



wwPDB EM Validation Summary Report ⓘ

May 30, 2024 – 03:07 PM JST

PDB ID : 8WB4
EMDB ID : EMD-37414
Title : Structure of PSII-ACPII supercomplex from cryptophyte algae
Authors : Li, X.Y.; Mao, Z.Y.; Shen, J.R.; Han, G.Y.
Deposited on : 2023-09-08
Resolution : 2.47 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:

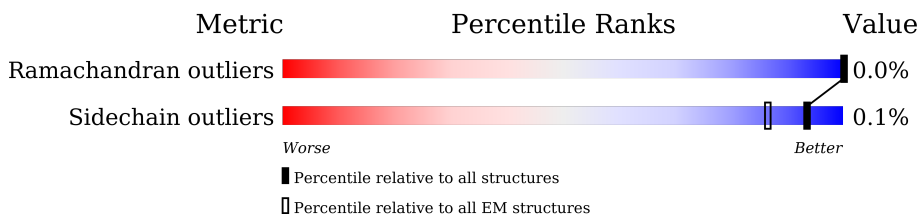
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

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 2.47 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	M	115	
1	m	115	
2	1	235	
2	7	235	
3	2	217	
3	8	217	
4	3	222	
4	9	222	
5	0	226	

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Mol	Chain	Length	Quality of chain
5	4	226	47% 76% 24%
6	5	218	51% 85% 14%
6	p	218	52% 85% 14%
7	6	220	32% 79% 21%
7	P	220	32% 79% 21%
8	A	360	93% 7%
8	a	360	93% 7%
9	D	351	97% .
9	d	351	97% .
10	E	84	13% 92% 8%
10	e	84	14% 92% 8%
11	F	42	71% 29%
11	f	42	71% 29%
12	H	67	97% .
12	h	67	97% .
13	I	38	92% 8%
13	i	38	92% 8%
14	J	39	54% 72% 28%
14	j	39	54% 72% 28%
15	K	45	82% 18%
15	k	45	82% 18%
16	O	330	70% 30%
16	o	330	70% 30%
17	Q	21	100%
17	q	21	100%


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Mol	Chain	Length	Quality of chain
18	R	26	42% 100%
18	r	26	50% 100%
19	S	285	17% 71% 29%
19	s	285	17% 71% 29%
20	T	32	100%
20	t	32	100%
21	U	150	61% 62% 38%
21	u	150	61% 61% 38%
22	V	163	80% 80% 20%
22	v	163	80% 80% 20%
23	X	39	100%
23	x	39	100%
24	Y	34	9% 100%
24	y	34	9% 100%
25	Z	62	95% ..
25	z	62	98% .
26	B	509	99% .
26	b	509	99% .
27	C	461	98% .
27	c	461	98% .
28	G	64	58% 100%
28	g	64	59% 100%
29	L	38	100%
29	l	38	100%
30	W	114	39% 61%

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Mol	Chain	Length	Quality of chain	
30	w	114		

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
32	CLA	0	601	X	-	-	-
32	CLA	0	602	X	-	-	-
32	CLA	0	603	X	-	-	-
32	CLA	0	604	X	-	-	-
32	CLA	0	605	X	-	-	-
32	CLA	0	606	X	-	-	-
32	CLA	0	607	X	-	-	-
32	CLA	0	608	X	-	-	-
32	CLA	0	609	X	-	-	-
32	CLA	0	611	X	-	-	-
32	CLA	0	612	X	-	-	-
32	CLA	0	613	X	-	-	-
32	CLA	1	601	X	-	-	-
32	CLA	1	602	X	-	-	-
32	CLA	1	603	X	-	-	-
32	CLA	1	604	X	-	-	-
32	CLA	1	605	X	-	-	-
32	CLA	1	606	X	-	-	-
32	CLA	1	607	X	-	-	-
32	CLA	1	608	X	-	-	-
32	CLA	1	609	X	-	-	-
32	CLA	1	611	X	-	-	-
32	CLA	1	612	X	-	-	-
32	CLA	1	613	X	-	-	-
32	CLA	2	601	X	-	-	-
32	CLA	2	602	X	-	-	-
32	CLA	2	603	X	-	-	-
32	CLA	2	604	X	-	-	-
32	CLA	2	605	X	-	-	-
32	CLA	2	606	X	-	-	-
32	CLA	2	607	X	-	-	-
32	CLA	2	608	X	-	-	-
32	CLA	2	609	X	-	-	-
32	CLA	2	611	X	-	-	-
32	CLA	2	612	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
32	CLA	3	601	X	-	-	-
32	CLA	3	602	X	-	-	-
32	CLA	3	603	X	-	-	-
32	CLA	3	604	X	-	-	-
32	CLA	3	605	X	-	-	-
32	CLA	3	606	X	-	-	-
32	CLA	3	607	X	-	-	-
32	CLA	3	608	X	-	-	-
32	CLA	3	609	X	-	-	-
32	CLA	3	610	X	-	-	-
32	CLA	3	611	X	-	-	-
32	CLA	4	601	X	-	-	-
32	CLA	4	602	X	-	-	-
32	CLA	4	603	X	-	-	-
32	CLA	4	604	X	-	-	-
32	CLA	4	605	X	-	-	-
32	CLA	4	606	X	-	-	-
32	CLA	4	607	X	-	-	-
32	CLA	4	608	X	-	-	-
32	CLA	4	609	X	-	-	-
32	CLA	4	611	X	-	-	-
32	CLA	4	612	X	-	-	-
32	CLA	4	613	X	-	-	-
32	CLA	5	302	X	-	-	-
32	CLA	5	303	X	-	-	-
32	CLA	5	304	X	-	-	-
32	CLA	5	305	X	-	-	-
32	CLA	5	306	X	-	-	-
32	CLA	5	307	X	-	-	-
32	CLA	5	308	X	-	-	-
32	CLA	5	309	X	-	-	-
32	CLA	5	310	X	-	-	-
32	CLA	5	312	X	-	-	-
32	CLA	5	313	X	-	-	-
32	CLA	6	601	X	-	-	-
32	CLA	6	602	X	-	-	-
32	CLA	6	603	X	-	-	-
32	CLA	6	604	X	-	-	-
32	CLA	6	606	X	-	-	-
32	CLA	6	607	X	-	-	-
32	CLA	6	608	X	-	-	-
32	CLA	6	610	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
32	CLA	6	611	X	-	-	-
32	CLA	7	601	X	-	-	-
32	CLA	7	602	X	-	-	-
32	CLA	7	603	X	-	-	-
32	CLA	7	604	X	-	-	-
32	CLA	7	605	X	-	-	-
32	CLA	7	606	X	-	-	-
32	CLA	7	607	X	-	-	-
32	CLA	7	608	X	-	-	-
32	CLA	7	609	X	-	-	-
32	CLA	7	611	X	-	-	-
32	CLA	7	612	X	-	-	-
32	CLA	7	613	X	-	-	-
32	CLA	8	601	X	-	-	-
32	CLA	8	602	X	-	-	-
32	CLA	8	603	X	-	-	-
32	CLA	8	604	X	-	-	-
32	CLA	8	605	X	-	-	-
32	CLA	8	606	X	-	-	-
32	CLA	8	607	X	-	-	-
32	CLA	8	608	X	-	-	-
32	CLA	8	609	X	-	-	-
32	CLA	8	611	X	-	-	-
32	CLA	8	612	X	-	-	-
32	CLA	9	601	X	-	-	-
32	CLA	9	602	X	-	-	-
32	CLA	9	603	X	-	-	-
32	CLA	9	604	X	-	-	-
32	CLA	9	605	X	-	-	-
32	CLA	9	606	X	-	-	-
32	CLA	9	607	X	-	-	-
32	CLA	9	608	X	-	-	-
32	CLA	9	609	X	-	-	-
32	CLA	9	610	X	-	-	-
32	CLA	9	611	X	-	-	-
32	CLA	A	602	X	-	-	-
32	CLA	A	603	X	-	-	-
32	CLA	A	605	X	-	-	-
32	CLA	B	602	X	-	-	-
32	CLA	B	603	X	-	-	-
32	CLA	B	604	X	-	-	-
32	CLA	B	605	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
32	CLA	B	606	X	-	-	-
32	CLA	B	607	X	-	-	-
32	CLA	B	608	X	-	-	-
32	CLA	B	609	X	-	-	-
32	CLA	B	610	X	-	-	-
32	CLA	B	611	X	-	-	-
32	CLA	B	612	X	-	-	-
32	CLA	B	613	X	-	-	-
32	CLA	B	614	X	-	-	-
32	CLA	B	615	X	-	-	-
32	CLA	B	616	X	-	-	-
32	CLA	B	617	X	-	-	-
32	CLA	C	501	X	-	-	-
32	CLA	C	502	X	-	-	-
32	CLA	C	503	X	-	-	-
32	CLA	C	504	X	-	-	-
32	CLA	C	505	X	-	-	-
32	CLA	C	506	X	-	-	-
32	CLA	C	507	X	-	-	-
32	CLA	C	508	X	-	-	-
32	CLA	C	509	X	-	-	-
32	CLA	C	510	X	-	-	-
32	CLA	C	511	X	-	-	-
32	CLA	C	512	X	-	-	-
32	CLA	C	513	X	-	-	-
32	CLA	D	401	X	-	-	-
32	CLA	D	403	X	-	-	-
32	CLA	D	404	X	-	-	-
32	CLA	G	101	X	-	-	-
32	CLA	P	601	X	-	-	-
32	CLA	P	602	X	-	-	-
32	CLA	P	603	X	-	-	-
32	CLA	P	604	X	-	-	-
32	CLA	P	606	X	-	-	-
32	CLA	P	607	X	-	-	-
32	CLA	P	608	X	-	-	-
32	CLA	P	610	X	-	-	-
32	CLA	P	611	X	-	-	-
32	CLA	S	302	X	-	-	-
32	CLA	S	303	X	-	-	-
32	CLA	a	405	X	-	-	-
32	CLA	a	406	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
32	CLA	a	408	X	-	-	-
32	CLA	b	602	X	-	-	-
32	CLA	b	603	X	-	-	-
32	CLA	b	604	X	-	-	-
32	CLA	b	605	X	-	-	-
32	CLA	b	606	X	-	-	-
32	CLA	b	607	X	-	-	-
32	CLA	b	608	X	-	-	-
32	CLA	b	609	X	-	-	-
32	CLA	b	610	X	-	-	-
32	CLA	b	611	X	-	-	-
32	CLA	b	612	X	-	-	-
32	CLA	b	613	X	-	-	-
32	CLA	b	614	X	-	-	-
32	CLA	b	615	X	-	-	-
32	CLA	b	616	X	-	-	-
32	CLA	b	617	X	-	-	-
32	CLA	c	501	X	-	-	-
32	CLA	c	502	X	-	-	-
32	CLA	c	503	X	-	-	-
32	CLA	c	504	X	-	-	-
32	CLA	c	505	X	-	-	-
32	CLA	c	506	X	-	-	-
32	CLA	c	507	X	-	-	-
32	CLA	c	508	X	-	-	-
32	CLA	c	509	X	-	-	-
32	CLA	c	510	X	-	-	-
32	CLA	c	511	X	-	-	-
32	CLA	c	512	X	-	-	-
32	CLA	c	513	X	-	-	-
32	CLA	d	402	X	-	-	-
32	CLA	d	403	X	-	-	-
32	CLA	d	409	X	-	-	-
32	CLA	g	102	X	-	-	-
32	CLA	p	302	X	-	-	-
32	CLA	p	303	X	-	-	-
32	CLA	p	304	X	-	-	-
32	CLA	p	305	X	-	-	-
32	CLA	p	306	X	-	-	-
32	CLA	p	307	X	-	-	-
32	CLA	p	308	X	-	-	-
32	CLA	p	309	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
32	CLA	p	310	X	-	-	-
32	CLA	p	312	X	-	-	-
32	CLA	p	313	X	-	-	-
32	CLA	s	302	X	-	-	-
32	CLA	s	303	X	-	-	-

2 Entry composition [i](#)

There are 47 unique types of molecules in this entry. The entry contains 80246 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 reaction center M.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
1	m	36	265	175	42	48	0	0
1	M	36	265	175	42	48	0	0

- Molecule 2 is a protein called ACPII-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	194	1472	946	256	262	8	0	0
2	7	194	1472	946	256	262	8	0	0

- Molecule 3 is a protein called ACPII-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	173	1362	899	222	238	3	0	0
3	8	173	1362	899	222	238	3	0	0

- Molecule 4 is a protein called ACPII-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	178	1371	885	230	247	9	0	0
4	9	178	1371	885	230	247	9	0	0

- Molecule 5 is a protein called ACPII-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	172	Total	C	N	O	S	0	0
			1308	845	225	229	9		
5	0	172	Total	C	N	O	S	0	0
			1308	845	225	229	9		

- Molecule 6 is a protein called ACPII-5.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	5	187	Total	C	N	O	S	0	0
			1471	956	243	267	5		
6	p	187	Total	C	N	O	S	0	0
			1471	956	243	267	5		

- Molecule 7 is a protein called ACPII-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	173	Total	C	N	O	S	0	0
			1344	878	221	237	8		
7	P	173	Total	C	N	O	S	0	0
			1344	878	221	237	8		

- Molecule 8 is a protein called Photosystem II protein D1.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	334	Total	C	N	O	S	0	0
			2618	1712	430	464	12		
8	a	334	Total	C	N	O	S	0	0
			2618	1712	430	464	12		

- Molecule 9 is a protein called Photosystem II D2 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	342	Total	C	N	O	S	0	0
			2713	1794	444	463	12		
9	d	342	Total	C	N	O	S	0	0
			2713	1794	444	463	12		

- Molecule 10 is a protein called Cytochrome b559 subunit alpha.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	E	77	Total	C	N	O	0	0
			629	409	104	116		

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Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	e	77	629	409	104	116	0	0

- Molecule 11 is a protein called Cytochrome b559 subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	F	30	247	168	41	37	1	0	0
11	f	30	247	168	41	37	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	H	65	515	344	81	88	2	0	0
12	h	65	515	344	81	88	2	0	0

- Molecule 13 is a protein called Photosystem II reaction center protein I.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	I	35	287	191	46	49	1	0	0
13	i	35	287	191	46	49	1	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	J	28	214	147	32	35	0	0
14	j	28	214	147	32	35	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
15	K	37	297	209	44	44	0	0
15	k	37	297	209	44	44	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	O	231	Total 1749	C 1103	N 282	O 358	S 6	0	0
16	o	231	Total 1749	C 1103	N 282	O 358	S 6	0	0

- Molecule 17 is a protein called Photosystem II reaction center protein Q.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	Q	21	Total 105	C 63	N 21	O 21	0	0
17	q	21	Total 105	C 63	N 21	O 21	0	0

- Molecule 18 is a protein called Photosystem II reaction center protein R.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	R	26	Total 130	C 78	N 26	O 26	0	0
18	r	26	Total 130	C 78	N 26	O 26	0	0

- Molecule 19 is a protein called CCP-II-S.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	S	203	Total 1563	C 1005	N 255	O 299	S 4	0	0
19	s	203	Total 1563	C 1005	N 255	O 299	S 4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	T	32	Total 260	C 179	N 40	O 40	S 1	0	0
20	t	32	Total 260	C 179	N 40	O 40	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	93	Total	C	N	O	S	0	0
			742	476	122	142	2		
21	u	93	Total	C	N	O	S	0	0
			742	476	122	142	2		

- Molecule 22 is a protein called Photosystem II cytochrome c550.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	131	Total	C	N	O	S	0	0
			996	626	170	196	4		
22	v	131	Total	C	N	O	S	0	0
			996	626	170	196	4		

- Molecule 23 is a protein called Photosystem II reaction center X protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	39	Total	C	N	O	S	0	0
			292	192	47	52	1		
23	x	39	Total	C	N	O	S	0	0
			292	192	47	52	1		

- Molecule 24 is a protein called Photosystem II reaction center protein Ycf12.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	34	Total	C	N	O	S	0	0
			266	180	43	42	1		
24	y	34	Total	C	N	O	S	0	0
			266	180	43	42	1		

- Molecule 25 is a protein called Photosystem II reaction center protein Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	61	Total	C	N	O	S	0	0
			457	315	67	74	1		
25	z	61	Total	C	N	O	S	0	0
			457	315	67	74	1		

- Molecule 26 is a protein called Photosystem II CP47 reaction center protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b	504	Total	C	N	O	S	0	0
			3962	2587	676	688	11		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	B	504	3962	2587	676	688	11	0	0

- Molecule 27 is a protein called Photosystem II CP43 reaction center protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	c	451	3504	2290	589	615	10	0	0
27	C	451	3504	2290	589	615	10	0	0

- Molecule 28 is a protein called Photosystem II reaction center protein G.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
28	g	64	320	192	64	64	0	0
28	G	64	320	192	64	64	0	0

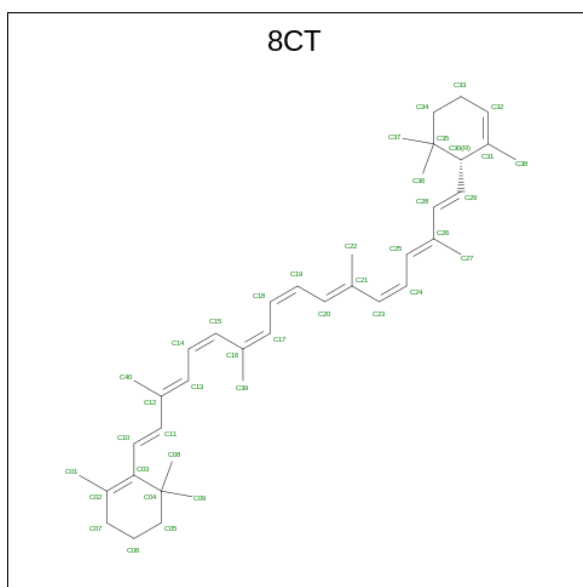
- Molecule 29 is a protein called Photosystem II reaction center protein L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	l	38	310	209	48	52	1	0	0
29	L	38	310	209	48	52	1	0	0

- Molecule 30 is a protein called Photosystem II reaction center protein W.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
30	w	45	367	238	57	72	0	0
30	W	45	367	238	57	72	0	0

- Molecule 31 is (6'R,11cis,11'cis,13cis,15cis)-4',5'-didehydro-5',6'-dihydro-beta,beta-carotene (three-letter code: 8CT) (formula: C₄₀H₅₆) (labeled as "Ligand of Interest" by depositor).



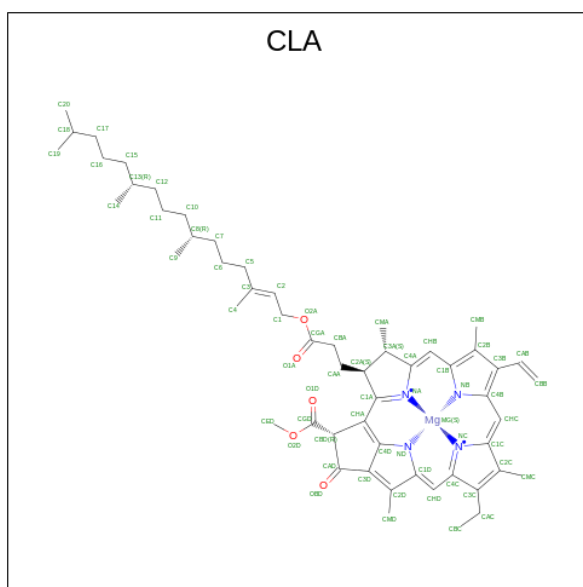
Mol	Chain	Residues	Atoms	AltConf
31	M	1	Total C 40 40	0
31	3	1	Total C 40 40	0
31	6	1	Total C 40 40	0
31	A	1	Total C 40 40	0
31	D	1	Total C 40 40	0
31	H	1	Total C 40 40	0
31	K	1	Total C 40 40	0
31	K	1	Total C 40 40	0
31	Z	1	Total C 40 40	0
31	b	1	Total C 40 40	0
31	b	1	Total C 40 40	0
31	c	1	Total C 40 40	0
31	d	1	Total C 40 40	0
31	k	1	Total C 40 40	0

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Mol	Chain	Residues	Atoms	AltConf
31	k	1	Total C 40 40	0
31	z	1	Total C 40 40	0
31	9	1	Total C 40 40	0
31	C	1	Total C 40 40	0
31	P	1	Total C 40 40	0
31	a	1	Total C 40 40	0
31	h	1	Total C 40 40	0
31	B	1	Total C 40 40	0
31	B	1	Total C 40 40	0
31	B	1	Total C 40 40	0

- Molecule 32 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
32	1	1	Total C Mg N O 42 34 1 4 3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	1	1	59	49	1	4	5	0
32	1	1	50	40	1	4	5	0
32	1	1	55	45	1	4	5	0
32	1	1	50	40	1	4	5	0
32	1	1	45	35	1	4	5	0
32	1	1	45	35	1	4	5	0
32	1	1	60	50	1	4	5	0
32	1	1	41	33	1	4	3	0
32	1	1	45	35	1	4	5	0
32	1	1	45	35	1	4	5	0
32	1	1	45	35	1	4	5	0
32	2	1	42	34	1	4	3	0
32	2	1	59	49	1	4	5	0
32	2	1	50	40	1	4	5	0
32	2	1	55	45	1	4	5	0
32	2	1	60	50	1	4	5	0
32	2	1	45	35	1	4	5	0
32	2	1	45	35	1	4	5	0
32	2	1	60	50	1	4	5	0
32	2	1	41	33	1	4	3	0
32	2	1	45	35	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	2	1	45	35	1	4	5	0
32	3	1	42	34	1	4	3	0
32	3	1	59	49	1	4	5	0
32	3	1	50	40	1	4	5	0
32	3	1	55	45	1	4	5	0
32	3	1	46	36	1	4	5	0
32	3	1	45	35	1	4	5	0
32	3	1	60	50	1	4	5	0
32	3	1	41	33	1	4	3	0
32	3	1	60	50	1	4	5	0
32	3	1	45	35	1	4	5	0
32	3	1	45	35	1	4	5	0
32	4	1	42	34	1	4	3	0
32	4	1	59	49	1	4	5	0
32	4	1	50	40	1	4	5	0
32	4	1	55	45	1	4	5	0
32	4	1	50	40	1	4	5	0
32	4	1	45	35	1	4	5	0
32	4	1	45	35	1	4	5	0
32	4	1	60	50	1	4	5	0
32	4	1	41	33	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	4	1	45	35	1	4	5	0
32	4	1	45	35	1	4	5	0
32	4	1	45	35	1	4	5	0
32	5	1	42	34	1	4	3	0
32	5	1	59	49	1	4	5	0
32	5	1	50	40	1	4	5	0
32	5	1	55	45	1	4	5	0
32	5	1	60	50	1	4	5	0
32	5	1	45	35	1	4	5	0
32	5	1	45	35	1	4	5	0
32	5	1	60	50	1	4	5	0
32	5	1	41	33	1	4	3	0
32	5	1	45	35	1	4	5	0
32	5	1	45	35	1	4	5	0
32	6	1	42	34	1	4	3	0
32	6	1	59	49	1	4	5	0
32	6	1	50	40	1	4	5	0
32	6	1	55	45	1	4	5	0
32	6	1	45	35	1	4	5	0
32	6	1	60	50	1	4	5	0
32	6	1	41	33	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	6	1	45	35	1	4	5	0
32	6	1	45	35	1	4	5	0
32	A	1	65	55	1	4	5	0
32	A	1	49	39	1	4	5	0
32	A	1	60	50	1	4	5	0
32	D	1	59	49	1	4	5	0
32	D	1	57	47	1	4	5	0
32	D	1	60	50	1	4	5	0
32	S	1	45	35	1	4	5	0
32	S	1	65	55	1	4	5	0
32	b	1	47	37	1	4	5	0
32	b	1	61	52	1	4	4	0
32	b	1	64	54	1	4	5	0
32	b	1	61	51	1	4	5	0
32	b	1	65	55	1	4	5	0
32	b	1	65	55	1	4	5	0
32	b	1	41	33	1	4	3	0
32	b	1	65	55	1	4	5	0
32	b	1	65	55	1	4	5	0
32	b	1	65	55	1	4	5	0
32	b	1	65	55	1	4	5	0
32	b	1	64	54	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	b	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	b	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	b	1	Total 64	C 54	Mg 1	N 4	O 5	0
32	b	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	b	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 64	C 54	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 64	C 54	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 45	C 35	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	c	1	Total 57	C 47	Mg 1	N 4	O 5	0
32	c	1	Total 49	C 39	Mg 1	N 4	O 5	0
32	d	1	Total 57	C 47	Mg 1	N 4	O 5	0
32	d	1	Total 60	C 50	Mg 1	N 4	O 5	0
32	d	1	Total 59	C 49	Mg 1	N 4	O 5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	g	1	45	35	1	4	5	0
32	0	1	42	34	1	4	3	0
32	0	1	59	49	1	4	5	0
32	0	1	50	40	1	4	5	0
32	0	1	55	45	1	4	5	0
32	0	1	50	40	1	4	5	0
32	0	1	45	35	1	4	5	0
32	0	1	45	35	1	4	5	0
32	0	1	60	50	1	4	5	0
32	0	1	41	33	1	4	3	0
32	0	1	45	35	1	4	5	0
32	0	1	45	35	1	4	5	0
32	0	1	45	35	1	4	5	0
32	7	1	42	34	1	4	3	0
32	7	1	59	49	1	4	5	0
32	7	1	50	40	1	4	5	0
32	7	1	55	45	1	4	5	0
32	7	1	50	40	1	4	5	0
32	7	1	45	35	1	4	5	0
32	7	1	45	35	1	4	5	0
32	7	1	60	50	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	7	1	41	33	1	4	3	0
32	7	1	45	35	1	4	5	0
32	7	1	45	35	1	4	5	0
32	7	1	45	35	1	4	5	0
32	8	1	42	34	1	4	3	0
32	8	1	59	49	1	4	5	0
32	8	1	50	40	1	4	5	0
32	8	1	55	45	1	4	5	0
32	8	1	60	50	1	4	5	0
32	8	1	45	35	1	4	5	0
32	8	1	45	35	1	4	5	0
32	8	1	60	50	1	4	5	0
32	8	1	41	33	1	4	3	0
32	8	1	45	35	1	4	5	0
32	8	1	45	35	1	4	5	0
32	9	1	42	34	1	4	3	0
32	9	1	59	49	1	4	5	0
32	9	1	50	40	1	4	5	0
32	9	1	55	45	1	4	5	0
32	9	1	46	36	1	4	5	0
32	9	1	45	35	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	9	1	Total 60	C 50	Mg 1	N 4	O 5	0
32	9	1	Total 41	C 33	Mg 1	N 4	O 3	0
32	9	1	Total 60	C 50	Mg 1	N 4	O 5	0
32	9	1	Total 45	C 35	Mg 1	N 4	O 5	0
32	9	1	Total 45	C 35	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 64	C 54	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 64	C 54	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 45	C 35	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 65	C 55	Mg 1	N 4	O 5	0
32	C	1	Total 57	C 47	Mg 1	N 4	O 5	0
32	C	1	Total 49	C 39	Mg 1	N 4	O 5	0
32	G	1	Total 45	C 35	Mg 1	N 4	O 5	0
32	P	1	Total 42	C 34	Mg 1	N 4	O 3	0
32	P	1	Total 59	C 49	Mg 1	N 4	O 5	0

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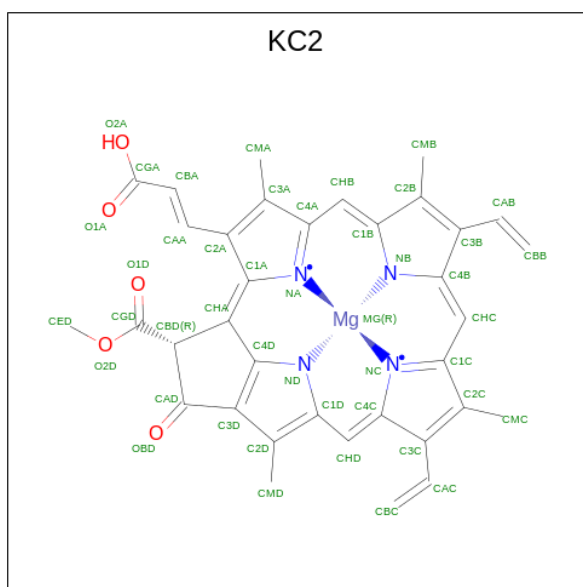
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	P	1	50	40	1	4	5	0
32	P	1	55	45	1	4	5	0
32	P	1	45	35	1	4	5	0
32	P	1	60	50	1	4	5	0
32	P	1	41	33	1	4	3	0
32	P	1	45	35	1	4	5	0
32	P	1	45	35	1	4	5	0
32	a	1	65	55	1	4	5	0
32	a	1	49	39	1	4	5	0
32	a	1	60	50	1	4	5	0
32	p	1	42	34	1	4	3	0
32	p	1	59	49	1	4	5	0
32	p	1	50	40	1	4	5	0
32	p	1	55	45	1	4	5	0
32	p	1	60	50	1	4	5	0
32	p	1	45	35	1	4	5	0
32	p	1	45	35	1	4	5	0
32	p	1	60	50	1	4	5	0
32	p	1	41	33	1	4	3	0
32	p	1	45	35	1	4	5	0
32	p	1	45	35	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
32	s	1	45	35	1	4	5	0
32	s	1	65	55	1	4	5	0
32	B	1	47	37	1	4	5	0
32	B	1	61	52	1	4	4	0
32	B	1	64	54	1	4	5	0
32	B	1	61	51	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	41	33	1	4	3	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	64	54	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	64	54	1	4	5	0
32	B	1	65	55	1	4	5	0
32	B	1	65	55	1	4	5	0

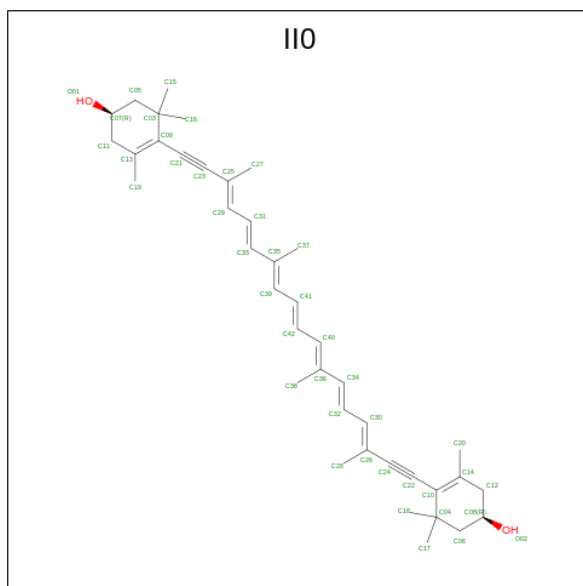
- Molecule 33 is Chlorophyll c2 (three-letter code: KC2) (formula: $C_{35}H_{28}MgN_4O_5$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf	
33	1	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	2	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	4	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	5	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	6	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	6	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	0	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	7	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	8	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	P	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	P	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
33	p	1	Total	C	Mg	N	O	0
			45	35	1	4	5	

- Molecule 34 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]octadec a-3,5,7,9,11,13,15-heptaen-1,17-diynyl]cyclohex-3-en-1-ol (three-letter code: II0) (formula:

C₄₀H₅₂O₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
34	1	1	Total	C	O	0
			42	40	2	
34	1	1	Total	C	O	0
			42	40	2	
34	1	1	Total	C	O	0
			42	40	2	
34	1	1	Total	C	O	0
			42	40	2	
34	2	1	Total	C	O	0
			42	40	2	
34	2	1	Total	C	O	0
			42	40	2	
34	2	1	Total	C	O	0
			42	40	2	
34	3	1	Total	C	O	0
			42	40	2	
34	3	1	Total	C	O	0
			42	40	2	
34	3	1	Total	C	O	0
			42	40	2	
34	4	1	Total	C	O	0
			42	40	2	
34	4	1	Total	C	O	0
			42	40	2	

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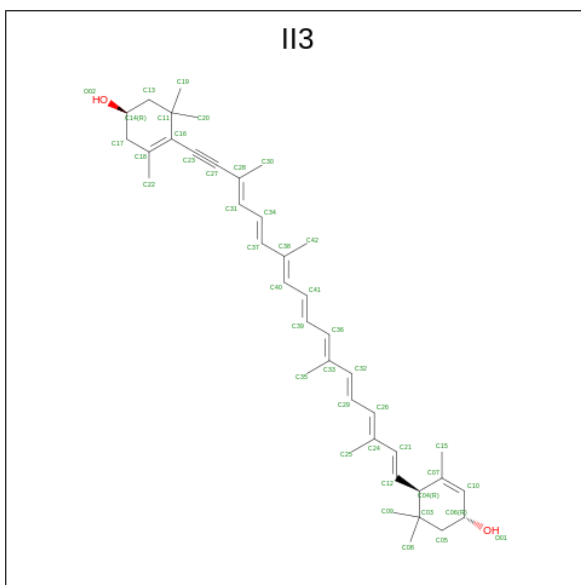
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
34	4	1	42	40	2	0
34	5	1	42	40	2	0
34	5	1	42	40	2	0
34	5	1	42	40	2	0
34	5	1	42	40	2	0
34	5	1	42	40	2	0
34	5	1	42	40	2	0
34	6	1	42	40	2	0
34	6	1	42	40	2	0
34	0	1	42	40	2	0
34	0	1	42	40	2	0
34	0	1	42	40	2	0
34	0	1	42	40	2	0
34	0	1	42	40	2	0
34	7	1	42	40	2	0
34	7	1	42	40	2	0
34	7	1	42	40	2	0
34	7	1	42	40	2	0
34	8	1	42	40	2	0
34	8	1	42	40	2	0
34	8	1	42	40	2	0
34	8	1	42	40	2	0
34	9	1	42	40	2	0

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Mol	Chain	Residues	Atoms			AltConf
34	9	1	Total	C	O	0
			42	40	2	
34	9	1	Total	C	O	0
			42	40	2	
34	P	1	Total	C	O	0
			42	40	2	
34	P	1	Total	C	O	0
			42	40	2	
34	p	1	Total	C	O	0
			42	40	2	
34	p	1	Total	C	O	0
			42	40	2	
34	p	1	Total	C	O	0
			42	40	2	

- Molecule 35 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-[(1 {R},4 {R})-2,6,6-trimethyl-4-oxidanyl-cyclohex-2-en-1-yl]octadeca-3,5,7,9,11,13,15,17-octaeen-1-ynyl]cyclohex-3-en-1-ol (three-letter code: II3) (formula: C₄₀H₅₄O₂) (labeled as "Ligand of Interest" by depositor).



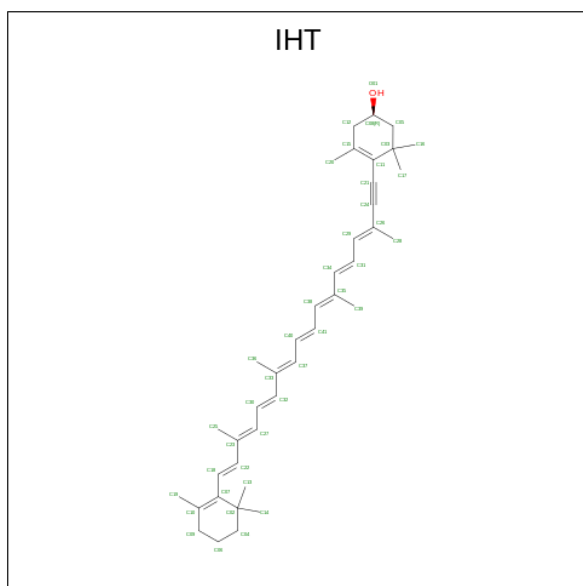
Mol	Chain	Residues	Atoms			AltConf
35	1	1	Total	C	O	0
			42	40	2	
35	6	1	Total	C	O	0
			42	40	2	

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Mol	Chain	Residues	Atoms			AltConf
35	7	1	Total	C	O	0
			42	40	2	
35	P	1	Total	C	O	0
			42	40	2	

- Molecule 36 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: C₄₀H₅₄O) (labeled as "Ligand of Interest" by depositor).



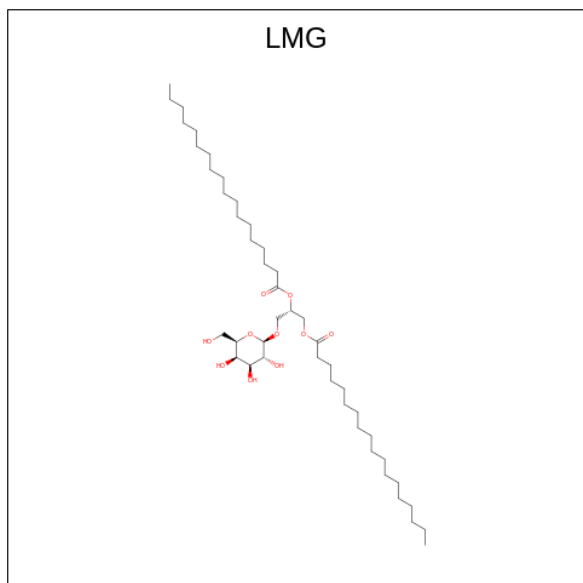
Mol	Chain	Residues	Atoms			AltConf
36	1	1	Total	C	O	0
			41	40	1	
36	2	1	Total	C	O	0
			41	40	1	
36	4	1	Total	C	O	0
			41	40	1	
36	4	1	Total	C	O	0
			41	40	1	
36	5	1	Total	C	O	0
			41	40	1	
36	0	1	Total	C	O	0
			41	40	1	
36	0	1	Total	C	O	0
			41	40	1	
36	7	1	Total	C	O	0
			41	40	1	

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Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
36	8	1	41	40	1	0
36	p	1	41	40	1	0

- Molecule 37 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$) (labeled as "Ligand of Interest" by depositor).



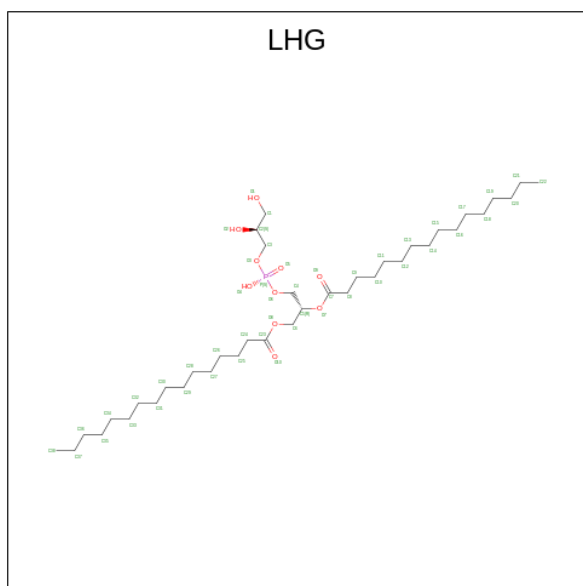
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
37	2	1	36	26	10	0
37	4	1	36	26	10	0
37	6	1	28	18	10	0
37	A	1	48	38	10	0
37	D	1	46	36	10	0
37	D	1	40	30	10	0
37	b	1	51	41	10	0
37	c	1	46	36	10	0
37	d	1	40	30	10	0

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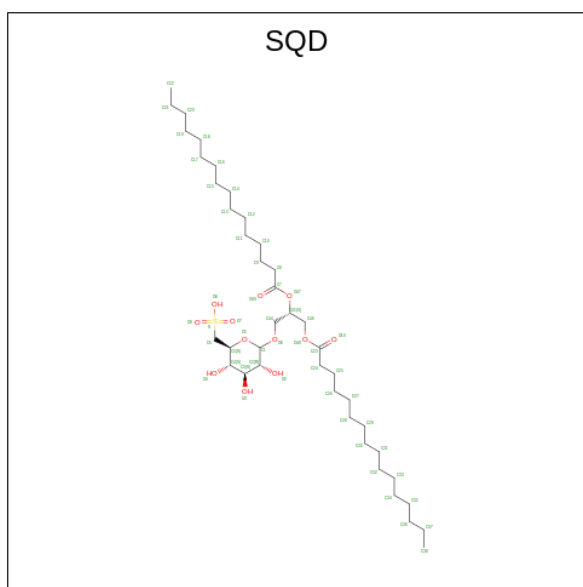
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
37	d	1	46	36	10	0
37	g	1	28	18	10	0
37	l	1	40	30	10	0
37	o	1	36	26	10	0
37	8	1	36	26	10	0
37	C	1	46	36	10	0
37	G	1	28	18	10	0
37	L	1	40	30	10	0
37	P	1	28	18	10	0
37	a	1	48	38	10	0
37	B	1	51	41	10	0

- Molecule 38 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$) (labeled as "Ligand of Interest" by depositor).



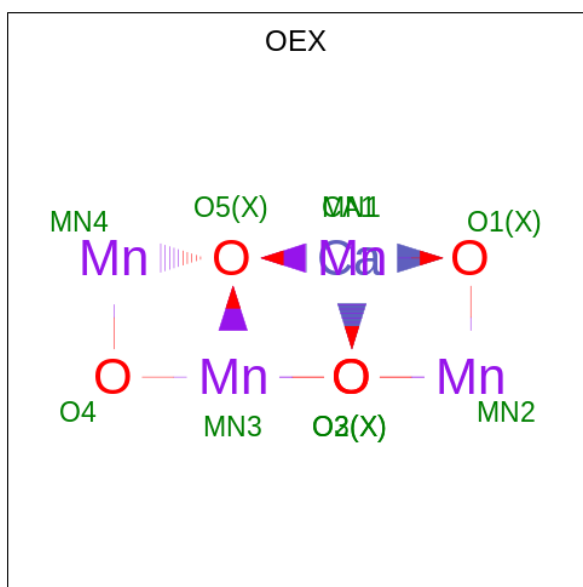
Mol	Chain	Residues	Atoms				AltConf
38	2	1	Total	C	O	P	0
			22	12	9	1	
38	A	1	Total	C	O	P	0
			43	32	10	1	
38	A	1	Total	C	O	P	0
			49	38	10	1	
38	D	1	Total	C	O	P	0
			48	38	9	1	
38	D	1	Total	C	O	P	0
			32	21	10	1	
38	S	1	Total	C	O	P	0
			37	26	10	1	
38	b	1	Total	C	O	P	0
			39	28	10	1	
38	b	1	Total	C	O	P	0
			39	28	10	1	
38	d	1	Total	C	O	P	0
			48	38	9	1	
38	d	1	Total	C	O	P	0
			32	21	10	1	
38	l	1	Total	C	O	P	0
			49	38	10	1	
38	8	1	Total	C	O	P	0
			22	12	9	1	
38	L	1	Total	C	O	P	0
			49	38	10	1	
38	a	1	Total	C	O	P	0
			43	32	10	1	
38	a	1	Total	C	O	P	0
			49	38	10	1	
38	s	1	Total	C	O	P	0
			37	26	10	1	
38	B	1	Total	C	O	P	0
			39	28	10	1	
38	B	1	Total	C	O	P	0
			39	28	10	1	

- Molecule 39 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: C₄₁H₇₈O₁₂S) (labeled as "Ligand of Interest" by depositor).



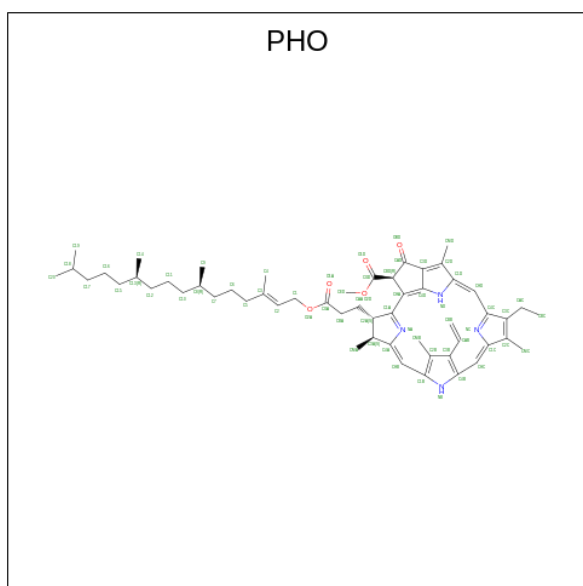
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	S	
39	5	1	35	22	12	1	0
39	A	1	54	41	12	1	0
39	b	1	48	35	12	1	0
39	b	1	54	41	12	1	0
39	a	1	54	41	12	1	0
39	p	1	35	22	12	1	0
39	B	1	48	35	12	1	0
39	B	1	54	41	12	1	0

- Molecule 40 is CA-MN4-O5 CLUSTER (three-letter code: OEX) (formula: CaMn_4O_5) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 41 is PHEOPHYTIN A (three-letter code: PHO) (formula: $C_{55}H_{74}N_4O_5$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
41	A	1	64	55	4	5	0

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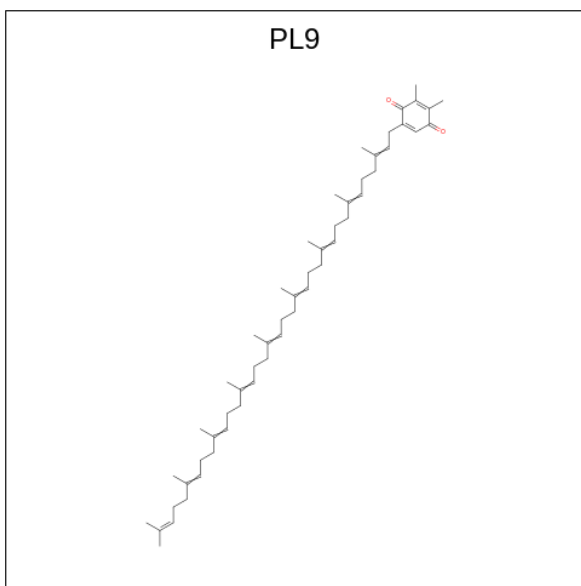
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
41	D	1	Total 64	C 55	N 4	O 5	0
41	d	1	Total 64	C 55	N 4	O 5	0
41	a	1	Total 64	C 55	N 4	O 5	0

- Molecule 42 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		AltConf
			Total	Cl	
42	A	1	Total 1	Cl 1	0
42	a	1	Total 1	Cl 1	0

- Molecule 43 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: C₅₃H₈₀O₂) (labeled as "Ligand of Interest" by depositor).



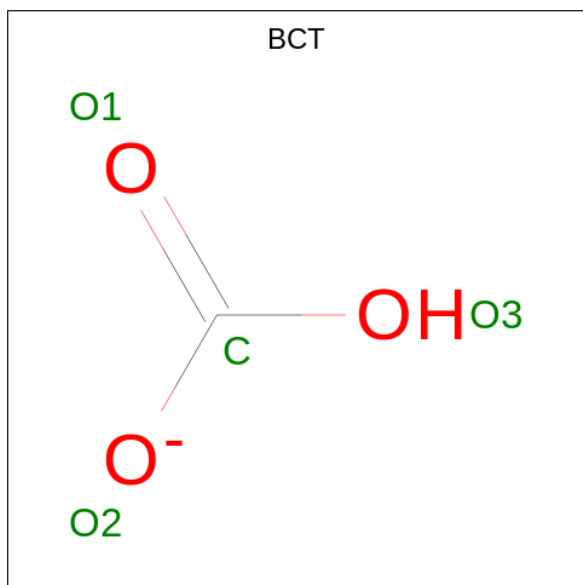
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
43	A	1	Total 13	C 11	O 2	0
43	D	1	Total 55	C 53	O 2	0
43	d	1	Total 55	C 53	O 2	0

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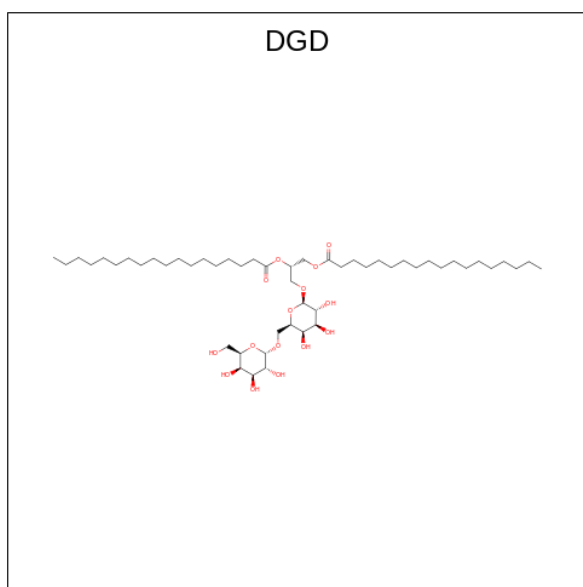
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
43	a	1	13	11	2	0

- Molecule 44 is BICARBONATE ION (three-letter code: BCT) (formula: CHO_3) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 45 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $\text{C}_{51}\text{H}_{96}\text{O}_{15}$) (labeled as "Ligand of Interest" by depositor).

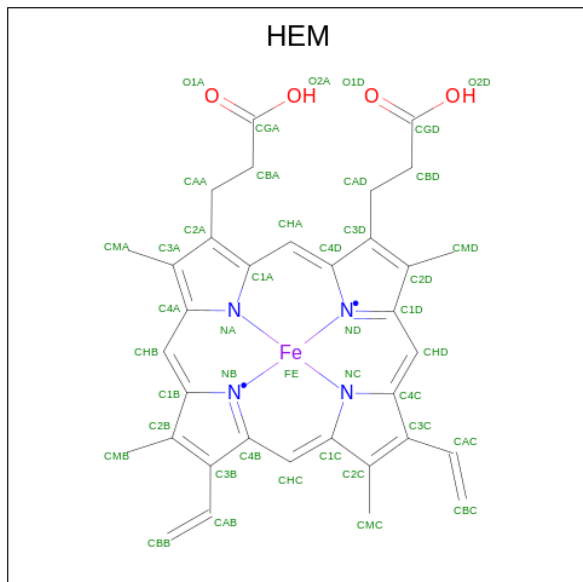


Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
45	A	1	53	39	14	0
45	H	1	62	47	15	0
45	c	1	55	40	15	0
45	c	1	56	41	15	0
45	c	1	55	40	15	0
45	C	1	55	40	15	0
45	C	1	56	41	15	0
45	C	1	55	40	15	0
45	a	1	53	39	14	0
45	h	1	62	47	15	0

- Molecule 46 is FE (II) ION (three-letter code: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms		AltConf
			Total	Fe	
46	D	1	1	1	0
46	d	1	1	1	0

- Molecule 47 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	Fe	N		O
47	E	1	Total 43	C 34	Fe 1	N 4	O 4	0
47	V	1	Total 43	C 34	Fe 1	N 4	O 4	0
47	f	1	Total 43	C 34	Fe 1	N 4	O 4	0
47	v	1	Total 43	C 34	Fe 1	N 4	O 4	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 reaction center M

Chain m:  31% 69%

MET GLN ARG LEU LEU ALA ALA VAL LEU LEU ALA ALA THR THR ILE ILE MET MET SER SER ALA ALA PHE PHE ALA ALA PRO PRO THR THR ALA ALA LEU LEU THR THR GLY LEU ARG ARG GLN GLN ALA ALA PRO LEU LEU CYS SER SER GLY ASN LYS LEU SER SER ALA ALA CYS ARG ALA ALA PRO PRO ARG ARG ALA ALA LYS LYS PRO PRO MET MET MET MET LEU LEU ALA ALA THR THR

THR ASN GLN ALA MET LEU LEU ALA ALA GLU GLY THR MET MET T108 GLY SER LEU GLY ASP LYS PHE


- Molecule 1: Photosystem II reaction center M

Chain M:  31% 69%

MET GLN ARG LEU LEU ALA ALA VAL LEU LEU ALA ALA THR THR ILE ILE MET MET SER SER ALA ALA PHE PHE ALA ALA PRO PRO THR THR ALA ALA LEU LEU THR THR GLY LEU ARG ARG GLN GLN ALA ALA PRO LEU LEU CYS SER SER GLY ASN LYS LEU SER SER ALA ALA CYS ARG ALA ALA PRO PRO ARG ARG ALA ALA LYS LYS PRO PRO MET MET MET MET LEU LEU ALA ALA THR THR

THR ASN GLN ALA MET LEU LEU ALA ALA GLU GLY THR MET MET T108 GLY SER LEU GLY ASP LYS PHE

- Molecule 2: ACPII-1


Chain 1:  30% 83% 17%

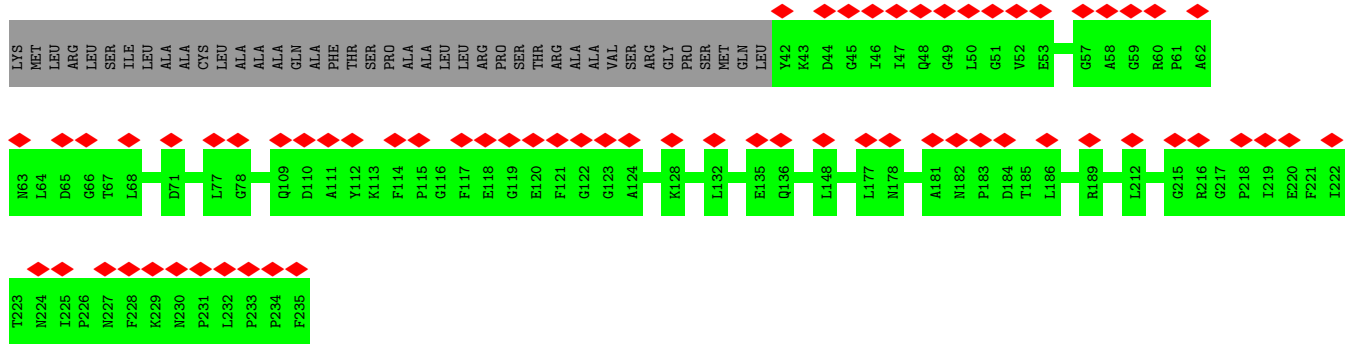
LYS MET LEU ARG LEU SER ILE LEU LEU ALA ALA CYS LEU ALA ALA ALA GLN PHE THR SER PRO ALA ALA LEU LEU ARG PRO SER THR ARG ALA VAL ARG SER GLY PRO SER MET MET GLN LEU Y42 K43 D44 G45 I46 I47 Q48 Q49 L50 G51 V52 E53 G57 A58 G59 R60 P61 A62

M63 L64 D65 G66 T67 L68 D71 F74 L77 G78 Q109 D110 A111 Y112 K113 F114 P115 G116 F117 E118 G119 A120 F121 G122 ARG A124 M125 M126 M127 K128 L132 E135 Q136 L148 L177 M178 A181 N182 P183 D184 T185 L186 R189 L212 G215 R216 G217 P218

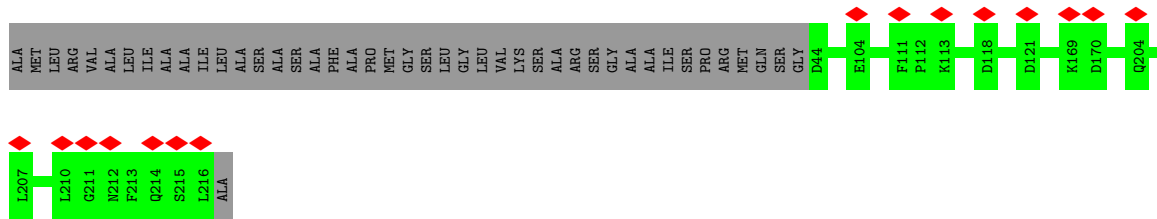
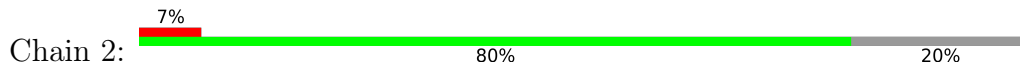
I219 E220 F221 I222 T223 M224 I225 P226 M227 F228 K229 M230 P231 L232 P233 P234 P235

- Molecule 2: ACPII-1

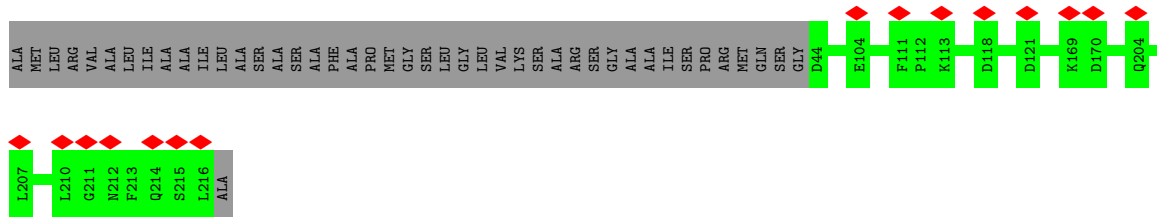
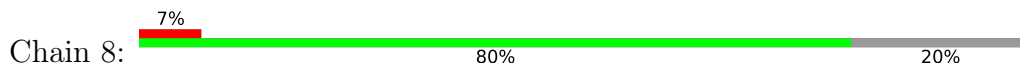
Chain 7:  29% 83% 17%



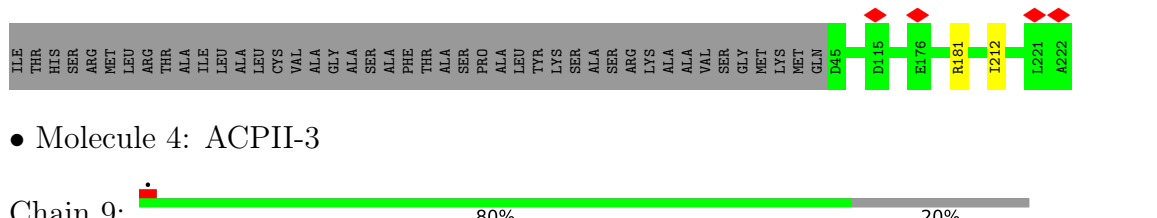
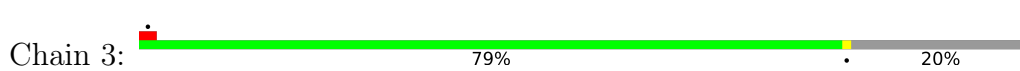
• Molecule 3: ACPII-2



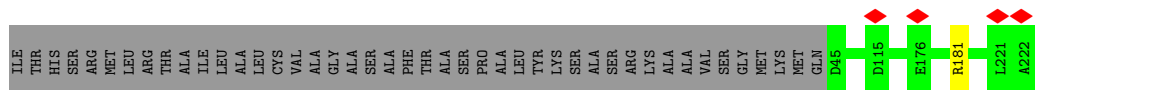
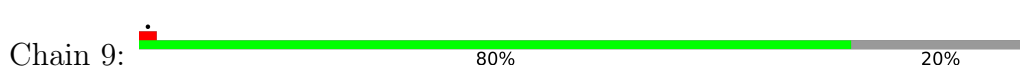
• Molecule 3: ACPII-2



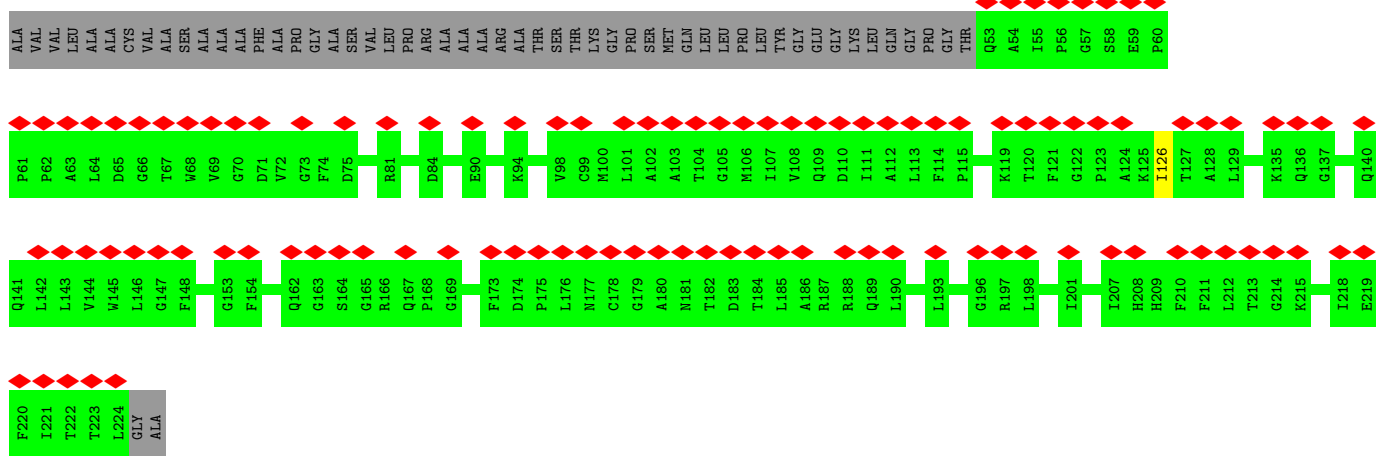
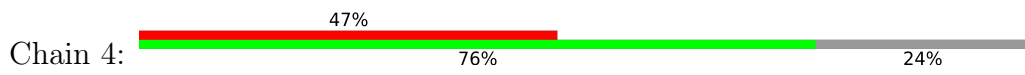
• Molecule 4: ACPII-3



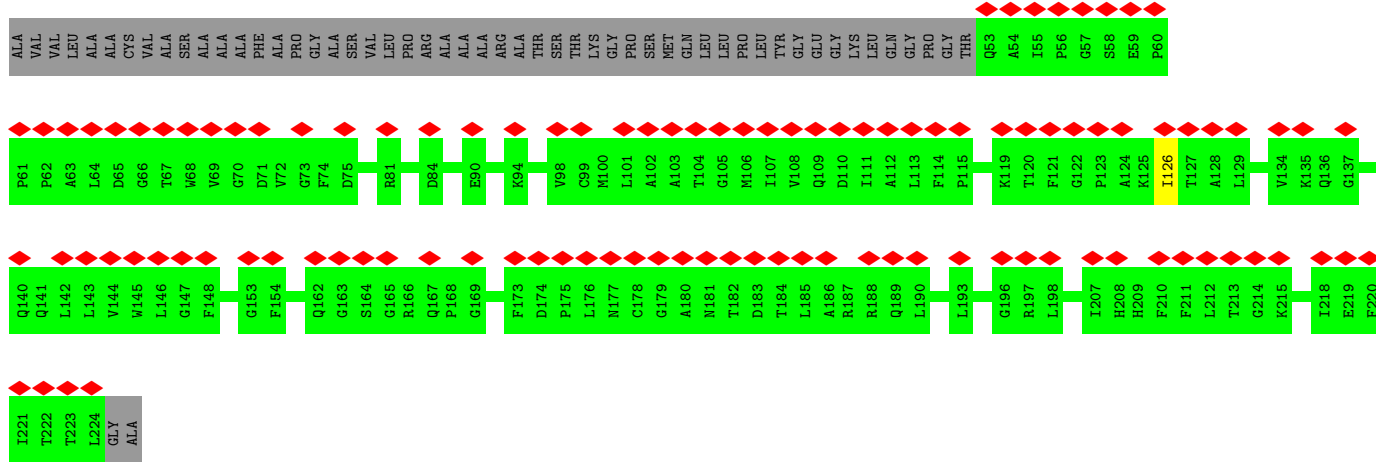
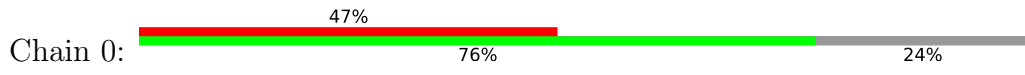
• Molecule 4: ACPII-3



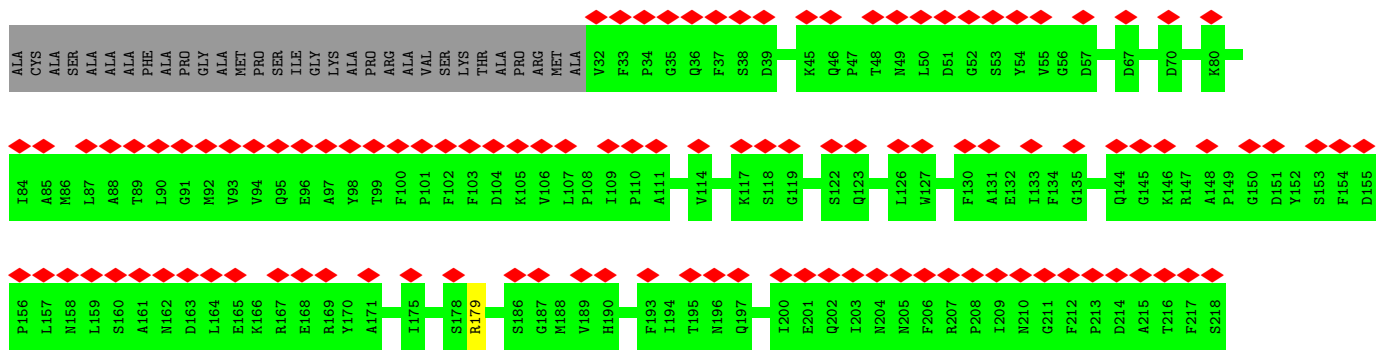
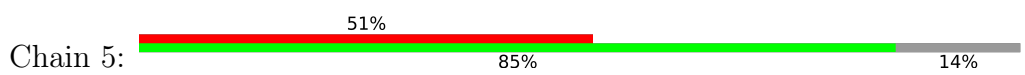
• Molecule 5: ACPII-4



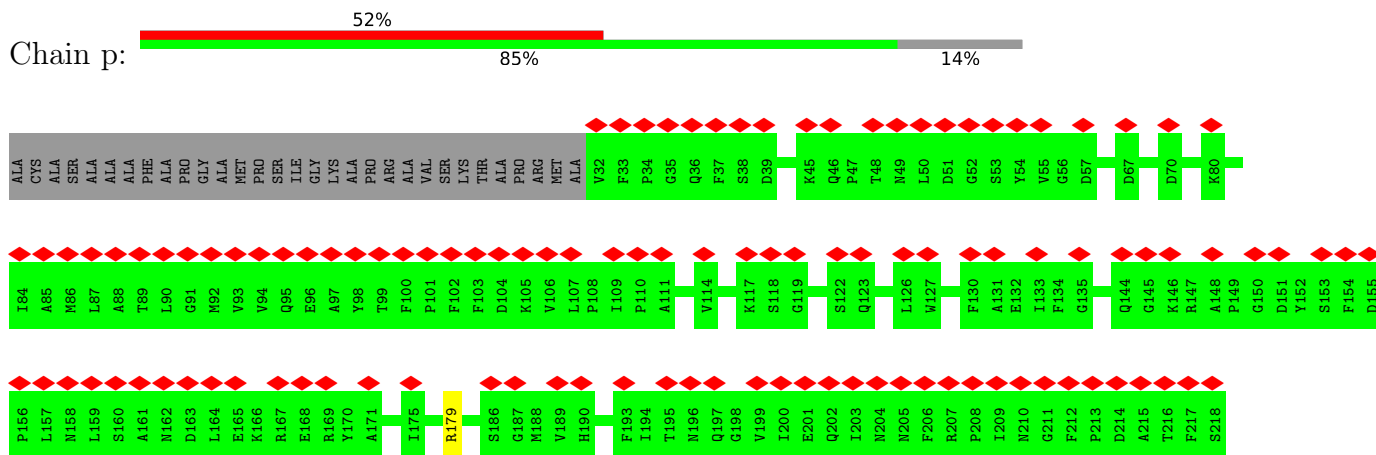
• Molecule 5: ACPII-4



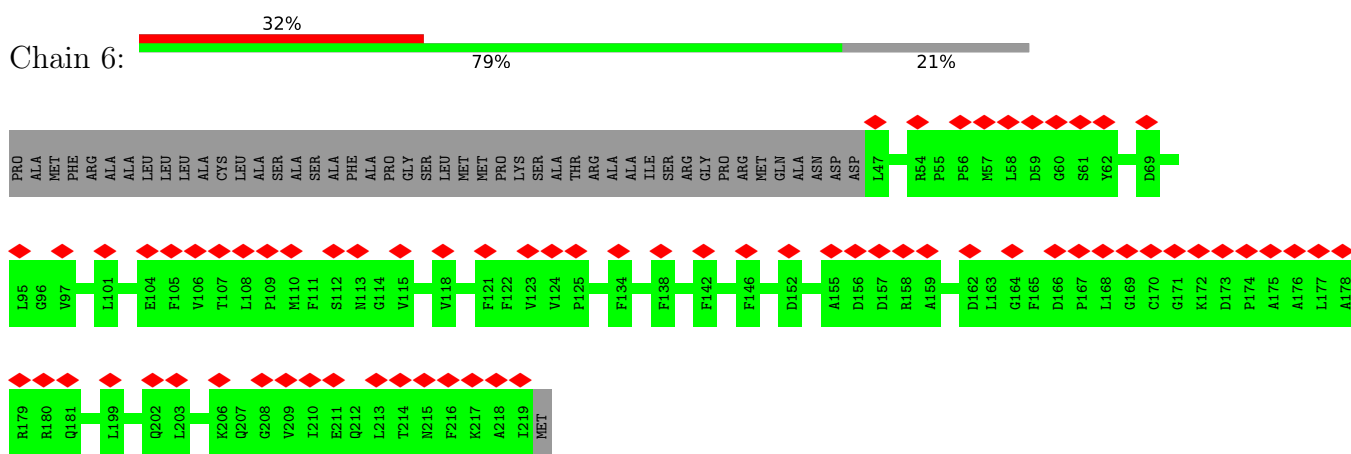
• Molecule 6: ACPII-5



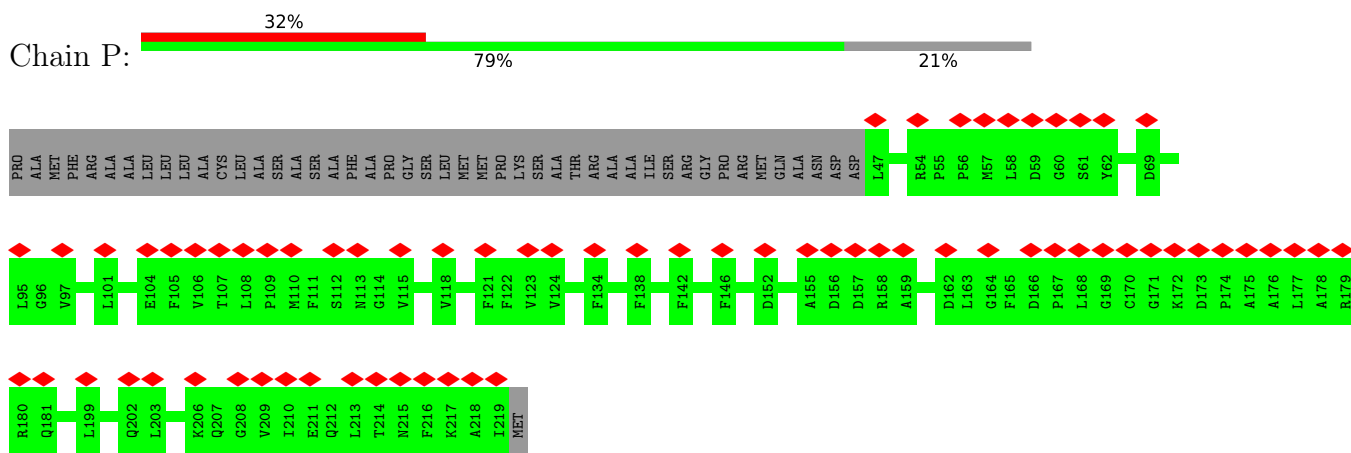
• Molecule 6: ACPII-5



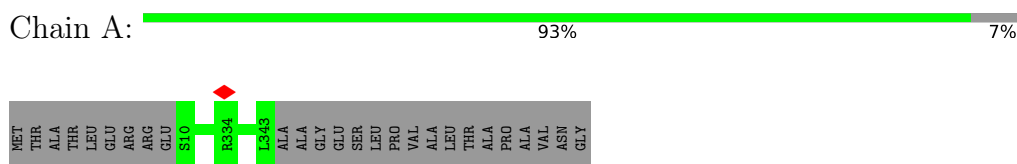
• Molecule 7: ACPII-6



• Molecule 7: ACPII-6

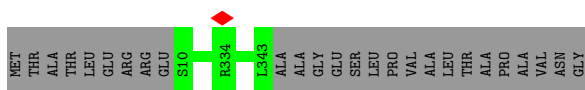


• Molecule 8: Photosystem II protein D1



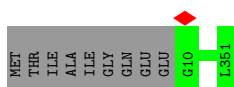
- Molecule 8: Photosystem II protein D1

Chain a:  93% 7%



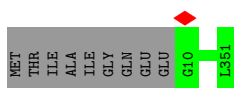
- Molecule 9: Photosystem II D2 protein

Chain D:  97%

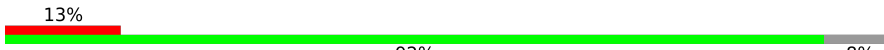


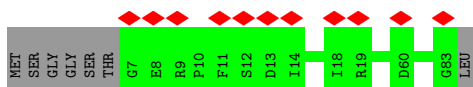
- Molecule 9: Photosystem II D2 protein

Chain d:  97%

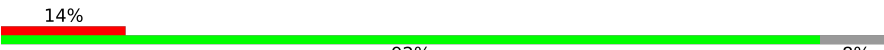


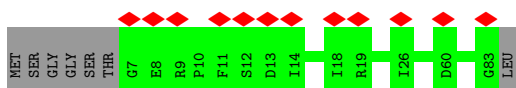
- Molecule 10: Cytochrome b559 subunit alpha

Chain E:  13% 92% 8%



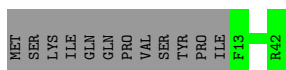
- Molecule 10: Cytochrome b559 subunit alpha

Chain e:  14% 92% 8%



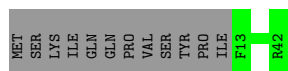
- Molecule 11: Cytochrome b559 subunit beta

Chain F:  71% 29%

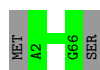


- Molecule 11: Cytochrome b559 subunit beta

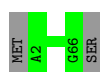
Chain f:  71% 29%



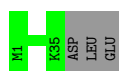
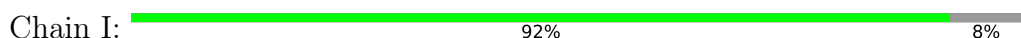
- Molecule 12: Photosystem II reaction center protein H



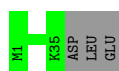
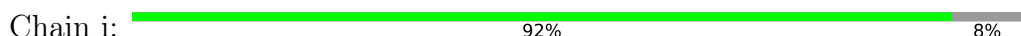
- Molecule 12: Photosystem II reaction center protein H



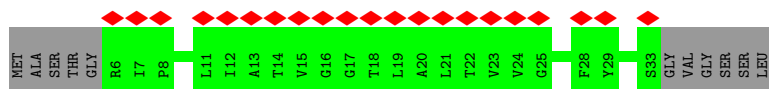
- Molecule 13: Photosystem II reaction center protein I



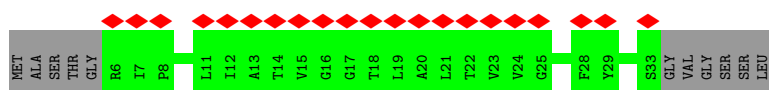
- Molecule 13: Photosystem II reaction center protein I



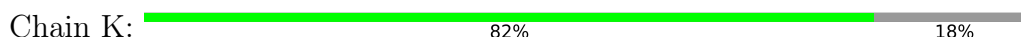
- Molecule 14: Photosystem II reaction center protein J

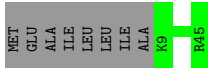


- Molecule 14: Photosystem II reaction center protein J

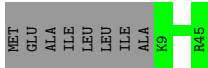
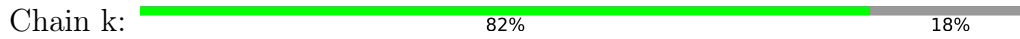


- Molecule 15: Photosystem II reaction center protein K

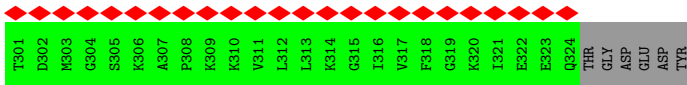
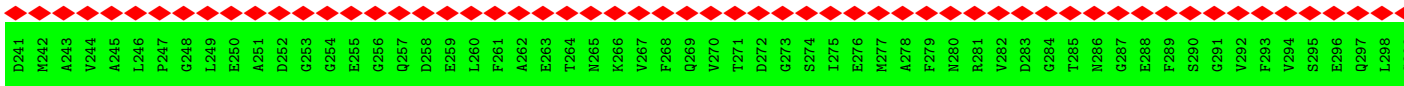
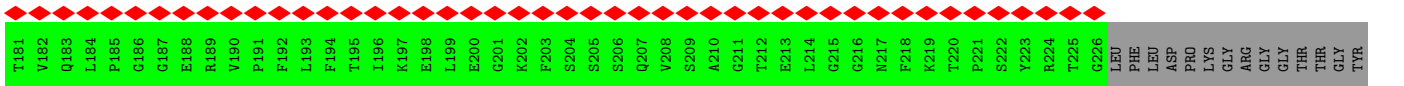
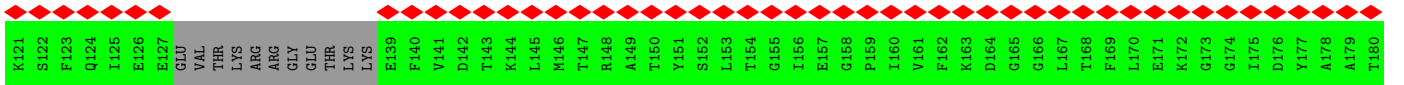
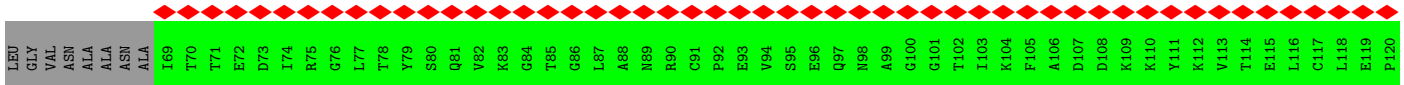
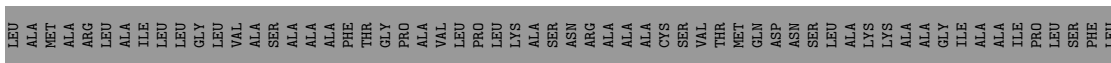




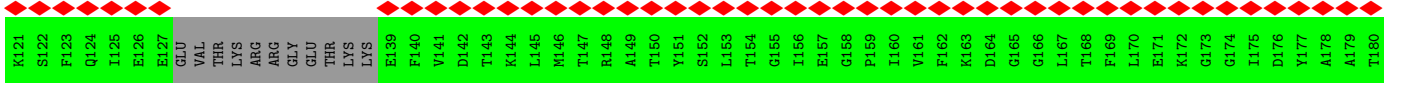
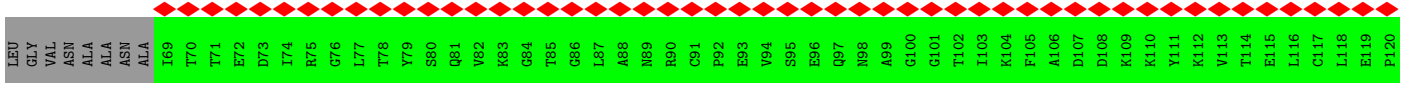
• Molecule 15: Photosystem II reaction center protein K

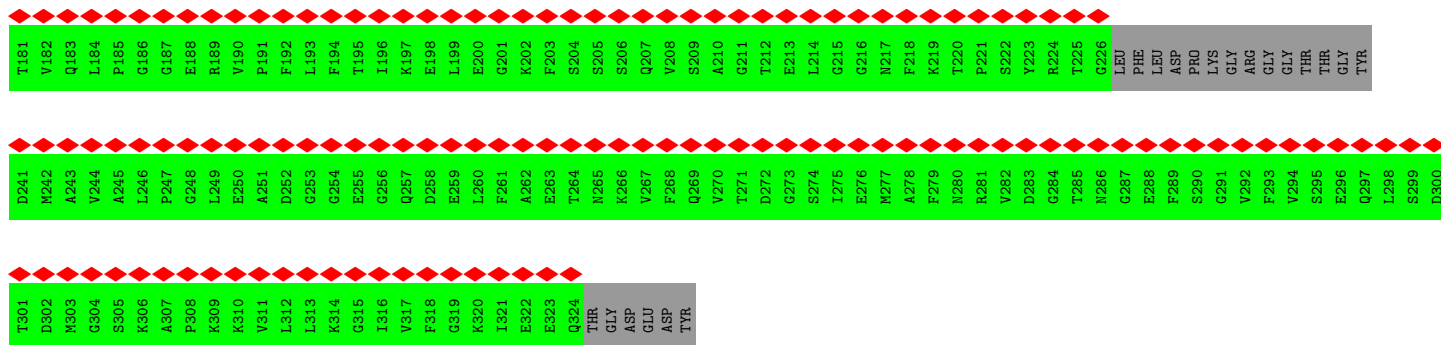


• Molecule 16: Photosystem II reaction center protein O

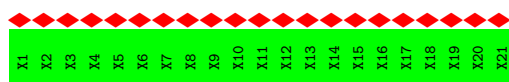


• Molecule 16: Photosystem II reaction center protein O

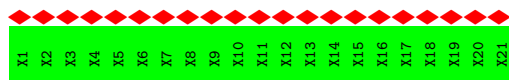




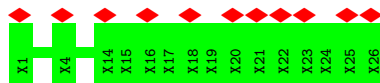
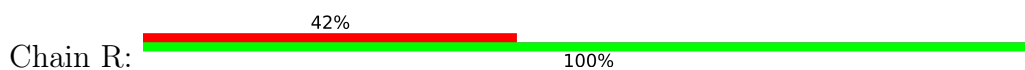
• Molecule 17: Photosystem II reaction center protein Q



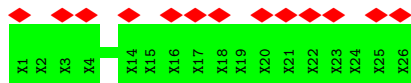
• Molecule 17: Photosystem II reaction center protein Q



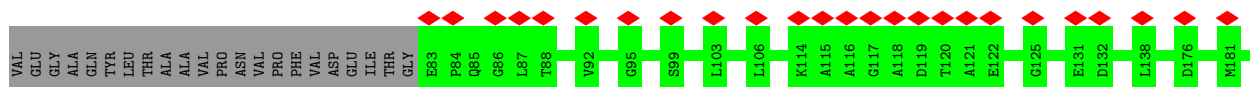
• Molecule 18: Photosystem II reaction center protein R

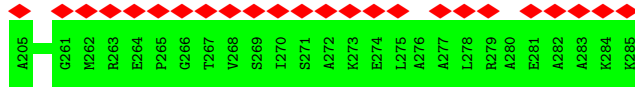


• Molecule 18: Photosystem II reaction center protein R

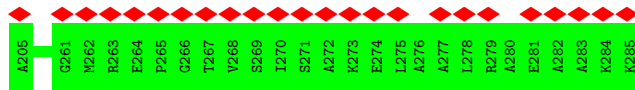
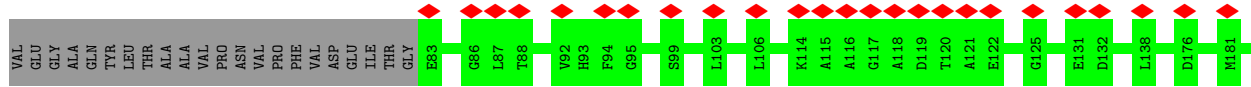


• Molecule 19: CCPH-S





• Molecule 19: CCPH-S



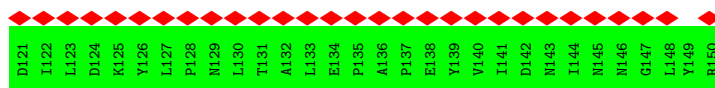
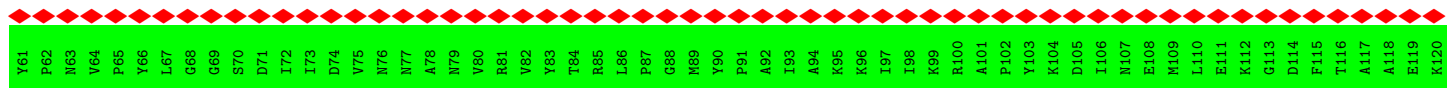
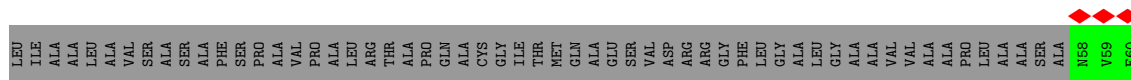
• Molecule 20: Photosystem II reaction center protein T



• Molecule 20: Photosystem II reaction center protein T

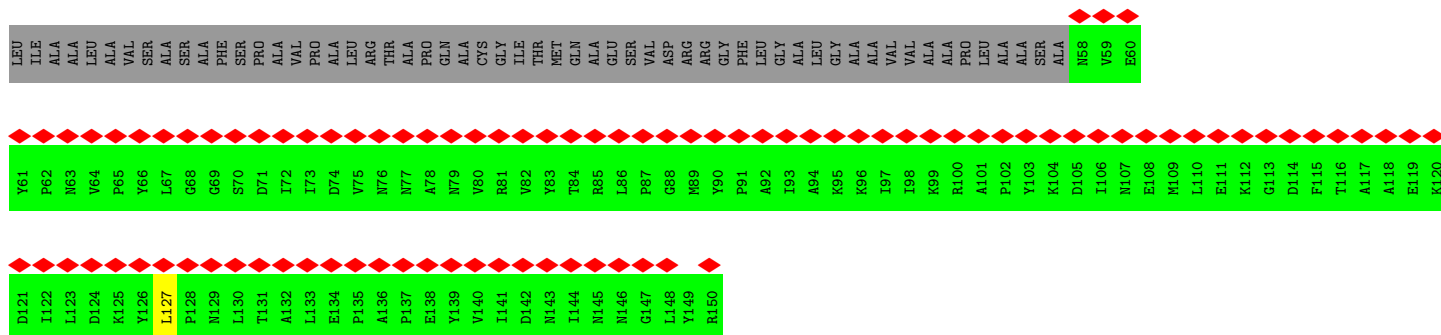


• Molecule 21: Photosystem II reaction center protein U

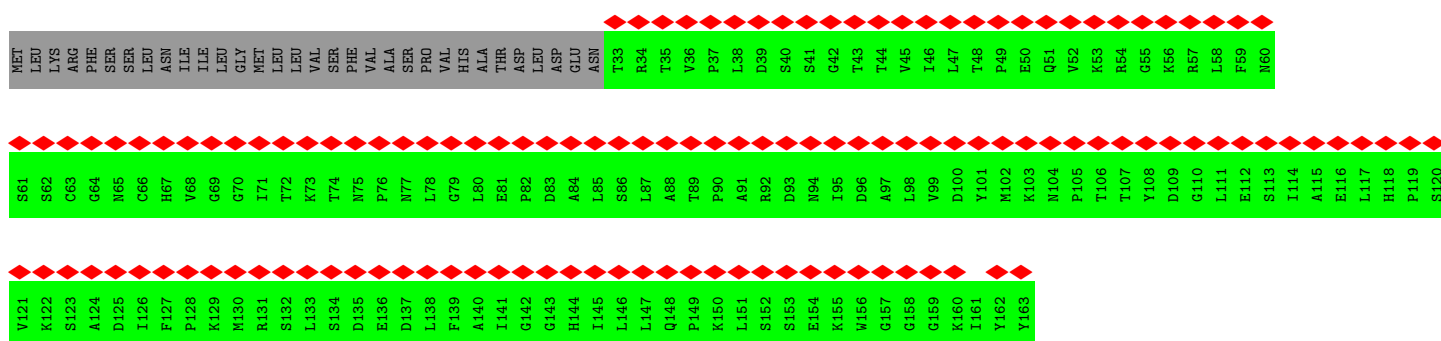
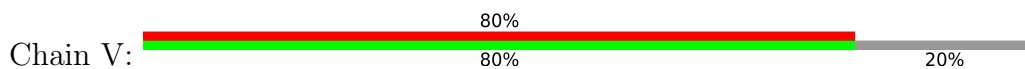


• Molecule 21: Photosystem II reaction center protein U

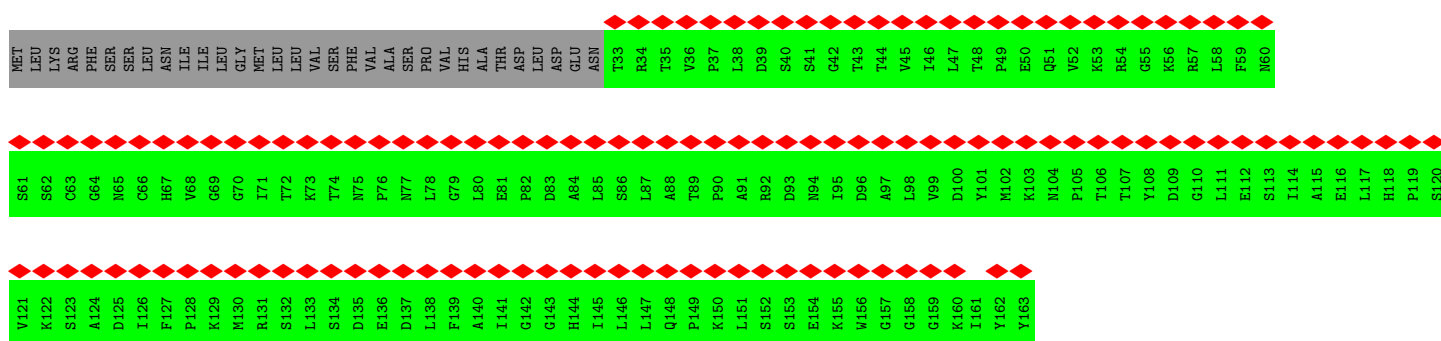
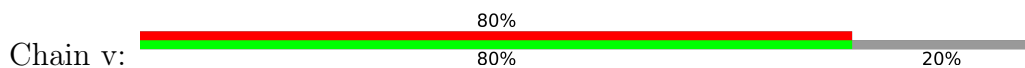




• Molecule 22: Photosystem II cytochrome c550



• Molecule 22: Photosystem II cytochrome c550



• Molecule 23: Photosystem II reaction center X protein

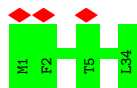


• Molecule 23: Photosystem II reaction center X protein

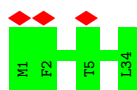




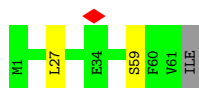
- Molecule 24: Photosystem II reaction center protein Ycf12



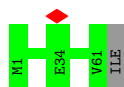
- Molecule 24: Photosystem II reaction center protein Ycf12



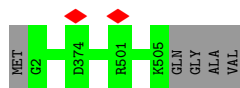
- Molecule 25: Photosystem II reaction center protein Z



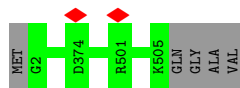
- Molecule 25: Photosystem II reaction center protein Z



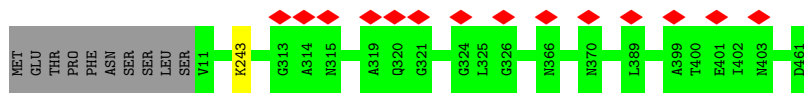
- Molecule 26: Photosystem II CP47 reaction center protein



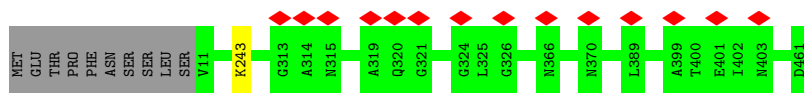
- Molecule 26: Photosystem II CP47 reaction center protein



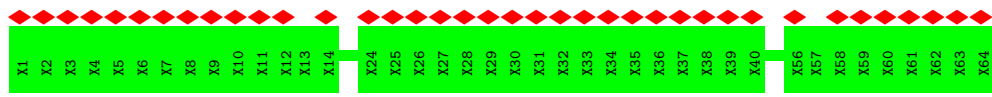
- Molecule 27: Photosystem II CP43 reaction center protein



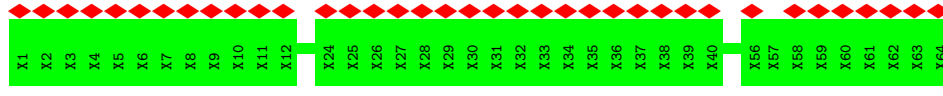
• Molecule 27: Photosystem II CP43 reaction center protein



• Molecule 28: Photosystem II reaction center protein G



• Molecule 28: Photosystem II reaction center protein G



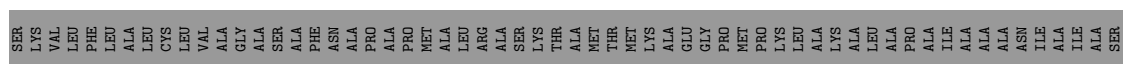
• Molecule 29: Photosystem II reaction center protein L

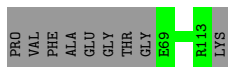


• Molecule 29: Photosystem II reaction center protein L

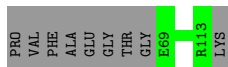
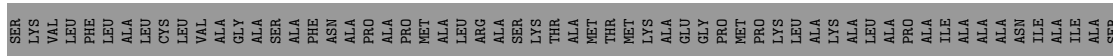


• Molecule 30: Photosystem II reaction center protein W





- Molecule 30: Photosystem II reaction center protein W



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	305400	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.307	Depositor
Minimum map value	-0.333	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.030	Depositor
Recommended contour level	0.253	Depositor
Map size (\AA)	532.48, 532.48, 532.48	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.04, 1.04, 1.04	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: II3, LHG, KC2, 8CT, BCT, DGD, IHT, OEX, PHO, FE2, II0, CL, LMG, PL9, HEM, SQD, CLA

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	M	0.30	0/268	0.48	0/367
1	m	0.30	0/268	0.47	0/367
2	1	0.25	0/1507	0.46	0/2043
2	7	0.25	0/1507	0.46	0/2043
3	2	0.26	0/1399	0.43	0/1893
3	8	0.26	0/1399	0.43	0/1893
4	3	0.26	0/1404	0.44	0/1895
4	9	0.26	0/1404	0.44	0/1895
5	0	0.25	0/1339	0.46	0/1814
5	4	0.25	0/1339	0.46	0/1814
6	5	0.26	0/1510	0.45	0/2046
6	p	0.25	0/1510	0.45	0/2046
7	6	0.25	0/1380	0.44	0/1870
7	P	0.25	0/1380	0.45	0/1870
8	A	0.30	0/2702	0.46	0/3688
8	a	0.30	0/2702	0.46	0/3688
9	D	0.30	0/2806	0.46	0/3823
9	d	0.29	0/2806	0.47	0/3823
10	E	0.27	0/647	0.47	0/882
10	e	0.27	0/647	0.49	0/882
11	F	0.27	0/255	0.45	0/344
11	f	0.28	0/255	0.44	0/344
12	H	0.28	0/527	0.48	0/717
12	h	0.28	0/527	0.48	0/717
13	I	0.30	0/294	0.49	0/397
13	i	0.30	0/294	0.48	0/397
14	J	0.24	0/220	0.42	0/301
14	j	0.24	0/220	0.42	0/301
15	K	0.31	0/308	0.44	0/421
15	k	0.32	0/308	0.44	0/421
16	O	0.24	0/1774	0.48	0/2385
16	o	0.25	0/1774	0.48	0/2385

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
19	S	0.26	0/1603	0.47	0/2180
19	s	0.26	0/1603	0.47	0/2180
20	T	0.31	0/267	0.44	0/359
20	t	0.32	0/267	0.44	0/359
21	U	0.25	0/758	0.46	0/1031
21	u	0.25	0/758	0.47	0/1031
22	V	0.23	0/1016	0.45	0/1377
22	v	0.23	0/1016	0.47	0/1377
23	X	0.26	0/296	0.45	0/402
23	x	0.26	0/296	0.46	0/402
24	Y	0.25	0/271	0.45	0/367
24	y	0.25	0/271	0.44	0/367
25	Z	0.27	0/467	0.40	0/638
25	z	0.25	0/467	0.37	0/638
26	B	0.29	0/4093	0.47	0/5569
26	b	0.29	0/4093	0.47	0/5569
27	C	0.30	0/3619	0.47	0/4937
27	c	0.30	0/3619	0.46	0/4937
29	L	0.30	0/320	0.40	0/434
29	l	0.30	0/320	0.40	0/434
30	W	0.28	0/374	0.48	0/509
30	w	0.29	0/374	0.48	0/509
All	All	0.28	0/62848	0.46	0/85378

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	M	34/115 (30%)	32 (94%)	2 (6%)	0	100	100
1	m	34/115 (30%)	32 (94%)	2 (6%)	0	100	100
2	1	192/235 (82%)	183 (95%)	9 (5%)	0	100	100
2	7	192/235 (82%)	186 (97%)	6 (3%)	0	100	100
3	2	171/217 (79%)	168 (98%)	3 (2%)	0	100	100
3	8	171/217 (79%)	169 (99%)	2 (1%)	0	100	100
4	3	176/222 (79%)	173 (98%)	2 (1%)	1 (1%)	25	40
4	9	176/222 (79%)	173 (98%)	3 (2%)	0	100	100
5	0	170/226 (75%)	167 (98%)	2 (1%)	1 (1%)	25	40
5	4	170/226 (75%)	167 (98%)	2 (1%)	1 (1%)	25	40
6	5	185/218 (85%)	182 (98%)	3 (2%)	0	100	100
6	p	185/218 (85%)	181 (98%)	4 (2%)	0	100	100
7	6	171/220 (78%)	171 (100%)	0	0	100	100
7	P	171/220 (78%)	171 (100%)	0	0	100	100
8	A	332/360 (92%)	326 (98%)	6 (2%)	0	100	100
8	a	332/360 (92%)	328 (99%)	4 (1%)	0	100	100
9	D	340/351 (97%)	335 (98%)	5 (2%)	0	100	100
9	d	340/351 (97%)	337 (99%)	3 (1%)	0	100	100
10	E	75/84 (89%)	75 (100%)	0	0	100	100
10	e	75/84 (89%)	75 (100%)	0	0	100	100
11	F	28/42 (67%)	28 (100%)	0	0	100	100
11	f	28/42 (67%)	28 (100%)	0	0	100	100
12	H	63/67 (94%)	60 (95%)	3 (5%)	0	100	100
12	h	63/67 (94%)	60 (95%)	3 (5%)	0	100	100
13	I	33/38 (87%)	33 (100%)	0	0	100	100
13	i	33/38 (87%)	33 (100%)	0	0	100	100
14	J	26/39 (67%)	26 (100%)	0	0	100	100
14	j	26/39 (67%)	26 (100%)	0	0	100	100
15	K	35/45 (78%)	34 (97%)	1 (3%)	0	100	100
15	k	35/45 (78%)	34 (97%)	1 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	O	225/330 (68%)	212 (94%)	13 (6%)	0	100	100
16	o	225/330 (68%)	213 (95%)	12 (5%)	0	100	100
19	S	201/285 (70%)	183 (91%)	18 (9%)	0	100	100
19	s	201/285 (70%)	183 (91%)	18 (9%)	0	100	100
20	T	30/32 (94%)	29 (97%)	1 (3%)	0	100	100
20	t	30/32 (94%)	29 (97%)	1 (3%)	0	100	100
21	U	91/150 (61%)	84 (92%)	7 (8%)	0	100	100
21	u	91/150 (61%)	82 (90%)	9 (10%)	0	100	100
22	V	129/163 (79%)	125 (97%)	4 (3%)	0	100	100
22	v	129/163 (79%)	125 (97%)	4 (3%)	0	100	100
23	X	37/39 (95%)	36 (97%)	1 (3%)	0	100	100
23	x	37/39 (95%)	36 (97%)	1 (3%)	0	100	100
24	Y	32/34 (94%)	32 (100%)	0	0	100	100
24	y	32/34 (94%)	32 (100%)	0	0	100	100
25	Z	59/62 (95%)	56 (95%)	3 (5%)	0	100	100
25	z	59/62 (95%)	57 (97%)	2 (3%)	0	100	100
26	B	502/509 (99%)	496 (99%)	6 (1%)	0	100	100
26	b	502/509 (99%)	497 (99%)	5 (1%)	0	100	100
27	C	449/461 (97%)	443 (99%)	6 (1%)	0	100	100
27	c	449/461 (97%)	442 (98%)	7 (2%)	0	100	100
29	L	36/38 (95%)	34 (94%)	2 (6%)	0	100	100
29	l	36/38 (95%)	34 (94%)	2 (6%)	0	100	100
30	W	43/114 (38%)	43 (100%)	0	0	100	100
30	w	43/114 (38%)	43 (100%)	0	0	100	100
All	All	7730/9392 (82%)	7539 (98%)	188 (2%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	3	212	ILE
5	4	126	ILE
5	0	126	ILE

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	M	28/84 (33%)	28 (100%)	0	100	100
1	m	28/84 (33%)	28 (100%)	0	100	100
2	1	149/179 (83%)	149 (100%)	0	100	100
2	7	149/179 (83%)	149 (100%)	0	100	100
3	2	139/167 (83%)	139 (100%)	0	100	100
3	8	139/167 (83%)	139 (100%)	0	100	100
4	3	143/175 (82%)	142 (99%)	1 (1%)	84	93
4	9	143/175 (82%)	142 (99%)	1 (1%)	84	93
5	0	136/169 (80%)	136 (100%)	0	100	100
5	4	136/169 (80%)	136 (100%)	0	100	100
6	5	157/175 (90%)	156 (99%)	1 (1%)	86	94
6	p	157/175 (90%)	156 (99%)	1 (1%)	86	94
7	6	141/174 (81%)	141 (100%)	0	100	100
7	P	141/174 (81%)	141 (100%)	0	100	100
8	A	271/289 (94%)	271 (100%)	0	100	100
8	a	271/289 (94%)	271 (100%)	0	100	100
9	D	274/281 (98%)	274 (100%)	0	100	100
9	d	274/281 (98%)	274 (100%)	0	100	100
10	E	68/73 (93%)	68 (100%)	0	100	100
10	e	68/73 (93%)	68 (100%)	0	100	100
11	F	25/37 (68%)	25 (100%)	0	100	100
11	f	25/37 (68%)	25 (100%)	0	100	100
12	H	56/58 (97%)	56 (100%)	0	100	100
12	h	56/58 (97%)	56 (100%)	0	100	100
13	I	33/36 (92%)	33 (100%)	0	100	100
13	i	33/36 (92%)	33 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	J	22/29 (76%)	22 (100%)	0	100	100
14	j	22/29 (76%)	22 (100%)	0	100	100
15	K	30/36 (83%)	30 (100%)	0	100	100
15	k	30/36 (83%)	30 (100%)	0	100	100
16	O	189/258 (73%)	189 (100%)	0	100	100
16	o	189/258 (73%)	189 (100%)	0	100	100
19	S	159/219 (73%)	159 (100%)	0	100	100
19	s	159/219 (73%)	159 (100%)	0	100	100
20	T	27/27 (100%)	27 (100%)	0	100	100
20	t	27/27 (100%)	27 (100%)	0	100	100
21	U	80/115 (70%)	80 (100%)	0	100	100
21	u	80/115 (70%)	79 (99%)	1 (1%)	69	86
22	V	112/141 (79%)	112 (100%)	0	100	100
22	v	112/141 (79%)	112 (100%)	0	100	100
23	X	34/34 (100%)	34 (100%)	0	100	100
23	x	34/34 (100%)	34 (100%)	0	100	100
24	Y	29/29 (100%)	29 (100%)	0	100	100
24	y	29/29 (100%)	29 (100%)	0	100	100
25	Z	50/51 (98%)	48 (96%)	2 (4%)	31	53
25	z	50/51 (98%)	50 (100%)	0	100	100
26	B	401/404 (99%)	401 (100%)	0	100	100
26	b	401/404 (99%)	401 (100%)	0	100	100
27	C	356/366 (97%)	355 (100%)	1 (0%)	92	97
27	c	356/366 (97%)	355 (100%)	1 (0%)	92	97
29	L	35/35 (100%)	35 (100%)	0	100	100
29	l	35/35 (100%)	35 (100%)	0	100	100
30	W	40/85 (47%)	40 (100%)	0	100	100
30	w	40/85 (47%)	40 (100%)	0	100	100
All	All	6368/7452 (86%)	6359 (100%)	9 (0%)	93	97

5 of 9 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
27	C	243	LYS
6	p	179	ARG
25	Z	59	SER
27	c	243	LYS
21	u	127	LEU

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

Mol	Chain	Res	Type
10	e	62	GLN
3	8	209	GLN
30	w	111	GLN
16	o	324	GLN
5	0	53	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 376 ligands modelled in this entry, 4 are monoatomic - leaving 372 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
47	HEM	E	101	-	41,50,50	1.51	3 (7%)	45,82,82	1.36	7 (15%)
32	CLA	c	501	-	65,73,73	1.44	6 (9%)	76,113,113	1.42	8 (10%)
32	CLA	B	602	-	47,55,73	1.71	6 (12%)	54,91,113	1.53	8 (14%)
44	BCT	A	611	46	2,3,3	1.16	0	2,3,3	4.53	2 (100%)
39	SQD	B	601	-	47,48,54	1.58	7 (14%)	56,59,65	1.50	6 (10%)
32	CLA	C	507	-	65,73,73	1.45	6 (9%)	76,113,113	1.39	6 (7%)
32	CLA	b	607	-	65,73,73	1.45	7 (10%)	76,113,113	1.43	8 (10%)
38	LHG	A	613	-	48,48,48	0.64	1 (2%)	51,54,54	1.26	6 (11%)
32	CLA	4	606	-	45,53,73	1.81	5 (11%)	52,89,113	1.50	6 (11%)
37	LMG	g	101	-	28,28,55	0.98	0	36,36,63	1.27	5 (13%)
36	IHT	2	616	-	40,42,42	1.99	2 (5%)	53,58,58	1.96	14 (26%)
32	CLA	b	610	-	65,73,73	1.47	6 (9%)	76,113,113	1.38	8 (10%)
34	II0	P	614	-	39,43,43	2.70	4 (10%)	50,60,60	1.70	11 (22%)
32	CLA	B	609	-	65,73,73	1.45	7 (10%)	76,113,113	1.42	8 (10%)
32	CLA	5	310	-	41,49,73	1.85	5 (12%)	47,84,113	1.63	8 (17%)
32	CLA	P	606	7	45,53,73	1.80	5 (11%)	52,89,113	1.51	7 (13%)
32	CLA	P	611	-	45,53,73	1.78	5 (11%)	52,89,113	1.58	7 (13%)
32	CLA	c	508	-	65,73,73	1.44	7 (10%)	76,113,113	1.43	8 (10%)
39	SQD	a	409	-	53,54,54	1.51	6 (11%)	62,65,65	1.40	8 (12%)
32	CLA	A	602	-	65,73,73	1.43	6 (9%)	76,113,113	1.43	6 (7%)
32	CLA	B	612	-	64,72,73	1.47	7 (10%)	74,111,113	1.41	8 (10%)
32	CLA	P	601	7	42,50,73	1.82	6 (14%)	48,85,113	1.56	6 (12%)
34	II0	2	613	-	39,43,43	2.70	4 (10%)	50,60,60	1.72	10 (20%)
34	II0	0	616	-	39,43,43	2.71	4 (10%)	50,60,60	1.74	11 (22%)
38	LHG	D	410	-	31,31,48	0.76	1 (3%)	34,37,54	1.27	3 (8%)
32	CLA	C	501	-	65,73,73	1.45	6 (9%)	76,113,113	1.42	8 (10%)
31	8CT	6	615	-	40,41,41	4.73	24 (60%)	50,56,56	2.59	18 (36%)
33	KC2	6	609	-	48,53,53	1.86	9 (18%)	54,89,89	2.11	13 (24%)
32	CLA	3	604	4	55,63,73	1.61	7 (12%)	64,101,113	1.44	9 (14%)
38	LHG	2	618	32	21,21,48	0.76	0	23,26,54	1.26	2 (8%)
38	LHG	B	619	-	38,38,48	0.68	1 (2%)	41,44,54	1.28	4 (9%)
31	8CT	B	622	-	40,41,41	4.64	23 (57%)	50,56,56	2.96	18 (36%)
35	II3	P	613	-	40,43,43	1.95	2 (5%)	47,60,60	1.65	9 (19%)
32	CLA	9	608	-	41,49,73	1.83	6 (14%)	47,84,113	1.65	7 (14%)
32	CLA	b	602	-	47,55,73	1.71	6 (12%)	54,91,113	1.52	7 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
39	SQD	b	601	-	47,48,54	1.58	7 (14%)	56,59,65	1.50	6 (10%)
32	CLA	3	608	-	41,49,73	1.81	6 (14%)	47,84,113	1.65	7 (14%)
38	LHG	a	402	-	42,42,48	0.67	1 (2%)	45,48,54	1.23	4 (8%)
34	II0	p	316	-	39,43,43	2.70	4 (10%)	50,60,60	1.66	9 (18%)
32	CLA	B	607	-	65,73,73	1.45	7 (10%)	76,113,113	1.43	8 (10%)
32	CLA	p	306	-	60,68,73	1.55	6 (10%)	70,107,113	1.38	6 (8%)
32	CLA	9	603	-	50,58,73	1.66	6 (12%)	58,95,113	1.57	8 (13%)
38	LHG	a	403	-	48,48,48	0.64	1 (2%)	51,54,54	1.26	6 (11%)
32	CLA	9	601	4	42,50,73	1.81	6 (14%)	48,85,113	1.63	7 (14%)
32	CLA	2	609	38	41,49,73	1.84	6 (14%)	47,84,113	1.62	8 (17%)
32	CLA	5	306	-	60,68,73	1.56	6 (10%)	70,107,113	1.40	6 (8%)
32	CLA	S	302	-	45,53,73	1.79	5 (11%)	52,89,113	1.56	8 (15%)
41	PHO	a	407	-	51,69,69	1.02	4 (7%)	47,99,99	1.18	6 (12%)
35	II3	7	615	-	40,43,43	1.95	2 (5%)	47,60,60	1.60	8 (17%)
36	IHT	4	614	-	40,42,42	1.95	2 (5%)	53,58,58	1.83	12 (22%)
32	CLA	3	601	4	42,50,73	1.82	6 (14%)	48,85,113	1.61	6 (12%)
32	CLA	5	303	6	59,67,73	1.57	6 (10%)	68,105,113	1.43	9 (13%)
45	DGD	c	515	-	57,57,67	0.95	2 (3%)	71,71,81	1.41	8 (11%)
32	CLA	8	601	3	42,50,73	1.81	6 (14%)	48,85,113	1.57	7 (14%)
33	KC2	p	311	-	48,53,53	1.87	10 (20%)	54,89,89	2.15	14 (25%)
32	CLA	b	613	-	65,73,73	1.44	7 (10%)	76,113,113	1.45	7 (9%)
34	II0	7	614	-	39,43,43	2.70	4 (10%)	50,60,60	1.71	9 (18%)
34	II0	P	612	-	39,43,43	2.65	4 (10%)	50,60,60	1.74	13 (26%)
34	II0	4	619	-	39,43,43	2.70	4 (10%)	50,60,60	1.71	12 (24%)
32	CLA	4	609	-	41,49,73	1.85	5 (12%)	47,84,113	1.63	7 (14%)
32	CLA	0	601	5	42,50,73	1.84	5 (11%)	48,85,113	1.58	7 (14%)
31	8CT	b	622	-	40,41,41	4.66	23 (57%)	50,56,56	2.44	15 (30%)
32	CLA	B	611	-	65,73,73	1.47	6 (9%)	76,113,113	1.38	9 (11%)
34	II0	0	615	-	39,43,43	2.66	4 (10%)	50,60,60	1.72	13 (26%)
32	CLA	6	608	-	41,49,73	1.85	5 (12%)	47,84,113	1.62	7 (14%)
39	SQD	5	318	-	34,35,54	1.75	7 (20%)	43,46,65	1.59	6 (13%)
32	CLA	B	603	-	61,69,73	1.50	6 (9%)	67,106,113	1.37	7 (10%)
34	II0	8	619	-	39,43,43	2.73	4 (10%)	50,60,60	1.66	9 (18%)
32	CLA	C	512	-	57,65,73	1.55	7 (12%)	65,102,113	1.48	7 (10%)
32	CLA	9	605	-	46,54,73	1.74	6 (13%)	53,90,113	1.52	7 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
37	LMG	l	101	-	40,40,55	0.88	1 (2%)	48,48,63	1.28	6 (12%)
39	SQD	b	620	-	53,54,54	1.53	7 (13%)	62,65,65	1.40	6 (9%)
32	CLA	7	613	-	45,53,73	1.80	5 (11%)	52,89,113	1.58	6 (11%)
38	LHG	S	301	-	36,36,48	0.71	1 (2%)	39,42,54	1.24	4 (10%)
32	CLA	A	605	-	60,68,73	1.51	6 (10%)	70,107,113	1.44	9 (12%)
32	CLA	B	610	-	65,73,73	1.47	6 (9%)	76,113,113	1.38	8 (10%)
34	II0	7	619	-	39,43,43	2.66	4 (10%)	50,60,60	1.66	11 (22%)
33	KC2	6	605	7	48,53,53	1.90	10 (20%)	54,89,89	2.02	12 (22%)
34	II0	2	614	-	39,43,43	2.69	4 (10%)	50,60,60	1.71	11 (22%)
32	CLA	b	604	-	64,72,73	1.46	7 (10%)	74,111,113	1.39	8 (10%)
32	CLA	P	604	-	55,63,73	1.62	5 (9%)	64,101,113	1.44	7 (10%)
32	CLA	P	610	-	45,53,73	1.80	6 (13%)	52,89,113	1.59	7 (13%)
32	CLA	0	604	-	55,63,73	1.64	6 (10%)	64,101,113	1.47	10 (15%)
33	KC2	4	610	5	48,53,53	1.87	9 (18%)	54,89,89	2.13	13 (24%)
32	CLA	P	603	-	50,58,73	1.68	6 (12%)	58,95,113	1.55	7 (12%)
34	II0	4	616	-	39,43,43	2.72	4 (10%)	50,60,60	1.72	11 (22%)
32	CLA	6	603	-	50,58,73	1.68	6 (12%)	58,95,113	1.55	7 (12%)
32	CLA	4	605	-	50,58,73	1.69	6 (12%)	58,95,113	1.52	8 (13%)
32	CLA	1	608	2	60,68,73	1.54	6 (10%)	70,107,113	1.39	7 (10%)
32	CLA	p	309	6	60,68,73	1.54	5 (8%)	70,107,113	1.40	7 (10%)
32	CLA	3	607	4	60,68,73	1.53	6 (10%)	70,107,113	1.42	6 (8%)
45	DGD	h	101	-	63,63,67	0.88	2 (3%)	77,77,81	1.37	8 (10%)
32	CLA	4	608	5	60,68,73	1.54	5 (8%)	70,107,113	1.40	7 (10%)
38	LHG	d	405	-	46,47,48	0.62	1 (2%)	45,51,54	1.20	5 (11%)
45	DGD	C	515	-	57,57,67	0.95	2 (3%)	71,71,81	1.41	8 (11%)
32	CLA	2	604	-	55,63,73	1.59	6 (10%)	64,101,113	1.51	8 (12%)
32	CLA	c	502	-	64,72,73	1.48	8 (12%)	74,111,113	1.39	7 (9%)
37	LMG	G	102	-	28,28,55	0.98	0	36,36,63	1.28	5 (13%)
34	II0	p	301	-	39,43,43	2.70	4 (10%)	50,60,60	1.71	13 (26%)
32	CLA	5	312	-	45,53,73	1.79	6 (13%)	52,89,113	1.58	6 (11%)
38	LHG	s	301	-	36,36,48	0.71	1 (2%)	39,42,54	1.24	4 (10%)
32	CLA	b	611	-	65,73,73	1.47	7 (10%)	76,113,113	1.38	8 (10%)
32	CLA	c	511	27	65,73,73	1.47	7 (10%)	76,113,113	1.39	6 (7%)
32	CLA	1	613	-	45,53,73	1.81	5 (11%)	52,89,113	1.56	6 (11%)
32	CLA	P	607	7	60,68,73	1.54	5 (8%)	70,107,113	1.41	6 (8%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
31	8CT	d	408	-	40,41,41	4.70	23 (57%)	50,56,56	2.44	16 (32%)
32	CLA	2	608	3	60,68,73	1.53	6 (10%)	70,107,113	1.41	7 (10%)
32	CLA	7	608	2	60,68,73	1.54	6 (10%)	70,107,113	1.38	6 (8%)
32	CLA	a	405	-	65,73,73	1.44	7 (10%)	76,113,113	1.43	6 (7%)
47	HEM	f	101	11	41,50,50	1.53	4 (9%)	45,82,82	1.33	5 (11%)
32	CLA	c	505	-	65,73,73	1.43	6 (9%)	76,113,113	1.42	7 (9%)
32	CLA	B	606	-	65,73,73	1.47	6 (9%)	76,113,113	1.37	7 (9%)
32	CLA	9	610	4	45,53,73	1.78	6 (13%)	52,89,113	1.59	7 (13%)
34	II0	3	614	-	39,43,43	2.70	4 (10%)	50,60,60	1.66	13 (26%)
32	CLA	C	510	-	65,73,73	1.47	7 (10%)	76,113,113	1.38	8 (10%)
34	II0	3	612	-	39,43,43	2.68	4 (10%)	50,60,60	1.69	11 (22%)
40	OEX	A	601	8	0,15,15	-	-	-	-	-
37	LMG	A	607	-	48,48,55	0.77	1 (2%)	56,56,63	1.33	5 (8%)
32	CLA	s	302	-	45,53,73	1.79	5 (11%)	52,89,113	1.55	7 (13%)
32	CLA	G	101	-	45,53,73	1.81	7 (15%)	52,89,113	1.54	6 (11%)
32	CLA	3	602	4	59,67,73	1.53	6 (10%)	68,105,113	1.45	9 (13%)
37	LMG	B	618	-	51,51,55	0.73	1 (1%)	59,59,63	1.35	6 (10%)
32	CLA	4	603	-	50,58,73	1.69	6 (12%)	58,95,113	1.53	7 (12%)
32	CLA	2	612	-	45,53,73	1.78	5 (11%)	52,89,113	1.55	8 (15%)
32	CLA	2	601	3	42,50,73	1.83	6 (14%)	48,85,113	1.57	6 (12%)
32	CLA	7	602	2	59,67,73	1.54	5 (8%)	68,105,113	1.44	9 (13%)
32	CLA	4	602	5	59,67,73	1.55	6 (10%)	68,105,113	1.43	8 (11%)
34	II0	1	617	-	39,43,43	2.74	4 (10%)	50,60,60	1.75	10 (20%)
32	CLA	9	607	4	60,68,73	1.52	6 (10%)	70,107,113	1.43	6 (8%)
32	CLA	b	614	-	65,73,73	1.45	7 (10%)	76,113,113	1.38	8 (10%)
34	II0	2	615	-	39,43,43	2.70	5 (12%)	50,60,60	1.81	12 (24%)
32	CLA	1	607	-	45,53,73	1.77	6 (13%)	52,89,113	1.52	6 (11%)
32	CLA	d	409	-	59,67,73	1.49	7 (11%)	68,105,113	1.51	8 (11%)
43	PL9	a	412	-	13,13,55	1.69	2 (15%)	17,17,69	1.65	4 (23%)
32	CLA	p	304	-	50,58,73	1.68	6 (12%)	58,95,113	1.51	8 (13%)
36	IHT	5	317	-	40,42,42	1.96	2 (5%)	53,58,58	1.80	13 (24%)
32	CLA	8	602	3	59,67,73	1.55	7 (11%)	68,105,113	1.43	9 (13%)
32	CLA	C	502	-	64,72,73	1.48	8 (12%)	74,111,113	1.39	7 (9%)
37	LMG	P	616	-	28,28,55	0.99	0	36,36,63	1.26	5 (13%)
32	CLA	3	610	4	45,53,73	1.78	6 (13%)	52,89,113	1.58	7 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
32	CLA	c	504	-	64,72,73	1.46	6 (9%)	74,111,113	1.44	6 (8%)
31	8CT	P	615	-	40,41,41	4.74	24 (60%)	50,56,56	2.60	18 (36%)
32	CLA	B	613	-	65,73,73	1.43	7 (10%)	76,113,113	1.44	7 (9%)
32	CLA	6	606	7	45,53,73	1.80	5 (11%)	52,89,113	1.51	7 (13%)
32	CLA	5	305	-	55,63,73	1.62	5 (9%)	64,101,113	1.47	8 (12%)
32	CLA	1	612	-	45,53,73	1.81	5 (11%)	52,89,113	1.53	7 (13%)
32	CLA	0	609	-	41,49,73	1.86	5 (12%)	47,84,113	1.63	7 (14%)
33	KC2	8	610	-	48,53,53	1.88	10 (20%)	54,89,89	2.14	13 (24%)
32	CLA	g	102	-	45,53,73	1.81	7 (15%)	52,89,113	1.52	6 (11%)
32	CLA	0	605	-	50,58,73	1.69	5 (10%)	58,95,113	1.52	8 (13%)
37	LMG	D	407	-	46,46,55	0.79	1 (2%)	54,54,63	1.34	5 (9%)
32	CLA	9	609	-	60,68,73	1.54	6 (10%)	70,107,113	1.39	7 (10%)
32	CLA	b	606	-	65,73,73	1.47	6 (9%)	76,113,113	1.37	7 (9%)
38	LHG	D	406	-	46,47,48	0.63	1 (2%)	45,51,54	1.20	5 (11%)
32	CLA	8	606	-	45,53,73	1.80	6 (13%)	52,89,113	1.54	6 (11%)
32	CLA	C	504	-	64,72,73	1.46	6 (9%)	74,111,113	1.44	7 (9%)
37	LMG	D	411	-	40,40,55	0.82	0	48,48,63	1.24	6 (12%)
32	CLA	4	613	5	45,53,73	1.80	5 (11%)	52,89,113	1.54	7 (13%)
32	CLA	c	509	-	65,73,73	1.44	7 (10%)	76,113,113	1.44	8 (10%)
37	LMG	b	618	-	51,51,55	0.73	1 (1%)	59,59,63	1.35	6 (10%)
32	CLA	0	602	5	59,67,73	1.55	6 (10%)	68,105,113	1.43	9 (13%)
32	CLA	c	512	-	57,65,73	1.55	6 (10%)	65,102,113	1.49	6 (9%)
33	KC2	P	609	-	48,53,53	1.86	10 (20%)	54,89,89	2.11	14 (25%)
32	CLA	b	617	-	65,73,73	1.45	7 (10%)	76,113,113	1.41	7 (9%)
39	SQD	A	606	-	53,54,54	1.51	6 (11%)	62,65,65	1.40	8 (12%)
32	CLA	A	603	-	49,57,73	1.65	8 (16%)	55,93,113	1.58	8 (14%)
32	CLA	5	302	6	42,50,73	1.84	6 (14%)	48,85,113	1.58	6 (12%)
32	CLA	2	607	3	45,53,73	1.78	6 (13%)	52,89,113	1.53	8 (15%)
31	8CT	Z	101	-	40,41,41	4.63	23 (57%)	50,56,56	2.61	21 (42%)
45	DGD	C	514	-	56,56,67	0.97	2 (3%)	70,70,81	1.47	10 (14%)
32	CLA	a	406	-	49,57,73	1.64	10 (20%)	55,93,113	1.60	8 (14%)
43	PL9	D	405	-	55,55,55	1.27	5 (9%)	68,69,69	1.53	11 (16%)
32	CLA	C	511	27	65,73,73	1.47	7 (10%)	76,113,113	1.40	6 (7%)
34	II0	5	316	-	39,43,43	2.72	4 (10%)	50,60,60	1.68	8 (16%)
34	II0	5	315	-	39,43,43	2.71	4 (10%)	50,60,60	1.69	11 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
32	CLA	7	604	2	55,63,73	1.62	5 (9%)	64,101,113	1.48	7 (10%)
34	II0	1	614	-	39,43,43	2.69	4 (10%)	50,60,60	1.67	10 (20%)
37	LMG	8	617	-	36,36,55	0.85	0	44,44,63	1.24	5 (11%)
36	IHT	8	616	-	40,42,42	1.98	2 (5%)	53,58,58	1.94	14 (26%)
33	KC2	0	610	5	48,53,53	1.87	10 (20%)	54,89,89	2.13	13 (24%)
32	CLA	C	505	-	65,73,73	1.43	6 (9%)	76,113,113	1.42	7 (9%)
32	CLA	6	602	7	59,67,73	1.54	6 (10%)	68,105,113	1.43	9 (13%)
32	CLA	0	607	5	45,53,73	1.79	6 (13%)	52,89,113	1.52	7 (13%)
32	CLA	p	303	6	59,67,73	1.57	6 (10%)	68,105,113	1.43	9 (13%)
32	CLA	1	604	2	55,63,73	1.61	6 (10%)	64,101,113	1.49	7 (10%)
32	CLA	a	408	-	60,68,73	1.50	6 (10%)	70,107,113	1.44	9 (12%)
34	II0	7	617	-	39,43,43	2.73	4 (10%)	50,60,60	1.73	11 (22%)
37	LMG	4	618	-	36,36,55	0.87	1 (2%)	44,44,63	1.26	5 (11%)
34	II0	5	301	-	39,43,43	2.68	4 (10%)	50,60,60	1.75	11 (22%)
45	DGD	H	101	-	63,63,67	0.88	2 (3%)	77,77,81	1.37	8 (10%)
32	CLA	B	617	-	65,73,73	1.45	7 (10%)	76,113,113	1.41	7 (9%)
32	CLA	b	603	-	61,69,73	1.49	6 (9%)	67,106,113	1.36	7 (10%)
38	LHG	A	612	-	42,42,48	0.67	1 (2%)	45,48,54	1.23	4 (8%)
32	CLA	0	603	-	50,58,73	1.68	6 (12%)	58,95,113	1.54	7 (12%)
32	CLA	3	609	-	60,68,73	1.54	6 (10%)	70,107,113	1.39	7 (10%)
32	CLA	c	503	-	65,73,73	1.45	7 (10%)	76,113,113	1.45	8 (10%)
32	CLA	b	616	-	65,73,73	1.46	7 (10%)	76,113,113	1.38	7 (9%)
32	CLA	D	404	-	60,68,73	1.50	6 (10%)	70,107,113	1.50	10 (14%)
34	II0	8	615	-	39,43,43	2.70	4 (10%)	50,60,60	1.83	10 (20%)
45	DGD	A	614	-	54,54,67	1.05	4 (7%)	67,67,81	1.48	10 (14%)
32	CLA	9	611	-	45,53,73	1.77	5 (11%)	52,89,113	1.56	7 (13%)
32	CLA	B	614	-	65,73,73	1.44	6 (9%)	76,113,113	1.38	8 (10%)
47	HEM	V	201	-	41,50,50	1.47	3 (7%)	45,82,82	1.35	7 (15%)
32	CLA	3	603	-	50,58,73	1.67	6 (12%)	58,95,113	1.57	8 (13%)
38	LHG	b	619	-	38,38,48	0.68	1 (2%)	41,44,54	1.28	4 (9%)
32	CLA	1	611	-	45,53,73	1.79	5 (11%)	52,89,113	1.58	6 (11%)
32	CLA	0	613	5	45,53,73	1.80	5 (11%)	52,89,113	1.54	7 (13%)
32	CLA	8	605	3	60,68,73	1.56	6 (10%)	70,107,113	1.39	8 (11%)
32	CLA	7	612	-	45,53,73	1.80	5 (11%)	52,89,113	1.53	7 (13%)
34	II0	3	613	-	39,43,43	2.71	4 (10%)	50,60,60	1.71	9 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
32	CLA	7	603	-	50,58,73	1.69	6 (12%)	58,95,113	1.58	8 (13%)
34	II0	9	614	-	39,43,43	2.69	4 (10%)	50,60,60	1.65	13 (26%)
32	CLA	4	601	5	42,50,73	1.84	5 (11%)	48,85,113	1.57	7 (14%)
32	CLA	c	510	-	65,73,73	1.45	7 (10%)	76,113,113	1.39	8 (10%)
32	CLA	5	304	-	50,58,73	1.71	6 (12%)	58,95,113	1.52	8 (13%)
36	IHT	0	618	-	40,42,42	1.96	3 (7%)	53,58,58	1.94	15 (28%)
31	8CT	C	518	-	40,41,41	4.72	23 (57%)	50,56,56	2.81	16 (32%)
38	LHG	l	102	-	48,48,48	0.63	1 (2%)	51,54,54	1.28	6 (11%)
32	CLA	8	611	-	45,53,73	1.78	5 (11%)	52,89,113	1.59	7 (13%)
32	CLA	b	608	-	41,49,73	1.79	6 (14%)	47,84,113	1.70	7 (14%)
31	8CT	D	409	-	40,41,41	4.70	24 (60%)	50,56,56	2.43	16 (32%)
32	CLA	b	605	-	61,69,73	1.50	7 (11%)	71,108,113	1.49	9 (12%)
34	II0	7	616	-	39,43,43	2.73	4 (10%)	50,60,60	1.72	10 (20%)
31	8CT	B	624	-	40,41,41	4.67	24 (60%)	50,56,56	2.78	16 (32%)
37	LMG	L	102	-	40,40,55	0.88	1 (2%)	48,48,63	1.28	6 (12%)
32	CLA	3	611	-	45,53,73	1.77	5 (11%)	52,89,113	1.56	7 (13%)
32	CLA	C	503	-	65,73,73	1.45	6 (9%)	76,113,113	1.44	9 (11%)
32	CLA	C	509	-	65,73,73	1.43	7 (10%)	76,113,113	1.44	9 (11%)
32	CLA	p	302	6	42,50,73	1.83	6 (14%)	48,85,113	1.58	7 (14%)
45	DGD	a	414	-	54,54,67	1.05	4 (7%)	67,67,81	1.47	10 (14%)
45	DGD	C	516	-	56,56,67	0.93	2 (3%)	70,70,81	1.41	7 (10%)
32	CLA	s	303	19	65,73,73	1.49	6 (9%)	76,113,113	1.35	7 (9%)
32	CLA	c	506	-	45,53,73	1.77	7 (15%)	52,89,113	1.64	8 (15%)
32	CLA	d	402	-	57,65,73	1.62	8 (14%)	70,103,113	1.50	9 (12%)
38	LHG	d	411	-	31,31,48	0.75	1 (3%)	34,37,54	1.27	3 (8%)
32	CLA	0	612	-	45,53,73	1.81	5 (11%)	52,89,113	1.61	7 (13%)
32	CLA	3	605	-	46,54,73	1.74	6 (13%)	53,90,113	1.51	7 (13%)
38	LHG	b	621	-	38,38,48	0.68	1 (2%)	41,44,54	1.27	4 (9%)
32	CLA	7	605	-	50,58,73	1.70	6 (12%)	58,95,113	1.50	9 (15%)
33	KC2	2	610	-	48,53,53	1.88	10 (20%)	54,89,89	2.15	13 (24%)
34	II0	8	613	-	39,43,43	2.69	4 (10%)	50,60,60	1.75	11 (22%)
37	LMG	0	619	-	36,36,55	0.87	1 (2%)	44,44,63	1.26	5 (11%)
34	II0	0	620	-	39,43,43	2.70	4 (10%)	50,60,60	1.71	13 (26%)
34	II0	5	319	-	39,43,43	2.72	4 (10%)	50,60,60	1.75	13 (26%)
32	CLA	9	604	4	55,63,73	1.61	6 (10%)	64,101,113	1.45	9 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
32	CLA	0	611	-	45,53,73	1.81	5 (11%)	52,89,113	1.56	7 (13%)
34	II0	4	615	-	39,43,43	2.68	4 (10%)	50,60,60	1.71	11 (22%)
32	CLA	1	606	-	45,53,73	1.76	6 (13%)	52,89,113	1.57	6 (11%)
37	LMG	d	401	-	40,40,55	0.81	0	48,48,63	1.24	6 (12%)
41	PHO	A	604	-	51,69,69	1.02	4 (7%)	47,99,99	1.19	6 (12%)
32	CLA	p	308	6	45,53,73	1.79	6 (13%)	52,89,113	1.58	7 (13%)
31	8CT	k	101	-	40,41,41	4.64	23 (57%)	50,56,56	2.62	21 (42%)
32	CLA	p	313	-	45,53,73	1.80	5 (11%)	52,89,113	1.55	7 (13%)
40	OEX	a	404	8	0,15,15	-	-	-	-	-
32	CLA	b	615	-	64,72,73	1.45	7 (10%)	74,111,113	1.39	7 (9%)
32	CLA	7	611	-	45,53,73	1.79	5 (11%)	52,89,113	1.59	6 (11%)
33	KC2	5	311	-	48,53,53	1.87	10 (20%)	54,89,89	2.14	14 (25%)
35	II3	1	615	-	40,43,43	1.96	2 (5%)	47,60,60	1.58	6 (12%)
32	CLA	6	611	-	45,53,73	1.79	5 (11%)	52,89,113	1.57	7 (13%)
32	CLA	6	607	7	60,68,73	1.54	6 (10%)	70,107,113	1.41	6 (8%)
32	CLA	D	403	-	57,65,73	1.63	8 (14%)	70,103,113	1.49	9 (12%)
32	CLA	8	609	38	41,49,73	1.84	6 (14%)	47,84,113	1.63	7 (14%)
36	IHT	p	317	-	40,42,42	1.96	2 (5%)	53,58,58	1.83	13 (24%)
31	8CT	a	413	-	40,41,41	4.63	23 (57%)	50,56,56	2.92	19 (38%)
32	CLA	6	601	7	42,50,73	1.84	6 (14%)	48,85,113	1.56	6 (12%)
41	PHO	d	410	-	51,69,69	0.99	4 (7%)	47,99,99	1.17	6 (12%)
31	8CT	h	102	-	40,41,41	4.70	24 (60%)	50,56,56	2.78	16 (32%)
32	CLA	B	615	-	64,72,73	1.45	6 (9%)	74,111,113	1.40	8 (10%)
31	8CT	M	201	-	40,41,41	4.64	23 (57%)	50,56,56	2.96	18 (36%)
33	KC2	1	610	-	48,53,53	1.88	10 (20%)	54,89,89	2.13	13 (24%)
41	PHO	D	402	-	51,69,69	1.00	4 (7%)	47,99,99	1.17	6 (12%)
31	8CT	b	623	-	40,41,41	4.67	24 (60%)	50,56,56	2.79	16 (32%)
36	IHT	1	618	-	40,42,42	1.97	2 (5%)	53,58,58	1.92	12 (22%)
39	SQD	p	318	-	34,35,54	1.76	7 (20%)	43,46,65	1.59	6 (13%)
37	LMG	C	517	-	46,46,55	0.77	1 (2%)	54,54,63	1.31	6 (11%)
32	CLA	2	603	-	50,58,73	1.68	6 (12%)	58,95,113	1.54	8 (13%)
37	LMG	d	406	-	46,46,55	0.79	1 (2%)	54,54,63	1.34	5 (9%)
38	LHG	B	621	-	38,38,48	0.69	1 (2%)	41,44,54	1.27	4 (9%)
31	8CT	3	615	-	40,41,41	4.69	24 (60%)	50,56,56	2.76	19 (38%)
32	CLA	B	604	-	64,72,73	1.46	6 (9%)	74,111,113	1.38	8 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
31	8CT	z	101	-	40,41,41	4.62	23 (57%)	50,56,56	2.65	22 (44%)
32	CLA	C	508	-	65,73,73	1.45	7 (10%)	76,113,113	1.44	8 (10%)
32	CLA	5	313	-	45,53,73	1.81	5 (11%)	52,89,113	1.55	7 (13%)
34	II0	2	619	-	39,43,43	2.72	4 (10%)	50,60,60	1.68	7 (14%)
36	IHT	4	617	-	40,42,42	1.99	3 (7%)	53,58,58	1.97	15 (28%)
32	CLA	c	513	-	49,57,73	1.66	7 (14%)	55,93,113	1.58	8 (14%)
32	CLA	B	608	-	41,49,73	1.79	6 (14%)	47,84,113	1.70	7 (14%)
32	CLA	8	607	3	45,53,73	1.76	6 (13%)	52,89,113	1.56	7 (13%)
34	II0	p	314	-	39,43,43	2.70	4 (10%)	50,60,60	1.81	13 (26%)
32	CLA	1	601	-	42,50,73	1.84	5 (11%)	48,85,113	1.56	7 (14%)
32	CLA	4	611	-	45,53,73	1.80	5 (11%)	52,89,113	1.56	7 (13%)
31	8CT	K	102	-	40,41,41	4.64	23 (57%)	50,56,56	2.63	21 (42%)
45	DGD	c	514	-	56,56,67	0.97	2 (3%)	70,70,81	1.48	10 (14%)
32	CLA	6	610	-	45,53,73	1.80	6 (13%)	52,89,113	1.58	6 (11%)
35	II3	6	613	-	40,43,43	1.95	2 (5%)	47,60,60	1.67	9 (19%)
34	II0	1	619	-	39,43,43	2.65	4 (10%)	50,60,60	1.67	11 (22%)
32	CLA	1	609	-	41,49,73	1.84	5 (12%)	47,84,113	1.64	8 (17%)
34	II0	6	614	-	39,43,43	2.72	5 (12%)	50,60,60	1.69	10 (20%)
34	II0	5	314	-	39,43,43	2.70	4 (10%)	50,60,60	1.80	14 (28%)
34	II0	9	613	-	39,43,43	2.70	4 (10%)	50,60,60	1.71	10 (20%)
32	CLA	7	606	-	45,53,73	1.75	6 (13%)	52,89,113	1.64	6 (11%)
32	CLA	S	303	19	65,73,73	1.49	6 (9%)	76,113,113	1.34	7 (9%)
32	CLA	7	607	-	45,53,73	1.78	6 (13%)	52,89,113	1.51	6 (11%)
32	CLA	2	611	-	45,53,73	1.77	5 (11%)	52,89,113	1.59	7 (13%)
32	CLA	p	307	-	45,53,73	1.80	6 (13%)	52,89,113	1.54	6 (11%)
32	CLA	p	312	-	45,53,73	1.79	6 (13%)	52,89,113	1.58	6 (11%)
32	CLA	6	604	-	55,63,73	1.63	6 (10%)	64,101,113	1.45	8 (12%)
32	CLA	4	612	-	45,53,73	1.80	5 (11%)	52,89,113	1.61	7 (13%)
32	CLA	D	401	-	59,67,73	1.50	6 (10%)	68,105,113	1.53	9 (13%)
32	CLA	P	608	-	41,49,73	1.83	5 (12%)	47,84,113	1.61	7 (14%)
34	II0	8	614	-	39,43,43	2.69	4 (10%)	50,60,60	1.70	12 (24%)
32	CLA	5	307	-	45,53,73	1.78	5 (11%)	52,89,113	1.55	6 (11%)
32	CLA	4	607	5	45,53,73	1.79	6 (13%)	52,89,113	1.53	7 (13%)
32	CLA	2	605	3	60,68,73	1.56	6 (10%)	70,107,113	1.41	8 (11%)
31	8CT	B	623	-	40,41,41	4.67	23 (57%)	50,56,56	2.44	15 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
32	CLA	0	606	-	45,53,73	1.81	6 (13%)	52,89,113	1.52	6 (11%)
31	8CT	c	518	-	40,41,41	4.73	23 (57%)	50,56,56	2.80	16 (32%)
38	LHG	L	101	-	48,48,48	0.63	1 (2%)	51,54,54	1.28	6 (11%)
37	LMG	a	410	-	48,48,55	0.77	1 (2%)	56,56,63	1.33	5 (8%)
32	CLA	8	603	-	50,58,73	1.66	6 (12%)	58,95,113	1.54	8 (13%)
32	CLA	3	606	-	45,53,73	1.79	7 (15%)	52,89,113	1.49	6 (11%)
32	CLA	P	602	7	59,67,73	1.55	6 (10%)	68,105,113	1.44	9 (13%)
33	KC2	7	610	-	48,53,53	1.87	10 (20%)	54,89,89	2.12	14 (25%)
34	II0	6	612	-	39,43,43	2.67	4 (10%)	50,60,60	1.78	12 (24%)
32	CLA	8	604	-	55,63,73	1.59	6 (10%)	64,101,113	1.51	7 (10%)
32	CLA	C	513	-	49,57,73	1.66	7 (14%)	55,93,113	1.57	8 (14%)
32	CLA	9	606	-	45,53,73	1.79	6 (13%)	52,89,113	1.51	6 (11%)
34	II0	p	315	-	39,43,43	2.72	4 (10%)	50,60,60	1.70	12 (24%)
34	II0	1	616	-	39,43,43	2.73	4 (10%)	50,60,60	1.70	9 (18%)
32	CLA	2	606	-	45,53,73	1.80	6 (13%)	52,89,113	1.55	6 (11%)
32	CLA	2	602	3	59,67,73	1.55	6 (10%)	68,105,113	1.43	9 (13%)
33	KC2	P	605	-	48,53,53	1.89	9 (18%)	54,89,89	2.01	13 (24%)
32	CLA	1	605	-	50,58,73	1.70	5 (10%)	58,95,113	1.50	9 (15%)
36	IHT	7	618	-	40,42,42	1.98	2 (5%)	53,58,58	1.93	13 (24%)
37	LMG	6	616	-	28,28,55	0.98	1 (3%)	36,36,63	1.26	5 (13%)
32	CLA	8	608	3	60,68,73	1.54	6 (10%)	70,107,113	1.40	8 (11%)
44	BCT	a	401	46	2,3,3	1.16	0	2,3,3	4.51	2 (100%)
47	HEM	v	201	-	41,50,50	1.47	3 (7%)	45,82,82	1.36	7 (15%)
32	CLA	7	601	-	42,50,73	1.84	5 (11%)	48,85,113	1.56	7 (14%)
32	CLA	5	308	6	45,53,73	1.77	6 (13%)	52,89,113	1.57	7 (13%)
32	CLA	4	604	-	55,63,73	1.64	5 (9%)	64,101,113	1.48	10 (15%)
31	8CT	A	610	-	40,41,41	4.62	23 (57%)	50,56,56	2.63	21 (42%)
32	CLA	p	310	-	41,49,73	1.85	5 (12%)	47,84,113	1.62	8 (17%)
32	CLA	9	602	4	59,67,73	1.53	6 (10%)	68,105,113	1.45	9 (13%)
32	CLA	p	305	-	55,63,73	1.62	5 (9%)	64,101,113	1.47	9 (14%)
43	PL9	d	404	-	55,55,55	1.27	5 (9%)	68,69,69	1.54	11 (16%)
32	CLA	B	605	-	61,69,73	1.50	6 (9%)	71,108,113	1.48	9 (12%)
31	8CT	K	101	-	40,41,41	4.68	24 (60%)	50,56,56	2.79	15 (30%)
34	II0	9	612	-	39,43,43	2.69	4 (10%)	50,60,60	1.67	11 (22%)
32	CLA	d	403	-	60,68,73	1.49	6 (10%)	70,107,113	1.49	9 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
37	LMG	c	517	-	46,46,55	0.77	1 (2%)	54,54,63	1.31	6 (11%)
37	LMG	2	617	-	36,36,55	0.86	0	44,44,63	1.25	5 (11%)
39	SQD	B	620	-	53,54,54	1.53	7 (13%)	62,65,65	1.40	6 (9%)
43	PL9	A	609	-	13,13,55	1.68	2 (15%)	17,17,69	1.66	4 (23%)
45	DGD	c	516	-	56,56,67	0.93	2 (3%)	70,70,81	1.41	7 (10%)
32	CLA	c	507	-	65,73,73	1.45	6 (9%)	76,113,113	1.39	6 (7%)
32	CLA	B	616	-	65,73,73	1.45	6 (9%)	76,113,113	1.38	7 (9%)
38	LHG	8	618	32	21,21,48	0.76	0	23,26,54	1.26	2 (8%)
31	8CT	9	615	-	40,41,41	4.69	24 (60%)	50,56,56	2.77	20 (40%)
31	8CT	H	102	-	40,41,41	4.70	24 (60%)	50,56,56	2.76	16 (32%)
32	CLA	5	309	-	60,68,73	1.54	5 (8%)	70,107,113	1.41	7 (10%)
32	CLA	7	609	-	41,49,73	1.85	5 (12%)	47,84,113	1.65	8 (17%)
32	CLA	C	506	-	45,53,73	1.75	7 (15%)	52,89,113	1.63	7 (13%)
32	CLA	b	609	-	65,73,73	1.45	6 (9%)	76,113,113	1.43	8 (10%)
34	IIO	0	617	-	39,43,43	2.69	4 (10%)	50,60,60	1.77	11 (22%)
32	CLA	0	608	5	60,68,73	1.54	5 (8%)	70,107,113	1.40	7 (10%)
32	CLA	1	603	-	50,58,73	1.69	6 (12%)	58,95,113	1.52	7 (12%)
32	CLA	1	602	2	59,67,73	1.55	6 (10%)	68,105,113	1.44	8 (11%)
32	CLA	b	612	-	64,72,73	1.46	7 (10%)	74,111,113	1.40	7 (9%)
36	IHT	0	614	-	40,42,42	1.93	2 (5%)	53,58,58	1.82	12 (22%)
32	CLA	8	612	-	45,53,73	1.78	5 (11%)	52,89,113	1.55	7 (13%)
31	8CT	k	102	-	40,41,41	4.68	24 (60%)	50,56,56	2.79	16 (32%)

