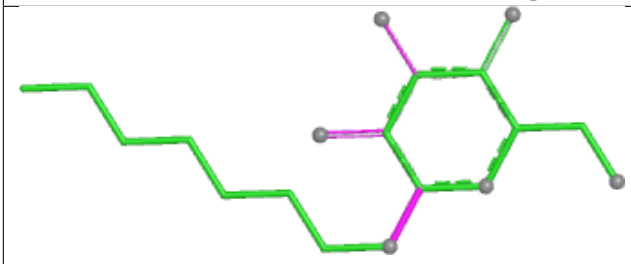

Bond lengths

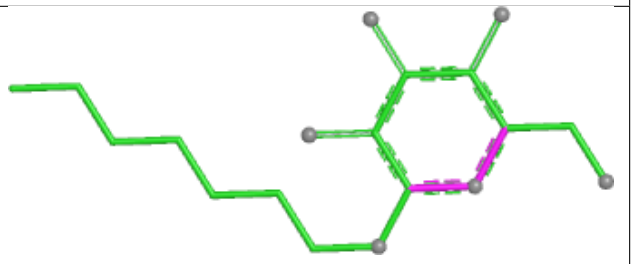

Bond angles

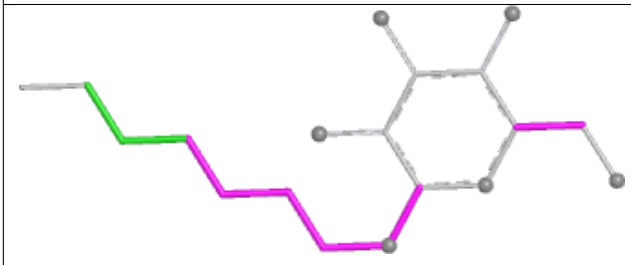

Torsions

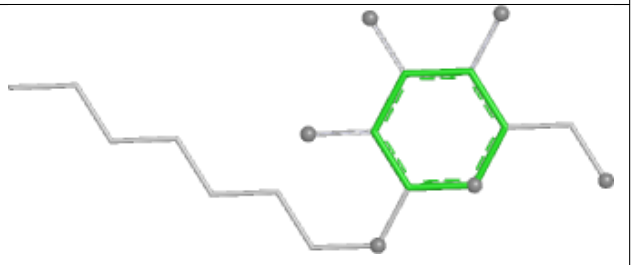

Rings

Ligand LMT x 104

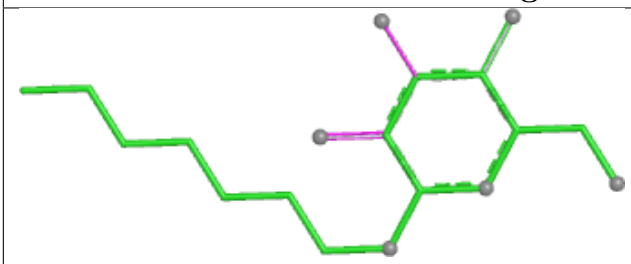

Bond lengths


Bond angles

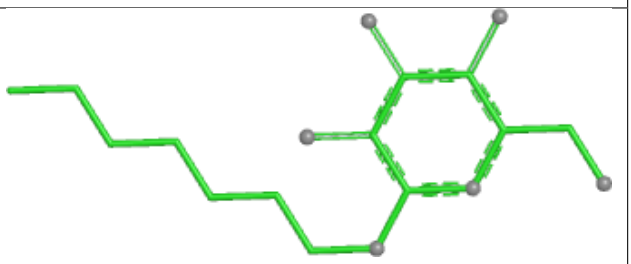

Torsions


Rings

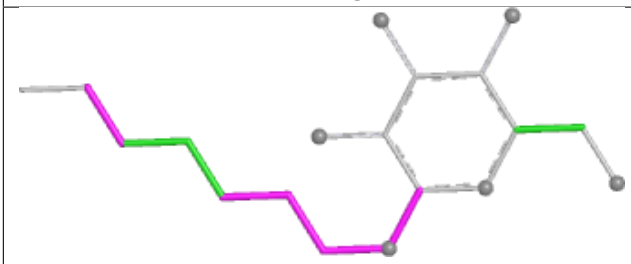
Ligand LMT X 105



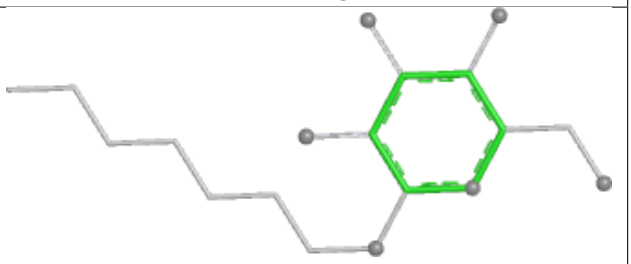
Bond lengths



Bond angles

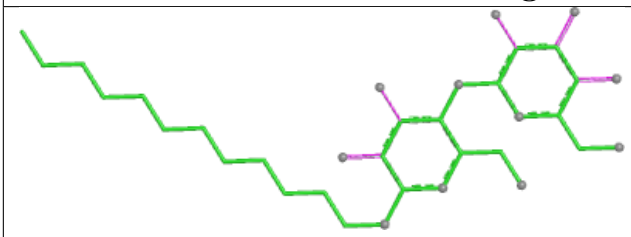


Torsions

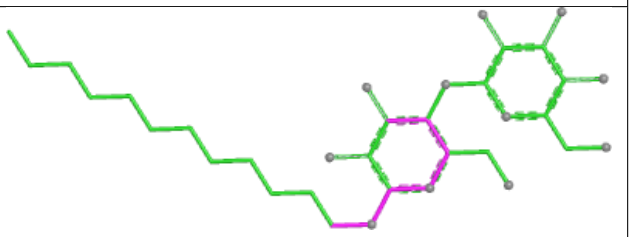


Rings

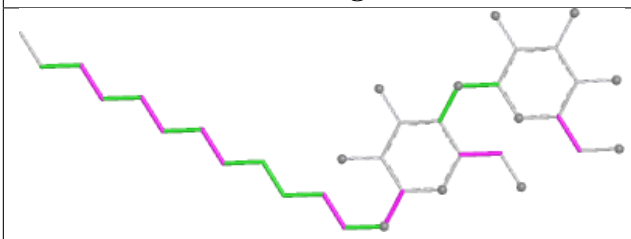
Ligand LMT A 415



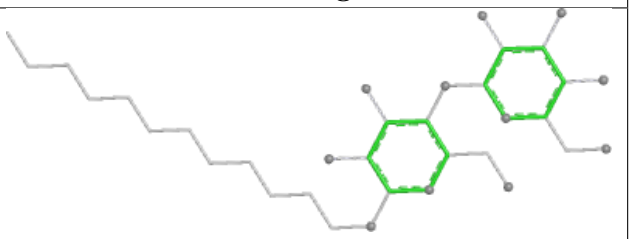
Bond lengths



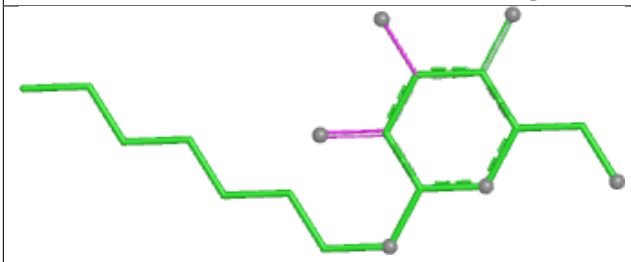
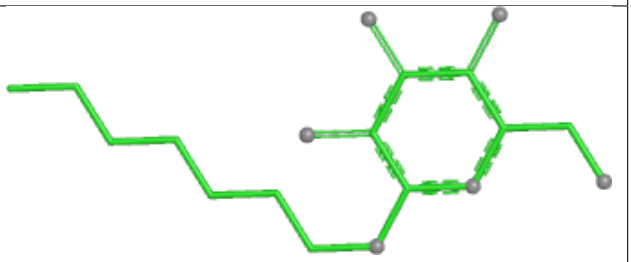
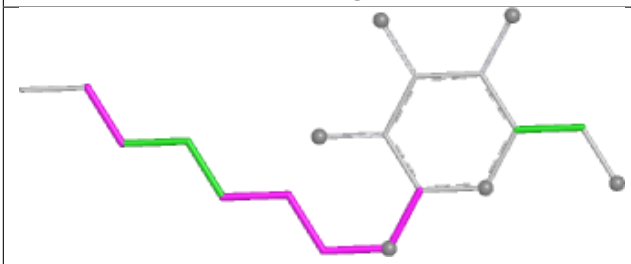
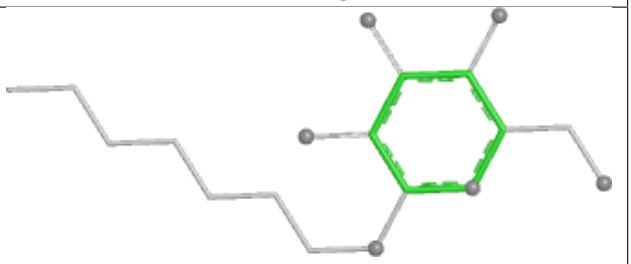
Bond angles

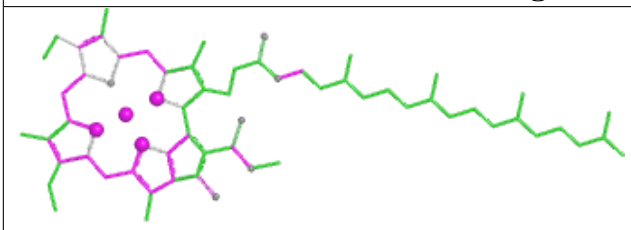
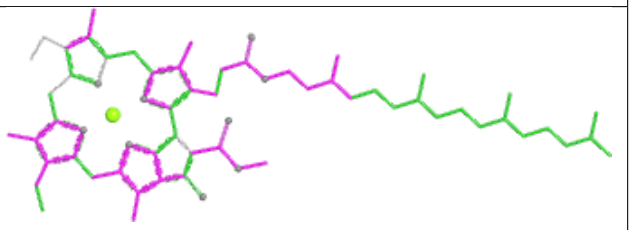
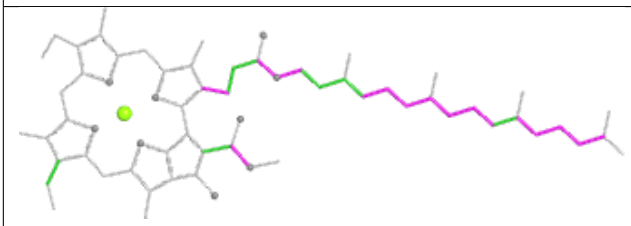
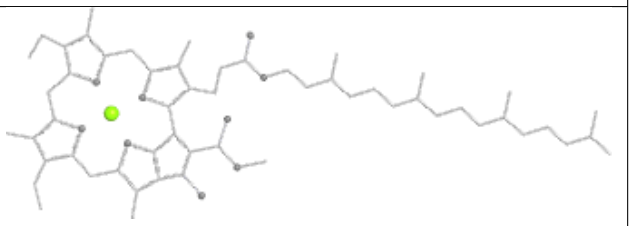


Torsions

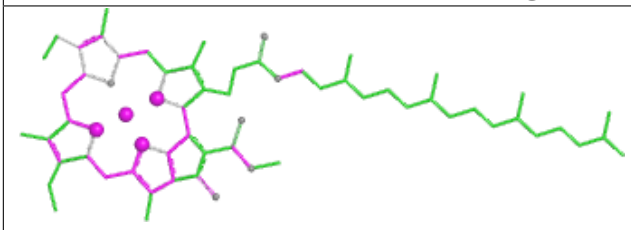


Rings

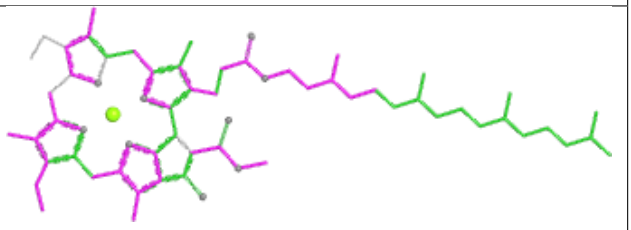
Ligand LMT x 105	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA c 512	
 Bond lengths	 Bond angles
 Torsions	 Rings

