



## wwPDB EM Validation Summary Report ⓘ

Oct 1, 2024 – 05:49 PM JST

PDB ID : 8HTU  
EMDB ID : EMD-35018  
Title : Cryo-EM structure of PpPSI-L  
Authors : Li, M.; Pan, X.W.; Sun, H.Y.  
Deposited on : 2022-12-21  
Resolution : 2.87 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](mailto: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>.

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

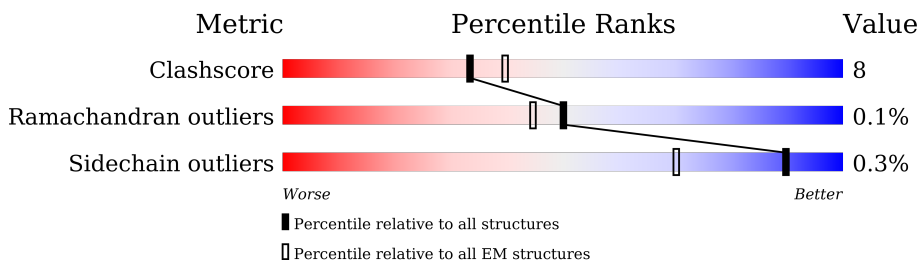
EMDB validation analysis : 0.0.1.dev113  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001) 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

# 1 Overall quality at a glance

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

The reported resolution of this entry is 2.87 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.




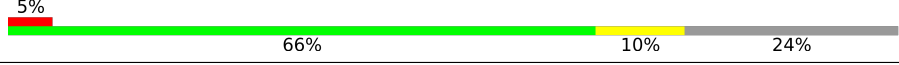
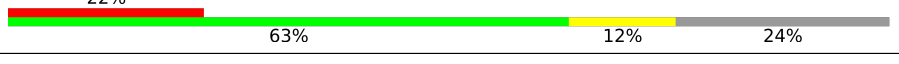
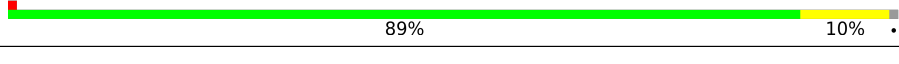

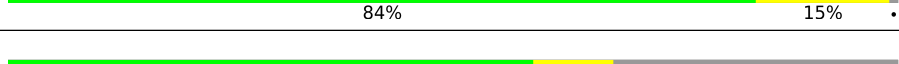
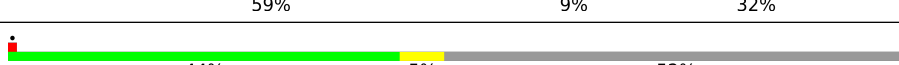
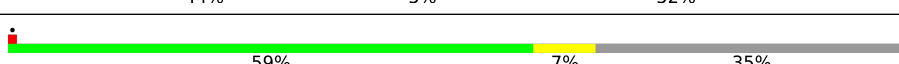
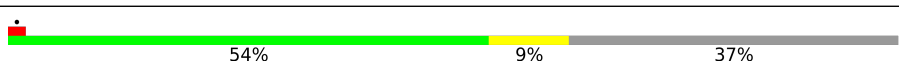
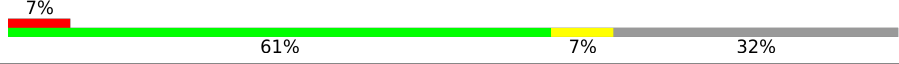

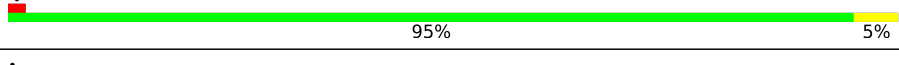
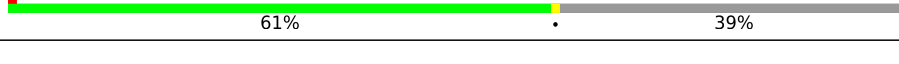

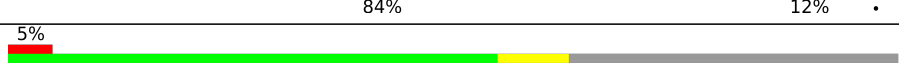


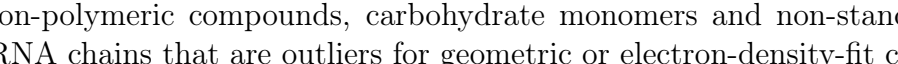
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	U	265	
1	V	265	
1	W	265	
2	1	245	
2	5	245	
3	2	273	
3	6	273	
4	3	323	

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Mol	Chain	Length	Quality of chain
4	7	323	
5	4	270	
5	8	270	
6	A	750	
7	B	734	
8	C	81	
9	D	210	
10	E	132	
11	F	246	
12	G	155	
13	H	139	
14	I	36	
15	J	41	
16	K	132	
17	L	223	
18	M	32	
19	O	143	
20	9	311	

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
21	CHL	1	601	X	-	-	-
21	CHL	1	607	X	-	-	-
21	CHL	2	601	X	-	-	-
21	CHL	2	602	X	-	-	-
21	CHL	2	606	X	-	-	-
21	CHL	2	607	X	-	-	-
21	CHL	2	608	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
21	CHL	2	618	X	-	-	-
21	CHL	3	608	X	-	-	-
21	CHL	4	606	X	-	-	-
21	CHL	4	607	X	-	-	-
21	CHL	4	608	X	-	-	-
21	CHL	4	618	X	-	-	-
21	CHL	5	601	X	-	-	-
21	CHL	5	607	X	-	-	-
21	CHL	6	601	X	-	-	-
21	CHL	6	602	X	-	-	-
21	CHL	6	606	X	-	-	-
21	CHL	6	607	X	-	-	-
21	CHL	6	608	X	-	-	-
21	CHL	6	618	X	-	-	-
21	CHL	7	608	X	-	-	-
21	CHL	8	606	X	-	-	-
21	CHL	8	607	X	-	-	-
21	CHL	8	608	X	-	-	-
21	CHL	8	618	X	-	-	-
21	CHL	9	601	X	-	-	-
21	CHL	9	605	X	-	-	-
21	CHL	9	606	X	-	-	-
21	CHL	9	607	X	-	-	-
21	CHL	9	608	X	-	-	-
21	CHL	U	601	X	-	-	-
21	CHL	U	605	X	-	-	-
21	CHL	U	606	X	-	-	-
21	CHL	U	607	X	-	-	-
21	CHL	U	608	X	-	-	-
21	CHL	U	609	X	-	-	-
21	CHL	V	601	X	-	-	-
21	CHL	V	605	X	-	-	-
21	CHL	V	606	X	-	-	-
21	CHL	V	607	X	-	-	-
21	CHL	V	608	X	-	-	-
21	CHL	V	609	X	-	-	-
21	CHL	W	601	X	-	-	-
21	CHL	W	605	X	-	-	-
21	CHL	W	606	X	-	-	-
21	CHL	W	607	X	-	-	-
21	CHL	W	608	X	-	-	-
21	CHL	W	609	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	1	602	X	-	-	-
22	CLA	1	603	X	-	-	-
22	CLA	1	606	X	-	-	-
22	CLA	1	608	X	-	-	-
22	CLA	1	609	X	-	-	-
22	CLA	1	610	X	-	-	-
22	CLA	1	611	X	-	-	-
22	CLA	1	612	X	-	-	-
22	CLA	1	613	X	-	-	-
22	CLA	1	614	X	-	-	-
22	CLA	1	616	X	-	-	-
22	CLA	2	603	X	-	-	-
22	CLA	2	604	X	-	-	-
22	CLA	2	609	X	-	-	-
22	CLA	2	610	X	-	-	-
22	CLA	2	611	X	-	-	-
22	CLA	2	612	X	-	-	-
22	CLA	2	613	X	-	-	-
22	CLA	2	614	X	-	-	-
22	CLA	3	602	X	-	-	-
22	CLA	3	603	X	-	-	-
22	CLA	3	604	X	-	-	-
22	CLA	3	606	X	-	-	-
22	CLA	3	607	X	-	-	-
22	CLA	3	609	X	-	-	-
22	CLA	3	610	X	-	-	-
22	CLA	3	611	X	-	-	-
22	CLA	3	612	X	-	-	-
22	CLA	3	613	X	-	-	-
22	CLA	3	614	X	-	-	-
22	CLA	3	615	X	-	-	-
22	CLA	3	617	X	-	-	-
22	CLA	4	601	X	-	-	-
22	CLA	4	602	X	-	-	-
22	CLA	4	603	X	-	-	-
22	CLA	4	604	X	-	-	-
22	CLA	4	609	X	-	-	-
22	CLA	4	610	X	-	-	-
22	CLA	4	611	X	-	-	-
22	CLA	4	612	X	-	-	-
22	CLA	4	613	X	-	-	-
22	CLA	4	614	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	5	602	X	-	-	-
22	CLA	5	603	X	-	-	-
22	CLA	5	604	X	-	-	-
22	CLA	5	606	X	-	-	-
22	CLA	5	608	X	-	-	-
22	CLA	5	609	X	-	-	-
22	CLA	5	610	X	-	-	-
22	CLA	5	611	X	-	-	-
22	CLA	5	612	X	-	-	-
22	CLA	5	614	X	-	-	-
22	CLA	5	616	X	-	-	-
22	CLA	6	603	X	-	-	-
22	CLA	6	604	X	-	-	-
22	CLA	6	609	X	-	-	-
22	CLA	6	610	X	-	-	-
22	CLA	6	611	X	-	-	-
22	CLA	6	612	X	-	-	-
22	CLA	6	613	X	-	-	-
22	CLA	6	614	X	-	-	-
22	CLA	7	603	X	-	-	-
22	CLA	7	604	X	-	-	-
22	CLA	7	606	X	-	-	-
22	CLA	7	607	X	-	-	-
22	CLA	7	609	X	-	-	-
22	CLA	7	610	X	-	-	-
22	CLA	7	611	X	-	-	-
22	CLA	7	612	X	-	-	-
22	CLA	7	613	X	-	-	-
22	CLA	7	614	X	-	-	-
22	CLA	7	615	X	-	-	-
22	CLA	7	617	X	-	-	-
22	CLA	8	601	X	-	-	-
22	CLA	8	602	X	-	-	-
22	CLA	8	603	X	-	-	-
22	CLA	8	604	X	-	-	-
22	CLA	8	609	X	-	-	-
22	CLA	8	610	X	-	-	-
22	CLA	8	611	X	-	-	-
22	CLA	8	612	X	-	-	-
22	CLA	8	613	X	-	-	-
22	CLA	8	614	X	-	-	-
22	CLA	9	602	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	9	603	X	-	-	-
22	CLA	9	604	X	-	-	-
22	CLA	9	609	X	-	-	-
22	CLA	9	610	X	-	-	-
22	CLA	9	611	X	-	-	-
22	CLA	9	612	X	-	-	-
22	CLA	9	613	X	-	-	-
22	CLA	A	801	X	-	-	-
22	CLA	A	802	X	-	-	-
22	CLA	A	803	X	-	-	-
22	CLA	A	804	X	-	-	-
22	CLA	A	806	X	-	-	-
22	CLA	A	807	X	-	-	-
22	CLA	A	808	X	-	-	-
22	CLA	A	809	X	-	-	-
22	CLA	A	810	X	-	-	-
22	CLA	A	811	X	-	-	-
22	CLA	A	812	X	-	-	-
22	CLA	A	813	X	-	-	-
22	CLA	A	814	X	-	-	-
22	CLA	A	815	X	-	-	-
22	CLA	A	816	X	-	-	-
22	CLA	A	817	X	-	-	-
22	CLA	A	818	X	-	-	-
22	CLA	A	819	X	-	-	-
22	CLA	A	820	X	-	-	-
22	CLA	A	821	X	-	-	-
22	CLA	A	822	X	-	-	-
22	CLA	A	823	X	-	-	-
22	CLA	A	824	X	-	-	-
22	CLA	A	826	X	-	-	-
22	CLA	A	828	X	-	-	-
22	CLA	A	829	X	-	-	-
22	CLA	A	830	X	-	-	-
22	CLA	A	831	X	-	-	-
22	CLA	A	832	X	-	-	-
22	CLA	A	833	X	-	-	-
22	CLA	A	834	X	-	-	-
22	CLA	A	835	X	-	-	-
22	CLA	A	836	X	-	-	-
22	CLA	A	838	X	-	-	-
22	CLA	A	839	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	A	840	X	-	-	-
22	CLA	A	841	X	-	-	-
22	CLA	A	842	X	-	-	-
22	CLA	A	843	X	-	-	-
22	CLA	A	845	X	-	-	-
22	CLA	A	854	X	-	-	-
22	CLA	B	802	X	-	-	-
22	CLA	B	803	X	-	-	-
22	CLA	B	804	X	-	-	-
22	CLA	B	805	X	-	-	-
22	CLA	B	806	X	-	-	-
22	CLA	B	808	X	-	-	-
22	CLA	B	809	X	-	-	-
22	CLA	B	810	X	-	-	-
22	CLA	B	811	X	-	-	-
22	CLA	B	812	X	-	-	-
22	CLA	B	813	X	-	-	-
22	CLA	B	814	X	-	-	-
22	CLA	B	815	X	-	-	-
22	CLA	B	816	X	-	-	-
22	CLA	B	817	X	-	-	-
22	CLA	B	818	X	-	-	-
22	CLA	B	819	X	-	-	-
22	CLA	B	820	X	-	-	-
22	CLA	B	821	X	-	-	-
22	CLA	B	822	X	-	-	-
22	CLA	B	823	X	-	-	-
22	CLA	B	824	X	-	-	-
22	CLA	B	825	X	-	-	-
22	CLA	B	826	X	-	-	-
22	CLA	B	827	X	-	-	-
22	CLA	B	828	X	-	-	-
22	CLA	B	829	X	-	-	-
22	CLA	B	830	X	-	-	-
22	CLA	B	831	X	-	-	-
22	CLA	B	833	X	-	-	-
22	CLA	B	834	X	-	-	-
22	CLA	B	835	X	-	-	-
22	CLA	B	836	X	-	-	-
22	CLA	B	837	X	-	-	-
22	CLA	B	839	X	-	-	-
22	CLA	B	840	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	B	841	X	-	-	-
22	CLA	F	301	X	-	-	-
22	CLA	F	303	X	-	-	-
22	CLA	F	304	X	-	-	-
22	CLA	G	201	X	-	-	-
22	CLA	G	203	X	-	-	-
22	CLA	G	204	X	-	-	-
22	CLA	H	201	X	-	-	-
22	CLA	J	101	X	-	-	-
22	CLA	K	201	X	-	-	-
22	CLA	K	203	X	-	-	-
22	CLA	K	204	X	-	-	-
22	CLA	K	206	X	-	-	-
22	CLA	L	302	X	-	-	-
22	CLA	L	303	X	-	-	-
22	CLA	L	304	X	-	-	-
22	CLA	O	2001	X	-	-	-
22	CLA	O	2002	X	-	-	-
22	CLA	O	2003	X	-	-	-
22	CLA	U	602	X	-	-	-
22	CLA	U	603	X	-	-	-
22	CLA	U	604	X	-	-	-
22	CLA	U	610	X	-	-	-
22	CLA	U	611	X	-	-	-
22	CLA	U	612	X	-	-	-
22	CLA	U	613	X	-	-	-
22	CLA	U	614	X	-	-	-
22	CLA	V	603	X	-	-	-
22	CLA	V	604	X	-	-	-
22	CLA	V	610	X	-	-	-
22	CLA	V	611	X	-	-	-
22	CLA	V	612	X	-	-	-
22	CLA	V	613	X	-	-	-
22	CLA	V	614	X	-	-	-
22	CLA	W	602	X	-	-	-
22	CLA	W	603	X	-	-	-
22	CLA	W	604	X	-	-	-
22	CLA	W	610	X	-	-	-
22	CLA	W	611	X	-	-	-
22	CLA	W	612	X	-	-	-
22	CLA	W	613	X	-	-	-
22	CLA	W	614	X	-	-	-

## 2 Entry composition [i](#)

There are 33 unique types of molecules in this entry. The entry contains 57715 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 Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	U	219	1659	1073	270	311	5	0	0
1	V	215	1630	1052	265	308	5	0	0
1	W	228	1734	1113	286	329	1 5	0	0

- Molecule 2 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	193	1478	964	248	265	1	0	0
2	5	192	1473	961	247	264	1	0	0

- Molecule 3 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	211	1625	1055	273	293	4	0	0
3	6	205	1583	1029	265	285	4	0	0

- Molecule 4 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	222	1719	1125	281	306	7	0	0
4	7	219	1687	1105	274	301	7	0	0

- Molecule 5 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	206	1600	1040	267	288	5	0	0
5	8	204	1582	1028	265	284	5	0	0

- Molecule 6 is a protein called Photosystem I P700 chlorophyll a apoprotein A1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	A	742	5837	3827	993	998	19	0	0

- Molecule 7 is a protein called Photosystem I P700 chlorophyll a apoprotein A2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	B	733	5850	3839	996	999	16	0	0

- Molecule 8 is a protein called Photosystem I iron-sulfur center.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	C	80	595	365	103	116	11	0	0

- Molecule 9 is a protein called Photosystem I reaction center subunit II, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	D	142	1114	714	197	200	3	0	0

- Molecule 10 is a protein called Photosystem I reaction center subunit IV, chloroplastic.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	E	64	507	322	90	95	0	0

- Molecule 11 is a protein called Photosystem I reaction center subunit III.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	F	161	1251	808	217	223	3	0	0

- Molecule 12 is a protein called Photosystem I reaction center subunit V, chloroplastic.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	G	97	Total	C	N	O	0	0
			740	478	127	135		

- Molecule 13 is a protein called Photosystem I reaction center subunit VI, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	95	Total	C	N	O	S	0	0
			736	472	125	138	1		

- Molecule 14 is a protein called Photosystem I reaction center subunit VIII.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	34	Total	C	N	O	S	0	0
			266	181	35	48	2		

- Molecule 15 is a protein called Photosystem I reaction center subunit IX.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	41	Total	C	N	O	S	0	0
			325	222	48	54	1		

- Molecule 16 is a protein called Photosystem I subunit X.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	81	Total	C	N	O	S	0	0
			565	356	98	108	3		

- Molecule 17 is a protein called PSI subunit V.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	163	Total	C	N	O	S	0	0
			1228	809	197	220	2		

- Molecule 18 is a protein called Photosystem I reaction center subunit XII.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	M	31	Total	C	N	O	0	0
			230	150	37	43		

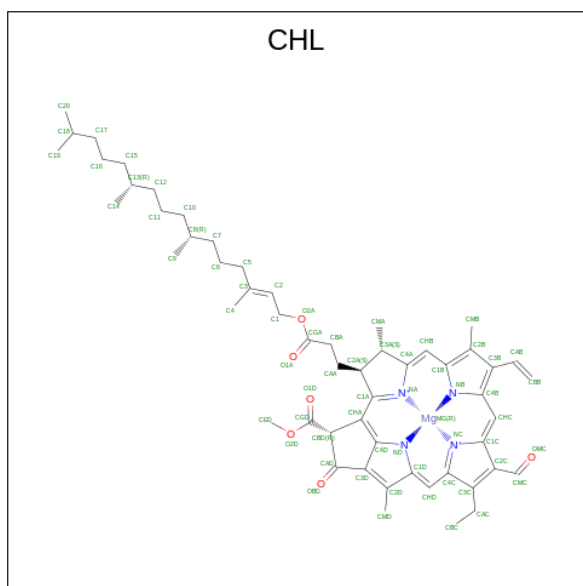
- Molecule 19 is a protein called Photosystem I subunit O.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	O	90	Total	C	N	O	S	0	0
			711	477	117	116	1		

- Molecule 20 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	9	221	Total	C	N	O	S	0	0
			1713	1113	283	308	9		

- Molecule 21 is CHLOROPHYLL B (three-letter code: CHL) (formula:  $C_{55}H_{70}MgN_4O_6$ ).



Mol	Chain	Residues	Atoms					AltConf
21	U	1	Total	C	Mg	N	O	0
			63	53	1	4	5	
21	U	1	Total	C	Mg	N	O	0
			38	30	1	4	3	
21	U	1	Total	C	Mg	N	O	0
			46	35	1	4	6	
21	U	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
21	U	1	Total	C	Mg	N	O	0
			40	31	1	4	4	
21	U	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
21	V	1	Total	C	Mg	N	O	0
			63	53	1	4	5	
21	V	1	Total	C	Mg	N	O	0
			42	33	1	4	4	

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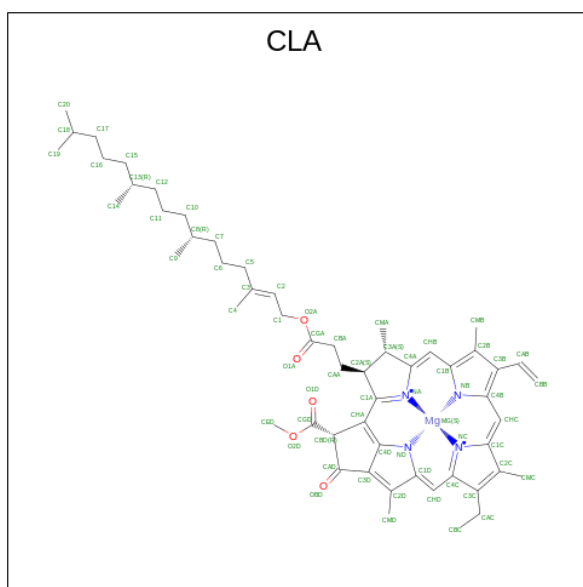
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
21	V	1	38	30	1	4	3	0
21	V	1	40	31	1	4	4	0
21	V	1	40	31	1	4	4	0
21	V	1	40	33	1	4	2	0
21	W	1	63	53	1	4	5	0
21	W	1	38	30	1	4	3	0
21	W	1	38	30	1	4	3	0
21	W	1	40	31	1	4	4	0
21	W	1	40	31	1	4	4	0
21	W	1	40	33	1	4	2	0
21	1	1	56	45	1	4	6	0
21	1	1	47	36	1	4	6	0
21	2	1	46	35	1	4	6	0
21	2	1	61	50	1	4	6	0
21	2	1	46	35	1	4	6	0
21	2	1	47	36	1	4	6	0
21	2	1	46	35	1	4	6	0
21	2	1	43	34	1	4	4	0
21	3	1	56	45	1	4	6	0
21	4	1	46	35	1	4	6	0
21	4	1	47	36	1	4	6	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
21	4	1	46	35	1	4	6	0
21	4	1	43	34	1	4	4	0
21	5	1	51	40	1	4	6	0
21	5	1	39	32	1	4	2	0
21	6	1	66	55	1	4	6	0
21	6	1	56	45	1	4	6	0
21	6	1	46	35	1	4	6	0
21	6	1	47	36	1	4	6	0
21	6	1	48	37	1	4	6	0
21	6	1	47	36	1	4	6	0
21	7	1	46	35	1	4	6	0
21	8	1	46	35	1	4	6	0
21	8	1	46	35	1	4	6	0
21	8	1	51	40	1	4	6	0
21	8	1	43	34	1	4	4	0
21	9	1	39	32	1	4	2	0
21	9	1	38	31	1	4	2	0
21	9	1	44	35	1	4	4	0
21	9	1	43	34	1	4	4	0
21	9	1	43	34	1	4	4	0

- Molecule 22 is CHLOROPHYLL A (three-letter code: CLA) (formula: C<sub>55</sub>H<sub>72</sub>MgN<sub>4</sub>O<sub>5</sub>).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	Mg	N		O
22	U	1	65	55	1	4	5	0
22	U	1	65	55	1	4	5	0
22	U	1	52	42	1	4	5	0
22	U	1	65	55	1	4	5	0
22	U	1	45	35	1	4	5	0
22	U	1	65	55	1	4	5	0
22	U	1	65	55	1	4	5	0
22	U	1	42	34	1	4	3	0
22	V	1	59	49	1	4	5	0
22	V	1	60	50	1	4	5	0
22	V	1	50	40	1	4	5	0
22	V	1	39	31	1	4	3	0
22	V	1	40	32	1	4	3	0
22	V	1	38	30	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	V	1	56	47	1	4	4	0
22	V	1	45	35	1	4	5	0
22	W	1	60	50	1	4	5	0
22	W	1	39	31	1	4	3	0
22	W	1	42	34	1	4	3	0
22	W	1	65	55	1	4	5	0
22	W	1	40	32	1	4	3	0
22	W	1	38	30	1	4	3	0
22	W	1	60	50	1	4	5	0
22	W	1	39	31	1	4	3	0
22	1	1	65	55	1	4	5	0
22	1	1	55	45	1	4	5	0
22	1	1	50	40	1	4	5	0
22	1	1	45	35	1	4	5	0
22	1	1	45	35	1	4	5	0
22	1	1	65	55	1	4	5	0
22	1	1	65	55	1	4	5	0
22	1	1	65	55	1	4	5	0
22	1	1	46	36	1	4	5	0
22	1	1	50	40	1	4	5	0
22	1	1	49	39	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	1	1	45	35	1	4	5	0
22	2	1	46	36	1	4	5	0
22	2	1	50	40	1	4	5	0
22	2	1	46	36	1	4	5	0
22	2	1	60	50	1	4	5	0
22	2	1	46	36	1	4	5	0
22	2	1	45	35	1	4	5	0
22	2	1	57	47	1	4	5	0
22	2	1	50	40	1	4	5	0
22	3	1	65	55	1	4	5	0
22	3	1	65	55	1	4	5	0
22	3	1	55	45	1	4	5	0
22	3	1	46	36	1	4	5	0
22	3	1	50	40	1	4	5	0
22	3	1	65	55	1	4	5	0
22	3	1	60	50	1	4	5	0
22	3	1	55	45	1	4	5	0
22	3	1	65	55	1	4	5	0
22	3	1	65	55	1	4	5	0
22	3	1	45	35	1	4	5	0
22	3	1	53	43	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	3	1	56	46	1	4	5	0
22	4	1	50	40	1	4	5	0
22	4	1	65	55	1	4	5	0
22	4	1	65	55	1	4	5	0
22	4	1	55	45	1	4	5	0
22	4	1	45	35	1	4	5	0
22	4	1	61	51	1	4	5	0
22	4	1	45	35	1	4	5	0
22	4	1	45	35	1	4	5	0
22	4	1	55	45	1	4	5	0
22	4	1	46	36	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	60	50	1	4	5	0
22	A	1	56	46	1	4	5	0
22	A	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	A	1	55	45	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	55	45	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	45	35	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	62	52	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	55	45	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	54	44	1	4	5	0
22	A	1	62	52	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	60	50	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	A	1	55	45	1	4	5	0
22	A	1	55	45	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	60	50	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	55	45	1	4	5	0
22	A	1	60	50	1	4	5	0
22	A	1	50	40	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	55	45	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	65	55	1	4	5	0
22	A	1	60	50	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	61	51	1	4	5	0
22	B	1	44	34	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	45	35	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	64	54	1	4	5	0
22	B	1	60	50	1	4	5	0
22	B	1	55	45	1	4	5	0
22	B	1	50	40	1	4	5	0
22	B	1	60	50	1	4	5	0
22	B	1	45	35	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	56	46	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	B	1	45	35	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	45	35	1	4	5	0
22	B	1	52	42	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	47	37	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	B	1	65	55	1	4	5	0
22	F	1	65	55	1	4	5	0
22	F	1	45	35	1	4	5	0
22	F	1	45	35	1	4	5	0
22	G	1	45	35	1	4	5	0
22	G	1	50	40	1	4	5	0
22	G	1	46	36	1	4	5	0
22	H	1	38	32	1	4	1	0
22	J	1	50	40	1	4	5	0
22	K	1	42	34	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
22	K	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	K	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
22	K	1	Total	C	Mg	N	O	0
			42	34	1	4	3	
22	L	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
22	L	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
22	L	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
22	O	1	Total	C	Mg	N		0
			27	22	1	4		
22	O	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	O	1	Total	C	Mg	N		0
			27	22	1	4		
22	5	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			41	33	1	4	3	
22	5	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			41	33	1	4	3	
22	5	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
22	5	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
22	5	1	Total	C	Mg	N	O	0
			46	36	1	4	5	

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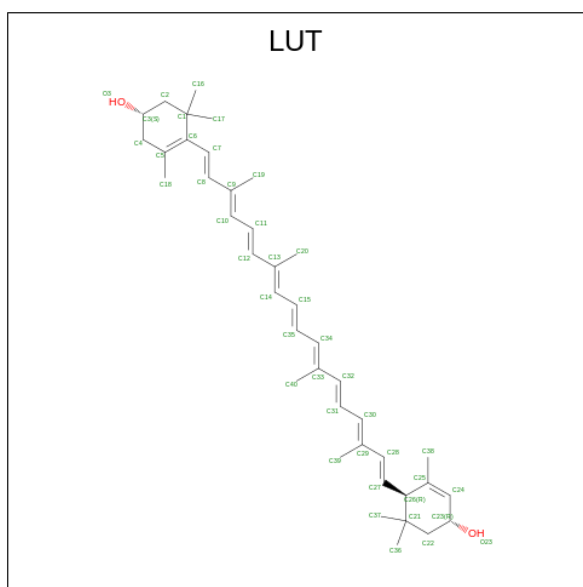
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
22	6	1	46	36	1	4	5	0
22	6	1	50	40	1	4	5	0
22	6	1	55	45	1	4	5	0
22	6	1	60	50	1	4	5	0
22	6	1	45	35	1	4	5	0
22	6	1	45	35	1	4	5	0
22	6	1	65	55	1	4	5	0
22	6	1	50	40	1	4	5	0
22	7	1	60	50	1	4	5	0
22	7	1	45	35	1	4	5	0
22	7	1	50	40	1	4	5	0
22	7	1	46	36	1	4	5	0
22	7	1	45	35	1	4	5	0
22	7	1	57	47	1	4	5	0
22	7	1	55	45	1	4	5	0
22	7	1	41	33	1	4	3	0
22	7	1	45	35	1	4	5	0
22	7	1	55	45	1	4	5	0
22	7	1	41	33	1	4	3	0
22	7	1	40	32	1	4	3	0
22	7	1	46	36	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
22	8	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			50	40	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			46	36	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	8	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
22	9	1	Total	C	Mg	N	O	0
			60	50	1	4	5	
22	9	1	Total	C	Mg	N	O	0
			42	34	1	4	3	
22	9	1	Total	C	Mg	N	O	0
			43	35	1	4	3	
22	9	1	Total	C	Mg	N	O	0
			45	35	1	4	5	
22	9	1	Total	C	Mg	N	O	0
			55	45	1	4	5	
22	9	1	Total	C	Mg	N	O	0
			65	55	1	4	5	
22	9	1	Total	C	Mg	N	O	0
			39	33	1	4	1	
22	9	1	Total	C	Mg	N	O	0
			52	42	1	4	5	

- Molecule 23 is (3R,3'R,6S)-4,5-DIDEHYDRO-5,6-DIHYDRO-BETA,BETA-CAROTENE-3,3'-DIOL (three-letter code: LUT) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>2</sub>).



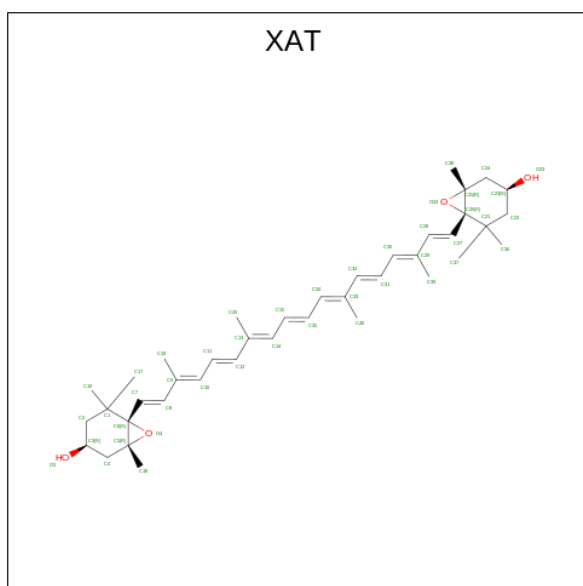
Mol	Chain	Residues	Atoms			AltConf
23	U	1	Total	C	O	0
			42	40	2	
23	U	1	Total	C	O	0
			42	40	2	
23	V	1	Total	C	O	0
			42	40	2	
23	V	1	Total	C	O	0
			42	40	2	
23	W	1	Total	C	O	0
			42	40	2	
23	W	1	Total	C	O	0
			42	40	2	
23	1	1	Total	C	O	0
			42	40	2	
23	2	1	Total	C	O	0
			42	40	2	
23	3	1	Total	C	O	0
			42	40	2	
23	4	1	Total	C	O	0
			42	40	2	
23	5	1	Total	C	O	0
			42	40	2	
23	6	1	Total	C	O	0
			42	40	2	
23	7	1	Total	C	O	0
			42	40	2	
23	8	1	Total	C	O	0
			42	40	2	

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Mol	Chain	Residues	Atoms			AltConf
23	9	1	Total	C	O	0
			42	40	2	
23	9	1	Total	C	O	0
			42	40	2	
23	9	1	Total	C	O	0
			42	40	2	

- Molecule 24 is (3S,5R,6S,3'S,5'R,6'S)-5,6,5',6'-DIEPOXY-5,6,5',6'- TETRAHYDRO-BETA ,BETA-CAROTENE-3,3'-DIOL (three-letter code: XAT) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>4</sub>).



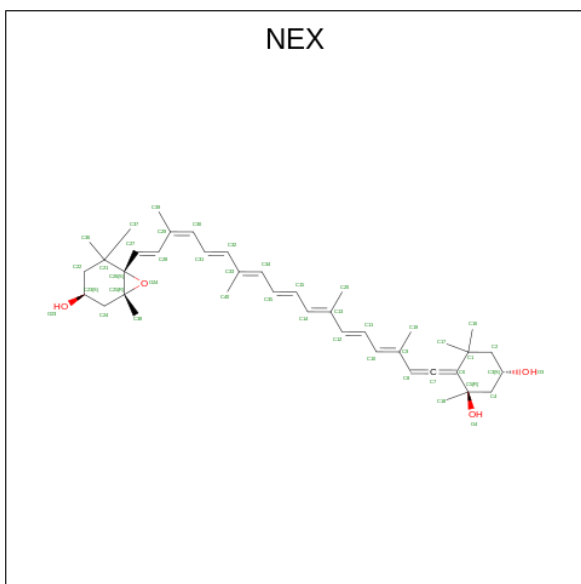
Mol	Chain	Residues	Atoms			AltConf
24	U	1	Total	C	O	0
			44	40	4	
24	V	1	Total	C	O	0
			44	40	4	
24	W	1	Total	C	O	0
			44	40	4	
24	1	1	Total	C	O	0
			44	40	4	
24	2	1	Total	C	O	0
			44	40	4	
24	3	1	Total	C	O	0
			44	40	4	
24	4	1	Total	C	O	0
			44	40	4	
24	5	1	Total	C	O	0
			44	40	4	

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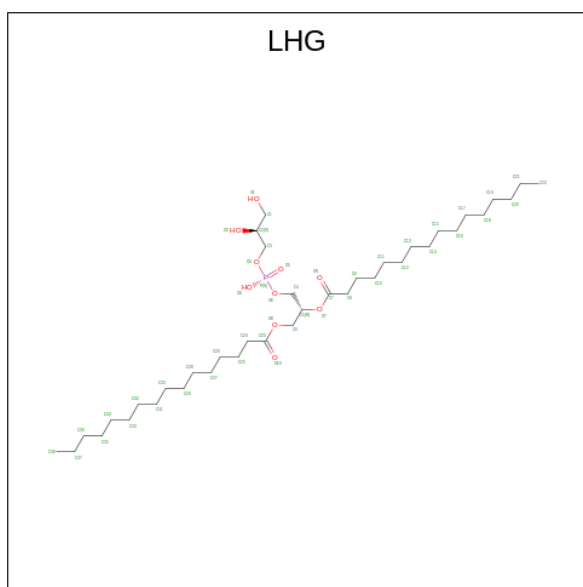
Mol	Chain	Residues	Atoms			AltConf
24	6	1	Total	C	O	0
			44	40	4	
24	7	1	Total	C	O	0
			44	40	4	
24	8	1	Total	C	O	0
			44	40	4	

- Molecule 25 is (1R,3R)-6-[(3E,5E,7E,9E,11E,13E,15E,17E)-18-[(1S,4R,6R)-4-HYDROXY-2,2,6-TRIMETHYL-7-OXABICYCLO[4.1.0]HEPT-1-YL]-3,7,12,16-TETRAMETHYLOCTADEC-1,3,5,7,9,11,13,15,17-NONAENYLIDENE]-1,5,5-TRIMETHYLCYCLOHEXANE-1,3-DIOL (three-letter code: NEX) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>4</sub>).



Mol	Chain	Residues	Atoms			AltConf
25	U	1	Total	C	O	0
			44	40	4	
25	V	1	Total	C	O	0
			44	40	4	
25	W	1	Total	C	O	0
			44	40	4	
25	9	1	Total	C	O	0
			44	40	4	

- Molecule 26 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: C<sub>38</sub>H<sub>75</sub>O<sub>10</sub>P).



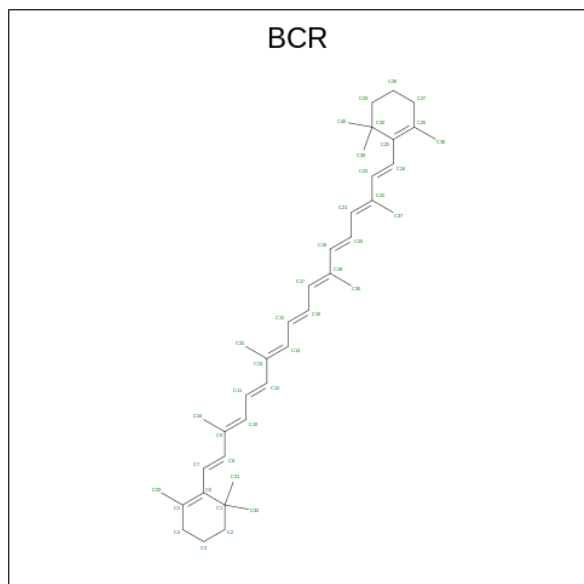
Mol	Chain	Residues	Atoms			AltConf	
			Total	C	O		P
26	U	1	45	34	10	1	0
26	V	1	42	31	10	1	0
26	W	1	45	34	10	1	0
26	1	1	49	38	10	1	0
26	2	1	32	21	10	1	0
26	3	1	32	21	10	1	0
26	4	1	38	27	10	1	0
26	A	1	47	36	10	1	0
26	A	1	31	20	10	1	0
26	B	1	35	24	10	1	0
26	5	1	37	26	10	1	0
26	6	1	32	21	10	1	0
26	7	1	34	23	10	1	0
26	8	1	38	27	10	1	0

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Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
26	9	1	28	17	10	1	0

- Molecule 27 is BETA-CAROTENE (three-letter code: BCR) (formula: C<sub>40</sub>H<sub>56</sub>).



Mol	Chain	Residues	Atoms		AltConf
27	1	1	Total	C	0
			40	40	
27	2	1	Total	C	0
			40	40	
27	3	1	Total	C	0
			40	40	
27	3	1	Total	C	0
			40	40	
27	4	1	Total	C	0
			40	40	
27	A	1	Total	C	0
			40	40	
27	A	1	Total	C	0
			40	40	
27	A	1	Total	C	0
			40	40	
27	A	1	Total	C	0
			40	40	

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Mol	Chain	Residues	Atoms	AltConf
27	A	1	Total C 39 39	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	B	1	Total C 40 40	0
27	F	1	Total C 40 40	0
27	G	1	Total C 40 40	0
27	I	1	Total C 40 40	0
27	J	1	Total C 40 40	0
27	K	1	Total C 40 40	0
27	K	1	Total C 40 40	0
27	L	1	Total C 40 40	0
27	L	1	Total C 40 40	0
27	L	1	Total C 40 40	0
27	M	1	Total C 40 40	0
27	O	1	Total C 40 40	0
27	6	1	Total C 40 40	0
27	7	1	Total C 40 40	0

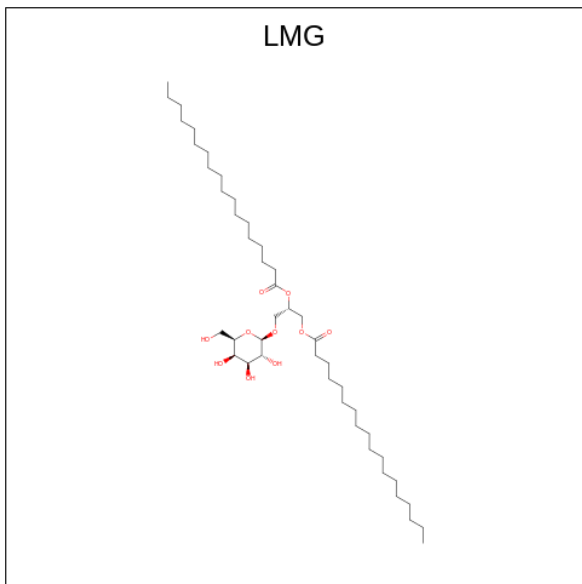
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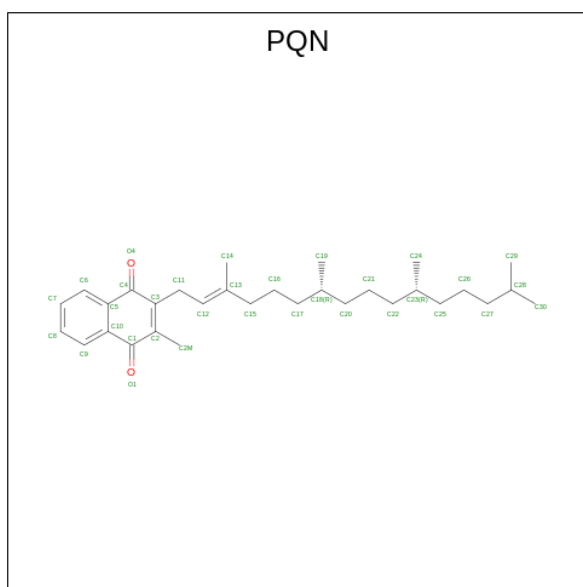
Mol	Chain	Residues	Atoms	AltConf
27	7	1	Total C 40 40	0
27	8	1	Total C 40 40	0

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



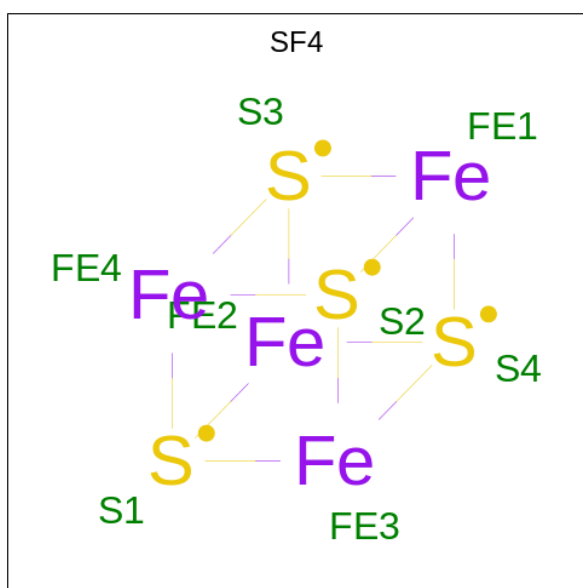
Mol	Chain	Residues	Atoms	AltConf
28	2	1	Total C O 47 37 10	0
28	A	1	Total C O 34 24 10	0
28	G	1	Total C O 32 22 10	0
28	J	1	Total C O 55 45 10	0
28	J	1	Total C O 35 25 10	0
28	L	1	Total C O 44 34 10	0

- Molecule 29 is PHYLLOQUINONE (three-letter code: PQN) (formula:  $C_{31}H_{46}O_2$ ).



Mol	Chain	Residues	Atoms			AltConf
29	A	1	Total	C	O	0
			33	31	2	
29	B	1	Total	C	O	0
			33	31	2	

- Molecule 30 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe<sub>4</sub>S<sub>4</sub>).



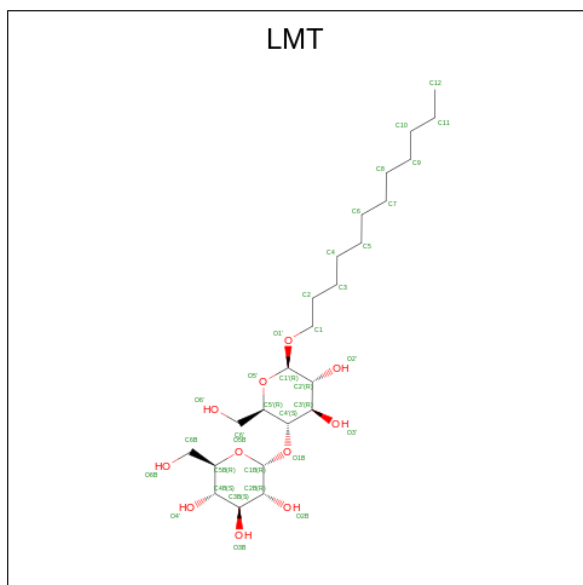
Mol	Chain	Residues	Atoms			AltConf
30	A	1	Total	Fe	S	0
			8	4	4	
30	C	1	Total	Fe	S	0
			8	4	4	

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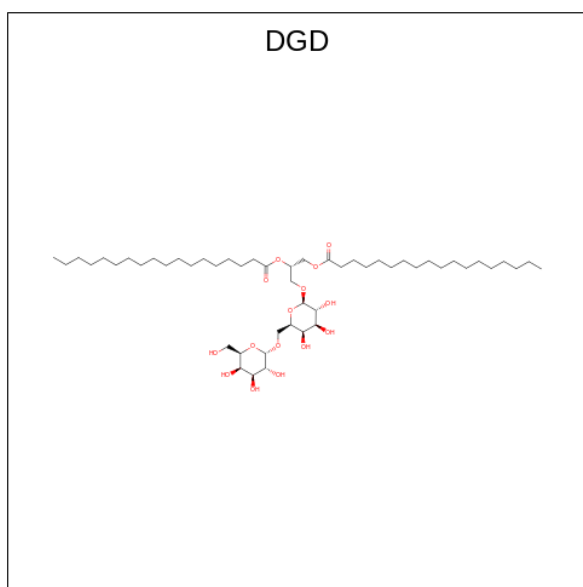
Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
30	C	1	8	4	4	0

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



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
31	A	1	35	24	11	0
31	B	1	31	20	11	0
31	G	1	35	24	11	0
31	K	1	35	24	11	0

- Molecule 32 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula:  $C_{51}H_{96}O_{15}$ ).



Mol	Chain	Residues	Atoms			AltConf
32	B	1	Total	C	O	0
			66	51	15	

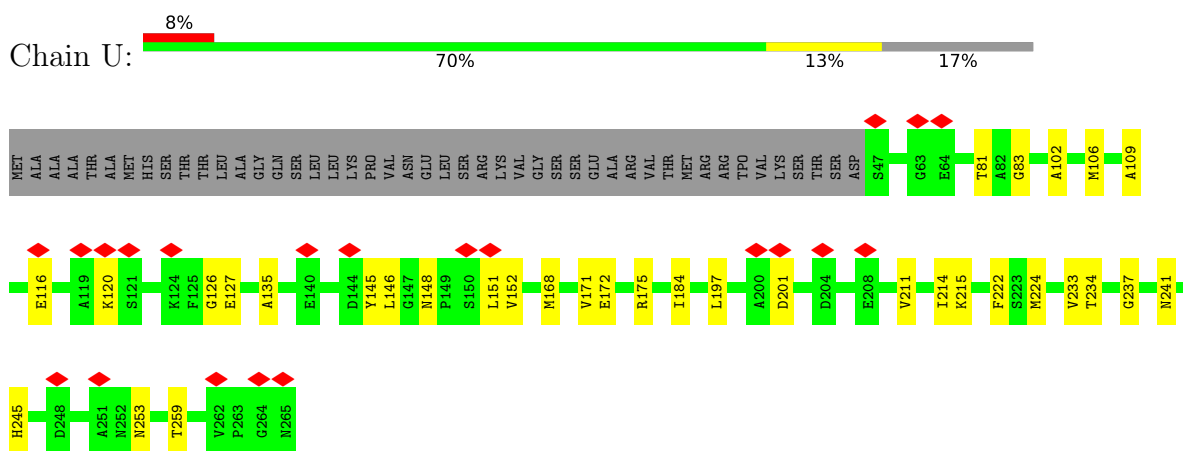
- Molecule 33 is water.

Mol	Chain	Residues	Atoms		AltConf
33	A	2	Total	O	0
			2	2	

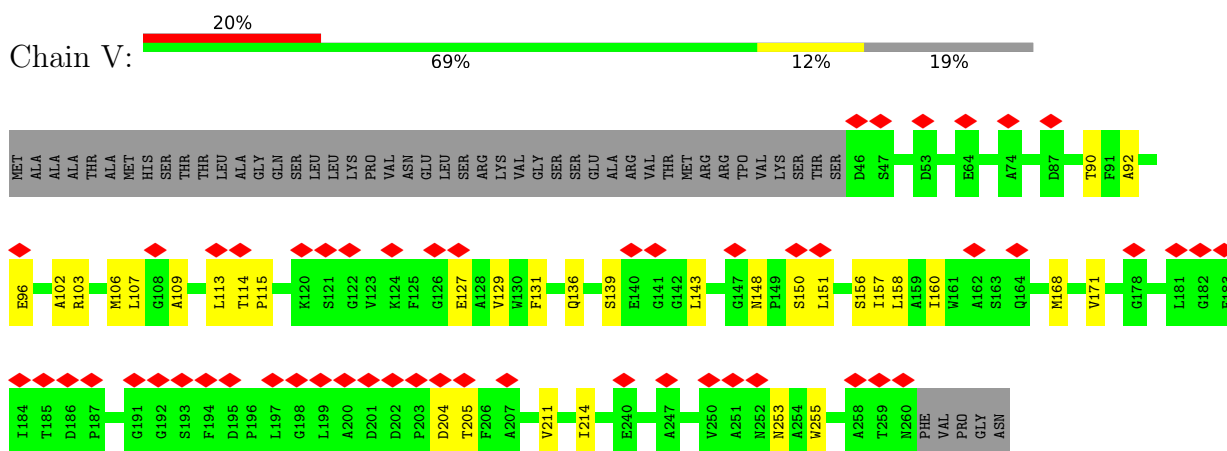
### 3 Residue-property plots [i](#)

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.

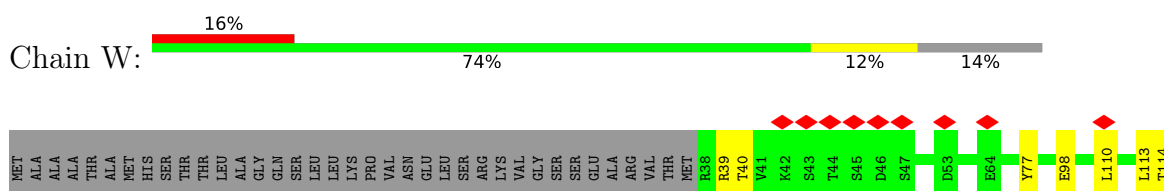
- Molecule 1: Chlorophyll a-b binding protein, chloroplastic

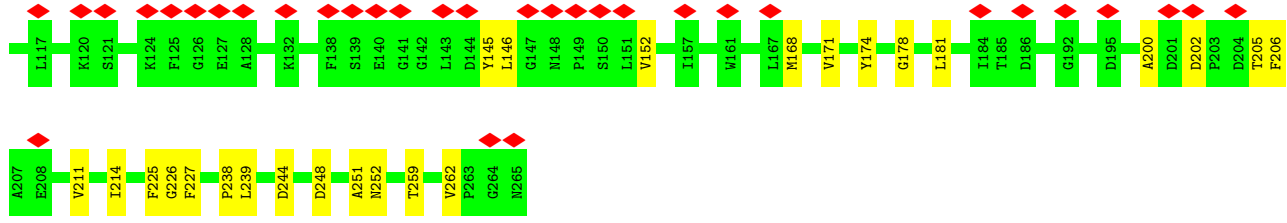


- Molecule 1: Chlorophyll a-b binding protein, chloroplastic

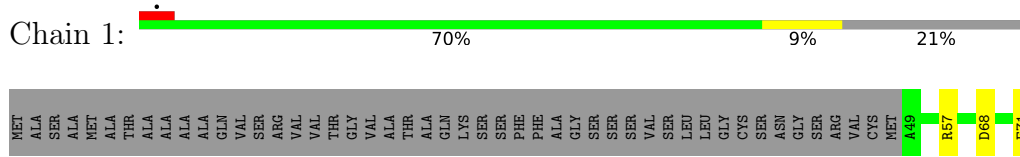


- Molecule 1: Chlorophyll a-b binding protein, chloroplastic

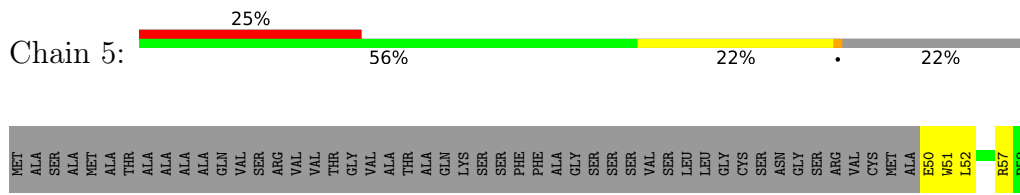




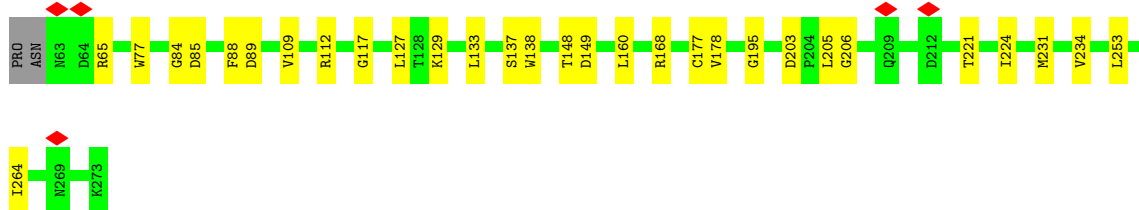
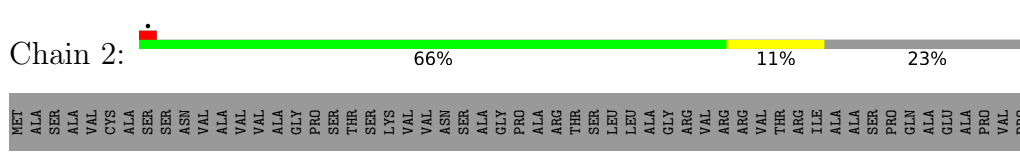
• Molecule 2: Chlorophyll a-b binding protein, chloroplastic



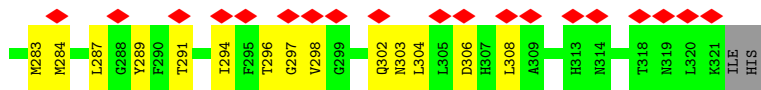
• Molecule 2: Chlorophyll a-b binding protein, chloroplastic



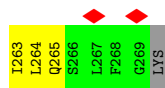
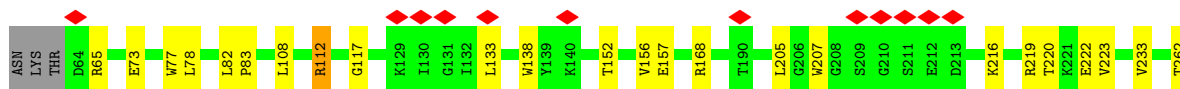
• Molecule 3: Chlorophyll a-b binding protein, chloroplastic



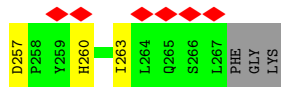
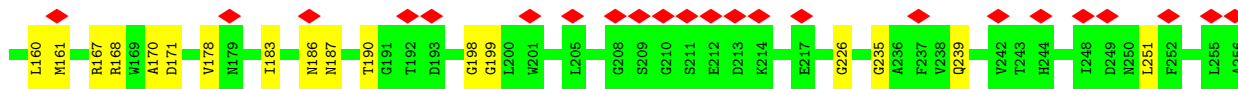
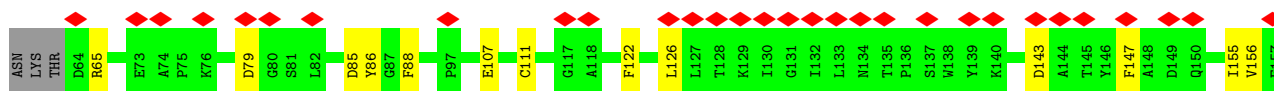




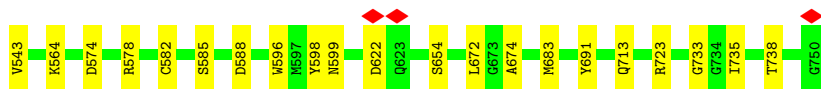
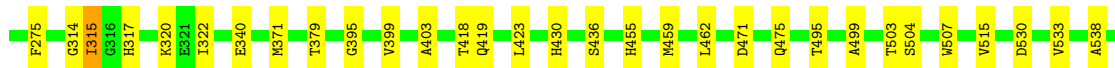
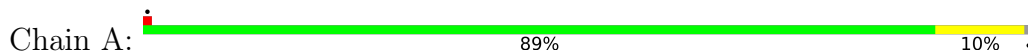
• Molecule 5: Chlorophyll a-b binding protein, chloroplastic



• Molecule 5: Chlorophyll a-b binding protein, chloroplastic




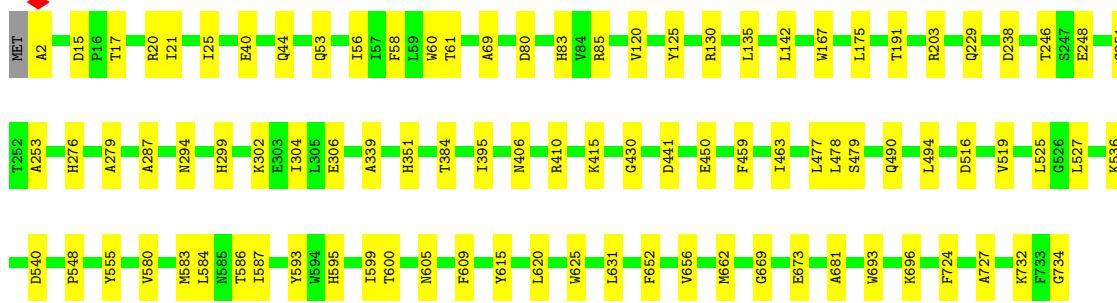
• Molecule 6: Photosystem I P700 chlorophyll a apoprotein A1




• Molecule 7: Photosystem I P700 chlorophyll a apoprotein A2



Chain B:  87% 13%



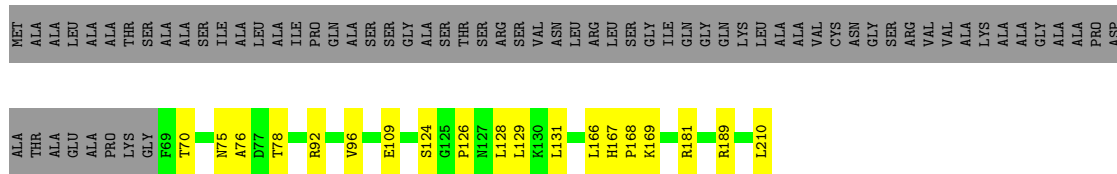
- Molecule 8: Photosystem I iron-sulfur center

Chain C:  84% 15%



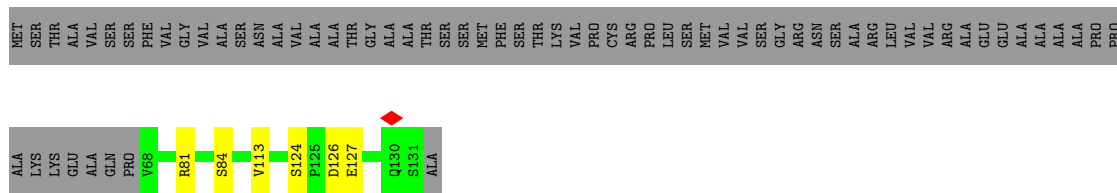
- Molecule 9: Photosystem I reaction center subunit II, chloroplastic

Chain D:  59% 9% 32%



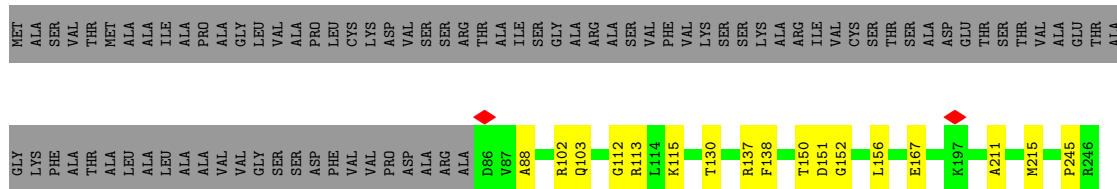
- Molecule 10: Photosystem I reaction center subunit IV, chloroplastic

Chain E:  44% 5% 52%

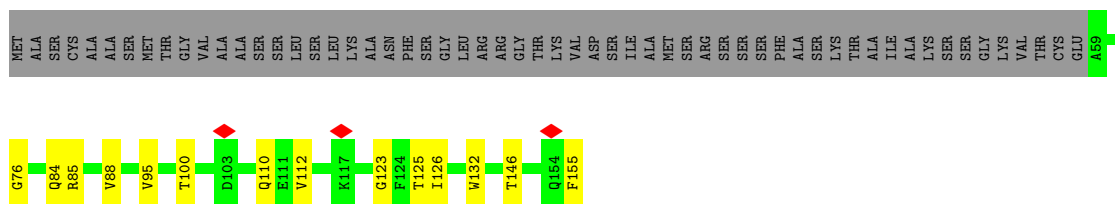


- Molecule 11: Photosystem I reaction center subunit III

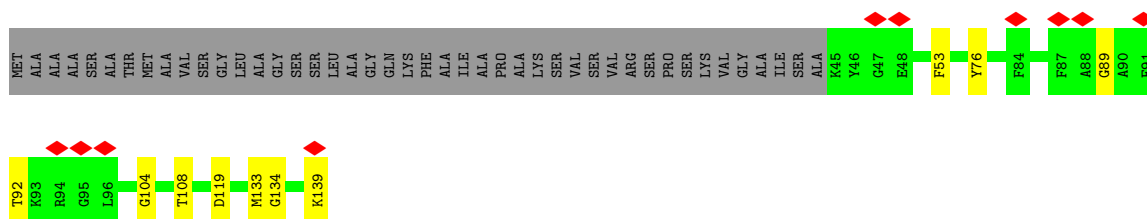
Chain F:  59% 7% 35%



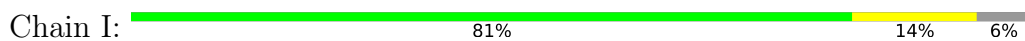
- Molecule 12: Photosystem I reaction center subunit V, chloroplastic



- Molecule 13: Photosystem I reaction center subunit VI, chloroplastic



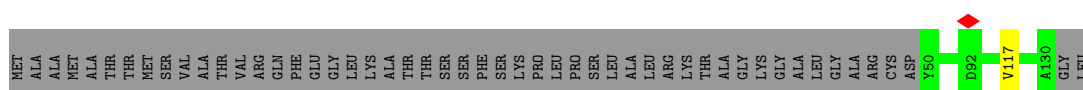
- Molecule 14: Photosystem I reaction center subunit VIII



- Molecule 15: Photosystem I reaction center subunit IX



- Molecule 16: Photosystem I subunit X

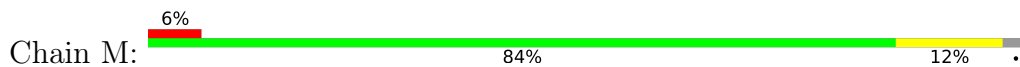


- Molecule 17: PSI subunit V

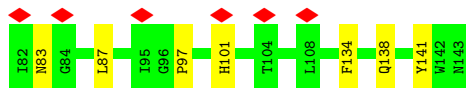
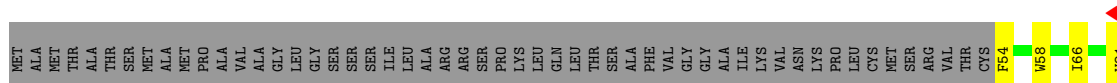




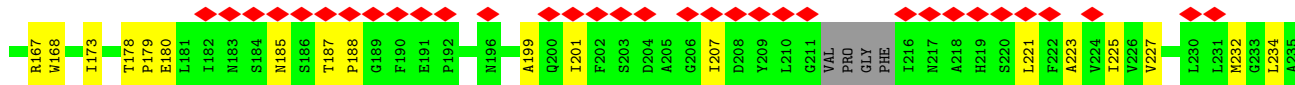
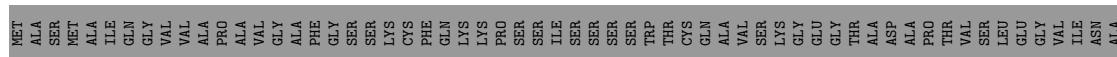
• Molecule 18: Photosystem I reaction center subunit XII



• Molecule 19: Photosystem I subunit O



• Molecule 20: Chlorophyll a-b binding protein, chloroplastic



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	144586	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)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.250	Depositor
Minimum map value	-0.039	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0188	Depositor
Map size ( $\text{\AA}$ )	332.8, 332.8, 332.8	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.04, 1.04, 1.04	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: TPO, XAT, CLA, LMT, CHL, LHG, LMG, DGD, PQN, SF4, BCR, LUT, NEX

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	U	0.28	0/1708	0.45	0/2327
1	V	0.27	0/1677	0.46	0/2284
1	W	0.28	0/1770	0.47	0/2406
2	1	0.29	0/1527	0.49	0/2088
2	5	0.28	0/1522	0.51	1/2081 (0.0%)
3	2	0.26	0/1676	0.46	0/2296
3	6	0.30	0/1634	0.48	0/2240
4	3	0.28	0/1770	0.47	0/2400
4	7	0.36	1/1738 (0.1%)	0.59	4/2360 (0.2%)
5	4	0.26	0/1650	0.47	0/2255
5	8	0.26	0/1631	0.46	0/2230
6	A	0.28	0/6032	0.46	0/8227
7	B	0.27	0/6064	0.46	0/8274
8	C	0.27	0/605	0.53	0/821
9	D	0.28	0/1142	0.51	0/1546
10	E	0.28	0/518	0.50	0/704
11	F	0.28	0/1277	0.52	0/1725
12	G	0.26	0/758	0.46	0/1034
13	H	0.27	0/753	0.48	0/1013
14	I	0.31	0/273	0.46	0/373
15	J	0.27	0/334	0.48	0/457
16	K	0.26	0/571	0.46	0/773
17	L	0.29	0/1263	0.45	0/1725
18	M	0.28	0/231	0.46	0/312
19	O	0.26	0/738	0.49	0/1009
20	9	0.28	0/1764	0.50	0/2397
All	All	0.28	1/40626 (0.0%)	0.48	5/55357 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	7	183	PRO	CG-CD	-8.08	1.24	1.50

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	7	183	PRO	N-CD-CG	-11.22	86.37	103.20
4	7	183	PRO	CA-N-CD	-6.39	102.55	111.50
4	7	192	PRO	CA-N-CD	-5.54	103.75	111.50
4	7	183	PRO	CA-CB-CG	-5.46	93.63	104.00
2	5	156	GLU	CA-CB-CG	5.23	124.90	113.40

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	U	1659	0	1592	31	0
1	V	1630	0	1562	22	0
1	W	1734	0	1664	20	0
2	1	1478	0	1453	16	0
2	5	1473	0	1448	57	0
3	2	1625	0	1584	22	0
3	6	1583	0	1537	44	0
4	3	1719	0	1685	23	0
4	7	1687	0	1651	47	0
5	4	1600	0	1567	23	0
5	8	1582	0	1553	33	0
6	A	5837	0	5725	67	0
7	B	5850	0	5622	68	0
8	C	595	0	573	10	0
9	D	1114	0	1116	11	0
10	E	507	0	503	4	0
11	F	1251	0	1303	13	0
12	G	740	0	723	13	0
13	H	736	0	721	6	0
14	I	266	0	274	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	J	325	0	341	1	0
16	K	565	0	587	1	0
17	L	1228	0	1238	9	0
18	M	230	0	251	4	0
19	O	711	0	705	10	0
20	9	1713	0	1675	39	0
21	1	103	0	78	2	0
21	2	289	0	210	11	0
21	3	56	0	47	3	0
21	4	182	0	122	8	0
21	5	90	0	61	5	0
21	6	310	0	243	9	0
21	7	46	0	31	3	0
21	8	186	0	128	7	0
21	9	207	0	132	18	0
21	U	319	0	267	12	0
21	V	263	0	168	4	0
21	W	259	0	156	4	0
22	1	645	0	581	11	0
22	2	400	0	322	7	0
22	3	745	0	719	19	0
22	4	532	0	474	15	0
22	5	568	0	442	21	0
22	6	416	0	357	13	0
22	7	626	0	498	20	0
22	8	526	0	448	18	0
22	9	401	0	348	8	0
22	A	2769	0	2877	56	0
22	B	2419	0	2498	52	0
22	F	155	0	137	5	0
22	G	141	0	105	4	0
22	H	38	0	26	0	0
22	J	50	0	39	0	0
22	K	204	0	183	4	0
22	L	190	0	203	3	0
22	O	109	0	55	4	0
22	U	464	0	467	13	0
22	V	387	0	306	9	0
22	W	383	0	308	5	0
23	1	42	0	56	3	0
23	2	42	0	56	4	0
23	3	42	0	56	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	4	42	0	56	3	0
23	5	42	0	56	3	0
23	6	42	0	56	2	0
23	7	42	0	56	2	0
23	8	42	0	56	2	0
23	9	126	0	168	14	0
23	U	84	0	112	8	0
23	V	84	0	112	6	0
23	W	84	0	112	6	0
24	1	44	0	56	5	0
24	2	44	0	56	6	0
24	3	44	0	56	6	0
24	4	44	0	56	11	0
24	5	44	0	56	8	0
24	6	44	0	56	7	0
24	7	44	0	56	3	0
24	8	44	0	56	4	0
24	U	44	0	56	0	0
24	V	44	0	56	0	0
24	W	44	0	56	1	0
25	9	44	0	56	3	0
25	U	44	0	56	3	0
25	V	44	0	56	2	0
25	W	44	0	56	3	0
26	1	49	0	74	2	0
26	2	32	0	34	0	0
26	3	32	0	34	0	0
26	4	38	0	46	3	0
26	5	37	0	44	0	0
26	6	32	0	34	2	0
26	7	34	0	38	0	0
26	8	38	0	46	0	0
26	9	28	0	26	0	0
26	A	78	0	99	0	0
26	B	35	0	40	0	0
26	U	45	0	60	1	0
26	V	42	0	54	0	0
26	W	45	0	60	1	0
27	1	40	0	56	1	0
27	2	40	0	56	5	0
27	3	80	0	112	16	0
27	4	40	0	56	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	6	40	0	56	5	0
27	7	80	0	112	10	0
27	8	40	0	56	7	0
27	A	239	0	333	29	0
27	B	280	0	392	31	0
27	F	40	0	56	3	0
27	G	40	0	56	4	0
27	I	40	0	56	4	0
27	J	40	0	56	4	0
27	K	80	0	112	10	0
27	L	120	0	168	13	0
27	M	40	0	56	5	0
27	O	40	0	56	5	0
28	2	47	0	67	0	0
28	A	34	0	38	0	0
28	G	32	0	34	2	0
28	J	90	0	126	0	0
28	L	44	0	58	0	0
29	A	33	0	46	0	0
29	B	33	0	46	0	0
30	A	8	0	0	0	0
30	C	16	0	0	0	0
31	A	35	0	46	0	0
31	B	31	0	35	0	0
31	G	35	0	46	0	0
31	K	35	0	46	0	0
32	B	66	0	96	0	0
33	A	2	0	0	0	0
All	All	57715	0	56699	925	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

The worst 5 of 925 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:L:305:BCR:HC8	27:L:305:BCR:H331	1.56	0.86
6:A:495:THR:HG21	22:A:836:CLA:HMD1	1.56	0.86
4:7:164:ALA:HB2	24:7:619:XAT:H163	1.58	0.85
22:B:813:CLA:HMC1	22:B:813:CLA:HBC2	1.60	0.83
22:B:823:CLA:CBC	27:B:1609:BCR:H343	2.11	0.81

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	U	217/265 (82%)	208 (96%)	9 (4%)	0	100	100
1	V	213/265 (80%)	207 (97%)	6 (3%)	0	100	100
1	W	225/265 (85%)	215 (96%)	9 (4%)	1 (0%)	30	58
2	1	191/245 (78%)	183 (96%)	8 (4%)	0	100	100
2	5	190/245 (78%)	166 (87%)	23 (12%)	1 (0%)	25	53
3	2	209/273 (77%)	200 (96%)	9 (4%)	0	100	100
3	6	203/273 (74%)	190 (94%)	13 (6%)	0	100	100
4	3	220/323 (68%)	213 (97%)	7 (3%)	0	100	100
4	7	217/323 (67%)	203 (94%)	13 (6%)	1 (0%)	25	53
5	4	204/270 (76%)	192 (94%)	12 (6%)	0	100	100
5	8	202/270 (75%)	187 (93%)	15 (7%)	0	100	100
6	A	740/750 (99%)	716 (97%)	23 (3%)	1 (0%)	48	75
7	B	731/734 (100%)	714 (98%)	17 (2%)	0	100	100
8	C	78/81 (96%)	74 (95%)	4 (5%)	0	100	100
9	D	140/210 (67%)	133 (95%)	7 (5%)	0	100	100
10	E	62/132 (47%)	62 (100%)	0	0	100	100
11	F	159/246 (65%)	152 (96%)	6 (4%)	1 (1%)	22	49
12	G	95/155 (61%)	91 (96%)	4 (4%)	0	100	100
13	H	93/139 (67%)	90 (97%)	3 (3%)	0	100	100
14	I	32/36 (89%)	31 (97%)	1 (3%)	0	100	100
15	J	39/41 (95%)	39 (100%)	0	0	100	100
16	K	79/132 (60%)	79 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	L	161/223 (72%)	155 (96%)	6 (4%)	0	100	100
18	M	29/32 (91%)	29 (100%)	0	0	100	100
19	O	88/143 (62%)	81 (92%)	7 (8%)	0	100	100
20	9	217/311 (70%)	190 (88%)	26 (12%)	1 (0%)	25	53
All	All	5034/6382 (79%)	4800 (95%)	228 (4%)	6 (0%)	50	75

5 of 6 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	A	315	ILE
2	5	135	PRO
4	7	112	SER
11	F	88	ALA
1	W	39	ARG

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	U	166/203 (82%)	165 (99%)	1 (1%)	84	94
1	V	163/203 (80%)	163 (100%)	0	100	100
1	W	173/203 (85%)	173 (100%)	0	100	100
2	1	148/186 (80%)	148 (100%)	0	100	100
2	5	148/186 (80%)	147 (99%)	1 (1%)	81	93
3	2	167/213 (78%)	167 (100%)	0	100	100
3	6	162/213 (76%)	160 (99%)	2 (1%)	67	87
4	3	174/256 (68%)	174 (100%)	0	100	100
4	7	170/256 (66%)	170 (100%)	0	100	100
5	4	164/210 (78%)	162 (99%)	2 (1%)	67	87
5	8	162/210 (77%)	162 (100%)	0	100	100
6	A	603/611 (99%)	602 (100%)	1 (0%)	92	98

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	B	595/596 (100%)	593 (100%)	2 (0%)	91	97
8	C	67/68 (98%)	67 (100%)	0	100	100
9	D	115/157 (73%)	115 (100%)	0	100	100
10	E	56/105 (53%)	56 (100%)	0	100	100
11	F	132/193 (68%)	132 (100%)	0	100	100
12	G	77/121 (64%)	77 (100%)	0	100	100
13	H	75/103 (73%)	74 (99%)	1 (1%)	65	86
14	I	30/32 (94%)	30 (100%)	0	100	100
15	J	35/35 (100%)	35 (100%)	0	100	100
16	K	58/95 (61%)	58 (100%)	0	100	100
17	L	124/165 (75%)	122 (98%)	2 (2%)	58	82
18	M	26/27 (96%)	26 (100%)	0	100	100
19	O	74/115 (64%)	74 (100%)	0	100	100
20	9	174/243 (72%)	173 (99%)	1 (1%)	84	94
All	All	4038/5005 (81%)	4025 (100%)	13 (0%)	90	97

5 of 13 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
17	L	135	ARG
17	L	223	LYS
20	9	134	LYS
3	6	137	SER
3	6	226	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 6 such sidechains are listed below:

Mol	Chain	Res	Type
6	A	422	ASN
17	L	94	ASN
4	7	302	GLN
2	1	140	ASN
1	U	245	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	TPO	W	40	1	8,10,11	1.58	1 (12%)	10,14,16	1.83	1 (10%)

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
1	TPO	W	40	1	-	0/9/11/13	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	W	40	TPO	P-O1P	3.35	1.61	1.50

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	W	40	TPO	P-OG1-CB	-5.15	107.66	123.21

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

366 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
28	LMG	G	202	-	32,32,55	1.21	3 (9%)	40,40,63	1.15	2 (5%)
27	BCR	A	856	-	40,40,41	0.70	0	54,54,56	1.68	13 (24%)
22	CLA	V	613	1	56,64,73	1.65	6 (10%)	64,101,113	1.42	11 (17%)
22	CLA	7	610	4	55,63,73	1.68	5 (9%)	64,101,113	1.36	7 (10%)
22	CLA	V	602	1	59,67,73	1.59	5 (8%)	68,105,113	1.30	9 (13%)
22	CLA	A	833	-	55,63,73	1.63	5 (9%)	64,101,113	1.34	8 (12%)
22	CLA	5	602	2	60,68,73	1.57	6 (10%)	70,107,113	1.29	8 (11%)
22	CLA	B	827	-	56,64,73	1.58	6 (10%)	65,102,113	1.38	7 (10%)
23	LUT	1	617	-	42,43,43	0.74	0	51,60,60	1.58	12 (23%)
27	BCR	B	847	-	41,41,41	0.75	0	56,56,56	2.14	19 (33%)
22	CLA	A	841	-	65,73,73	1.51	6 (9%)	76,113,113	1.21	7 (9%)
22	CLA	U	604	-	52,60,73	1.68	6 (11%)	60,97,113	1.38	8 (13%)
21	CHL	4	606	-	46,54,74	2.29	16 (34%)	49,90,114	3.22	19 (38%)
21	CHL	6	602	3	56,64,74	2.11	15 (26%)	61,102,114	2.99	18 (29%)
22	CLA	2	603	-	46,54,73	1.79	7 (15%)	53,90,113	1.47	7 (13%)
22	CLA	5	609	2	41,49,73	1.99	8 (19%)	47,84,113	1.40	7 (14%)
22	CLA	3	604	-	55,63,73	1.61	6 (10%)	64,101,113	1.35	9 (14%)
22	CLA	A	820	-	65,73,73	1.47	5 (7%)	76,113,113	1.29	8 (10%)
21	CHL	6	607	-	47,55,74	2.29	16 (34%)	50,91,114	3.16	19 (38%)
22	CLA	B	832	-	65,73,73	1.53	6 (9%)	76,113,113	1.30	9 (11%)
22	CLA	U	614	-	42,50,73	1.90	6 (14%)	48,85,113	1.34	7 (14%)
22	CLA	B	814	-	65,73,73	1.51	6 (9%)	76,113,113	1.38	12 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	7	609	4	57,65,73	1.73	8 (14%)	66,103,113	1.28	8 (12%)
31	LMT	A	857	-	36,36,36	0.77	0	47,47,47	1.36	7 (14%)
22	CLA	B	810	-	65,73,73	1.47	7 (10%)	76,113,113	1.30	8 (10%)
22	CLA	4	609	5	45,53,73	1.80	6 (13%)	52,89,113	1.42	9 (17%)
27	BCR	A	851	-	41,41,41	0.80	1 (2%)	56,56,56	2.14	24 (42%)
23	LUT	V	2620	-	42,43,43	0.76	0	51,60,60	1.73	16 (31%)
22	CLA	A	843	-	65,73,73	1.50	7 (10%)	76,113,113	1.27	7 (9%)
22	CLA	1	603	-	55,63,73	1.63	6 (10%)	64,101,113	1.43	9 (14%)
22	CLA	B	839	-	65,73,73	1.49	7 (10%)	76,113,113	1.26	8 (10%)
22	CLA	3	610	4	60,68,73	1.59	7 (11%)	70,107,113	1.27	8 (11%)
22	CLA	B	825	-	65,73,73	1.47	6 (9%)	76,113,113	1.33	8 (10%)
22	CLA	7	606	-	46,54,73	1.78	6 (13%)	53,90,113	1.39	7 (13%)
22	CLA	3	617	-	55,63,73	1.77	10 (18%)	63,98,113	2.10	11 (17%)
23	LUT	4	619	-	42,43,43	0.71	0	51,60,60	1.81	14 (27%)
21	CHL	8	608	-	51,59,74	2.20	15 (29%)	55,96,114	3.11	22 (40%)
27	BCR	A	849	-	41,41,41	0.77	0	56,56,56	2.01	18 (32%)
23	LUT	U	2620	-	42,43,43	0.73	0	51,60,60	1.72	14 (27%)
23	LUT	3	618	-	42,43,43	0.77	1 (2%)	51,60,60	1.60	11 (21%)
22	CLA	A	826	-	65,73,73	1.51	7 (10%)	76,113,113	1.24	8 (10%)
22	CLA	7	612	4	45,53,73	1.83	6 (13%)	52,89,113	1.50	7 (13%)
25	NEX	U	2623	-	38,46,46	1.06	3 (7%)	50,70,70	2.53	17 (34%)
28	LMG	J	104	-	35,35,55	1.14	2 (5%)	43,43,63	1.01	2 (4%)
22	CLA	A	815	-	65,73,73	1.51	8 (12%)	76,113,113	1.25	9 (11%)
23	LUT	W	2620	-	42,43,43	0.79	0	51,60,60	1.67	13 (25%)
23	LUT	9	620	-	42,43,43	0.75	0	51,60,60	1.79	13 (25%)
22	CLA	6	613	3	65,73,73	1.54	6 (9%)	76,113,113	1.22	8 (10%)
23	LUT	6	619	-	42,43,43	0.74	0	51,60,60	1.55	11 (21%)
23	LUT	5	617	-	42,43,43	1.71	8 (19%)	51,60,60	1.76	11 (21%)
22	CLA	8	602	5	60,68,73	1.59	6 (10%)	70,107,113	1.28	9 (12%)
22	CLA	W	602	1	60,68,73	1.56	5 (8%)	70,107,113	1.29	7 (10%)
21	CHL	V	605	1	42,50,74	2.40	16 (38%)	44,85,114	3.45	20 (45%)
22	CLA	F	303	-	45,53,73	1.77	6 (13%)	52,89,113	1.49	8 (15%)
21	CHL	6	618	3	47,55,74	2.26	15 (31%)	50,91,114	3.15	18 (36%)
22	CLA	V	611	26	39,48,73	1.98	6 (15%)	48,83,113	1.50	9 (18%)
30	SF4	C	102	8	0,12,12	-	-	-	-	-

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	A	806	-	65,73,73	1.49	6 (9%)	76,113,113	1.29	8 (10%)
22	CLA	8	610	5	55,63,73	1.67	6 (10%)	64,101,113	1.31	9 (14%)
22	CLA	5	613	2	50,58,73	1.75	7 (14%)	58,95,113	1.38	10 (17%)
26	LHG	8	630	22	37,37,48	1.07	2 (5%)	40,43,54	1.09	4 (10%)
24	XAT	4	620	-	39,47,47	0.99	1 (2%)	54,74,74	5.03	22 (40%)
22	CLA	1	602	2	65,73,73	1.50	6 (9%)	76,113,113	1.23	8 (10%)
22	CLA	5	614	-	43,51,73	1.83	5 (11%)	49,86,113	1.41	7 (14%)
21	CHL	W	609	1	39,48,74	2.27	13 (33%)	42,82,114	3.38	18 (42%)
22	CLA	A	829	-	60,68,73	1.52	6 (10%)	70,107,113	1.42	8 (11%)
32	DGD	B	850	-	67,67,67	0.89	2 (2%)	81,81,81	0.96	3 (3%)
26	LHG	V	2630	22	41,41,48	1.02	2 (4%)	44,47,54	0.96	2 (4%)
22	CLA	G	204	12	46,54,73	1.81	5 (10%)	53,90,113	1.42	7 (13%)
21	CHL	9	608	-	43,51,74	2.29	15 (34%)	45,86,114	3.24	19 (42%)
22	CLA	B	828	-	65,73,73	1.50	7 (10%)	76,113,113	1.25	7 (9%)
22	CLA	B	812	-	43,52,73	1.78	6 (13%)	48,87,113	1.51	8 (16%)
24	XAT	8	620	-	39,47,47	1.76	6 (15%)	54,74,74	1.94	15 (27%)
22	CLA	A	822	-	65,73,73	1.50	7 (10%)	76,113,113	1.26	8 (10%)
22	CLA	2	604	-	50,58,73	1.70	6 (12%)	58,95,113	1.43	9 (15%)
22	CLA	A	817	-	65,73,73	1.51	5 (7%)	76,113,113	1.33	8 (10%)
21	CHL	8	618	5	43,51,74	2.32	14 (32%)	45,86,114	3.26	19 (42%)
26	LHG	B	851	22	34,34,48	1.11	2 (5%)	37,40,54	1.01	2 (5%)
21	CHL	U	609	1	66,74,74	1.95	15 (22%)	73,114,114	2.73	22 (30%)
22	CLA	B	830	-	45,53,73	1.87	6 (13%)	52,89,113	1.37	7 (13%)
26	LHG	U	2630	22	44,44,48	0.98	2 (4%)	47,50,54	0.96	2 (4%)
22	CLA	9	609	20	45,53,73	2.37	16 (35%)	52,89,113	3.13	21 (40%)
22	CLA	3	603	4	65,73,73	1.54	7 (10%)	76,113,113	1.25	7 (9%)
22	CLA	B	838	-	47,55,73	1.80	8 (17%)	54,91,113	1.41	9 (16%)
21	CHL	2	606	-	46,54,74	2.29	16 (34%)	49,90,114	3.22	20 (40%)
22	CLA	B	802	-	65,73,73	1.48	7 (10%)	76,113,113	1.19	6 (7%)
22	CLA	B	826	-	65,73,73	1.53	6 (9%)	76,113,113	1.24	8 (10%)
23	LUT	W	2621	-	42,43,43	0.76	0	51,60,60	1.66	9 (17%)
24	XAT	V	2622	-	39,47,47	1.06	1 (2%)	54,74,74	5.76	21 (38%)
27	BCR	B	801	-	41,41,41	0.72	0	56,56,56	1.91	17 (30%)
22	CLA	B	815	-	45,53,73	1.81	6 (13%)	52,89,113	1.42	7 (13%)
21	CHL	V	608	-	39,48,74	2.26	13 (33%)	45,83,114	3.30	18 (40%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
26	LHG	5	630	22	36,36,48	1.08	2 (5%)	39,42,54	1.07	3 (7%)
22	CLA	B	833	-	65,73,73	1.50	7 (10%)	76,113,113	1.30	9 (11%)
22	CLA	5	603	-	45,53,73	1.85	6 (13%)	52,89,113	1.43	7 (13%)
21	CHL	6	601	3	66,74,74	1.95	15 (22%)	73,114,114	2.67	21 (28%)
26	LHG	3	630	22	31,31,48	1.16	2 (6%)	34,37,54	1.05	2 (5%)
22	CLA	B	816	-	65,73,73	1.51	6 (9%)	76,113,113	1.28	8 (10%)
22	CLA	6	611	26	45,53,73	1.79	5 (11%)	52,89,113	1.50	8 (15%)
24	XAT	2	620	-	39,47,47	0.91	2 (5%)	54,74,74	2.53	22 (40%)
22	CLA	9	612	20	38,47,73	1.94	8 (21%)	45,81,113	1.41	6 (13%)
26	LHG	A	847	22	30,30,48	1.16	2 (6%)	33,36,54	1.23	3 (9%)
23	LUT	U	2621	-	42,43,43	0.78	0	51,60,60	1.70	11 (21%)
21	CHL	1	601	2	56,64,74	2.11	16 (28%)	61,102,114	2.89	23 (37%)
25	NEX	9	623	-	38,46,46	1.04	2 (5%)	50,70,70	2.21	14 (28%)
21	CHL	V	606	-	37,46,74	2.43	14 (37%)	46,81,114	3.23	19 (41%)
21	CHL	U	608	-	39,48,74	2.27	13 (33%)	45,83,114	3.24	19 (42%)
22	CLA	1	606	-	45,53,73	1.86	7 (15%)	52,89,113	1.41	7 (13%)
22	CLA	B	806	-	65,73,73	1.48	7 (10%)	76,113,113	1.30	8 (10%)
22	CLA	B	805	-	65,73,73	1.49	6 (9%)	76,113,113	1.34	10 (13%)
24	XAT	1	618	-	39,47,47	0.91	1 (2%)	54,74,74	2.52	24 (44%)
22	CLA	A	832	-	55,63,73	1.63	8 (14%)	64,101,113	1.43	7 (10%)
22	CLA	5	606	2	45,53,73	1.85	6 (13%)	52,89,113	1.42	8 (15%)
29	PQN	B	842	-	34,34,34	0.63	1 (2%)	42,45,45	0.89	2 (4%)
22	CLA	1	608	-	45,53,73	1.83	7 (15%)	52,89,113	1.41	8 (15%)
22	CLA	7	615	-	39,48,73	1.94	6 (15%)	44,83,113	1.44	7 (15%)
26	LHG	4	630	22	37,37,48	1.03	2 (5%)	40,43,54	1.21	6 (15%)
22	CLA	A	837	6	65,73,73	1.55	7 (10%)	76,113,113	1.22	6 (7%)
22	CLA	W	614	-	38,47,73	1.99	7 (18%)	47,82,113	1.49	9 (19%)
22	CLA	V	612	1	37,46,73	2.01	7 (18%)	46,81,113	1.67	9 (19%)
22	CLA	2	612	3	45,53,73	1.82	6 (13%)	52,89,113	1.43	6 (11%)
24	XAT	7	619	-	39,47,47	1.22	3 (7%)	54,74,74	6.06	18 (33%)
22	CLA	6	604	-	50,58,73	1.73	6 (12%)	58,95,113	1.42	8 (13%)
22	CLA	7	607	4	45,53,73	1.80	5 (11%)	52,89,113	1.48	6 (11%)
22	CLA	B	821	-	50,58,73	1.77	7 (14%)	58,95,113	1.37	8 (13%)
22	CLA	8	601	5	50,58,73	1.77	7 (14%)	58,95,113	1.37	9 (15%)
22	CLA	3	607	4	50,58,73	1.72	7 (14%)	58,95,113	1.40	9 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	1	611	26	65,73,73	1.53	6 (9%)	76,113,113	1.30	11 (14%)
22	CLA	5	604	-	41,49,73	1.92	7 (17%)	47,84,113	1.43	6 (12%)
21	CHL	V	609	1	39,48,74	2.31	13 (33%)	42,82,114	3.34	19 (45%)
21	CHL	5	601	2	51,59,74	2.21	16 (31%)	55,96,114	3.04	23 (41%)
26	LHG	7	630	22	33,33,48	1.14	2 (6%)	36,39,54	1.08	3 (8%)
22	CLA	O	2003	-	29,35,73	2.68	9 (31%)	28,60,113	1.47	3 (10%)
22	CLA	L	304	-	60,68,73	1.56	6 (10%)	70,107,113	1.30	9 (12%)
22	CLA	U	612	1	65,73,73	1.52	7 (10%)	76,113,113	1.21	7 (9%)
22	CLA	V	610	1	39,47,73	2.01	6 (15%)	49,82,113	1.50	10 (20%)
23	LUT	9	621	-	42,43,43	0.81	0	51,60,60	1.68	13 (25%)
21	CHL	6	608	-	48,56,74	2.26	15 (31%)	51,92,114	3.19	19 (37%)
22	CLA	V	614	-	45,53,73	1.82	6 (13%)	52,89,113	1.38	8 (15%)
22	CLA	A	807	6	65,73,73	1.48	6 (9%)	76,113,113	1.27	7 (9%)
22	CLA	3	615	-	53,61,73	1.68	6 (11%)	61,98,113	1.42	7 (11%)
22	CLA	B	819	-	60,68,73	1.59	7 (11%)	70,107,113	1.37	10 (14%)
22	CLA	8	603	-	55,63,73	1.66	6 (10%)	64,101,113	1.38	7 (10%)
22	CLA	6	603	-	46,54,73	1.83	6 (13%)	53,90,113	1.46	7 (13%)
22	CLA	5	608	-	50,58,73	1.72	5 (10%)	58,95,113	1.45	9 (15%)
22	CLA	6	612	3	45,53,73	1.86	6 (13%)	52,89,113	1.40	6 (11%)
21	CHL	4	608	-	46,54,74	2.37	15 (32%)	49,90,114	3.15	17 (34%)
22	CLA	A	839	-	60,68,73	1.56	6 (10%)	70,107,113	1.32	8 (11%)
24	XAT	3	619	-	39,47,47	0.87	1 (2%)	54,74,74	2.76	21 (38%)
22	CLA	B	836	-	52,60,73	1.64	6 (11%)	60,97,113	1.44	7 (11%)
27	BCR	L	306	-	41,41,41	0.70	0	56,56,56	2.06	20 (35%)
22	CLA	5	610	2	55,63,73	1.66	6 (10%)	64,101,113	1.28	8 (12%)
26	LHG	A	846	-	46,46,48	0.96	2 (4%)	49,52,54	0.99	3 (6%)
22	CLA	A	823	-	53,62,73	1.60	5 (9%)	60,99,113	1.45	8 (13%)
22	CLA	1	610	2	65,73,73	1.52	6 (9%)	76,113,113	1.25	9 (11%)
22	CLA	4	612	5	45,53,73	1.82	7 (15%)	52,89,113	1.45	7 (13%)
22	CLA	B	829	-	65,73,73	1.51	6 (9%)	76,113,113	1.26	7 (9%)
22	CLA	L	302	17	65,73,73	1.53	7 (10%)	76,113,113	1.25	8 (10%)
22	CLA	A	818	-	65,73,73	1.51	6 (9%)	76,113,113	1.23	7 (9%)
22	CLA	A	821	-	55,63,73	1.64	8 (14%)	64,101,113	1.25	7 (10%)
22	CLA	3	606	-	46,54,73	1.78	6 (13%)	53,90,113	1.44	7 (13%)
22	CLA	K	201	16	42,50,73	1.83	6 (14%)	48,85,113	1.55	8 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	B	809	7	65,73,73	1.51	7 (10%)	76,113,113	1.30	8 (10%)
22	CLA	7	611	26	41,49,73	1.91	6 (14%)	47,84,113	1.40	8 (17%)
21	CHL	8	607	-	46,54,74	2.33	16 (34%)	49,90,114	3.19	19 (38%)
31	LMT	G	206	-	36,36,36	0.65	0	47,47,47	1.26	6 (12%)
28	LMG	2	631	-	47,47,55	0.98	2 (4%)	55,55,63	0.98	4 (7%)
22	CLA	8	613	5	55,63,73	1.67	6 (10%)	64,101,113	1.36	8 (12%)
22	CLA	4	614	-	46,54,73	1.79	6 (13%)	53,90,113	1.39	7 (13%)
22	CLA	A	842	-	55,63,73	1.67	7 (12%)	64,101,113	1.36	8 (12%)
21	CHL	V	601	1	62,71,74	1.89	14 (22%)	76,111,114	2.67	22 (28%)
22	CLA	W	613	1	60,68,73	1.58	7 (11%)	70,107,113	1.29	8 (11%)
27	BCR	2	621	-	41,41,41	0.77	0	56,56,56	2.08	20 (35%)
22	CLA	3	614	-	45,53,73	1.82	6 (13%)	52,89,113	1.44	8 (15%)
22	CLA	A	809	6	56,64,73	1.61	6 (10%)	65,102,113	1.40	8 (12%)
22	CLA	6	614	-	50,58,73	1.72	6 (12%)	58,95,113	1.44	9 (15%)
22	CLA	1	613	2	50,58,73	1.72	6 (12%)	58,95,113	1.40	8 (13%)
25	NEX	V	2623	-	38,46,46	0.89	1 (2%)	50,70,70	2.56	18 (36%)
27	BCR	A	850	-	41,41,41	0.74	0	56,56,56	1.80	15 (26%)
22	CLA	L	303	-	65,73,73	1.51	8 (12%)	76,113,113	1.26	9 (11%)
21	CHL	6	606	-	46,54,74	2.30	15 (32%)	49,90,114	3.20	19 (38%)
22	CLA	F	301	33	65,73,73	1.50	7 (10%)	76,113,113	1.23	7 (9%)
22	CLA	4	601	5	50,58,73	1.72	5 (10%)	58,95,113	1.42	10 (17%)
22	CLA	6	610	3	60,68,73	1.57	6 (10%)	70,107,113	1.27	8 (11%)
22	CLA	2	610	3	60,68,73	1.57	7 (11%)	70,107,113	1.22	7 (10%)
22	CLA	5	611	26	46,54,73	1.84	7 (15%)	53,90,113	1.39	6 (11%)
22	CLA	B	840	-	65,73,73	1.47	6 (9%)	76,113,113	1.24	8 (10%)
24	XAT	5	618	-	39,47,47	0.88	0	54,74,74	2.70	24 (44%)
22	CLA	F	304	11	41,51,73	1.91	11 (26%)	41,81,113	1.92	7 (17%)
28	LMG	L	307	-	44,44,55	1.00	2 (4%)	52,52,63	0.93	2 (3%)
22	CLA	2	609	3	46,54,73	1.79	6 (13%)	53,90,113	1.44	7 (13%)
21	CHL	4	618	5	43,51,74	2.28	14 (32%)	45,86,114	3.29	20 (44%)
22	CLA	B	822	-	60,68,73	1.58	5 (8%)	70,107,113	1.36	11 (15%)
27	BCR	7	620	-	41,41,41	0.68	0	56,56,56	2.08	20 (35%)
22	CLA	3	602	4	65,73,73	1.51	7 (10%)	76,113,113	1.23	8 (10%)
22	CLA	9	610	20	55,63,73	1.65	8 (14%)	64,101,113	1.29	8 (12%)
22	CLA	A	854	-	60,68,73	1.56	6 (10%)	70,107,113	1.39	7 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	W	603	-	38,47,73	1.97	6 (15%)	43,82,113	1.46	9 (20%)
30	SF4	C	101	8	0,12,12	-	-	-		
22	CLA	B	841	26	65,73,73	1.51	6 (9%)	76,113,113	1.32	9 (11%)
30	SF4	A	853	7,6	0,12,12	-	-	-		
27	BCR	B	844	-	41,41,41	0.70	0	56,56,56	2.02	23 (41%)
27	BCR	M	2001	-	41,41,41	0.65	0	56,56,56	2.15	22 (39%)
22	CLA	1	609	2	65,73,73	1.59	7 (10%)	76,113,113	1.24	9 (11%)
22	CLA	A	803	-	65,73,73	1.51	9 (13%)	76,113,113	1.34	7 (9%)
21	CHL	W	606	-	37,46,74	2.44	14 (37%)	46,81,114	3.32	20 (43%)
21	CHL	2	608	-	46,54,74	2.35	16 (34%)	49,90,114	3.15	21 (42%)
27	BCR	B	848	-	41,41,41	0.73	0	56,56,56	1.97	17 (30%)
22	CLA	A	835	-	65,73,73	1.51	7 (10%)	76,113,113	1.21	8 (10%)
22	CLA	3	613	4	65,73,73	1.52	6 (9%)	76,113,113	1.32	10 (13%)
22	CLA	V	603	-	60,68,73	1.57	5 (8%)	70,107,113	1.31	7 (10%)
22	CLA	B	804	-	65,73,73	1.51	5 (7%)	76,113,113	1.33	10 (13%)
31	LMT	B	849	-	32,32,36	0.66	0	43,43,47	1.32	7 (16%)
23	LUT	V	2621	-	42,43,43	0.78	0	51,60,60	1.68	11 (21%)
22	CLA	4	603	-	65,73,73	1.51	6 (9%)	76,113,113	1.29	8 (10%)
22	CLA	A	819	-	62,70,73	1.52	7 (11%)	72,109,113	1.32	8 (11%)
22	CLA	B	824	-	65,73,73	1.50	6 (9%)	76,113,113	1.37	8 (10%)
24	XAT	U	2622	-	39,47,47	0.89	0	54,74,74	2.62	16 (29%)
23	LUT	2	619	-	42,43,43	1.60	8 (19%)	51,60,60	1.58	11 (21%)
27	BCR	8	621	-	41,41,41	0.79	0	56,56,56	2.29	19 (33%)
28	LMG	J	103	-	55,55,55	0.87	2 (3%)	63,63,63	1.00	3 (4%)
27	BCR	K	205	-	41,41,41	0.81	1 (2%)	56,56,56	2.36	25 (44%)
22	CLA	8	614	-	45,53,73	1.84	5 (11%)	52,89,113	1.47	9 (17%)
27	BCR	L	305	-	41,41,41	0.70	0	56,56,56	1.98	21 (37%)
22	CLA	4	613	5	55,63,73	1.66	5 (9%)	64,101,113	1.32	9 (14%)
22	CLA	B	807	-	65,73,73	1.49	6 (9%)	76,113,113	1.28	8 (10%)
22	CLA	B	808	-	65,73,73	1.52	8 (12%)	76,113,113	1.18	7 (9%)
22	CLA	U	603	-	65,73,73	1.51	7 (10%)	76,113,113	1.30	7 (9%)
22	CLA	4	602	5	65,73,73	1.51	5 (7%)	76,113,113	1.22	9 (11%)
22	CLA	A	828	-	65,73,73	1.51	7 (10%)	76,113,113	1.33	8 (10%)
22	CLA	U	610	1	65,73,73	1.50	6 (9%)	76,113,113	1.28	10 (13%)
22	CLA	9	602	20	60,68,73	1.57	8 (13%)	70,107,113	1.44	9 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
21	CHL	5	607	2	38,47,74	2.39	15 (39%)	41,81,114	3.34	18 (43%)
22	CLA	1	616	2	45,53,73	1.85	6 (13%)	52,89,113	1.45	7 (13%)
23	LUT	8	619	-	42,43,43	0.75	1 (2%)	51,60,60	1.68	12 (23%)
22	CLA	A	834	-	65,73,73	1.52	6 (9%)	76,113,113	1.23	7 (9%)
22	CLA	A	813	-	55,63,73	1.61	6 (10%)	64,101,113	1.44	7 (10%)
22	CLA	8	604	-	50,58,73	1.74	6 (12%)	58,95,113	1.35	9 (15%)
22	CLA	7	602	4	60,68,73	1.62	5 (8%)	70,107,113	1.42	9 (12%)
22	CLA	A	827	33	65,73,73	1.50	6 (9%)	76,113,113	1.27	8 (10%)
26	LHG	6	630	22	31,31,48	1.17	2 (6%)	34,37,54	1.07	2 (5%)
21	CHL	U	601	1	62,71,74	1.89	14 (22%)	76,111,114	2.57	21 (27%)
27	BCR	4	621	-	41,41,41	0.80	0	56,56,56	3.03	16 (28%)
22	CLA	K	206	16	42,50,73	1.87	7 (16%)	48,85,113	1.43	7 (14%)
26	LHG	1	630	22	48,48,48	0.93	2 (4%)	51,54,54	0.95	3 (5%)
22	CLA	A	840	-	50,58,73	1.71	6 (12%)	58,95,113	1.40	7 (12%)
22	CLA	G	203	-	50,58,73	1.72	5 (10%)	58,95,113	1.41	8 (13%)
23	LUT	7	618	-	42,43,43	0.78	0	51,60,60	1.61	10 (19%)
21	CHL	W	601	1	62,71,74	1.89	14 (22%)	76,111,114	2.59	21 (27%)
22	CLA	1	604	-	50,58,73	1.71	5 (10%)	58,95,113	1.41	8 (13%)
22	CLA	W	611	26	39,48,73	1.97	7 (17%)	48,83,113	1.49	8 (16%)
24	XAT	6	620	-	39,47,47	1.23	2 (5%)	54,74,74	6.73	25 (46%)
22	CLA	B	803	-	65,73,73	1.49	8 (12%)	76,113,113	1.29	7 (9%)
22	CLA	O	2002	-	55,63,73	1.68	6 (10%)	64,101,113	1.28	7 (10%)
22	CLA	A	824	-	62,70,73	1.54	6 (9%)	72,109,113	1.29	9 (12%)
22	CLA	5	616	2	46,54,73	1.84	5 (10%)	53,90,113	1.34	6 (11%)
27	BCR	O	2004	-	41,41,41	0.75	0	56,56,56	2.10	18 (32%)
21	CHL	2	602	3	61,69,74	2.04	16 (26%)	67,108,114	2.84	24 (35%)
27	BCR	B	843	-	41,41,41	0.74	0	56,56,56	2.18	22 (39%)
22	CLA	B	835	-	45,53,73	1.77	5 (11%)	52,89,113	1.44	8 (15%)
22	CLA	U	602	1	65,73,73	1.52	6 (9%)	76,113,113	1.24	9 (11%)
22	CLA	K	204	-	65,73,73	1.49	6 (9%)	76,113,113	1.35	8 (10%)
21	CHL	U	605	1	37,46,74	2.44	14 (37%)	46,81,114	3.34	18 (39%)
22	CLA	7	604	-	50,58,73	1.72	5 (10%)	58,95,113	1.42	9 (15%)
27	BCR	3	621	-	41,41,41	0.79	1 (2%)	56,56,56	2.26	19 (33%)
22	CLA	7	614	-	41,49,73	1.89	5 (12%)	47,84,113	1.52	7 (14%)
27	BCR	J	102	-	41,41,41	0.71	0	56,56,56	2.24	17 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
21	CHL	2	607	-	47,55,74	2.30	15 (31%)	50,91,114	3.21	21 (42%)
21	CHL	W	605	1	37,46,74	2.43	14 (37%)	46,81,114	3.31	18 (39%)
22	CLA	B	834	-	65,73,73	1.49	7 (10%)	76,113,113	1.28	7 (9%)
27	BCR	B	1609	-	41,41,41	0.75	0	56,56,56	3.14	26 (46%)
22	CLA	B	820	-	55,63,73	1.63	6 (10%)	64,101,113	1.34	8 (12%)
21	CHL	8	606	-	46,54,74	2.32	16 (34%)	49,90,114	3.17	21 (42%)
22	CLA	4	610	5	61,69,73	1.63	6 (9%)	71,108,113	1.29	7 (9%)
21	CHL	2	618	3	43,51,74	2.31	14 (32%)	45,86,114	3.30	20 (44%)
21	CHL	9	601	20	38,47,74	2.39	14 (36%)	41,81,114	3.31	19 (46%)
22	CLA	V	604	-	50,58,73	1.73	7 (14%)	58,95,113	1.42	9 (15%)
22	CLA	4	611	26	45,53,73	1.86	6 (13%)	52,89,113	1.41	5 (9%)
22	CLA	9	611	26	65,73,73	1.54	7 (10%)	76,113,113	1.24	8 (10%)
21	CHL	3	608	-	56,64,74	2.10	15 (26%)	61,102,114	2.91	19 (31%)
22	CLA	O	2001	-	29,35,73	2.68	9 (31%)	28,60,113	1.53	4 (14%)
27	BCR	F	305	-	41,41,41	0.69	0	56,56,56	2.13	19 (33%)
24	XAT	W	2622	-	39,47,47	0.90	0	54,74,74	2.64	19 (35%)
27	BCR	1	619	-	41,41,41	0.74	0	56,56,56	2.55	27 (48%)
22	CLA	9	613	20	52,60,73	1.72	7 (13%)	60,97,113	1.39	7 (11%)
22	CLA	A	801	-	65,73,73	1.50	7 (10%)	76,113,113	1.55	12 (15%)
21	CHL	W	608	-	39,48,74	2.25	13 (33%)	45,83,114	3.28	19 (42%)
22	CLA	7	617	-	46,54,73	1.80	5 (10%)	53,90,113	1.41	8 (15%)
22	CLA	7	613	4	55,63,73	1.67	7 (12%)	64,101,113	1.31	8 (12%)
22	CLA	A	805	-	65,73,73	1.51	5 (7%)	76,113,113	1.36	9 (11%)
21	CHL	V	607	-	40,48,74	2.34	14 (35%)	47,83,114	3.41	20 (42%)
22	CLA	A	808	-	60,68,73	1.59	6 (10%)	70,107,113	1.28	8 (11%)
22	CLA	B	817	-	65,73,73	1.51	7 (10%)	76,113,113	1.28	7 (9%)
21	CHL	2	601	3	46,54,74	2.31	15 (32%)	49,90,114	3.23	20 (40%)
29	PQN	A	844	-	34,34,34	0.49	0	42,45,45	0.86	3 (7%)
22	CLA	W	610	1	65,73,73	1.54	6 (9%)	76,113,113	1.36	8 (10%)
22	CLA	2	613	3	57,65,73	1.62	7 (12%)	66,103,113	1.41	10 (15%)
26	LHG	9	2630	22	27,27,48	1.30	2 (7%)	30,33,54	0.98	3 (10%)
22	CLA	8	611	26	55,63,73	1.67	6 (10%)	64,101,113	1.24	6 (9%)
27	BCR	6	621	-	41,41,41	0.81	0	56,56,56	2.42	21 (37%)
28	LMG	A	860	-	34,34,55	1.14	2 (5%)	42,42,63	1.10	2 (4%)
22	CLA	6	609	3	55,63,73	1.65	5 (9%)	64,101,113	1.32	9 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
21	CHL	9	607	-	43,51,74	2.31	14 (32%)	45,86,114	3.19	20 (44%)
22	CLA	W	612	1	37,46,73	2.02	7 (18%)	46,81,113	1.56	11 (23%)
22	CLA	A	836	-	57,66,73	1.48	9 (15%)	66,99,113	1.82	12 (18%)
27	BCR	G	205	-	41,41,41	0.76	0	56,56,56	1.92	19 (33%)
22	CLA	B	811	-	61,69,73	1.59	7 (11%)	71,108,113	1.22	8 (11%)
21	CHL	1	607	-	47,55,74	2.31	16 (34%)	50,91,114	3.08	20 (40%)
27	BCR	L	301	-	41,41,41	0.72	0	56,56,56	2.29	19 (33%)
26	LHG	2	630	22	31,31,48	1.17	2 (6%)	34,37,54	1.04	2 (5%)
22	CLA	3	611	26	55,63,73	1.70	6 (10%)	64,101,113	1.31	7 (10%)
21	CHL	U	607	-	66,74,74	1.94	15 (22%)	73,114,114	2.74	22 (30%)
27	BCR	A	852	-	41,41,41	0.72	0	56,56,56	2.28	24 (42%)
22	CLA	U	611	26	45,53,73	1.86	5 (11%)	52,89,113	1.37	7 (13%)
22	CLA	3	609	4	65,73,73	1.54	7 (10%)	76,113,113	1.37	9 (11%)
22	CLA	U	613	1	65,73,73	1.51	6 (9%)	76,113,113	1.26	8 (10%)
22	CLA	8	609	5	55,63,73	1.64	6 (10%)	64,101,113	1.42	7 (10%)
26	LHG	W	2630	22	44,44,48	0.97	2 (4%)	47,50,54	0.97	2 (4%)
27	BCR	A	848	-	41,41,41	0.78	0	56,56,56	1.93	17 (30%)
22	CLA	A	831	-	65,73,73	1.51	5 (7%)	76,113,113	1.27	8 (10%)
25	NEX	W	2623	-	38,46,46	0.94	1 (2%)	50,70,70	2.78	19 (38%)
22	CLA	B	823	-	45,53,73	1.78	6 (13%)	52,89,113	1.49	8 (15%)
22	CLA	W	604	-	42,50,73	1.85	7 (16%)	48,85,113	1.46	7 (14%)
21	CHL	9	605	-	37,46,74	2.41	14 (37%)	41,80,114	3.44	18 (43%)
22	CLA	J	101	15	50,58,73	1.73	7 (14%)	58,95,113	1.43	8 (13%)
22	CLA	B	813	-	65,73,73	1.50	6 (9%)	76,113,113	1.29	9 (11%)
22	CLA	7	603	4	45,53,73	1.88	6 (13%)	52,89,113	1.38	6 (11%)
21	CHL	4	607	-	47,55,74	2.32	15 (31%)	50,91,114	3.10	20 (40%)
22	CLA	B	837	-	65,73,73	1.50	7 (10%)	76,113,113	1.33	8 (10%)
21	CHL	7	608	-	46,54,74	2.30	15 (32%)	49,90,114	3.22	20 (40%)
27	BCR	B	845	-	41,41,41	0.73	0	56,56,56	2.51	22 (39%)
22	CLA	A	845	26	65,73,73	1.52	6 (9%)	76,113,113	1.21	7 (9%)
22	CLA	A	838	-	55,63,73	1.62	6 (10%)	64,101,113	1.39	7 (10%)
22	CLA	G	201	-	45,53,73	1.84	7 (15%)	52,89,113	1.39	8 (15%)
27	BCR	3	620	-	41,41,41	0.73	0	56,56,56	2.08	19 (33%)
22	CLA	A	804	-	65,73,73	1.50	6 (9%)	76,113,113	1.33	9 (11%)
22	CLA	K	203	-	55,63,73	1.65	6 (10%)	64,101,113	1.33	9 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	2	611	26	45,53,73	1.84	5 (11%)	52,89,113	1.46	7 (13%)
22	CLA	A	814	-	65,73,73	1.50	7 (10%)	76,113,113	1.36	8 (10%)
27	BCR	I	101	-	41,41,41	0.74	0	56,56,56	1.75	11 (19%)
22	CLA	9	603	20	42,50,73	1.95	6 (14%)	48,85,113	1.46	7 (14%)
21	CHL	W	607	-	40,48,74	2.33	14 (35%)	47,83,114	3.38	19 (40%)
21	CHL	U	606	-	46,54,74	2.28	16 (34%)	49,90,114	3.30	19 (38%)
22	CLA	A	812	-	65,73,73	1.49	8 (12%)	76,113,113	1.24	8 (10%)
22	CLA	4	604	-	55,63,73	1.63	6 (10%)	64,101,113	1.42	8 (12%)
22	CLA	A	810	6	65,73,73	1.52	7 (10%)	76,113,113	1.32	9 (11%)
31	LMT	K	208	-	36,36,36	0.61	0	47,47,47	1.27	6 (12%)
22	CLA	1	612	2	46,54,73	1.79	7 (15%)	53,90,113	1.36	7 (13%)
22	CLA	2	614	-	50,58,73	1.74	7 (14%)	58,95,113	1.39	8 (13%)
22	CLA	B	818	-	64,72,73	1.49	7 (10%)	74,111,113	1.27	8 (10%)
22	CLA	A	830	-	65,73,73	1.51	7 (10%)	76,113,113	1.28	8 (10%)
22	CLA	H	201	-	37,46,73	1.99	6 (16%)	44,80,113	1.42	7 (15%)
22	CLA	5	612	2	46,54,73	1.91	8 (17%)	53,90,113	1.36	6 (11%)
22	CLA	9	604	-	43,51,73	1.88	6 (13%)	49,86,113	1.39	7 (14%)
22	CLA	3	612	4	65,73,73	1.50	7 (10%)	76,113,113	1.24	9 (11%)
22	CLA	A	825	-	65,73,73	1.51	5 (7%)	76,113,113	1.36	8 (10%)
22	CLA	A	802	-	65,73,73	1.51	8 (12%)	76,113,113	1.19	7 (9%)
23	LUT	9	624	-	42,43,43	0.81	0	51,60,60	3.48	25 (49%)
22	CLA	8	612	5	46,54,73	1.82	5 (10%)	53,90,113	1.36	6 (11%)
27	BCR	7	621	-	41,41,41	0.73	0	56,56,56	2.19	21 (37%)
21	CHL	9	606	-	44,52,74	2.25	14 (31%)	46,87,114	3.28	20 (43%)
22	CLA	1	614	-	49,57,73	1.76	5 (10%)	57,94,113	1.34	8 (14%)
27	BCR	K	202	-	41,41,41	0.71	0	56,56,56	2.03	19 (33%)
22	CLA	A	811	-	55,63,73	1.63	7 (12%)	64,101,113	1.31	7 (10%)
22	CLA	B	831	-	65,73,73	1.53	6 (9%)	76,113,113	1.35	9 (11%)
22	CLA	A	816	-	45,53,73	1.77	7 (15%)	52,89,113	1.48	8 (15%)

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
28	LMG	G	202	-	-	9/27/47/70	0/1/1/1
27	BCR	A	856	-	-	1/27/61/63	0/2/2/2
22	CLA	V	613	1	1/1/12/20	13/26/104/115	-
22	CLA	7	610	4	1/1/13/20	8/25/103/115	-
22	CLA	V	602	1	-	7/30/108/115	-
22	CLA	A	833	-	1/1/13/20	8/25/103/115	-
22	CLA	5	602	2	1/1/14/20	14/31/109/115	-
22	CLA	B	827	-	1/1/13/20	12/27/105/115	-
23	LUT	1	617	-	-	0/29/67/67	0/2/2/2
27	BCR	B	847	-	-	2/29/63/63	0/2/2/2
22	CLA	A	841	-	1/1/15/20	11/37/115/115	-
22	CLA	U	604	-	1/1/12/20	10/22/100/115	-
21	CHL	4	606	-	3/3/16/26	3/15/113/137	-
21	CHL	6	602	3	3/3/18/26	10/27/125/137	-
22	CLA	2	603	-	1/1/11/20	5/15/93/115	-
22	CLA	5	609	2	1/1/10/20	4/8/86/115	-
22	CLA	3	604	-	1/1/13/20	8/25/103/115	-
22	CLA	A	820	-	1/1/15/20	11/37/115/115	-
21	CHL	6	607	-	3/3/16/26	7/17/115/137	-
22	CLA	B	832	-	-	10/37/115/115	-
22	CLA	U	614	-	1/1/10/20	4/10/88/115	-
22	CLA	B	814	-	1/1/15/20	12/37/115/115	-
22	CLA	7	609	4	1/1/13/20	8/28/106/115	-
31	LMT	A	857	-	-	7/21/61/61	0/2/2/2
22	CLA	B	810	-	1/1/15/20	16/37/115/115	-
22	CLA	4	609	5	1/1/11/20	4/13/91/115	-
27	BCR	A	851	-	-	2/29/63/63	0/2/2/2
23	LUT	V	2620	-	-	1/29/67/67	0/2/2/2
22	CLA	A	843	-	1/1/15/20	14/37/115/115	-
22	CLA	1	603	-	1/1/13/20	9/25/103/115	-
22	CLA	B	839	-	1/1/15/20	9/37/115/115	-
22	CLA	3	610	4	1/1/14/20	8/31/109/115	-
22	CLA	B	825	-	1/1/15/20	10/37/115/115	-
22	CLA	7	606	-	1/1/11/20	7/15/93/115	-
22	CLA	3	617	-	1/1/13/20	13/28/102/115	-
23	LUT	4	619	-	-	0/29/67/67	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
21	CHL	8	608	-	3/3/17/26	7/21/119/137	-
27	BCR	A	849	-	-	4/29/63/63	0/2/2/2
23	LUT	U	2620	-	-	0/29/67/67	0/2/2/2
23	LUT	3	618	-	-	1/29/67/67	0/2/2/2
22	CLA	A	826	-	1/1/15/20	10/37/115/115	-
22	CLA	7	612	4	1/1/11/20	4/13/91/115	-
25	NEX	U	2623	-	-	3/27/83/83	0/3/3/3
28	LMG	J	104	-	-	6/30/50/70	0/1/1/1
22	CLA	A	815	-	1/1/15/20	15/37/115/115	-
23	LUT	W	2620	-	-	2/29/67/67	0/2/2/2
23	LUT	9	620	-	-	2/29/67/67	0/2/2/2
22	CLA	6	613	3	1/1/15/20	12/37/115/115	-
23	LUT	6	619	-	-	2/29/67/67	0/2/2/2
23	LUT	5	617	-	-	14/29/67/67	0/2/2/2
22	CLA	8	602	5	1/1/14/20	8/31/109/115	-
22	CLA	W	602	1	1/1/14/20	5/31/109/115	-
21	CHL	V	605	1	3/3/15/26	2/10/108/137	-
22	CLA	F	303	-	1/1/11/20	2/13/91/115	-
21	CHL	6	618	3	3/3/16/26	10/17/115/137	-
22	CLA	V	611	26	1/1/10/20	2/8/84/115	-
30	SF4	C	102	8	-	-	0/6/5/5
22	CLA	A	806	-	1/1/15/20	17/37/115/115	-
22	CLA	8	610	5	1/1/13/20	6/25/103/115	-
22	CLA	5	613	2	-	9/19/97/115	-
26	LHG	8	630	22	-	9/42/42/53	-
24	XAT	4	620	-	-	3/31/93/93	0/4/4/4
22	CLA	1	602	2	1/1/15/20	14/37/115/115	-
22	CLA	5	614	-	1/1/10/20	4/11/89/115	-
21	CHL	W	609	1	3/3/14/26	1/6/104/137	-
22	CLA	A	829	-	1/1/14/20	11/31/109/115	-
32	DGD	B	850	-	-	16/55/95/95	0/2/2/2
26	LHG	V	2630	22	-	8/46/46/53	-
22	CLA	G	204	12	1/1/11/20	4/15/93/115	-
21	CHL	9	608	-	3/3/15/26	2/12/110/137	-
22	CLA	B	828	-	1/1/15/20	14/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	B	812	-	1/1/11/20	2/13/91/115	-
24	XAT	8	620	-	-	18/31/93/93	0/4/4/4
22	CLA	A	822	-	1/1/15/20	12/37/115/115	-
22	CLA	2	604	-	1/1/12/20	4/19/97/115	-
22	CLA	A	817	-	1/1/15/20	12/37/115/115	-
21	CHL	8	618	5	3/3/15/26	2/12/110/137	-
26	LHG	B	851	22	-	10/39/39/53	-
21	CHL	U	609	1	3/3/20/26	23/39/137/137	-
22	CLA	B	830	-	1/1/11/20	6/13/91/115	-
26	LHG	U	2630	22	-	11/49/49/53	-
22	CLA	9	609	20	1/1/11/20	4/13/91/115	-
22	CLA	3	603	4	1/1/15/20	7/37/115/115	-
22	CLA	B	838	-	-	5/16/94/115	-
21	CHL	2	606	-	3/3/16/26	4/15/113/137	-
22	CLA	B	802	-	1/1/15/20	8/37/115/115	-
22	CLA	B	826	-	1/1/15/20	9/37/115/115	-
23	LUT	W	2621	-	-	2/29/67/67	0/2/2/2
24	XAT	V	2622	-	-	2/31/93/93	0/4/4/4
27	BCR	B	801	-	-	4/29/63/63	0/2/2/2
22	CLA	B	815	-	1/1/11/20	3/13/91/115	-
21	CHL	V	608	-	3/3/15/26	3/8/104/137	-
26	LHG	5	630	22	-	5/41/41/53	-
22	CLA	B	833	-	1/1/15/20	16/37/115/115	-
22	CLA	5	603	-	1/1/11/20	6/13/91/115	-
21	CHL	6	601	3	3/3/20/26	16/39/137/137	-
26	LHG	3	630	22	-	8/36/36/53	-
22	CLA	B	816	-	1/1/15/20	9/37/115/115	-
22	CLA	6	611	26	1/1/11/20	7/13/91/115	-
24	XAT	2	620	-	-	0/31/93/93	0/4/4/4
22	CLA	9	612	20	1/1/9/20	1/4/82/115	-
26	LHG	A	847	22	-	17/35/35/53	-
23	LUT	U	2621	-	-	1/29/67/67	0/2/2/2
21	CHL	1	601	2	3/3/18/26	11/27/125/137	-
25	NEX	9	623	-	-	2/27/83/83	0/3/3/3
21	CHL	V	606	-	3/3/15/26	2/4/100/137	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
21	CHL	U	608	-	3/3/15/26	3/8/104/137	-
22	CLA	1	606	-	1/1/11/20	6/13/91/115	-
22	CLA	B	806	-	1/1/15/20	14/37/115/115	-
22	CLA	B	805	-	1/1/15/20	11/37/115/115	-
24	XAT	1	618	-	-	0/31/93/93	0/4/4/4
22	CLA	A	832	-	1/1/13/20	5/25/103/115	-
22	CLA	5	606	2	1/1/11/20	2/13/91/115	-
29	PQN	B	842	-	-	6/23/43/43	0/2/2/2
22	CLA	1	608	-	1/1/11/20	5/13/91/115	-
22	CLA	7	615	-	1/1/10/20	2/6/84/115	-
26	LHG	4	630	22	-	20/42/42/53	-
22	CLA	A	837	6	-	17/37/115/115	-
22	CLA	W	614	-	1/1/10/20	2/6/82/115	-
22	CLA	V	612	1	1/1/10/20	2/4/80/115	-
22	CLA	2	612	3	1/1/11/20	8/13/91/115	-
24	XAT	7	619	-	-	6/31/93/93	0/4/4/4
22	CLA	6	604	-	1/1/12/20	4/19/97/115	-
22	CLA	7	607	4	1/1/11/20	3/13/91/115	-
22	CLA	B	821	-	1/1/12/20	5/19/97/115	-
22	CLA	8	601	5	1/1/12/20	5/19/97/115	-
22	CLA	3	607	4	1/1/12/20	8/19/97/115	-
22	CLA	1	611	26	1/1/15/20	16/37/115/115	-
22	CLA	5	604	-	1/1/10/20	5/8/86/115	-
21	CHL	V	609	1	3/3/14/26	2/6/104/137	-
21	CHL	5	601	2	3/3/17/26	7/21/119/137	-
26	LHG	7	630	22	-	11/38/38/53	-
22	CLA	O	2003	-	1/1/5/20	-	-
22	CLA	L	304	-	1/1/14/20	13/31/109/115	-
22	CLA	U	612	1	1/1/15/20	10/37/115/115	-
22	CLA	V	610	1	1/1/10/20	3/6/82/115	-
23	LUT	9	621	-	-	1/29/67/67	0/2/2/2
21	CHL	6	608	-	3/3/16/26	5/18/116/137	-
22	CLA	V	614	-	1/1/11/20	5/13/91/115	-
22	CLA	A	807	6	1/1/15/20	18/37/115/115	-
22	CLA	3	615	-	1/1/12/20	4/23/101/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	B	819	-	1/1/14/20	14/31/109/115	-
22	CLA	8	603	-	1/1/13/20	8/25/103/115	-
22	CLA	6	603	-	1/1/11/20	7/15/93/115	-
22	CLA	5	608	-	1/1/12/20	8/19/97/115	-
22	CLA	6	612	3	1/1/11/20	6/13/91/115	-
21	CHL	4	608	-	3/3/16/26	3/15/113/137	-
22	CLA	A	839	-	1/1/14/20	6/31/109/115	-
24	XAT	3	619	-	-	0/31/93/93	0/4/4/4
22	CLA	B	836	-	1/1/12/20	10/22/100/115	-
27	BCR	L	306	-	-	3/29/63/63	0/2/2/2
22	CLA	5	610	2	1/1/13/20	4/25/103/115	-
26	LHG	A	846	-	-	12/51/51/53	-
22	CLA	A	823	-	1/1/13/20	8/25/103/115	-
22	CLA	1	610	2	1/1/15/20	10/37/115/115	-
22	CLA	4	612	5	1/1/11/20	5/13/91/115	-
22	CLA	B	829	-	1/1/15/20	8/37/115/115	-
22	CLA	L	302	17	1/1/15/20	21/37/115/115	-
22	CLA	A	818	-	1/1/15/20	5/37/115/115	-
22	CLA	A	821	-	1/1/13/20	4/25/103/115	-
22	CLA	3	606	-	1/1/11/20	8/15/93/115	-
22	CLA	K	201	16	1/1/10/20	4/10/88/115	-
22	CLA	B	809	7	1/1/15/20	11/37/115/115	-
22	CLA	7	611	26	1/1/10/20	2/8/86/115	-
21	CHL	8	607	-	3/3/16/26	5/15/113/137	-
31	LMT	G	206	-	-	7/21/61/61	0/2/2/2
28	LMG	2	631	-	-	12/42/62/70	0/1/1/1
22	CLA	8	613	5	1/1/13/20	8/25/103/115	-
22	CLA	4	614	-	1/1/11/20	7/15/93/115	-
22	CLA	A	842	-	1/1/13/20	8/25/103/115	-
21	CHL	V	601	1	3/3/20/26	18/35/131/137	-
22	CLA	W	613	1	1/1/14/20	7/31/109/115	-
27	BCR	2	621	-	-	6/29/63/63	0/2/2/2
22	CLA	3	614	-	1/1/11/20	6/13/91/115	-
22	CLA	A	809	6	1/1/13/20	7/27/105/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	6	614	-	1/1/12/20	3/19/97/115	-
22	CLA	1	613	2	1/1/12/20	8/19/97/115	-
25	NEX	V	2623	-	-	2/27/83/83	0/3/3/3
27	BCR	A	850	-	-	4/29/63/63	0/2/2/2
22	CLA	L	303	-	1/1/15/20	11/37/115/115	-
21	CHL	6	606	-	3/3/16/26	4/15/113/137	-
22	CLA	F	301	33	1/1/15/20	13/37/115/115	-
22	CLA	4	601	5	1/1/12/20	8/19/97/115	-
22	CLA	6	610	3	1/1/14/20	9/31/109/115	-
22	CLA	2	610	3	1/1/14/20	6/31/109/115	-
22	CLA	5	611	26	1/1/11/20	6/15/93/115	-
22	CLA	B	840	-	1/1/15/20	12/37/115/115	-
24	XAT	5	618	-	-	4/31/93/93	0/4/4/4
22	CLA	F	304	11	1/1/8/20	7/18/73/115	-
28	LMG	L	307	-	-	14/39/59/70	0/1/1/1
22	CLA	2	609	3	1/1/11/20	6/15/93/115	-
21	CHL	4	618	5	3/3/15/26	2/12/110/137	-
22	CLA	B	822	-	1/1/14/20	15/31/109/115	-
27	BCR	7	620	-	-	1/29/63/63	0/2/2/2
22	CLA	3	602	4	1/1/15/20	9/37/115/115	-
22	CLA	9	610	20	1/1/13/20	9/25/103/115	-
22	CLA	A	854	-	1/1/14/20	17/31/109/115	-
22	CLA	W	603	-	1/1/10/20	2/4/82/115	-
30	SF4	C	101	8	-	-	0/6/5/5
22	CLA	B	841	26	1/1/15/20	8/37/115/115	-
30	SF4	A	853	7,6	-	-	0/6/5/5
27	BCR	B	844	-	-	0/29/63/63	0/2/2/2
27	BCR	M	2001	-	-	5/29/63/63	0/2/2/2
22	CLA	1	609	2	1/1/15/20	12/37/115/115	-
22	CLA	A	803	-	1/1/15/20	8/37/115/115	-
21	CHL	W	606	-	3/3/15/26	0/4/100/137	-
21	CHL	2	608	-	3/3/16/26	0/15/113/137	-
27	BCR	B	848	-	-	3/29/63/63	0/2/2/2
22	CLA	A	835	-	1/1/15/20	12/37/115/115	-
22	CLA	3	613	4	1/1/15/20	11/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	V	603	-	1/1/14/20	12/31/109/115	-
22	CLA	B	804	-	1/1/15/20	10/37/115/115	-
31	LMT	B	849	-	-	5/17/57/61	0/2/2/2
23	LUT	V	2621	-	-	2/29/67/67	0/2/2/2
22	CLA	4	603	-	1/1/15/20	13/37/115/115	-
22	CLA	A	819	-	1/1/14/20	9/34/112/115	-
22	CLA	B	824	-	1/1/15/20	9/37/115/115	-
24	XAT	U	2622	-	-	1/31/93/93	0/4/4/4
23	LUT	2	619	-	-	12/29/67/67	0/2/2/2
27	BCR	8	621	-	-	4/29/63/63	0/2/2/2
28	LMG	J	103	-	-	11/50/70/70	0/1/1/1
27	BCR	K	205	-	-	3/29/63/63	0/2/2/2
22	CLA	8	614	-	1/1/11/20	9/13/91/115	-
27	BCR	L	305	-	-	2/29/63/63	0/2/2/2
22	CLA	4	613	5	1/1/13/20	6/25/103/115	-
22	CLA	B	807	-	-	4/37/115/115	-
22	CLA	B	808	-	1/1/15/20	11/37/115/115	-
22	CLA	U	603	-	1/1/15/20	10/37/115/115	-
22	CLA	4	602	5	1/1/15/20	17/37/115/115	-
22	CLA	A	828	-	1/1/15/20	14/37/115/115	-
22	CLA	U	610	1	1/1/15/20	13/37/115/115	-
22	CLA	9	602	20	1/1/14/20	12/31/109/115	-
21	CHL	5	607	2	3/3/14/26	0/4/102/137	-
22	CLA	1	616	2	1/1/11/20	7/13/91/115	-
23	LUT	8	619	-	-	1/29/67/67	0/2/2/2
22	CLA	A	834	-	1/1/15/20	9/37/115/115	-
22	CLA	A	813	-	1/1/13/20	7/25/103/115	-
22	CLA	8	604	-	1/1/12/20	5/19/97/115	-
22	CLA	7	602	4	-	10/31/109/115	-
22	CLA	A	827	33	-	14/37/115/115	-
26	LHG	6	630	22	-	9/36/36/53	-
21	CHL	U	601	1	3/3/20/26	20/35/131/137	-
27	BCR	4	621	-	-	7/29/63/63	0/2/2/2
22	CLA	K	206	16	1/1/10/20	2/10/88/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
26	LHG	1	630	22	-	25/53/53/53	-
22	CLA	A	840	-	1/1/12/20	5/19/97/115	-
22	CLA	G	203	-	1/1/12/20	8/19/97/115	-
23	LUT	7	618	-	-	1/29/67/67	0/2/2/2
21	CHL	W	601	1	3/3/20/26	15/35/131/137	-
22	CLA	1	604	-	-	8/19/97/115	-
22	CLA	W	611	26	1/1/10/20	1/8/84/115	-
24	XAT	6	620	-	-	3/31/93/93	0/4/4/4
22	CLA	B	803	-	1/1/15/20	16/37/115/115	-
22	CLA	O	2002	-	1/1/13/20	12/25/103/115	-
22	CLA	A	824	-	1/1/14/20	15/34/112/115	-
22	CLA	5	616	2	1/1/11/20	4/15/93/115	-
27	BCR	O	2004	-	-	5/29/63/63	0/2/2/2
21	CHL	2	602	3	3/3/19/26	10/33/131/137	-
27	BCR	B	843	-	-	5/29/63/63	0/2/2/2
22	CLA	B	835	-	1/1/11/20	2/13/91/115	-
22	CLA	U	602	1	1/1/15/20	10/37/115/115	-
22	CLA	K	204	-	1/1/15/20	16/37/115/115	-
21	CHL	U	605	1	3/3/15/26	0/4/100/137	-
22	CLA	7	604	-	1/1/12/20	8/19/97/115	-
27	BCR	3	621	-	-	0/29/63/63	0/2/2/2
22	CLA	7	614	-	1/1/10/20	3/8/86/115	-
27	BCR	J	102	-	-	2/29/63/63	0/2/2/2
21	CHL	2	607	-	3/3/16/26	3/17/115/137	-
21	CHL	W	605	1	3/3/15/26	0/4/100/137	-
22	CLA	B	834	-	1/1/15/20	13/37/115/115	-
27	BCR	B	1609	-	-	5/29/63/63	0/2/2/2
22	CLA	B	820	-	1/1/13/20	10/25/103/115	-
21	CHL	8	606	-	3/3/16/26	3/15/113/137	-
22	CLA	4	610	5	1/1/14/20	14/33/111/115	-
21	CHL	2	618	3	3/3/15/26	4/12/110/137	-
21	CHL	9	601	20	3/3/14/26	0/4/102/137	-
22	CLA	V	604	-	1/1/12/20	8/19/97/115	-
22	CLA	4	611	26	1/1/11/20	5/13/91/115	-
22	CLA	9	611	26	1/1/15/20	14/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
21	CHL	3	608	-	3/3/18/26	10/27/125/137	-
22	CLA	O	2001	-	1/1/5/20	-	-
27	BCR	F	305	-	-	5/29/63/63	0/2/2/2
24	XAT	W	2622	-	-	1/31/93/93	0/4/4/4
27	BCR	1	619	-	-	6/29/63/63	0/2/2/2
22	CLA	9	613	20	1/1/12/20	3/22/100/115	-
22	CLA	A	801	-	1/1/15/20	12/37/115/115	-
21	CHL	W	608	-	3/3/15/26	1/8/104/137	-
22	CLA	7	617	-	1/1/11/20	7/15/93/115	-
22	CLA	7	613	4	1/1/13/20	9/25/103/115	-
22	CLA	A	805	-	-	17/37/115/115	-
21	CHL	V	607	-	3/3/15/26	0/8/104/137	-
22	CLA	A	808	-	1/1/14/20	6/31/109/115	-
22	CLA	B	817	-	1/1/15/20	16/37/115/115	-
21	CHL	2	601	3	3/3/16/26	5/15/113/137	-
29	PQN	A	844	-	-	7/23/43/43	0/2/2/2
22	CLA	W	610	1	1/1/15/20	19/37/115/115	-
22	CLA	2	613	3	1/1/13/20	12/28/106/115	-
26	LHG	9	2630	22	-	14/32/32/53	-
22	CLA	8	611	26	1/1/13/20	4/25/103/115	-
27	BCR	6	621	-	-	6/29/63/63	0/2/2/2
28	LMG	A	860	-	-	12/29/49/70	0/1/1/1
22	CLA	6	609	3	1/1/13/20	2/25/103/115	-
21	CHL	9	607	-	3/3/15/26	3/12/110/137	-
22	CLA	W	612	1	1/1/10/20	2/4/80/115	-
22	CLA	A	836	-	1/1/14/20	13/36/105/115	-
27	BCR	G	205	-	-	4/29/63/63	0/2/2/2
22	CLA	B	811	-	1/1/14/20	7/33/111/115	-
21	CHL	1	607	-	3/3/16/26	8/17/115/137	-
27	BCR	L	301	-	-	6/29/63/63	0/2/2/2
26	LHG	2	630	22	-	9/36/36/53	-
22	CLA	3	611	26	1/1/13/20	11/25/103/115	-
21	CHL	U	607	-	3/3/20/26	14/39/137/137	-
27	BCR	A	852	-	-	8/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	U	611	26	1/1/11/20	7/13/91/115	-
22	CLA	3	609	4	1/1/15/20	12/37/115/115	-
22	CLA	U	613	1	1/1/15/20	12/37/115/115	-
22	CLA	8	609	5	1/1/13/20	8/25/103/115	-
26	LHG	W	2630	22	-	13/49/49/53	-
27	BCR	A	848	-	-	4/29/63/63	0/2/2/2
22	CLA	A	831	-	1/1/15/20	10/37/115/115	-
25	NEX	W	2623	-	-	7/27/83/83	0/3/3/3
22	CLA	B	823	-	1/1/11/20	6/13/91/115	-
22	CLA	W	604	-	1/1/10/20	3/10/88/115	-
21	CHL	9	605	-	3/3/14/26	0/2/100/137	-
22	CLA	J	101	15	1/1/12/20	5/19/97/115	-
22	CLA	B	813	-	1/1/15/20	12/37/115/115	-
22	CLA	7	603	4	1/1/11/20	5/13/91/115	-
21	CHL	4	607	-	3/3/16/26	5/17/115/137	-
22	CLA	B	837	-	1/1/15/20	8/37/115/115	-
21	CHL	7	608	-	3/3/16/26	5/15/113/137	-
27	BCR	B	845	-	-	10/29/63/63	0/2/2/2
22	CLA	A	845	26	1/1/15/20	12/37/115/115	-
22	CLA	A	838	-	1/1/13/20	9/25/103/115	-
22	CLA	G	201	-	1/1/11/20	5/13/91/115	-
27	BCR	3	620	-	-	2/29/63/63	0/2/2/2
22	CLA	A	804	-	1/1/15/20	20/37/115/115	-
22	CLA	K	203	-	1/1/13/20	8/25/103/115	-
22	CLA	2	611	26	1/1/11/20	6/13/91/115	-
22	CLA	A	814	-	1/1/15/20	22/37/115/115	-
27	BCR	I	101	-	-	3/29/63/63	0/2/2/2
22	CLA	9	603	20	1/1/10/20	3/10/88/115	-
21	CHL	W	607	-	3/3/15/26	3/8/104/137	-
21	CHL	U	606	-	3/3/16/26	5/15/113/137	-
22	CLA	A	812	-	1/1/15/20	10/37/115/115	-
22	CLA	4	604	-	1/1/13/20	8/25/103/115	-
22	CLA	A	810	6	1/1/15/20	15/37/115/115	-
31	LMT	K	208	-	-	7/21/61/61	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	1	612	2	1/1/11/20	3/15/93/115	-
22	CLA	2	614	-	1/1/12/20	4/19/97/115	-
22	CLA	B	818	-	1/1/14/20	13/36/114/115	-
22	CLA	A	830	-	1/1/15/20	17/37/115/115	-
22	CLA	H	201	-	1/1/9/20	0/2/80/115	-
22	CLA	5	612	2	1/1/11/20	8/15/93/115	-
22	CLA	9	604	-	1/1/10/20	3/11/89/115	-
22	CLA	3	612	4	1/1/15/20	16/37/115/115	-
22	CLA	A	825	-	-	18/37/115/115	-
22	CLA	A	802	-	1/1/15/20	8/37/115/115	-
23	LUT	9	624	-	-	3/29/67/67	0/2/2/2
22	CLA	8	612	5	1/1/11/20	7/15/93/115	-
27	BCR	7	621	-	-	1/29/63/63	0/2/2/2
21	CHL	9	606	-	3/3/15/26	1/13/111/137	-
22	CLA	1	614	-	1/1/12/20	10/17/95/115	-
27	BCR	K	202	-	-	4/29/63/63	0/2/2/2
22	CLA	A	811	-	1/1/13/20	8/25/103/115	-
22	CLA	B	831	-	1/1/15/20	15/37/115/115	-
22	CLA	A	816	-	1/1/11/20	5/13/91/115	-

The worst 5 of 2228 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	5	609	CLA	C4B-NB	8.61	1.42	1.35
22	7	609	CLA	C4B-NB	8.58	1.42	1.35
22	5	612	CLA	C4B-NB	8.57	1.42	1.35
22	1	609	CLA	C4B-NB	8.37	1.42	1.35
22	9	603	CLA	C4B-NB	8.35	1.42	1.35

The worst 5 of 3987 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	V	2622	XAT	O4-C5-C4	-29.06	91.55	113.38
24	4	620	XAT	O4-C5-C4	-27.98	92.37	113.38
24	6	620	XAT	O4-C5-C4	-26.00	93.85	113.38
24	7	619	XAT	O24-C25-C24	-25.27	94.40	113.38
24	6	620	XAT	O24-C25-C24	-22.02	96.84	113.38

5 of 357 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
21	U	601	CHL	NC
21	U	601	CHL	NA
21	U	601	CHL	ND
21	U	605	CHL	NC
21	U	605	CHL	NA

5 of 2687 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
21	U	601	CHL	CAD-CBD-CGD-O2D
21	U	607	CHL	C1A-C2A-CAA-CBA
21	U	607	CHL	C3A-C2A-CAA-CBA
21	U	608	CHL	CHA-CBD-CGD-O2D
21	U	609	CHL	C1A-C2A-CAA-CBA

There are no ring outliers.

