wwPDB EM Validation Summary Report

Oct 17, 2024 – 12:39 PM JST

PDB ID	:	8XLP
EMDB ID	:	EMD-38455
Title	:	Structure of inactive Photosystem II associated with CAC antenna from Rhodomonas Salina
Authors	:	Si, L.; Li, M.
Deposited on	:	2023-12-26
Resolution	:	2.57 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 ⓘ symbol.

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

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

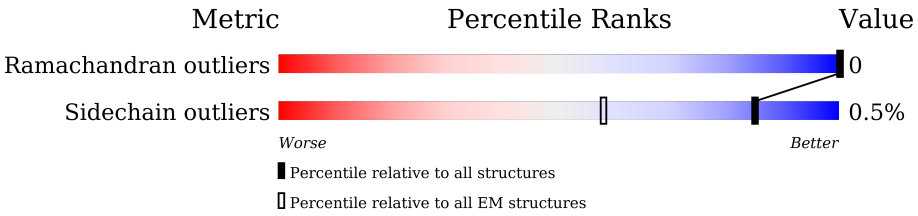
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance

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

The reported resolution of this entry is 2.57 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	328	99%
1	a	328	99%
2	B	509	98%
2	b	509	98%
3	C	487	5% 89% 11%
3	c	487	5% 89% 11%
4	D	351	97%
4	d	351	97%
5	E	84	6% 76% 24%

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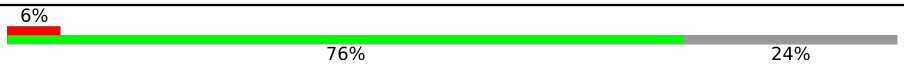
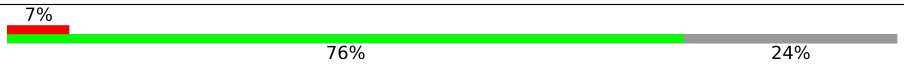
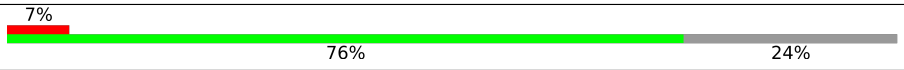
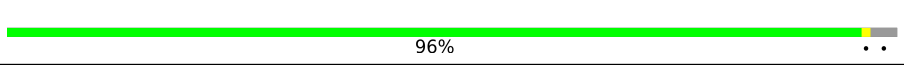
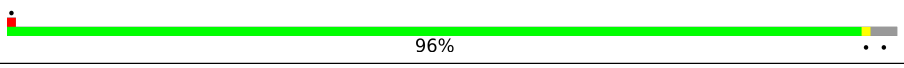
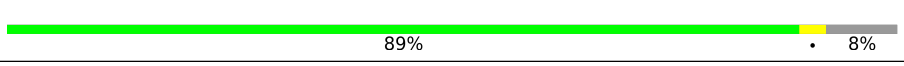
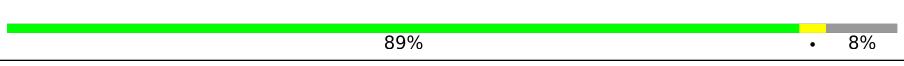
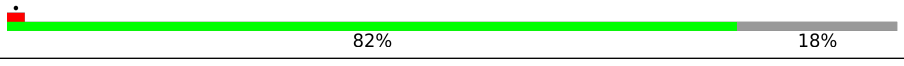
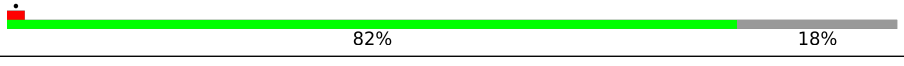
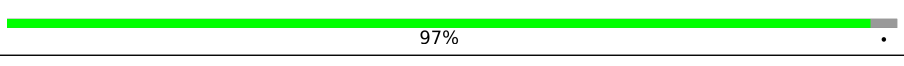
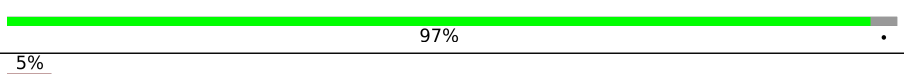
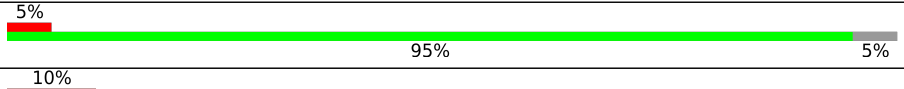
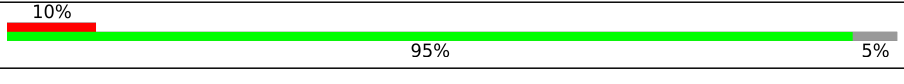
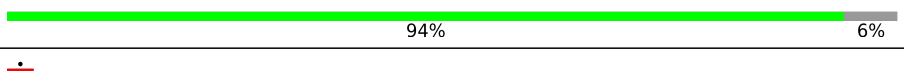
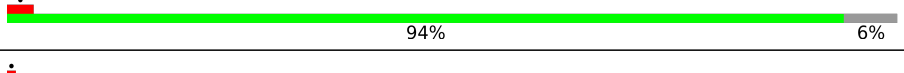
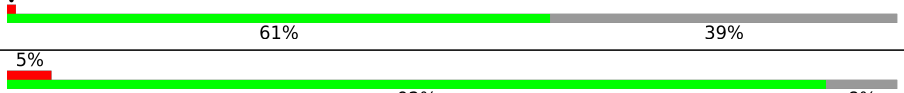
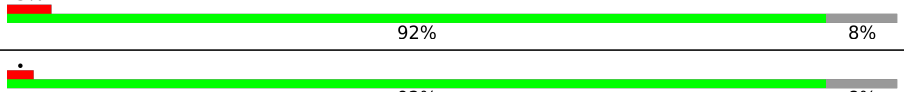
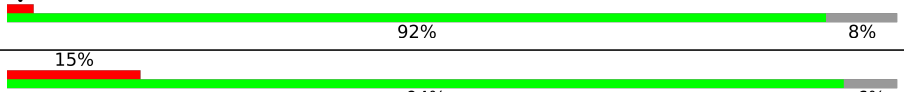
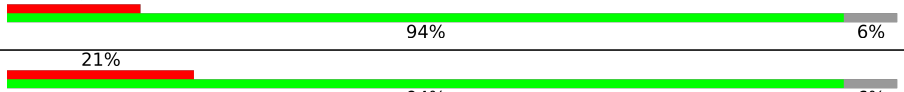
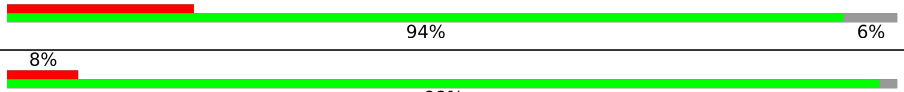
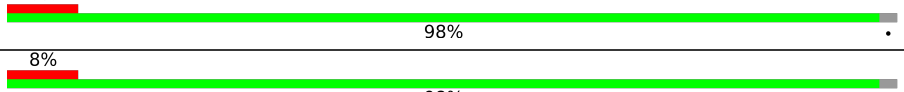
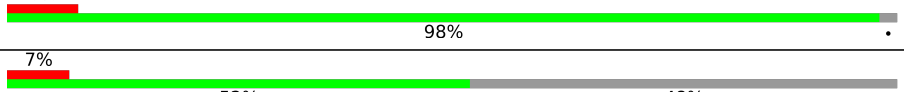
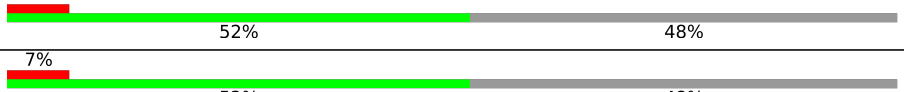
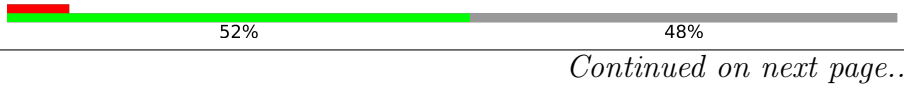
Mol	Chain	Length	Quality of chain
5	e	84	
6	F	42	
6	f	42	
7	H	67	
7	h	67	
8	I	38	
8	i	38	
9	K	45	
9	k	45	
10	L	38	
10	l	38	
11	M	40	
11	m	40	
12	T	32	
12	t	32	
13	W	74	
13	w	74	
14	X	39	
14	x	39	
15	Y	34	
15	y	34	
16	Z	62	
16	z	62	
17	G	284	
17	g	284	

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Mol	Chain	Length	Quality of chain
18	2	217	80% 20%
18	O	217	80% 20%
19	3	221	81% 19%
19	P	221	81% 19%
20	4	216	7% 75% 25%
20	Q	216	6% 75% 25%
21	5	229	5% 79% 20%
21	R	229	5% 79% 20%
22	6	227	15% 75% 24%
22	S	227	12% 75% 24%
23	1	233	13% 81% 18%
23	N	233	14% 81% 18%

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	1	601	X	-	-	-
25	CLA	1	602	X	-	-	-
25	CLA	1	603	X	-	-	-
25	CLA	1	604	X	-	-	-
25	CLA	1	606	X	-	-	-
25	CLA	1	607	X	-	-	-
25	CLA	1	609	X	-	-	-
25	CLA	1	610	X	-	-	-
25	CLA	1	614	X	-	-	-
25	CLA	1	615	X	-	-	-
25	CLA	2	601	X	-	-	-
25	CLA	2	602	X	-	-	-
25	CLA	2	603	X	-	-	-
25	CLA	2	604	X	-	-	-
25	CLA	2	606	X	-	-	-
25	CLA	2	607	X	-	-	-
25	CLA	2	609	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	2	610	X	-	-	-
25	CLA	2	611	X	-	-	-
25	CLA	2	613	X	-	-	-
25	CLA	2	615	X	-	-	-
25	CLA	3	601	X	-	-	-
25	CLA	3	602	X	-	-	-
25	CLA	3	603	X	-	-	-
25	CLA	3	609	X	-	-	-
25	CLA	3	610	X	-	-	-
25	CLA	3	611	X	-	-	-
25	CLA	3	612	X	-	-	-
25	CLA	3	613	X	-	-	-
25	CLA	3	615	X	-	-	-
25	CLA	4	602	X	-	-	-
25	CLA	4	603	X	-	-	-
25	CLA	4	604	X	-	-	-
25	CLA	4	606	X	-	-	-
25	CLA	4	607	X	-	-	-
25	CLA	4	609	X	-	-	-
25	CLA	4	610	X	-	-	-
25	CLA	4	613	X	-	-	-
25	CLA	4	615	X	-	-	-
25	CLA	5	601	X	-	-	-
25	CLA	5	602	X	-	-	-
25	CLA	5	603	X	-	-	-
25	CLA	5	604	X	-	-	-
25	CLA	5	606	X	-	-	-
25	CLA	5	607	X	-	-	-
25	CLA	5	609	X	-	-	-
25	CLA	5	610	X	-	-	-
25	CLA	5	611	X	-	-	-
25	CLA	5	613	X	-	-	-
25	CLA	5	615	X	-	-	-
25	CLA	6	601	X	-	-	-
25	CLA	6	602	X	-	-	-
25	CLA	6	603	X	-	-	-
25	CLA	6	604	X	-	-	-
25	CLA	6	609	X	-	-	-
25	CLA	6	610	X	-	-	-
25	CLA	6	611	X	-	-	-
25	CLA	6	613	X	-	-	-
25	CLA	6	615	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	403	X	-	-	-
25	CLA	A	404	X	-	-	-
25	CLA	A	406	X	-	-	-
25	CLA	B	601	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	516	X	-	-	-
25	CLA	C	517	X	-	-	-
25	CLA	C	518	X	-	-	-
25	CLA	C	519	X	-	-	-
25	CLA	C	520	X	-	-	-
25	CLA	C	521	X	-	-	-
25	CLA	C	522	X	-	-	-
25	CLA	C	523	X	-	-	-
25	CLA	C	524	X	-	-	-
25	CLA	C	525	X	-	-	-
25	CLA	C	526	X	-	-	-
25	CLA	C	527	X	-	-	-
25	CLA	C	528	X	-	-	-
25	CLA	D	400	X	-	-	-
25	CLA	D	403	X	-	-	-
25	CLA	D	404	X	-	-	-
25	CLA	G	301	X	-	-	-
25	CLA	G	302	X	-	-	-
25	CLA	N	601	X	-	-	-
25	CLA	N	602	X	-	-	-
25	CLA	N	603	X	-	-	-
25	CLA	N	604	X	-	-	-
25	CLA	N	606	X	-	-	-
25	CLA	N	607	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	N	609	X	-	-	-
25	CLA	N	610	X	-	-	-
25	CLA	N	614	X	-	-	-
25	CLA	N	615	X	-	-	-
25	CLA	O	601	X	-	-	-
25	CLA	O	602	X	-	-	-
25	CLA	O	603	X	-	-	-
25	CLA	O	604	X	-	-	-
25	CLA	O	606	X	-	-	-
25	CLA	O	607	X	-	-	-
25	CLA	O	609	X	-	-	-
25	CLA	O	610	X	-	-	-
25	CLA	O	611	X	-	-	-
25	CLA	O	613	X	-	-	-
25	CLA	O	615	X	-	-	-
25	CLA	P	601	X	-	-	-
25	CLA	P	602	X	-	-	-
25	CLA	P	603	X	-	-	-
25	CLA	P	609	X	-	-	-
25	CLA	P	610	X	-	-	-
25	CLA	P	611	X	-	-	-
25	CLA	P	612	X	-	-	-
25	CLA	P	613	X	-	-	-
25	CLA	P	615	X	-	-	-
25	CLA	Q	602	X	-	-	-
25	CLA	Q	603	X	-	-	-
25	CLA	Q	604	X	-	-	-
25	CLA	Q	606	X	-	-	-
25	CLA	Q	607	X	-	-	-
25	CLA	Q	609	X	-	-	-
25	CLA	Q	610	X	-	-	-
25	CLA	Q	613	X	-	-	-
25	CLA	Q	615	X	-	-	-
25	CLA	R	601	X	-	-	-
25	CLA	R	602	X	-	-	-
25	CLA	R	603	X	-	-	-
25	CLA	R	604	X	-	-	-
25	CLA	R	606	X	-	-	-
25	CLA	R	607	X	-	-	-
25	CLA	R	609	X	-	-	-
25	CLA	R	610	X	-	-	-
25	CLA	R	611	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	R	613	X	-	-	-
25	CLA	R	615	X	-	-	-
25	CLA	S	601	X	-	-	-
25	CLA	S	602	X	-	-	-
25	CLA	S	603	X	-	-	-
25	CLA	S	604	X	-	-	-
25	CLA	S	609	X	-	-	-
25	CLA	S	610	X	-	-	-
25	CLA	S	611	X	-	-	-
25	CLA	S	613	X	-	-	-
25	CLA	S	615	X	-	-	-
25	CLA	a	403	X	-	-	-
25	CLA	a	404	X	-	-	-
25	CLA	a	406	X	-	-	-
25	CLA	b	601	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	516	X	-	-	-
25	CLA	c	517	X	-	-	-
25	CLA	c	518	X	-	-	-
25	CLA	c	519	X	-	-	-
25	CLA	c	520	X	-	-	-
25	CLA	c	521	X	-	-	-
25	CLA	c	522	X	-	-	-
25	CLA	c	523	X	-	-	-
25	CLA	c	524	X	-	-	-
25	CLA	c	525	X	-	-	-
25	CLA	c	526	X	-	-	-
25	CLA	c	527	X	-	-	-
25	CLA	c	528	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	d	400	X	-	-	-
25	CLA	d	403	X	-	-	-
25	CLA	d	404	X	-	-	-
25	CLA	g	301	X	-	-	-
25	CLA	g	302	X	-	-	-

2 Entry composition (i)

There are 40 unique types of molecules in this entry. The entry contains 70547 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.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	a	327	Total	C	N	O	S	0	0
			2563	1677	420	454	12		
1	A	327	Total	C	N	O	S	0	0
			2563	1677	420	454	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	b	503	Total	C	N	O	S	0	0
			3950	2575	674	689	12		
2	B	503	Total	C	N	O	S	0	0
			3950	2575	674	689	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	c	434	Total	C	N	O	S	0	0
			3379	2213	569	587	10		
3	C	434	Total	C	N	O	S	0	0
			3379	2213	569	587	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	d	341	Total	C	N	O	S	0	0
			2708	1790	443	462	13		
4	D	341	Total	C	N	O	S	0	0
			2708	1790	443	462	13		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
5	e	64	Total 525	C 345	N 85	O 95	0	0
5	E	64	Total 525	C 345	N 85	O 95	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	f	32	Total 261	C 179	N 43	O 38	S 1	0	0
6	F	32	Total 261	C 179	N 43	O 38	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	65	Total 508	C 337	N 81	O 88	S 2	0	0
7	H	65	Total 508	C 337	N 81	O 88	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	35	Total 284	C 188	N 46	O 49	S 1	0	0
8	I	35	Total 284	C 188	N 46	O 49	S 1	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
9	k	37	Total 296	C 209	N 44	O 43	0	0
9	K	37	Total 296	C 209	N 44	O 43	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
10	l	37	Total 301	C 204	N 47	O 50	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
10	L	37	Total 301	C 204	N 47	O 50	0	0

- Molecule 11 is a protein called Photosystem II protein M.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	m	38	Total 285	C 189	N 45	O 51	0	0
11	M	38	Total 285	C 189	N 45	O 51	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	t	30	Total 244	C 169	N 36	O 38	S 1	0	0
12	T	30	Total 244	C 169	N 36	O 38	S 1	0	0

- Molecule 13 is a protein called Photosystem II protein W.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	w	45	Total 363	C 235	N 58	O 70	0	0
13	W	45	Total 363	C 235	N 58	O 70	0	0

- Molecule 14 is a protein called Photosystem II reaction center X protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	x	36	Total 268	C 179	N 41	O 47	S 1	0	0
14	X	36	Total 268	C 179	N 41	O 47	S 1	0	0

- Molecule 15 is a protein called Photosystem II reaction center protein Psb30.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	y	32	Total 241	C 159	N 42	O 40	0	0
15	Y	32	Total 241	C 159	N 42	O 40	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	z	61	Total	C	N	O	S	0	0
			460	314	67	76	3		
16	Z	61	Total	C	N	O	S	0	0
			460	314	67	76	3		

- Molecule 17 is a protein called NCP.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	g	147	Total	C	N	O	S	0	0
			1163	757	190	215	1		
17	G	147	Total	C	N	O	S	0	0
			1163	757	190	215	1		

- Molecule 18 is a protein called CAC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	2	173	Total	C	N	O	S	0	0
			1380	912	225	240	3		
18	O	173	Total	C	N	O	S	0	0
			1380	912	225	240	3		

- Molecule 19 is a protein called CAC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	3	180	Total	C	N	O	S	0	0
			1392	902	232	249	9		
19	P	180	Total	C	N	O	S	0	0
			1392	902	232	249	9		

- Molecule 20 is a protein called CAC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	4	163	Total	C	N	O	S	0	0
			1253	806	216	221	10		
20	Q	163	Total	C	N	O	S	0	0
			1253	806	216	221	10		

- Molecule 21 is a protein called CAC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	5	183	Total	C	N	O	S	0	0
			1430	936	234	257	3		
21	R	183	Total	C	N	O	S	0	0
			1430	936	234	257	3		

- Molecule 22 is a protein called CAC6.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	6	173	Total	C	N	O	S	0	0
			1337	865	228	238	6		
22	S	173	Total	C	N	O	S	0	0
			1337	865	228	238	6		

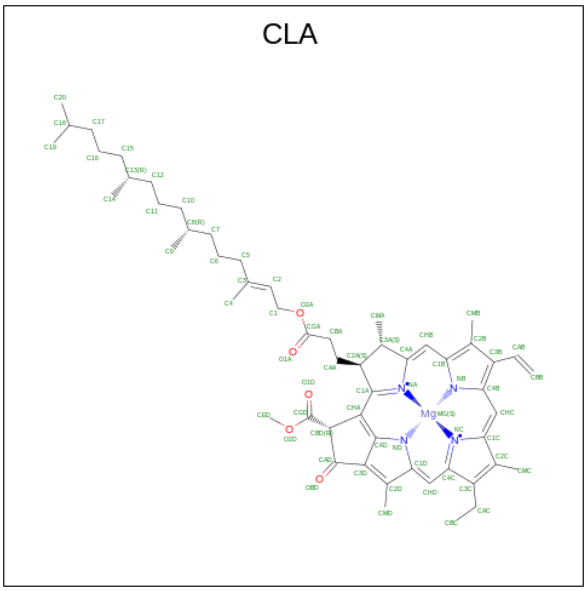
- Molecule 23 is a protein called CAC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	1	190	Total	C	N	O	S	0	0
			1458	933	256	261	8		
23	N	190	Total	C	N	O	S	0	0
			1458	933	256	261	8		

- Molecule 24 is FE (II) ION (three-letter code: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms		AltConf
24	a	1	Total	Fe	0
			1	1	
24	A	1	Total	Fe	0
			1	1	

- 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	0
			65	55	1	4	5	
25	a	1	Total	C	Mg	N	O	0
			49	39	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
			50	40	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
			59	49	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
			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	

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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
			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	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
			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
			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
			53	43	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
			61	51	1	4	5	

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Mol	Chain	Residues	Atoms					AltConf
25	g	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	g	1	Total	C	Mg	N	O	0
			45	35	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
			49	39	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
			50	40	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
			59	49	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
			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	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	

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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
			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
			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
			52	42	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
			60	50	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			49	39	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			51	41	1	4	5	

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Mol	Chain	Residues	Atoms					AltConf
25	2	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			48	38	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	2	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			62	52	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			63	53	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			52	42	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			53	43	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	3	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			61	51	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			43	35	1	4	3	

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Mol	Chain	Residues	Atoms					AltConf
25	4	1	Total	C	Mg	N	O	0
			56	46	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			51	41	1	4	5	
25	4	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	4	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	5	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			52	42	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	5	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			59	49	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	5	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			57	47	1	4	5	

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Mol	Chain	Residues	Atoms					AltConf
25	6	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			53	43	1	4	5	
25	6	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	G	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	G	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			59	49	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	1	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			48	38	1	4	5	
25	1	1	Total	C	Mg	N	O	0
			47	37	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			49	39	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			51	41	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			60	50	1	4	5	

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Mol	Chain	Residues	Atoms					AltConf
25	O	1	Total	C	Mg	N	O	0
			48	38	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	O	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			62	52	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			63	53	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			52	42	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			53	43	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	P	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			61	51	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	Q	1	Total	C	Mg	N	O	0
			56	46	1	4	5	

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Mol	Chain	Residues	Atoms					AltConf
25	Q	1	Total	C	Mg	N	O	0
			51	41	1	4	5	
25	Q	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	Q	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	R	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			52	42	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
25	R	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			59	49	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	R	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			57	47	1	4	5	
25	S	1	Total	C	Mg	N	O	0
			55	45	1	4	5	

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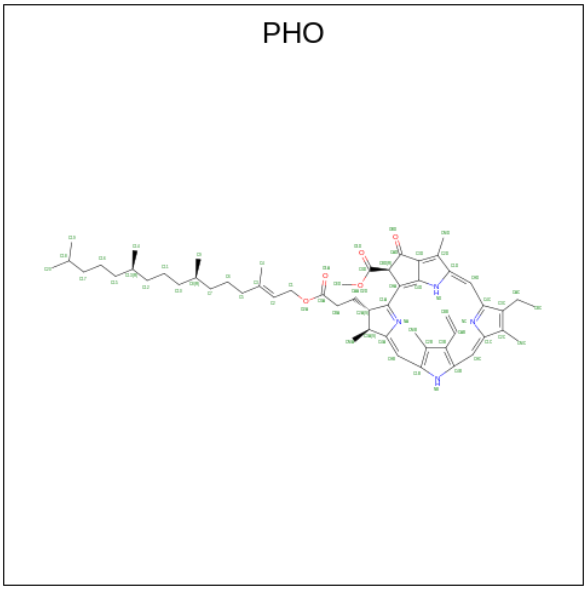
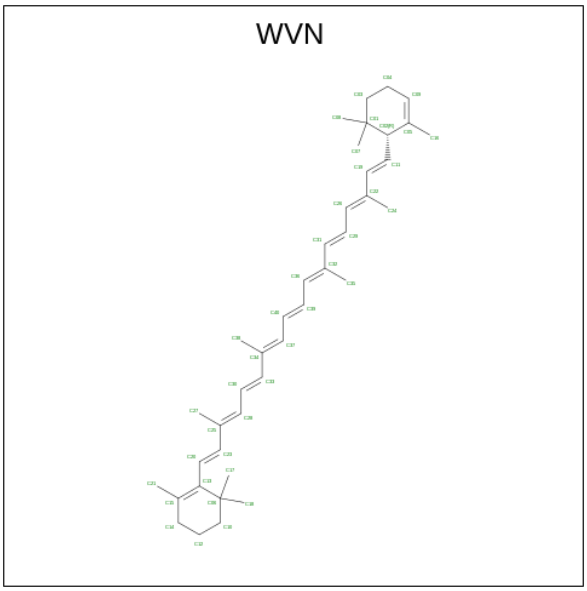
Mol	Chain	Residues	Atoms					AltConf
25	S	1	Total 53	C 43	Mg 1	N 4	O 5	0
25	S	1	Total 65	C 55	Mg 1	N 4	O 5	0
25	N	1	Total 45	C 35	Mg 1	N 4	O 5	0
25	N	1	Total 60	C 50	Mg 1	N 4	O 5	0
25	N	1	Total 60	C 50	Mg 1	N 4	O 5	0
25	N	1	Total 59	C 49	Mg 1	N 4	O 5	0
25	N	1	Total 50	C 40	Mg 1	N 4	O 5	0
25	N	1	Total 43	C 35	Mg 1	N 4	O 3	0
25	N	1	Total 46	C 36	Mg 1	N 4	O 5	0
25	N	1	Total 60	C 50	Mg 1	N 4	O 5	0
25	N	1	Total 48	C 38	Mg 1	N 4	O 5	0
25	N	1	Total 47	C 37	Mg 1	N 4	O 5	0

- 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 64 55 4 5	0
26	d	1	Total C N O 64 55 4 5	0
26	A	1	Total C N O 64 55 4 5	0
26	D	1	Total C N O 64 55 4 5	0

- Molecule 27 is 1,3,3-trimethyl-2-[(1E,3E,5E,7E,9E,11E,13E,15E,17E)-3,7,12,16-tetramethyl-18-[(1R)-2,6,6-trimethylcyclohex-2-en-1-yl]octadeca-1,3,5,7,9,11,13,15,17-nonaenyl]cyclohexene (three-letter code: WVN) (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	c	1	Total C 40 40	0
27	c	1	Total C 40 40	0

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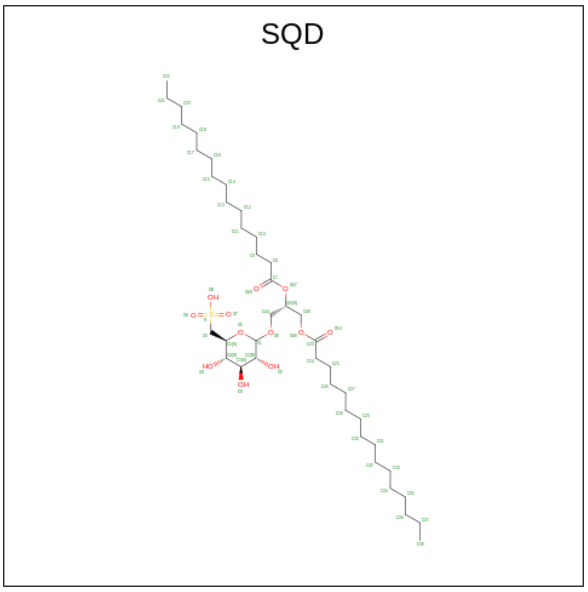
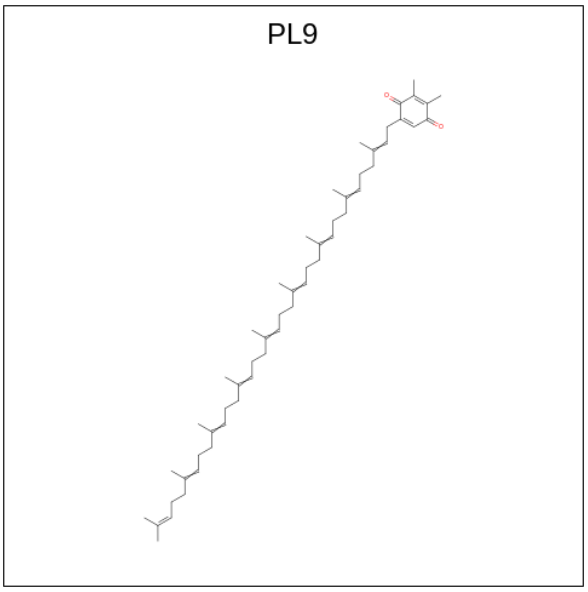
Mol	Chain	Residues	Atoms	AltConf
27	d	1	Total C 40 40	0
27	h	1	Total C 40 40	0
27	y	1	Total C 40 40	0
27	A	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	C	1	Total C 40 40	0
27	C	1	Total C 40 40	0
27	C	1	Total C 40 40	0
27	D	1	Total C 40 40	0
27	H	1	Total C 40 40	0
27	Y	1	Total C 40 40	0
27	3	1	Total C 40 40	0
27	6	1	Total C 40 40	0
27	P	1	Total C 40 40	0
27	S	1	Total C 40 40	0

- Molecule 28 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: $C_{41}H_{78}O_{12}S$).



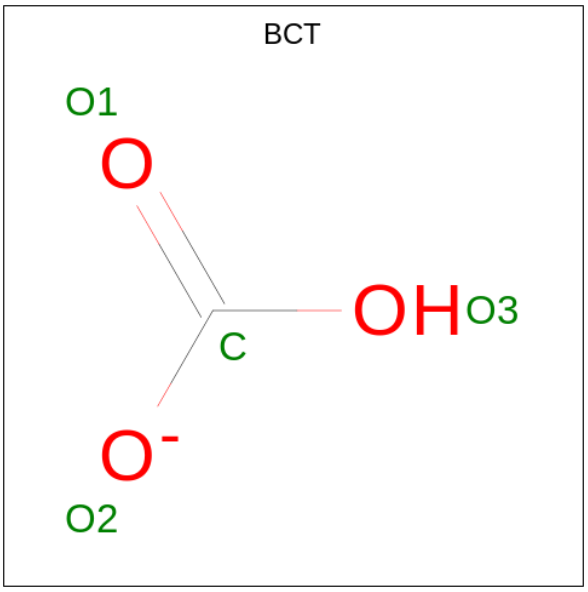
Mol	Chain	Residues	Atoms				AltConf
28	a	1	Total 45	C 32	O 12	S 1	0
28	a	1	Total 40	C 27	O 12	S 1	0
28	A	1	Total 54	C 41	O 12	S 1	0
28	A	1	Total 40	C 27	O 12	S 1	0

- 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: $C_{53}H_{80}O_2$).



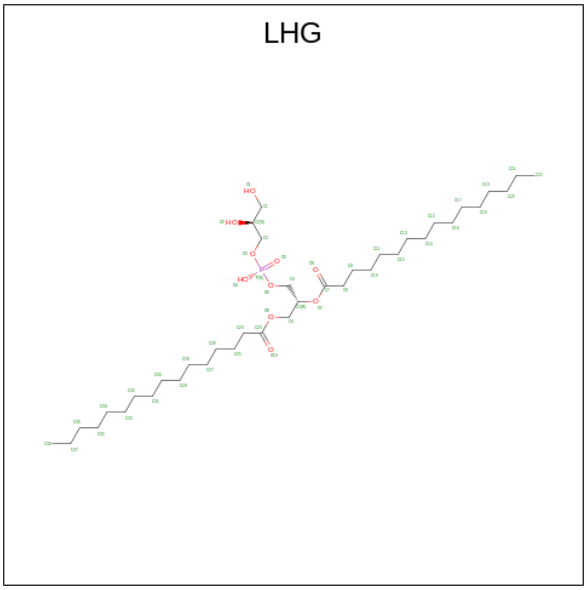
Mol	Chain	Residues	Atoms	AltConf
29	a	1	Total C O 33 31 2	0
29	d	1	Total C O 55 53 2	0
29	A	1	Total C O 33 31 2	0
29	D	1	Total C O 55 53 2	0

- Molecule 30 is BICARBONATE ION (three-letter code: BCT) (formula: CHO_3) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 31 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$).



Mol	Chain	Residues	Atoms				AltConf
31	a	1	Total	C	O	P	0
			42	31	10	1	
31	b	1	Total	C	O	P	0
			43	32	10	1	
31	c	1	Total	C	O	P	0
			40	29	10	1	
31	d	1	Total	C	O	P	0
			49	38	10	1	
31	l	1	Total	C	O	P	0
			49	38	10	1	
31	z	1	Total	C	O	P	0
			25	14	10	1	
31	A	1	Total	C	O	P	0
			42	31	10	1	
31	B	1	Total	C	O	P	0
			43	32	10	1	
31	C	1	Total	C	O	P	0
			40	29	10	1	

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Mol	Chain	Residues	Atoms				AltConf
31	D	1	Total 49	C 38	O 10	P 1	0
31	L	1	Total 49	C 38	O 10	P 1	0
31	Z	1	Total 25	C 14	O 10	P 1	0
31	2	1	Total 46	C 35	O 10	P 1	0
31	3	1	Total 49	C 38	O 10	P 1	0
31	5	1	Total 46	C 35	O 10	P 1	0
31	6	1	Total 40	C 29	O 10	P 1	0
31	O	1	Total 46	C 35	O 10	P 1	0
31	P	1	Total 49	C 38	O 10	P 1	0
31	R	1	Total 46	C 35	O 10	P 1	0
31	S	1	Total 40	C 29	O 10	P 1	0

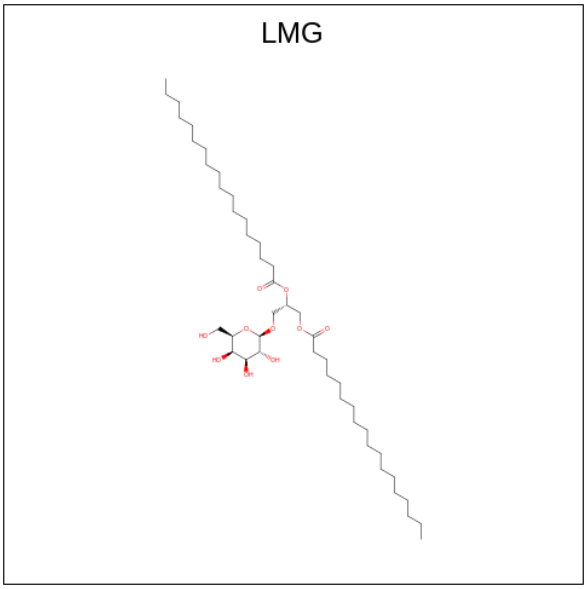
- Molecule 32 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		AltConf
32	a	1	Total 1	Cl 1	0
32	c	1	Total 1	Cl 1	0
32	A	1	Total 1	Cl 1	0
32	C	1	Total 1	Cl 1	0

- Molecule 33 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		AltConf
33	a	2	Total 2	Mn 2	0
33	A	2	Total 2	Mn 2	0

- Molecule 34 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$).



Mol	Chain	Residues	Atoms			AltConf
34	b	1	Total	C	O	0
			51	41	10	
34	c	1	Total	C	O	0
			51	41	10	
34	d	1	Total	C	O	0
			40	30	10	
34	d	1	Total	C	O	0
			37	27	10	
34	f	1	Total	C	O	0
			46	36	10	
34	m	1	Total	C	O	0
			40	30	10	
34	w	1	Total	C	O	0
			48	38	10	
34	z	1	Total	C	O	0
			31	21	10	
34	g	1	Total	C	O	0
			40	30	10	
34	B	1	Total	C	O	0
			51	41	10	
34	C	1	Total	C	O	0
			47	37	10	
34	D	1	Total	C	O	0
			40	30	10	

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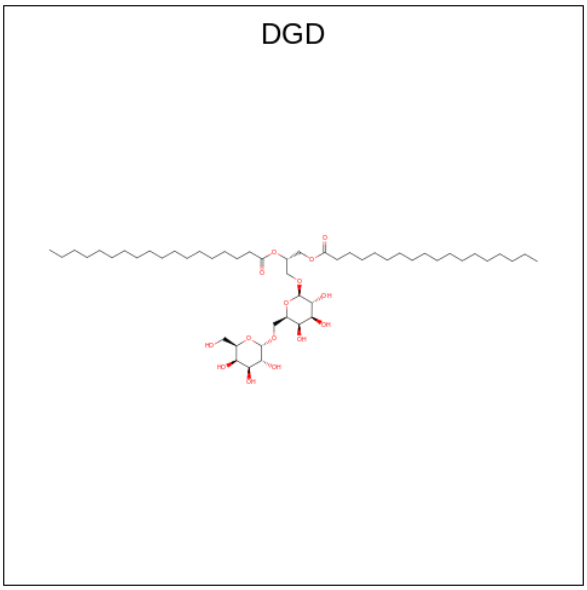
Mol	Chain	Residues	Atoms			AltConf
34	D	1	Total 37	C 27	O 10	0
34	F	1	Total 46	C 36	O 10	0
34	M	1	Total 40	C 30	O 10	0
34	W	1	Total 48	C 38	O 10	0
34	Z	1	Total 31	C 21	O 10	0
34	2	1	Total 40	C 30	O 10	0
34	4	1	Total 43	C 33	O 10	0
34	G	1	Total 40	C 30	O 10	0
34	O	1	Total 40	C 30	O 10	0
34	Q	1	Total 43	C 33	O 10	0

- Molecule 35 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).



Mol	Chain	Residues	Atoms			AltConf
35	c	1	Total 54	C 39	O 15	0

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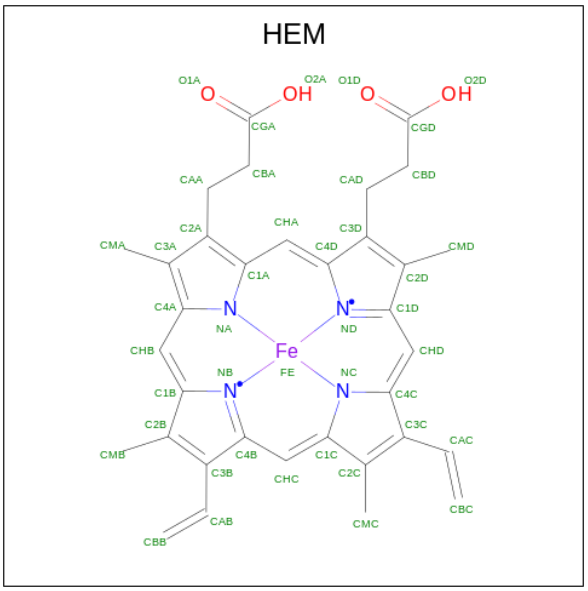
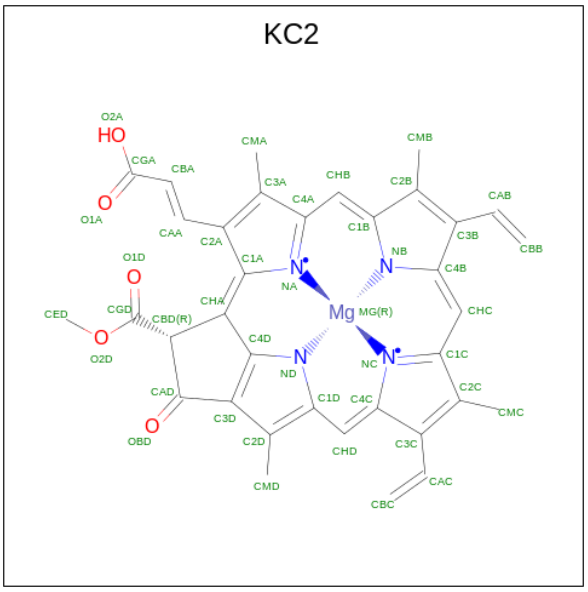
Mol	Chain	Residues	Atoms	AltConf
35	h	1	Total C O 62 47 15	0
35	C	1	Total C O 54 39 15	0
35	H	1	Total C O 62 47 15	0

- Molecule 36 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



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

- Molecule 37 is Chlorophyll c2 (three-letter code: KC2) (formula: $C_{35}H_{28}MgN_4O_5$).



Mol	Chain	Residues	Atoms					AltConf
37	2	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	3	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	4	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	4	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	4	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	5	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	6	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	6	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	O	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	P	1	Total	C	Mg	N	O	0
			45	35	1	4	5	

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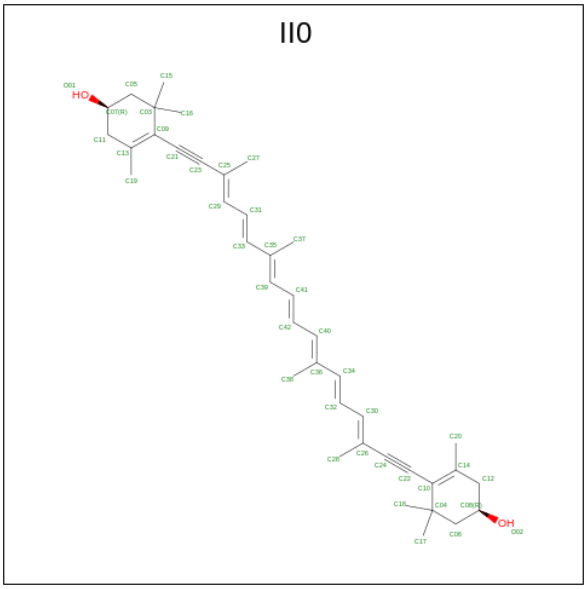
Mol	Chain	Residues	Atoms					AltConf
37	Q	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	Q	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	Q	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	R	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	S	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	S	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	N	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	N	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	N	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
37	N	1	Total	C	Mg	N	O	0
			45	35	1	4	5	

- Molecule 38 is (1 {R})-3,5,5-trimethyl-4-[(3 {E},5 {E},7 {E},9 {E},11 {E},13 {E},15 {E})-3,7,12,16-tetramethyl-18-[(4 {R})-2,6,6-trimethyl-4-oxidanyl-cyclohexen-1-yl]octadeca-3,5,7,9,11,13,15-heptaen-1,17-diynyl]cyclohex-3-en-1-ol (three-letter code: II0) (formula: $C_{40}H_{52}O_2$).



Mol	Chain	Residues	Atoms			AltConf
38	2	1	Total	C	O	0
			42	40	2	
38	2	1	Total	C	O	0
			42	40	2	
38	2	1	Total	C	O	0
			42	40	2	
38	2	1	Total	C	O	0
			42	40	2	
38	3	1	Total	C	O	0
			42	40	2	
38	3	1	Total	C	O	0
			42	40	2	
38	3	1	Total	C	O	0
			42	40	2	
38	3	1	Total	C	O	0
			42	40	2	
38	4	1	Total	C	O	0
			42	40	2	
38	4	1	Total	C	O	0
			42	40	2	
38	4	1	Total	C	O	0
			42	40	2	
38	4	1	Total	C	O	0
			42	40	2	
38	5	1	Total	C	O	0
			42	40	2	
38	5	1	Total	C	O	0
			42	40	2	
38	5	1	Total	C	O	0
			42	40	2	
38	5	1	Total	C	O	0
			42	40	2	
38	6	1	Total	C	O	0
			42	40	2	
38	6	1	Total	C	O	0
			42	40	2	
38	6	1	Total	C	O	0
			42	40	2	
38	6	1	Total	C	O	0
			42	40	2	
38	1	1	Total	C	O	0
			42	40	2	
38	1	1	Total	C	O	0
			42	40	2	

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Mol	Chain	Residues	Atoms			AltConf
38	1	1	Total	C	O	0
			42	40	2	
38	1	1	Total	C	O	0
			42	40	2	
38	O	1	Total	C	O	0
			42	40	2	
38	O	1	Total	C	O	0
			42	40	2	
38	O	1	Total	C	O	0
			42	40	2	
38	O	1	Total	C	O	0
			42	40	2	
38	P	1	Total	C	O	0
			42	40	2	
38	P	1	Total	C	O	0
			42	40	2	
38	P	1	Total	C	O	0
			42	40	2	
38	P	1	Total	C	O	0
			42	40	2	
38	Q	1	Total	C	O	0
			42	40	2	
38	Q	1	Total	C	O	0
			42	40	2	
38	Q	1	Total	C	O	0
			42	40	2	
38	Q	1	Total	C	O	0
			42	40	2	
38	R	1	Total	C	O	0
			42	40	2	
38	R	1	Total	C	O	0
			42	40	2	
38	R	1	Total	C	O	0
			42	40	2	
38	R	1	Total	C	O	0
			42	40	2	
38	S	1	Total	C	O	0
			42	40	2	
38	S	1	Total	C	O	0
			42	40	2	
38	S	1	Total	C	O	0
			42	40	2	

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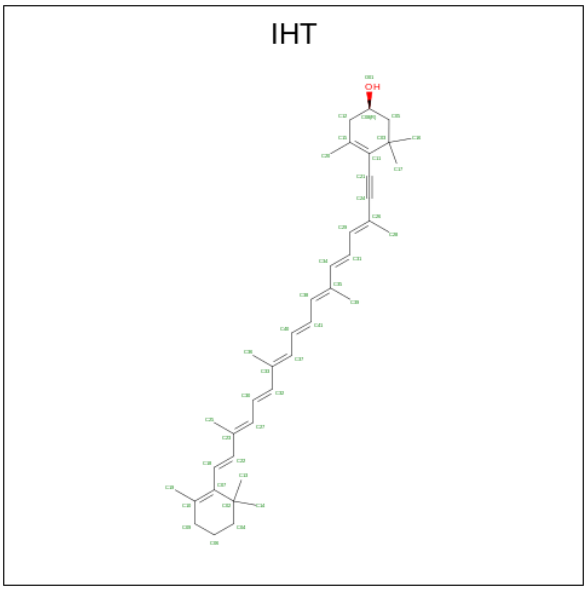
Mol	Chain	Residues	Atoms	AltConf
38	S	1	Total C O 42 40 2	0
38	N	1	Total C O 42 40 2	0
38	N	1	Total C O 42 40 2	0
38	N	1	Total C O 42 40 2	0
38	N	1	Total C O 42 40 2	0

- Molecule 39 is (1 {R})-3,5,5-trimethyl-4-[(3 {E},5 {E},7 {E},9 {E},11 {E},13 {E},15 {E},17 {E})-3,7,12,16-tetramethyl-18-(2,6,6-trimethylcyclohexen-1-yl)octadeca-3,5,7,9,11,13,15,17-octaen-1-ynyl]cyclohex-3-en-1-ol (three-letter code: IHT) (formula: $C_{40}H_{54}O$).



Mol	Chain	Residues	Atoms	AltConf
39	2	1	Total C O 41 40 1	0
39	4	1	Total C O 41 40 1	0
39	5	1	Total C O 41 40 1	0
39	1	1	Total C O 41 40 1	0
39	O	1	Total C O 41 40 1	0

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Mol	Chain	Residues	Atoms			AltConf
39	Q	1	Total 41	C 40	O 1	0
39	R	1	Total 41	C 40	O 1	0
39	N	1	Total 41	C 40	O 1	0

- Molecule 40 is water.

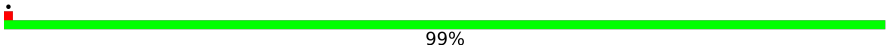
Mol	Chain	Residues	Atoms		AltConf
40	c	1	Total 1	O 1	0
40	C	1	Total 1	O 1	0

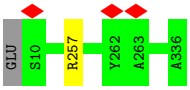
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Photosystem II protein D1

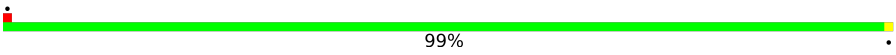
Chain a:

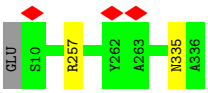




• Molecule 1: Photosystem II protein D1

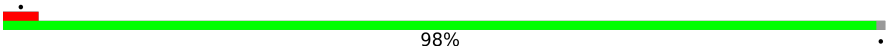
Chain A:

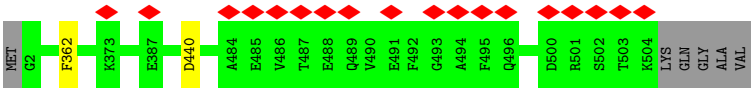




• Molecule 2: Photosystem II CP47 reaction center protein

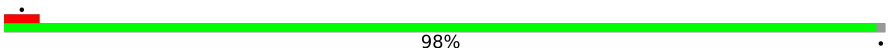
Chain b:

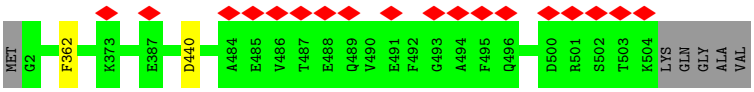




• Molecule 2: Photosystem II CP47 reaction center protein

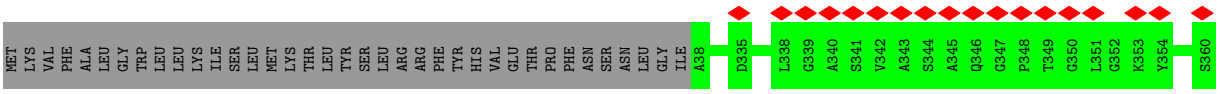
Chain B:

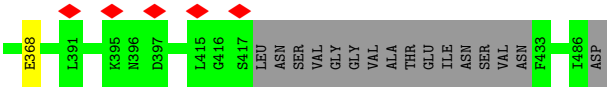




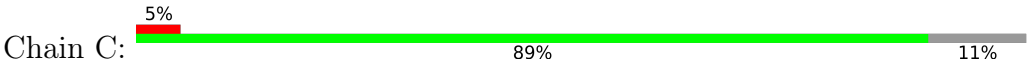
• Molecule 3: Photosystem II CP43 reaction center protein

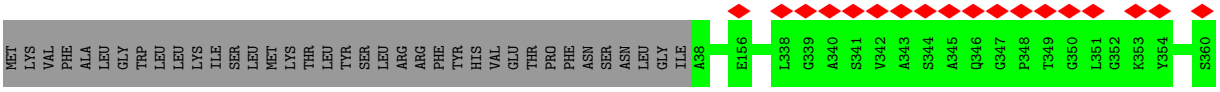
Chain c:

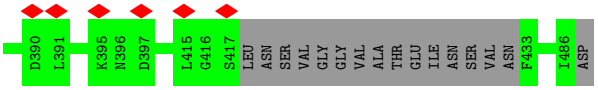




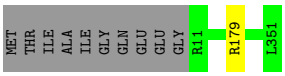
• Molecule 3: Photosystem II CP43 reaction center protein





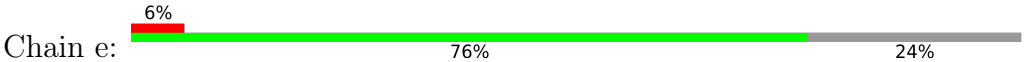


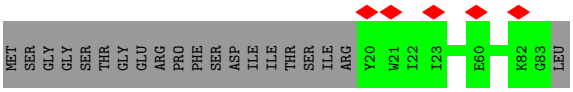
• Molecule 4: Photosystem II D2 protein



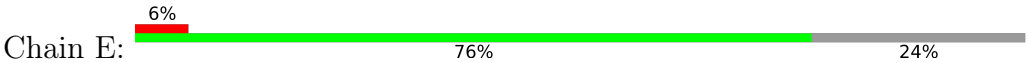
• Molecule 4: Photosystem II D2 protein

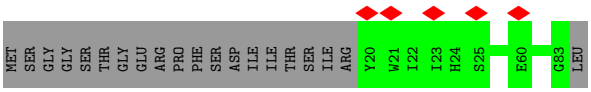
• Molecule 5: Cytochrome b559 subunit alpha



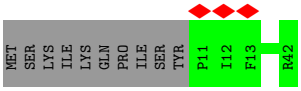


• Molecule 5: Cytochrome b559 subunit alpha

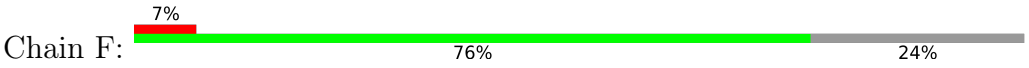


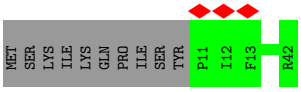


• Molecule 6: Cytochrome b559 subunit beta

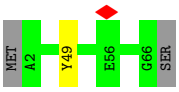


• Molecule 6: Cytochrome b559 subunit beta



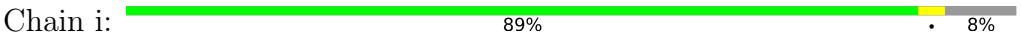


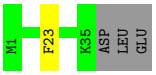
• Molecule 7: Photosystem II reaction center protein H



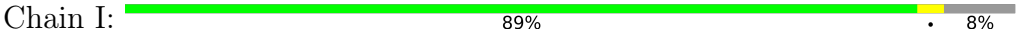
• Molecule 7: Photosystem II reaction center protein H

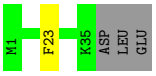
• Molecule 8: Photosystem II reaction center protein I



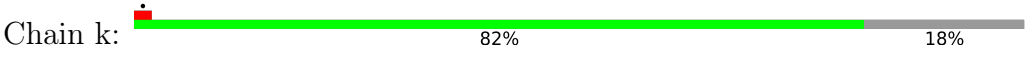


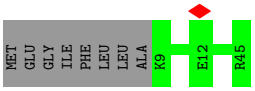
• Molecule 8: Photosystem II reaction center protein I





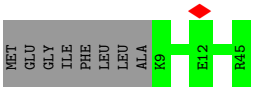
• Molecule 9: Photosystem II reaction center protein K





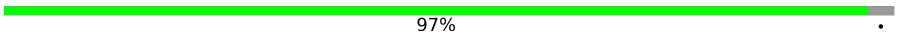
• Molecule 9: Photosystem II reaction center protein K

Chain K:



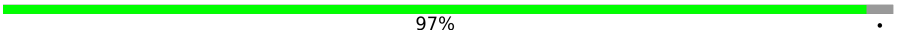
• Molecule 10: Photosystem II reaction center protein L

Chain l:



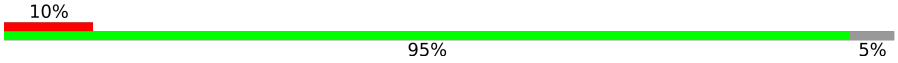
• Molecule 10: Photosystem II reaction center protein L

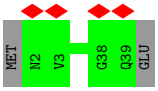
Chain L:



• Molecule 11: Photosystem II protein M

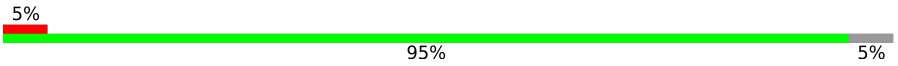
Chain m:

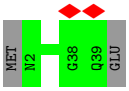




• Molecule 11: Photosystem II protein M

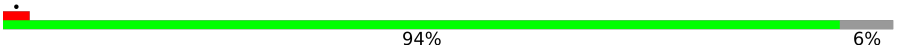
Chain M:

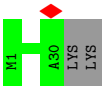




• Molecule 12: Photosystem II reaction center protein T

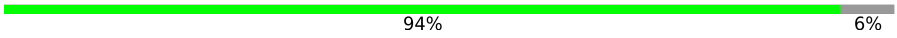
Chain t:





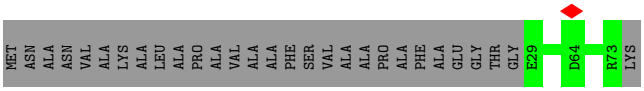
• Molecule 12: Photosystem II reaction center protein T

Chain T:



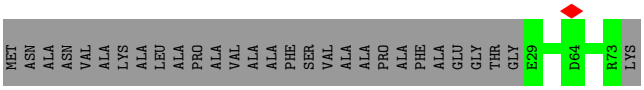
• Molecule 13: Photosystem II protein W

Chain w:



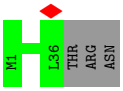
• Molecule 13: Photosystem II protein W

Chain W:



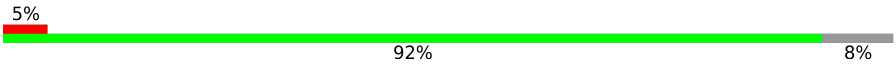
• Molecule 14: Photosystem II reaction center X protein

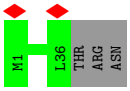
Chain x:



• Molecule 14: Photosystem II reaction center X protein

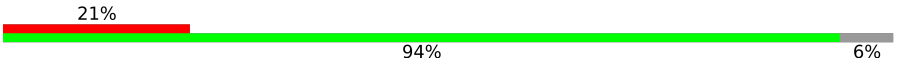
Chain X:

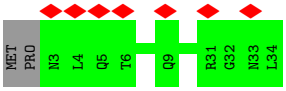




• Molecule 15: Photosystem II reaction center protein Psb30

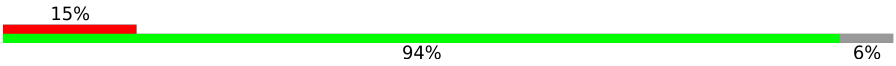
Chain y:

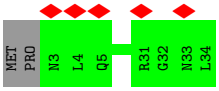




• Molecule 15: Photosystem II reaction center protein Psb30

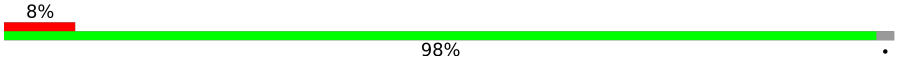
Chain Y:

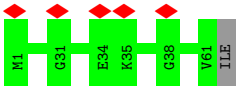




• Molecule 16: Photosystem II reaction center protein Z

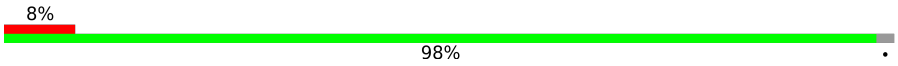
Chain z:

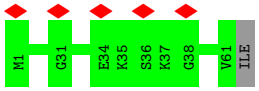




• Molecule 16: Photosystem II reaction center protein Z

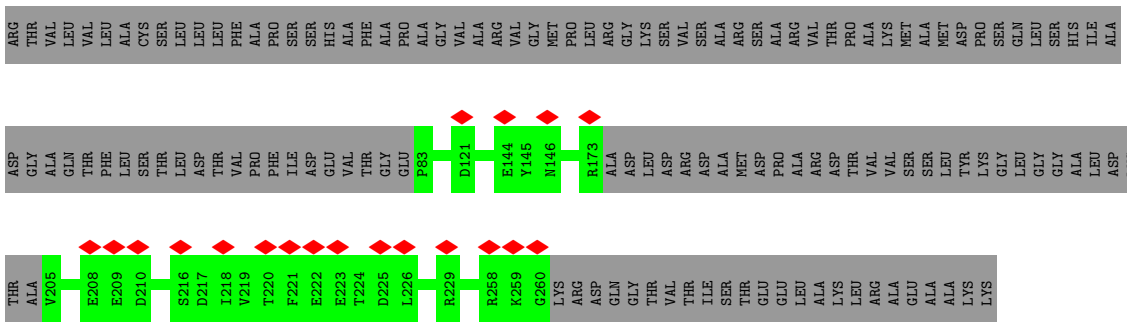
Chain Z:





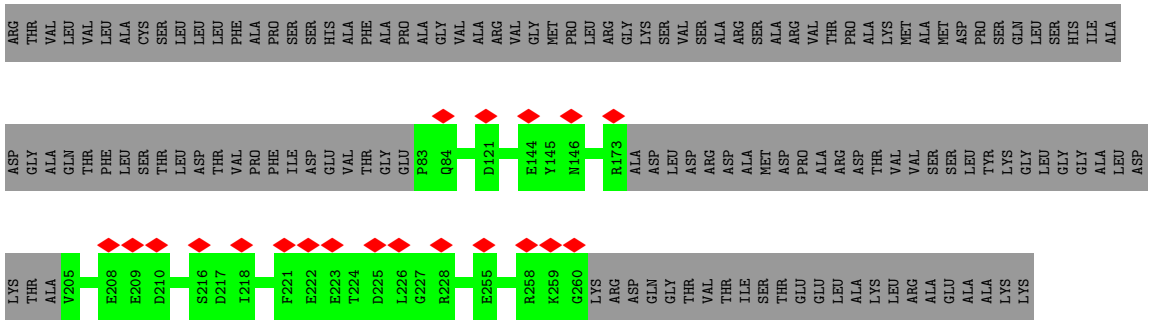
• Molecule 17: NCP

Chain g:



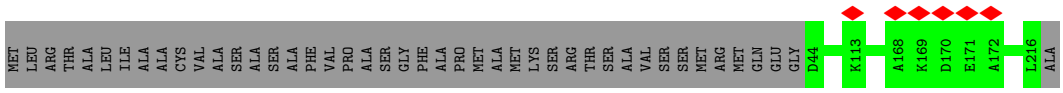
• Molecule 17: NCP

Chain G:



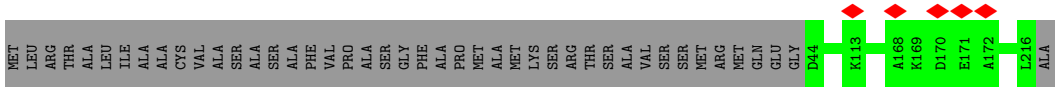
• Molecule 18: CAC2

Chain 2:



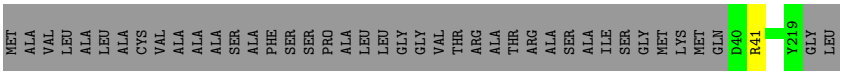
• Molecule 18: CAC2

Chain O:



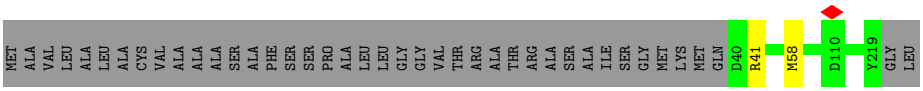
• Molecule 19: CAC3

Chain 3:



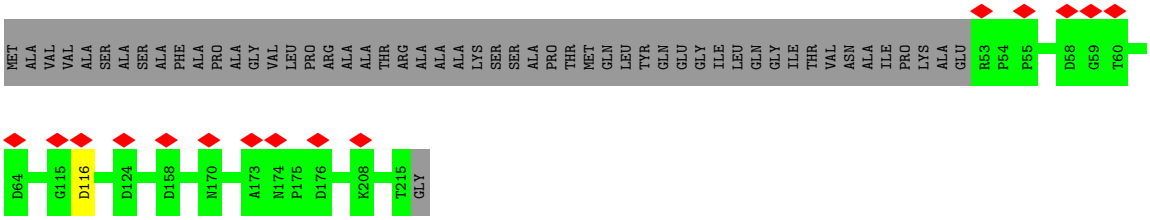
• Molecule 19: CAC3

Chain P:



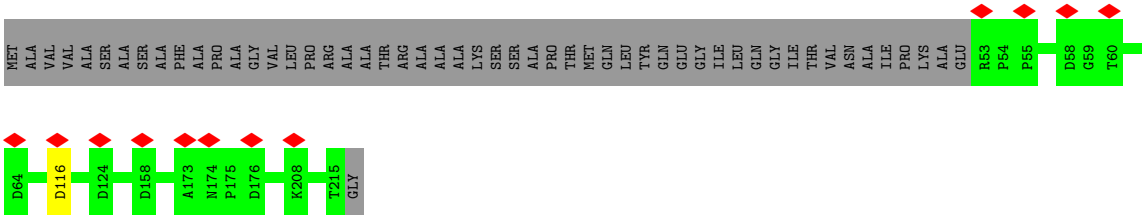
• Molecule 20: CAC4

Chain 4:



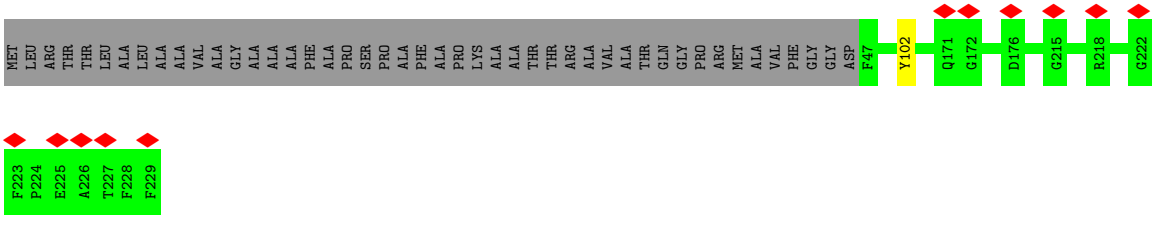
• Molecule 20: CAC4

Chain Q:



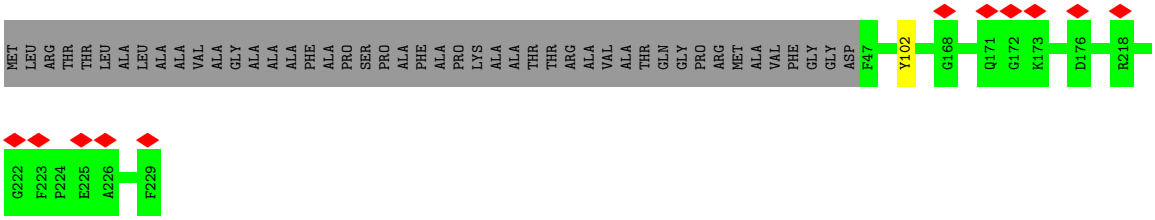
• Molecule 21: CAC5

Chain 5:



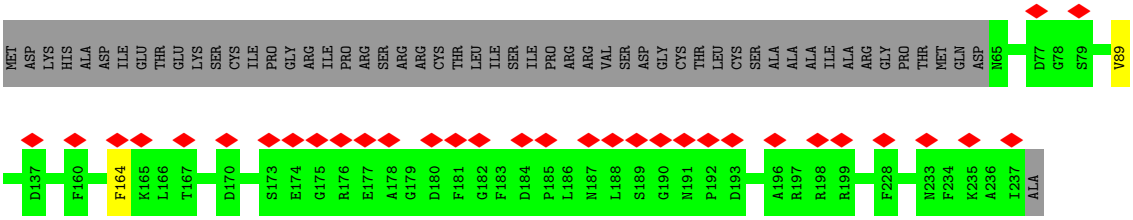
• Molecule 21: CAC5

Chain R:



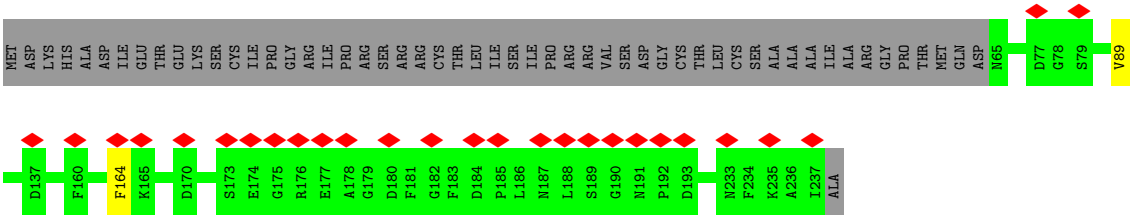
• Molecule 22: CAC6

Chain 6:



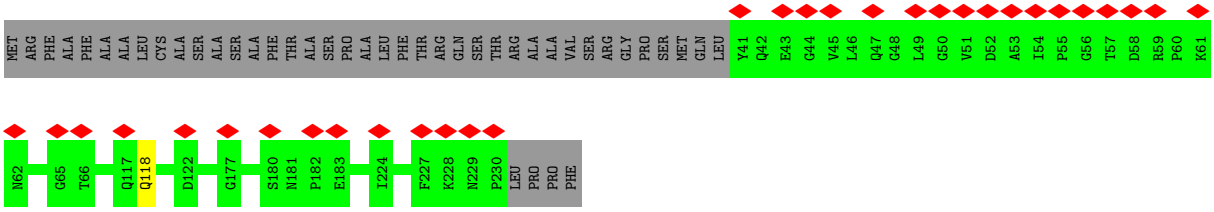
• Molecule 22: CAC6

Chain S:



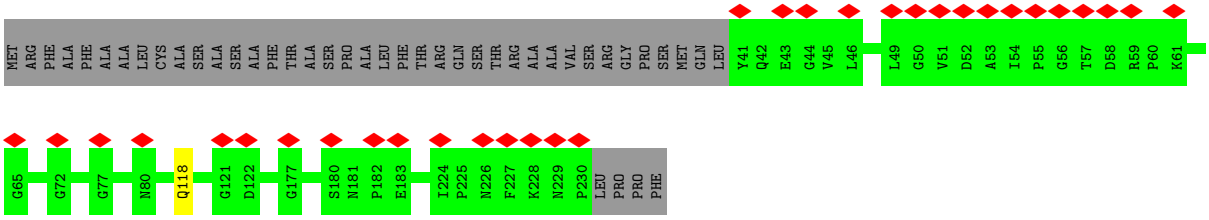
• Molecule 23: CAC1

Chain 1:



• Molecule 23: CAC1

Chain N:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	112613	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	DIRECT ELECTRON DE-16 (4k x 4k)	Depositor
Maximum map value	0.253	Depositor
Minimum map value	0.000	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.024	Depositor
Map size (Å)	432.65326, 432.65326, 432.65326	wwPDB
Map dimensions	416, 416, 416	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0400319, 1.0400319, 1.0400319	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: SQD, MN, DGD, IHT, II0, CLA, PL9, KC2, WVN, BCT, PHO, LMG, HEM, CL, FE2, LHG

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	0.27	0/2644	0.45	0/3607
1	a	0.25	0/2644	0.44	0/3607
2	B	0.27	0/4082	0.47	0/5557
2	b	0.26	0/4082	0.46	0/5557
3	C	0.25	0/3491	0.46	0/4763
3	c	0.26	0/3491	0.47	0/4763
4	D	0.27	0/2801	0.45	0/3815
4	d	0.26	0/2801	0.46	0/3815
5	E	0.24	0/541	0.43	0/738
5	e	0.27	0/541	0.49	0/738
6	F	0.40	0/270	0.62	0/366
6	f	0.36	0/270	0.54	0/366
7	H	0.26	0/519	0.52	0/707
7	h	0.28	0/519	0.55	0/707
8	I	0.25	0/290	0.45	0/392
8	i	0.25	0/290	0.45	0/392
9	K	0.29	0/307	0.43	0/421
9	k	0.29	0/307	0.44	0/421
10	L	0.30	0/311	0.40	0/424
10	l	0.30	0/311	0.40	0/424
11	M	0.26	0/289	0.41	0/393
11	m	0.26	0/289	0.41	0/393
12	T	0.26	0/251	0.43	0/341
12	t	0.26	0/251	0.44	0/341
13	W	0.26	0/370	0.50	0/503
13	w	0.26	0/370	0.50	0/503
14	X	0.25	0/272	0.42	0/370
14	x	0.25	0/272	0.42	0/370
15	Y	0.23	0/242	0.43	0/329
15	y	0.23	0/242	0.43	0/329
16	Z	0.29	0/470	0.42	0/641
16	z	0.27	0/470	0.41	0/641

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
17	G	0.26	0/1200	0.47	0/1635
17	g	0.25	0/1200	0.47	0/1635
18	2	0.28	0/1419	0.46	0/1919
18	O	0.27	0/1419	0.45	0/1919
19	3	0.26	0/1428	0.44	0/1930
19	P	0.26	0/1428	0.44	0/1930
20	4	0.28	0/1281	0.51	0/1731
20	Q	0.28	0/1281	0.50	0/1731
21	5	0.28	0/1469	0.47	0/1988
21	R	0.28	0/1469	0.48	0/1988
22	6	0.28	0/1372	0.58	2/1855 (0.1%)
22	S	0.29	0/1372	0.52	0/1855
23	1	0.26	0/1490	0.48	0/2017
23	N	0.26	0/1490	0.48	0/2017
All	All	0.27	0/53618	0.47	2/72884 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	6	89	VAL	CB-CA-C	11.31	132.88	111.40
22	6	89	VAL	N-CA-C	-5.64	95.77	111.00

There are no chirality outliers.

There are no planarity outliers.

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	325/328 (99%)	320 (98%)	5 (2%)	0	100	100
1	a	325/328 (99%)	319 (98%)	6 (2%)	0	100	100
2	B	501/509 (98%)	495 (99%)	6 (1%)	0	100	100
2	b	501/509 (98%)	495 (99%)	6 (1%)	0	100	100
3	C	430/487 (88%)	421 (98%)	9 (2%)	0	100	100
3	c	430/487 (88%)	420 (98%)	10 (2%)	0	100	100
4	D	339/351 (97%)	329 (97%)	10 (3%)	0	100	100
4	d	339/351 (97%)	330 (97%)	9 (3%)	0	100	100
5	E	62/84 (74%)	62 (100%)	0	0	100	100
5	e	62/84 (74%)	62 (100%)	0	0	100	100
6	F	30/42 (71%)	30 (100%)	0	0	100	100
6	f	30/42 (71%)	30 (100%)	0	0	100	100
7	H	63/67 (94%)	56 (89%)	7 (11%)	0	100	100
7	h	63/67 (94%)	55 (87%)	8 (13%)	0	100	100
8	I	33/38 (87%)	32 (97%)	1 (3%)	0	100	100
8	i	33/38 (87%)	32 (97%)	1 (3%)	0	100	100
9	K	35/45 (78%)	35 (100%)	0	0	100	100
9	k	35/45 (78%)	35 (100%)	0	0	100	100
10	L	35/38 (92%)	35 (100%)	0	0	100	100
10	l	35/38 (92%)	35 (100%)	0	0	100	100
11	M	36/40 (90%)	35 (97%)	1 (3%)	0	100	100
11	m	36/40 (90%)	36 (100%)	0	0	100	100
12	T	28/32 (88%)	28 (100%)	0	0	100	100
12	t	28/32 (88%)	28 (100%)	0	0	100	100
13	W	43/74 (58%)	40 (93%)	3 (7%)	0	100	100
13	w	43/74 (58%)	40 (93%)	3 (7%)	0	100	100
14	X	34/39 (87%)	34 (100%)	0	0	100	100
14	x	34/39 (87%)	34 (100%)	0	0	100	100
15	Y	30/34 (88%)	29 (97%)	1 (3%)	0	100	100
15	y	30/34 (88%)	30 (100%)	0	0	100	100
16	Z	59/62 (95%)	59 (100%)	0	0	100	100
16	z	59/62 (95%)	59 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	G	143/284 (50%)	137 (96%)	6 (4%)	0	100	100
17	g	143/284 (50%)	137 (96%)	6 (4%)	0	100	100
18	2	171/217 (79%)	164 (96%)	7 (4%)	0	100	100
18	O	171/217 (79%)	162 (95%)	9 (5%)	0	100	100
19	3	178/221 (80%)	168 (94%)	10 (6%)	0	100	100
19	P	178/221 (80%)	168 (94%)	10 (6%)	0	100	100
20	4	161/216 (74%)	153 (95%)	8 (5%)	0	100	100
20	Q	161/216 (74%)	153 (95%)	8 (5%)	0	100	100
21	5	181/229 (79%)	172 (95%)	9 (5%)	0	100	100
21	R	181/229 (79%)	171 (94%)	10 (6%)	0	100	100
22	6	171/227 (75%)	163 (95%)	8 (5%)	0	100	100
22	S	171/227 (75%)	165 (96%)	6 (4%)	0	100	100
23	1	188/233 (81%)	174 (93%)	14 (7%)	0	100	100
23	N	188/233 (81%)	174 (93%)	14 (7%)	0	100	100
All	All	6552/7794 (84%)	6341 (97%)	211 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	265/266 (100%)	263 (99%)	2 (1%)	79	91
1	a	265/266 (100%)	264 (100%)	1 (0%)	89	96
2	B	400/404 (99%)	398 (100%)	2 (0%)	86	95
2	b	400/404 (99%)	398 (100%)	2 (0%)	86	95
3	C	342/389 (88%)	342 (100%)	0	100	100
3	c	342/389 (88%)	341 (100%)	1 (0%)	91	97
4	D	274/281 (98%)	272 (99%)	2 (1%)	81	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	d	274/281 (98%)	273 (100%)	1 (0%)	89 96
5	E	56/73 (77%)	56 (100%)	0	100 100
5	e	56/73 (77%)	56 (100%)	0	100 100
6	F	27/37 (73%)	27 (100%)	0	100 100
6	f	27/37 (73%)	27 (100%)	0	100 100
7	H	55/57 (96%)	54 (98%)	1 (2%)	54 75
7	h	55/57 (96%)	54 (98%)	1 (2%)	54 75
8	I	33/36 (92%)	32 (97%)	1 (3%)	36 60
8	i	33/36 (92%)	32 (97%)	1 (3%)	36 60
9	K	30/36 (83%)	30 (100%)	0	100 100
9	k	30/36 (83%)	30 (100%)	0	100 100
10	L	34/35 (97%)	34 (100%)	0	100 100
10	l	34/35 (97%)	34 (100%)	0	100 100
11	M	30/32 (94%)	30 (100%)	0	100 100
11	m	30/32 (94%)	30 (100%)	0	100 100
12	T	26/28 (93%)	26 (100%)	0	100 100
12	t	26/28 (93%)	26 (100%)	0	100 100
13	W	40/56 (71%)	40 (100%)	0	100 100
13	w	40/56 (71%)	40 (100%)	0	100 100
14	X	31/34 (91%)	31 (100%)	0	100 100
14	x	31/34 (91%)	31 (100%)	0	100 100
15	Y	27/29 (93%)	27 (100%)	0	100 100
15	y	27/29 (93%)	27 (100%)	0	100 100
16	Z	51/52 (98%)	51 (100%)	0	100 100
16	z	51/52 (98%)	51 (100%)	0	100 100
17	G	120/227 (53%)	120 (100%)	0	100 100
17	g	120/227 (53%)	120 (100%)	0	100 100
18	2	141/172 (82%)	141 (100%)	0	100 100
18	O	141/172 (82%)	141 (100%)	0	100 100
19	3	142/168 (84%)	141 (99%)	1 (1%)	81 92
19	P	142/168 (84%)	140 (99%)	2 (1%)	62 81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	4	131/166 (79%)	130 (99%)	1 (1%)	79 91
20	Q	131/166 (79%)	130 (99%)	1 (1%)	79 91
21	5	151/179 (84%)	150 (99%)	1 (1%)	81 92
21	R	151/179 (84%)	150 (99%)	1 (1%)	81 92
22	6	138/183 (75%)	137 (99%)	1 (1%)	81 92
22	S	138/183 (75%)	136 (99%)	2 (1%)	62 81
23	1	152/184 (83%)	151 (99%)	1 (1%)	81 92
23	N	152/184 (83%)	151 (99%)	1 (1%)	81 92
All	All	5392/6248 (86%)	5365 (100%)	27 (0%)	85 95

5 of 27 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
8	I	23	PHE
21	5	102	TYR
22	S	89	VAL
20	4	116	ASP
22	6	164	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
5	E	24	HIS
16	Z	58	ASN
23	N	226	ASN
23	1	226	ASN
23	N	223	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 370 ligands modelled in this entry, 10 are monoatomic - leaving 360 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	$\#\|Z\| > 2$
31	LHG	L	101	-	48,48,48	0.94	2 (4%)	51,54,54	1.04	3 (5%)
25	CLA	b	604	-	59,67,73	1.59	6 (10%)	68,105,113	1.43	9 (13%)
25	CLA	B	606	-	65,73,73	1.54	6 (9%)	76,113,113	1.28	9 (11%)
25	CLA	6	604	-	65,73,73	1.46	6 (9%)	76,113,113	1.36	7 (9%)
34	LMG	Q	621	-	43,43,55	1.05	2 (4%)	51,51,63	0.89	2 (3%)
34	LMG	W	134	-	48,48,55	0.96	2 (4%)	56,56,63	1.09	4 (7%)
29	PL9	A	409	-	33,33,55	1.22	3 (9%)	41,42,69	1.59	9 (21%)
36	HEM	e	102	6,5	41,50,50	1.34	6 (14%)	45,82,82	1.75	8 (17%)
25	CLA	Q	610	20	51,59,73	1.71	5 (9%)	59,96,113	1.45	8 (13%)
37	KC2	2	612	-	48,53,53	3.17	21 (43%)	54,89,89	4.49	30 (55%)
25	CLA	P	611	31	52,60,73	1.71	5 (9%)	60,97,113	1.34	8 (13%)
25	CLA	A	403	-	65,73,73	1.54	8 (12%)	76,113,113	1.20	7 (9%)
25	CLA	6	601	22	55,63,73	1.68	5 (9%)	64,101,113	1.32	7 (10%)
25	CLA	D	400	-	65,73,73	1.54	5 (7%)	76,113,113	1.30	8 (10%)
25	CLA	B	601	-	50,58,73	1.75	6 (12%)	58,95,113	1.49	9 (15%)
25	CLA	6	603	-	55,63,73	1.65	5 (9%)	64,101,113	1.37	8 (12%)
25	CLA	Q	607	-	43,51,73	1.88	6 (13%)	49,86,113	1.37	6 (12%)
25	CLA	N	603	-	60,68,73	1.58	5 (8%)	70,107,113	1.32	6 (8%)
25	CLA	d	404	-	61,69,73	1.56	5 (8%)	71,108,113	1.33	7 (9%)
25	CLA	5	603	-	52,60,73	1.71	6 (11%)	60,97,113	1.50	8 (13%)
27	WVN	S	620	-	40,41,41	1.89	14 (35%)	50,56,56	1.88	12 (24%)
25	CLA	3	609	19	65,73,73	1.49	5 (7%)	76,113,113	1.35	8 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
38	II0	5	619	-	39,43,43	2.55	11 (28%)	50,60,60	3.30	15 (30%)
25	CLA	4	607	-	43,51,73	1.88	6 (13%)	49,86,113	1.37	6 (12%)
38	II0	2	618	-	39,43,43	2.51	11 (28%)	50,60,60	3.29	18 (36%)
38	II0	R	618	-	39,43,43	2.55	10 (25%)	50,60,60	3.35	17 (34%)
25	CLA	b	601	-	50,58,73	1.75	5 (10%)	58,95,113	1.46	9 (15%)
25	CLA	O	601	18	49,57,73	1.74	6 (12%)	55,93,113	1.52	8 (14%)
25	CLA	6	613	-	53,61,73	1.63	6 (11%)	61,98,113	1.43	8 (13%)
27	WVN	H	89	-	40,41,41	1.87	14 (35%)	50,56,56	2.53	13 (26%)
25	CLA	3	603	-	65,73,73	1.52	6 (9%)	76,113,113	1.29	9 (11%)
38	II0	O	618	-	39,43,43	2.58	12 (30%)	50,60,60	3.29	18 (36%)
25	CLA	R	603	-	52,60,73	1.71	6 (11%)	60,97,113	1.50	8 (13%)
31	LHG	3	621	25	48,48,48	0.94	2 (4%)	51,54,54	1.06	3 (5%)
38	II0	S	619	-	39,43,43	2.53	11 (28%)	50,60,60	3.32	16 (32%)
37	KC2	S	606	22	48,53,53	3.18	22 (45%)	54,89,89	4.42	31 (57%)
27	WVN	C	530	-	40,41,41	1.85	14 (35%)	50,56,56	1.95	13 (26%)
38	II0	N	617	-	39,43,43	2.51	11 (28%)	50,60,60	3.32	16 (32%)
25	CLA	b	609	-	65,73,73	1.53	5 (7%)	76,113,113	1.26	8 (10%)
25	CLA	3	615	-	45,53,73	1.78	6 (13%)	52,89,113	1.52	7 (13%)
25	CLA	c	525	-	65,73,73	1.51	6 (9%)	76,113,113	1.36	8 (10%)
25	CLA	5	613	21	55,63,73	1.63	6 (10%)	64,101,113	1.51	8 (12%)
25	CLA	O	615	-	45,53,73	1.80	6 (13%)	52,89,113	1.48	7 (13%)
38	II0	2	619	-	39,43,43	2.60	11 (28%)	50,60,60	3.28	19 (38%)
30	BCT	a	412	24	2,3,3	1.21	0	2,3,3	4.19	1 (50%)
26	PHO	A	405	-	51,69,69	0.99	3 (5%)	47,99,99	1.13	5 (10%)
25	CLA	N	609	23	46,54,73	1.74	6 (13%)	53,90,113	1.50	8 (15%)
25	CLA	3	613	19	55,63,73	1.63	6 (10%)	64,101,113	1.43	7 (10%)
25	CLA	D	403	-	65,73,73	1.55	6 (9%)	76,113,113	1.27	7 (9%)
38	II0	3	617	-	39,43,43	2.53	12 (30%)	50,60,60	3.34	17 (34%)
25	CLA	S	603	-	55,63,73	1.62	6 (10%)	64,101,113	1.48	8 (12%)
25	CLA	Q	615	-	43,51,73	1.83	6 (13%)	49,86,113	1.41	6 (12%)
25	CLA	b	607	-	65,73,73	1.51	5 (7%)	76,113,113	1.28	8 (10%)
25	CLA	O	611	-	60,68,73	1.60	5 (8%)	70,107,113	1.34	8 (11%)
27	WVN	P	620	-	40,41,41	1.86	14 (35%)	50,56,56	2.35	19 (38%)
34	LMG	b	620	-	51,51,55	0.93	2 (3%)	59,59,63	1.01	3 (5%)
25	CLA	d	400	-	65,73,73	1.54	5 (7%)	76,113,113	1.30	8 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
37	KC2	P	606	19	48,53,53	3.16	21 (43%)	54,89,89	4.46	32 (59%)
25	CLA	6	602	22	65,73,73	1.51	5 (7%)	76,113,113	1.30	8 (10%)
39	IHT	Q	620	-	40,42,42	2.14	11 (27%)	53,58,58	2.80	23 (43%)
38	II0	4	616	-	39,43,43	2.54	11 (28%)	50,60,60	3.27	16 (32%)
31	LHG	z	103	-	24,24,48	1.33	2 (8%)	27,30,54	1.14	2 (7%)
25	CLA	1	606	23	50,58,73	1.73	5 (10%)	58,95,113	1.37	9 (15%)
34	LMG	B	620	-	51,51,55	0.93	2 (3%)	59,59,63	1.02	3 (5%)
25	CLA	G	301	-	65,73,73	1.49	6 (9%)	76,113,113	1.25	8 (10%)
25	CLA	b	612	-	65,73,73	1.48	7 (10%)	76,113,113	1.48	10 (13%)
25	CLA	N	604	23	59,67,73	1.60	5 (8%)	68,105,113	1.35	7 (10%)
25	CLA	a	406	-	60,68,73	1.58	6 (10%)	70,107,113	1.30	7 (10%)
34	LMG	C	536	-	47,47,55	0.97	2 (4%)	55,55,63	1.18	4 (7%)
37	KC2	O	612	-	48,53,53	3.16	21 (43%)	54,89,89	4.48	30 (55%)
25	CLA	P	603	-	65,73,73	1.52	6 (9%)	76,113,113	1.29	9 (11%)
25	CLA	c	524	-	65,73,73	1.51	6 (9%)	76,113,113	1.38	6 (7%)
27	WVN	3	620	-	40,41,41	1.86	14 (35%)	50,56,56	2.36	19 (38%)
25	CLA	6	609	22	55,63,73	1.60	6 (10%)	64,101,113	1.44	8 (12%)
25	CLA	3	604	-	63,71,73	1.49	6 (9%)	73,110,113	1.40	6 (8%)
25	CLA	b	606	-	65,73,73	1.53	5 (7%)	76,113,113	1.28	8 (10%)
25	CLA	B	612	-	65,73,73	1.47	7 (10%)	76,113,113	1.48	10 (13%)
35	DGD	h	90	-	63,63,67	0.88	2 (3%)	77,77,81	0.86	3 (3%)
37	KC2	4	605	-	48,53,53	3.19	21 (43%)	54,89,89	4.45	31 (57%)
25	CLA	5	611	31	65,73,73	1.52	6 (9%)	76,113,113	1.24	6 (7%)
25	CLA	d	403	-	65,73,73	1.55	6 (9%)	76,113,113	1.27	7 (9%)
25	CLA	Q	609	20	56,64,73	1.60	6 (10%)	65,102,113	1.43	7 (10%)
31	LHG	c	535	-	39,39,48	1.04	2 (5%)	42,45,54	1.12	2 (4%)
25	CLA	5	604	21	60,68,73	1.58	6 (10%)	70,107,113	1.33	8 (11%)
25	CLA	B	603	-	65,73,73	1.52	6 (9%)	76,113,113	1.23	6 (7%)
25	CLA	c	527	-	65,73,73	1.53	6 (9%)	76,113,113	1.29	7 (9%)
25	CLA	O	607	-	60,68,73	1.62	7 (11%)	70,107,113	1.16	7 (10%)
38	II0	6	619	-	39,43,43	2.50	12 (30%)	50,60,60	3.31	17 (34%)
38	II0	6	617	-	39,43,43	2.53	12 (30%)	50,60,60	3.32	16 (32%)
28	SQD	A	408	-	53,54,54	1.18	4 (7%)	62,65,65	1.15	6 (9%)
38	II0	P	617	-	39,43,43	2.50	11 (28%)	50,60,60	3.35	18 (36%)
34	LMG	4	621	-	43,43,55	1.05	2 (4%)	51,51,63	0.89	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
31	LHG	S	621	25	39,39,48	1.04	2 (5%)	42,45,54	1.04	2 (4%)
25	CLA	b	611	-	65,73,73	1.52	5 (7%)	76,113,113	1.30	9 (11%)
25	CLA	B	607	-	65,73,73	1.52	5 (7%)	76,113,113	1.26	7 (9%)
25	CLA	c	521	-	65,73,73	1.51	5 (7%)	76,113,113	1.34	8 (10%)
38	II0	1	619	-	39,43,43	2.57	10 (25%)	50,60,60	3.42	18 (36%)
25	CLA	1	607	-	43,51,73	1.90	7 (16%)	49,86,113	1.34	6 (12%)
37	KC2	4	612	-	48,53,53	3.20	22 (45%)	54,89,89	4.54	31 (57%)
34	LMG	d	402	-	40,40,55	1.05	2 (5%)	48,48,63	1.03	3 (6%)
25	CLA	N	607	-	43,51,73	1.90	7 (16%)	49,86,113	1.34	6 (12%)
27	WVN	Y	89	-	40,41,41	1.90	14 (35%)	50,56,56	2.25	12 (24%)
25	CLA	S	610	22	57,65,73	1.60	5 (8%)	66,103,113	1.43	7 (10%)
34	LMG	O	622	-	40,40,55	1.06	2 (5%)	48,48,63	1.01	2 (4%)
25	CLA	P	615	-	45,53,73	1.78	6 (13%)	52,89,113	1.52	8 (15%)
39	IHT	R	620	-	40,42,42	2.00	10 (25%)	53,58,58	2.96	25 (47%)
38	II0	Q	617	-	39,43,43	2.55	11 (28%)	50,60,60	3.32	17 (34%)
25	CLA	5	607	-	43,51,73	1.80	6 (13%)	49,86,113	1.54	8 (16%)
25	CLA	R	610	21	59,67,73	1.62	5 (8%)	68,105,113	1.34	7 (10%)
34	LMG	F	99	-	46,46,55	0.98	2 (4%)	54,54,63	1.02	3 (5%)
38	II0	P	618	-	39,43,43	2.52	10 (25%)	50,60,60	3.35	19 (38%)
27	WVN	d	408	-	40,41,41	1.88	14 (35%)	50,56,56	2.21	16 (32%)
25	CLA	C	516	-	65,73,73	1.53	6 (9%)	76,113,113	1.29	7 (9%)
37	KC2	1	613	-	48,53,53	3.26	21 (43%)	54,89,89	4.51	31 (57%)
25	CLA	4	610	20	51,59,73	1.71	5 (9%)	59,96,113	1.44	8 (13%)
34	LMG	f	99	-	46,46,55	0.99	2 (4%)	54,54,63	1.03	3 (5%)
37	KC2	6	606	-	48,53,53	3.17	22 (45%)	54,89,89	4.43	32 (59%)
37	KC2	1	605	-	48,53,53	3.15	21 (43%)	54,89,89	4.51	31 (57%)
25	CLA	c	523	-	65,73,73	1.51	5 (7%)	76,113,113	1.32	8 (10%)
37	KC2	S	612	22	48,53,53	3.15	21 (43%)	54,89,89	4.60	31 (57%)
38	II0	O	617	-	39,43,43	2.50	10 (25%)	50,60,60	3.32	17 (34%)
25	CLA	C	519	-	60,68,73	1.57	5 (8%)	70,107,113	1.35	8 (11%)
25	CLA	c	519	-	60,68,73	1.57	5 (8%)	70,107,113	1.36	8 (11%)
25	CLA	S	615	-	65,73,73	1.49	6 (9%)	76,113,113	1.31	7 (9%)
25	CLA	4	602	20	65,73,73	1.50	5 (7%)	76,113,113	1.31	7 (9%)
25	CLA	3	612	-	53,61,73	1.69	6 (11%)	61,98,113	1.44	8 (13%)
25	CLA	2	602	18	65,73,73	1.52	5 (7%)	76,113,113	1.32	9 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	P	613	19	55,63,73	1.64	6 (10%)	64,101,113	1.42	7 (10%)
25	CLA	S	602	22	65,73,73	1.51	5 (7%)	76,113,113	1.30	7 (9%)
25	CLA	N	606	23	50,58,73	1.74	5 (10%)	58,95,113	1.37	9 (15%)
25	CLA	5	606	21	65,73,73	1.54	5 (7%)	76,113,113	1.26	7 (9%)
25	CLA	N	614	-	48,56,73	1.74	5 (10%)	55,92,113	1.51	8 (14%)
27	WVN	y	89	-	40,41,41	1.87	14 (35%)	50,56,56	2.49	16 (32%)
37	KC2	6	612	22	48,53,53	3.14	21 (43%)	54,89,89	4.61	31 (57%)
25	CLA	C	527	-	65,73,73	1.53	6 (9%)	76,113,113	1.30	7 (9%)
39	IHT	1	620	-	40,42,42	2.08	11 (27%)	53,58,58	2.84	22 (41%)
29	PL9	d	405	-	55,55,55	1.05	3 (5%)	68,69,69	1.51	11 (16%)
25	CLA	c	522	-	65,73,73	1.49	5 (7%)	76,113,113	1.33	6 (7%)
39	IHT	N	620	-	40,42,42	2.08	10 (25%)	53,58,58	2.84	22 (41%)
35	DGD	c	532	-	55,55,67	0.93	2 (3%)	69,69,81	0.97	3 (4%)
25	CLA	R	602	21	55,63,73	1.65	5 (9%)	64,101,113	1.37	8 (12%)
38	II0	S	618	-	39,43,43	2.65	10 (25%)	50,60,60	3.41	22 (44%)
27	WVN	h	89	-	40,41,41	1.87	14 (35%)	50,56,56	2.46	13 (26%)
25	CLA	1	603	-	60,68,73	1.59	5 (8%)	70,107,113	1.32	7 (10%)
38	II0	S	617	-	39,43,43	2.51	12 (30%)	50,60,60	3.32	16 (32%)
25	CLA	a	404	-	49,57,73	1.76	6 (12%)	55,93,113	1.44	8 (14%)
25	CLA	1	610	23	60,68,73	1.59	5 (8%)	70,107,113	1.34	7 (10%)
25	CLA	R	604	21	60,68,73	1.59	6 (10%)	70,107,113	1.32	8 (11%)
25	CLA	O	604	18	65,73,73	1.53	5 (7%)	76,113,113	1.29	7 (9%)
34	LMG	c	536	-	51,51,55	0.91	2 (3%)	59,59,63	0.98	3 (5%)
37	KC2	N	605	-	48,53,53	3.15	21 (43%)	54,89,89	4.50	31 (57%)
25	CLA	b	605	-	65,73,73	1.54	6 (9%)	76,113,113	1.29	8 (10%)
25	CLA	P	610	19	65,73,73	1.53	5 (7%)	76,113,113	1.29	7 (9%)
39	IHT	5	620	-	40,42,42	2.05	11 (27%)	53,58,58	2.83	20 (37%)
37	KC2	Q	612	-	48,53,53	3.20	22 (45%)	54,89,89	4.54	31 (57%)
39	IHT	O	620	-	40,42,42	2.13	10 (25%)	53,58,58	2.70	20 (37%)
25	CLA	O	610	18	65,73,73	1.52	5 (7%)	76,113,113	1.30	7 (9%)
38	II0	2	616	-	39,43,43	2.53	11 (28%)	50,60,60	3.34	16 (32%)
34	LMG	M	101	-	40,40,55	1.04	2 (5%)	48,48,63	1.08	4 (8%)
25	CLA	G	302	17	45,53,73	1.82	6 (13%)	52,89,113	1.44	7 (13%)
31	LHG	a	413	-	41,41,48	1.01	2 (4%)	44,47,54	0.97	2 (4%)
25	CLA	C	525	-	65,73,73	1.51	6 (9%)	76,113,113	1.36	7 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	R	607	-	43,51,73	1.80	6 (13%)	49,86,113	1.53	8 (16%)
31	LHG	b	622	-	42,42,48	1.00	2 (4%)	45,48,54	1.09	3 (6%)
25	CLA	3	611	31	52,60,73	1.70	5 (9%)	60,97,113	1.34	8 (13%)
38	II0	4	619	-	39,43,43	2.60	12 (30%)	50,60,60	3.32	19 (38%)
27	WVN	c	529	-	40,41,41	1.88	14 (35%)	50,56,56	2.15	15 (30%)
25	CLA	2	606	18	51,59,73	1.73	5 (9%)	59,96,113	1.36	8 (13%)
26	PHO	D	401	-	51,69,69	0.99	3 (5%)	47,99,99	1.15	5 (10%)
25	CLA	5	609	21	65,73,73	1.54	9 (13%)	76,113,113	1.34	9 (11%)
25	CLA	Q	613	-	43,51,73	1.78	6 (13%)	49,86,113	1.51	7 (14%)
25	CLA	O	613	18	60,68,73	1.57	6 (10%)	70,107,113	1.35	7 (10%)
25	CLA	O	606	18	51,59,73	1.72	6 (11%)	59,96,113	1.35	8 (13%)
25	CLA	B	610	-	65,73,73	1.54	5 (7%)	76,113,113	1.25	8 (10%)
25	CLA	P	609	19	65,73,73	1.50	5 (7%)	76,113,113	1.35	7 (9%)
34	LMG	2	622	-	40,40,55	1.06	2 (5%)	48,48,63	1.01	2 (4%)
25	CLA	1	602	23	60,68,73	1.58	6 (10%)	70,107,113	1.33	8 (11%)
38	II0	1	616	-	39,43,43	2.54	11 (28%)	50,60,60	3.37	16 (32%)
25	CLA	Q	603	-	65,73,73	1.55	6 (9%)	76,113,113	1.29	9 (11%)
25	CLA	P	602	19	62,70,73	1.53	5 (8%)	72,109,113	1.39	7 (9%)
25	CLA	c	520	-	65,73,73	1.51	6 (9%)	76,113,113	1.28	8 (10%)
31	LHG	C	535	-	39,39,48	1.02	2 (5%)	42,45,54	1.10	3 (7%)
25	CLA	A	406	-	60,68,73	1.58	5 (8%)	70,107,113	1.30	7 (10%)
30	BCT	A	412	24	2,3,3	1.22	0	2,3,3	4.19	1 (50%)
25	CLA	c	526	-	65,73,73	1.54	5 (7%)	76,113,113	1.34	8 (10%)
34	LMG	d	407	-	37,37,55	1.09	2 (5%)	45,45,63	1.03	3 (6%)
38	II0	R	616	-	39,43,43	2.52	11 (28%)	50,60,60	3.34	17 (34%)
27	WVN	b	619	-	40,41,41	1.87	14 (35%)	50,56,56	2.32	16 (32%)
25	CLA	D	404	-	60,68,73	1.58	5 (8%)	70,107,113	1.35	7 (10%)
25	CLA	6	615	-	65,73,73	1.49	6 (9%)	76,113,113	1.31	7 (9%)
37	KC2	N	613	-	48,53,53	3.26	21 (43%)	54,89,89	4.50	31 (57%)
37	KC2	4	611	-	48,53,53	3.18	21 (43%)	54,89,89	4.54	31 (57%)
31	LHG	B	622	-	42,42,48	1.00	2 (4%)	45,48,54	1.07	3 (6%)
38	II0	2	617	-	39,43,43	2.50	11 (28%)	50,60,60	3.31	16 (32%)
27	WVN	a	407	-	40,41,41	1.95	14 (35%)	50,56,56	2.30	19 (38%)
27	WVN	B	618	-	40,41,41	1.88	14 (35%)	50,56,56	2.41	13 (26%)
31	LHG	2	621	-	45,45,48	0.97	2 (4%)	48,51,54	0.99	3 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	B	602	-	65,73,73	1.51	6 (9%)	76,113,113	1.34	9 (11%)
28	SQD	a	411	-	39,40,54	1.37	4 (10%)	48,51,65	1.12	6 (12%)
25	CLA	O	609	18	48,56,73	1.78	5 (10%)	55,92,113	1.35	7 (12%)
38	II0	6	616	-	39,43,43	2.51	11 (28%)	50,60,60	3.37	14 (28%)
25	CLA	S	604	-	65,73,73	1.46	6 (9%)	76,113,113	1.36	7 (9%)
34	LMG	m	101	-	40,40,55	1.03	2 (5%)	48,48,63	1.08	4 (8%)
38	II0	P	616	-	39,43,43	2.53	11 (28%)	50,60,60	3.34	15 (30%)
27	WVN	b	618	-	40,41,41	1.88	14 (35%)	50,56,56	2.53	17 (34%)
25	CLA	b	610	-	65,73,73	1.55	5 (7%)	76,113,113	1.25	8 (10%)
25	CLA	B	608	-	65,73,73	1.51	5 (7%)	76,113,113	1.30	7 (9%)
25	CLA	g	302	17	45,53,73	1.77	6 (13%)	52,89,113	1.68	9 (17%)
25	CLA	N	601	23	45,53,73	1.85	5 (11%)	52,89,113	1.50	6 (11%)
28	SQD	A	411	-	39,40,54	1.37	4 (10%)	48,51,65	1.12	6 (12%)
38	II0	Q	616	-	39,43,43	2.54	11 (28%)	50,60,60	3.27	16 (32%)
25	CLA	N	610	23	60,68,73	1.59	5 (8%)	70,107,113	1.34	7 (10%)
38	II0	O	616	-	39,43,43	2.53	11 (28%)	50,60,60	3.33	16 (32%)
31	LHG	d	406	-	48,48,48	0.93	2 (4%)	51,54,54	1.06	3 (5%)
25	CLA	5	610	21	59,67,73	1.61	5 (8%)	68,105,113	1.33	7 (10%)
25	CLA	2	601	18	49,57,73	1.73	5 (10%)	55,93,113	1.51	9 (16%)
25	CLA	C	521	-	65,73,73	1.51	5 (7%)	76,113,113	1.33	8 (10%)
25	CLA	1	609	23	46,54,73	1.77	6 (13%)	53,90,113	1.43	6 (11%)
25	CLA	3	610	19	65,73,73	1.53	5 (7%)	76,113,113	1.28	7 (9%)
25	CLA	2	609	18	48,56,73	1.78	5 (10%)	55,92,113	1.35	7 (12%)
25	CLA	4	613	-	43,51,73	1.78	6 (13%)	49,86,113	1.52	8 (16%)
39	IHT	2	620	-	40,42,42	2.14	11 (27%)	53,58,58	2.71	22 (41%)
25	CLA	2	615	-	45,53,73	1.78	6 (13%)	52,89,113	1.48	7 (13%)
25	CLA	S	613	-	53,61,73	1.63	6 (11%)	61,98,113	1.43	8 (13%)
31	LHG	A	413	-	41,41,48	1.01	2 (4%)	44,47,54	0.98	2 (4%)
25	CLA	2	610	18	65,73,73	1.53	5 (7%)	76,113,113	1.30	7 (9%)
25	CLA	c	517	-	65,73,73	1.51	7 (10%)	76,113,113	1.30	7 (9%)
25	CLA	C	524	-	65,73,73	1.51	6 (9%)	76,113,113	1.37	7 (9%)
37	KC2	Q	605	-	48,53,53	3.19	21 (43%)	54,89,89	4.45	31 (57%)
38	II0	4	618	-	39,43,43	2.57	11 (28%)	50,60,60	3.36	18 (36%)
25	CLA	P	604	-	63,71,73	1.50	6 (9%)	73,110,113	1.40	6 (8%)
25	CLA	B	615	-	65,73,73	1.52	5 (7%)	76,113,113	1.38	6 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
38	II0	1	617	-	39,43,43	2.51	11 (28%)	50,60,60	3.33	16 (32%)
28	SQD	a	408	-	44,45,54	1.29	4 (9%)	53,56,65	1.21	6 (11%)
25	CLA	b	602	-	65,73,73	1.51	5 (7%)	76,113,113	1.34	9 (11%)
25	CLA	R	613	21	55,63,73	1.64	6 (10%)	64,101,113	1.52	8 (12%)
25	CLA	Q	604	20	61,69,73	1.55	5 (8%)	71,108,113	1.32	7 (9%)
25	CLA	P	601	19	45,53,73	1.87	6 (13%)	52,89,113	1.42	7 (13%)
25	CLA	N	602	23	60,68,73	1.58	6 (10%)	70,107,113	1.34	8 (11%)
29	PL9	a	409	-	33,33,55	1.22	3 (9%)	41,42,69	1.58	9 (21%)
25	CLA	5	602	21	55,63,73	1.66	5 (9%)	64,101,113	1.36	8 (12%)
25	CLA	4	615	-	43,51,73	1.83	6 (13%)	49,86,113	1.41	6 (12%)
31	LHG	P	621	25	48,48,48	0.94	2 (4%)	51,54,54	1.06	3 (5%)
37	KC2	R	612	-	48,53,53	3.17	21 (43%)	54,89,89	4.49	33 (61%)
27	WVN	B	619	-	40,41,41	1.86	14 (35%)	50,56,56	2.36	15 (30%)
38	II0	6	618	-	39,43,43	2.65	10 (25%)	50,60,60	3.41	22 (44%)
38	II0	Q	618	-	39,43,43	2.56	11 (28%)	50,60,60	3.36	19 (38%)
25	CLA	b	614	-	60,68,73	1.58	5 (8%)	70,107,113	1.26	7 (10%)
34	LMG	D	402	-	40,40,55	1.05	2 (5%)	48,48,63	1.03	2 (4%)
25	CLA	B	616	-	65,73,73	1.52	6 (9%)	76,113,113	1.30	8 (10%)
27	WVN	b	617	-	40,41,41	1.85	14 (35%)	50,56,56	2.57	15 (30%)
36	HEM	E	102	6,5	41,50,50	1.34	5 (12%)	45,82,82	1.74	9 (20%)
25	CLA	C	522	-	65,73,73	1.51	5 (7%)	76,113,113	1.34	7 (9%)
25	CLA	1	614	-	48,56,73	1.73	5 (10%)	55,92,113	1.50	8 (14%)
38	II0	N	619	-	39,43,43	2.58	12 (30%)	50,60,60	3.43	18 (36%)
25	CLA	S	609	22	55,63,73	1.61	6 (10%)	64,101,113	1.50	7 (10%)
37	KC2	N	611	-	48,53,53	3.20	21 (43%)	54,89,89	4.46	31 (57%)
25	CLA	R	601	21	55,63,73	1.68	5 (9%)	64,101,113	1.38	8 (12%)
25	CLA	S	601	22	55,63,73	1.68	5 (9%)	64,101,113	1.32	7 (10%)
25	CLA	c	528	-	53,61,73	1.69	5 (9%)	61,98,113	1.38	9 (14%)
25	CLA	A	404	-	49,57,73	1.76	6 (12%)	55,93,113	1.43	8 (14%)
38	II0	N	616	-	39,43,43	2.54	11 (28%)	50,60,60	3.37	16 (32%)
25	CLA	B	613	-	65,73,73	1.53	6 (9%)	76,113,113	1.27	7 (9%)
25	CLA	B	605	-	65,73,73	1.52	6 (9%)	76,113,113	1.30	8 (10%)
25	CLA	R	609	21	65,73,73	1.53	9 (13%)	76,113,113	1.34	9 (11%)
31	LHG	l	101	-	48,48,48	0.94	2 (4%)	51,54,54	1.04	3 (5%)
27	WVN	D	408	-	40,41,41	1.88	14 (35%)	50,56,56	2.13	15 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	C	520	-	65,73,73	1.51	6 (9%)	76,113,113	1.30	9 (11%)
26	PHO	d	401	-	51,69,69	1.00	3 (5%)	47,99,99	1.15	5 (10%)
38	II0	R	619	-	39,43,43	2.54	11 (28%)	50,60,60	3.30	15 (30%)
31	LHG	O	621	-	45,45,48	0.97	2 (4%)	48,51,54	0.99	3 (6%)
37	KC2	1	612	23	48,53,53	3.15	21 (43%)	54,89,89	4.58	31 (57%)
38	II0	1	618	-	39,43,43	2.57	11 (28%)	50,60,60	3.33	19 (38%)
34	LMG	w	134	-	48,48,55	0.97	2 (4%)	56,56,63	1.12	4 (7%)
27	WVN	c	531	-	40,41,41	1.86	14 (35%)	50,56,56	2.32	14 (28%)
27	WVN	B	617	-	40,41,41	1.84	14 (35%)	50,56,56	2.50	16 (32%)
25	CLA	4	609	-	56,64,73	1.62	6 (10%)	65,102,113	1.45	6 (9%)
34	LMG	G	303	-	40,40,55	1.05	2 (5%)	48,48,63	1.01	3 (6%)
25	CLA	Q	606	20	55,63,73	1.67	5 (9%)	64,101,113	1.31	8 (12%)
25	CLA	4	603	-	65,73,73	1.55	5 (7%)	76,113,113	1.28	9 (11%)
25	CLA	P	612	-	53,61,73	1.68	5 (9%)	61,98,113	1.44	8 (13%)
25	CLA	2	603	-	65,73,73	1.54	5 (7%)	76,113,113	1.27	6 (7%)
29	PL9	D	405	-	55,55,55	1.05	4 (7%)	68,69,69	1.50	11 (16%)
38	II0	5	616	-	39,43,43	2.51	11 (28%)	50,60,60	3.34	17 (34%)
37	KC2	5	612	-	48,53,53	3.17	21 (43%)	54,89,89	4.48	32 (59%)
34	LMG	Z	102	-	31,31,55	1.20	2 (6%)	39,39,63	1.08	3 (7%)
25	CLA	C	523	-	65,73,73	1.51	5 (7%)	76,113,113	1.33	8 (10%)
25	CLA	b	608	-	65,73,73	1.53	5 (7%)	76,113,113	1.30	7 (9%)
38	II0	S	616	-	39,43,43	2.52	11 (28%)	50,60,60	3.37	14 (28%)
25	CLA	3	602	19	62,70,73	1.52	5 (8%)	72,109,113	1.39	7 (9%)
25	CLA	C	518	-	65,73,73	1.55	6 (9%)	76,113,113	1.23	6 (7%)
38	II0	4	617	-	39,43,43	2.54	11 (28%)	50,60,60	3.32	17 (34%)
25	CLA	2	613	18	60,68,73	1.57	6 (10%)	70,107,113	1.35	8 (11%)
25	CLA	c	516	-	65,73,73	1.53	6 (9%)	76,113,113	1.30	7 (9%)
25	CLA	C	526	-	65,73,73	1.54	5 (7%)	76,113,113	1.35	8 (10%)
37	KC2	1	611	-	48,53,53	3.20	21 (43%)	54,89,89	4.46	31 (57%)
35	DGD	C	532	-	55,55,67	0.92	2 (3%)	69,69,81	0.97	3 (4%)
25	CLA	5	601	21	55,63,73	1.67	5 (9%)	64,101,113	1.37	8 (12%)
25	CLA	R	606	21	65,73,73	1.54	5 (7%)	76,113,113	1.27	7 (9%)
38	II0	5	617	-	39,43,43	2.52	11 (28%)	50,60,60	3.31	17 (34%)
25	CLA	g	301	-	65,73,73	1.54	5 (7%)	76,113,113	1.28	9 (11%)
25	CLA	Q	602	20	65,73,73	1.50	5 (7%)	76,113,113	1.30	7 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
25	CLA	3	601	19	45,53,73	1.86	6 (13%)	52,89,113	1.41	7 (13%)
25	CLA	6	611	31	55,63,73	1.65	5 (9%)	64,101,113	1.32	8 (12%)
34	LMG	z	102	-	31,31,55	1.20	2 (6%)	39,39,63	1.08	3 (7%)
38	II0	P	619	-	39,43,43	2.54	11 (28%)	50,60,60	3.31	16 (32%)
25	CLA	b	616	-	65,73,73	1.52	6 (9%)	76,113,113	1.30	8 (10%)
25	CLA	N	615	-	47,55,73	1.78	5 (10%)	54,91,113	1.48	8 (14%)
25	CLA	1	604	23	59,67,73	1.60	5 (8%)	68,105,113	1.35	7 (10%)
37	KC2	3	606	19	48,53,53	3.17	21 (43%)	54,89,89	4.46	32 (59%)
25	CLA	4	606	20	55,63,73	1.64	7 (12%)	64,101,113	1.40	9 (14%)
25	CLA	b	603	-	65,73,73	1.54	6 (9%)	76,113,113	1.22	6 (7%)
38	II0	Q	619	-	39,43,43	2.57	12 (30%)	50,60,60	3.32	20 (40%)
38	II0	O	619	-	39,43,43	2.60	11 (28%)	50,60,60	3.27	19 (38%)
25	CLA	B	614	-	60,68,73	1.58	5 (8%)	70,107,113	1.26	8 (11%)
25	CLA	2	611	-	60,68,73	1.59	5 (8%)	70,107,113	1.33	8 (11%)
25	CLA	C	517	-	65,73,73	1.51	7 (10%)	76,113,113	1.30	7 (9%)
25	CLA	c	518	-	65,73,73	1.55	5 (7%)	76,113,113	1.23	6 (7%)
39	IHT	4	620	-	40,42,42	2.10	11 (27%)	53,58,58	2.77	23 (43%)
25	CLA	1	601	23	45,53,73	1.84	5 (11%)	52,89,113	1.50	6 (11%)
25	CLA	B	609	-	65,73,73	1.53	5 (7%)	76,113,113	1.26	8 (10%)
31	LHG	6	621	25	39,39,48	1.03	2 (5%)	42,45,54	1.04	2 (4%)
27	WVN	C	531	-	40,41,41	1.87	14 (35%)	50,56,56	2.30	15 (30%)
25	CLA	O	602	18	65,73,73	1.52	5 (7%)	76,113,113	1.33	9 (11%)
25	CLA	R	611	31	65,73,73	1.52	6 (9%)	76,113,113	1.25	6 (7%)
38	II0	N	618	-	39,43,43	2.56	10 (25%)	50,60,60	3.33	19 (38%)
38	II0	3	618	-	39,43,43	2.54	11 (28%)	50,60,60	3.29	17 (34%)
25	CLA	B	611	-	65,73,73	1.52	5 (7%)	76,113,113	1.30	9 (11%)
31	LHG	5	621	25	45,45,48	0.97	2 (4%)	48,51,54	1.10	4 (8%)
25	CLA	2	604	18	65,73,73	1.53	5 (7%)	76,113,113	1.29	7 (9%)
25	CLA	1	615	-	47,55,73	1.78	5 (10%)	54,91,113	1.47	8 (14%)
35	DGD	H	90	-	63,63,67	0.87	2 (3%)	77,77,81	0.86	3 (3%)
25	CLA	b	613	-	65,73,73	1.54	6 (9%)	76,113,113	1.27	7 (9%)
25	CLA	S	611	31	55,63,73	1.65	5 (9%)	64,101,113	1.32	8 (12%)
27	WVN	C	529	-	40,41,41	1.92	14 (35%)	50,56,56	2.26	16 (32%)
37	KC2	N	612	23	48,53,53	3.15	21 (43%)	54,89,89	4.58	31 (57%)
25	CLA	5	615	-	46,54,73	1.78	6 (13%)	53,90,113	1.39	7 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
31	LHG	Z	103	-	24,24,48	1.34	2 (8%)	27,30,54	1.14	2 (7%)
34	LMG	D	407	-	37,37,55	1.08	2 (5%)	45,45,63	1.03	3 (6%)
38	II0	3	619	-	39,43,43	2.54	11 (28%)	50,60,60	3.31	16 (32%)
31	LHG	R	621	25	45,45,48	0.97	2 (4%)	48,51,54	1.10	4 (8%)
25	CLA	a	403	-	65,73,73	1.54	8 (12%)	76,113,113	1.20	7 (9%)
25	CLA	B	604	-	59,67,73	1.58	6 (10%)	68,105,113	1.42	8 (11%)
26	PHO	a	405	-	51,69,69	0.99	4 (7%)	47,99,99	1.14	5 (10%)
25	CLA	R	615	-	46,54,73	1.79	6 (13%)	53,90,113	1.38	7 (13%)
31	LHG	D	406	-	48,48,48	0.93	2 (4%)	51,54,54	1.07	3 (5%)
25	CLA	O	603	-	65,73,73	1.55	6 (9%)	76,113,113	1.27	6 (7%)
25	CLA	2	607	-	60,68,73	1.62	6 (10%)	70,107,113	1.17	7 (10%)
38	II0	3	616	-	39,43,43	2.53	11 (28%)	50,60,60	3.34	15 (30%)
37	KC2	Q	611	-	48,53,53	3.17	21 (43%)	54,89,89	4.54	31 (57%)
25	CLA	4	604	20	61,69,73	1.56	5 (8%)	71,108,113	1.33	7 (9%)
27	WVN	6	620	-	40,41,41	1.90	14 (35%)	50,56,56	1.90	13 (26%)
38	II0	5	618	-	39,43,43	2.54	11 (28%)	50,60,60	3.35	17 (34%)
27	WVN	A	407	-	40,41,41	1.88	14 (35%)	50,56,56	2.33	15 (30%)
34	LMG	g	303	-	40,40,55	1.05	2 (5%)	48,48,63	1.01	3 (6%)
25	CLA	6	610	22	57,65,73	1.60	5 (8%)	66,103,113	1.43	8 (12%)
25	CLA	b	615	-	65,73,73	1.51	5 (7%)	76,113,113	1.36	7 (9%)
27	WVN	c	530	-	40,41,41	1.85	14 (35%)	50,56,56	1.86	13 (26%)
25	CLA	C	528	-	52,60,73	1.70	6 (11%)	60,97,113	1.38	9 (15%)
38	II0	R	617	-	39,43,43	2.53	11 (28%)	50,60,60	3.31	18 (36%)

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
31	LHG	L	101	-	-	6/53/53/53	-
25	CLA	b	604	-	1/1/13/20	12/30/108/115	-
25	CLA	B	606	-	1/1/15/20	12/37/115/115	-
25	CLA	6	604	-	1/1/15/20	18/37/115/115	-
34	LMG	Q	621	-	-	4/38/58/70	0/1/1/1
34	LMG	W	134	-	-	9/43/63/70	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	PL9	A	409	-	-	10/27/47/73	0/1/1/1
36	HEM	e	102	6,5	-	6/12/54/54	-
25	CLA	Q	610	20	1/1/12/20	4/21/99/115	-
37	KC2	2	612	-	-	7/15/71/71	-
25	CLA	P	611	31	1/1/12/20	6/22/100/115	-
25	CLA	A	403	-	1/1/15/20	8/37/115/115	-
25	CLA	6	601	22	1/1/13/20	8/25/103/115	-
25	CLA	D	400	-	1/1/15/20	10/37/115/115	-
25	CLA	B	601	-	1/1/12/20	9/19/97/115	-
25	CLA	6	603	-	1/1/13/20	7/25/103/115	-
25	CLA	Q	607	-	1/1/10/20	3/11/89/115	-
25	CLA	N	603	-	1/1/14/20	7/31/109/115	-
25	CLA	d	404	-	1/1/14/20	16/33/111/115	-
25	CLA	5	603	-	1/1/12/20	9/22/100/115	-
27	WVN	S	620	-	-	9/29/63/63	0/2/2/2
25	CLA	3	609	19	1/1/15/20	9/37/115/115	-
38	II0	5	619	-	-	3/21/67/67	0/2/2/2
25	CLA	4	607	-	1/1/10/20	3/11/89/115	-
38	II0	2	618	-	-	1/21/67/67	0/2/2/2
38	II0	R	618	-	-	0/21/67/67	0/2/2/2
25	CLA	b	601	-	1/1/12/20	9/19/97/115	-
25	CLA	O	601	18	1/1/11/20	7/18/96/115	-
25	CLA	6	613	-	1/1/12/20	5/23/101/115	-
27	WVN	H	89	-	-	9/29/63/63	0/2/2/2
25	CLA	3	603	-	1/1/15/20	15/37/115/115	-
38	II0	O	618	-	-	3/21/67/67	0/2/2/2
25	CLA	R	603	-	1/1/12/20	9/22/100/115	-
31	LHG	3	621	25	-	19/53/53/53	-
38	II0	S	619	-	-	4/21/67/67	0/2/2/2
37	KC2	S	606	22	-	8/15/71/71	-
27	WVN	C	530	-	-	10/29/63/63	0/2/2/2
38	II0	N	617	-	-	1/21/67/67	0/2/2/2
25	CLA	b	609	-	1/1/15/20	8/37/115/115	-
25	CLA	3	615	-	1/1/11/20	8/13/91/115	-
25	CLA	c	525	-	1/1/15/20	11/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	5	613	21	1/1/13/20	13/25/103/115	-
25	CLA	O	615	-	1/1/11/20	8/13/91/115	-
38	II0	2	619	-	-	5/21/67/67	0/2/2/2
26	PHO	A	405	-	-	14/37/103/103	0/5/6/6
25	CLA	N	609	23	1/1/11/20	7/15/93/115	-
25	CLA	3	613	19	1/1/13/20	11/25/103/115	-
25	CLA	D	403	-	1/1/15/20	5/37/115/115	-
38	II0	3	617	-	-	1/21/67/67	0/2/2/2
25	CLA	S	603	-	1/1/13/20	9/25/103/115	-
25	CLA	Q	615	-	1/1/10/20	2/11/89/115	-
25	CLA	b	607	-	1/1/15/20	12/37/115/115	-
25	CLA	O	611	-	1/1/14/20	15/31/109/115	-
27	WVN	P	620	-	-	8/29/63/63	0/2/2/2
34	LMG	b	620	-	-	6/46/66/70	0/1/1/1
25	CLA	d	400	-	1/1/15/20	10/37/115/115	-
37	KC2	P	606	19	-	9/15/71/71	-
25	CLA	6	602	22	1/1/15/20	17/37/115/115	-
39	IHT	Q	620	-	-	10/25/65/65	0/2/2/2
38	II0	4	616	-	-	2/21/67/67	0/2/2/2
31	LHG	z	103	-	-	8/29/29/53	-
25	CLA	1	606	23	1/1/12/20	6/19/97/115	-
34	LMG	B	620	-	-	7/46/66/70	0/1/1/1
25	CLA	G	301	-	1/1/15/20	19/37/115/115	-
25	CLA	b	612	-	1/1/15/20	12/37/115/115	-
25	CLA	N	604	23	1/1/13/20	8/30/108/115	-
25	CLA	a	406	-	1/1/14/20	11/31/109/115	-
34	LMG	C	536	-	-	20/42/62/70	0/1/1/1
37	KC2	O	612	-	-	7/15/71/71	-
25	CLA	P	603	-	1/1/15/20	15/37/115/115	-
25	CLA	c	524	-	1/1/15/20	13/37/115/115	-
27	WVN	3	620	-	-	8/29/63/63	0/2/2/2
25	CLA	6	609	22	1/1/13/20	8/25/103/115	-
25	CLA	3	604	-	-	8/35/113/115	-
25	CLA	b	606	-	1/1/15/20	10/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	612	-	1/1/15/20	12/37/115/115	-
35	DGD	h	90	-	-	14/51/91/95	0/2/2/2
37	KC2	4	605	-	-	7/15/71/71	-
25	CLA	5	611	31	1/1/15/20	17/37/115/115	-
25	CLA	d	403	-	1/1/15/20	5/37/115/115	-
25	CLA	Q	609	20	1/1/13/20	9/27/105/115	-
31	LHG	c	535	-	-	13/44/44/53	-
25	CLA	5	604	21	1/1/14/20	11/31/109/115	-
25	CLA	B	603	-	1/1/15/20	9/37/115/115	-
25	CLA	c	527	-	1/1/15/20	12/37/115/115	-
25	CLA	O	607	-	1/1/14/20	14/31/109/115	-
38	II0	6	619	-	-	3/21/67/67	0/2/2/2
38	II0	6	617	-	-	1/21/67/67	0/2/2/2
28	SQD	A	408	-	-	7/49/69/69	0/1/1/1
38	II0	P	617	-	-	0/21/67/67	0/2/2/2
34	LMG	4	621	-	-	4/38/58/70	0/1/1/1
31	LHG	S	621	25	-	12/44/44/53	-
25	CLA	b	611	-	1/1/15/20	10/37/115/115	-
25	CLA	B	607	-	1/1/15/20	13/37/115/115	-
25	CLA	c	521	-	1/1/15/20	7/37/115/115	-
38	II0	1	619	-	-	3/21/67/67	0/2/2/2
25	CLA	1	607	-	1/1/10/20	5/11/89/115	-
37	KC2	4	612	-	-	3/15/71/71	-
34	LMG	d	402	-	-	9/35/55/70	0/1/1/1
25	CLA	N	607	-	1/1/10/20	5/11/89/115	-
27	WVN	Y	89	-	-	9/29/63/63	0/2/2/2
25	CLA	S	610	22	1/1/13/20	11/28/106/115	-
34	LMG	O	622	-	-	2/35/55/70	0/1/1/1
25	CLA	P	615	-	1/1/11/20	8/13/91/115	-
39	IHT	R	620	-	-	11/25/65/65	0/2/2/2
38	II0	Q	617	-	-	1/21/67/67	0/2/2/2
25	CLA	5	607	-	1/1/10/20	5/11/89/115	-
25	CLA	R	610	21	1/1/13/20	10/30/108/115	-
34	LMG	F	99	-	-	3/41/61/70	0/1/1/1
38	II0	P	618	-	-	2/21/67/67	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	WVN	d	408	-	-	12/29/63/63	0/2/2/2
25	CLA	C	516	-	1/1/15/20	7/37/115/115	-
37	KC2	1	613	-	-	10/15/71/71	-
25	CLA	4	610	20	1/1/12/20	4/21/99/115	-
34	LMG	f	99	-	-	3/41/61/70	0/1/1/1
37	KC2	6	606	-	-	8/15/71/71	-
37	KC2	1	605	-	-	12/15/71/71	-
25	CLA	c	523	-	1/1/15/20	12/37/115/115	-
37	KC2	S	612	22	-	5/15/71/71	-
38	II0	O	617	-	-	1/21/67/67	0/2/2/2
25	CLA	C	519	-	1/1/14/20	12/31/109/115	-
25	CLA	c	519	-	1/1/14/20	12/31/109/115	-
25	CLA	S	615	-	1/1/15/20	10/37/115/115	-
25	CLA	4	602	20	1/1/15/20	8/37/115/115	-
25	CLA	3	612	-	1/1/12/20	5/23/101/115	-
25	CLA	2	602	18	1/1/15/20	16/37/115/115	-
25	CLA	P	613	19	1/1/13/20	11/25/103/115	-
25	CLA	S	602	22	1/1/15/20	17/37/115/115	-
25	CLA	N	606	23	1/1/12/20	6/19/97/115	-
25	CLA	5	606	21	1/1/15/20	14/37/115/115	-
25	CLA	N	614	-	1/1/11/20	6/17/95/115	-
27	WVN	y	89	-	-	8/29/63/63	0/2/2/2
37	KC2	6	612	22	-	5/15/71/71	-
25	CLA	C	527	-	1/1/15/20	11/37/115/115	-
39	IHT	1	620	-	-	8/25/65/65	0/2/2/2
29	PL9	d	405	-	-	8/53/73/73	0/1/1/1
25	CLA	c	522	-	1/1/15/20	9/37/115/115	-
39	IHT	N	620	-	-	7/25/65/65	0/2/2/2
35	DGD	c	532	-	-	8/43/83/95	0/2/2/2
25	CLA	R	602	21	1/1/13/20	12/25/103/115	-
38	II0	S	618	-	-	4/21/67/67	0/2/2/2
27	WVN	h	89	-	-	11/29/63/63	0/2/2/2
25	CLA	1	603	-	1/1/14/20	9/31/109/115	-
38	II0	S	617	-	-	1/21/67/67	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	a	404	-	1/1/11/20	10/18/96/115	-
25	CLA	1	610	23	1/1/14/20	6/31/109/115	-
25	CLA	R	604	21	1/1/14/20	11/31/109/115	-
25	CLA	O	604	18	1/1/15/20	12/37/115/115	-
34	LMG	c	536	-	-	19/46/66/70	0/1/1/1
37	KC2	N	605	-	-	12/15/71/71	-
25	CLA	b	605	-	1/1/15/20	9/37/115/115	-
25	CLA	P	610	19	1/1/15/20	14/37/115/115	-
39	IHT	5	620	-	-	7/25/65/65	0/2/2/2
37	KC2	Q	612	-	-	3/15/71/71	-
39	IHT	O	620	-	-	6/25/65/65	0/2/2/2
25	CLA	O	610	18	1/1/15/20	10/37/115/115	-
38	II0	2	616	-	-	1/21/67/67	0/2/2/2
34	LMG	M	101	-	-	6/35/55/70	0/1/1/1
25	CLA	G	302	17	1/1/11/20	4/13/91/115	-
31	LHG	a	413	-	-	28/46/46/53	-
25	CLA	C	525	-	1/1/15/20	11/37/115/115	-
25	CLA	R	607	-	1/1/10/20	4/11/89/115	-
31	LHG	b	622	-	-	20/47/47/53	-
25	CLA	3	611	31	1/1/12/20	6/22/100/115	-
38	II0	4	619	-	-	4/21/67/67	0/2/2/2
27	WVN	c	529	-	-	10/29/63/63	0/2/2/2
25	CLA	2	606	18	1/1/12/20	6/21/99/115	-
26	PHO	D	401	-	-	11/37/103/103	0/5/6/6
25	CLA	5	609	21	1/1/15/20	10/37/115/115	-
25	CLA	Q	613	-	1/1/10/20	8/11/89/115	-
25	CLA	O	613	18	1/1/14/20	10/31/109/115	-
25	CLA	O	606	18	1/1/12/20	6/21/99/115	-
25	CLA	B	610	-	1/1/15/20	9/37/115/115	-
25	CLA	P	609	19	1/1/15/20	9/37/115/115	-
34	LMG	2	622	-	-	2/35/55/70	0/1/1/1
25	CLA	1	602	23	1/1/14/20	7/31/109/115	-
38	II0	1	616	-	-	4/21/67/67	0/2/2/2
25	CLA	Q	603	-	1/1/15/20	14/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	P	602	19	1/1/14/20	15/34/112/115	-
25	CLA	c	520	-	1/1/15/20	8/37/115/115	-
31	LHG	C	535	-	-	16/44/44/53	-
25	CLA	A	406	-	1/1/14/20	10/31/109/115	-
25	CLA	c	526	-	1/1/15/20	12/37/115/115	-
34	LMG	d	407	-	-	2/32/52/70	0/1/1/1
38	II0	R	616	-	-	0/21/67/67	0/2/2/2
27	WVN	b	619	-	-	10/29/63/63	0/2/2/2
25	CLA	D	404	-	1/1/14/20	13/31/109/115	-
25	CLA	6	615	-	1/1/15/20	10/37/115/115	-
37	KC2	N	613	-	-	10/15/71/71	-
37	KC2	4	611	-	-	8/15/71/71	-
31	LHG	B	622	-	-	12/47/47/53	-
38	II0	2	617	-	-	0/21/67/67	0/2/2/2
27	WVN	a	407	-	-	9/29/63/63	0/2/2/2
27	WVN	B	618	-	-	11/29/63/63	0/2/2/2
31	LHG	2	621	-	-	9/50/50/53	-
25	CLA	B	602	-	-	6/37/115/115	-
28	SQD	a	411	-	-	4/35/55/69	0/1/1/1
25	CLA	O	609	18	1/1/11/20	2/17/95/115	-
38	II0	6	616	-	-	5/21/67/67	0/2/2/2
25	CLA	S	604	-	1/1/15/20	18/37/115/115	-
34	LMG	m	101	-	-	7/35/55/70	0/1/1/1
38	II0	P	616	-	-	2/21/67/67	0/2/2/2
27	WVN	b	618	-	-	10/29/63/63	0/2/2/2
25	CLA	b	610	-	1/1/15/20	9/37/115/115	-
25	CLA	B	608	-	1/1/15/20	4/37/115/115	-
25	CLA	g	302	17	1/1/11/20	6/13/91/115	-
25	CLA	N	601	23	1/1/11/20	7/13/91/115	-
28	SQD	A	411	-	-	3/35/55/69	0/1/1/1
38	II0	Q	616	-	-	2/21/67/67	0/2/2/2
25	CLA	N	610	23	1/1/14/20	6/31/109/115	-
38	II0	O	616	-	-	1/21/67/67	0/2/2/2
31	LHG	d	406	-	-	13/53/53/53	-
25	CLA	5	610	21	1/1/13/20	10/30/108/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	2	601	18	1/1/11/20	7/18/96/115	-
25	CLA	C	521	-	1/1/15/20	8/37/115/115	-
25	CLA	1	609	23	1/1/11/20	5/15/93/115	-
25	CLA	3	610	19	1/1/15/20	14/37/115/115	-
25	CLA	2	609	18	1/1/11/20	2/17/95/115	-
25	CLA	4	613	-	1/1/10/20	8/11/89/115	-
39	IHT	2	620	-	-	5/25/65/65	0/2/2/2
25	CLA	2	615	-	1/1/11/20	8/13/91/115	-
25	CLA	S	613	-	1/1/12/20	5/23/101/115	-
31	LHG	A	413	-	-	29/46/46/53	-
25	CLA	2	610	18	1/1/15/20	10/37/115/115	-
25	CLA	c	517	-	1/1/15/20	16/37/115/115	-
25	CLA	C	524	-	1/1/15/20	13/37/115/115	-
37	KC2	Q	605	-	-	7/15/71/71	-
38	II0	4	618	-	-	2/21/67/67	0/2/2/2
25	CLA	P	604	-	-	8/35/113/115	-
25	CLA	B	615	-	1/1/15/20	10/37/115/115	-
38	II0	1	617	-	-	1/21/67/67	0/2/2/2
28	SQD	a	408	-	-	6/40/60/69	0/1/1/1
25	CLA	b	602	-	-	6/37/115/115	-
25	CLA	R	613	21	1/1/13/20	14/25/103/115	-
25	CLA	Q	604	20	1/1/14/20	17/33/111/115	-
25	CLA	P	601	19	1/1/11/20	2/13/91/115	-
25	CLA	N	602	23	1/1/14/20	7/31/109/115	-
29	PL9	a	409	-	-	10/27/47/73	0/1/1/1
25	CLA	5	602	21	1/1/13/20	12/25/103/115	-
25	CLA	4	615	-	1/1/10/20	2/11/89/115	-
31	LHG	P	621	25	-	19/53/53/53	-
37	KC2	R	612	-	-	8/15/71/71	-
27	WVN	B	619	-	-	10/29/63/63	0/2/2/2
38	II0	6	618	-	-	4/21/67/67	0/2/2/2
38	II0	Q	618	-	-	2/21/67/67	0/2/2/2
25	CLA	b	614	-	1/1/14/20	12/31/109/115	-
34	LMG	D	402	-	-	9/35/55/70	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	616	-	1/1/15/20	15/37/115/115	-
27	WVN	b	617	-	-	13/29/63/63	0/2/2/2
36	HEM	E	102	6,5	-	6/12/54/54	-
25	CLA	C	522	-	1/1/15/20	9/37/115/115	-
25	CLA	1	614	-	1/1/11/20	6/17/95/115	-
38	II0	N	619	-	-	4/21/67/67	0/2/2/2
25	CLA	S	609	22	1/1/13/20	14/25/103/115	-
37	KC2	N	611	-	-	4/15/71/71	-
25	CLA	R	601	21	1/1/13/20	6/25/103/115	-
25	CLA	S	601	22	1/1/13/20	8/25/103/115	-
25	CLA	c	528	-	1/1/12/20	9/23/101/115	-
25	CLA	A	404	-	1/1/11/20	10/18/96/115	-
38	II0	N	616	-	-	4/21/67/67	0/2/2/2
25	CLA	B	613	-	1/1/15/20	15/37/115/115	-
25	CLA	B	605	-	1/1/15/20	9/37/115/115	-
25	CLA	R	609	21	1/1/15/20	10/37/115/115	-
31	LHG	l	101	-	-	6/53/53/53	-
27	WVN	D	408	-	-	9/29/63/63	0/2/2/2
25	CLA	C	520	-	1/1/15/20	11/37/115/115	-
26	PHO	d	401	-	-	12/37/103/103	0/5/6/6
38	II0	R	619	-	-	3/21/67/67	0/2/2/2
31	LHG	O	621	-	-	9/50/50/53	-
37	KC2	1	612	23	-	3/15/71/71	-
38	II0	1	618	-	-	3/21/67/67	0/2/2/2
34	LMG	w	134	-	-	8/43/63/70	0/1/1/1
27	WVN	c	531	-	-	11/29/63/63	0/2/2/2
27	WVN	B	617	-	-	11/29/63/63	0/2/2/2
25	CLA	4	609	-	1/1/13/20	11/27/105/115	-
34	LMG	G	303	-	-	8/35/55/70	0/1/1/1
25	CLA	Q	606	20	1/1/13/20	9/25/103/115	-
25	CLA	4	603	-	1/1/15/20	14/37/115/115	-
25	CLA	P	612	-	1/1/12/20	5/23/101/115	-
25	CLA	2	603	-	1/1/15/20	8/37/115/115	-
29	PL9	D	405	-	-	7/53/73/73	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
38	II0	5	616	-	-	0/21/67/67	0/2/2/2
37	KC2	5	612	-	-	8/15/71/71	-
34	LMG	Z	102	-	-	5/26/46/70	0/1/1/1
25	CLA	C	523	-	1/1/15/20	12/37/115/115	-
25	CLA	b	608	-	1/1/15/20	6/37/115/115	-
38	II0	S	616	-	-	6/21/67/67	0/2/2/2
25	CLA	3	602	19	1/1/14/20	15/34/112/115	-
25	CLA	C	518	-	1/1/15/20	9/37/115/115	-
38	II0	4	617	-	-	1/21/67/67	0/2/2/2
25	CLA	2	613	18	1/1/14/20	10/31/109/115	-
25	CLA	c	516	-	1/1/15/20	8/37/115/115	-
25	CLA	C	526	-	1/1/15/20	13/37/115/115	-
37	KC2	1	611	-	-	4/15/71/71	-
35	DGD	C	532	-	-	8/43/83/95	0/2/2/2
25	CLA	5	601	21	1/1/13/20	6/25/103/115	-
25	CLA	R	606	21	1/1/15/20	14/37/115/115	-
38	II0	5	617	-	-	1/21/67/67	0/2/2/2
25	CLA	g	301	-	1/1/15/20	9/37/115/115	-
25	CLA	Q	602	20	1/1/15/20	8/37/115/115	-
25	CLA	3	601	19	1/1/11/20	0/13/91/115	-
25	CLA	6	611	31	1/1/13/20	11/25/103/115	-
34	LMG	z	102	-	-	5/26/46/70	0/1/1/1
38	II0	P	619	-	-	6/21/67/67	0/2/2/2
25	CLA	b	616	-	1/1/15/20	15/37/115/115	-
25	CLA	N	615	-	1/1/11/20	10/16/94/115	-
25	CLA	1	604	23	1/1/13/20	8/30/108/115	-
37	KC2	3	606	19	-	9/15/71/71	-
25	CLA	4	606	20	1/1/13/20	11/25/103/115	-
25	CLA	b	603	-	1/1/15/20	9/37/115/115	-
38	II0	Q	619	-	-	5/21/67/67	0/2/2/2
38	II0	O	619	-	-	5/21/67/67	0/2/2/2
25	CLA	B	614	-	1/1/14/20	11/31/109/115	-
25	CLA	2	611	-	1/1/14/20	15/31/109/115	-
25	CLA	C	517	-	1/1/15/20	16/37/115/115	-
25	CLA	c	518	-	1/1/15/20	9/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
39	IHT	4	620	-	-	9/25/65/65	0/2/2/2
25	CLA	1	601	23	1/1/11/20	7/13/91/115	-
25	CLA	B	609	-	1/1/15/20	9/37/115/115	-
31	LHG	6	621	25	-	12/44/44/53	-
27	WVN	C	531	-	-	10/29/63/63	0/2/2/2
25	CLA	O	602	18	1/1/15/20	16/37/115/115	-
25	CLA	R	611	31	1/1/15/20	17/37/115/115	-
38	II0	N	618	-	-	3/21/67/67	0/2/2/2
38	II0	3	618	-	-	2/21/67/67	0/2/2/2
25	CLA	B	611	-	1/1/15/20	10/37/115/115	-
31	LHG	5	621	25	-	15/50/50/53	-
25	CLA	2	604	18	1/1/15/20	12/37/115/115	-
25	CLA	1	615	-	1/1/11/20	10/16/94/115	-
35	DGD	H	90	-	-	14/51/91/95	0/2/2/2
25	CLA	b	613	-	1/1/15/20	16/37/115/115	-
25	CLA	S	611	31	1/1/13/20	11/25/103/115	-
27	WVN	C	529	-	-	10/29/63/63	0/2/2/2
37	KC2	N	612	23	-	4/15/71/71	-
25	CLA	5	615	-	1/1/11/20	5/15/93/115	-
31	LHG	Z	103	-	-	8/29/29/53	-
34	LMG	D	407	-	-	2/32/52/70	0/1/1/1
38	II0	3	619	-	-	6/21/67/67	0/2/2/2
31	LHG	R	621	25	-	15/50/50/53	-
25	CLA	a	403	-	1/1/15/20	8/37/115/115	-
25	CLA	B	604	-	1/1/13/20	11/30/108/115	-
26	PHO	a	405	-	-	14/37/103/103	0/5/6/6
25	CLA	R	615	-	1/1/11/20	5/15/93/115	-
31	LHG	D	406	-	-	13/53/53/53	-
25	CLA	O	603	-	1/1/15/20	8/37/115/115	-
25	CLA	2	607	-	1/1/14/20	14/31/109/115	-
38	II0	3	616	-	-	2/21/67/67	0/2/2/2
37	KC2	Q	611	-	-	8/15/71/71	-
25	CLA	4	604	20	1/1/14/20	16/33/111/115	-
27	WVN	6	620	-	-	7/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
38	II0	5	618	-	-	0/21/67/67	0/2/2/2
27	WVN	A	407	-	-	2/29/63/63	0/2/2/2
34	LMG	g	303	-	-	8/35/55/70	0/1/1/1
25	CLA	6	610	22	1/1/13/20	11/28/106/115	-
25	CLA	b	615	-	1/1/15/20	9/37/115/115	-
27	WVN	c	530	-	-	10/29/63/63	0/2/2/2
25	CLA	C	528	-	1/1/12/20	9/22/100/115	-
38	II0	R	617	-	-	1/21/67/67	0/2/2/2