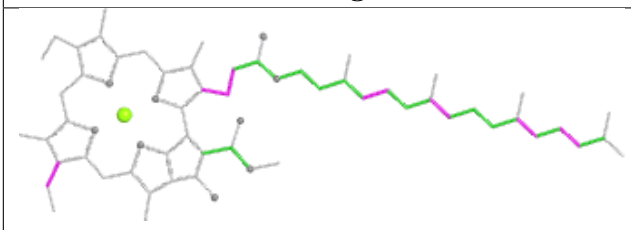
Ligand CLA D 401



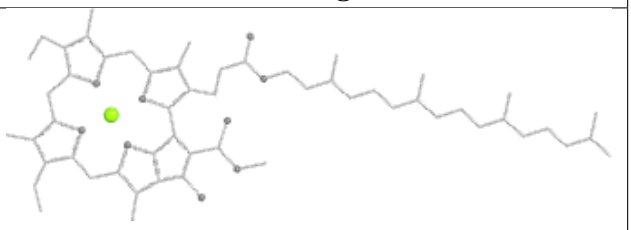
Bond lengths



Bond angles

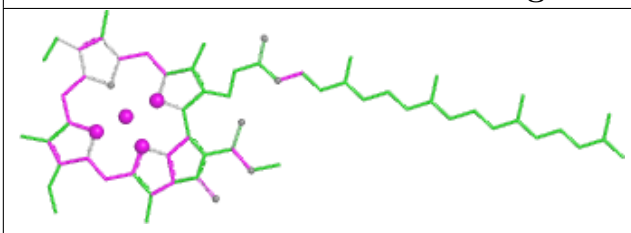


Torsions

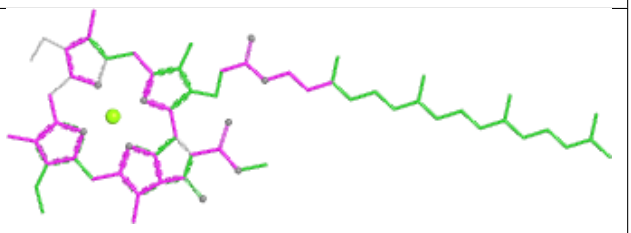


Rings

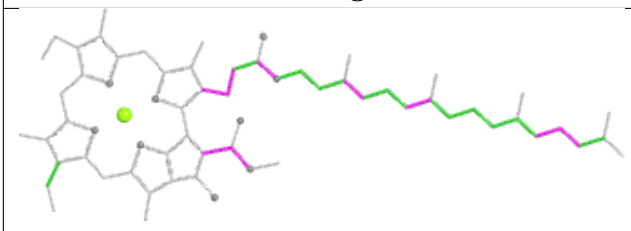
Ligand CLA b 609



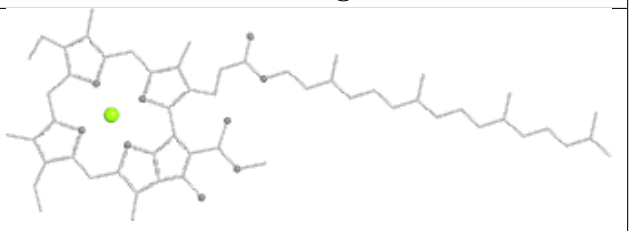
Bond lengths



Bond angles

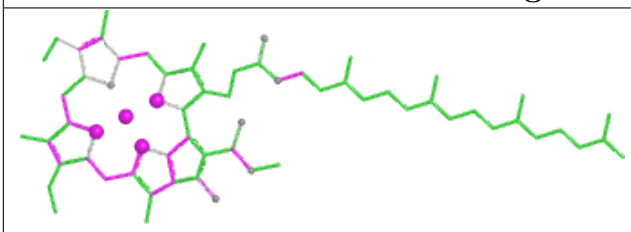


Torsions

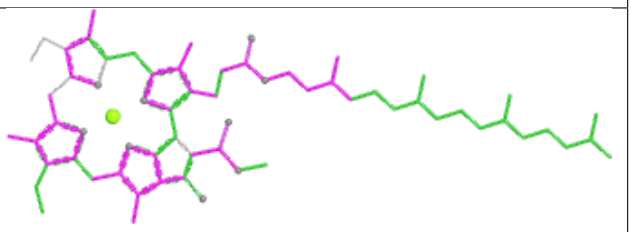


Rings

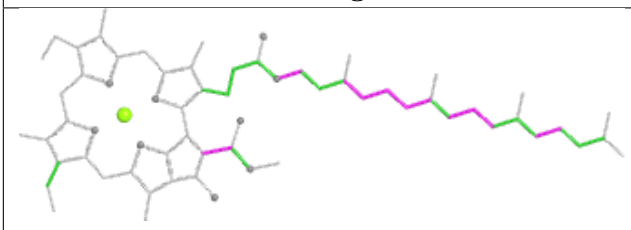
Ligand CLA B 604



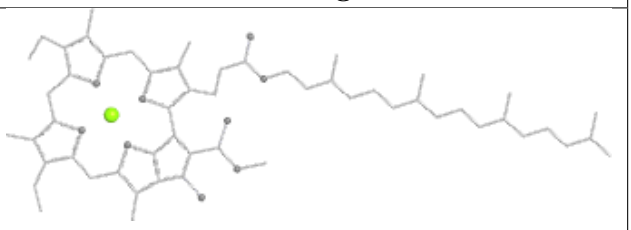
Bond lengths



Bond angles

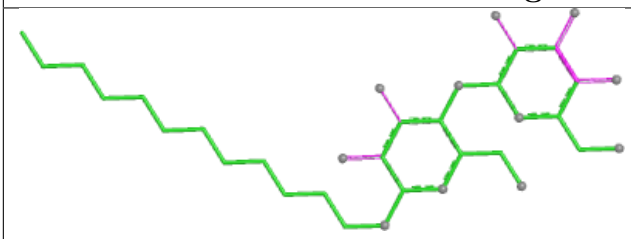


Torsions

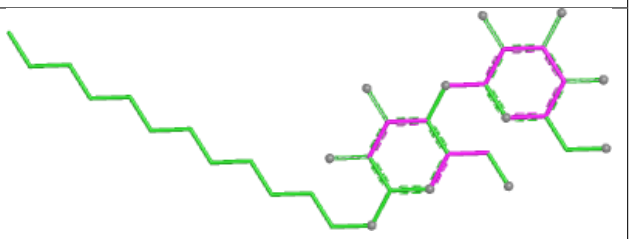


Rings

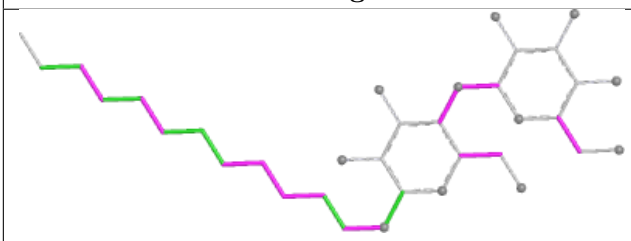
Ligand LMT k 105



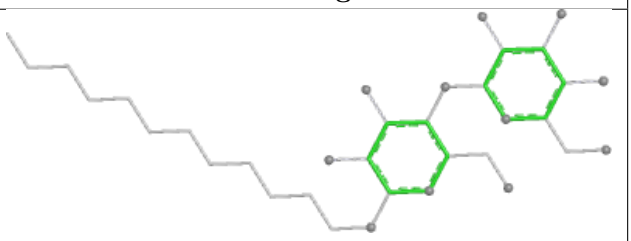
Bond lengths



Bond angles

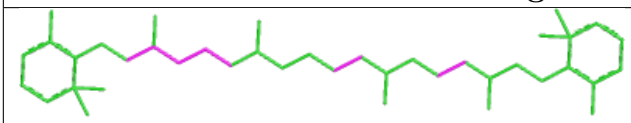


Torsions

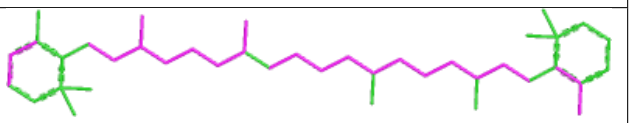


Rings

Ligand BCR c 515

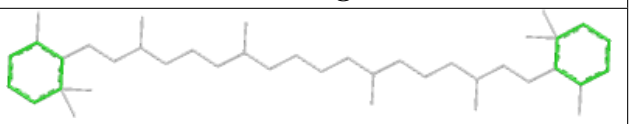


Bond lengths



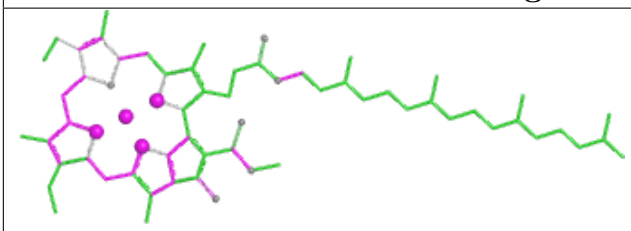
Bond angles

Torsions

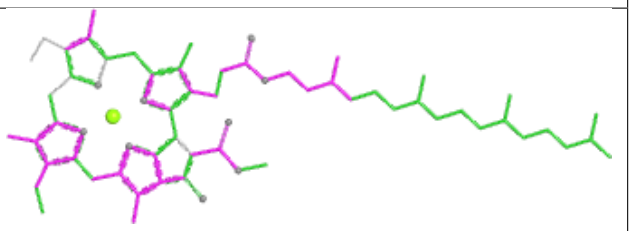


Rings

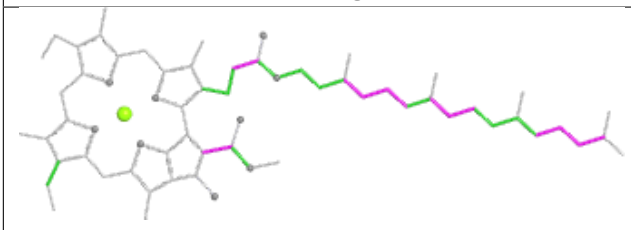
Ligand CLA B 614



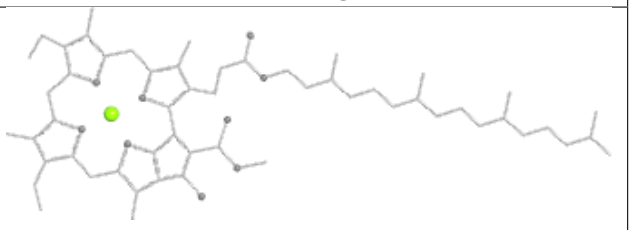
Bond lengths



Bond angles

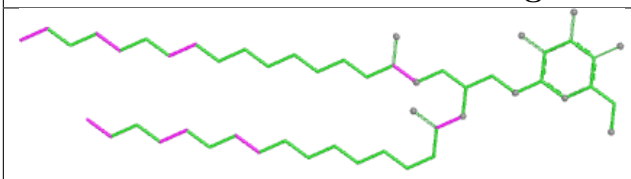


Torsions

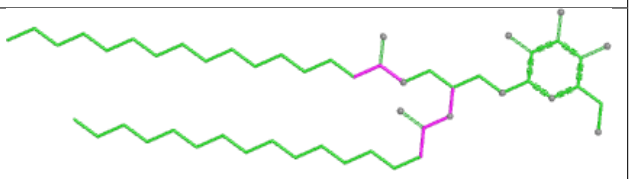


Rings

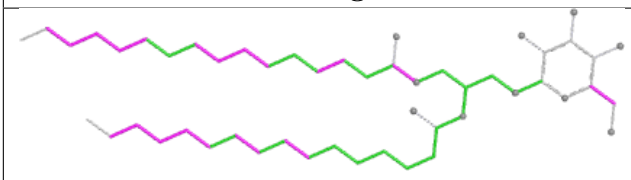
Ligand LMG c 519



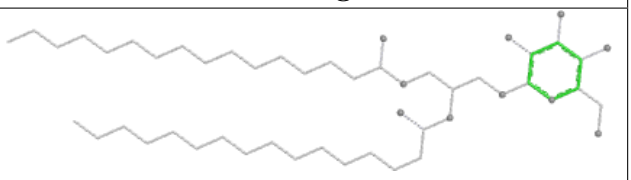
Bond lengths



Bond angles

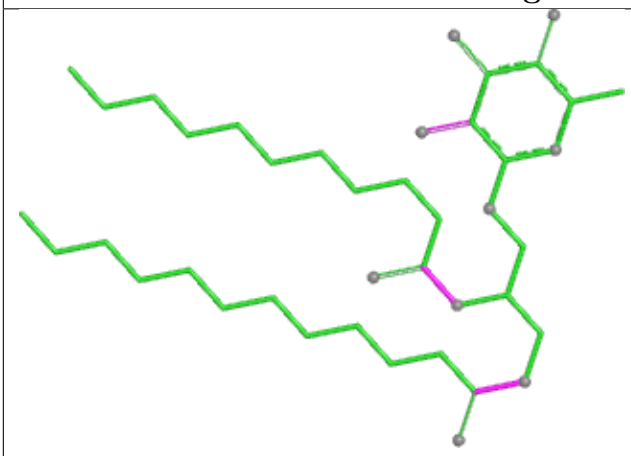


Torsions

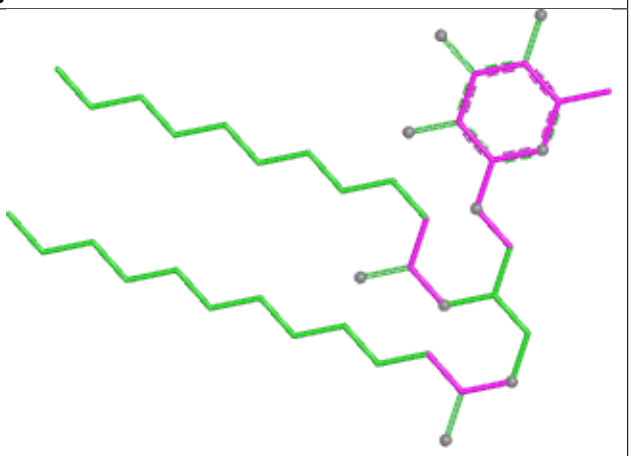


Rings

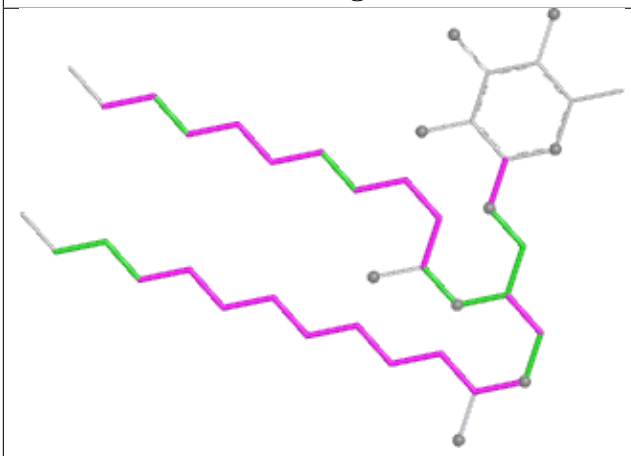
Ligand SQD K 101



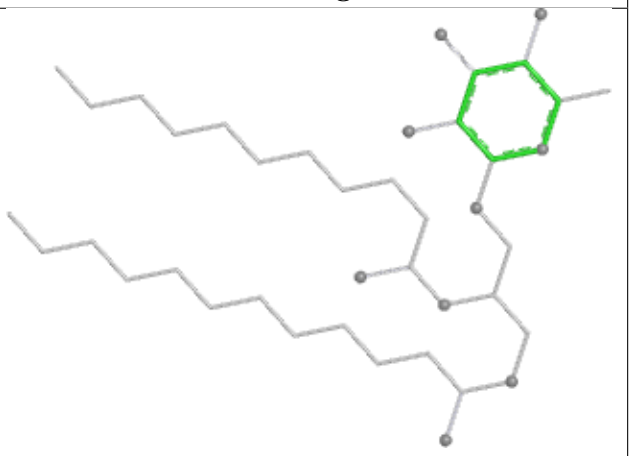
Bond lengths



Bond angles

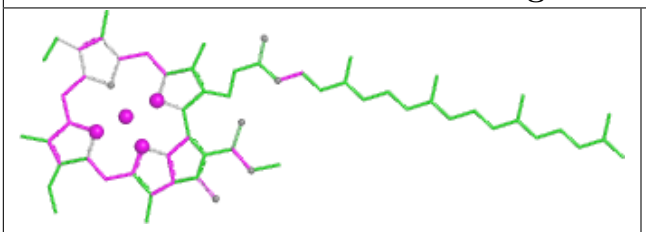


Torsions

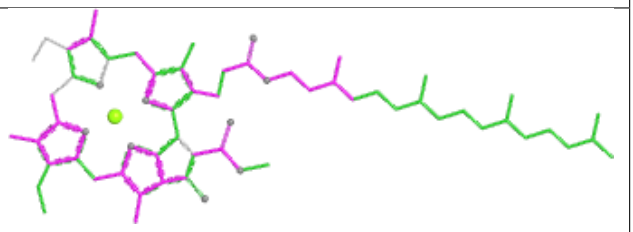


Rings

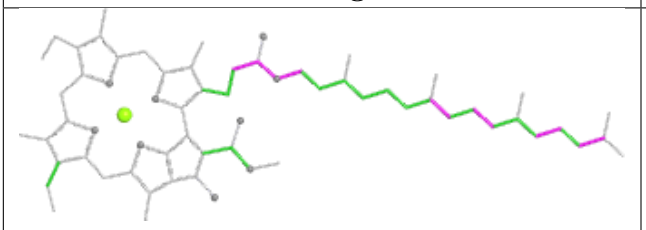
Ligand CLA b 612



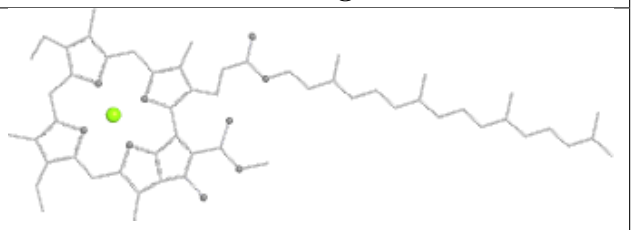
Bond lengths



Bond angles

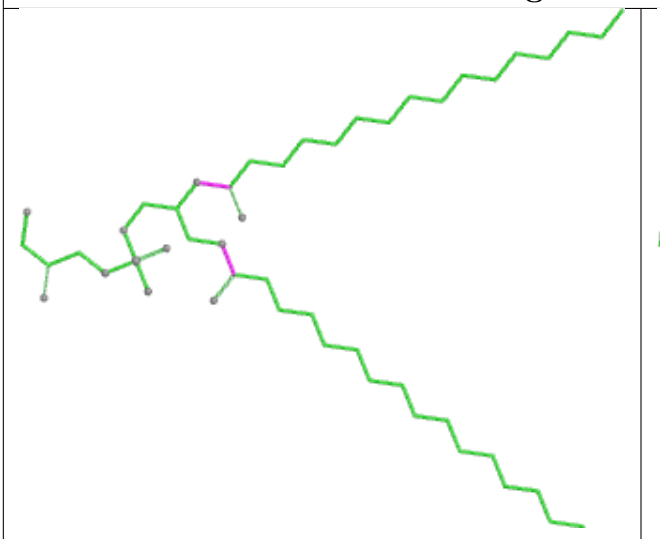


Torsions

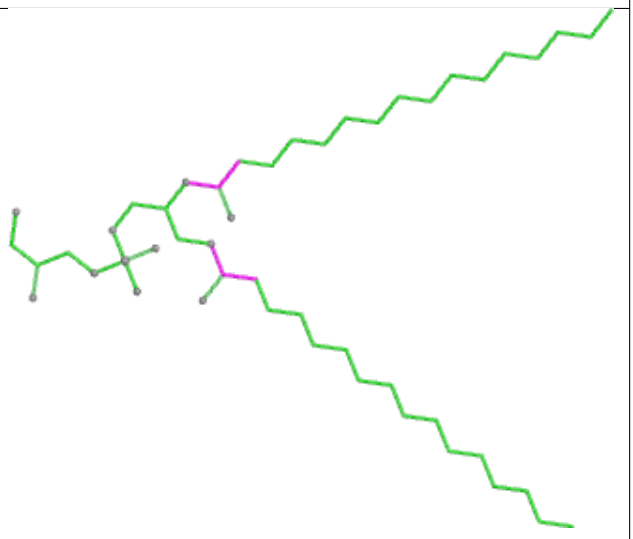


Rings

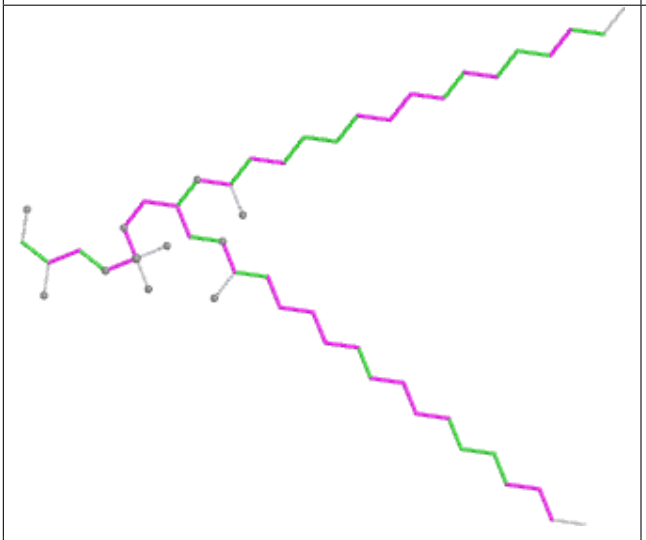
Ligand LHG b 627



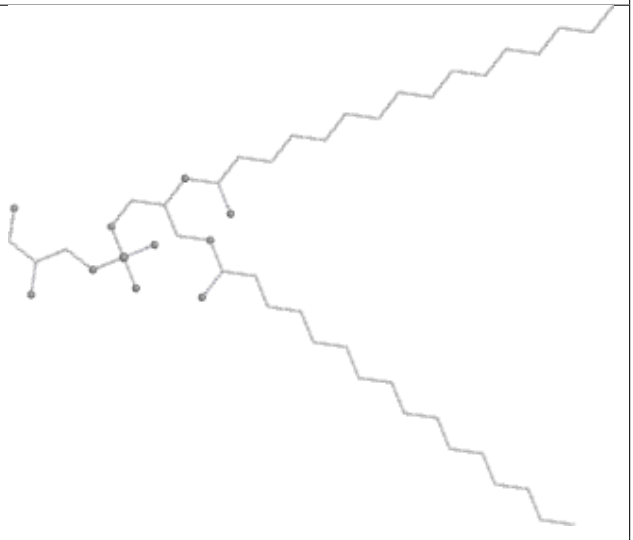
Bond lengths



Bond angles

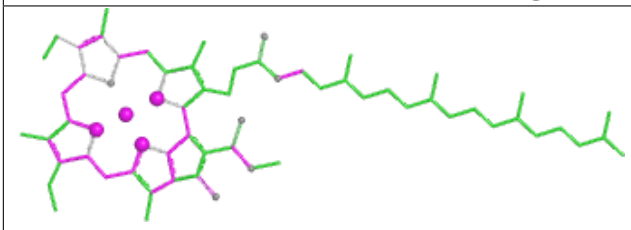


Torsions

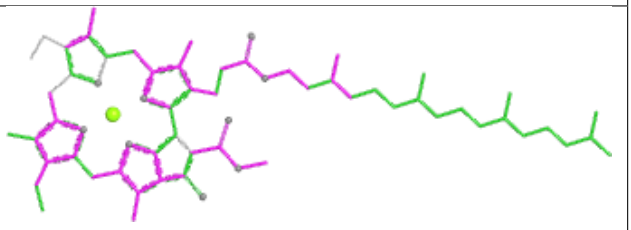


Rings

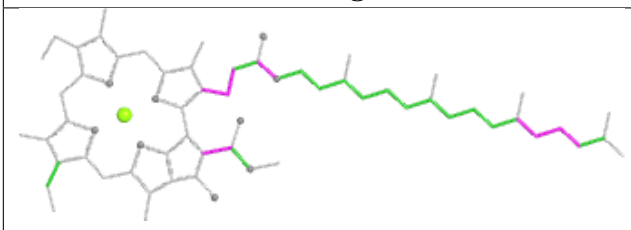
Ligand CLA b 607



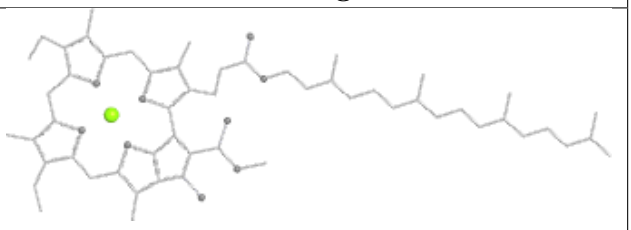
Bond lengths



Bond angles

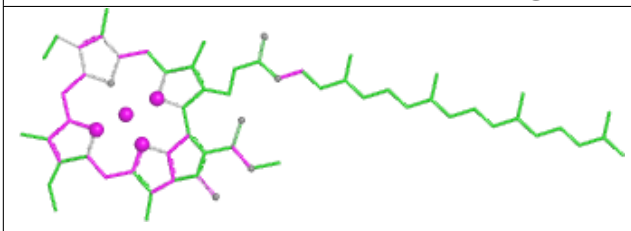


Torsions

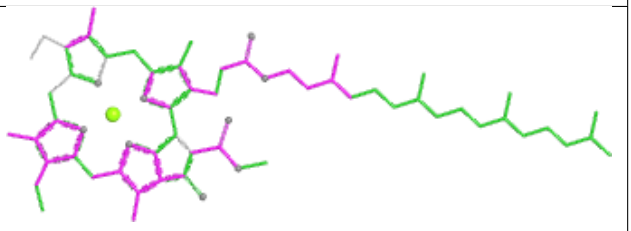


Rings

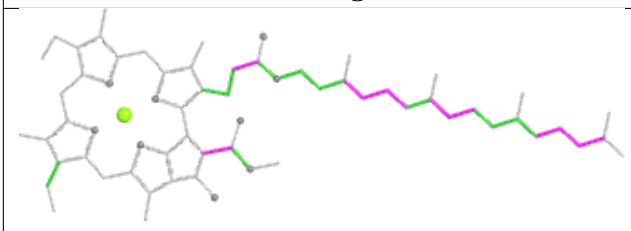
Ligand CLA b 614



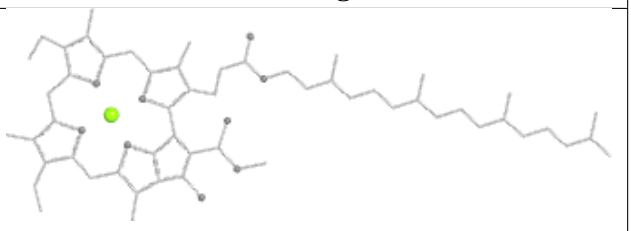
Bond lengths



Bond angles

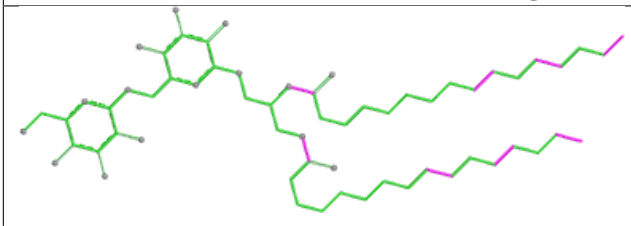


