



## wwPDB EM Validation Summary Report ⓘ

Nov 12, 2022 – 09:12 AM EST

PDB ID : 6UZV  
EMDB ID : EMD-20963  
Title : The structure of a red shifted photosystem I complex  
Authors : Toporik, H.; Williams, D.; Chiu, P.L.; Mazor, Y.  
Deposited on : 2019-11-15  
Resolution : 3.10 Å(reported)  
Based on initial models : 5OY0, 6KIG

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.dev43  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2



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Mol	Chain	Length	Quality of chain
4	4	141	13% 94%
4	D	141	15% 94%
4	d	141	14% 94%
5	5	74	16% 89% 8%
5	E	74	18% 89% 8%
5	e	74	16% 89% 8%
6	6	165	13% 85% 15%
6	F	165	11% 85% 15%
6	f	165	13% 85% 15%
7	I	40	• 92% 8%
7	h	40	92% 8%
7	i	40	92% 8%
8	7	40	5% 98% •
8	J	40	8% 98% •
8	j	40	8% 98% •
9	0	157	8% 97% ••
9	L	157	9% 97% ••
9	l	157	9% 97% ••
10	9	31	10% 97% •
10	M	31	10% 97% •
10	m	31	10% 97% •
11	8	90	30% 86% • 12%
11	K	90	37% 86% • 12%
11	k	90	34% 86% • 12%