259 monomers are involved in 569 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
28	G	202	LMG	2	0
27	A	856	BCR	5	0
22	V	613	CLA	2	0
22	7	610	CLA	1	0
22	V	602	CLA	4	0
22	5	602	CLA	2	0
22	B	827	CLA	1	0
23	1	617	LUT	3	0
27	B	847	BCR	4	0
22	A	841	CLA	1	0
22	U	604	CLA	2	0
21	4	606	CHL	3	0
22	5	609	CLA	6	0
22	3	604	CLA	2	0
22	A	820	CLA	1	0
21	6	607	CHL	1	0
22	B	832	CLA	1	0
22	U	614	CLA	3	0
22	B	814	CLA	1	0
22	7	609	CLA	5	0
22	4	609	CLA	2	0
27	A	851	BCR	12	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
23	V	2620	LUT	3	0
22	A	843	CLA	1	0
22	1	603	CLA	1	0
22	B	839	CLA	3	0
22	3	610	CLA	1	0
22	B	825	CLA	1	0
22	7	606	CLA	2	0
22	3	617	CLA	1	0
23	4	619	LUT	3	0
21	8	608	CHL	2	0
27	A	849	BCR	1	0
23	U	2620	LUT	3	0
22	A	826	CLA	1	0
22	7	612	CLA	1	0
25	U	2623	NEX	3	0
23	W	2620	LUT	3	0
23	9	620	LUT	5	0
23	6	619	LUT	2	0
23	5	617	LUT	3	0
22	8	602	CLA	4	0
22	W	602	CLA	2	0
21	V	605	CHL	1	0
22	F	303	CLA	1	0
21	6	618	CHL	2	0
22	A	806	CLA	2	0
22	8	610	CLA	2	0
22	5	613	CLA	2	0
24	4	620	XAT	11	0
22	1	602	CLA	1	0
21	W	609	CHL	1	0
22	A	829	CLA	3	0
21	9	608	CHL	4	0
22	B	828	CLA	3	0
22	B	812	CLA	1	0
24	8	620	XAT	4	0
22	A	822	CLA	1	0
22	2	604	CLA	2	0
22	A	817	CLA	1	0
21	8	618	CHL	2	0
21	U	609	CHL	3	0
22	B	830	CLA	1	0
26	U	2630	LHG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	9	609	CLA	3	0
22	3	603	CLA	3	0
22	B	838	CLA	1	0
21	2	606	CHL	3	0
22	B	802	CLA	2	0
23	W	2621	LUT	3	0
27	B	801	BCR	5	0
22	B	815	CLA	2	0
22	B	833	CLA	2	0
22	5	603	CLA	2	0
21	6	601	CHL	1	0
22	B	816	CLA	1	0
22	6	611	CLA	1	0
24	2	620	XAT	6	0
22	9	612	CLA	1	0
23	U	2621	LUT	5	0
21	1	601	CHL	1	0
25	9	623	NEX	3	0
21	V	606	CHL	1	0
21	U	608	CHL	1	0
22	1	606	CLA	3	0
22	B	806	CLA	5	0
22	B	805	CLA	2	0
24	1	618	XAT	5	0
22	A	832	CLA	1	0
22	5	606	CLA	2	0
26	4	630	LHG	3	0
22	A	837	CLA	4	0
24	7	619	XAT	3	0
22	6	604	CLA	2	0
22	7	607	CLA	2	0
22	B	821	CLA	1	0
22	8	601	CLA	1	0
22	3	607	CLA	1	0
22	1	611	CLA	4	0
22	5	604	CLA	3	0
21	V	609	CHL	2	0
21	5	601	CHL	4	0
22	L	304	CLA	1	0
22	V	610	CLA	2	0
23	9	621	LUT	2	0
21	6	608	CHL	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	V	614	CLA	1	0
22	3	615	CLA	2	0
22	B	819	CLA	2	0
22	8	603	CLA	2	0
22	6	603	CLA	2	0
22	6	612	CLA	1	0
21	4	608	CHL	3	0
22	A	839	CLA	1	0
24	3	619	XAT	6	0
22	B	836	CLA	1	0
27	L	306	BCR	5	0
22	5	610	CLA	1	0
22	1	610	CLA	1	0
22	3	606	CLA	2	0
22	K	201	CLA	2	0
22	B	809	CLA	1	0
21	8	607	CHL	2	0
22	8	613	CLA	3	0
22	4	614	CLA	1	0
27	2	621	BCR	5	0
22	A	809	CLA	5	0
25	V	2623	NEX	2	0
22	L	303	CLA	2	0
21	6	606	CHL	1	0
22	F	301	CLA	2	0
22	4	601	CLA	1	0
22	6	610	CLA	5	0
22	2	610	CLA	1	0
22	5	611	CLA	1	0
22	B	840	CLA	2	0
24	5	618	XAT	8	0
22	F	304	CLA	2	0
21	4	618	CHL	1	0
22	B	822	CLA	2	0
27	7	620	BCR	7	0
22	3	602	CLA	2	0
22	A	854	CLA	4	0
22	B	841	CLA	1	0
27	B	844	BCR	3	0
27	M	2001	BCR	5	0
22	1	609	CLA	2	0
22	A	803	CLA	7	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
21	W	606	CHL	2	0
21	2	608	CHL	3	0
27	B	848	BCR	1	0
22	A	835	CLA	1	0
22	3	613	CLA	1	0
22	B	804	CLA	3	0
23	V	2621	LUT	3	0
22	4	603	CLA	1	0
22	B	824	CLA	3	0
23	2	619	LUT	4	0
27	8	621	BCR	7	0
27	K	205	BCR	4	0
22	8	614	CLA	1	0
27	L	305	BCR	4	0
22	4	613	CLA	1	0
22	B	808	CLA	1	0
22	U	603	CLA	1	0
22	4	602	CLA	2	0
22	A	828	CLA	4	0
22	U	610	CLA	4	0
22	9	602	CLA	1	0
21	5	607	CHL	1	0
23	8	619	LUT	2	0
22	8	604	CLA	2	0
22	7	602	CLA	7	0
22	A	827	CLA	2	0
26	6	630	LHG	2	0
27	4	621	BCR	12	0
26	1	630	LHG	2	0
23	7	618	LUT	2	0
22	W	611	CLA	1	0
24	6	620	XAT	7	0
22	B	803	CLA	5	0
22	O	2002	CLA	4	0
22	5	616	CLA	2	0
27	O	2004	BCR	5	0
21	2	602	CHL	1	0
27	B	843	BCR	4	0
22	U	602	CLA	2	0
22	K	204	CLA	2	0
27	3	621	BCR	5	0
27	J	102	BCR	4	0

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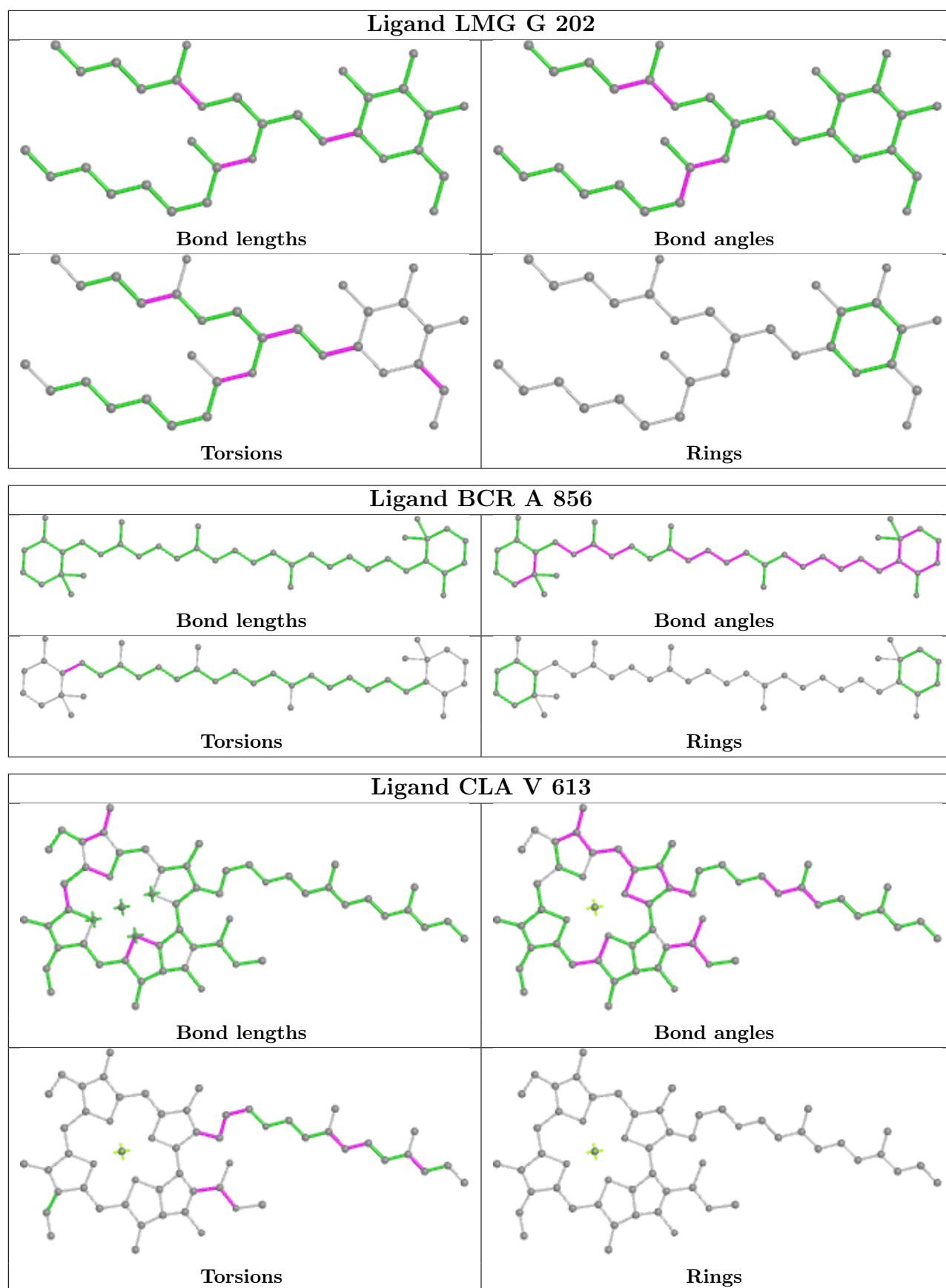
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27	B	1609	BCR	8	0
21	8	606	CHL	1	0
22	4	610	CLA	4	0
21	2	618	CHL	1	0
21	9	601	CHL	3	0
22	V	604	CLA	1	0
22	4	611	CLA	1	0
22	9	611	CLA	2	0
21	3	608	CHL	3	0
27	F	305	BCR	3	0
24	W	2622	XAT	1	0
27	1	619	BCR	1	0
22	9	613	CLA	1	0
22	A	801	CLA	5	0
21	W	608	CHL	1	0
22	7	613	CLA	2	0
22	A	808	CLA	2	0
22	B	817	CLA	1	0
21	2	601	CHL	2	0
22	W	610	CLA	1	0
22	2	613	CLA	2	0
27	6	621	BCR	5	0
22	6	609	CLA	3	0
21	9	607	CHL	2	0
22	A	836	CLA	2	0
27	G	205	BCR	4	0
21	1	607	CHL	1	0
27	L	301	BCR	4	0
21	U	607	CHL	4	0
27	A	852	BCR	9	0
22	3	609	CLA	4	0
22	U	613	CLA	1	0
22	8	609	CLA	5	0
26	W	2630	LHG	1	0
27	A	848	BCR	2	0
25	W	2623	NEX	3	0
22	B	823	CLA	4	0
22	W	604	CLA	1	0
21	9	605	CHL	2	0
22	B	813	CLA	3	0
22	7	603	CLA	1	0

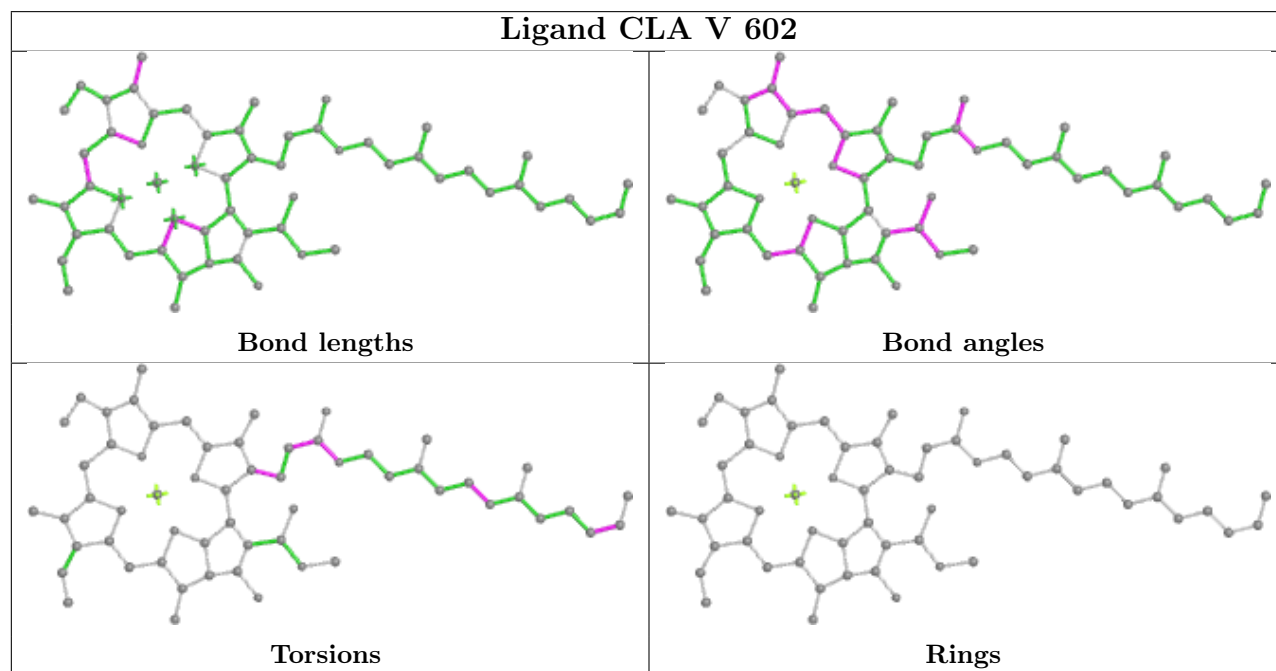
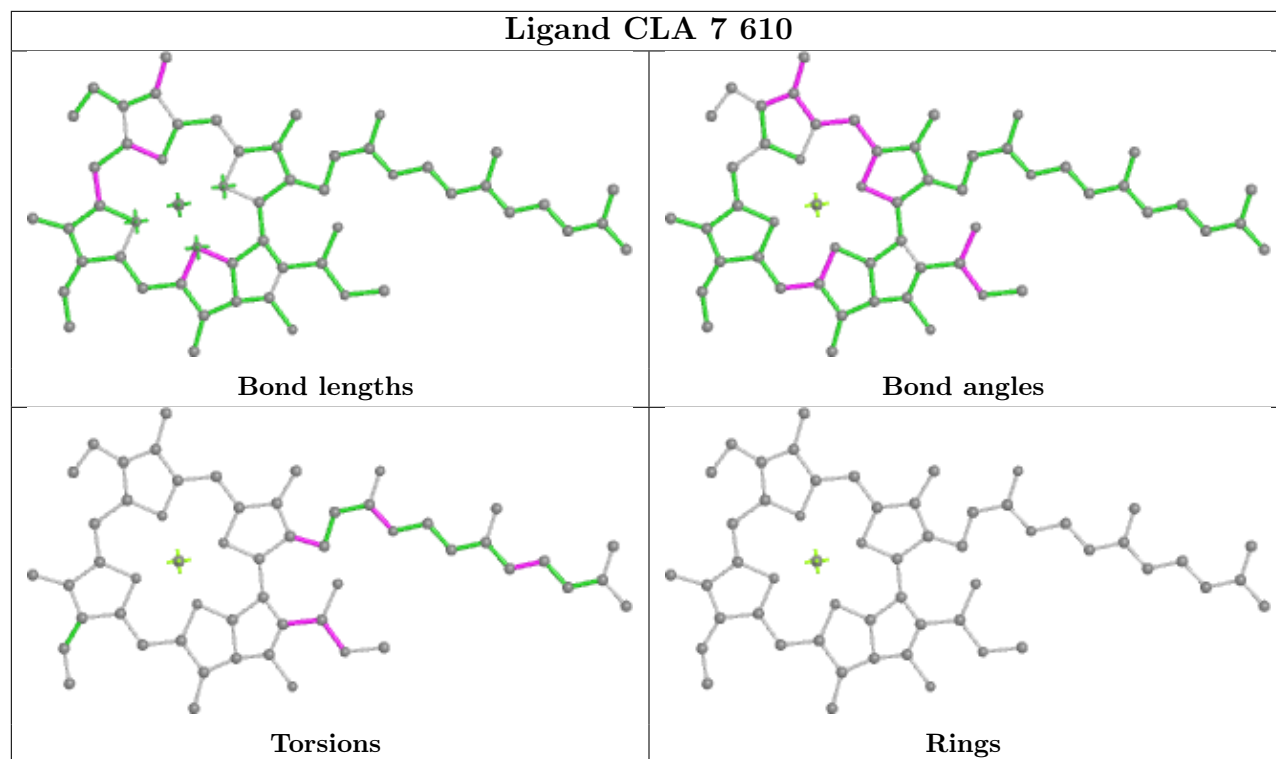
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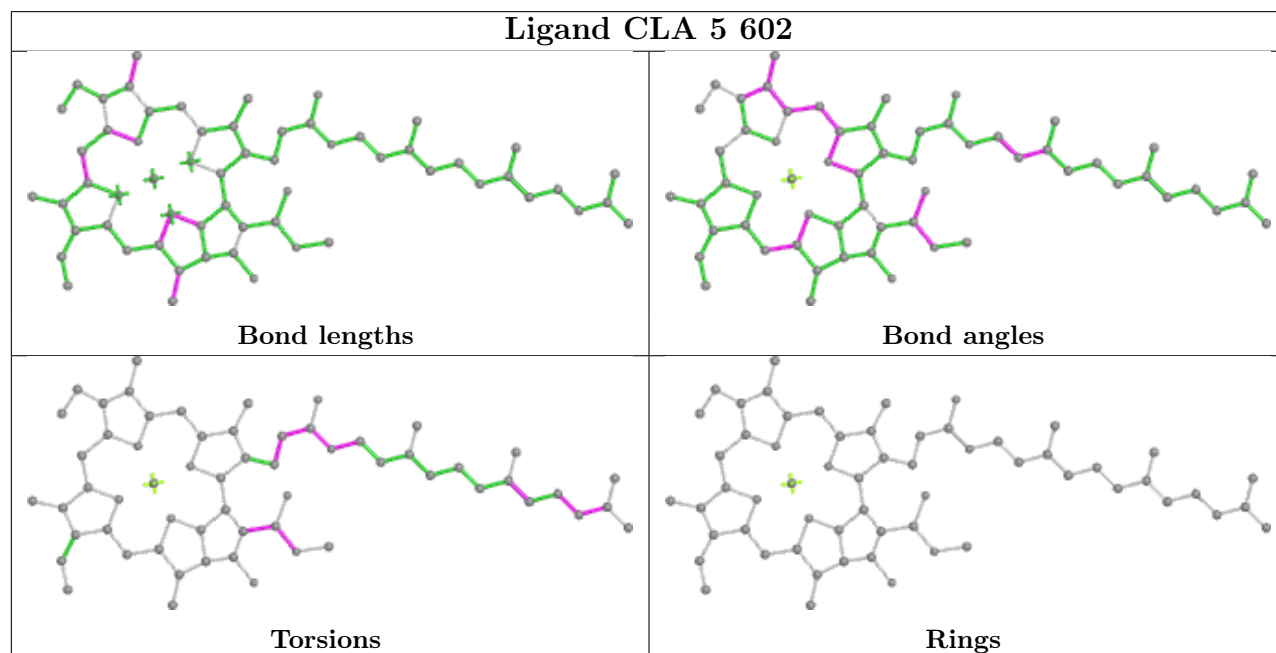
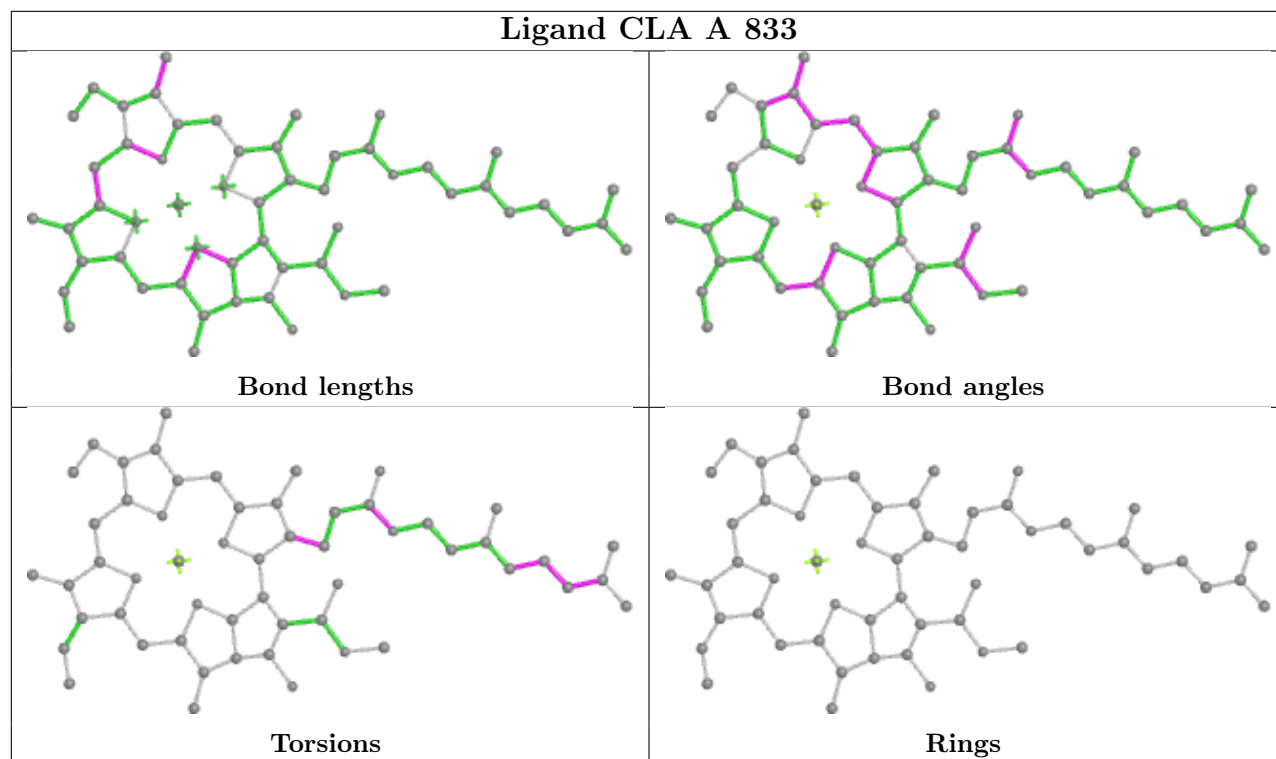
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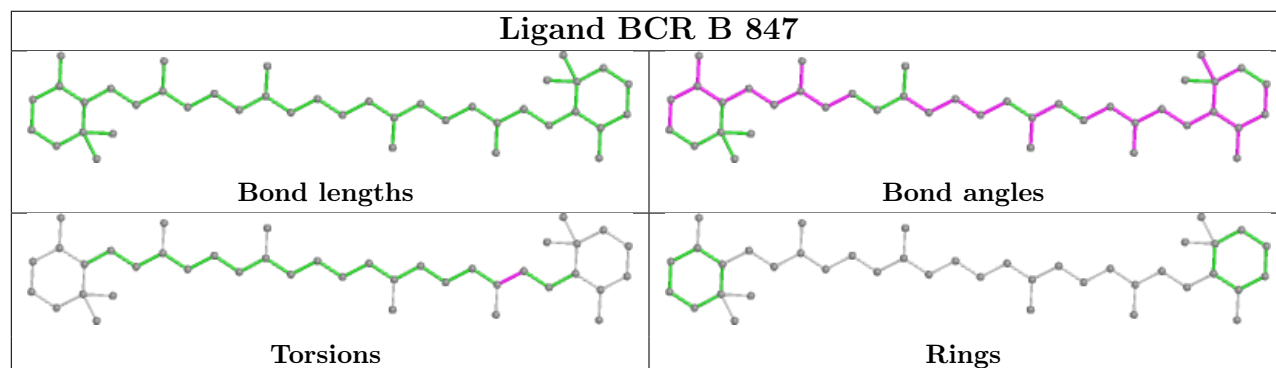
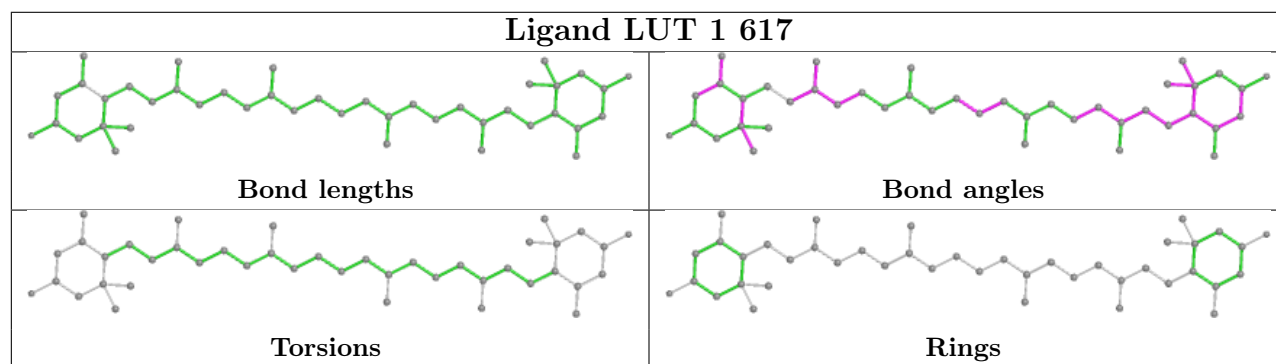
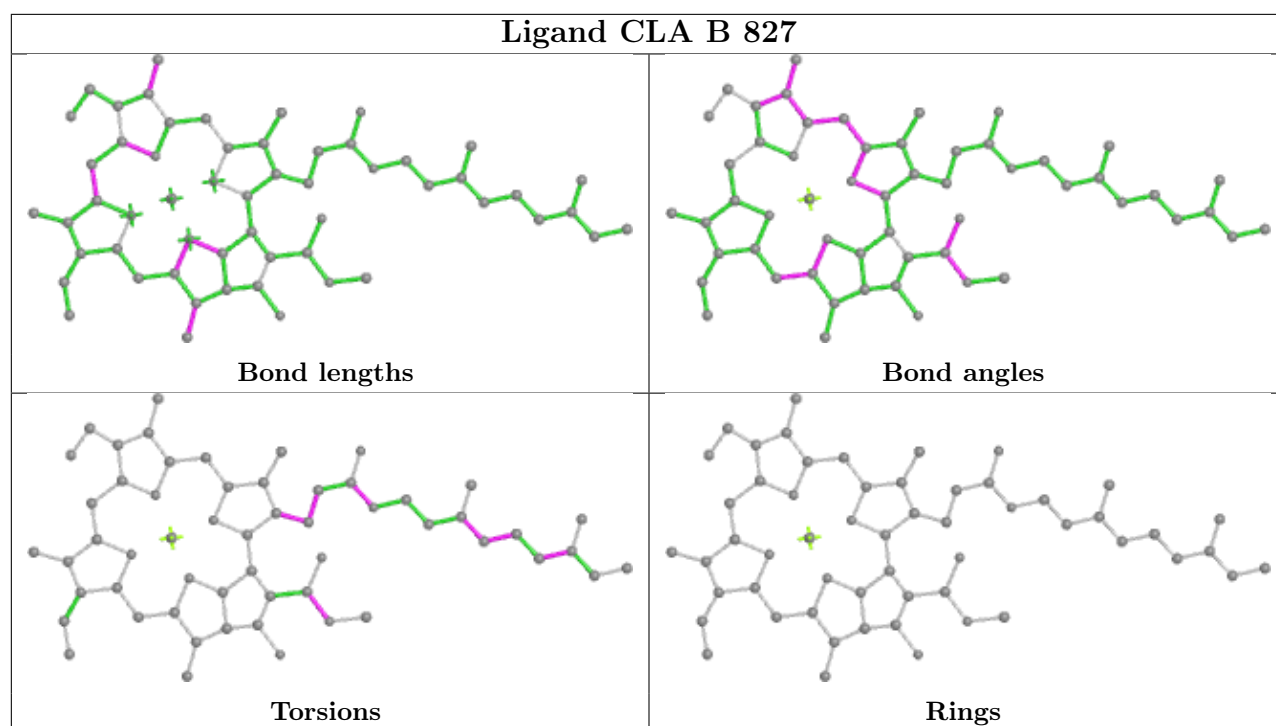
Mol	Chain	Res	Type	Clashes	Symm-Clashes
21	4	607	CHL	1	0
22	B	837	CLA	2	0
21	7	608	CHL	3	0
27	B	845	BCR	6	0
22	A	845	CLA	1	0
22	G	201	CLA	4	0
27	3	620	BCR	11	0
22	2	611	CLA	1	0
22	A	814	CLA	1	0
27	I	101	BCR	4	0
21	U	606	CHL	4	0
22	A	812	CLA	2	0
22	4	604	CLA	3	0
22	A	810	CLA	3	0
22	1	612	CLA	1	0
22	2	614	CLA	2	0
22	B	818	CLA	1	0
22	A	830	CLA	2	0
22	5	612	CLA	1	0
22	3	612	CLA	2	0
22	A	825	CLA	1	0
22	A	802	CLA	3	0
23	9	624	LUT	7	0
27	7	621	BCR	3	0
21	9	606	CHL	7	0
27	K	202	BCR	6	0
22	A	816	CLA	1	0

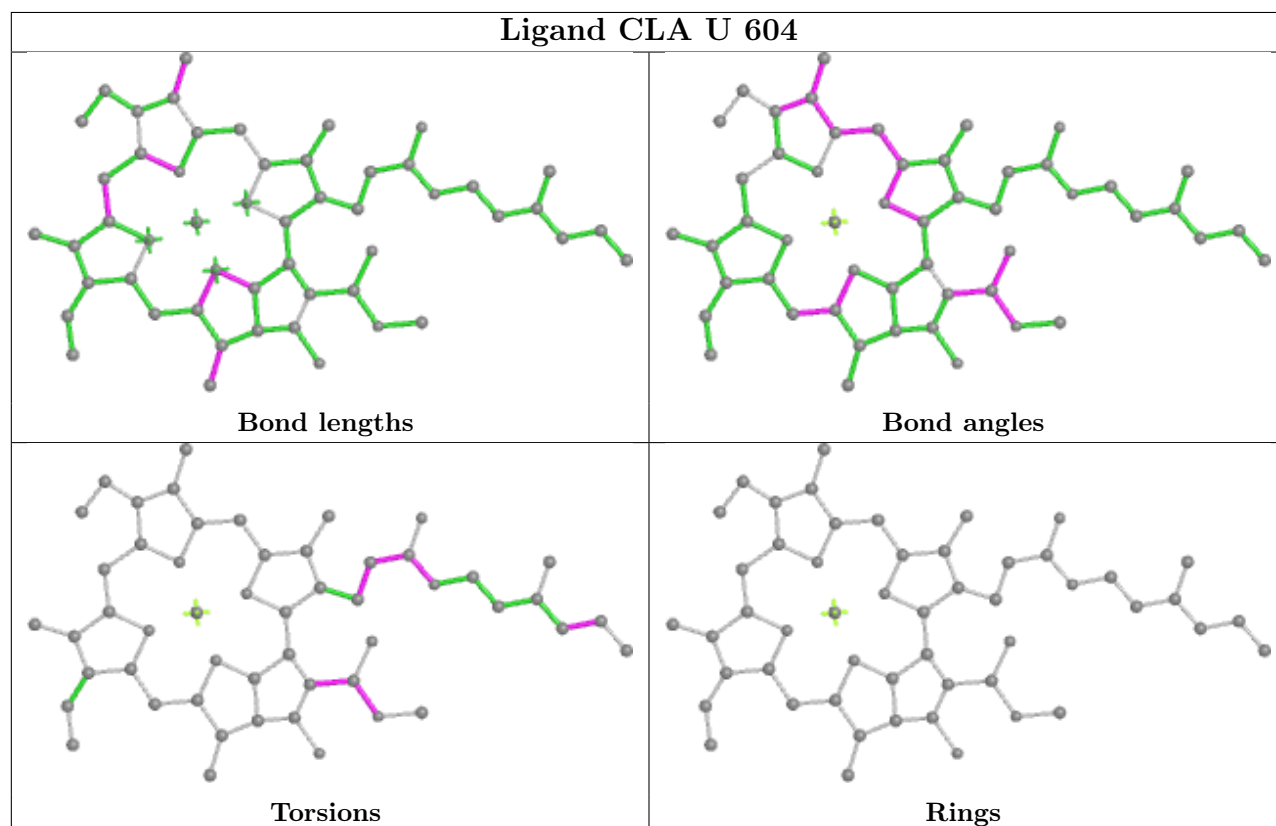
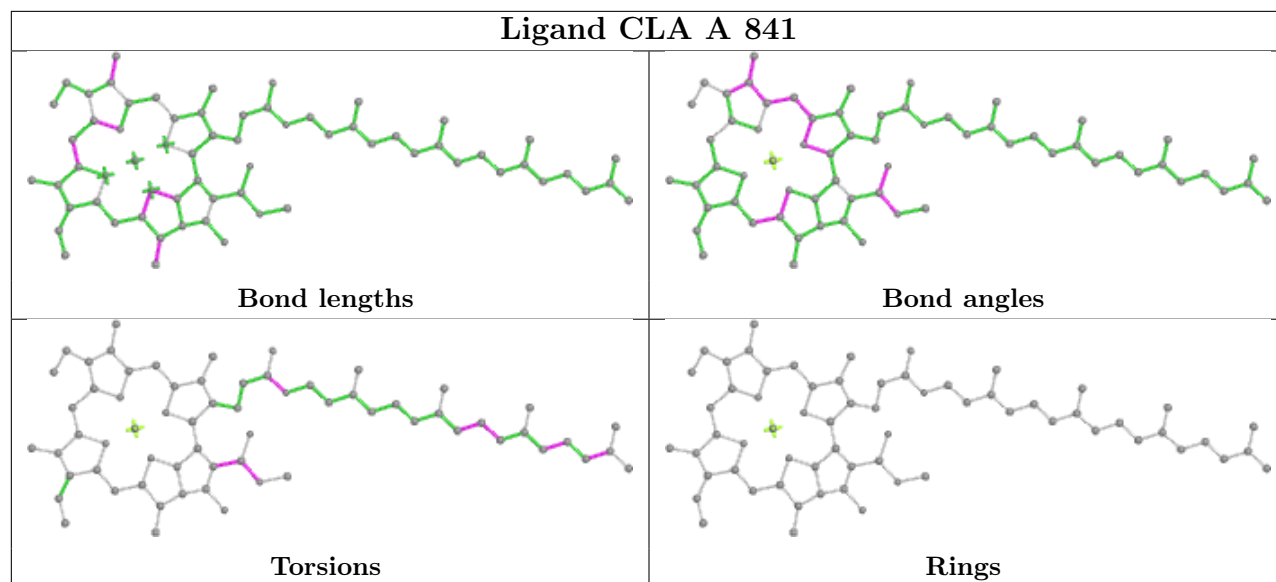
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

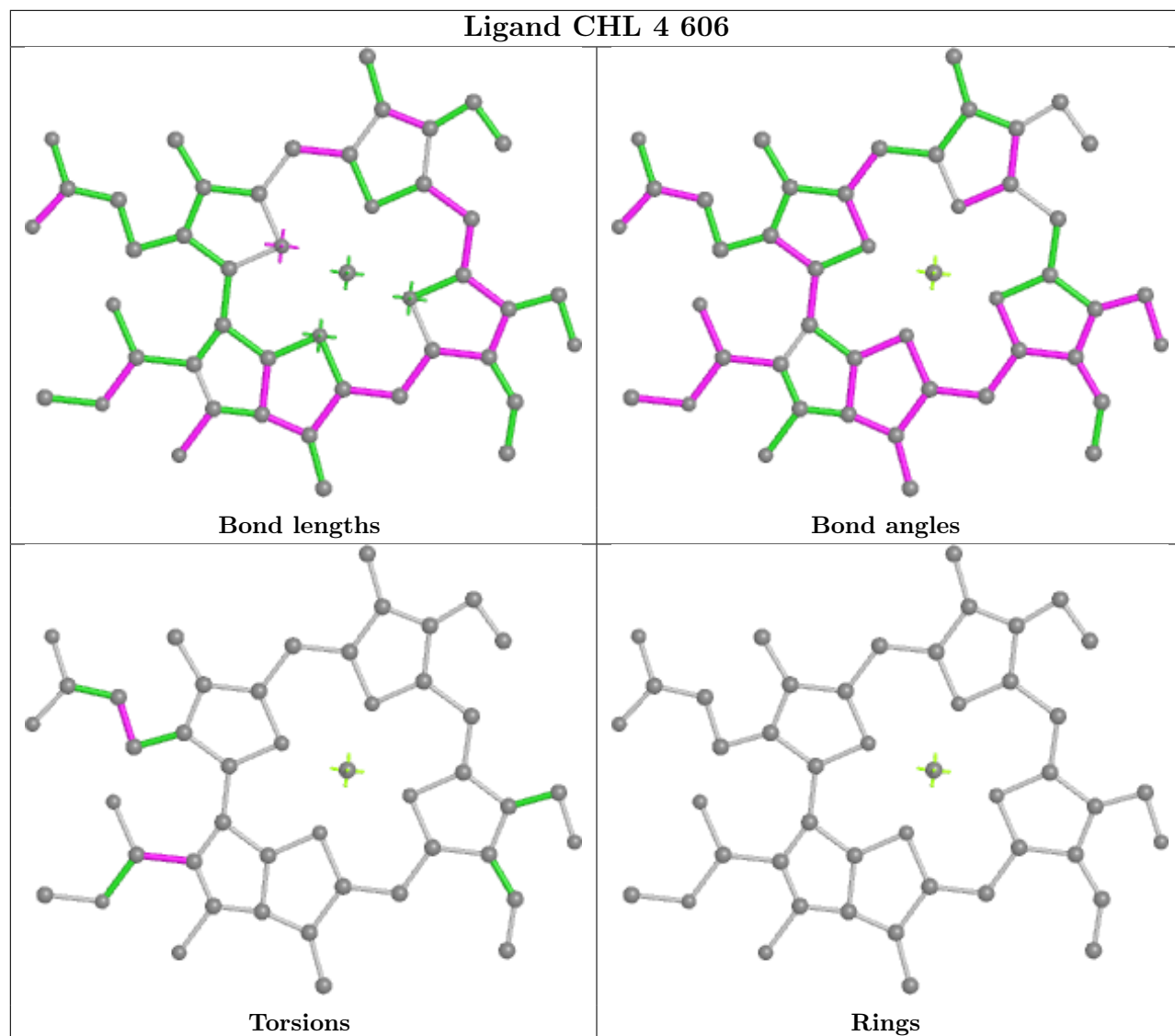




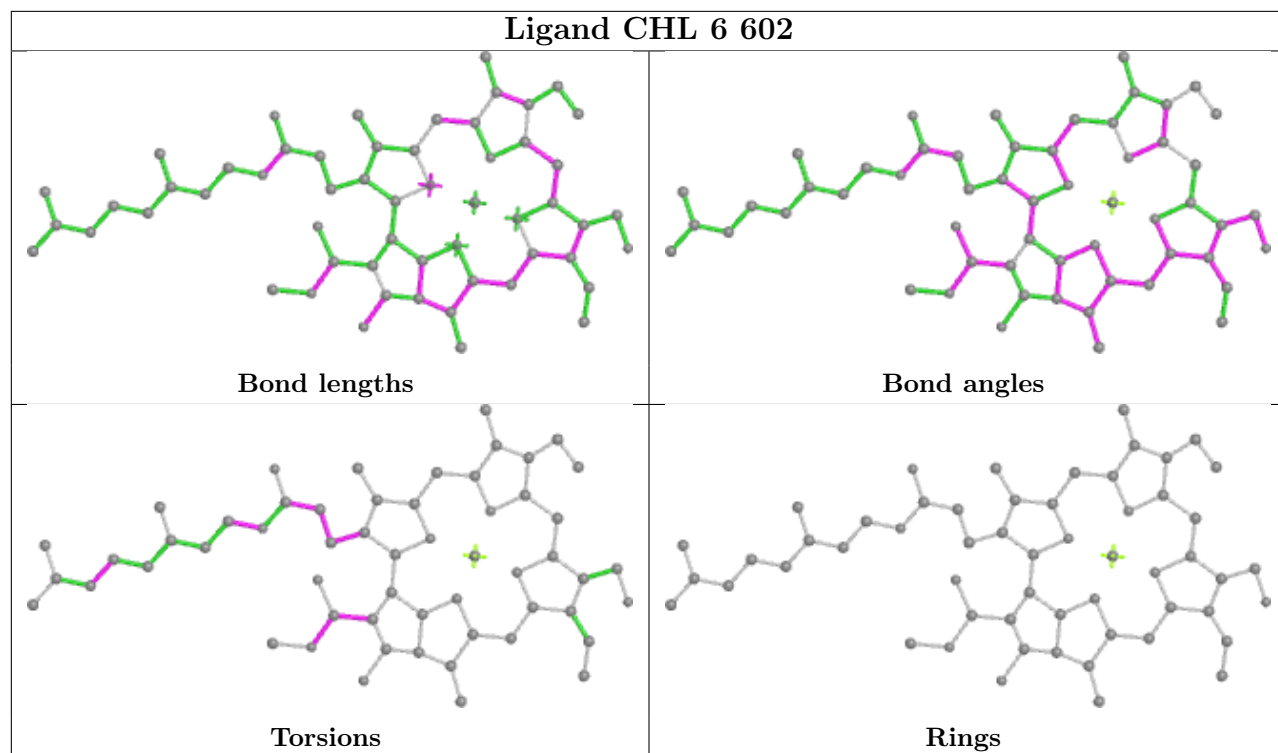


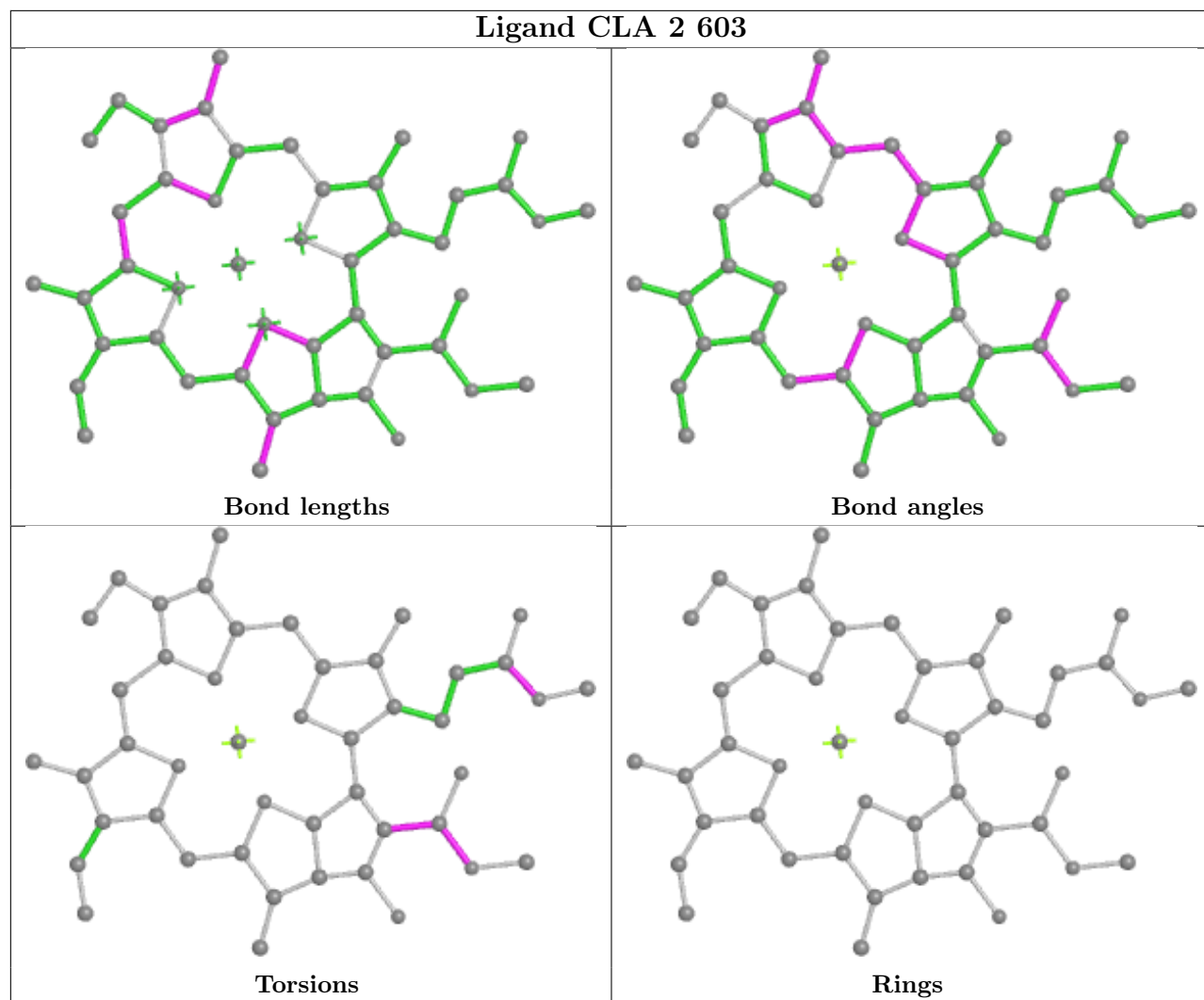


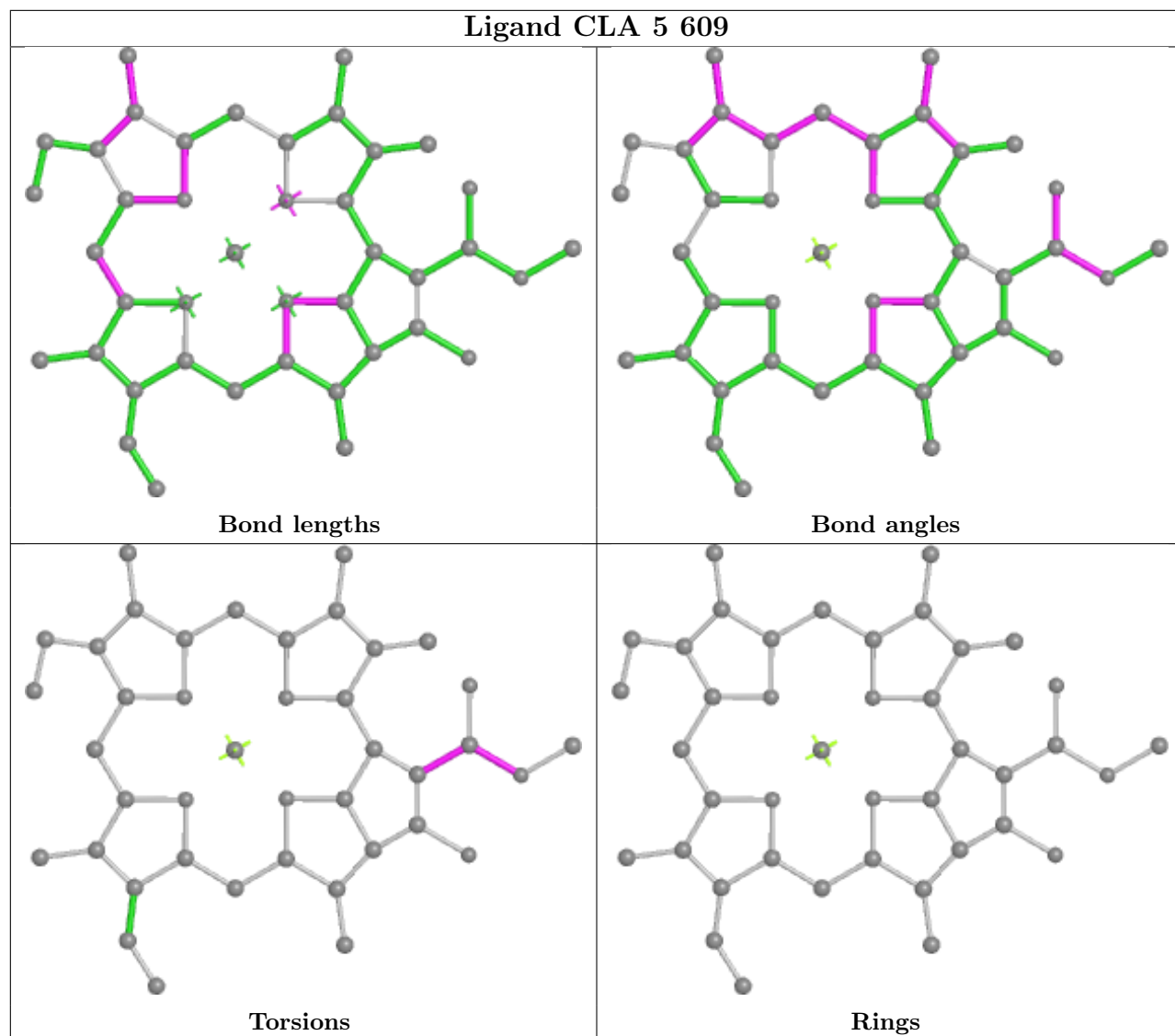


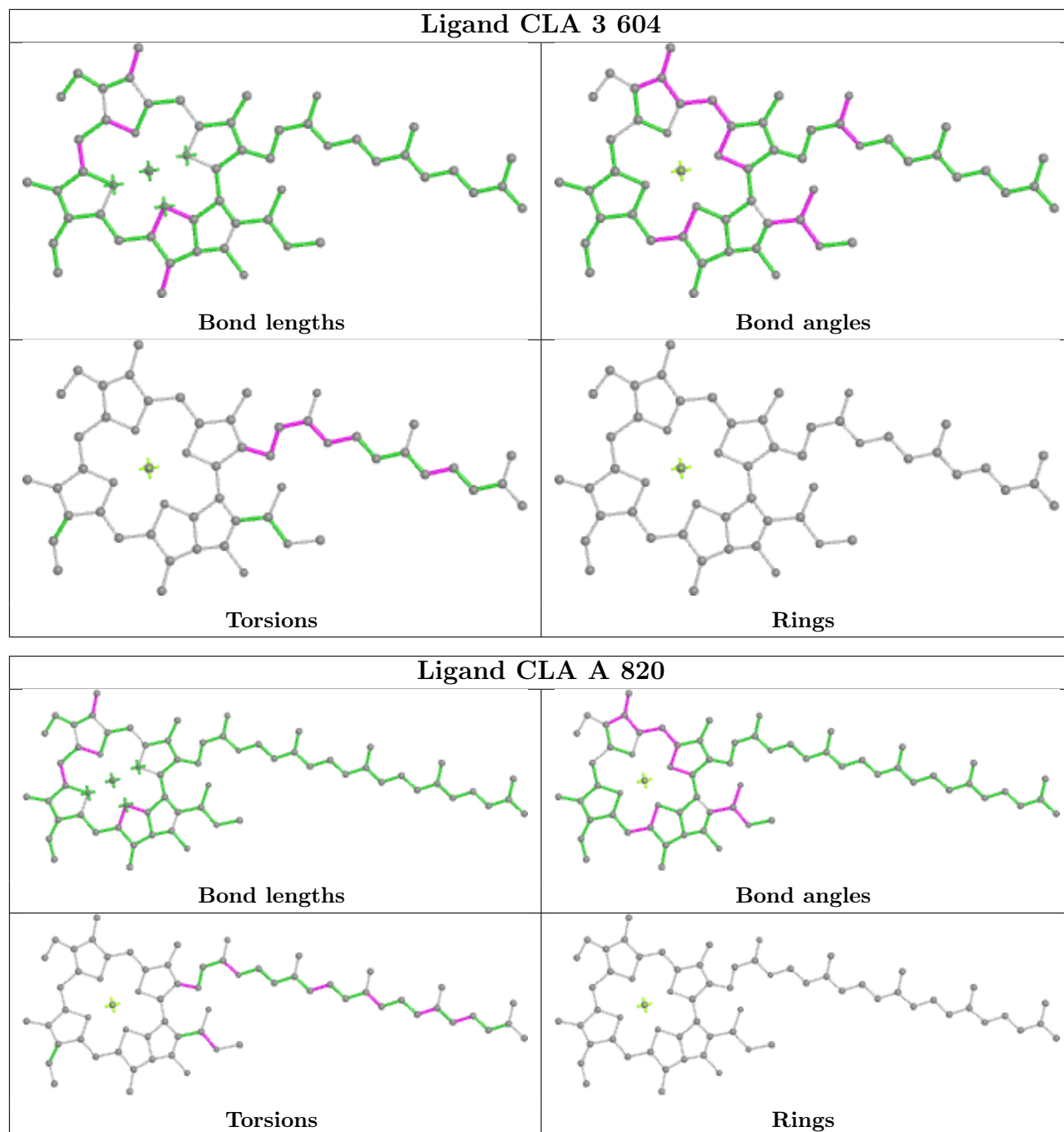


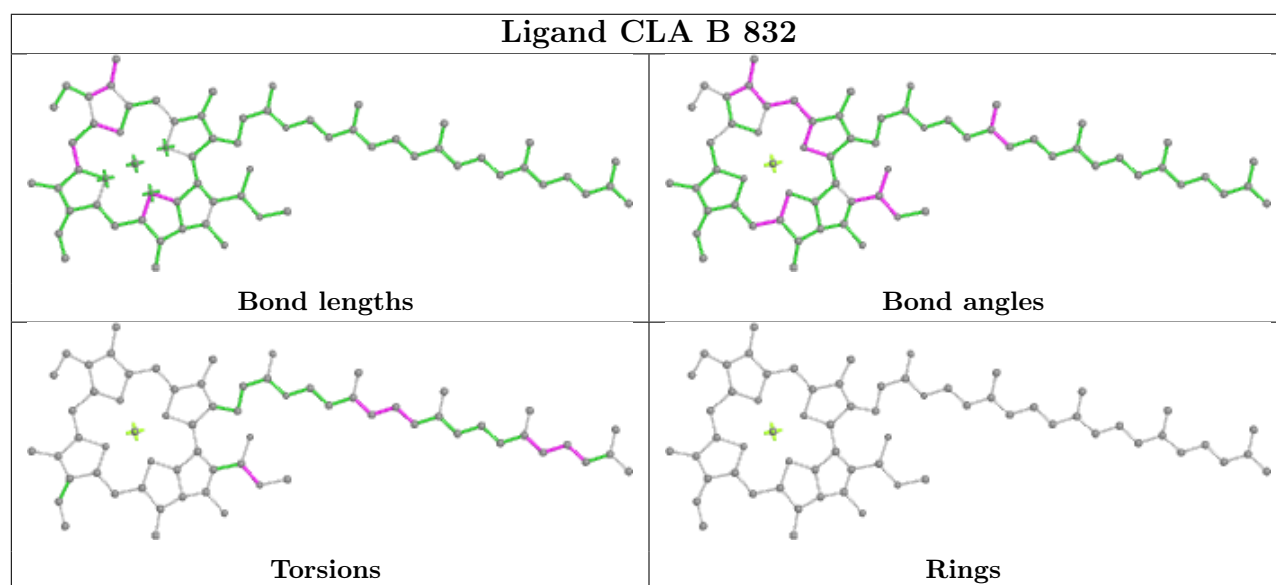
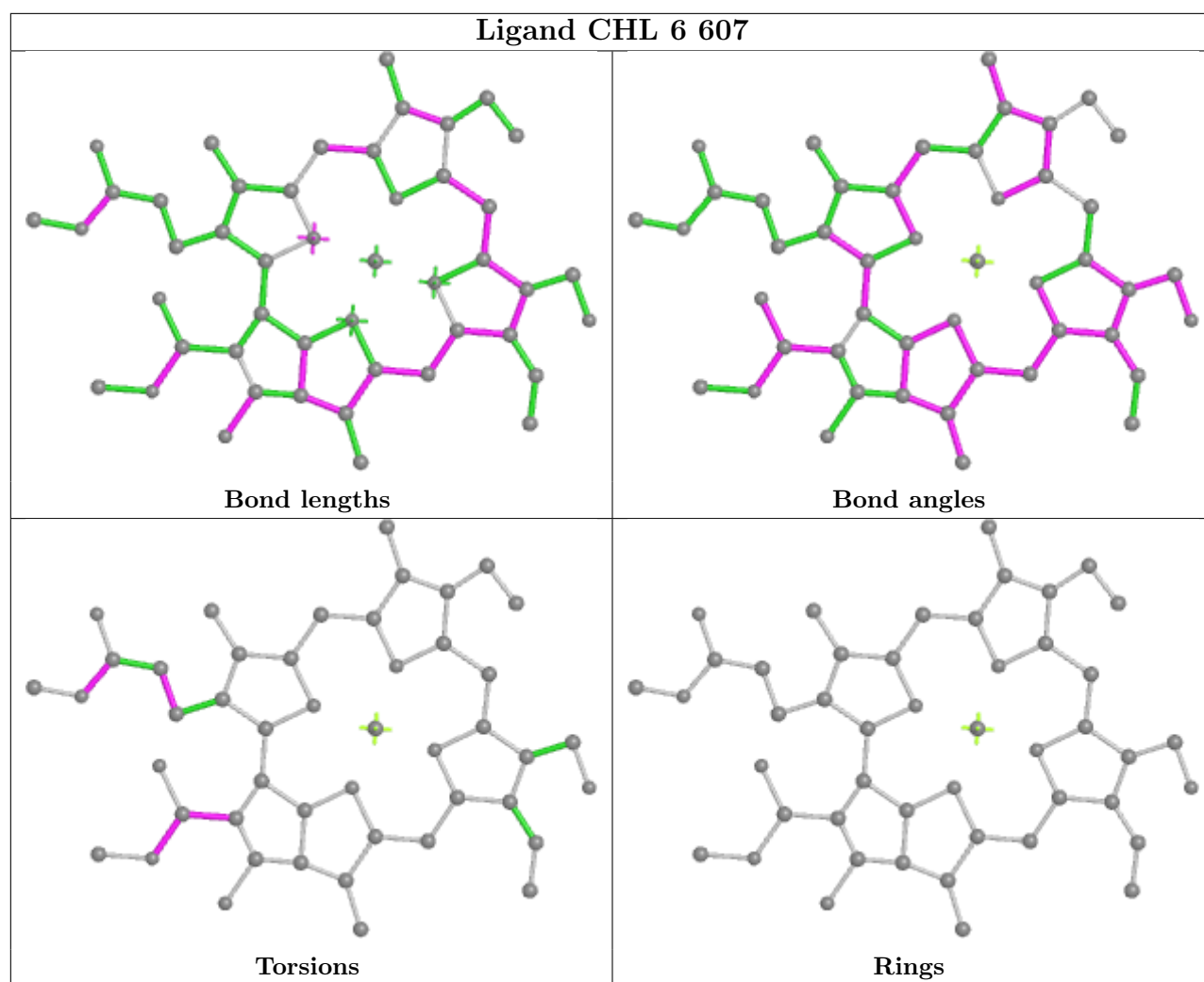


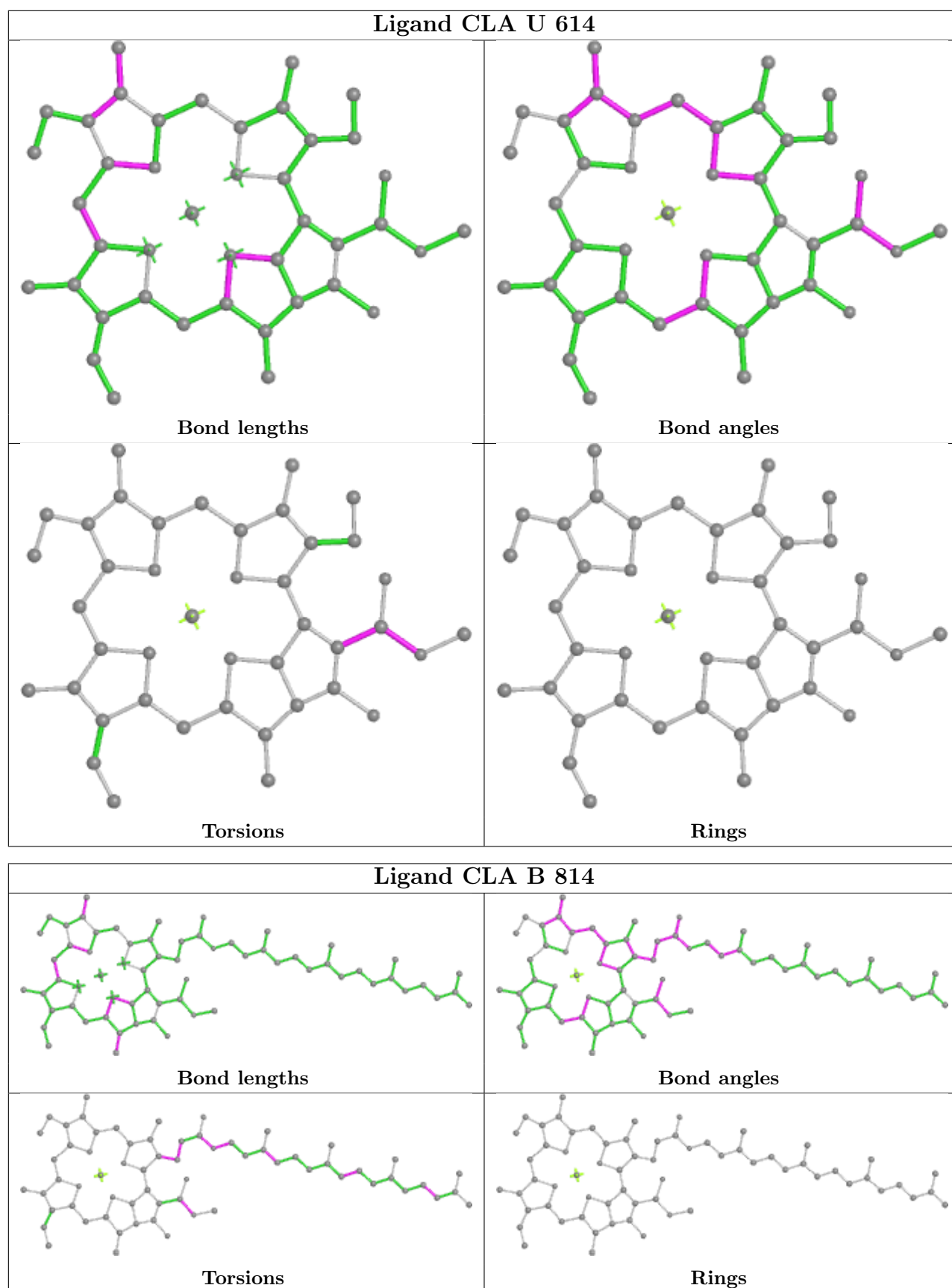


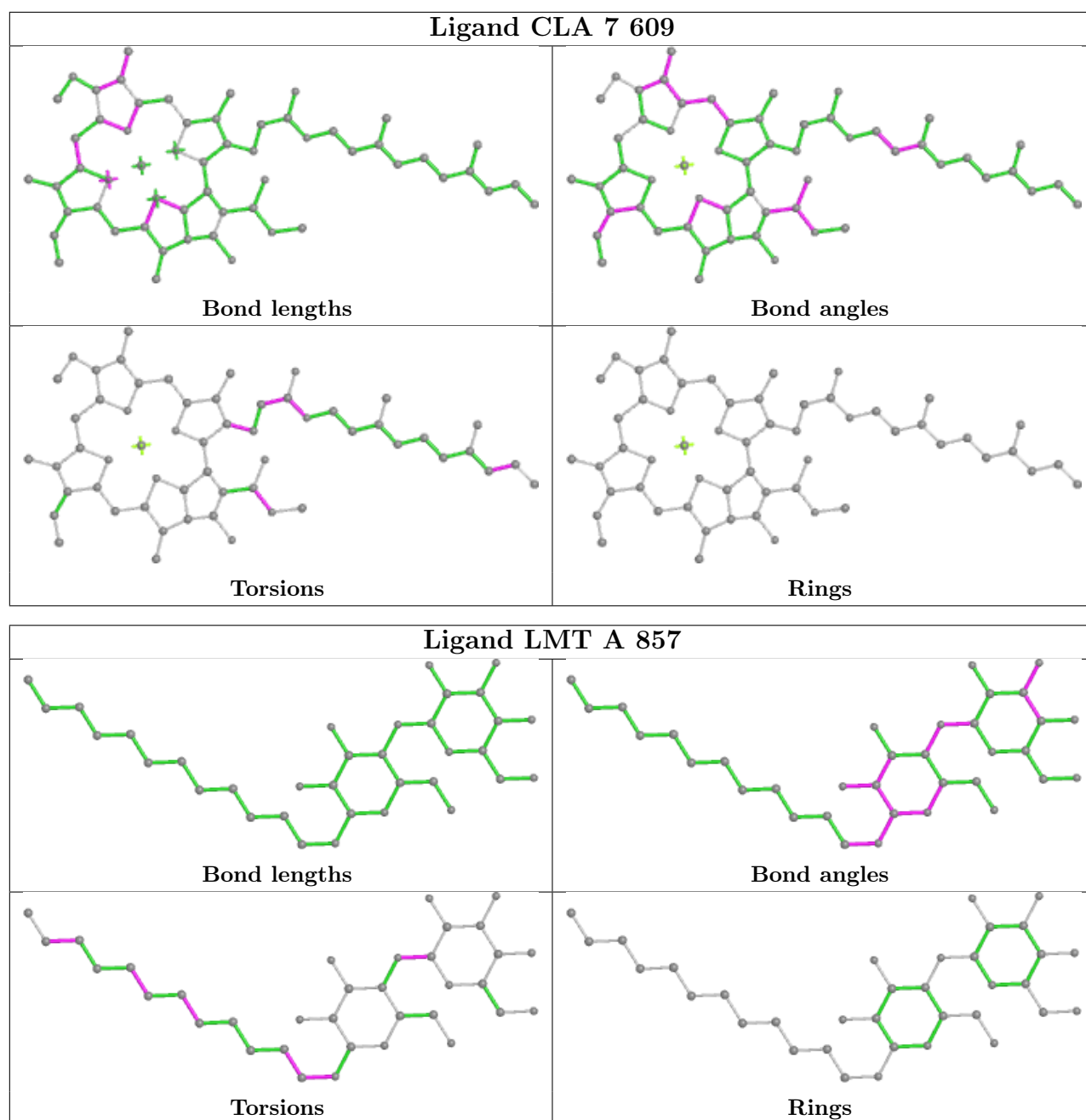


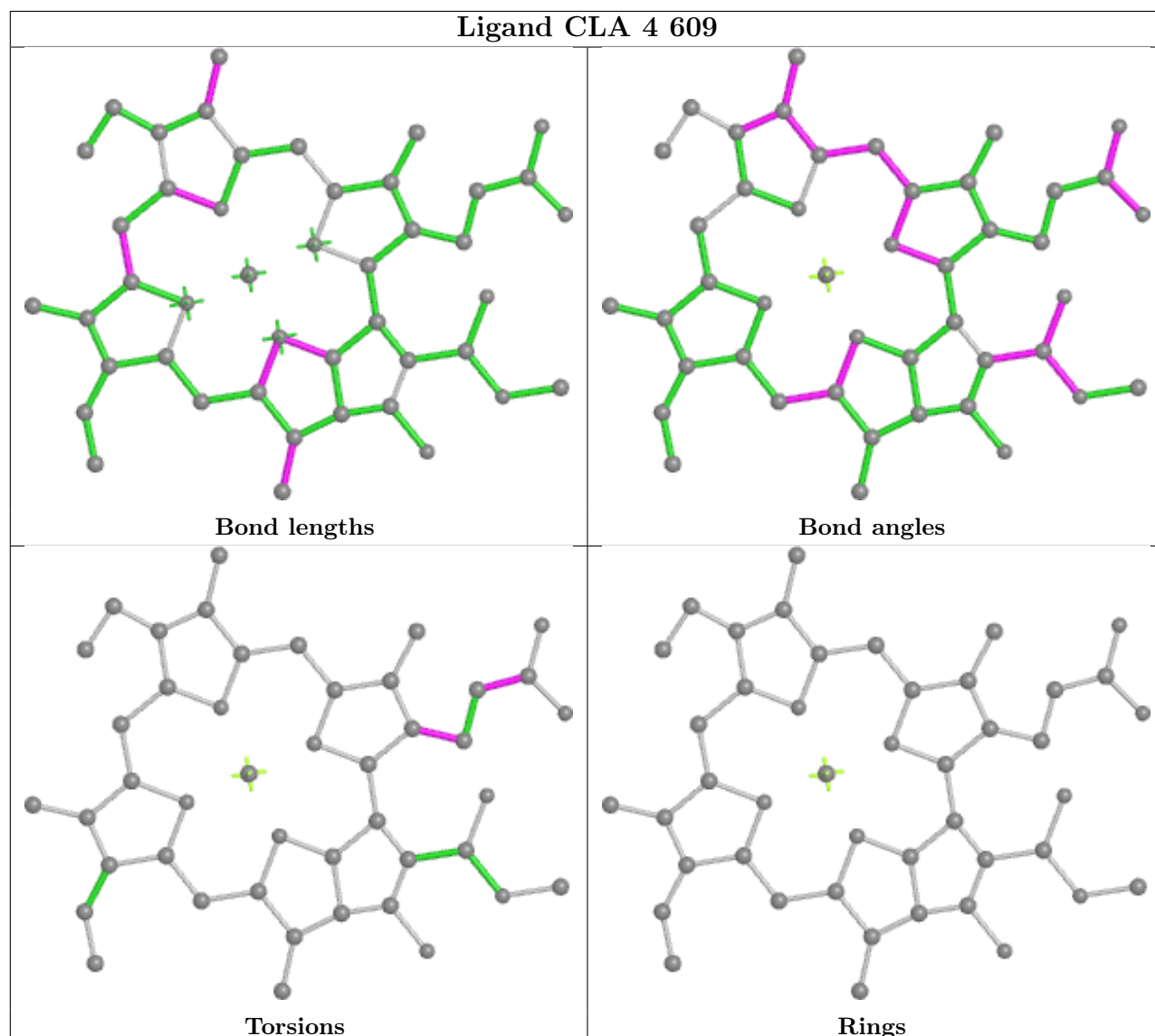
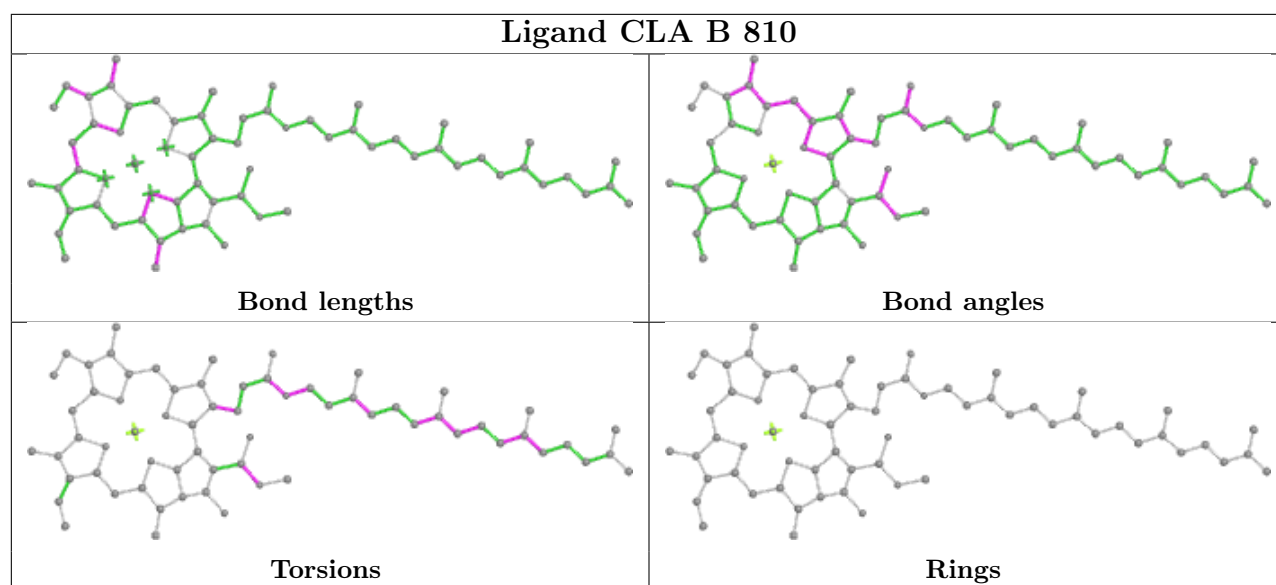




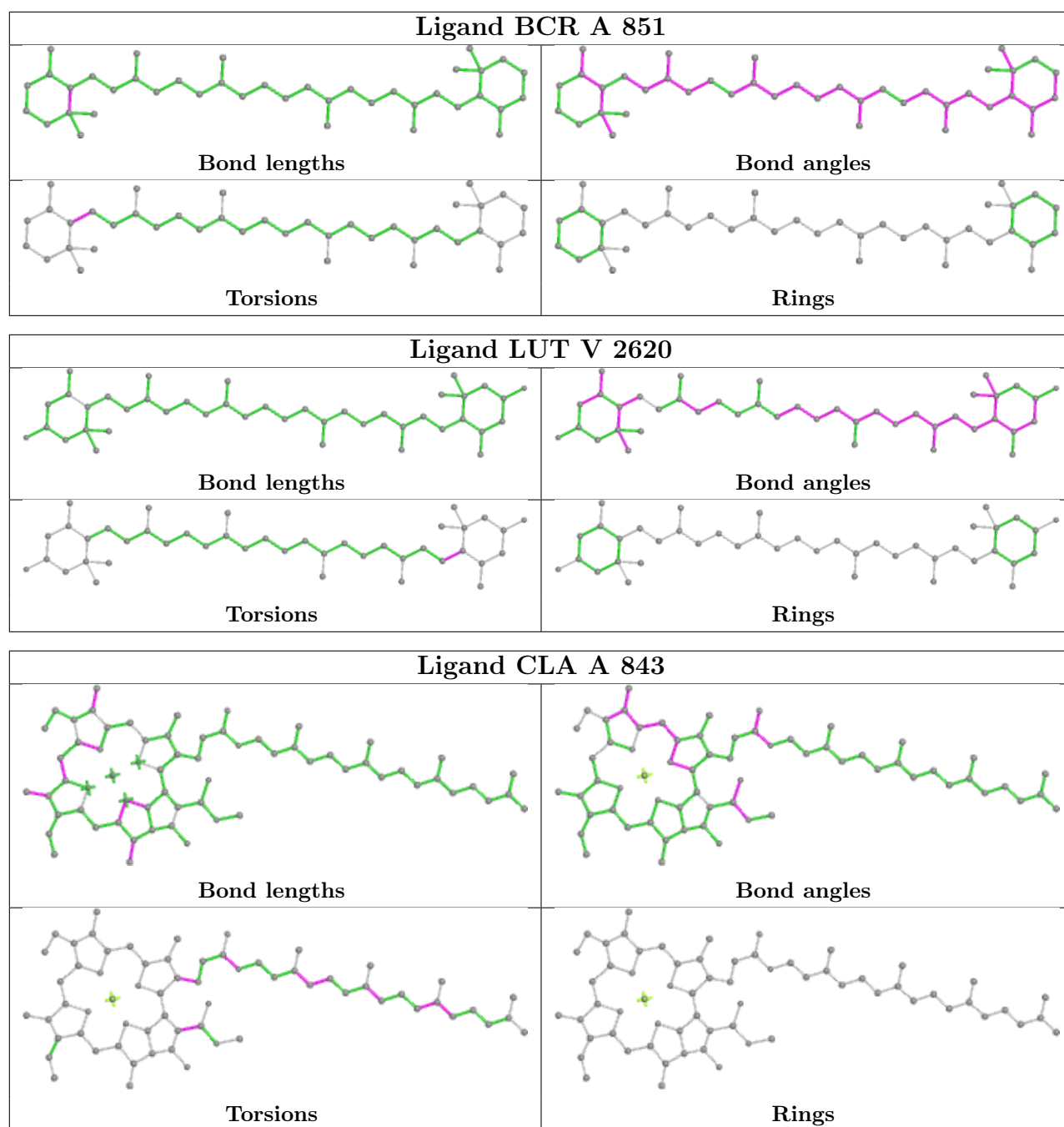


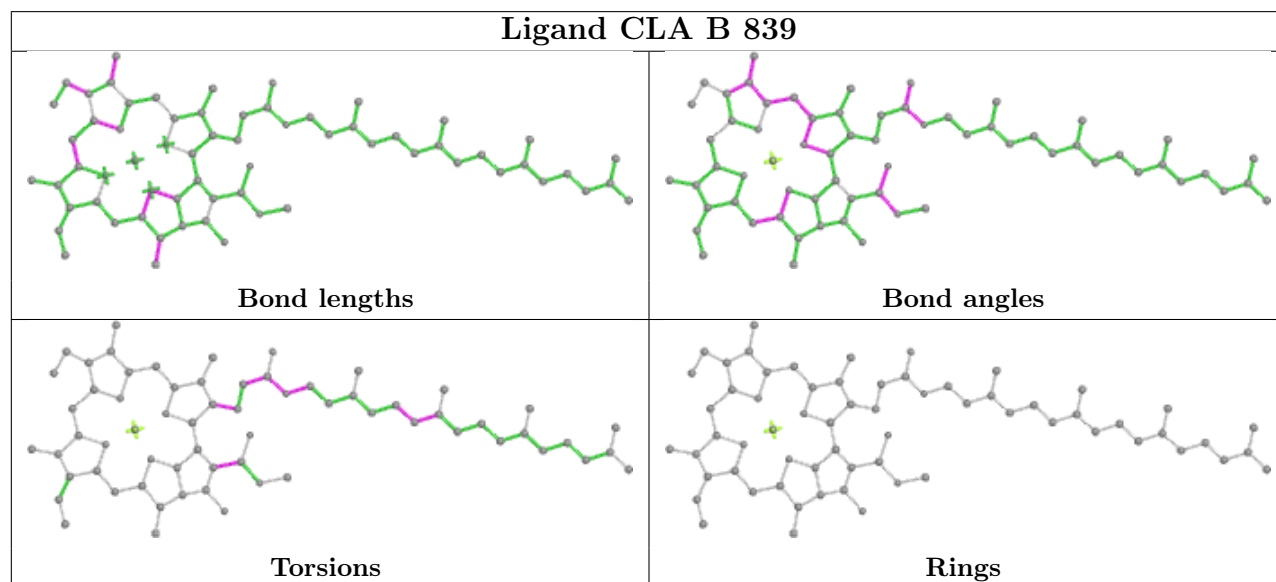
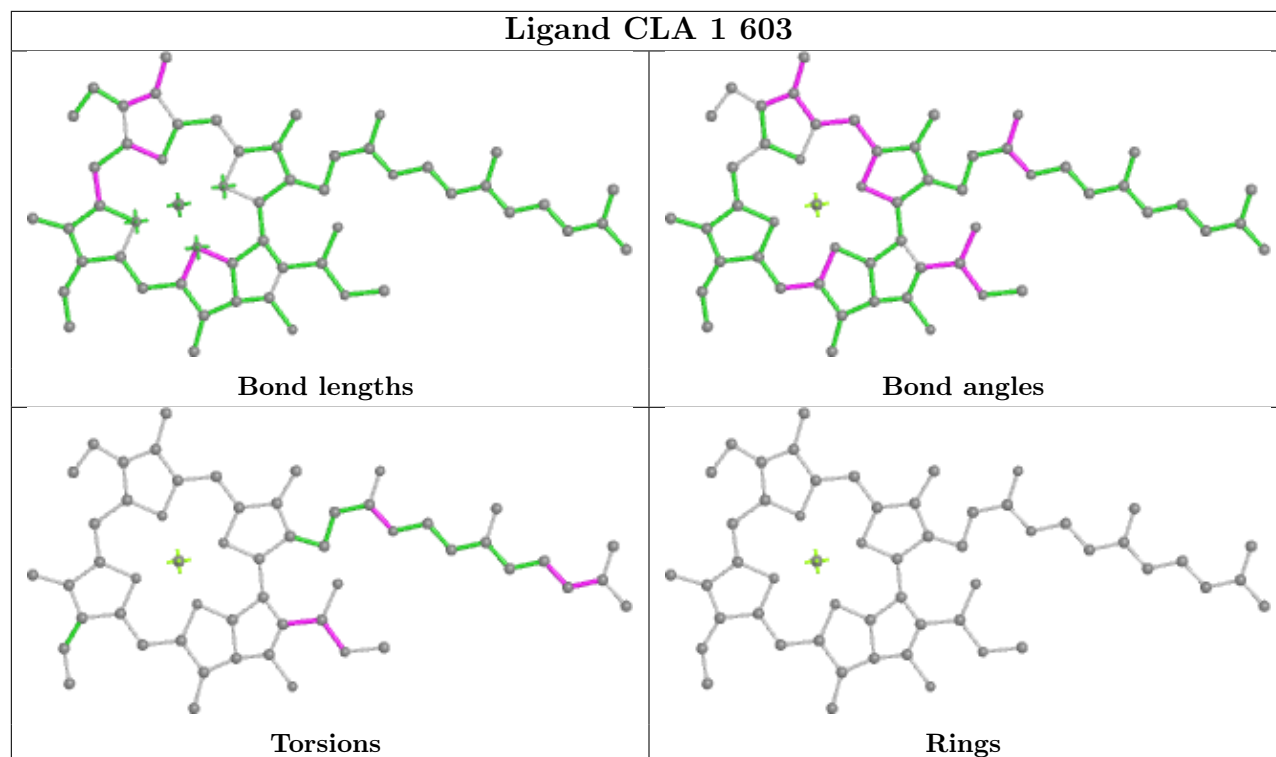


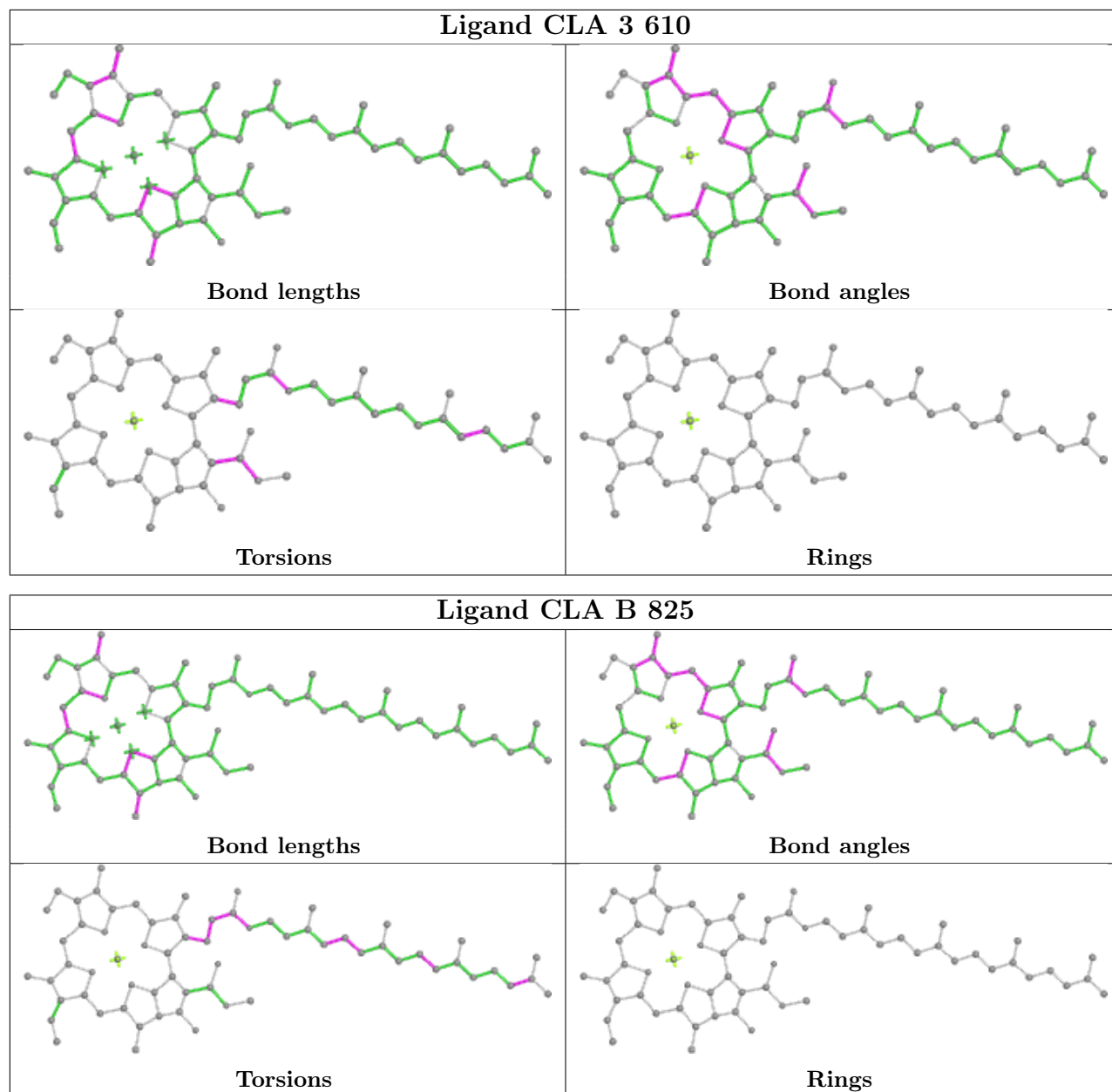




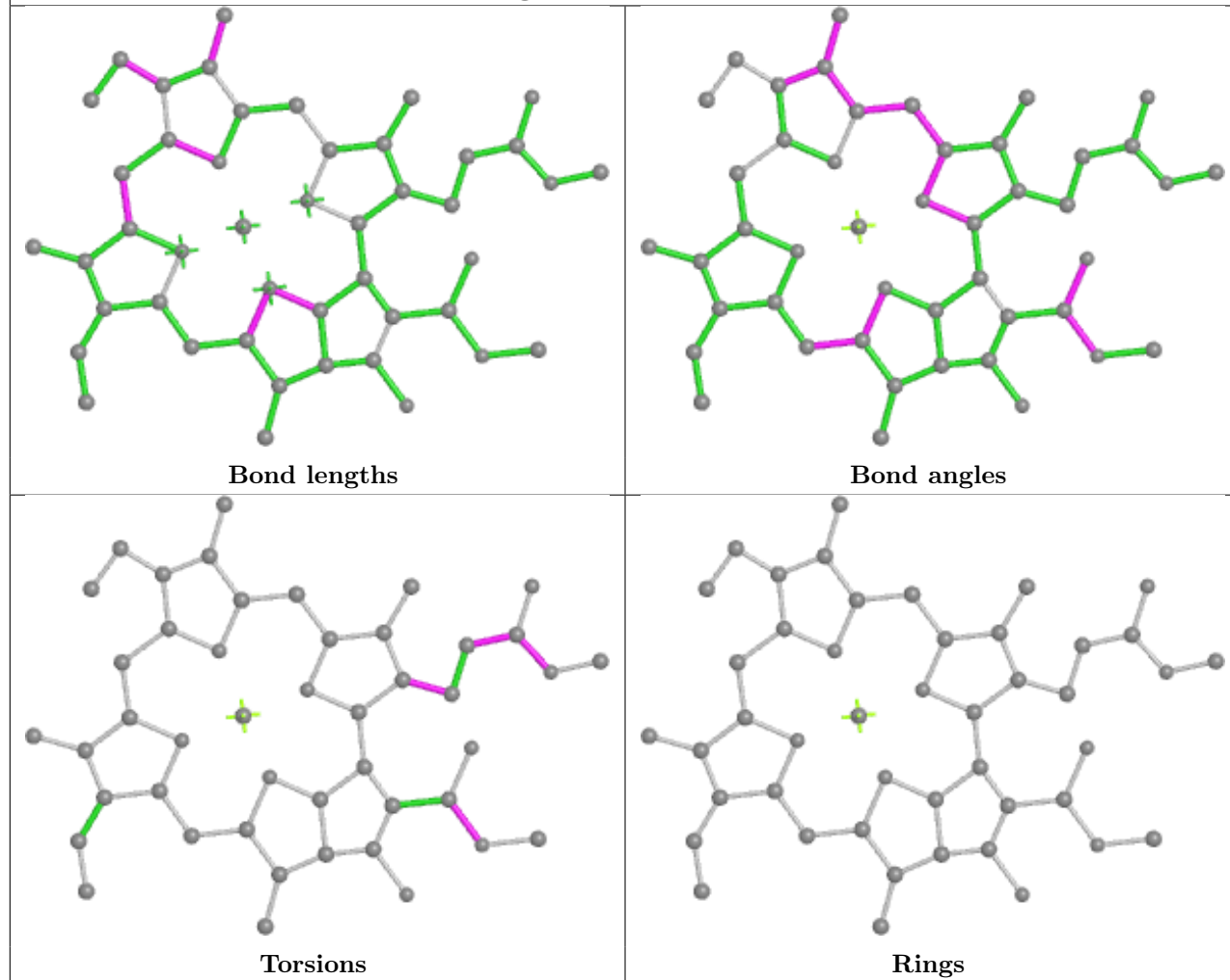




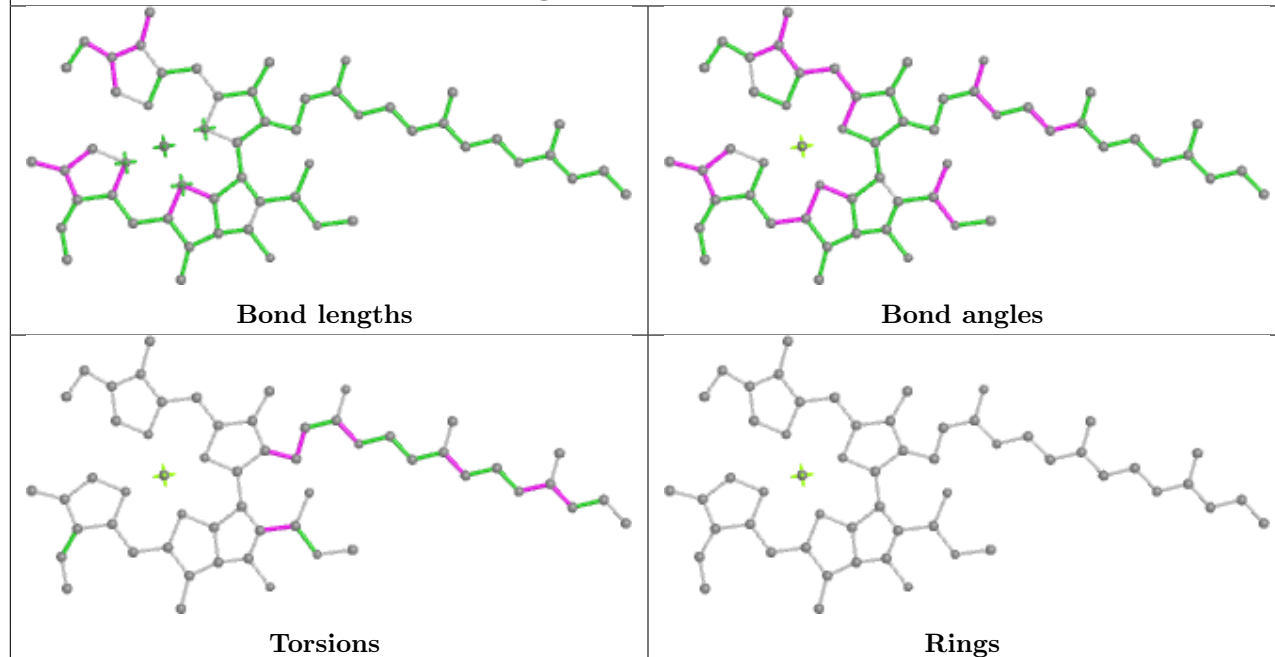


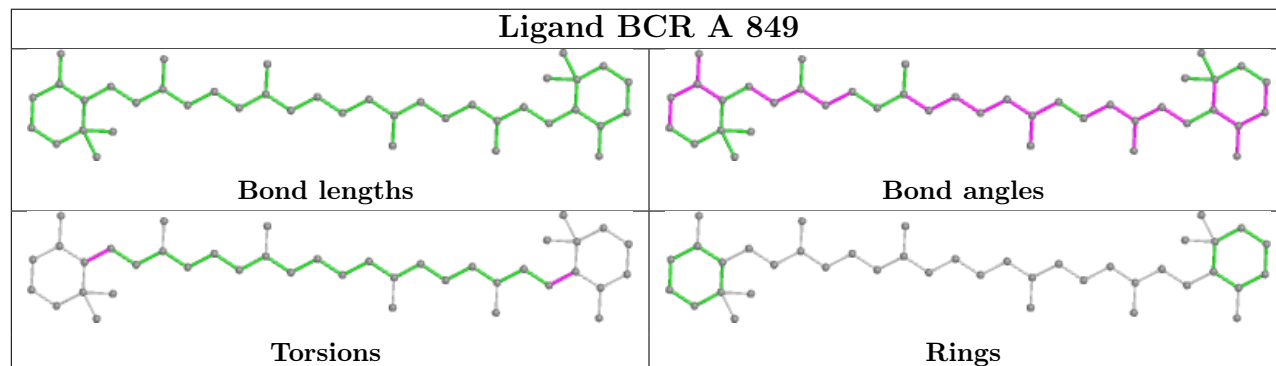
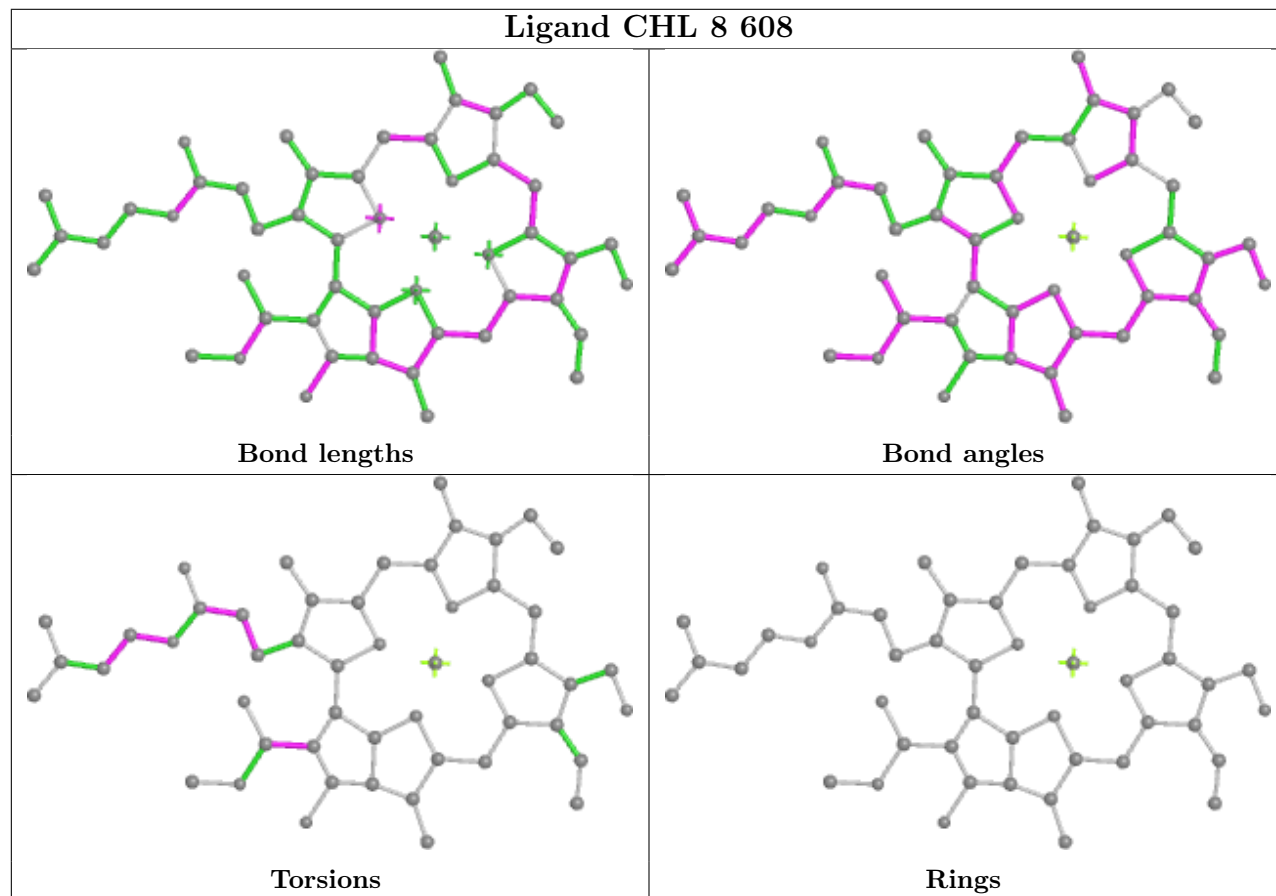
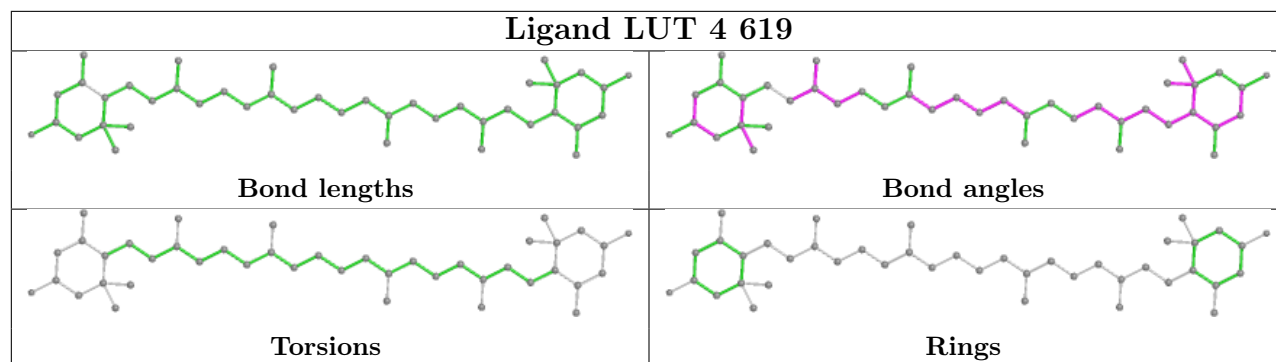


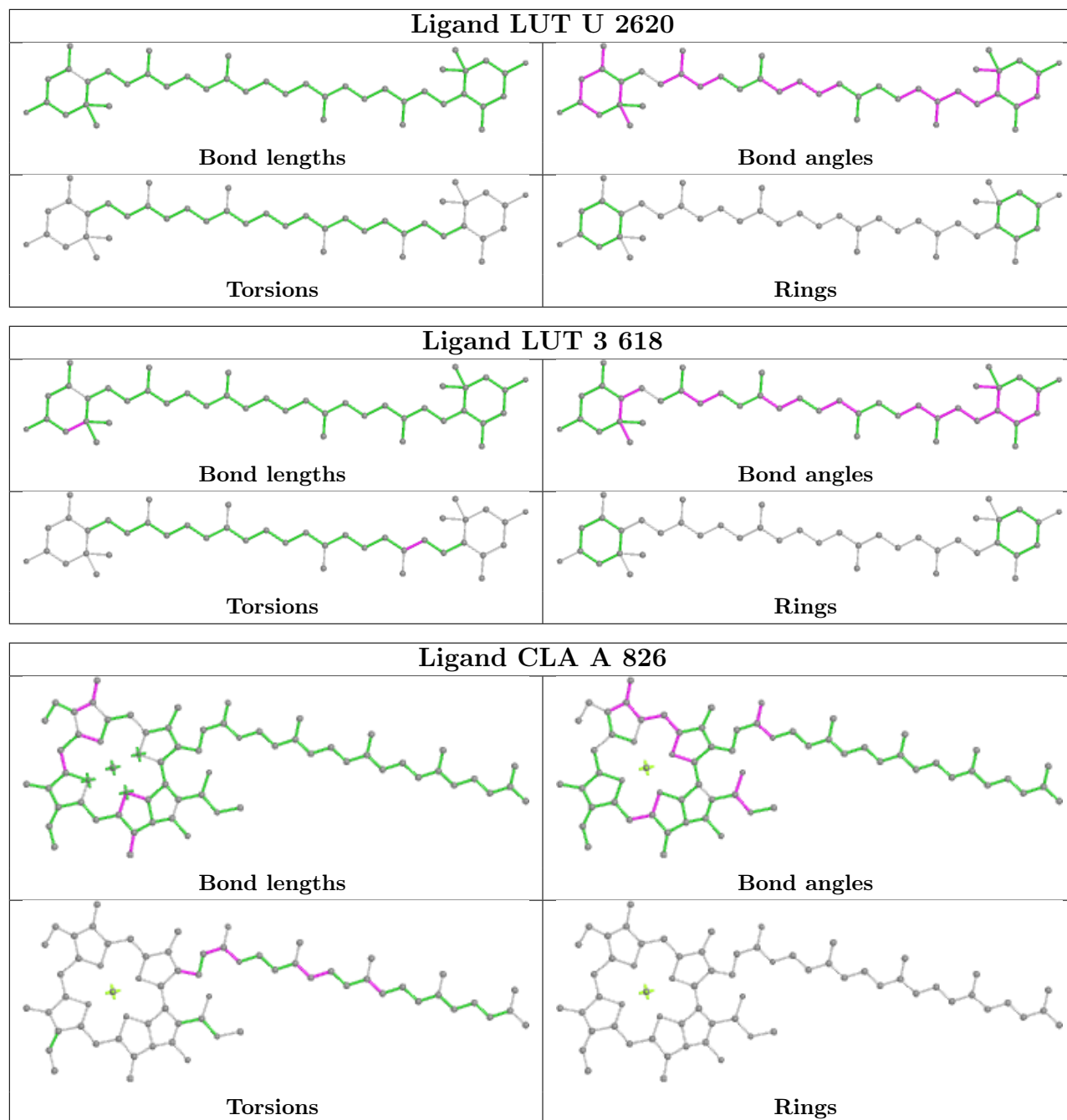
## Ligand CLA 7 606

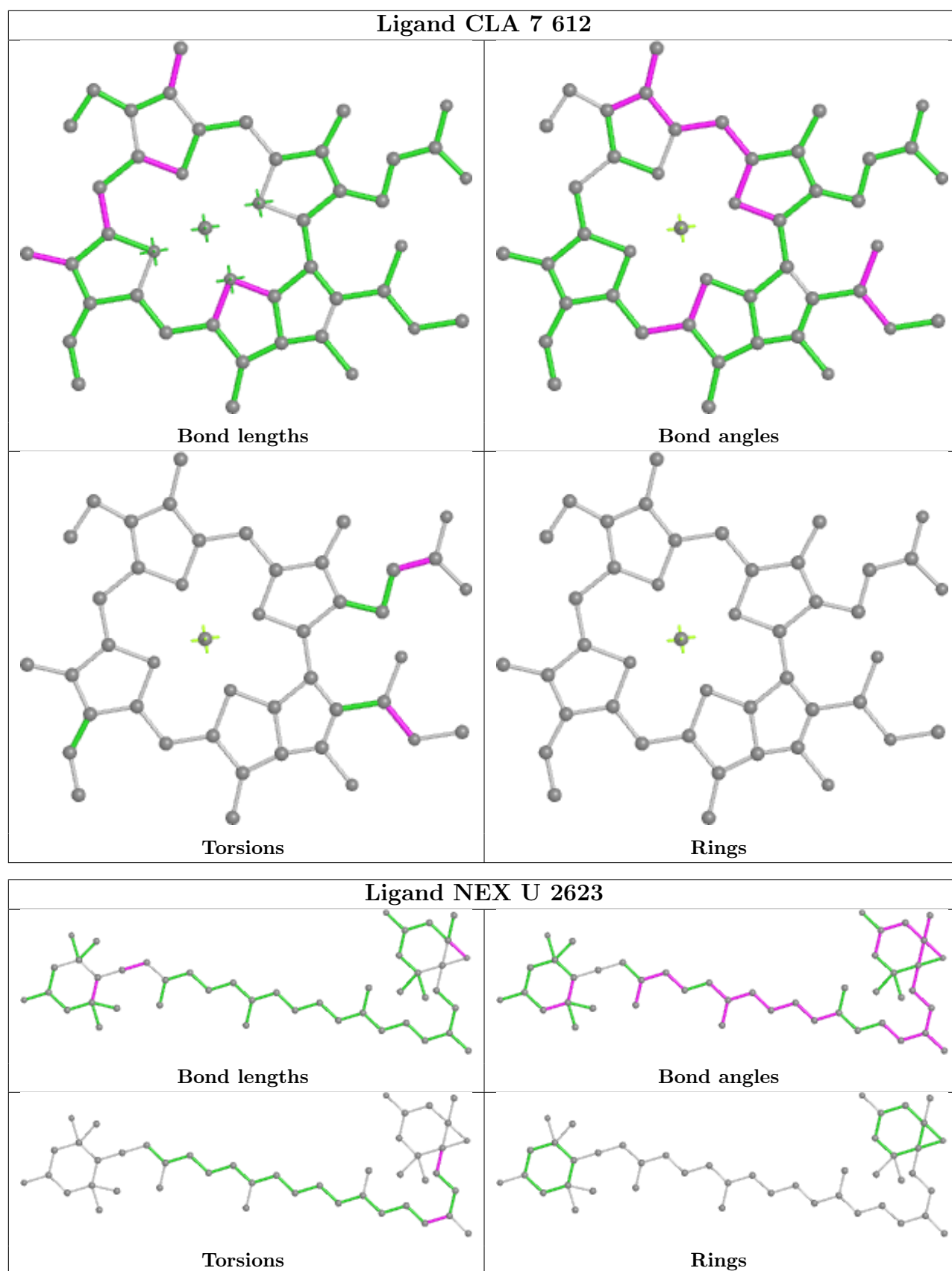


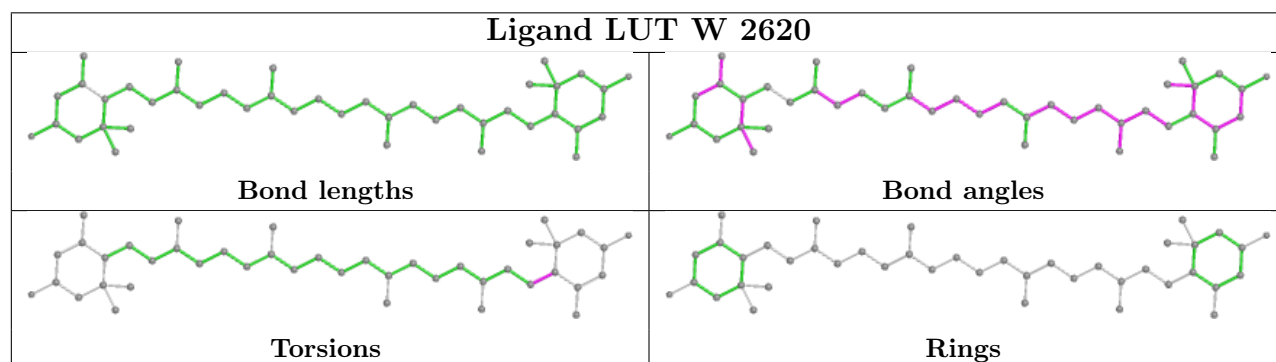
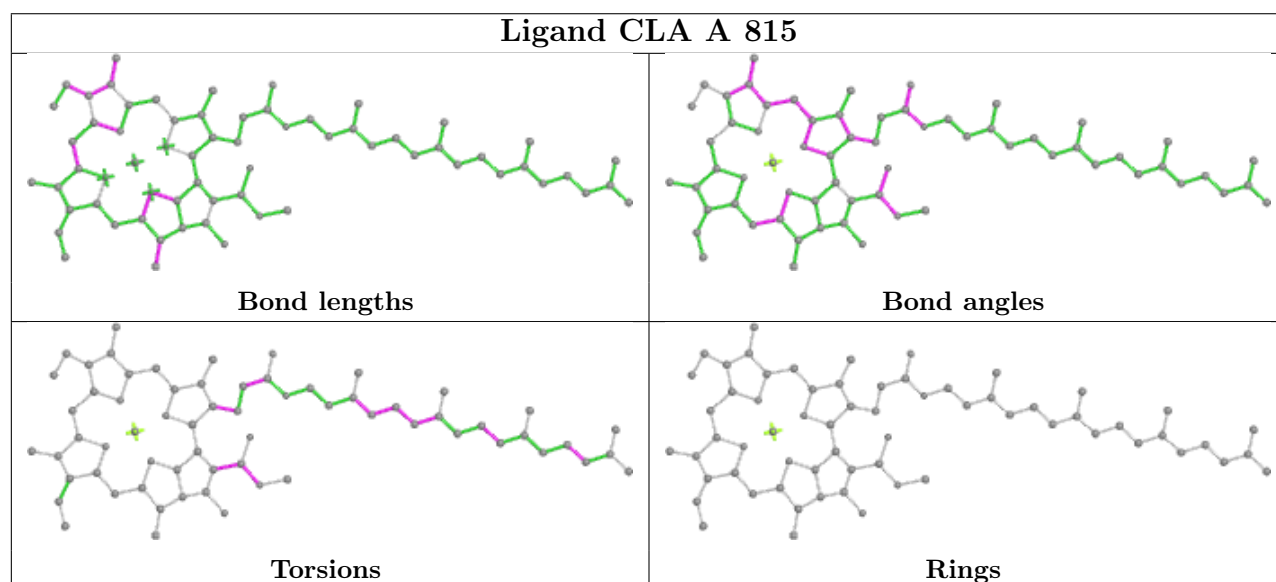
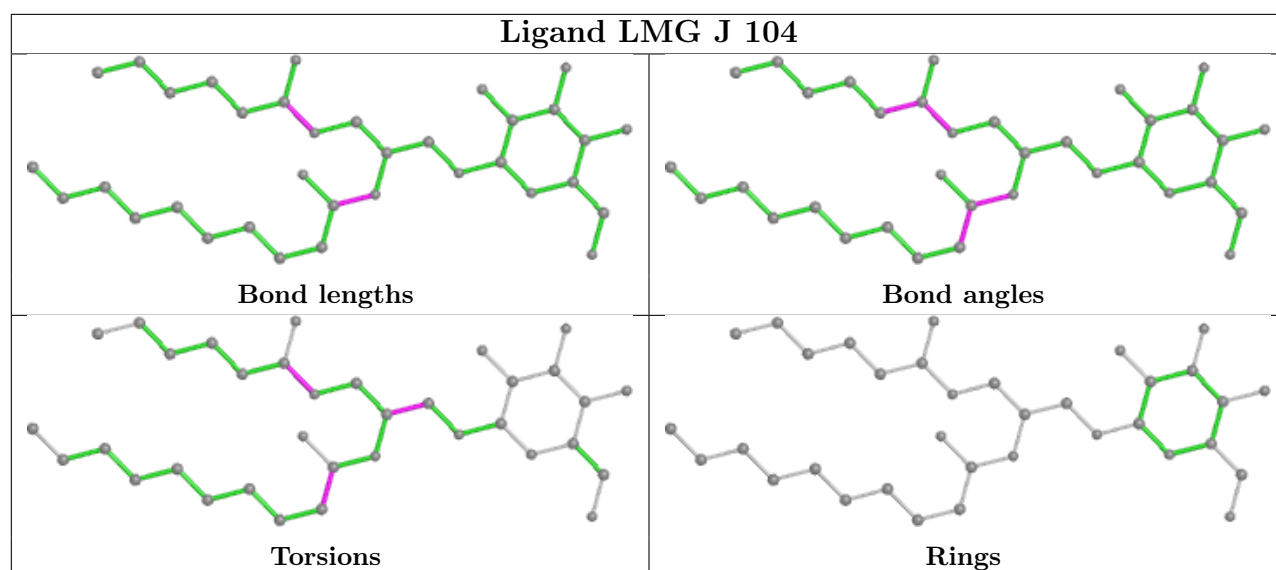
## Ligand CLA 3 617



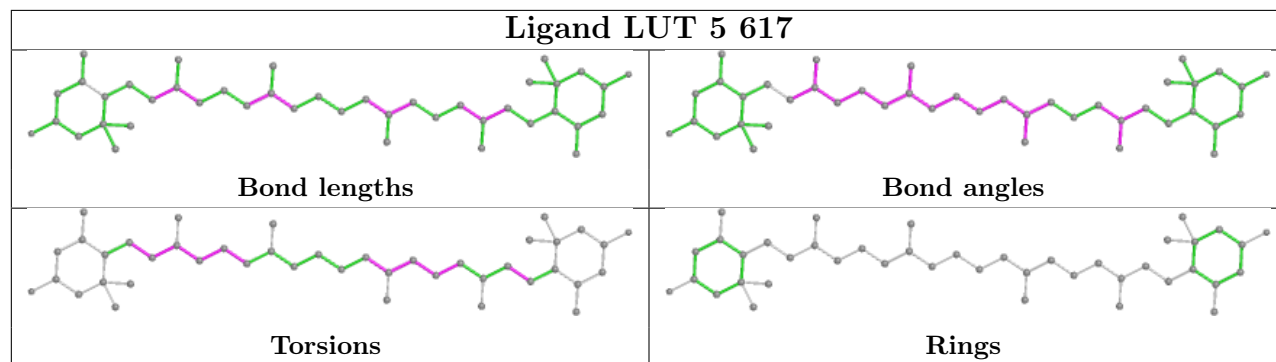
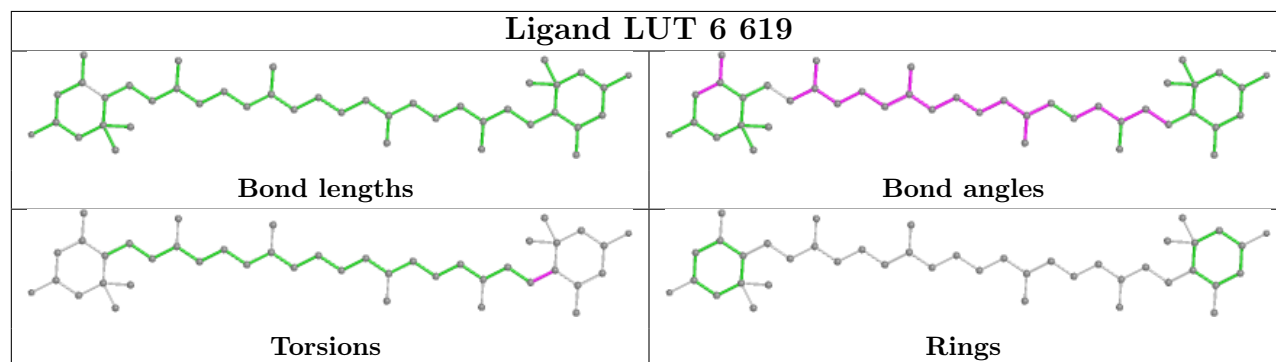
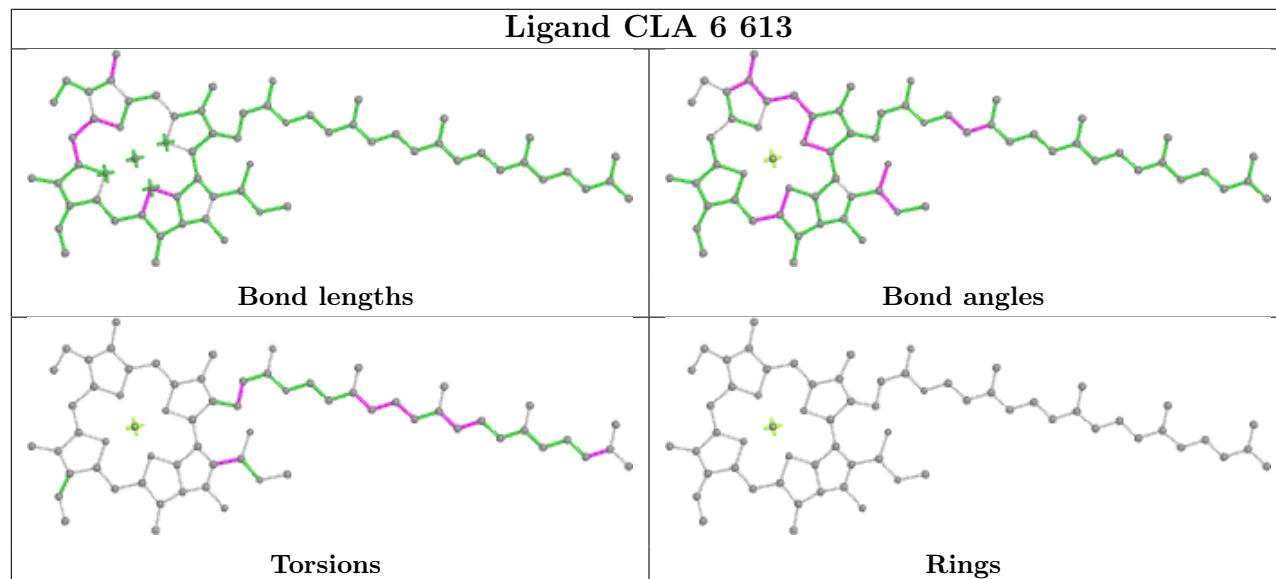
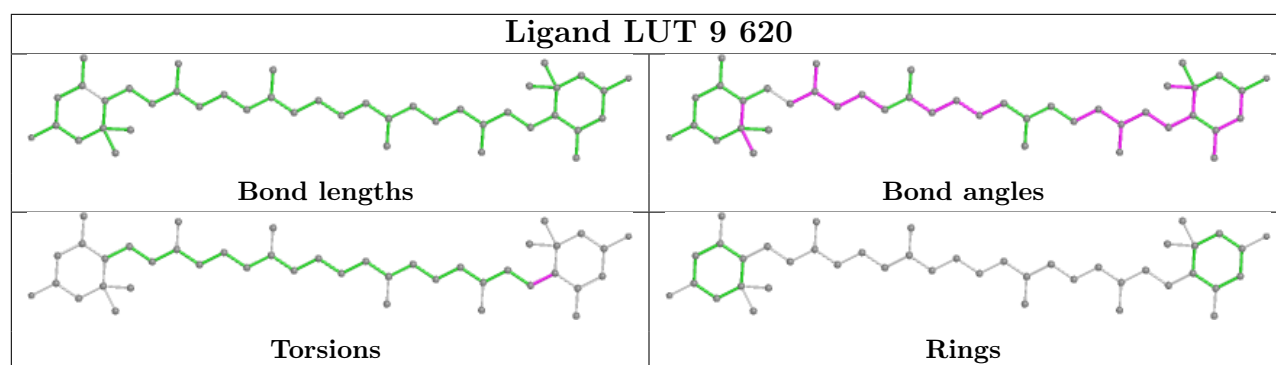