Torsions

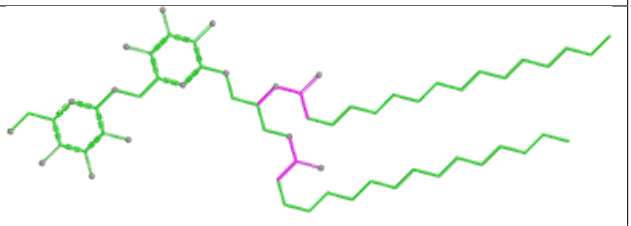


Rings

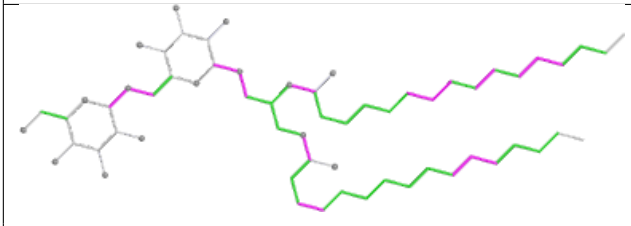
Ligand DGD c 517



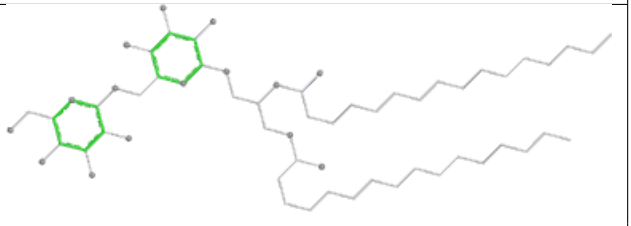
Bond lengths



Bond angles

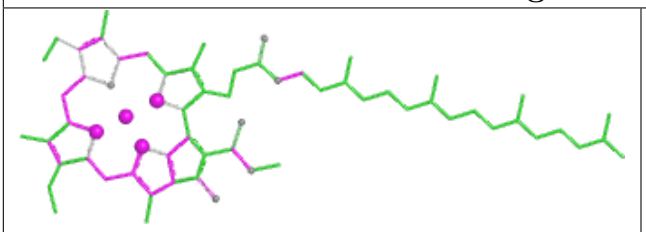


Torsions

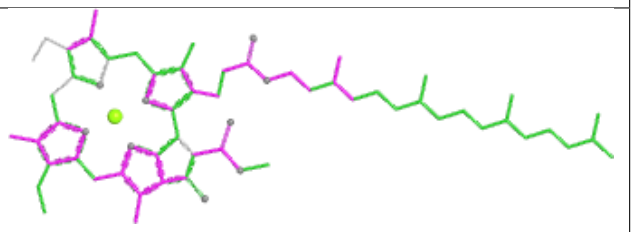


Rings

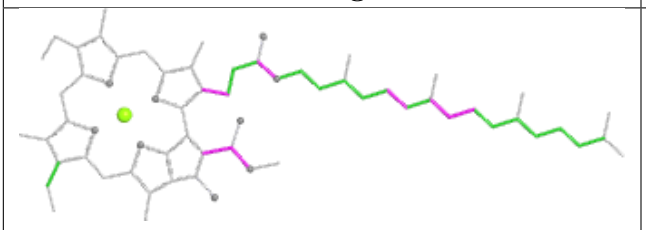
Ligand CLA b 605



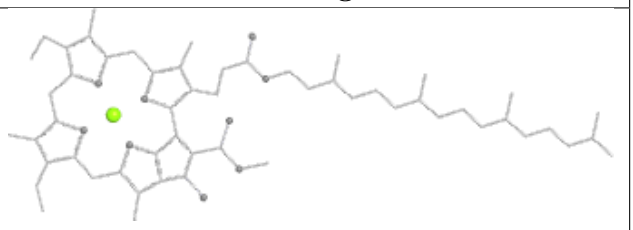
Bond lengths



Bond angles

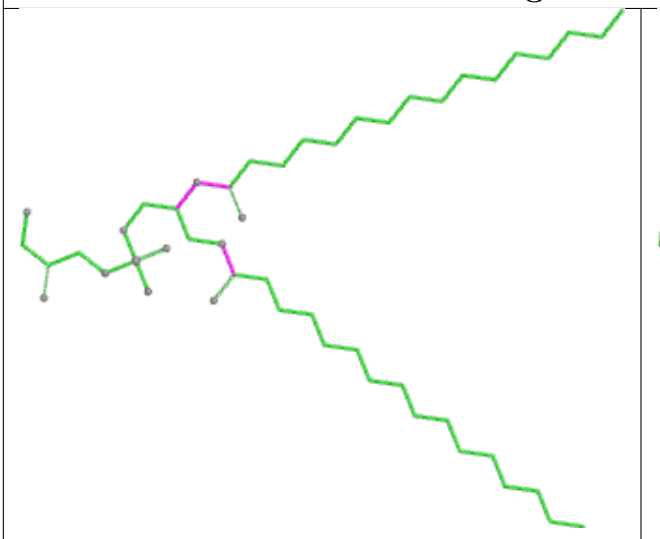


Torsions

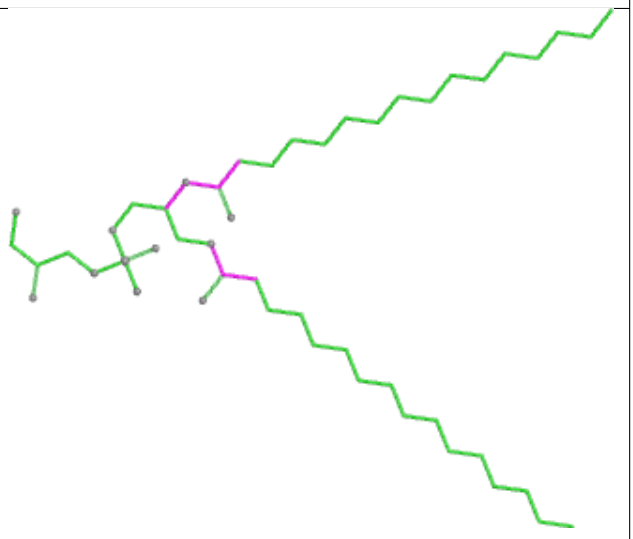


Rings

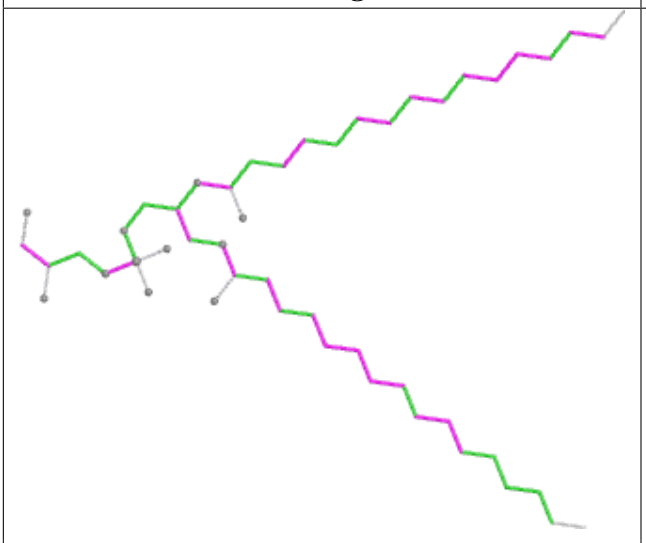
Ligand LHG d 406



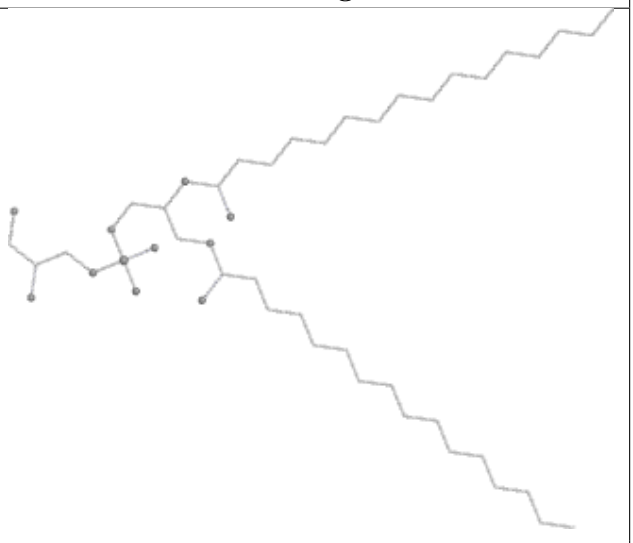
Bond lengths



Bond angles

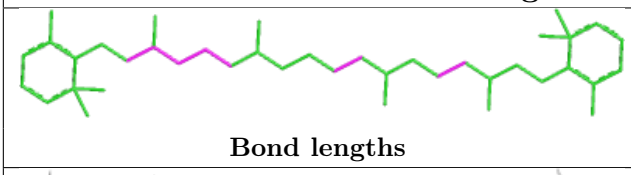


Torsions

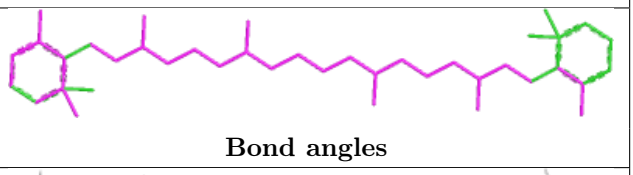


Rings

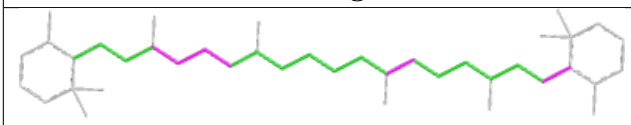
Ligand BCR K 103



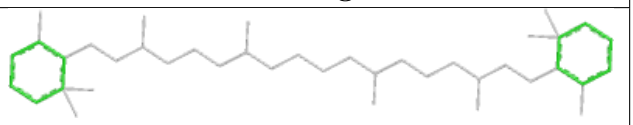
Bond lengths



Bond angles

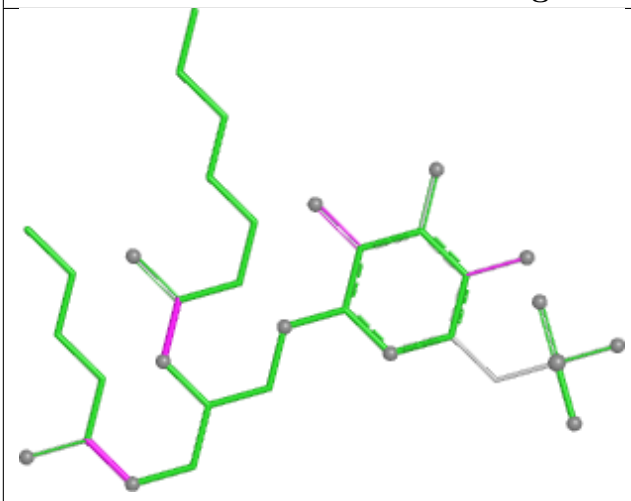


Torsions

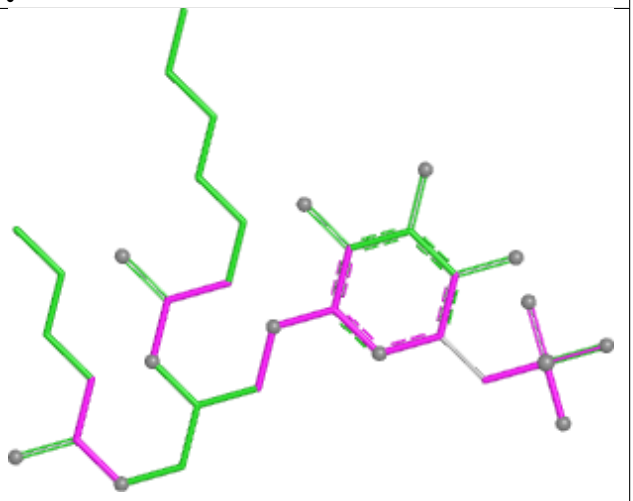


Rings

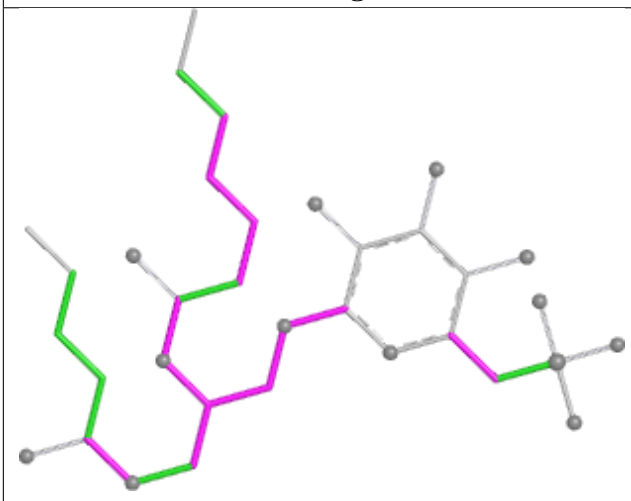
Ligand SQD f 102



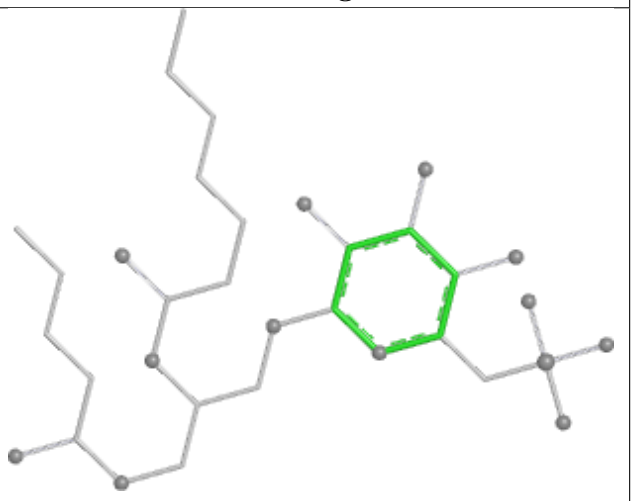
Bond lengths



Bond angles

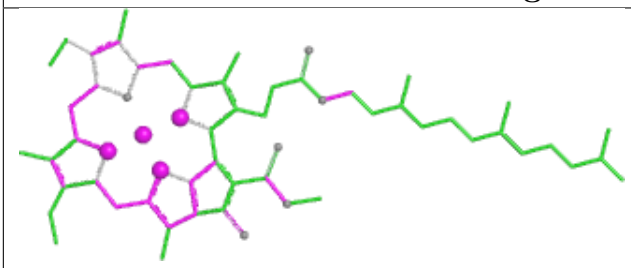


Torsions

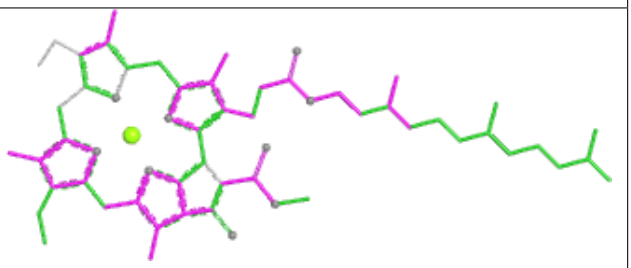


Rings

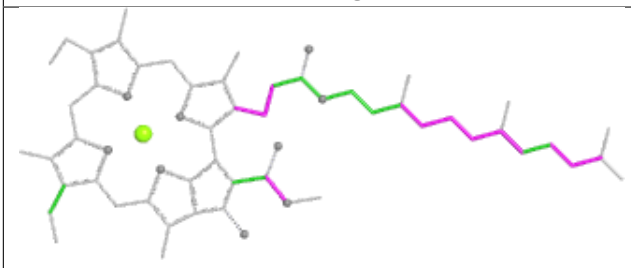
Ligand CLA A 408



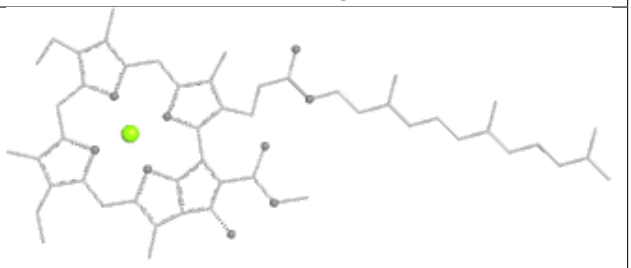
Bond lengths



Bond angles

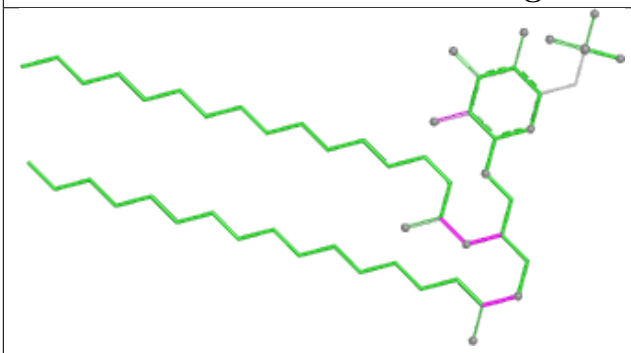


Torsions

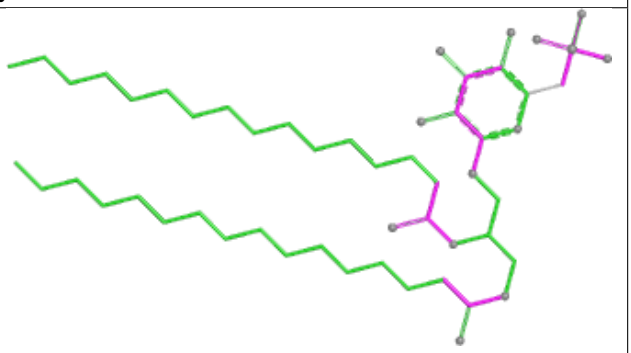


Rings

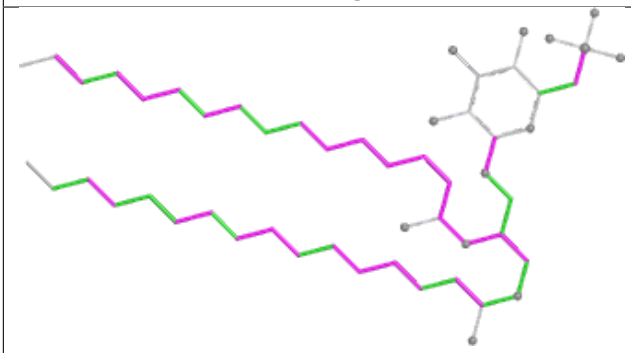
Ligand SQD C 501



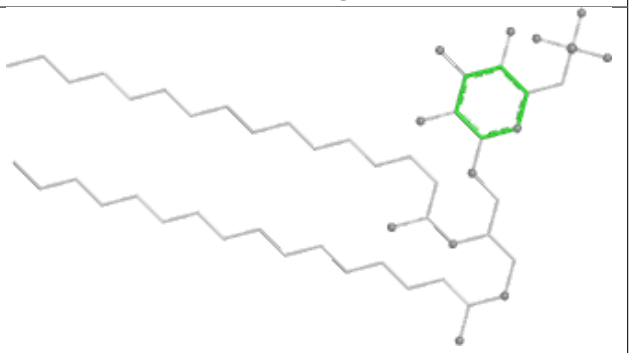
Bond lengths



Bond angles

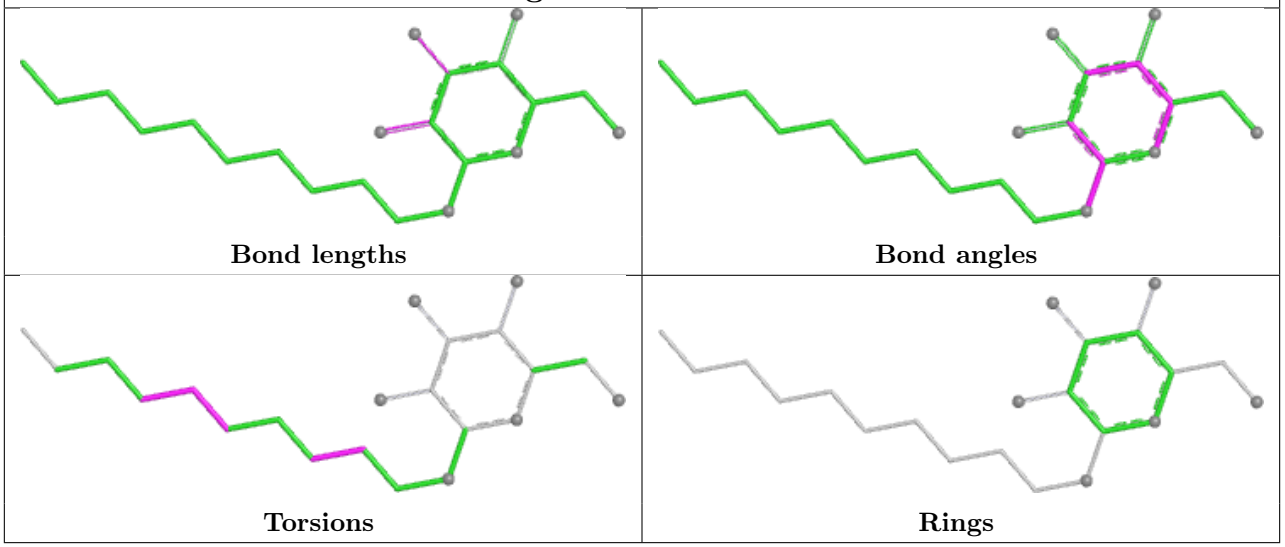


Torsions

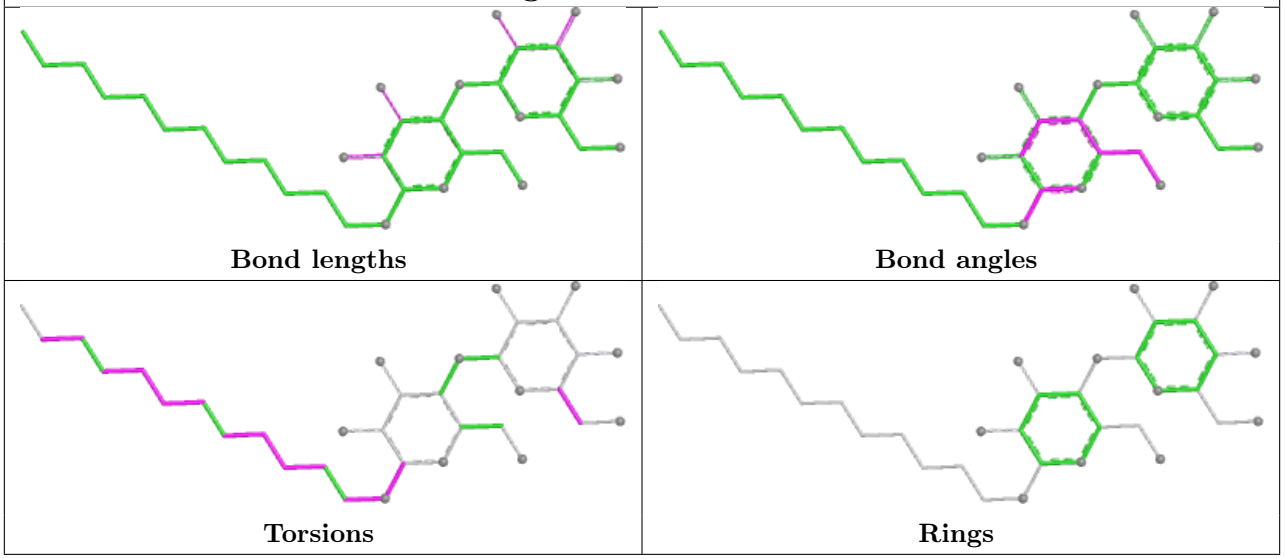


Rings

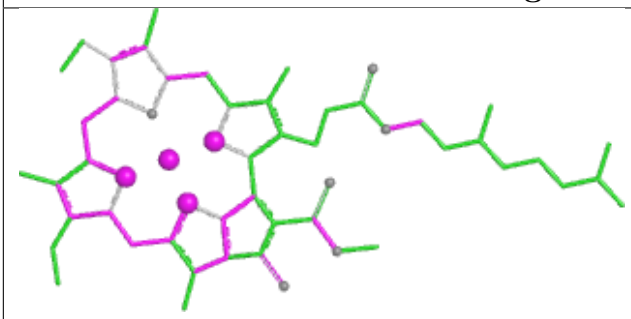
Ligand LMT x 103



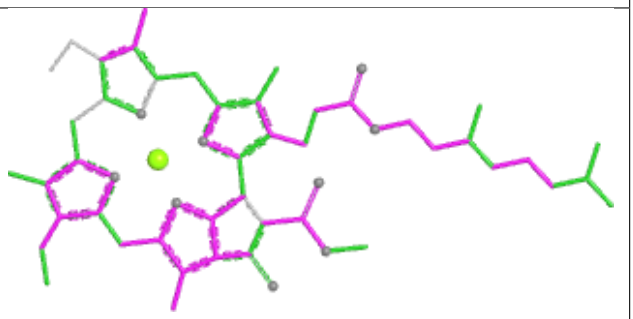
Ligand LMT B 623



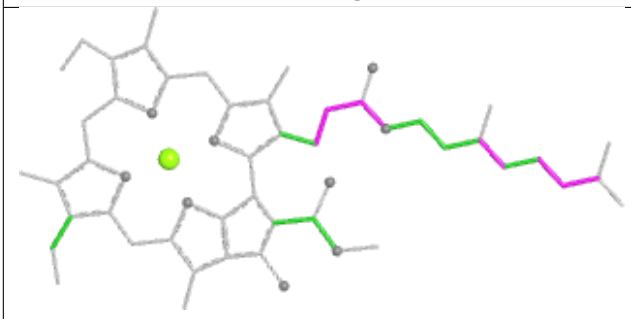
Ligand CLA C 506



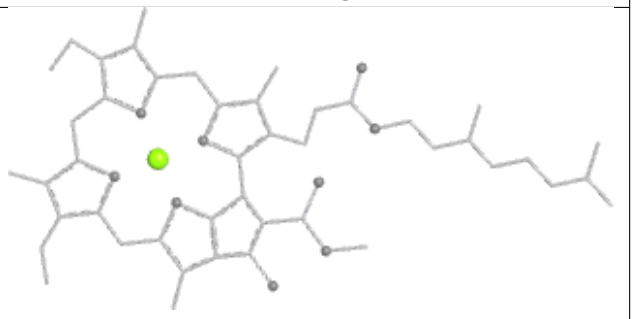
Bond lengths



Bond angles

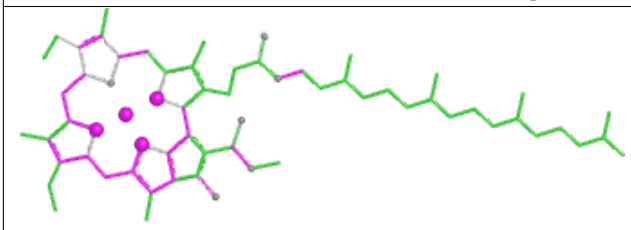


Torsions

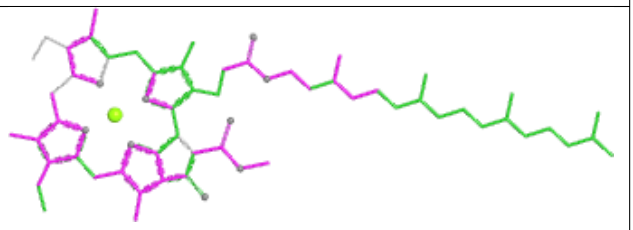


Rings

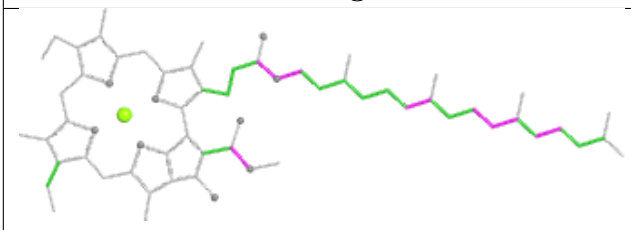
Ligand CLA C 510



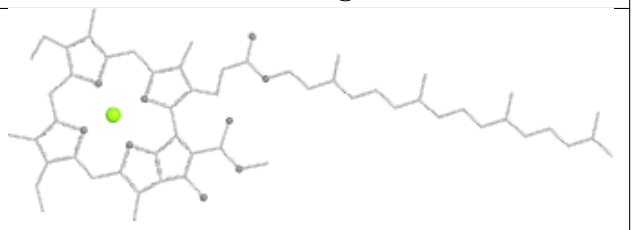
Bond lengths



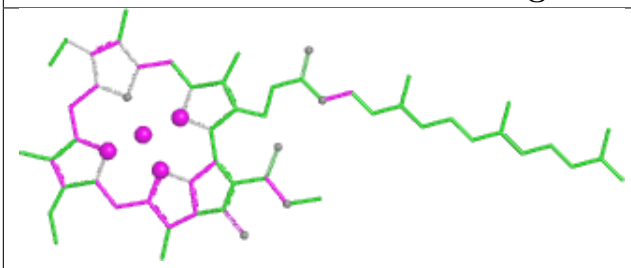
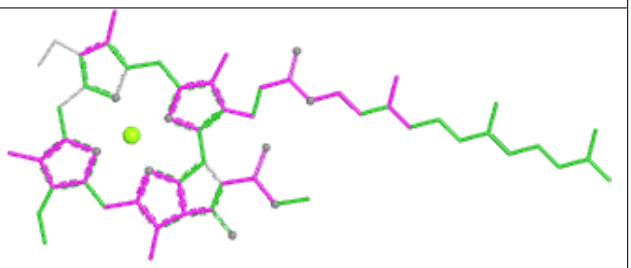
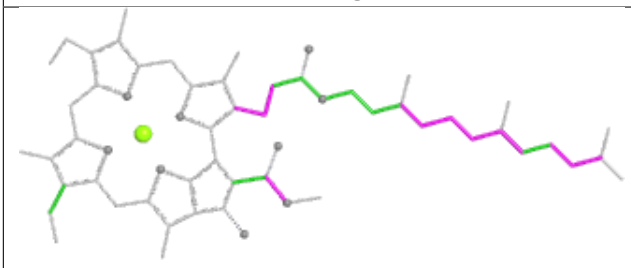
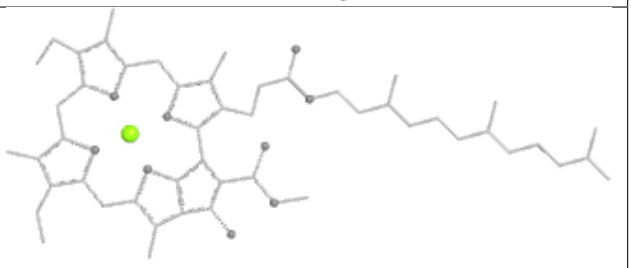
Bond angles

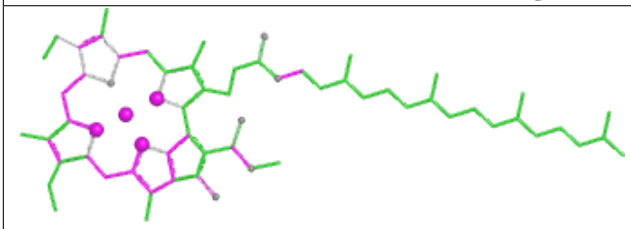
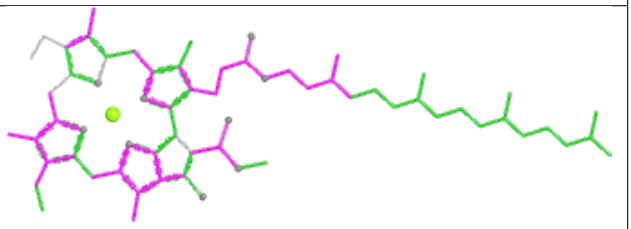
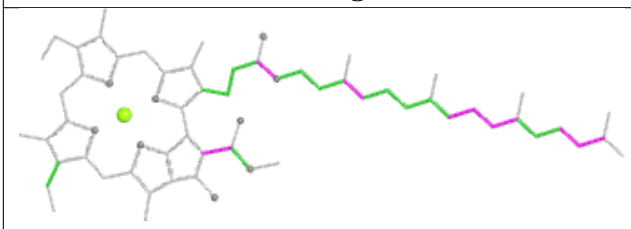
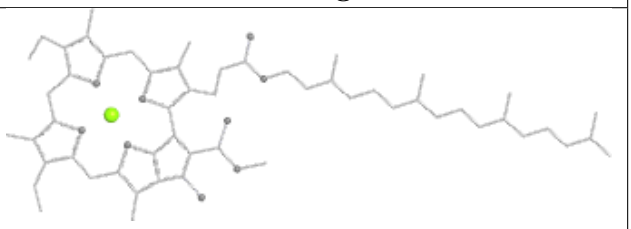


Torsions

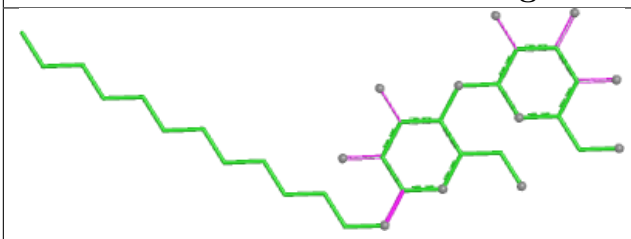


Rings

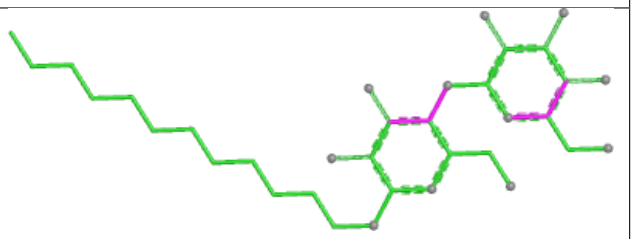
Ligand CLA a 408	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand CLA c 505	
	