The worst 5 of 2689 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	S	618	II0	C13-C09	-10.77	1.22	1.34
38	6	618	II0	C13-C09	-10.73	1.23	1.34
38	2	619	II0	C13-C09	-10.34	1.23	1.34
38	4	619	II0	C13-C09	-10.32	1.23	1.34
38	O	619	II0	C13-C09	-10.31	1.23	1.34

The worst 5 of 3804 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
37	6	612	KC2	C1A-NA-C4A	-12.47	101.10	106.71
37	4	612	KC2	C1A-NA-C4A	-12.46	101.11	106.71
37	Q	612	KC2	C1A-NA-C4A	-12.45	101.11	106.71
37	S	612	KC2	C1A-NA-C4A	-12.45	101.11	106.71
37	O	612	KC2	C1A-NA-C4A	-12.39	101.14	106.71

5 of 190 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
25	a	403	CLA	ND
25	a	404	CLA	ND
25	a	406	CLA	ND
25	b	601	CLA	ND
25	b	603	CLA	ND

5 of 3039 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
25	a	404	CLA	C1A-C2A-CAA-CBA

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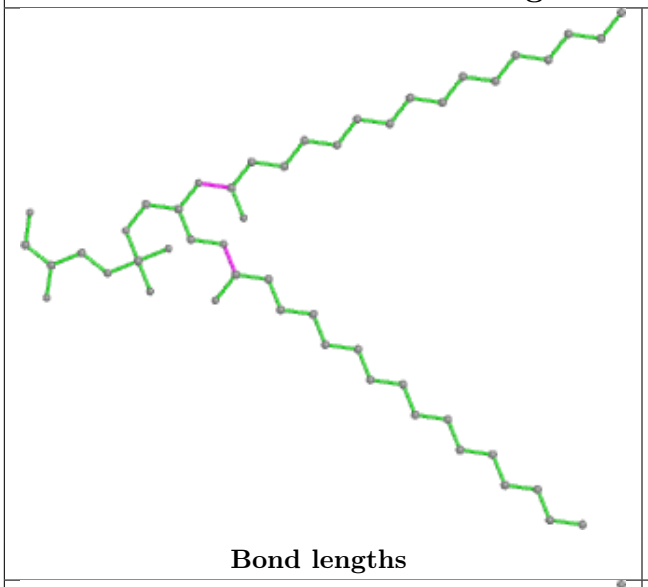
Mol	Chain	Res	Type	Atoms
25	a	404	CLA	C3A-C2A-CAA-CBA
25	a	406	CLA	C1A-C2A-CAA-CBA
25	a	406	CLA	C3A-C2A-CAA-CBA
25	a	406	CLA	CBD-CGD-O2D-CED

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 LHG L 101



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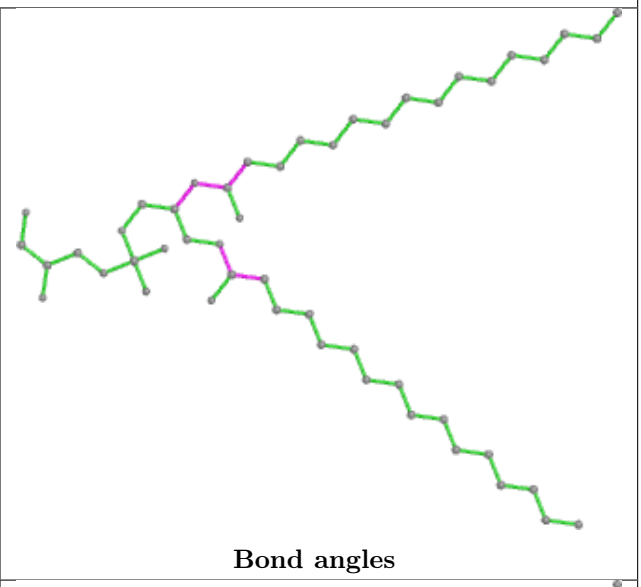
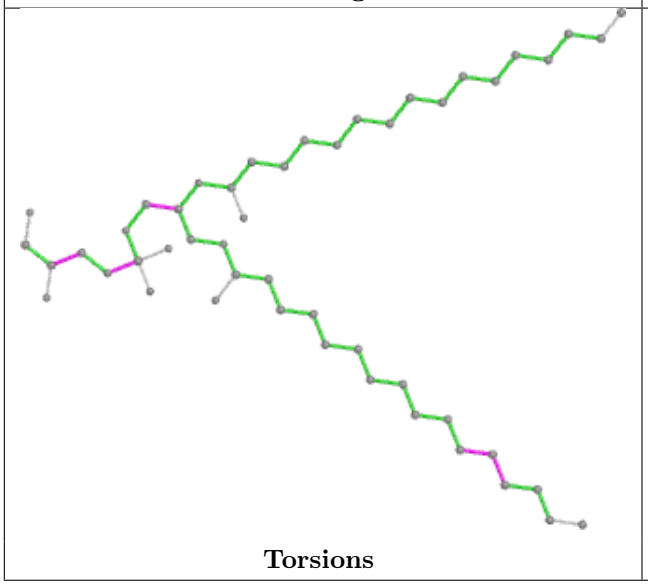
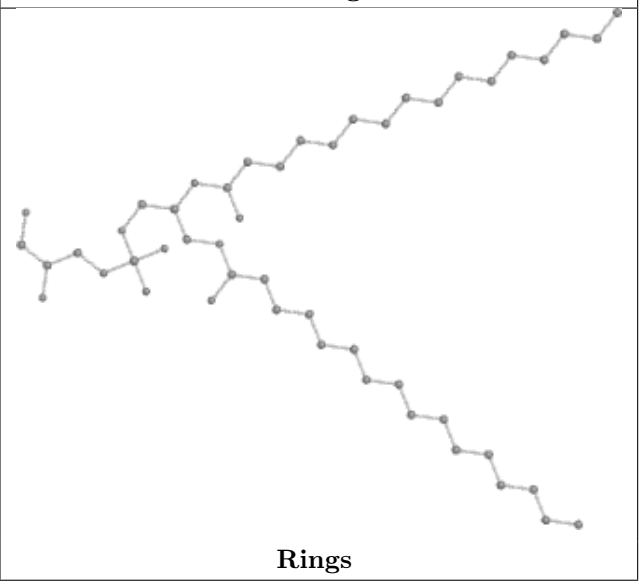


Bond angles

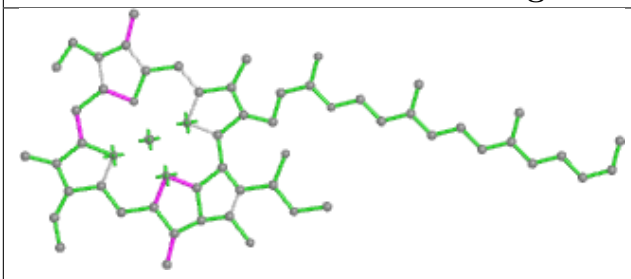


Torsions



Rings

Ligand CLA b 604



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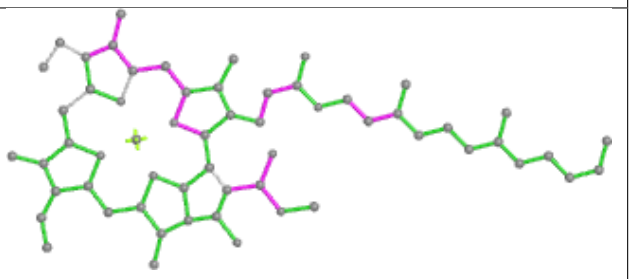

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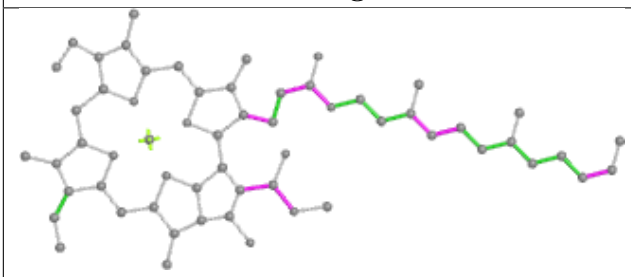

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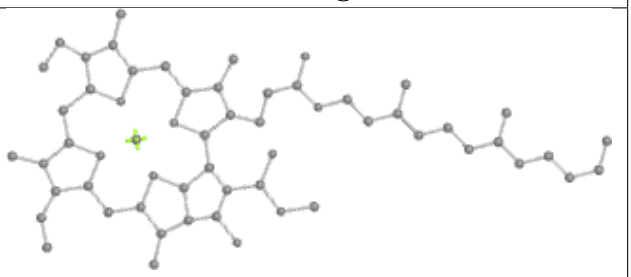

Rings

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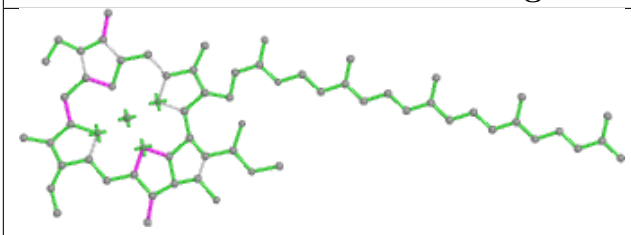

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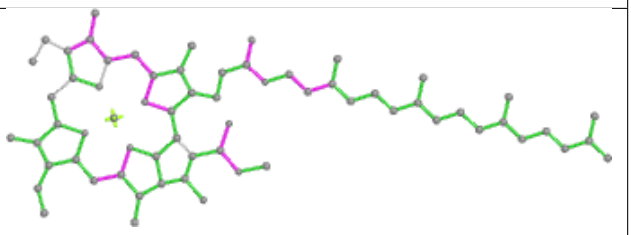

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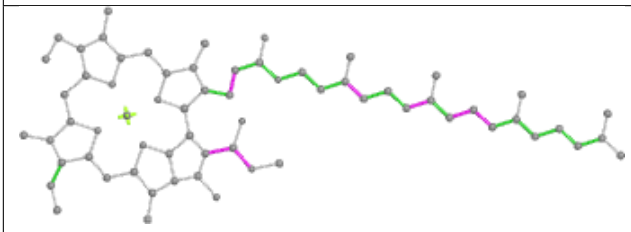

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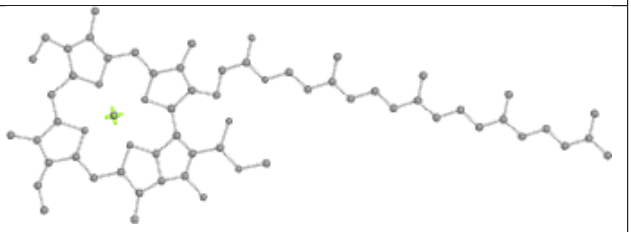

Rings

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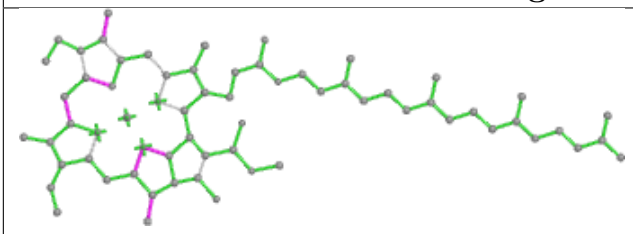

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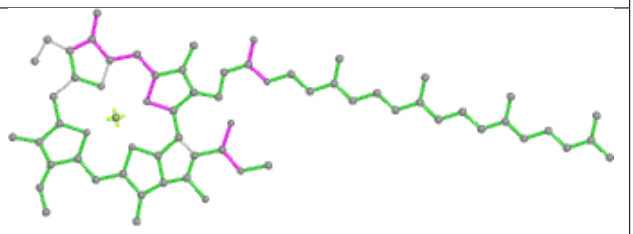

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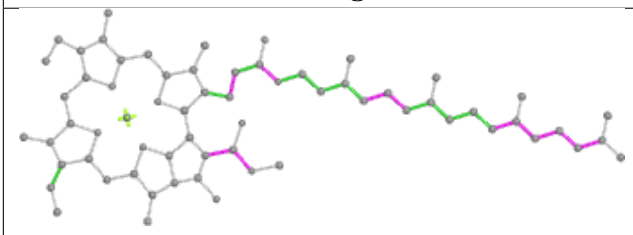

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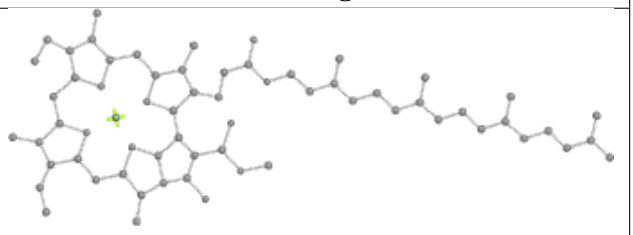
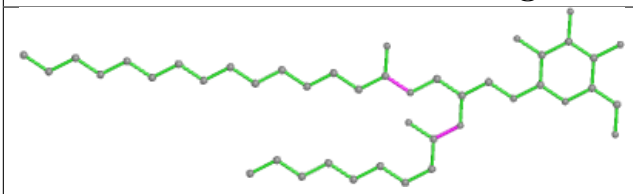


Rings

Ligand LMG Q 621



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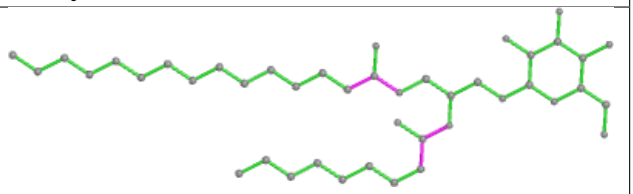

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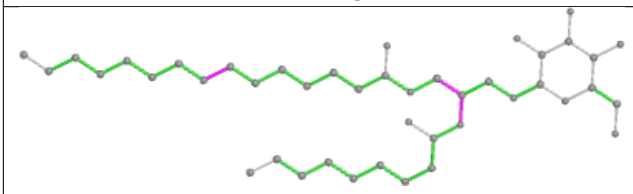

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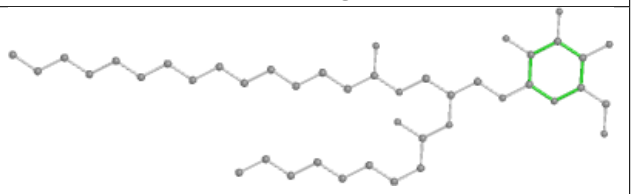

Rings

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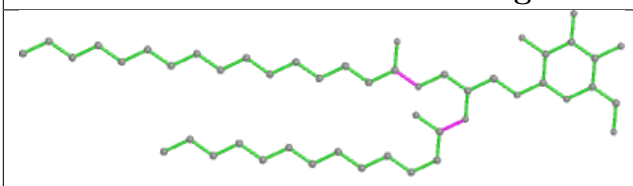

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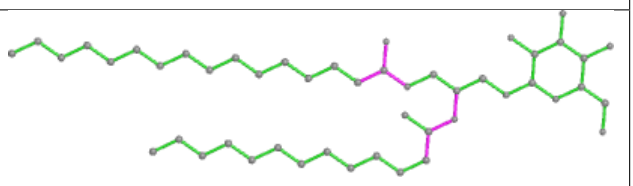

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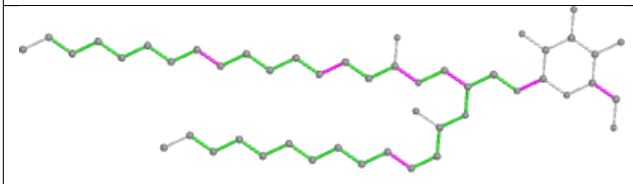

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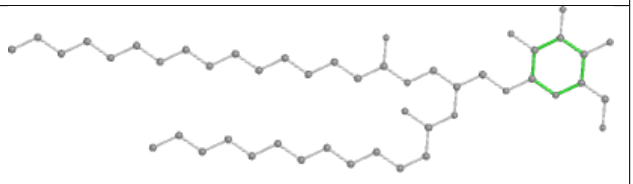
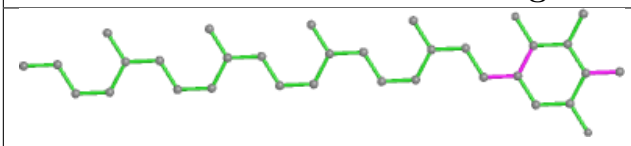


Rings

Ligand PL9 A 409



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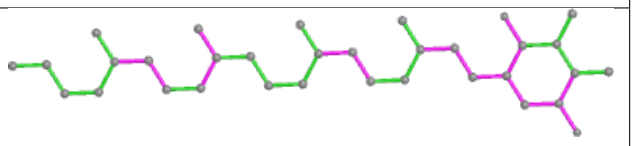

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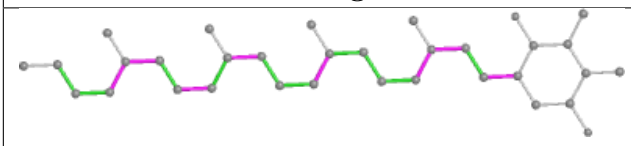

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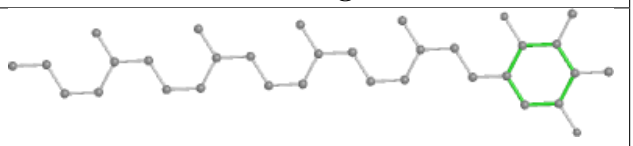
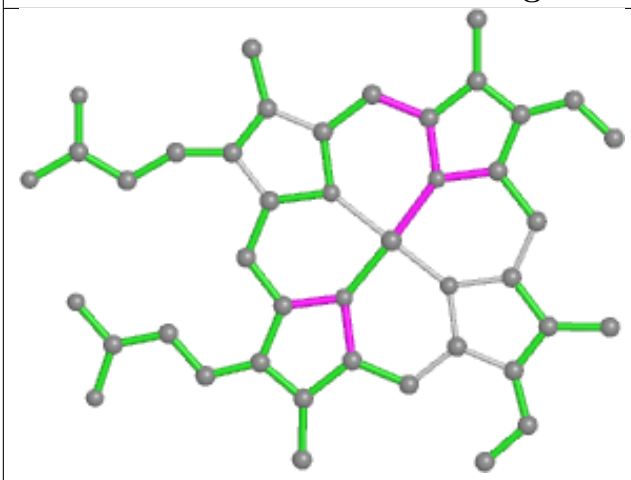


Rings

Ligand HEM e 102



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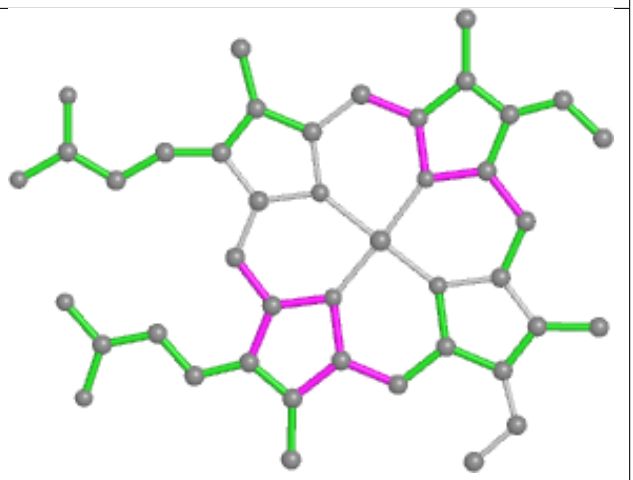

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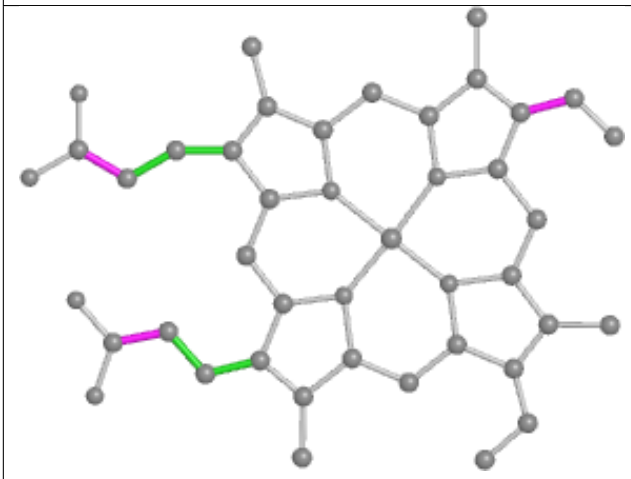

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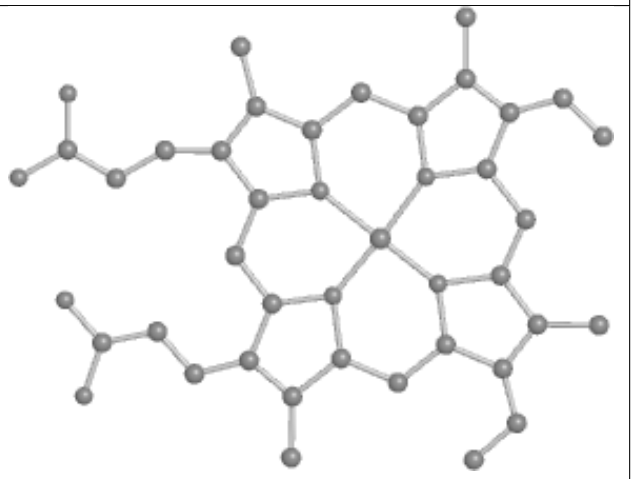
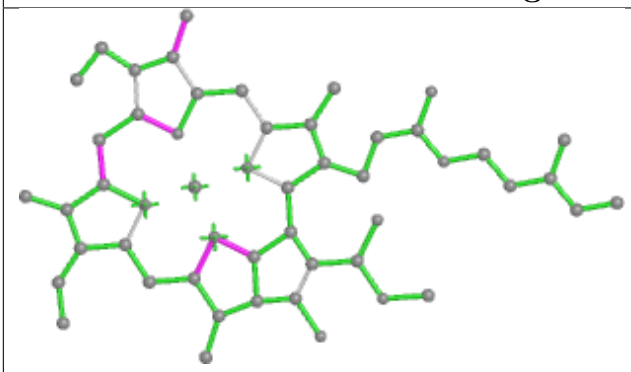


Rings

Ligand CLA Q 610



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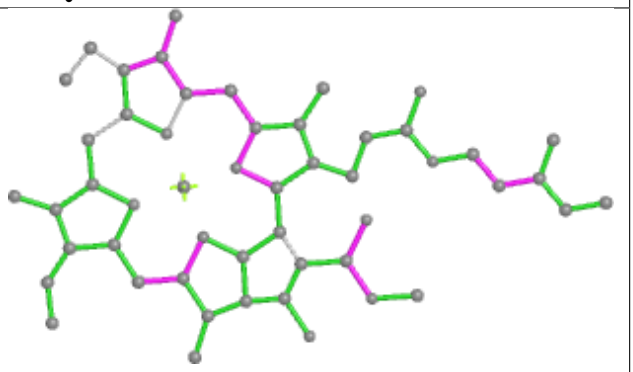

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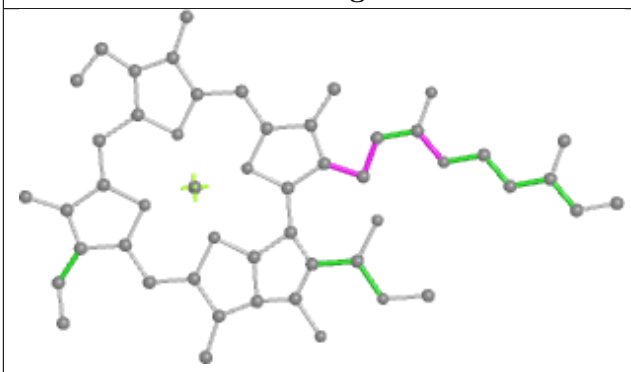

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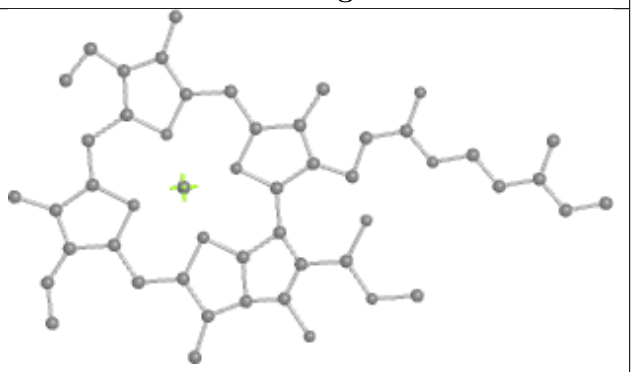
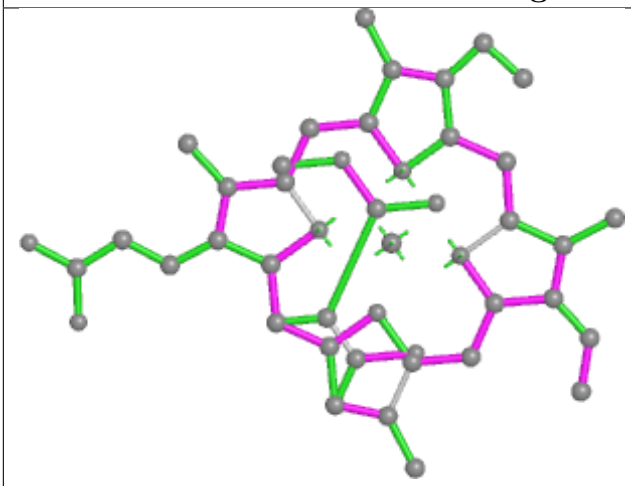


Rings

Ligand KC2 2 612



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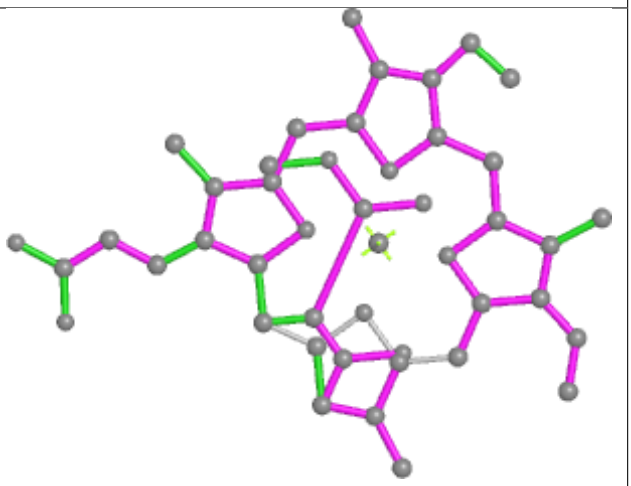

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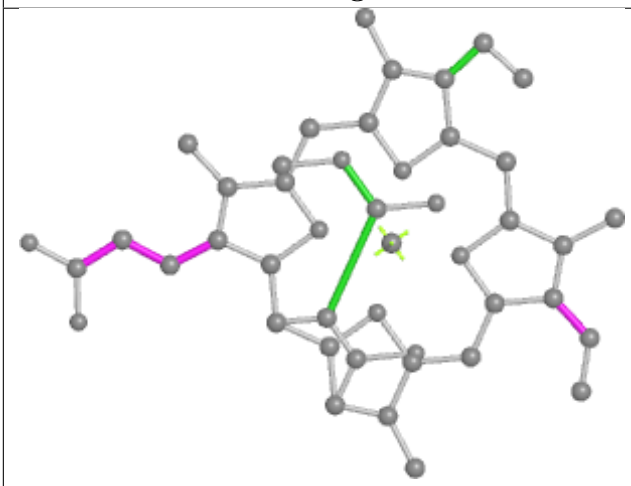

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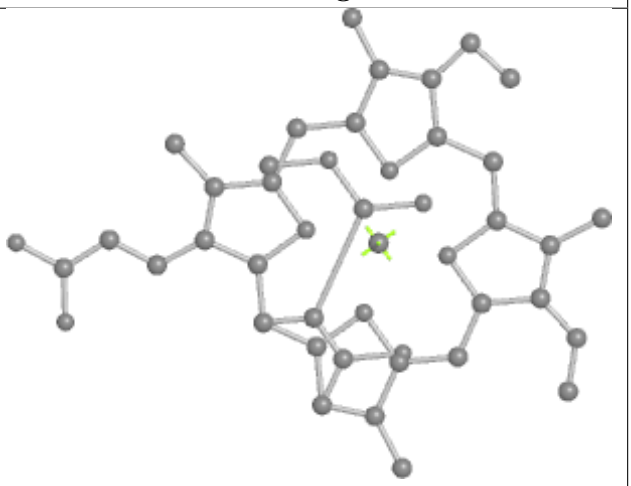

Rings

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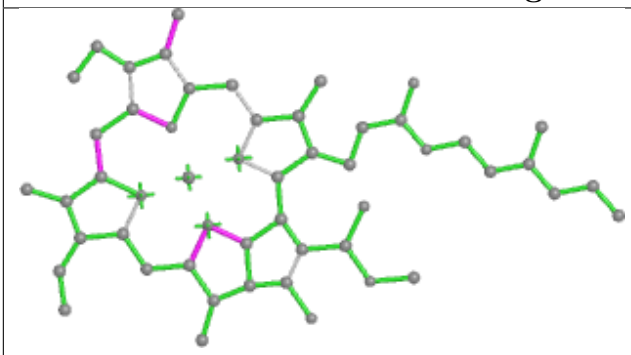
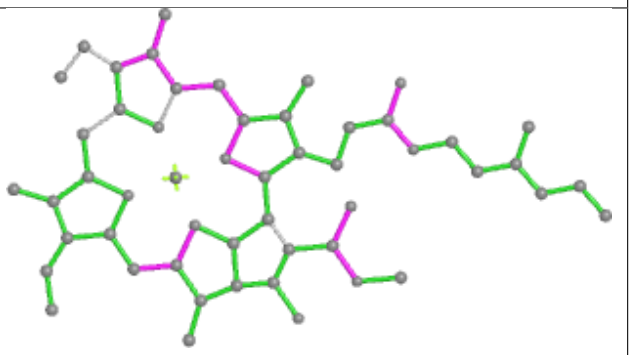
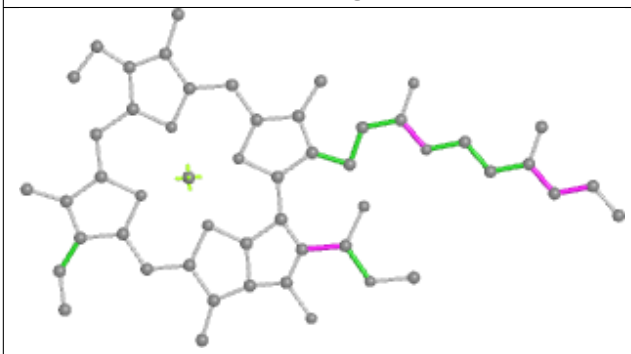
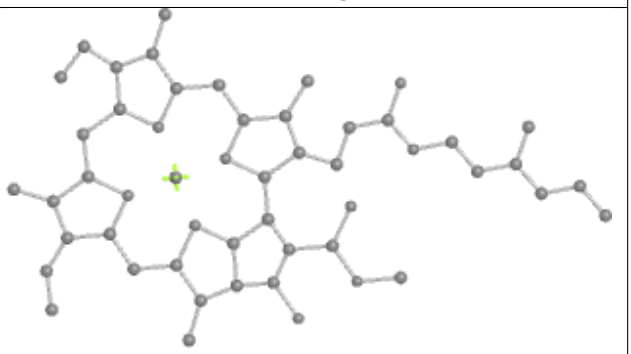
	
Bond lengths	Bond angles
	
Torsions	Rings

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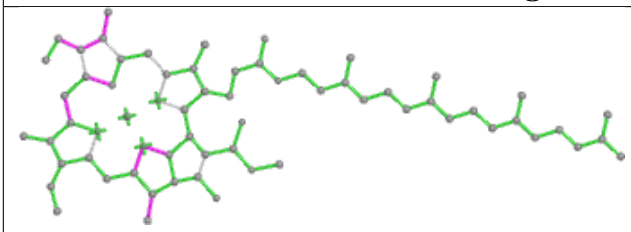	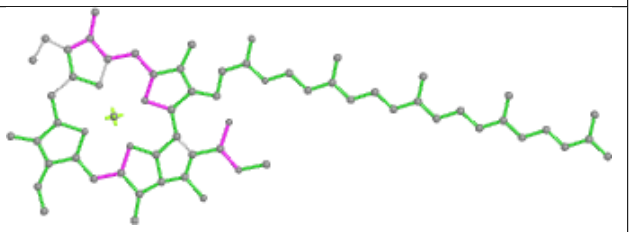
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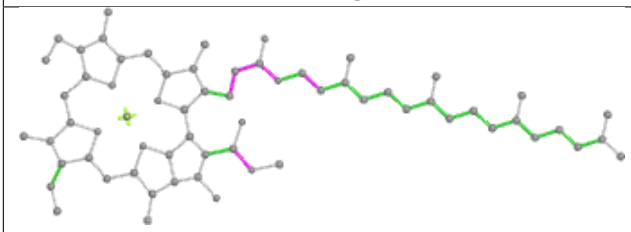	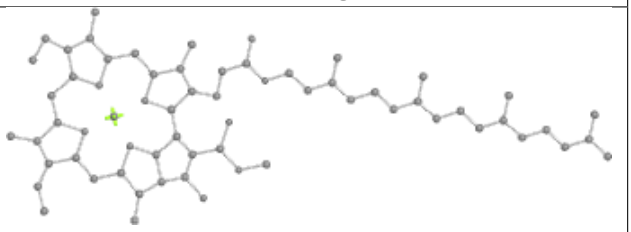
Torsions	Rings

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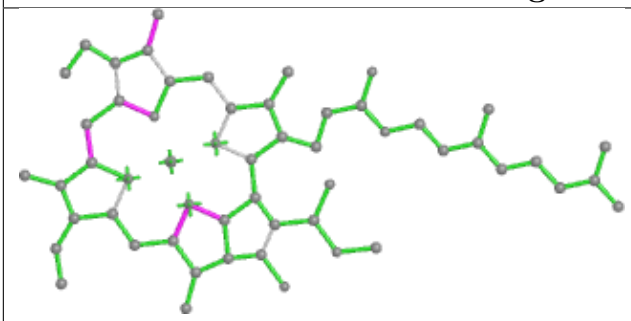

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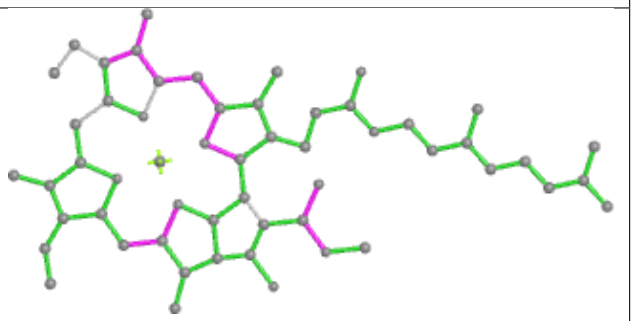

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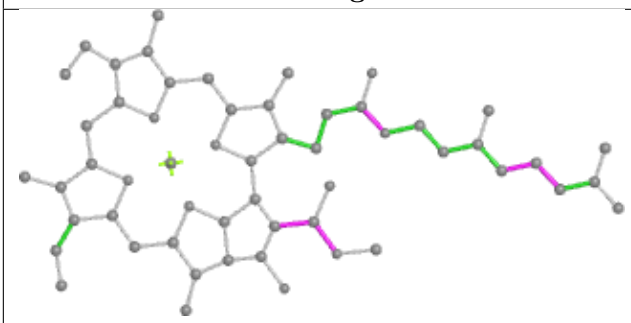

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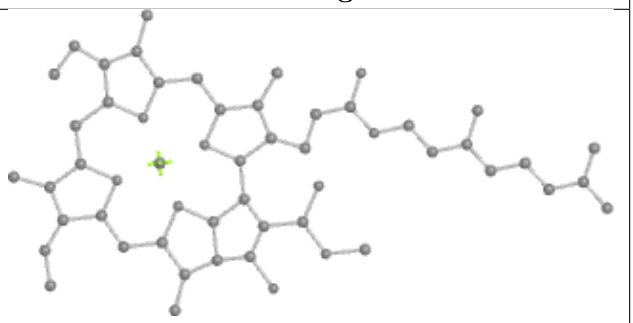
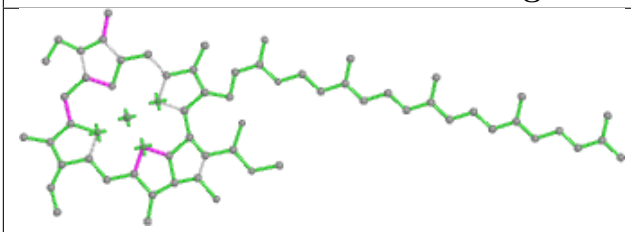


Rings

Ligand CLA D 400



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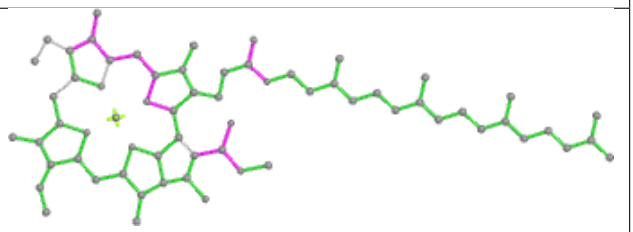

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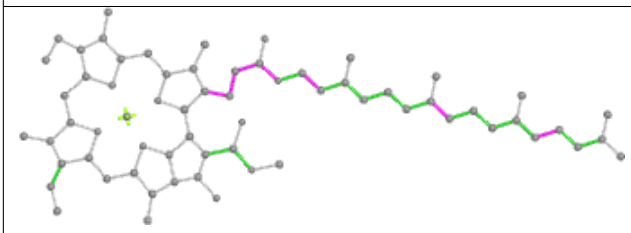

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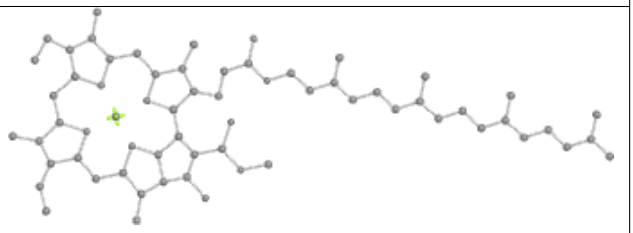

Rings

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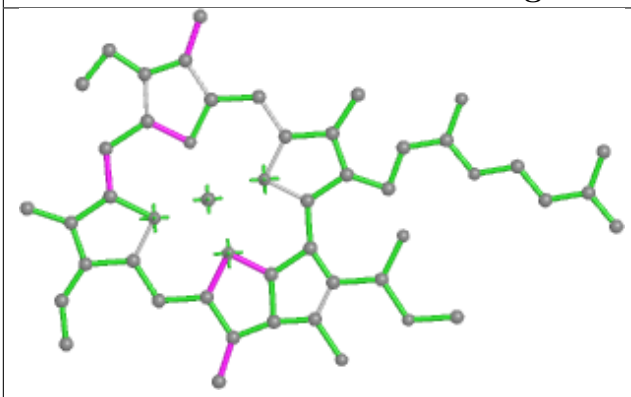	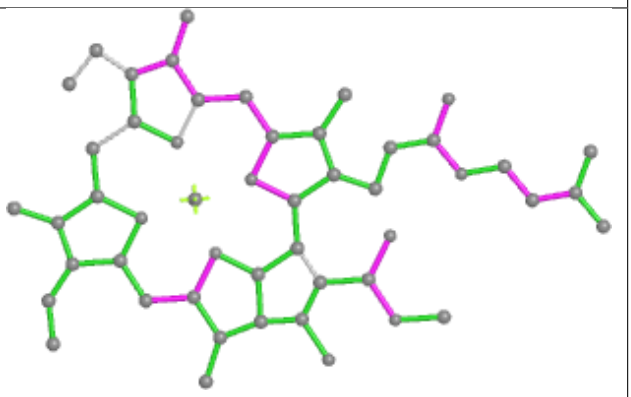
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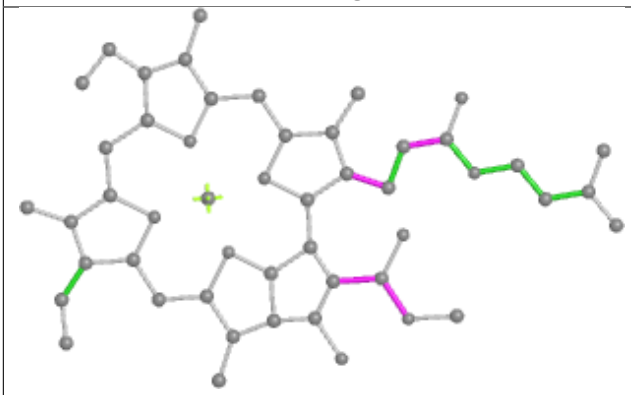	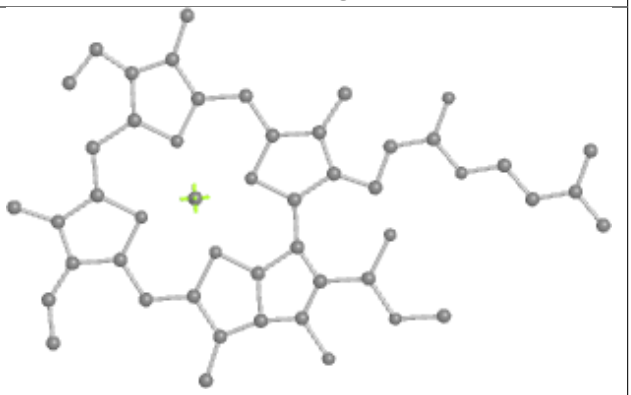
Torsions	Rings

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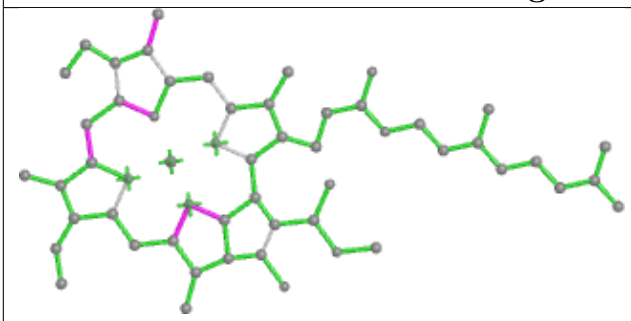	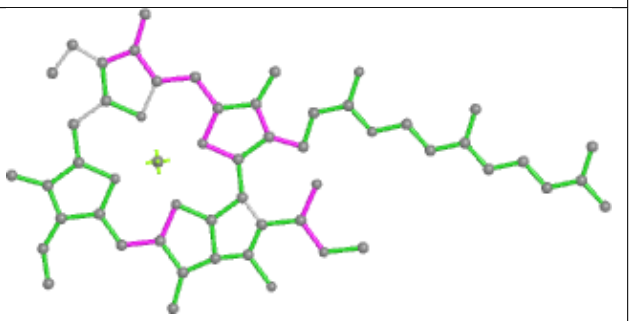
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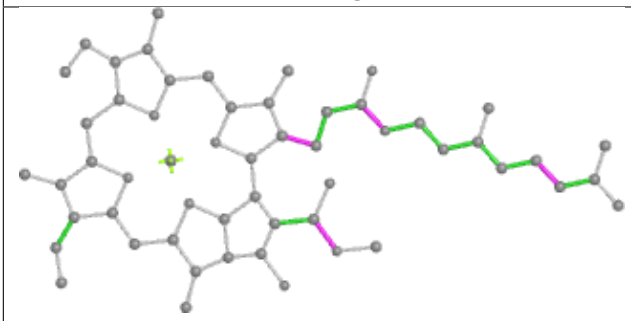	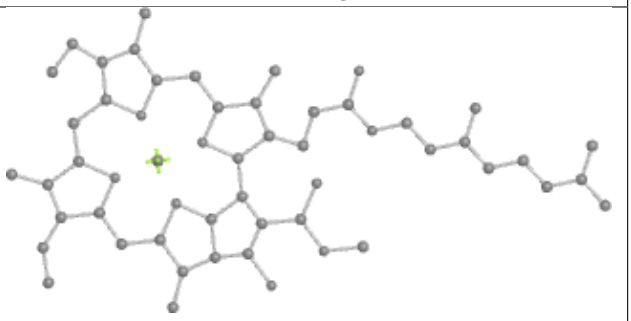
Torsions	Rings

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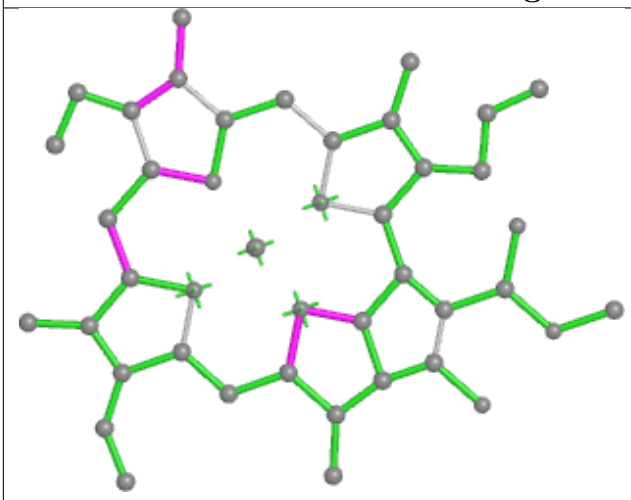

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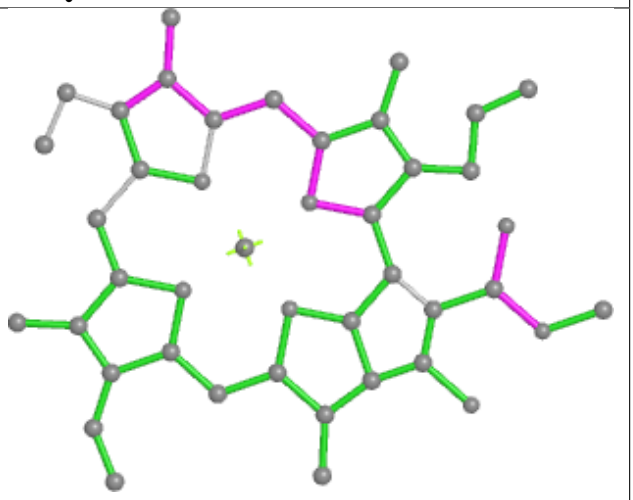

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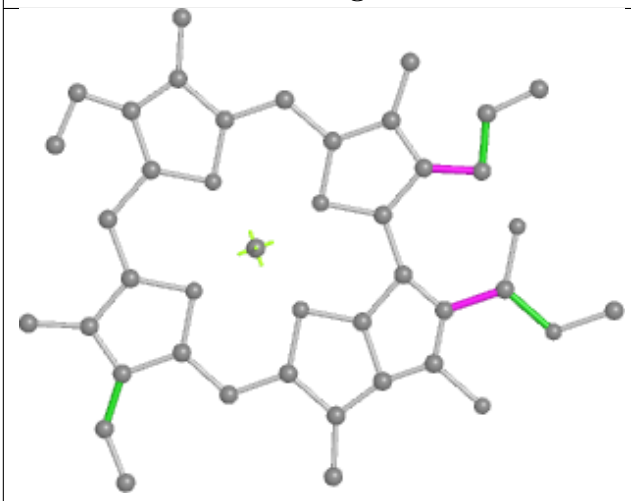

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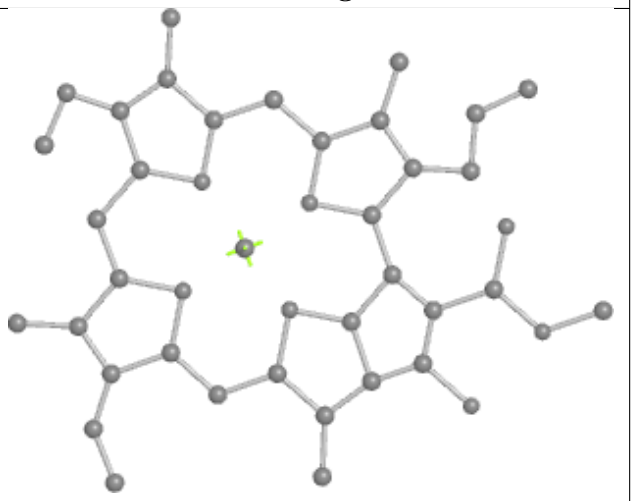

Rings

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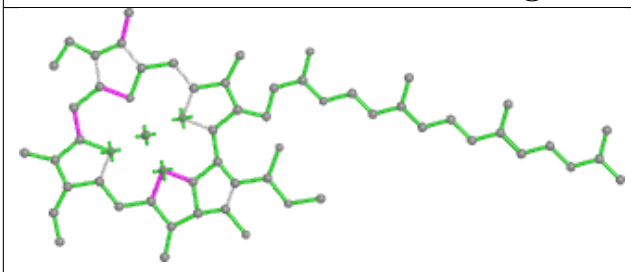

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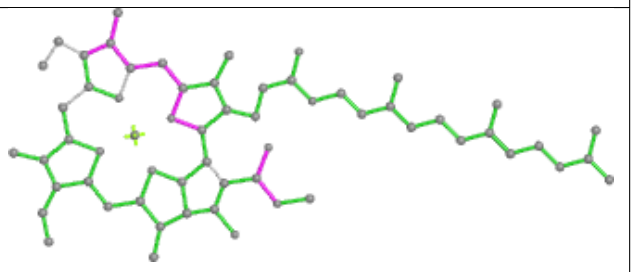

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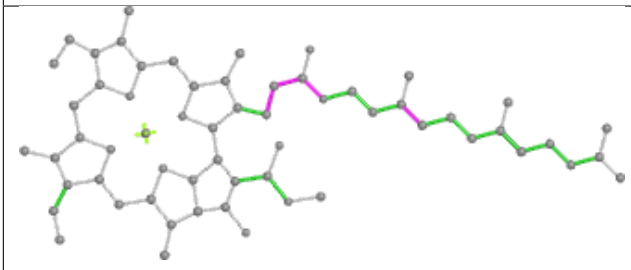

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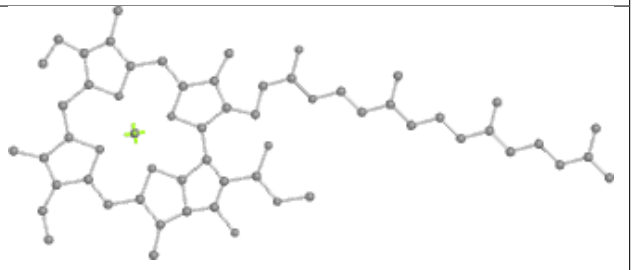

Rings

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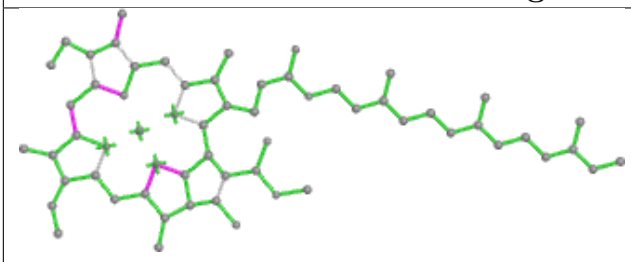
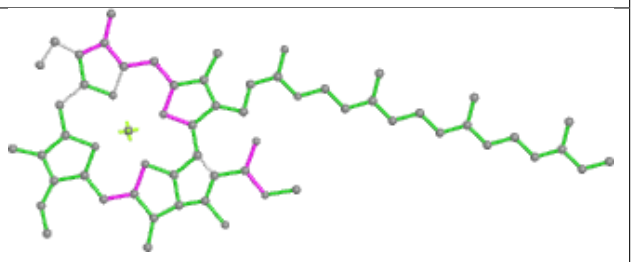
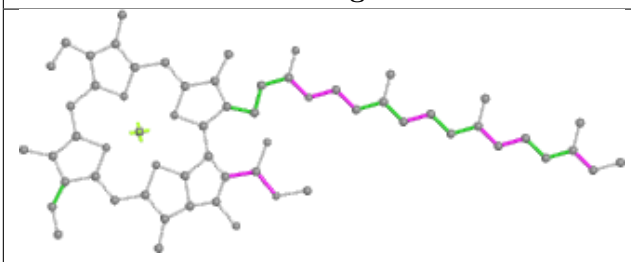
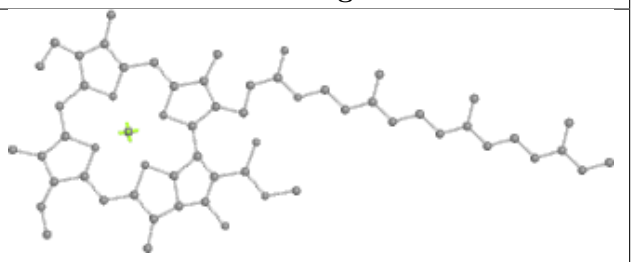
 Bond lengths	 Bond angles
 Torsions	 Rings

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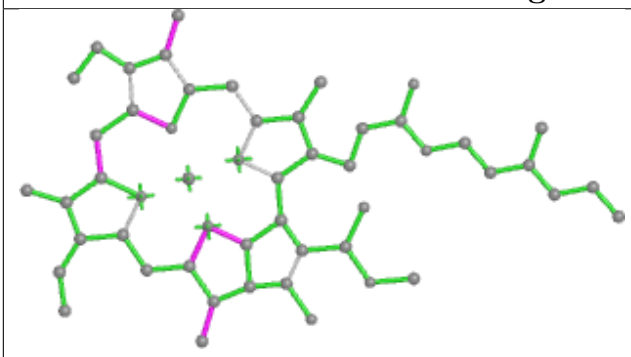
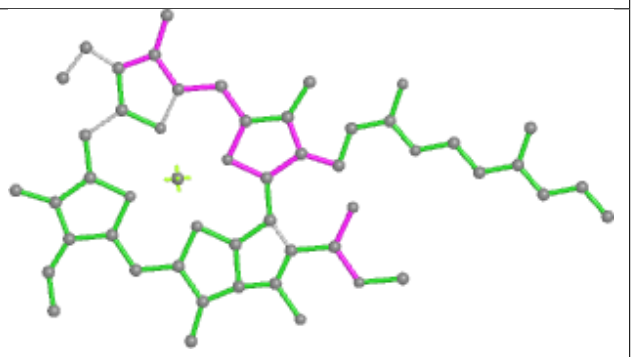
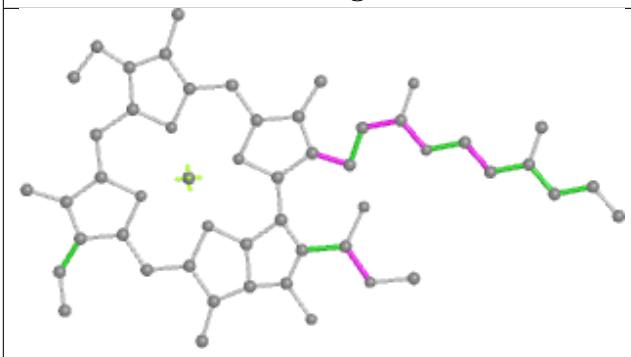
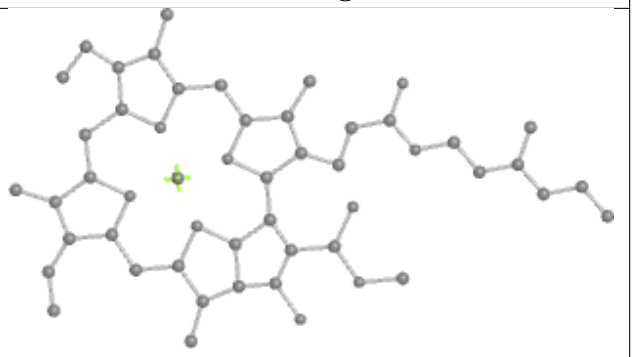
 Bond lengths	 Bond angles
 Torsions	 Rings

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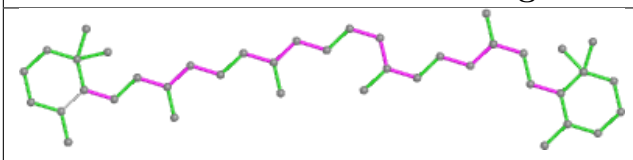

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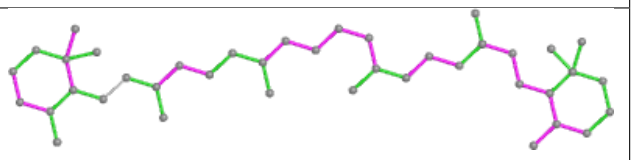

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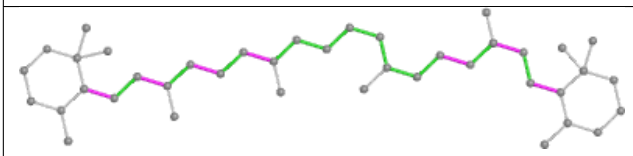

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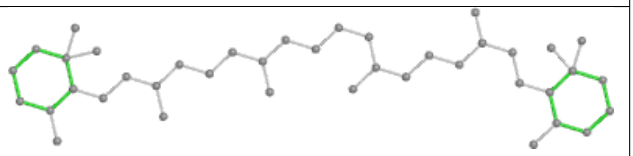

Rings

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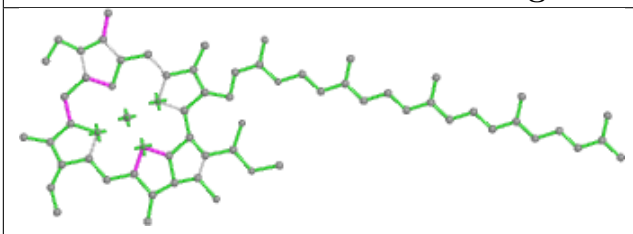

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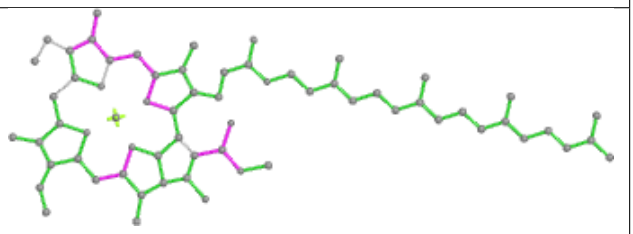

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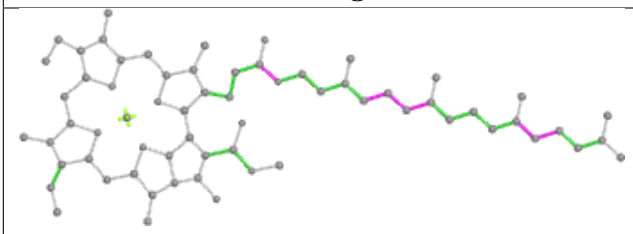

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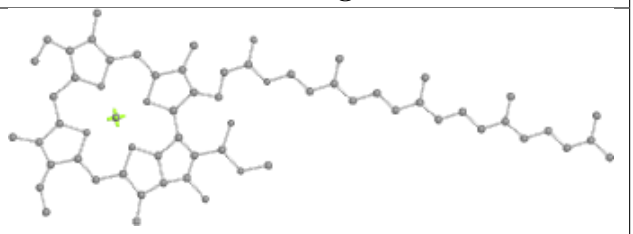
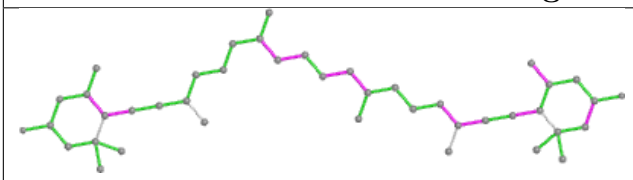


Rings

Ligand II0 5 619



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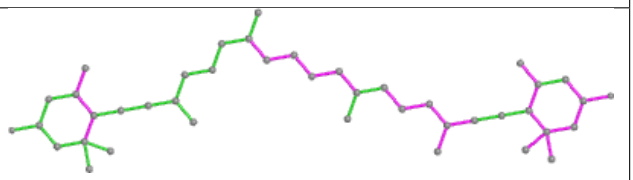
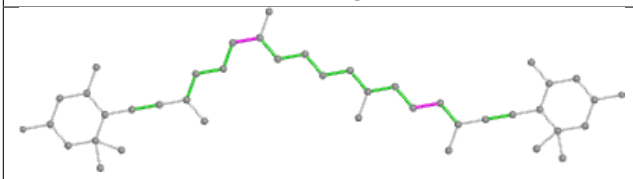


Bond angles



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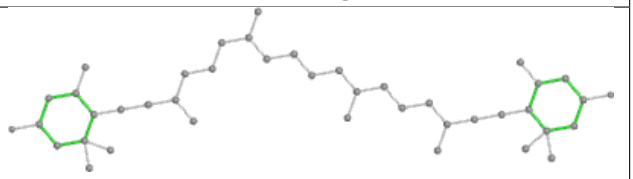

Rings

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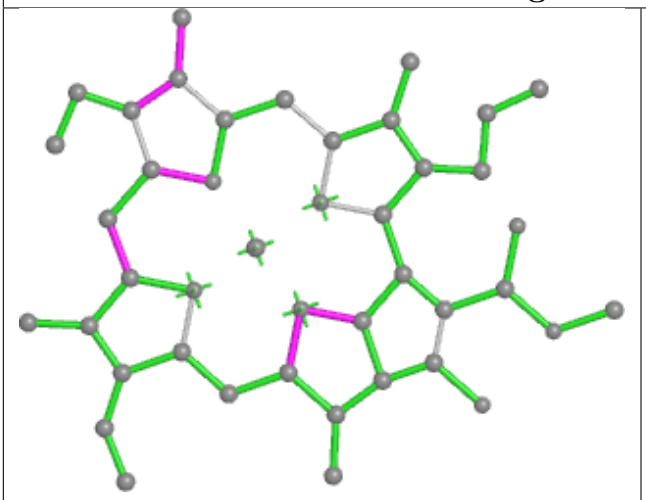

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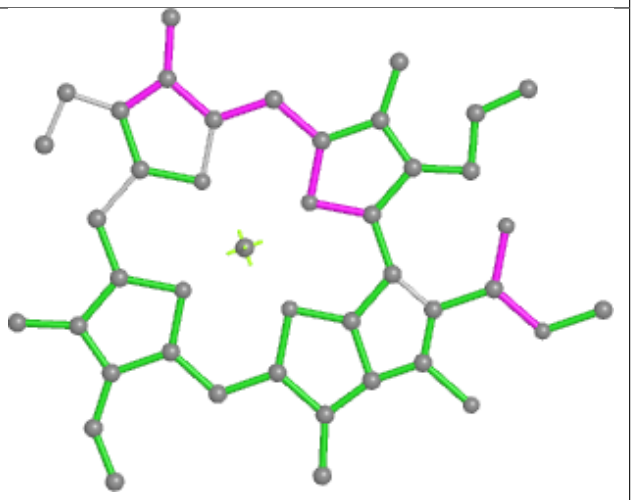
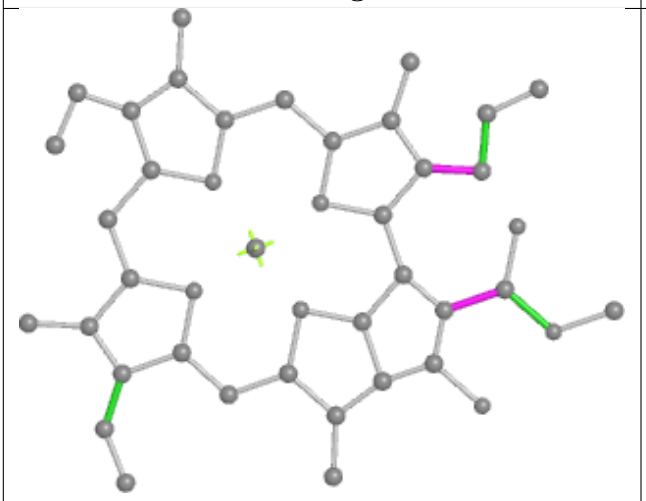
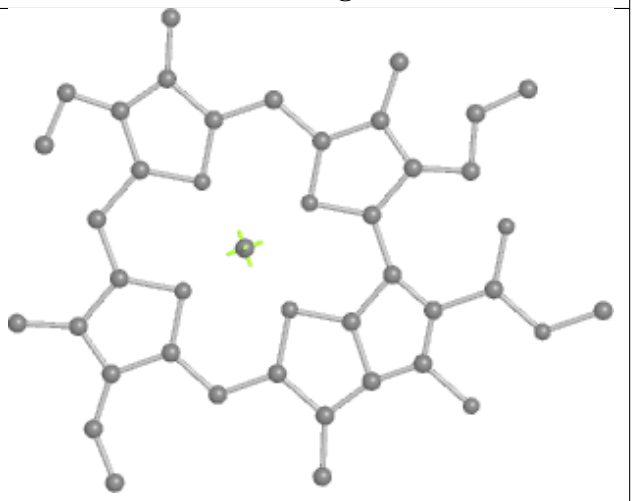


Bond angles

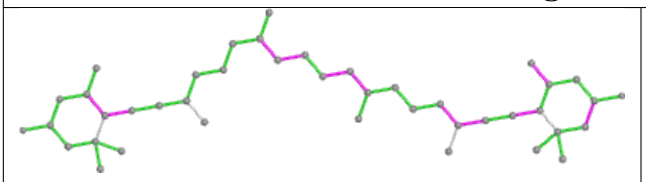


Torsions

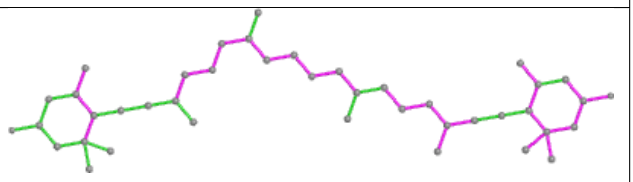


Rings

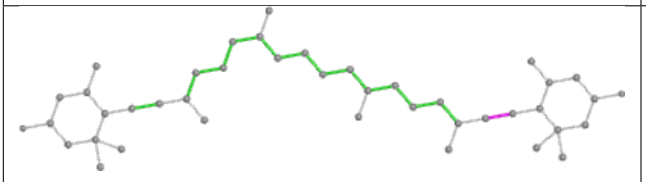
Ligand II0 2 618



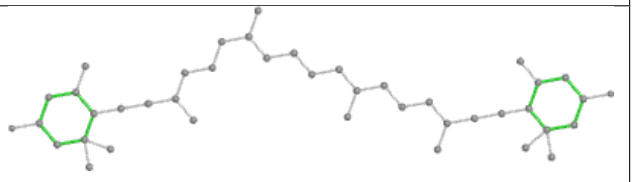
Bond lengths



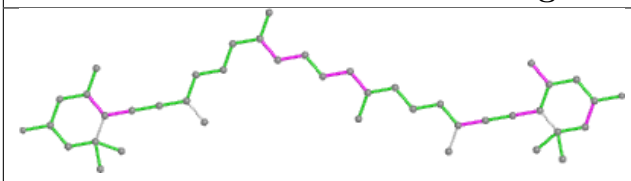
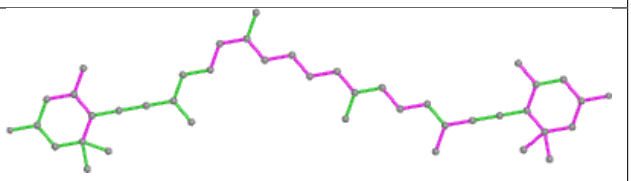
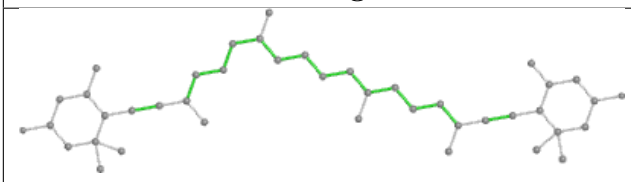
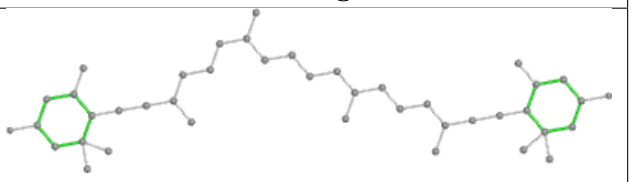
Bond angles

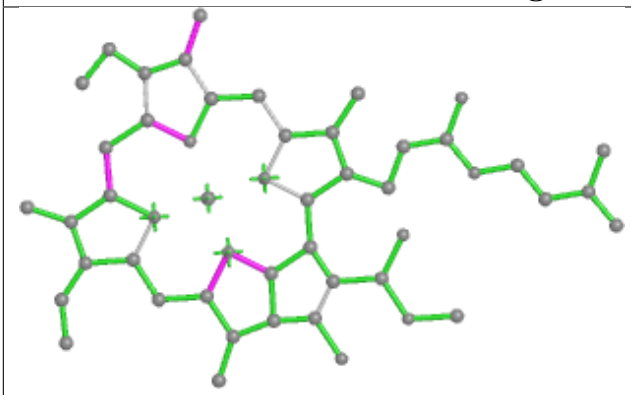
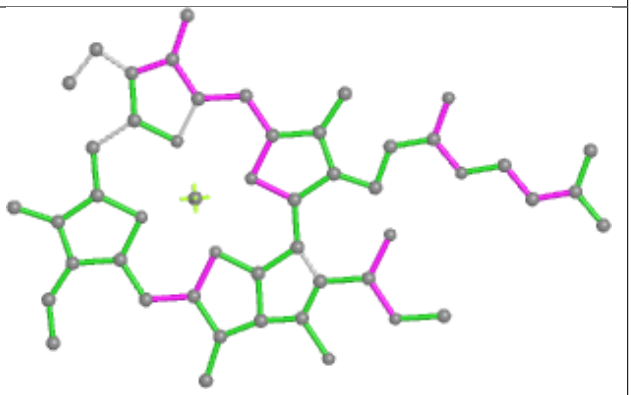
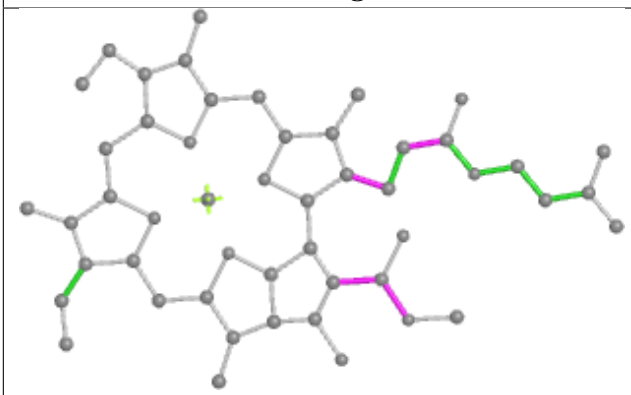
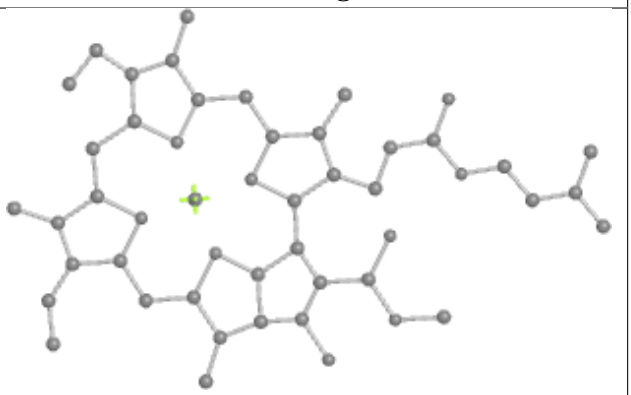


Torsions

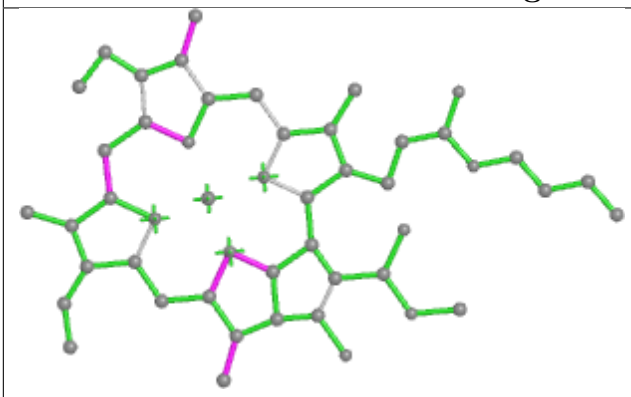


Rings

Ligand II0 R 618	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA b 601	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA O 601



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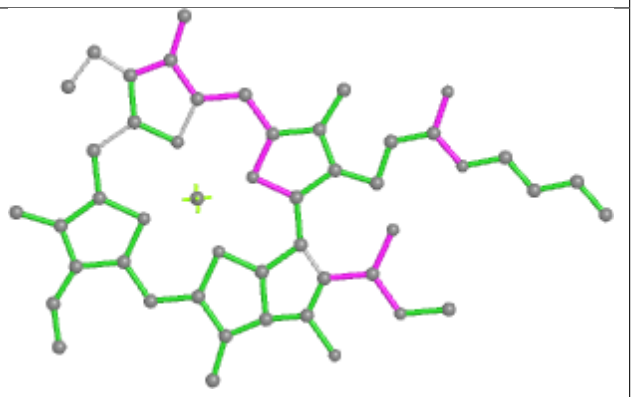
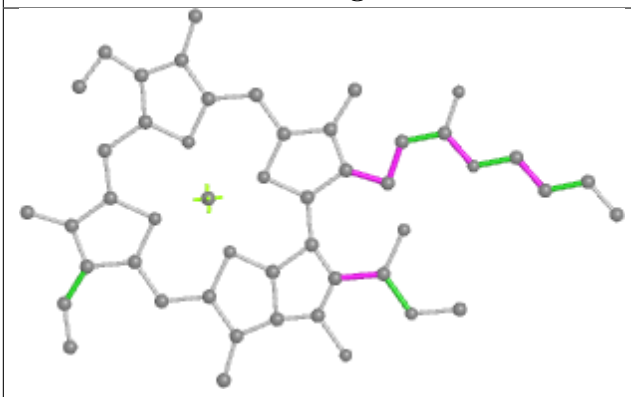


Bond angles



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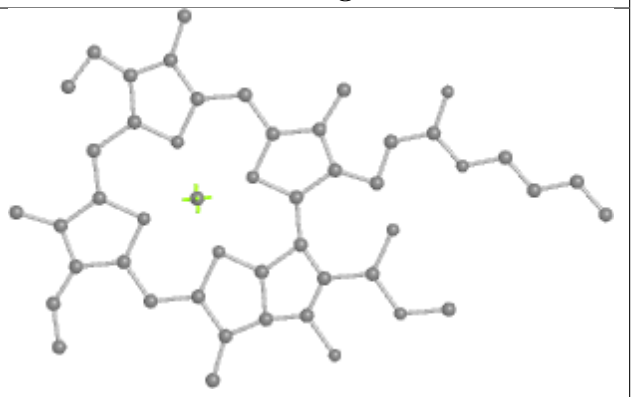
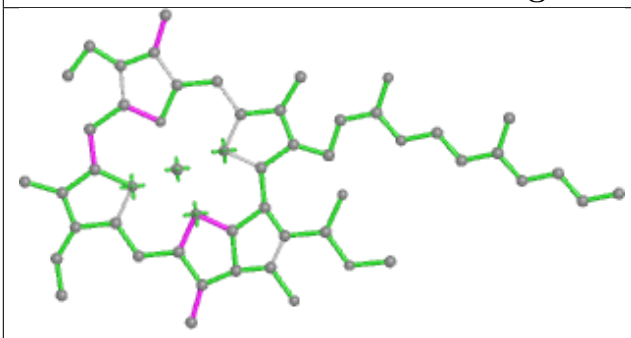


Rings

Ligand CLA 6 613



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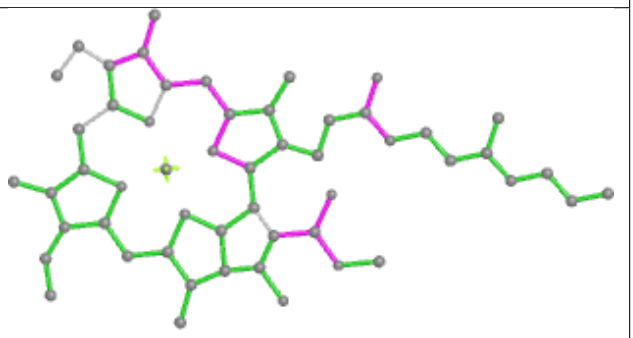

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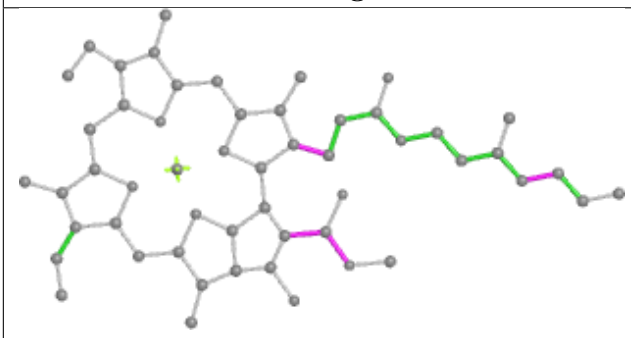

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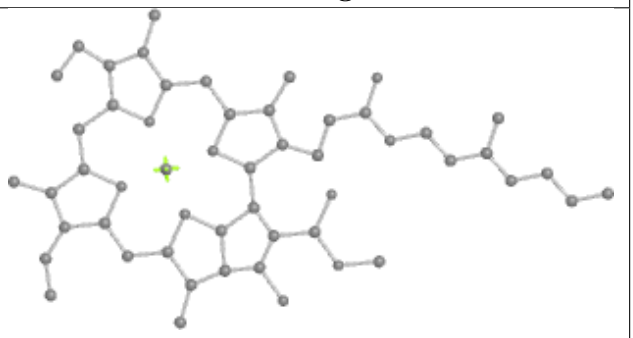
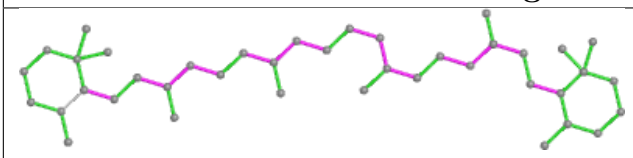


Rings

Ligand WVN H 89



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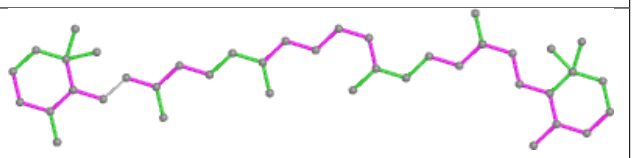
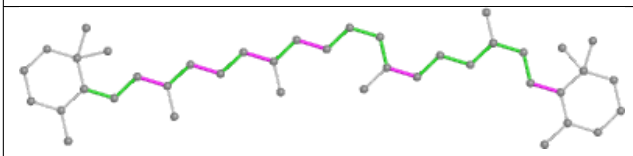


Bond angles



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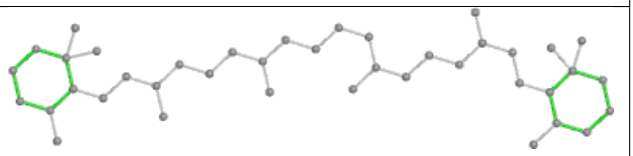
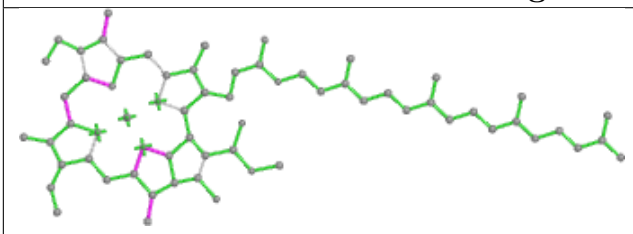


Rings

Ligand CLA 3 603



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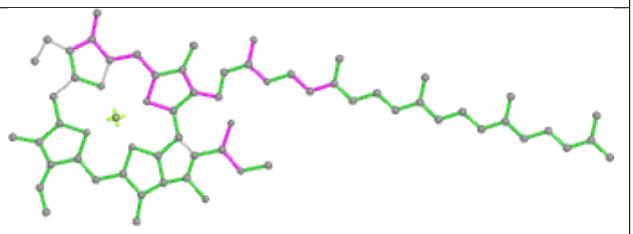

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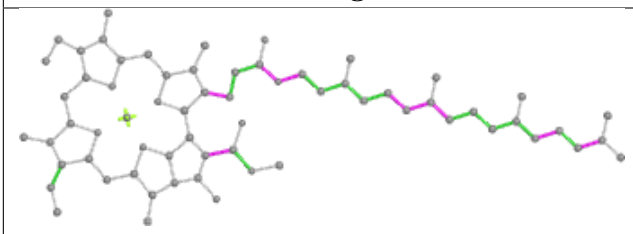

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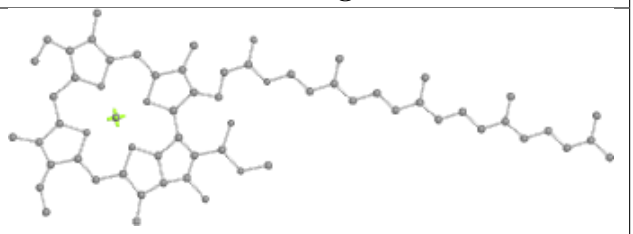
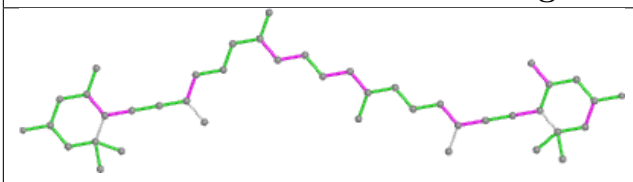


Rings

Ligand II0 O 618



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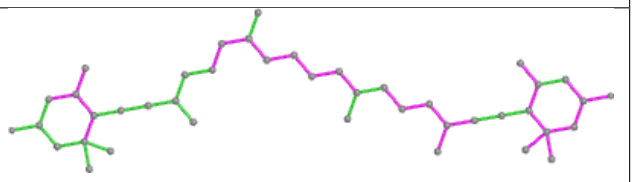
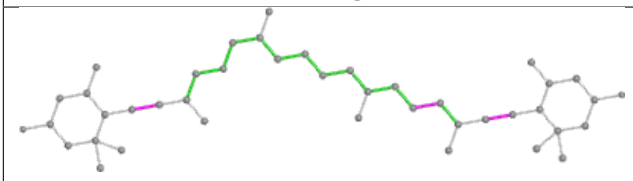


Bond angles



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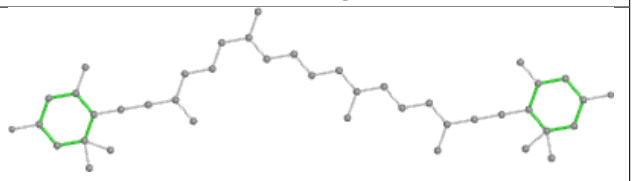
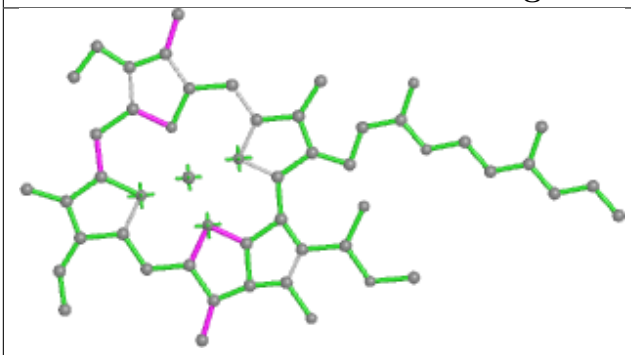
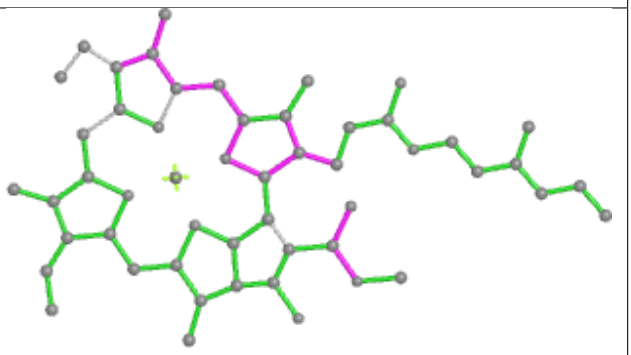


Rings

Ligand CLA R 603	
	
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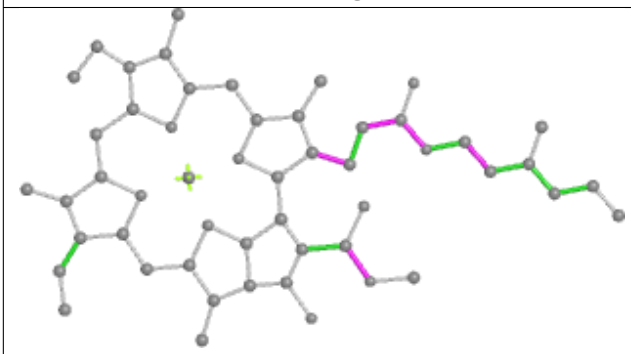	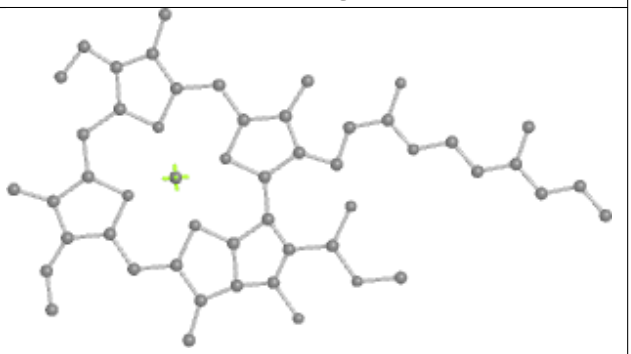
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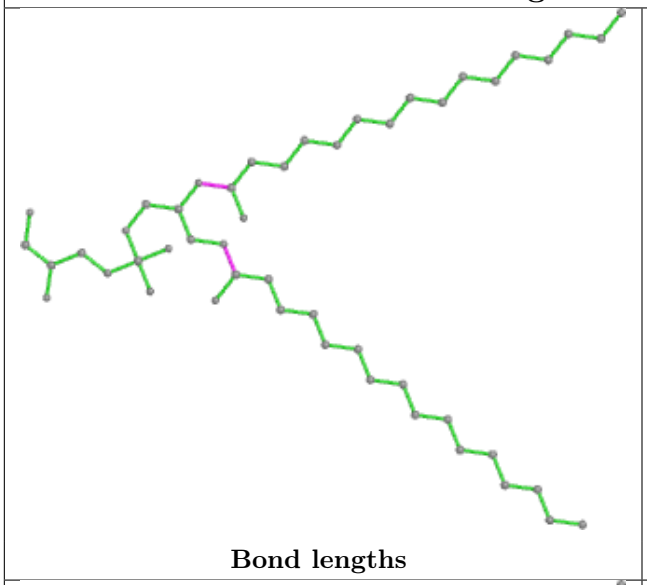
Ligand LHG 3 621



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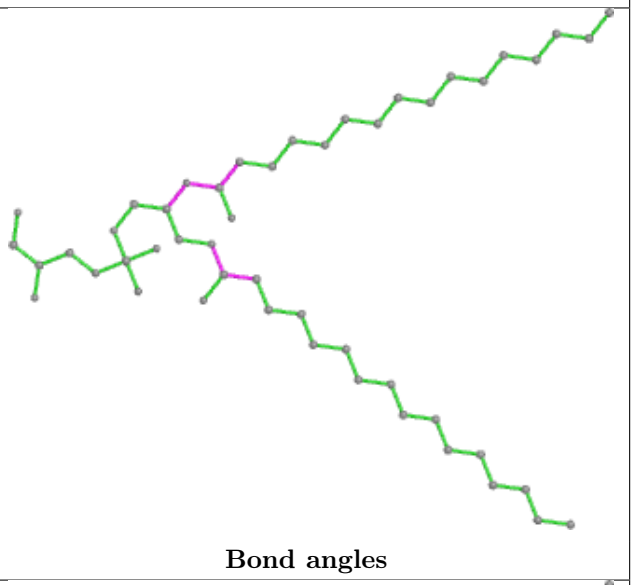
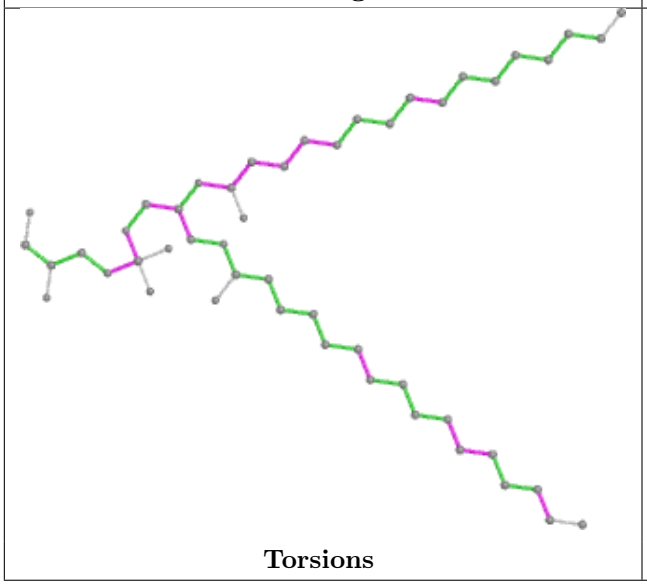
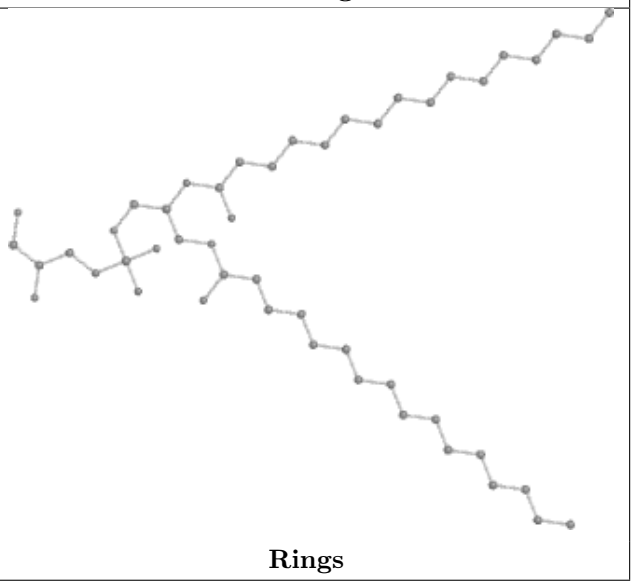


Bond angles

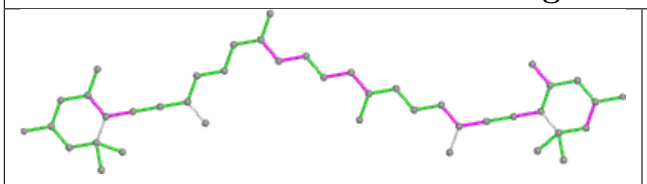


Torsions



Rings

Ligand II0 S 619



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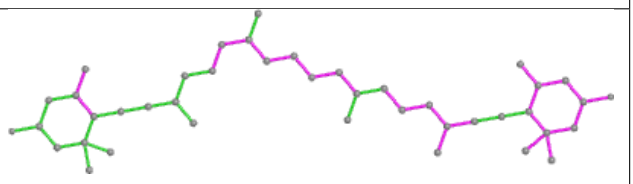
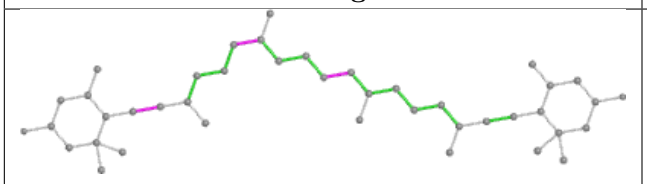


Bond angles



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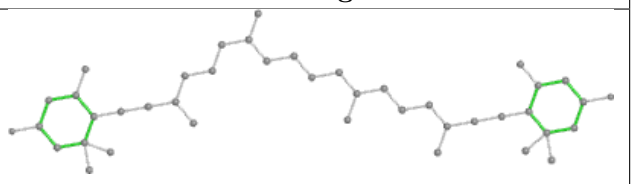
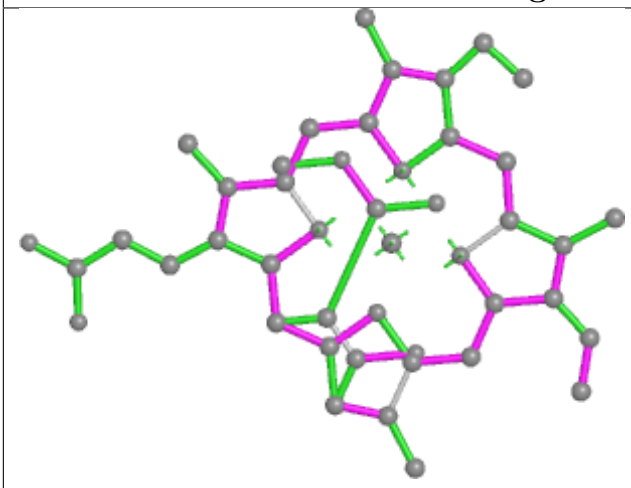


Rings

Ligand KC2 S 606



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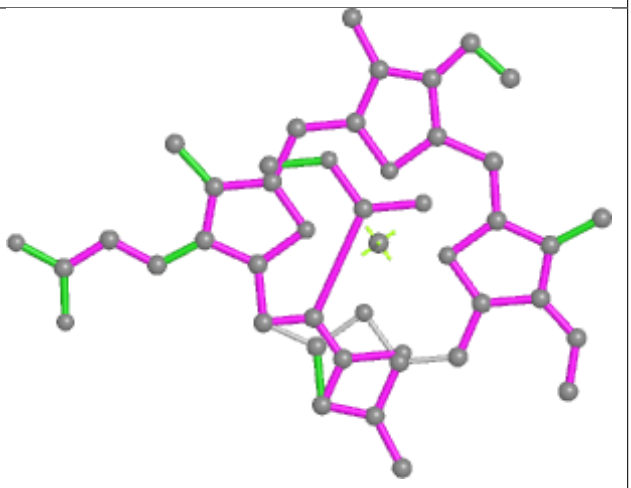
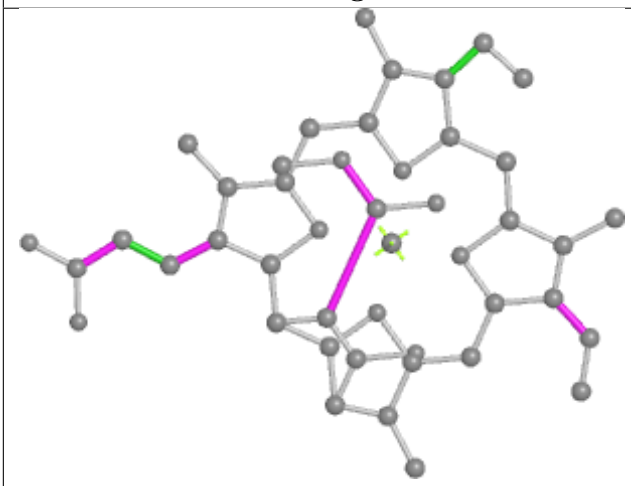


Bond angles



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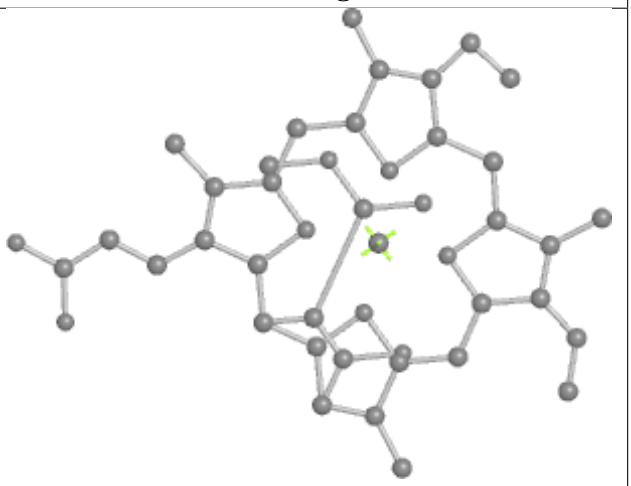
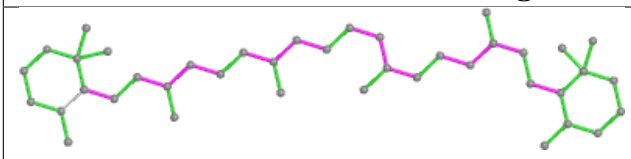


Rings

Ligand WVN C 530



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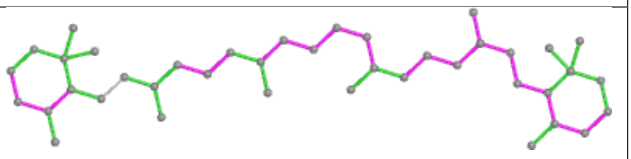
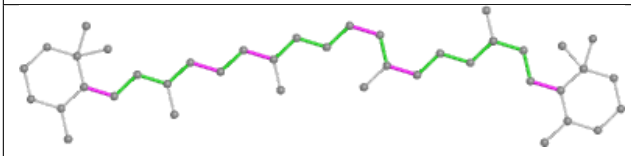


Bond angles



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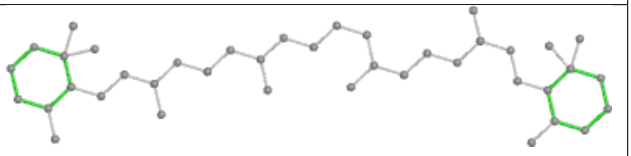
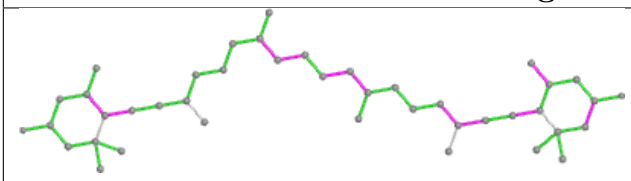
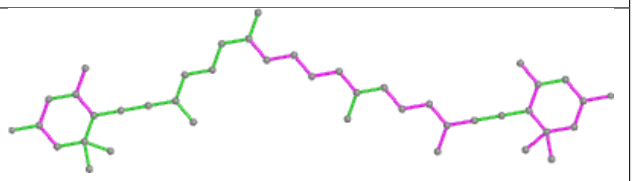


Rings

Ligand II0 N 617



Bond lengths



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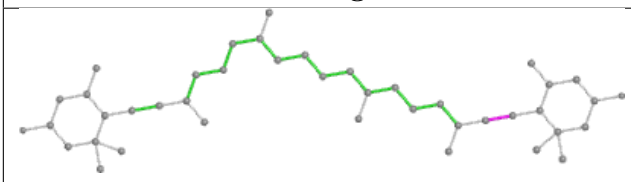
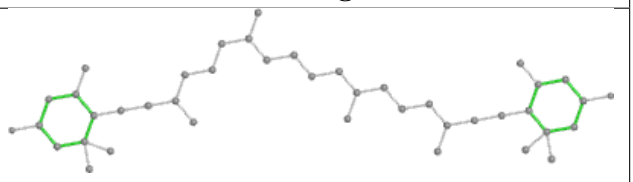
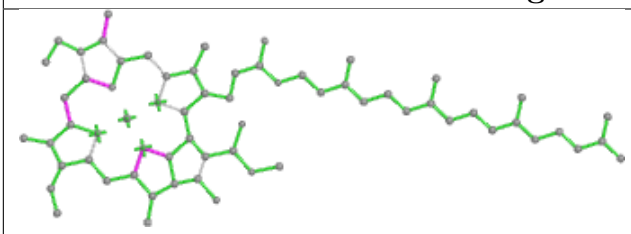


Torsions



Rings

Ligand CLA b 609



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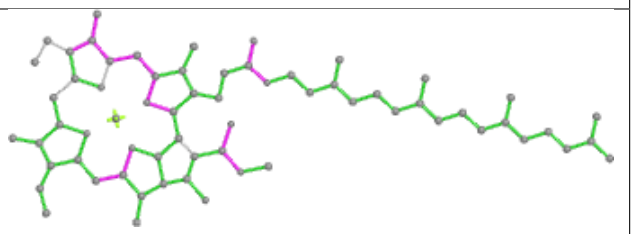

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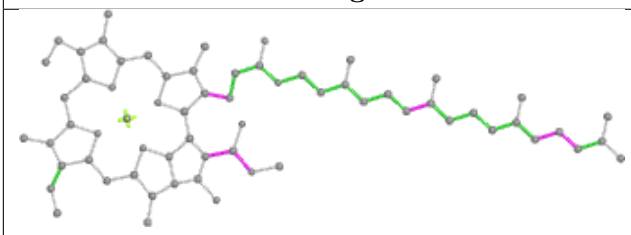

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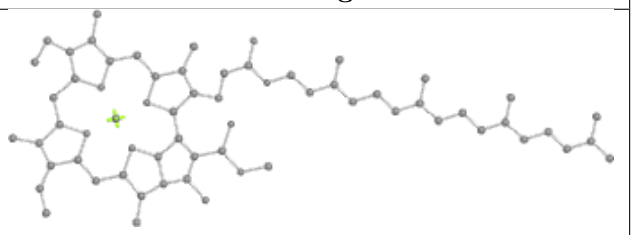
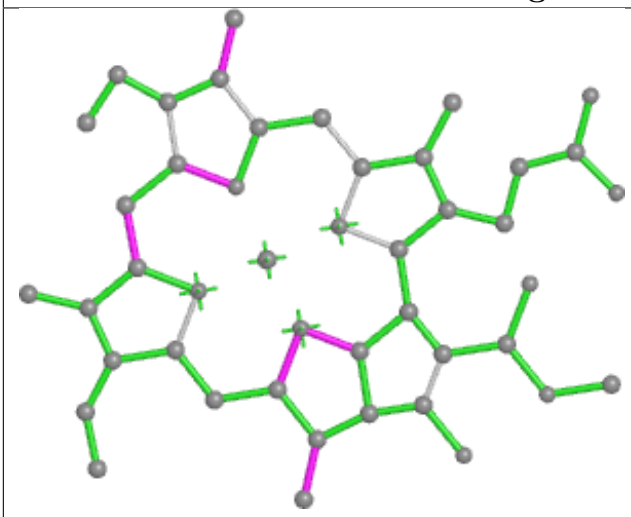


Rings

Ligand CLA 3 615



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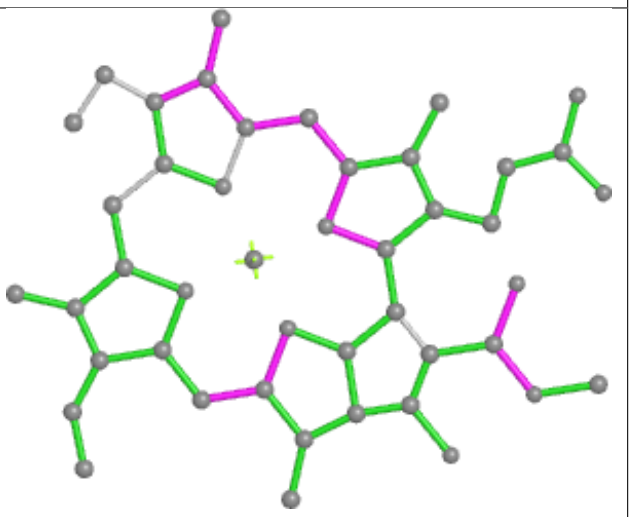

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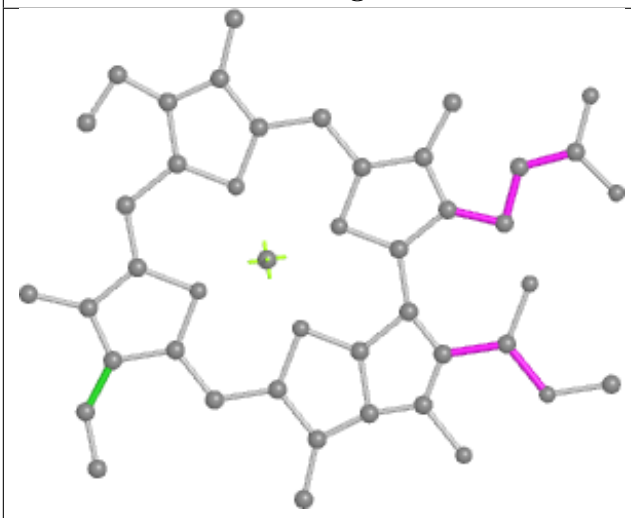

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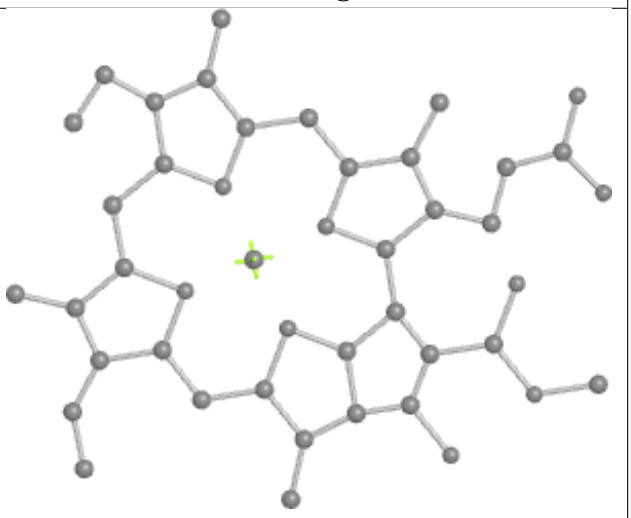
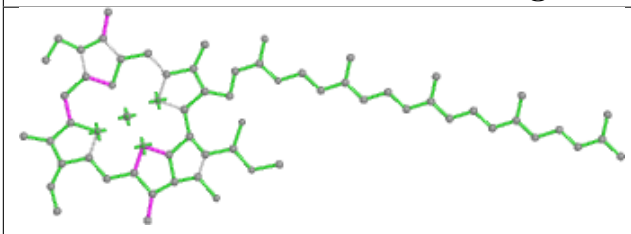


Rings

Ligand CLA c 525



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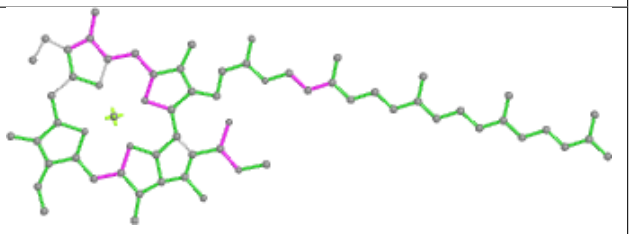

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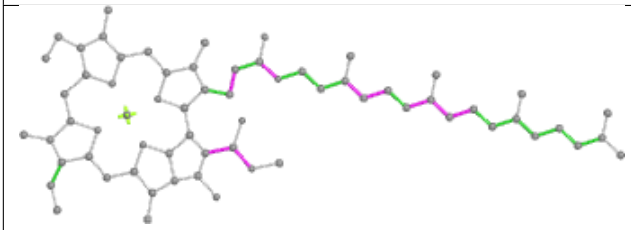

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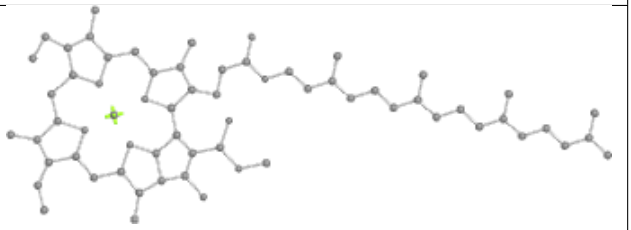
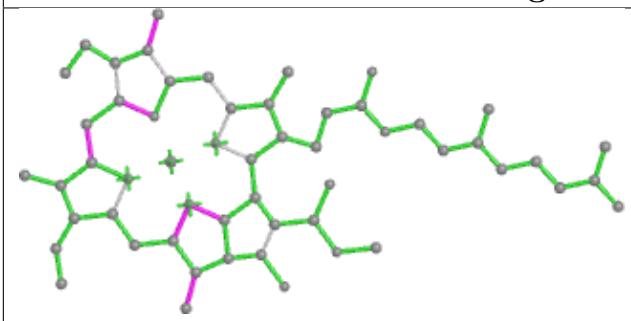


Rings

Ligand CLA 5 613



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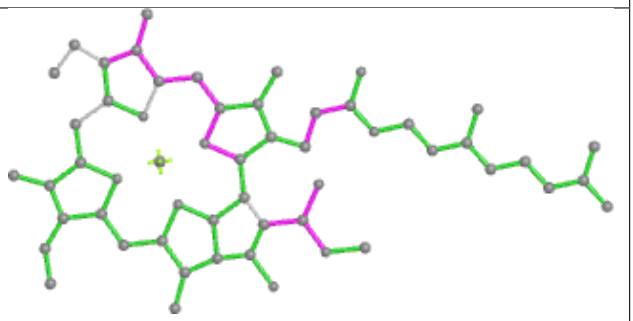

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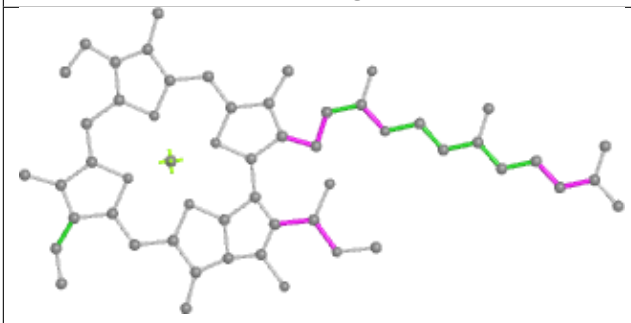

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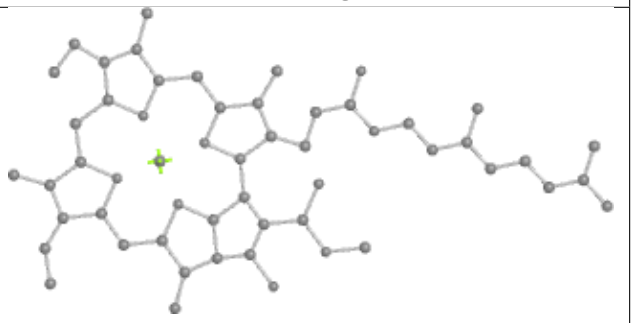
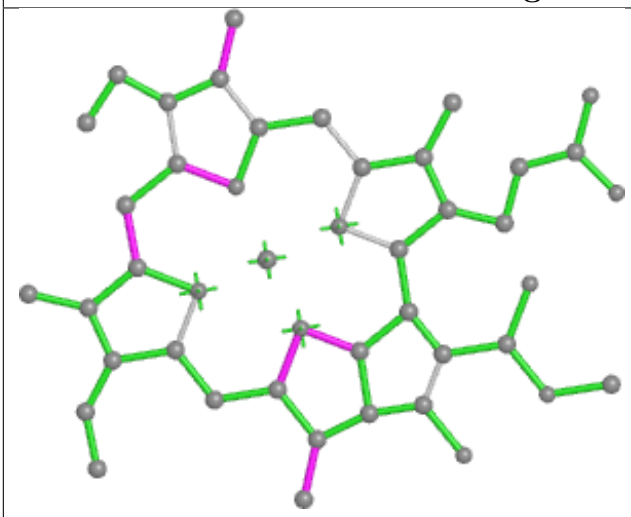


Rings

Ligand CLA O 615



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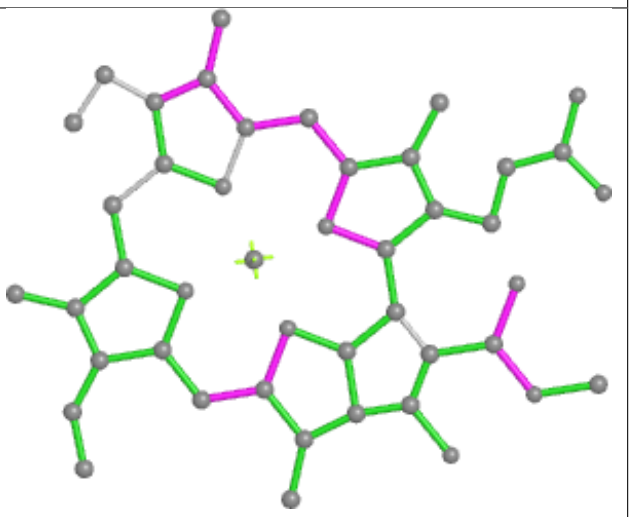

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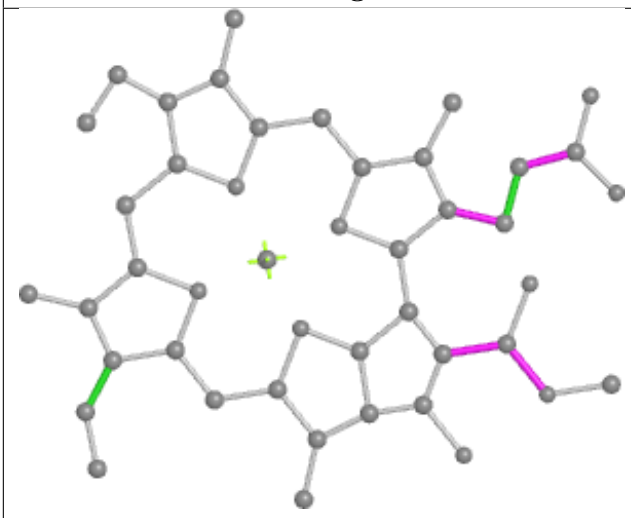

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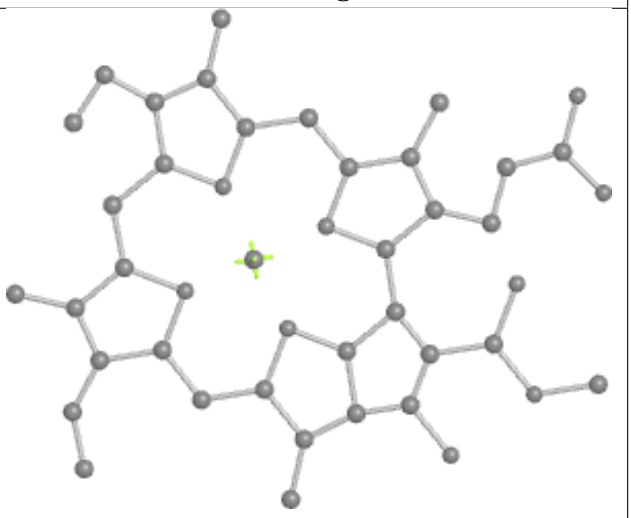
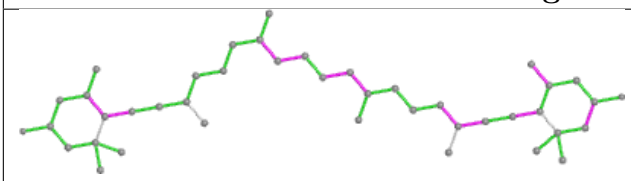


Rings

Ligand II0 2 619



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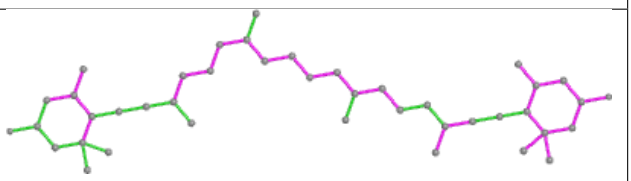

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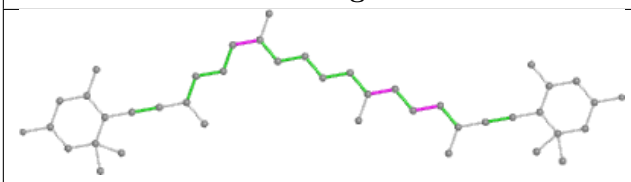

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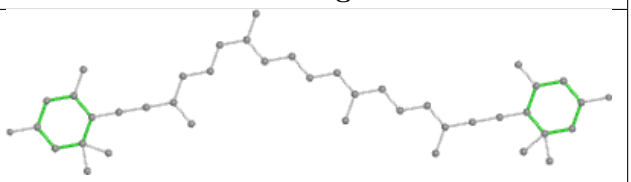
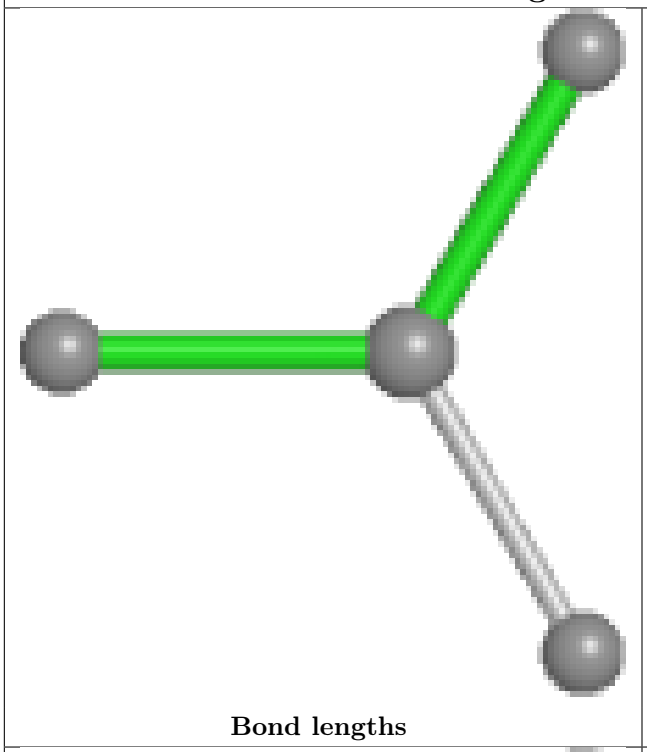


Rings

Ligand BCT a 412



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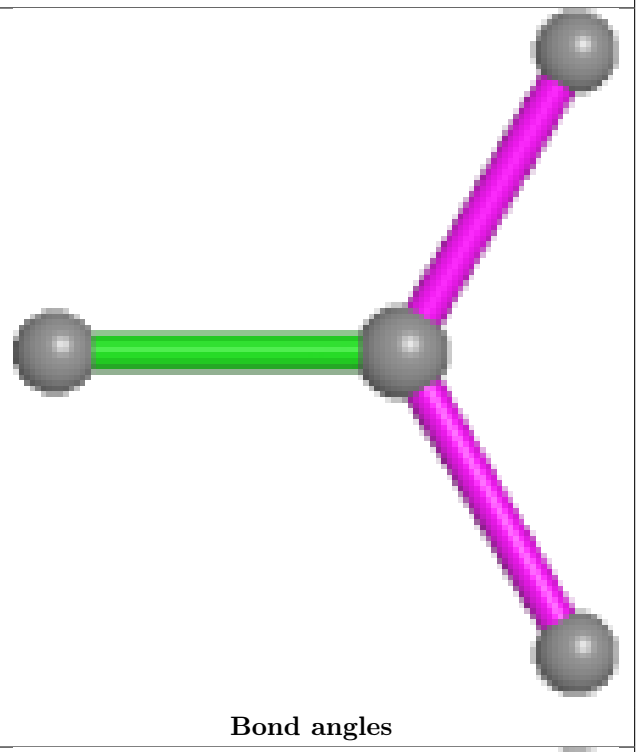

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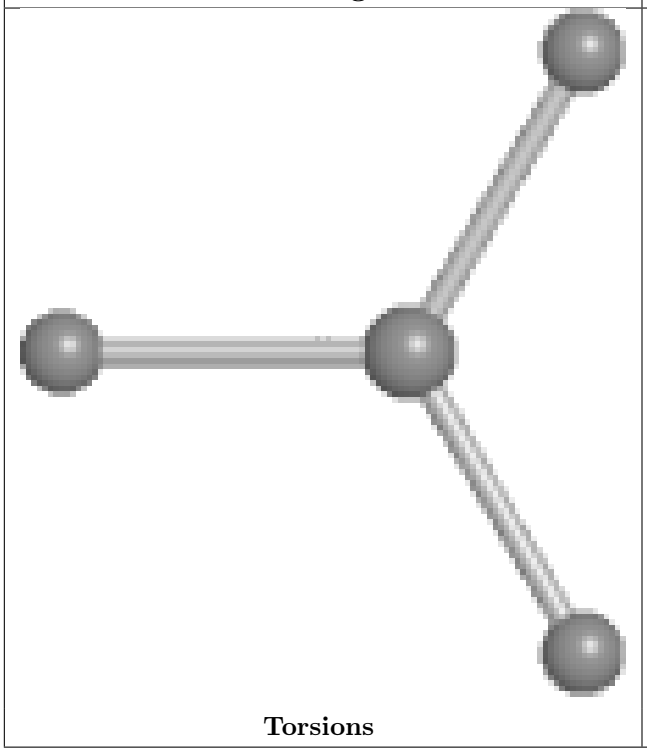

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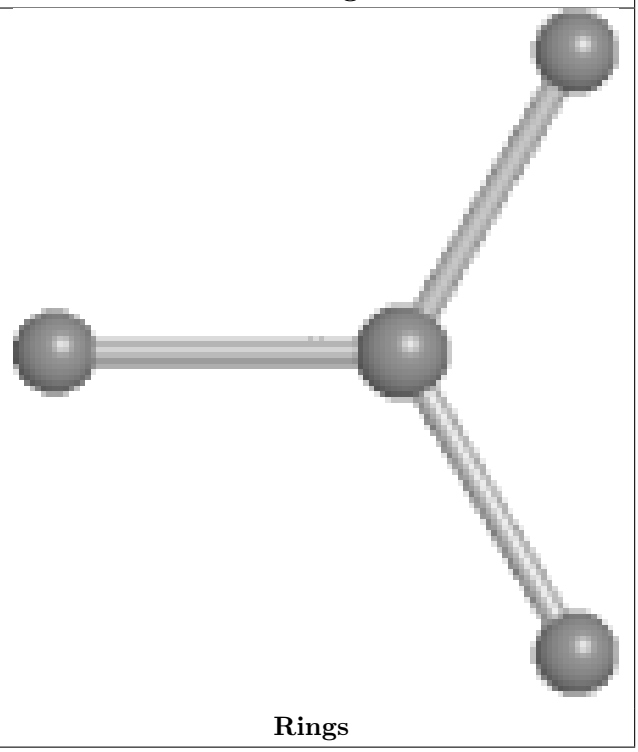
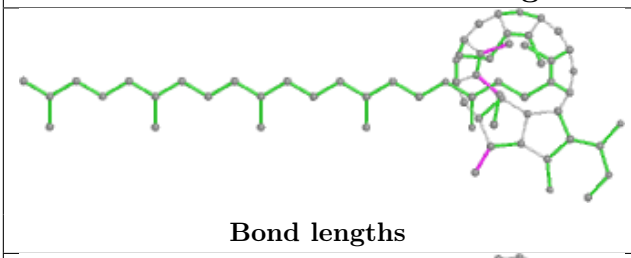


Rings

Ligand PHO A 405



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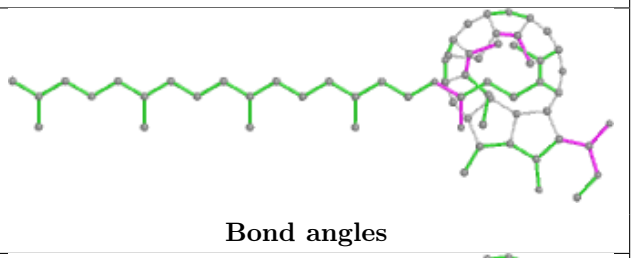
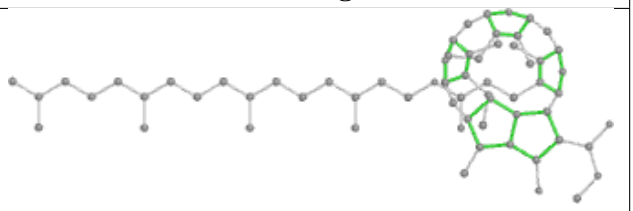