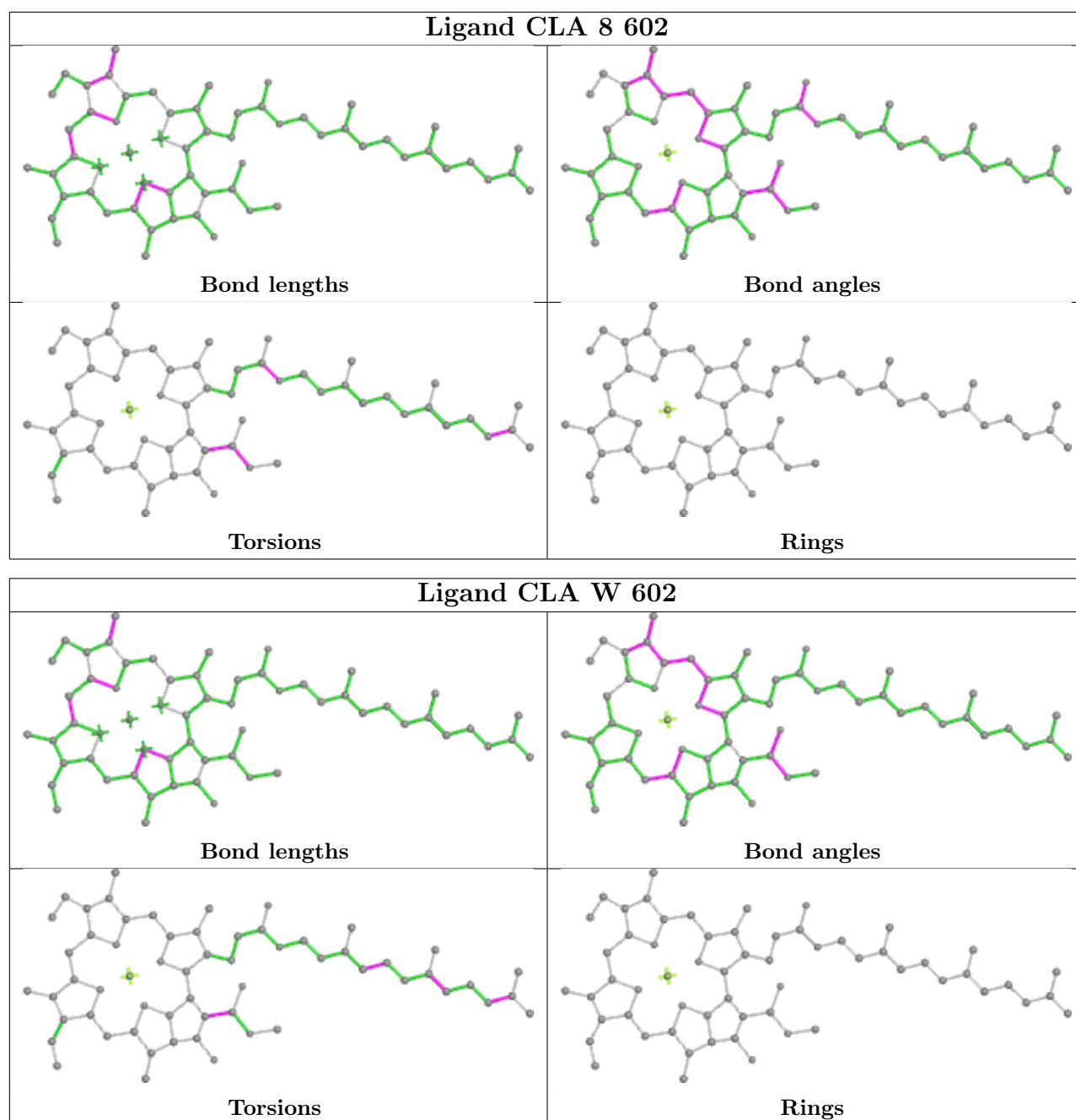


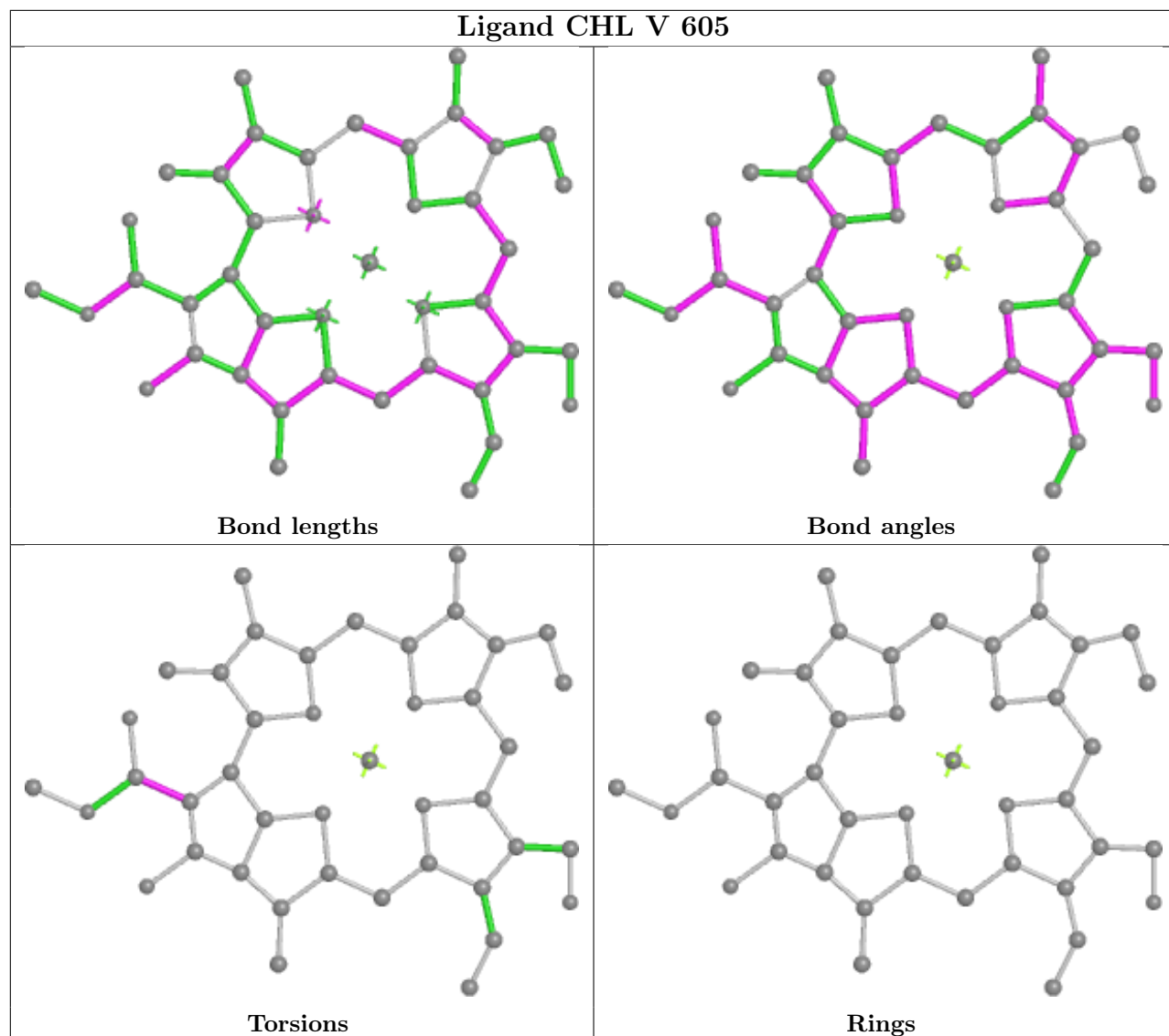


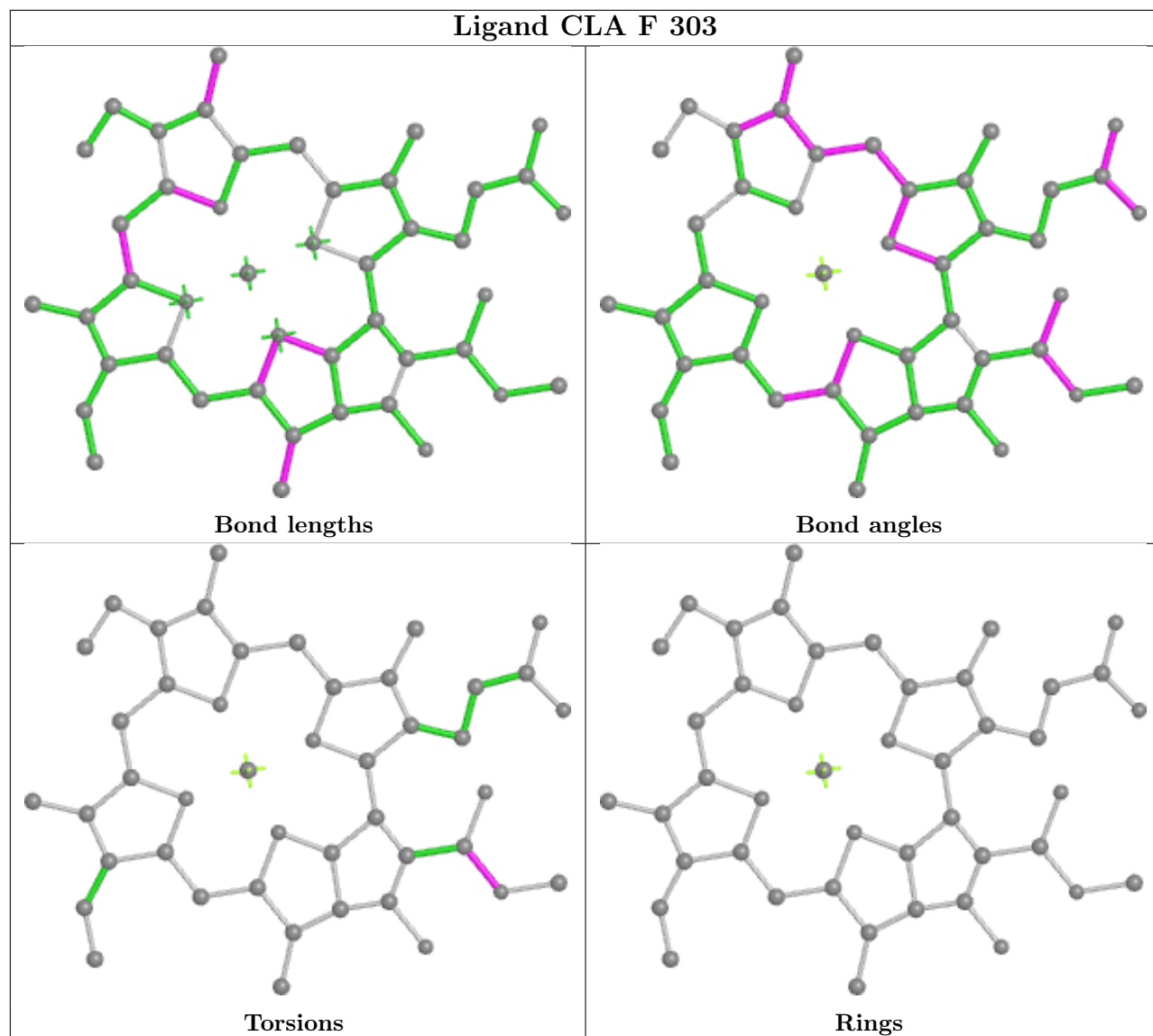


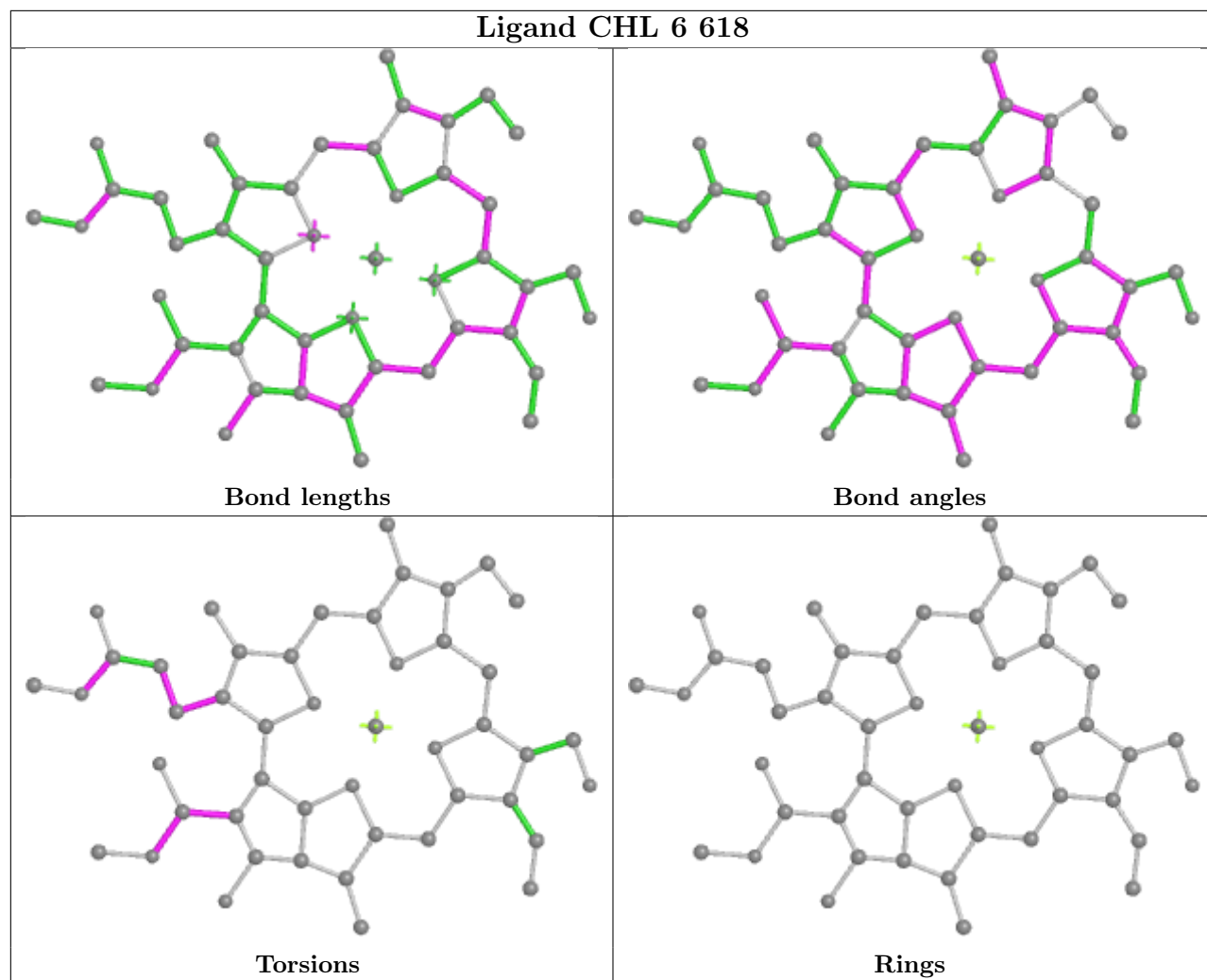


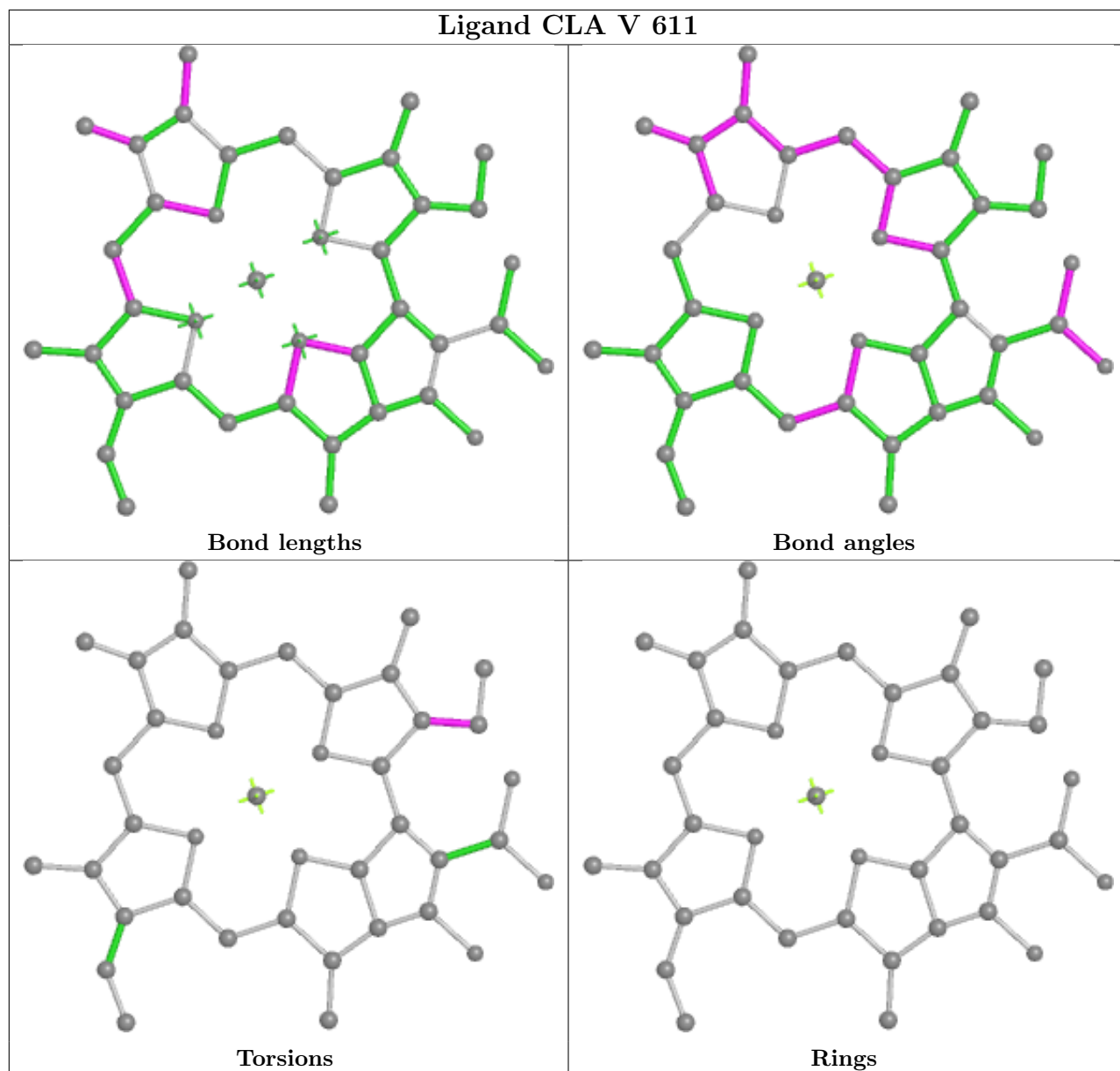


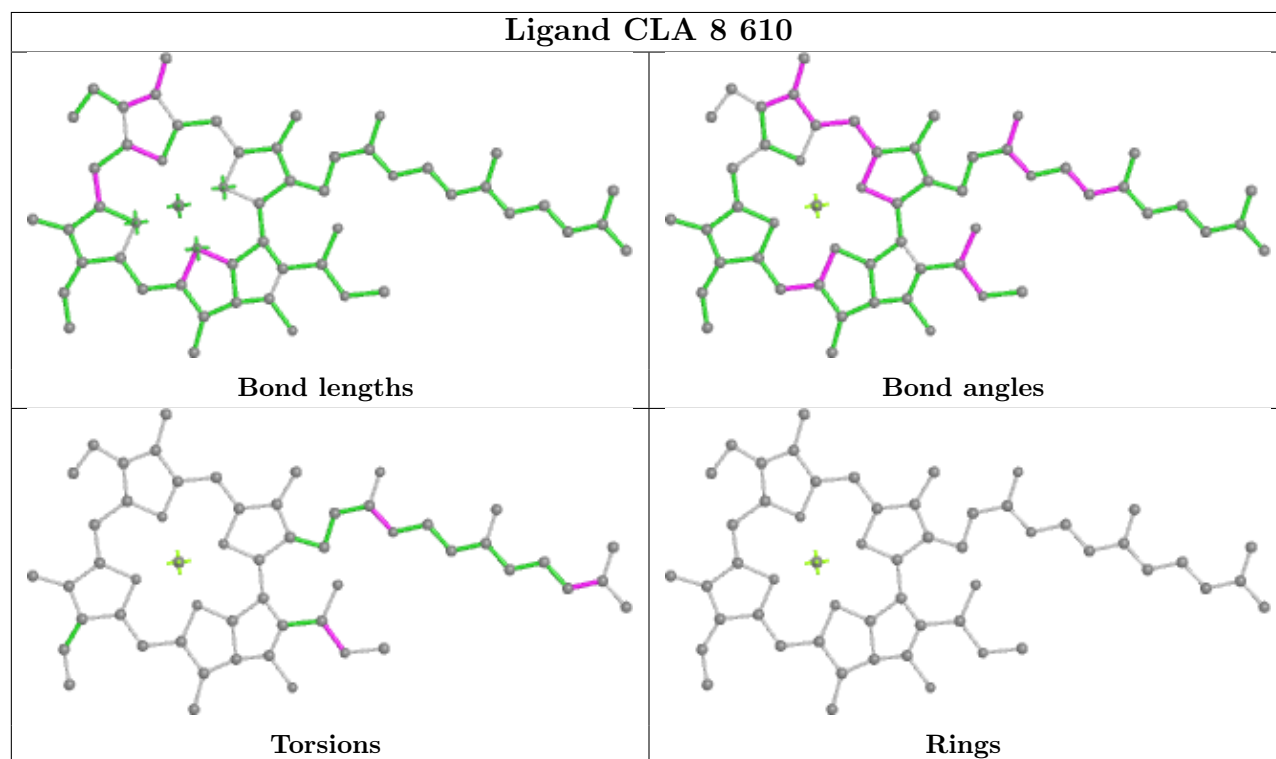
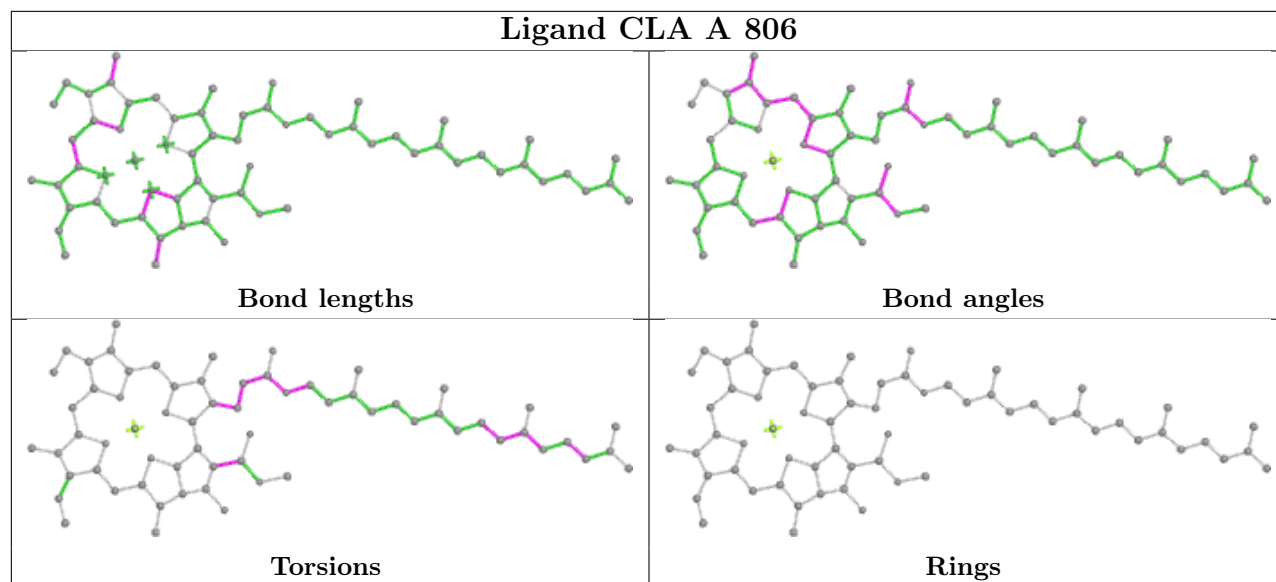


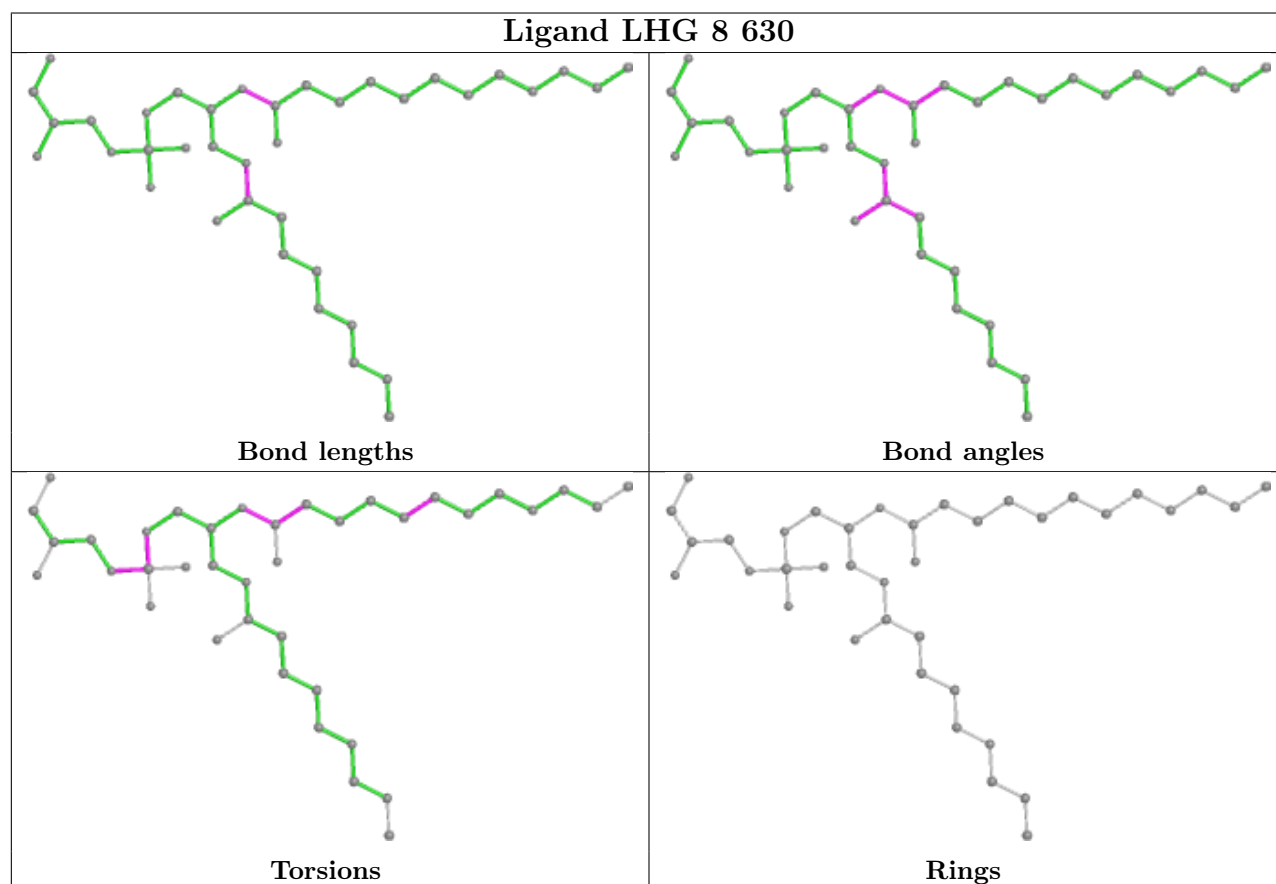
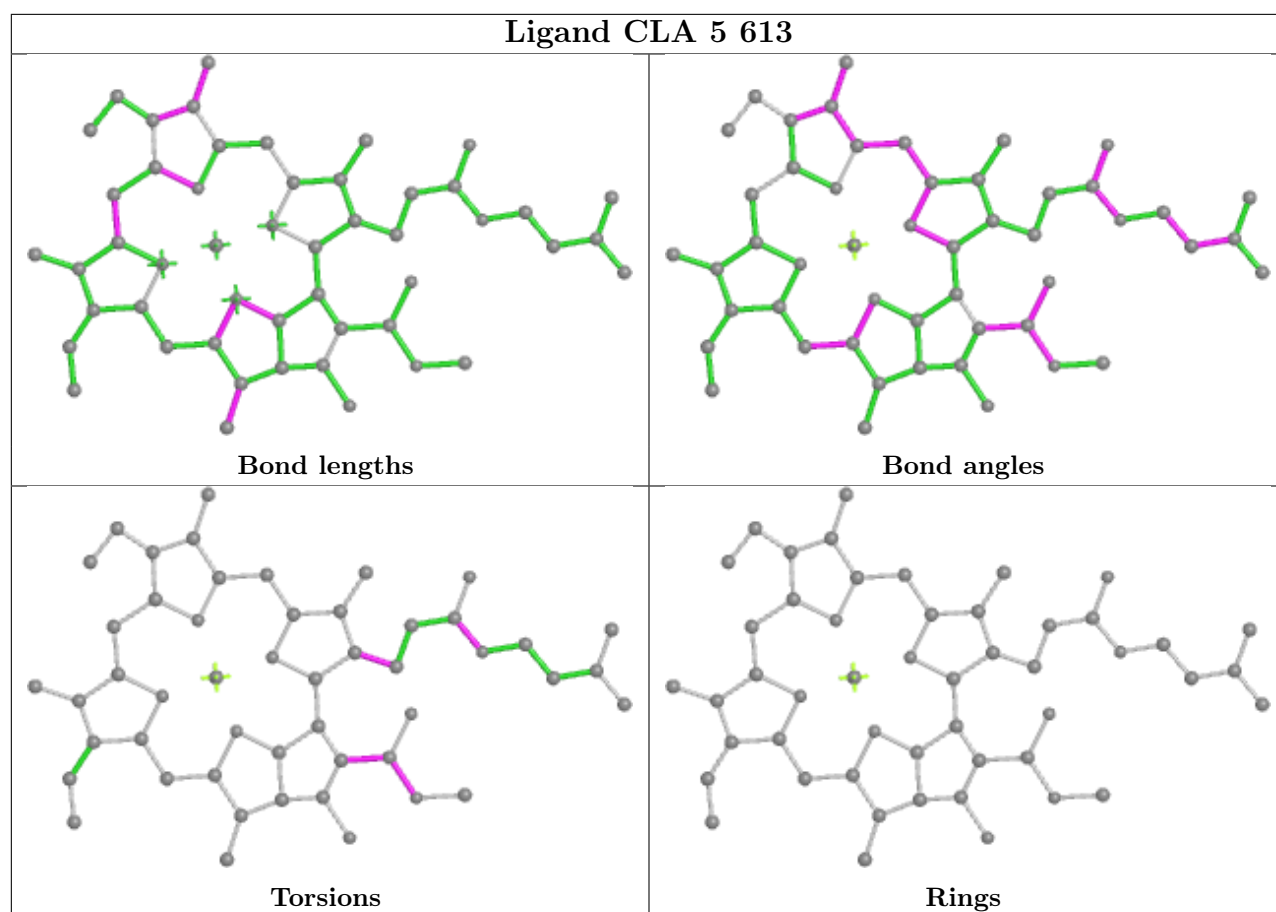




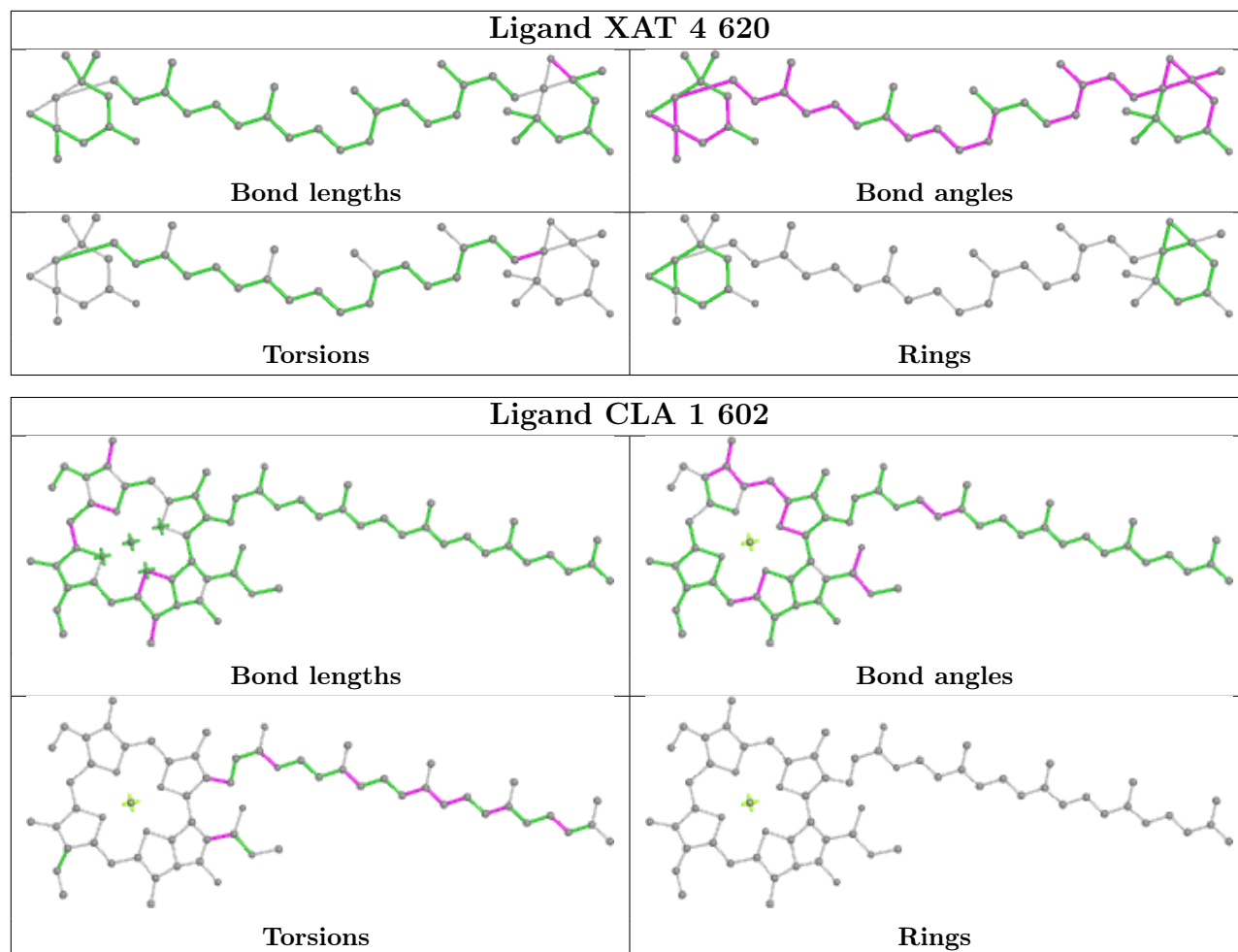


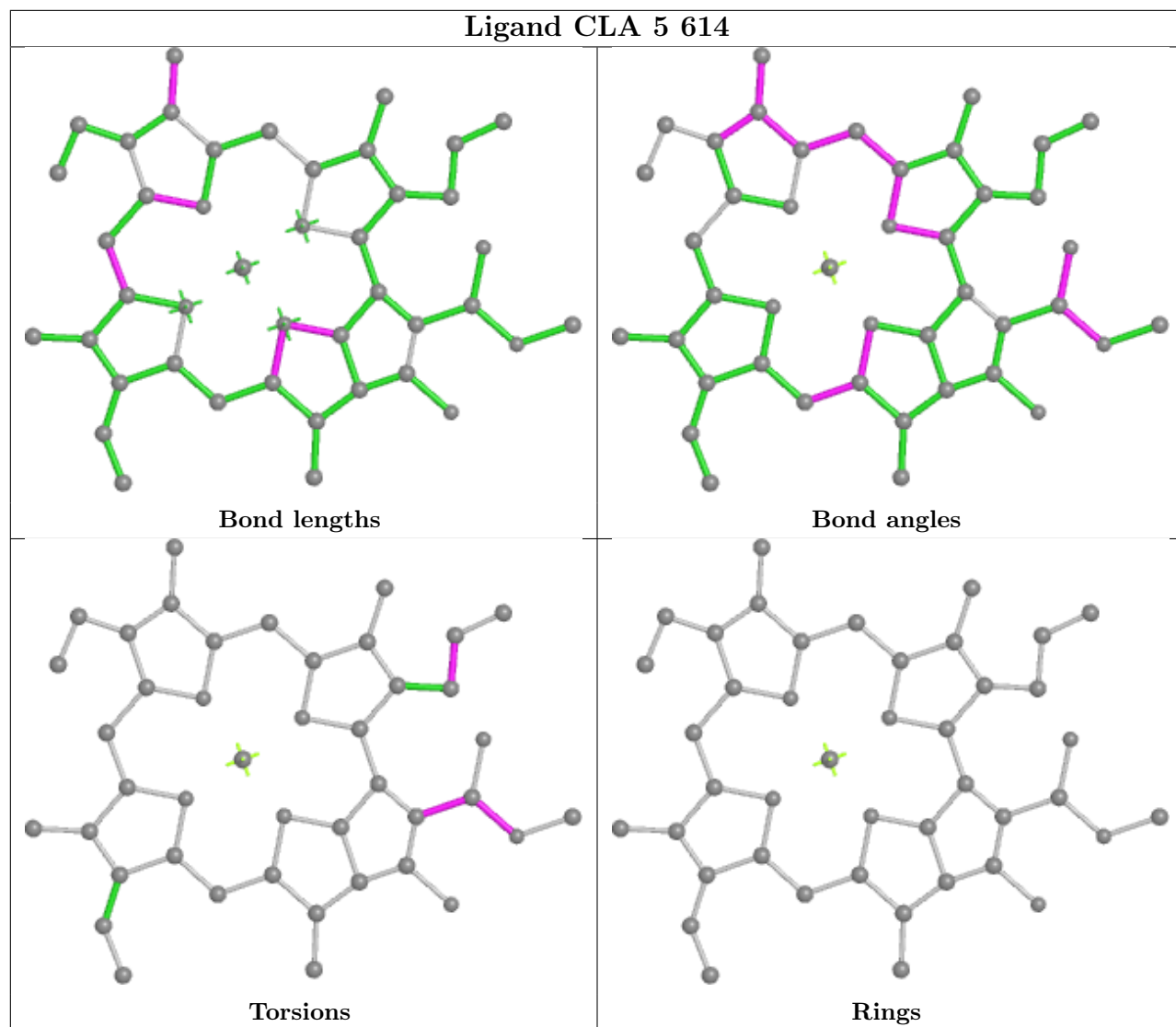


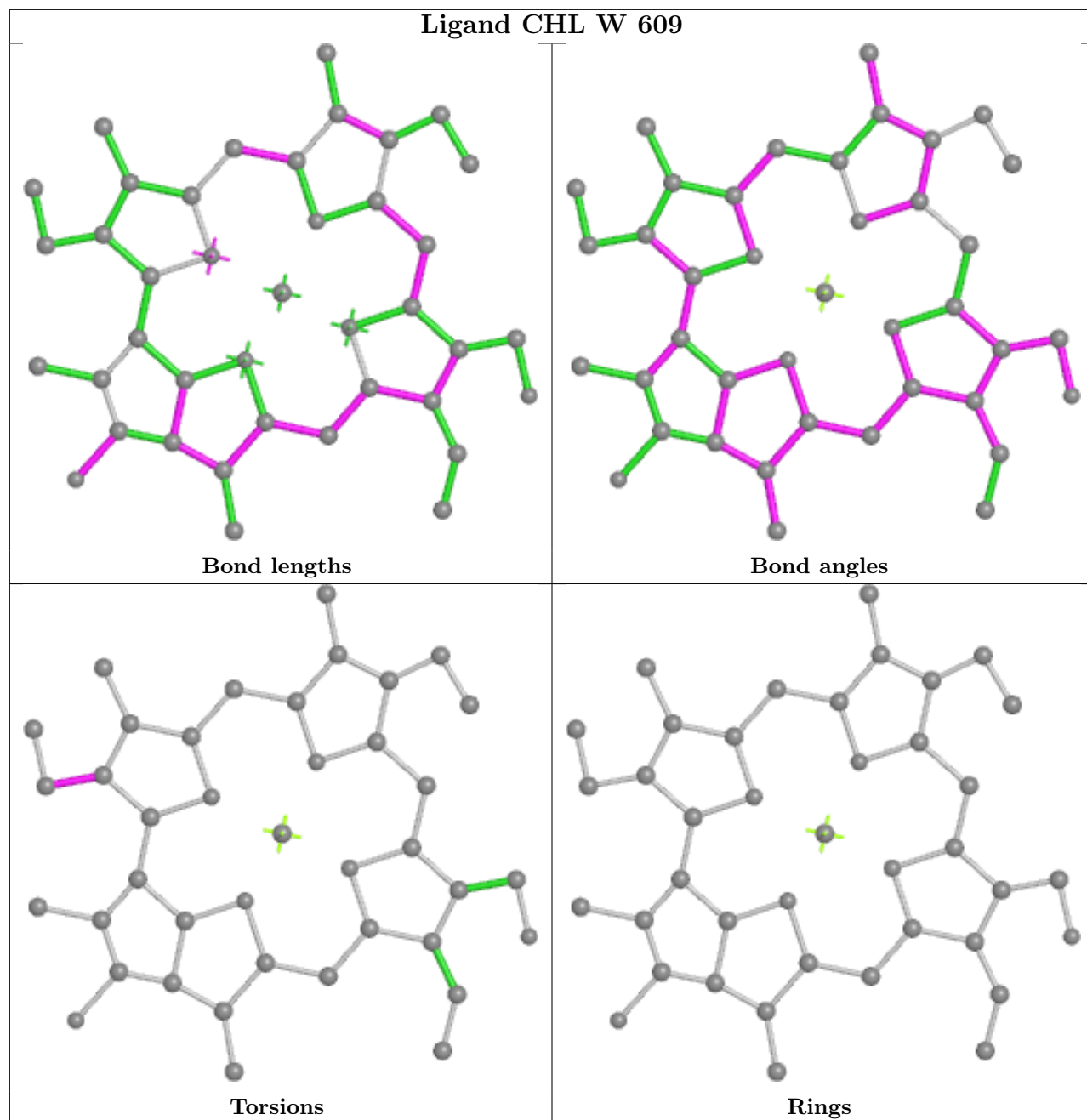


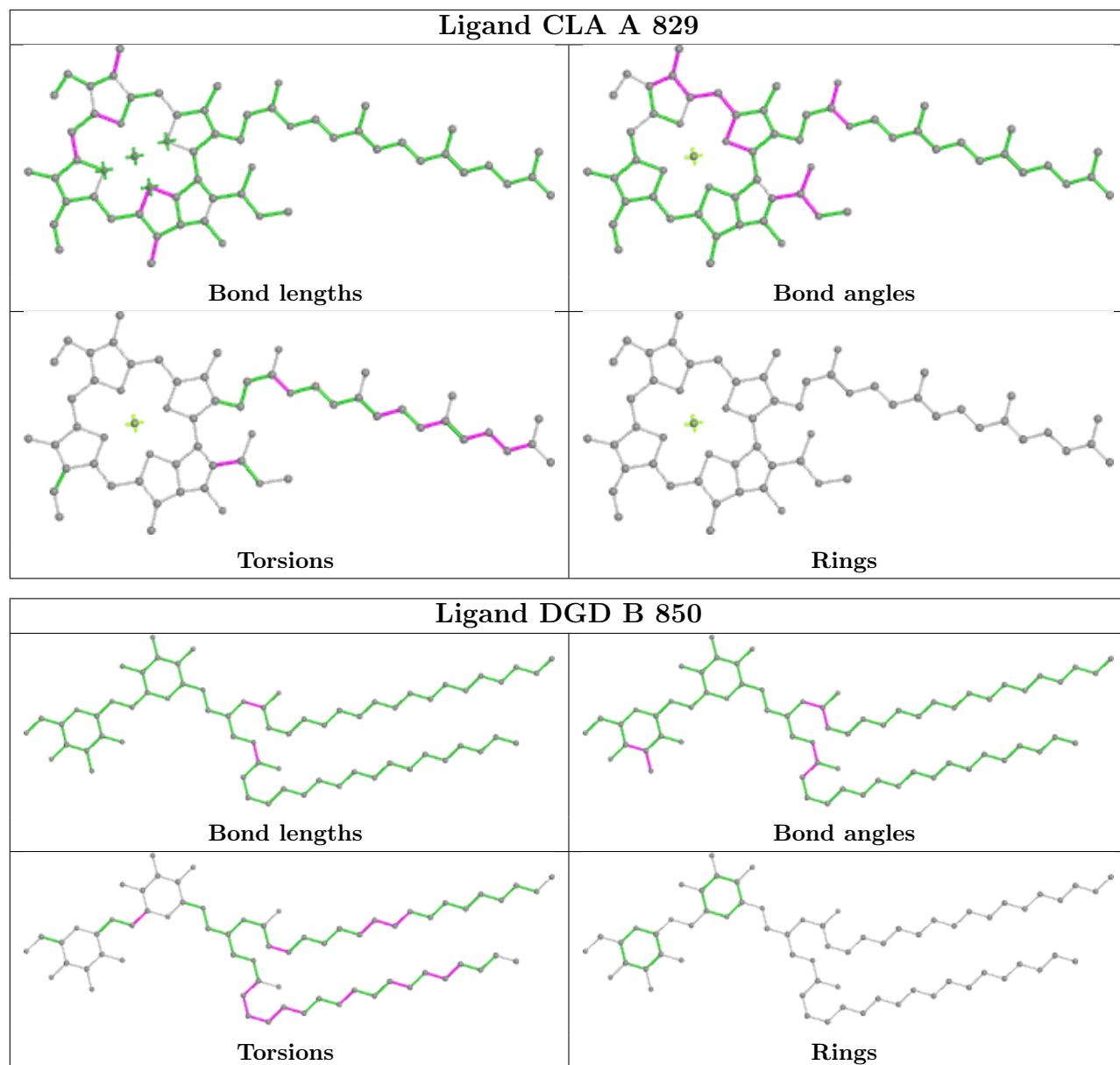


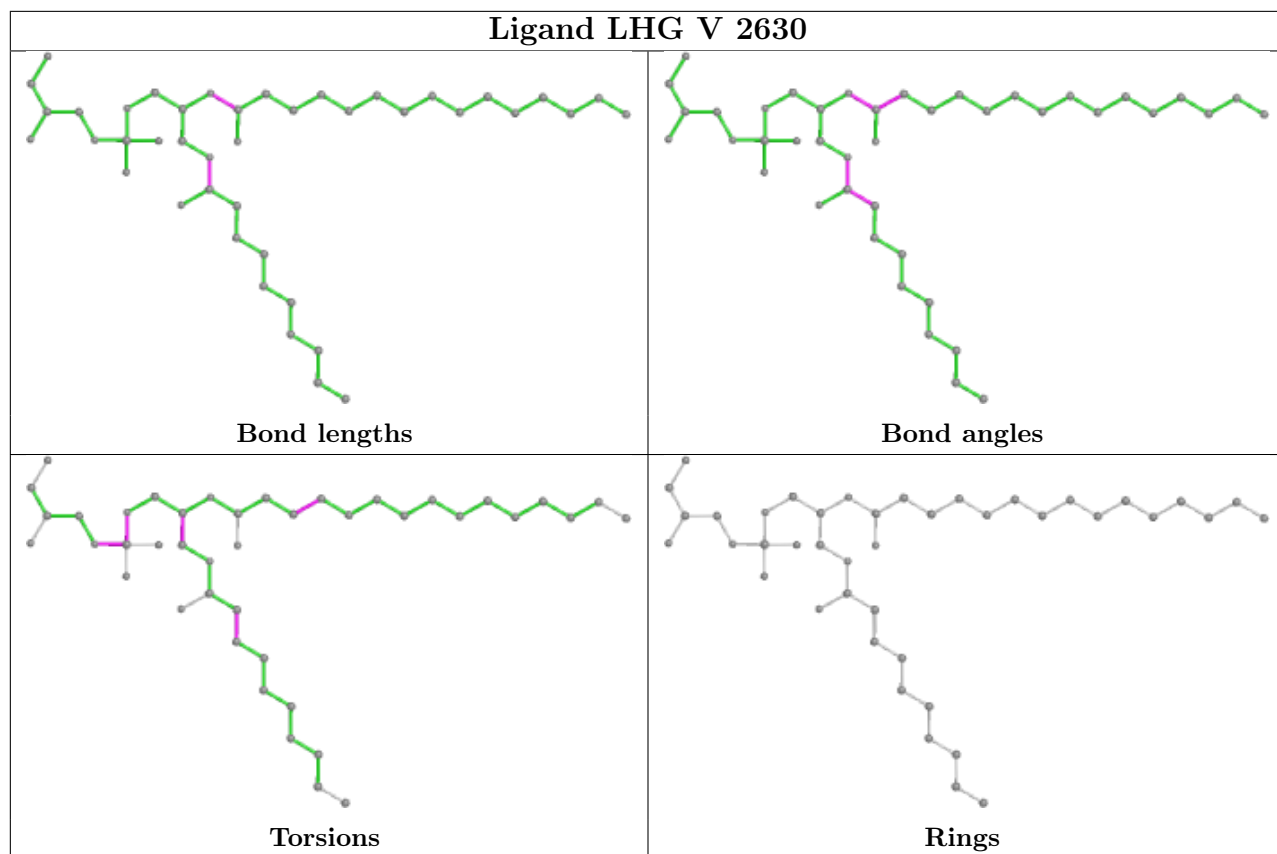


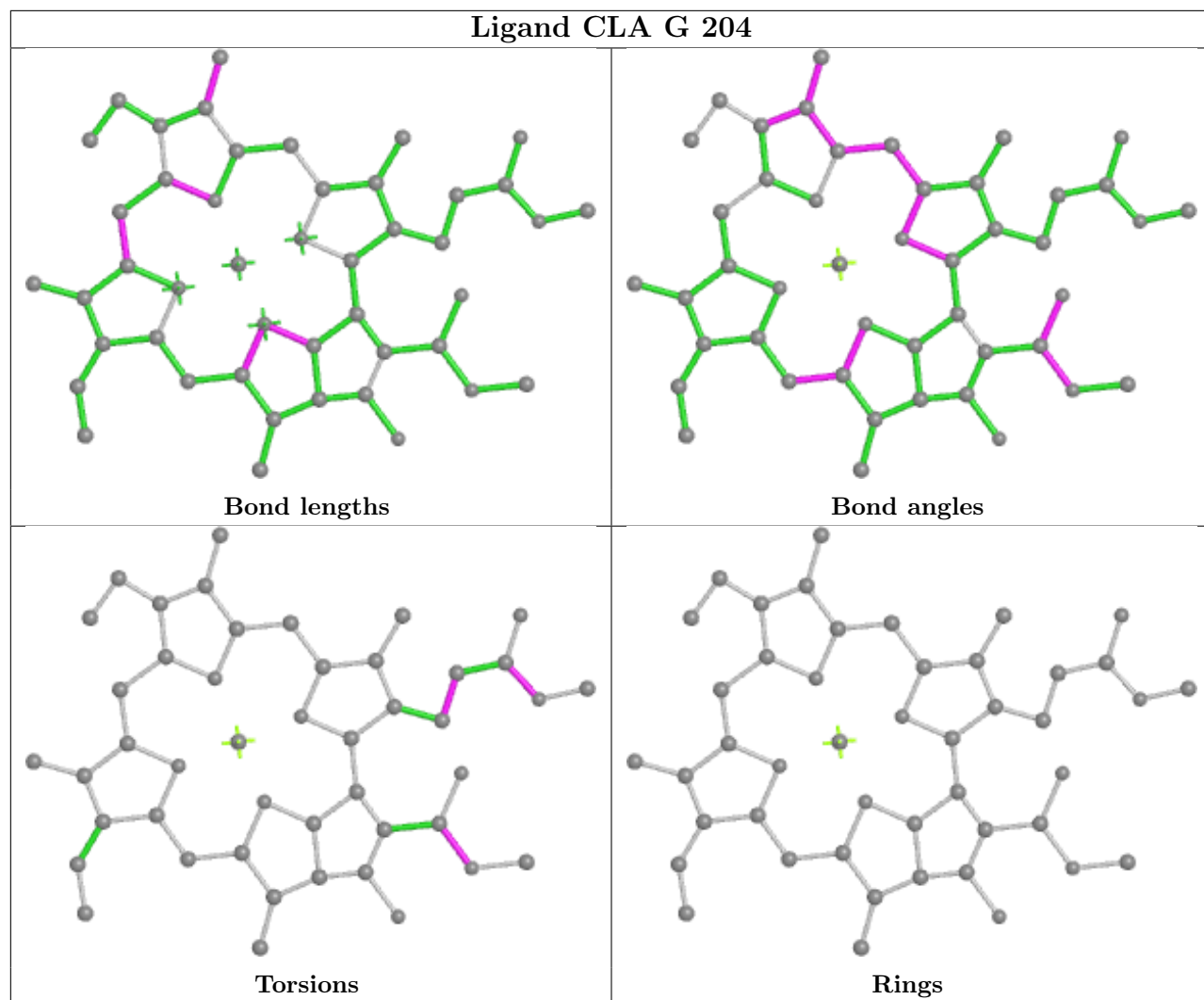


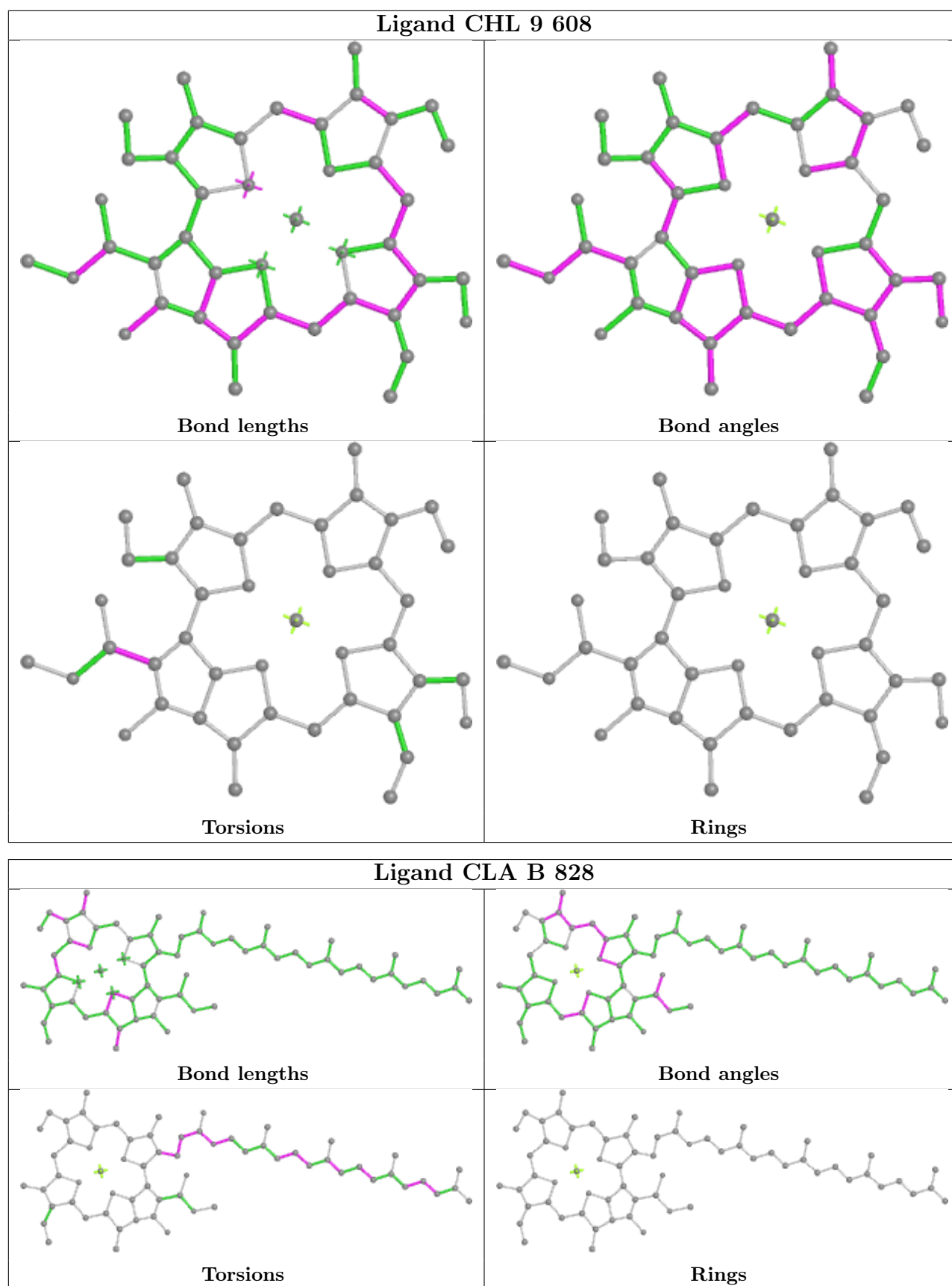


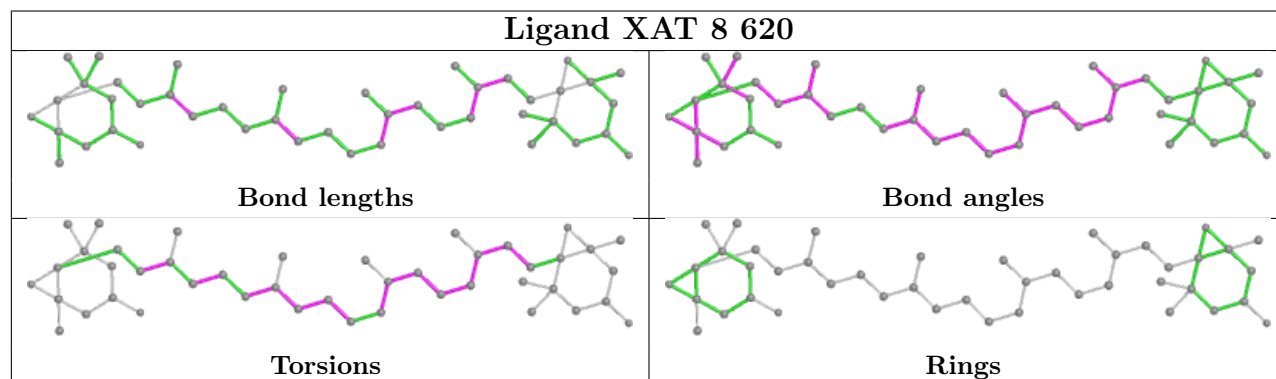
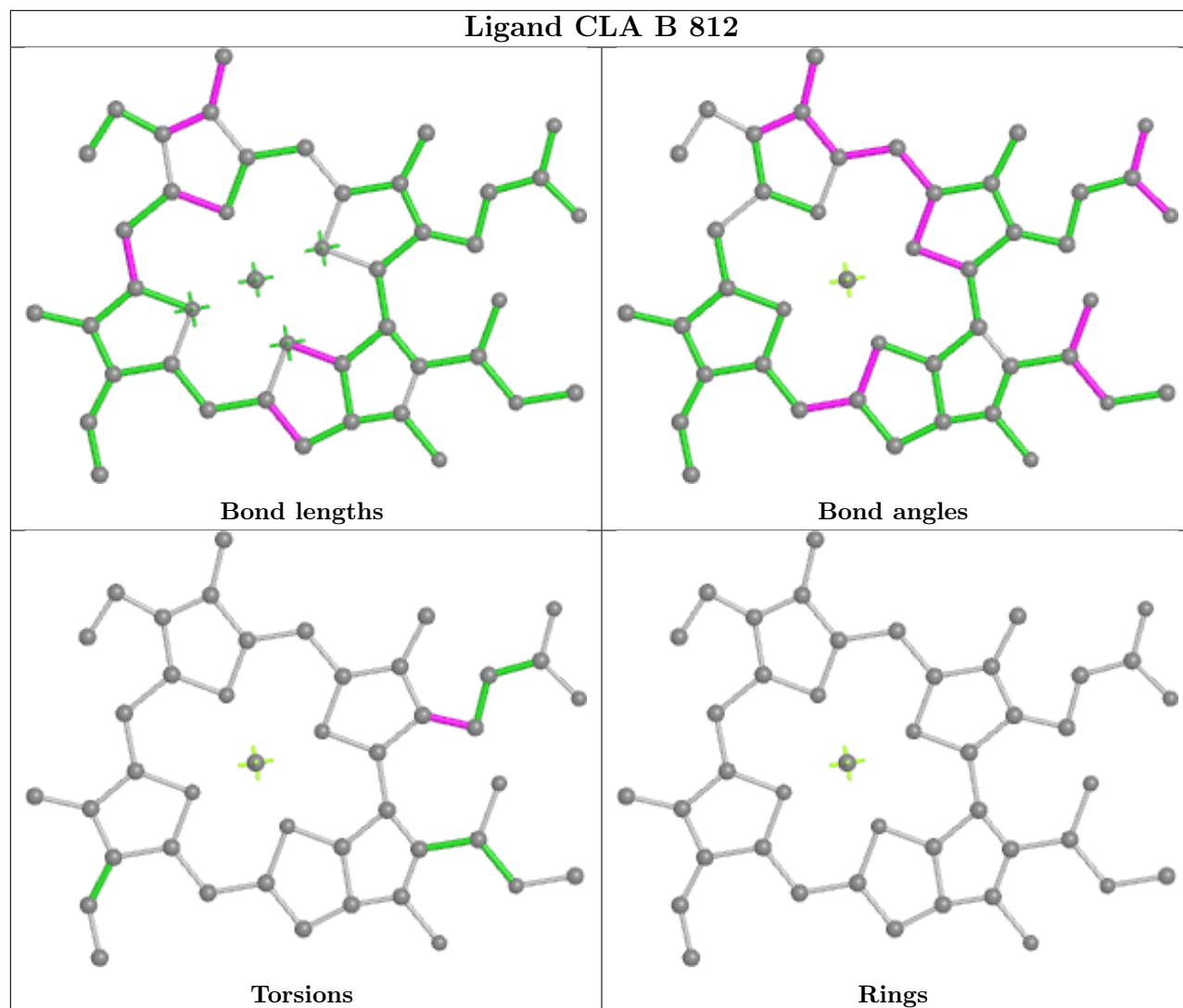




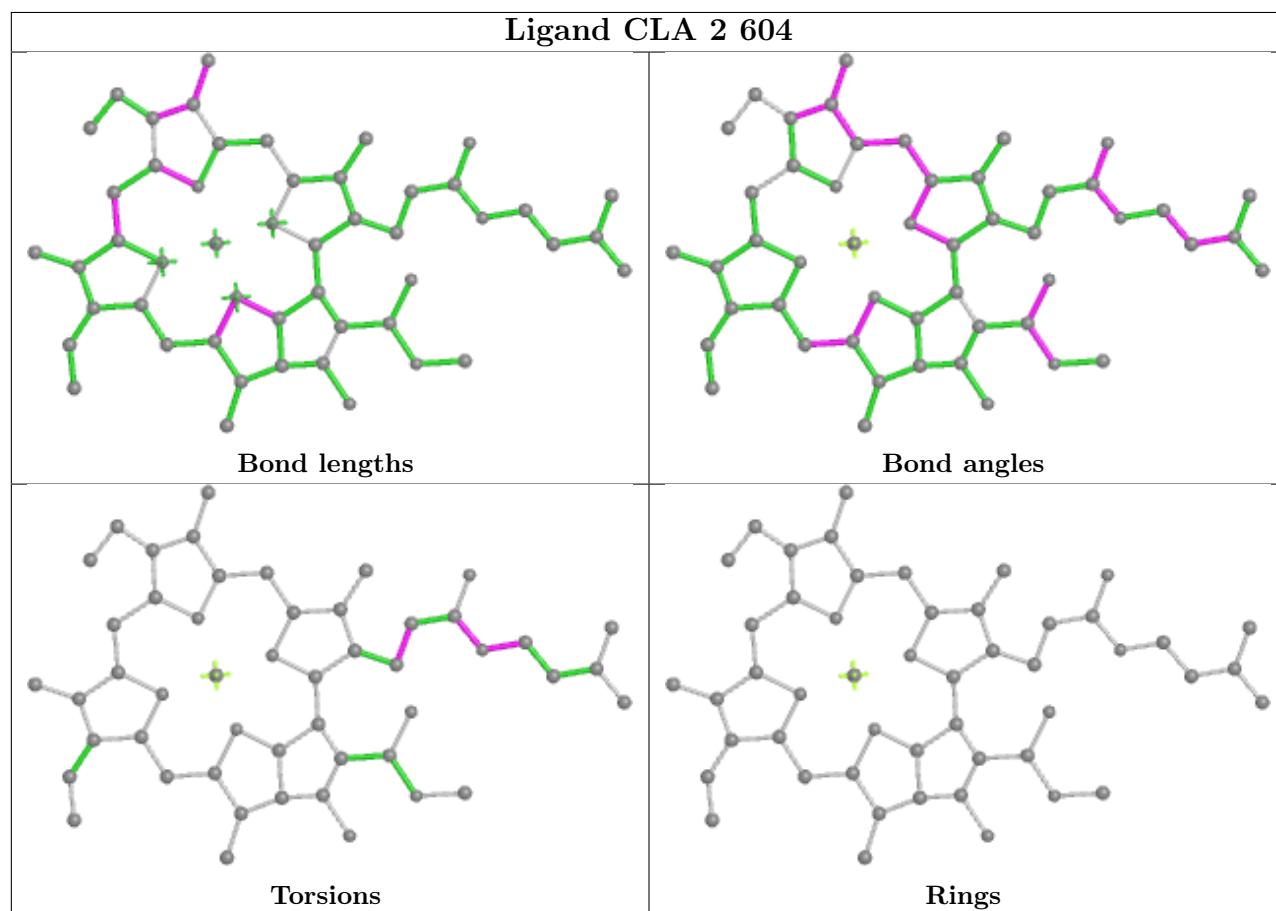
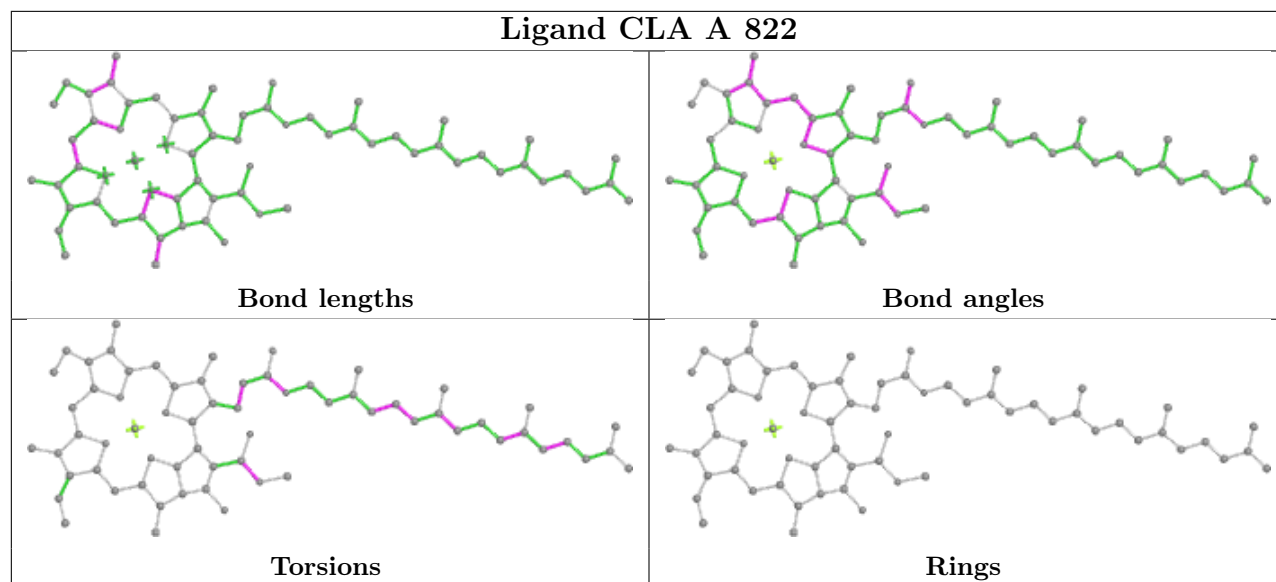


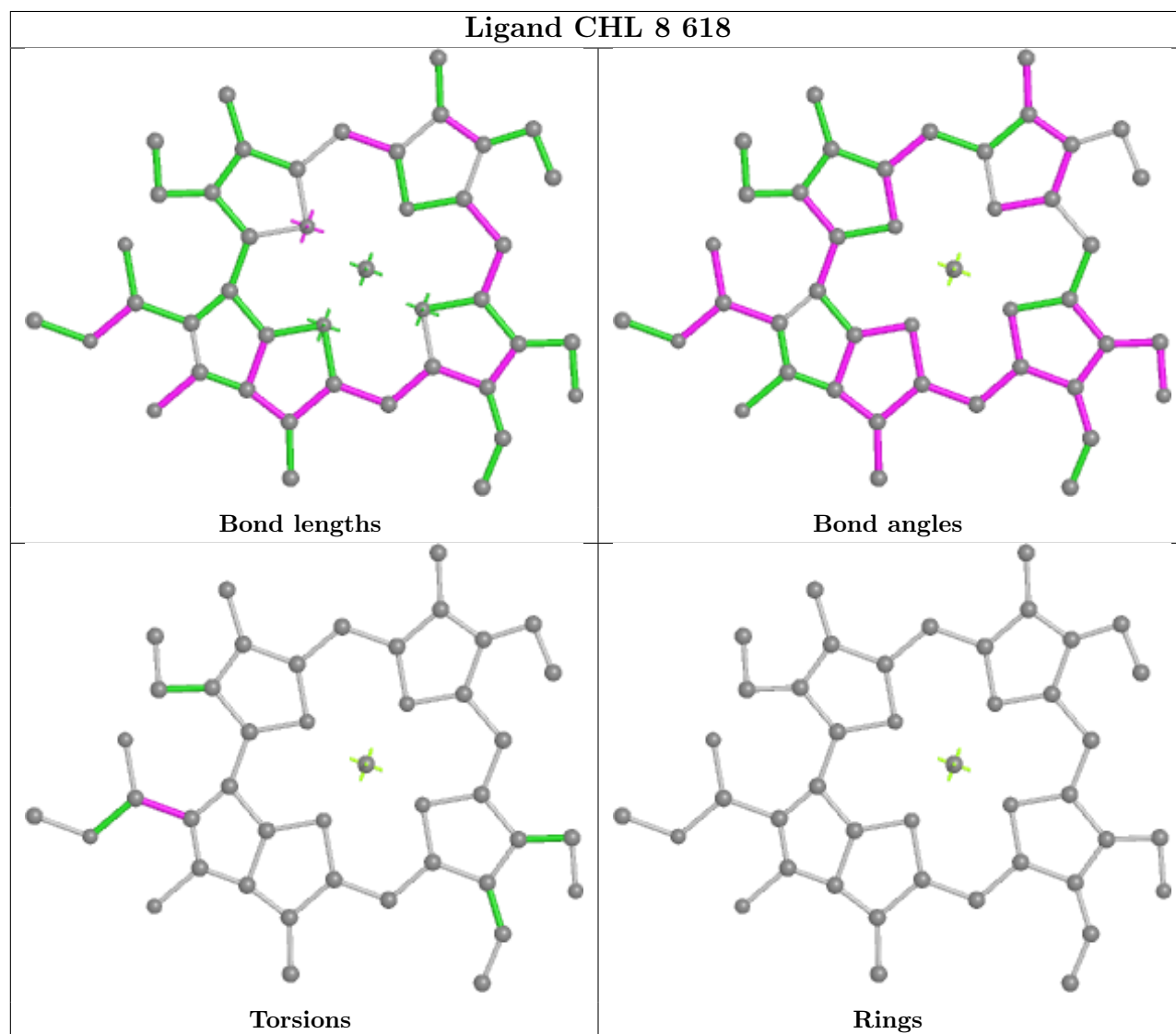
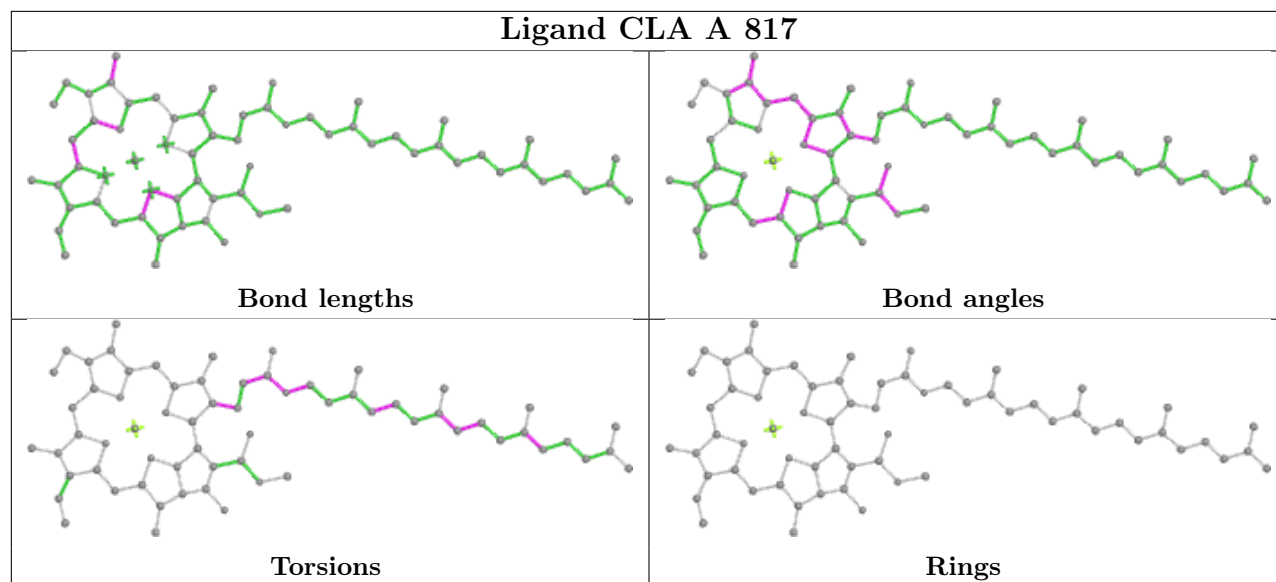


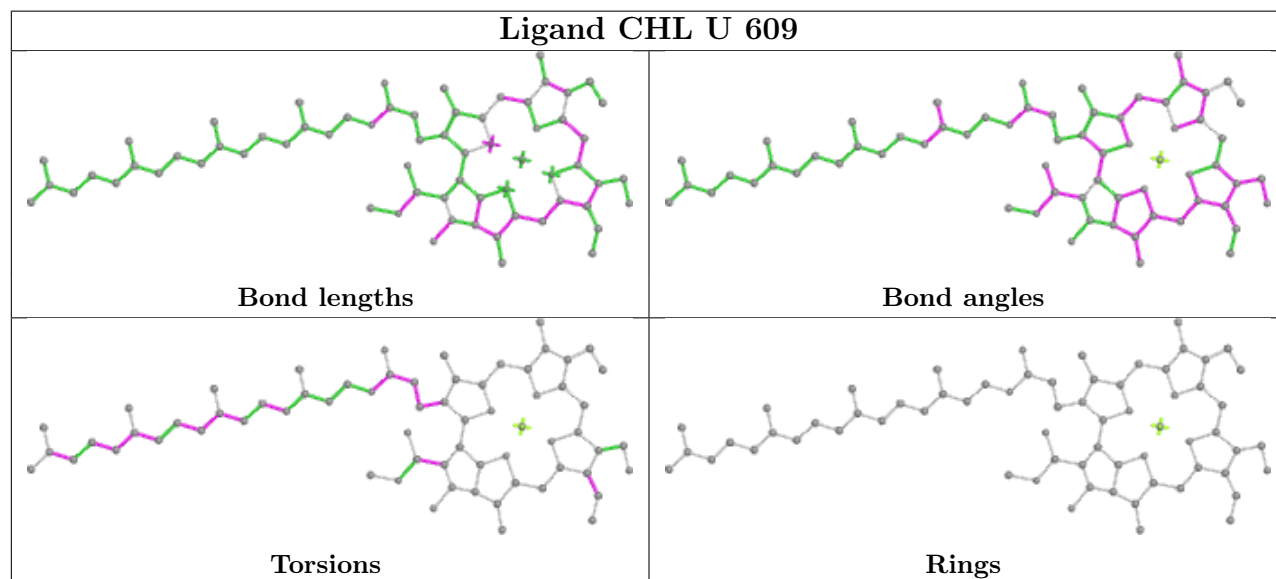
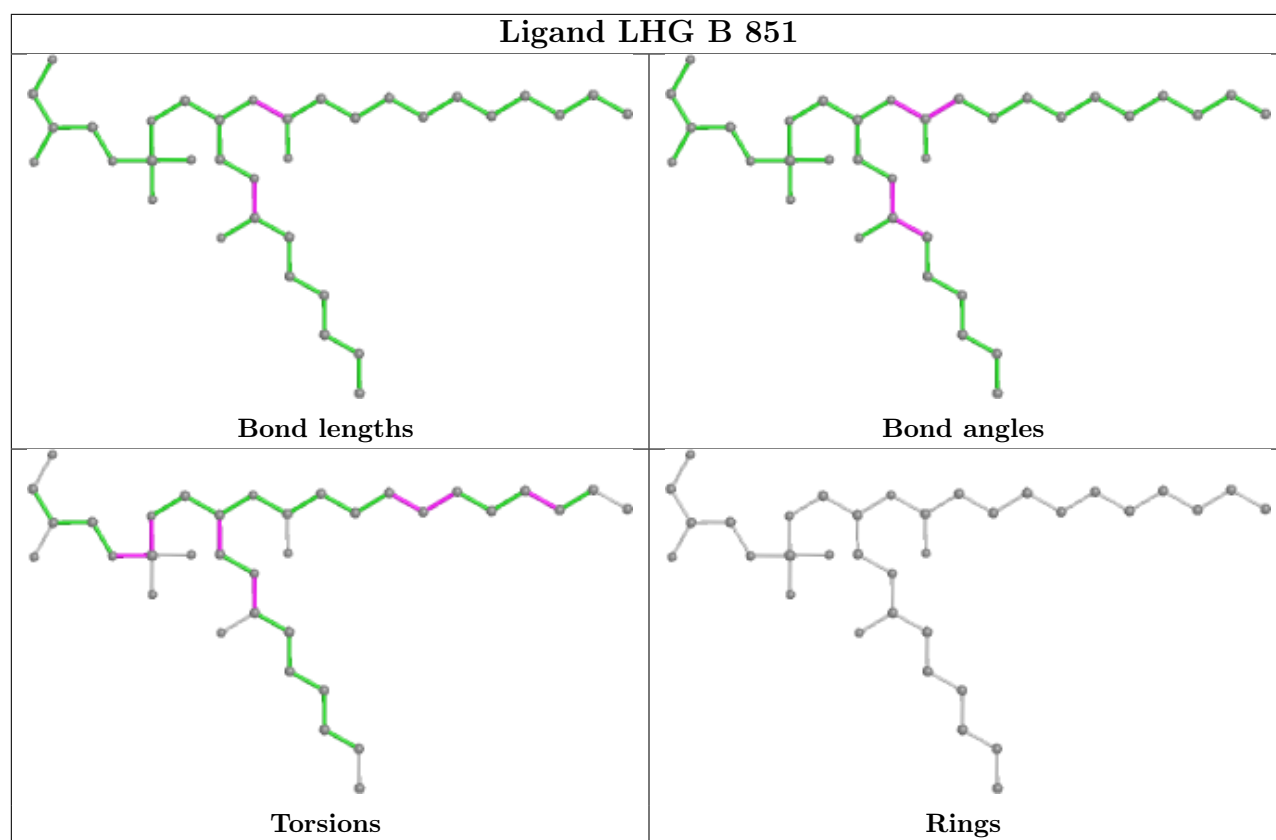


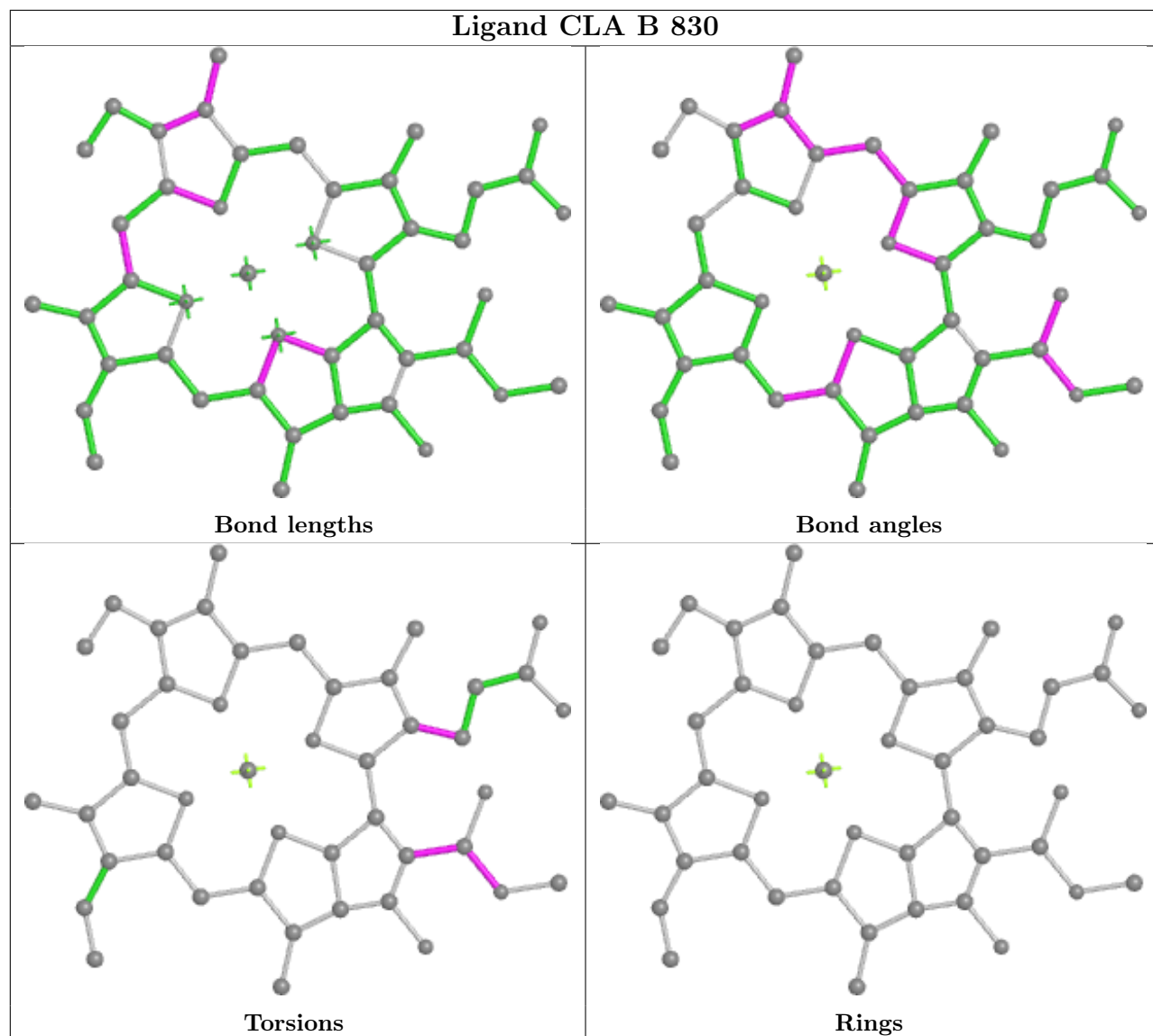


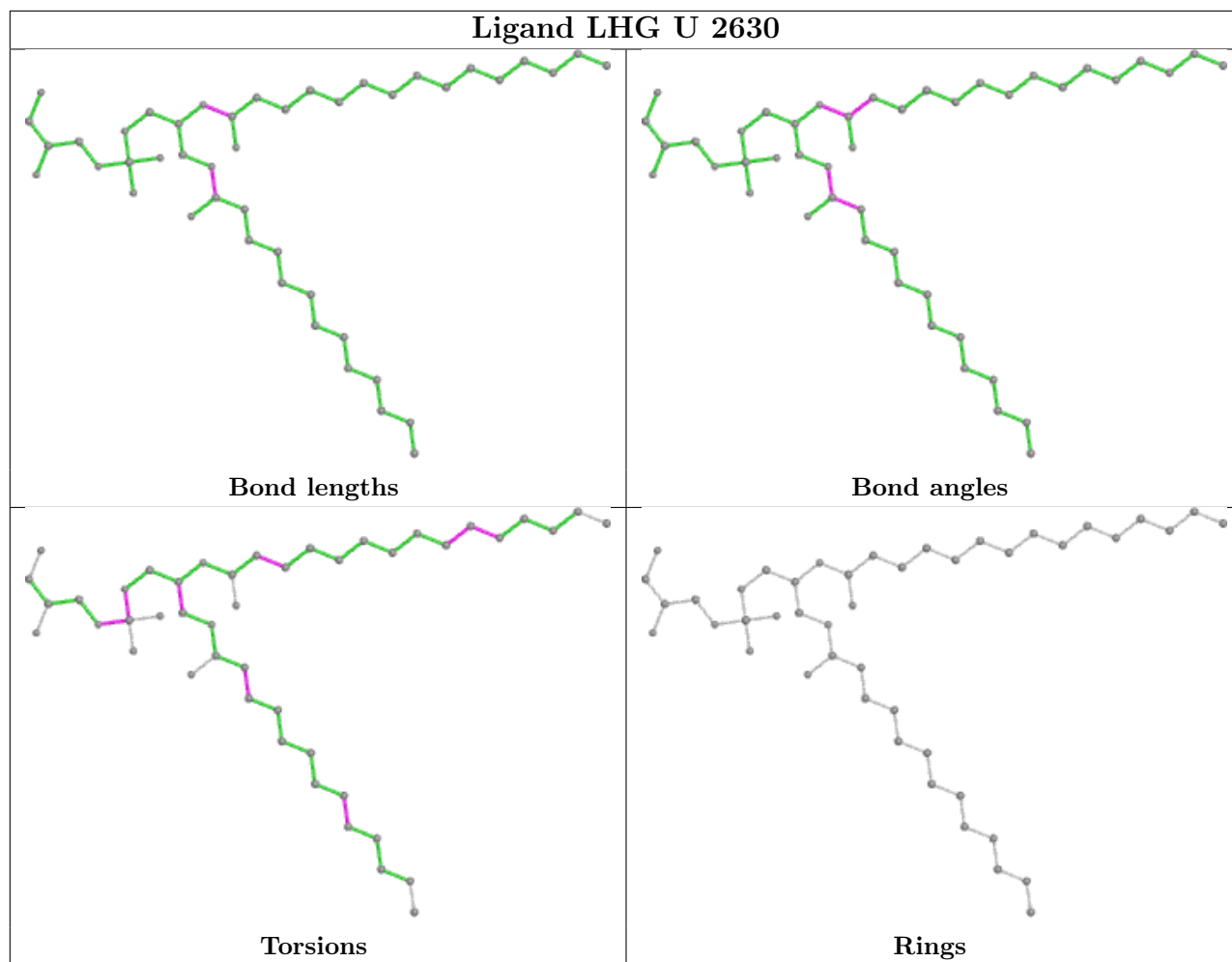




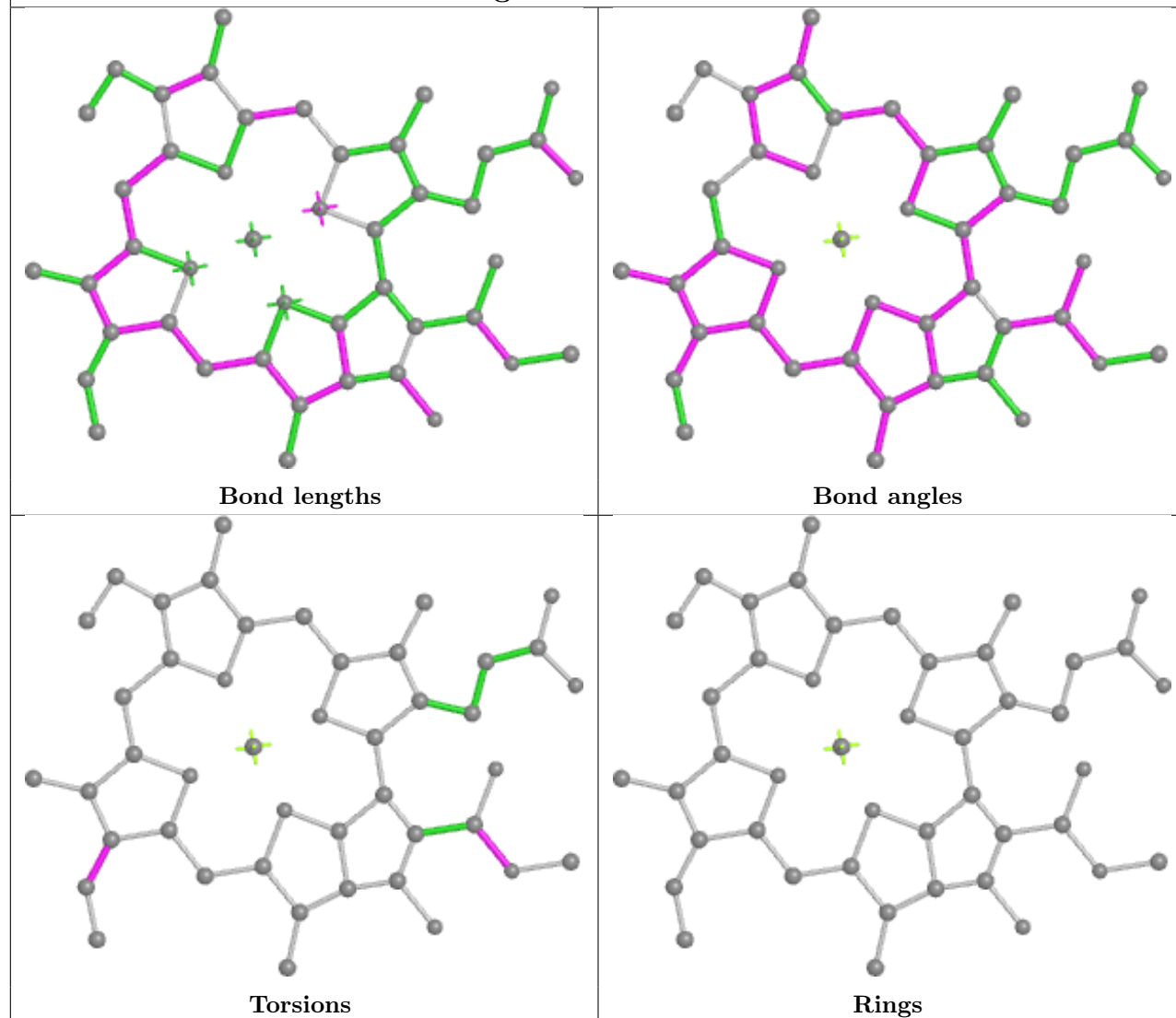




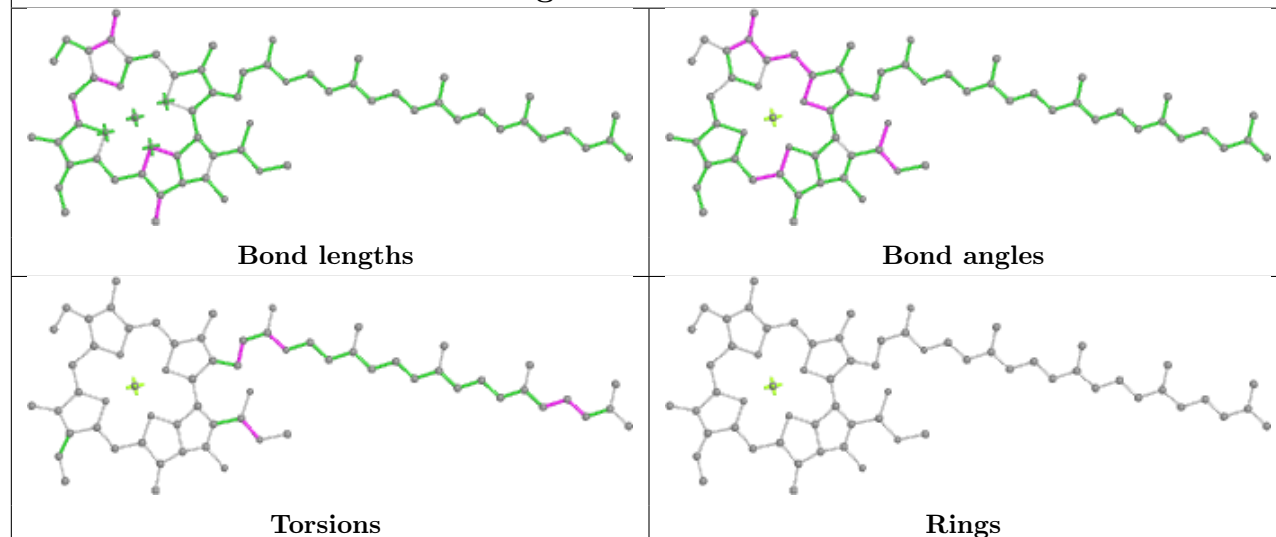


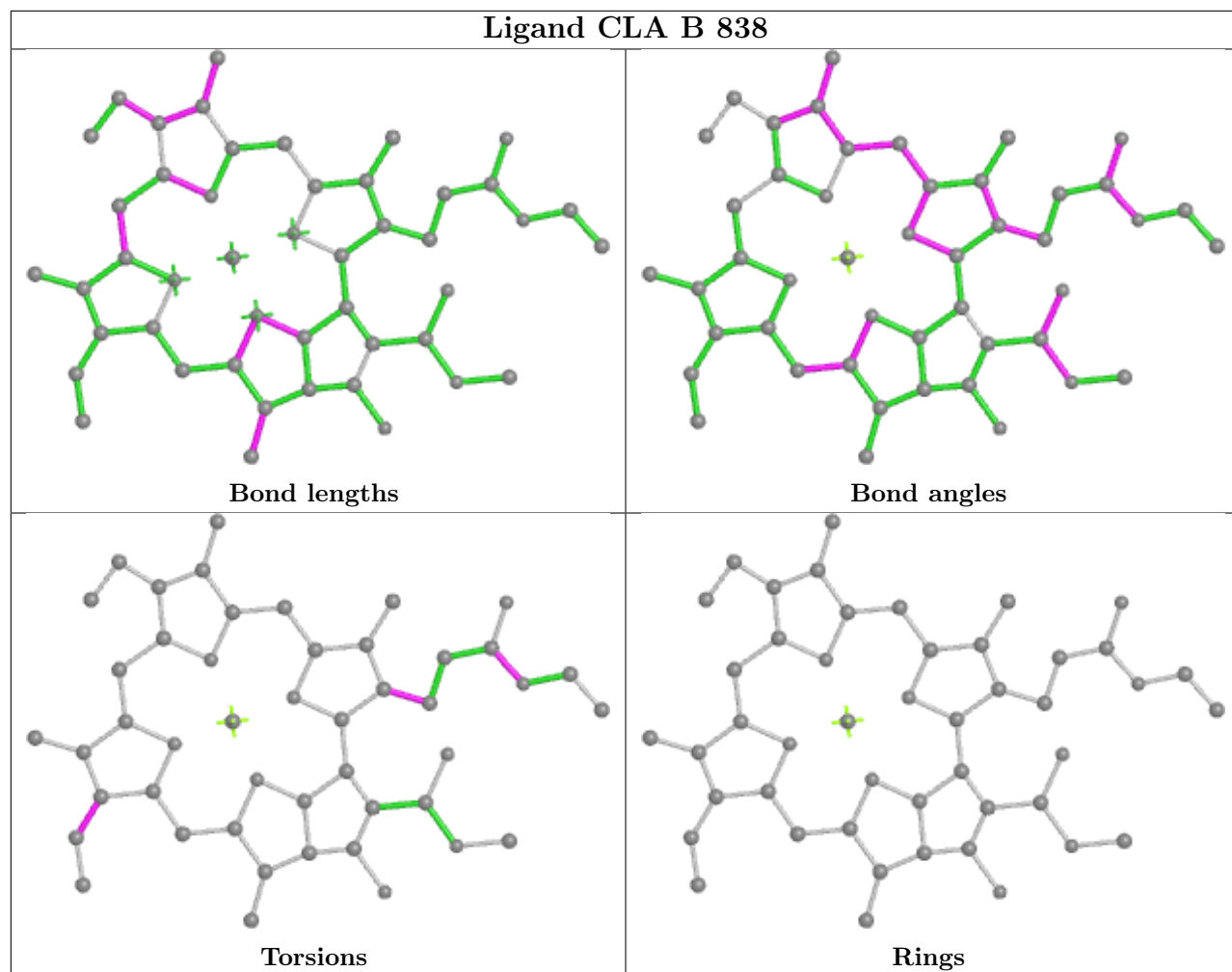


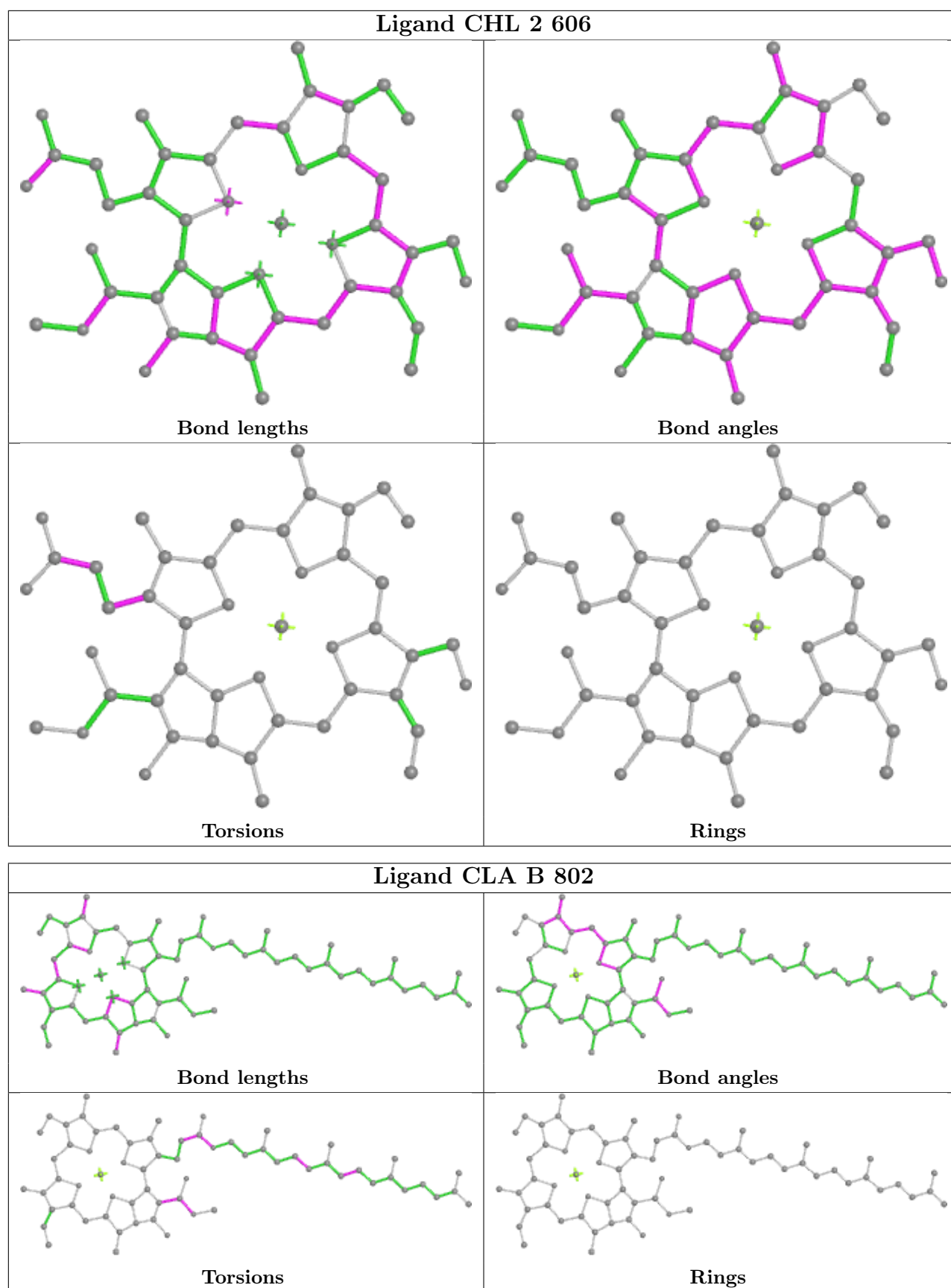
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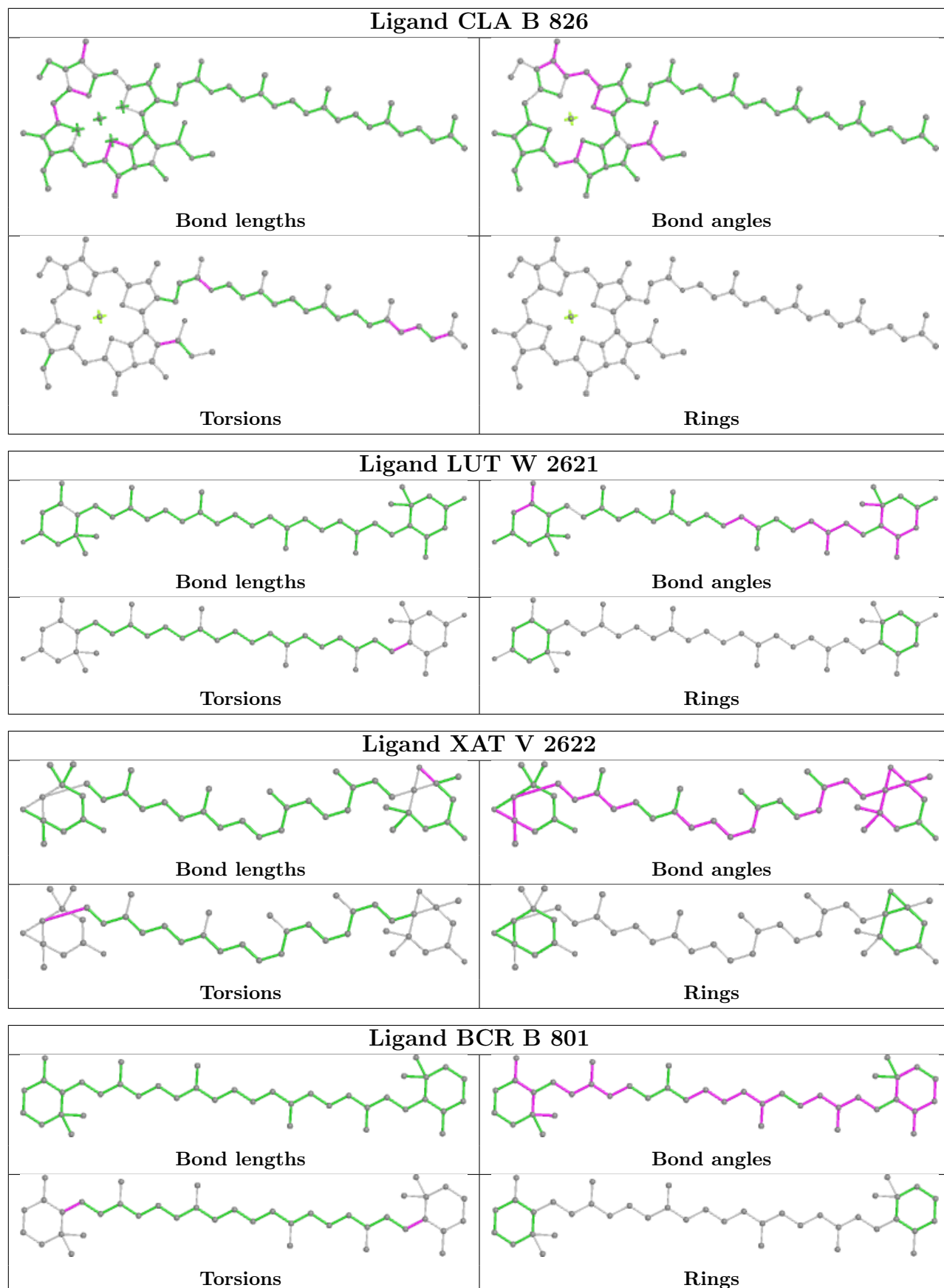
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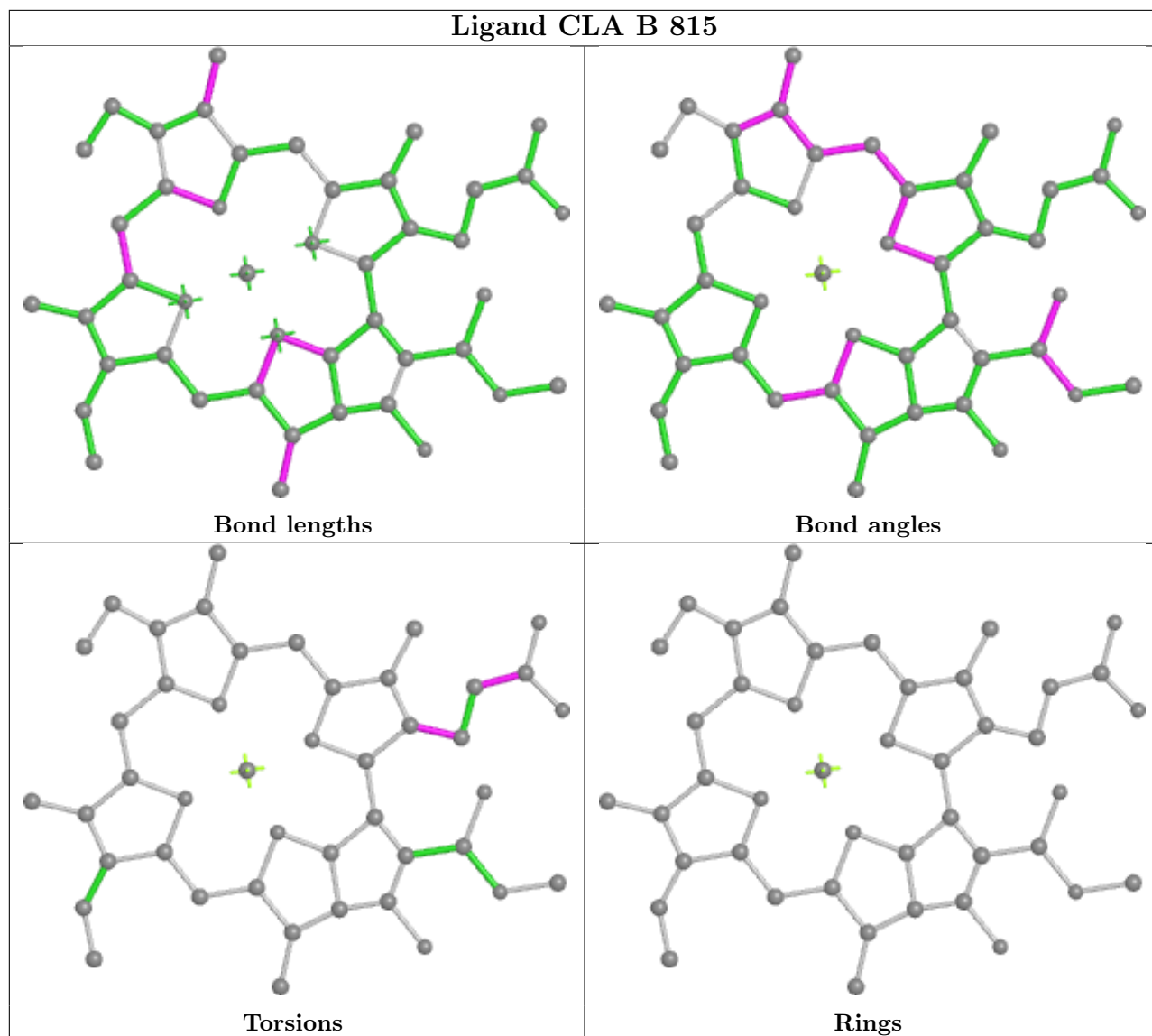


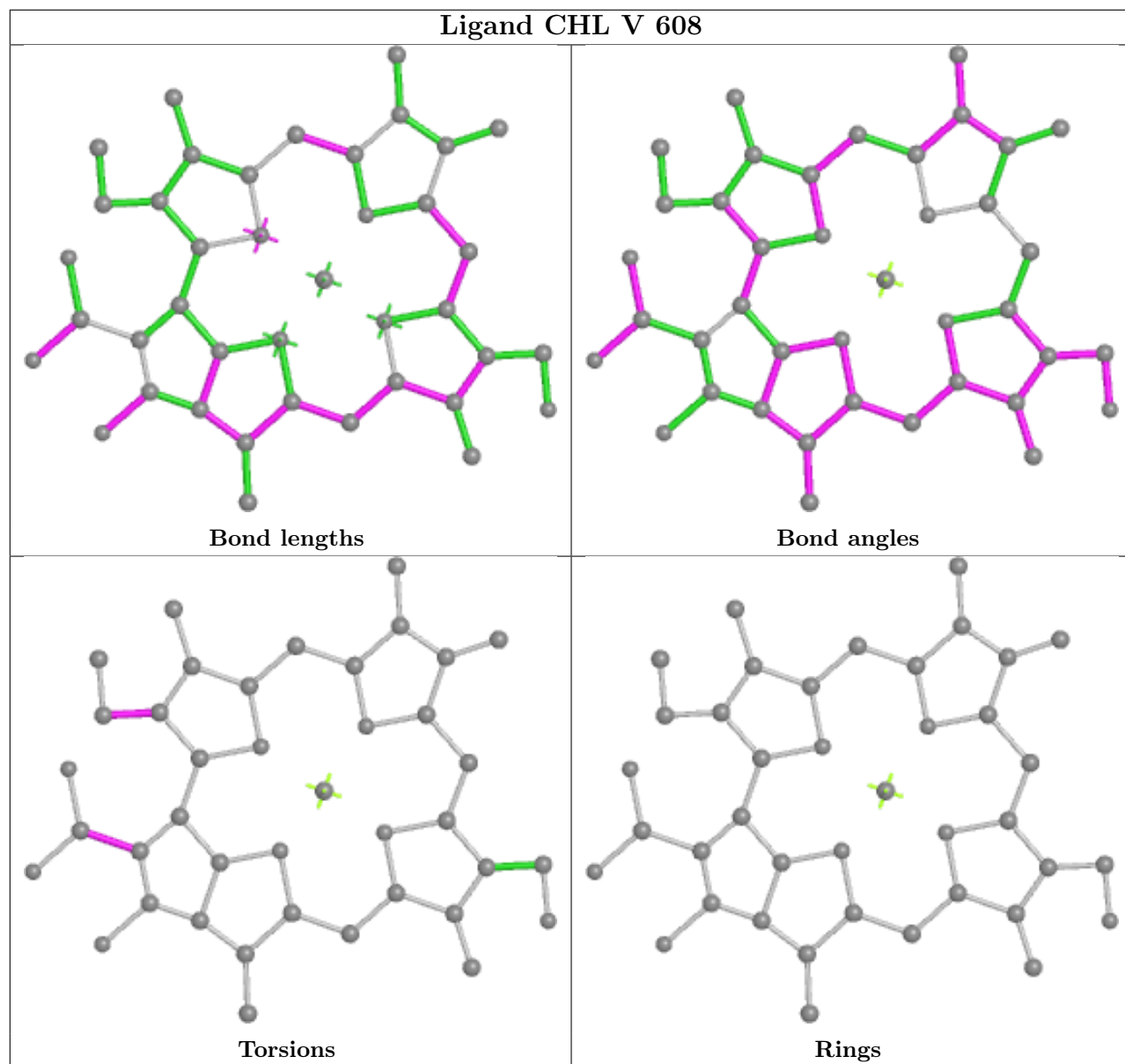


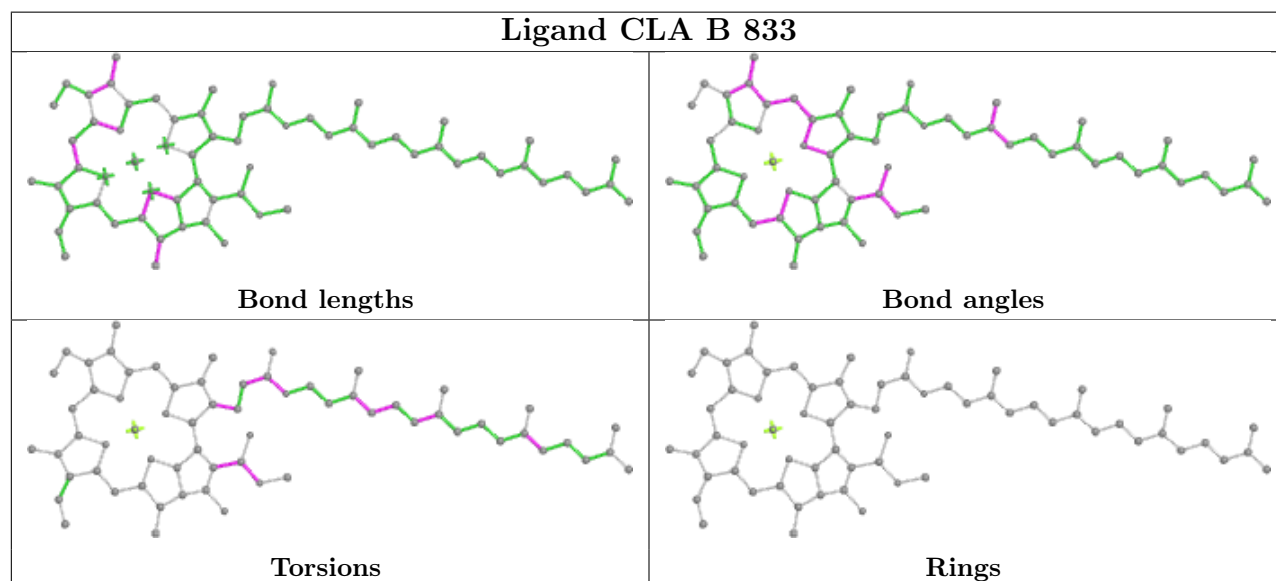
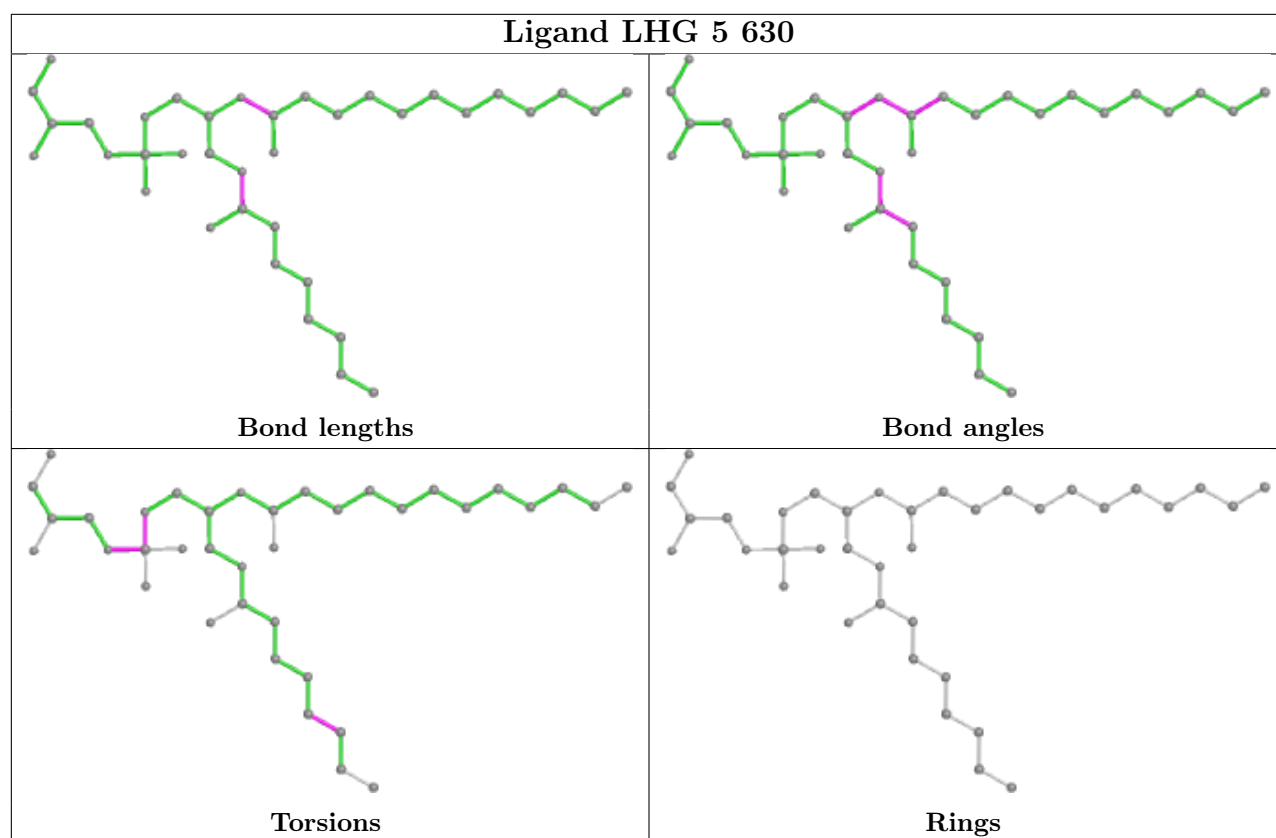


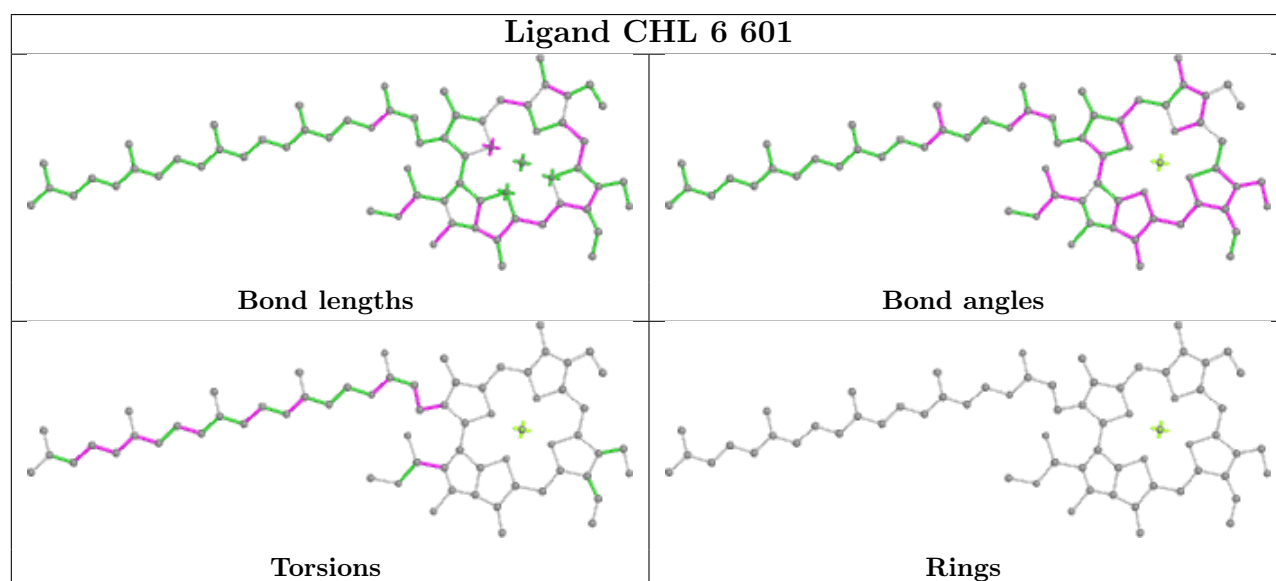
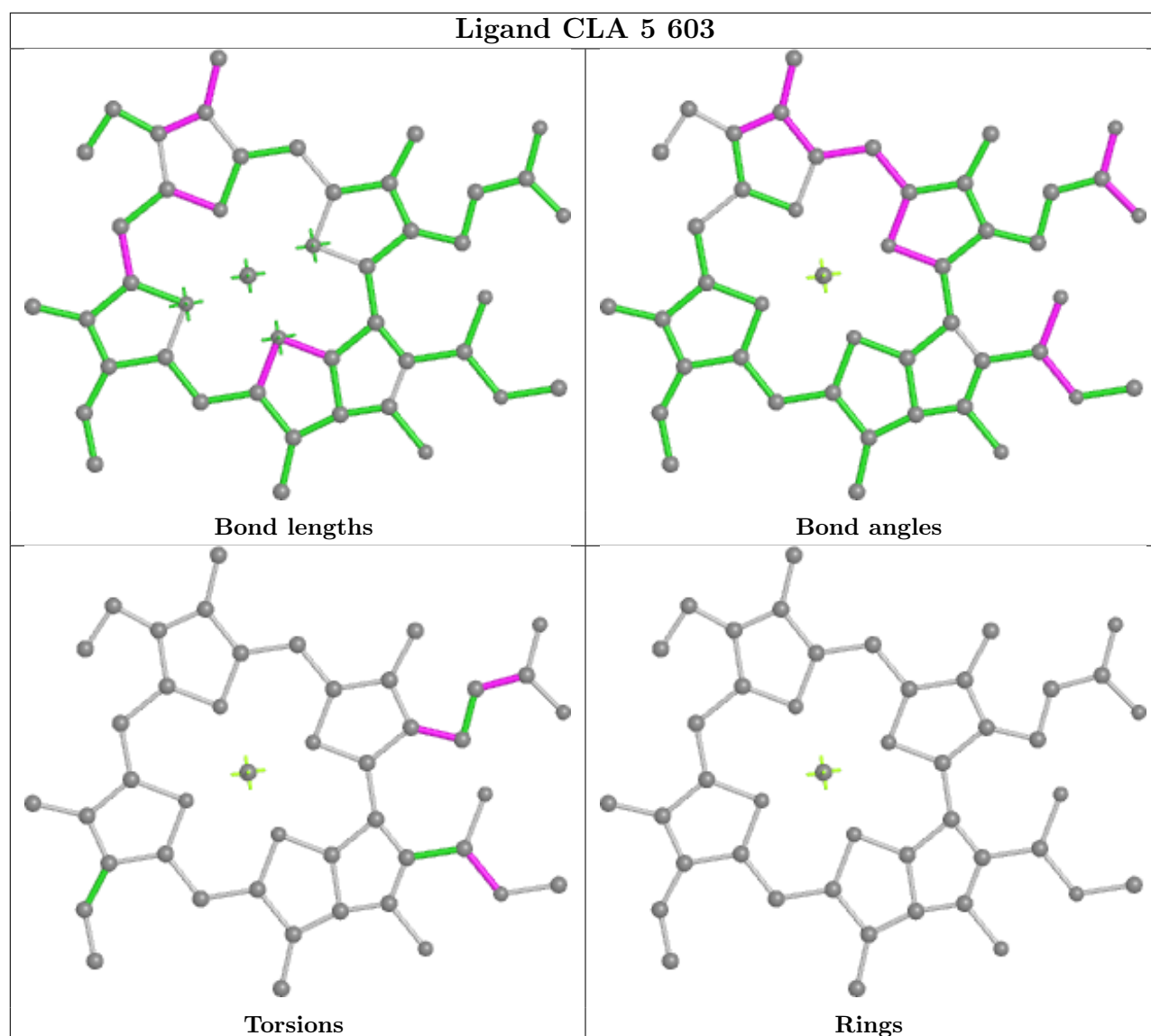


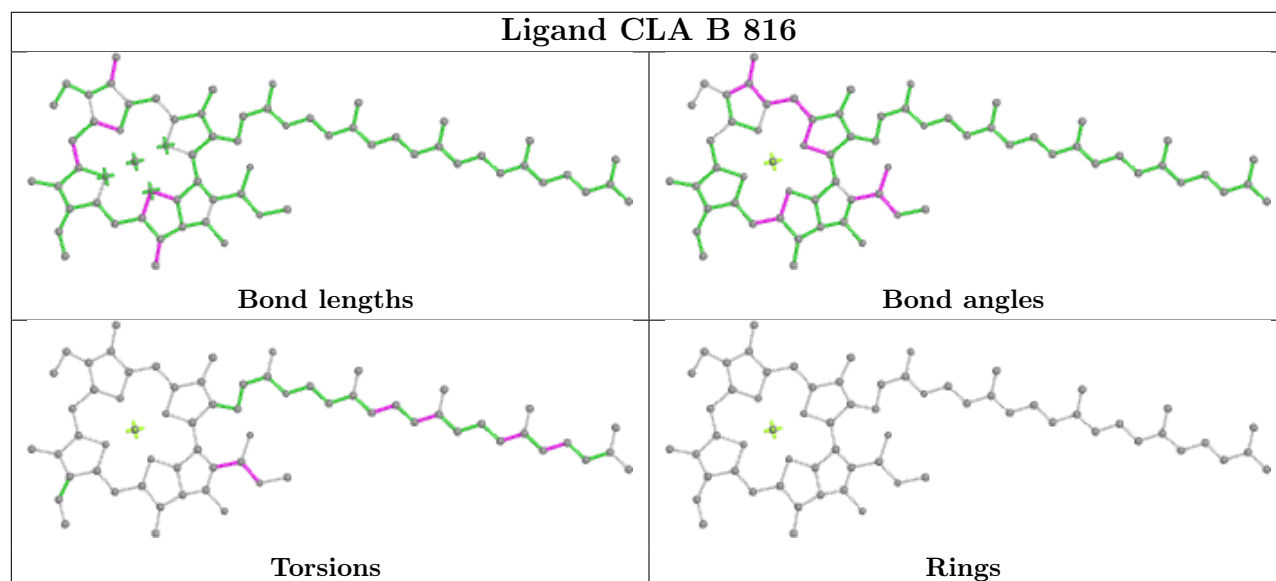
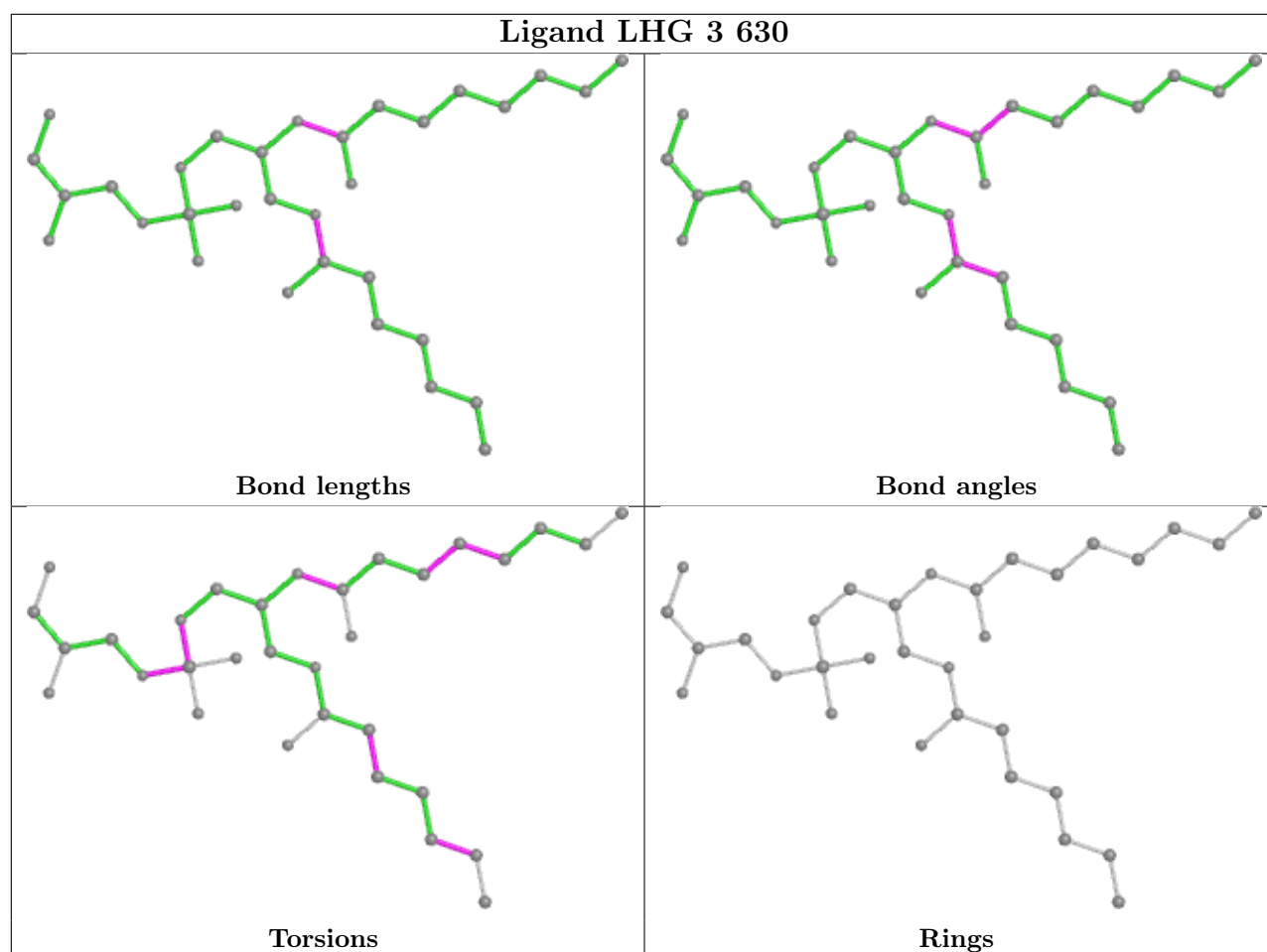


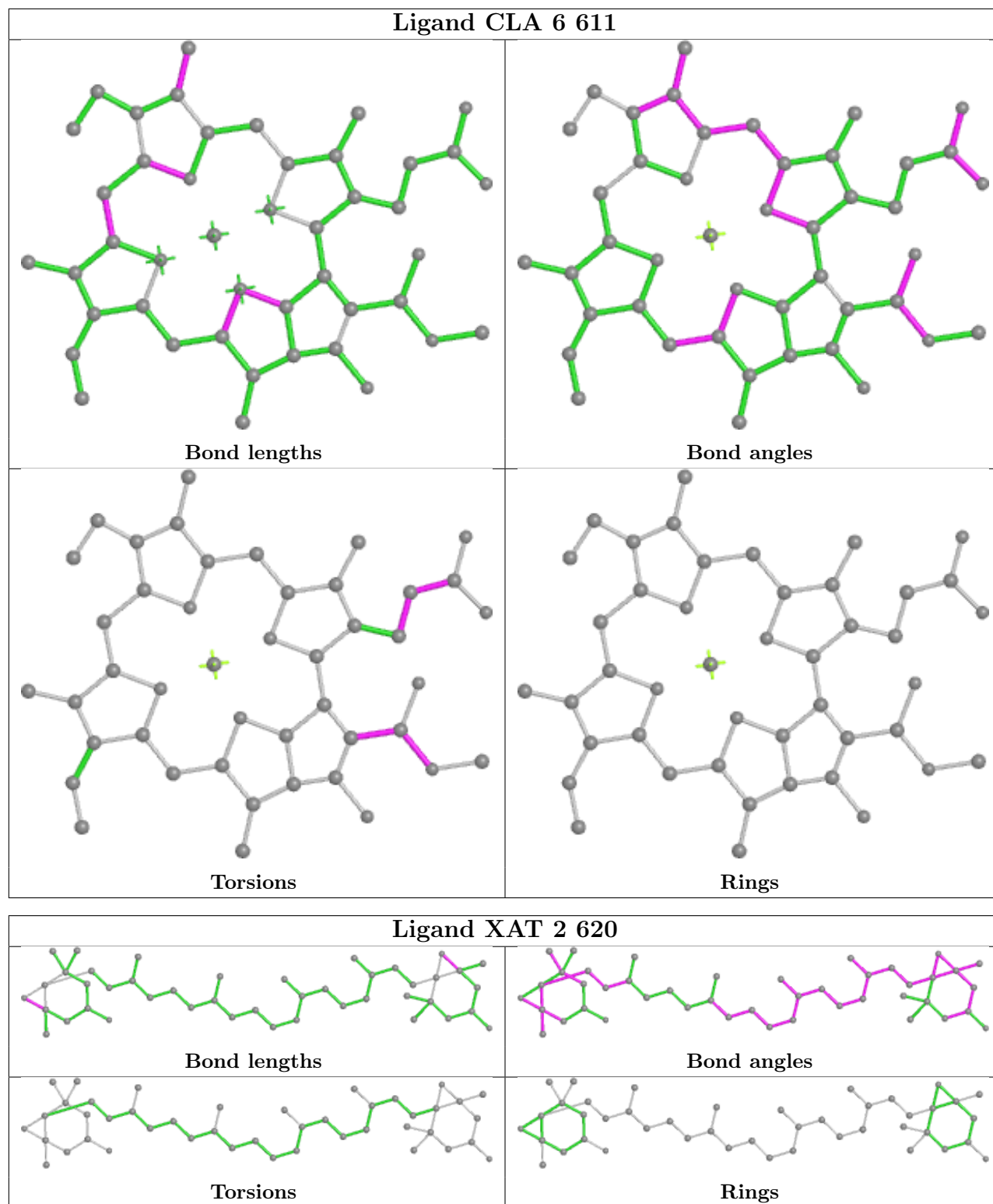


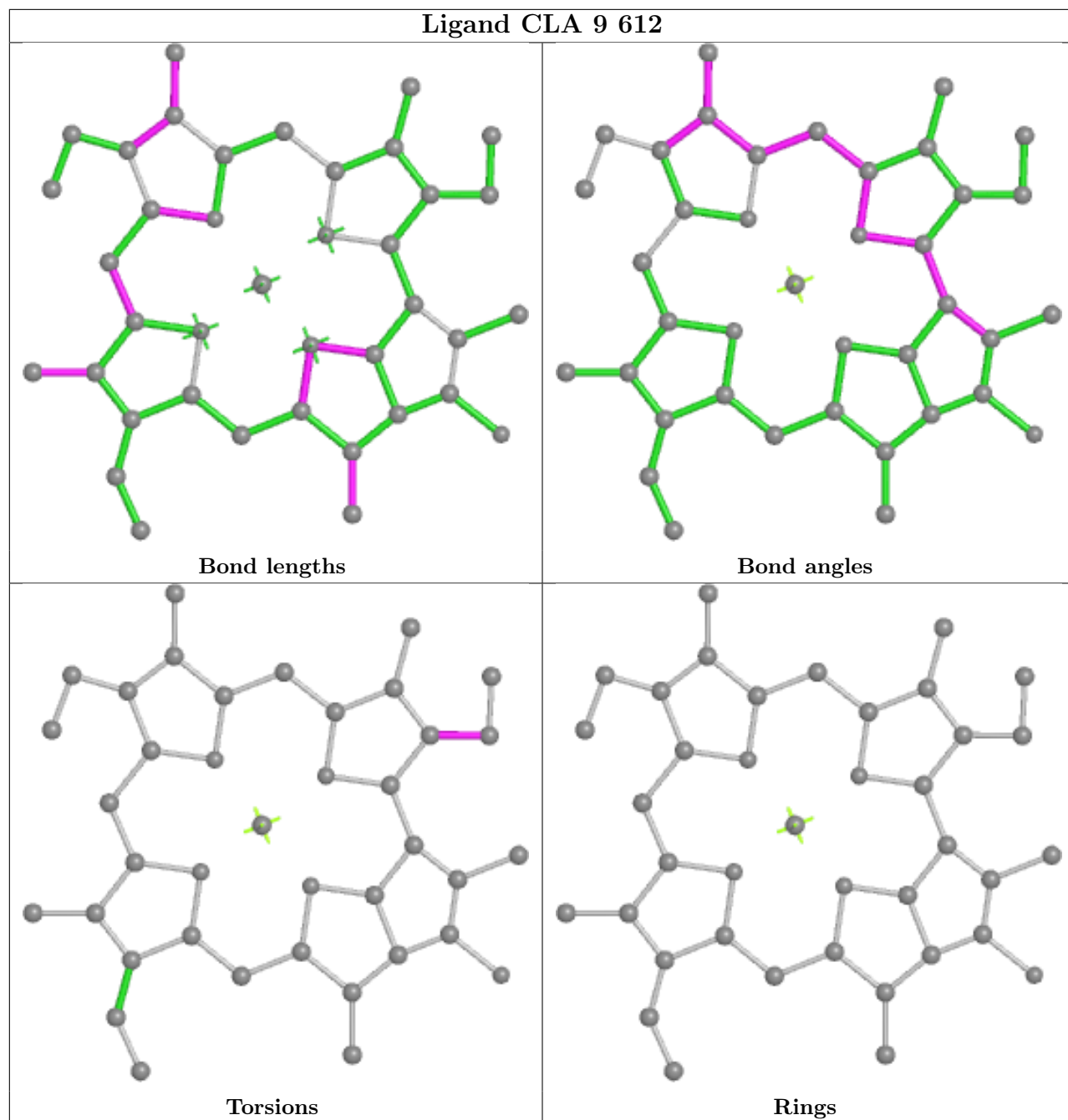




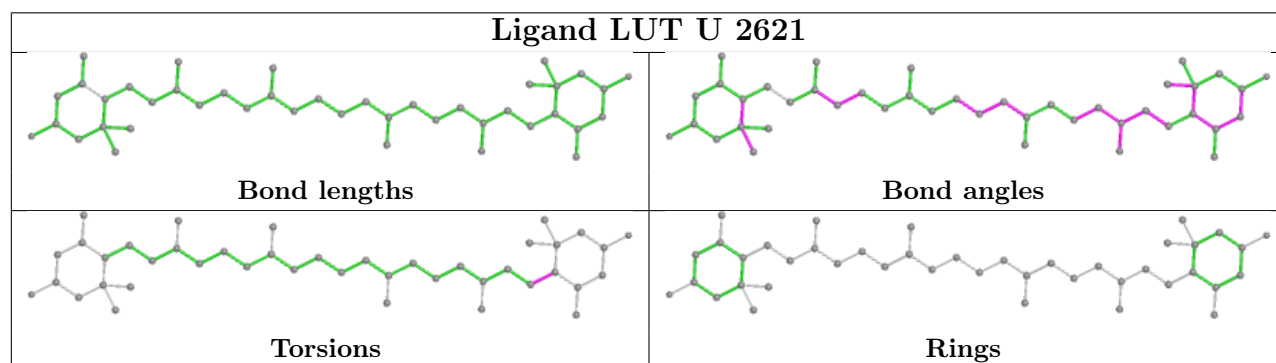
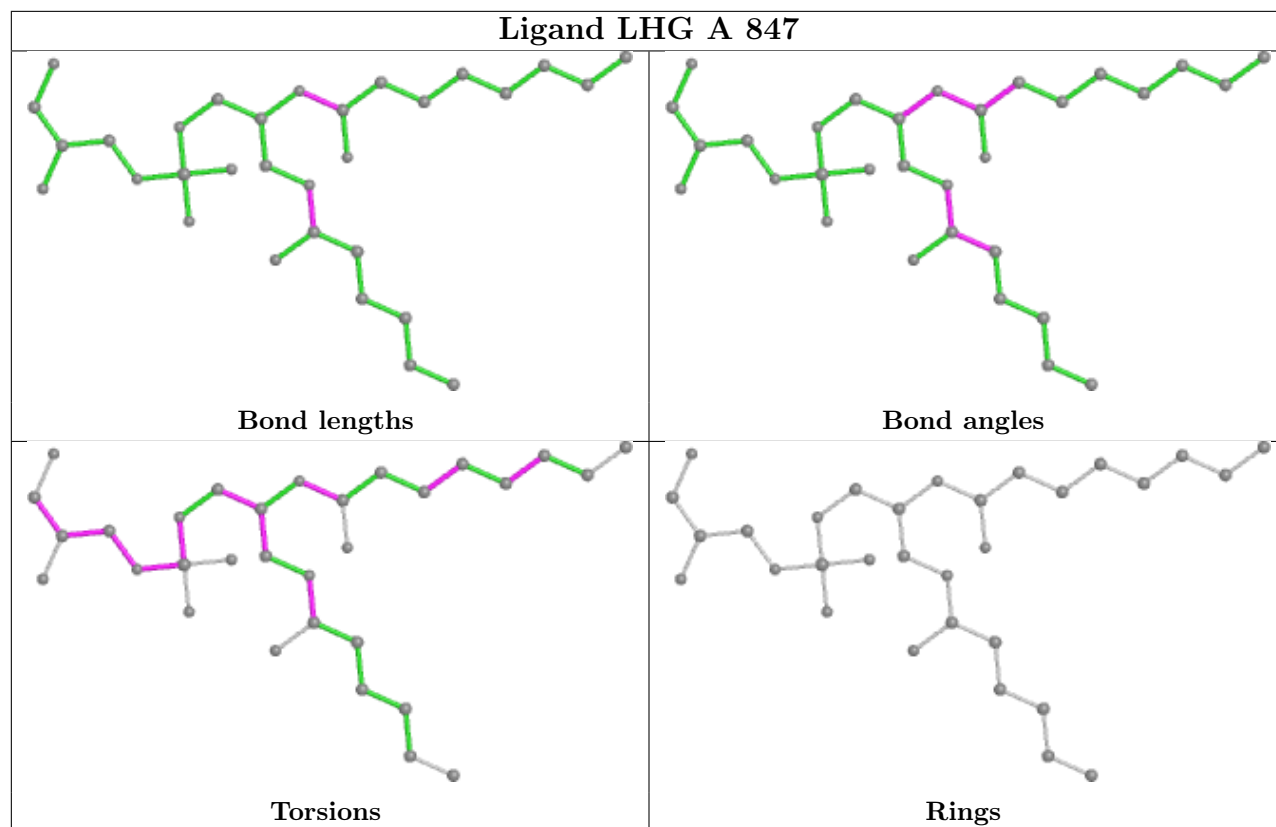