Bond lengths	Bond angles
	
Torsions	Rings

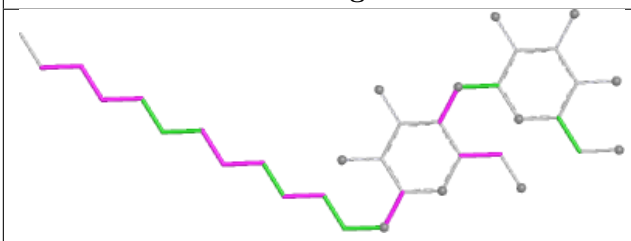
Ligand LMT m 101



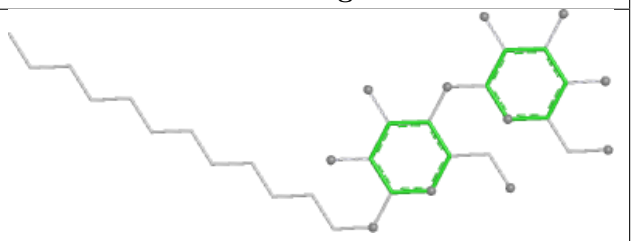
Bond lengths



Bond angles

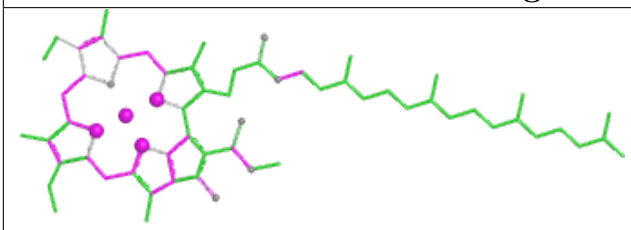


Torsions

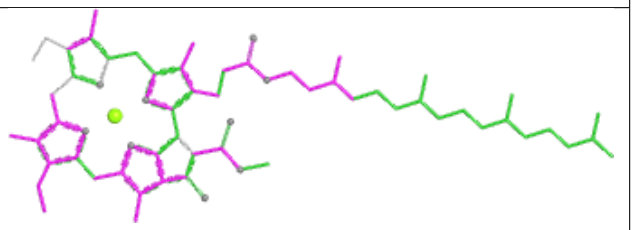


Rings

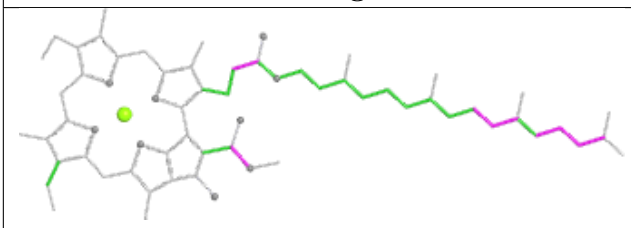
Ligand CLA D 403



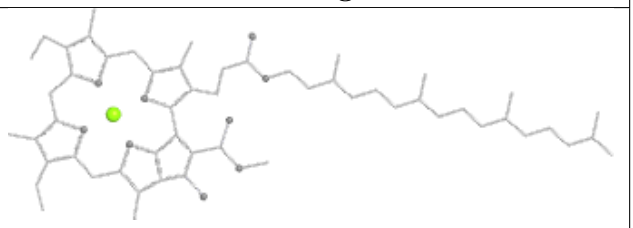
Bond lengths



Bond angles

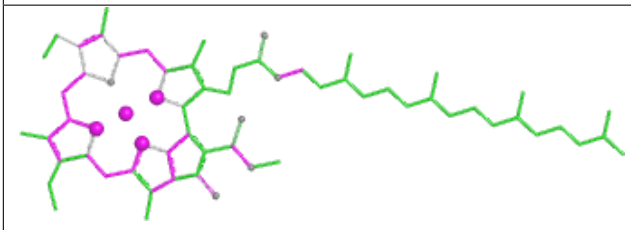


Torsions

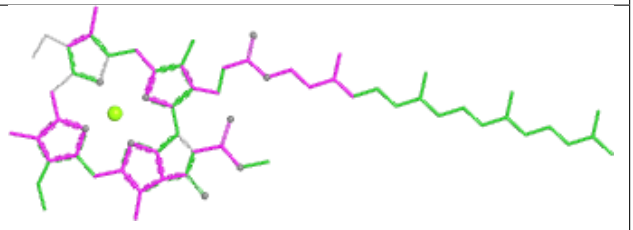


Rings

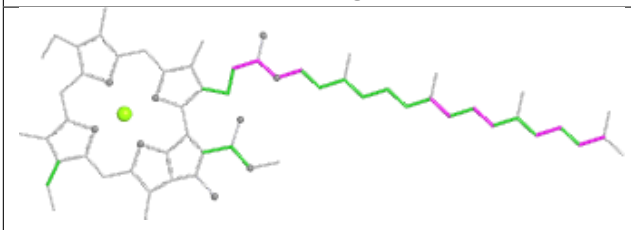
Ligand CLA B 612



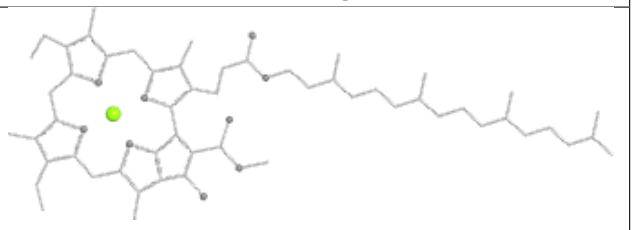
Bond lengths



Bond angles

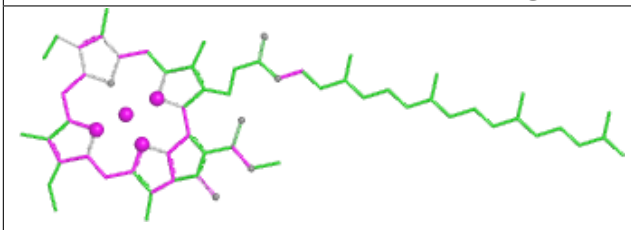


Torsions

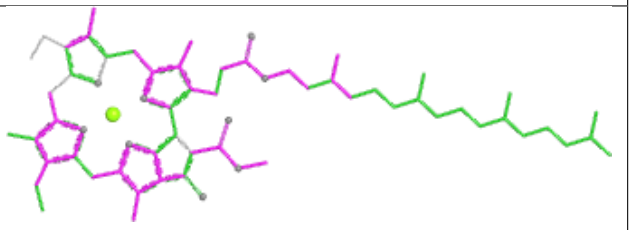


Rings

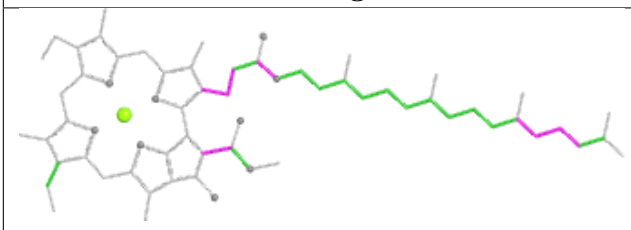
Ligand CLA B 607



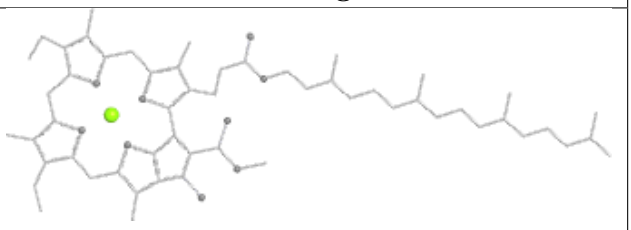
Bond lengths



Bond angles

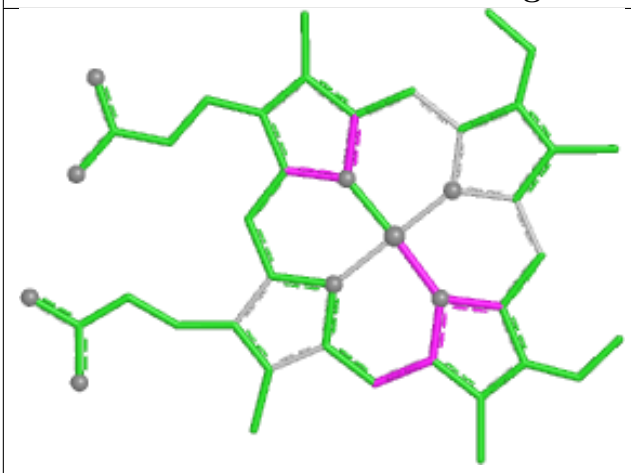


Torsions

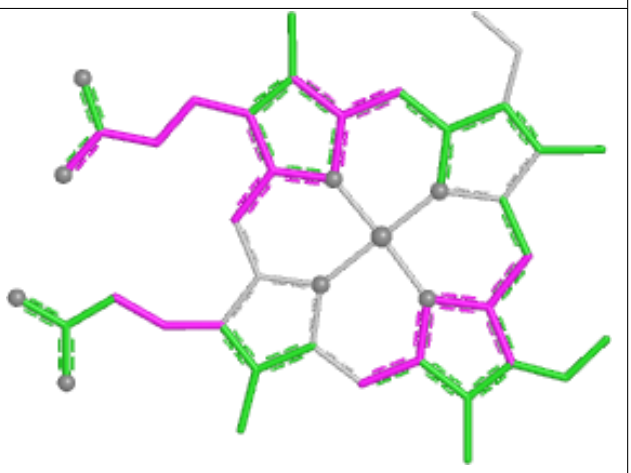


Rings

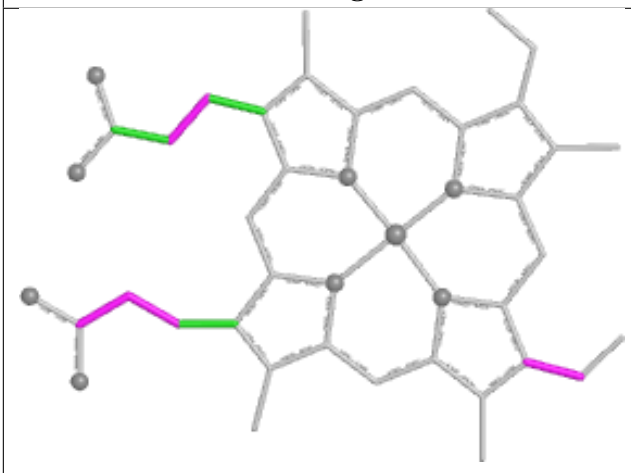
Ligand HEM e 104



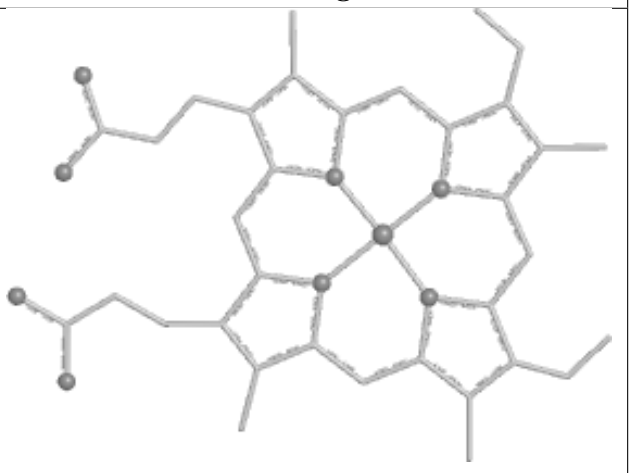
Bond lengths



Bond angles

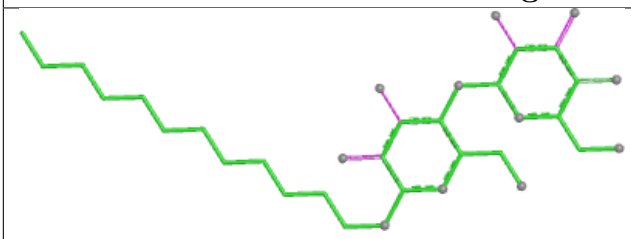


Torsions

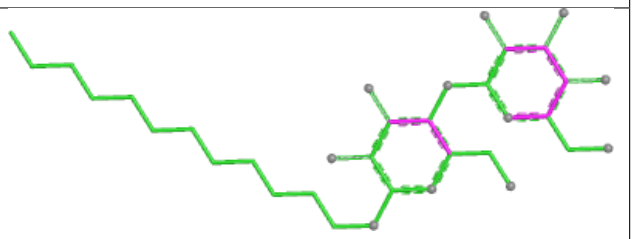


Rings

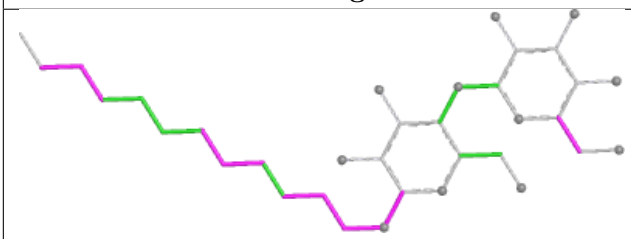
Ligand LMT C 524



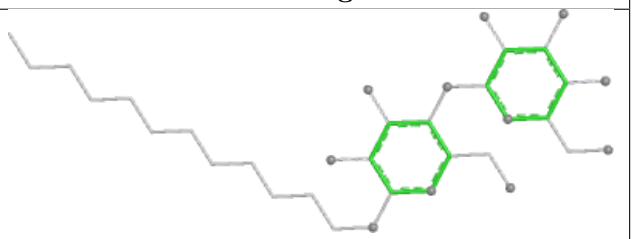
Bond lengths



Bond angles

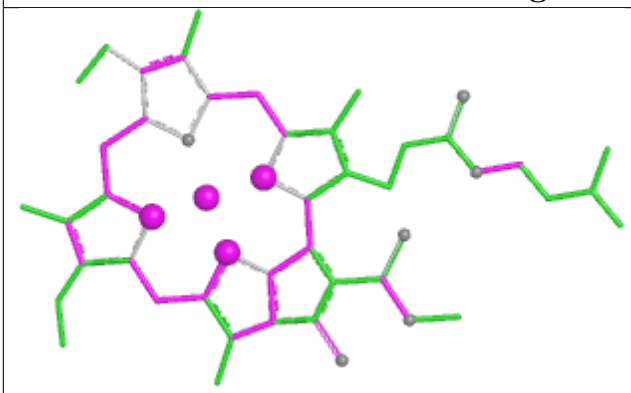


Torsions

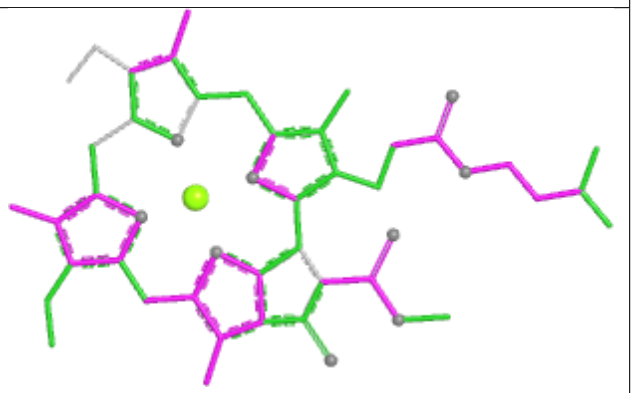


Rings

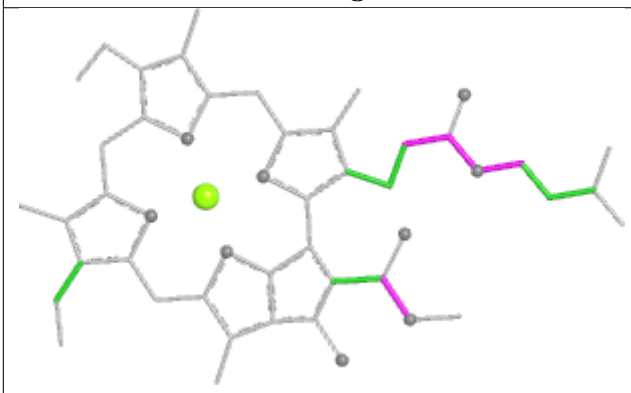
Ligand CLA c 513



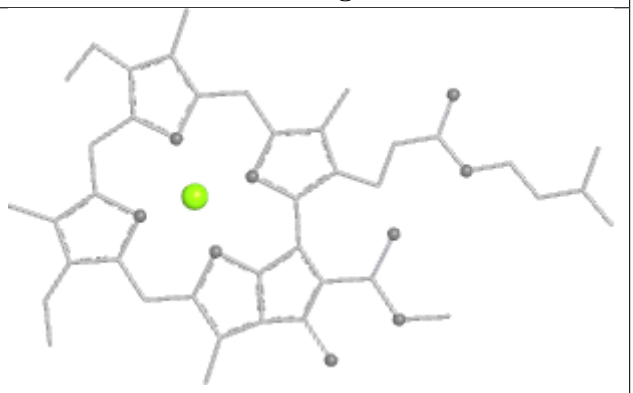
Bond lengths



Bond angles

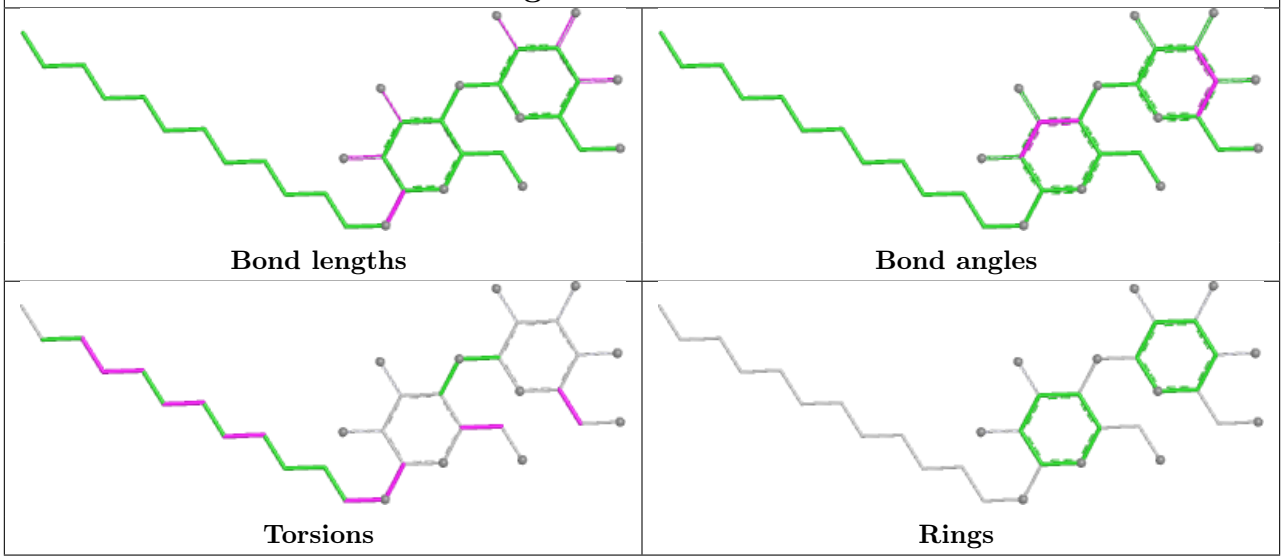


Torsions

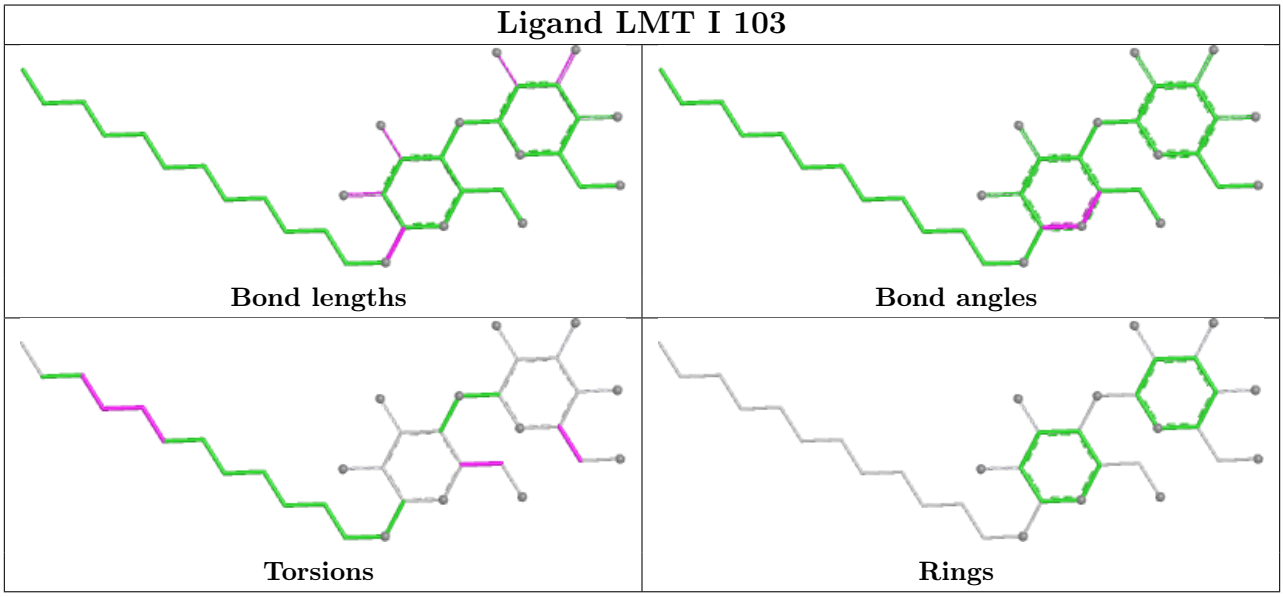


Rings

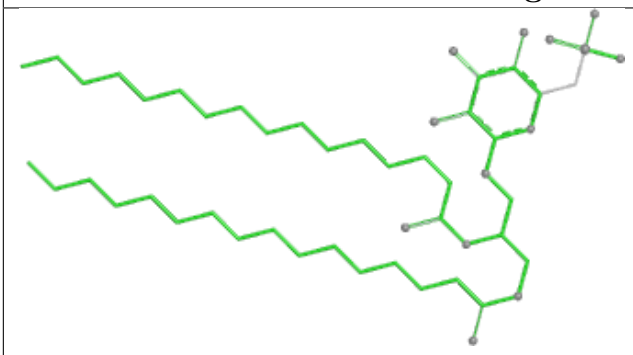
Ligand LMT F 103



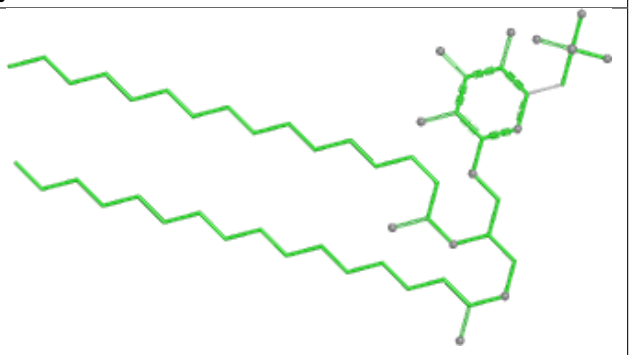
Ligand LMT I 103



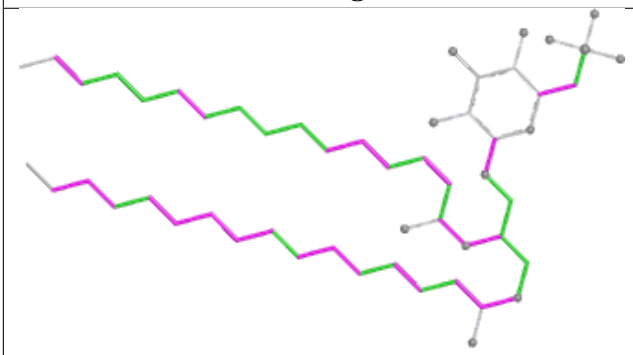
Ligand SQD B 620



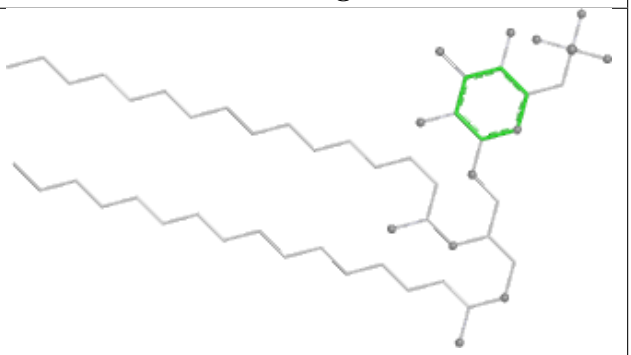
Bond lengths



Bond angles

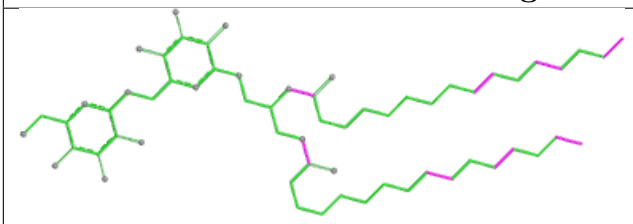


Torsions

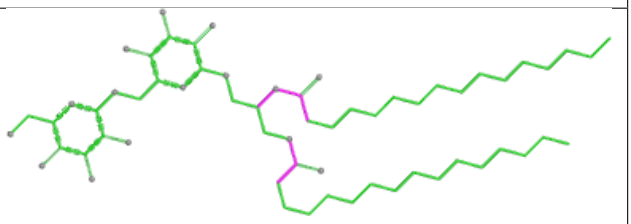


Rings

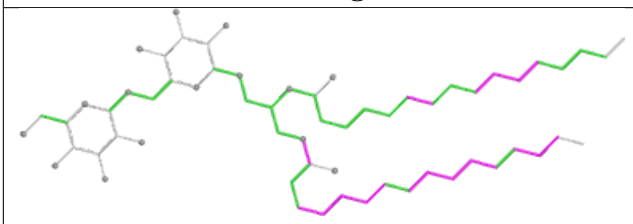
Ligand DGD C 518



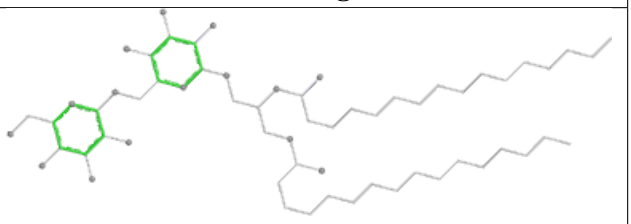
Bond lengths



Bond angles

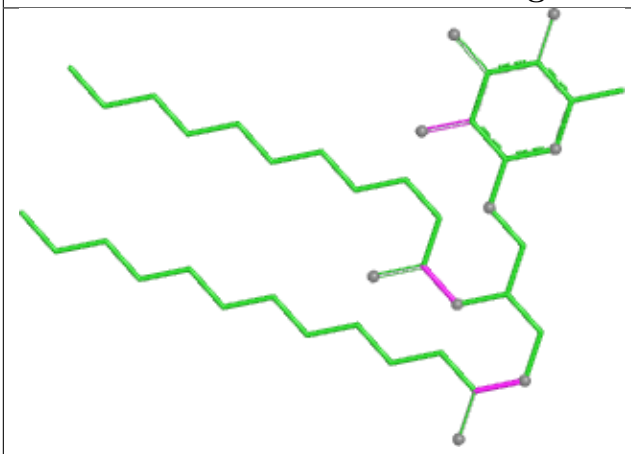


Torsions

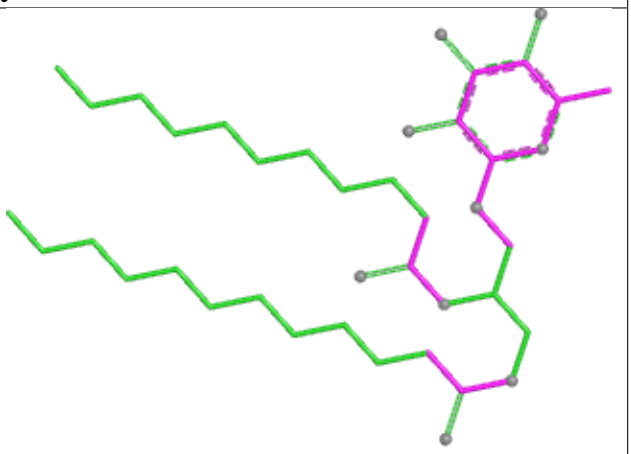


Rings

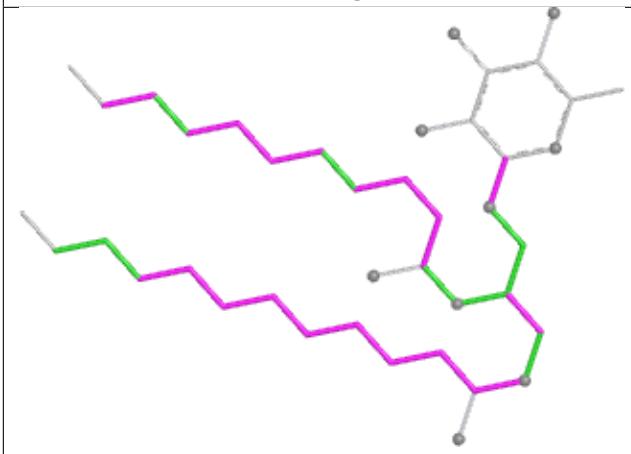
Ligand SQD k 101



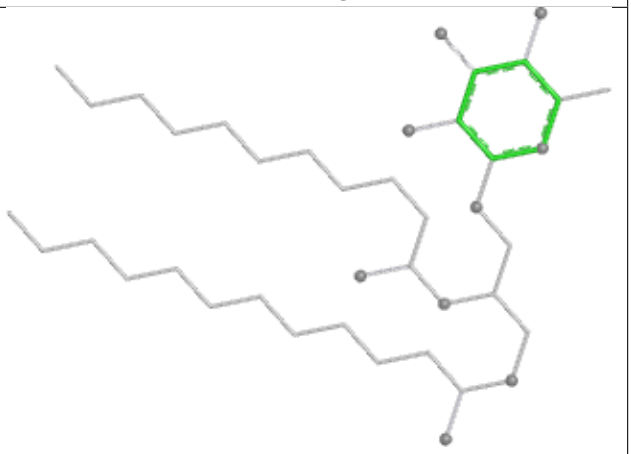
Bond lengths



Bond angles

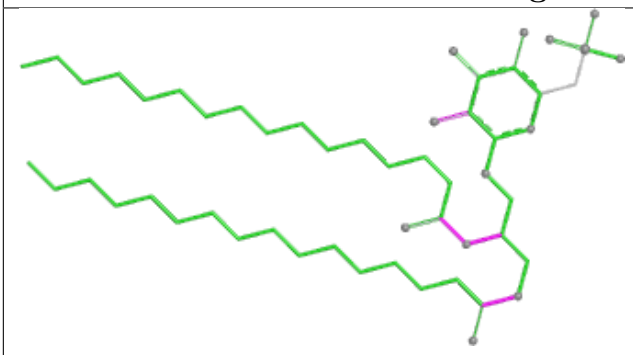


Torsions

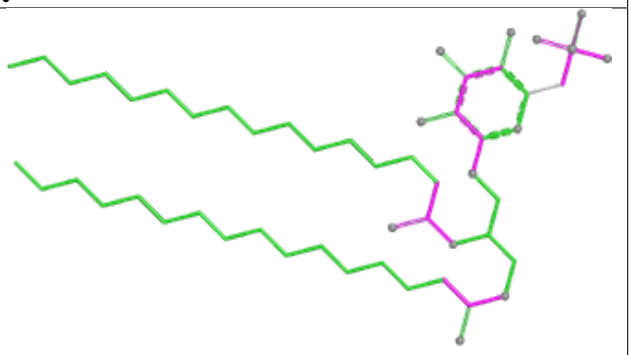


Rings

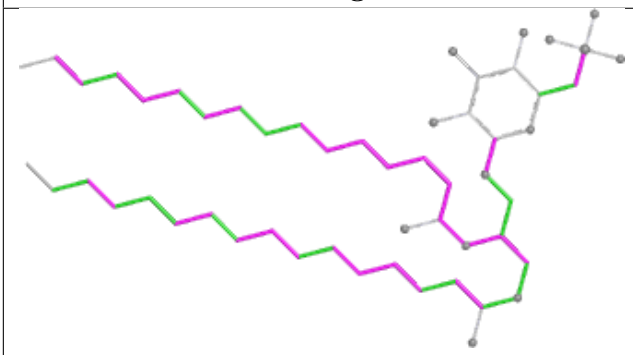
Ligand SQD c 501



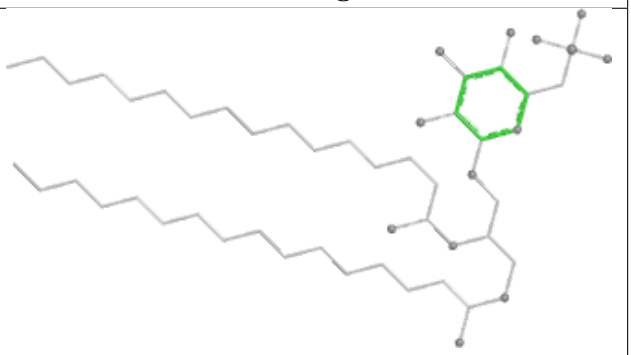
Bond lengths



Bond angles

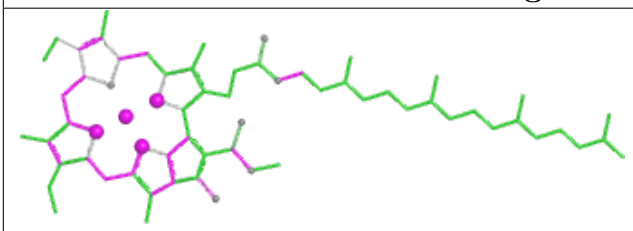


Torsions

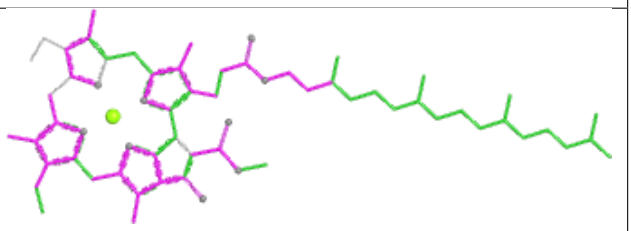


Rings

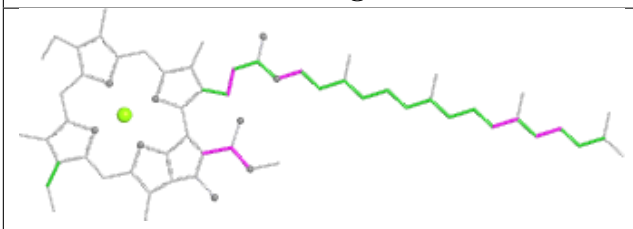
Ligand CLA C 503



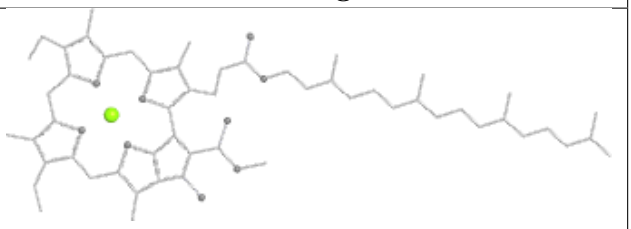
Bond lengths



Bond angles

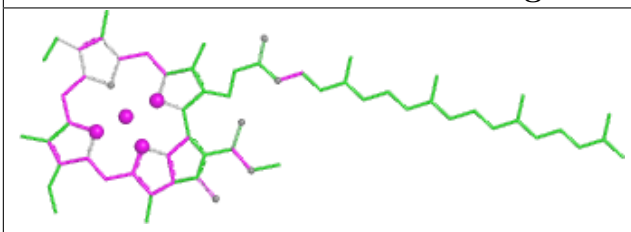


Torsions

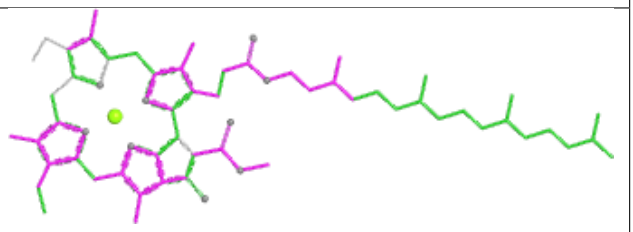


Rings

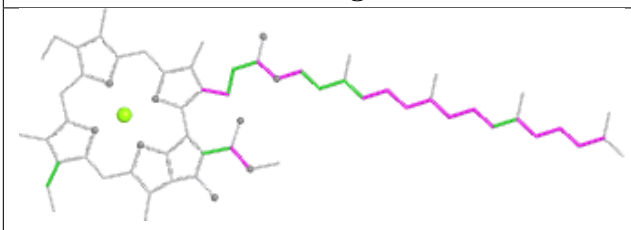
Ligand CLA C 512



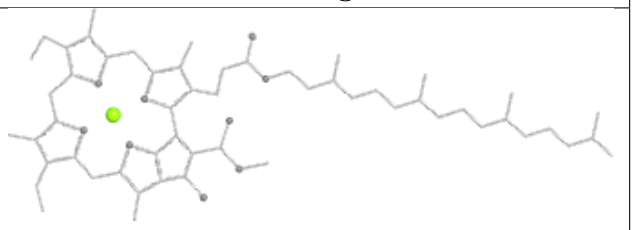
Bond lengths



Bond angles

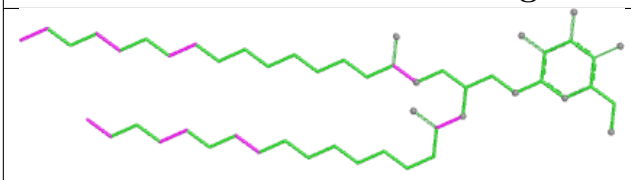


Torsions

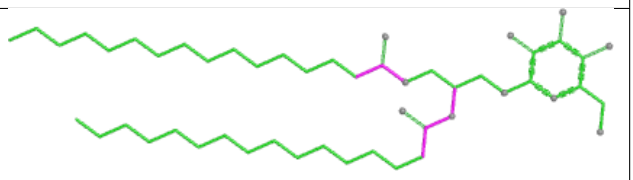


Rings

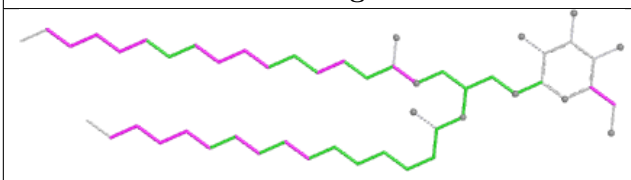
Ligand LMG C 519



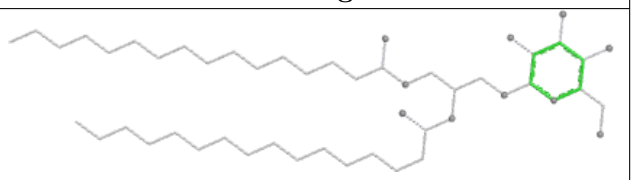
Bond lengths



Bond angles

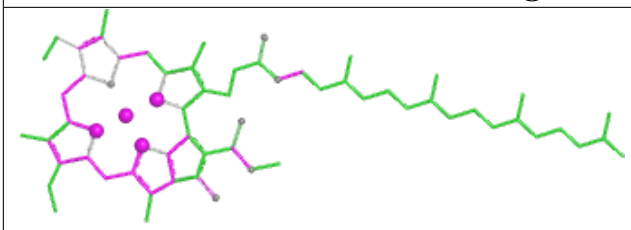


Torsions

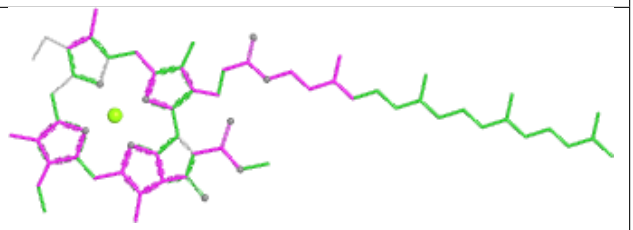


Rings

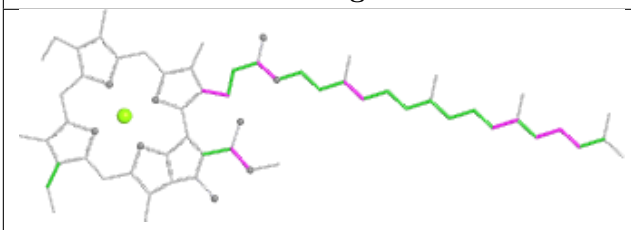
Ligand CLA D 404



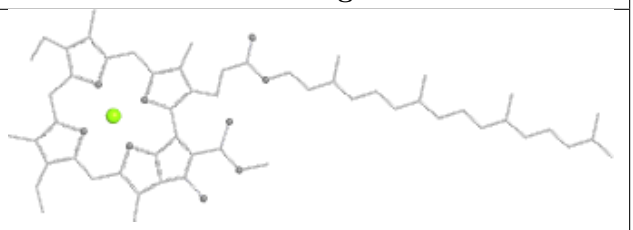
Bond lengths



Bond angles

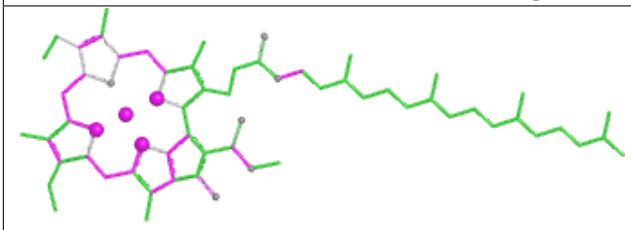


Torsions

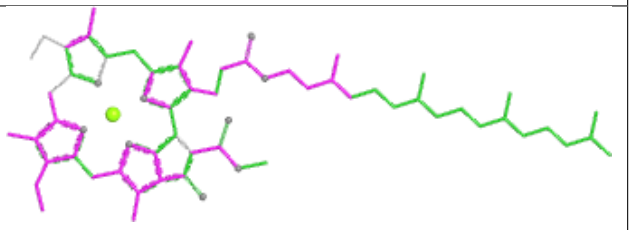


Rings

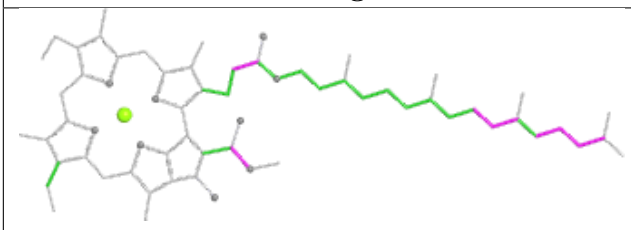
Ligand CLA d 403



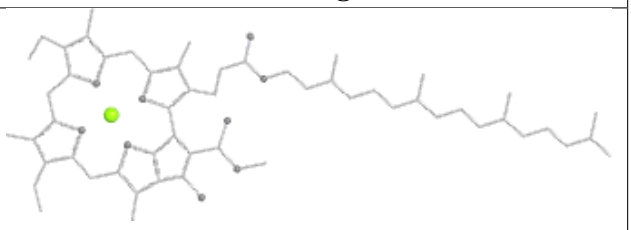
Bond lengths



Bond angles

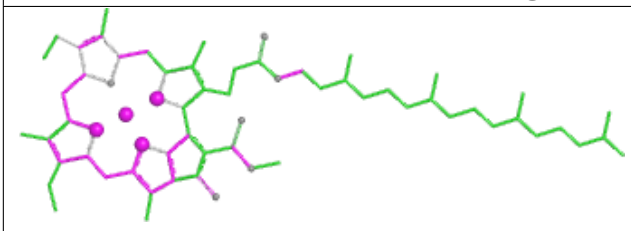


Torsions

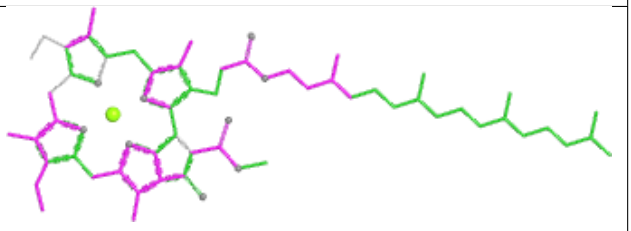


Rings

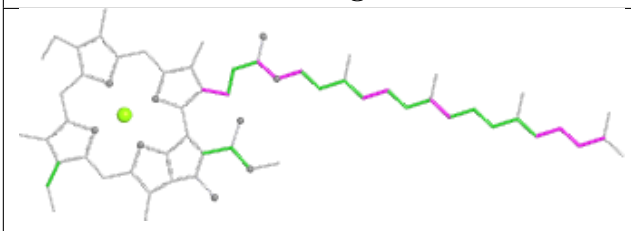
Ligand CLA A 406