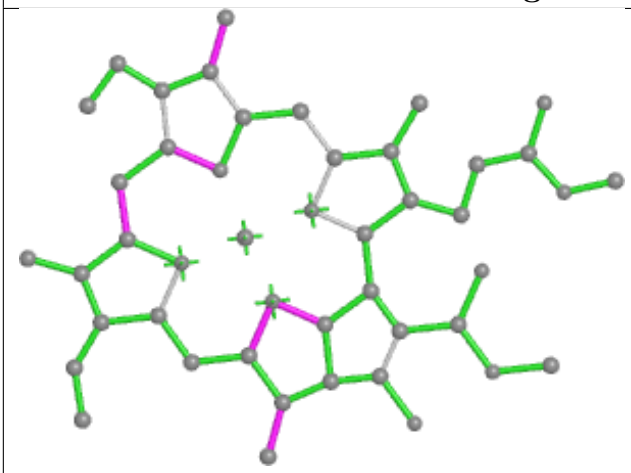
Bond angles

Torsions



Rings

Ligand CLA N 609



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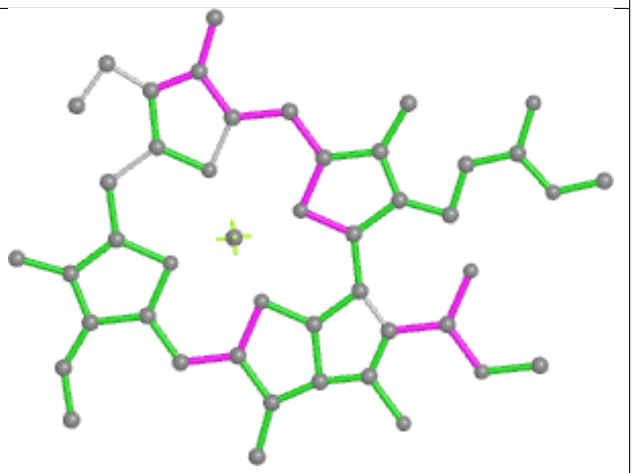

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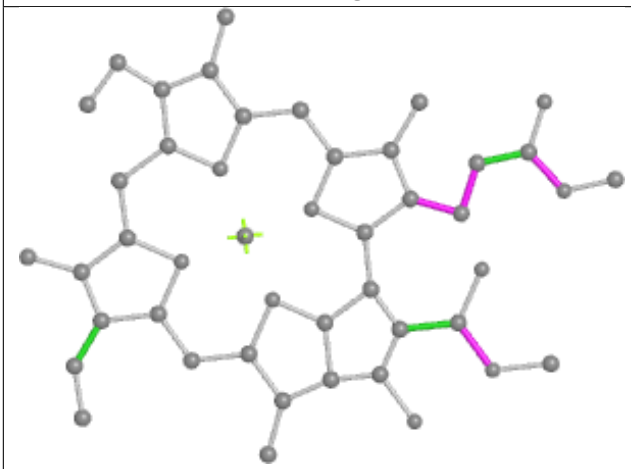

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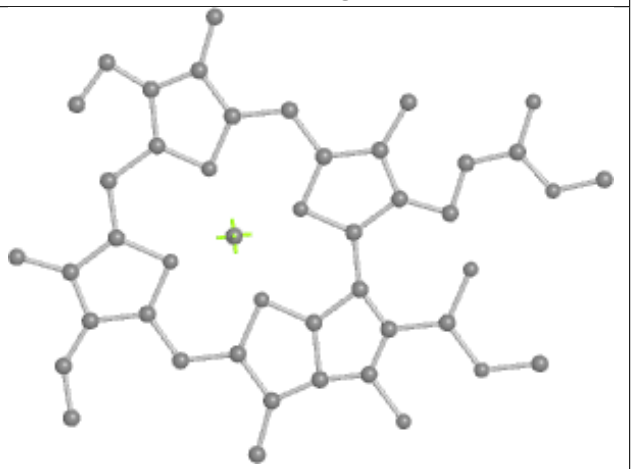
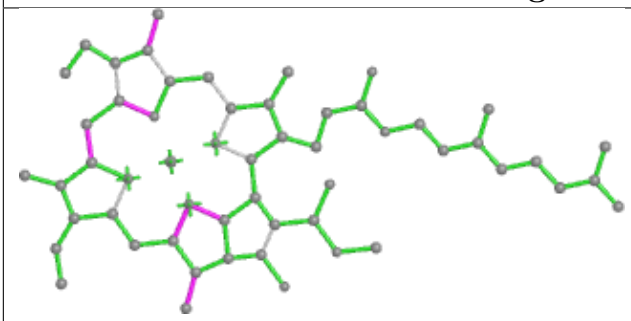


Rings

Ligand CLA 3 613



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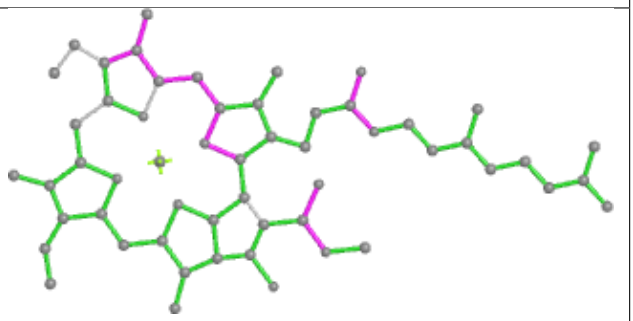

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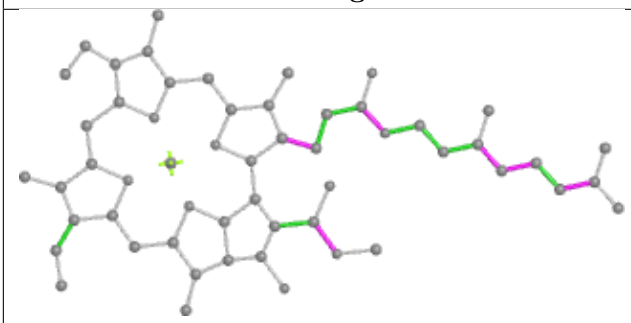

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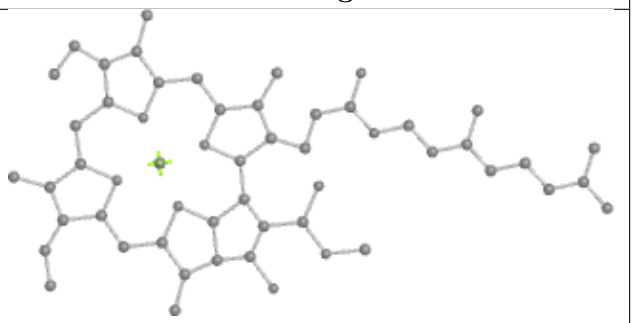
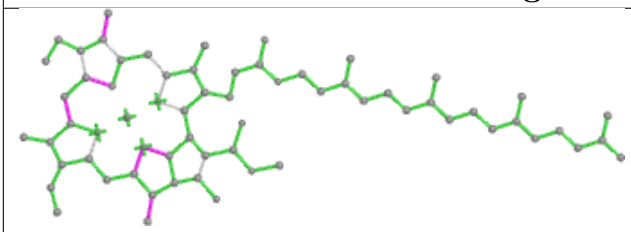


Rings

Ligand CLA D 403



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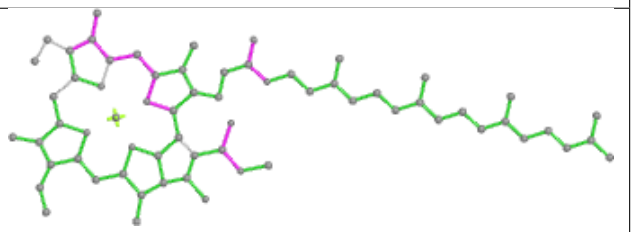

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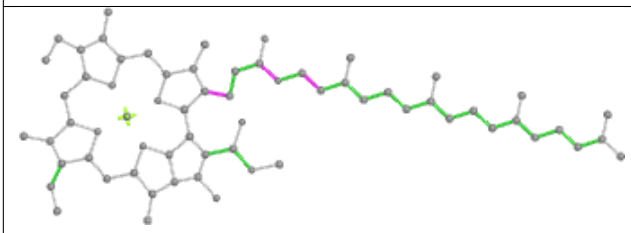

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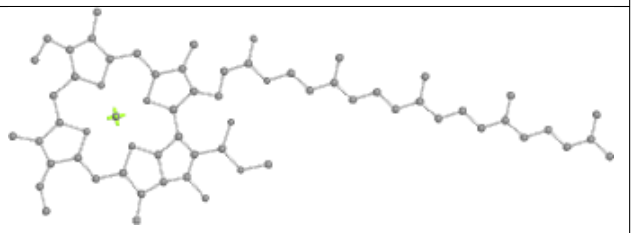
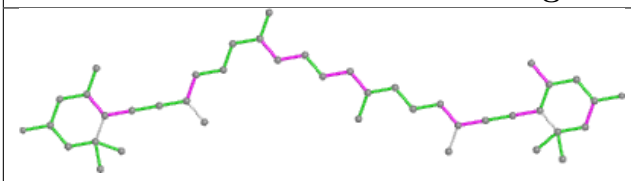
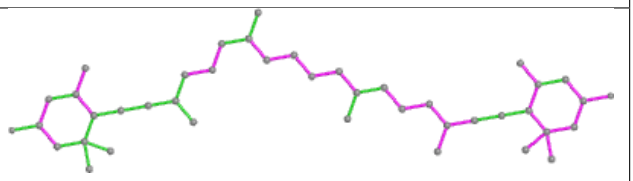
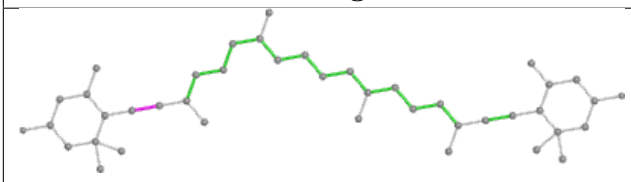
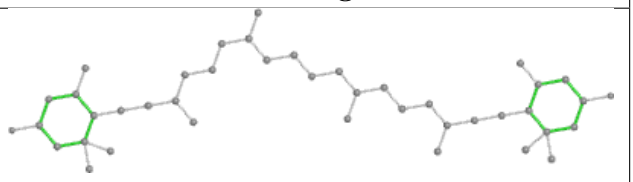
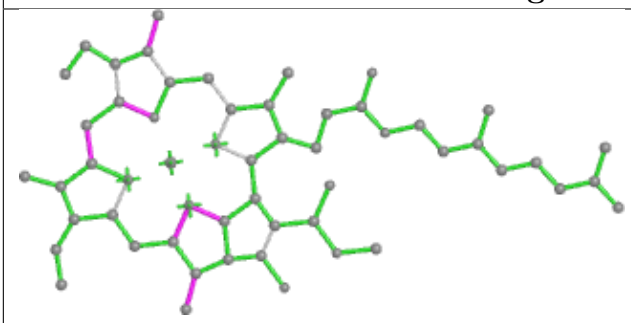
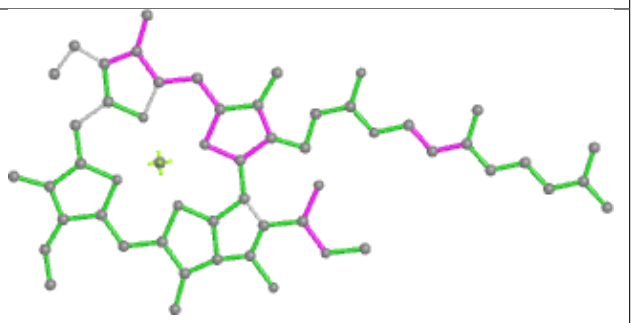
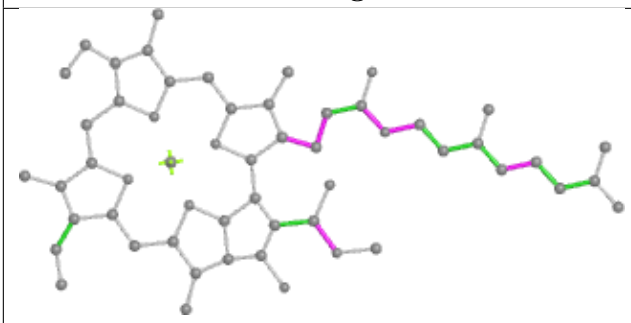
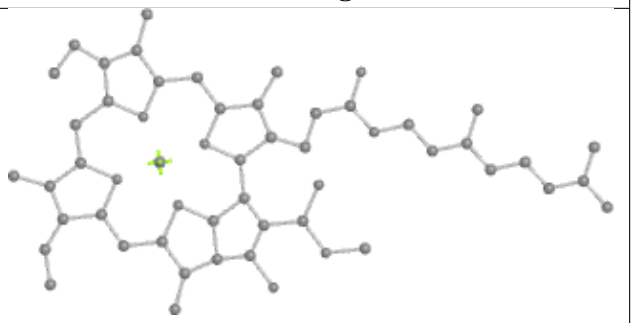
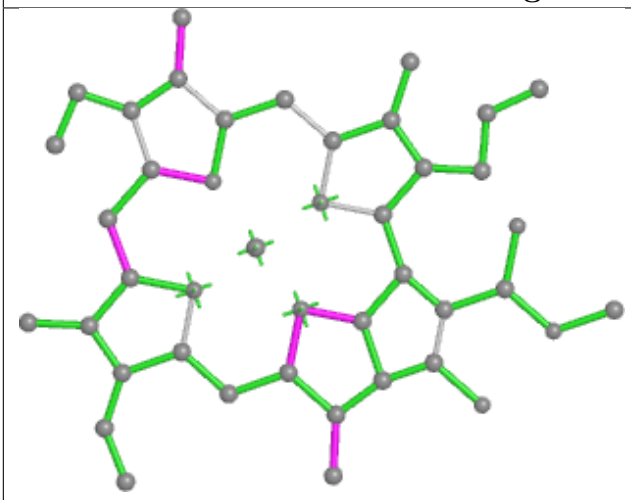


Rings

Ligand II0 3 617	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA S 603	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA Q 615



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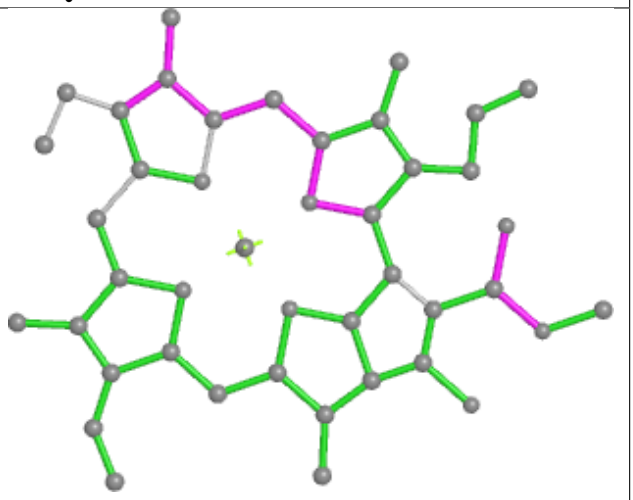

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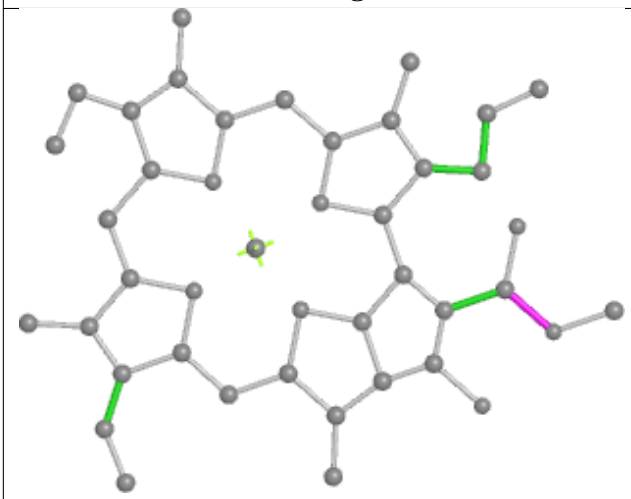

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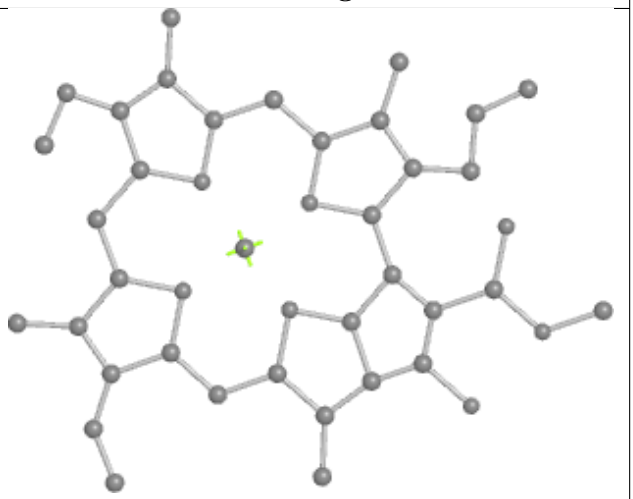

Rings

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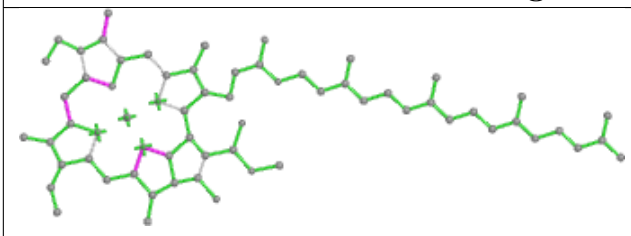

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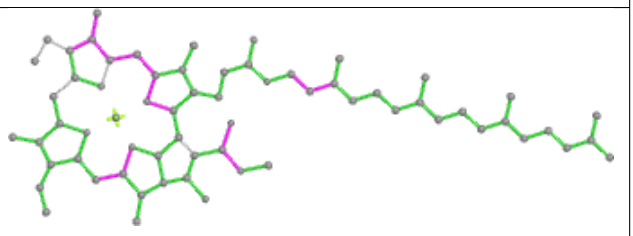

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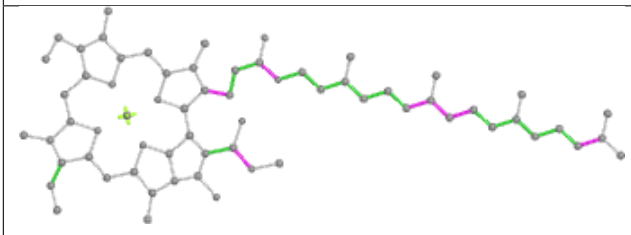

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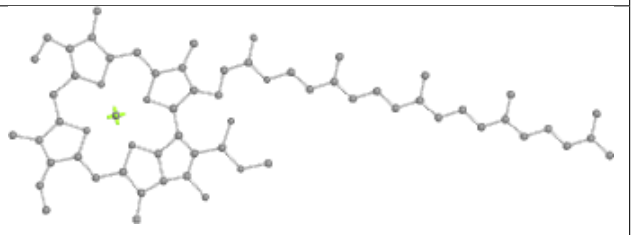

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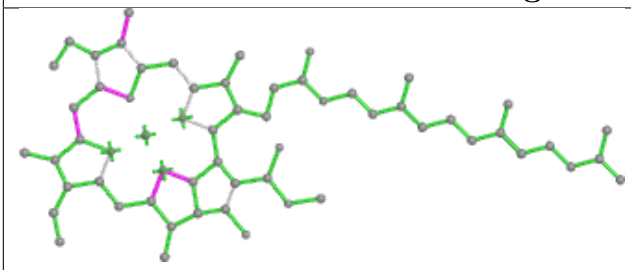

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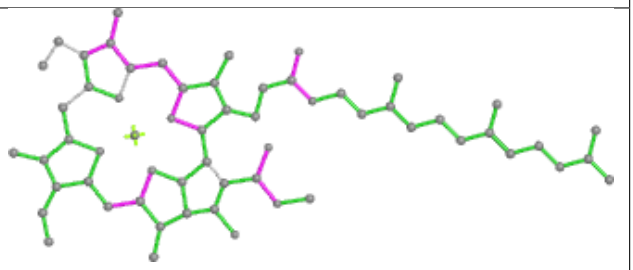

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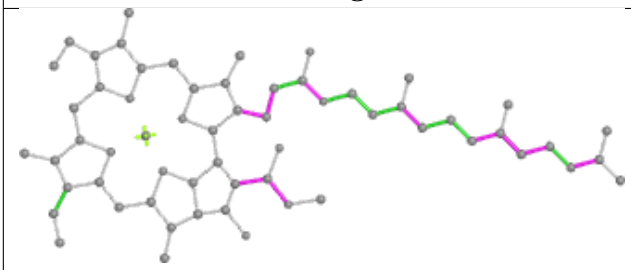

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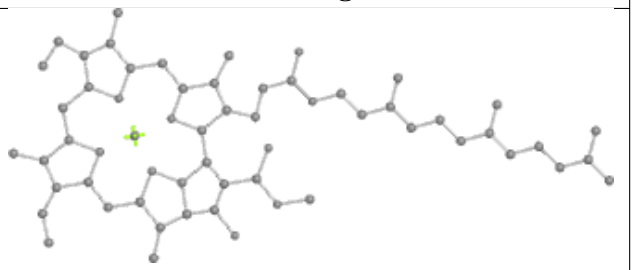

Rings

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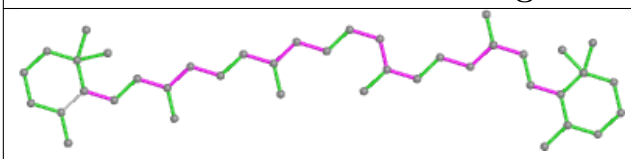

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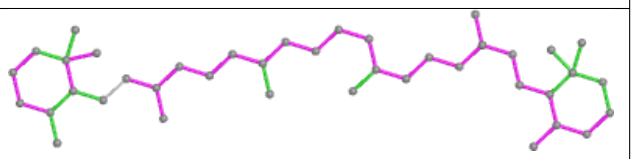

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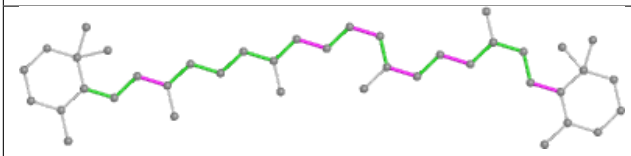

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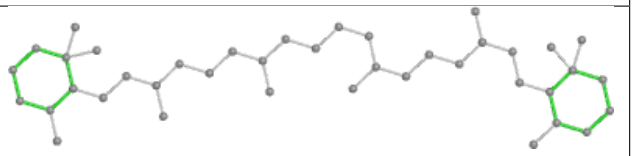

Rings

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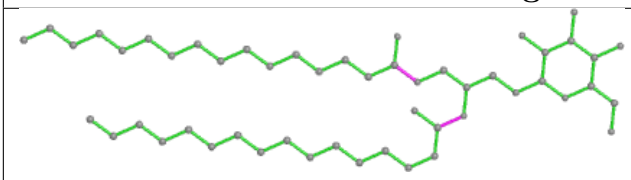

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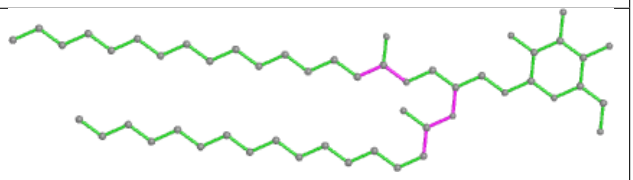

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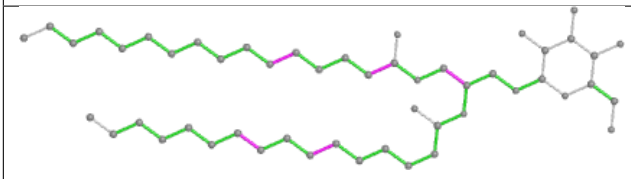

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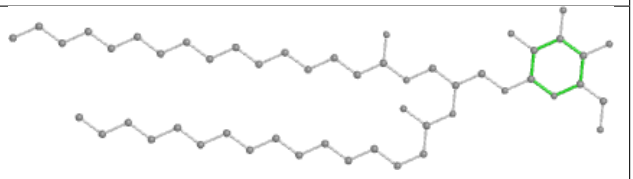
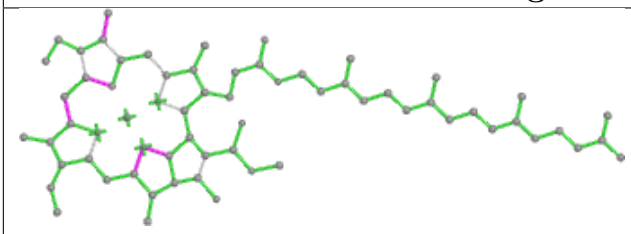


Rings

Ligand CLA d 400



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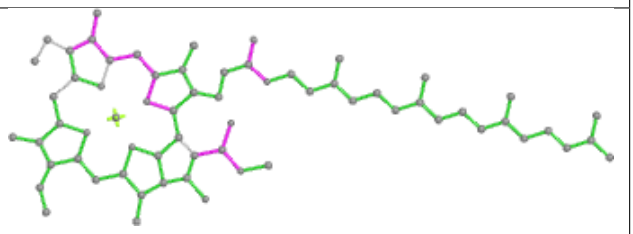

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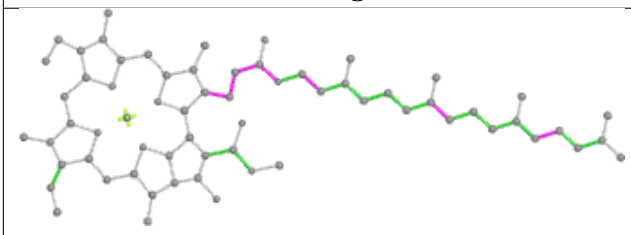

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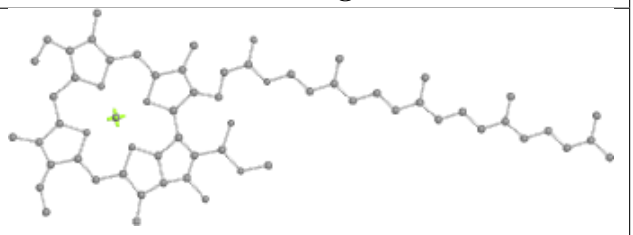

Rings

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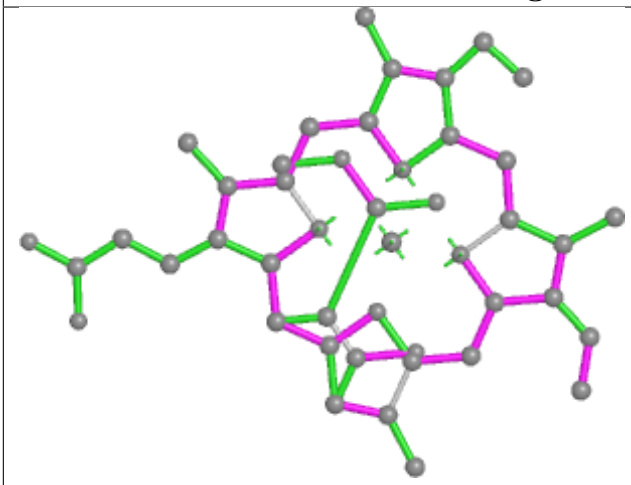

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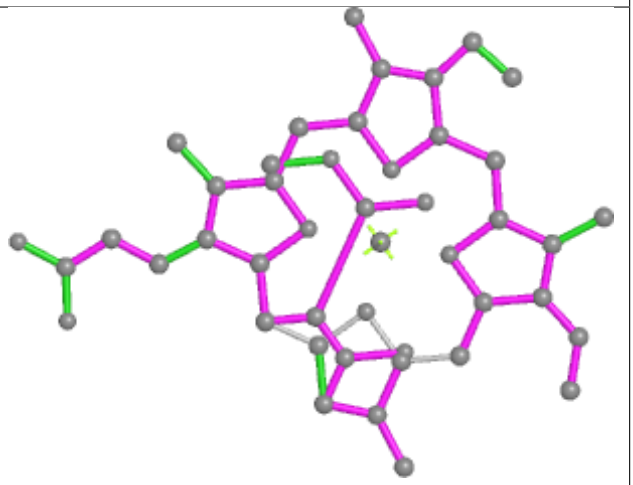

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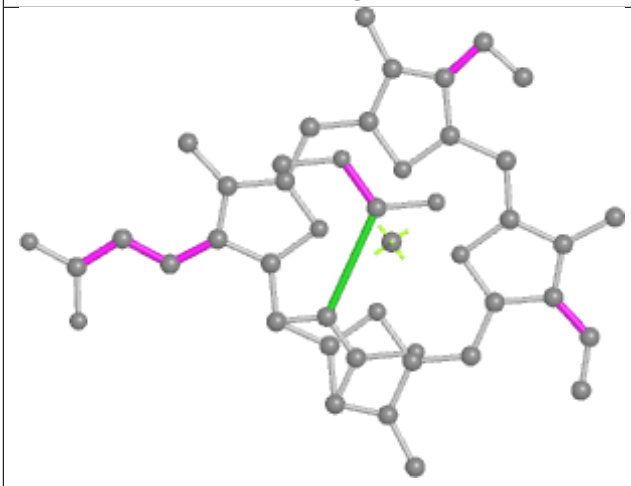

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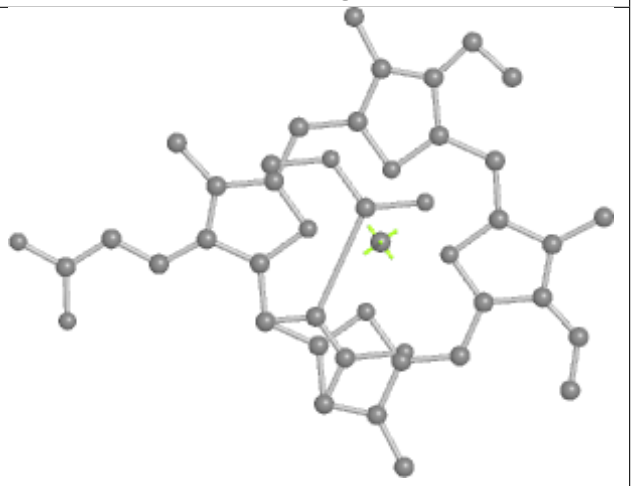

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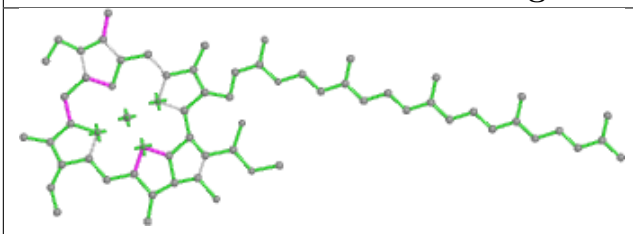

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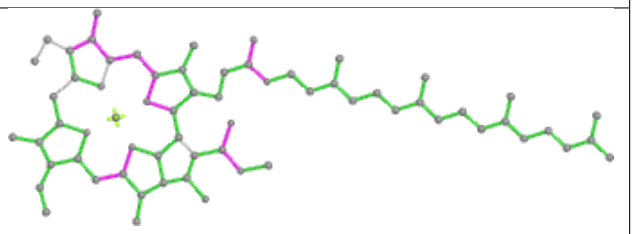

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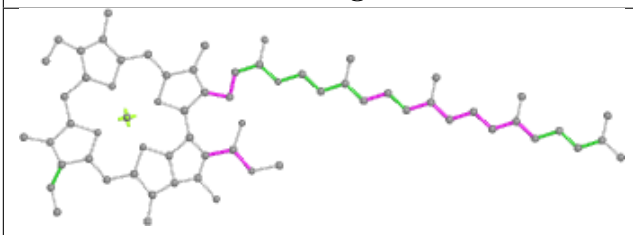

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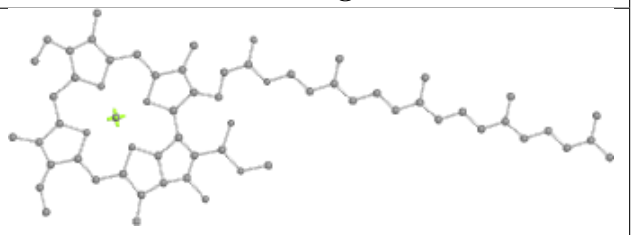

Rings

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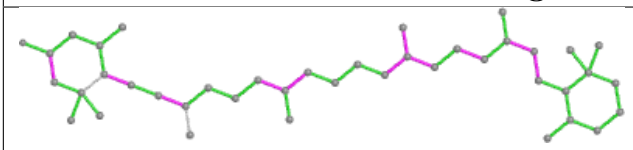

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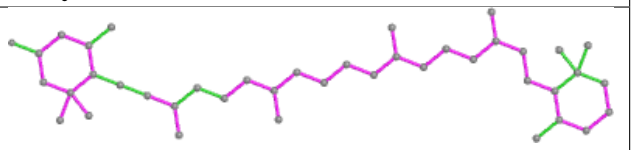

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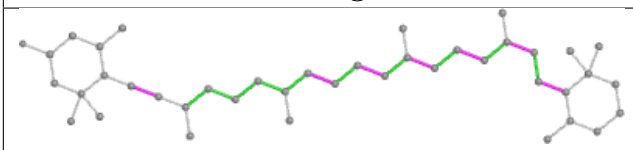

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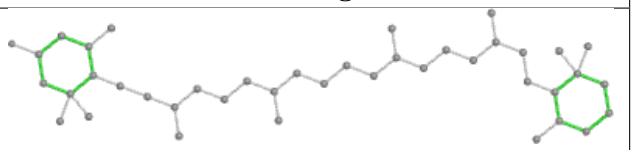

Rings

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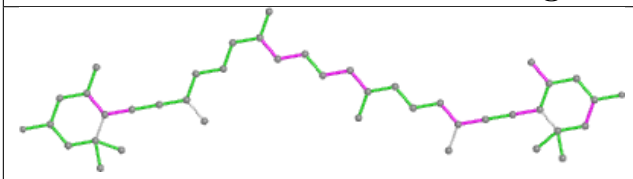

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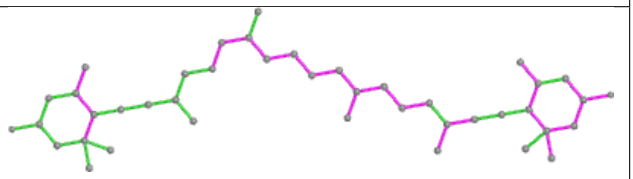

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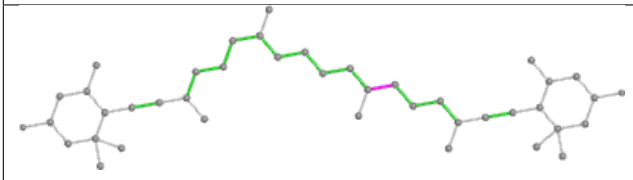

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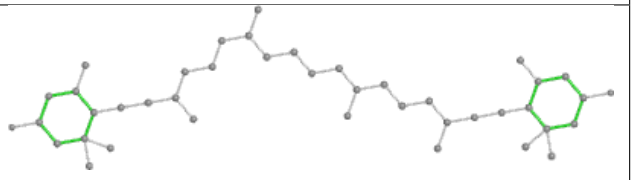

Rings

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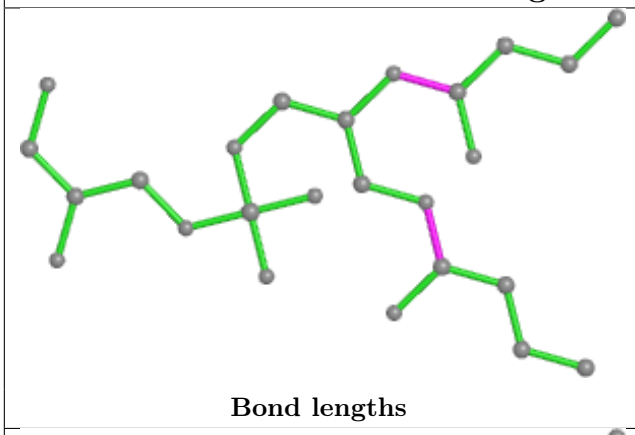

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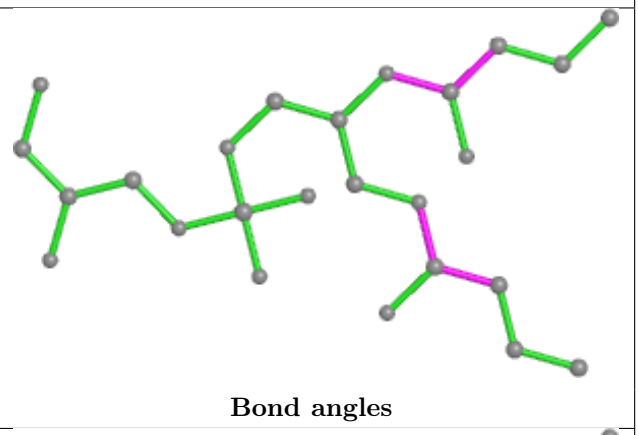

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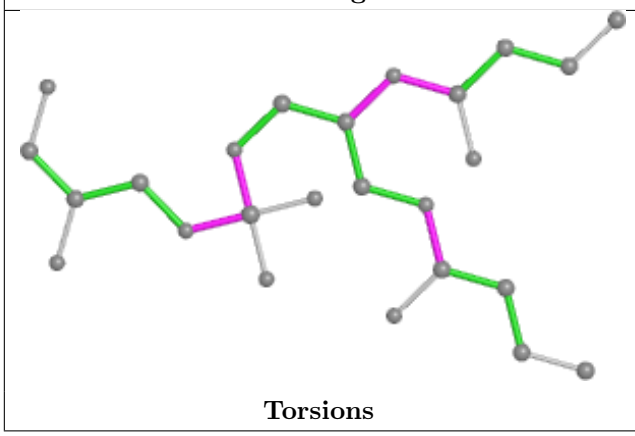

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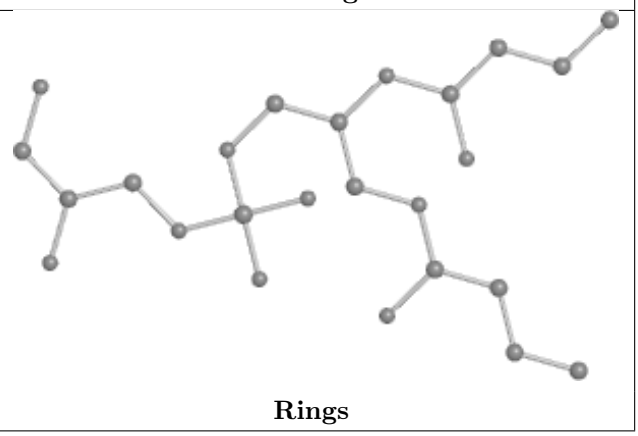
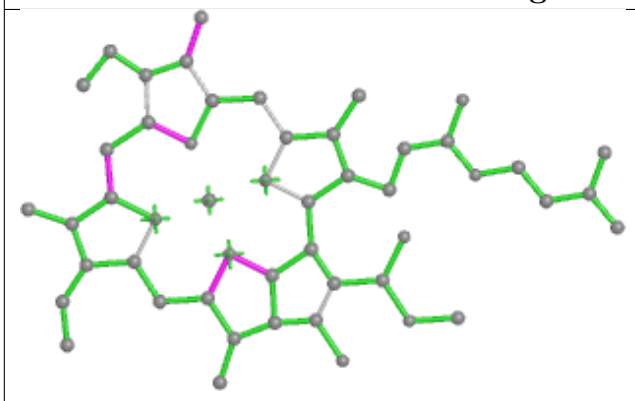


Rings

Ligand CLA 1 606



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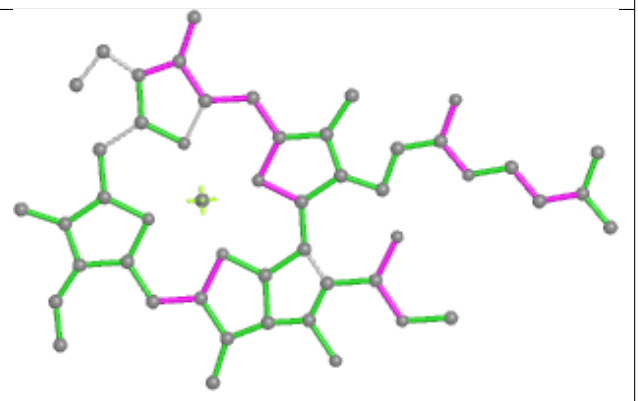

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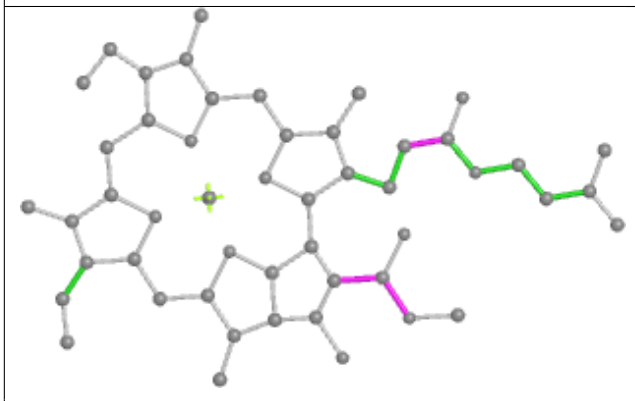

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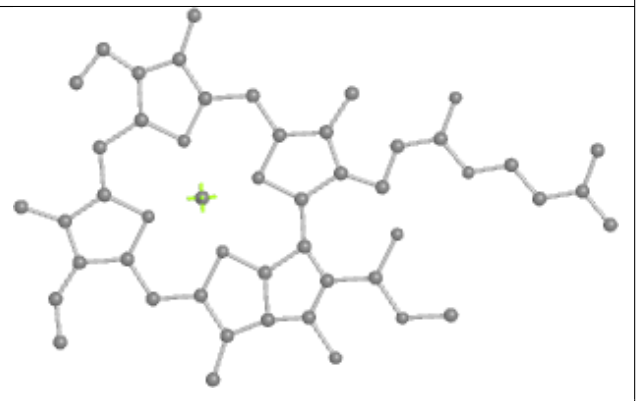
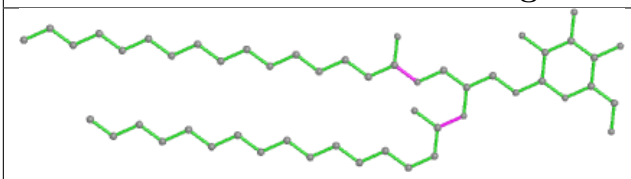


Rings

Ligand LMG B 620



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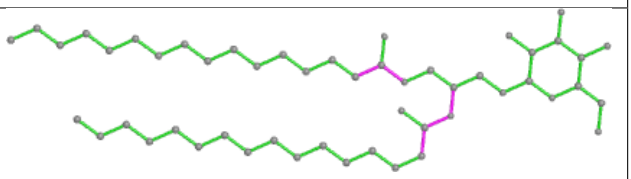

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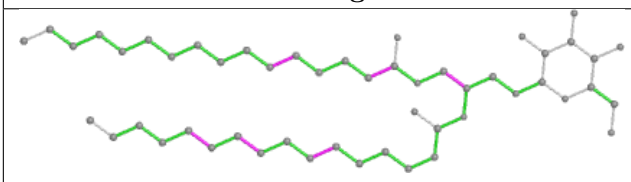

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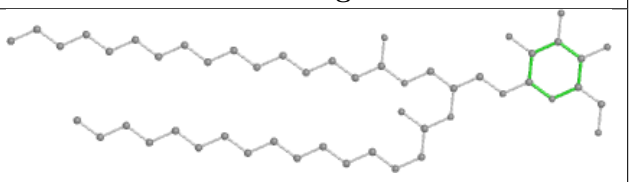
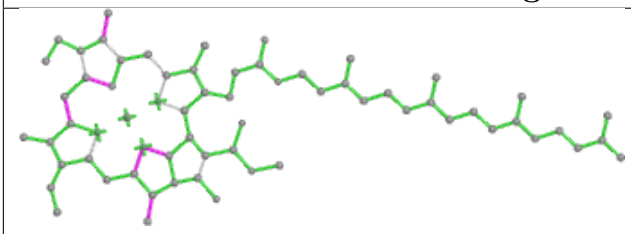
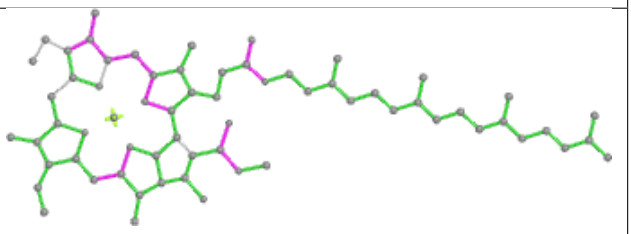


Rings

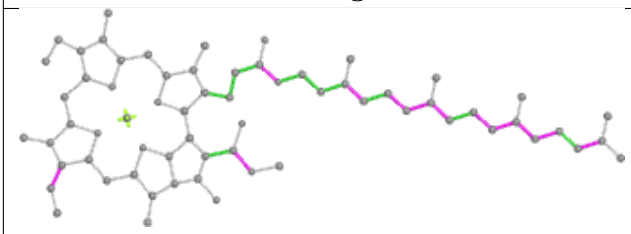
Ligand CLA G 301



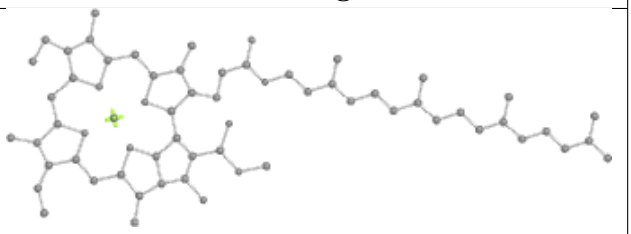
Bond lengths



Bond angles

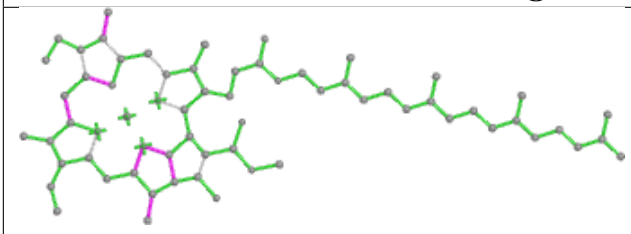


Torsions



Rings

Ligand CLA b 612



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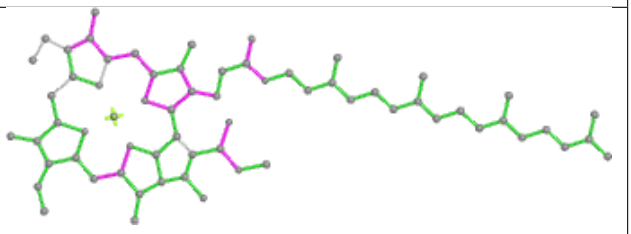

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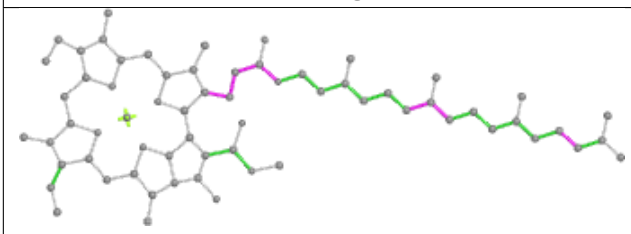

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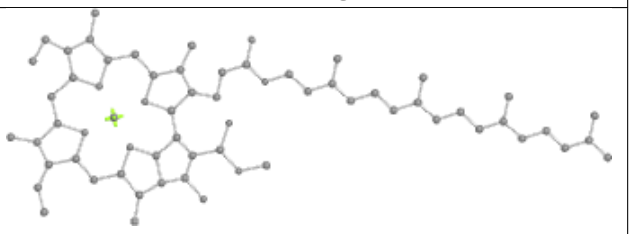
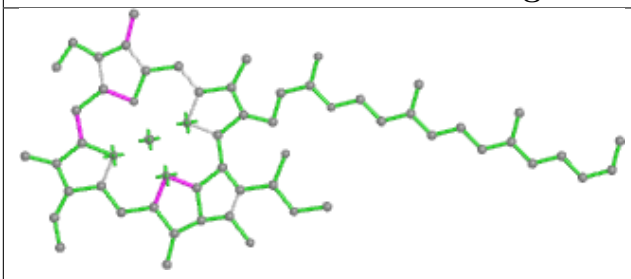
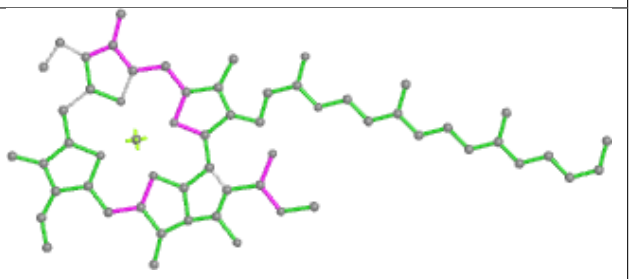
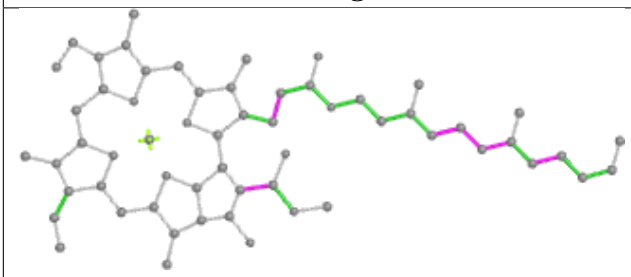
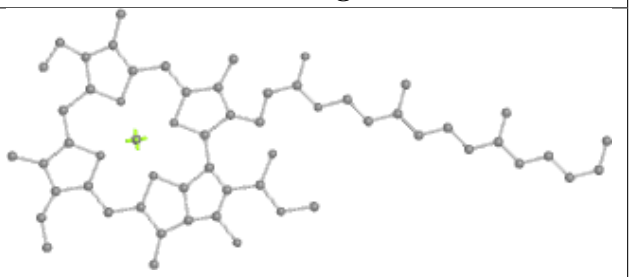
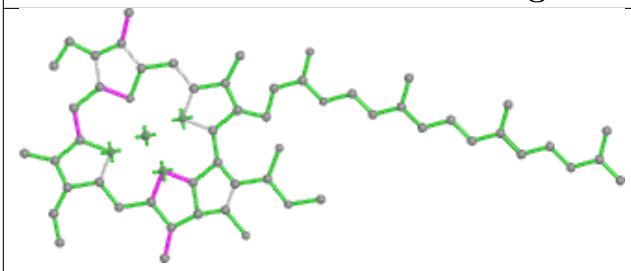
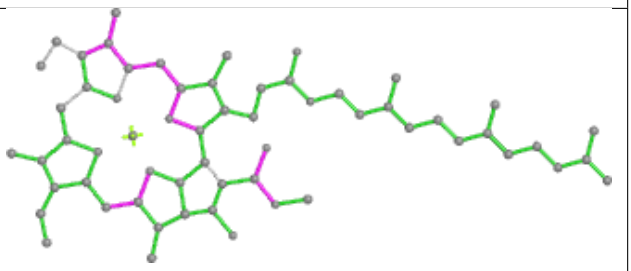
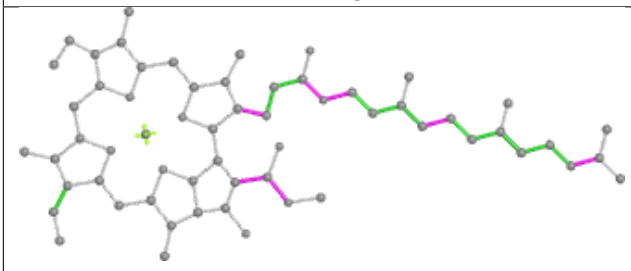
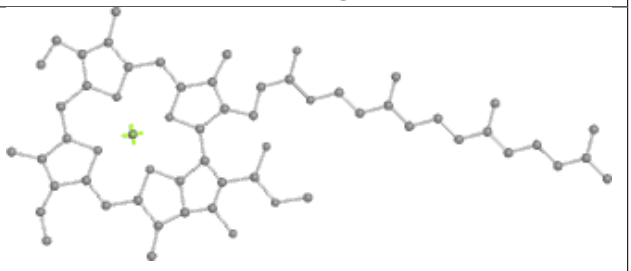
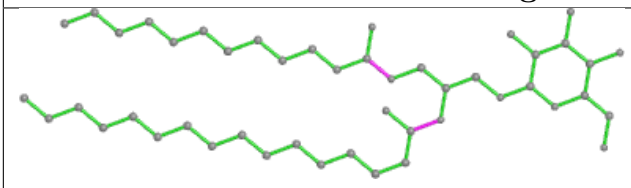


Rings

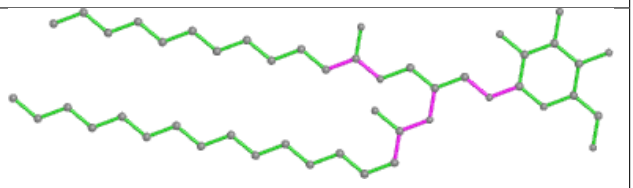
Ligand CLA N 604	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA a 406	
 Bond lengths	 Bond angles
 Torsions	 Rings

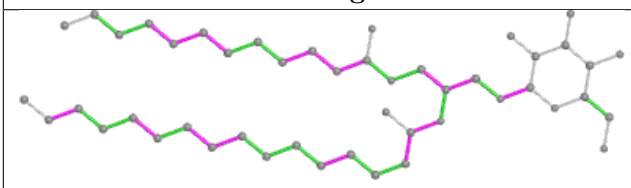
Ligand LMG C 536



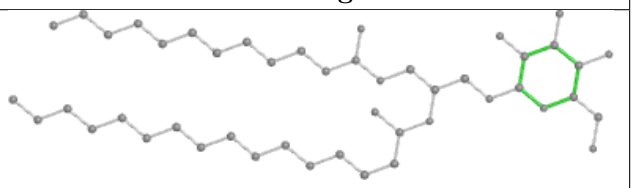
Bond lengths



Bond angles

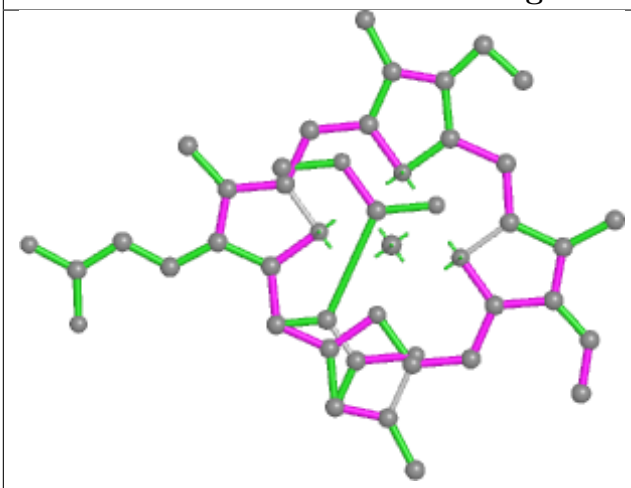


Torsions



Rings

Ligand KC2 O 612



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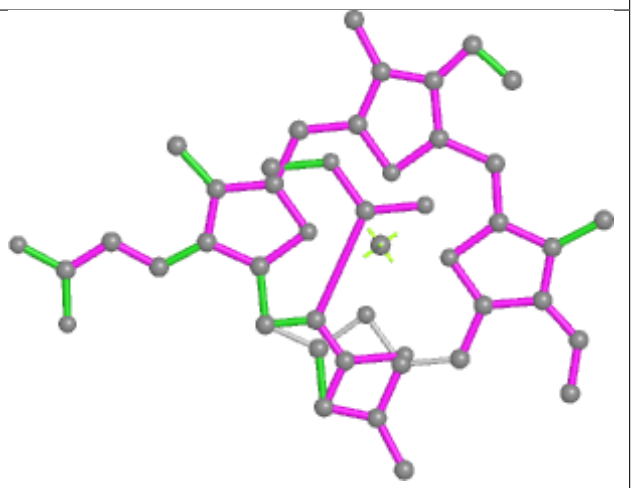
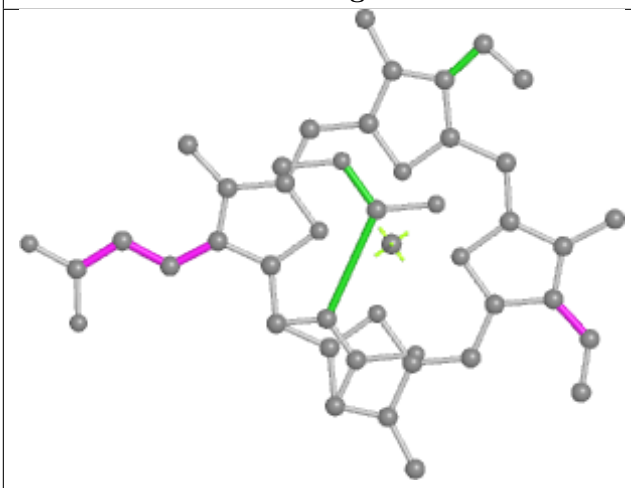


Bond angles



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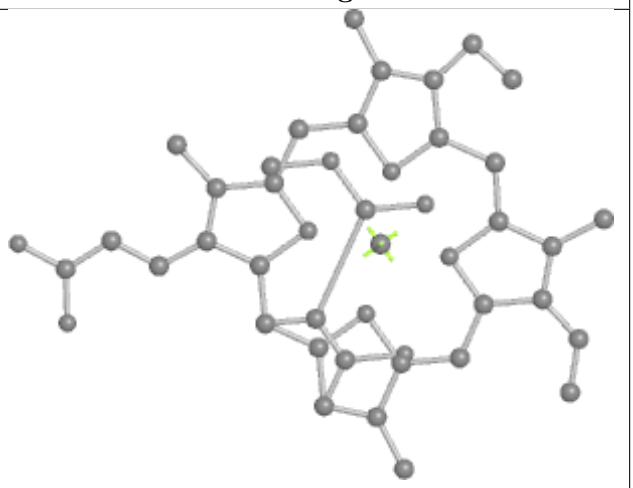
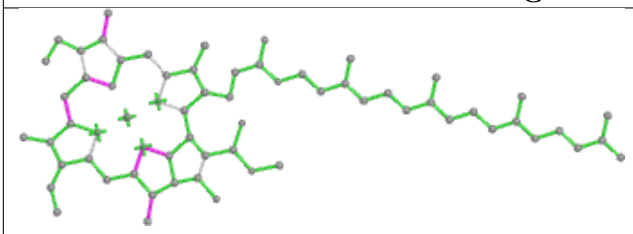
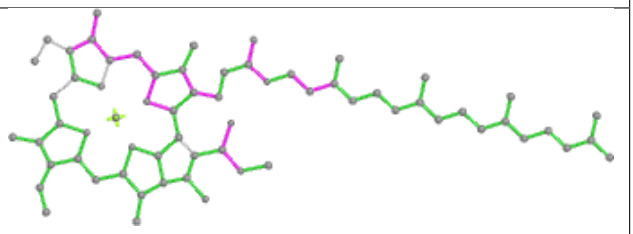


Rings

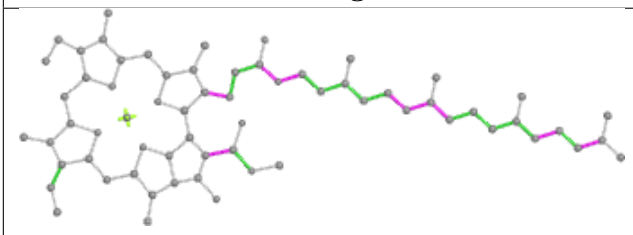
Ligand CLA P 603



Bond lengths



Bond angles



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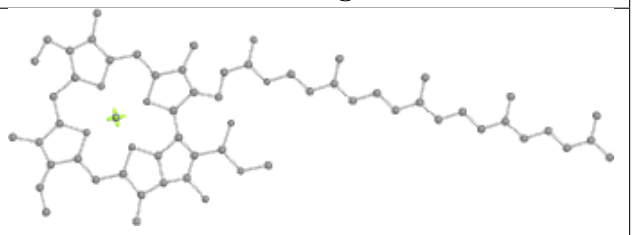
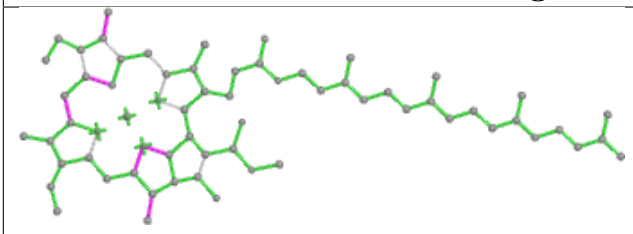


Rings

Ligand CLA c 524



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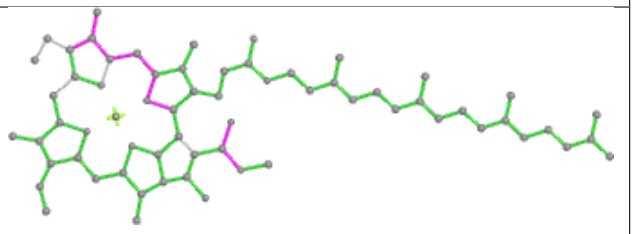
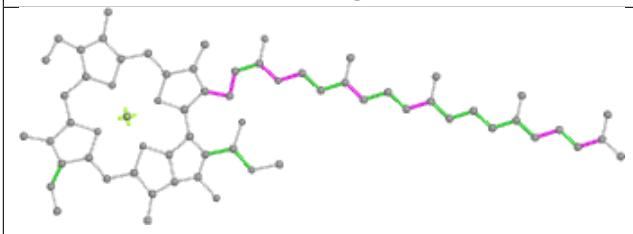


Bond angles



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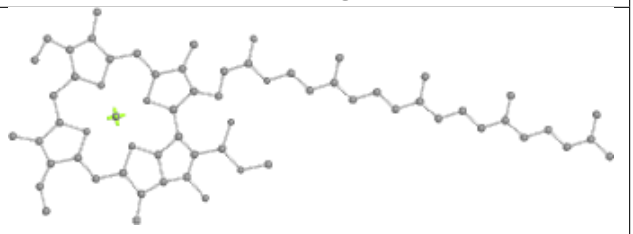
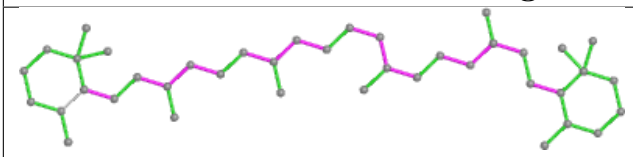


Rings

Ligand WVN 3 620



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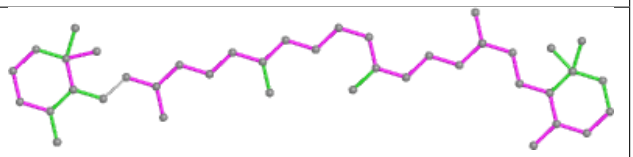
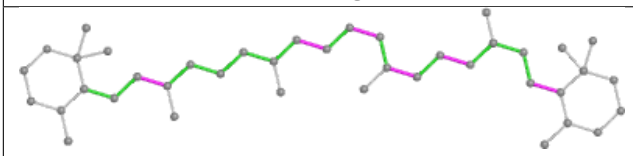


Bond angles



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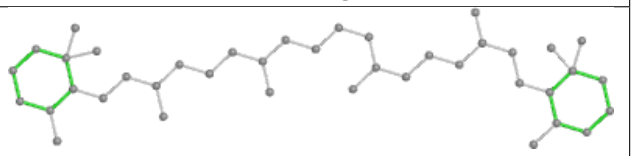
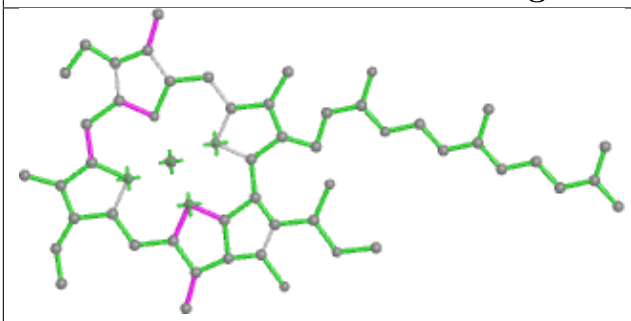


Rings

Ligand CLA 6 609



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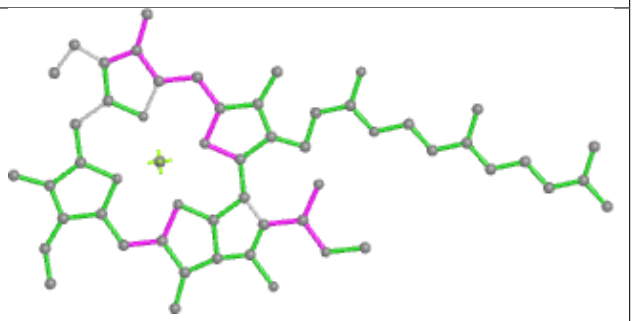

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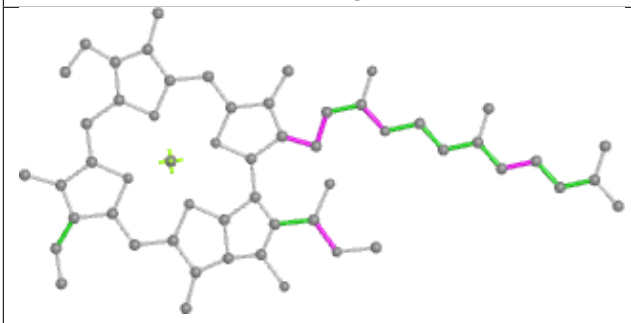

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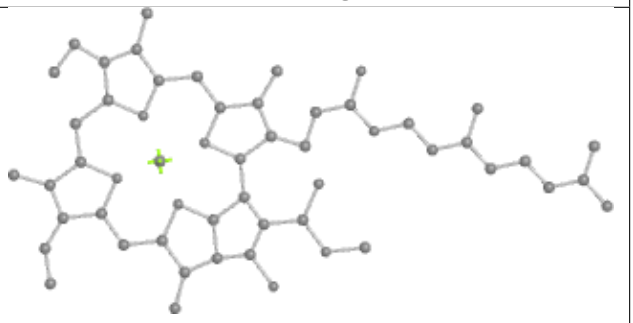
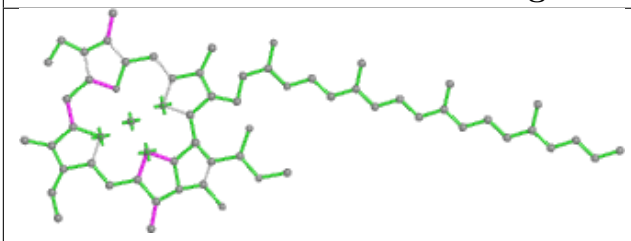


Rings

Ligand CLA 3 604



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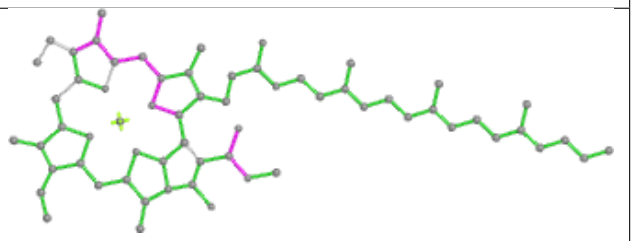
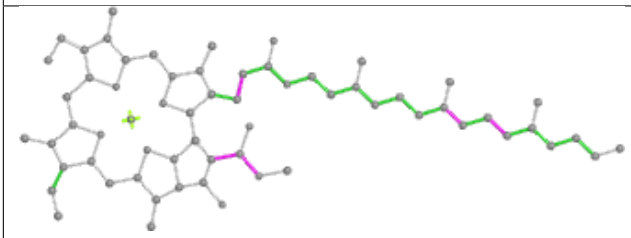


Bond angles



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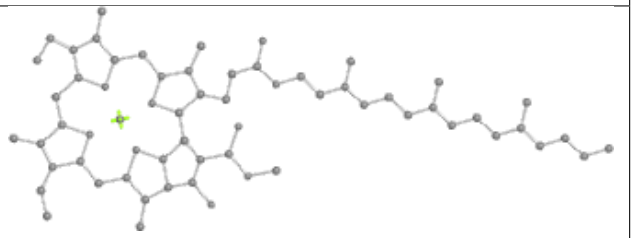
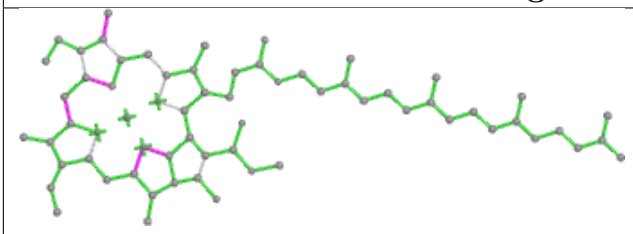


Rings

Ligand CLA b 606



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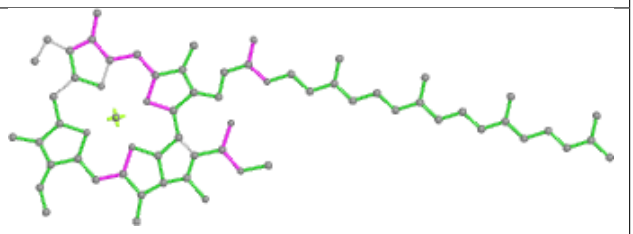
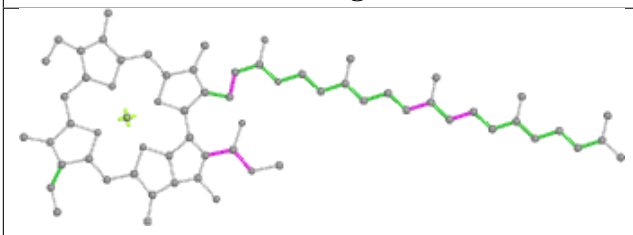


Bond angles



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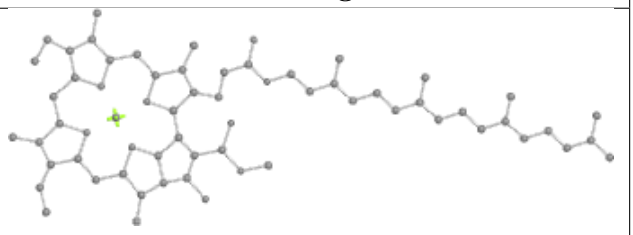

Rings

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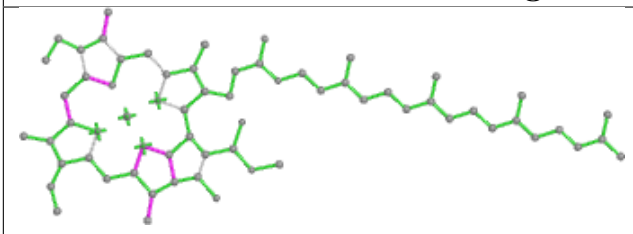

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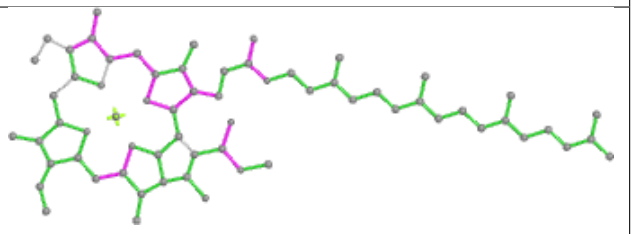
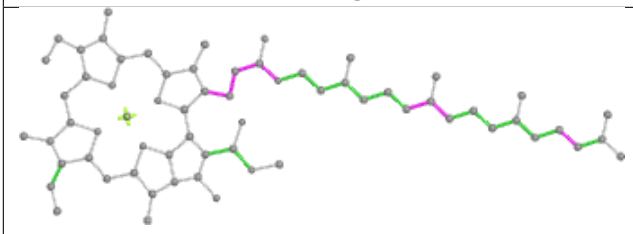


Bond angles



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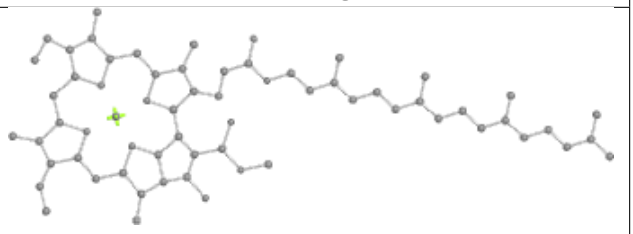
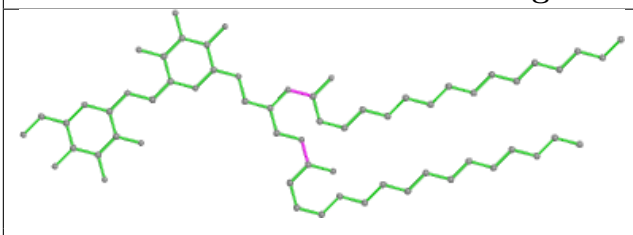


Rings

Ligand DGD h 90



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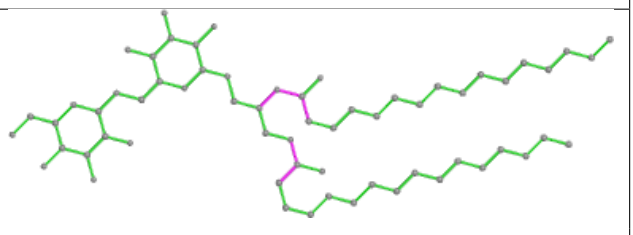
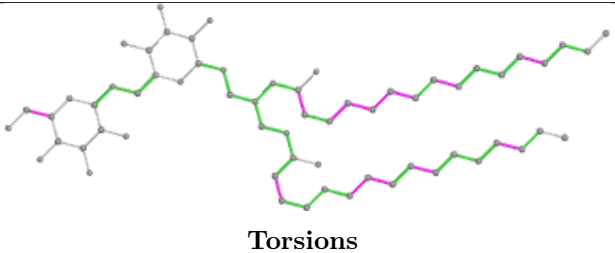
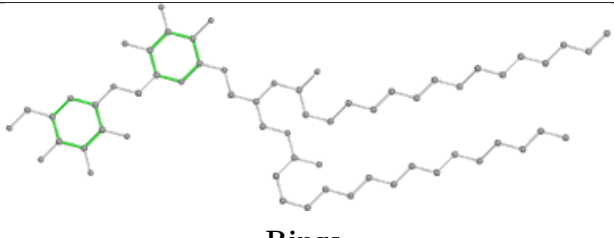


Bond angles

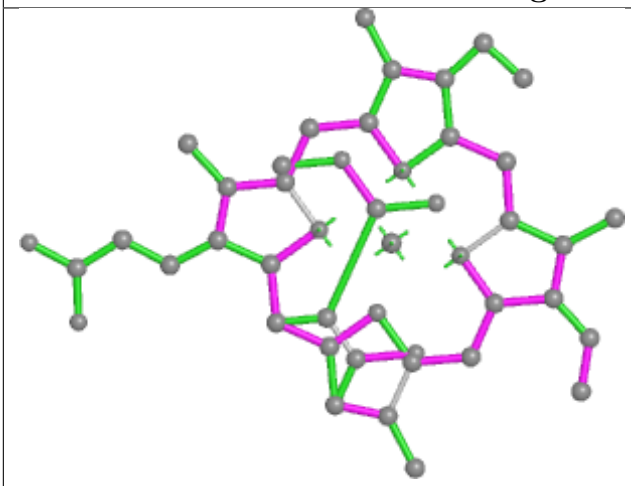


Torsions



Rings

Ligand KC2 4 605



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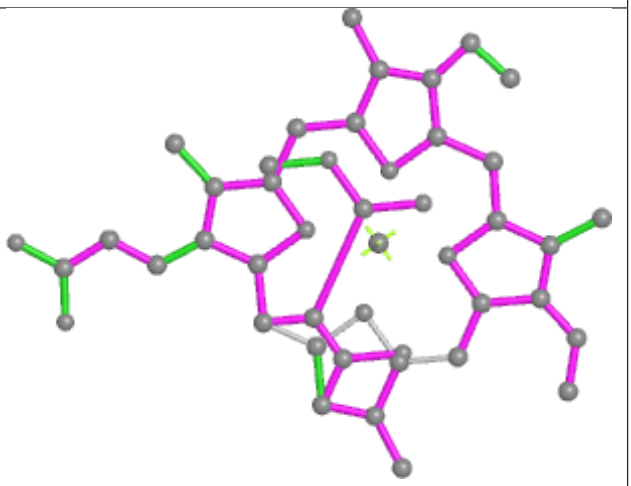

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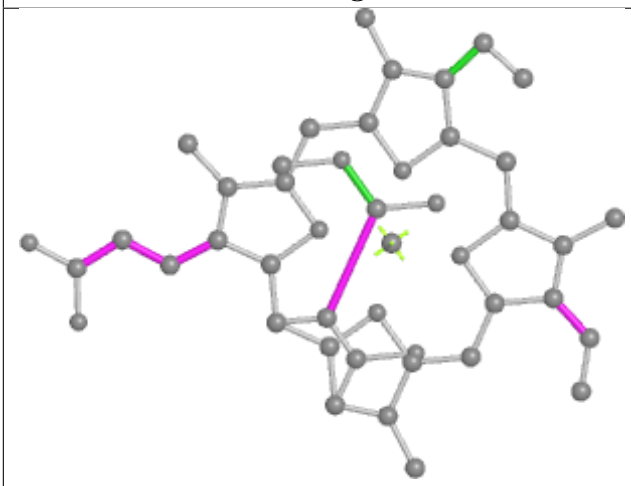

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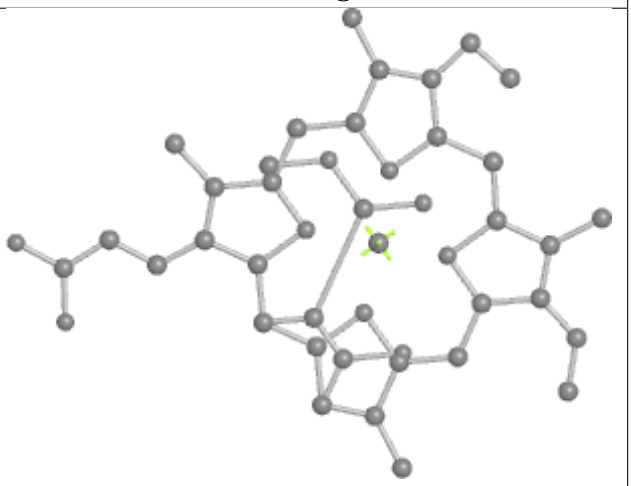
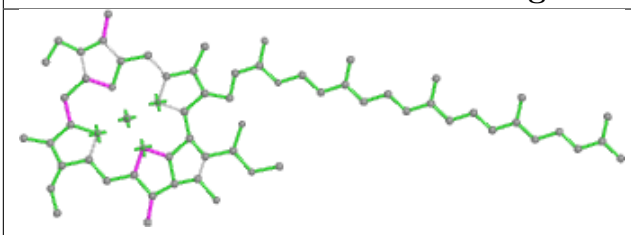


Rings

Ligand CLA 5 611



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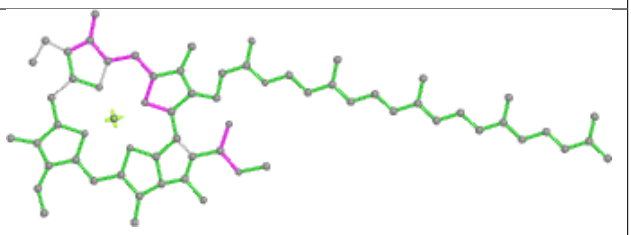

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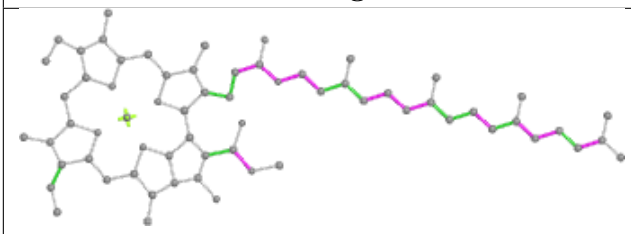

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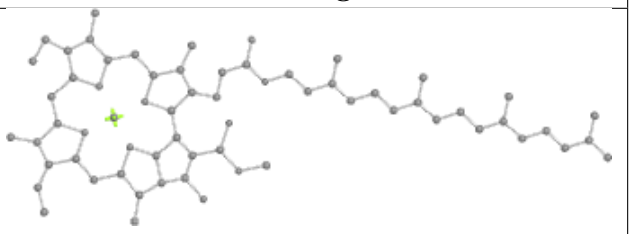
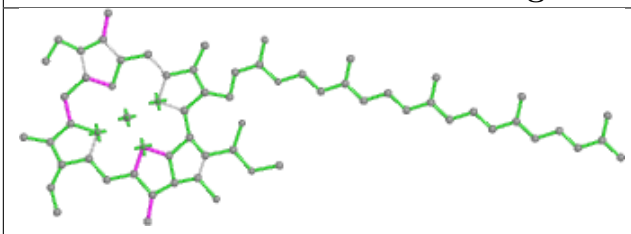


Rings

Ligand CLA d 403



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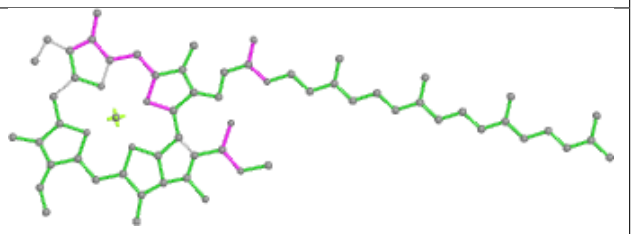

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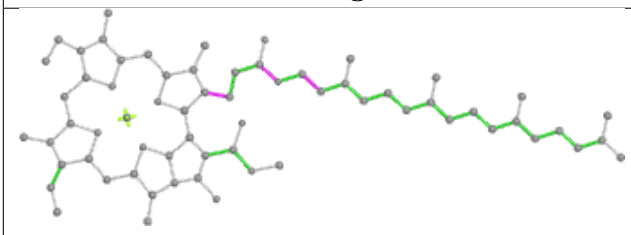

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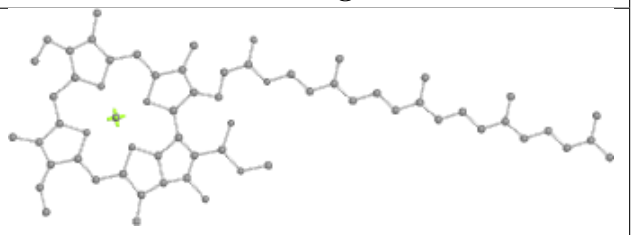

Rings

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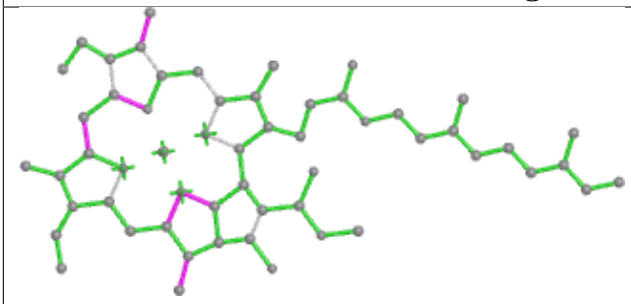

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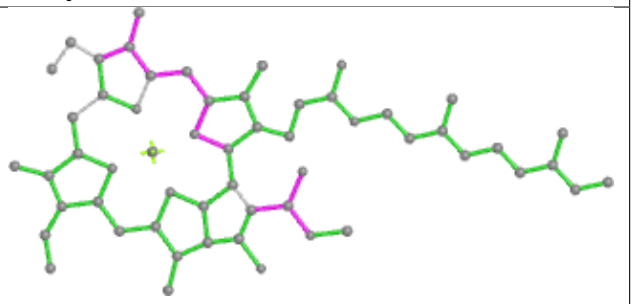

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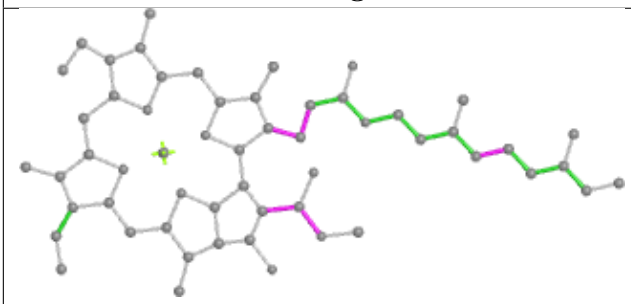

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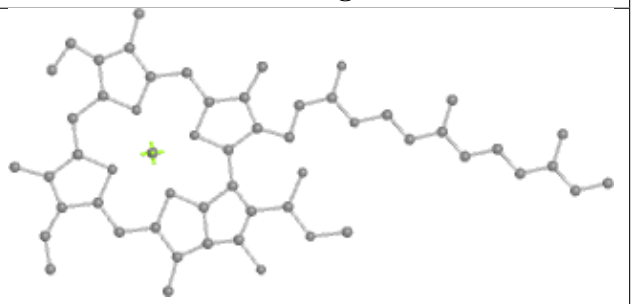
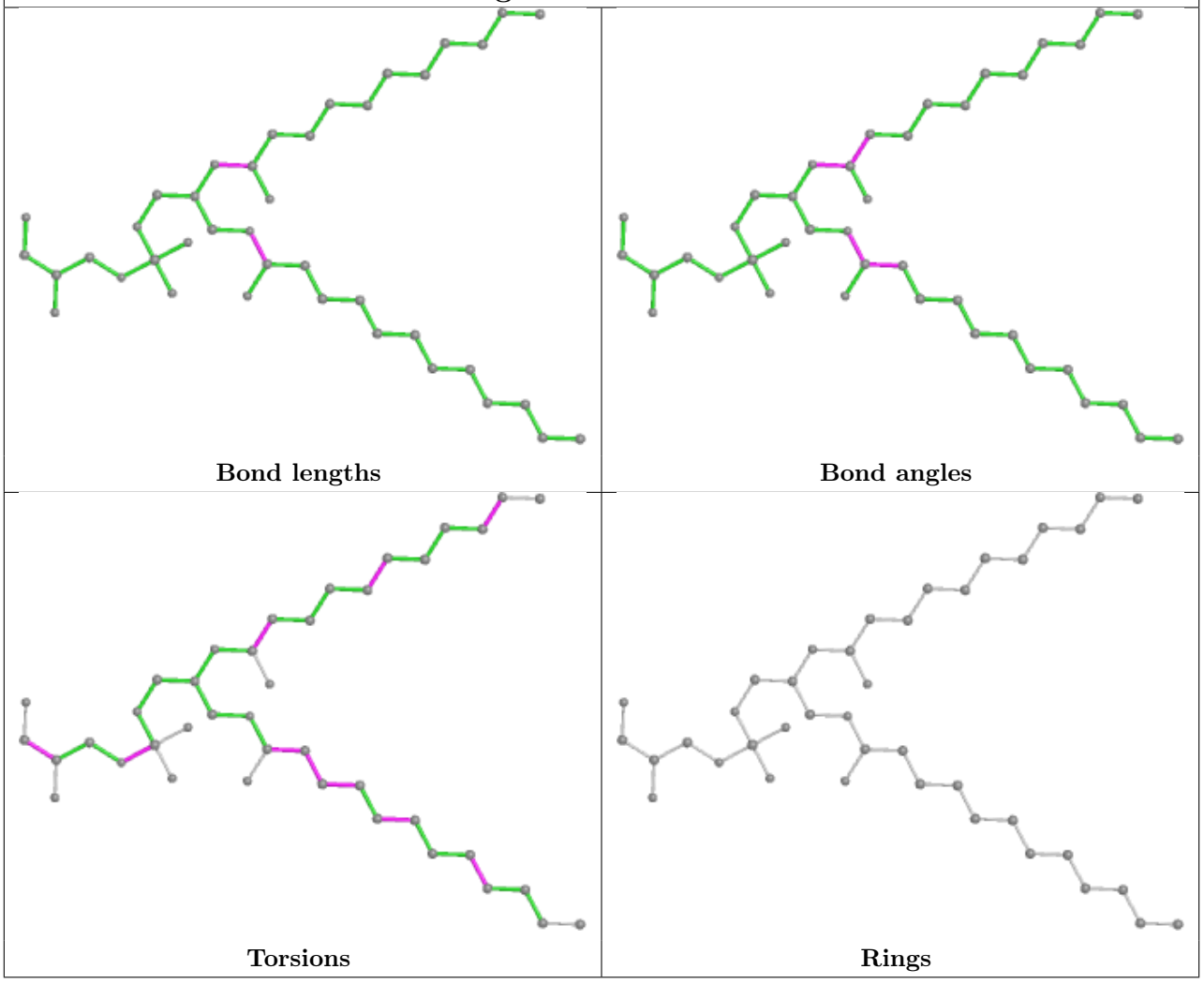


Rings

Ligand LHG c 535



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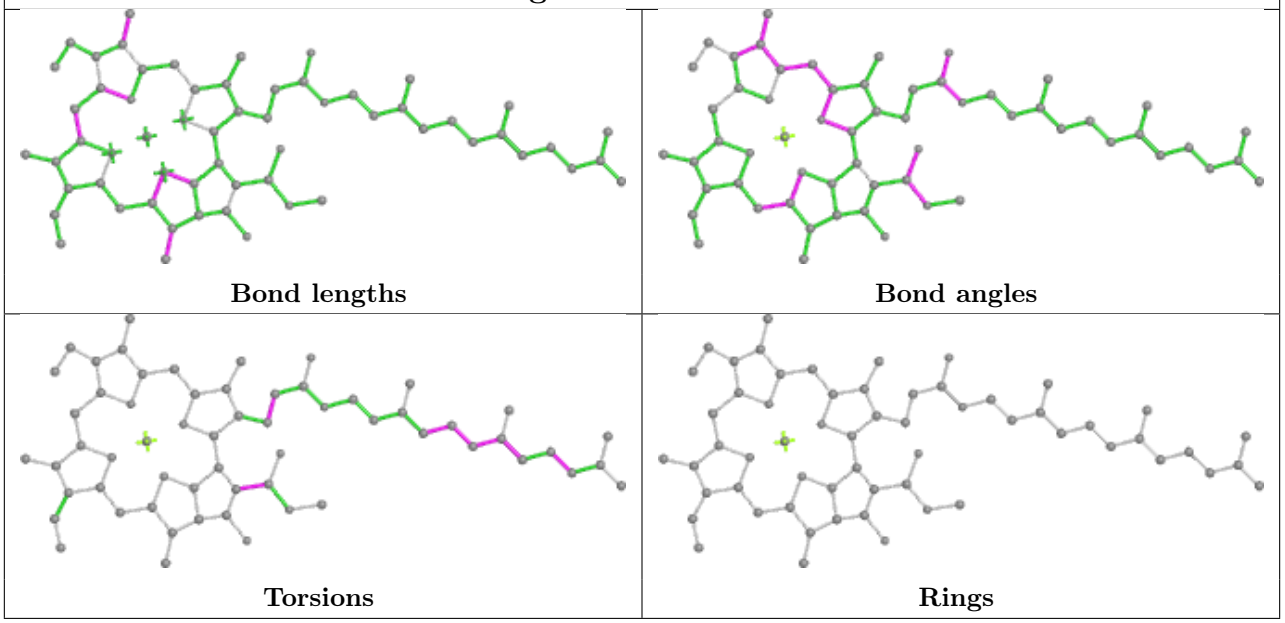

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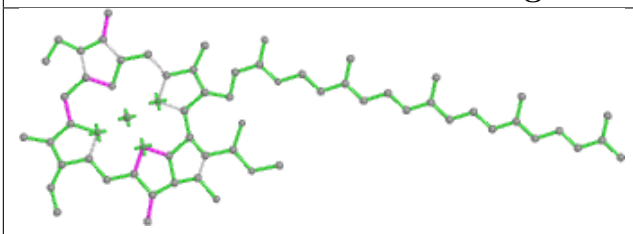

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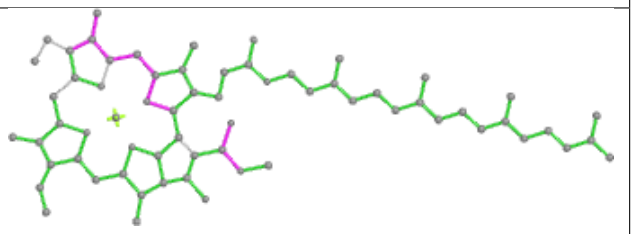
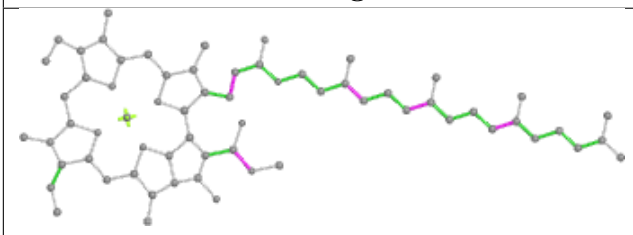


Bond angles



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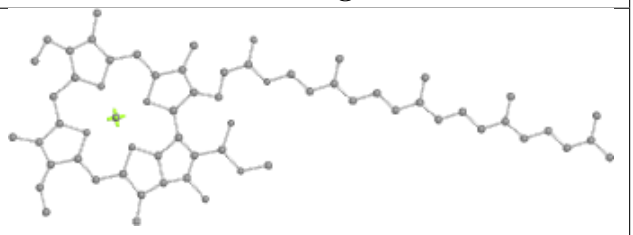
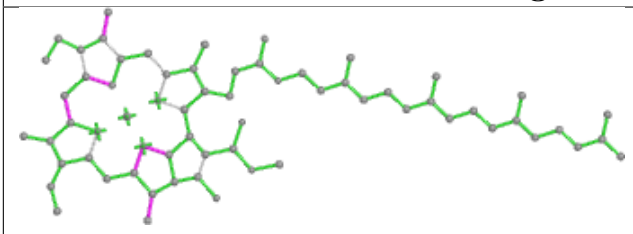


Rings

Ligand CLA c 527



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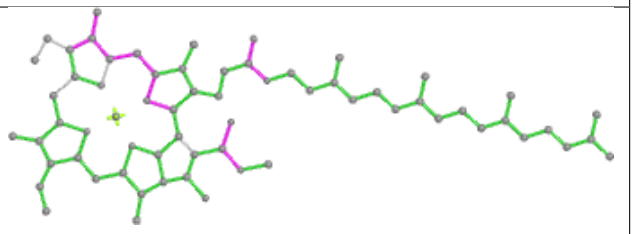

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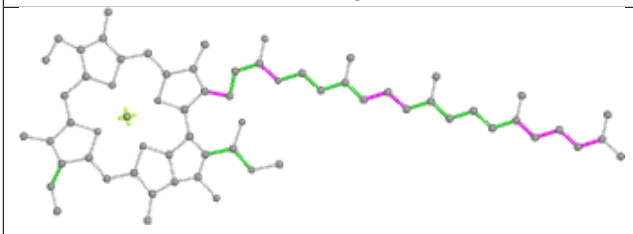

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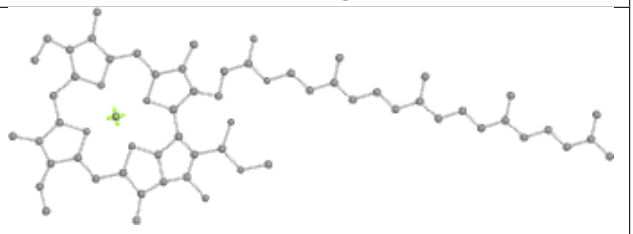
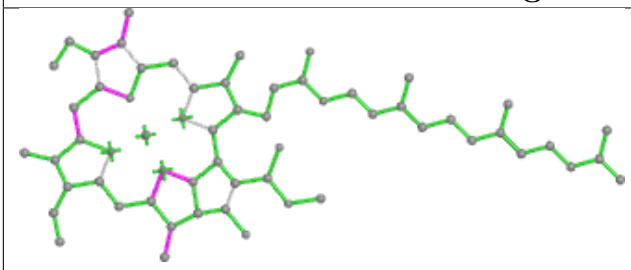


Rings

Ligand CLA O 607



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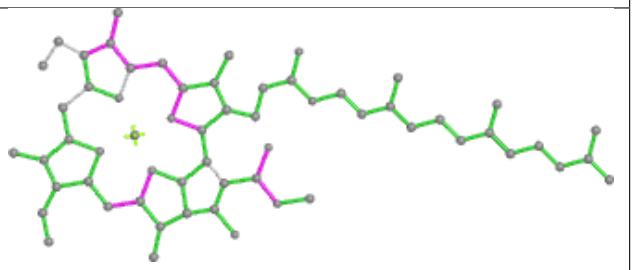

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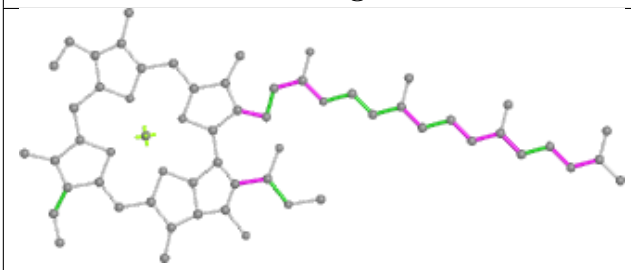

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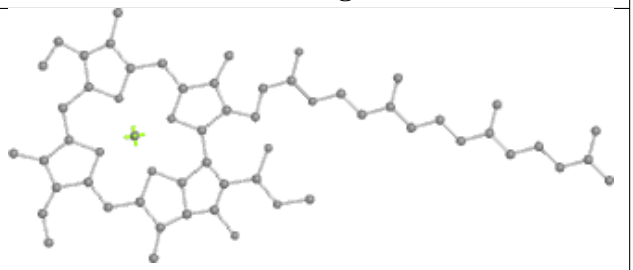
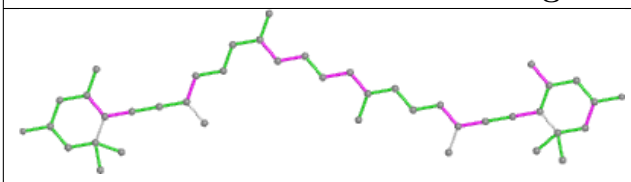


Rings

Ligand II0 6 619



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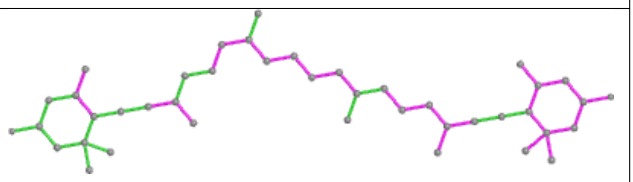
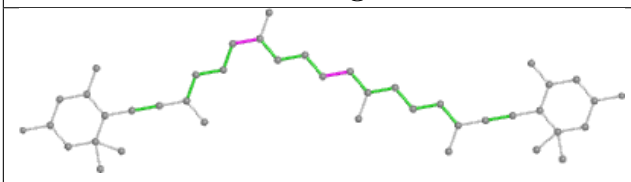


Bond angles



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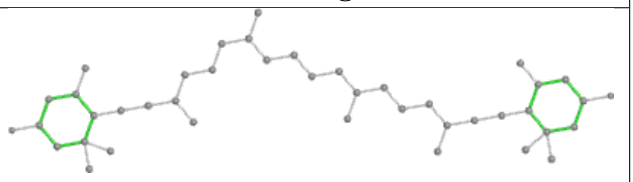
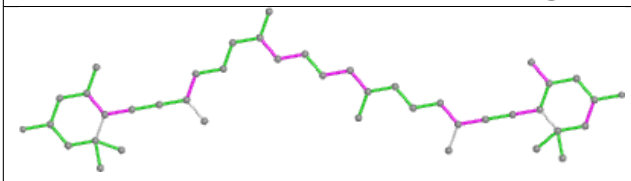


Rings

Ligand II0 6 617



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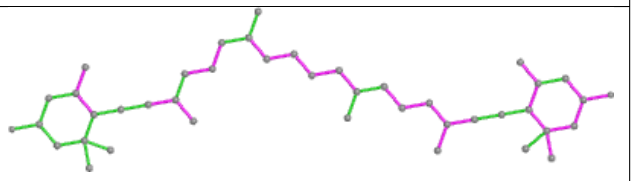

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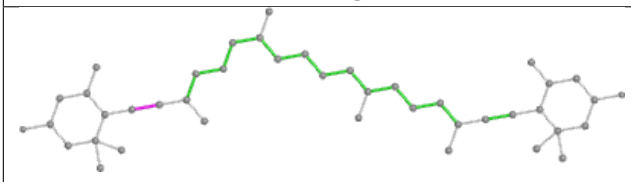

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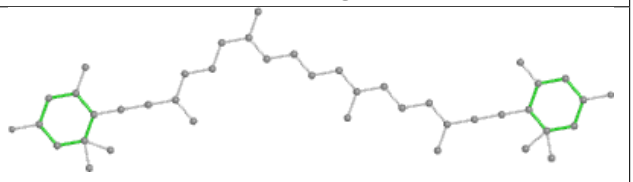
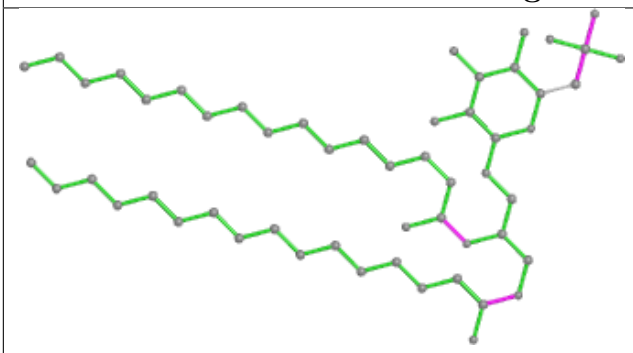


Rings

Ligand SQD A 408



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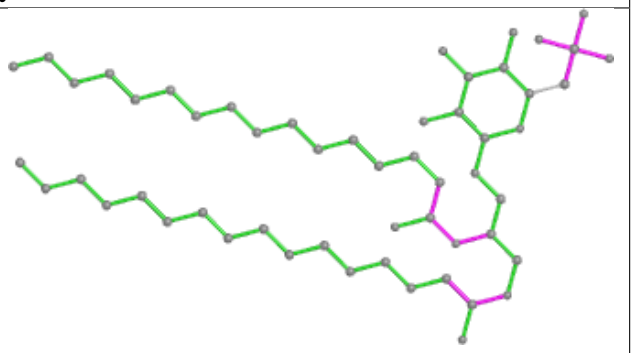

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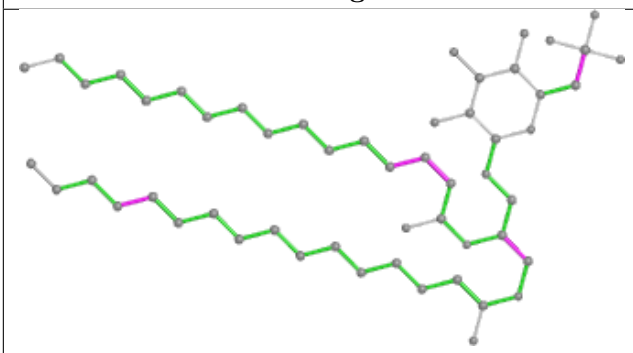

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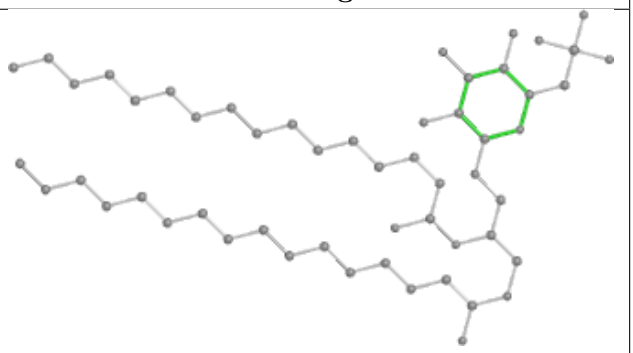

Rings

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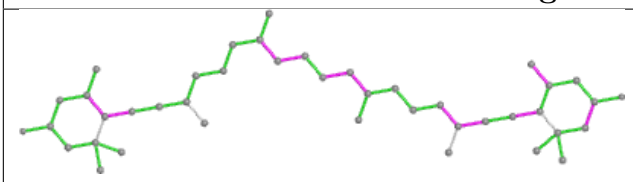

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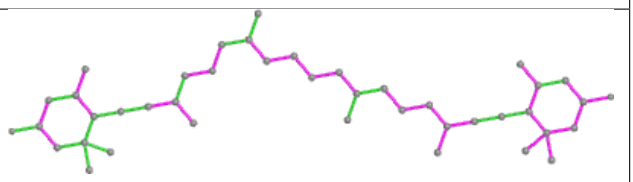

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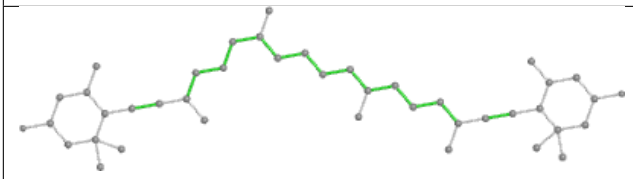

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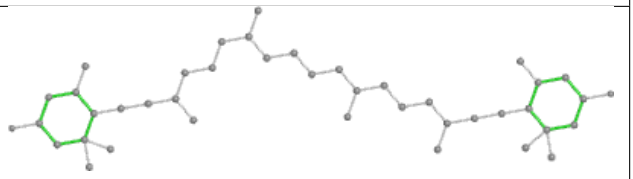
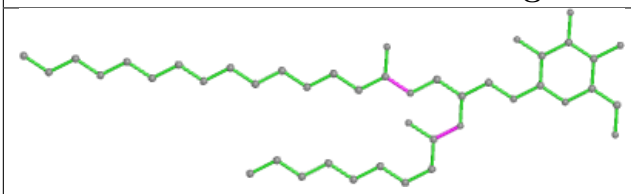


Rings

Ligand LMG 4 621



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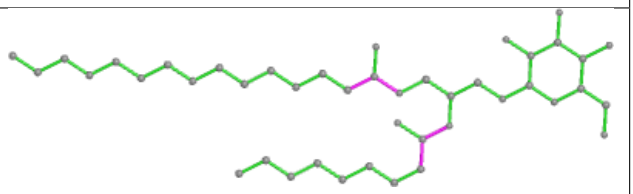
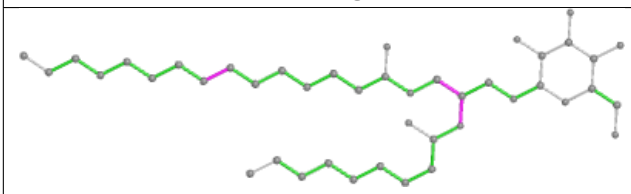


Bond angles



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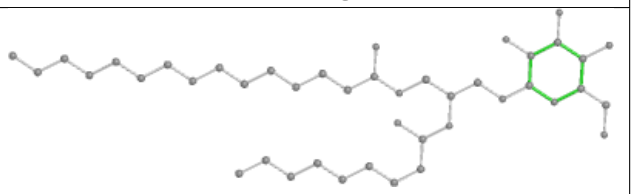
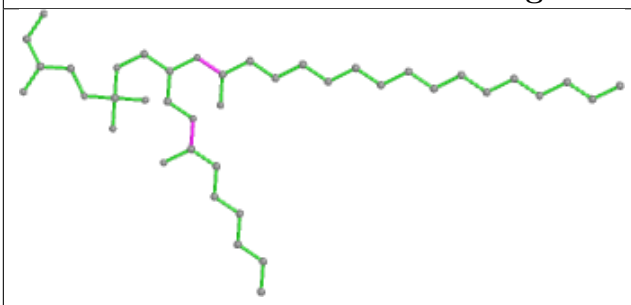


Rings

Ligand LHG S 621



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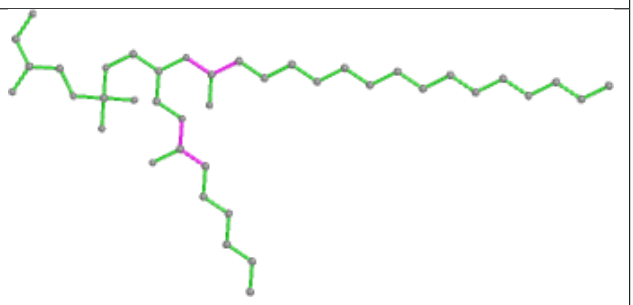
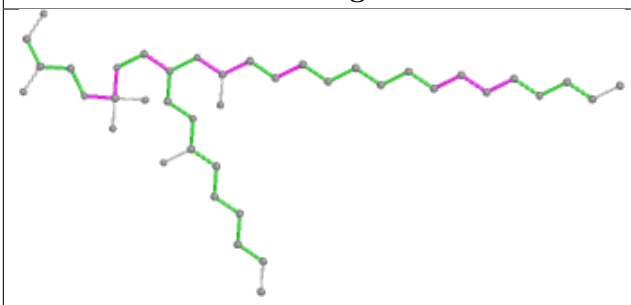
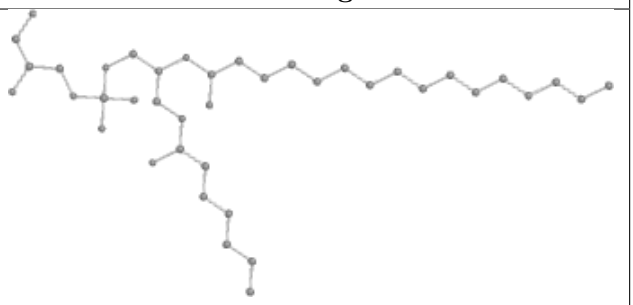


Bond angles

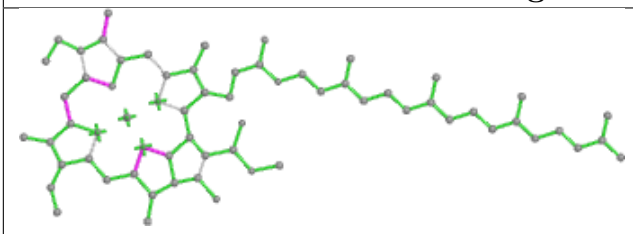


Torsions

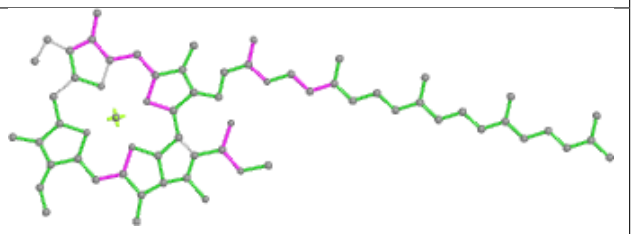


Rings

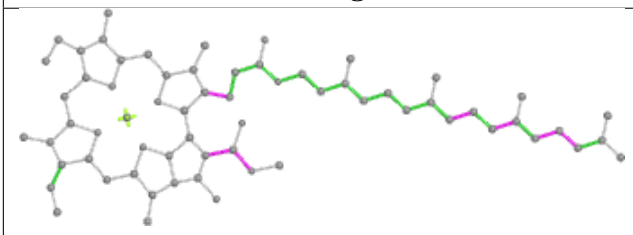
Ligand CLA b 611



Bond lengths



Bond angles



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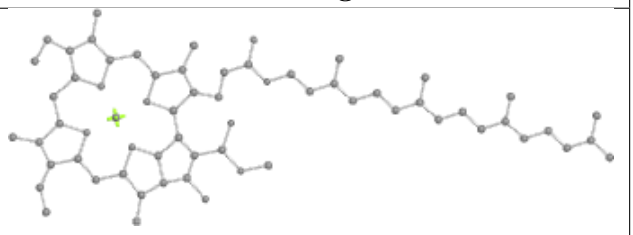

Rings

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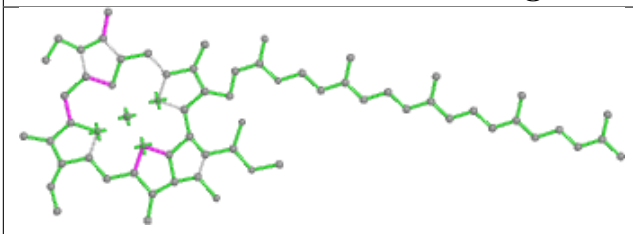

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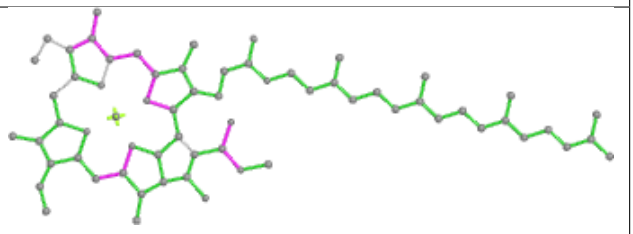

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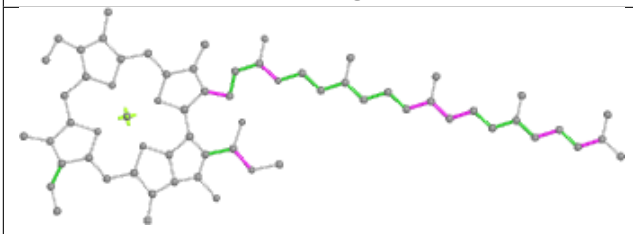

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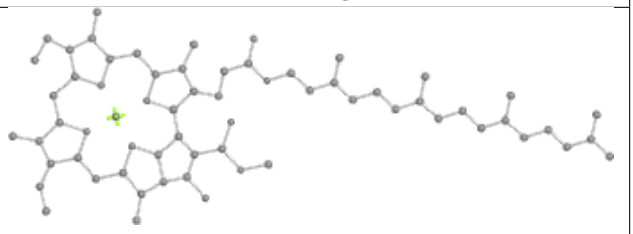
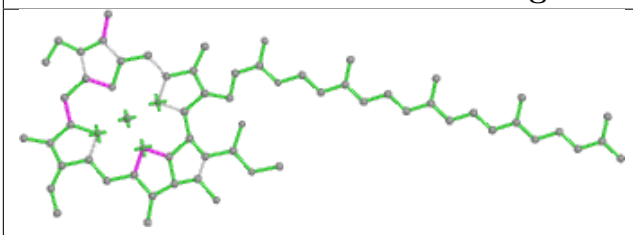


Rings

Ligand CLA c 521



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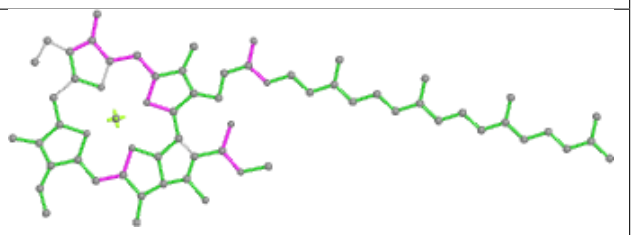
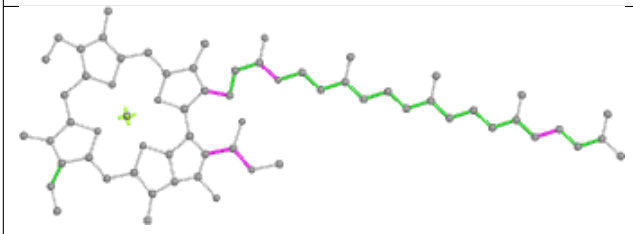


Bond angles



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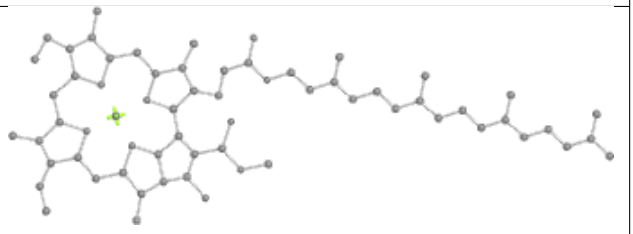
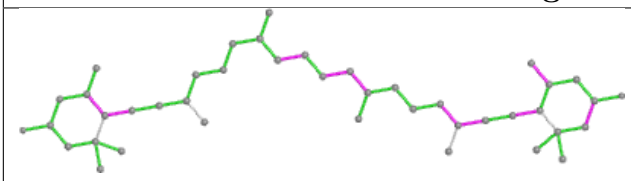


Rings

Ligand II0 1 619



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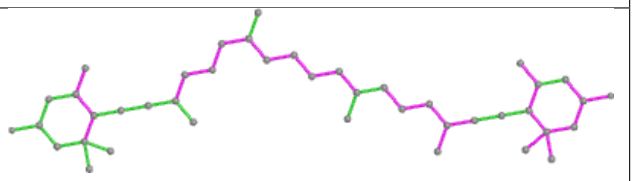
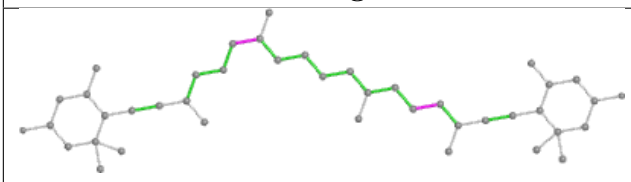


Bond angles



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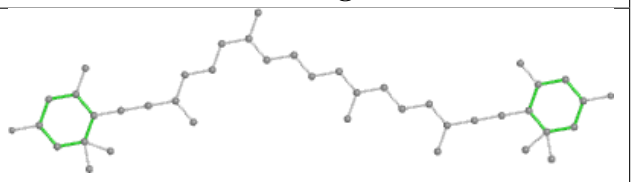
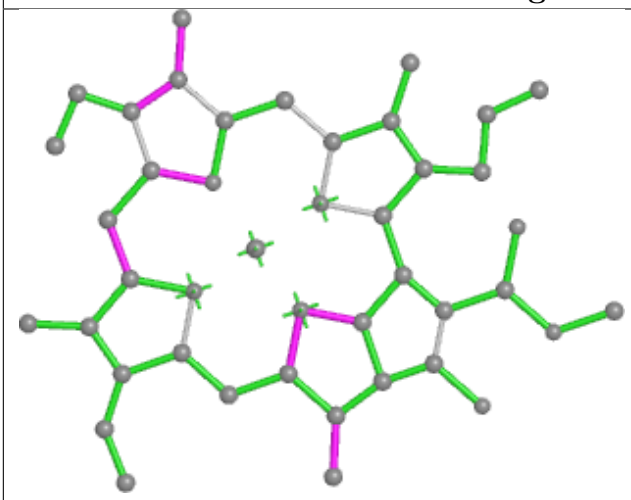


Rings

Ligand CLA 1 607



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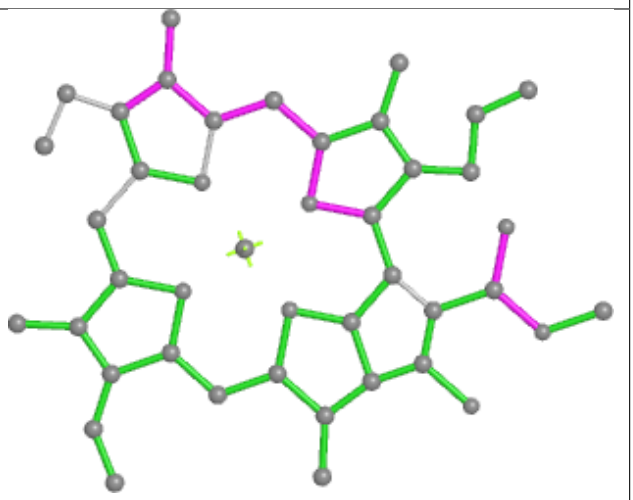

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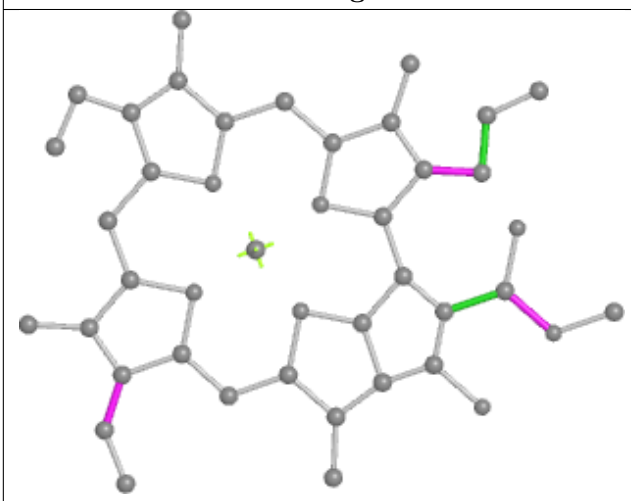

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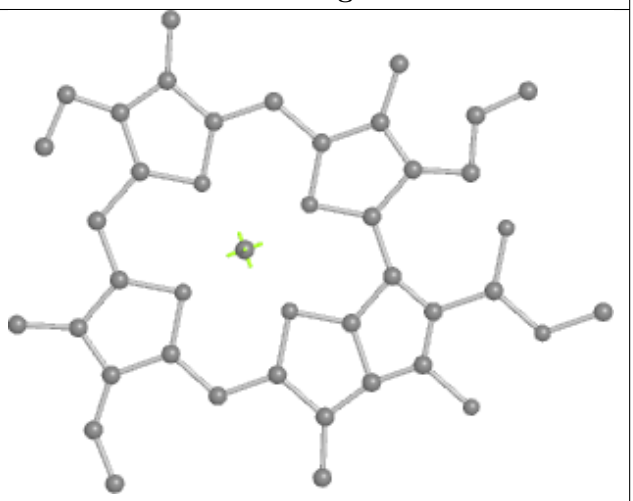
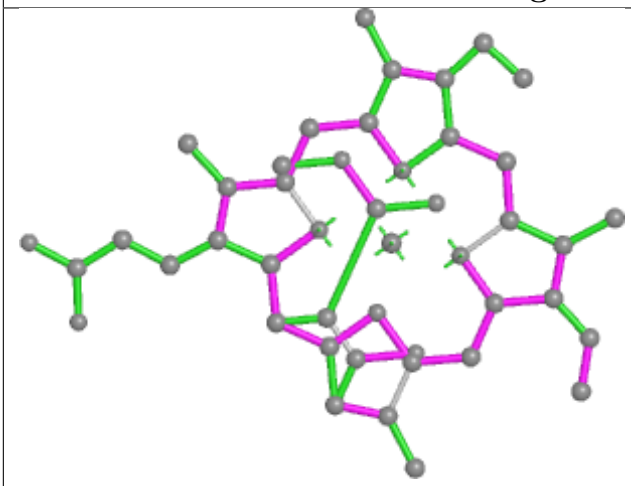


Rings

Ligand KC2 4 612



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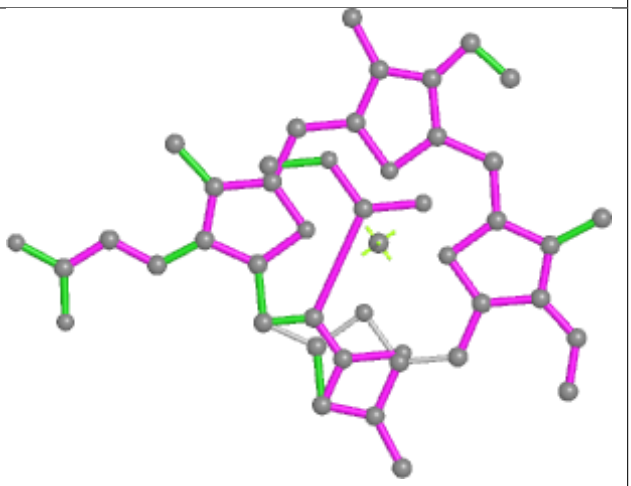
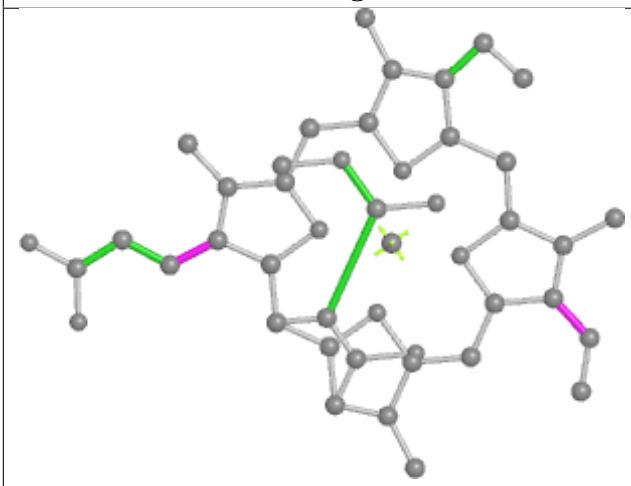


Bond angles



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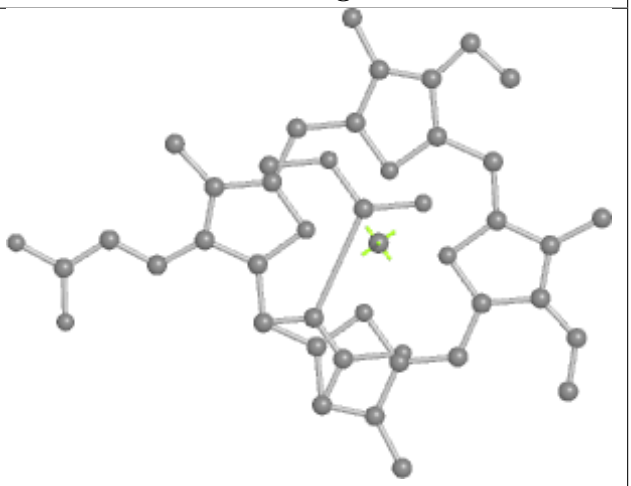
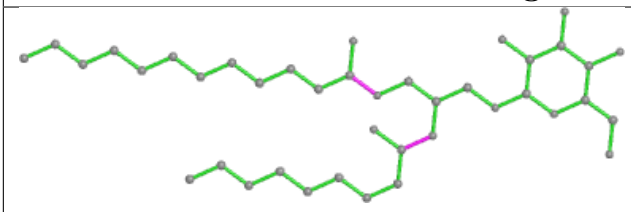


Rings

Ligand LMG d 402



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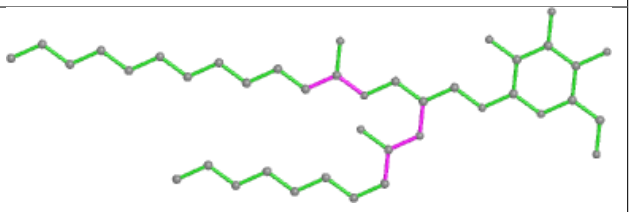

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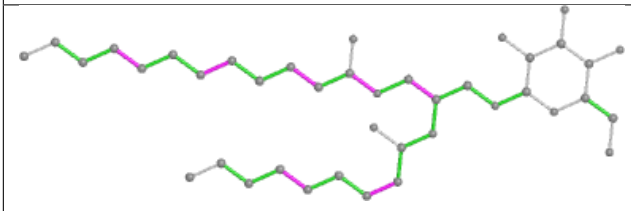

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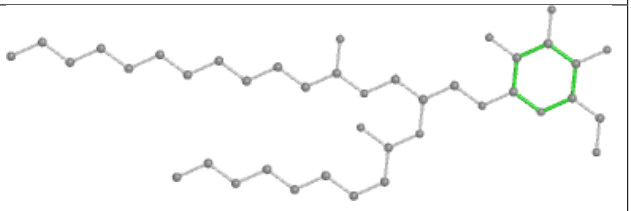
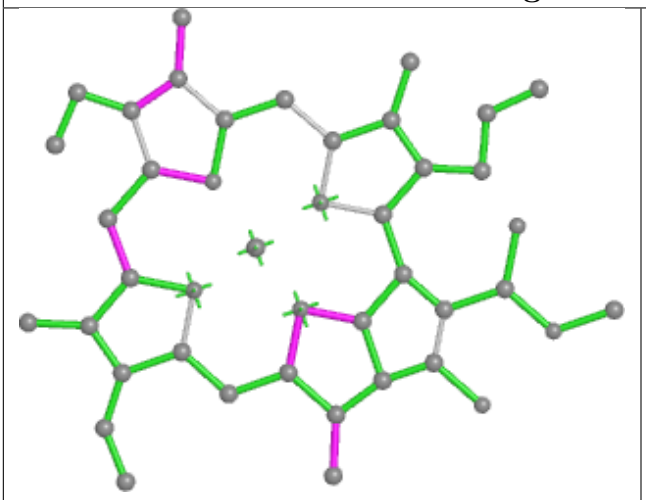


Rings

Ligand CLA N 607



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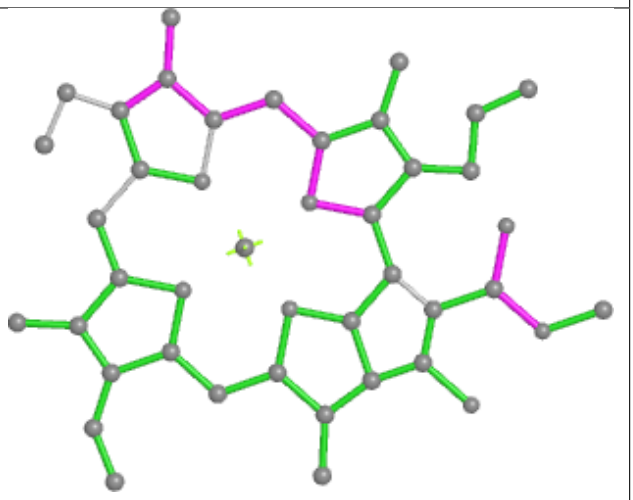
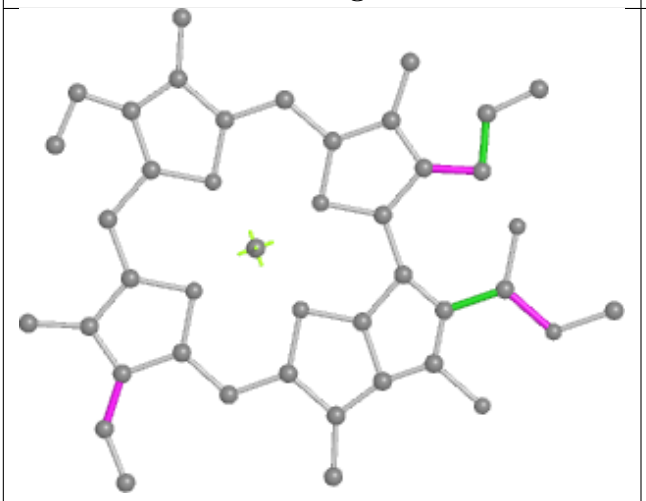


Bond angles



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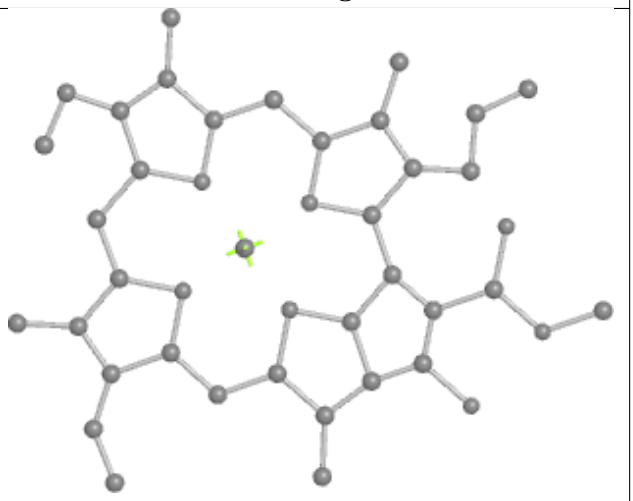
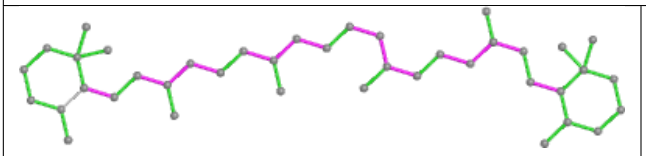


Rings

Ligand WVN Y 89



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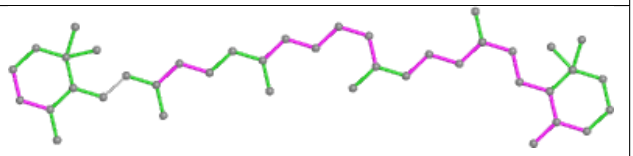

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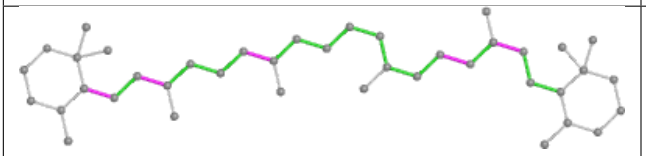

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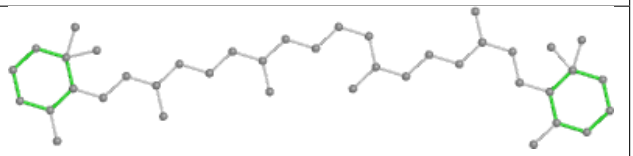