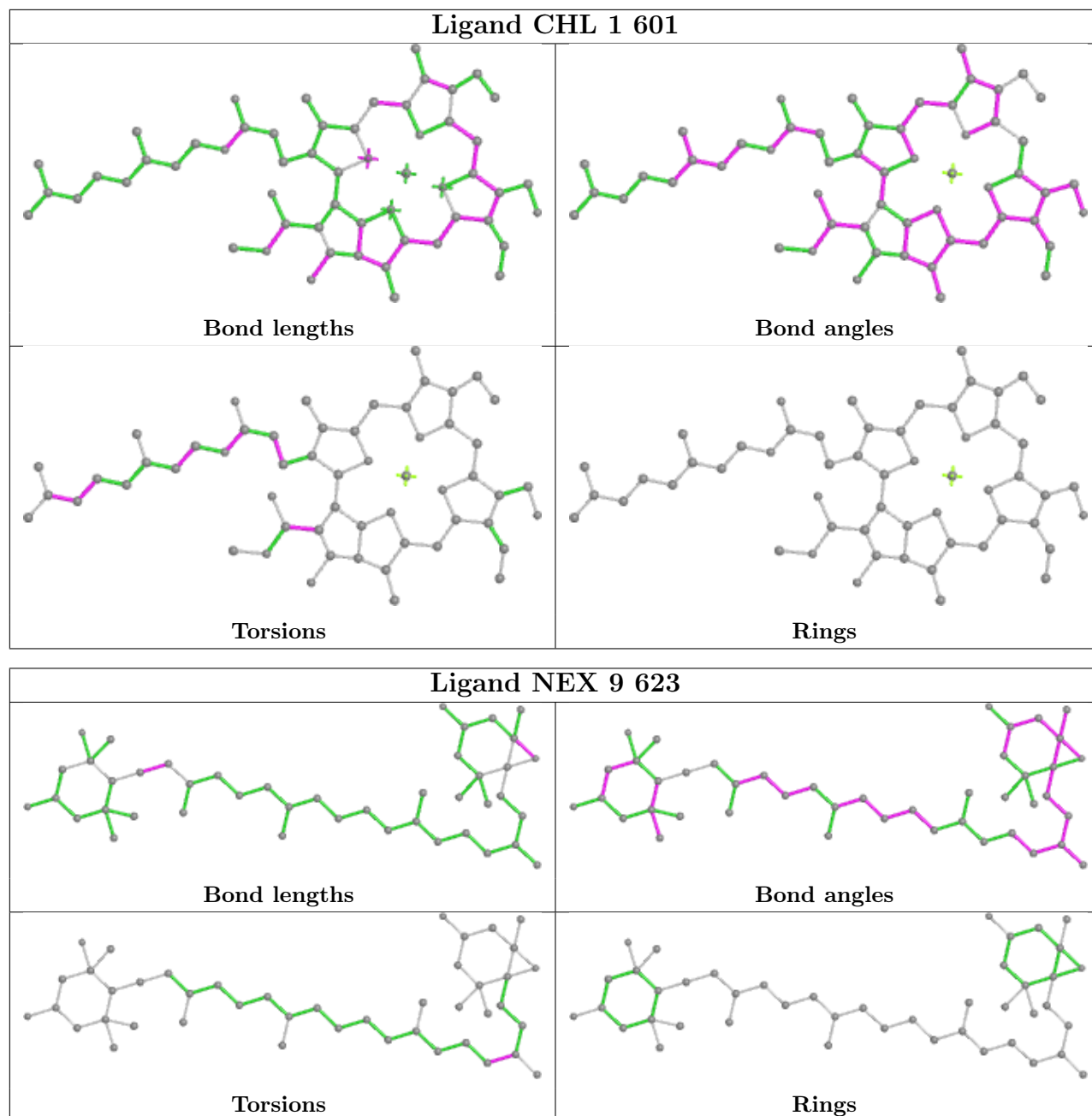


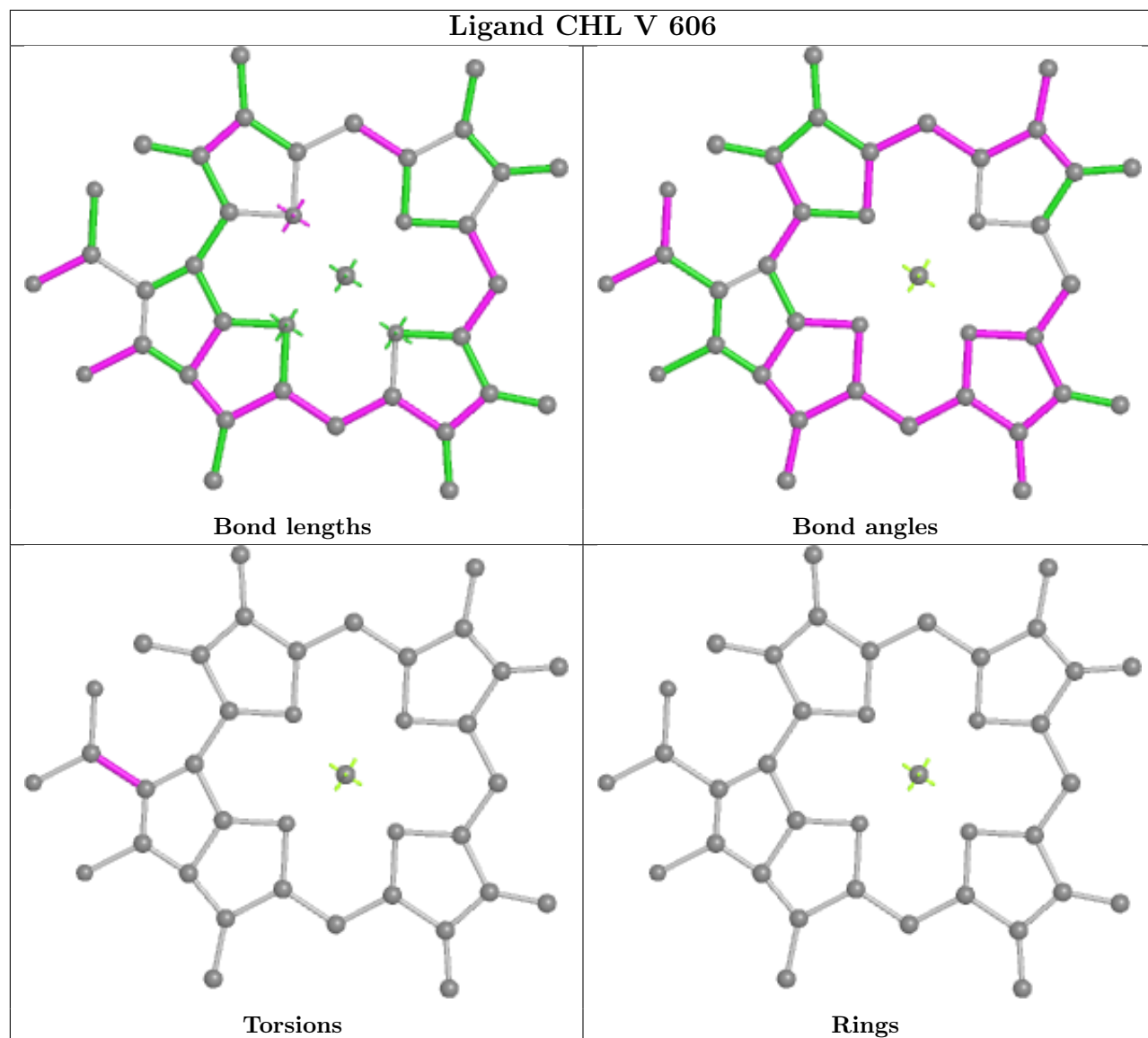


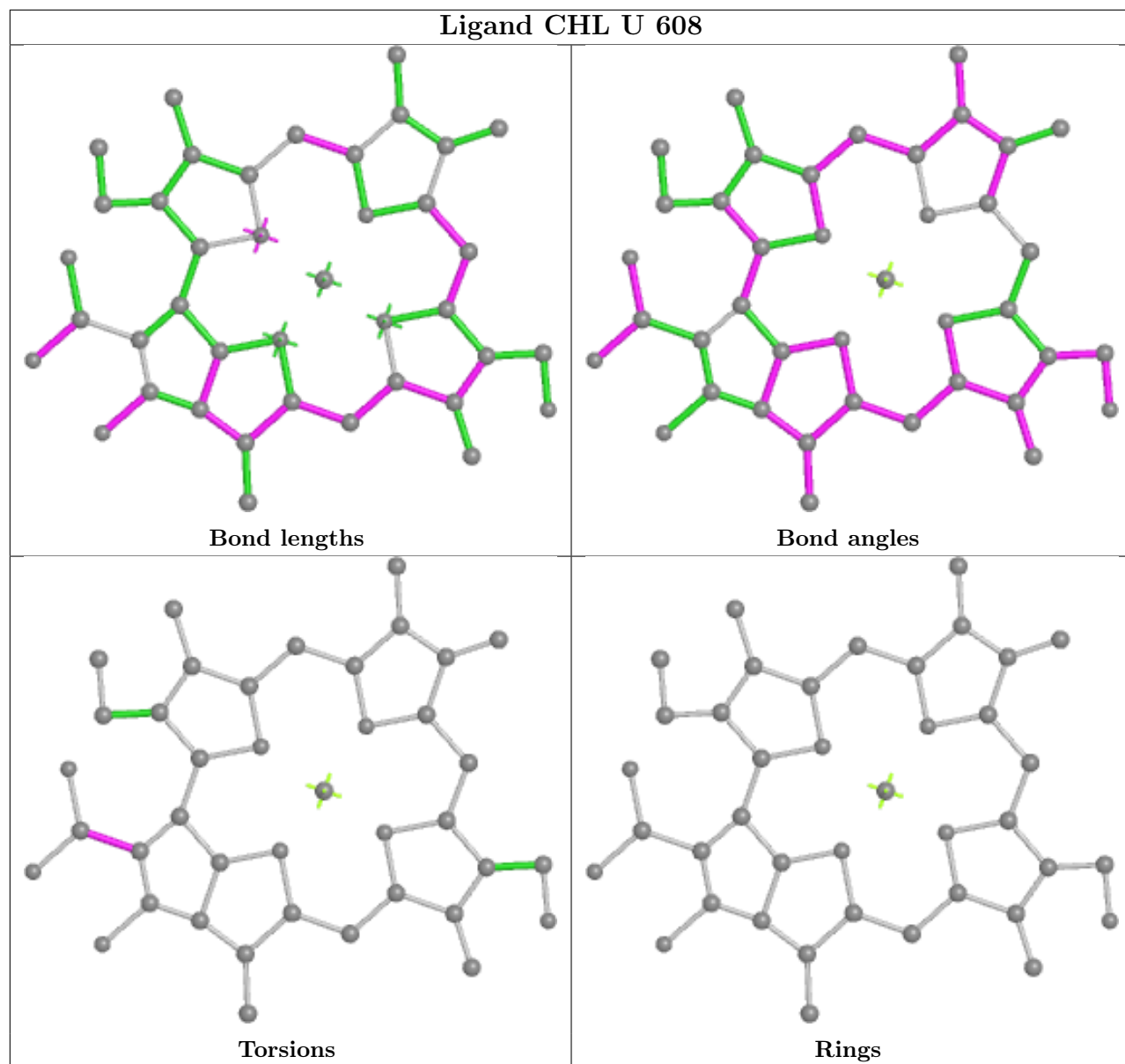


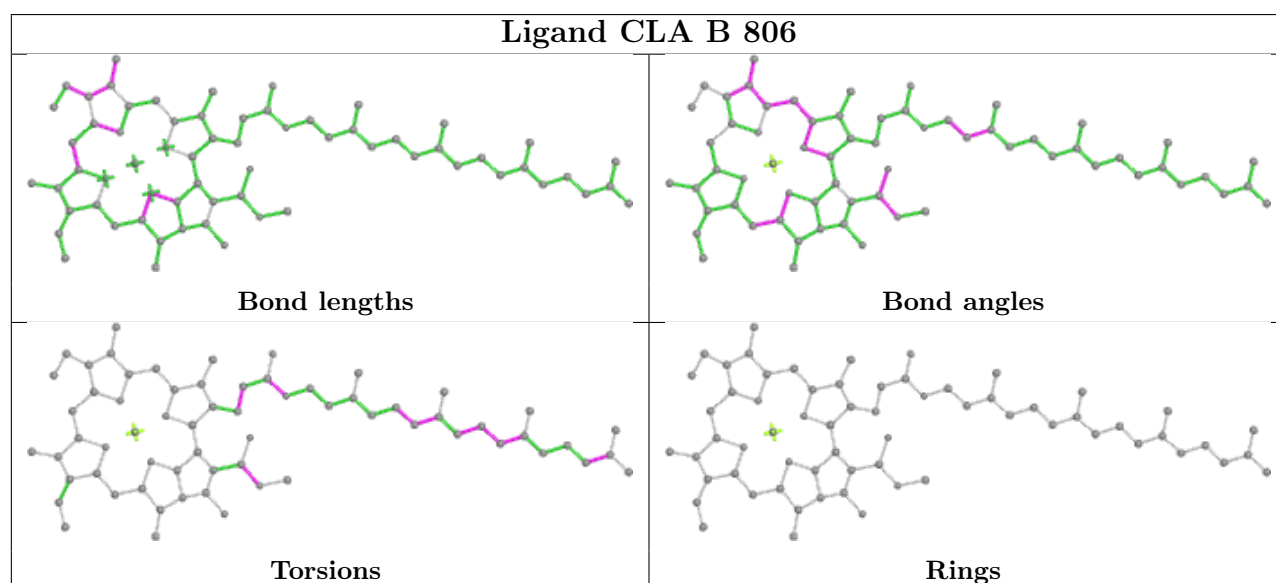
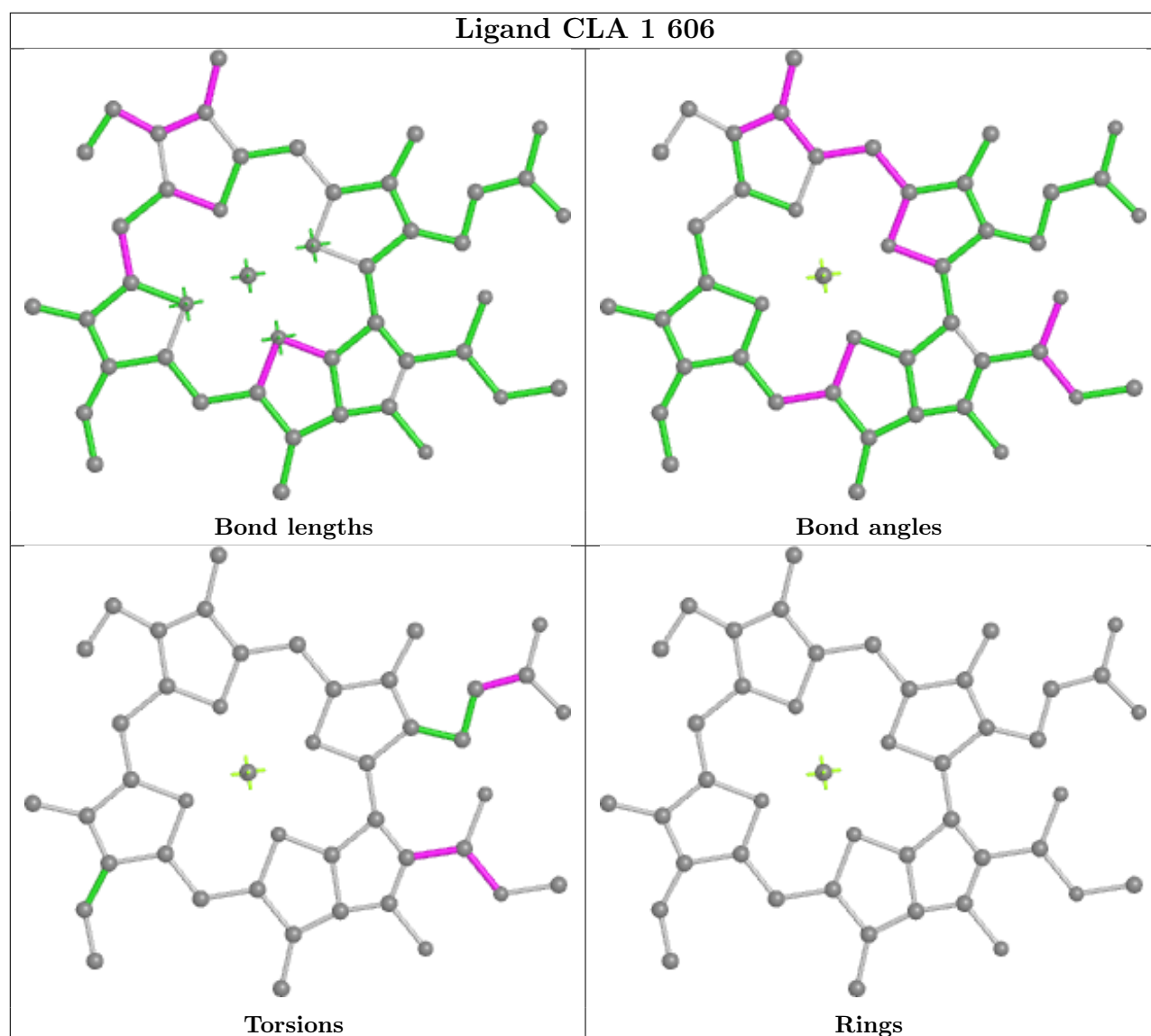


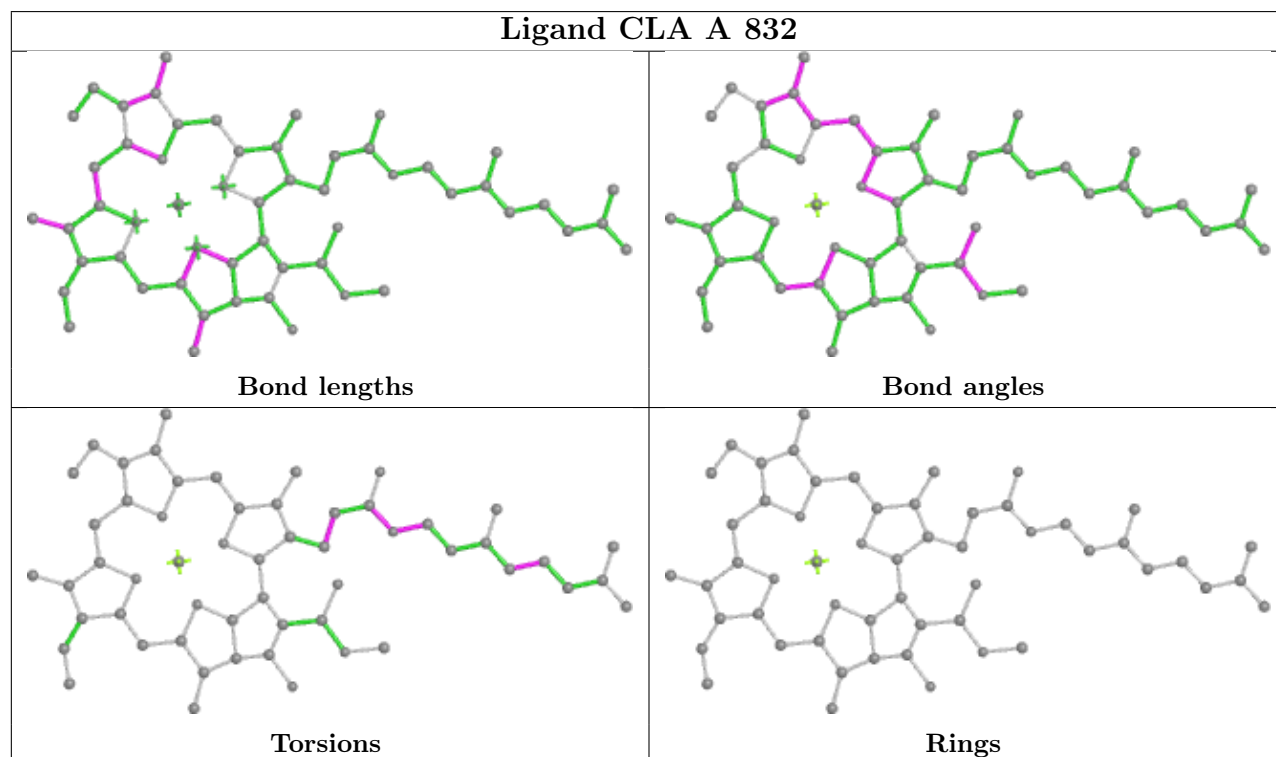
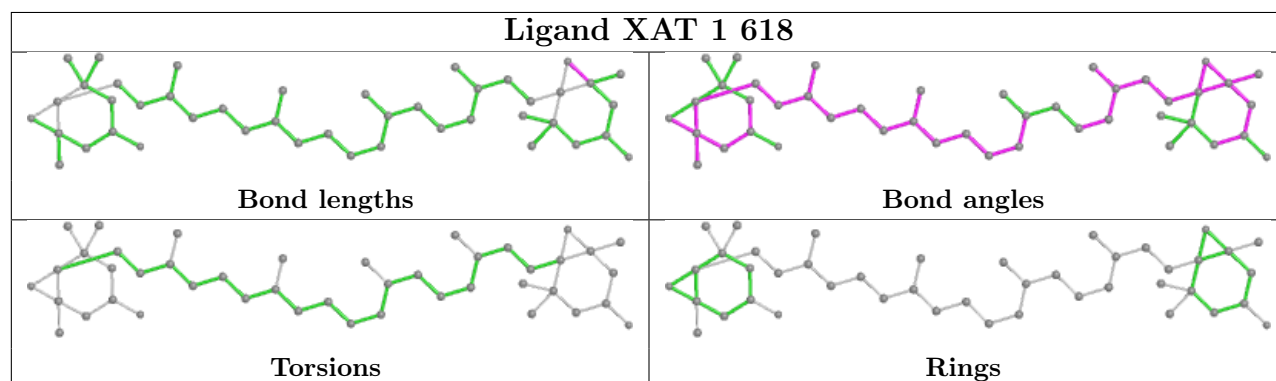
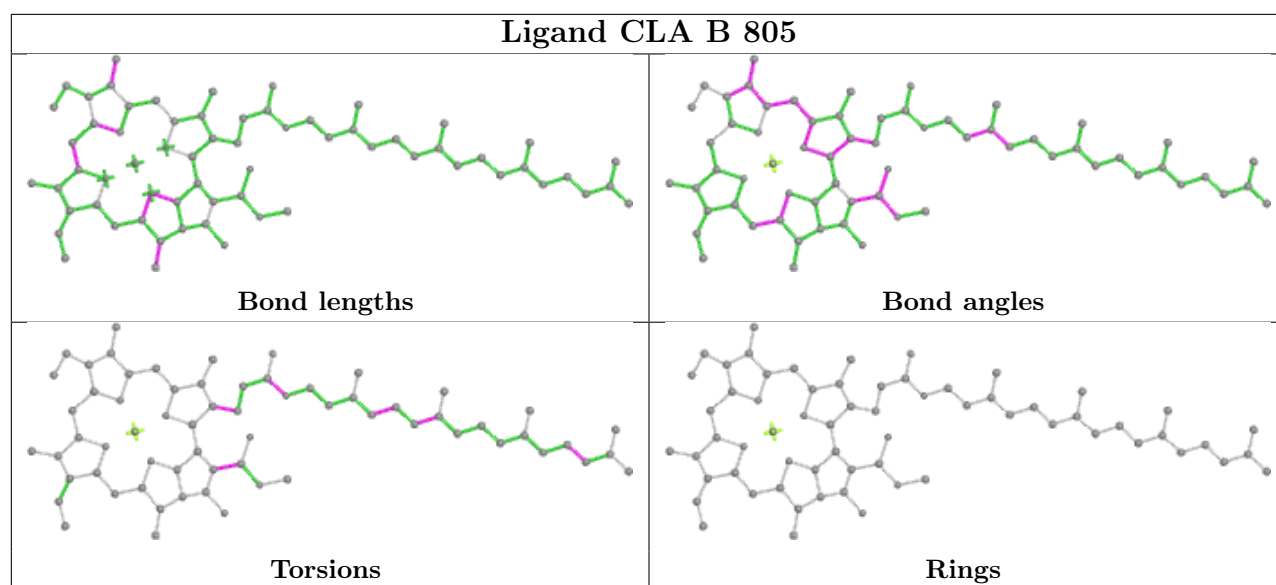


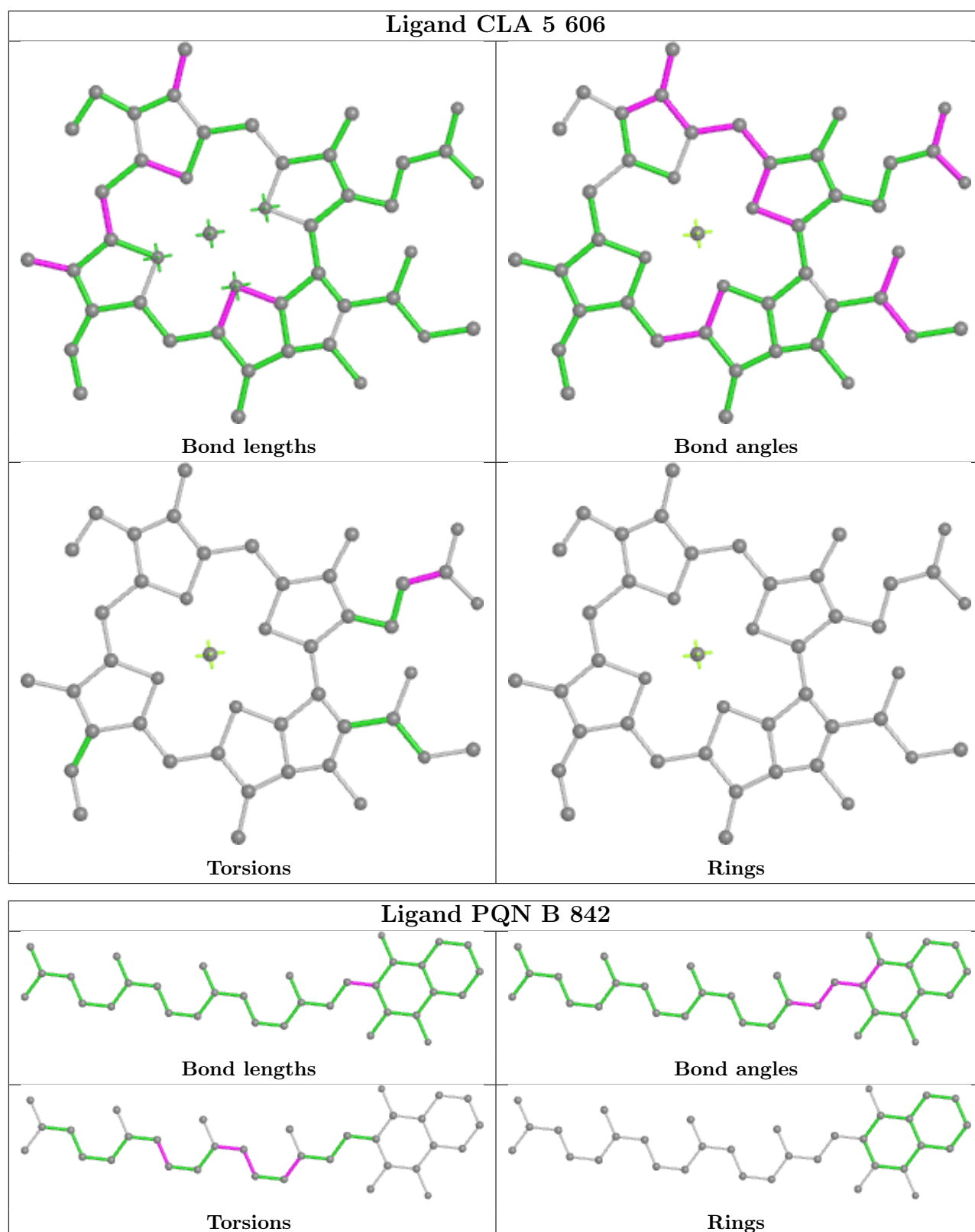


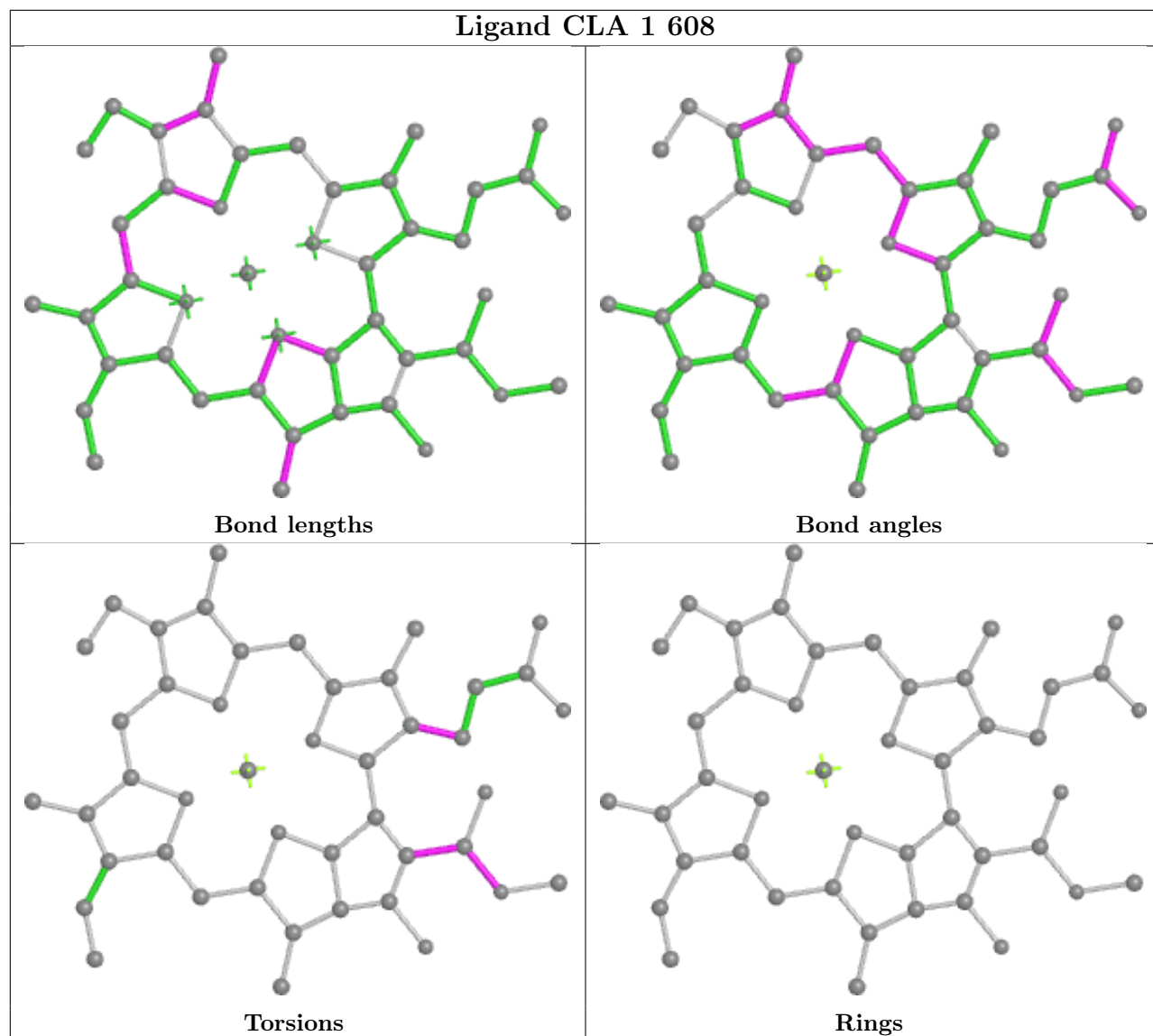




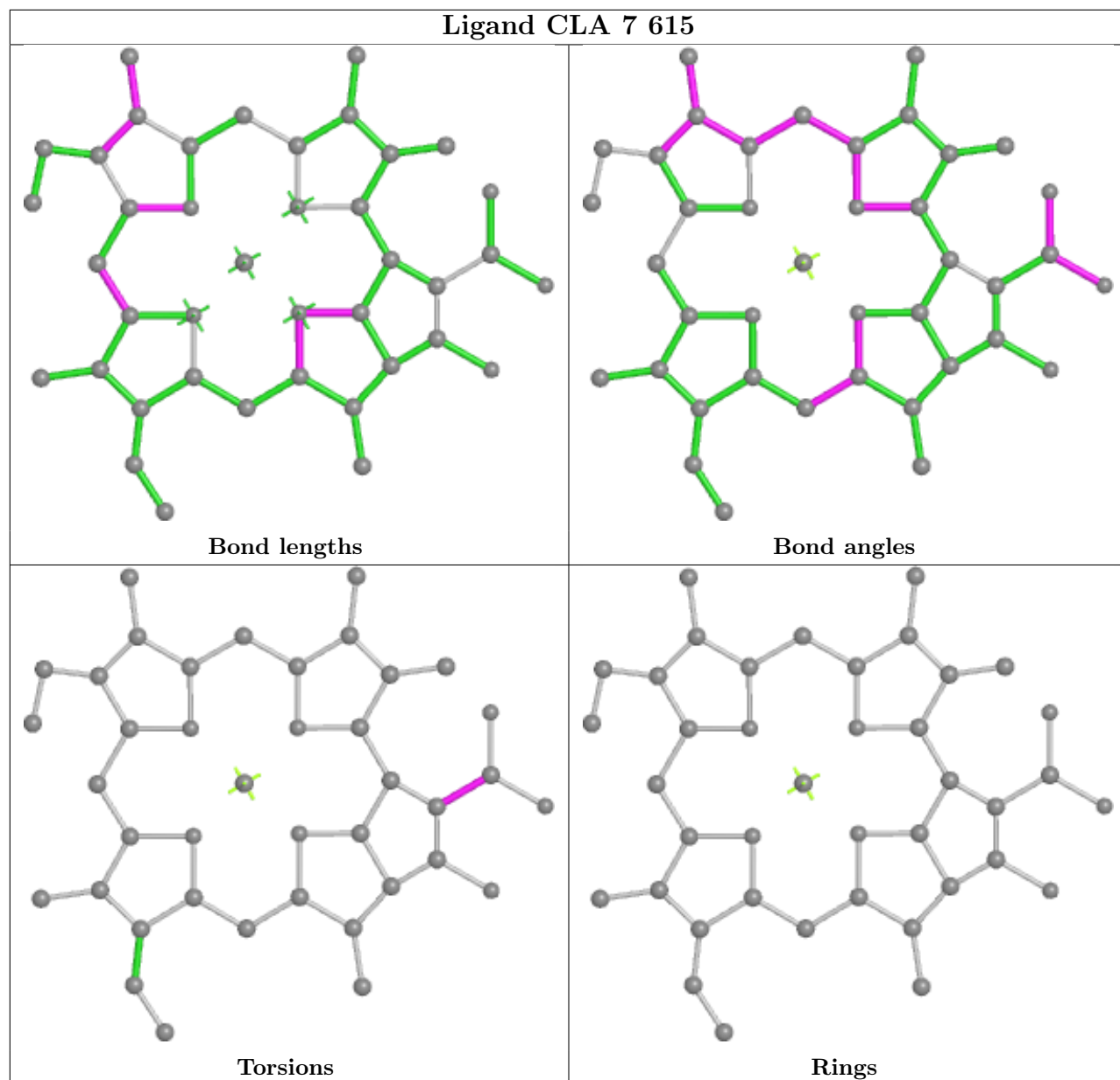


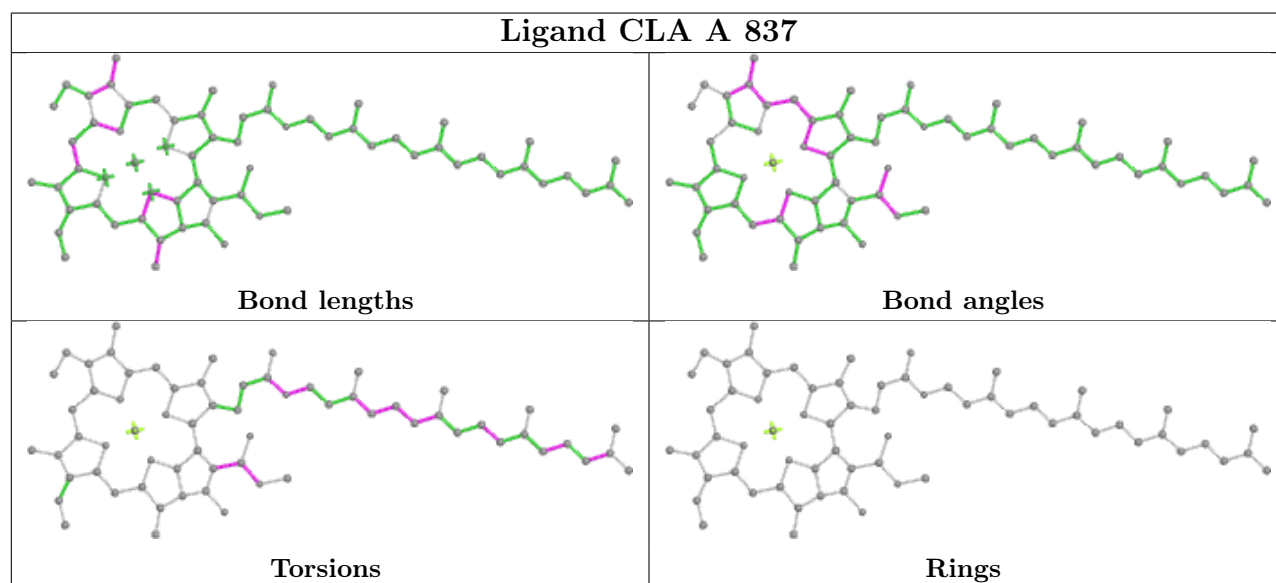
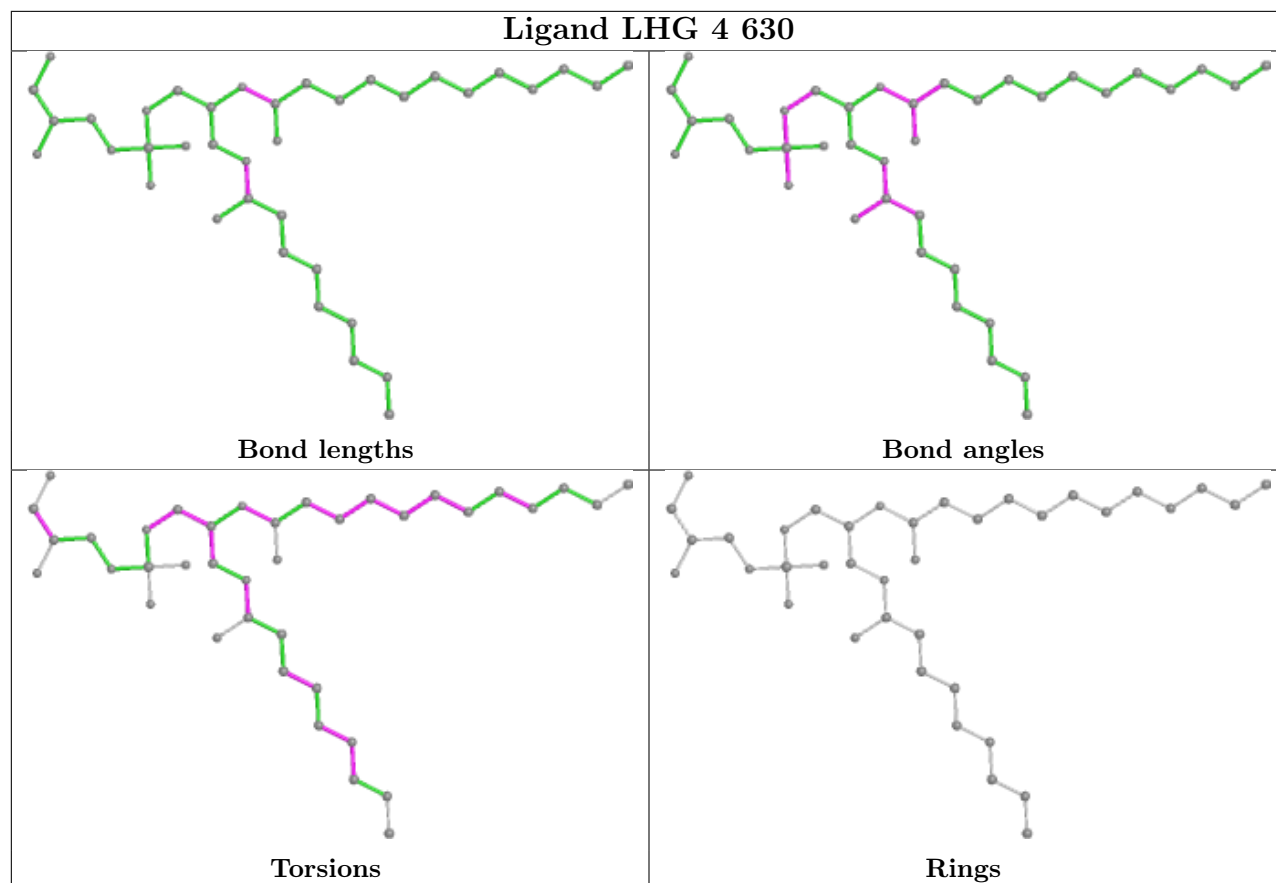


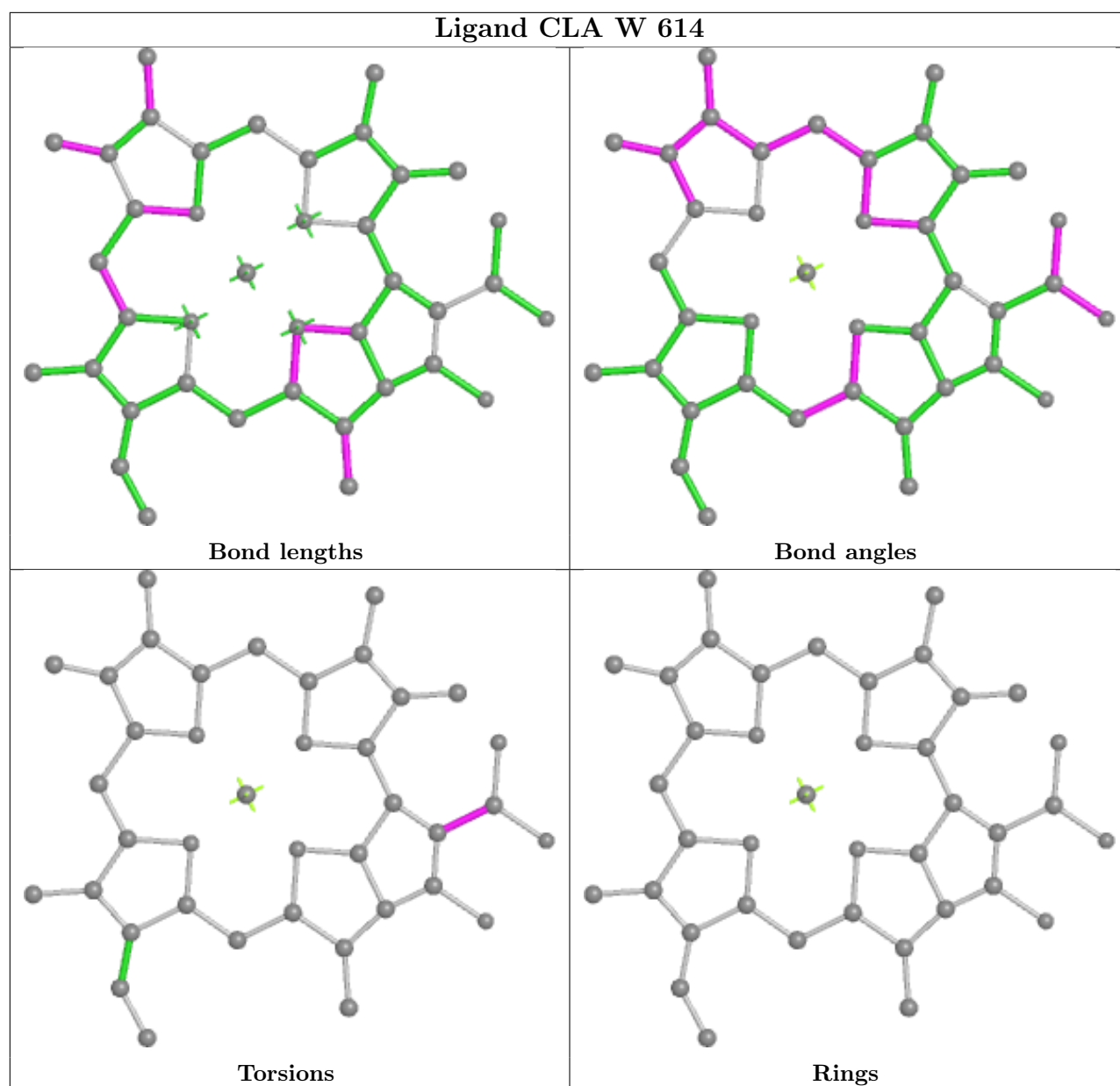


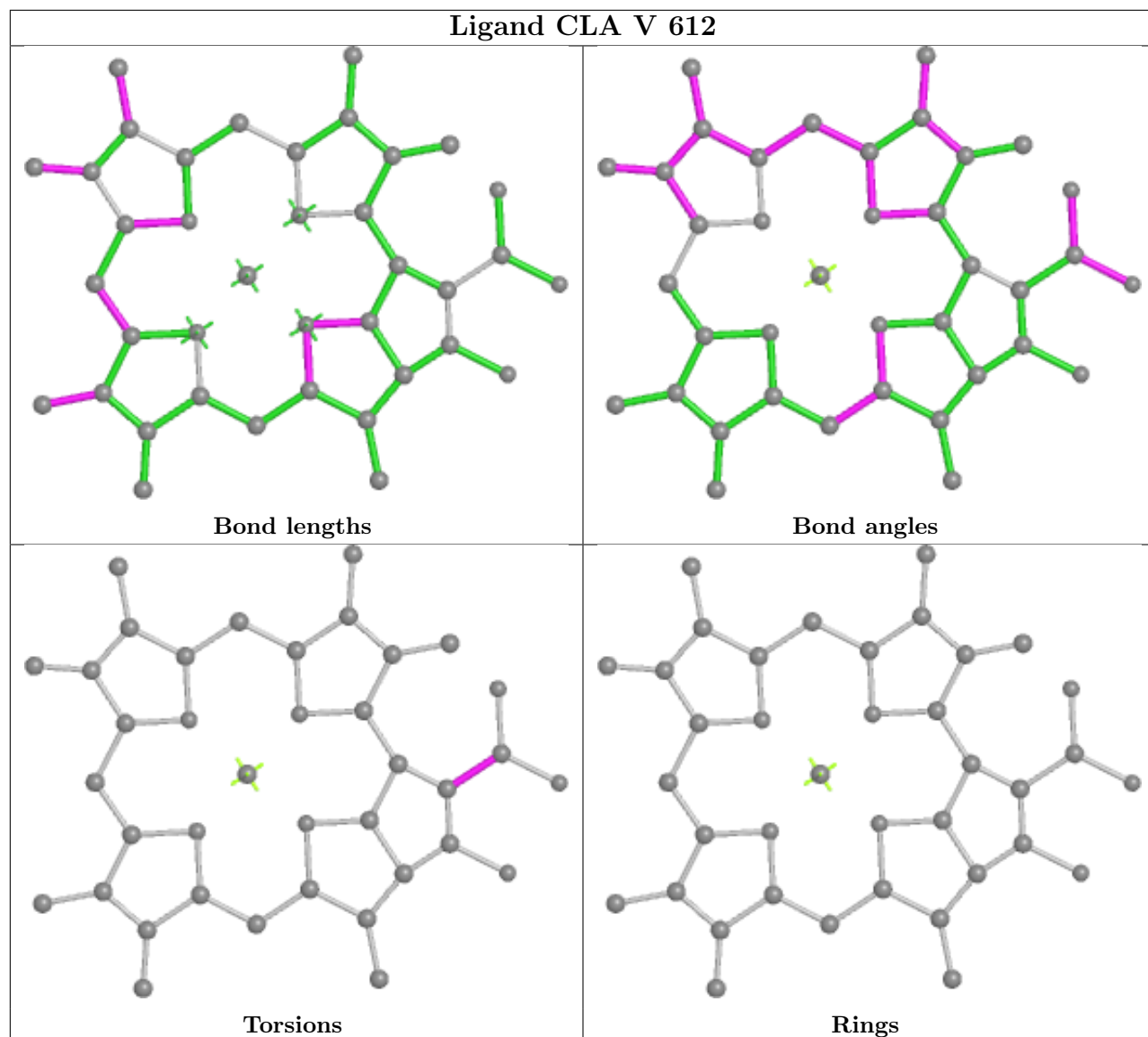


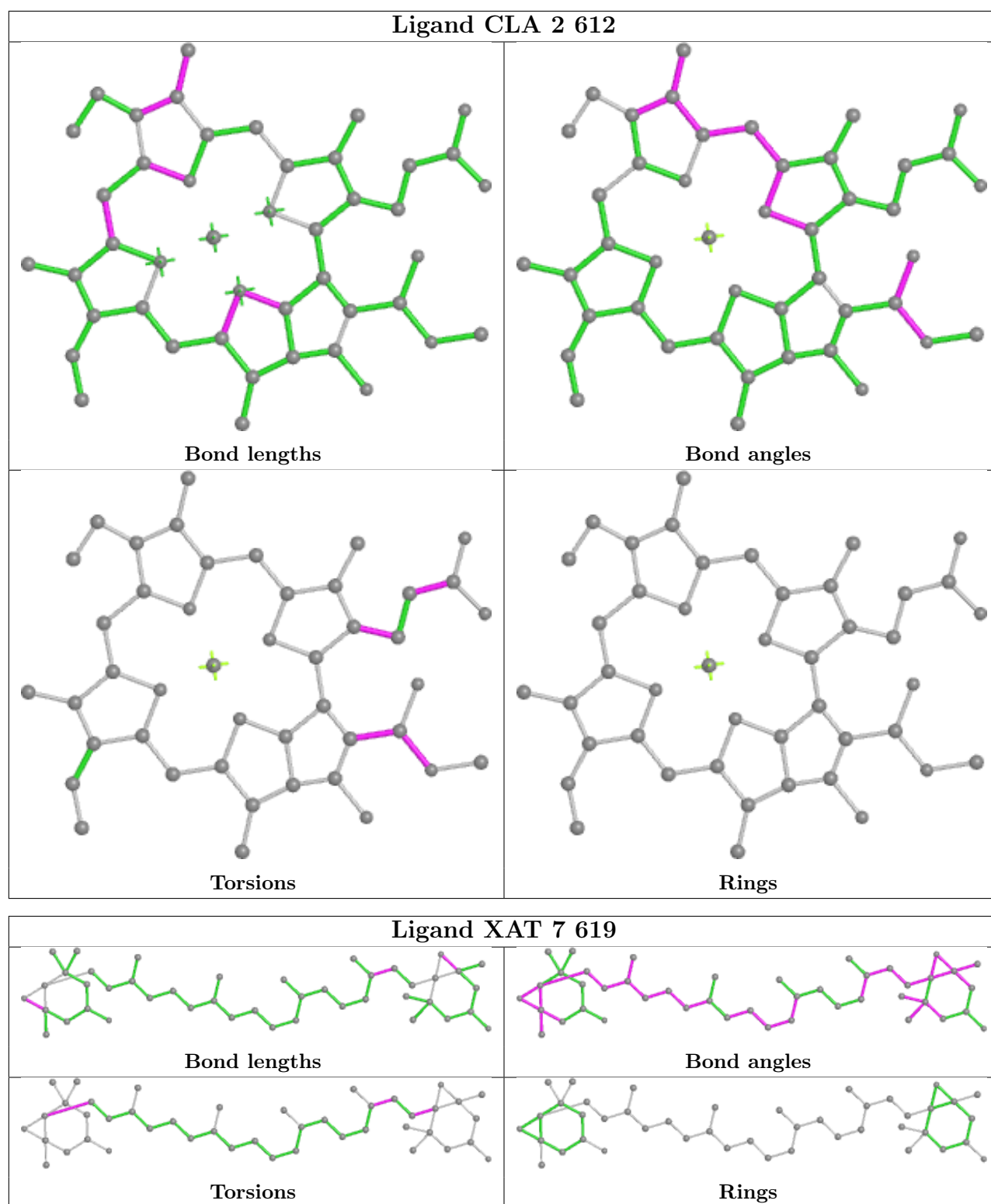


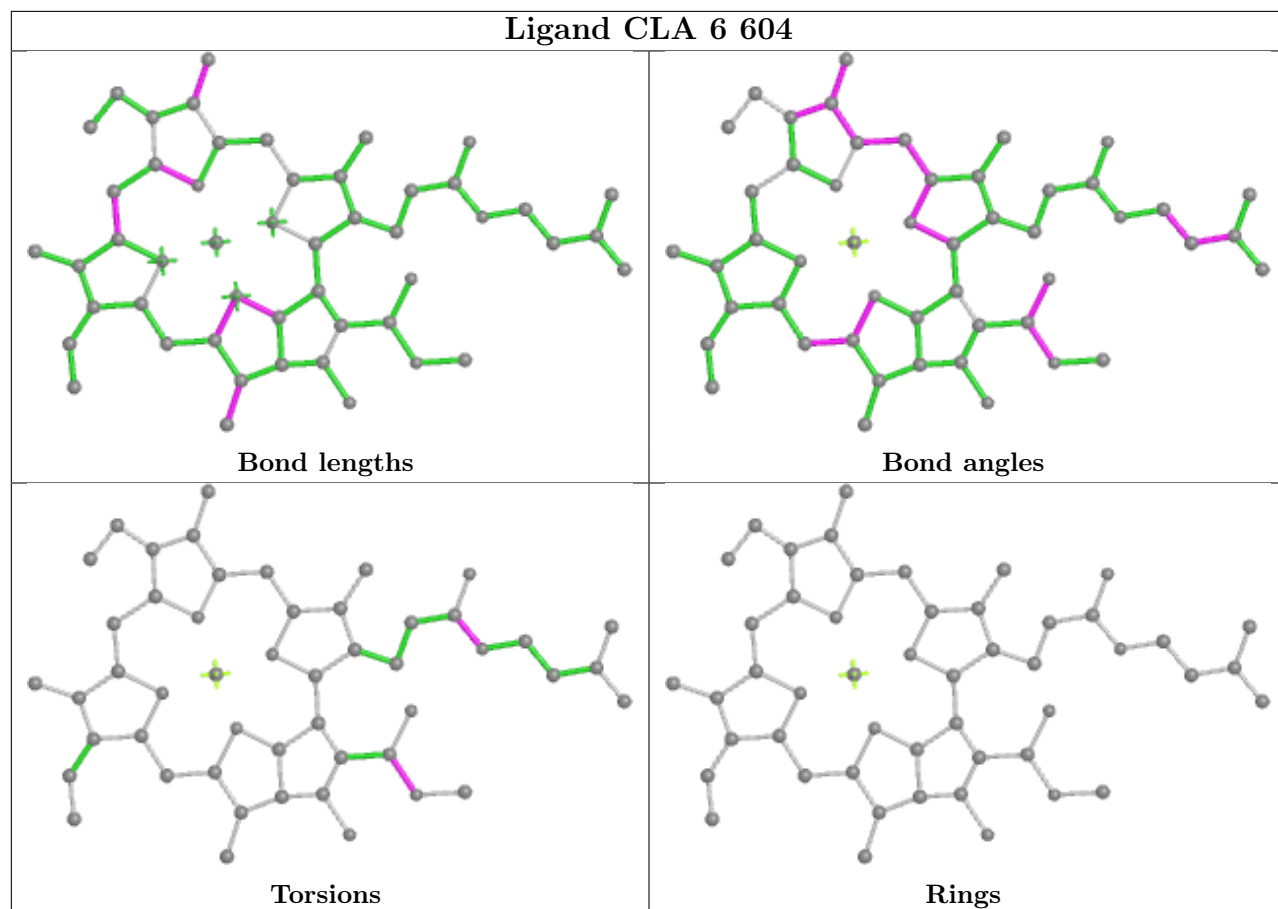


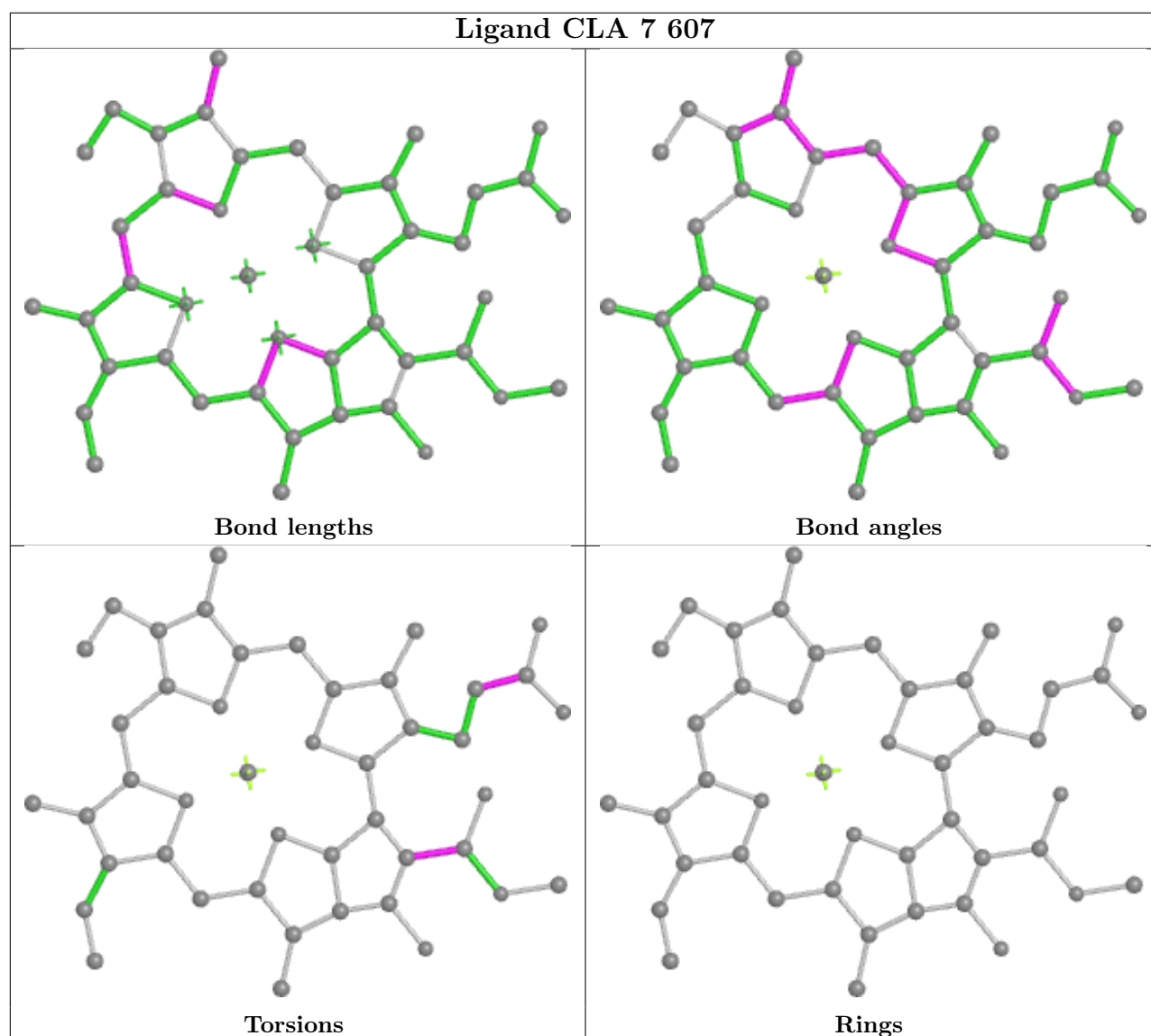


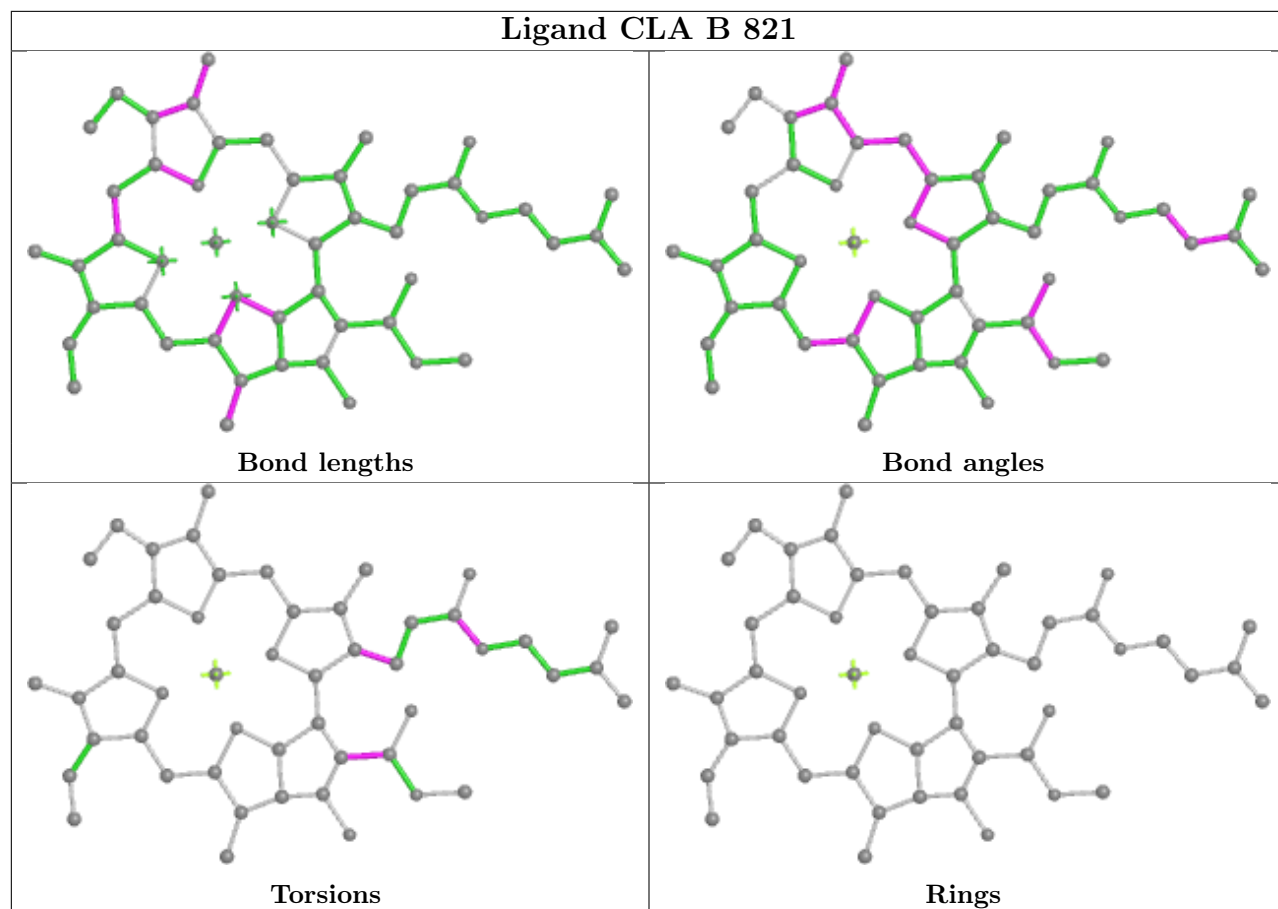




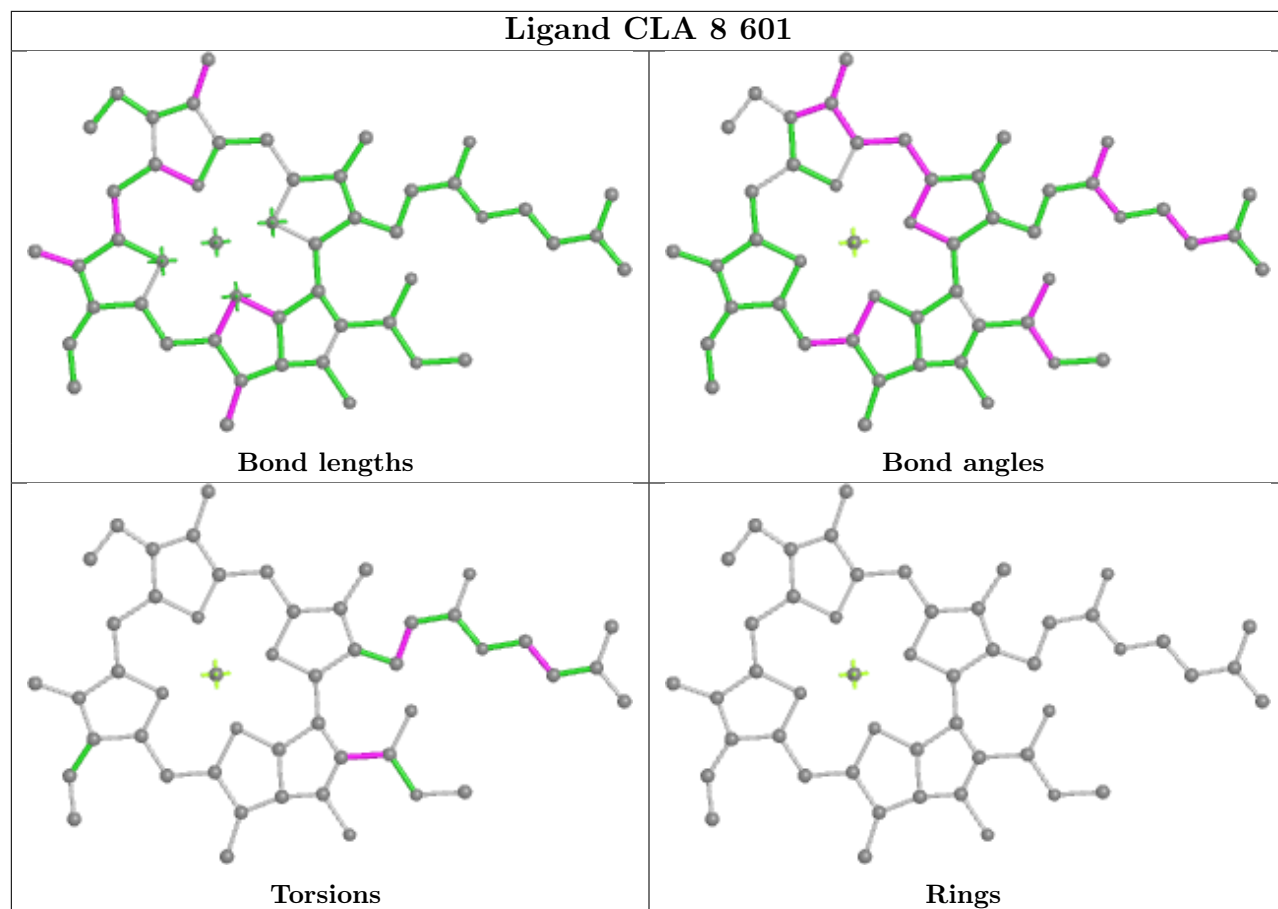


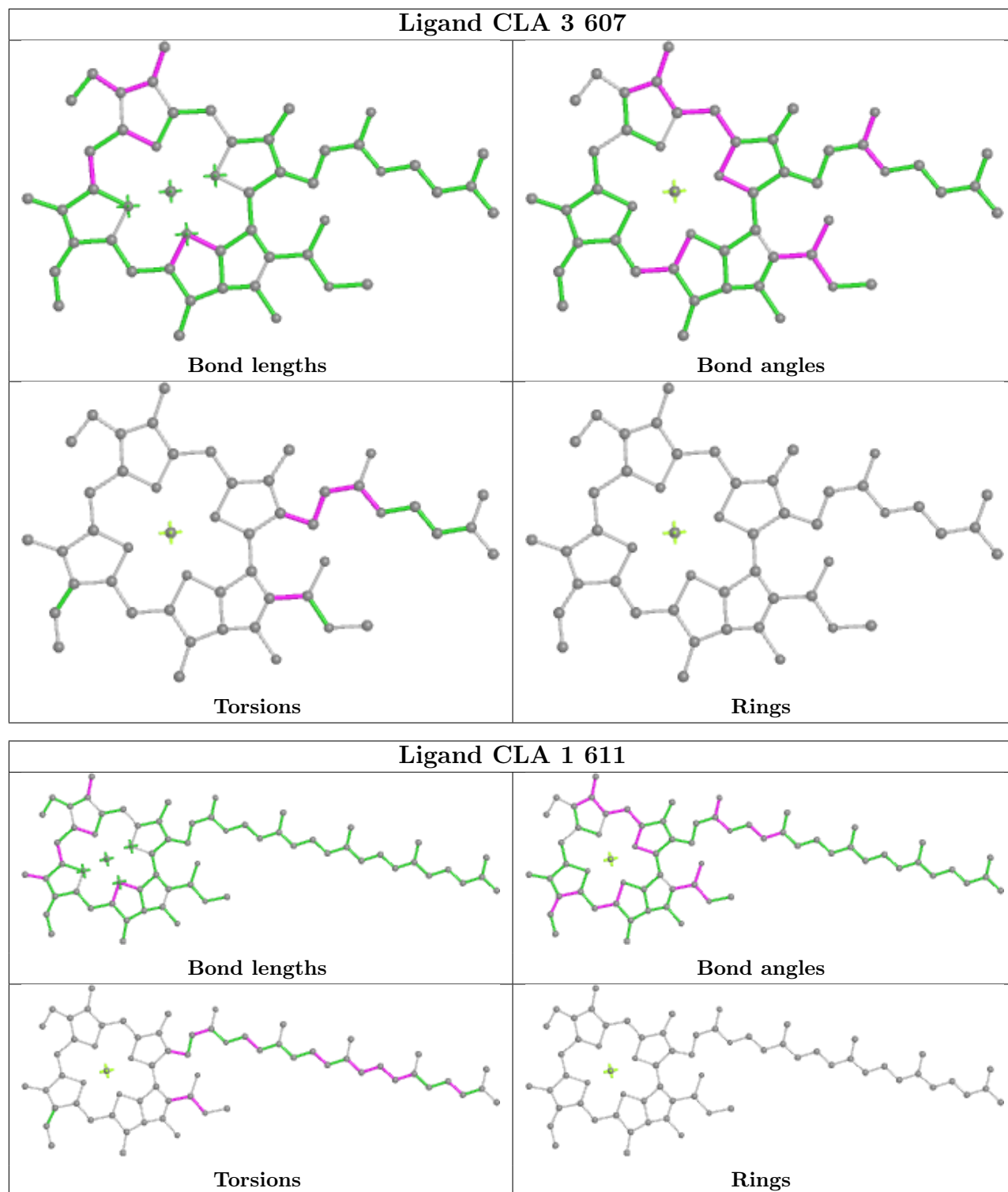


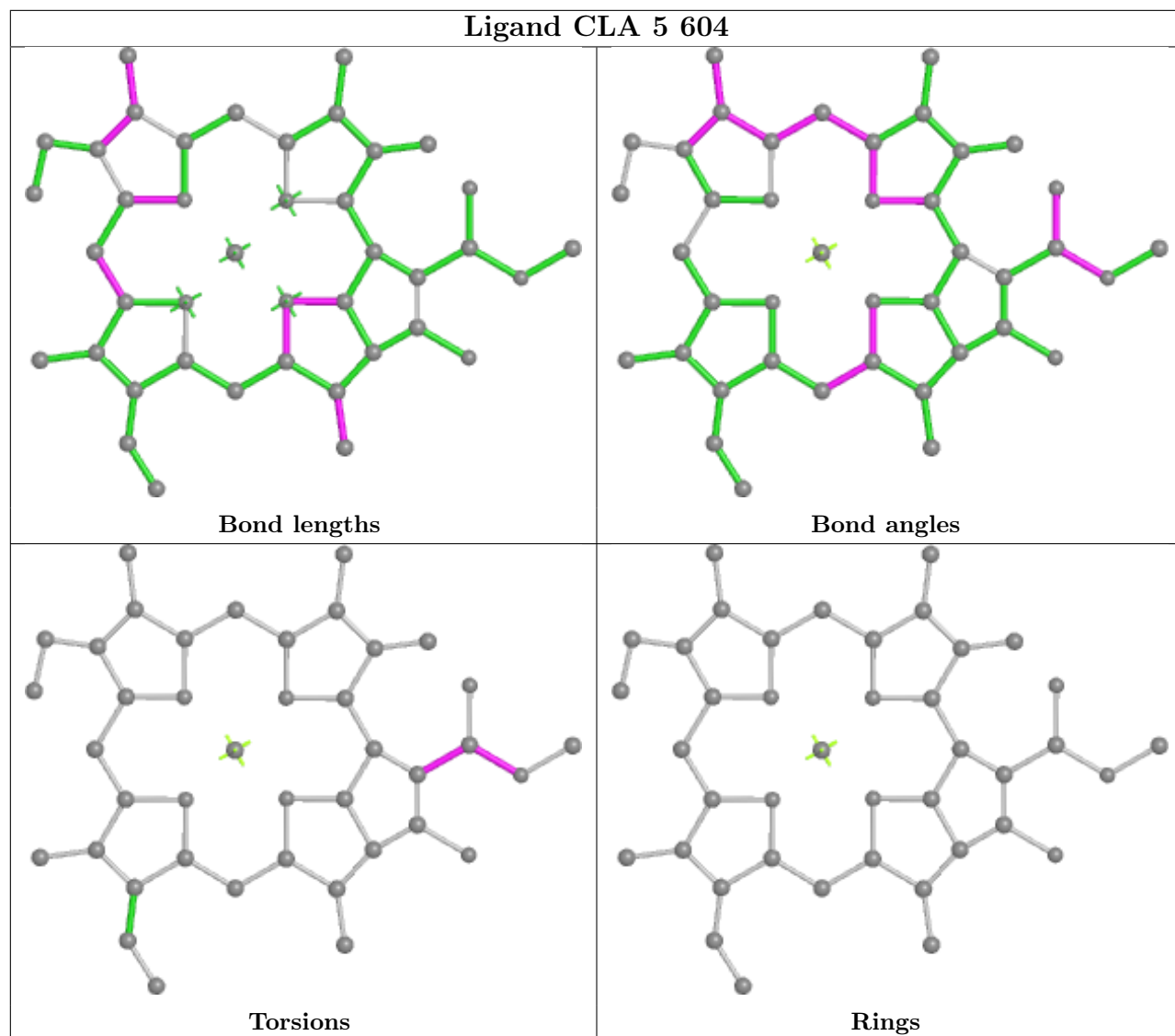


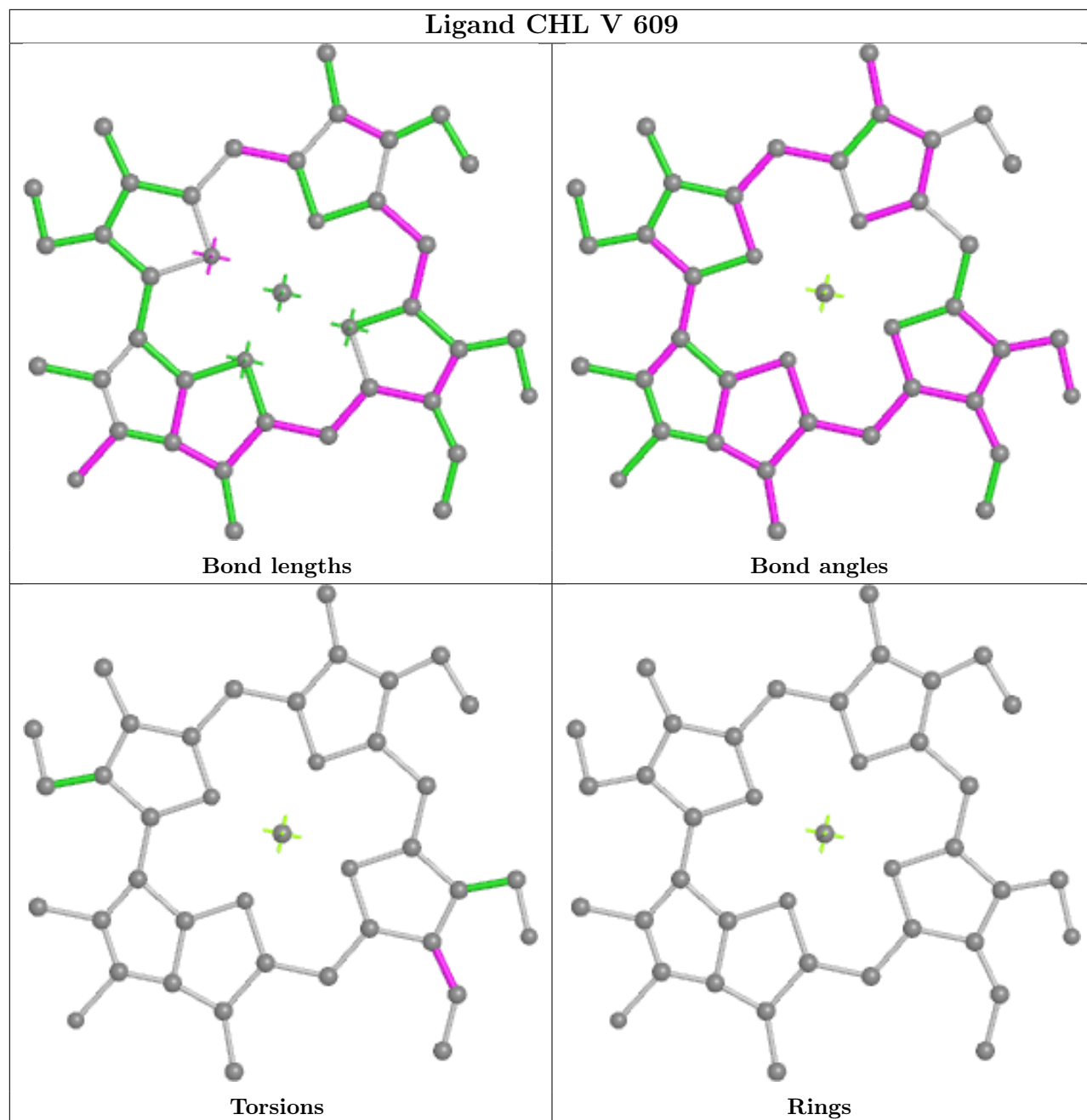


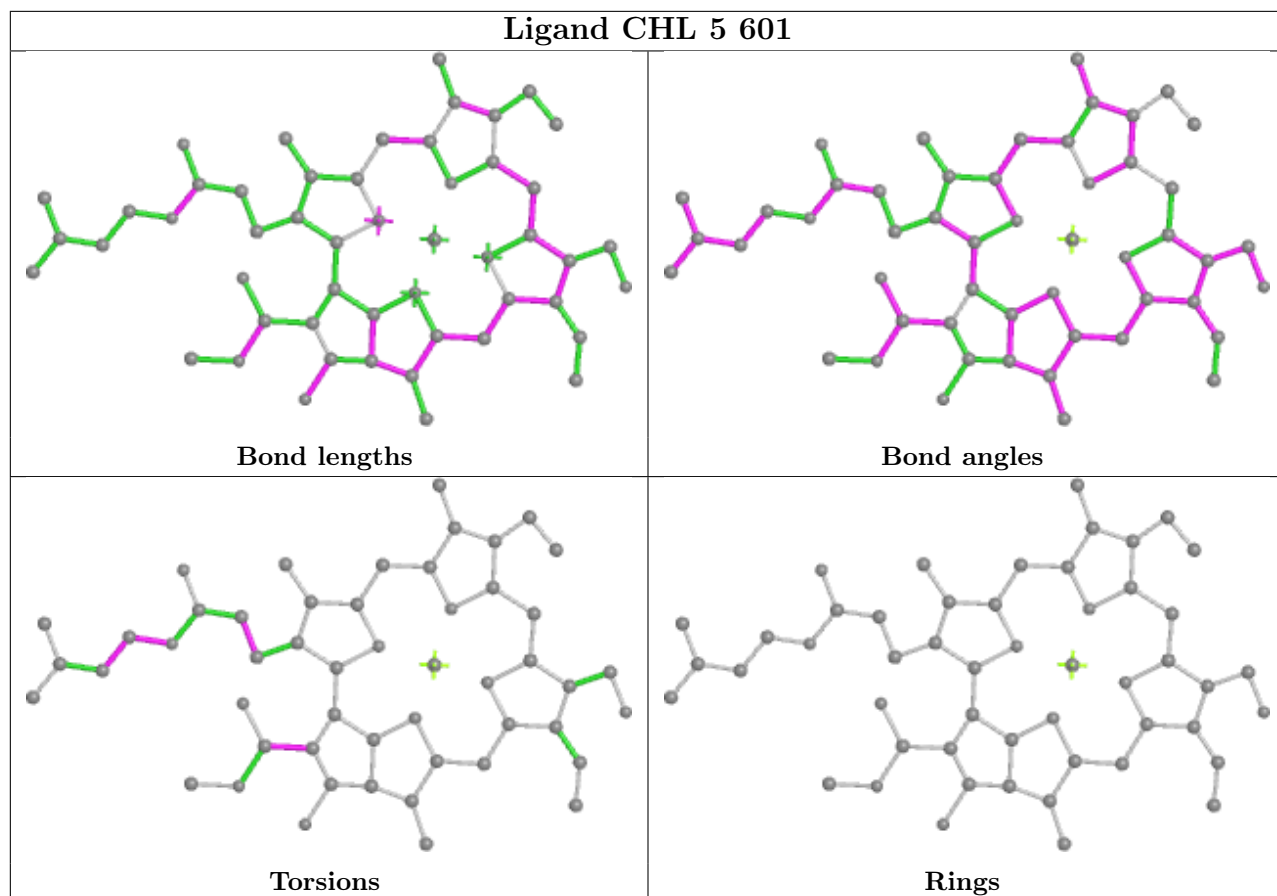


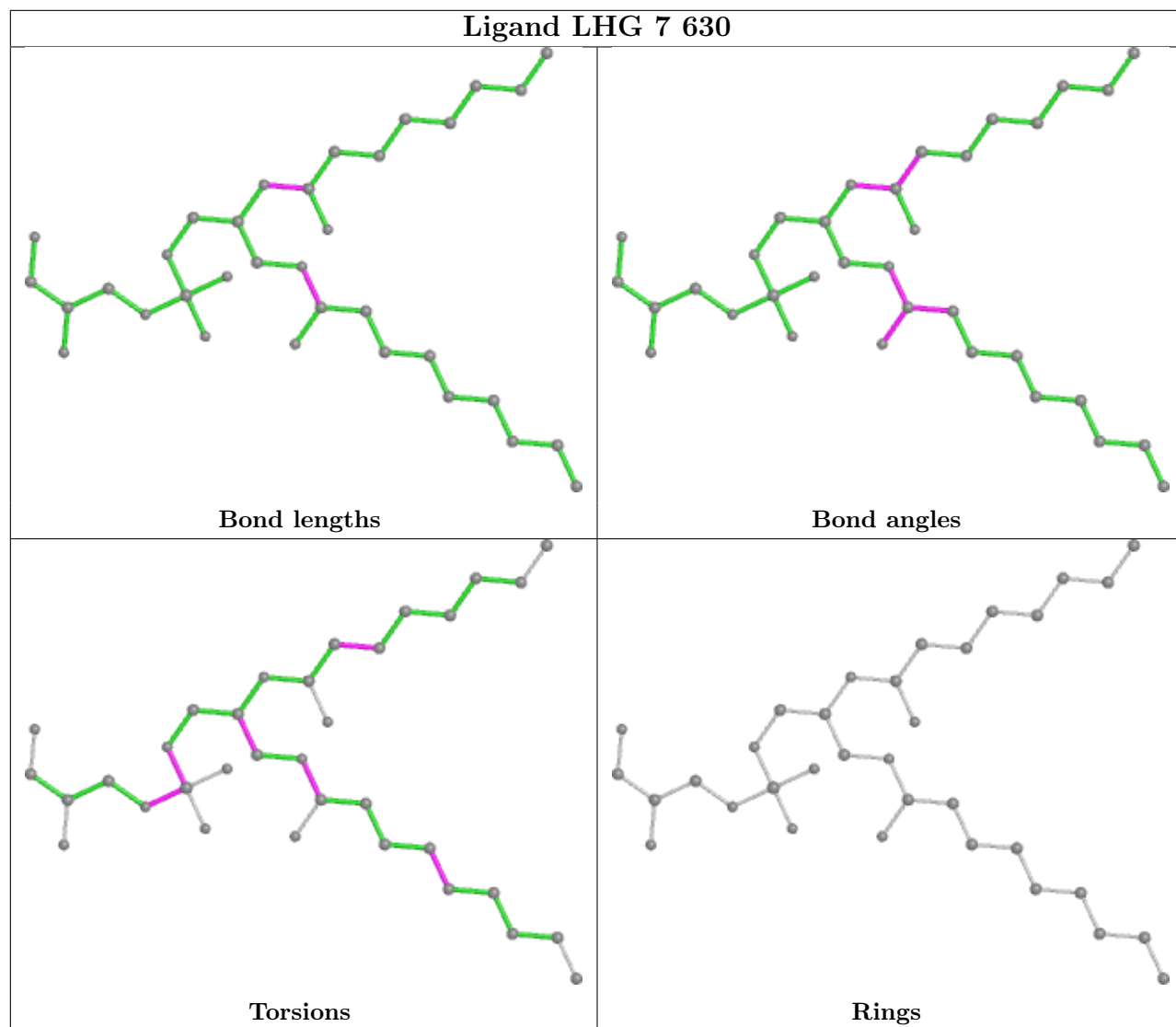


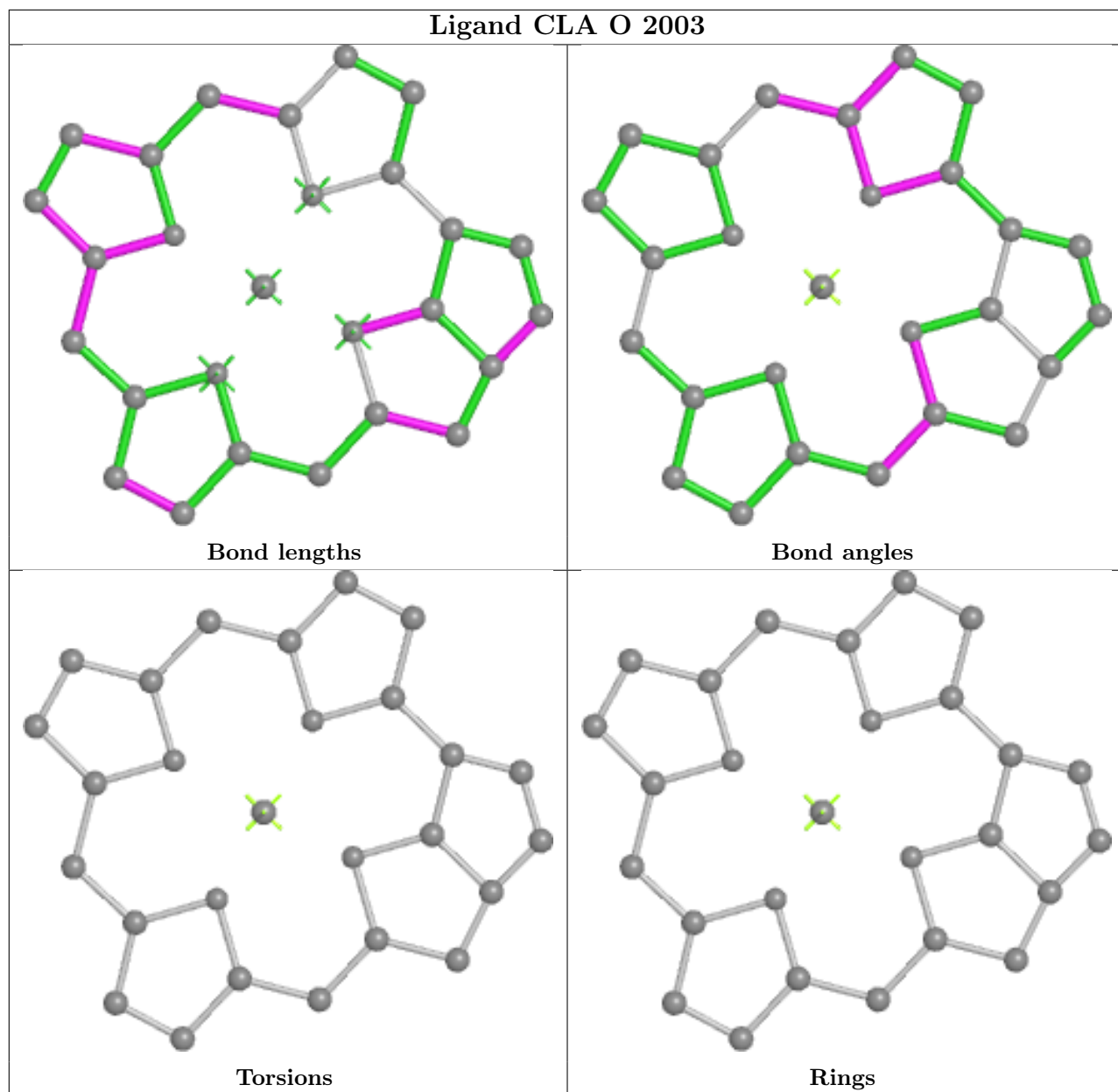


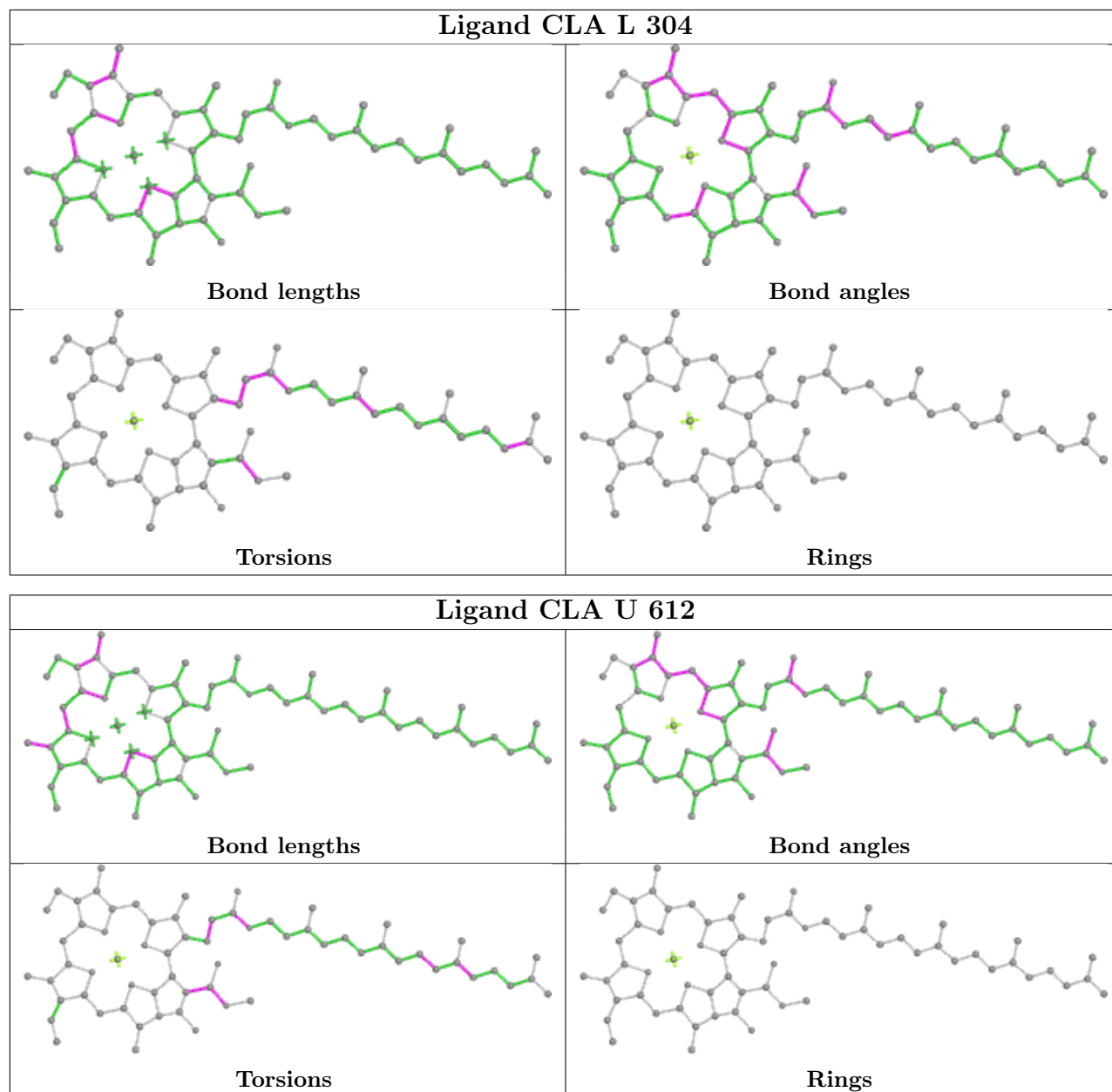




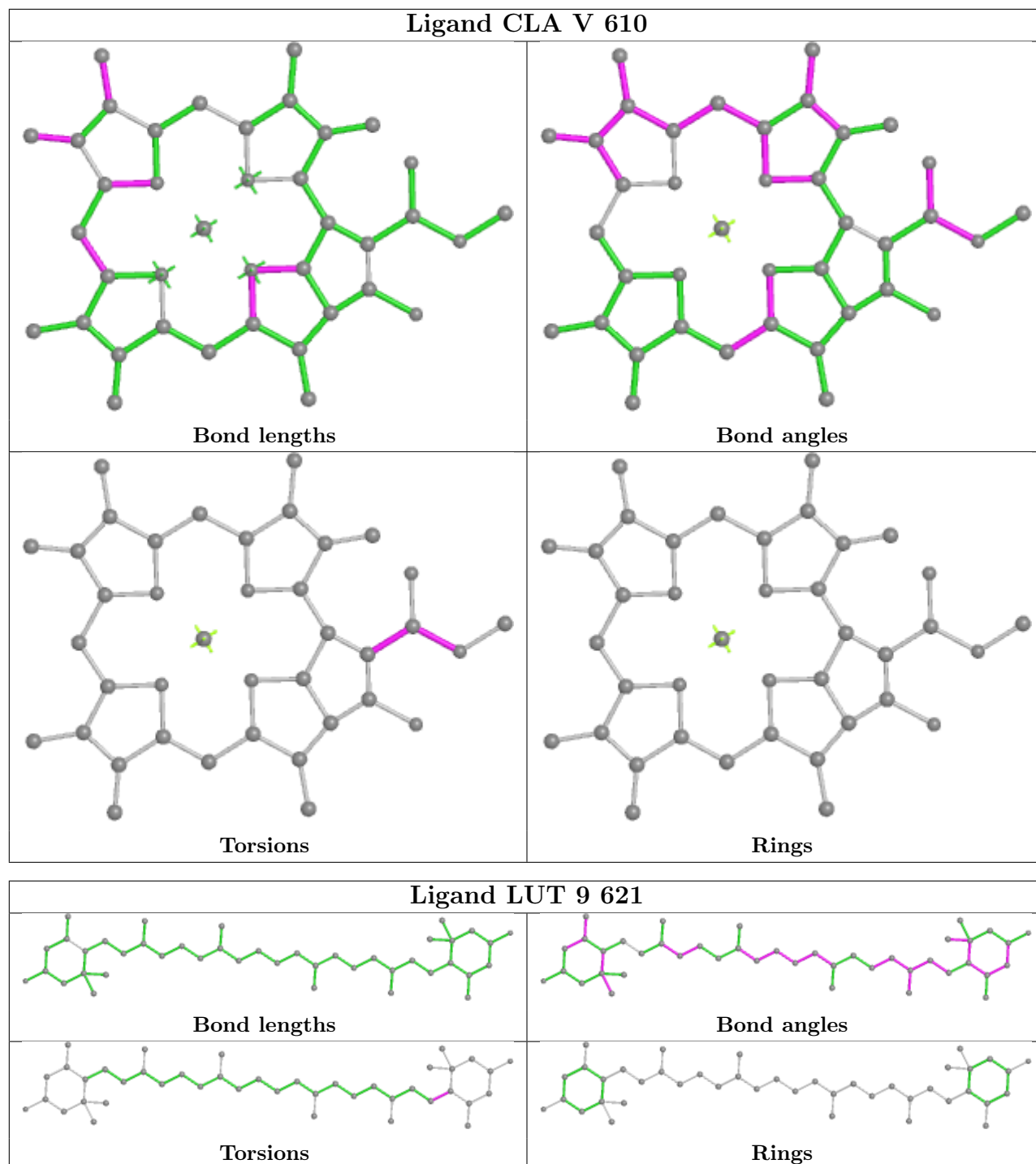


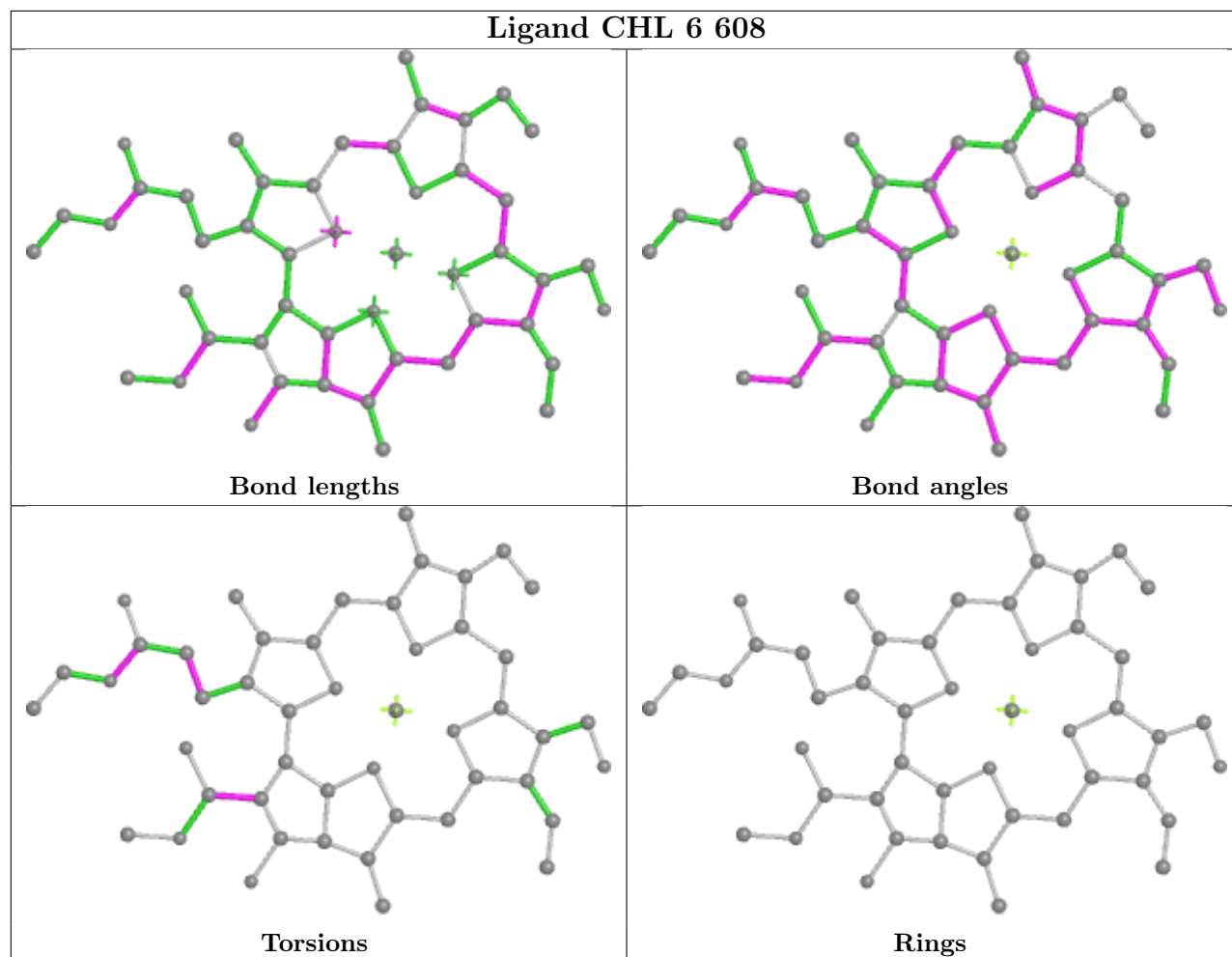


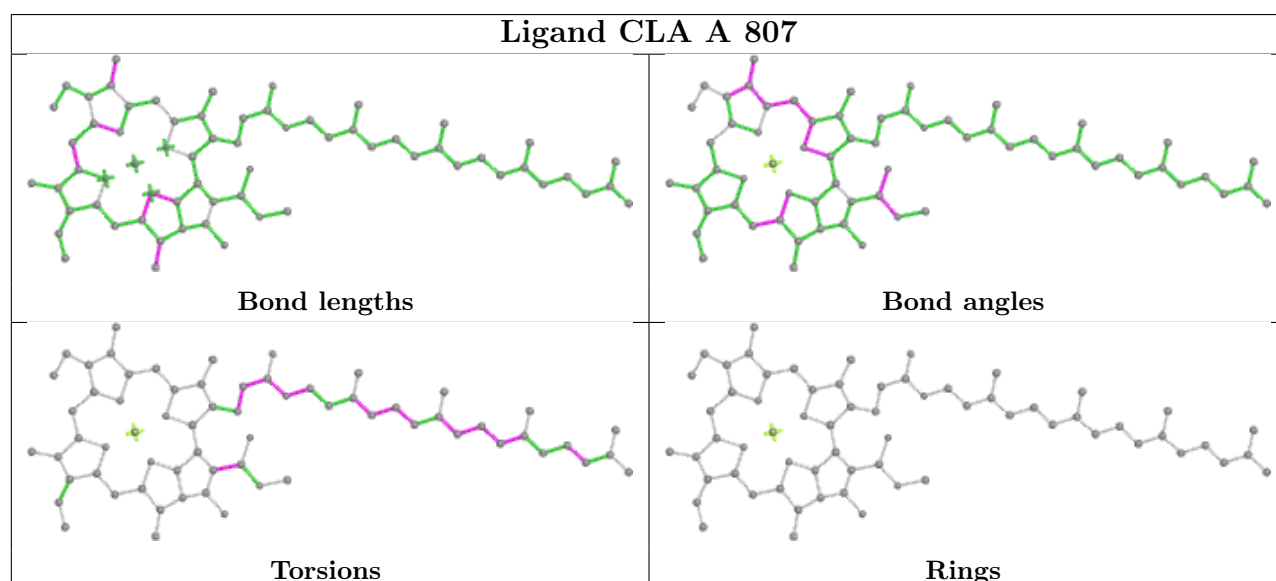
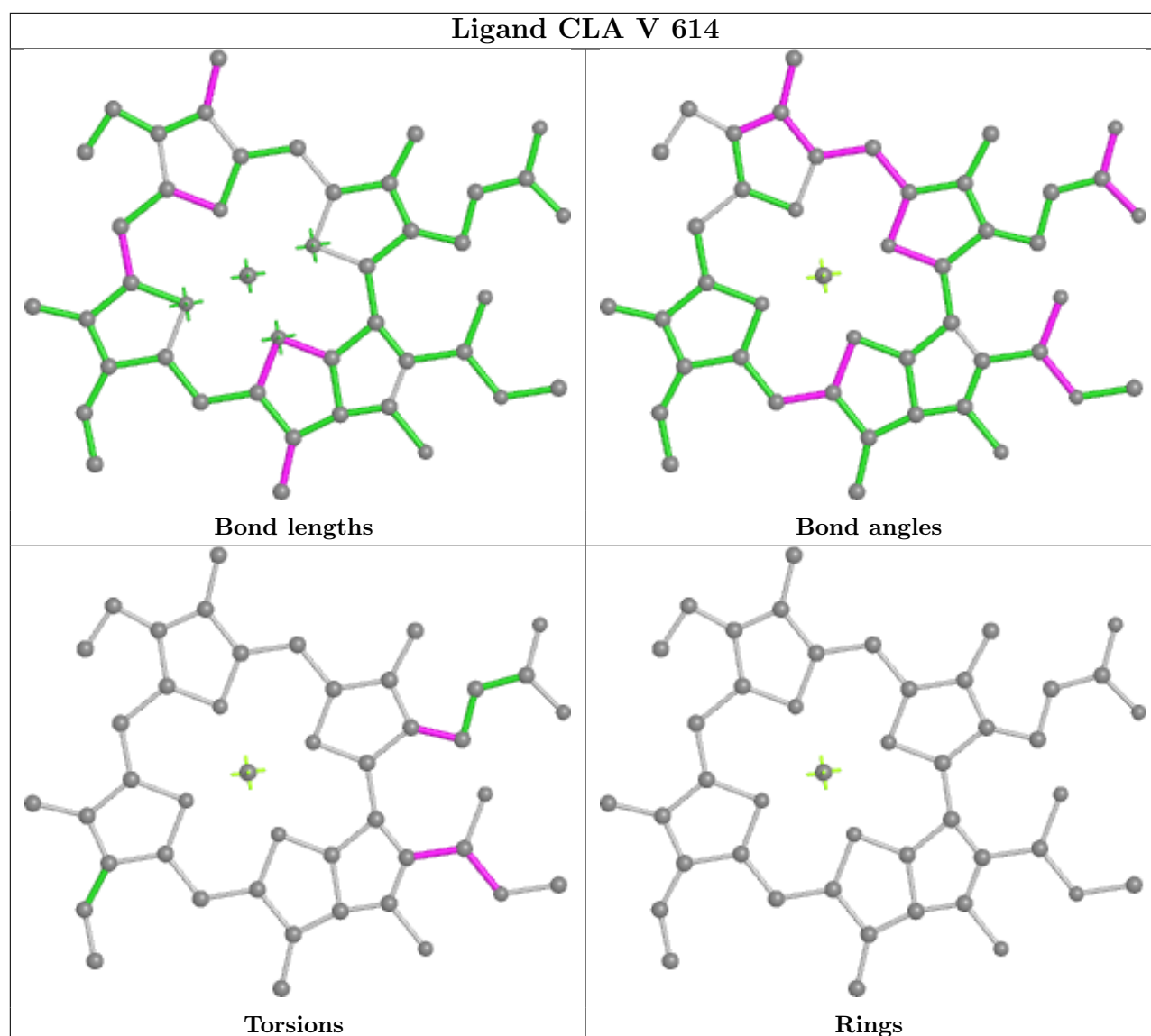


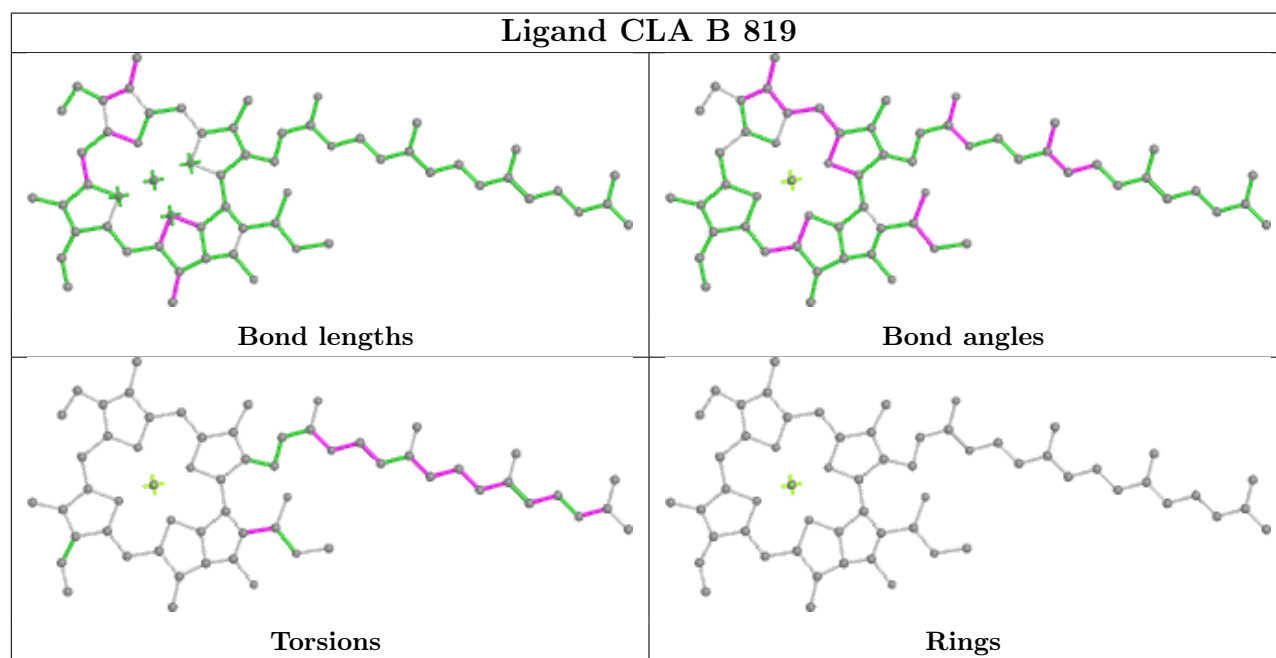
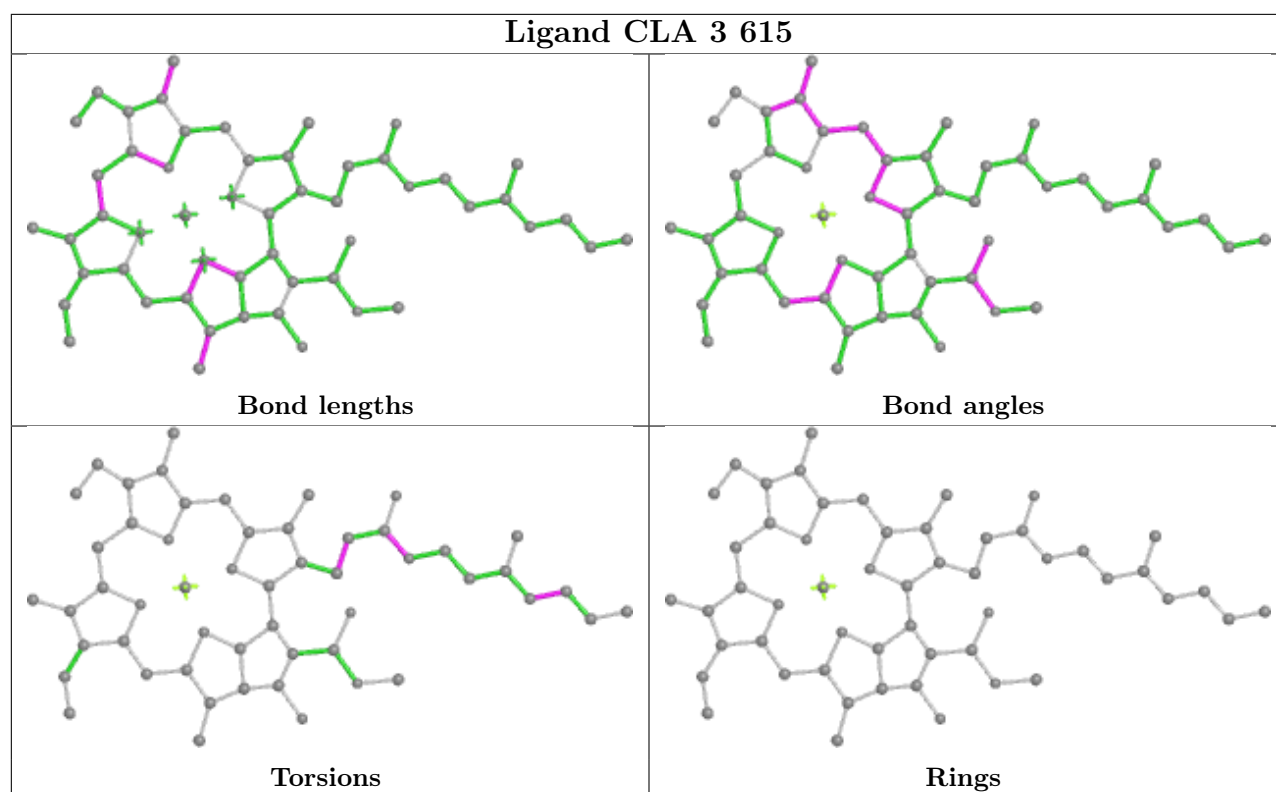


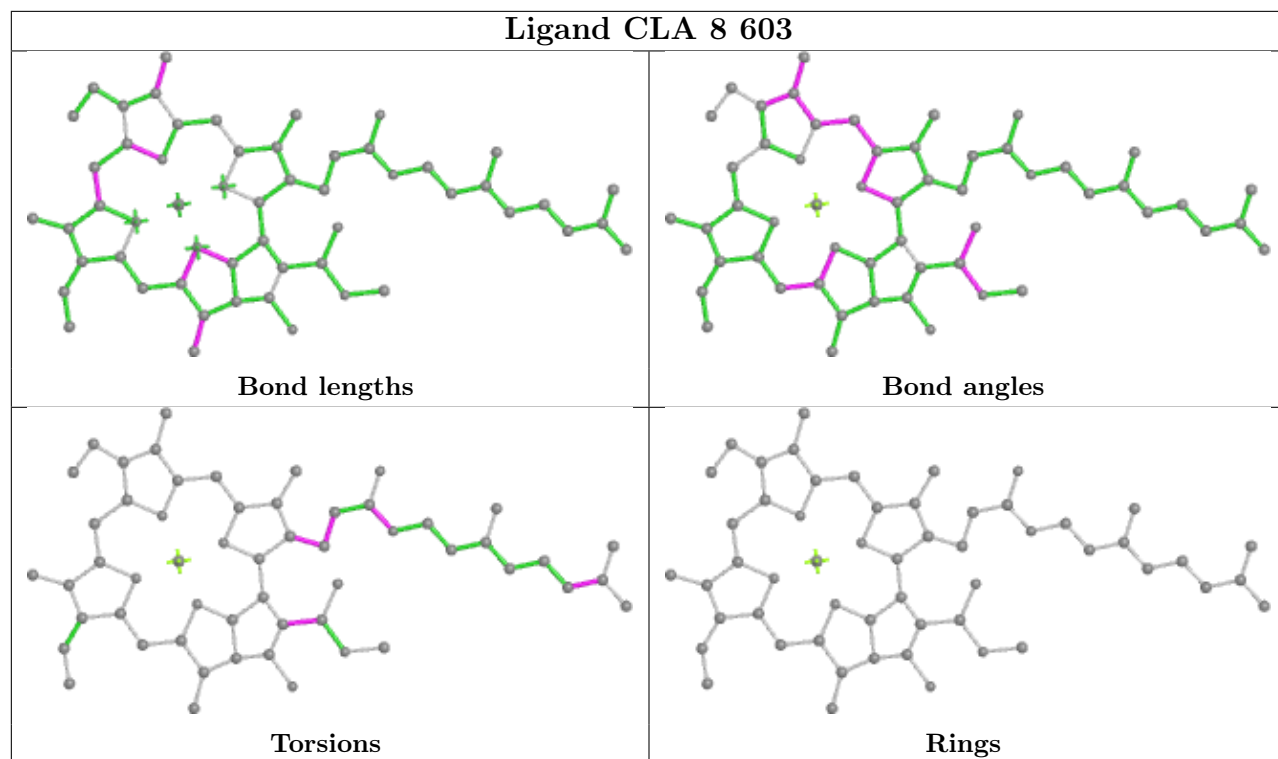


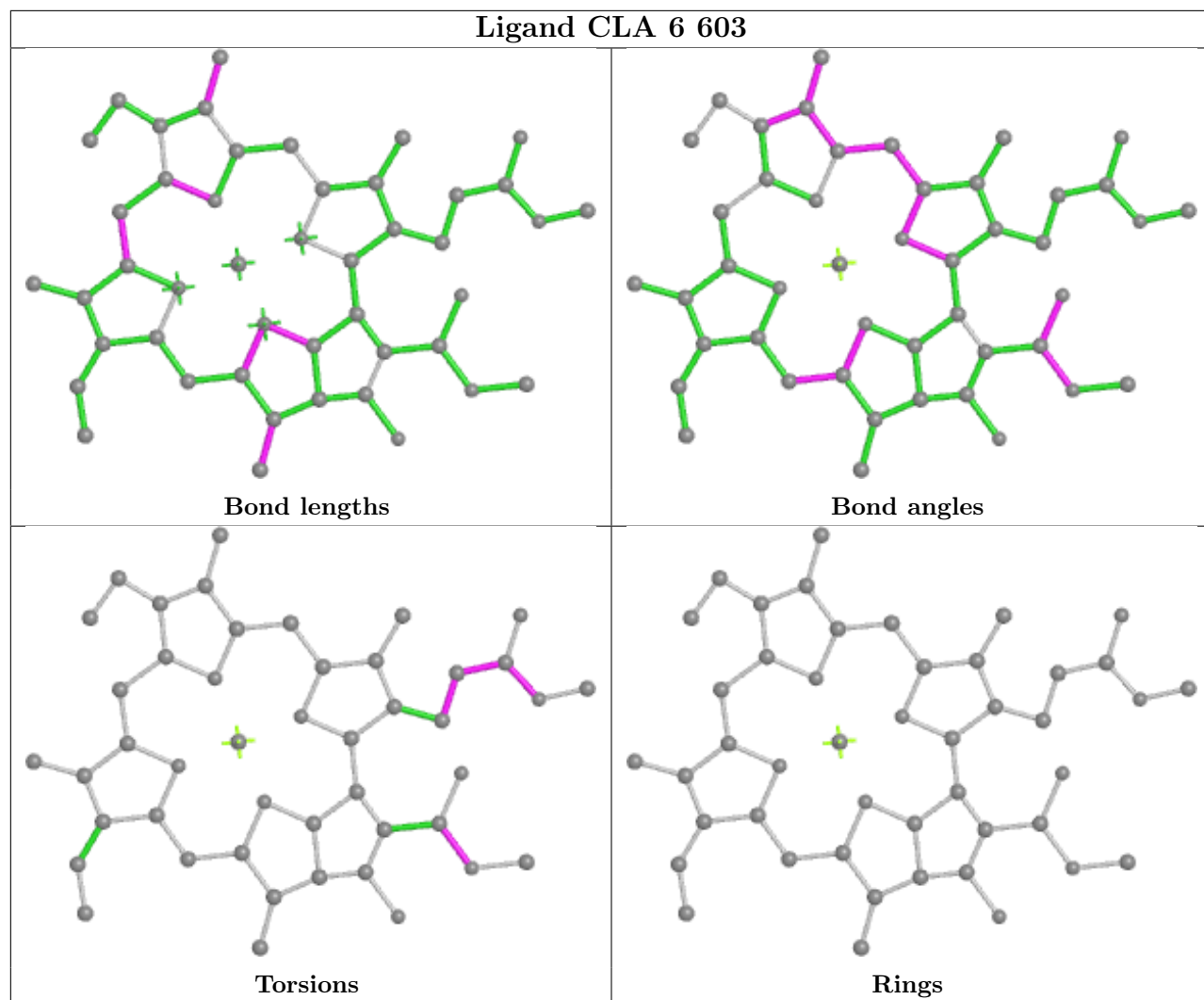


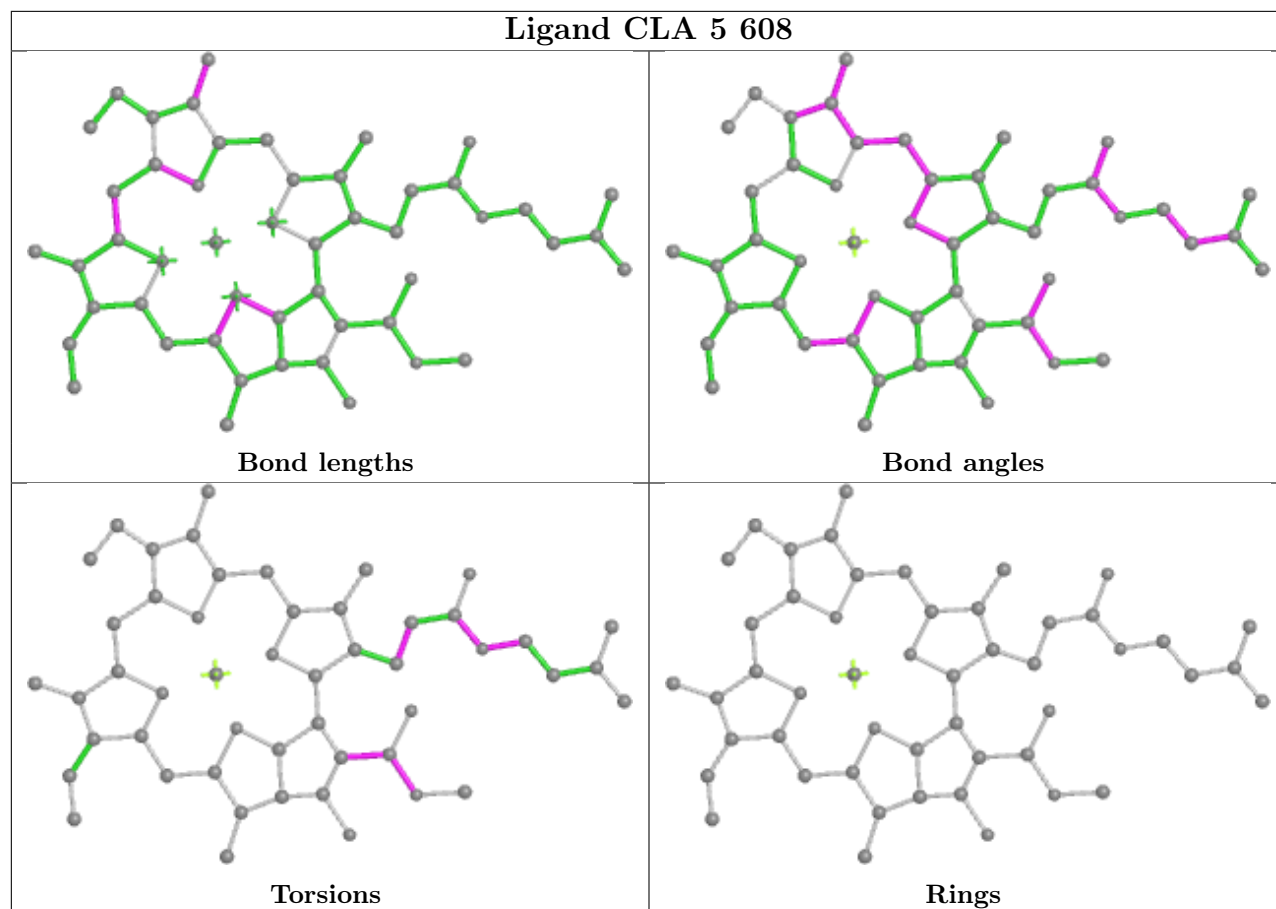


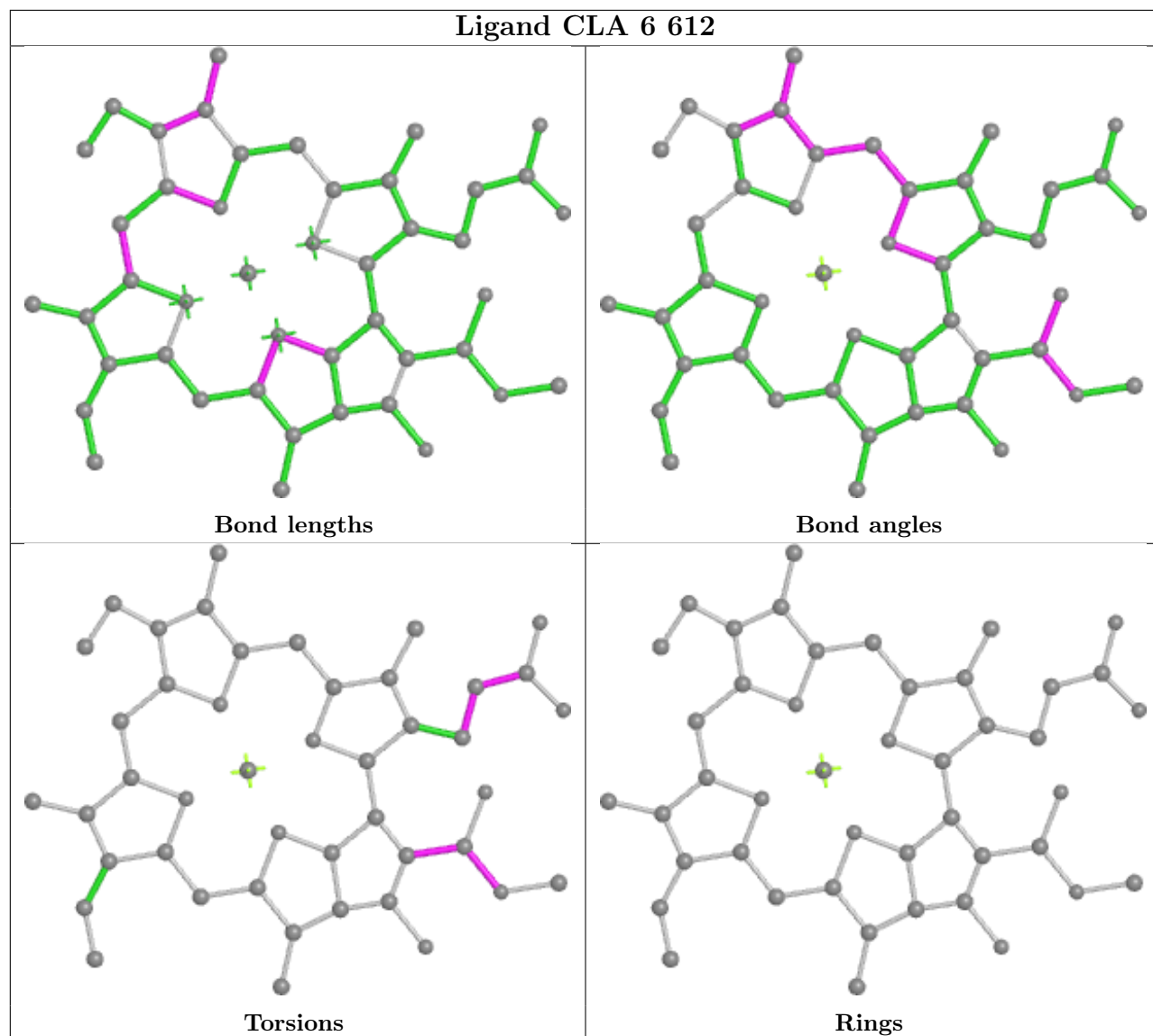




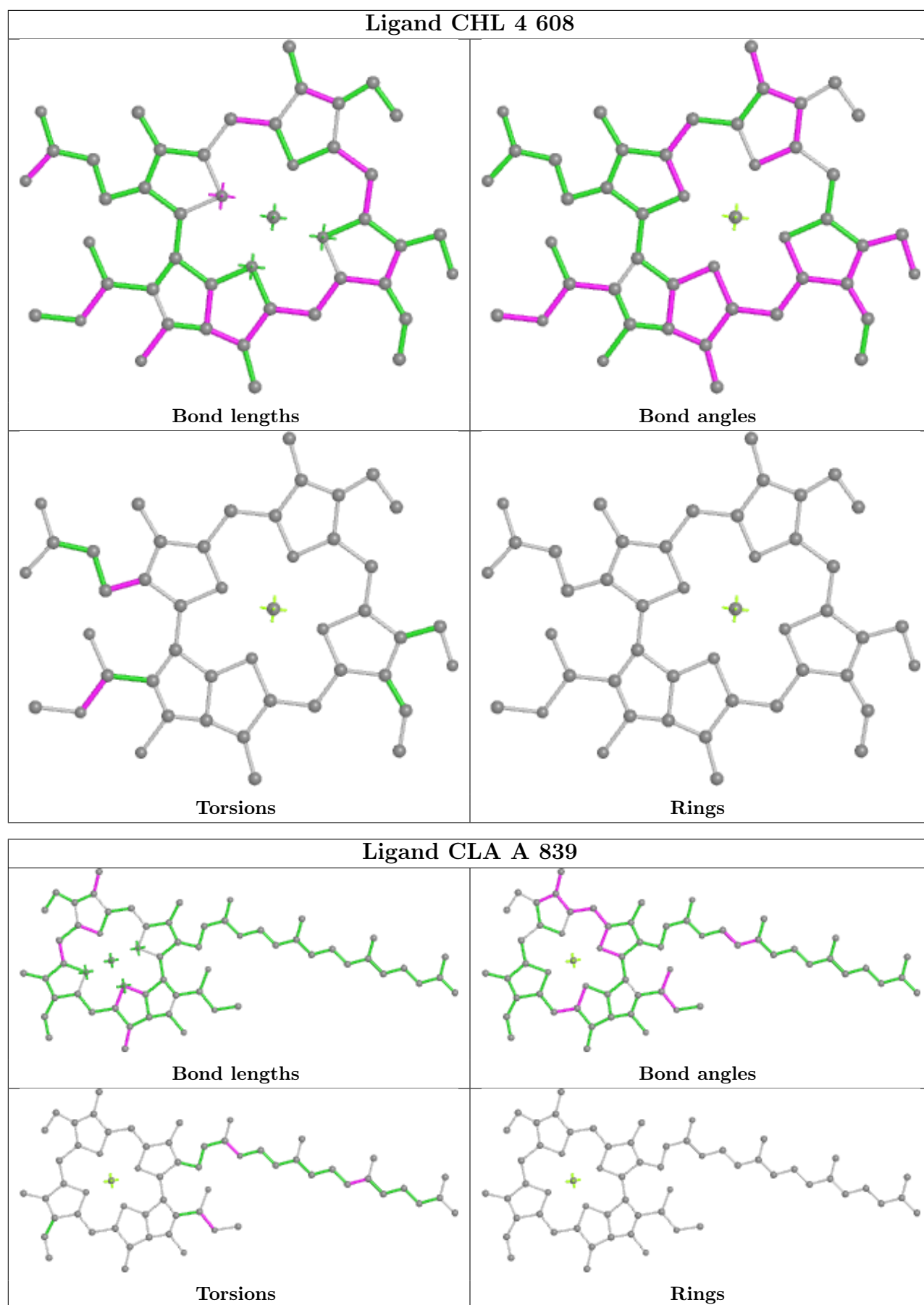


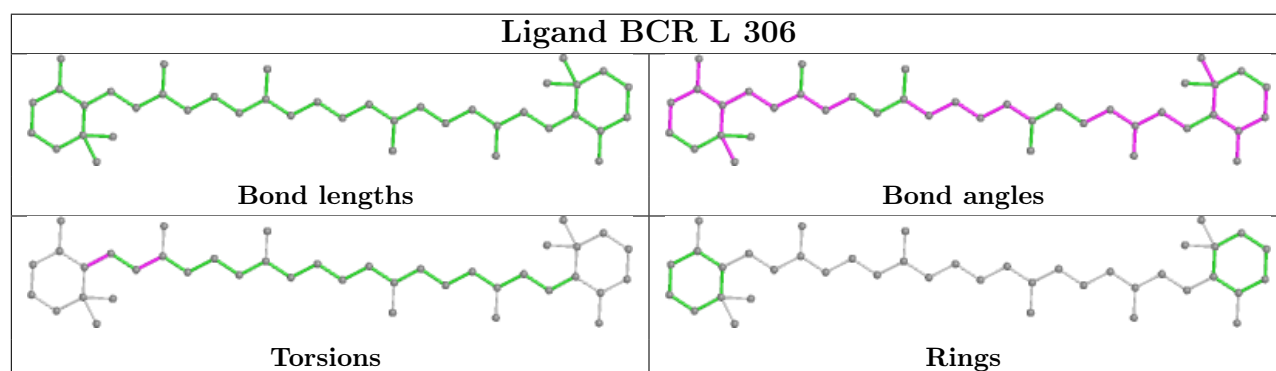
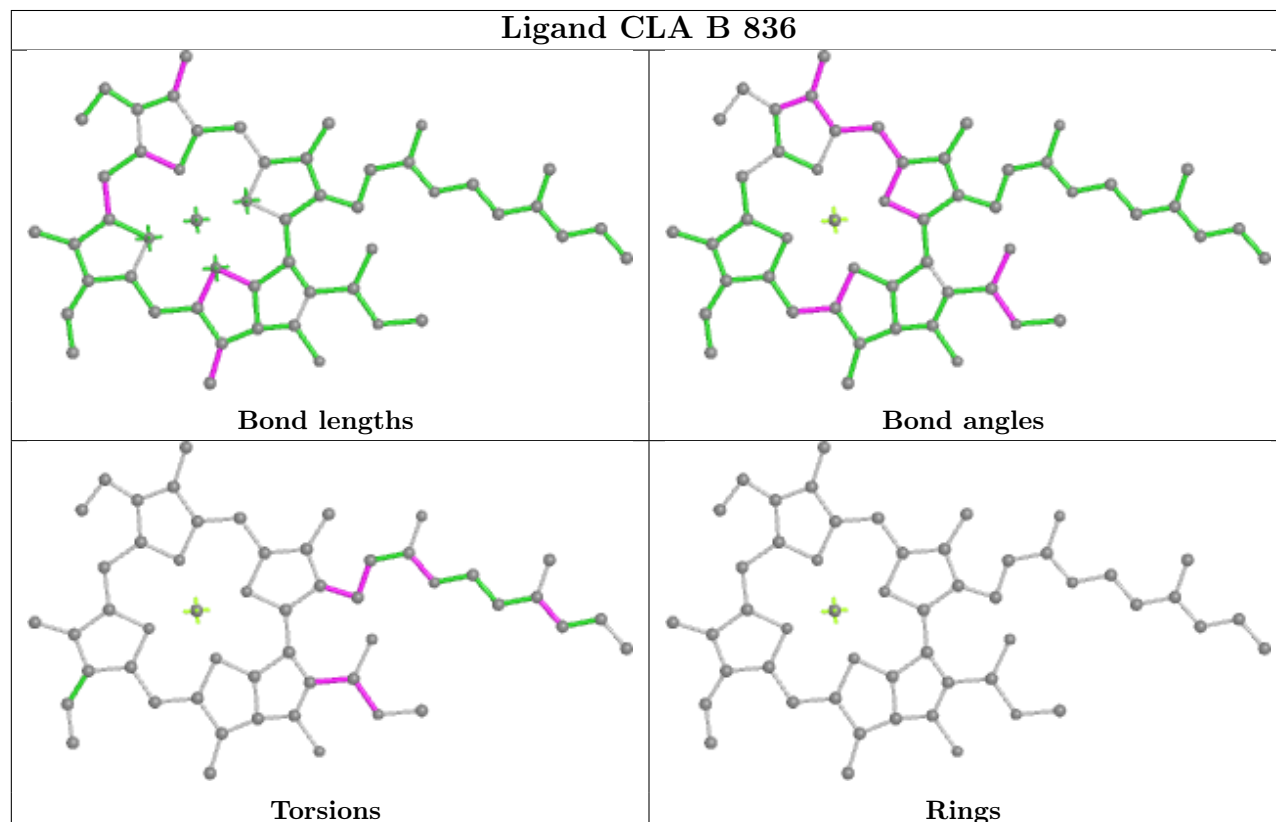
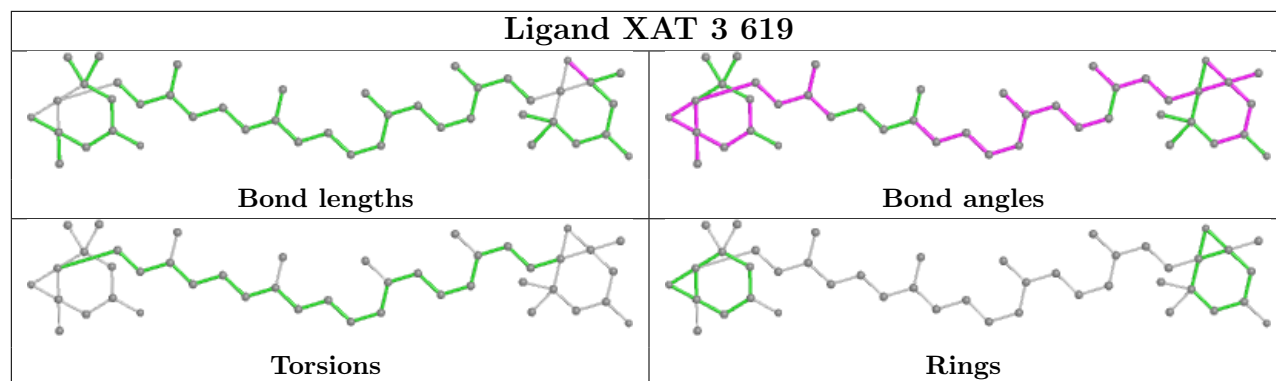