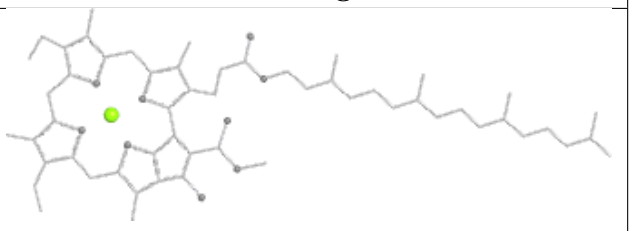
Bond lengths



Bond angles

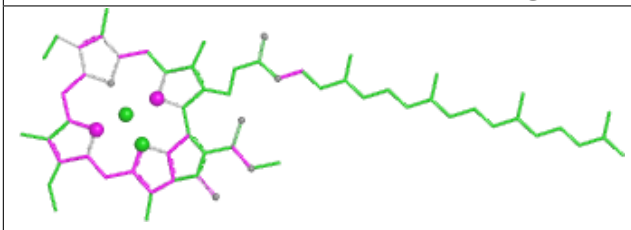


Torsions

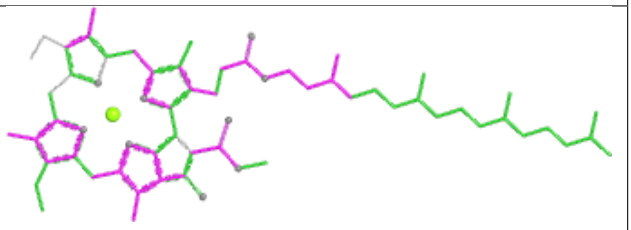


Rings

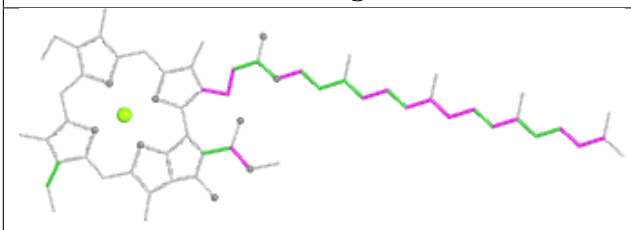
Ligand CLA B 602



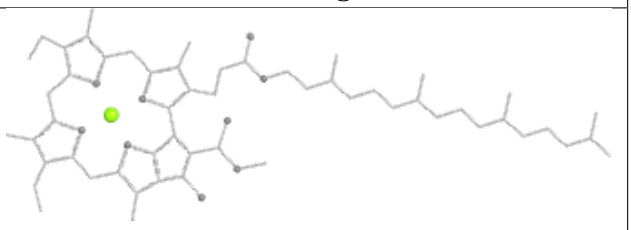
Bond lengths



Bond angles

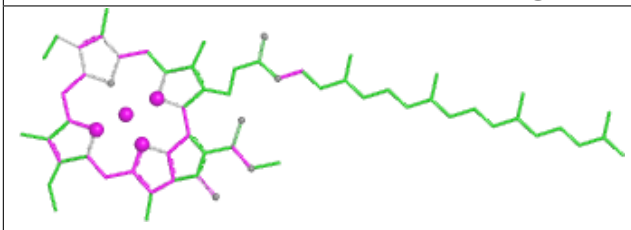


Torsions

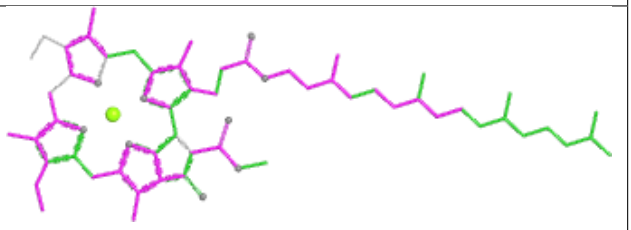


Rings

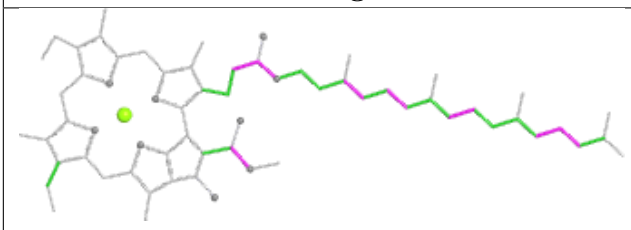
Ligand CLA c 511



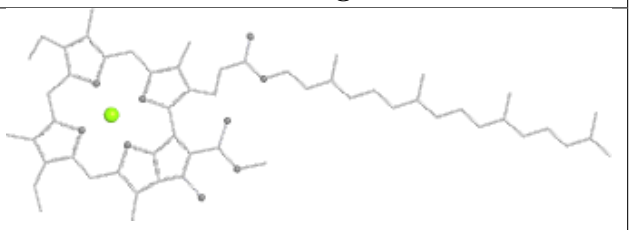
Bond lengths



Bond angles

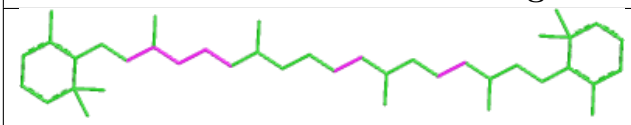


Torsions



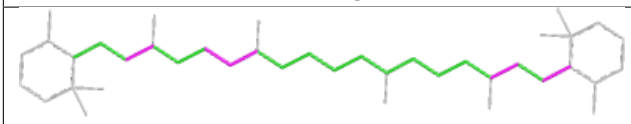
Rings

Ligand BCR z 101

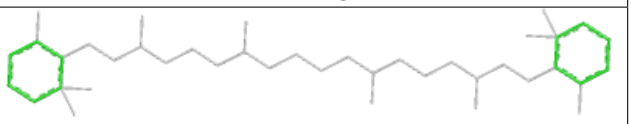


Bond lengths

Bond angles

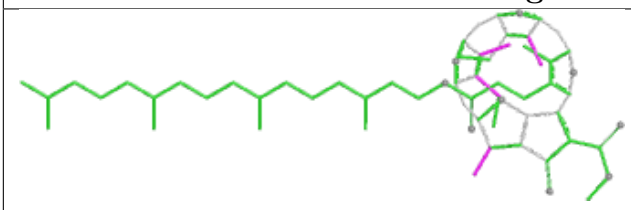


Torsions

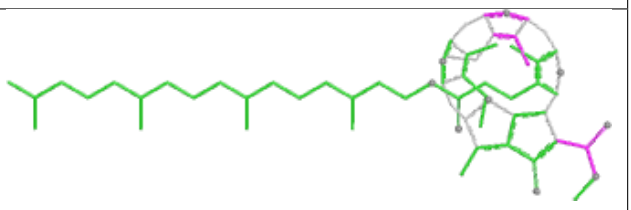


Rings

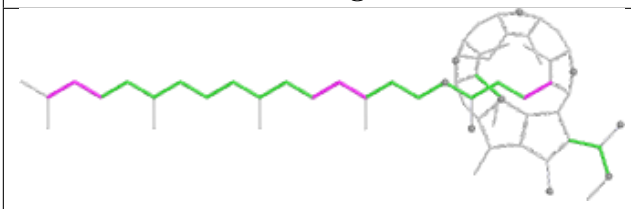
Ligand PHO a 407



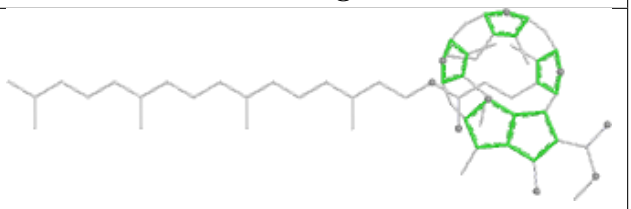
Bond lengths



Bond angles

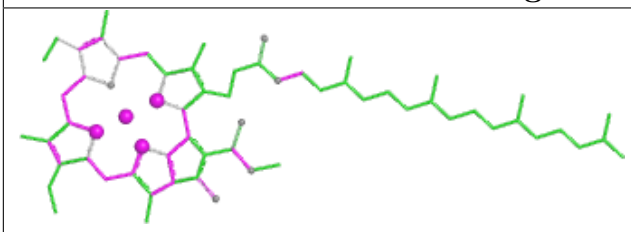


Torsions

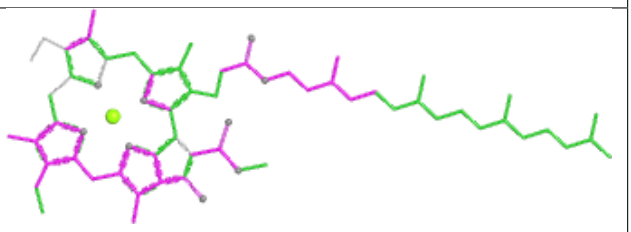


Rings

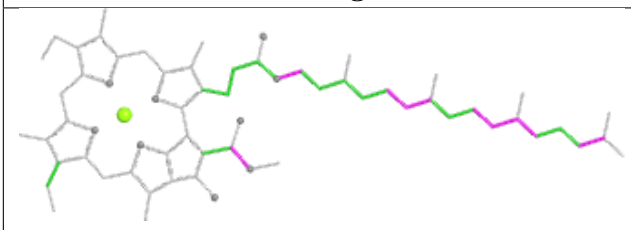
Ligand CLA B 615



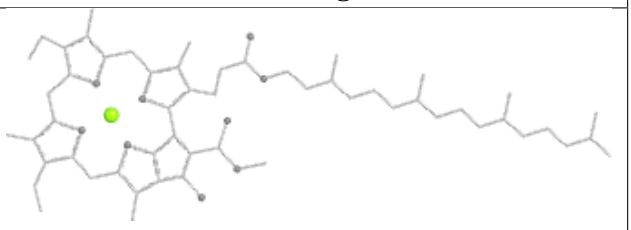
Bond lengths



Bond angles

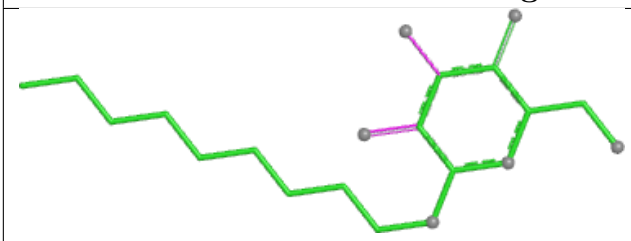


Torsions

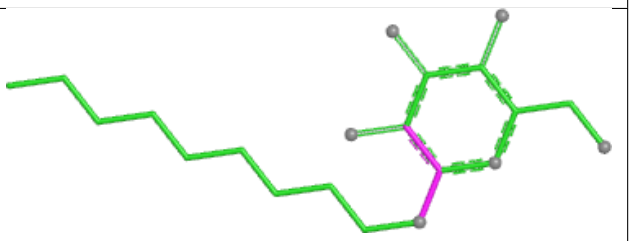


Rings

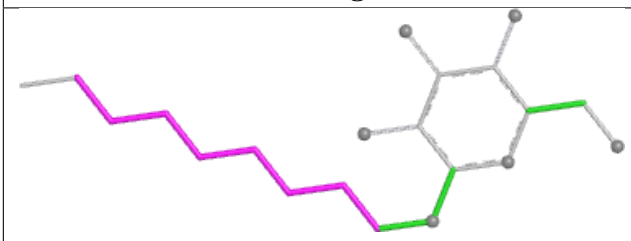
Ligand LMT Y 101



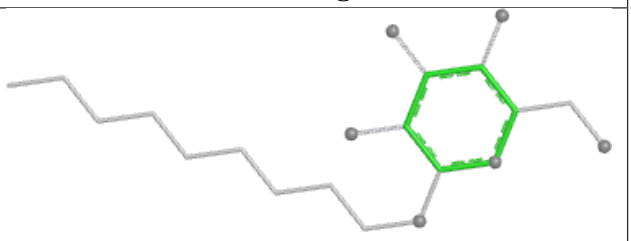
Bond lengths



Bond angles

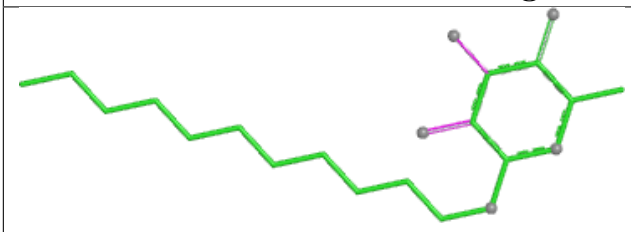


Torsions

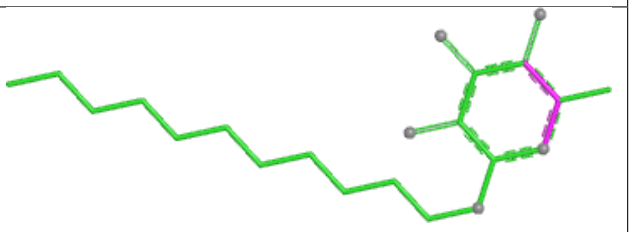


Rings

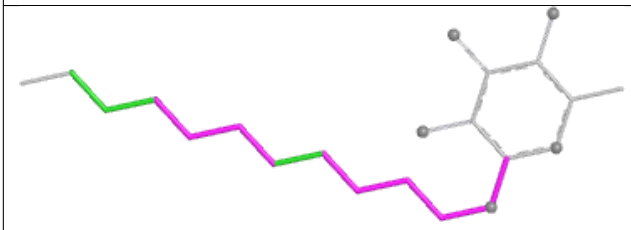
Ligand LMT X 102



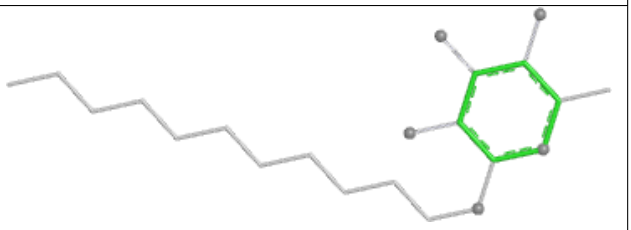
Bond lengths



Bond angles

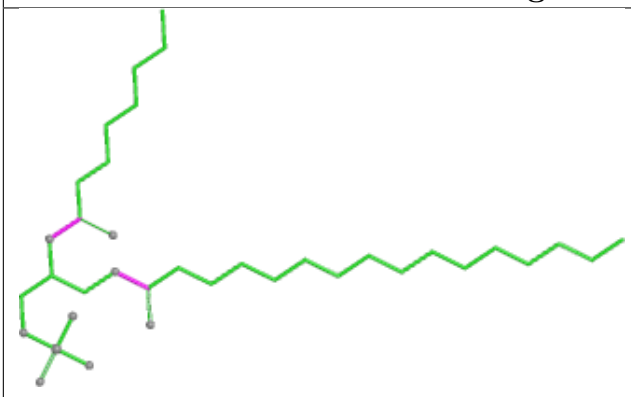


Torsions

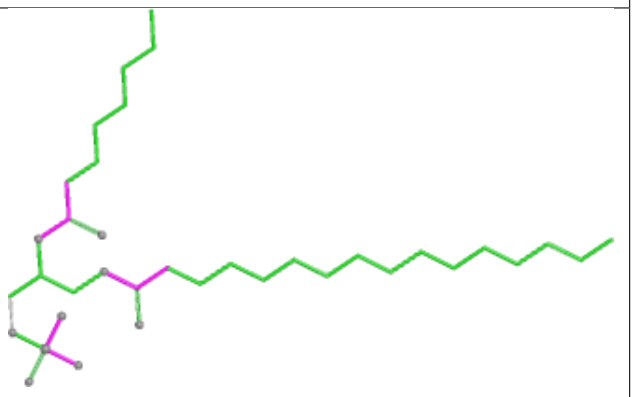


Rings

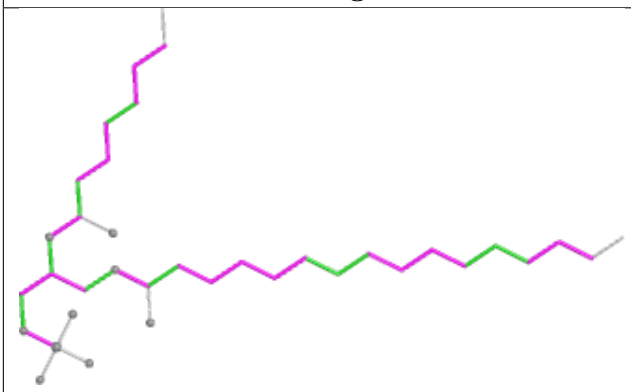
Ligand LHG z 102



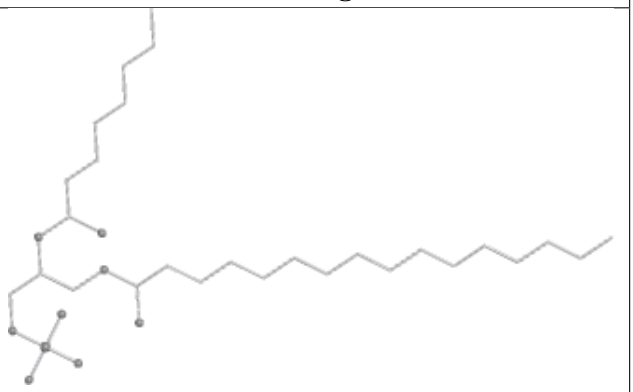
Bond lengths



Bond angles

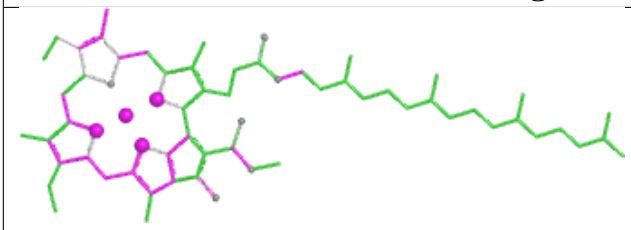


Torsions

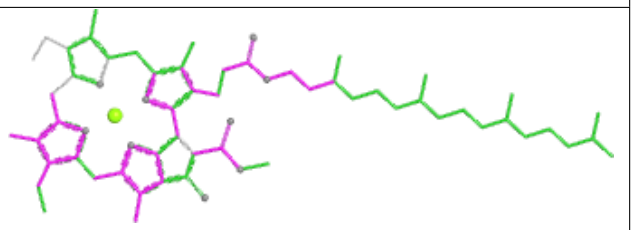


Rings

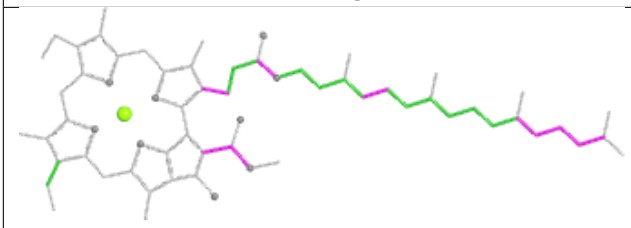
Ligand CLA c 507



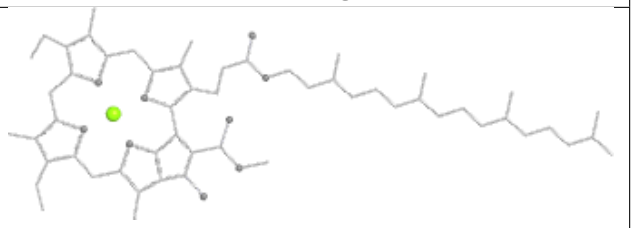
Bond lengths



Bond angles

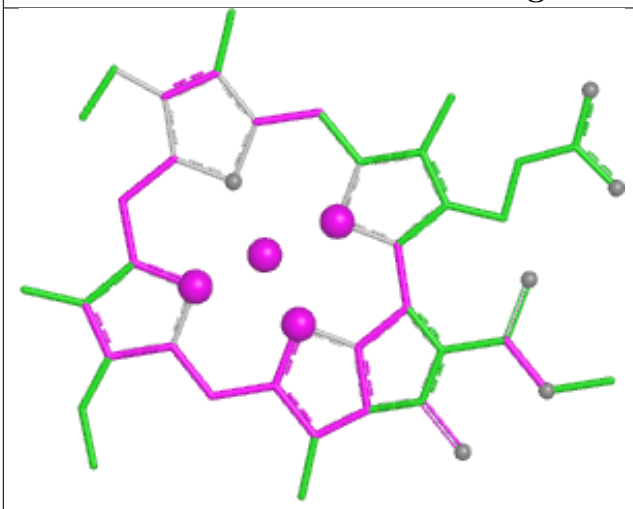


Torsions

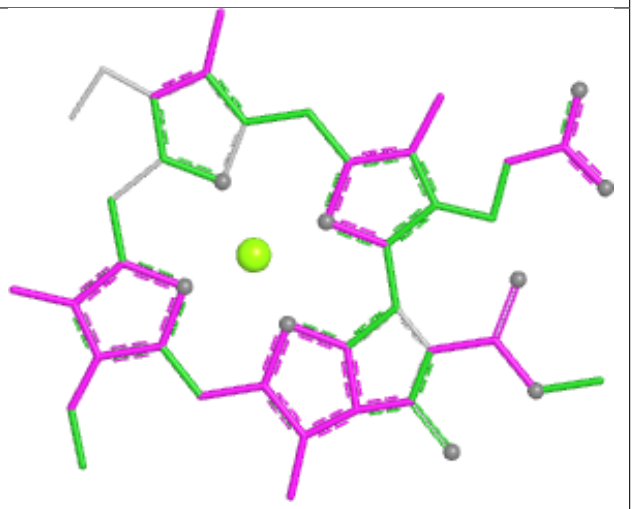


Rings

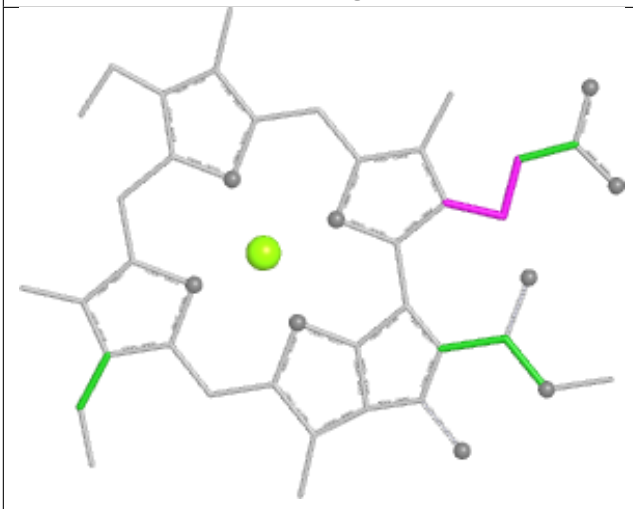
Ligand CLA b 601



Bond lengths



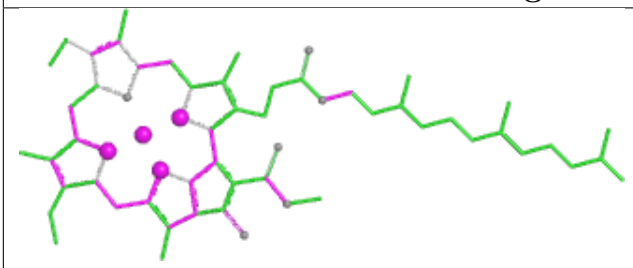
Bond angles



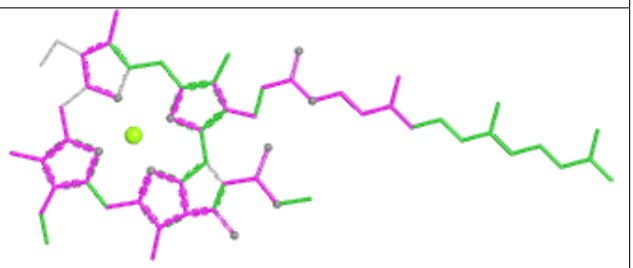
Torsions

Rings

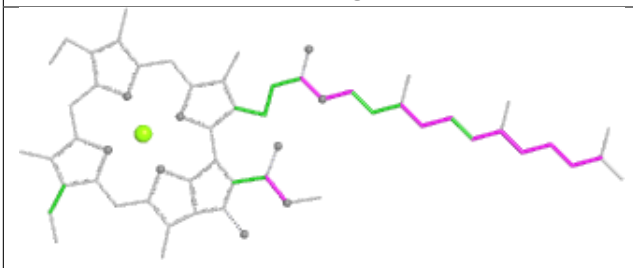
Ligand CLA B 616



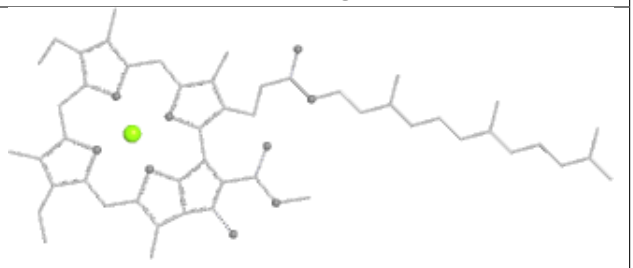
Bond lengths



Bond angles

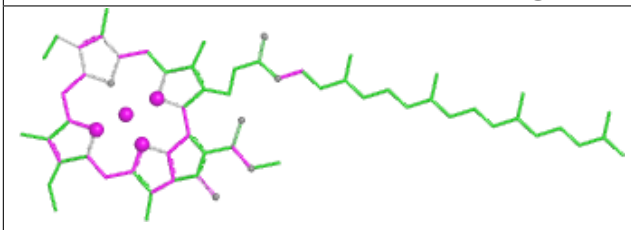


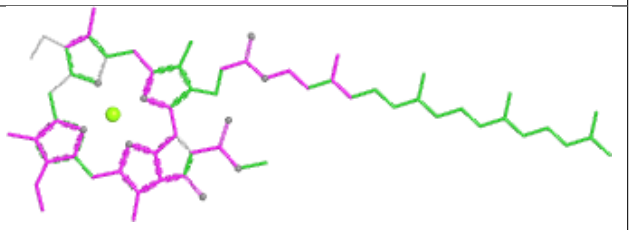
Torsions

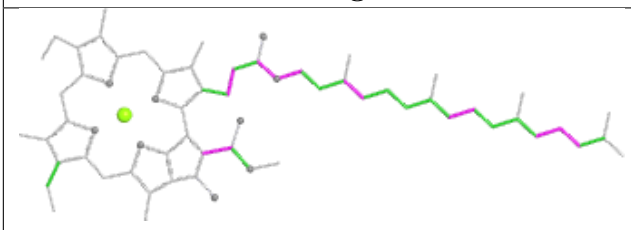


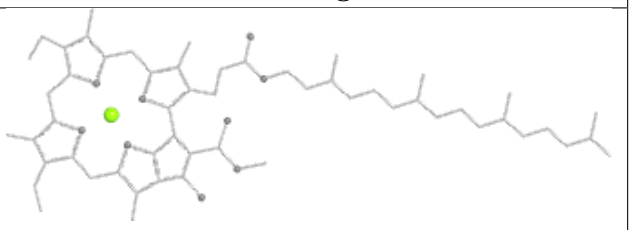
Rings

Ligand CLA c 508

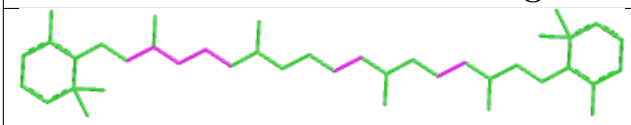

Bond lengths


Bond angles

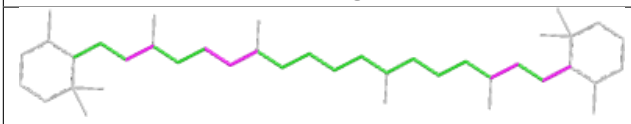

Torsions

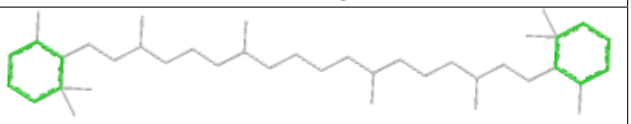

Rings

Ligand BCR Z 101

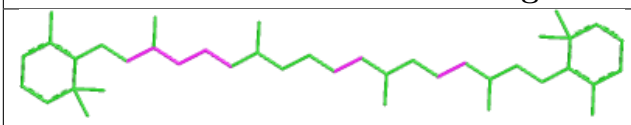

Bond lengths

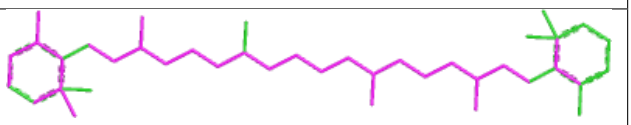

Bond angles

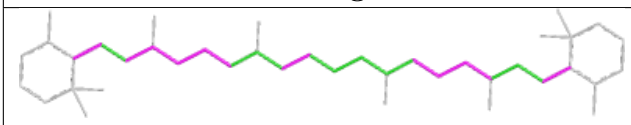

Torsions

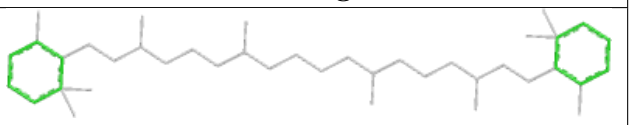

Rings

Ligand BCR K 102

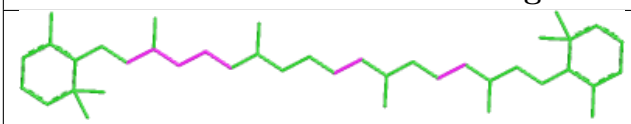

Bond lengths

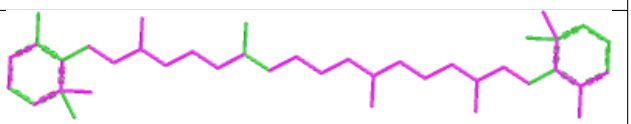

Bond angles

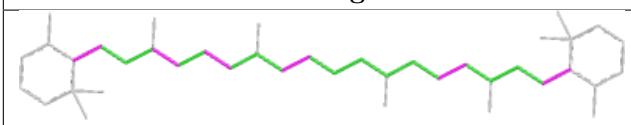

Torsions

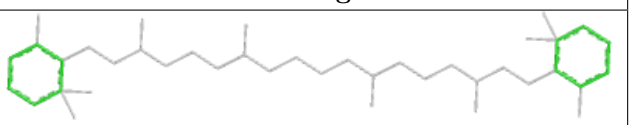

Rings

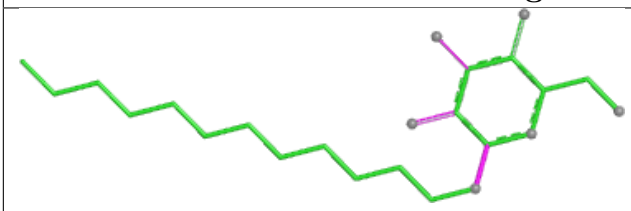
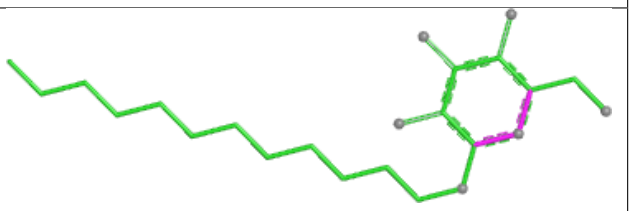
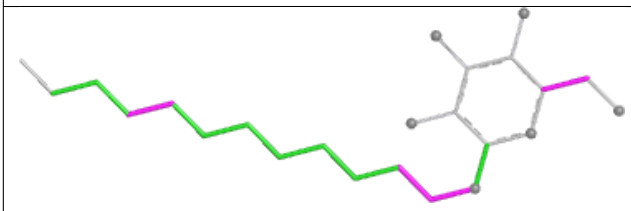
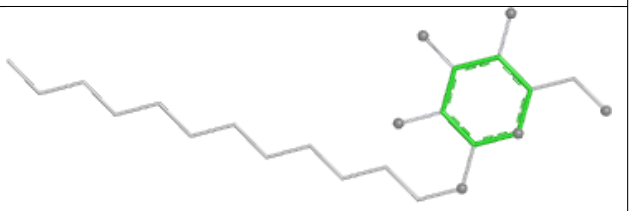
Ligand BCR F 101

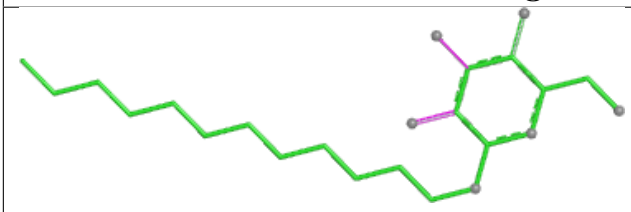
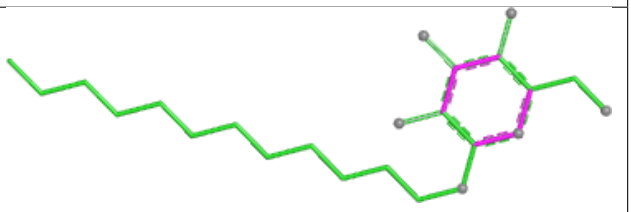
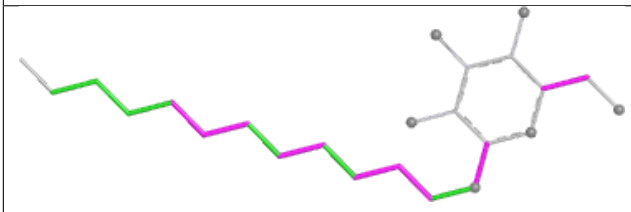
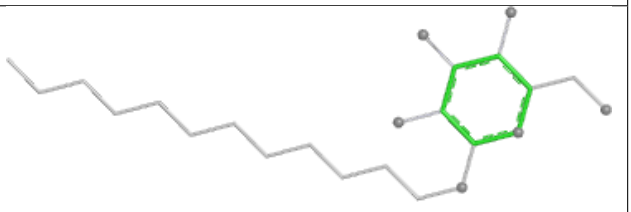

Bond lengths


Bond angles

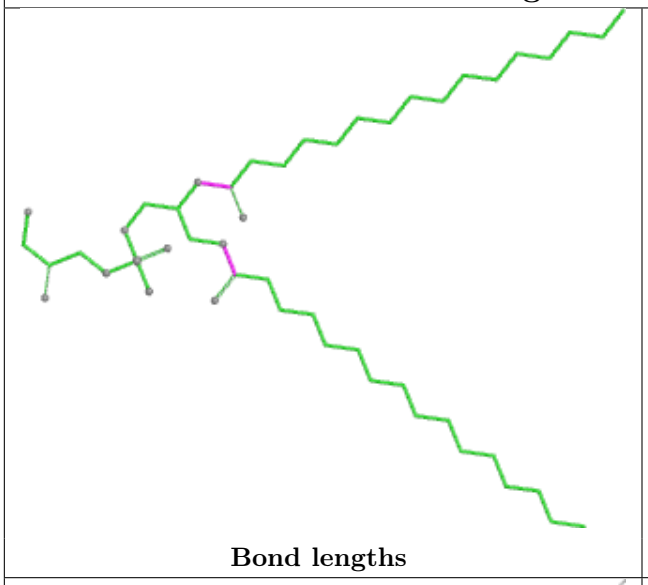

Torsions


Rings

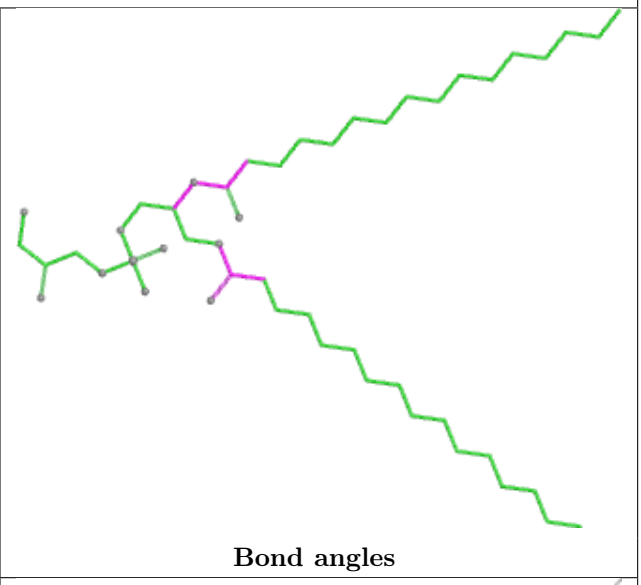
Ligand LMT a 416	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand LMT h 102	
 Bond lengths	 Bond angles
 Torsions	 Rings