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
47	HEM	E	101	-	-	3/12/54/54	-
32	CLA	c	501	-	1/1/15/20	19/37/115/115	-
32	CLA	B	602	-	1/1/11/20	6/16/94/115	-
39	SQD	B	601	-	-	23/43/63/69	0/1/1/1
32	CLA	C	507	-	1/1/15/20	14/37/115/115	-
32	CLA	b	607	-	1/1/15/20	9/37/115/115	-
38	LHG	A	613	-	-	25/53/53/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	4	606	-	1/1/11/20	5/13/91/115	-
37	LMG	g	101	-	-	9/23/43/70	0/1/1/1
36	IHT	2	616	-	-	1/25/65/65	0/2/2/2
32	CLA	b	610	-	1/1/15/20	8/37/115/115	-
34	II0	P	614	-	-	2/21/67/67	0/2/2/2
32	CLA	B	609	-	1/1/15/20	9/37/115/115	-
32	CLA	5	310	-	1/1/10/20	3/8/86/115	-
32	CLA	P	606	7	1/1/11/20	3/13/91/115	-
32	CLA	P	611	-	1/1/11/20	7/13/91/115	-
32	CLA	c	508	-	1/1/15/20	9/37/115/115	-
39	SQD	a	409	-	-	26/49/69/69	0/1/1/1
32	CLA	A	602	-	1/1/15/20	7/37/115/115	-
32	CLA	B	612	-	1/1/14/20	15/35/113/115	-
32	CLA	P	601	7	1/1/10/20	0/10/88/115	-
34	II0	2	613	-	-	1/21/67/67	0/2/2/2
34	II0	0	616	-	-	4/21/67/67	0/2/2/2
38	LHG	D	410	-	-	18/36/36/53	-
32	CLA	C	501	-	1/1/15/20	18/37/115/115	-
31	8CT	6	615	-	-	5/29/63/63	0/2/2/2
33	KC2	6	609	-	-	11/15/71/71	-
32	CLA	3	604	4	1/1/13/20	6/25/103/115	-
38	LHG	2	618	32	-	12/24/24/53	-
38	LHG	B	619	-	-	19/43/43/53	-
31	8CT	B	622	-	-	16/29/63/63	0/2/2/2
35	II3	P	613	-	-	3/25/67/67	0/2/2/2
32	CLA	9	608	-	1/1/10/20	1/8/86/115	-
32	CLA	b	602	-	1/1/11/20	6/16/94/115	-
39	SQD	b	601	-	-	23/43/63/69	0/1/1/1
32	CLA	3	608	-	1/1/10/20	1/8/86/115	-
38	LHG	a	402	-	-	10/47/47/53	-
34	II0	p	316	-	-	3/21/67/67	0/2/2/2
32	CLA	B	607	-	1/1/15/20	9/37/115/115	-
32	CLA	p	306	-	1/1/14/20	14/31/109/115	-
32	CLA	9	603	-	1/1/12/20	6/19/97/115	-
38	LHG	a	403	-	-	26/53/53/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	9	601	4	1/1/10/20	3/10/88/115	-
32	CLA	2	609	38	1/1/10/20	2/8/86/115	-
32	CLA	5	306	-	1/1/14/20	15/31/109/115	-
32	CLA	S	302	-	1/1/11/20	6/13/91/115	-
41	PHO	a	407	-	-	8/37/103/103	0/5/6/6
35	II3	7	615	-	-	2/25/67/67	0/2/2/2
36	IHT	4	614	-	-	5/25/65/65	0/2/2/2
32	CLA	3	601	4	1/1/10/20	3/10/88/115	-
32	CLA	5	303	6	1/1/13/20	11/30/108/115	-
45	DGD	c	515	-	-	18/45/85/95	0/2/2/2
32	CLA	8	601	3	1/1/10/20	3/10/88/115	-
33	KC2	p	311	-	-	10/15/71/71	-
32	CLA	b	613	-	1/1/15/20	16/37/115/115	-
34	II0	7	614	-	-	1/21/67/67	0/2/2/2
34	II0	P	612	-	-	0/21/67/67	0/2/2/2
34	II0	4	619	-	-	2/21/67/67	0/2/2/2
32	CLA	4	609	-	1/1/10/20	2/8/86/115	-
32	CLA	0	601	5	1/1/10/20	4/10/88/115	-
31	8CT	b	622	-	-	8/29/63/63	0/2/2/2
32	CLA	B	611	-	1/1/15/20	8/37/115/115	-
34	II0	0	615	-	-	1/21/67/67	0/2/2/2
32	CLA	6	608	-	1/1/10/20	2/8/86/115	-
39	SQD	5	318	-	-	19/30/50/69	0/1/1/1
32	CLA	B	603	-	1/1/12/20	12/27/107/115	-
34	II0	8	619	-	-	1/21/67/67	0/2/2/2
32	CLA	C	512	-	1/1/12/20	11/27/105/115	-
32	CLA	9	605	-	1/1/11/20	6/15/93/115	-
37	LMG	l	101	-	-	17/35/55/70	0/1/1/1
39	SQD	b	620	-	-	24/49/69/69	0/1/1/1
32	CLA	7	613	-	1/1/11/20	7/13/91/115	-
38	LHG	S	301	-	-	21/41/41/53	-
32	CLA	A	605	-	1/1/14/20	3/31/109/115	-
32	CLA	B	610	-	1/1/15/20	8/37/115/115	-
34	II0	7	619	-	-	2/21/67/67	0/2/2/2
33	KC2	6	605	7	-	10/15/71/71	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
34	II0	2	614	-	-	0/21/67/67	0/2/2/2
32	CLA	b	604	-	1/1/14/20	10/35/113/115	-
32	CLA	P	604	-	1/1/13/20	5/25/103/115	-
32	CLA	P	610	-	1/1/11/20	6/13/91/115	-
32	CLA	0	604	-	1/1/13/20	9/25/103/115	-
33	KC2	4	610	5	-	11/15/71/71	-
32	CLA	P	603	-	1/1/12/20	3/19/97/115	-
34	II0	4	616	-	-	4/21/67/67	0/2/2/2
32	CLA	6	603	-	1/1/12/20	3/19/97/115	-
32	CLA	4	605	-	1/1/12/20	7/19/97/115	-
32	CLA	1	608	2	1/1/14/20	10/31/109/115	-
32	CLA	p	309	6	1/1/14/20	10/31/109/115	-
32	CLA	3	607	4	1/1/14/20	8/31/109/115	-
45	DGD	h	101	-	-	20/51/91/95	0/2/2/2
32	CLA	4	608	5	1/1/14/20	8/31/109/115	-
38	LHG	d	405	-	-	17/47/51/53	-
45	DGD	C	515	-	-	18/45/85/95	0/2/2/2
32	CLA	2	604	-	1/1/13/20	3/25/103/115	-
32	CLA	c	502	-	1/1/14/20	16/35/113/115	-
37	LMG	G	102	-	-	9/23/43/70	0/1/1/1
34	II0	p	301	-	-	2/21/67/67	0/2/2/2
32	CLA	5	312	-	1/1/11/20	7/13/91/115	-
38	LHG	s	301	-	-	21/41/41/53	-
32	CLA	b	611	-	1/1/15/20	8/37/115/115	-
32	CLA	c	511	27	1/1/15/20	8/37/115/115	-
32	CLA	1	613	-	1/1/11/20	7/13/91/115	-
32	CLA	P	607	7	1/1/14/20	7/31/109/115	-
31	8CT	d	408	-	-	13/29/63/63	0/2/2/2
32	CLA	2	608	3	1/1/14/20	10/31/109/115	-
32	CLA	7	608	2	1/1/14/20	10/31/109/115	-
32	CLA	a	405	-	1/1/15/20	7/37/115/115	-
47	HEM	f	101	11	-	3/12/54/54	-
32	CLA	c	505	-	1/1/15/20	13/37/115/115	-
32	CLA	B	606	-	1/1/15/20	13/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	9	610	4	1/1/11/20	7/13/91/115	-
34	II0	3	614	-	-	3/21/67/67	0/2/2/2
32	CLA	C	510	-	1/1/15/20	8/37/115/115	-
34	II0	3	612	-	-	1/21/67/67	0/2/2/2
37	LMG	A	607	-	-	16/43/63/70	0/1/1/1
32	CLA	s	302	-	1/1/11/20	5/13/91/115	-
32	CLA	G	101	-	1/1/11/20	6/13/91/115	-
32	CLA	3	602	4	1/1/13/20	13/30/108/115	-
37	LMG	B	618	-	-	18/46/66/70	0/1/1/1
32	CLA	4	603	-	1/1/12/20	6/19/97/115	-
32	CLA	2	612	-	1/1/11/20	6/13/91/115	-
32	CLA	2	601	3	1/1/10/20	3/10/88/115	-
32	CLA	7	602	2	1/1/13/20	12/30/108/115	-
32	CLA	4	602	5	1/1/13/20	11/30/108/115	-
34	II0	1	617	-	-	3/21/67/67	0/2/2/2
32	CLA	9	607	4	1/1/14/20	8/31/109/115	-
32	CLA	b	614	-	1/1/15/20	14/37/115/115	-
34	II0	2	615	-	-	3/21/67/67	0/2/2/2
32	CLA	1	607	-	1/1/11/20	7/13/91/115	-
32	CLA	d	409	-	1/1/13/20	5/30/108/115	-
43	PL9	a	412	-	-	1/5/18/73	0/1/1/1
32	CLA	p	304	-	1/1/12/20	10/19/97/115	-
36	IHT	5	317	-	-	1/25/65/65	0/2/2/2
32	CLA	8	602	3	1/1/13/20	12/30/108/115	-
32	CLA	C	502	-	1/1/14/20	16/35/113/115	-
37	LMG	P	616	-	-	9/23/43/70	0/1/1/1
32	CLA	3	610	4	1/1/11/20	7/13/91/115	-
32	CLA	c	504	-	1/1/14/20	13/35/113/115	-
31	8CT	P	615	-	-	5/29/63/63	0/2/2/2
32	CLA	B	613	-	1/1/15/20	16/37/115/115	-
32	CLA	6	606	7	1/1/11/20	3/13/91/115	-
32	CLA	5	305	-	1/1/13/20	9/25/103/115	-
32	CLA	1	612	-	1/1/11/20	5/13/91/115	-
32	CLA	0	609	-	1/1/10/20	2/8/86/115	-
33	KC2	8	610	-	-	11/15/71/71	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	g	102	-	1/1/11/20	7/13/91/115	-
32	CLA	0	605	-	1/1/12/20	7/19/97/115	-
37	LMG	D	407	-	-	17/41/61/70	0/1/1/1
32	CLA	9	609	-	1/1/14/20	6/31/109/115	-
32	CLA	b	606	-	1/1/15/20	13/37/115/115	-
38	LHG	D	406	-	-	18/47/51/53	-
32	CLA	8	606	-	1/1/11/20	2/13/91/115	-
32	CLA	C	504	-	1/1/14/20	13/35/113/115	-
37	LMG	D	411	-	-	26/35/55/70	0/1/1/1
32	CLA	4	613	5	1/1/11/20	6/13/91/115	-
32	CLA	c	509	-	1/1/15/20	8/37/115/115	-
37	LMG	b	618	-	-	17/46/66/70	0/1/1/1
32	CLA	0	602	5	1/1/13/20	11/30/108/115	-
32	CLA	c	512	-	1/1/12/20	11/27/105/115	-
33	KC2	P	609	-	-	11/15/71/71	-
32	CLA	b	617	-	1/1/15/20	14/37/115/115	-
39	SQD	A	606	-	-	26/49/69/69	0/1/1/1
32	CLA	A	603	-	1/1/11/20	4/18/96/115	-
32	CLA	5	302	6	1/1/10/20	4/10/88/115	-
32	CLA	2	607	3	1/1/11/20	2/13/91/115	-
31	8CT	Z	101	-	-	12/29/63/63	0/2/2/2
45	DGD	C	514	-	-	18/44/84/95	0/2/2/2
32	CLA	a	406	-	1/1/11/20	4/18/96/115	-
43	PL9	D	405	-	-	3/53/73/73	0/1/1/1
32	CLA	C	511	27	1/1/15/20	9/37/115/115	-
34	II0	5	316	-	-	3/21/67/67	0/2/2/2
34	II0	5	315	-	-	3/21/67/67	0/2/2/2
32	CLA	7	604	2	1/1/13/20	6/25/103/115	-
34	II0	1	614	-	-	0/21/67/67	0/2/2/2
37	LMG	8	617	-	-	10/31/51/70	0/1/1/1
36	IHT	8	616	-	-	0/25/65/65	0/2/2/2
33	KC2	0	610	5	-	12/15/71/71	-
32	CLA	C	505	-	1/1/15/20	13/37/115/115	-
32	CLA	6	602	7	1/1/13/20	15/30/108/115	-
32	CLA	0	607	5	1/1/11/20	0/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	p	303	6	1/1/13/20	12/30/108/115	-
32	CLA	1	604	2	1/1/13/20	6/25/103/115	-
32	CLA	a	408	-	1/1/14/20	3/31/109/115	-
34	II0	7	617	-	-	4/21/67/67	0/2/2/2
37	LMG	4	618	-	-	11/31/51/70	0/1/1/1
34	II0	5	301	-	-	3/21/67/67	0/2/2/2
45	DGD	H	101	-	-	20/51/91/95	0/2/2/2
32	CLA	B	617	-	1/1/15/20	14/37/115/115	-
32	CLA	b	603	-	1/1/12/20	13/27/107/115	-
38	LHG	A	612	-	-	10/47/47/53	-
32	CLA	0	603	-	1/1/12/20	6/19/97/115	-
32	CLA	3	609	-	1/1/14/20	6/31/109/115	-
32	CLA	c	503	-	1/1/15/20	15/37/115/115	-
32	CLA	b	616	-	1/1/15/20	5/37/115/115	-
32	CLA	D	404	-	1/1/14/20	10/31/109/115	-
34	II0	8	615	-	-	2/21/67/67	0/2/2/2
45	DGD	A	614	-	-	15/43/79/95	0/2/2/2
32	CLA	9	611	-	1/1/11/20	4/13/91/115	-
32	CLA	B	614	-	1/1/15/20	14/37/115/115	-
47	HEM	V	201	-	-	1/12/54/54	-
32	CLA	3	603	-	1/1/12/20	6/19/97/115	-
38	LHG	b	619	-	-	19/43/43/53	-
32	CLA	1	611	-	1/1/11/20	6/13/91/115	-
32	CLA	0	613	5	1/1/11/20	6/13/91/115	-
32	CLA	8	605	3	1/1/14/20	11/31/109/115	-
32	CLA	7	612	-	1/1/11/20	6/13/91/115	-
34	II0	3	613	-	-	0/21/67/67	0/2/2/2
32	CLA	7	603	-	1/1/12/20	8/19/97/115	-
34	II0	9	614	-	-	3/21/67/67	0/2/2/2
32	CLA	4	601	5	1/1/10/20	4/10/88/115	-
32	CLA	c	510	-	1/1/15/20	8/37/115/115	-
32	CLA	5	304	-	1/1/12/20	10/19/97/115	-
36	IHT	0	618	-	-	5/25/65/65	0/2/2/2
31	8CT	C	518	-	-	10/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
38	LHG	l	102	-	-	21/53/53/53	-
32	CLA	8	611	-	1/1/11/20	7/13/91/115	-
32	CLA	b	608	-	1/1/10/20	3/8/86/115	-
31	8CT	D	409	-	-	13/29/63/63	0/2/2/2
32	CLA	b	605	-	1/1/14/20	11/33/111/115	-
34	II0	7	616	-	-	3/21/67/67	0/2/2/2
31	8CT	B	624	-	-	7/29/63/63	0/2/2/2
37	LMG	L	102	-	-	18/35/55/70	0/1/1/1
32	CLA	3	611	-	1/1/11/20	4/13/91/115	-
32	CLA	C	503	-	1/1/15/20	16/37/115/115	-
32	CLA	C	509	-	1/1/15/20	8/37/115/115	-
32	CLA	p	302	6	1/1/10/20	5/10/88/115	-
45	DGD	a	414	-	-	14/43/79/95	0/2/2/2
45	DGD	C	516	-	-	19/44/84/95	0/2/2/2
32	CLA	s	303	19	1/1/15/20	15/37/115/115	-
32	CLA	c	506	-	1/1/11/20	5/13/91/115	-
32	CLA	d	402	-	1/1/13/20	9/28/104/115	-
38	LHG	d	411	-	-	18/36/36/53	-
32	CLA	0	612	-	1/1/11/20	5/13/91/115	-
32	CLA	3	605	-	1/1/11/20	6/15/93/115	-
38	LHG	b	621	-	-	14/43/43/53	-
32	CLA	7	605	-	1/1/12/20	7/19/97/115	-
33	KC2	2	610	-	-	11/15/71/71	-
34	II0	8	613	-	-	0/21/67/67	0/2/2/2
37	LMG	0	619	-	-	11/31/51/70	0/1/1/1
34	II0	0	620	-	-	1/21/67/67	0/2/2/2
34	II0	5	319	-	-	2/21/67/67	0/2/2/2
32	CLA	9	604	4	1/1/13/20	5/25/103/115	-
32	CLA	0	611	-	1/1/11/20	7/13/91/115	-
34	II0	4	615	-	-	0/21/67/67	0/2/2/2
32	CLA	1	606	-	1/1/11/20	9/13/91/115	-
37	LMG	d	401	-	-	26/35/55/70	0/1/1/1
41	PHO	A	604	-	-	8/37/103/103	0/5/6/6
32	CLA	p	308	6	1/1/11/20	5/13/91/115	-
31	8CT	k	101	-	-	6/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	p	313	-	1/1/11/20	6/13/91/115	-
32	CLA	b	615	-	1/1/14/20	15/35/113/115	-
32	CLA	7	611	-	1/1/11/20	6/13/91/115	-
33	KC2	5	311	-	-	9/15/71/71	-
35	II3	1	615	-	-	2/25/67/67	0/2/2/2
32	CLA	6	611	-	1/1/11/20	5/13/91/115	-
32	CLA	6	607	7	1/1/14/20	7/31/109/115	-
32	CLA	D	403	-	1/1/13/20	9/28/104/115	-
32	CLA	8	609	38	1/1/10/20	2/8/86/115	-
36	IHT	p	317	-	-	0/25/65/65	0/2/2/2
31	8CT	a	413	-	-	7/29/63/63	0/2/2/2
32	CLA	6	601	7	1/1/10/20	0/10/88/115	-
41	PHO	d	410	-	-	8/37/103/103	0/5/6/6
31	8CT	h	102	-	-	9/29/63/63	0/2/2/2
32	CLA	B	615	-	1/1/14/20	15/35/113/115	-
31	8CT	M	201	-	-	16/29/63/63	0/2/2/2
33	KC2	1	610	-	-	11/15/71/71	-
41	PHO	D	402	-	-	8/37/103/103	0/5/6/6
31	8CT	b	623	-	-	7/29/63/63	0/2/2/2
36	IHT	1	618	-	-	4/25/65/65	0/2/2/2
39	SQD	p	318	-	-	18/30/50/69	0/1/1/1
37	LMG	C	517	-	-	25/41/61/70	0/1/1/1
32	CLA	2	603	-	1/1/12/20	5/19/97/115	-
37	LMG	d	406	-	-	17/41/61/70	0/1/1/1
38	LHG	B	621	-	-	14/43/43/53	-
31	8CT	3	615	-	-	10/29/63/63	0/2/2/2
32	CLA	B	604	-	1/1/14/20	10/35/113/115	-
31	8CT	z	101	-	-	13/29/63/63	0/2/2/2
32	CLA	C	508	-	1/1/15/20	9/37/115/115	-
32	CLA	5	313	-	1/1/11/20	7/13/91/115	-
34	II0	2	619	-	-	2/21/67/67	0/2/2/2
36	IHT	4	617	-	-	6/25/65/65	0/2/2/2
32	CLA	c	513	-	1/1/11/20	11/18/96/115	-
32	CLA	B	608	-	1/1/10/20	3/8/86/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CLA	8	607	3	1/1/11/20	2/13/91/115	-
34	II0	p	314	-	-	0/21/67/67	0/2/2/2
32	CLA	1	601	-	1/1/10/20	2/10/88/115	-
32	CLA	4	611	-	1/1/11/20	7/13/91/115	-
31	8CT	K	102	-	-	7/29/63/63	0/2/2/2
45	DGD	c	514	-	-	18/44/84/95	0/2/2/2
32	CLA	6	610	-	1/1/11/20	6/13/91/115	-
35	II3	6	613	-	-	1/25/67/67	0/2/2/2
34	II0	1	619	-	-	2/21/67/67	0/2/2/2
32	CLA	1	609	-	1/1/10/20	3/8/86/115	-
34	II0	6	614	-	-	3/21/67/67	0/2/2/2
34	II0	5	314	-	-	2/21/67/67	0/2/2/2
34	II0	9	613	-	-	1/21/67/67	0/2/2/2
32	CLA	7	606	-	1/1/11/20	9/13/91/115	-
32	CLA	S	303	19	1/1/15/20	15/37/115/115	-
32	CLA	7	607	-	1/1/11/20	7/13/91/115	-
32	CLA	2	611	-	1/1/11/20	7/13/91/115	-
32	CLA	p	307	-	1/1/11/20	2/13/91/115	-
32	CLA	p	312	-	1/1/11/20	7/13/91/115	-
32	CLA	6	604	-	1/1/13/20	5/25/103/115	-
32	CLA	4	612	-	1/1/11/20	6/13/91/115	-
32	CLA	D	401	-	1/1/13/20	5/30/108/115	-
32	CLA	P	608	-	1/1/10/20	2/8/86/115	-
34	II0	8	614	-	-	0/21/67/67	0/2/2/2
32	CLA	5	307	-	1/1/11/20	3/13/91/115	-
32	CLA	4	607	5	1/1/11/20	2/13/91/115	-
32	CLA	2	605	3	1/1/14/20	11/31/109/115	-
31	8CT	B	623	-	-	8/29/63/63	0/2/2/2
32	CLA	0	606	-	1/1/11/20	5/13/91/115	-
31	8CT	c	518	-	-	10/29/63/63	0/2/2/2
38	LHG	L	101	-	-	20/53/53/53	-
37	LMG	a	410	-	-	16/43/63/70	0/1/1/1
32	CLA	8	603	-	1/1/12/20	5/19/97/115	-
32	CLA	3	606	-	1/1/11/20	1/13/91/115	-
32	CLA	P	602	7	1/1/13/20	14/30/108/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
33	KC2	7	610	-	-	12/15/71/71	-
34	II0	6	612	-	-	1/21/67/67	0/2/2/2
32	CLA	8	604	-	1/1/13/20	3/25/103/115	-
32	CLA	C	513	-	1/1/11/20	12/18/96/115	-
32	CLA	9	606	-	1/1/11/20	1/13/91/115	-
34	II0	p	315	-	-	4/21/67/67	0/2/2/2
34	II0	1	616	-	-	4/21/67/67	0/2/2/2
32	CLA	2	606	-	1/1/11/20	3/13/91/115	-
32	CLA	2	602	3	1/1/13/20	11/30/108/115	-
33	KC2	P	605	-	-	10/15/71/71	-
32	CLA	1	605	-	1/1/12/20	7/19/97/115	-
36	IHT	7	618	-	-	2/25/65/65	0/2/2/2
37	LMG	6	616	-	-	9/23/43/70	0/1/1/1
32	CLA	8	608	3	1/1/14/20	10/31/109/115	-
47	HEM	v	201	-	-	1/12/54/54	-
32	CLA	7	601	-	1/1/10/20	3/10/88/115	-
32	CLA	5	308	6	1/1/11/20	5/13/91/115	-
32	CLA	4	604	-	1/1/13/20	9/25/103/115	-
31	8CT	A	610	-	-	5/29/63/63	0/2/2/2
32	CLA	p	310	-	1/1/10/20	3/8/86/115	-
32	CLA	9	602	4	1/1/13/20	13/30/108/115	-
32	CLA	p	305	-	1/1/13/20	9/25/103/115	-
43	PL9	d	404	-	-	3/53/73/73	0/1/1/1
32	CLA	B	605	-	1/1/14/20	11/33/111/115	-
31	8CT	K	101	-	-	13/29/63/63	0/2/2/2
34	II0	9	612	-	-	3/21/67/67	0/2/2/2
32	CLA	d	403	-	1/1/14/20	10/31/109/115	-
37	LMG	c	517	-	-	25/41/61/70	0/1/1/1
37	LMG	2	617	-	-	10/31/51/70	0/1/1/1
39	SQD	B	620	-	-	24/49/69/69	0/1/1/1
43	PL9	A	609	-	-	1/5/18/73	0/1/1/1
45	DGD	c	516	-	-	19/44/84/95	0/2/2/2
32	CLA	c	507	-	1/1/15/20	14/37/115/115	-
32	CLA	B	616	-	1/1/15/20	6/37/115/115	-
38	LHG	8	618	32	-	11/24/24/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
31	8CT	9	615	-	-	10/29/63/63	0/2/2/2
31	8CT	H	102	-	-	9/29/63/63	0/2/2/2
32	CLA	5	309	-	1/1/14/20	10/31/109/115	-
32	CLA	7	609	-	1/1/10/20	3/8/86/115	-
32	CLA	C	506	-	1/1/11/20	5/13/91/115	-
32	CLA	b	609	-	1/1/15/20	9/37/115/115	-
34	IIO	0	617	-	-	2/21/67/67	0/2/2/2
32	CLA	0	608	5	1/1/14/20	8/31/109/115	-
32	CLA	1	603	-	1/1/12/20	5/19/97/115	-
32	CLA	1	602	2	1/1/13/20	12/30/108/115	-
32	CLA	b	612	-	1/1/14/20	15/35/113/115	-
36	IHT	0	614	-	-	5/25/65/65	0/2/2/2
32	CLA	8	612	-	1/1/11/20	6/13/91/115	-
31	8CT	k	102	-	-	13/29/63/63	0/2/2/2

The worst 5 of 2275 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	d	408	8CT	C02-C03	14.49	1.59	1.34
31	D	409	8CT	C02-C03	14.46	1.59	1.34
31	b	622	8CT	C02-C03	14.40	1.59	1.34
31	h	102	8CT	C02-C03	14.40	1.59	1.34
31	H	102	8CT	C02-C03	14.39	1.59	1.34

The worst 5 of 3146 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	k	102	8CT	C33-C32-C31	-11.05	114.25	124.85
31	B	622	8CT	C33-C32-C31	-11.04	114.27	124.85
31	M	201	8CT	C33-C32-C31	-11.02	114.28	124.85
31	a	413	8CT	C33-C32-C31	-11.01	114.30	124.85
31	K	101	8CT	C33-C32-C31	-10.98	114.32	124.85

5 of 208 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
32	1	601	CLA	ND
32	1	602	CLA	ND
32	1	603	CLA	ND

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Mol	Chain	Res	Type	Atom
32	1	604	CLA	ND
32	1	605	CLA	ND

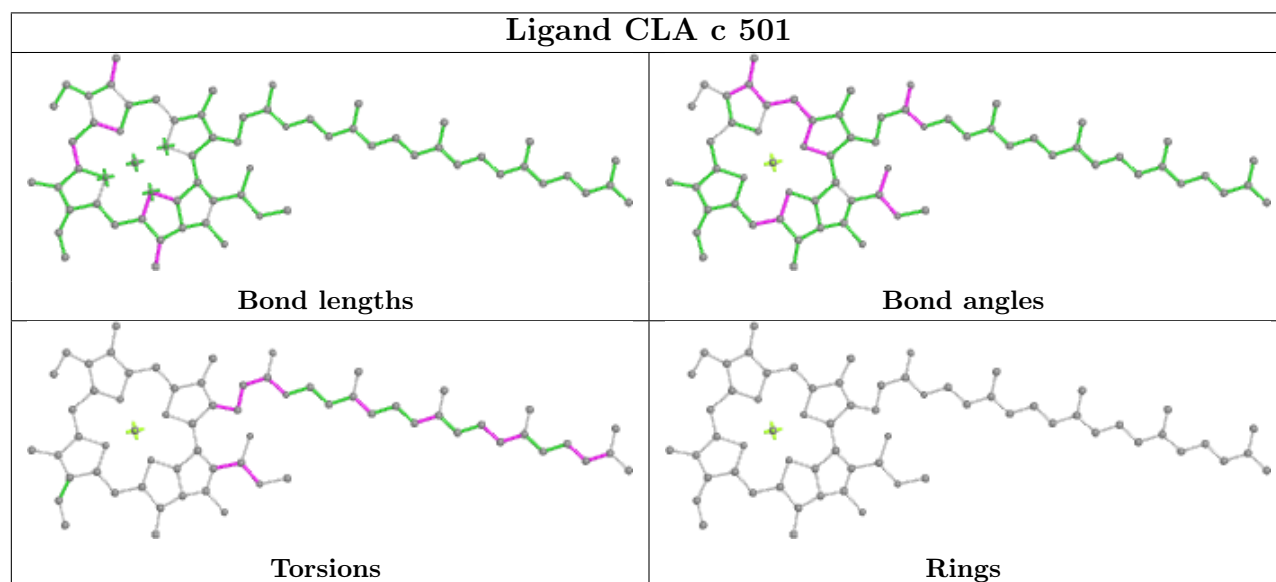
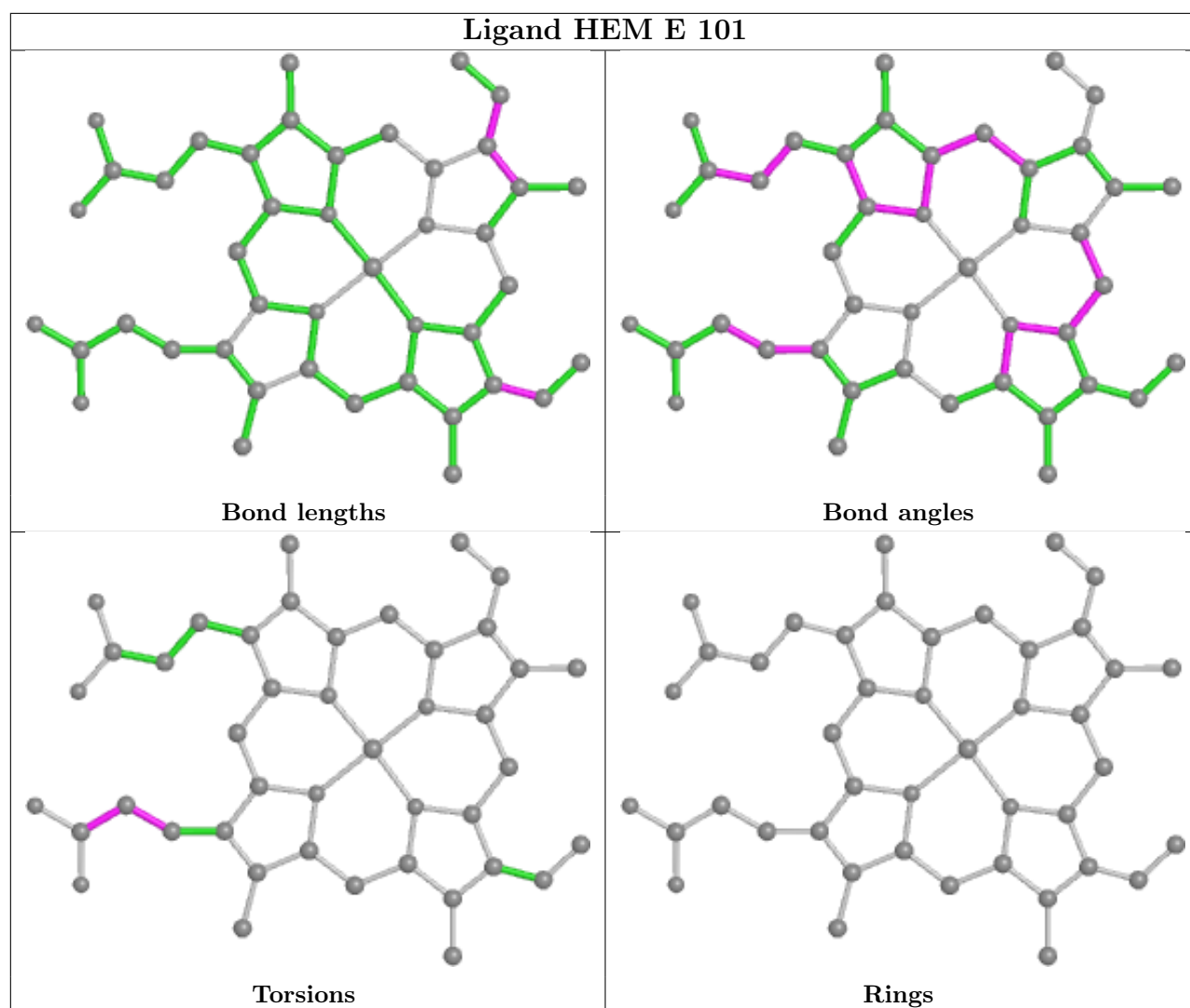
5 of 3102 torsion outliers are listed below:

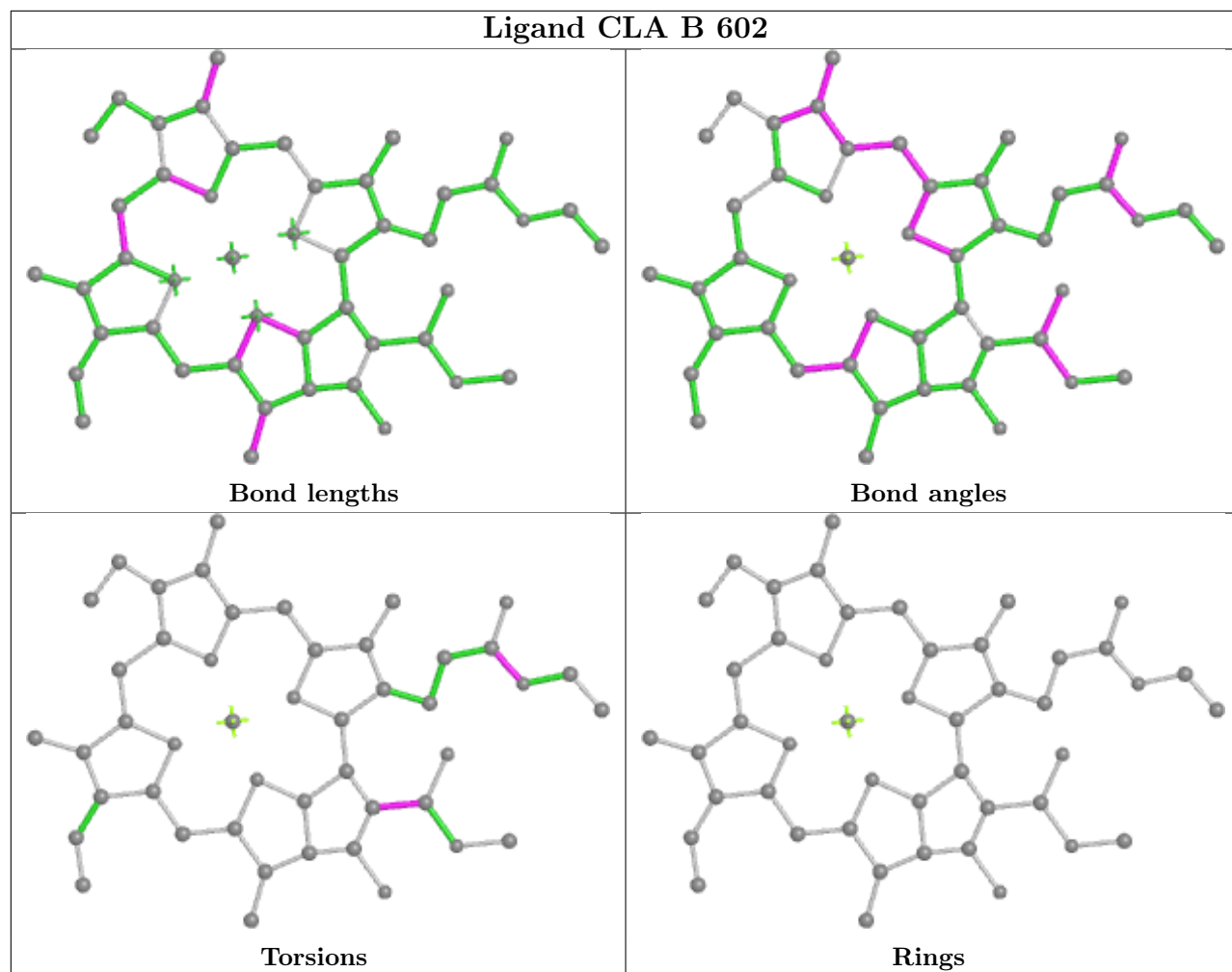
Mol	Chain	Res	Type	Atoms
31	M	201	8CT	C16-C17-C18-C19
31	M	201	8CT	C20-C21-C23-C24
31	M	201	8CT	C22-C21-C23-C24
31	M	201	8CT	C28-C29-C30-C35
31	3	615	8CT	C12-C13-C14-C15

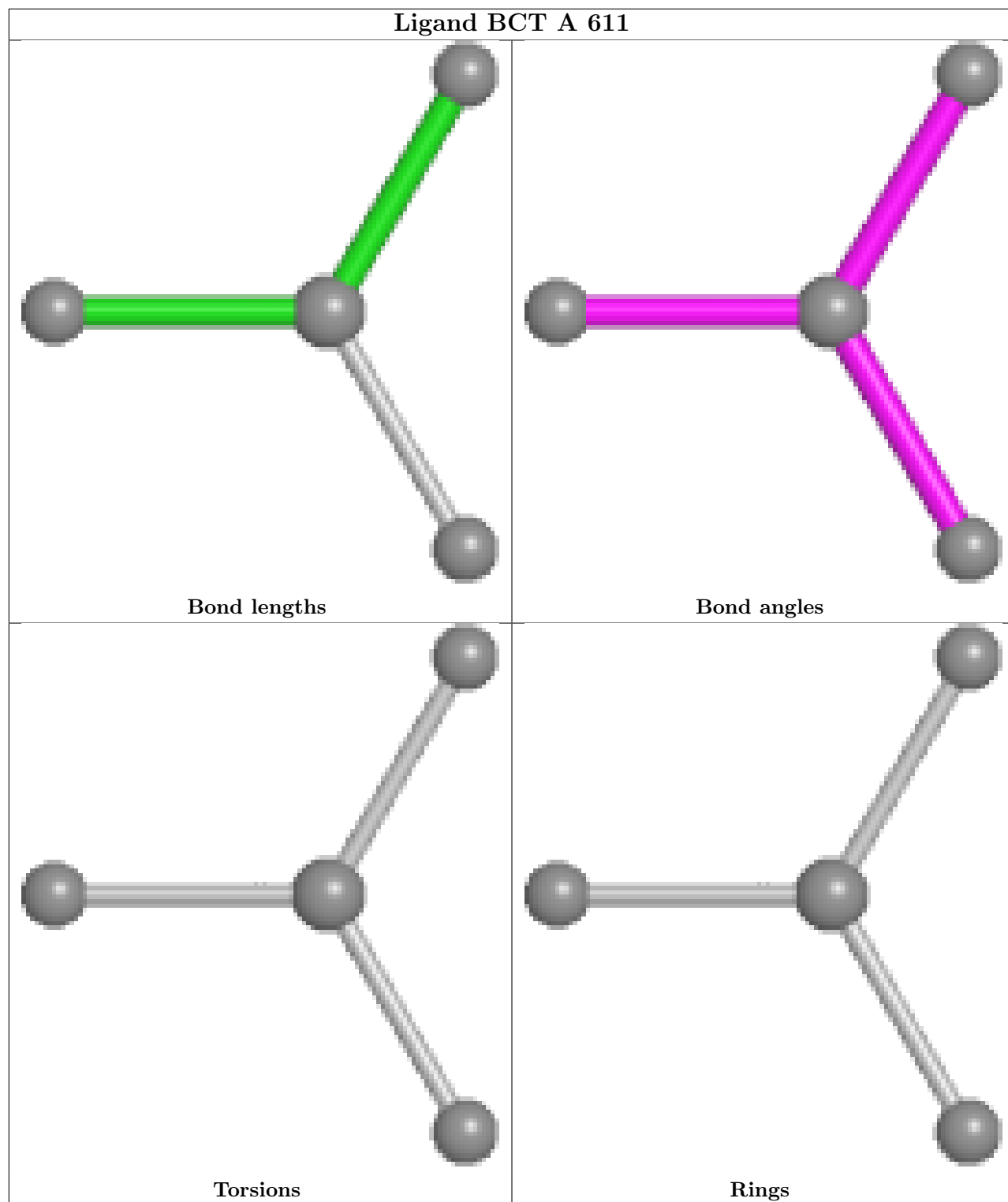
There are no ring outliers.

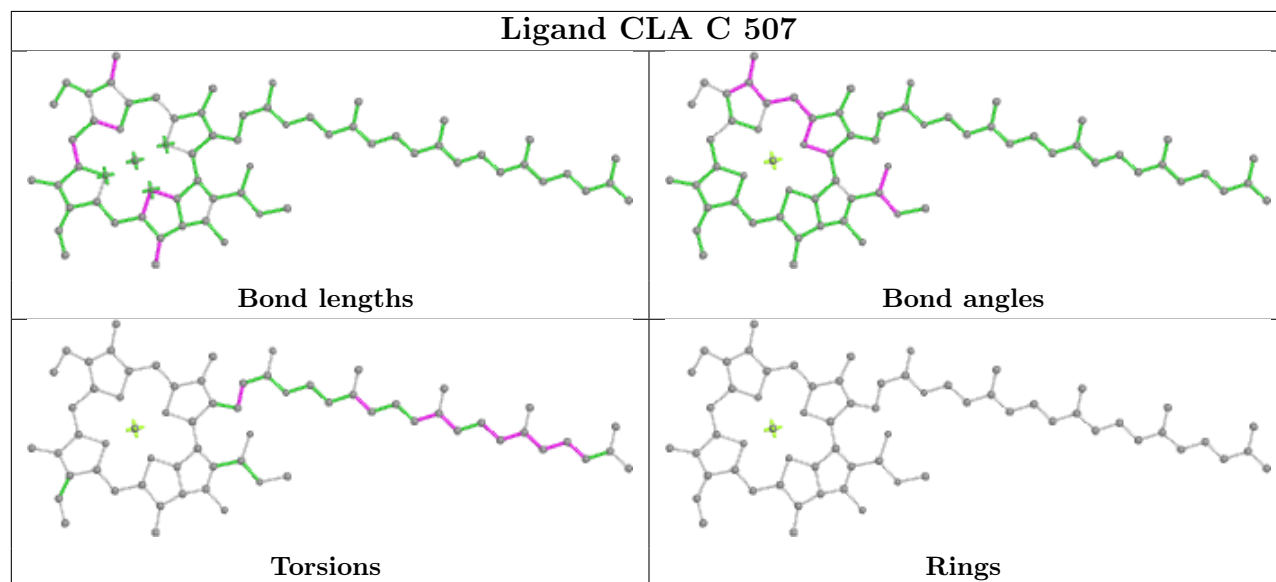
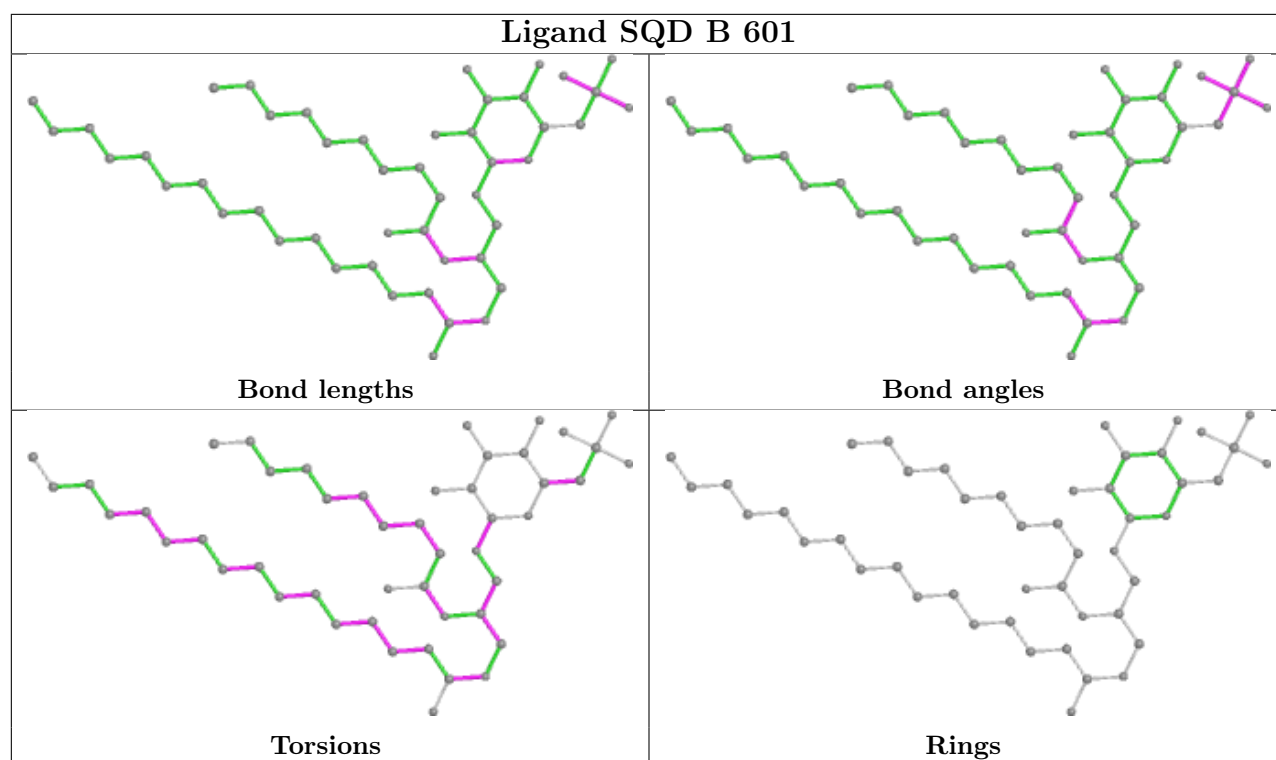
No monomer is involved in short contacts.

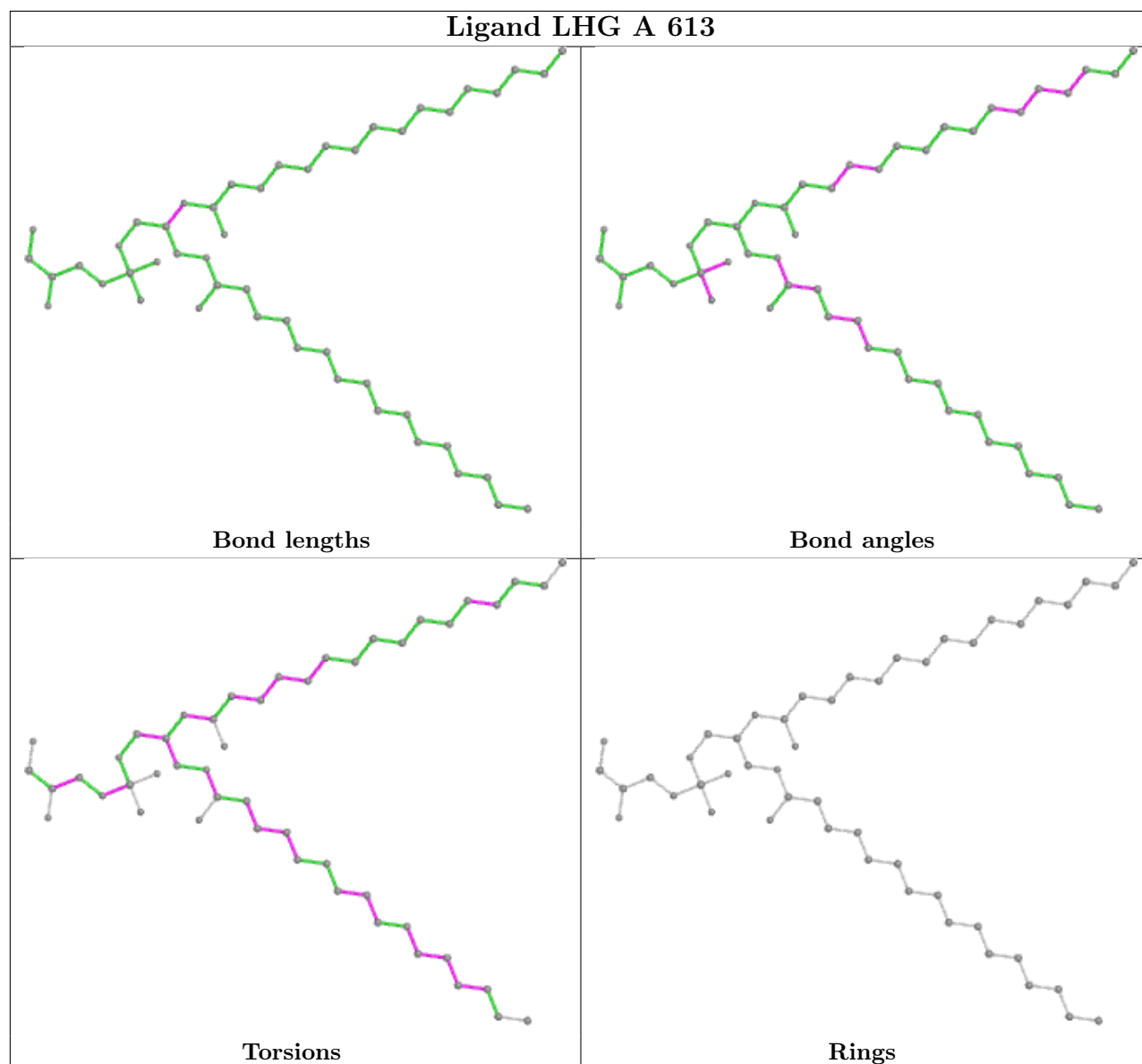
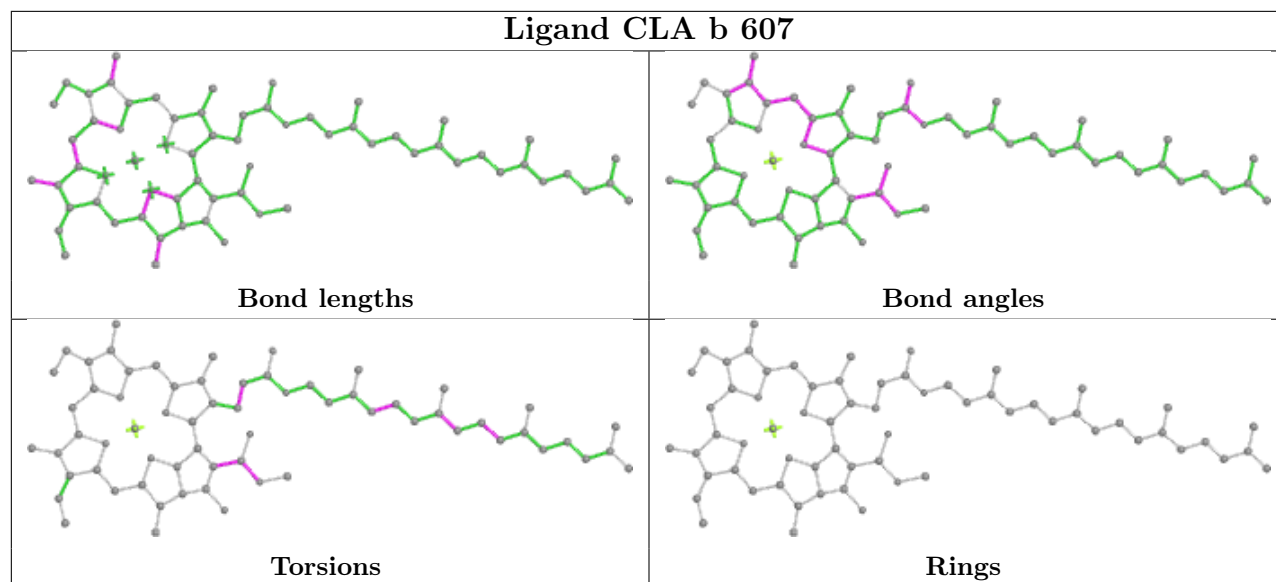
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

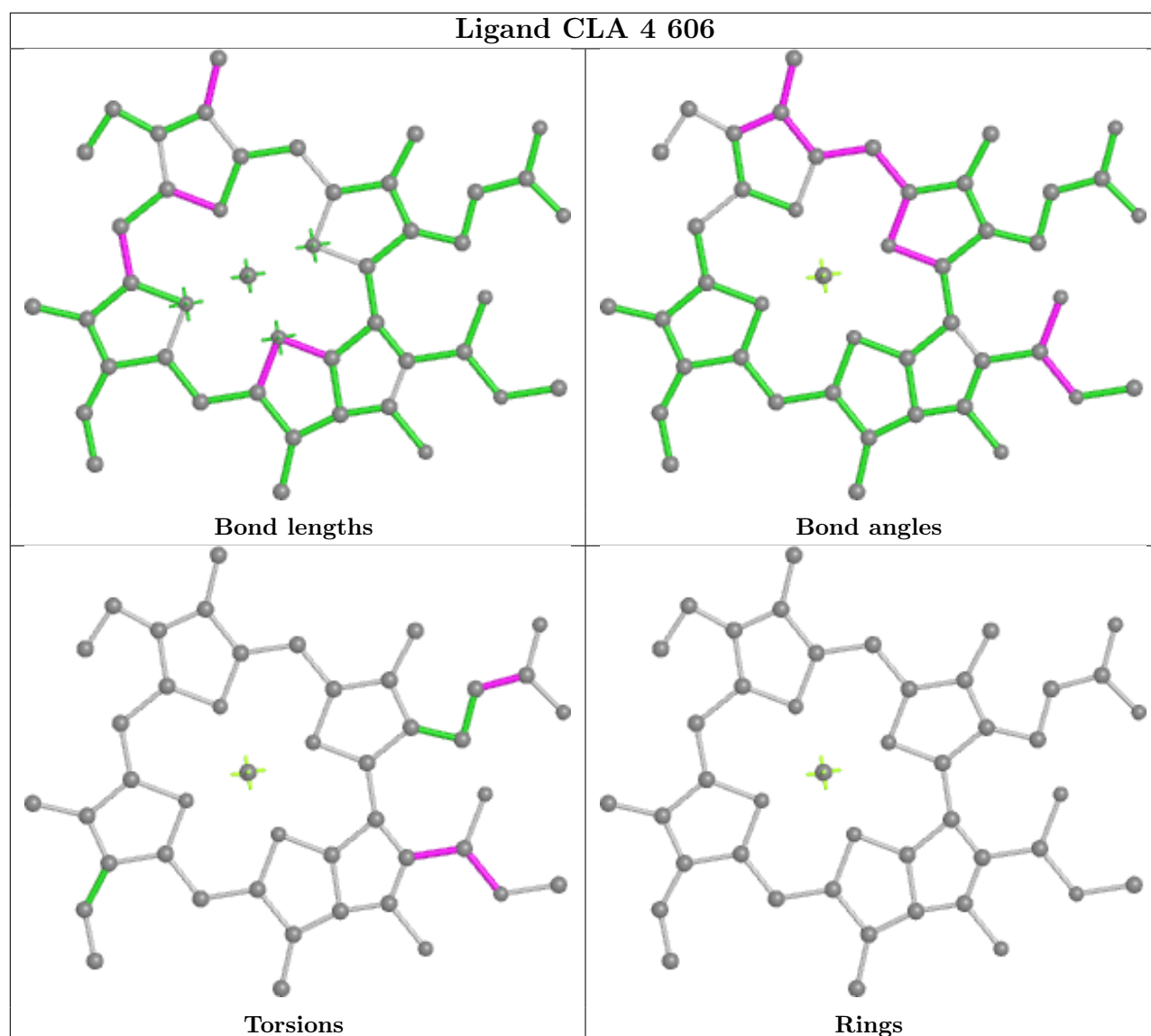


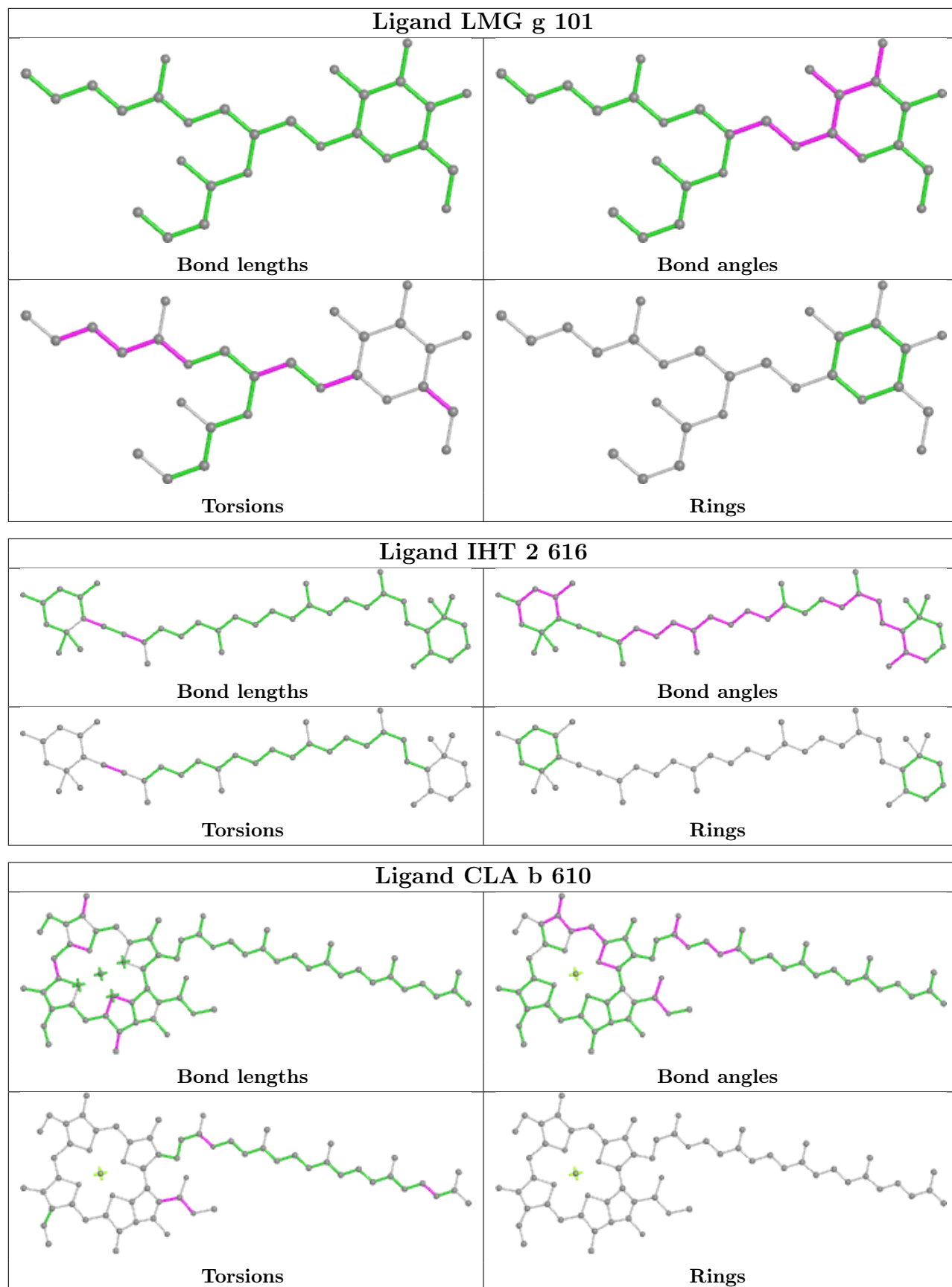


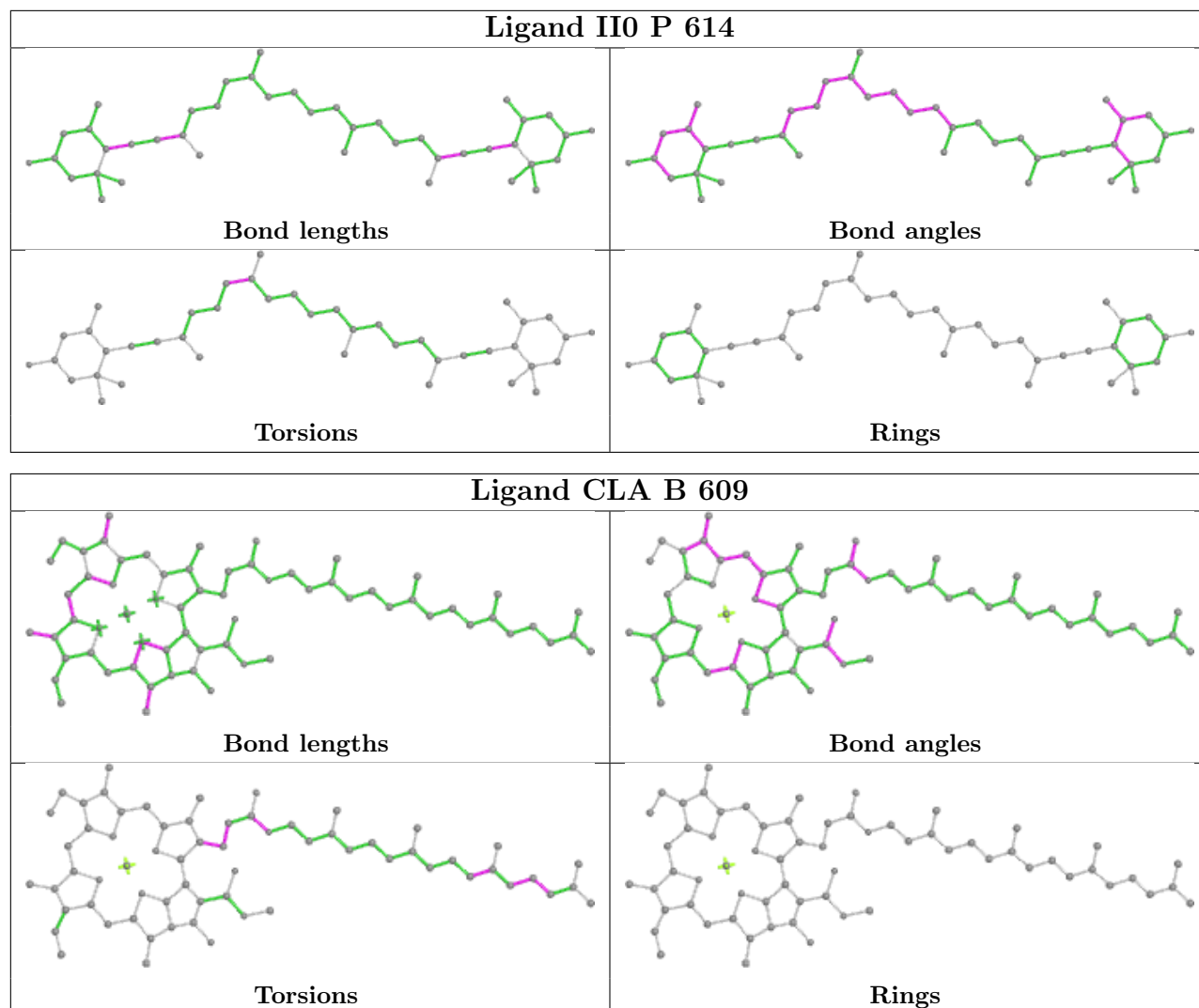


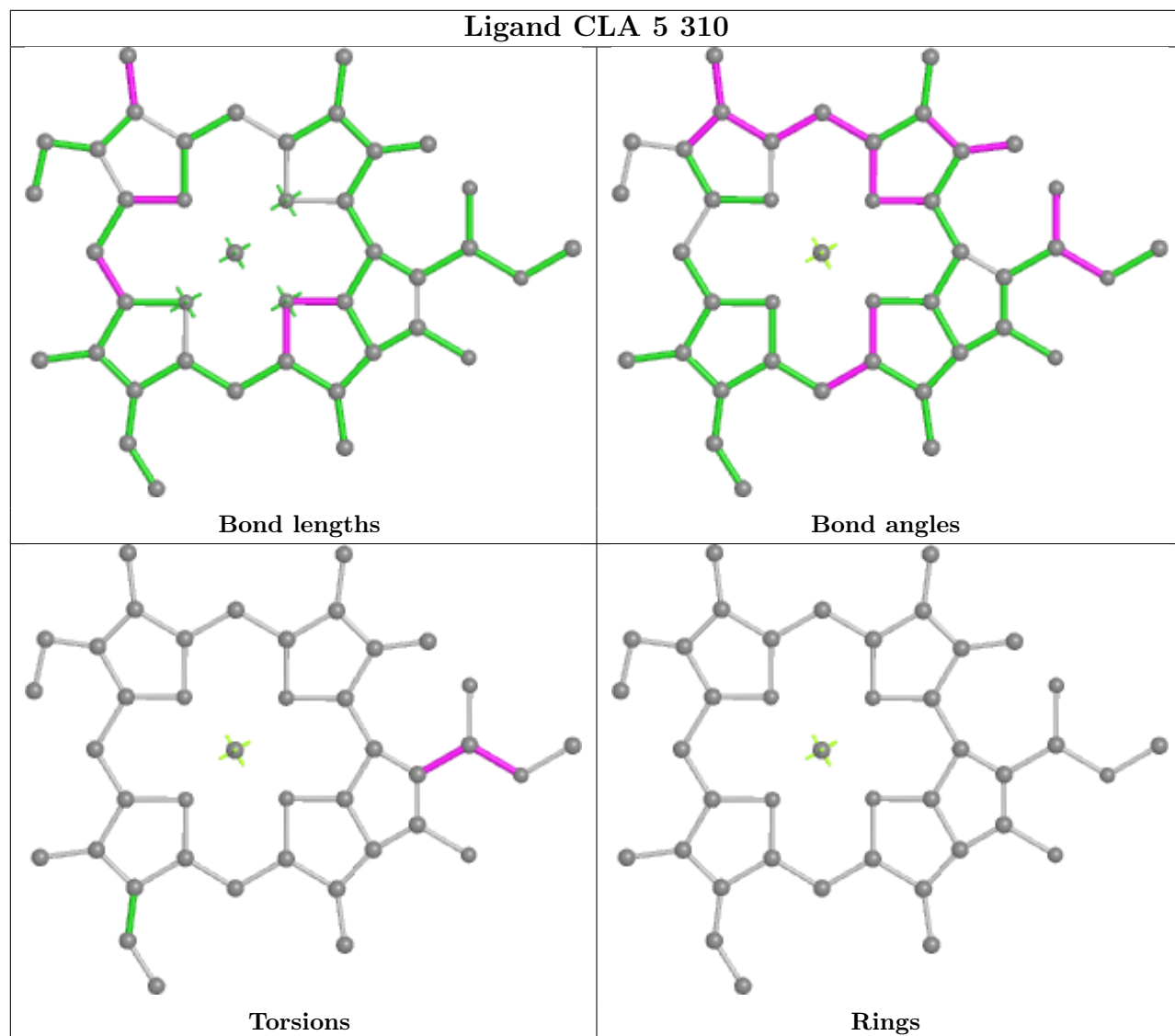


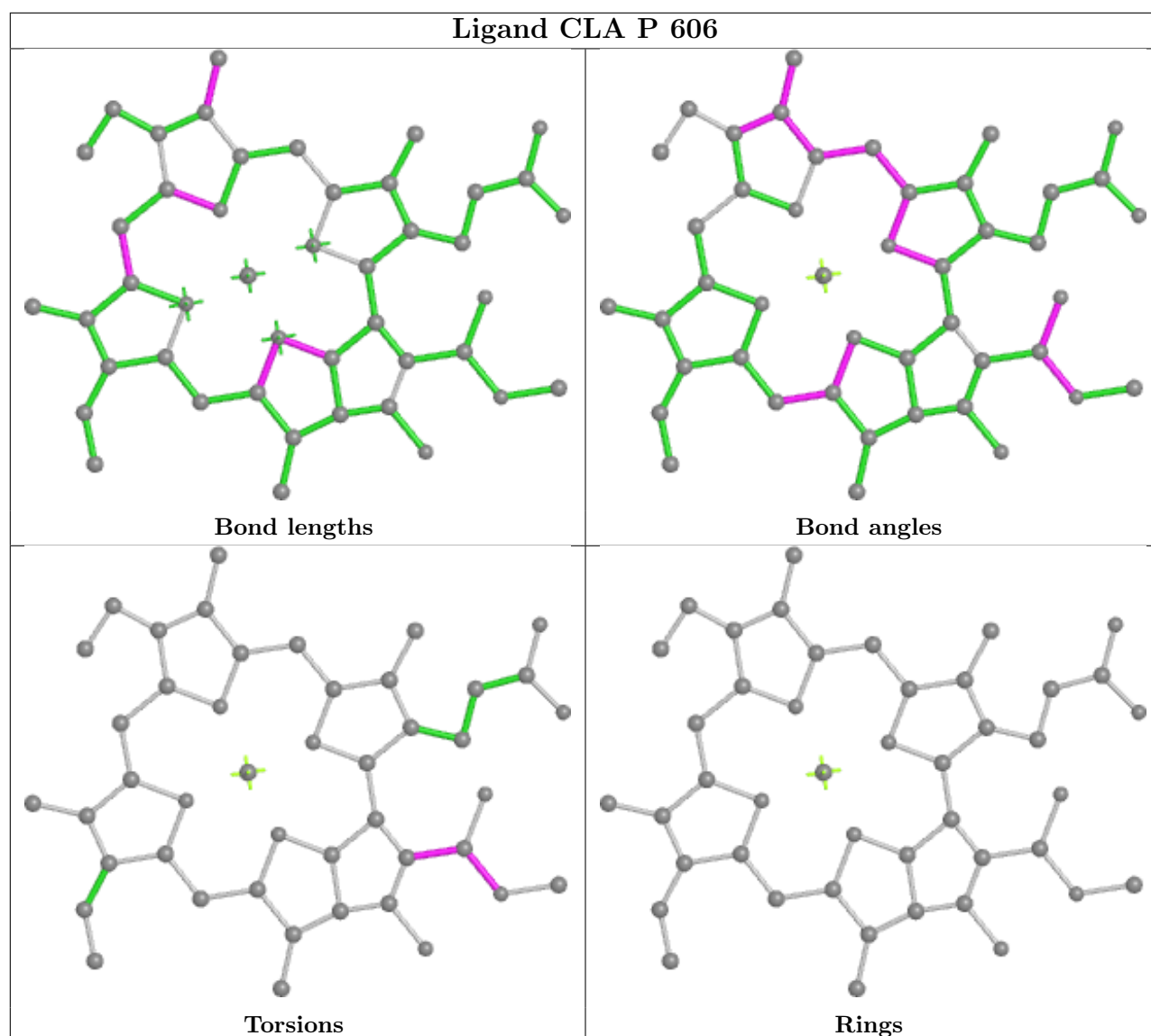


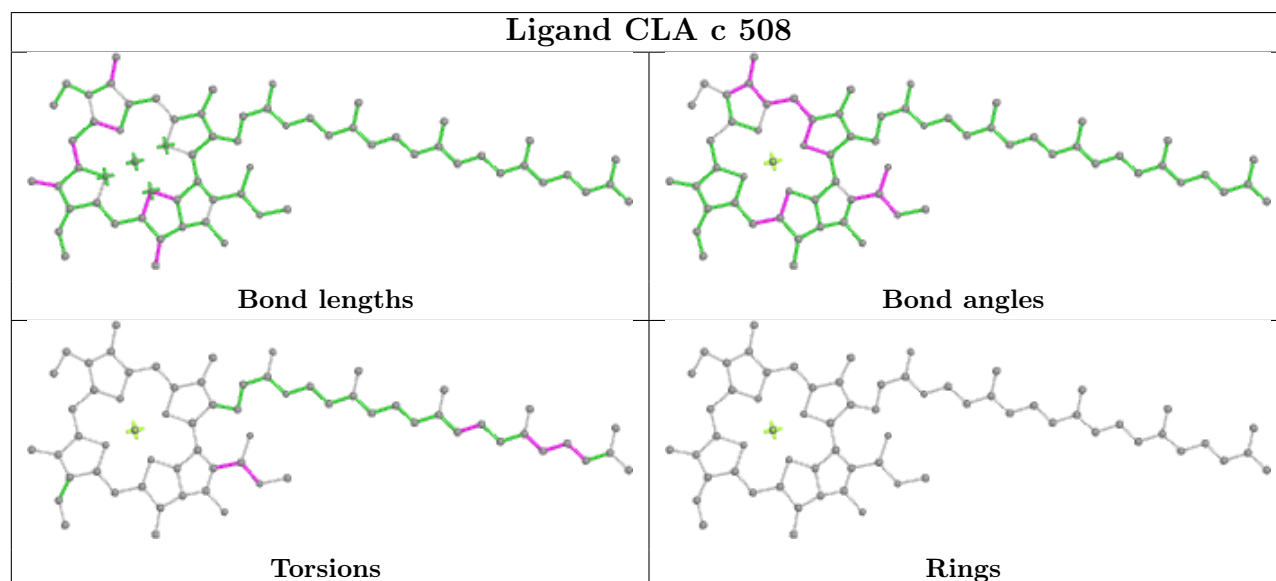
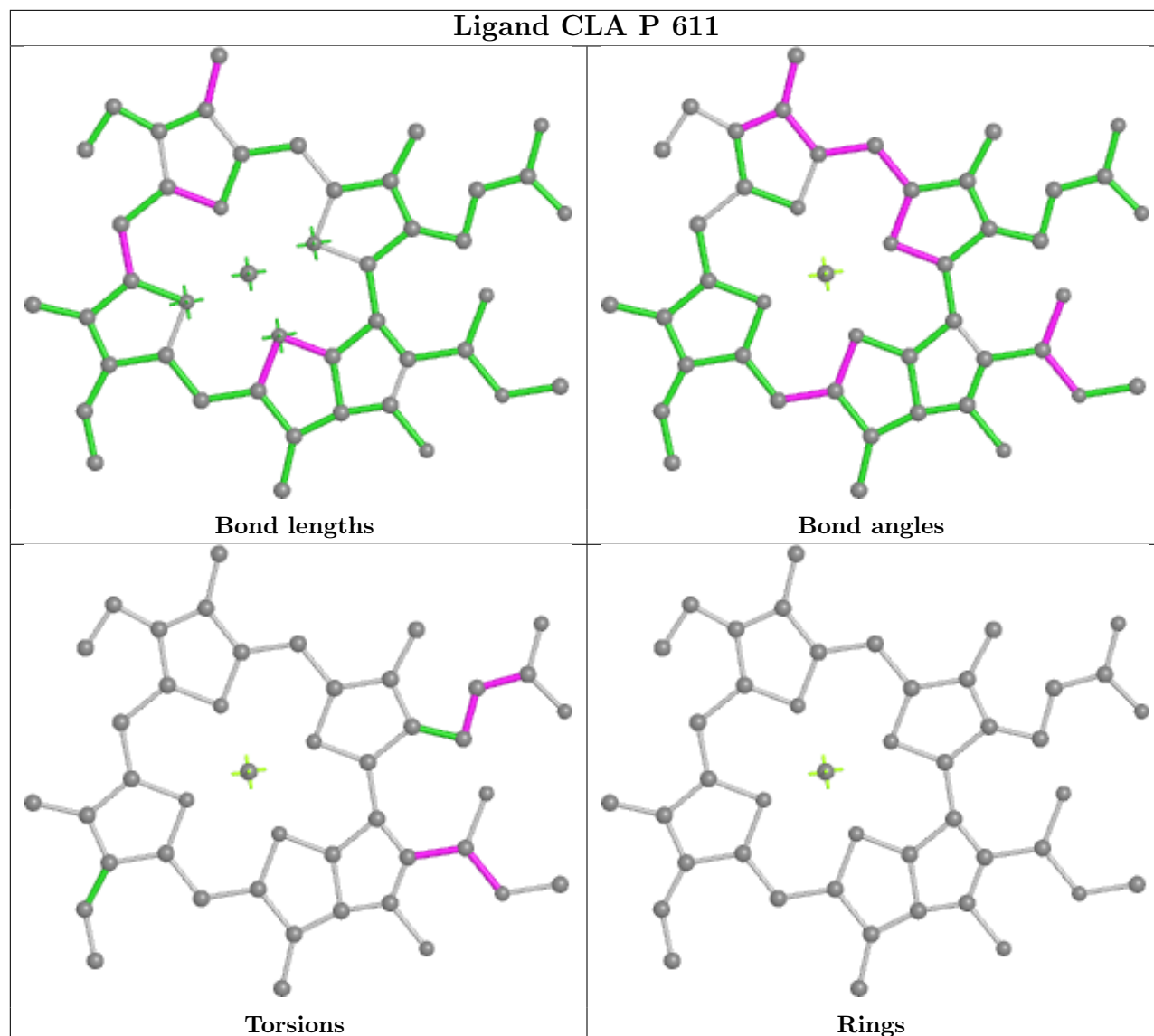


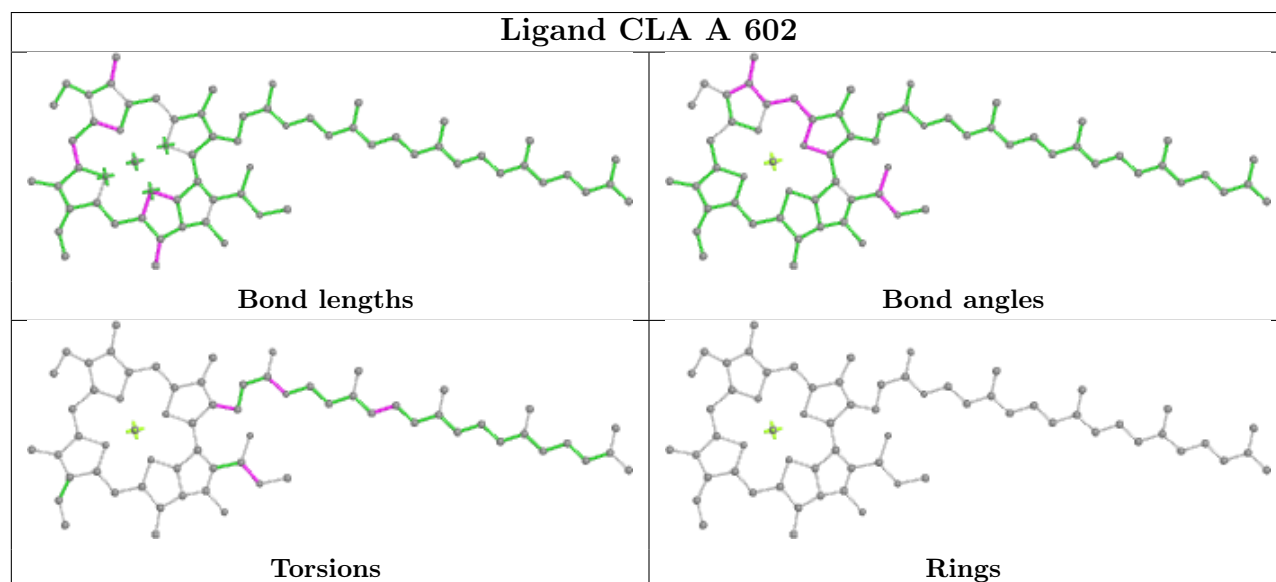
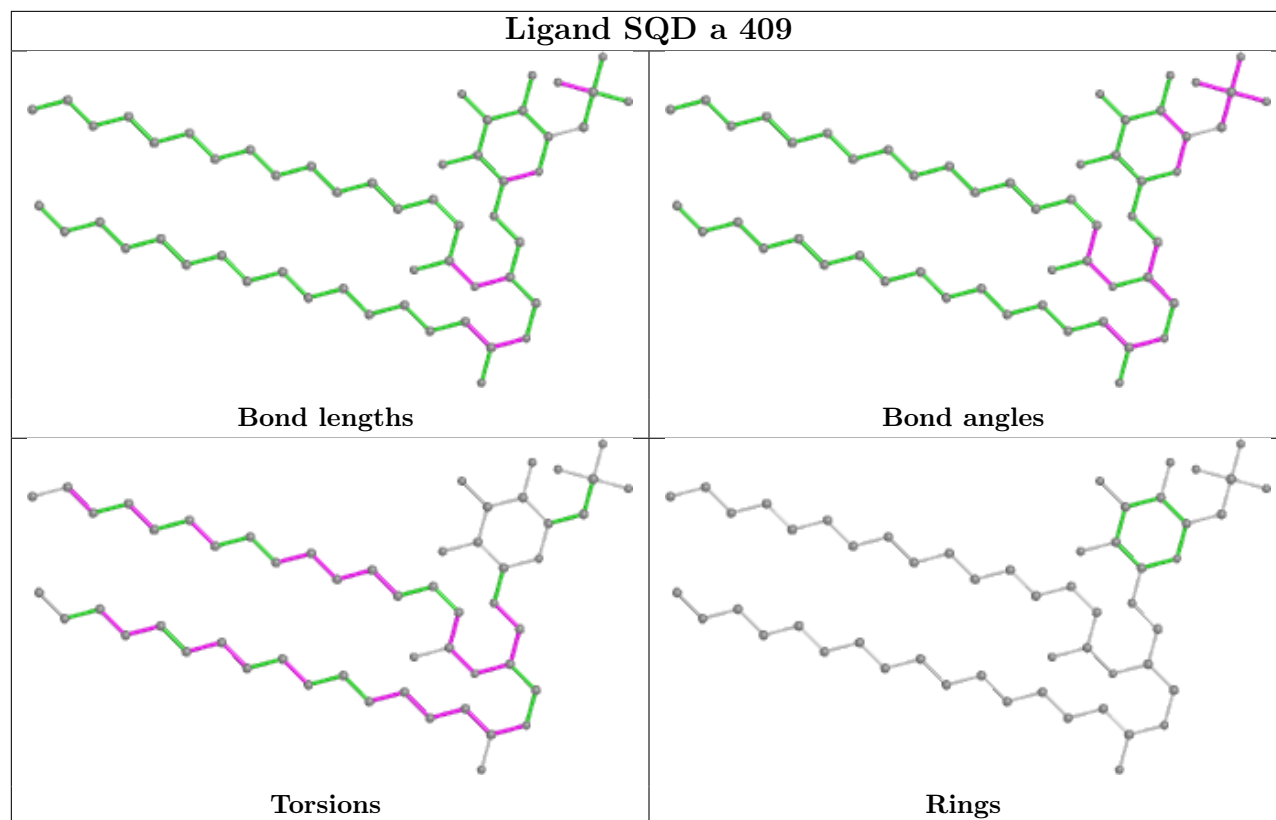


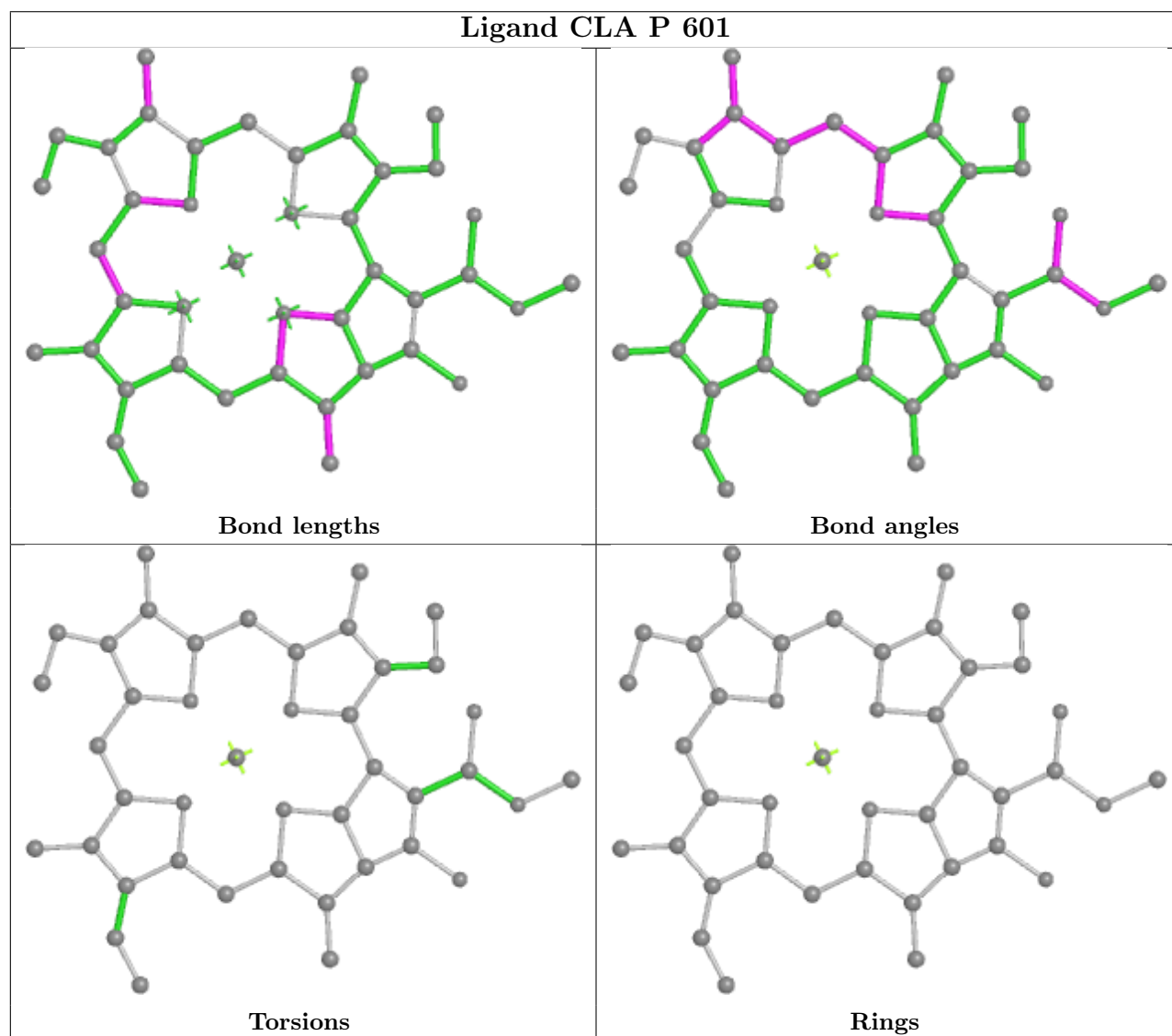
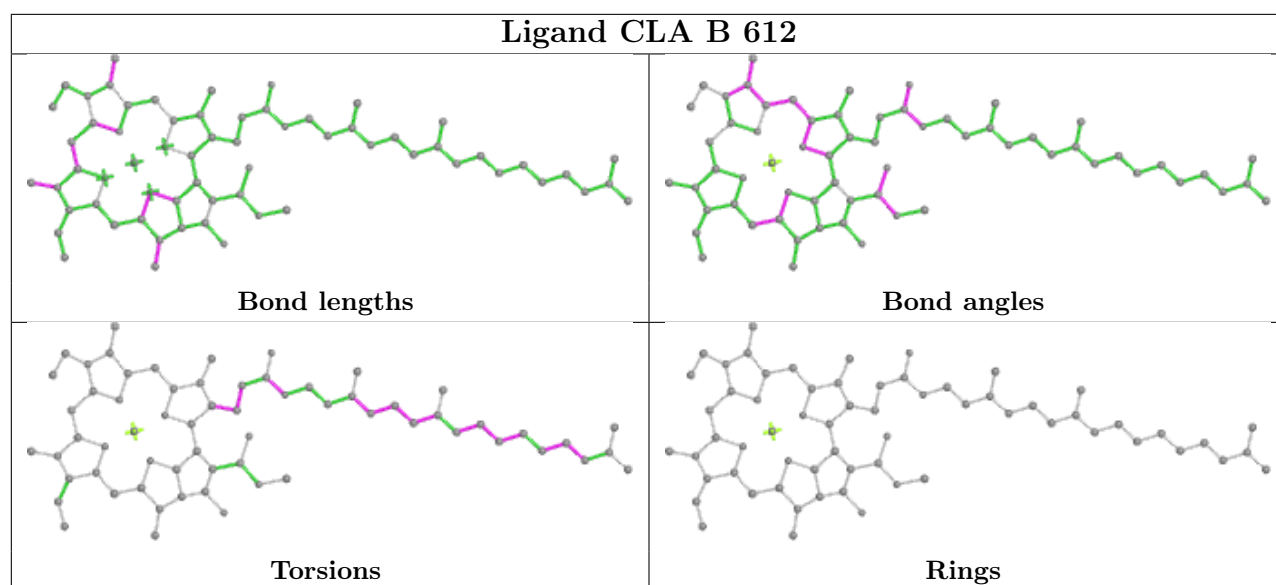


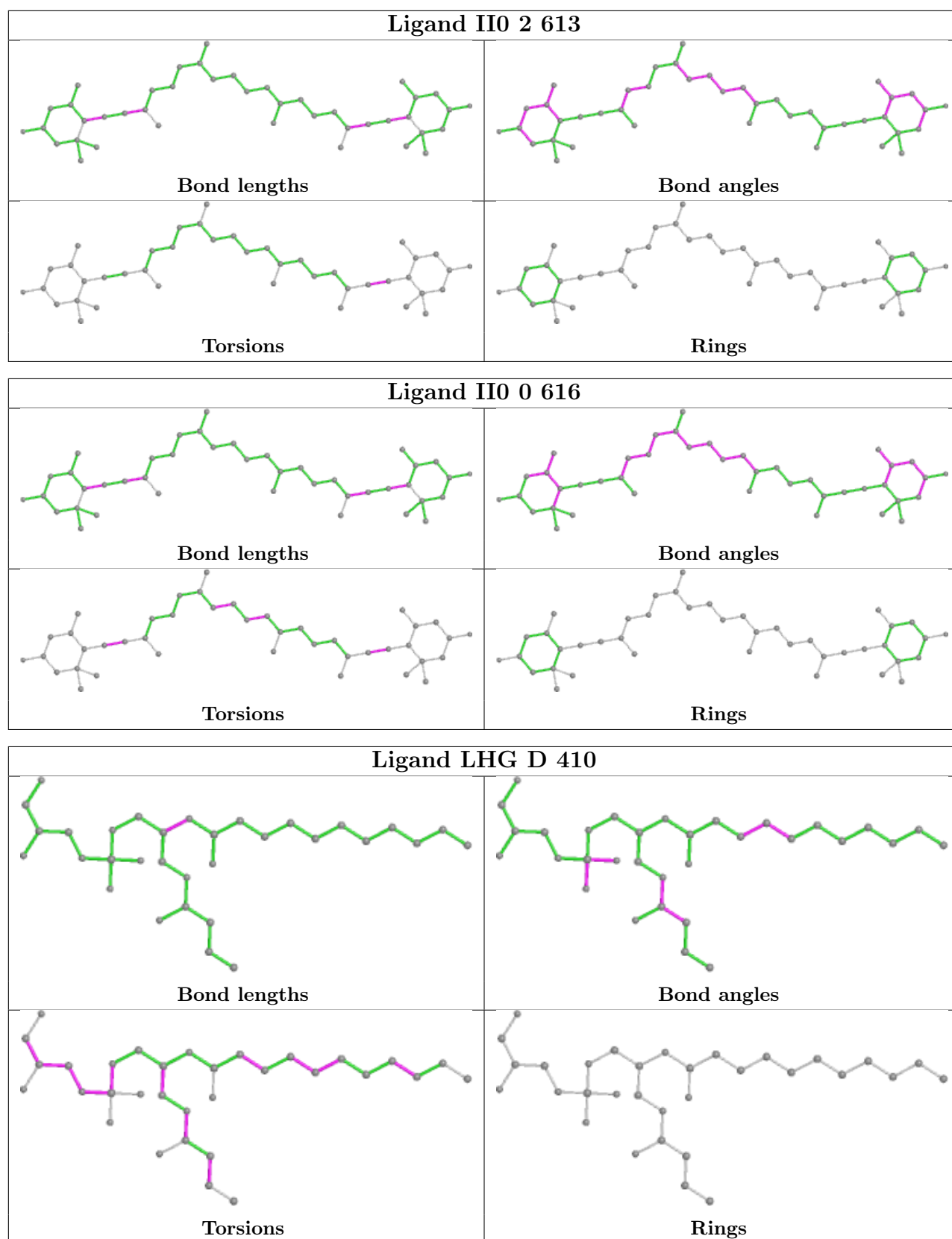


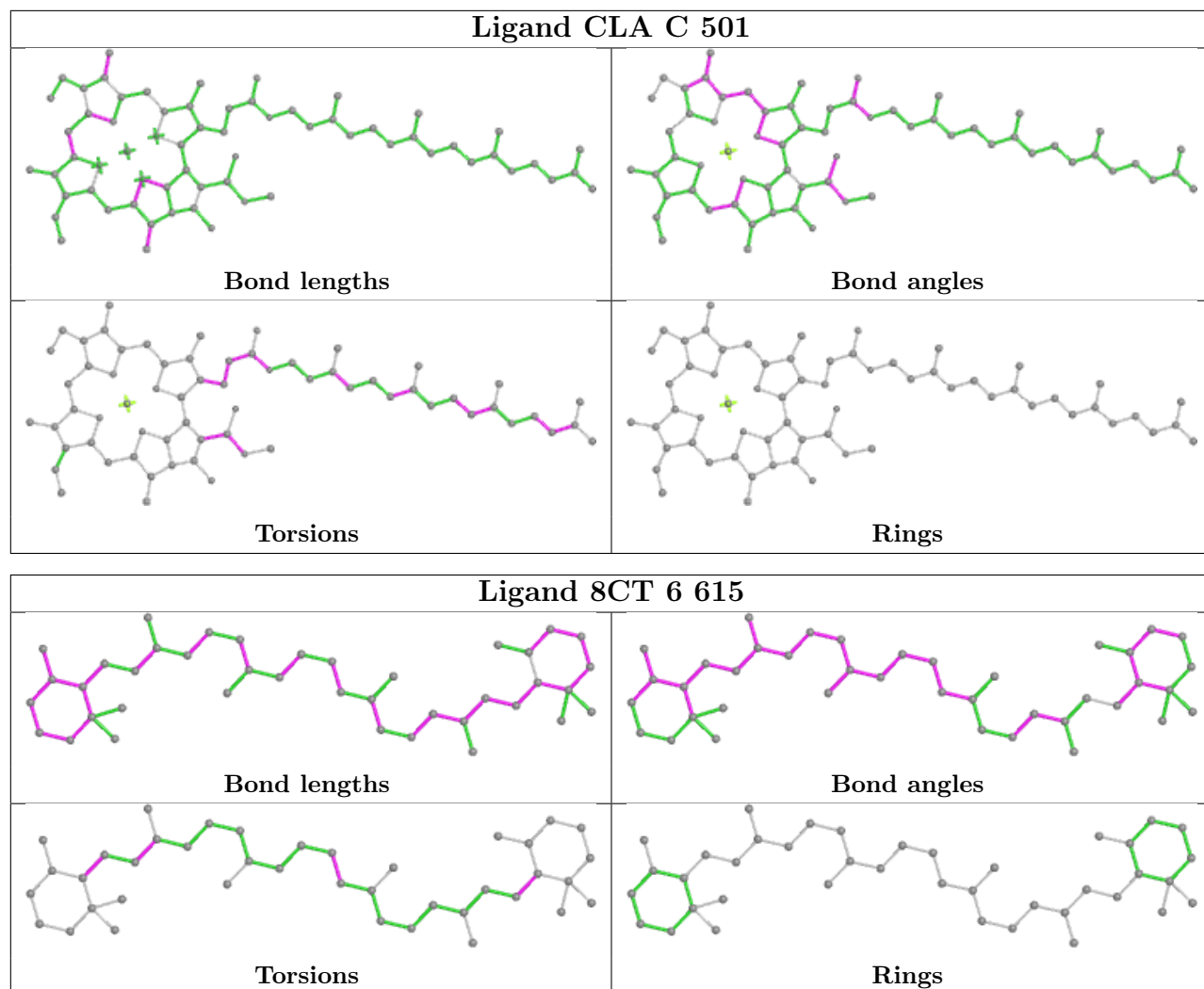


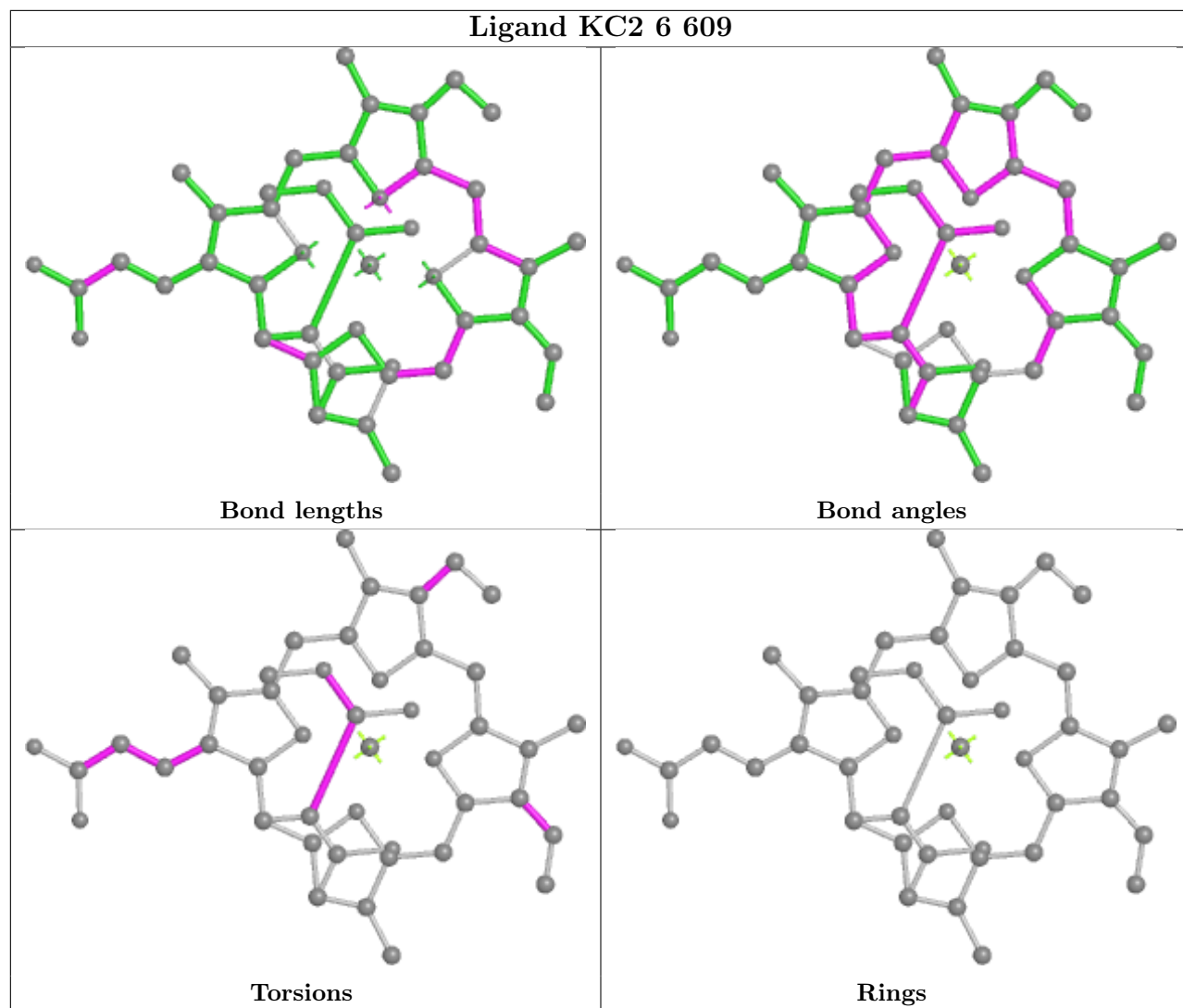


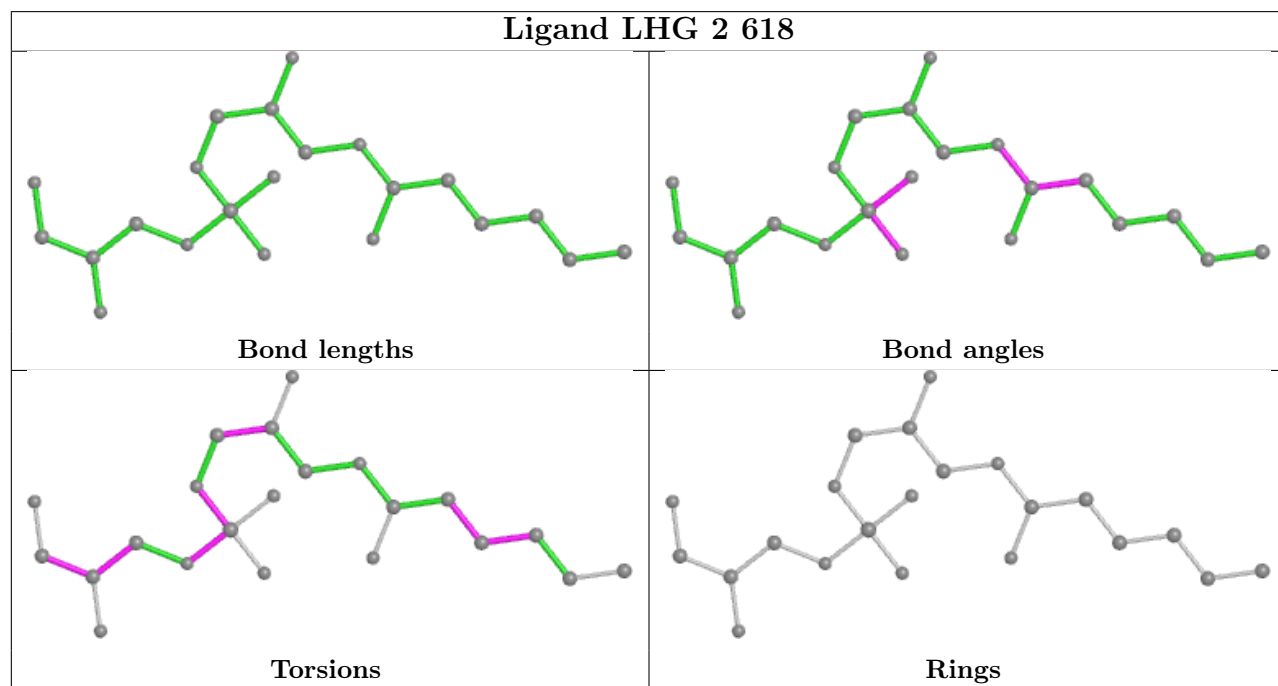
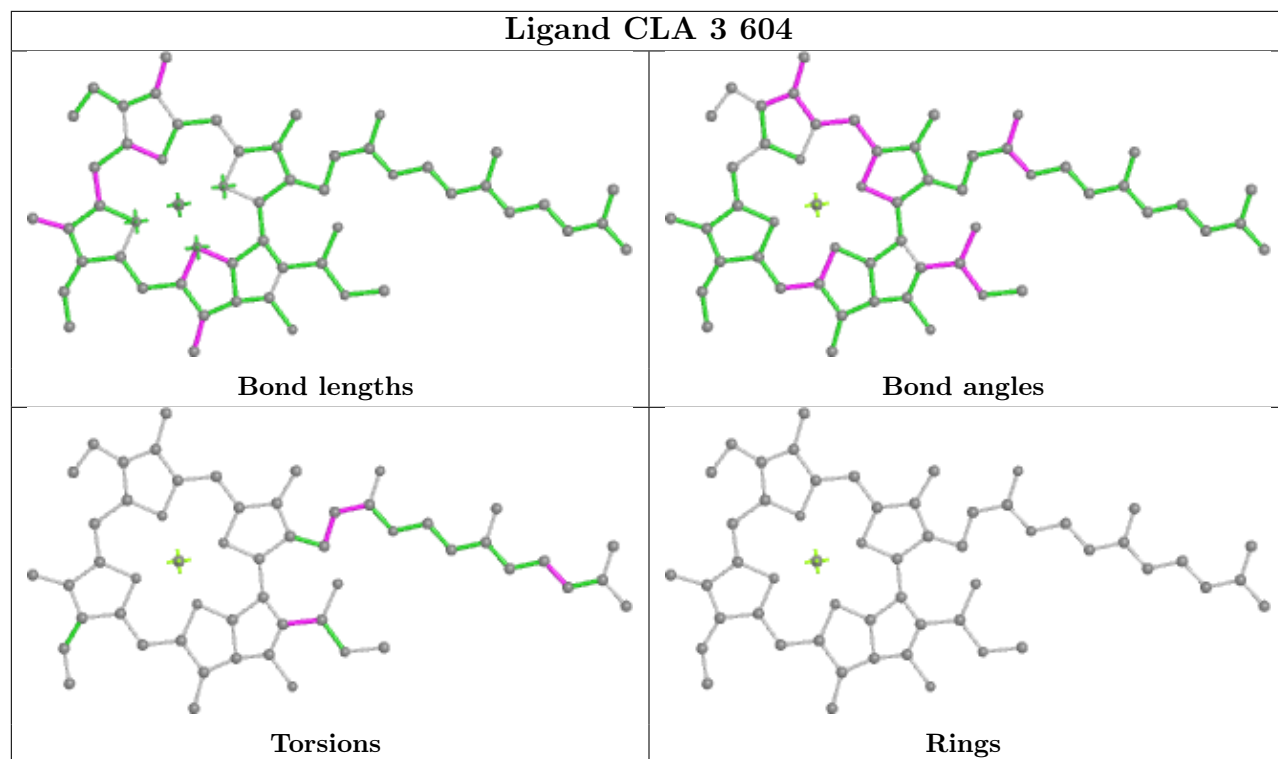


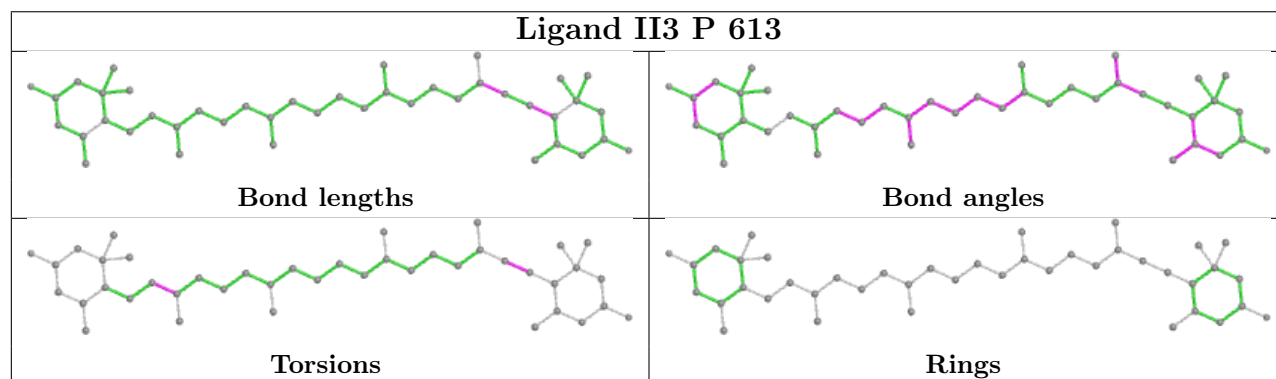
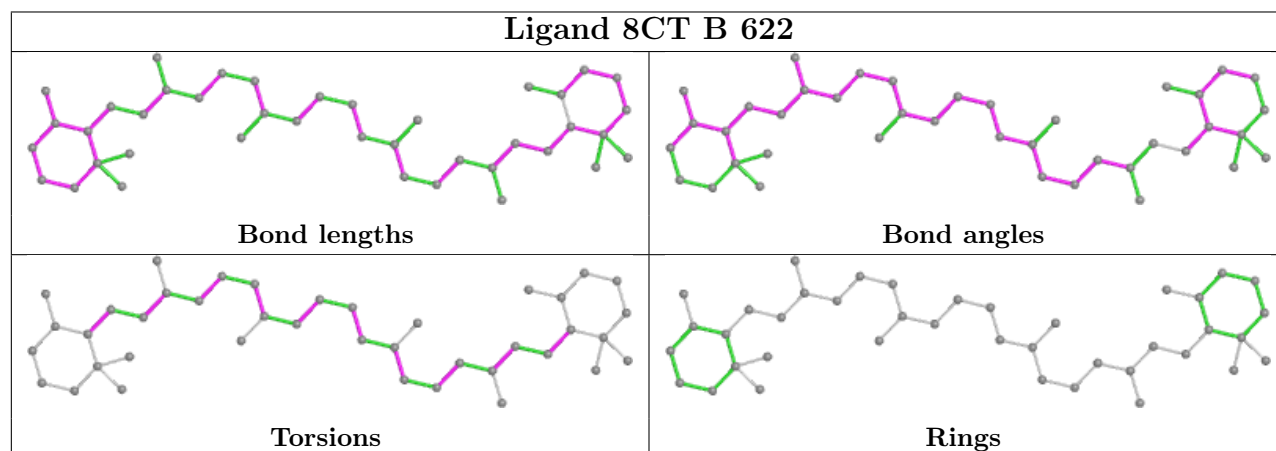
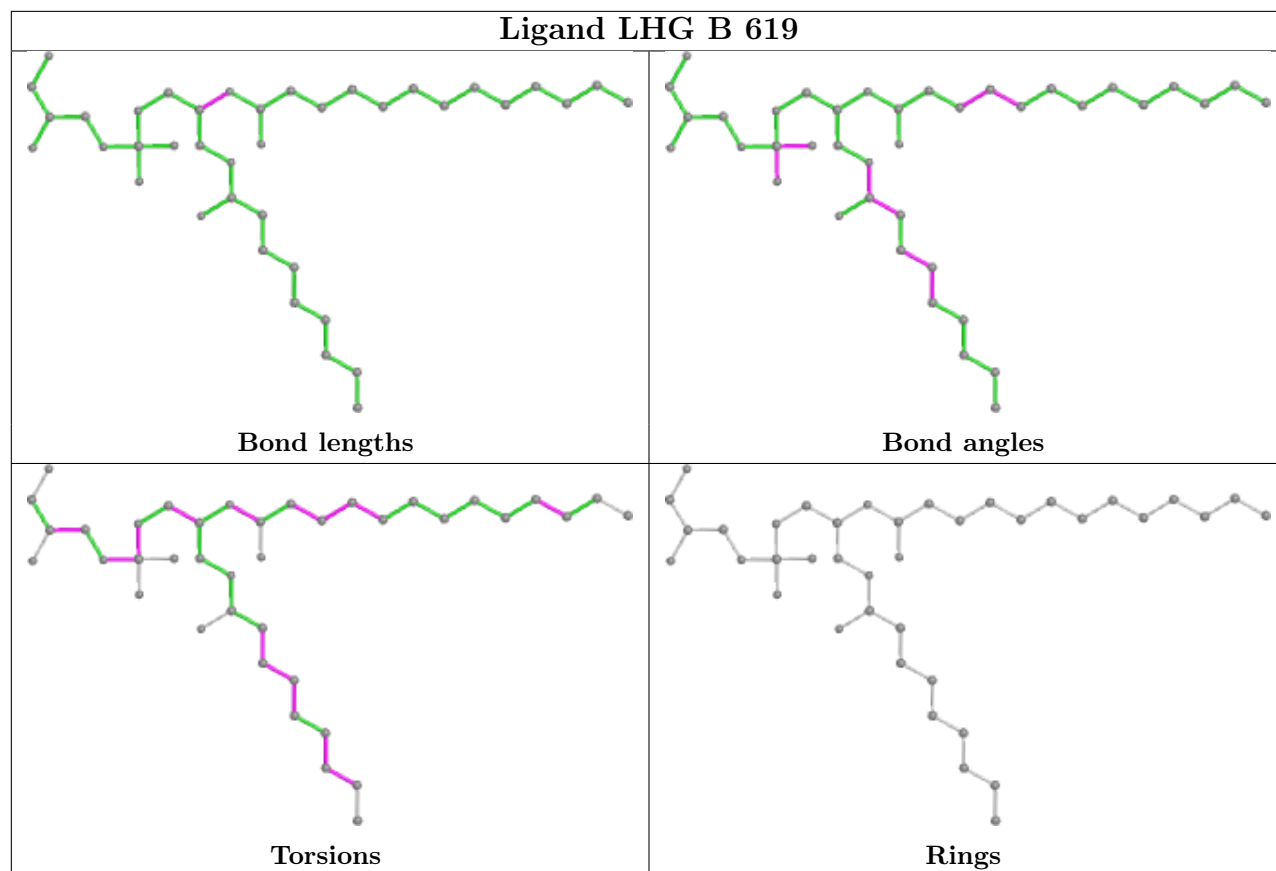