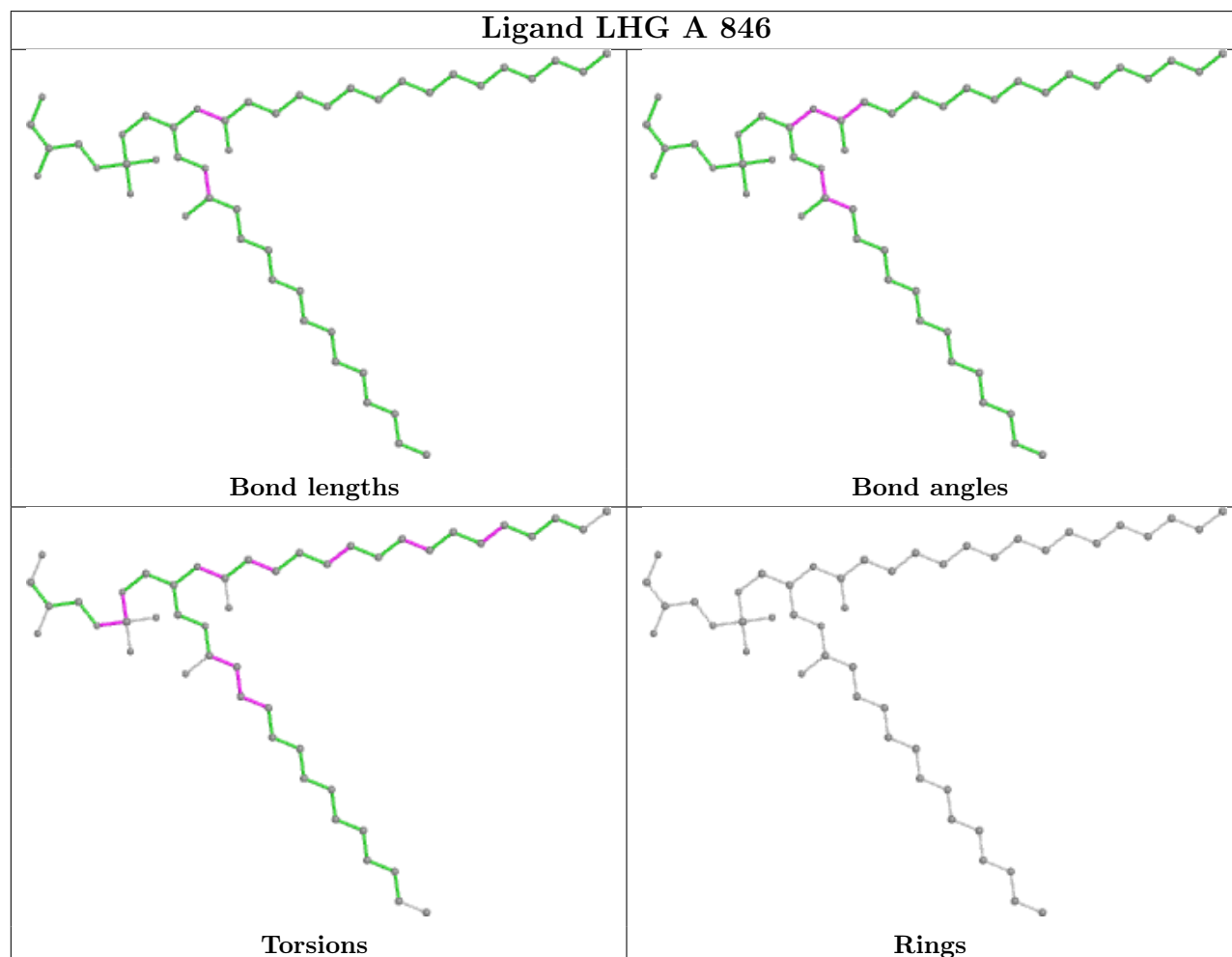
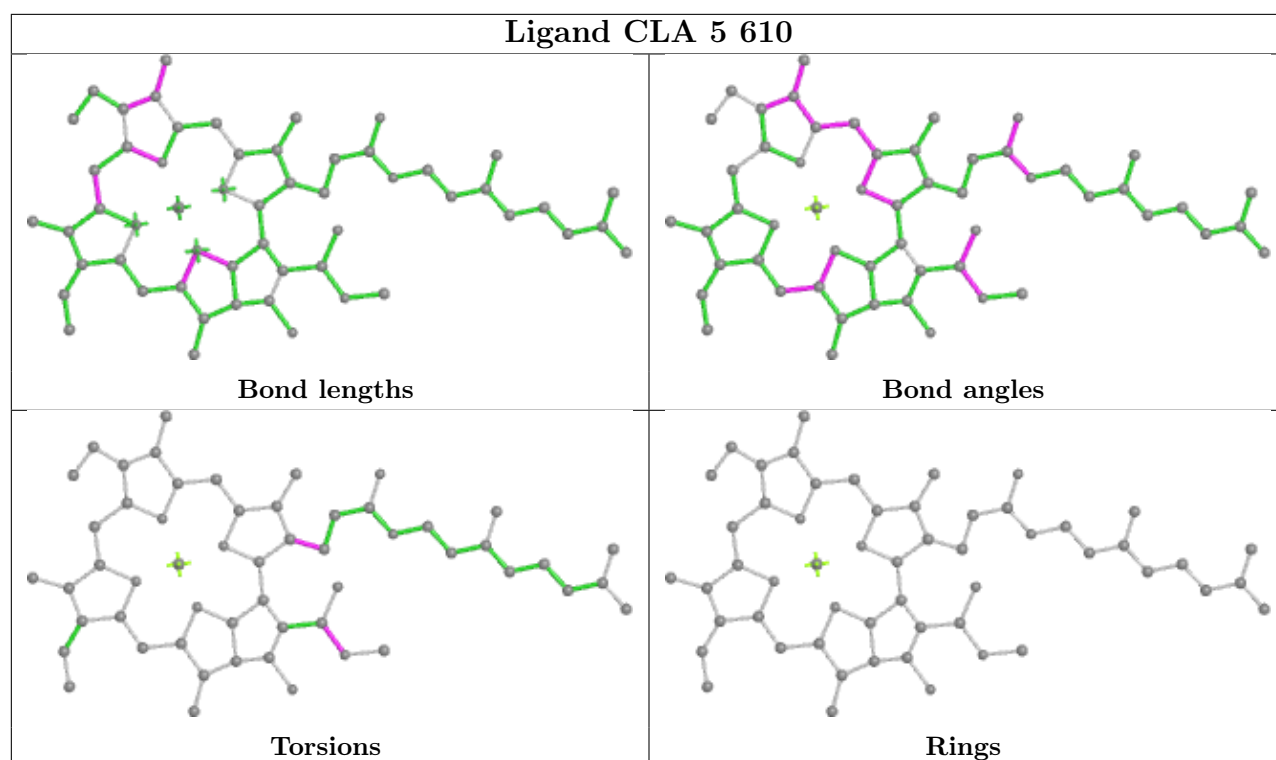


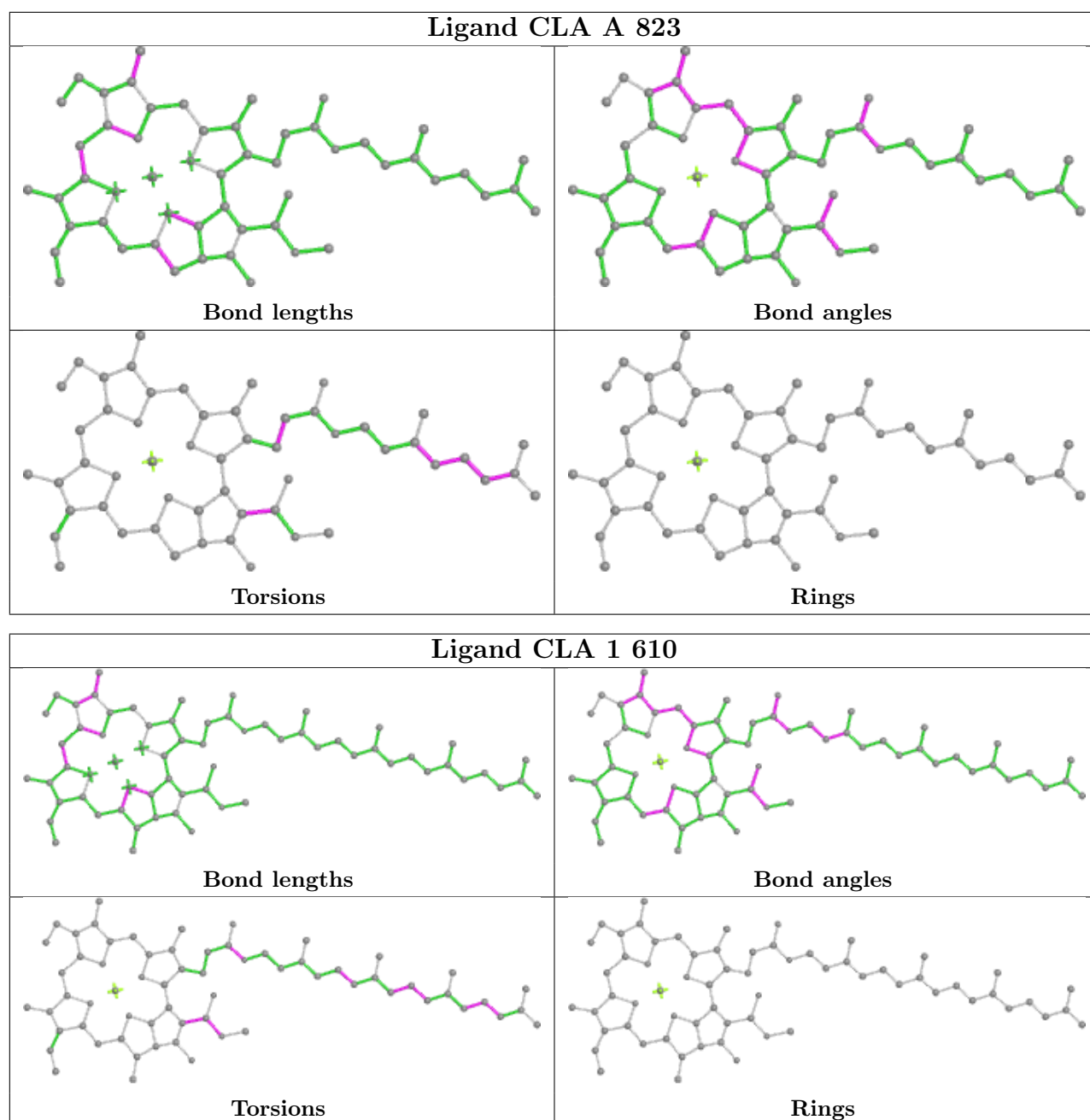


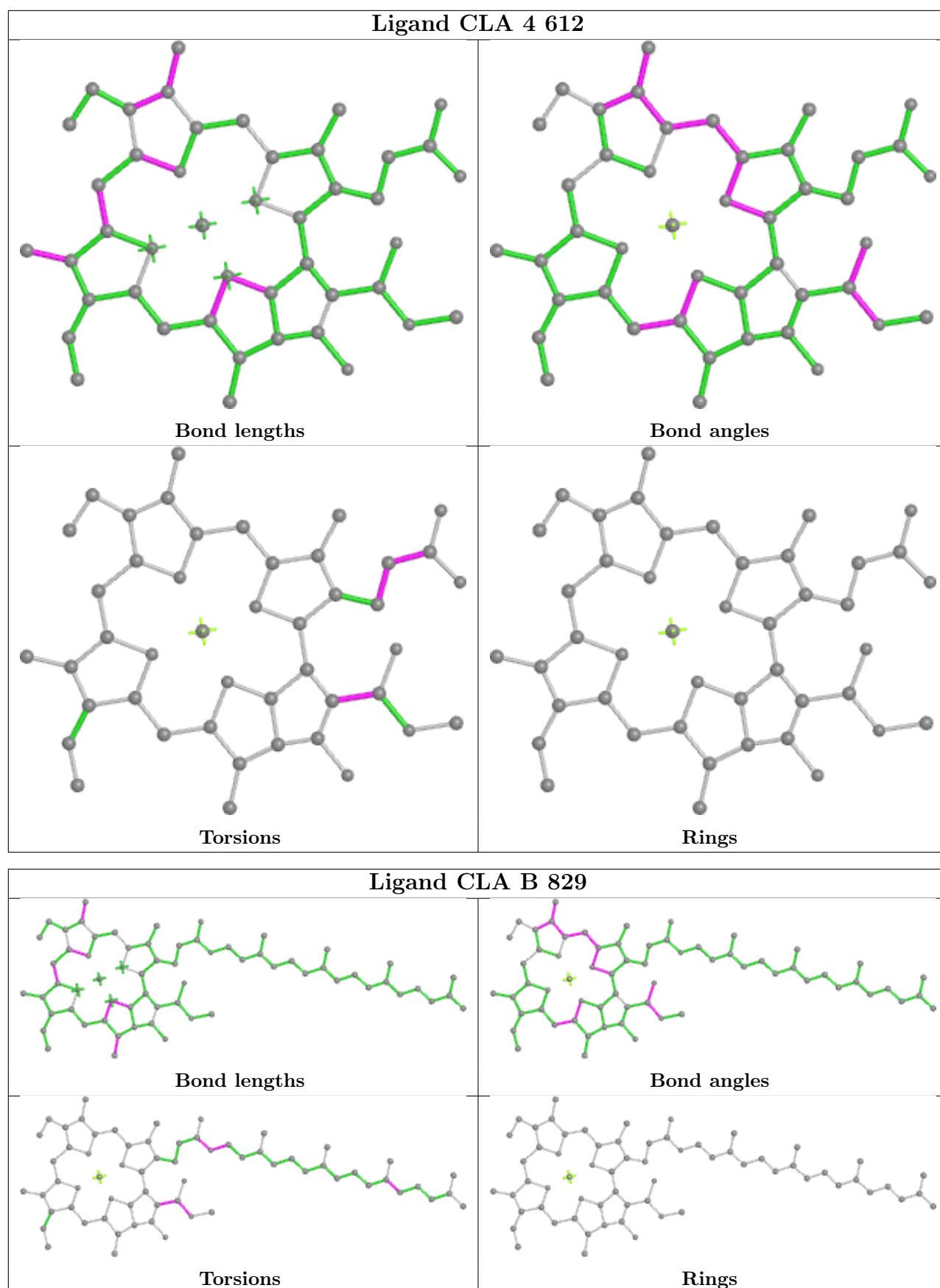


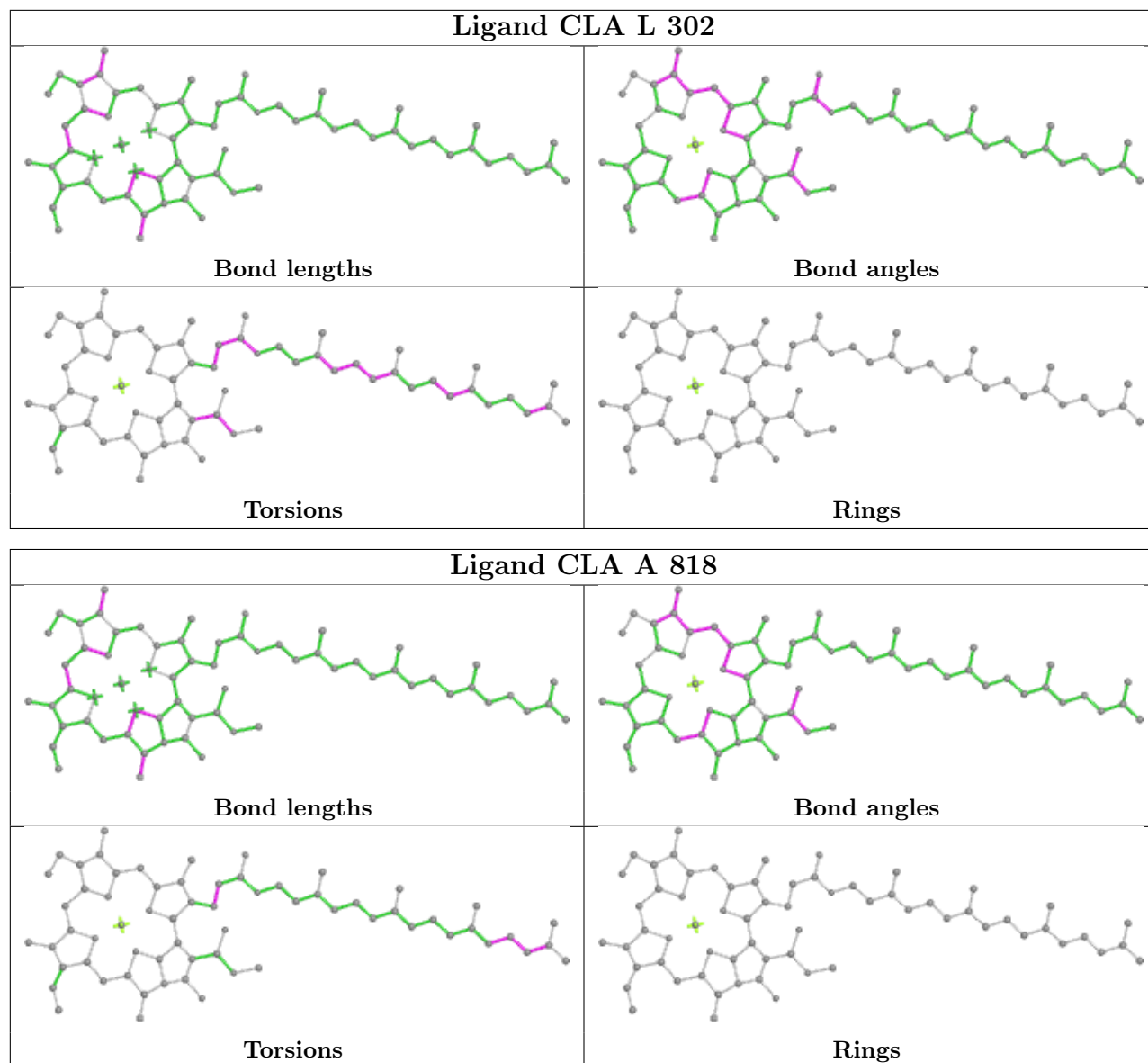


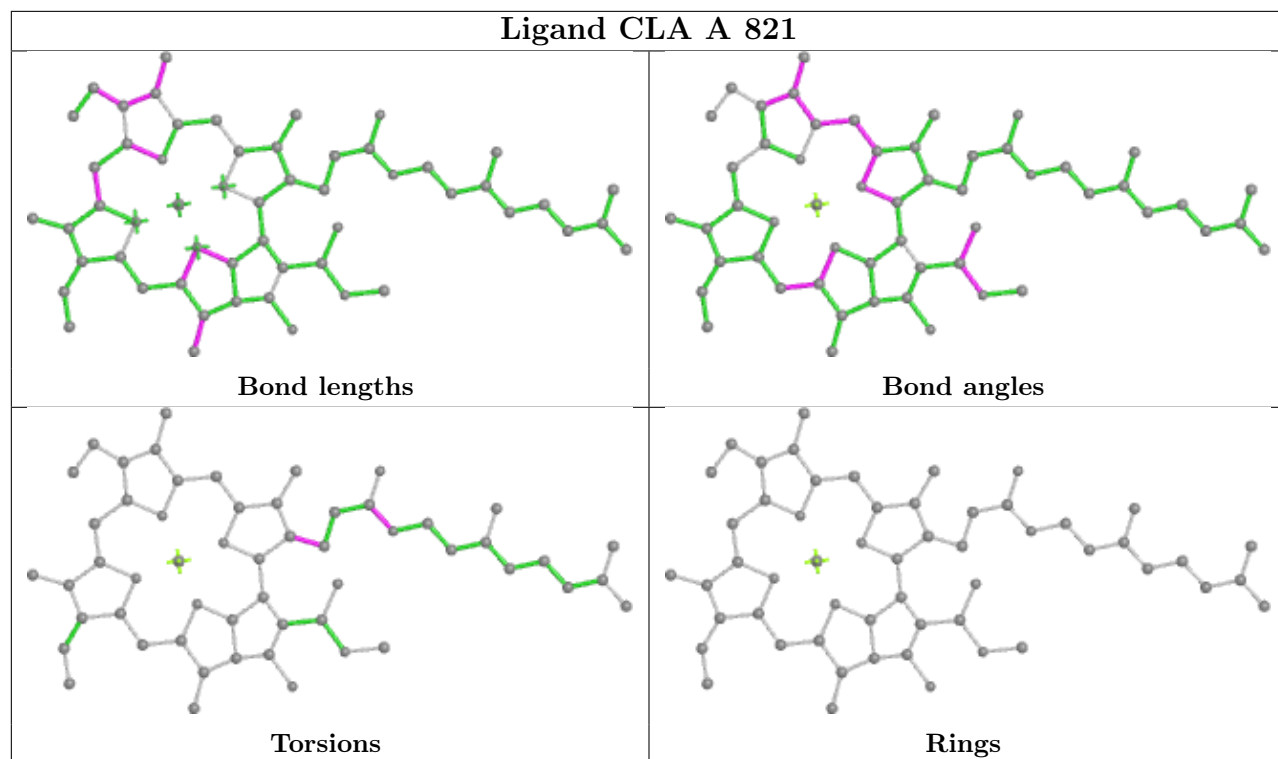


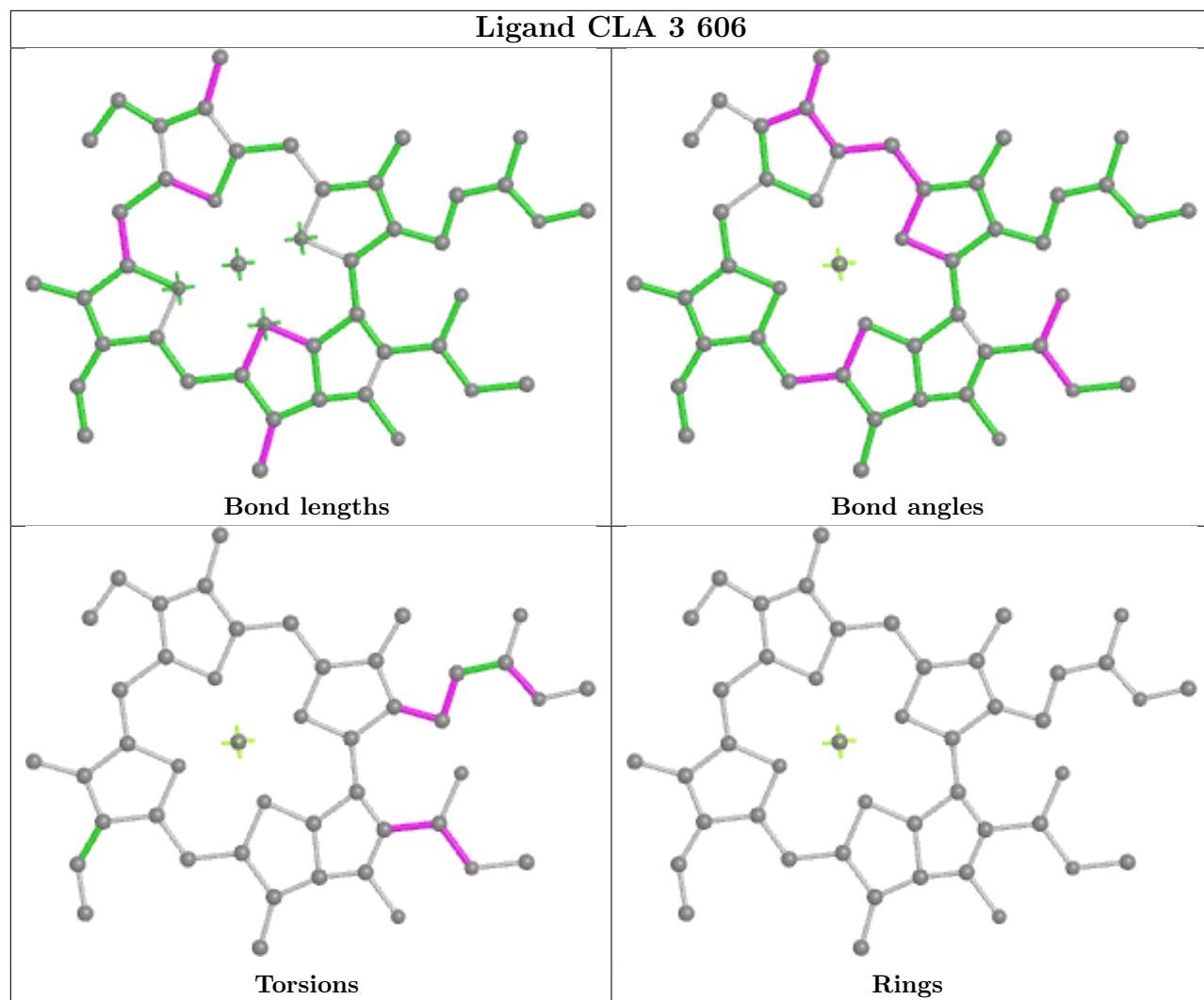




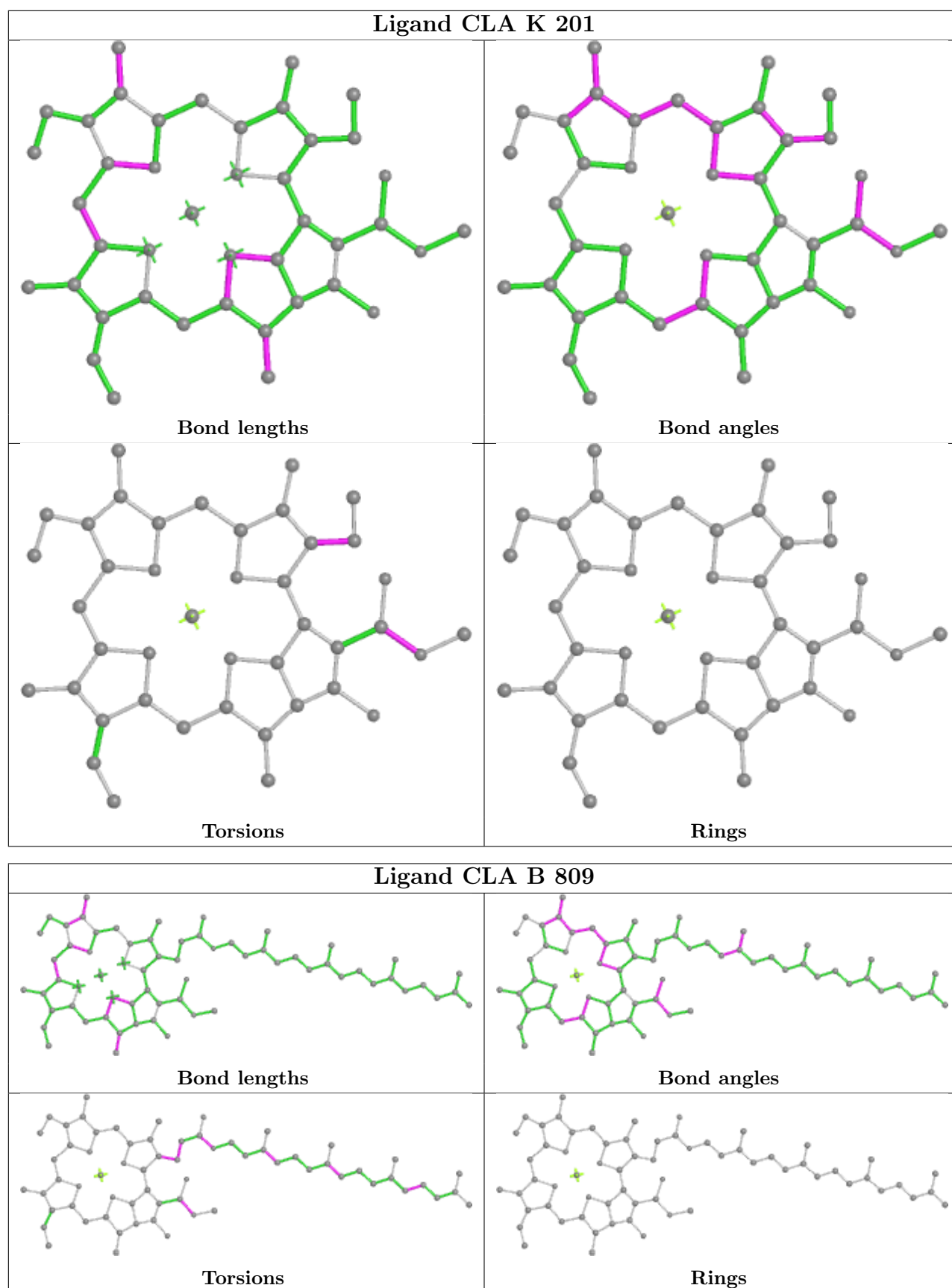


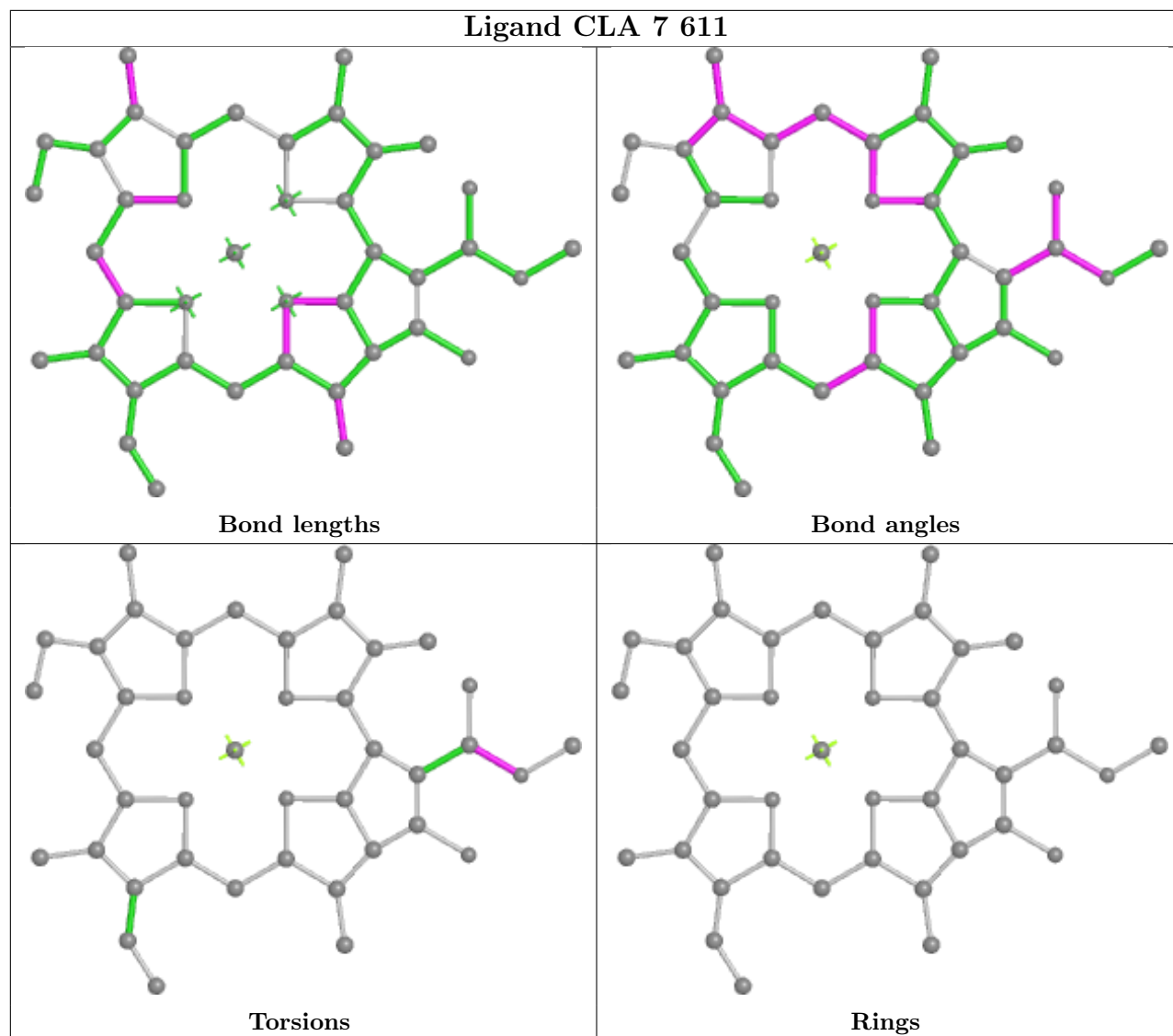


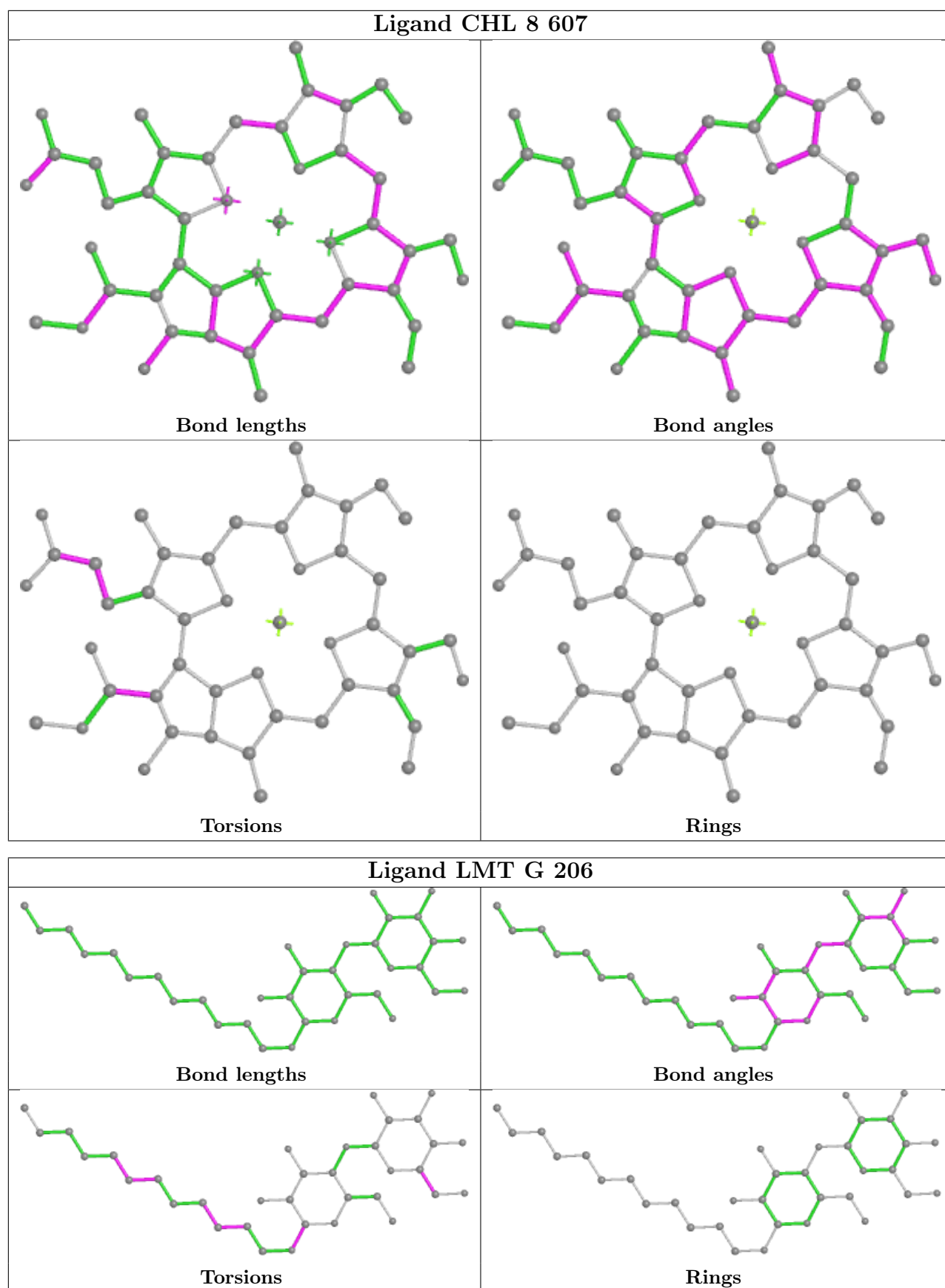


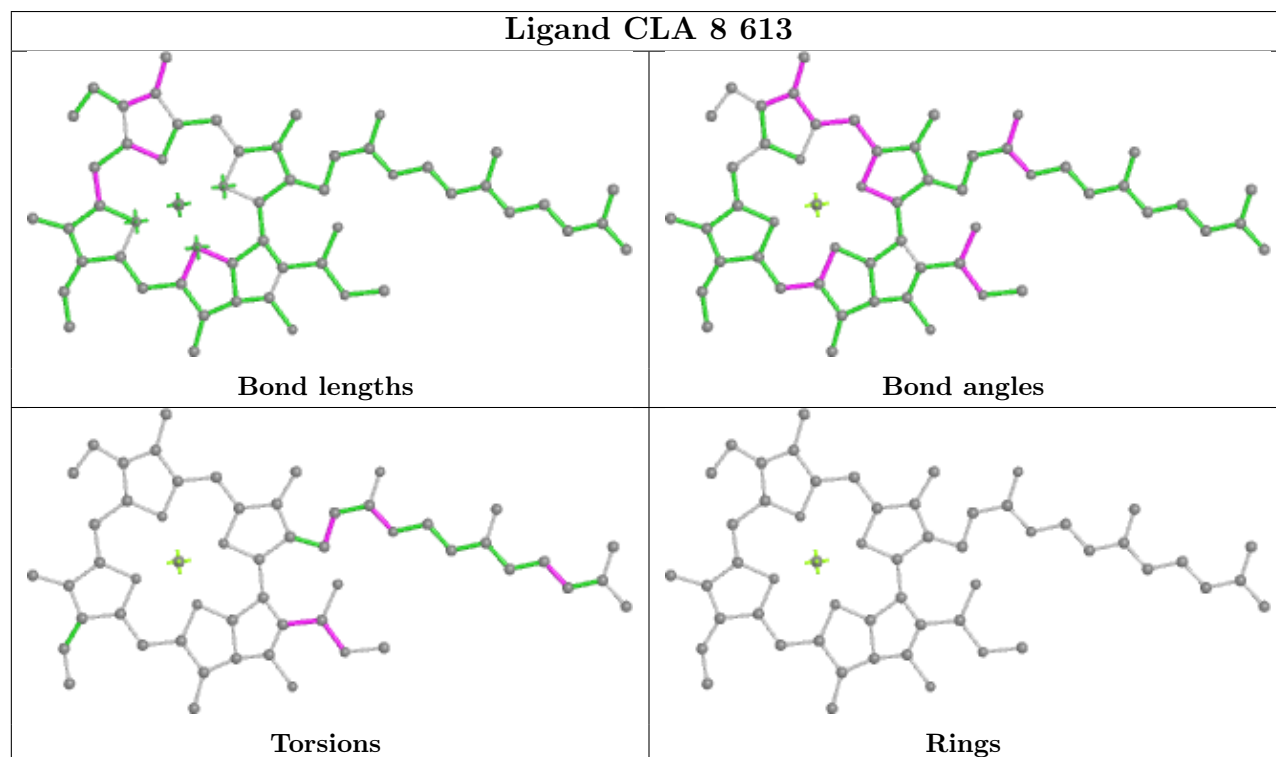
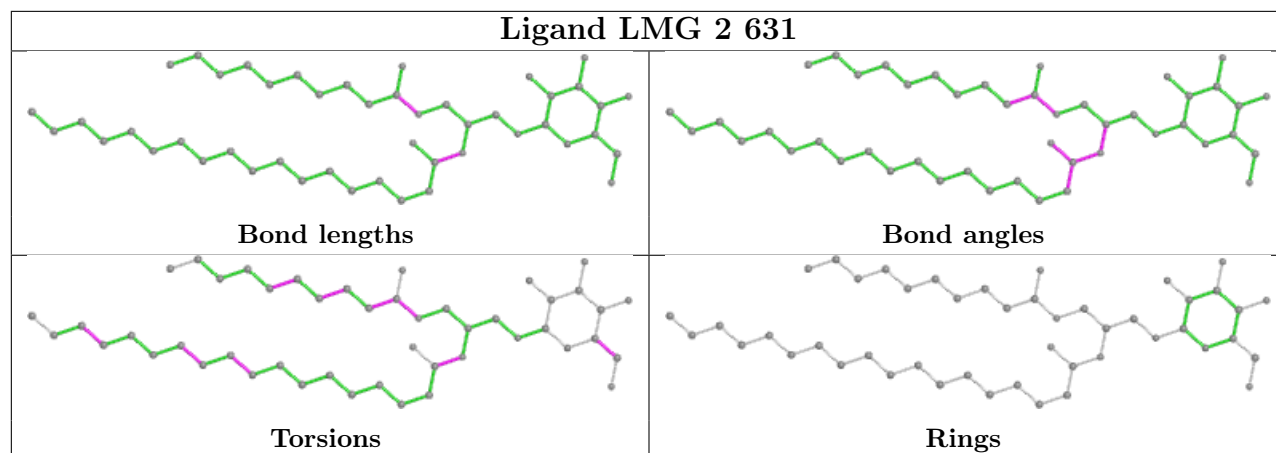


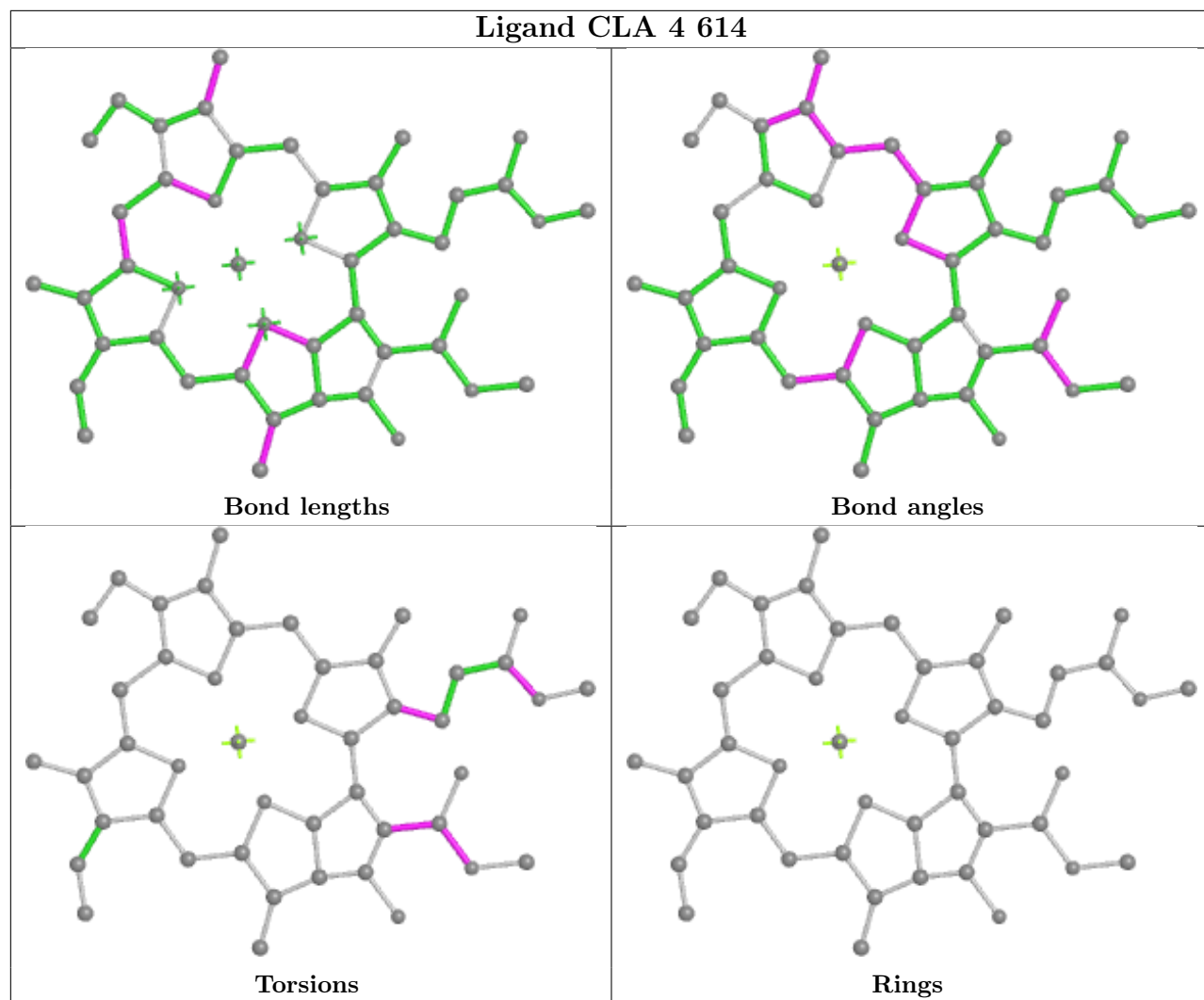


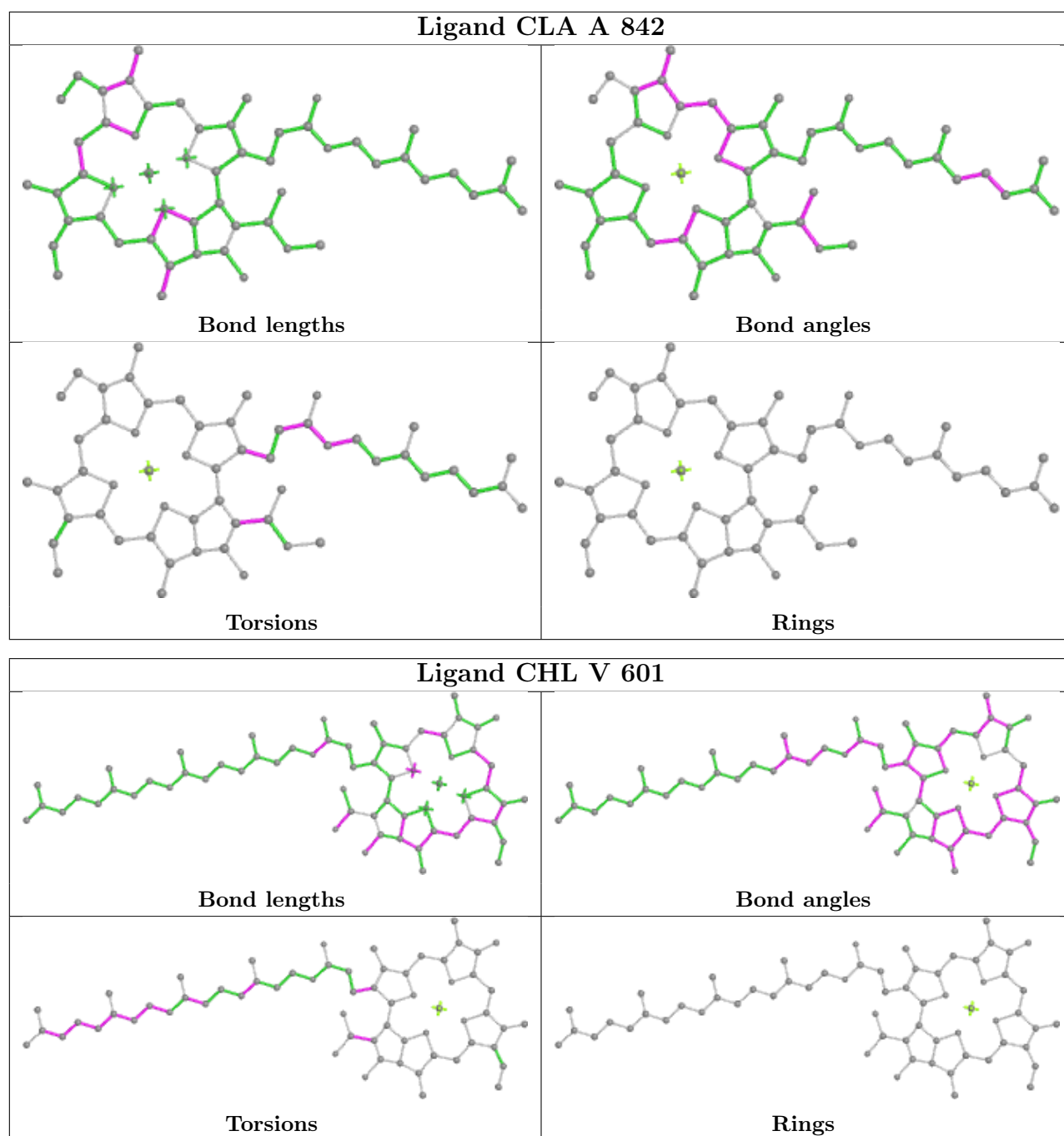


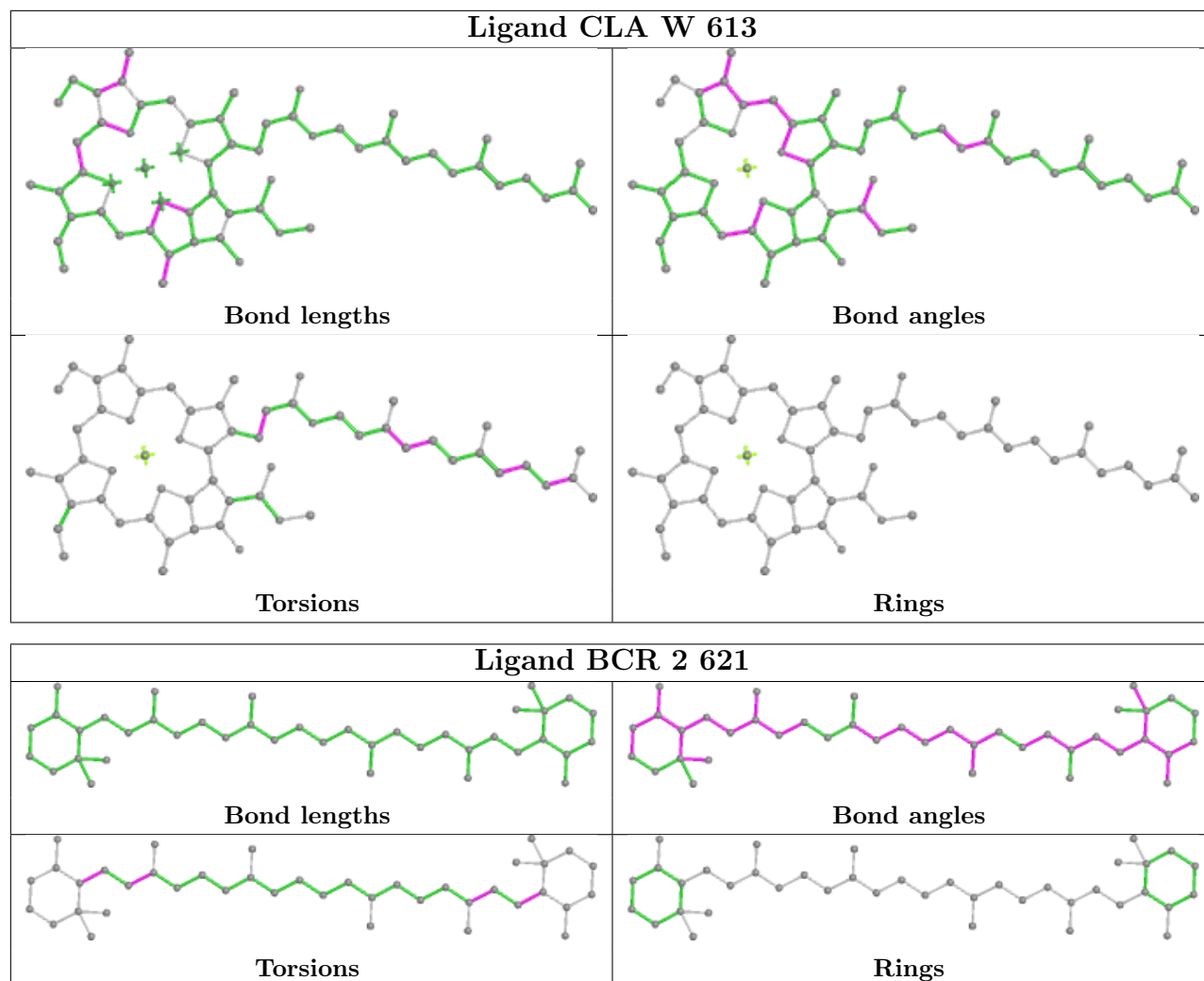


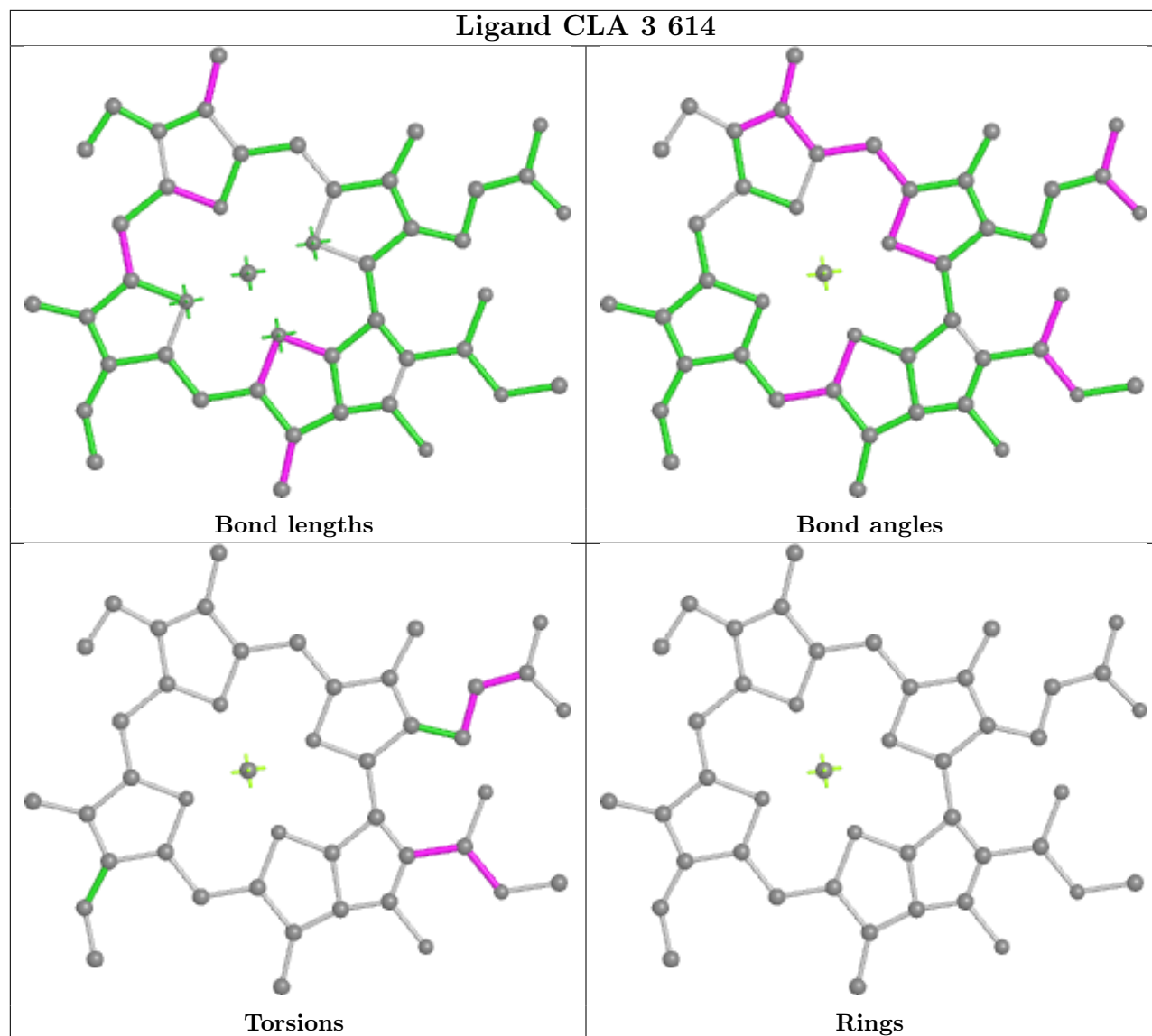




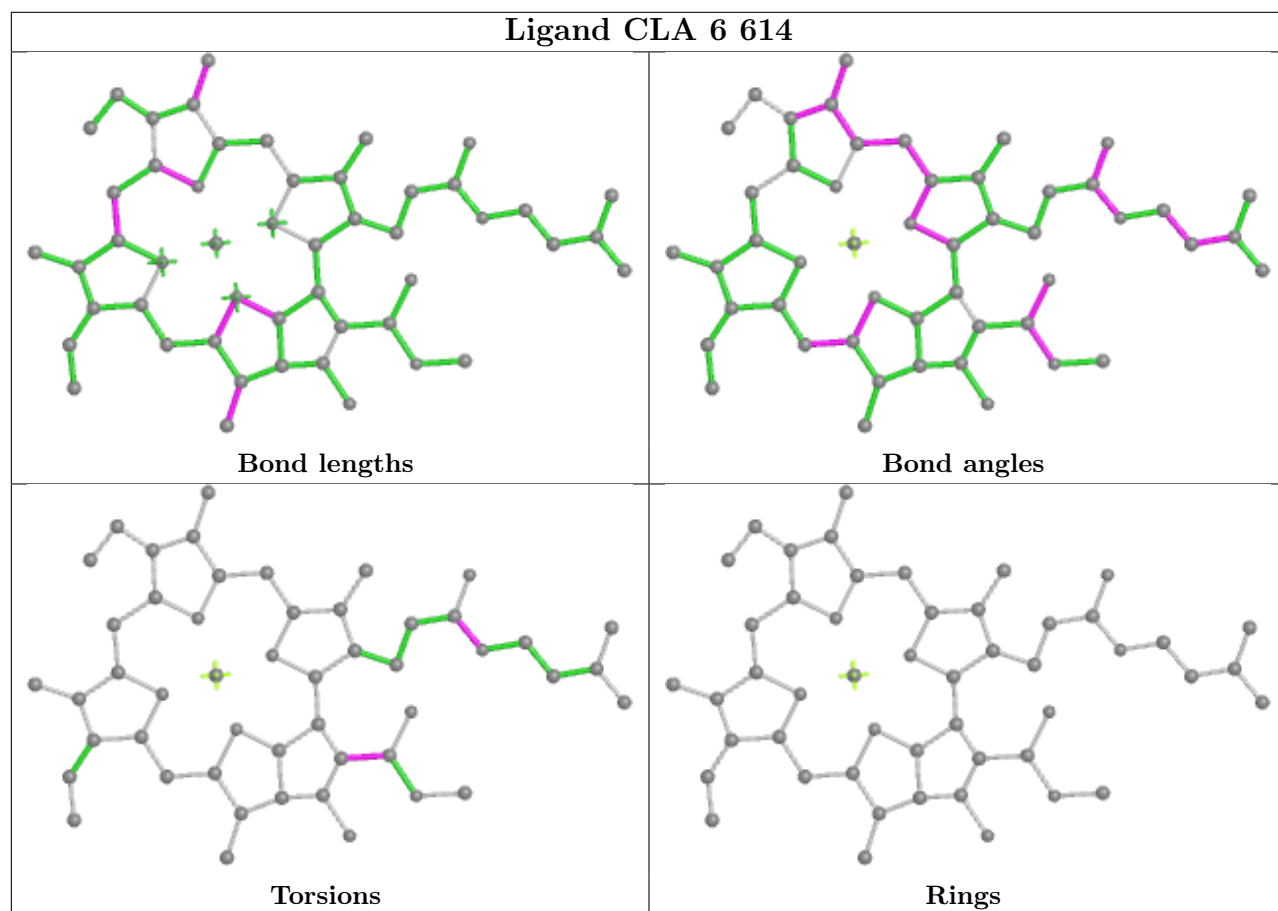
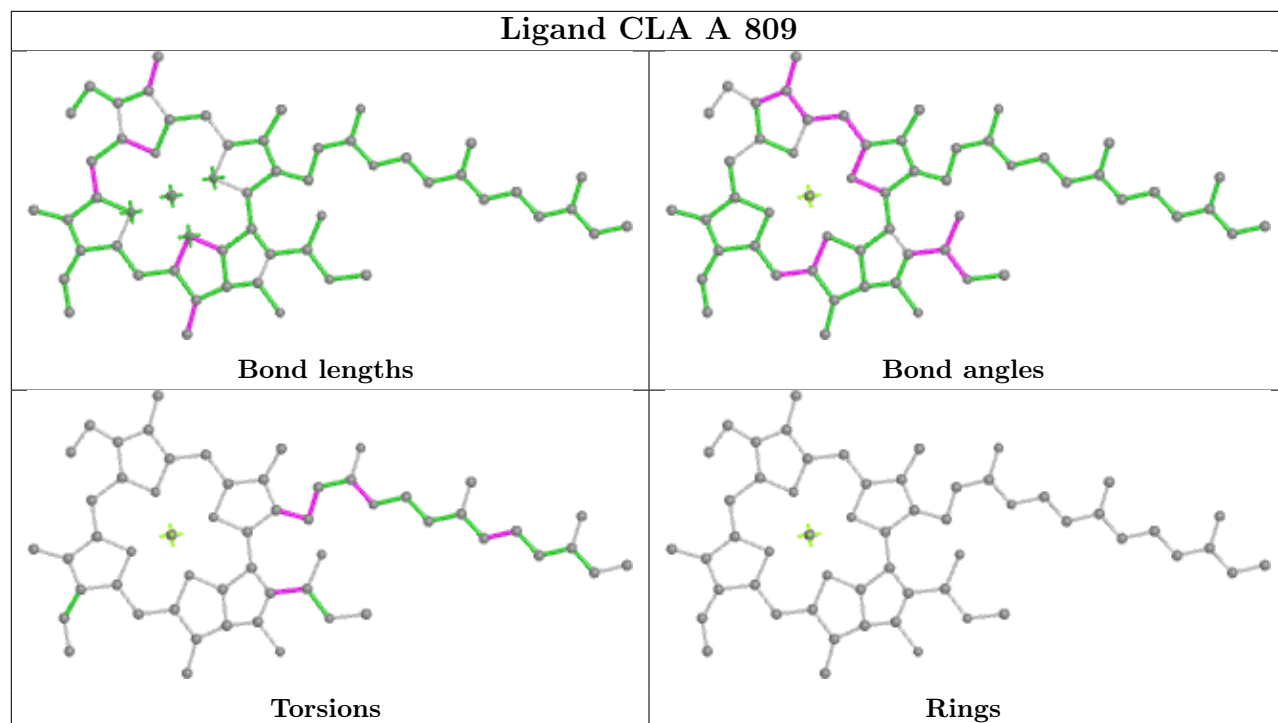


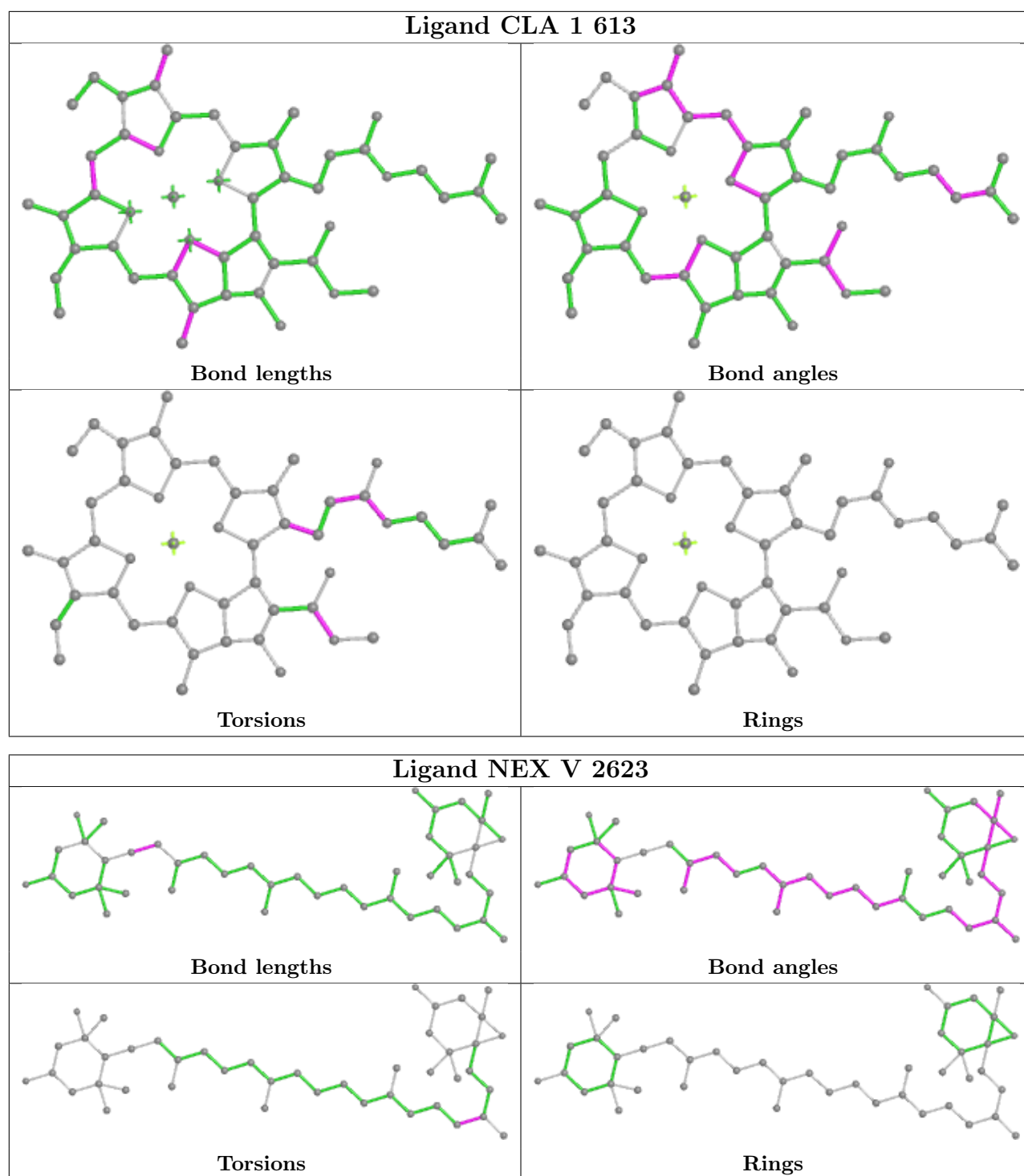


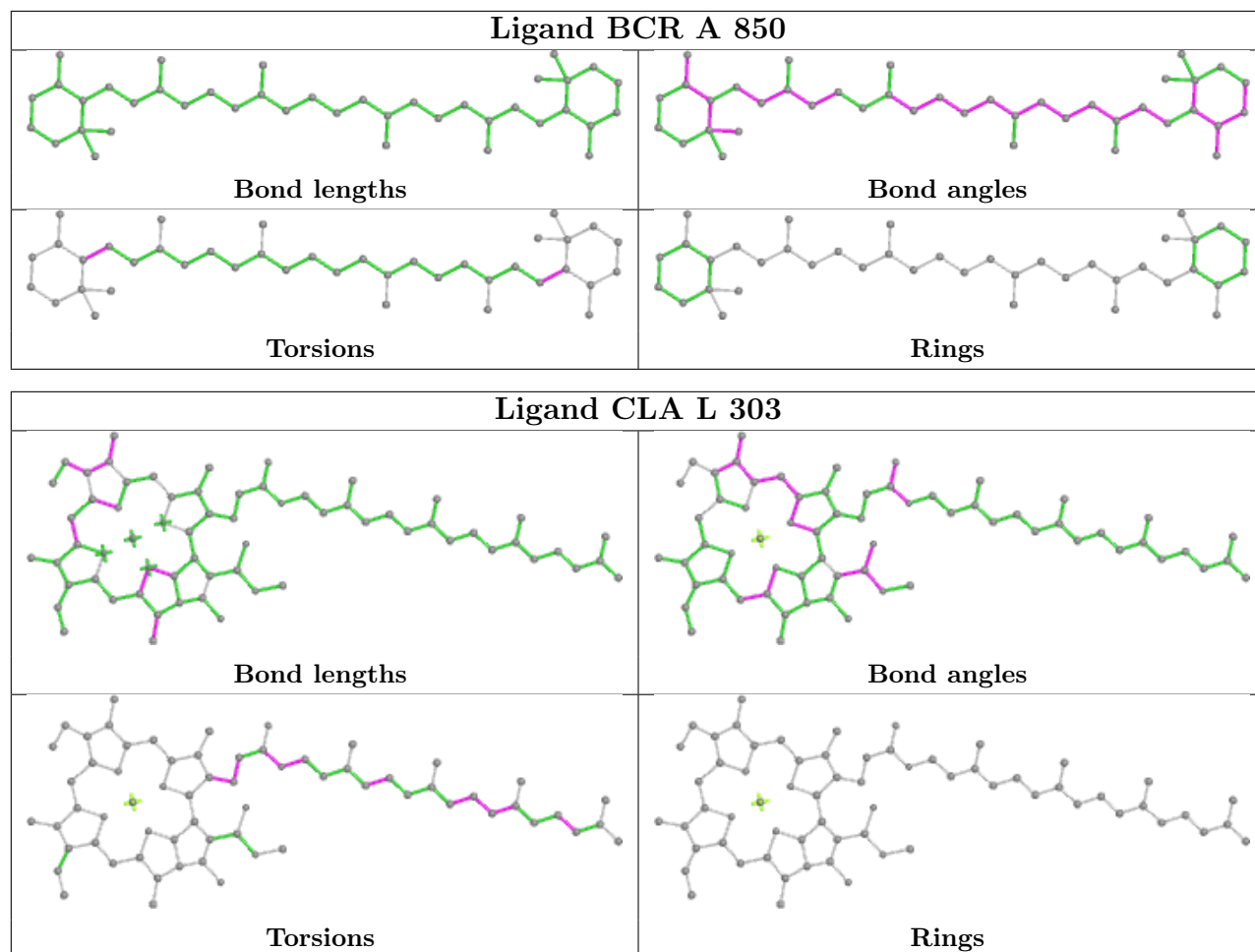


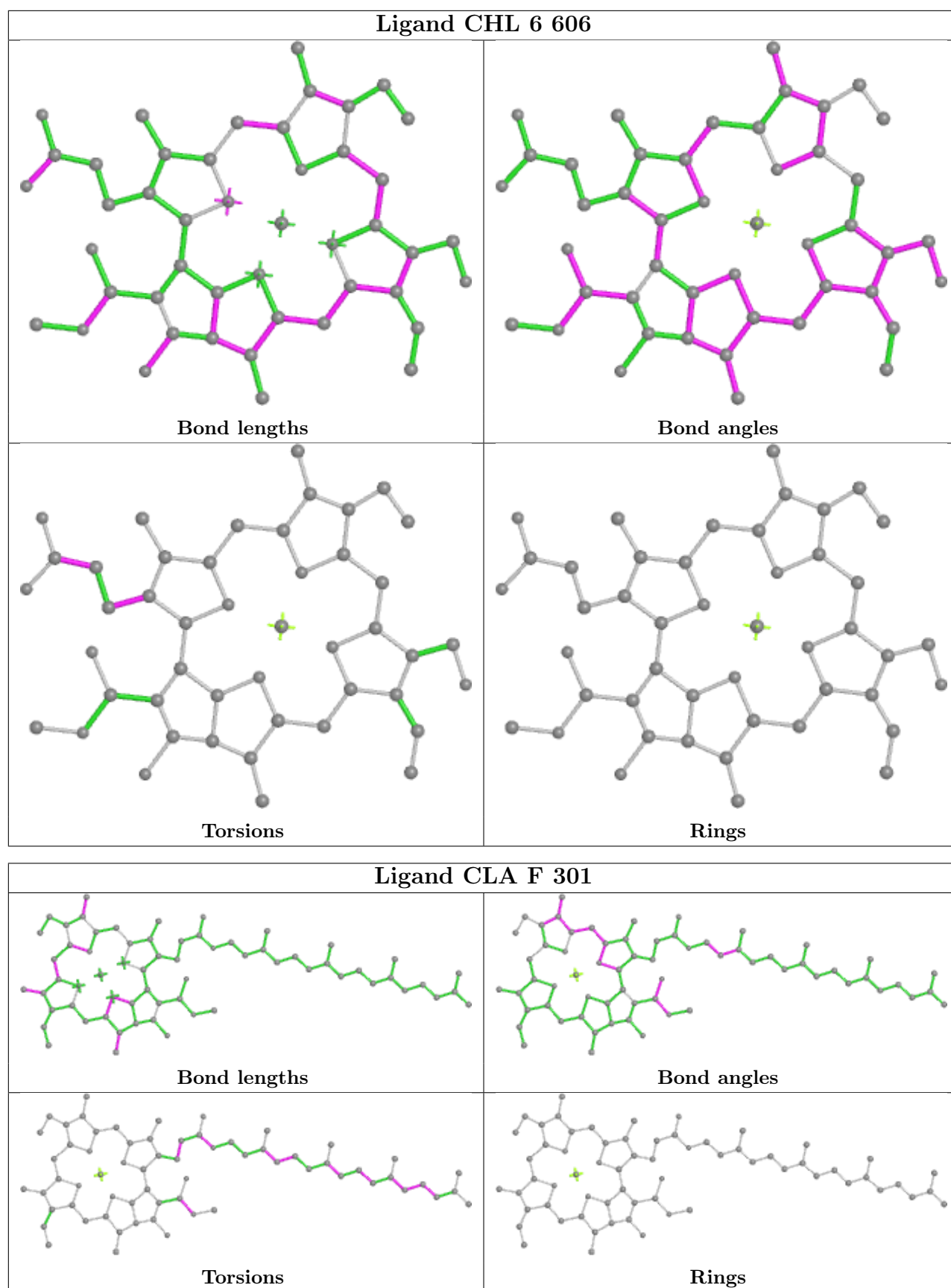


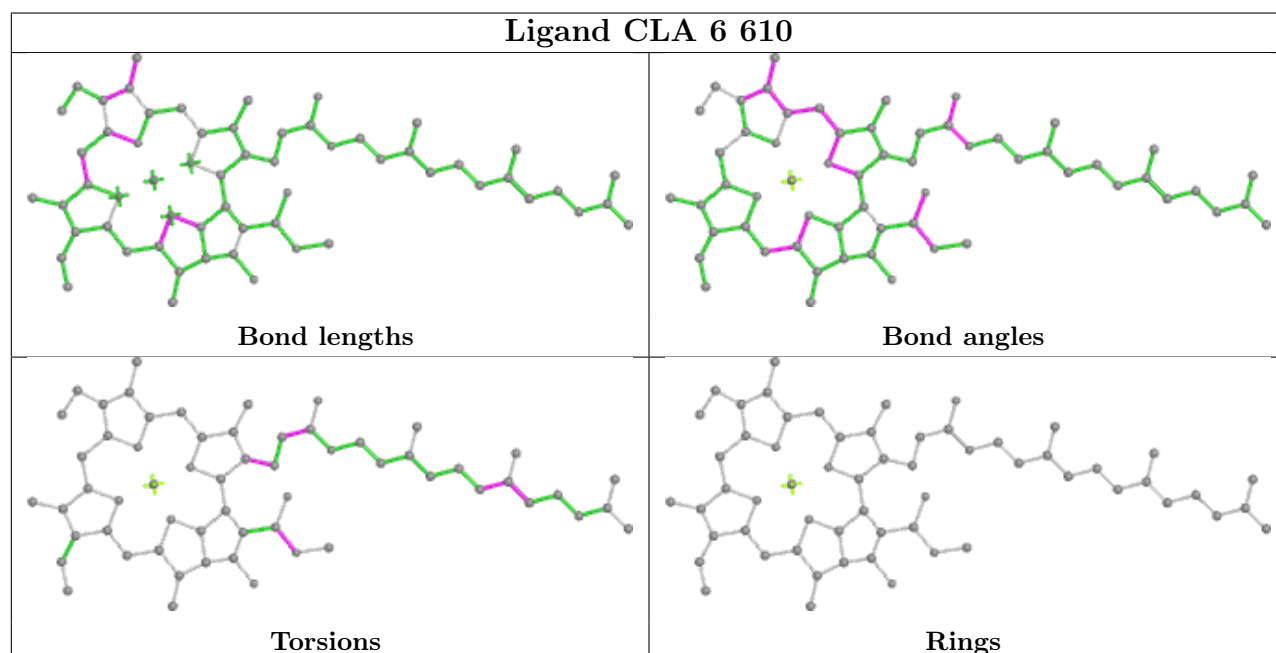
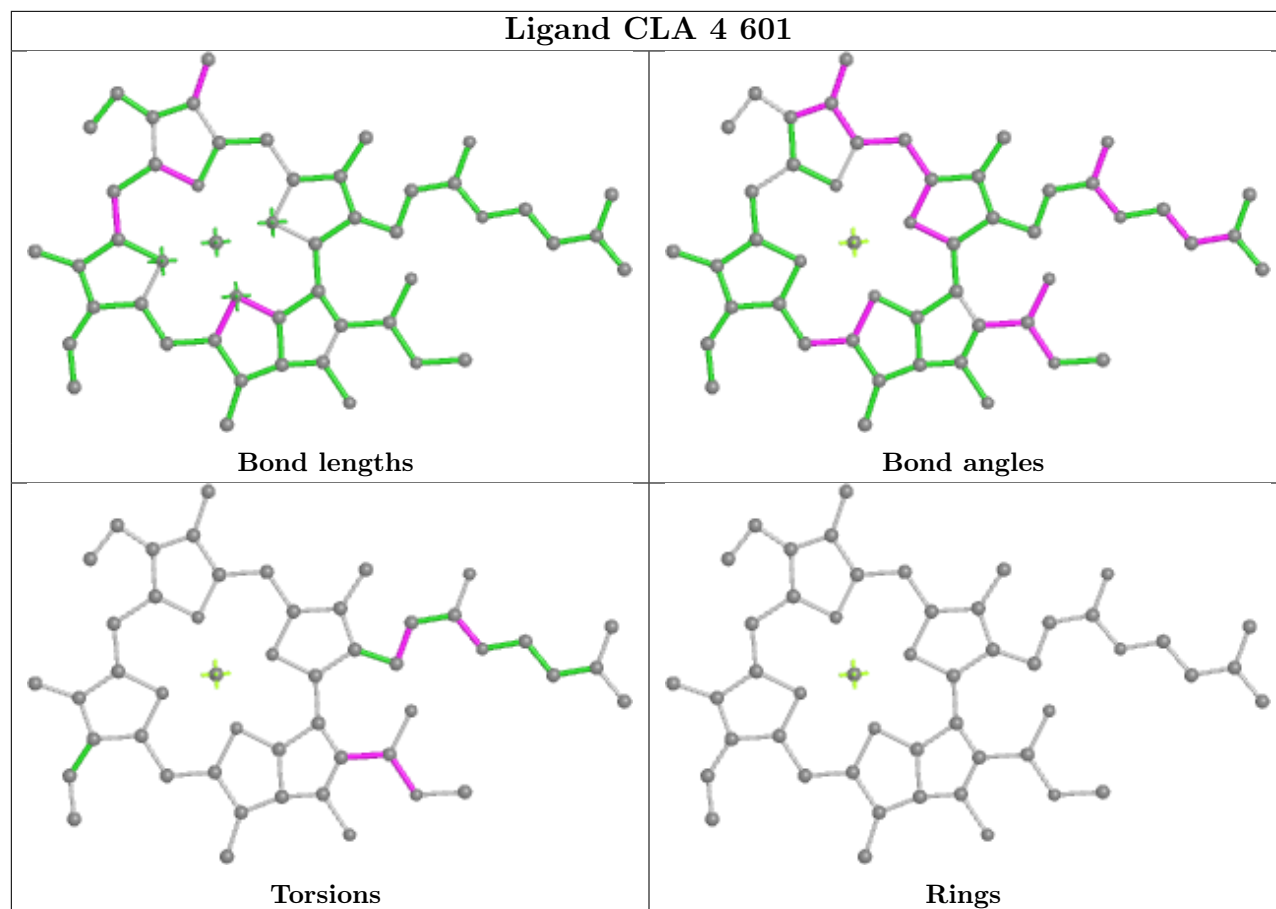


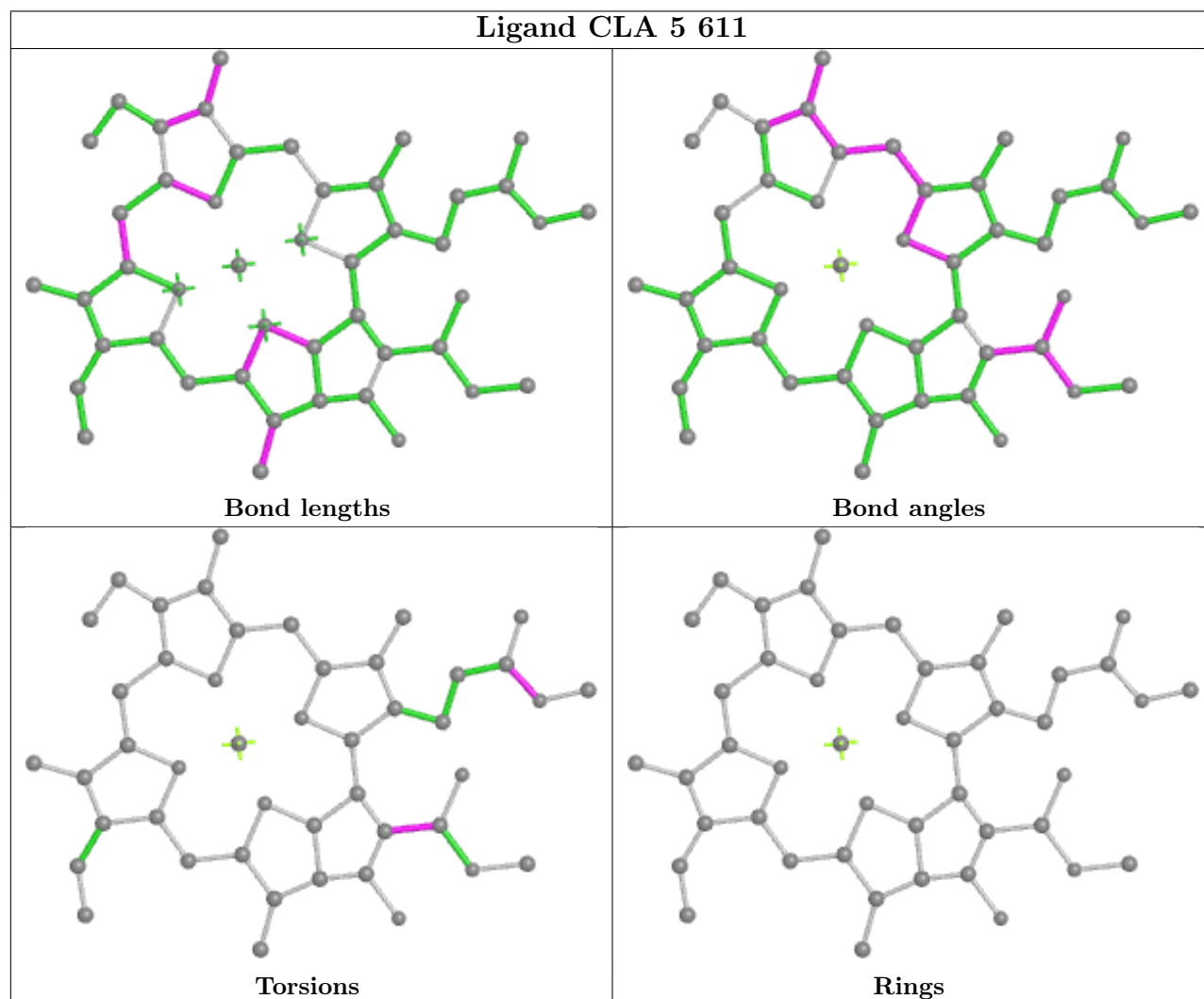
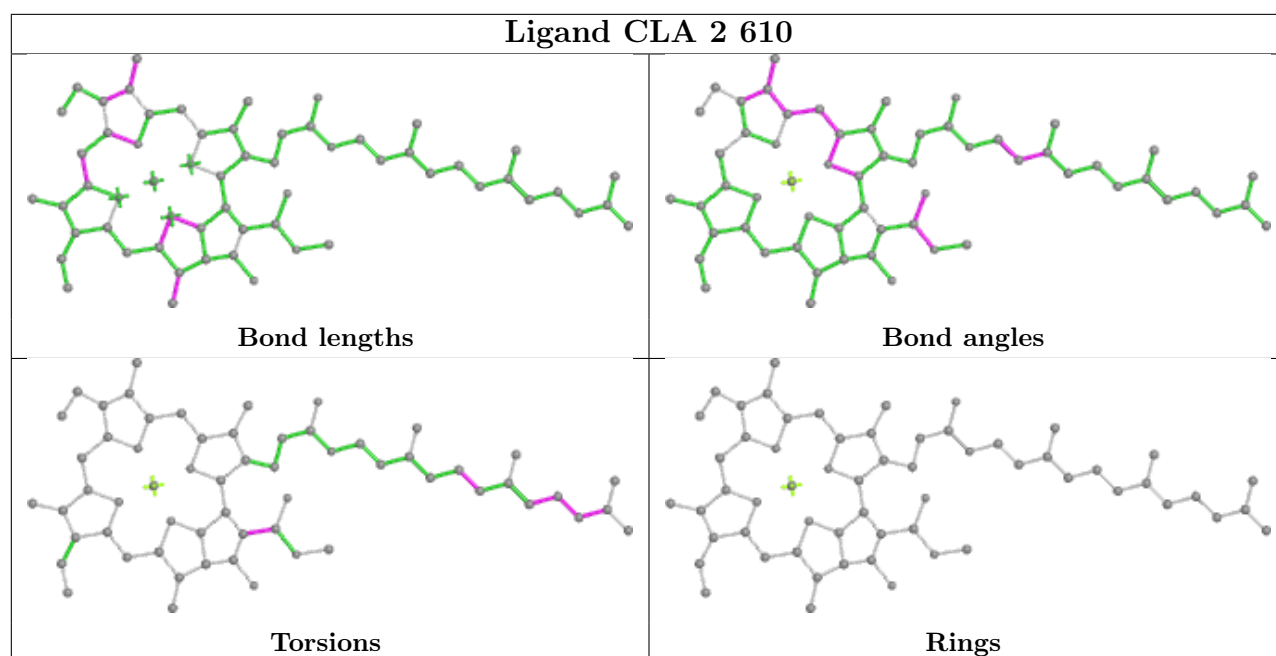


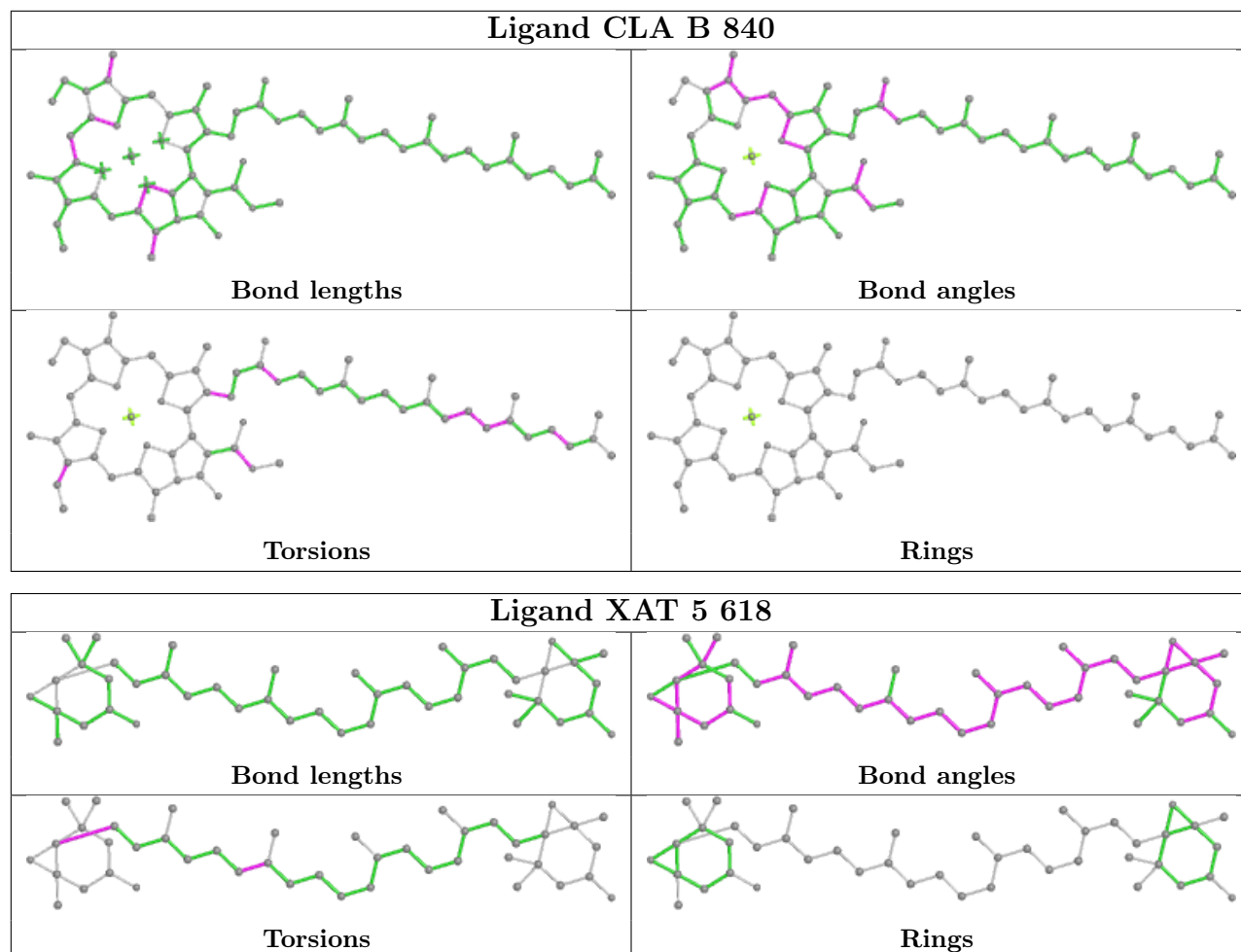


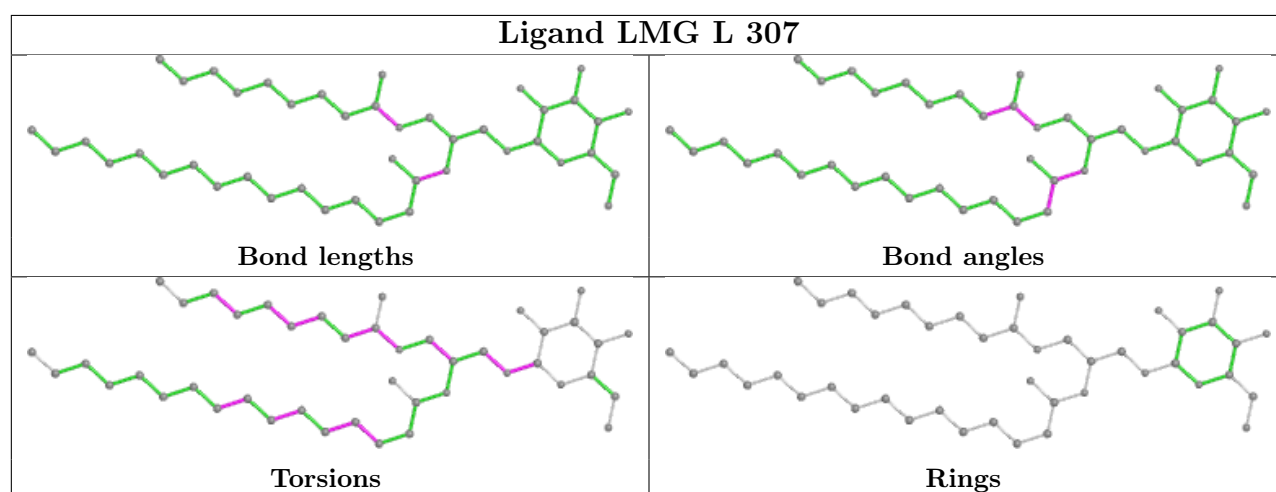
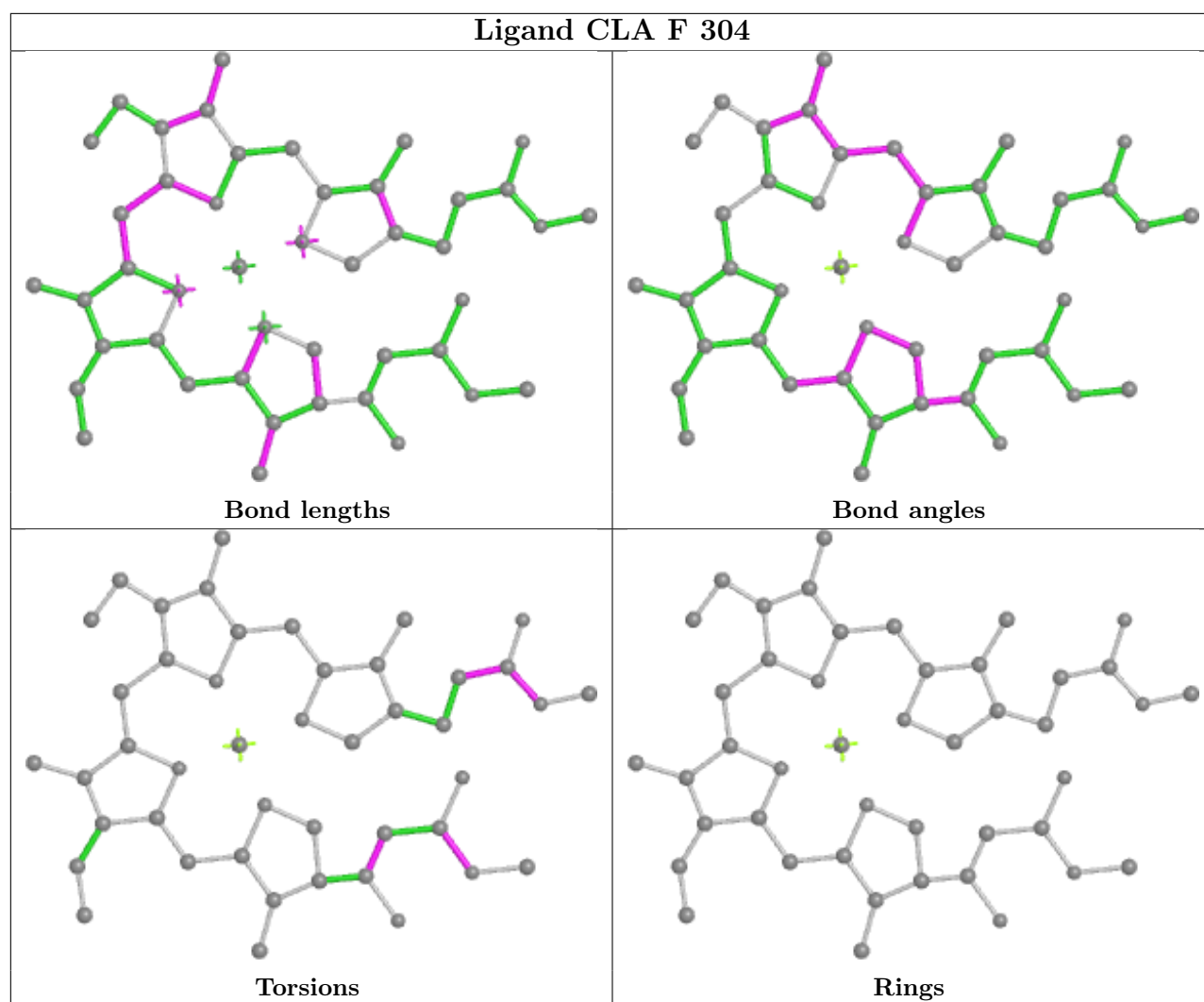




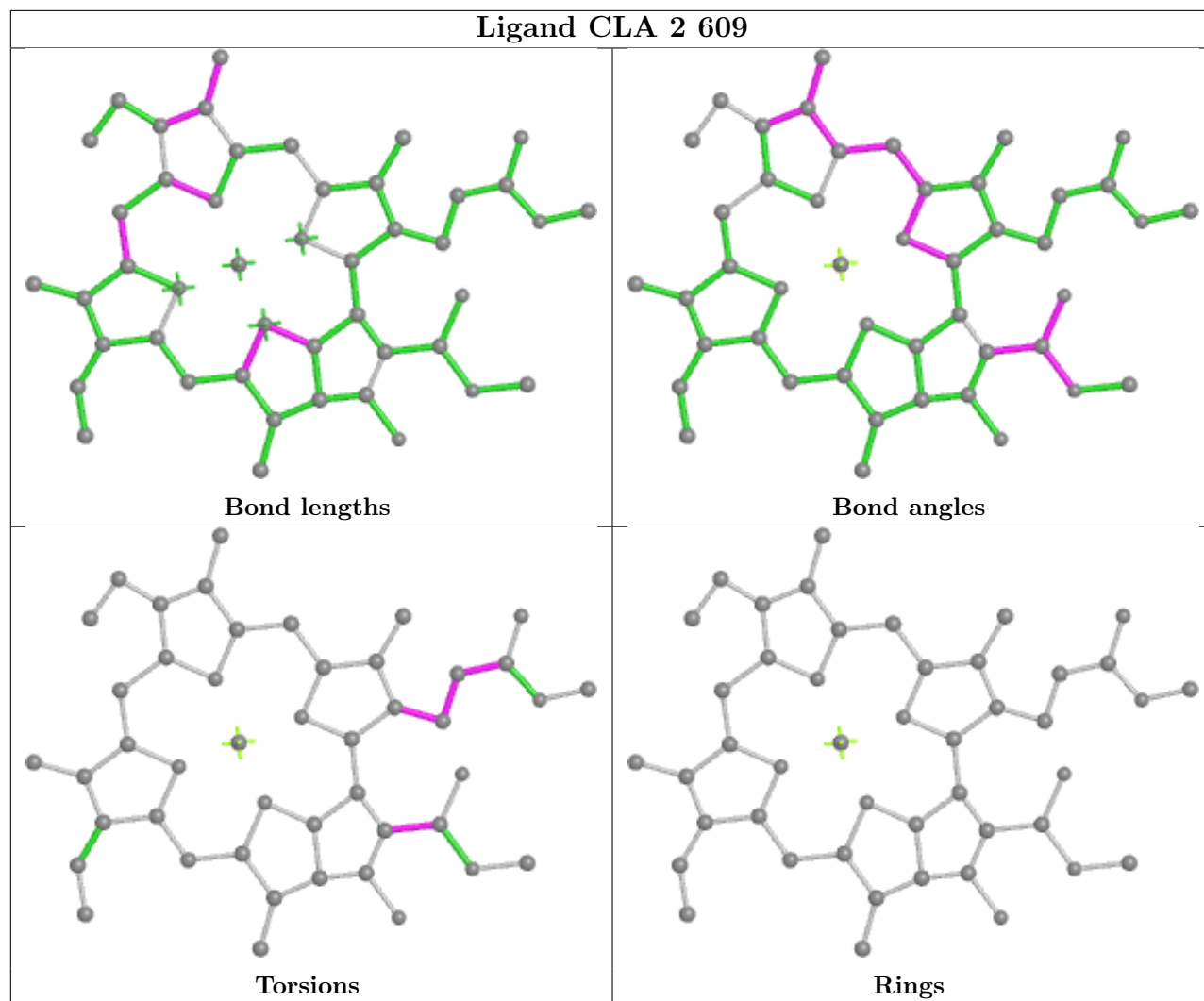


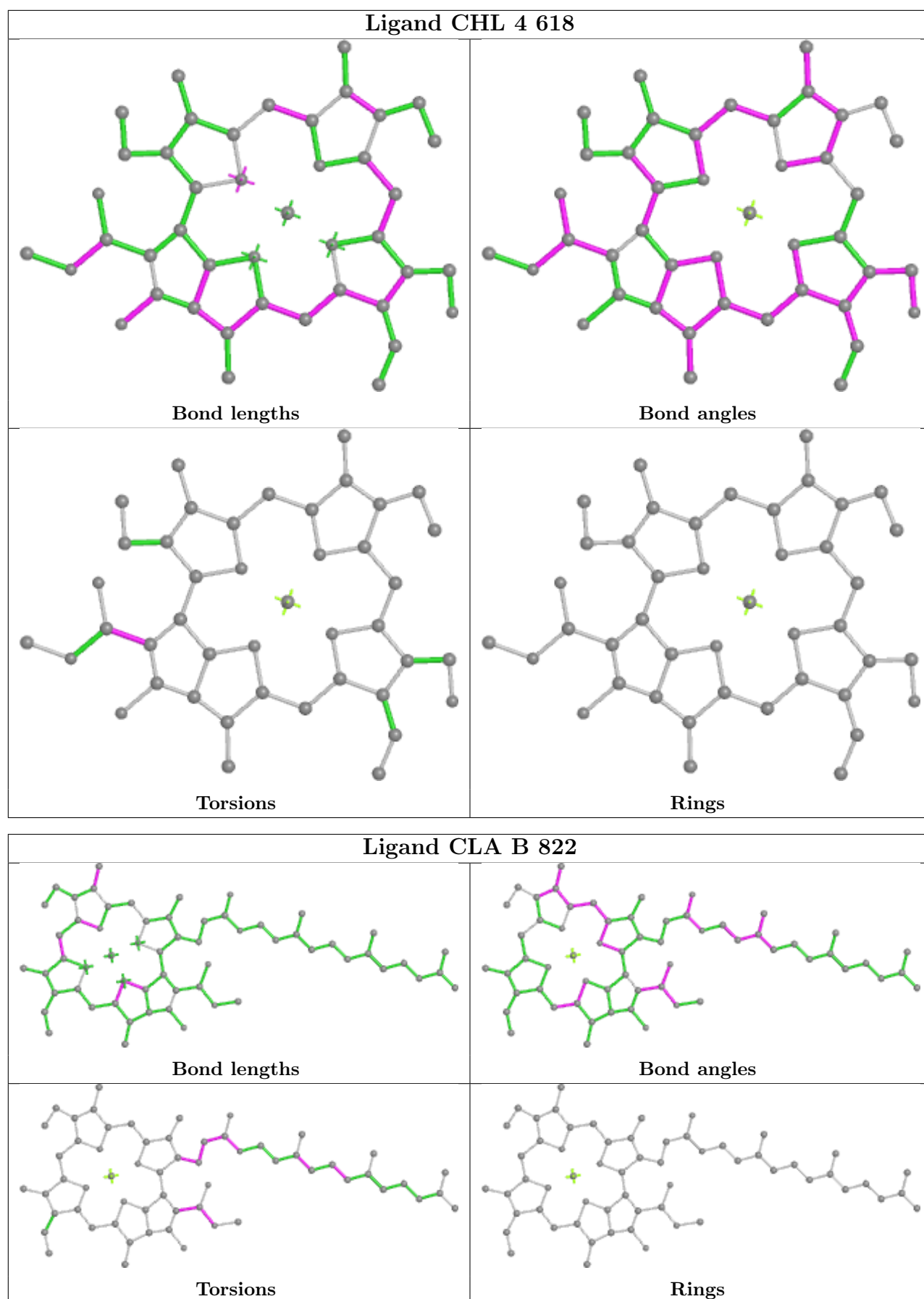


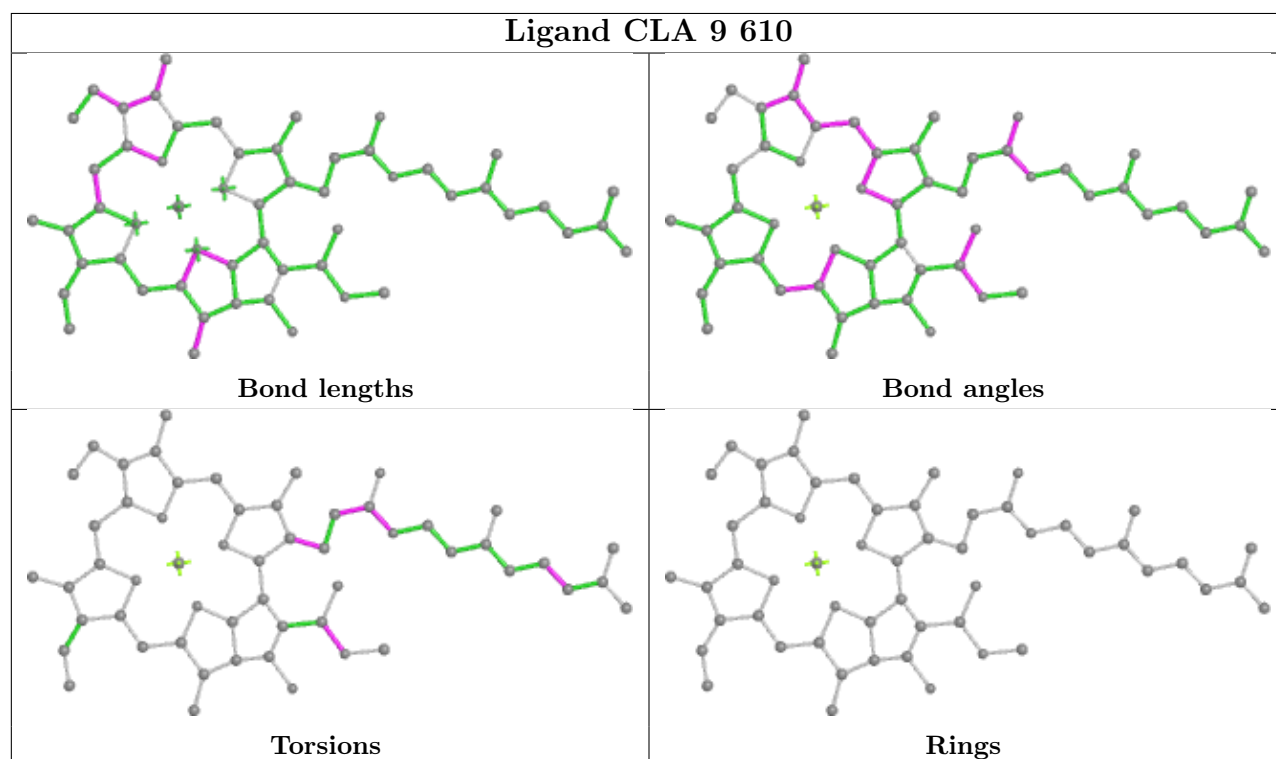
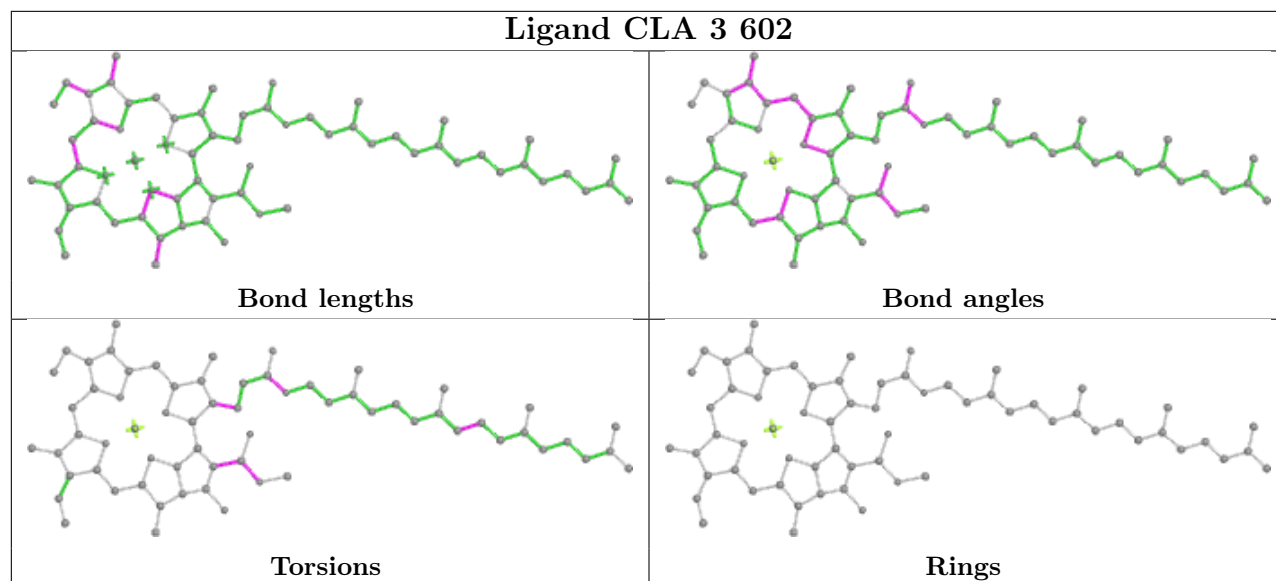
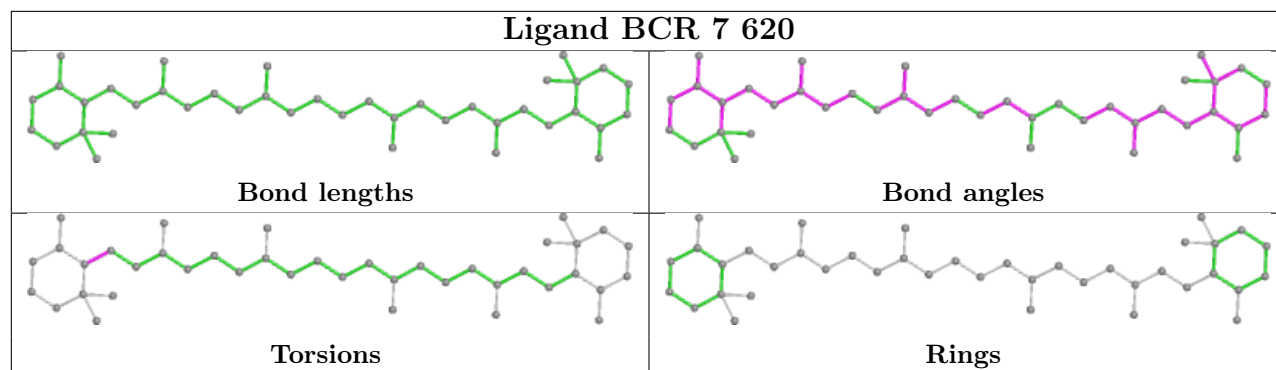


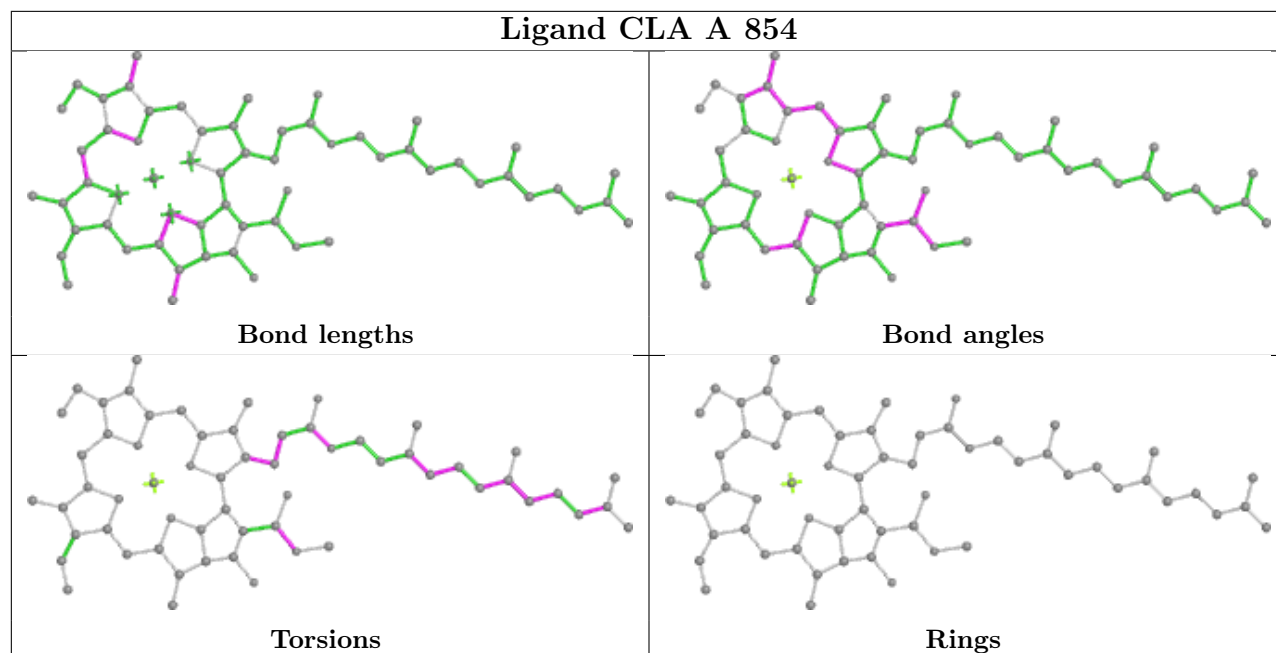


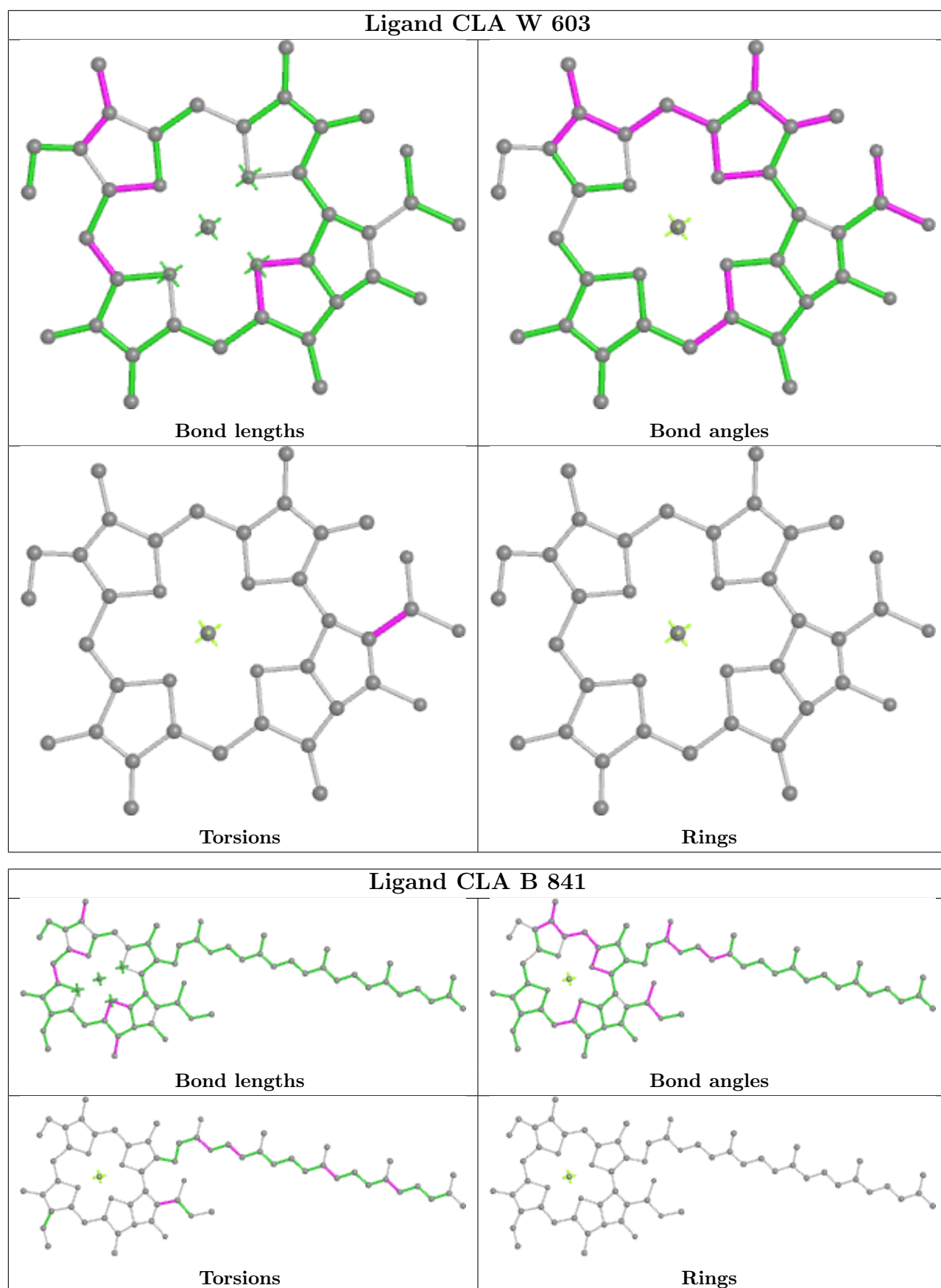


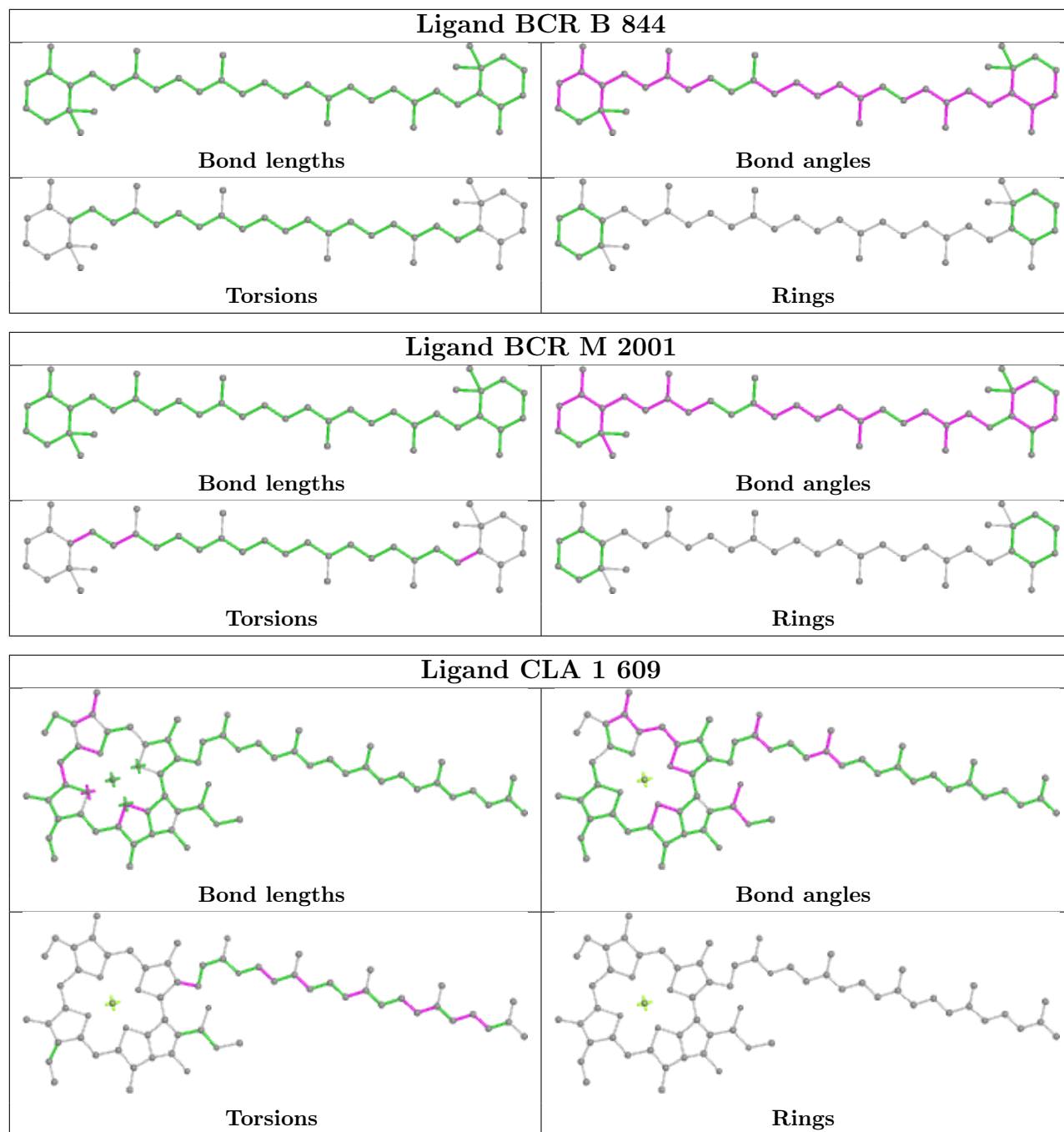


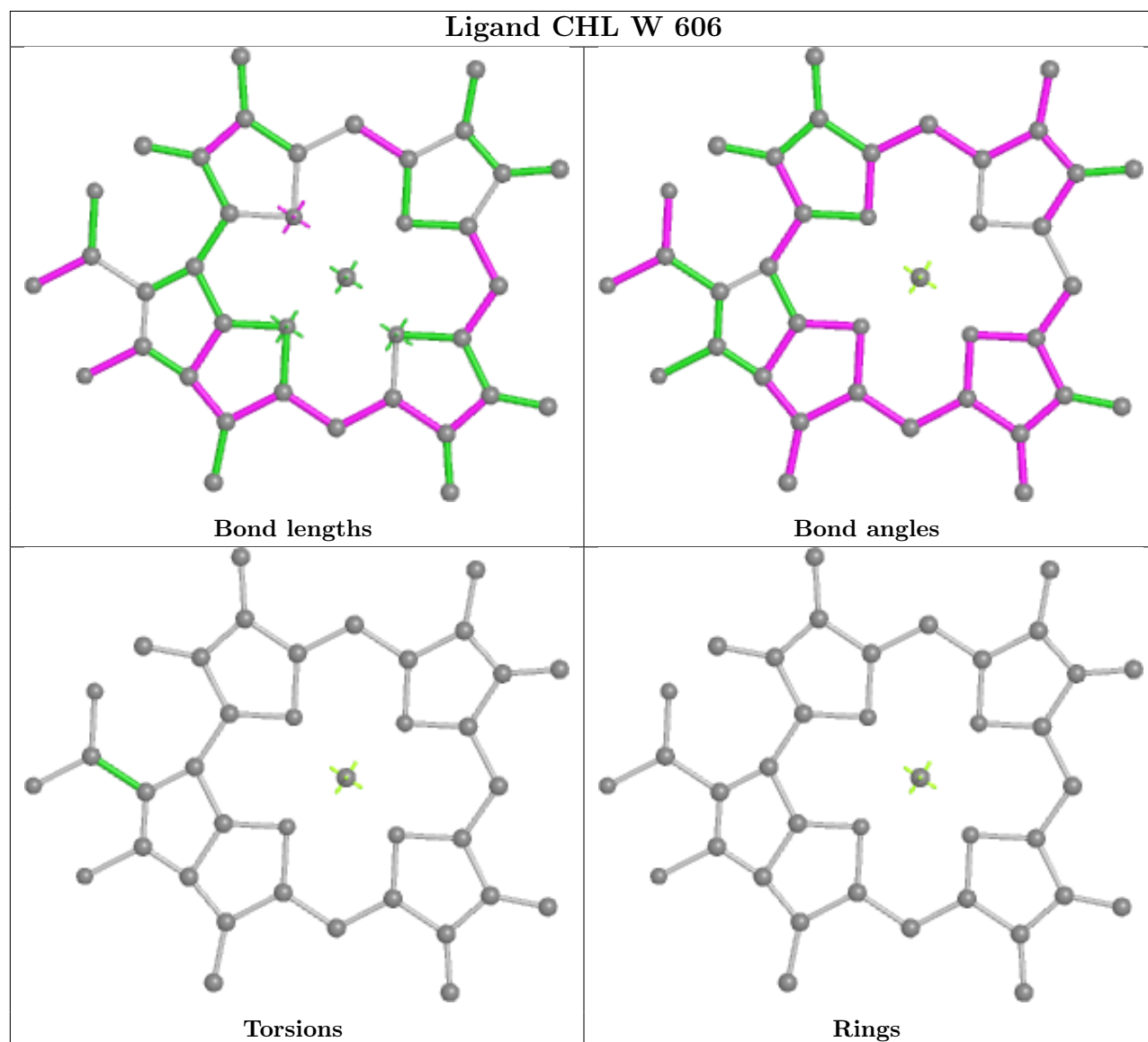
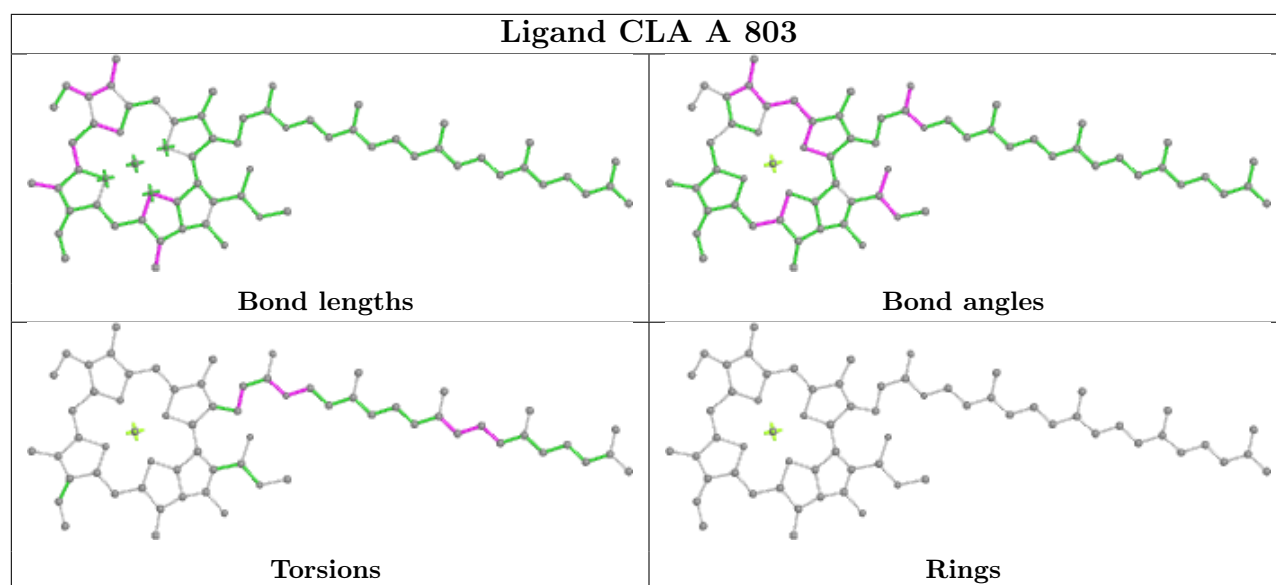