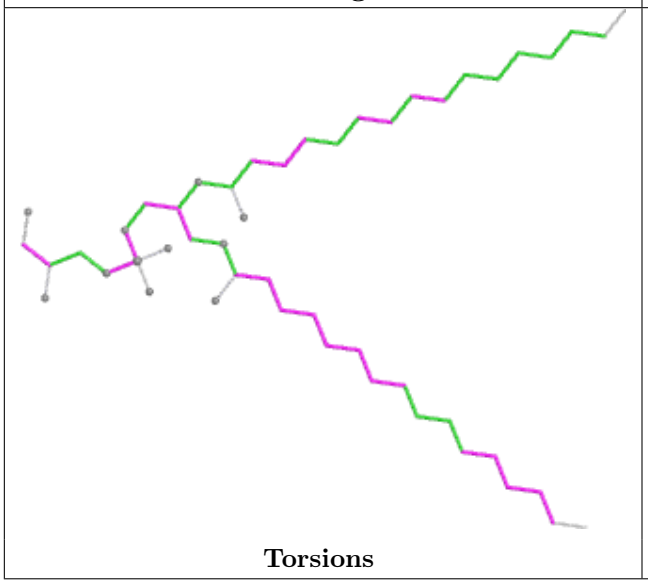
Ligand LHG D 407



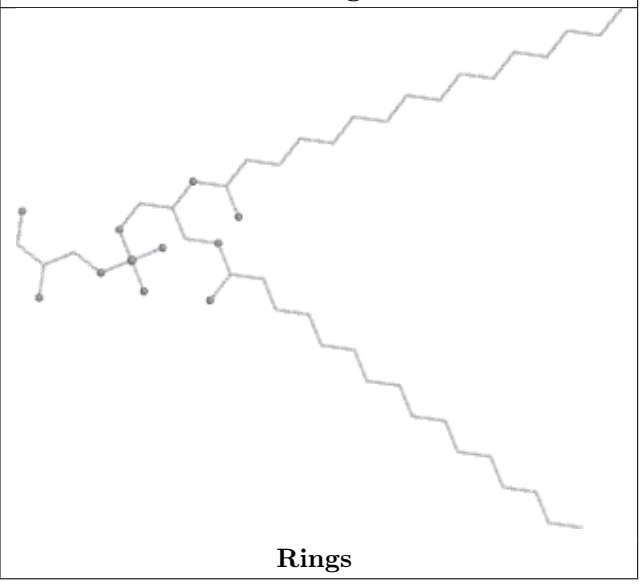
Bond lengths



Bond angles

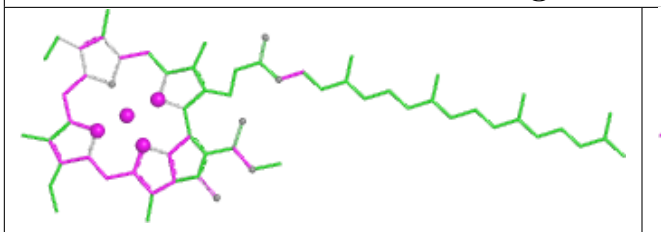


Torsions

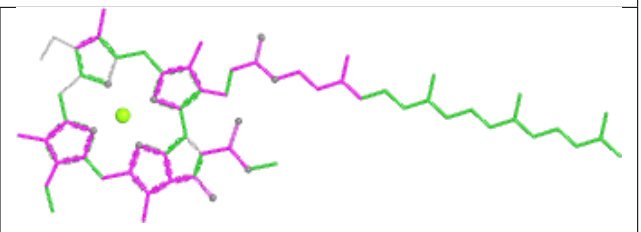


Rings

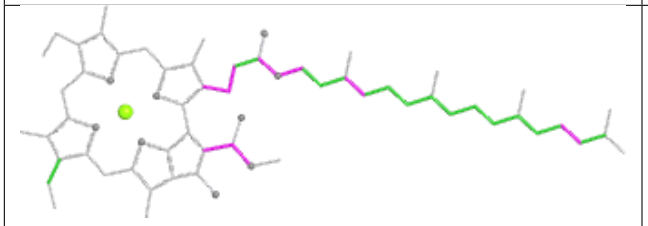
Ligand CLA c 502



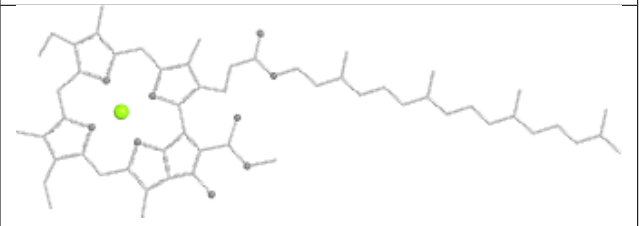
Bond lengths



Bond angles

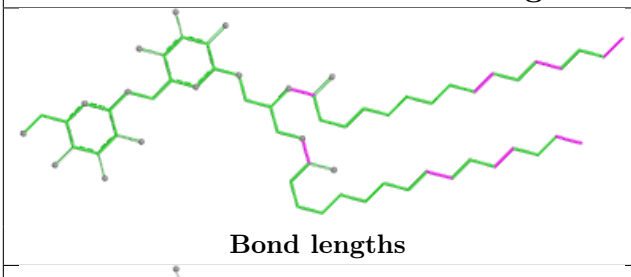


Torsions

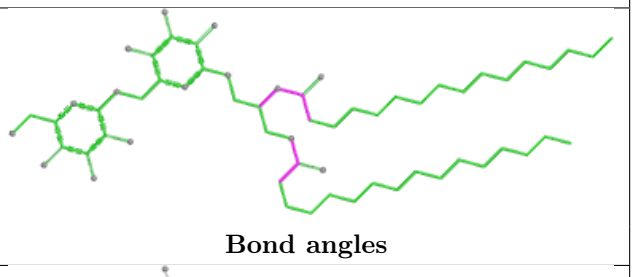


Rings

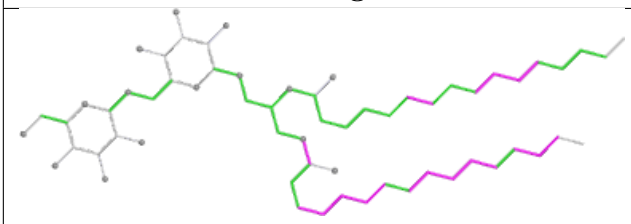
Ligand DGD c 518



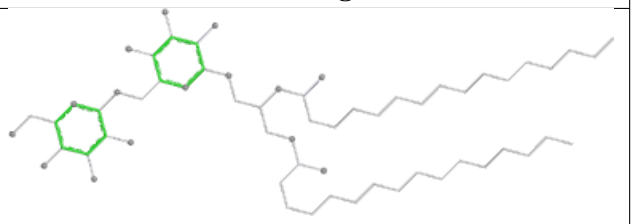
Bond lengths



Bond angles

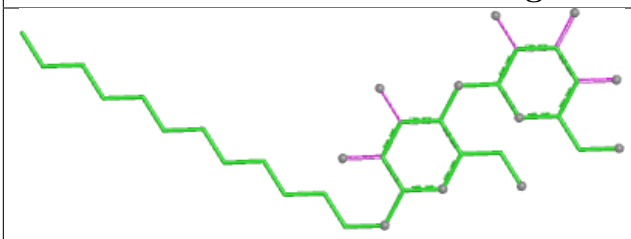


Torsions

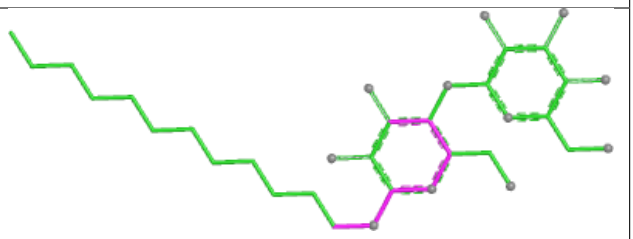


Rings

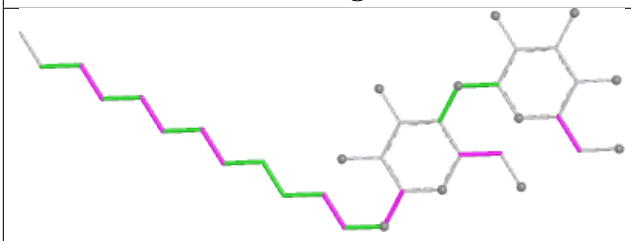
Ligand LMT a 415



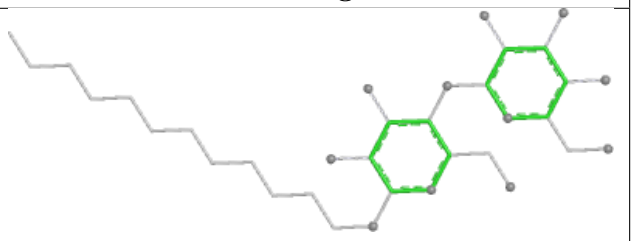
Bond lengths



Bond angles

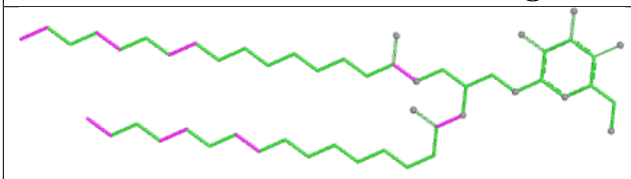


Torsions

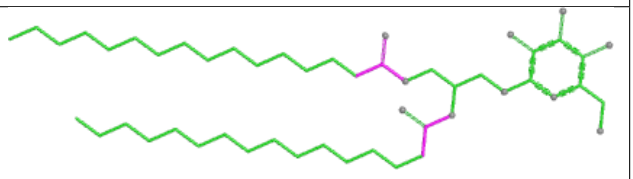


Rings

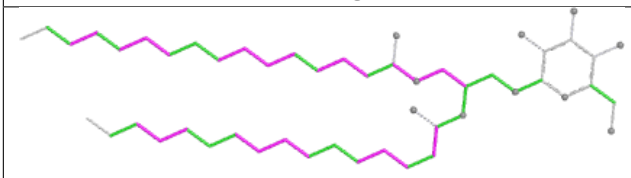
Ligand LMG a 410



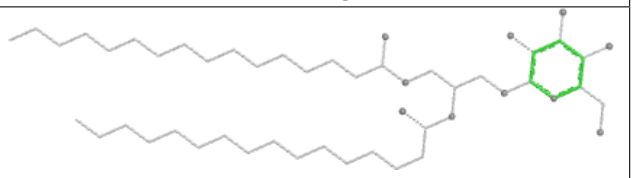
Bond lengths



Bond angles

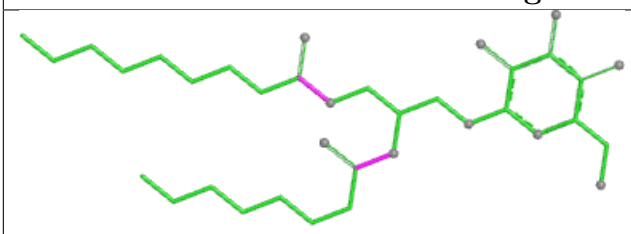


Torsions

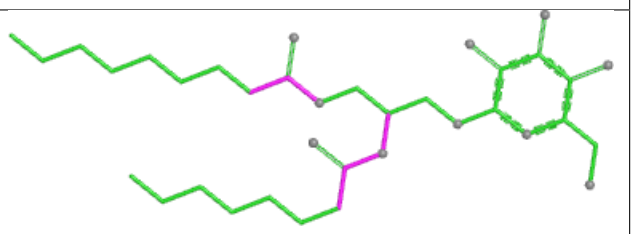


Rings

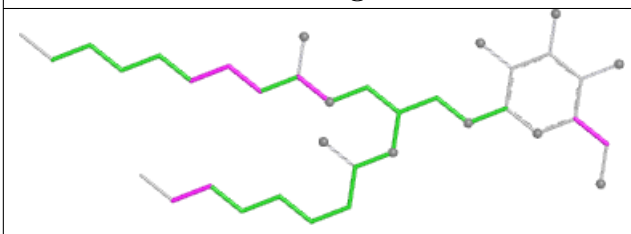
Ligand LMG a 414



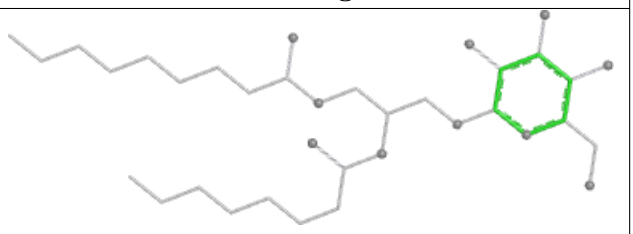
Bond lengths



Bond angles

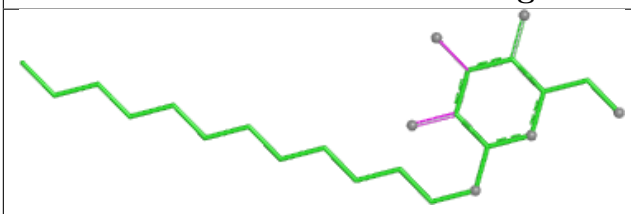


Torsions

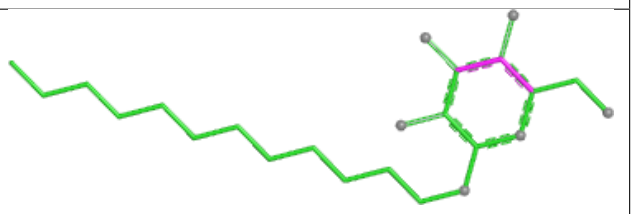


Rings

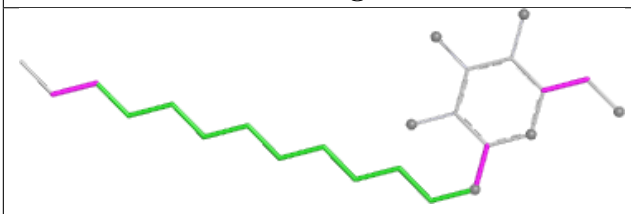
Ligand LMT M 102



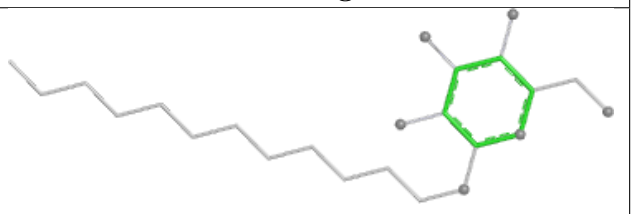
Bond lengths



Bond angles

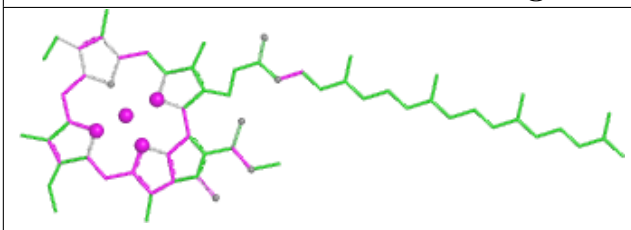


Torsions

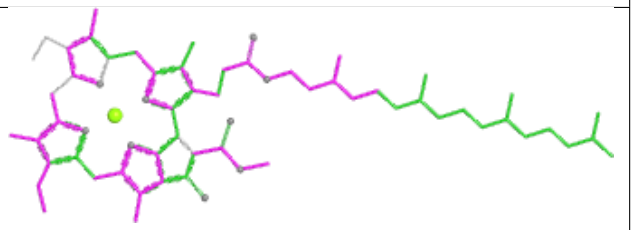


Rings

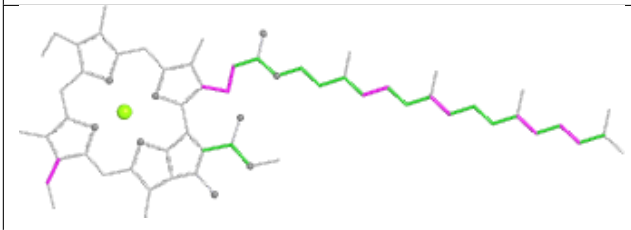
Ligand CLA d 401



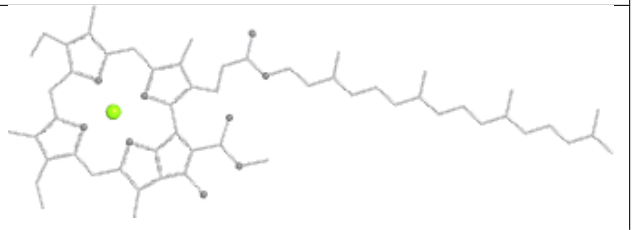
Bond lengths



Bond angles

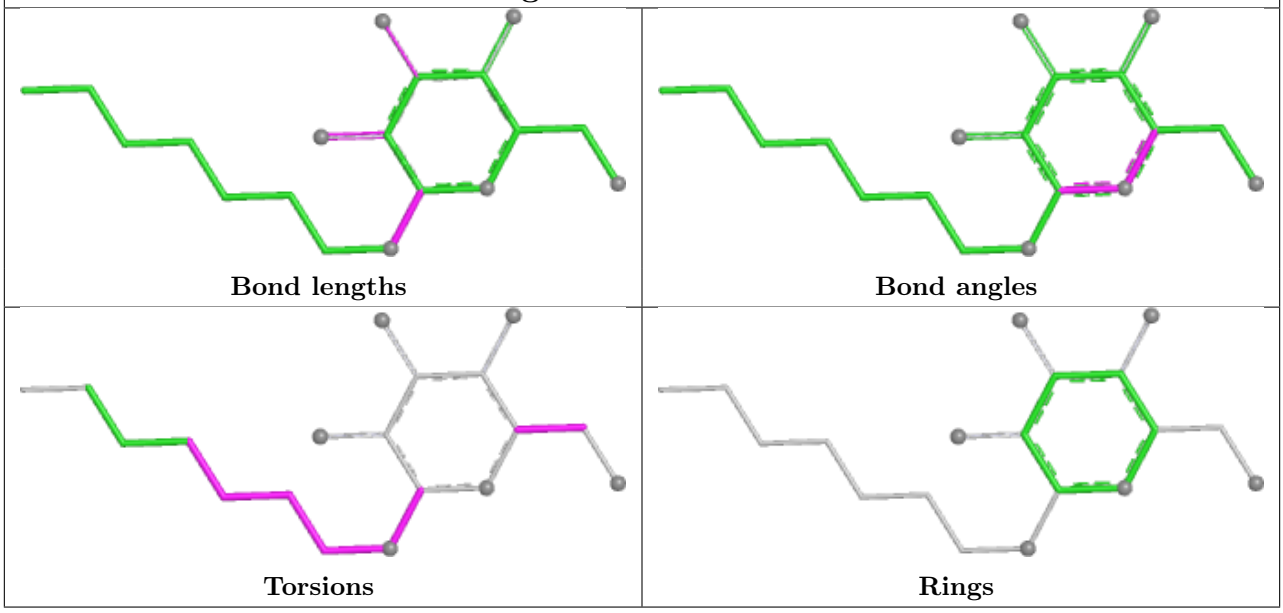


Torsions

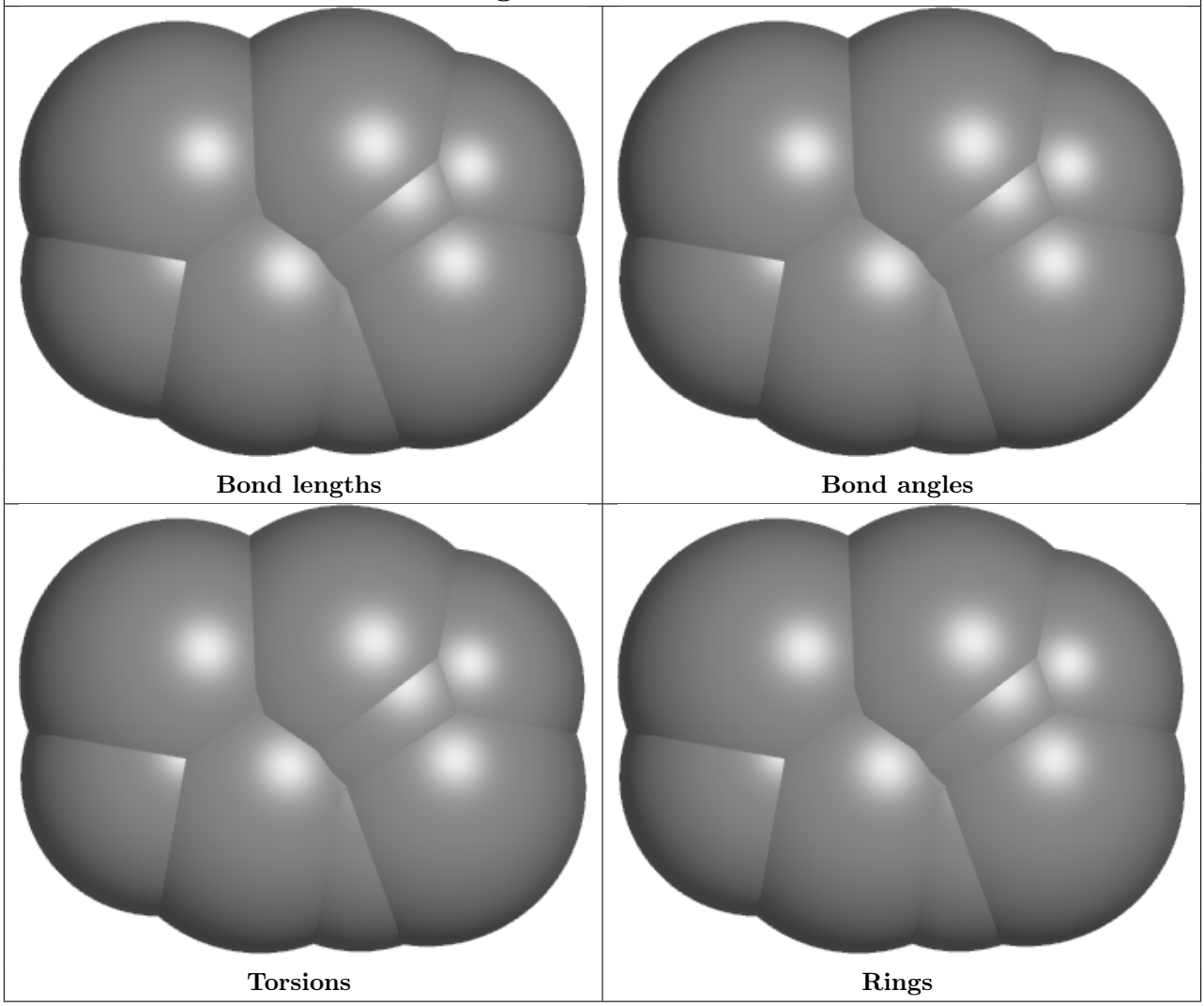


Rings

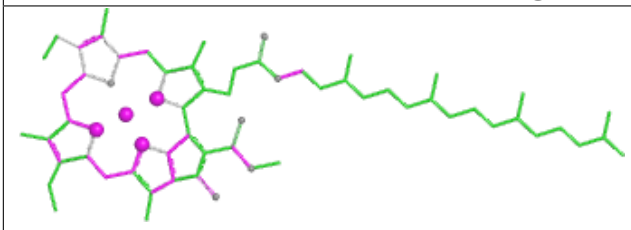
Ligand LMT X 104



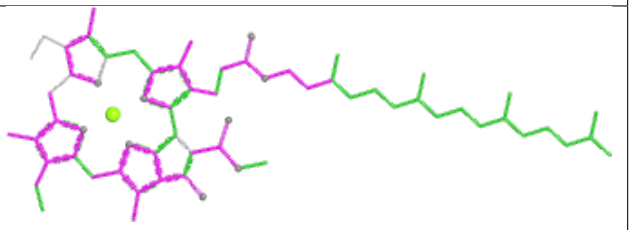
Ligand OEX a 401



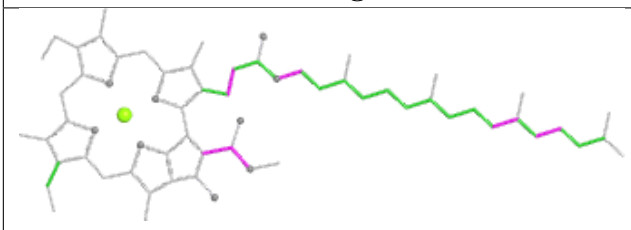
Ligand CLA c 503



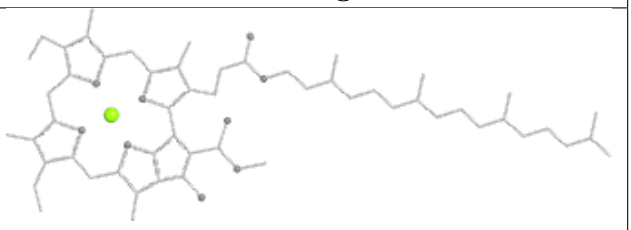
Bond lengths



Bond angles

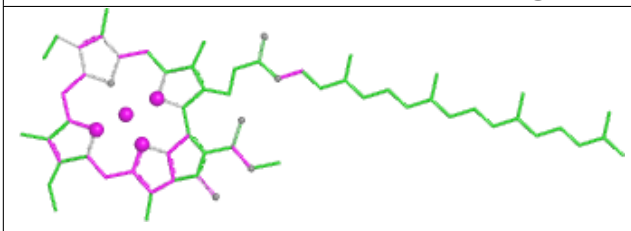


Torsions

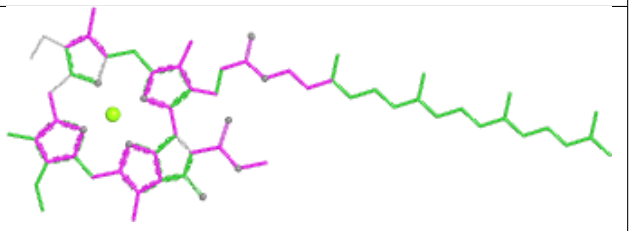


Rings

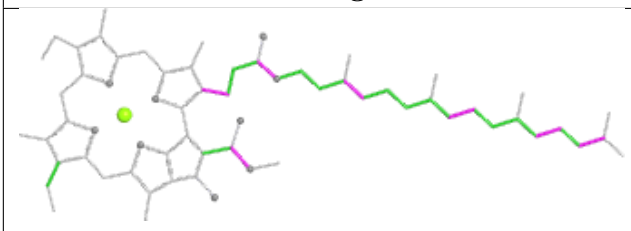
Ligand CLA c 509



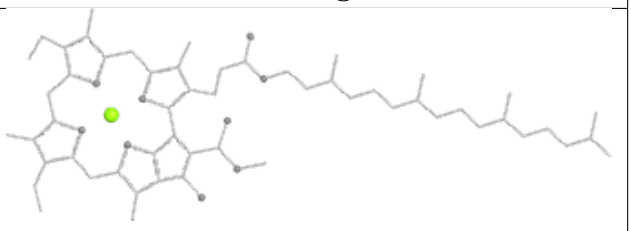
Bond lengths



Bond angles

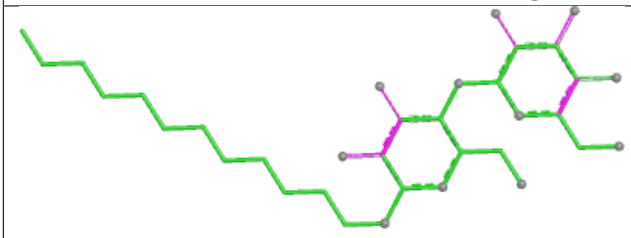


Torsions

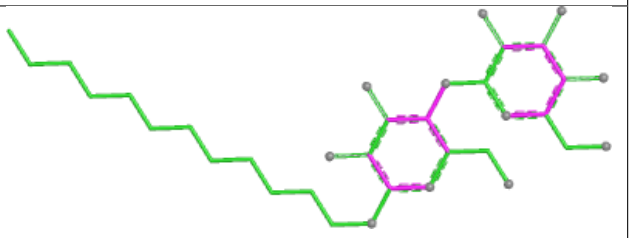


Rings

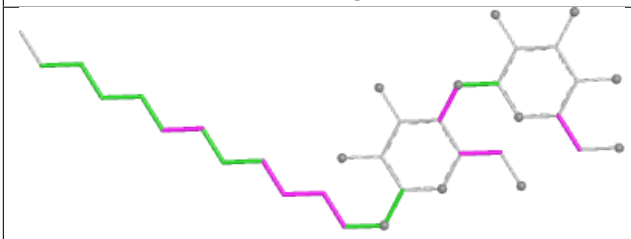
Ligand LMT e 103



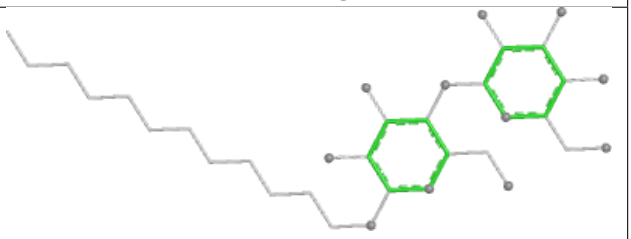
Bond lengths



Bond angles

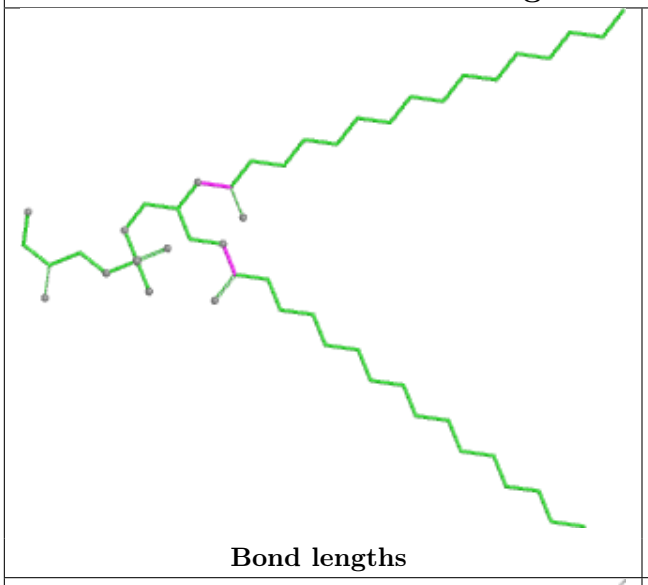


Torsions

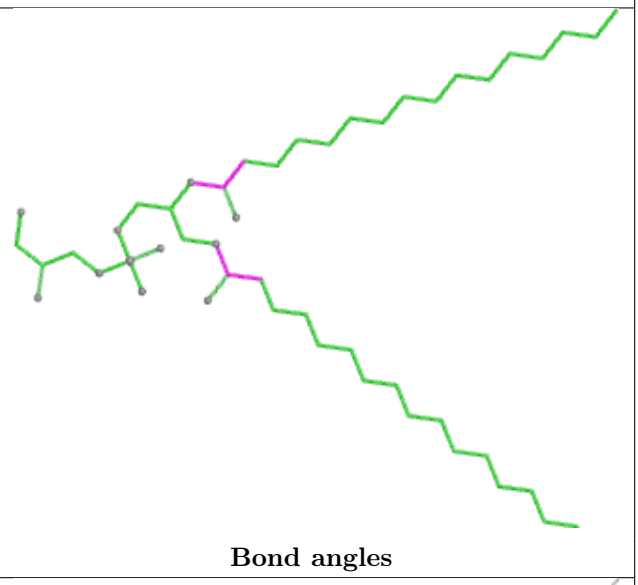


Rings

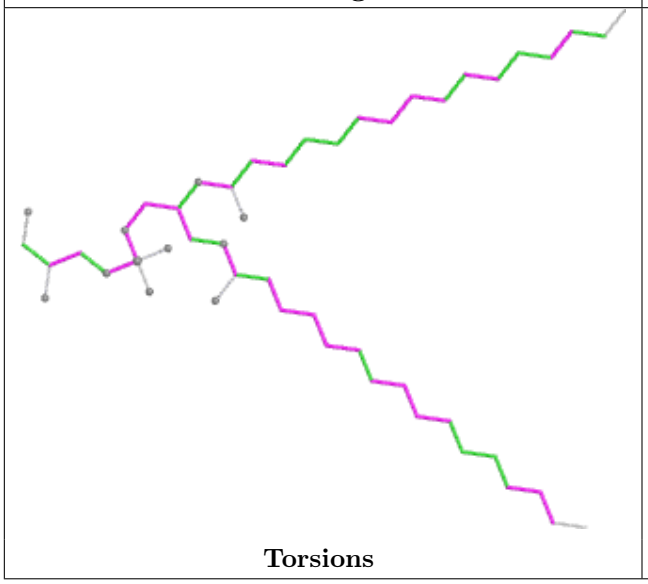
Ligand LHG B 627



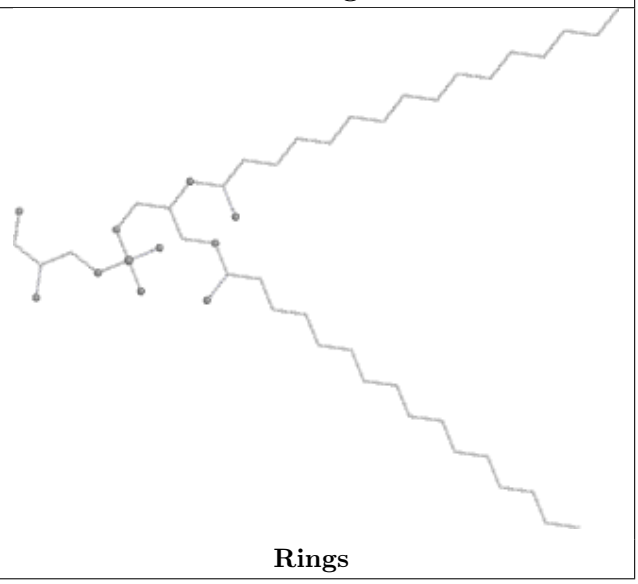
Bond lengths



Bond angles

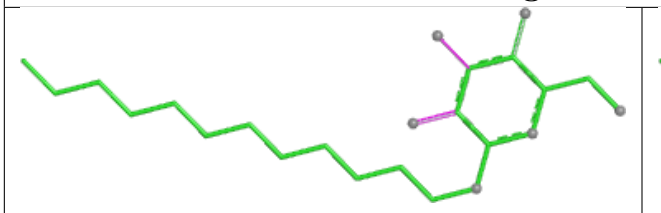