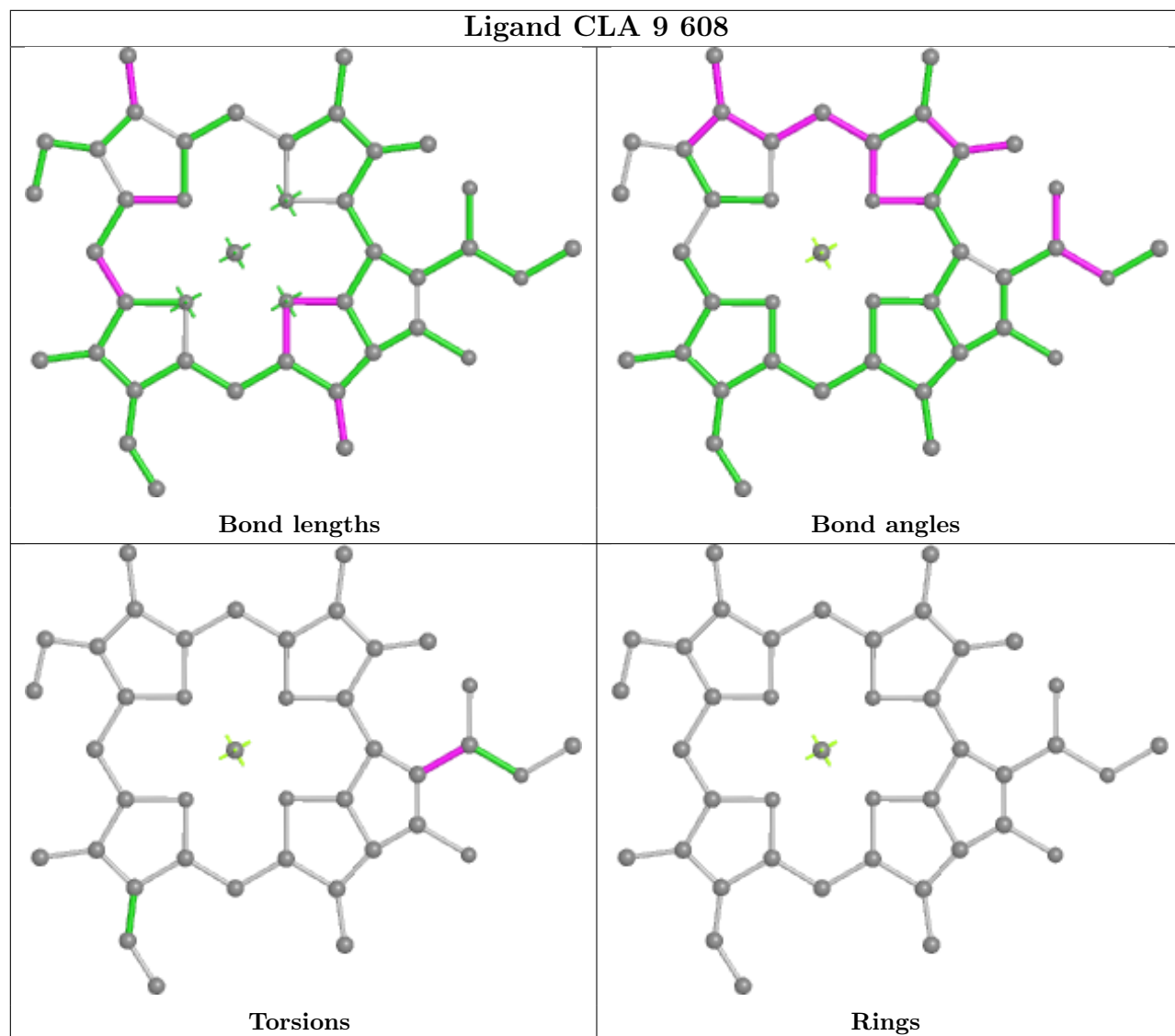


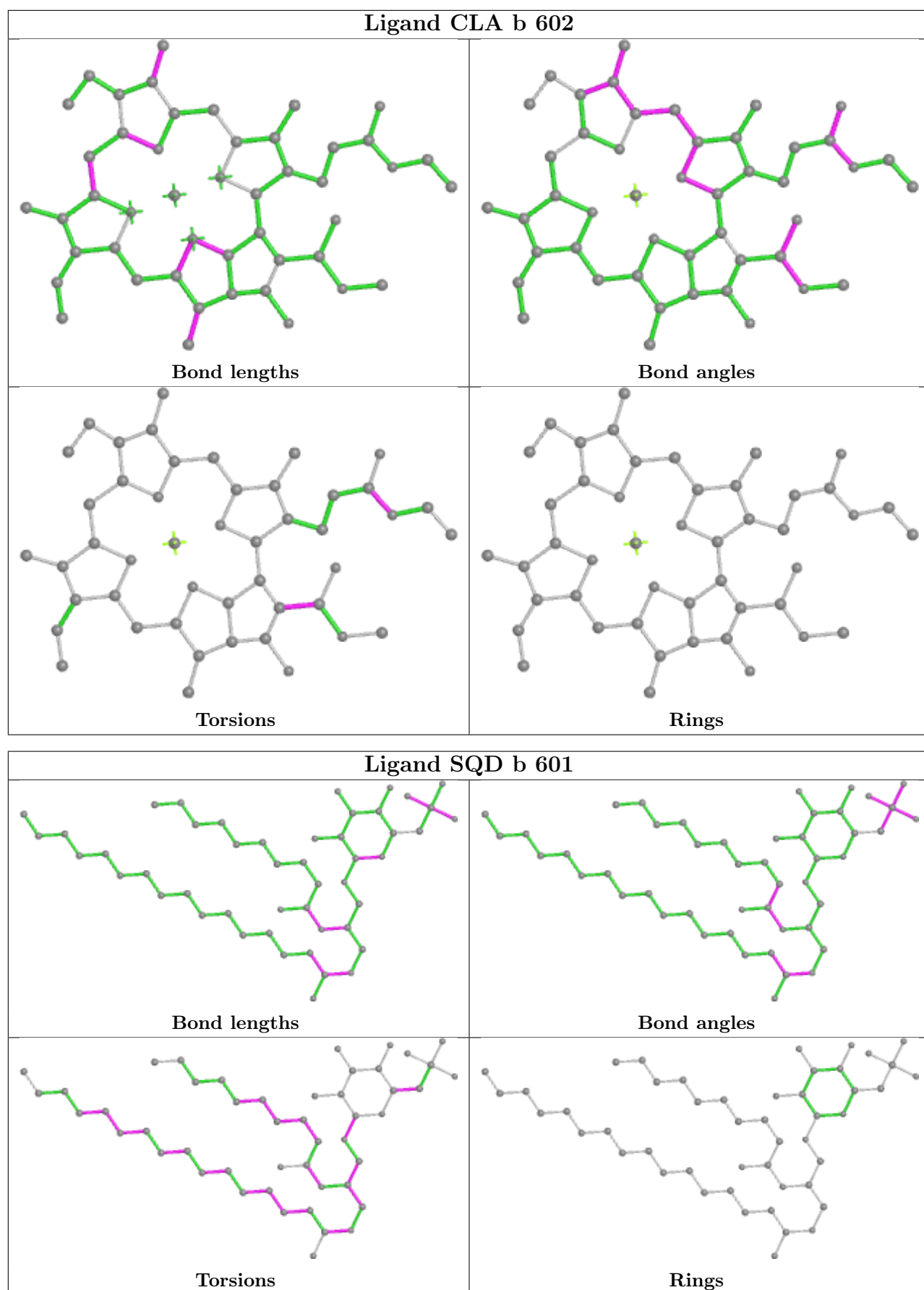


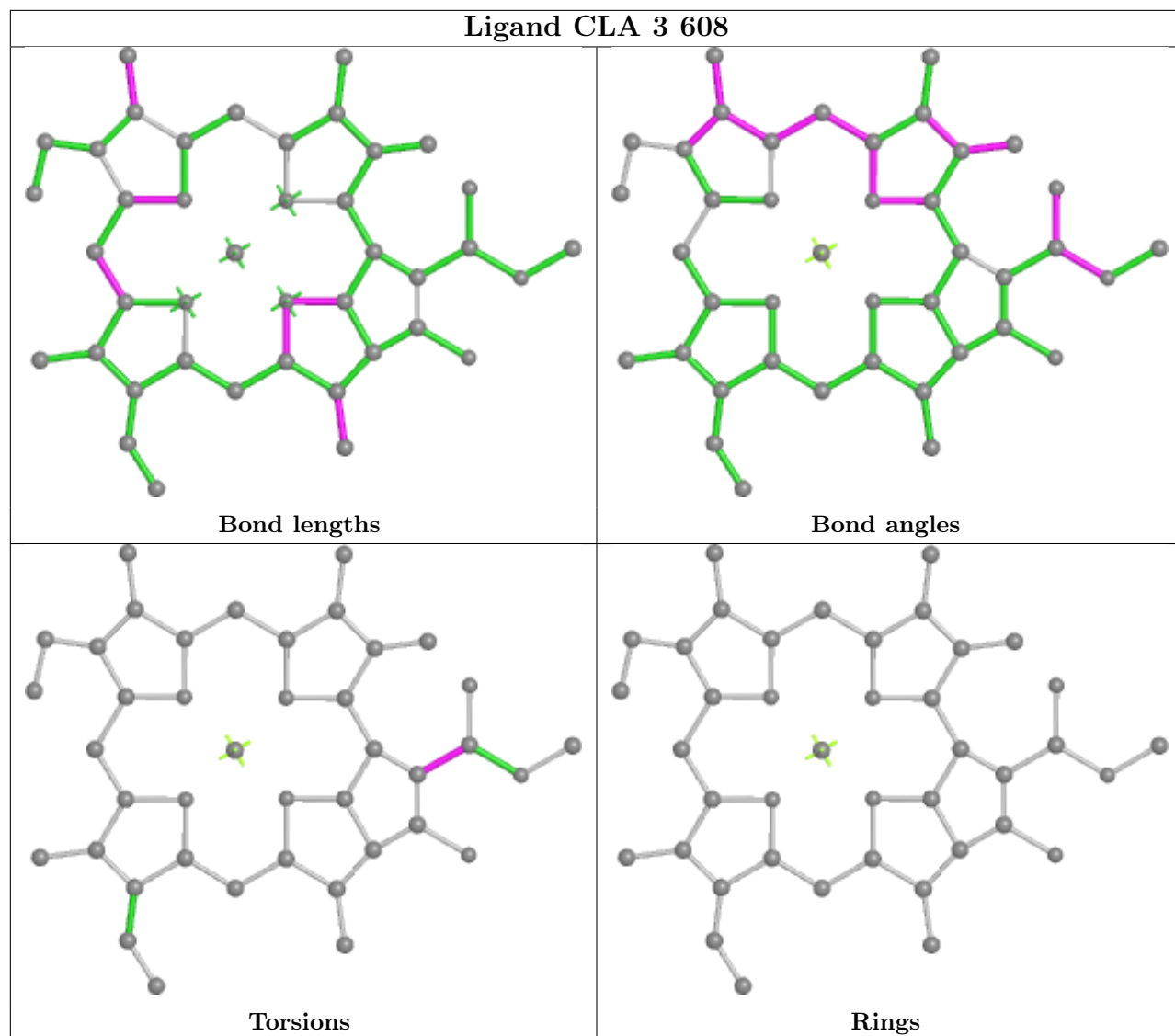


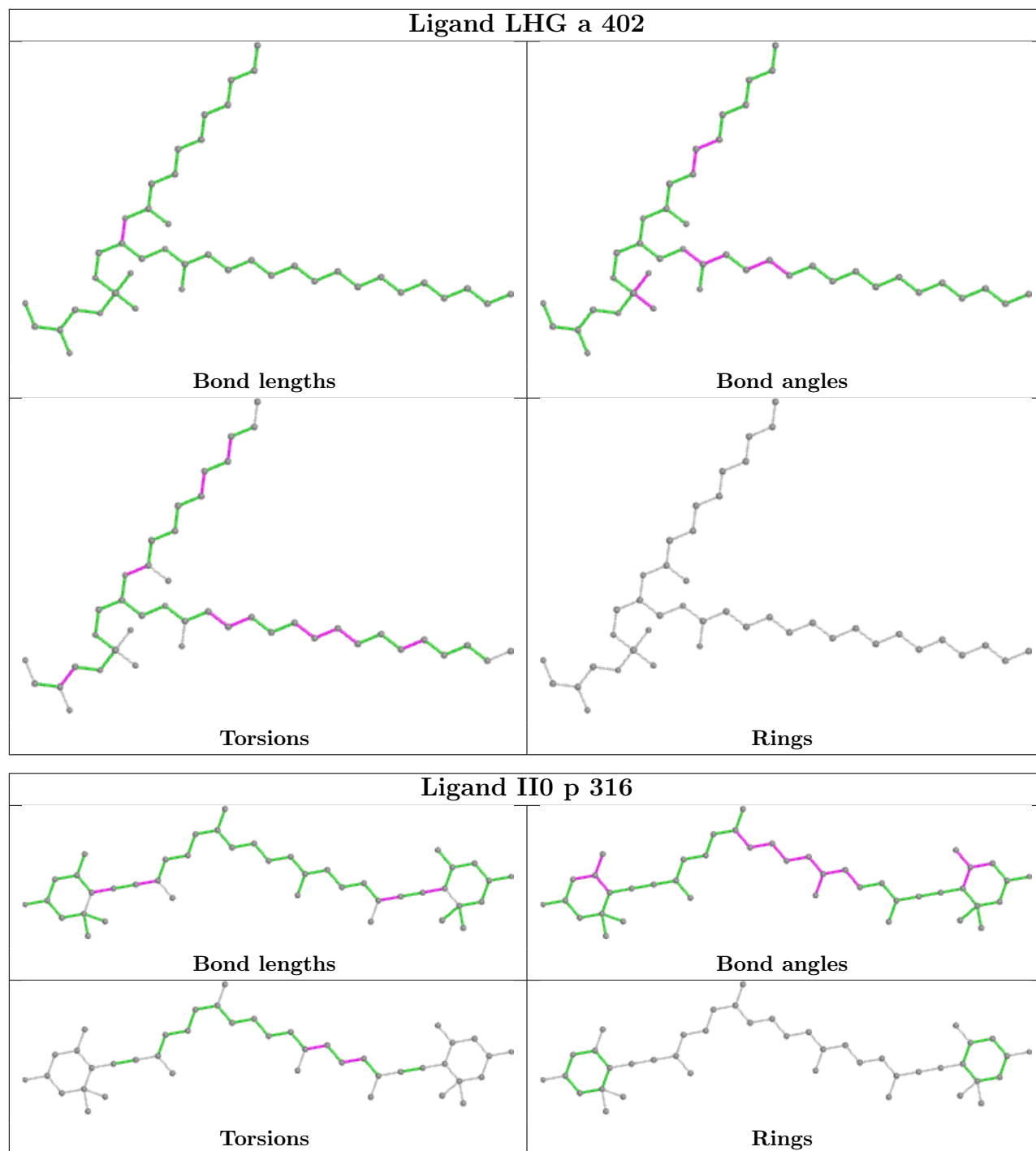


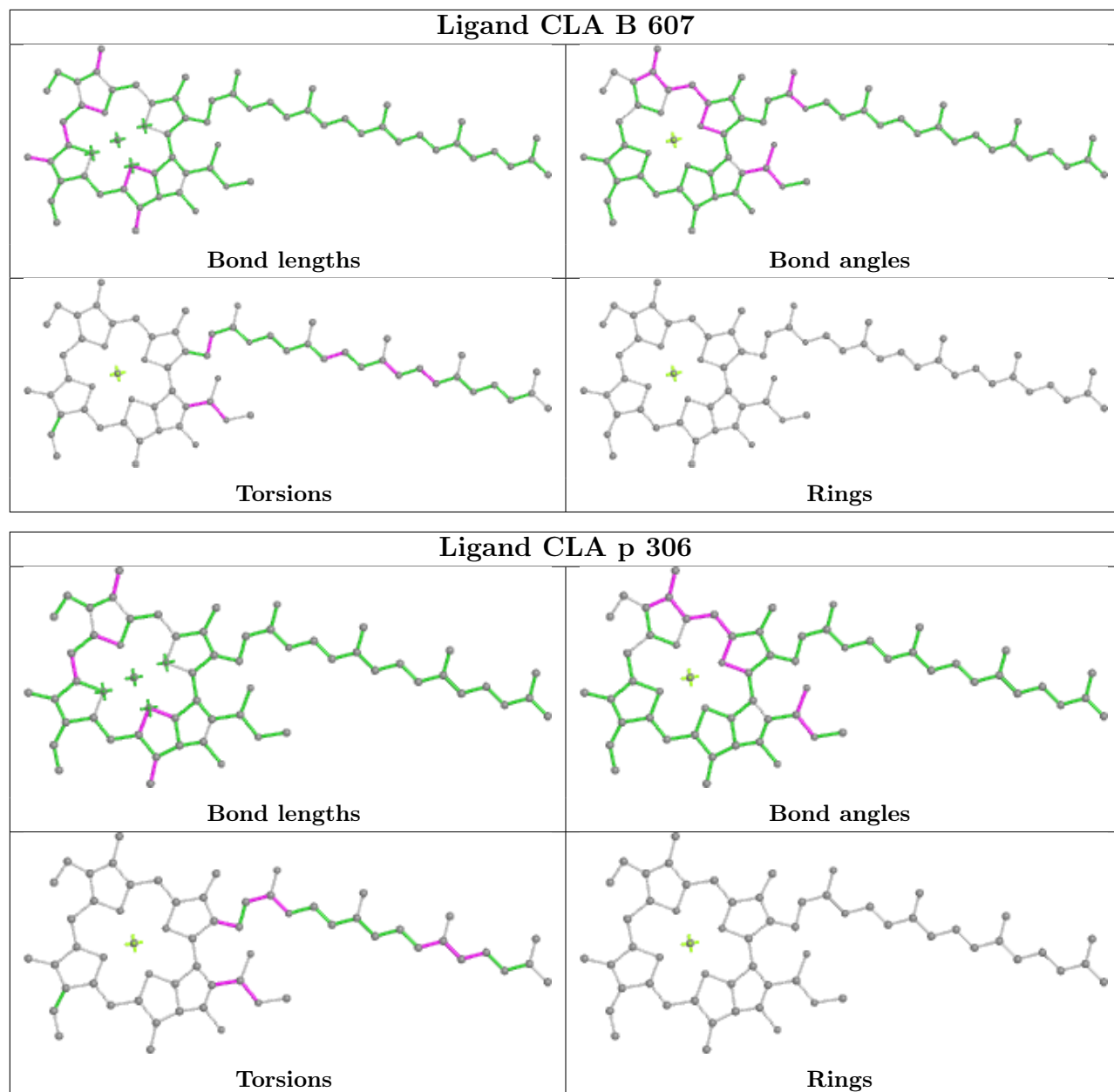


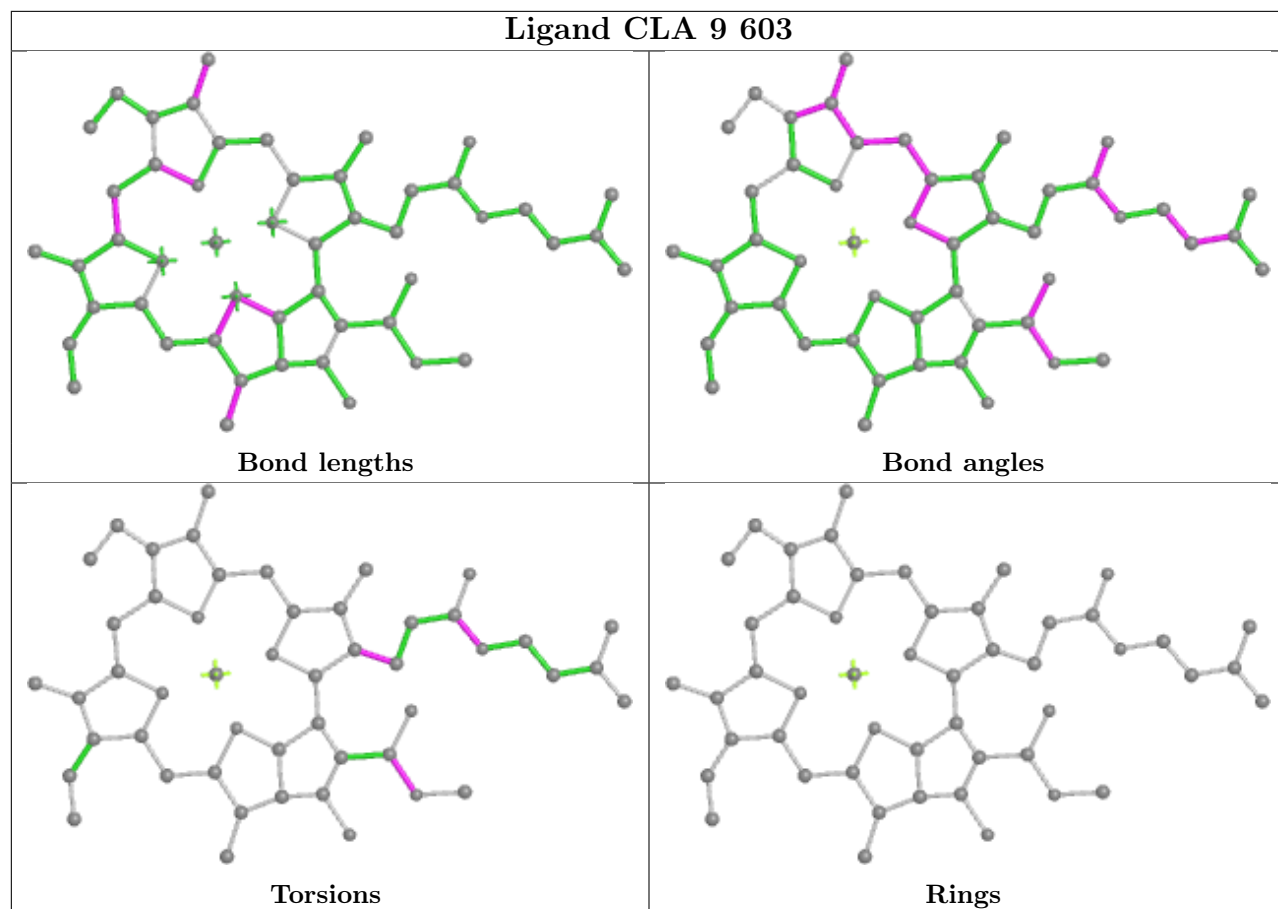


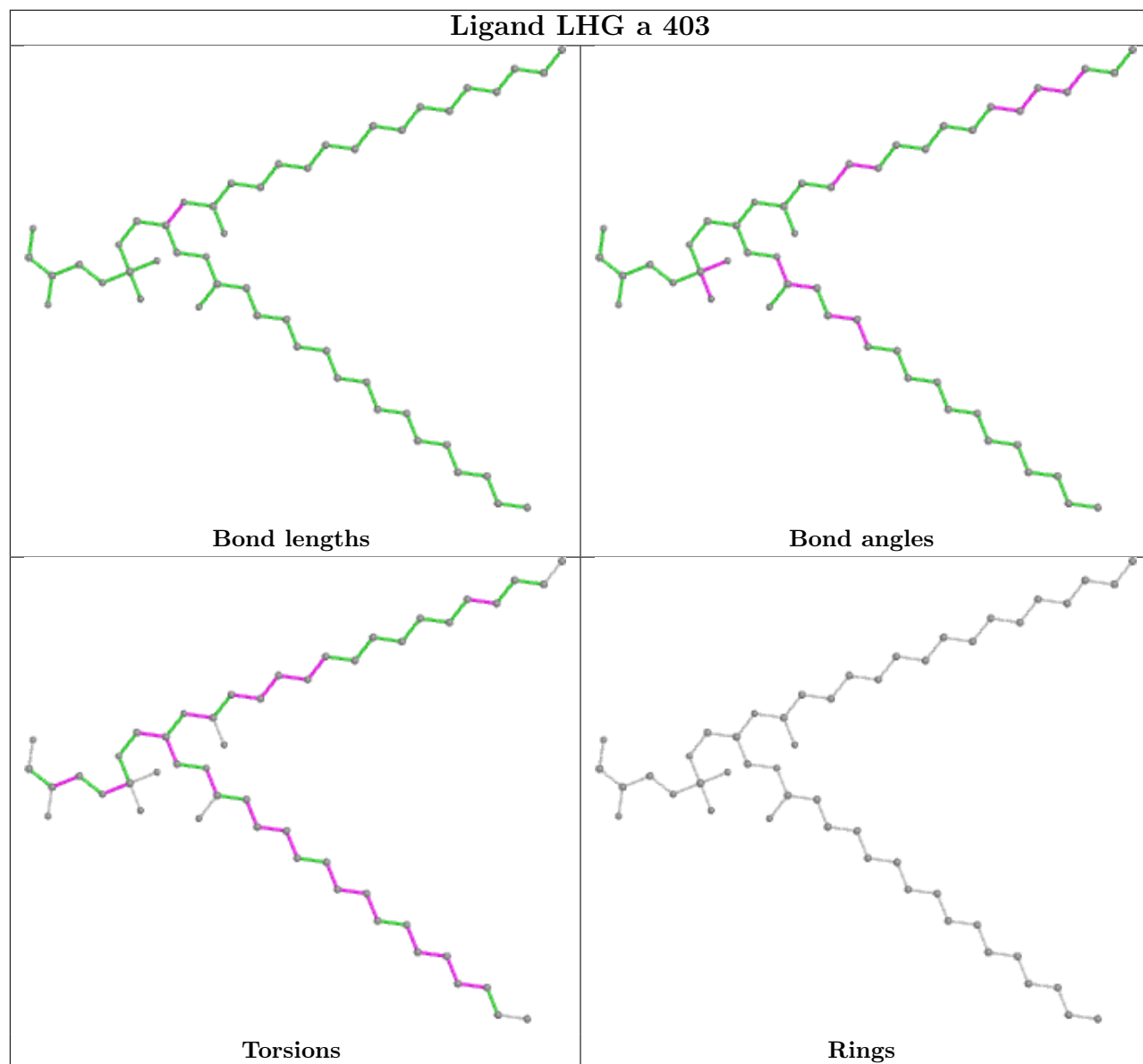


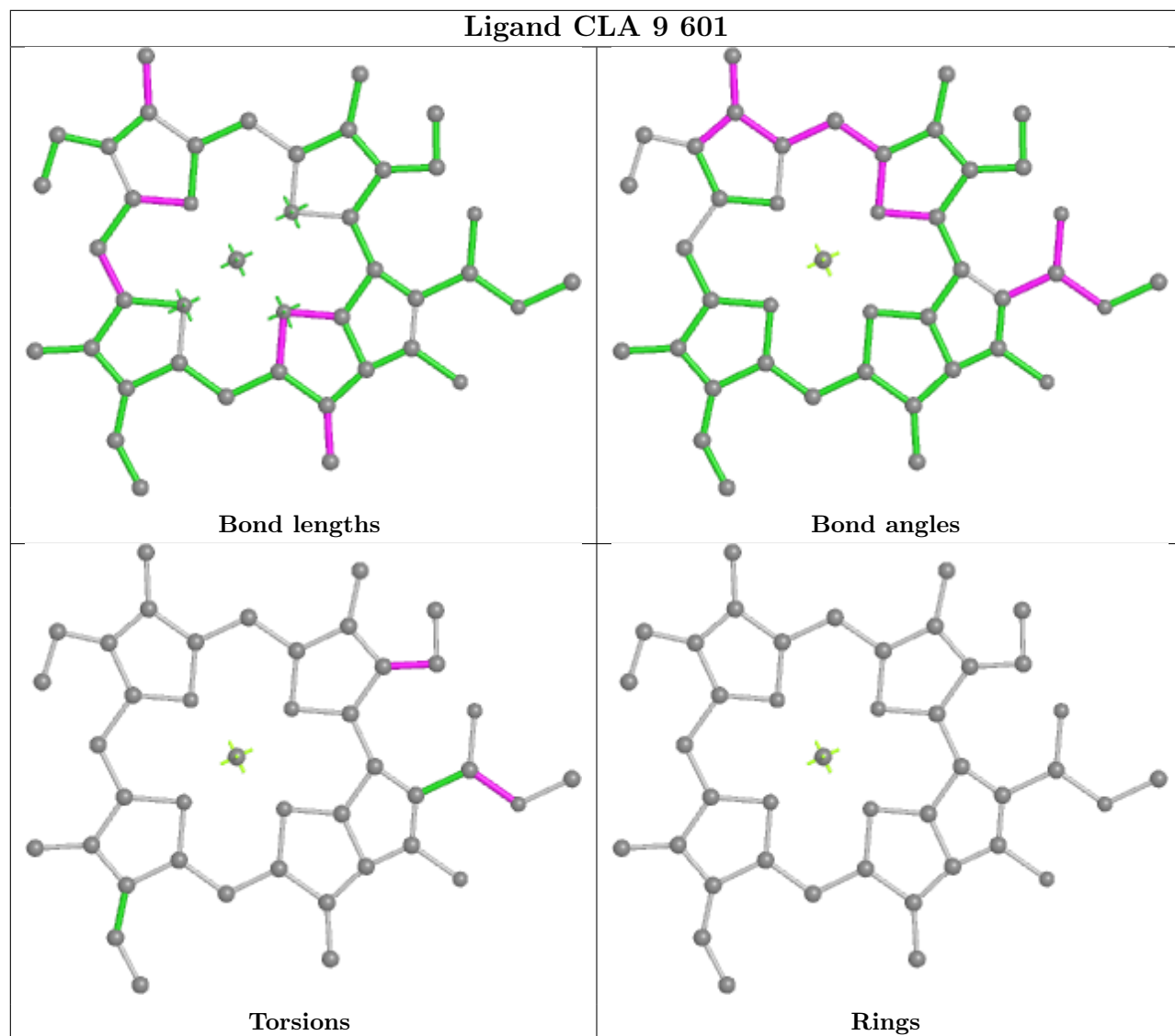


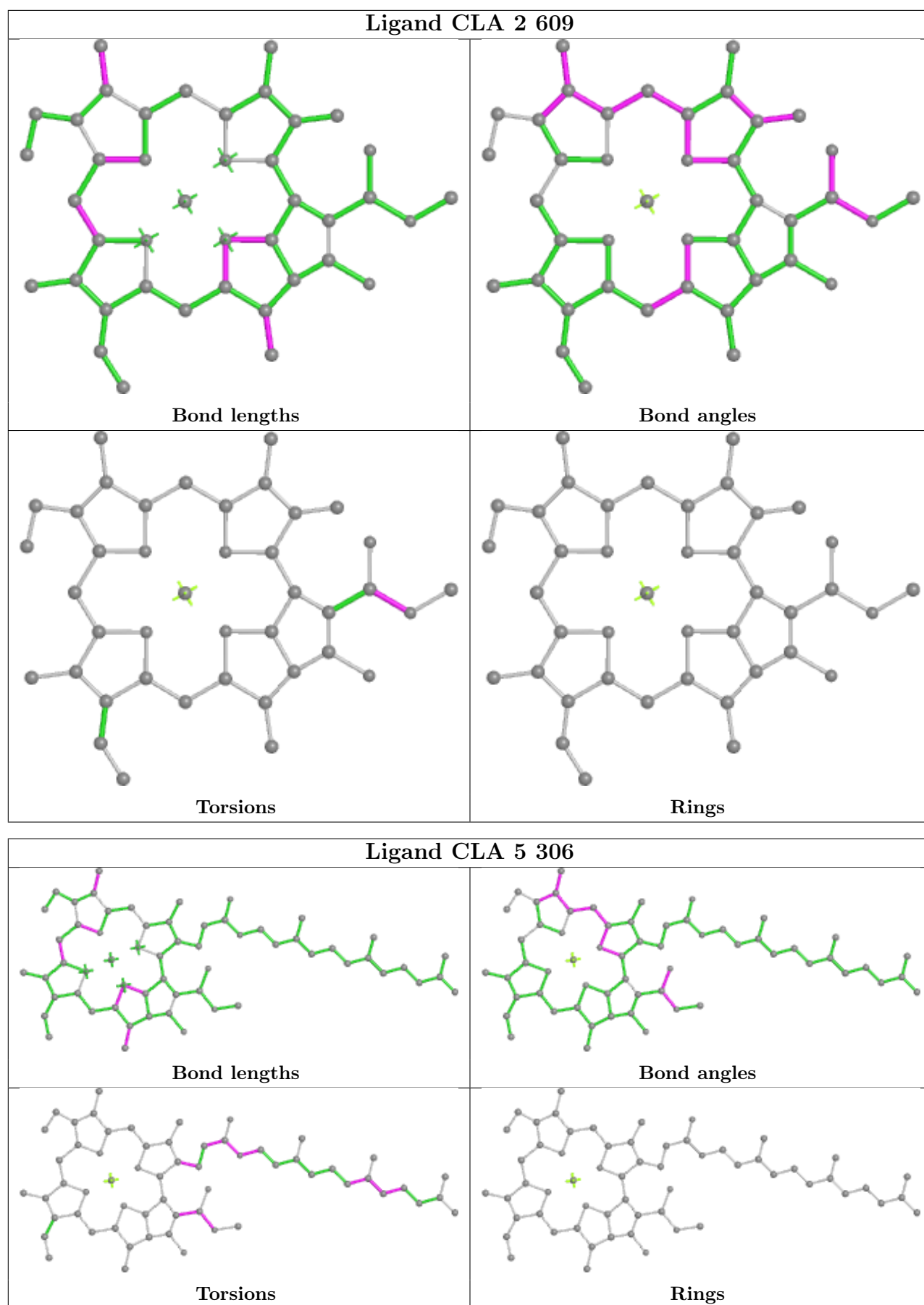


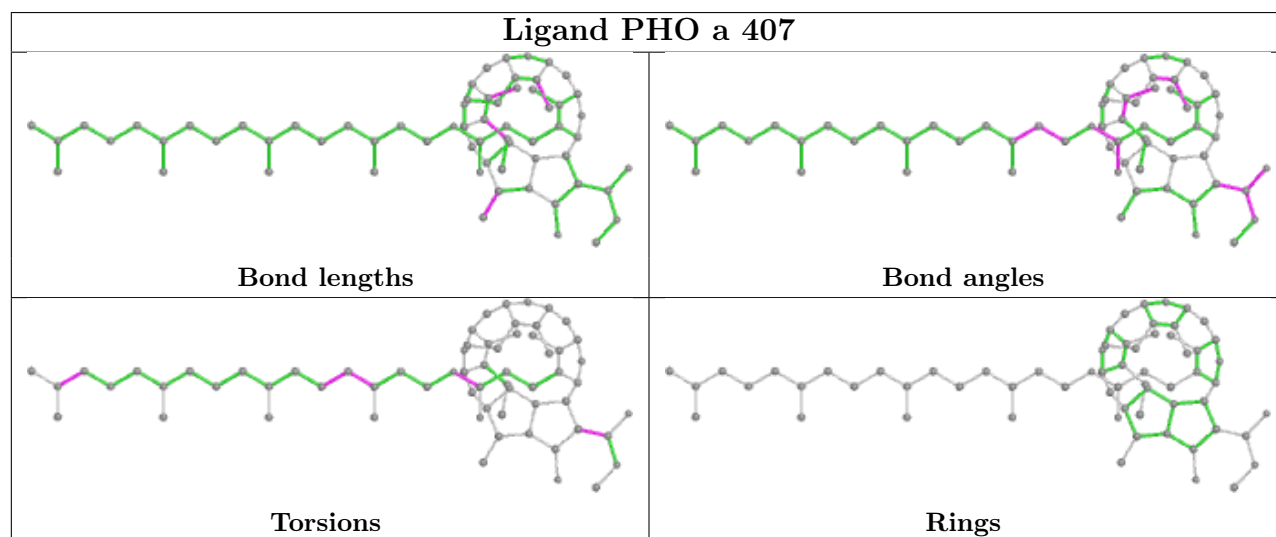
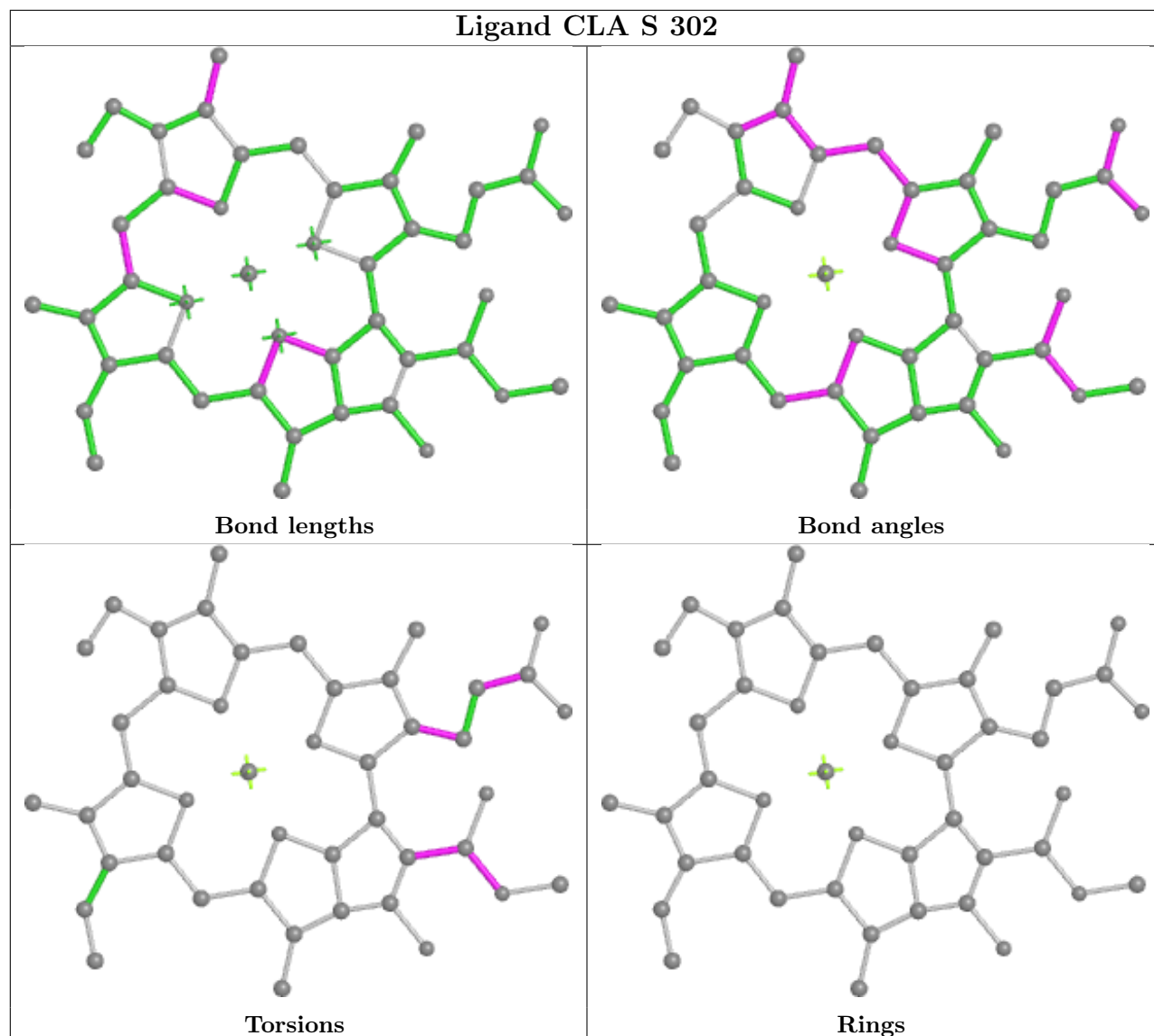


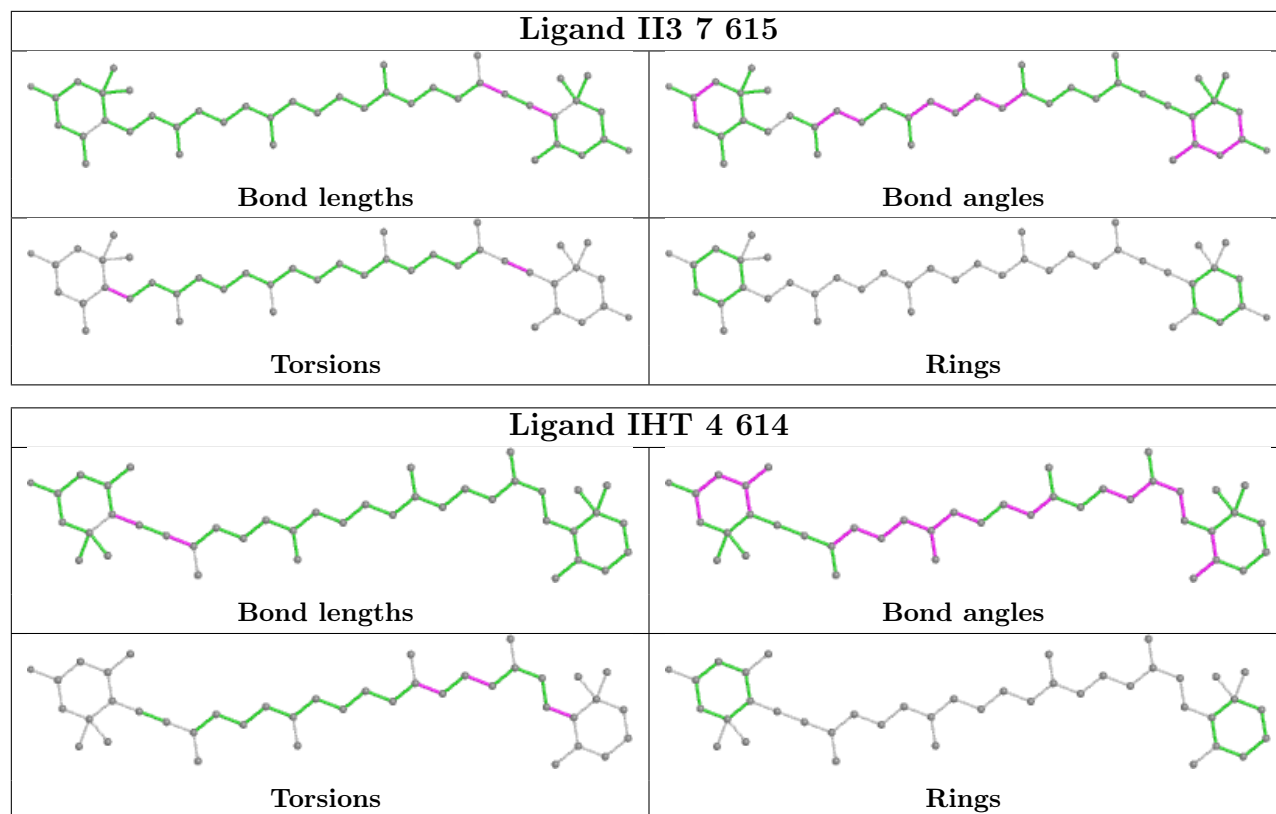


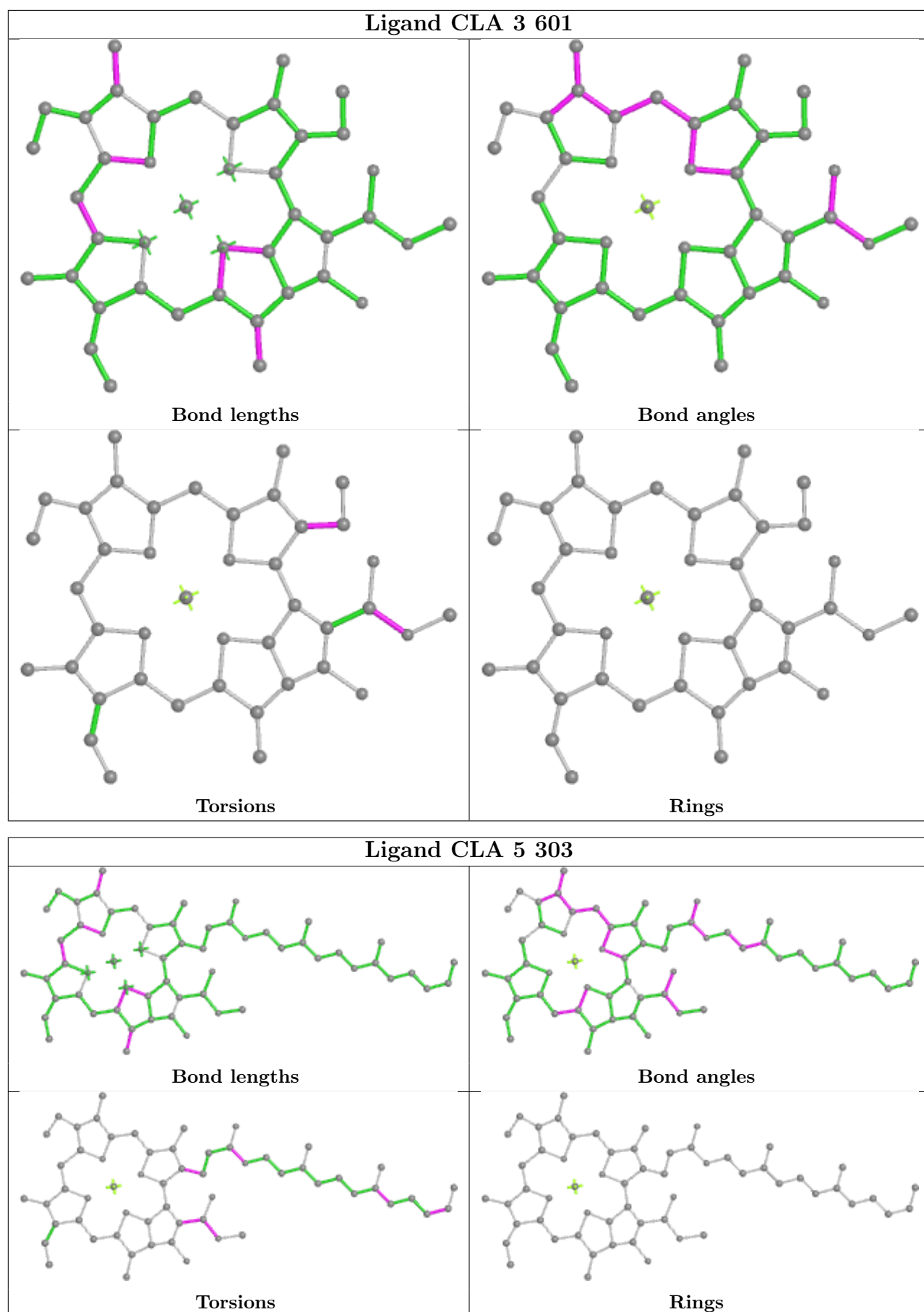


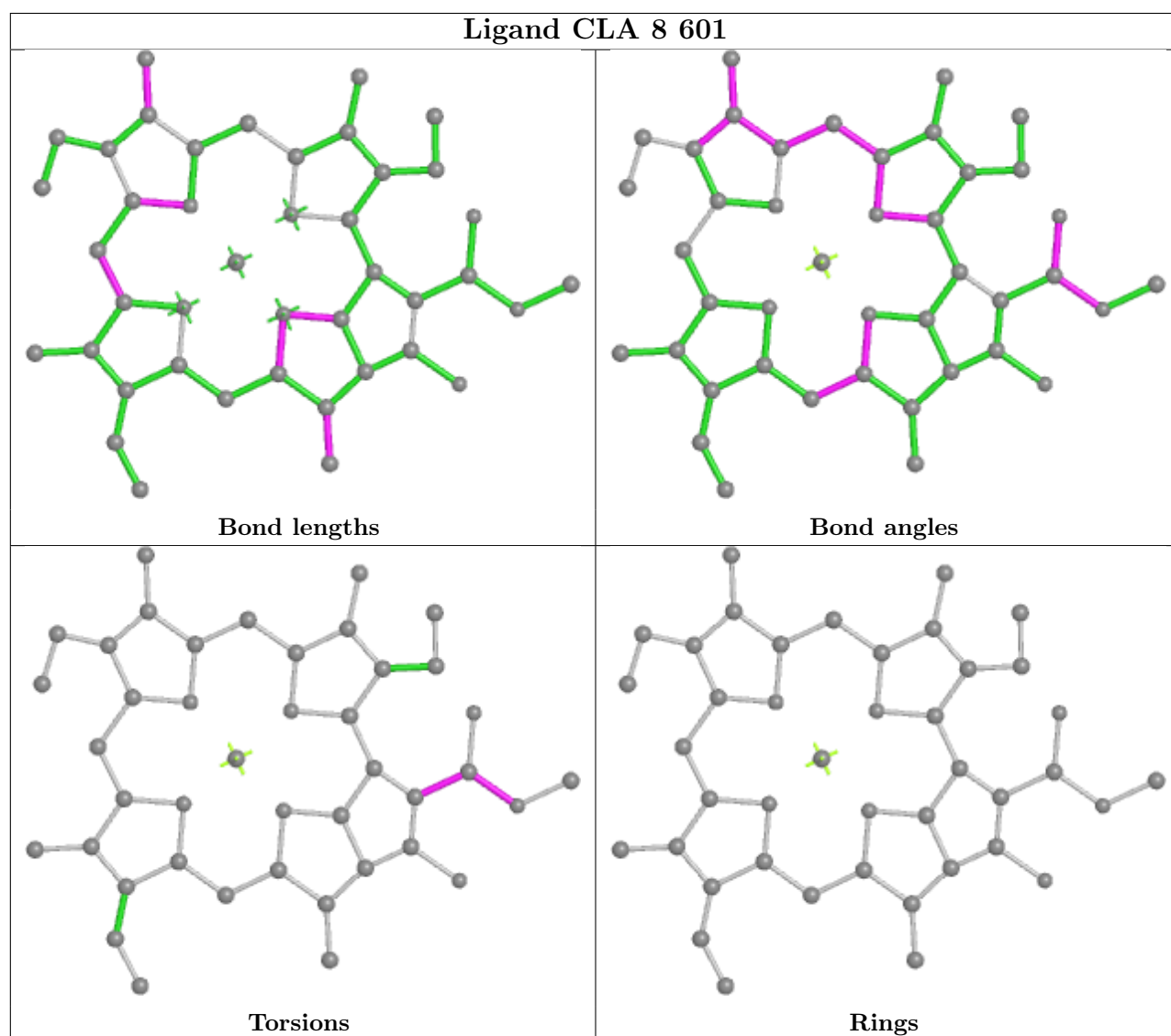
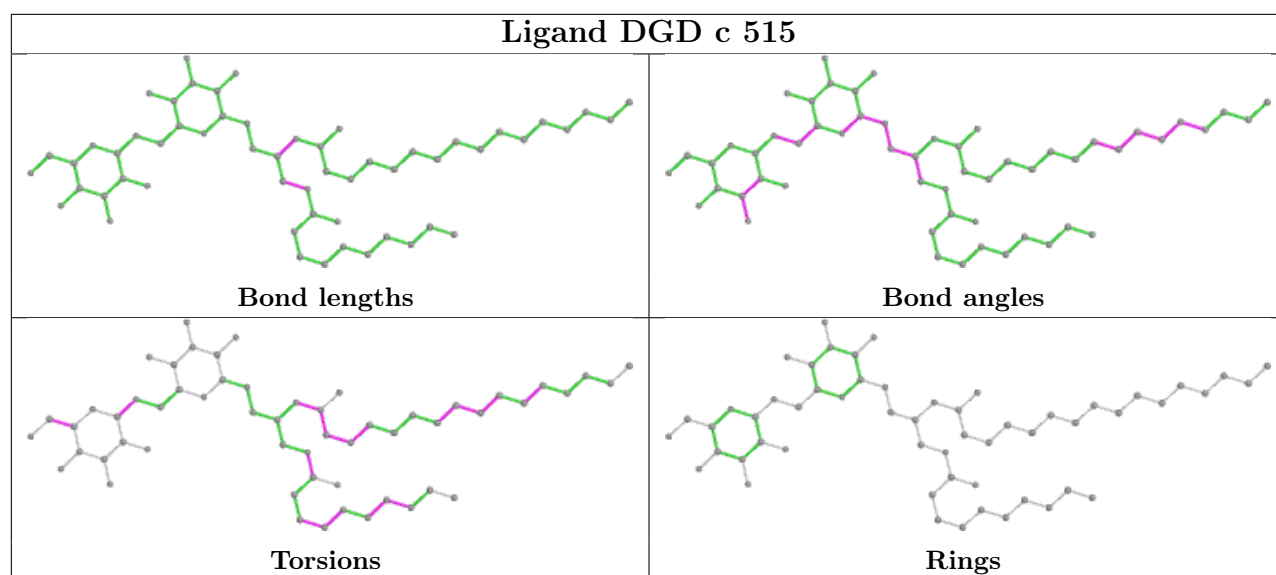


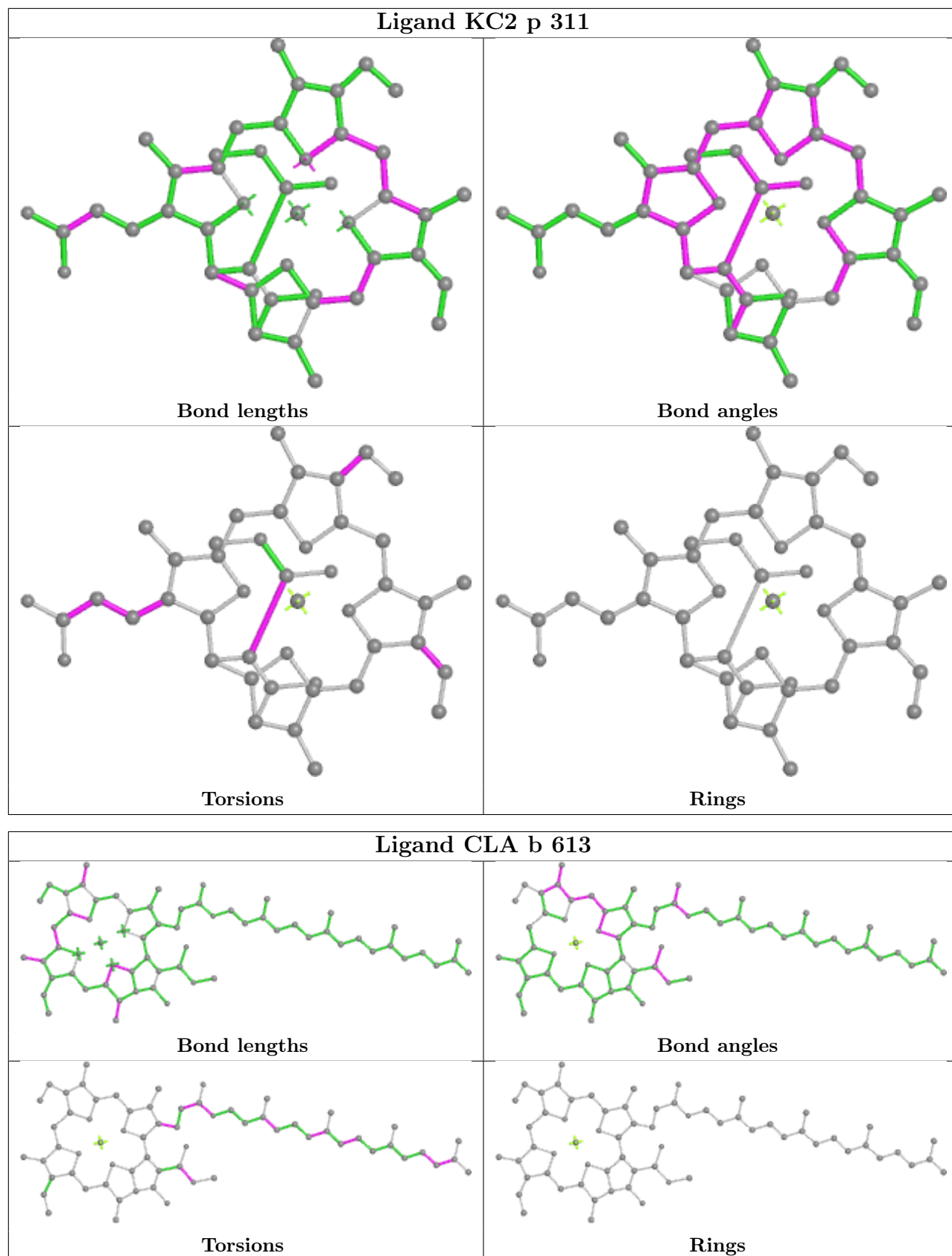


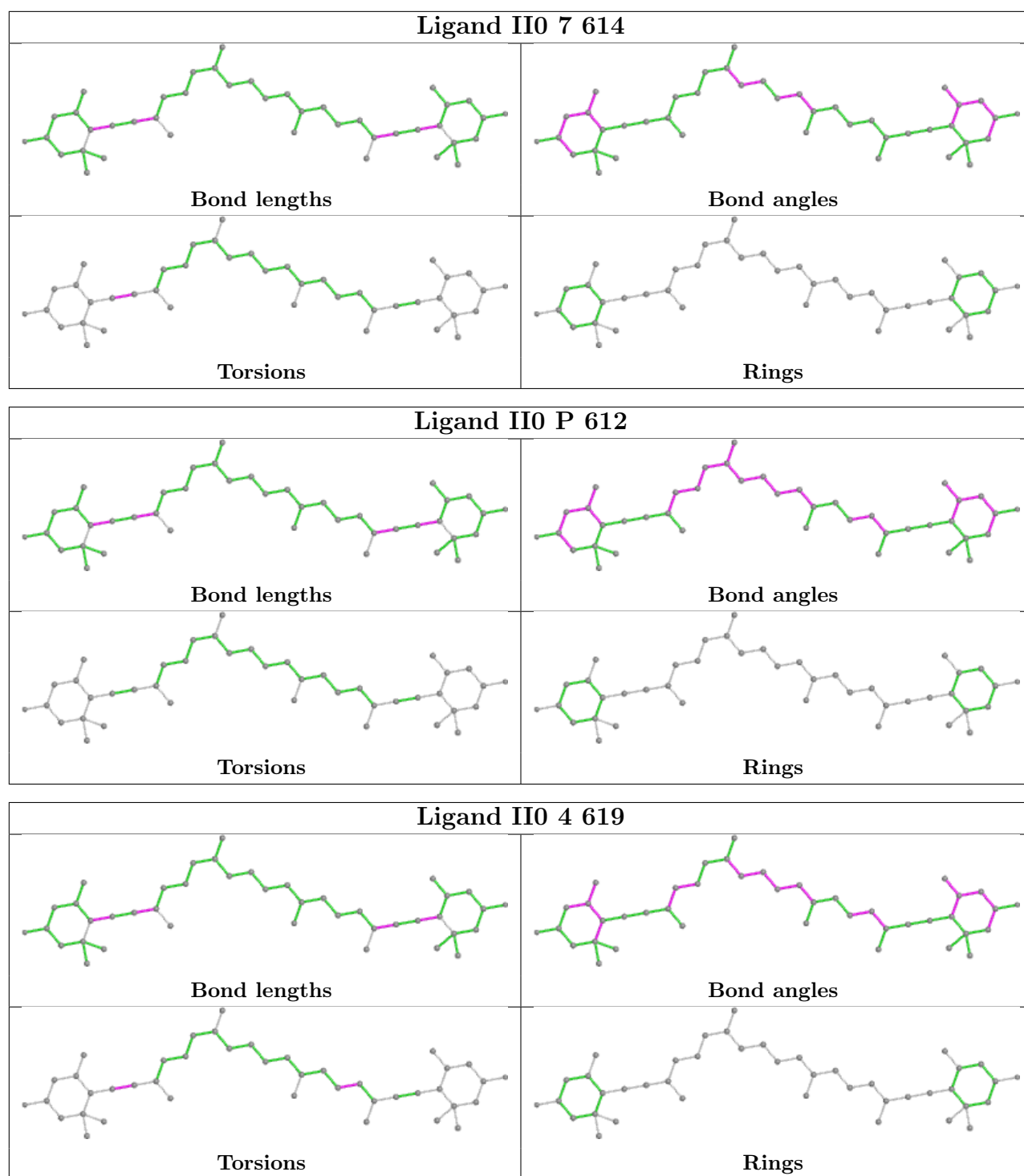


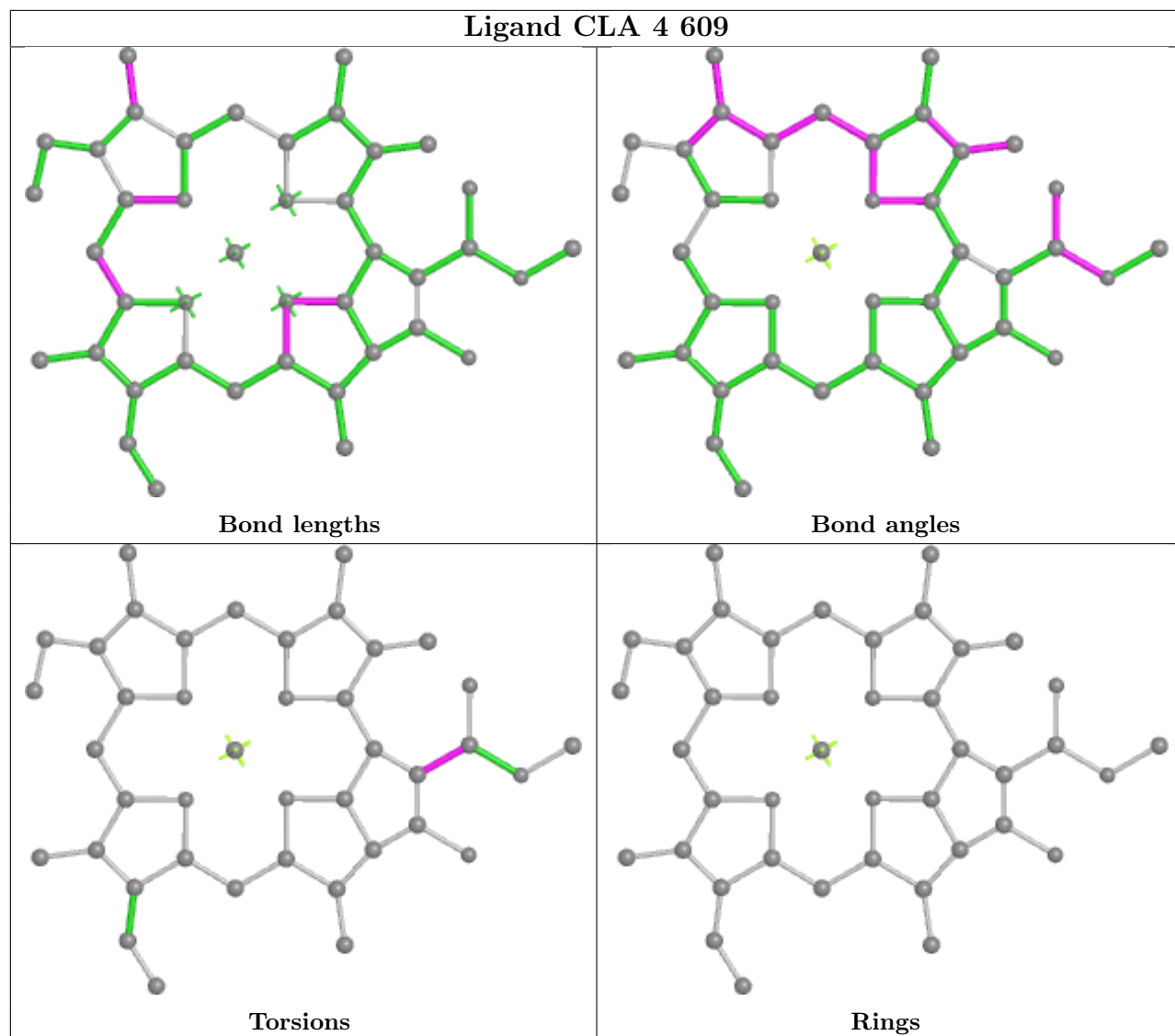


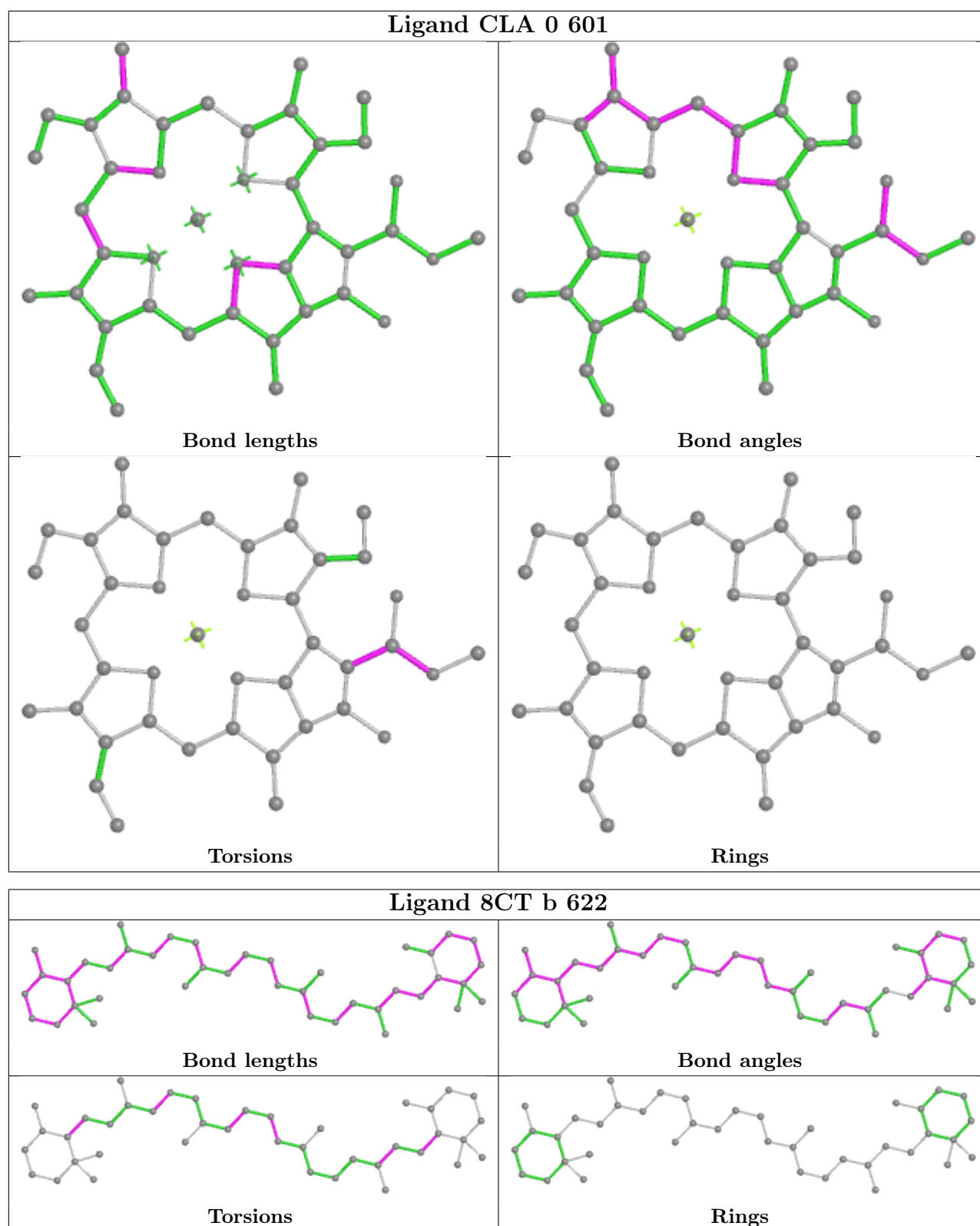


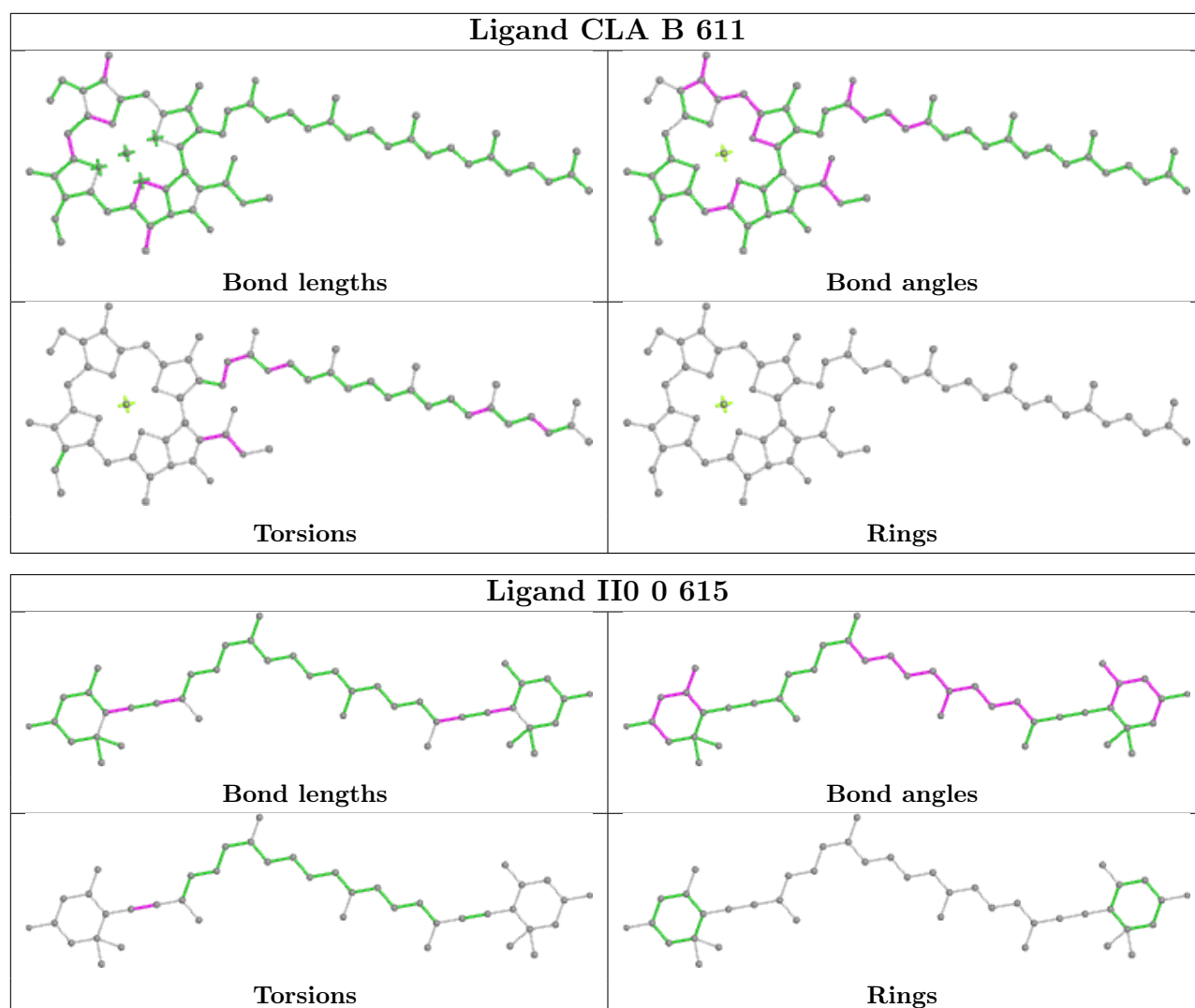


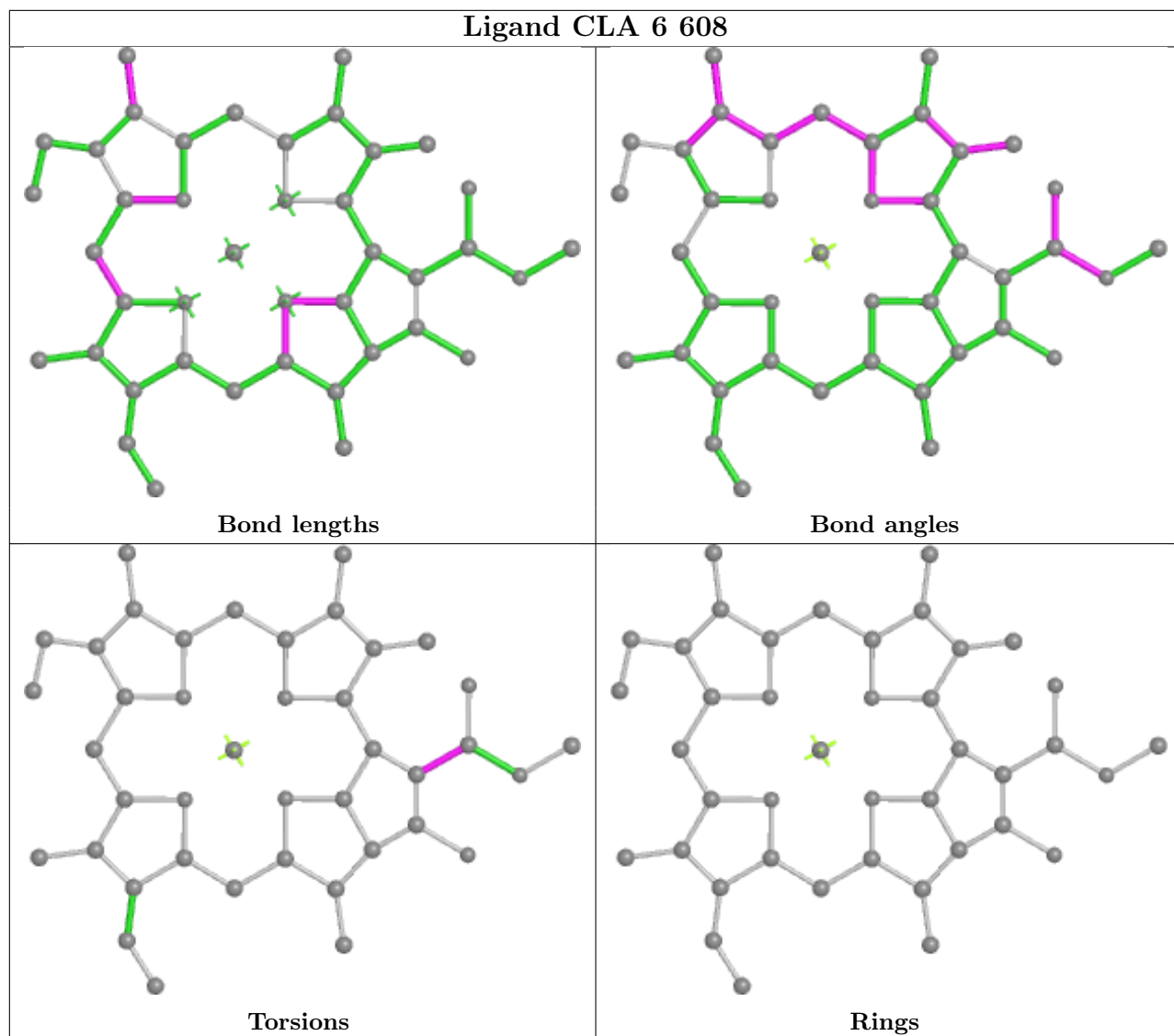


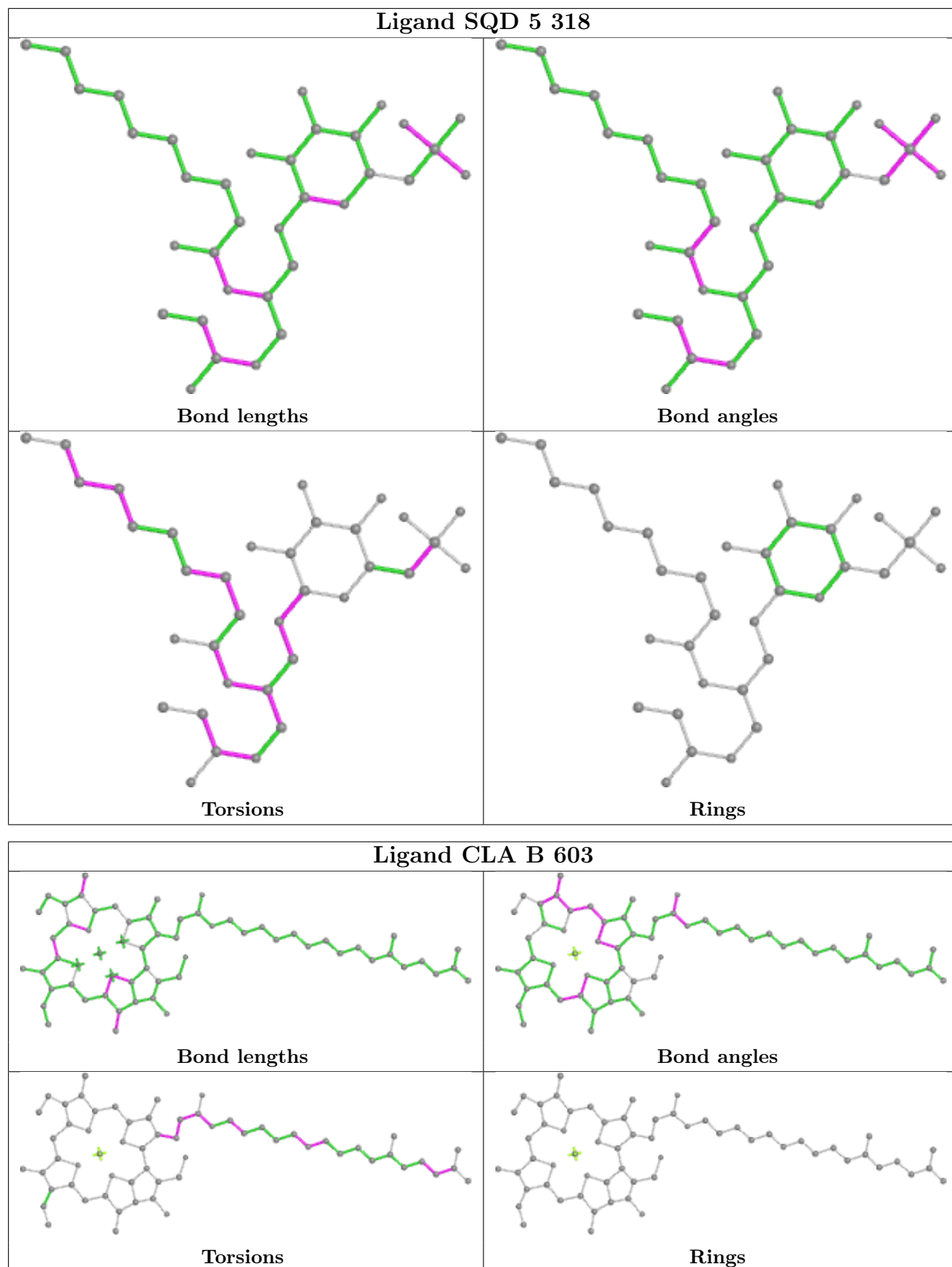


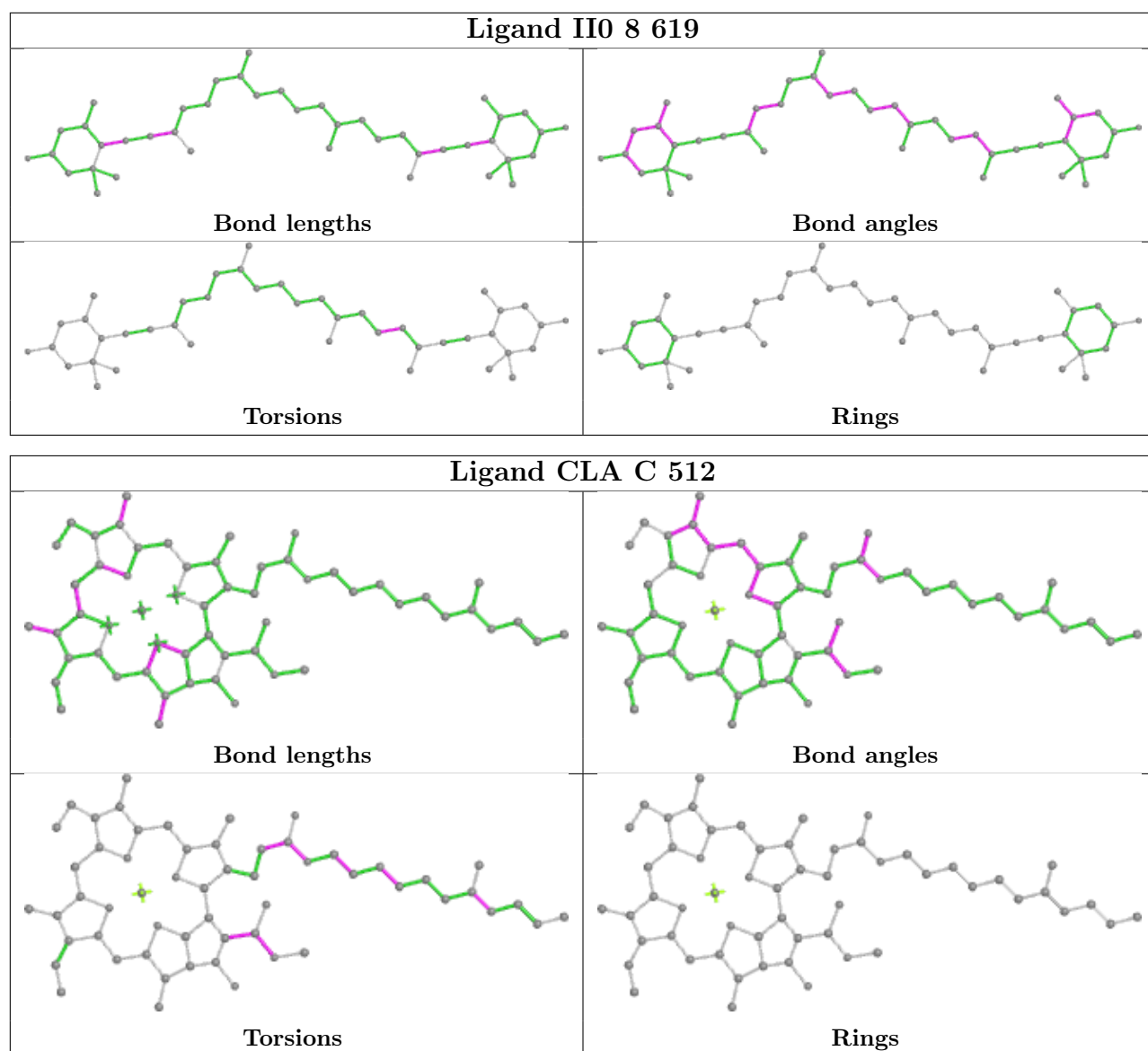


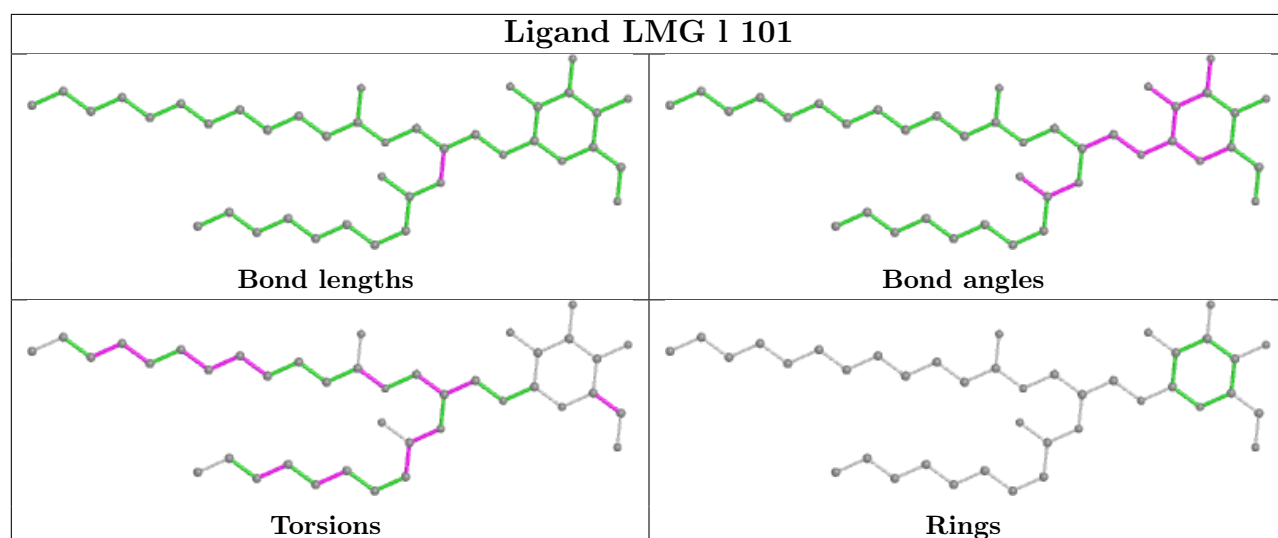
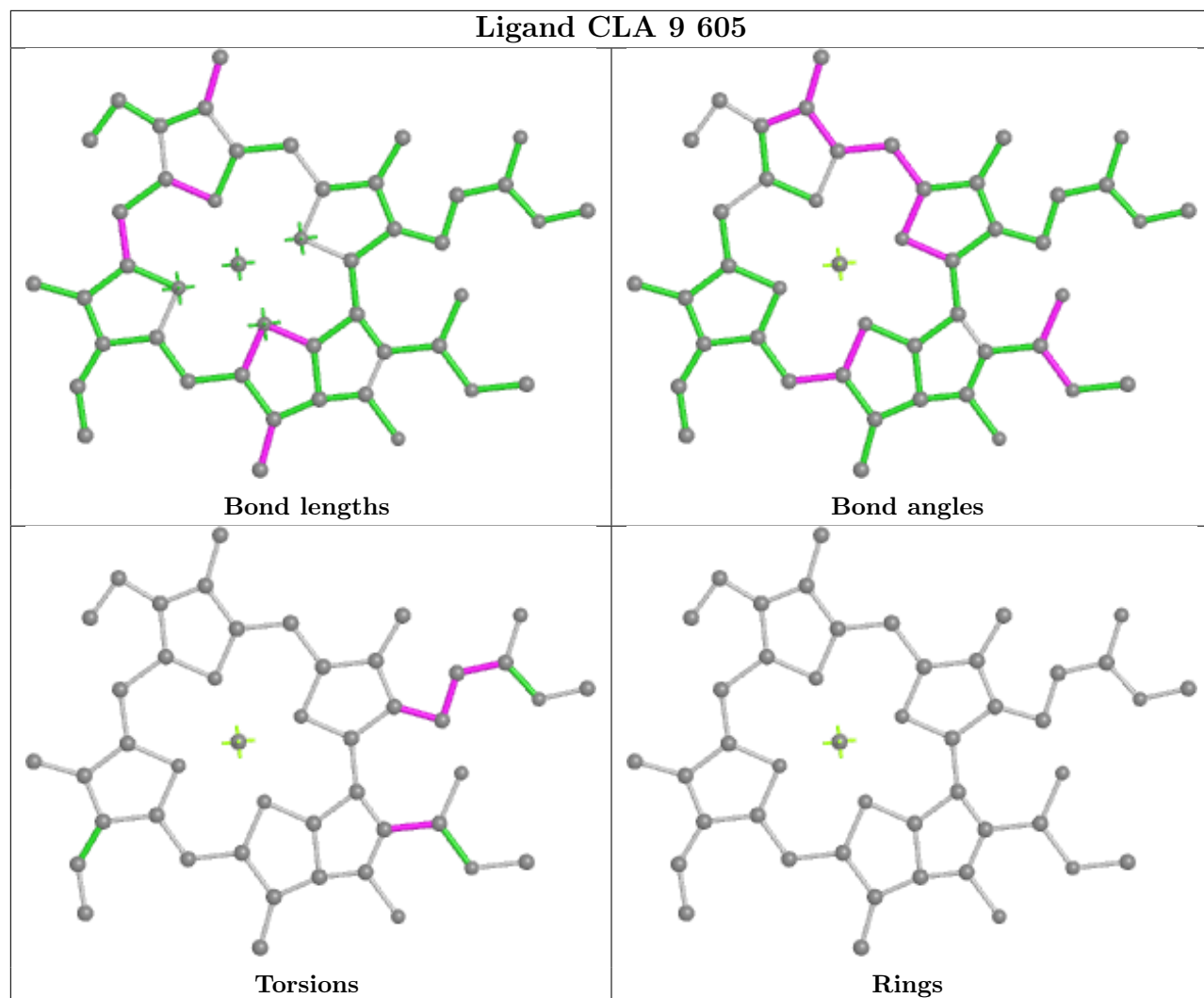


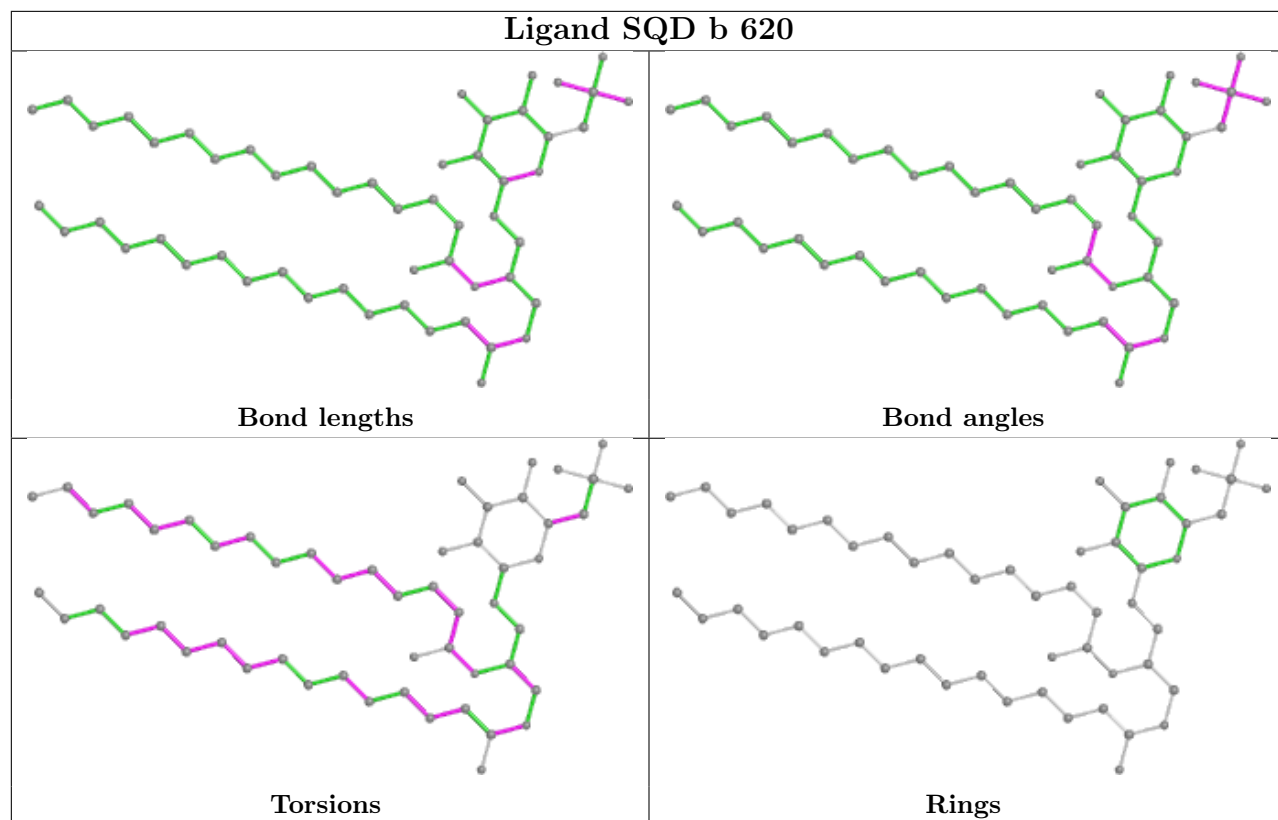


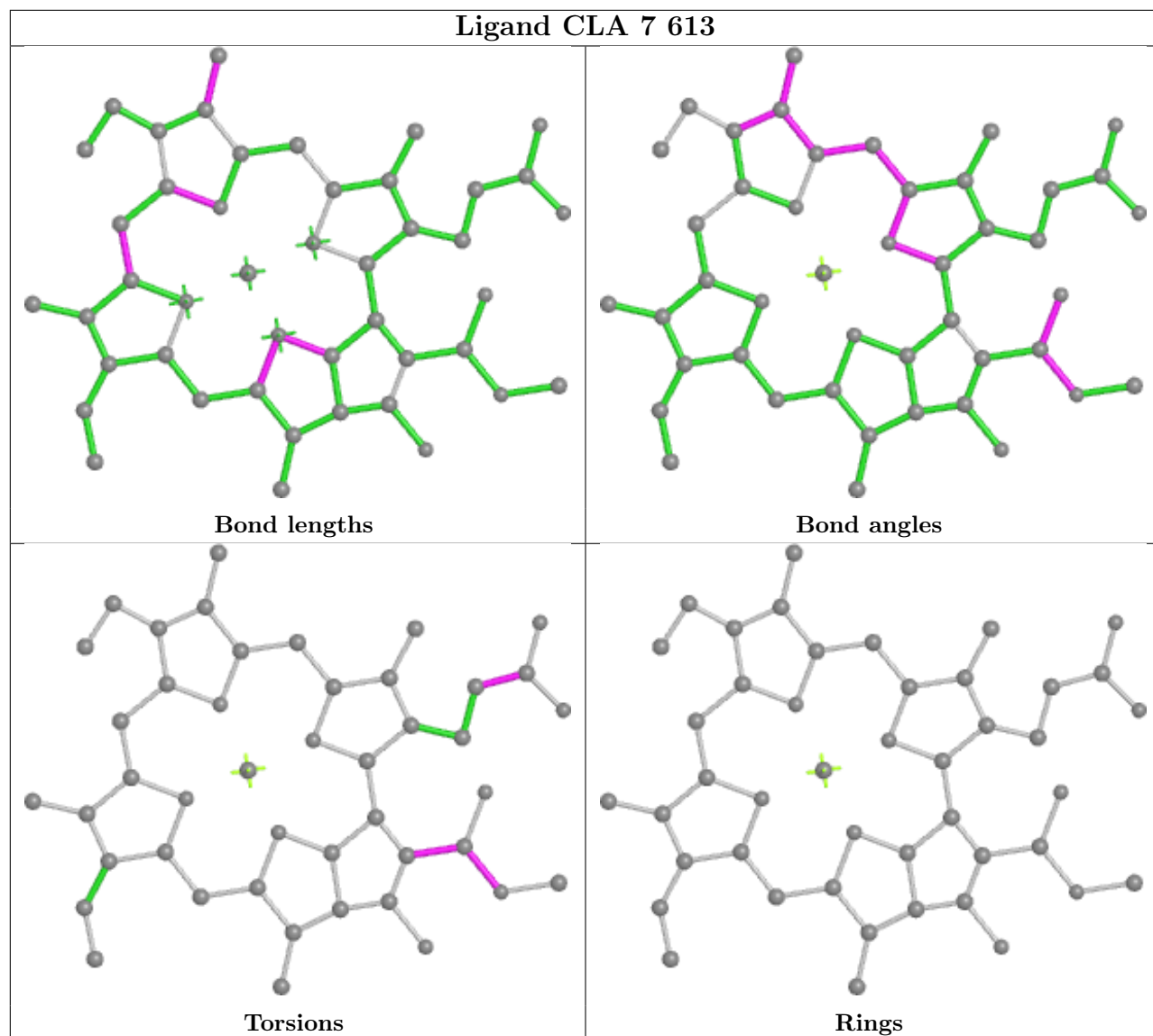


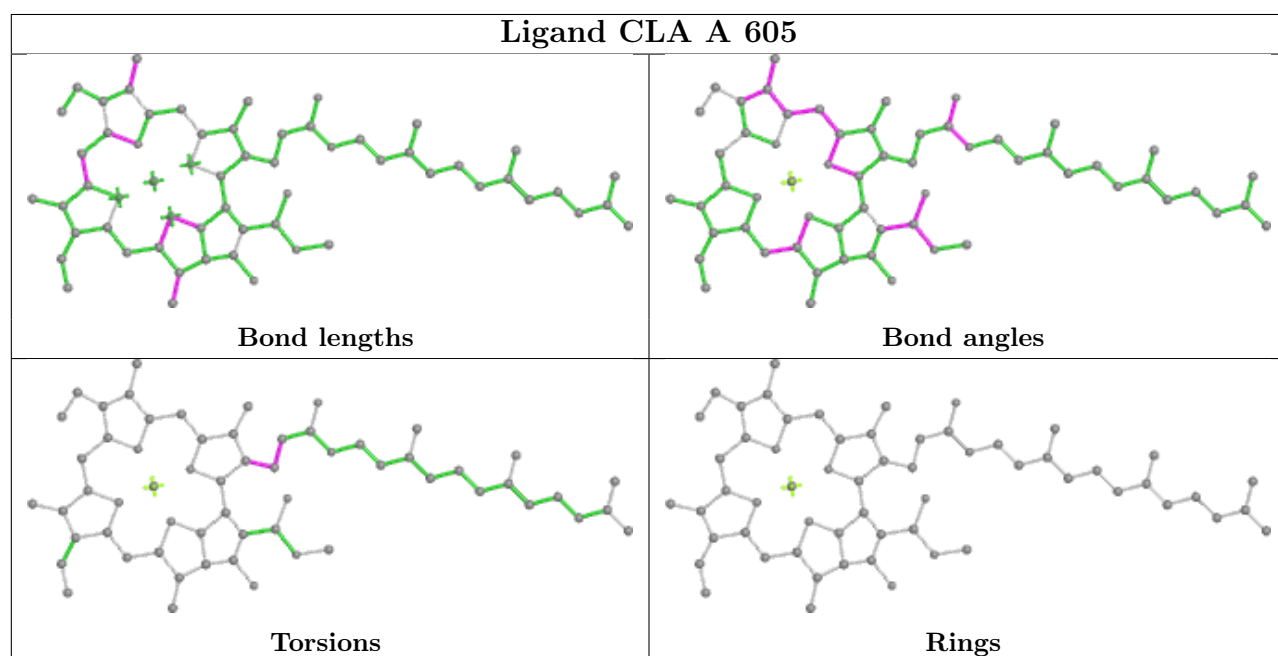
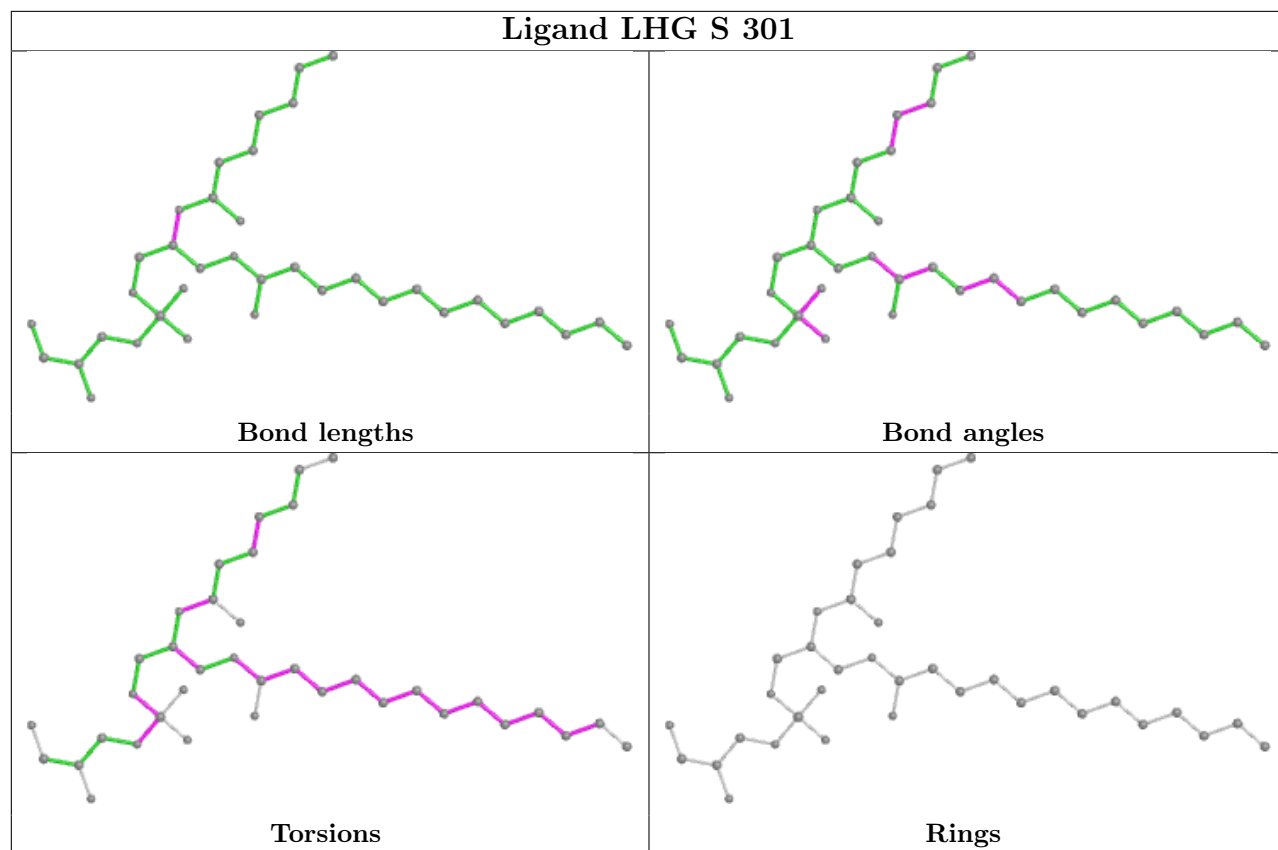


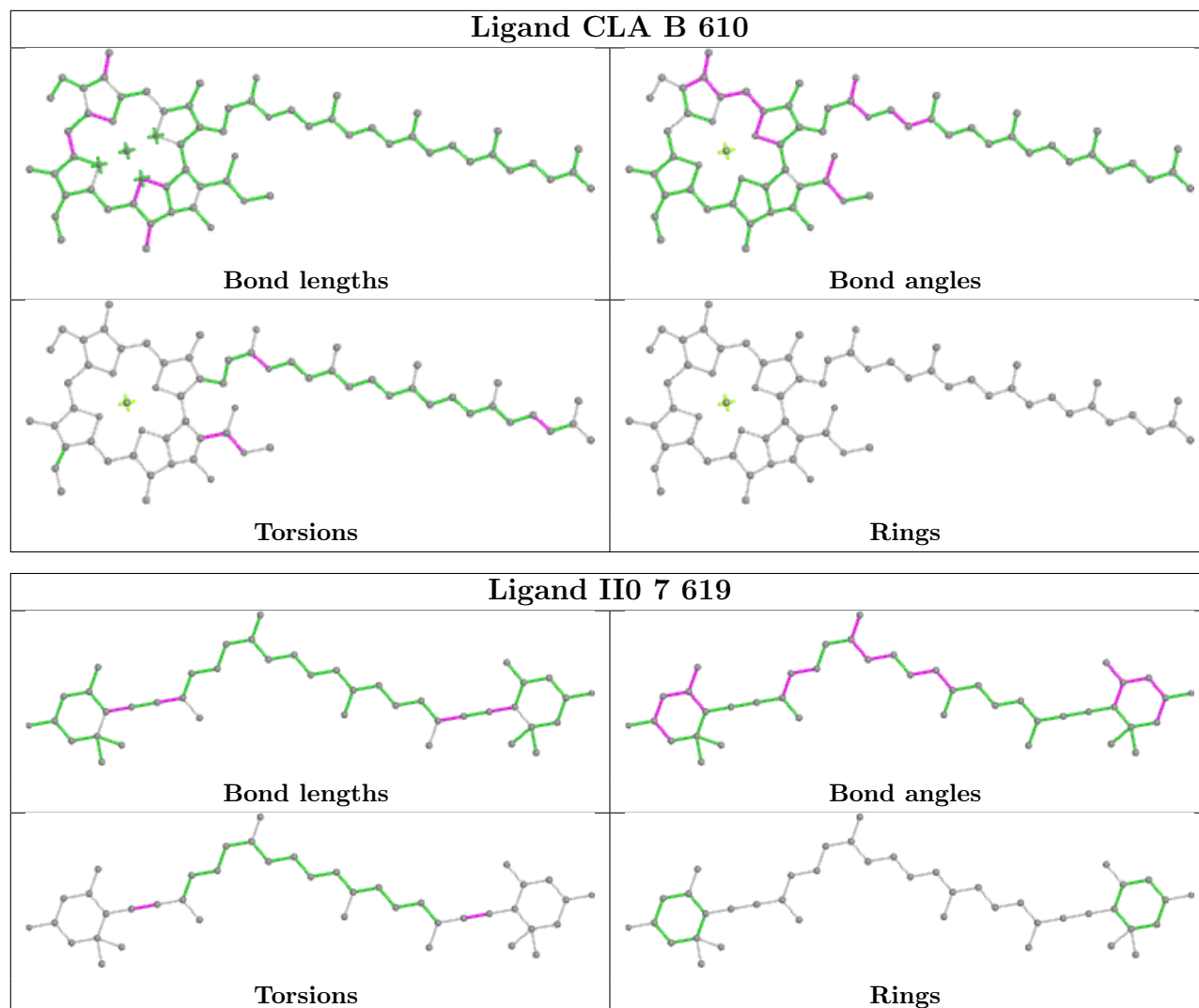


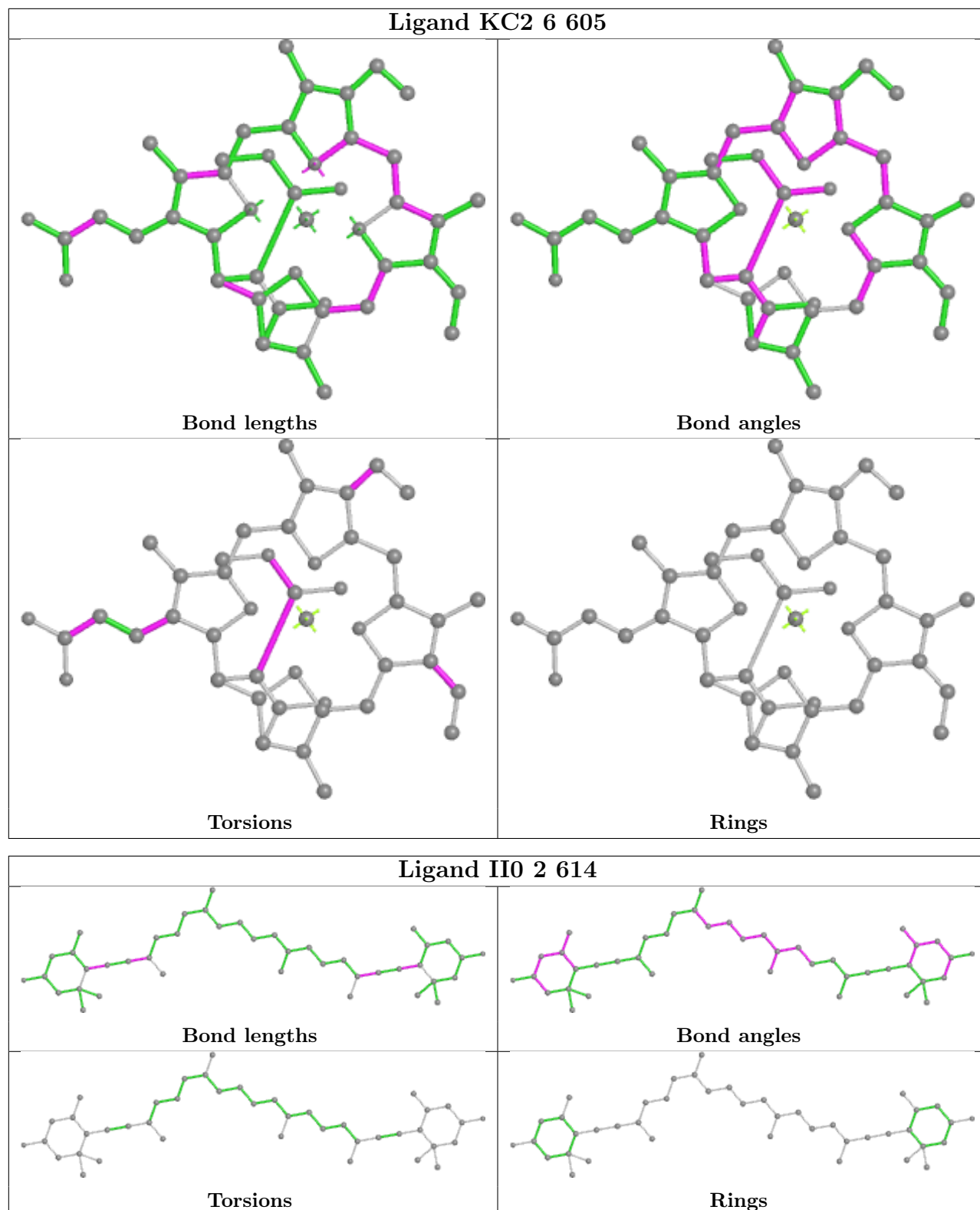


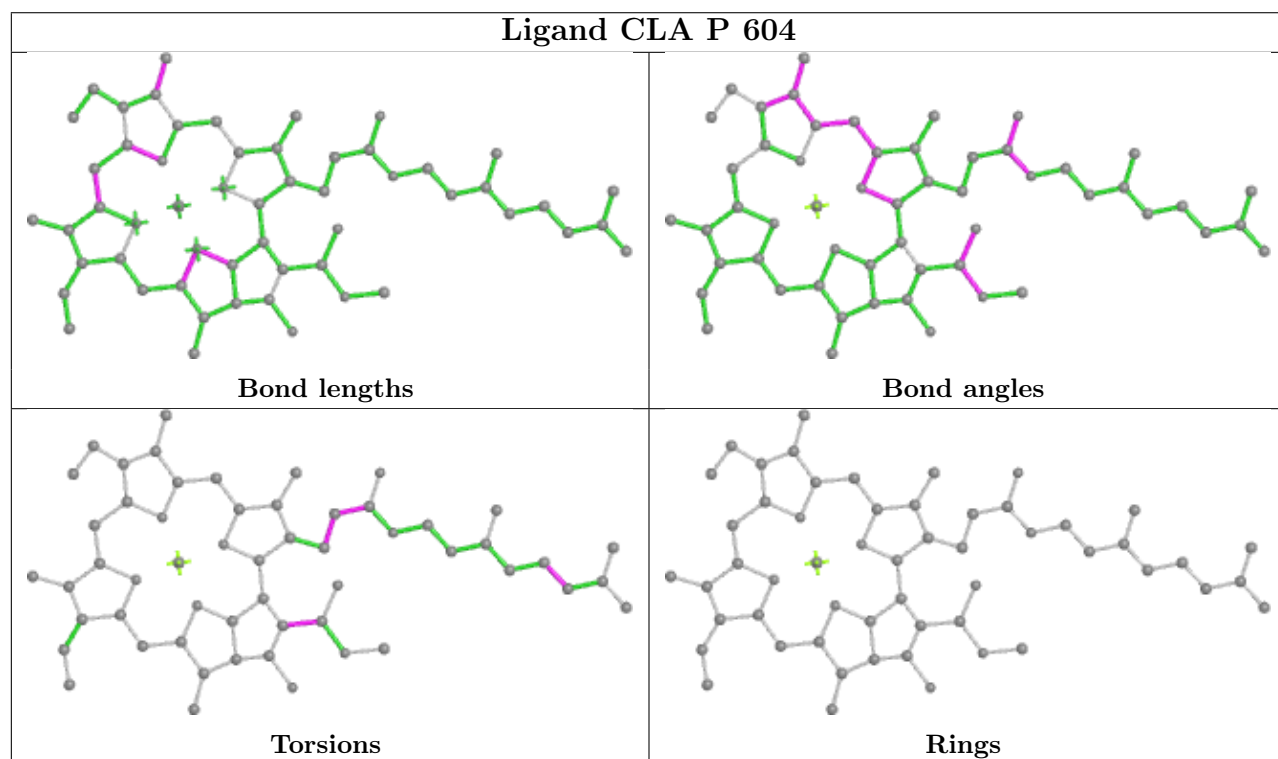
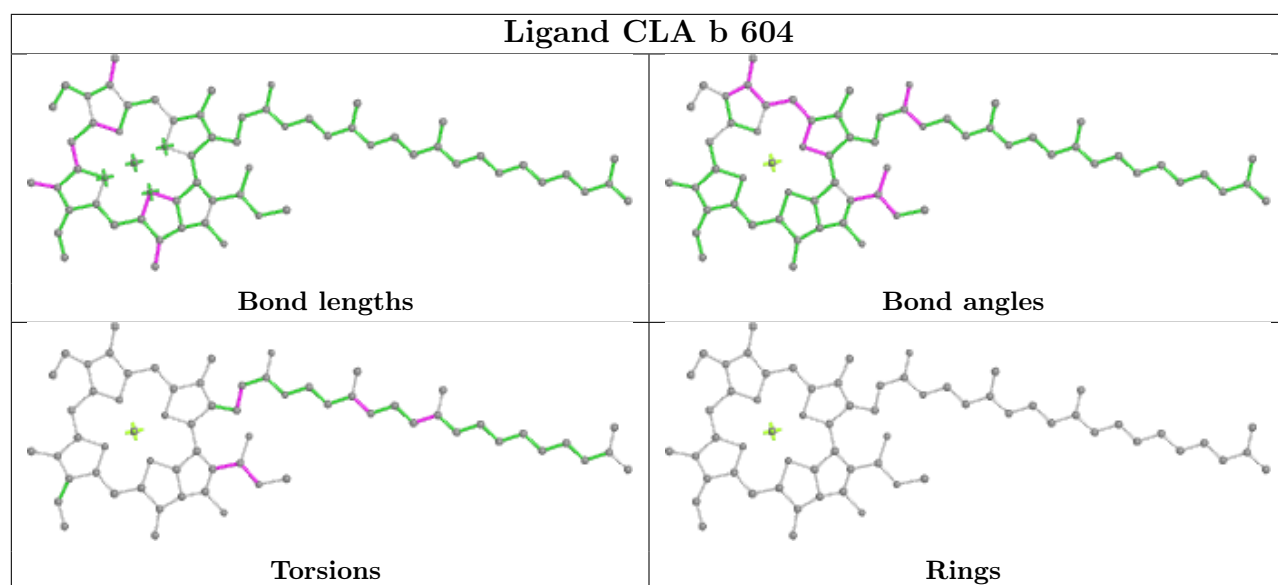


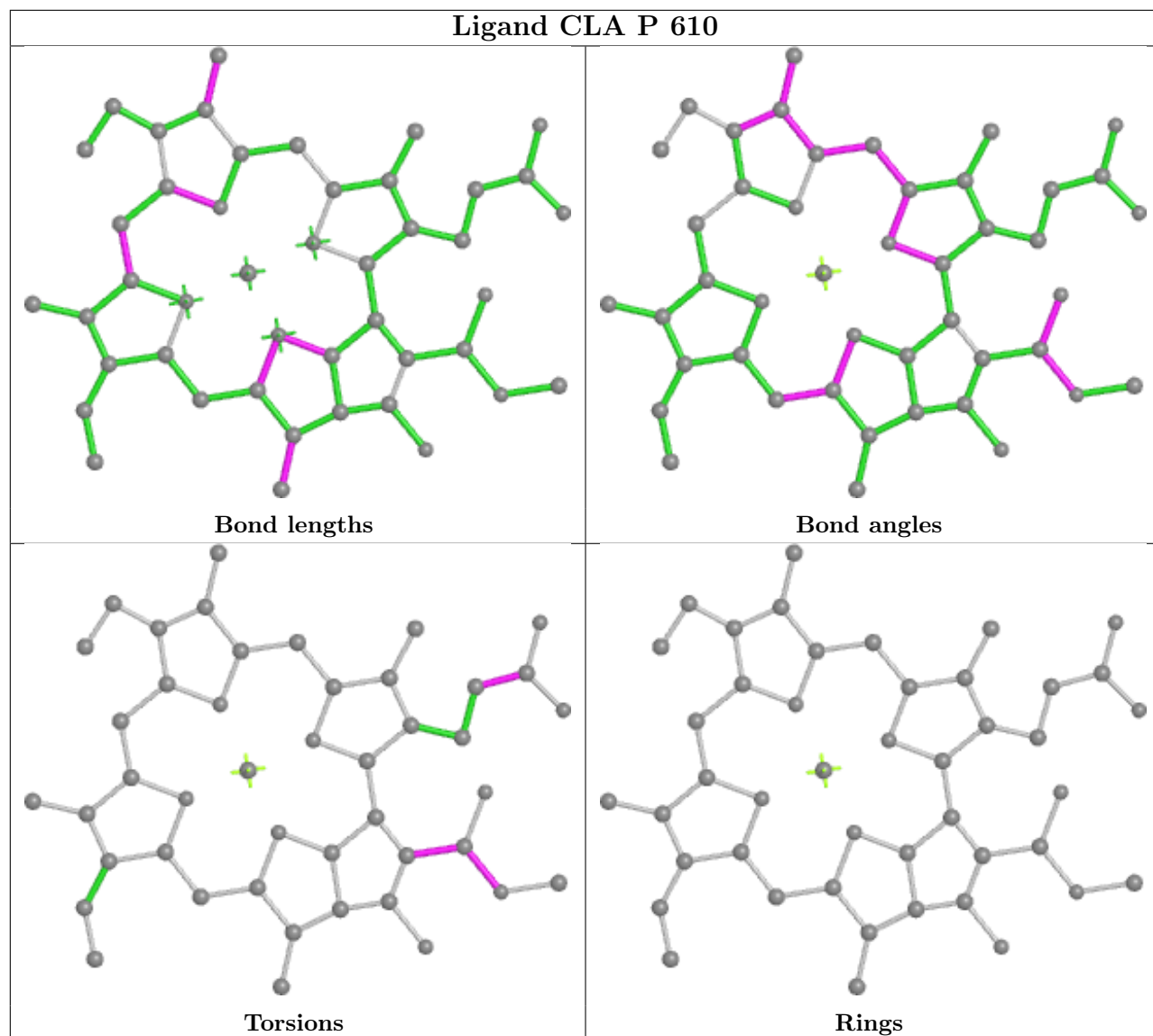


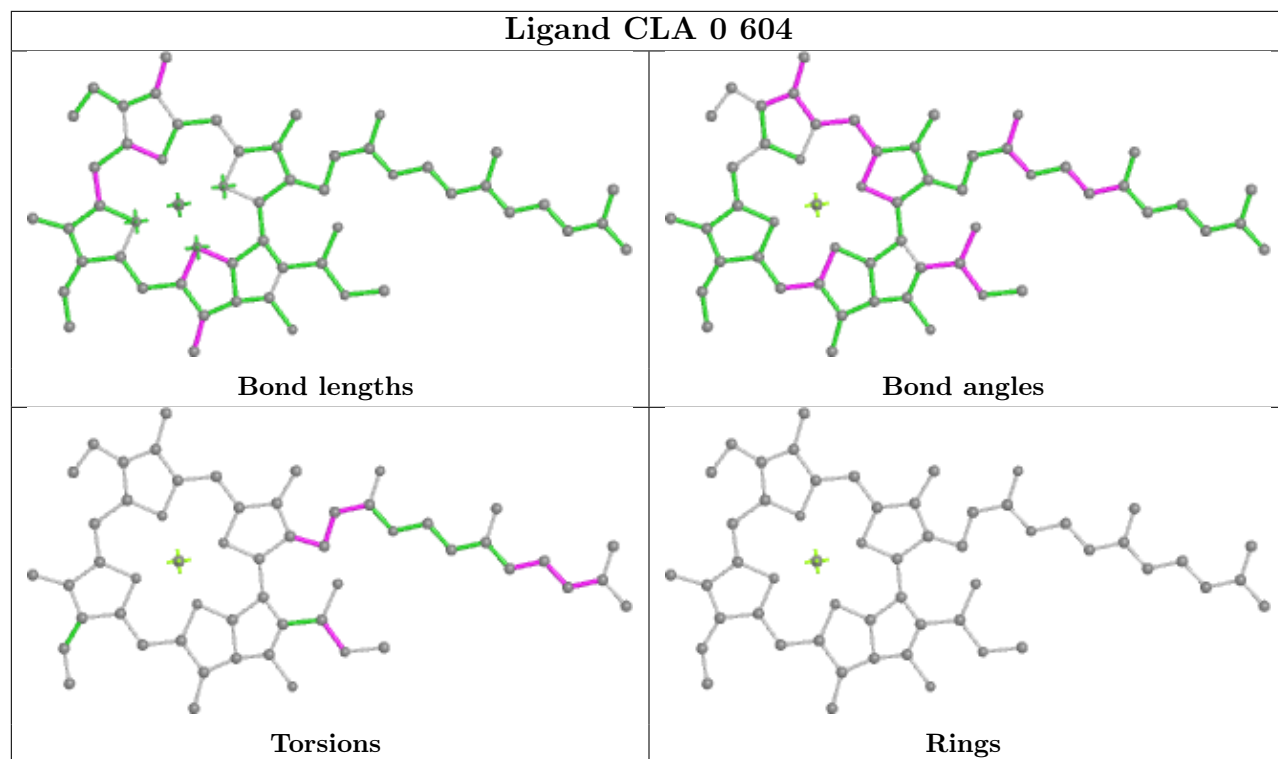


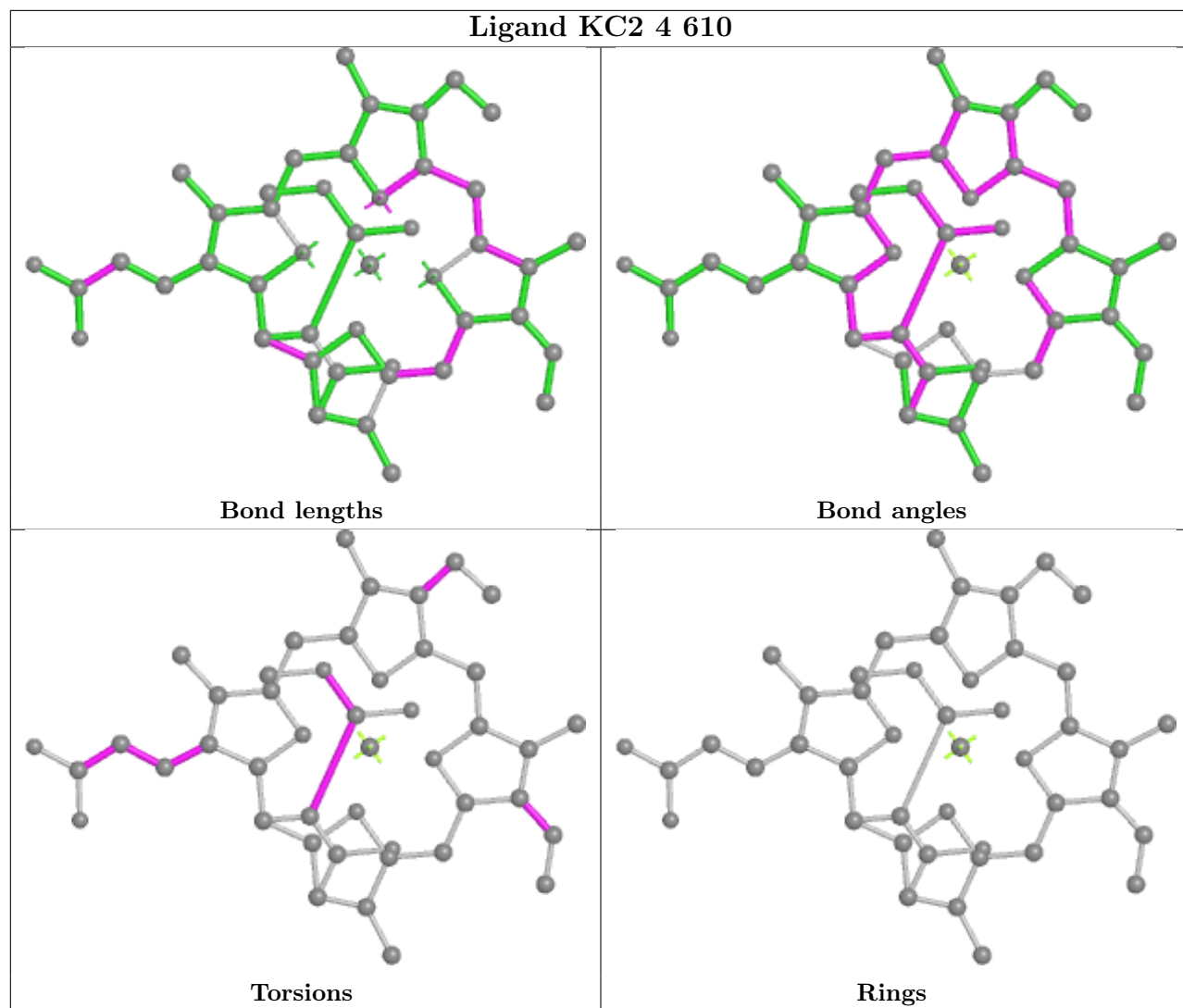


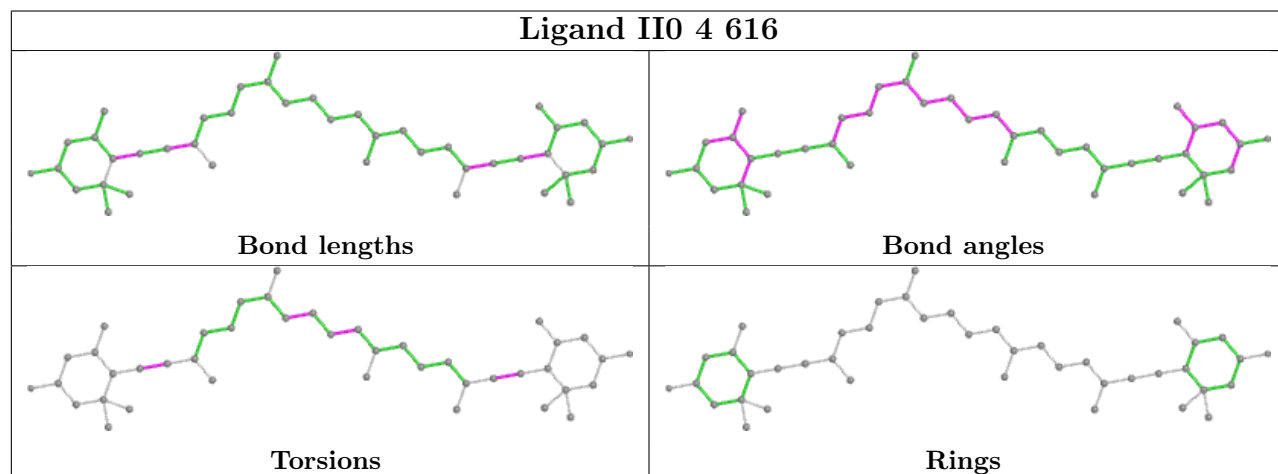
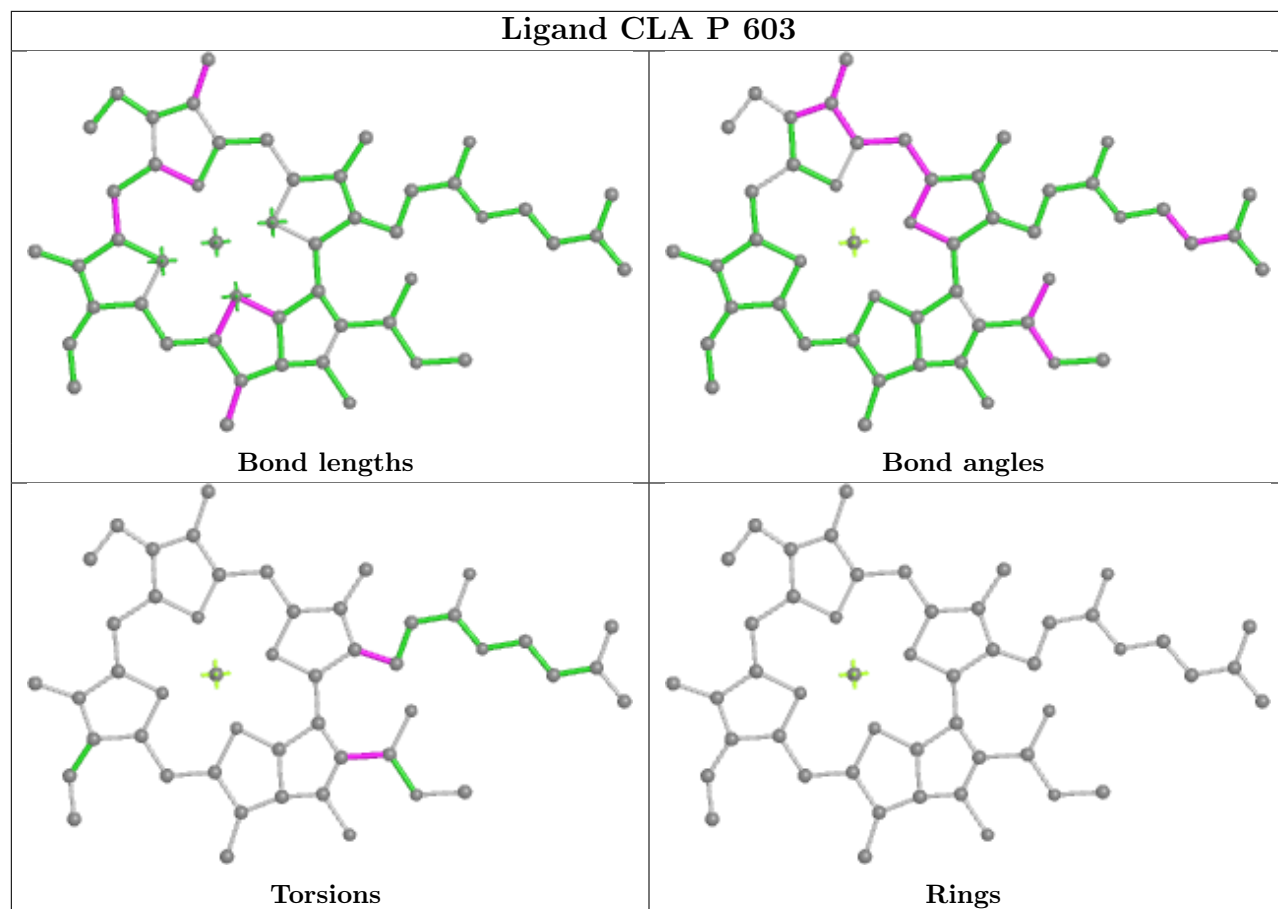


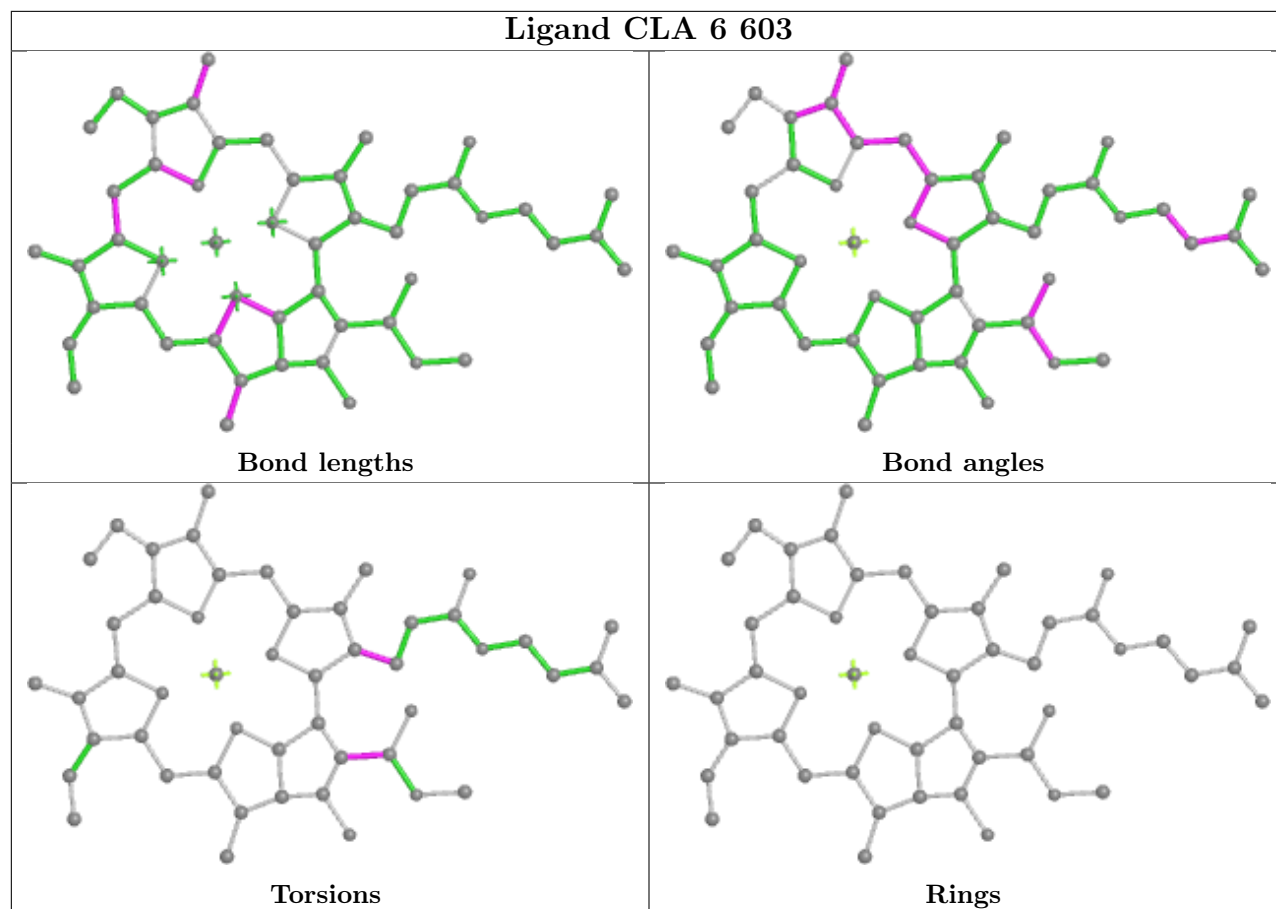


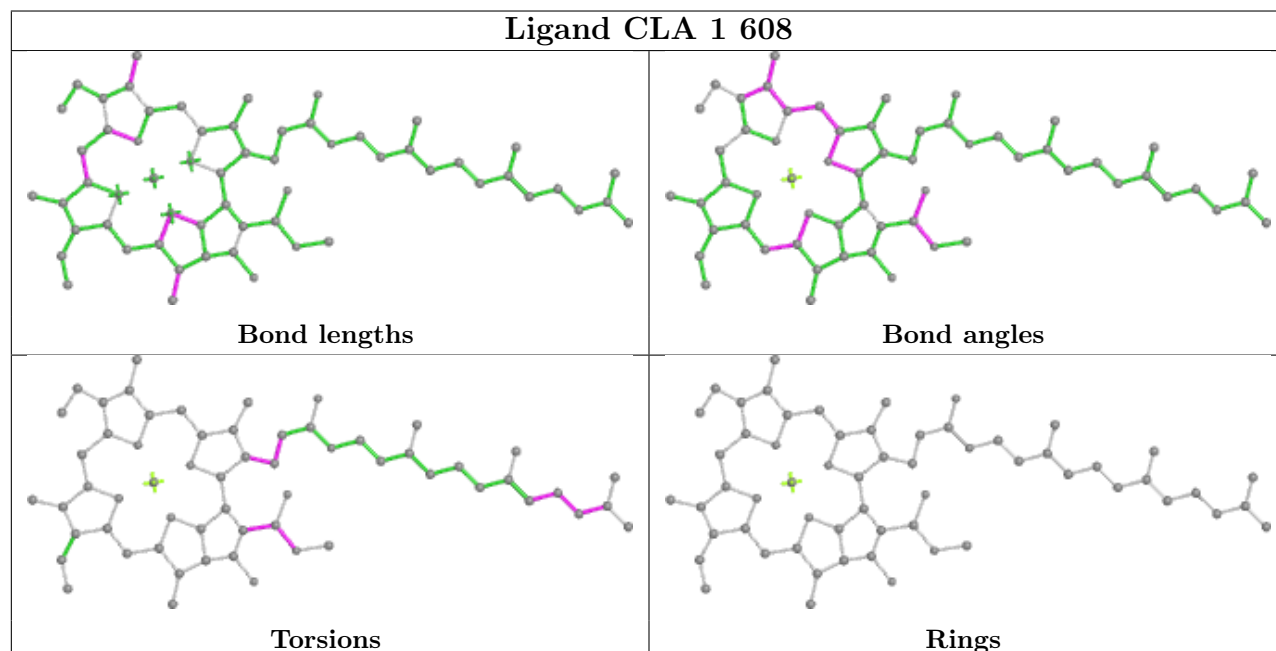
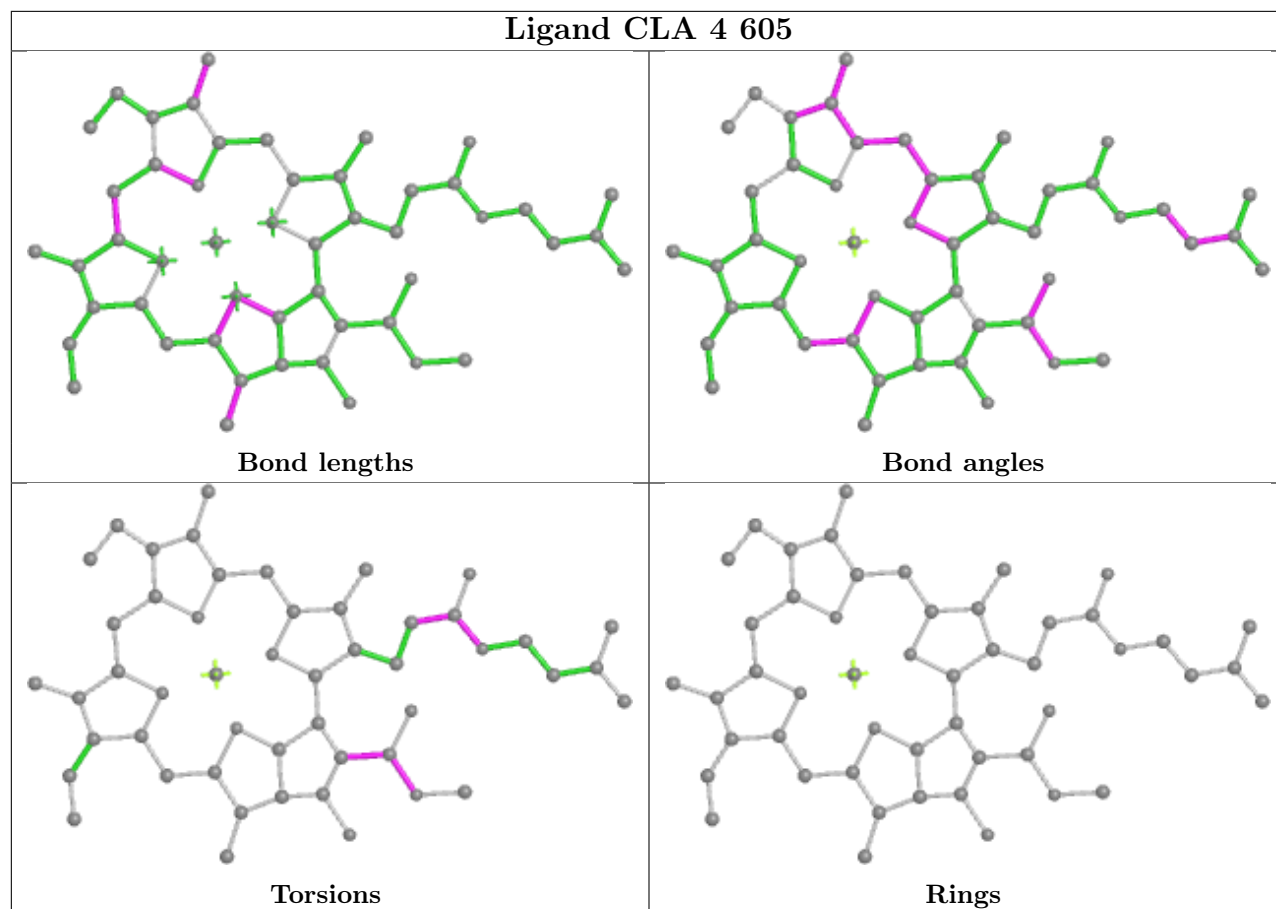


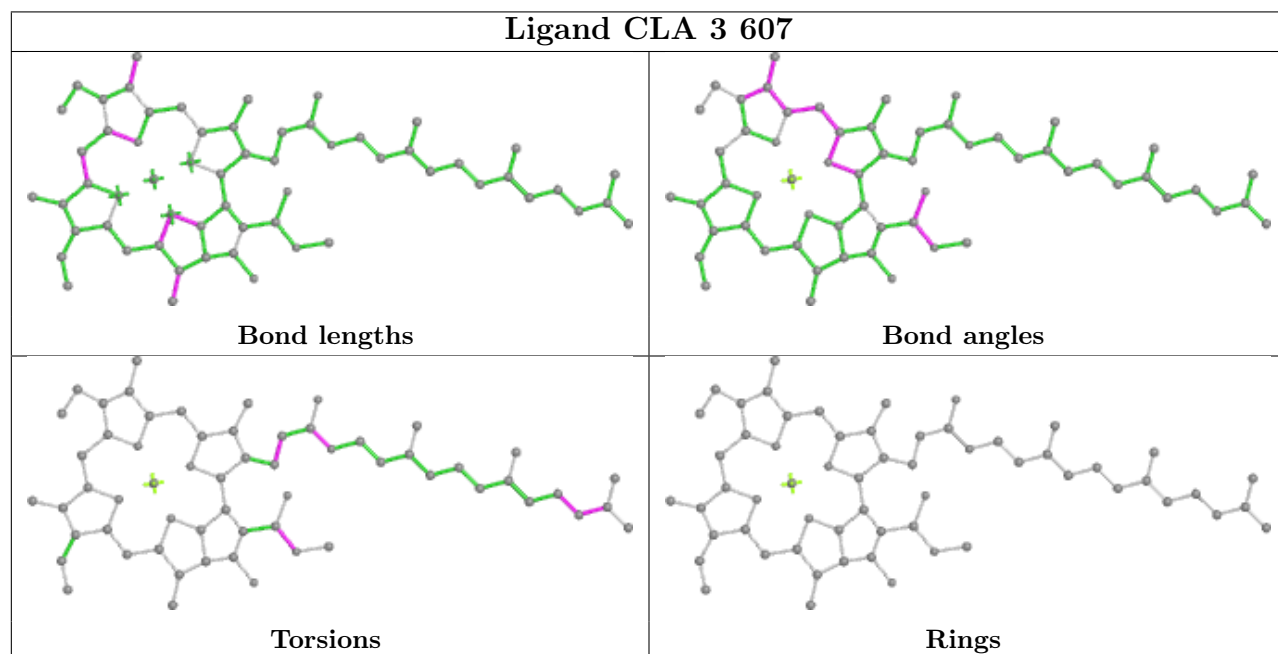
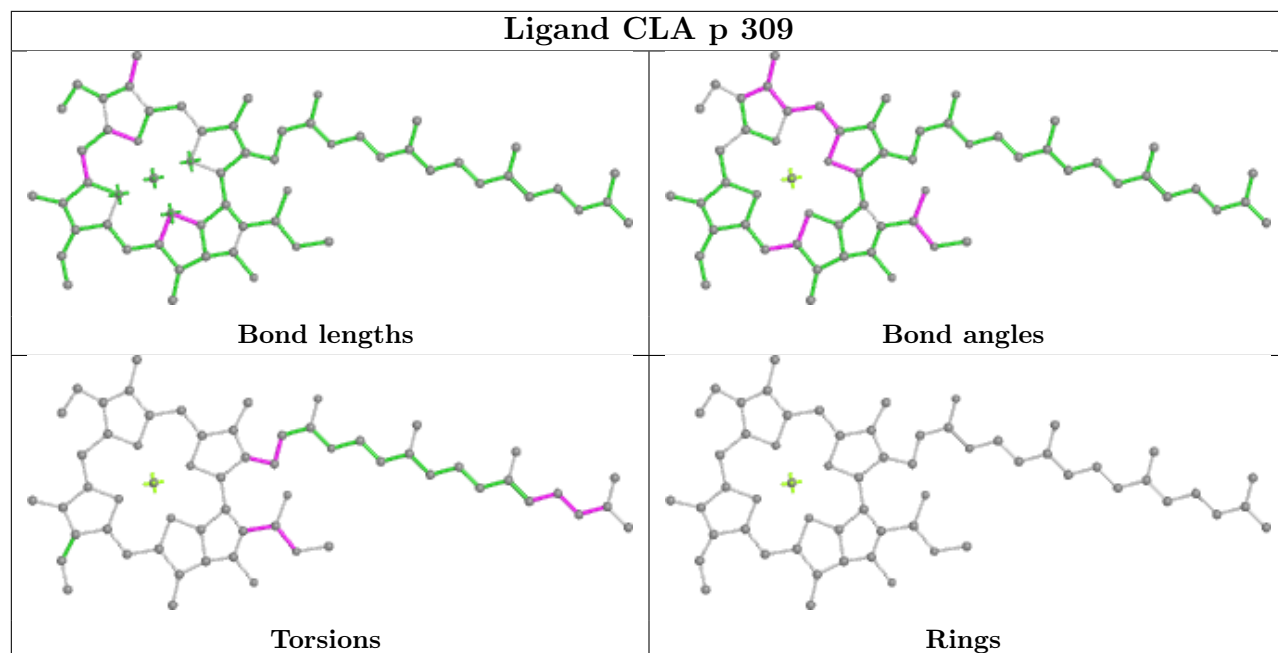


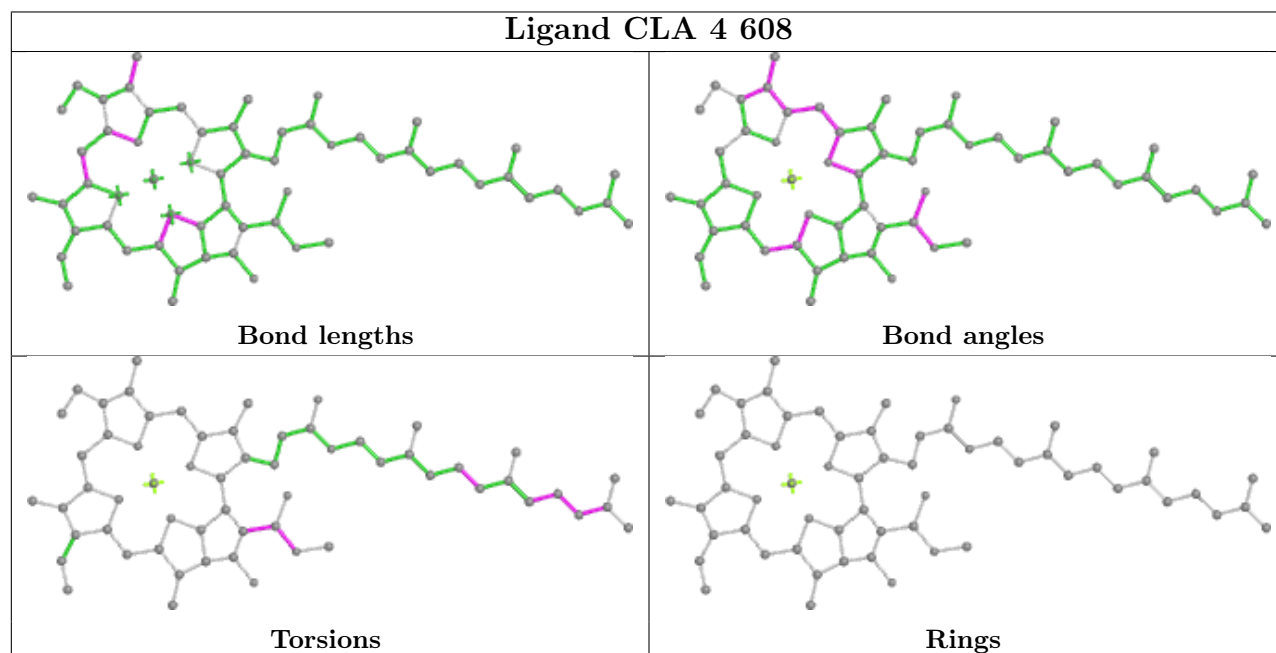
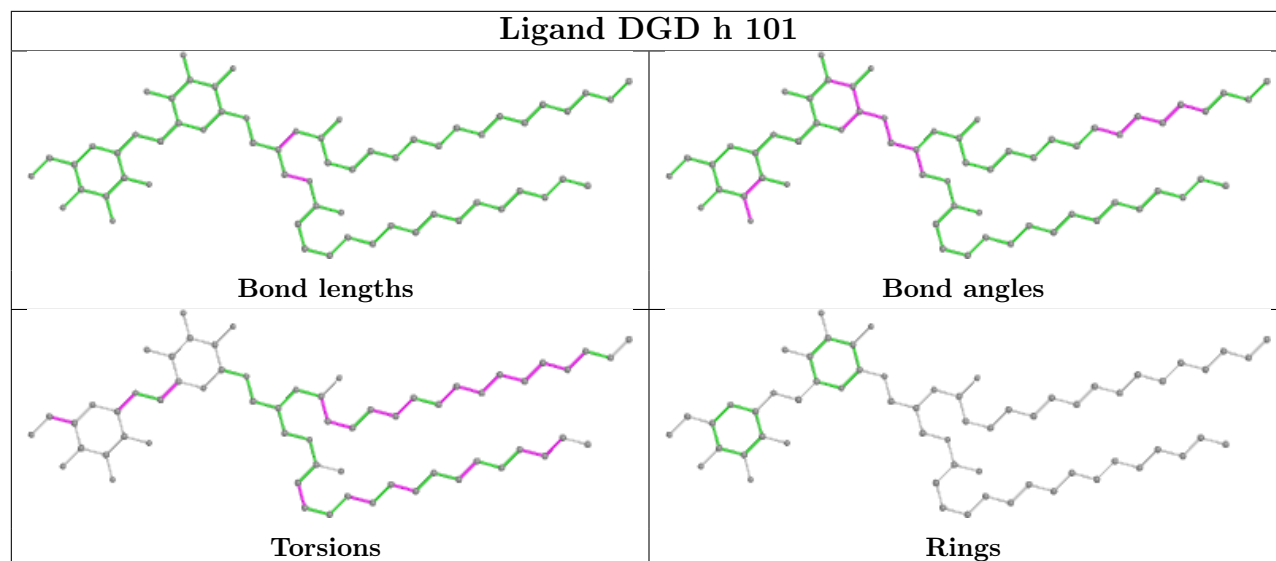


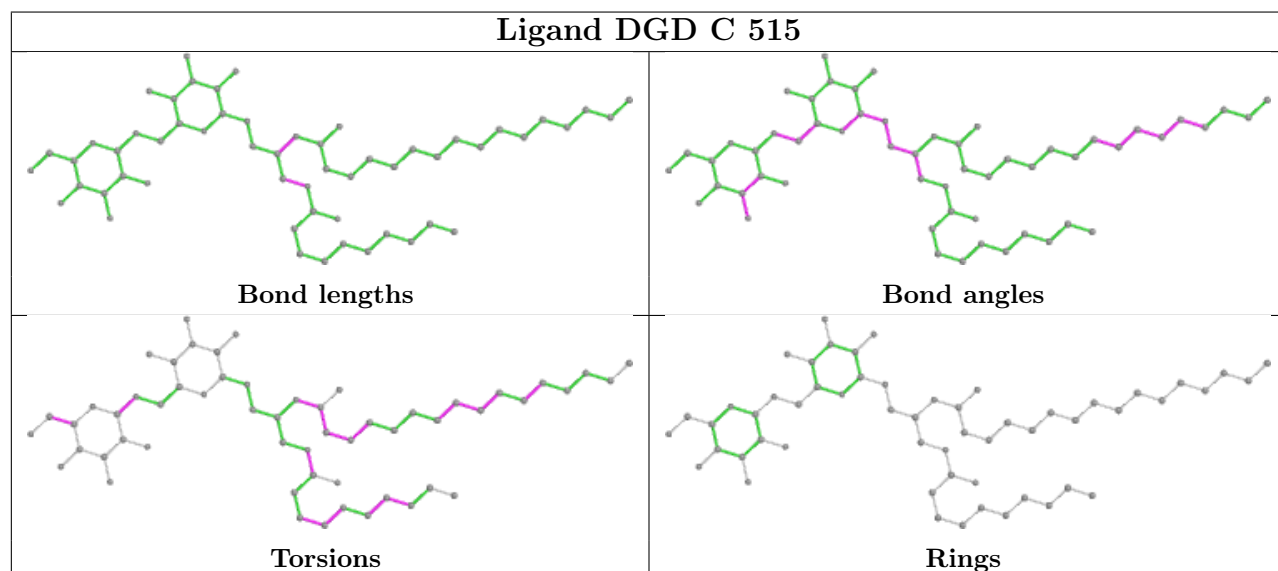
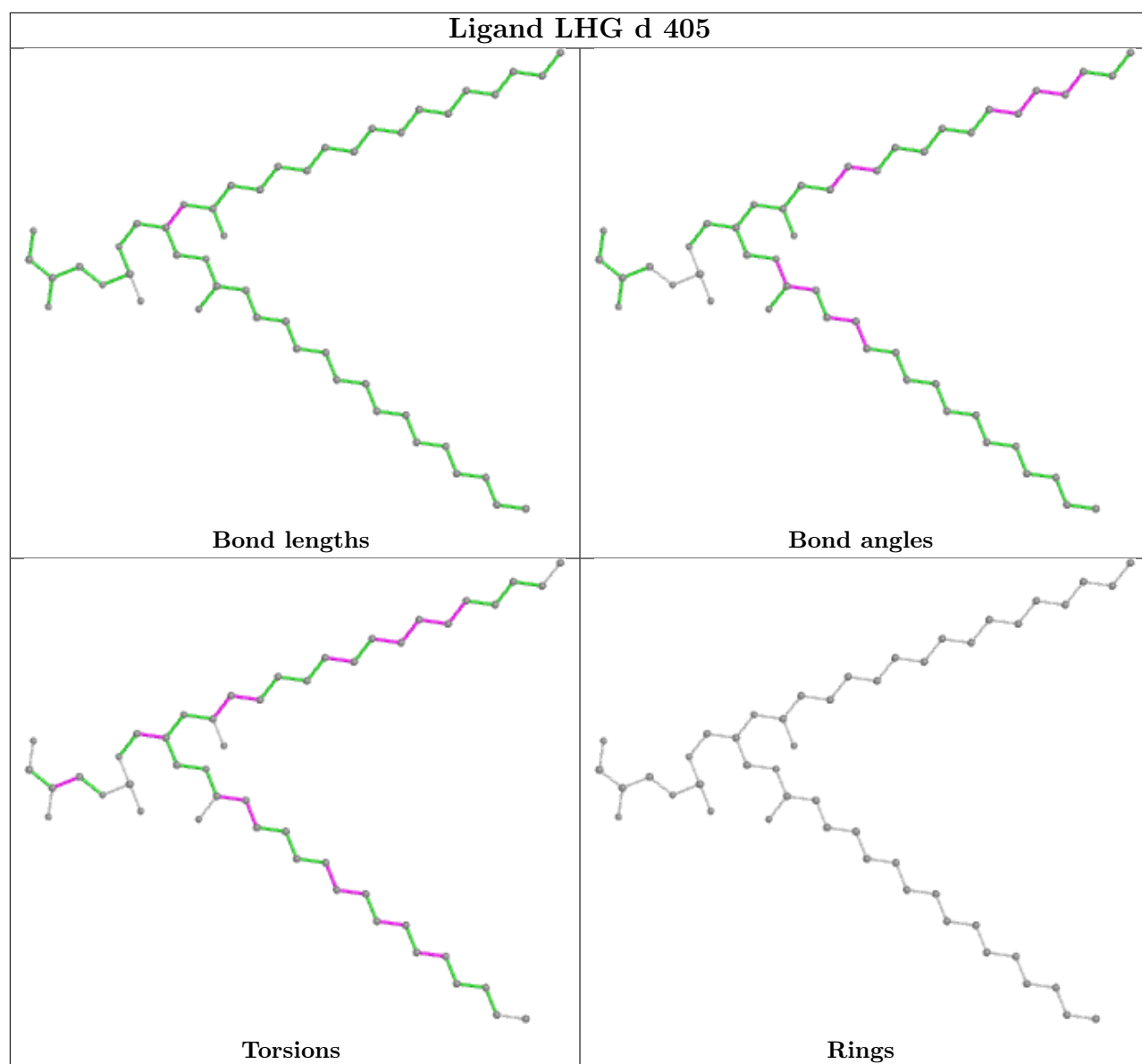