Rings

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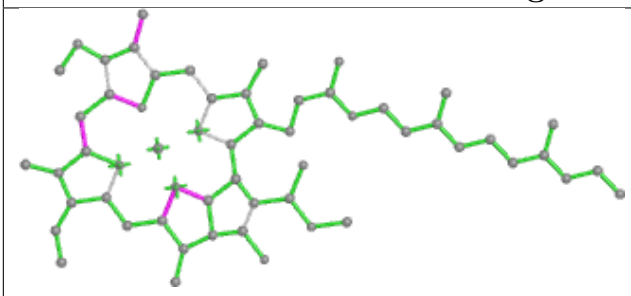

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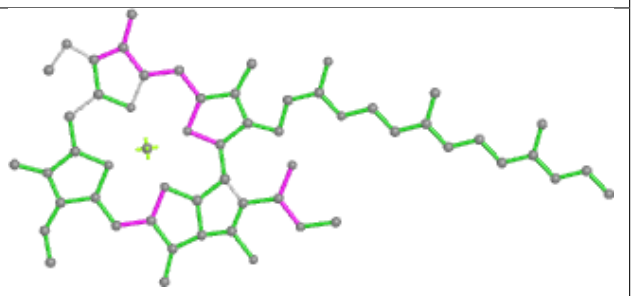

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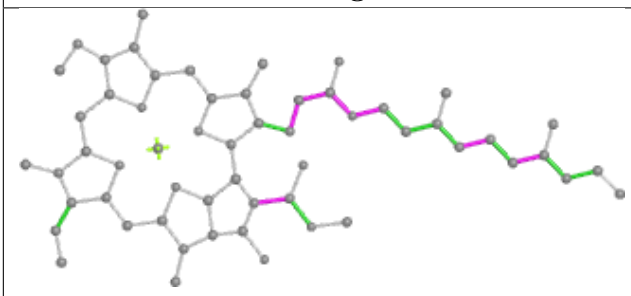

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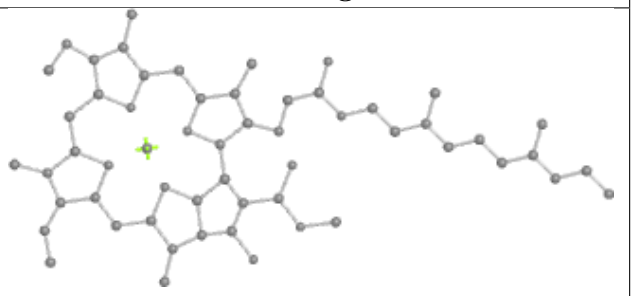
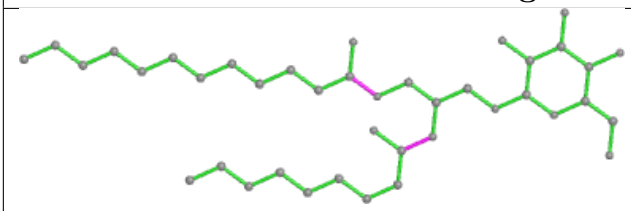


Rings

Ligand LMG O 622



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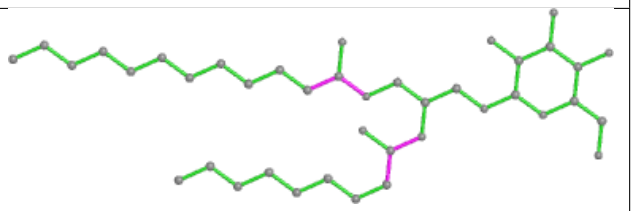
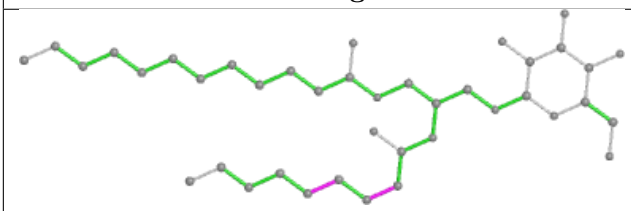


Bond angles



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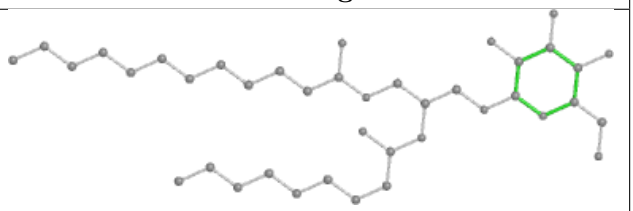
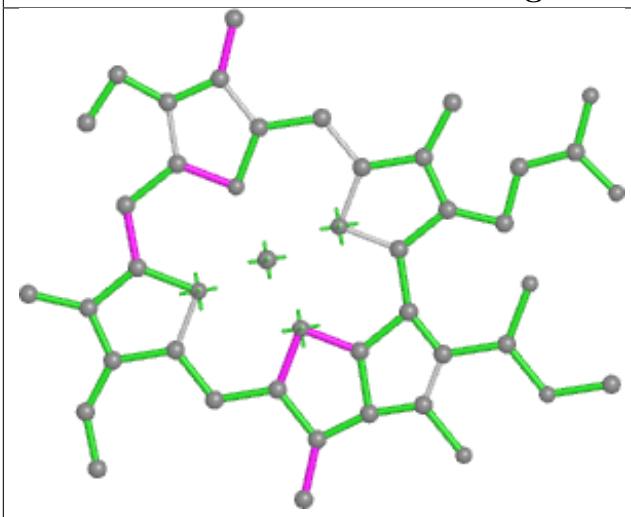


Rings

Ligand CLA P 615



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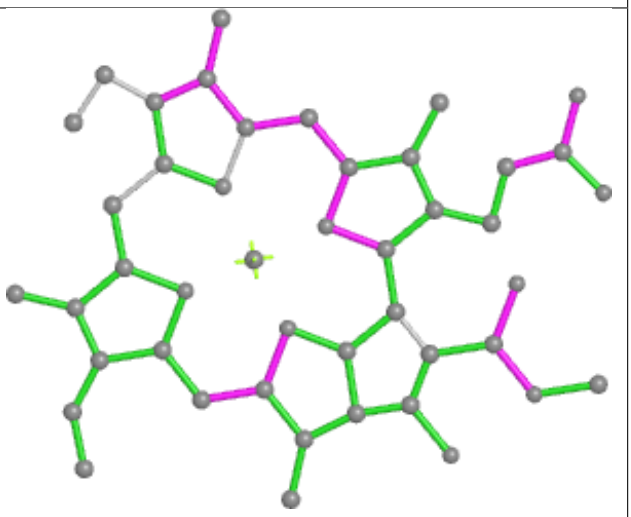
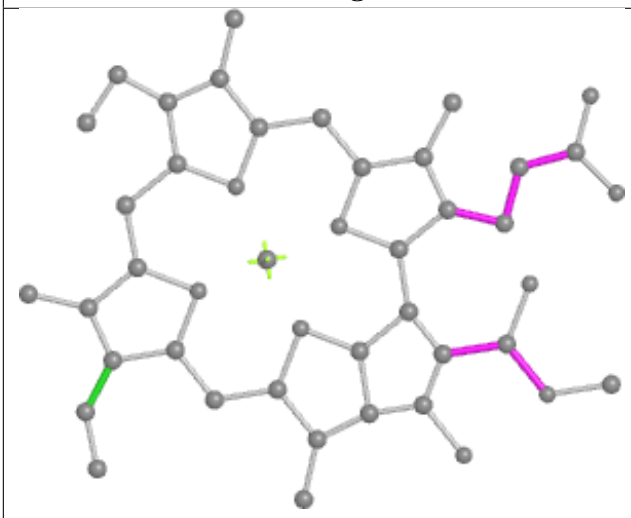


Bond angles



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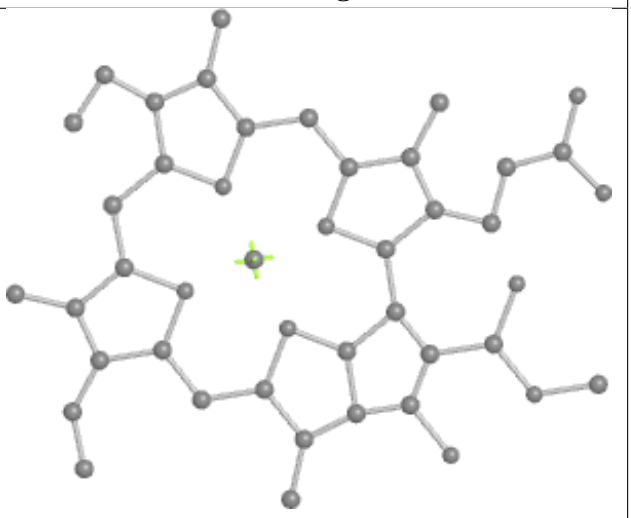
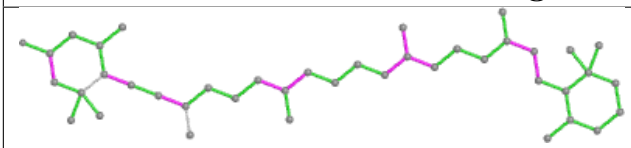


Rings

Ligand IHT R 620



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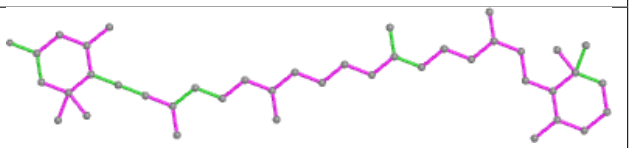
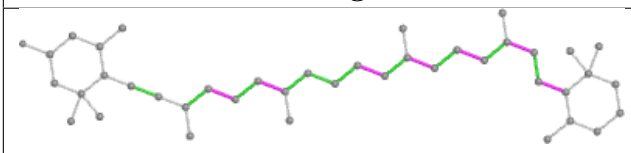


Bond angles



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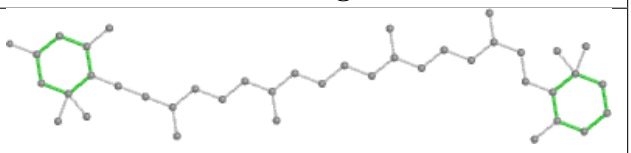
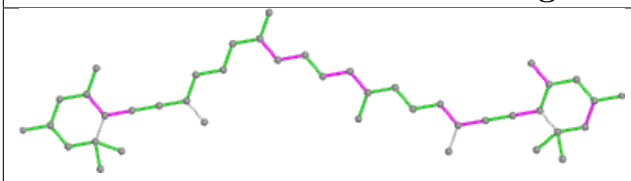
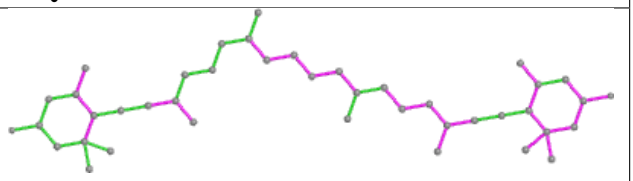


Rings

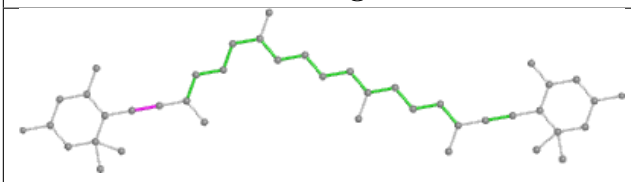
Ligand II0 Q 617



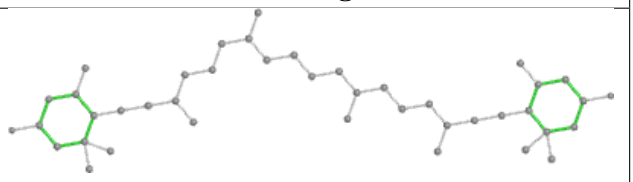
Bond lengths



Bond angles

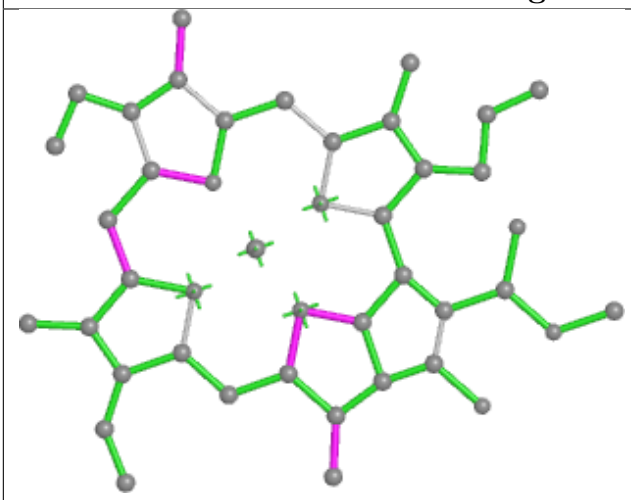


Torsions



Rings

Ligand CLA 5 607



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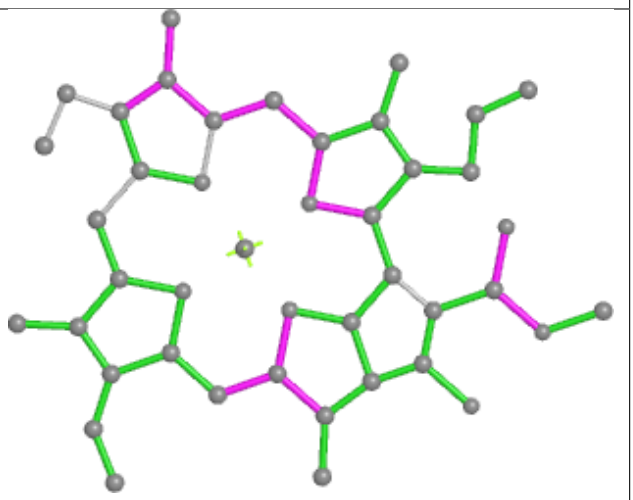

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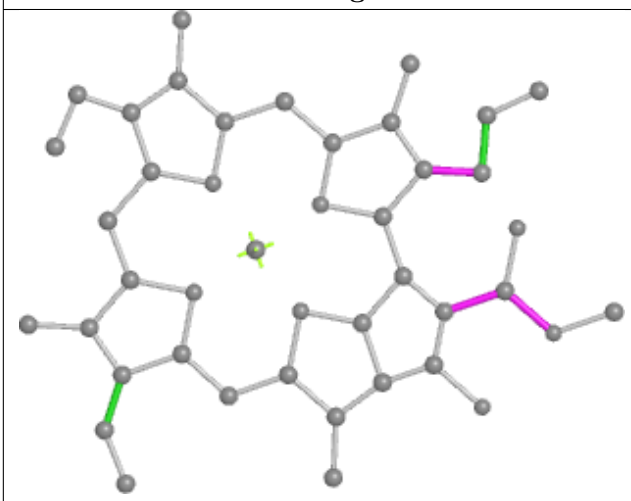

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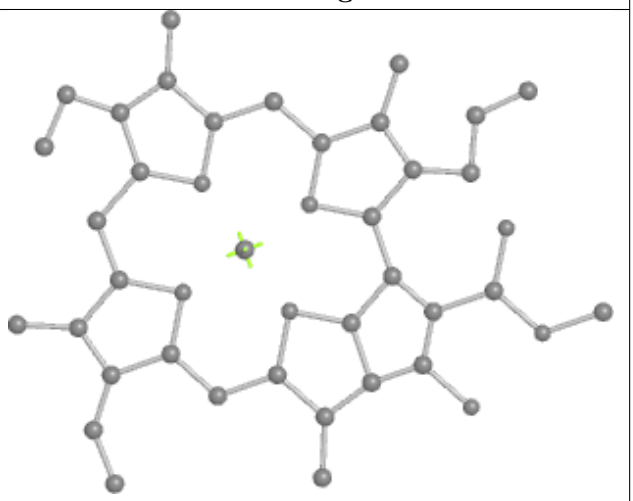
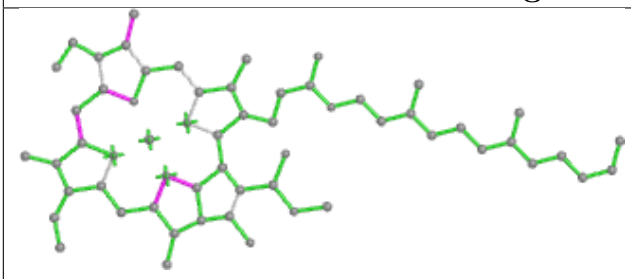


Rings

Ligand CLA R 610



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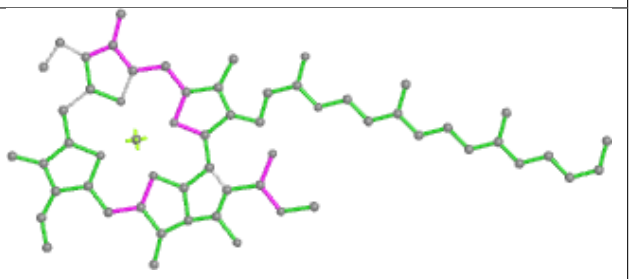

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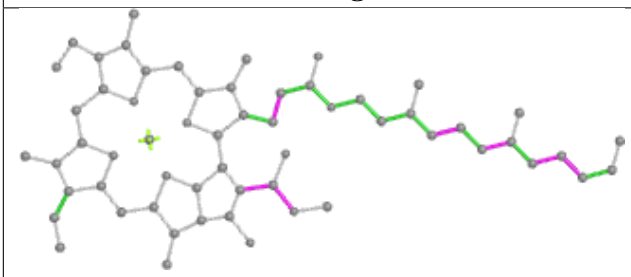

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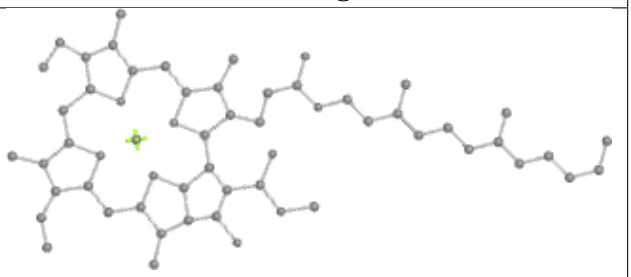
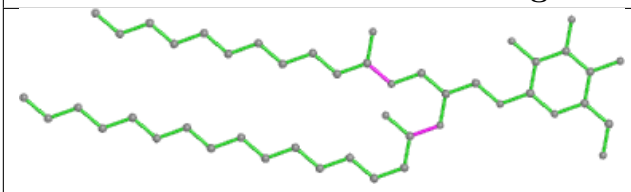


Rings

Ligand LMG F 99



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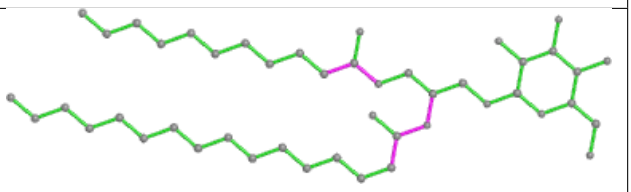

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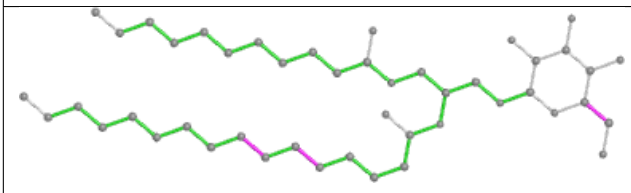

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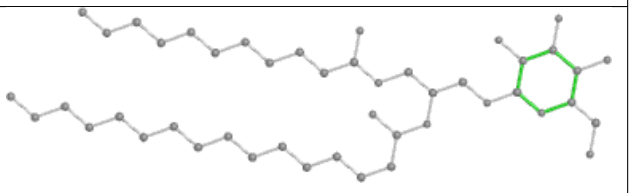
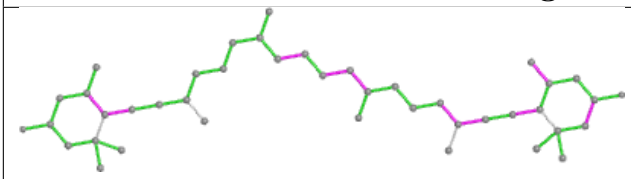


Rings

Ligand II0 P 618



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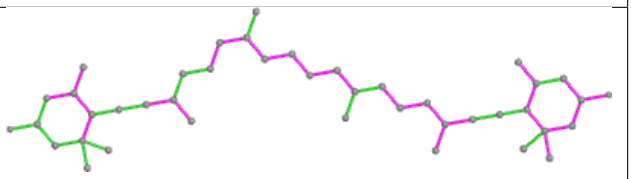
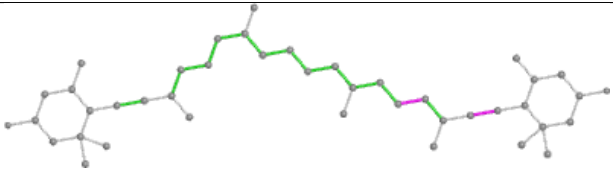


Bond angles



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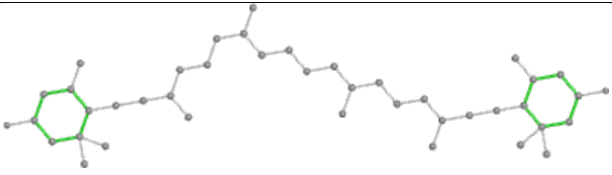
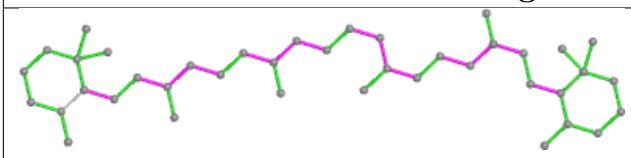
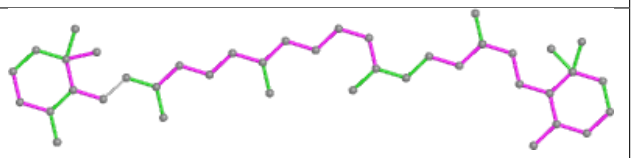
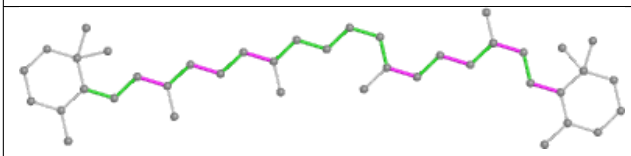
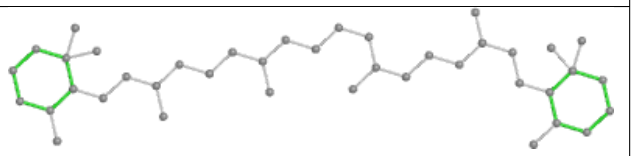
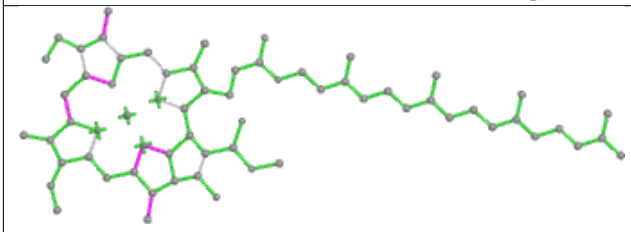
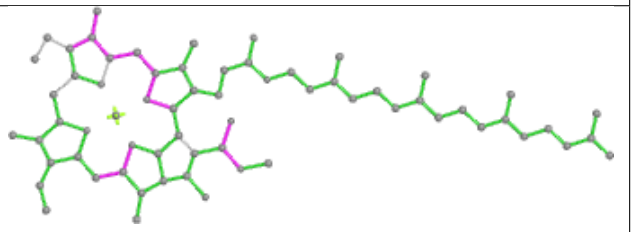
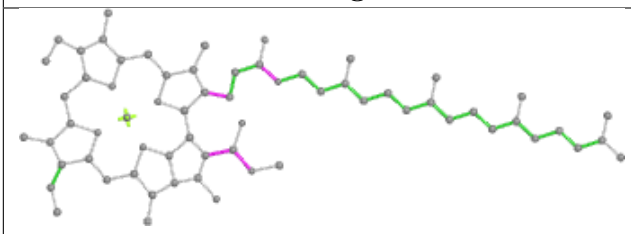
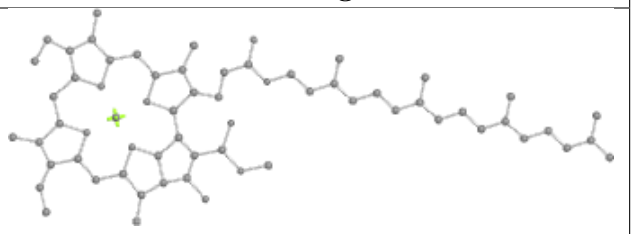
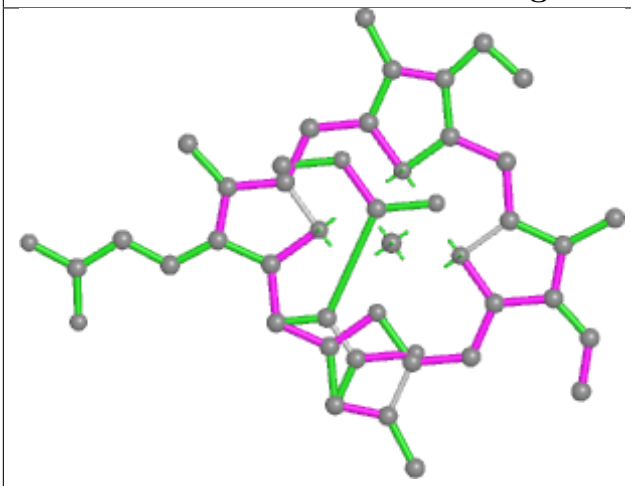


Rings

Ligand WVN d 408	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA C 516	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand KC2 1 613



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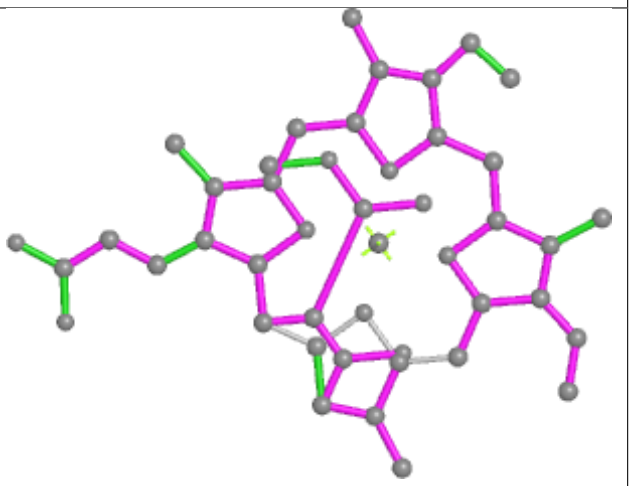
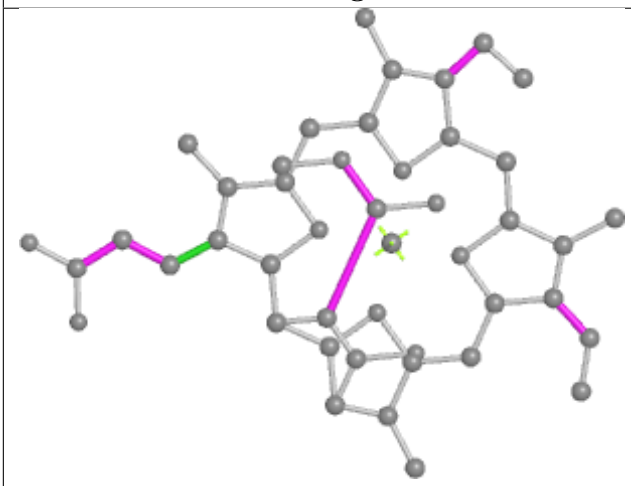


Bond angles



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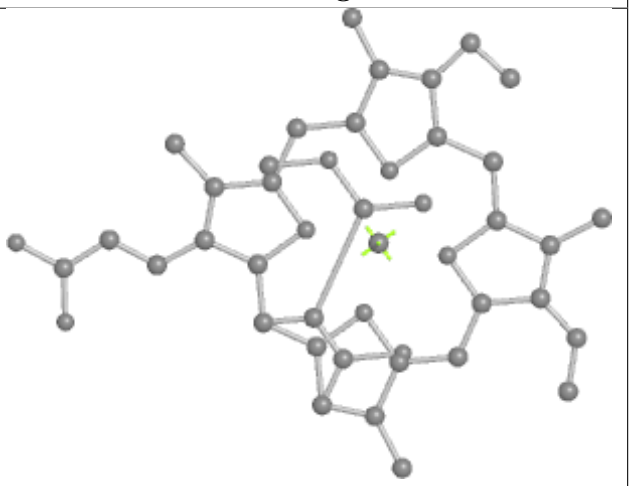
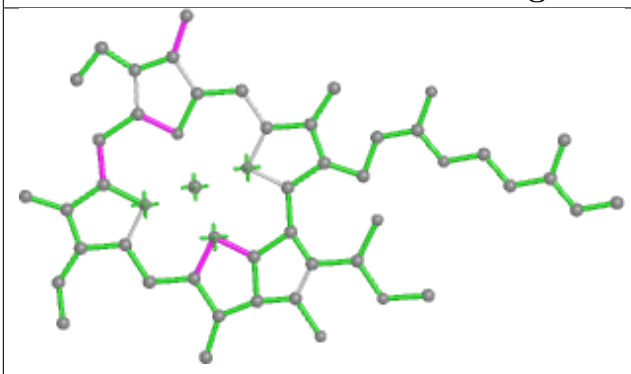


Rings

Ligand CLA 4 610



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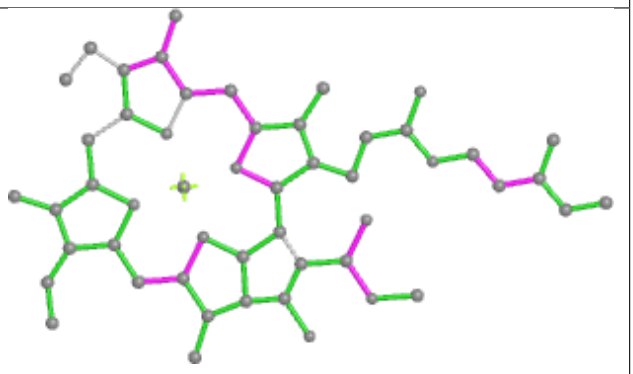
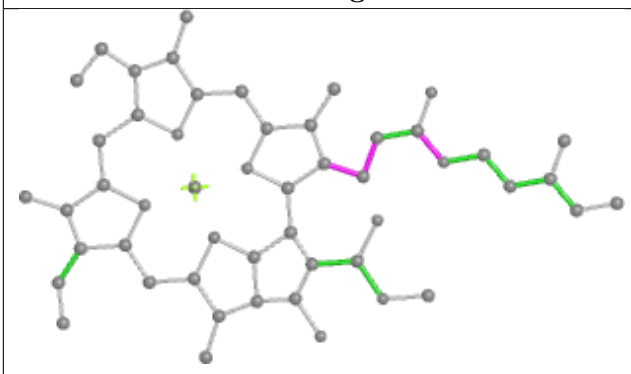


Bond angles



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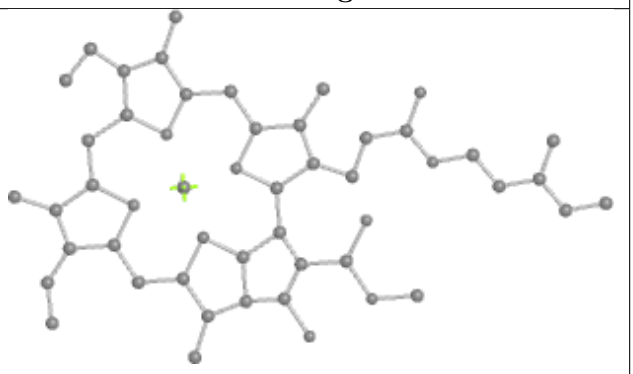
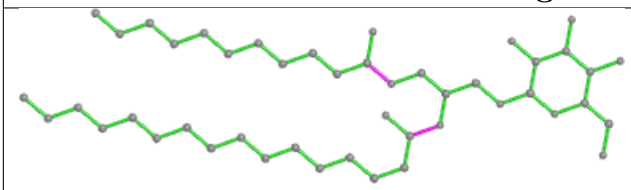


Rings

Ligand LMG f 99



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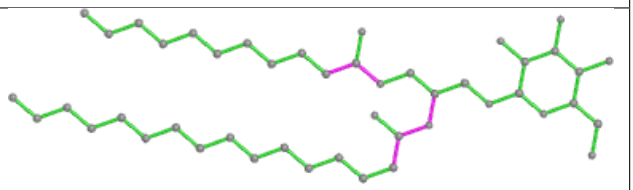

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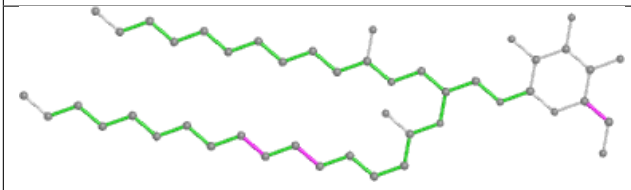

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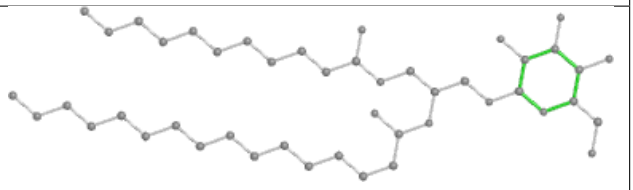
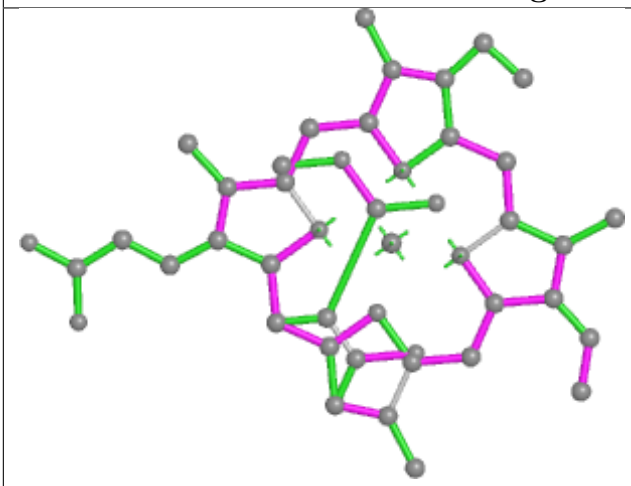


Rings

Ligand KC2 6 606



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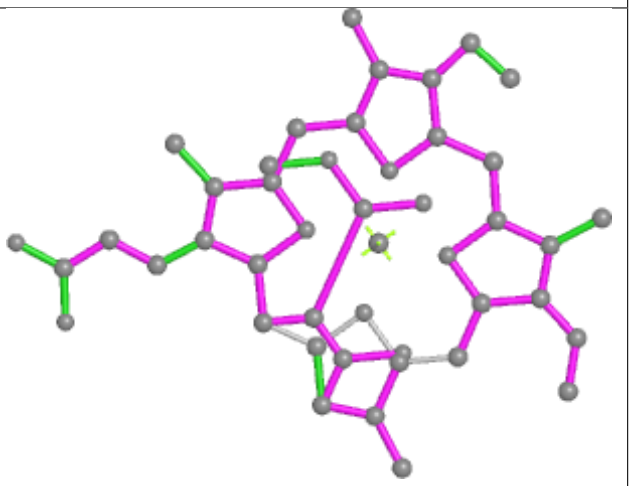
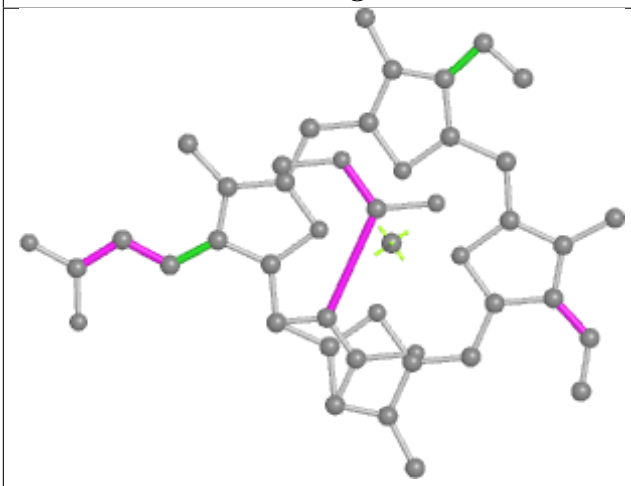


Bond angles



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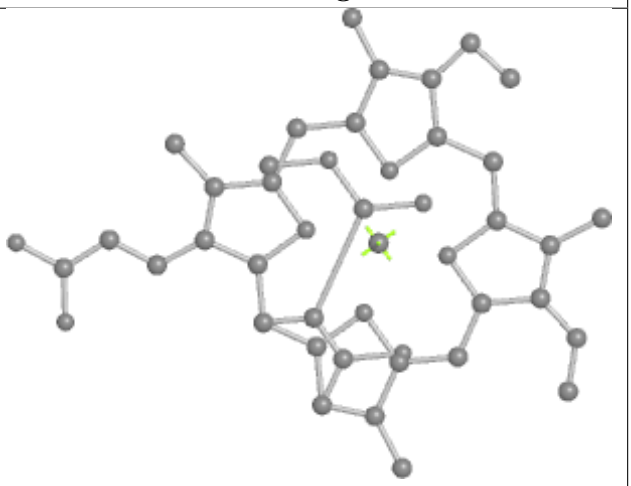
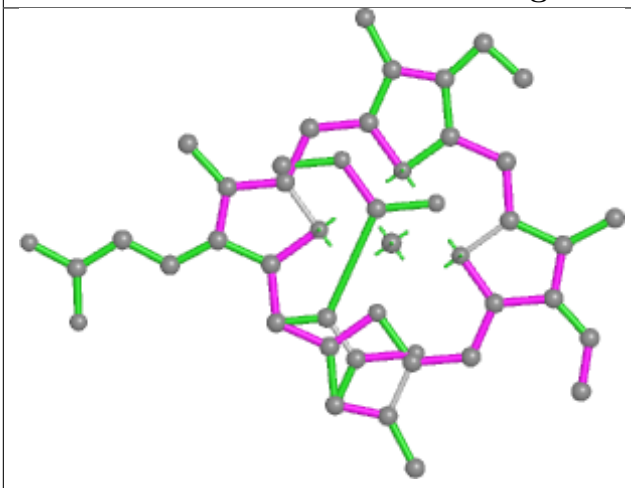


Rings

Ligand KC2 1 605



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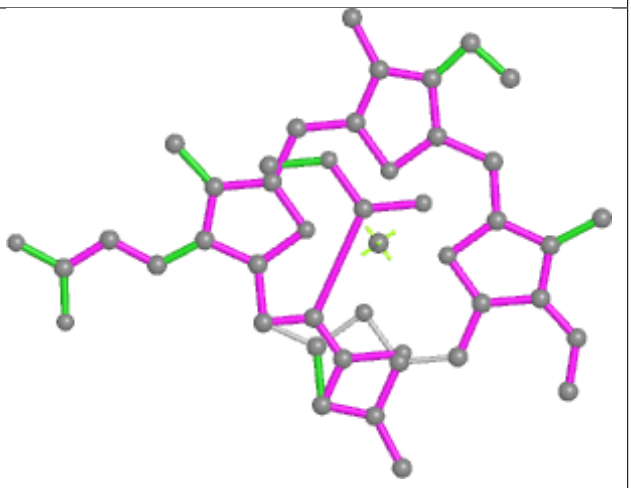
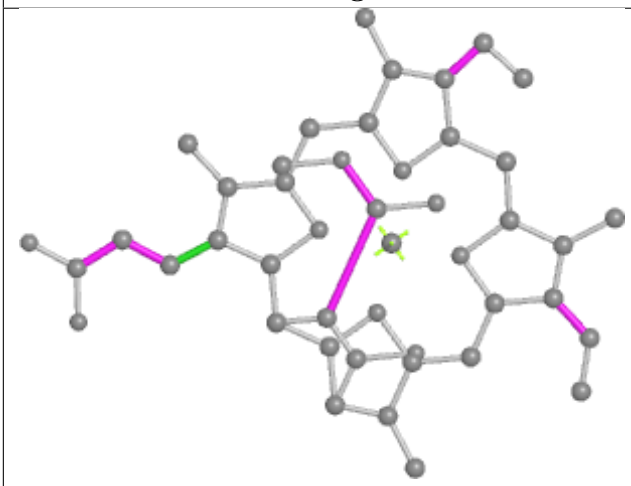


Bond angles



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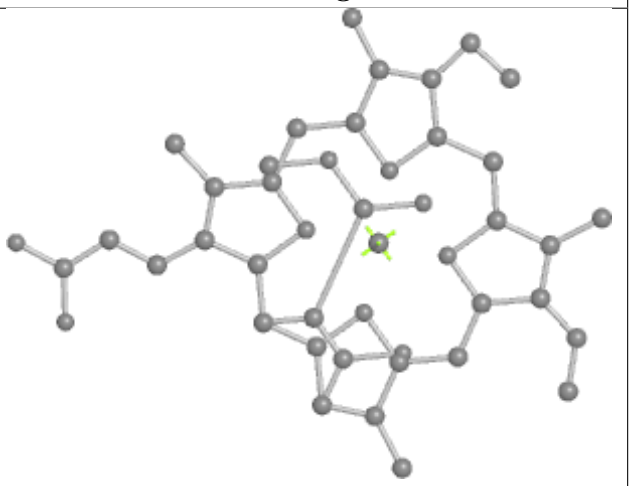
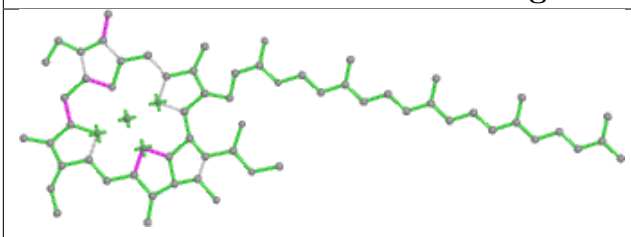


Rings

Ligand CLA c 523



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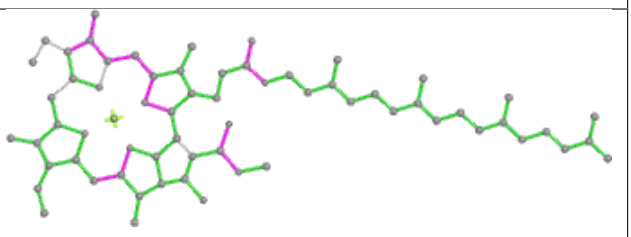
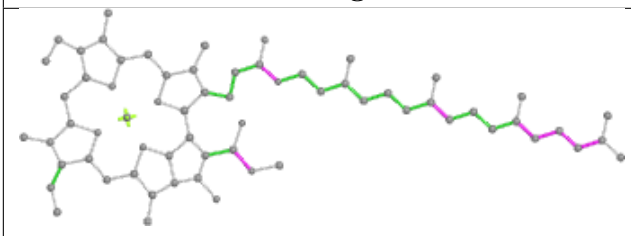


Bond angles



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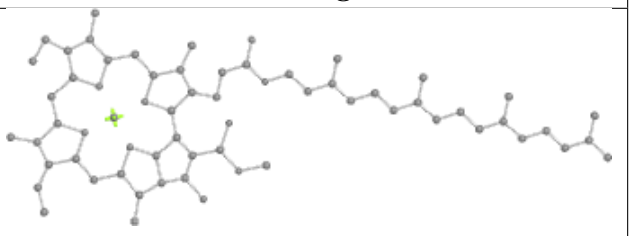
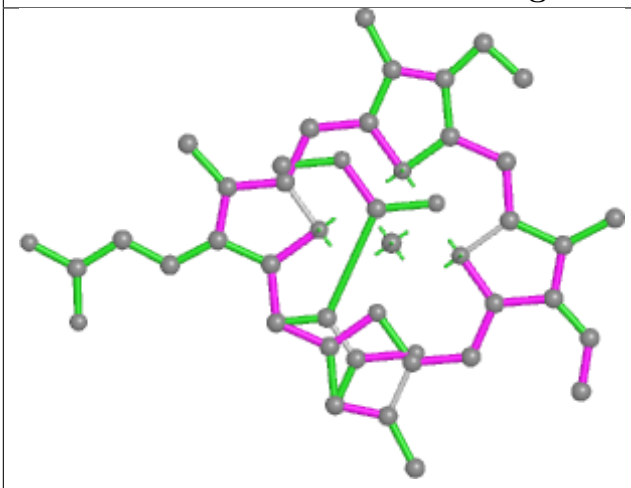


Rings

Ligand KC2 S 612



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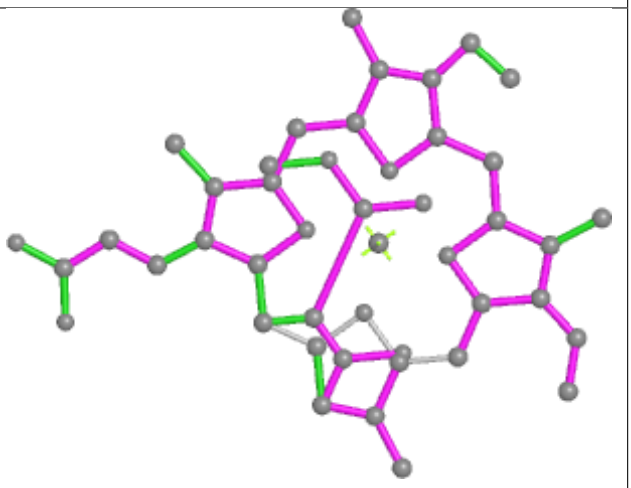
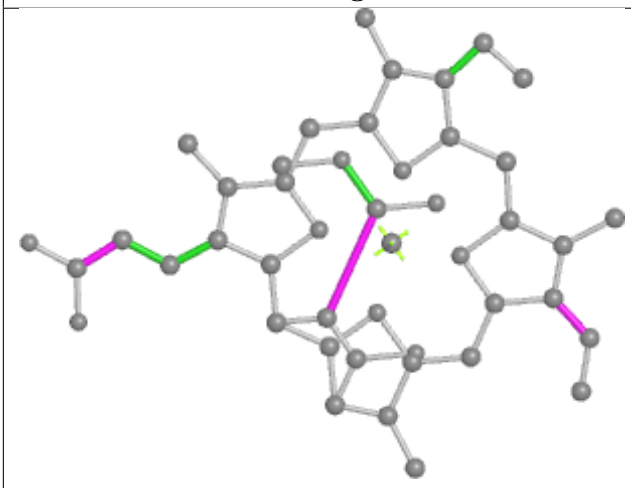
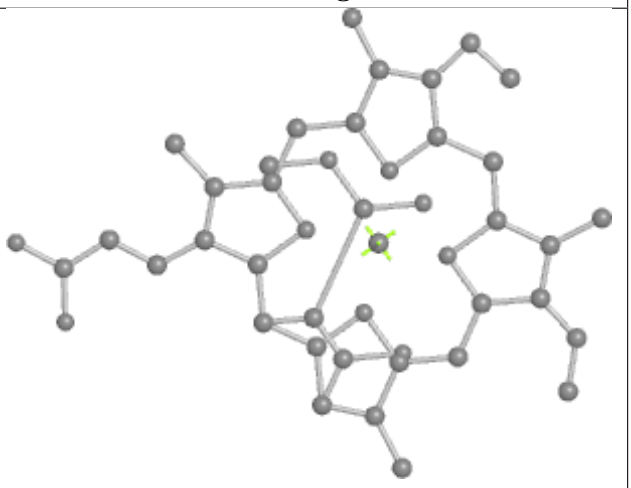


Bond angles

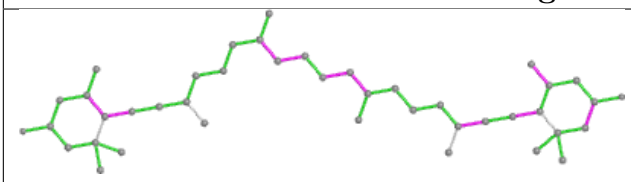


Torsions

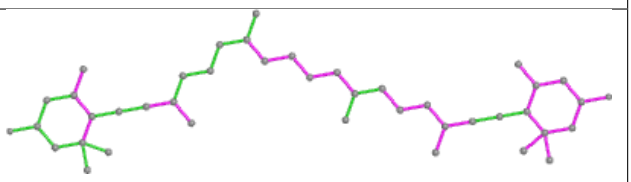


Rings

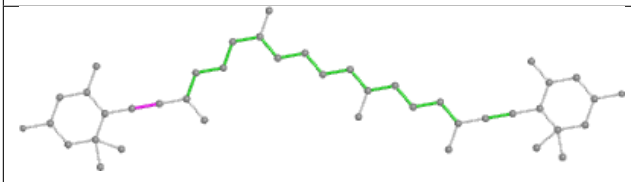
Ligand II0 O 617



Bond lengths



Bond angles



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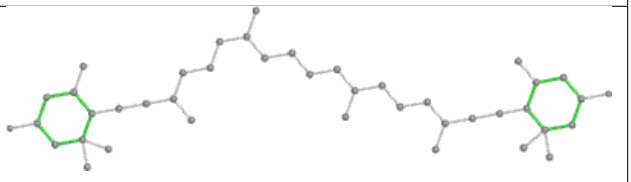

Rings

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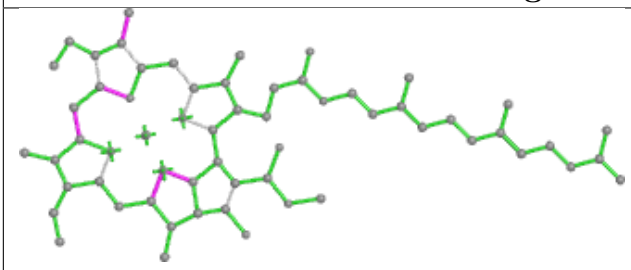
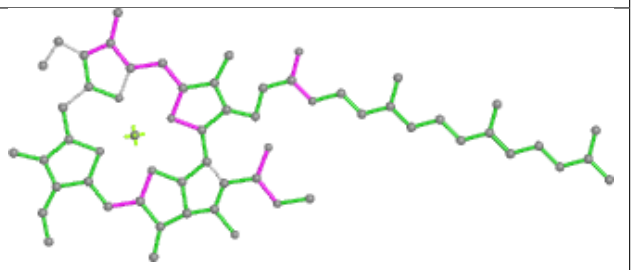
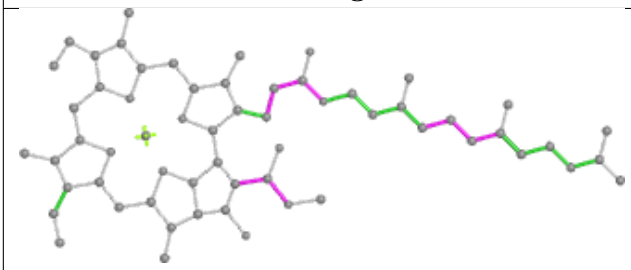
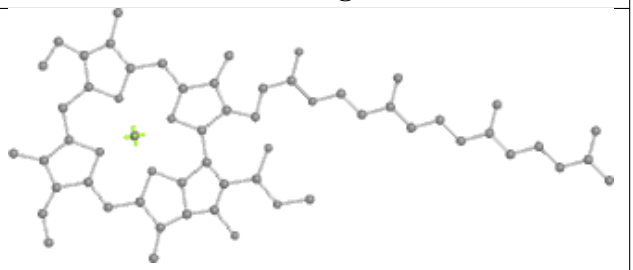
	
Bond lengths	Bond angles
	
Torsions	Rings

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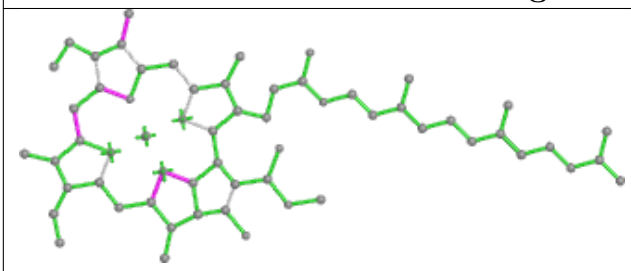
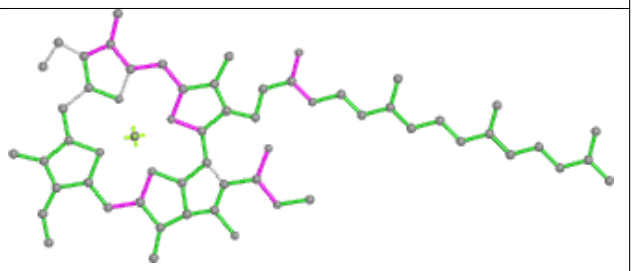
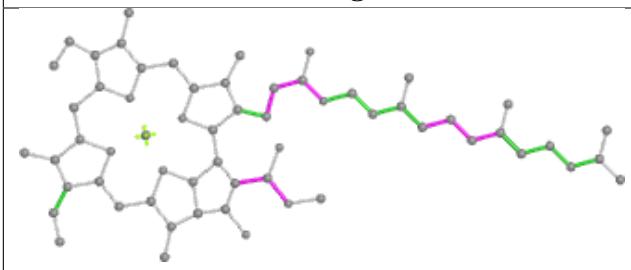
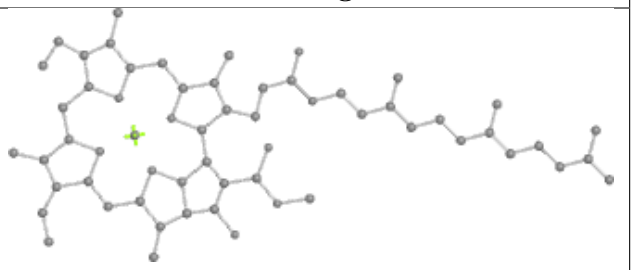
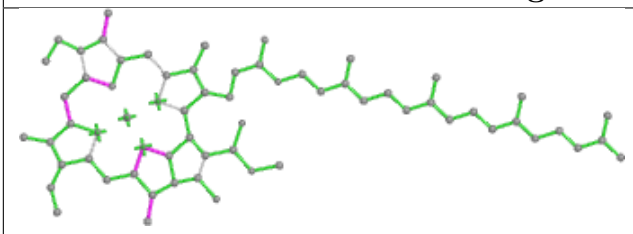
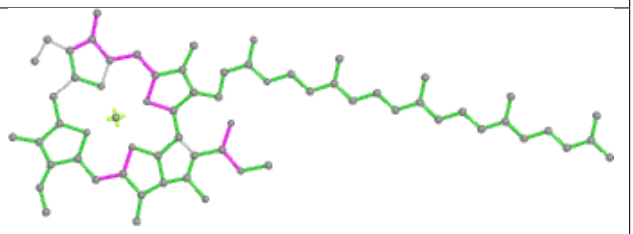
	
Bond lengths	Bond angles
	
Torsions	Rings

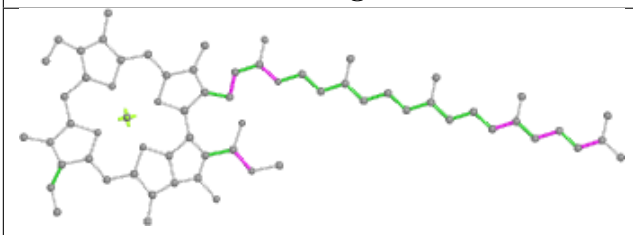
Ligand CLA S 615



Bond lengths



Bond angles



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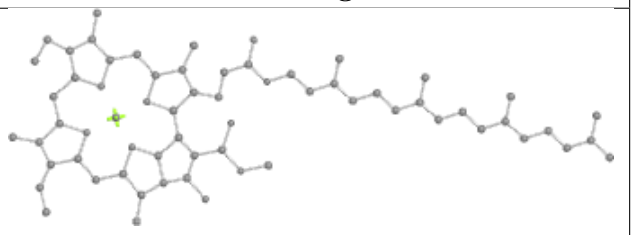
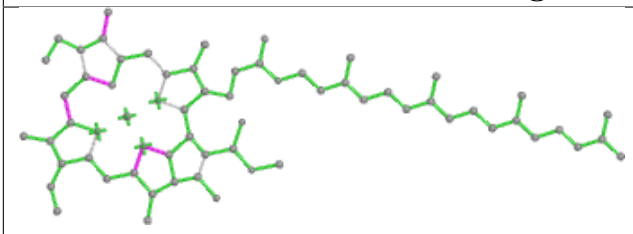


Rings

Ligand CLA 4 602



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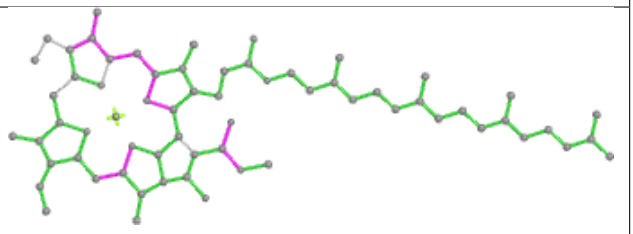

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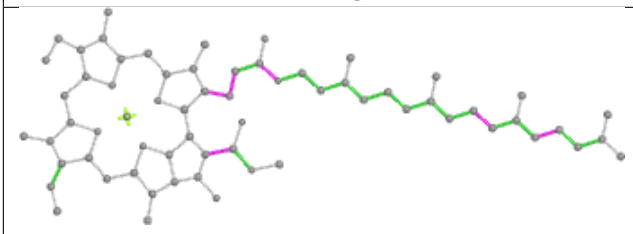

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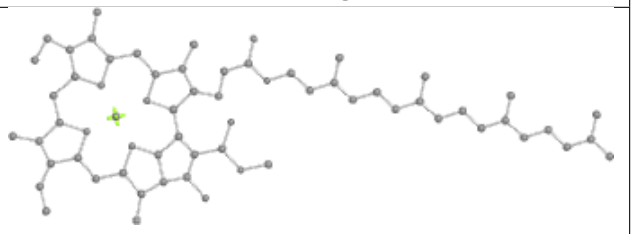

Rings

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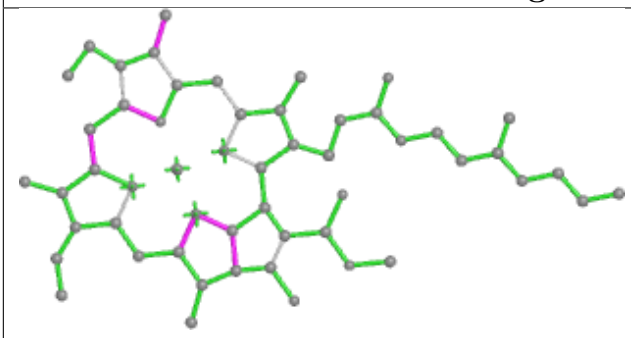
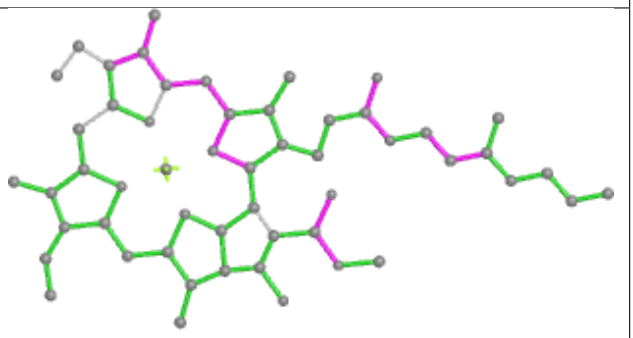
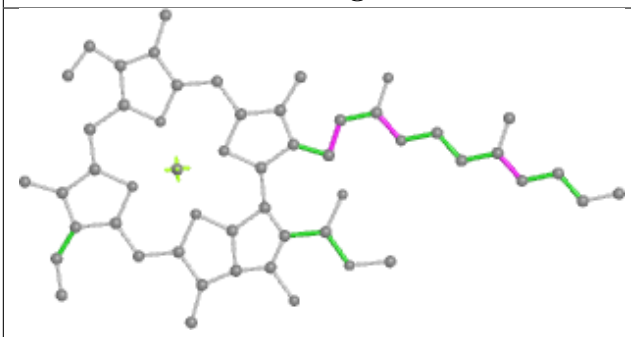
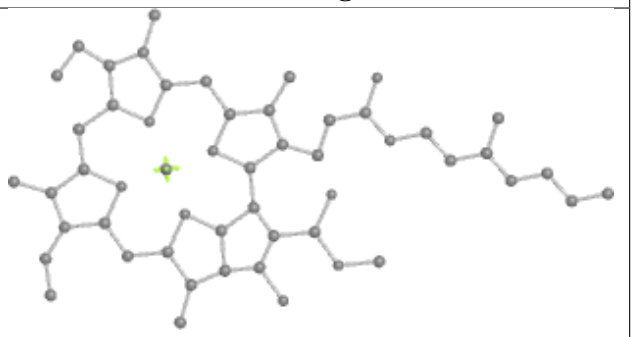
	
Bond lengths	Bond angles
	
Torsions	Rings

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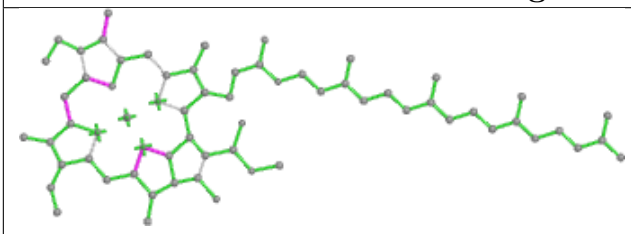
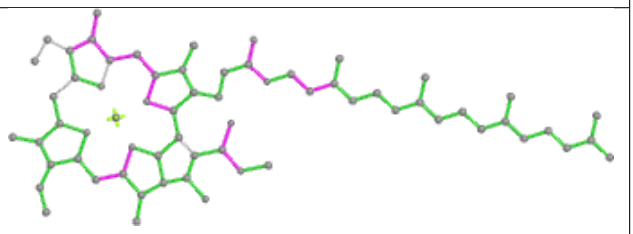
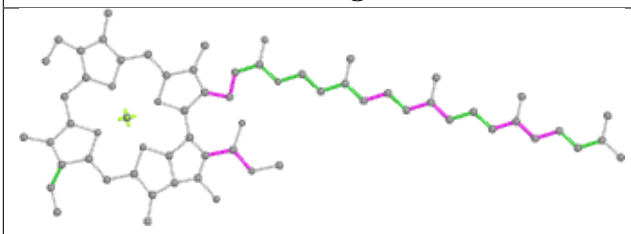
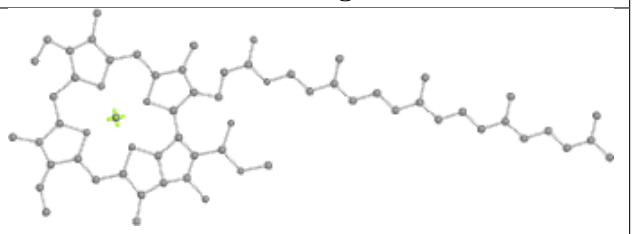
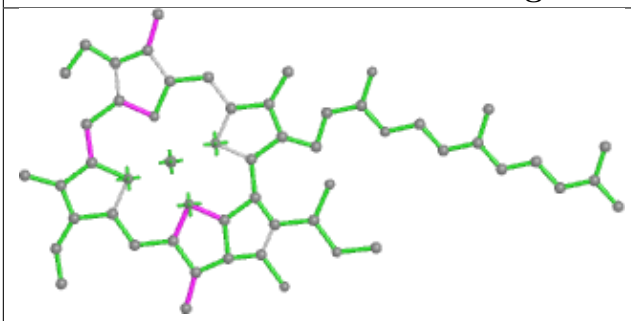
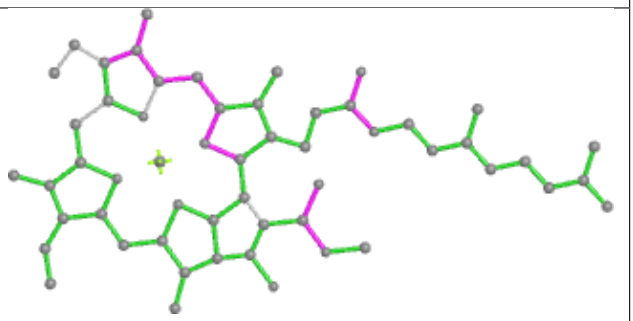
	
Bond lengths	Bond angles
	
Torsions	Rings

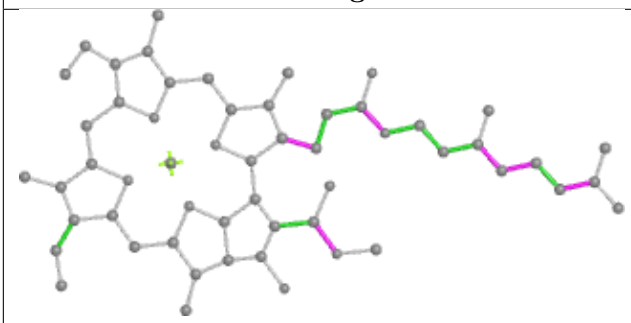
Ligand CLA P 613



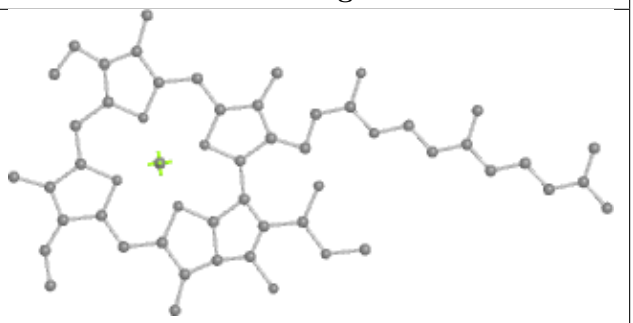
Bond lengths



Bond angles

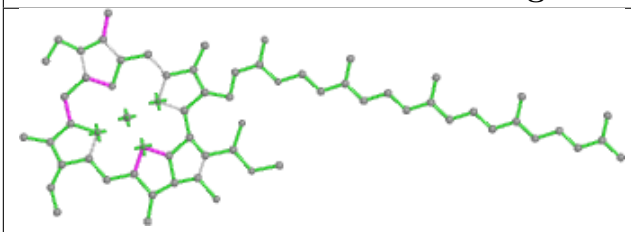


Torsions



Rings

Ligand CLA S 602



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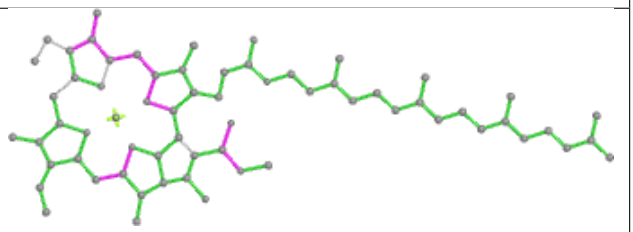
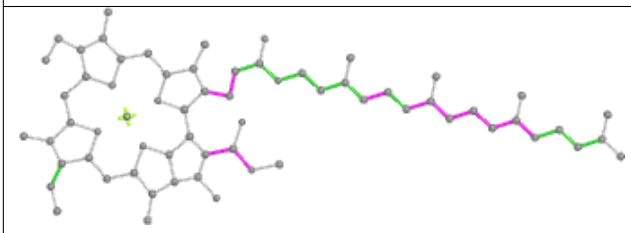


Bond angles



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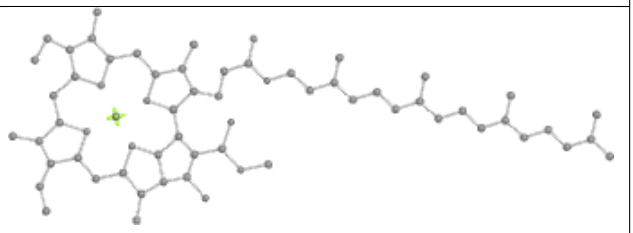

Rings

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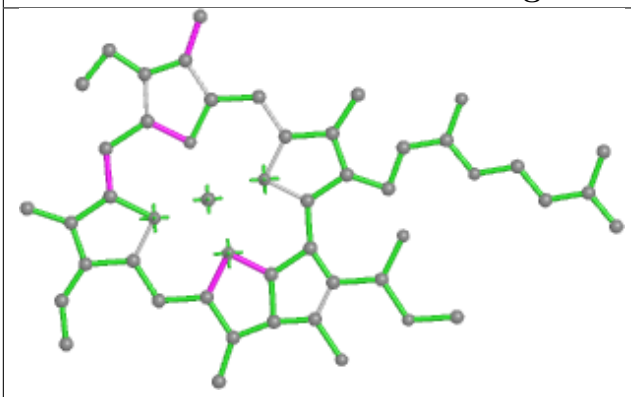
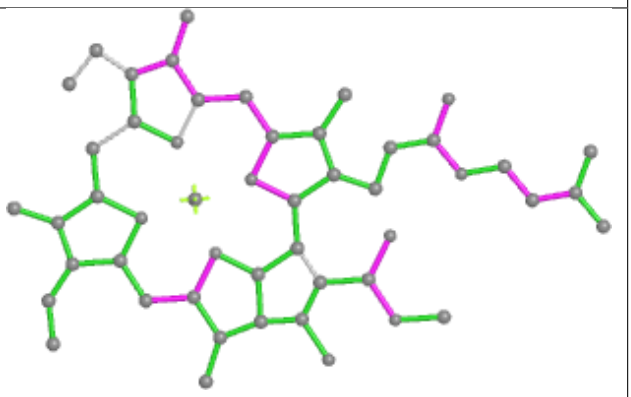
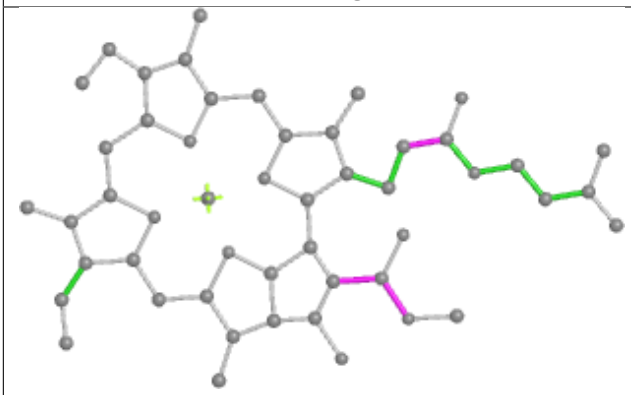
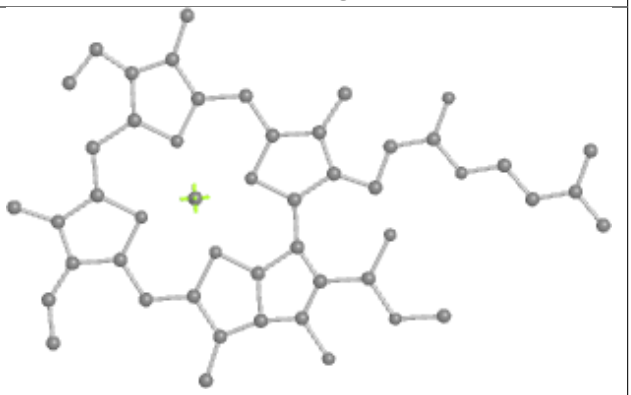
 Bond lengths	 Bond angles
 Torsions	 Rings

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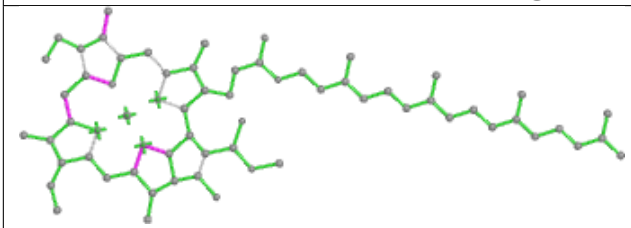
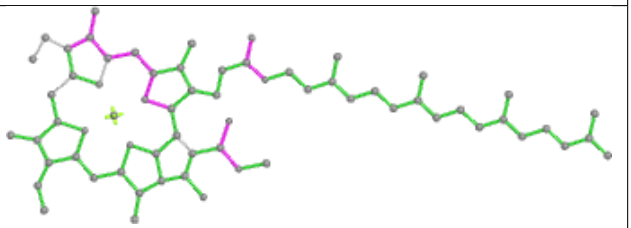
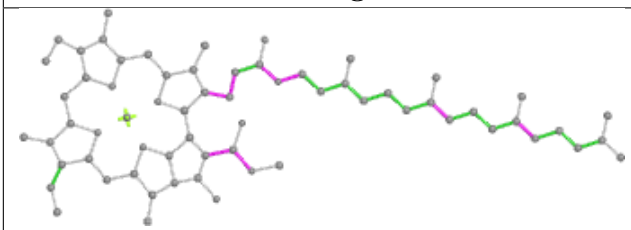
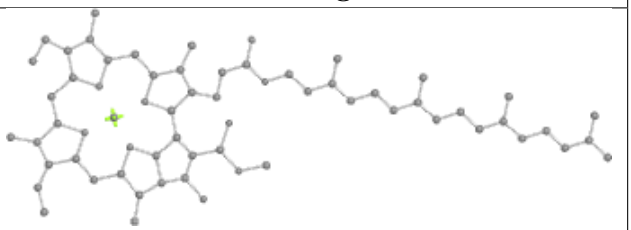
 Bond lengths	 Bond angles
 Torsions	 Rings

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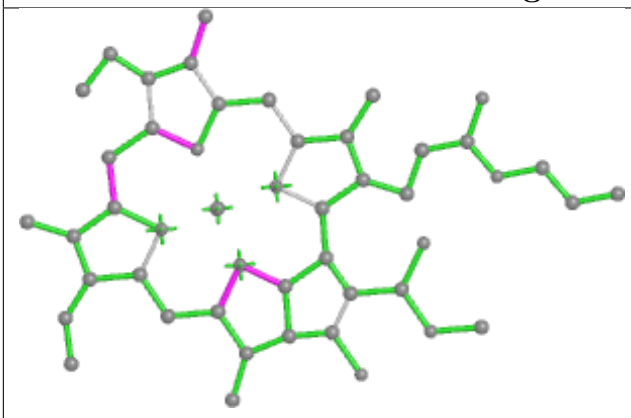
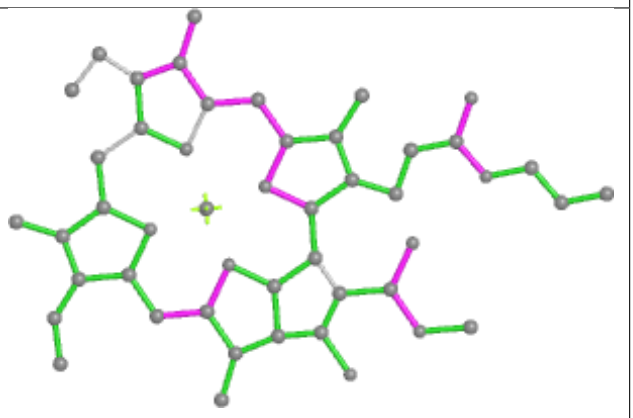
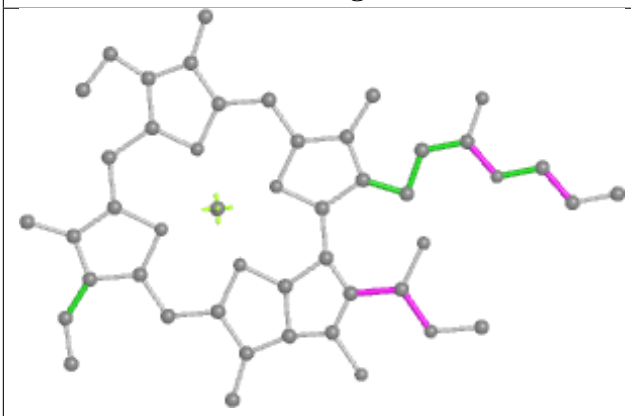


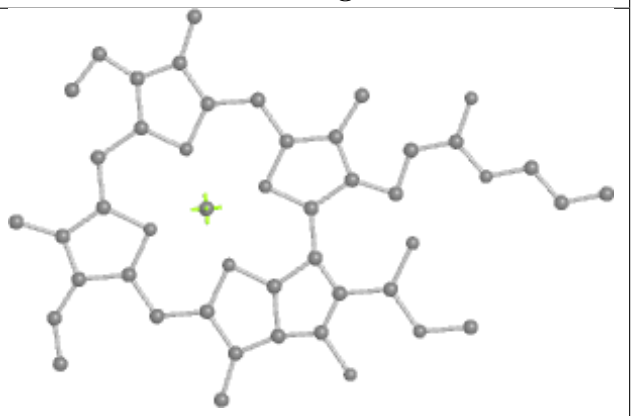
Bond lengths



Bond angles

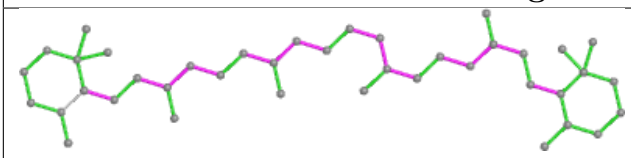


Torsions



Rings

Ligand WVN y 89



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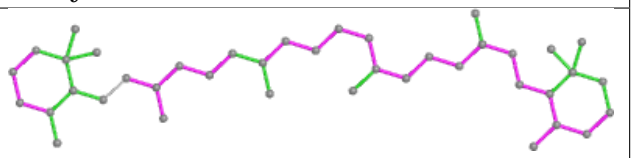
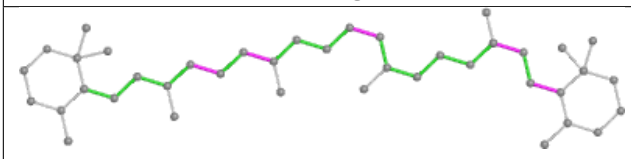


Bond angles



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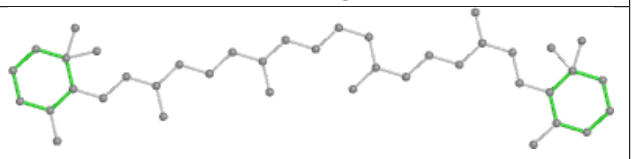
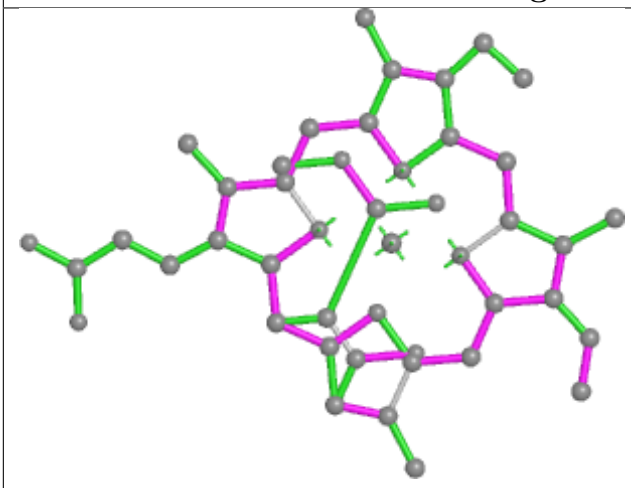
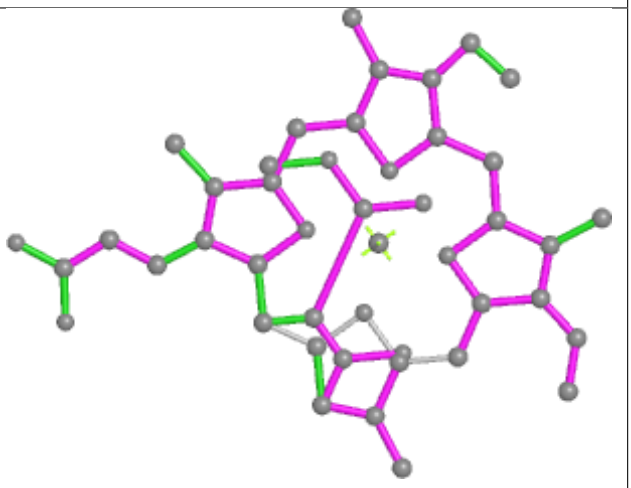


Rings

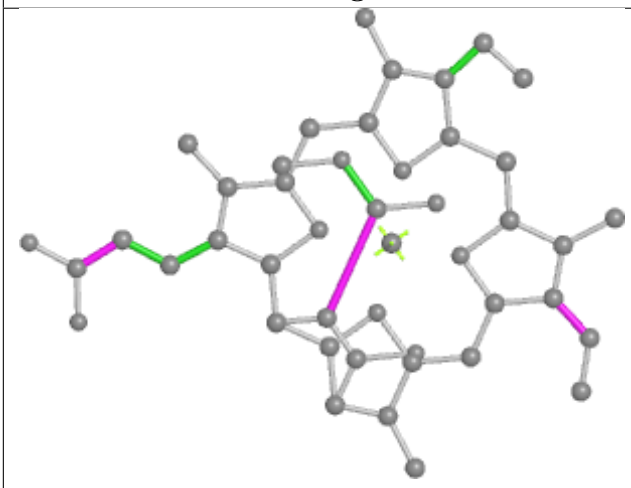
Ligand KC2 6 612



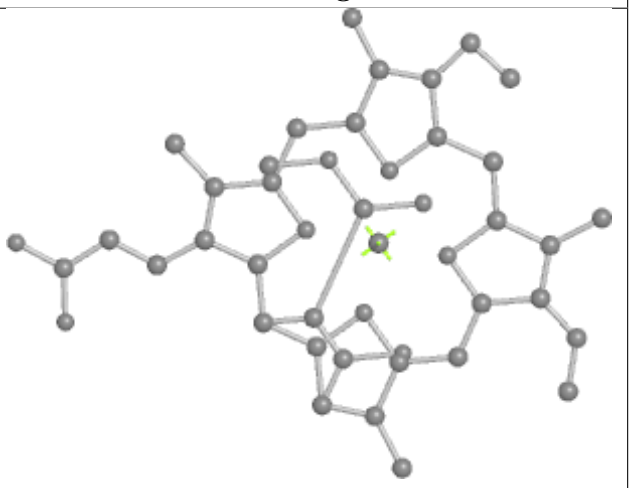
Bond lengths



Bond angles

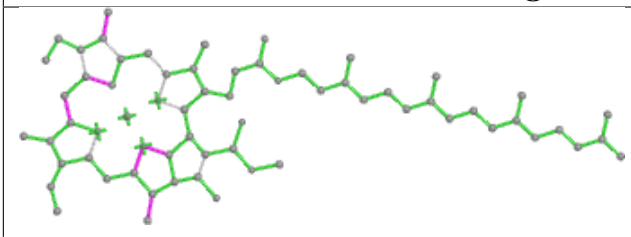


Torsions



Rings

Ligand CLA C 527



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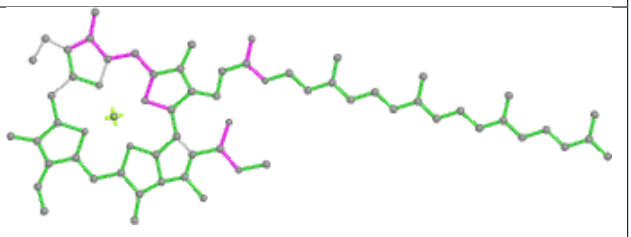
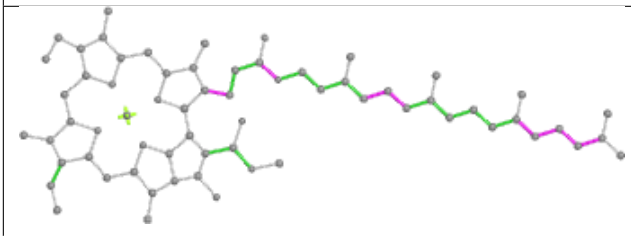


Bond angles



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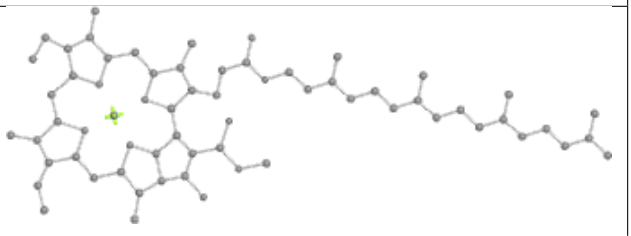
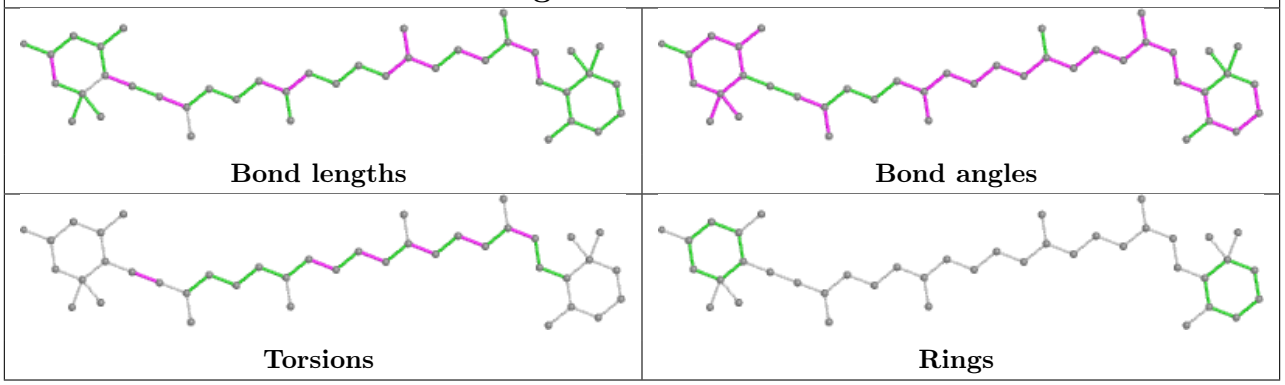
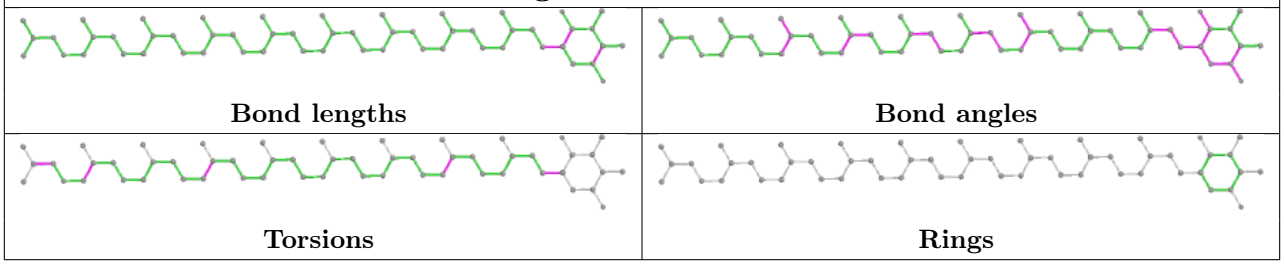


Rings

Ligand IHT 1 620



Ligand PL9 d 405



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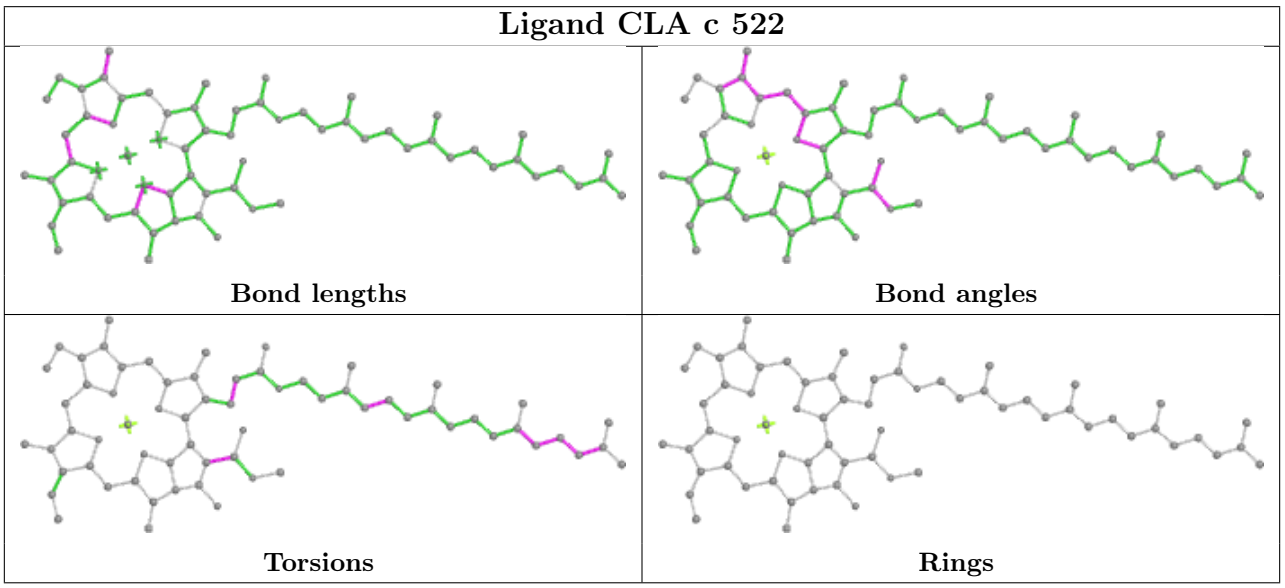
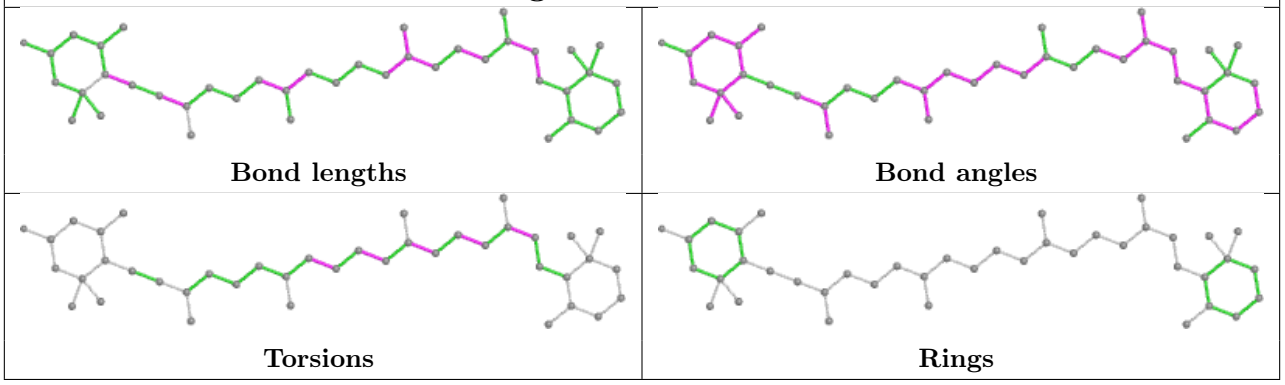


Ligand IHT N 620



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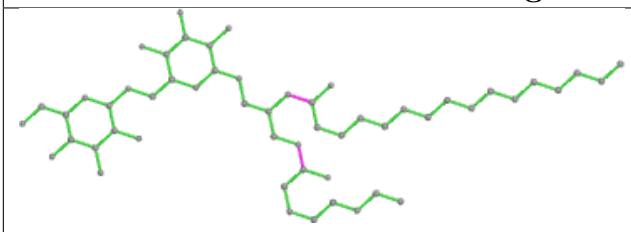
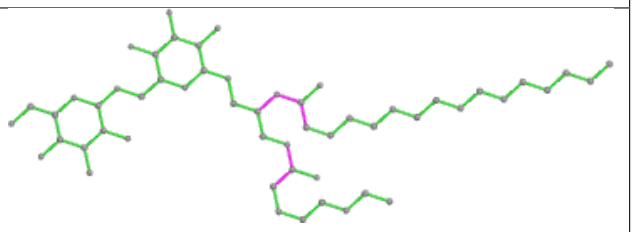
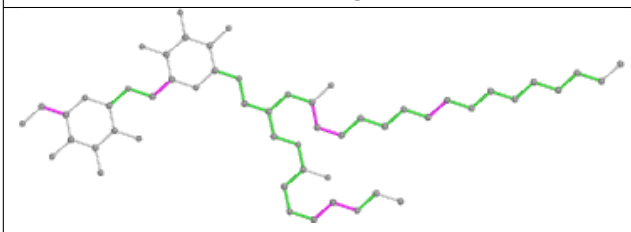


Bond lengths



Bond angles



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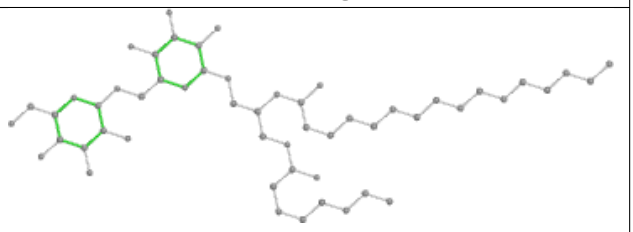
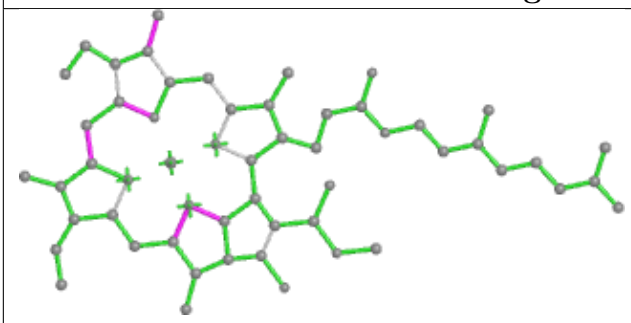


Rings

Ligand CLA R 602



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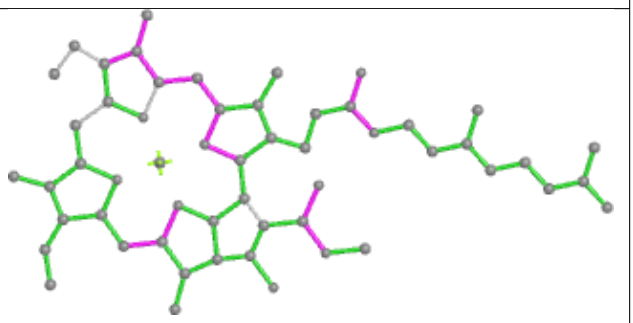
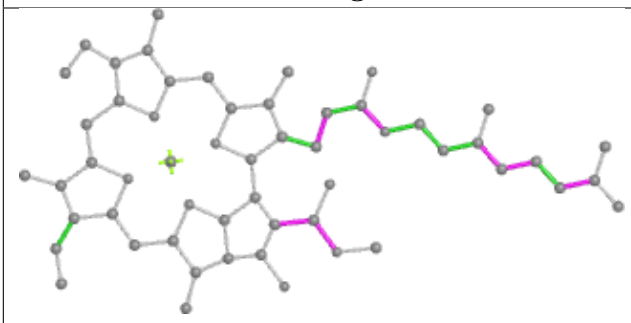


Bond angles



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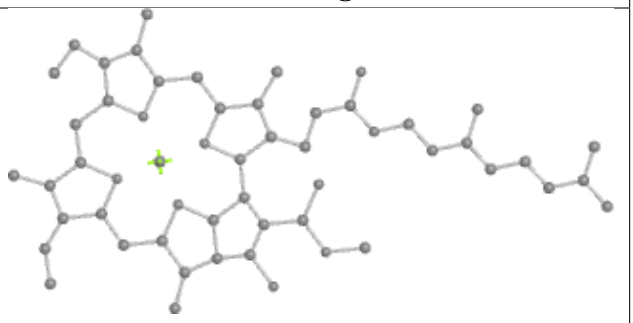
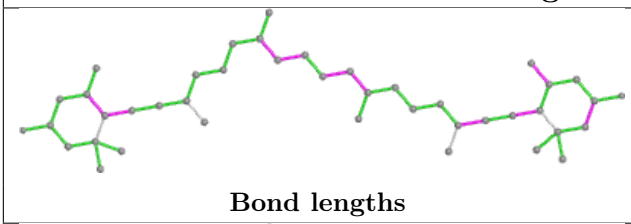


Rings

Ligand II0 S 618



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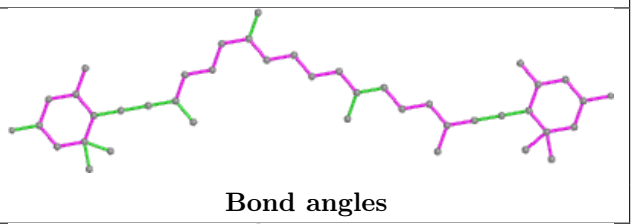
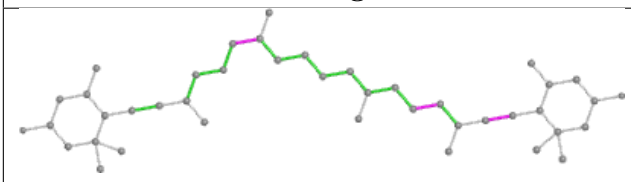


Bond angles



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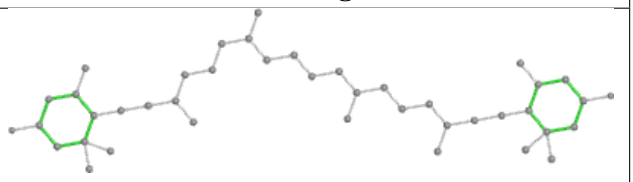
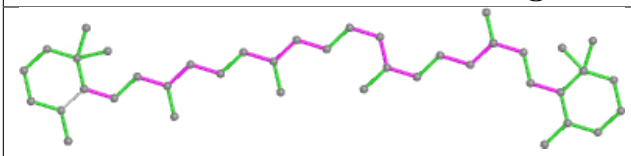


Rings

Ligand WVN h 89



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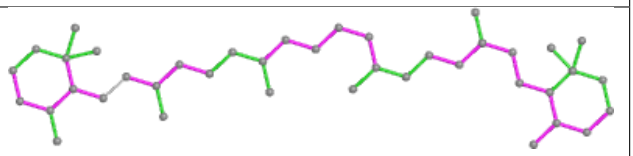
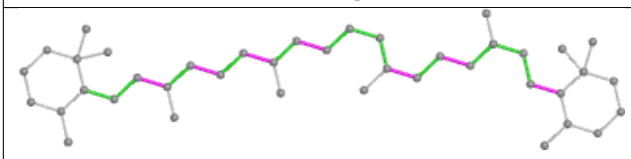


Bond angles



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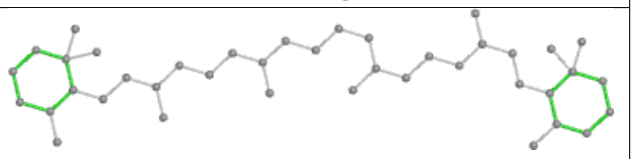
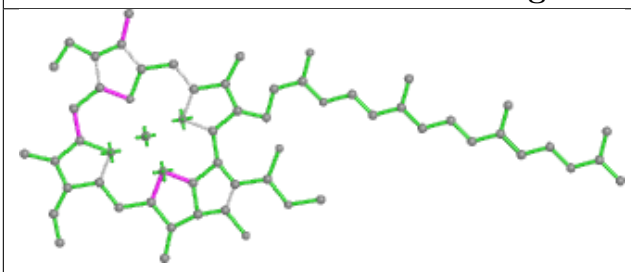


Rings

Ligand CLA 1 603



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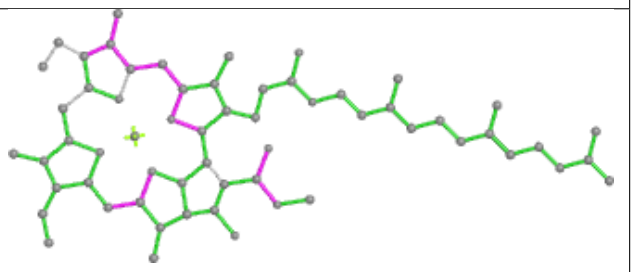

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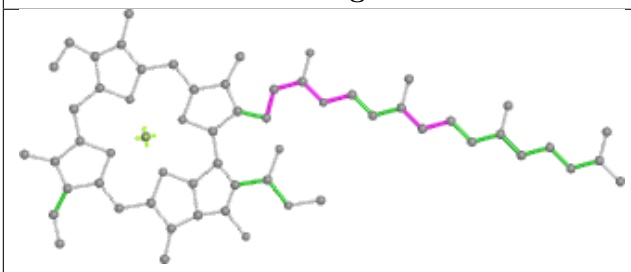

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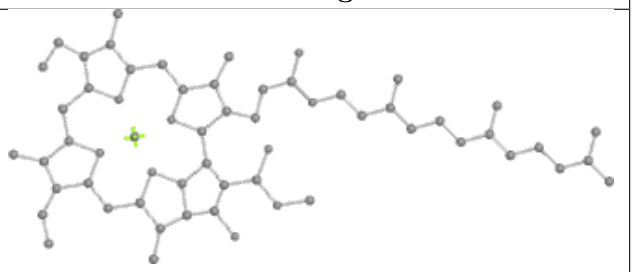
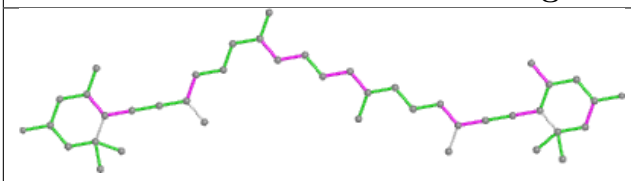
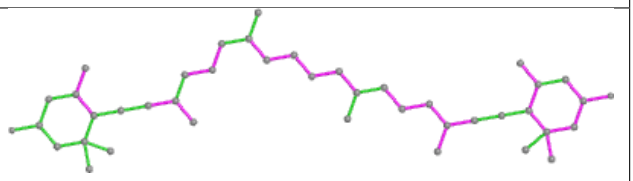


Rings

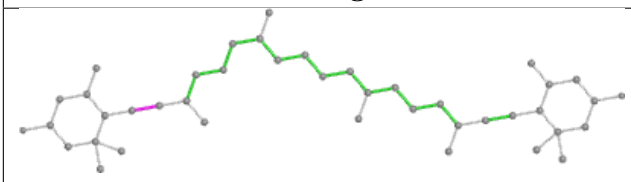
Ligand II0 S 617



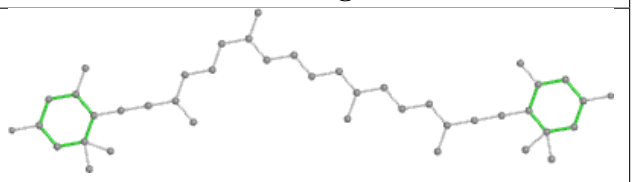
Bond lengths



Bond angles

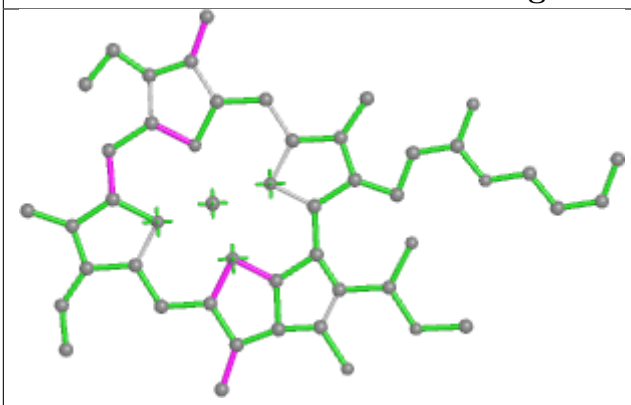


Torsions



Rings

Ligand CLA a 404



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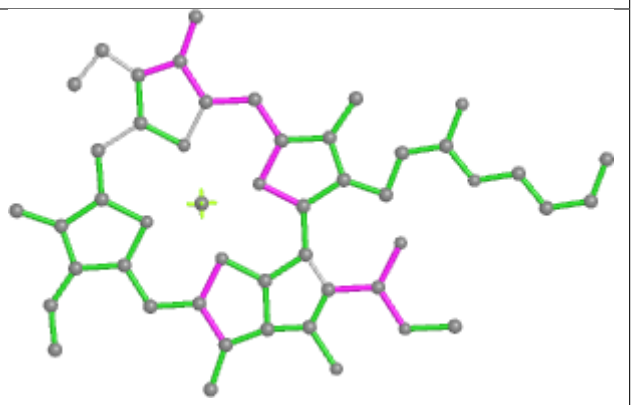
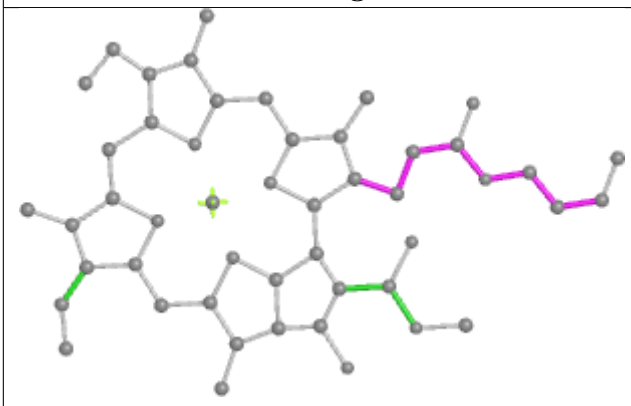


Bond angles



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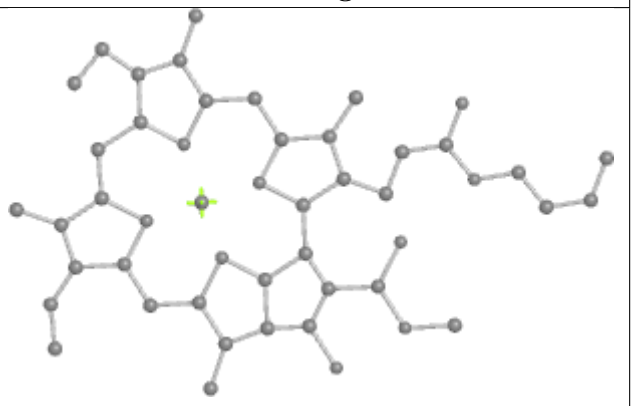
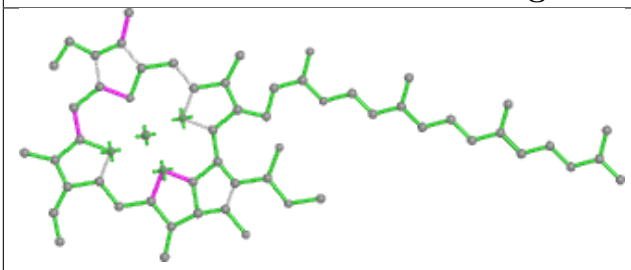
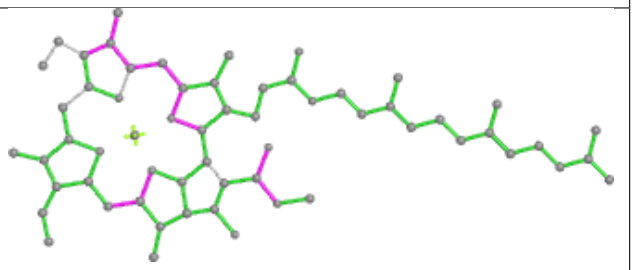
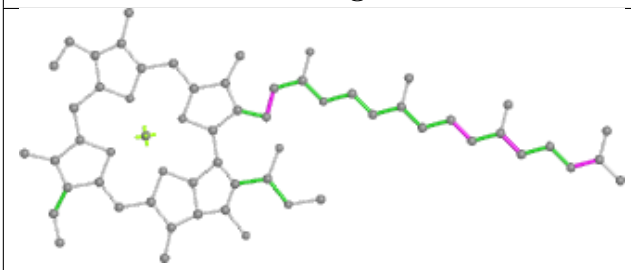
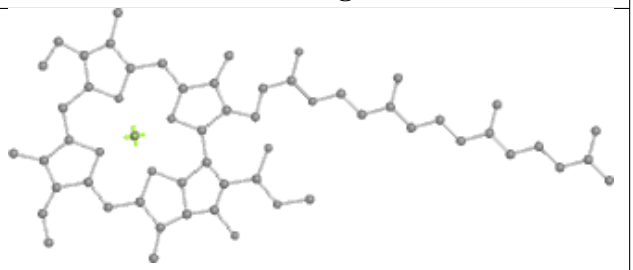
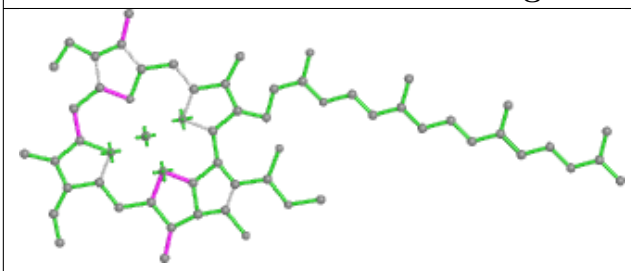
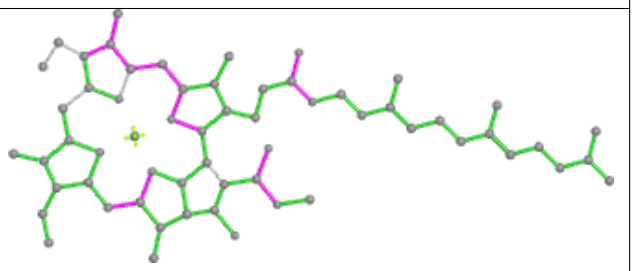
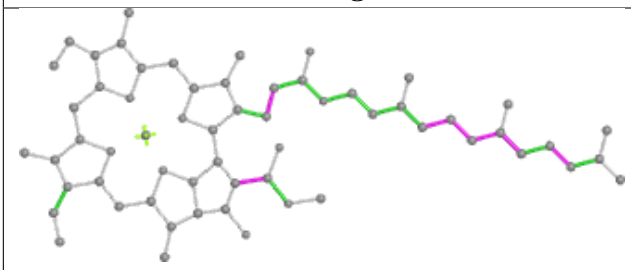
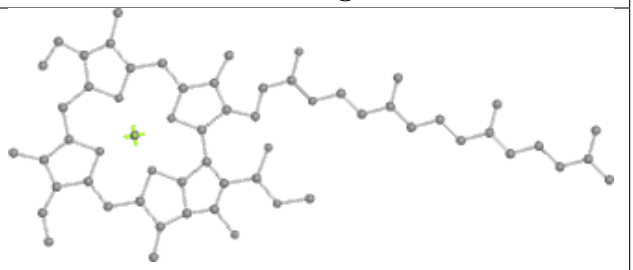
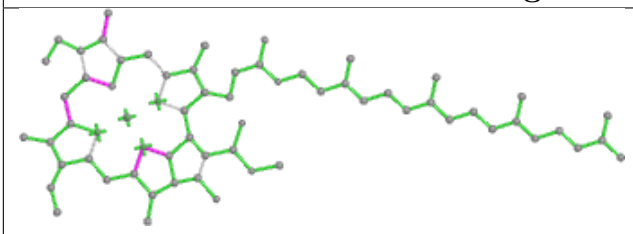


Rings

Ligand CLA 1 610	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA R 604	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA O 604



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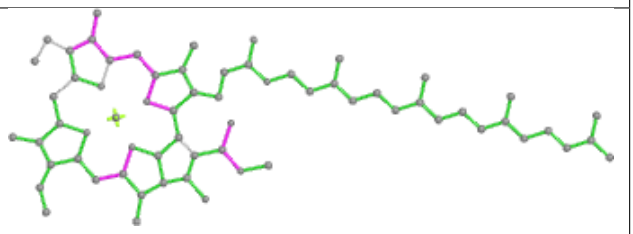
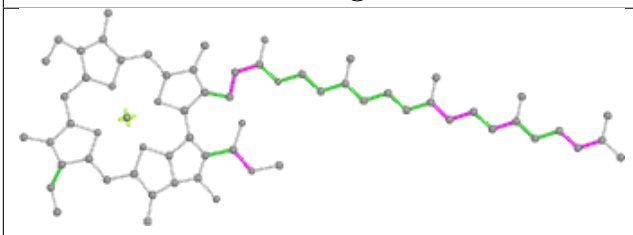
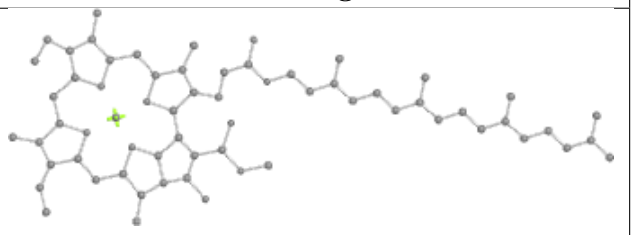


Bond angles

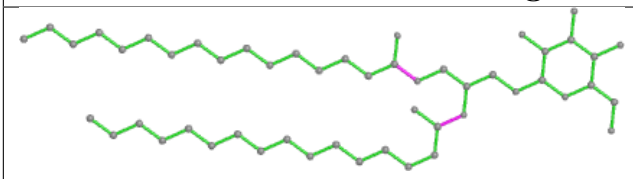


Torsions



Rings

Ligand LMG c 536



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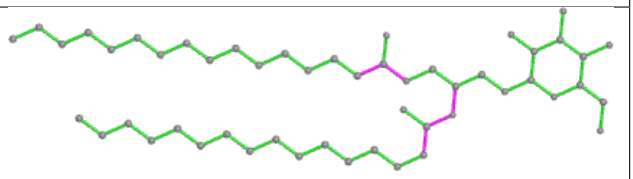
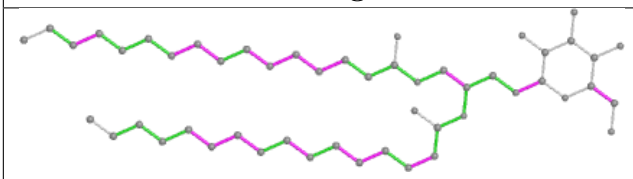
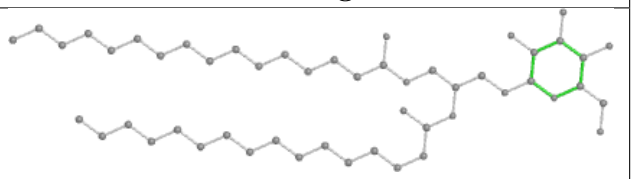


Bond angles

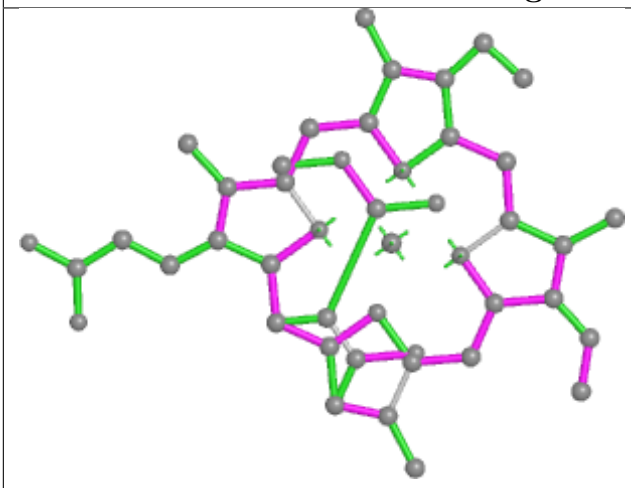


Torsions



Rings

Ligand KC2 N 605



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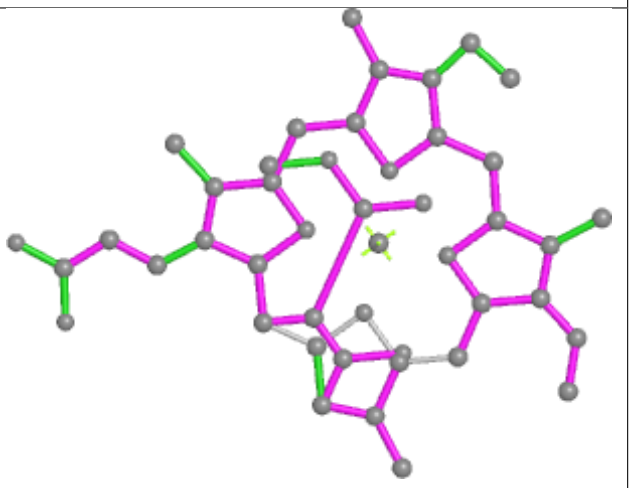

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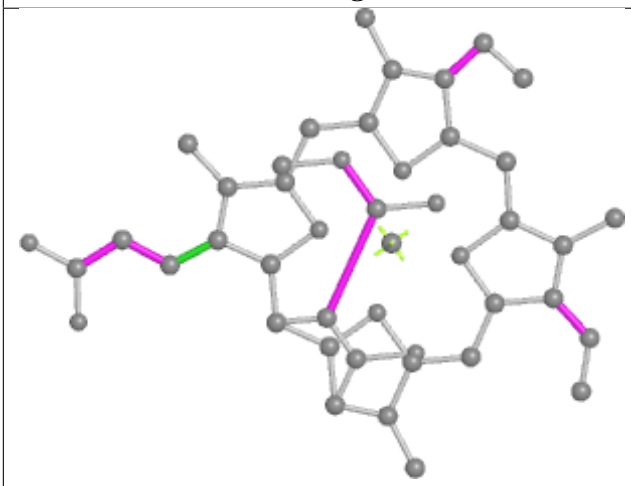

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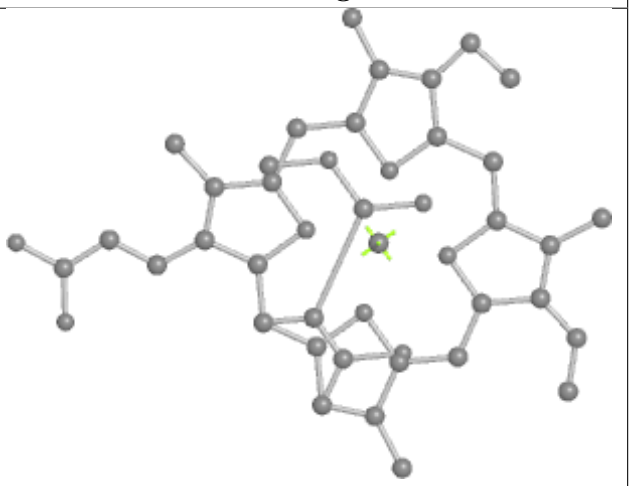
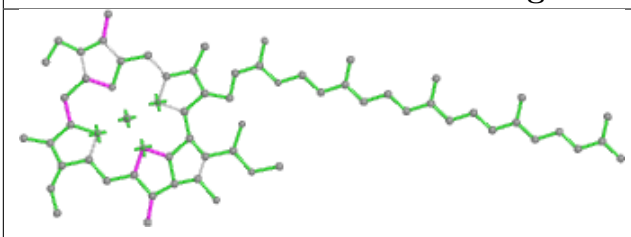


Rings

Ligand CLA b 605



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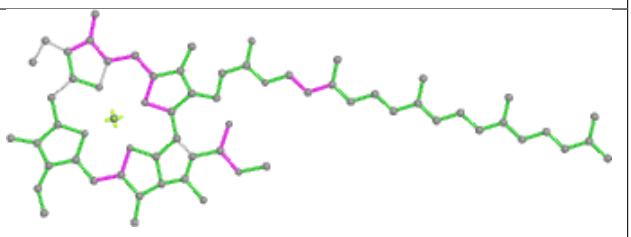

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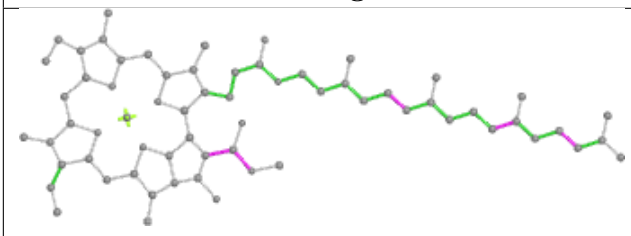

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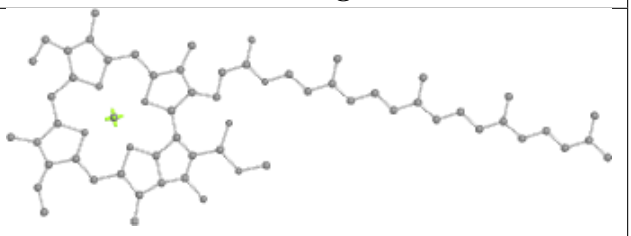
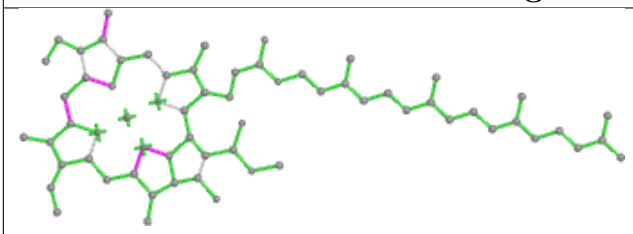


Rings

Ligand CLA P 610



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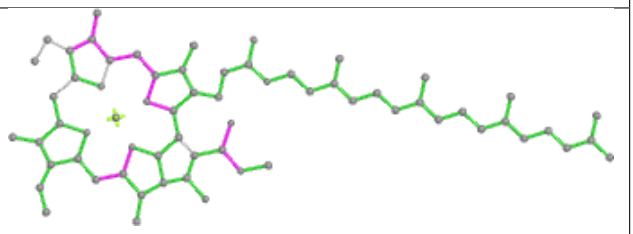

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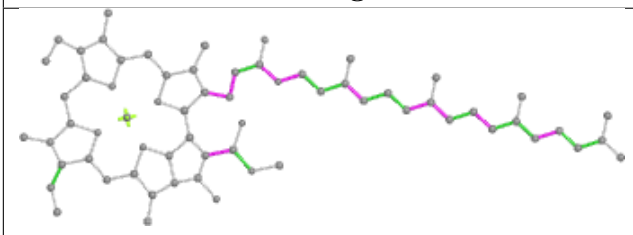

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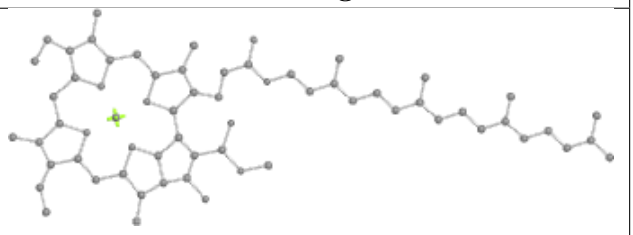
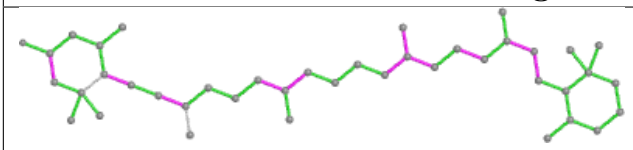


Rings

Ligand IHT 5 620



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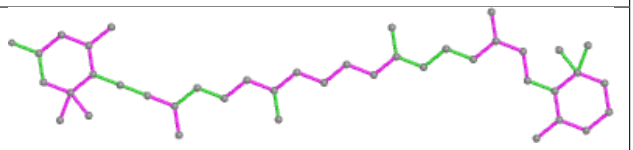

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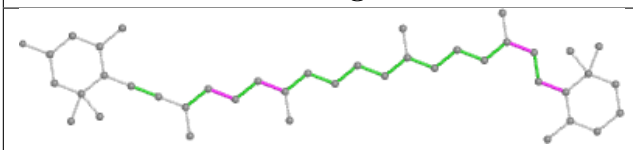

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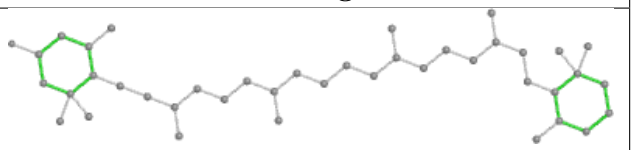
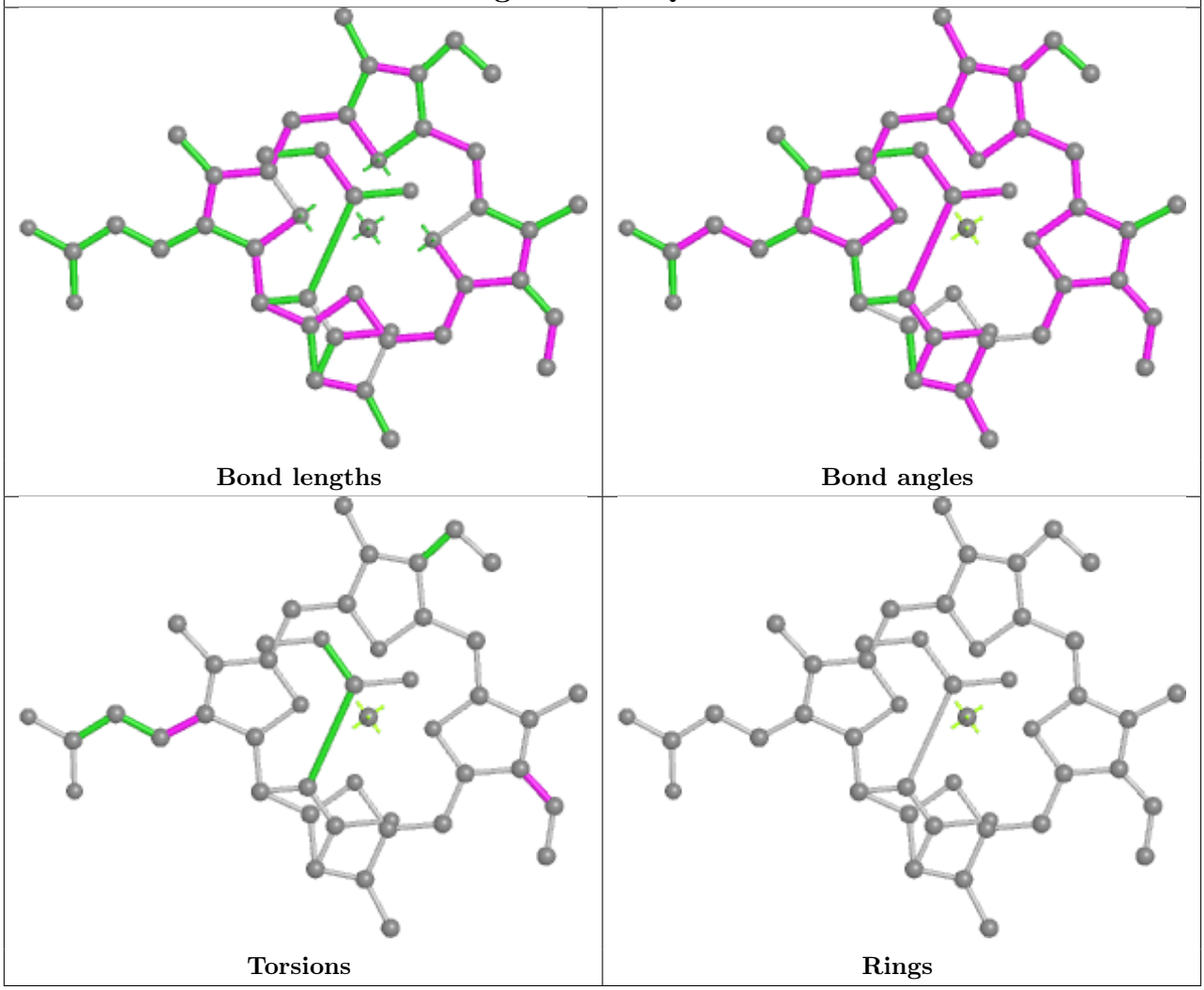


Rings

Ligand KC2 Q 612



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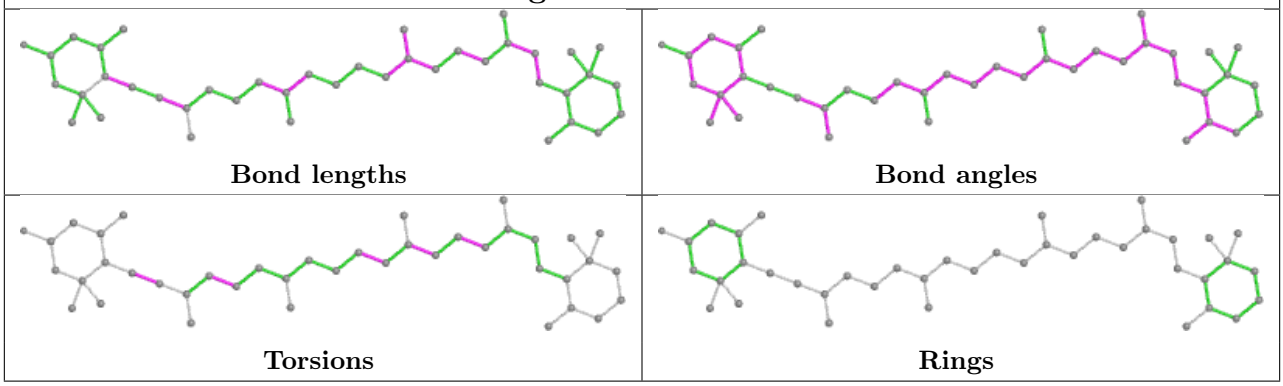

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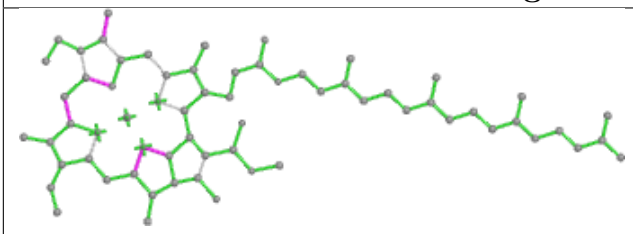

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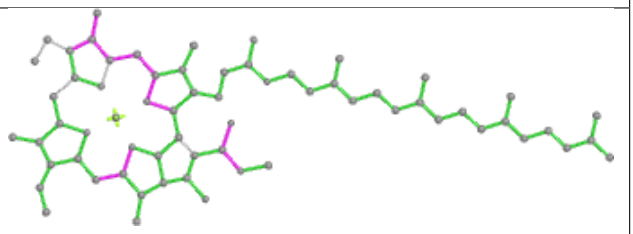
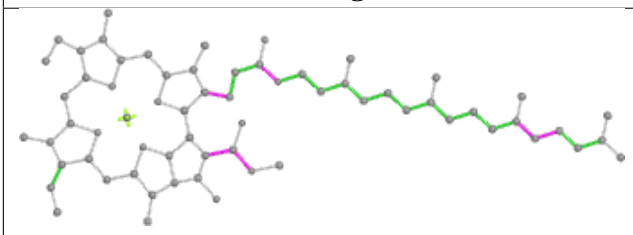


Bond angles



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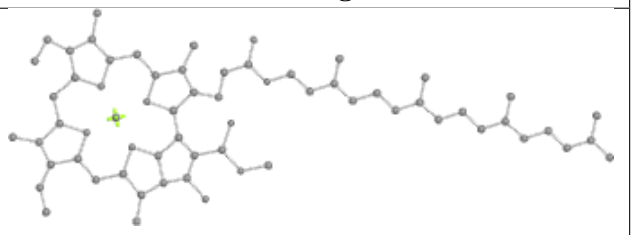
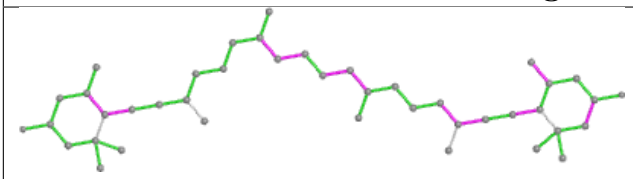


Rings

Ligand II0 2 616



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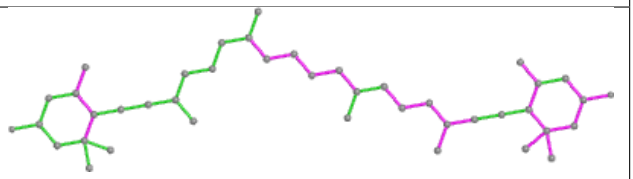

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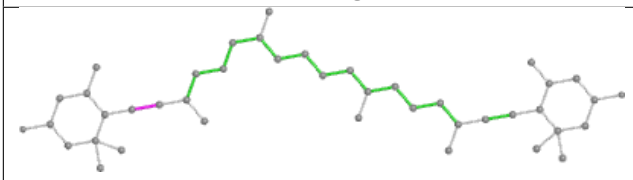

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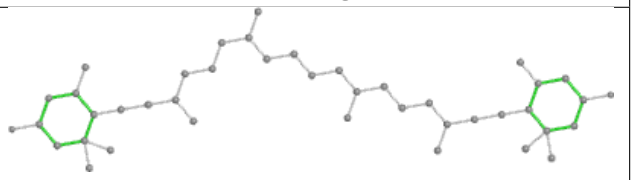
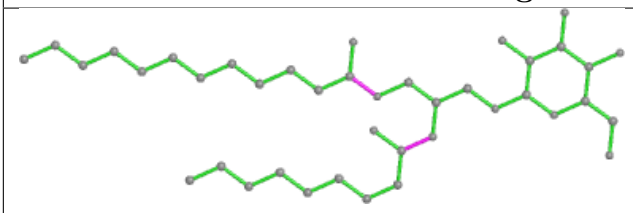


Rings

Ligand LMG M 101



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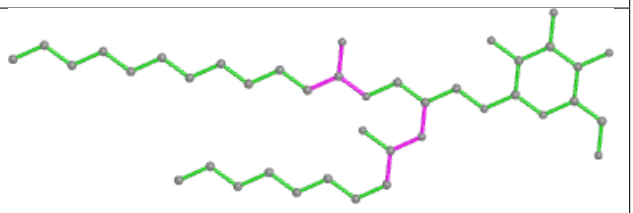
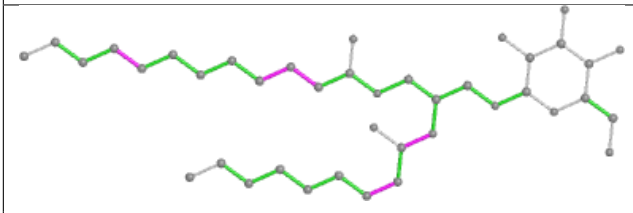