Torsions



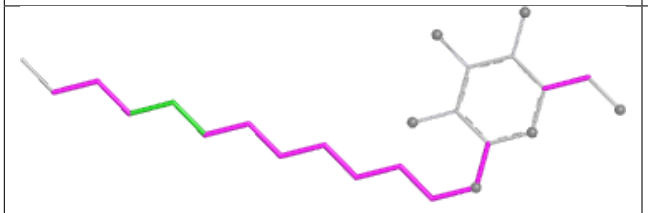
Rings

Ligand LMT T 101

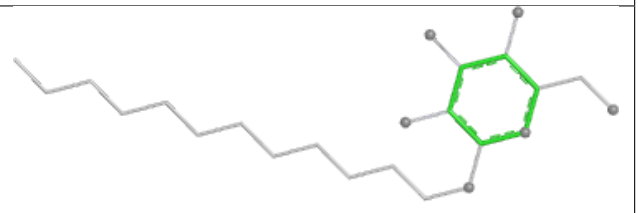


Bond lengths

Bond angles

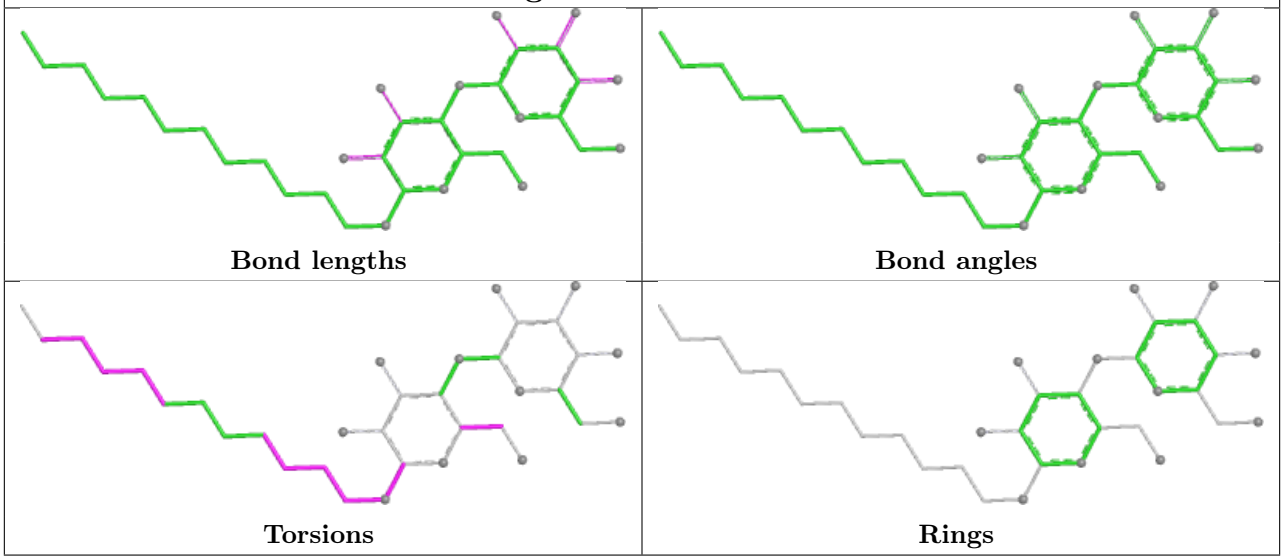


Torsions

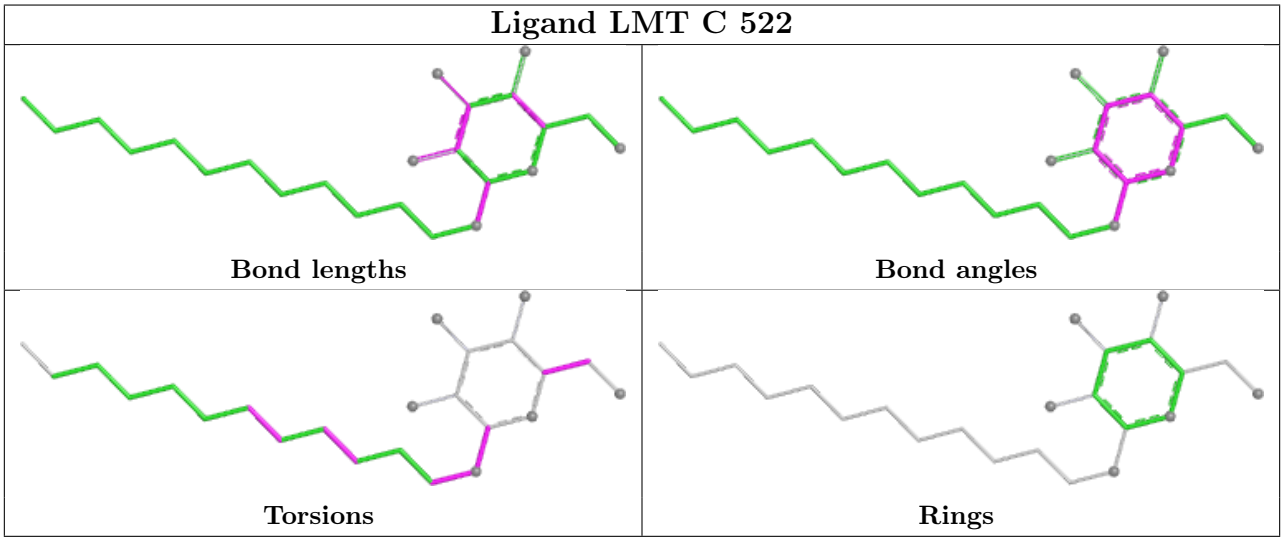


Rings

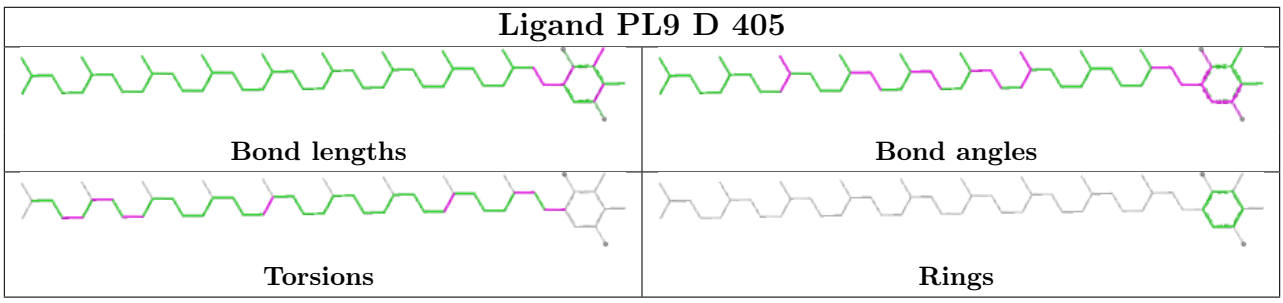
Ligand LMT d 411



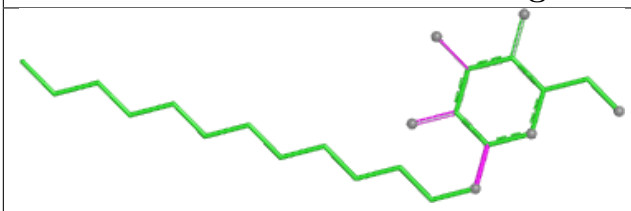
Ligand LMT C 522



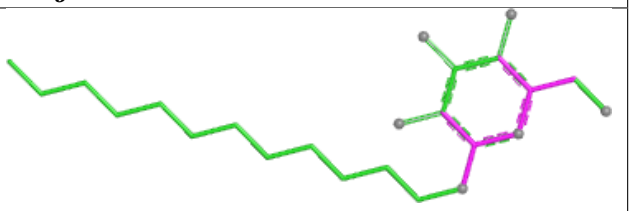
Ligand PL9 D 405



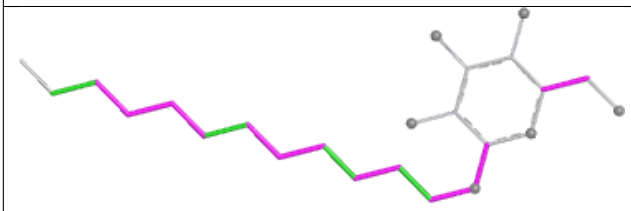
Ligand LMT j 101



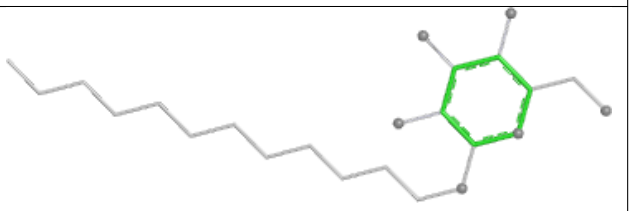
Bond lengths



Bond angles

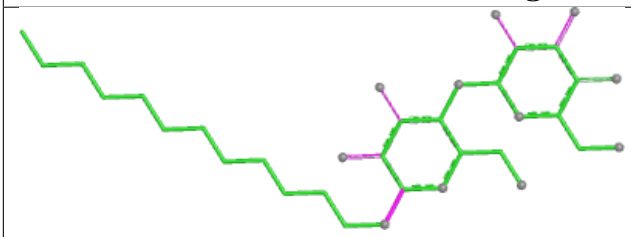


Torsions

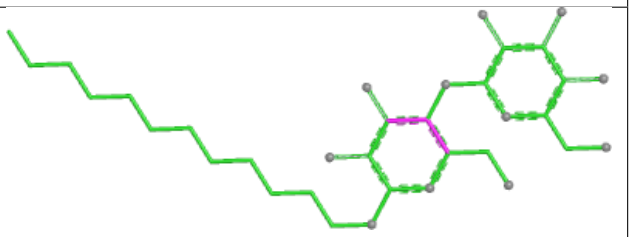


Rings

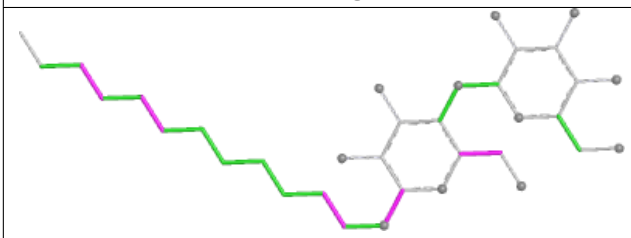
Ligand LMT d 412



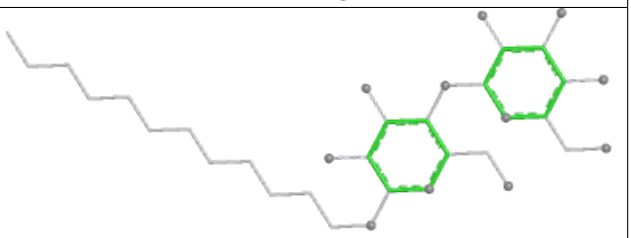
Bond lengths



Bond angles

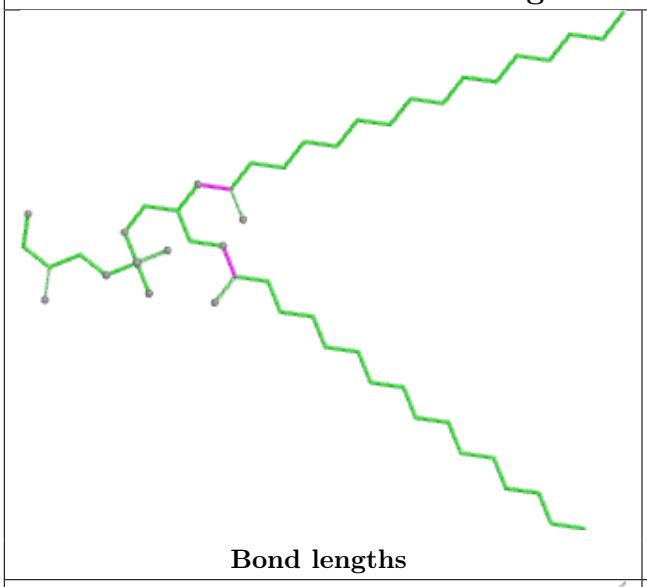


Torsions

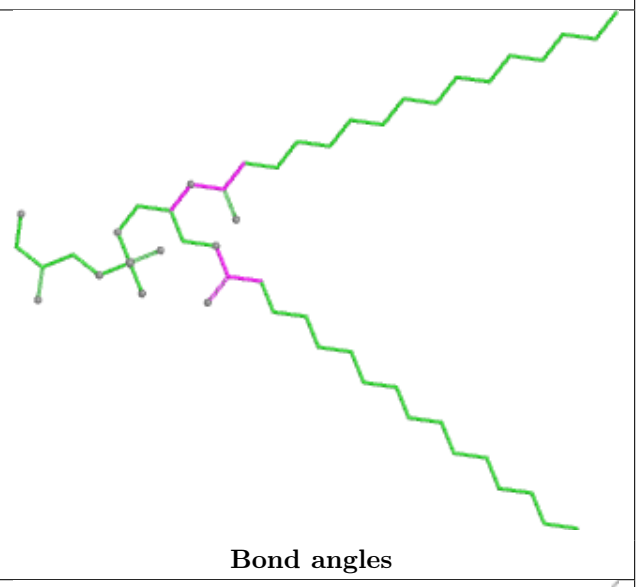


Rings

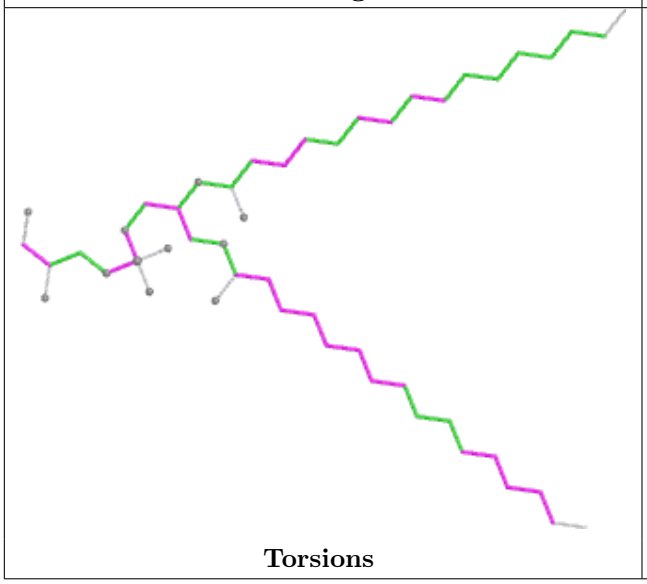
Ligand LHG d 407



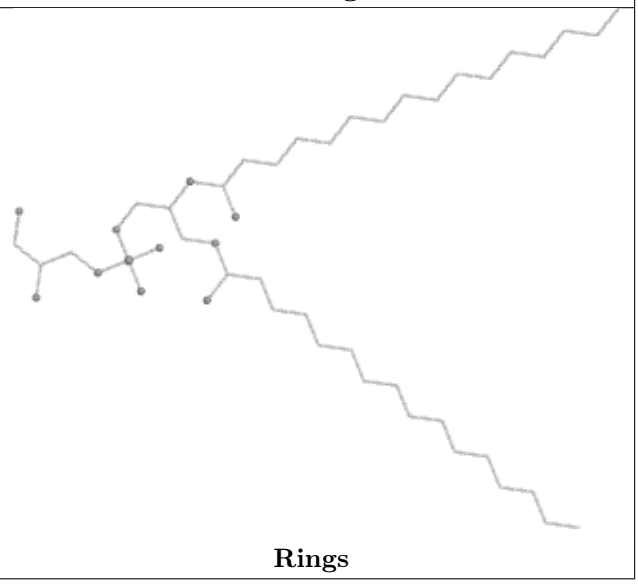
Bond lengths



Bond angles

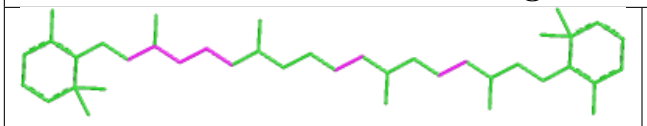


Torsions

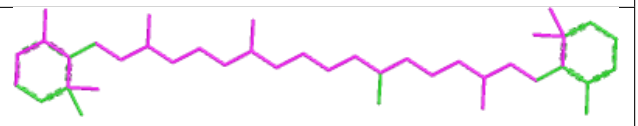


Rings

Ligand BCR B 619

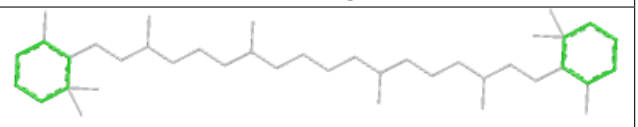


Bond lengths

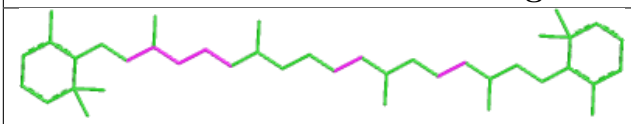
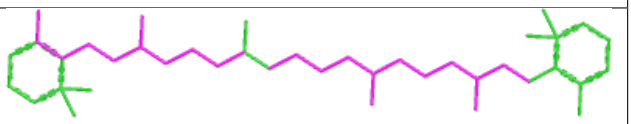
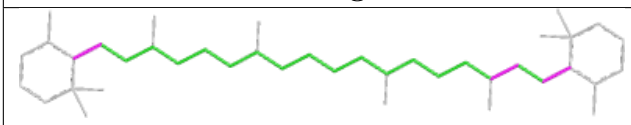
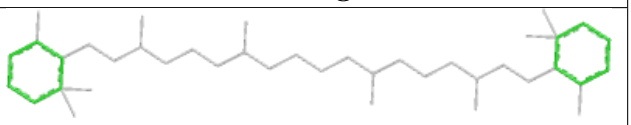


Bond angles

Torsions



Rings

Ligand BCR b 617	
 Bond lengths	 Bond angles
 Torsions	 Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

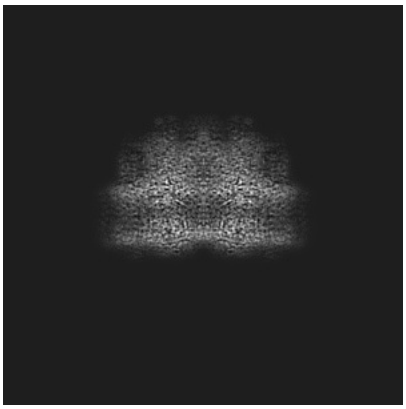
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-41460. These allow visual inspection of the internal detail of the map and identification of artifacts.

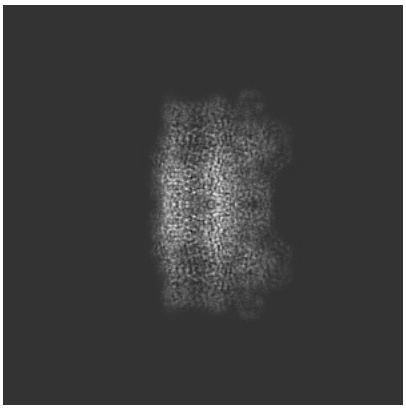
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

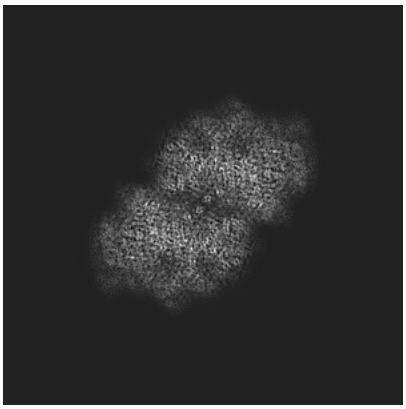
6.1.1 Primary map



X

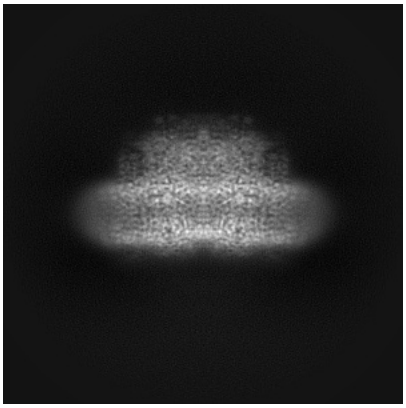


Y

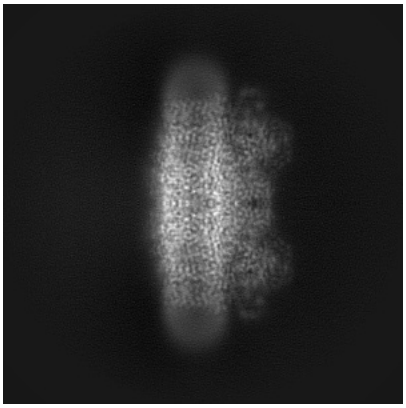


Z

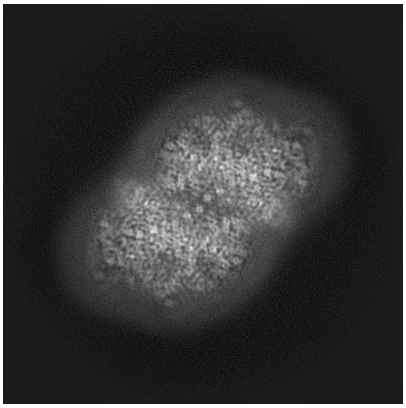
6.1.2 Raw map



X



Y



Z

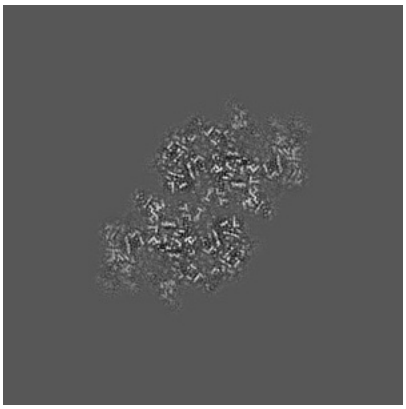
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

6.2.1 Primary map

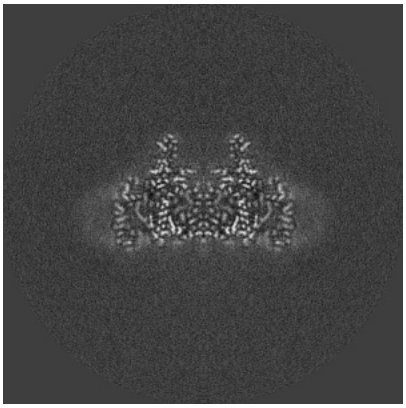
X Index: 180

Y Index: 180

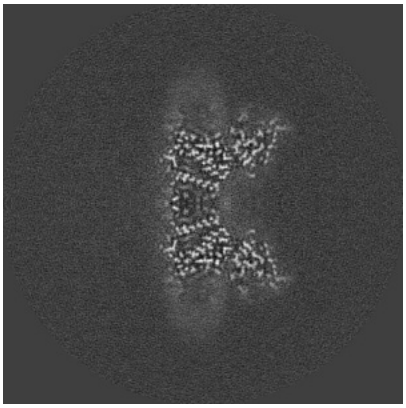


Z Index: 180

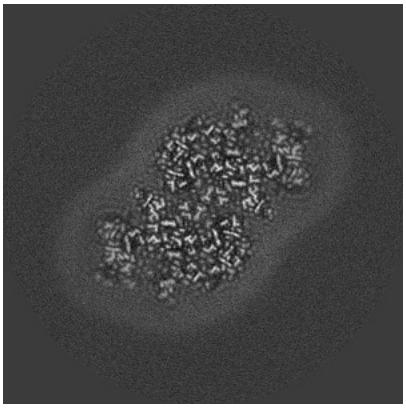
6.2.2 Raw map



X Index: 180



Y Index: 180



Z Index: 180

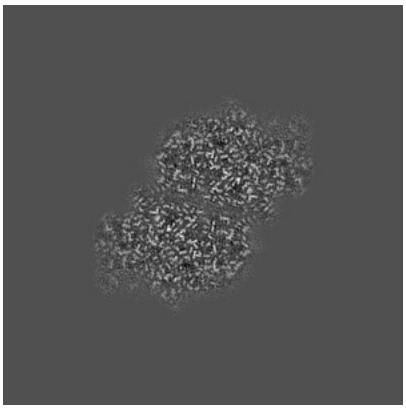
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map

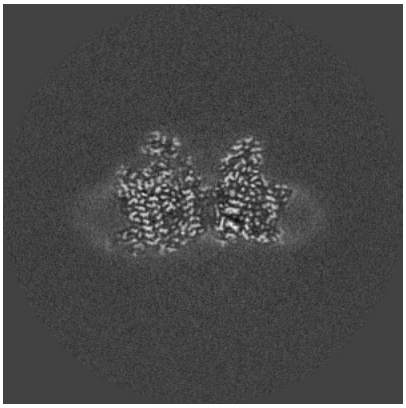
X Index: 192

Y Index: 146

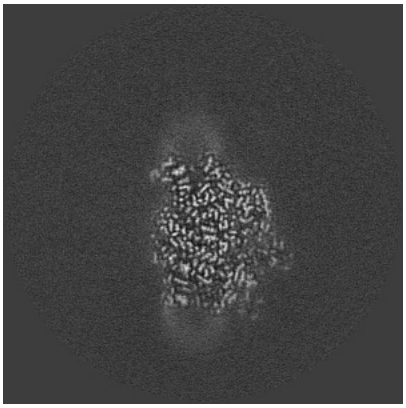


Z Index: 191

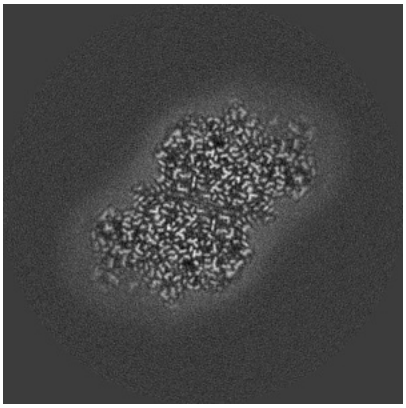
6.3.2 Raw map



X Index: 168



Y Index: 146

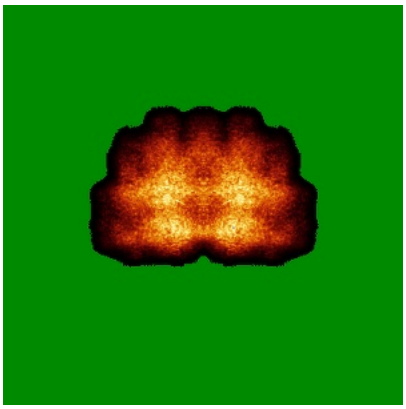


Z Index: 191

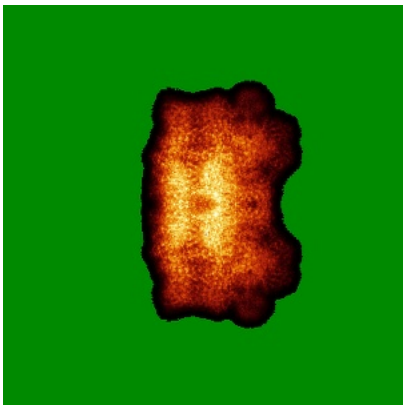
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