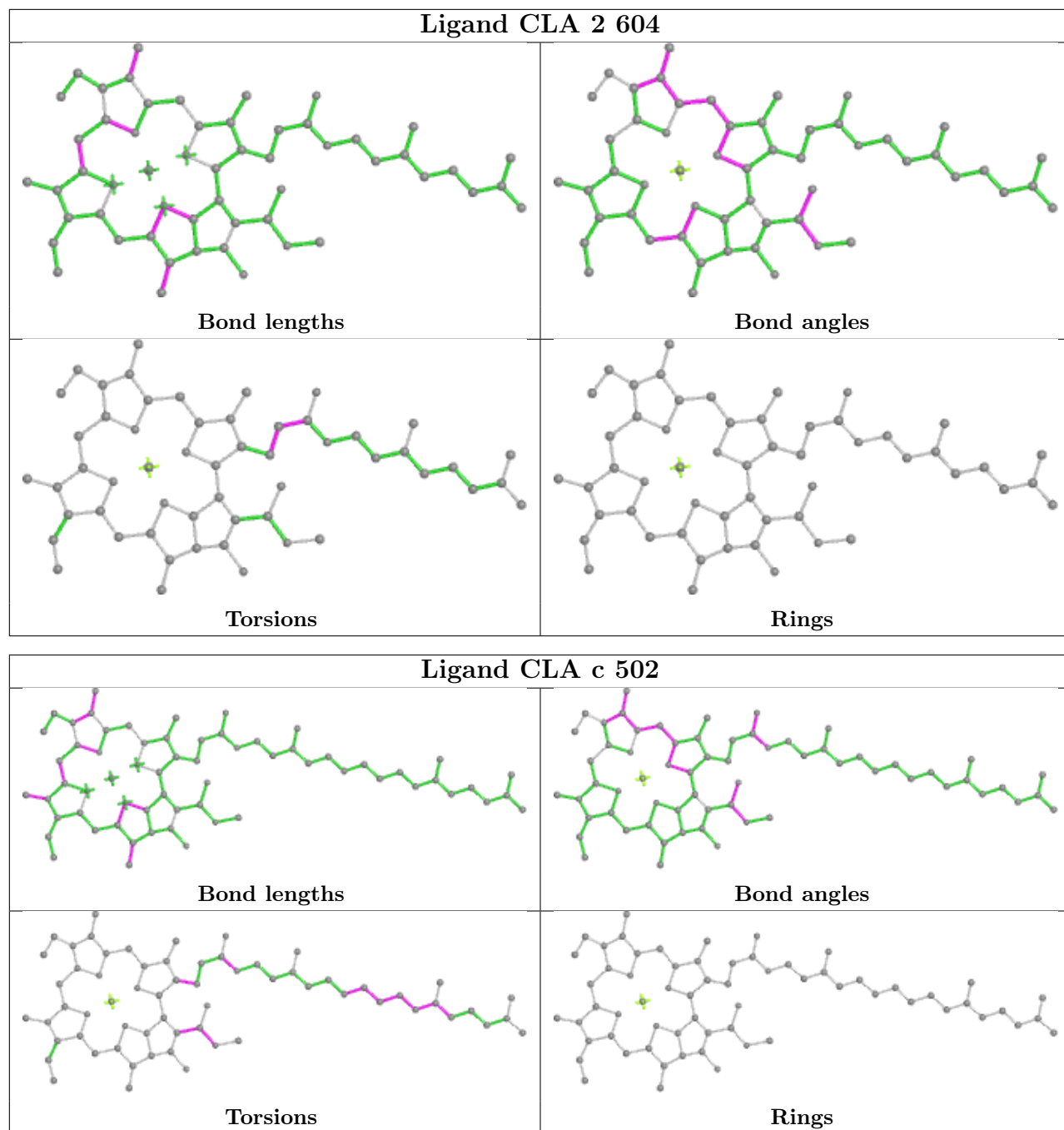


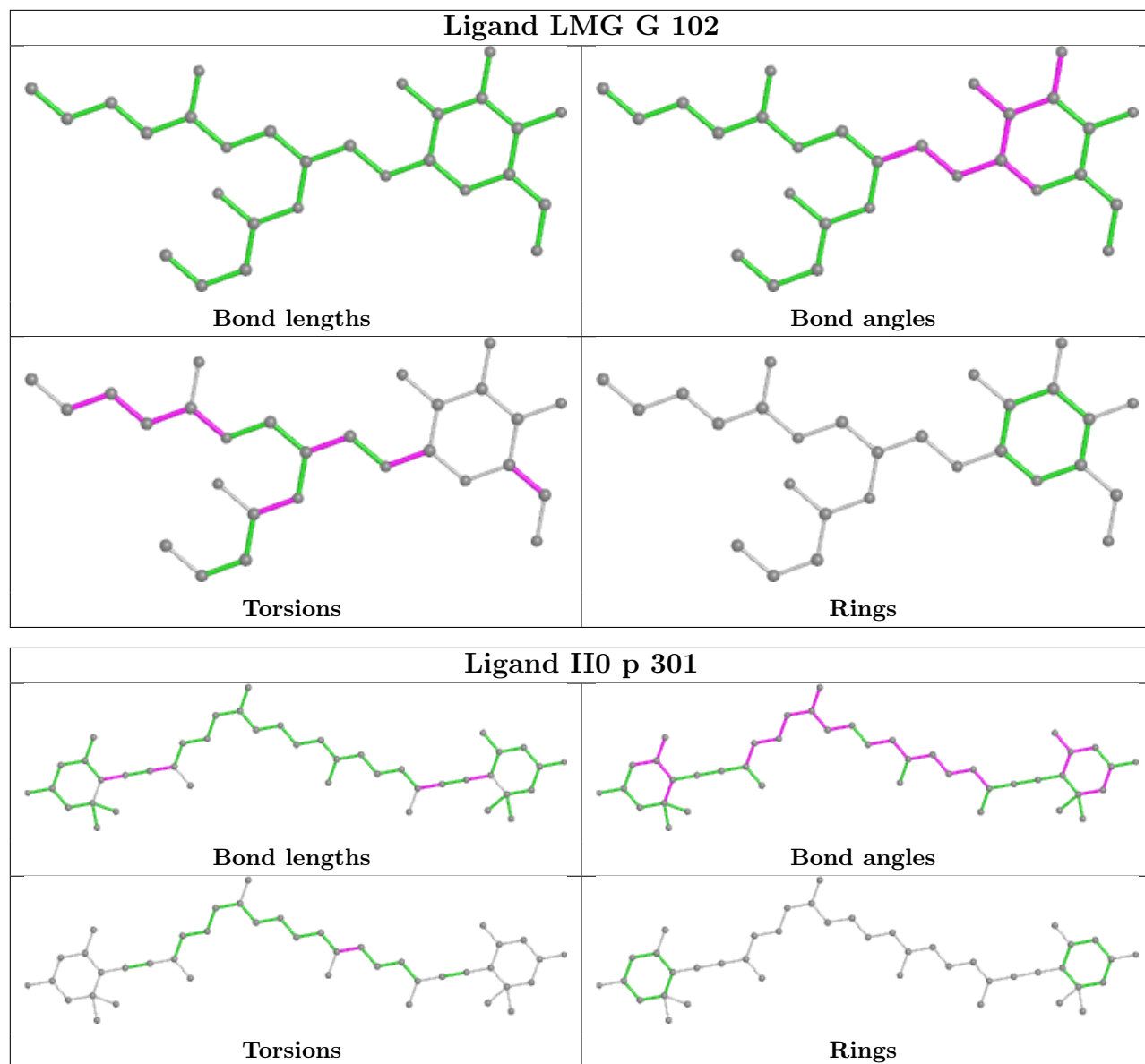


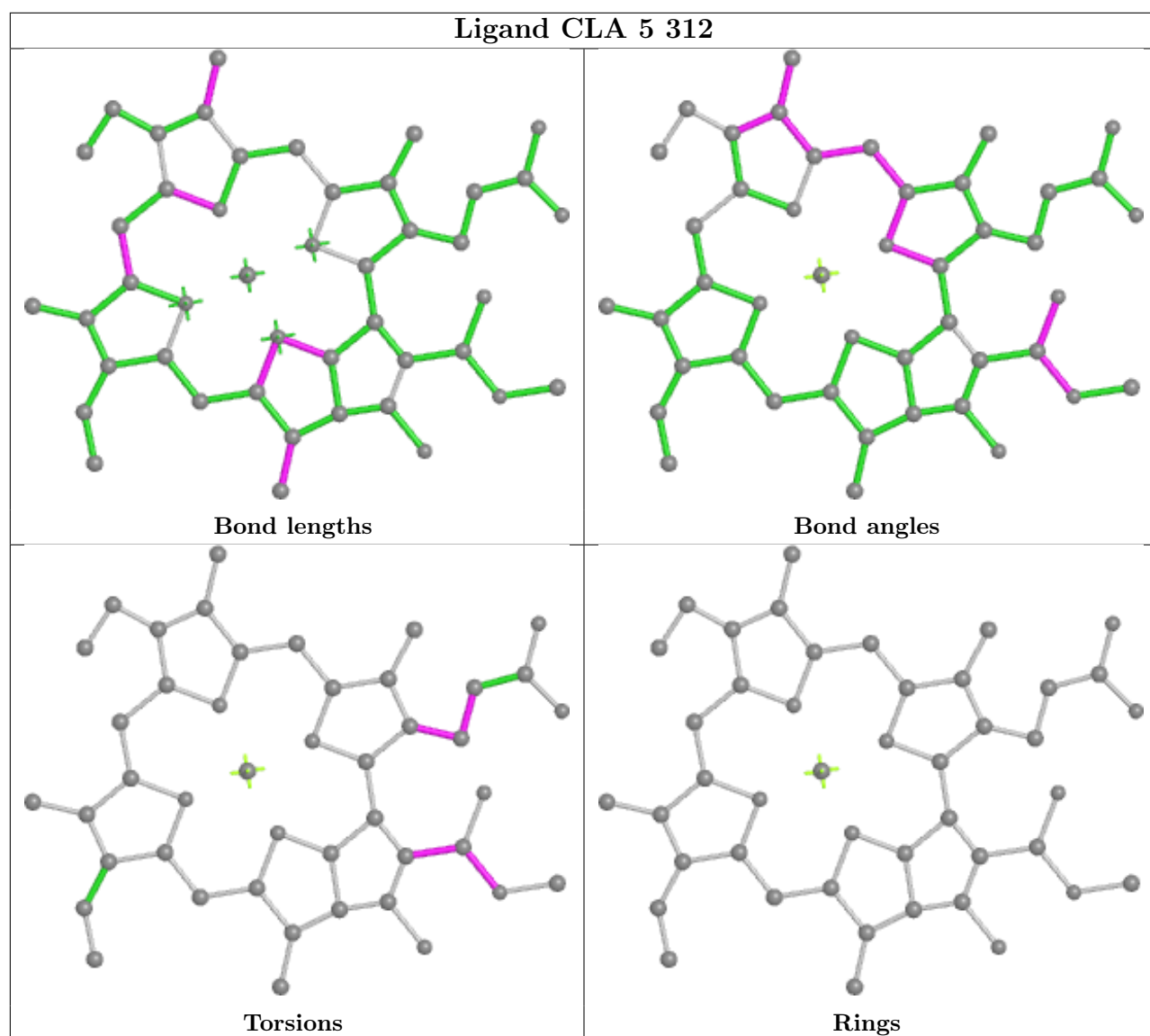


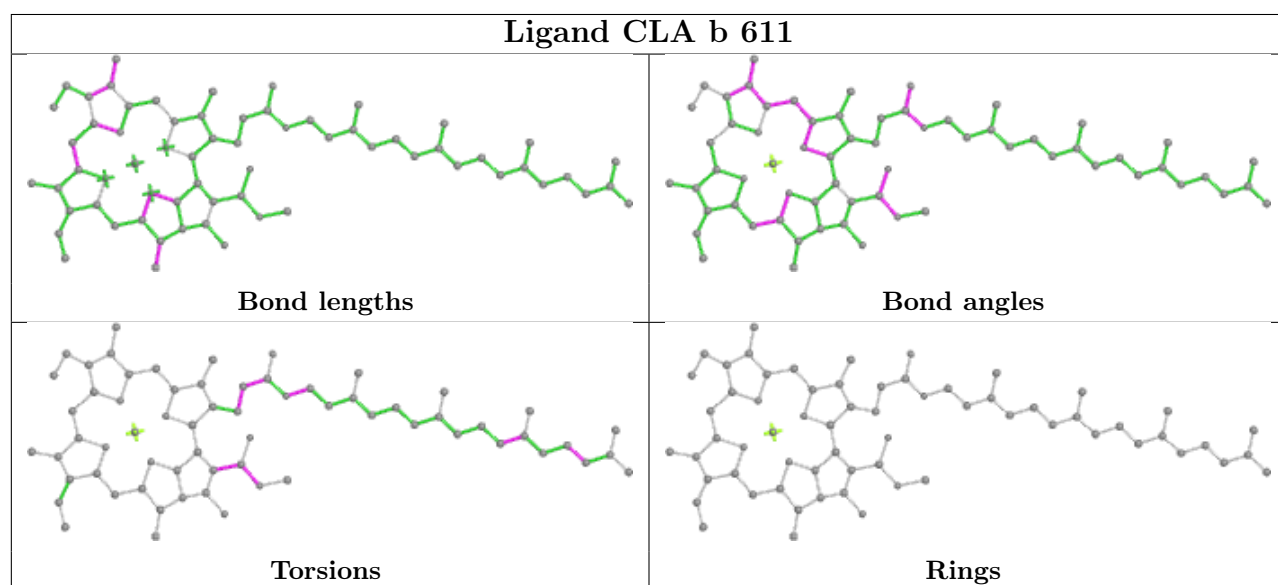
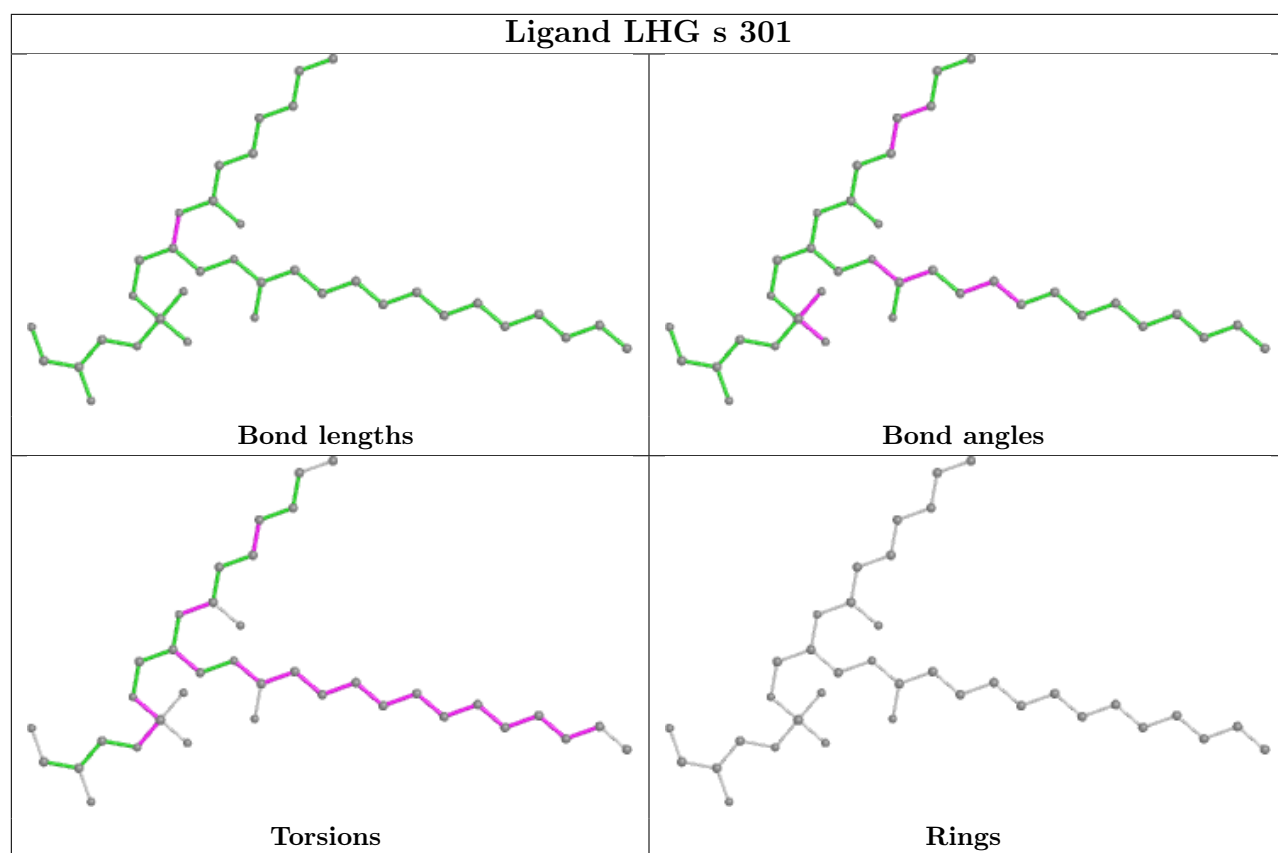


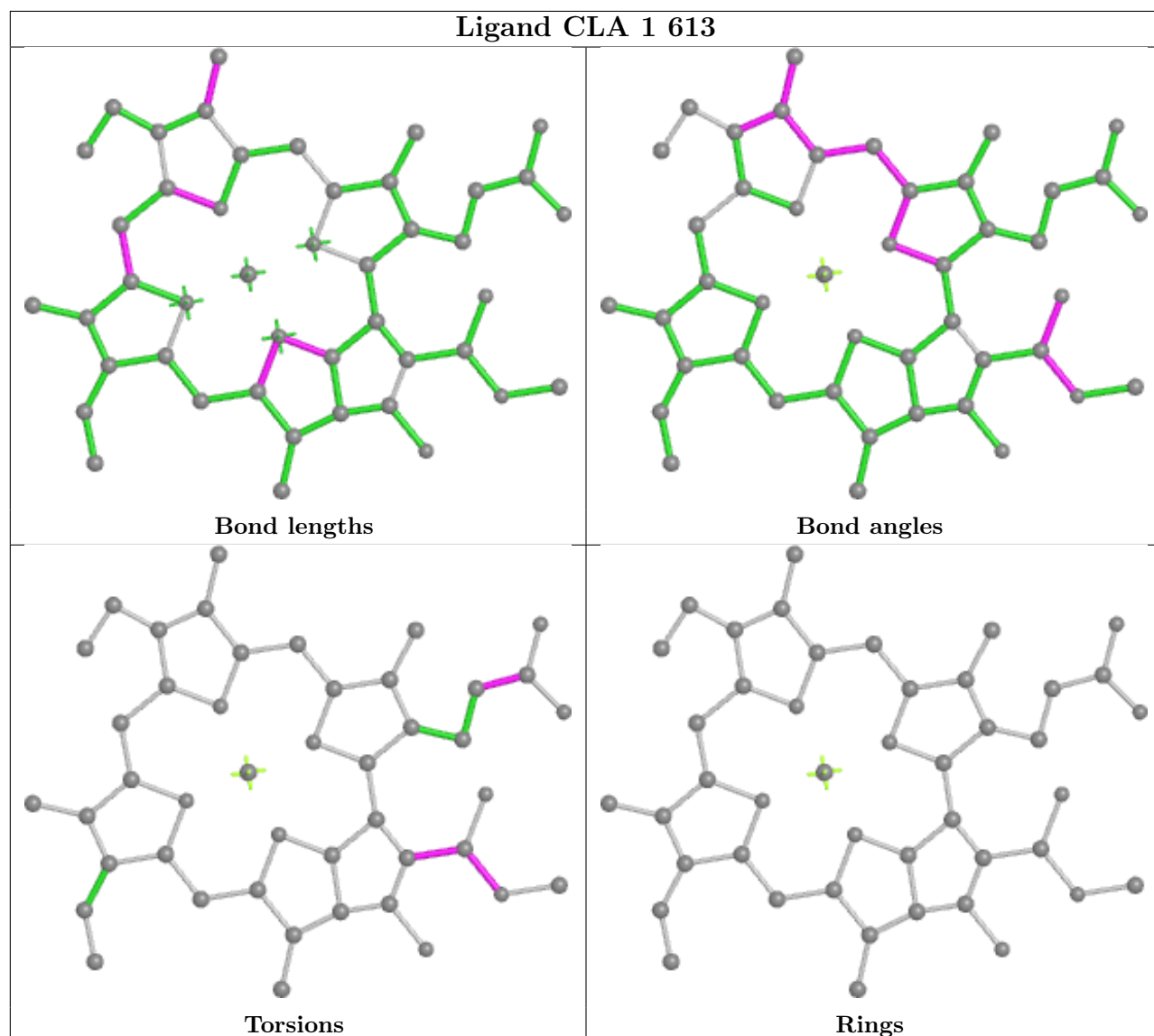
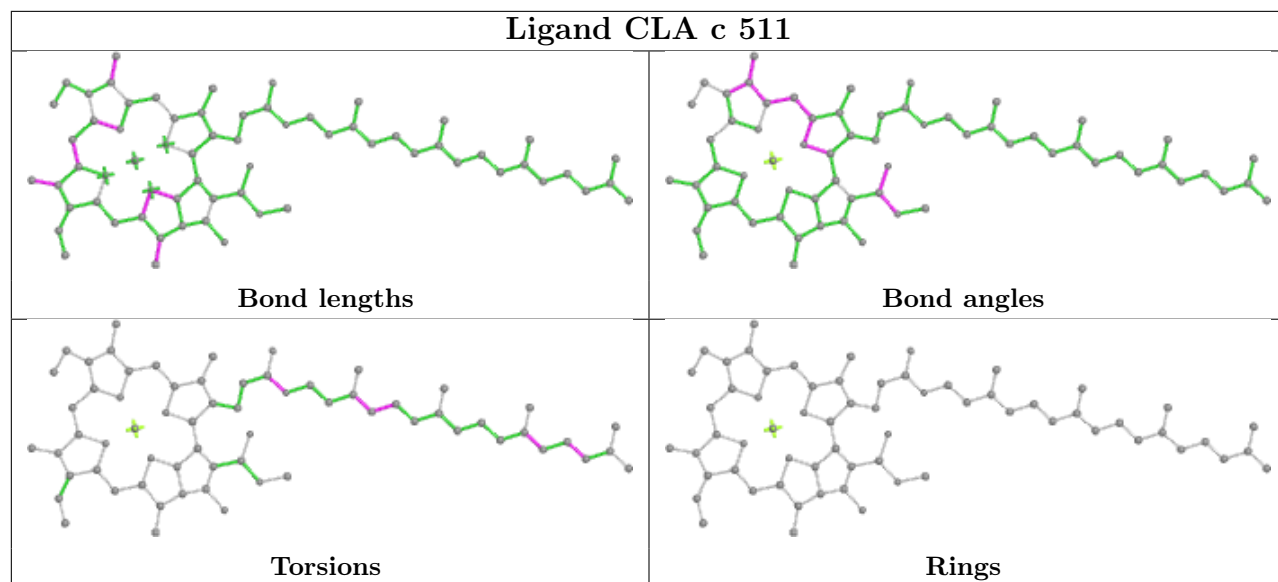


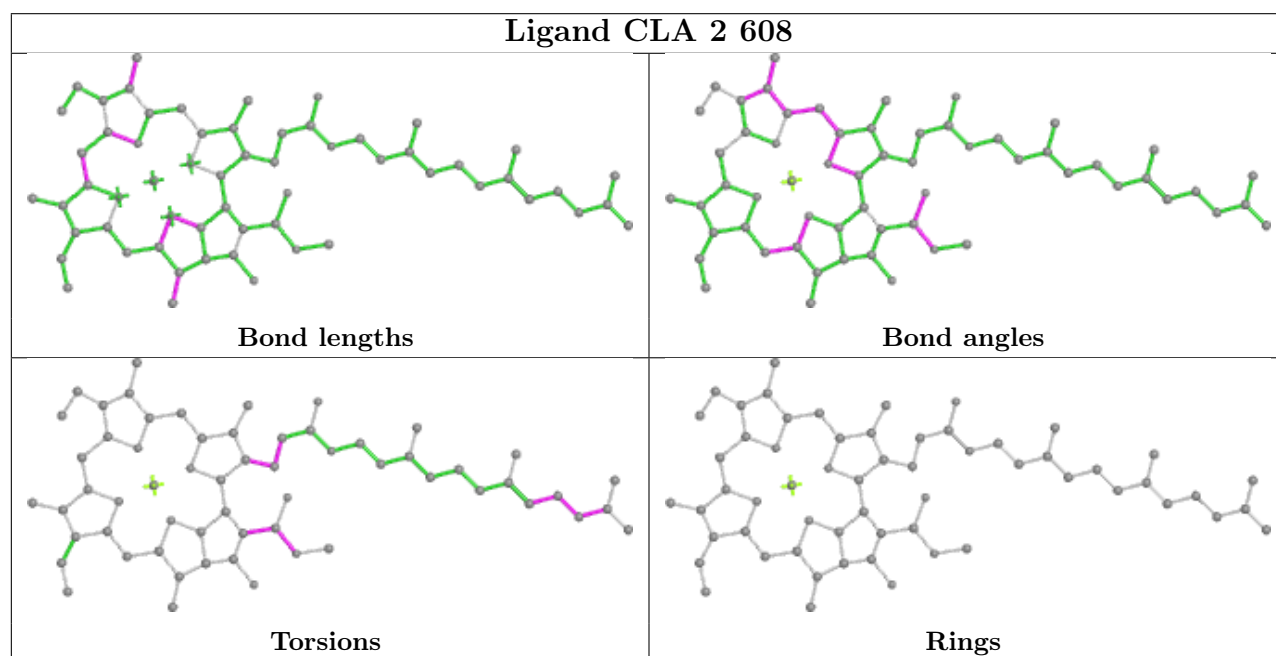
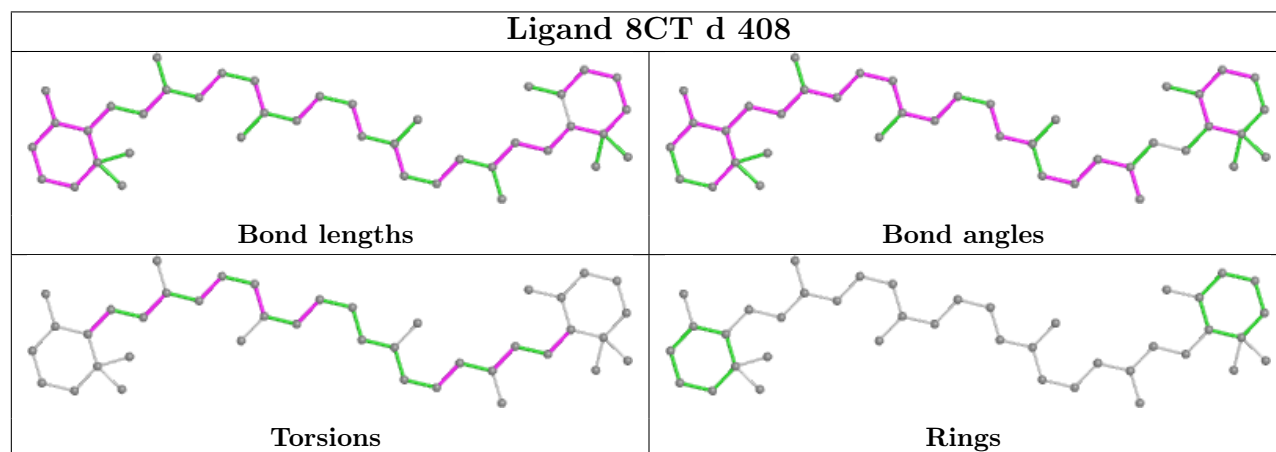
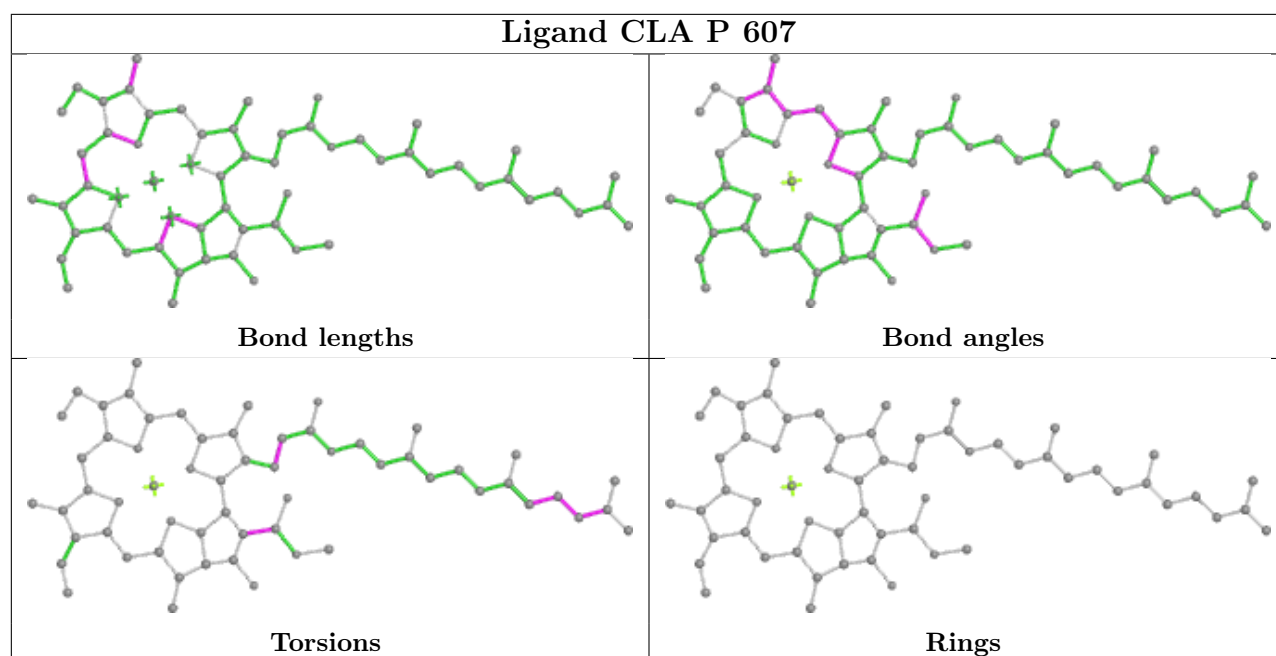


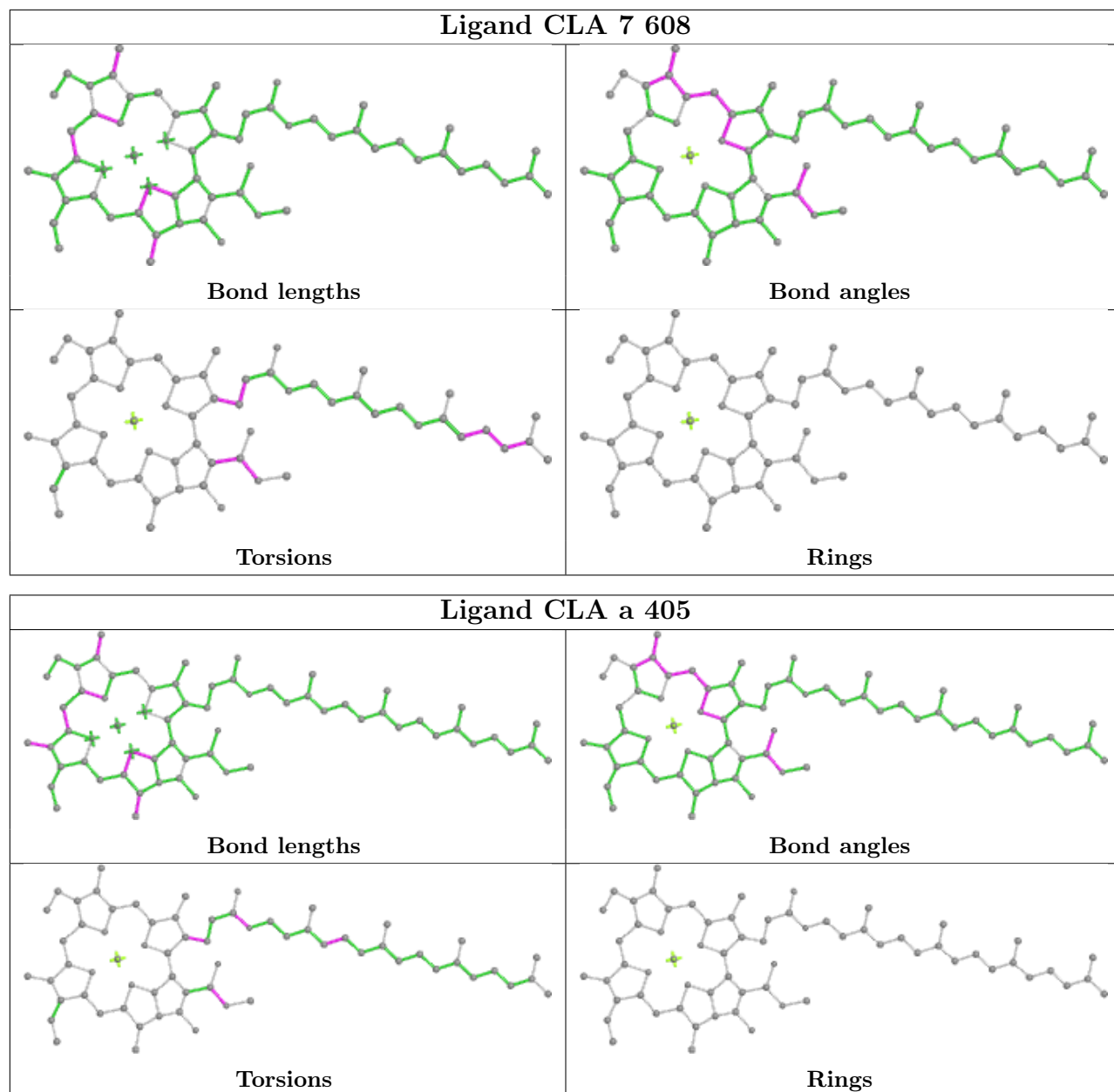


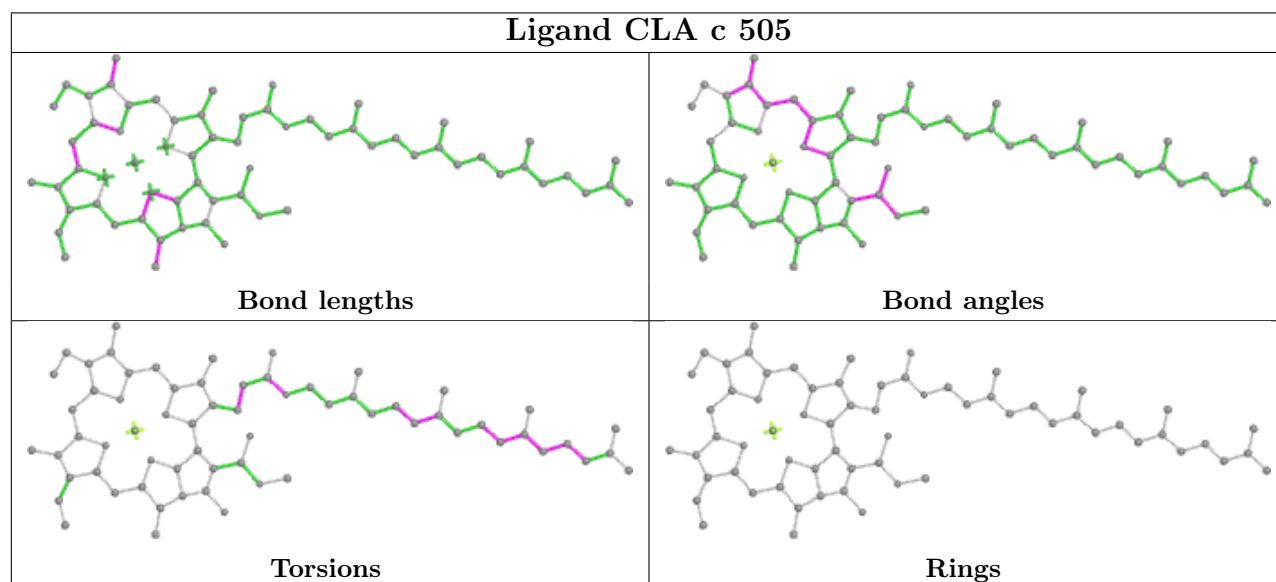
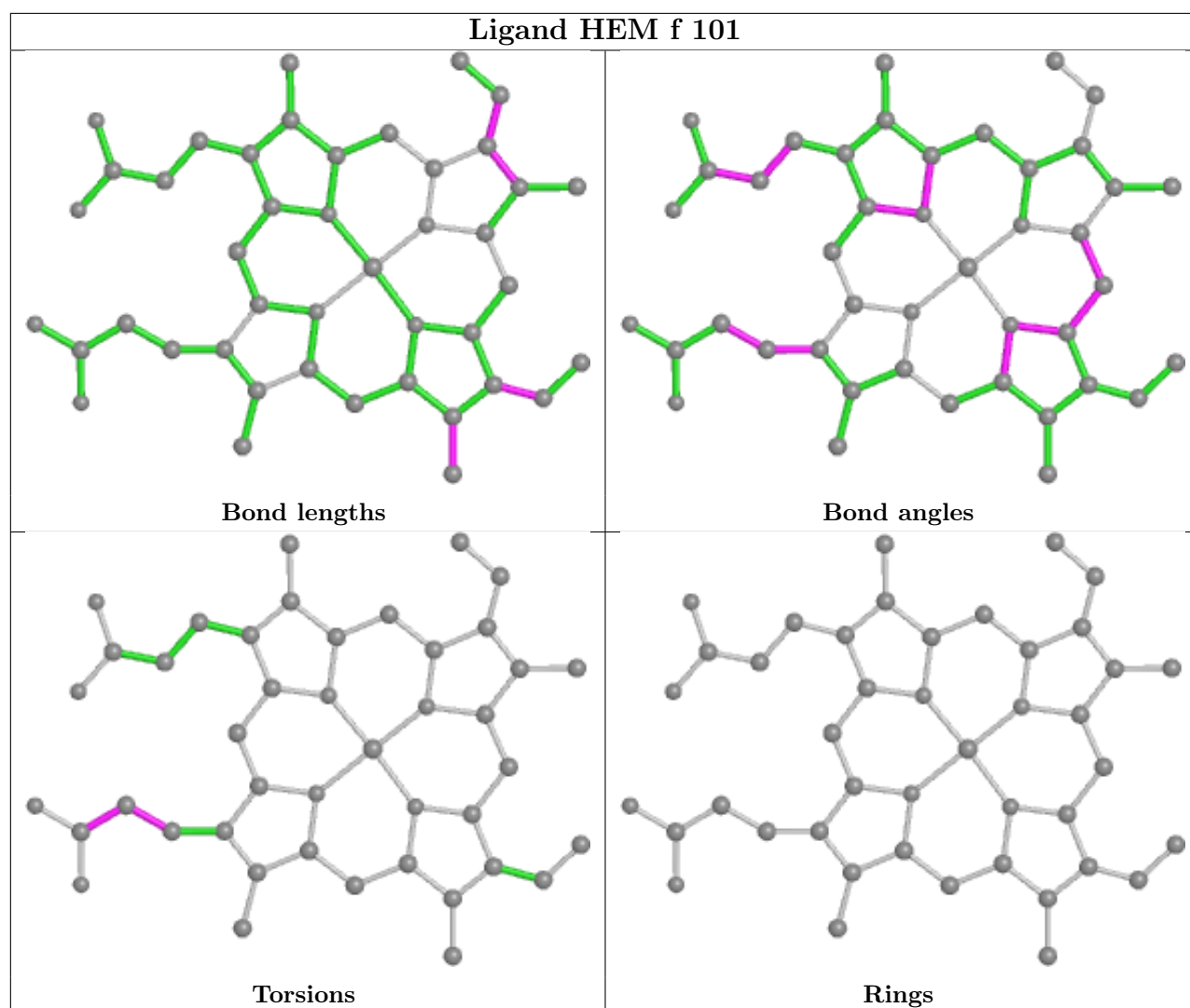


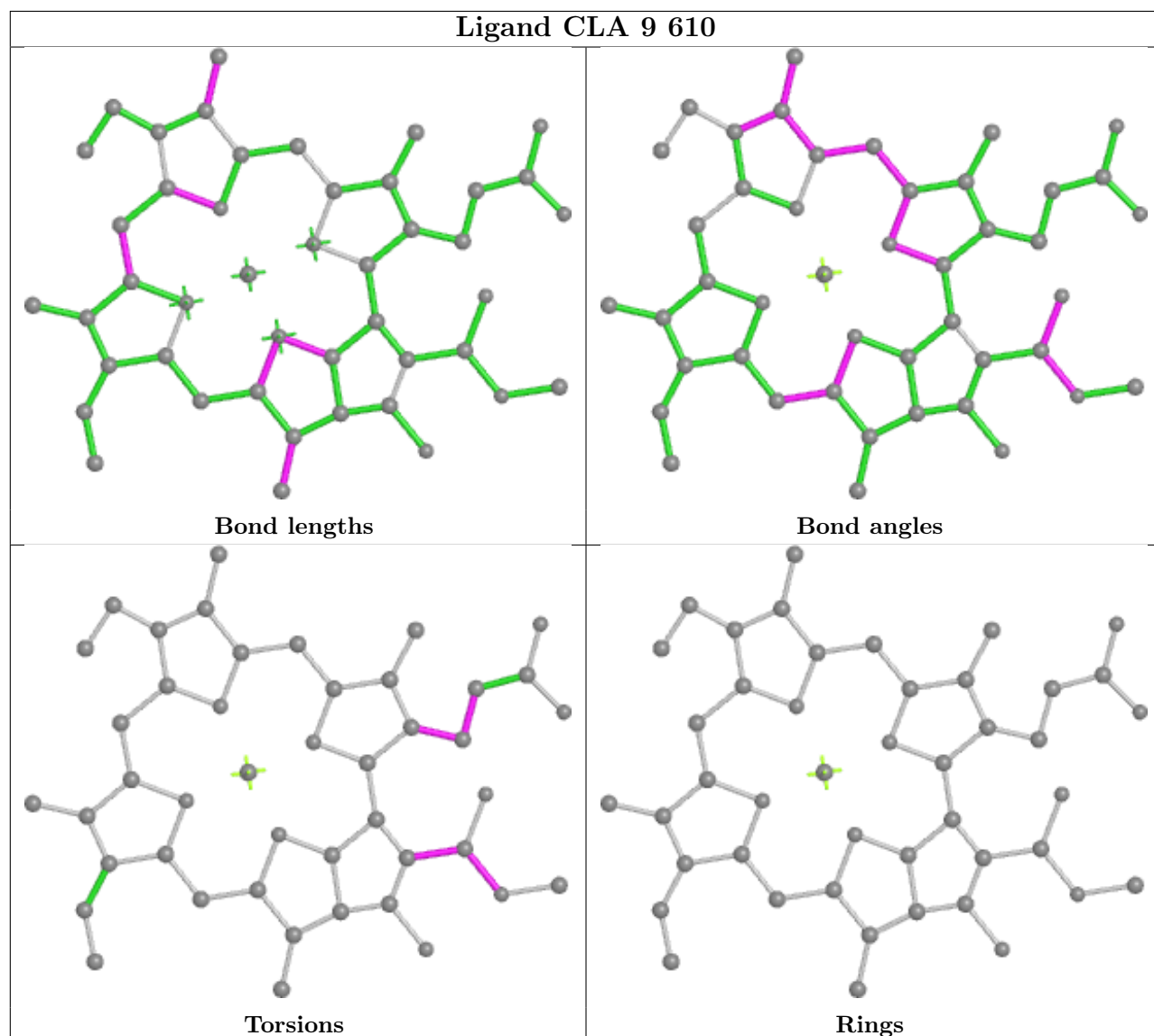
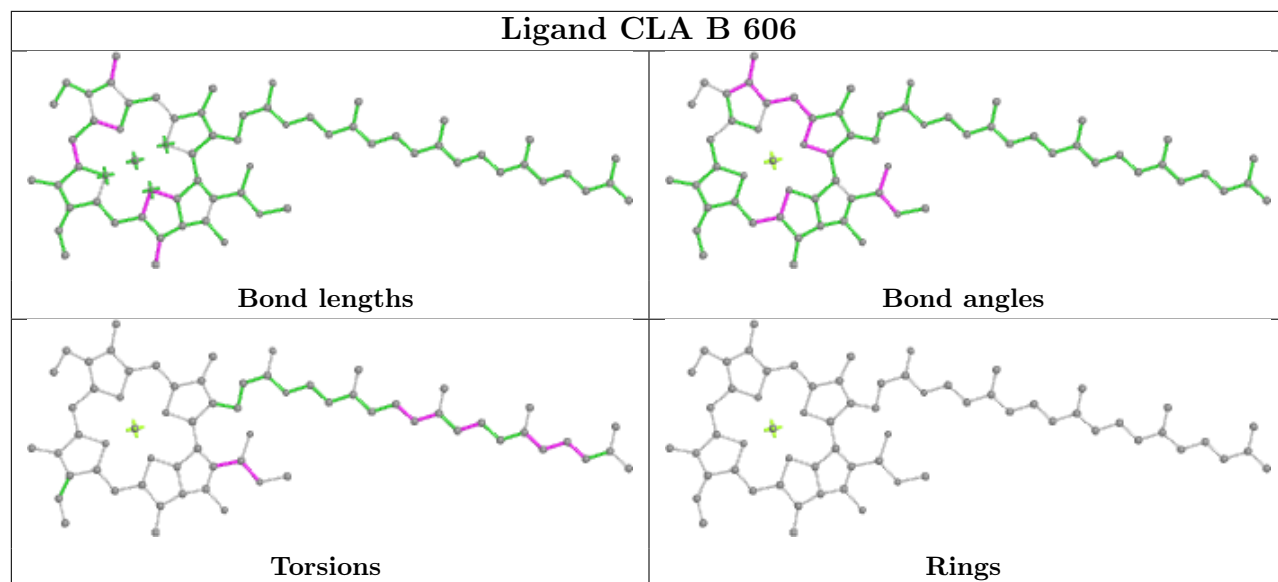


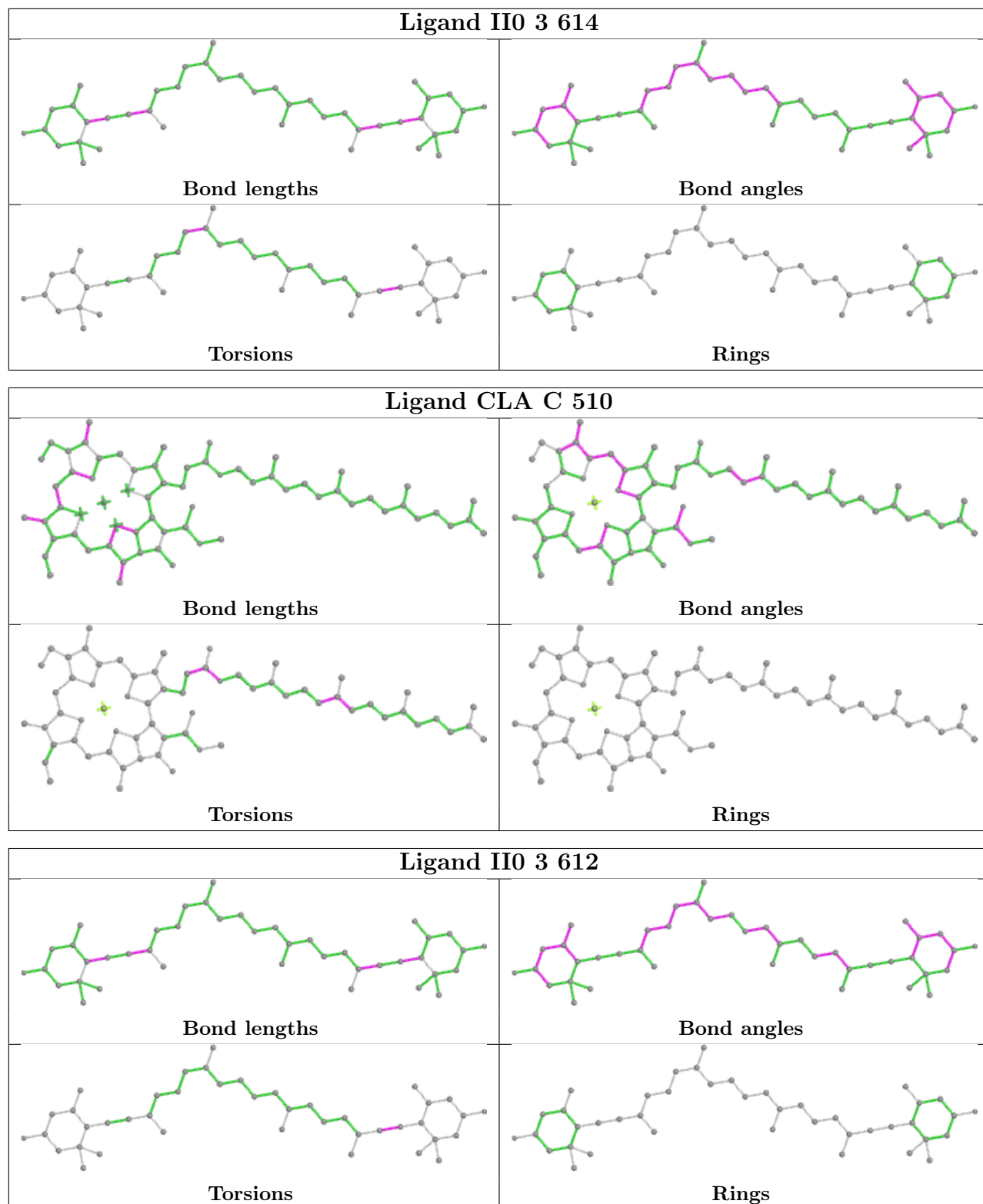


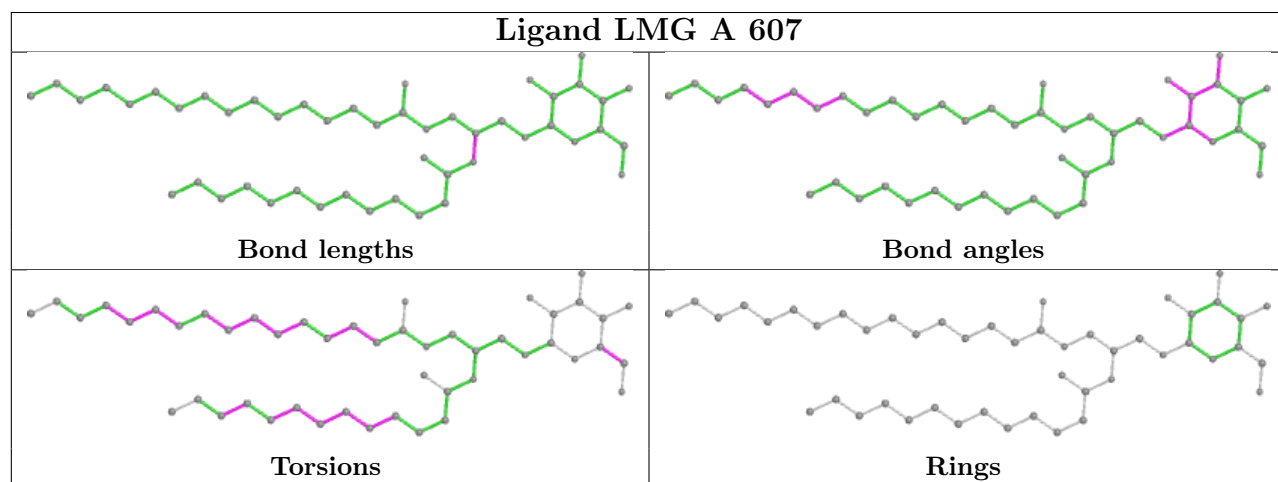
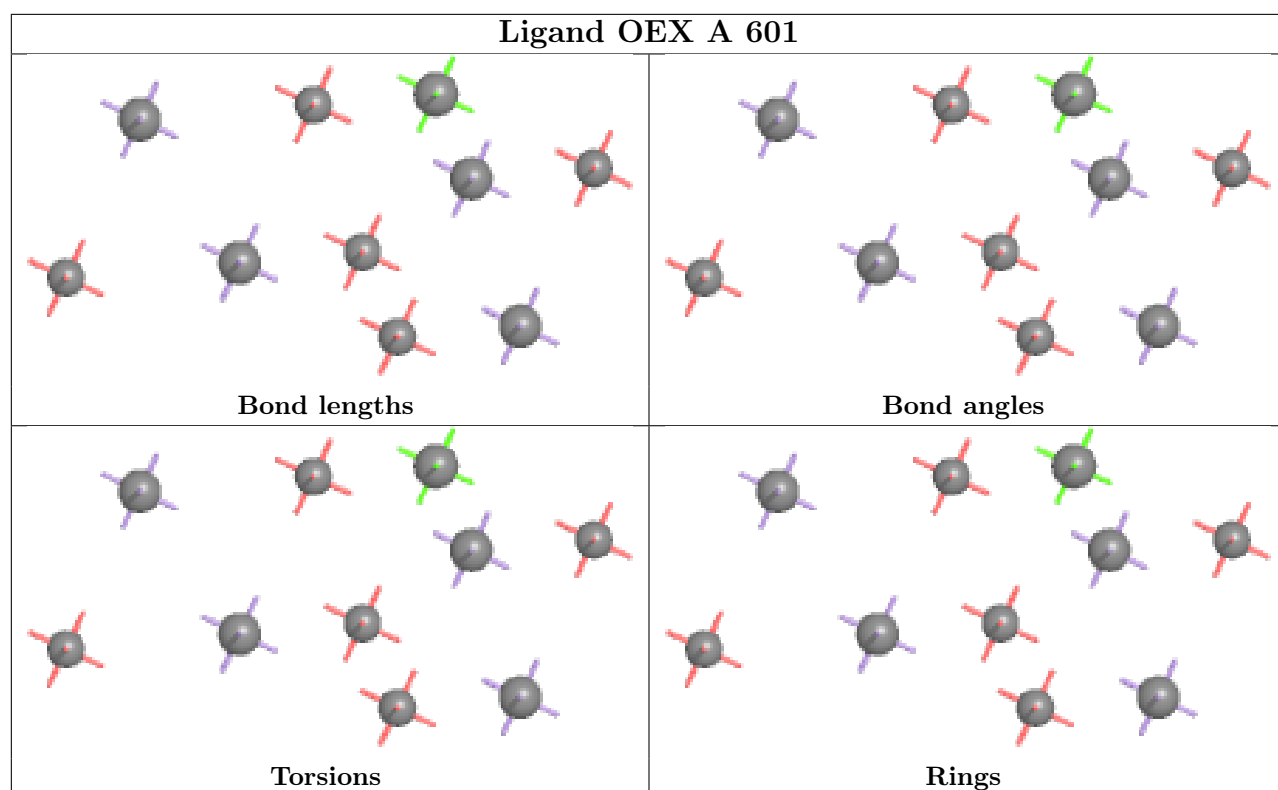


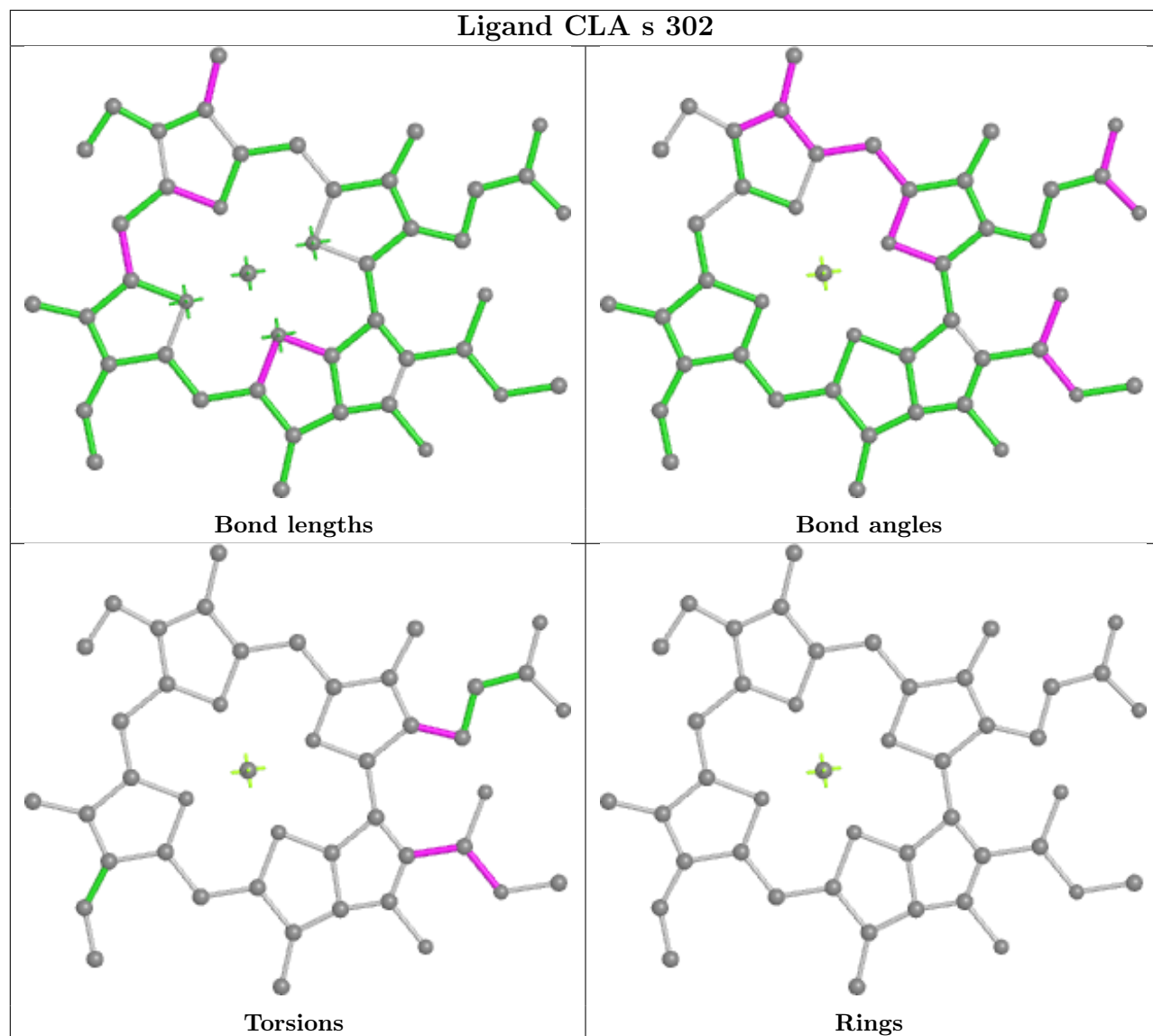


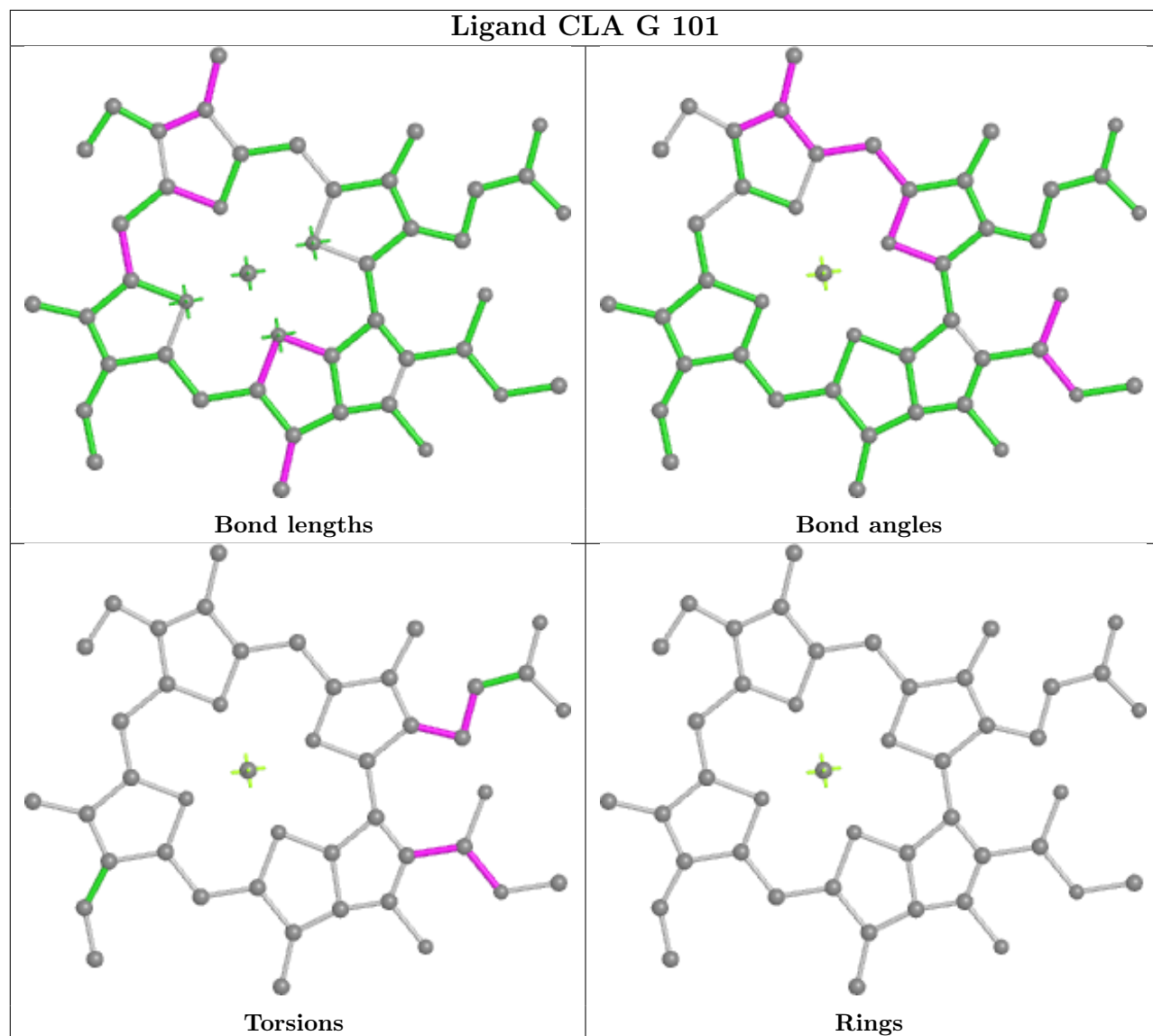


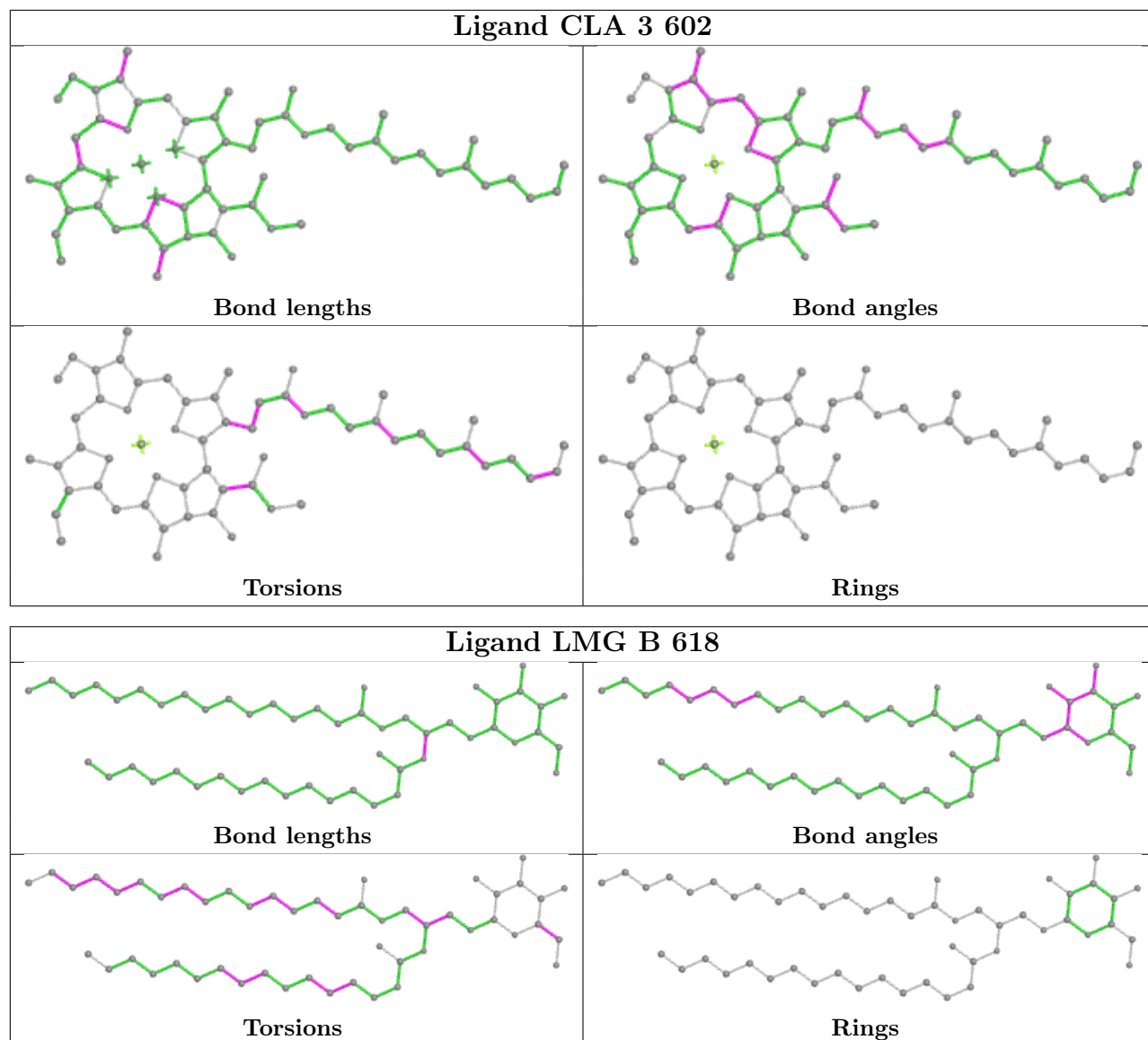


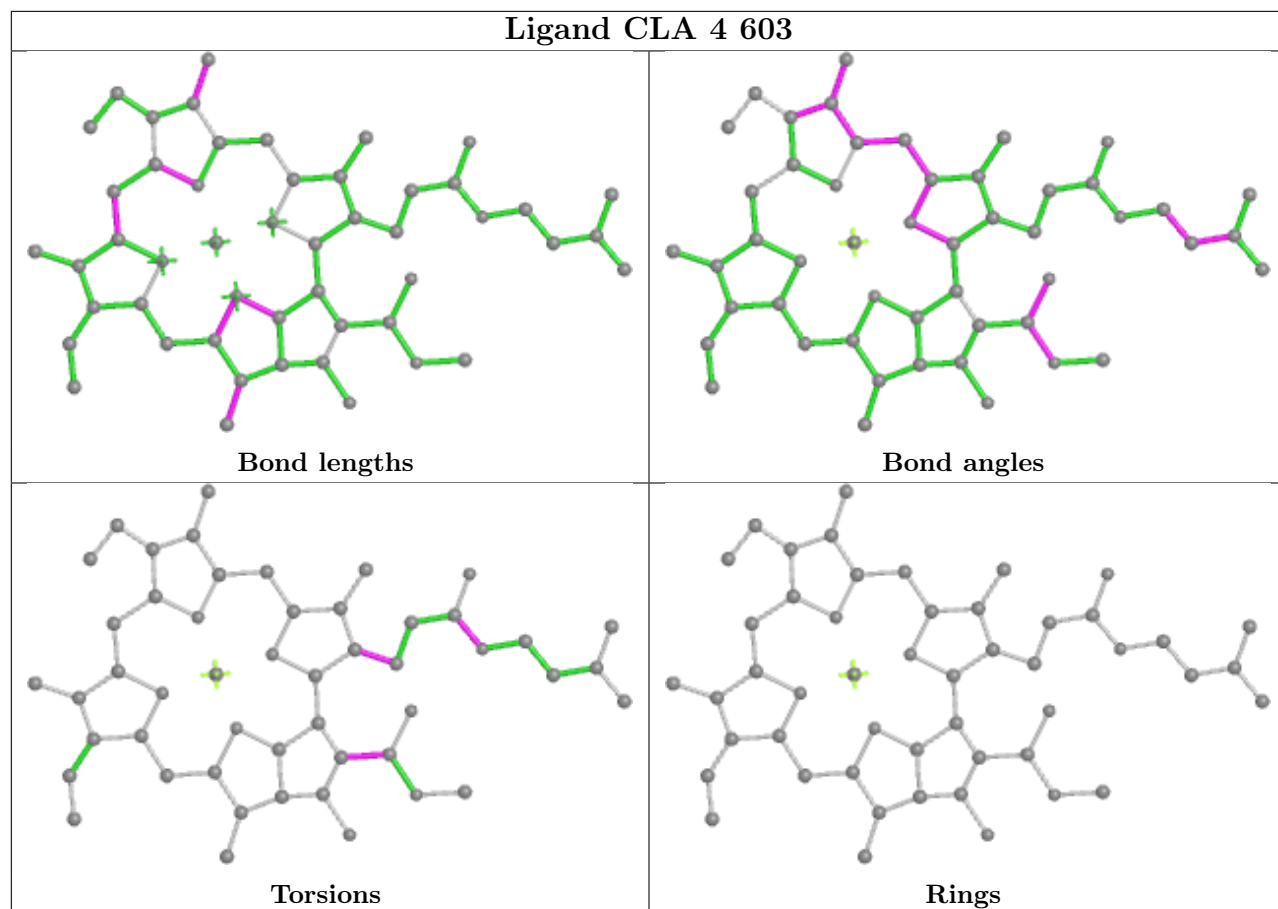


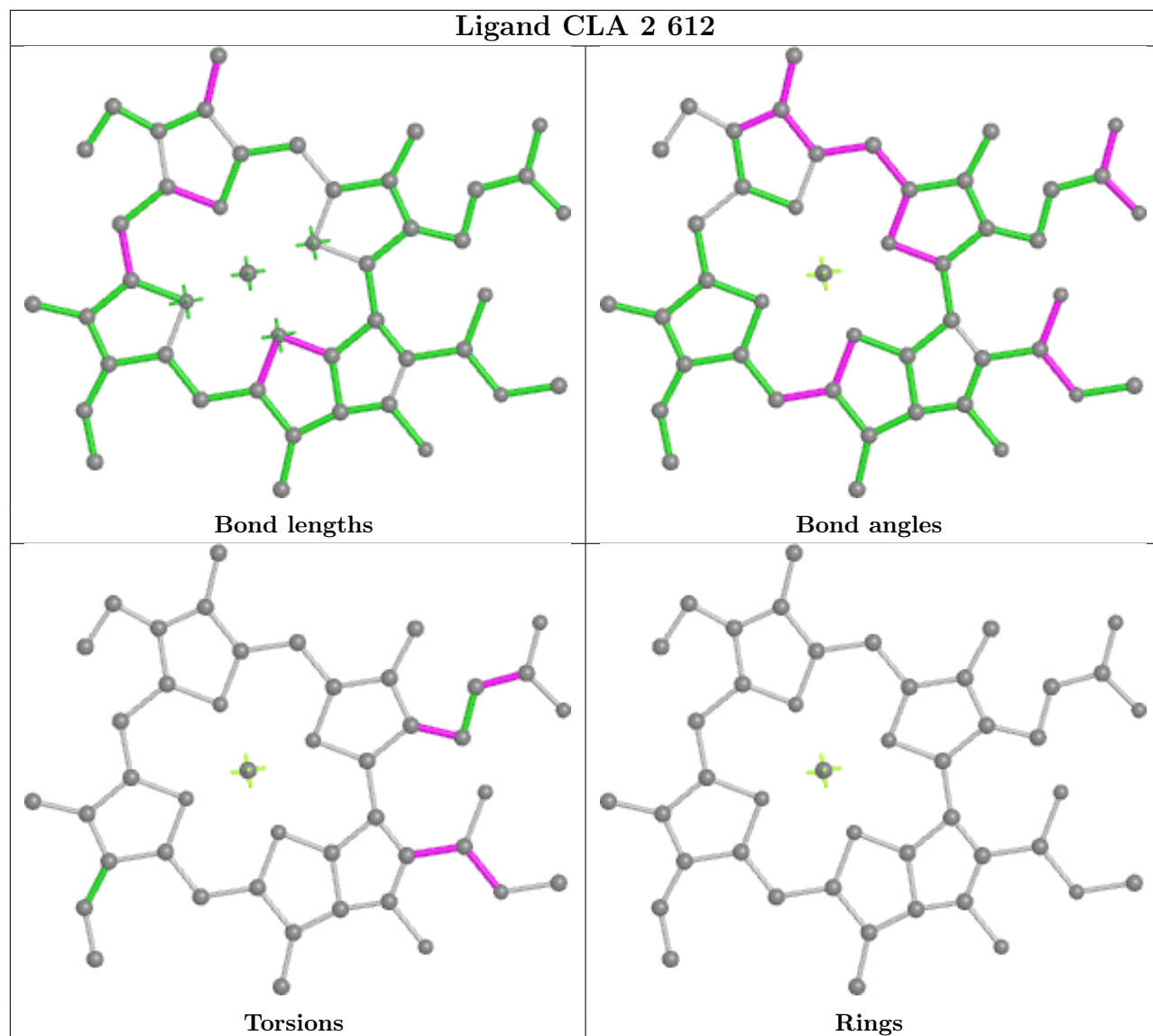


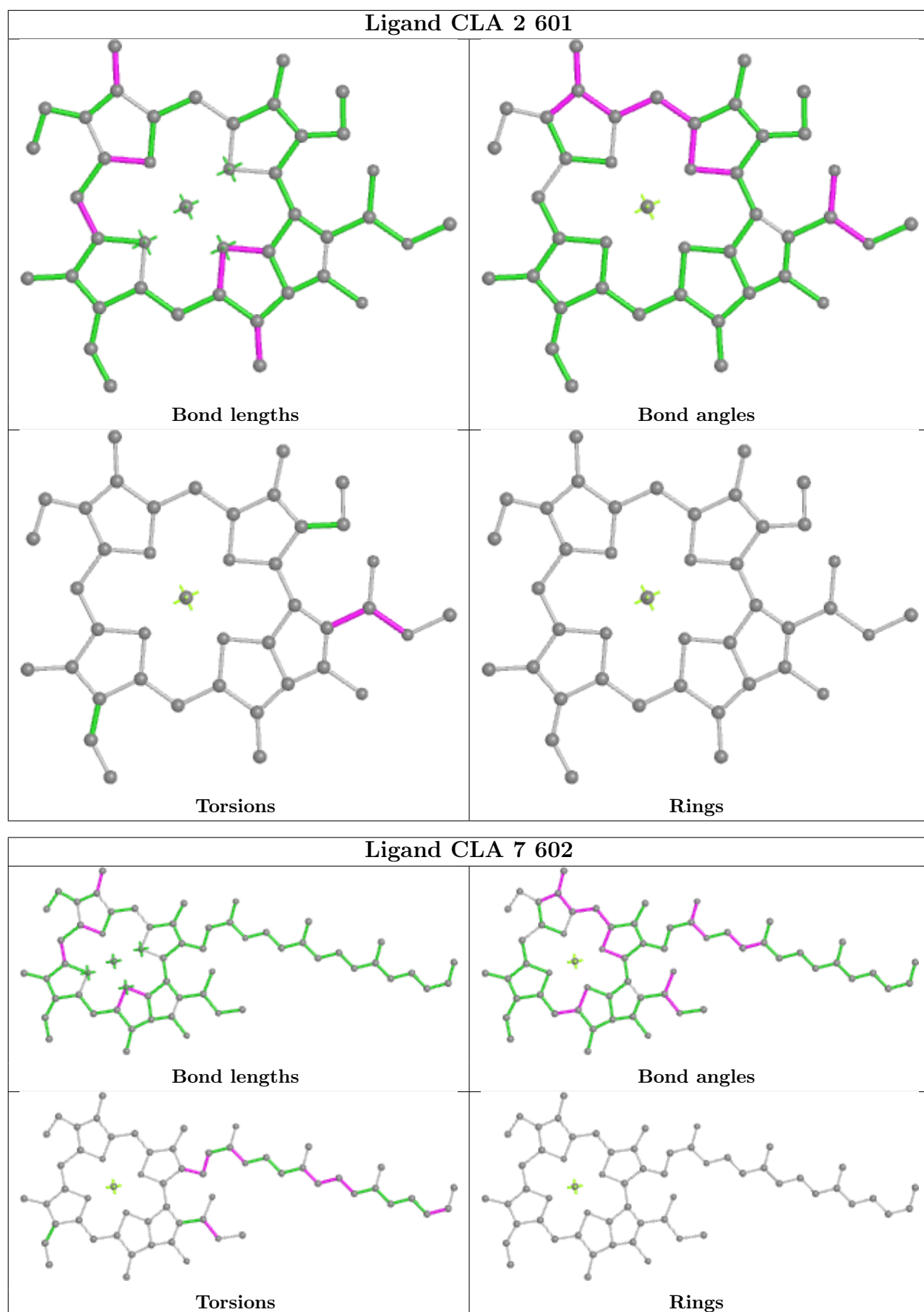


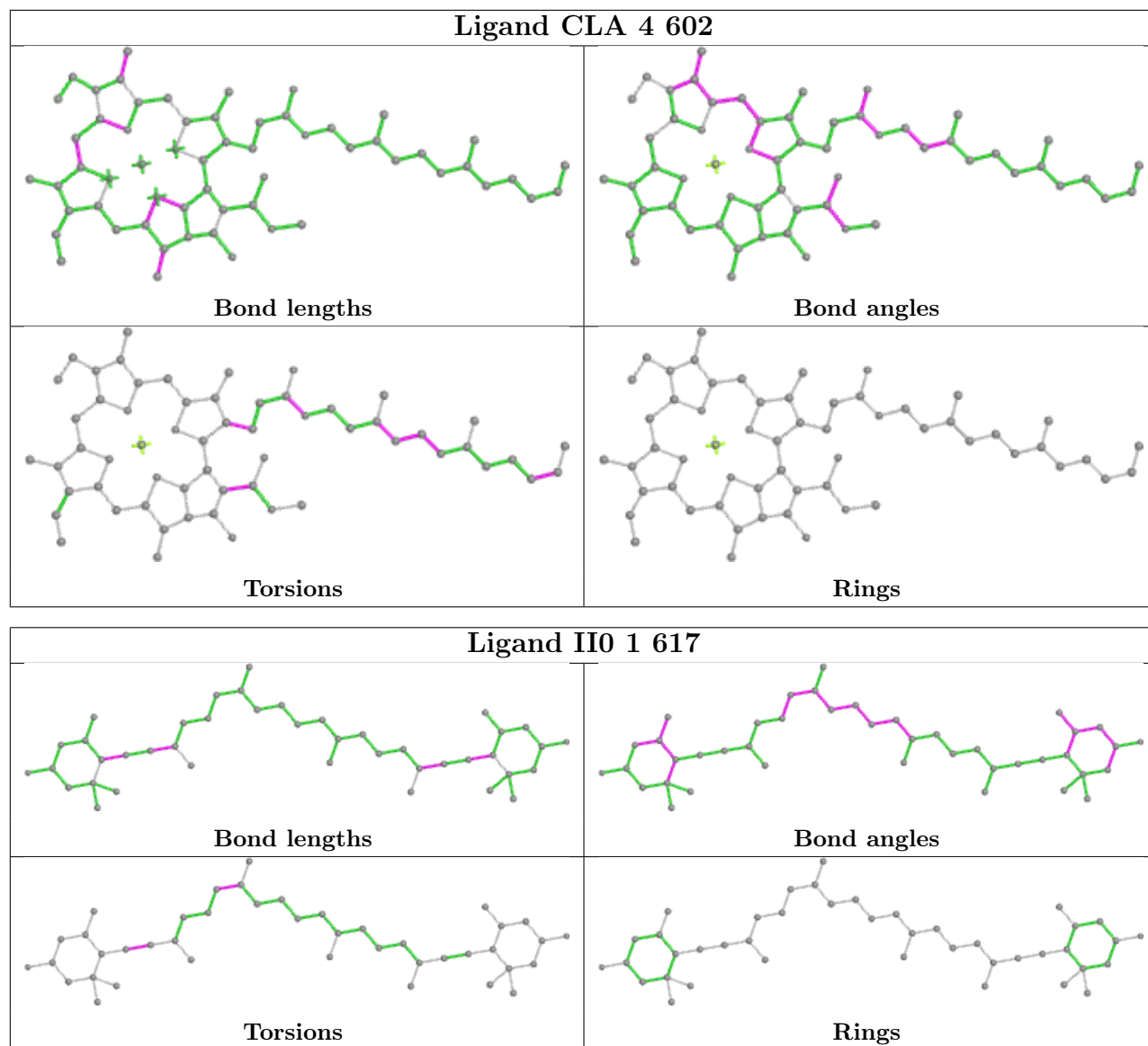


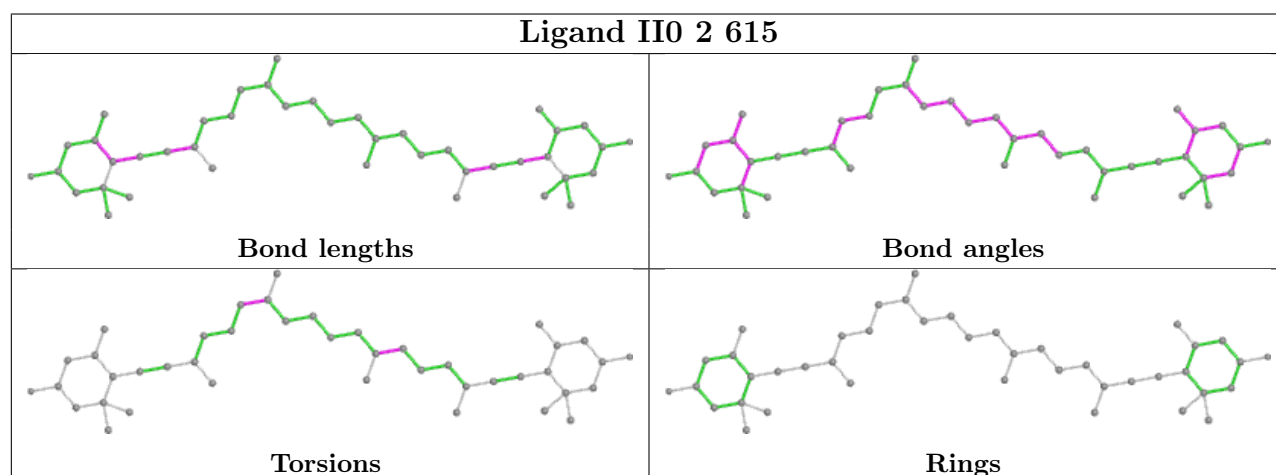
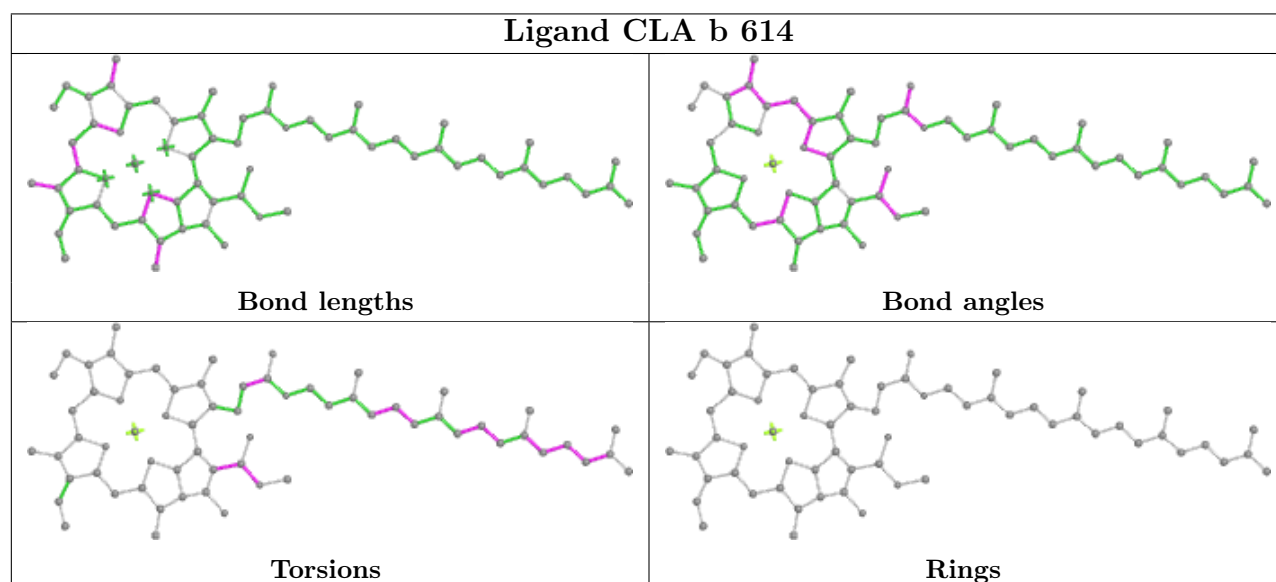
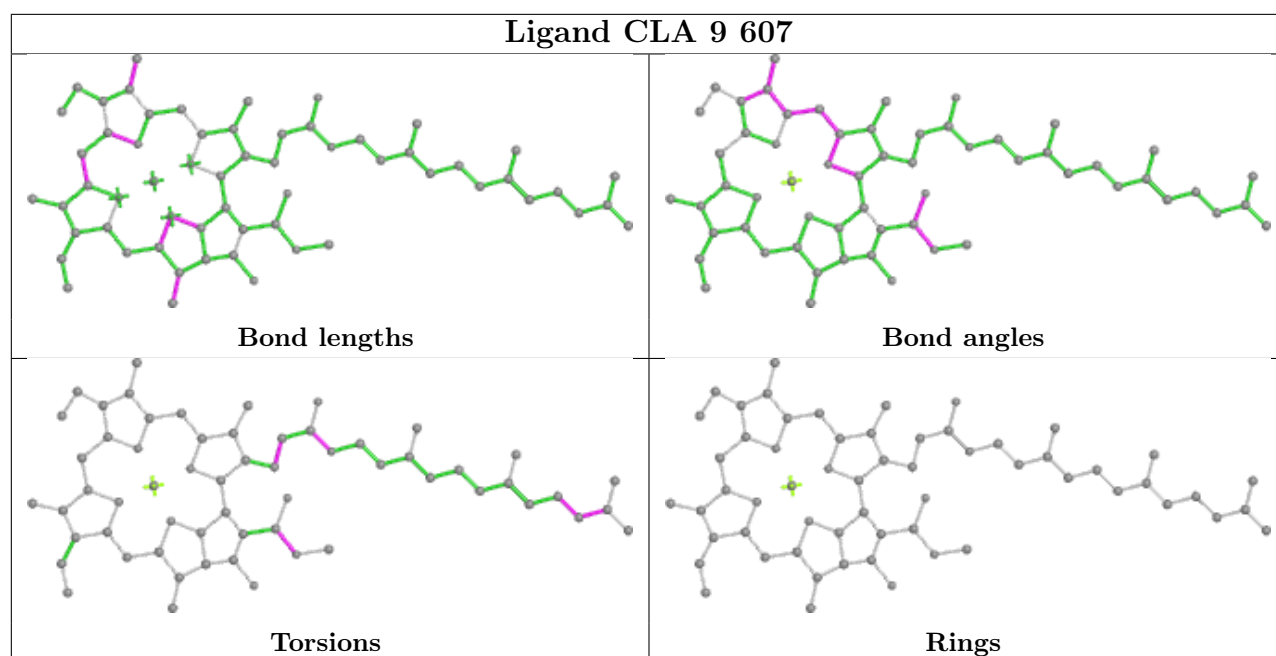


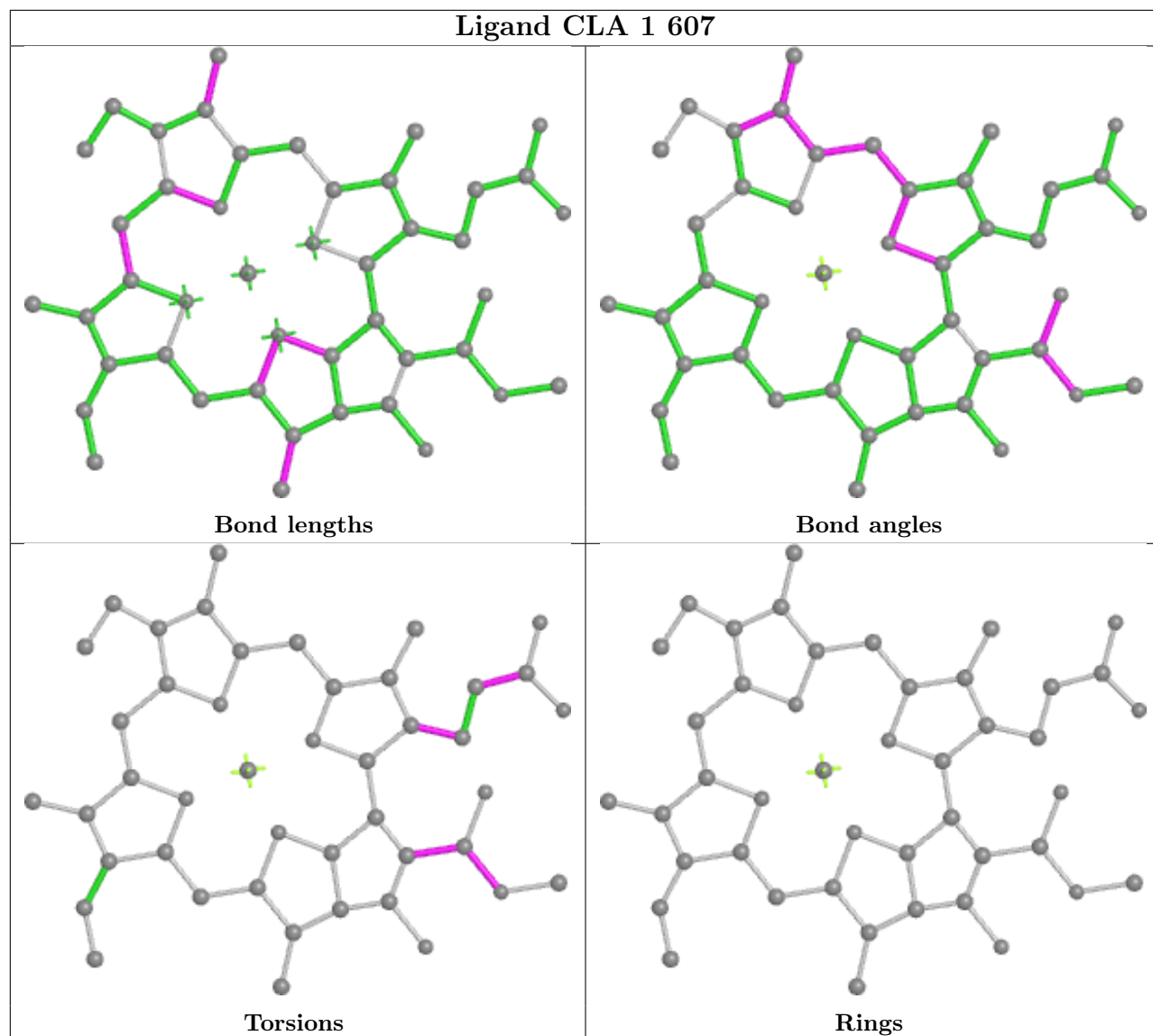


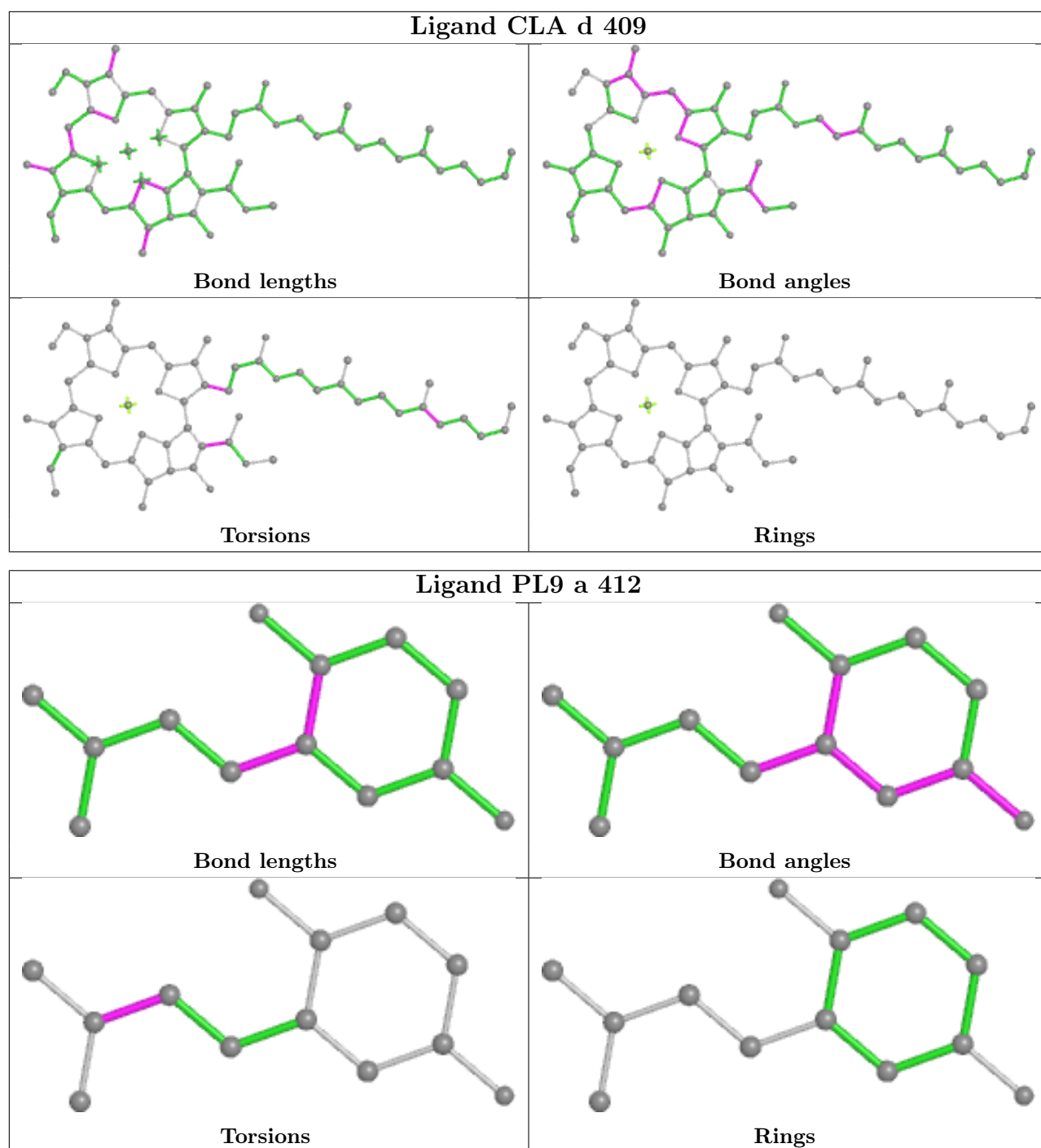


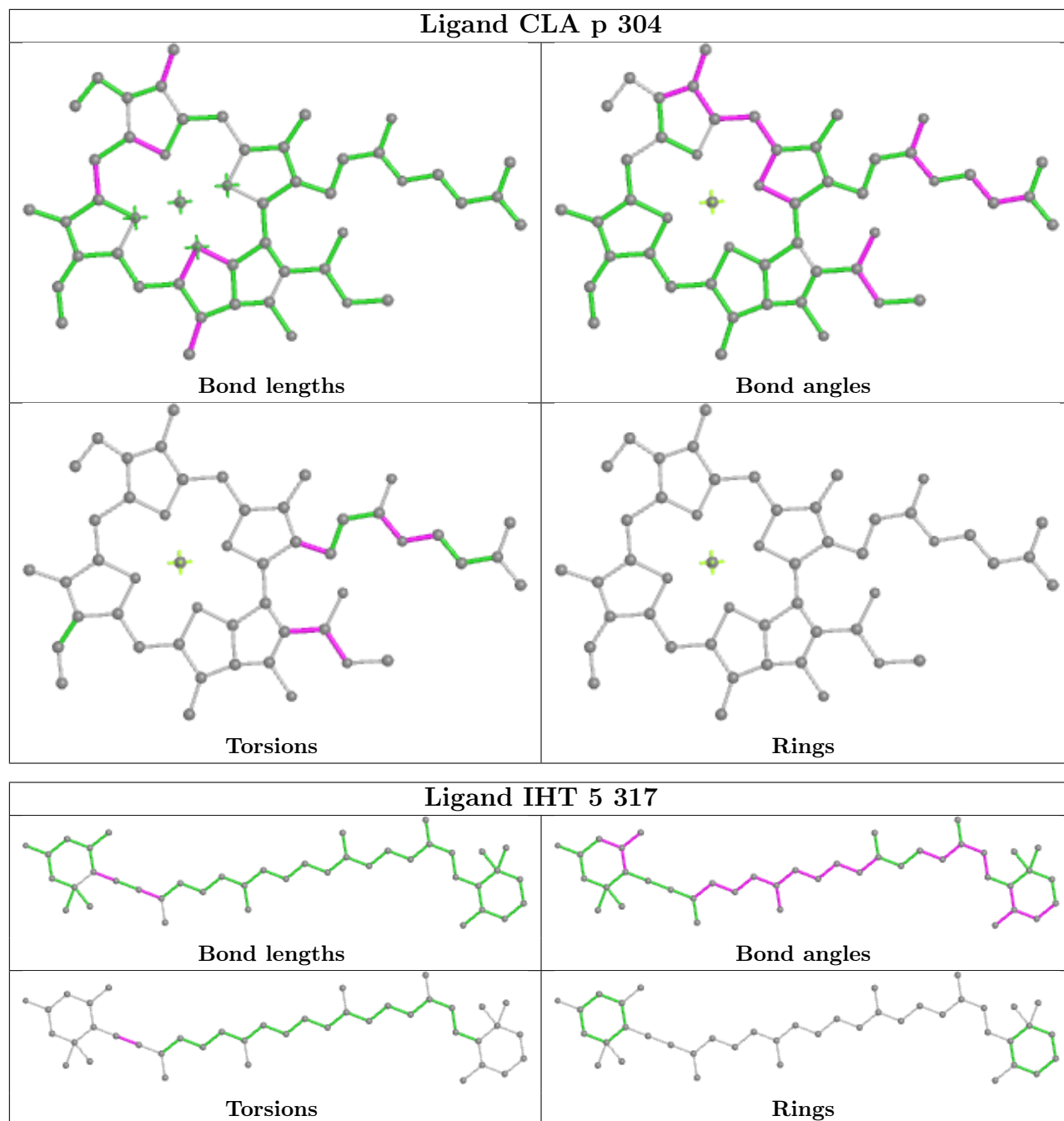


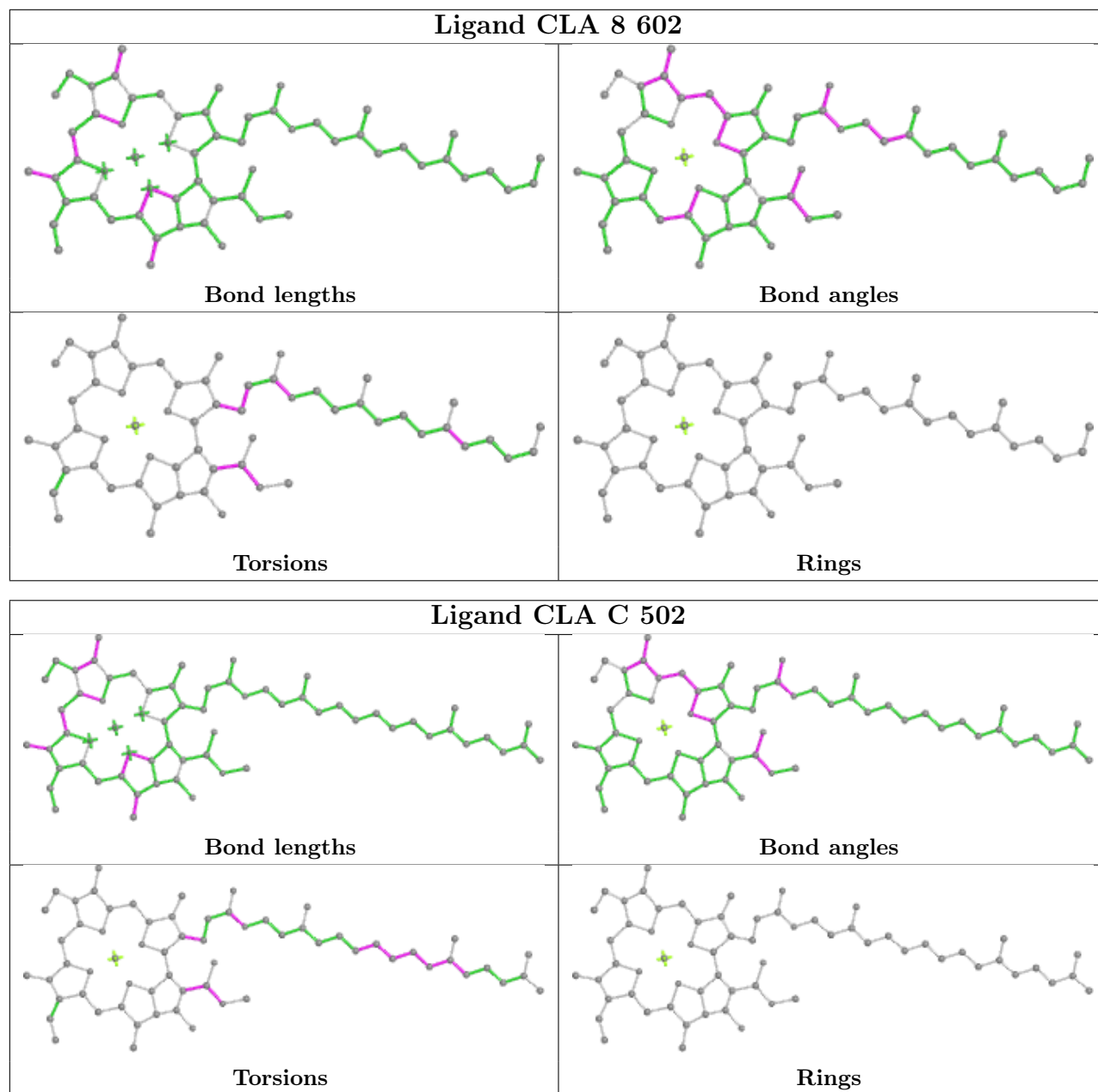


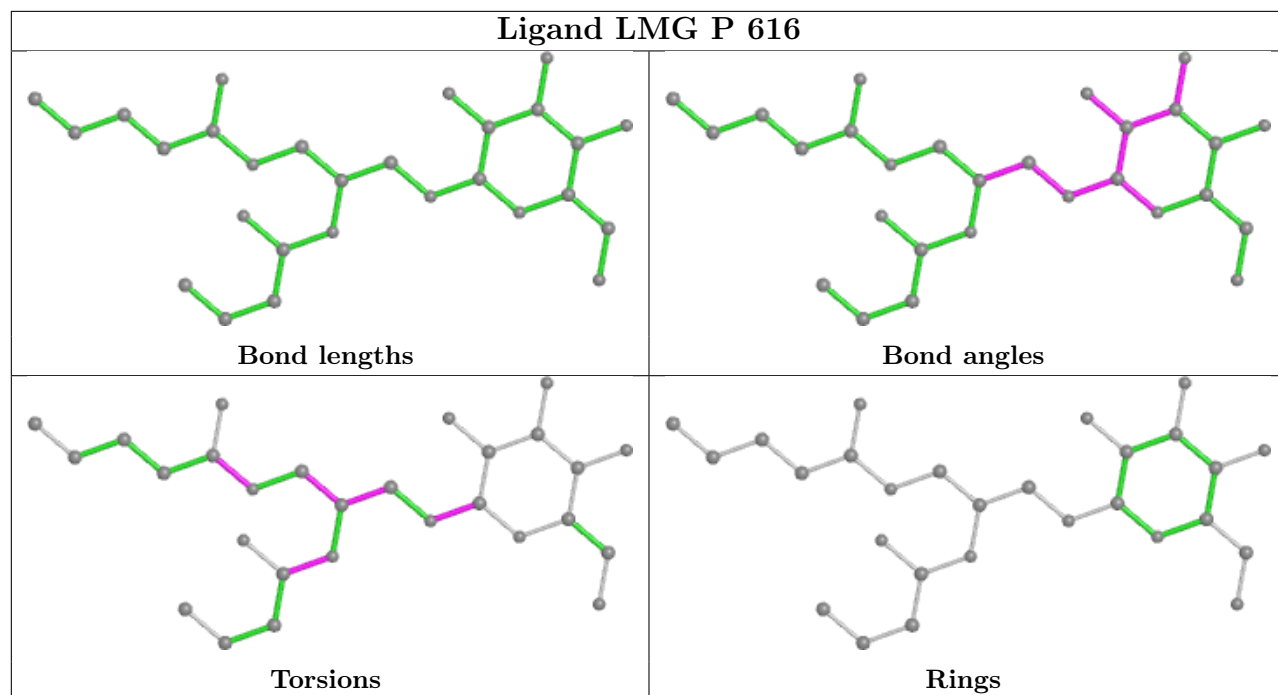


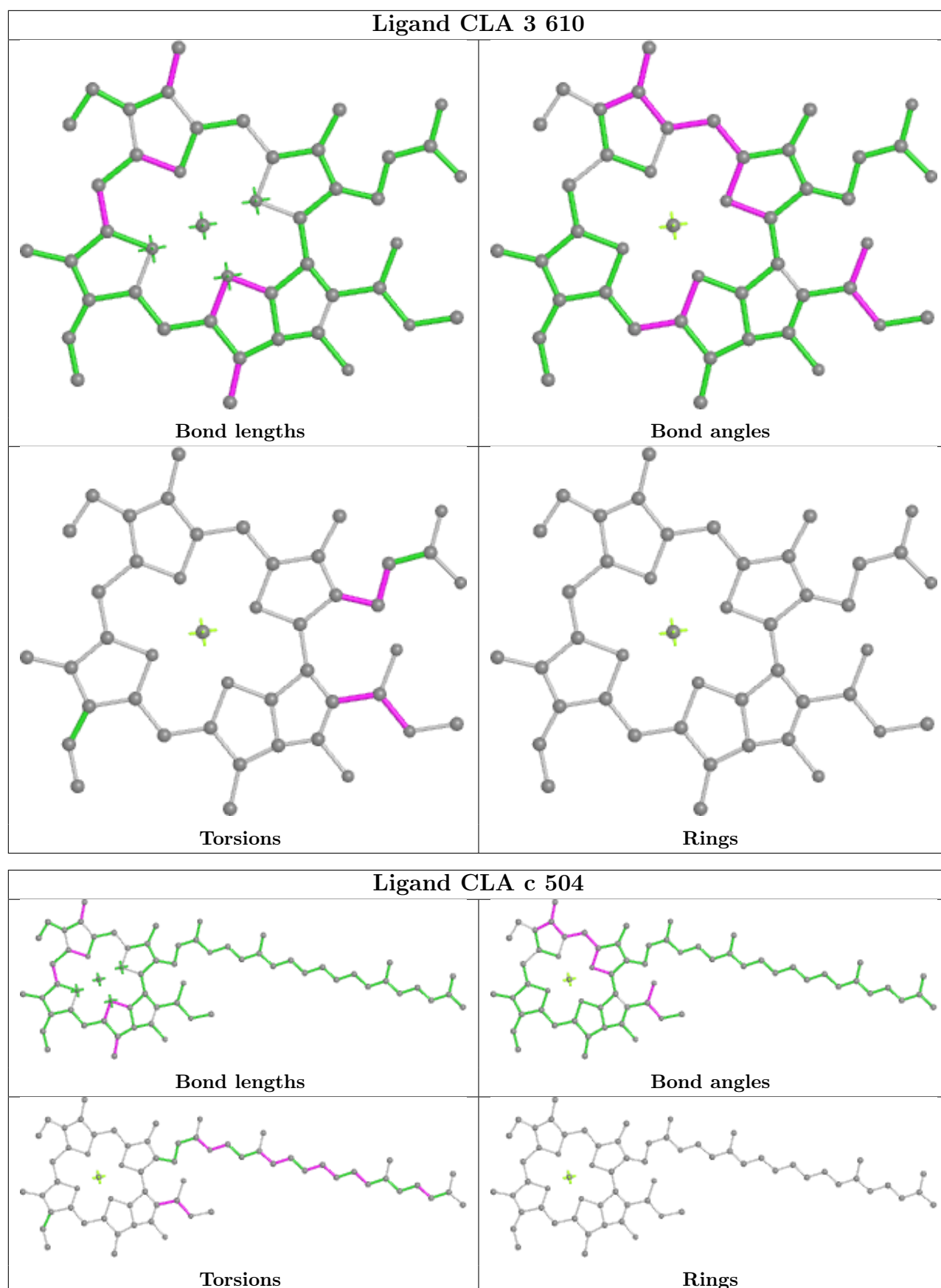


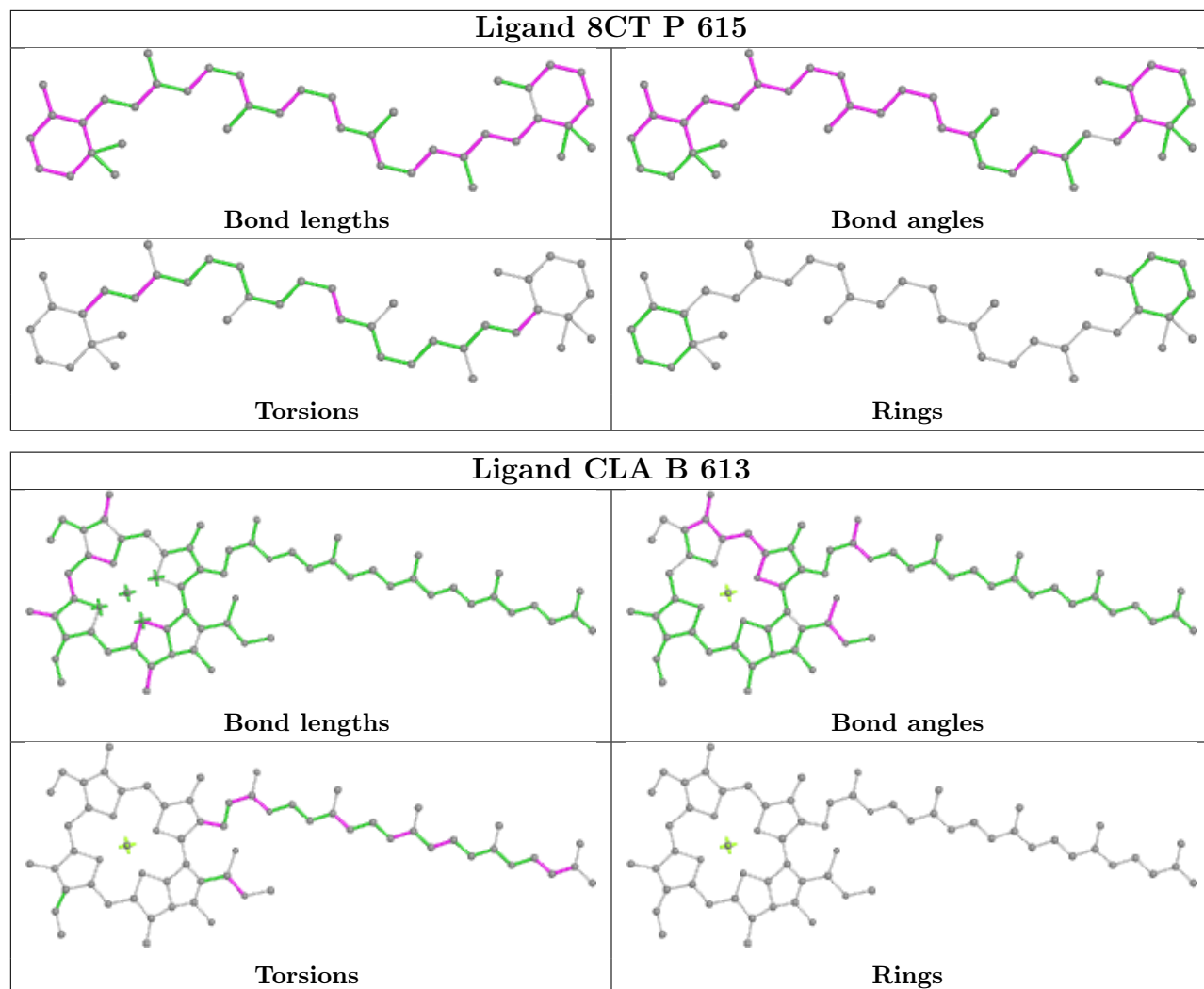


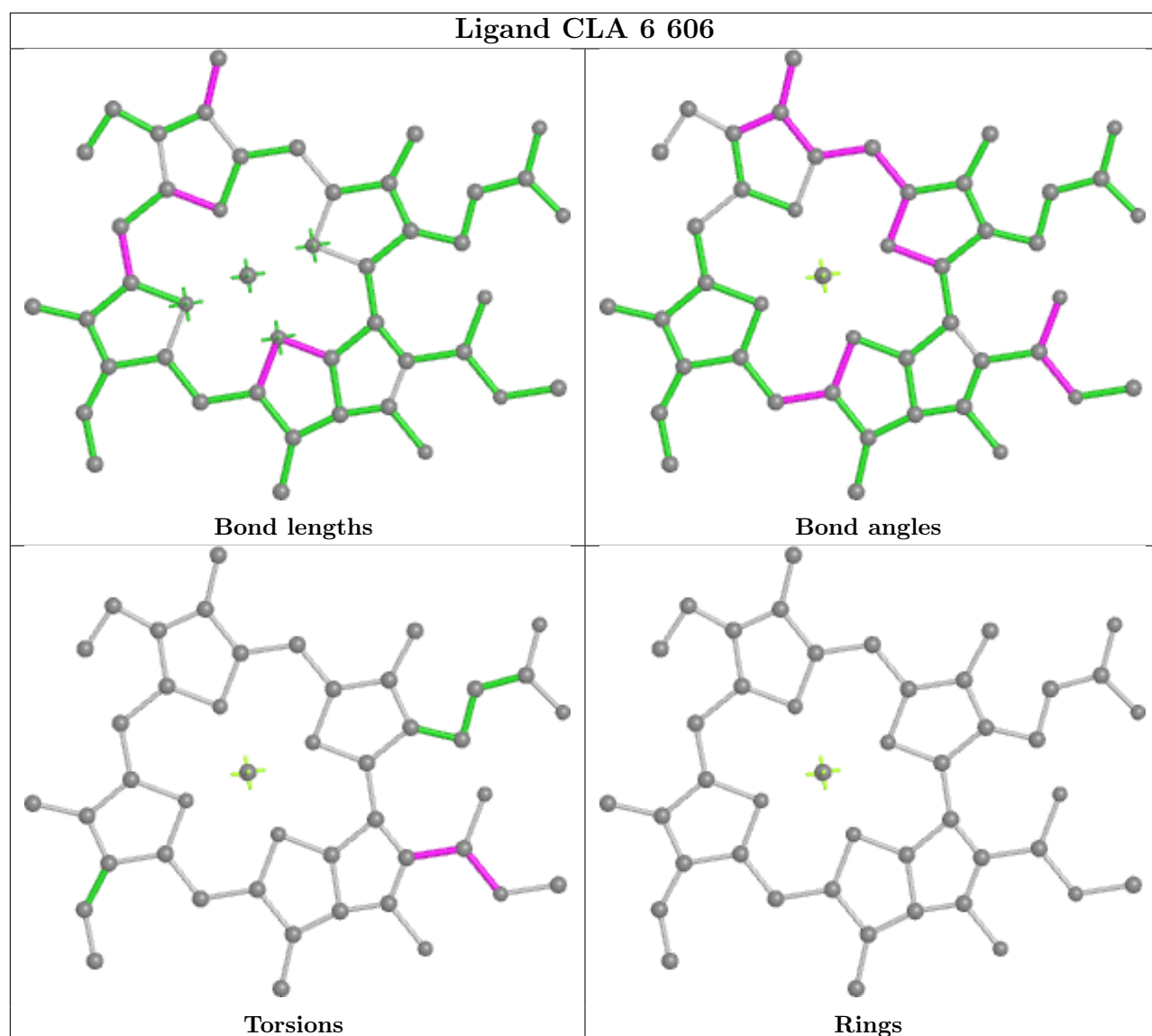


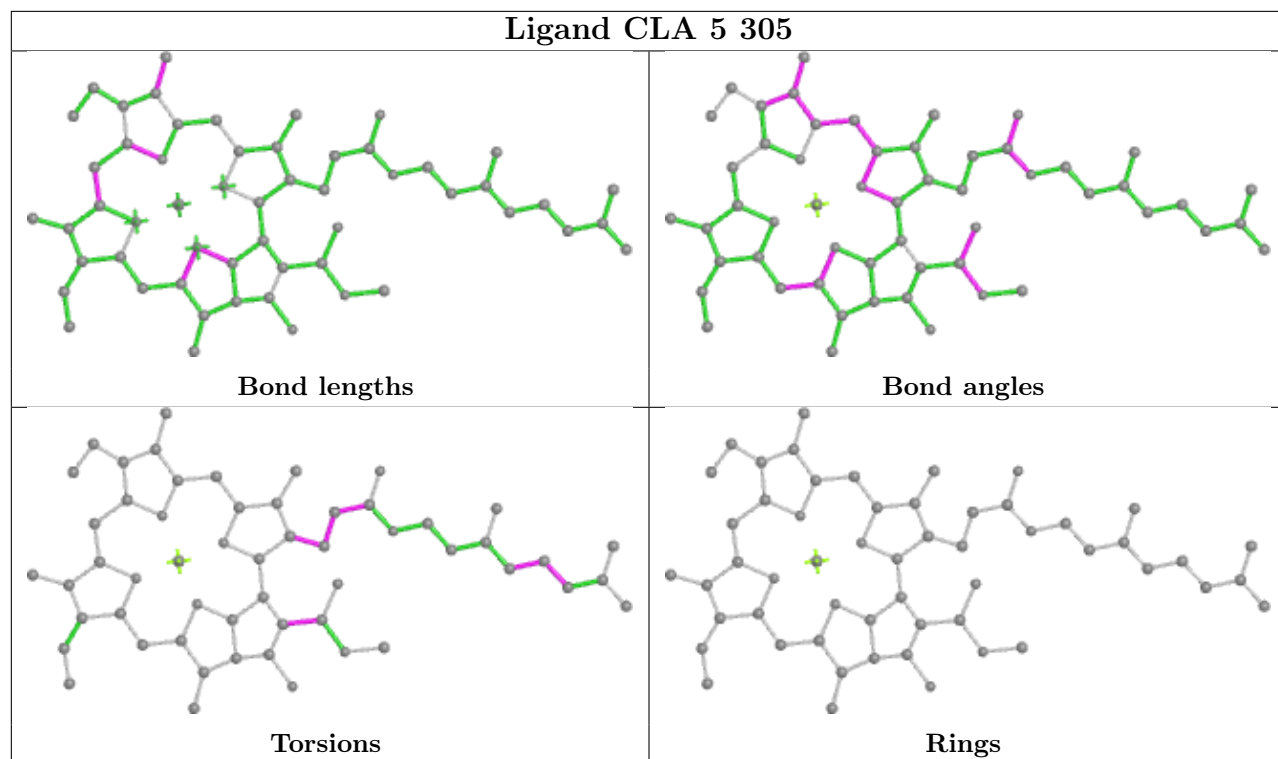


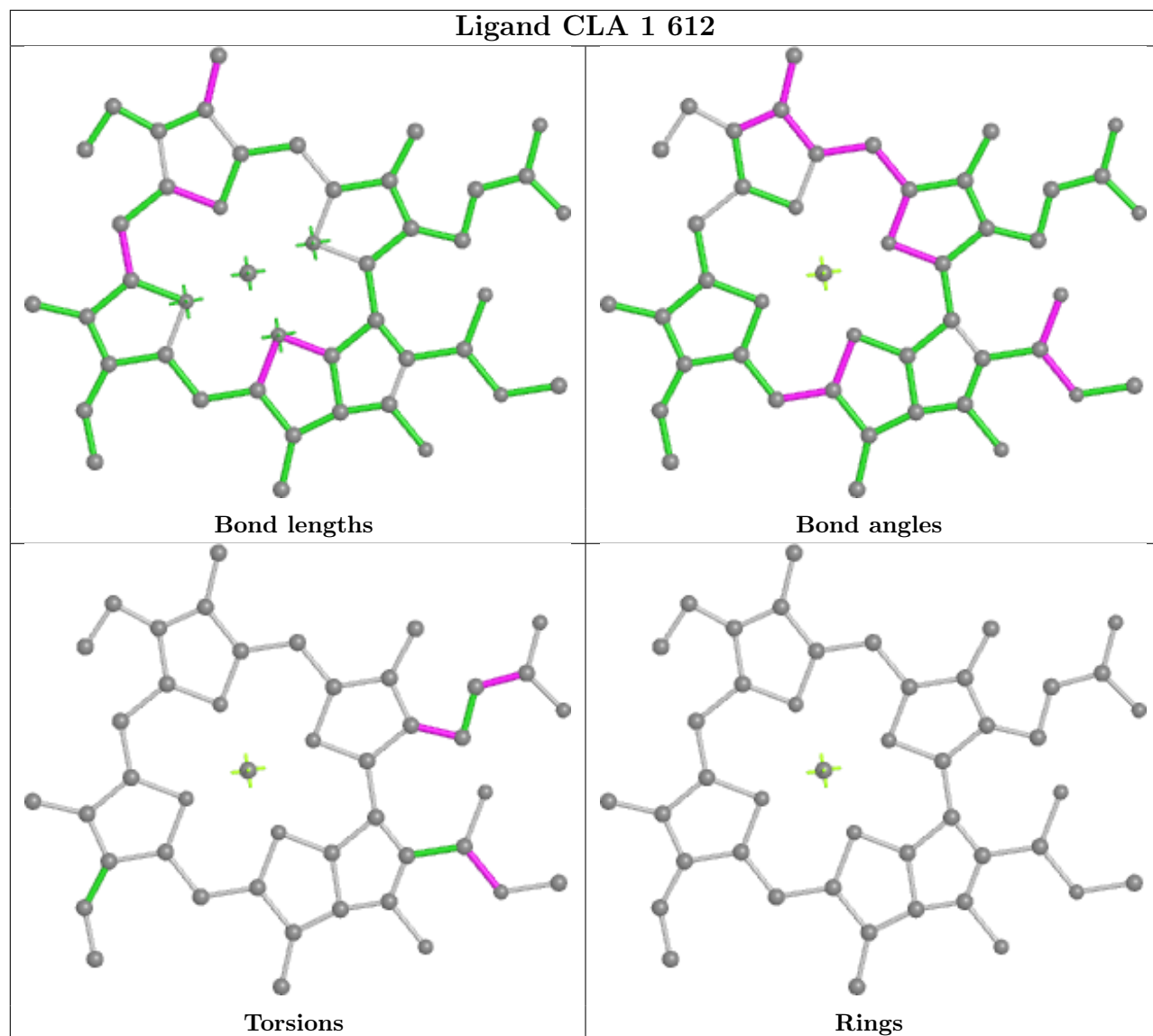


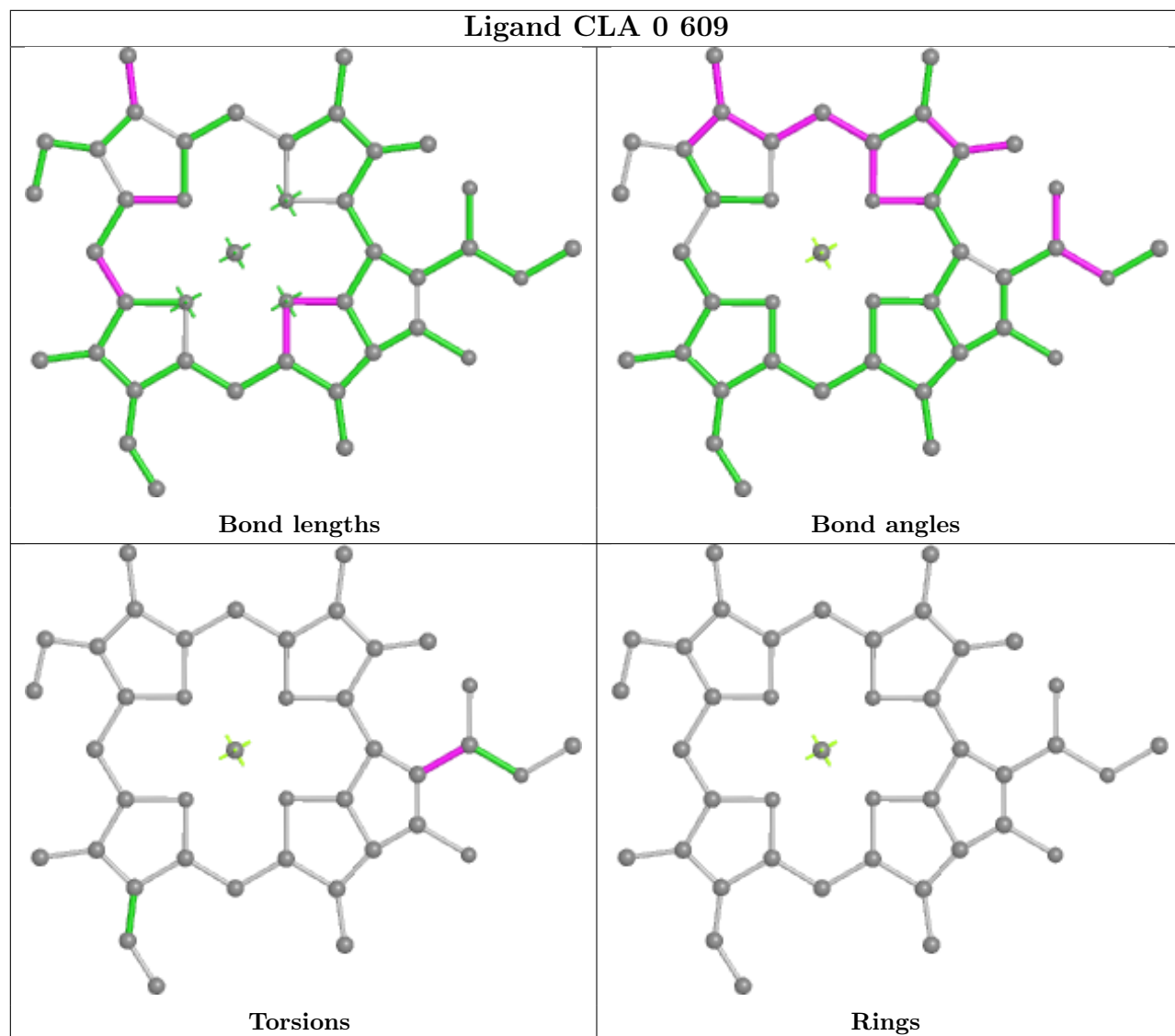


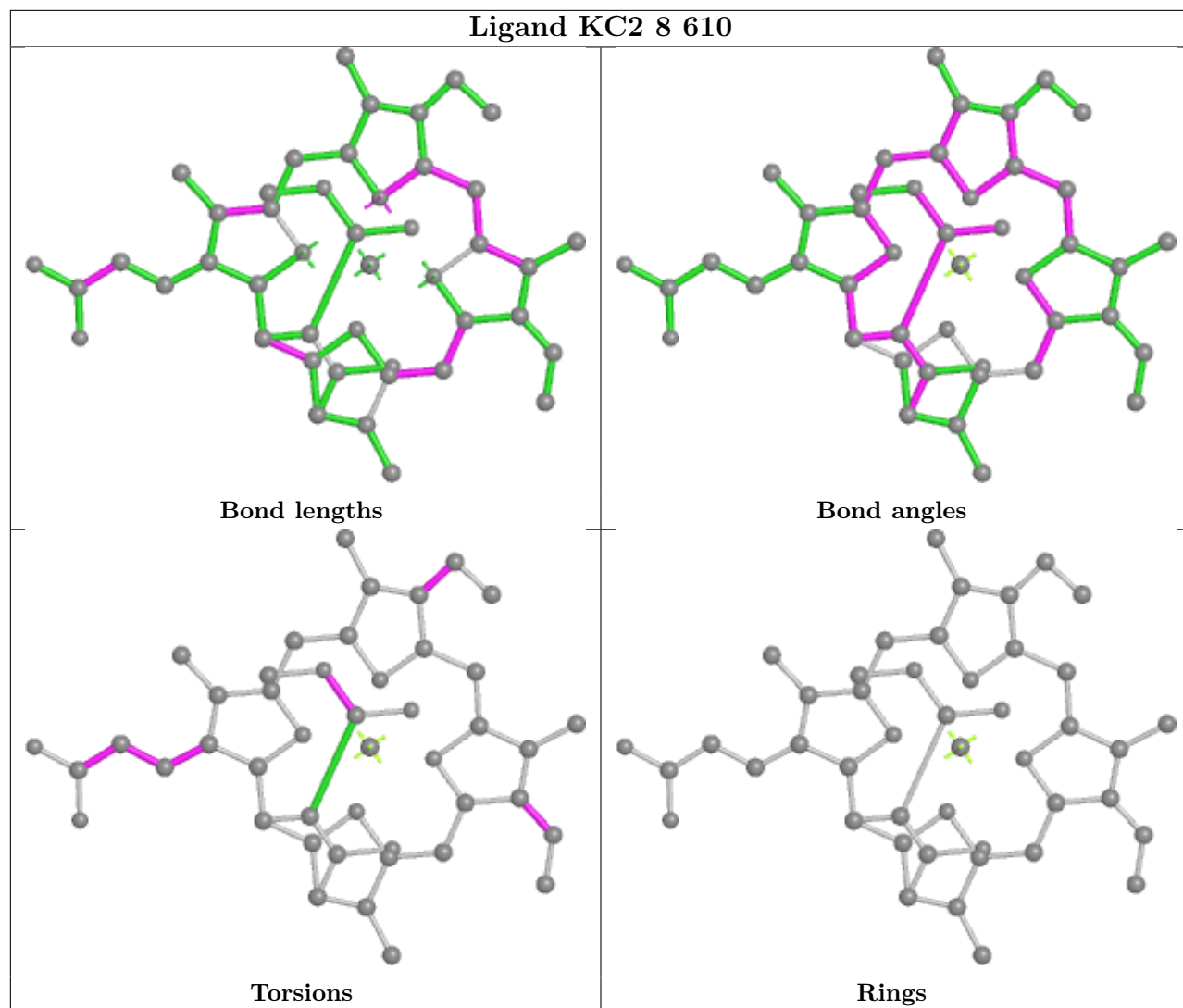


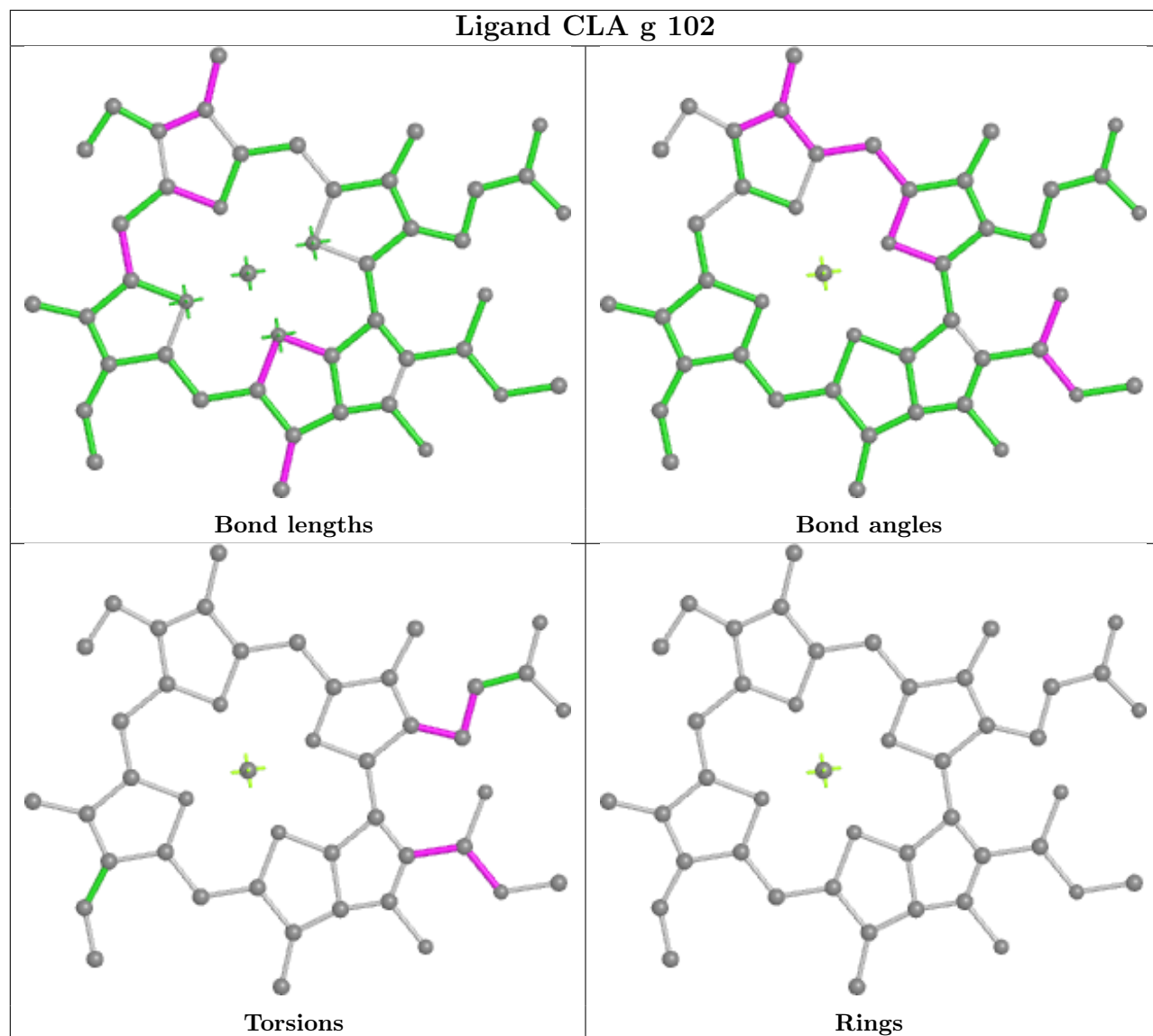


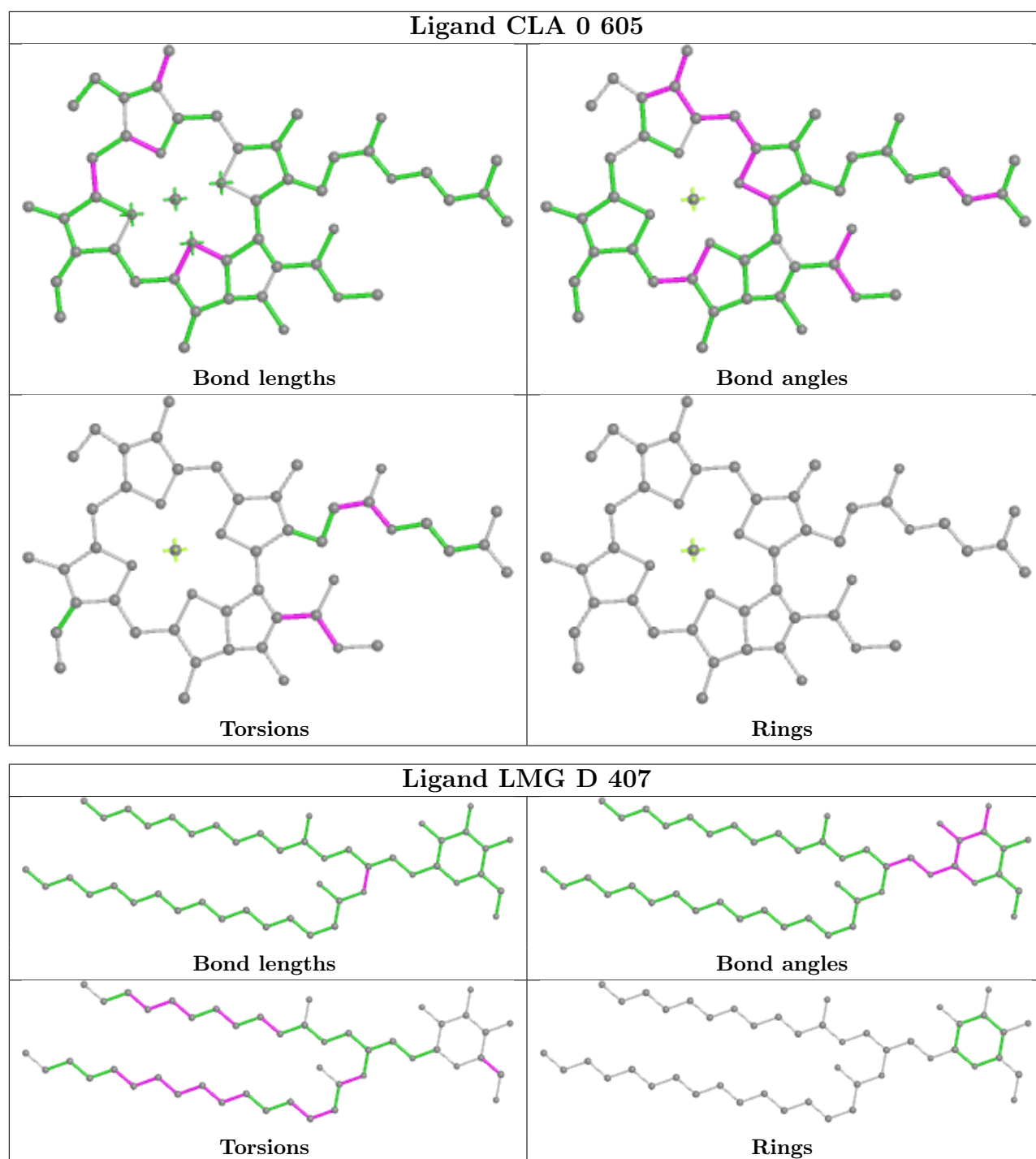


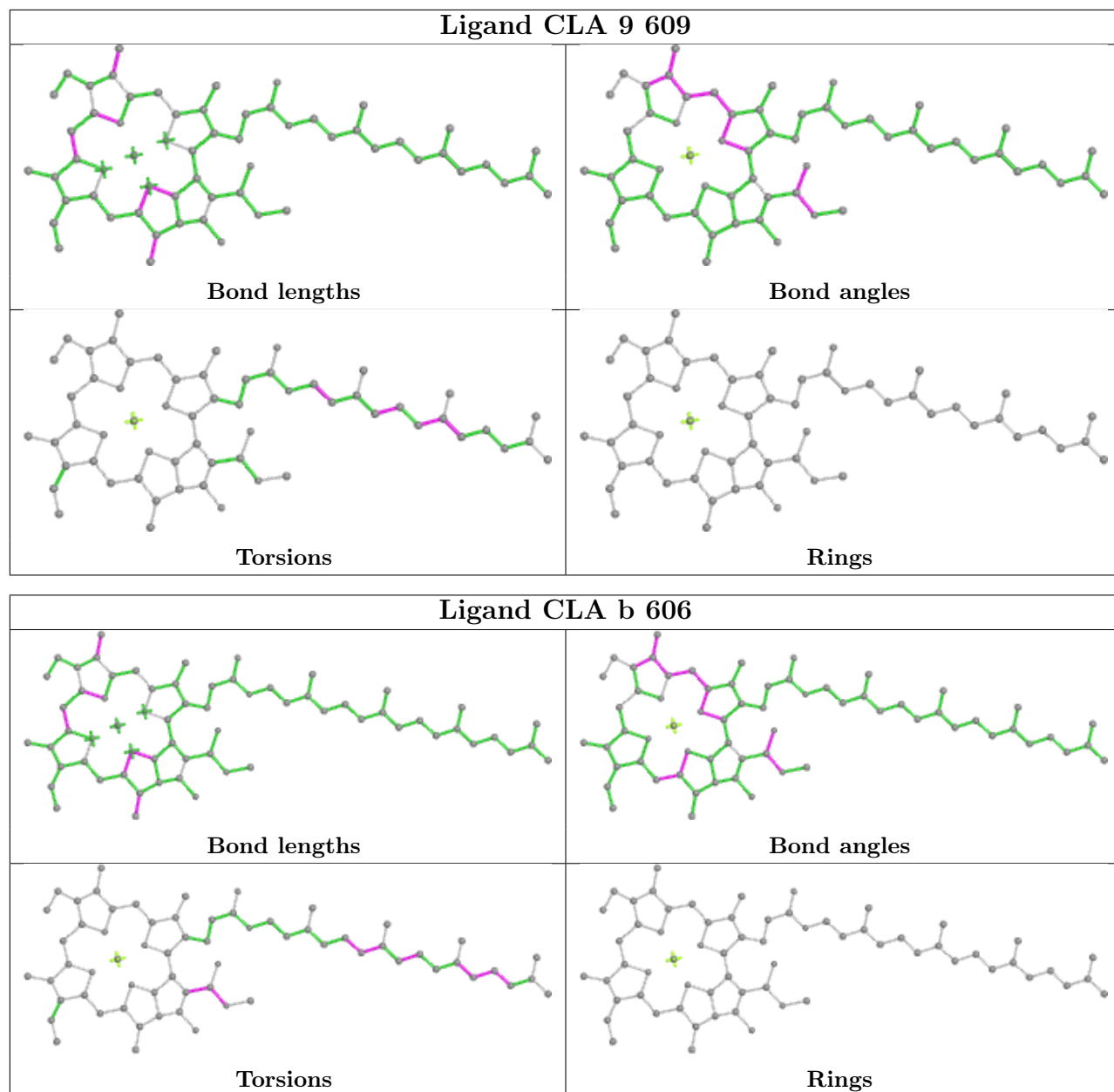


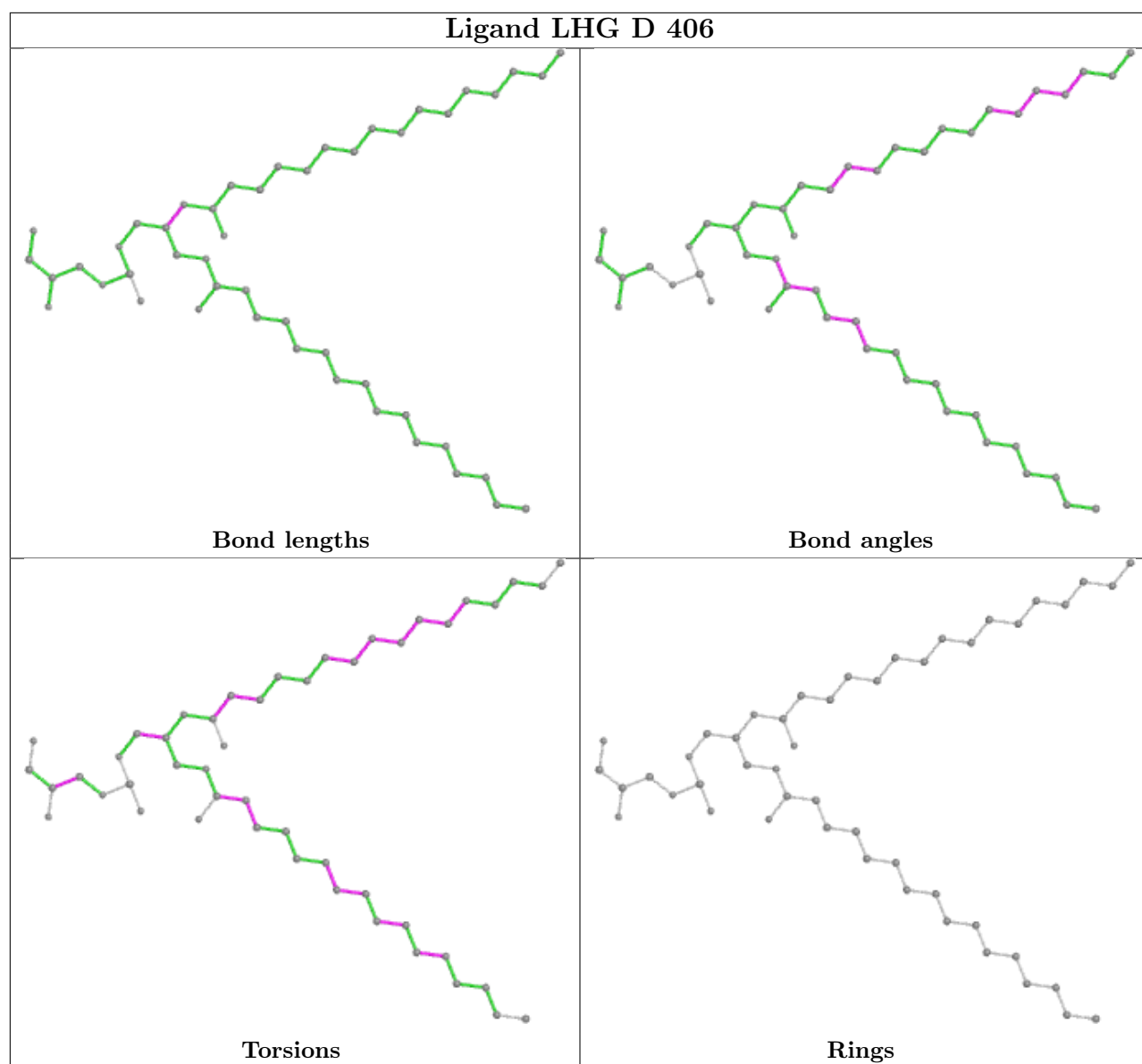


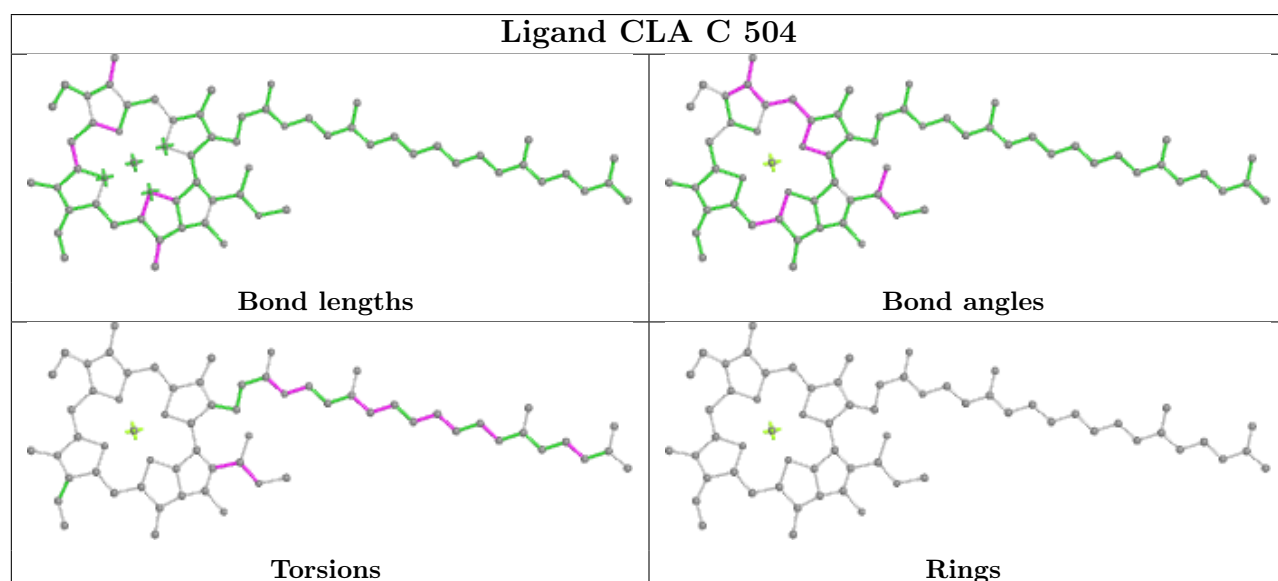
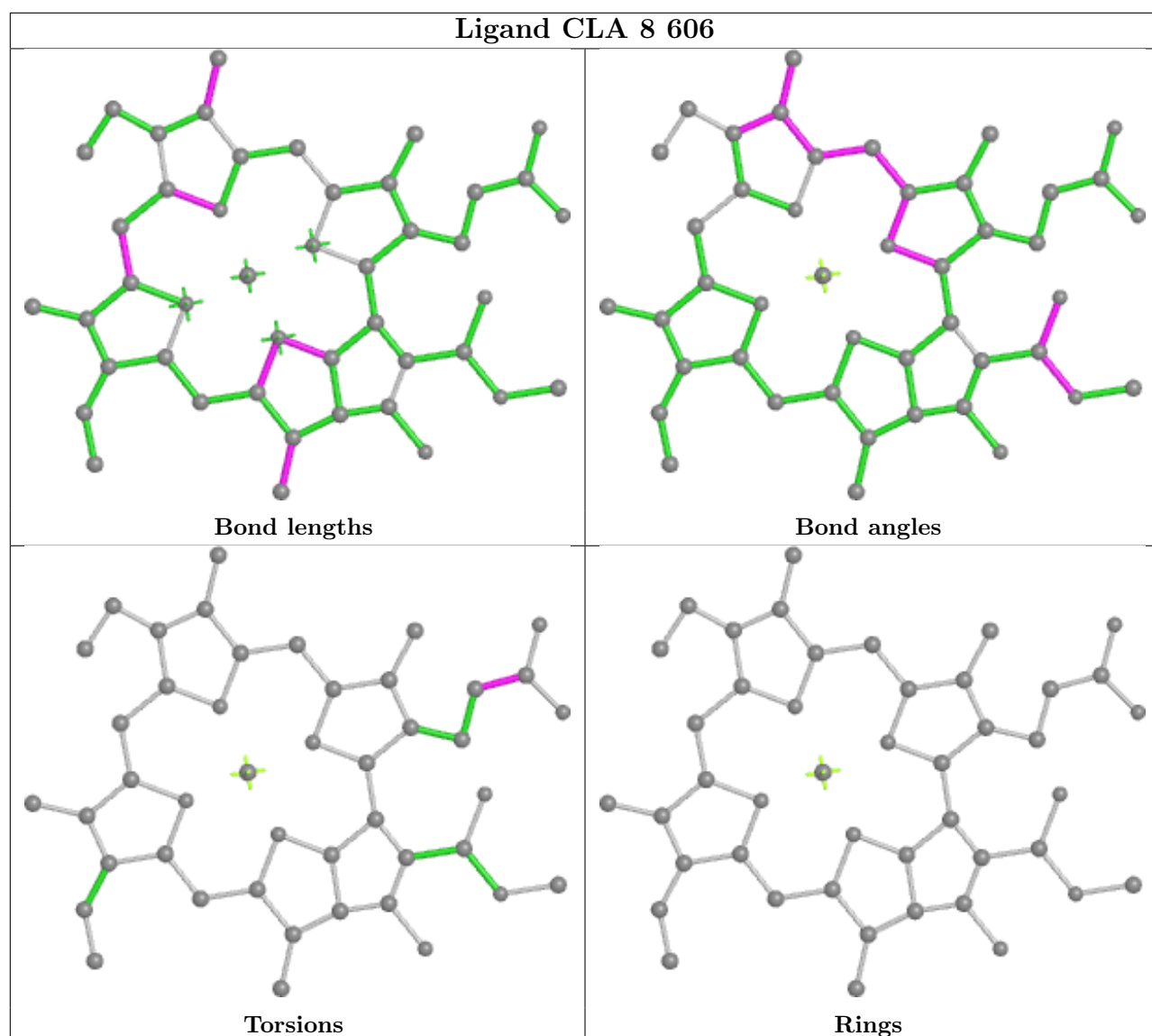