Bond angles



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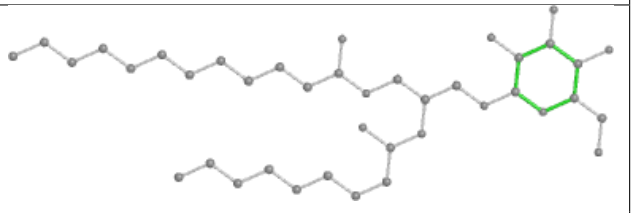
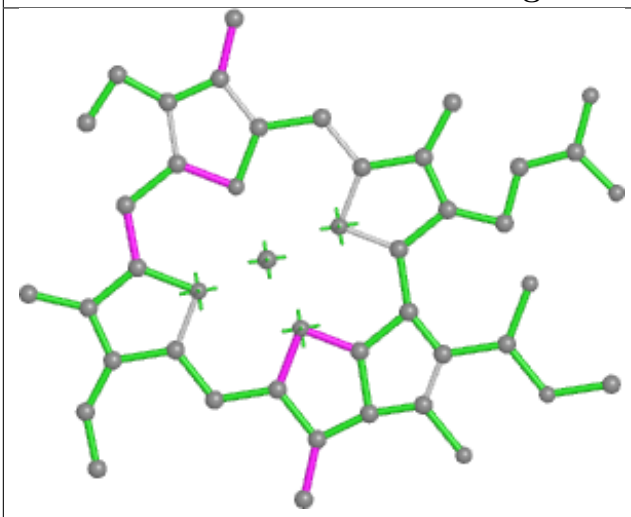


Rings

Ligand CLA G 302



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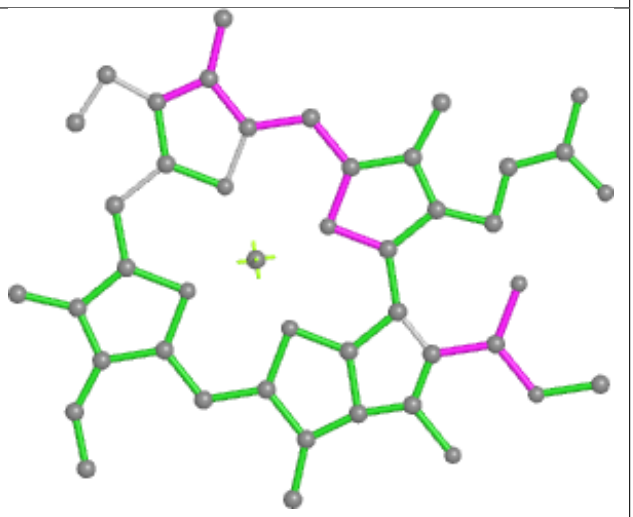
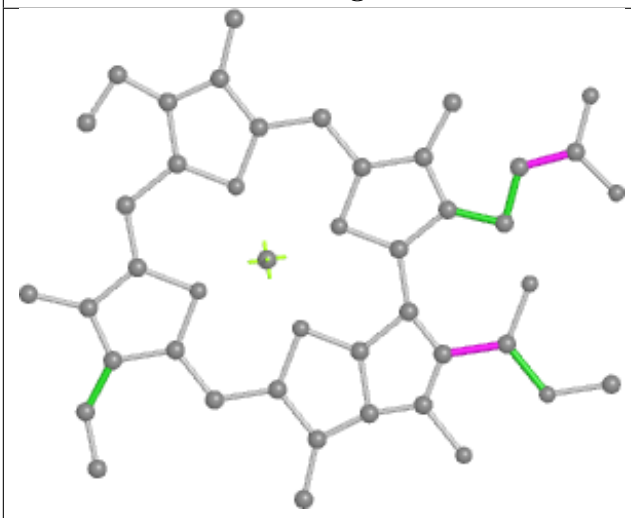


Bond angles



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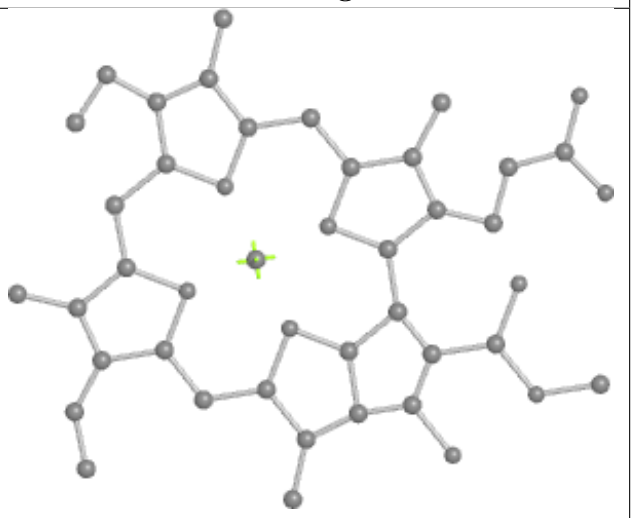
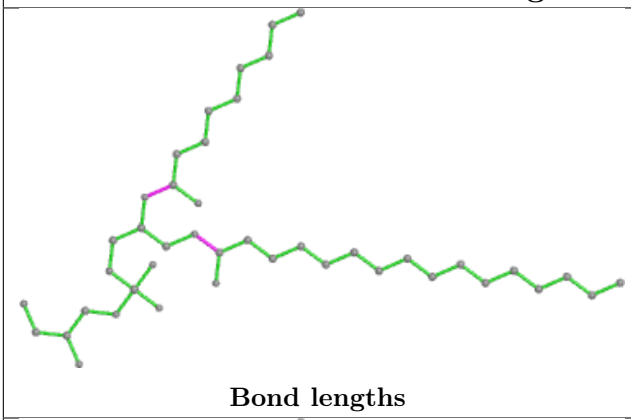


Rings

Ligand LHG a 413



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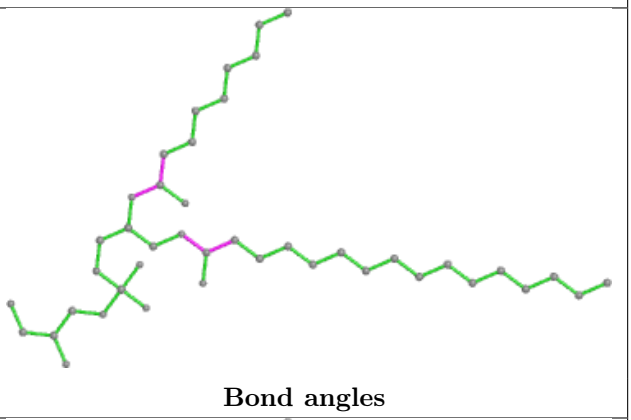
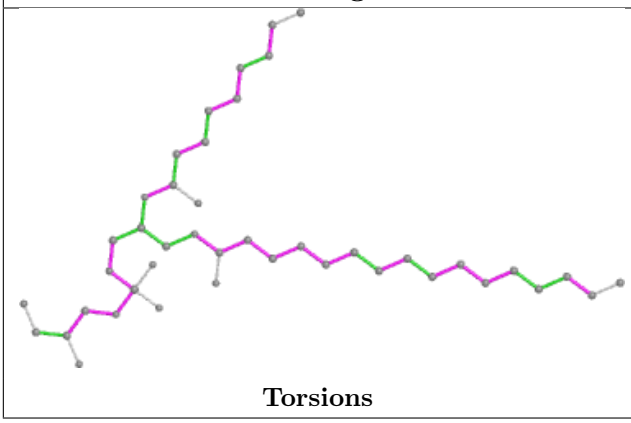


Bond angles



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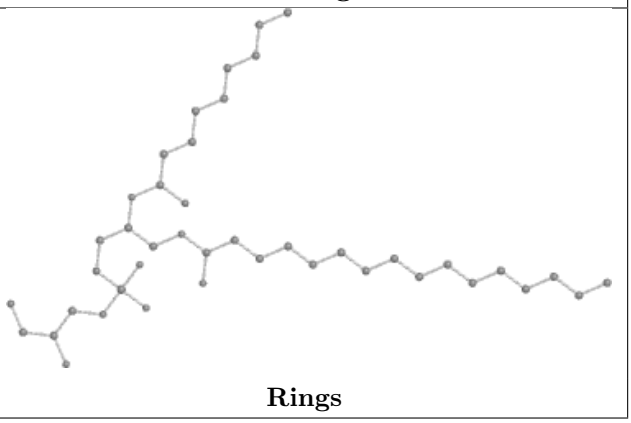
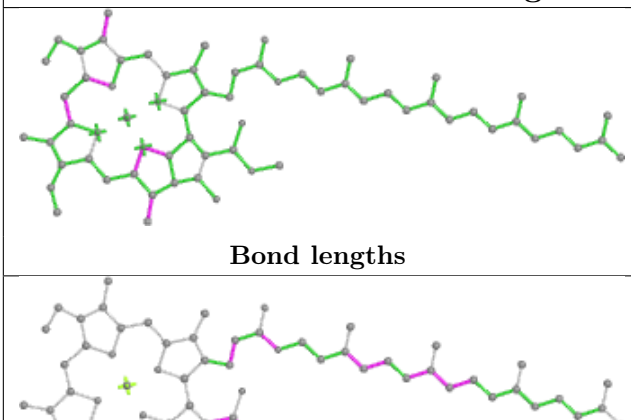


Rings

Ligand CLA C 525



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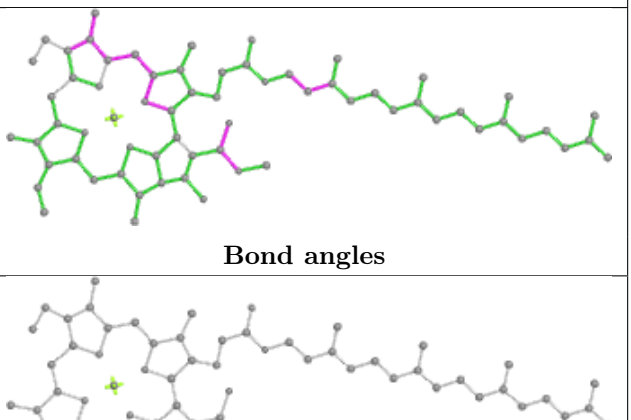
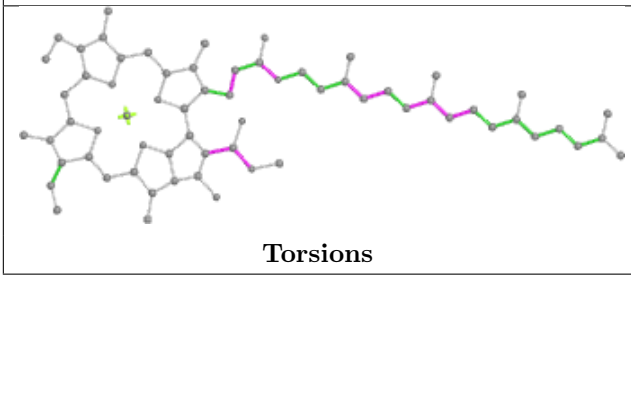


Bond angles



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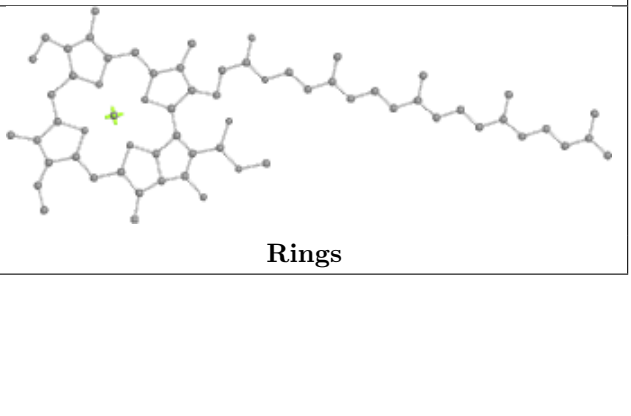
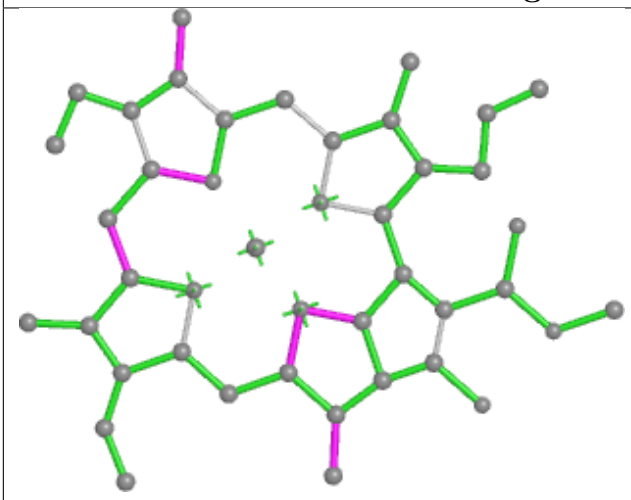


Rings

Ligand CLA R 607



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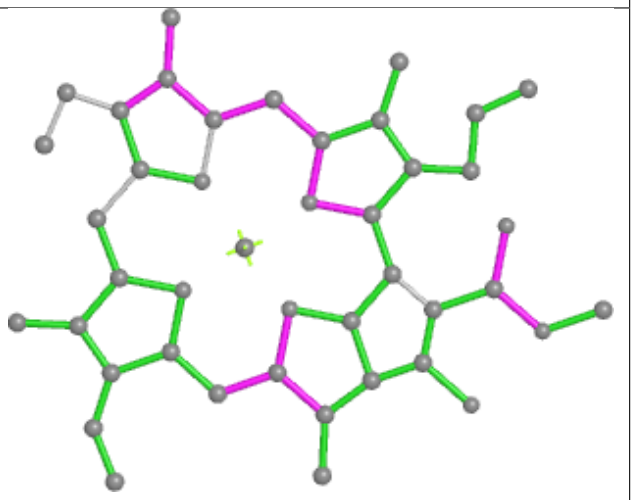
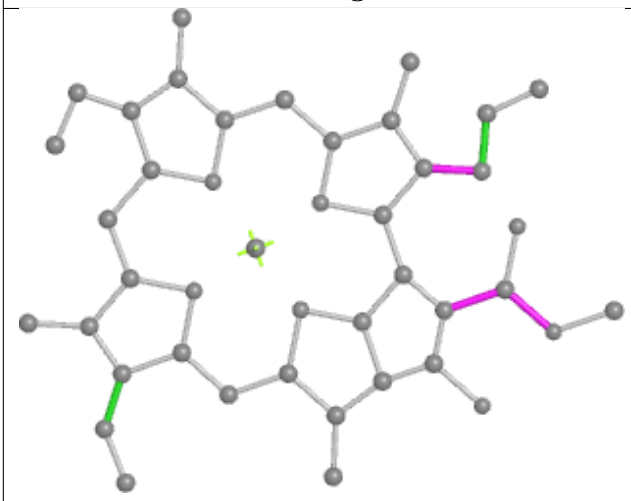


Bond angles



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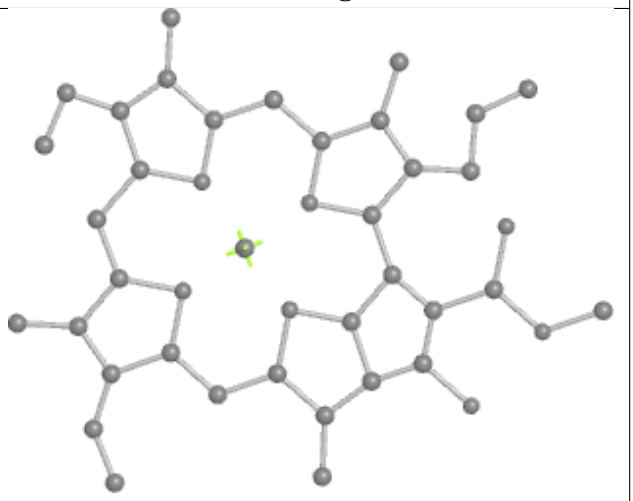
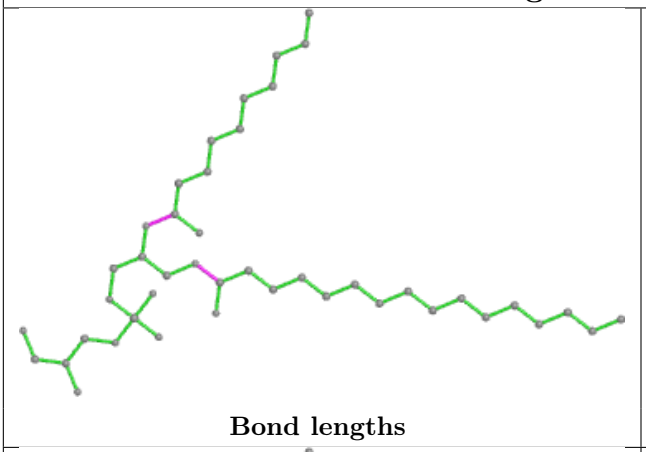


Rings

Ligand LHG b 622



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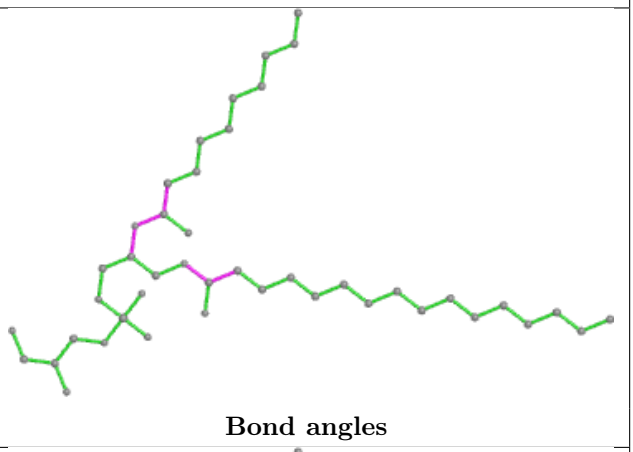
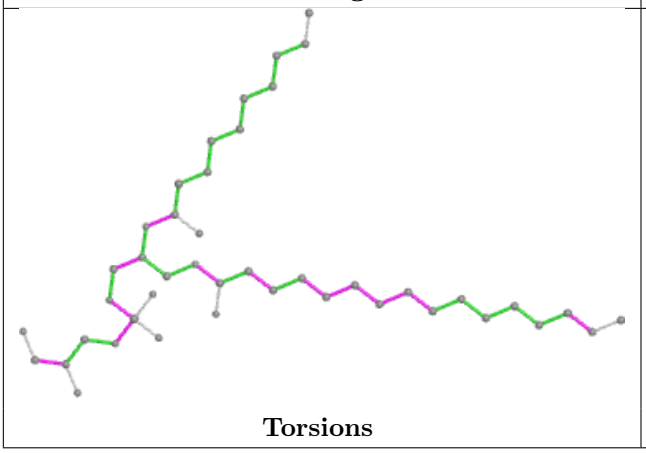


Bond angles



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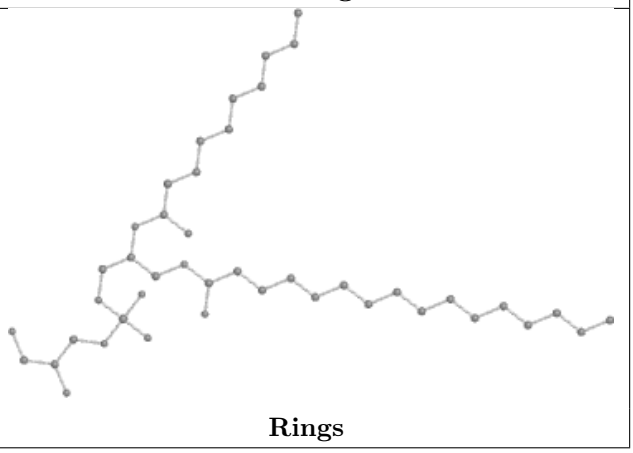
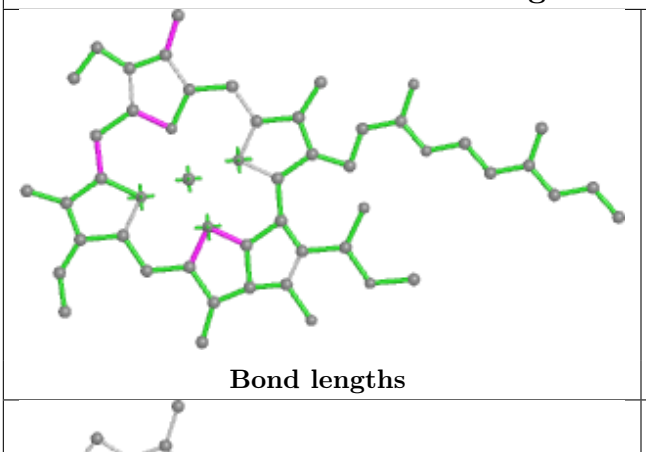
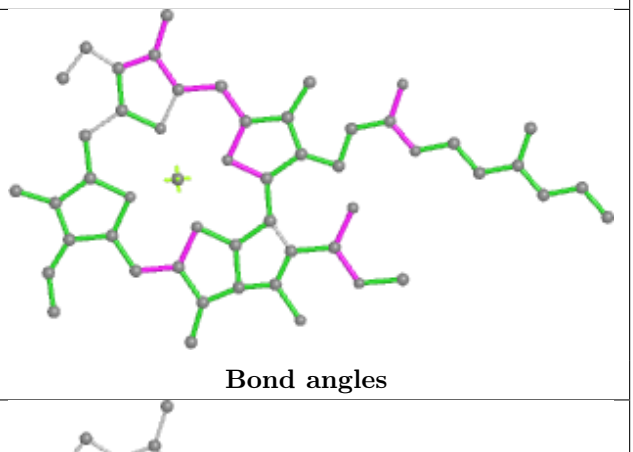


Rings

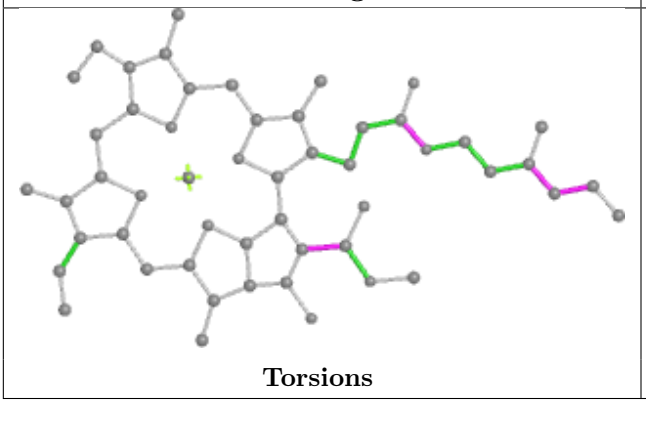
Ligand CLA 3 611



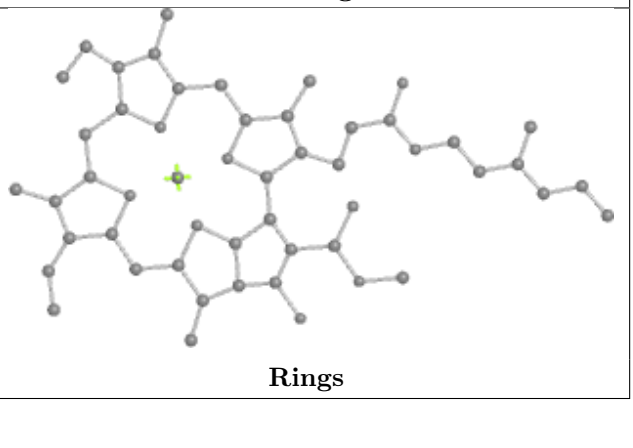
Bond lengths



Bond angles

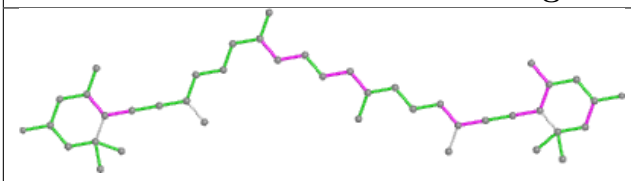


Torsions



Rings

Ligand II0 4 619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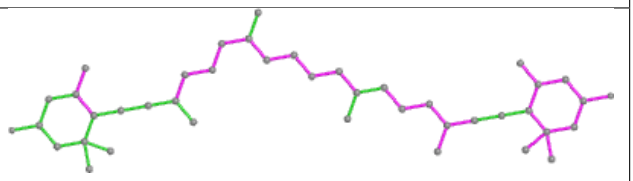
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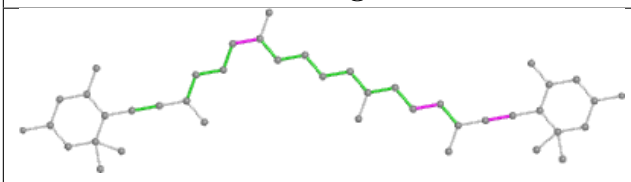
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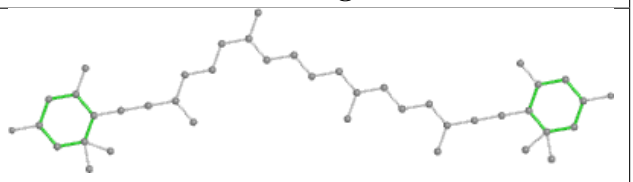
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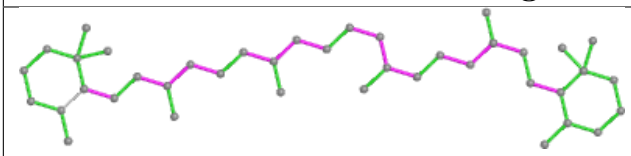
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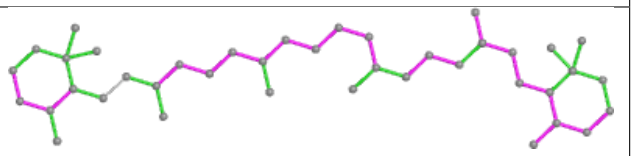
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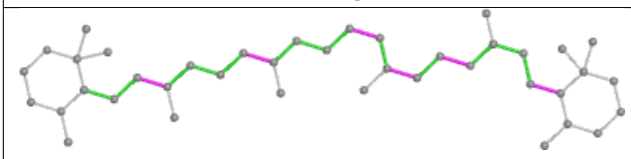
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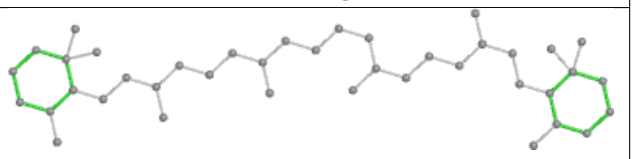
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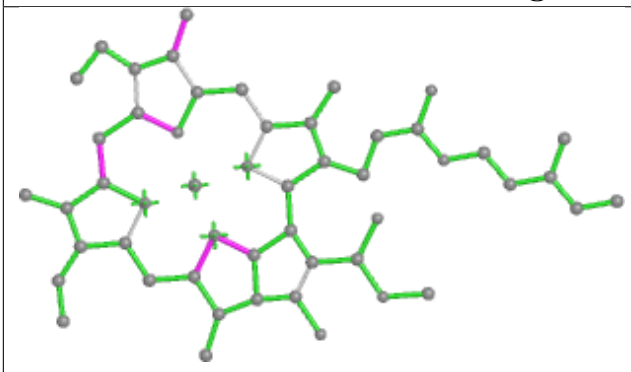
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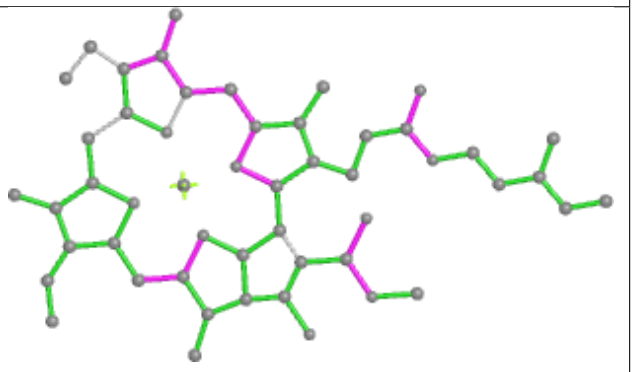
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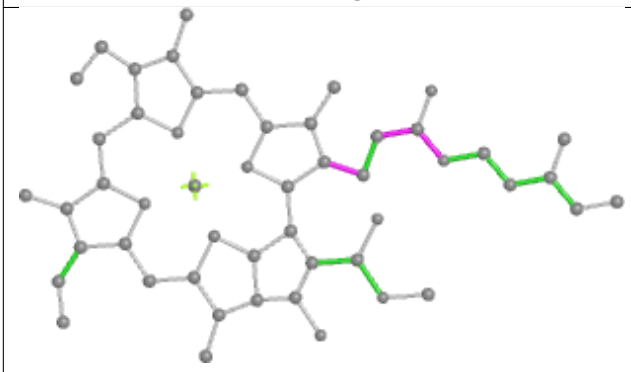
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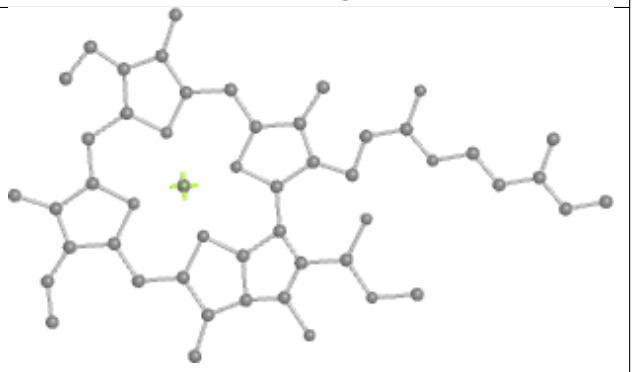
Rings

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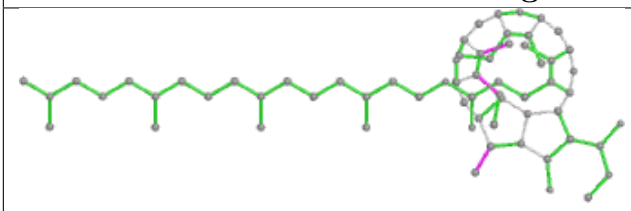

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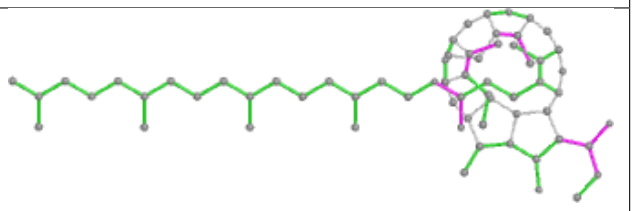

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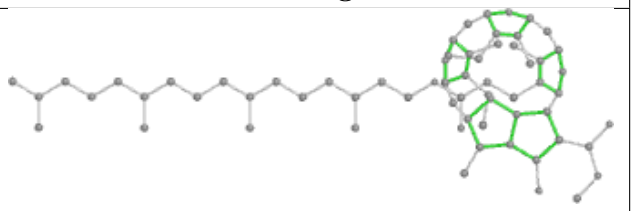
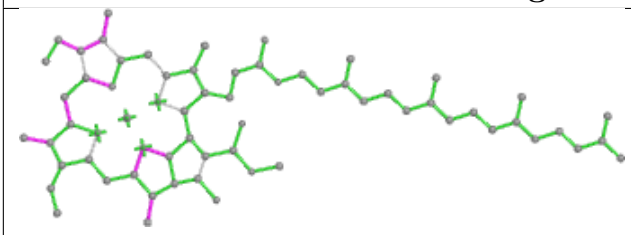


Rings

Ligand CLA 5 609



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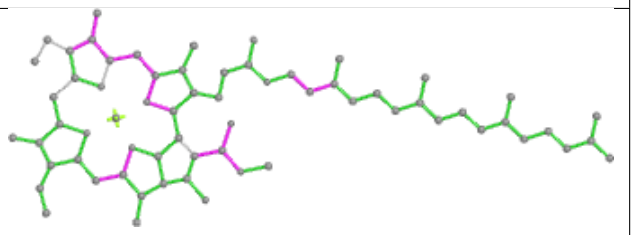

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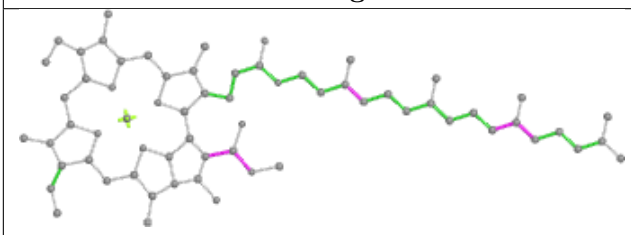

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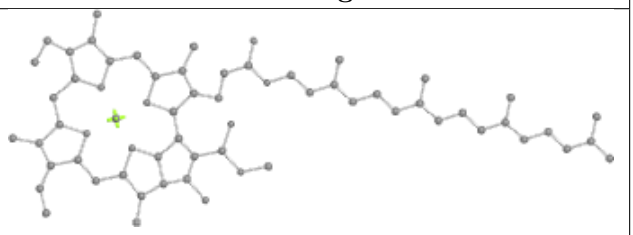

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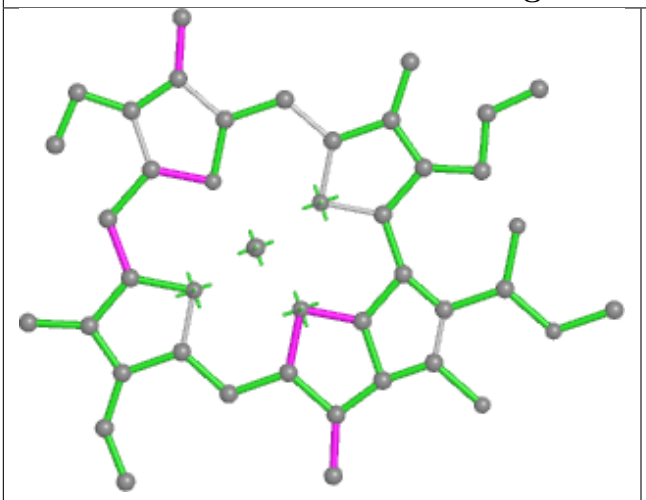

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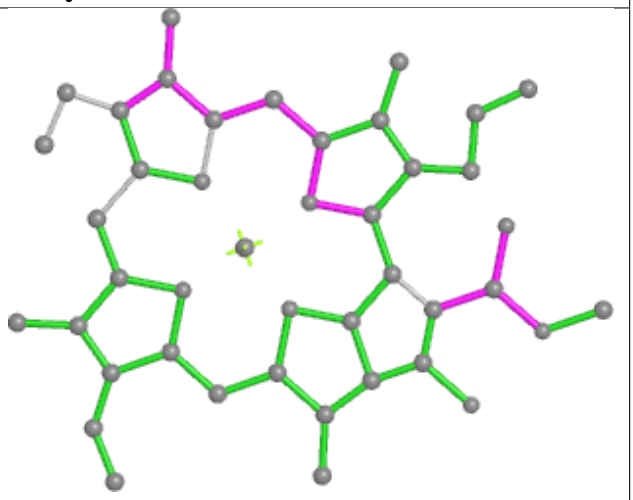

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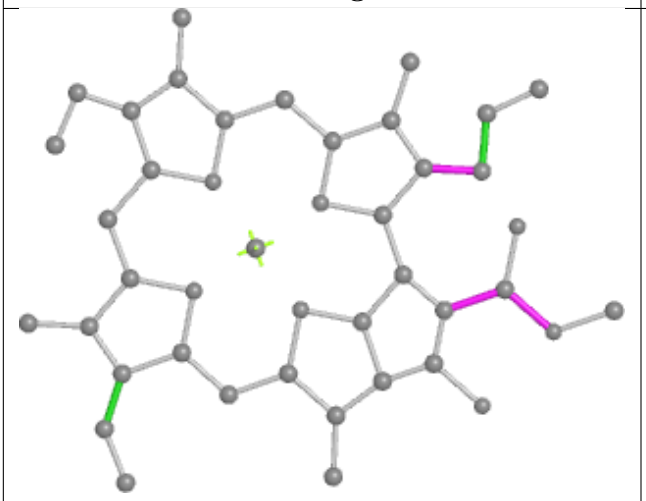

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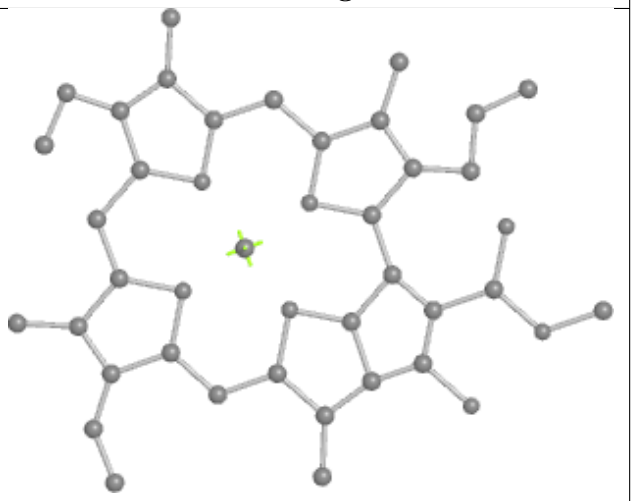

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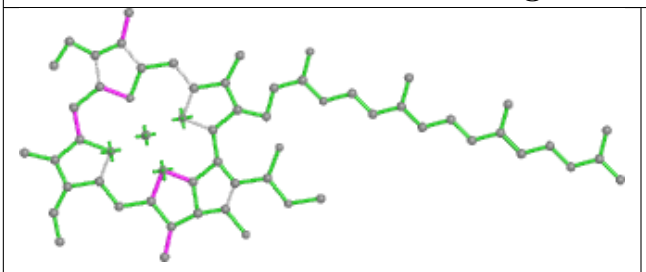

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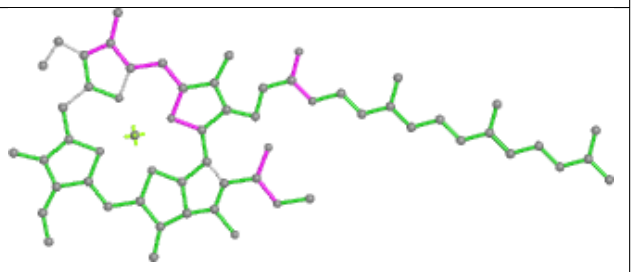

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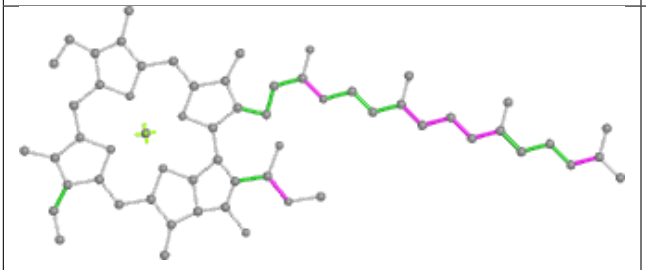

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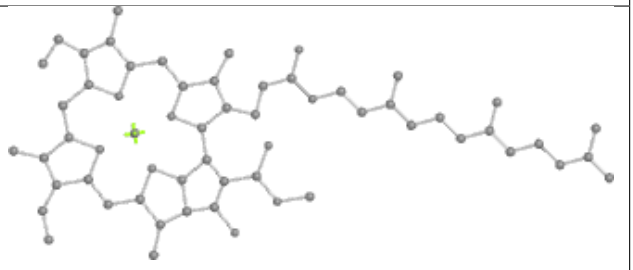

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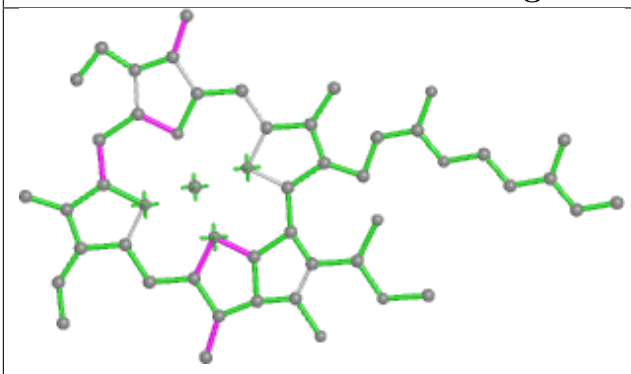

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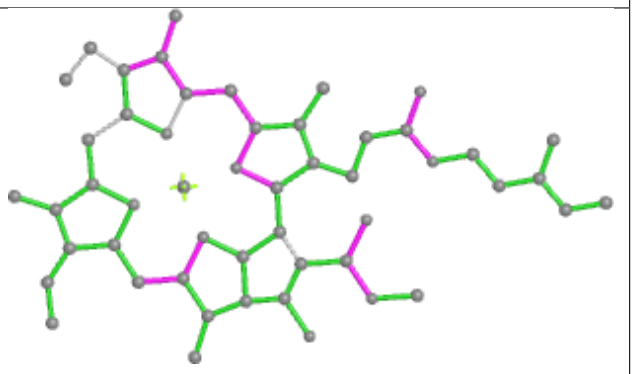

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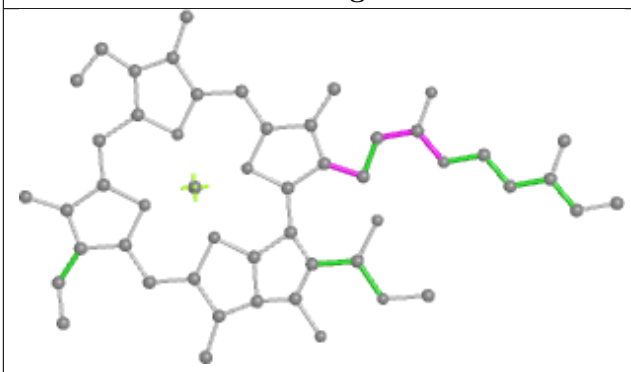

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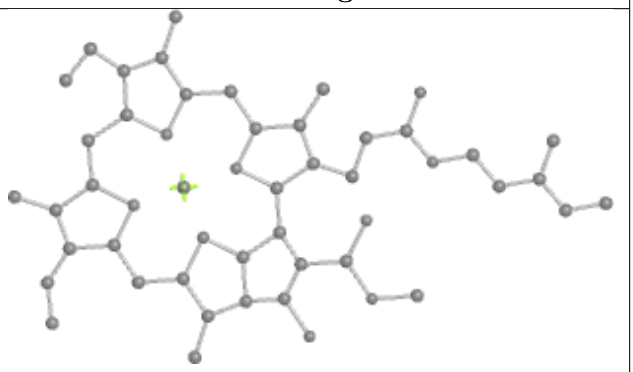

Rings

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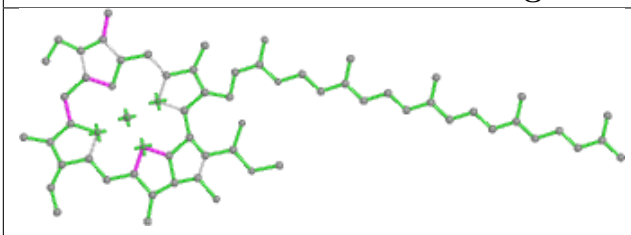

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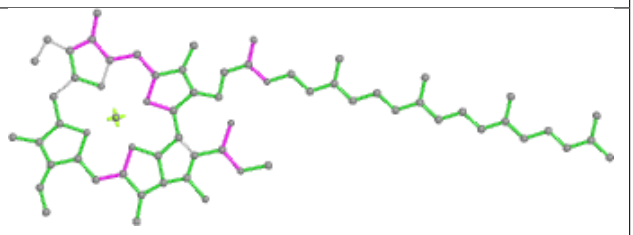

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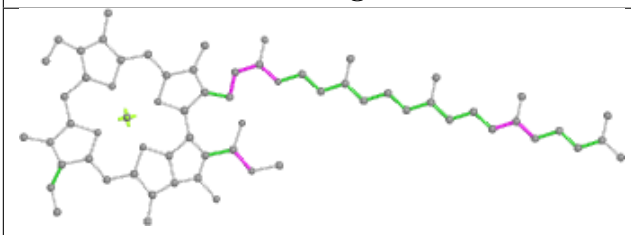

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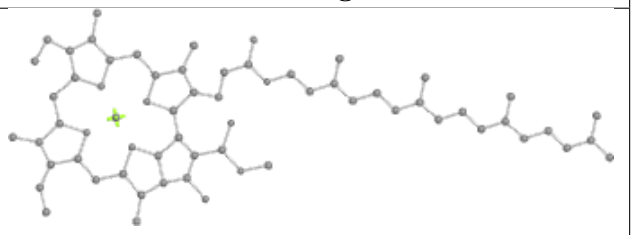

Rings

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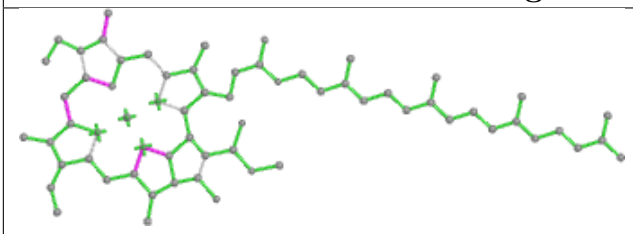

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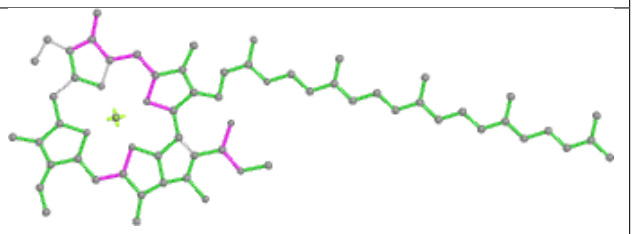

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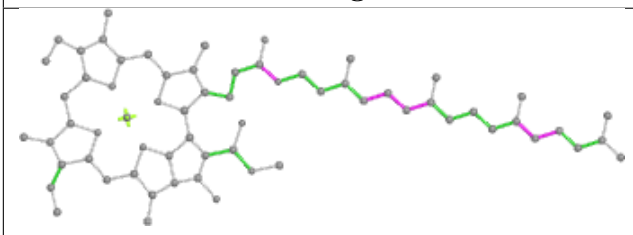

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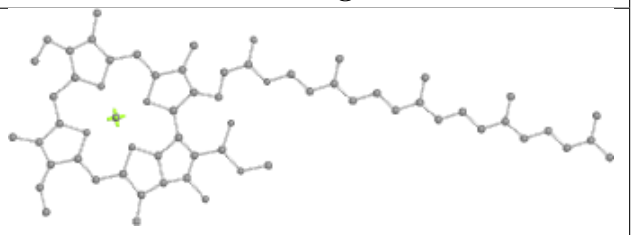
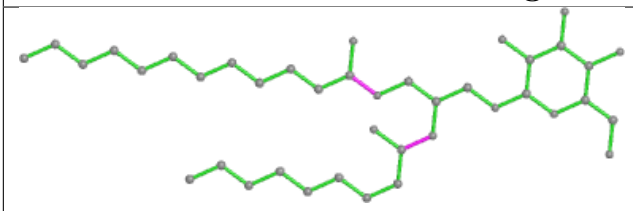


Rings

Ligand LMG 2 622



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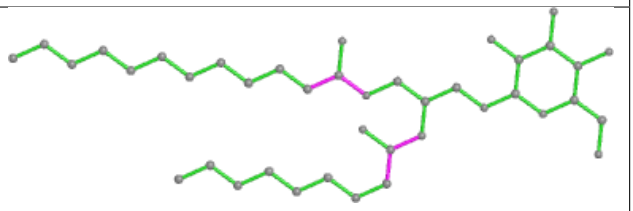

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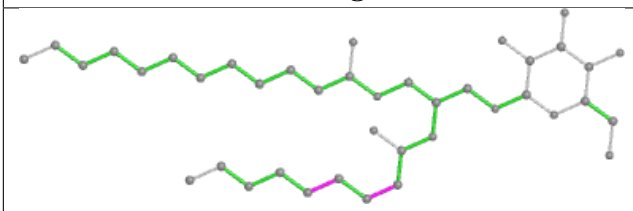

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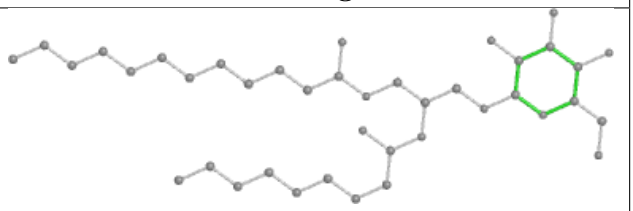
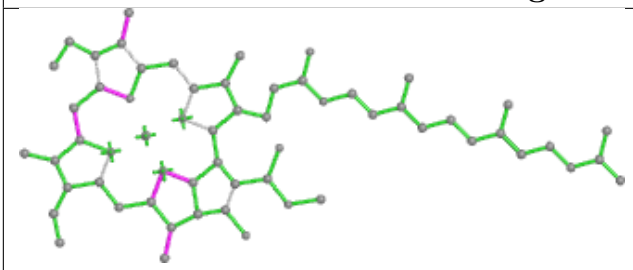


Rings

Ligand CLA 1 602



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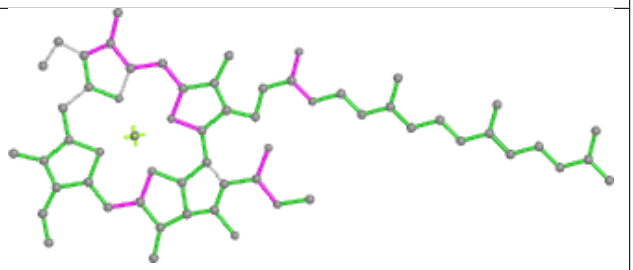

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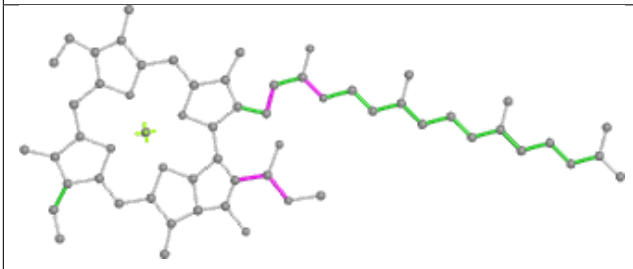

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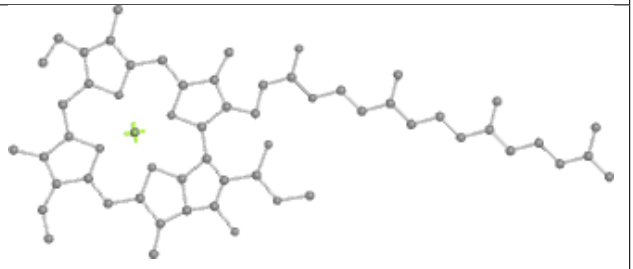
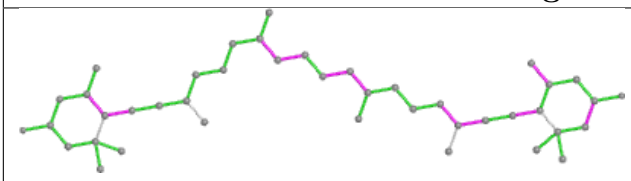


Rings

Ligand II0 1 616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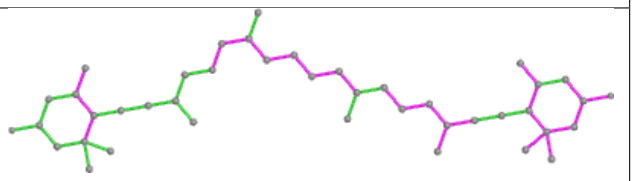
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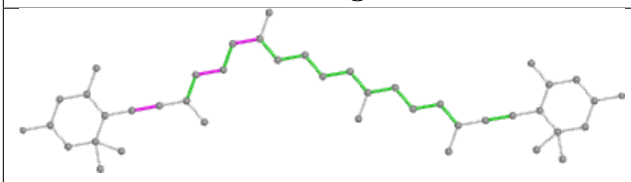
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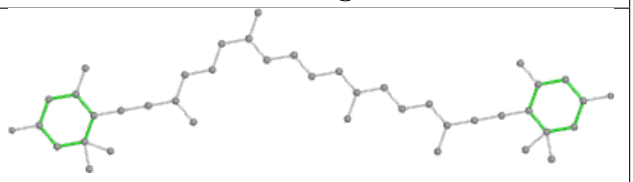
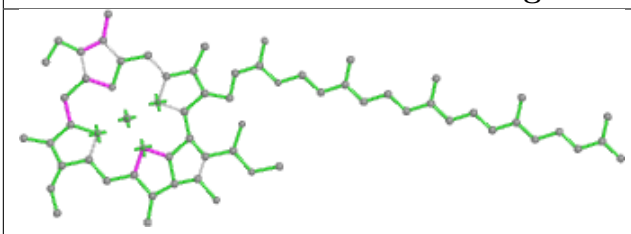

Rings

Ligand CLA Q 603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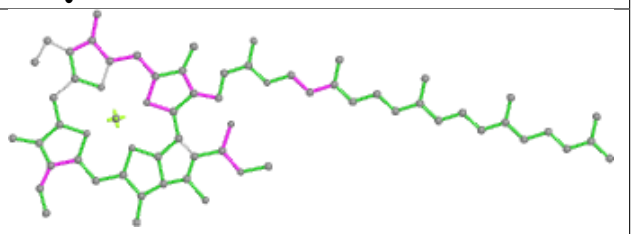
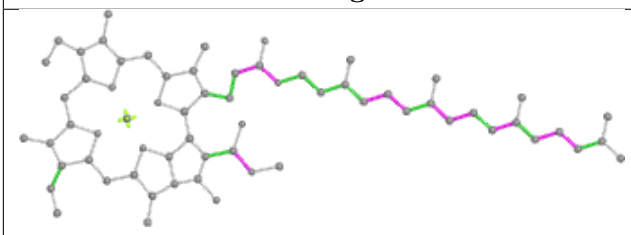
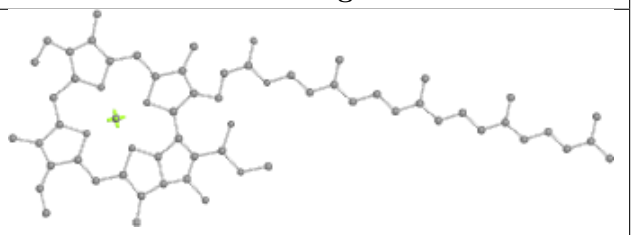
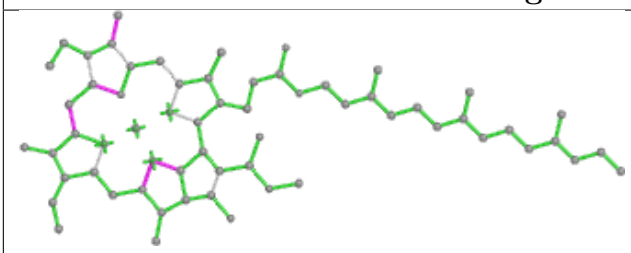

Bond angles


Torsions


Rings

Ligand CLA P 602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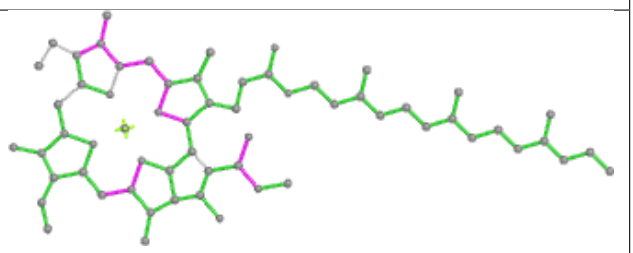
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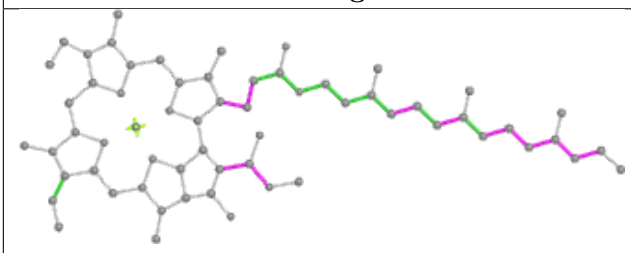
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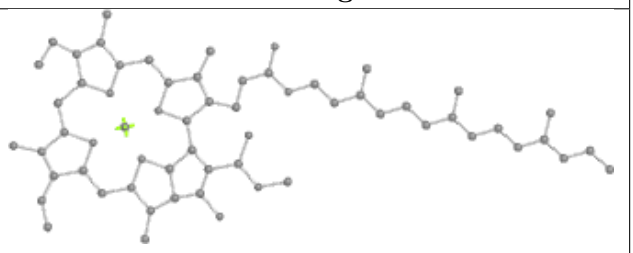
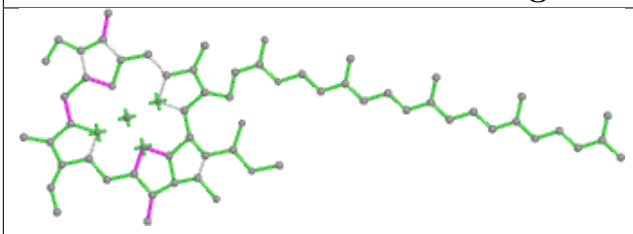

Rings

Ligand CLA c 520



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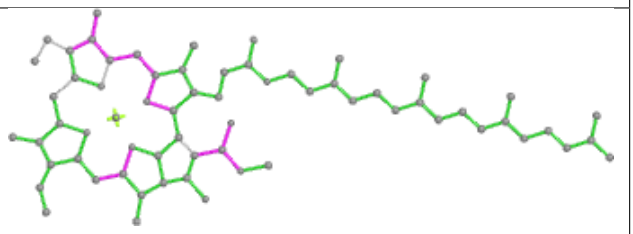

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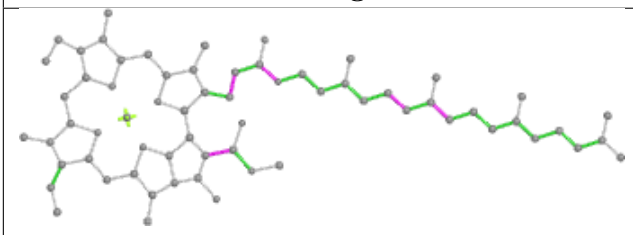

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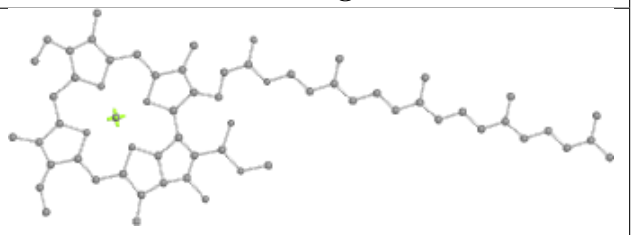
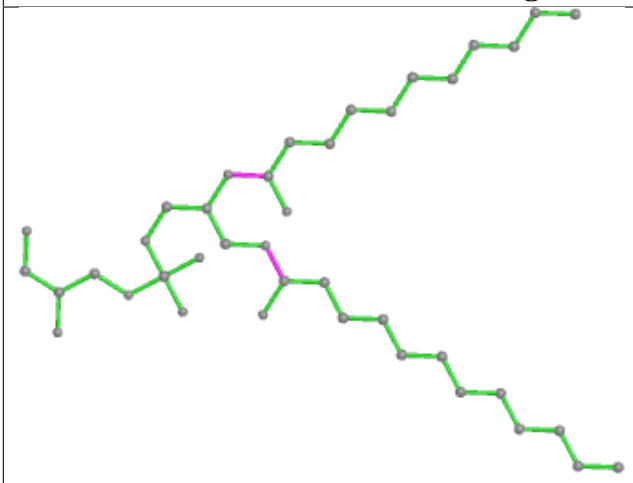


Rings

Ligand LHG C 535



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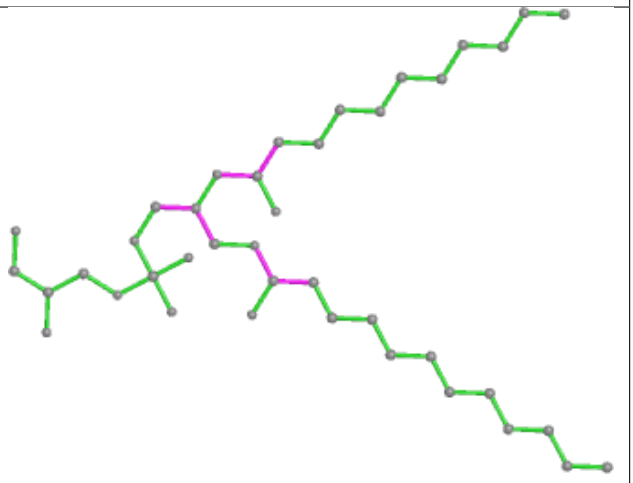
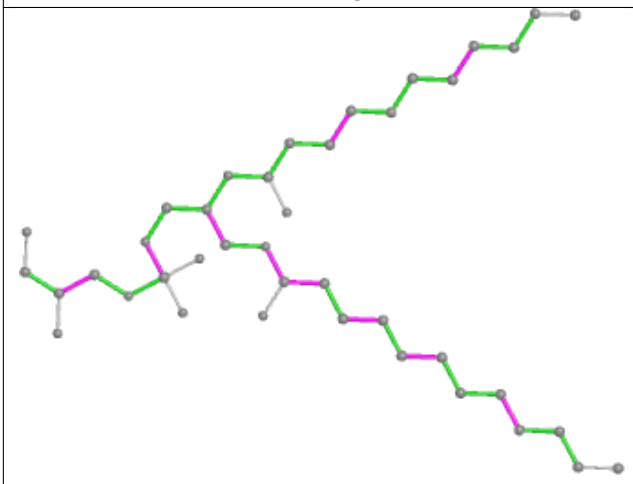


Bond angles



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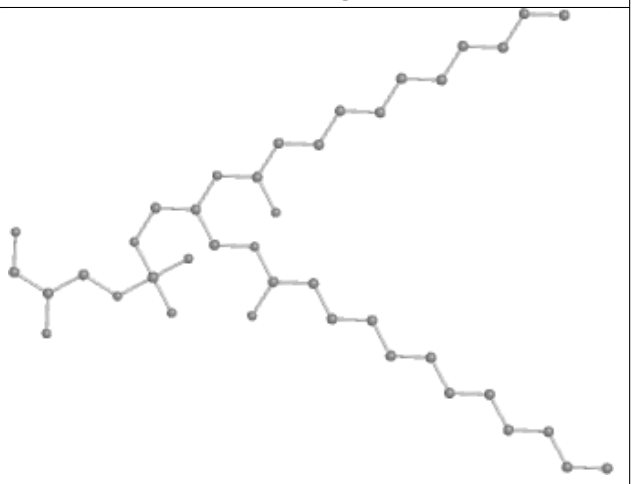
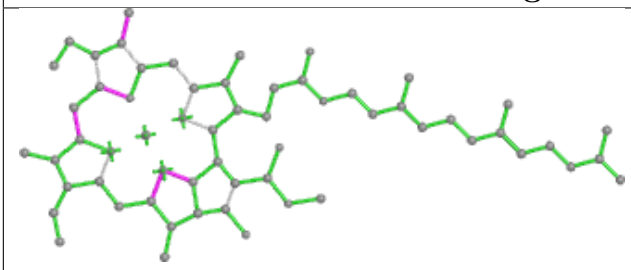


Rings

Ligand CLA A 406



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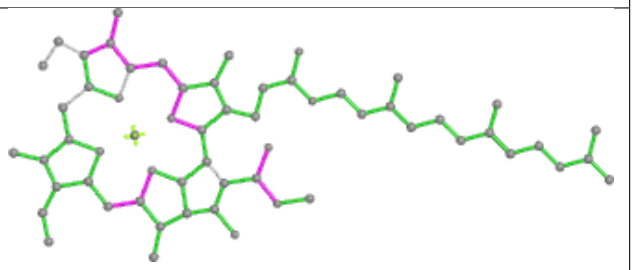
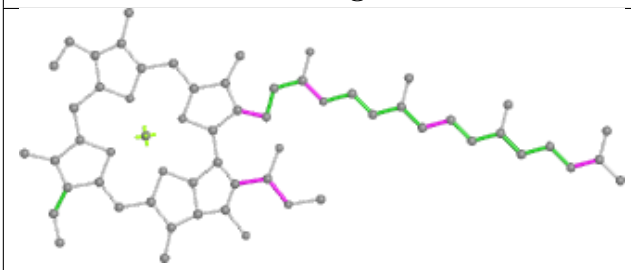


Bond angles



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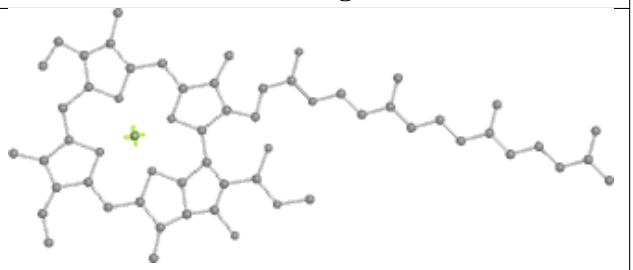
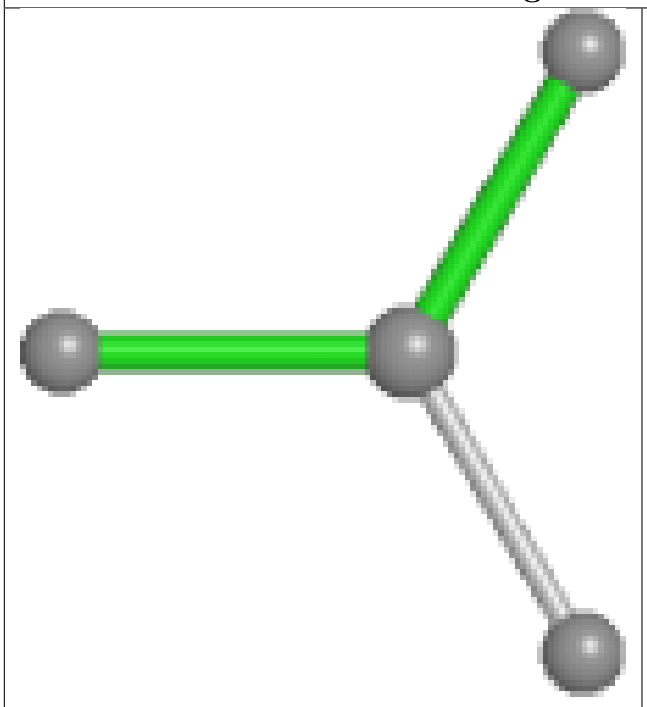


Rings

Ligand BCT A 412



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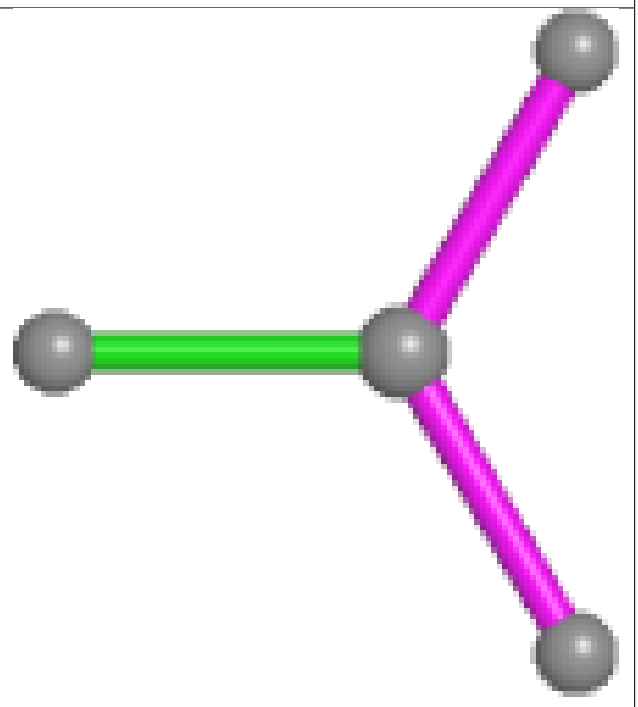

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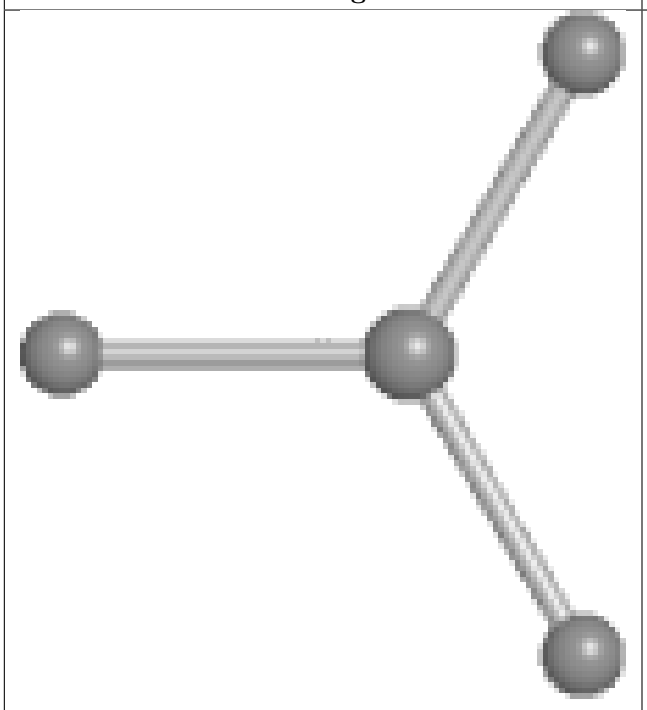

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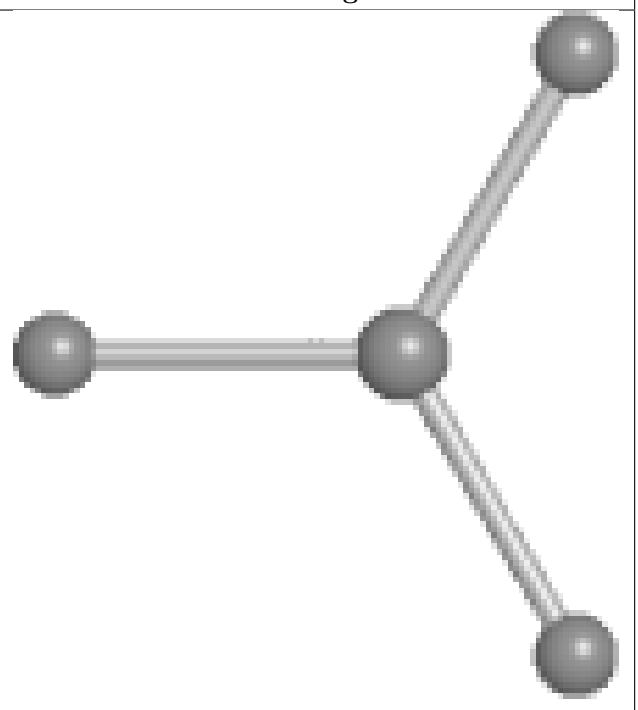
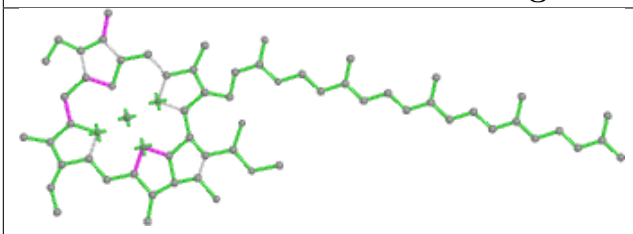


Rings

Ligand CLA c 526



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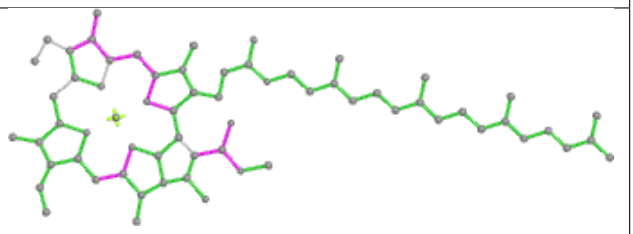
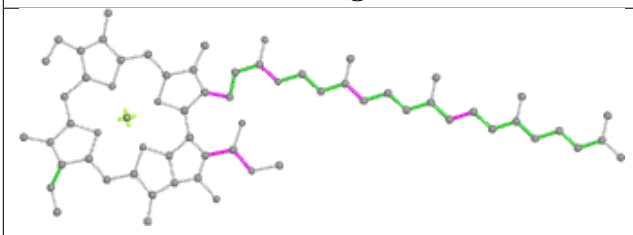


Bond angles



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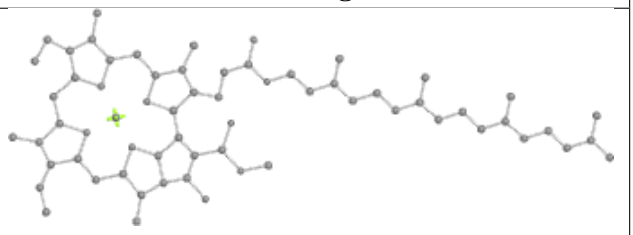
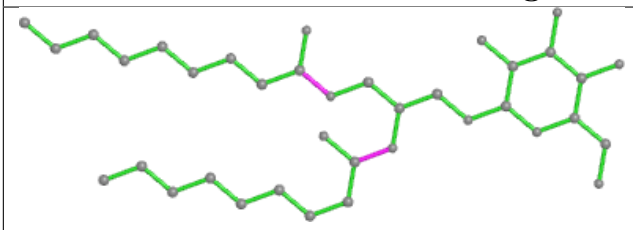


Rings

Ligand LMG d 407



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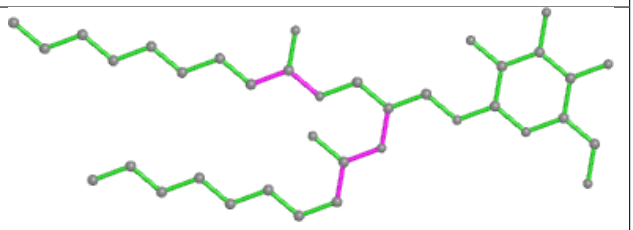

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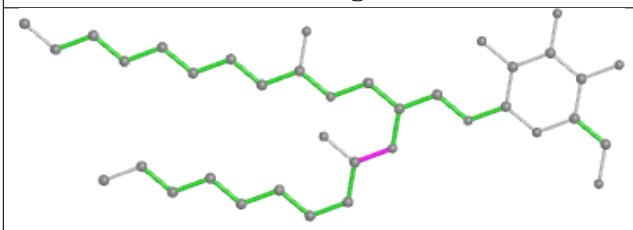

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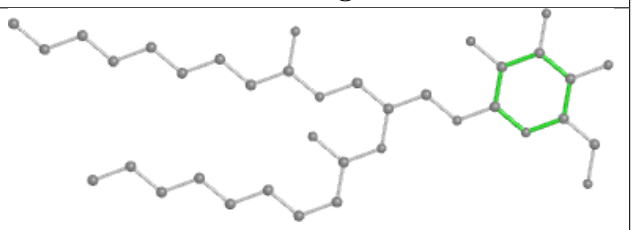
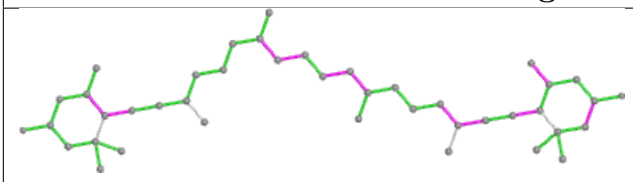


Rings

Ligand II0 R 616



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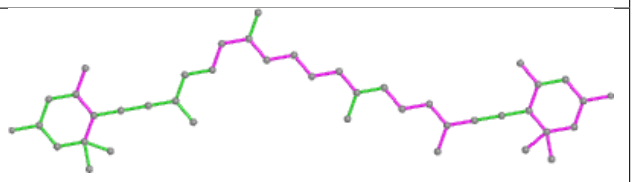
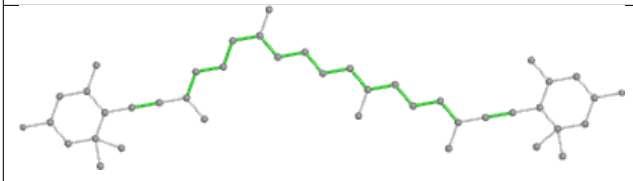
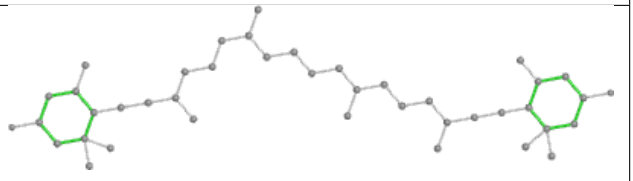


Bond angles

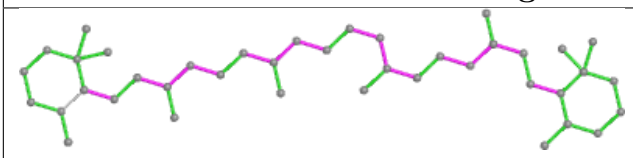


Torsions



Rings

Ligand WVN b 619



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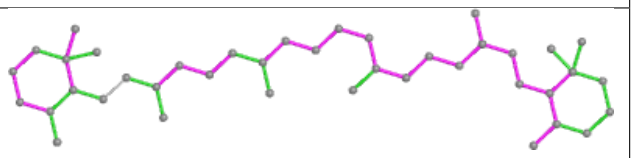
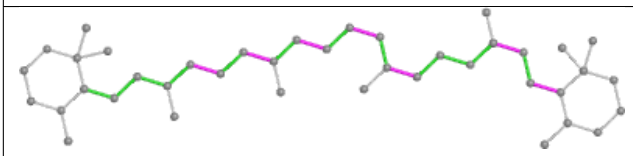


Bond angles



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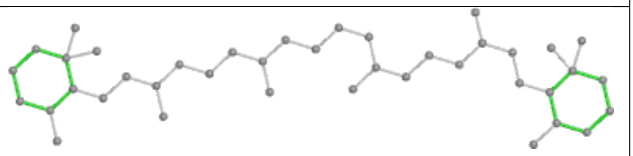
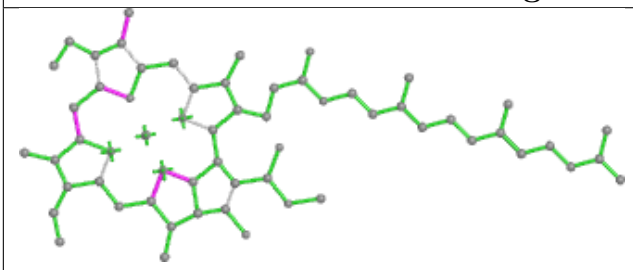


Rings

Ligand CLA D 404



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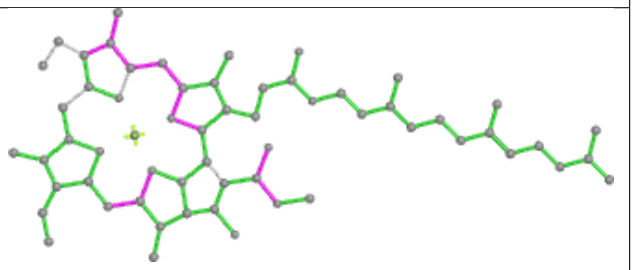
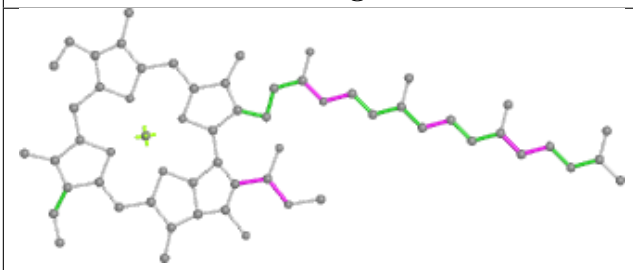


Bond angles



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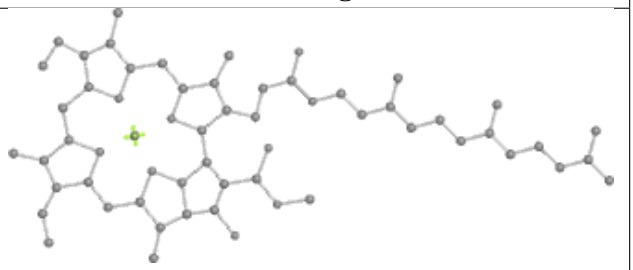
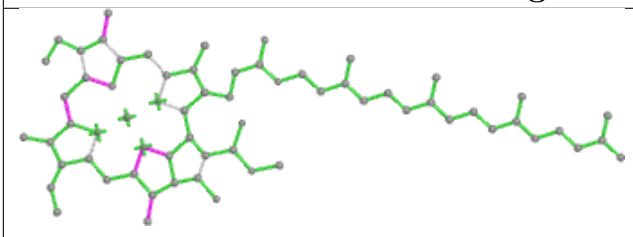


Rings

Ligand CLA 6 615



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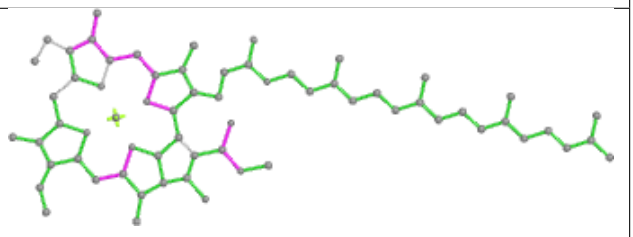

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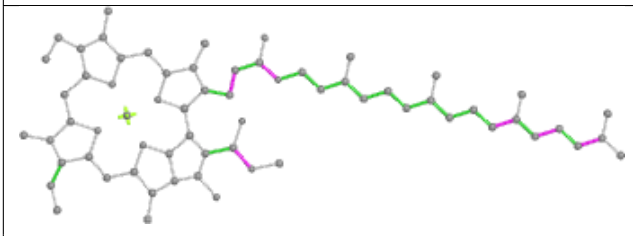

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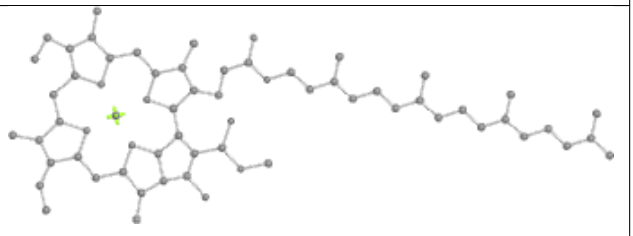
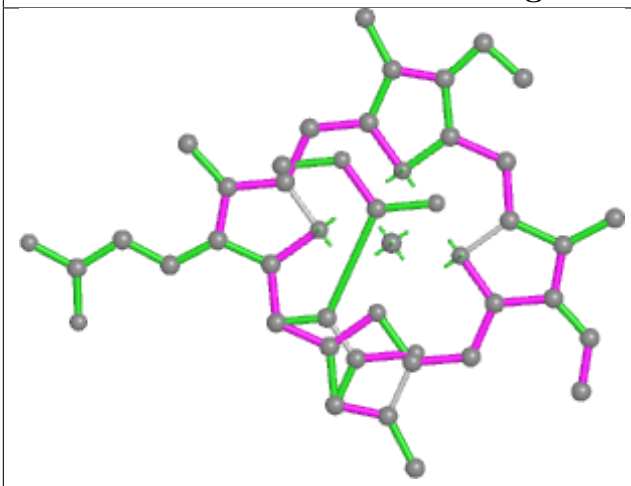


Rings

Ligand KC2 N 613



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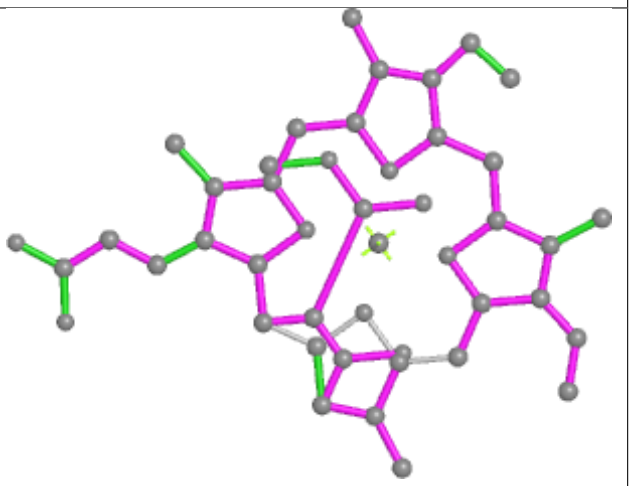
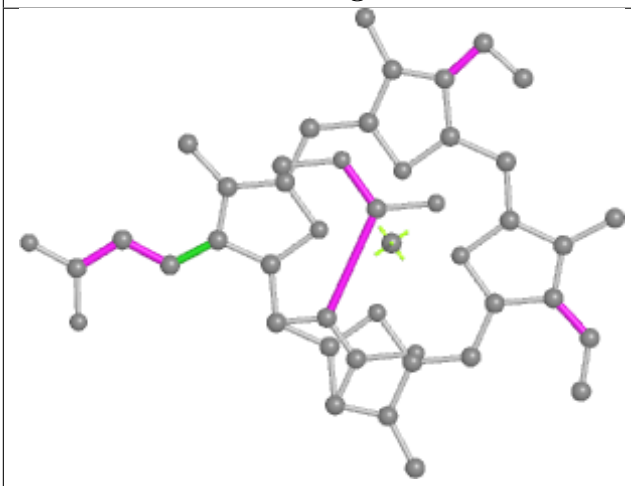


Bond angles



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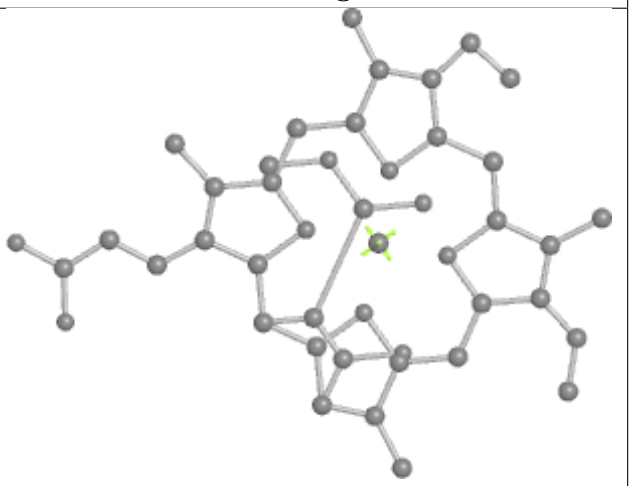
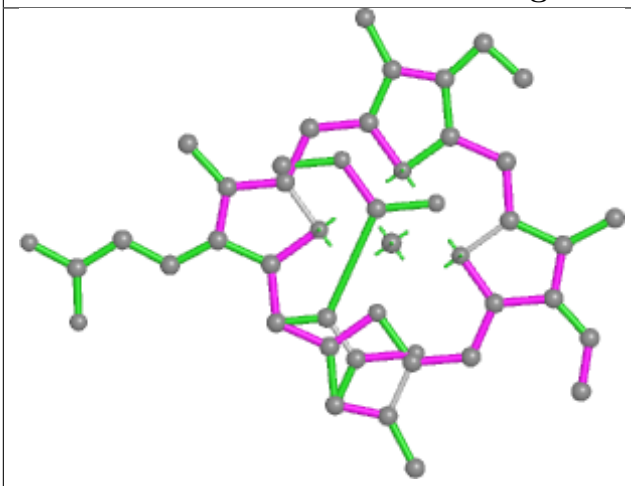


Rings

Ligand KC2 4 611



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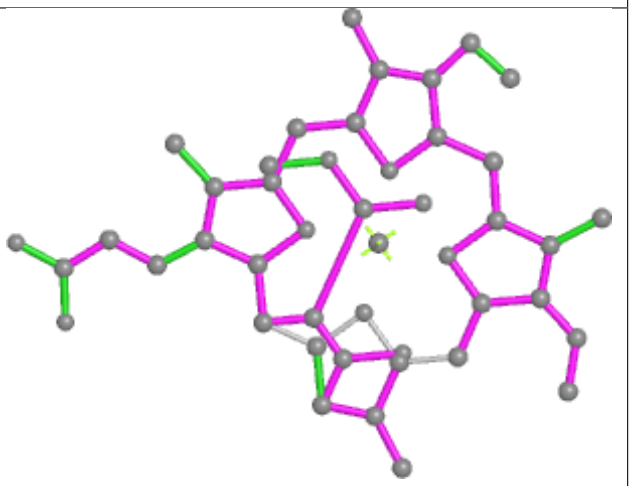
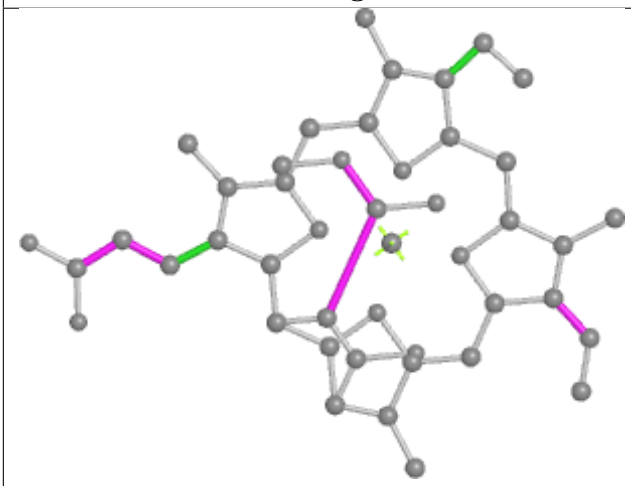


Bond angles



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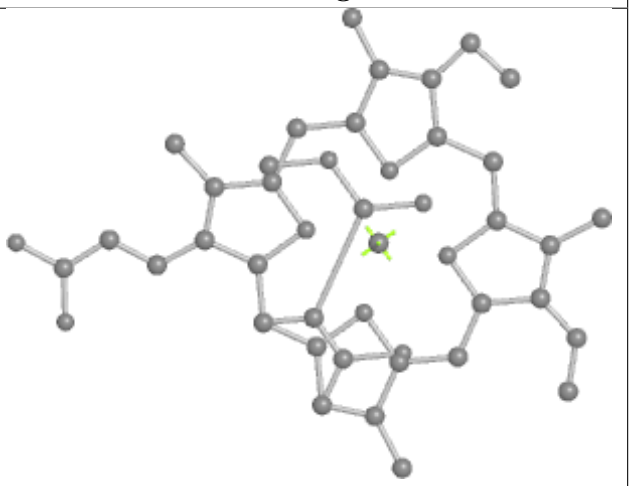
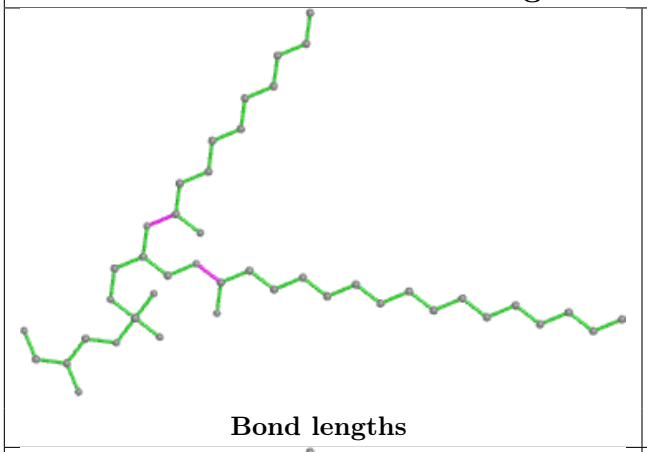
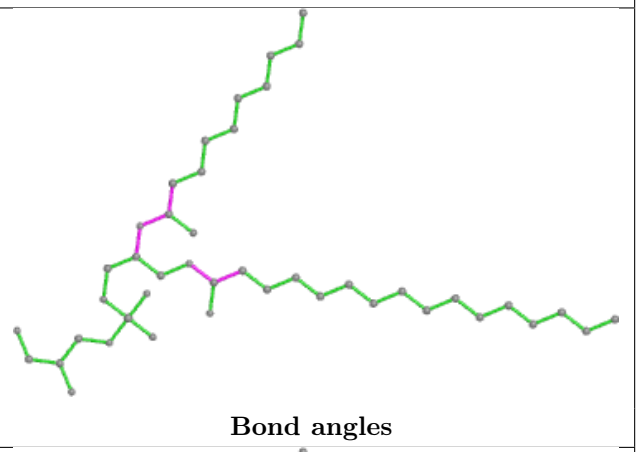


Rings

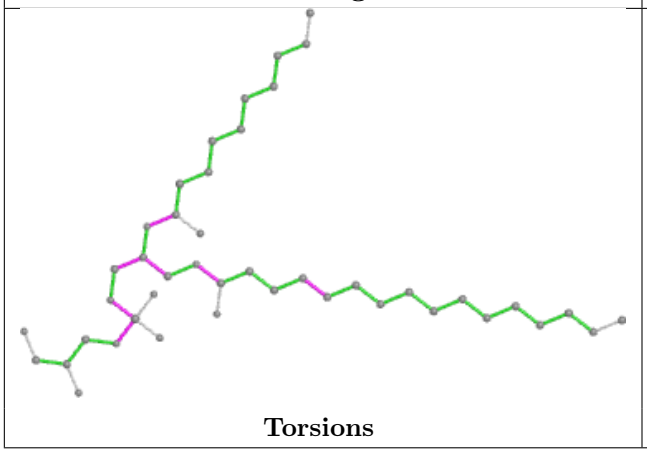
Ligand LHG B 622



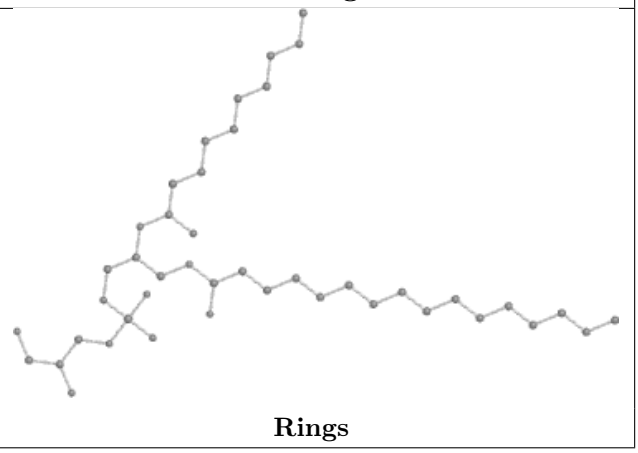
Bond lengths



Bond angles

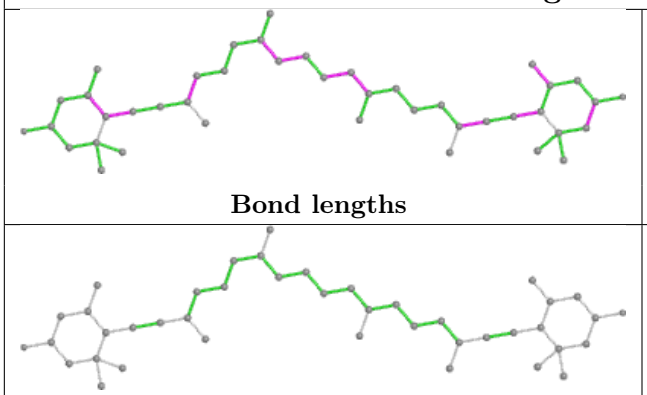


Torsions



Rings

Ligand II0 2 617



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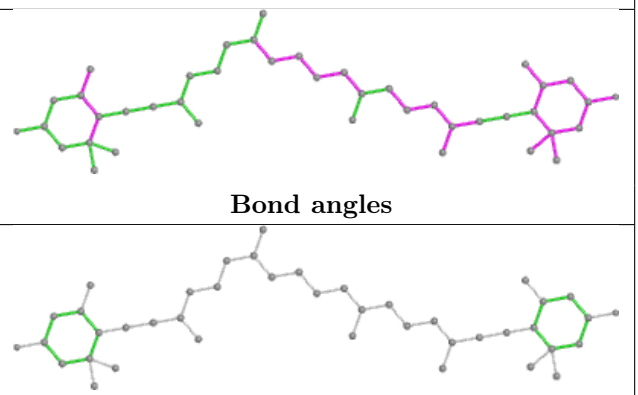

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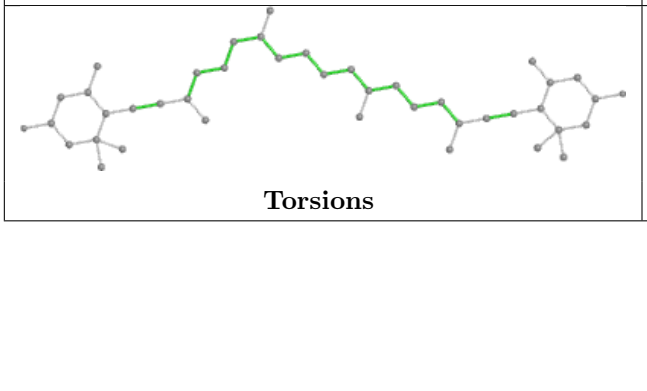
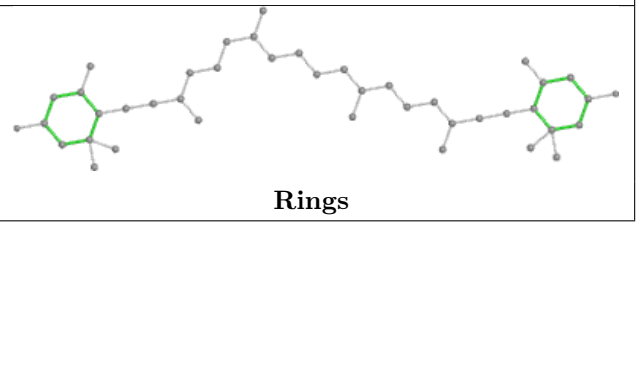
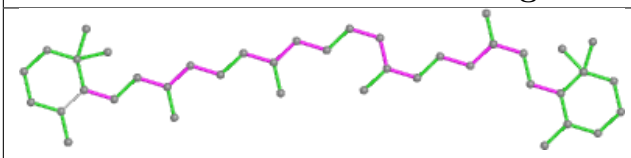
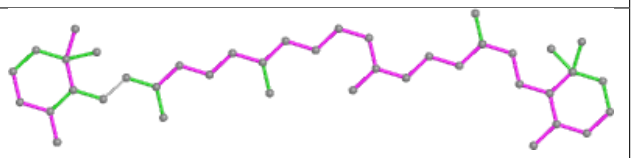
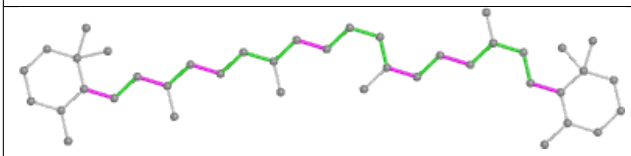
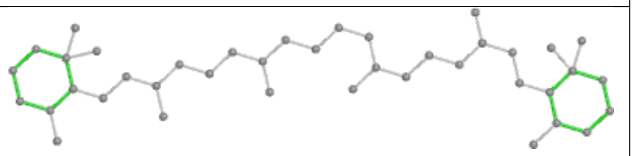
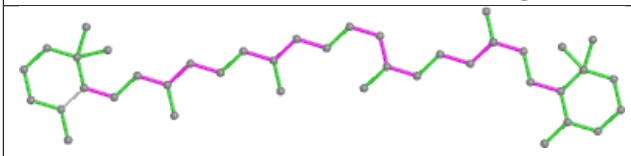
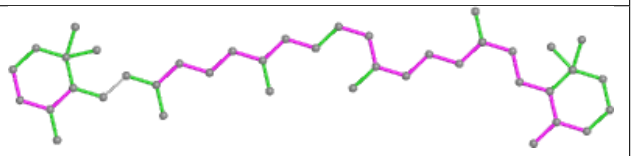
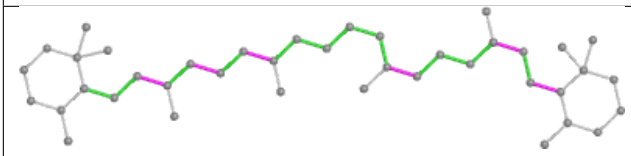
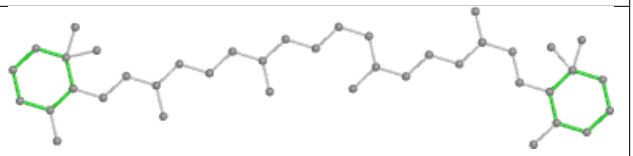


Torsions

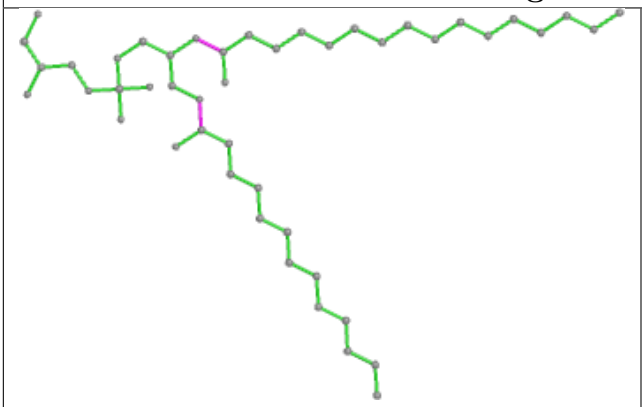


Rings

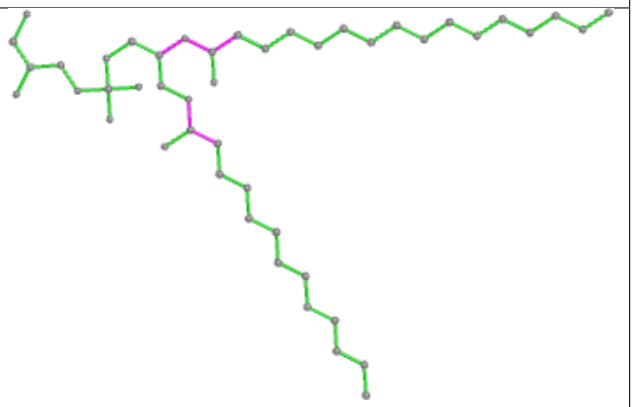
Ligand WVN a 407	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand WVN B 618	
 Bond lengths	 Bond angles
 Torsions	 Rings

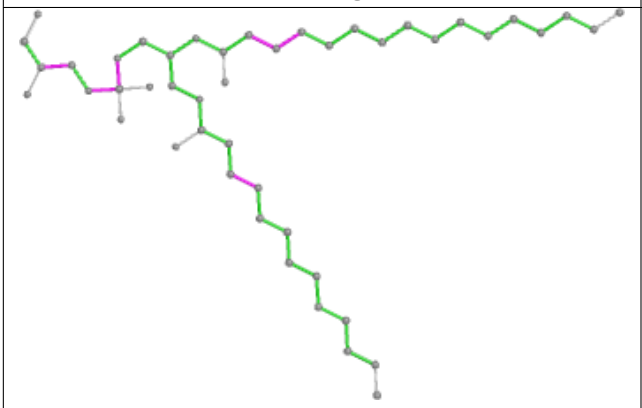
Ligand LHG 2 621



Bond lengths



Bond angles



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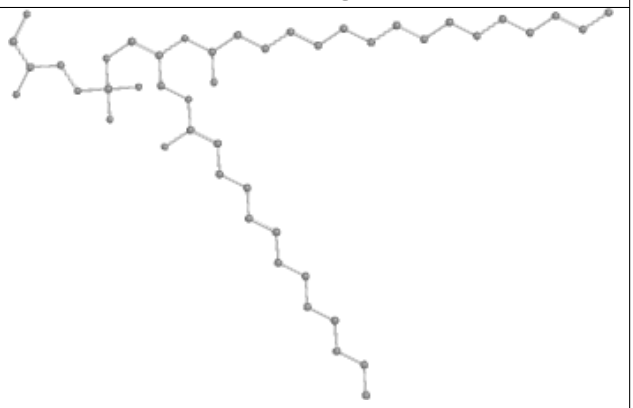
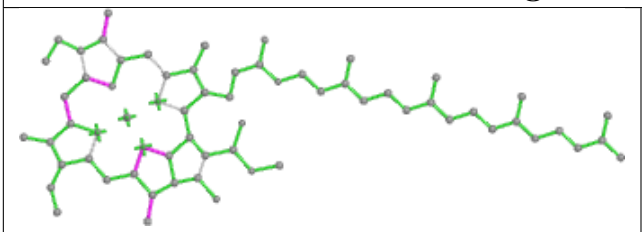


Rings

Ligand CLA B 602



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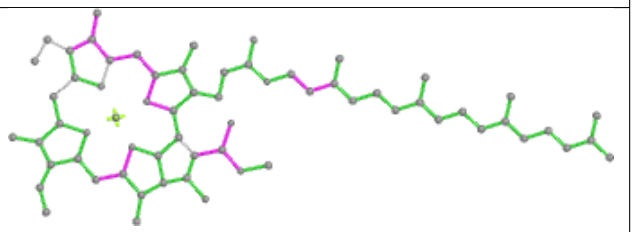
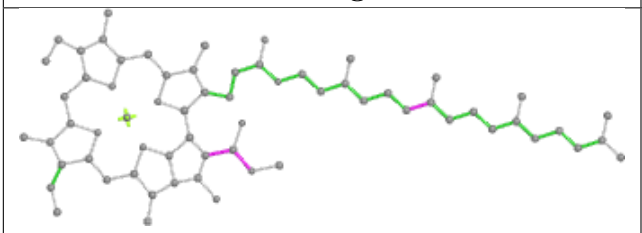


Bond angles



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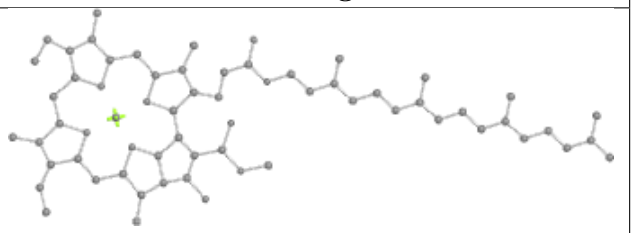
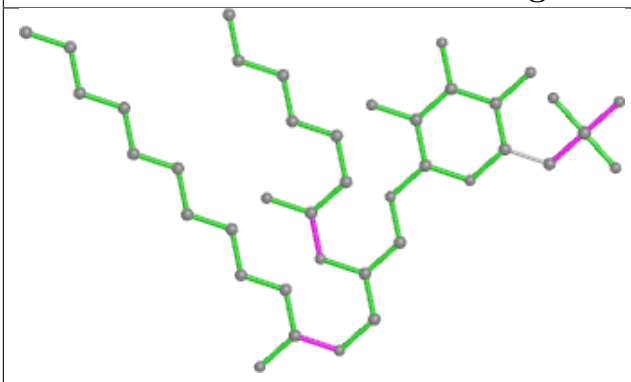


Rings

Ligand SQD a 411



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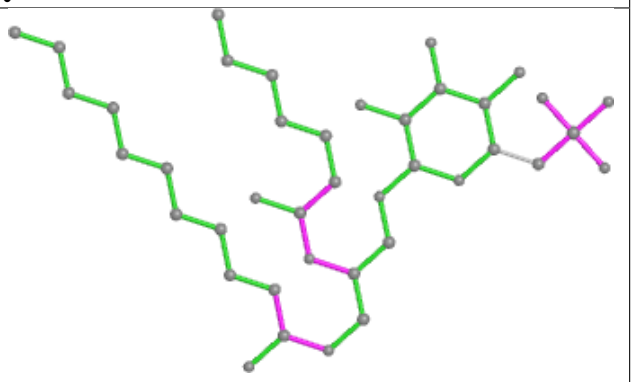
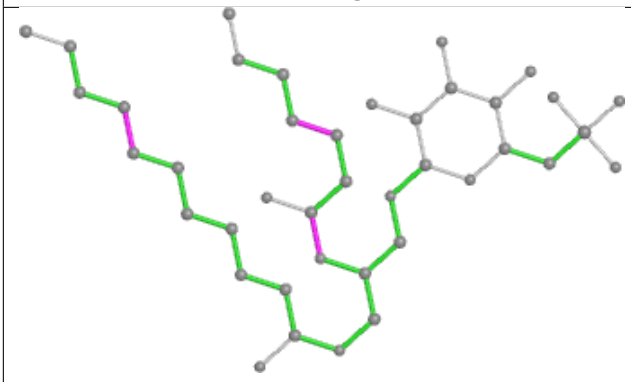


Bond angles



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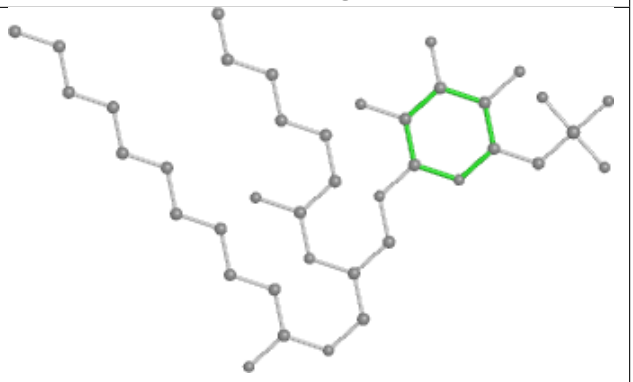
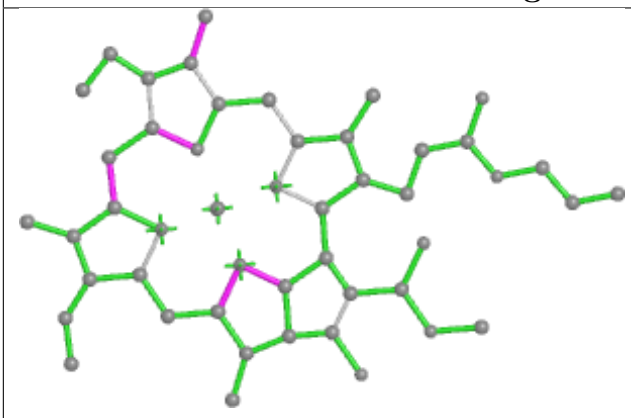


Rings

Ligand CLA O 609



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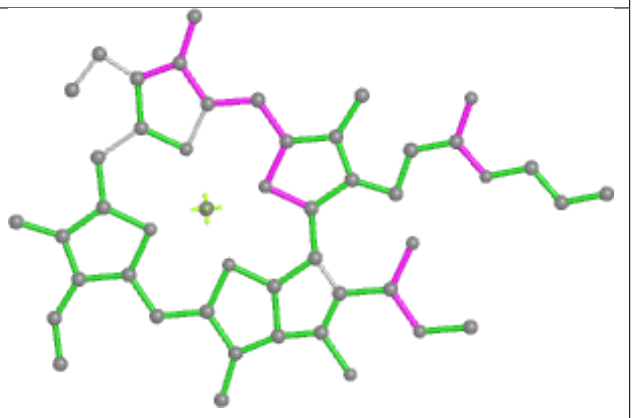
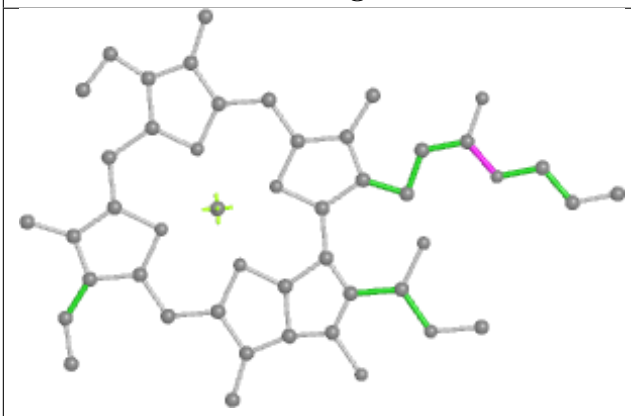


Bond angles



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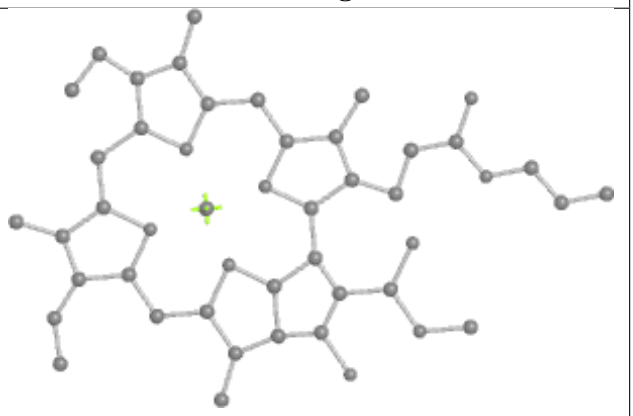
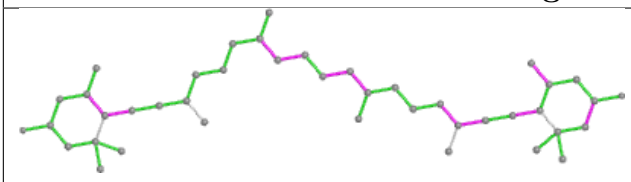


Rings

Ligand II0 6 616



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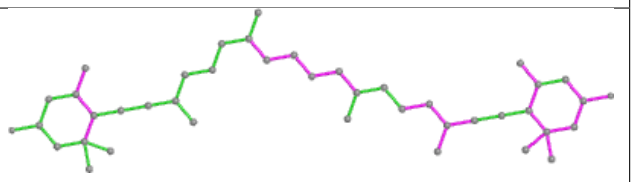
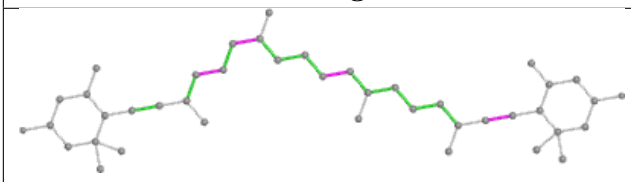
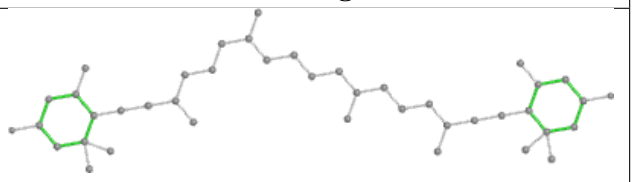


Bond angles

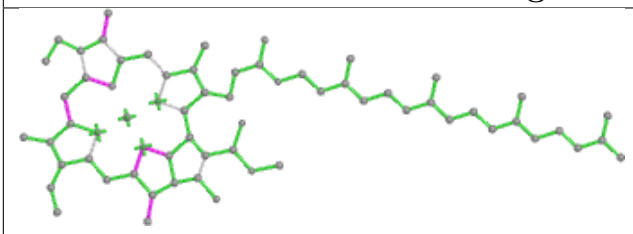


Torsions



Rings

Ligand CLA S 604



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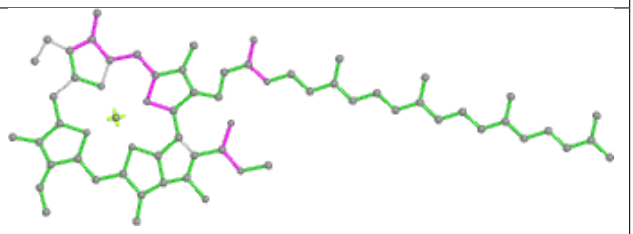
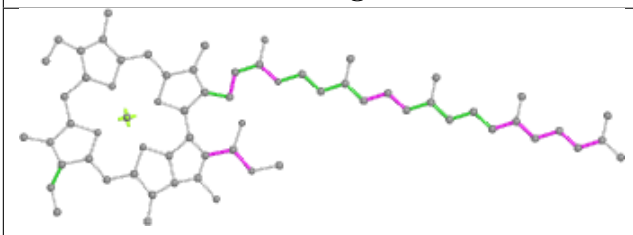


Bond angles



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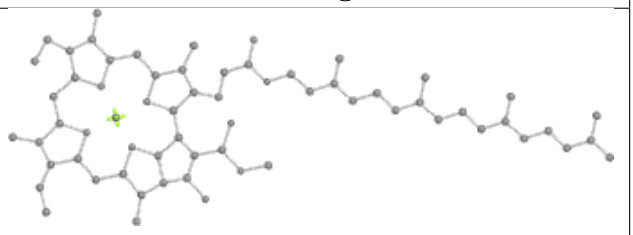
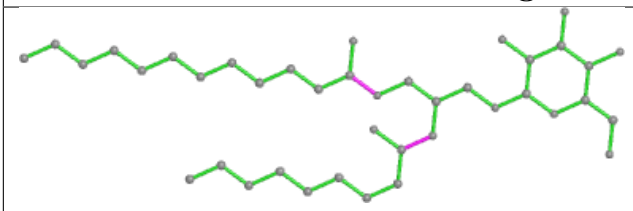


Rings

Ligand LMG m 101



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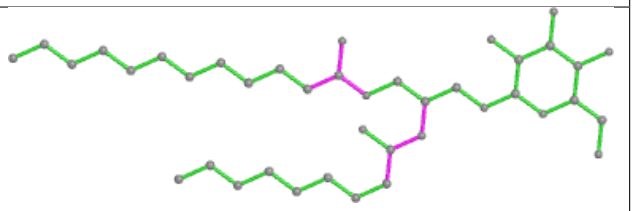
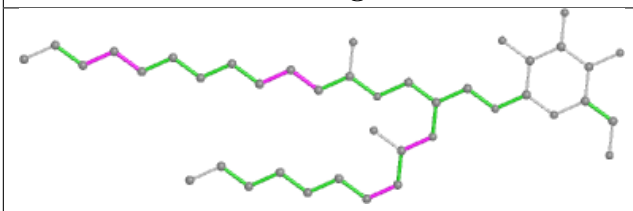


Bond angles



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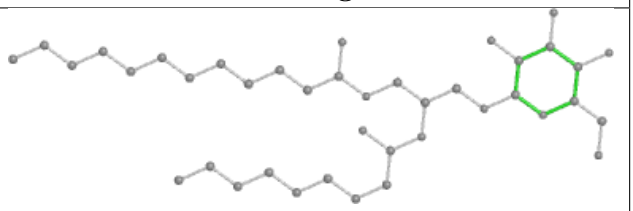
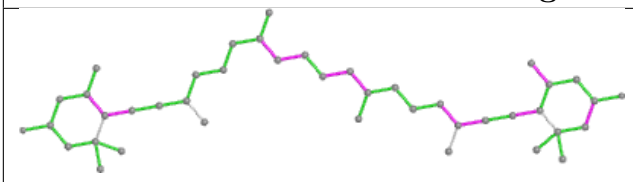


Rings

Ligand II0 P 616



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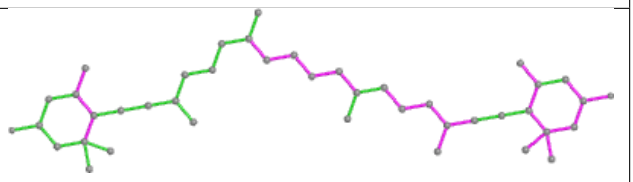
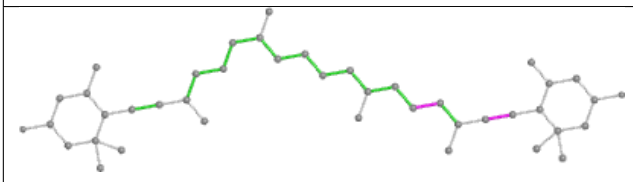


Bond angles



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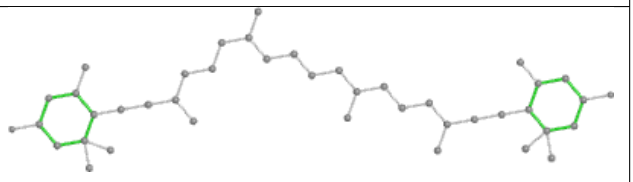
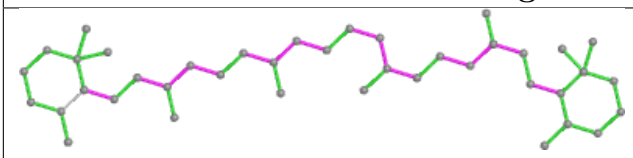


Rings

Ligand WVN b 618



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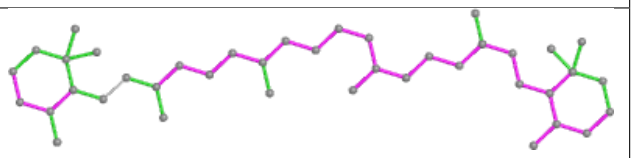
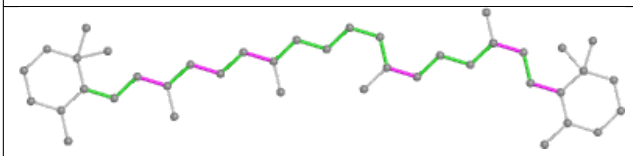


Bond angles



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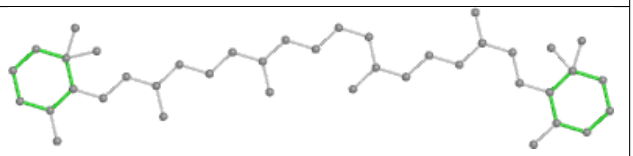
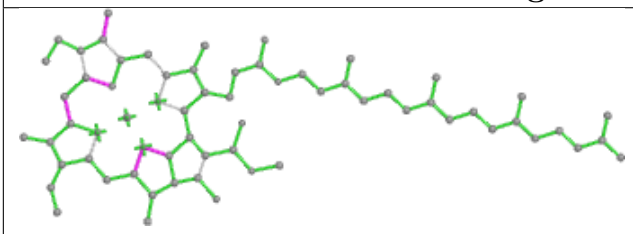


Rings

Ligand CLA b 610



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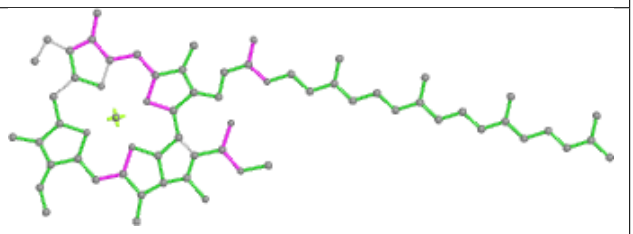
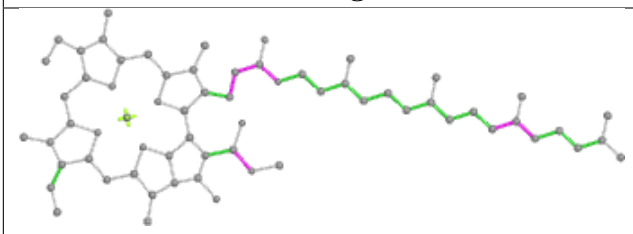
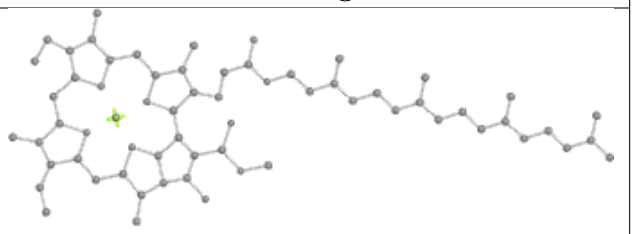


Bond angles

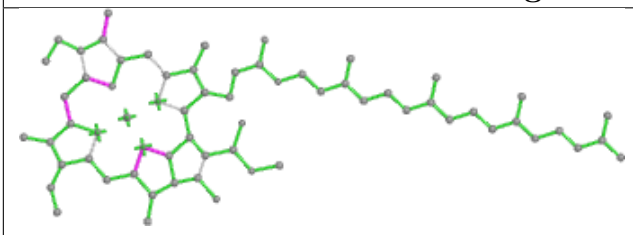


Torsions

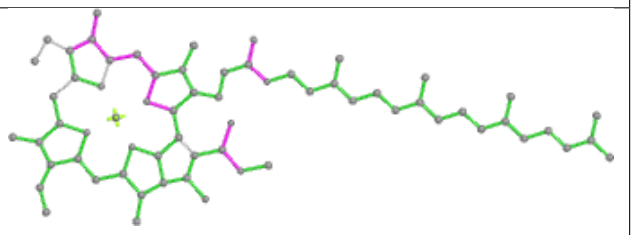


Rings

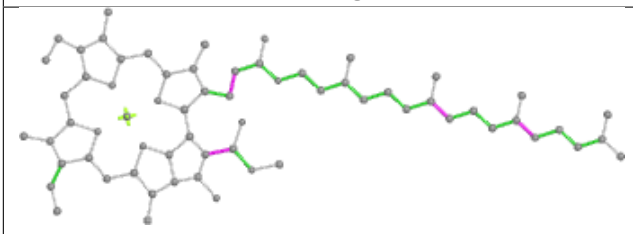
Ligand CLA B 608



Bond lengths



Bond angles



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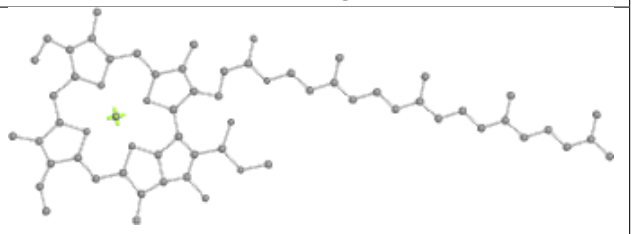
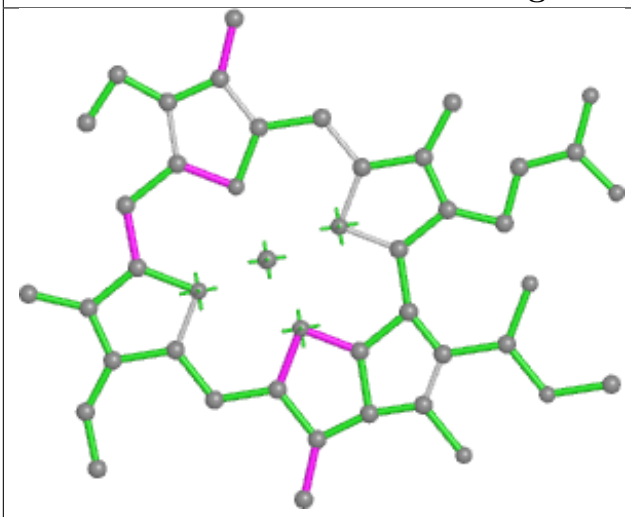


Rings

Ligand CLA g 302



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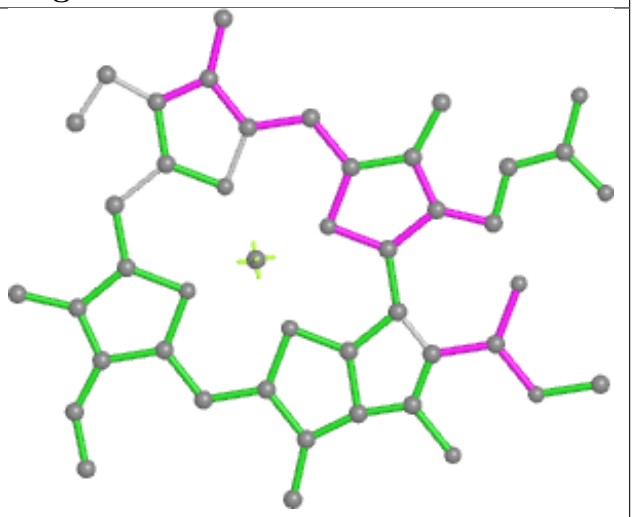

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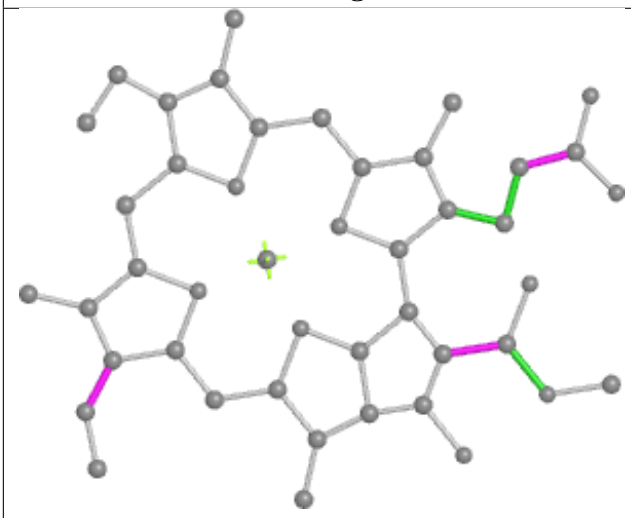

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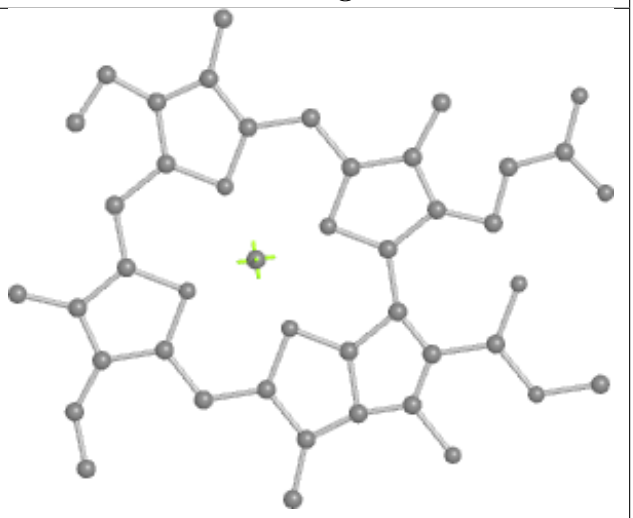
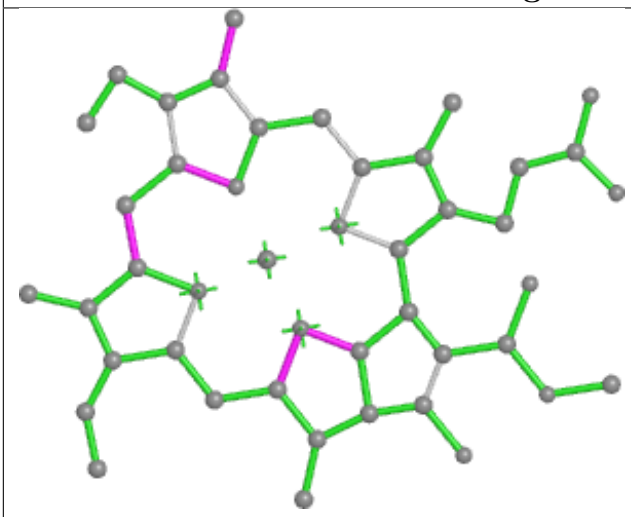


Rings

Ligand CLA N 601



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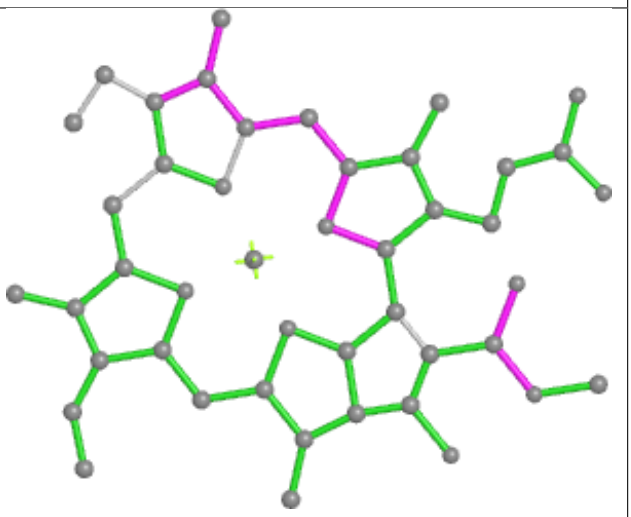

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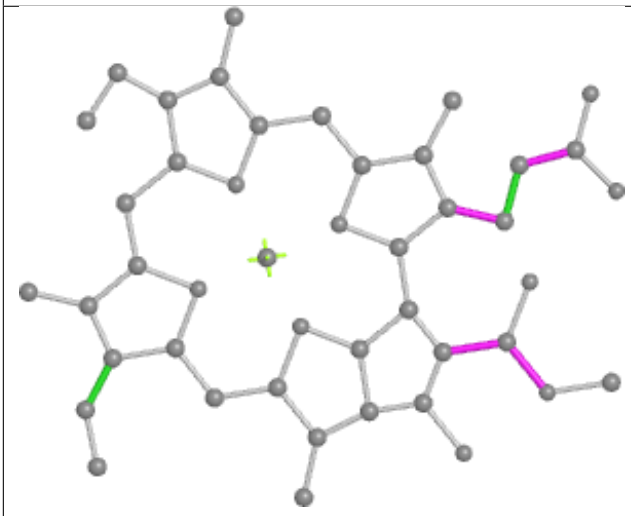