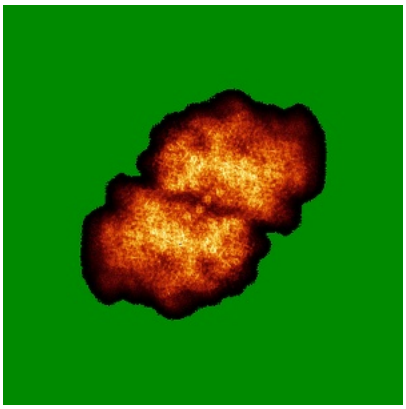
6.4.1 Primary map



X

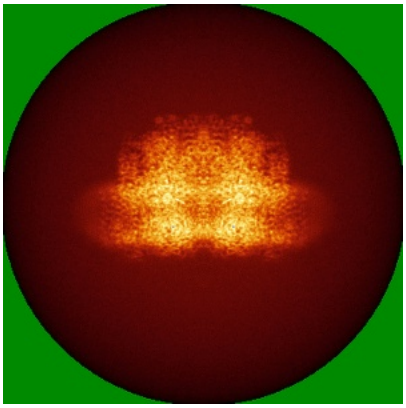


Y

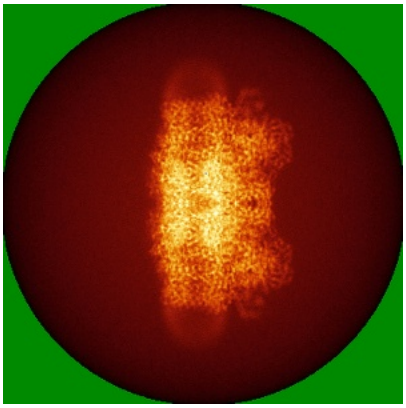


Z

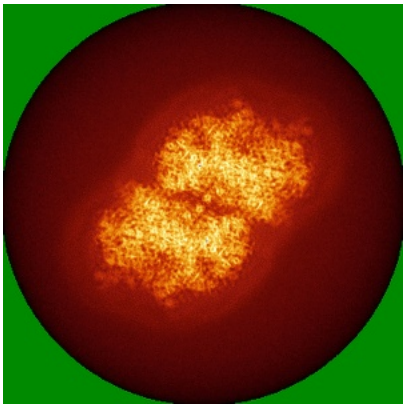
6.4.2 Raw map



X



Y

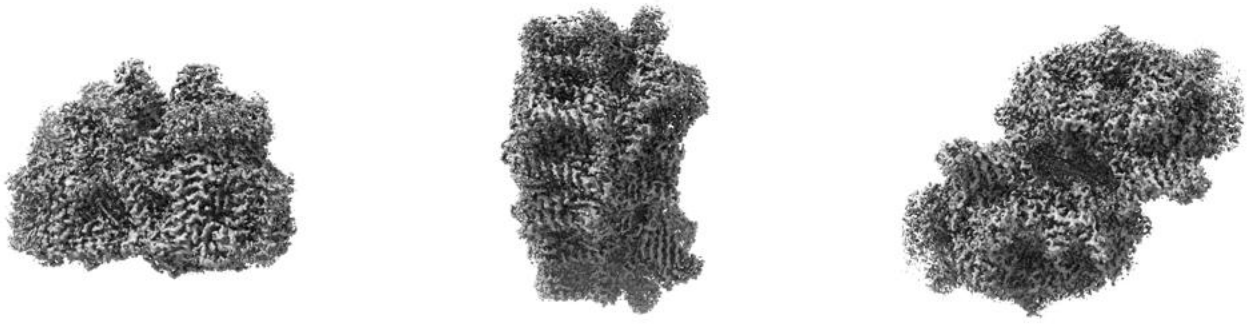


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

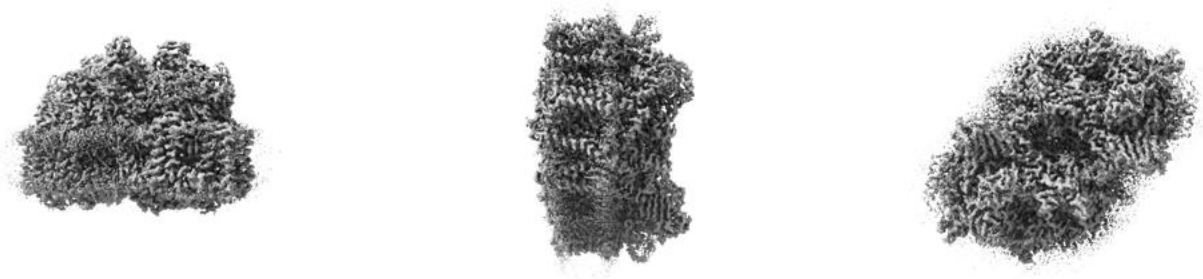
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00432. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

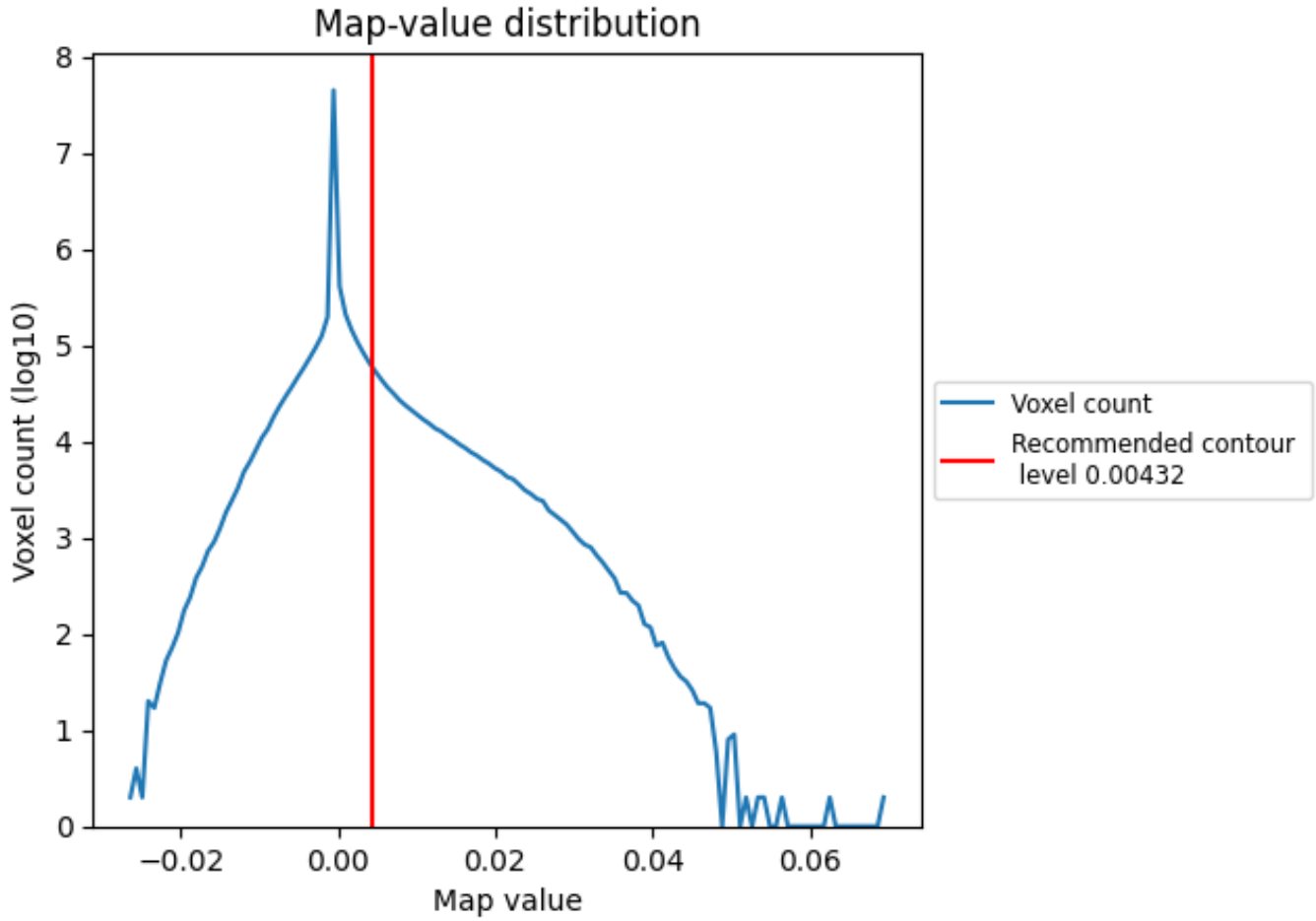
6.6 Mask visualisation (i)

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

7 Map analysis

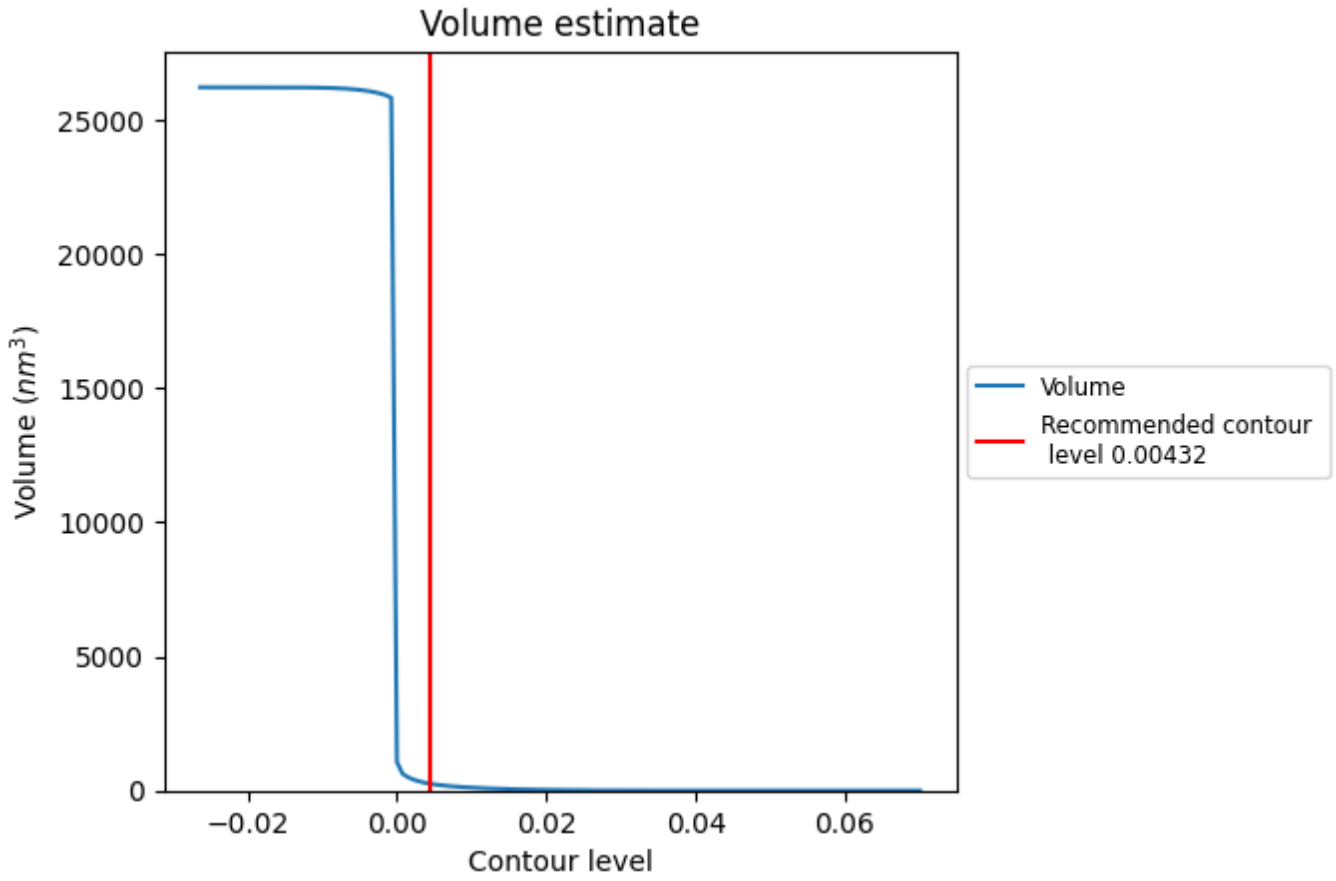
This section contains the results of statistical analysis of the map.

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.

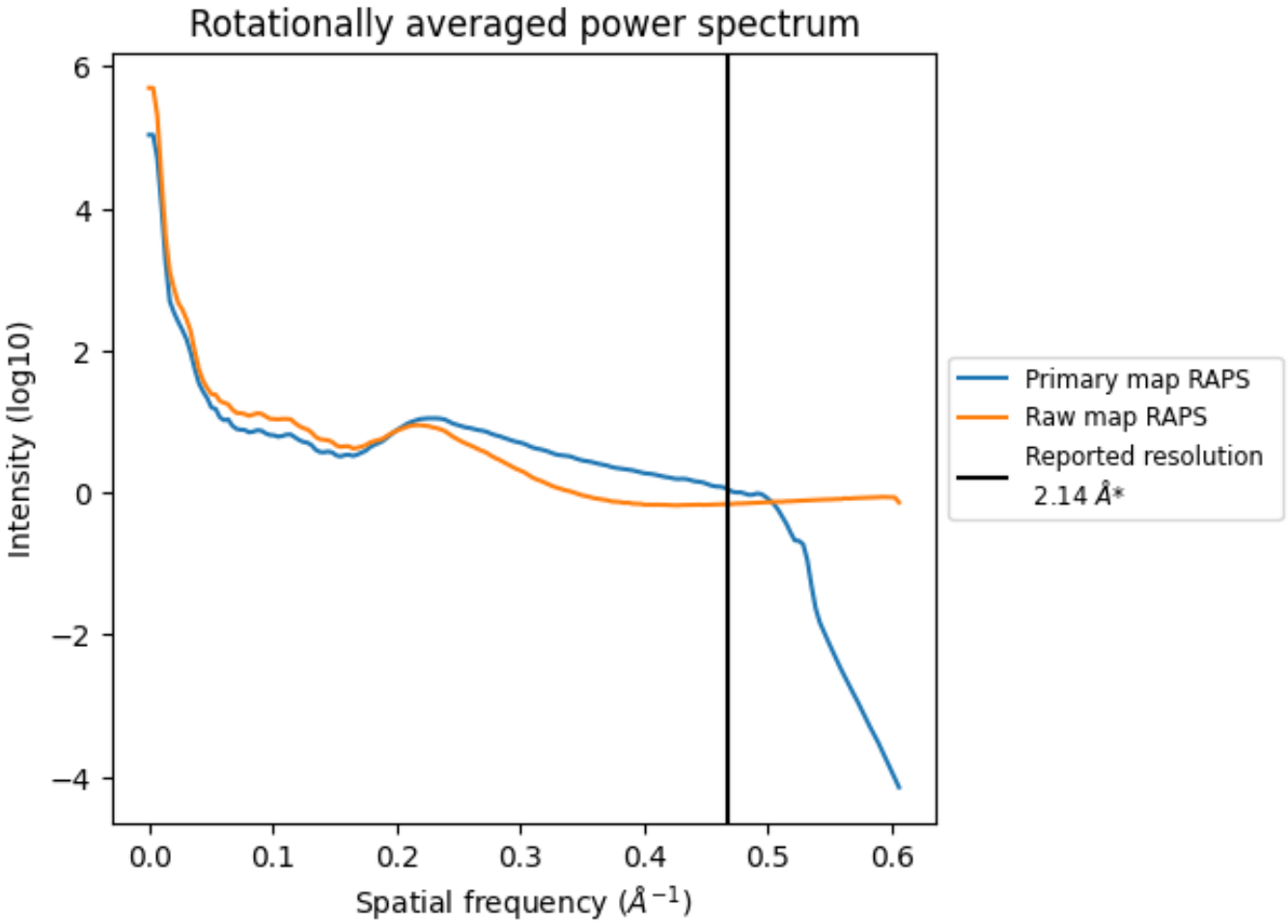
7.2 Volume estimate



The volume at the recommended contour level is 262 nm^3; this corresponds to an approximate mass of 237 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)

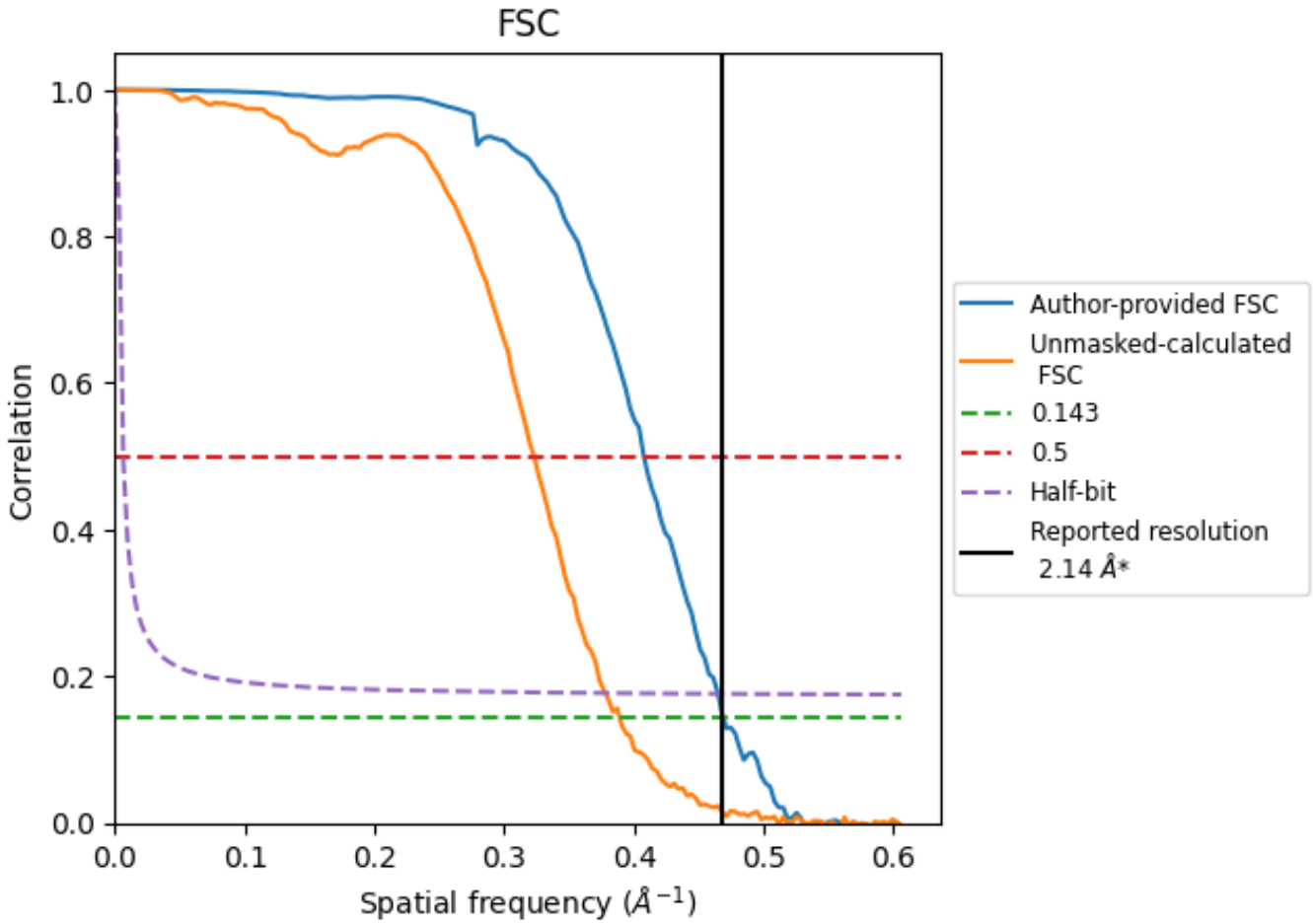


*Reported resolution corresponds to spatial frequency of 0.467 Å^{-1}

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 0.467 Å^{-1}

8.2 Resolution estimates (i)

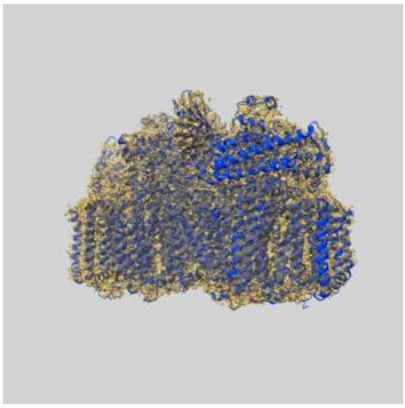
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.14	-	-
Author-provided FSC curve	2.13	2.45	2.15
Unmasked-calculated*	2.57	3.09	2.65

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 2.57 differs from the reported value 2.14 by more than 10 %

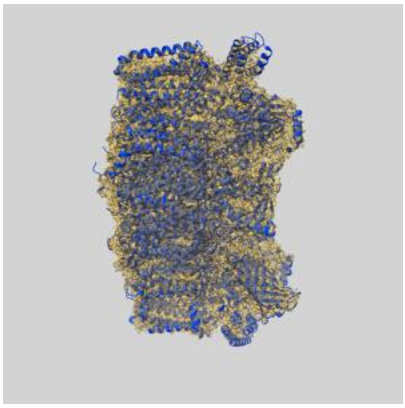
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-41460 and PDB model 8TOW. Per-residue inclusion information can be found in section 3 on page 32.

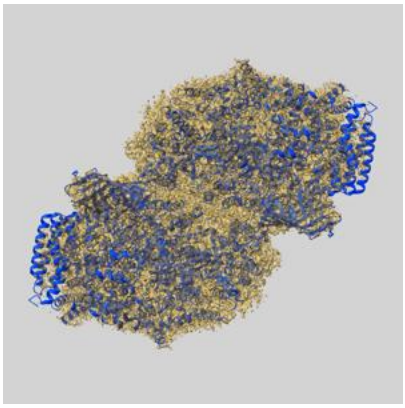
9.1 Map-model overlay



X



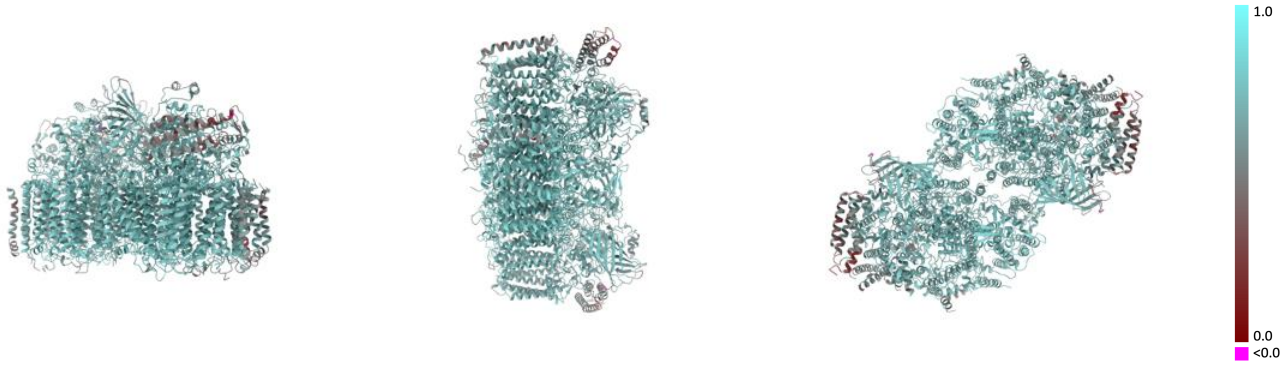
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00432 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.

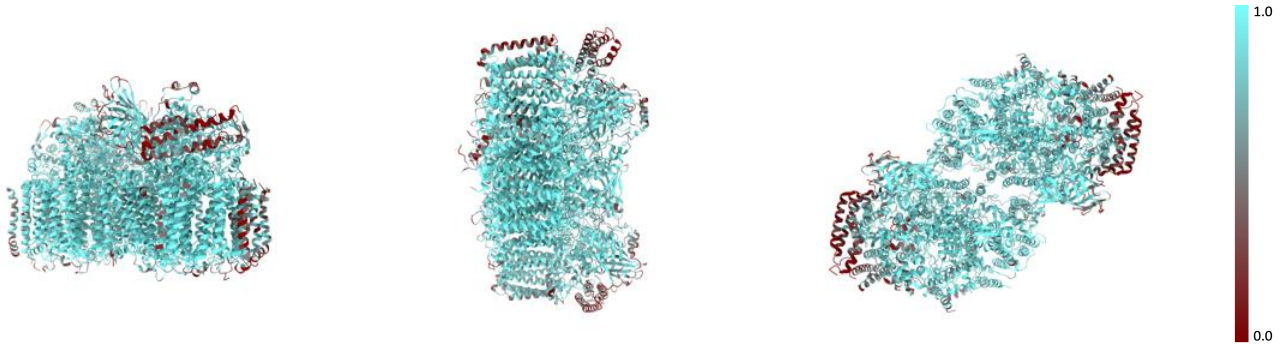
9.2 Q-score mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

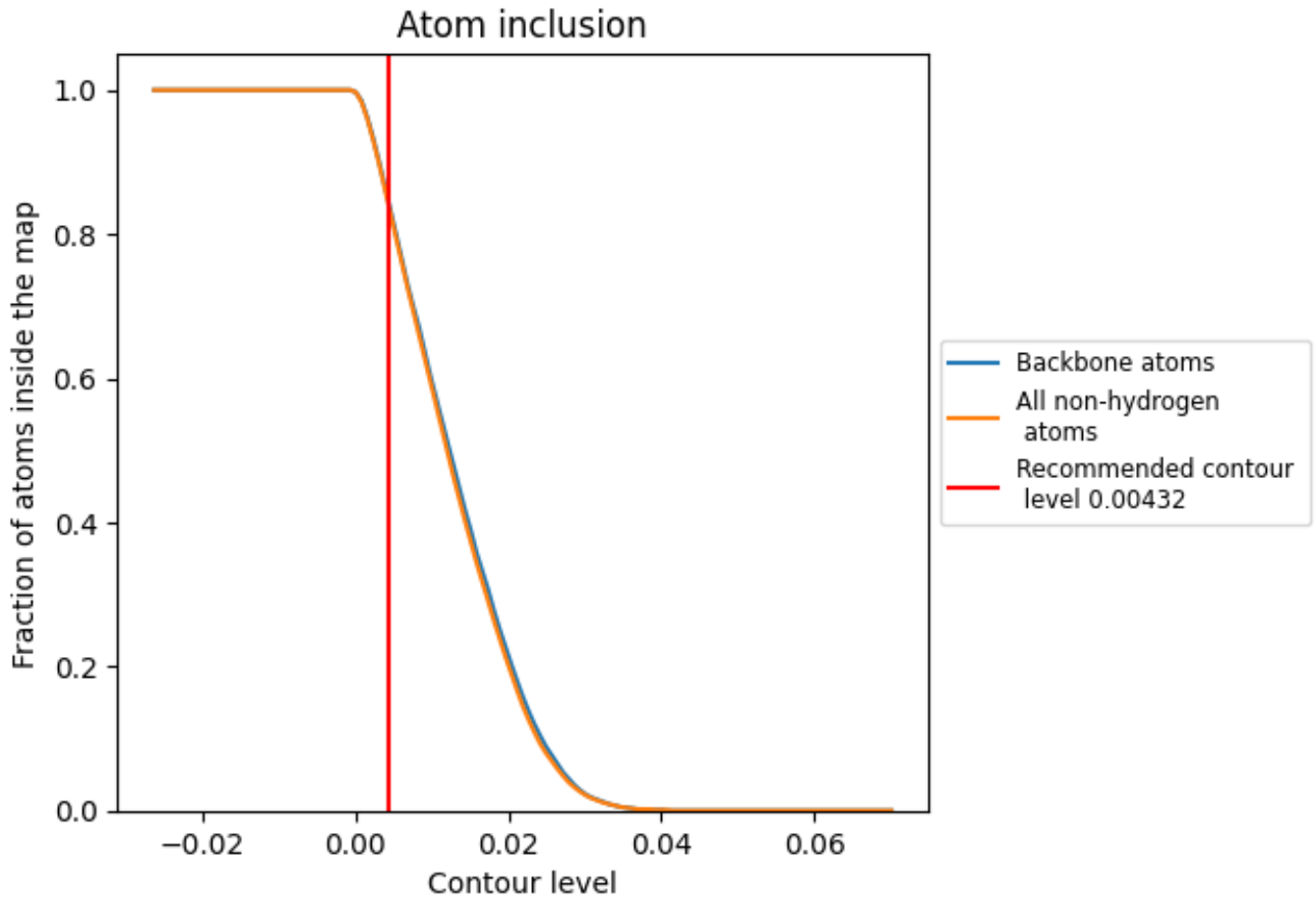
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.00432).

9.4 Atom inclusion (i)



At the recommended contour level, 84% of all backbone atoms, 84% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.00432) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8390	0.6860
A	0.9280	0.7330
B	0.9220	0.7210
C	0.8760	0.6950
D	0.9540	0.7430
E	0.8100	0.6680
F	0.7770	0.6340
H	0.8390	0.6850
I	0.6350	0.6560
J	0.7250	0.6350
K	0.7770	0.6040
L	0.9680	0.7420
M	0.8880	0.6880
O	0.7630	0.6520
Q	0.3080	0.4660
R	0.5280	0.5230
T	0.9040	0.7030
U	0.7290	0.6390
V	0.8060	0.6640
X	0.6730	0.6300
Y	0.6020	0.5660
Z	0.4320	0.5510
a	0.9270	0.7340
b	0.9220	0.7210
c	0.8770	0.6960
d	0.9540	0.7430
e	0.8090	0.6670
f	0.7800	0.6360
h	0.8360	0.6850
i	0.6370	0.6550
j	0.7280	0.6340
k	0.7800	0.6020
l	0.9640	0.7440
m	0.8850	0.6900
o	0.7610	0.6540

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
q	0.3070	0.4660
r	0.5280	0.5180
t	0.9040	0.7080
u	0.7290	0.6370
v	0.8080	0.6650
x	0.6780	0.6360
y	0.5900	0.5640
z	0.4320	0.5470