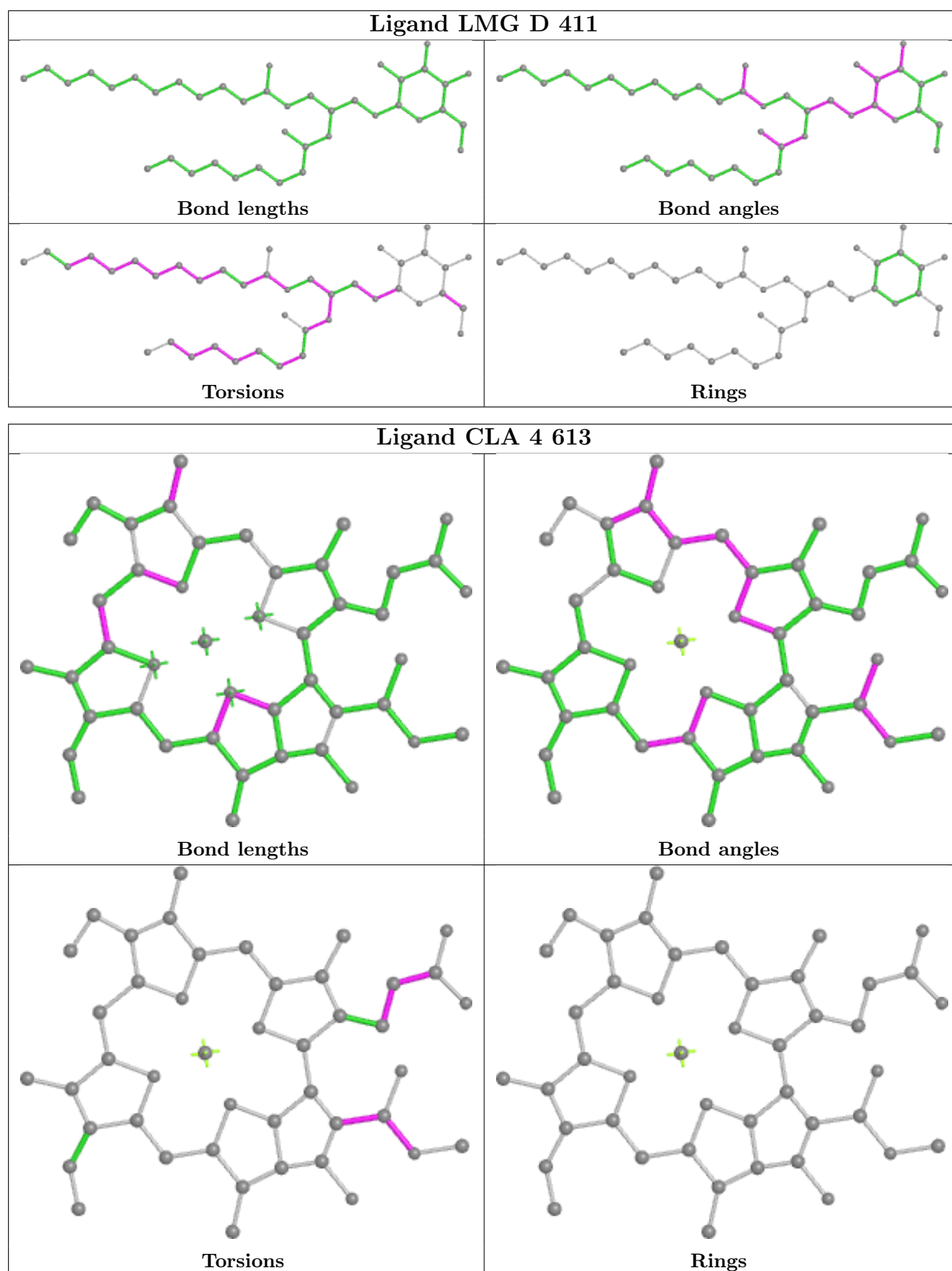


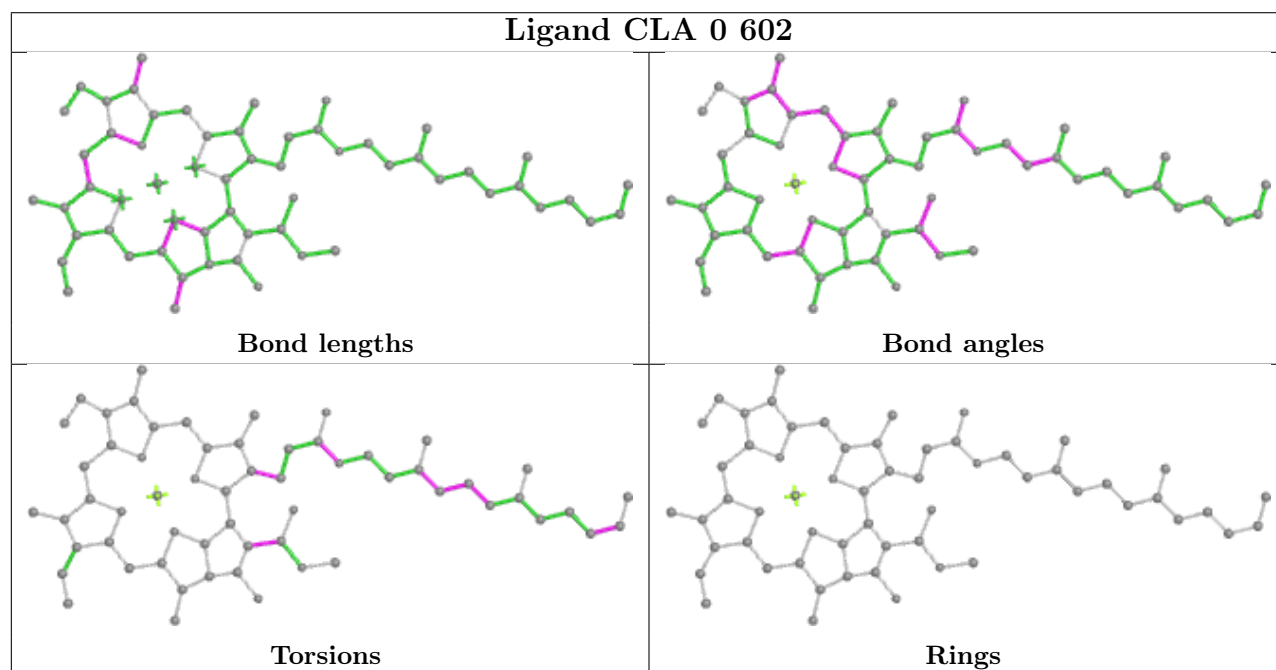
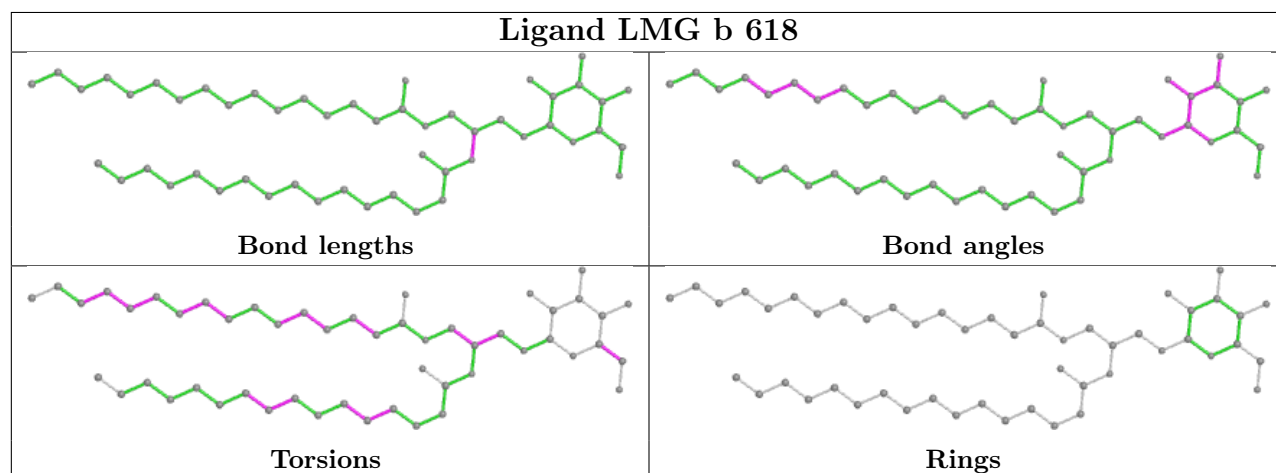
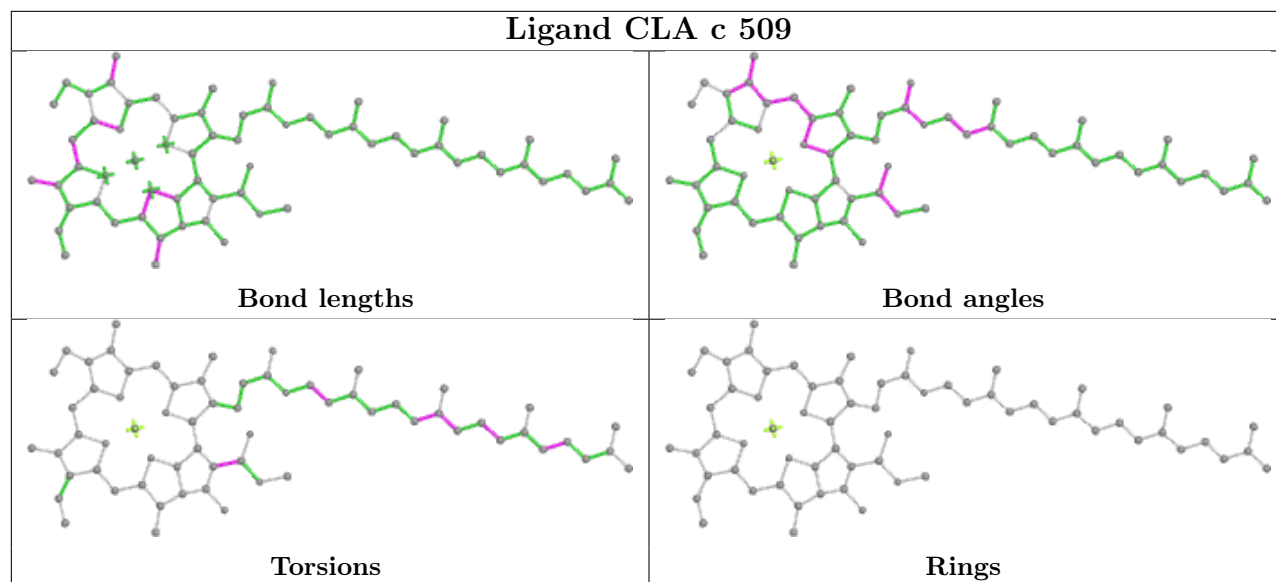


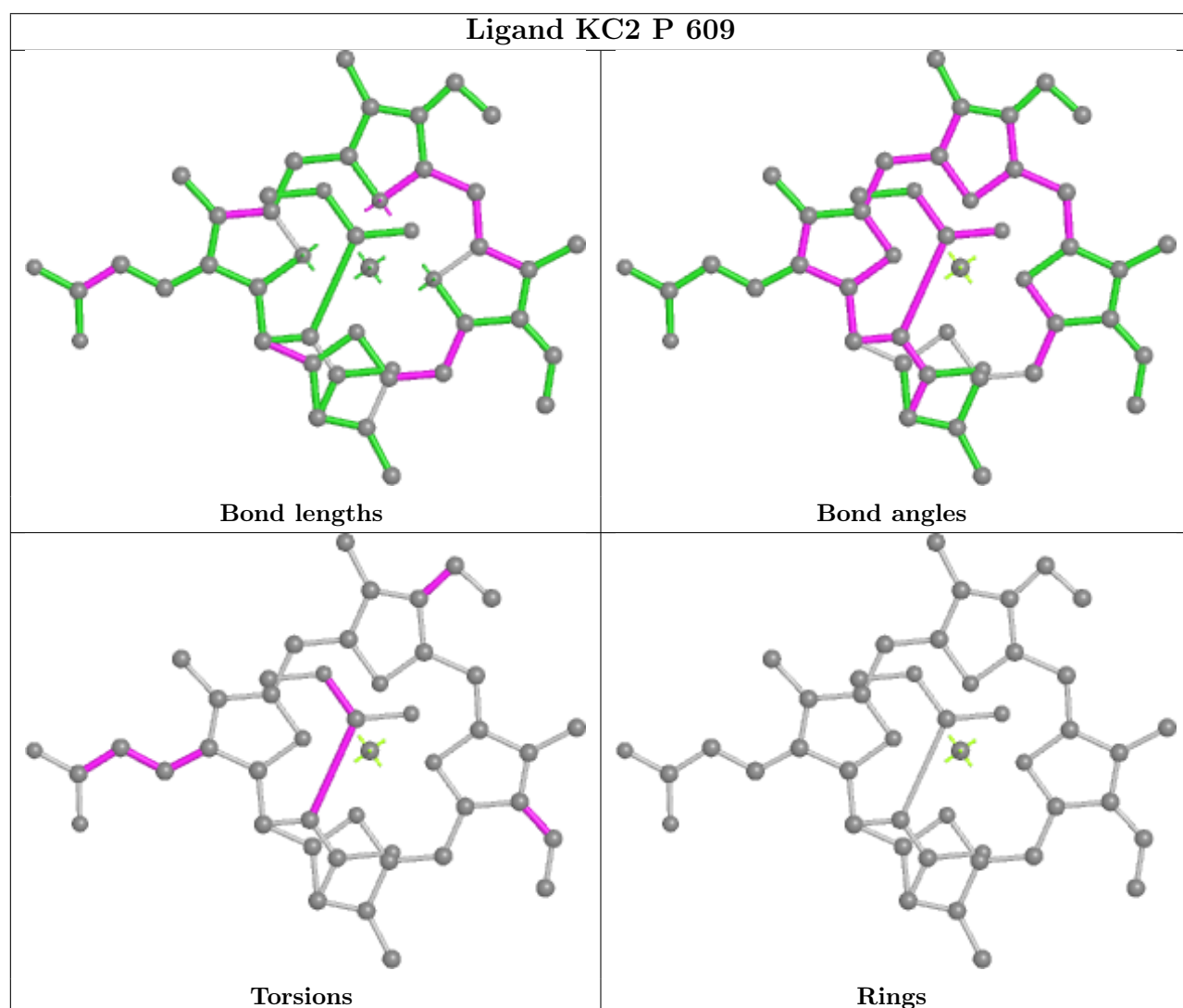
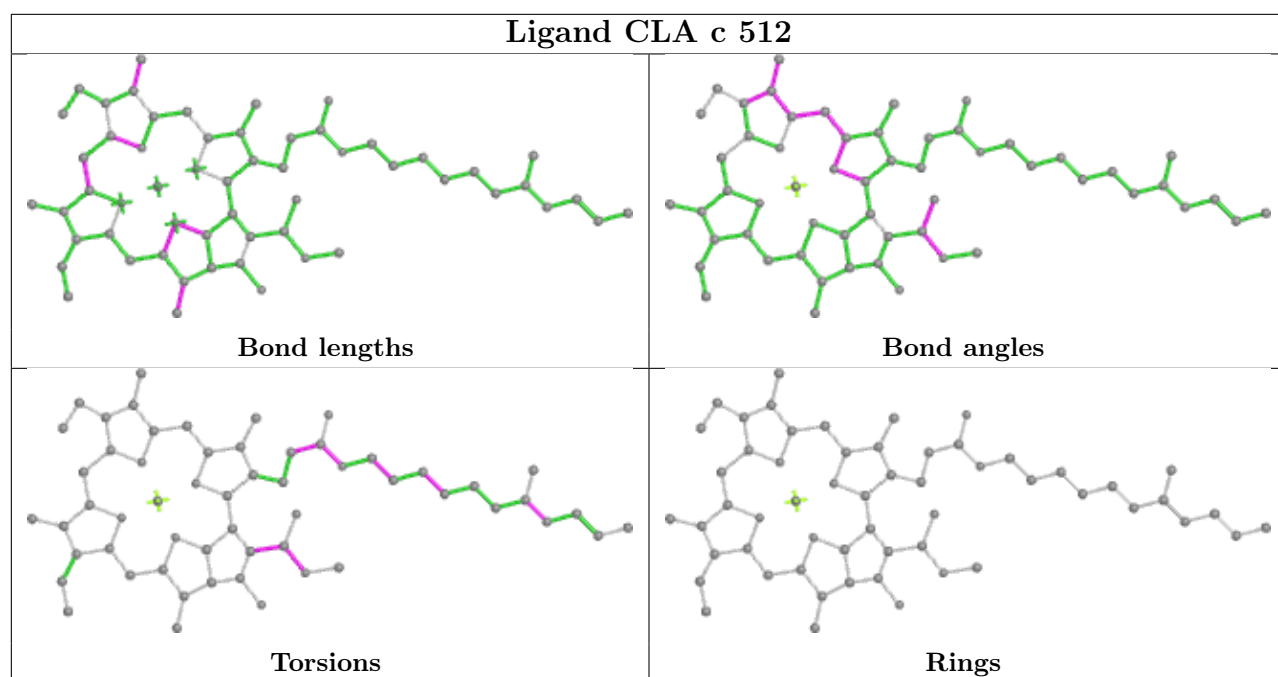


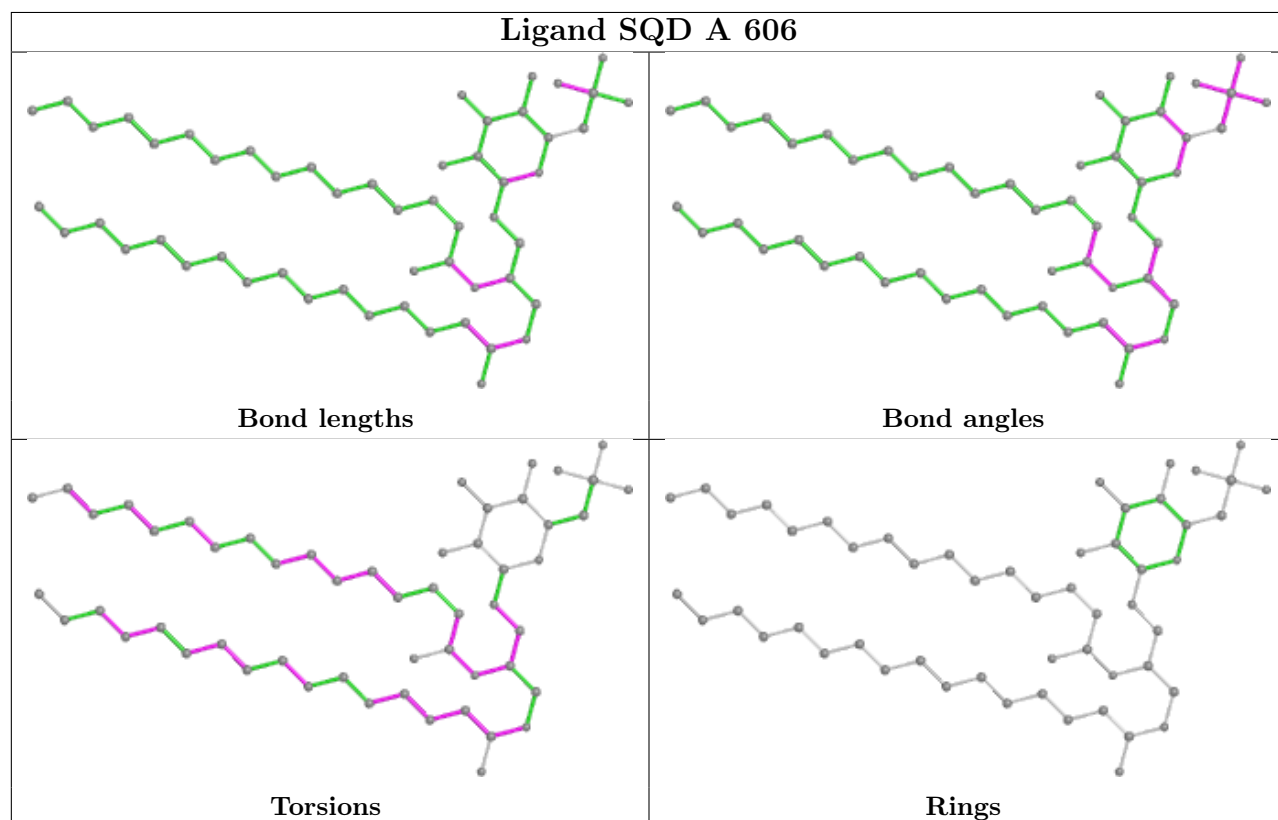
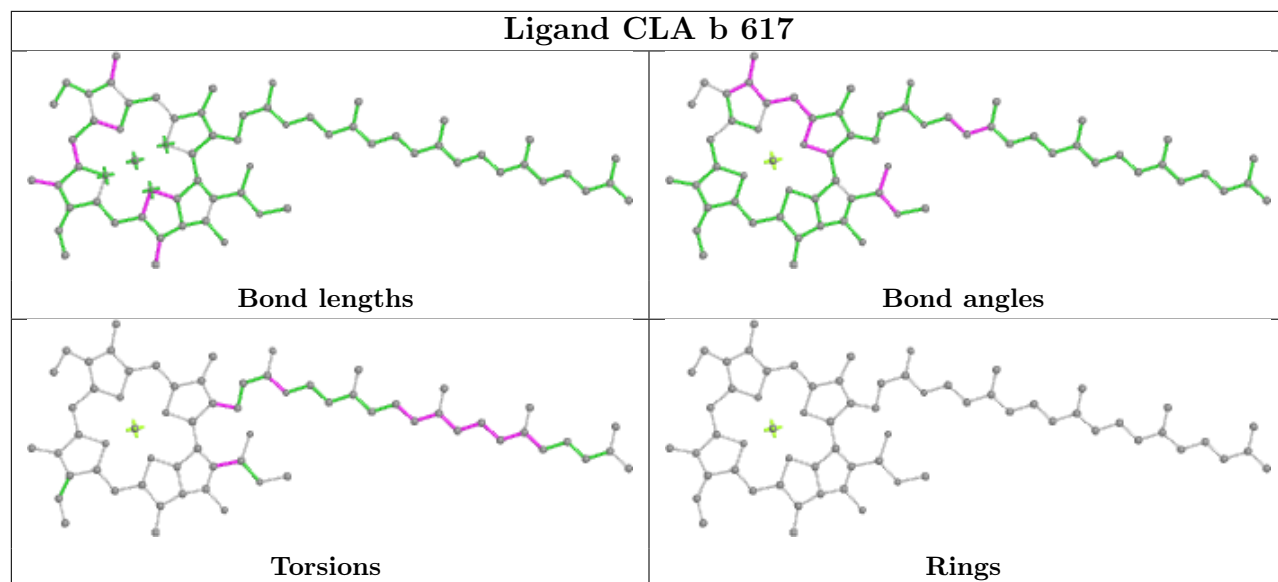


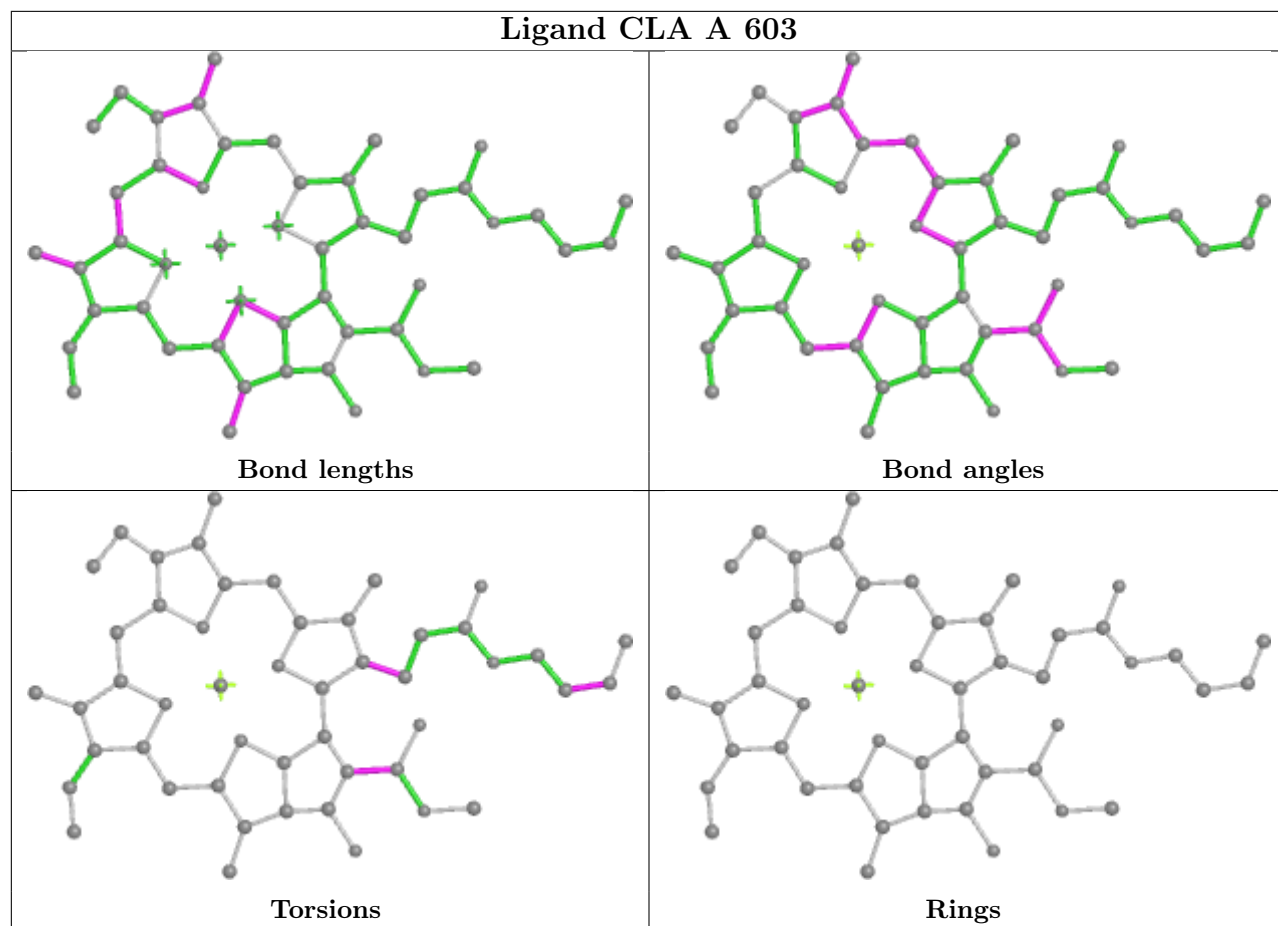


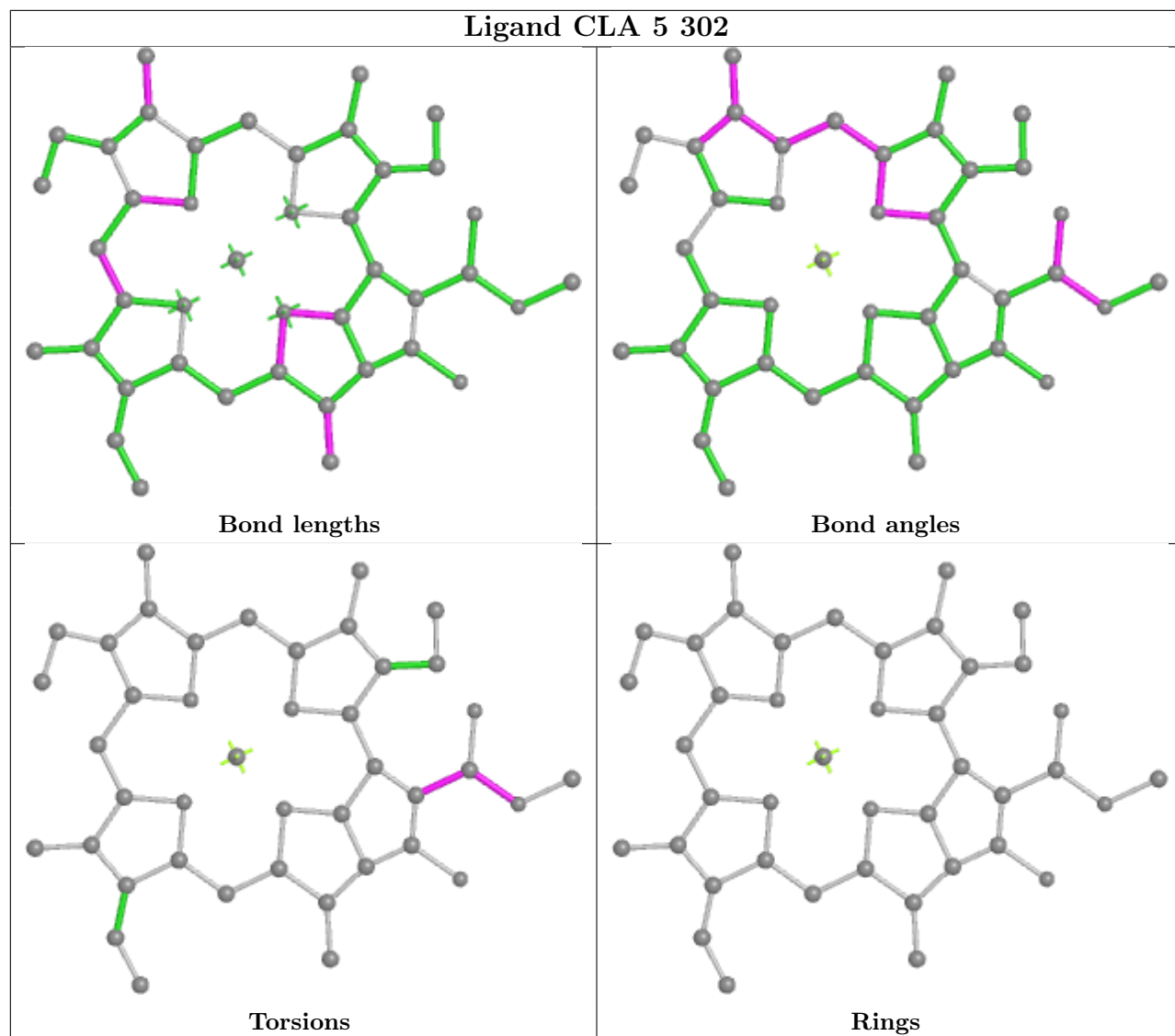


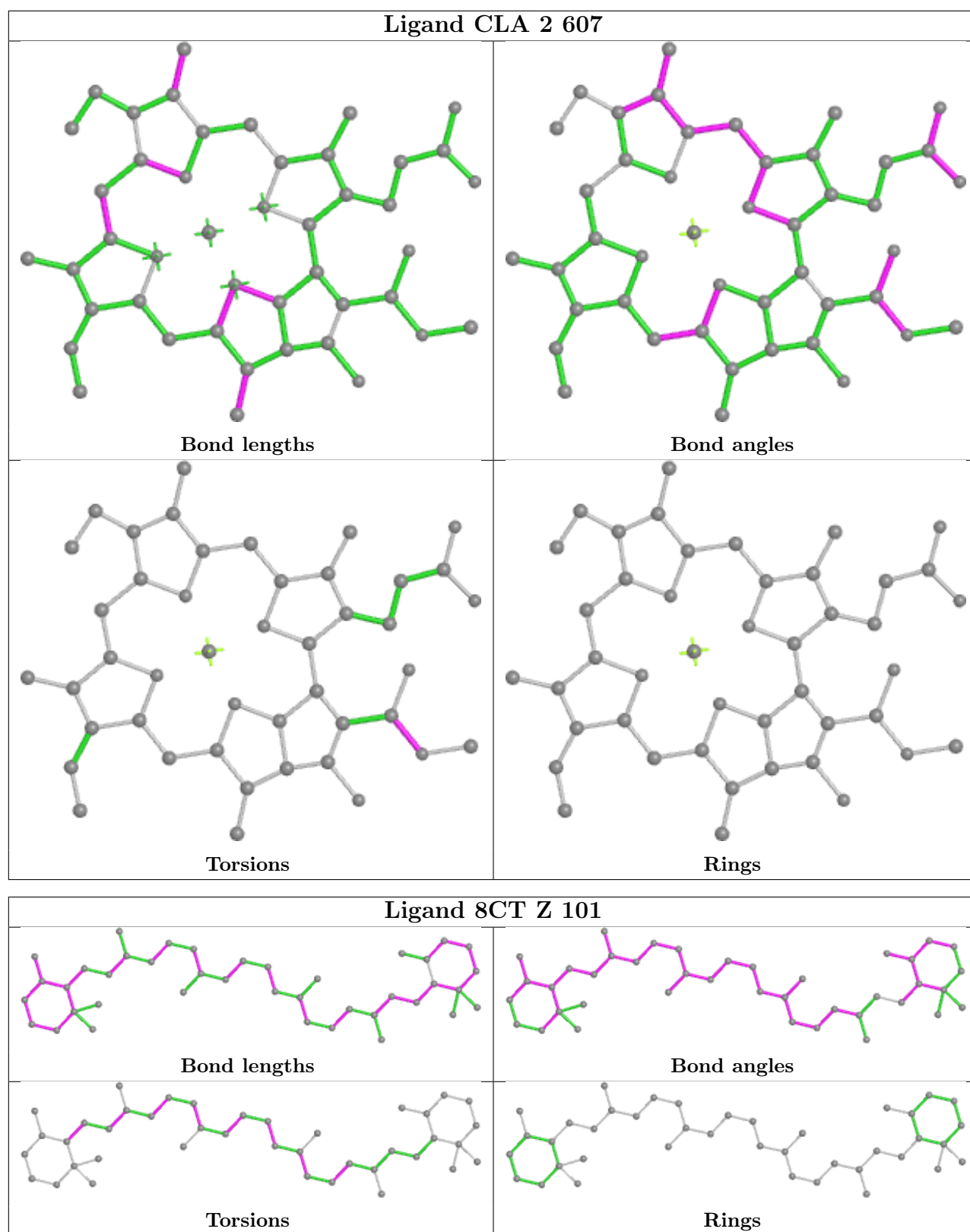


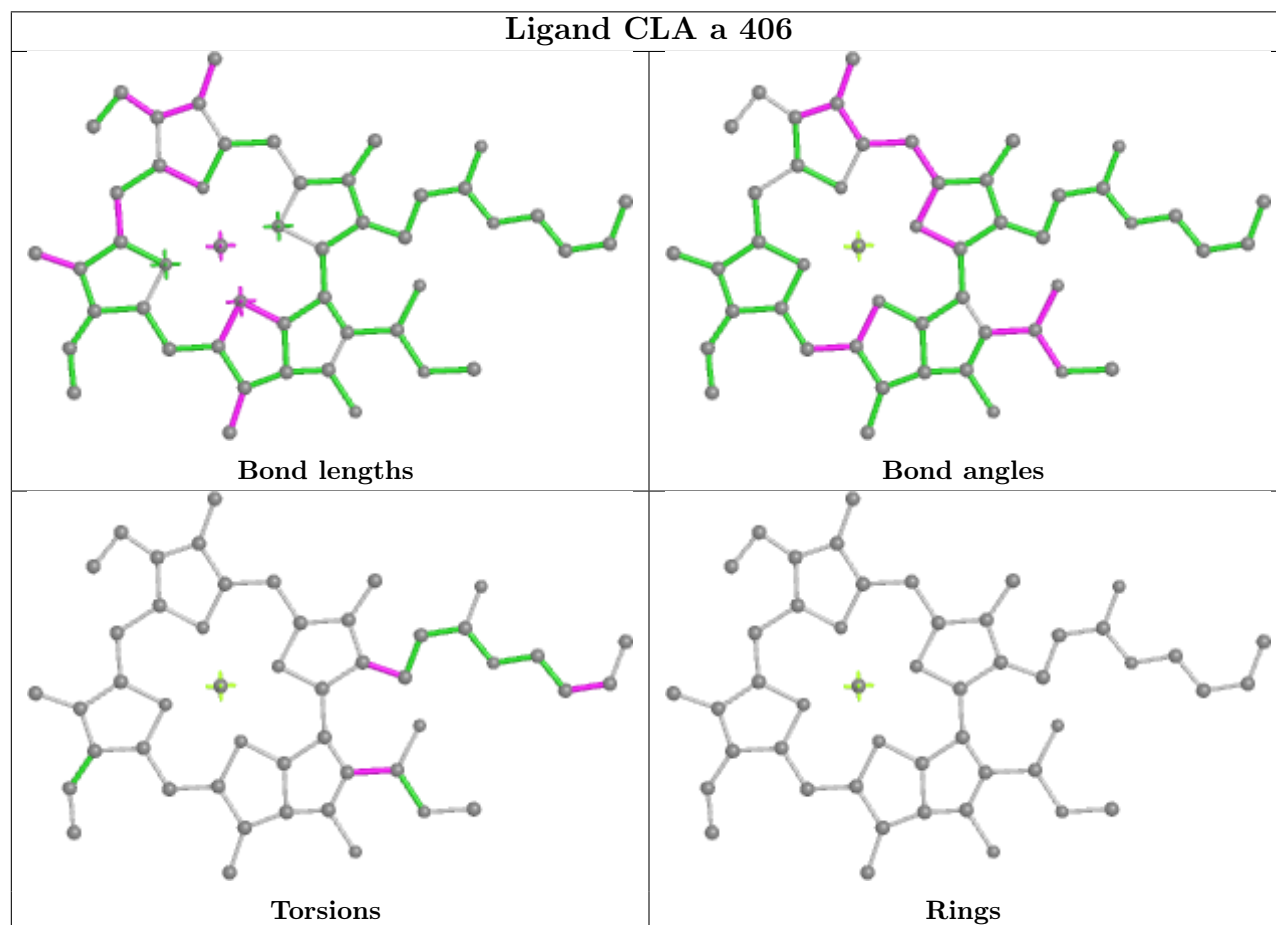
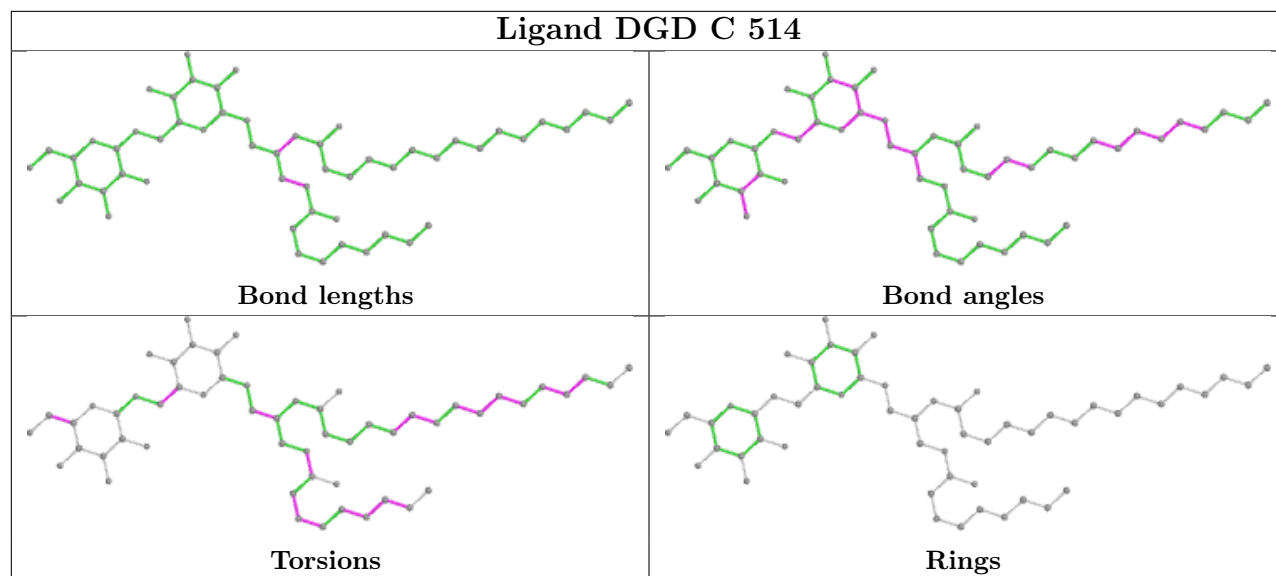


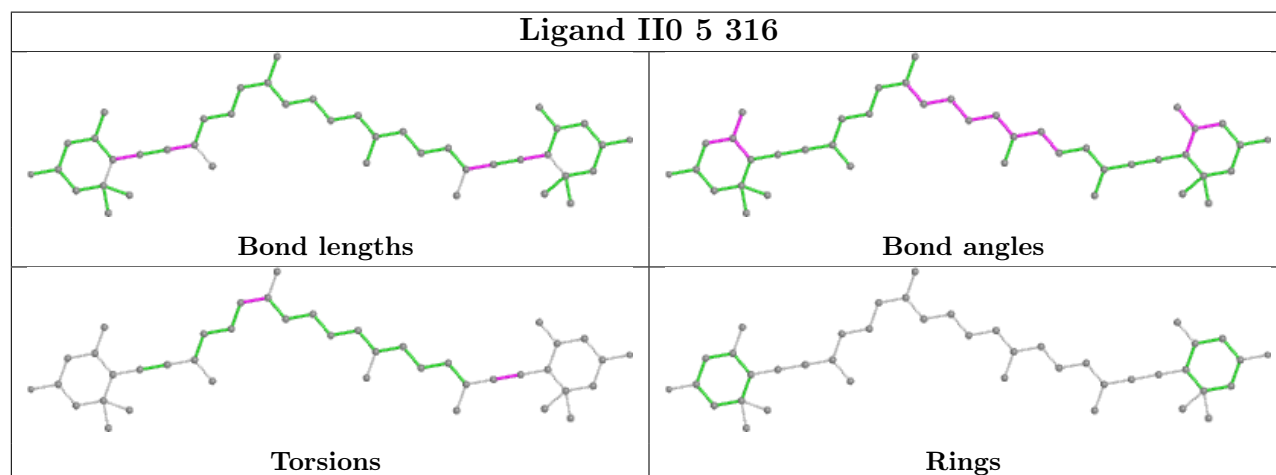
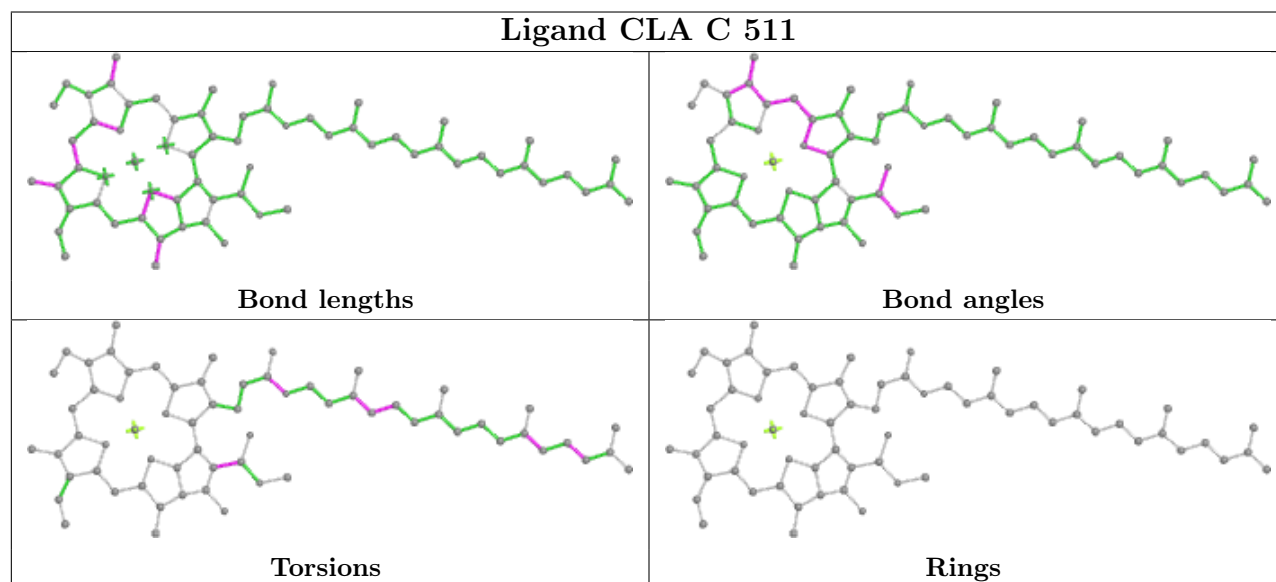
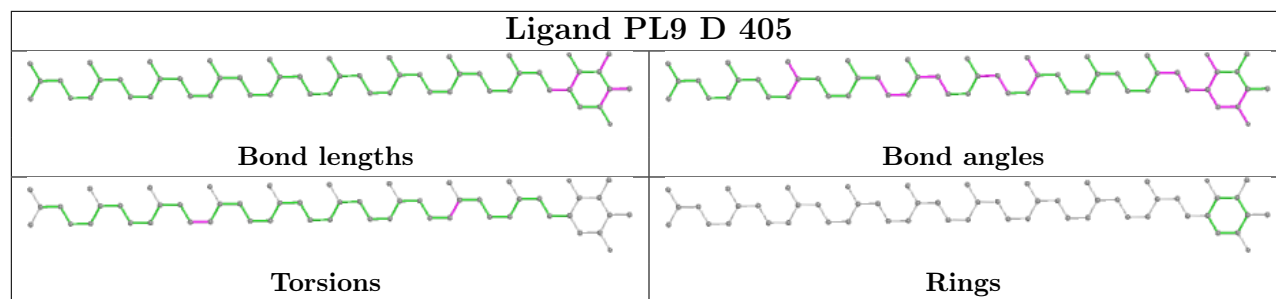


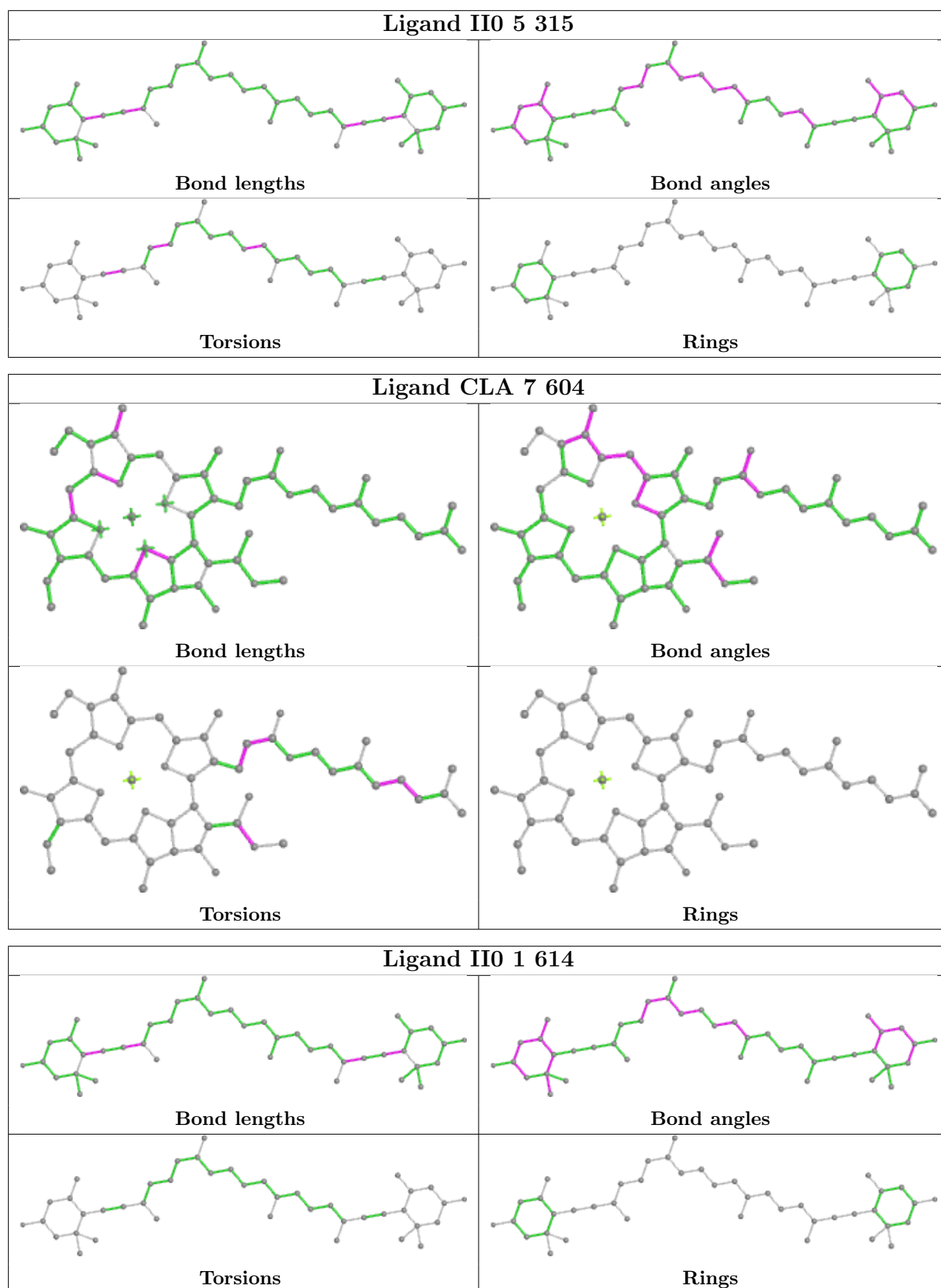


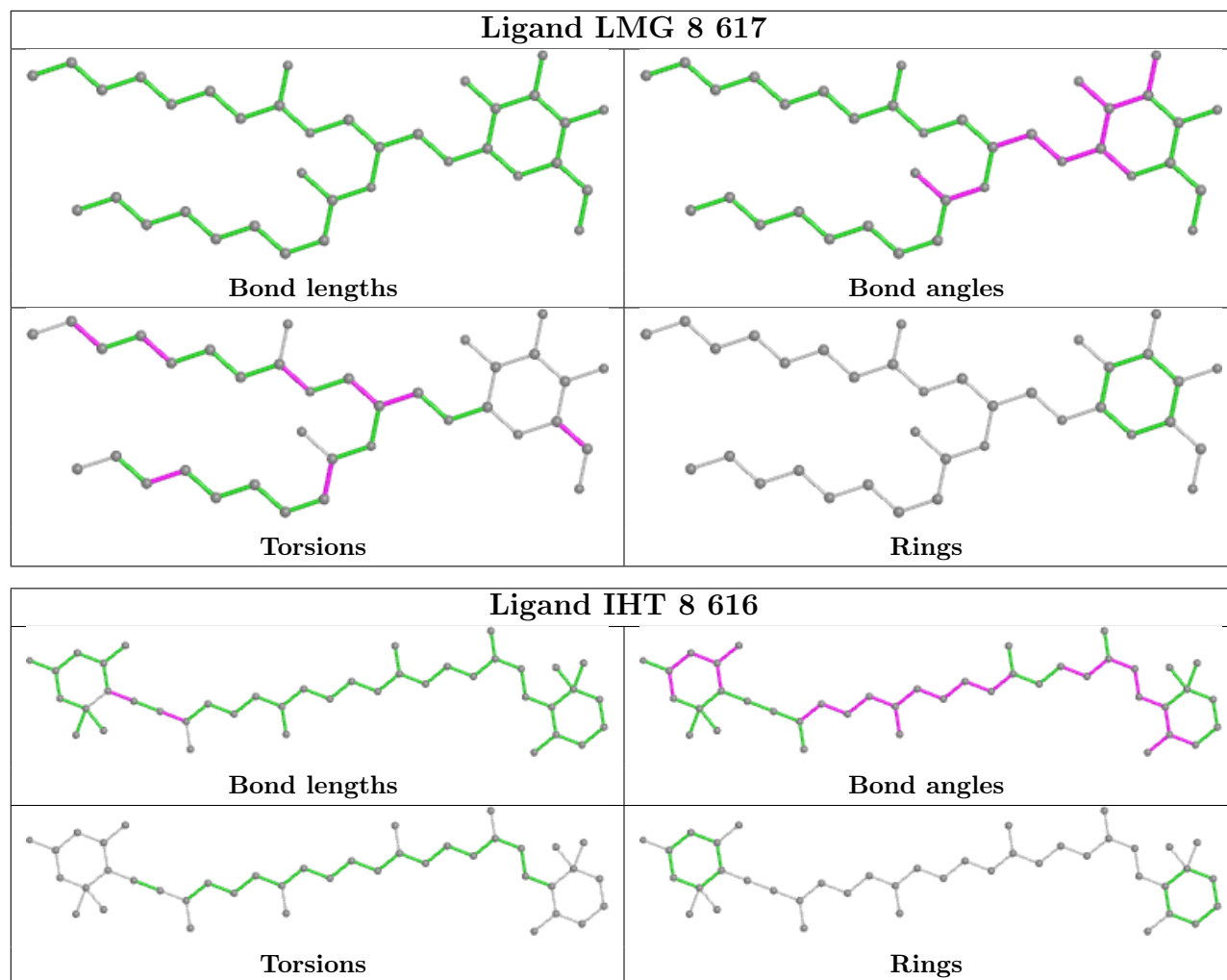


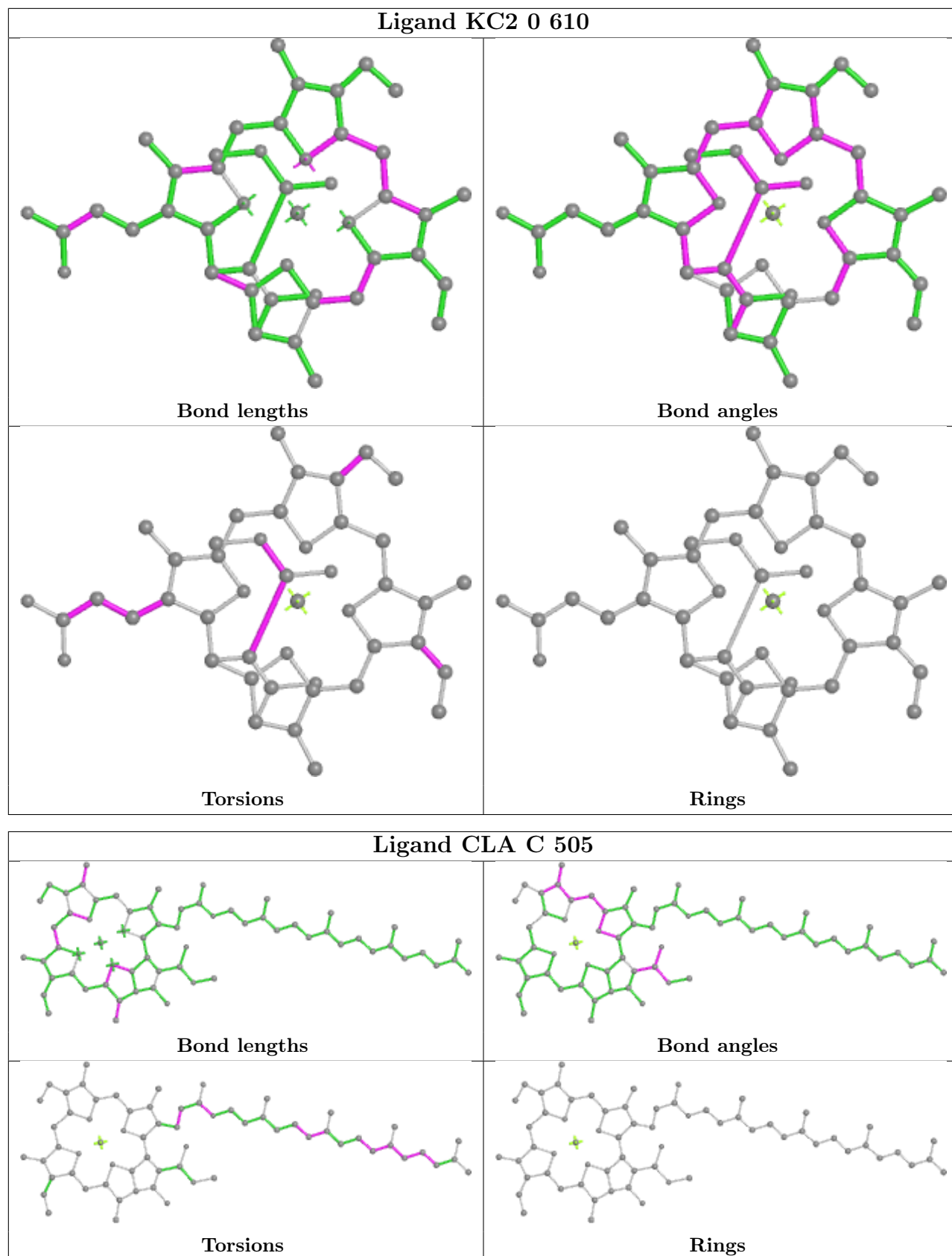


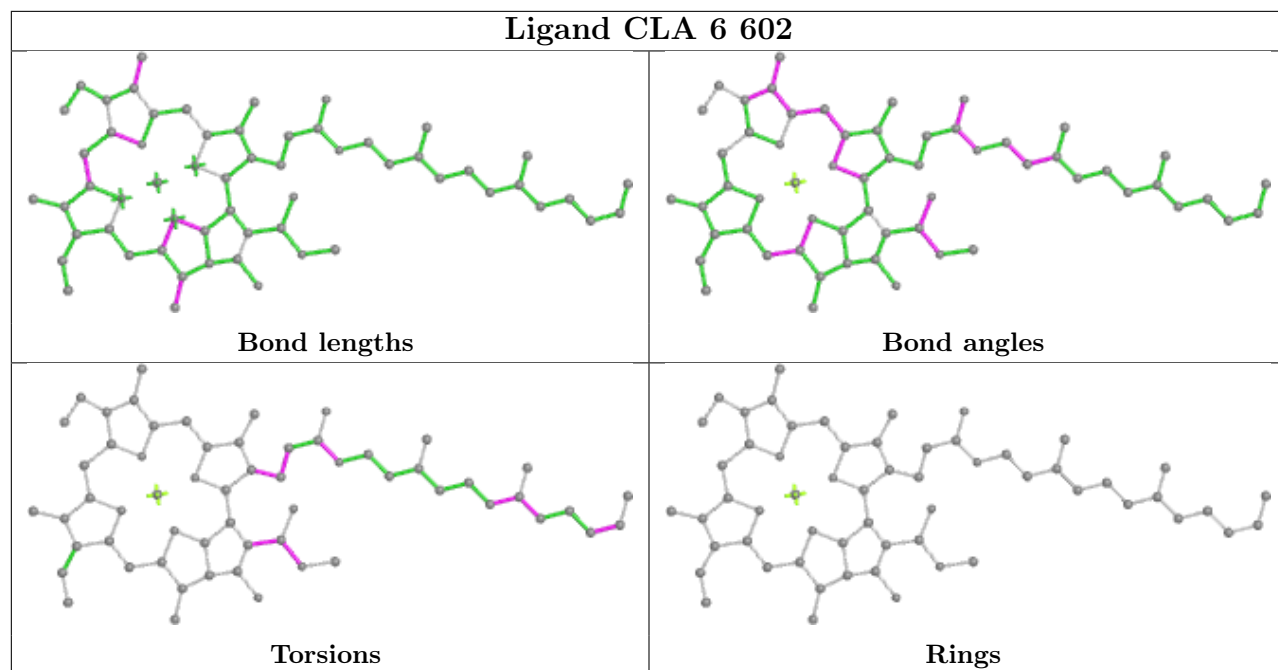


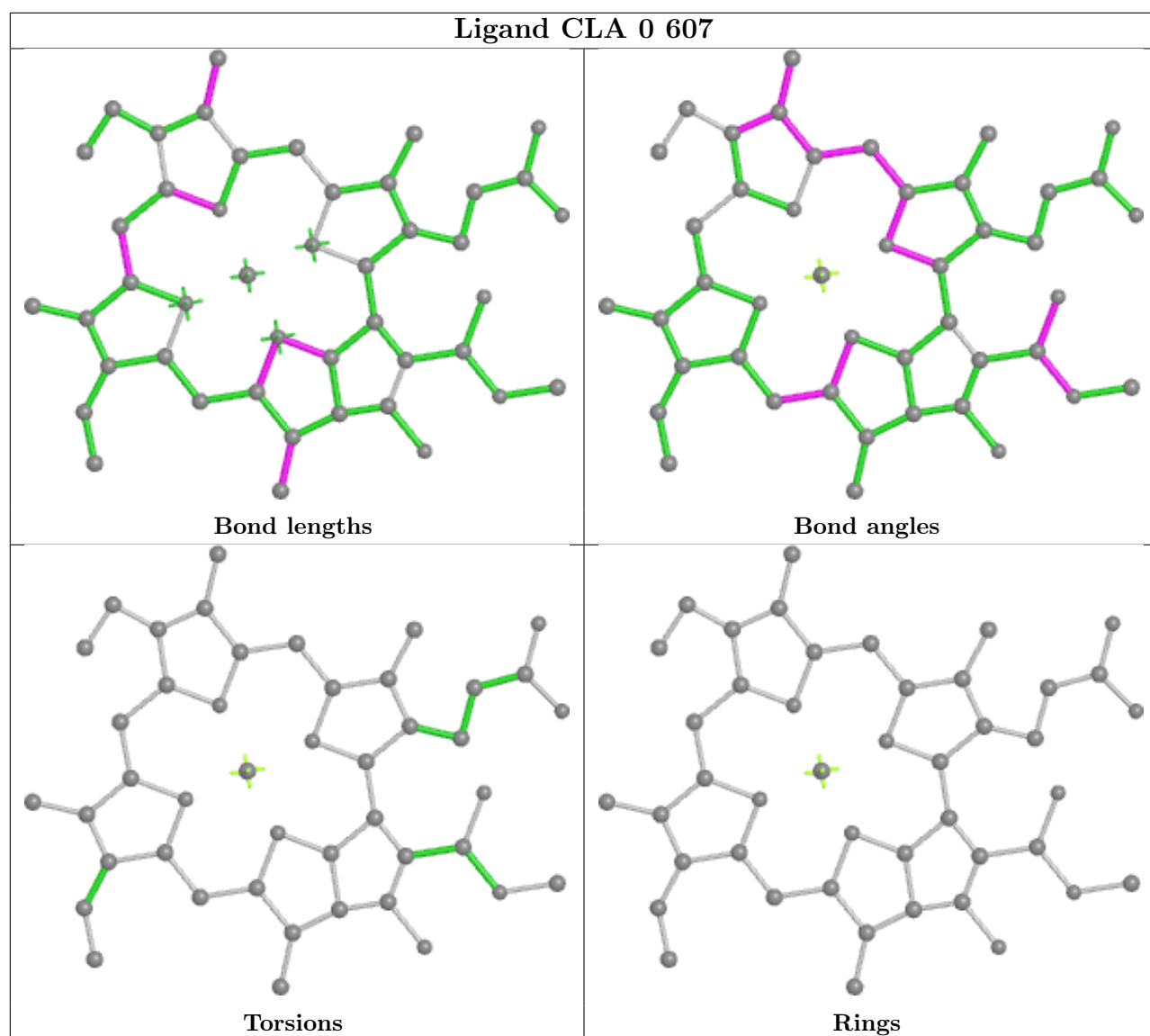


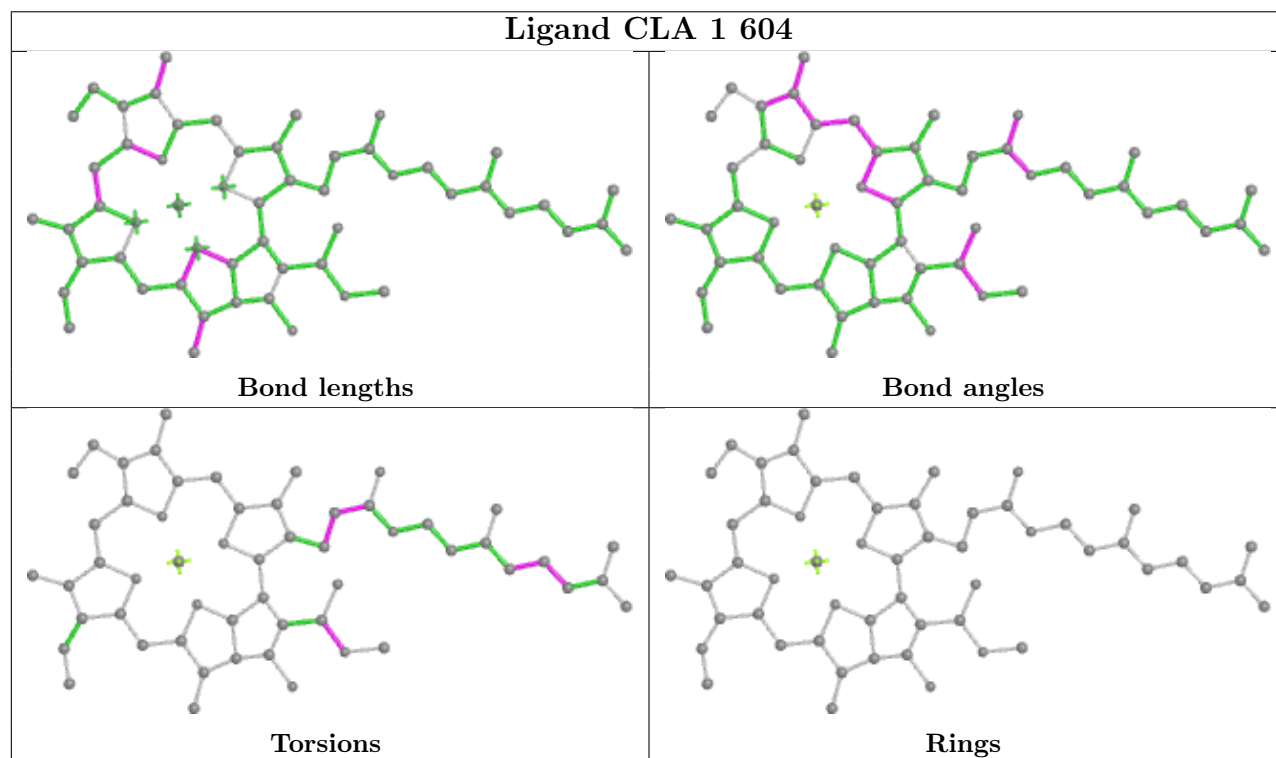
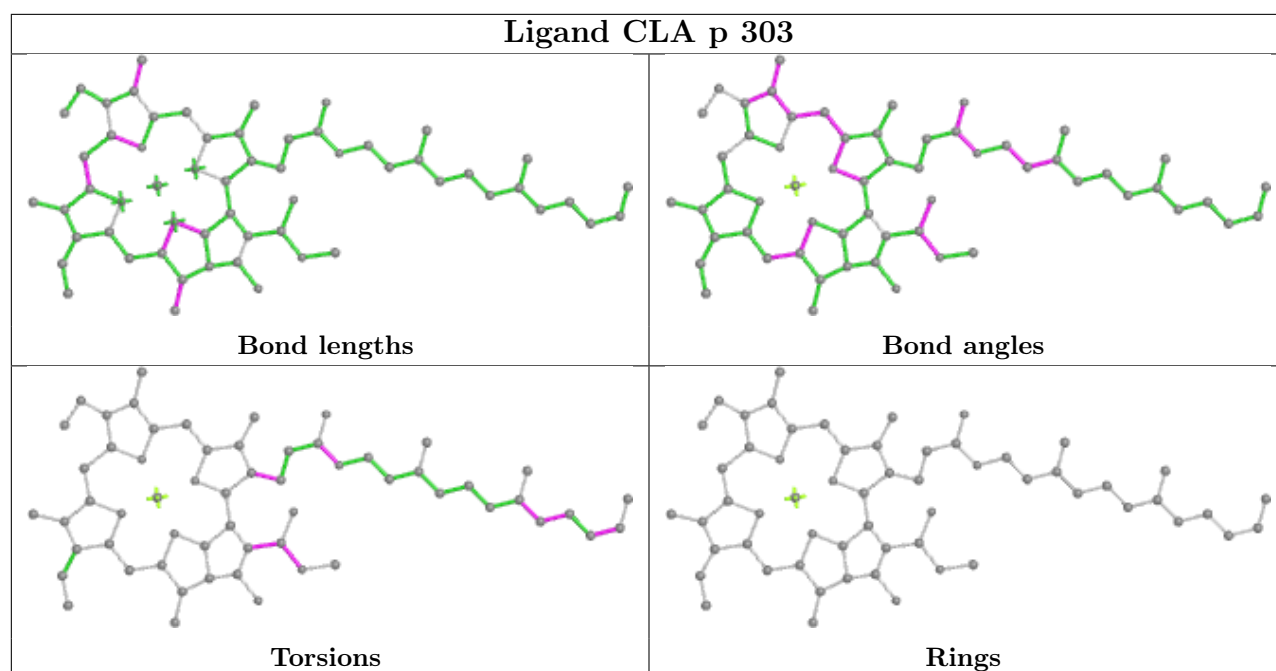


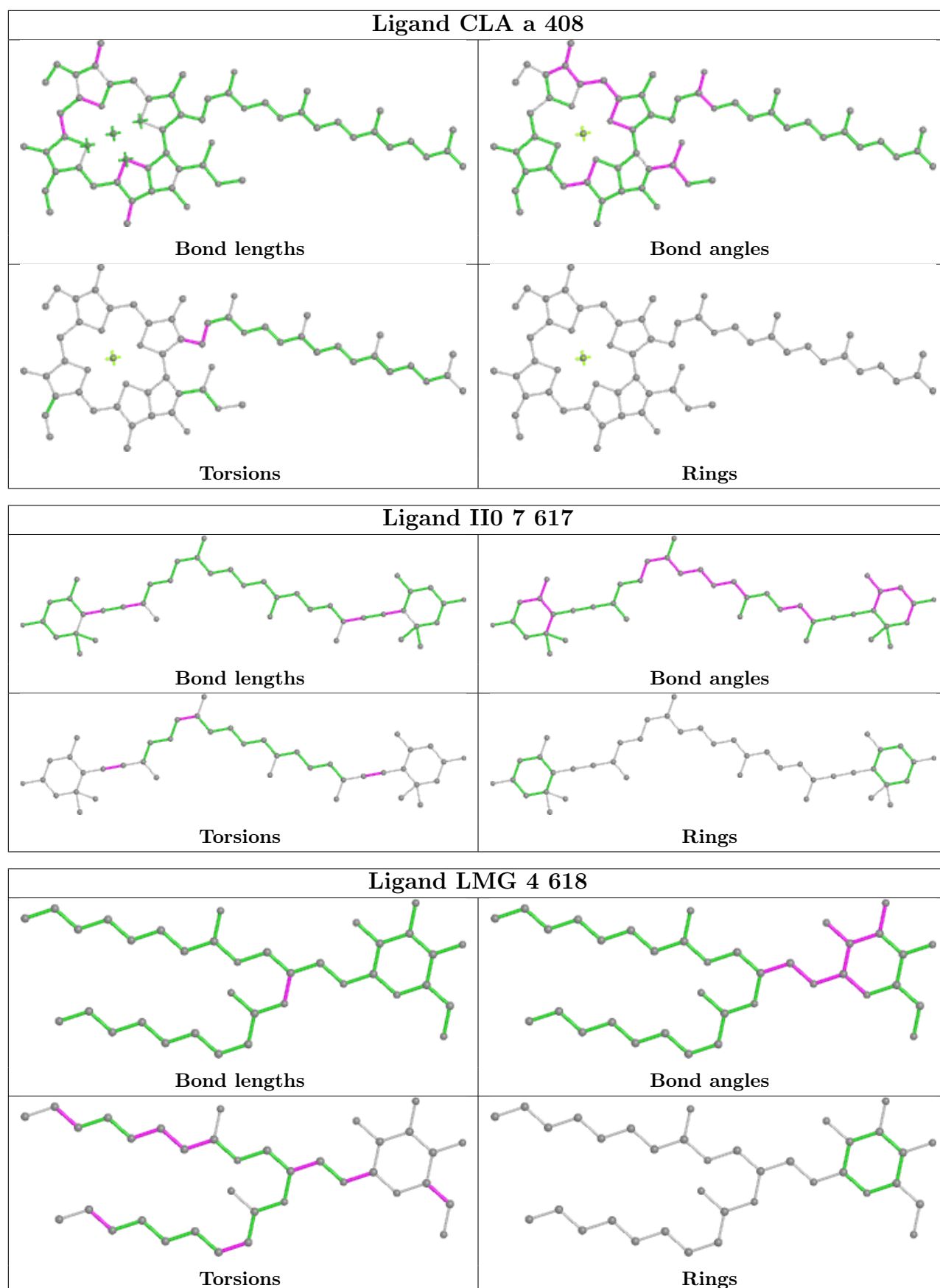


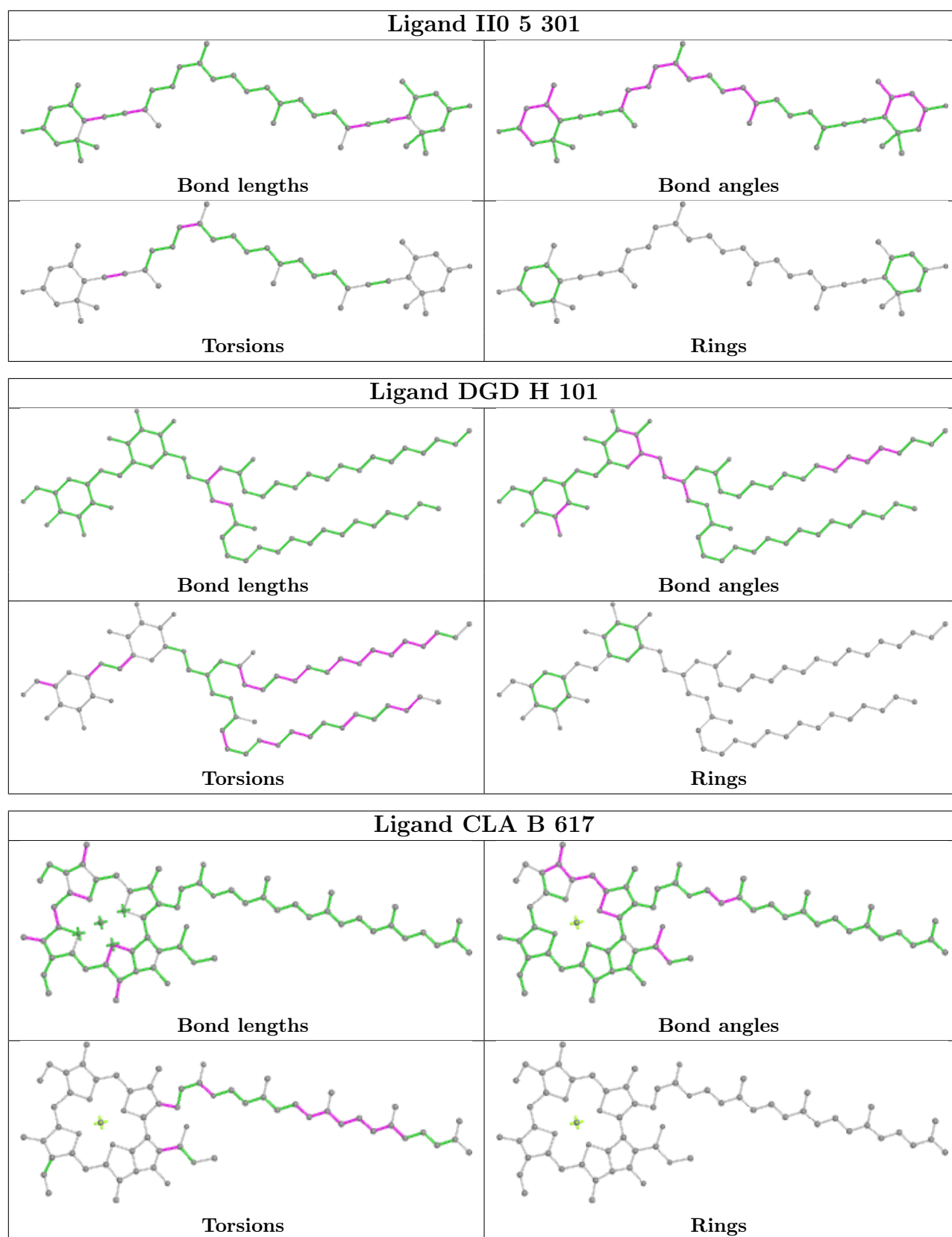


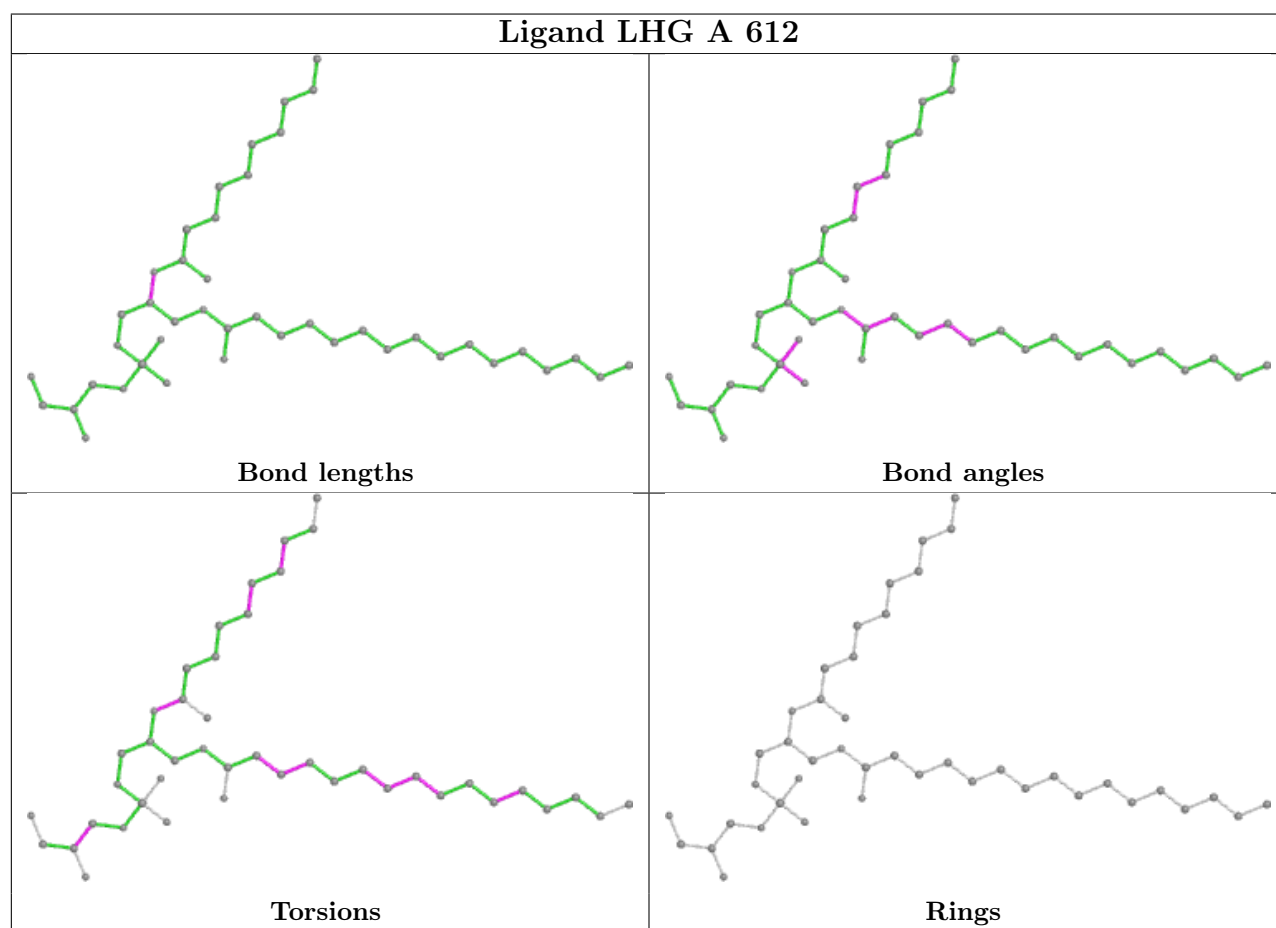
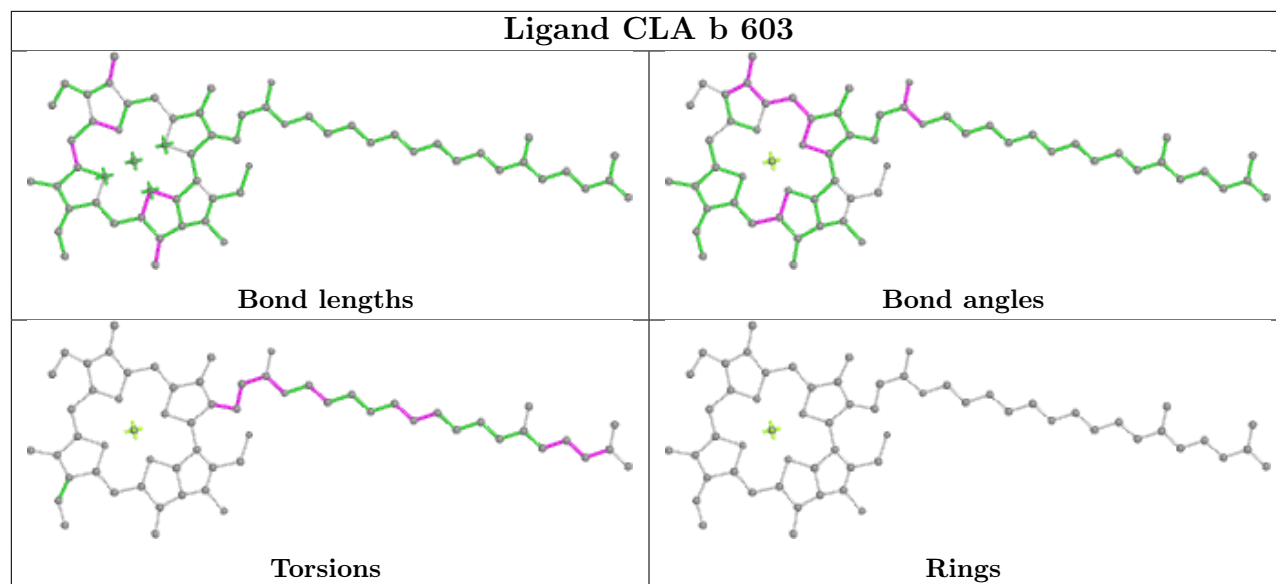


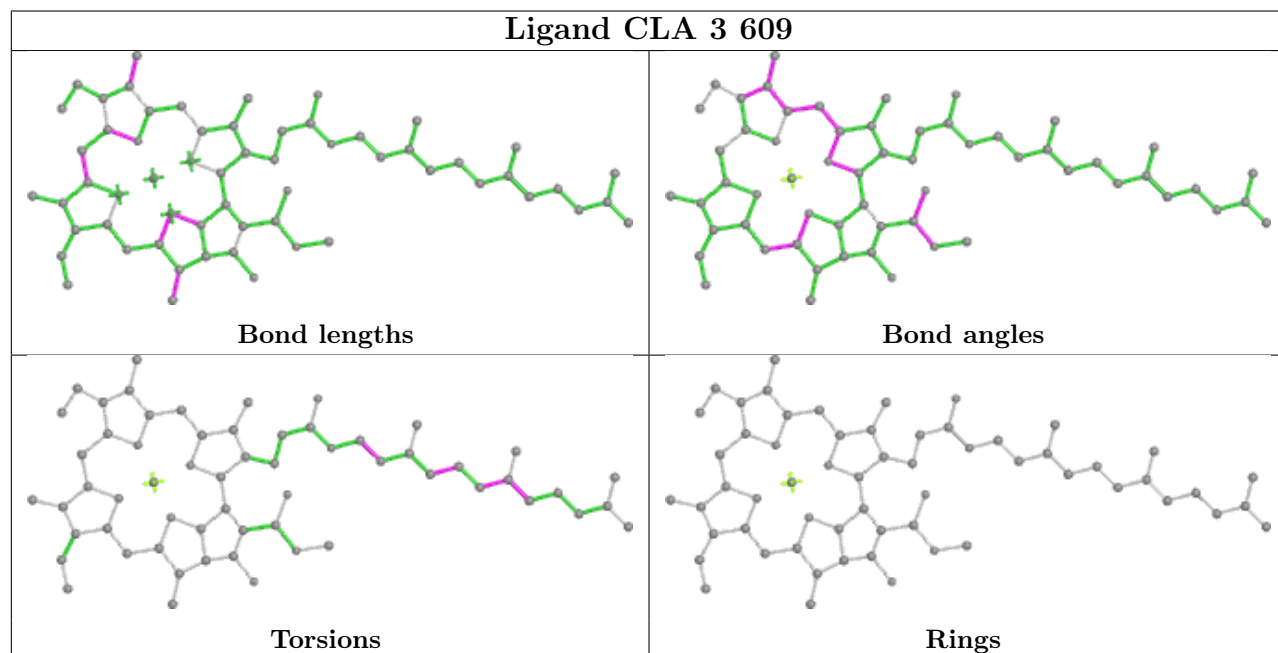
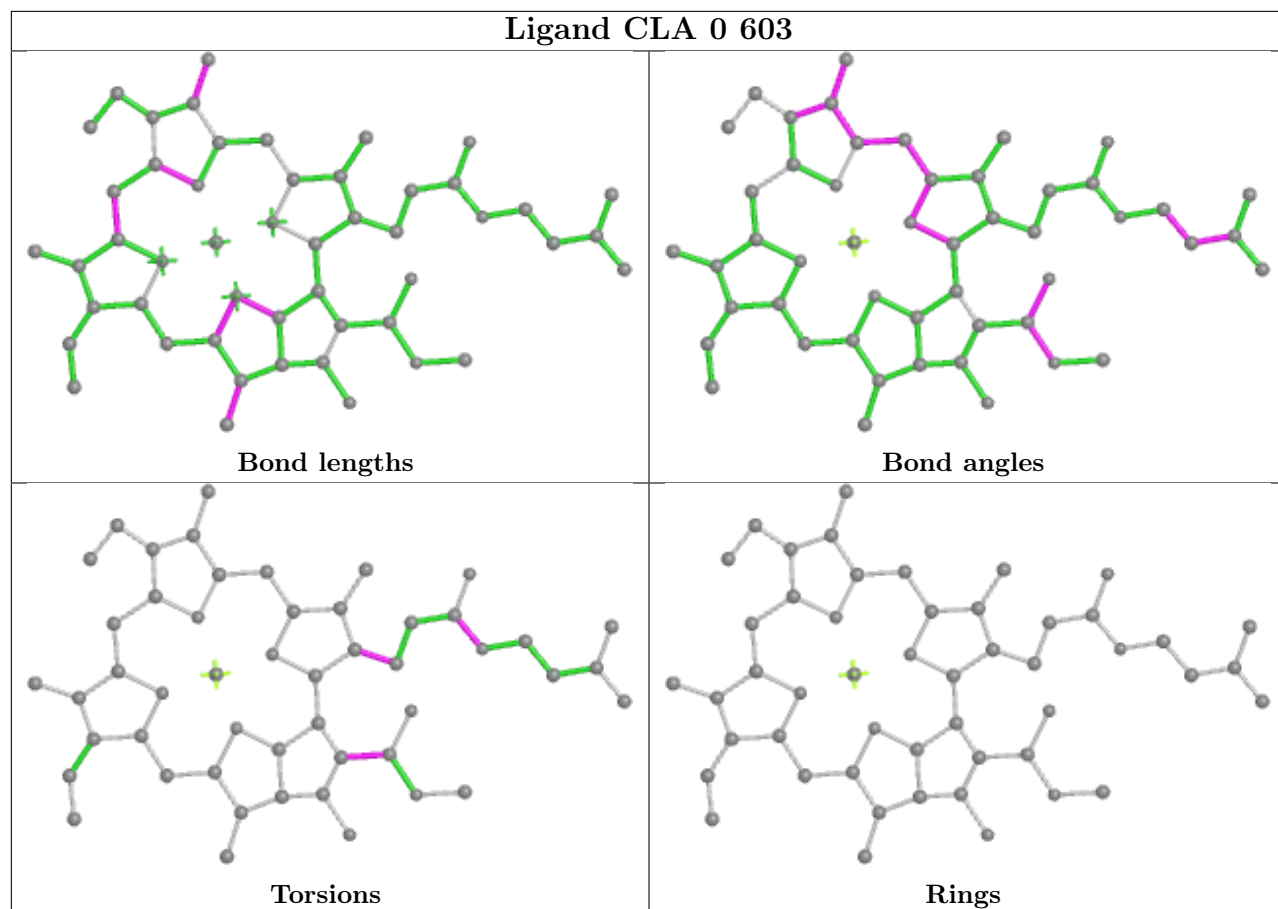


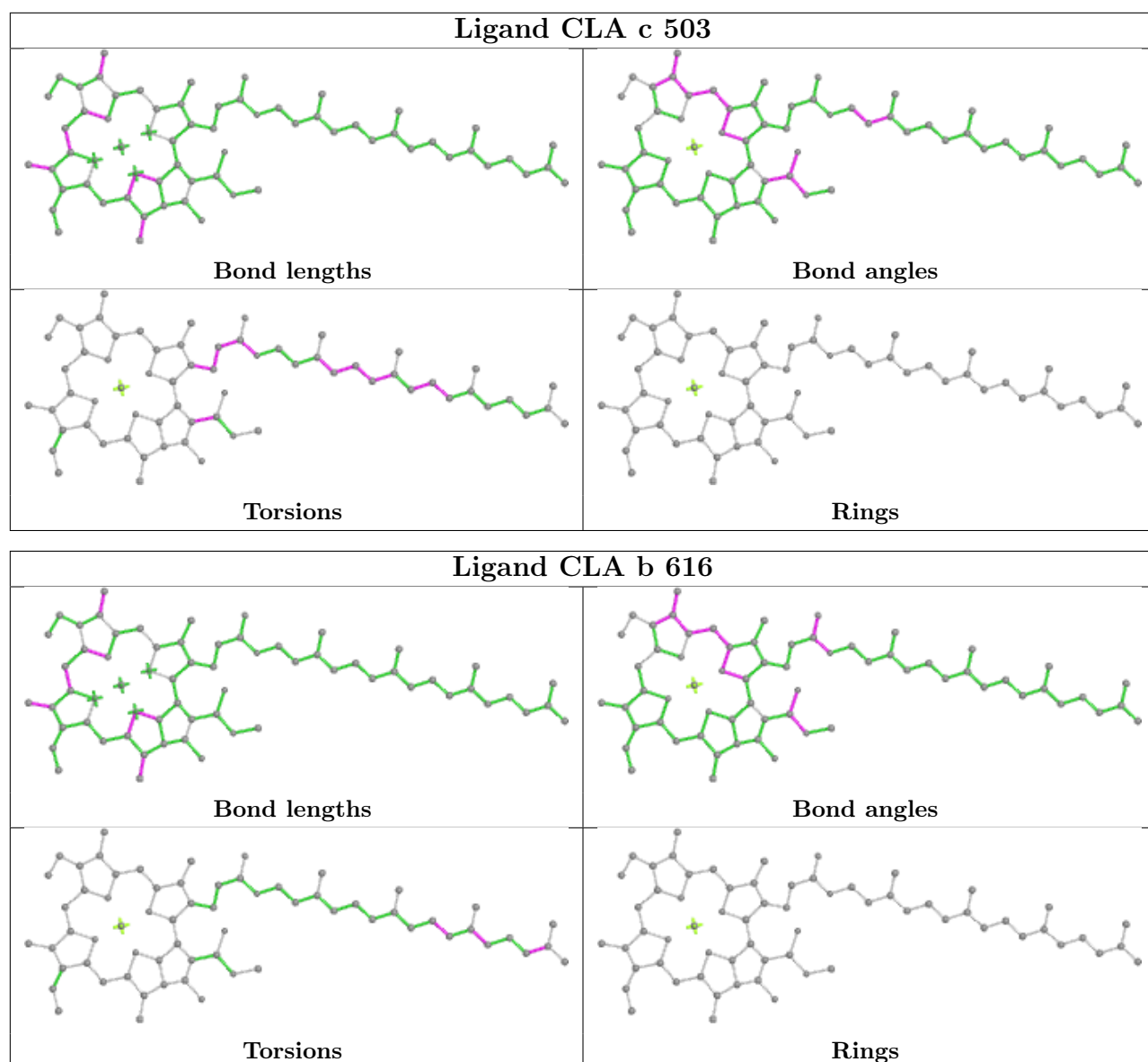


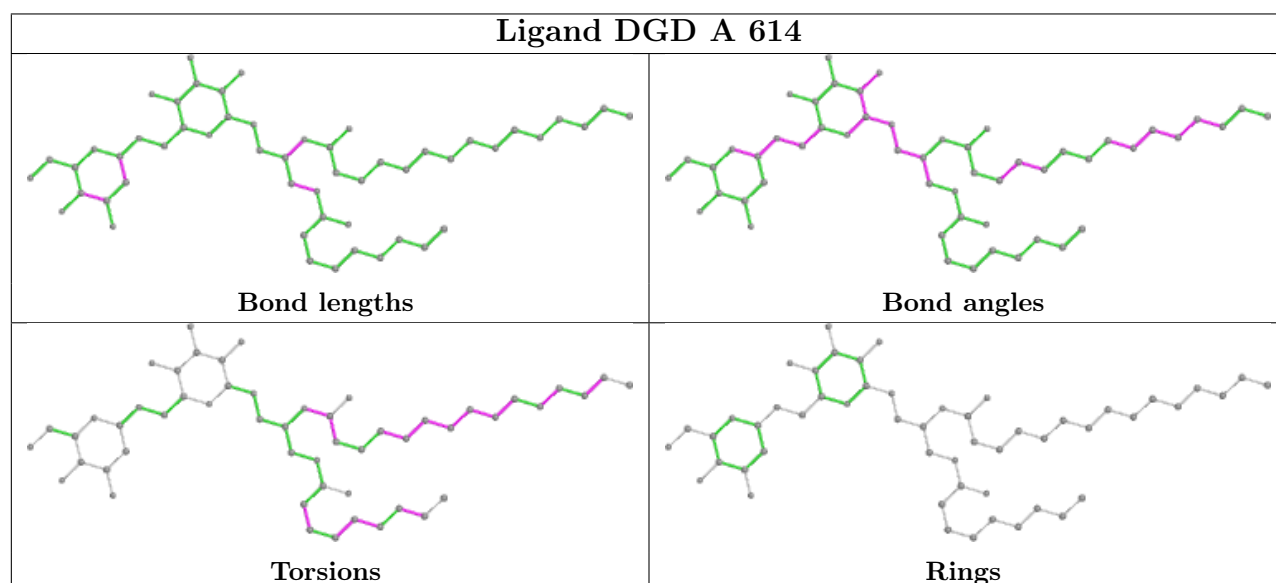
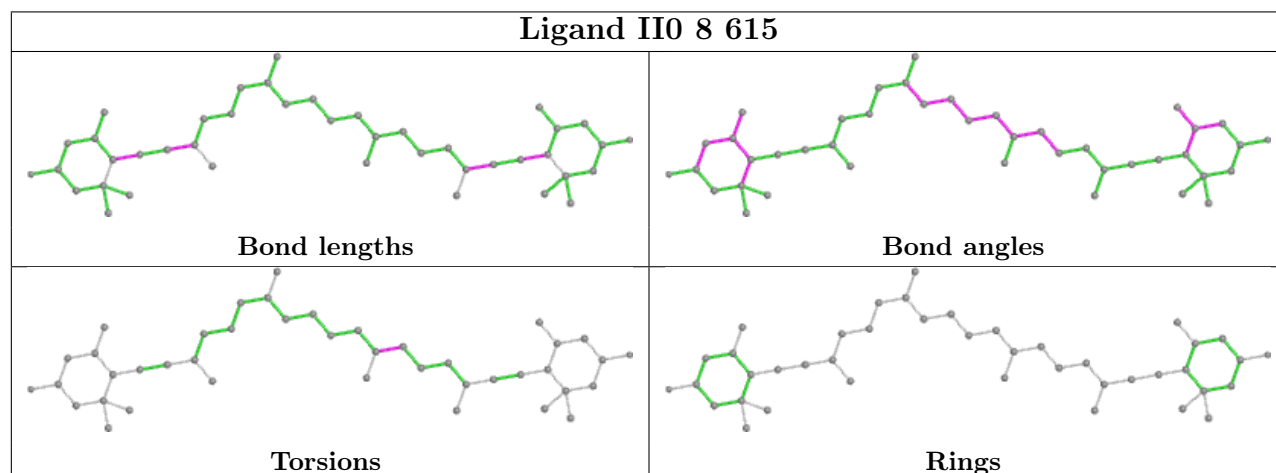
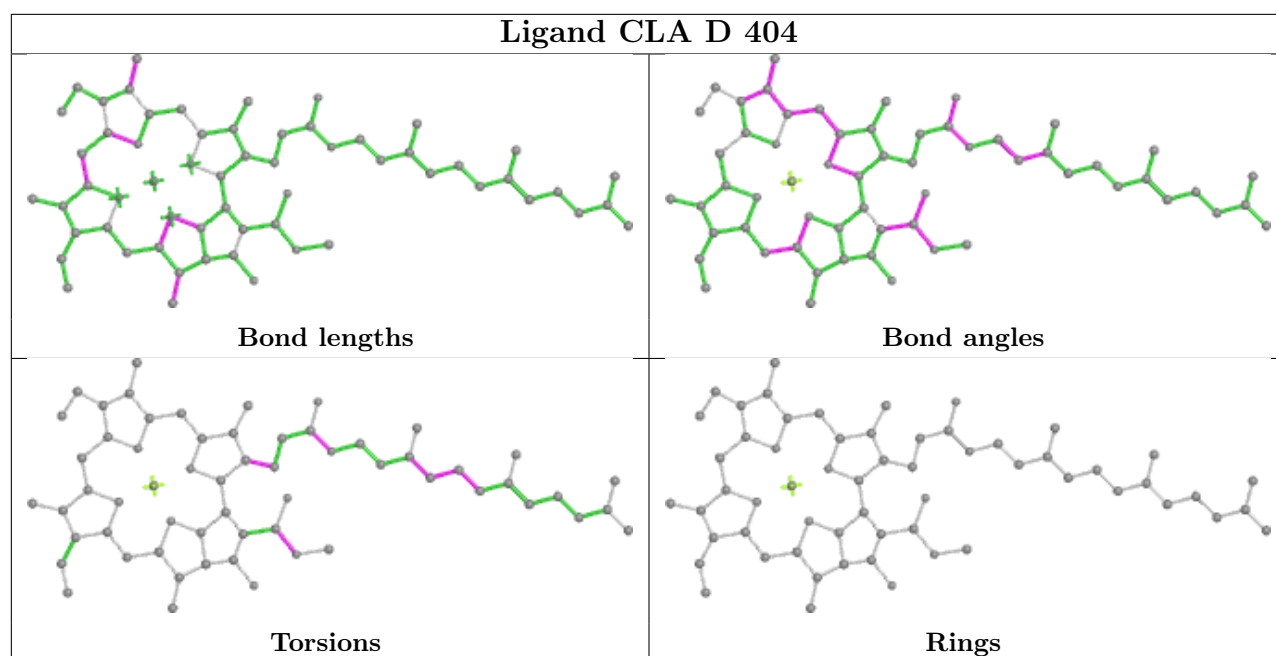