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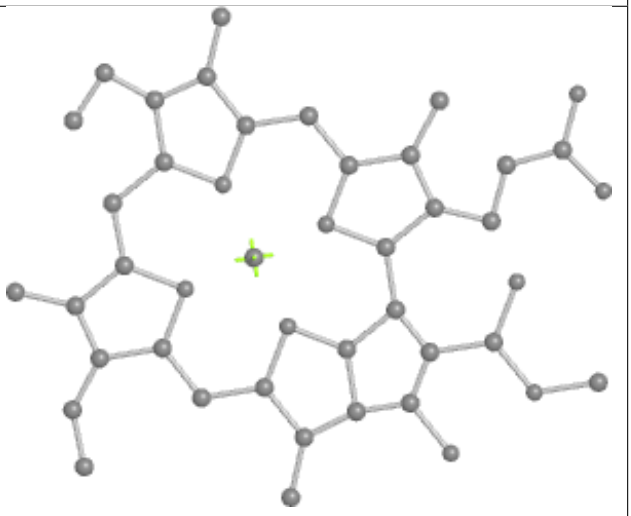
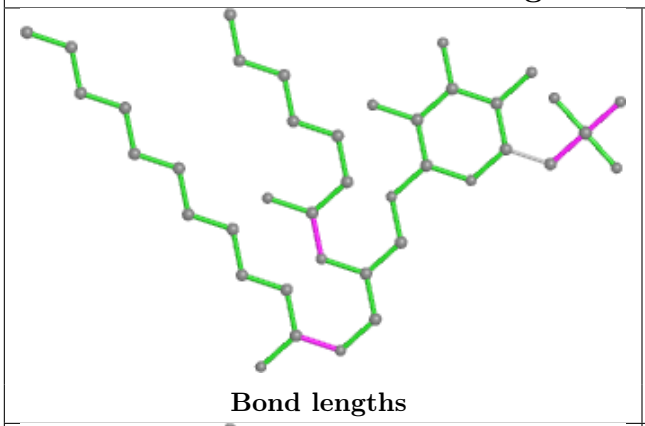


Rings

Ligand SQD A 411



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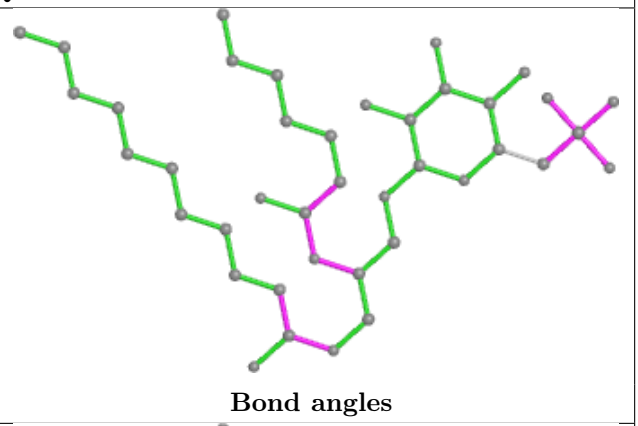

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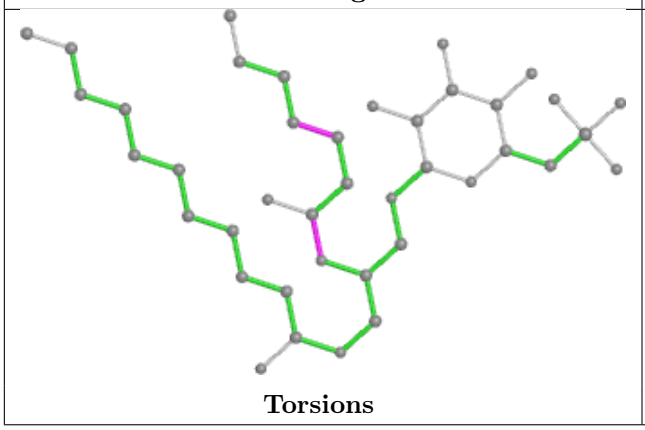

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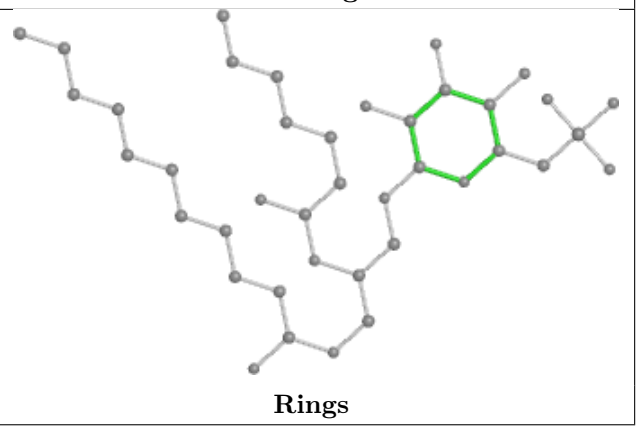
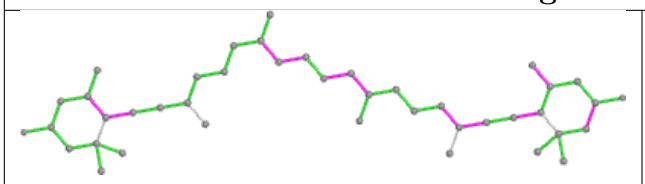


Rings

Ligand II0 Q 616



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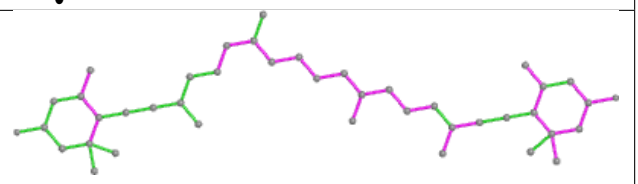

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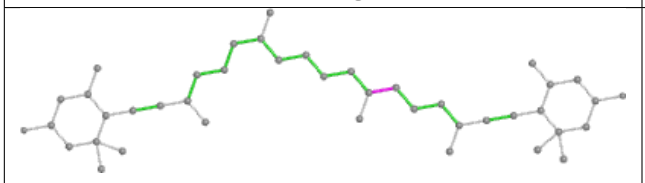

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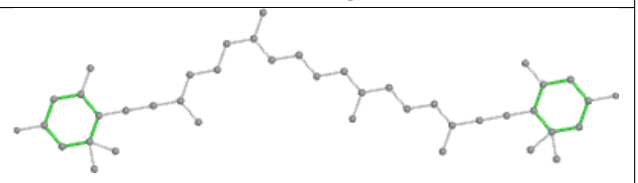
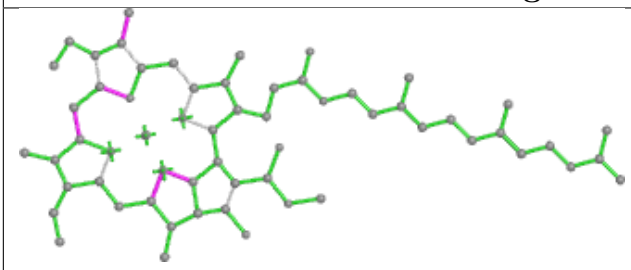


Rings

Ligand CLA N 610



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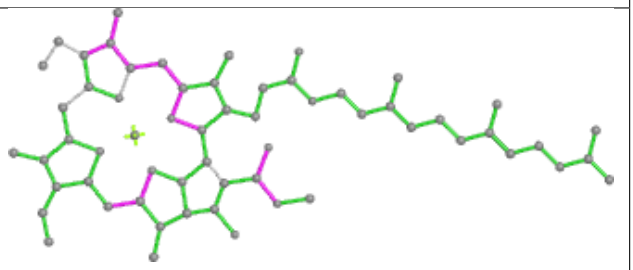

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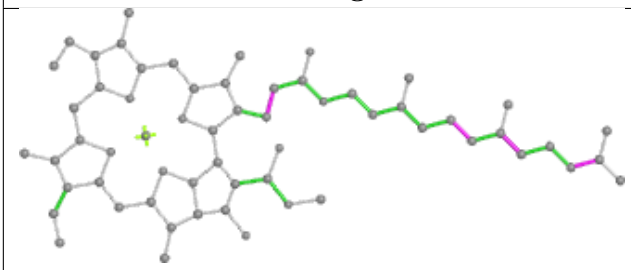

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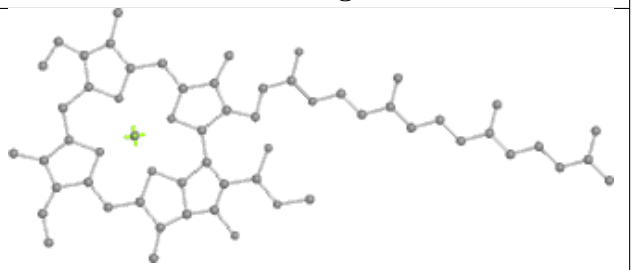

Rings

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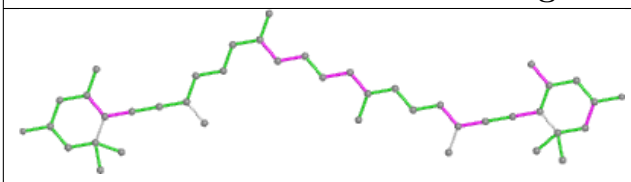

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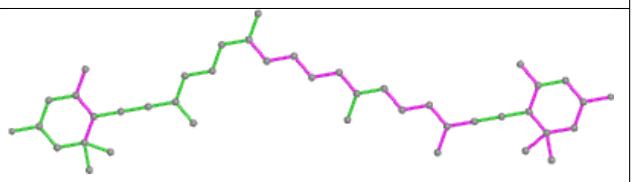

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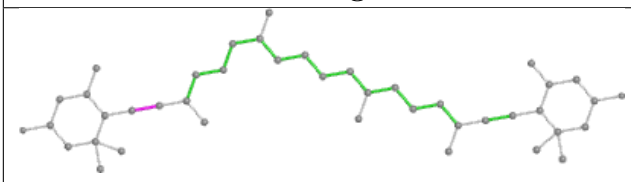

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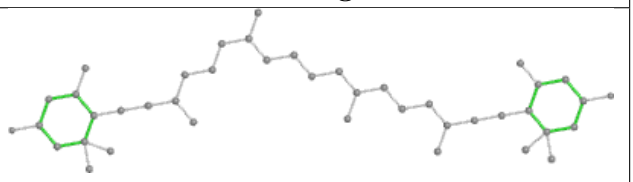
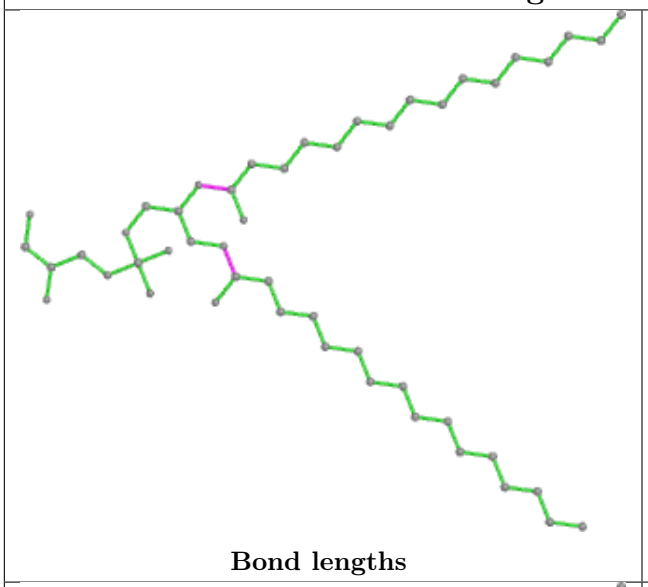


Rings

Ligand LHG d 406



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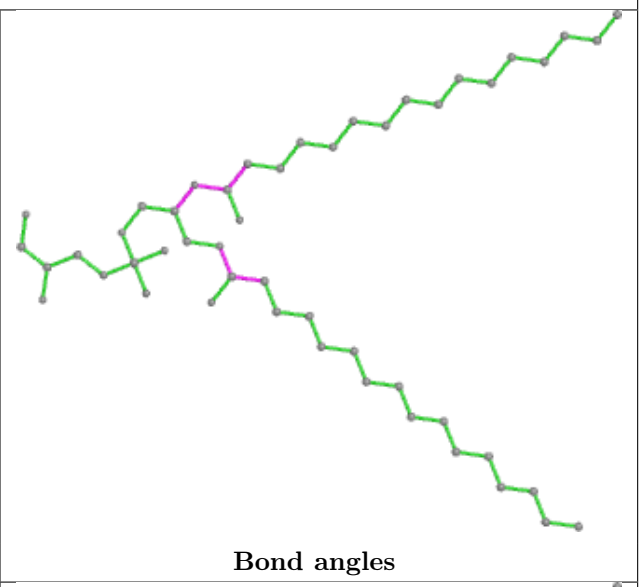
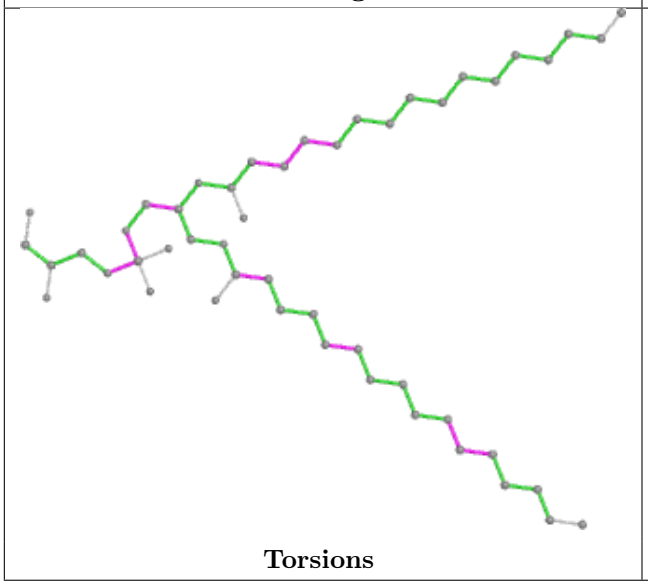


Bond angles



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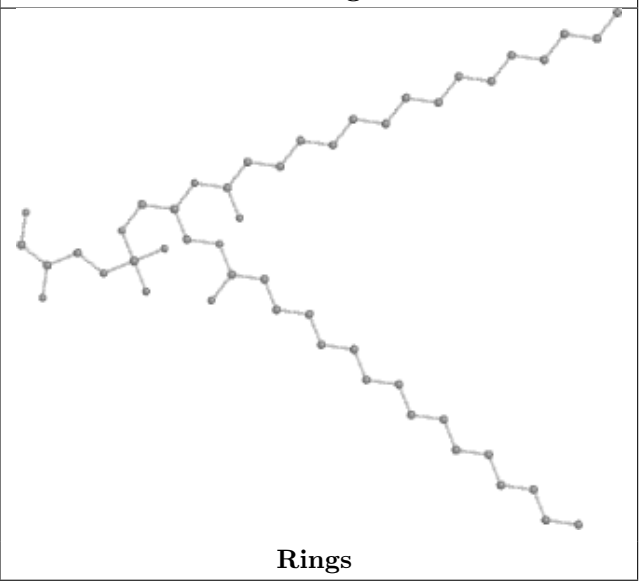
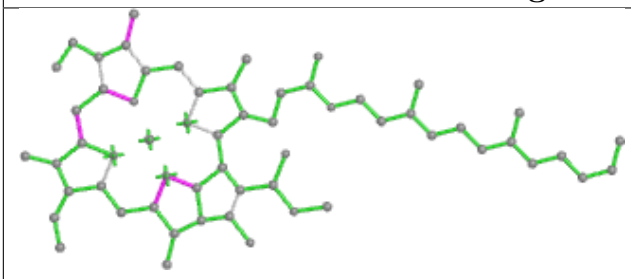


Rings

Ligand CLA 5 610



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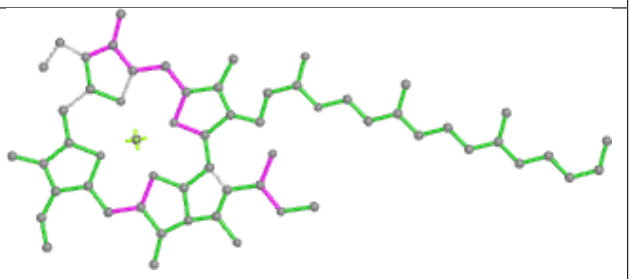

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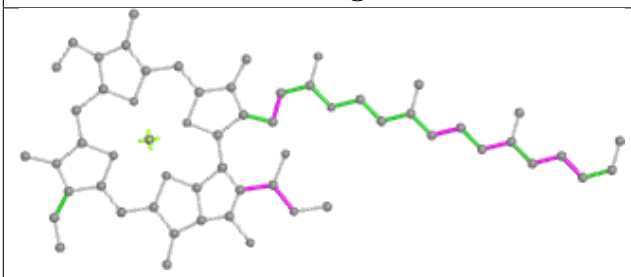

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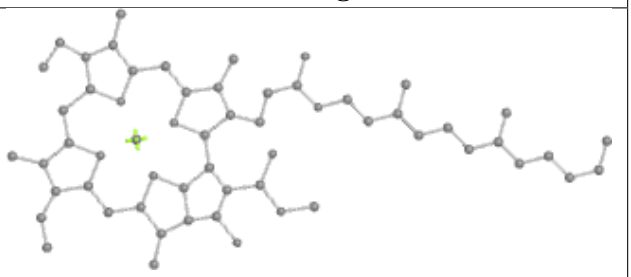

Rings

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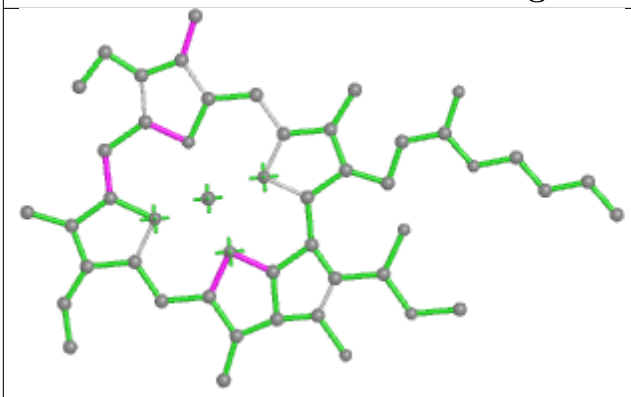

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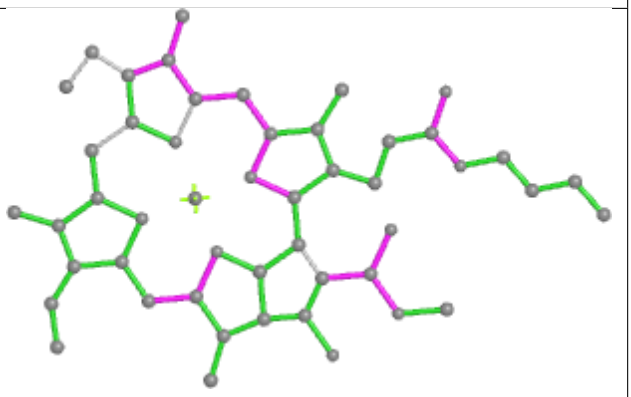

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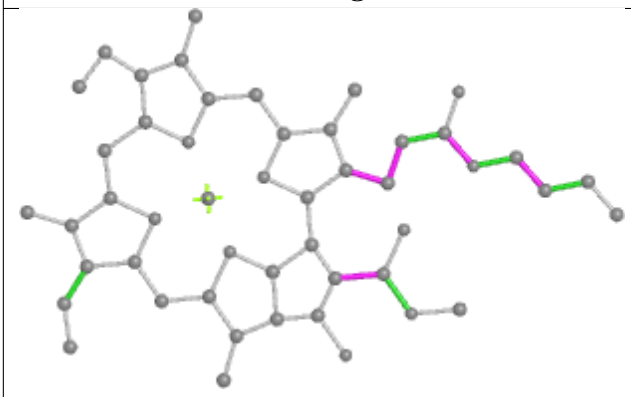

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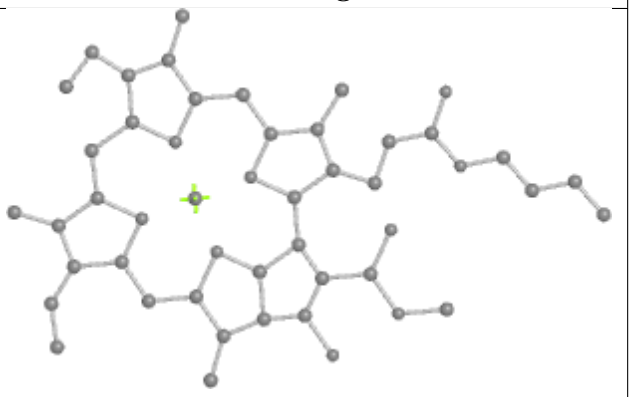
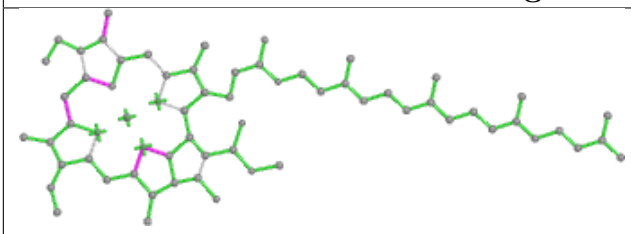


Rings

Ligand CLA C 521



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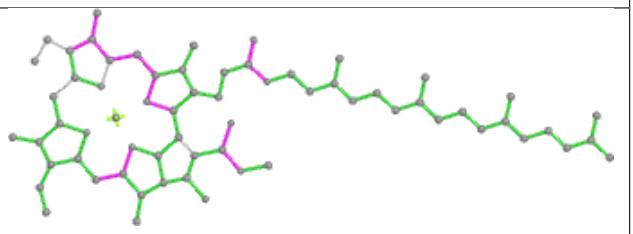

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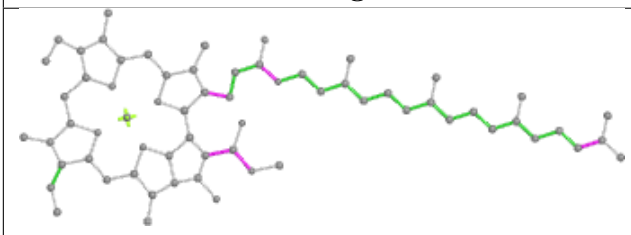

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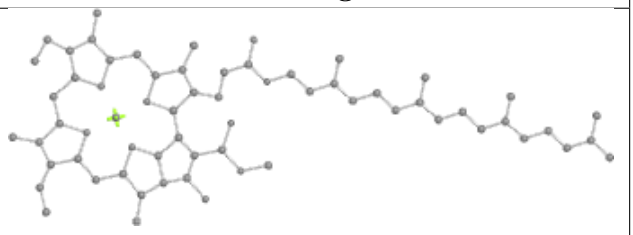
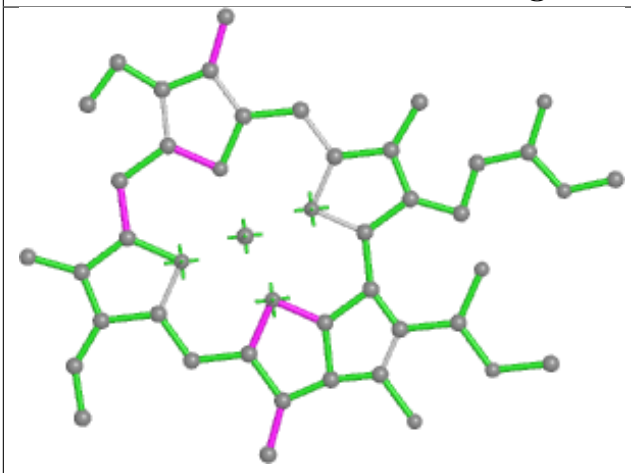


Rings

Ligand CLA 1 609



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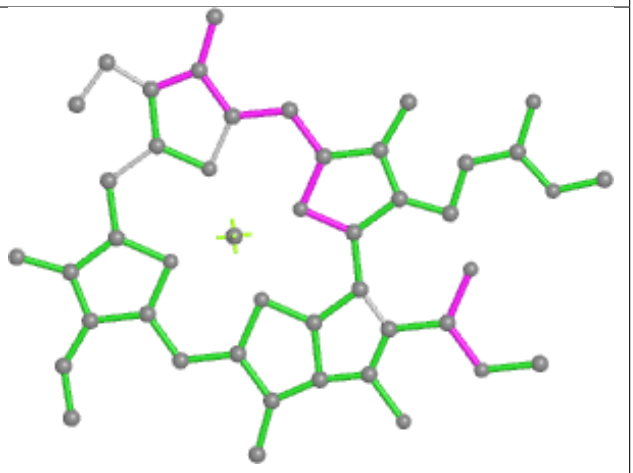
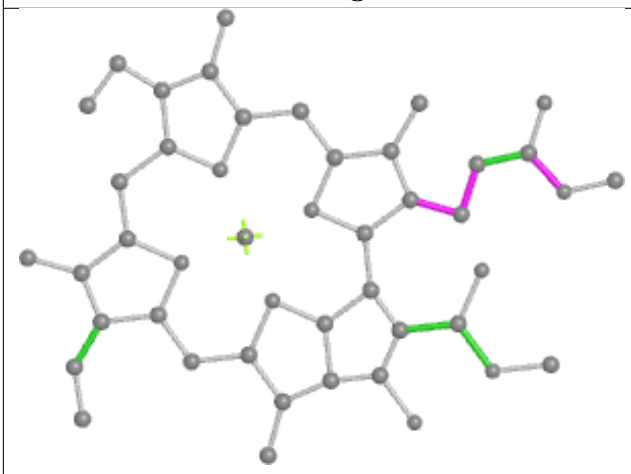


Bond angles



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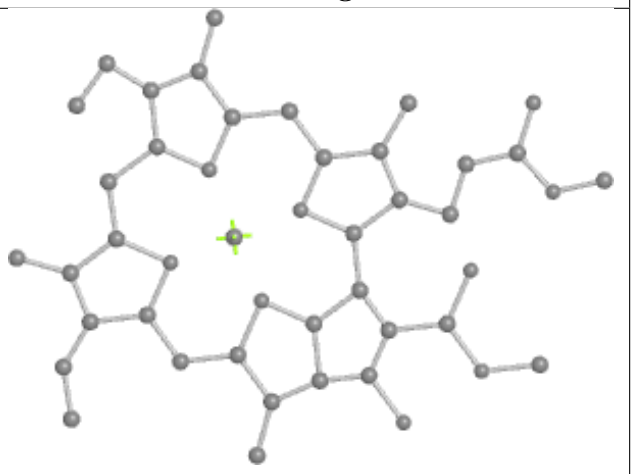
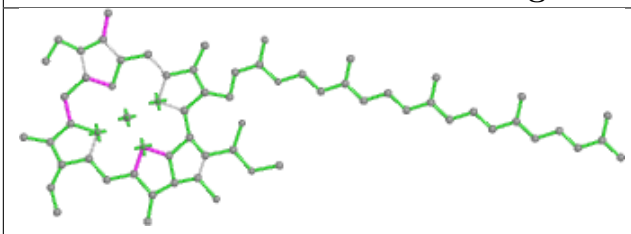


Rings

Ligand CLA 3 610



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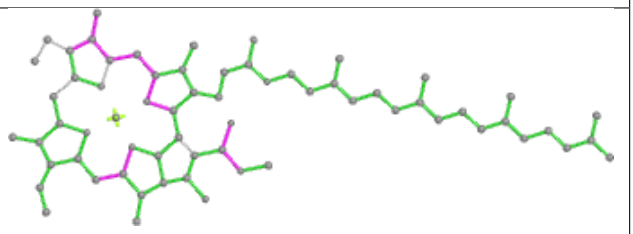
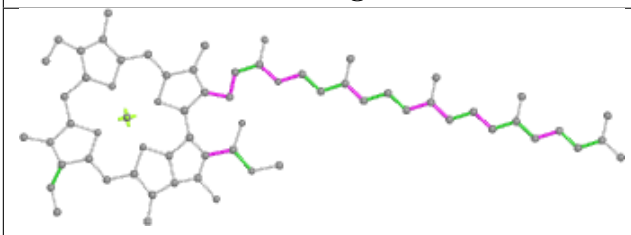


Bond angles



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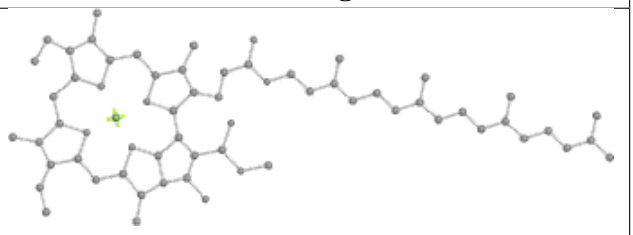
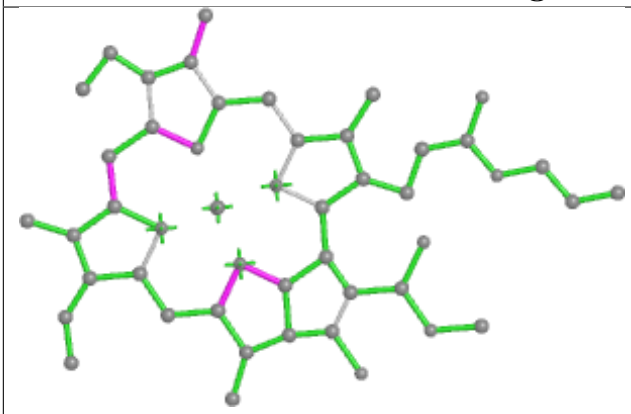
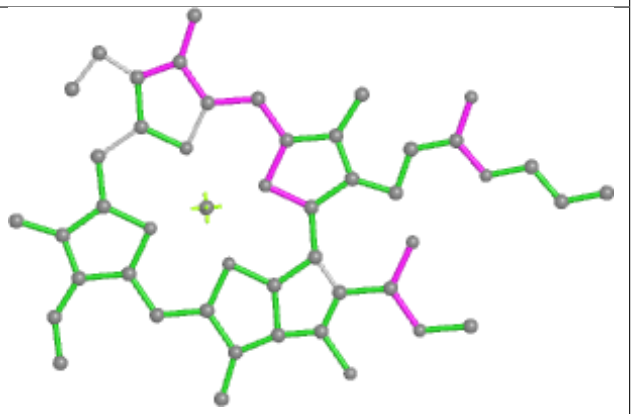


Rings

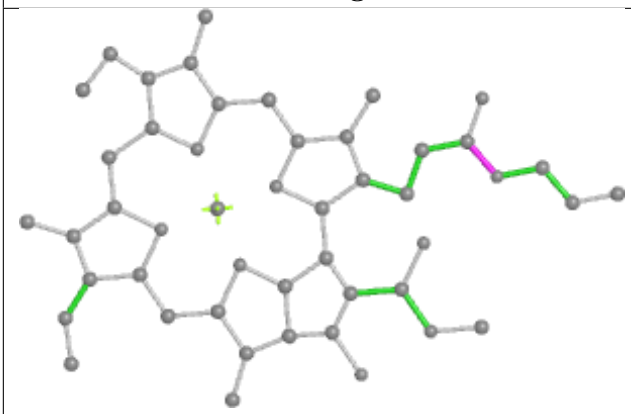
Ligand CLA 2 609



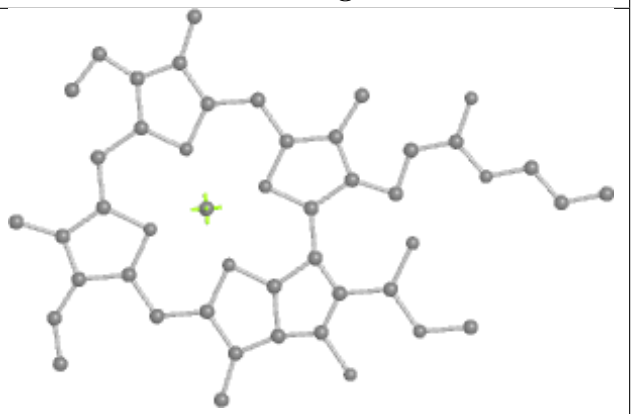
Bond lengths



Bond angles

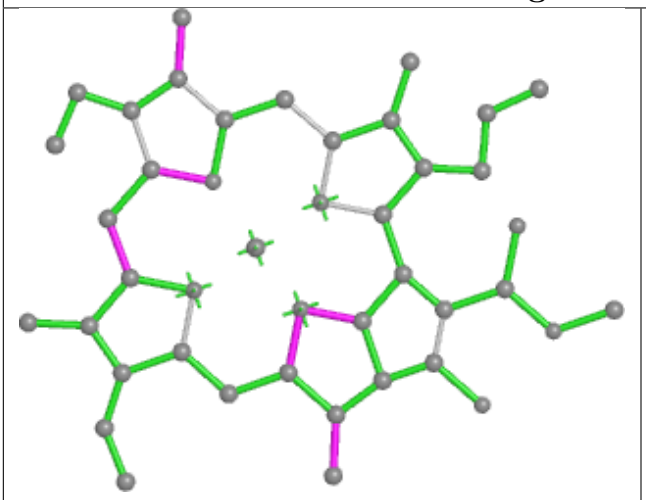


Torsions



Rings

Ligand CLA 4 613



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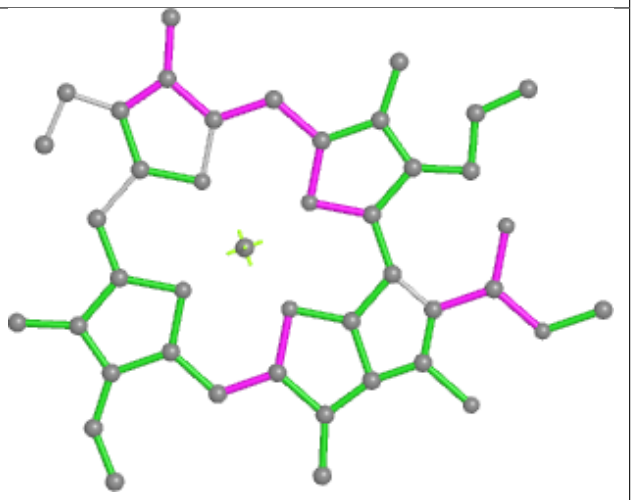

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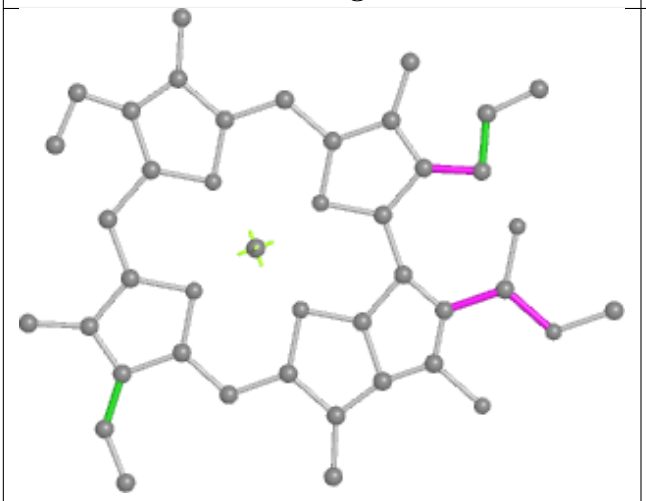

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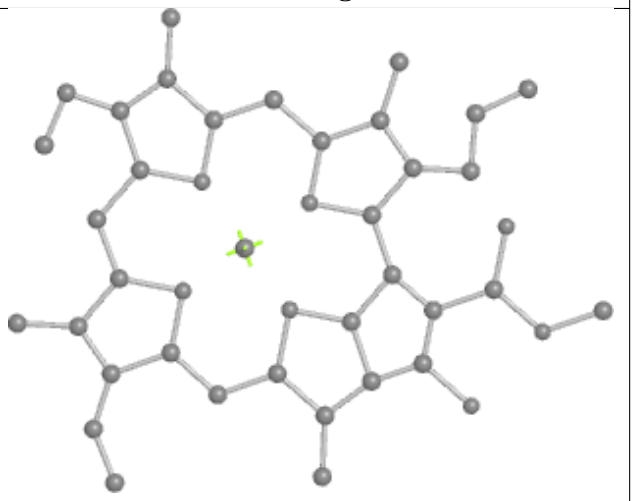

Rings

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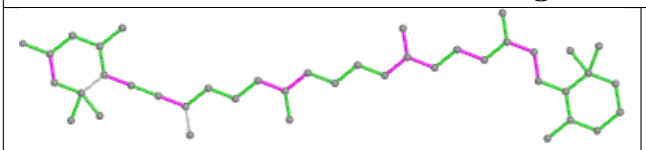

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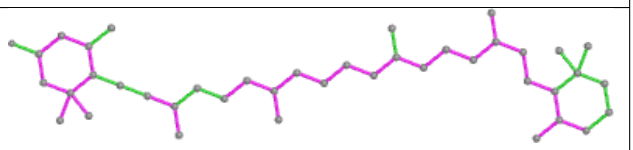

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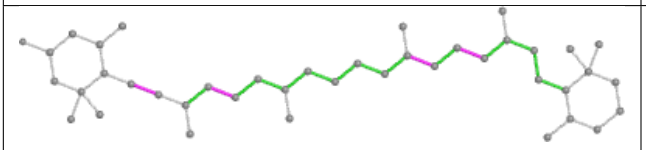

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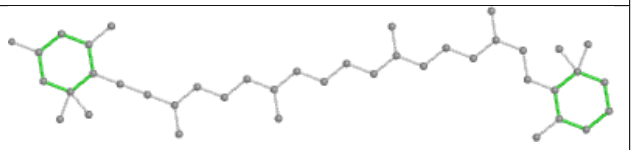

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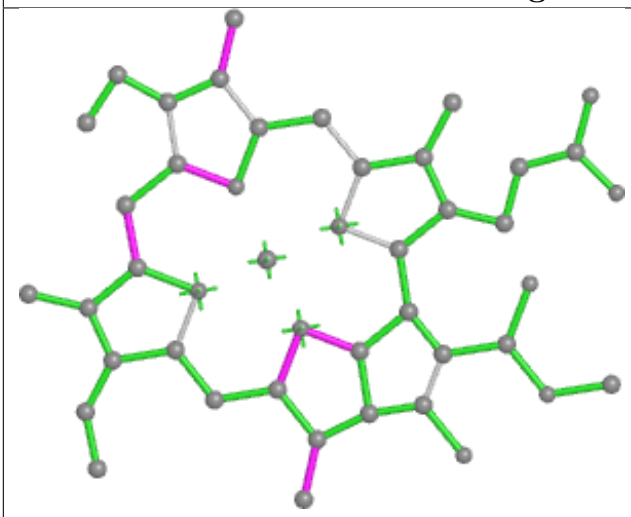

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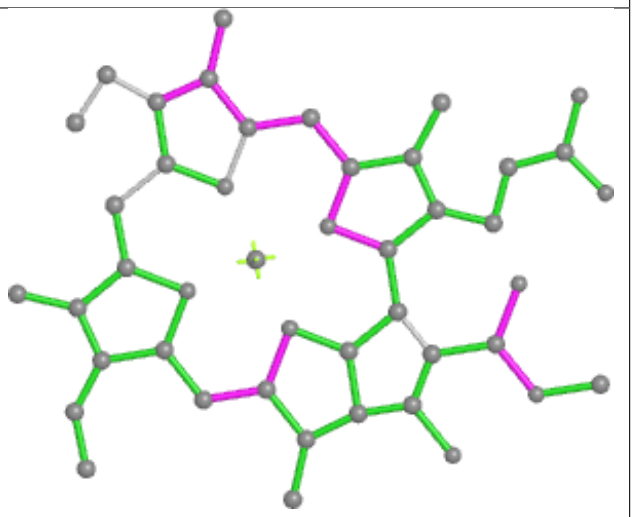

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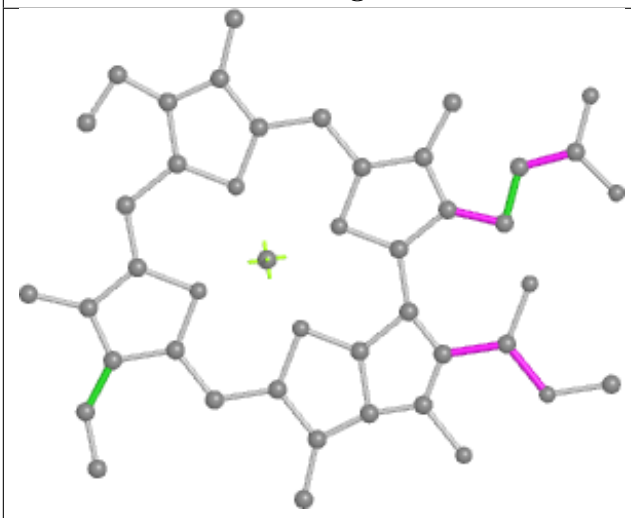

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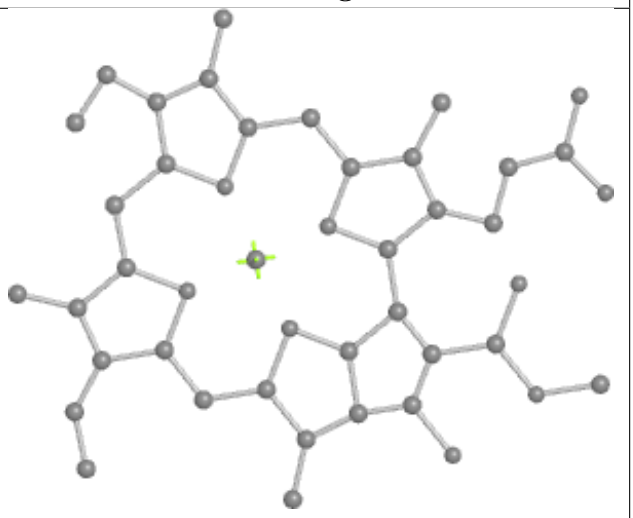
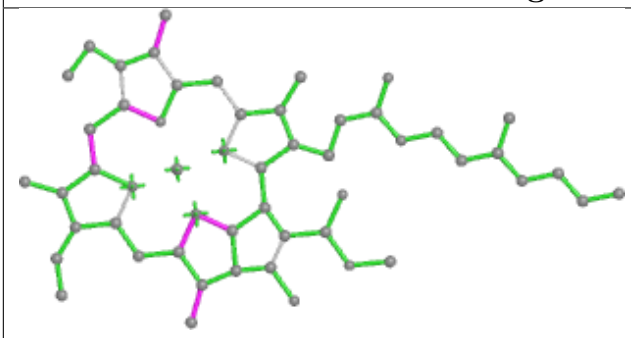


Rings

Ligand CLA S 613



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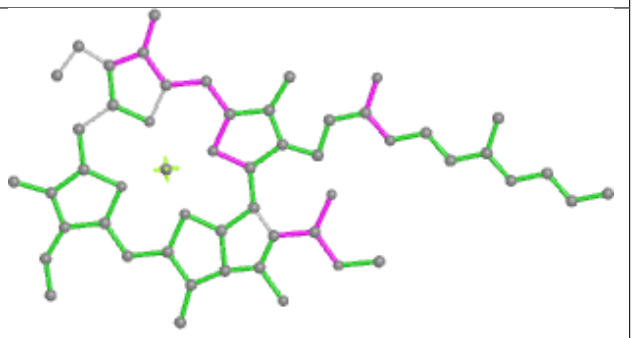

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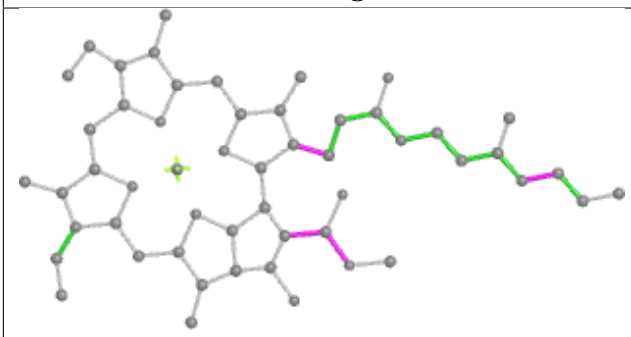

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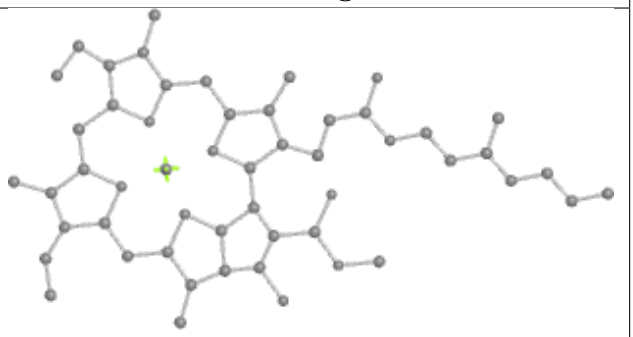
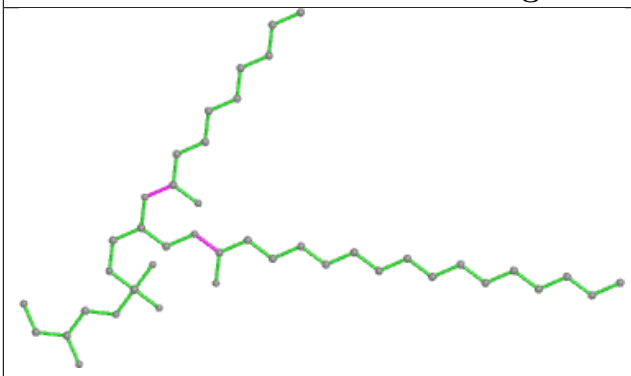


Rings

Ligand LHG A 413



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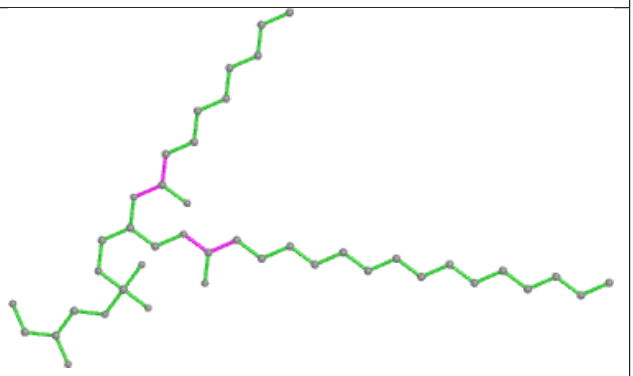

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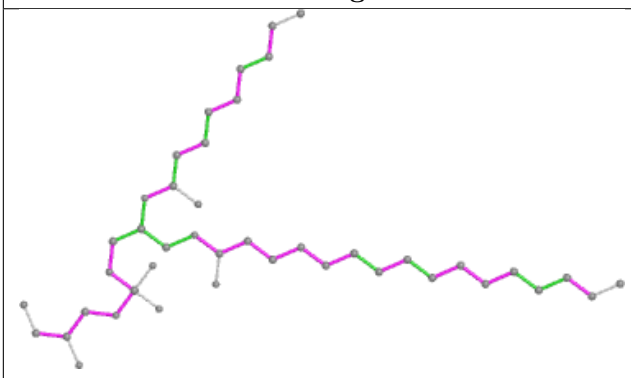

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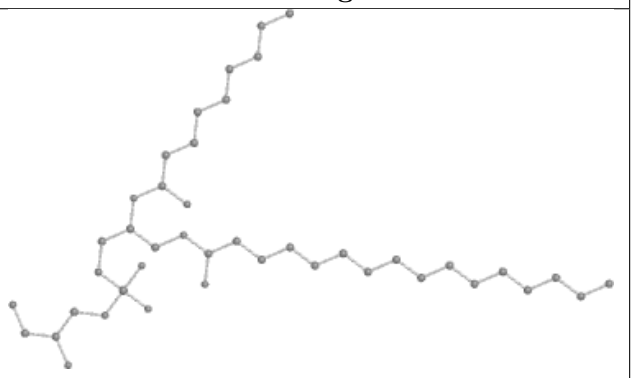

Rings

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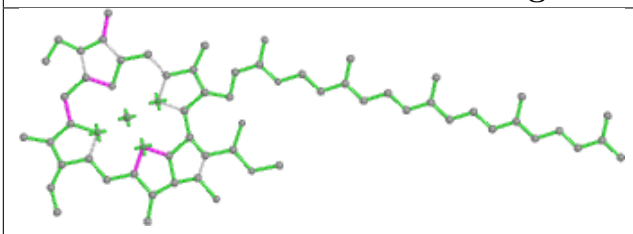

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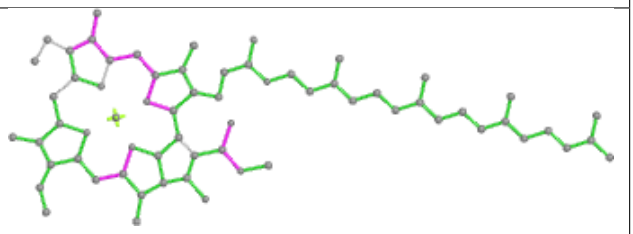

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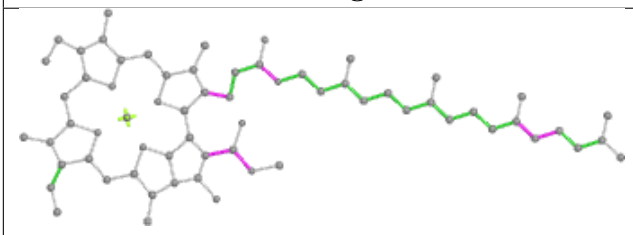

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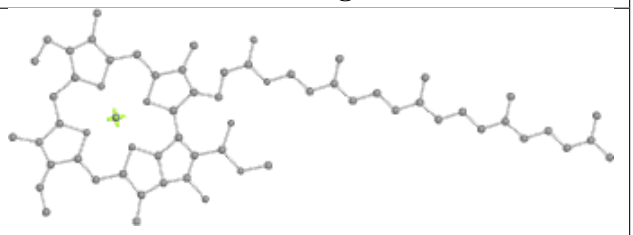

Rings

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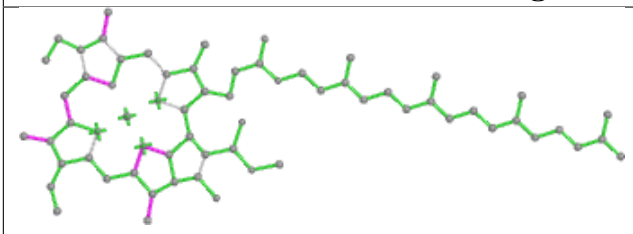

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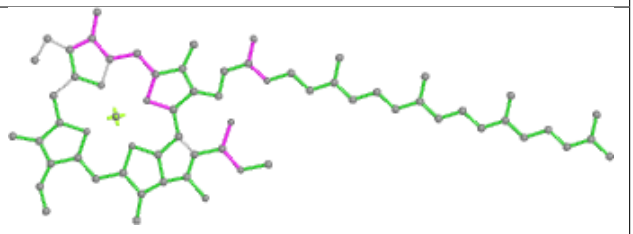

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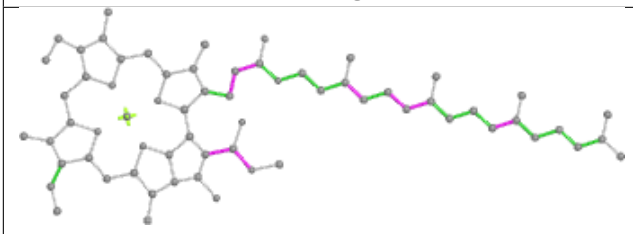

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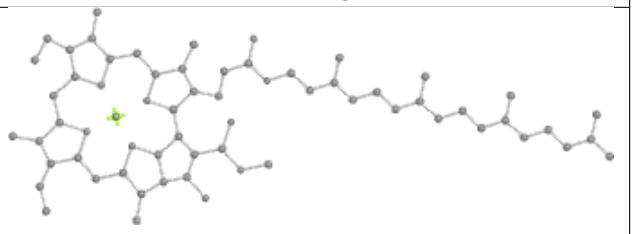

Rings

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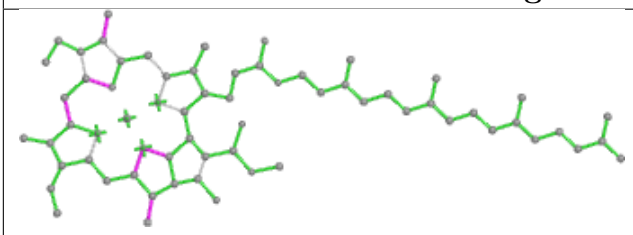

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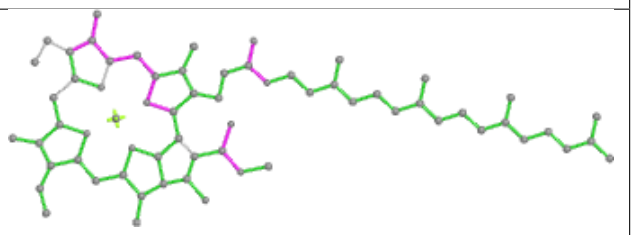

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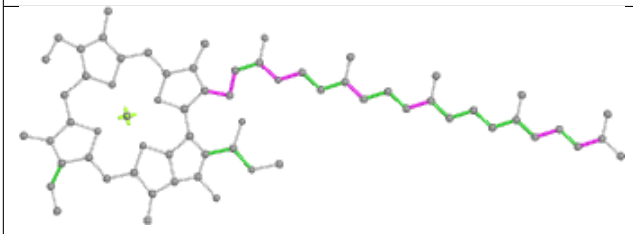

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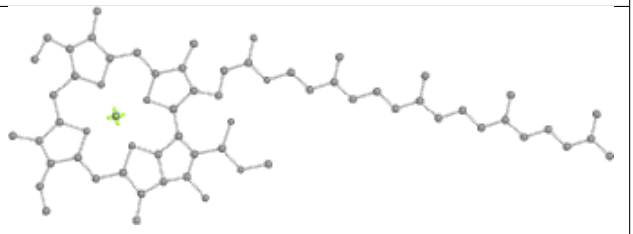

Rings

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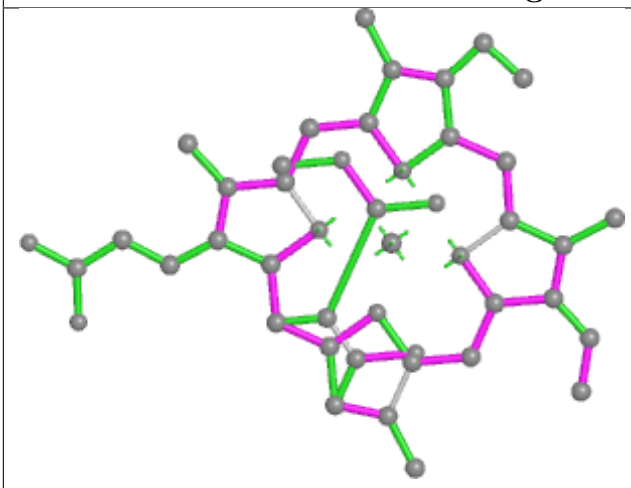

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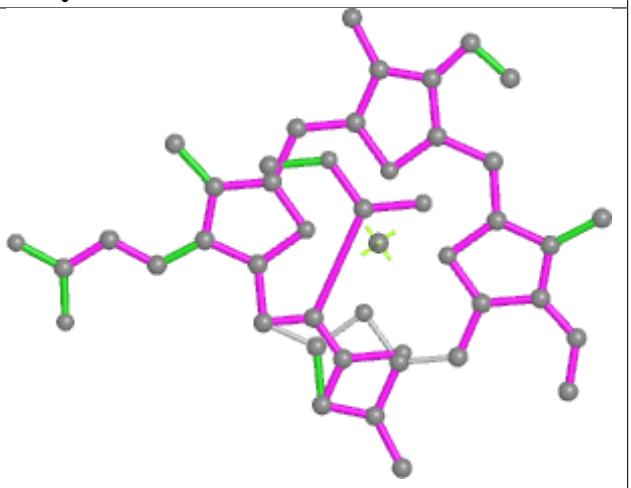

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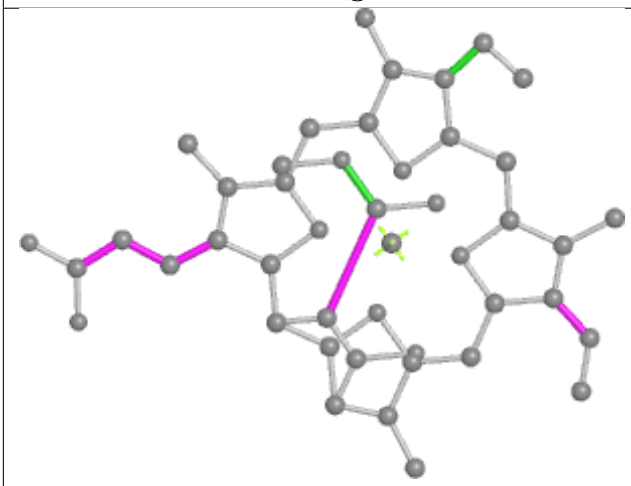

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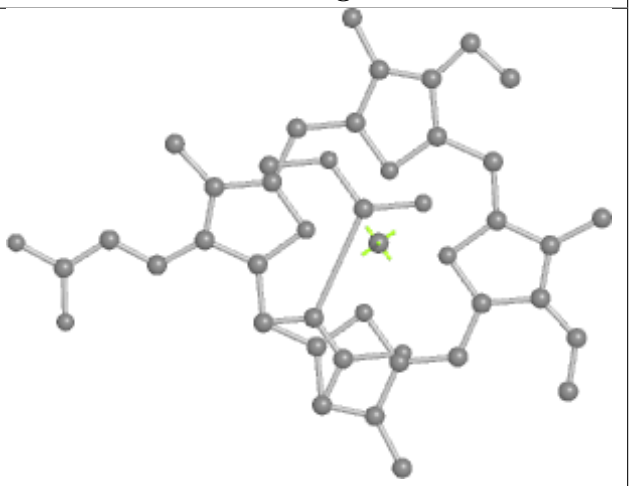
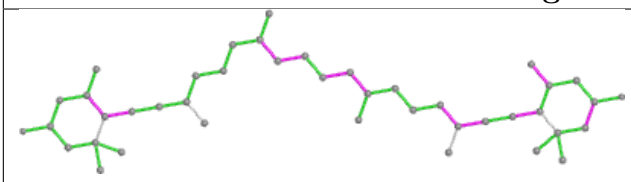


Rings

Ligand II0 4 618



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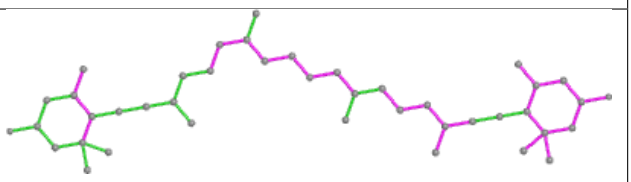

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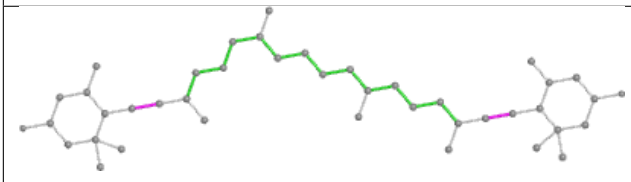

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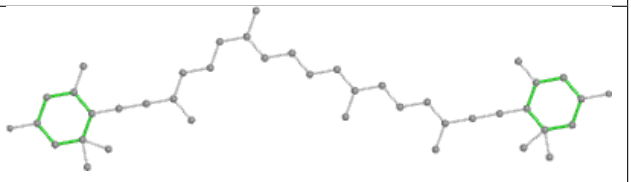
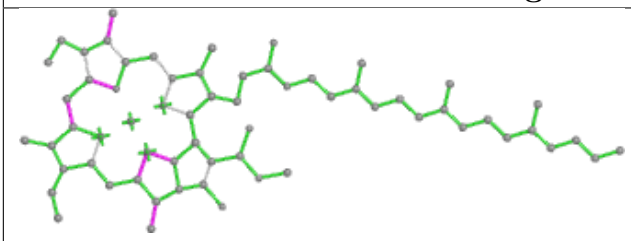


Rings

Ligand CLA P 604



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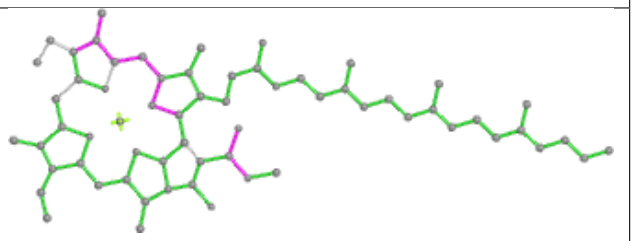
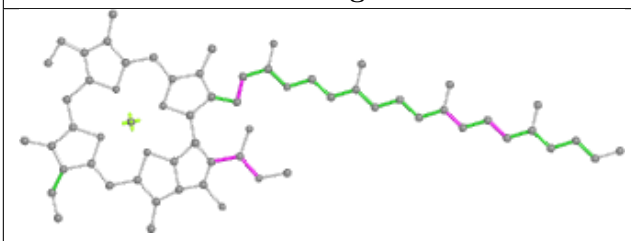


Bond angles



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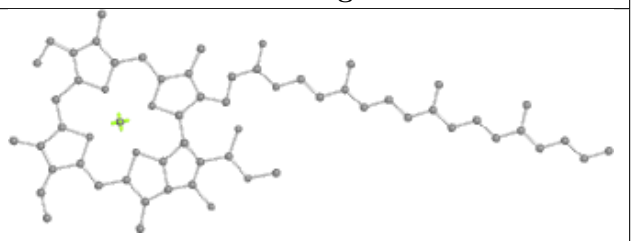

Rings

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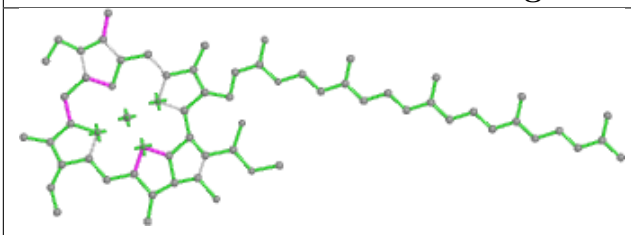

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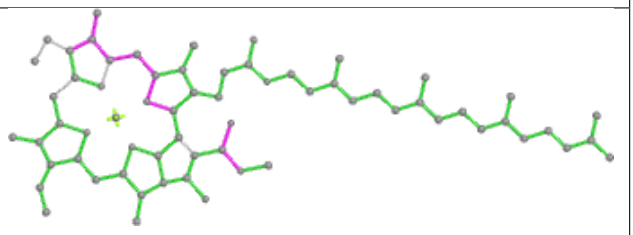
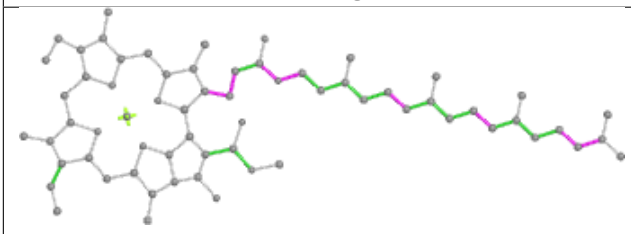


Bond angles



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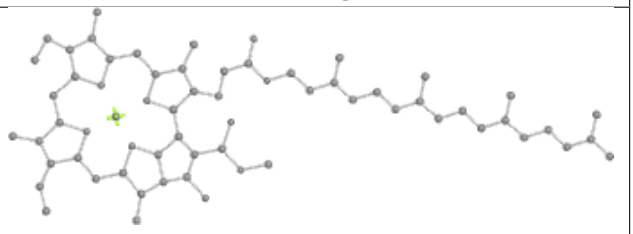
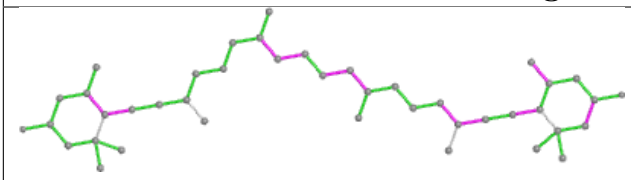


Rings

Ligand II0 1 617



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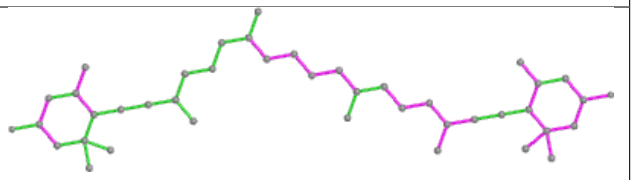
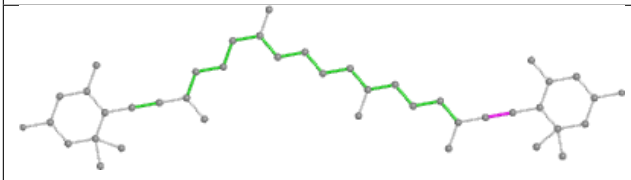
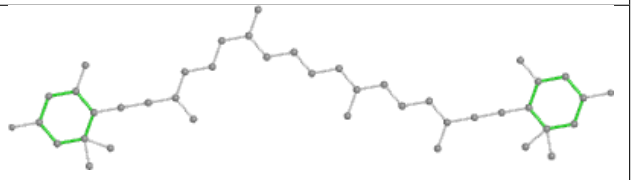


Bond angles

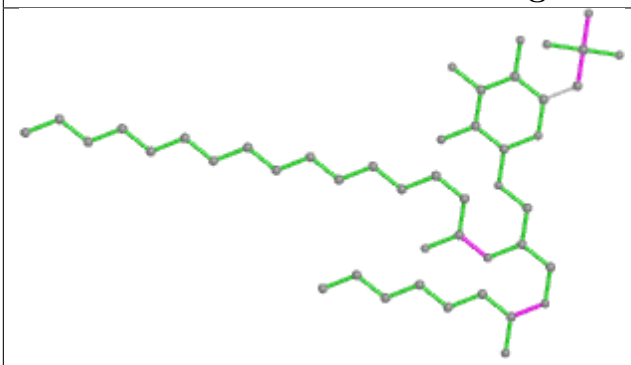


Torsions



Rings

Ligand SQD a 408



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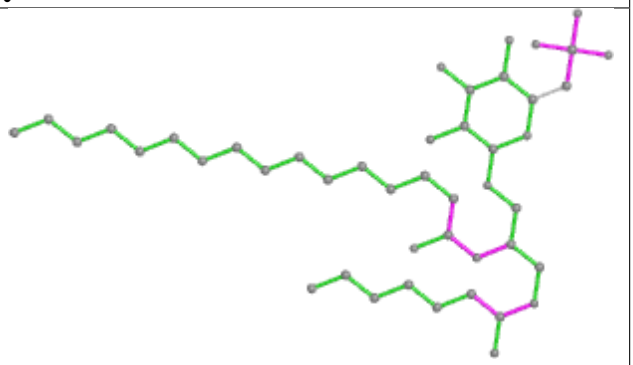
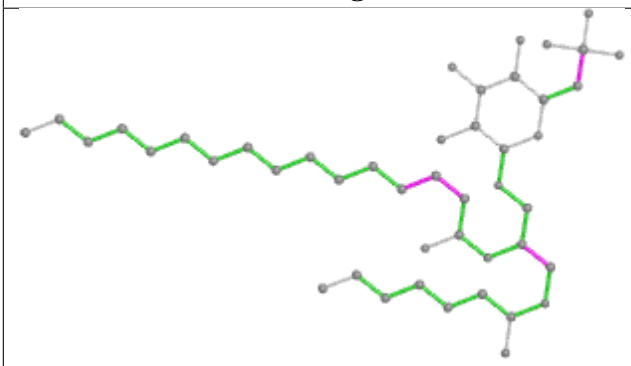


Bond angles



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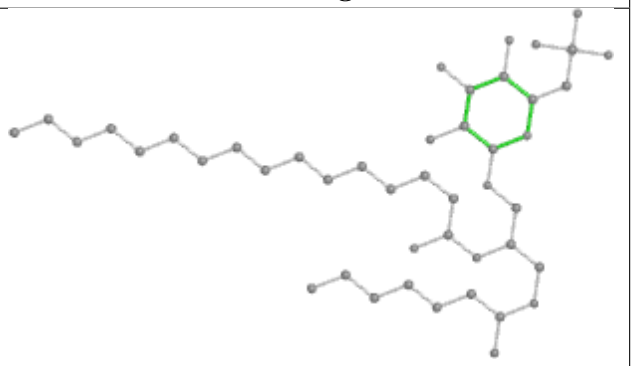
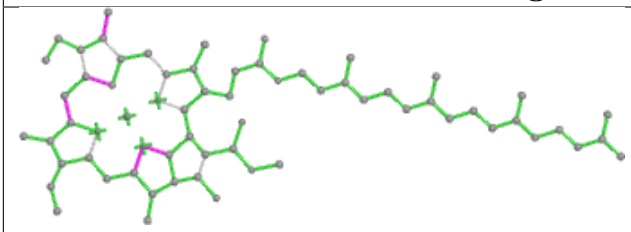


Rings

Ligand CLA b 602



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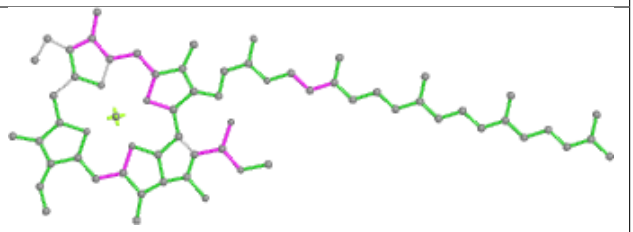

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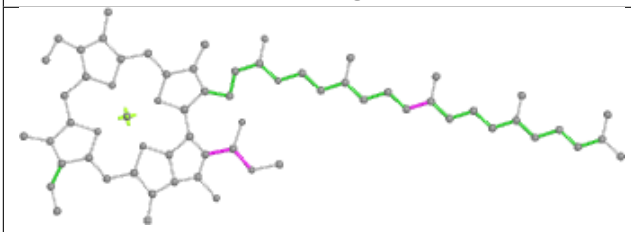

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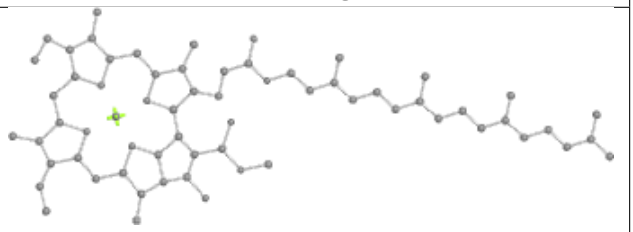
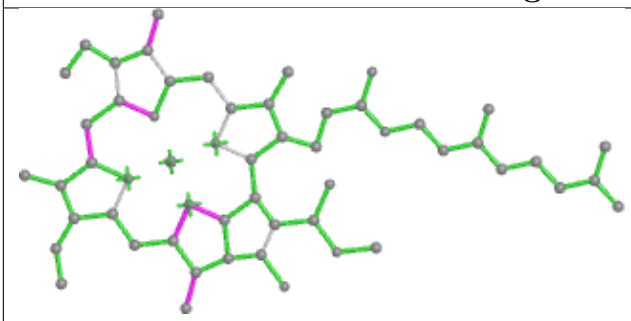


Rings

Ligand CLA R 613



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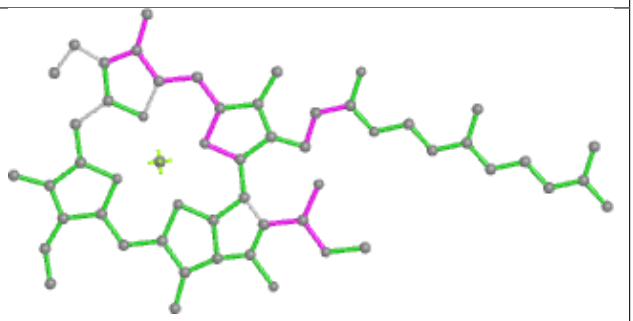
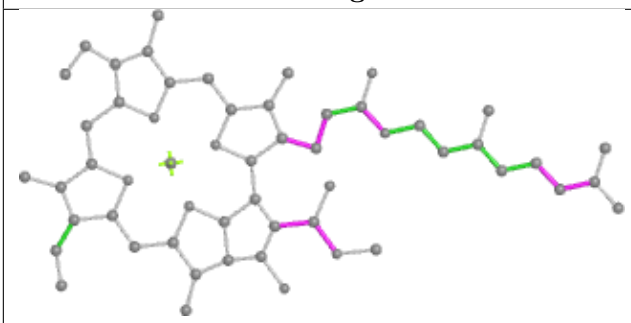


Bond angles



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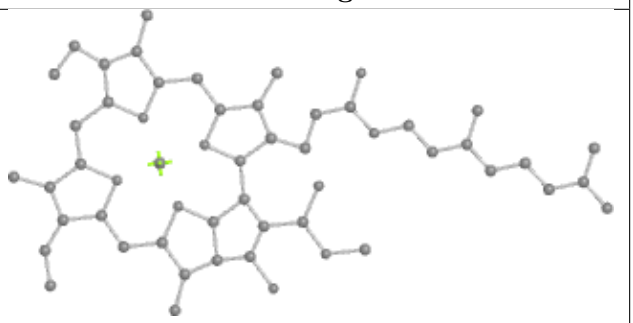
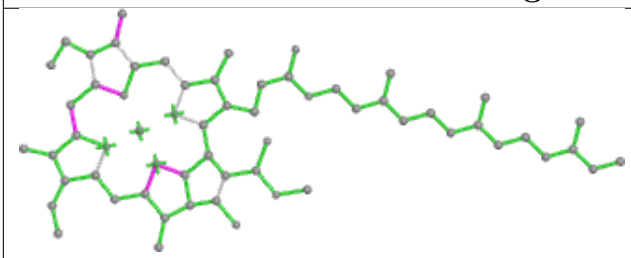


Rings

Ligand CLA Q 604



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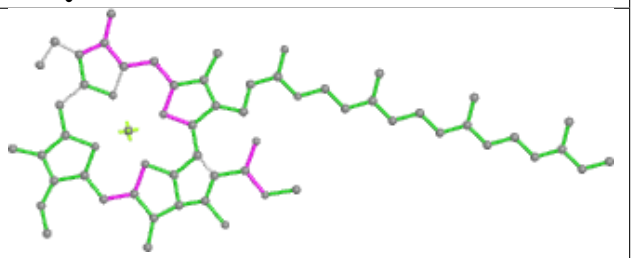

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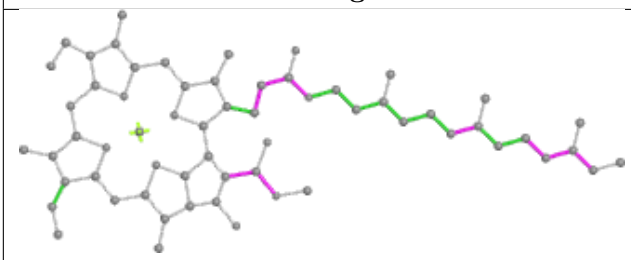

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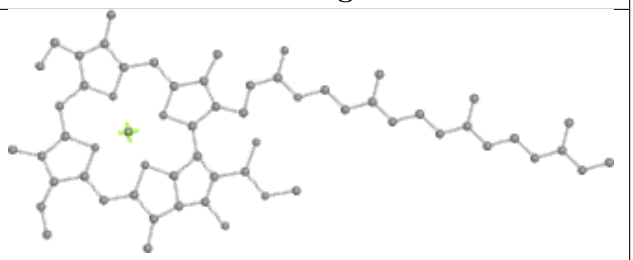
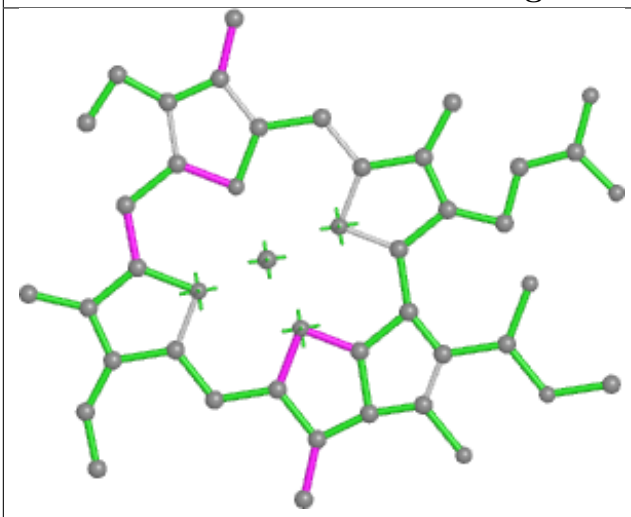


Rings

Ligand CLA P 601



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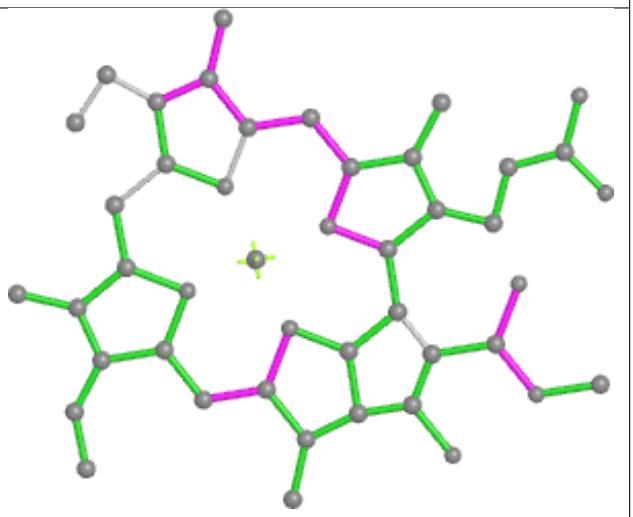

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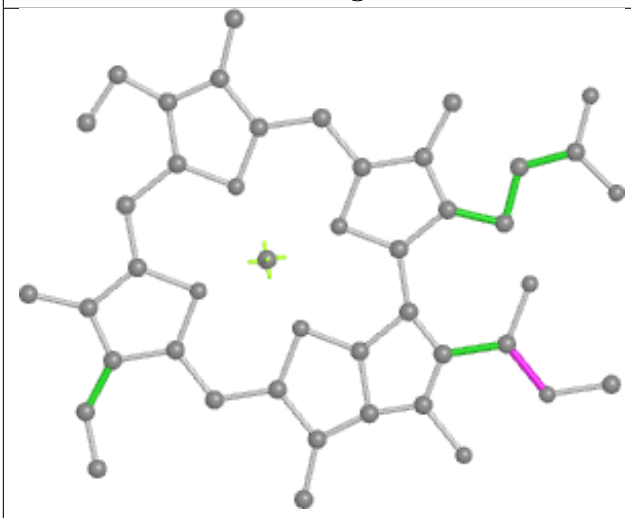

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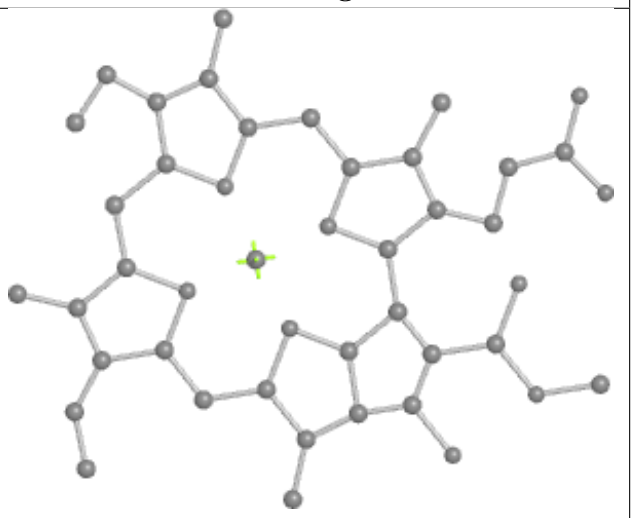
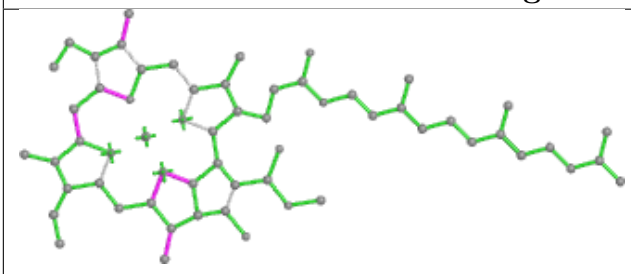


Rings

Ligand CLA N 602



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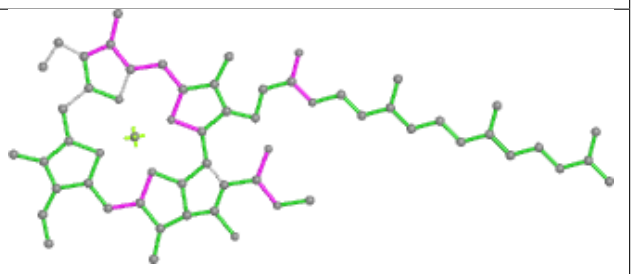

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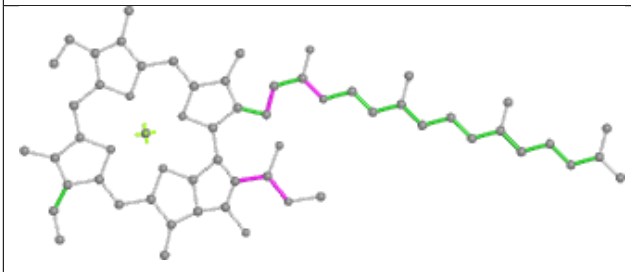

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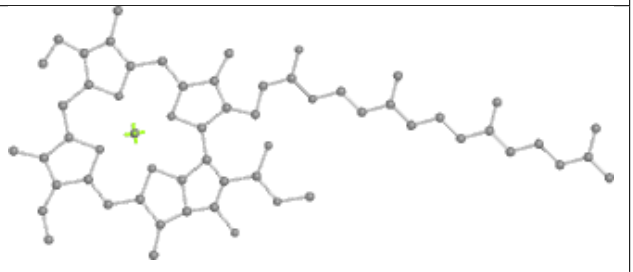
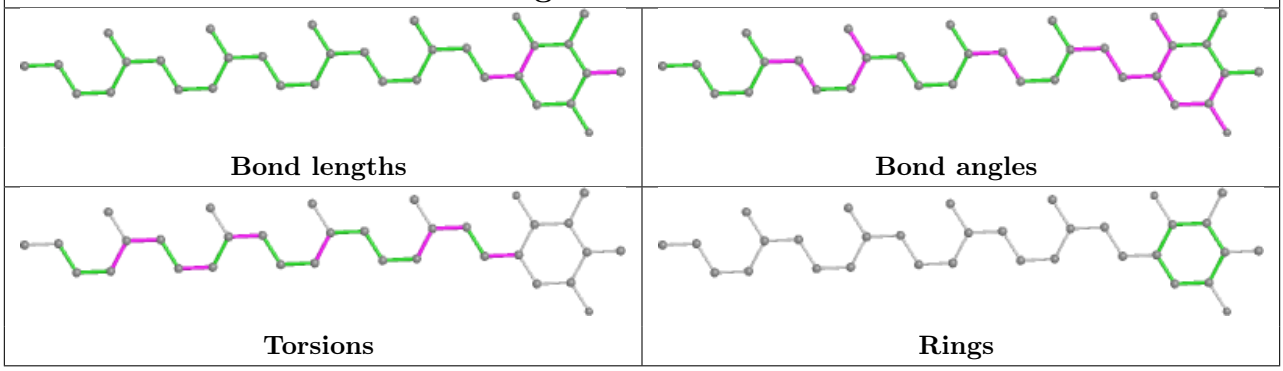


Rings

Ligand PL9 a 409



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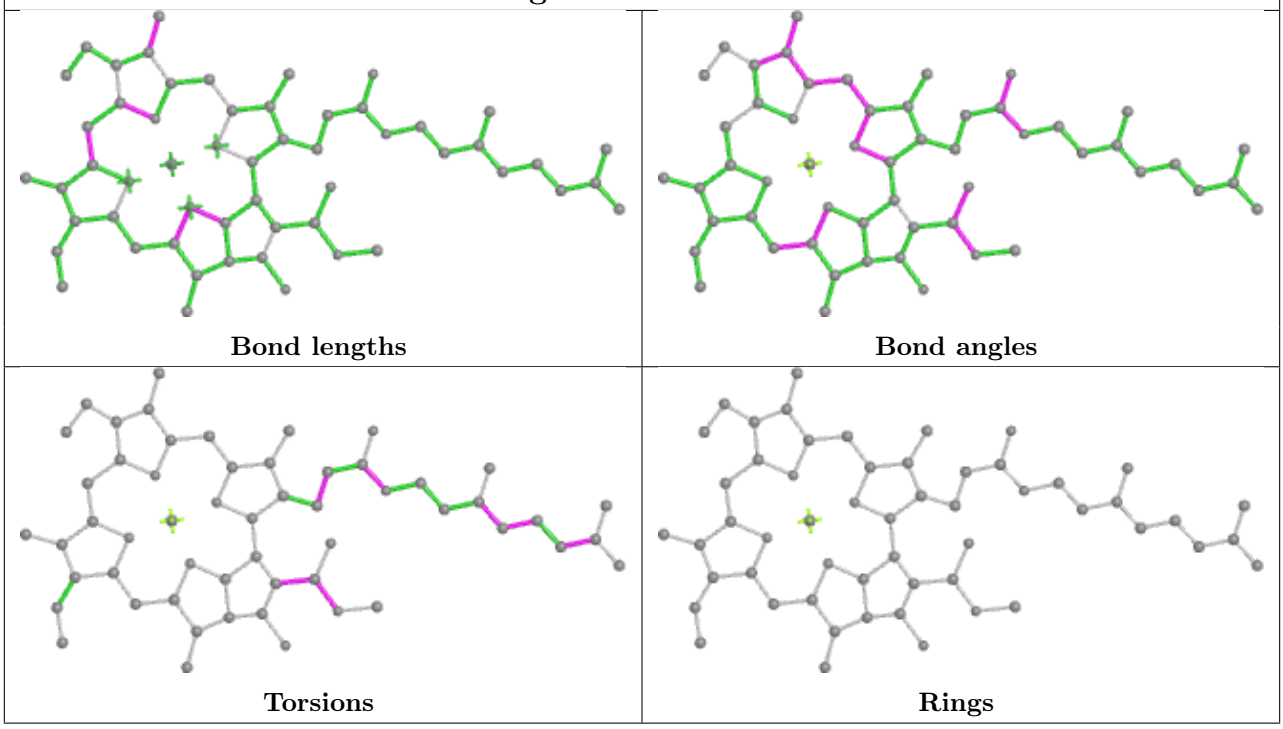

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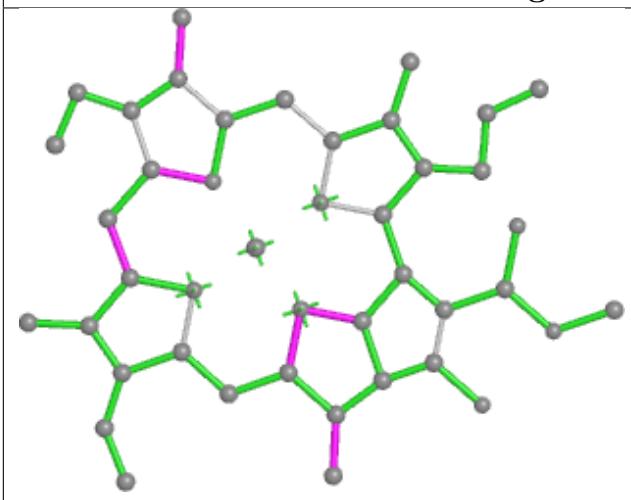

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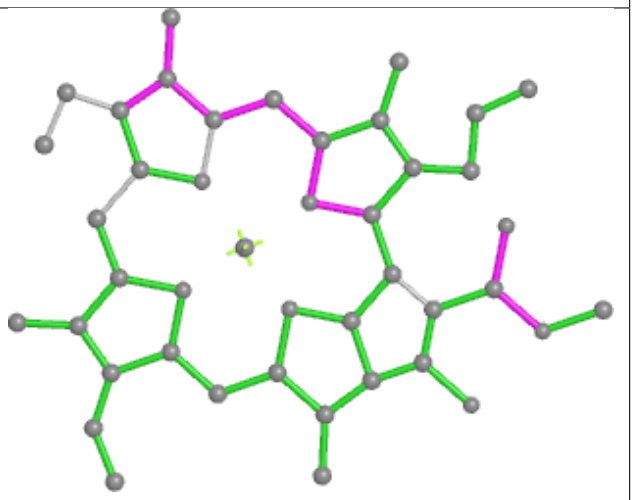
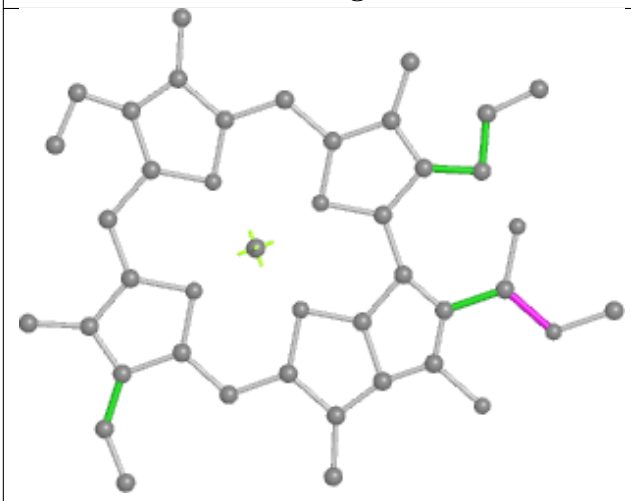


Bond angles



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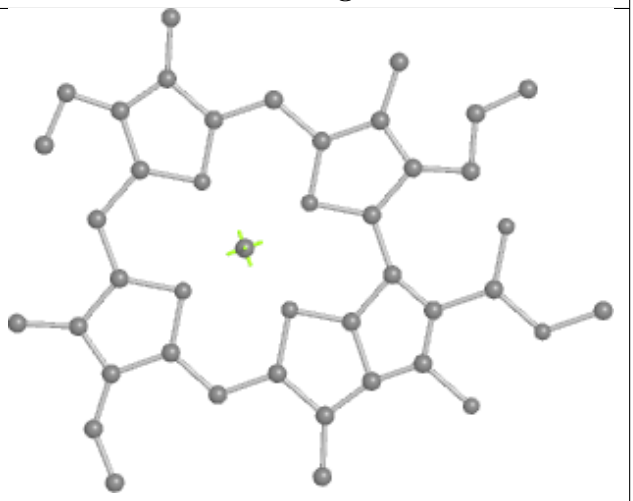
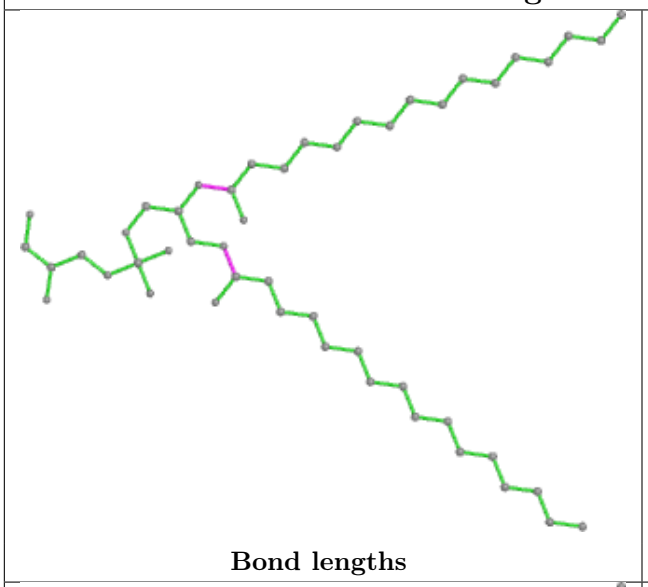


Rings

Ligand LHG P 621



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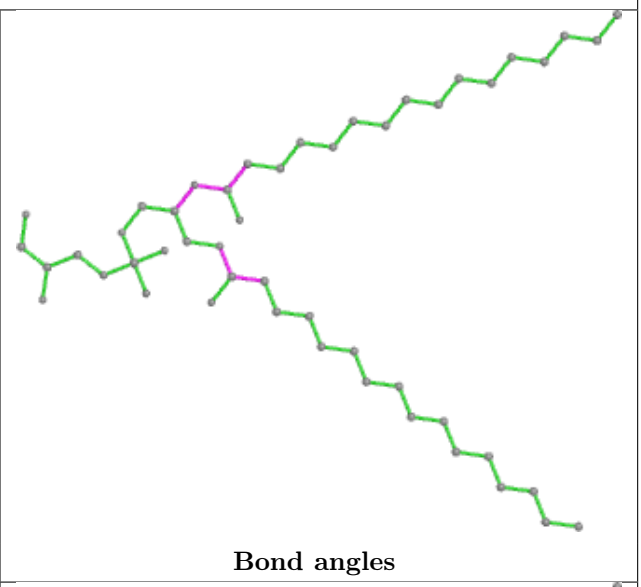
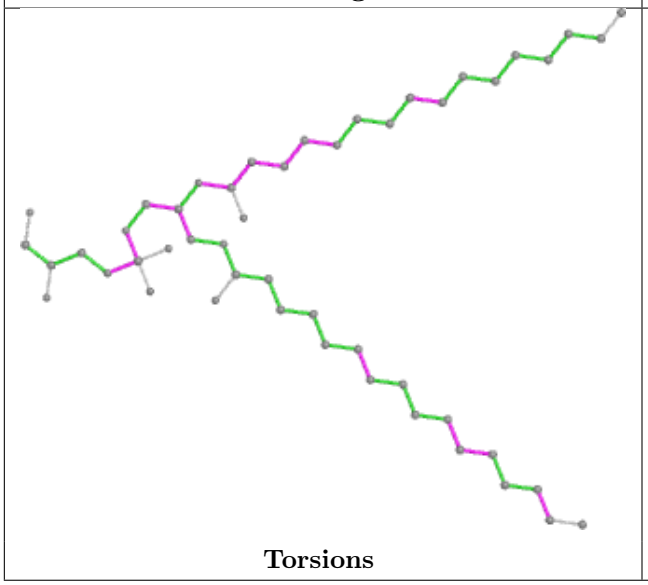


Bond angles



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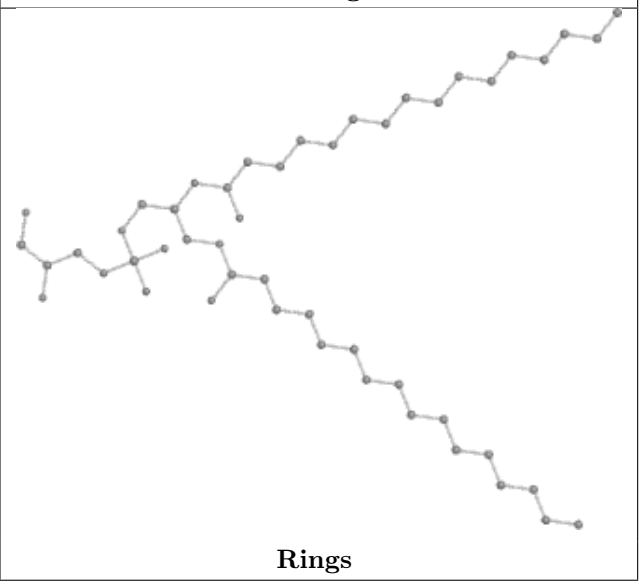
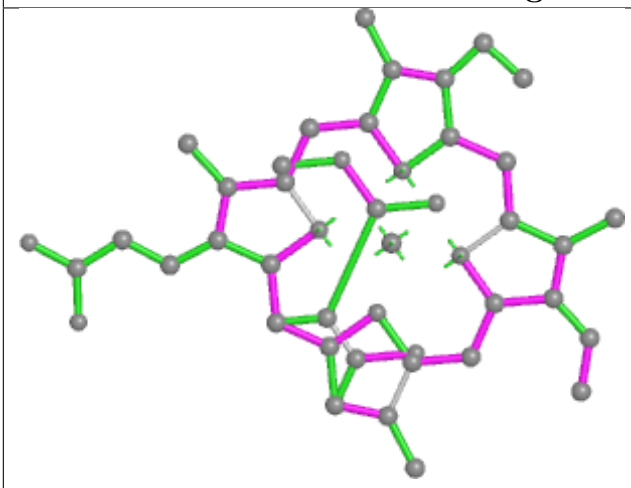


Rings

Ligand KC2 R 612



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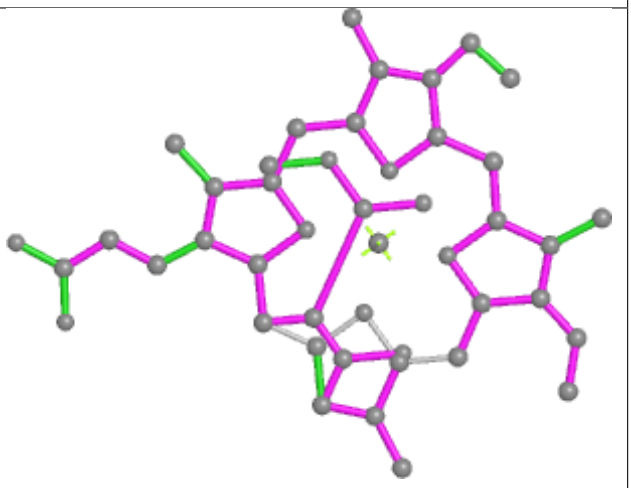

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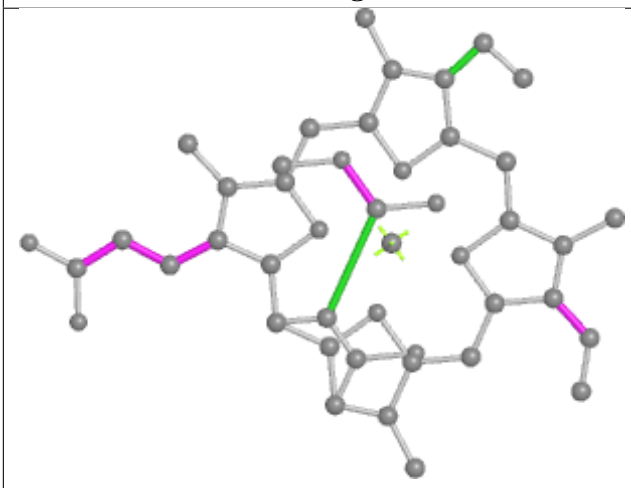

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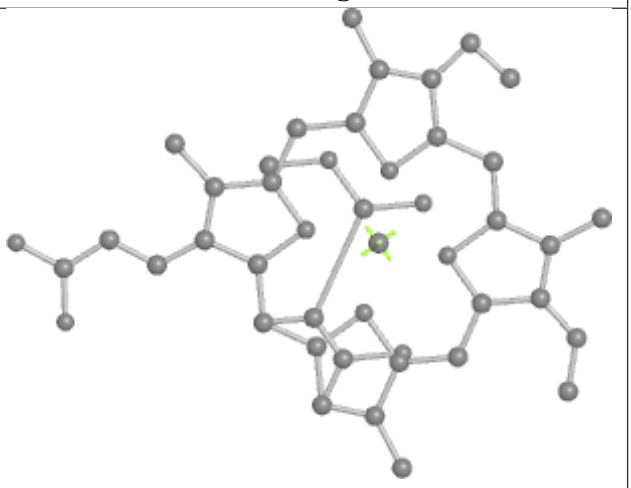
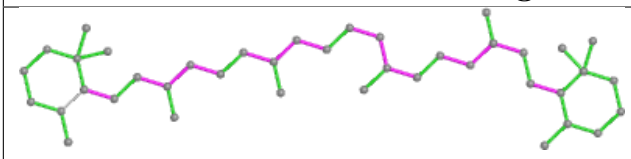


Rings

Ligand WVN B 619



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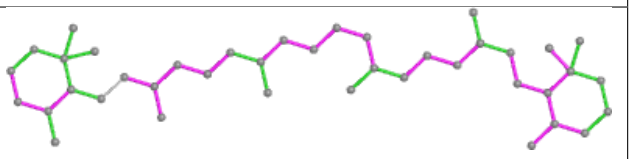

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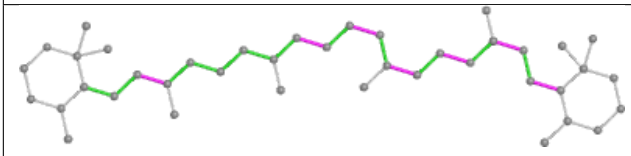

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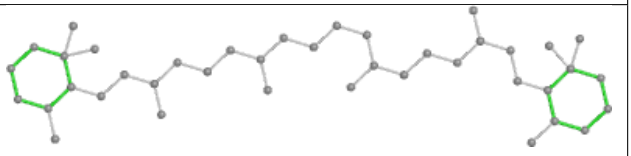
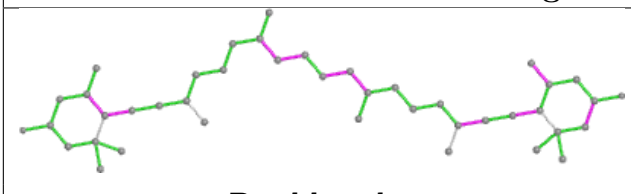


Rings

Ligand II0 6 618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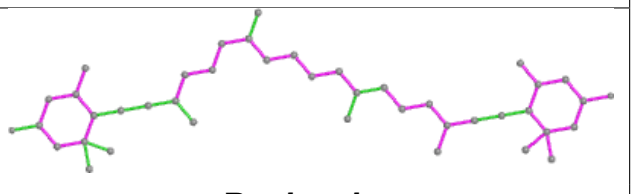
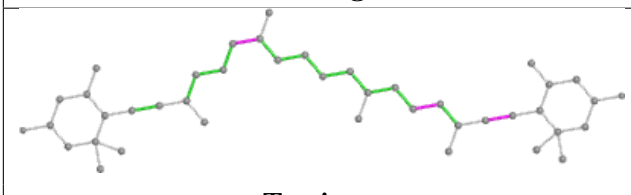

Bond angles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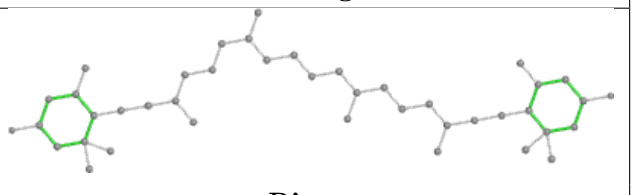
Rings

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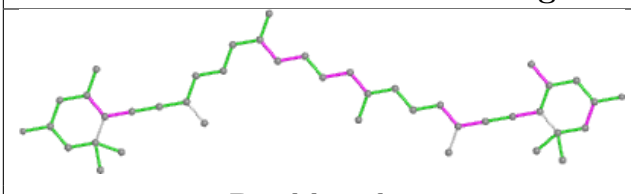
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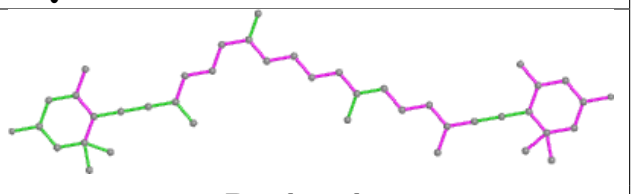
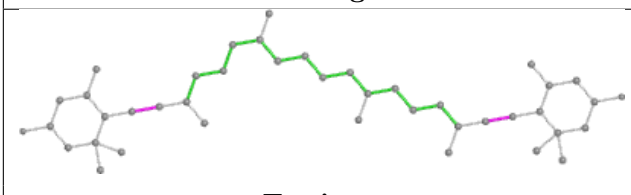

Bond angles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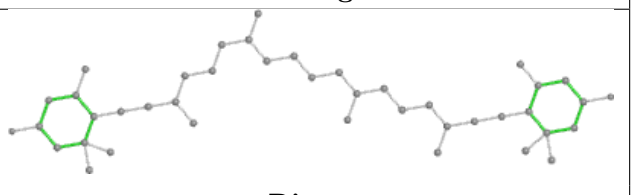
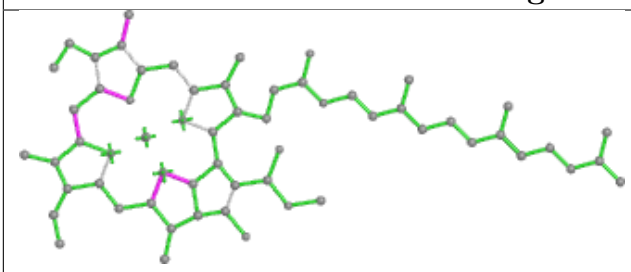

Rings

Ligand CLA b 614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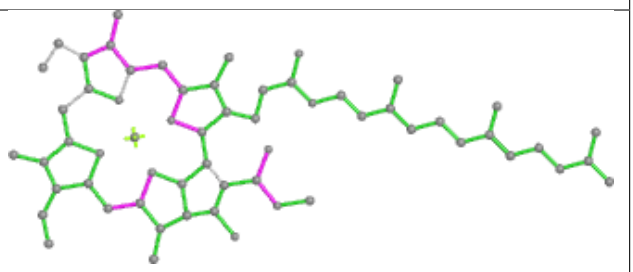
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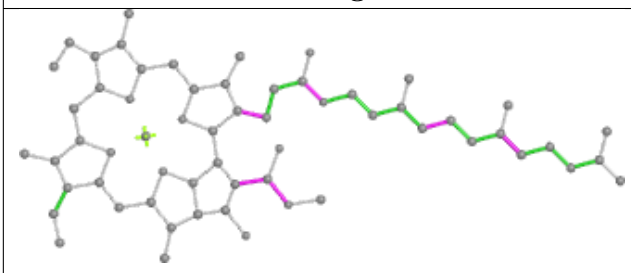
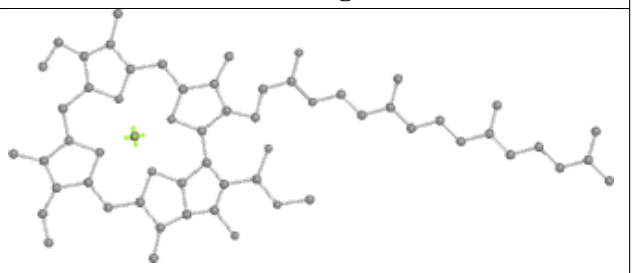
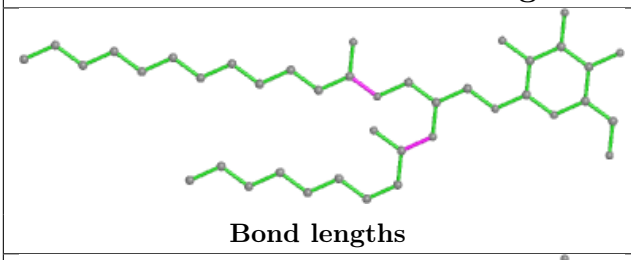
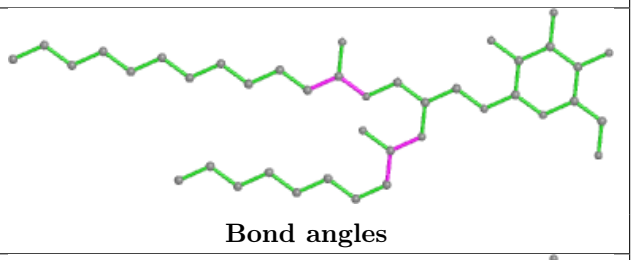

Torsions


Rings

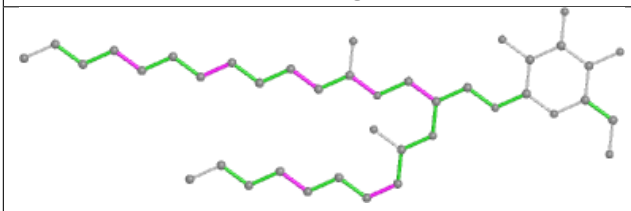
Ligand LMG D 402



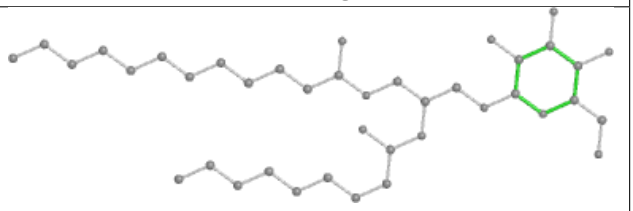
Bond lengths



Bond angles

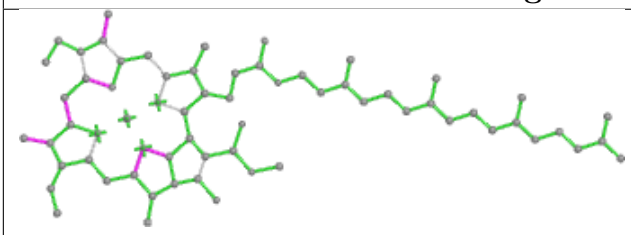


Torsions



Rings

Ligand CLA B 616



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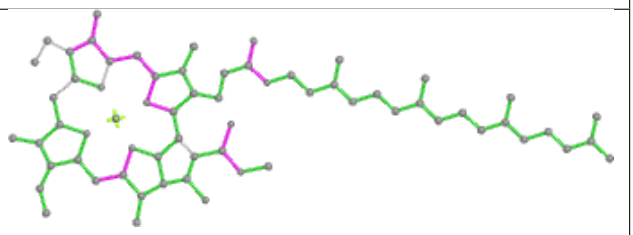
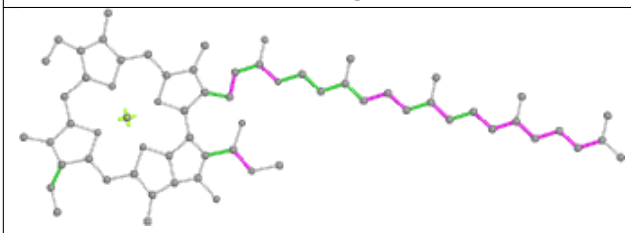
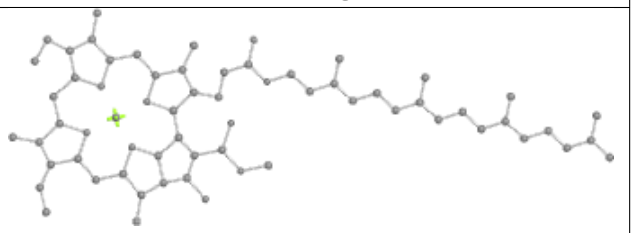


Bond angles

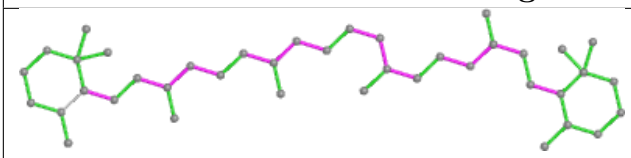


Torsions



Rings

Ligand WVN b 617



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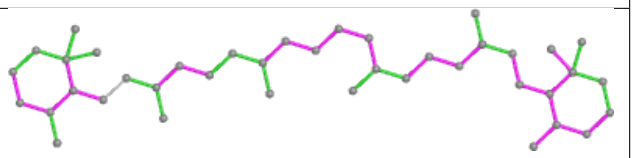
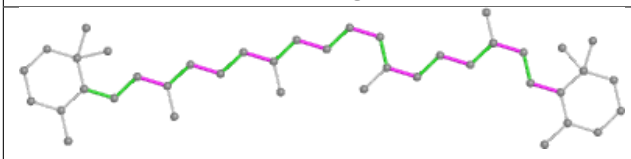


Bond angles



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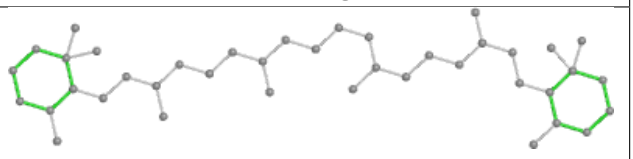
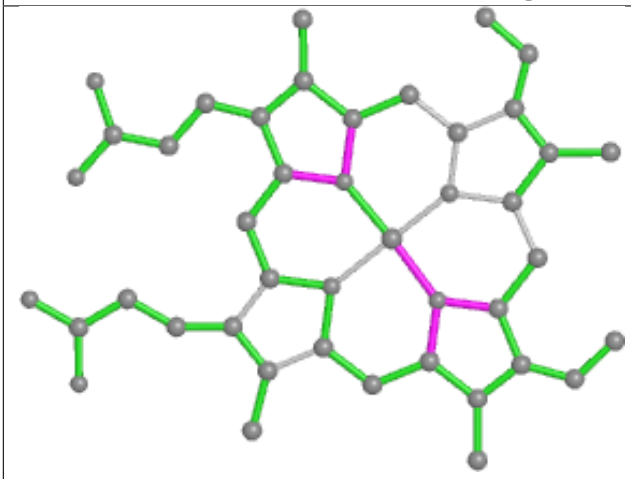


Rings

Ligand HEM E 102



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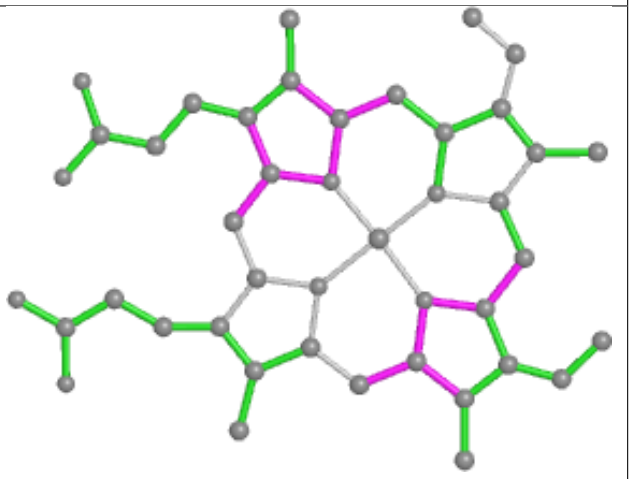
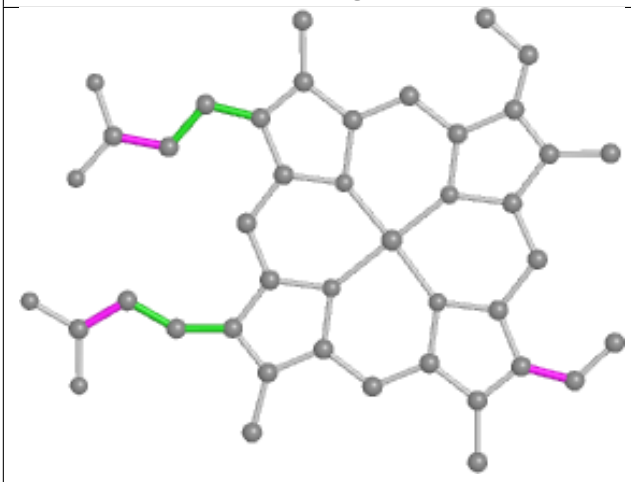


Bond angles



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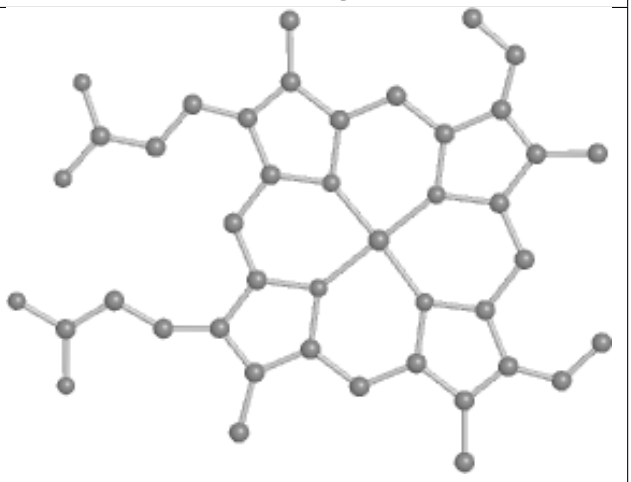
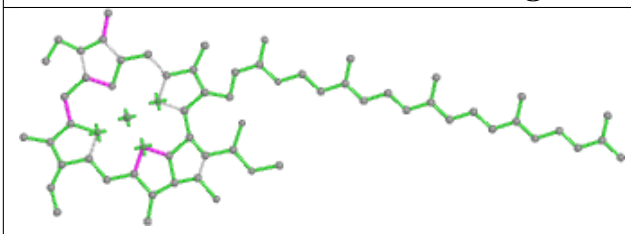


Rings

Ligand CLA C 522



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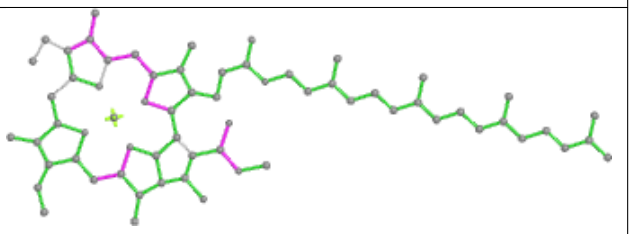
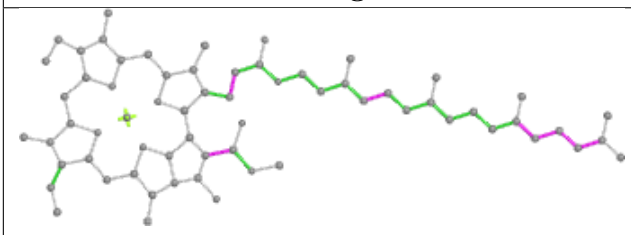


Bond angles



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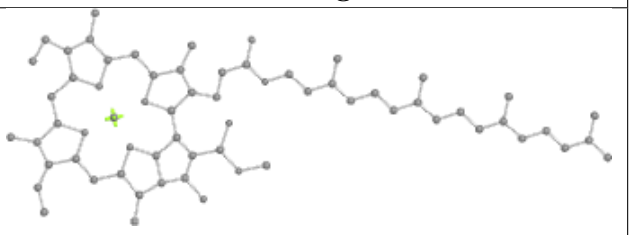
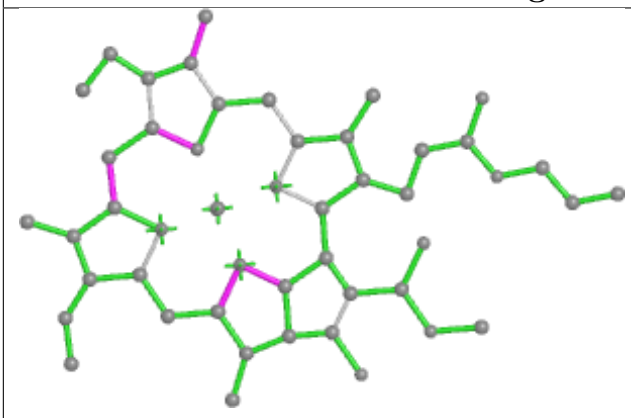


Rings

Ligand CLA 1 614



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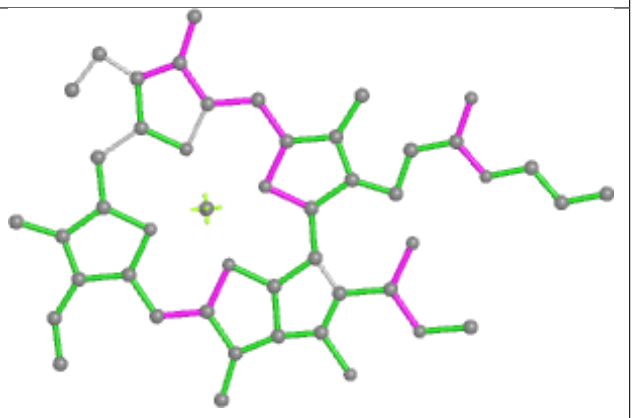
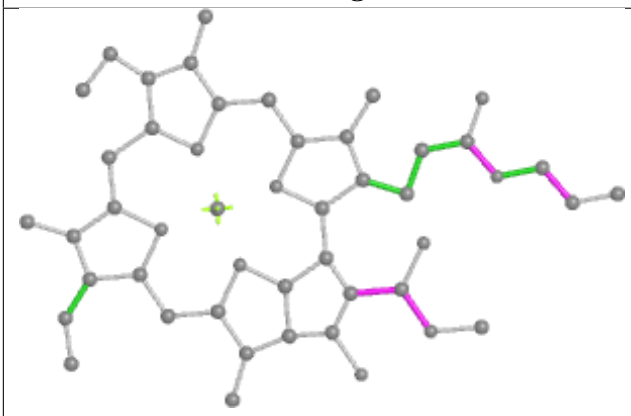


Bond angles



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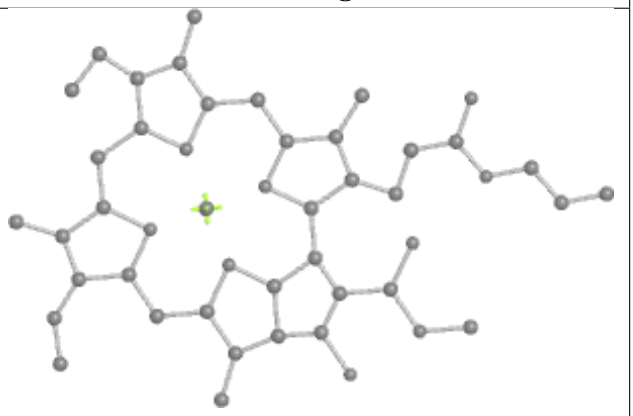
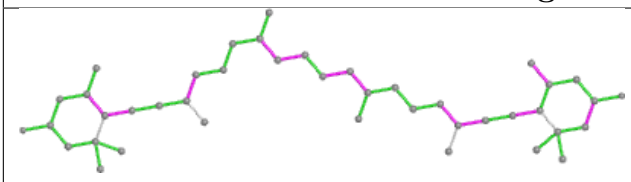


Rings

Ligand II0 N 619



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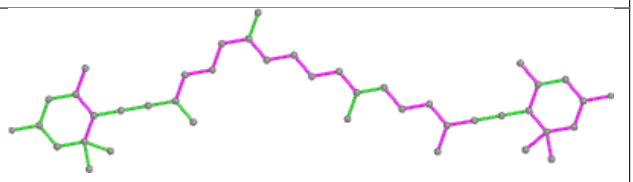
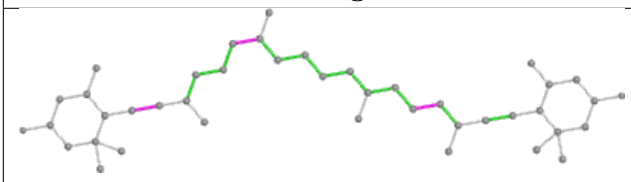


Bond angles



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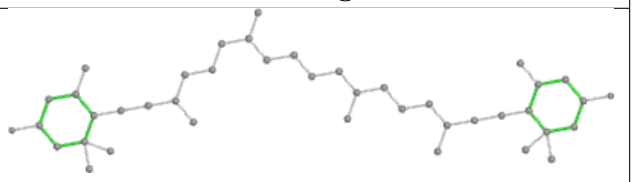
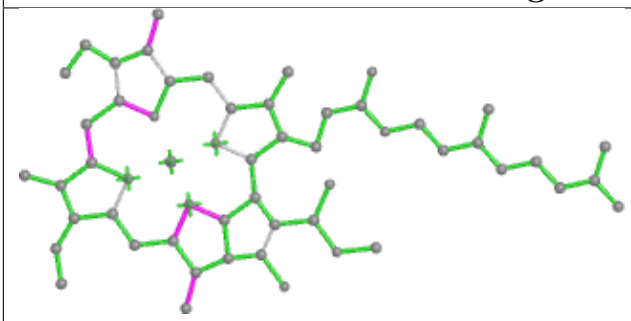


Rings

Ligand CLA S 609



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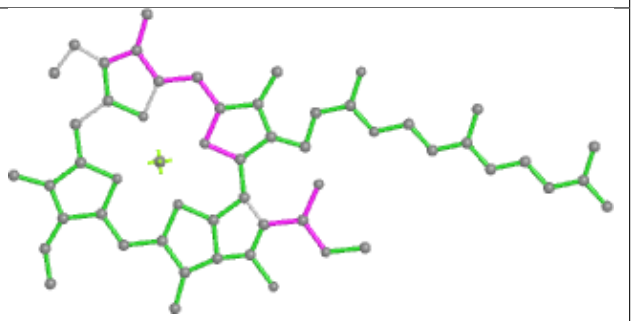
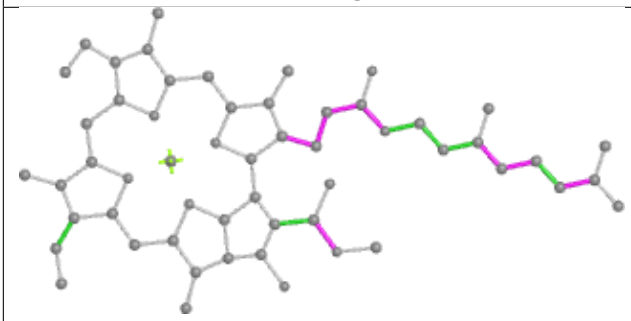
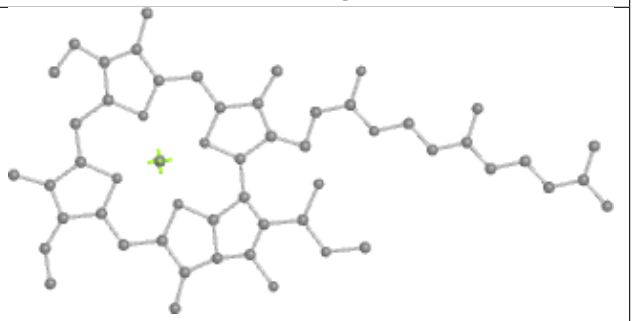


Bond angles

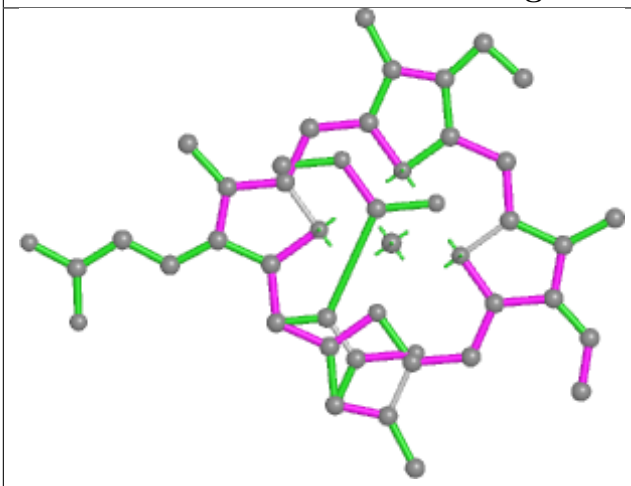


Torsions



Rings

Ligand KC2 N 611



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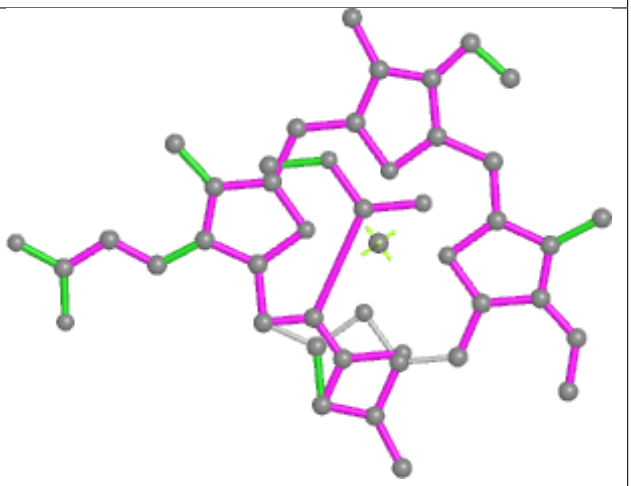
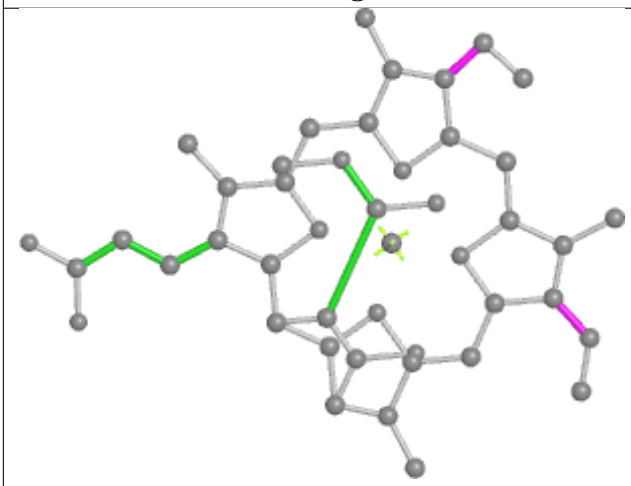


Bond angles



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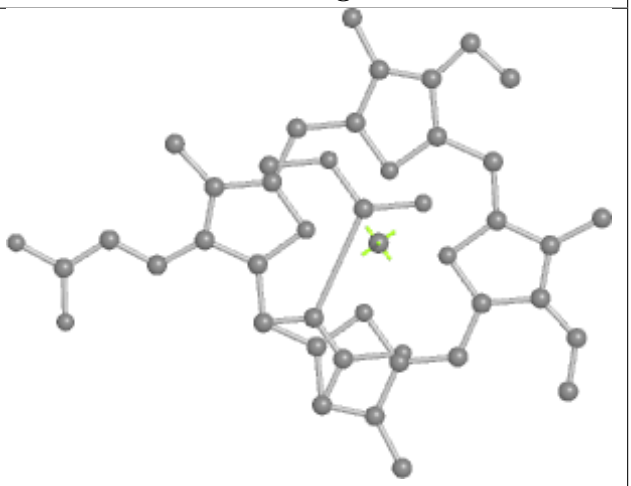
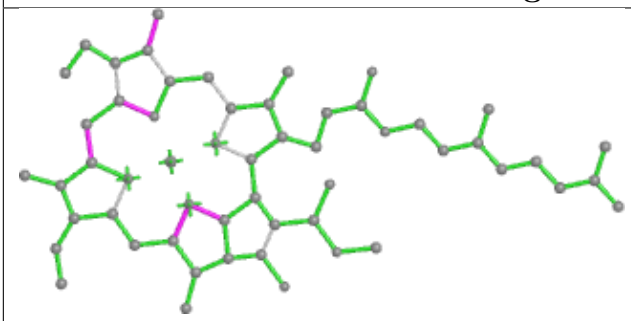


Rings

Ligand CLA R 601



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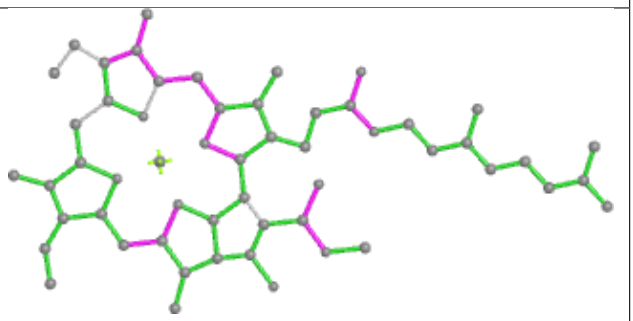
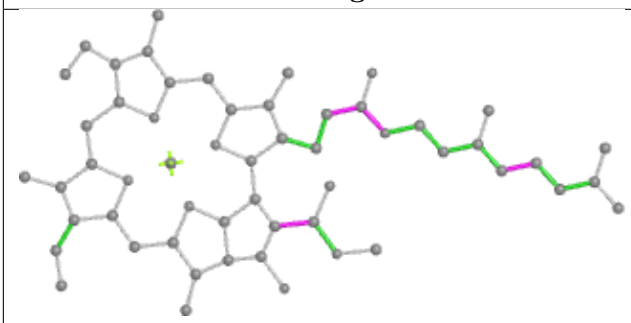


Bond angles



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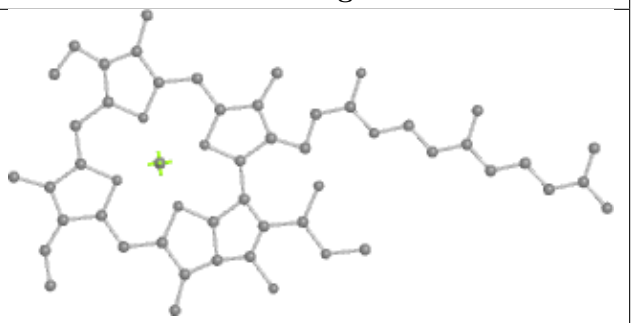
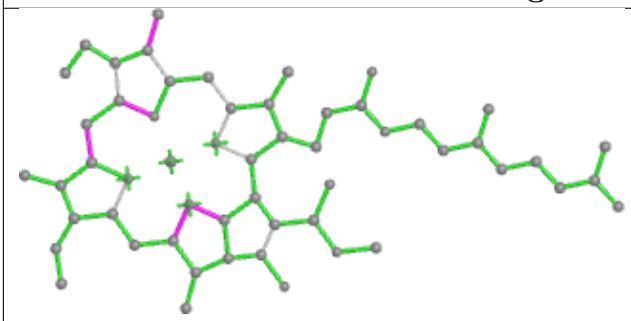


Rings

Ligand CLA S 601



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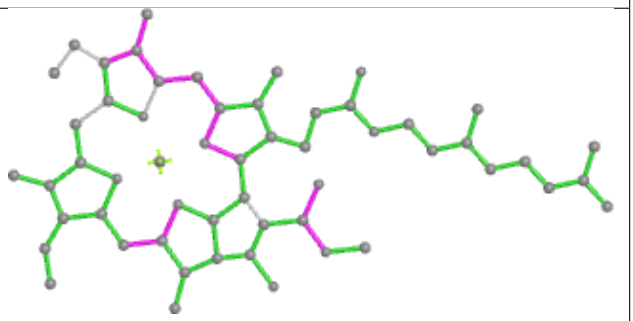
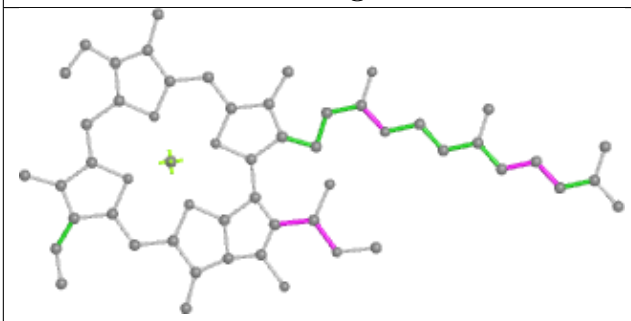