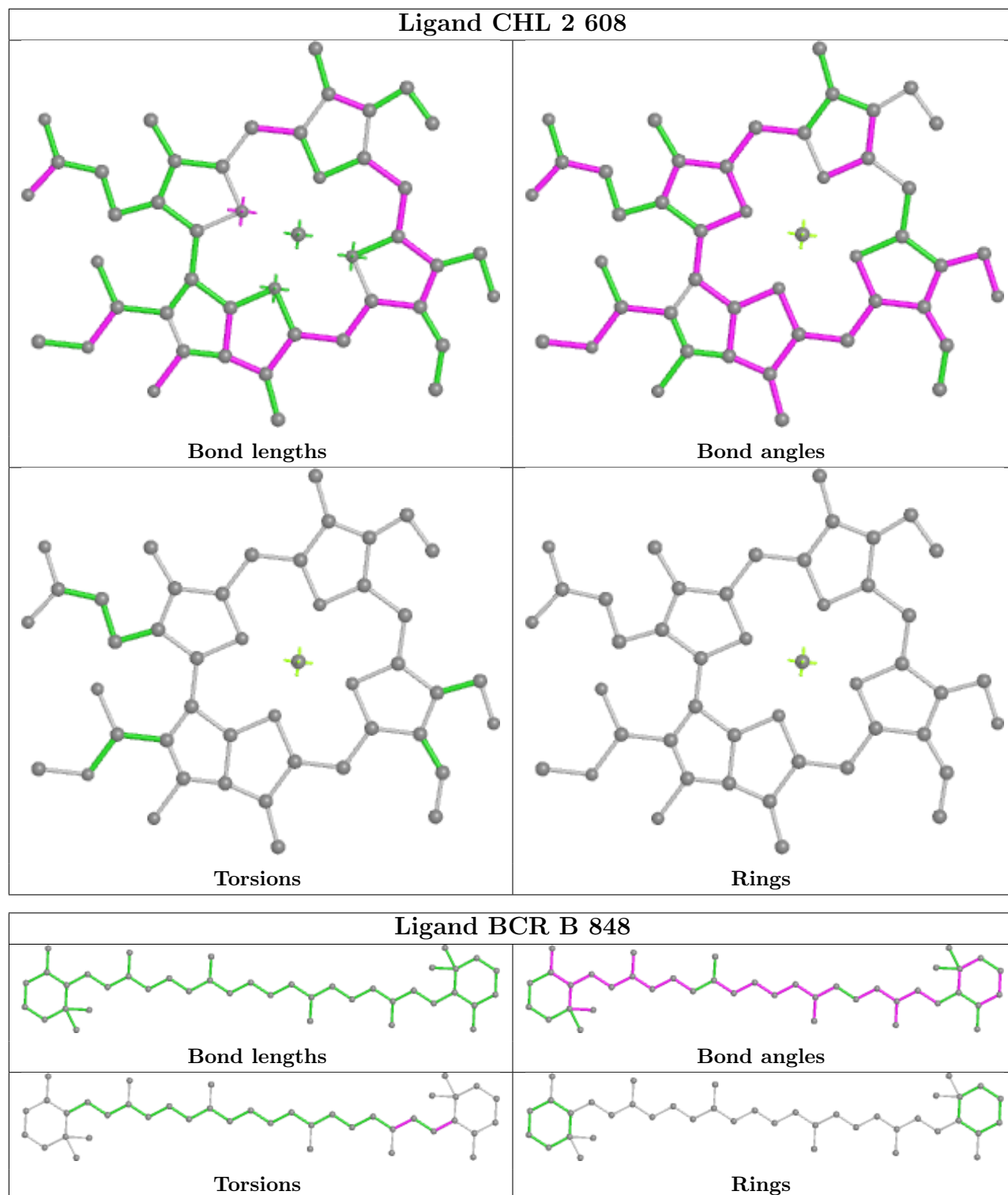




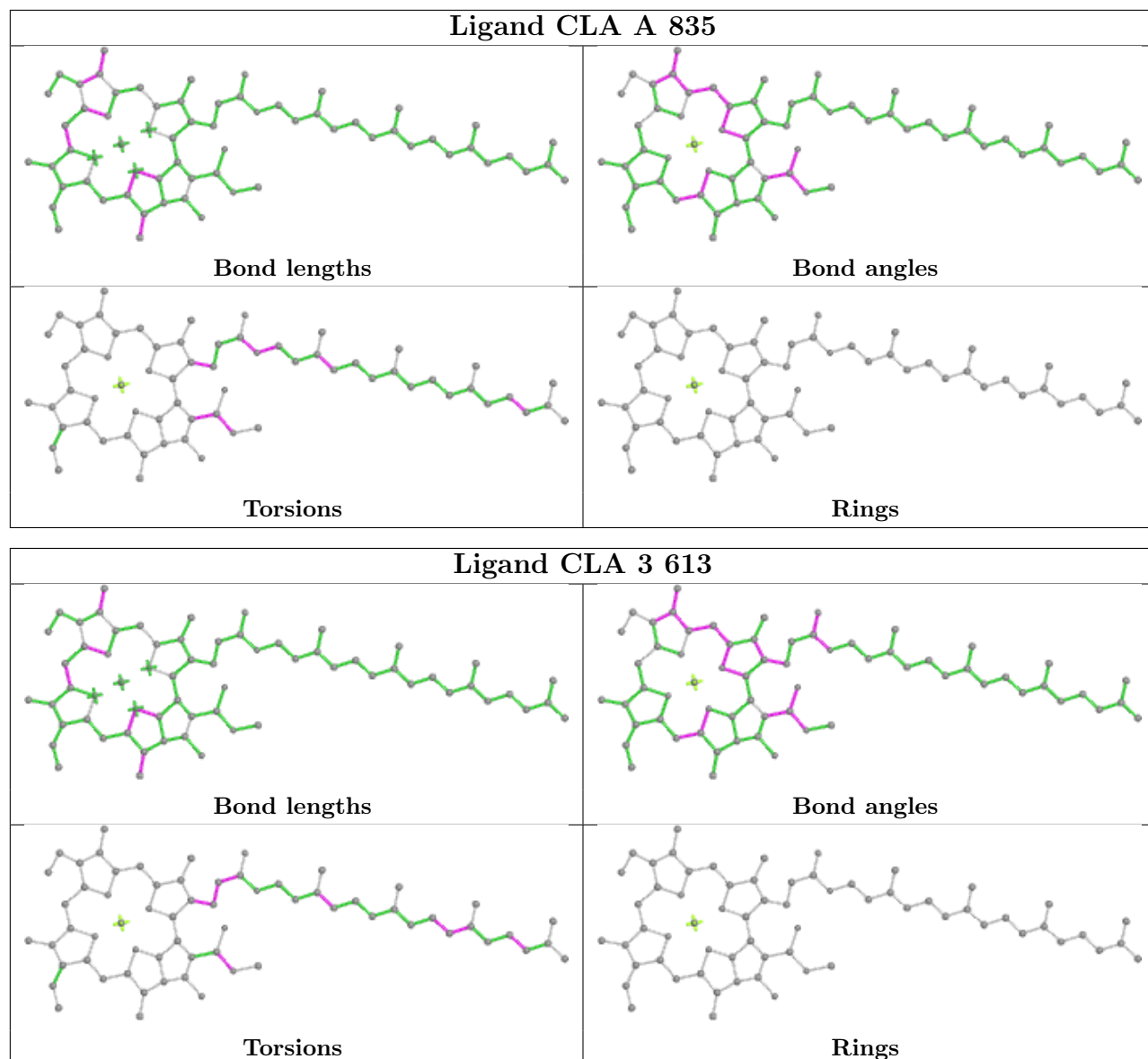


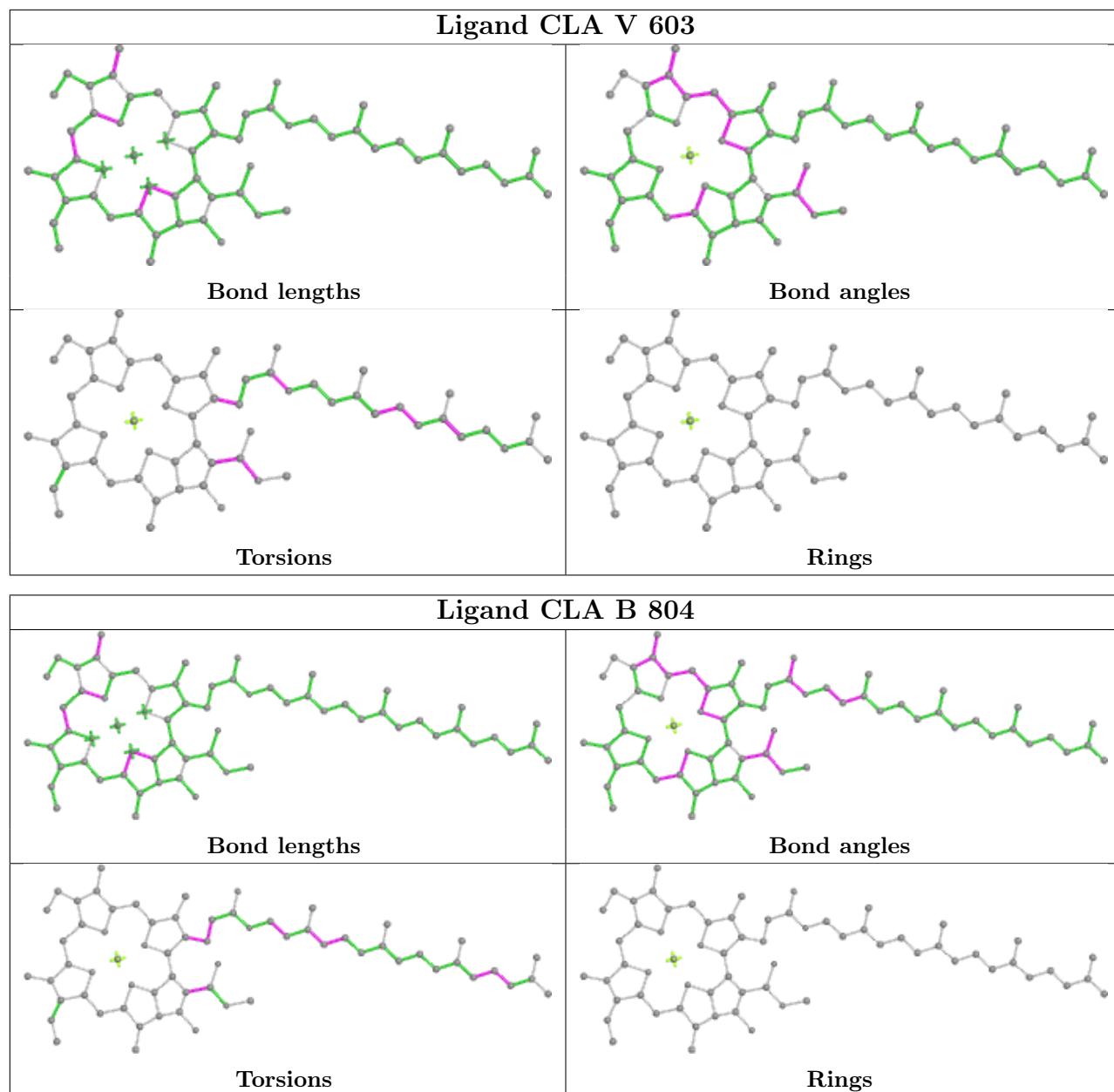


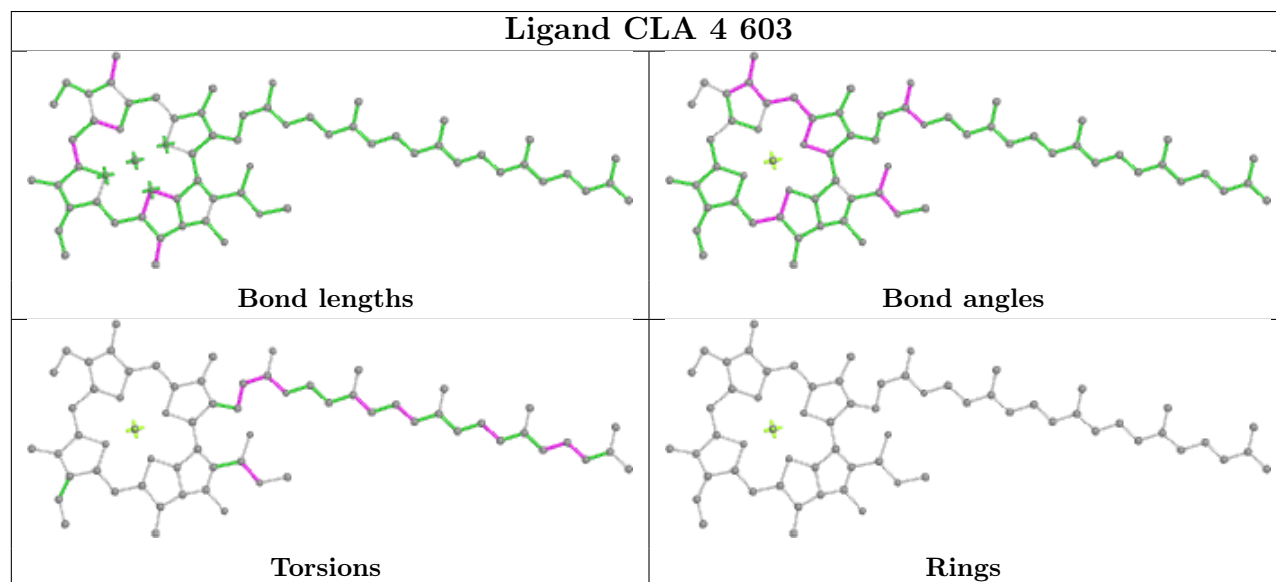
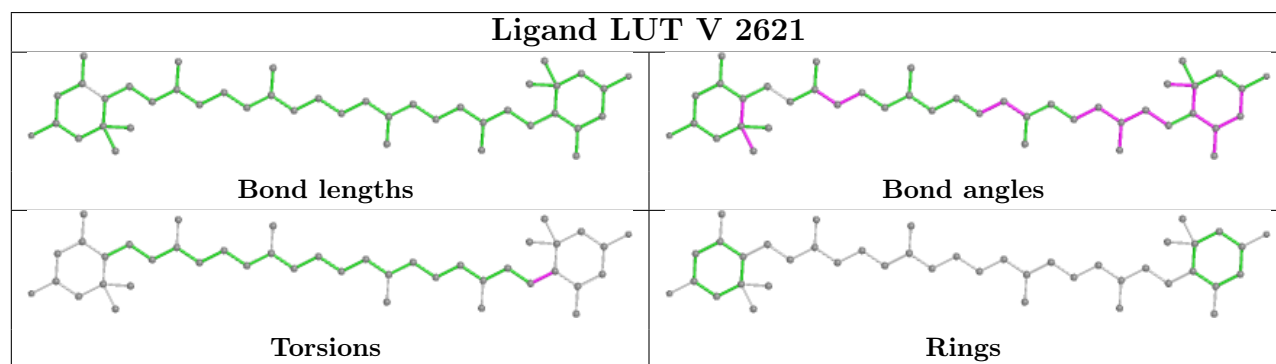
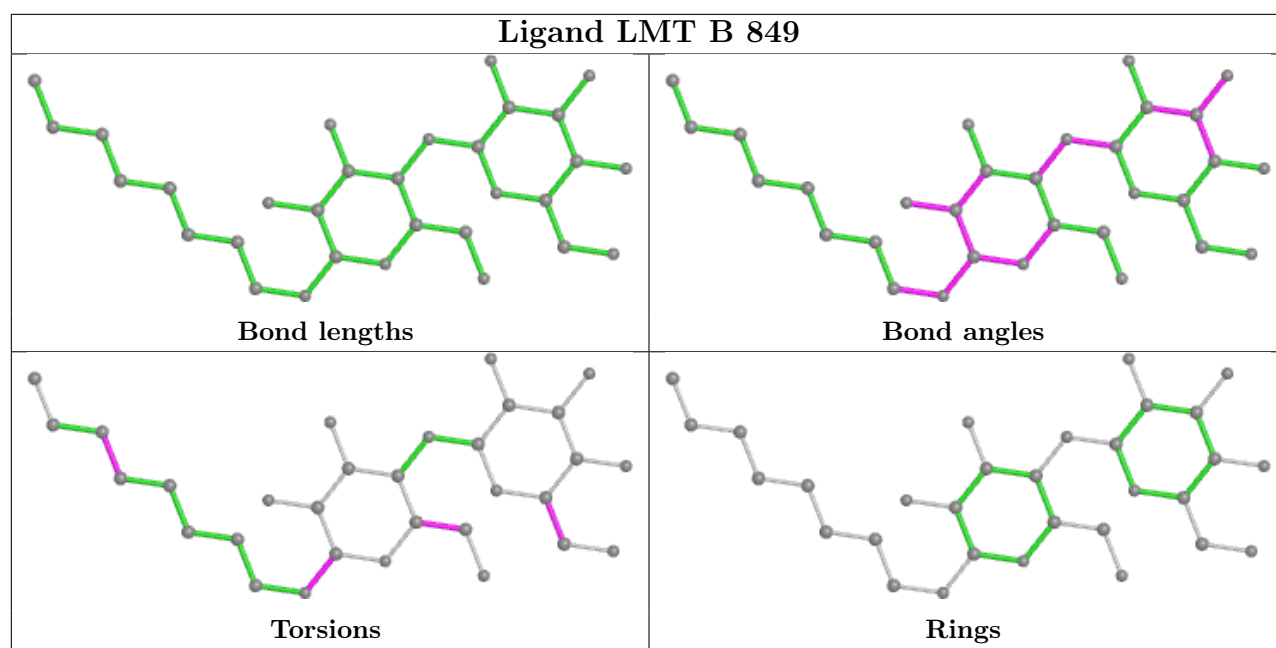


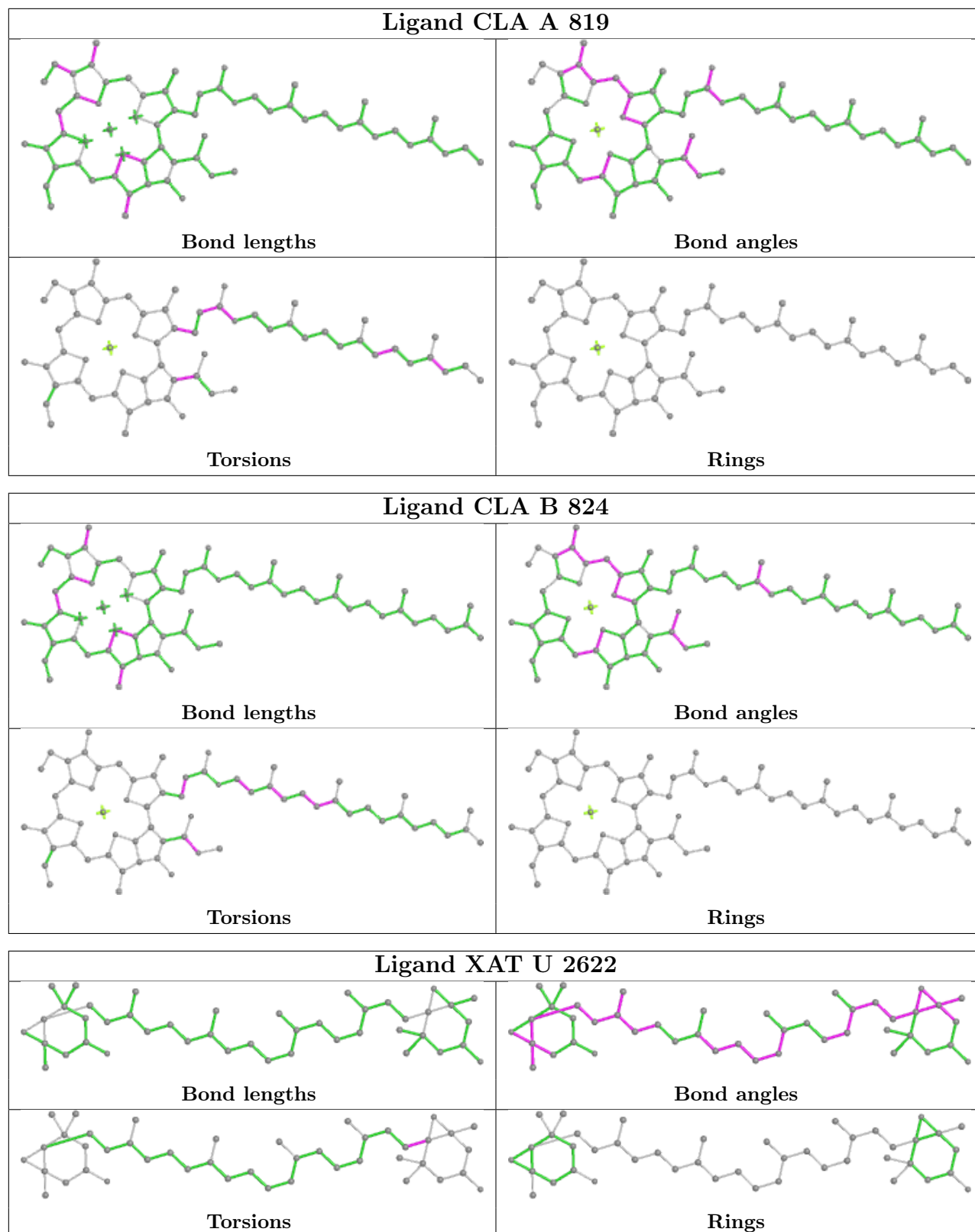


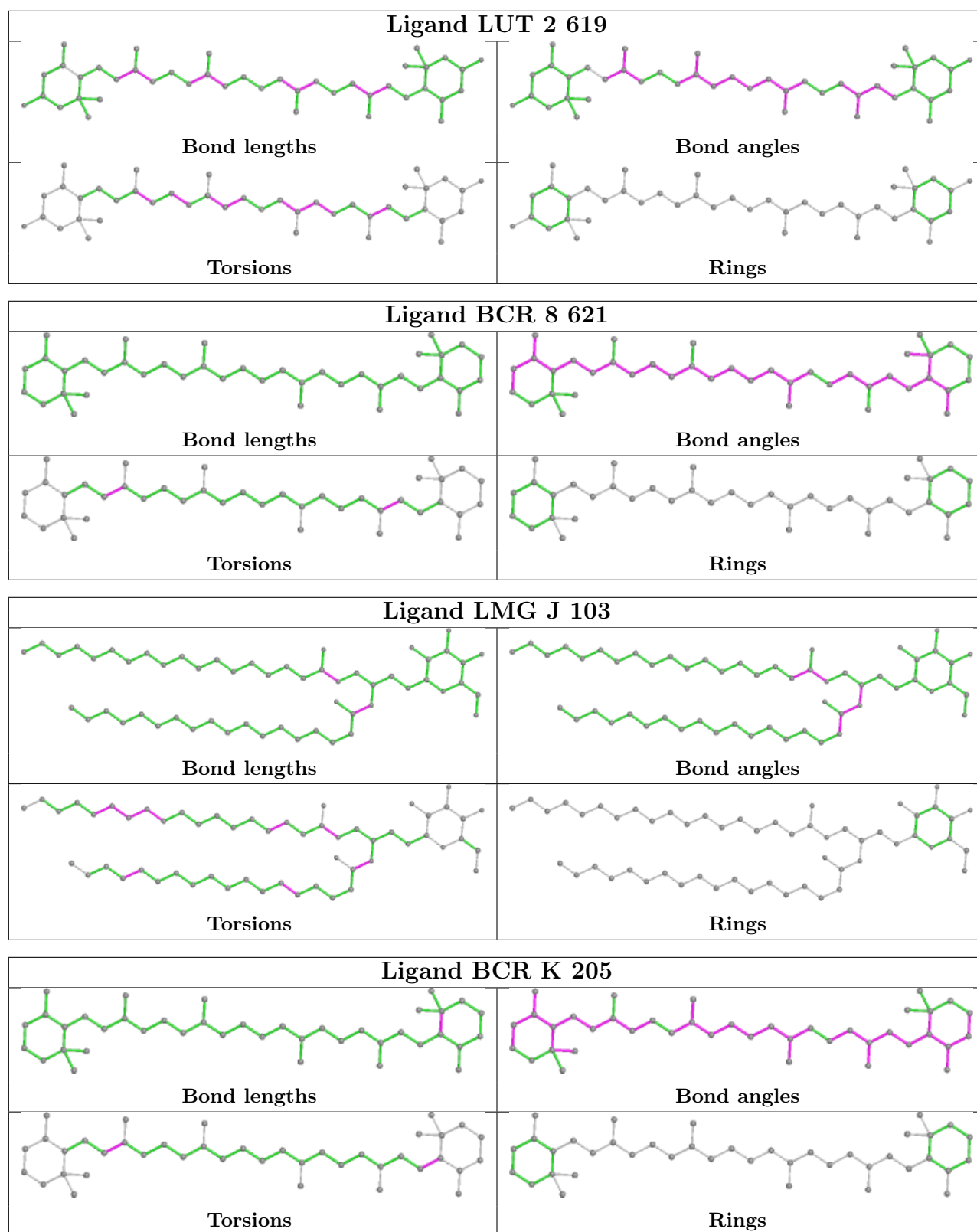


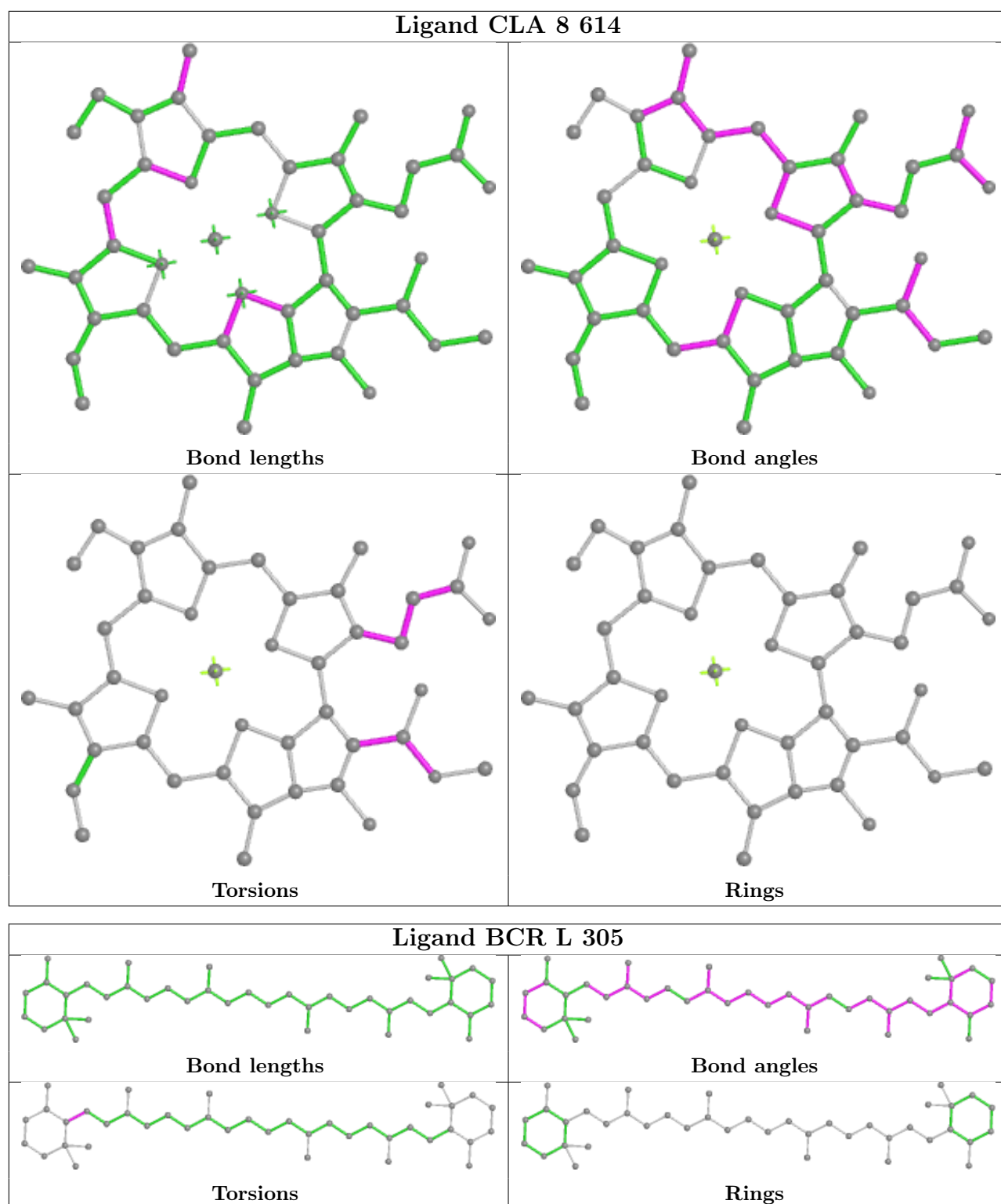


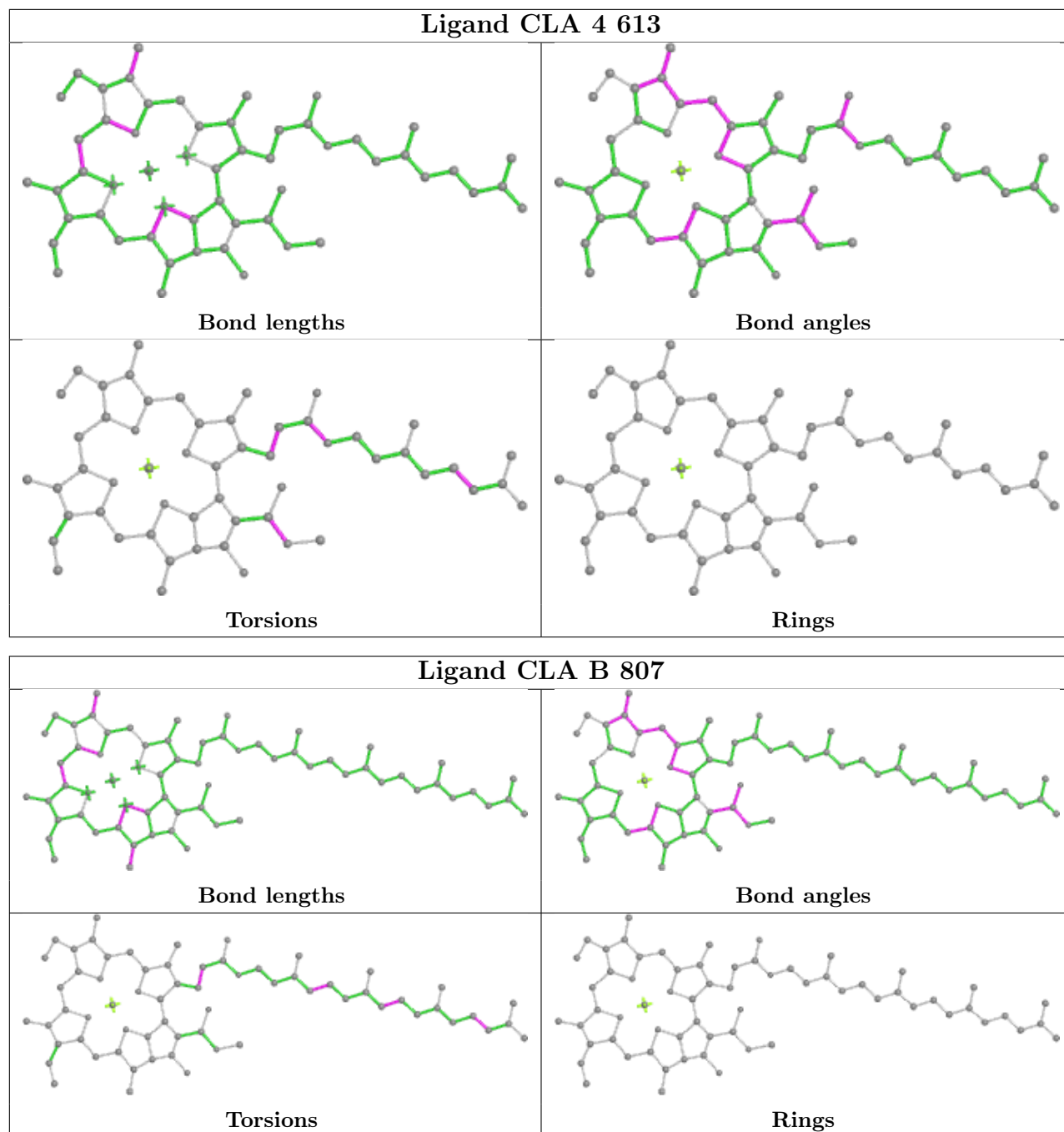


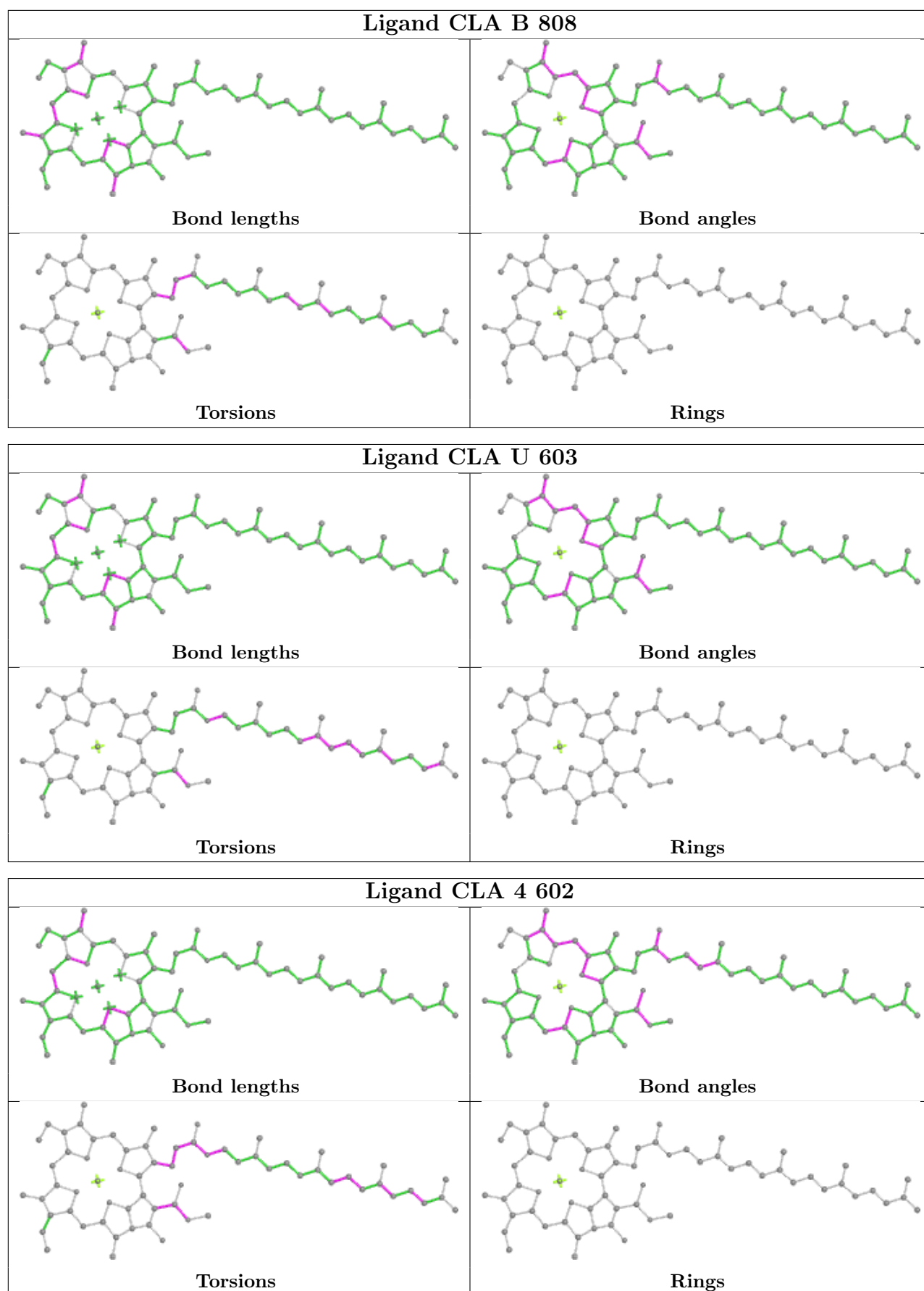




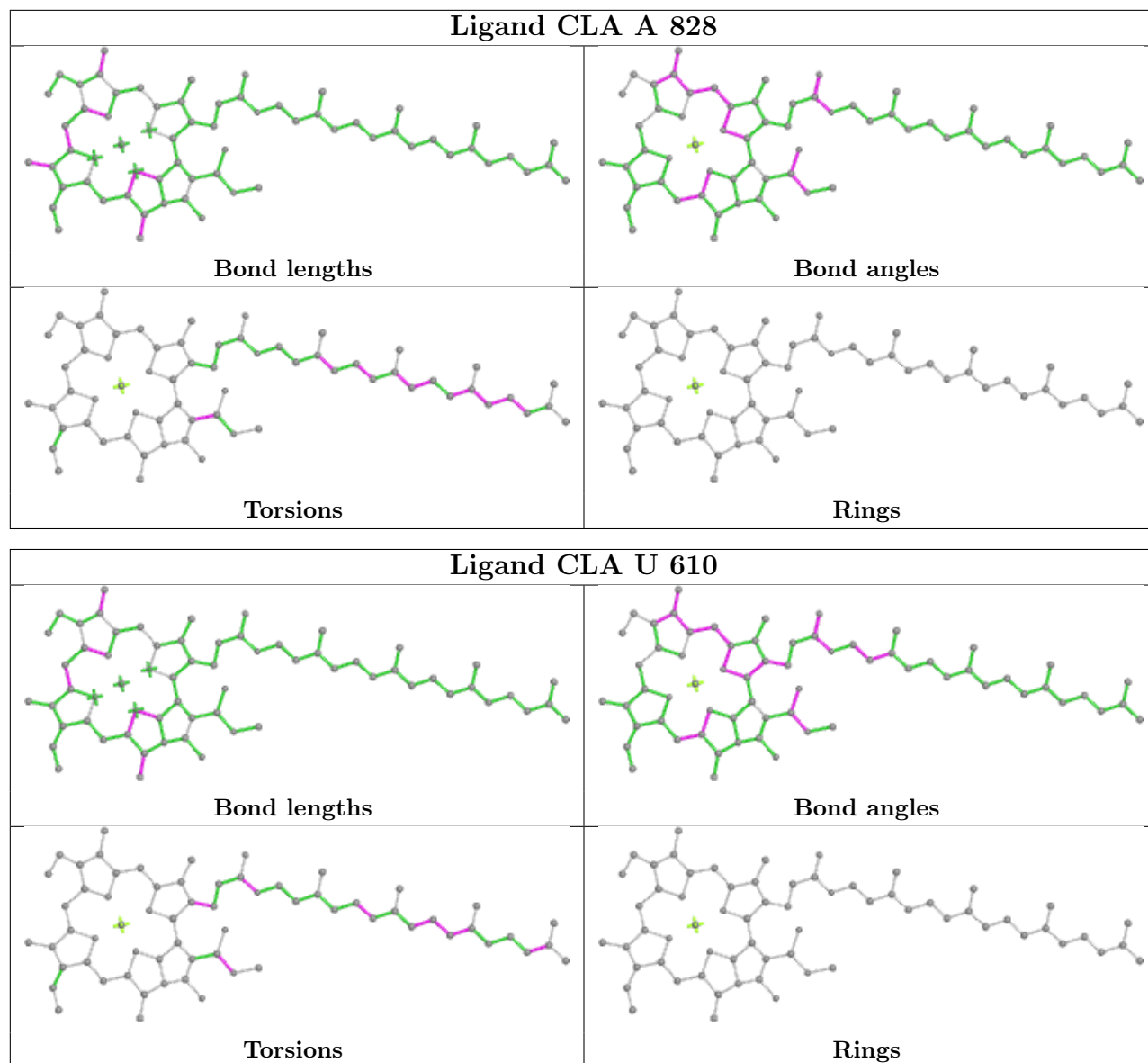


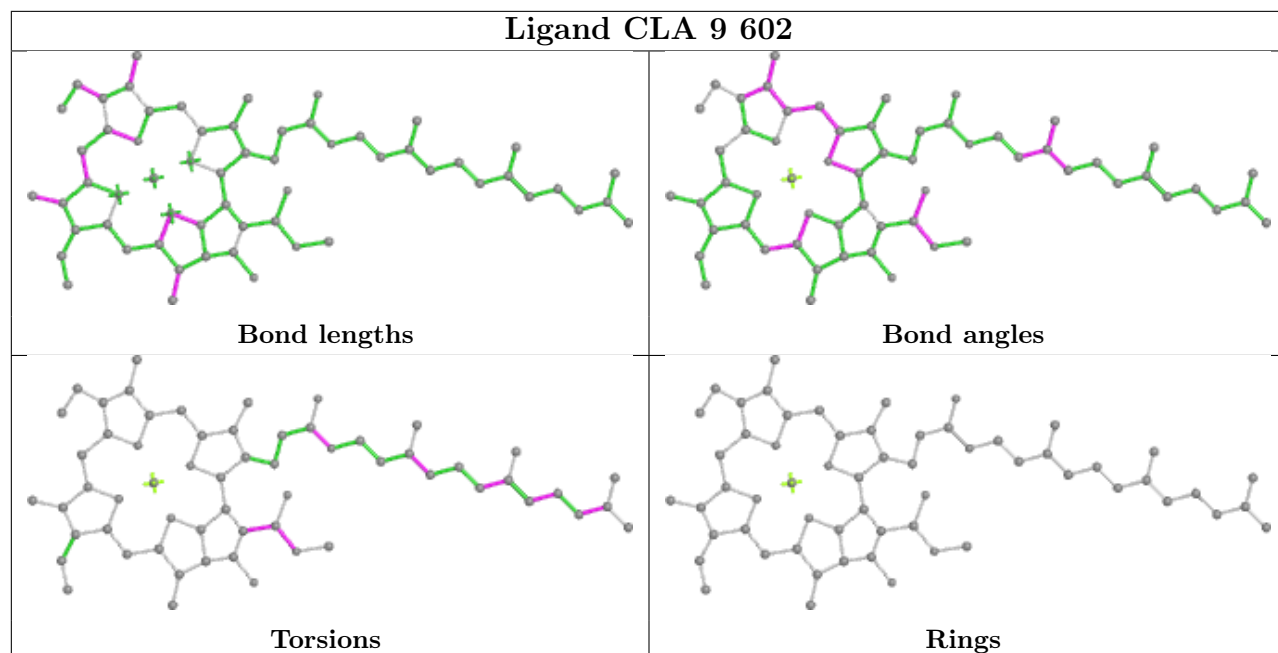


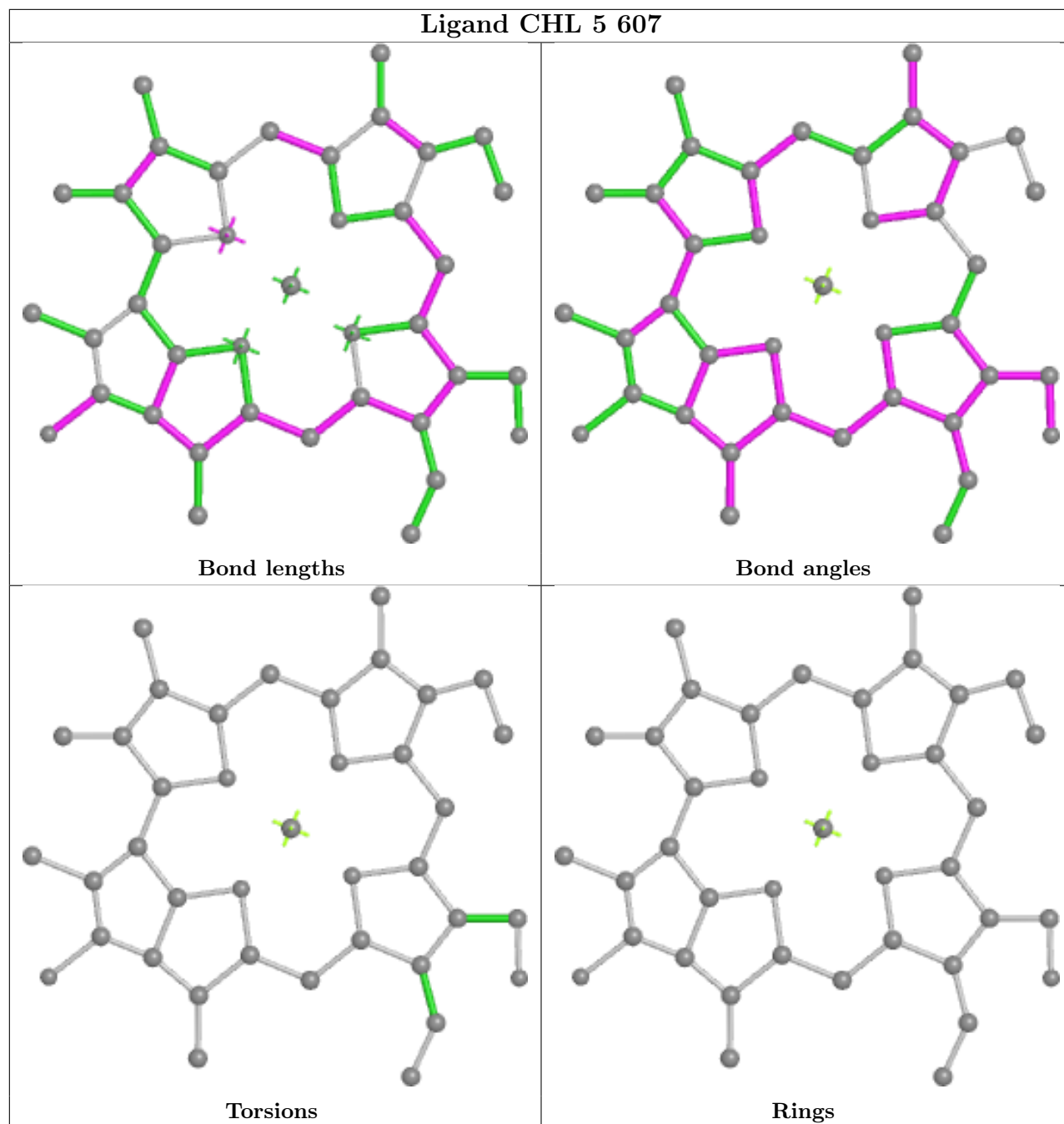


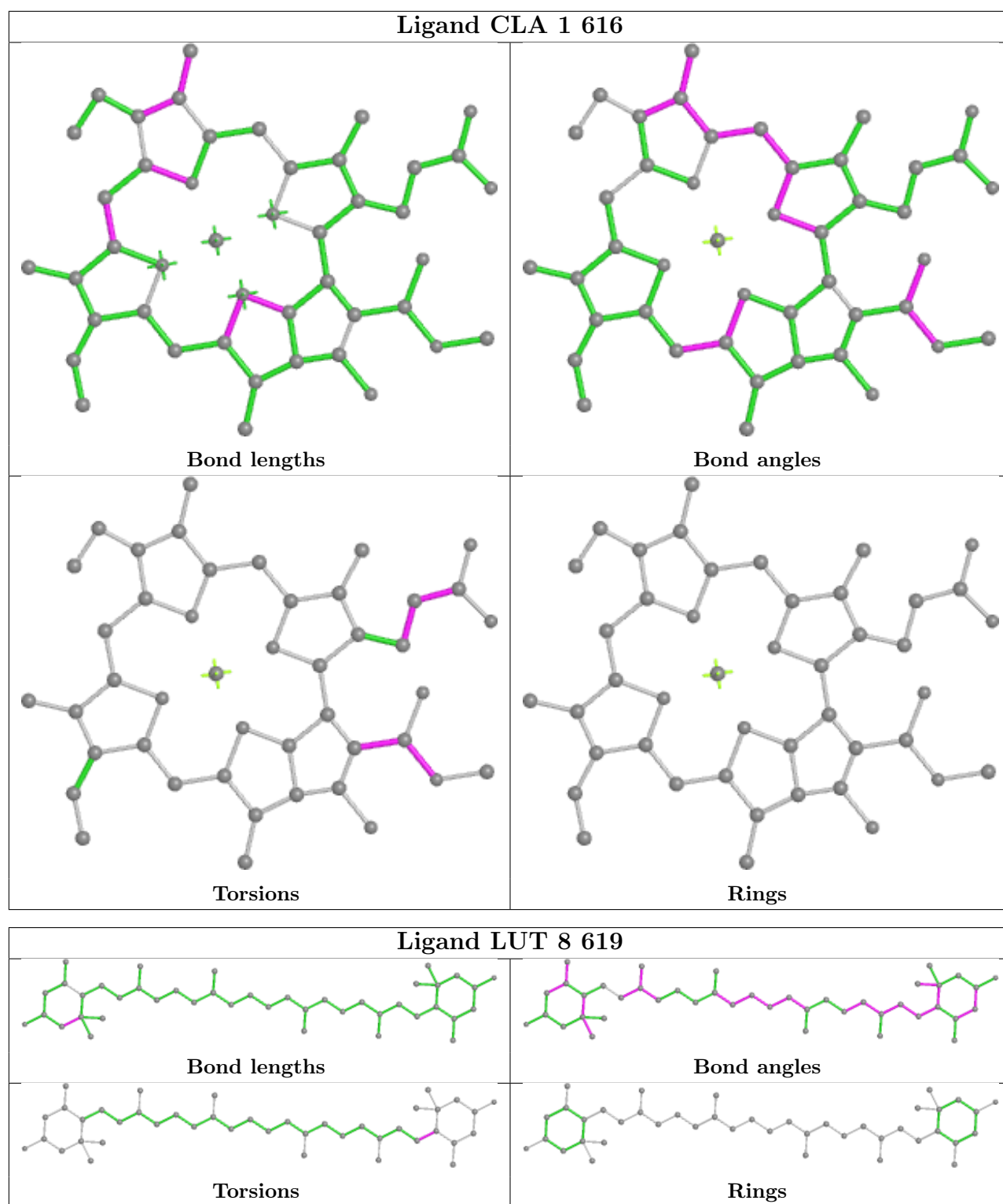


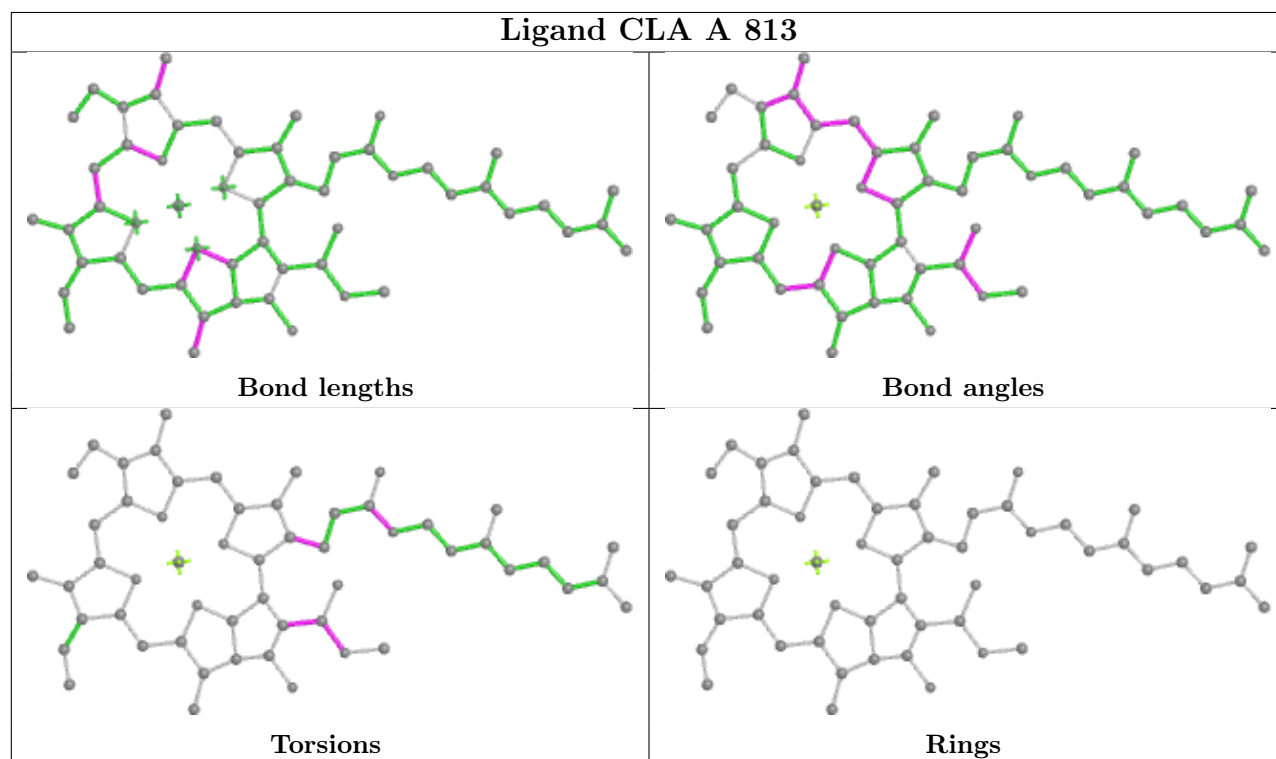
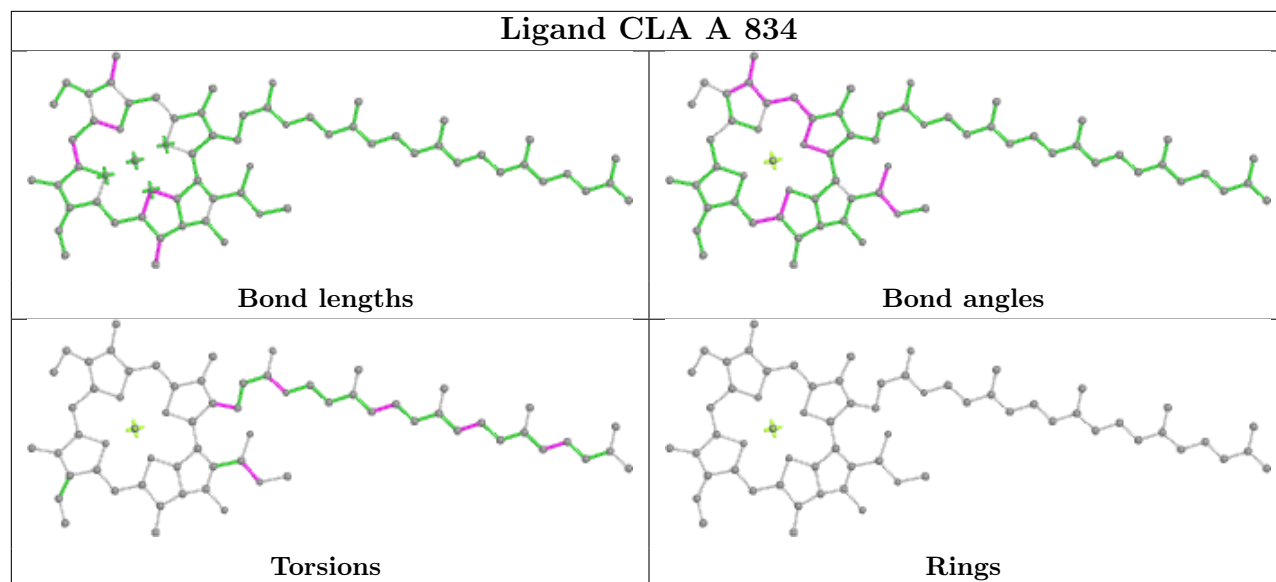


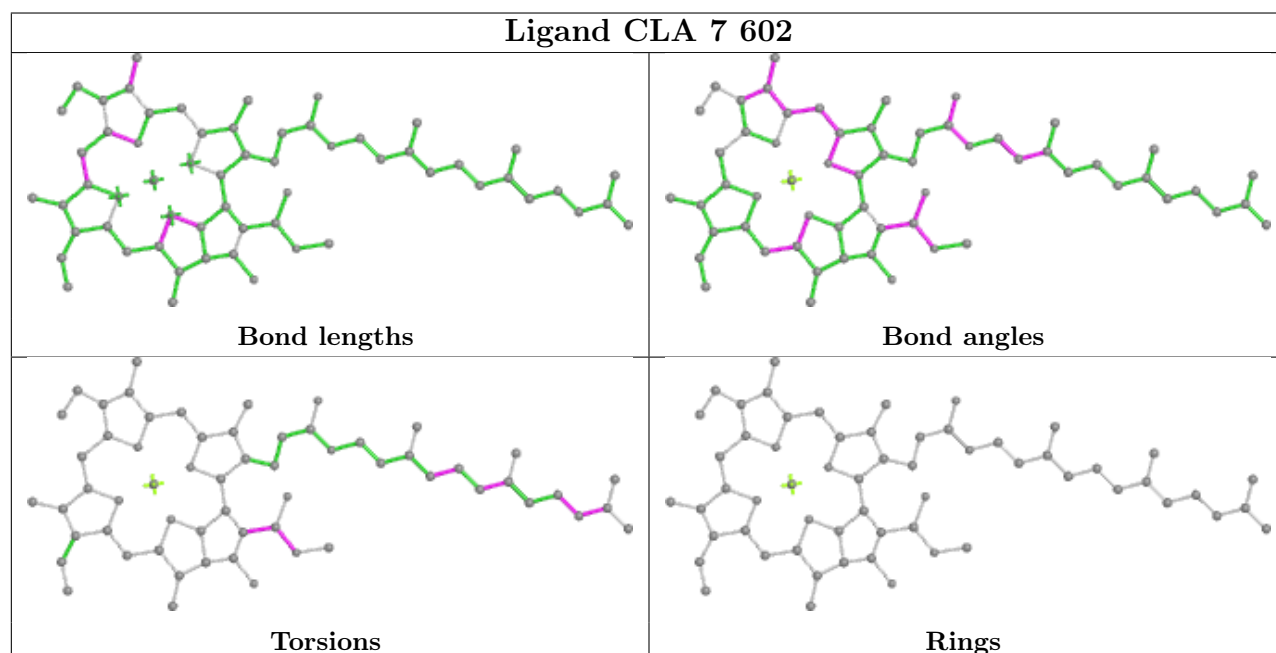
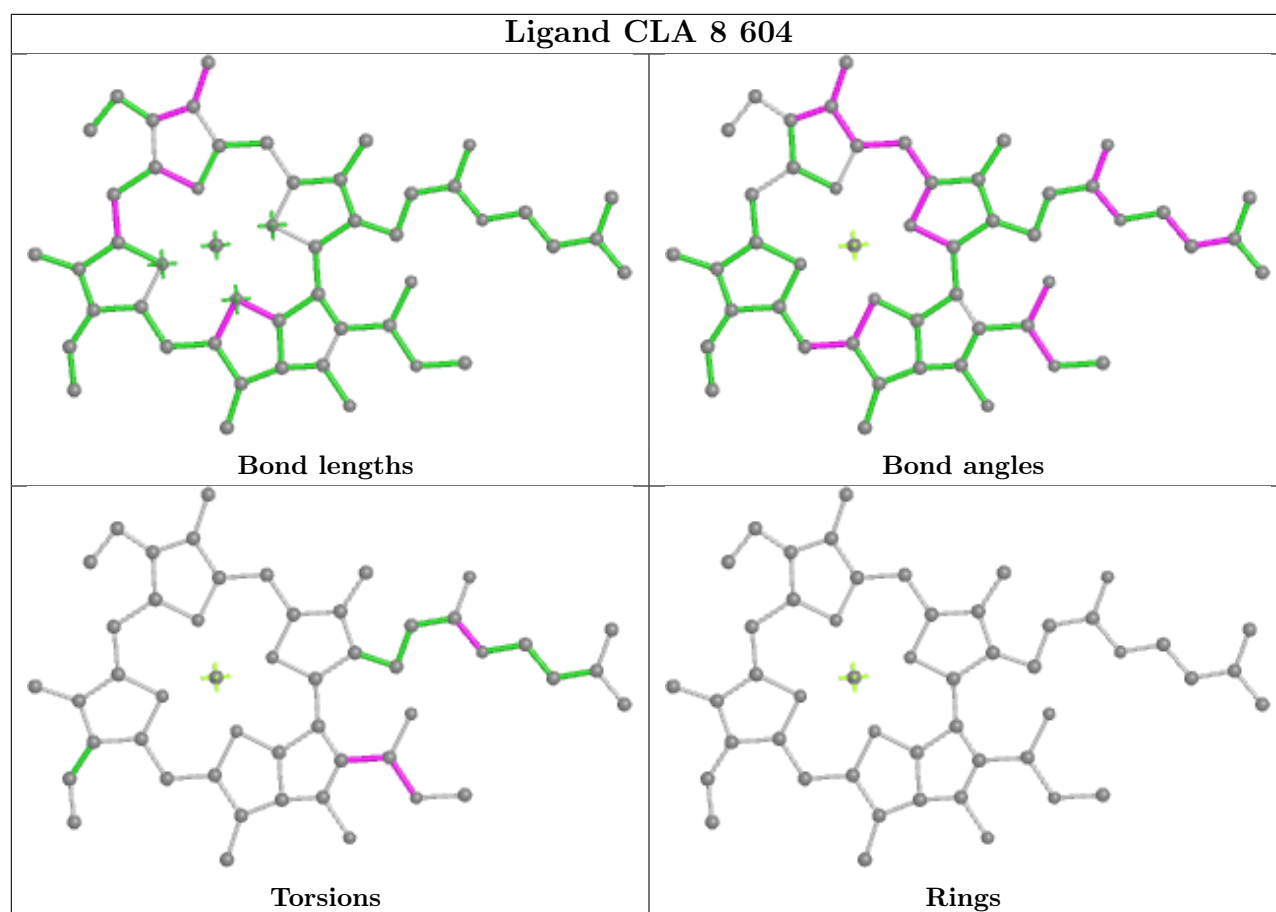


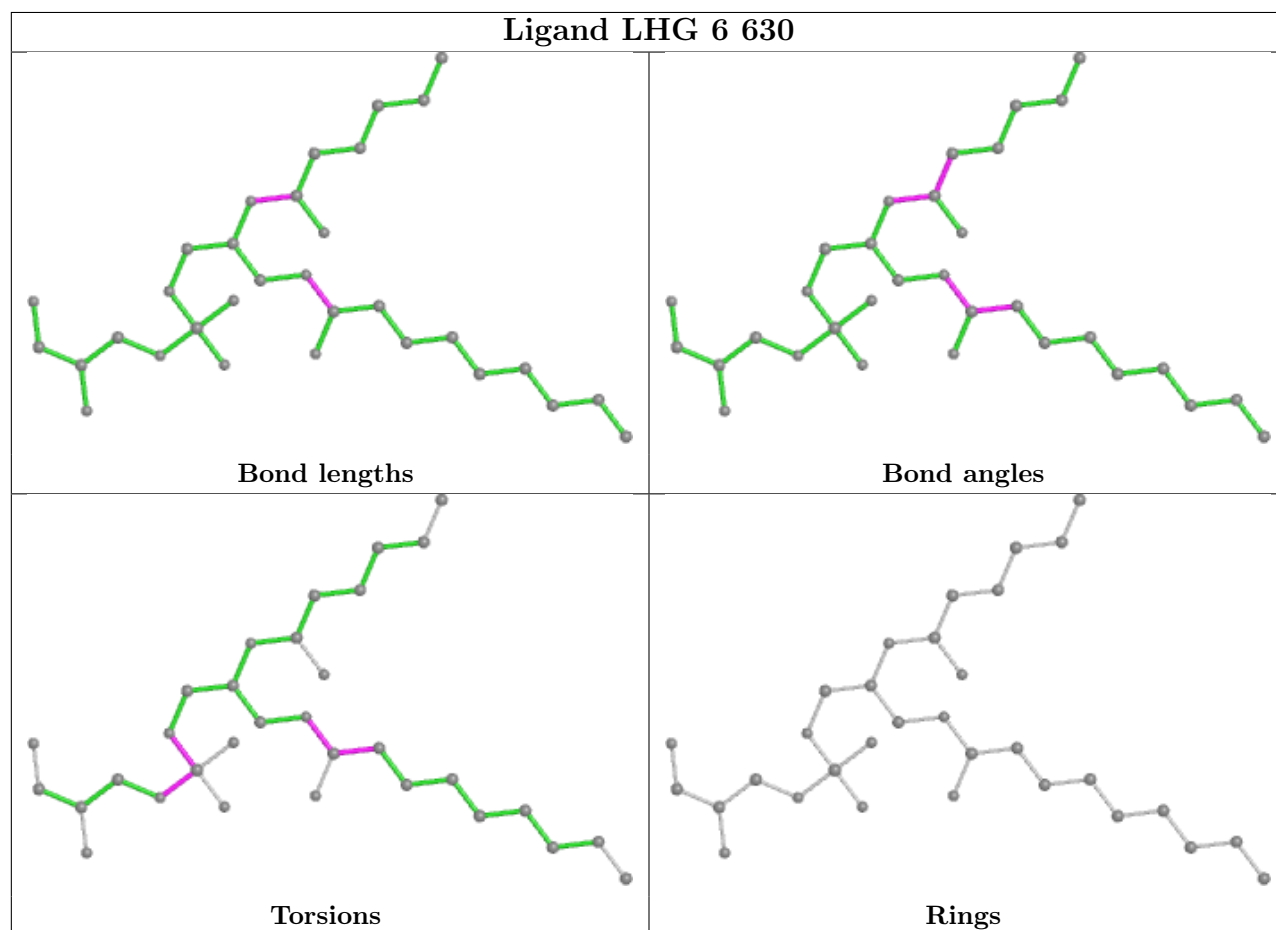
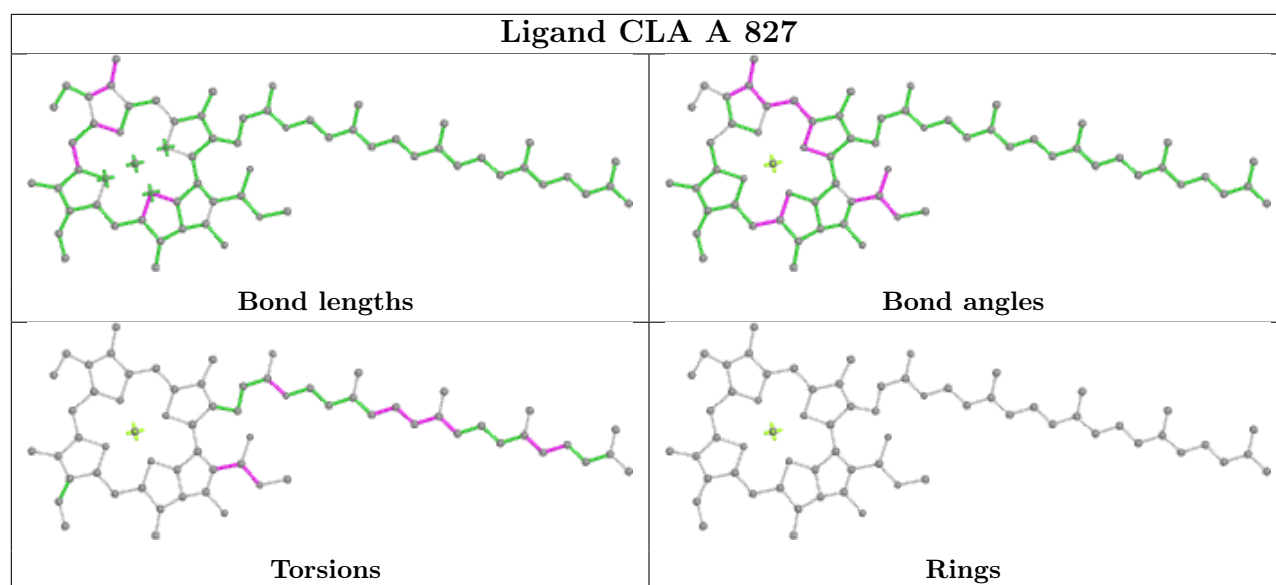


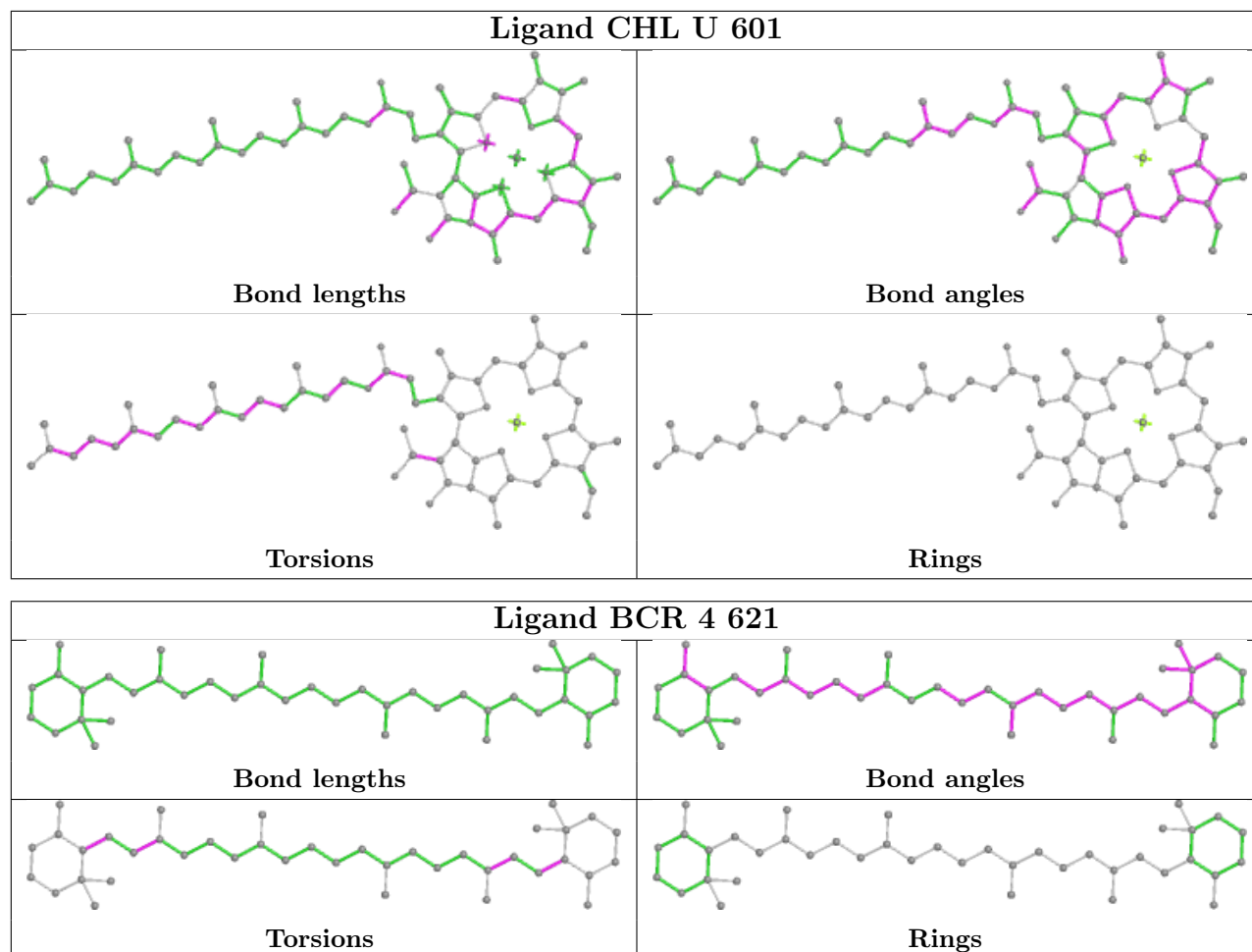




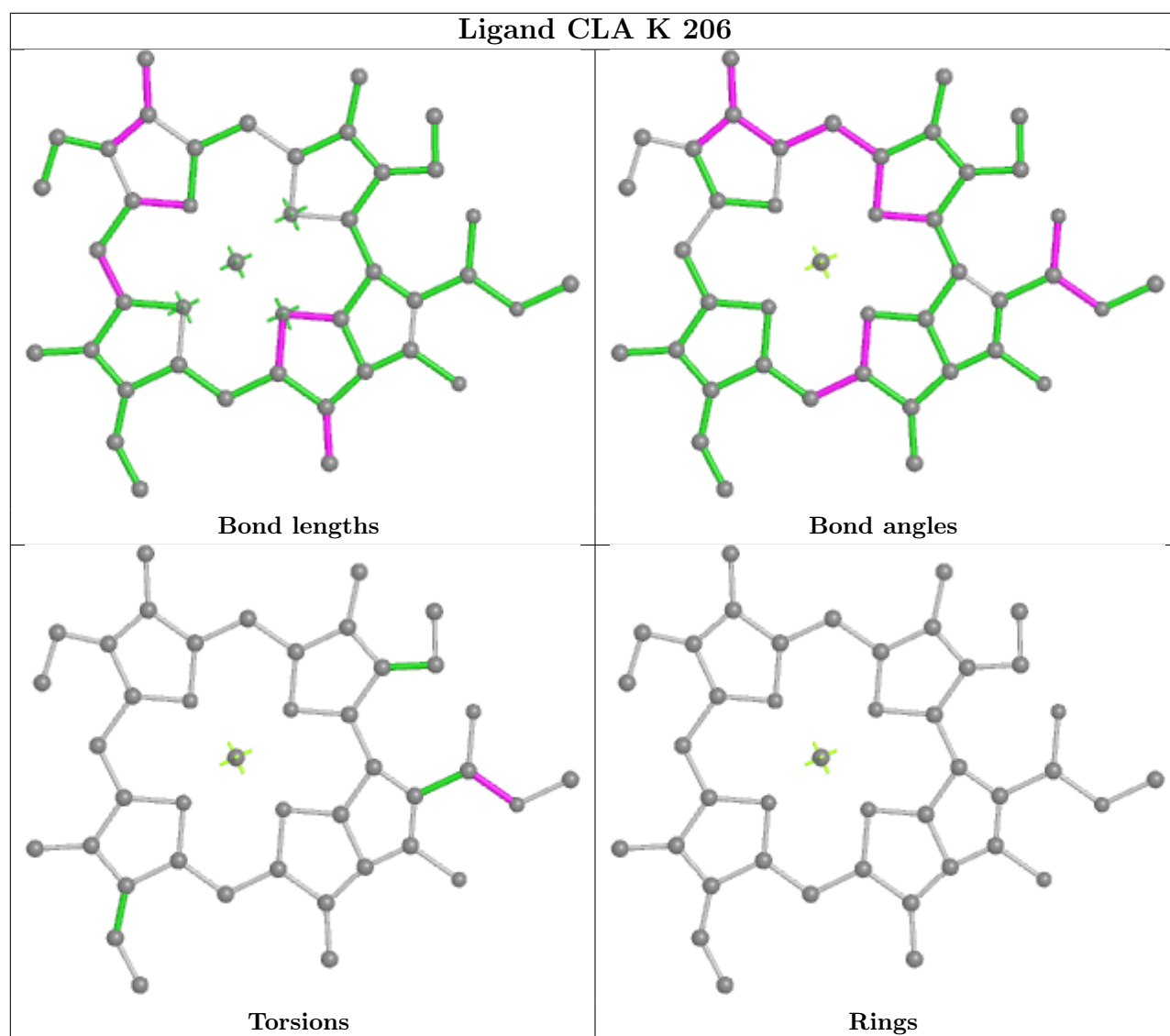


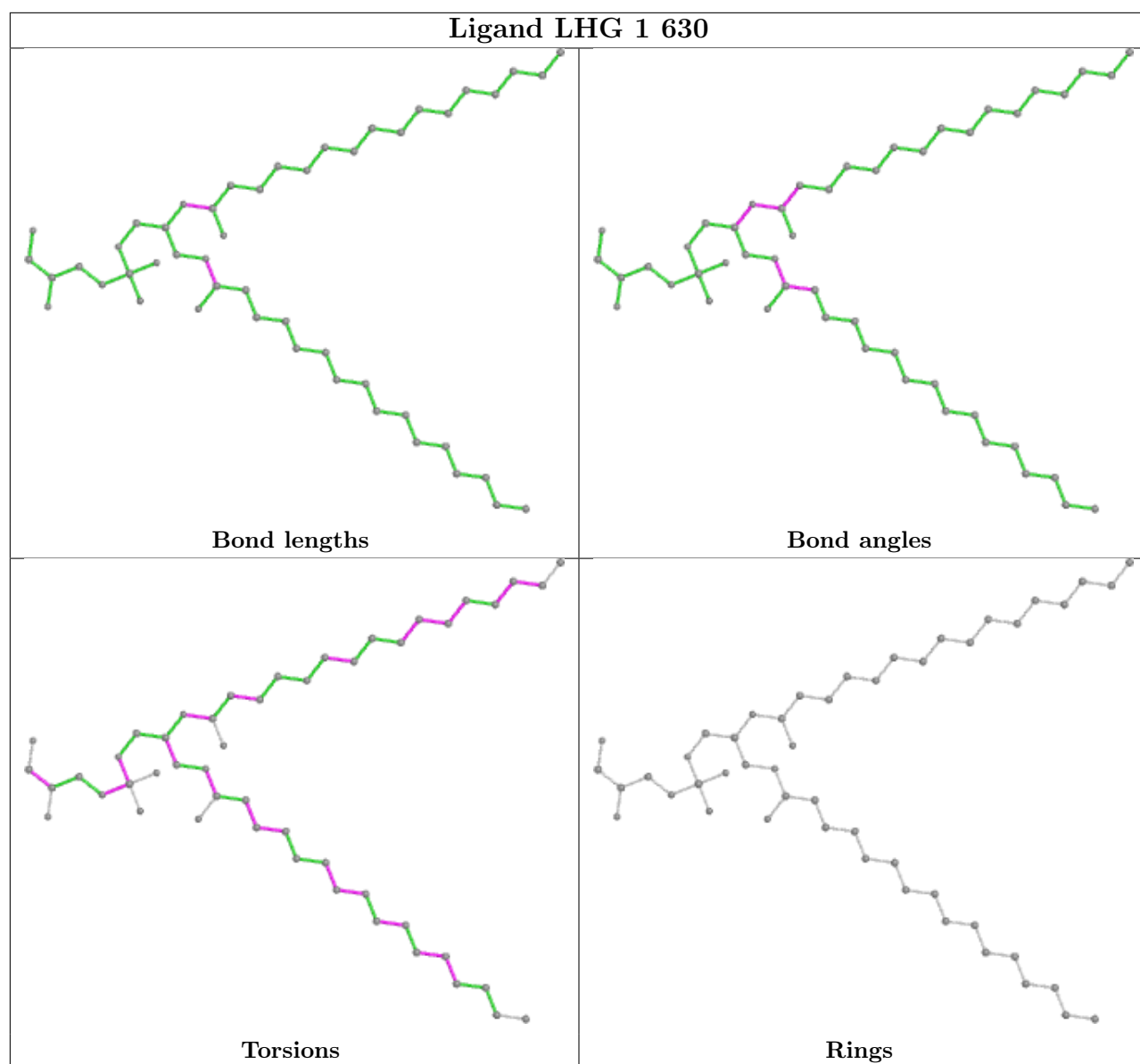


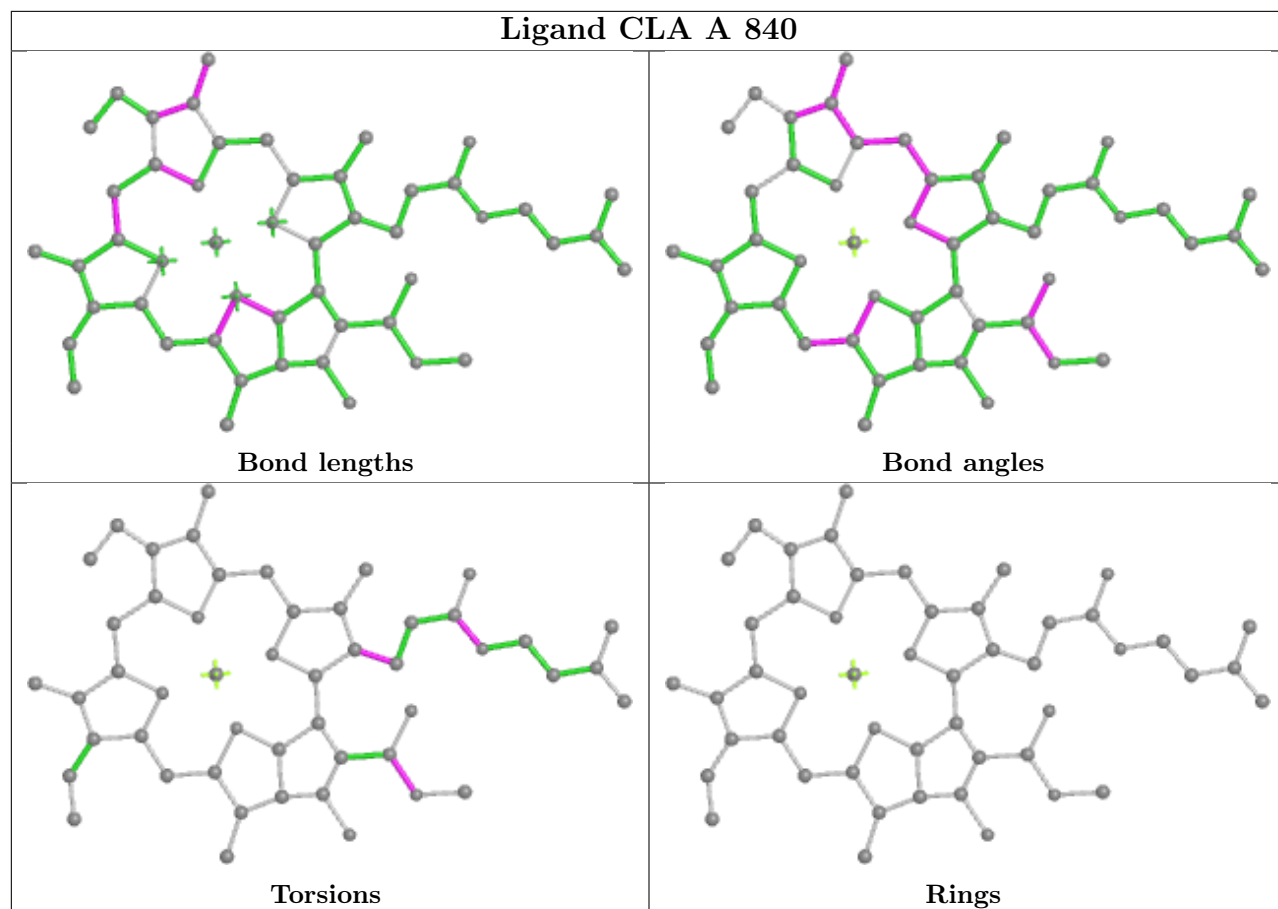


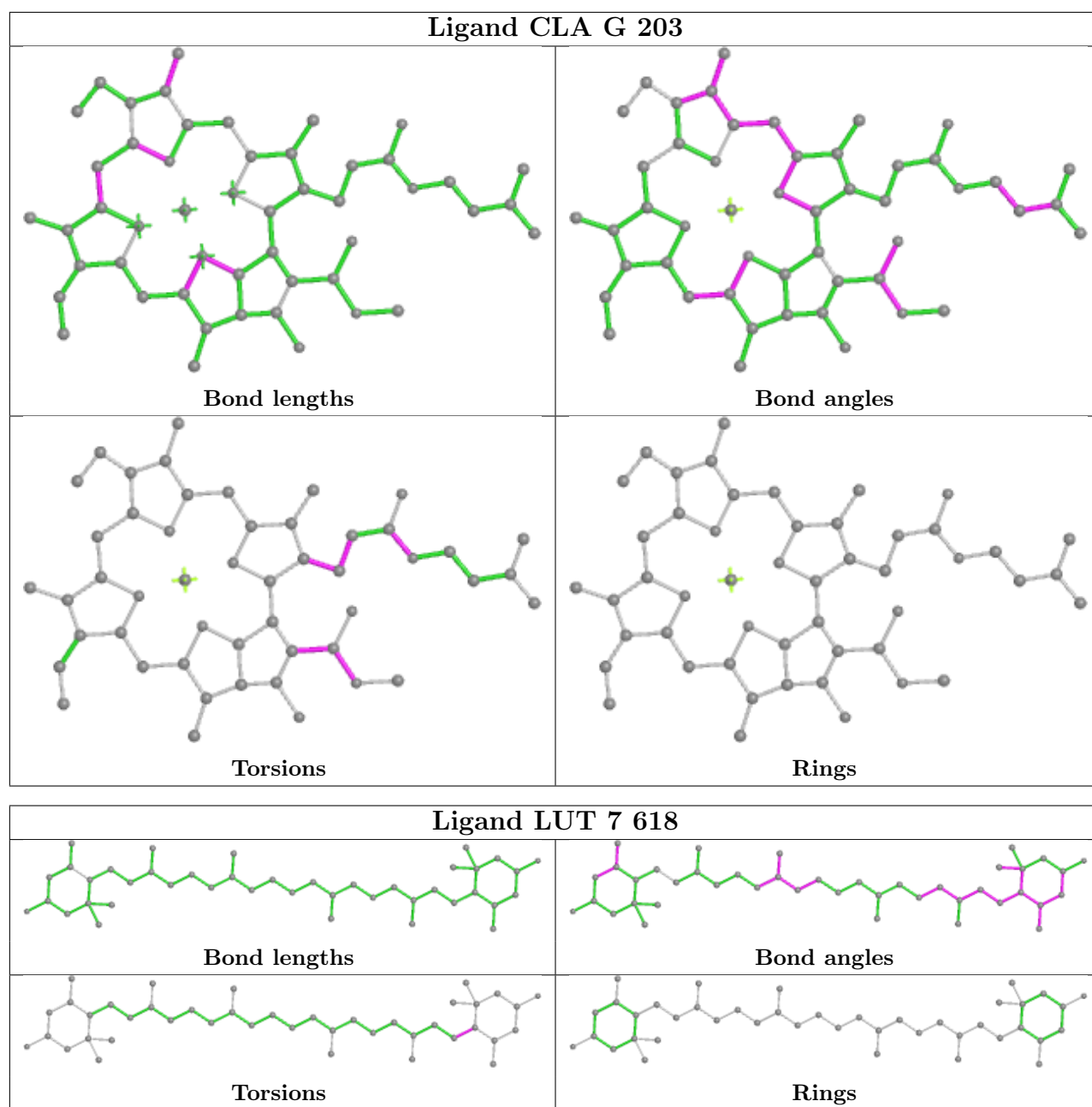


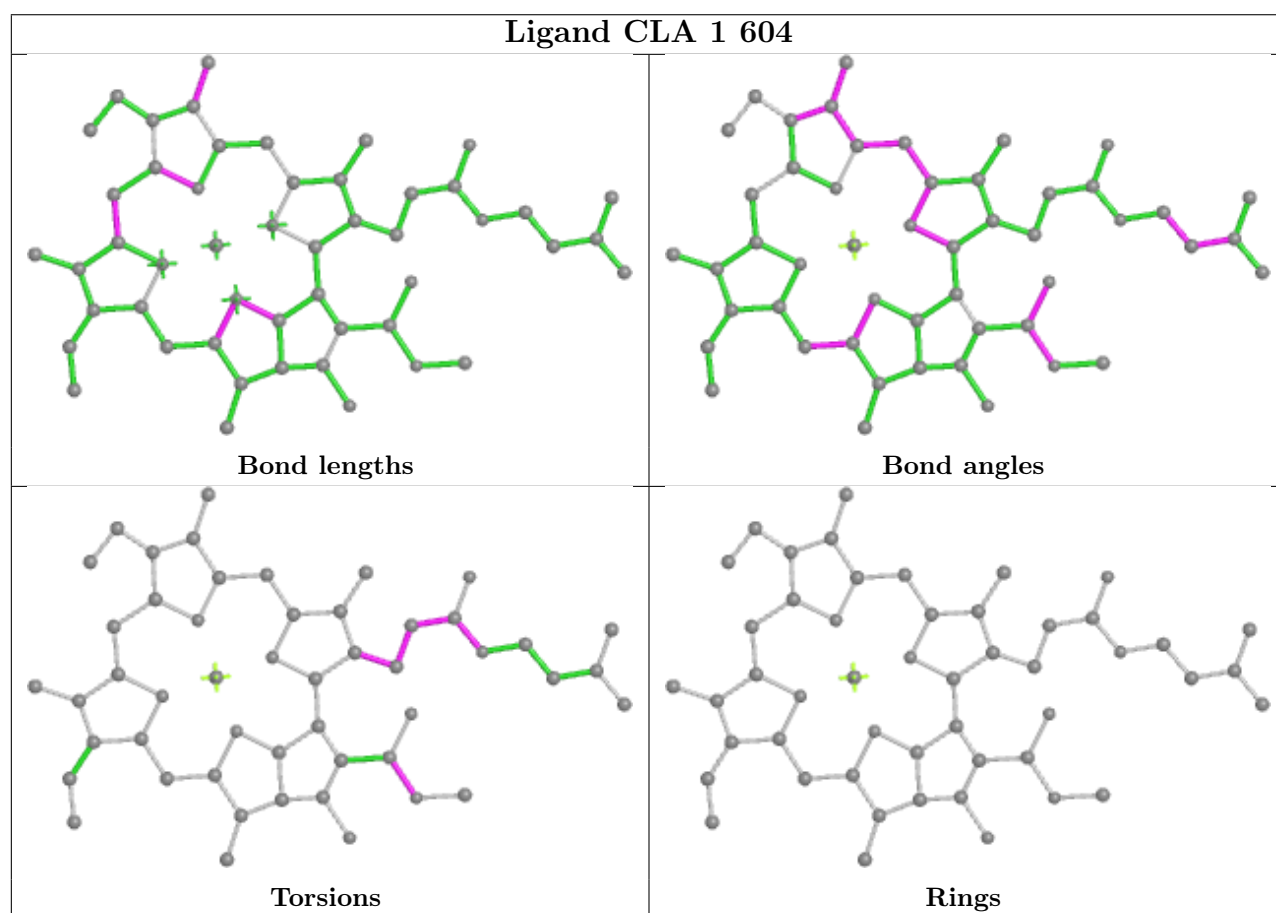
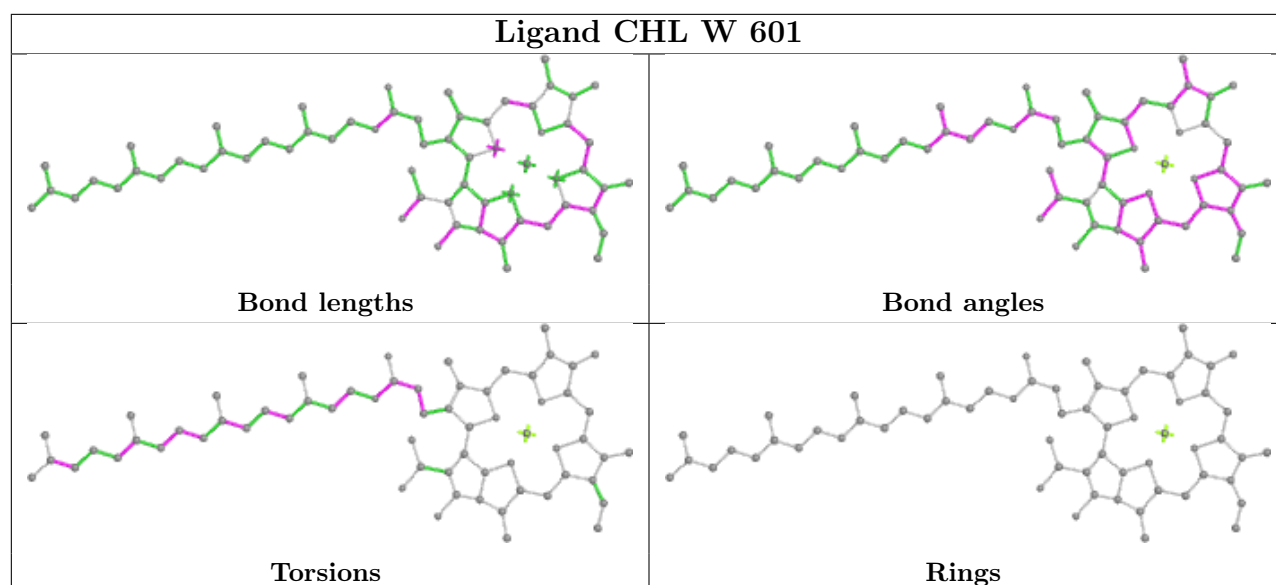


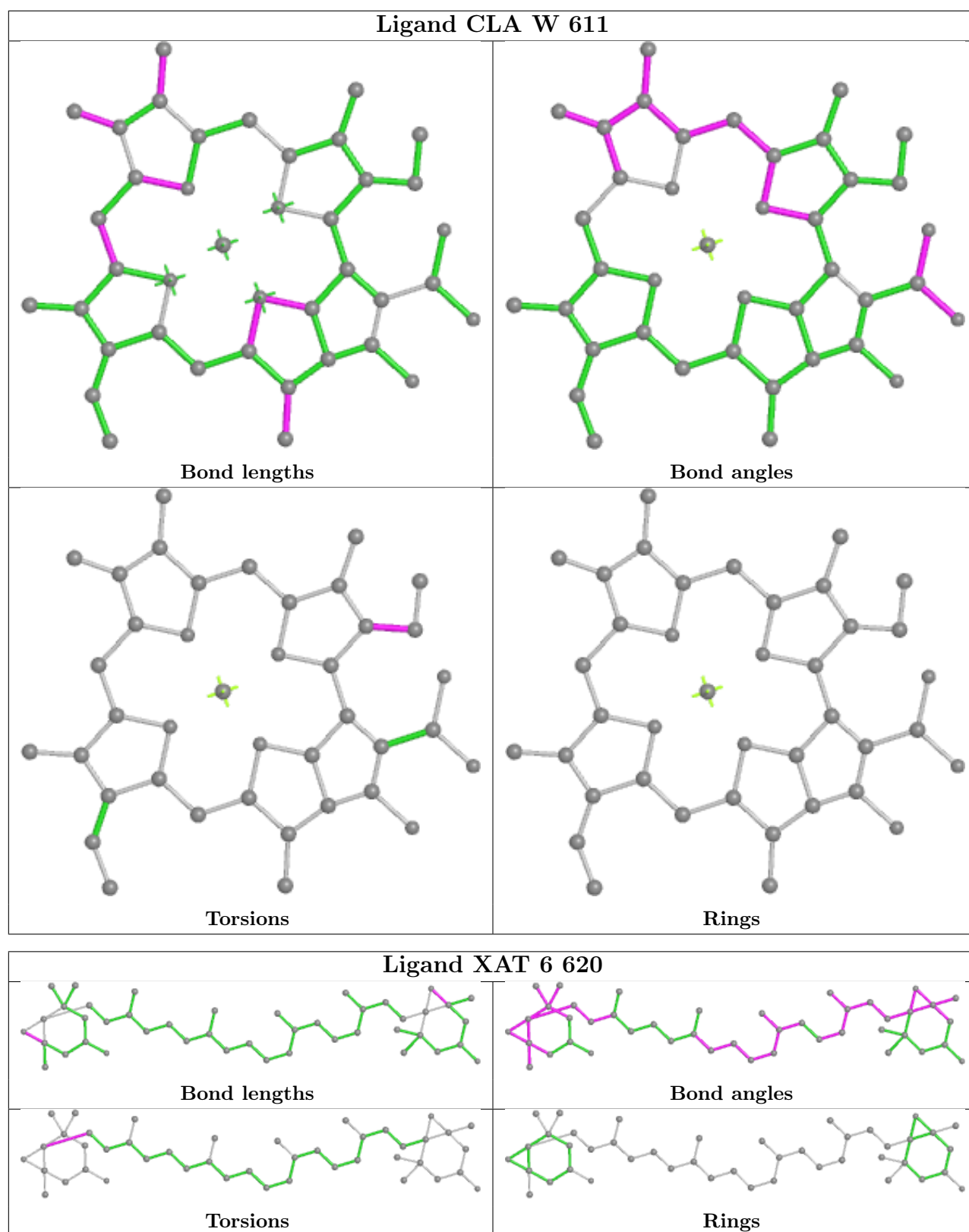


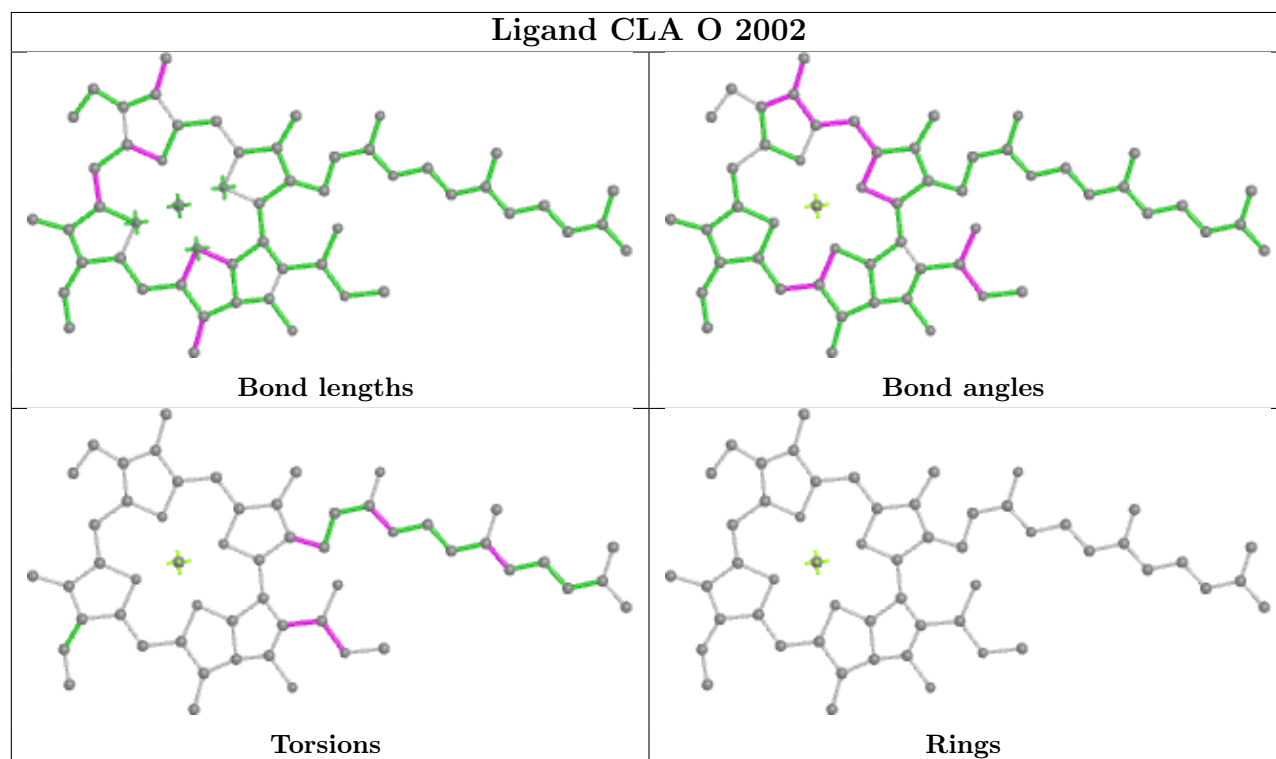
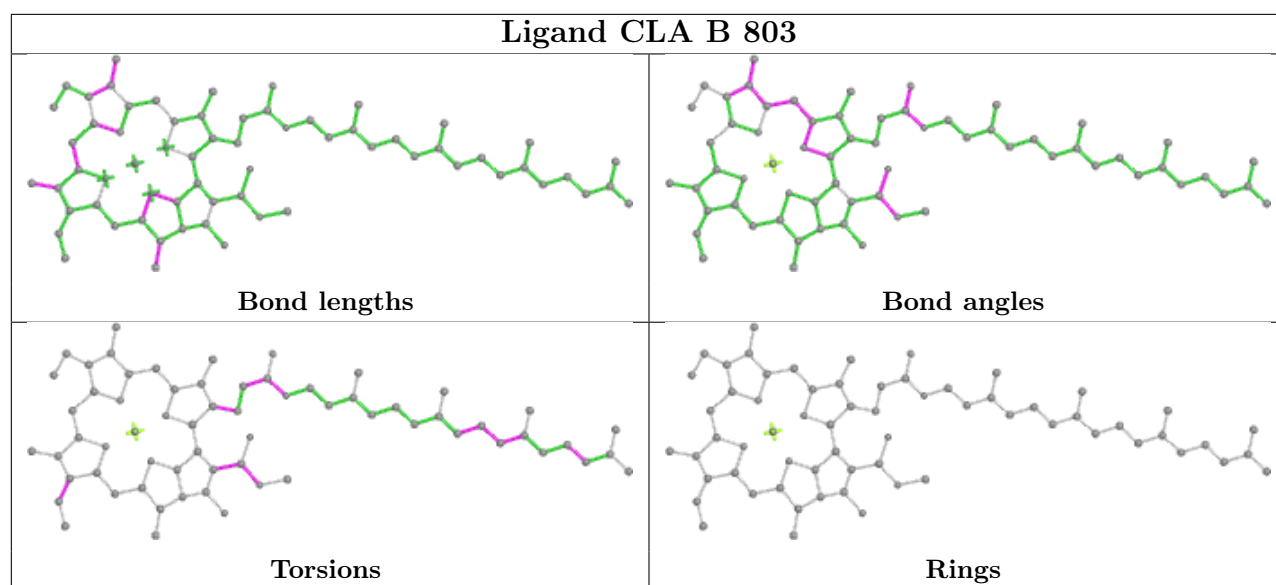


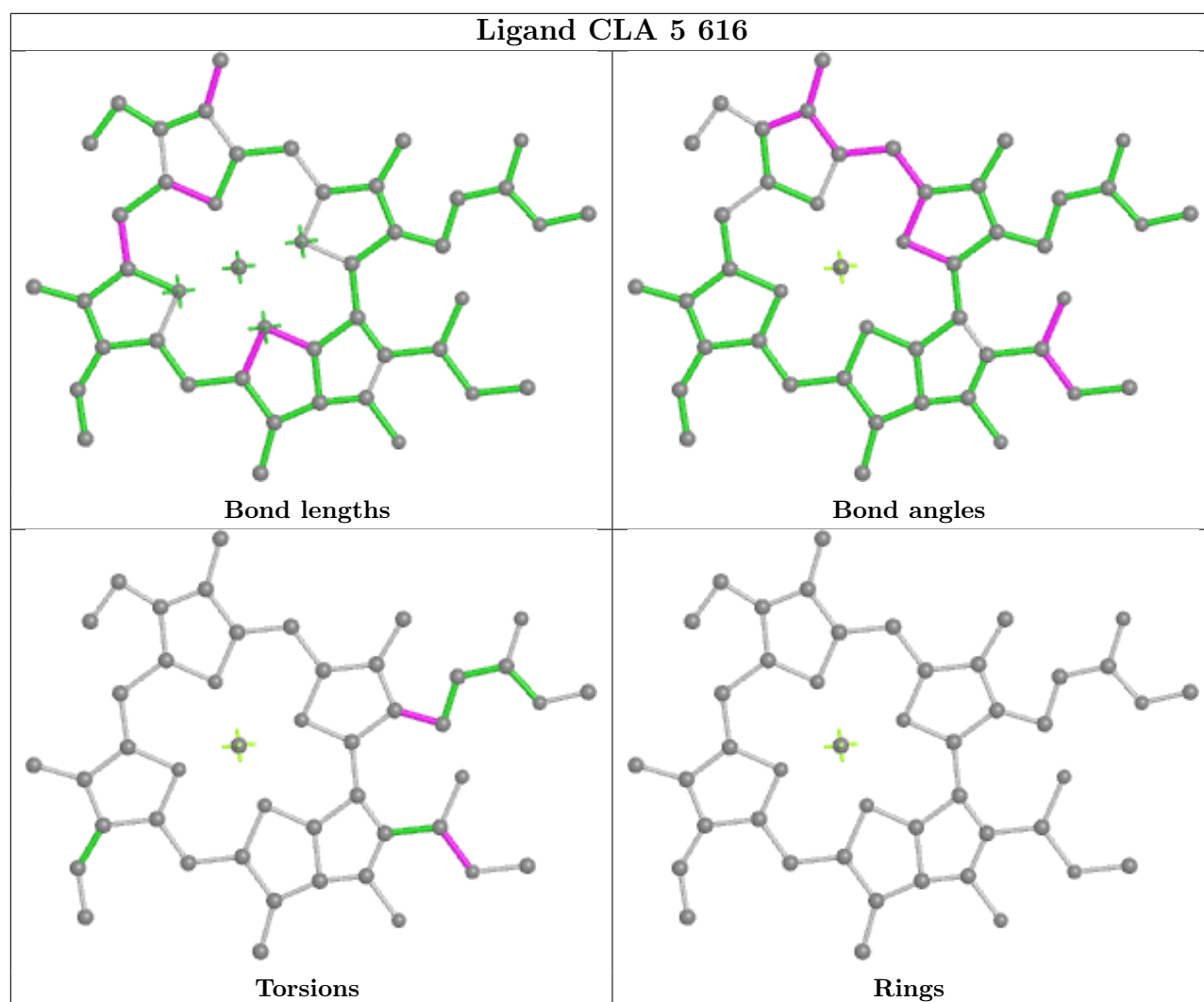
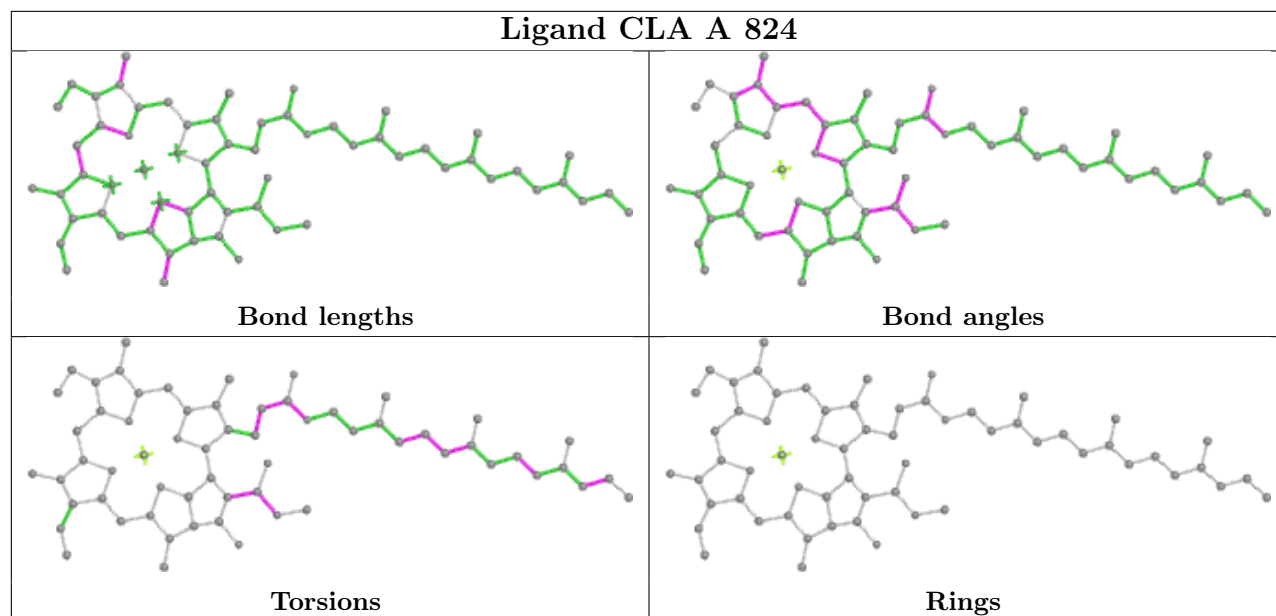




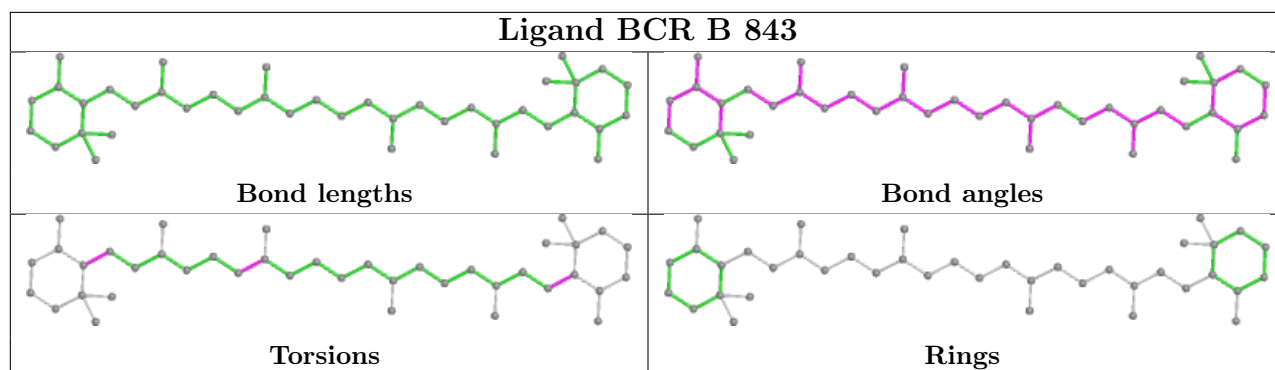
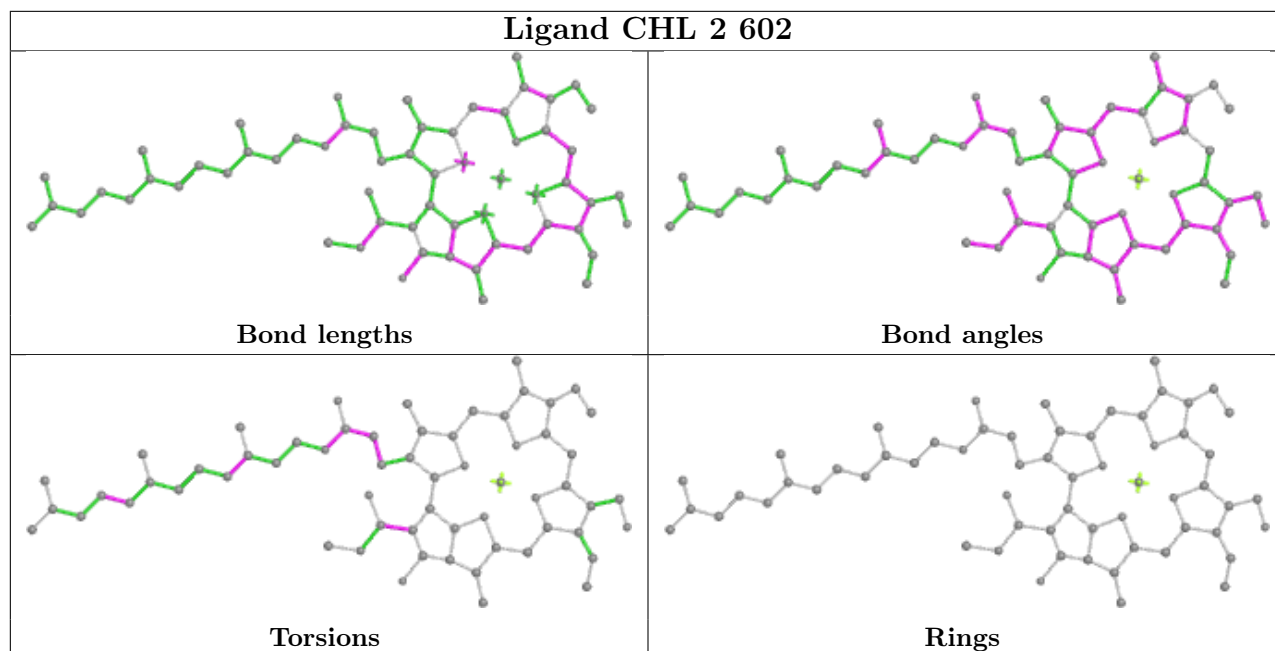
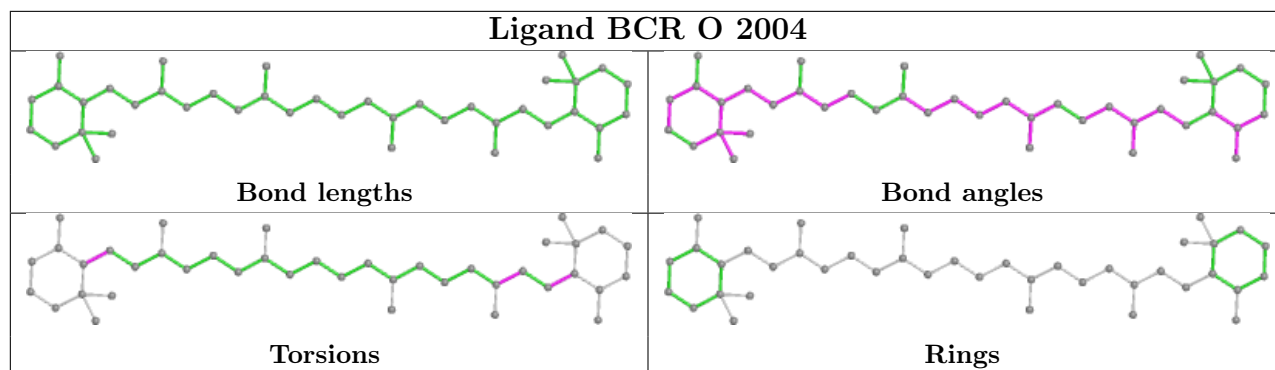


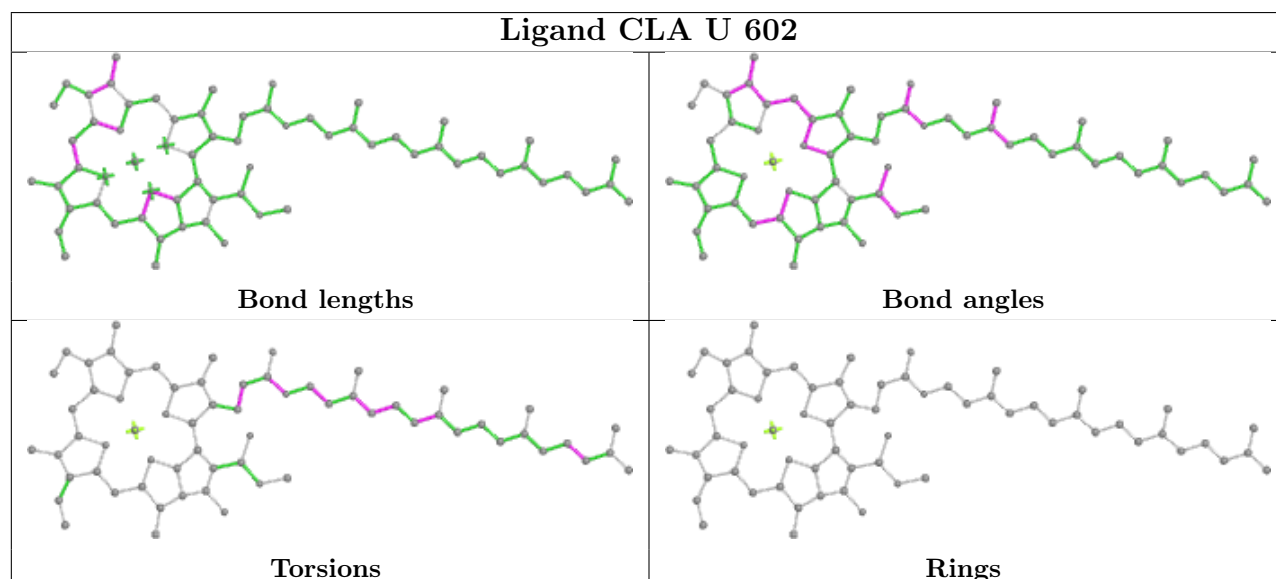
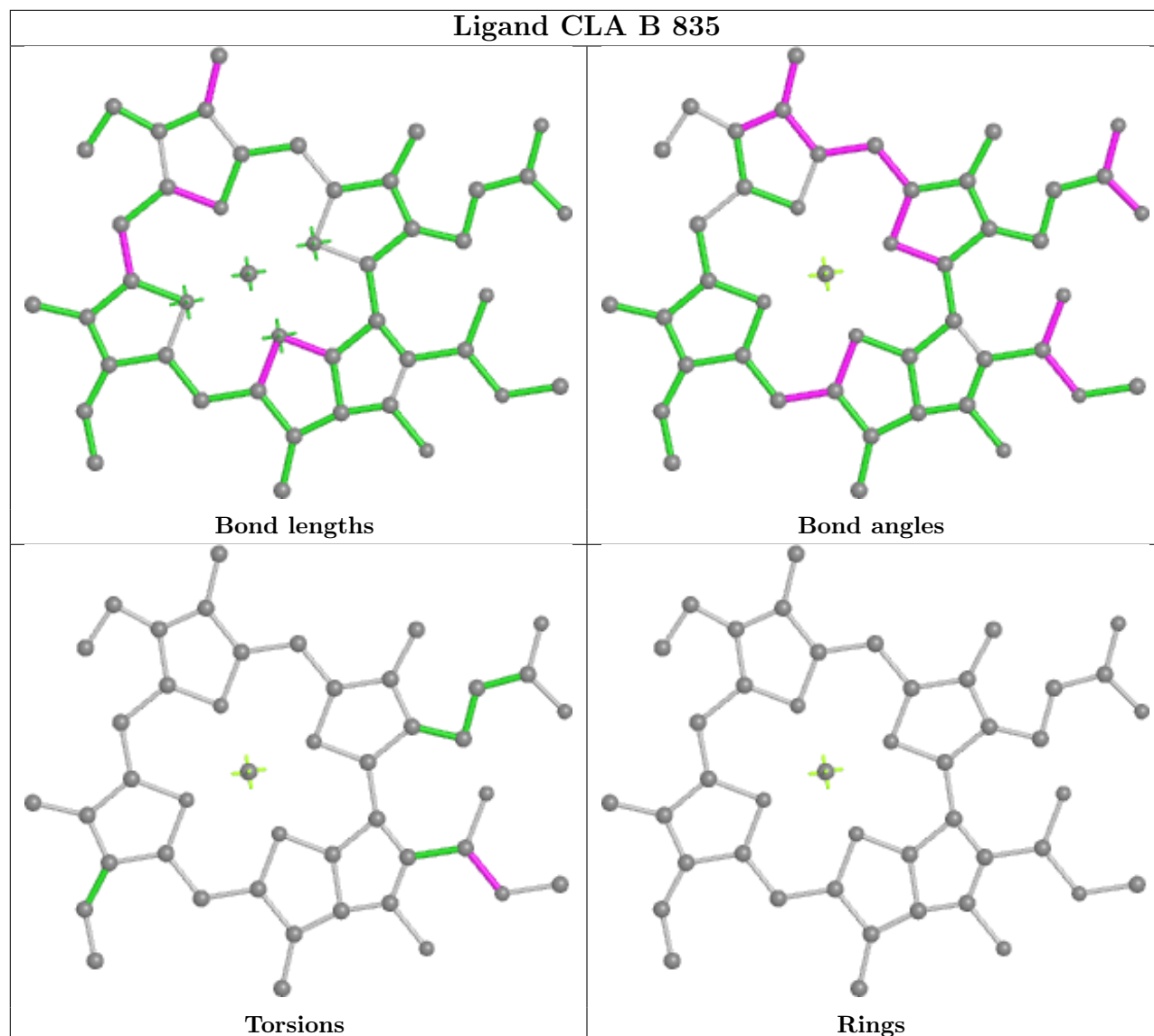


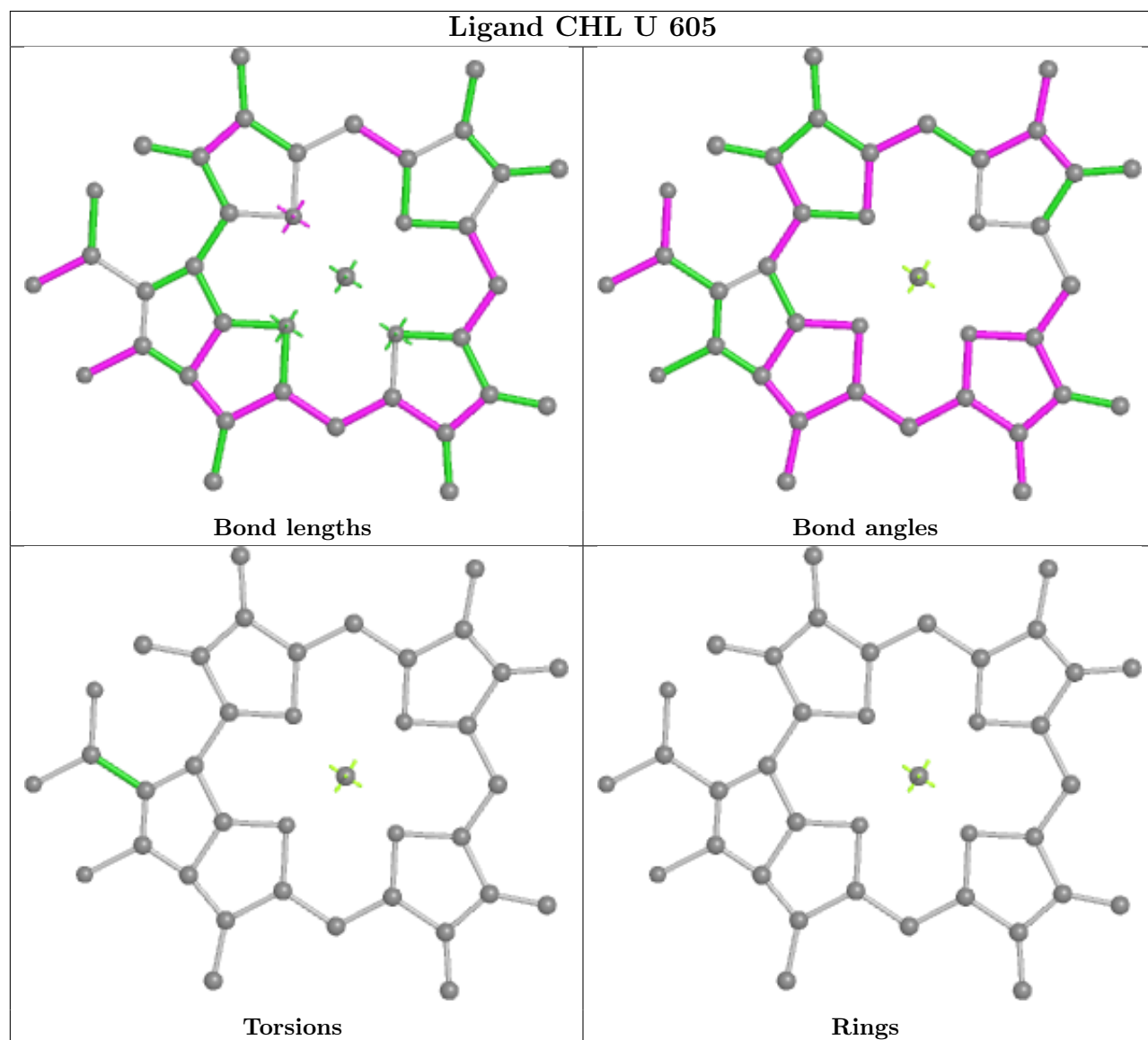
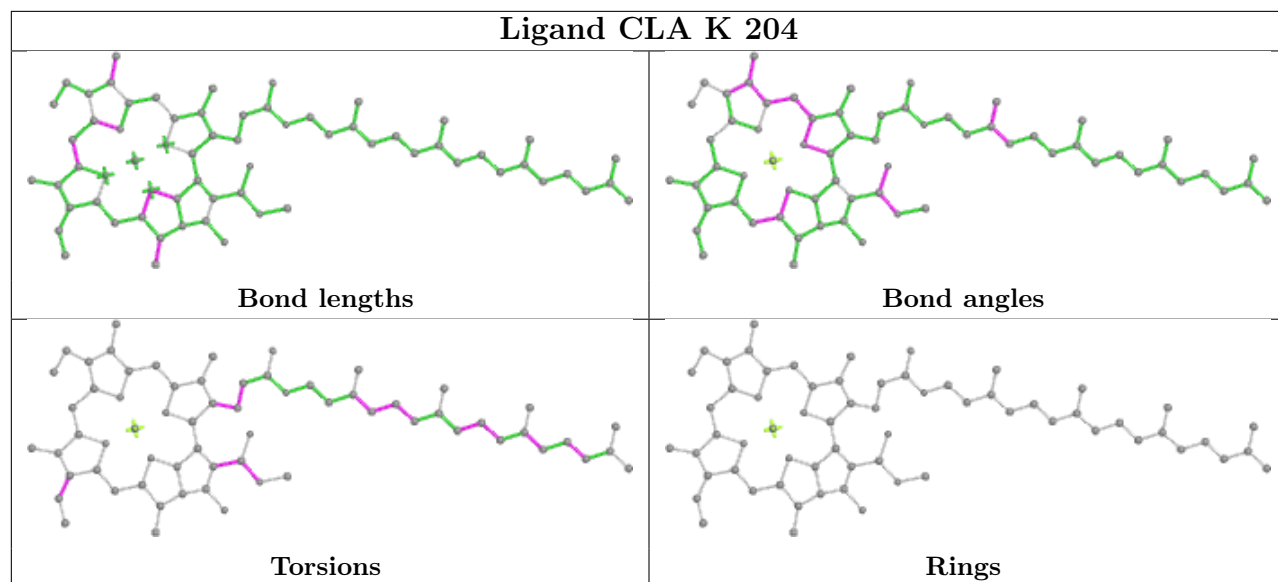


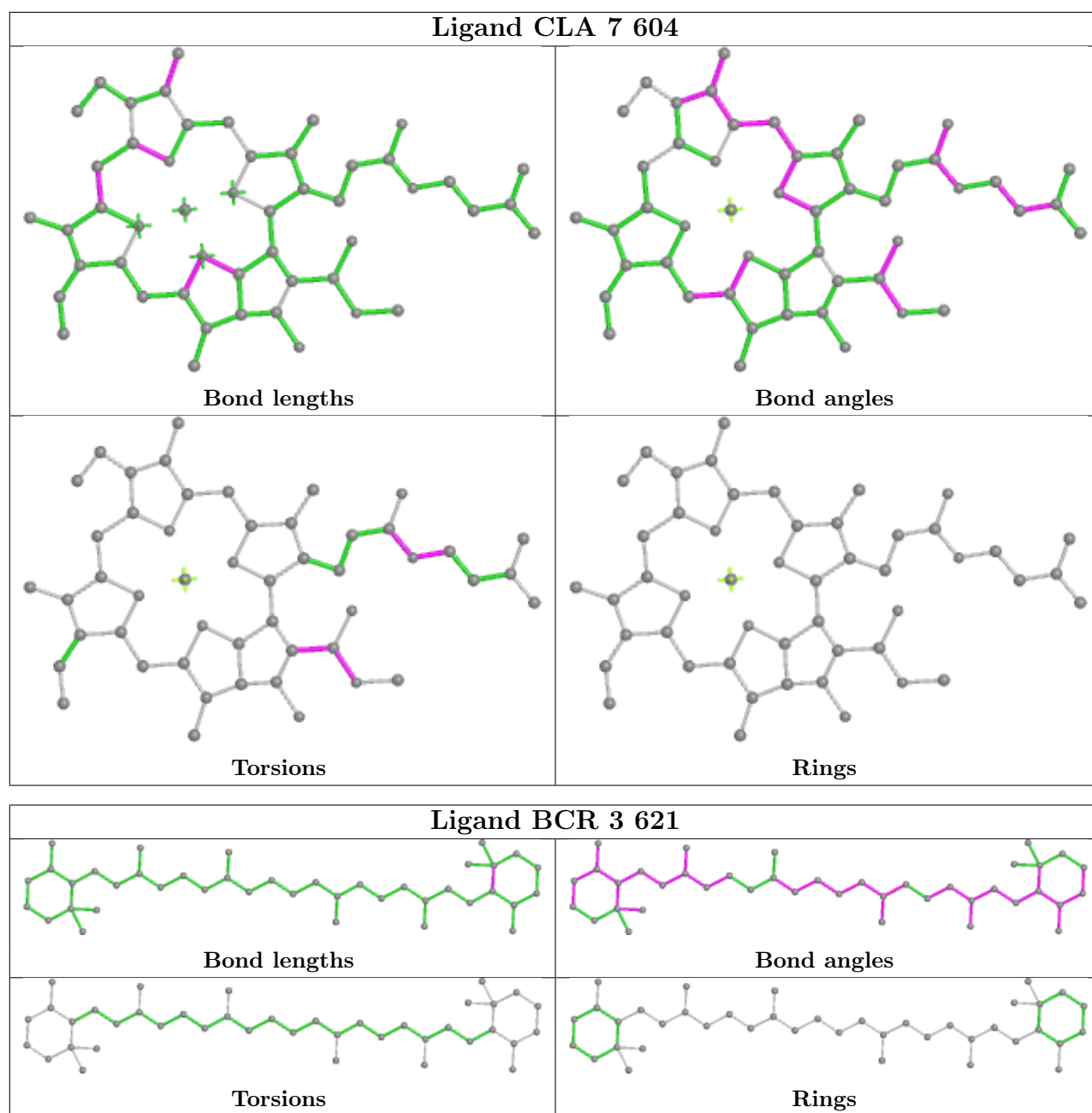


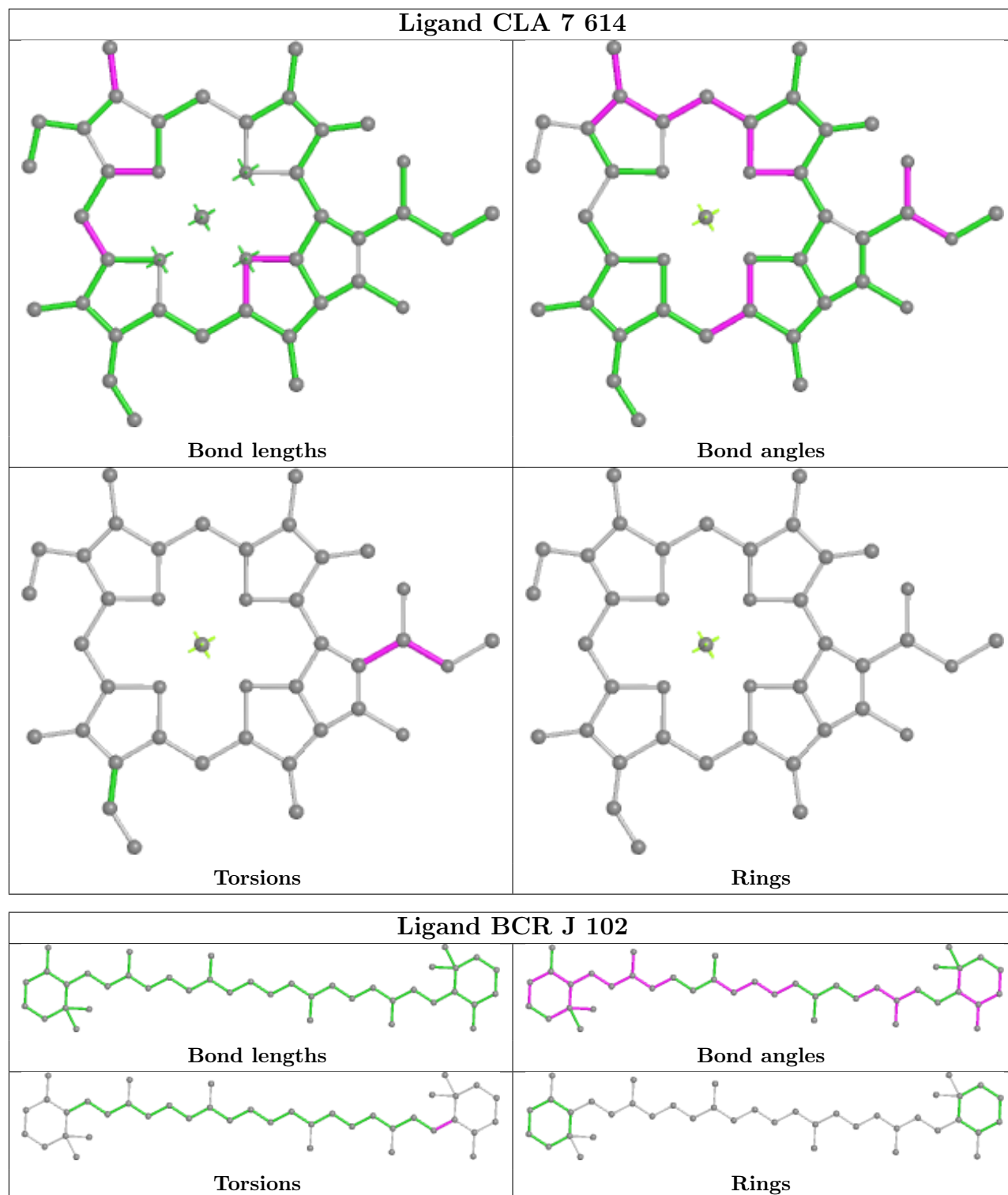


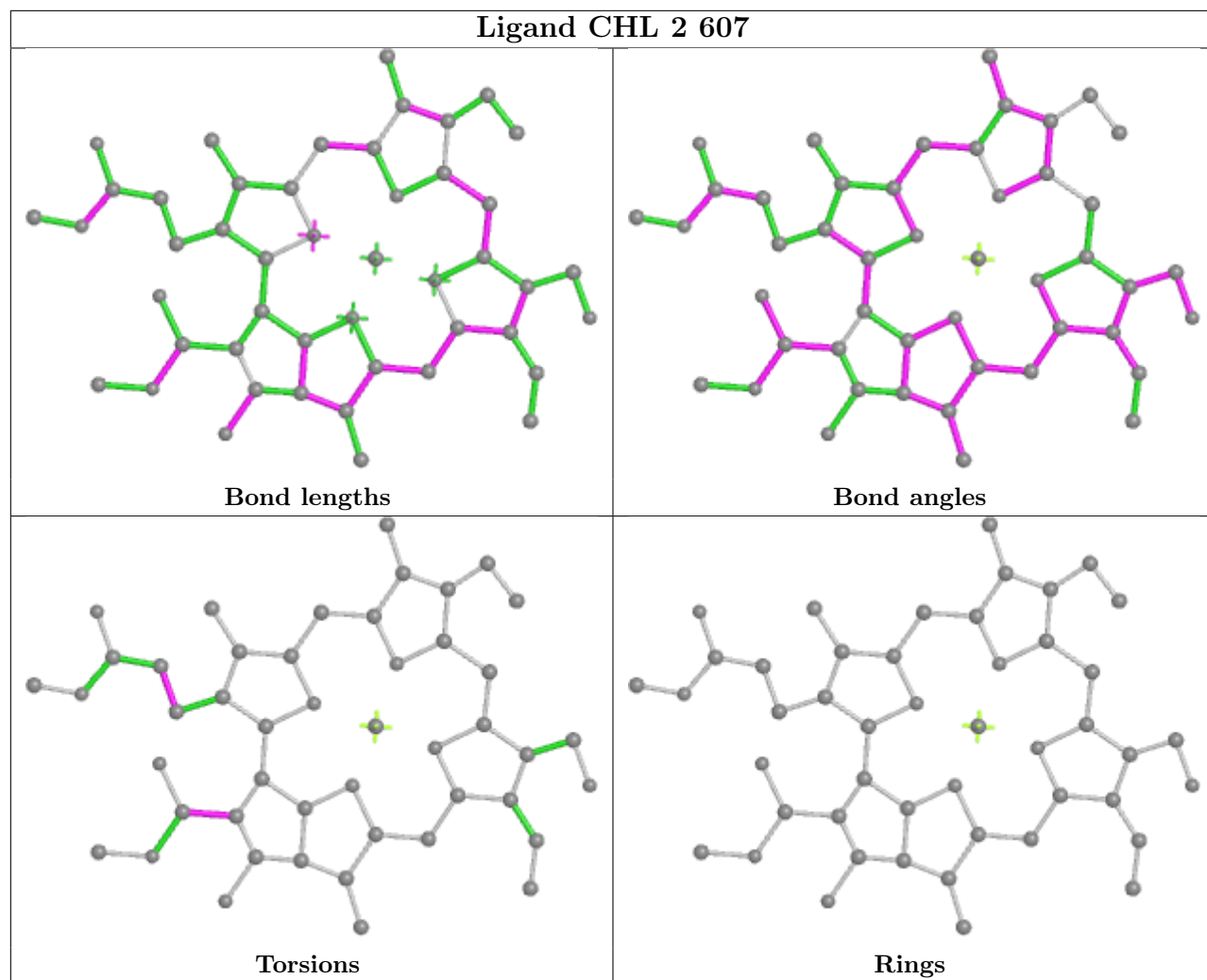


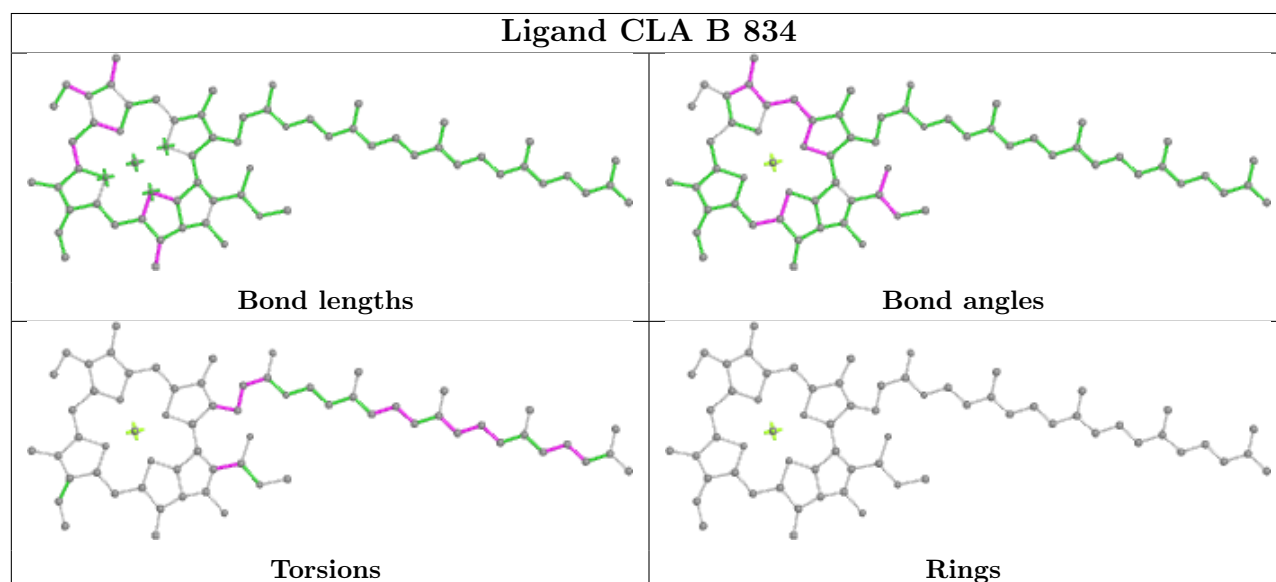
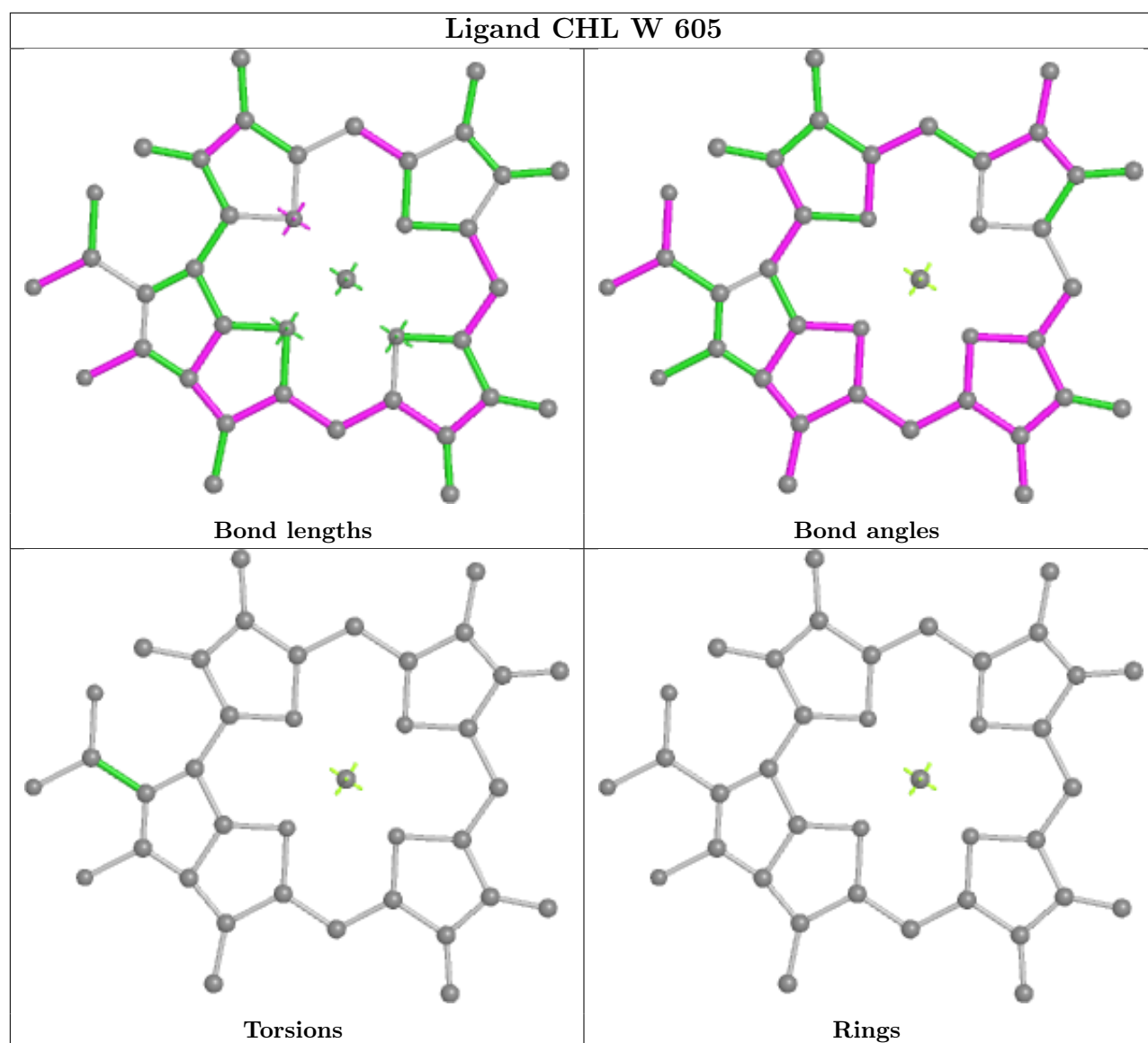