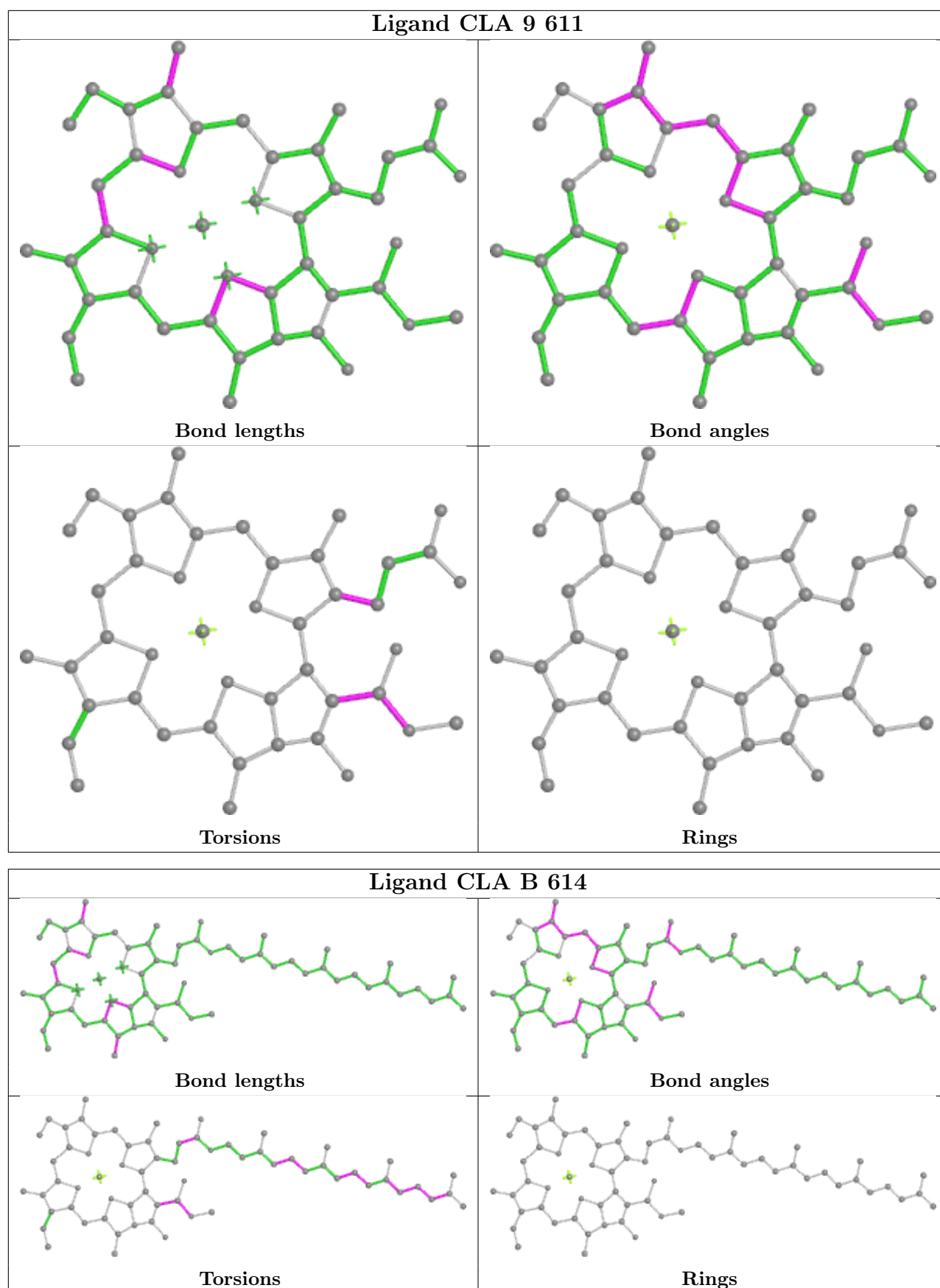


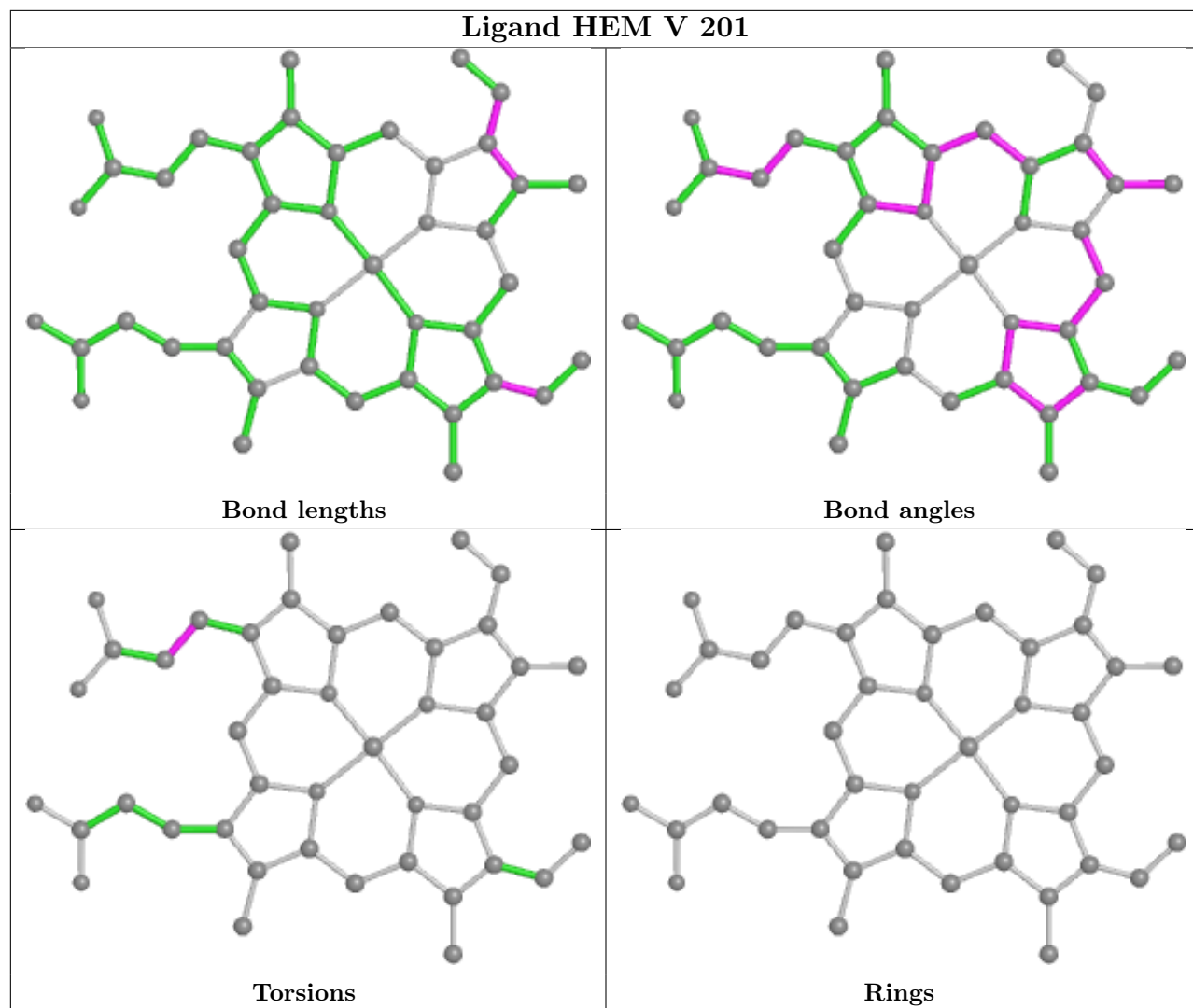


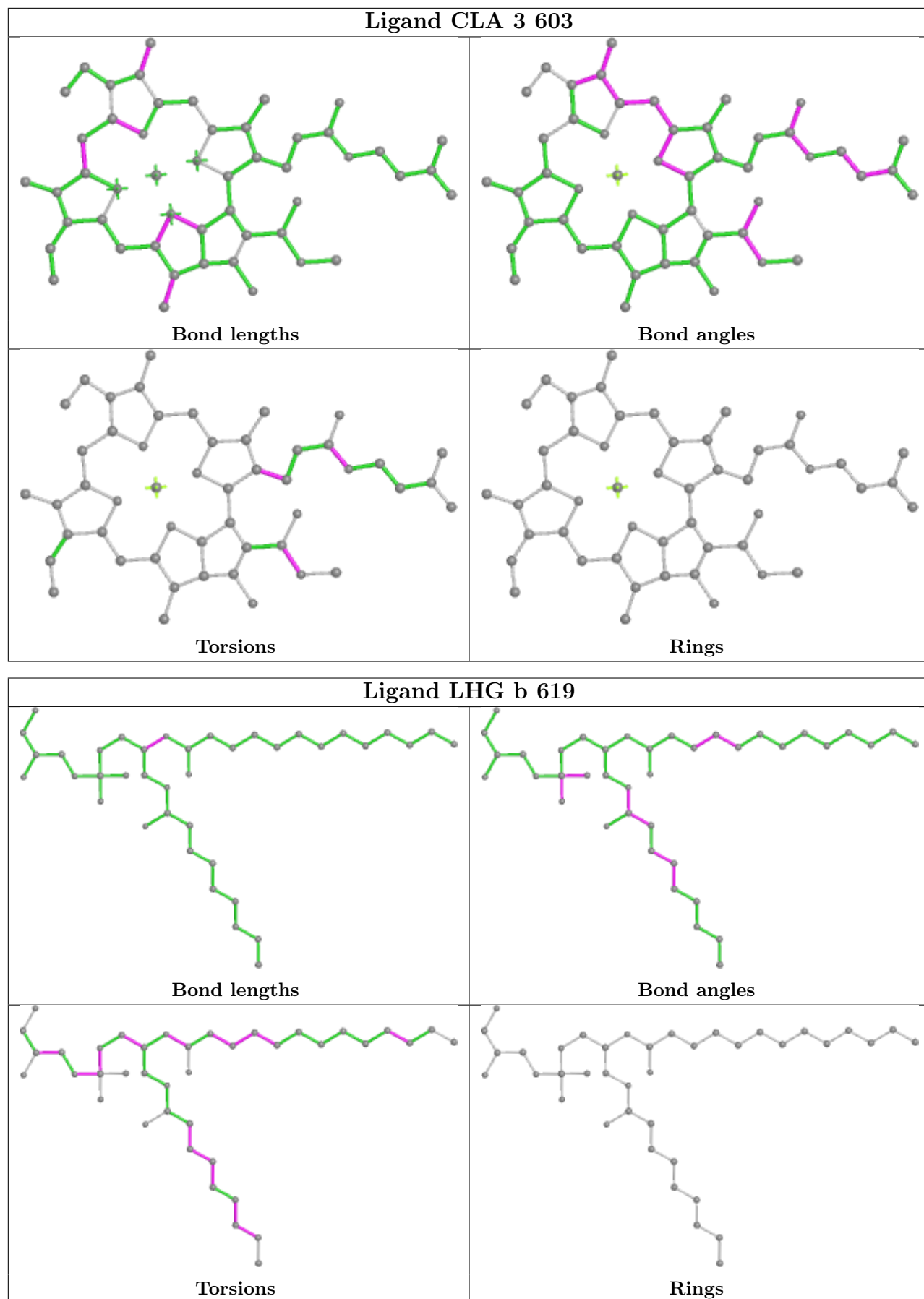


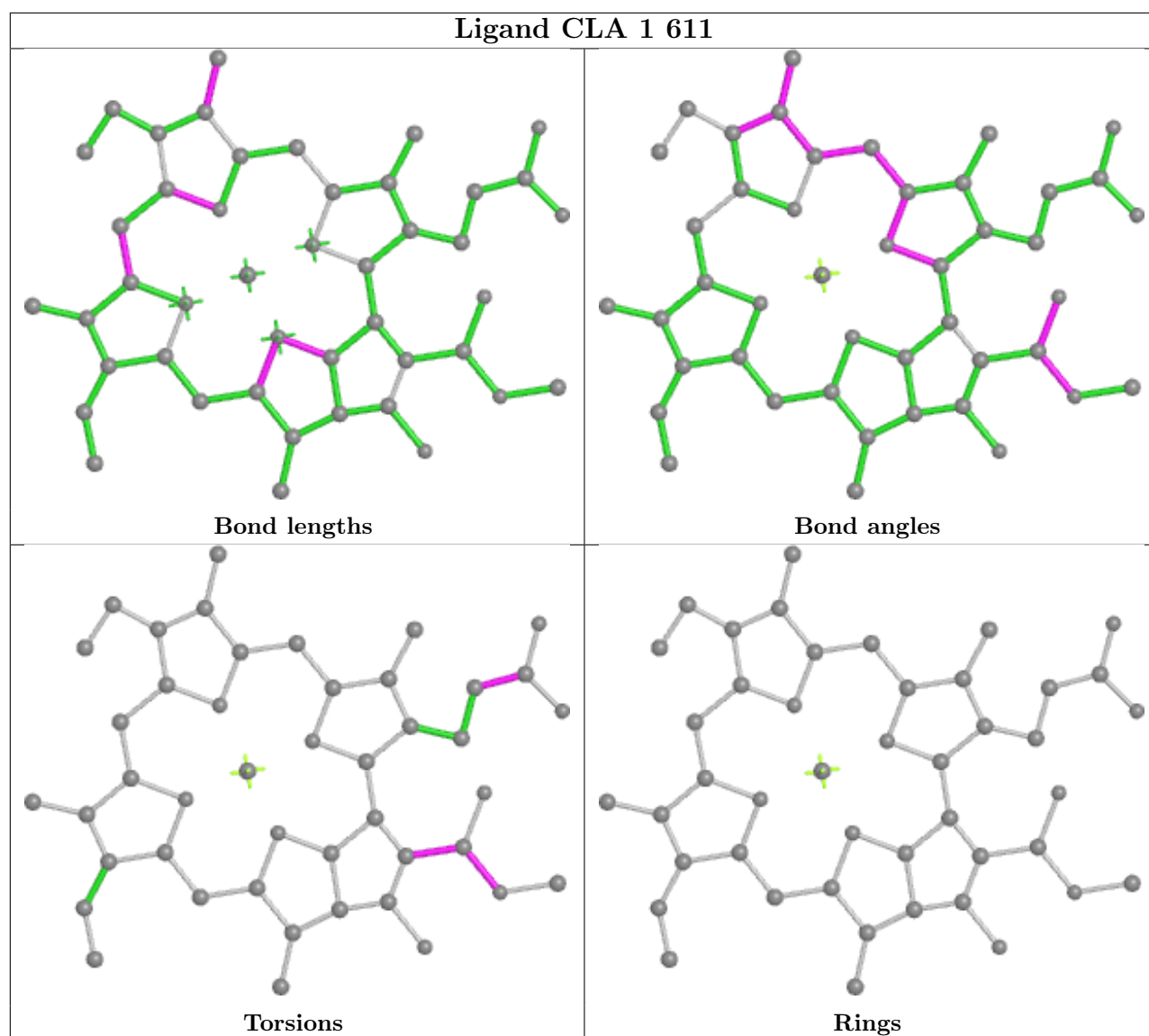


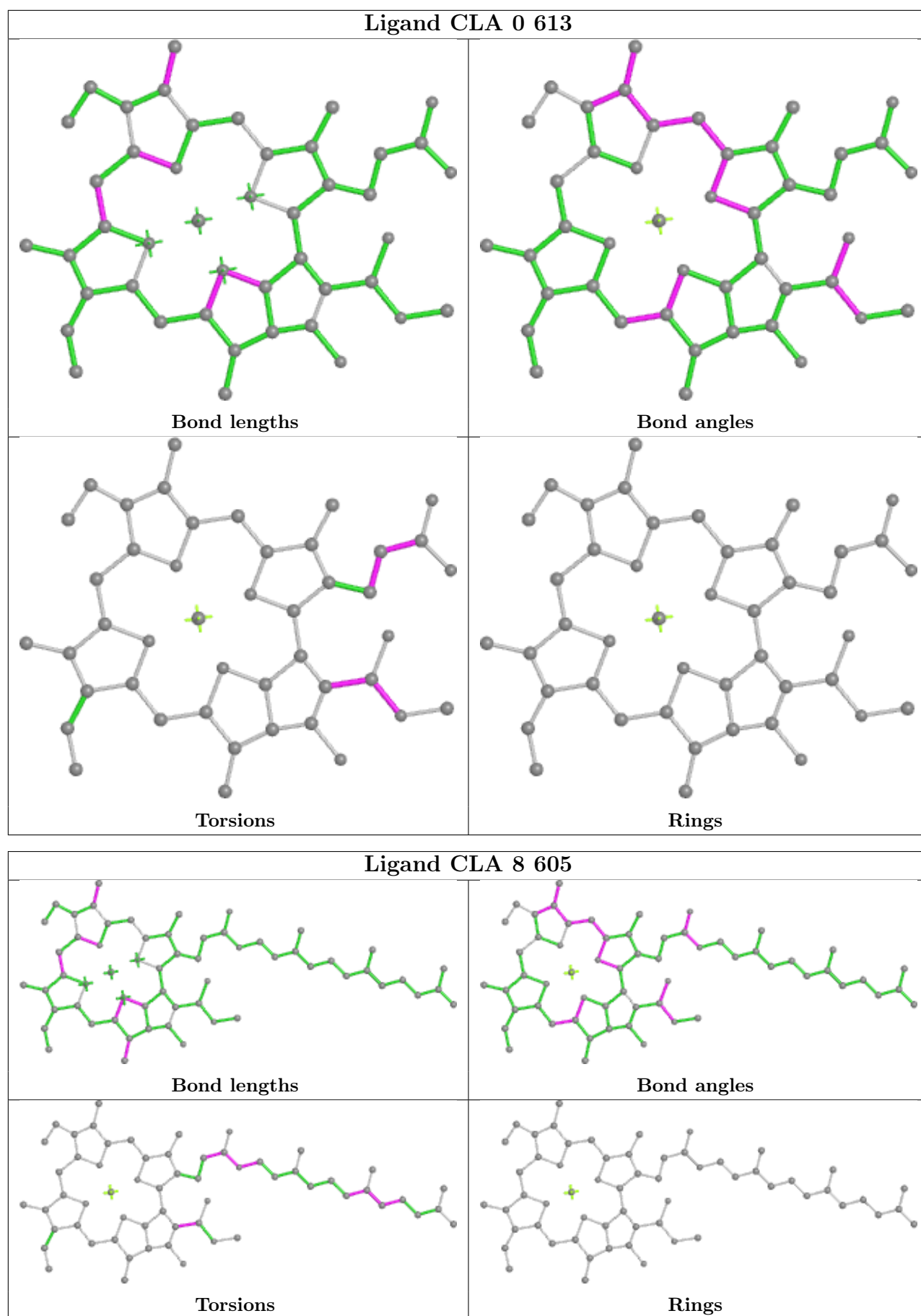


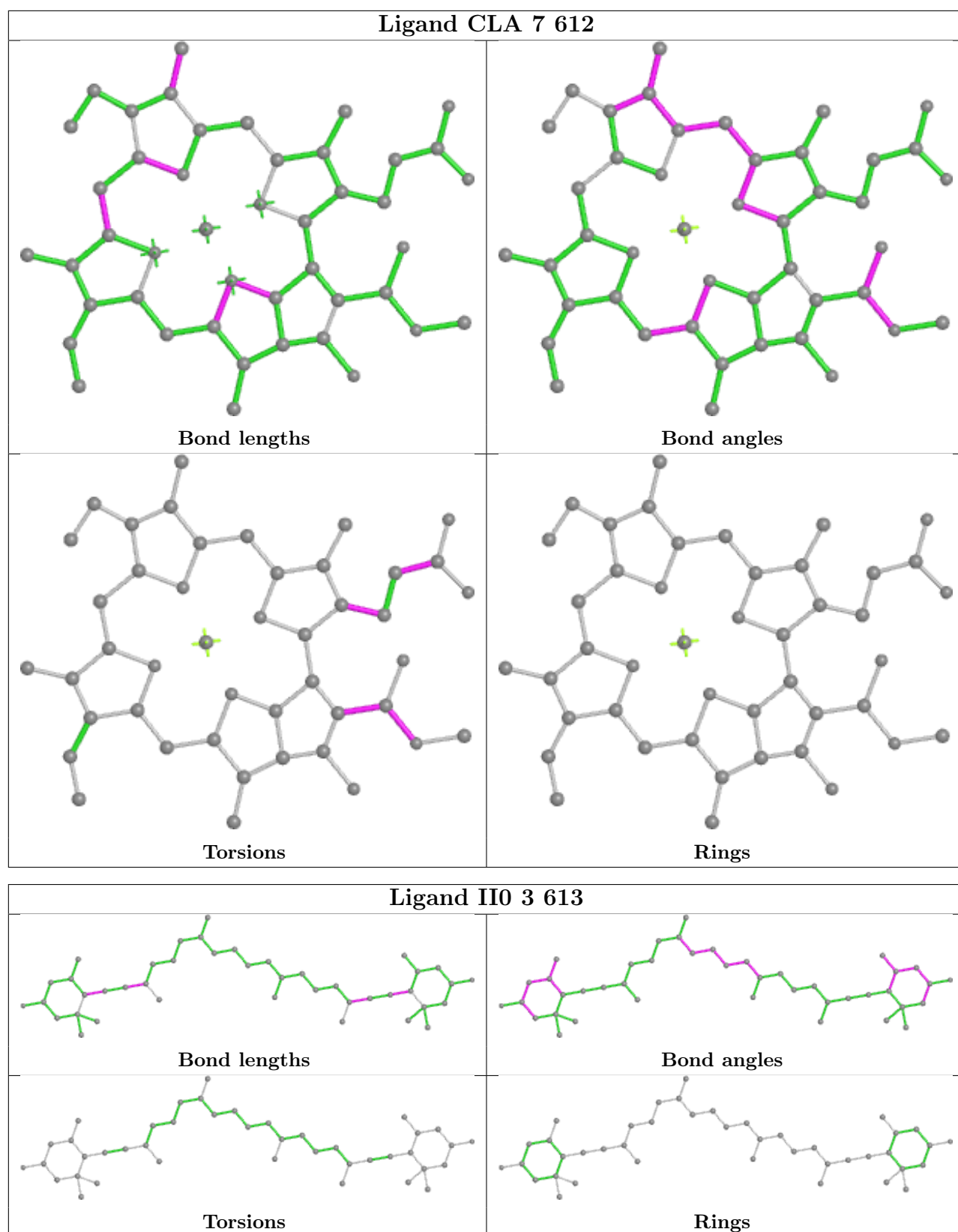


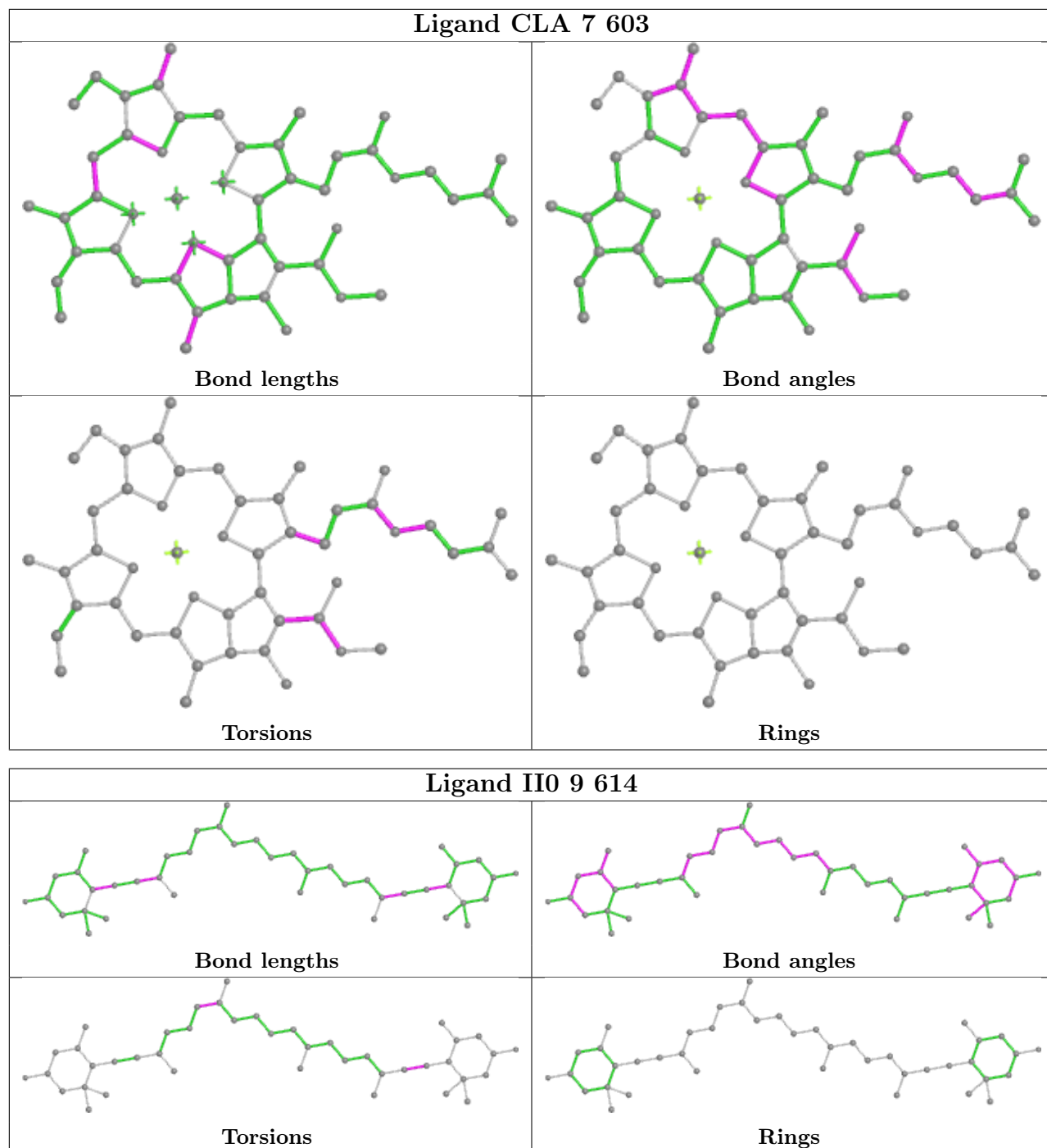


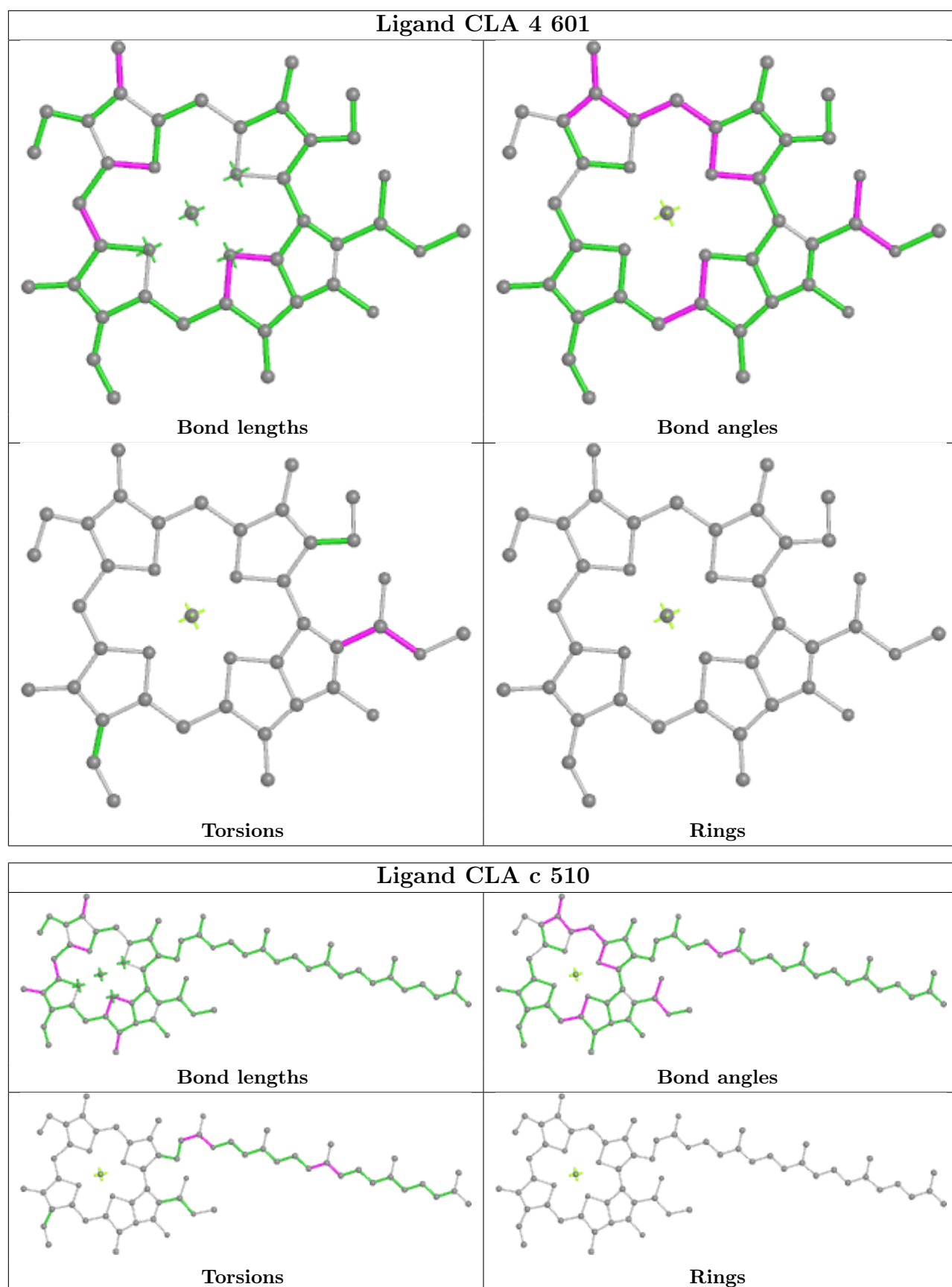


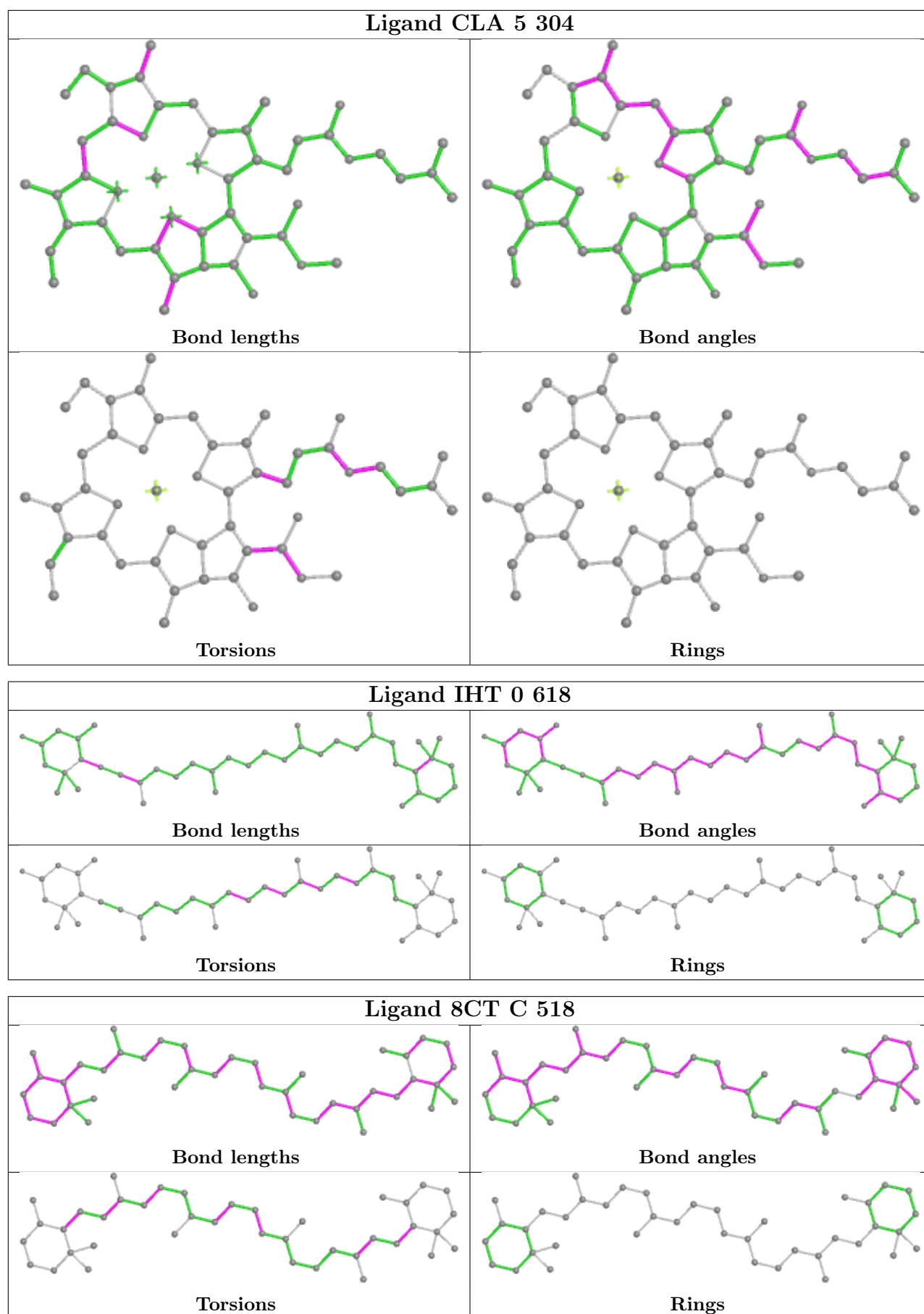


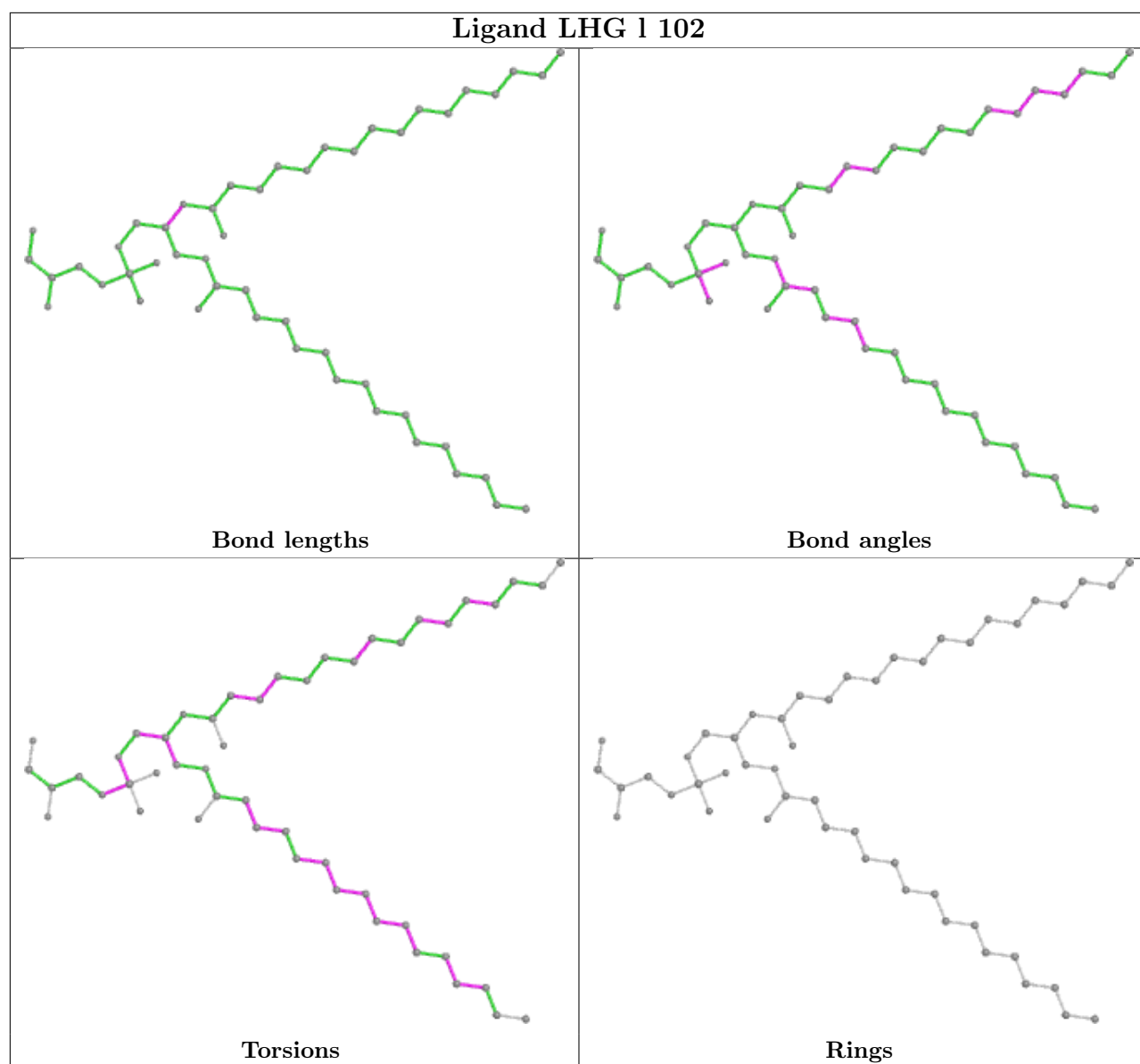


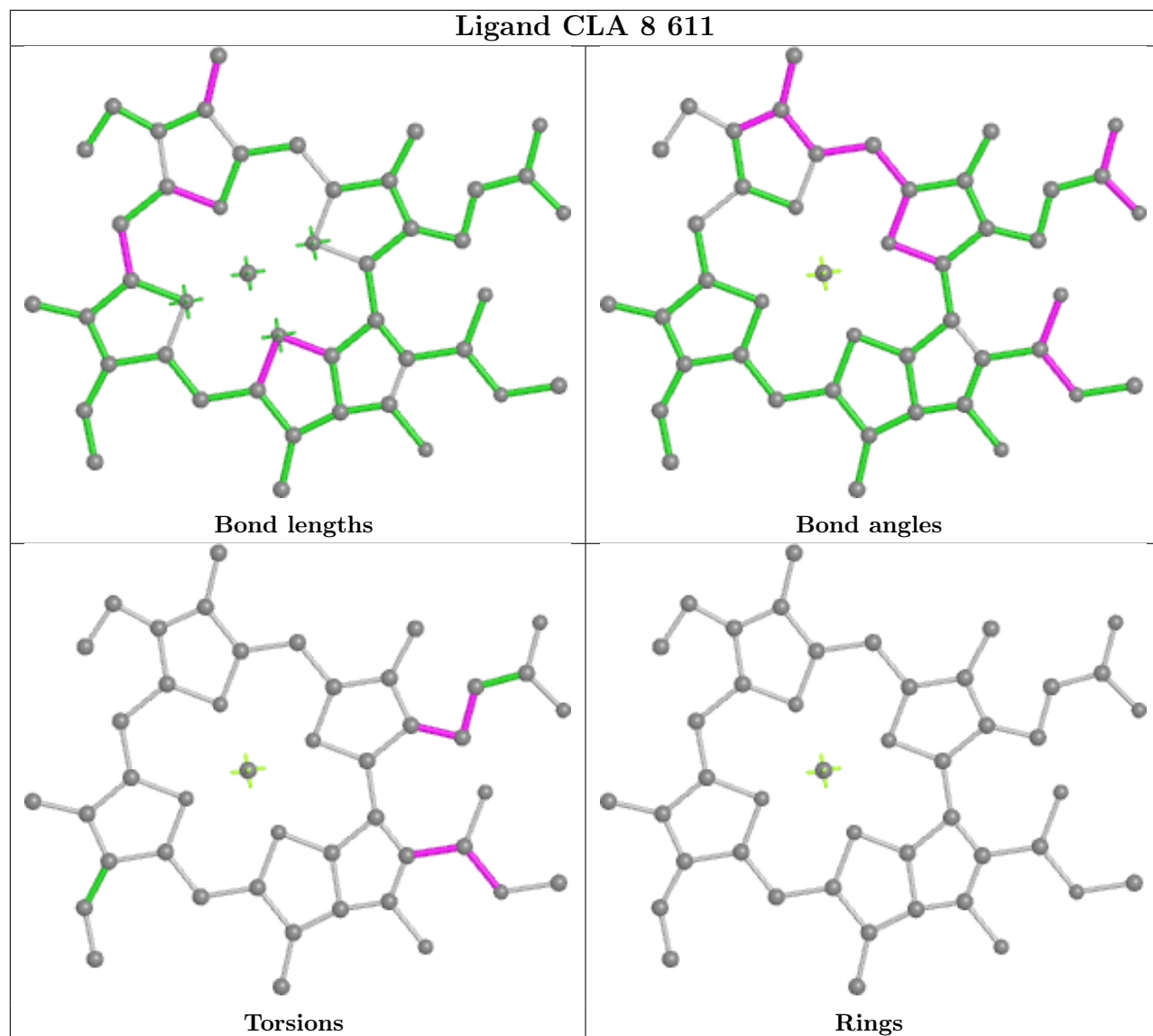


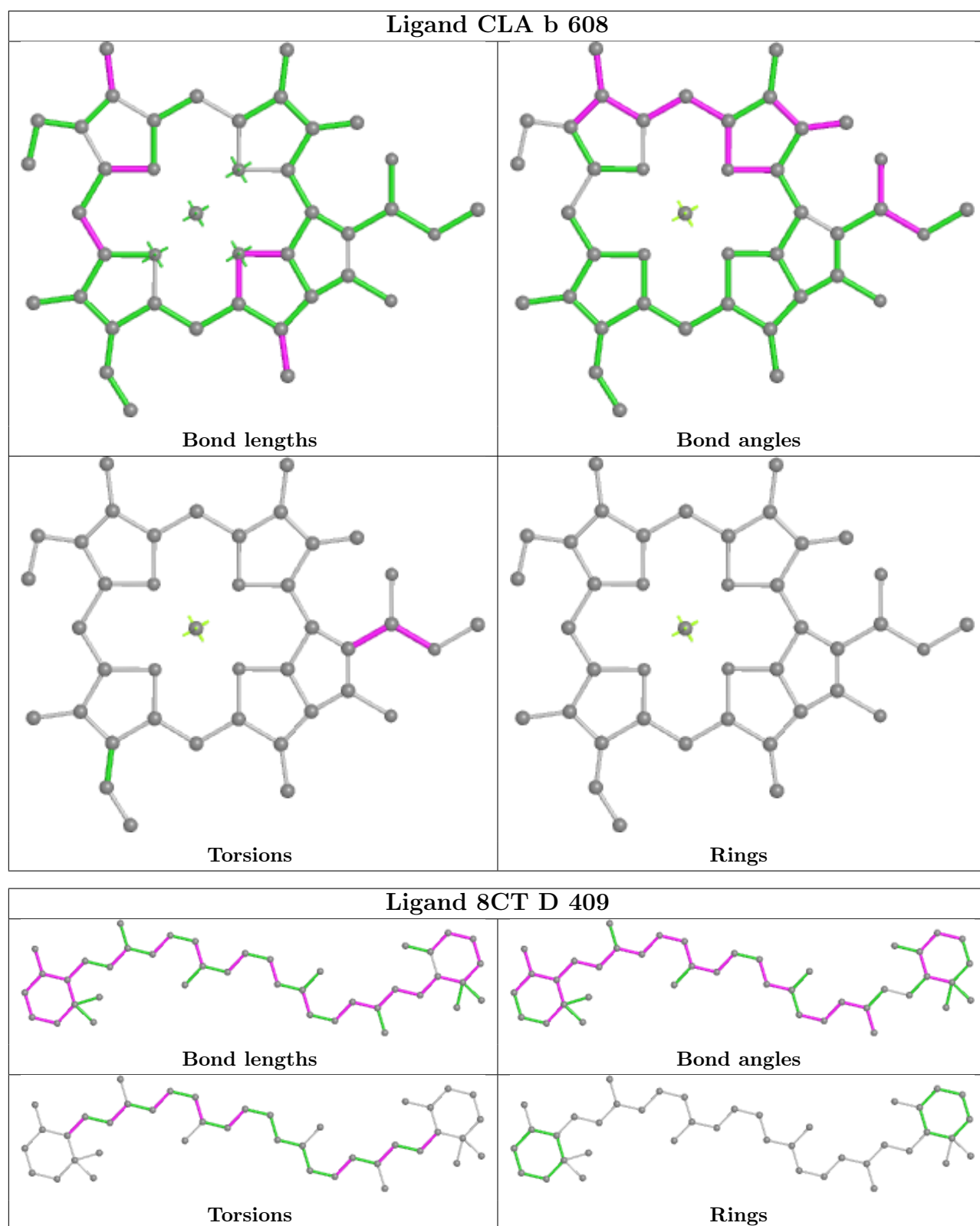


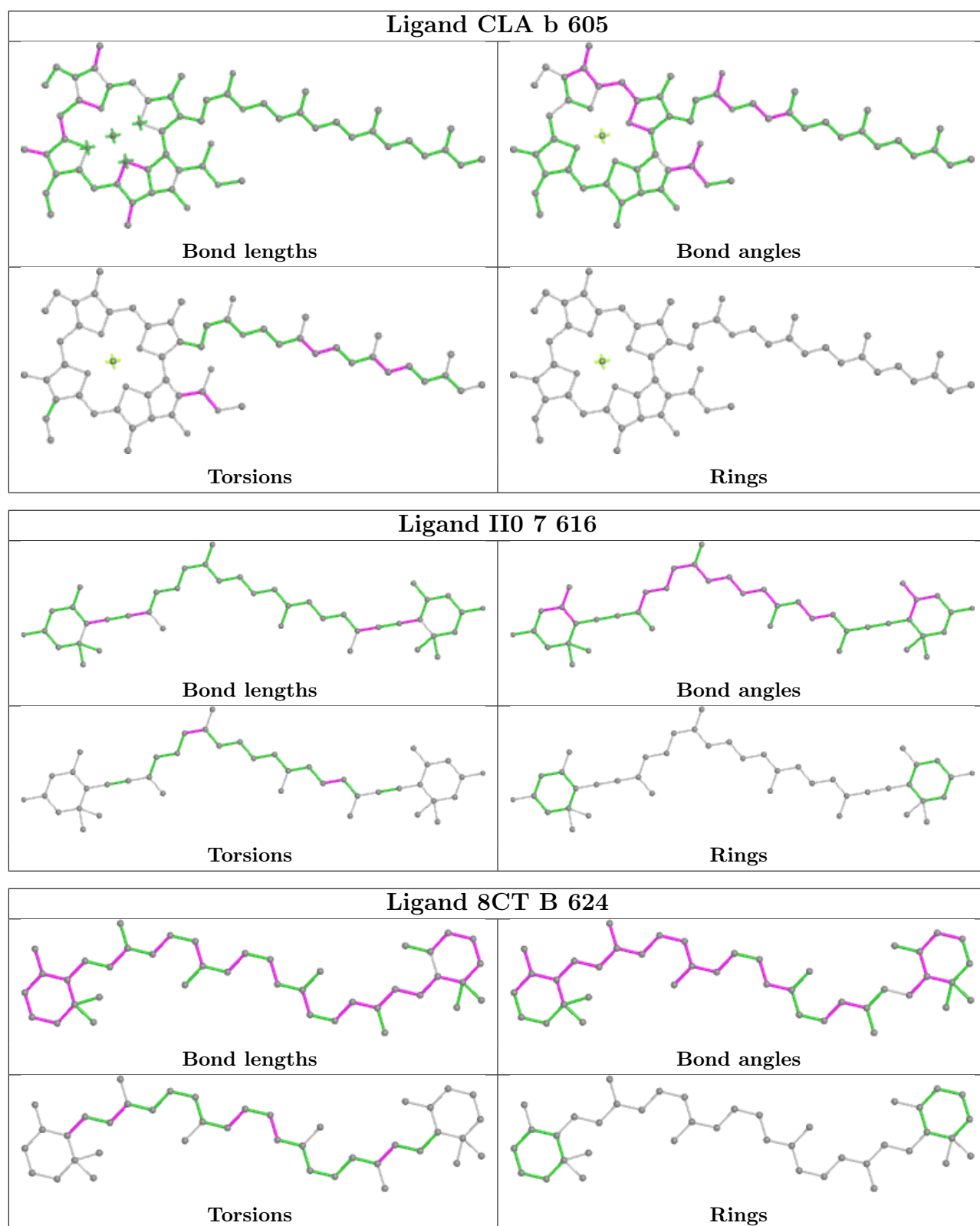


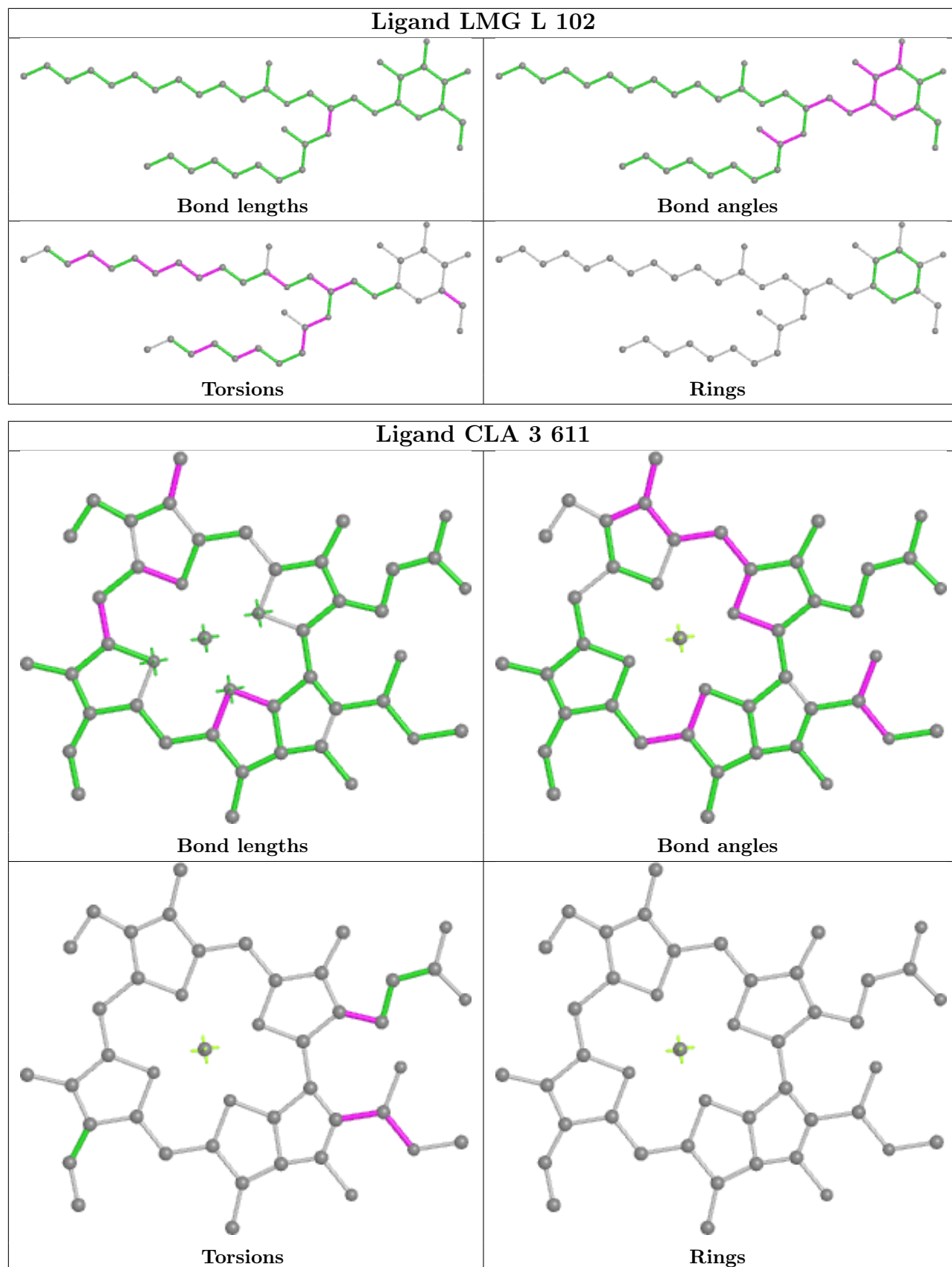


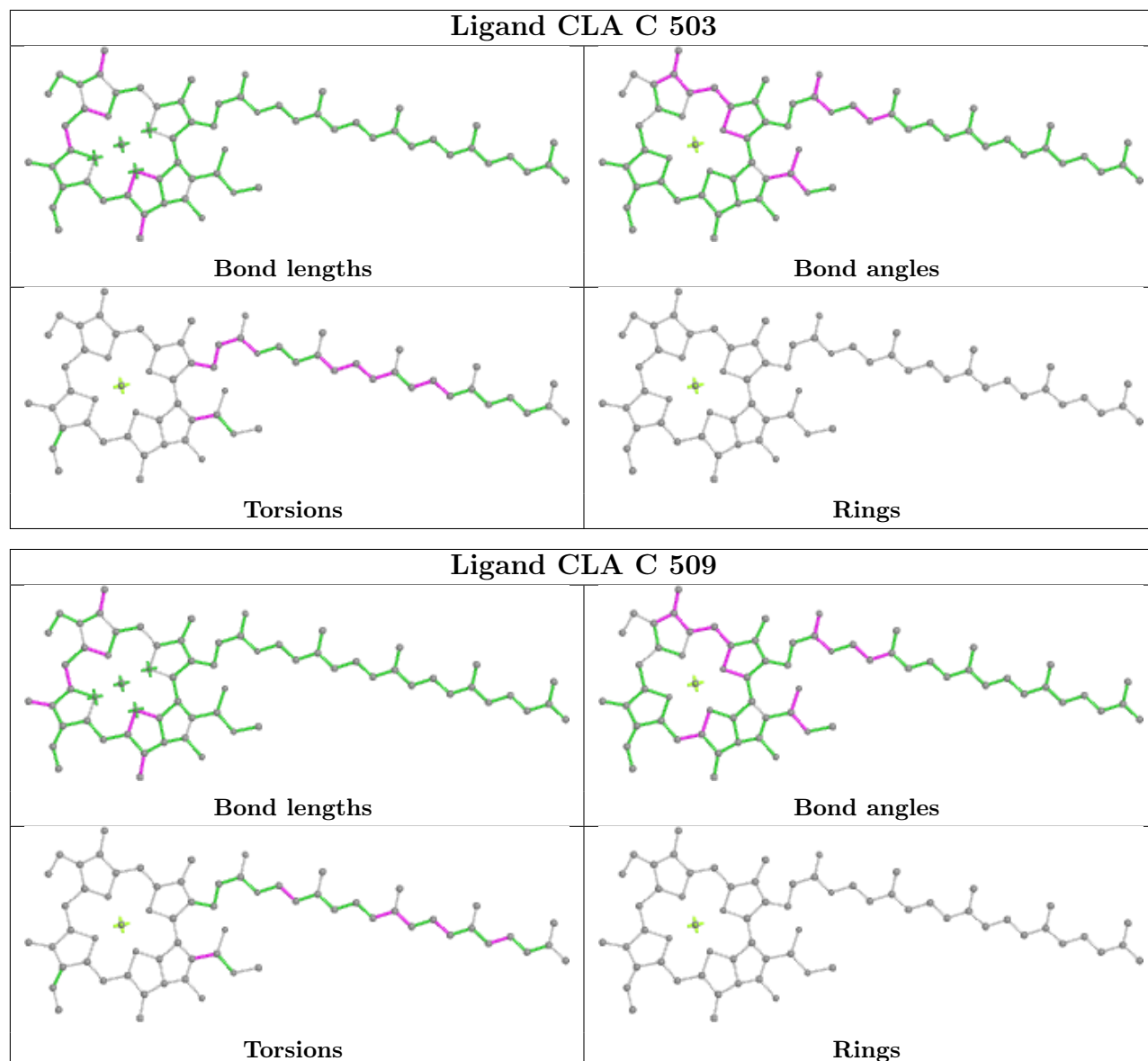


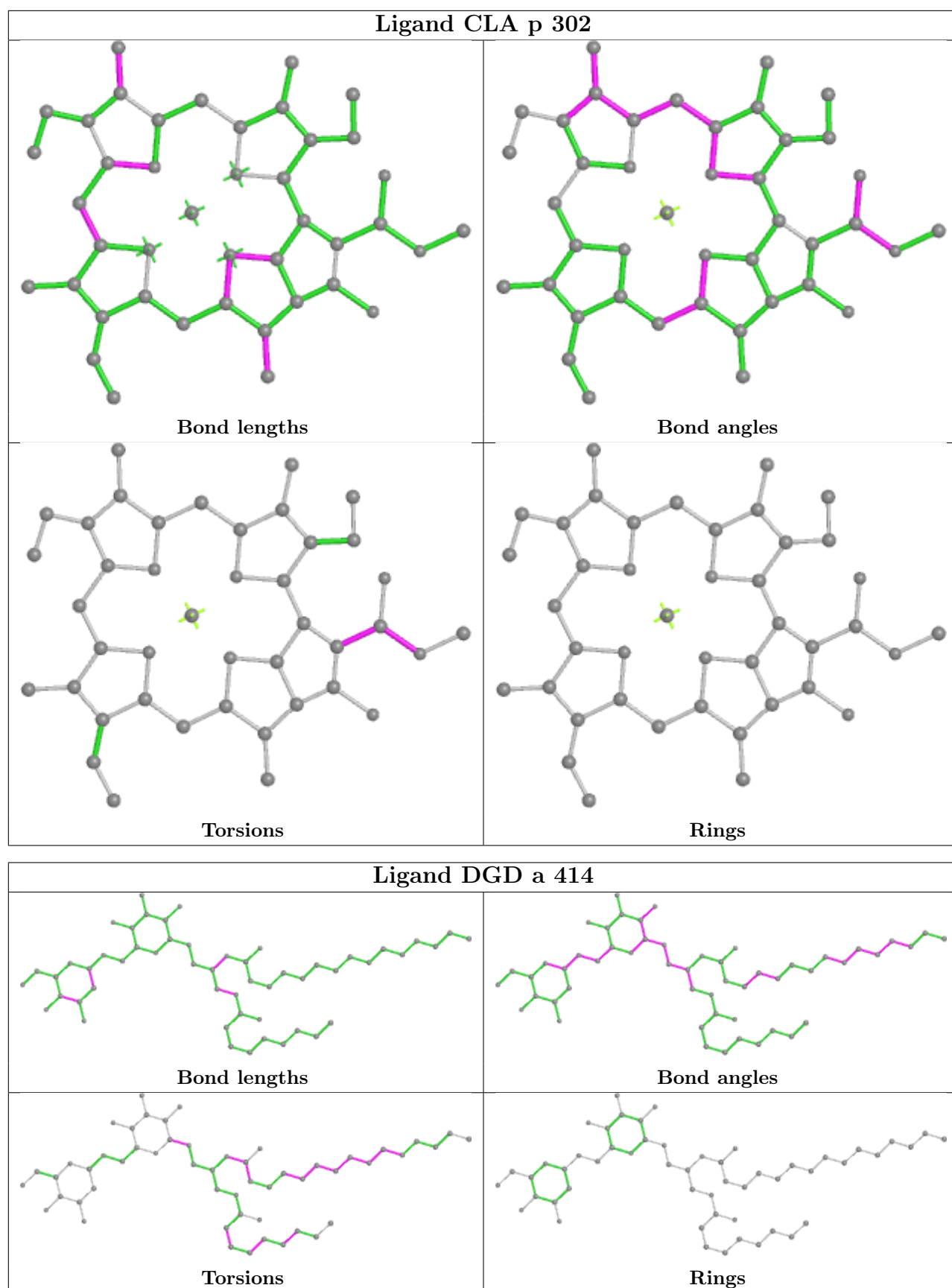


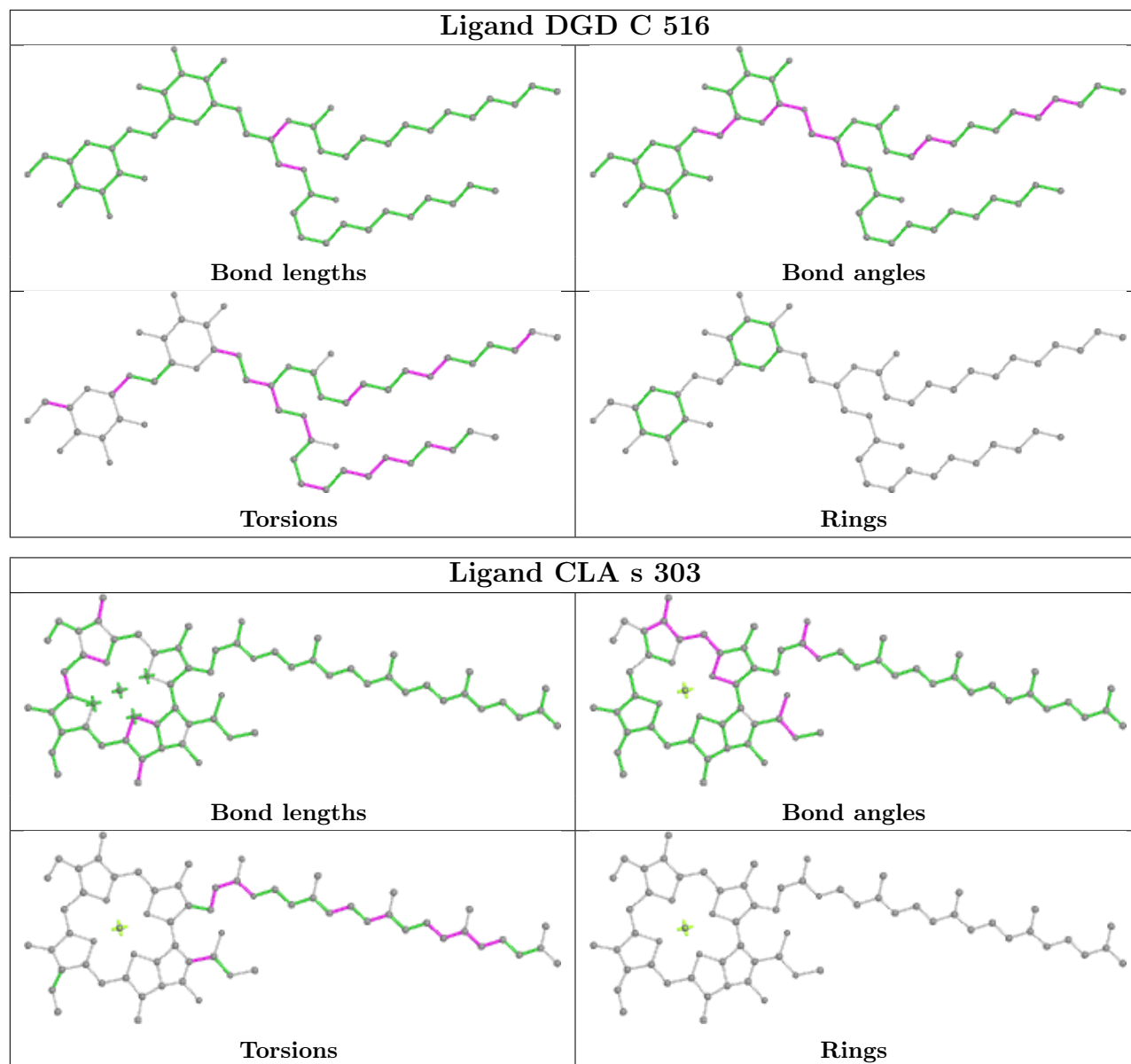


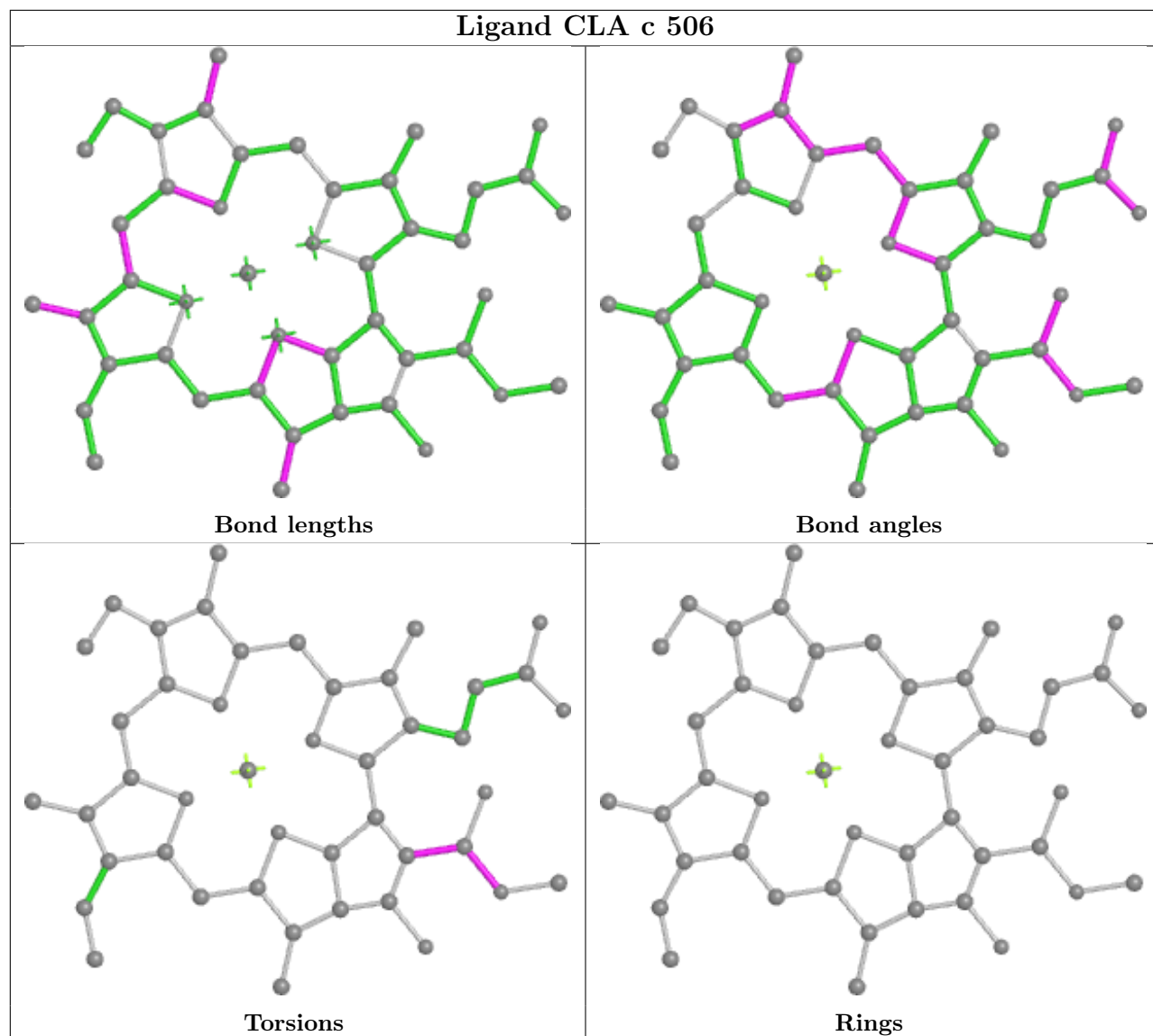


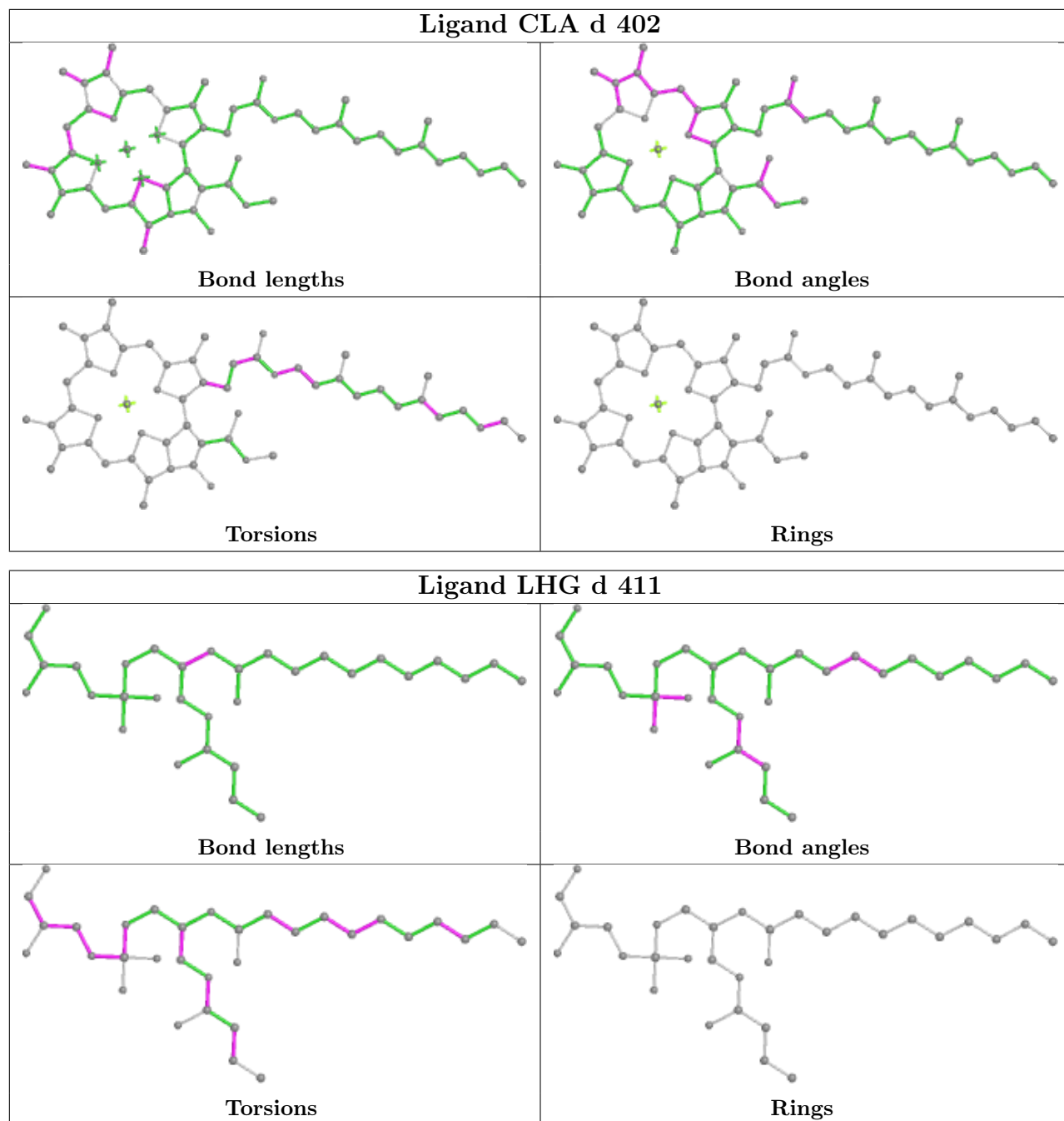


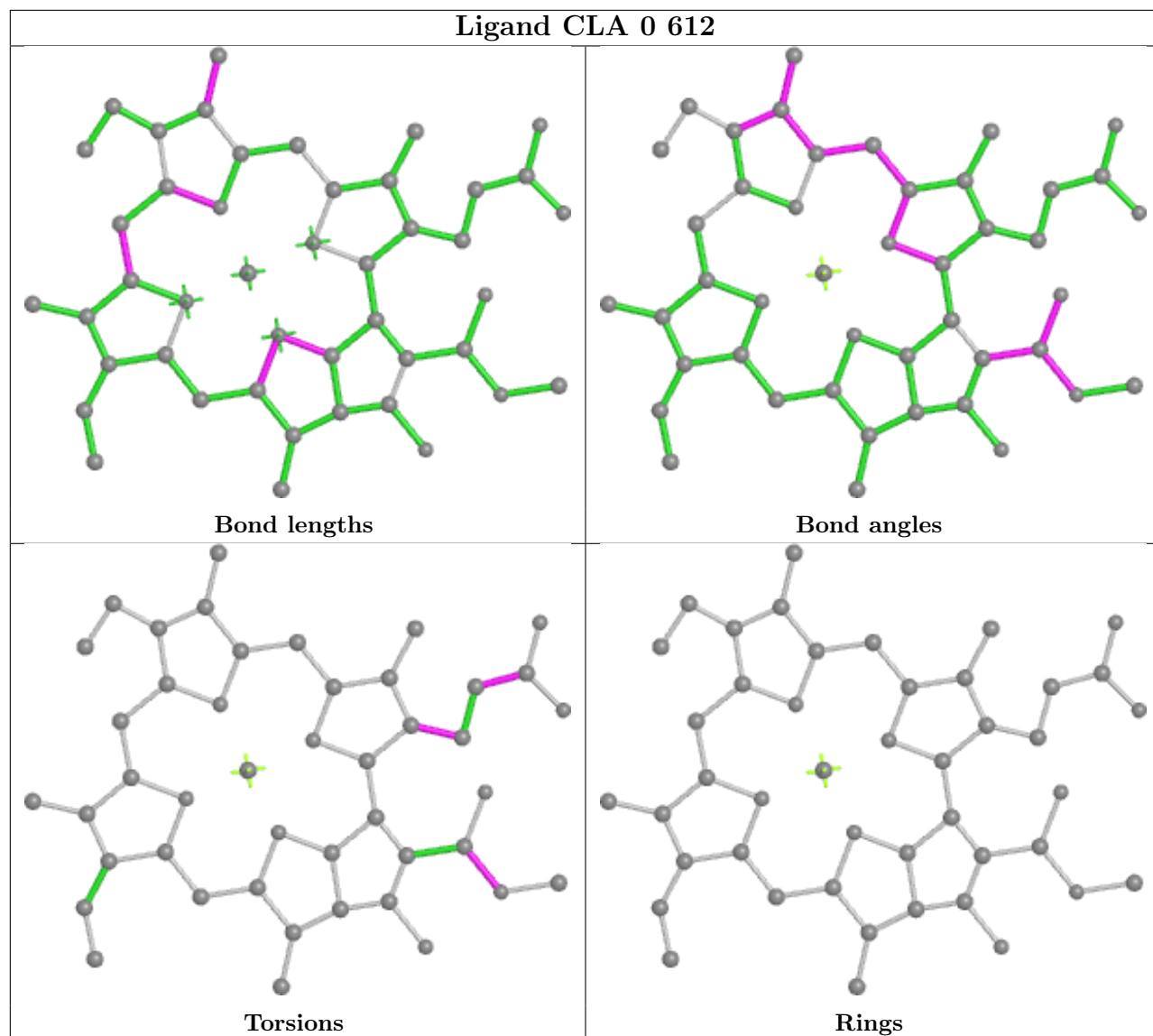


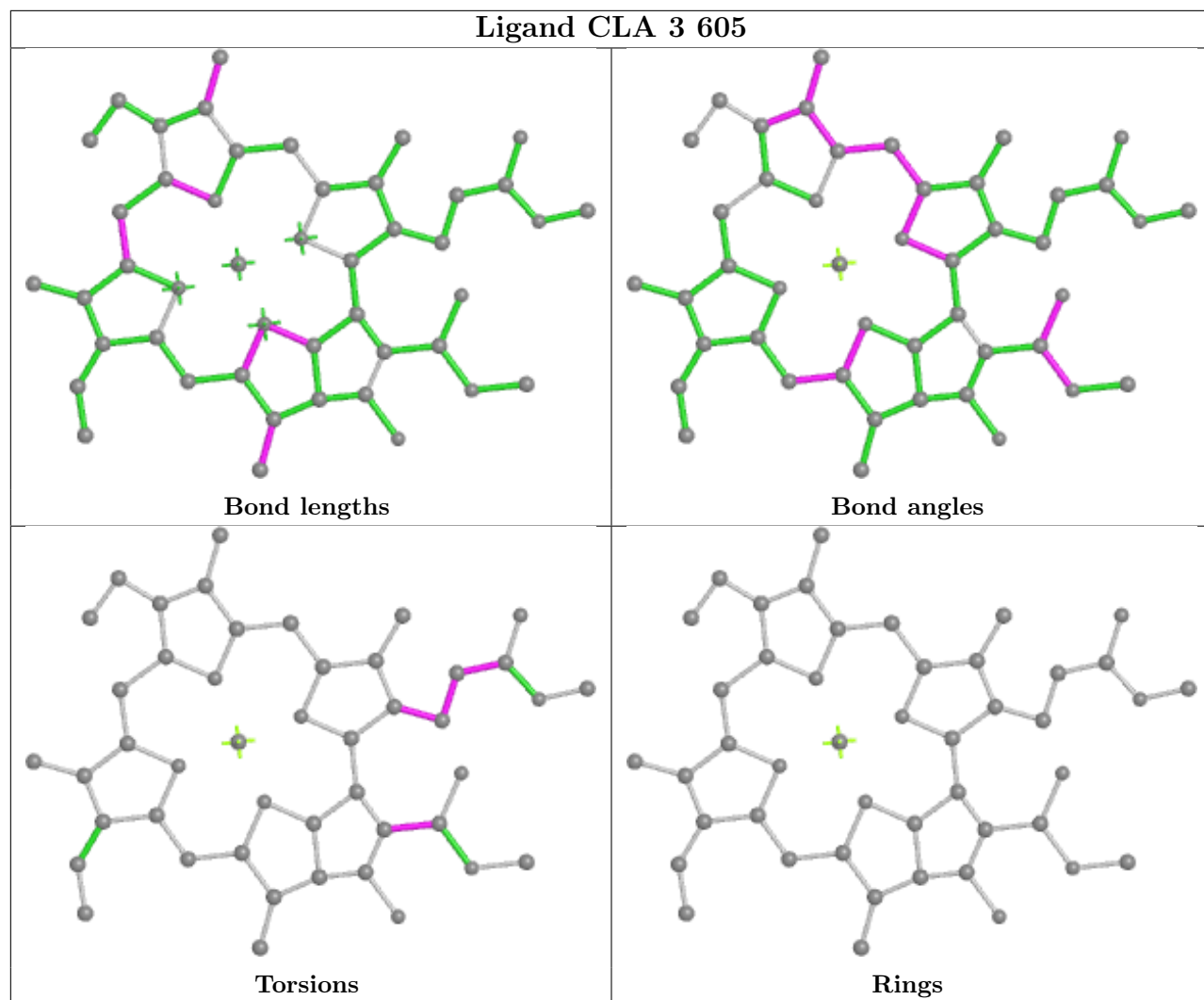


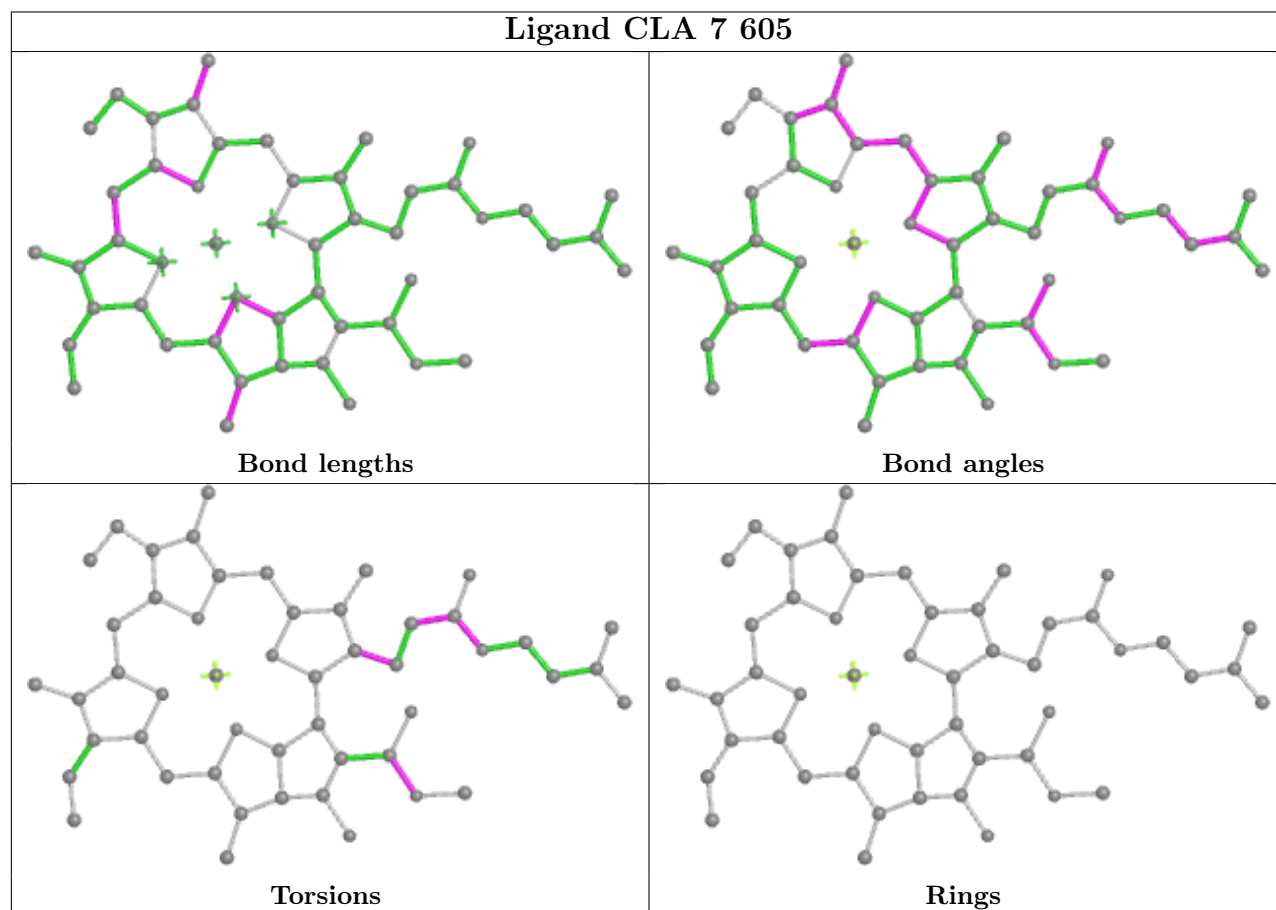
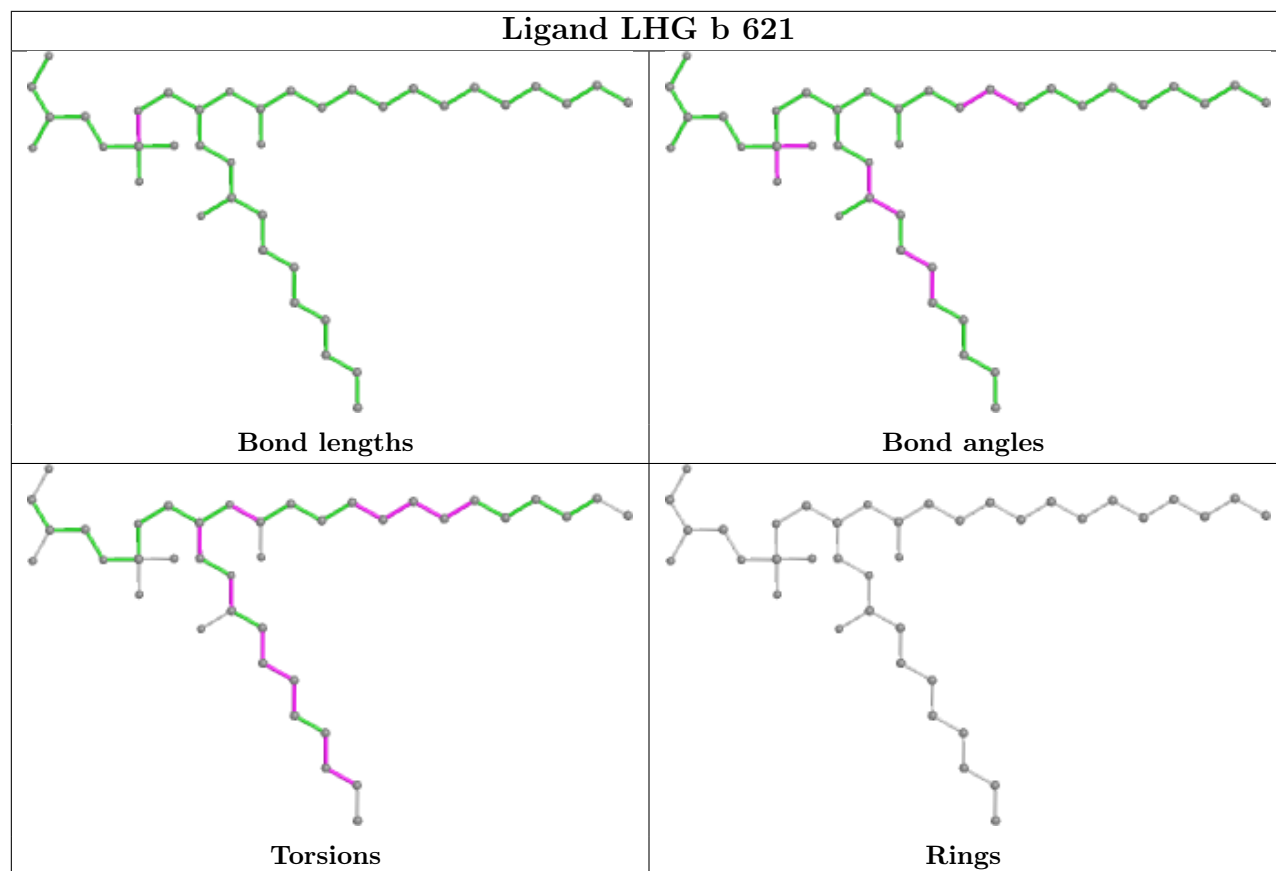


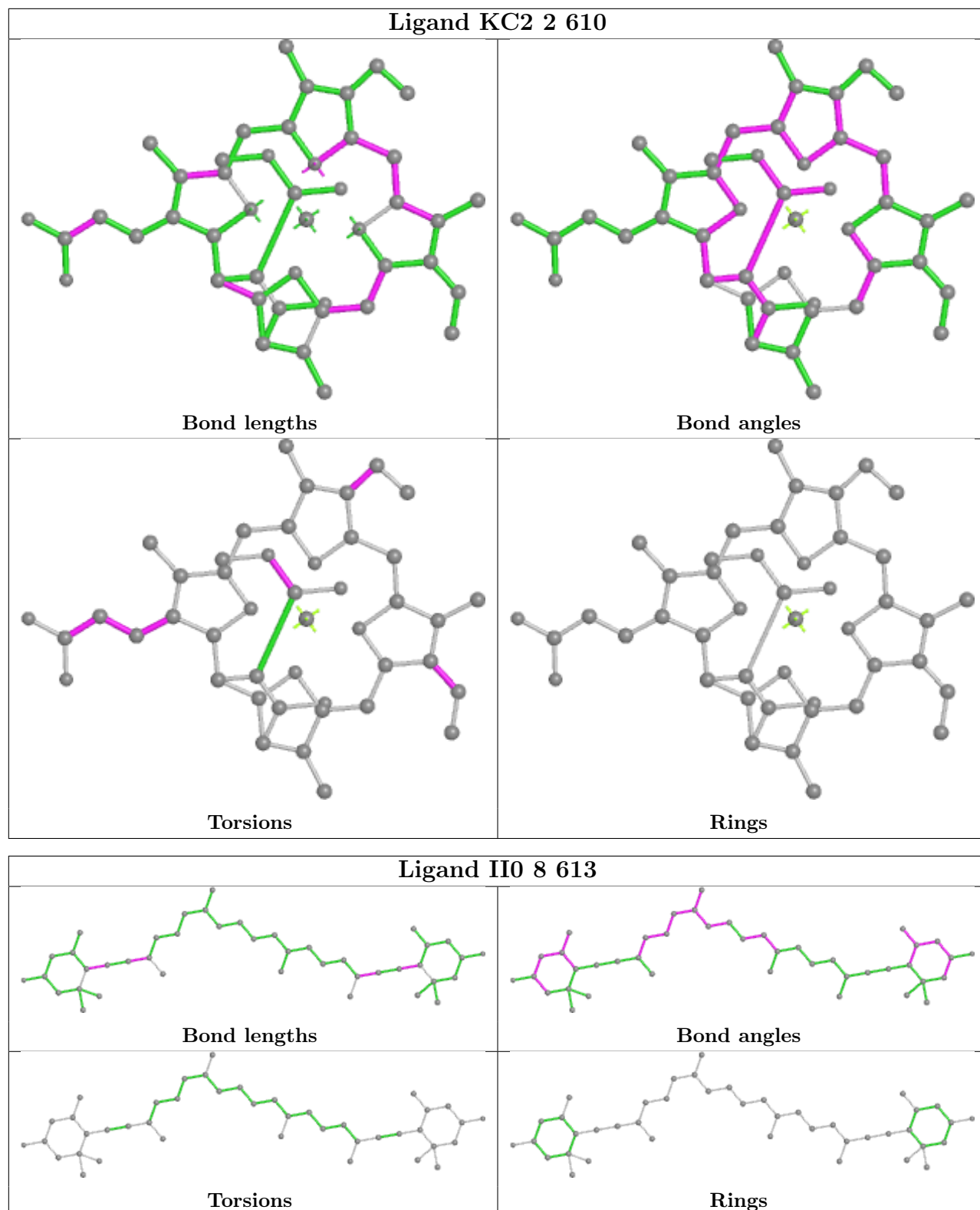


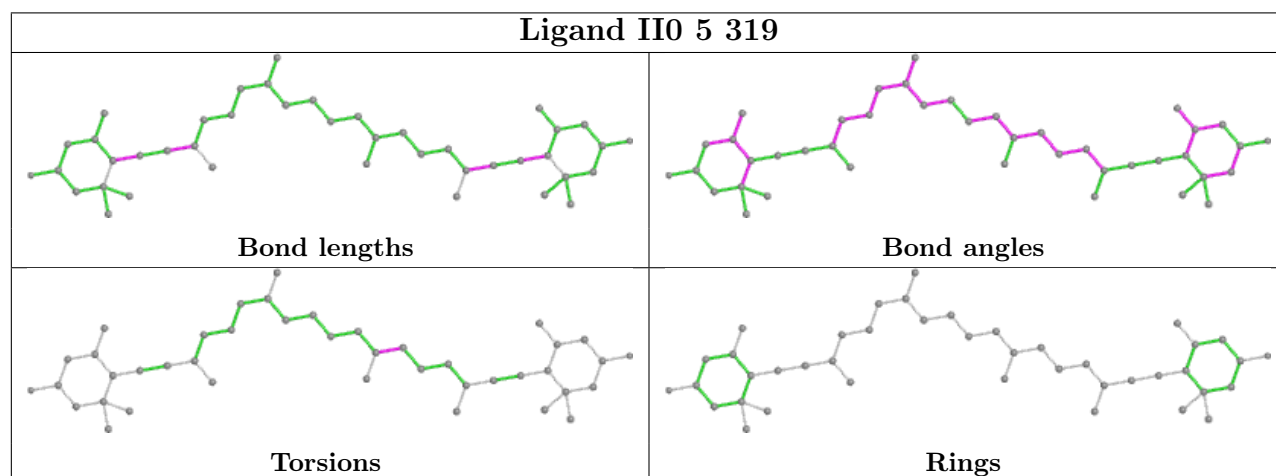
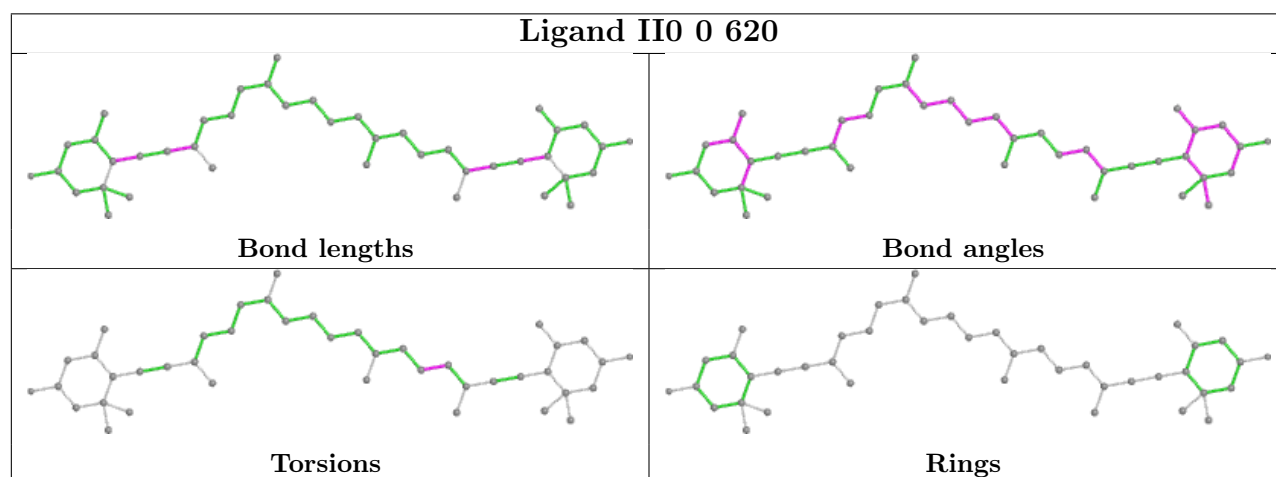
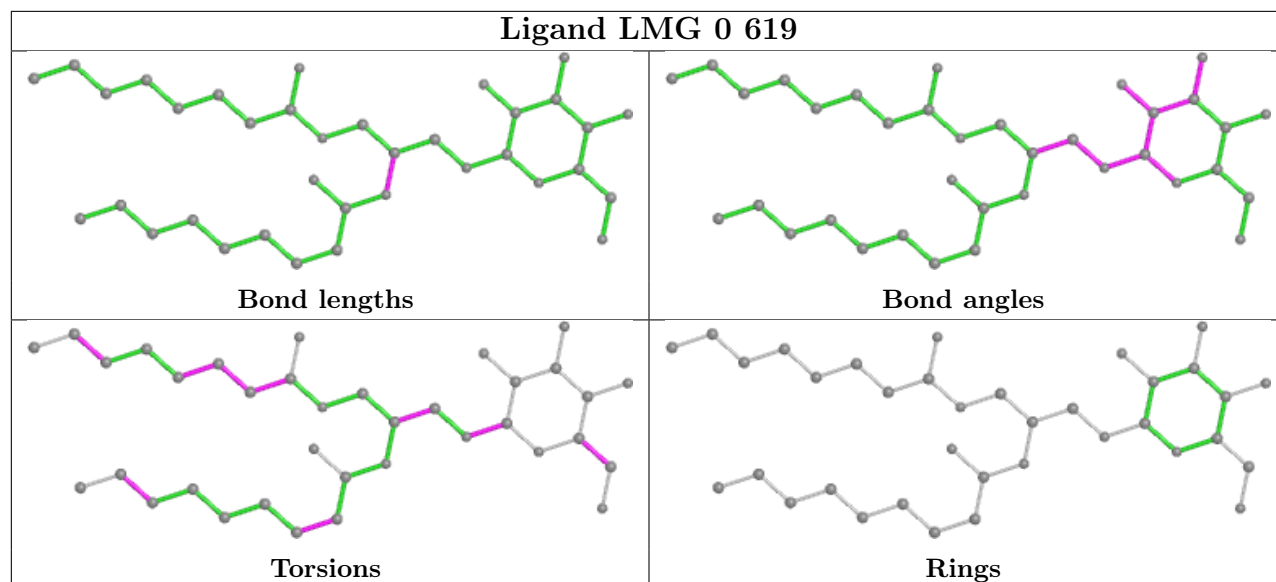


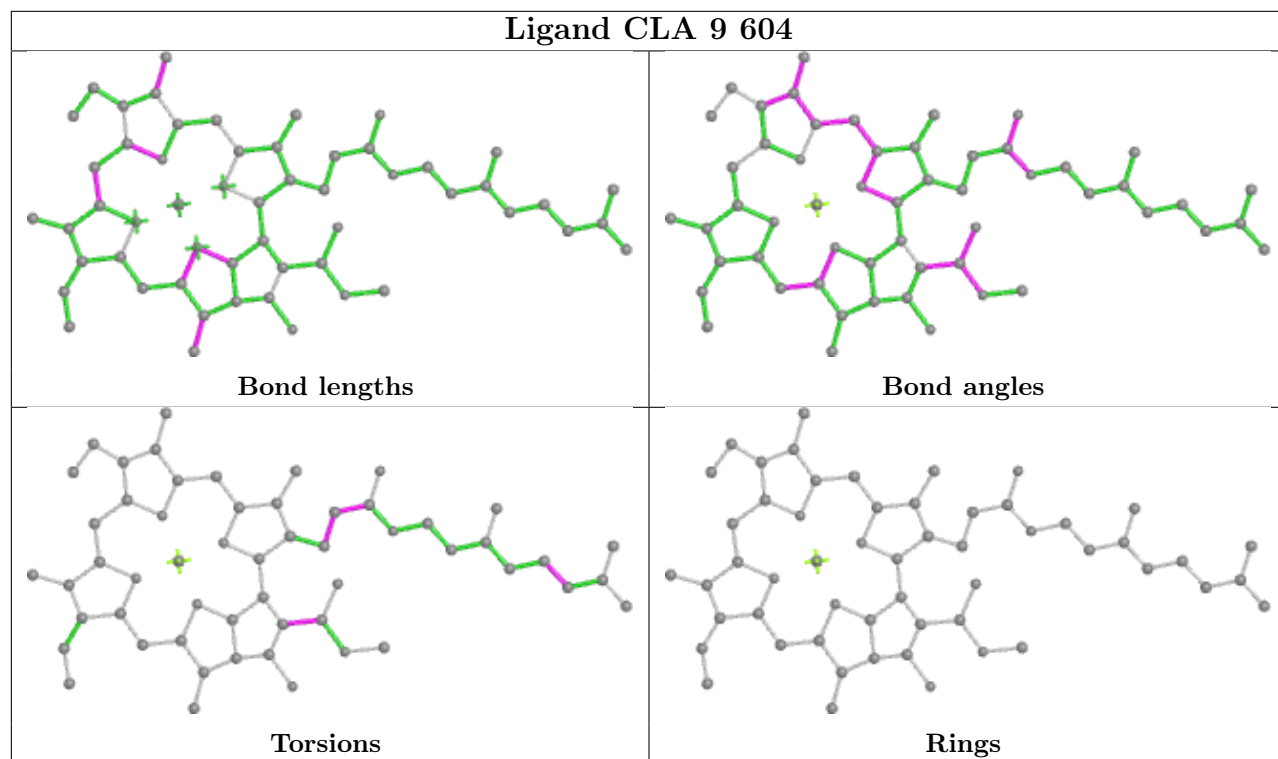


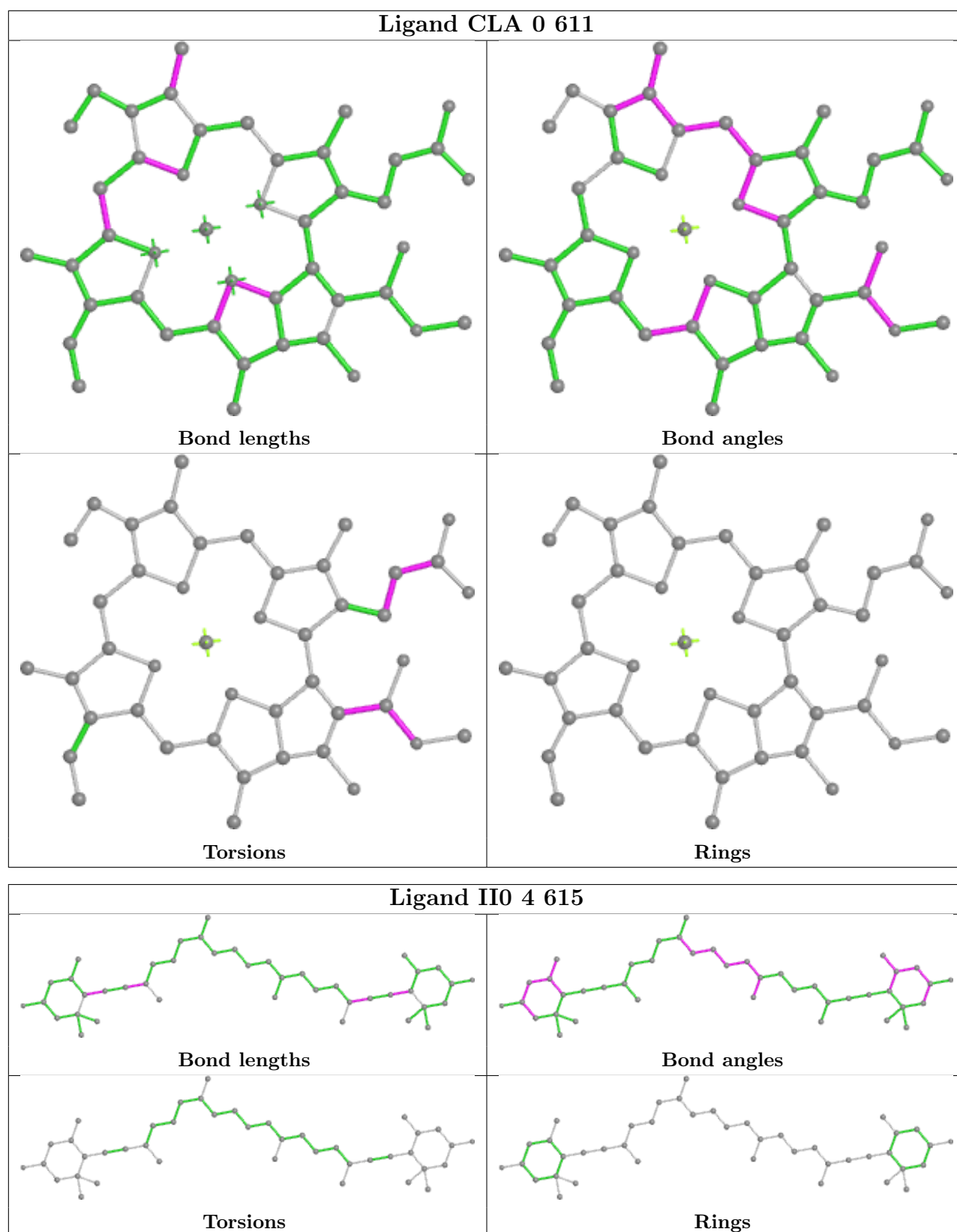


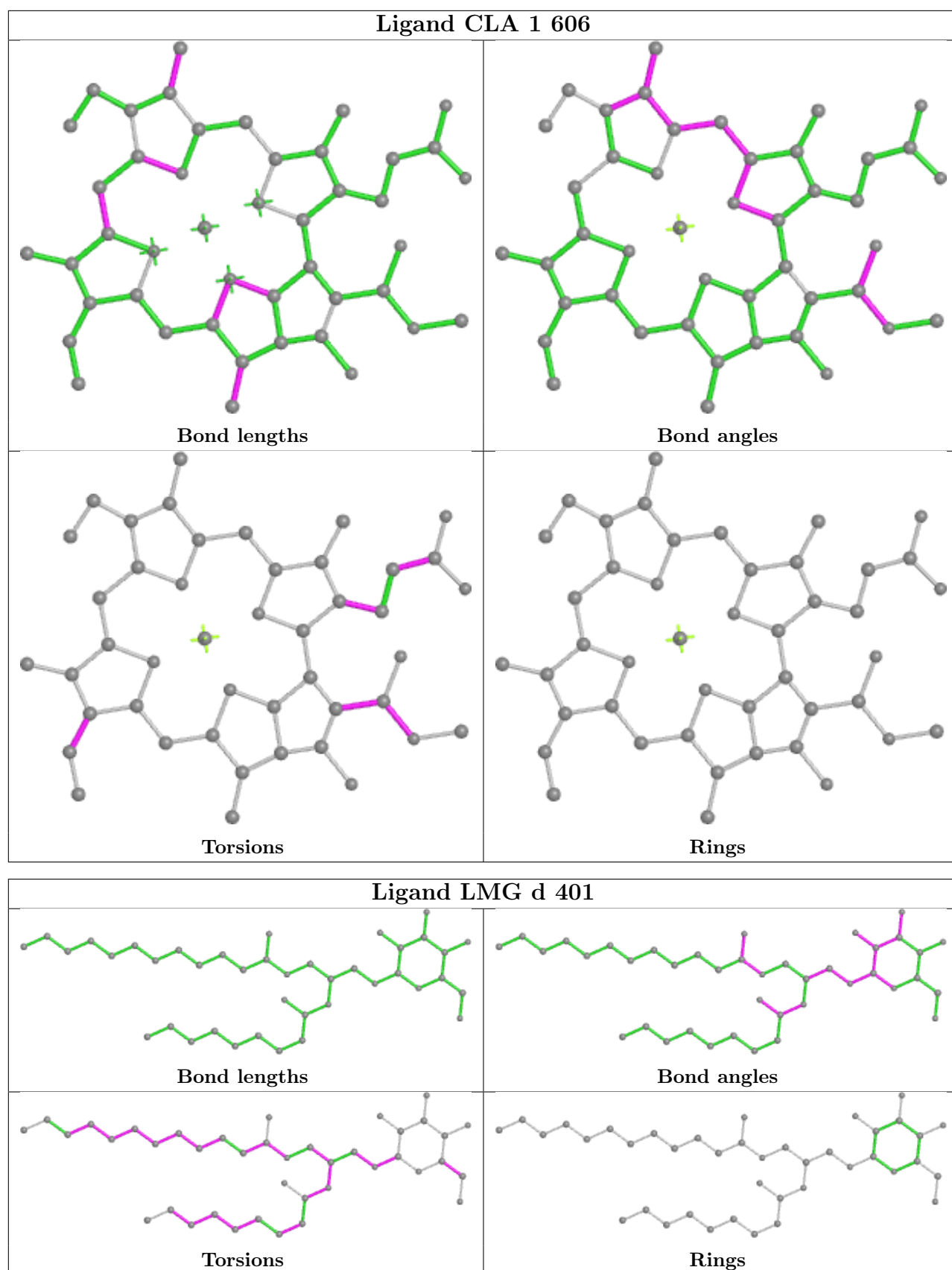


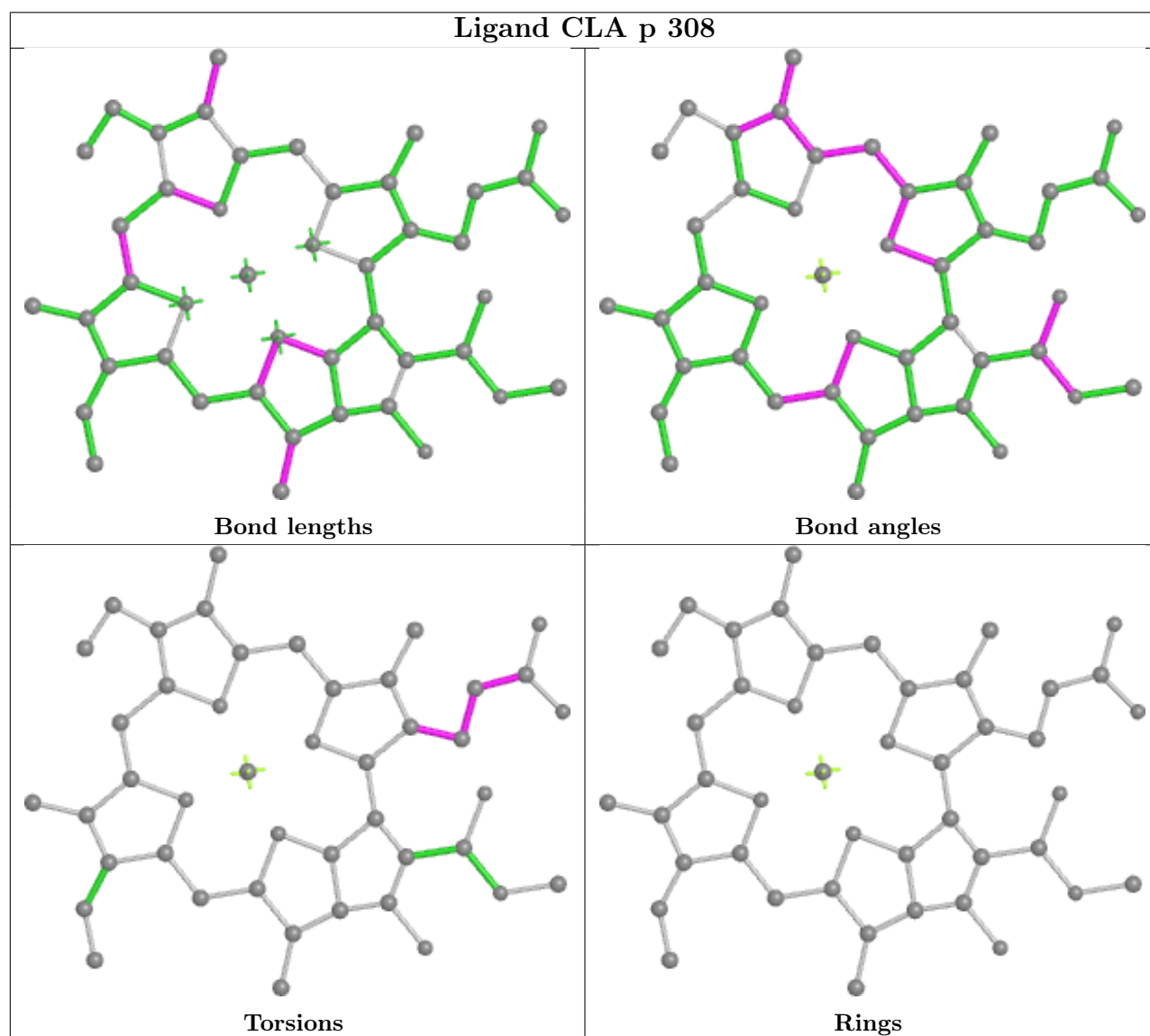
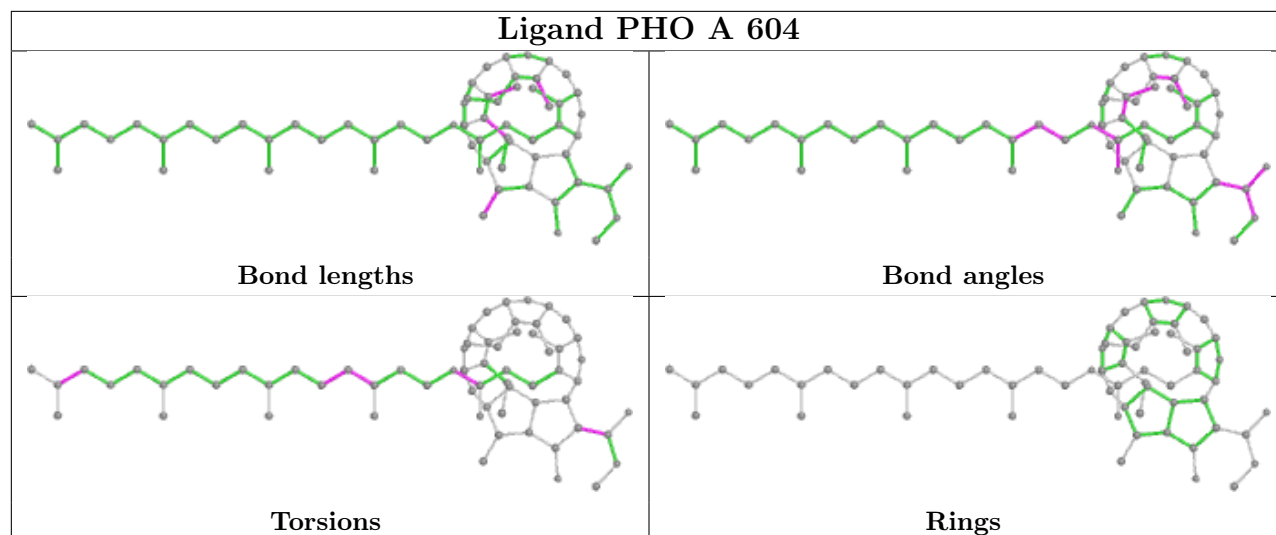


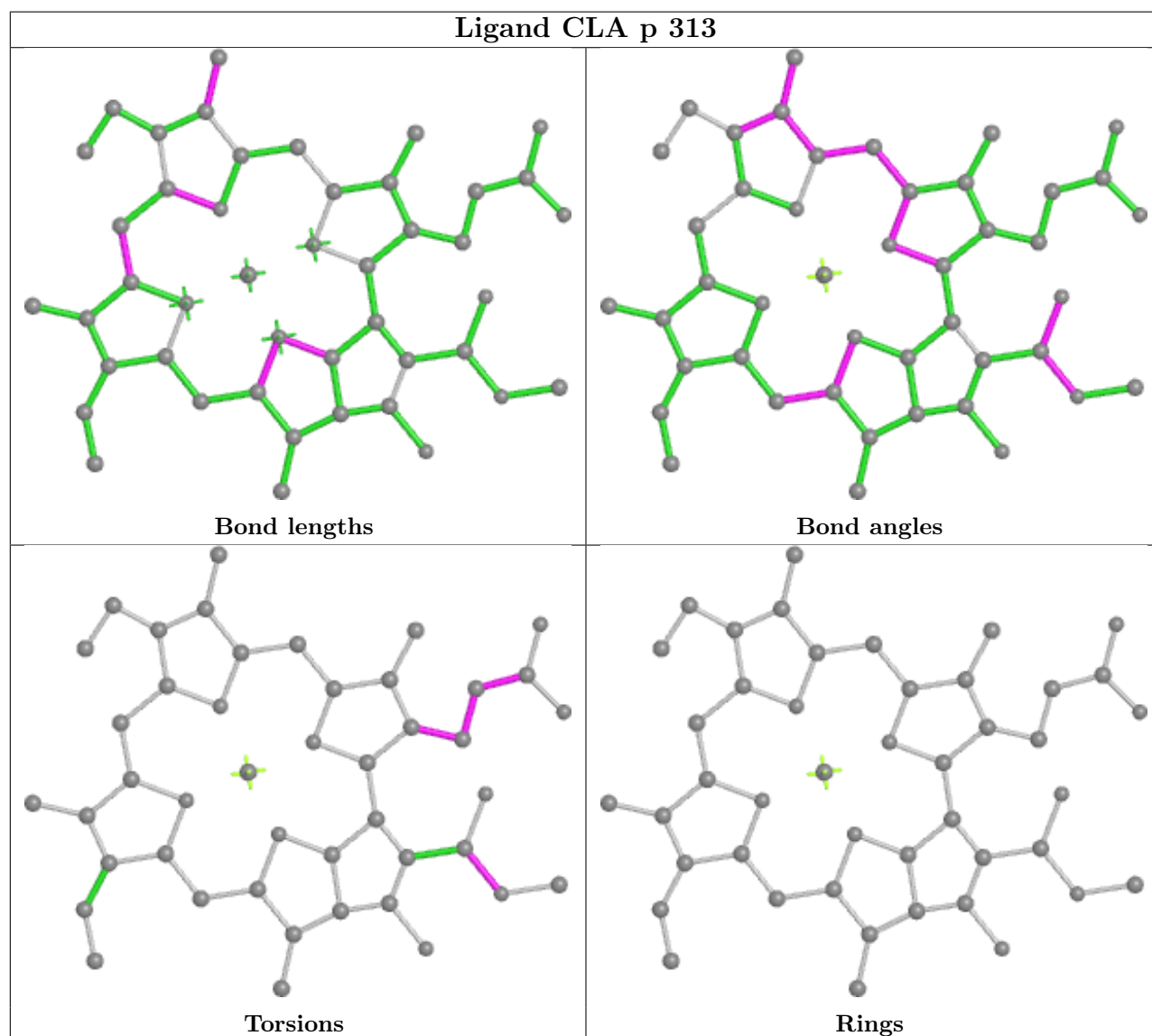
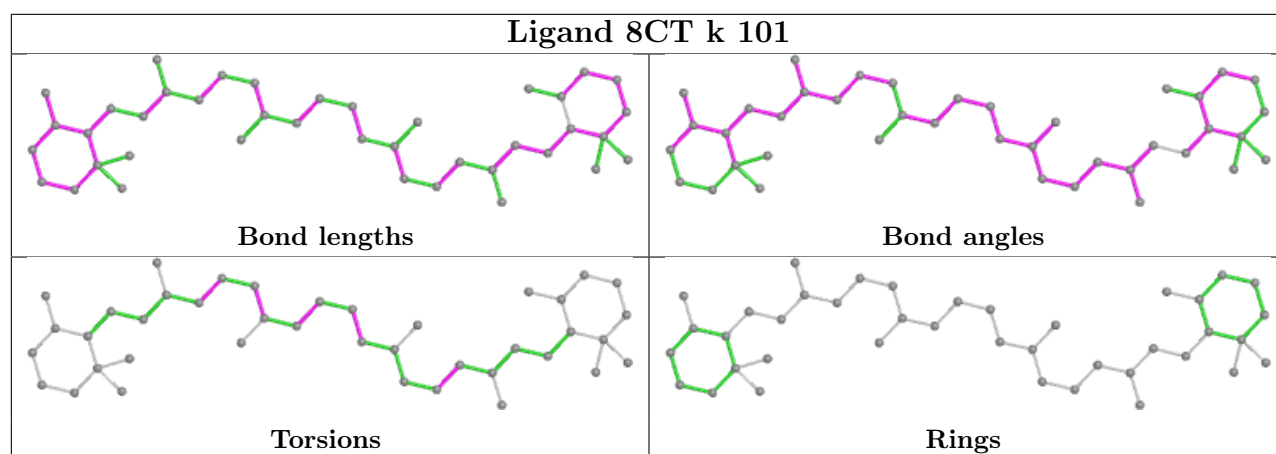


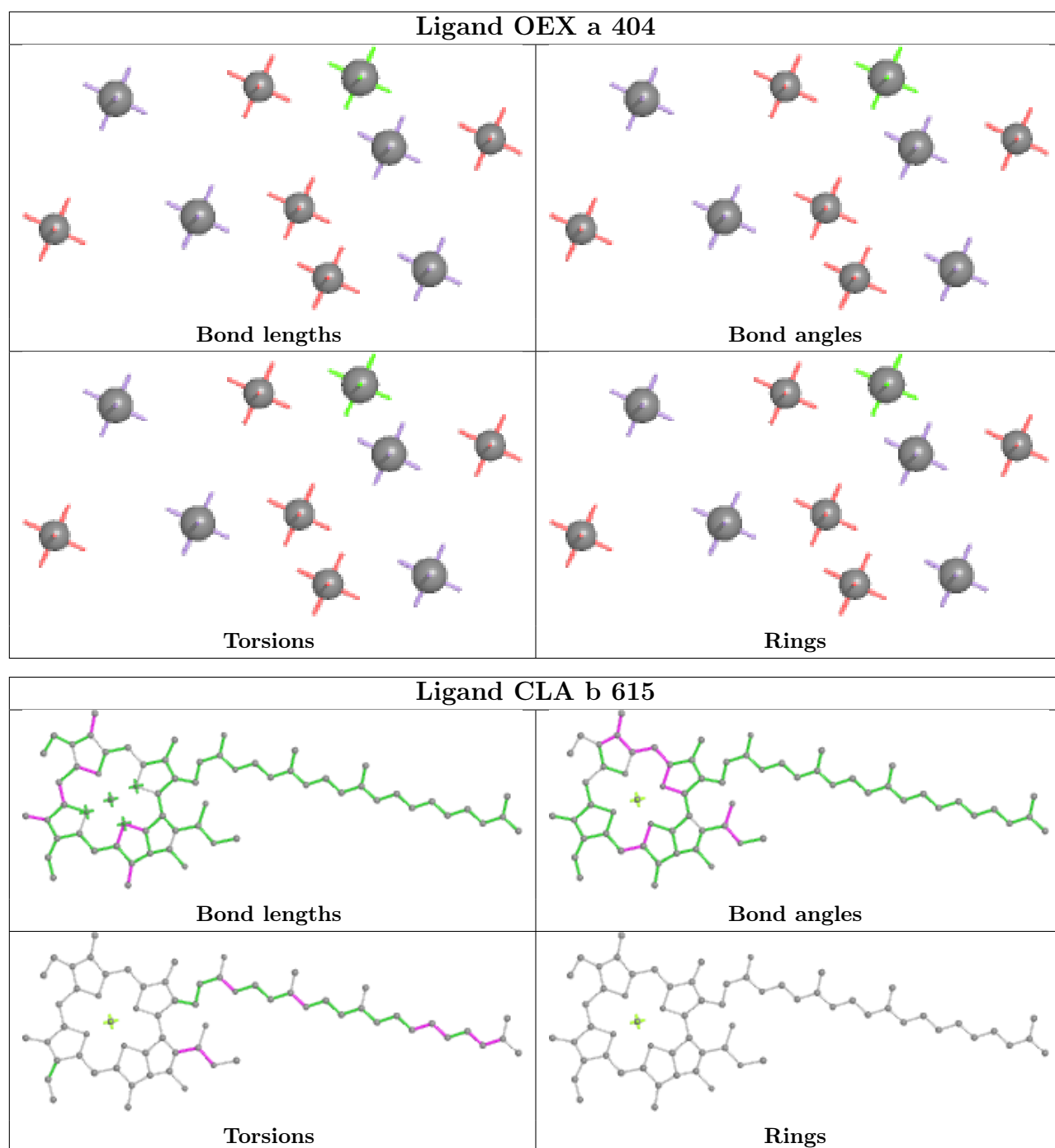


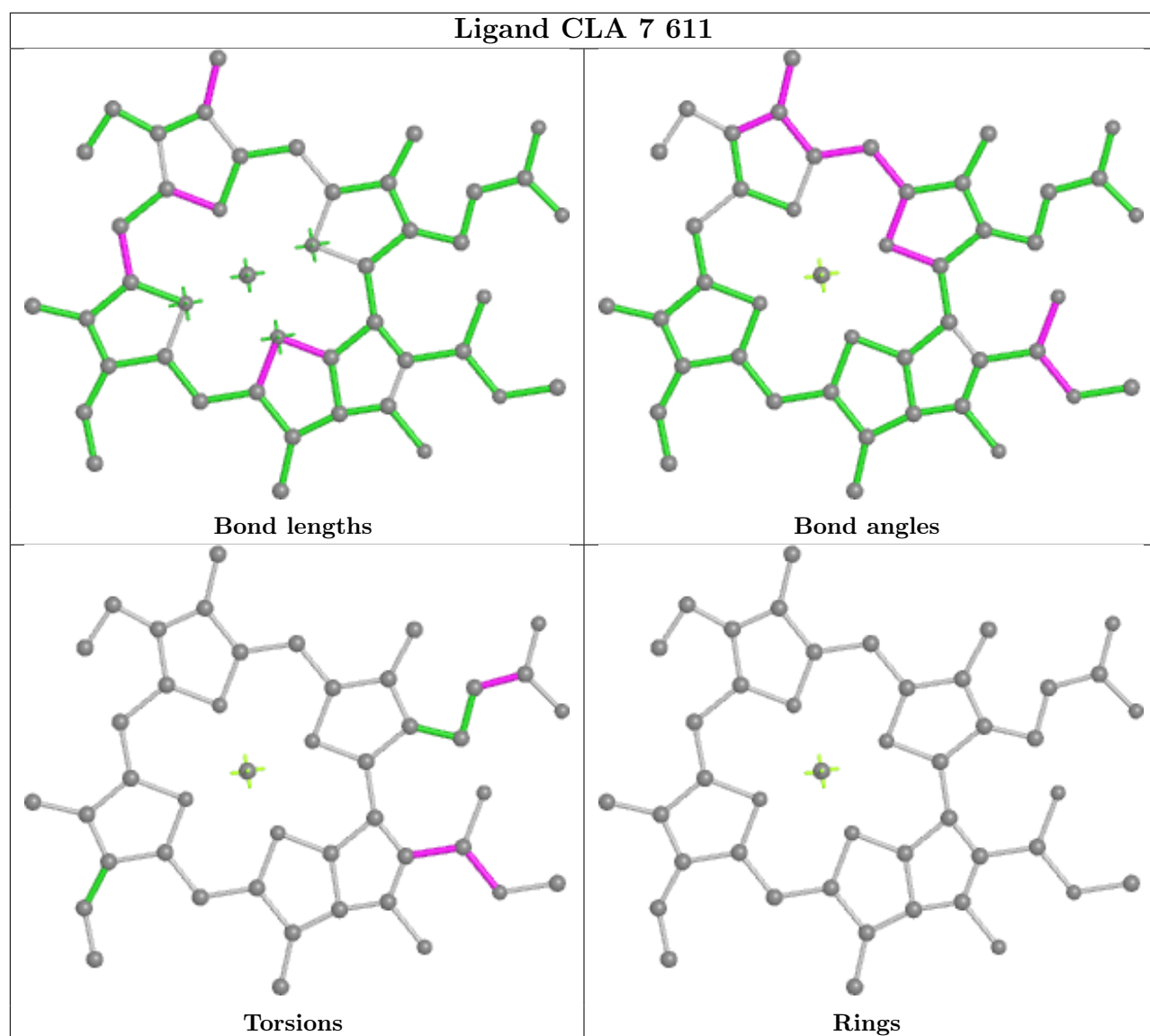


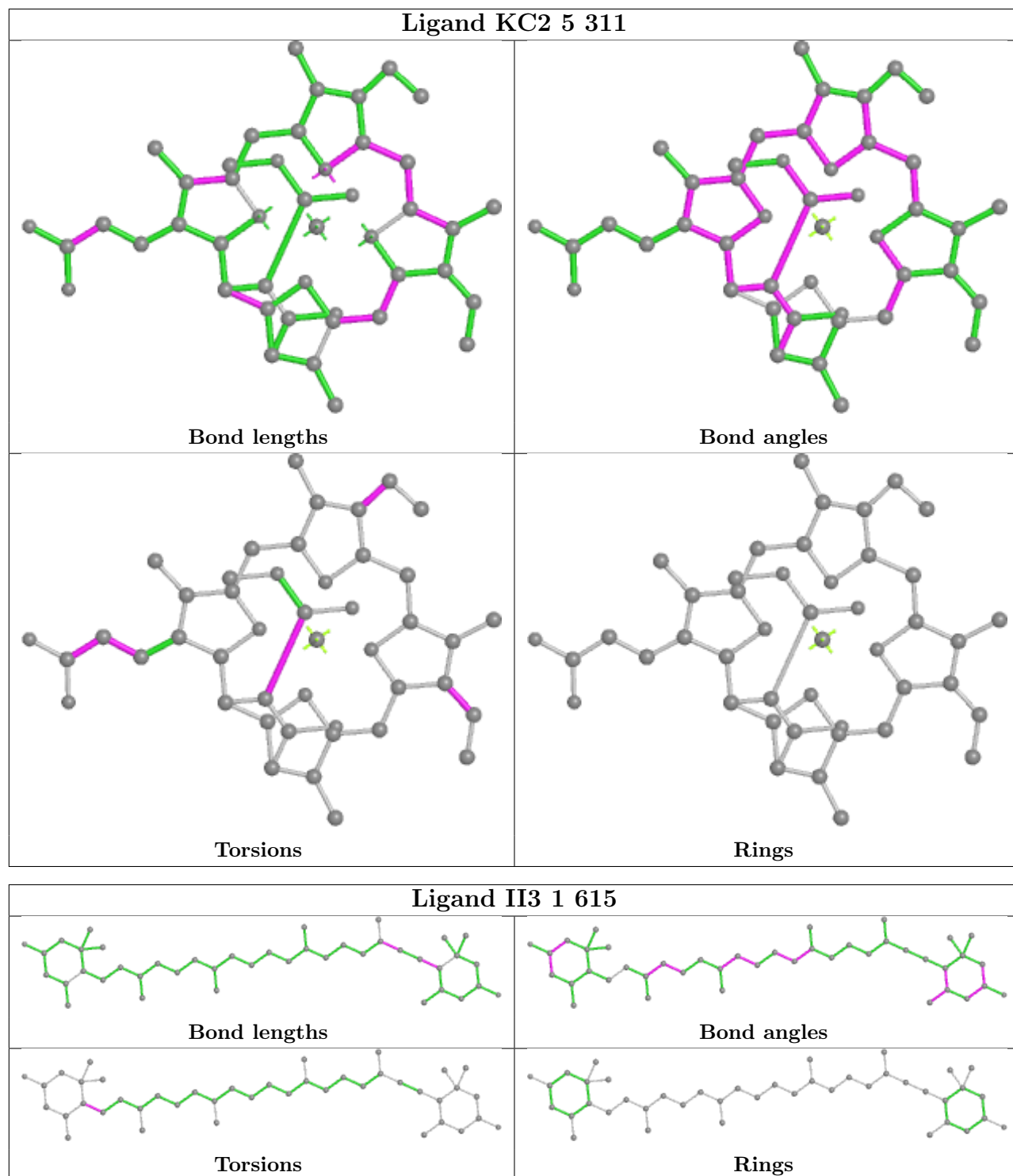


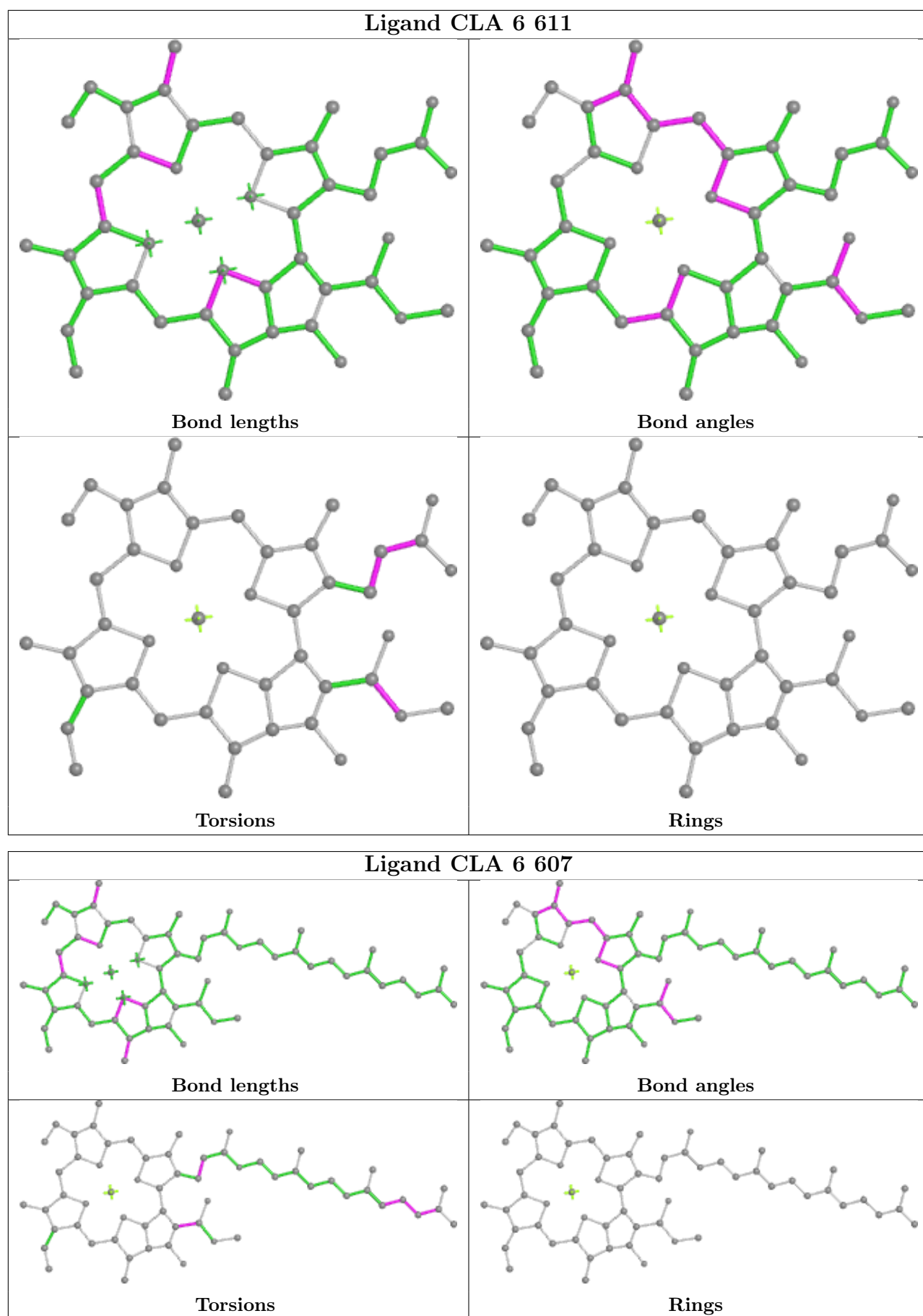


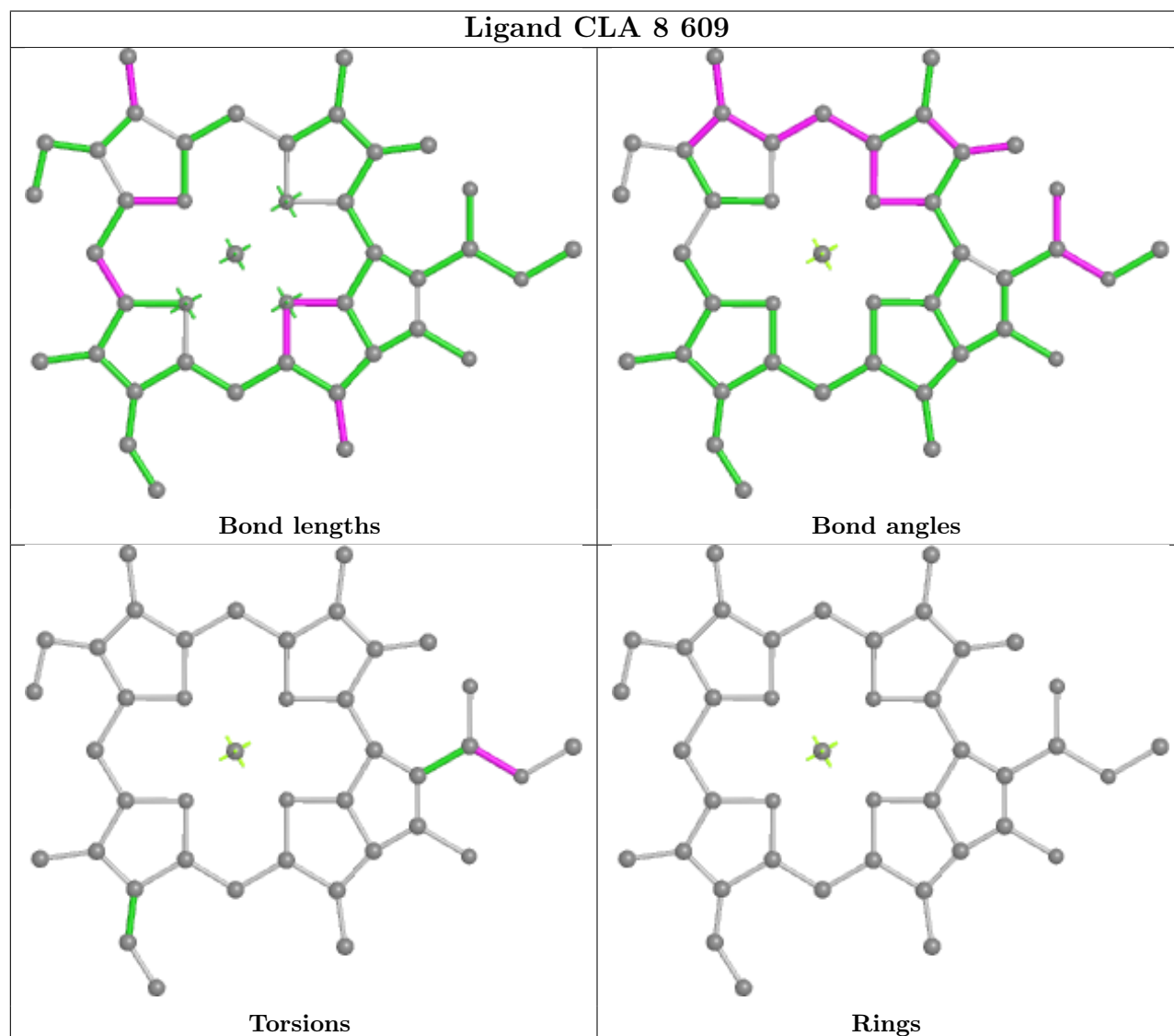
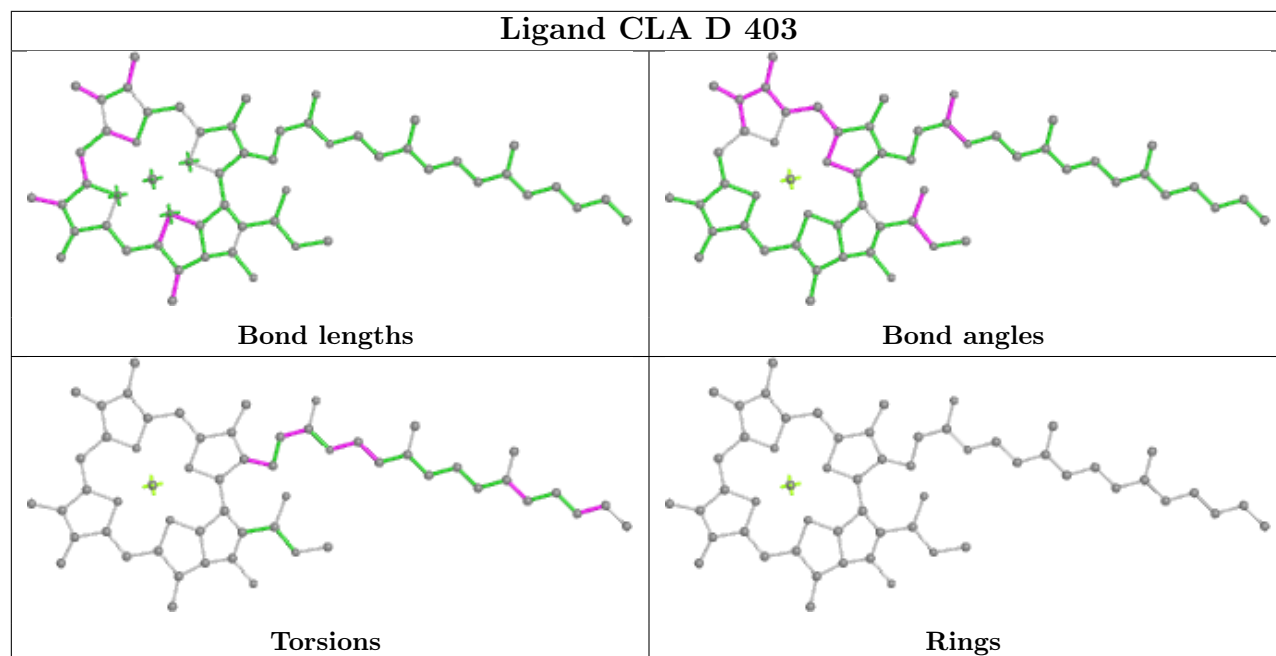


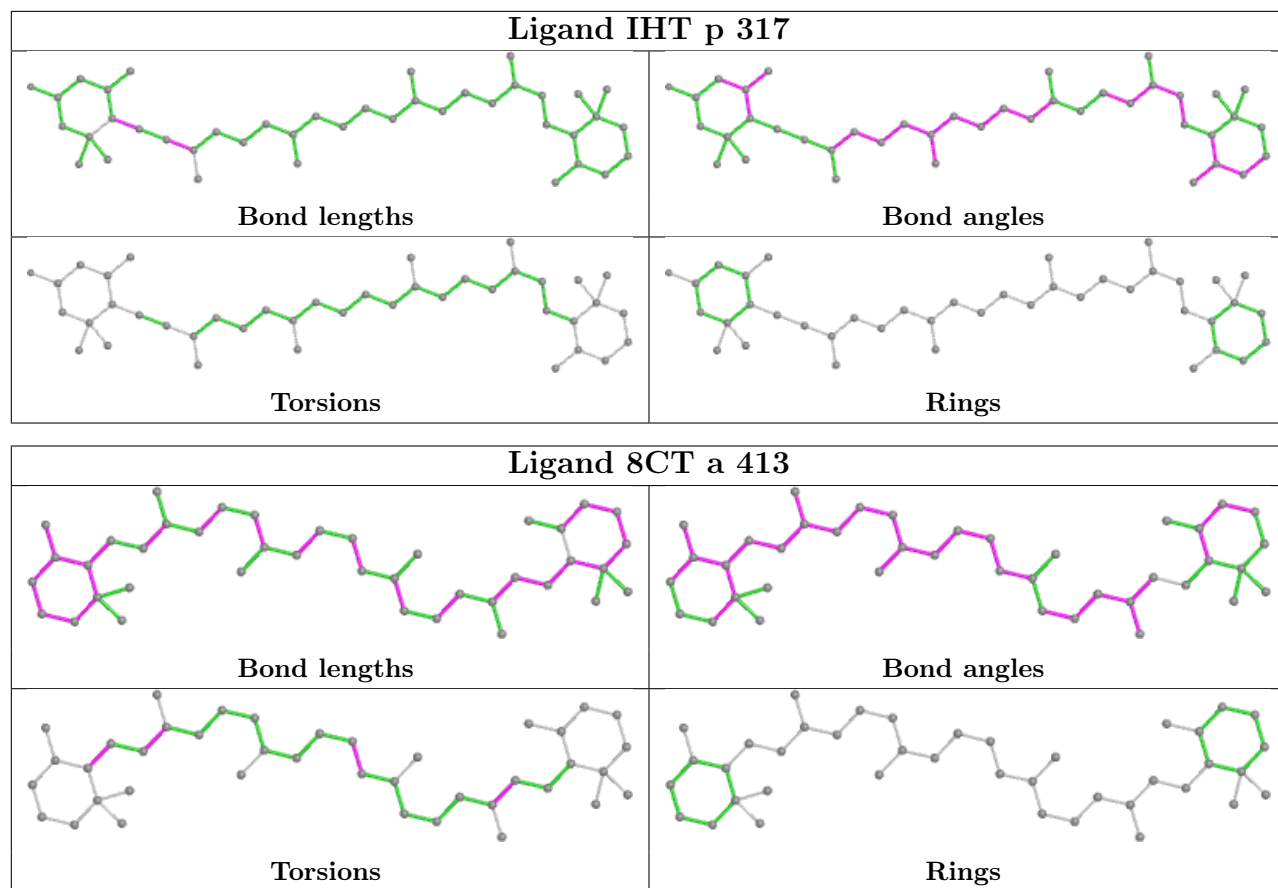


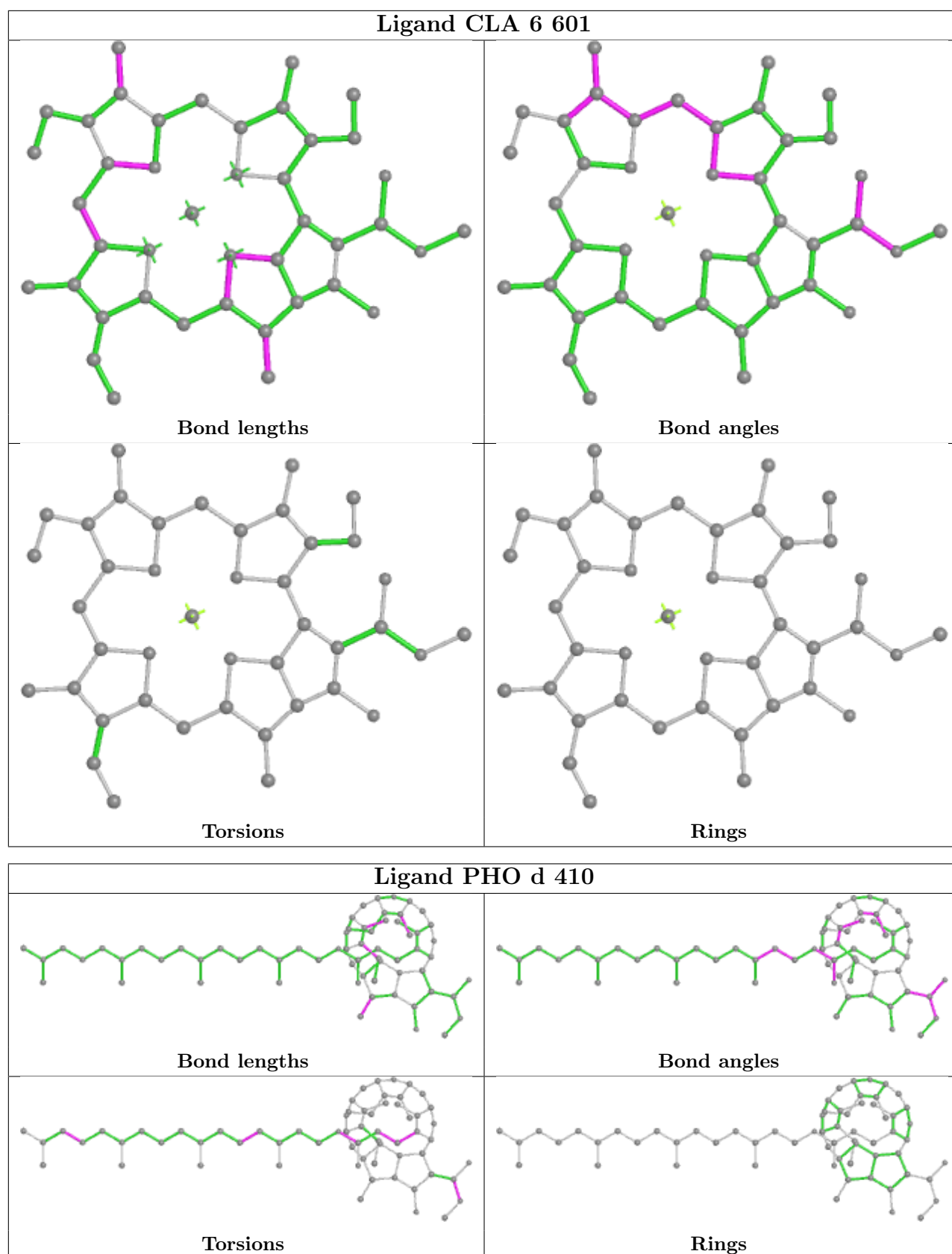


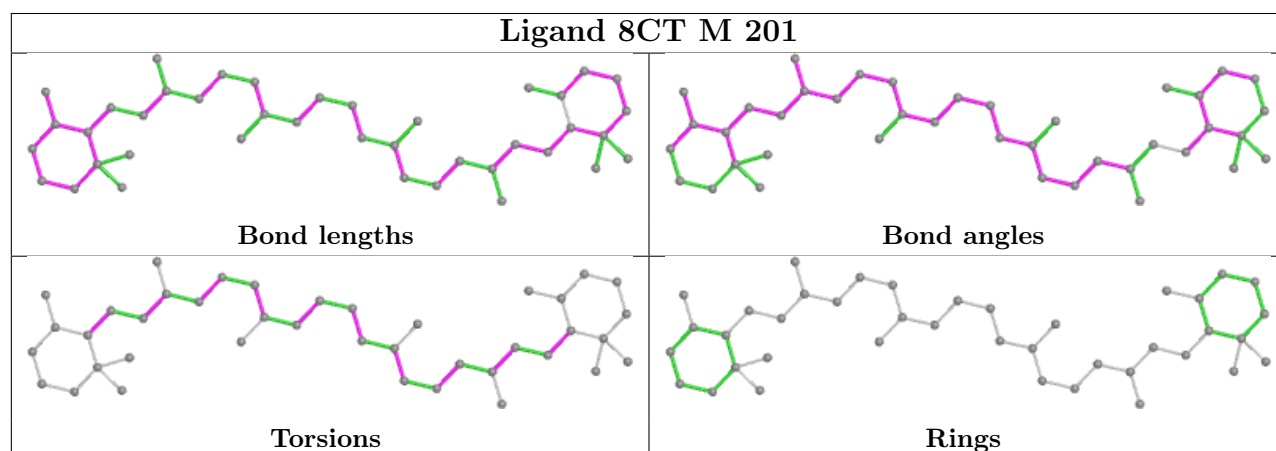
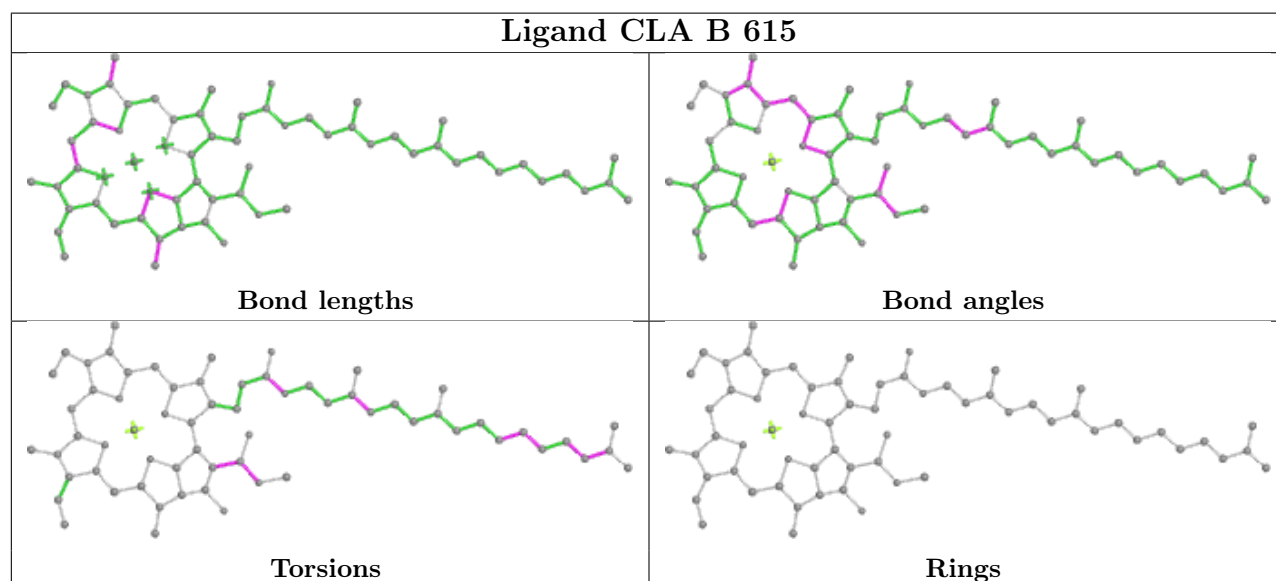
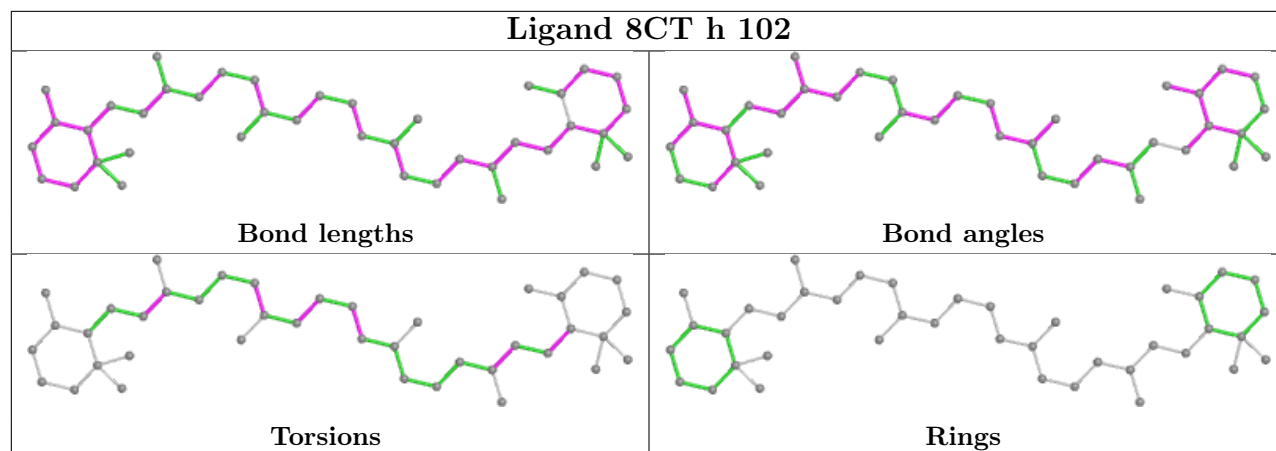


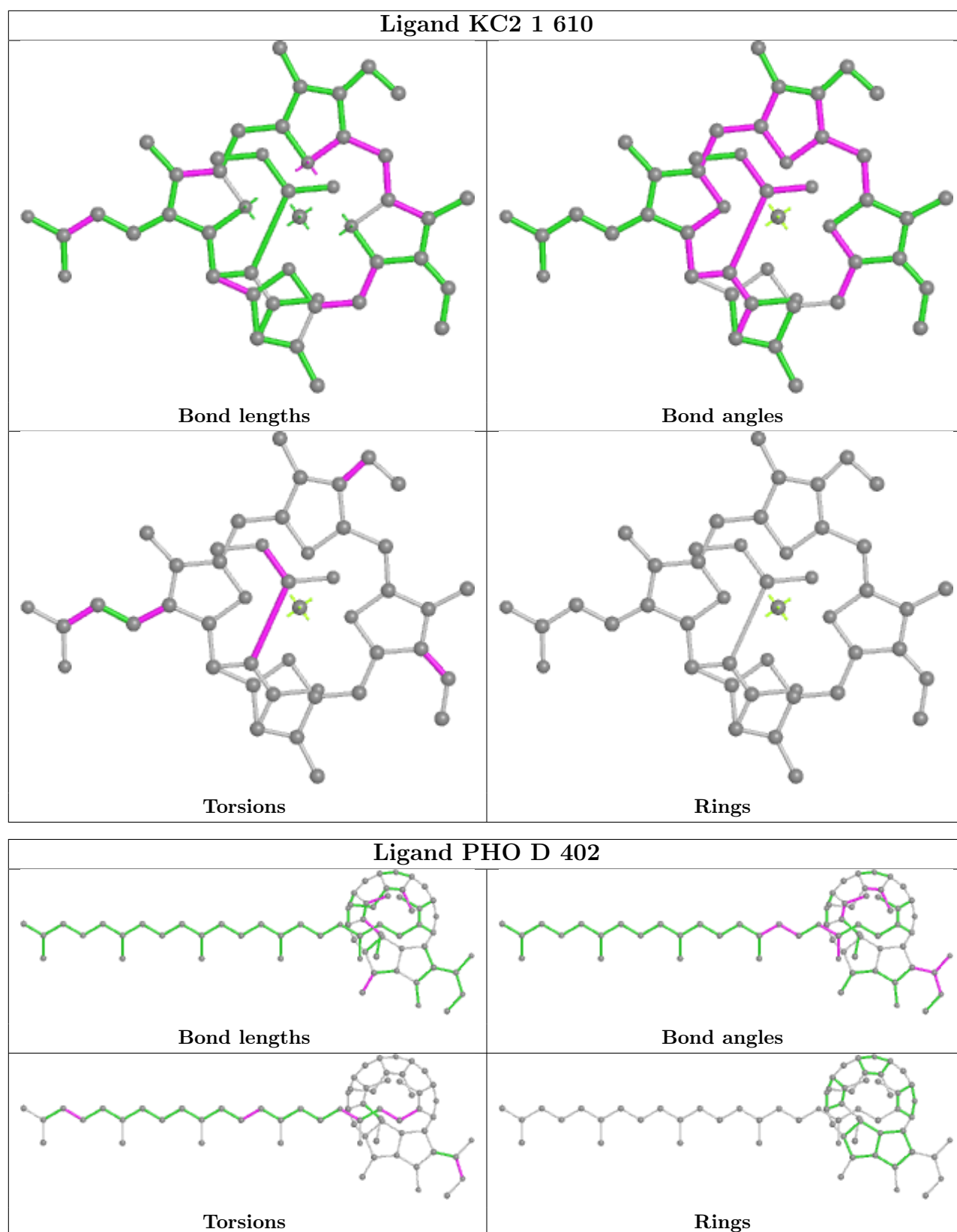


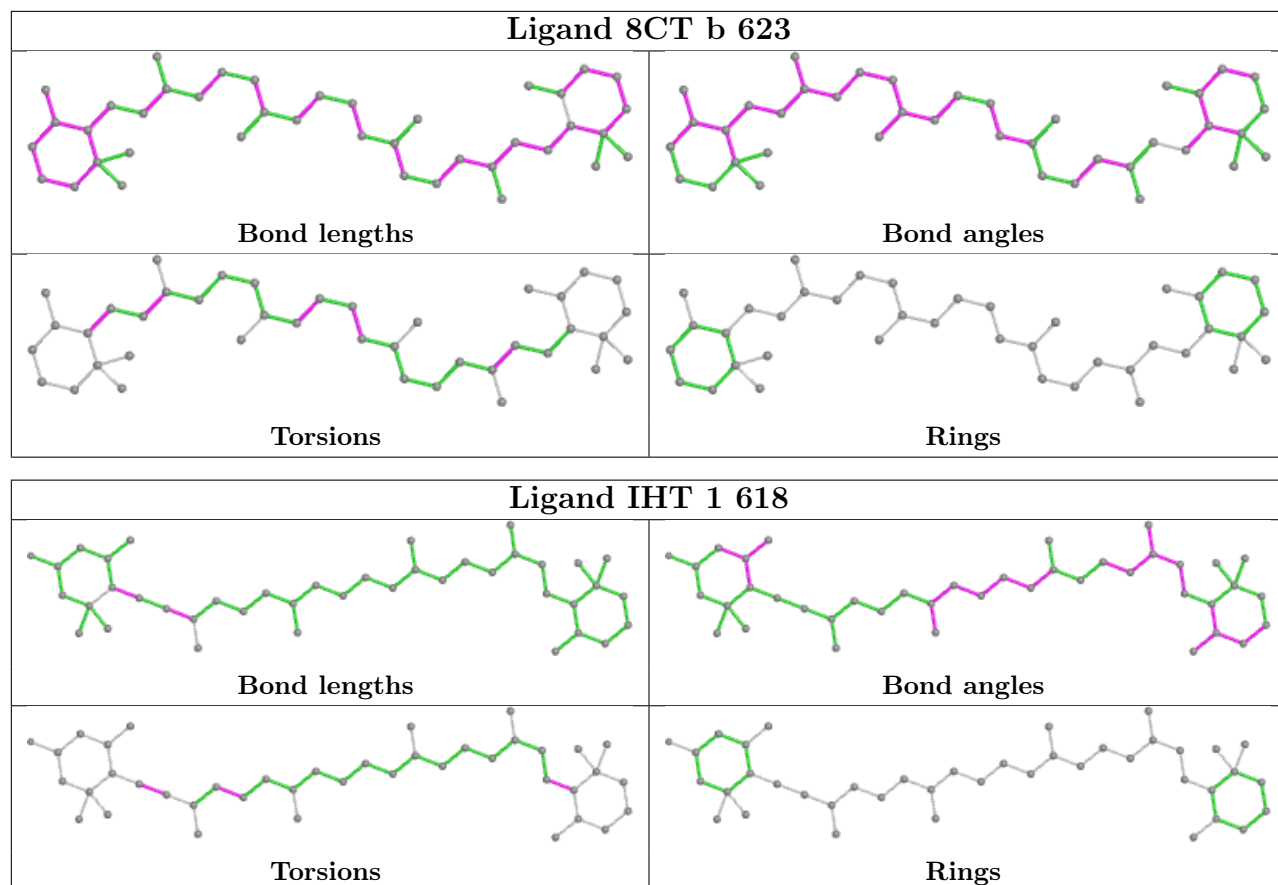


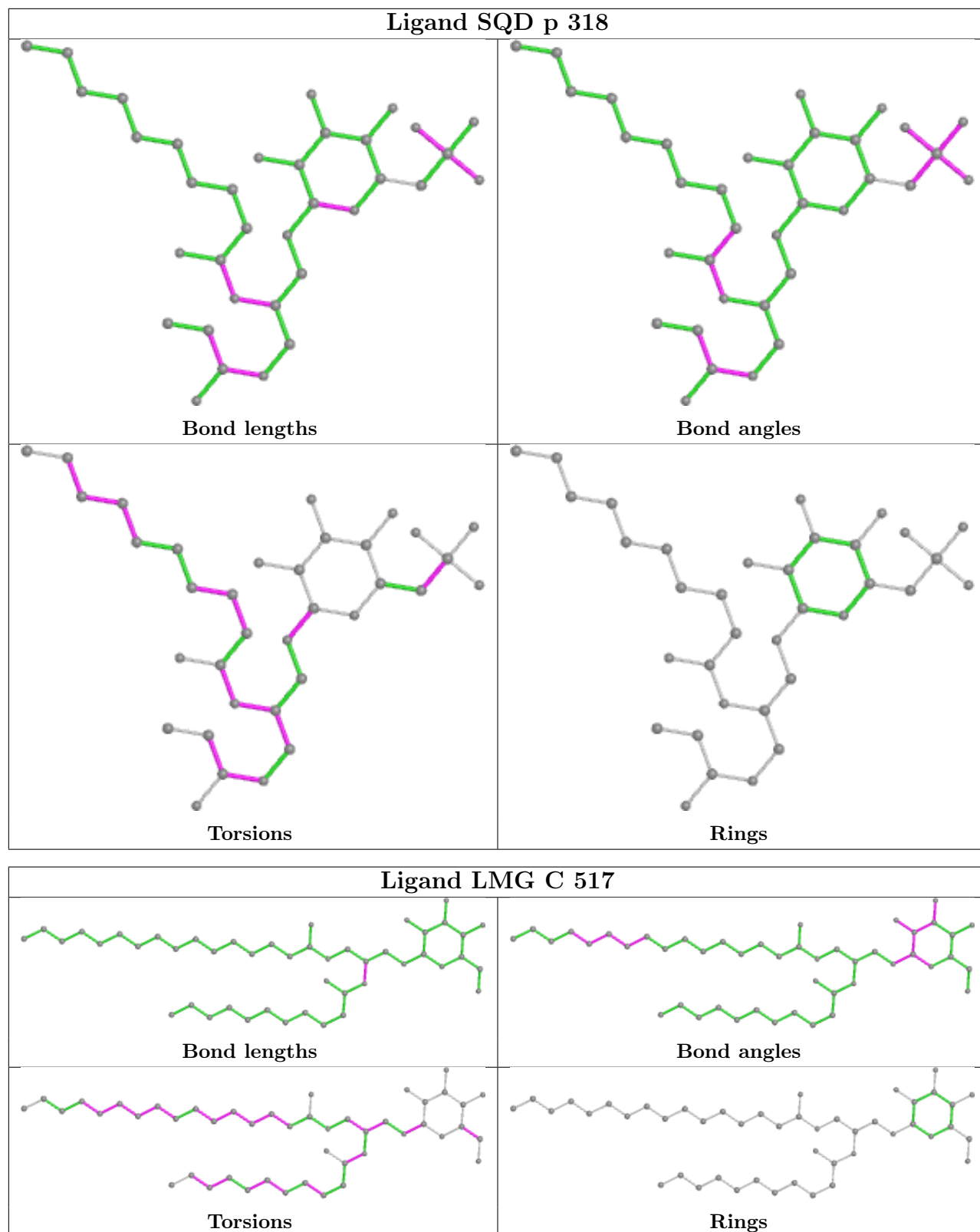


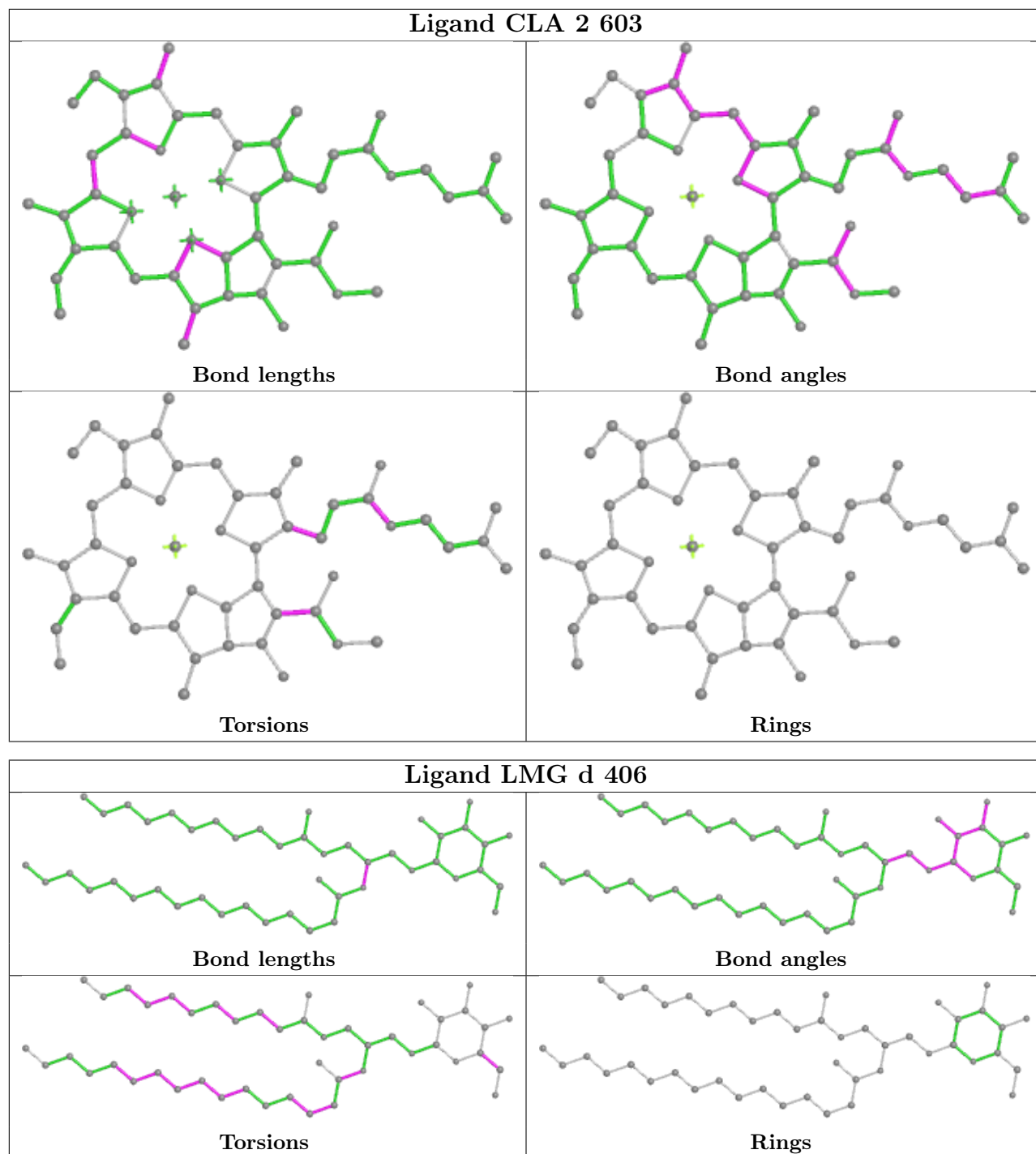


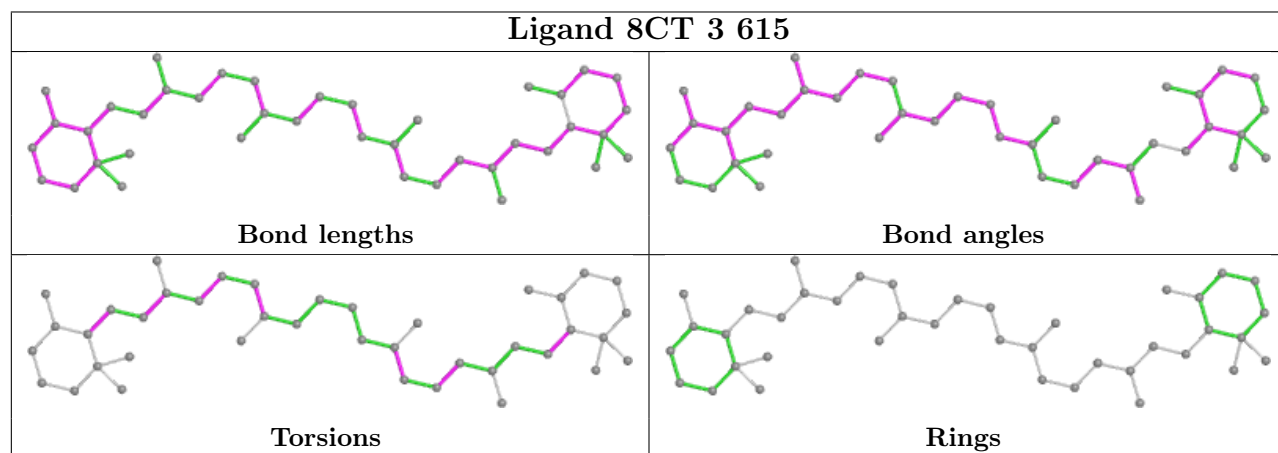
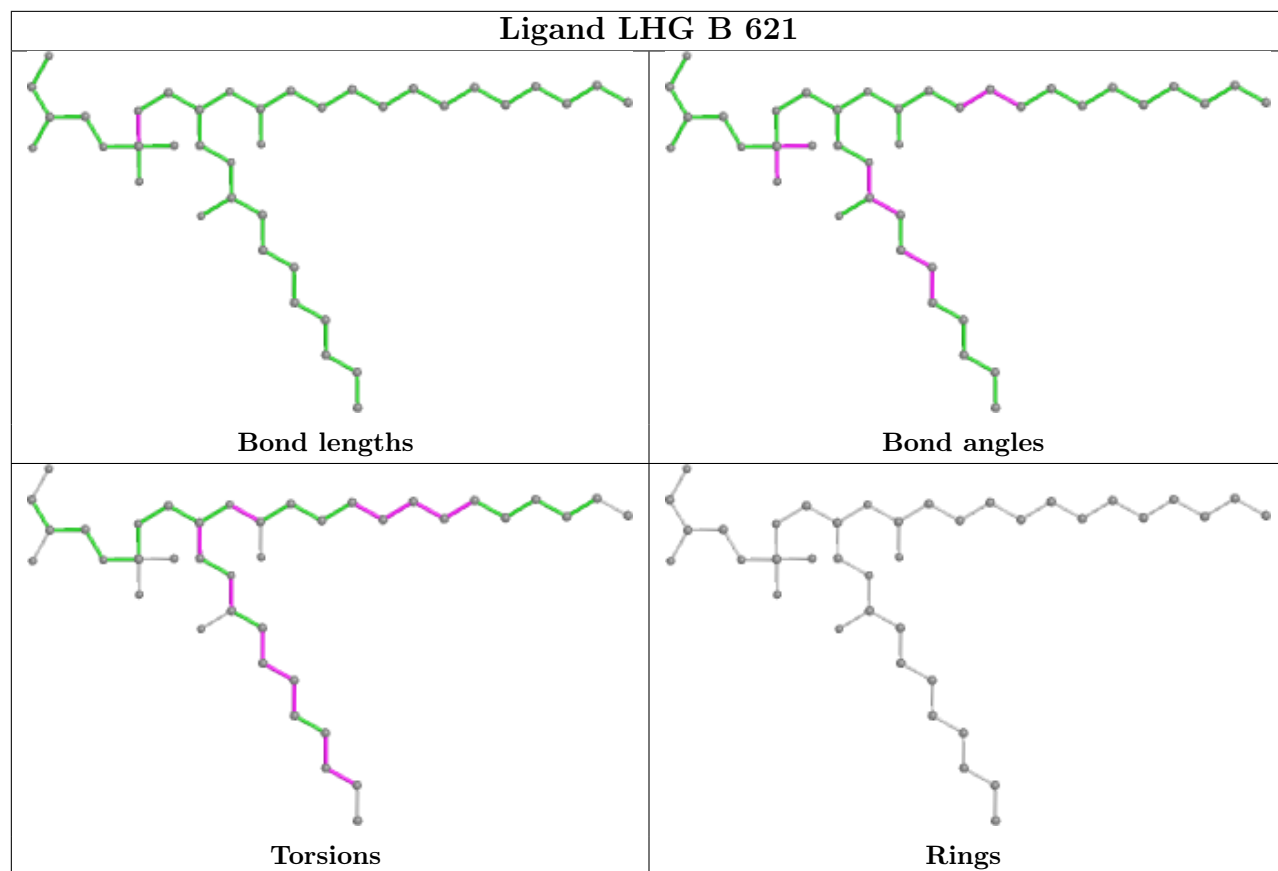