Bond angles



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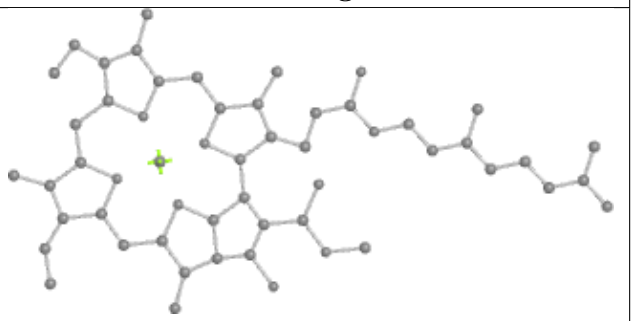
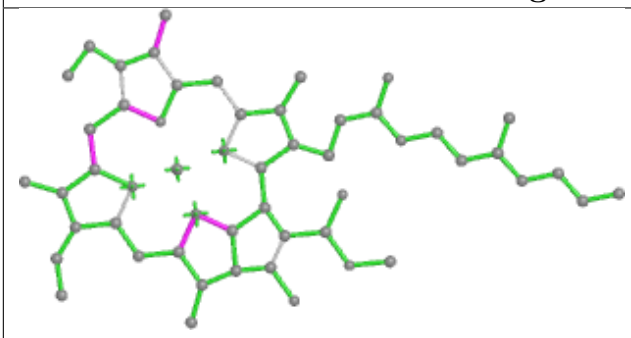


Rings

Ligand CLA c 528



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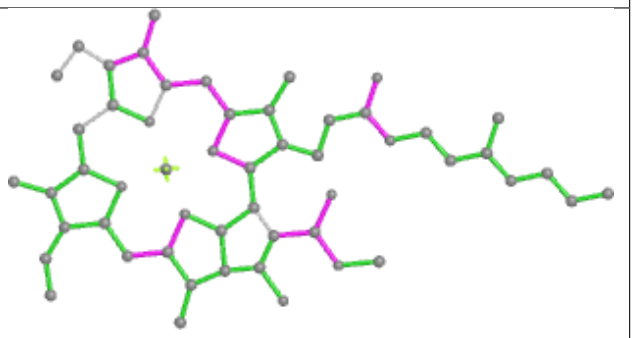
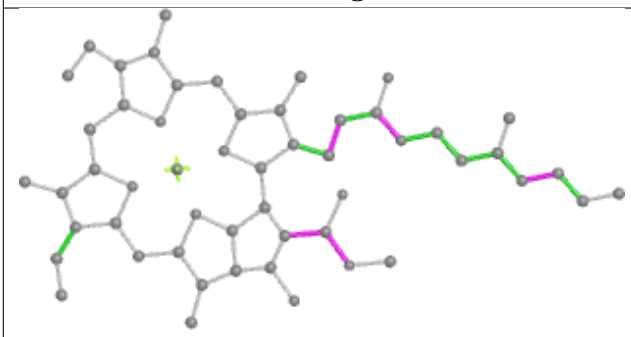


Bond angles



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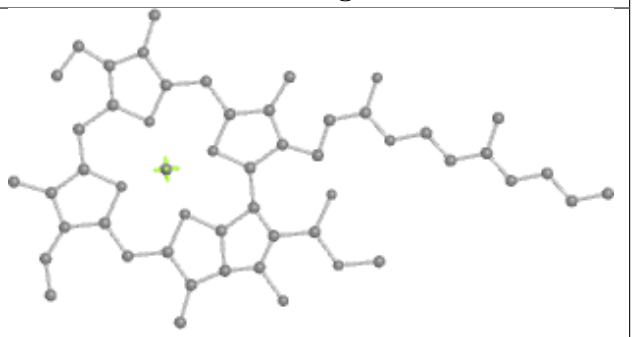
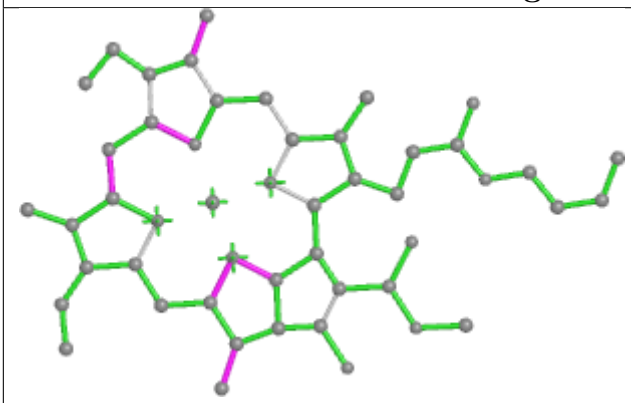


Rings

Ligand CLA A 404



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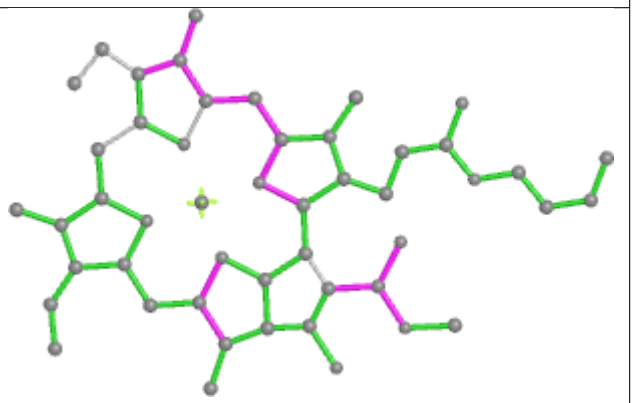
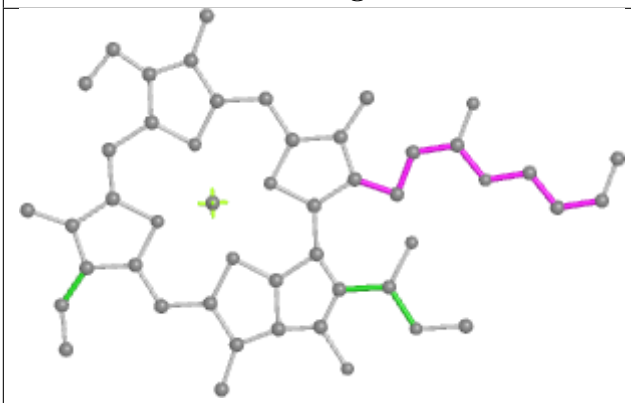


Bond angles



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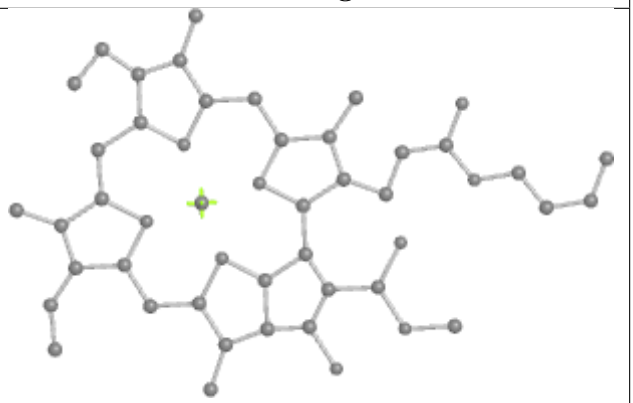
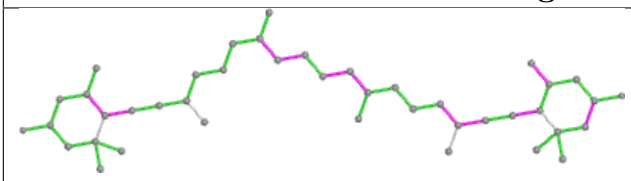
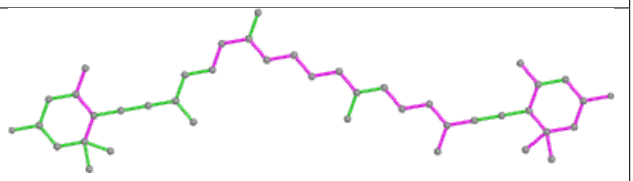
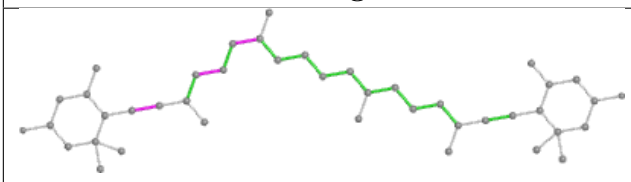


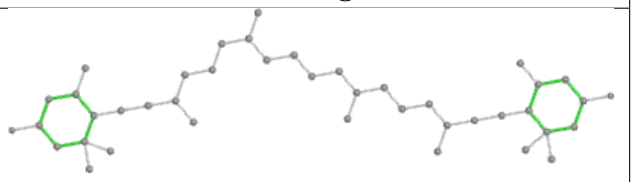
Rings

Ligand II0 N 616

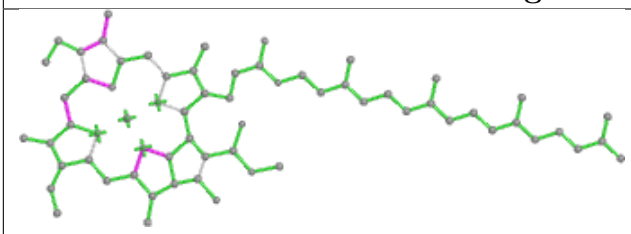

Bond lengths


Bond angles


Torsions


Rings

Ligand CLA B 613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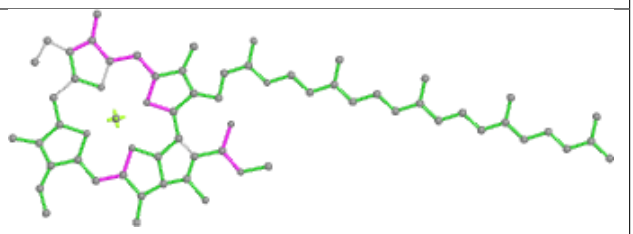
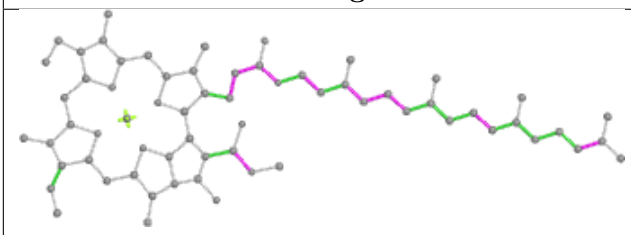

Bond angles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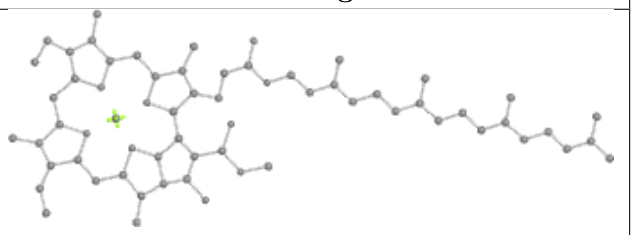
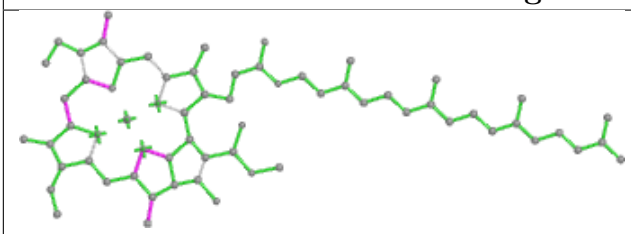

Rings

Ligand CLA B 605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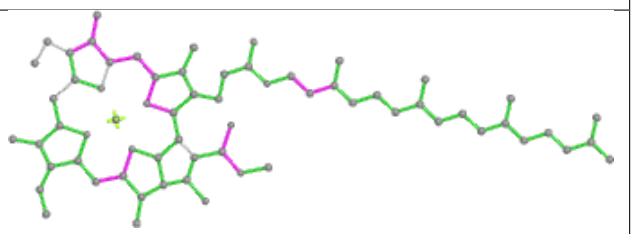
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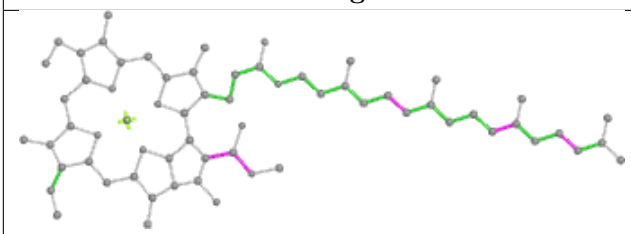
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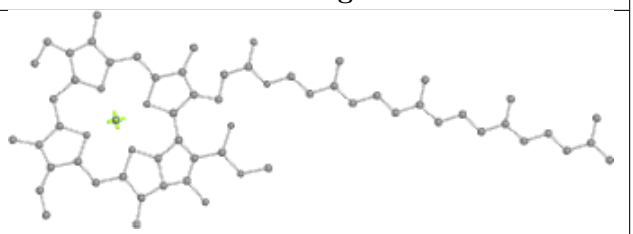
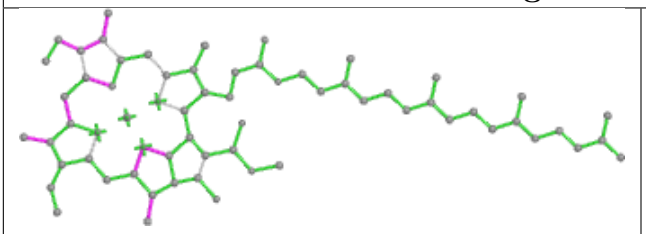

Rings

Ligand CLA R 609



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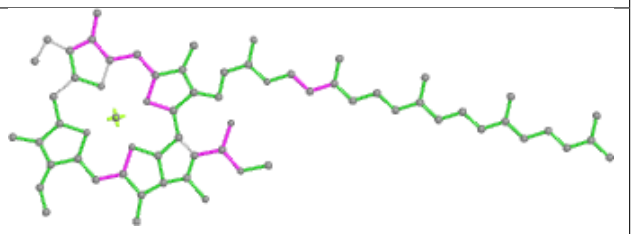
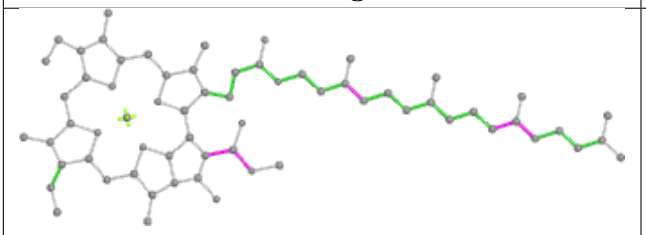


Bond angles



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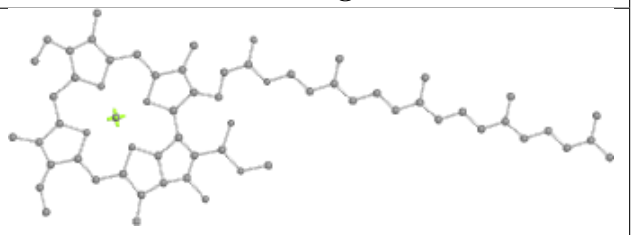
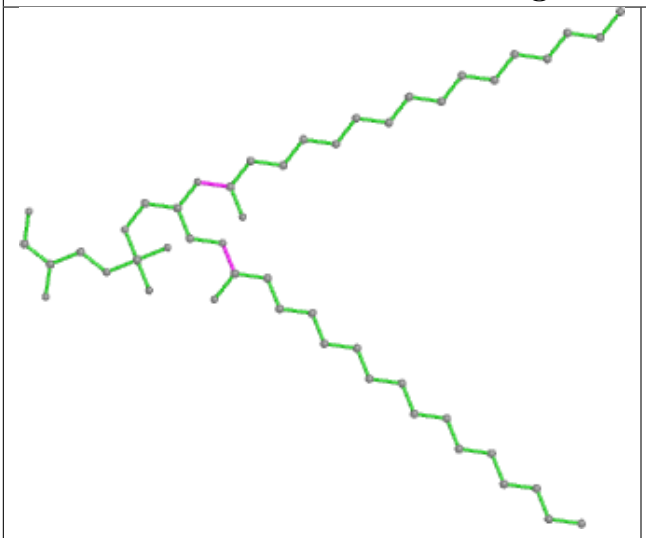


Rings

Ligand LHG l 101



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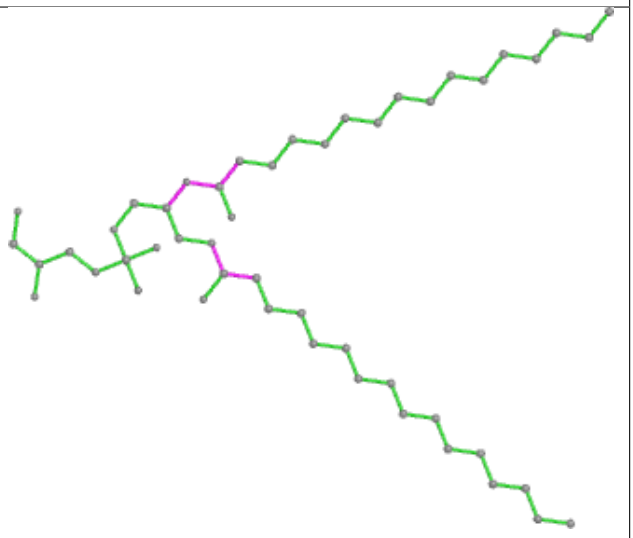
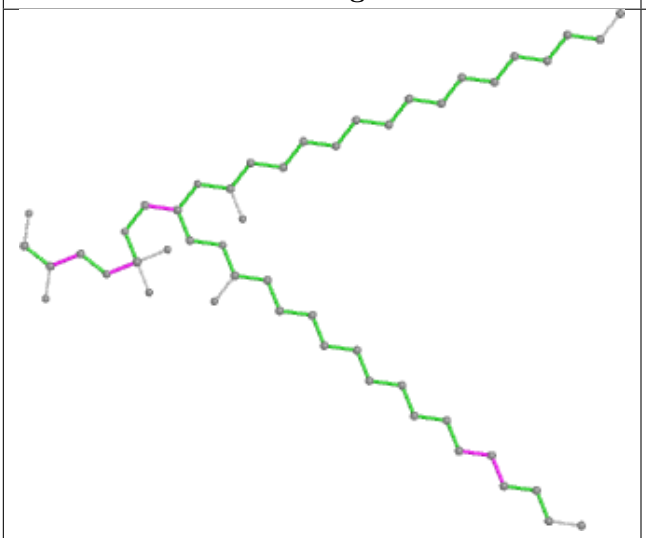


Bond angles



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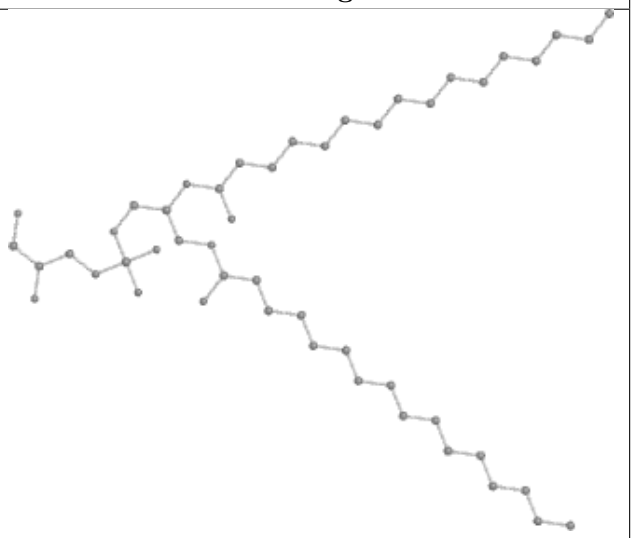
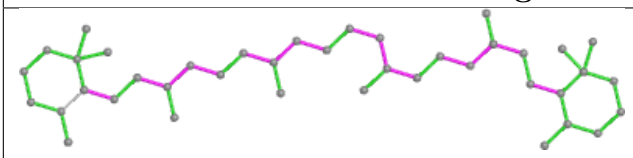


Rings

Ligand WVN D 408



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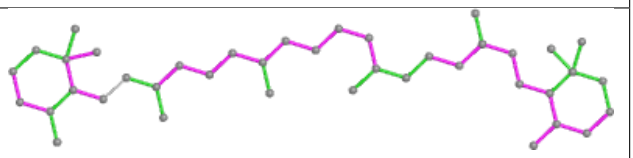

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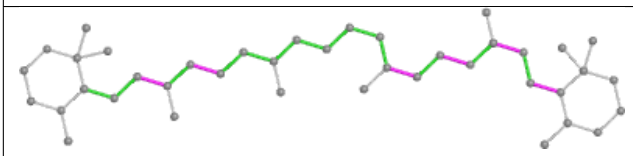

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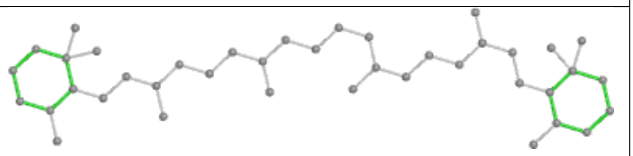
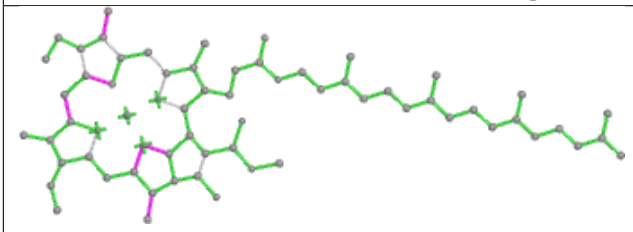


Rings

Ligand CLA C 520



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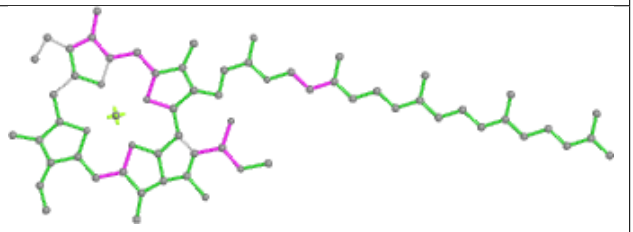
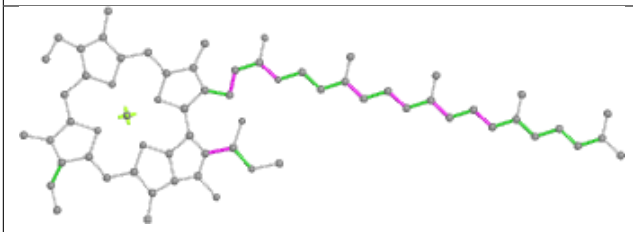


Bond angles



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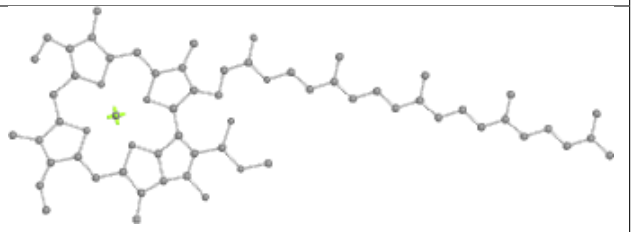
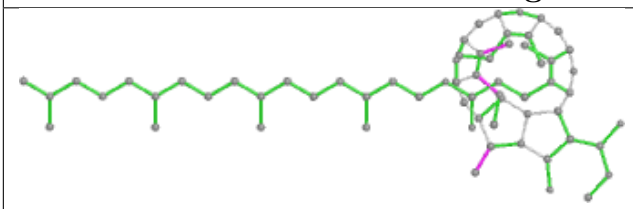


Rings

Ligand PHO d 401



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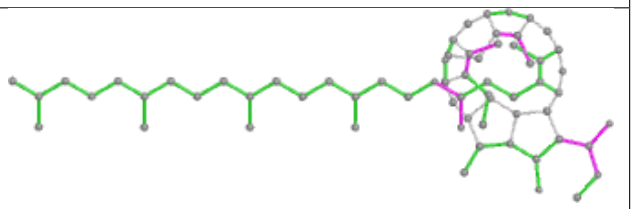
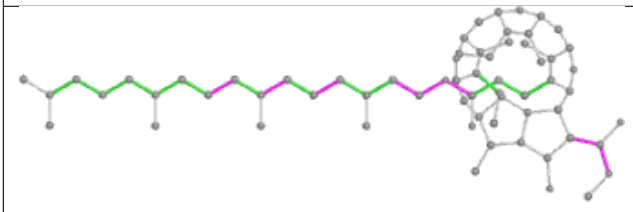


Bond angles



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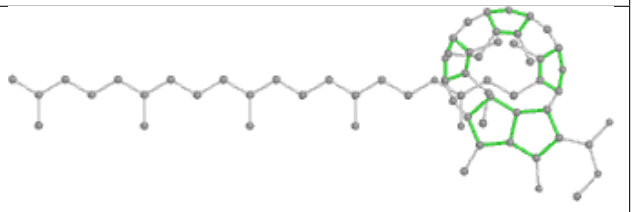
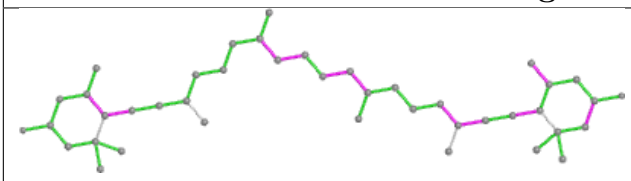


Rings

Ligand II0 R 619



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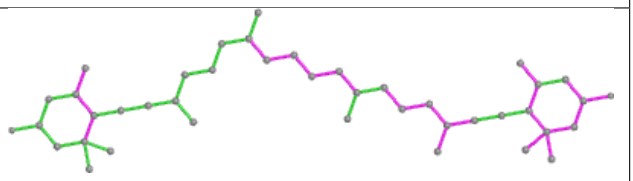
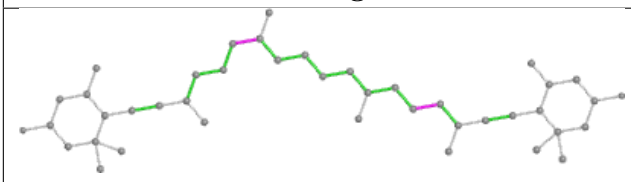
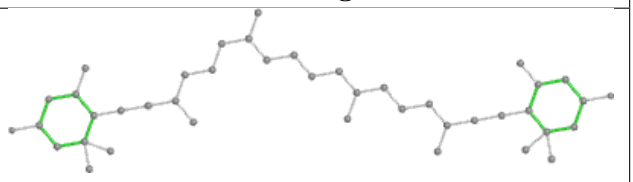


Bond angles

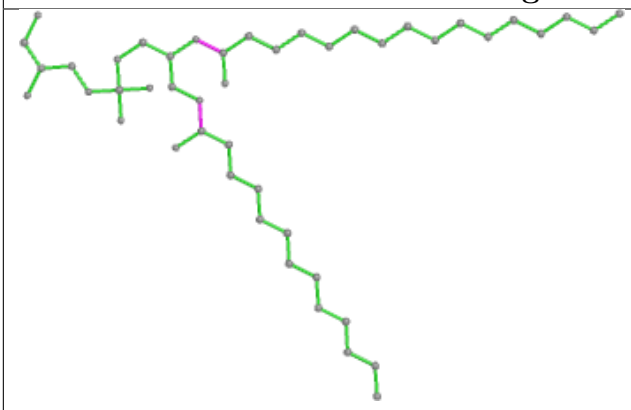


Torsions



Rings

Ligand LHG O 621



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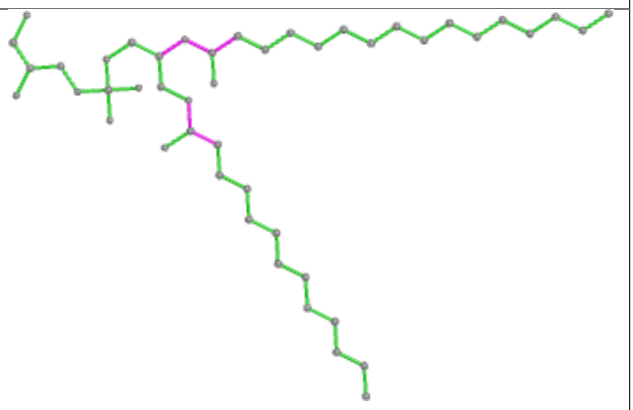
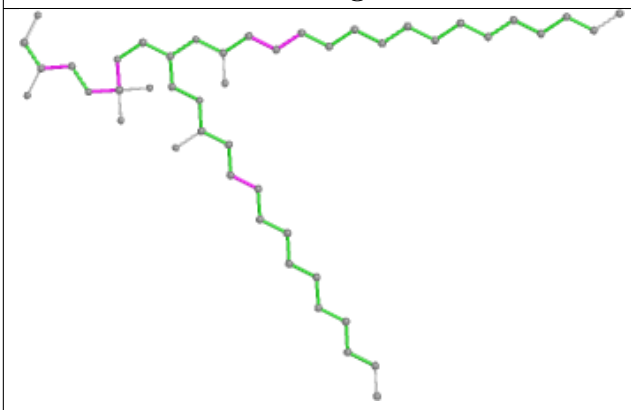


Bond angles



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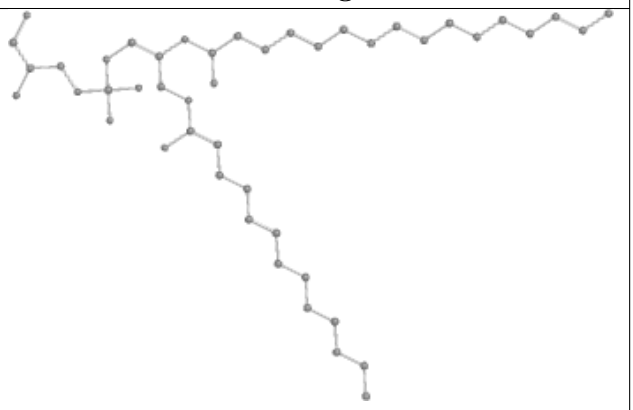
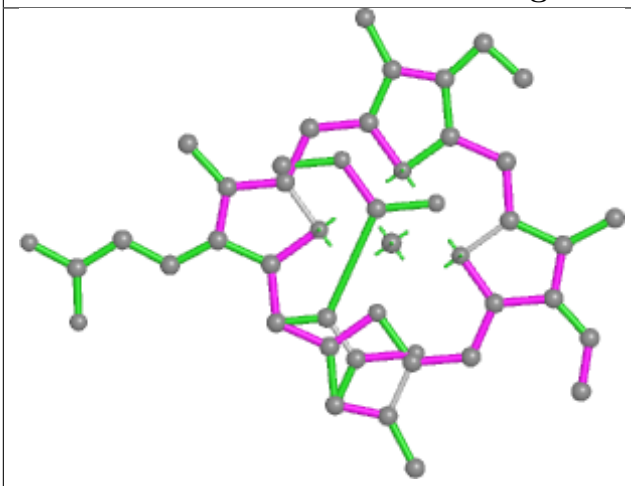


Rings

Ligand KC2 1 612



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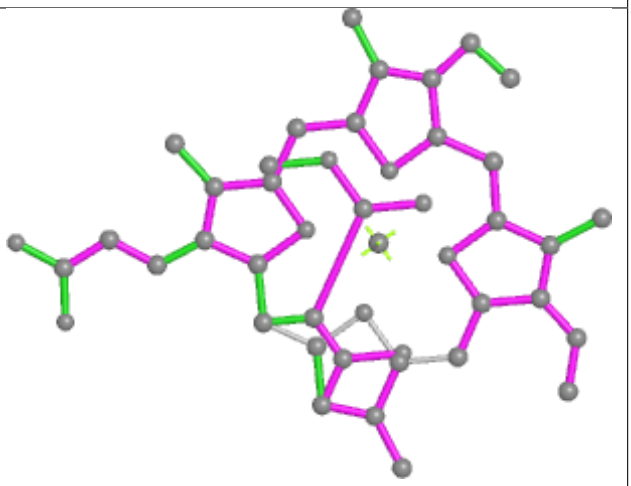
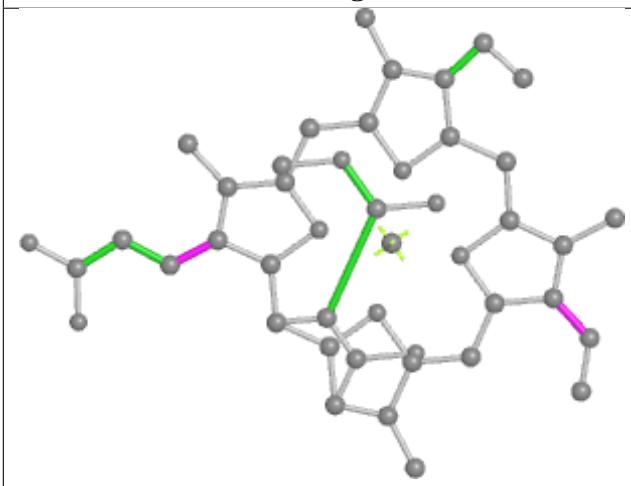


Bond angles



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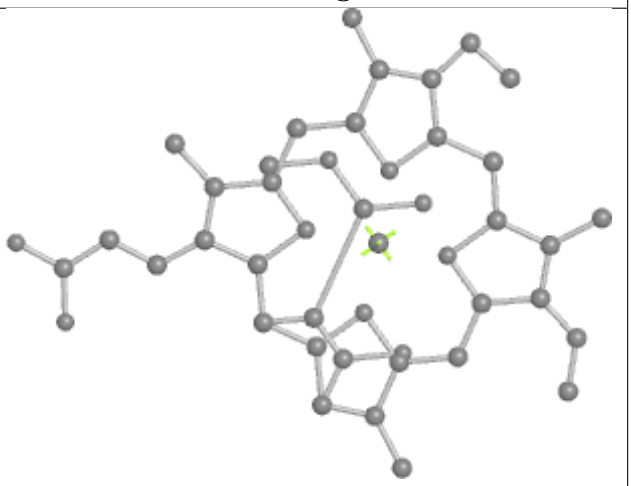
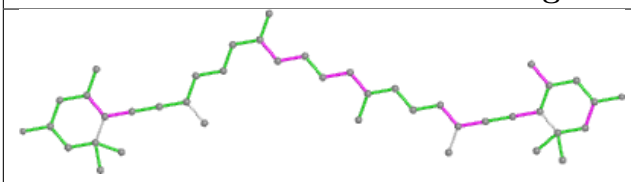


Rings

Ligand II0 1 618



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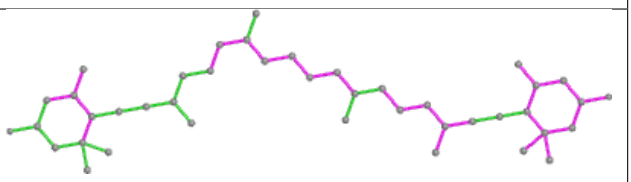
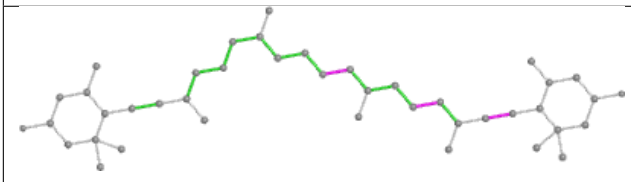


Bond angles



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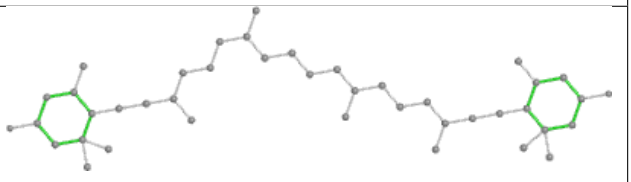
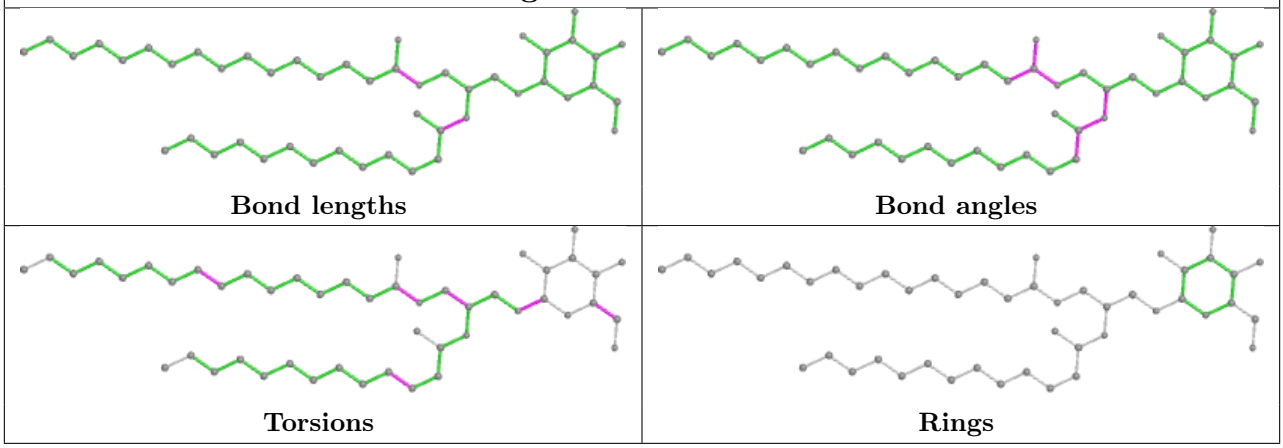
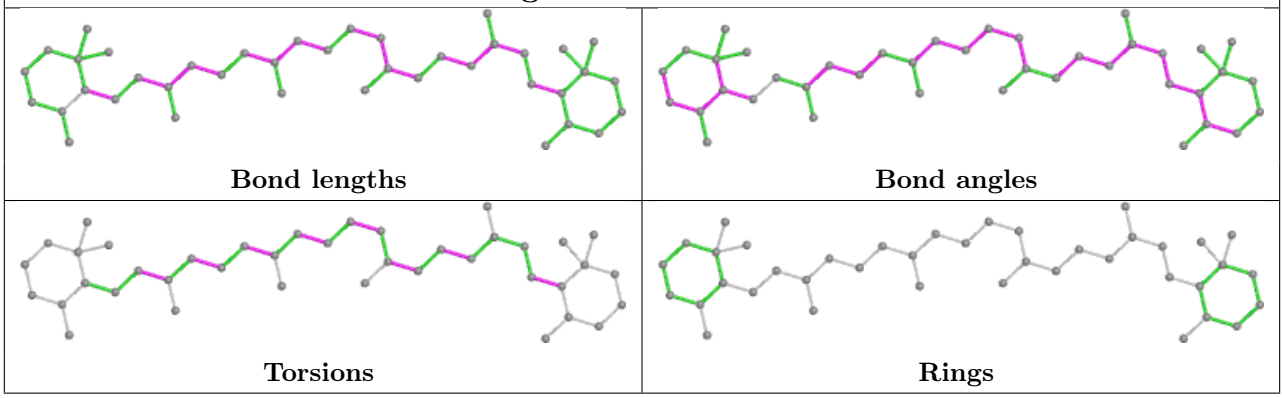


Rings

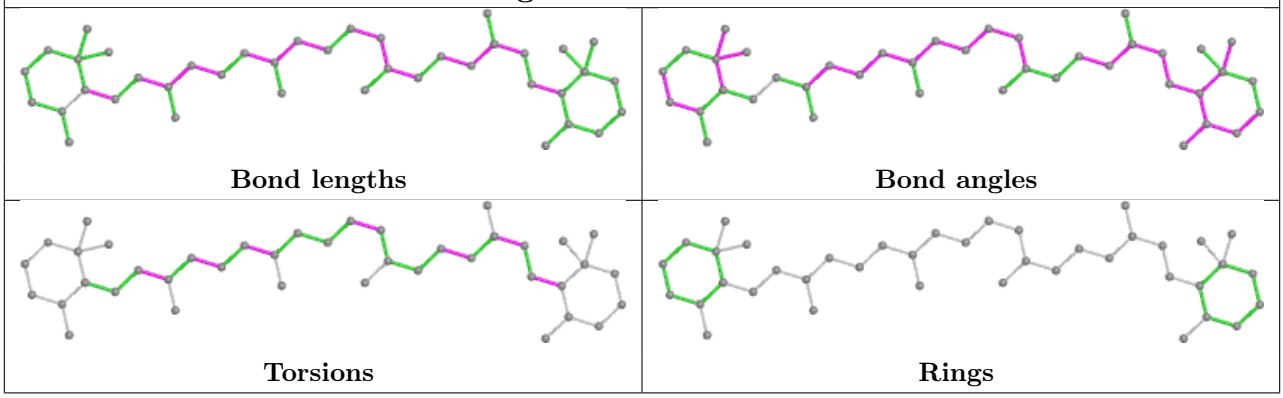
Ligand LMG w 134



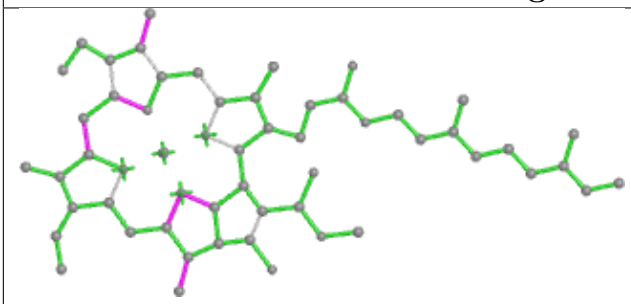
Ligand WVN c 531



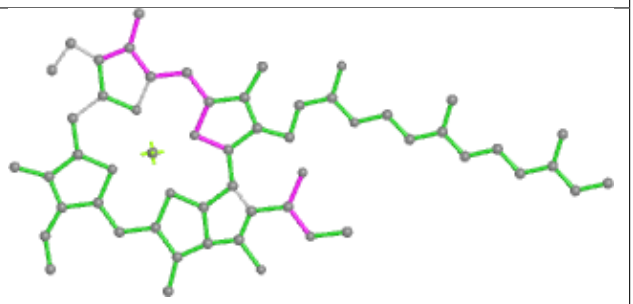
Ligand WVN B 617



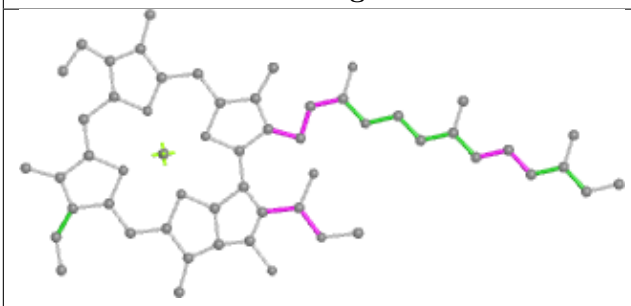
Ligand CLA 4 609



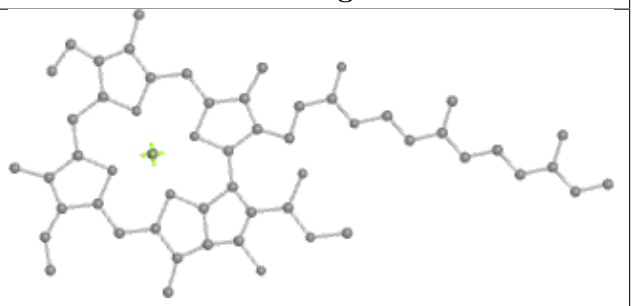
Bond lengths



Bond angles

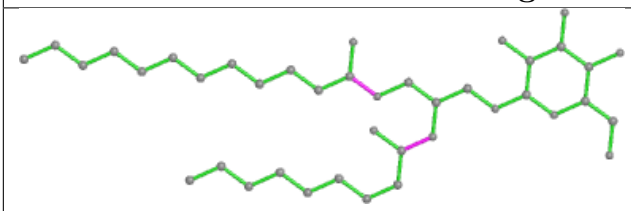


Torsions



Rings

Ligand LMG G 303



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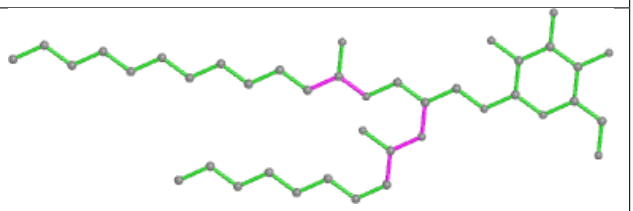
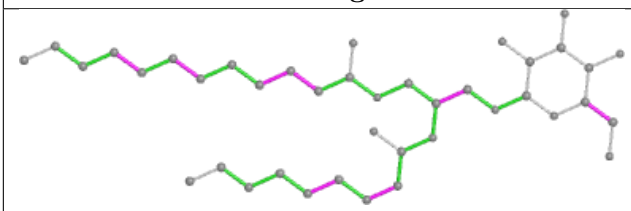
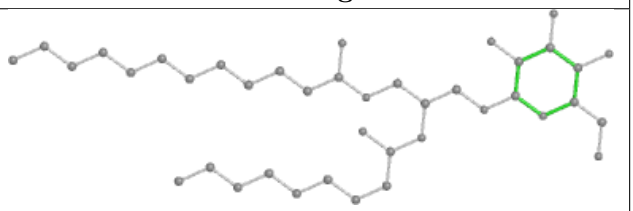


Bond angles

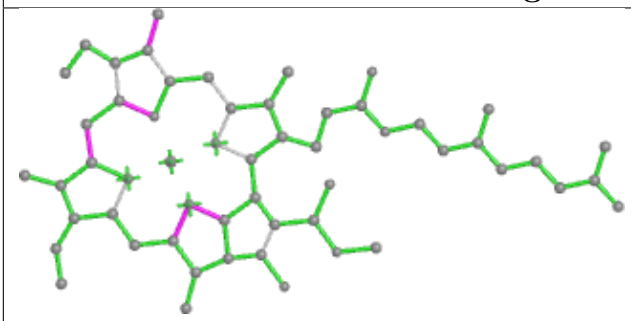


Torsions



Rings

Ligand CLA Q 606



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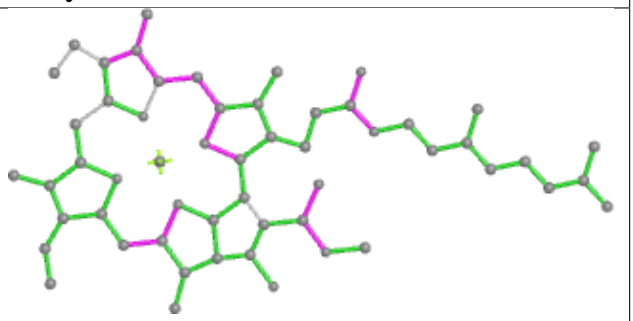

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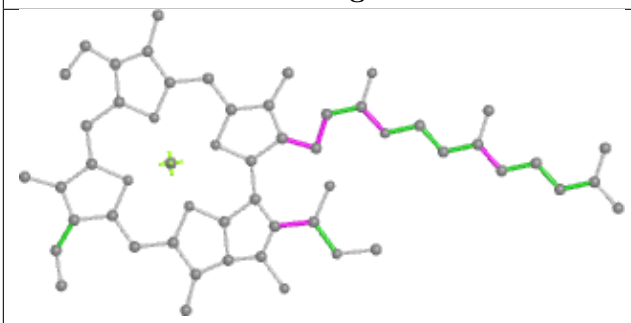

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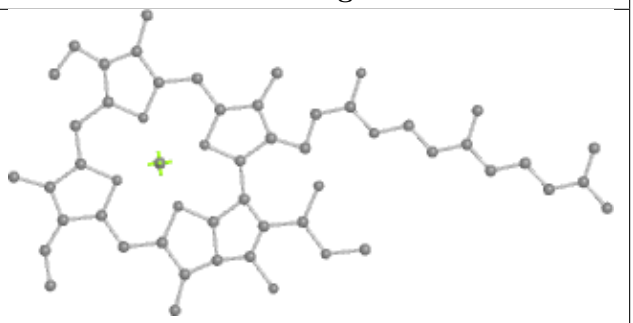
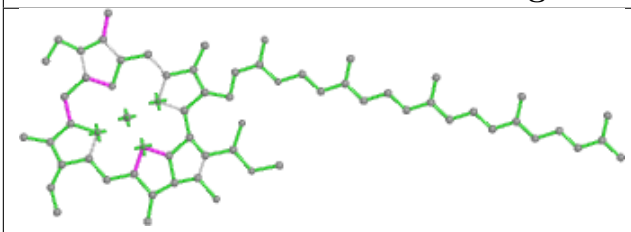


Rings

Ligand CLA 4 603



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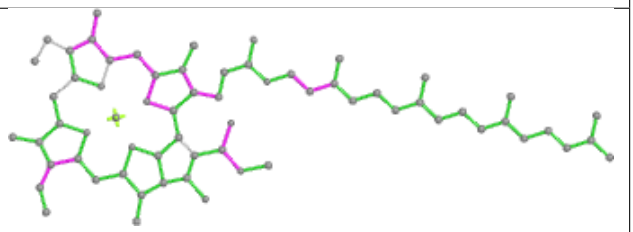

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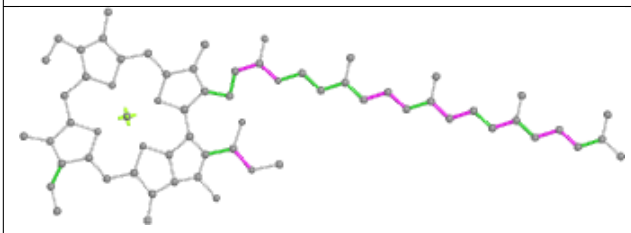

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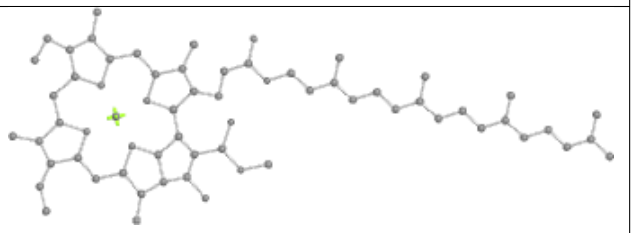
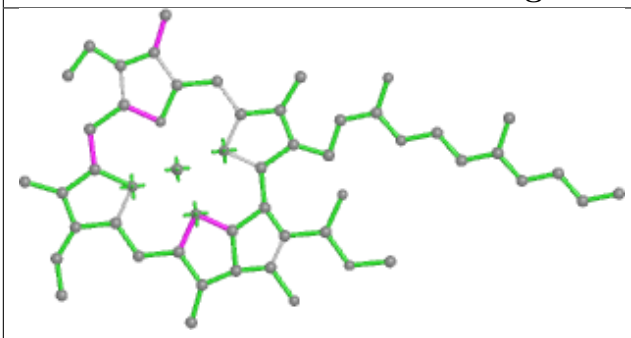


Rings

Ligand CLA P 612



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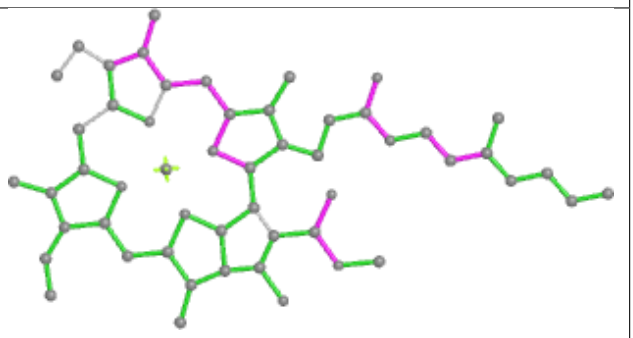

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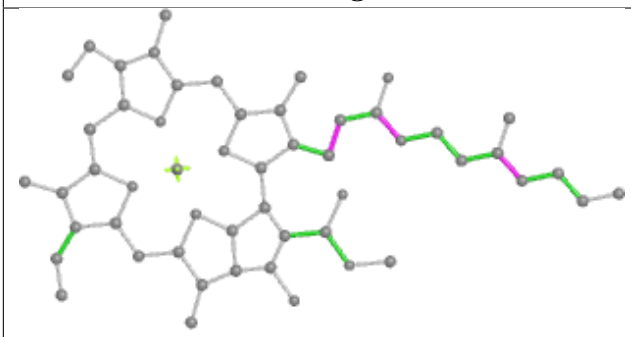

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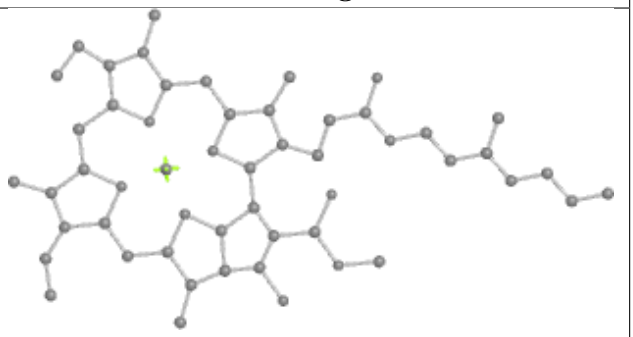
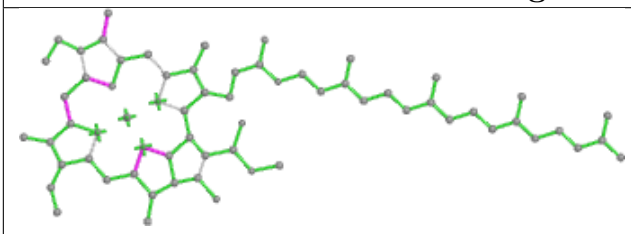


Rings

Ligand CLA 2 603



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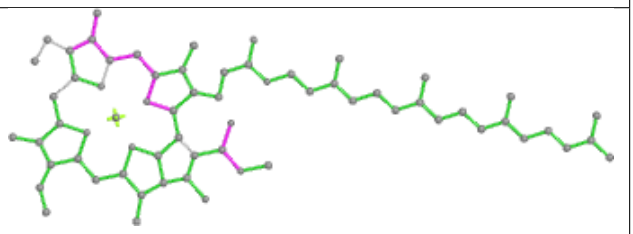

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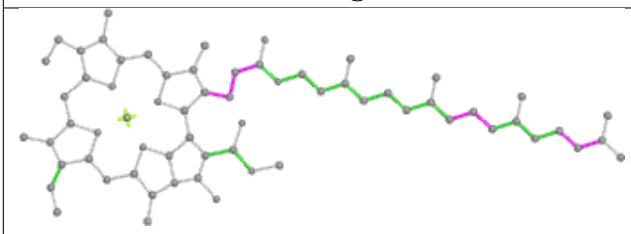

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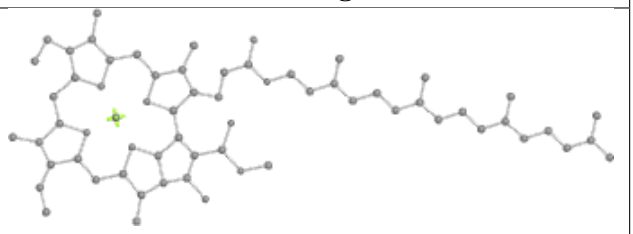

Rings

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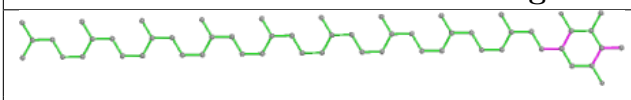

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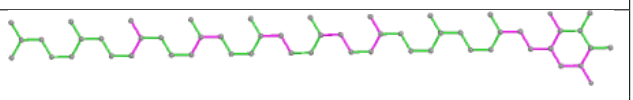

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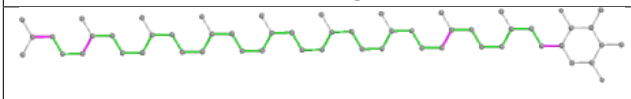

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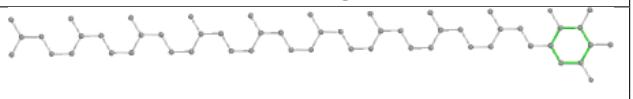
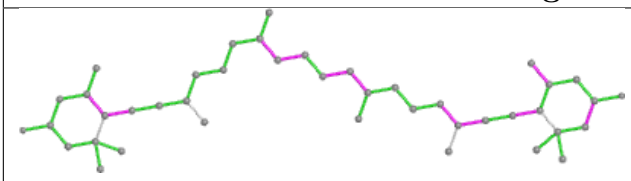


Rings

Ligand II0 5 616



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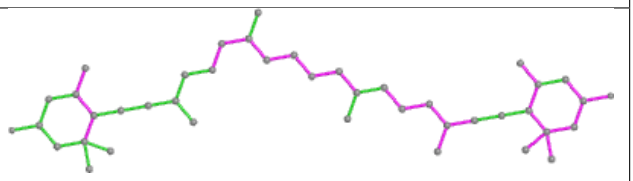

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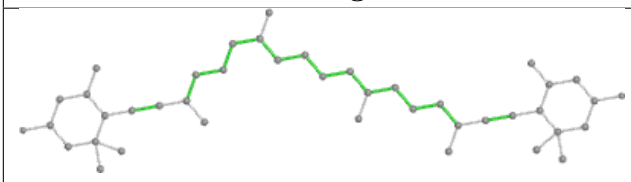

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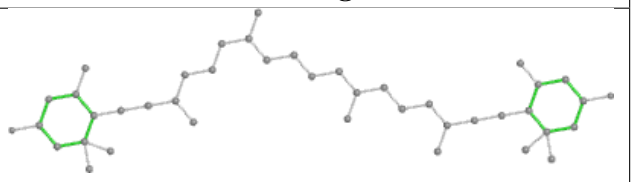
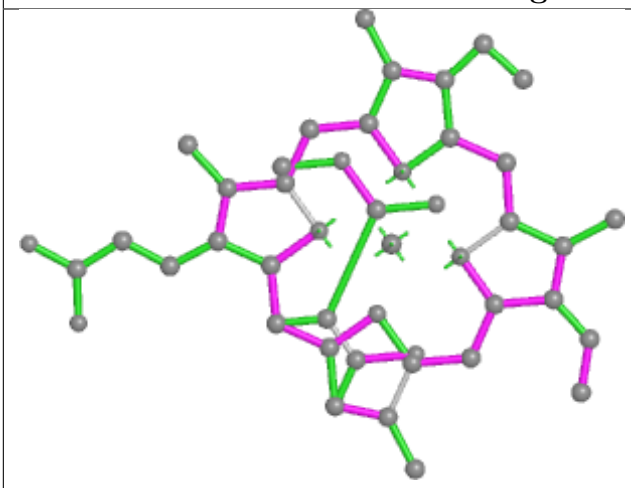


Rings

Ligand KC2 5 612



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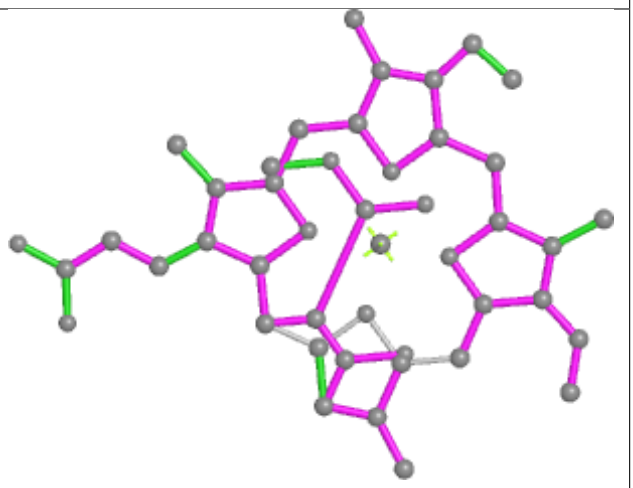

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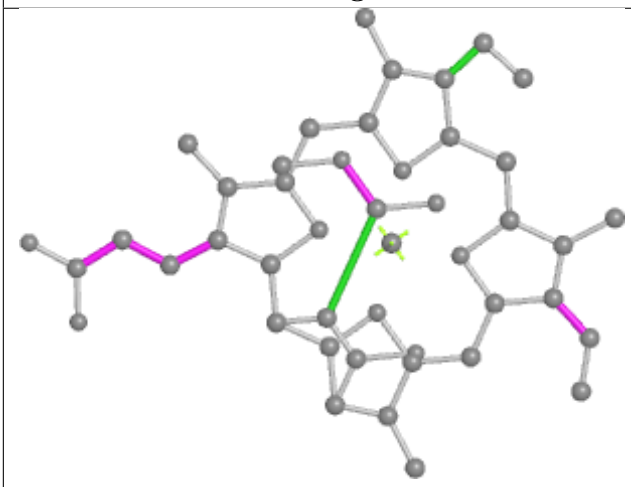

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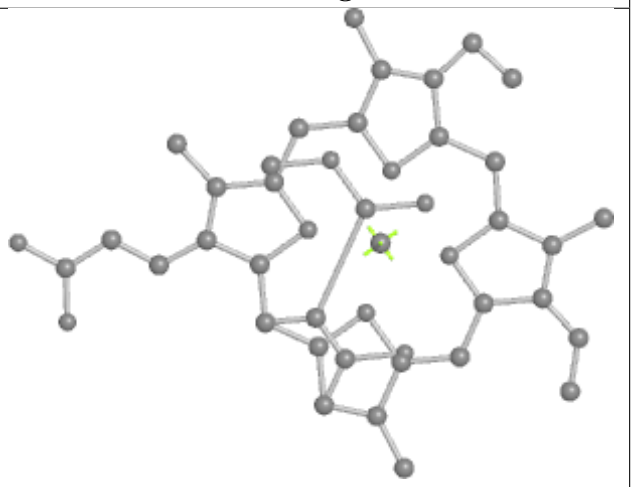
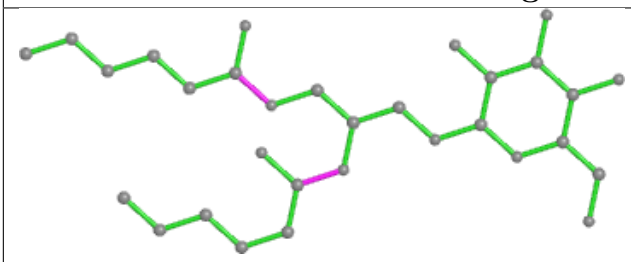


Rings

Ligand LMG Z 102



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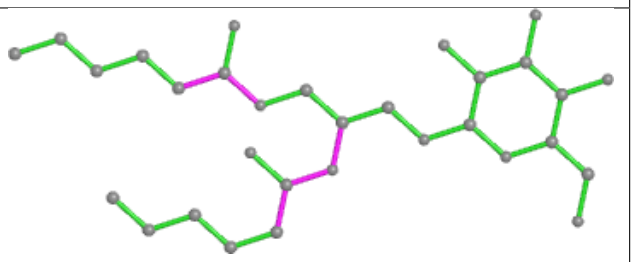

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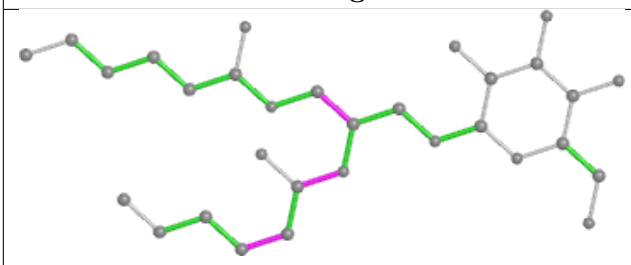

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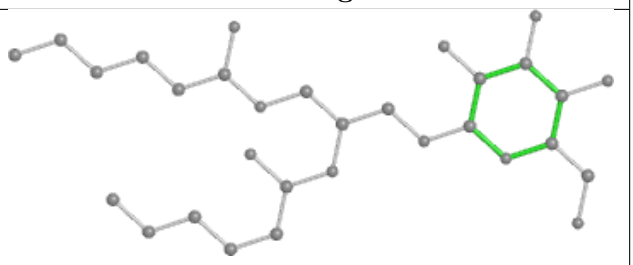
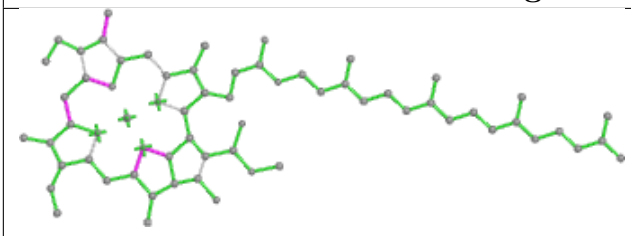


Rings

Ligand CLA C 523



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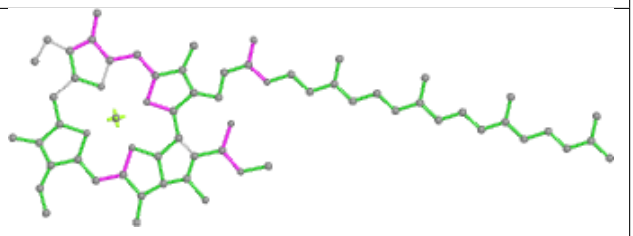

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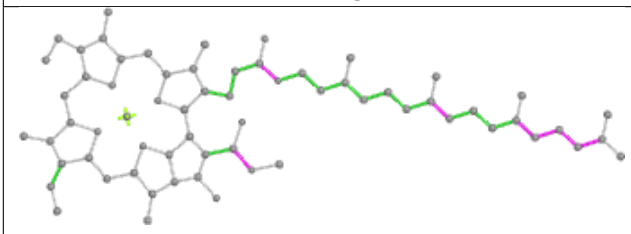

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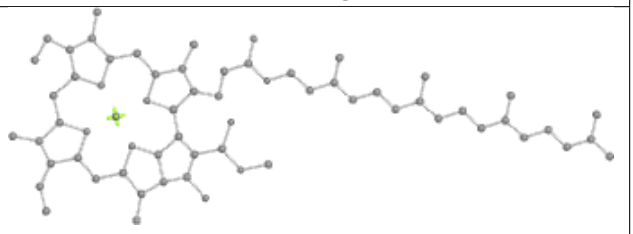
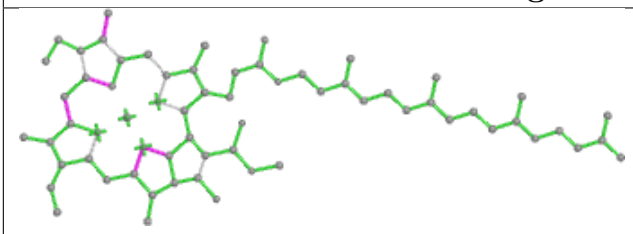


Rings

Ligand CLA b 608



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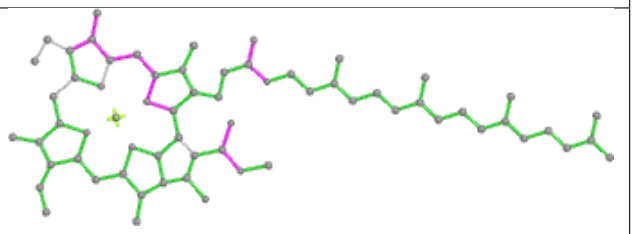
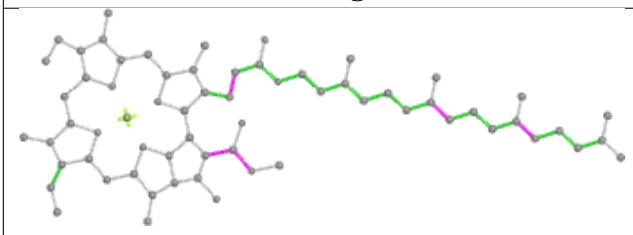


Bond angles



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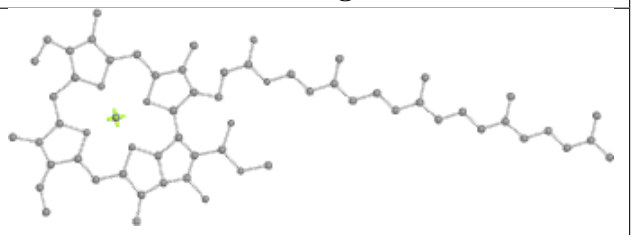
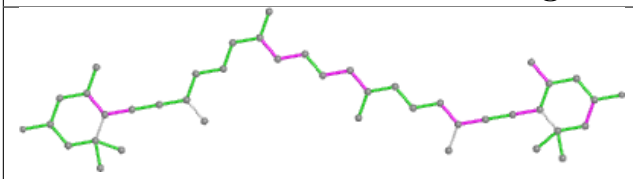


Rings

Ligand II0 S 616



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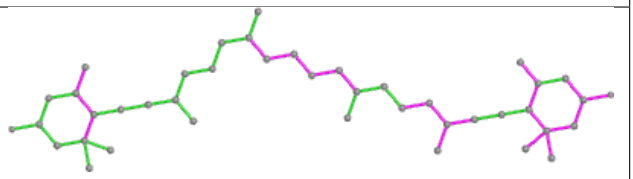
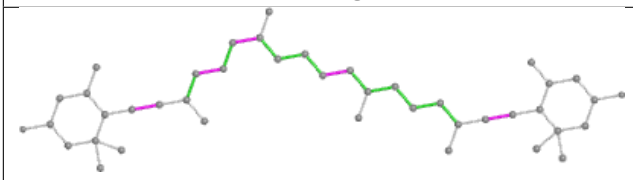


Bond angles



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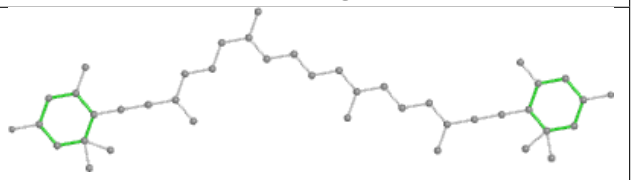
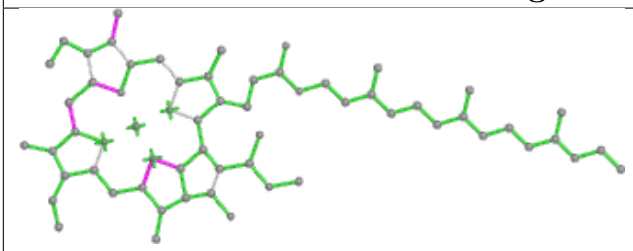


Rings

Ligand CLA 3 602



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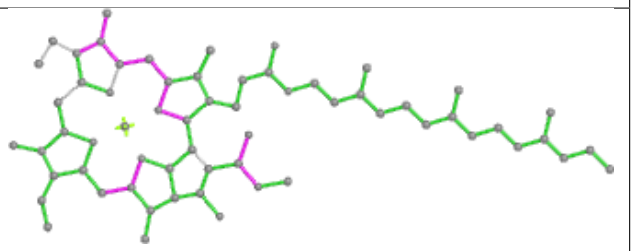
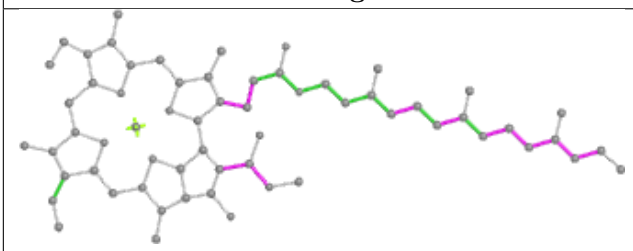


Bond angles



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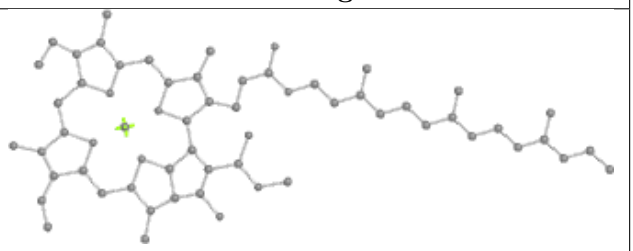
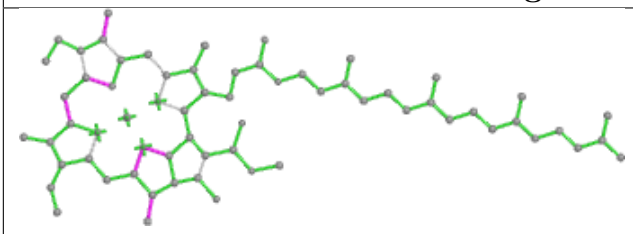


Rings

Ligand CLA C 518



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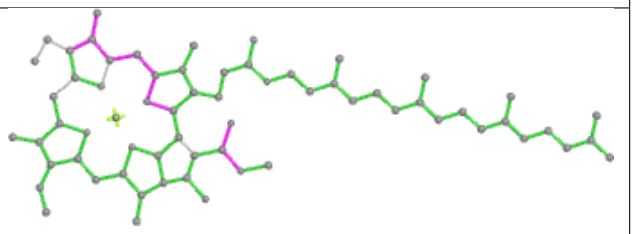
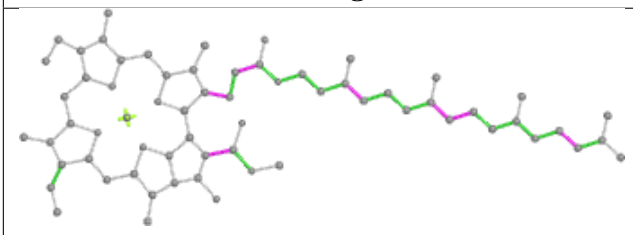
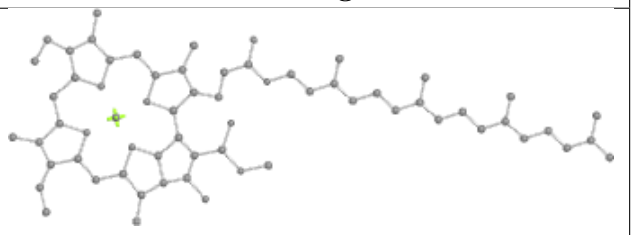


Bond angles

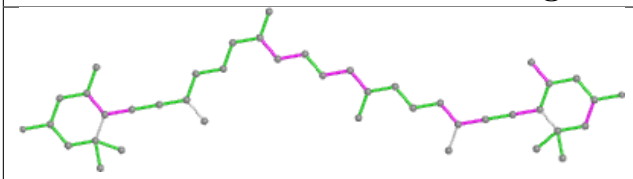


Torsions



Rings

Ligand II0 4 617



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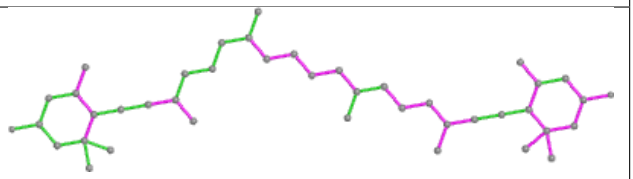
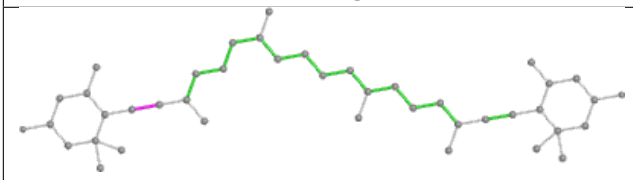


Bond angles



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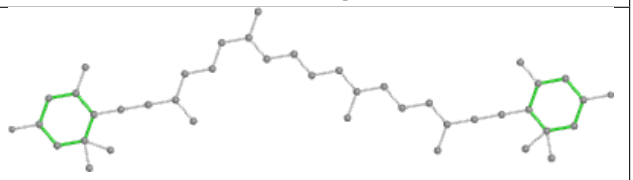

Rings

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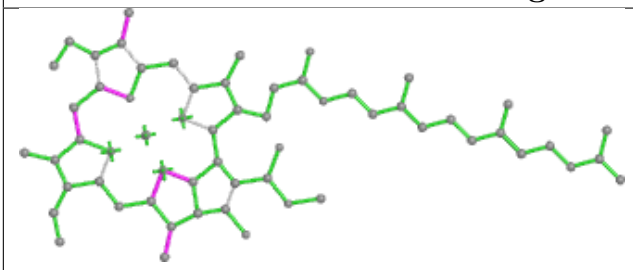

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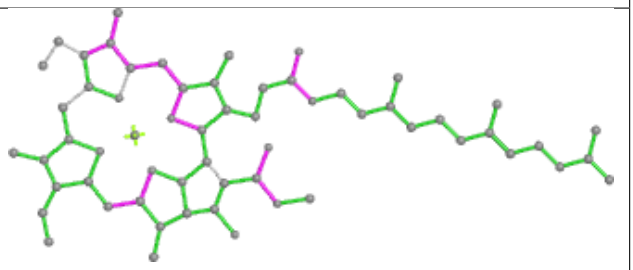

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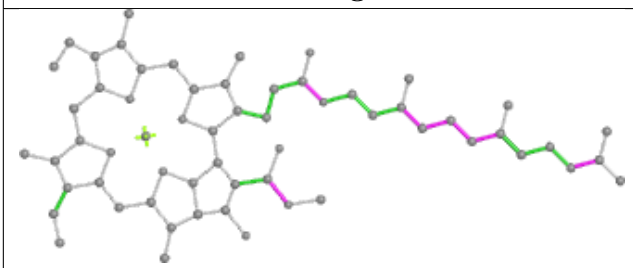

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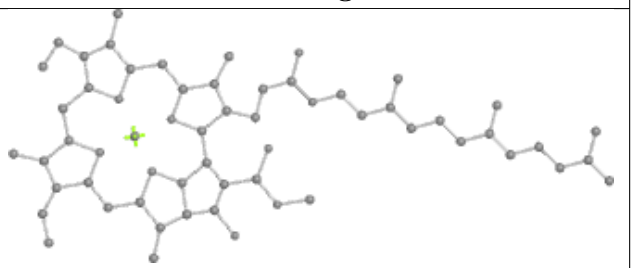

Rings

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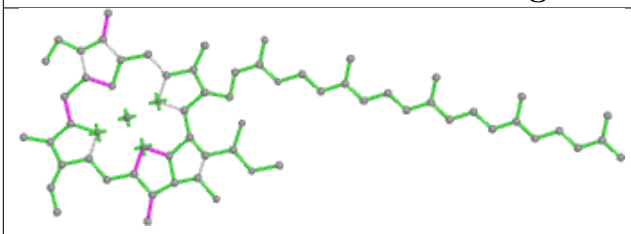	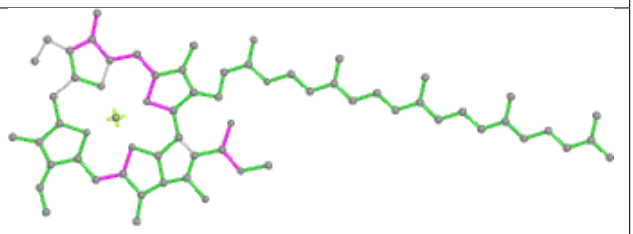
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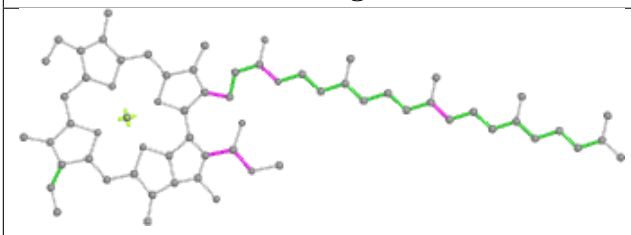	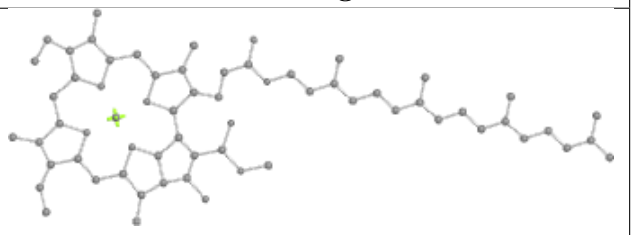
Torsions	Rings

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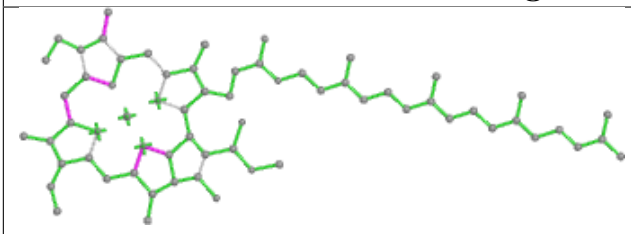	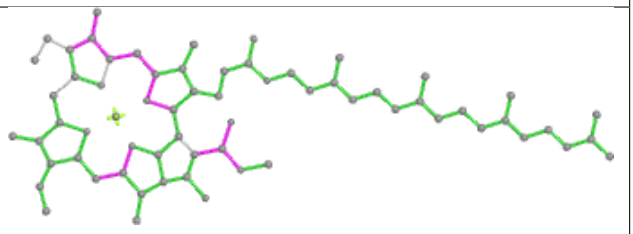
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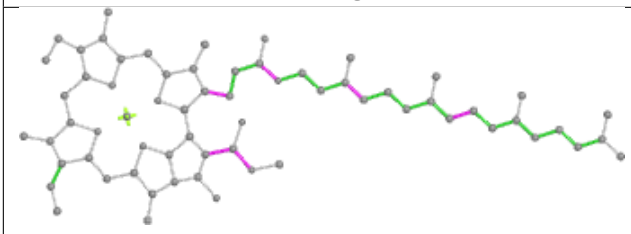
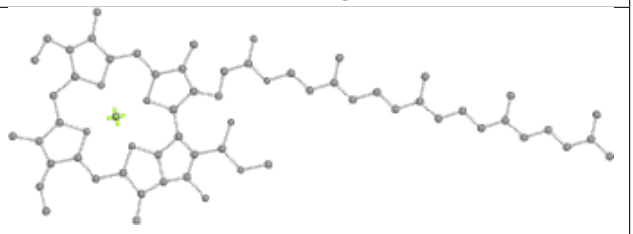
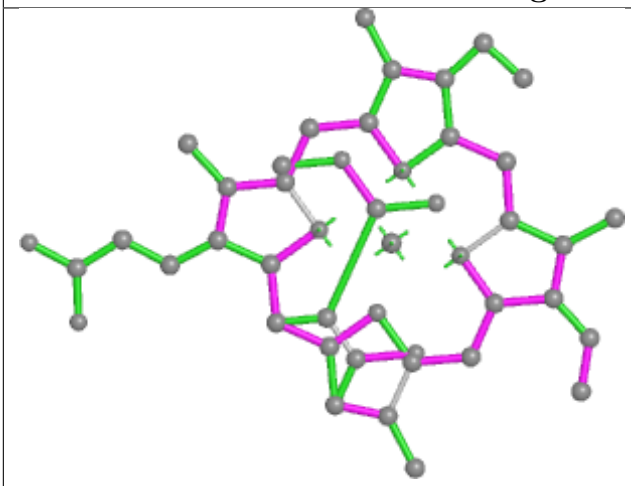
	
Torsions	Rings

Ligand KC2 1 611



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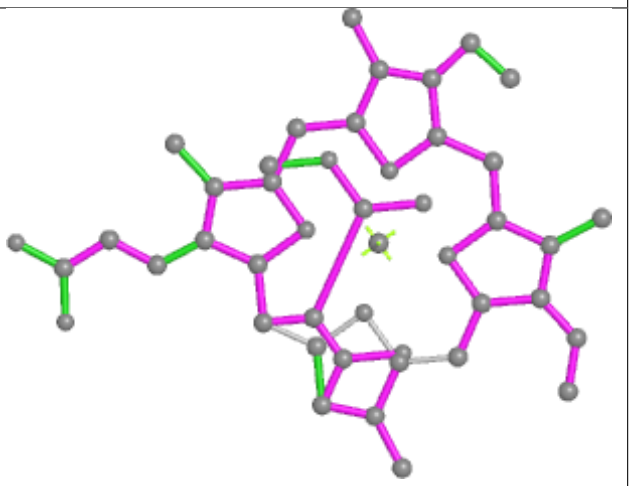

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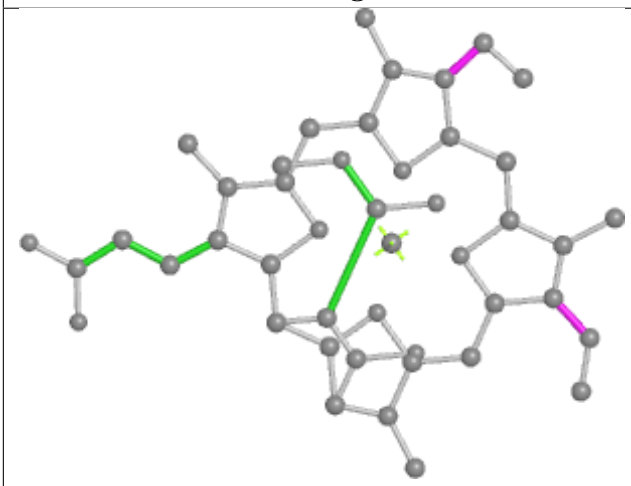

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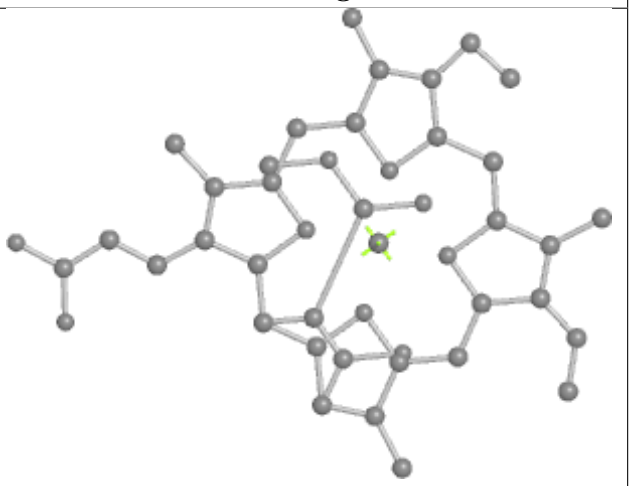

Rings

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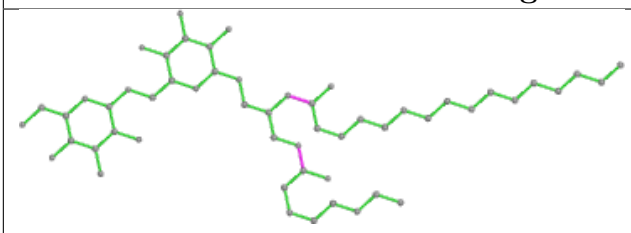

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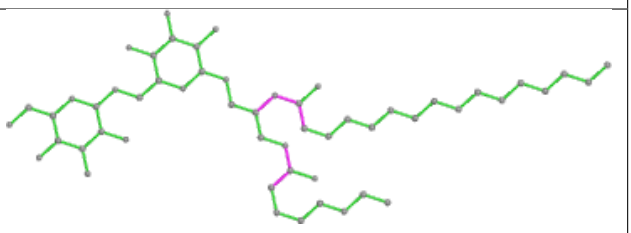

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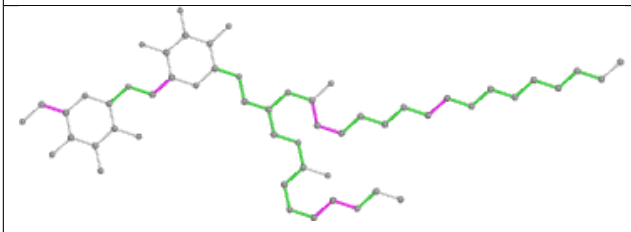

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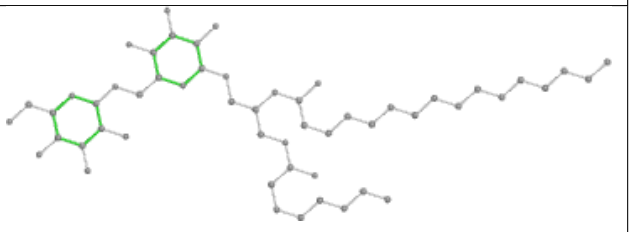

Rings

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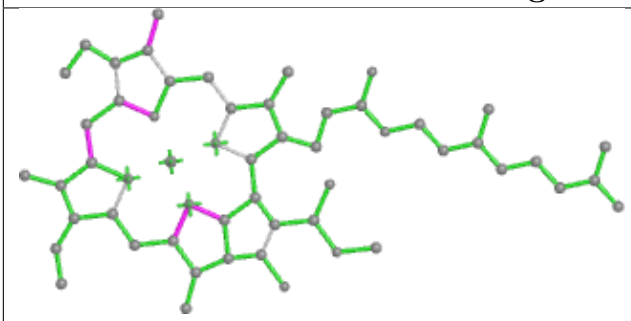

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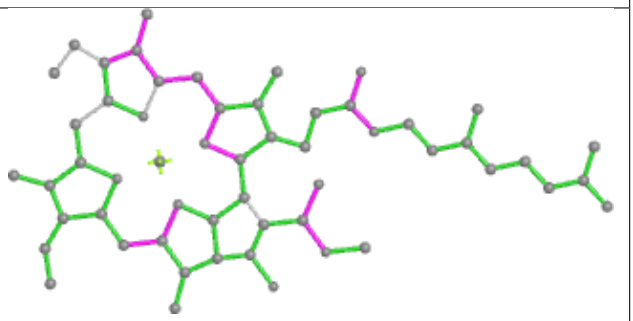

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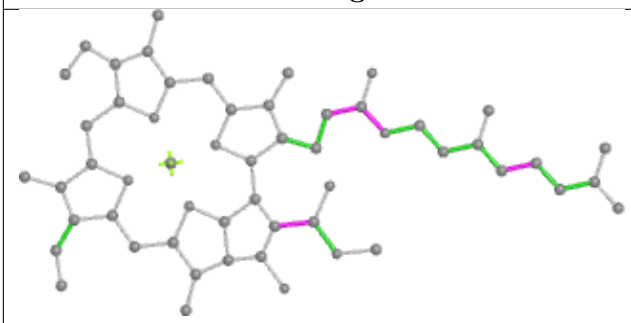

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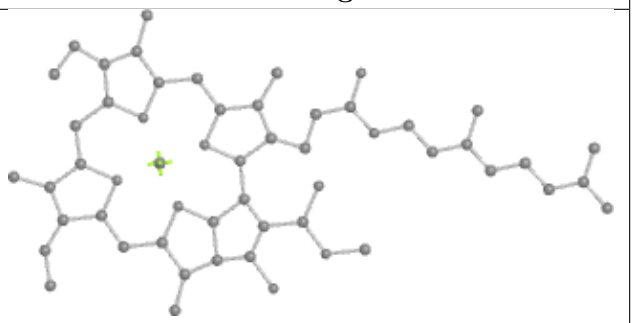

Rings

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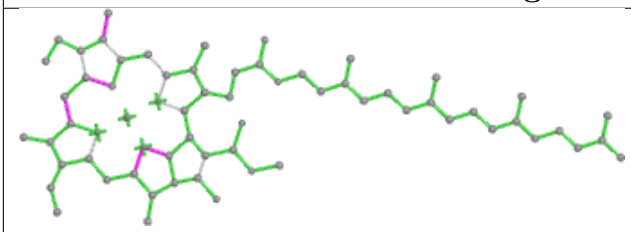

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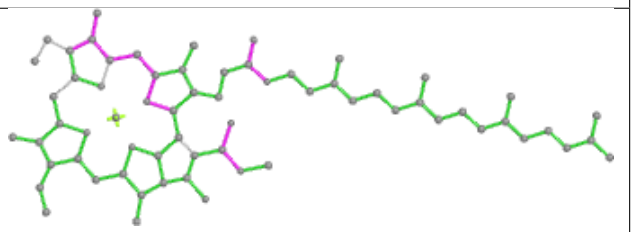

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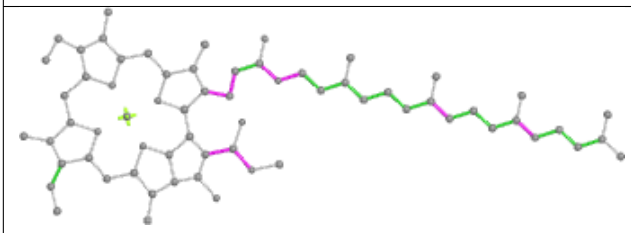

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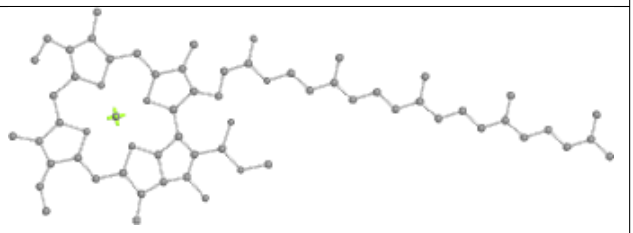

Rings

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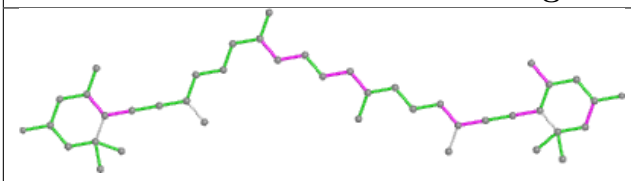
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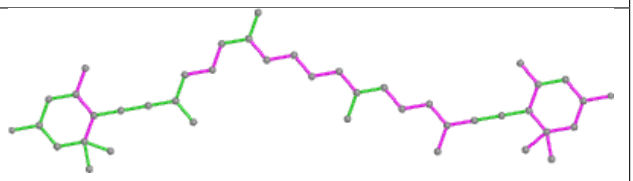
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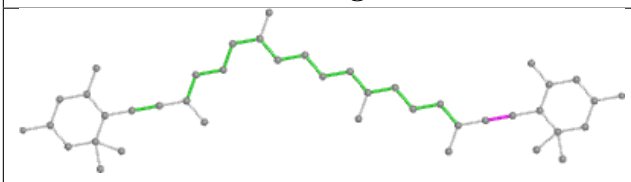
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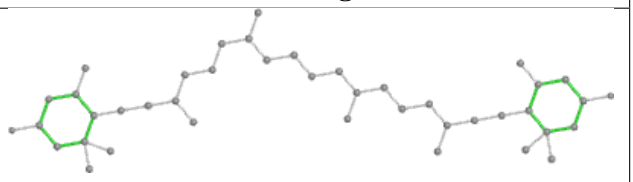
Rings

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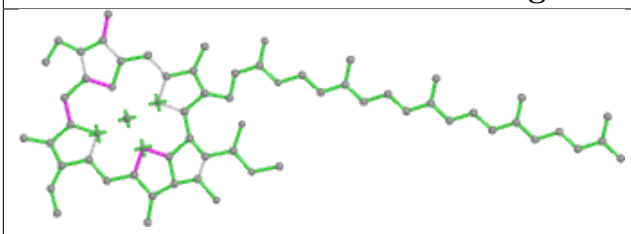
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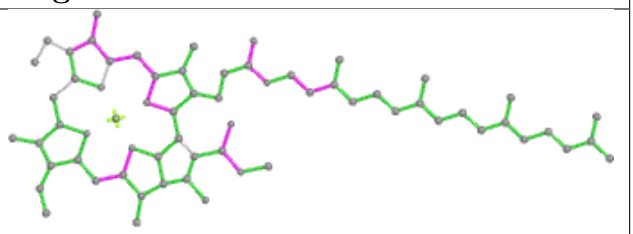
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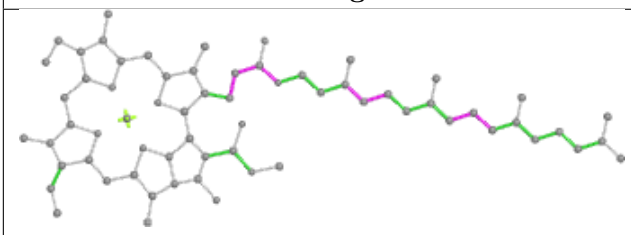
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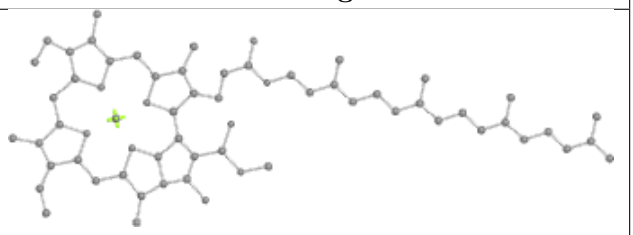
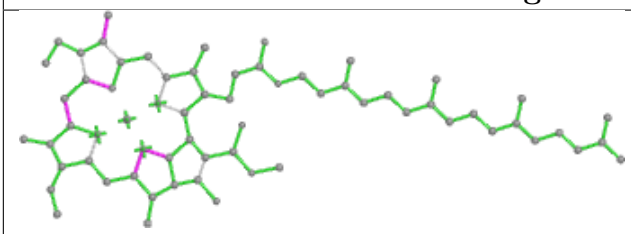

Rings

Ligand CLA Q 602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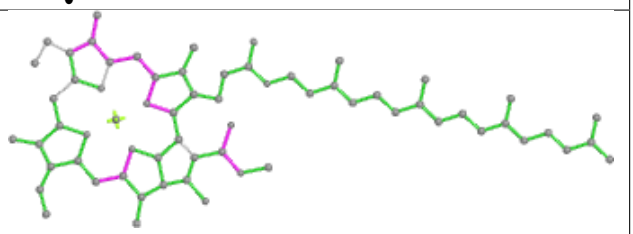
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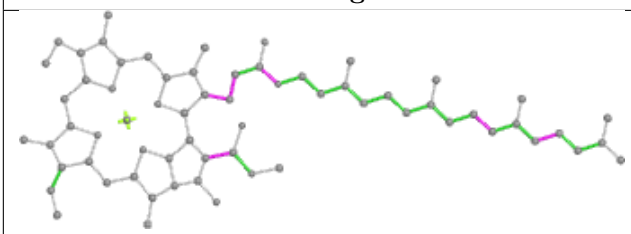
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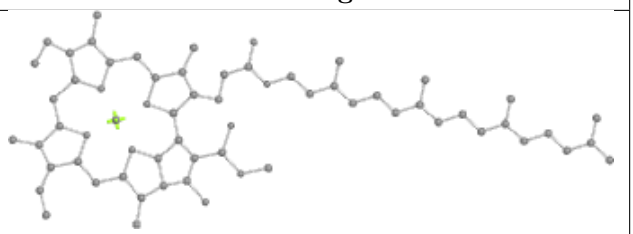
Rings

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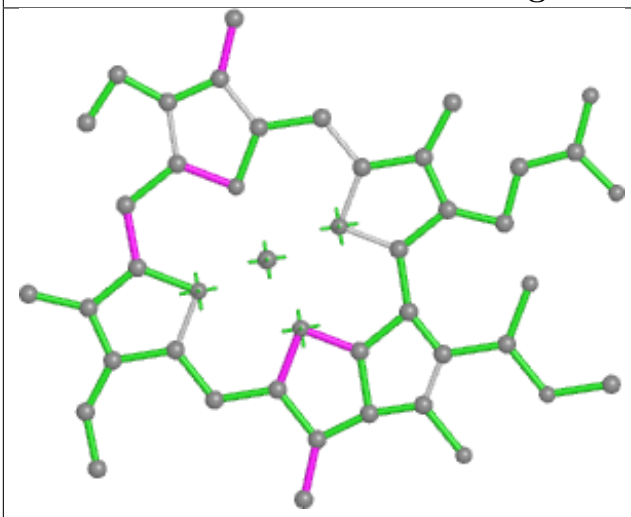

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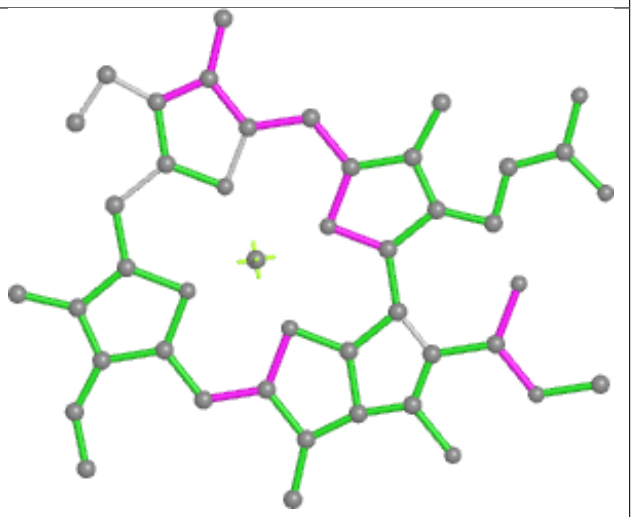
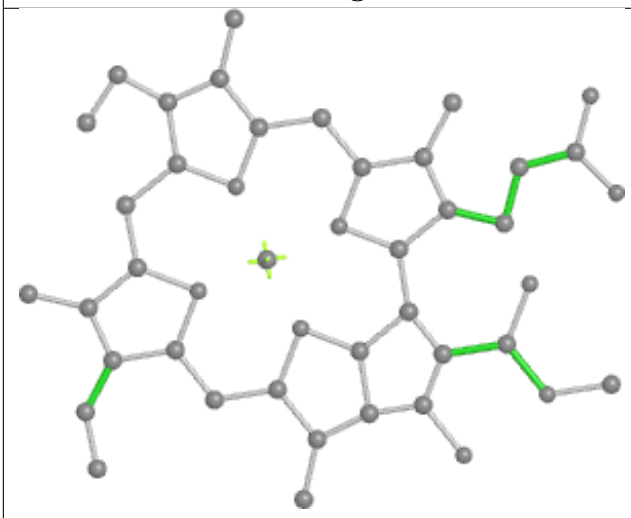


Bond angles



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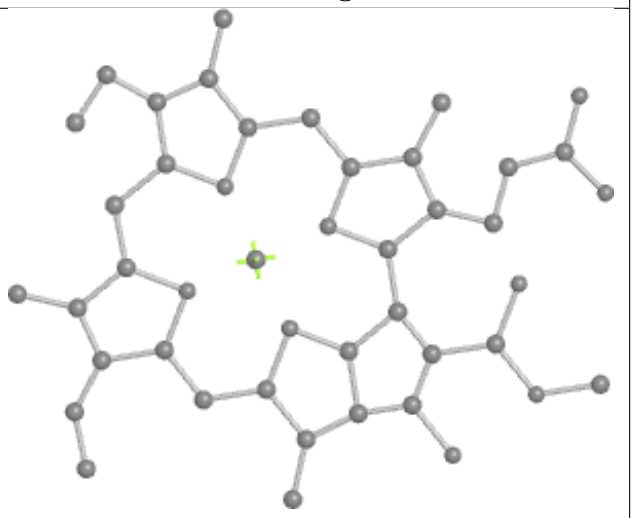

Rings

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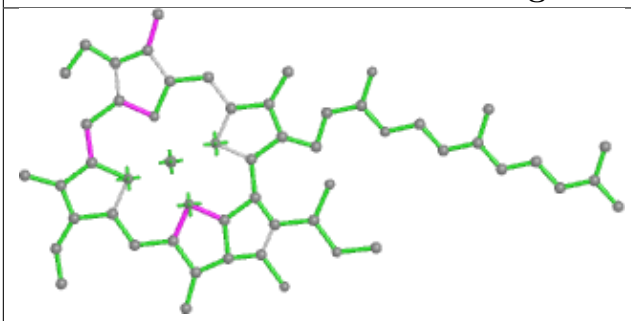

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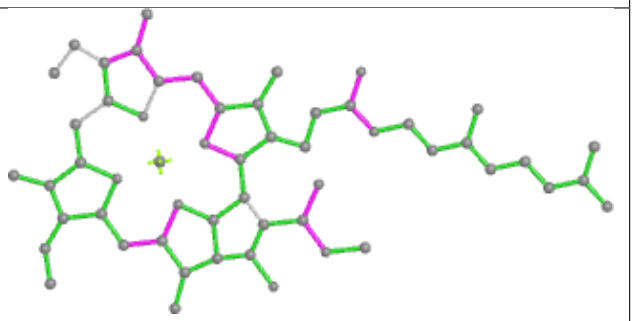
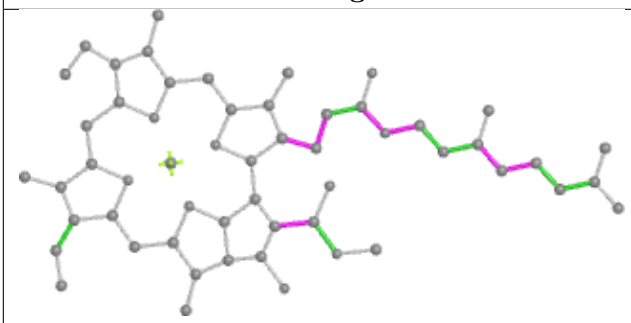


Bond angles



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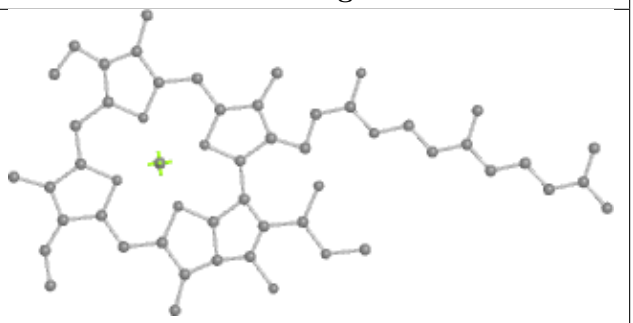
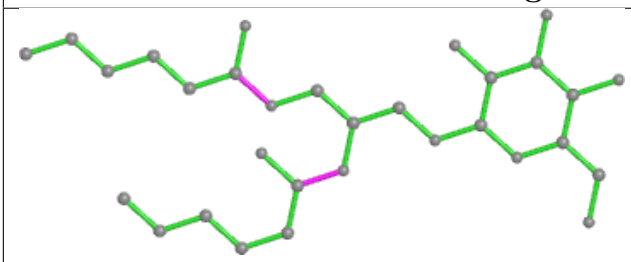
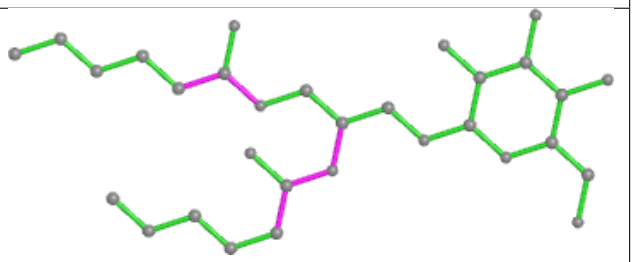


Rings

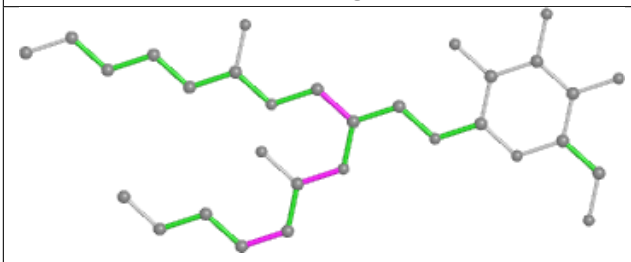
Ligand LMG z 102



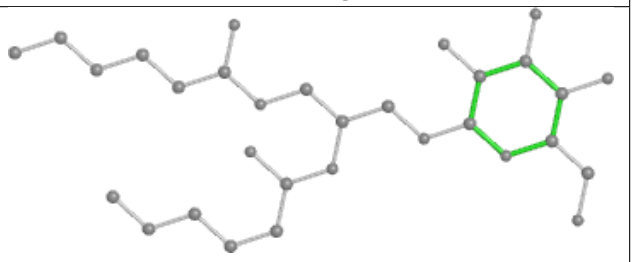
Bond lengths



Bond angles

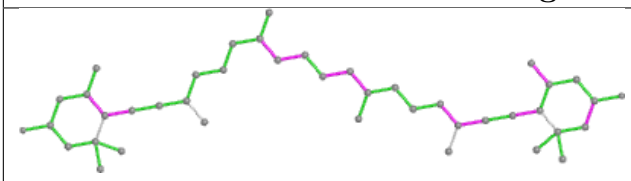


Torsions



Rings

Ligand II0 P 619



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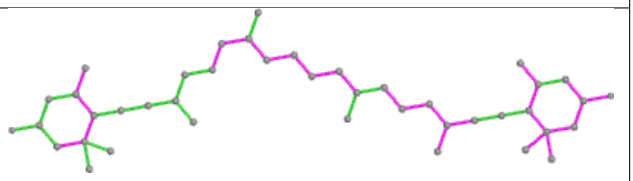
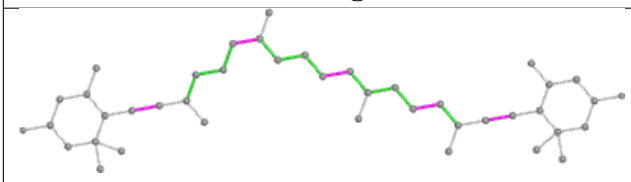


Bond angles



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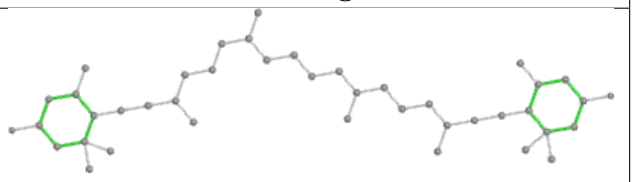
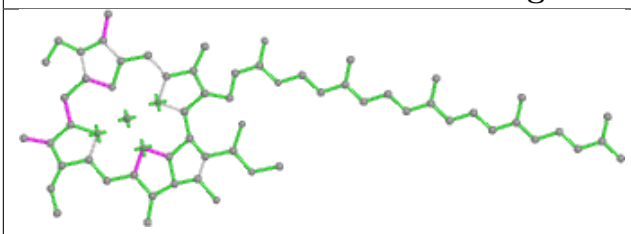


Rings

Ligand CLA b 616



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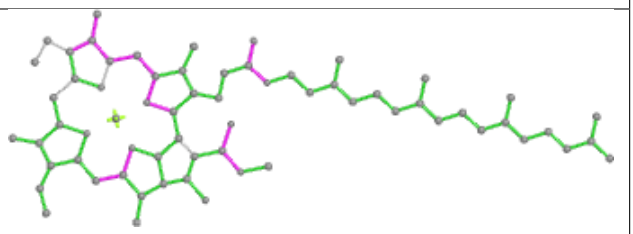
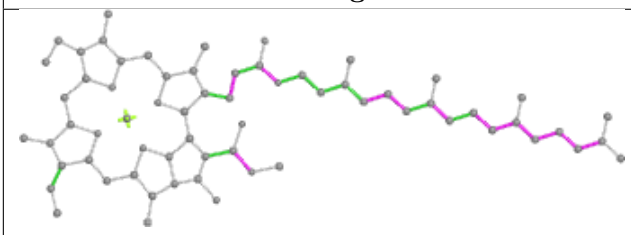


Bond angles



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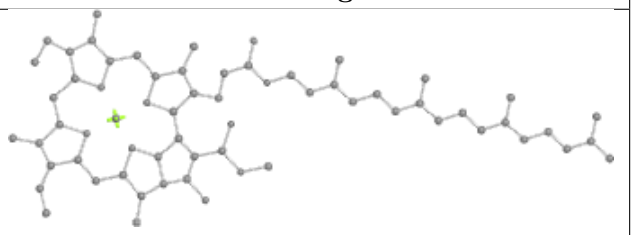
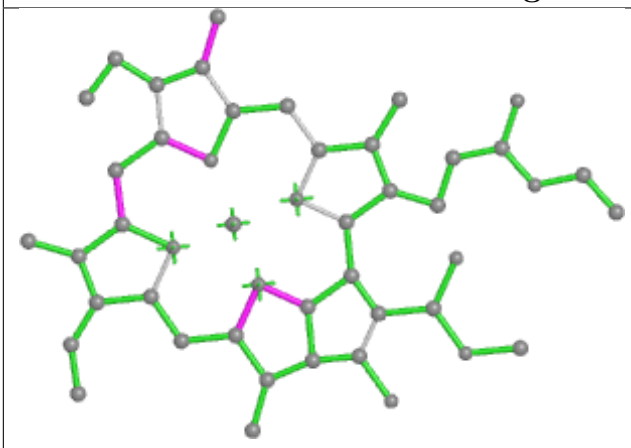


Rings

Ligand CLA N 615



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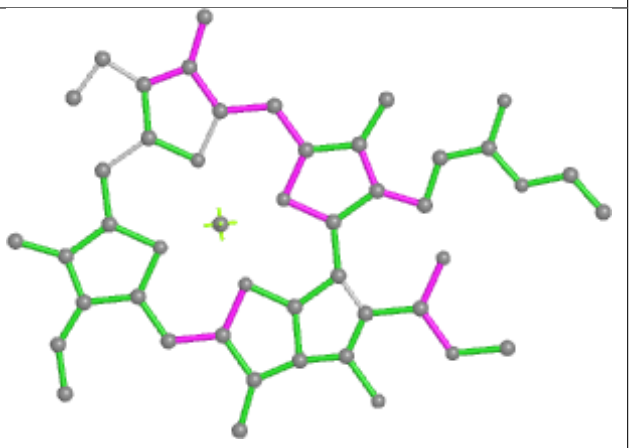

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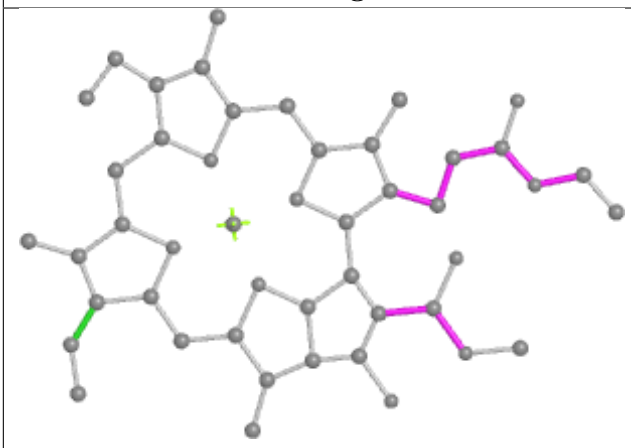

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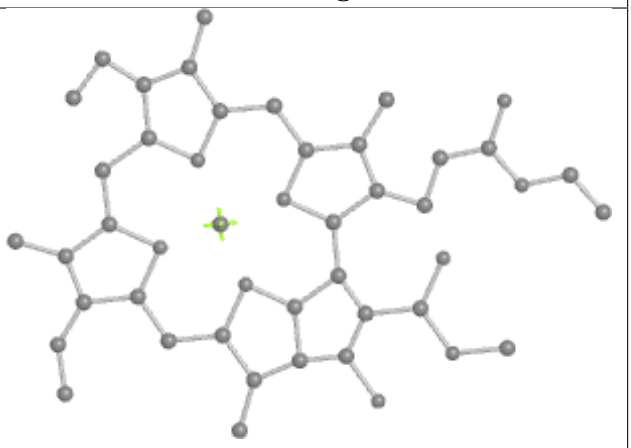
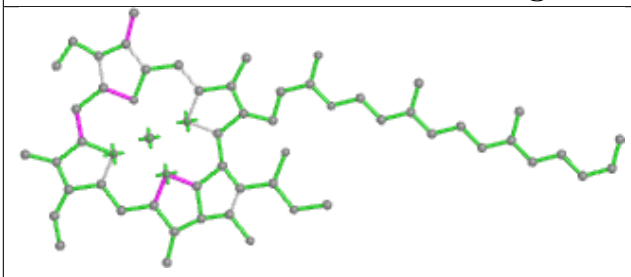


Rings

Ligand CLA 1 604



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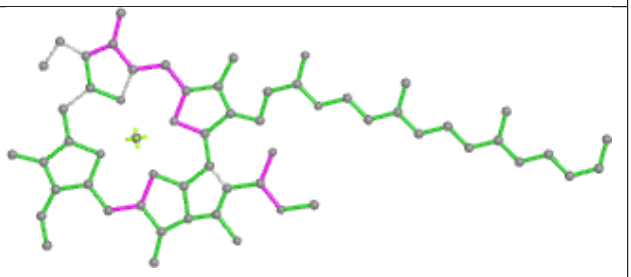
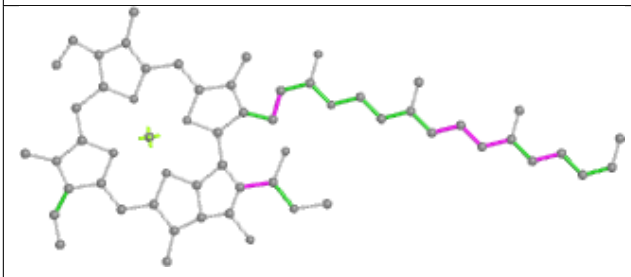


Bond angles



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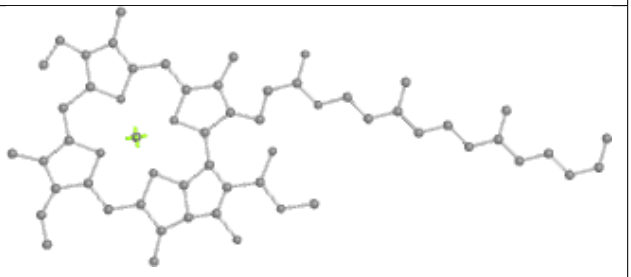
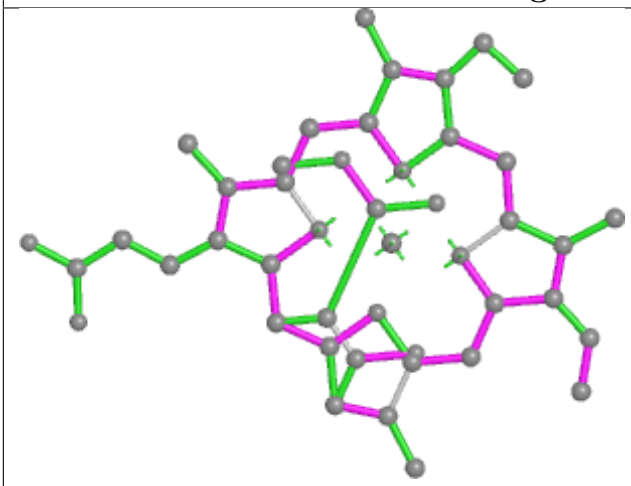


Rings

Ligand KC2 3 606



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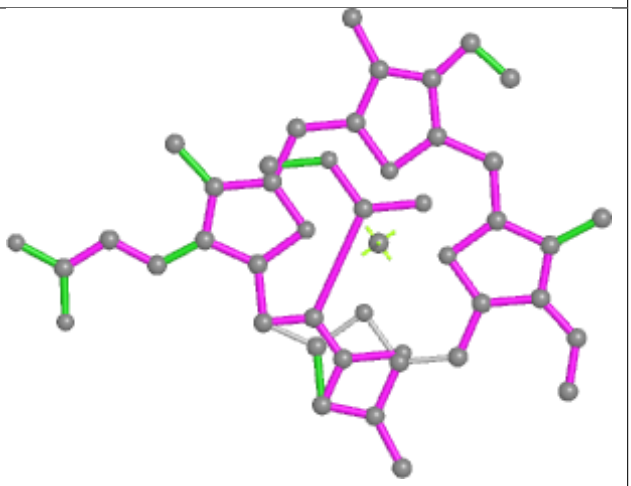

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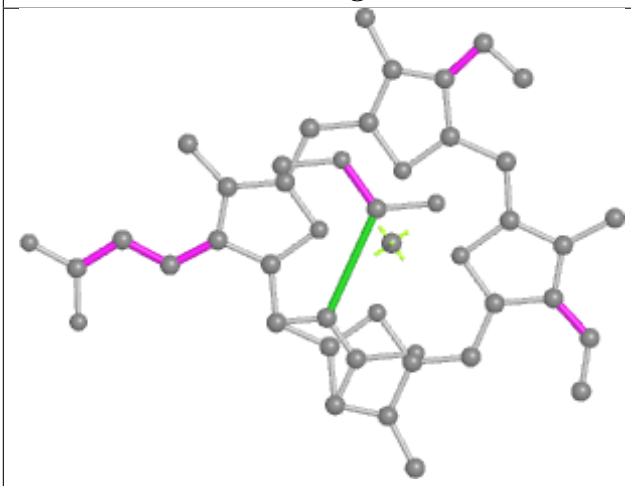

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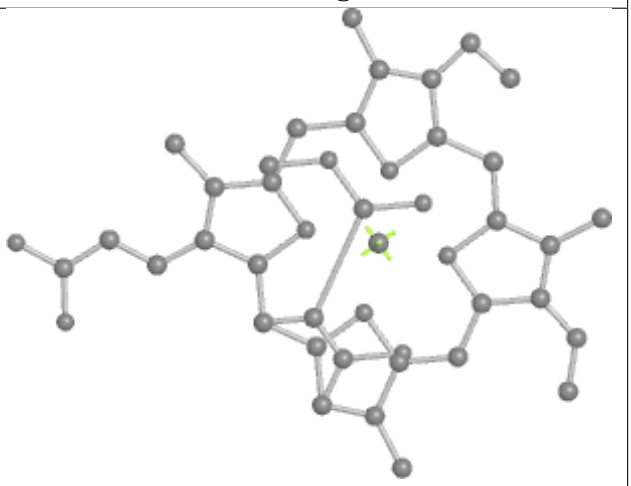
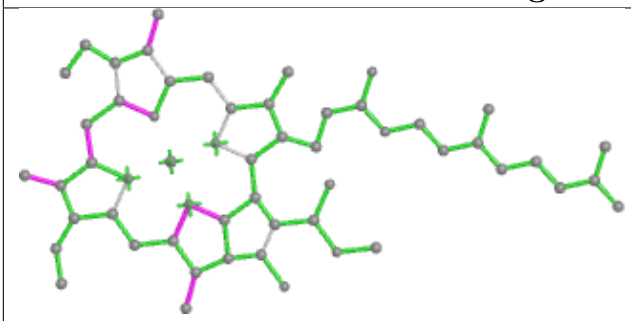


Rings

Ligand CLA 4 606



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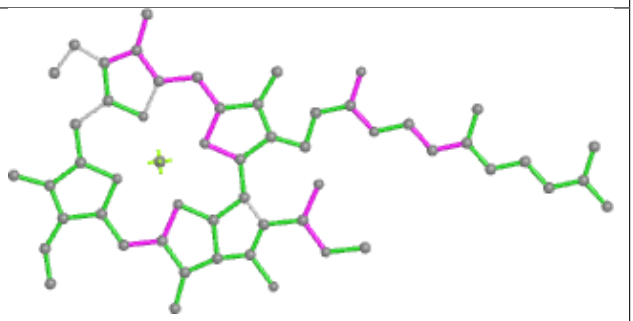

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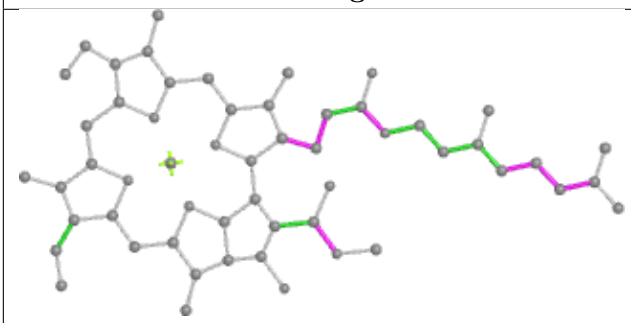

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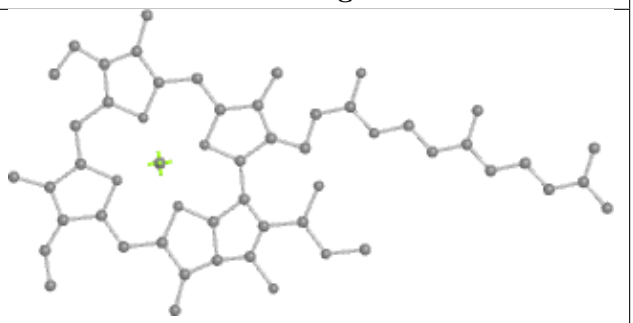
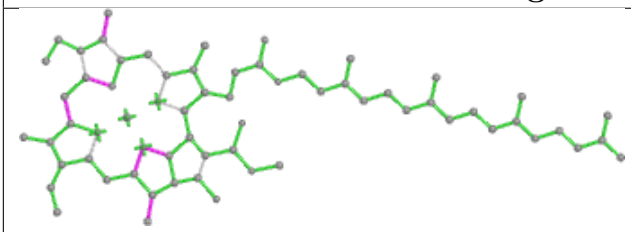


Rings

Ligand CLA b 603



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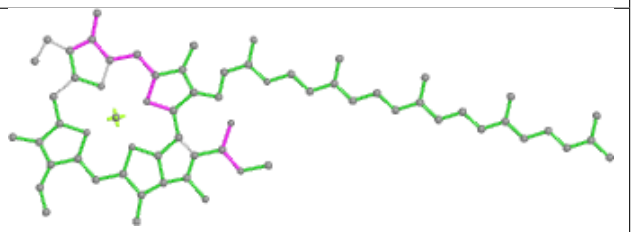

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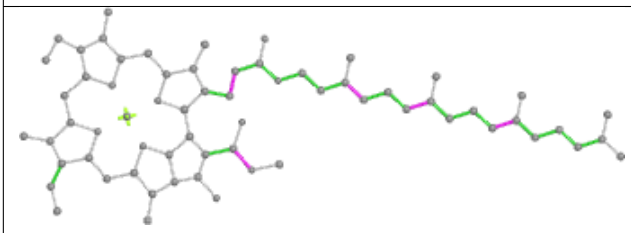

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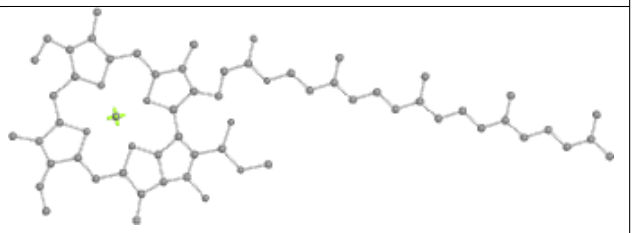
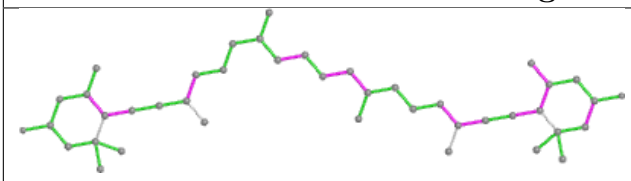


Rings

Ligand II0 Q 619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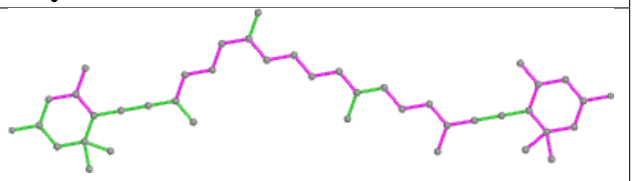
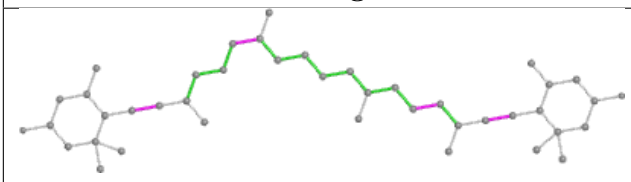

Bond angles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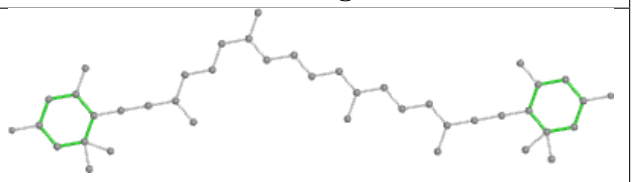
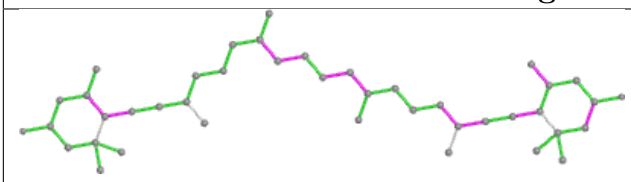

Rings

Ligand II0 O 619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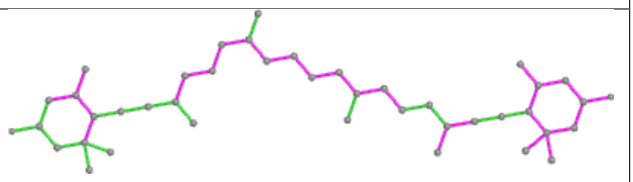
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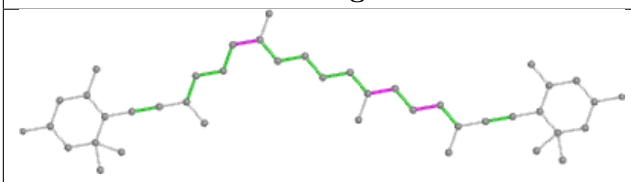
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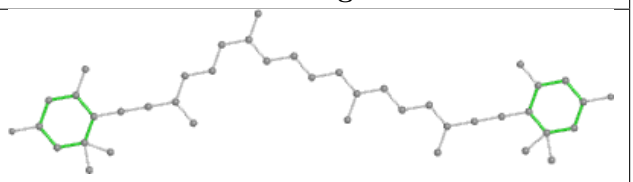
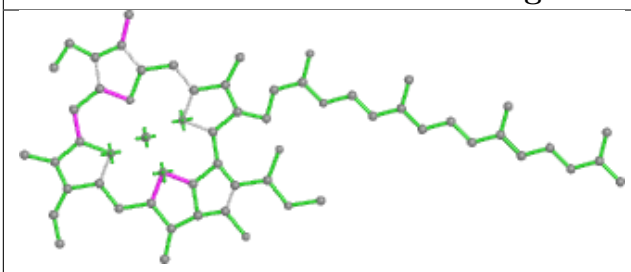

Rings

Ligand CLA B 614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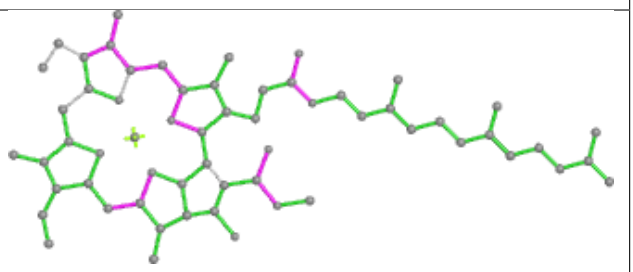
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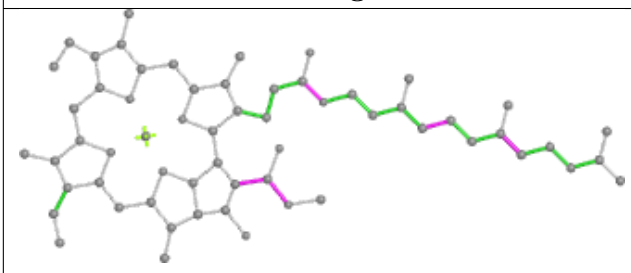
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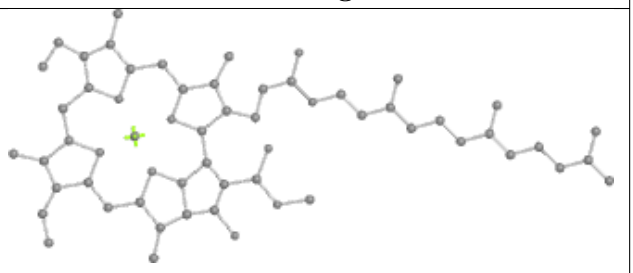
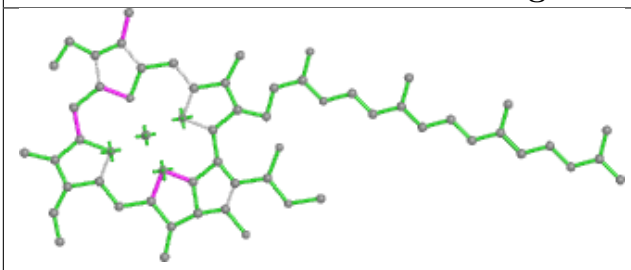
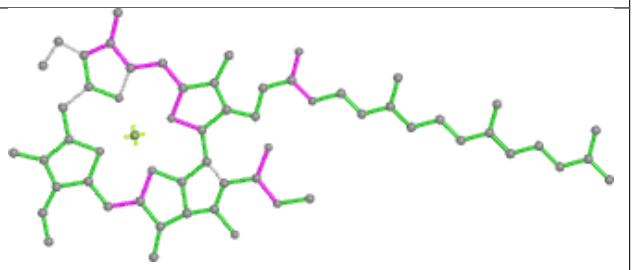
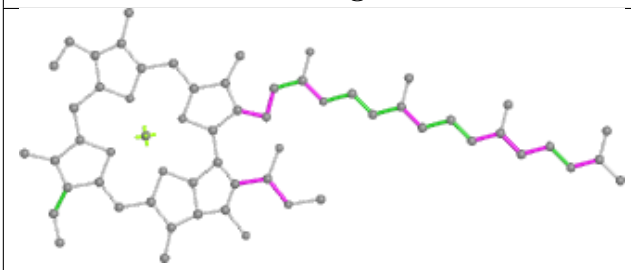
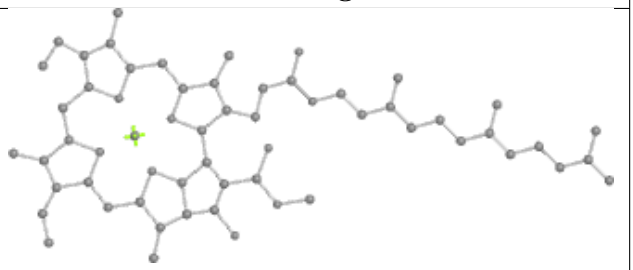
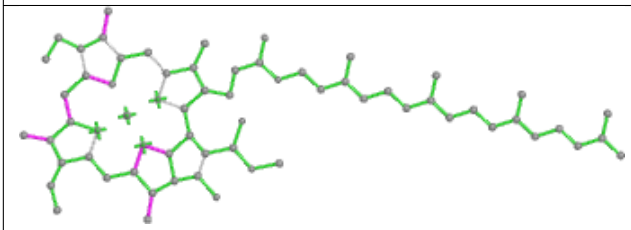
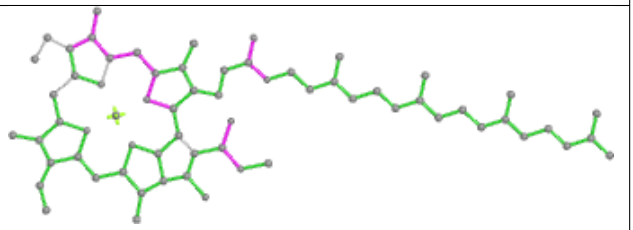
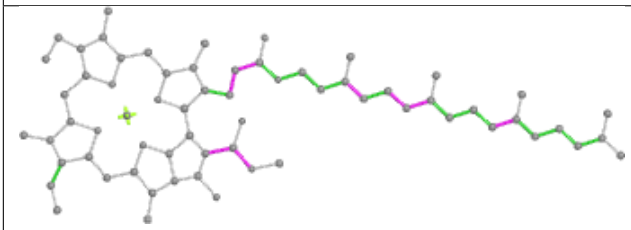
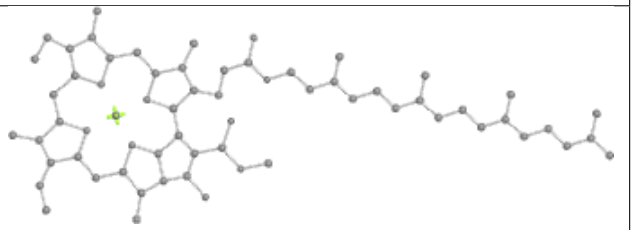
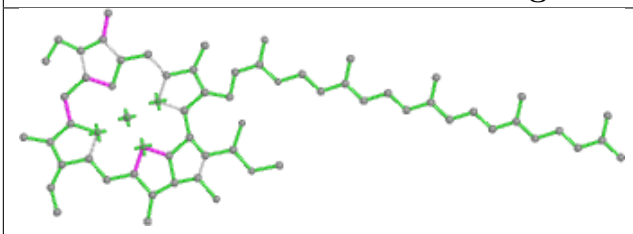