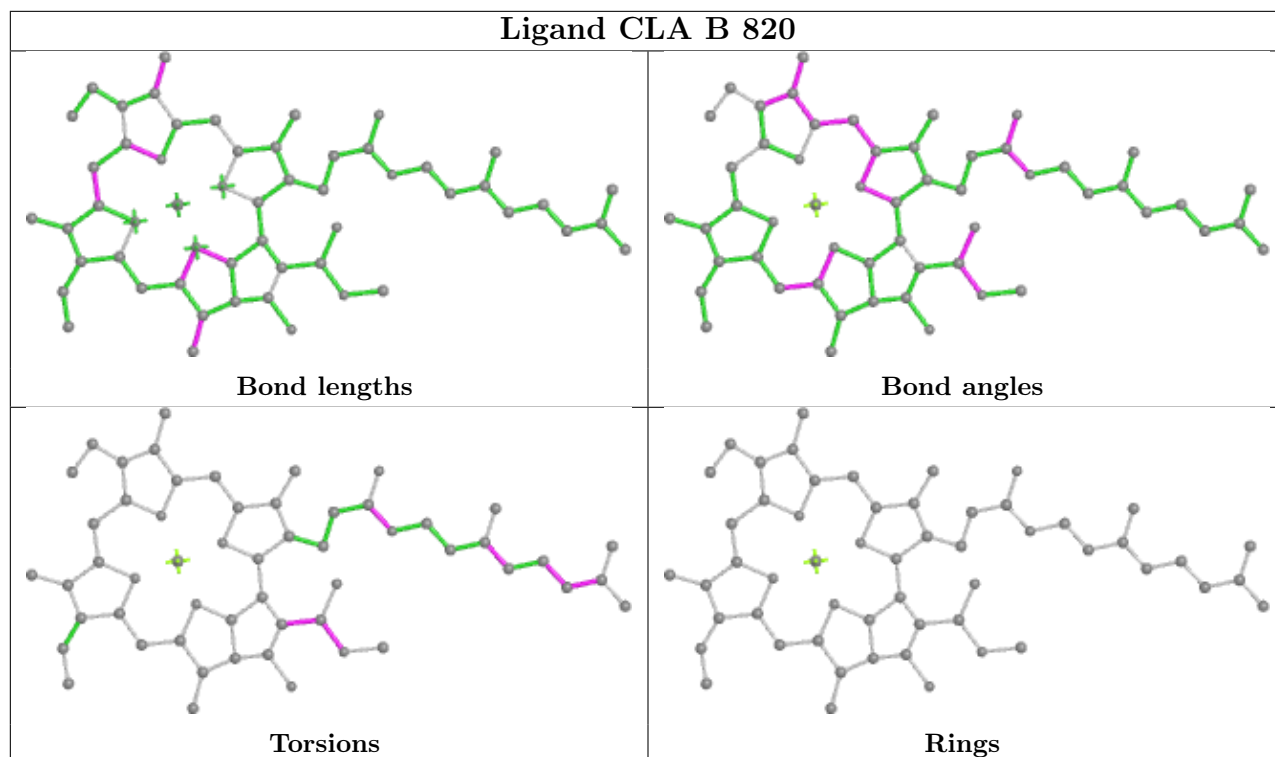
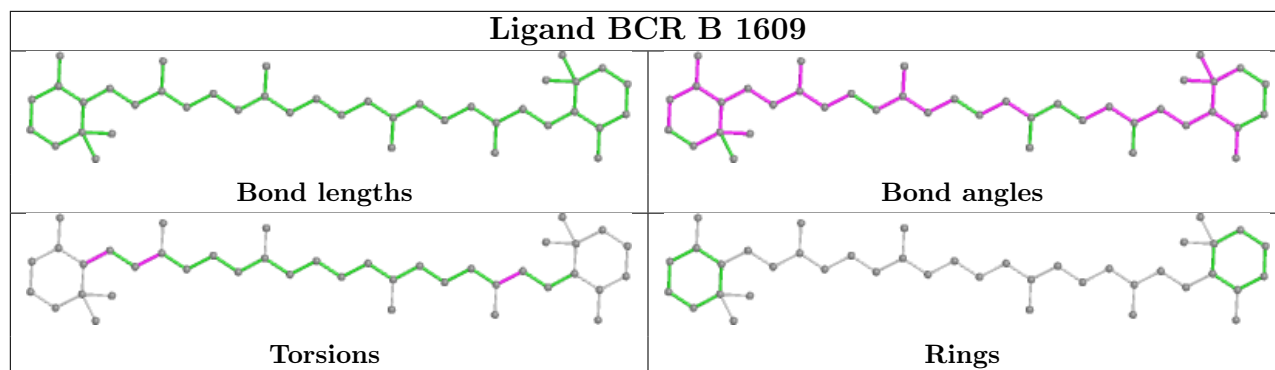




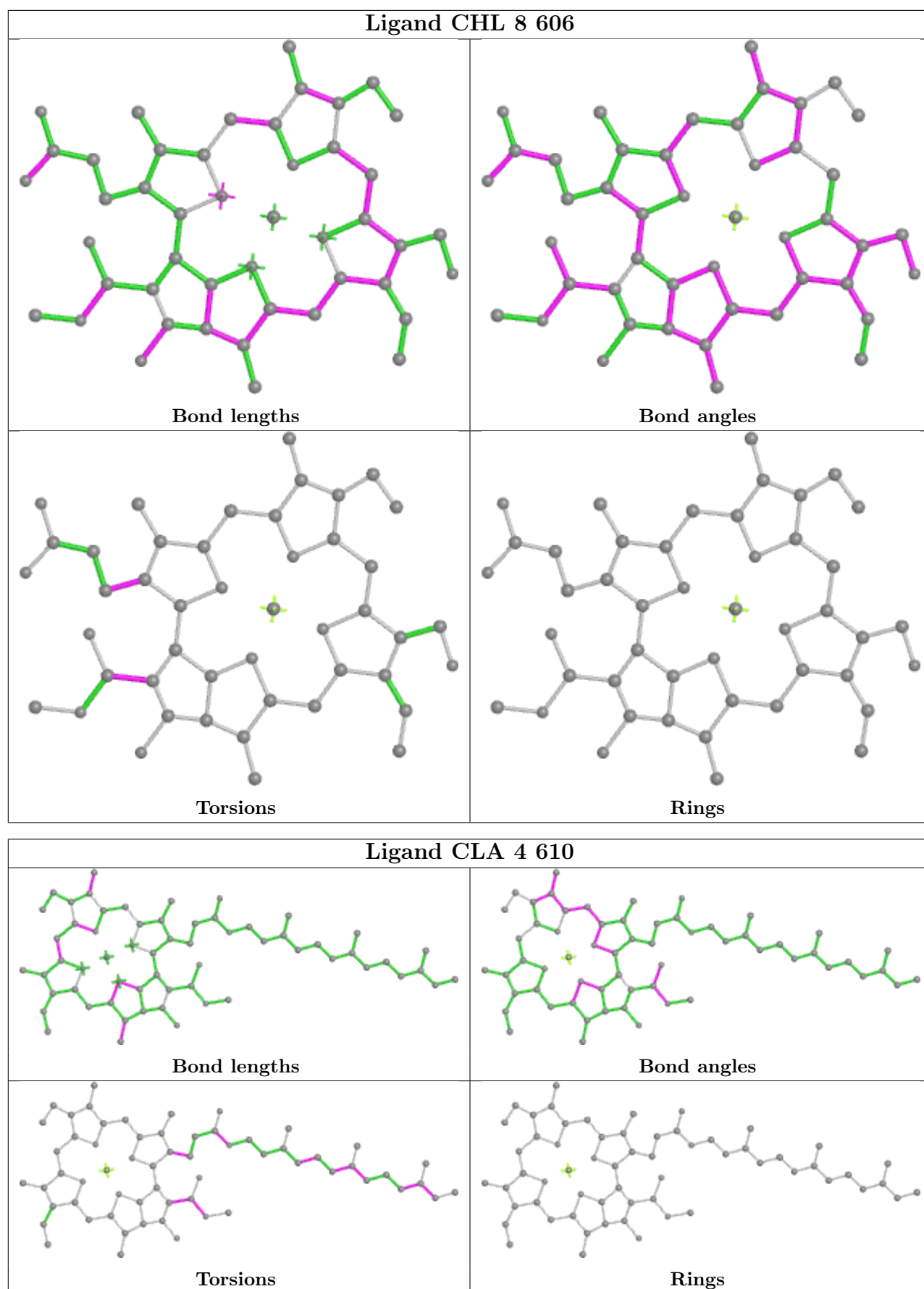


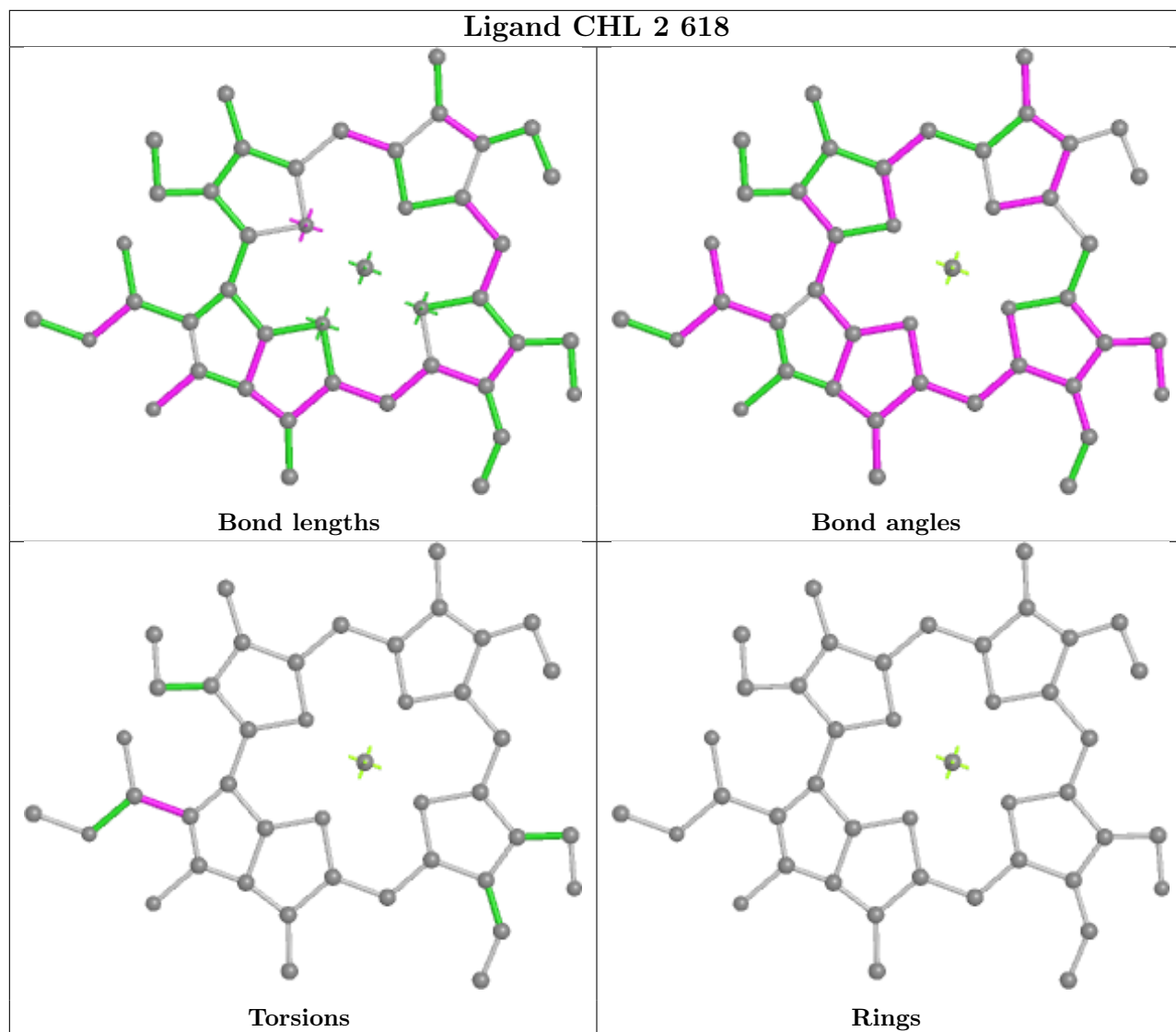


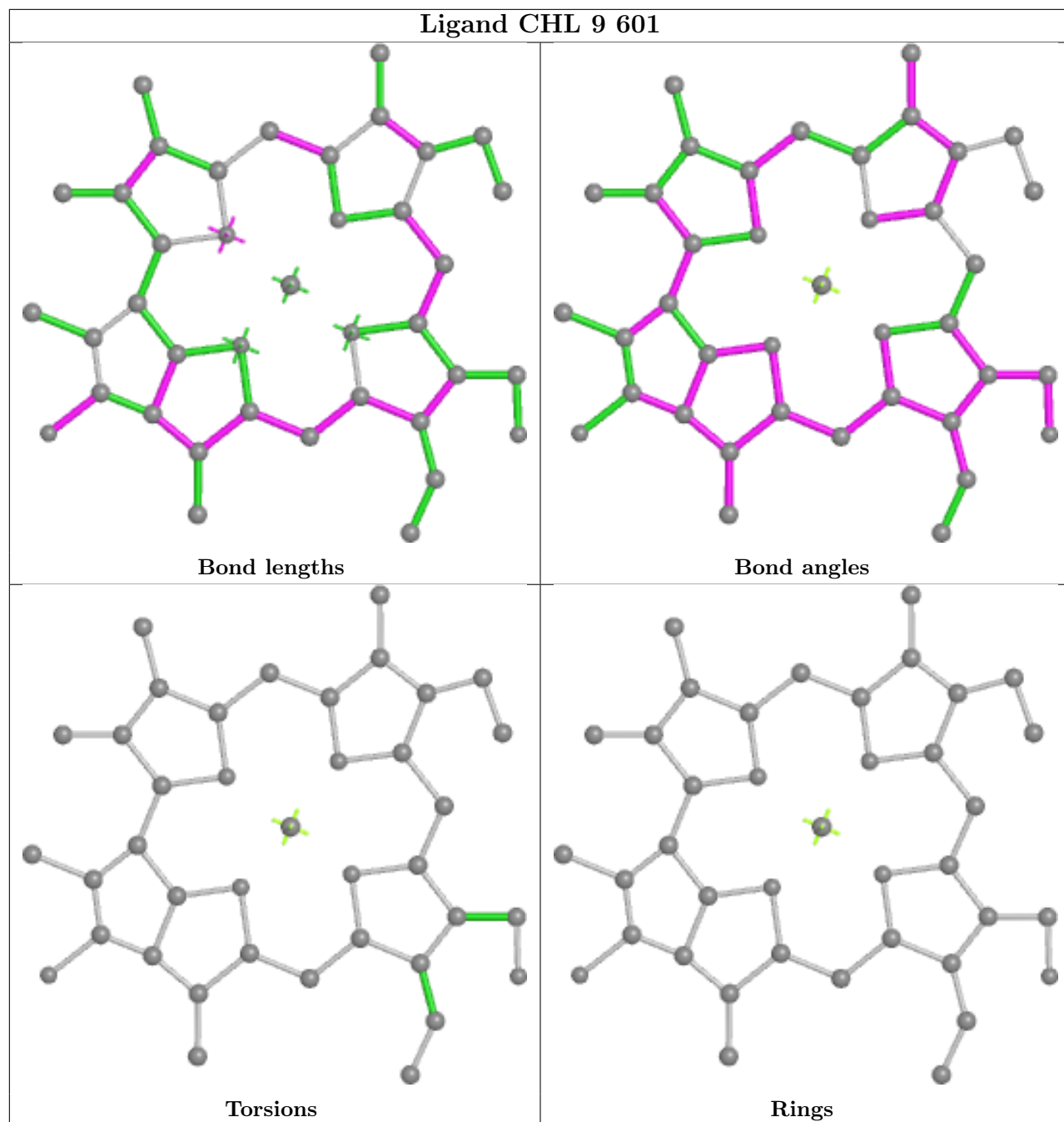


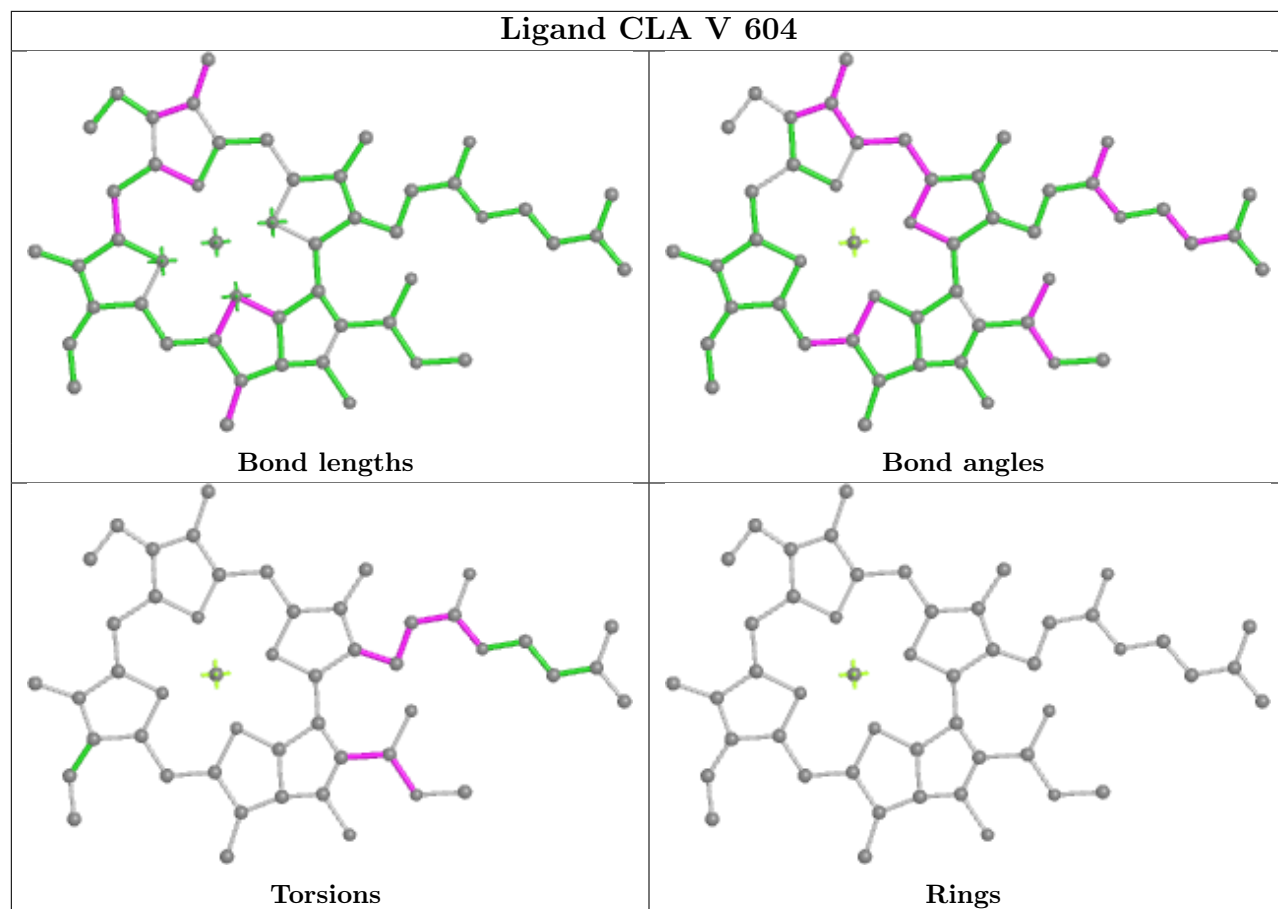


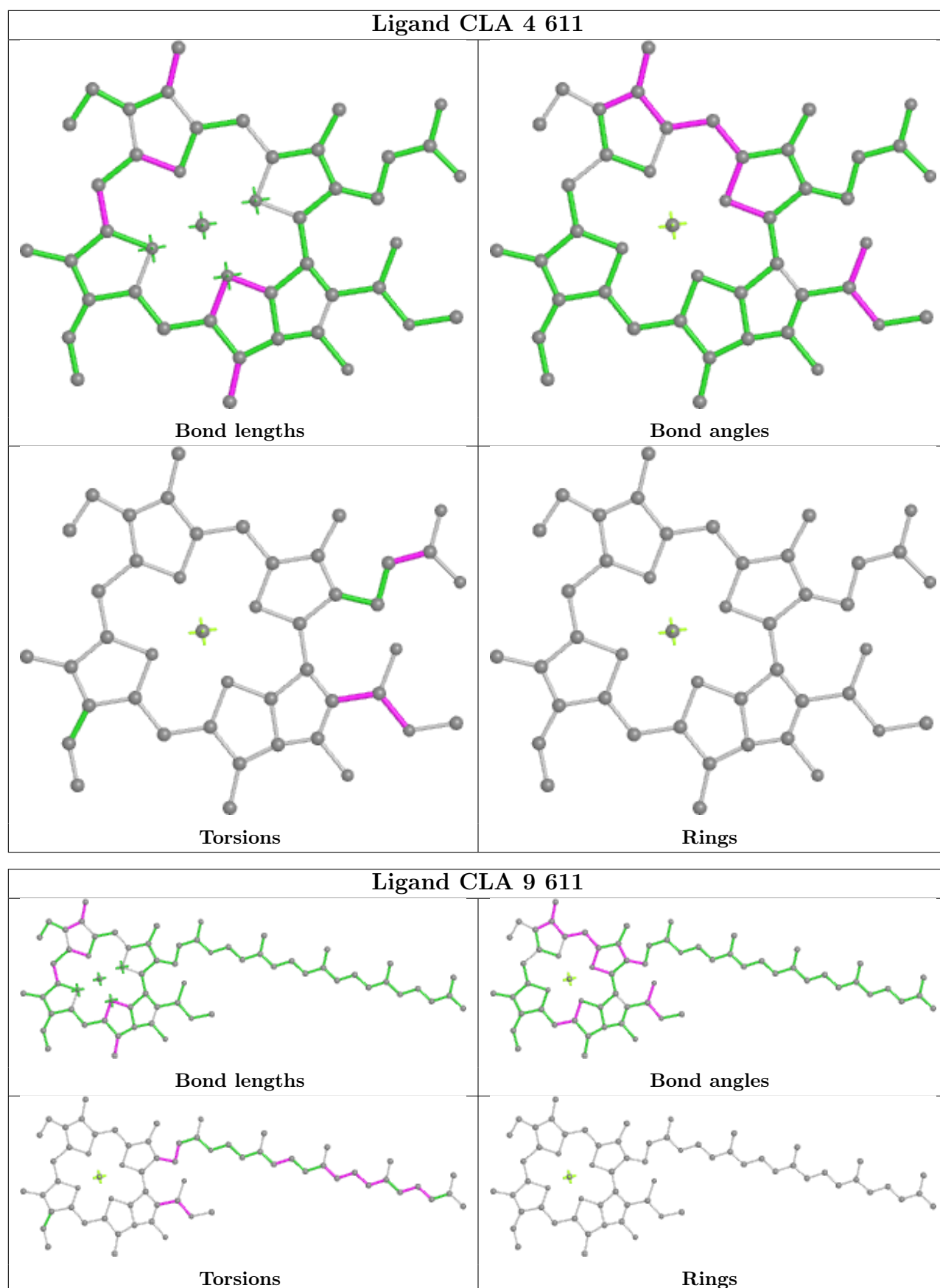


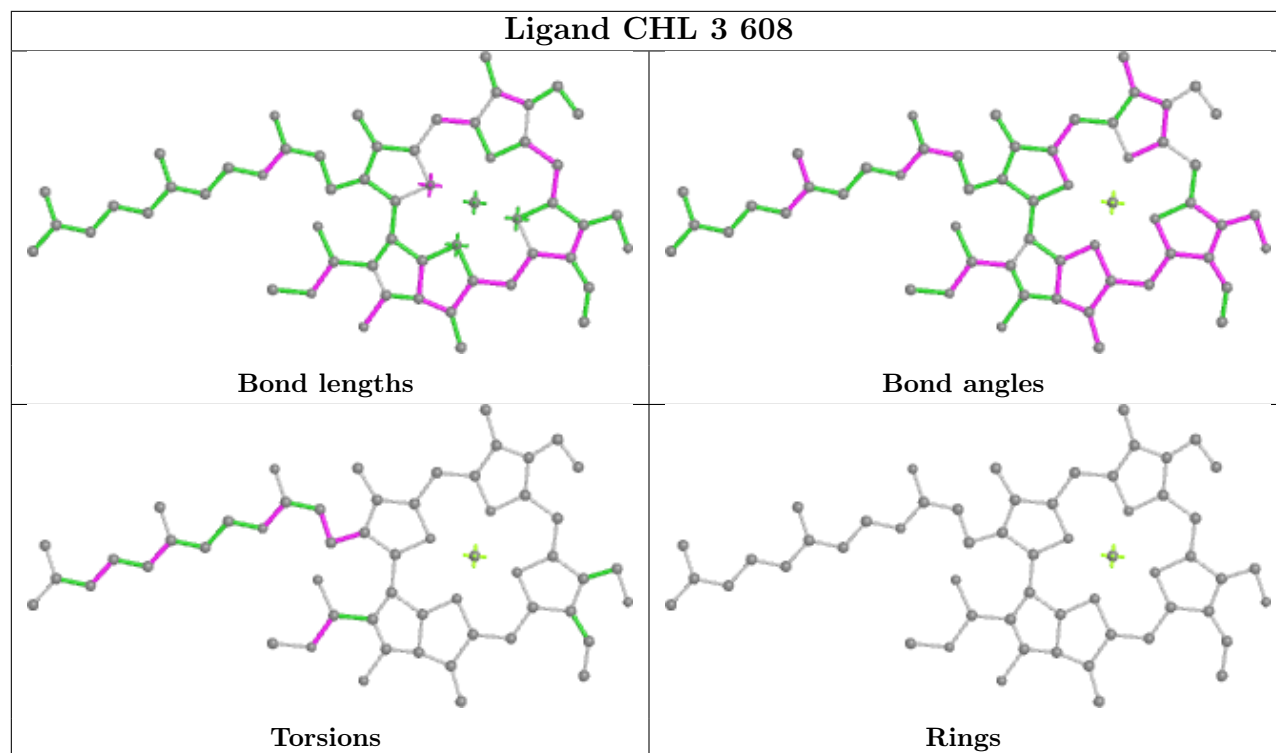


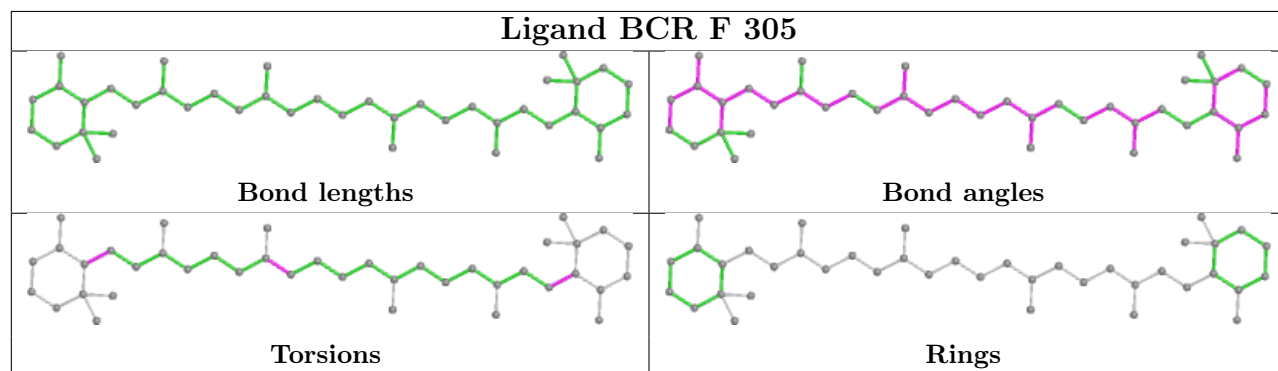
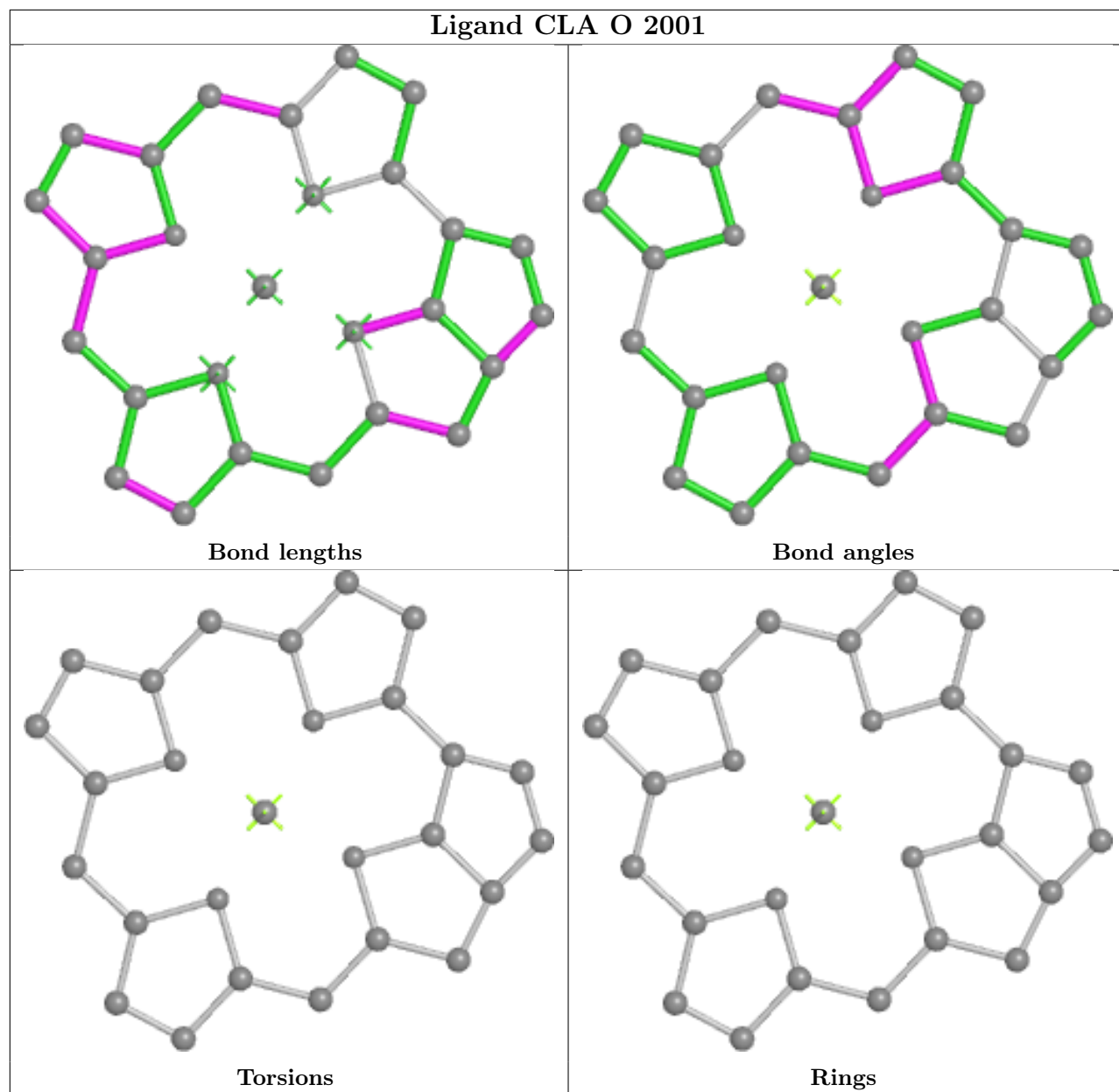


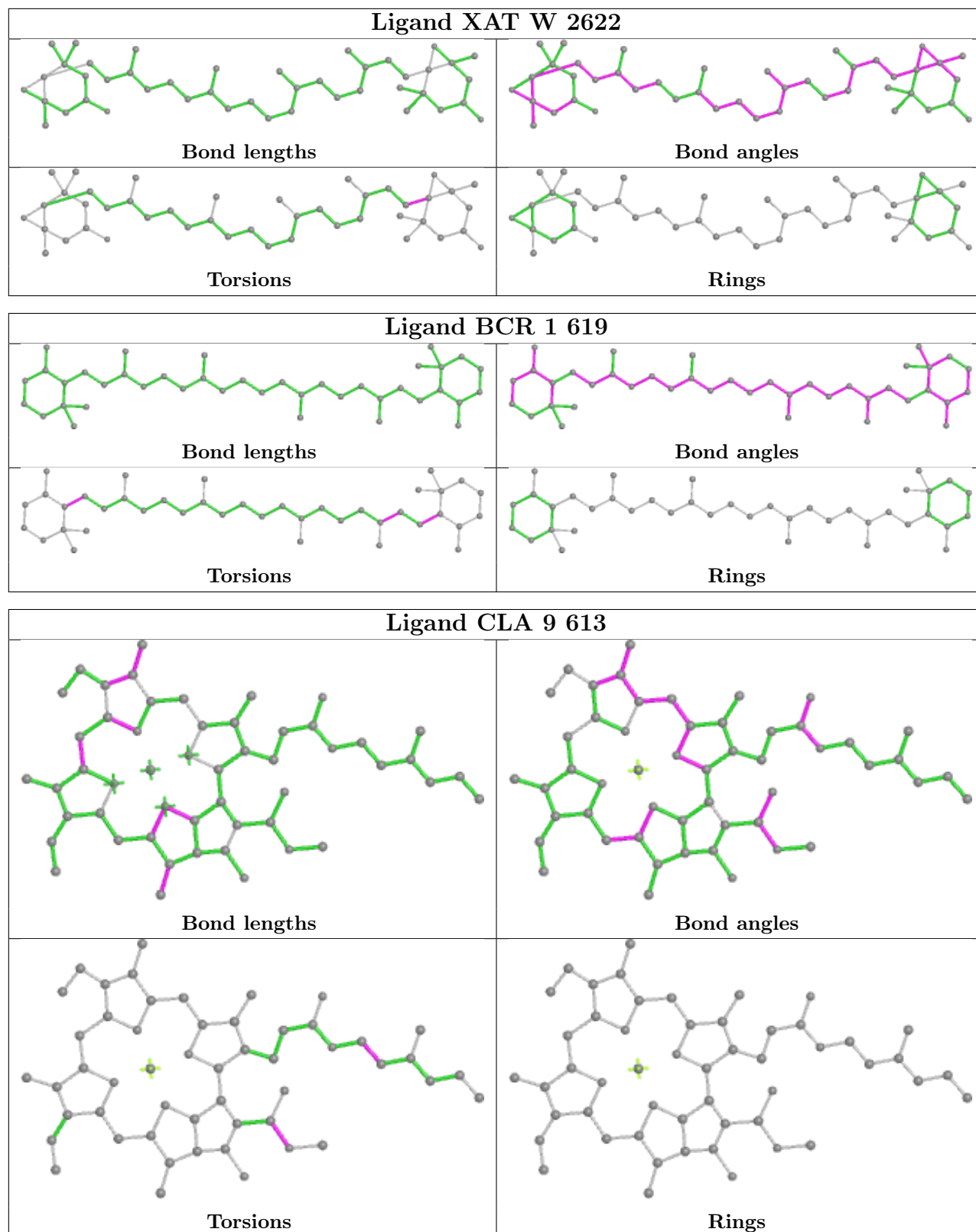




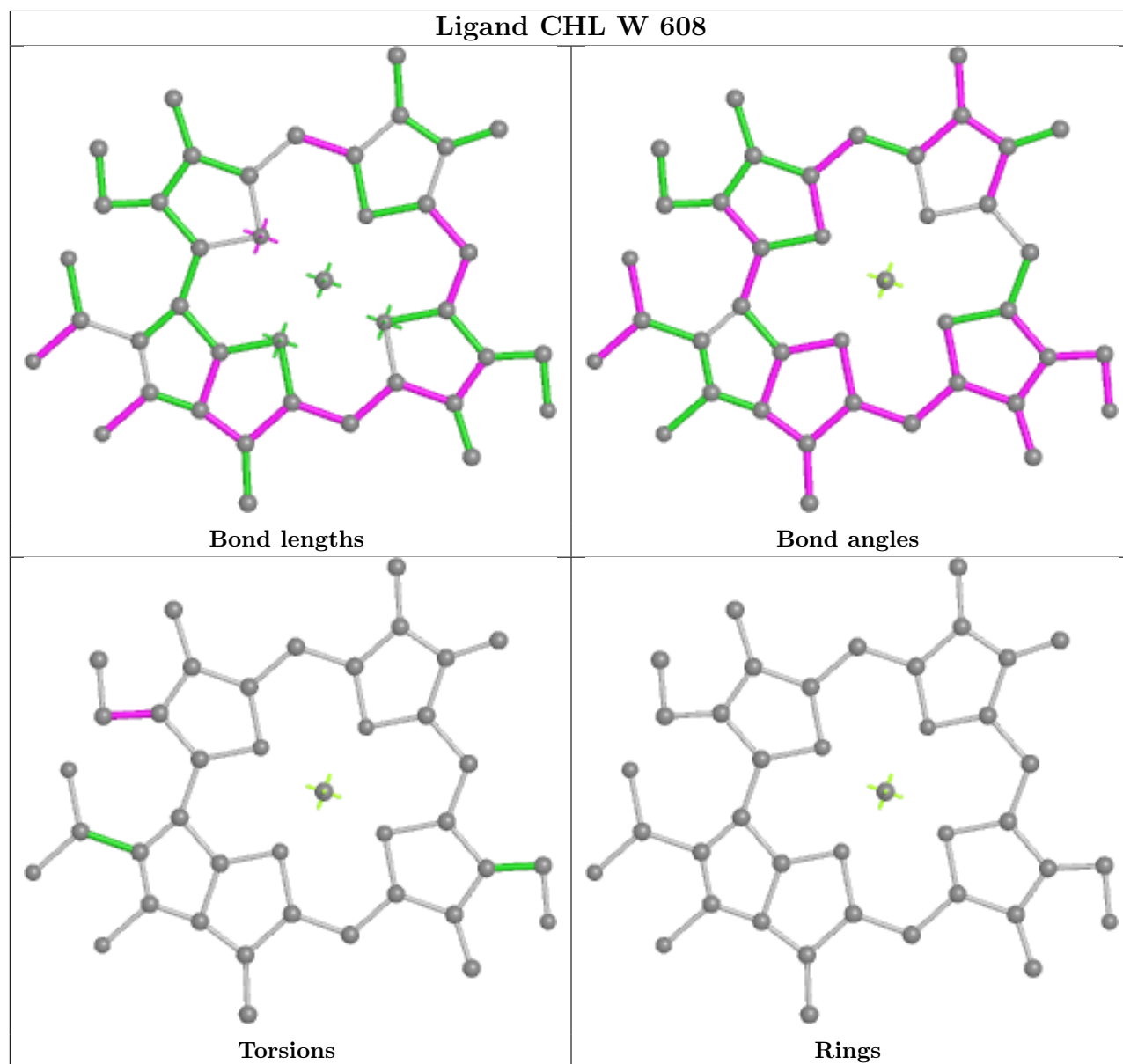
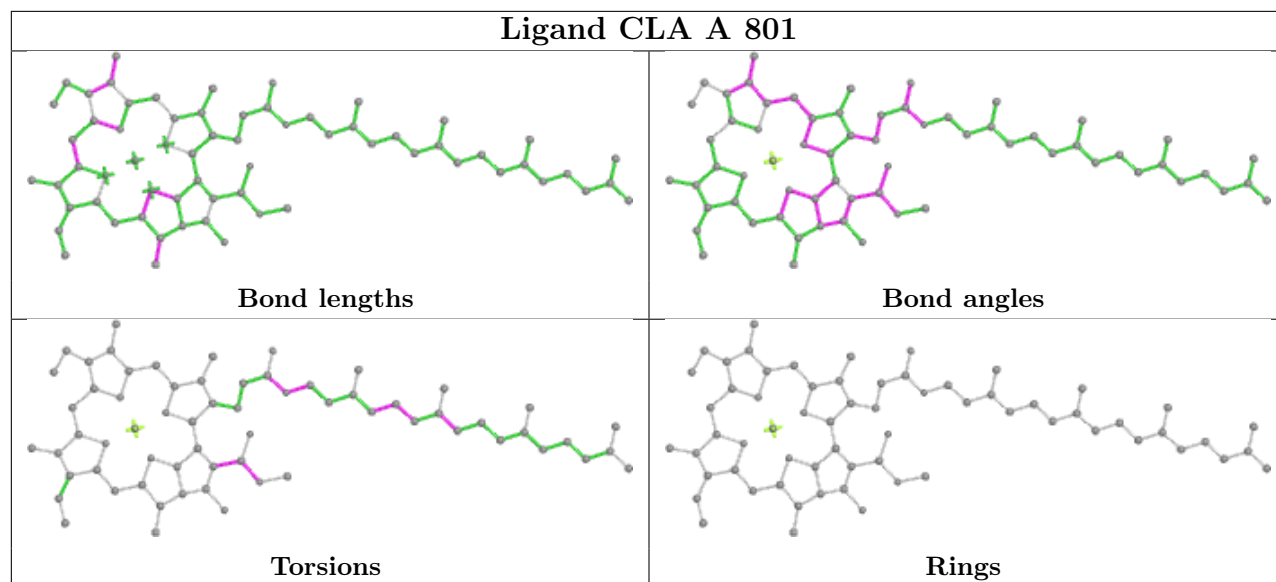


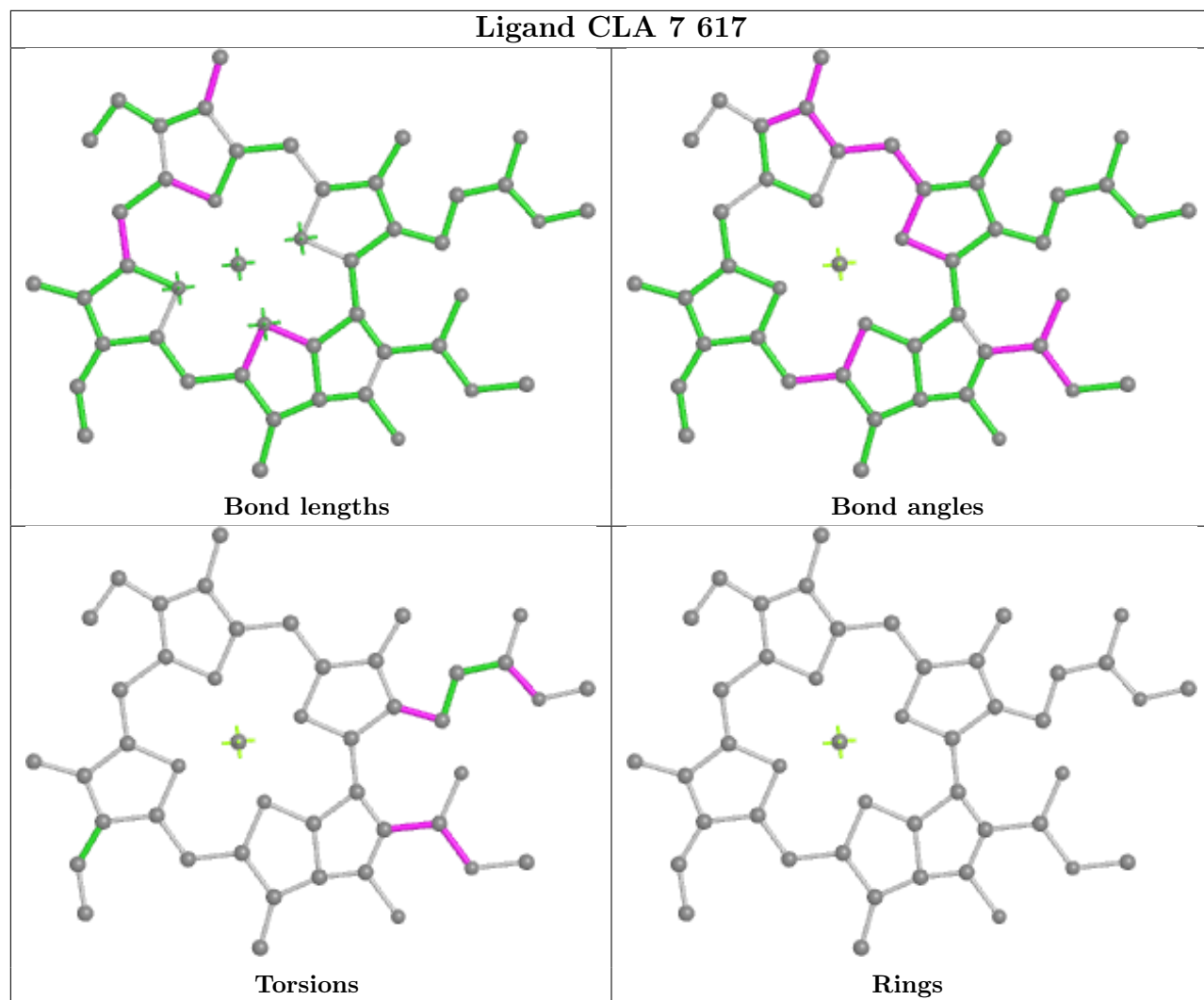


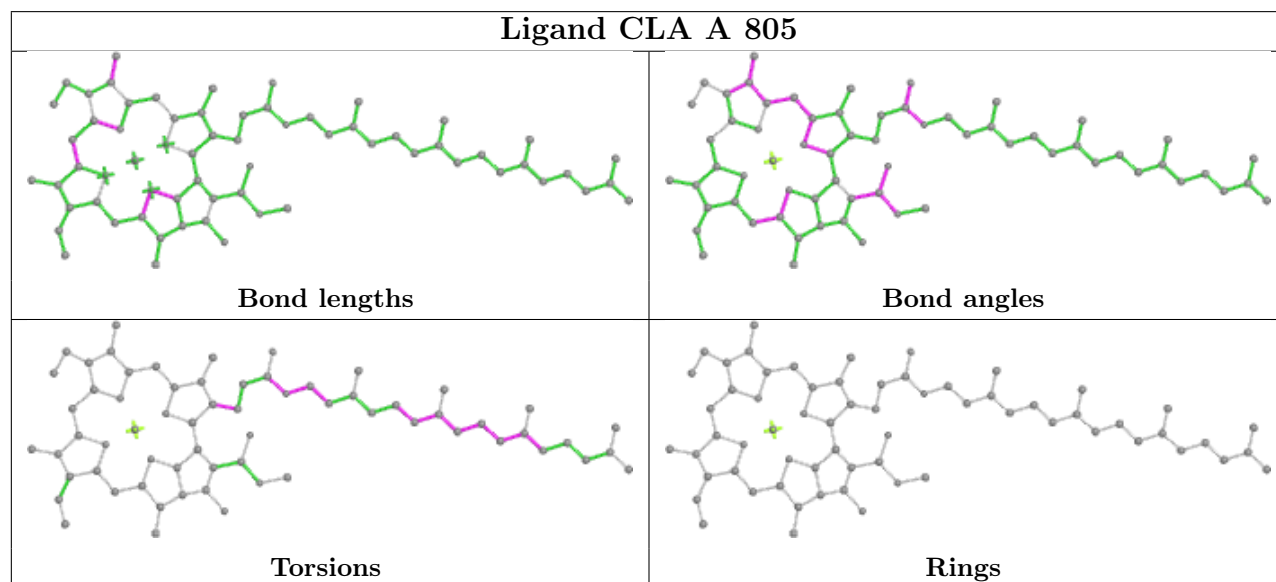
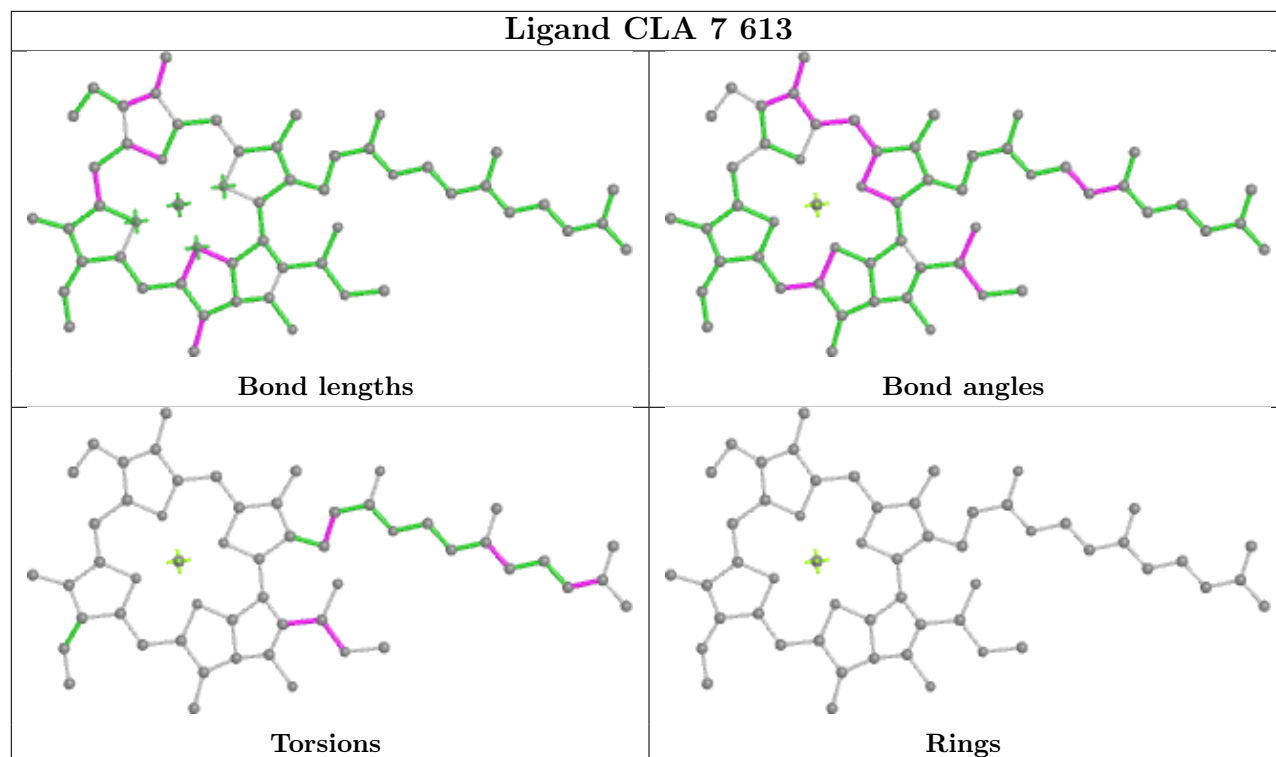


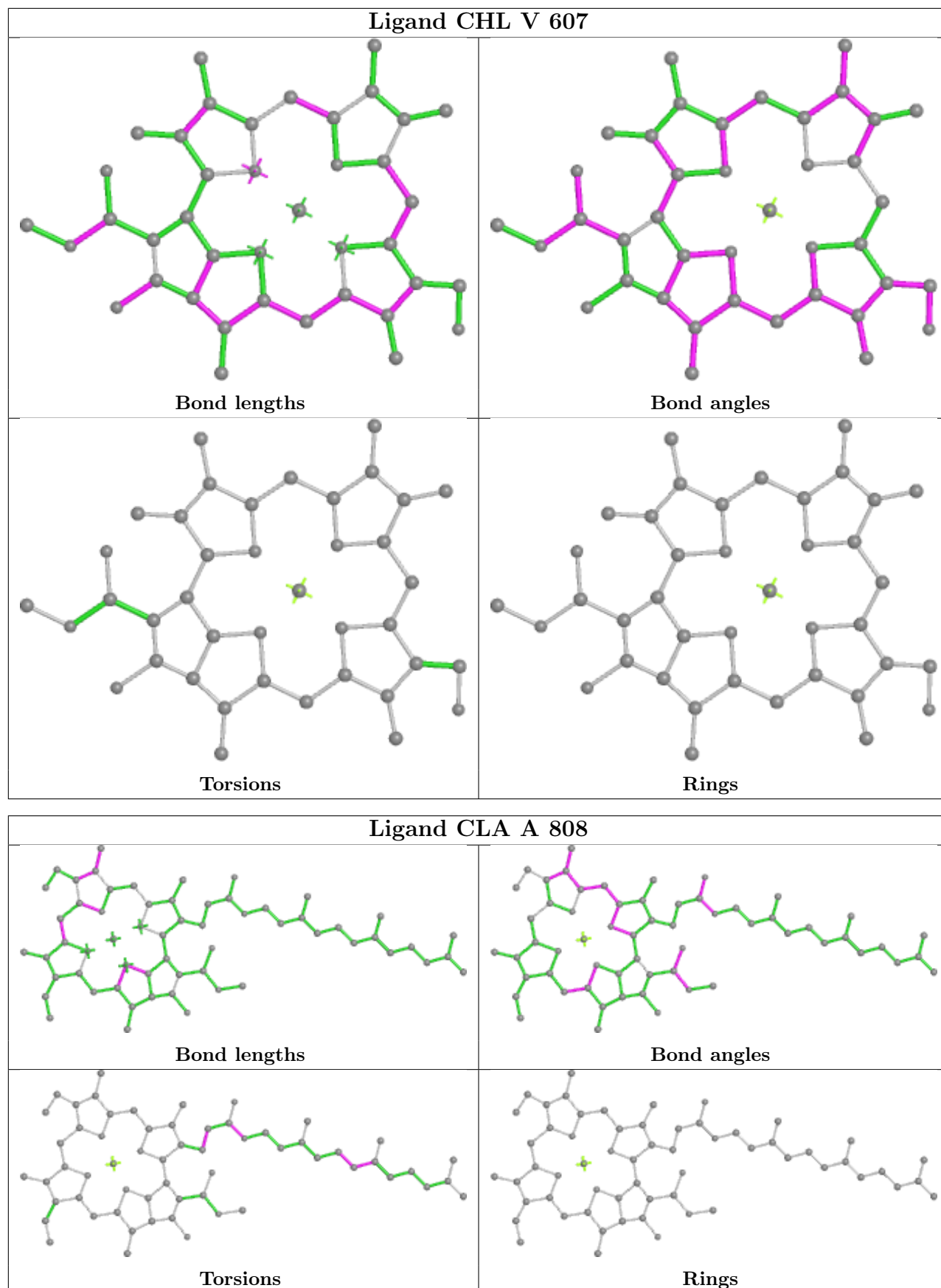


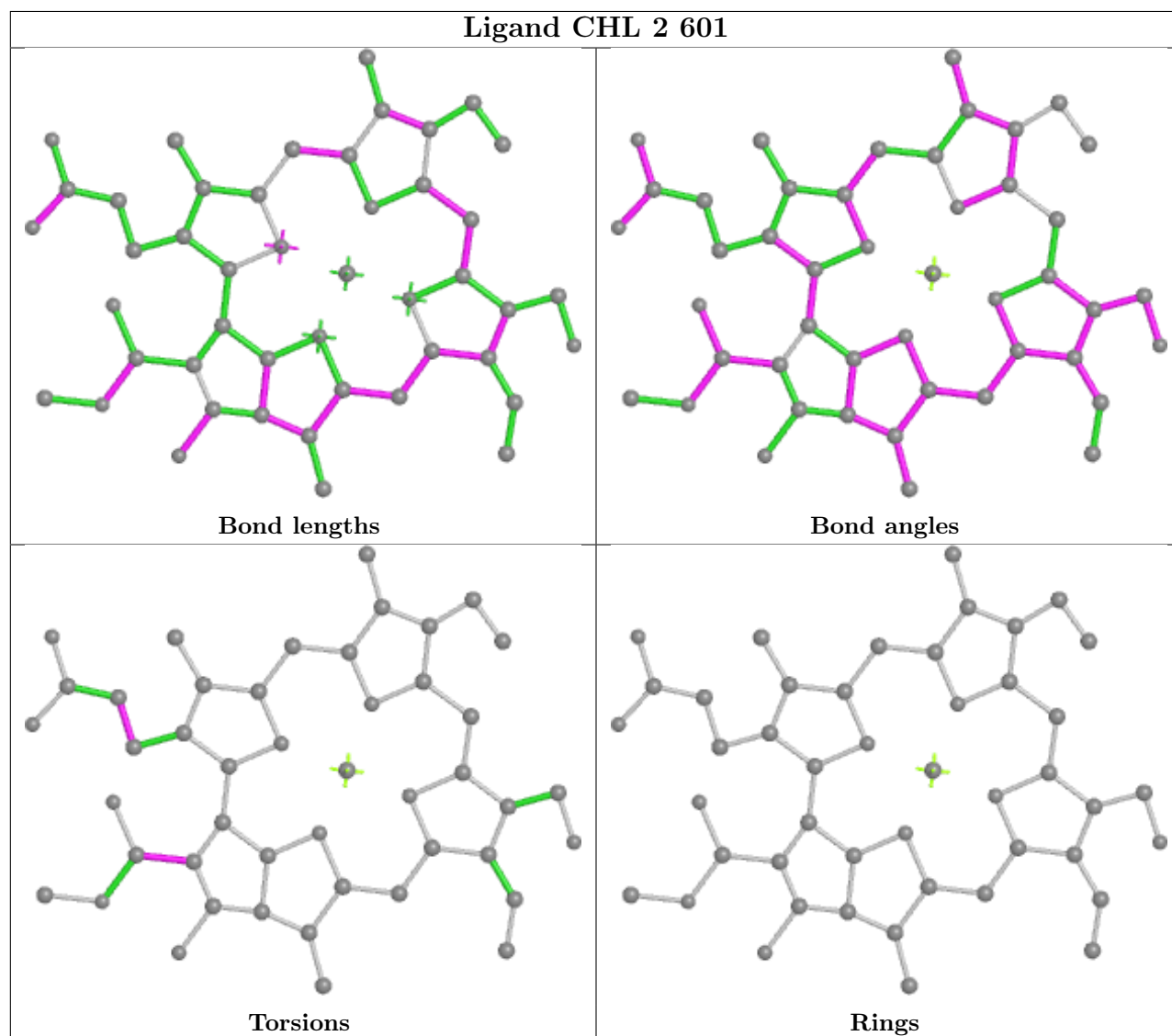
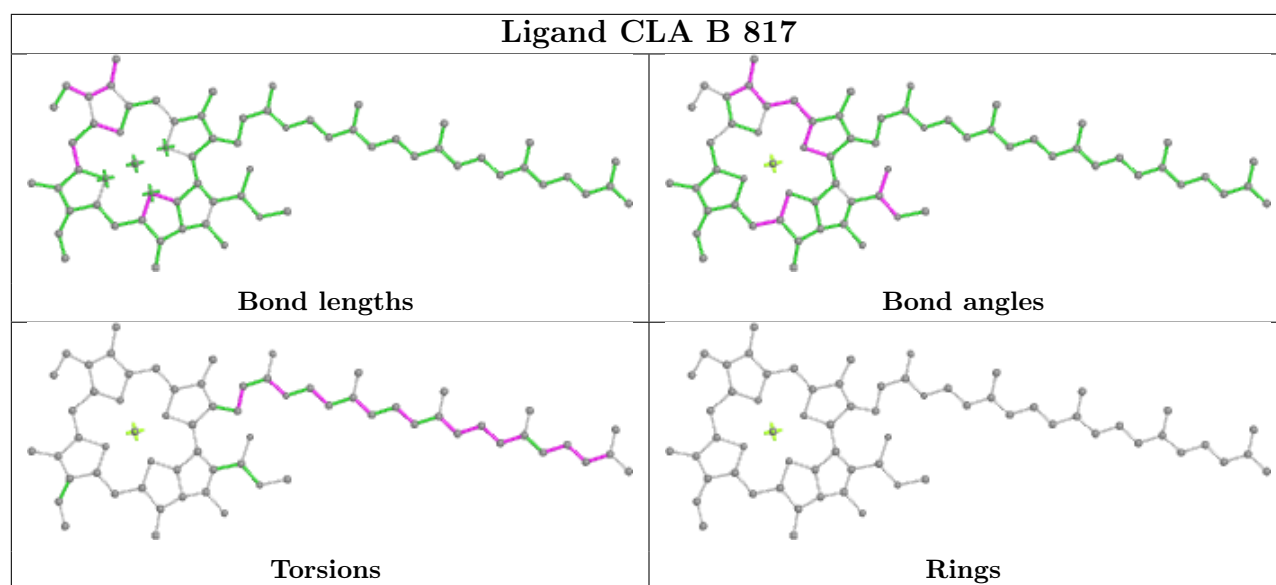


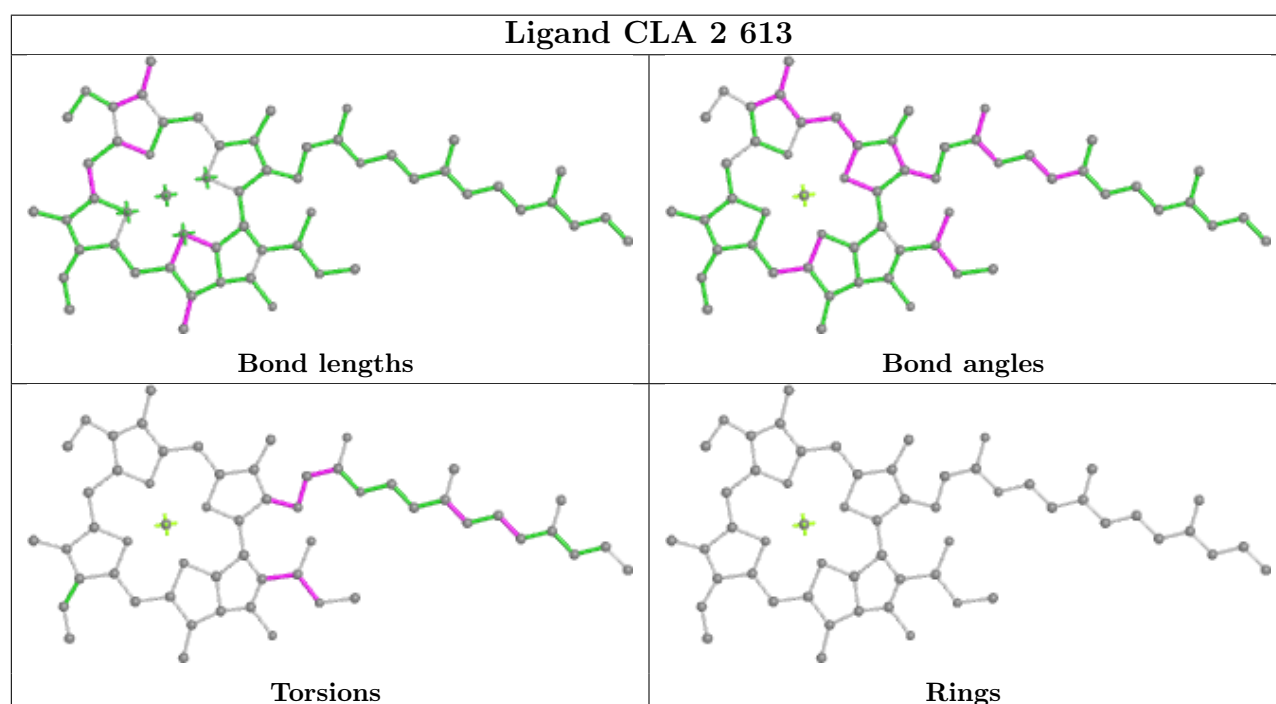
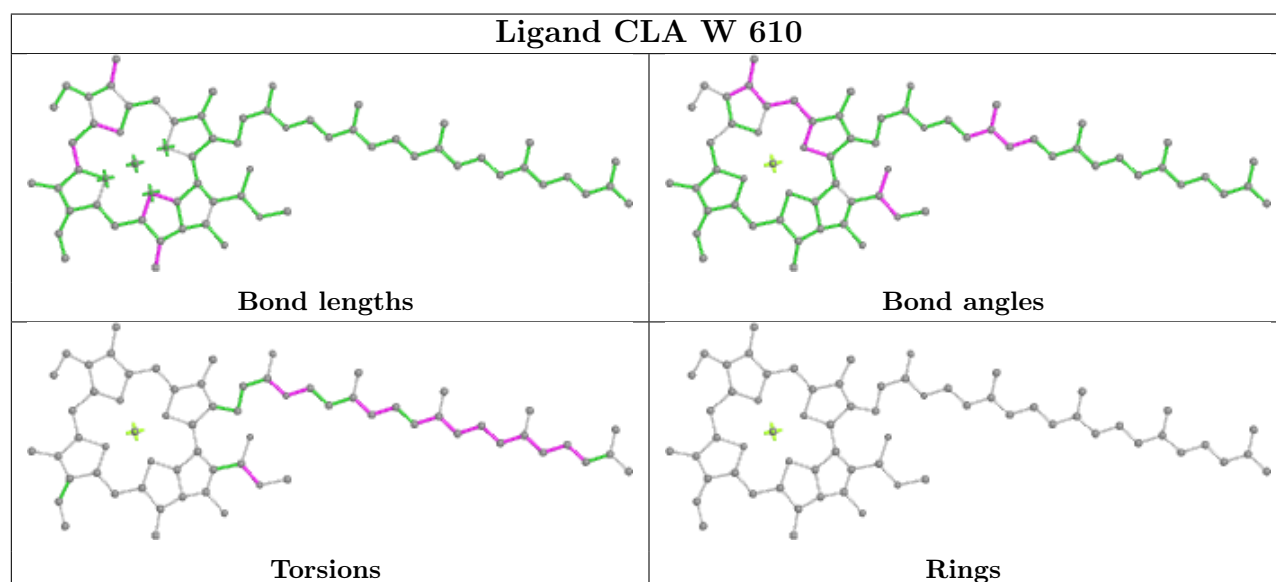
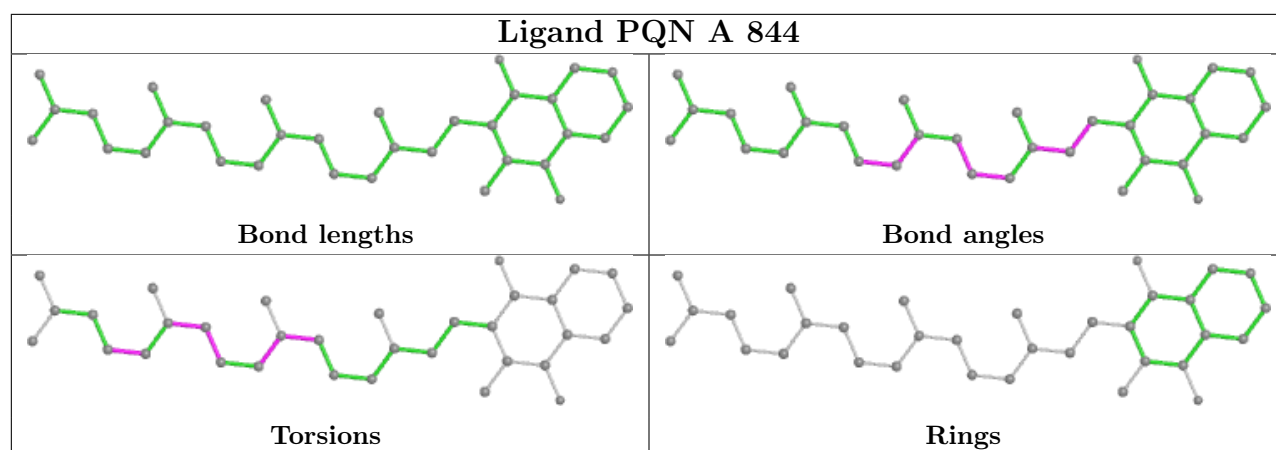


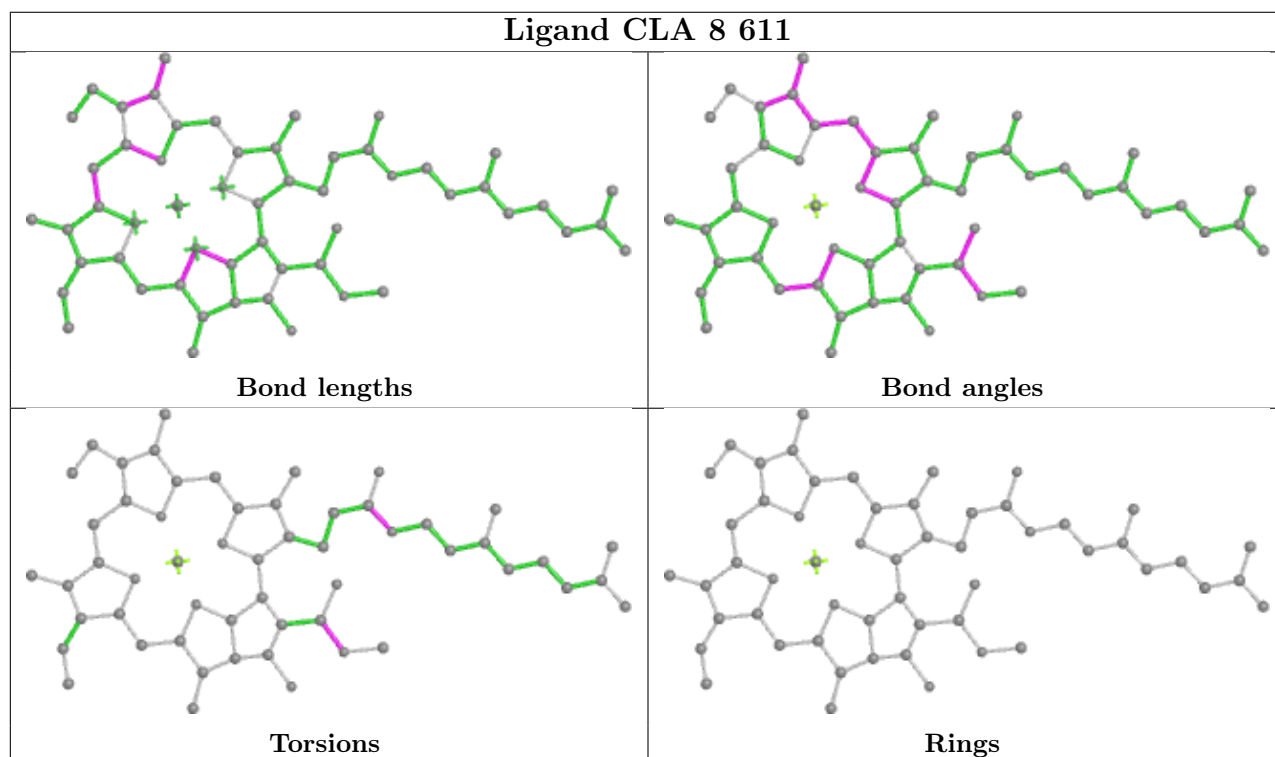
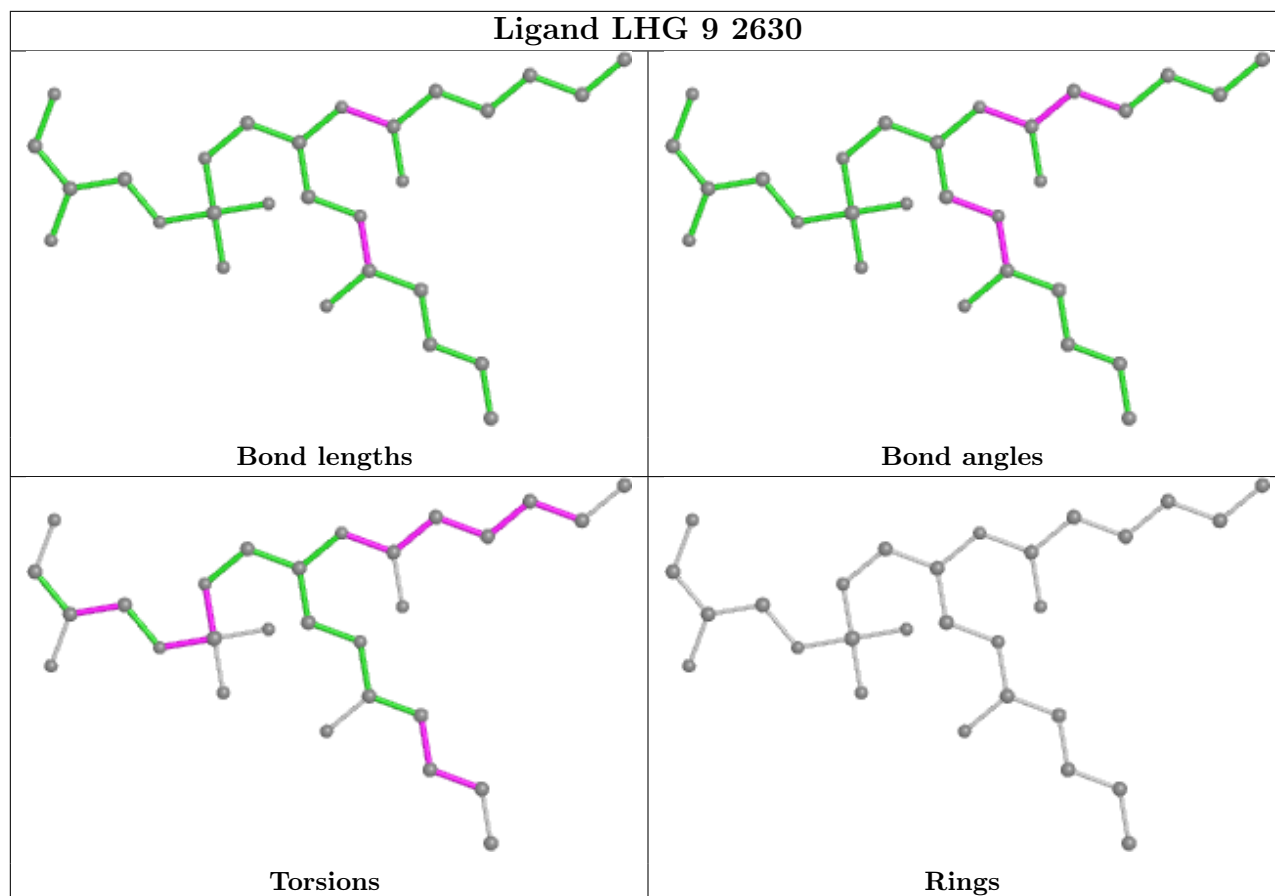


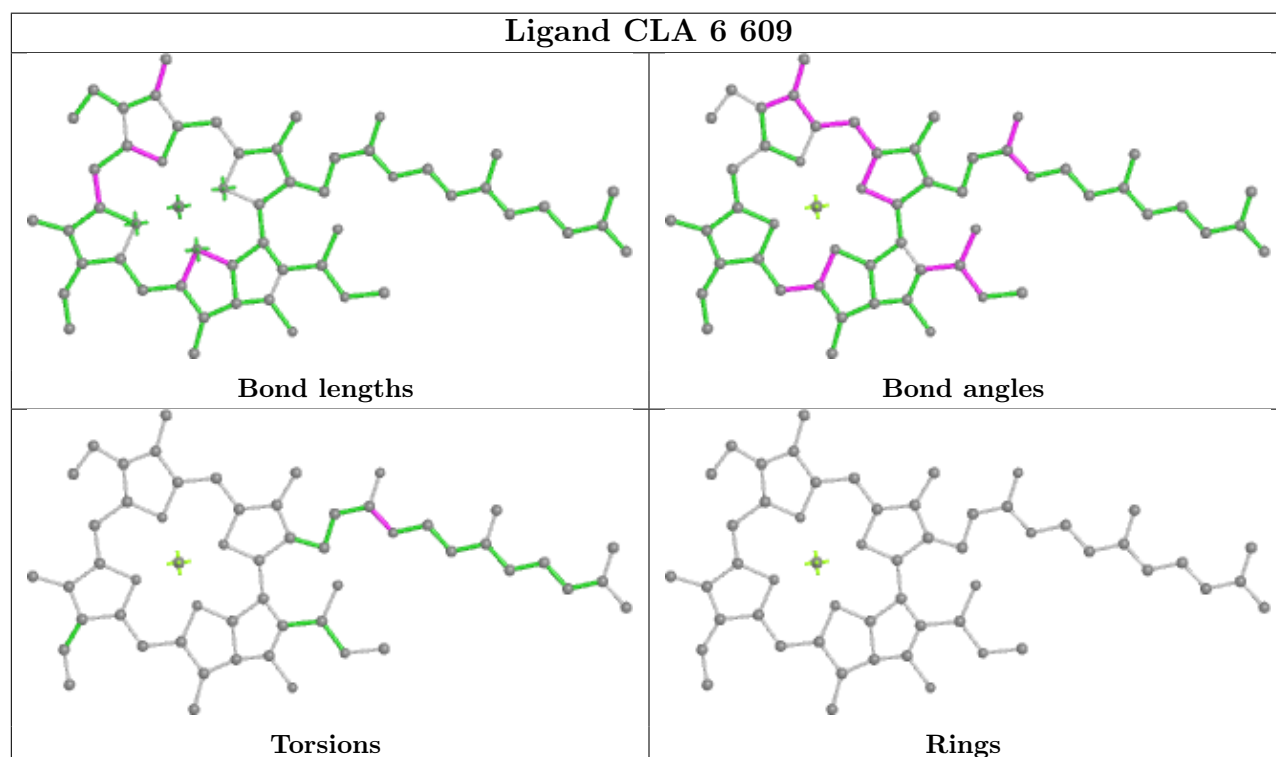
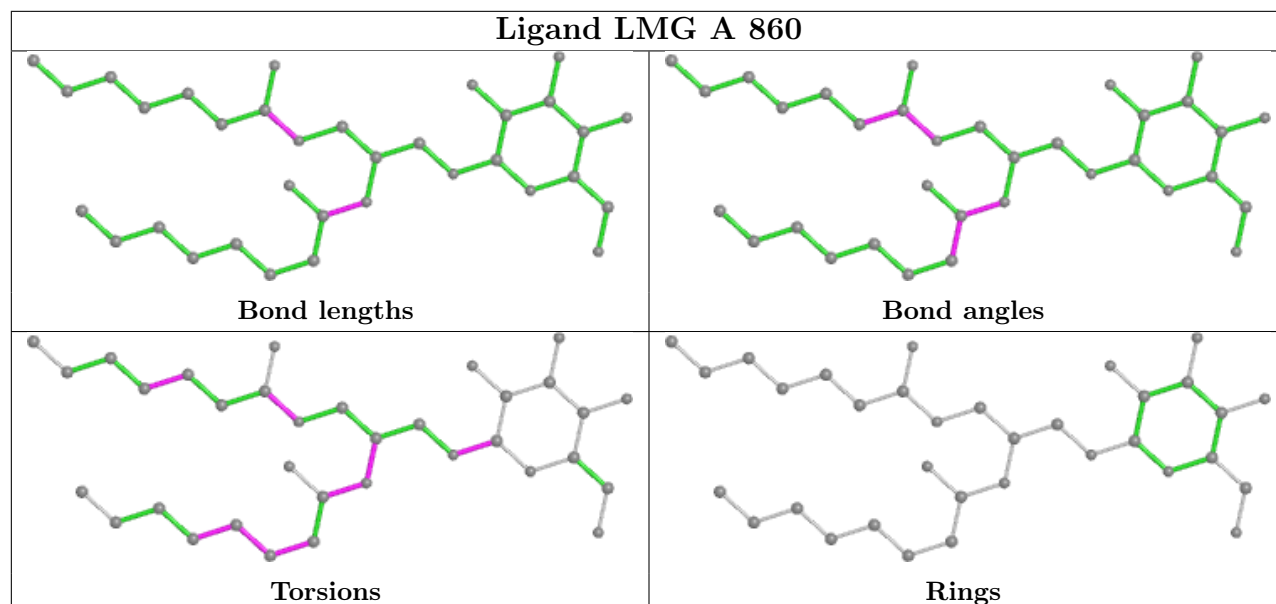
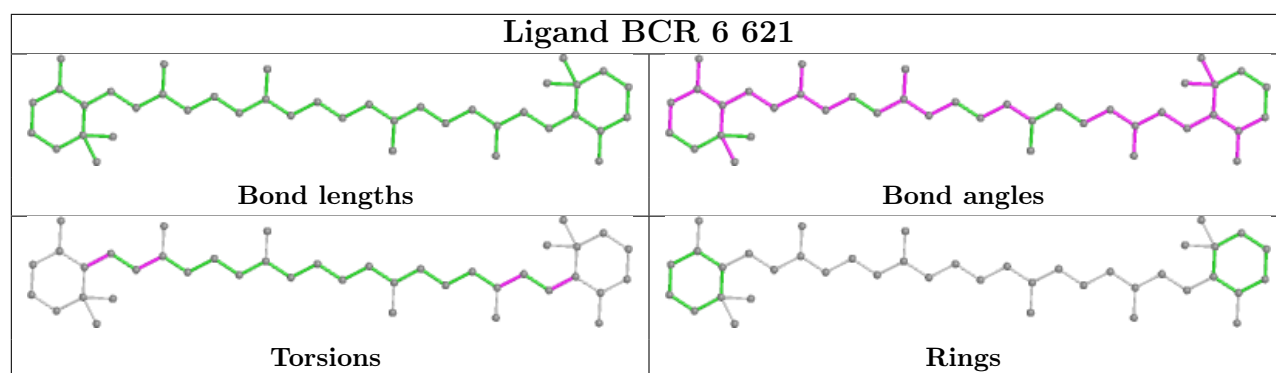




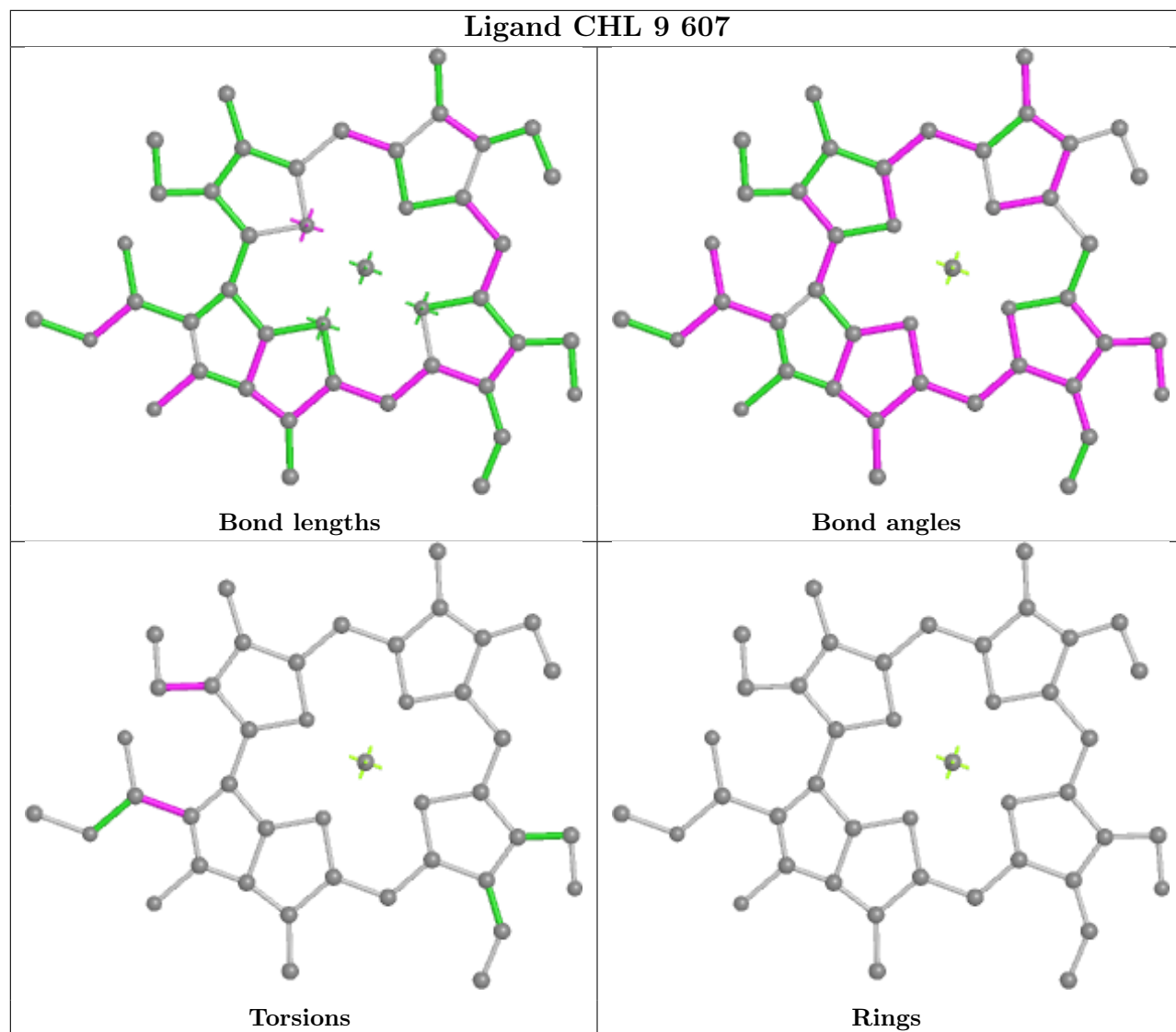


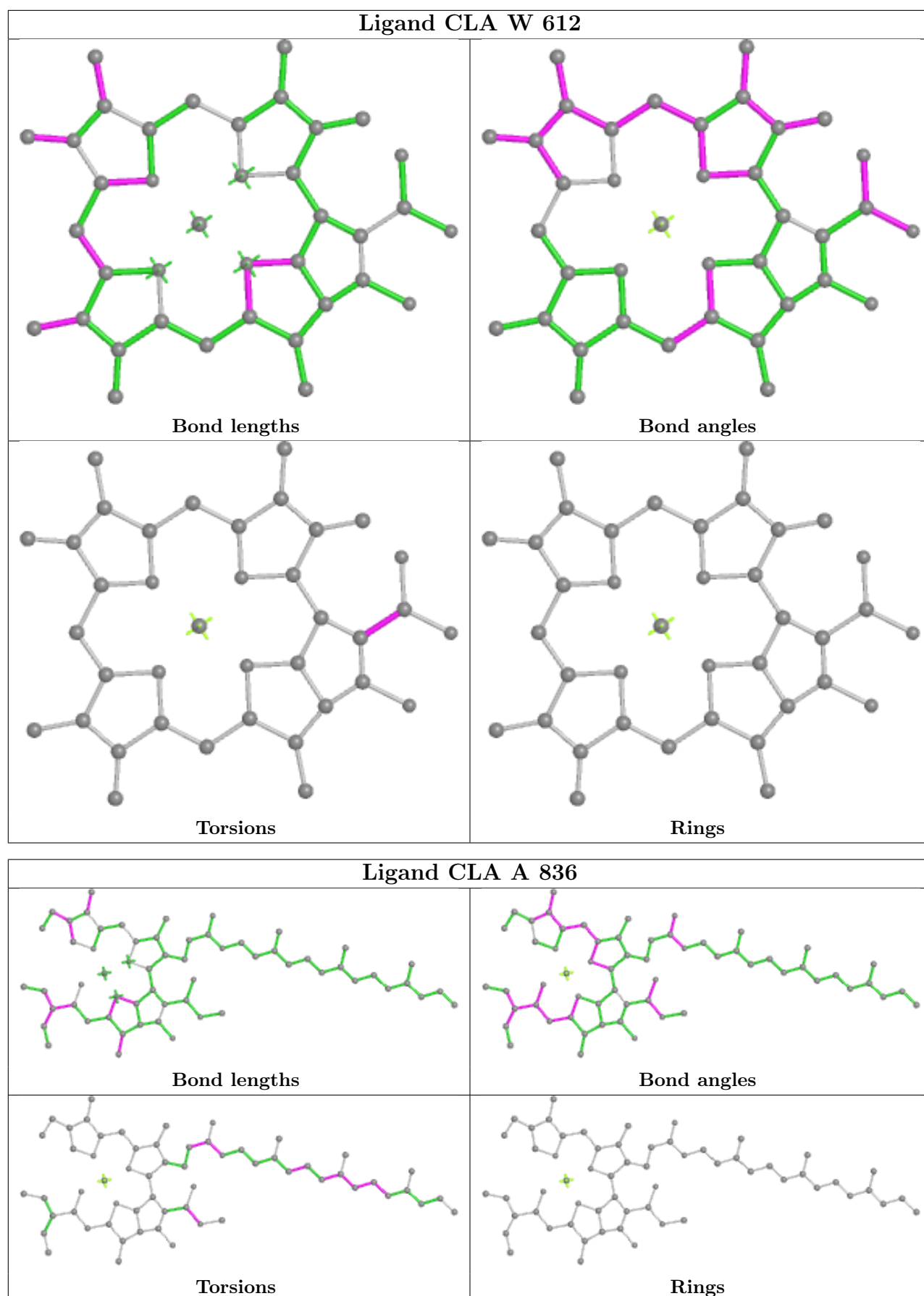


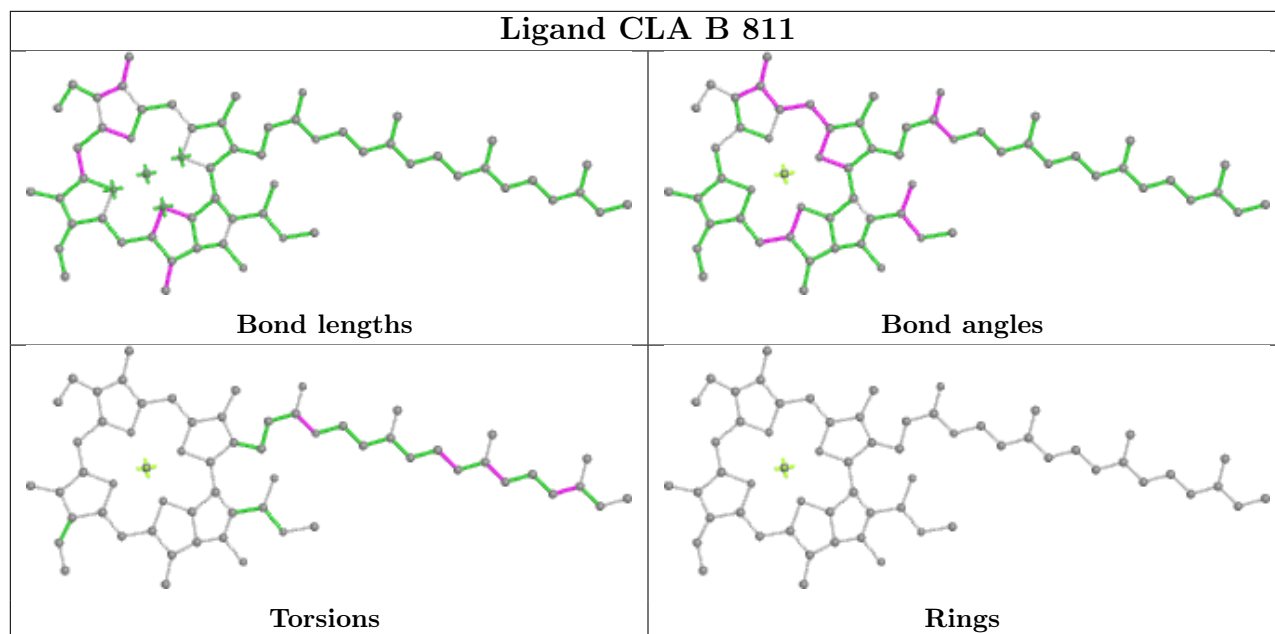
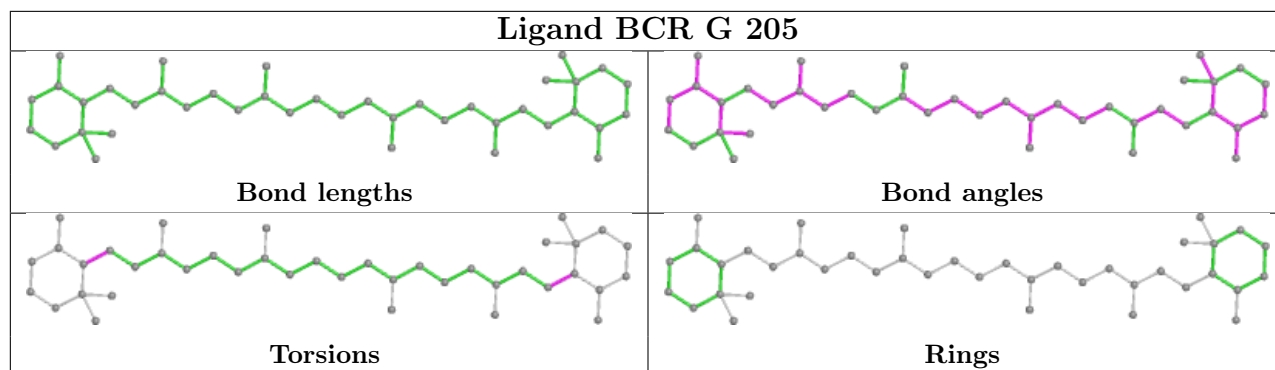


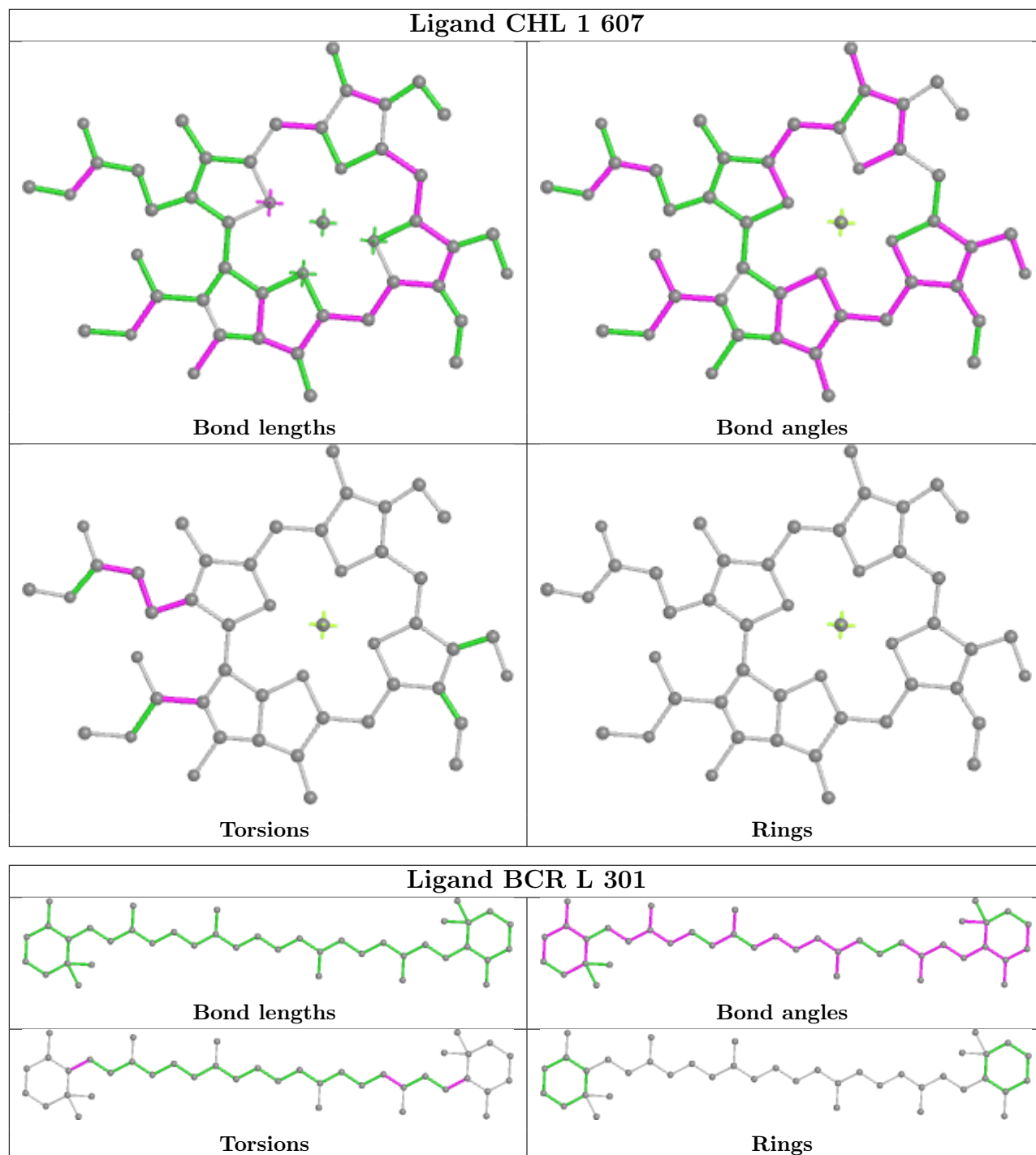


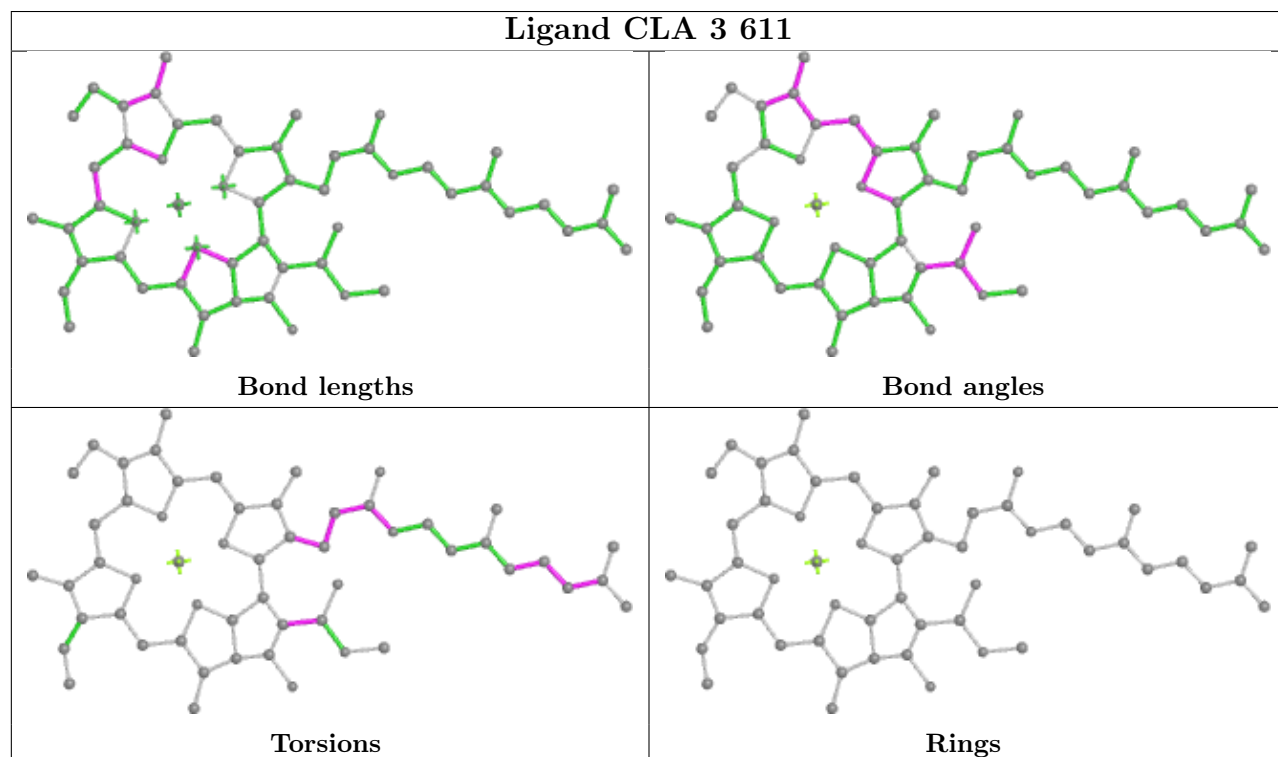
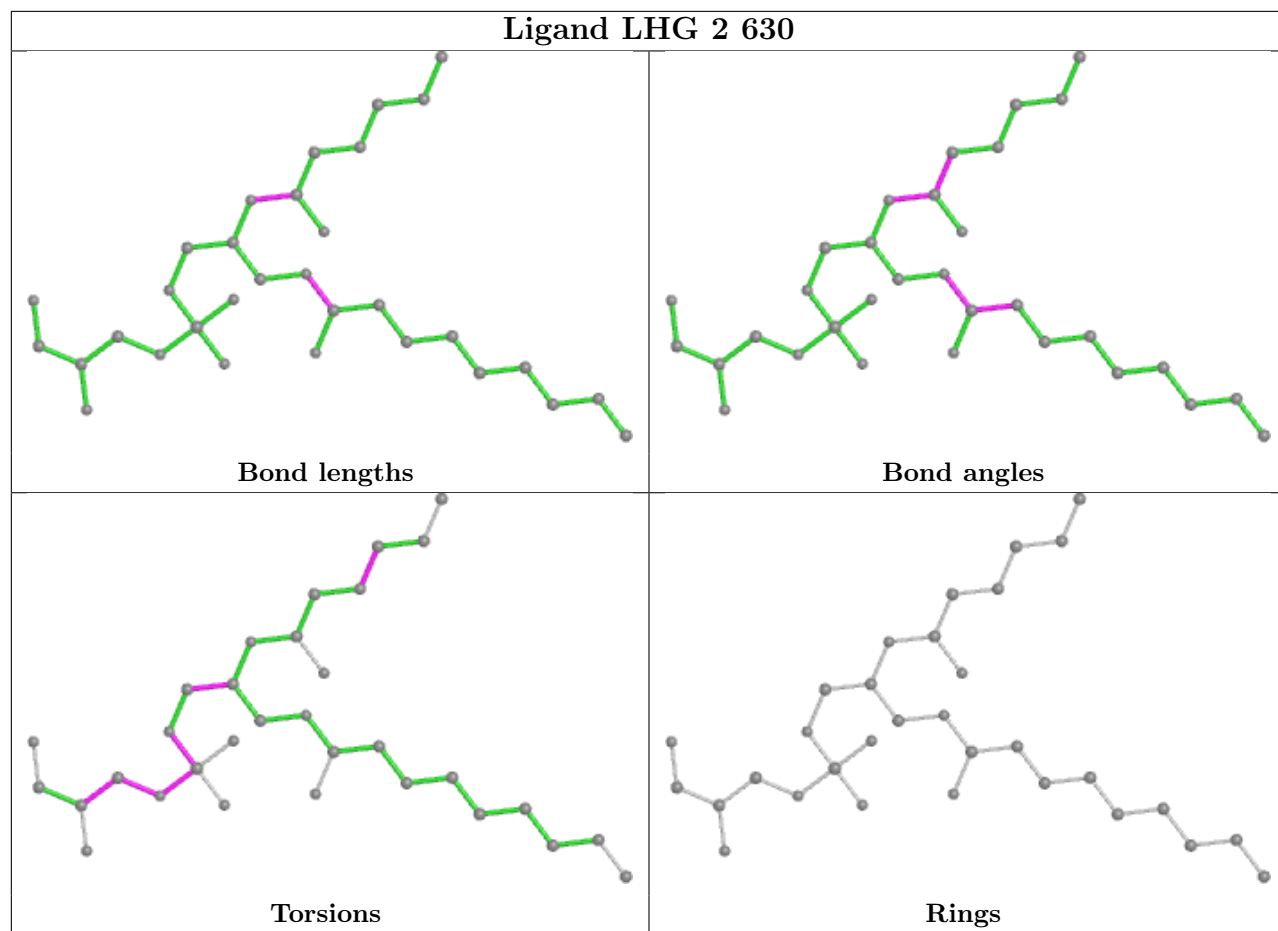


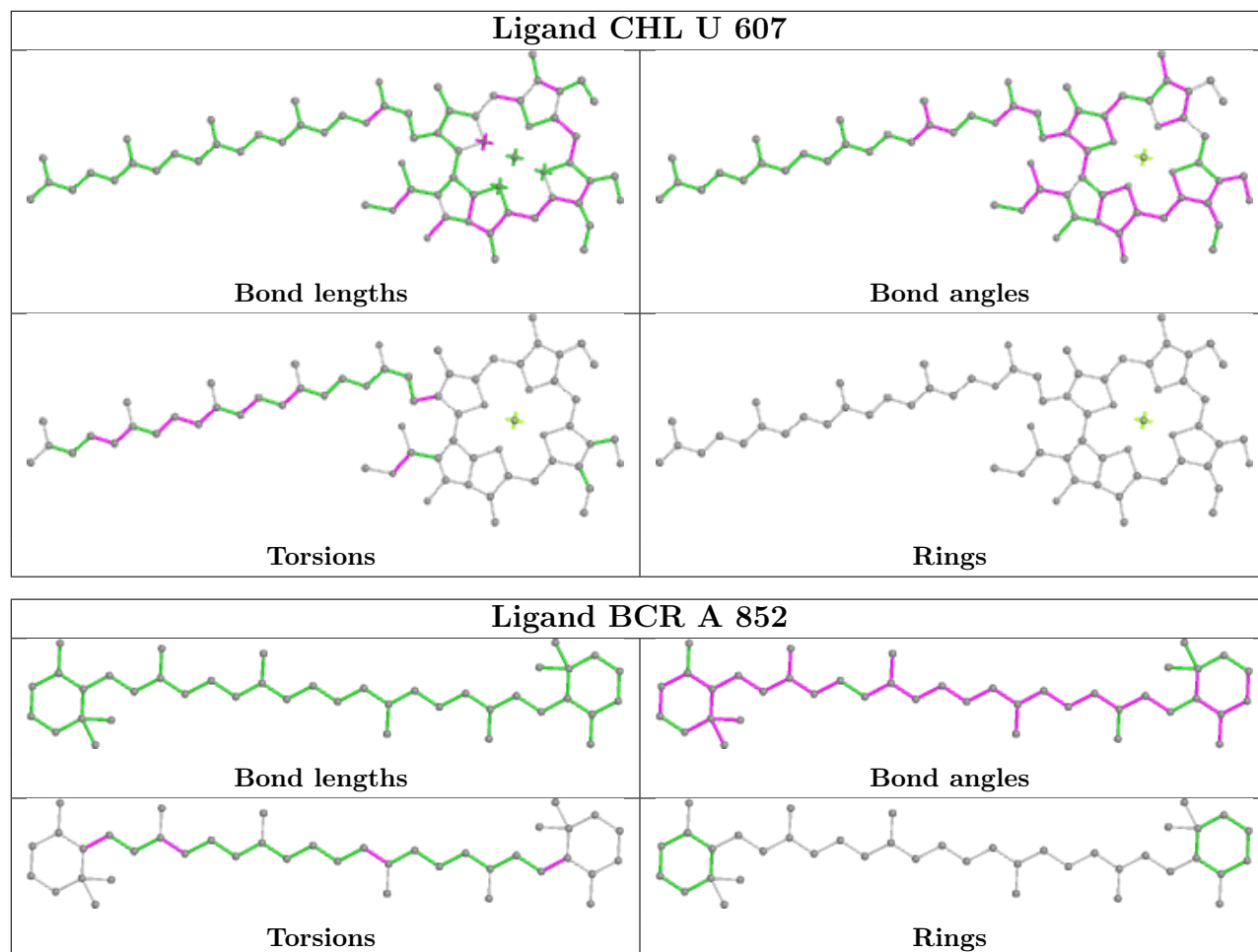


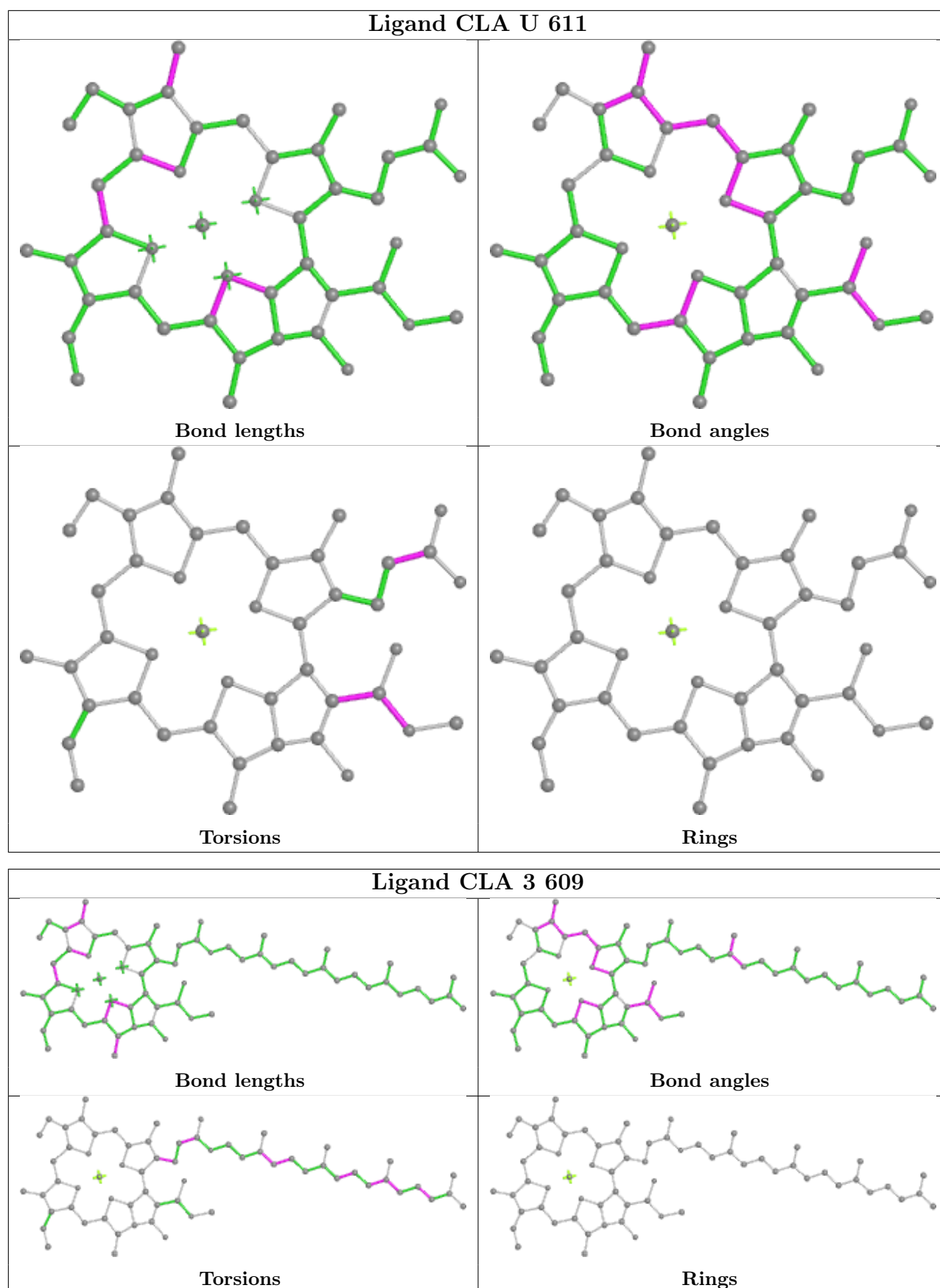


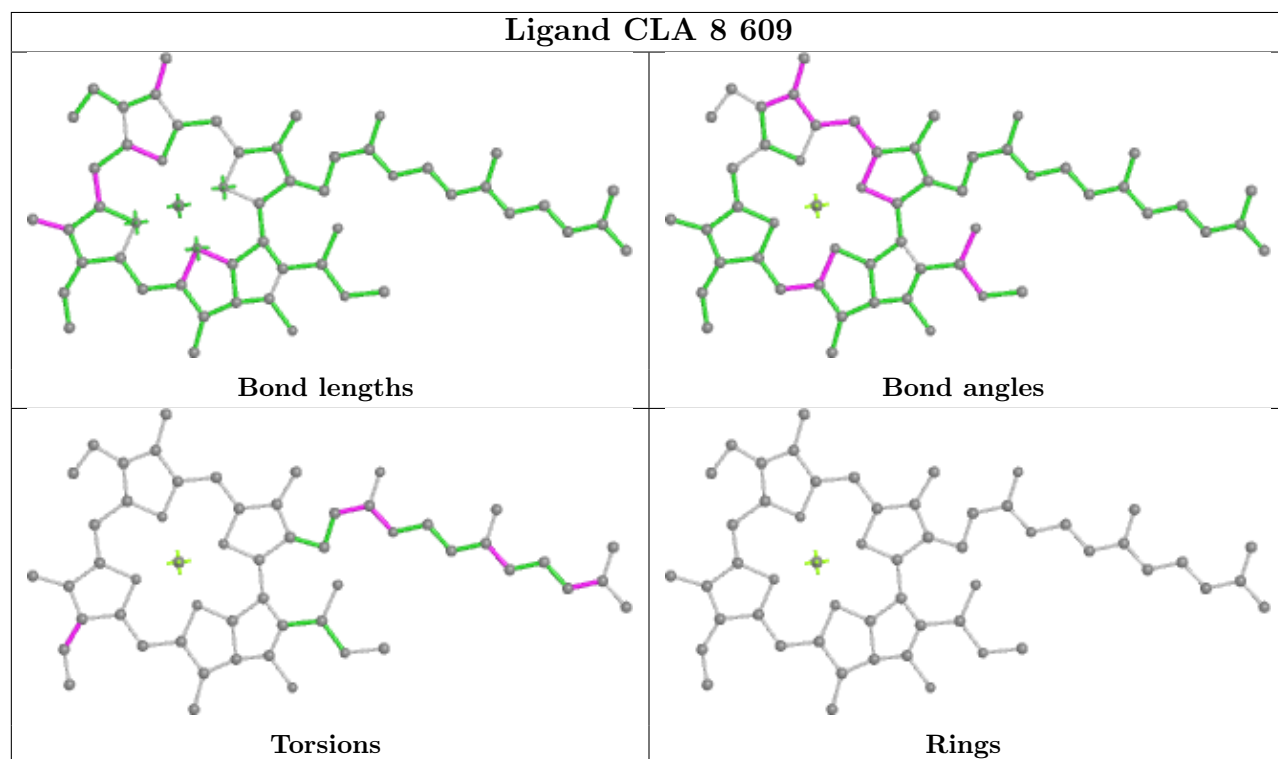
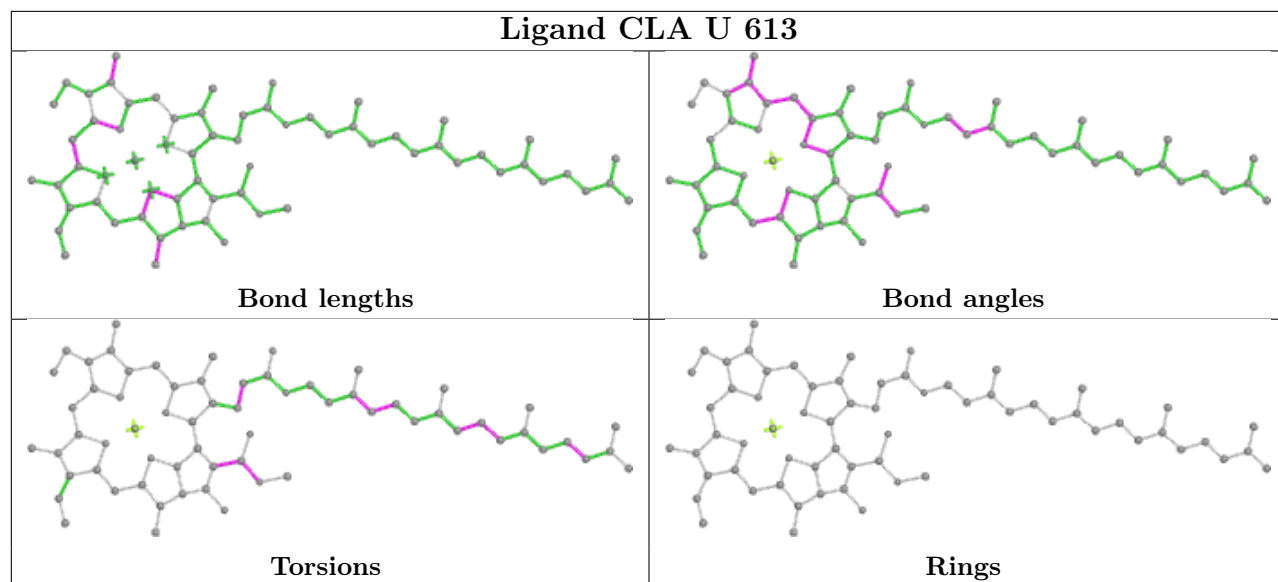




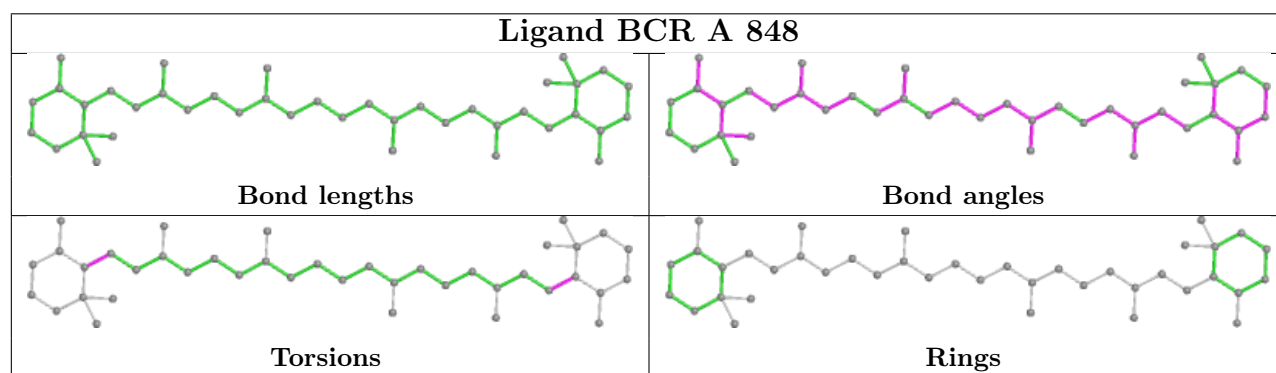
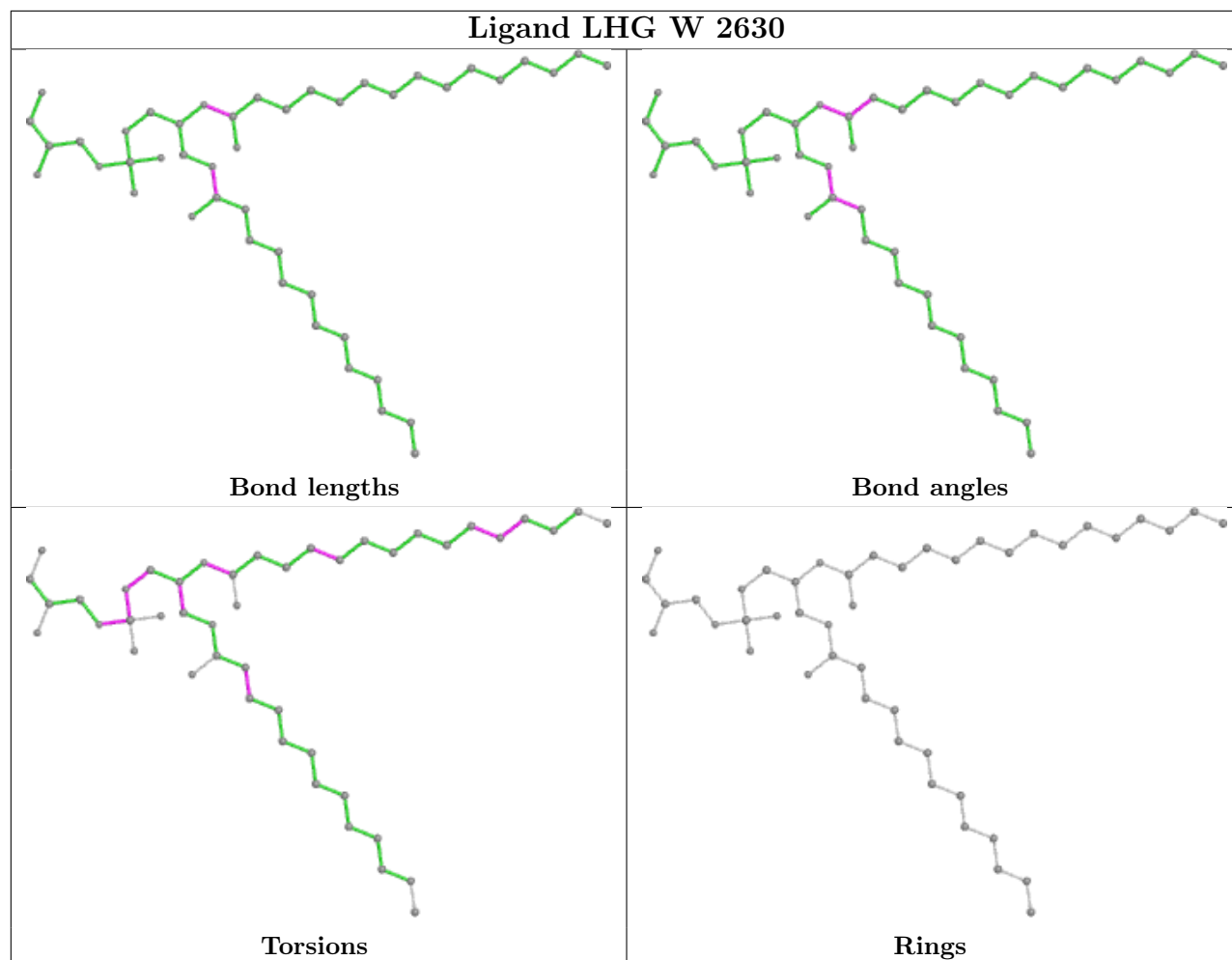


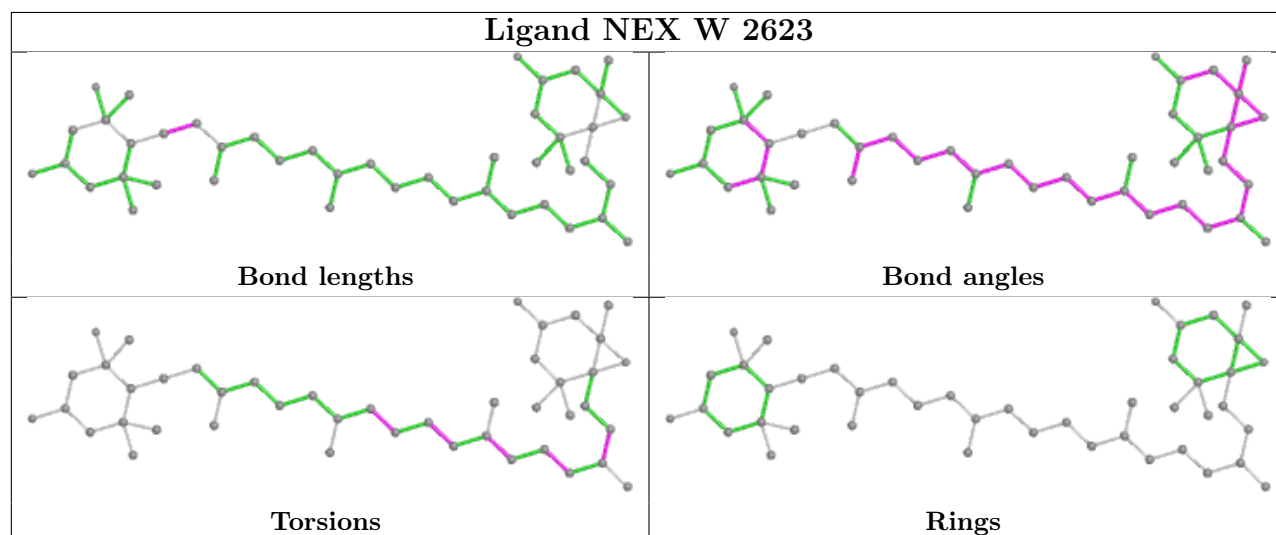
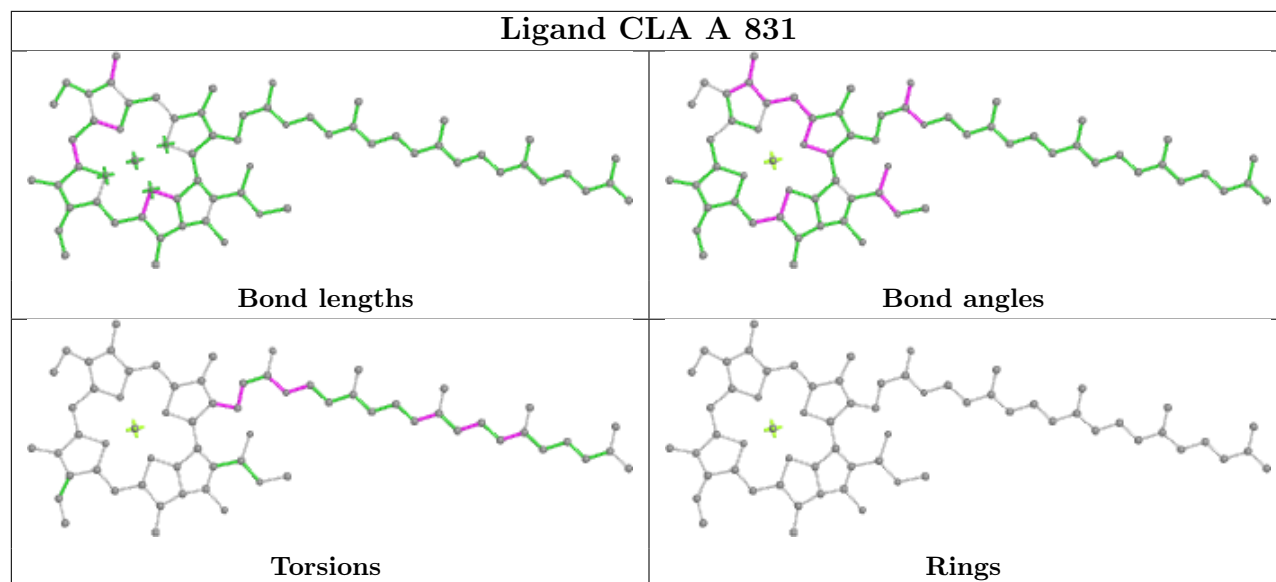