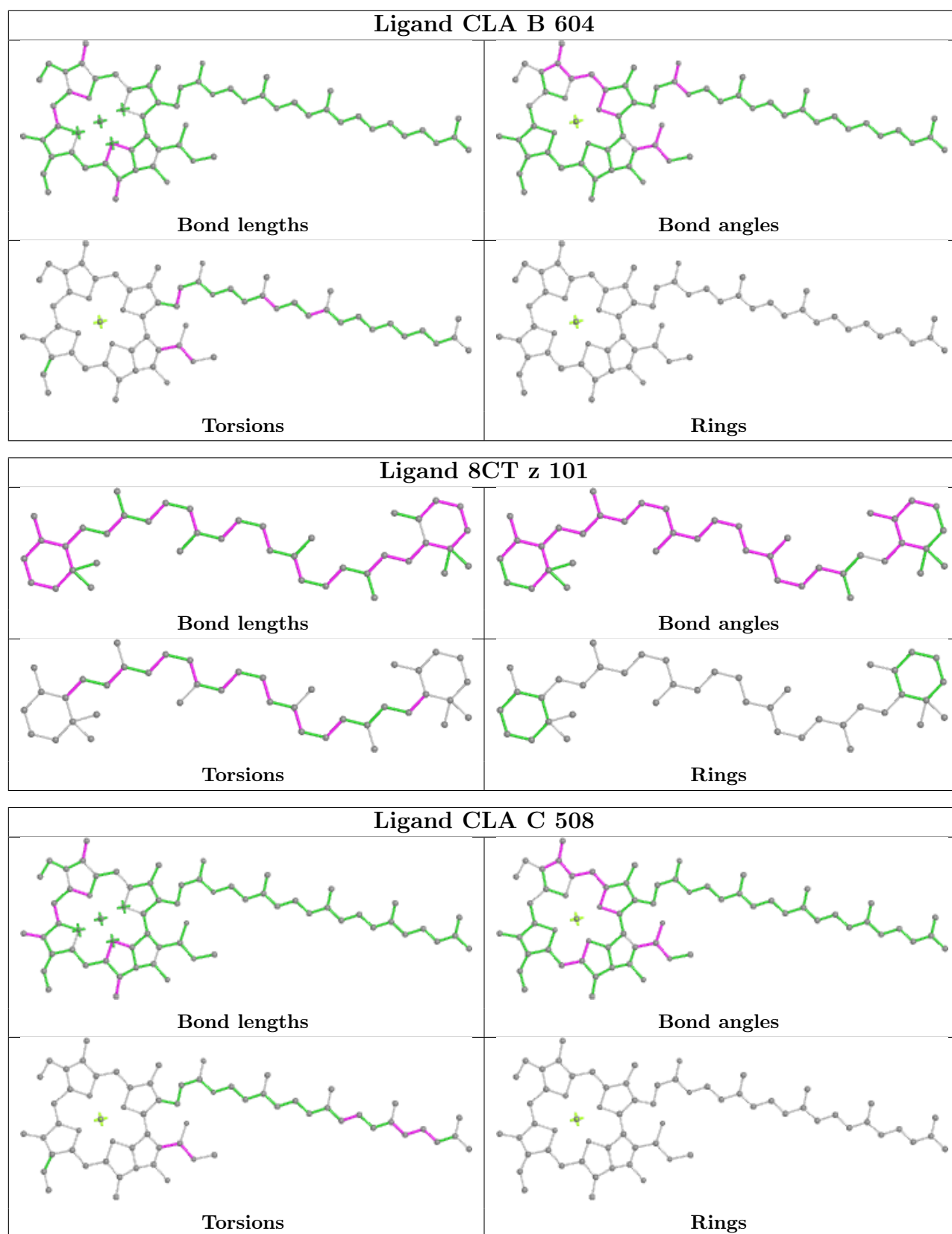


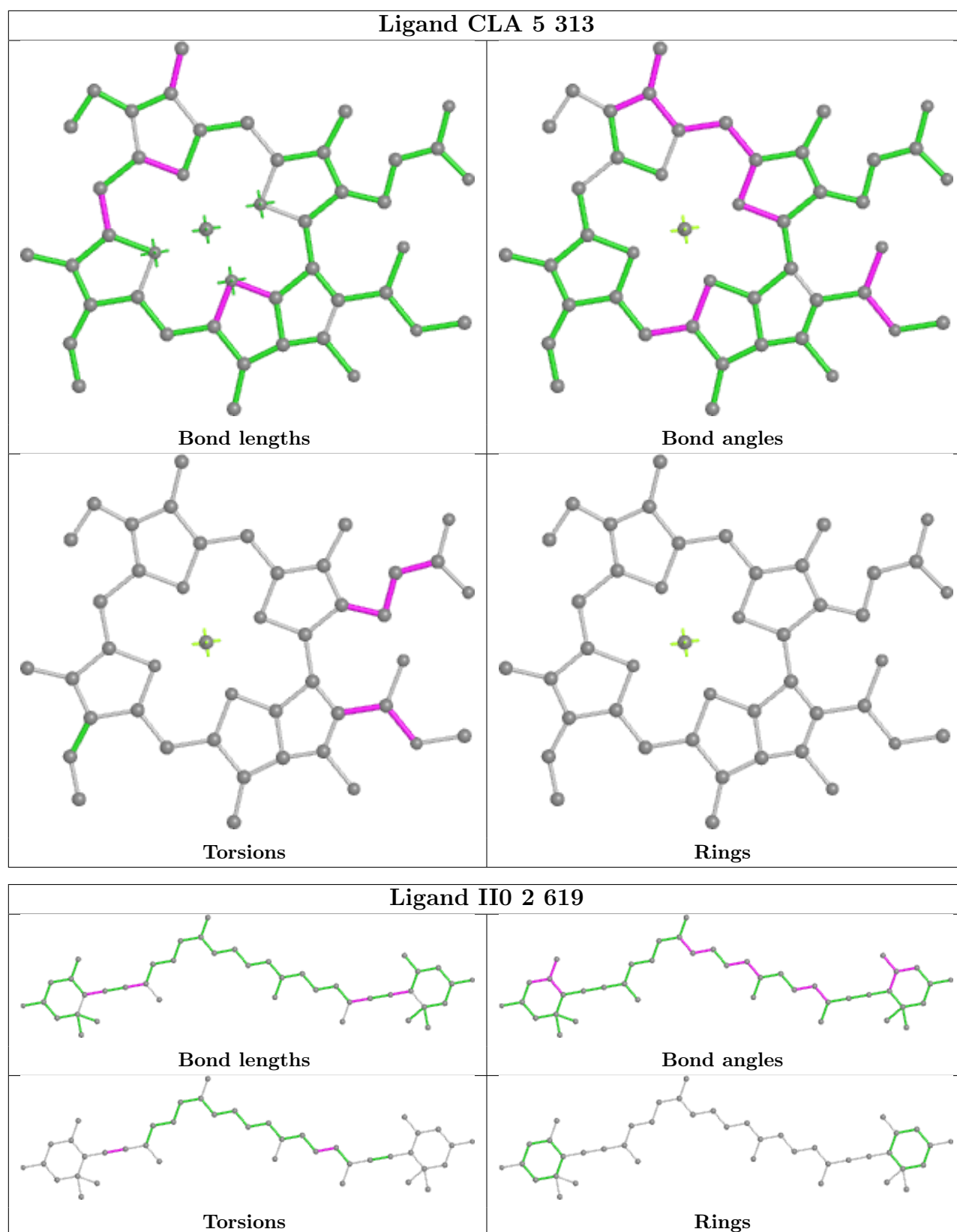


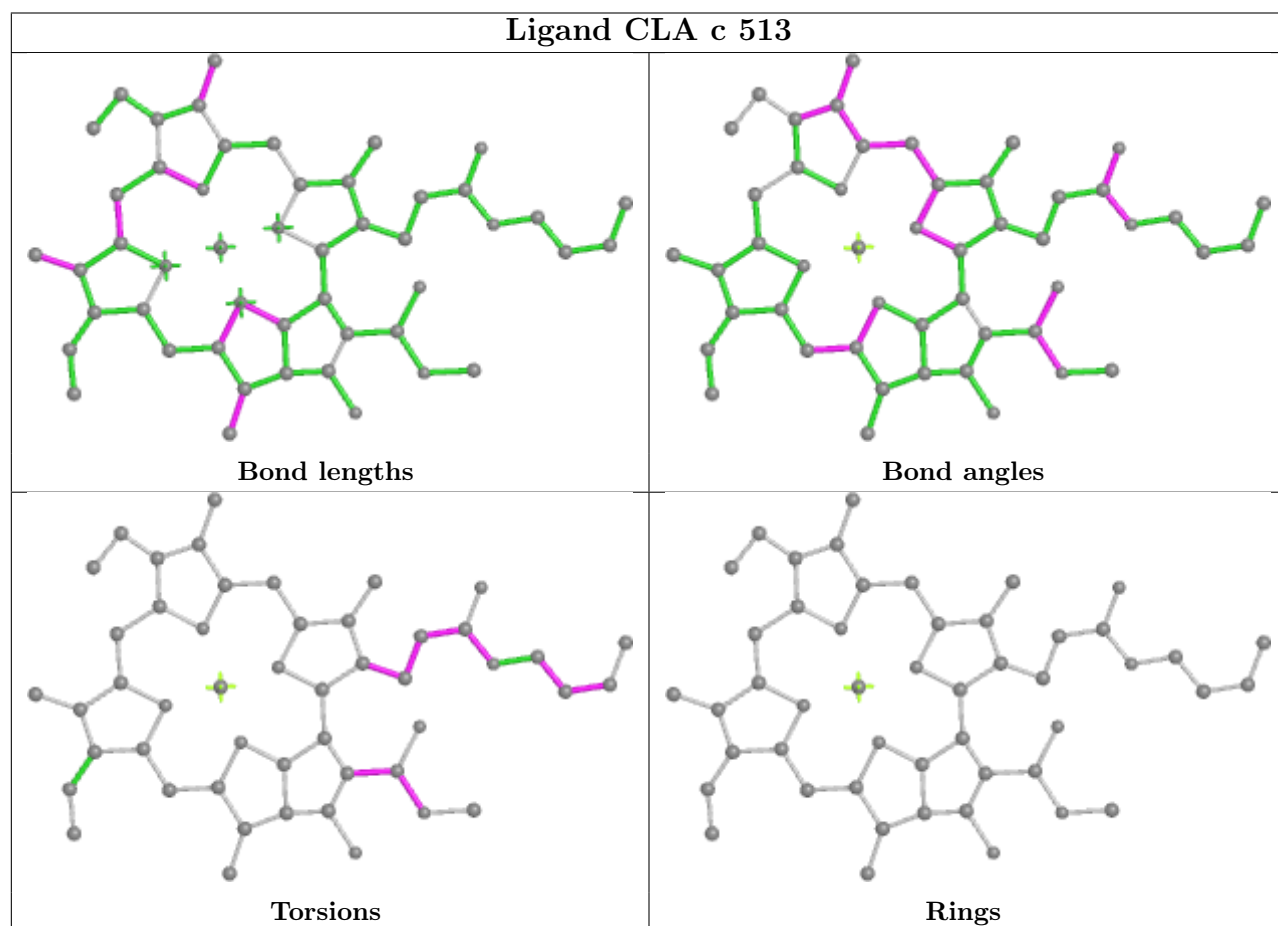
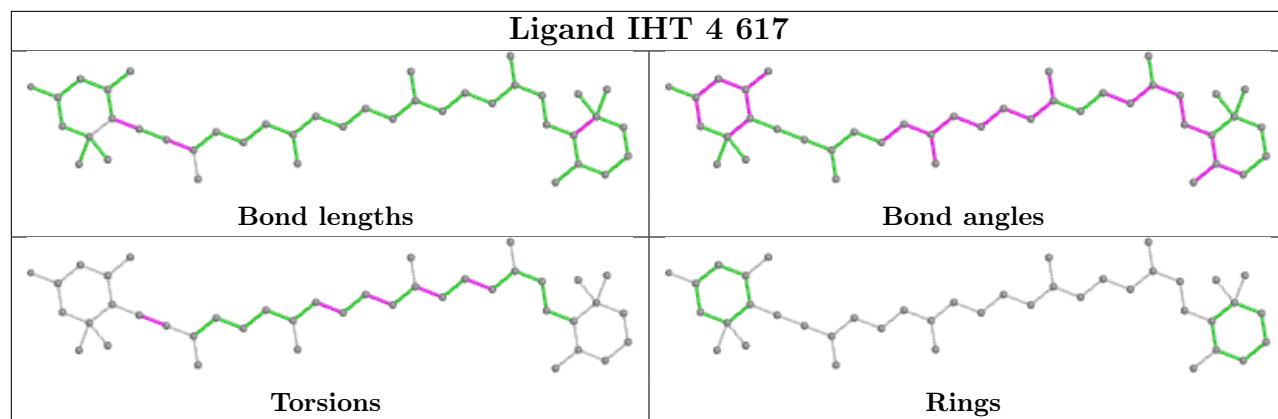


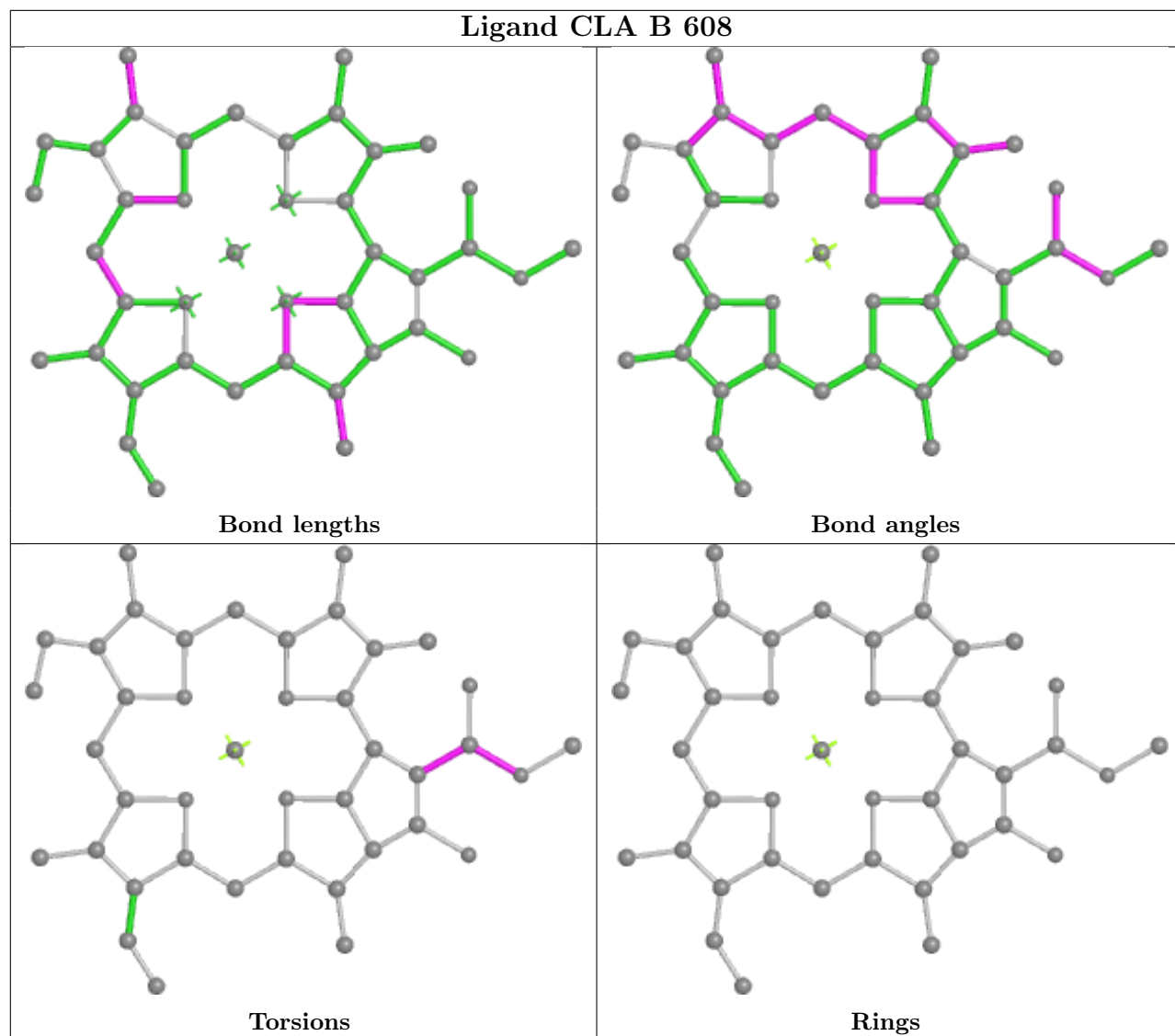


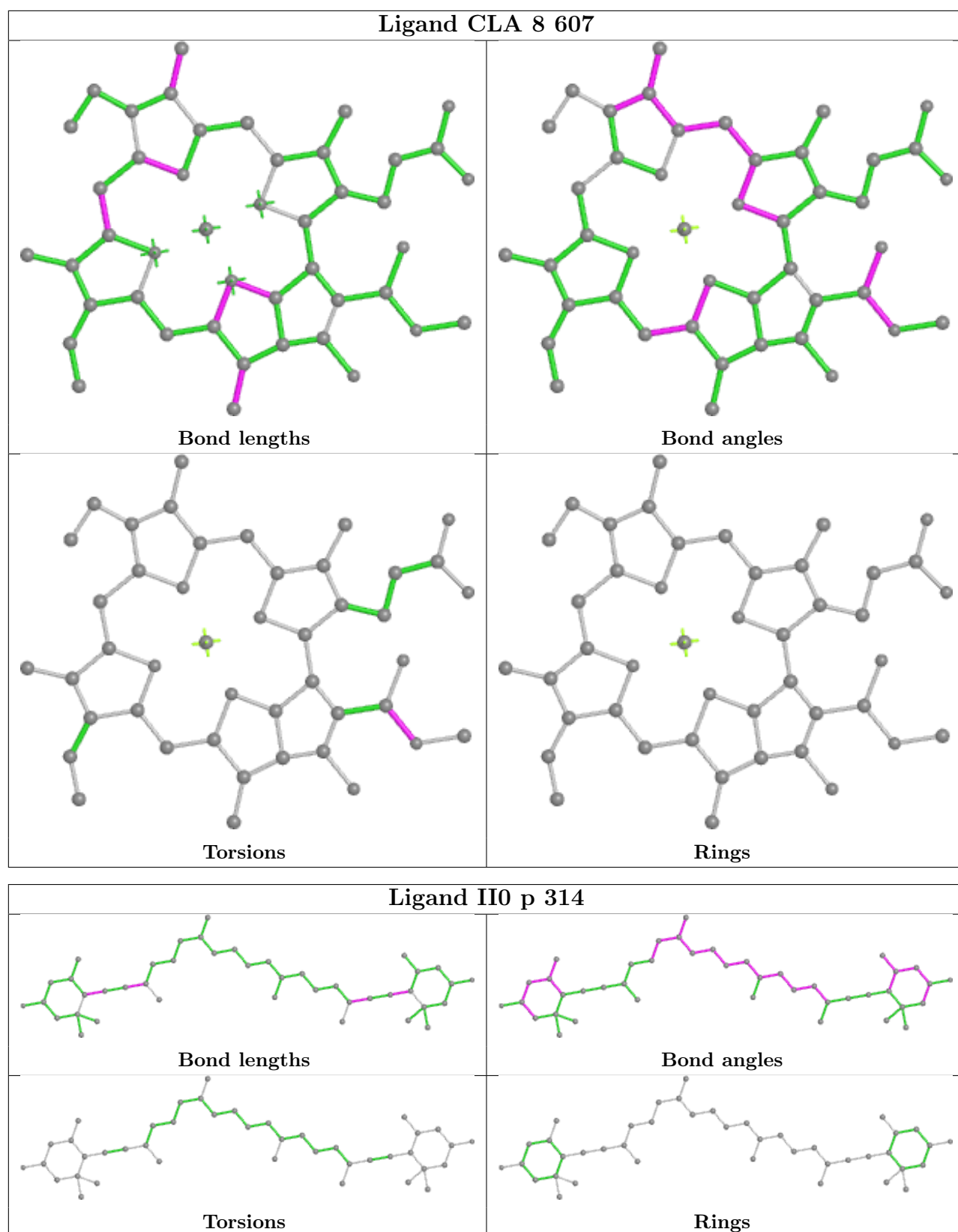


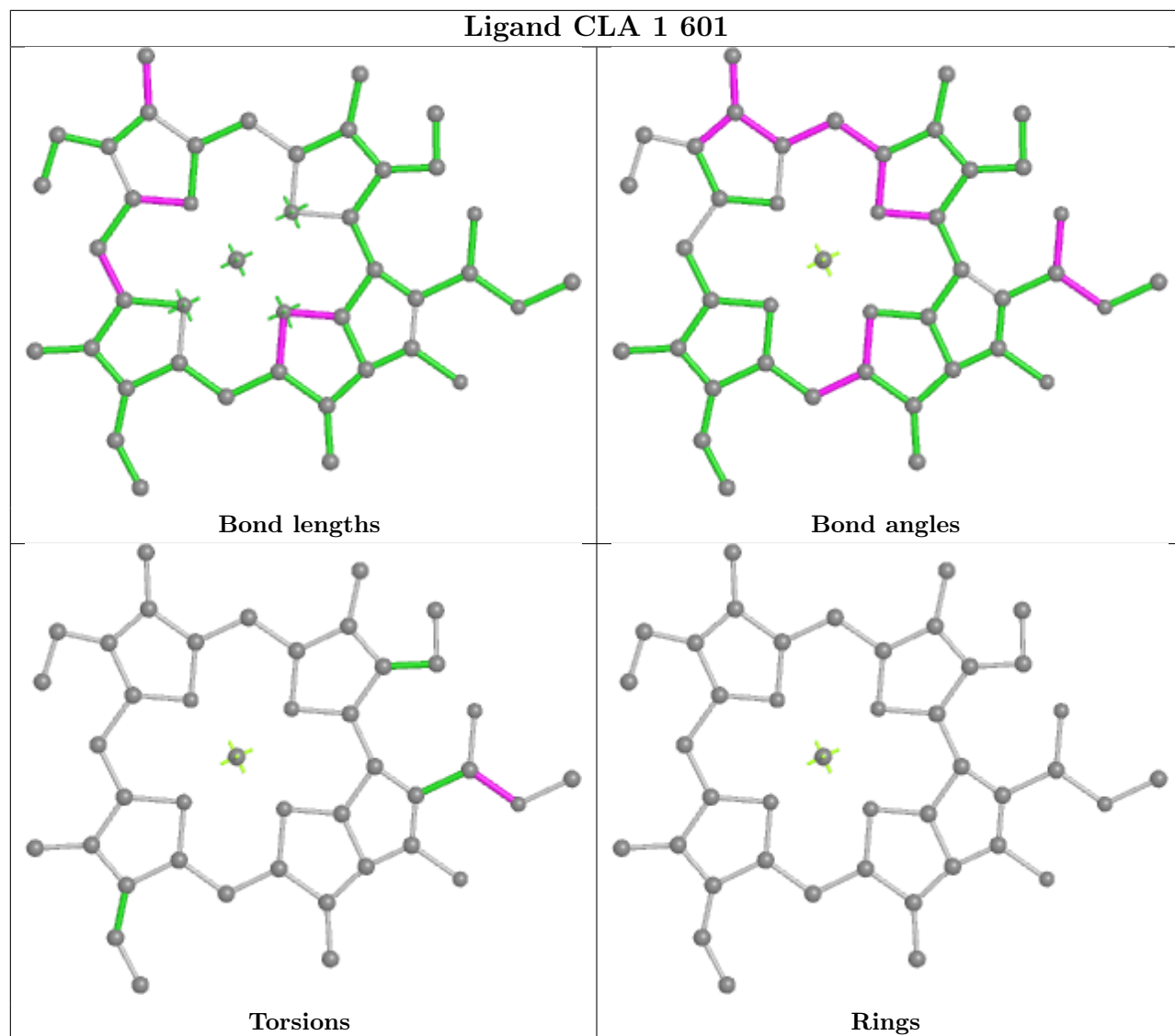


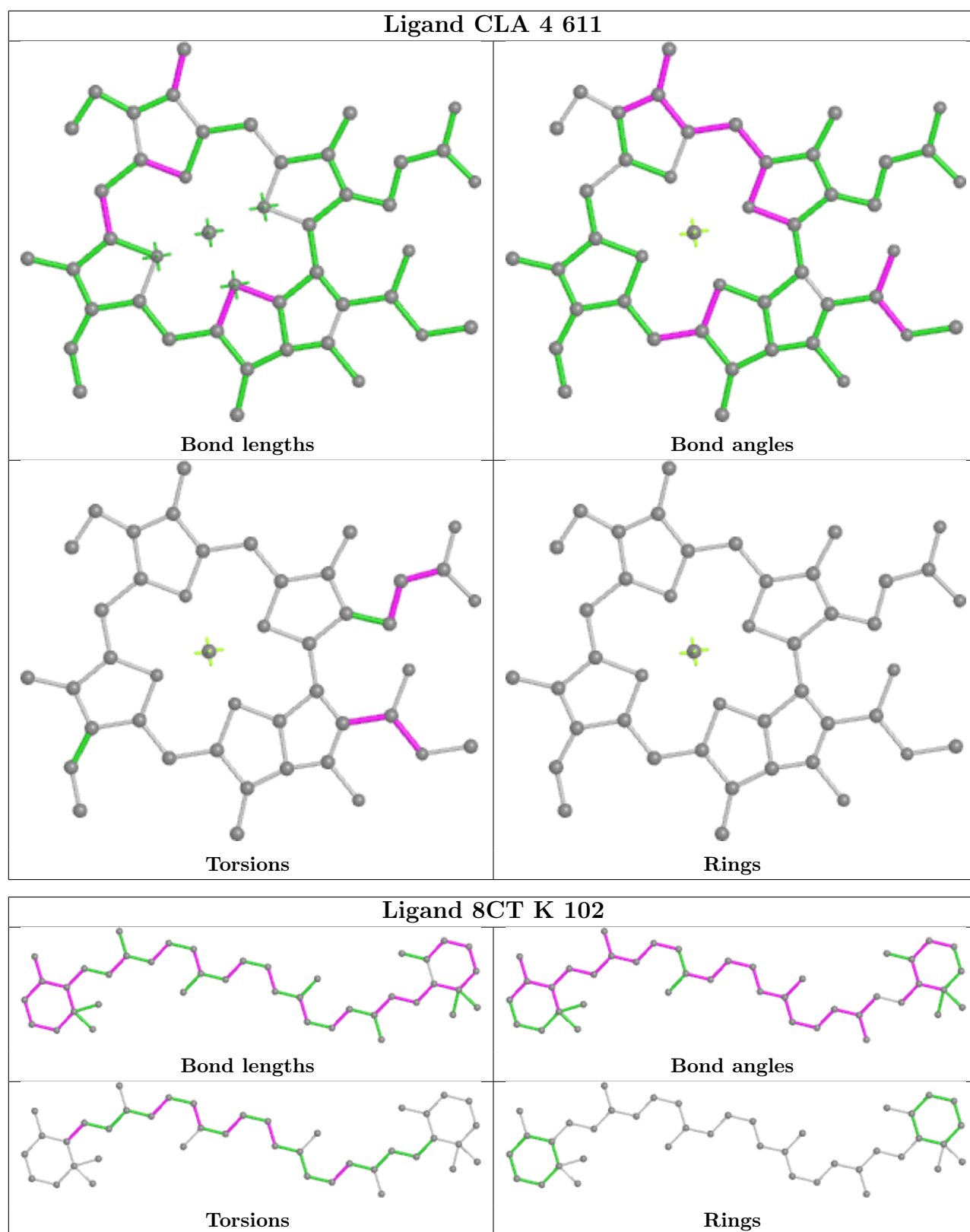


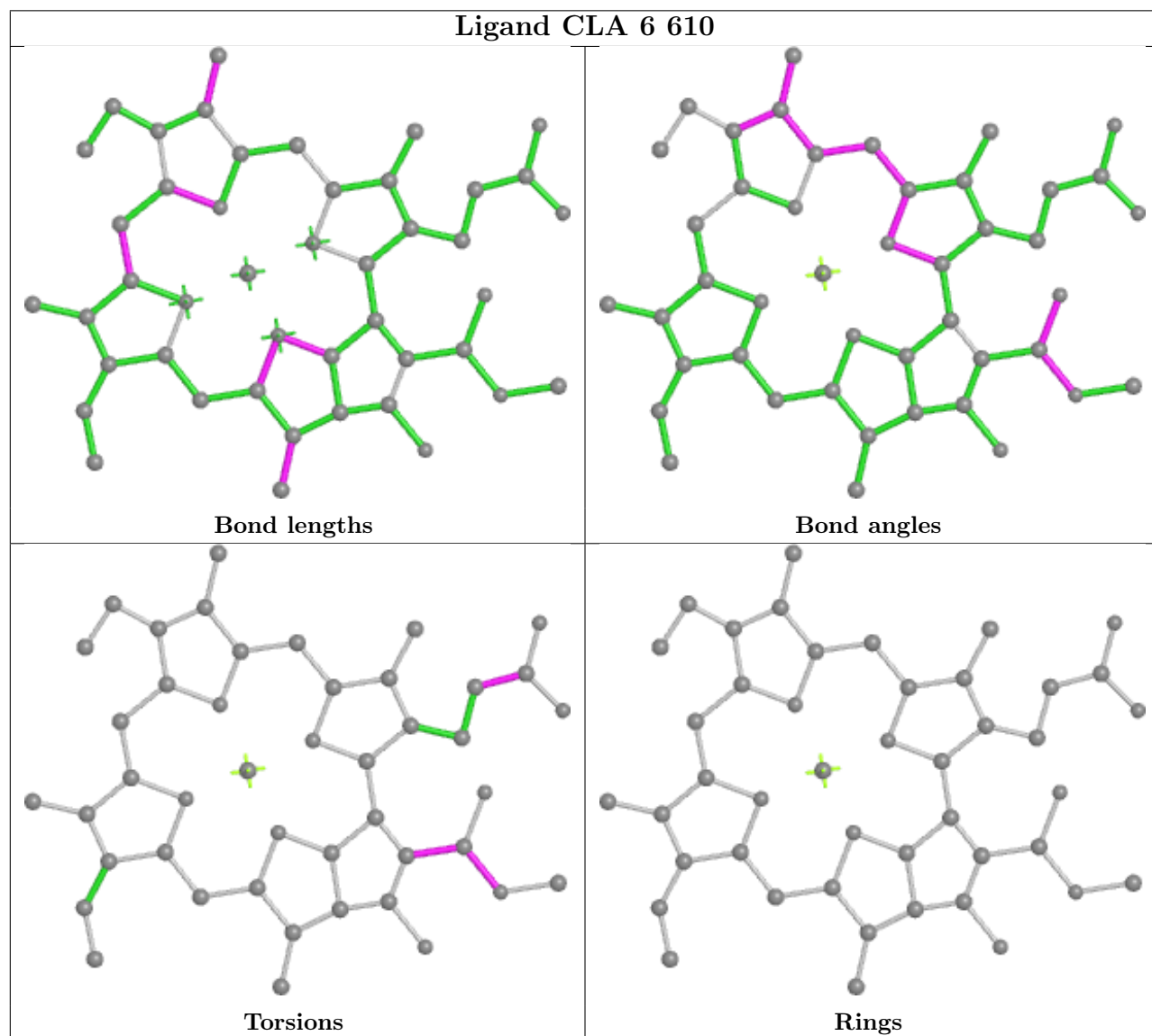
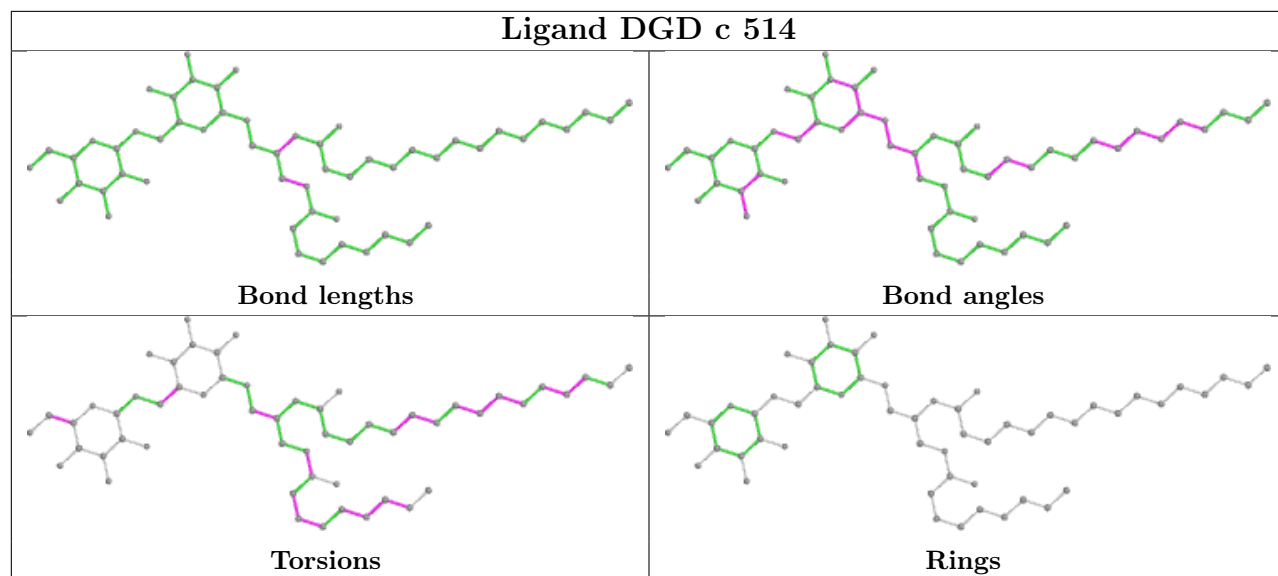


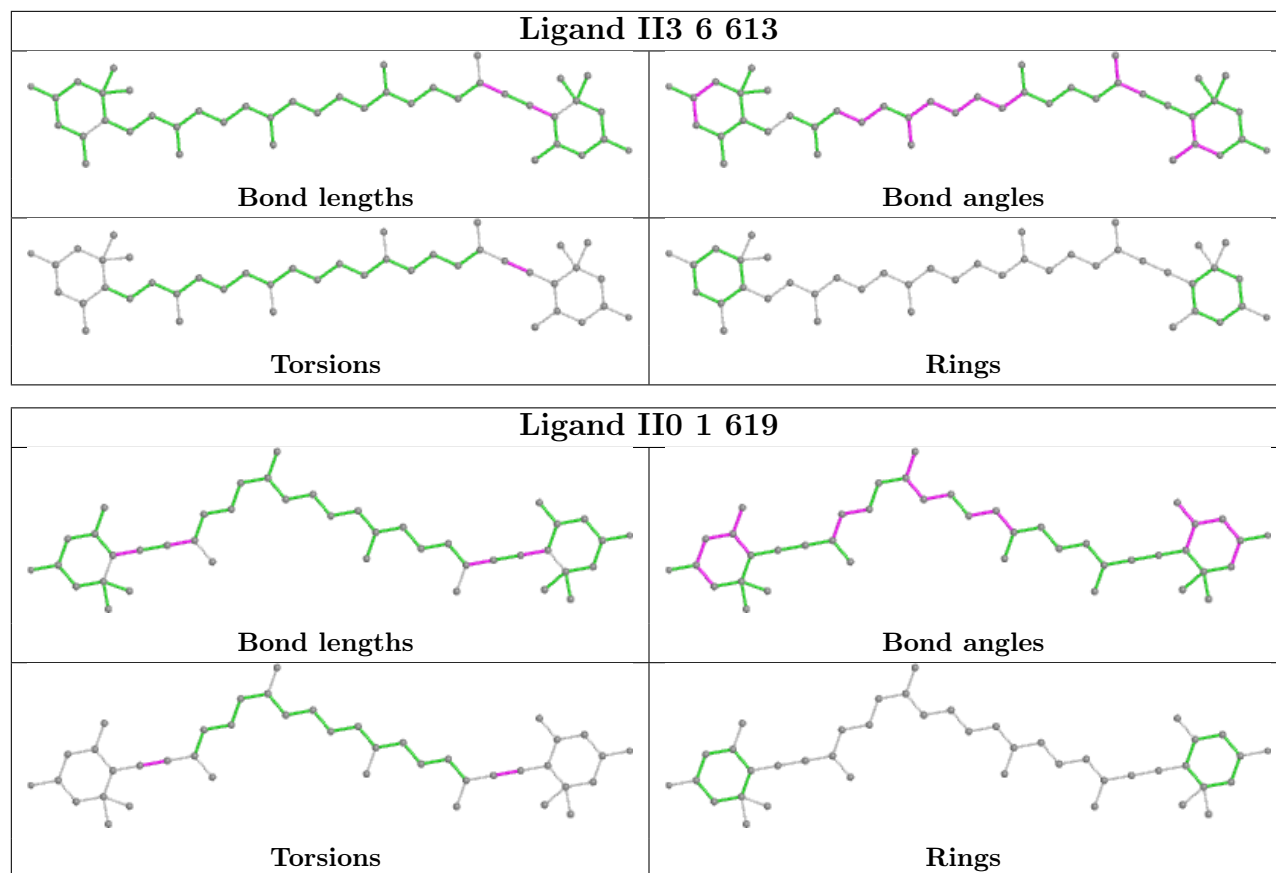


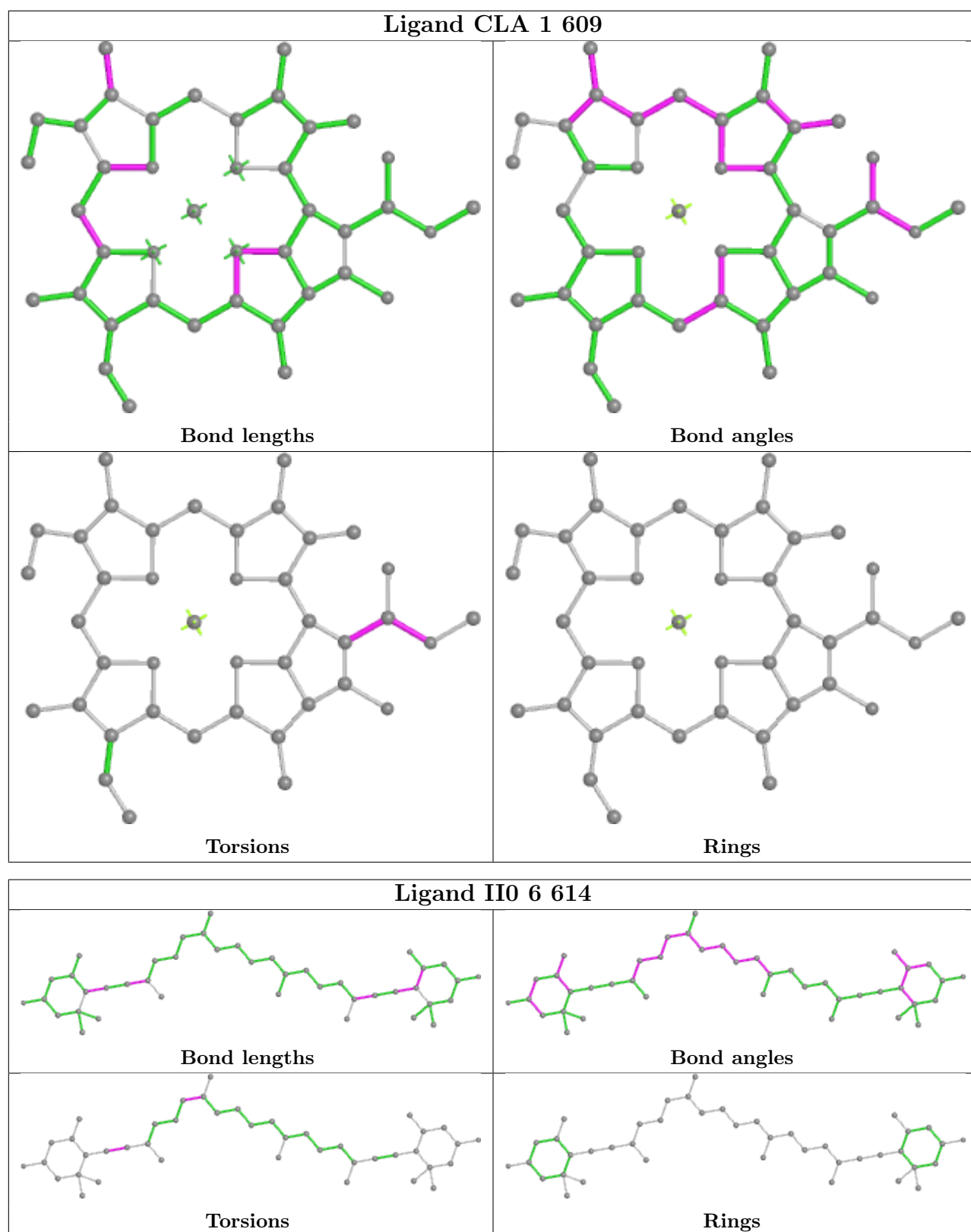


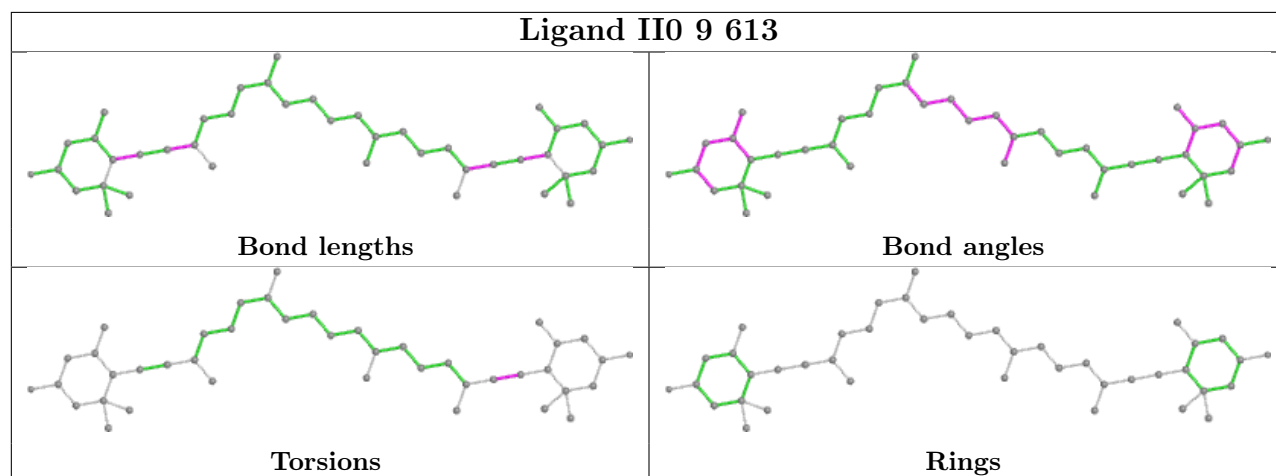
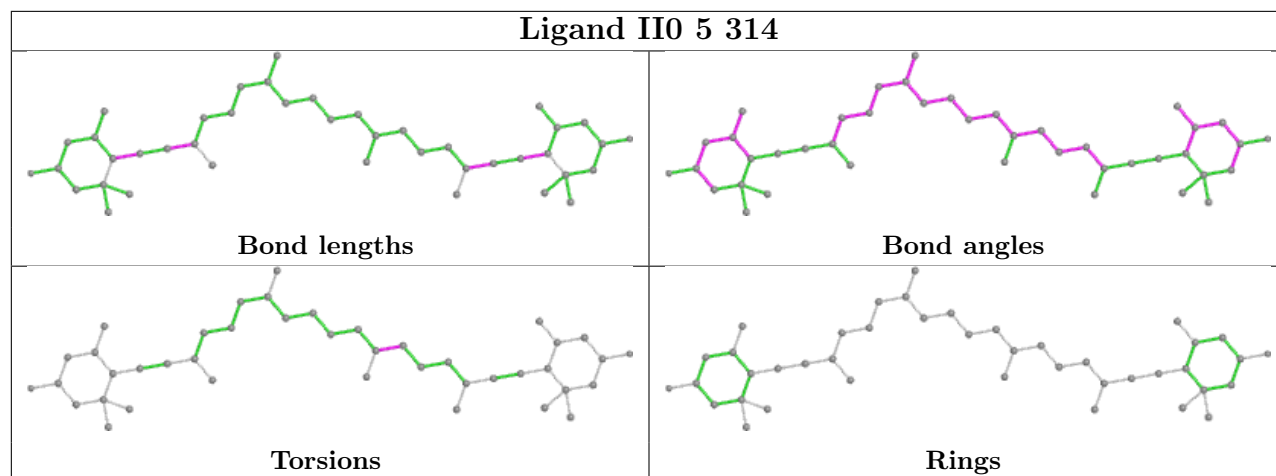


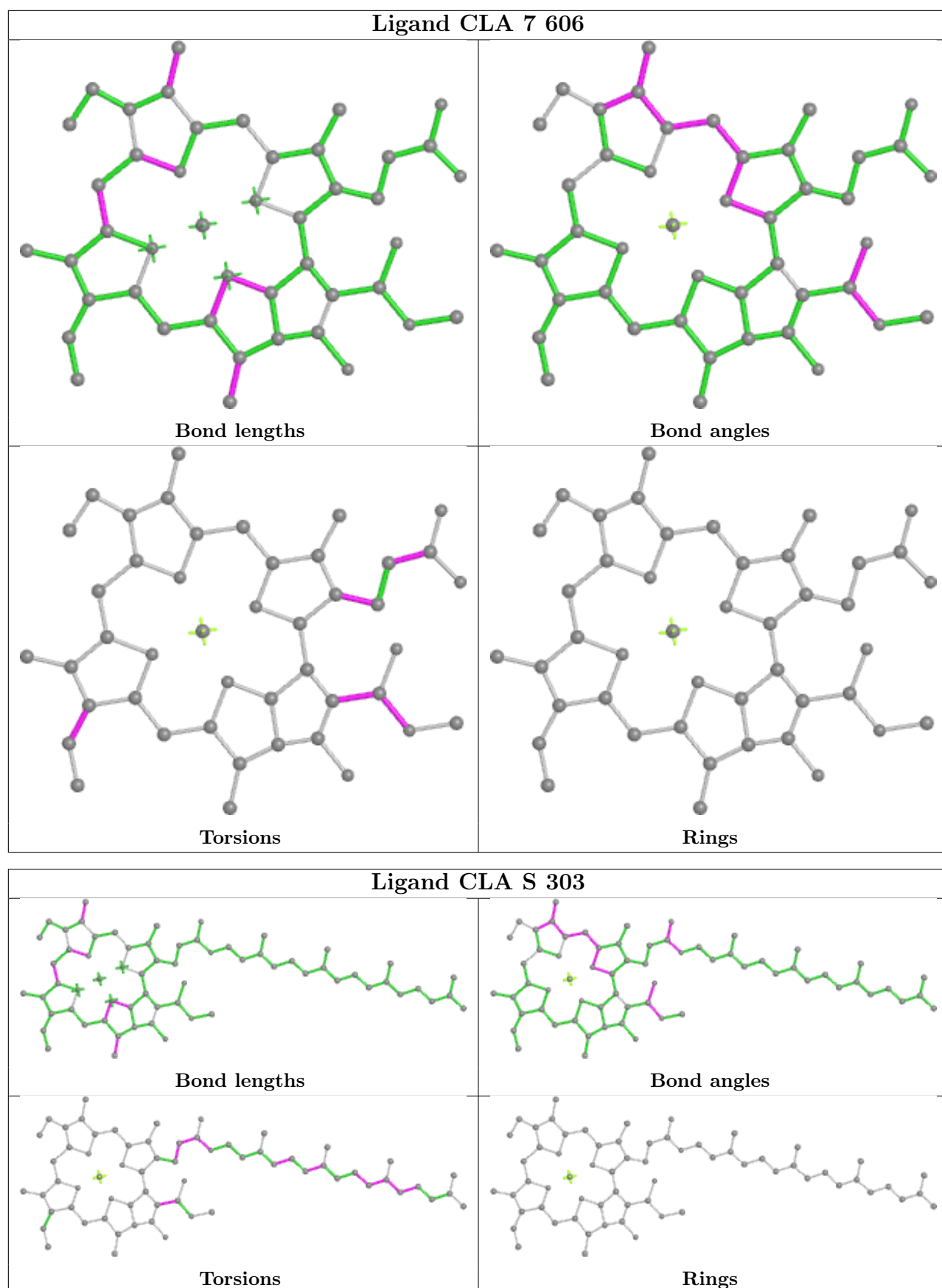


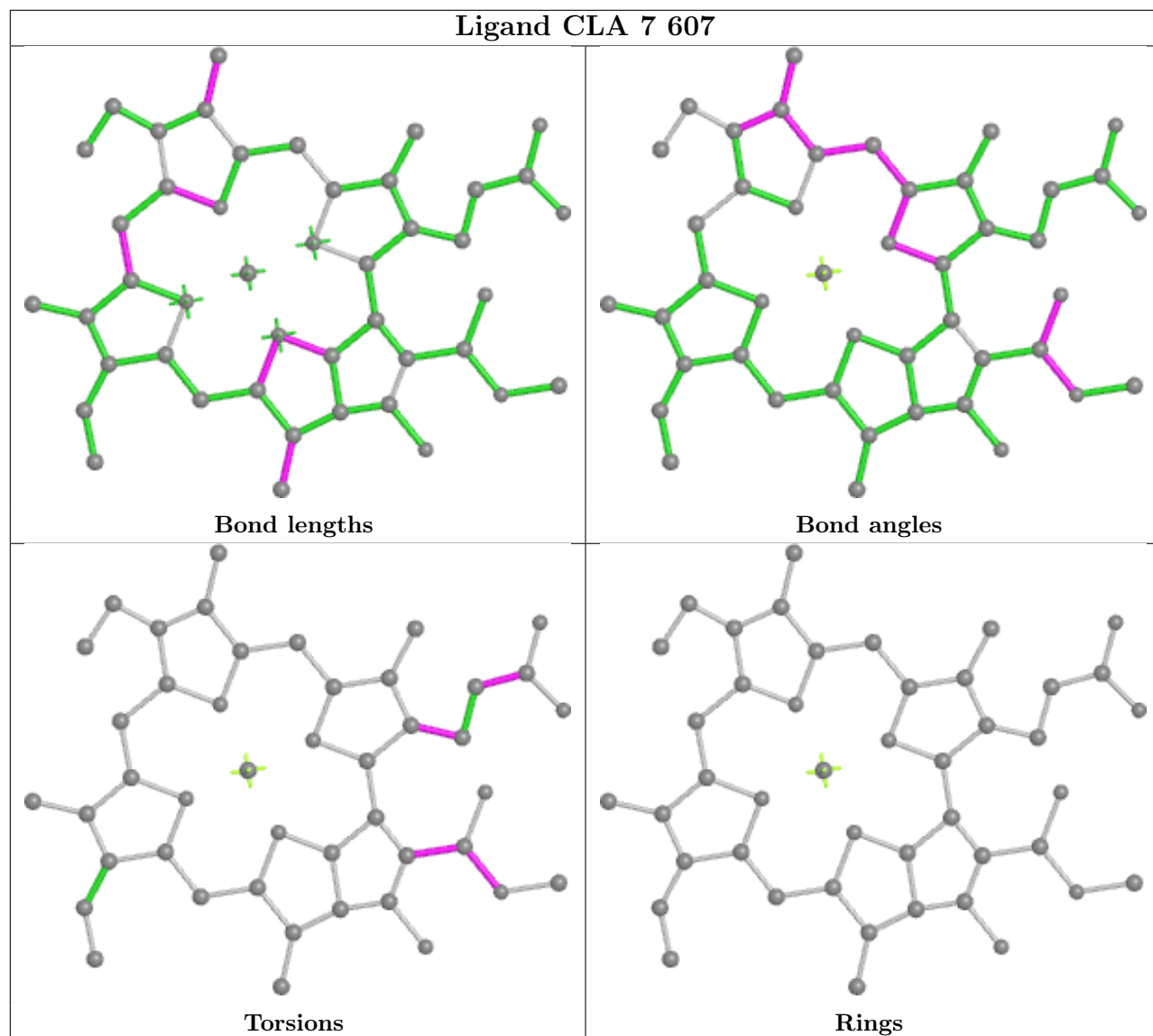


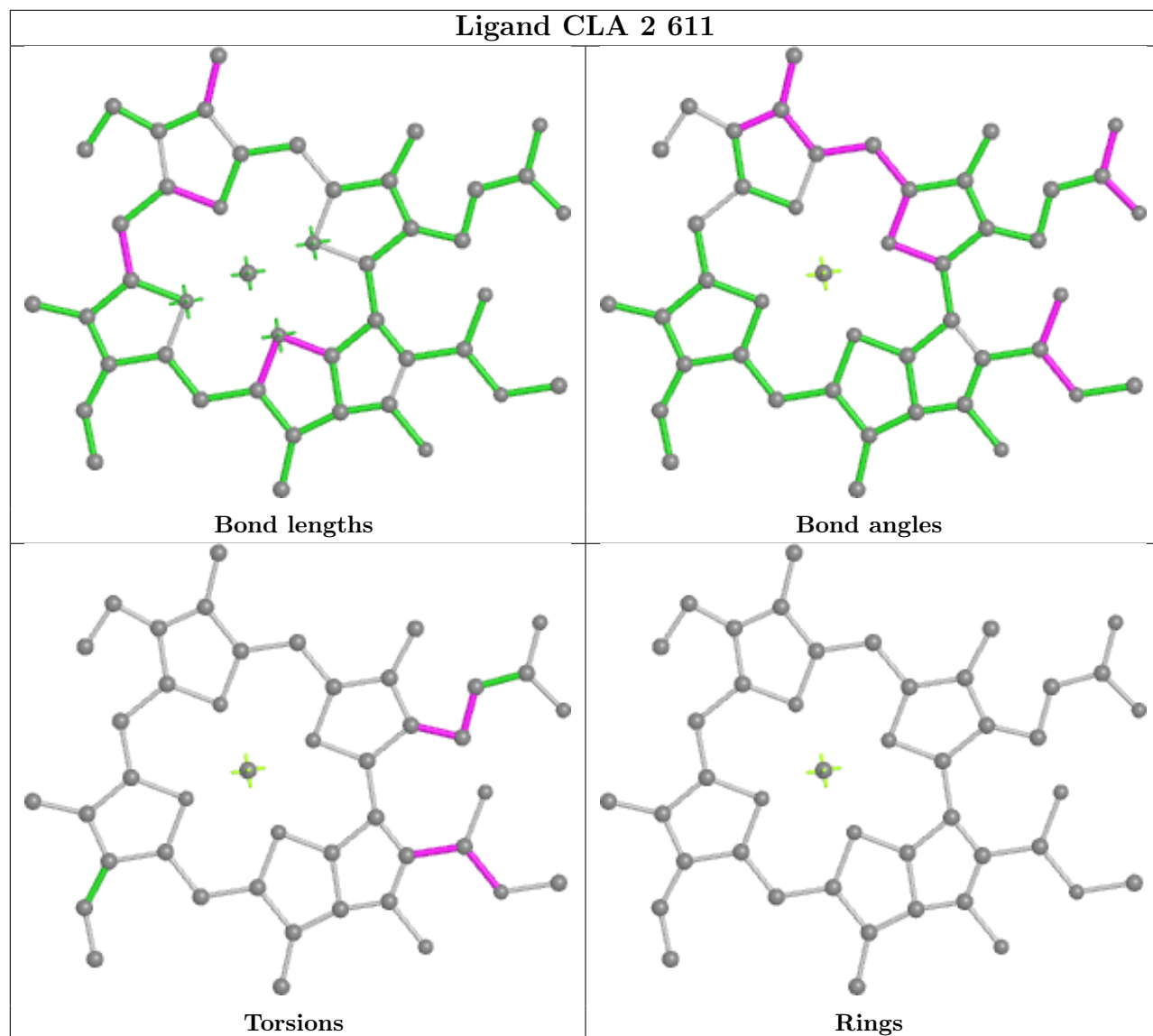


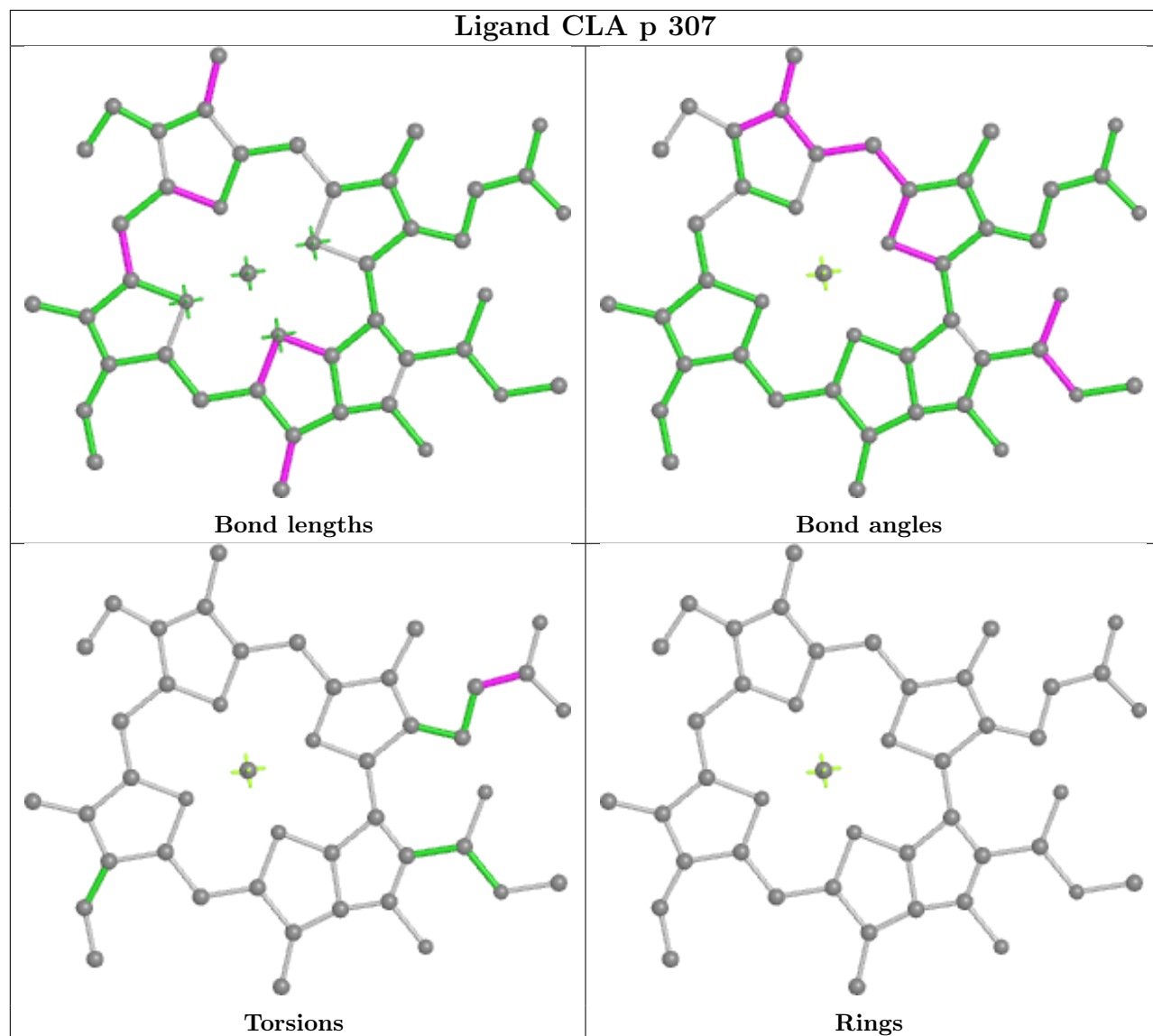


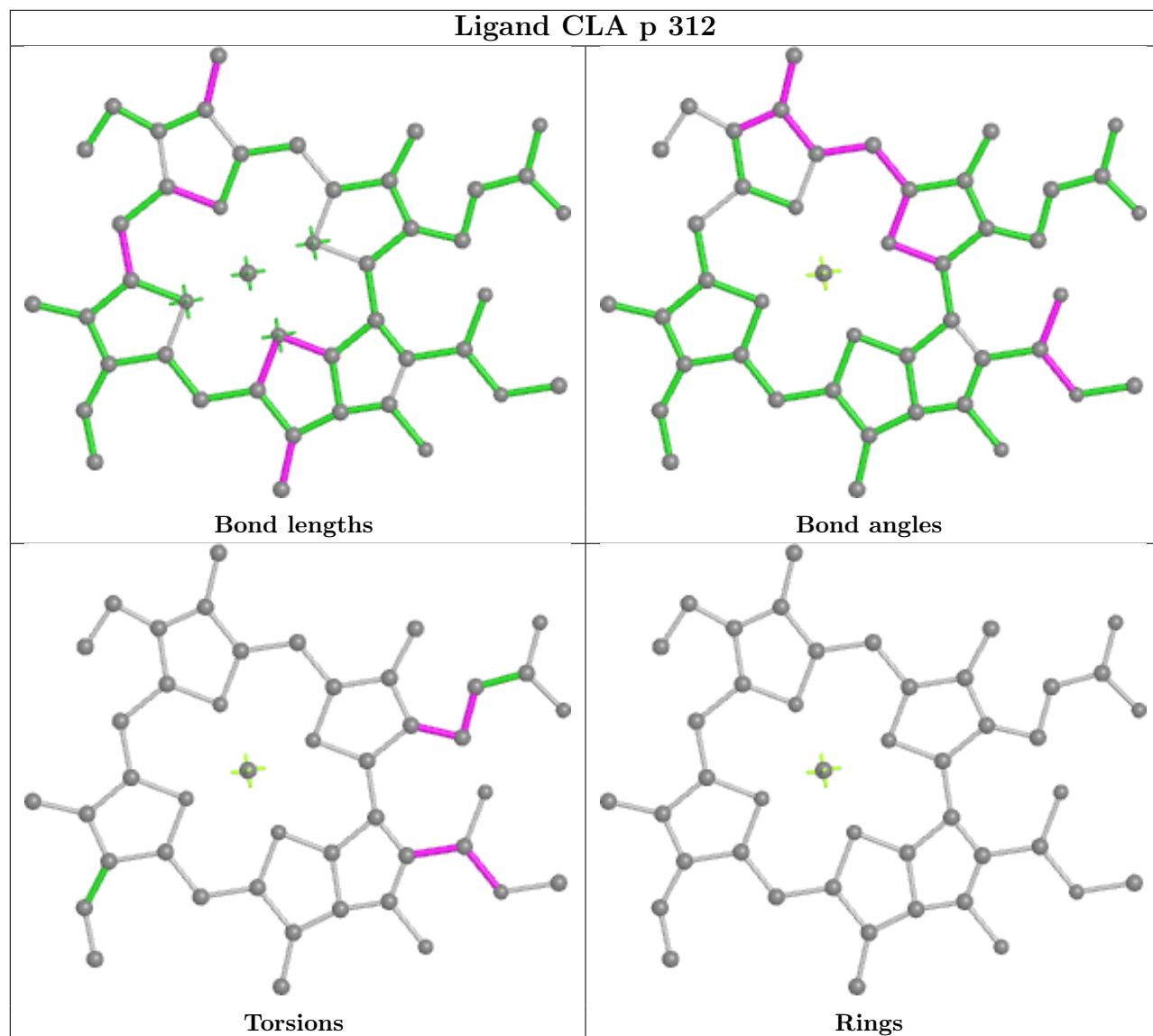


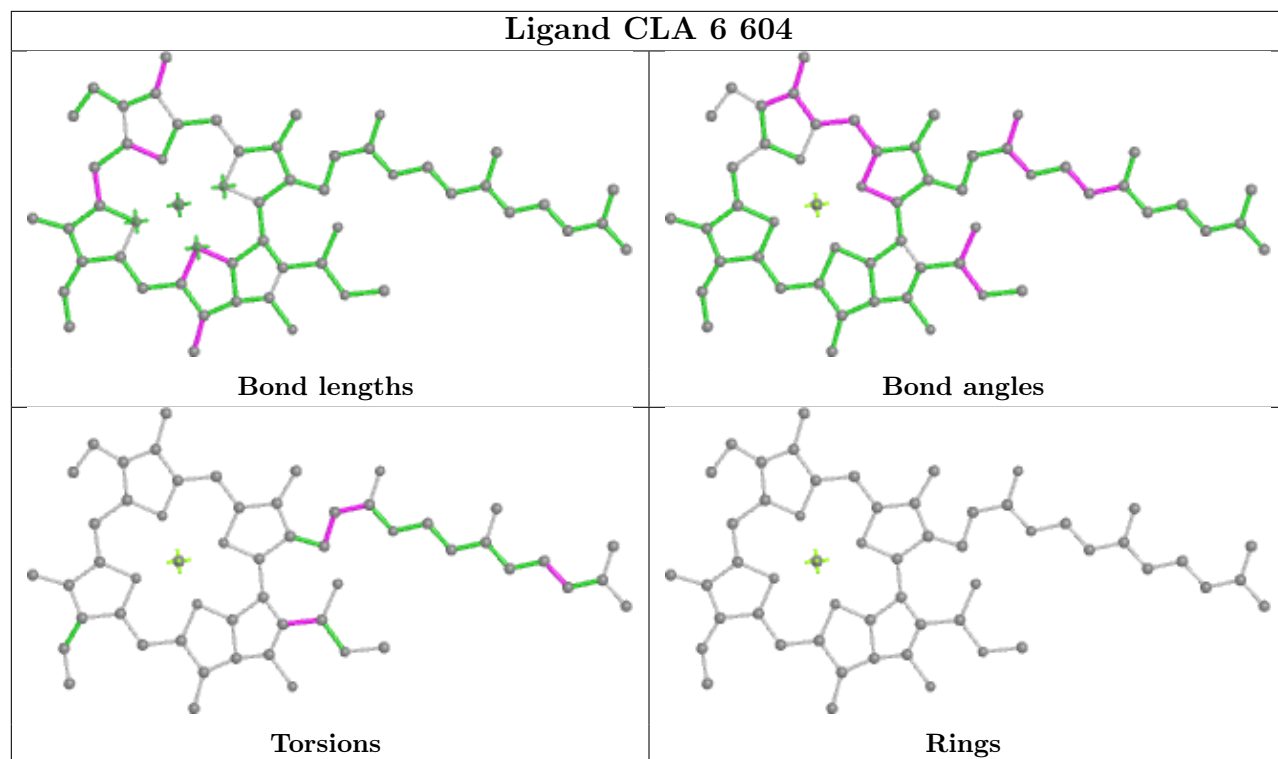


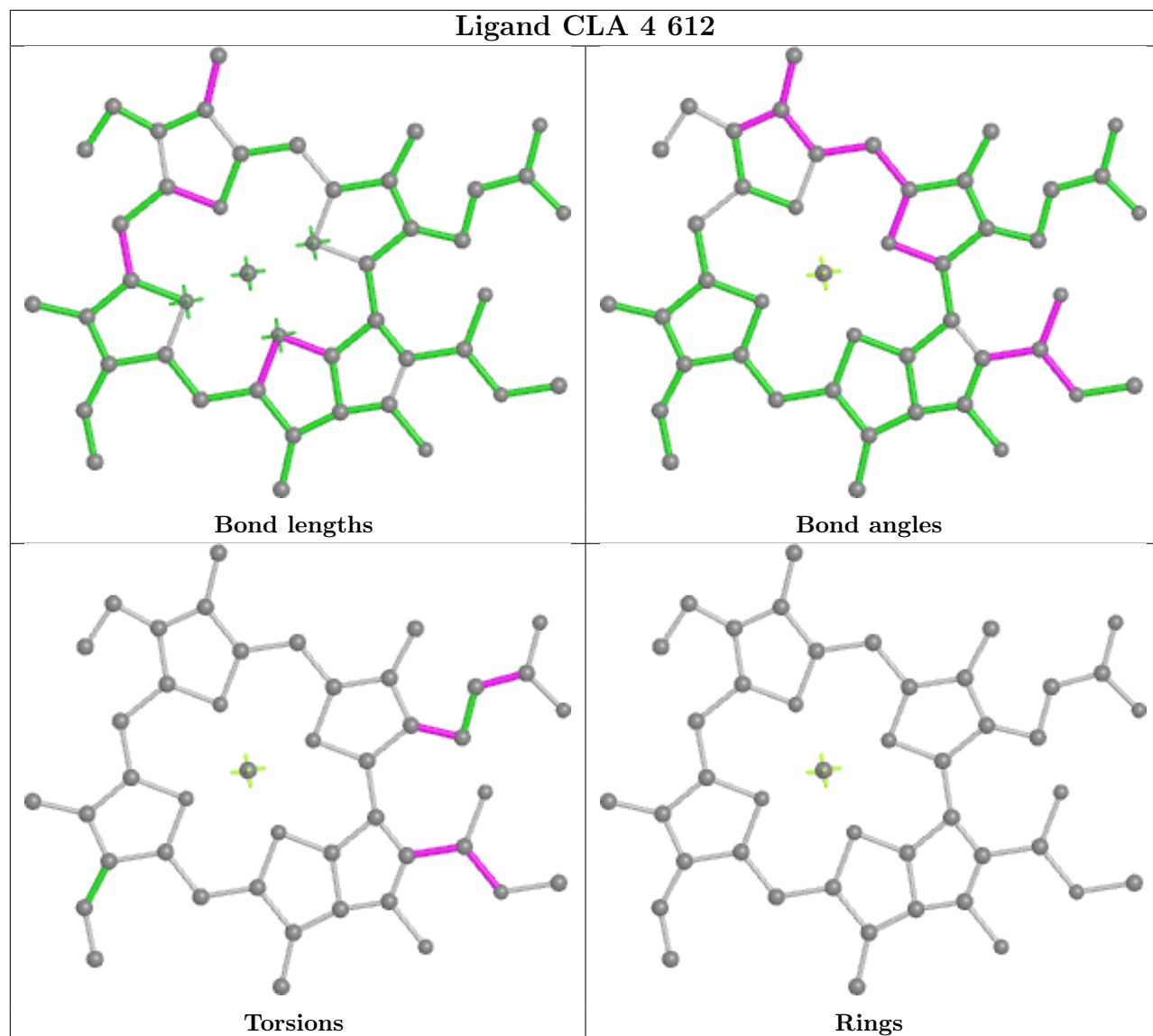


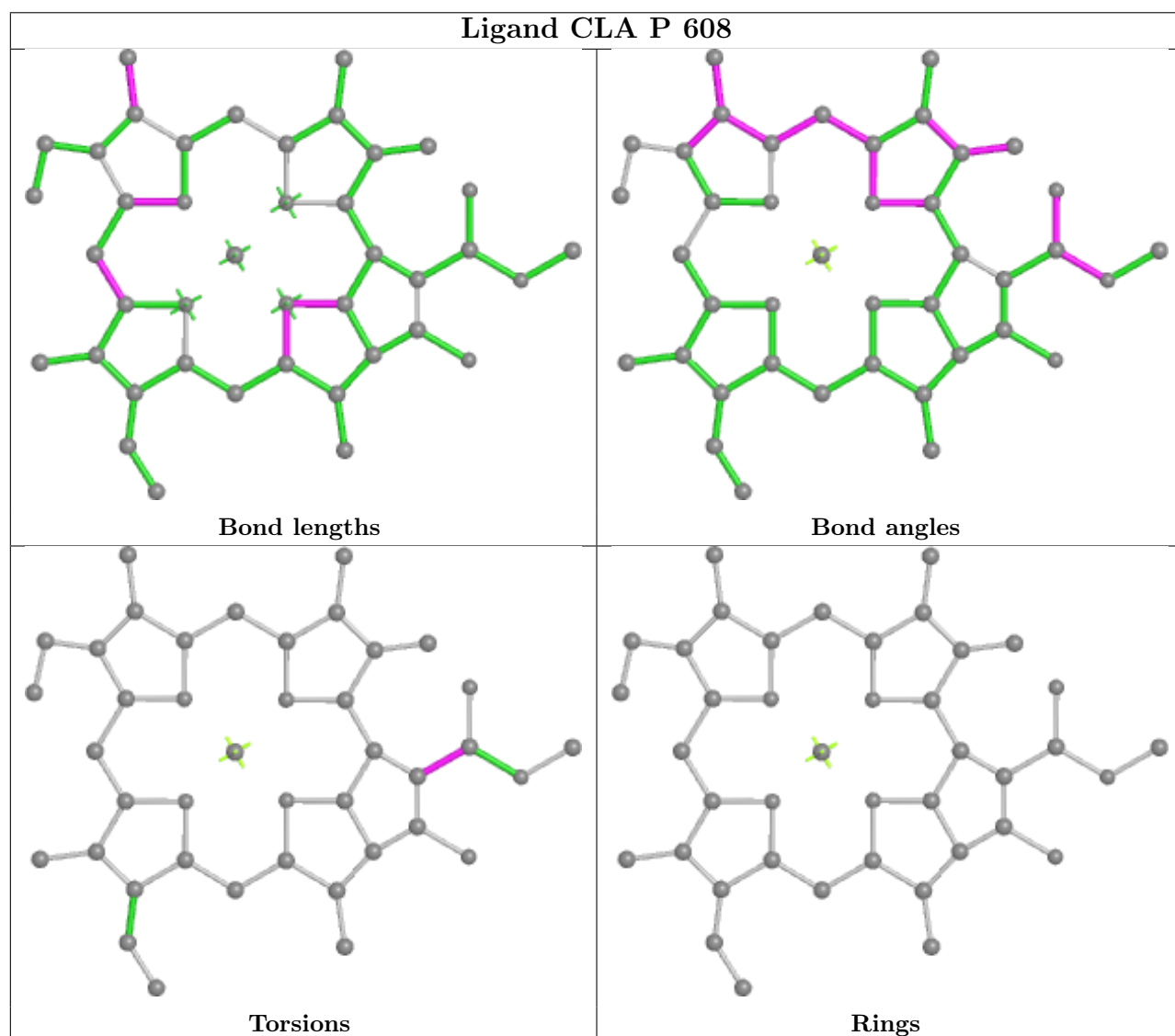
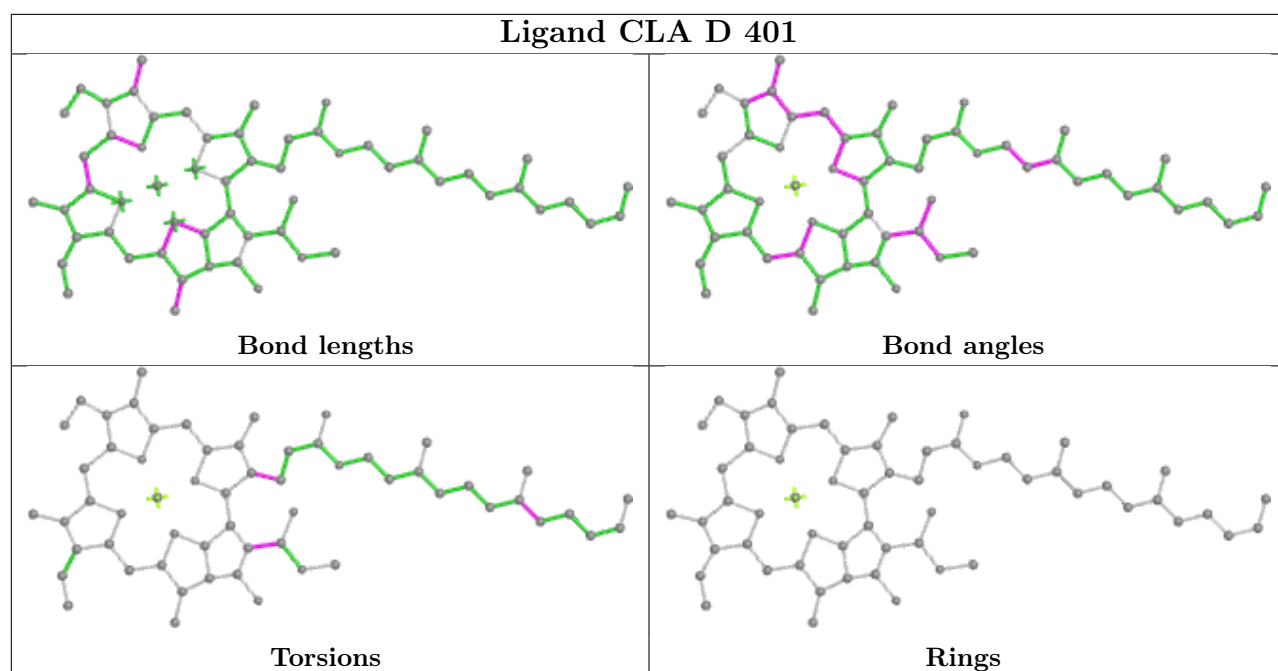


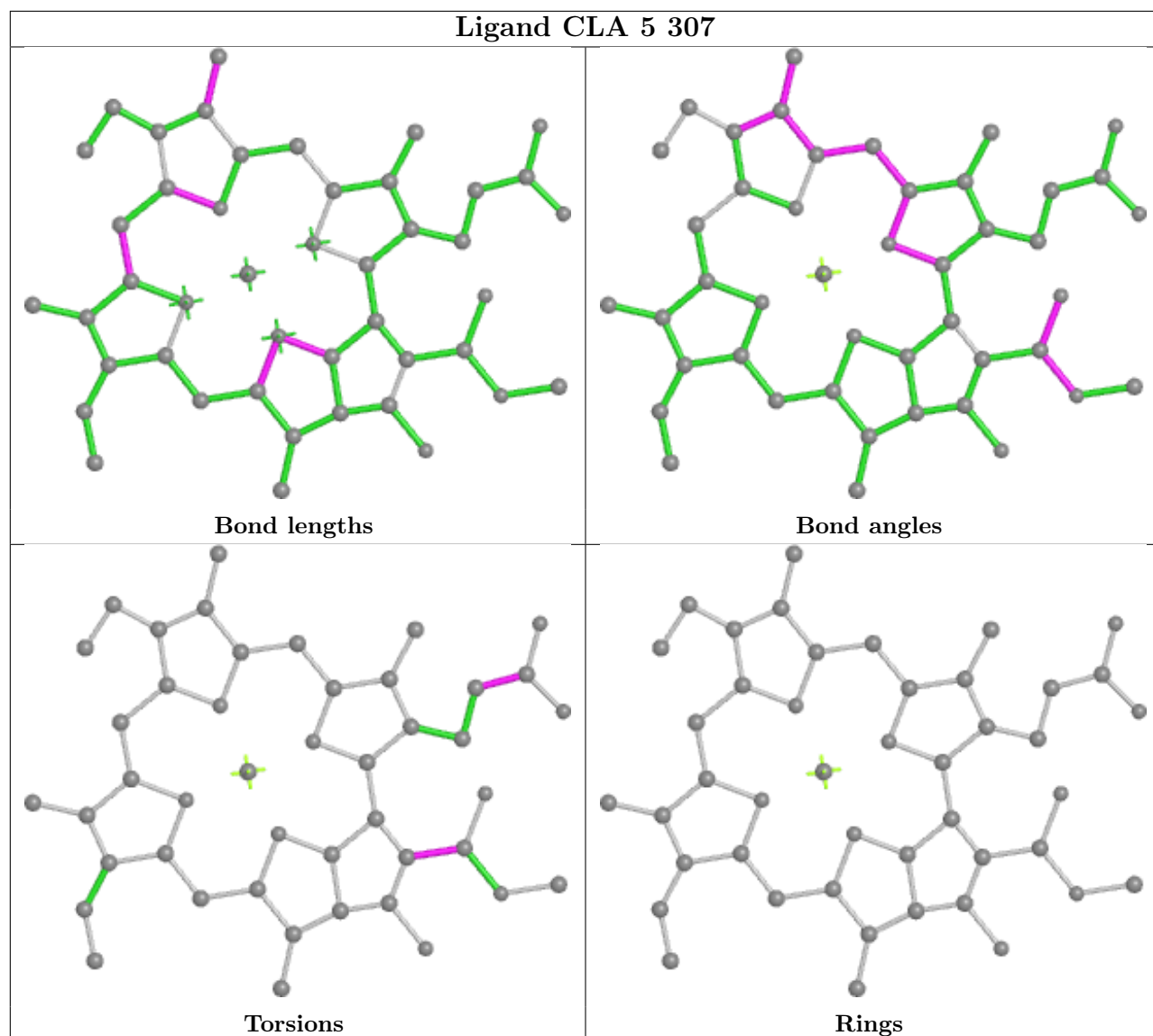
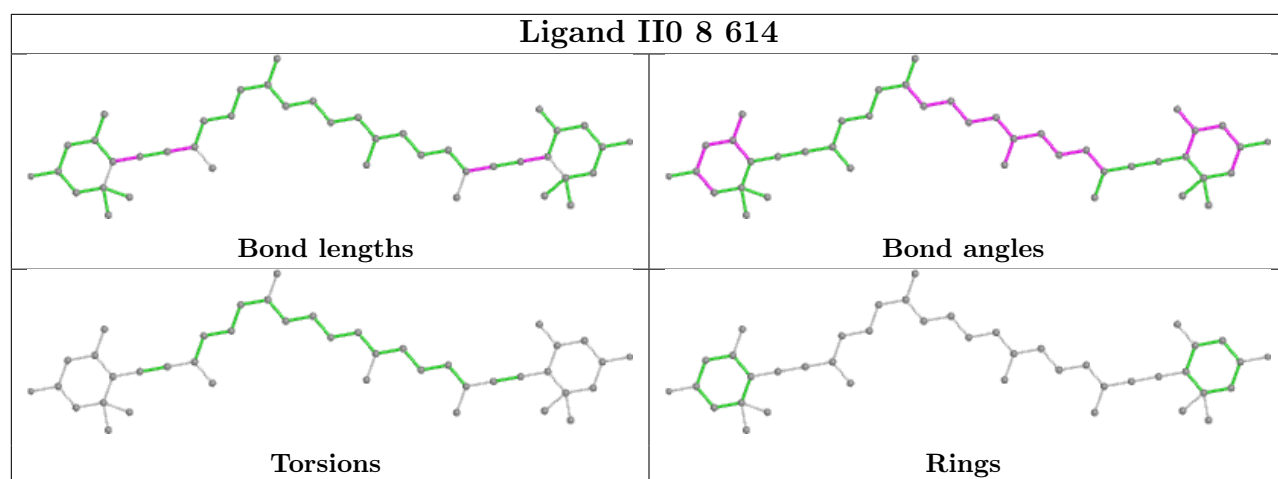


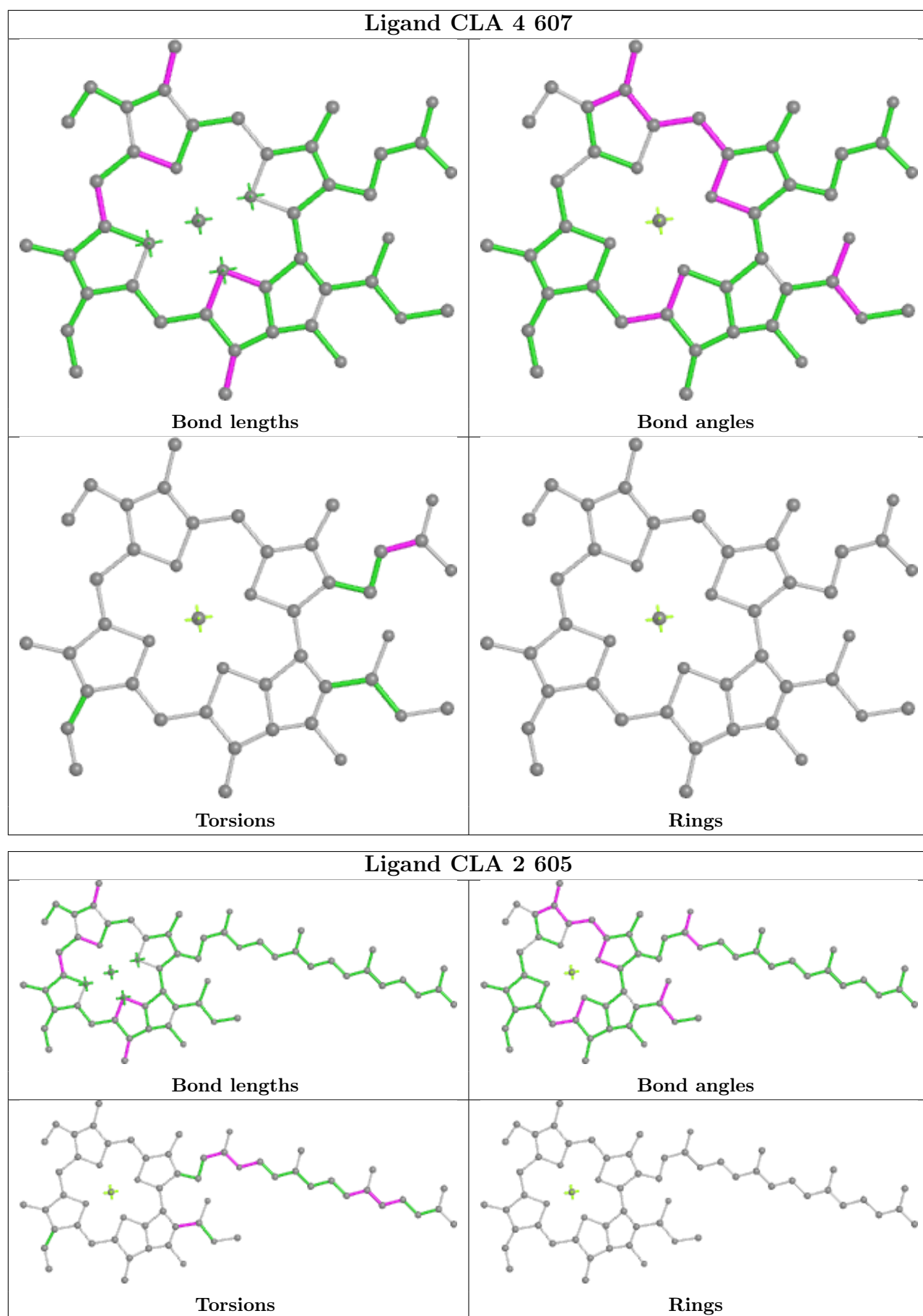


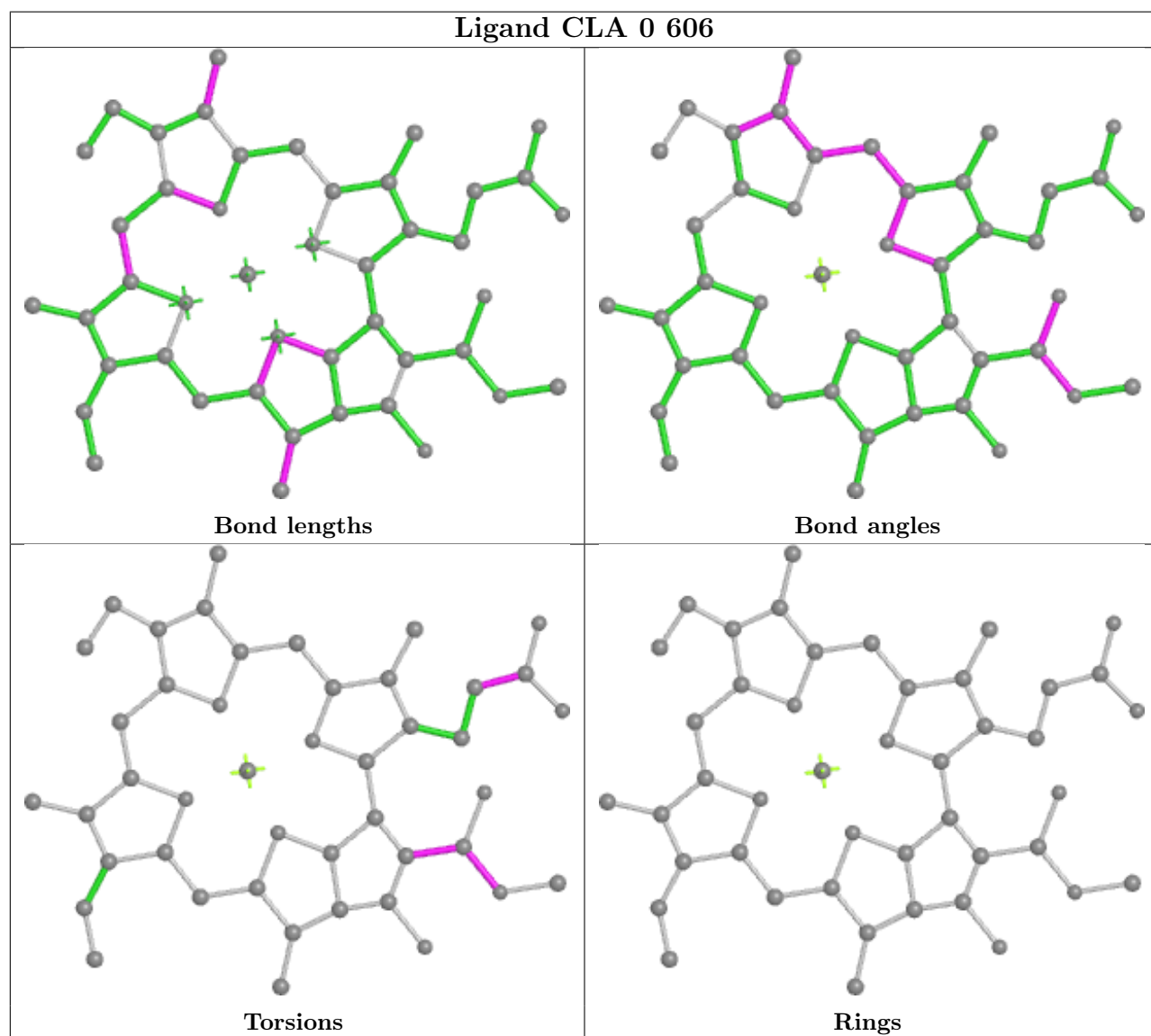
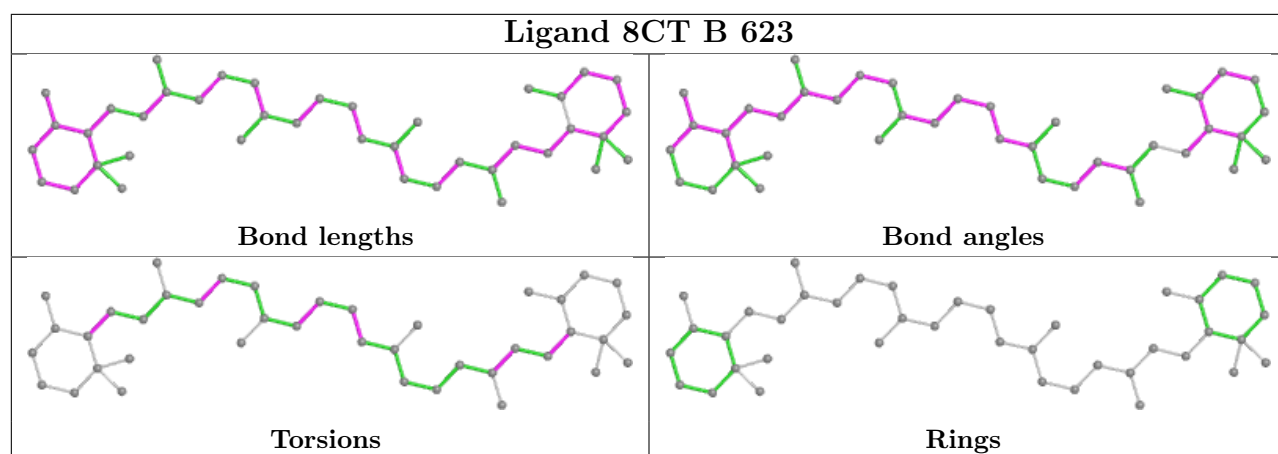


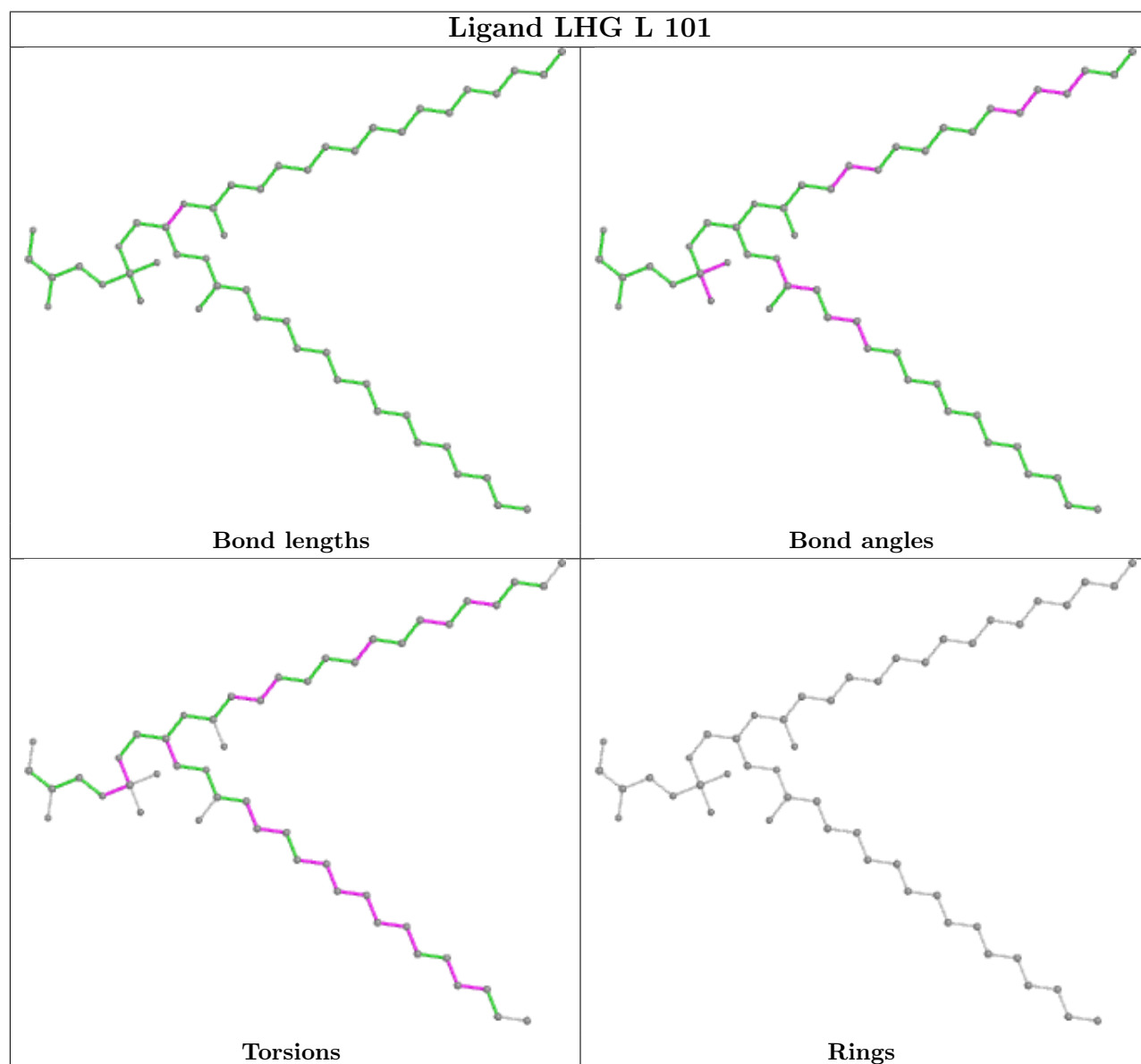
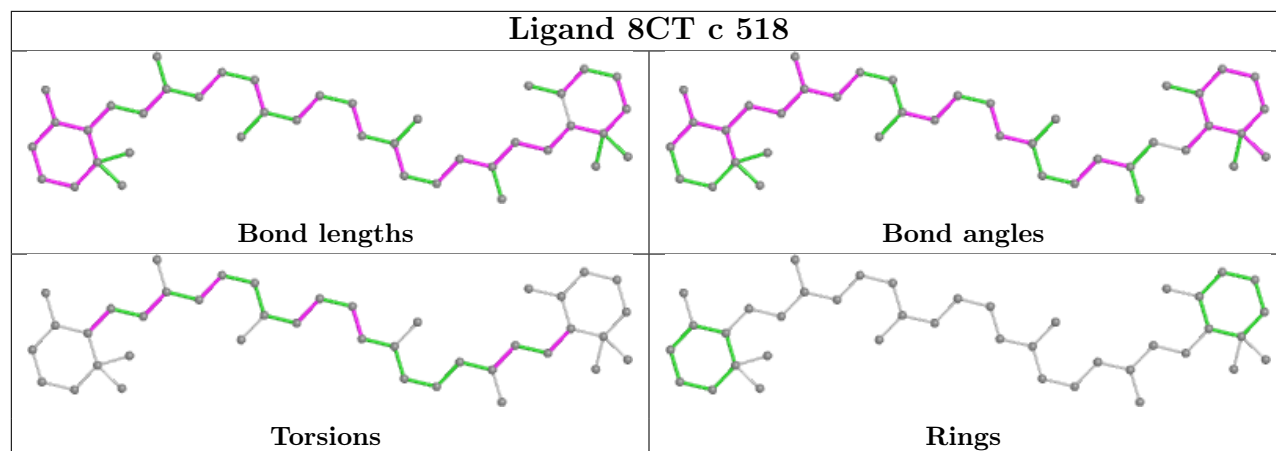


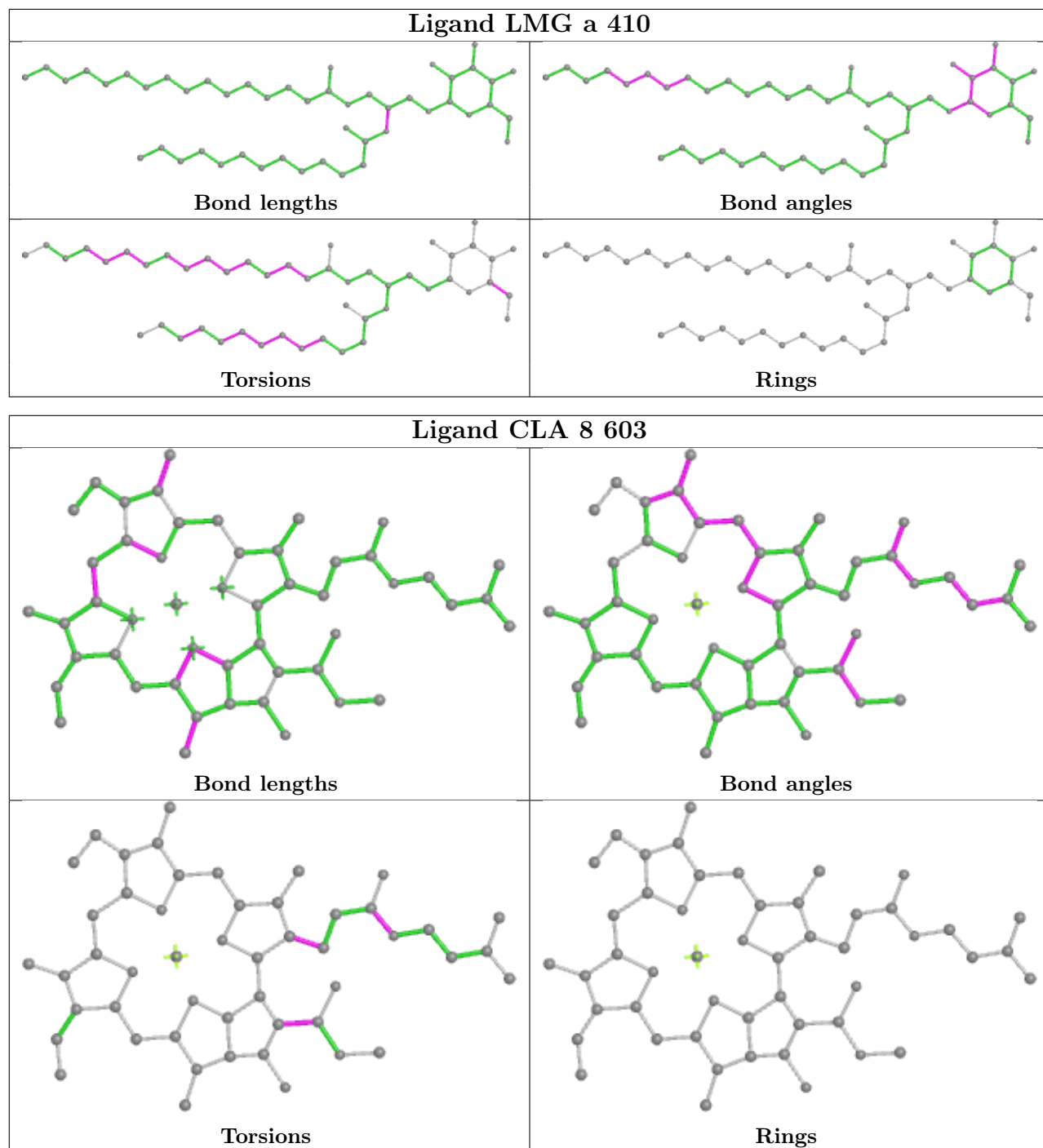


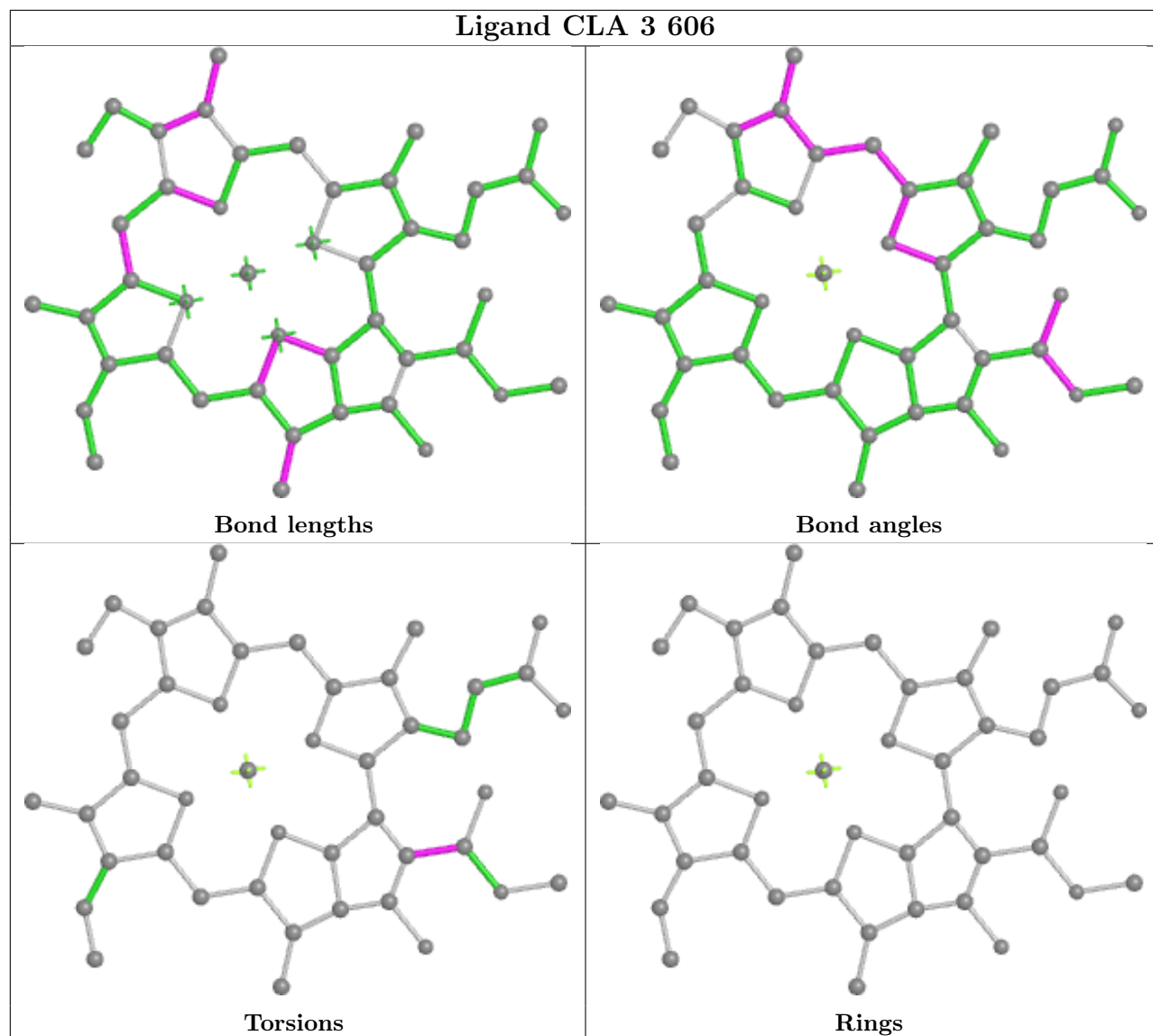


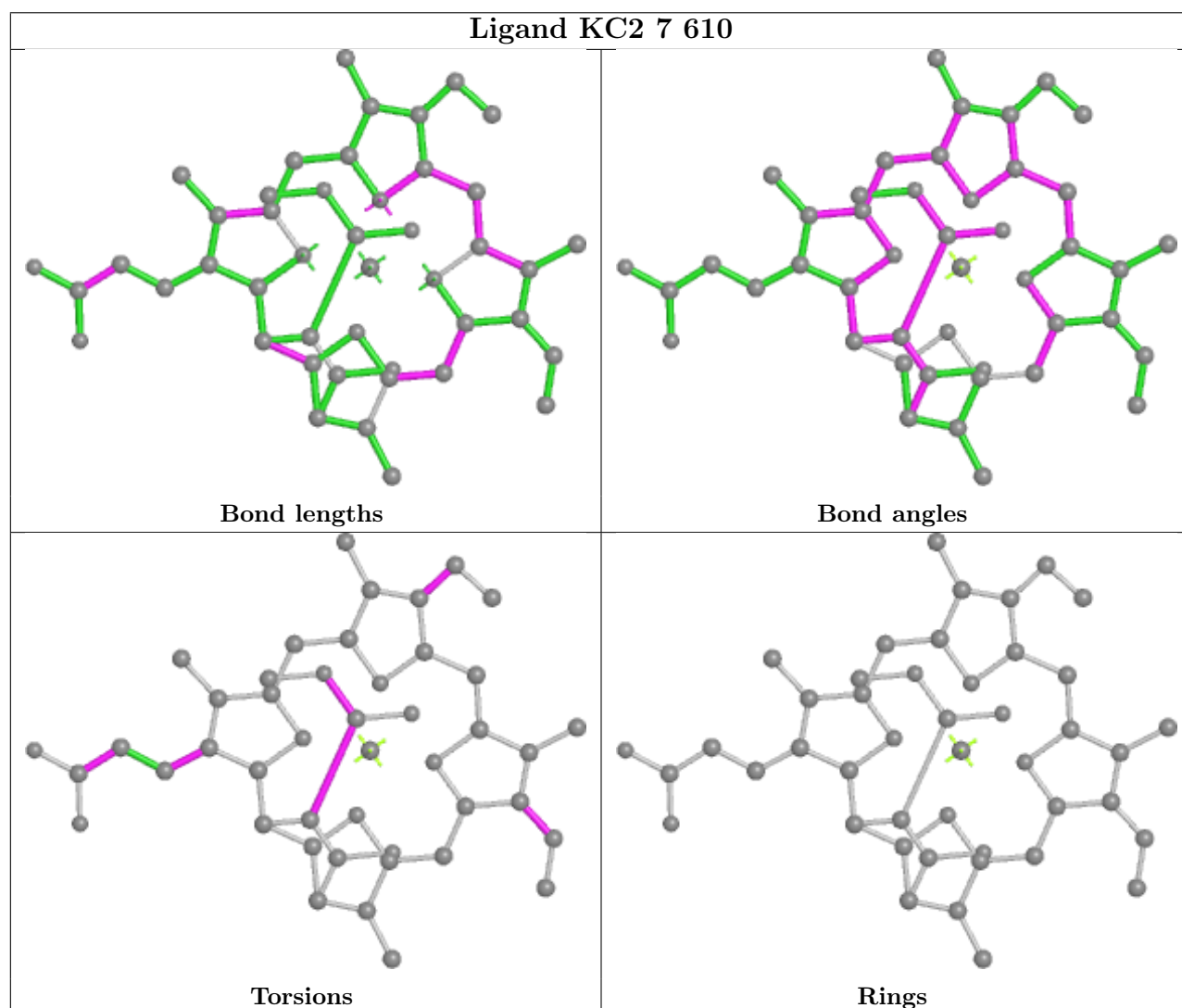
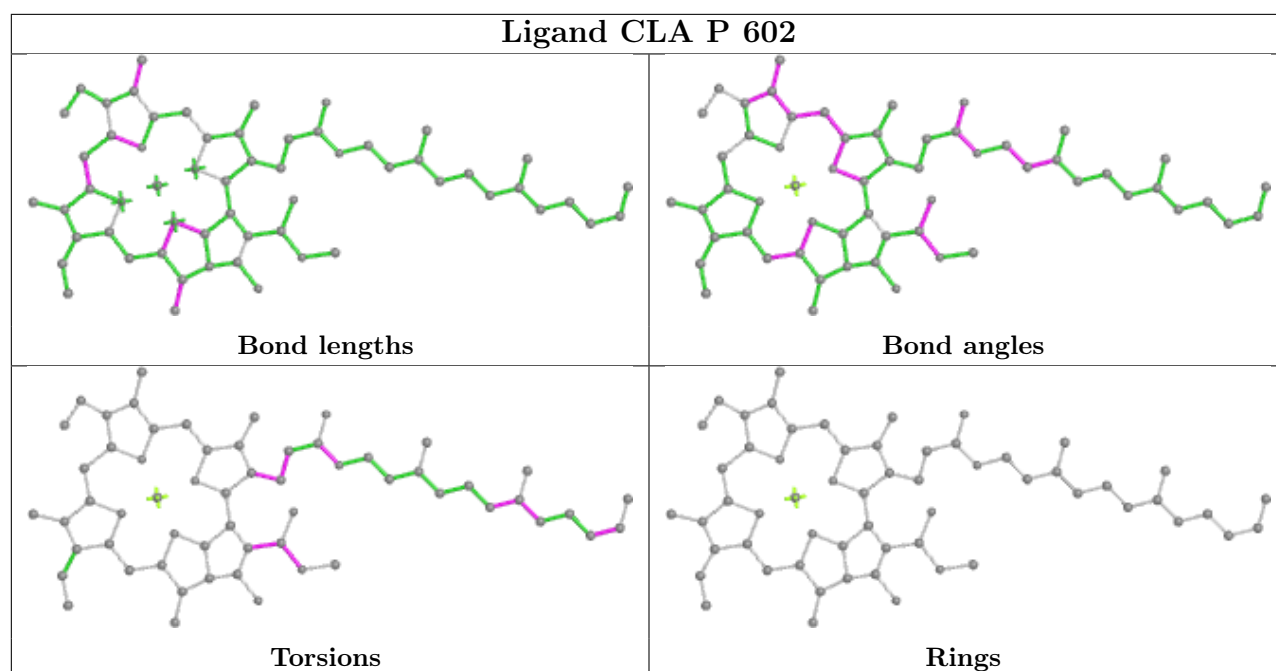


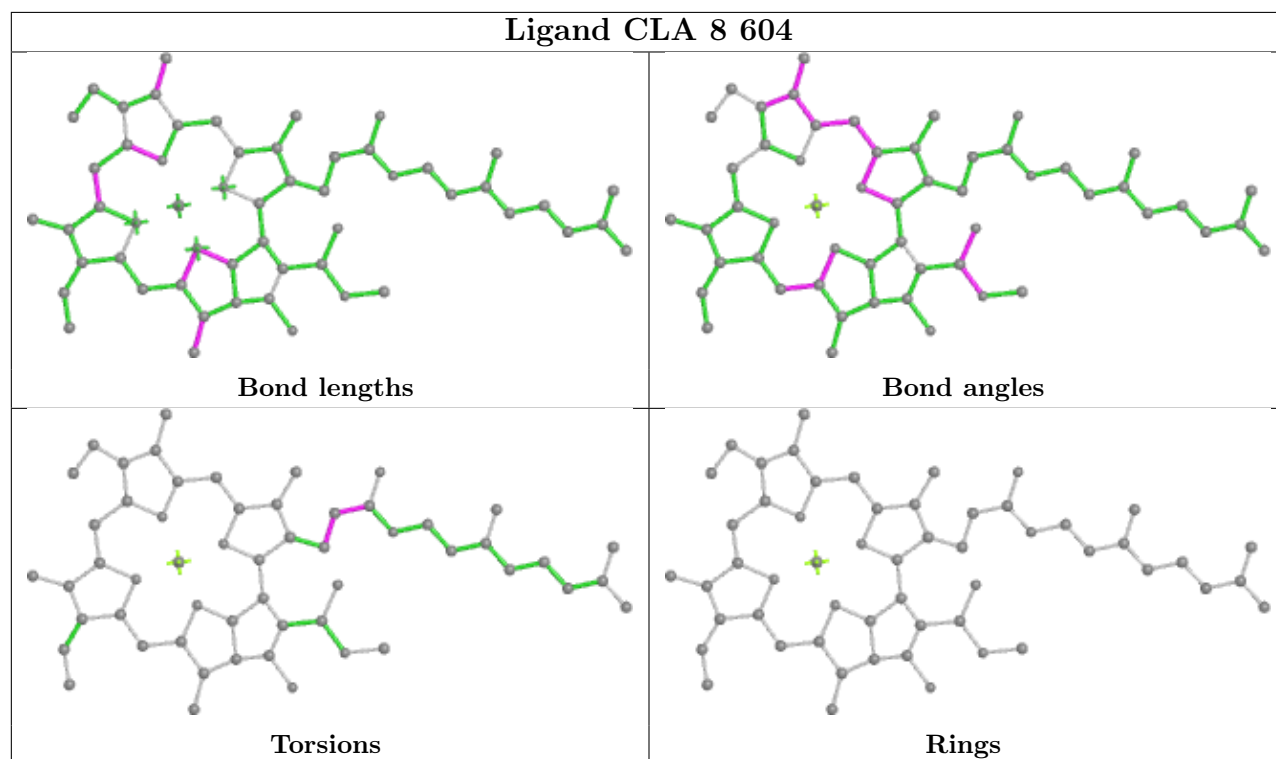
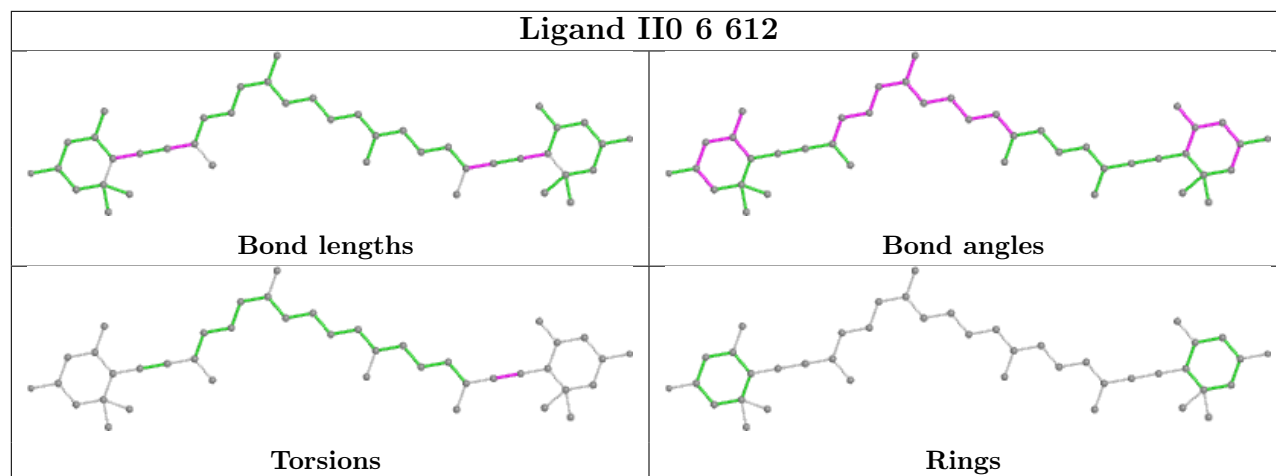


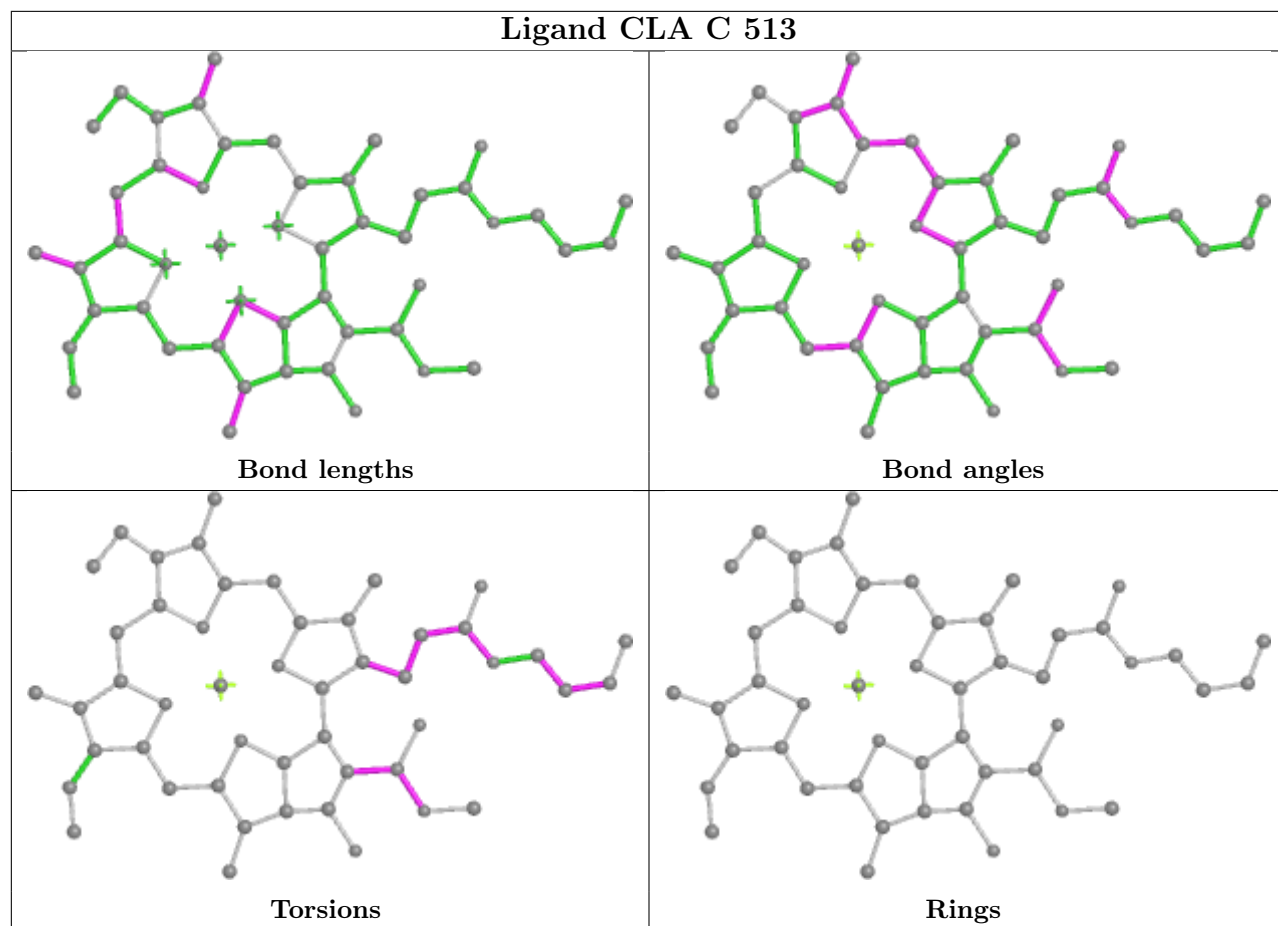


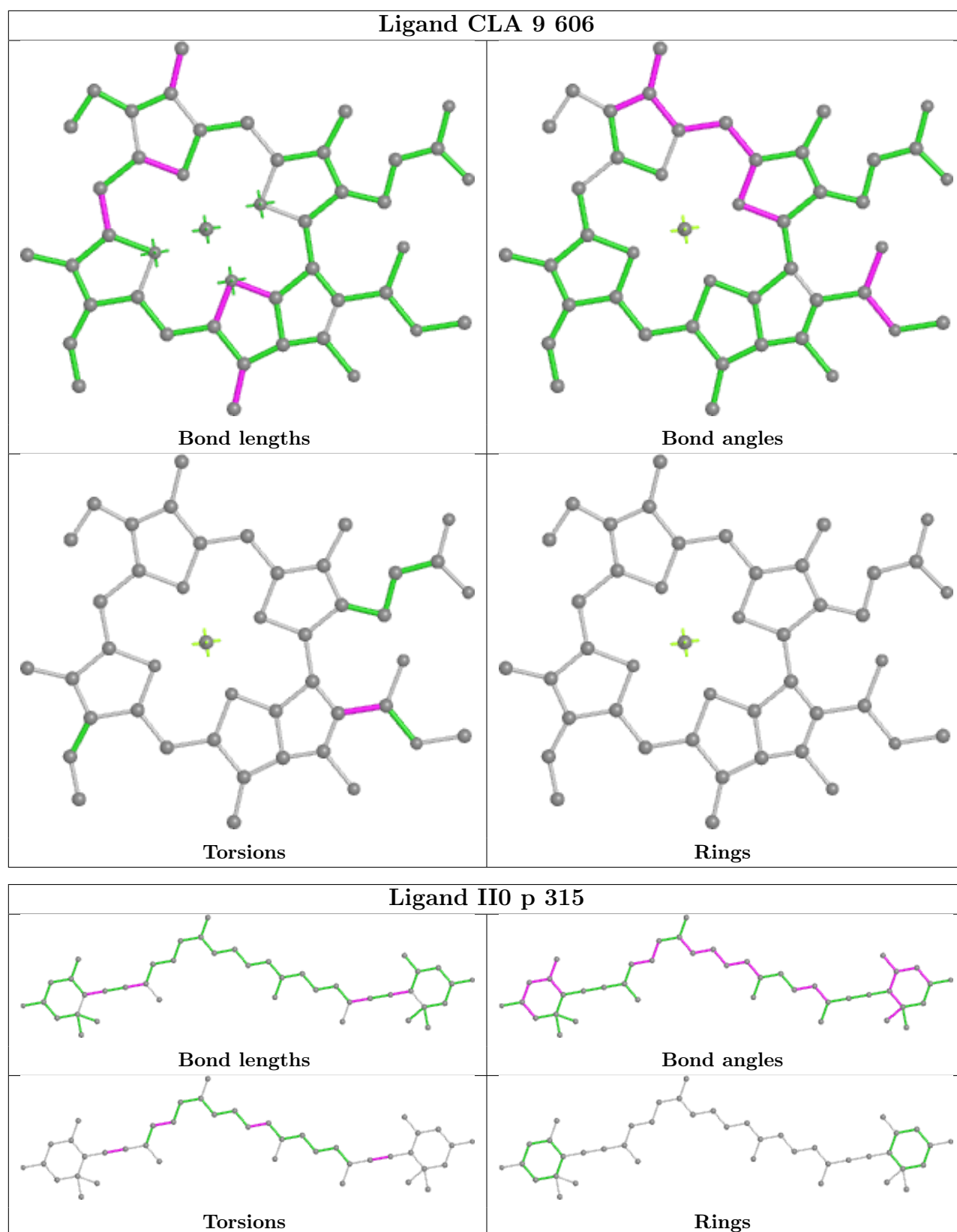


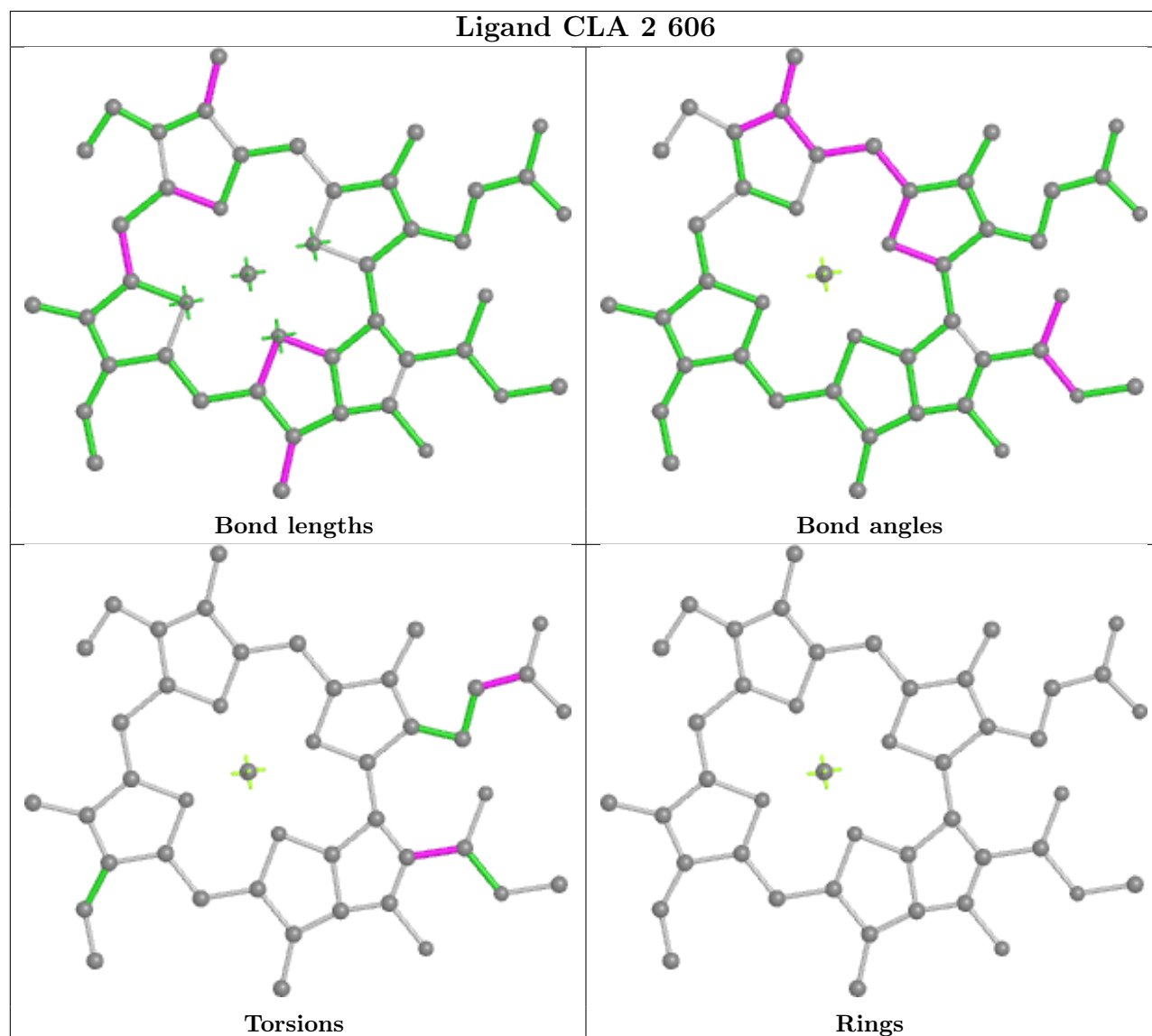
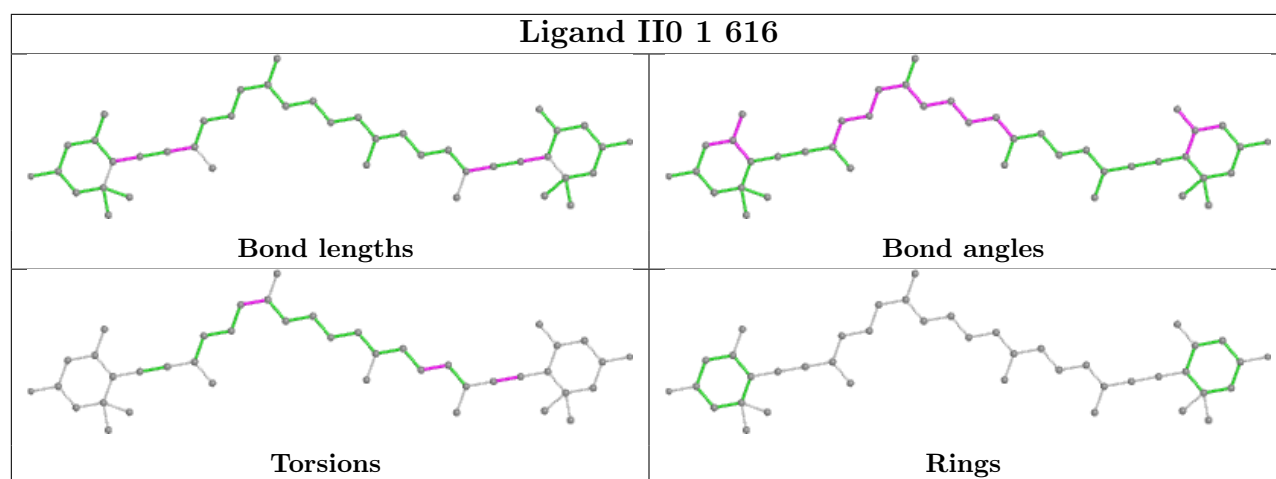