Rings

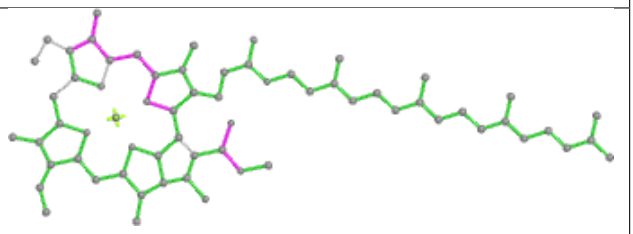
Ligand CLA 2 611	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CLA C 517	
 Bond lengths	 Bond angles
 Torsions	 Rings

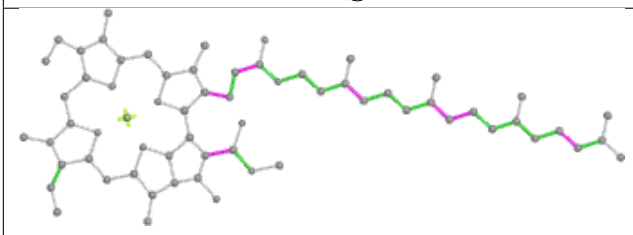
Ligand CLA c 518



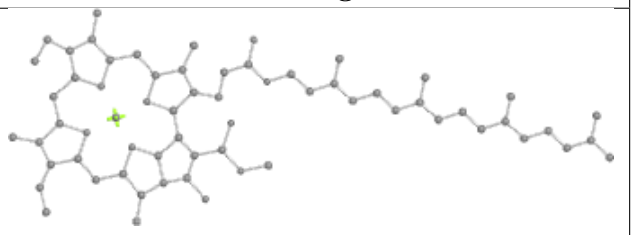
Bond lengths



Bond angles

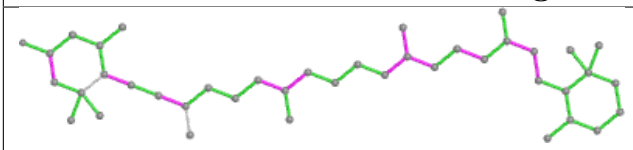


Torsions



Rings

Ligand IHT 4 620



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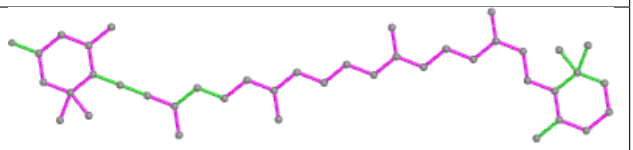

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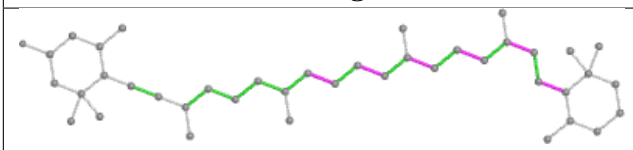

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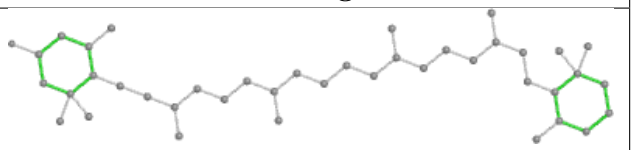
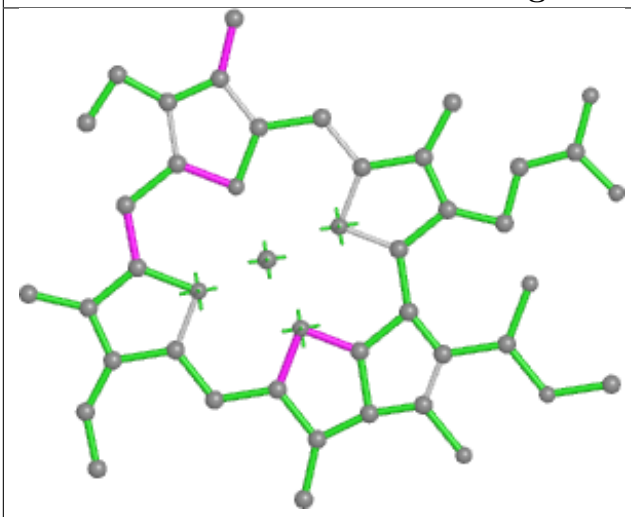


Rings

Ligand CLA 1 601



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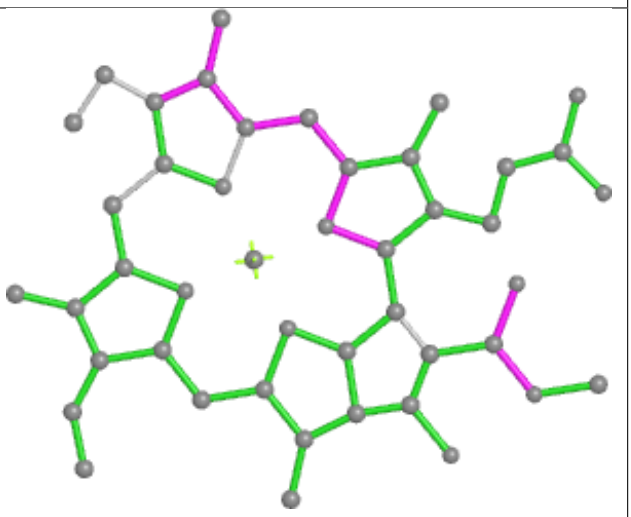

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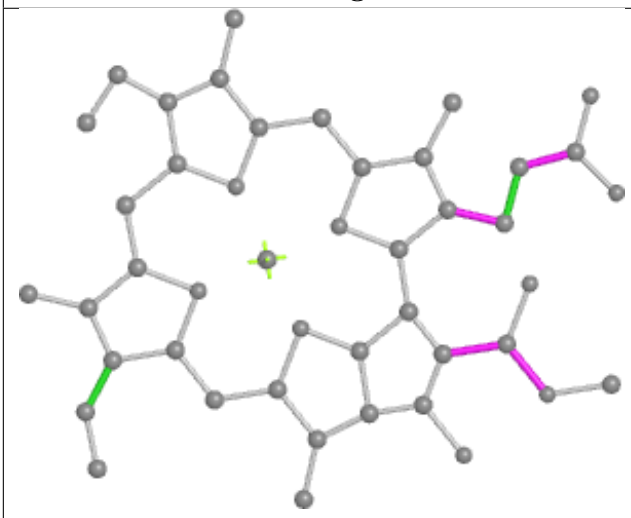

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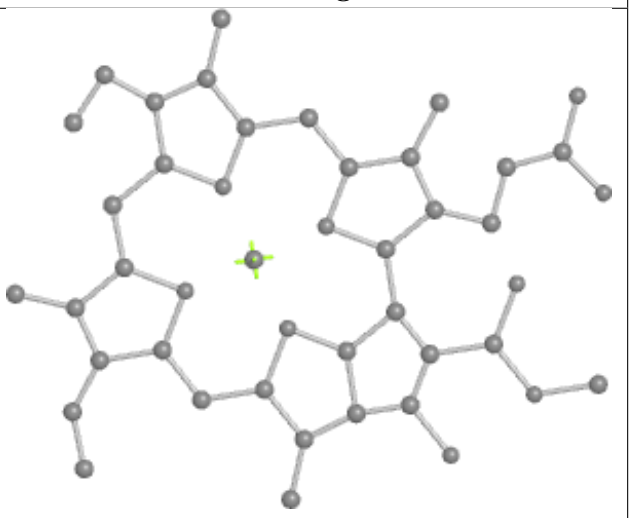

Rings

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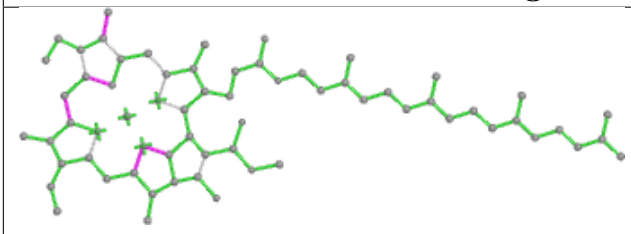

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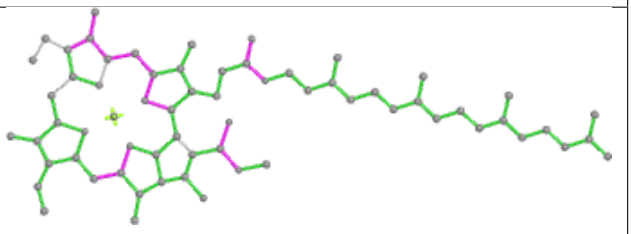
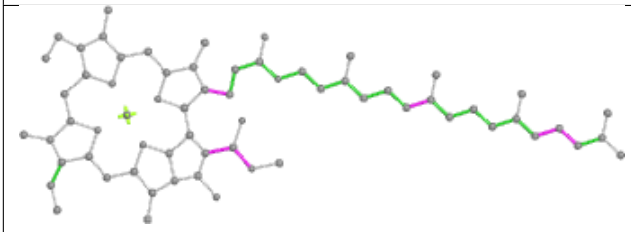


Bond angles



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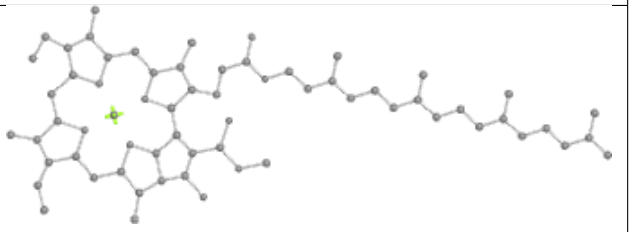
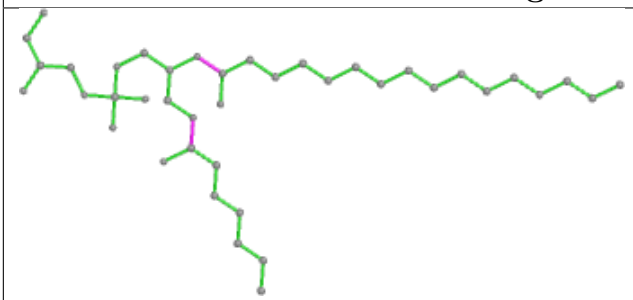


Rings

Ligand LHG 6 621



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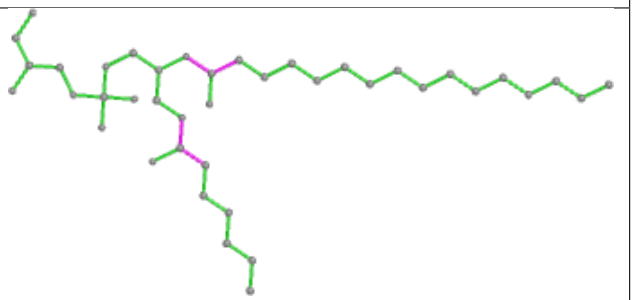

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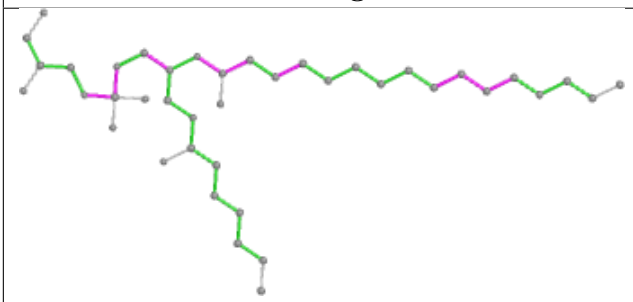

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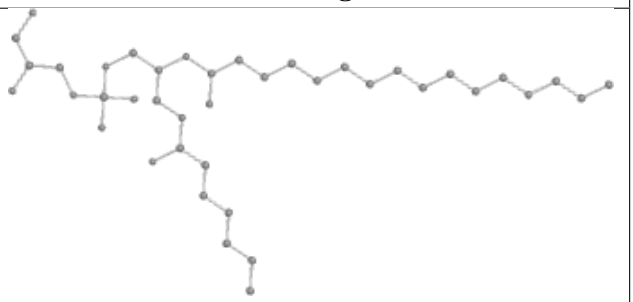

Rings

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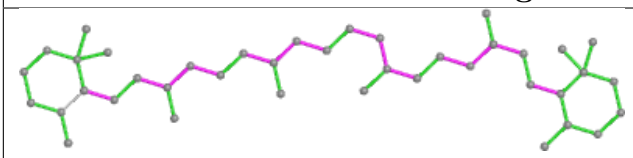

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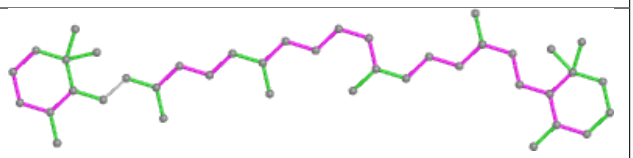

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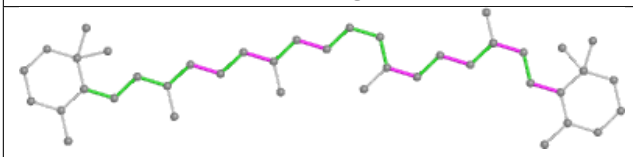

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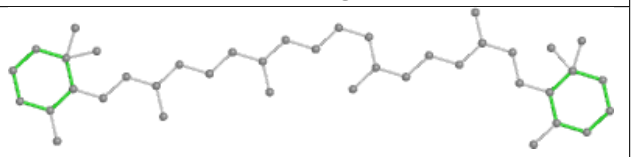
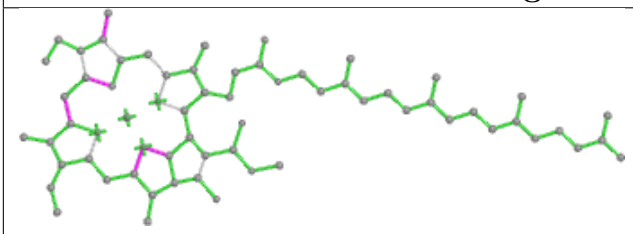


Rings

Ligand CLA O 602



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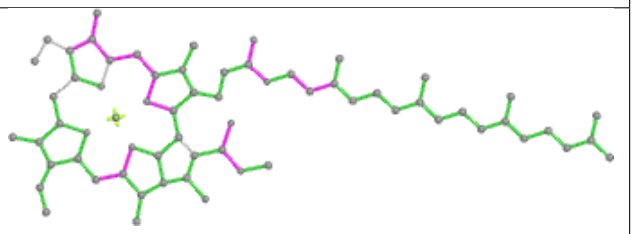

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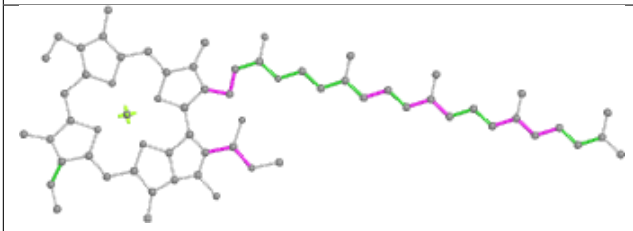

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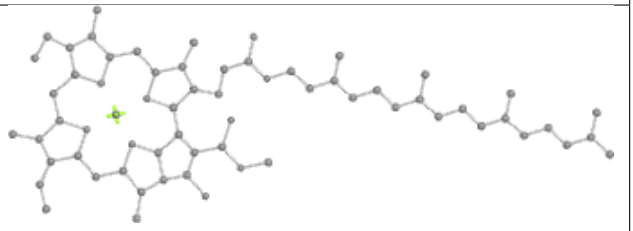

Rings

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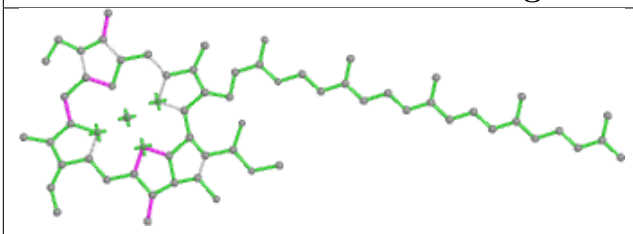

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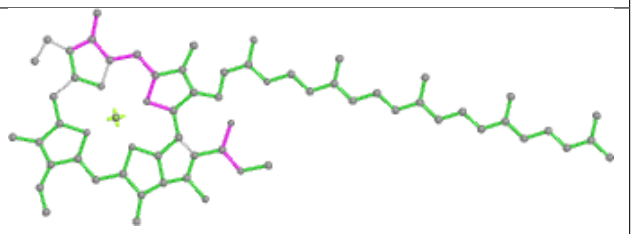

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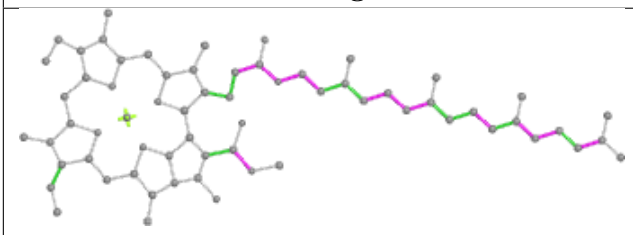

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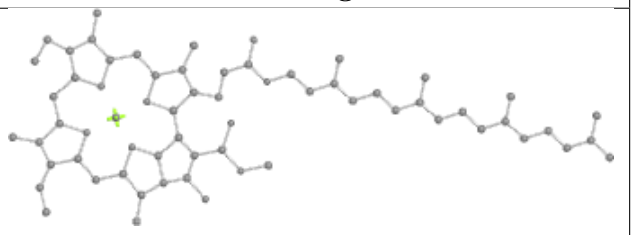

Rings

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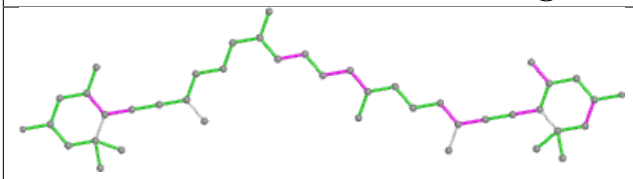

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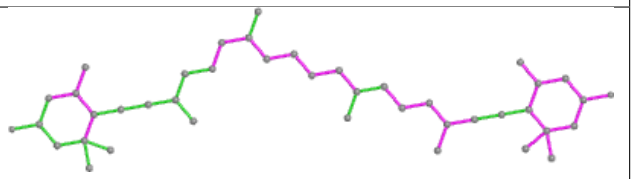
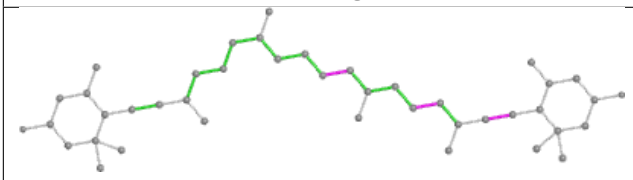


Bond angles



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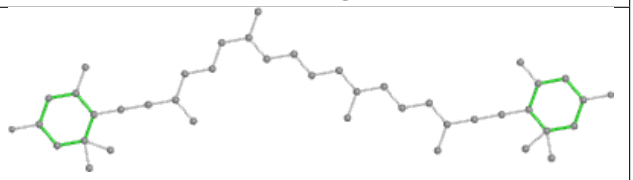

Rings

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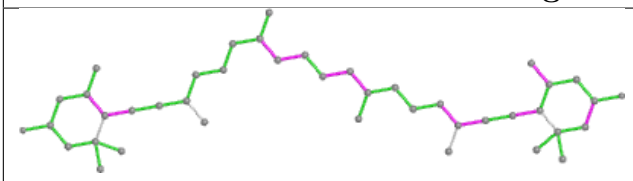

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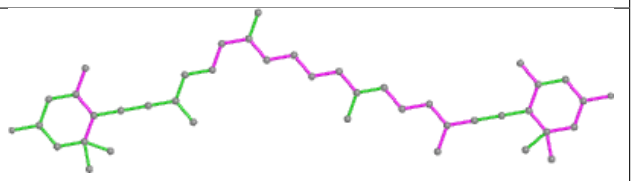

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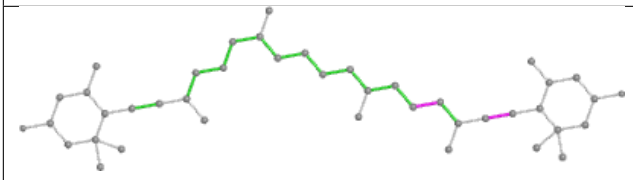

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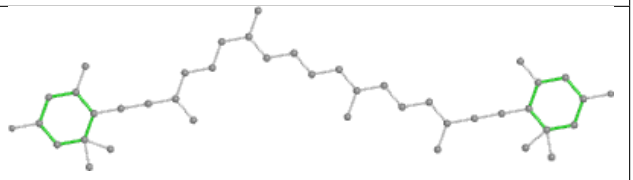

Rings

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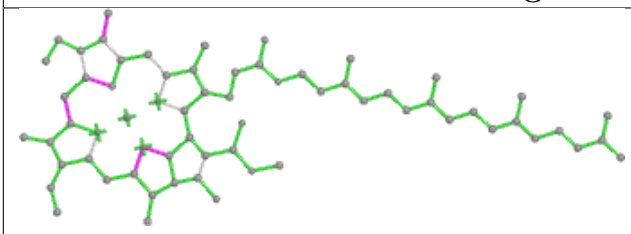

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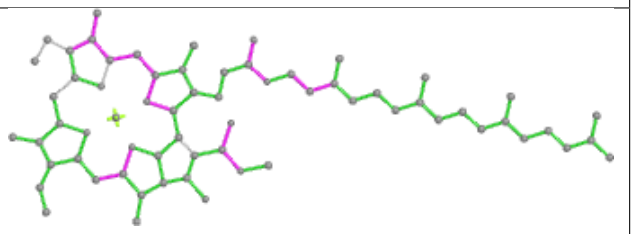

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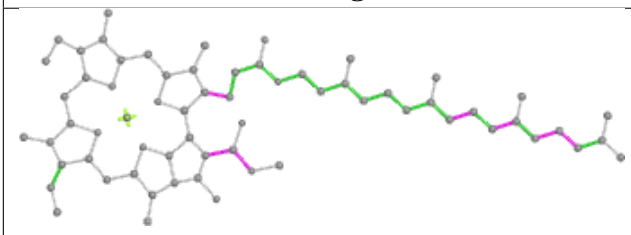

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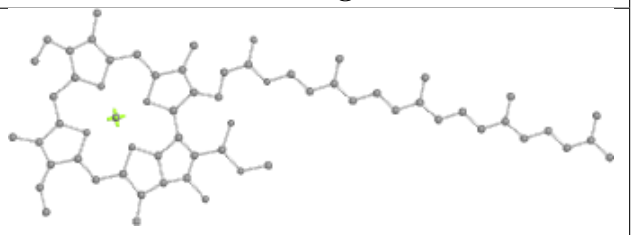
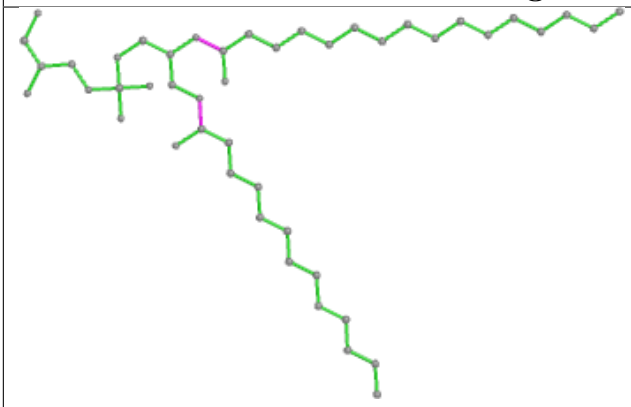


Rings

Ligand LHG 5 621



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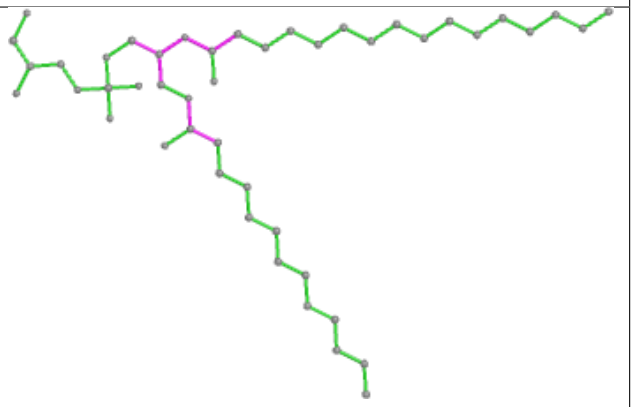
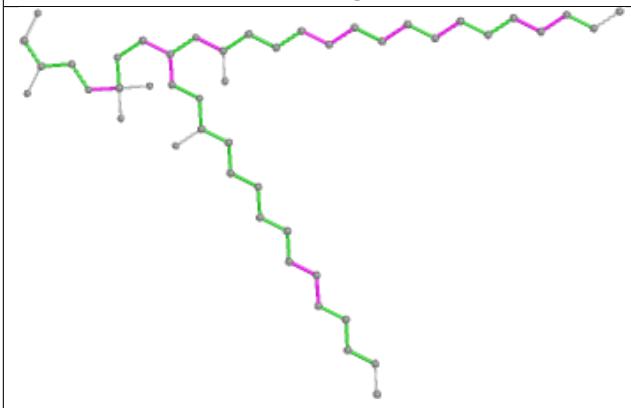


Bond angles



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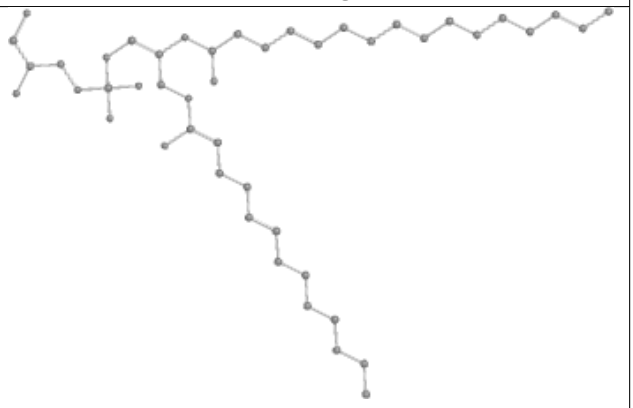
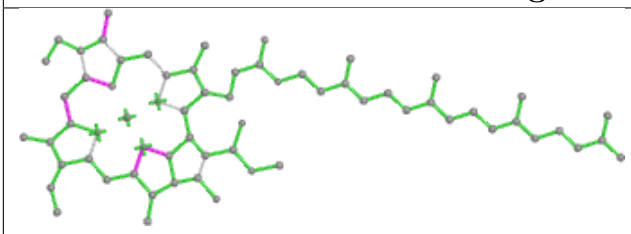


Rings

Ligand CLA 2 604



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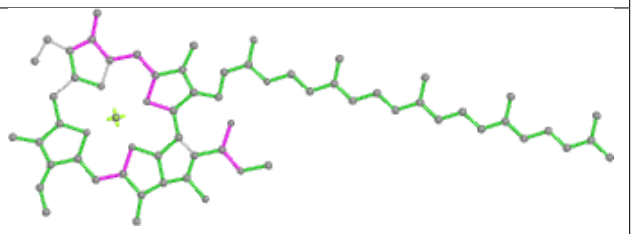
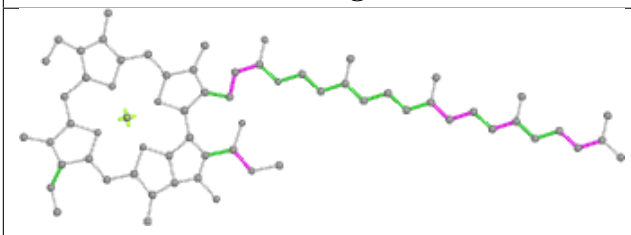


Bond angles



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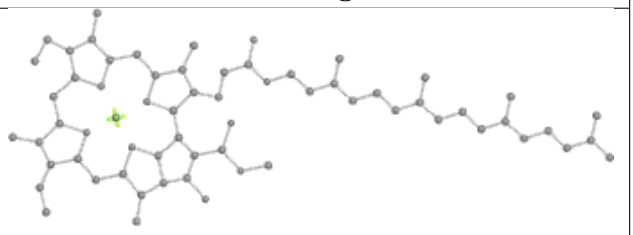

Rings

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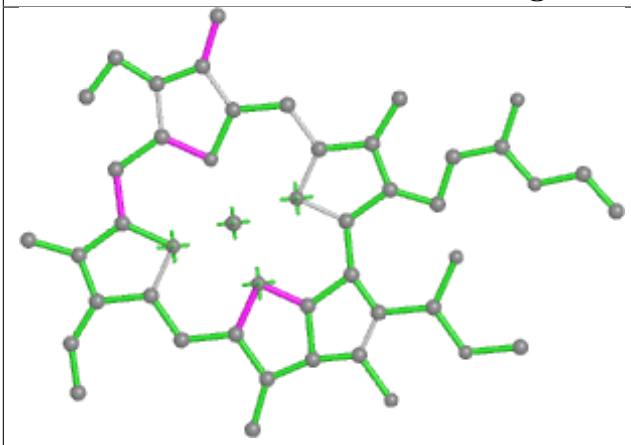

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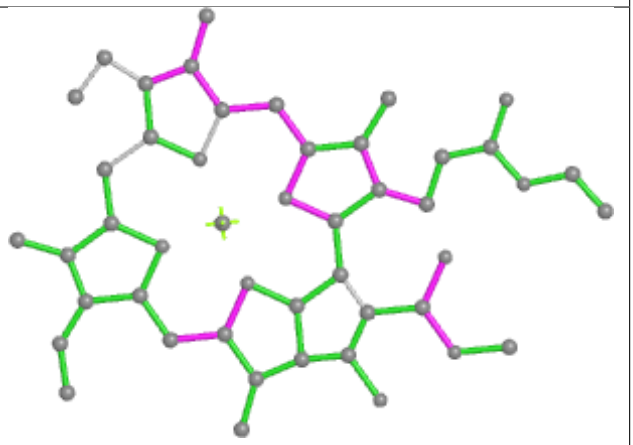
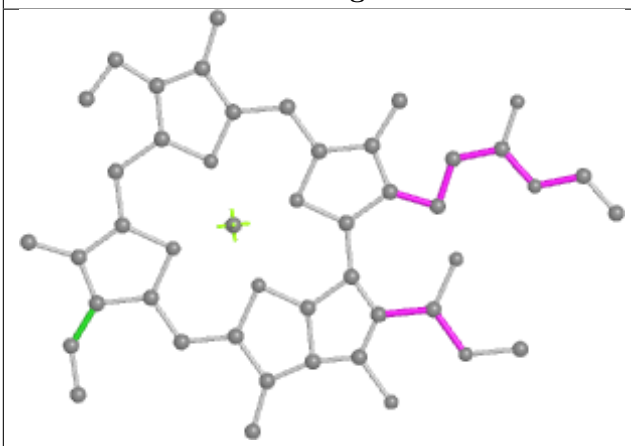


Bond angles



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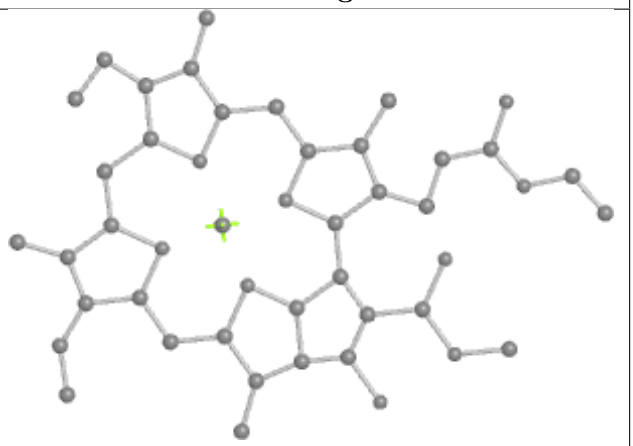

Rings

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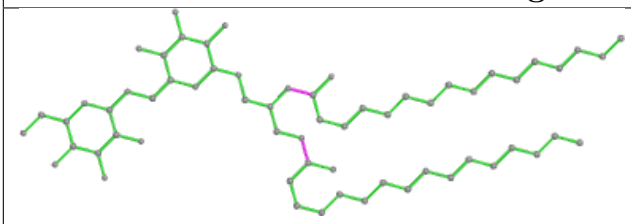
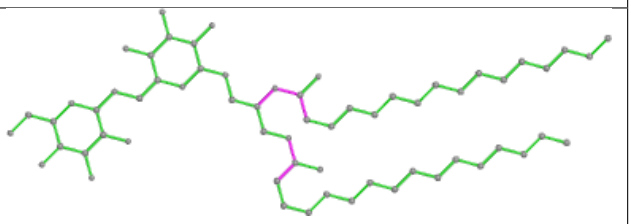


Bond lengths



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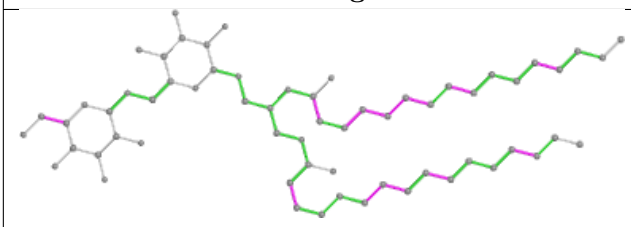
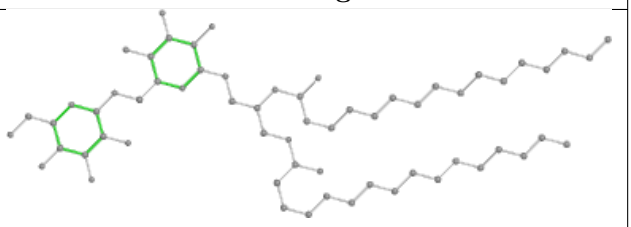
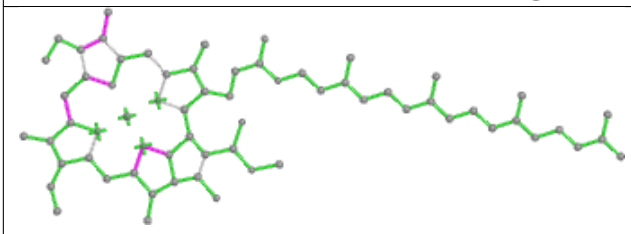


Torsions



Rings

Ligand CLA b 613



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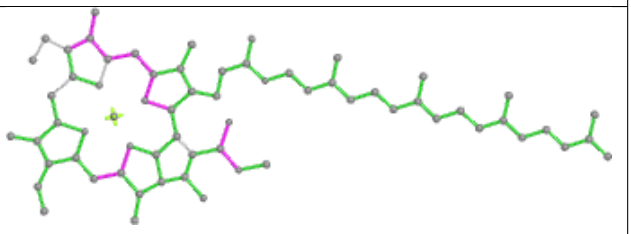

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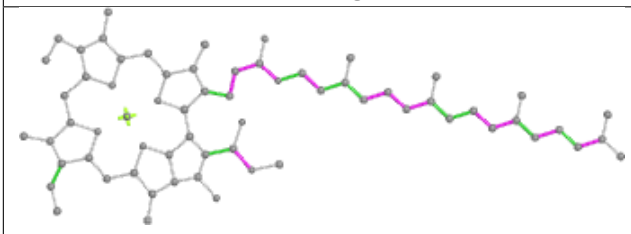

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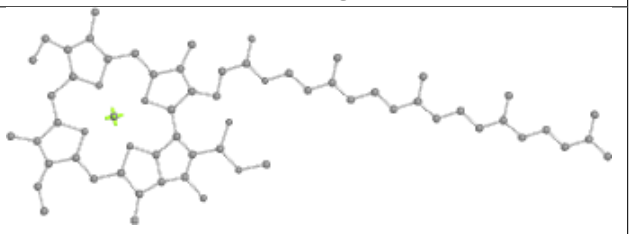
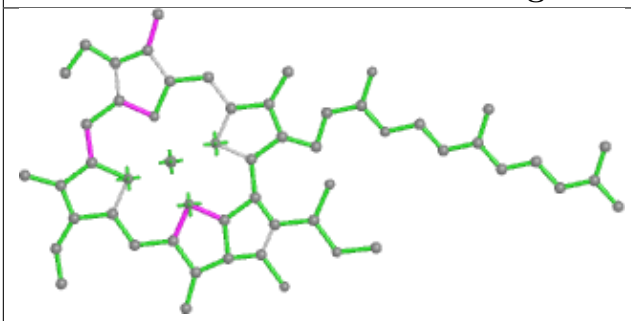


Rings

Ligand CLA S 611



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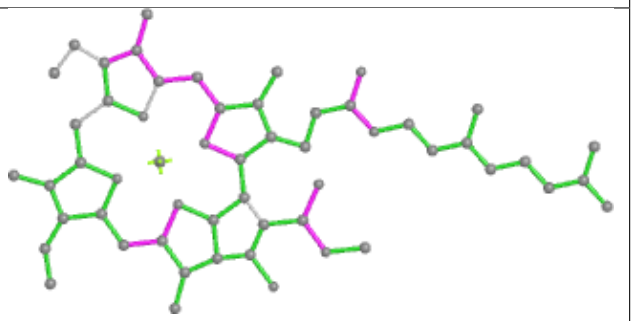

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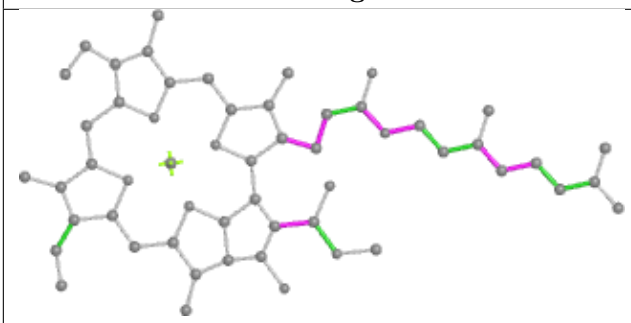

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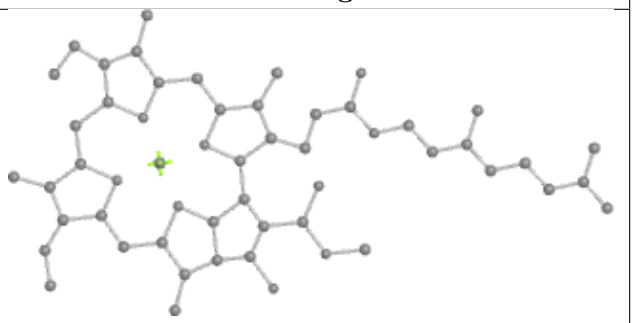
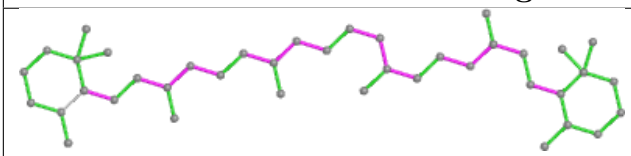


Rings

Ligand WVN C 529



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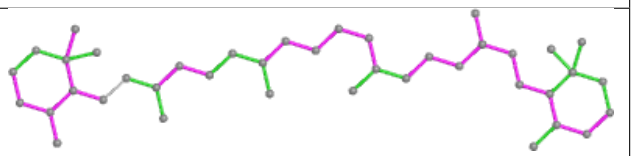

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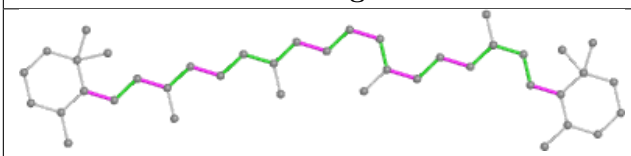

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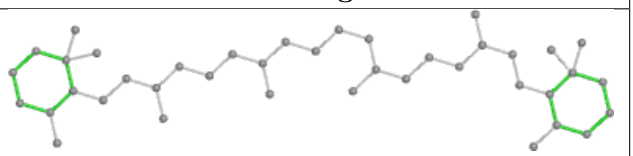
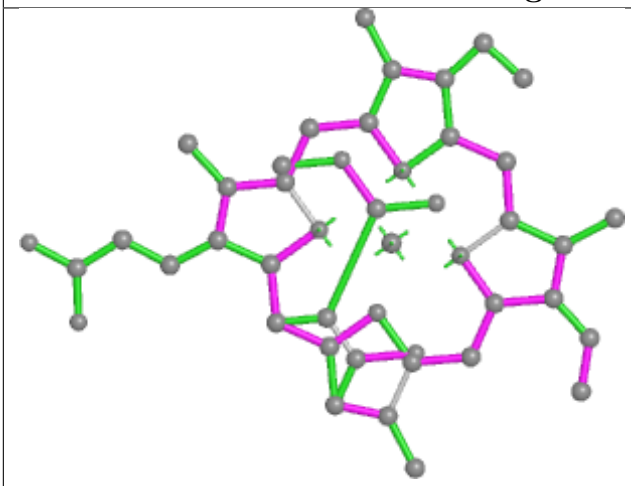


Rings

Ligand KC2 N 612



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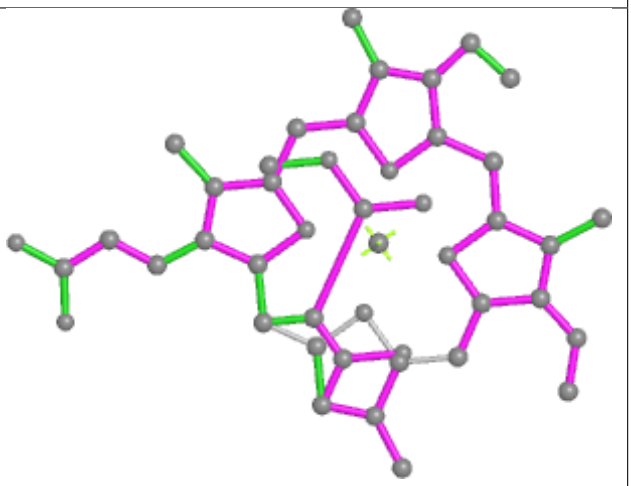

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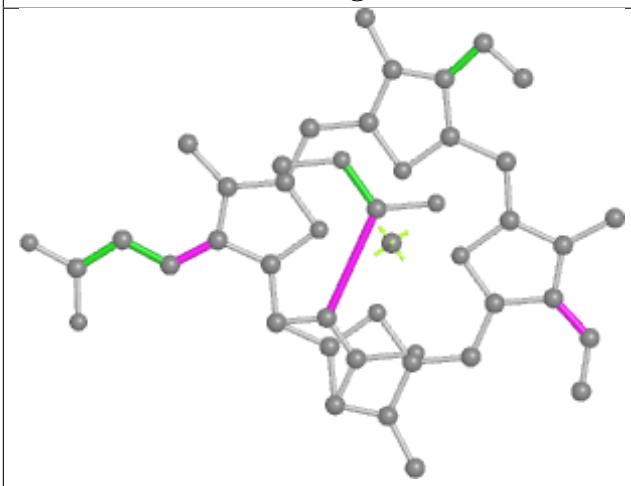

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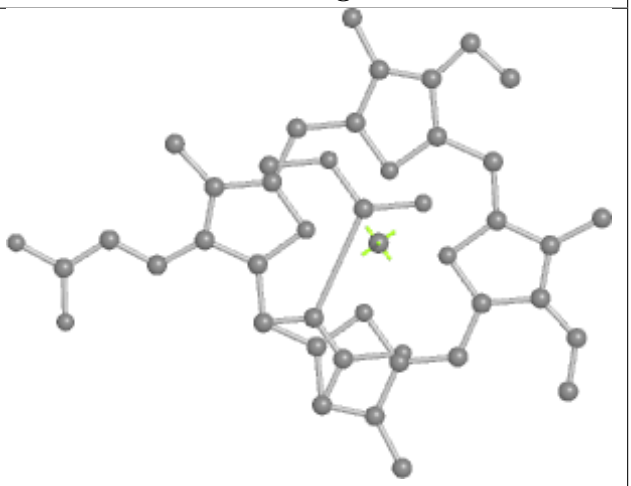
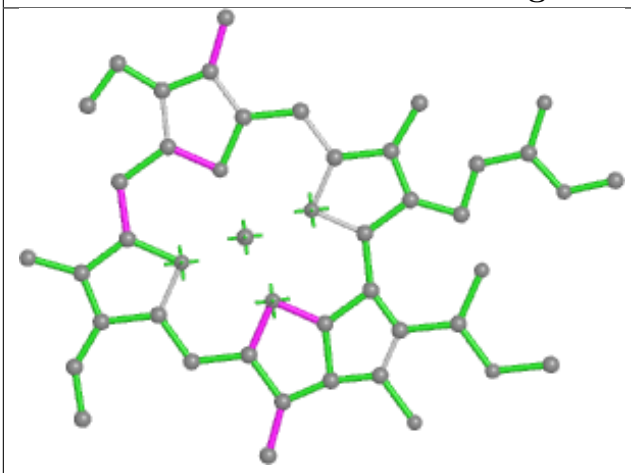


Rings

Ligand CLA 5 615



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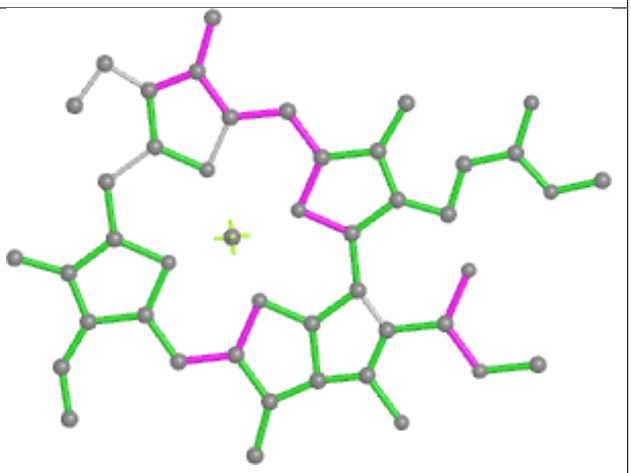

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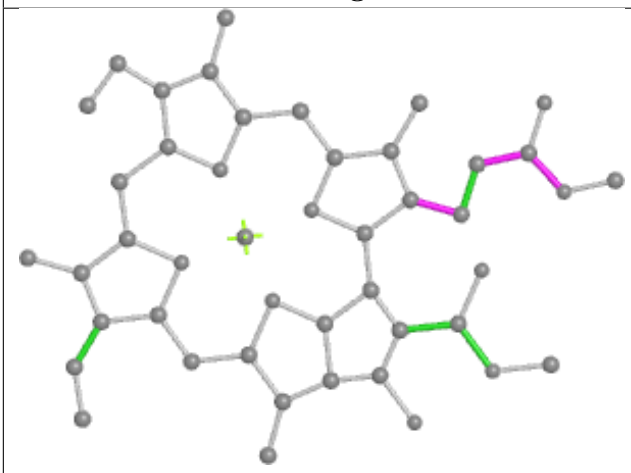

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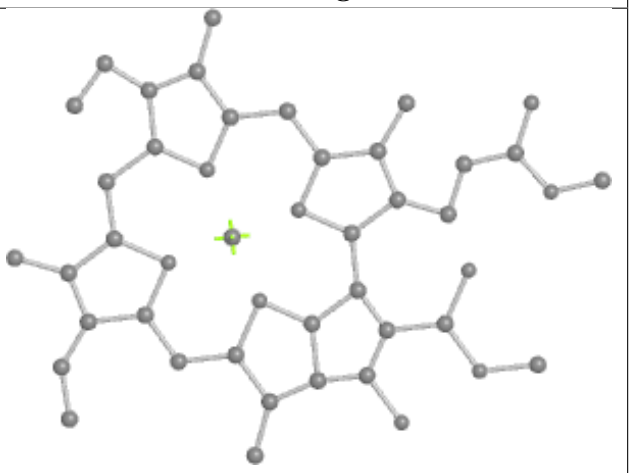
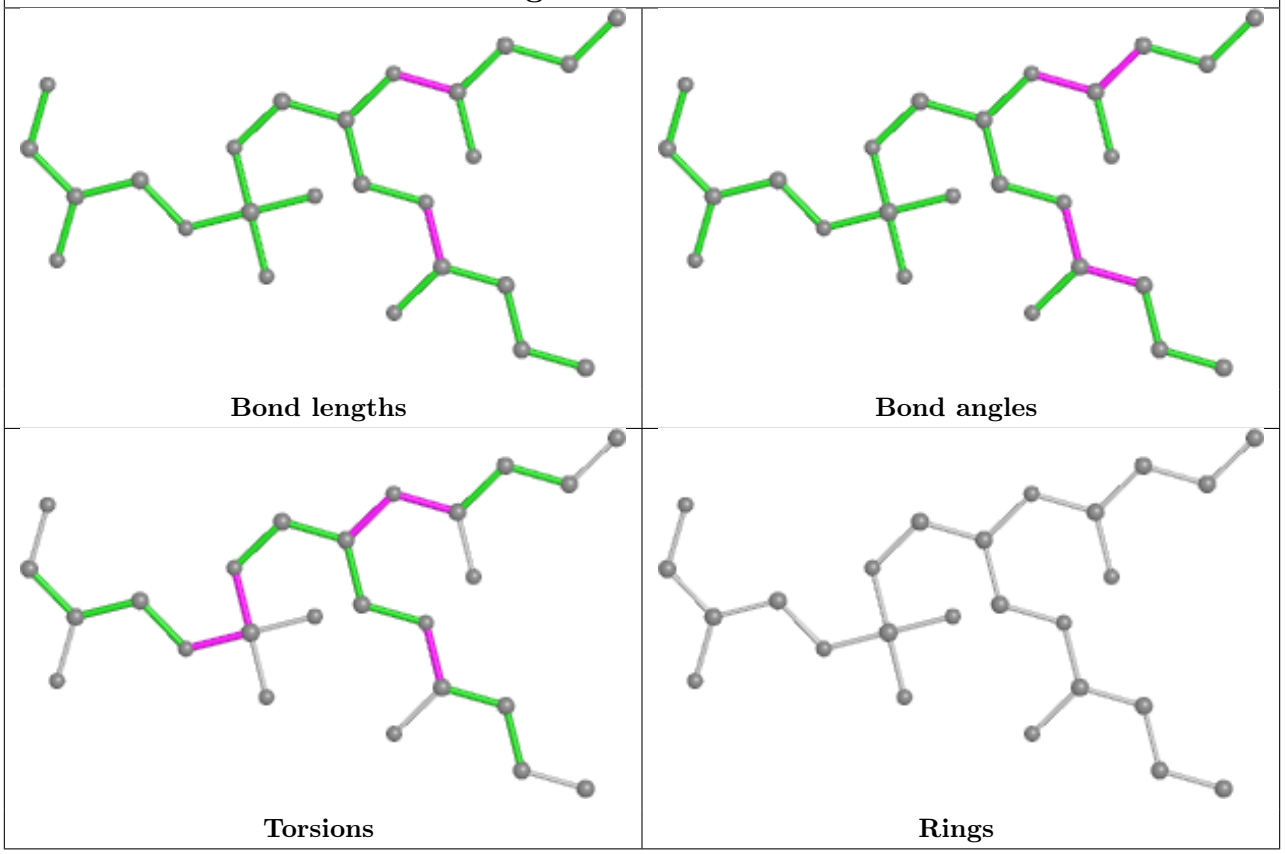


Rings

Ligand LHG Z 103



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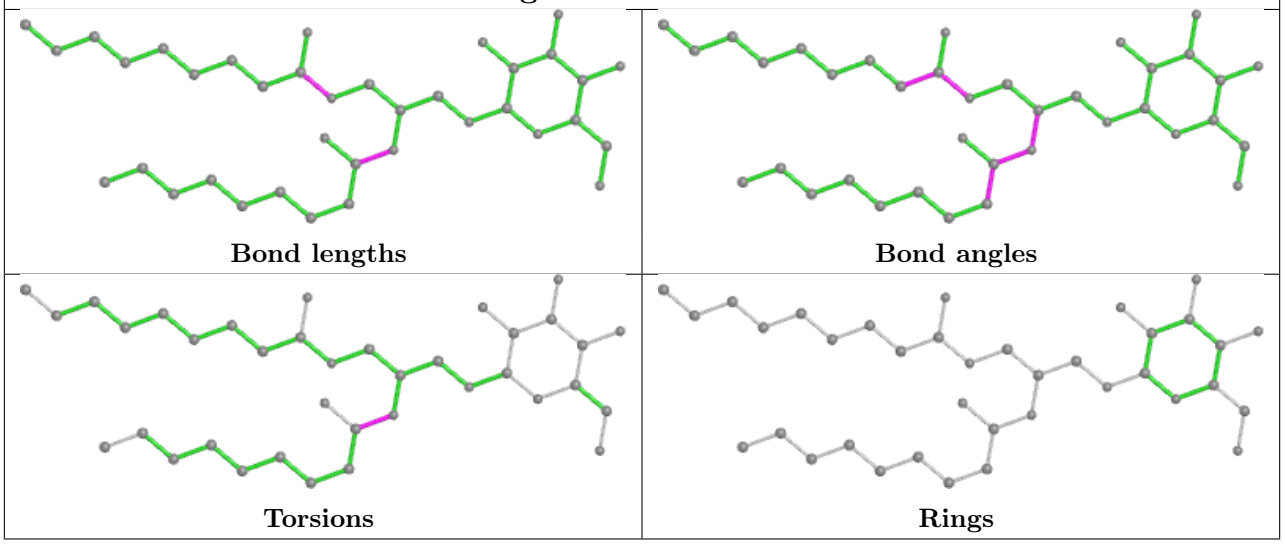
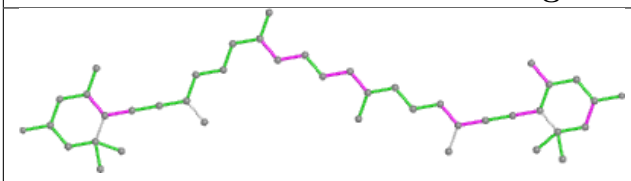


Ligand II0 3 619



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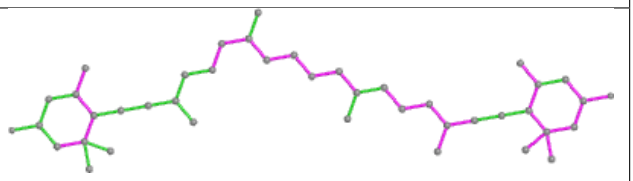
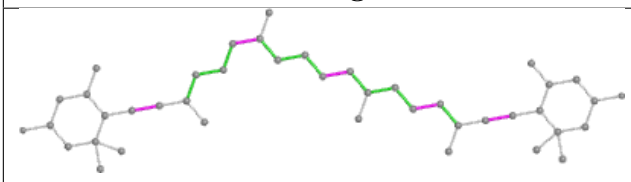


Bond angles



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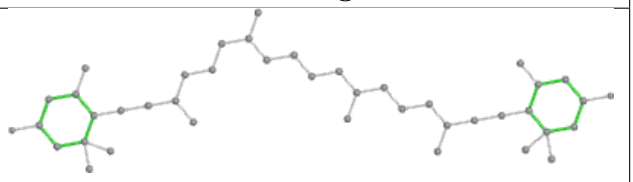
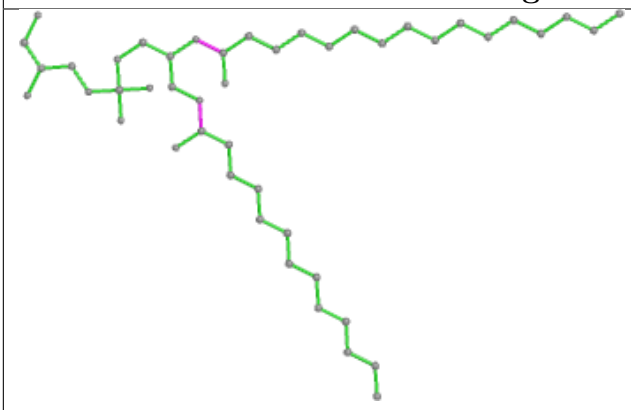


Rings

Ligand LHG R 621



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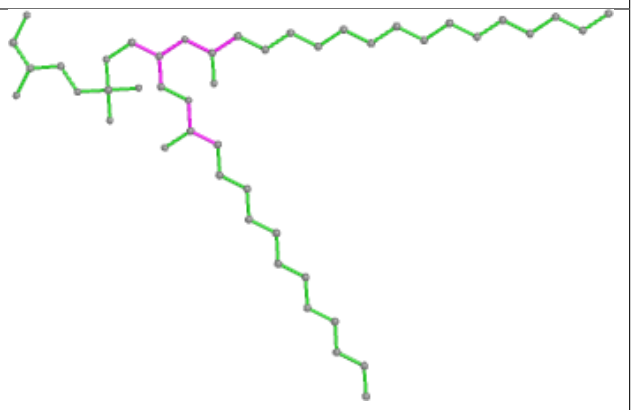
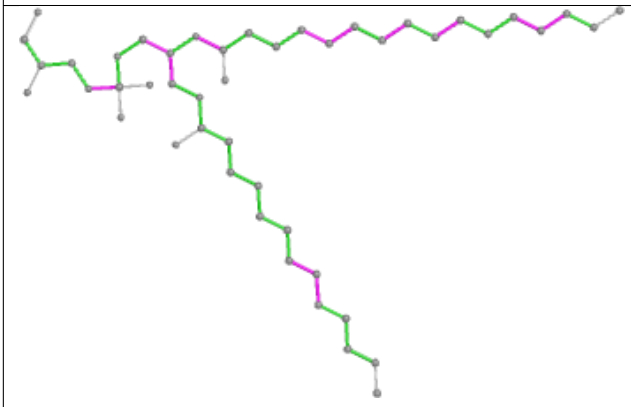


Bond angles



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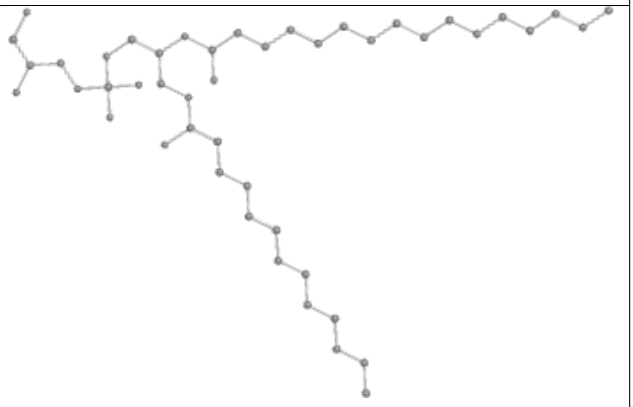
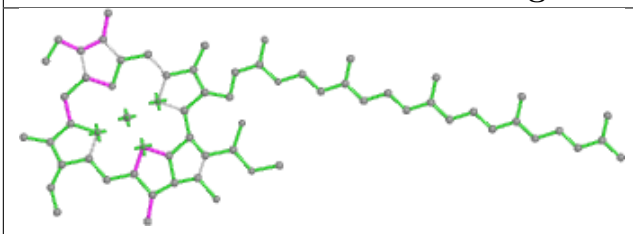


Rings

Ligand CLA a 403



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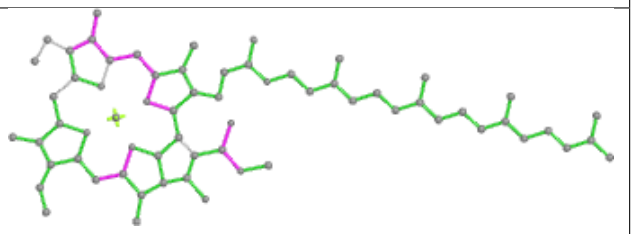
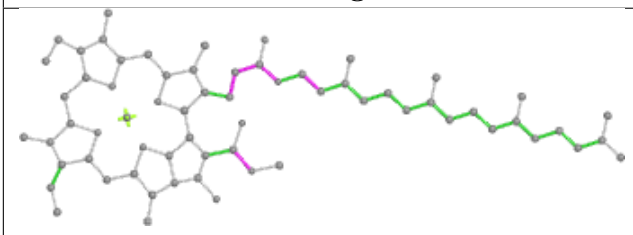


Bond angles



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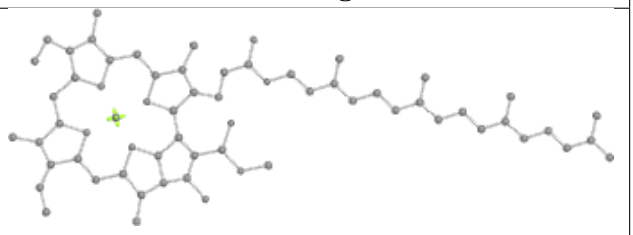
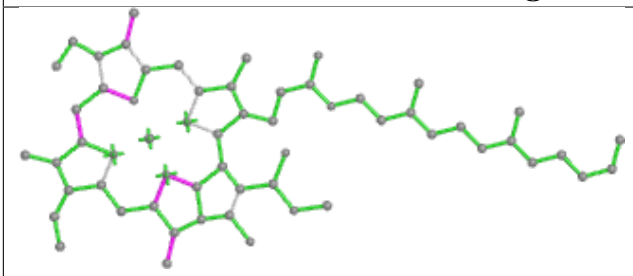


Rings

Ligand CLA B 604



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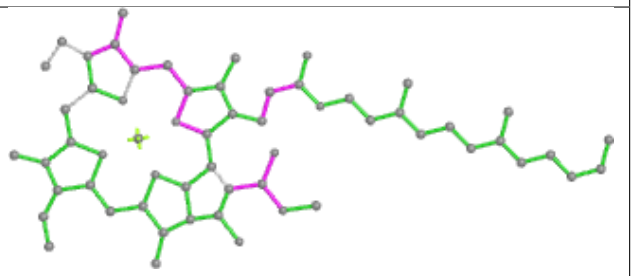
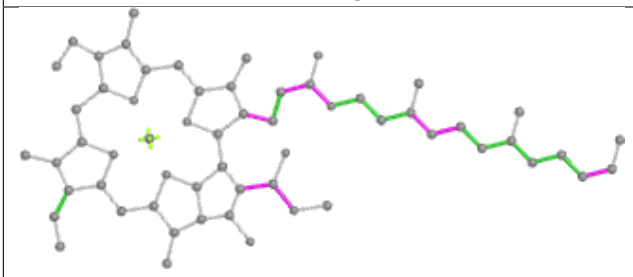


Bond angles



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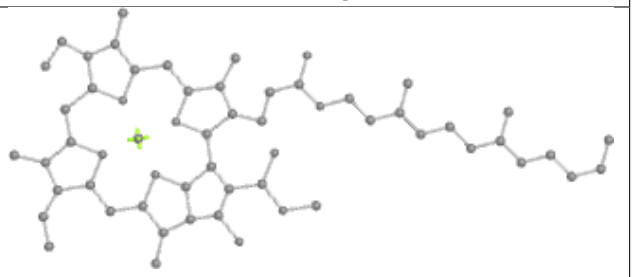
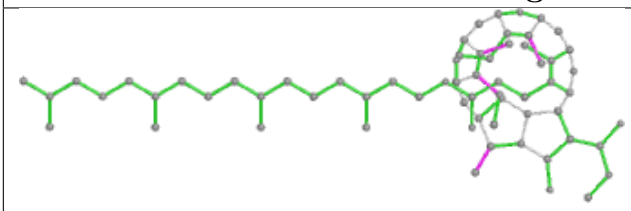


Rings

Ligand PHO a 405



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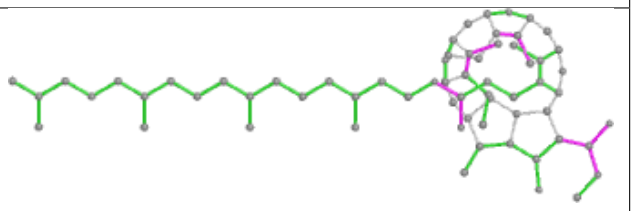
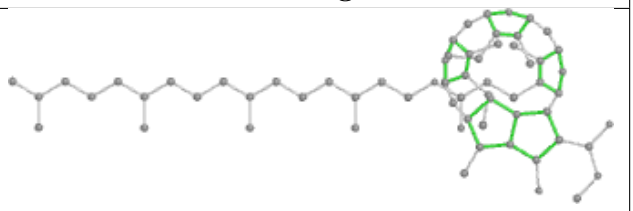


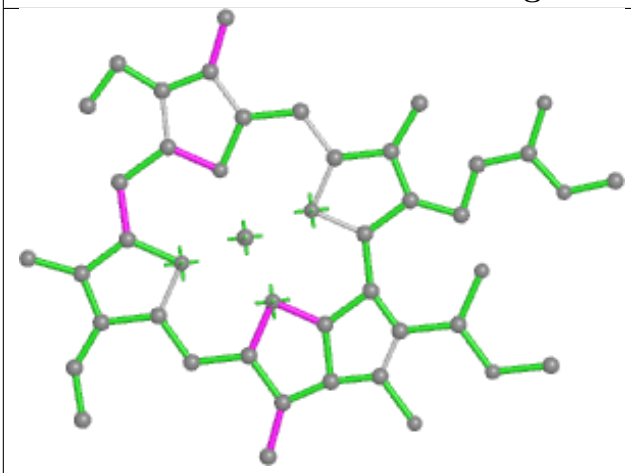
Bond angles

Torsions



Rings

Ligand CLA R 615



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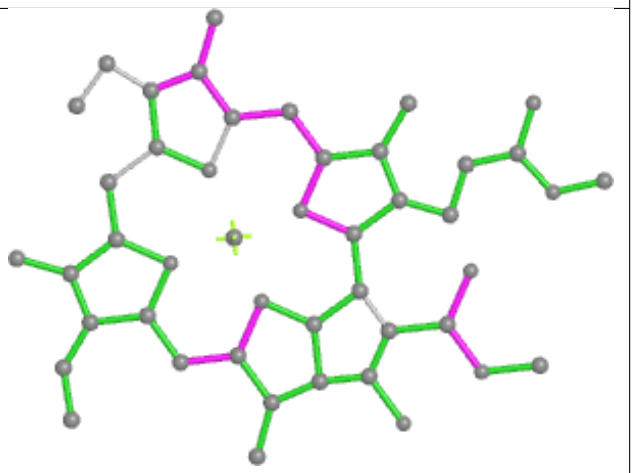
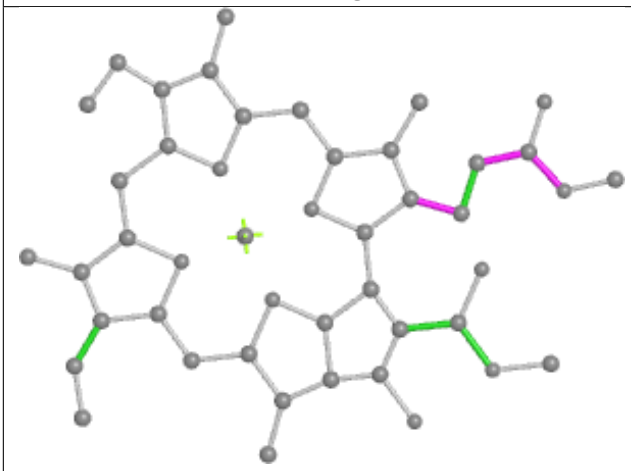


Bond angles



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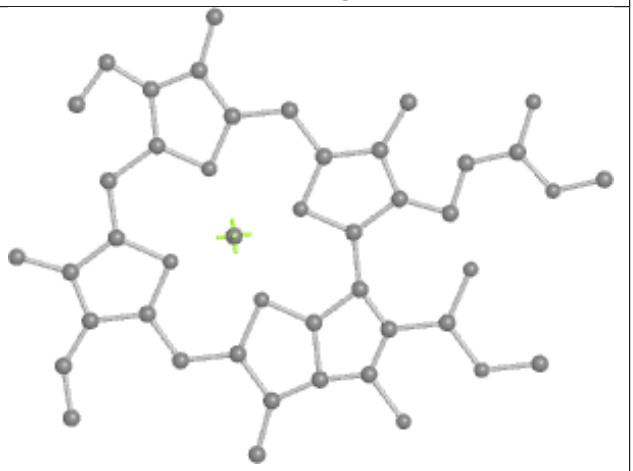
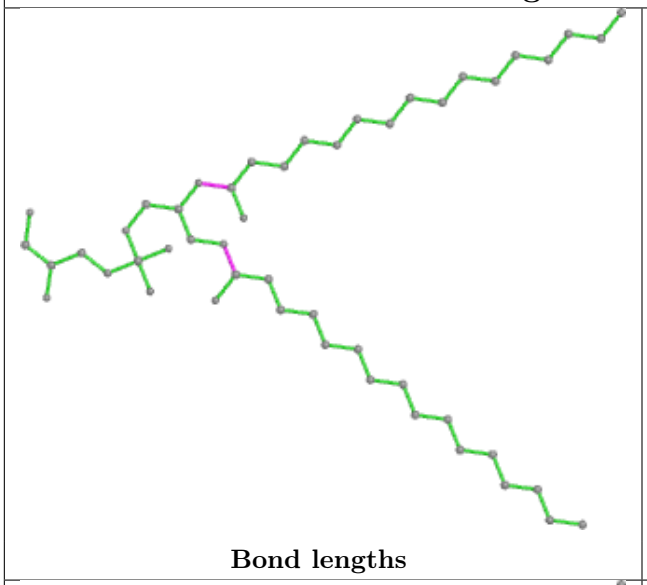


Rings

Ligand LHG D 406



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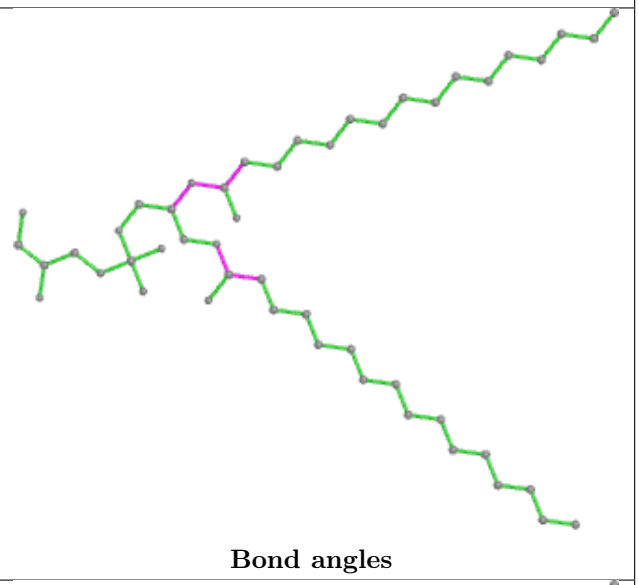
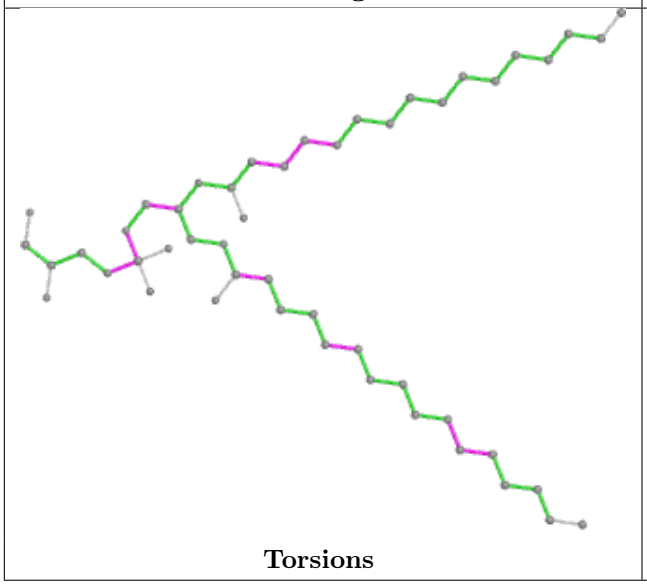


Bond angles



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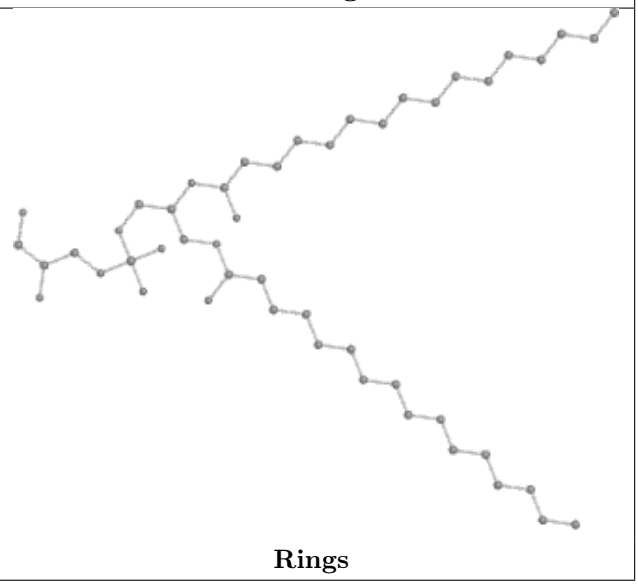
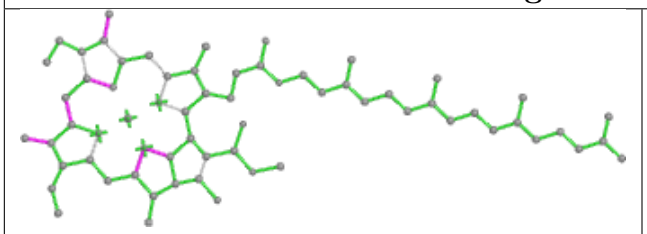


Rings

Ligand CLA O 603



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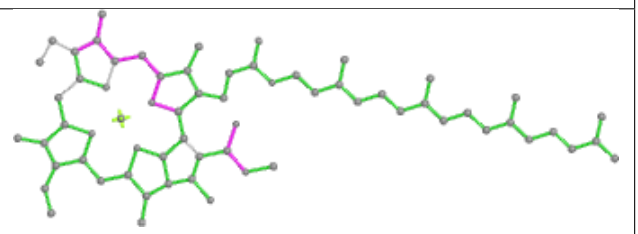
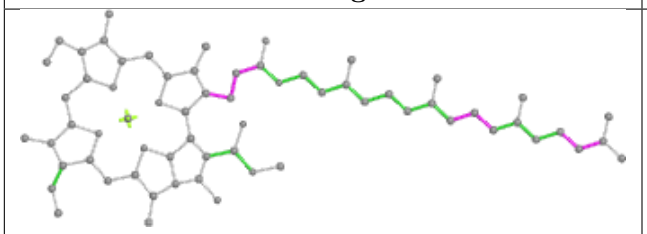
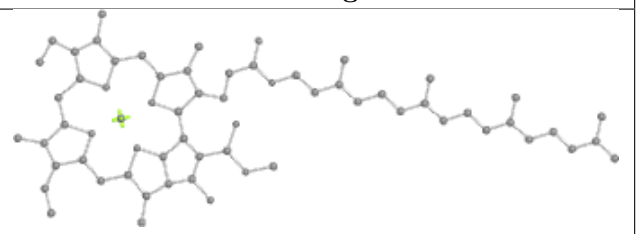


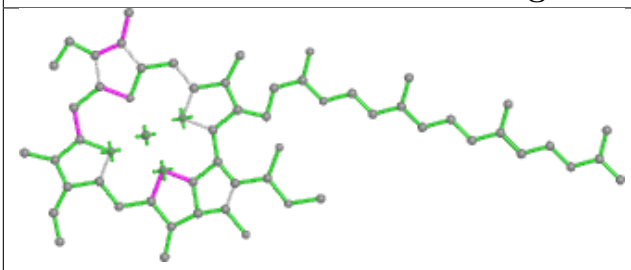
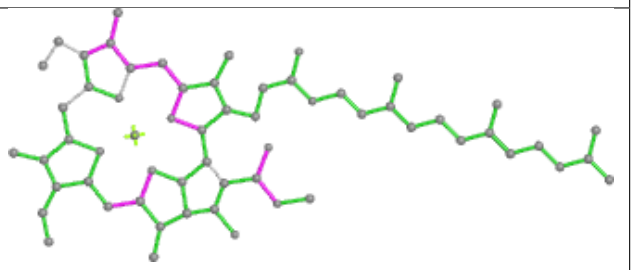
Bond angles



Torsions



Rings

Ligand CLA 2 607	
	
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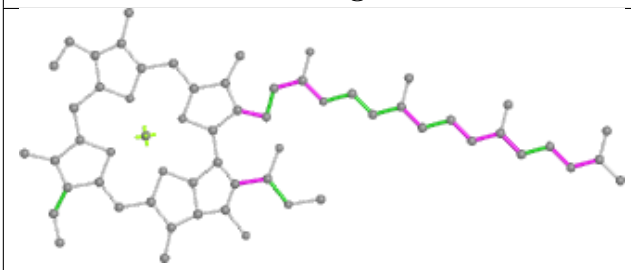
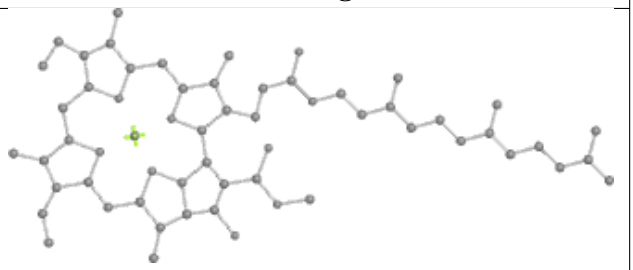
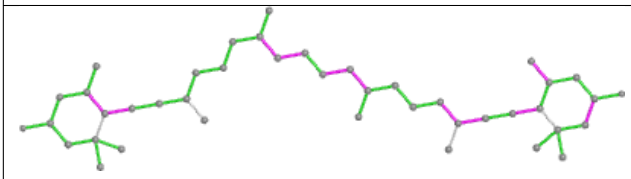
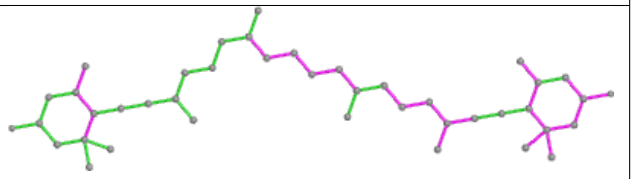
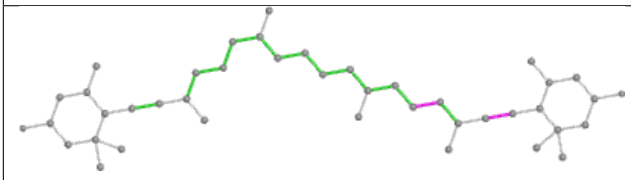
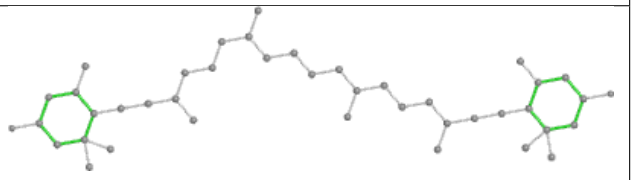
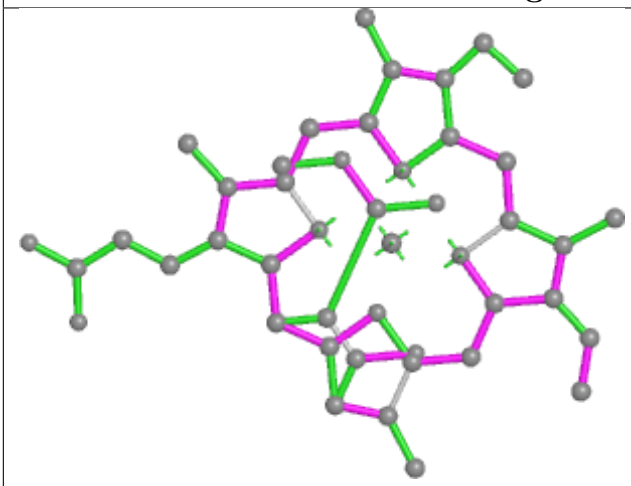
	
Torsions	Rings

Ligand II0 3 616	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand KC2 Q 611



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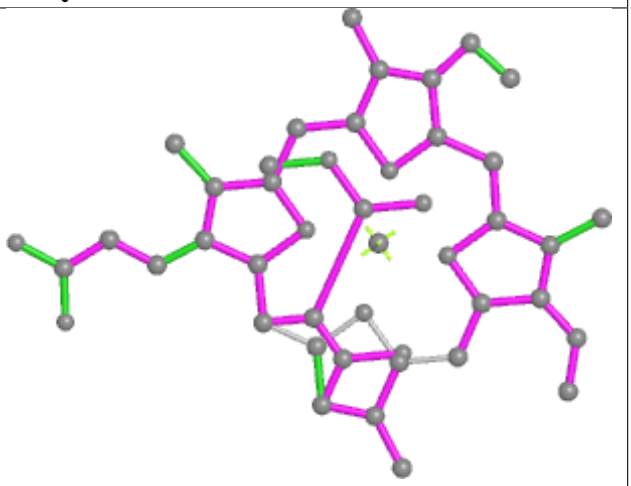
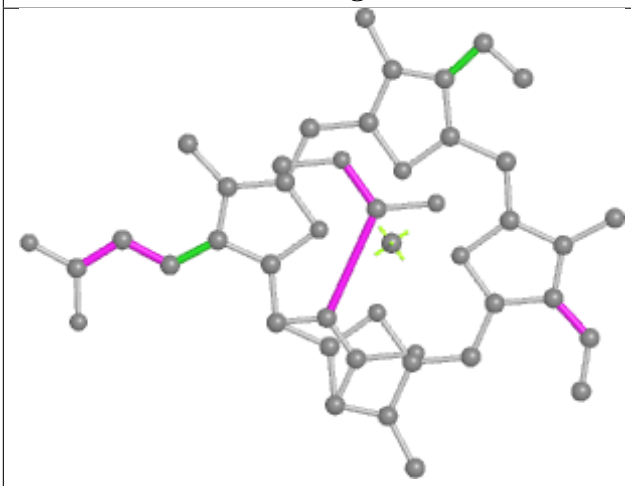
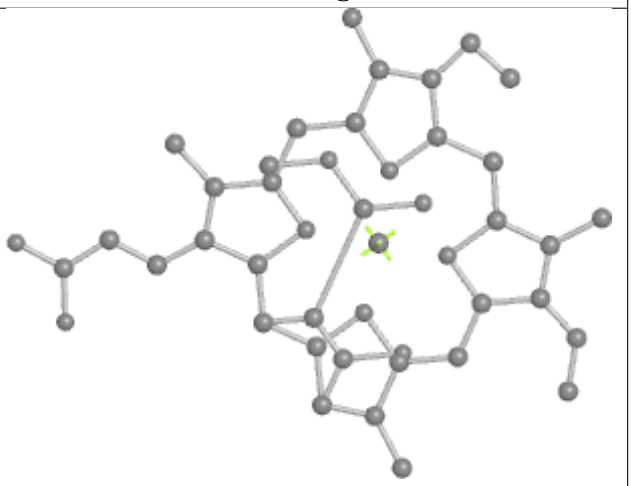


Bond angles

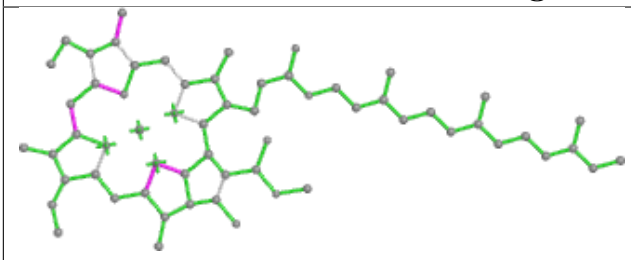


Torsions

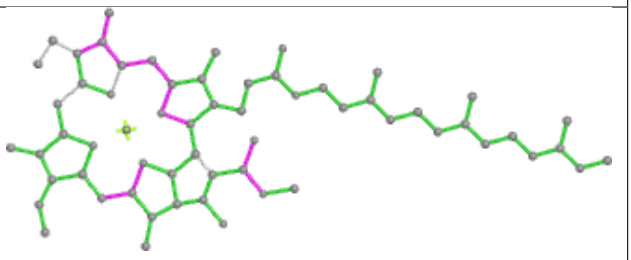


Rings

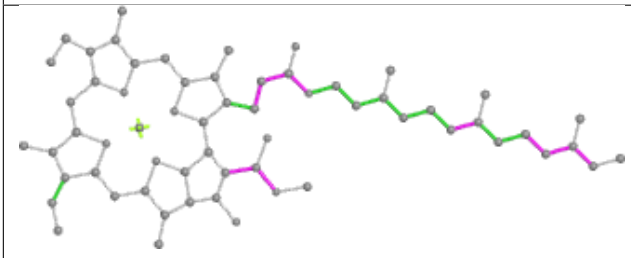
Ligand CLA 4 604



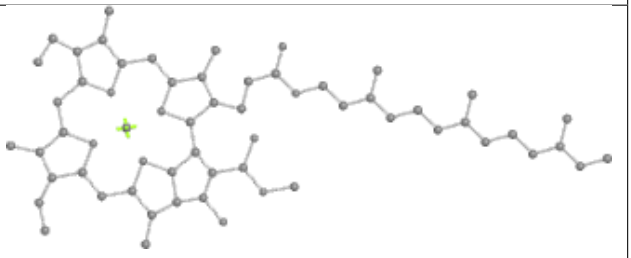
Bond lengths



Bond angles

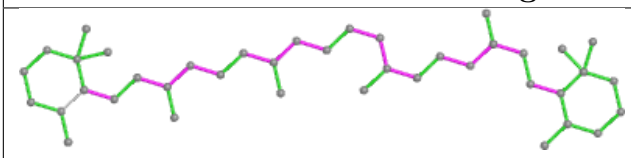


Torsions



Rings

Ligand WVN 6 620



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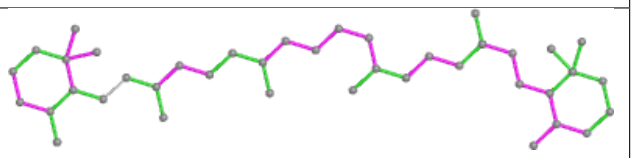
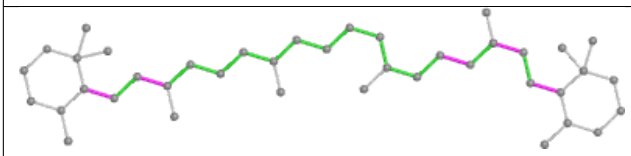


Bond angles



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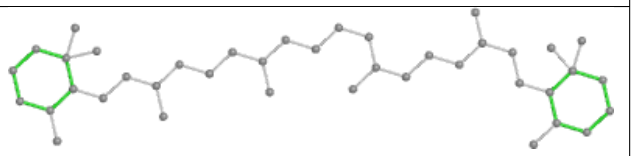
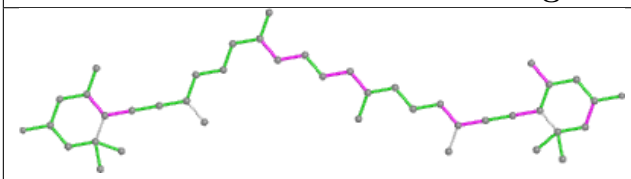
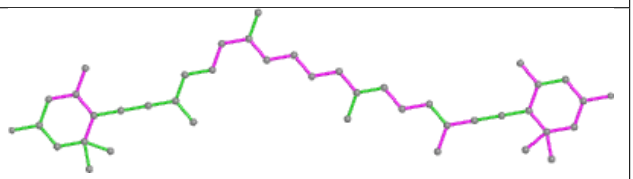


Rings

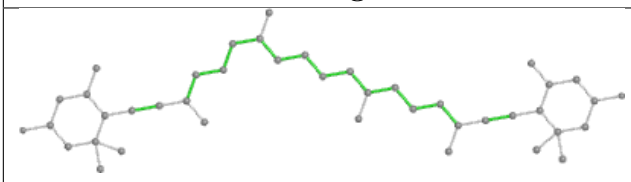
Ligand II0 5 618



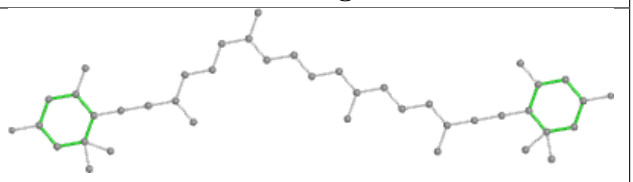
Bond lengths



Bond angles

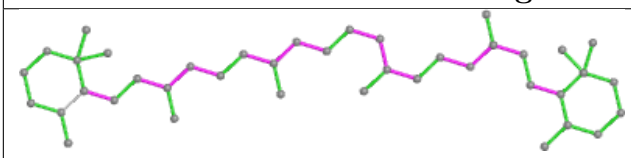


Torsions



Rings

Ligand WVN A 407



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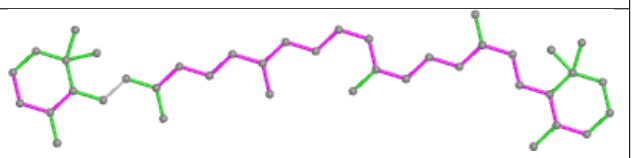
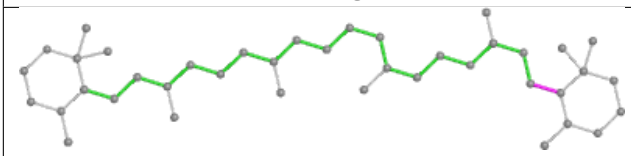


Bond angles



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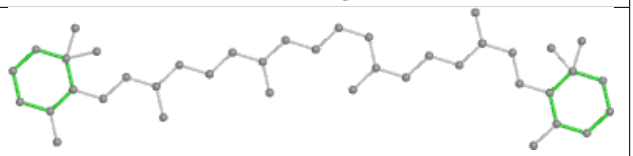
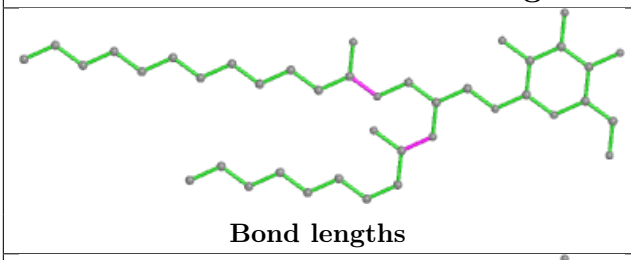
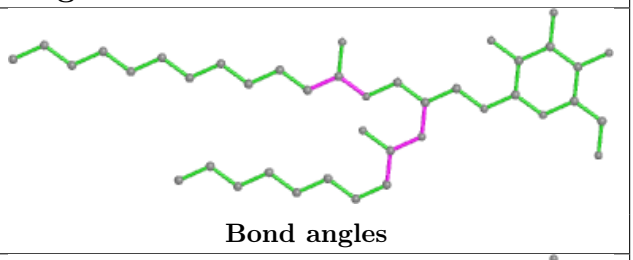


Rings

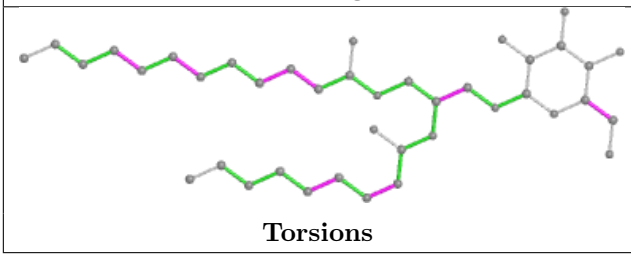
Ligand LMG g 303



Bond lengths



Bond angles



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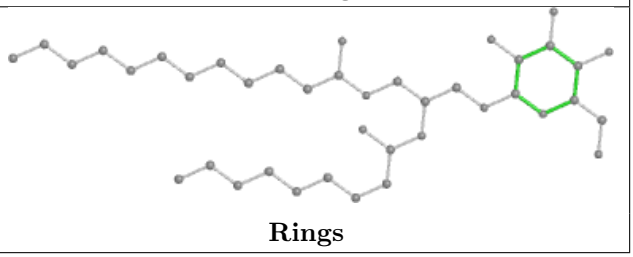
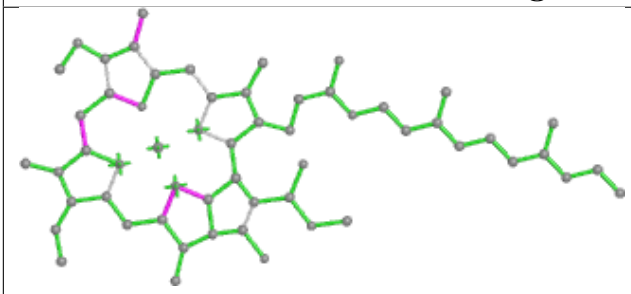
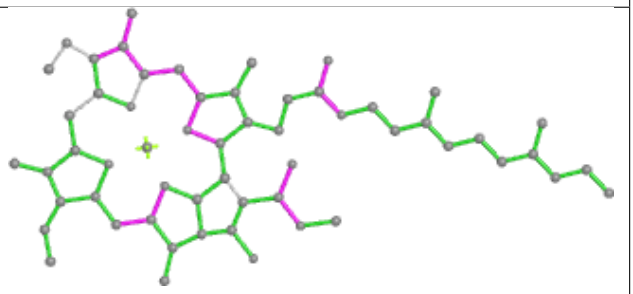


Rings

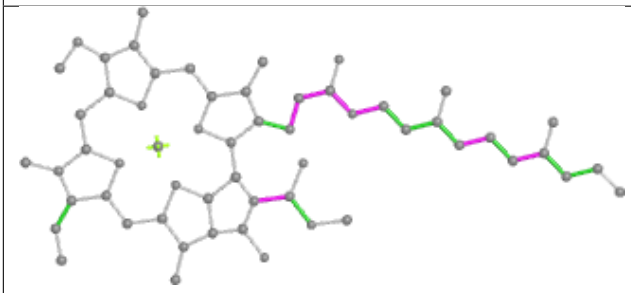
Ligand CLA 6 610



Bond lengths



Bond angles



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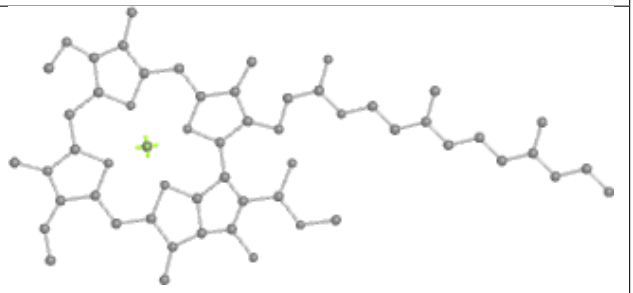
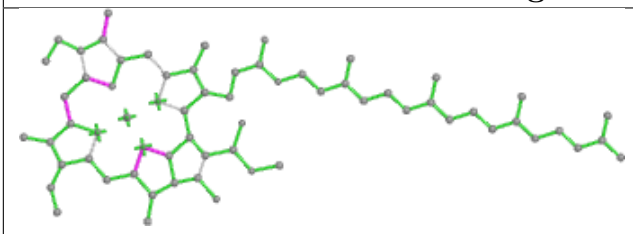


Rings

Ligand CLA b 615



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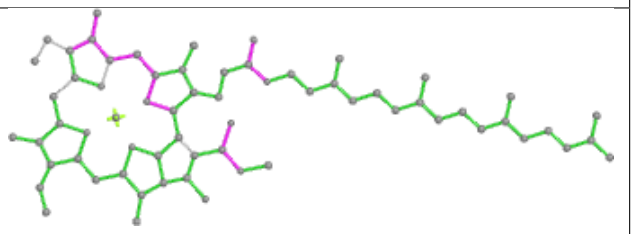
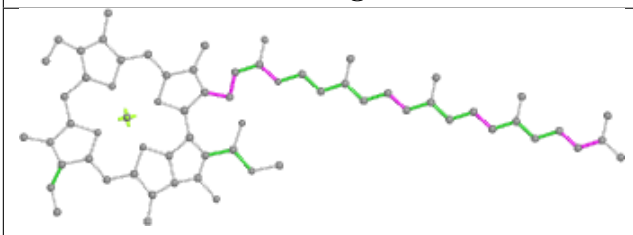
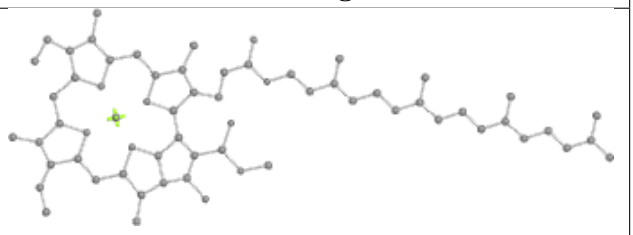


Bond angles

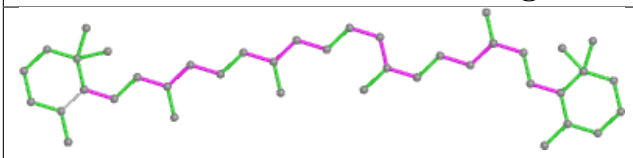


Torsions

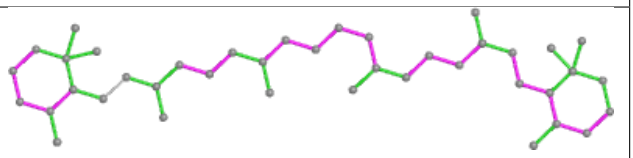


Rings

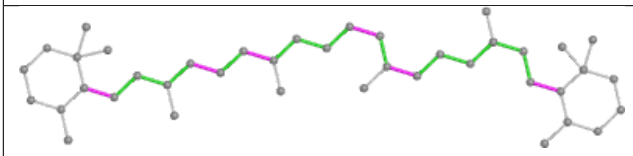
Ligand WVN c 530



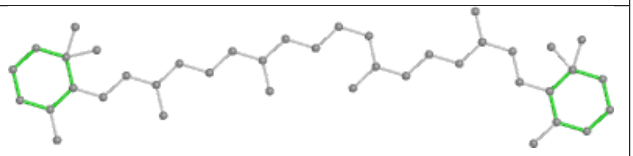
Bond lengths



Bond angles

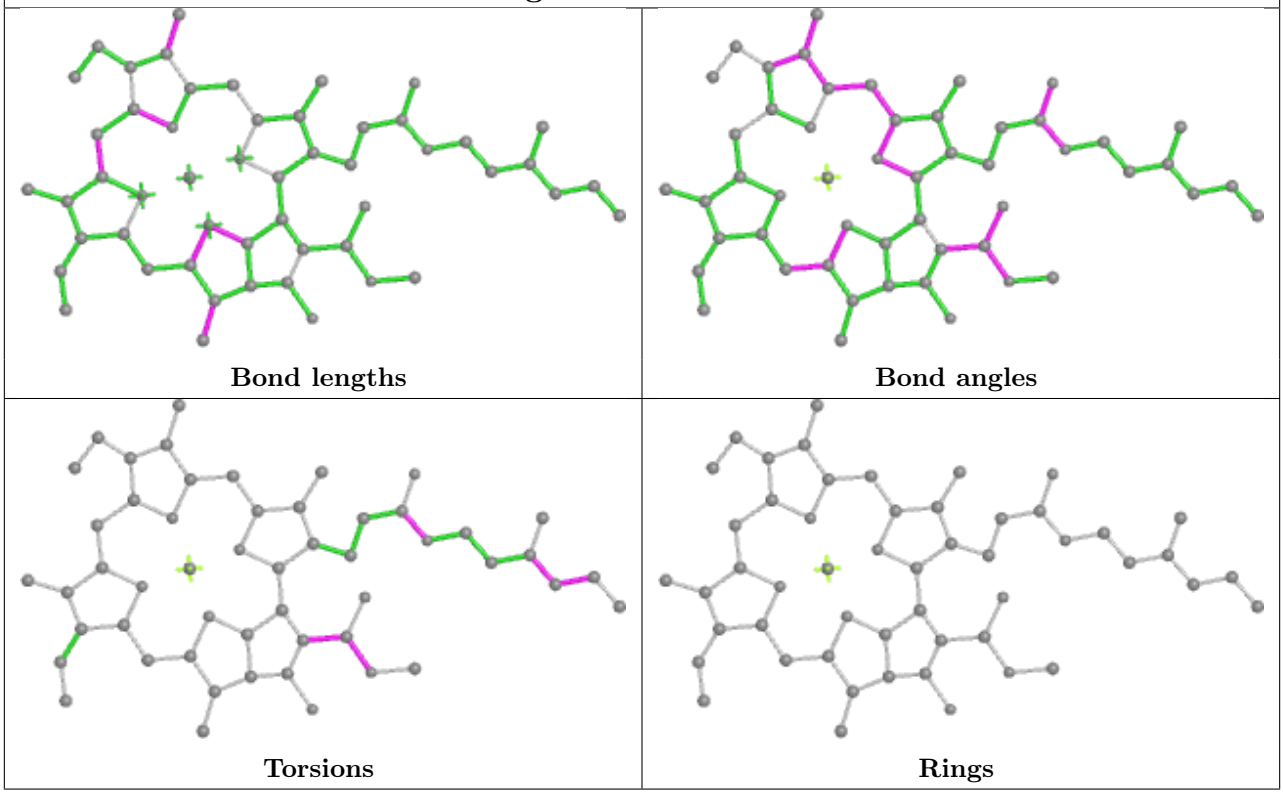


Torsions

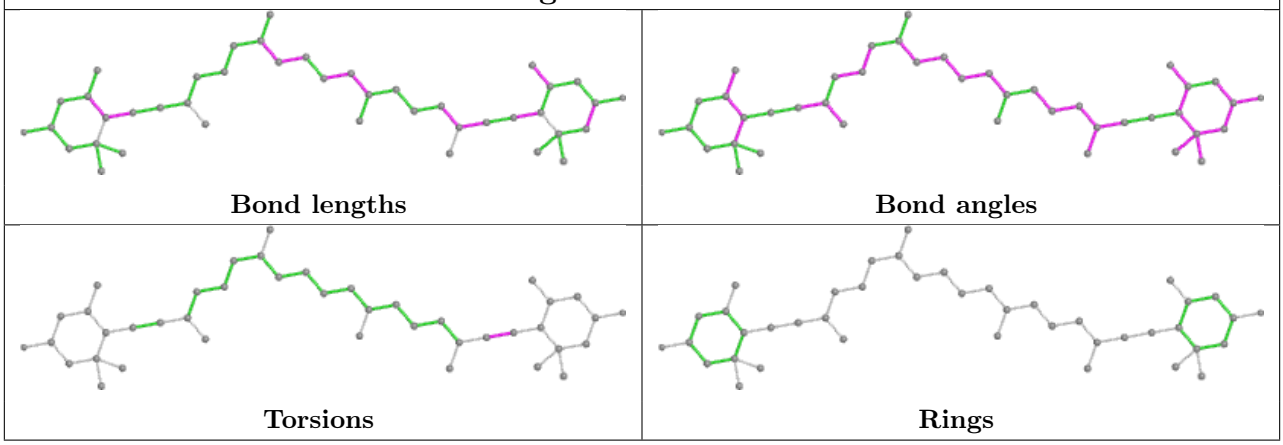


Rings

Ligand CLA C 528



Ligand II0 R 617



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

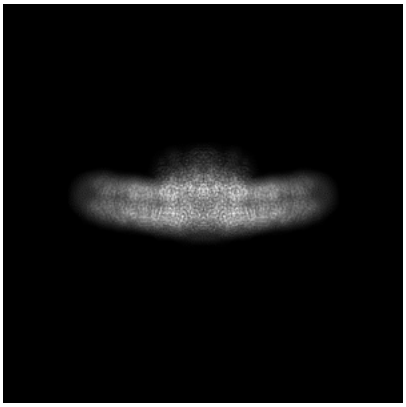
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-38455. These allow visual inspection of the internal detail of the map and identification of artifacts.

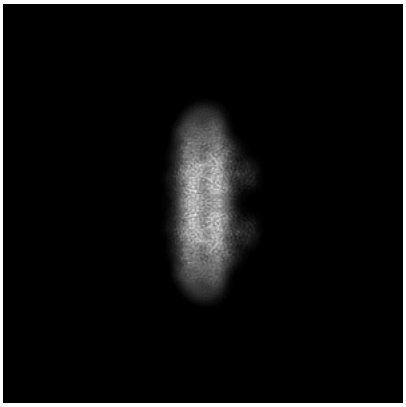
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

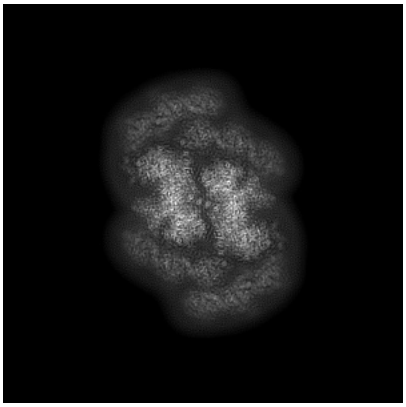
6.1.1 Primary map



X



Y

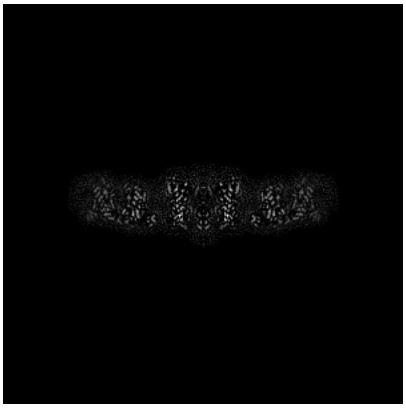


Z

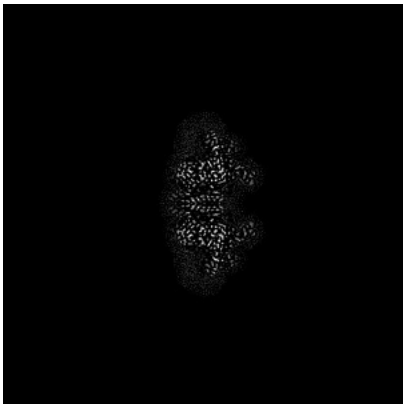
The images above show the map projected in three orthogonal directions.

6.2 Central slices

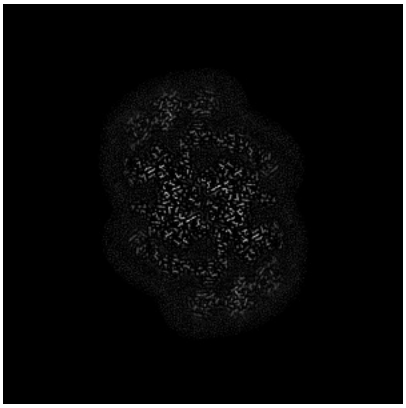
6.2.1 Primary map



X Index: 208



Y Index: 208

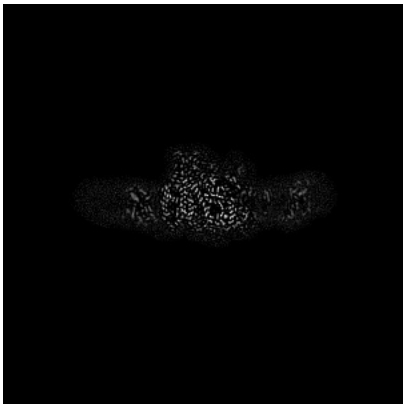


Z Index: 208

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

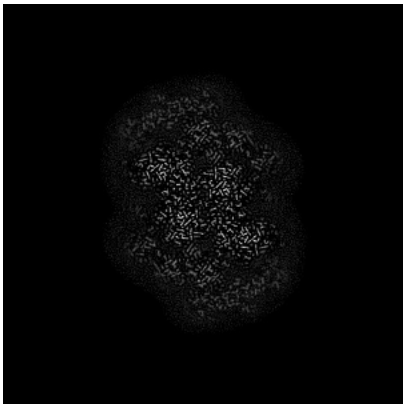
6.3 Largest variance slices (i)

6.3.1 Primary map



X Index: 182

Y Index: 222

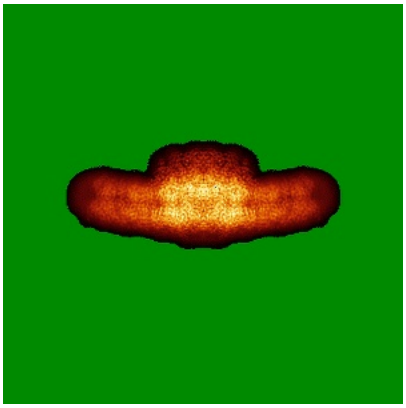


Z Index: 198

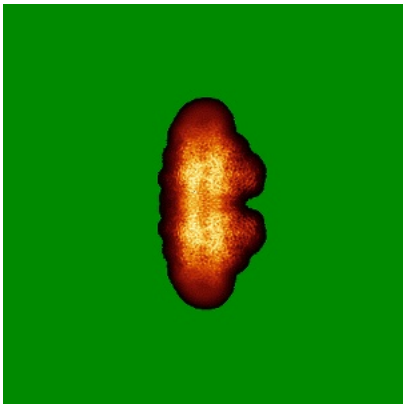
The images above show the largest variance slices of the map in three orthogonal directions.

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

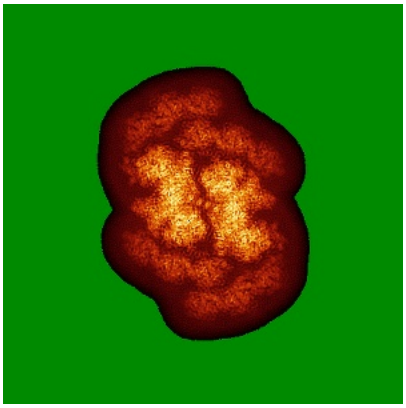
6.4.1 Primary map



X



Y



Z

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 0.024. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

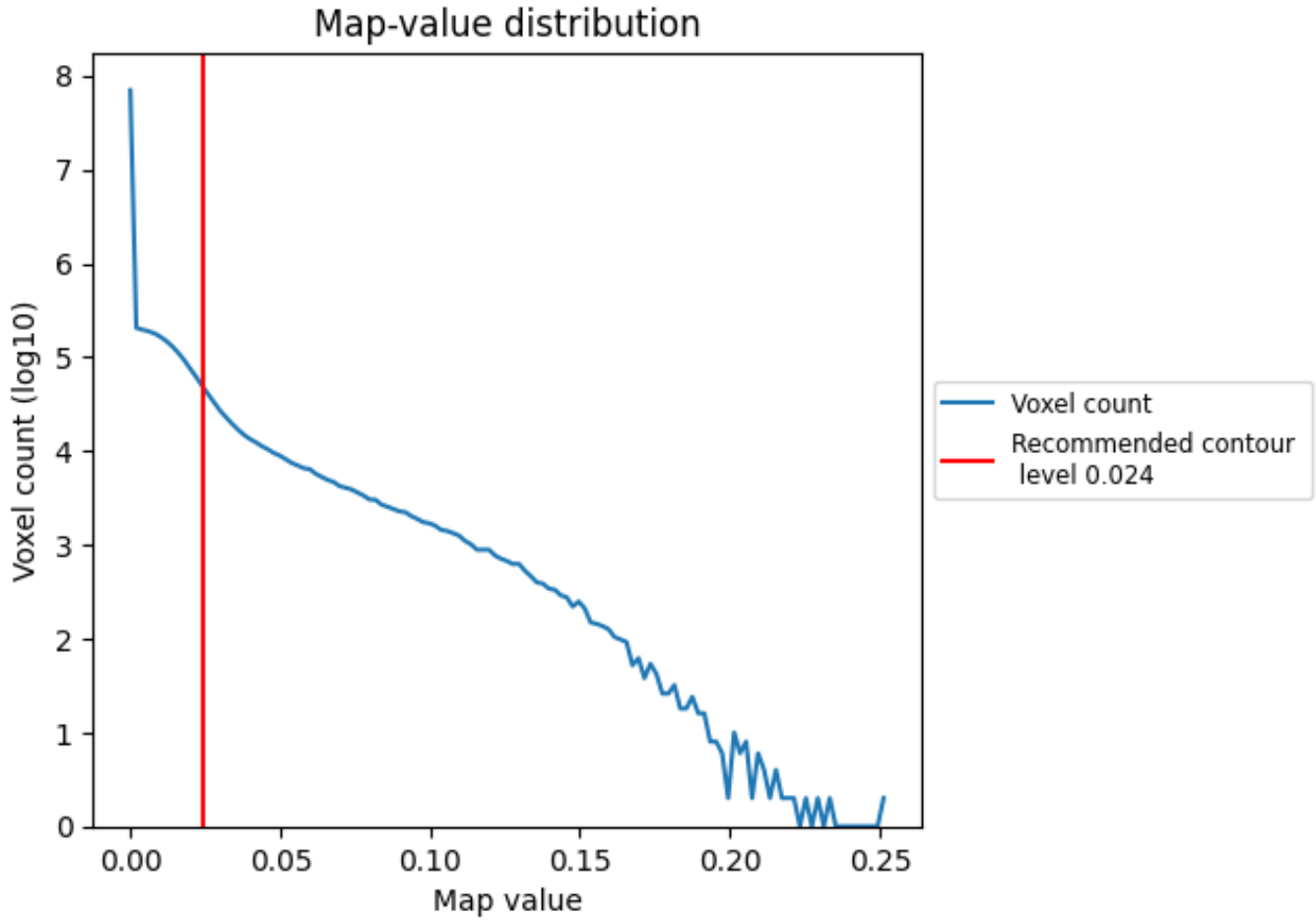
6.6 Mask visualisation (i)

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

7 Map analysis

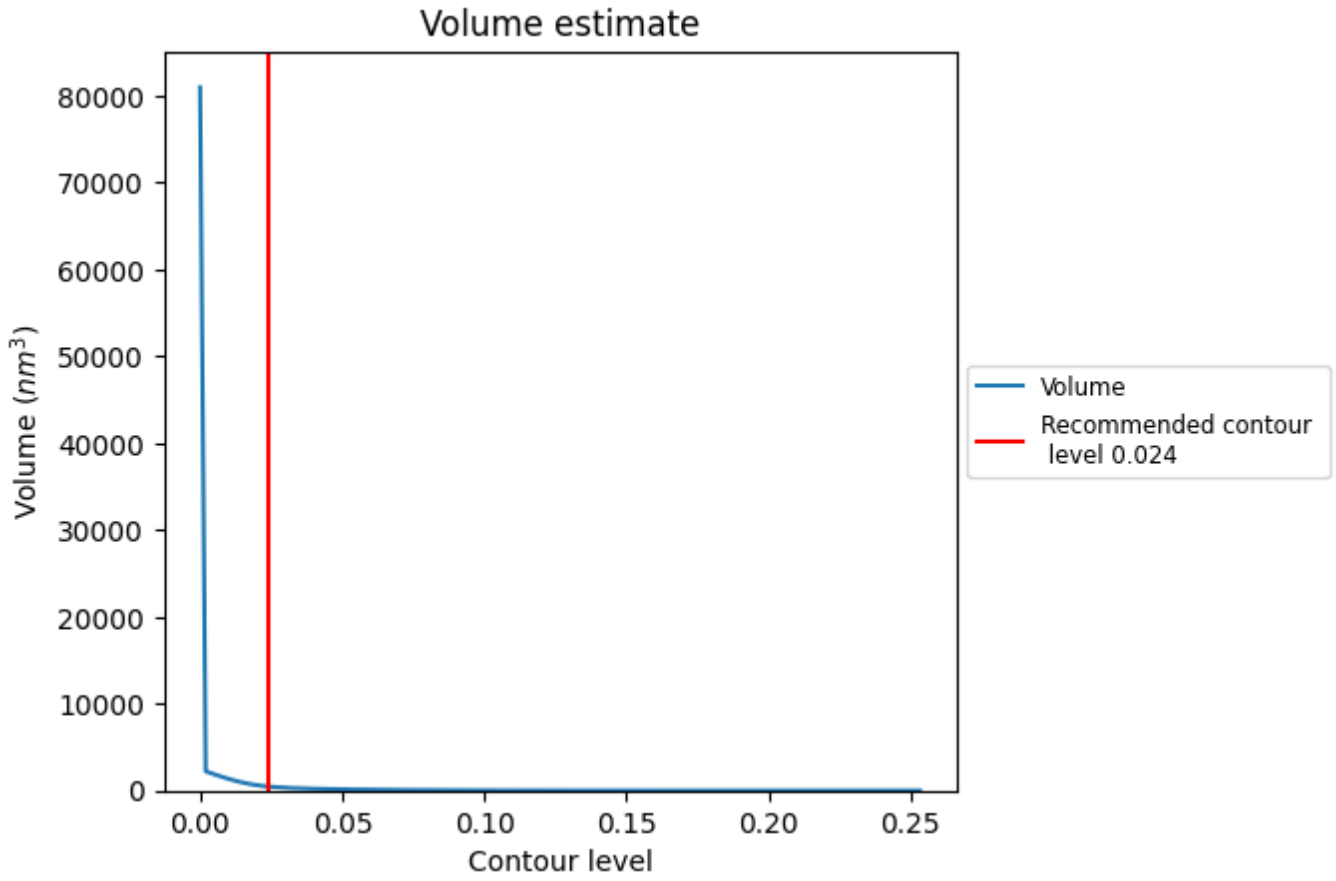
This section contains the results of statistical analysis of the map.

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.

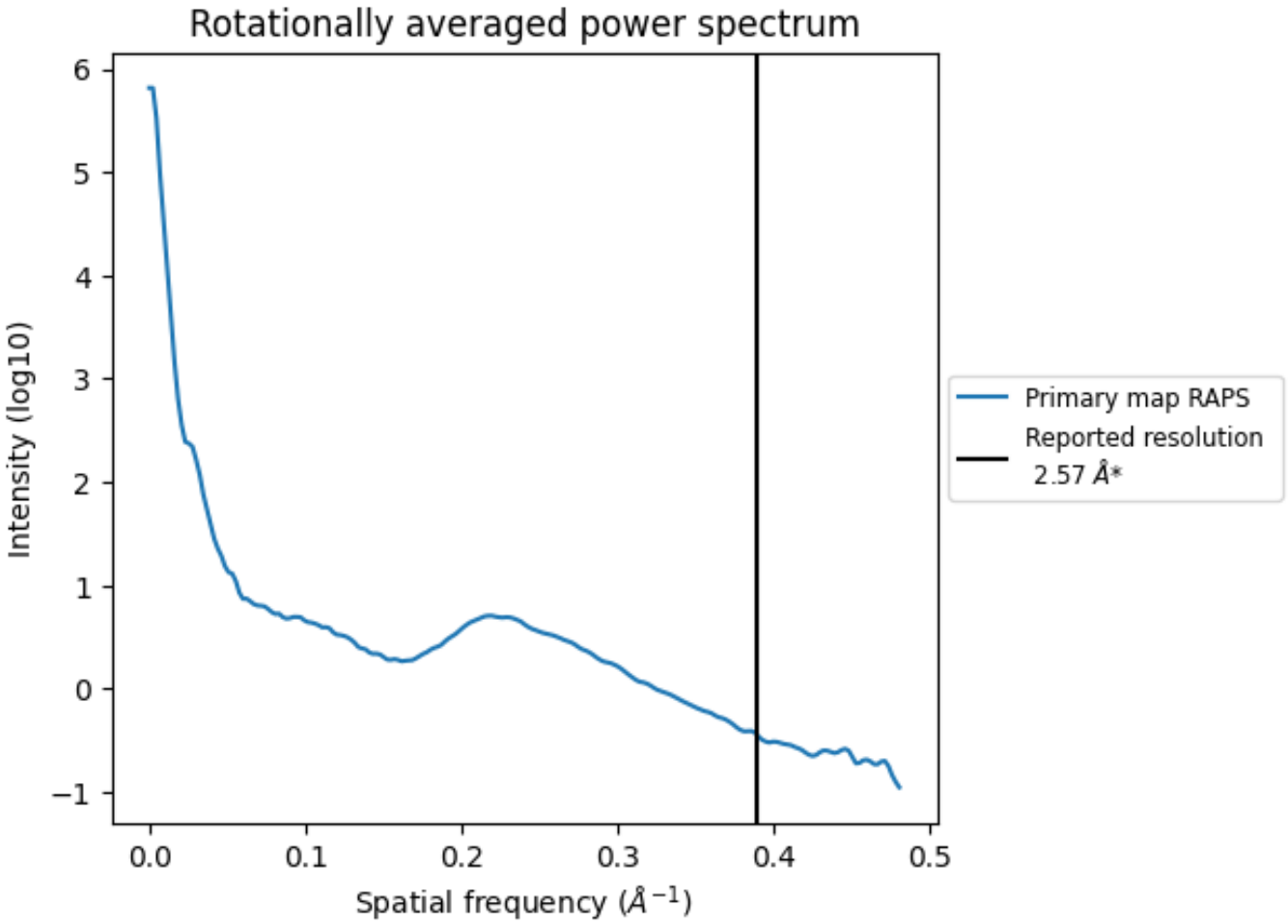
7.2 Volume estimate (i)



The volume at the recommended contour level is 462 nm^3; this corresponds to an approximate mass of 417 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 0.389 Å^{-1}

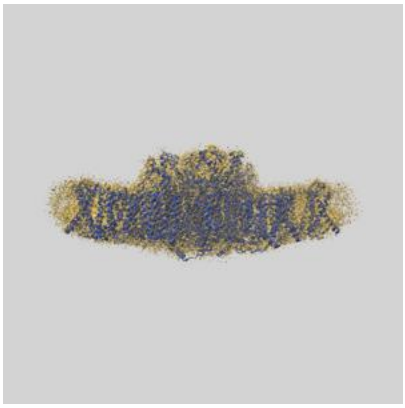
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

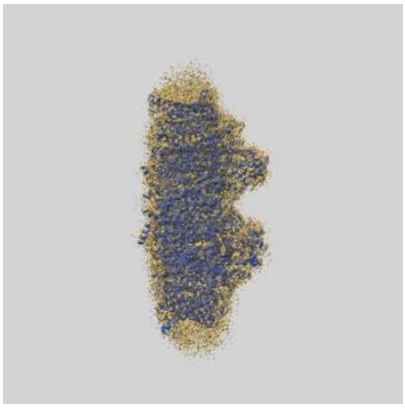
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-38455 and PDB model 8XLP. Per-residue inclusion information can be found in section 3 on page 40.

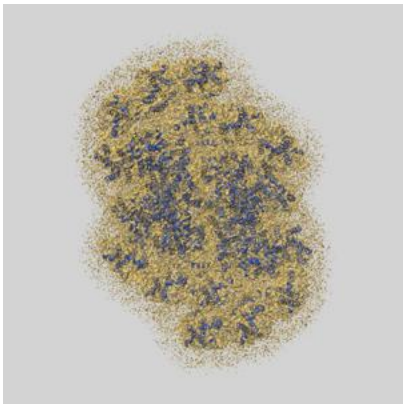
9.1 Map-model overlay



X



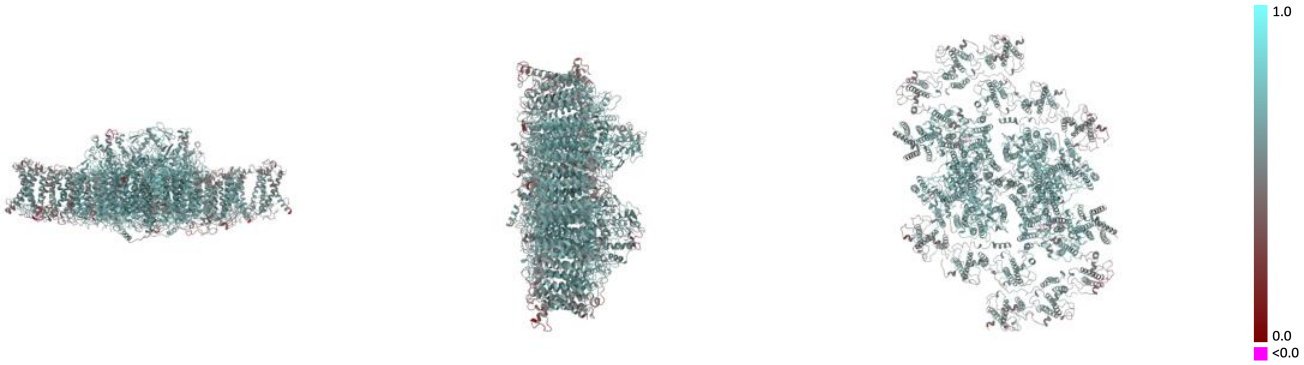
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.024 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.

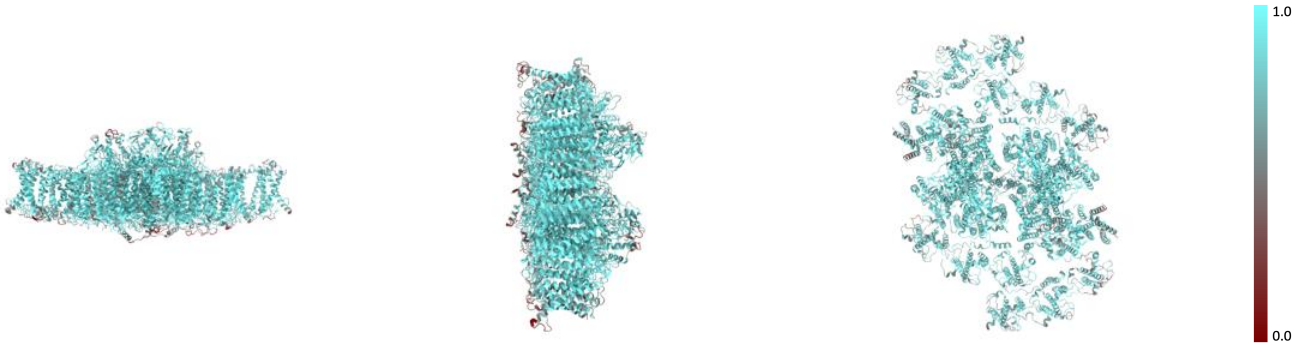
9.2 Q-score mapped to coordinate model



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.

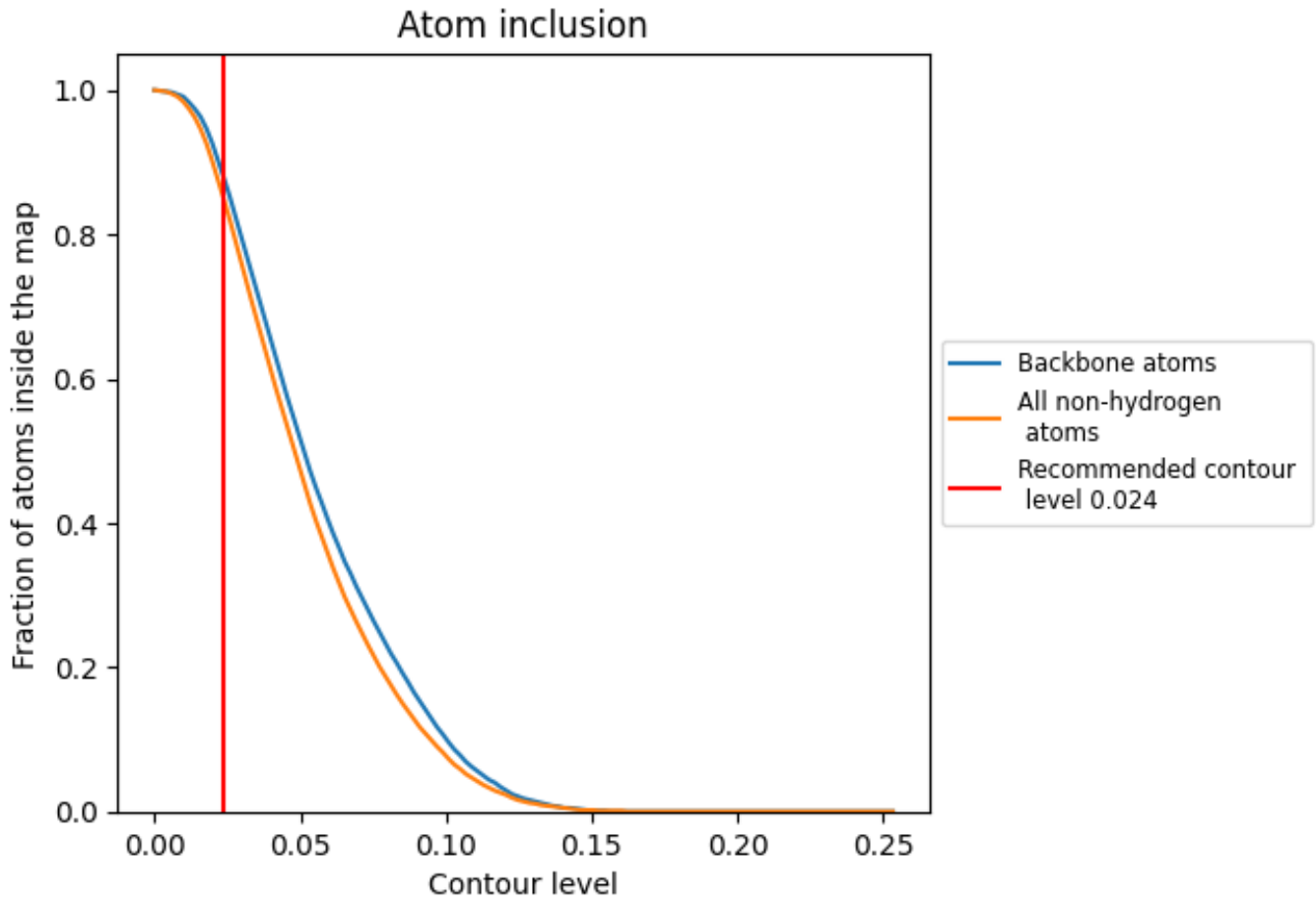
9.3 Atom inclusion mapped to coordinate model



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 (0.024).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 85% 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 (0.024) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8460	0.5980
1	0.7140	0.5020
2	0.8310	0.5580
3	0.8790	0.5930
4	0.7750	0.5350
5	0.7940	0.5290
6	0.6910	0.4620
A	0.9410	0.6790
B	0.9180	0.6570
C	0.8900	0.6360
D	0.9550	0.6820
E	0.7920	0.5820
F	0.7420	0.5460
G	0.7280	0.5440
H	0.9280	0.6440
I	0.9790	0.6960
K	0.8700	0.6110
L	0.9620	0.6660
M	0.8390	0.5970
N	0.6900	0.4630
O	0.8340	0.5610
P	0.8800	0.5980
Q	0.7760	0.5270
R	0.8050	0.5410
S	0.6950	0.4870
T	0.9410	0.6690
W	0.8860	0.6330
X	0.8830	0.6140
Y	0.6100	0.5300
Z	0.6220	0.4910
a	0.9440	0.6800
b	0.9160	0.6570
c	0.8870	0.6360
d	0.9540	0.6820
e	0.7830	0.5780

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Chain	Atom inclusion	Q-score
f	0.7520	0.5470
g	0.7260	0.5500
h	0.9230	0.6430
i	0.9790	0.6900
k	0.8870	0.6100
l	0.9650	0.6690
m	0.8290	0.5940
t	0.9330	0.6710
w	0.8590	0.6060
x	0.8910	0.6090
y	0.5990	0.5230
z	0.6160	0.5020