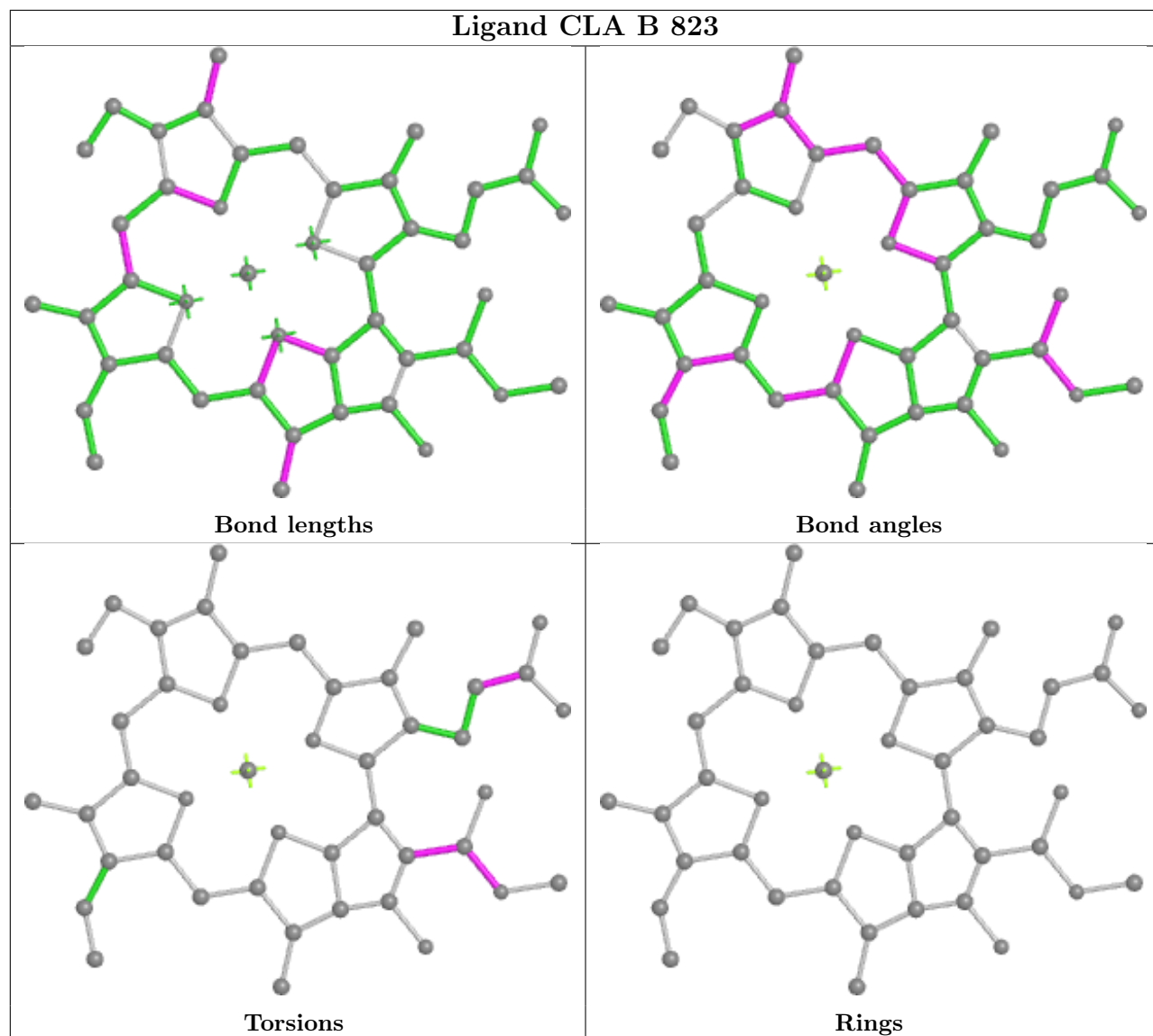


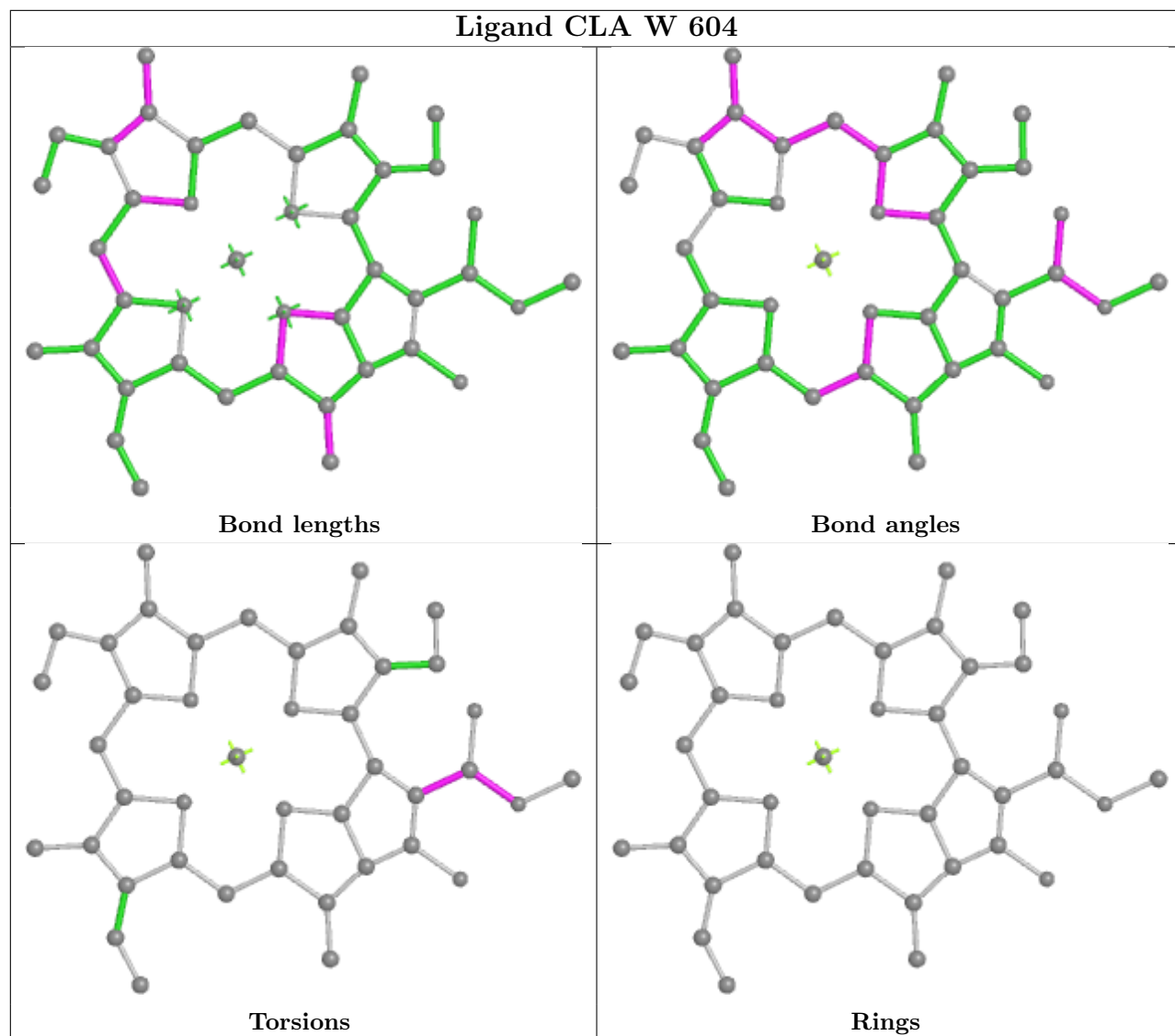


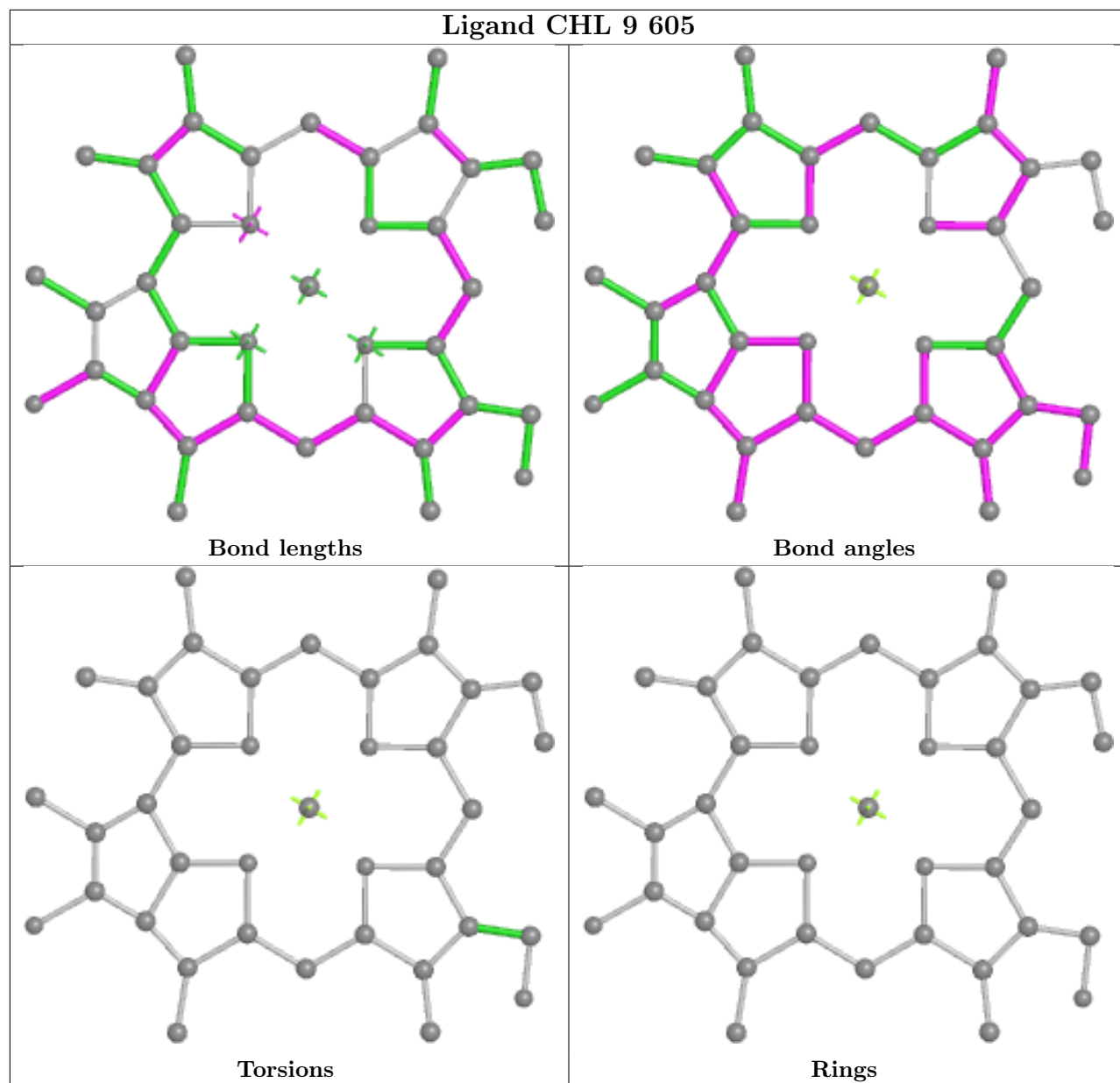


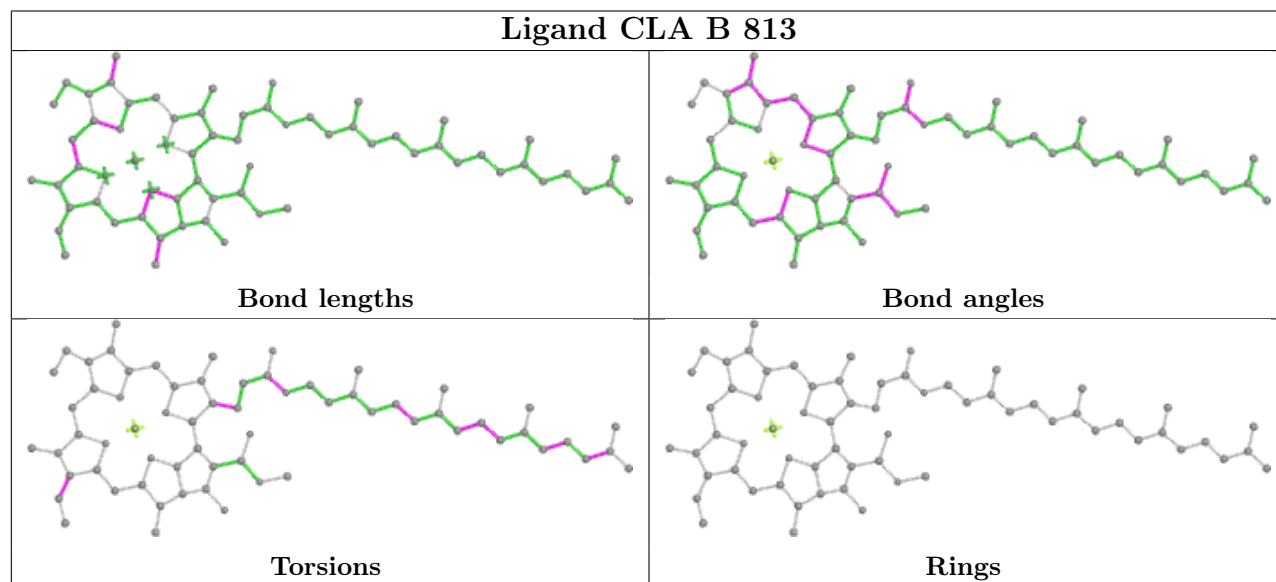
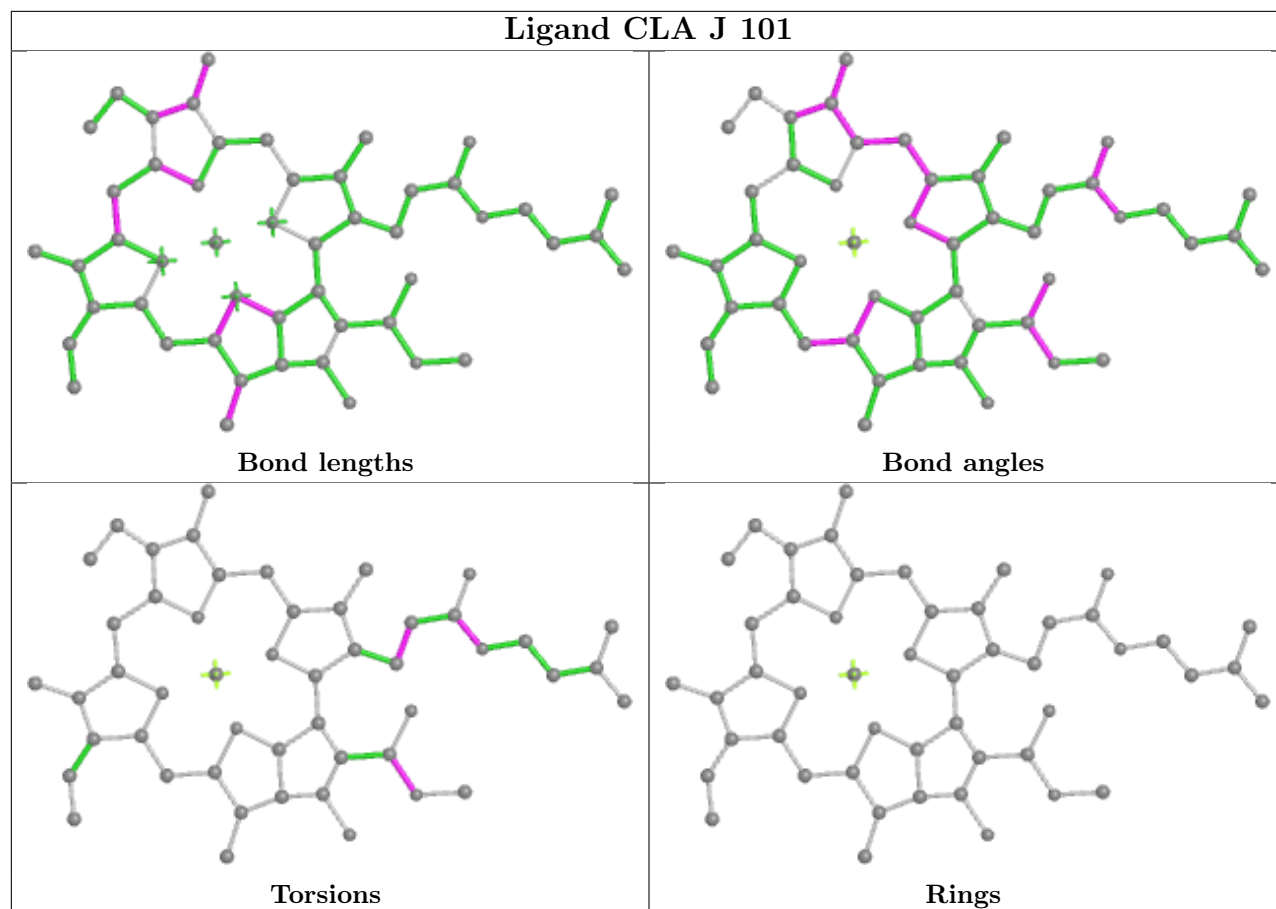


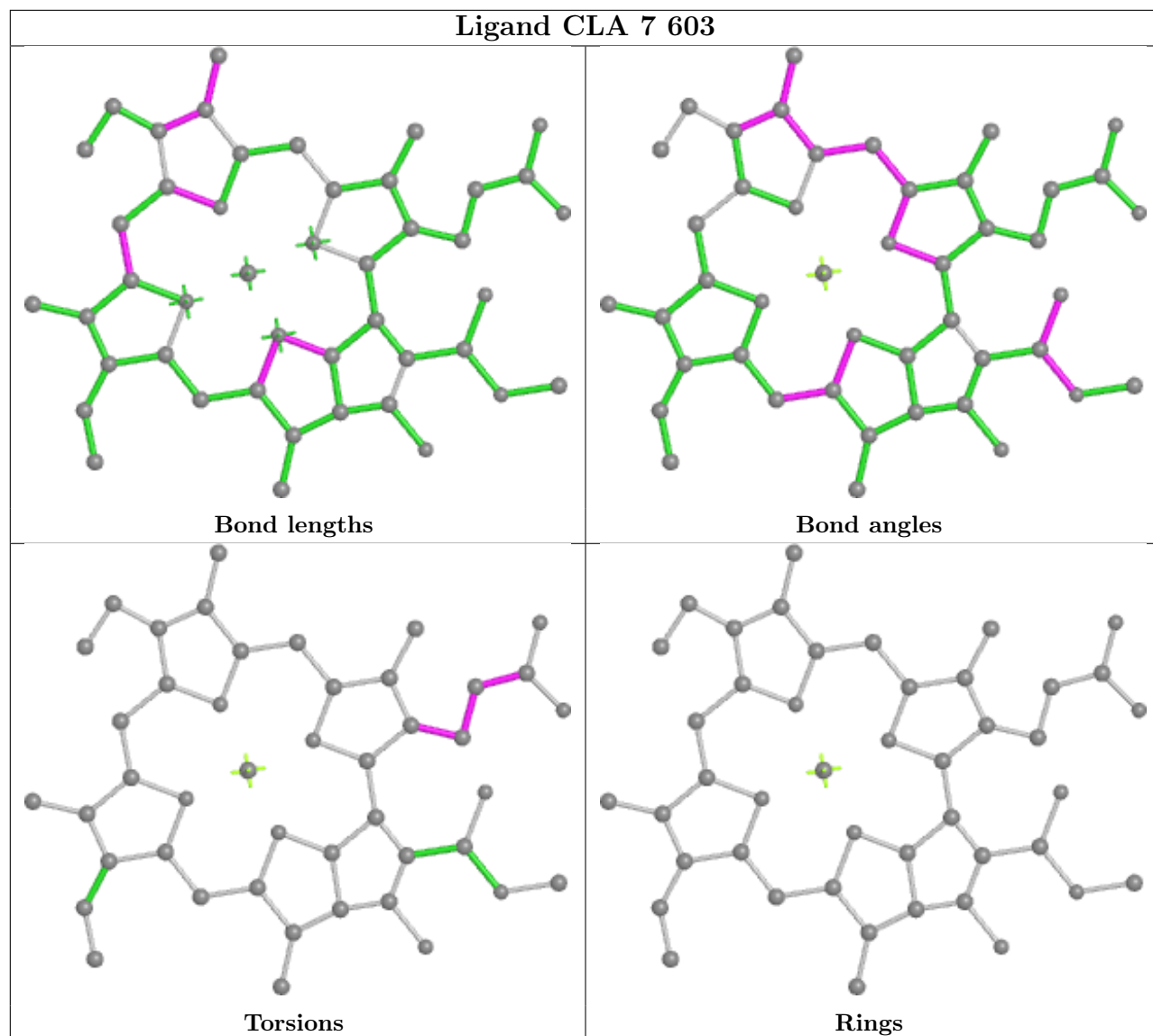


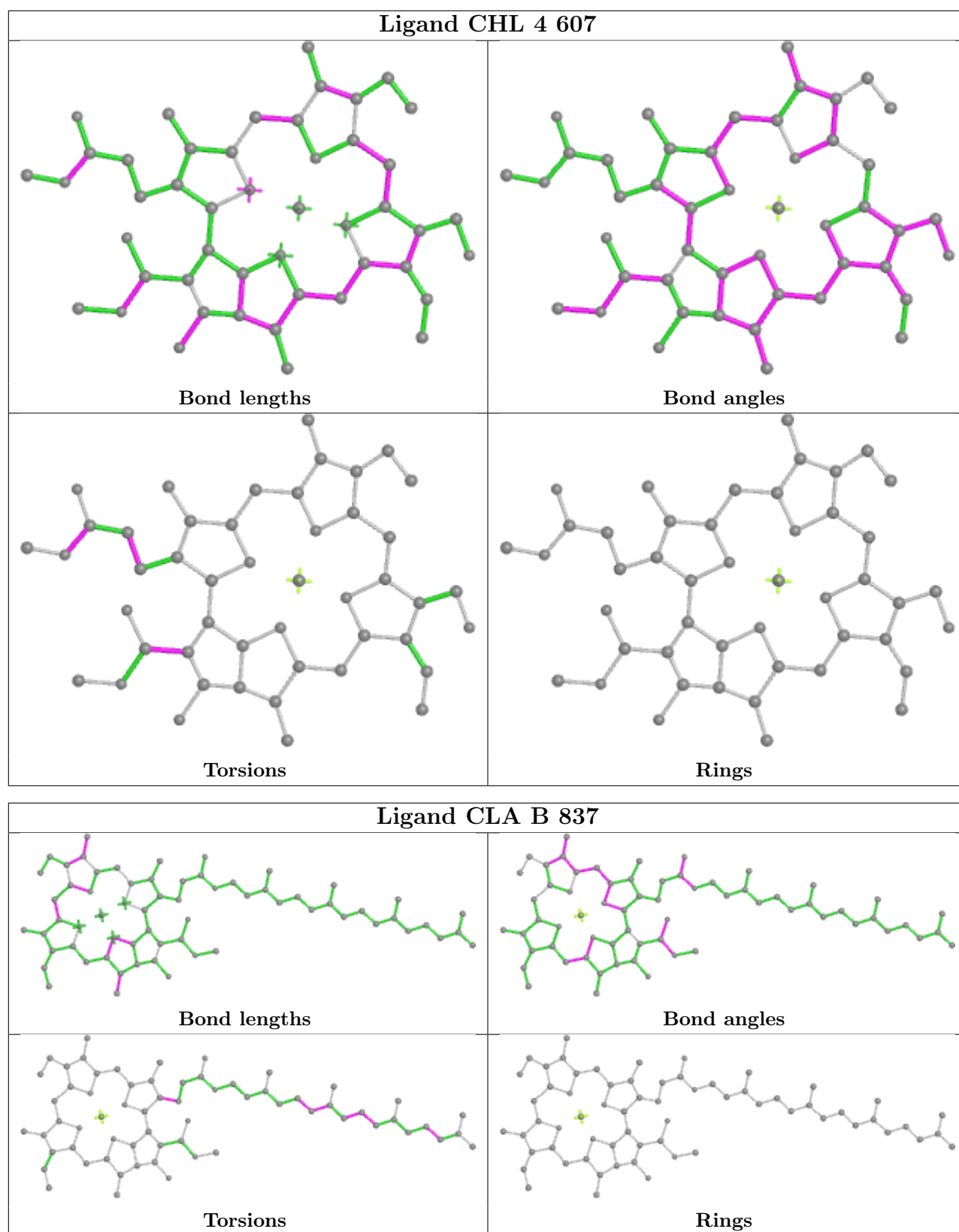




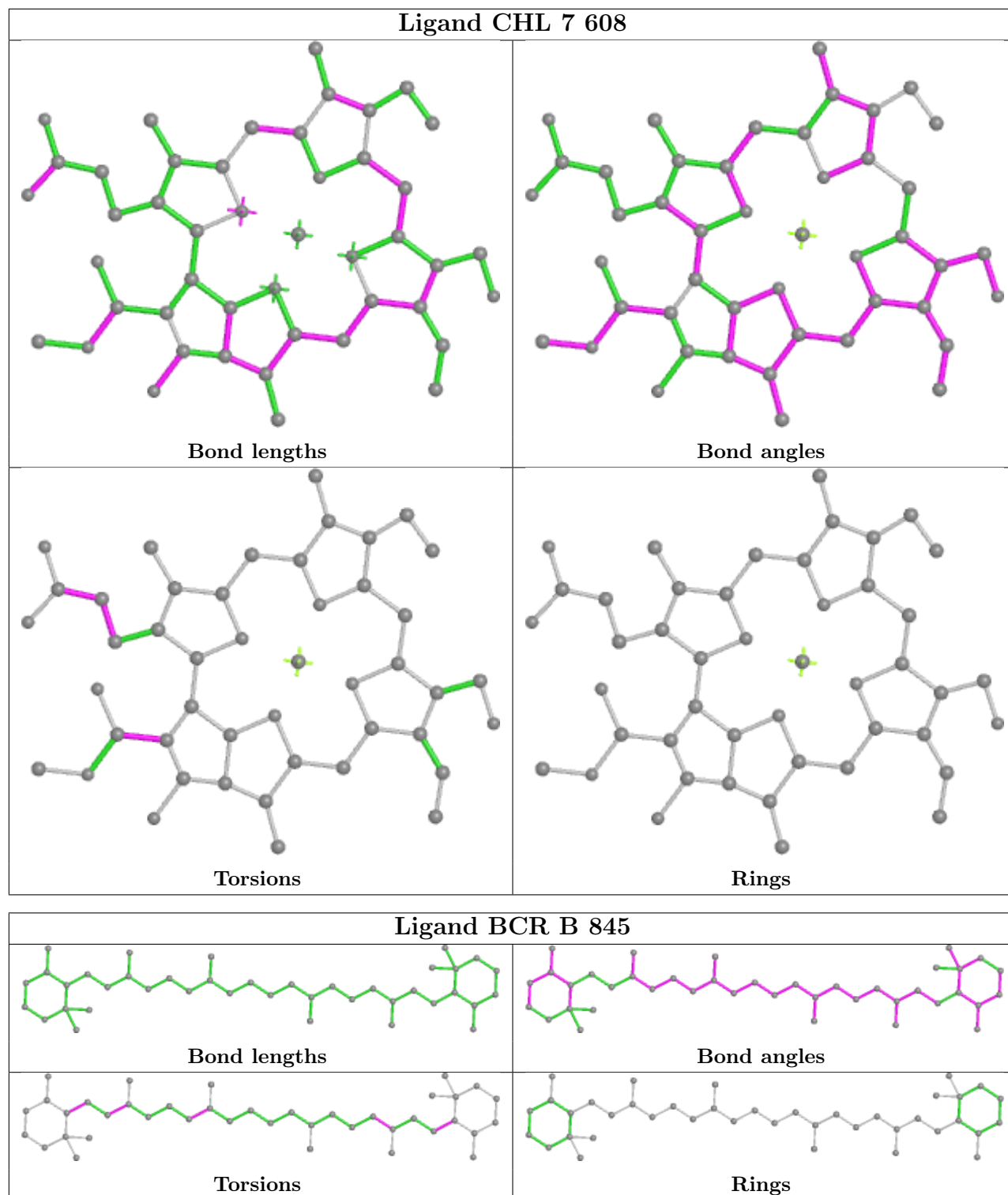


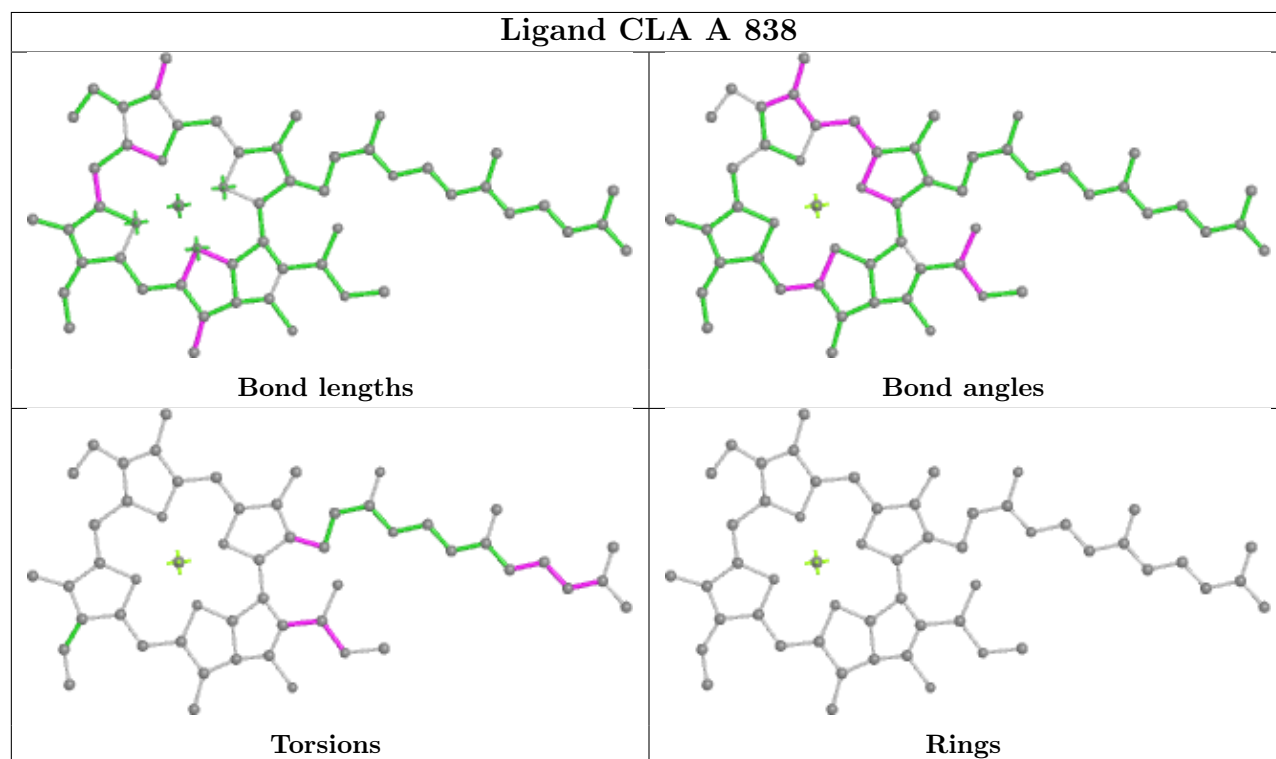
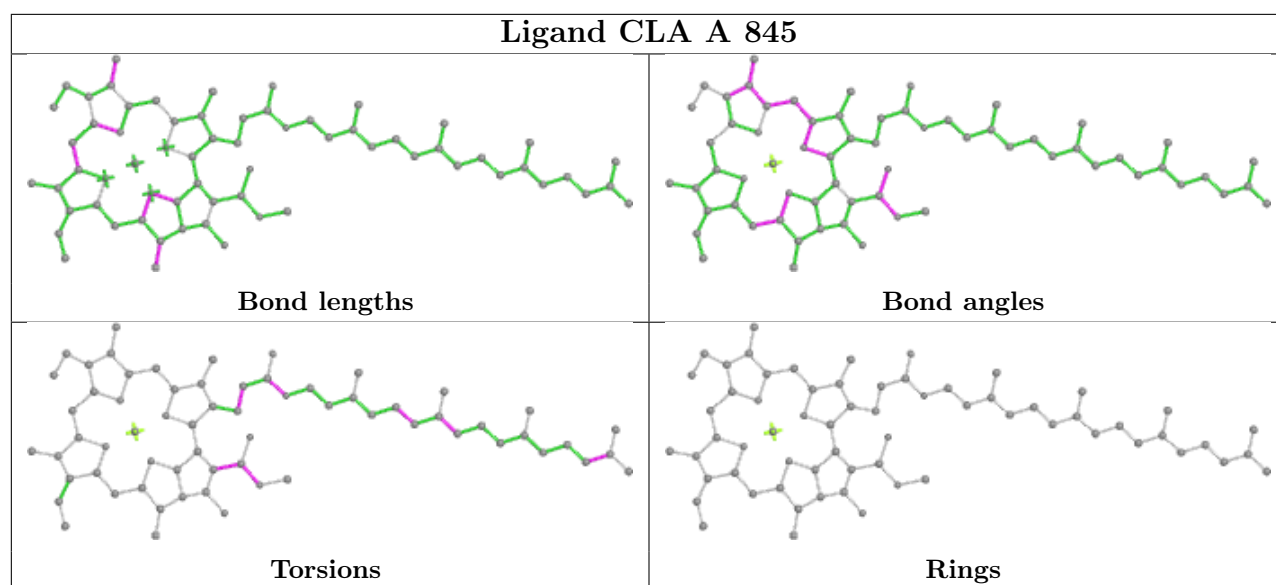


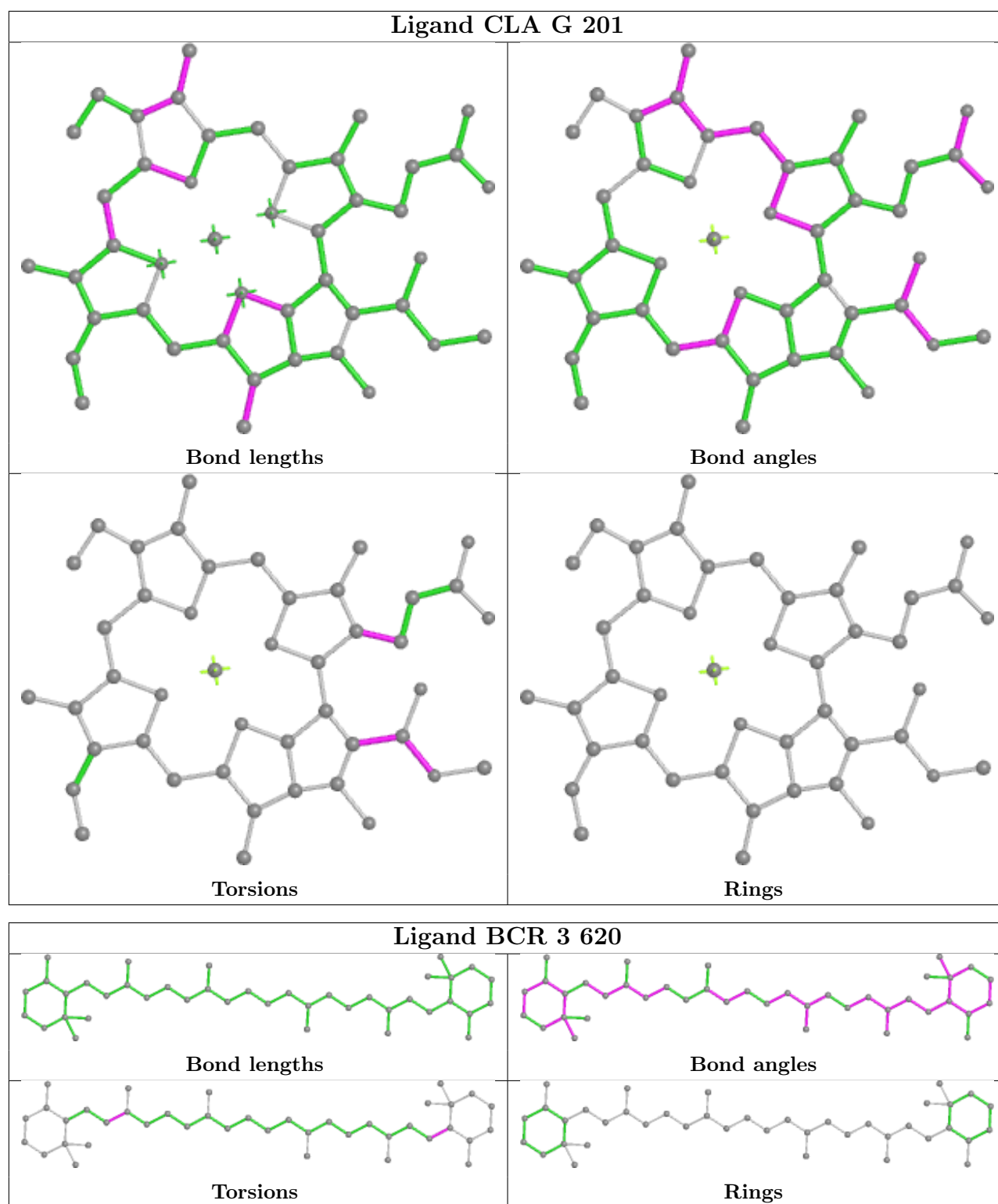


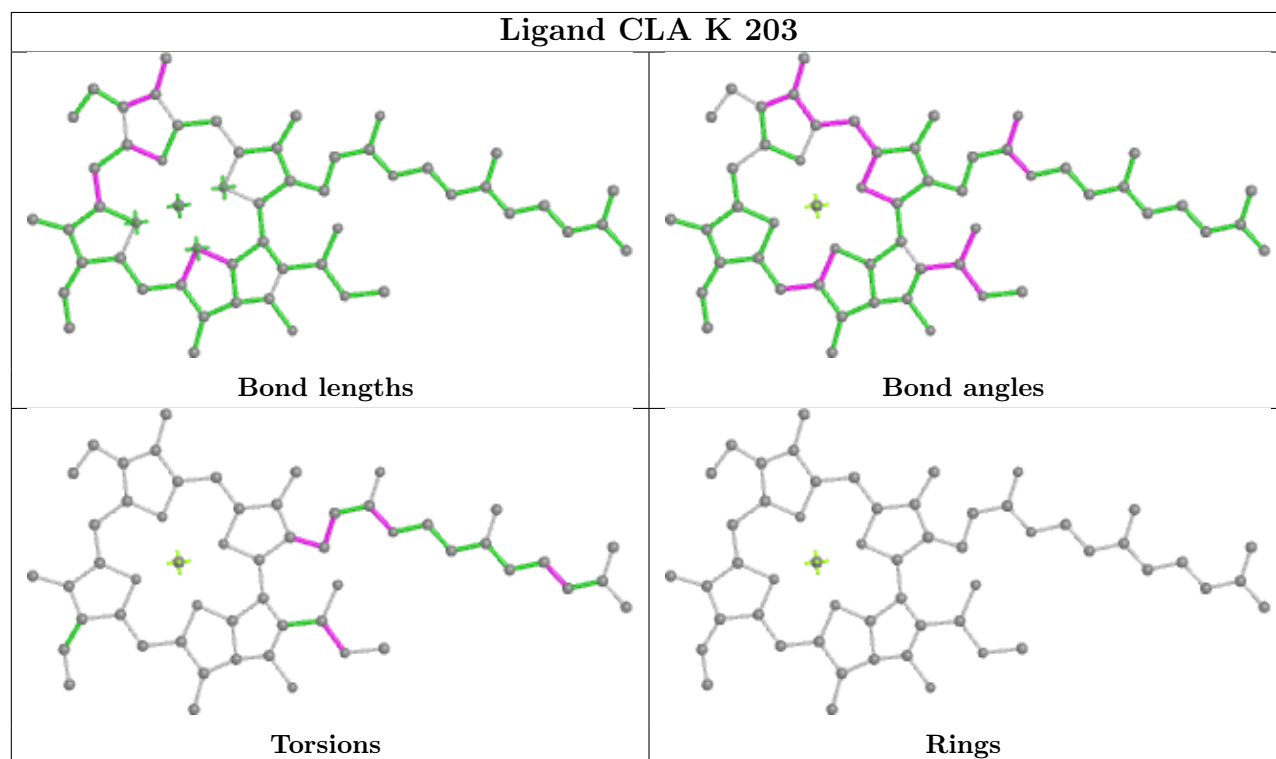
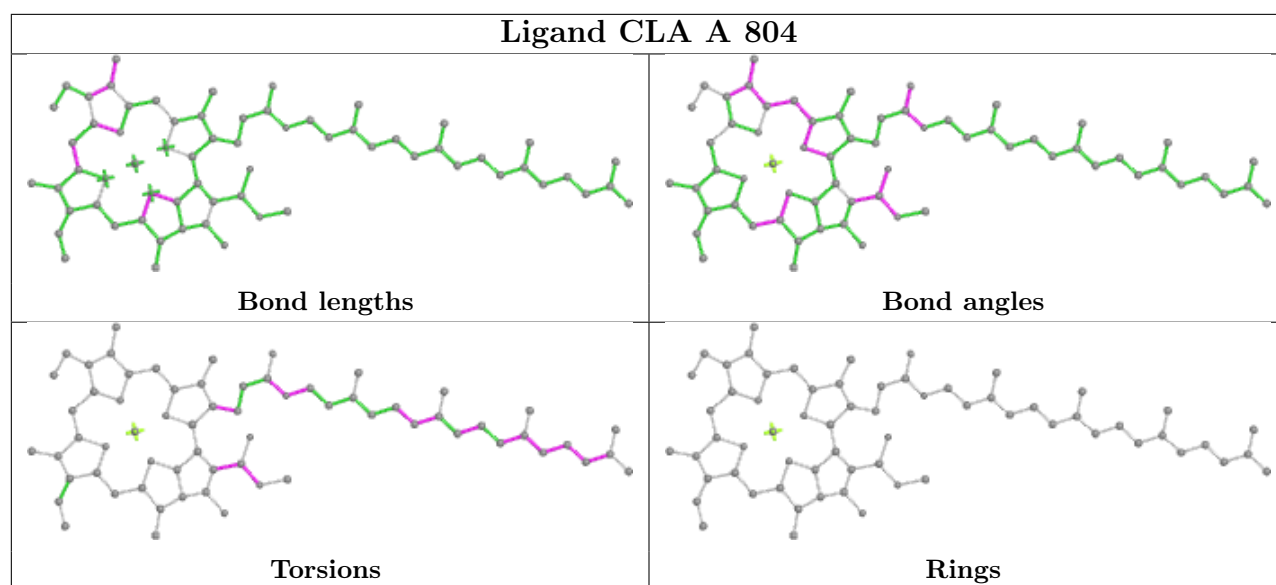


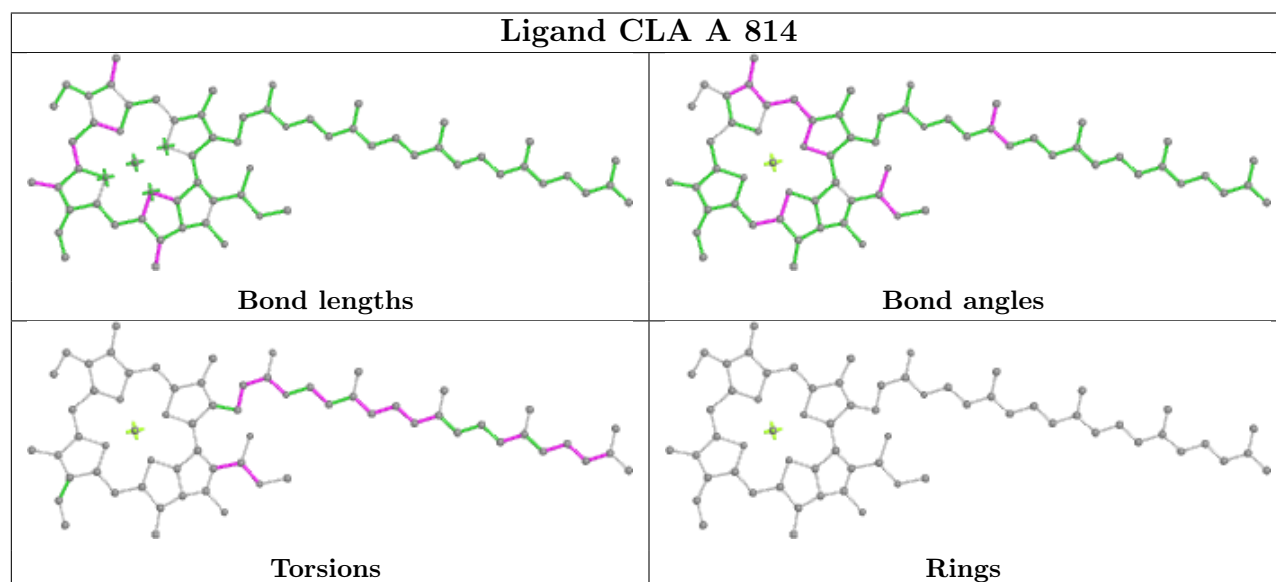
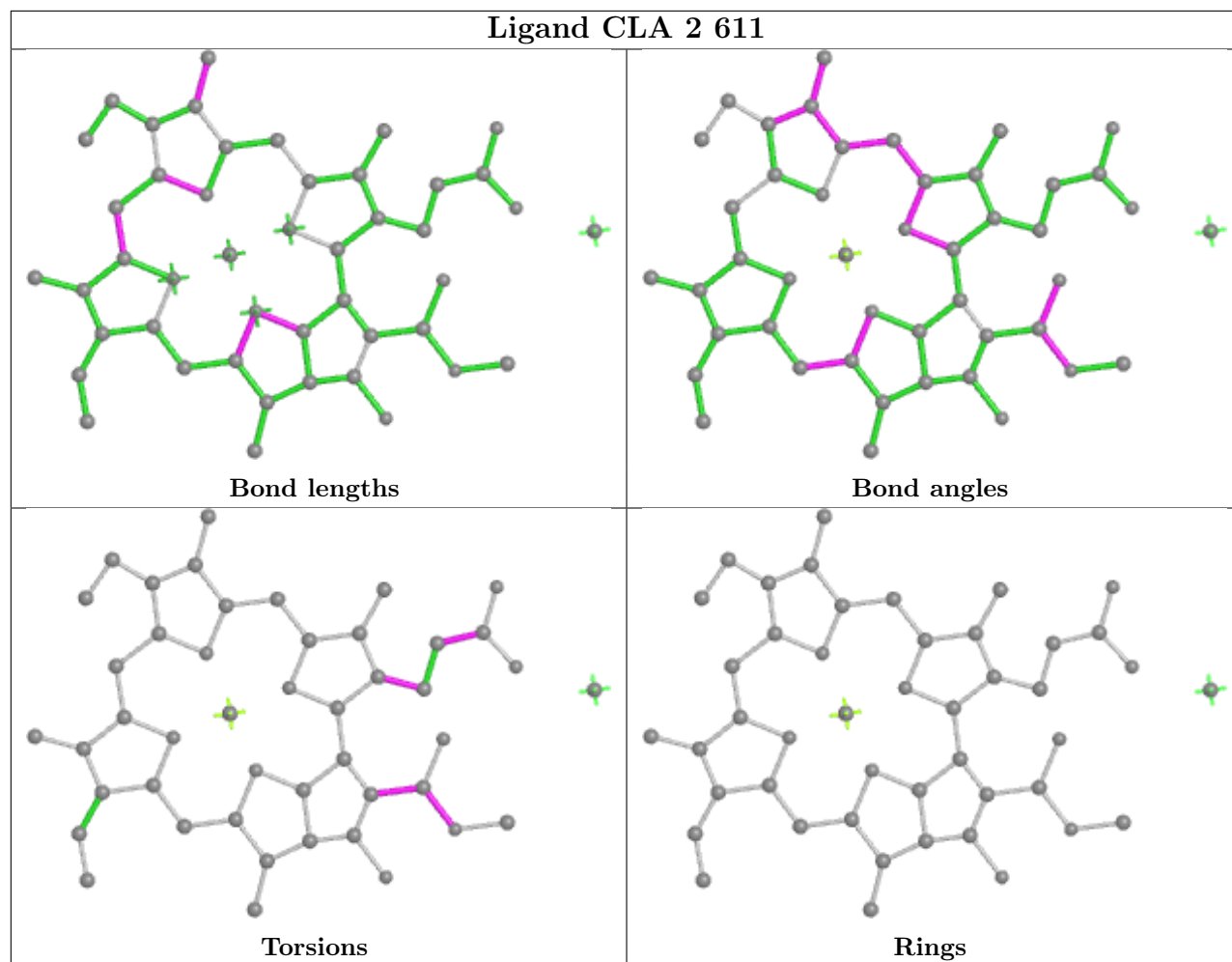


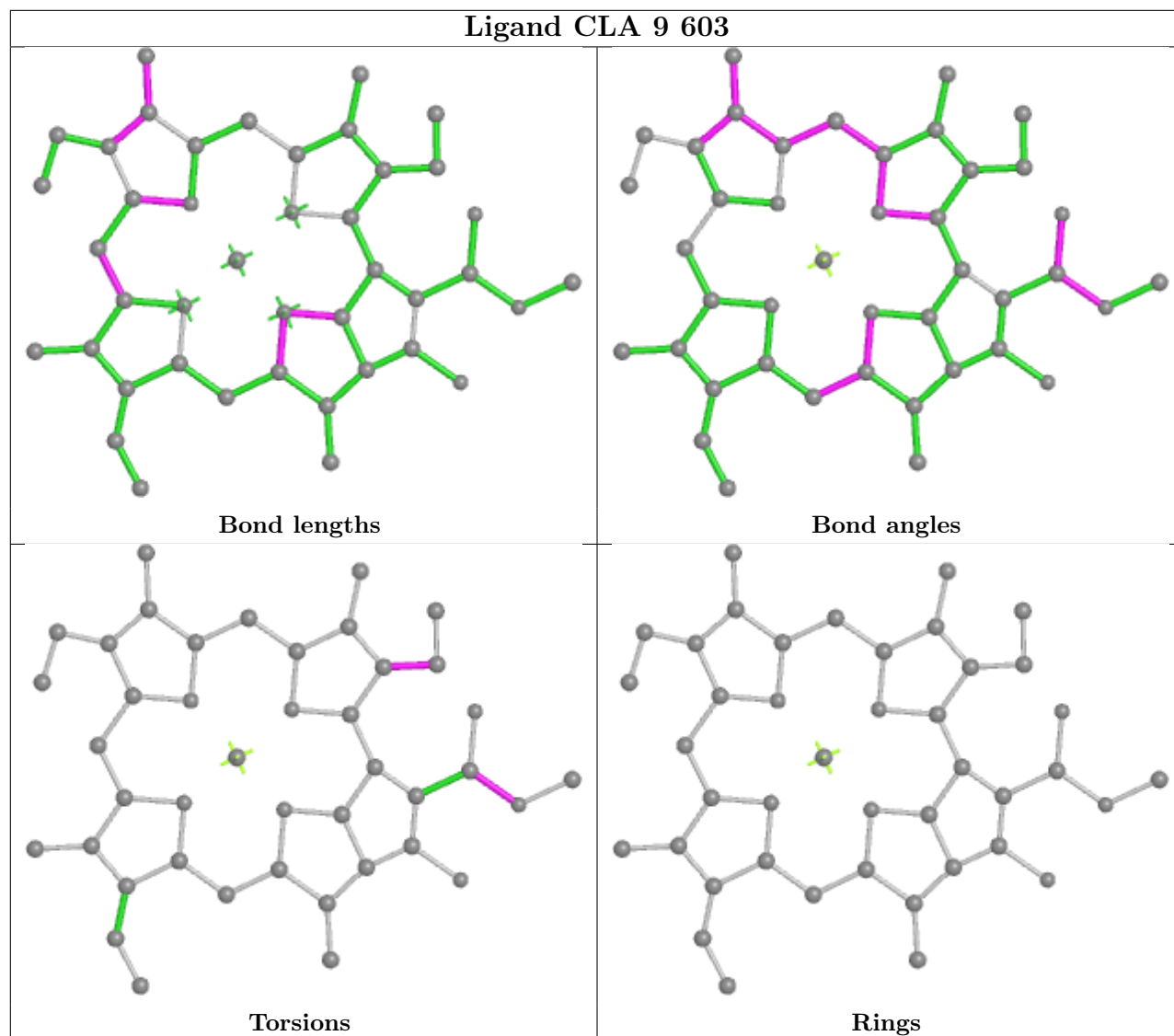
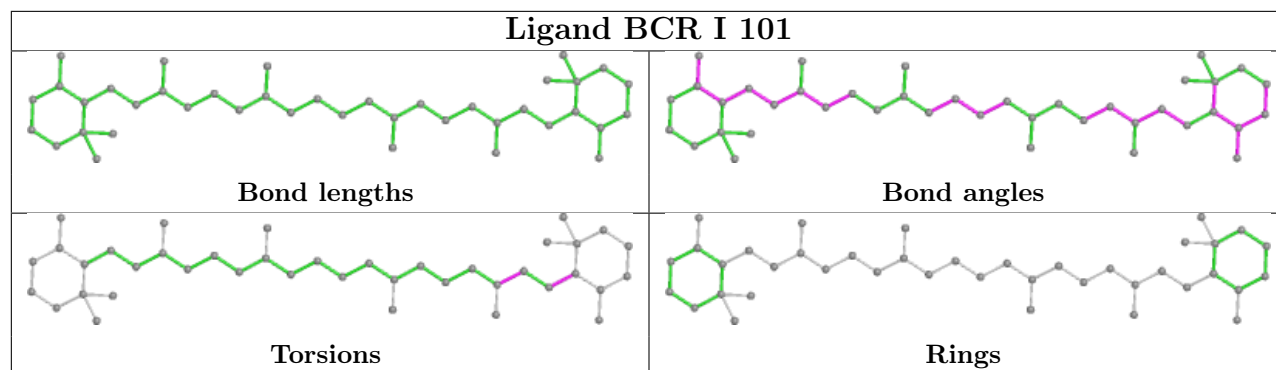


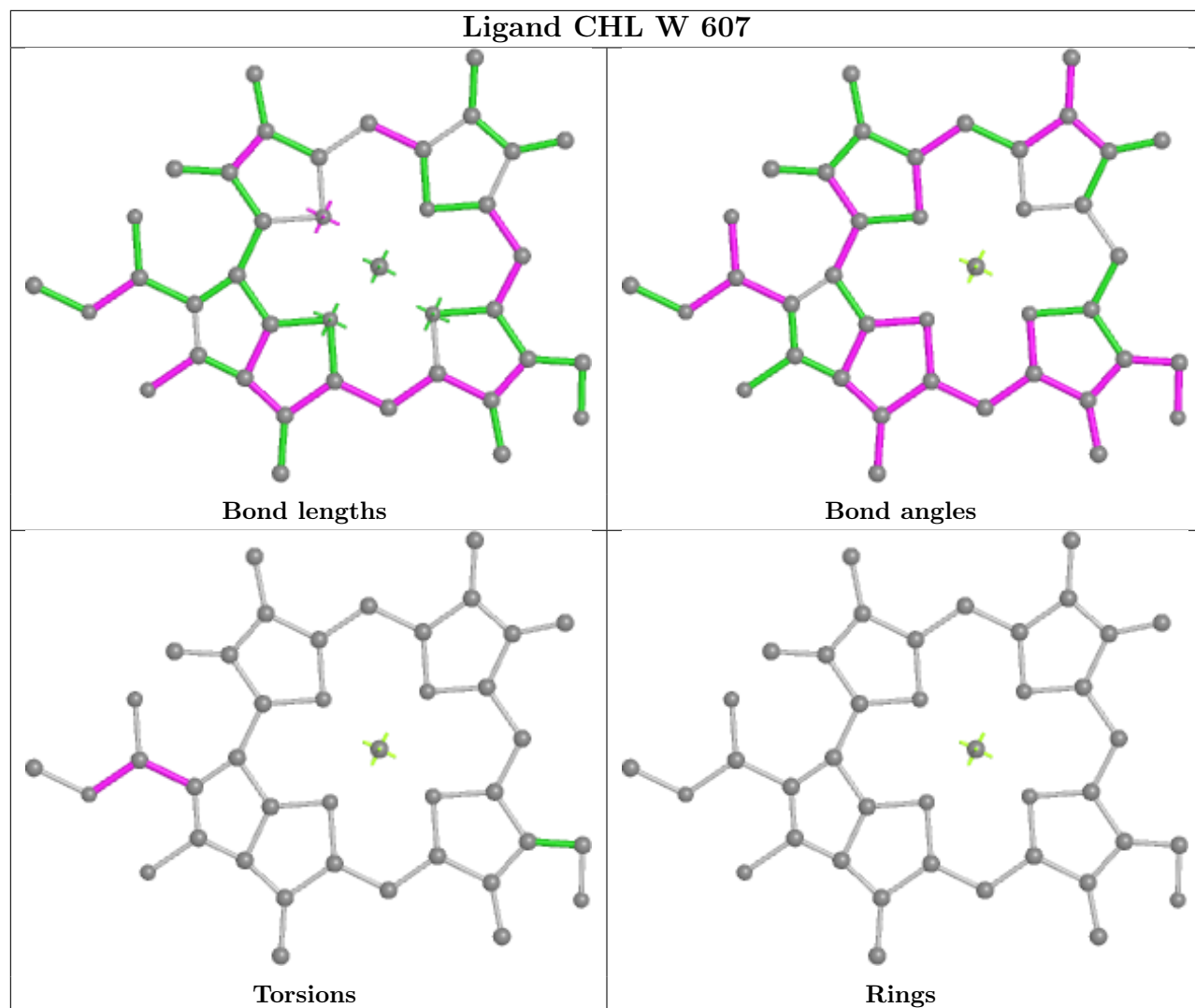


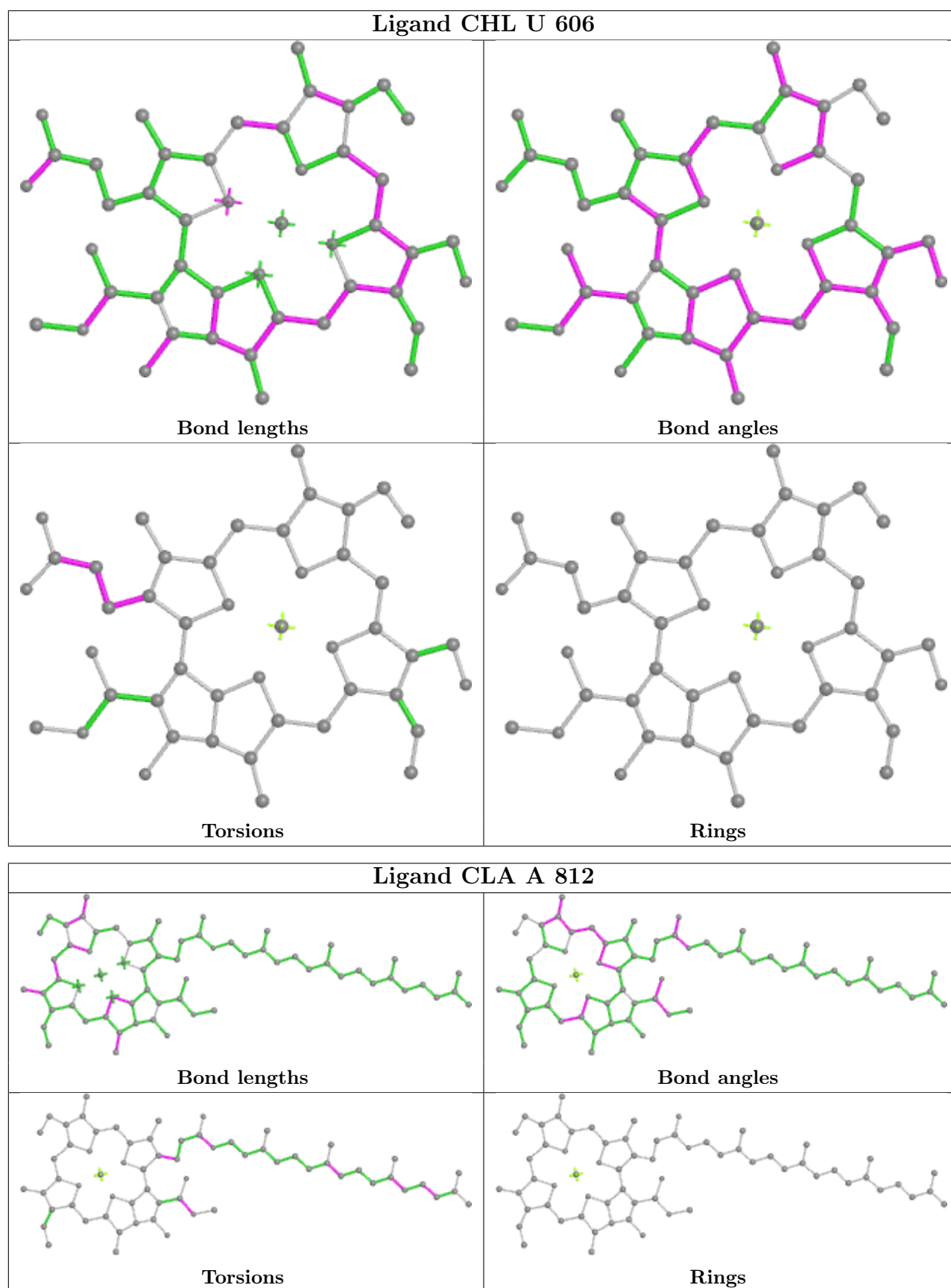




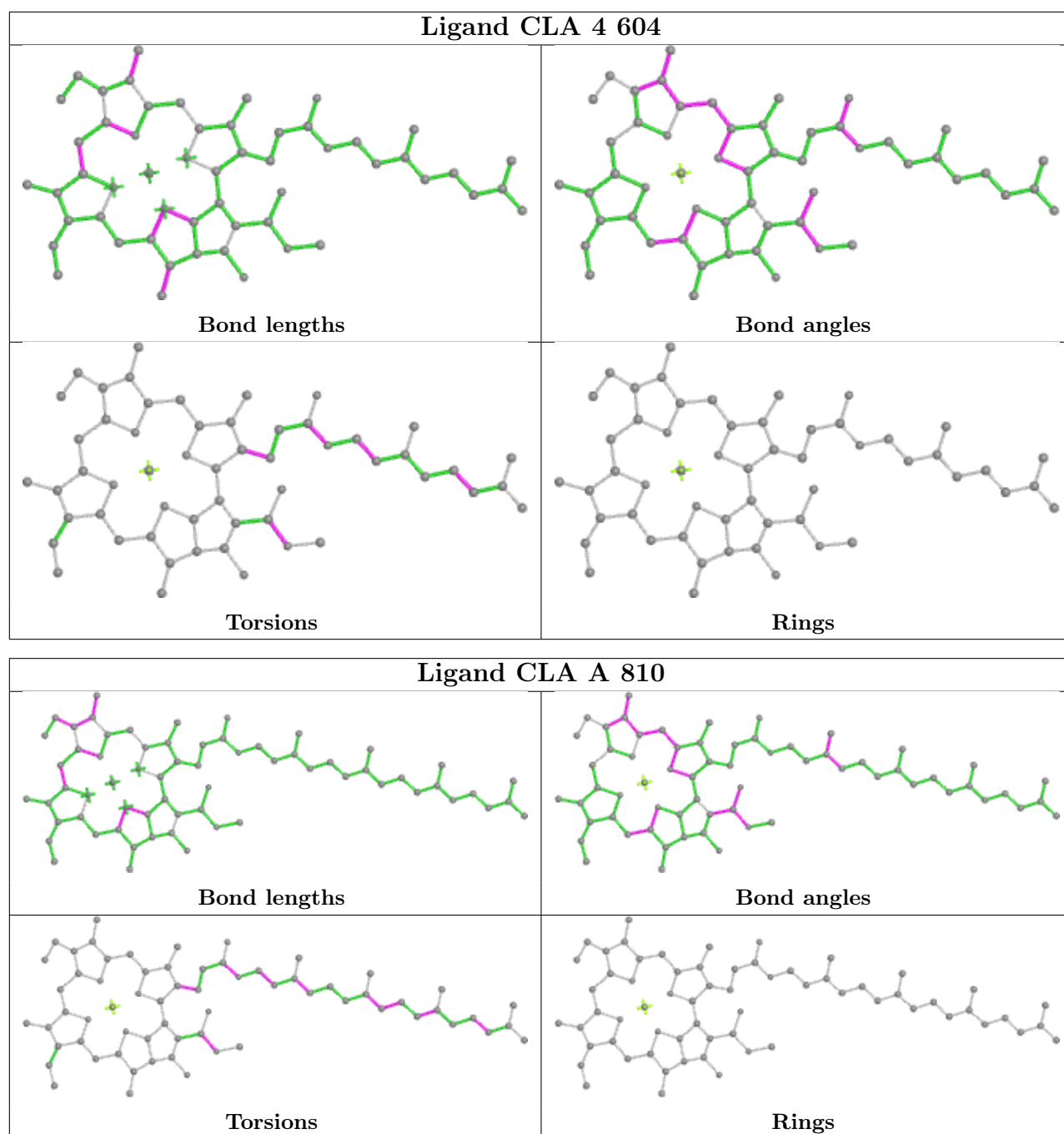


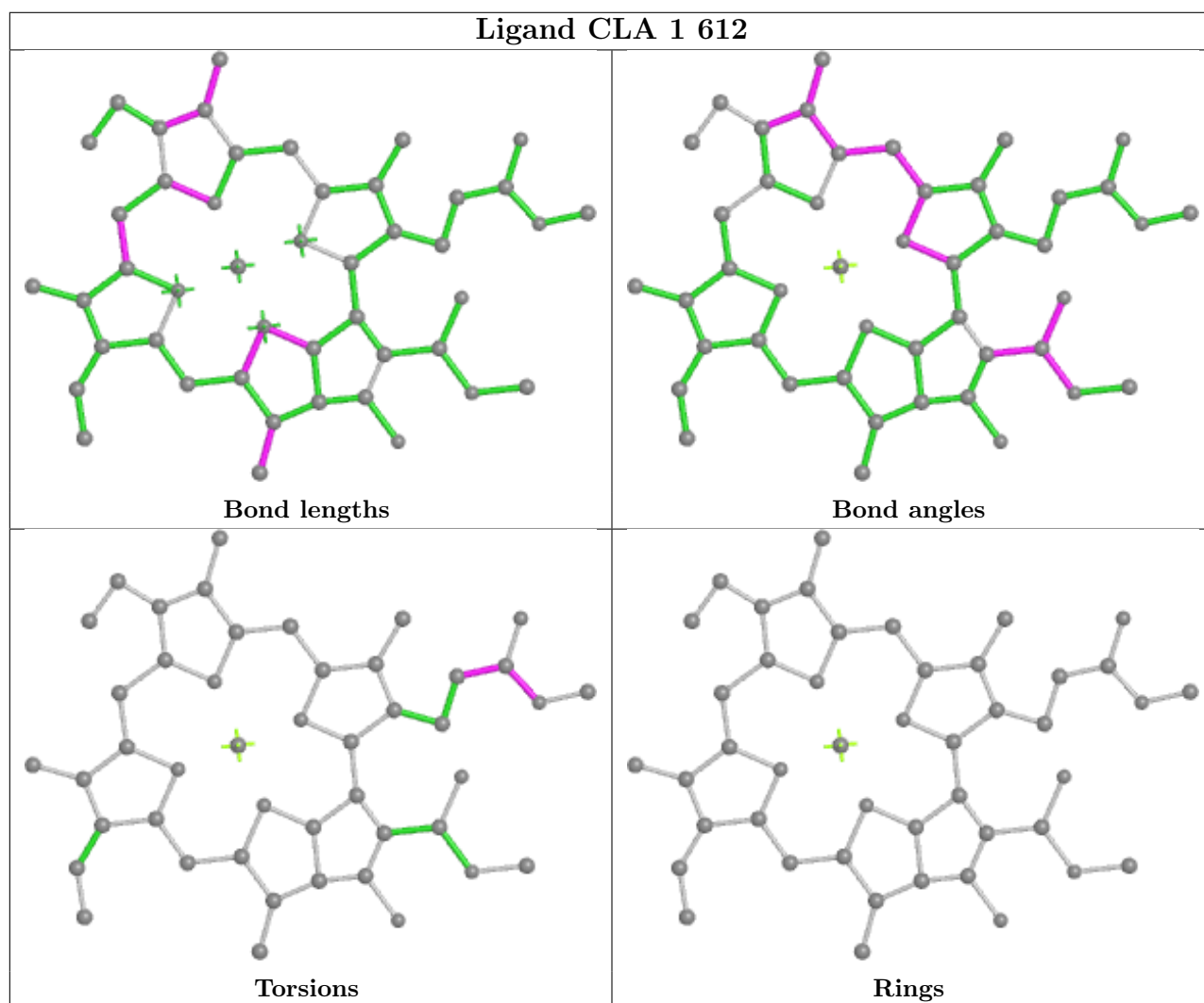
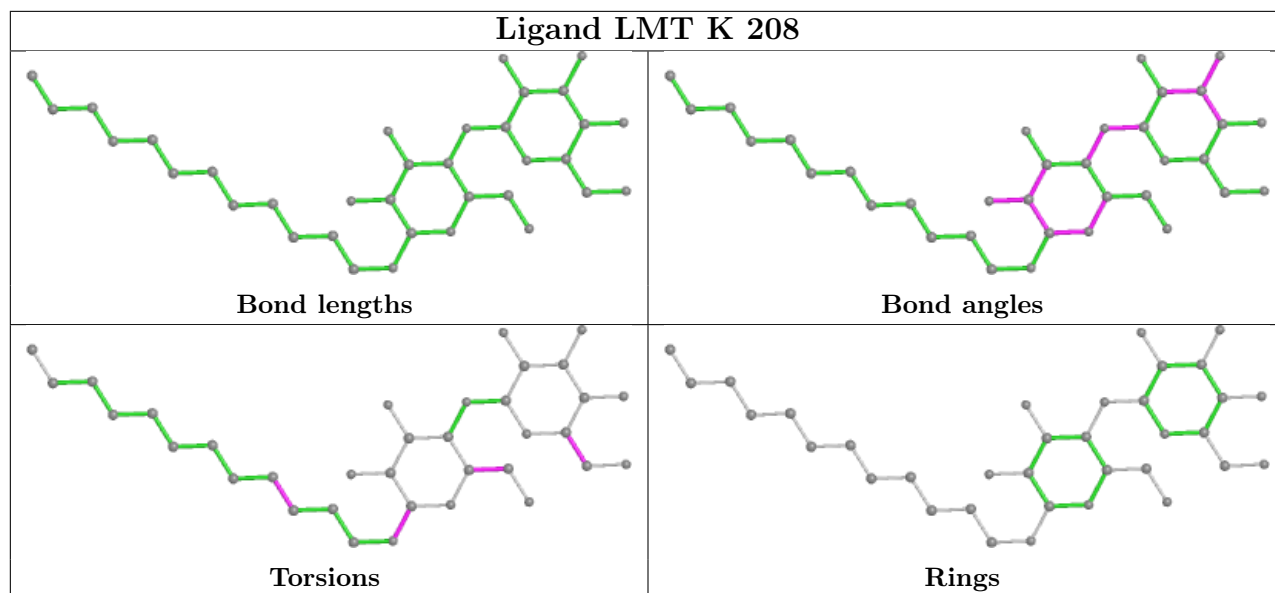


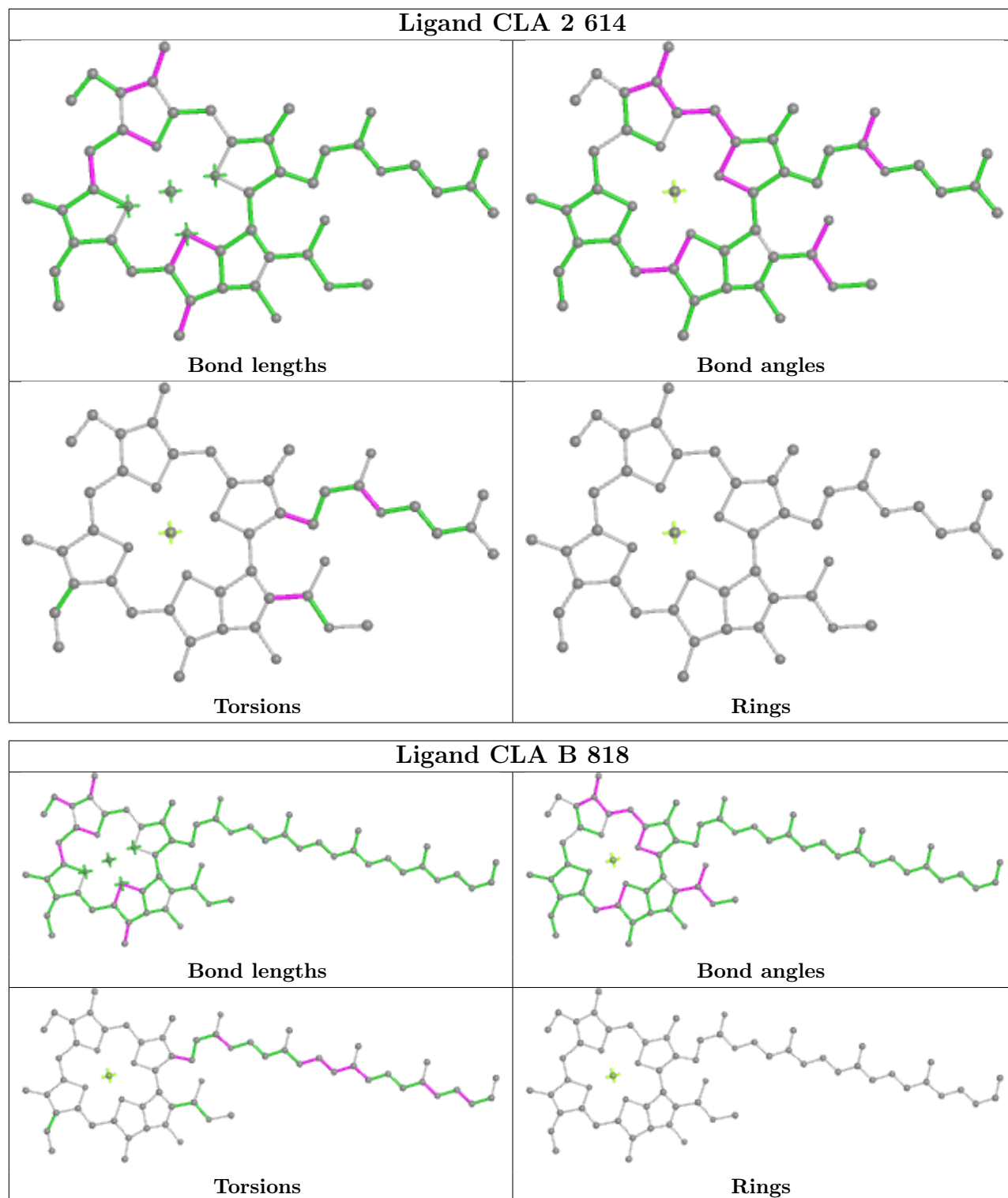


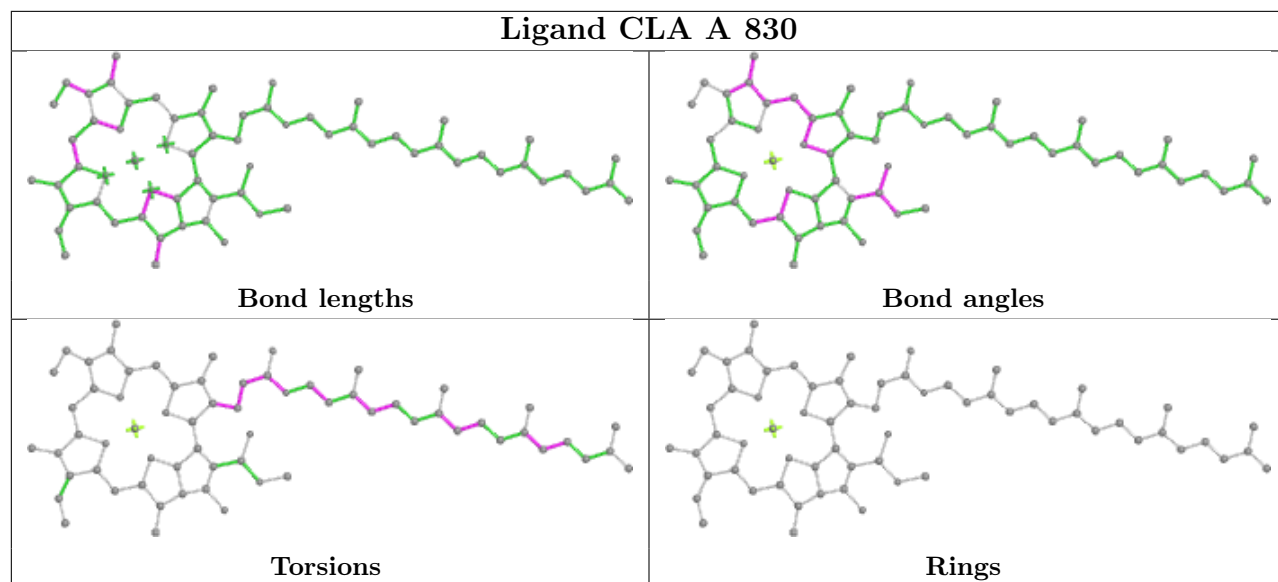


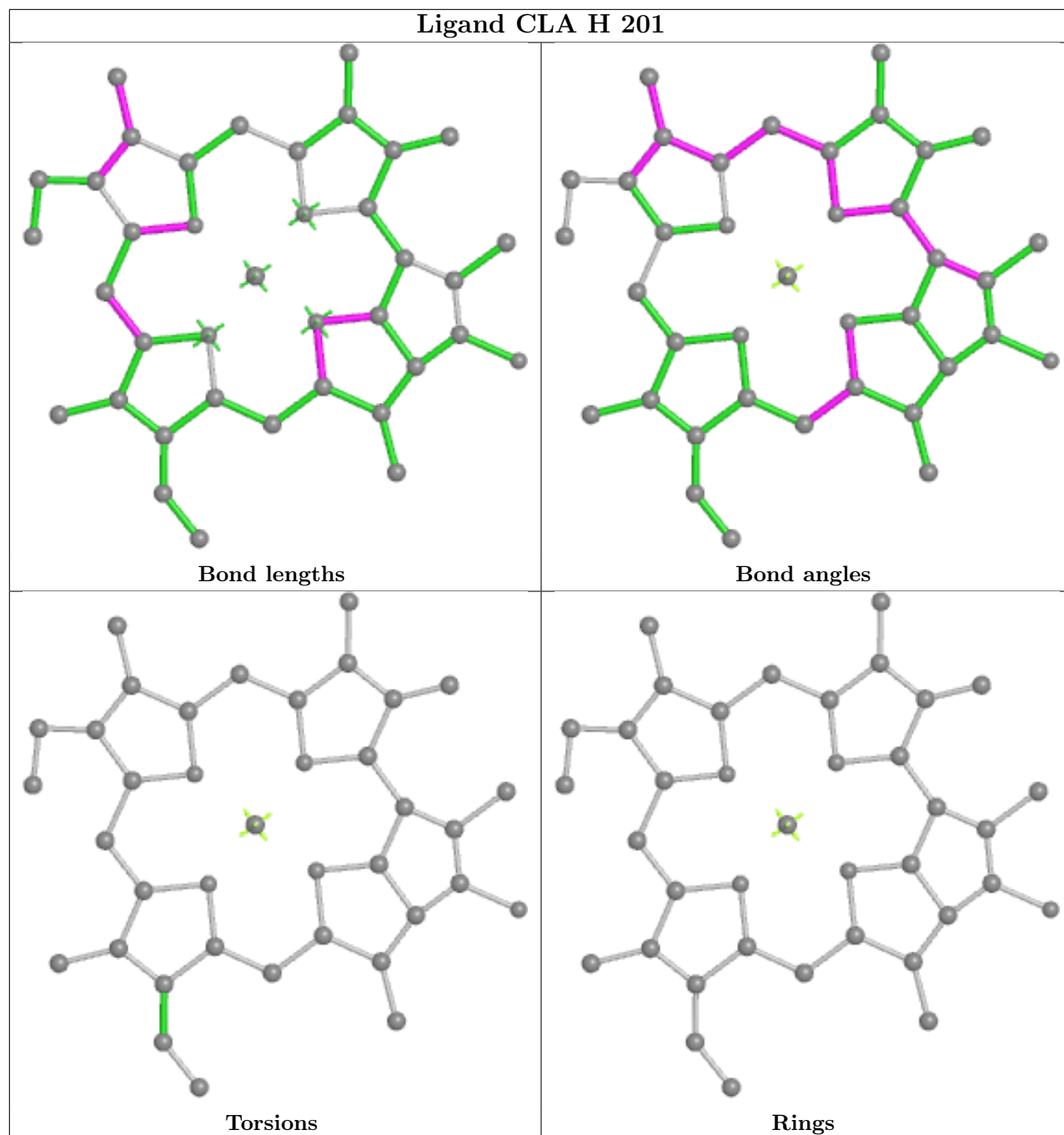


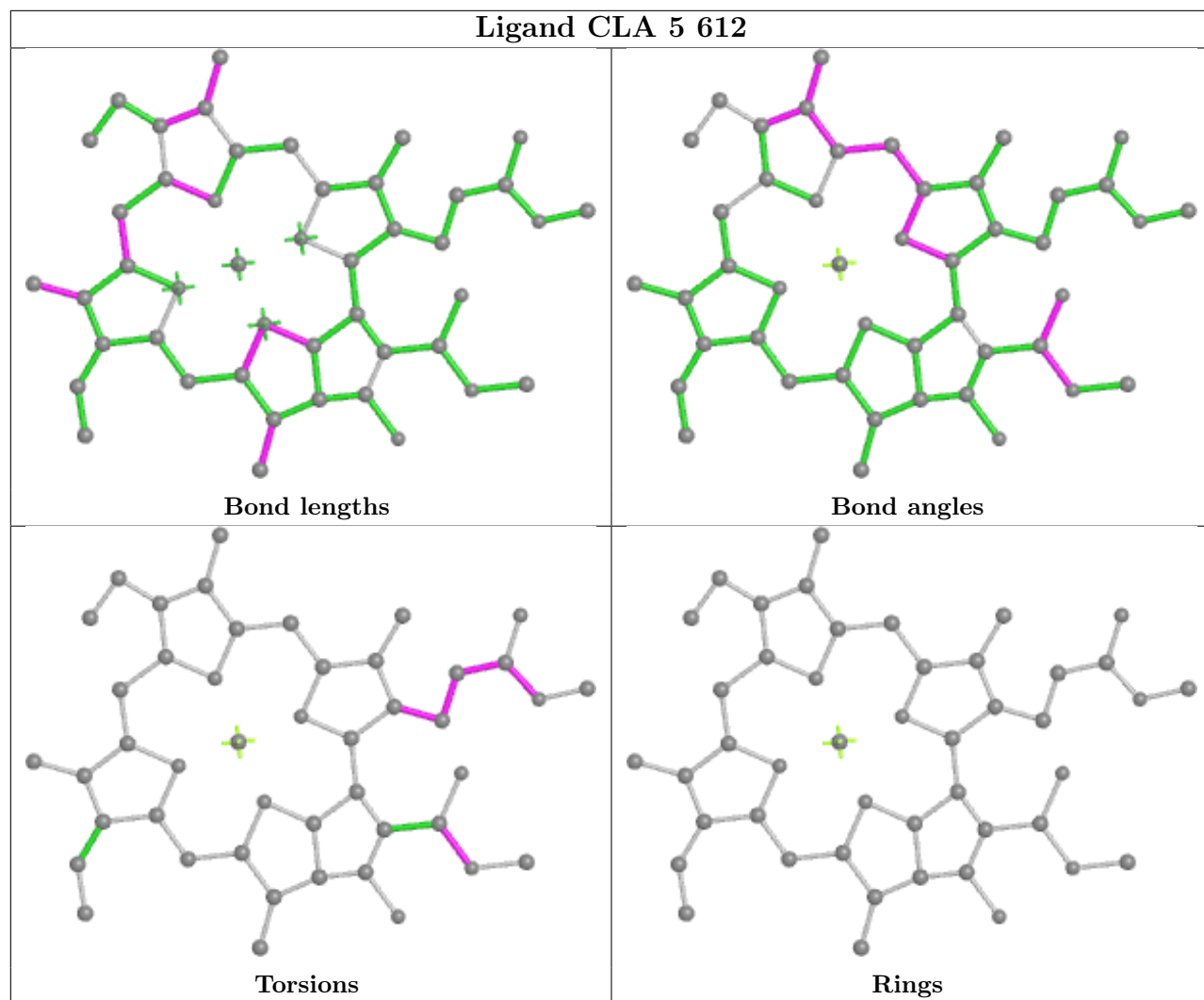


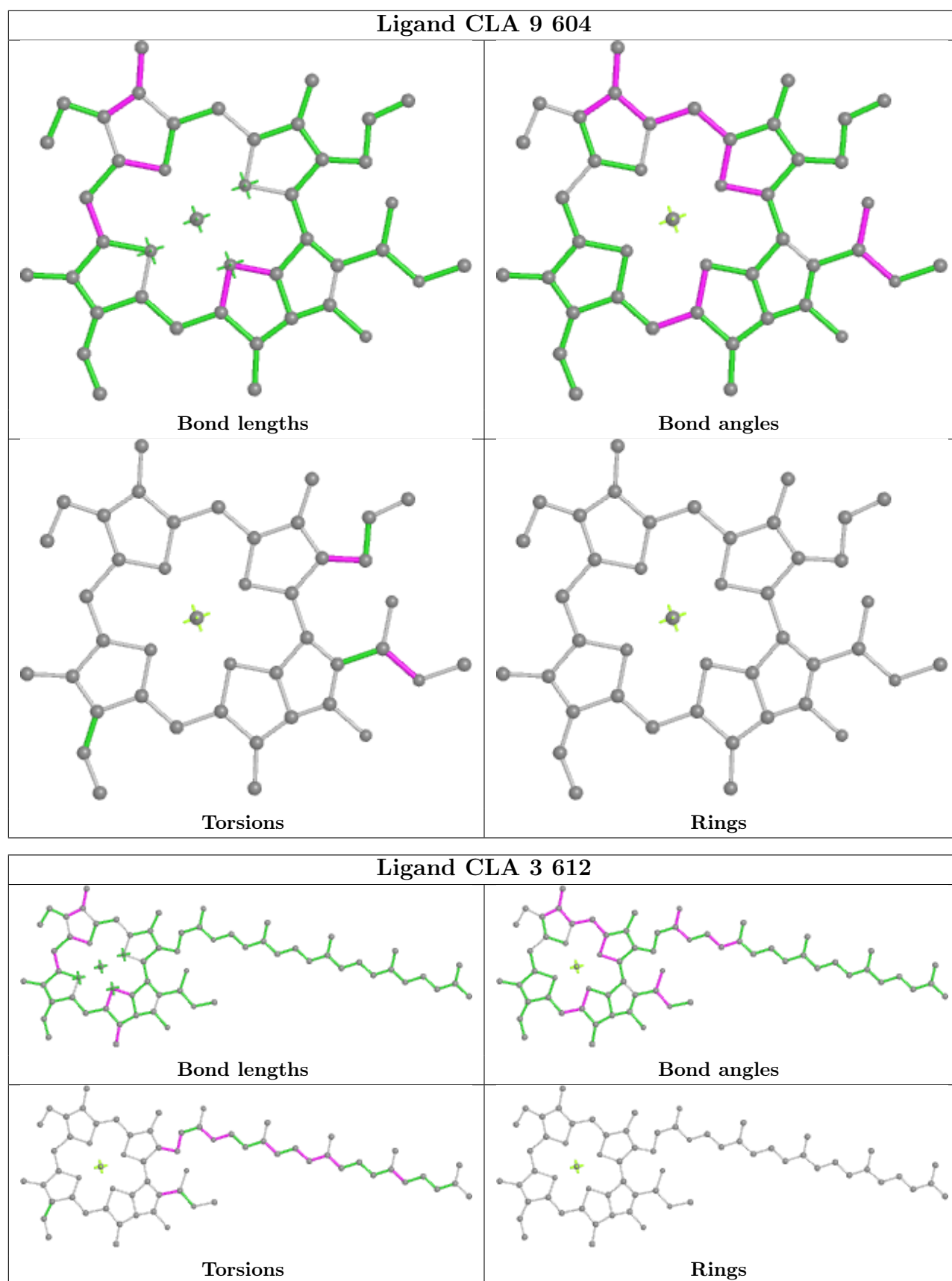


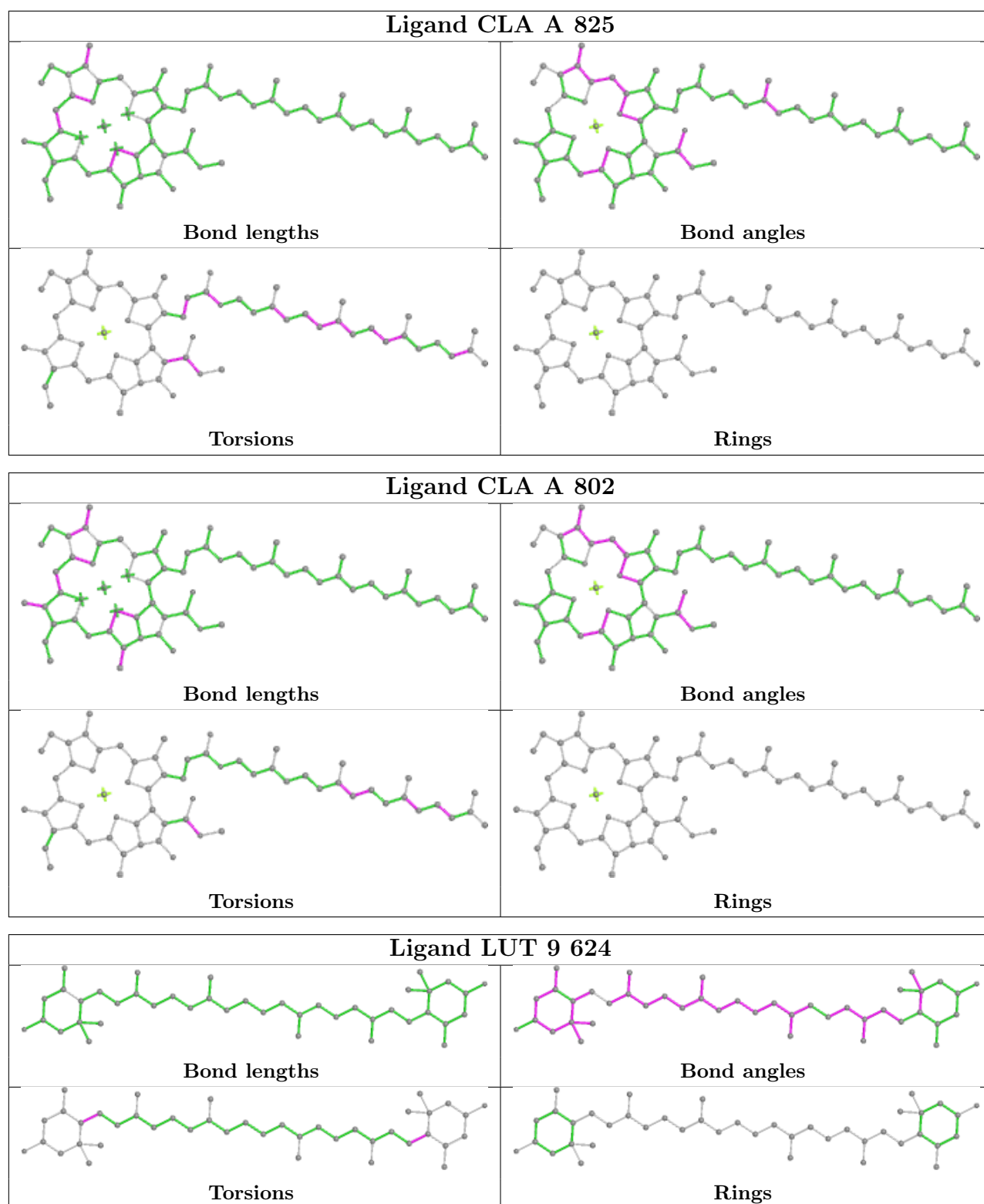




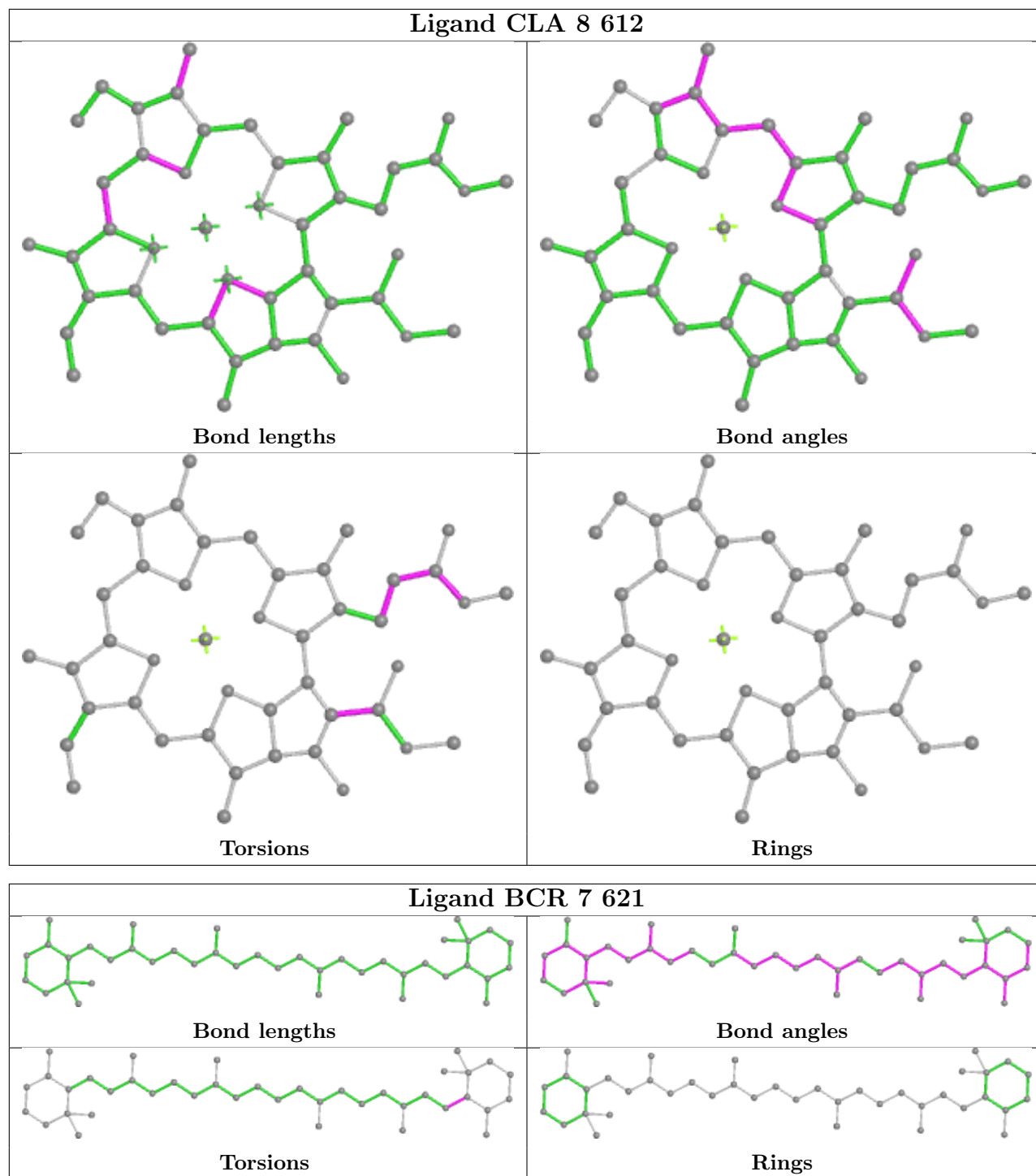


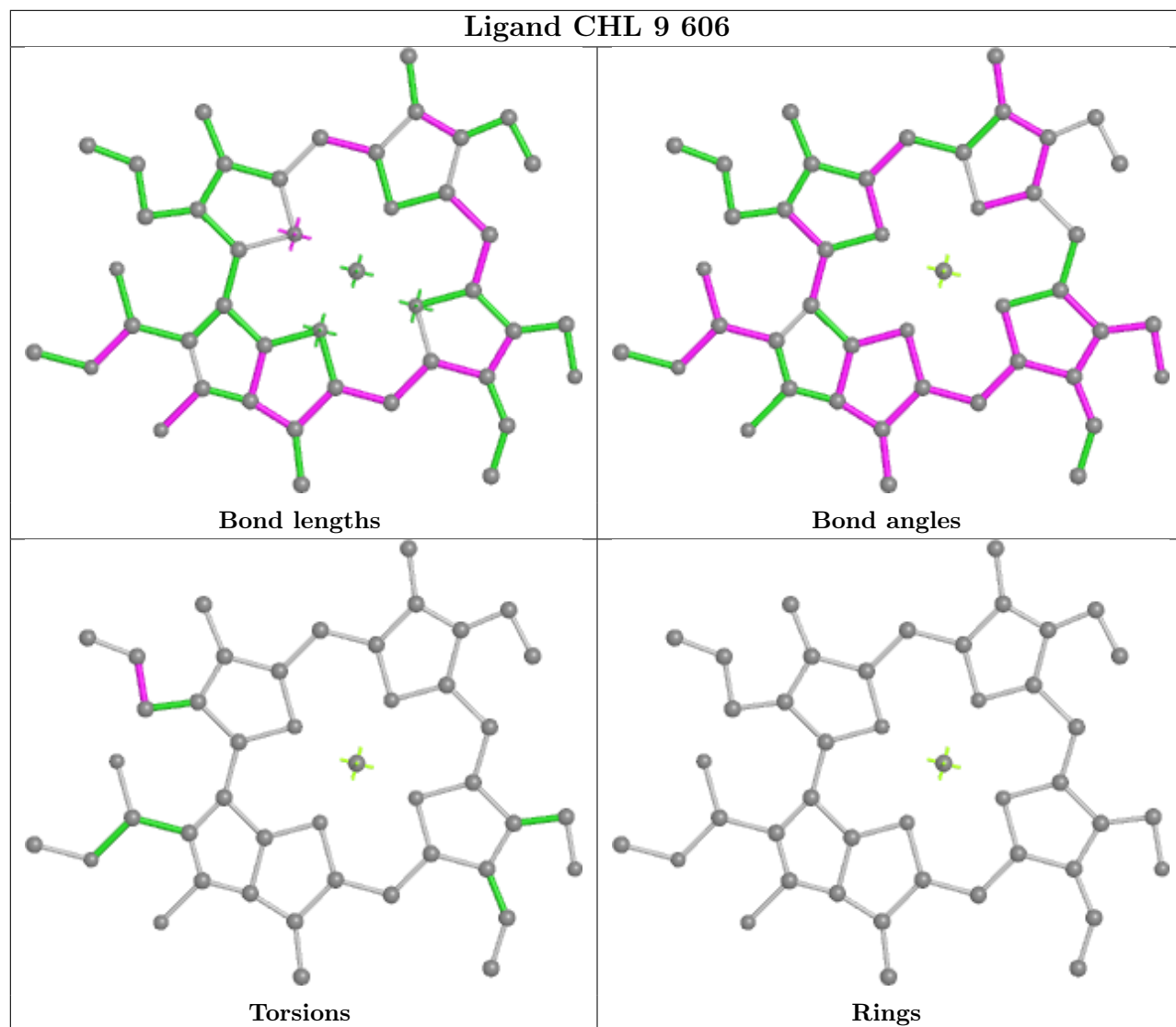


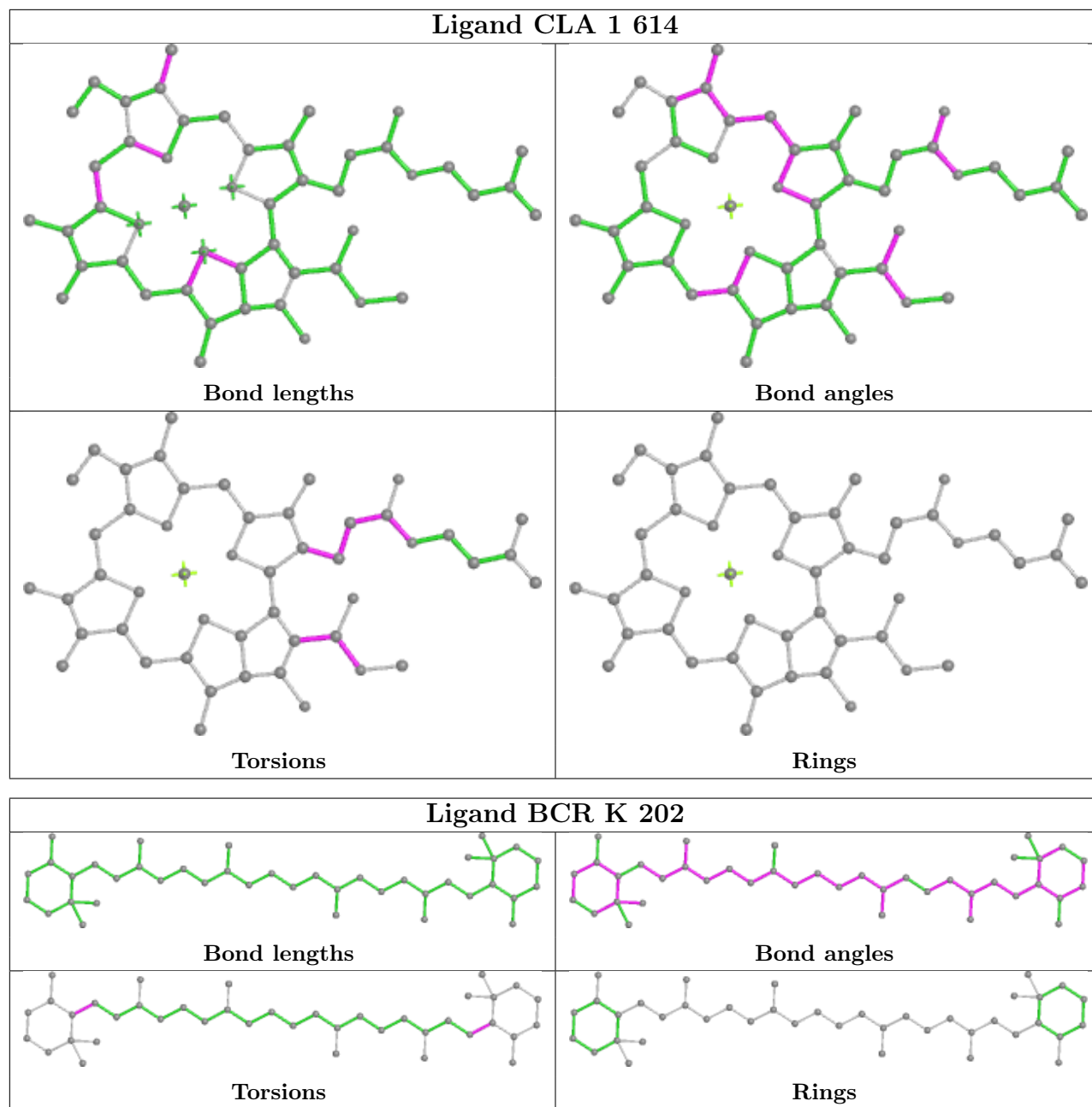


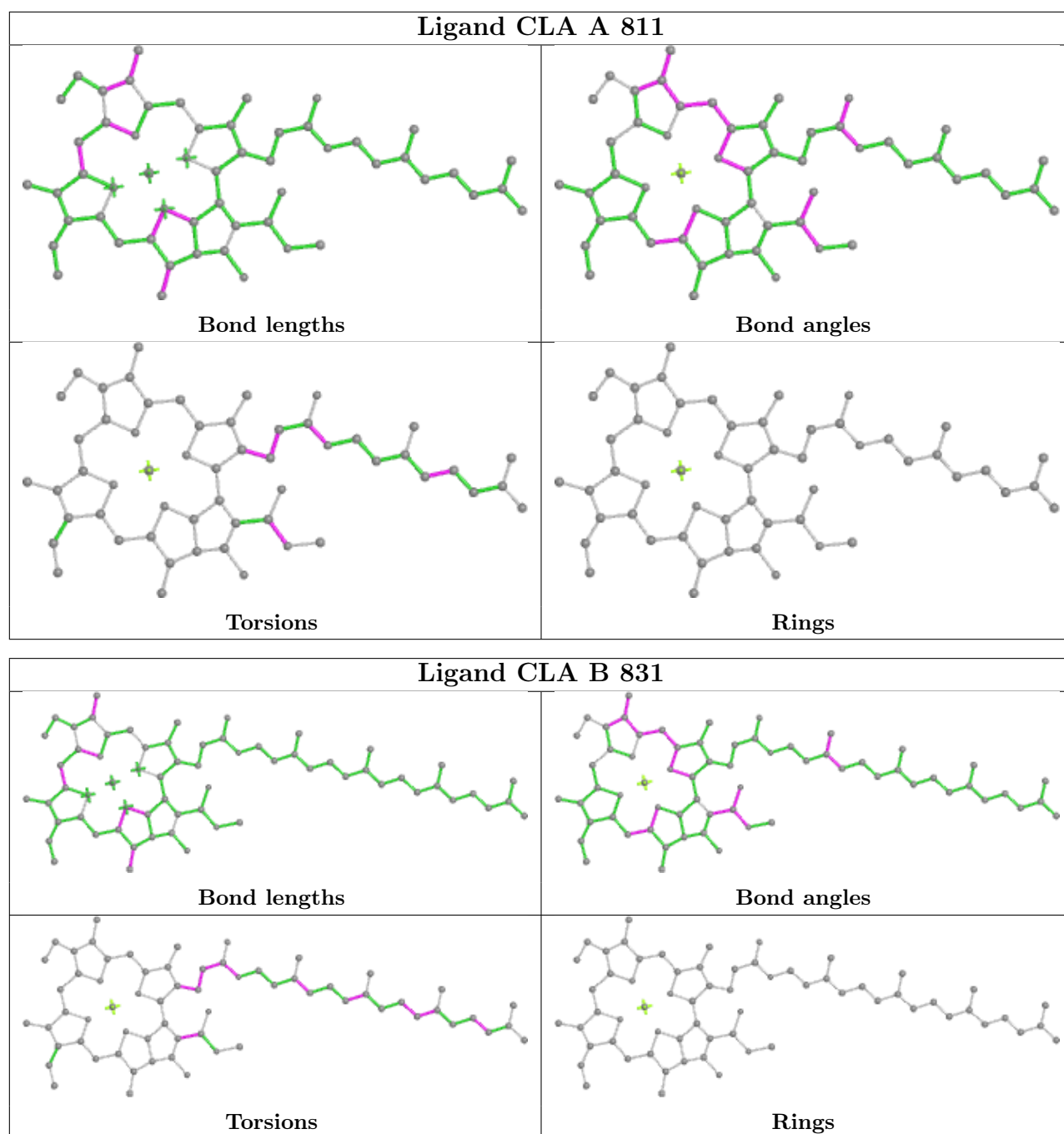


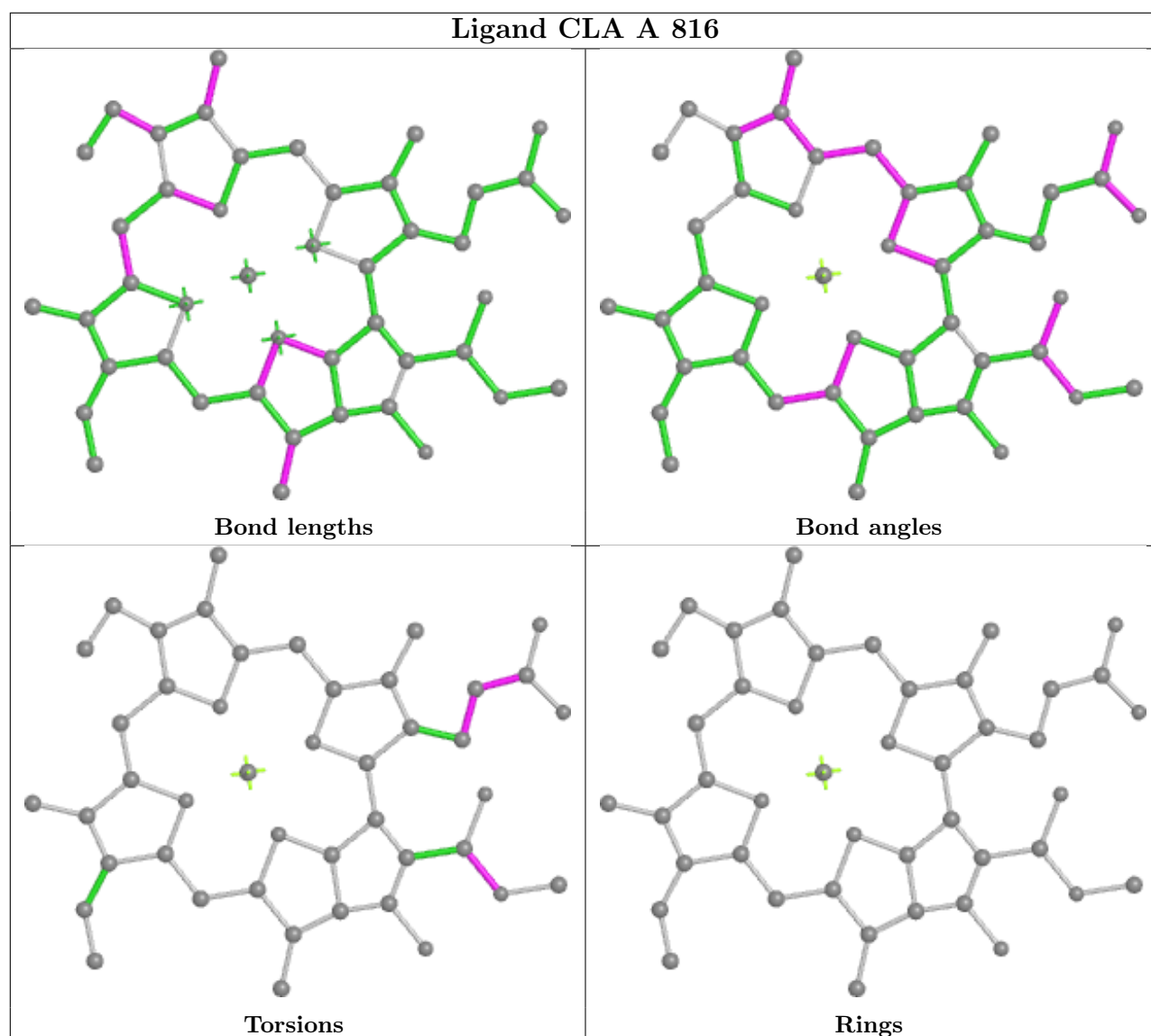












## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

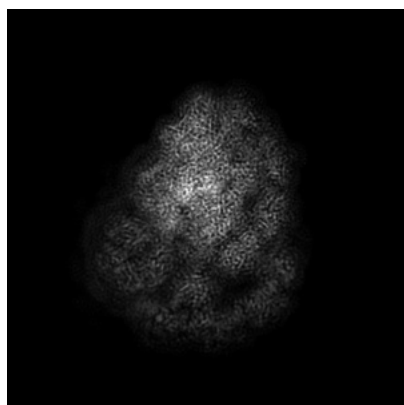
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-35018. These allow visual inspection of the internal detail of the map and identification of artifacts.

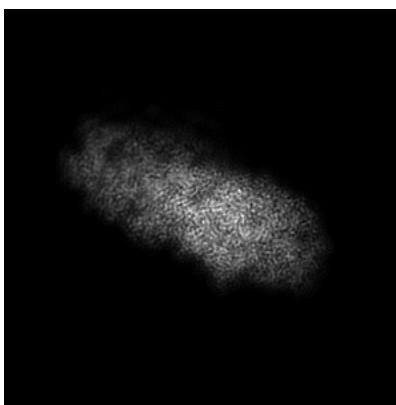
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

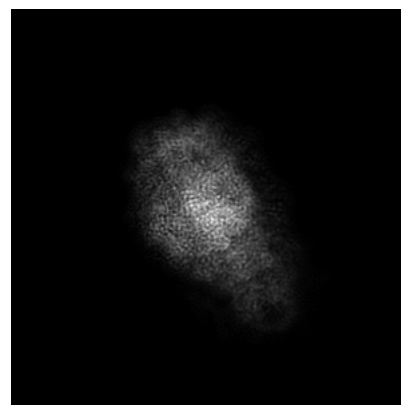
#### 6.1.1 Primary map



X



Y

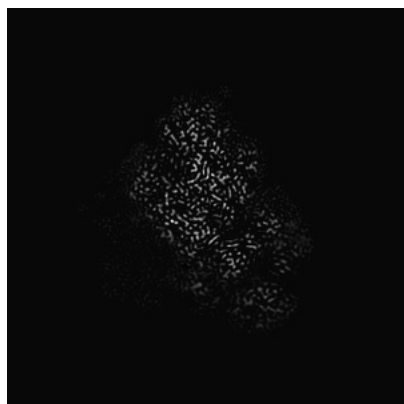


Z

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

### 6.2 Central slices [i](#)

#### 6.2.1 Primary map



X Index: 160



Y Index: 160

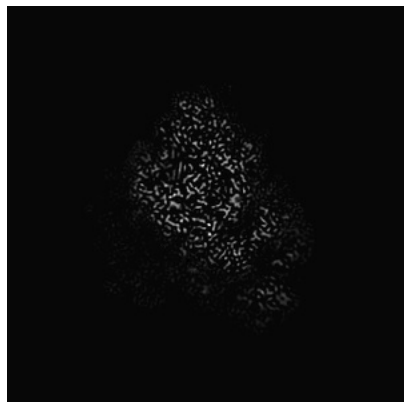


Z Index: 160

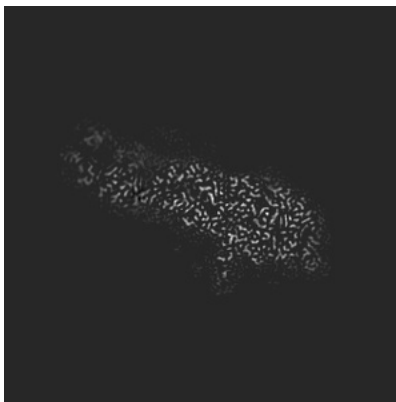
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

### 6.3.1 Primary map



X Index: 158



Y Index: 151

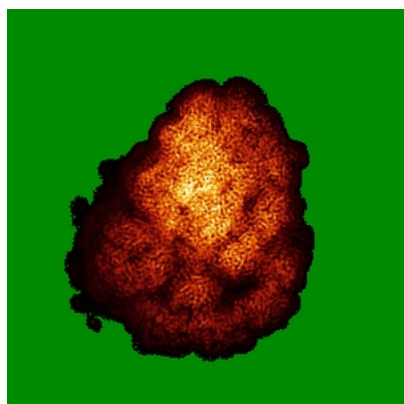


Z Index: 175

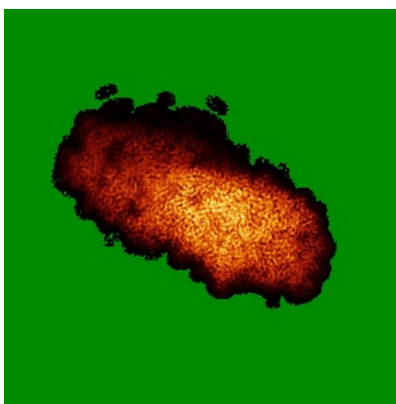
The images above show the largest variance slices of the map in three orthogonal directions.

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

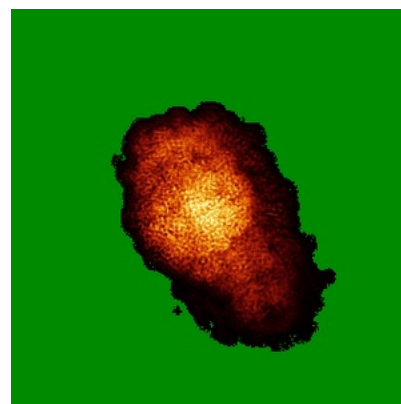
### 6.4.1 Primary map



X



Y

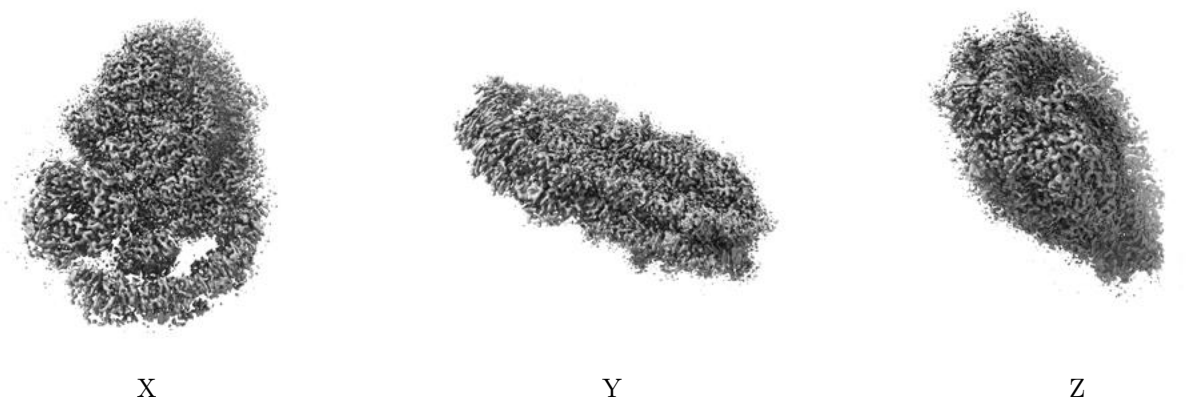


Z

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

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0188. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

## 6.6 Mask visualisation [i](#)

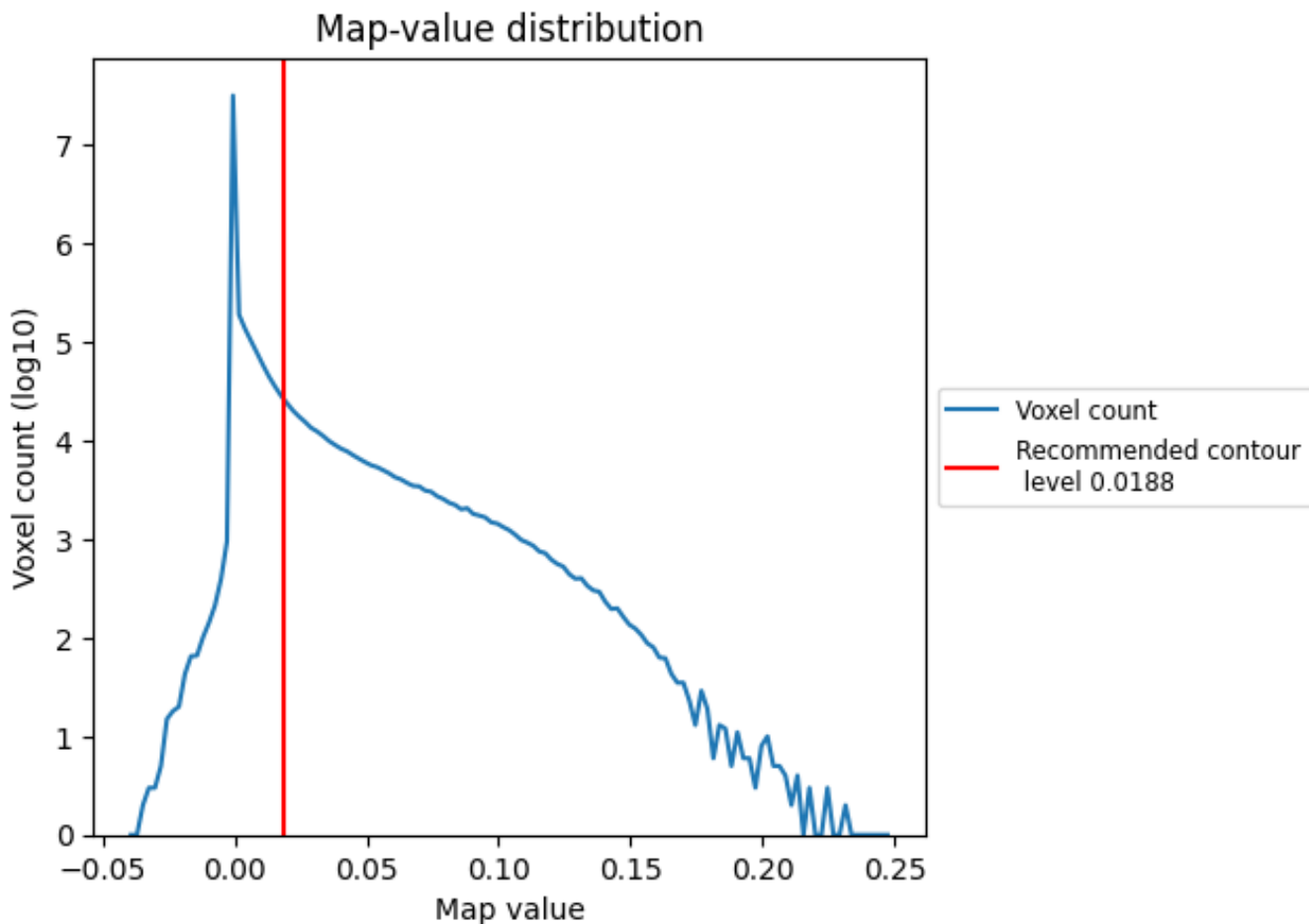
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

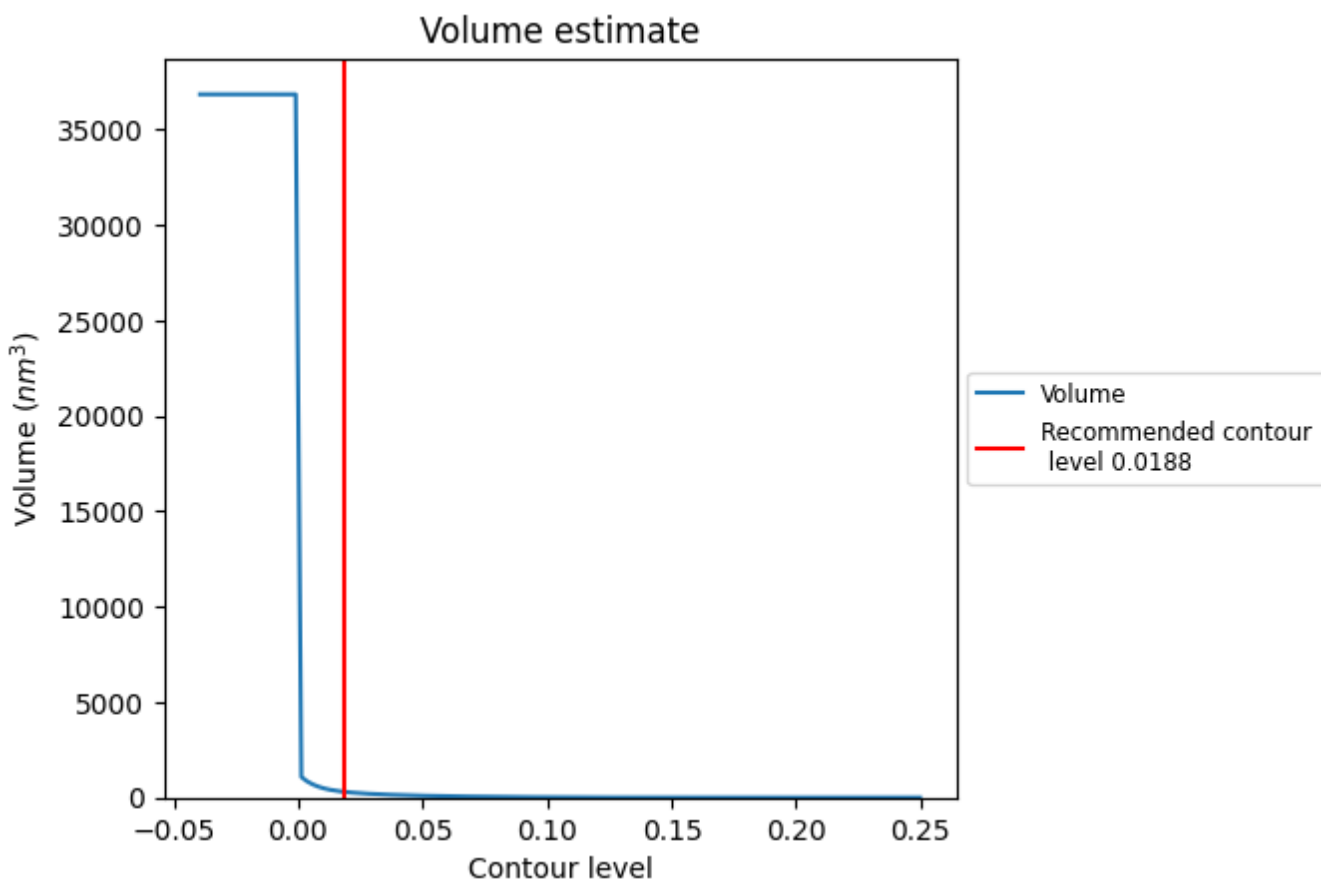
This section contains the results of statistical analysis of the map.

### 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.

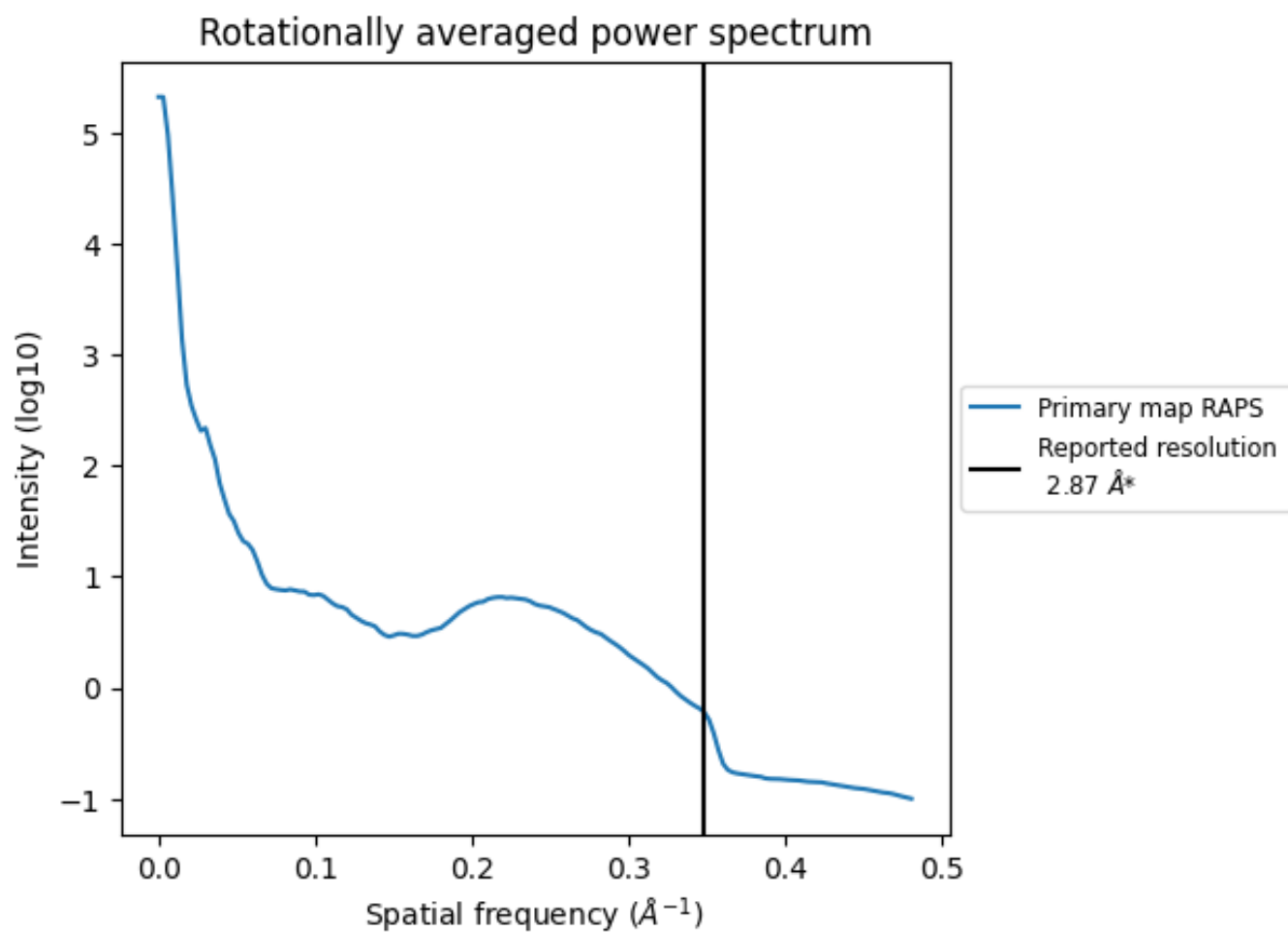
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 296  $\text{nm}^3$ ; this corresponds to an approximate mass of 267 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 0.348 Å<sup>-1</sup>

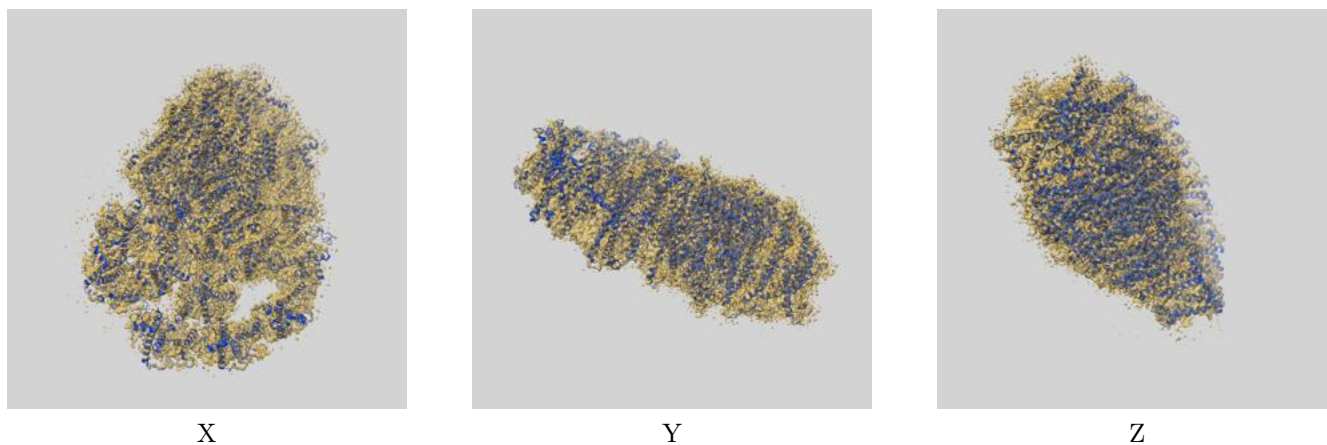
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

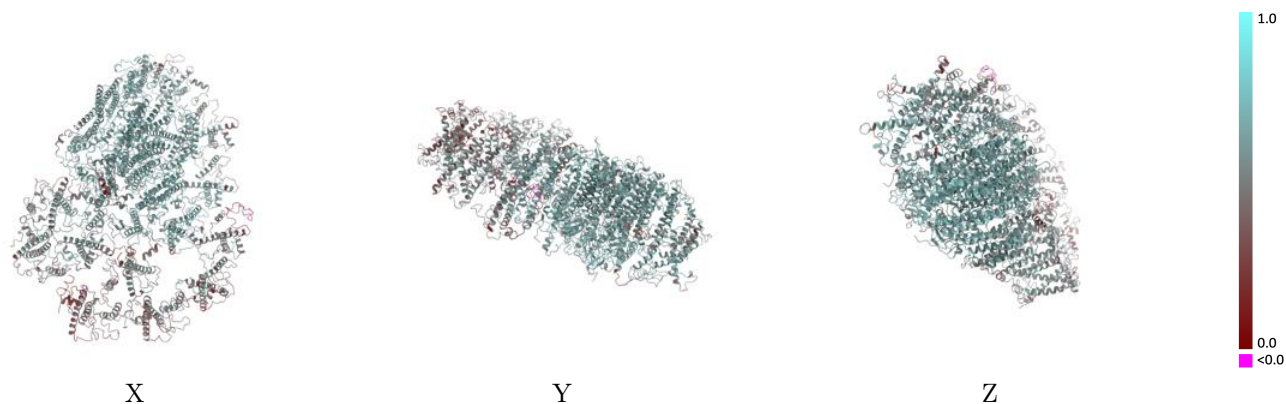
This section contains information regarding the fit between EMDB map EMD-35018 and PDB model 8HTU. Per-residue inclusion information can be found in section [3](#) on page [37](#).

### 9.1 Map-model overlay [i](#)



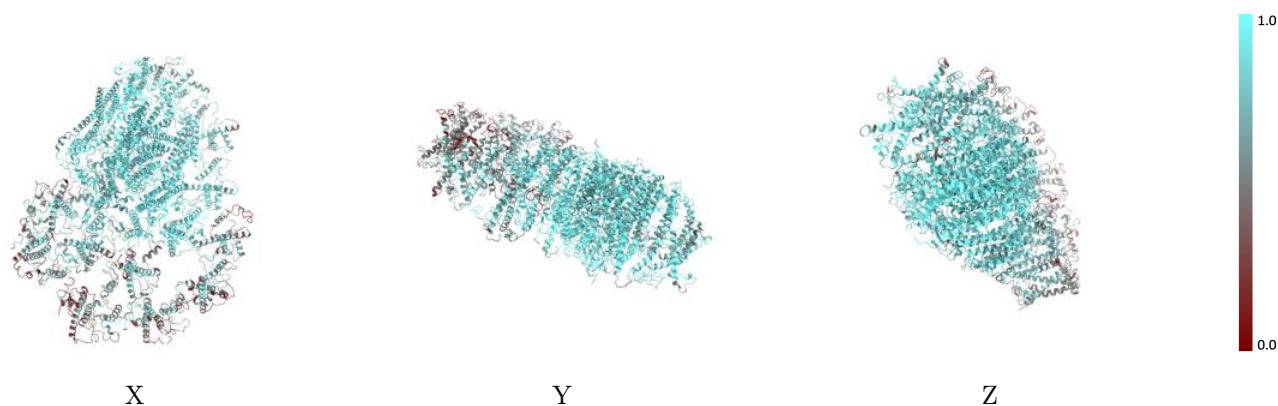
The images above show the 3D surface view of the map at the recommended contour level 0.0188 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



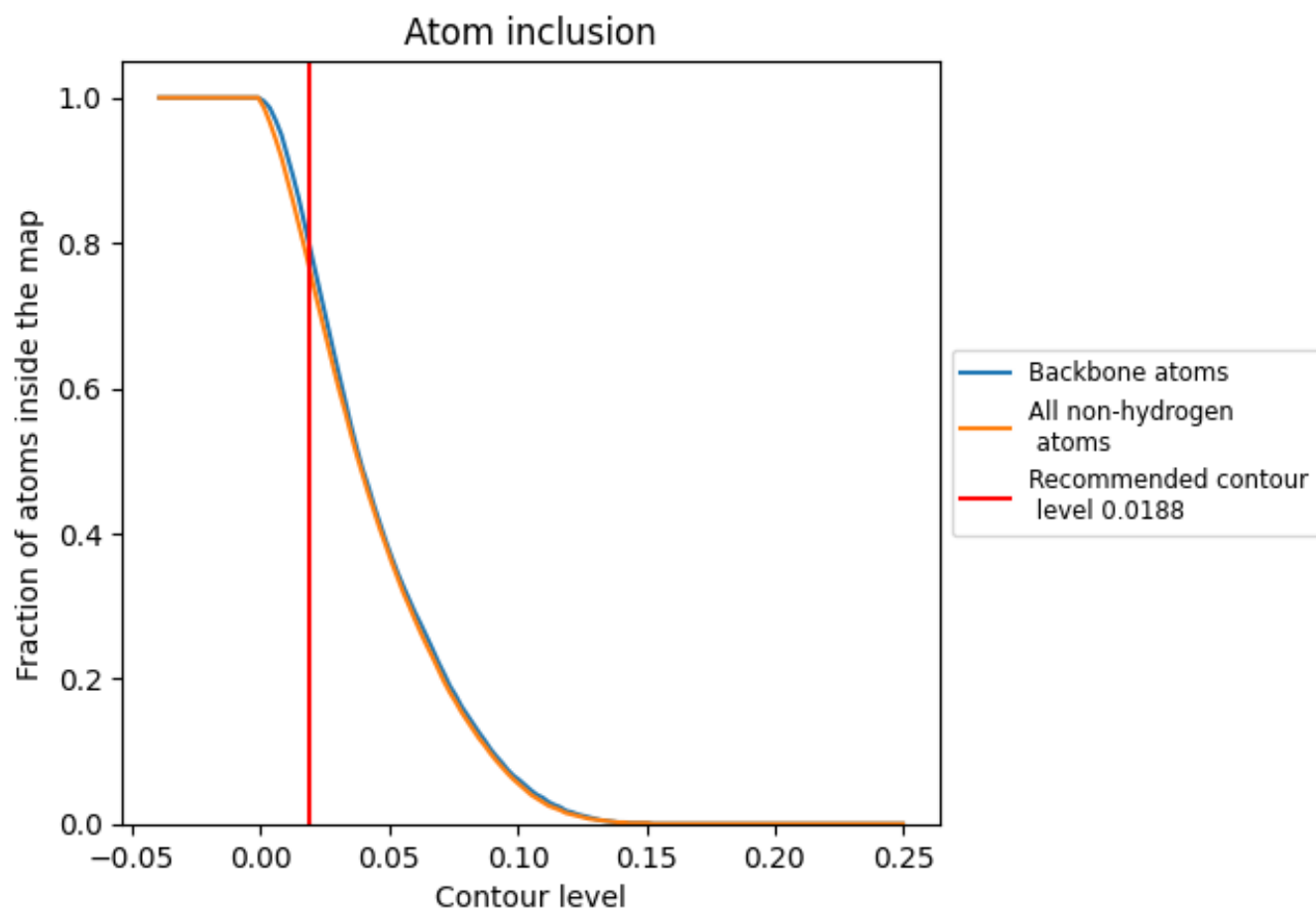
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0188).























































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 77% 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 (0.0188) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7680	 0.5500
1	 0.7560	 0.5390
2	 0.8540	 0.5860
3	 0.8550	 0.5880
4	 0.7930	 0.5400
5	 0.5530	 0.4110
6	 0.5150	 0.4410
7	 0.4180	 0.3830
8	 0.5530	 0.4610
9	 0.6210	 0.4420
A	 0.9310	 0.6320
B	 0.9210	 0.6270
C	 0.9460	 0.6200
D	 0.8850	 0.5910
E	 0.8660	 0.6050
F	 0.8630	 0.5990
G	 0.7240	 0.5410
H	 0.7350	 0.5080
I	 0.9010	 0.5910
J	 0.8490	 0.5860
K	 0.8640	 0.5880
L	 0.8690	 0.5870
M	 0.7750	 0.5580
O	 0.7840	 0.4770
U	 0.6840	 0.5290
V	 0.5640	 0.4930
W	 0.6720	 0.5220