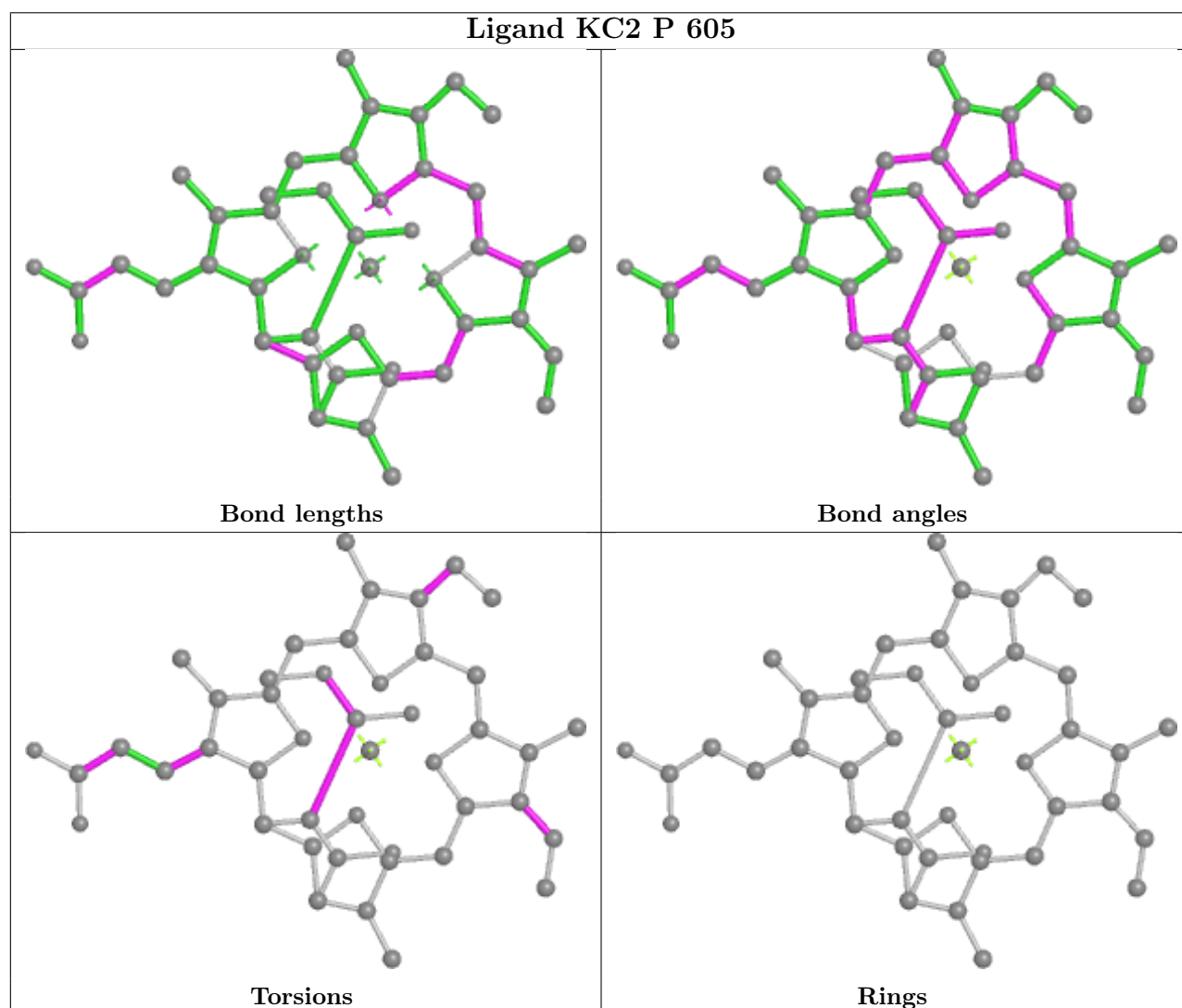
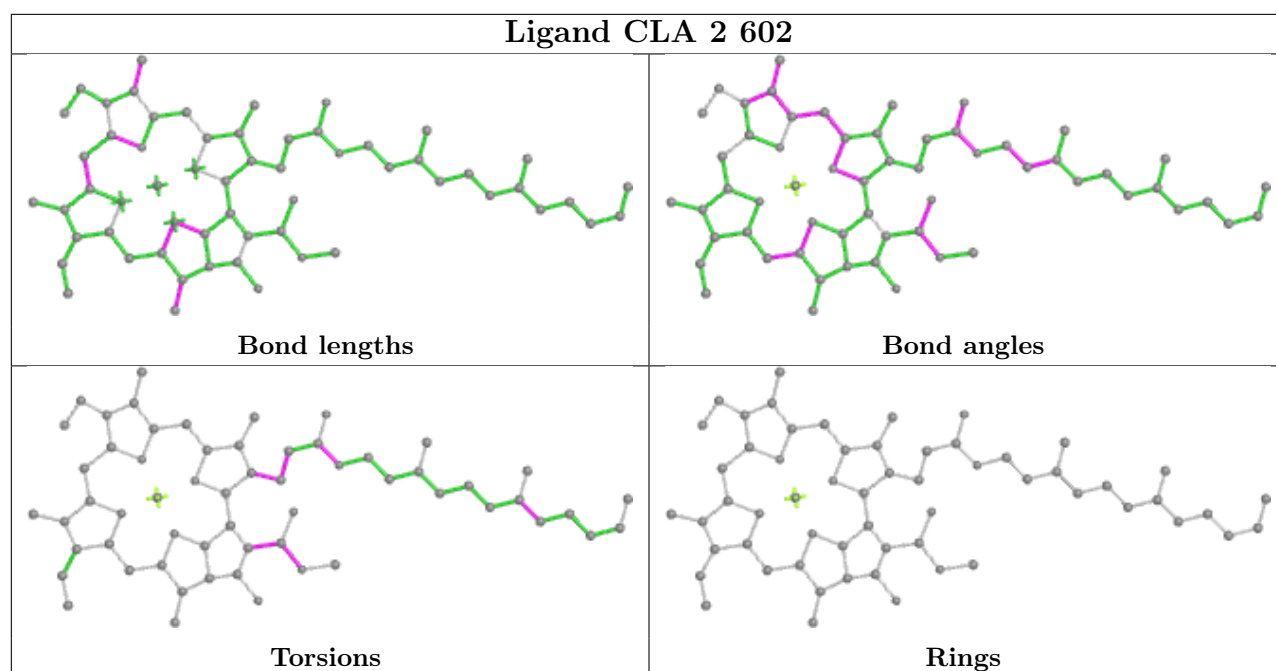


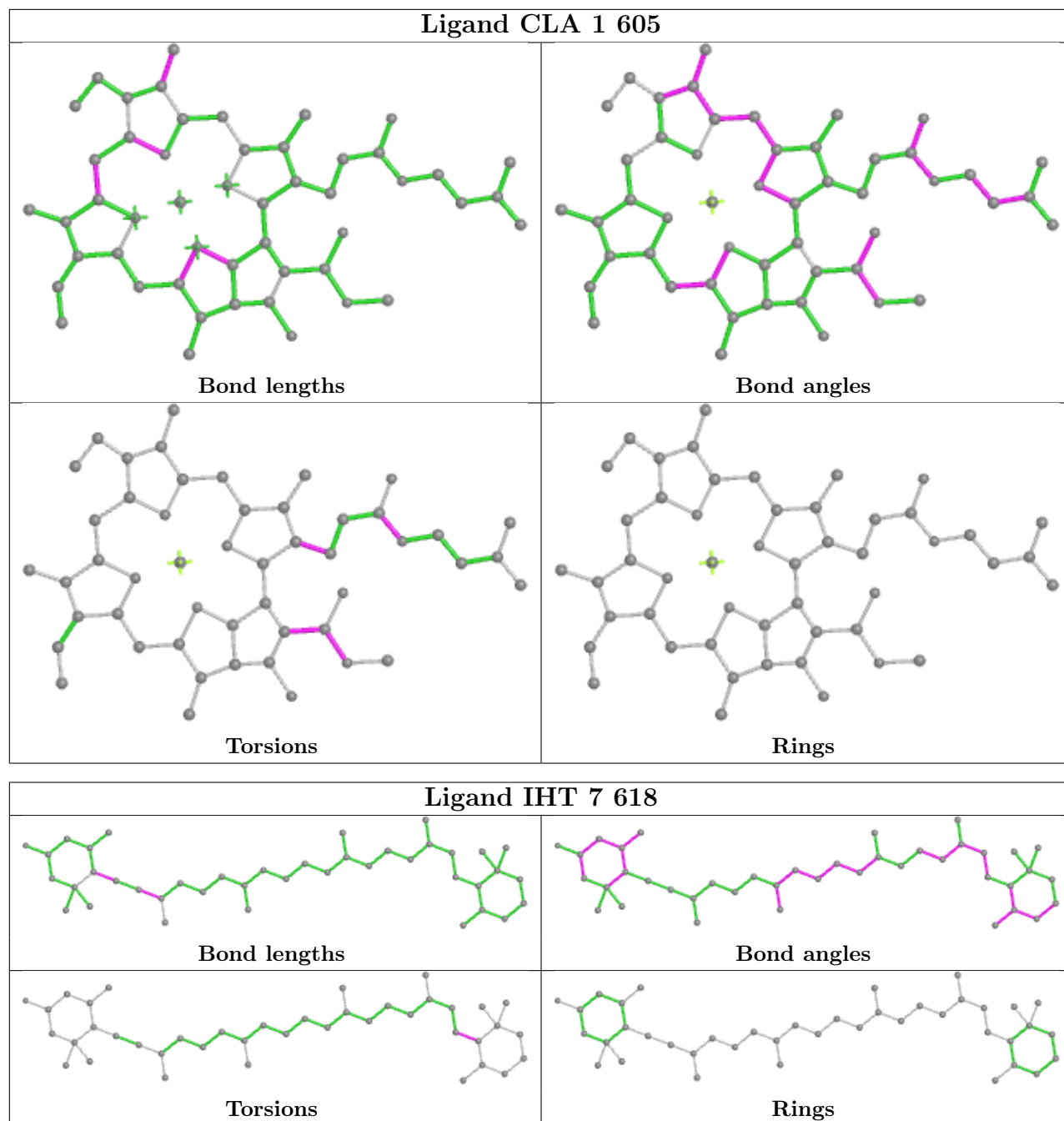


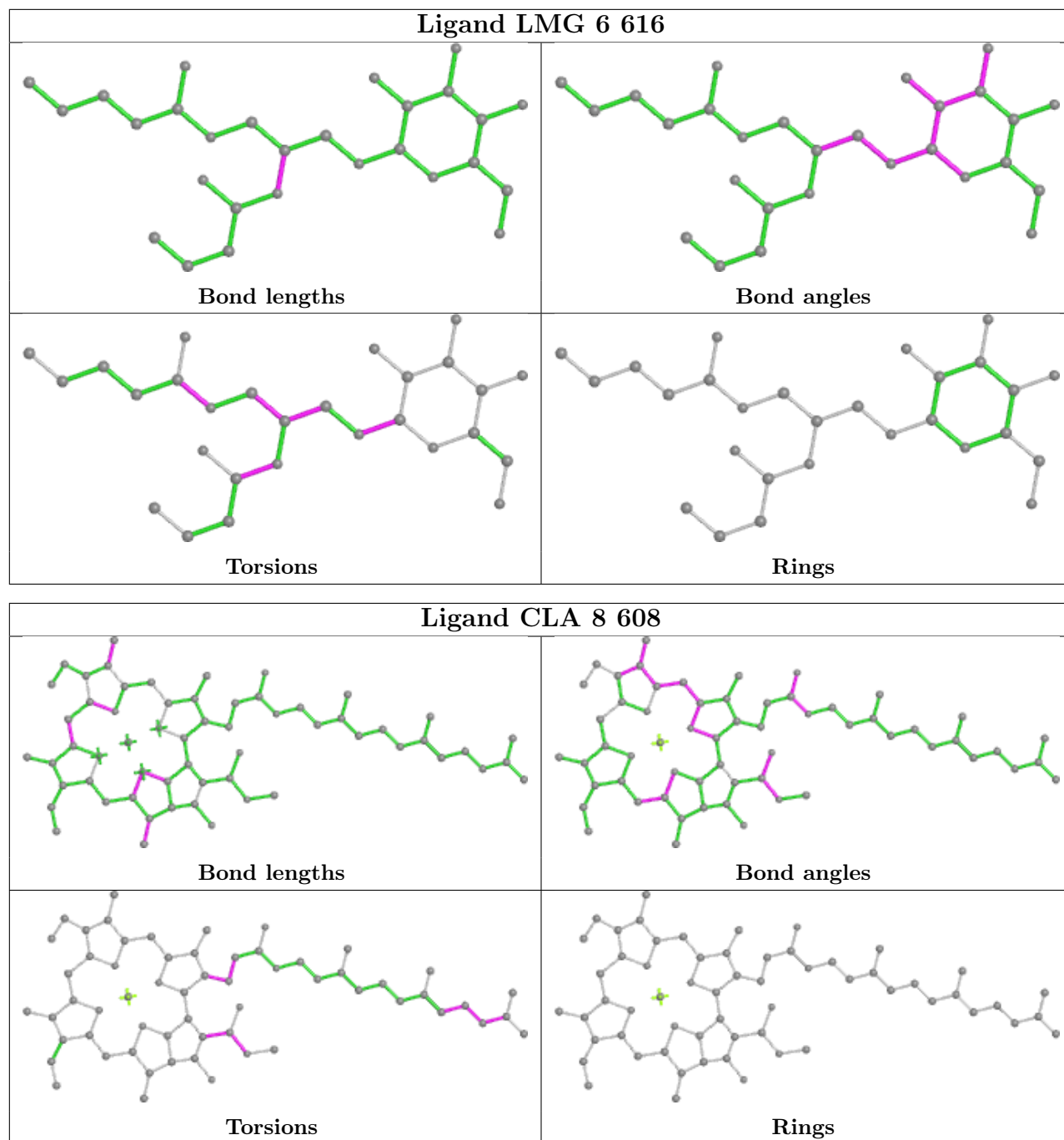


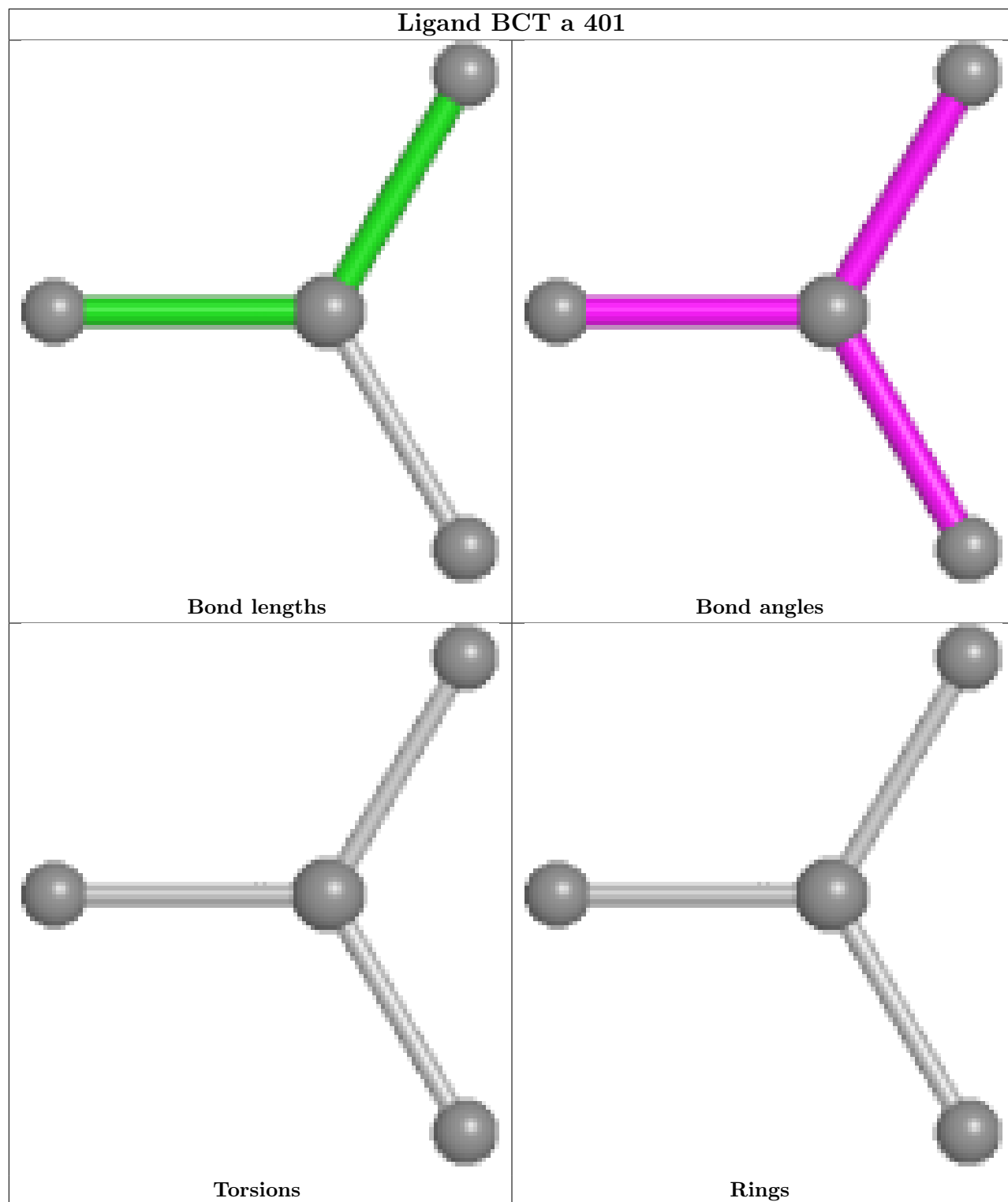


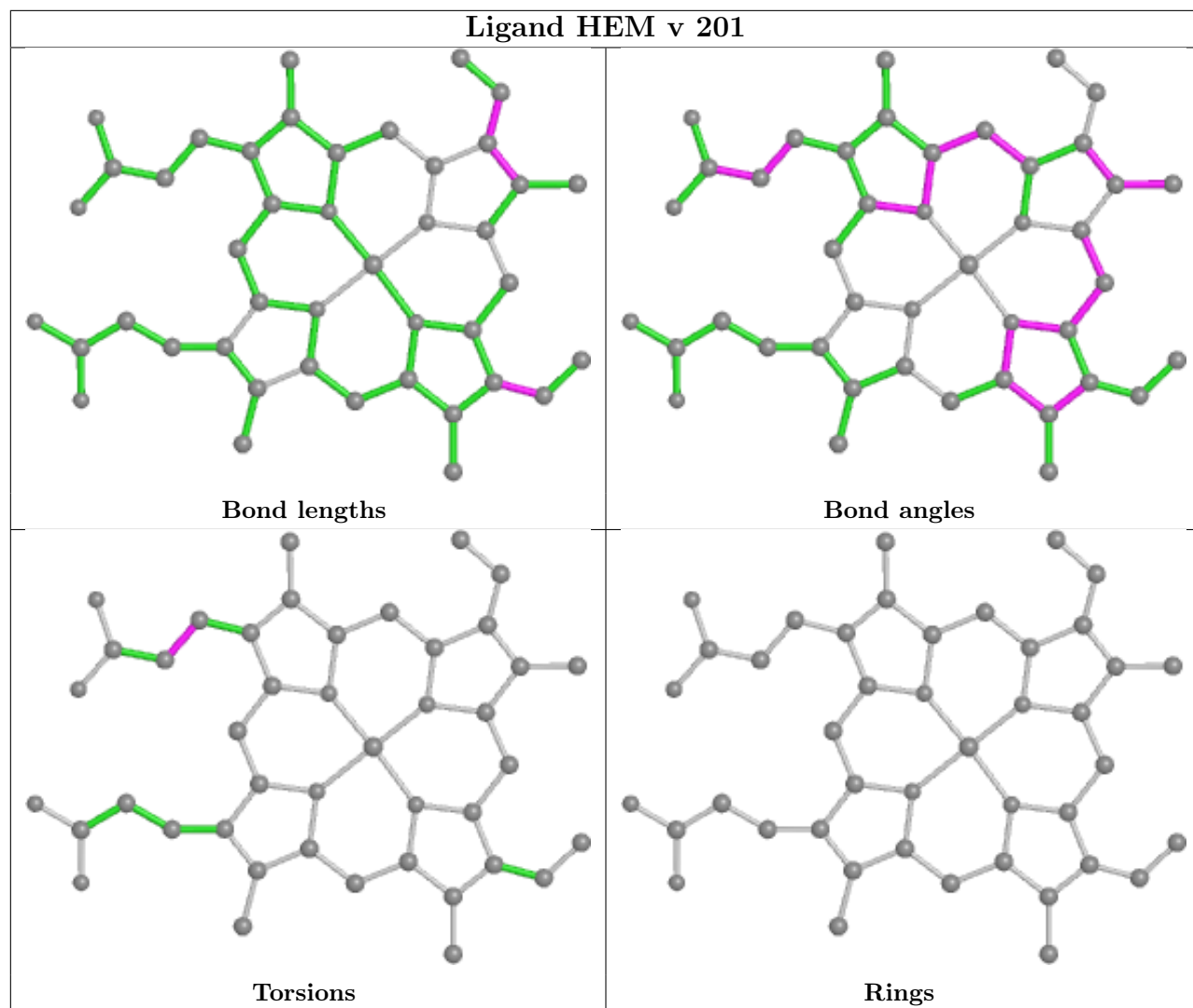


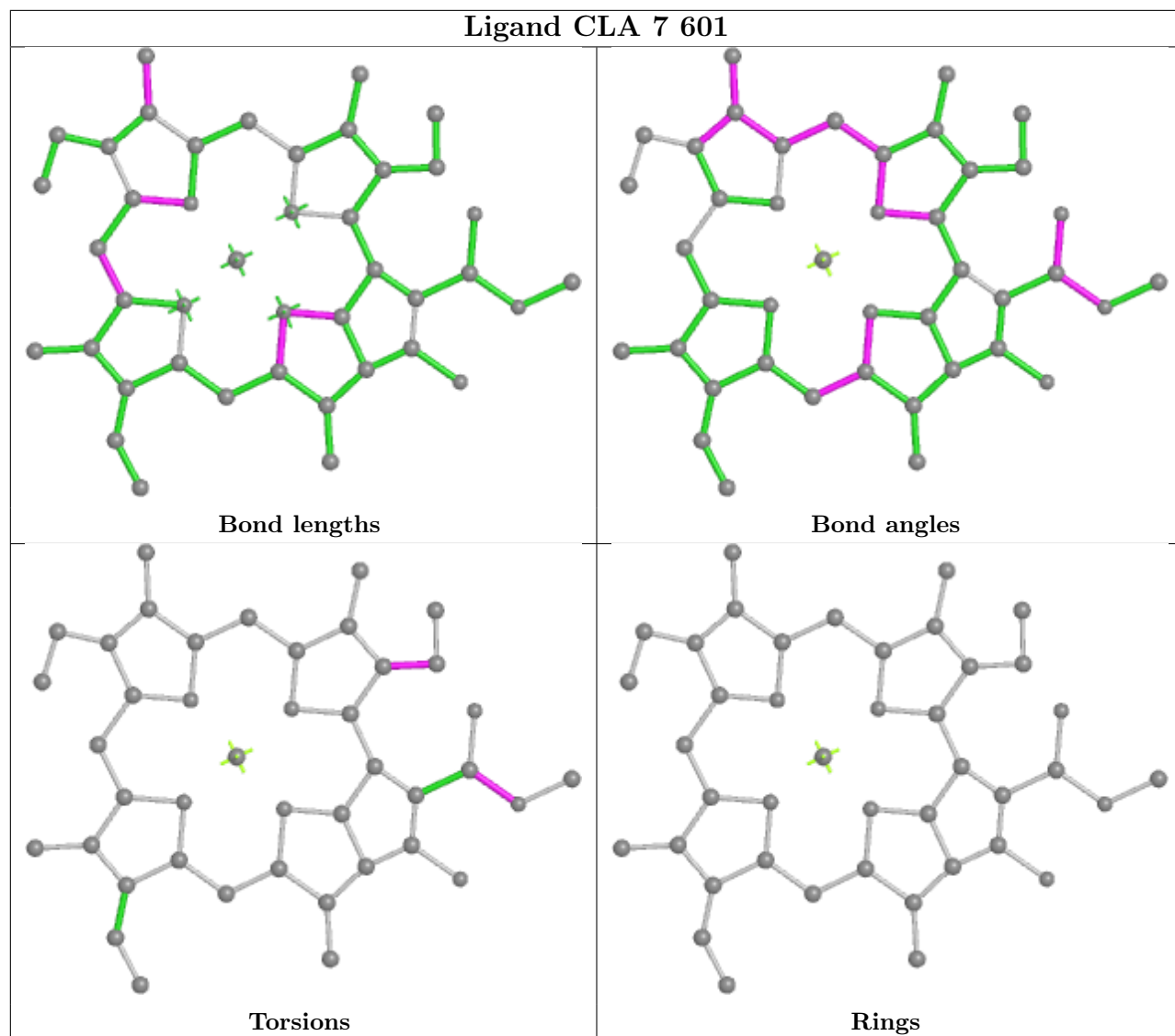


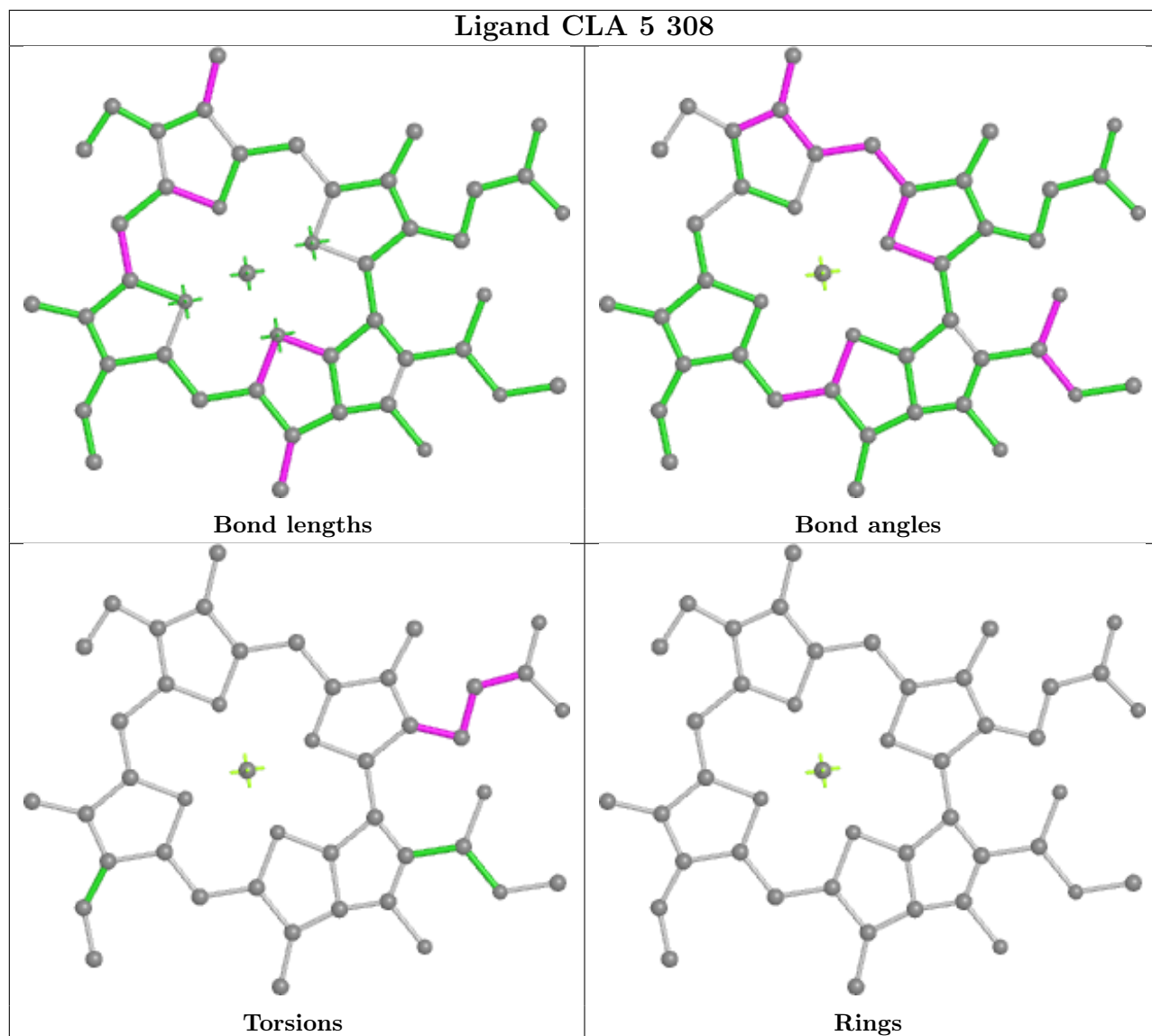


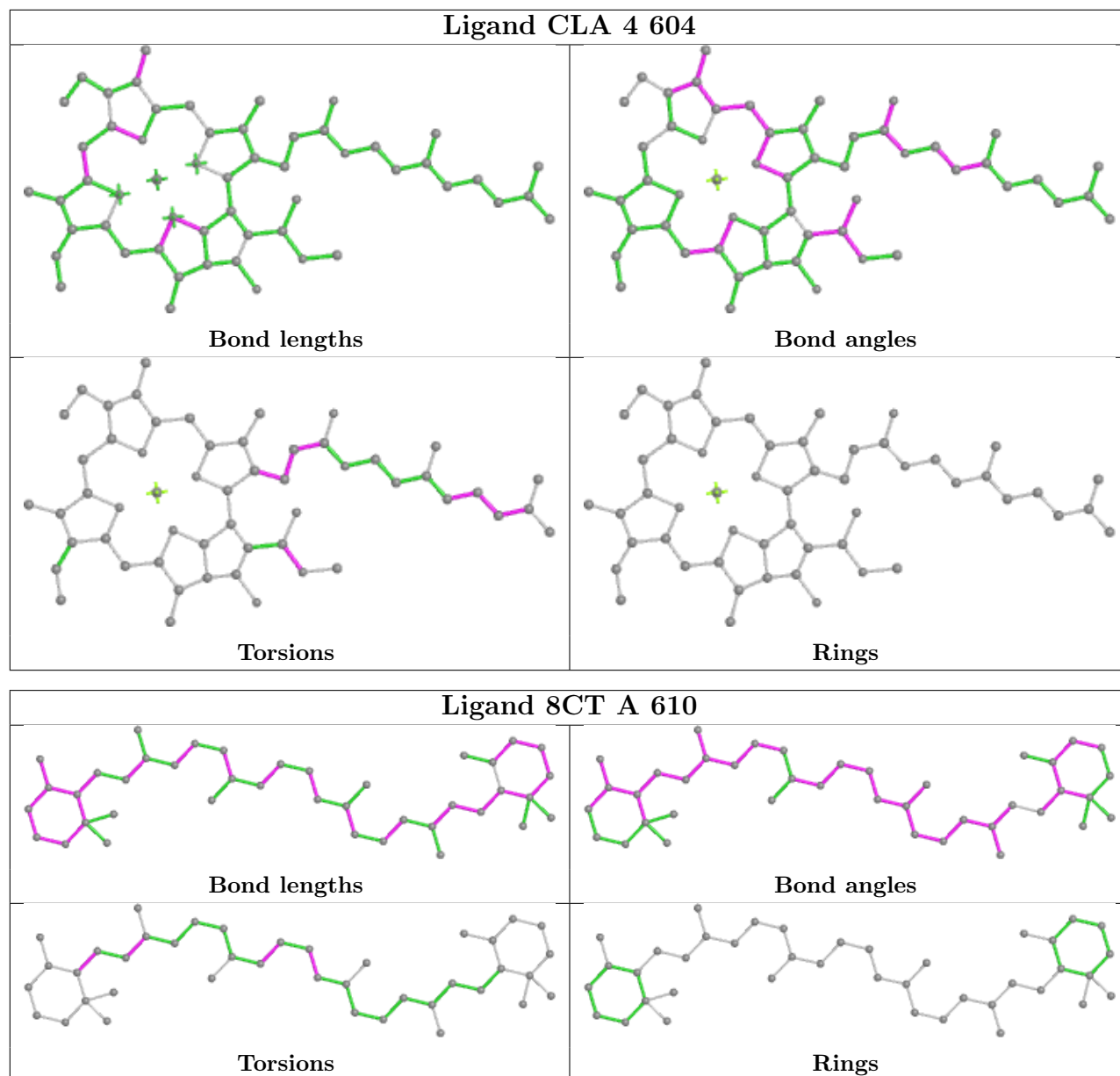


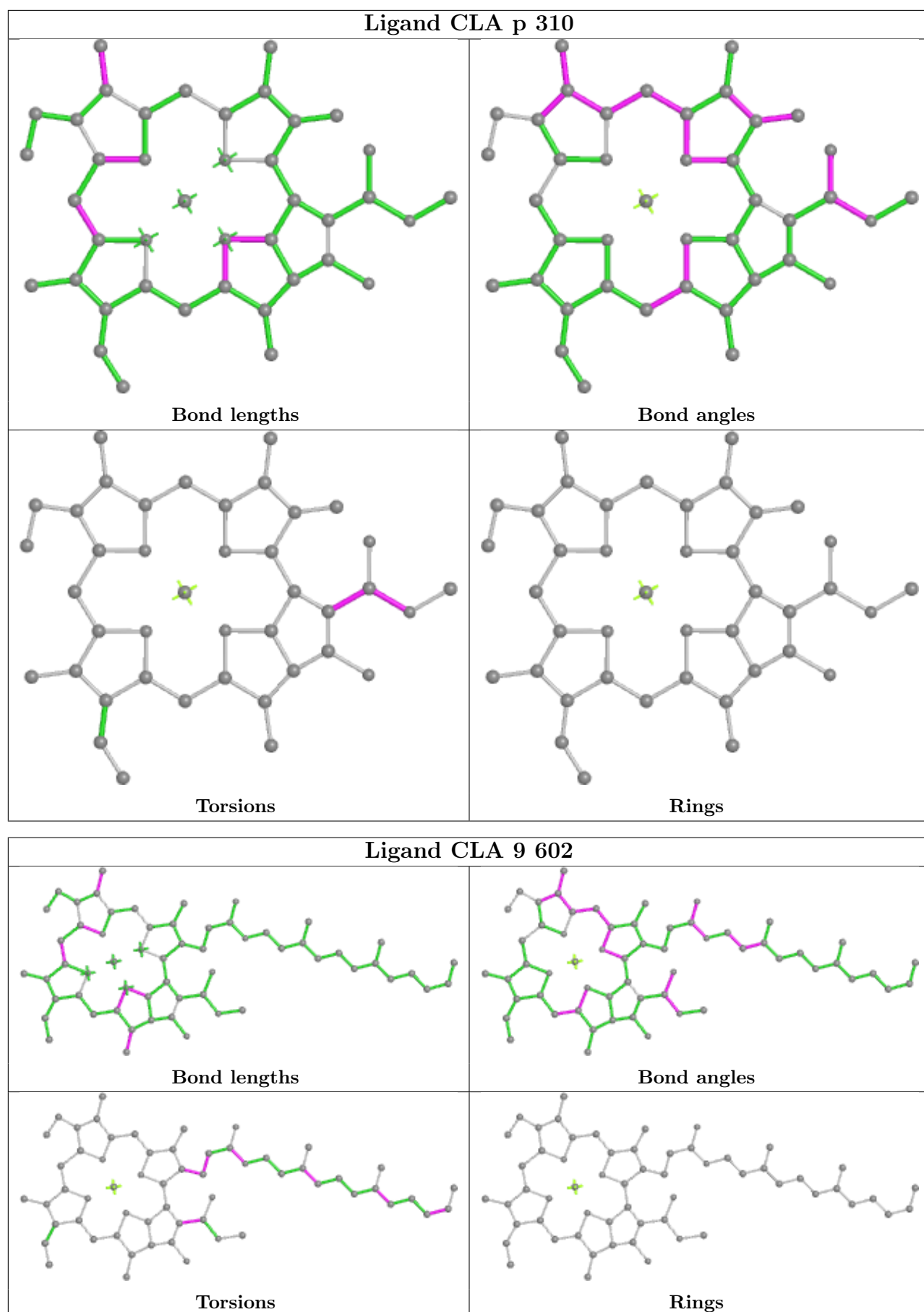


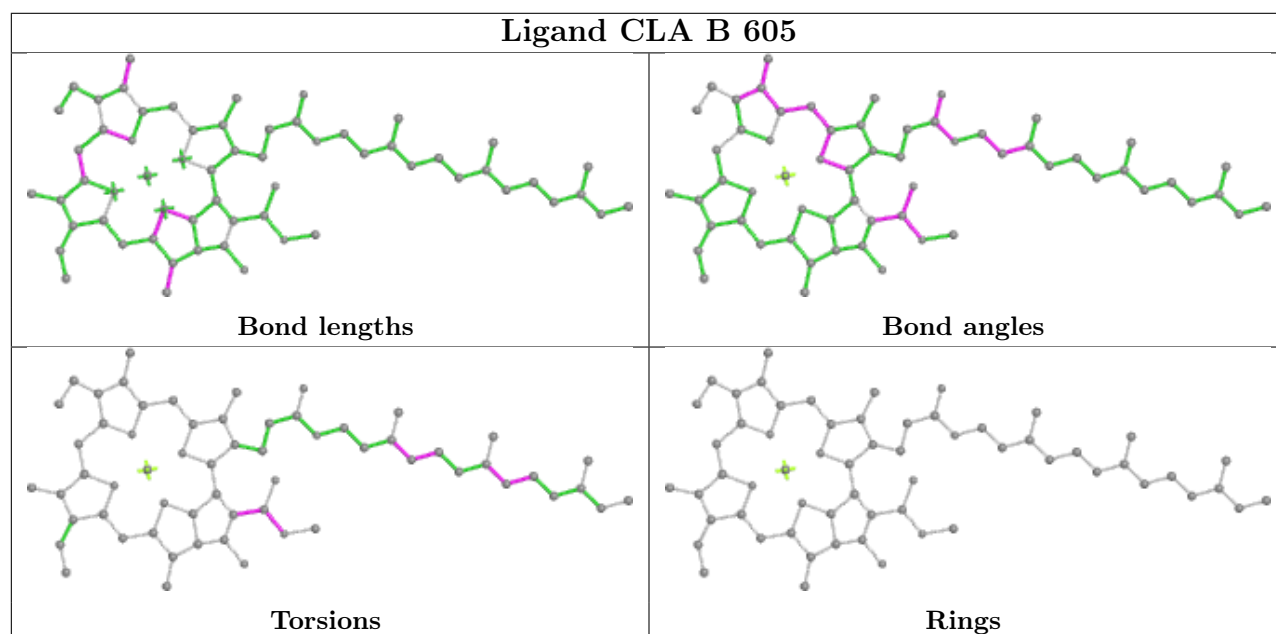
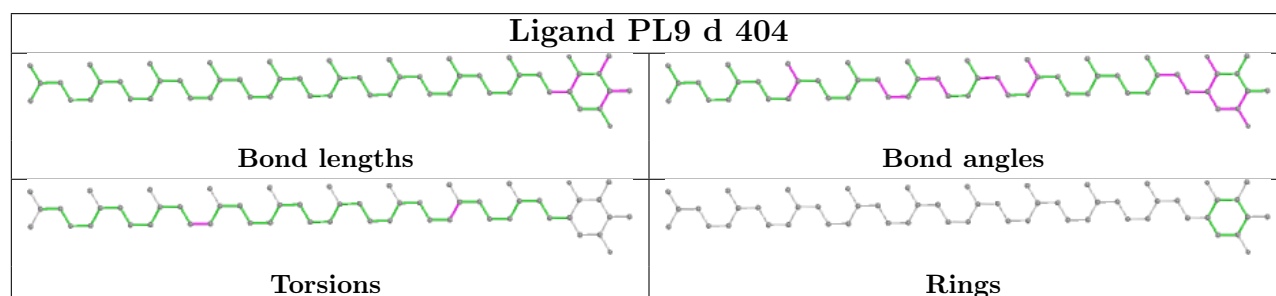
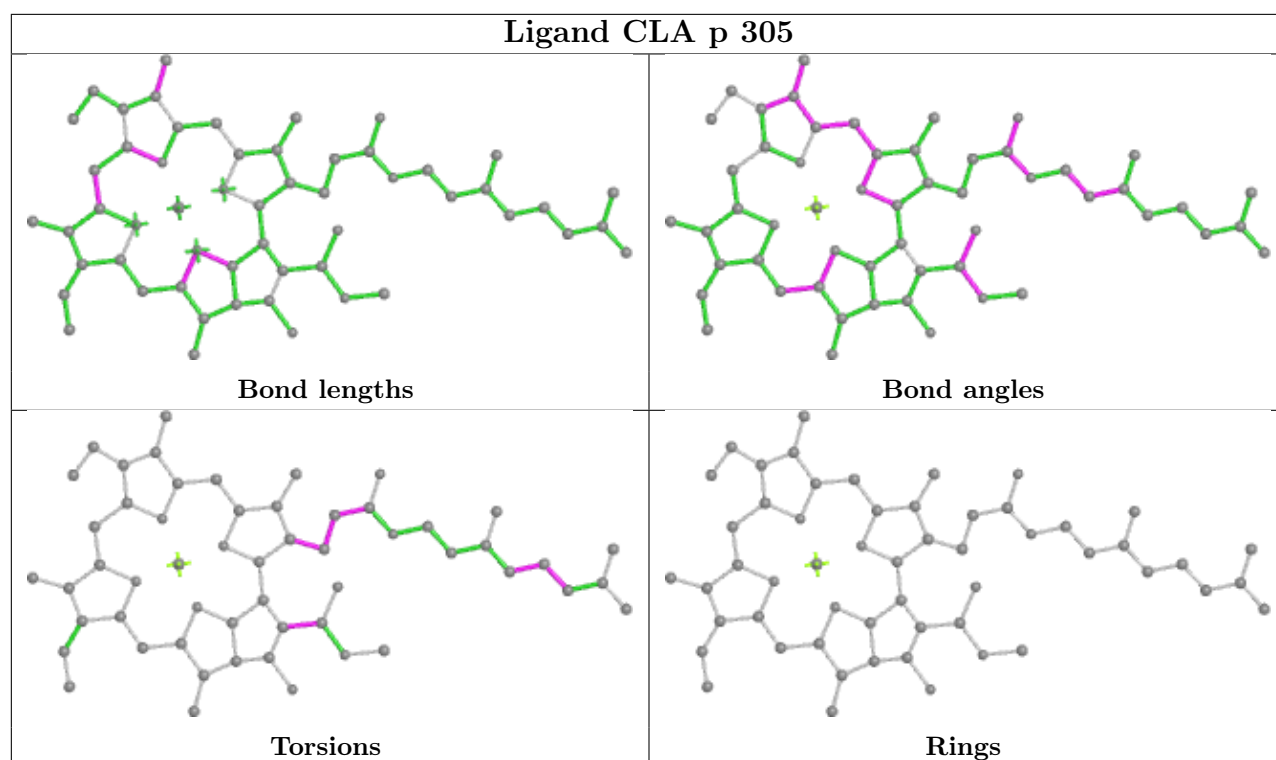


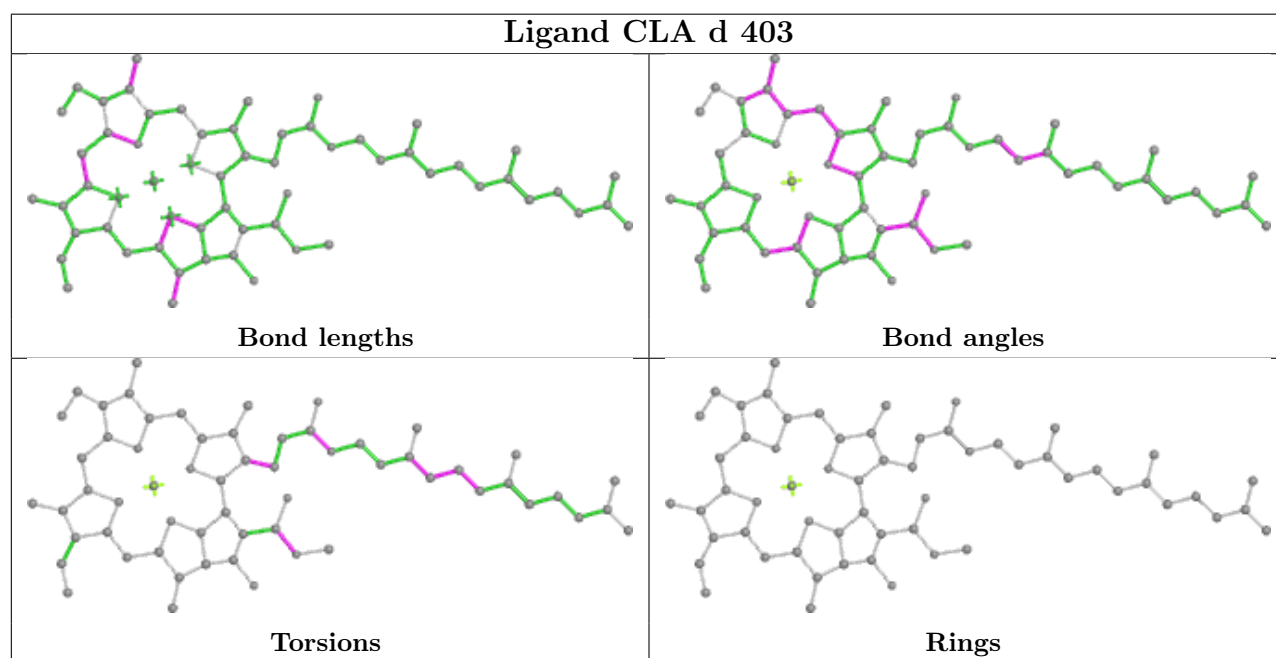
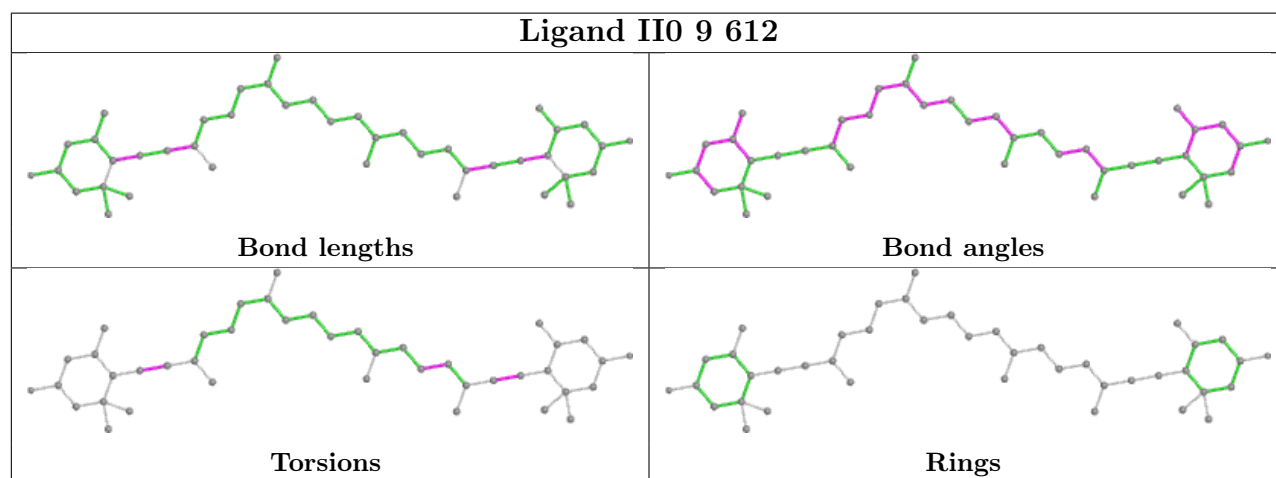
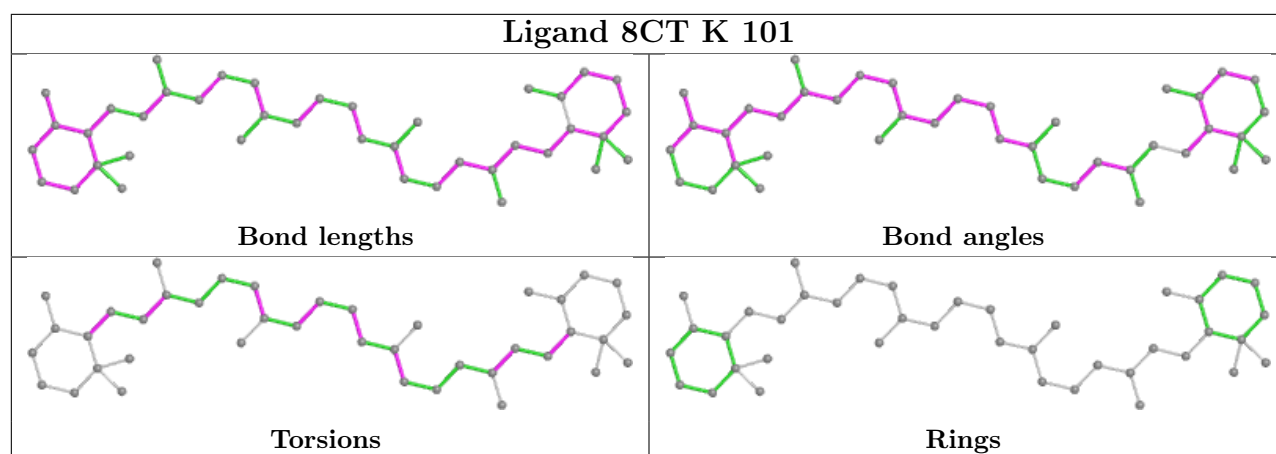


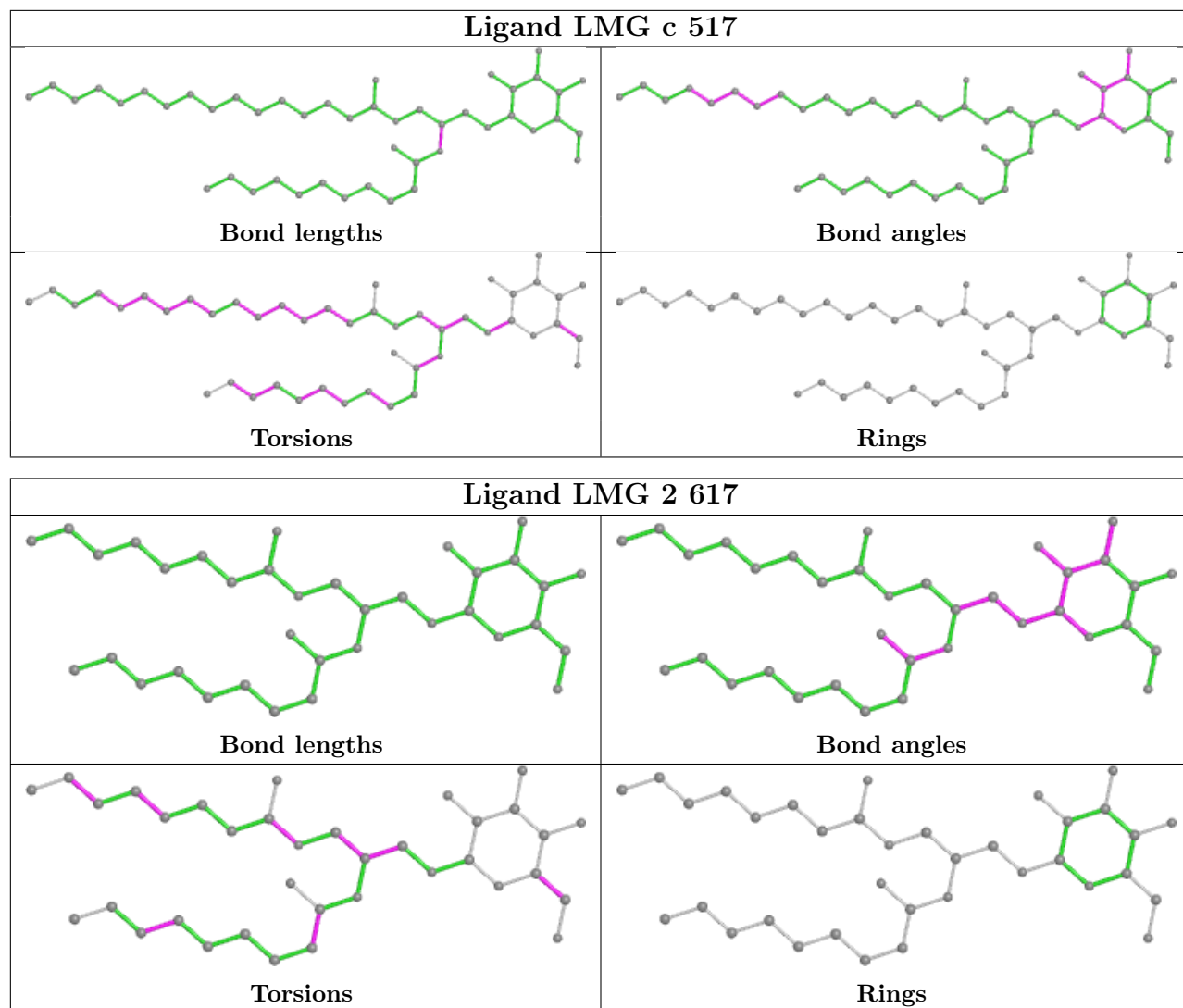


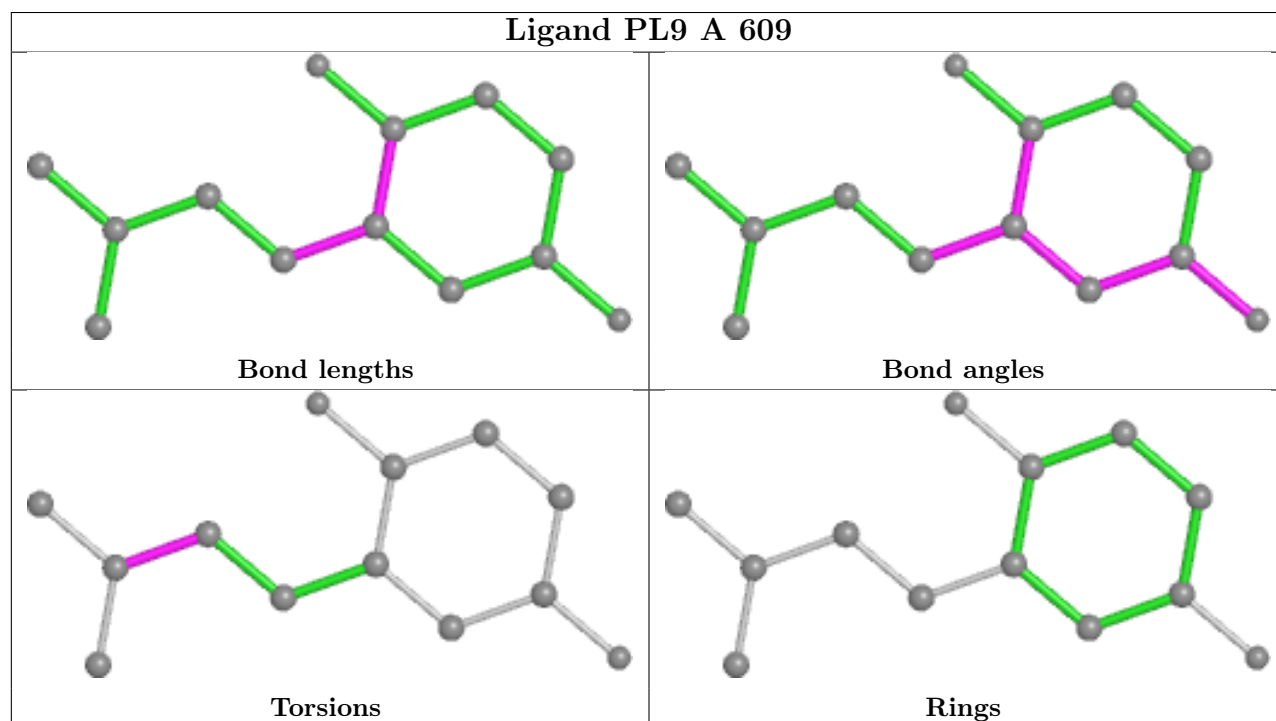
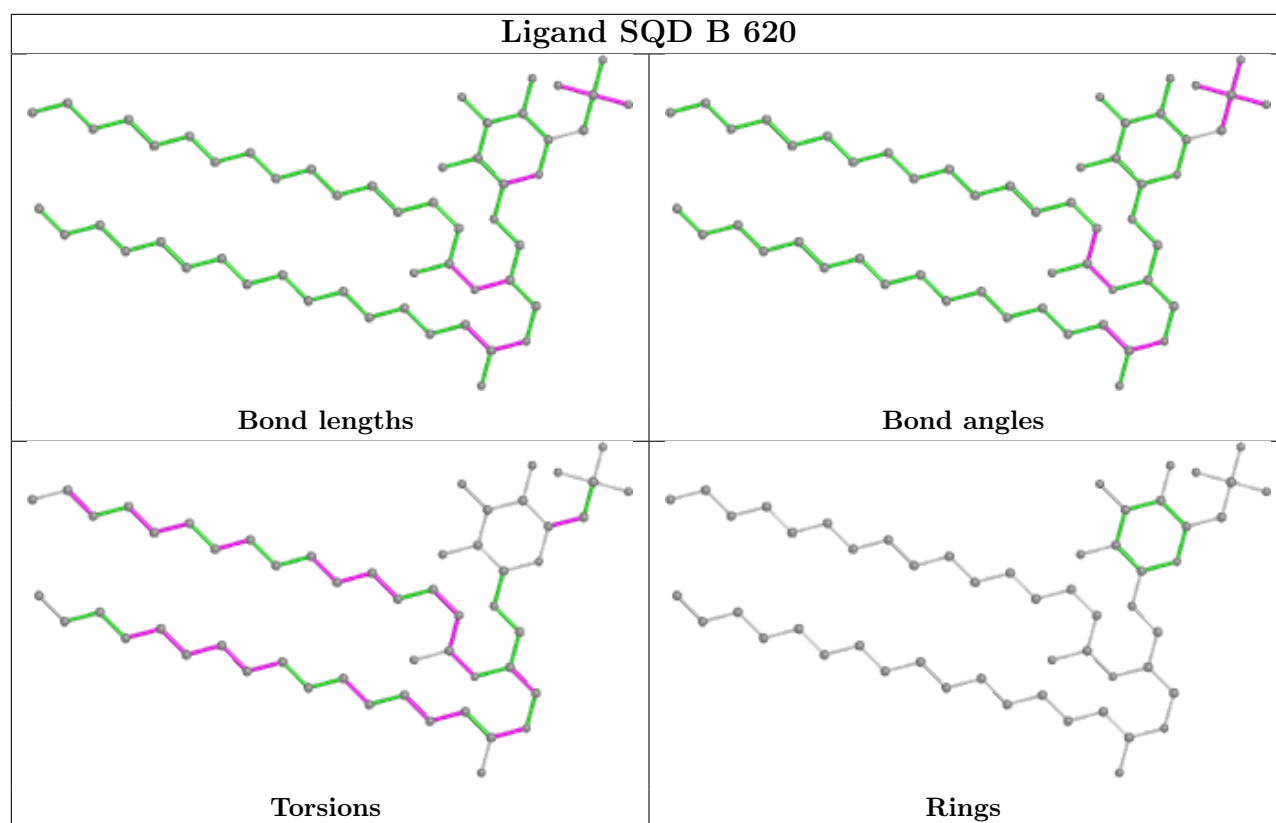


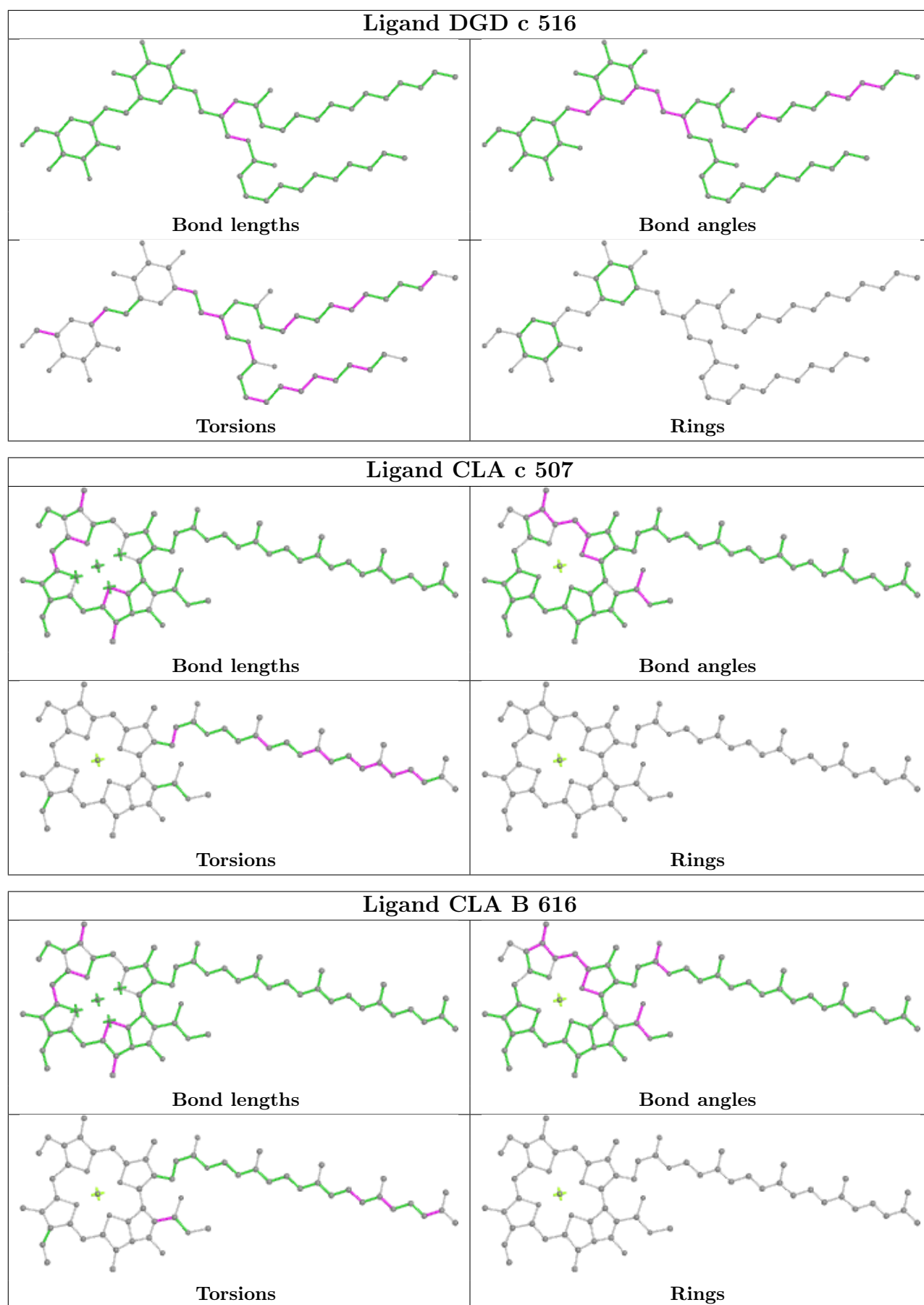


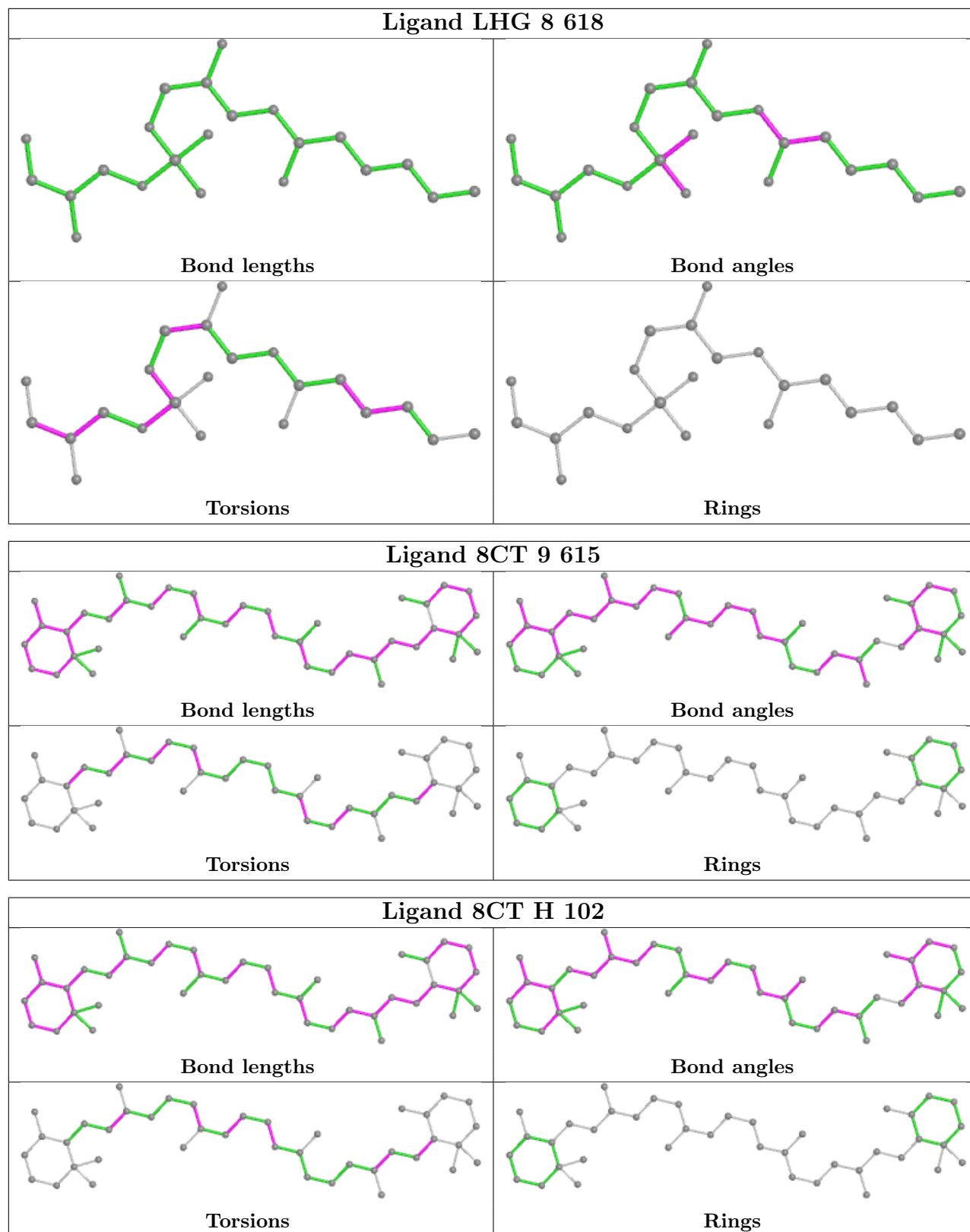


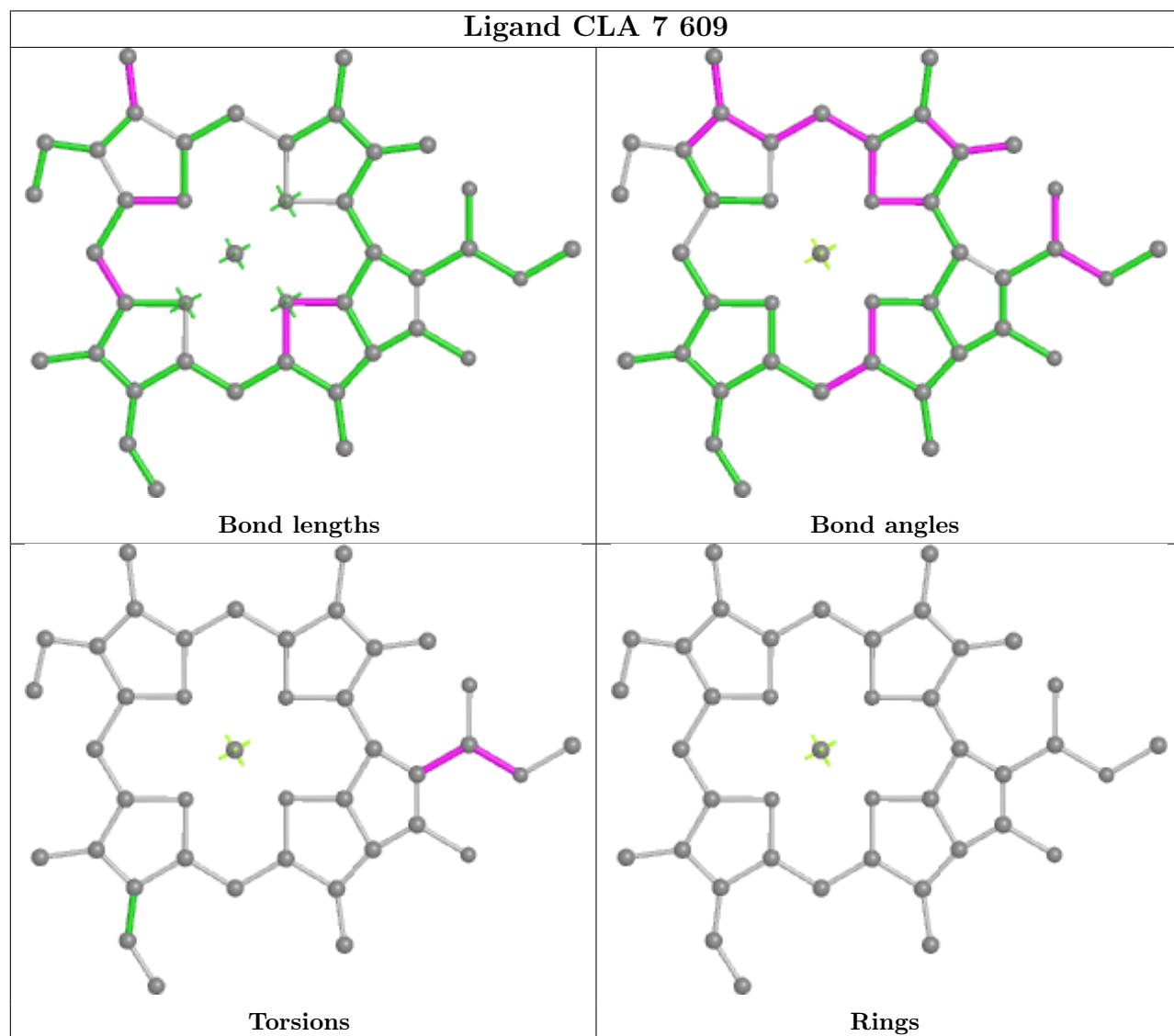
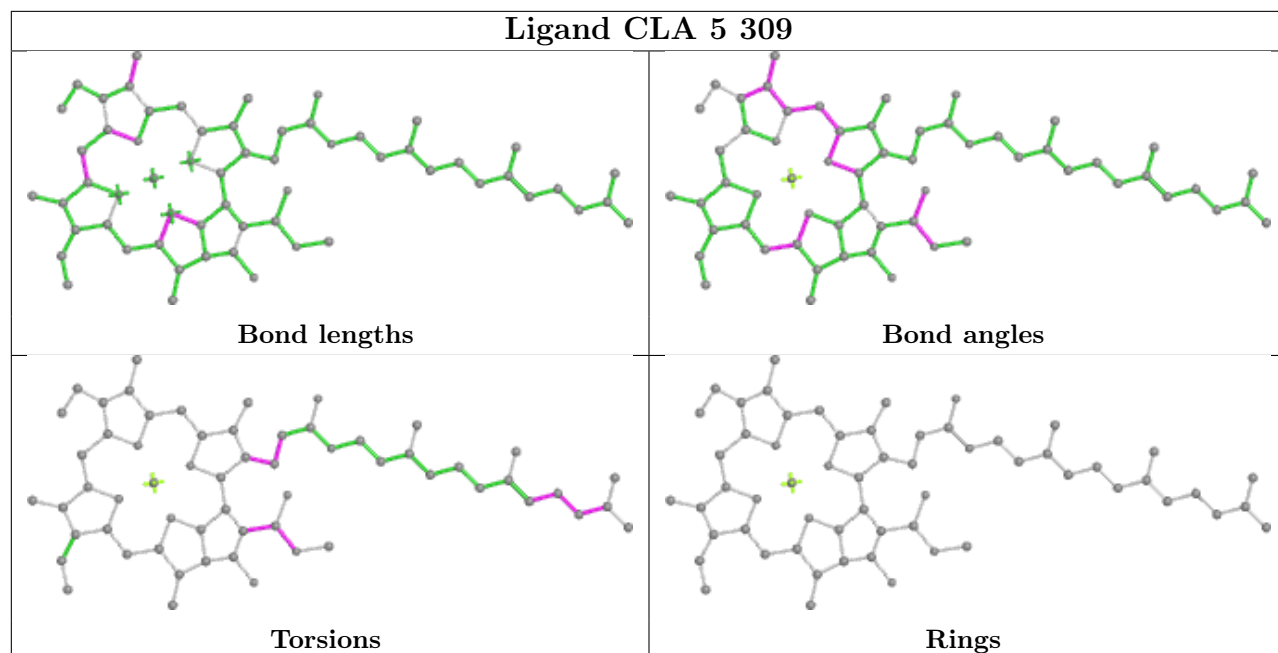


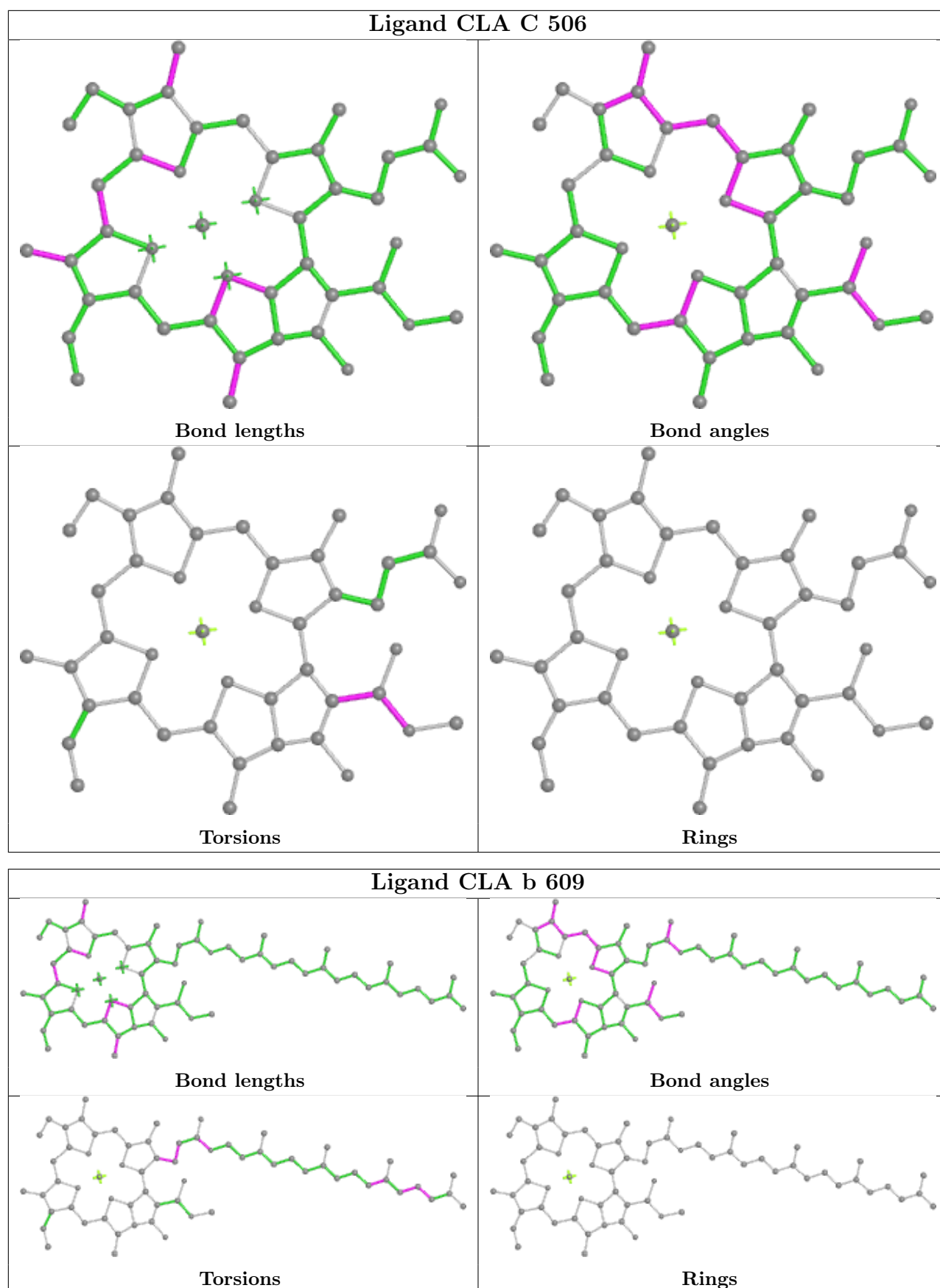


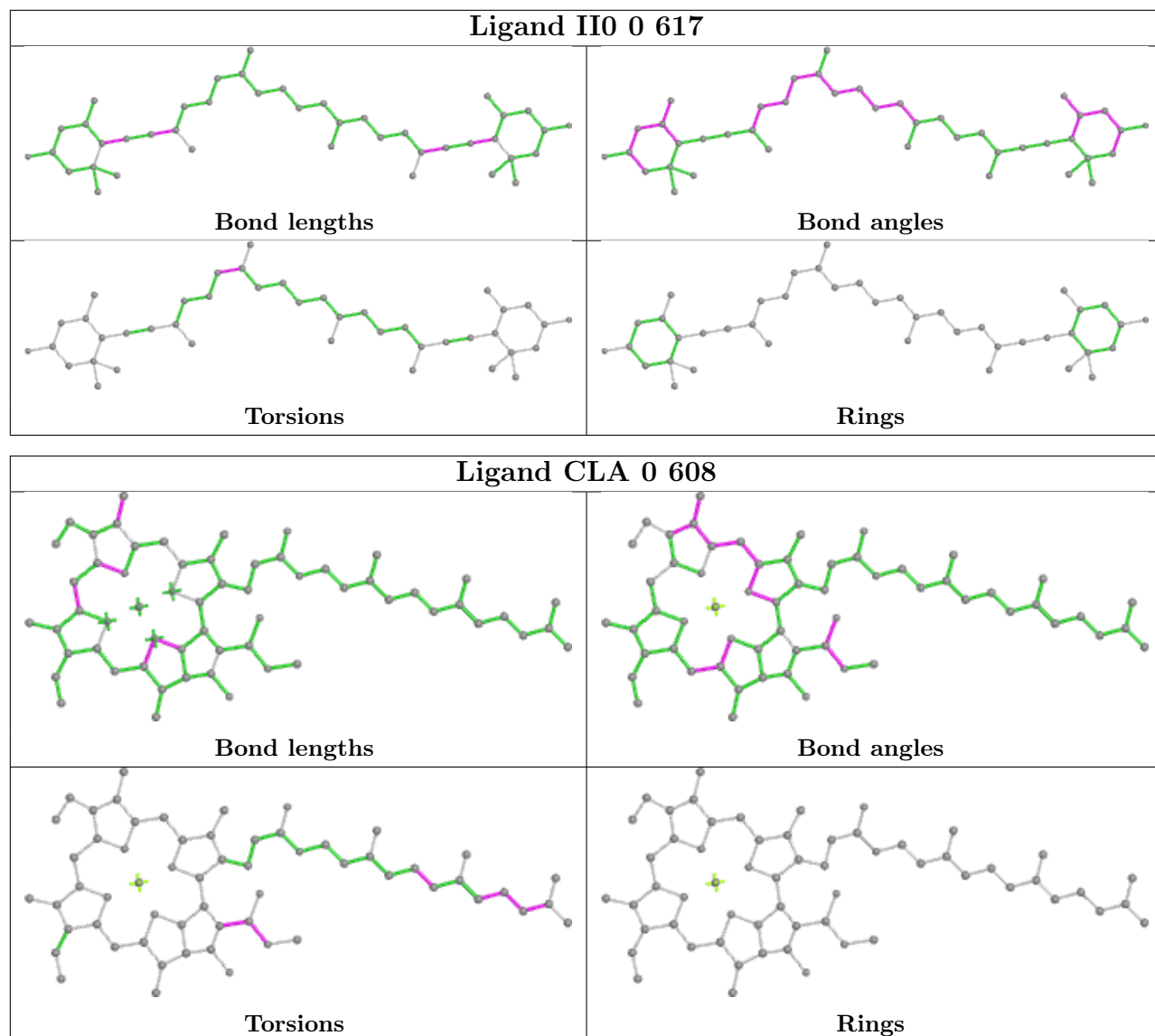


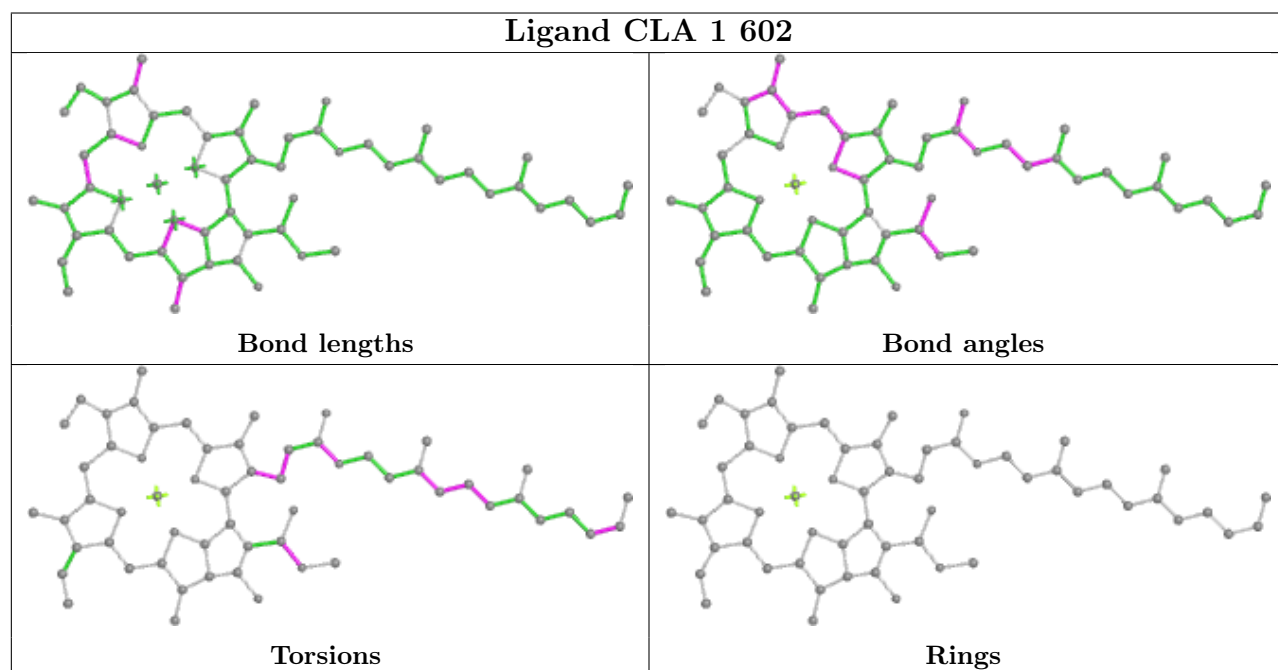
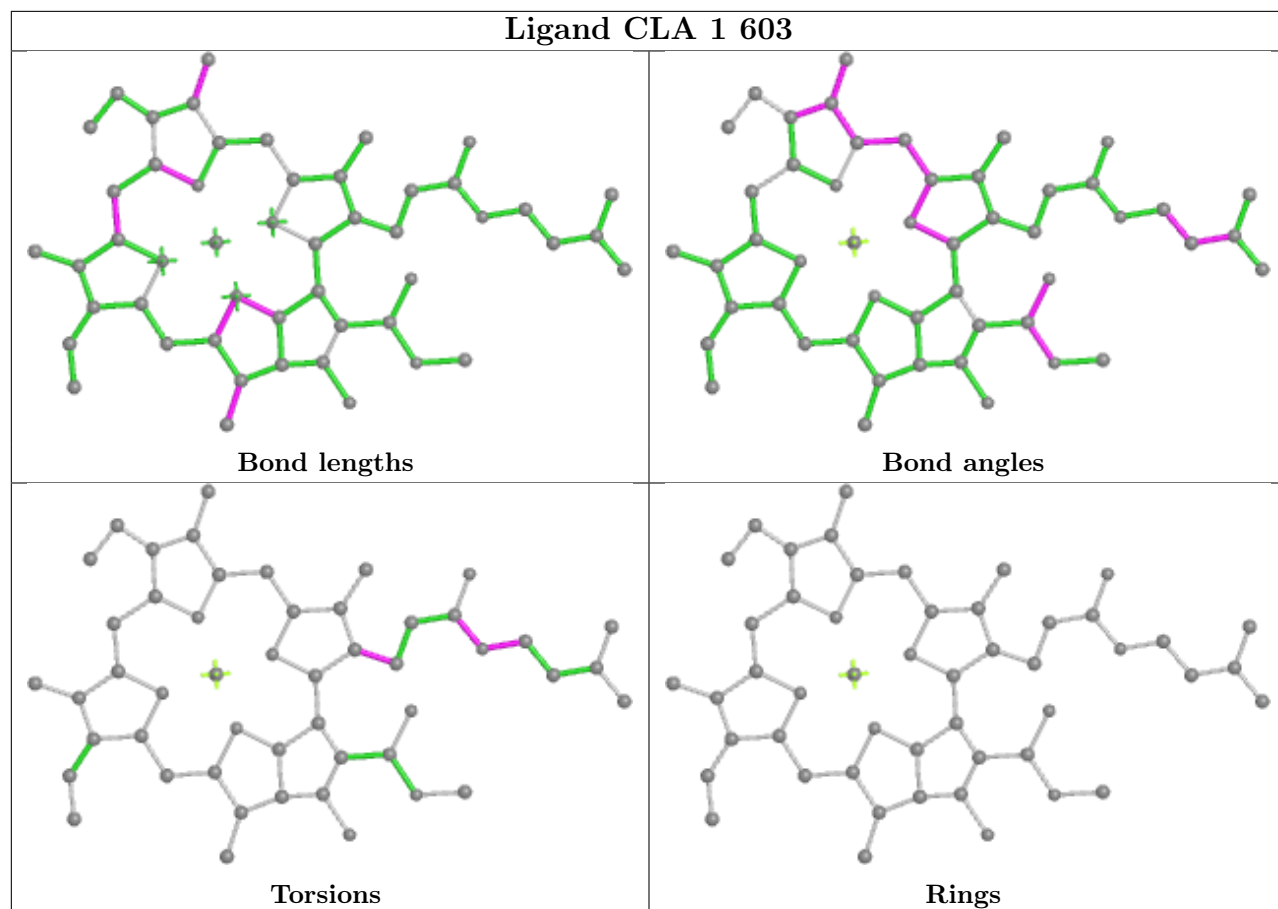


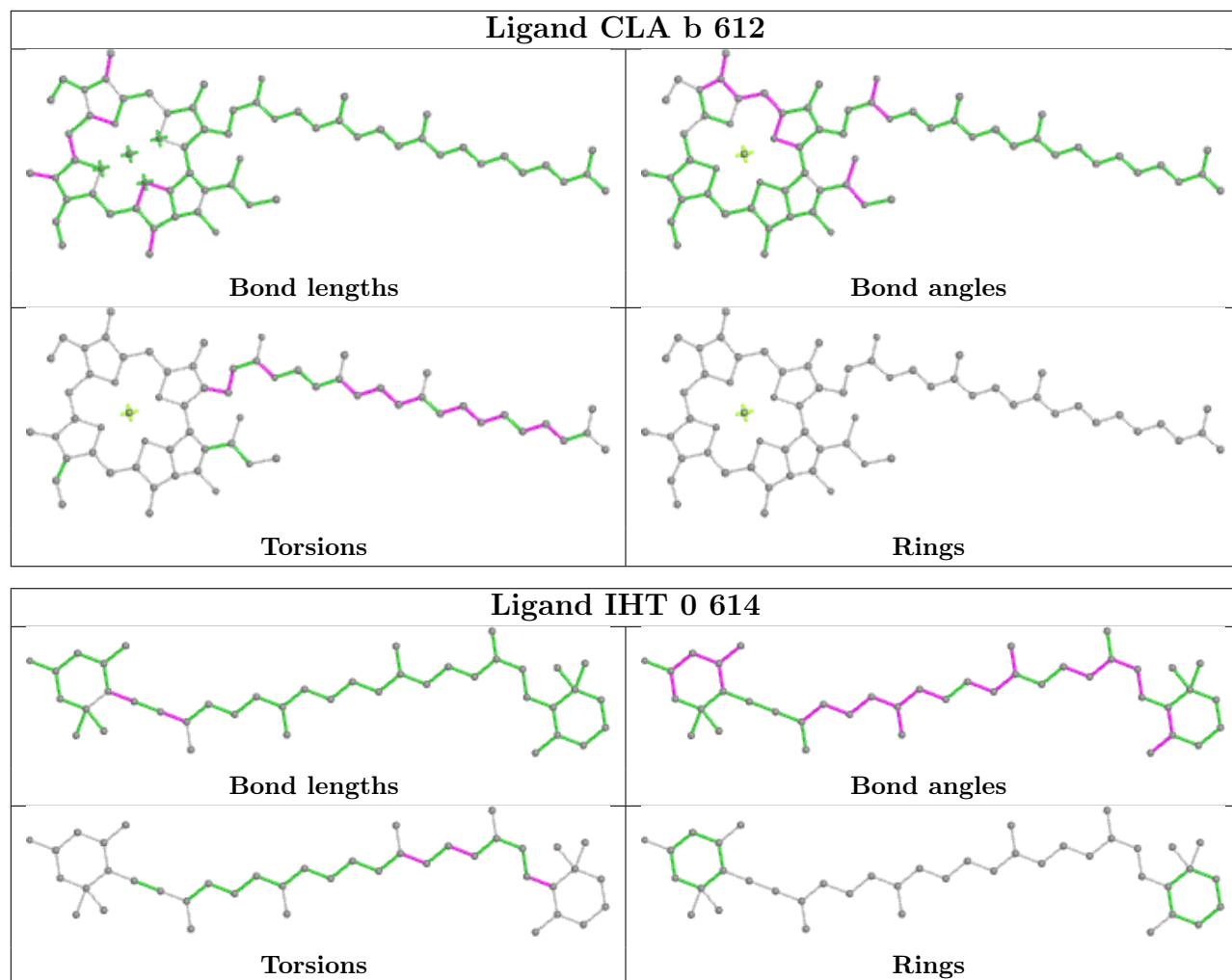


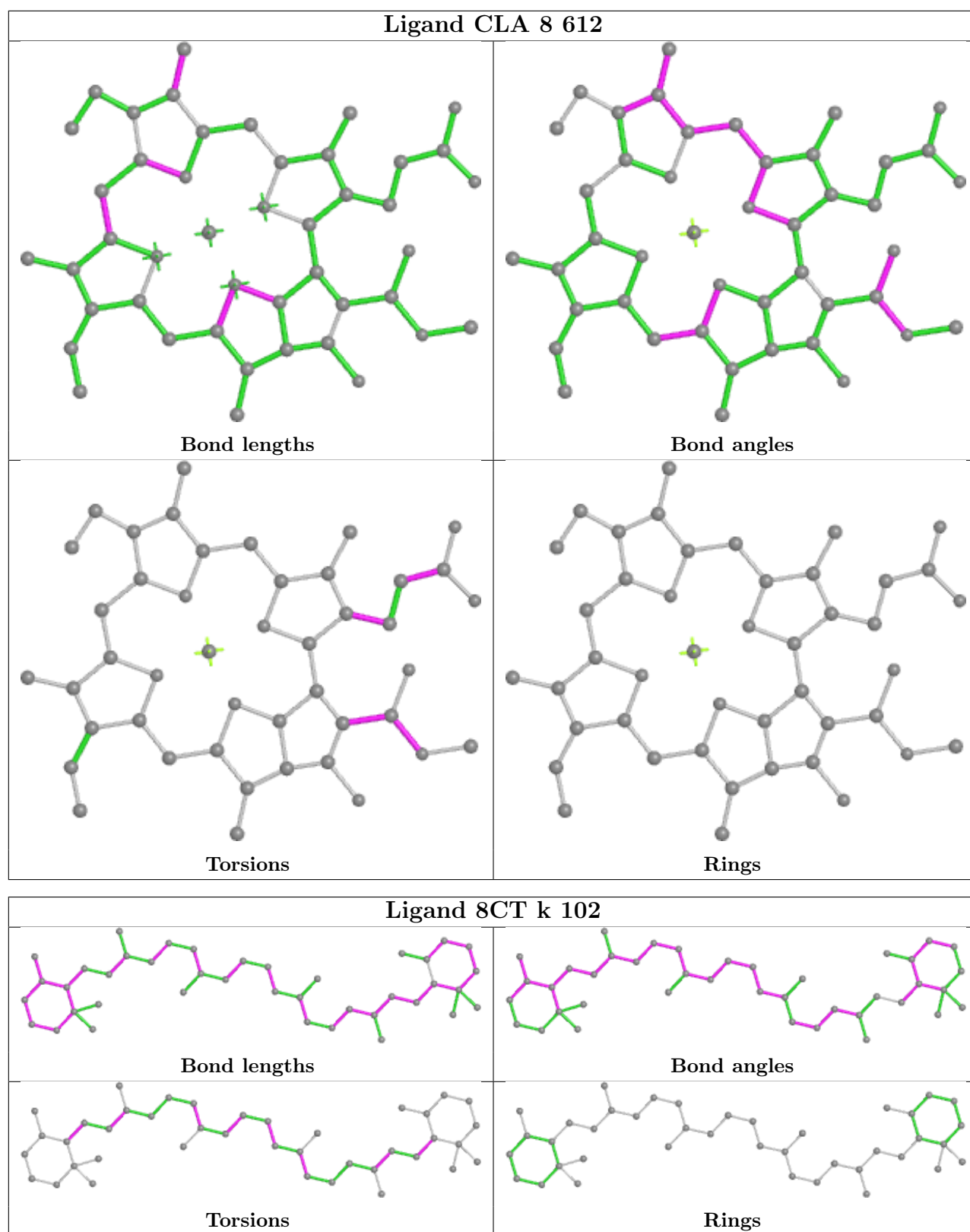












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

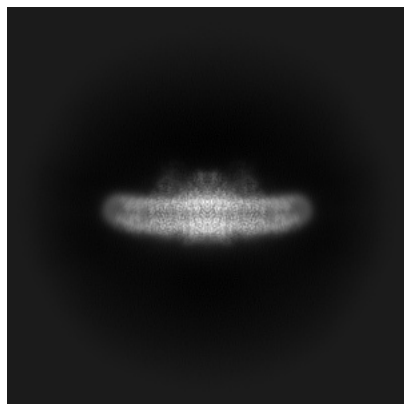
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-37414. These allow visual inspection of the internal detail of the map and identification of artifacts.

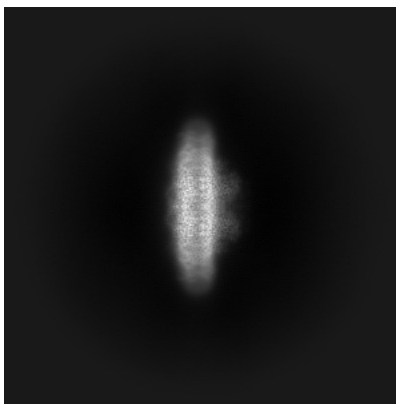
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

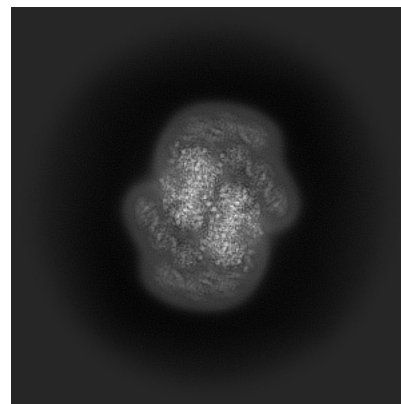
6.1.1 Primary map



X

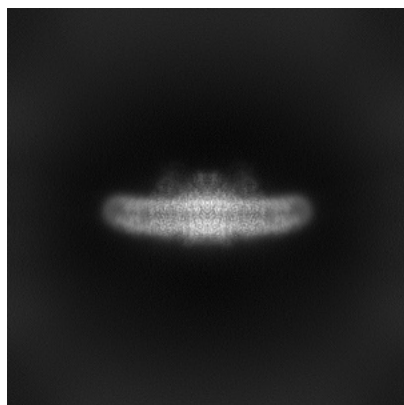


Y

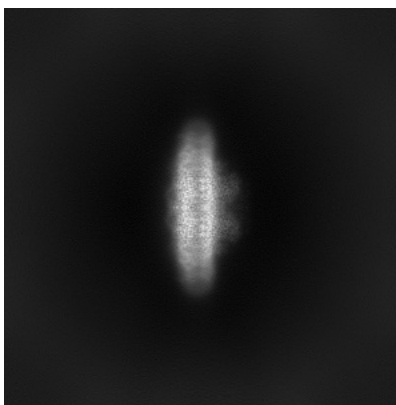


Z

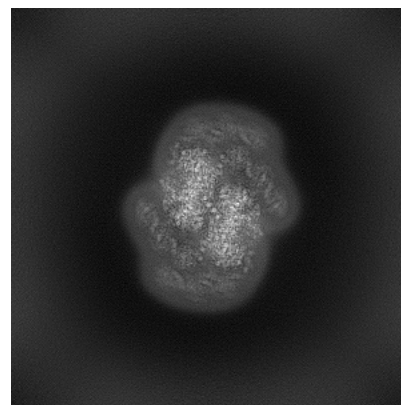
6.1.2 Raw map



X



Y

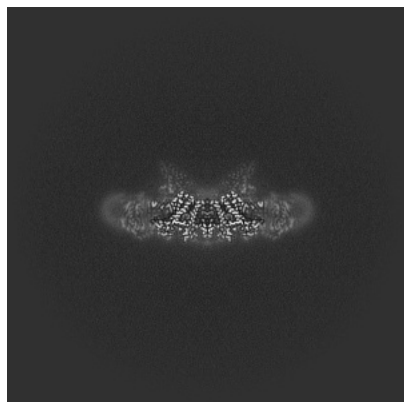


Z

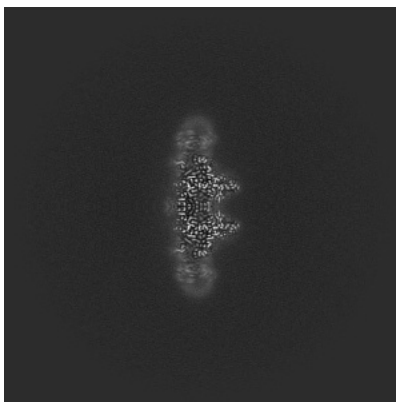
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

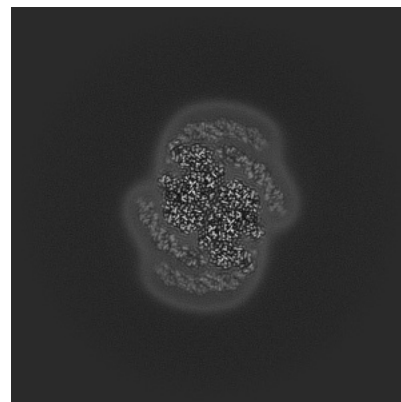
6.2.1 Primary map



X Index: 256

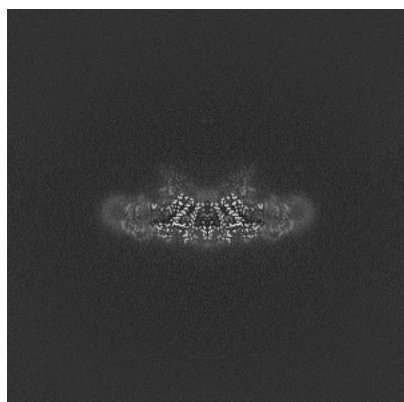


Y Index: 256

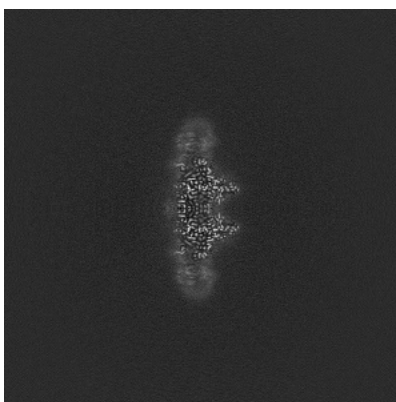


Z Index: 256

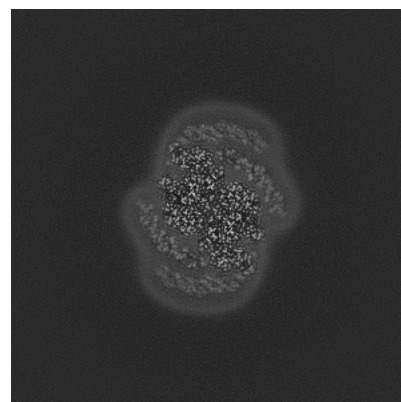
6.2.2 Raw map



X Index: 256



Y Index: 256

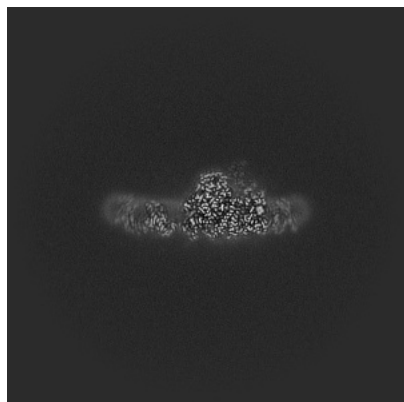


Z Index: 256

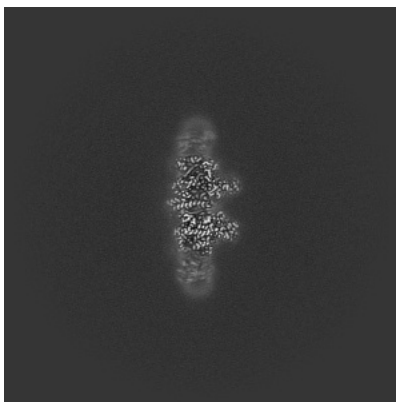
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

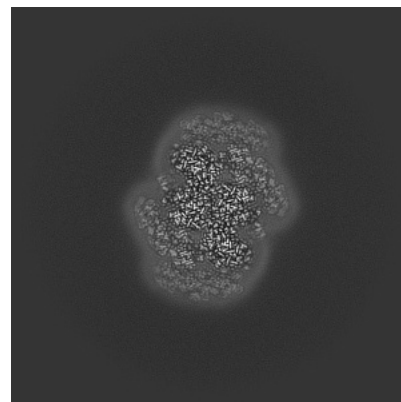
6.3.1 Primary map



X Index: 229

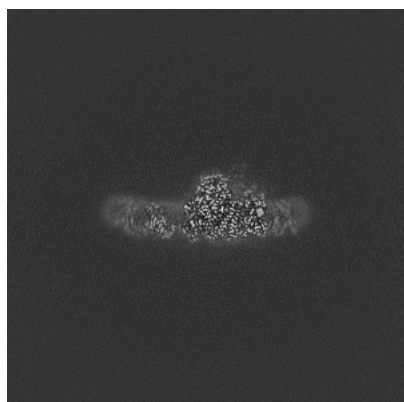


Y Index: 251

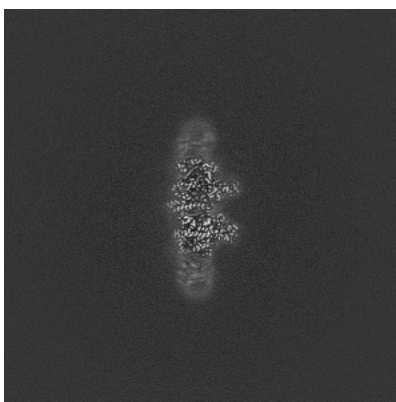


Z Index: 235

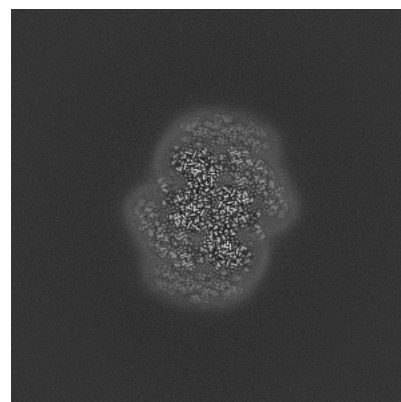
6.3.2 Raw map



X Index: 229



Y Index: 251

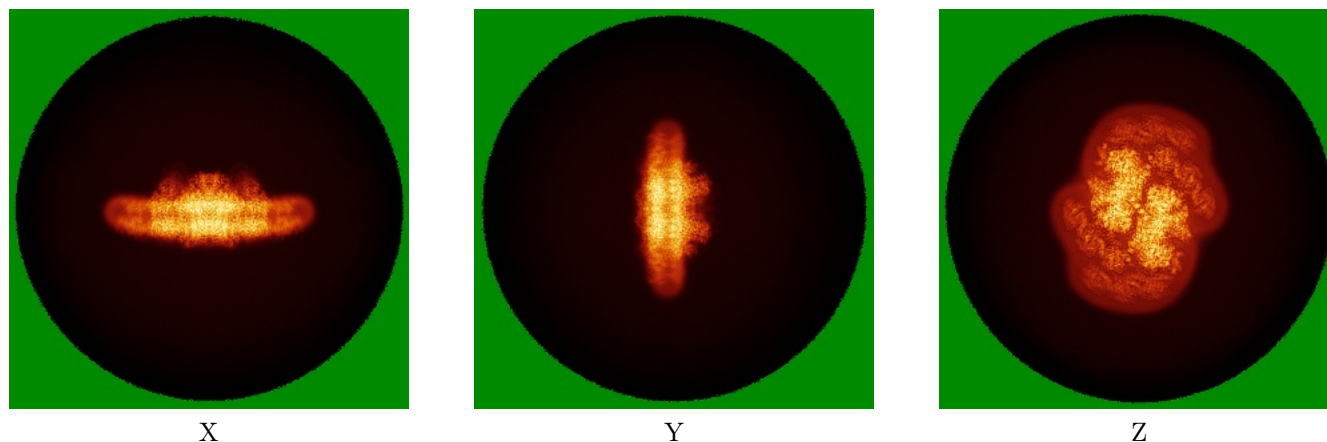


Z Index: 235

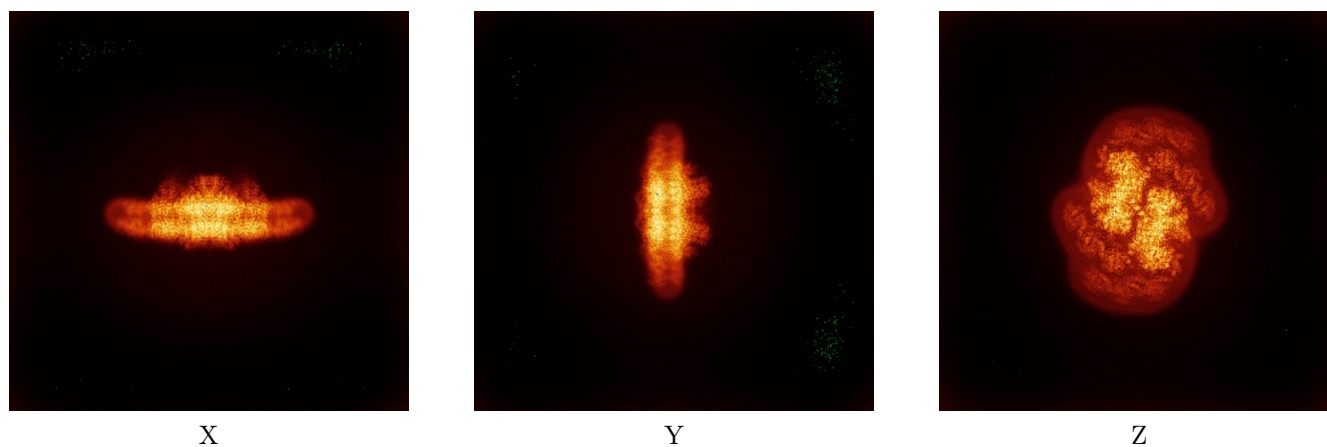
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

6.4.1 Primary map



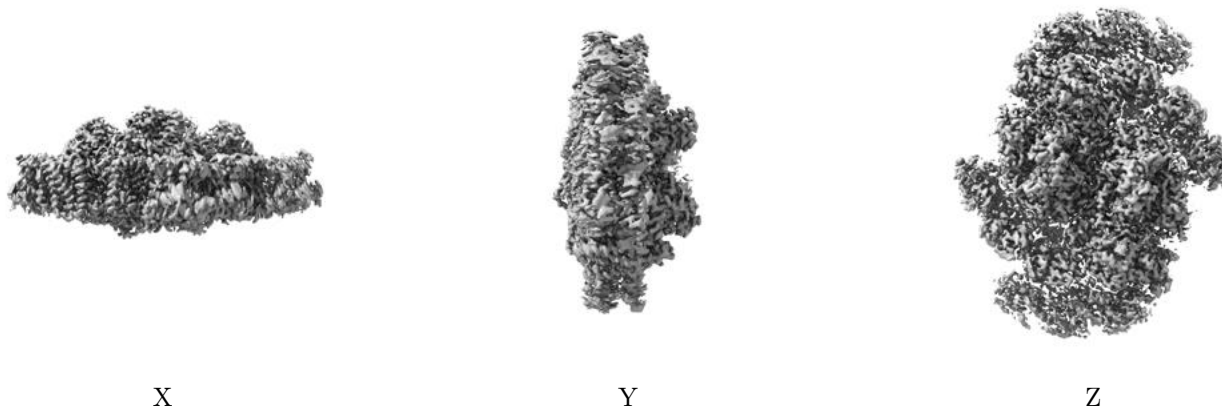
6.4.2 Raw map



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.

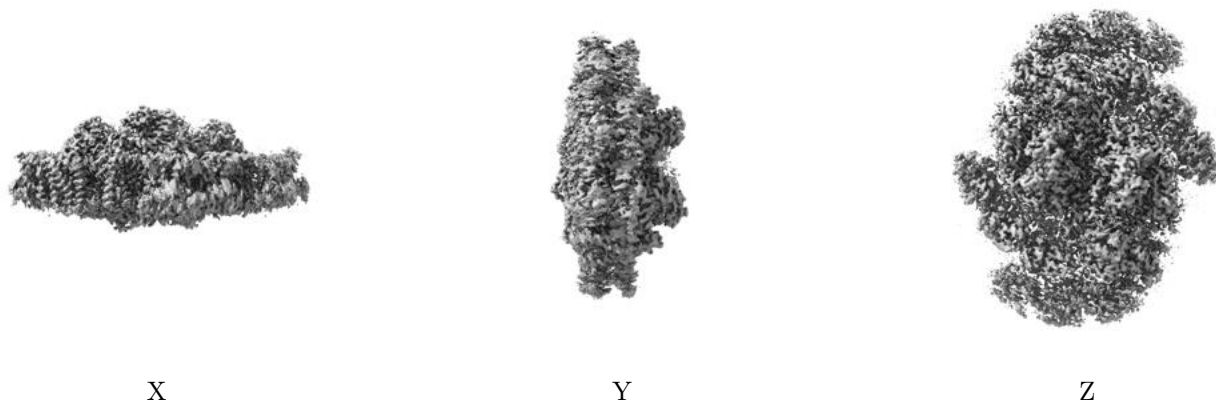
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.253. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

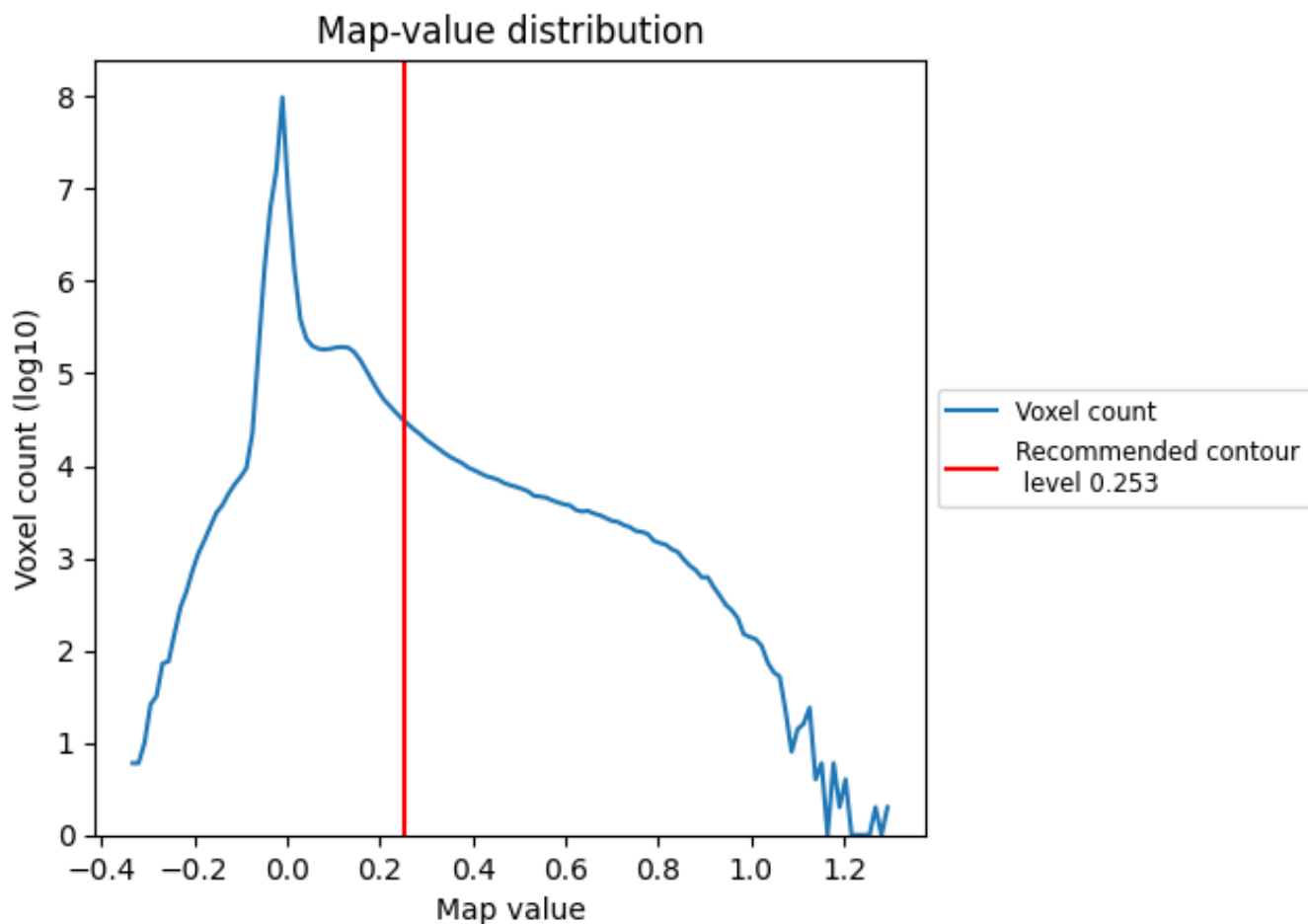
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

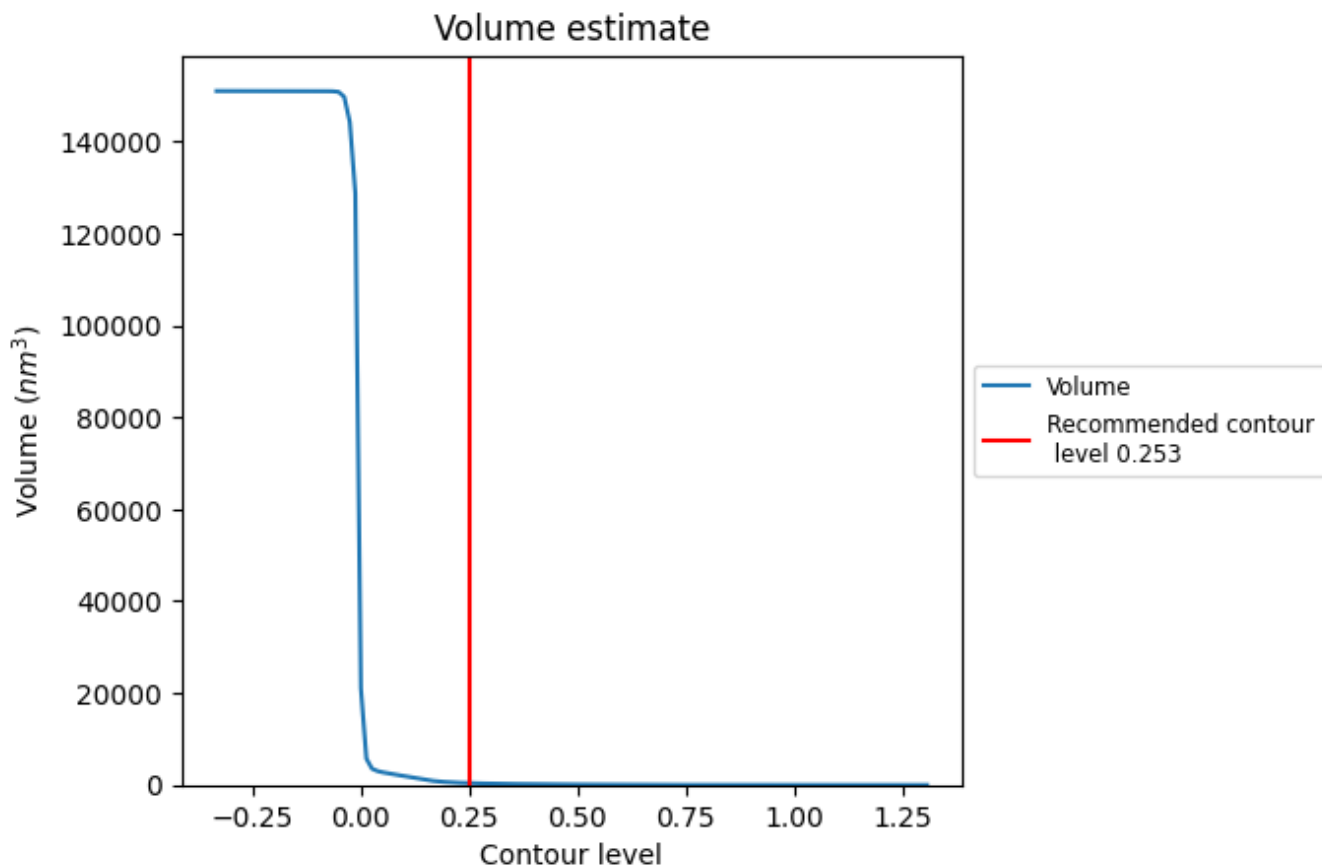
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

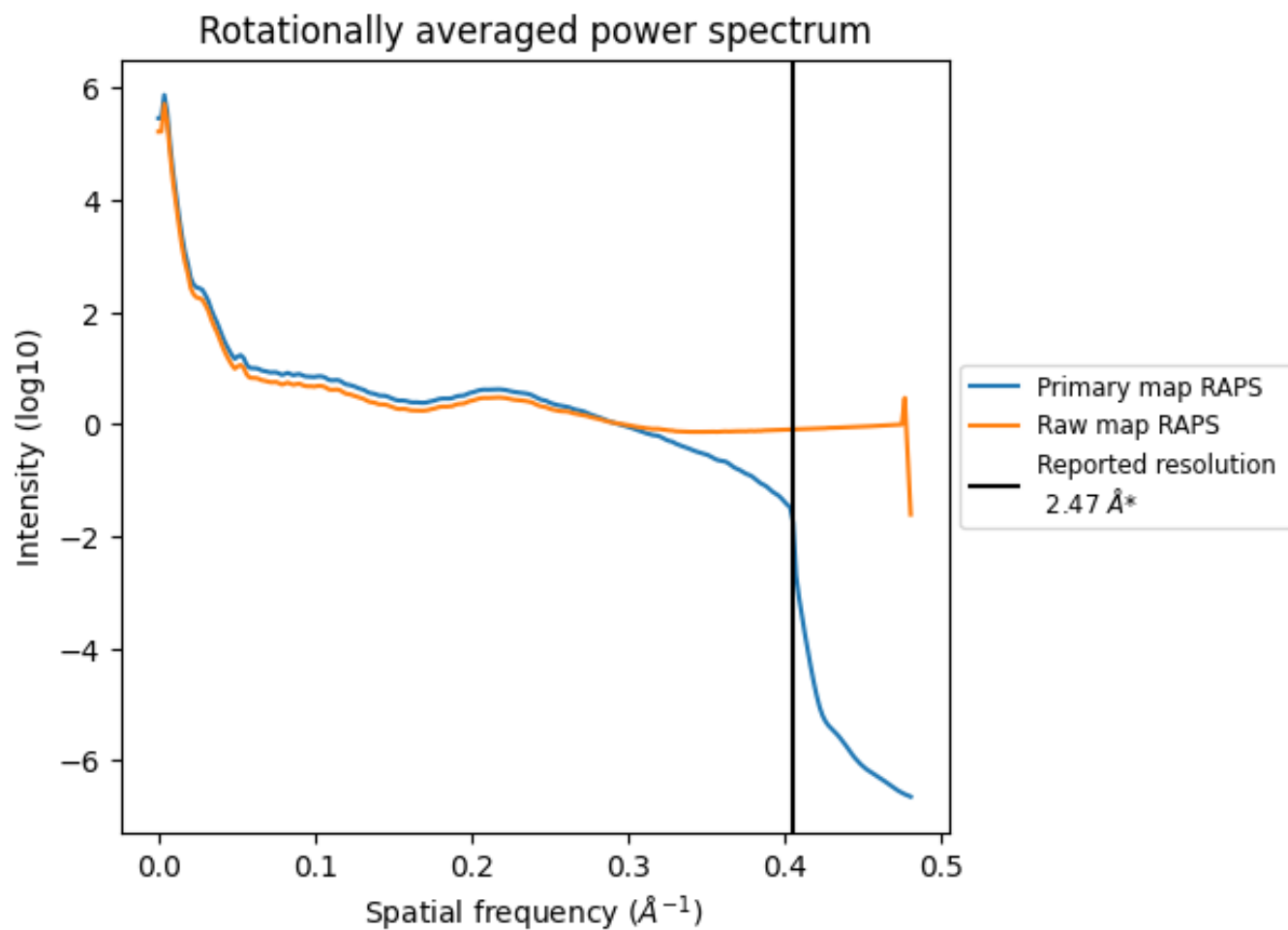
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 394 nm^3 ; this corresponds to an approximate mass of 356 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

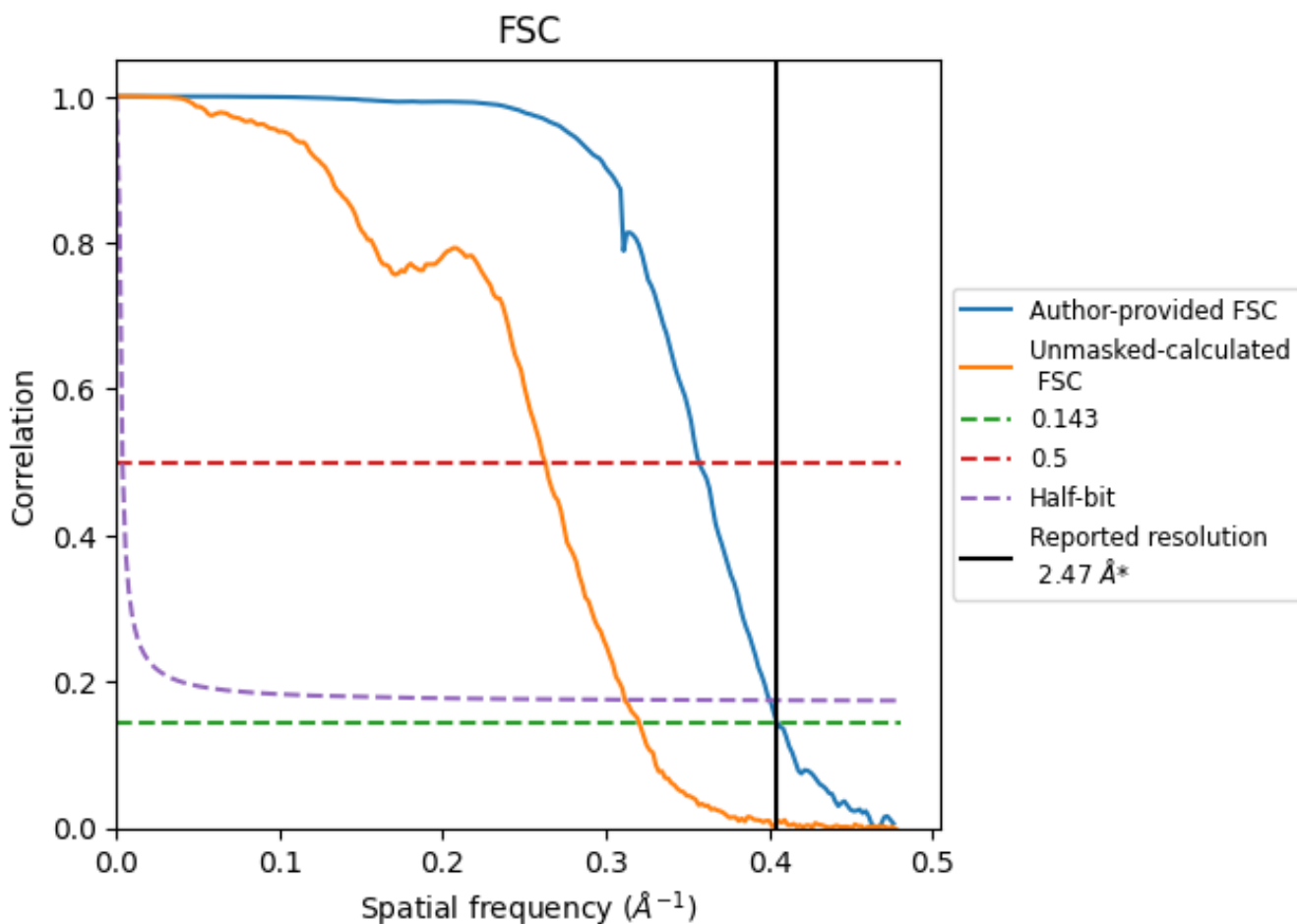


*Reported resolution corresponds to spatial frequency of 0.405 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.405 Å⁻¹

8.2 Resolution estimates [i](#)

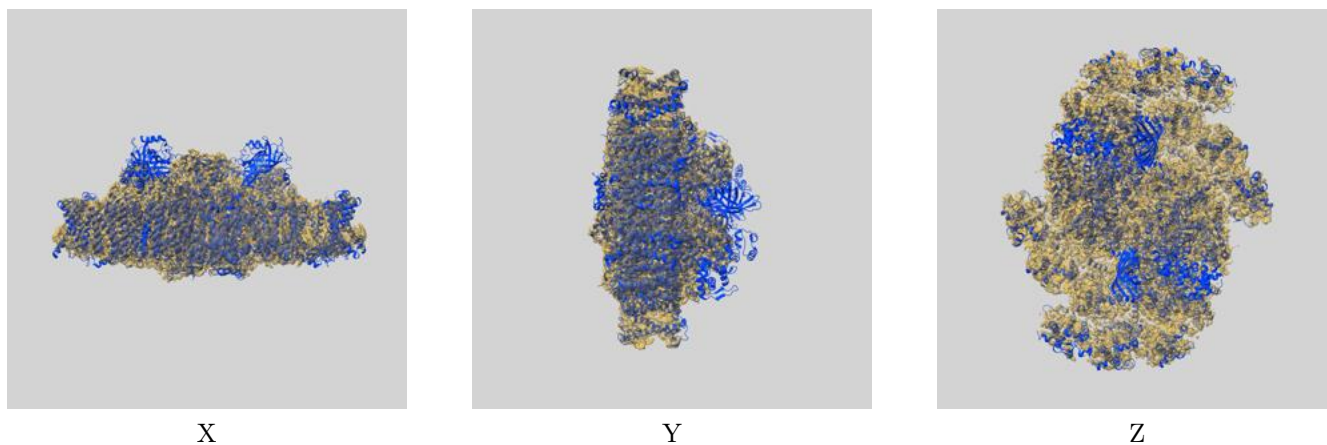
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.47	-	-
Author-provided FSC curve	2.47	2.80	2.50
Unmasked-calculated*	3.12	3.81	3.21

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.12 differs from the reported value 2.47 by more than 10 %

9 Map-model fit [i](#)

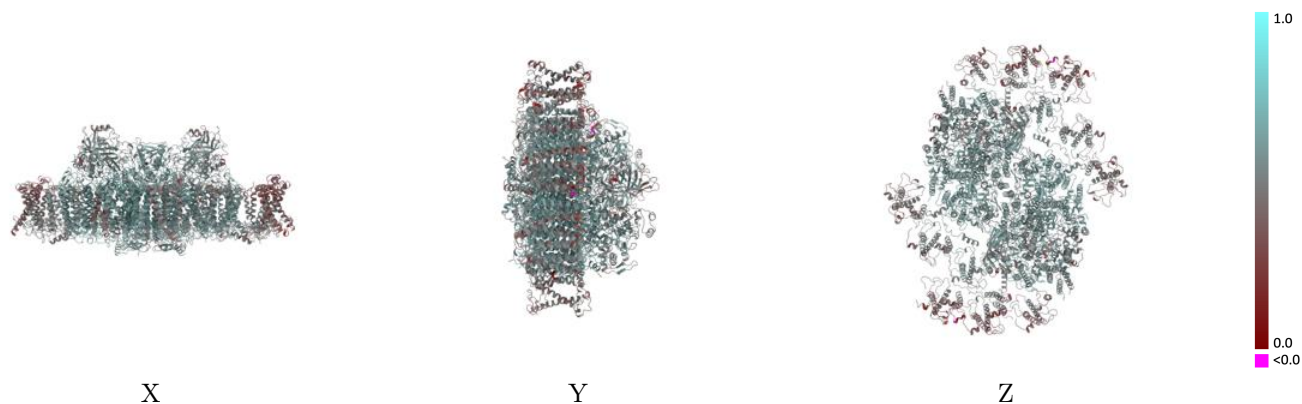
This section contains information regarding the fit between EMDB map EMD-37414 and PDB model 8WB4. Per-residue inclusion information can be found in section [3](#) on page [43](#).

9.1 Map-model overlay [i](#)



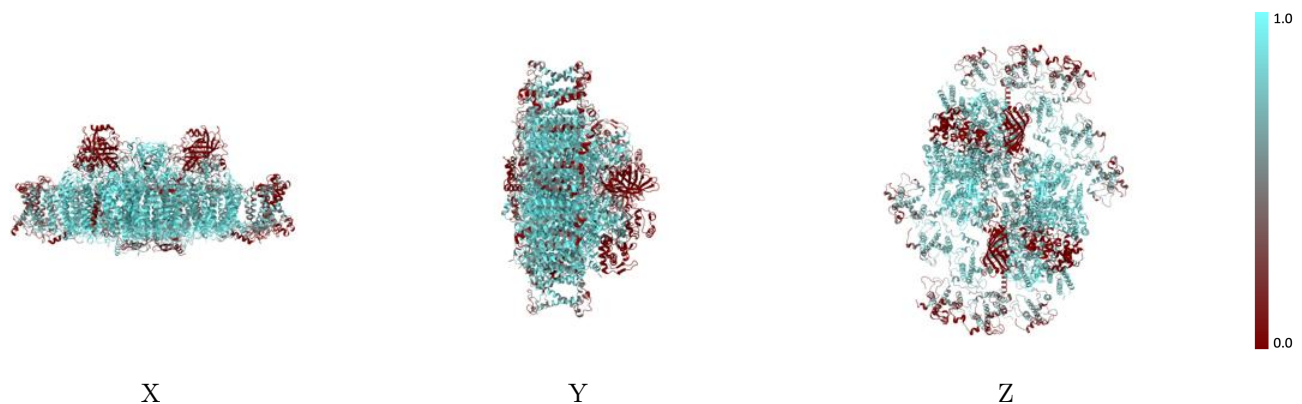
The images above show the 3D surface view of the map at the recommended contour level 0.253 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



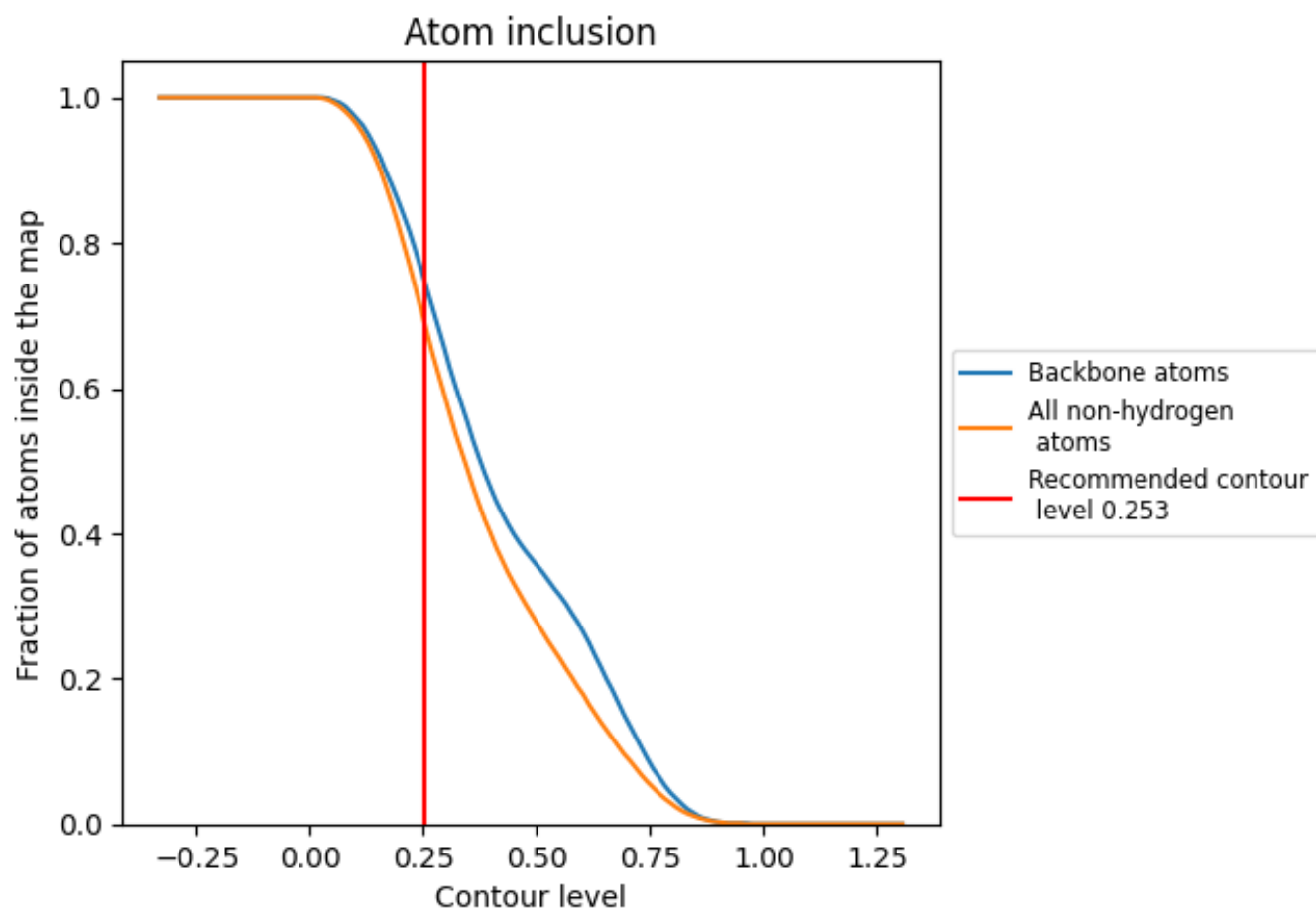
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 [i](#)



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 (0.253).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 69% 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 (0.253) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6870	 0.5390
0	 0.3220	 0.3940
1	 0.5160	 0.4300
2	 0.7030	 0.5030
3	 0.8210	 0.5590
4	 0.3280	 0.3940
5	 0.3860	 0.4010
6	 0.4790	 0.4320
7	 0.5140	 0.4320
8	 0.7060	 0.5030
9	 0.8200	 0.5590
A	 0.9490	 0.6200
B	 0.9280	 0.6140
C	 0.9050	 0.6000
D	 0.9620	 0.6290
E	 0.7590	 0.5330
F	 0.8680	 0.5520
G	 0.4320	 0.5120
H	 0.9650	 0.6130
I	 0.9890	 0.6320
J	 0.2870	 0.4670
K	 0.9140	 0.5930
L	 0.9340	 0.6010
M	 0.9440	 0.6050
O	 0.0060	 0.4920
P	 0.4830	 0.4330
Q	 0.0570	 0.5560
R	 0.4620	 0.4100
S	 0.6270	 0.5060
T	 0.9250	 0.6230
U	 0.0110	 0.4830
V	 0.0170	 0.5160
W	 0.8750	 0.5900
X	 0.8780	 0.5930
Y	 0.6150	 0.4860



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Chain	Atom inclusion	Q-score
Z	 0.7650	 0.5140
a	 0.9470	 0.6180
b	 0.9290	 0.6150
c	 0.9040	 0.6010
d	 0.9620	 0.6310
e	 0.7600	 0.5390
f	 0.8430	 0.5560
g	 0.4160	 0.4930
h	 0.9650	 0.6160
i	 0.9890	 0.6260
j	 0.2870	 0.4630
k	 0.9110	 0.5940
l	 0.9340	 0.5980
m	 0.9350	 0.6030
o	 0.0070	 0.4880
p	 0.3940	 0.4020
q	 0.0570	 0.5540
r	 0.4620	 0.4120
s	 0.6270	 0.5080
t	 0.9250	 0.6230
u	 0.0110	 0.4850
v	 0.0160	 0.5190
w	 0.8750	 0.5860
x	 0.8780	 0.5880
y	 0.6110	 0.4880
z	 0.7570	 0.5180