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
13	CL0	1	803	X	-	-	-
13	CL0	A	803	X	-	-	-
13	CL0	a	803	X	-	-	-
14	CLA	0	202	X	-	-	-
14	CLA	0	206	X	-	-	-
14	CLA	0	207	X	-	-	-
14	CLA	0	208	X	-	-	-
14	CLA	1	804	X	-	-	-
14	CLA	1	805	X	-	-	-
14	CLA	1	806	X	-	-	-
14	CLA	1	807	X	-	-	-
14	CLA	1	808	X	-	-	-
14	CLA	1	809	X	-	-	-
14	CLA	1	810	X	-	-	-
14	CLA	1	811	X	-	-	-
14	CLA	1	812	X	-	-	-
14	CLA	1	813	X	-	-	-
14	CLA	1	814	X	-	-	-
14	CLA	1	815	X	-	-	-
14	CLA	1	817	X	-	-	-
14	CLA	1	818	X	-	-	-
14	CLA	1	819	X	-	-	-
14	CLA	1	820	X	-	-	-
14	CLA	1	821	X	-	-	-
14	CLA	1	822	X	-	-	-
14	CLA	1	823	X	-	-	-
14	CLA	1	824	X	-	-	-
14	CLA	1	825	X	-	-	-
14	CLA	1	826	X	-	-	-
14	CLA	1	827	X	-	-	-
14	CLA	1	828	X	-	-	-
14	CLA	1	829	X	-	-	-
14	CLA	1	830	X	-	-	-
14	CLA	1	831	X	-	-	-
14	CLA	1	832	X	-	-	-
14	CLA	1	833	X	-	-	-
14	CLA	1	834	X	-	-	-
14	CLA	1	835	X	-	-	-
14	CLA	1	836	X	-	-	-
14	CLA	1	837	X	-	-	-
14	CLA	1	838	X	-	-	-
14	CLA	1	839	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	1	840	X	-	-	-
14	CLA	1	841	X	-	-	-
14	CLA	1	843	X	-	-	-
14	CLA	1	844	X	-	-	-
14	CLA	2	801	X	-	-	-
14	CLA	2	803	X	-	-	-
14	CLA	2	804	X	-	-	-
14	CLA	2	805	X	-	-	-
14	CLA	2	806	X	-	-	-
14	CLA	2	808	X	-	-	-
14	CLA	2	809	X	-	-	-
14	CLA	2	810	X	-	-	-
14	CLA	2	811	X	-	-	-
14	CLA	2	812	X	-	-	-
14	CLA	2	813	X	-	-	-
14	CLA	2	814	X	-	-	-
14	CLA	2	815	X	-	-	-
14	CLA	2	816	X	-	-	-
14	CLA	2	817	X	-	-	-
14	CLA	2	818	X	-	-	-
14	CLA	2	820	X	-	-	-
14	CLA	2	821	X	-	-	-
14	CLA	2	824	X	-	-	-
14	CLA	2	826	X	-	-	-
14	CLA	2	827	X	-	-	-
14	CLA	2	828	X	-	-	-
14	CLA	2	829	X	-	-	-
14	CLA	2	830	X	-	-	-
14	CLA	2	831	X	-	-	-
14	CLA	2	832	X	-	-	-
14	CLA	2	833	X	-	-	-
14	CLA	2	834	X	-	-	-
14	CLA	2	835	X	-	-	-
14	CLA	2	836	X	-	-	-
14	CLA	2	837	X	-	-	-
14	CLA	2	838	X	-	-	-
14	CLA	2	839	X	-	-	-
14	CLA	2	840	X	-	-	-
14	CLA	2	841	X	-	-	-
14	CLA	2	842	X	-	-	-
14	CLA	2	844	X	-	-	-
14	CLA	6	4403	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	6	4404	X	-	-	-
14	CLA	7	1101	X	-	-	-
14	CLA	7	1102	X	-	-	-
14	CLA	7	1103	X	-	-	-
14	CLA	8	4003	X	-	-	-
14	CLA	8	4004	X	-	-	-
14	CLA	A	804	X	-	-	-
14	CLA	A	805	X	-	-	-
14	CLA	A	806	X	-	-	-
14	CLA	A	807	X	-	-	-
14	CLA	A	808	X	-	-	-
14	CLA	A	809	X	-	-	-
14	CLA	A	810	X	-	-	-
14	CLA	A	811	X	-	-	-
14	CLA	A	812	X	-	-	-
14	CLA	A	813	X	-	-	-
14	CLA	A	814	X	-	-	-
14	CLA	A	815	X	-	-	-
14	CLA	A	816	X	-	-	-
14	CLA	A	818	X	-	-	-
14	CLA	A	819	X	-	-	-
14	CLA	A	820	X	-	-	-
14	CLA	A	821	X	-	-	-
14	CLA	A	822	X	-	-	-
14	CLA	A	823	X	-	-	-
14	CLA	A	824	X	-	-	-
14	CLA	A	825	X	-	-	-
14	CLA	A	826	X	-	-	-
14	CLA	A	827	X	-	-	-
14	CLA	A	828	X	-	-	-
14	CLA	A	829	X	-	-	-
14	CLA	A	830	X	-	-	-
14	CLA	A	831	X	-	-	-
14	CLA	A	832	X	-	-	-
14	CLA	A	833	X	-	-	-
14	CLA	A	834	X	-	-	-
14	CLA	A	835	X	-	-	-
14	CLA	A	836	X	-	-	-
14	CLA	A	837	X	-	-	-
14	CLA	A	838	X	-	-	-
14	CLA	A	839	X	-	-	-
14	CLA	A	840	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	A	841	X	-	-	-
14	CLA	A	843	X	-	-	-
14	CLA	A	844	X	-	-	-
14	CLA	B	801	X	-	-	-
14	CLA	B	802	X	-	-	-
14	CLA	B	804	X	-	-	-
14	CLA	B	805	X	-	-	-
14	CLA	B	806	X	-	-	-
14	CLA	B	807	X	-	-	-
14	CLA	B	809	X	-	-	-
14	CLA	B	810	X	-	-	-
14	CLA	B	811	X	-	-	-
14	CLA	B	812	X	-	-	-
14	CLA	B	813	X	-	-	-
14	CLA	B	814	X	-	-	-
14	CLA	B	815	X	-	-	-
14	CLA	B	816	X	-	-	-
14	CLA	B	817	X	-	-	-
14	CLA	B	818	X	-	-	-
14	CLA	B	819	X	-	-	-
14	CLA	B	821	X	-	-	-
14	CLA	B	822	X	-	-	-
14	CLA	B	825	X	-	-	-
14	CLA	B	827	X	-	-	-
14	CLA	B	828	X	-	-	-
14	CLA	B	829	X	-	-	-
14	CLA	B	830	X	-	-	-
14	CLA	B	831	X	-	-	-
14	CLA	B	832	X	-	-	-
14	CLA	B	833	X	-	-	-
14	CLA	B	834	X	-	-	-
14	CLA	B	835	X	-	-	-
14	CLA	B	836	X	-	-	-
14	CLA	B	837	X	-	-	-
14	CLA	B	838	X	-	-	-
14	CLA	B	839	X	-	-	-
14	CLA	B	840	X	-	-	-
14	CLA	B	841	X	-	-	-
14	CLA	B	842	X	-	-	-
14	CLA	B	843	X	-	-	-
14	CLA	B	845	X	-	-	-
14	CLA	F	201	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	F	204	X	-	-	-
14	CLA	F	205	X	-	-	-
14	CLA	J	101	X	-	-	-
14	CLA	J	102	X	-	-	-
14	CLA	K	4003	X	-	-	-
14	CLA	K	4004	X	-	-	-
14	CLA	L	1501	X	-	-	-
14	CLA	L	1502	X	-	-	-
14	CLA	L	1503	X	-	-	-
14	CLA	a	804	X	-	-	-
14	CLA	a	805	X	-	-	-
14	CLA	a	806	X	-	-	-
14	CLA	a	807	X	-	-	-
14	CLA	a	808	X	-	-	-
14	CLA	a	809	X	-	-	-
14	CLA	a	810	X	-	-	-
14	CLA	a	811	X	-	-	-
14	CLA	a	812	X	-	-	-
14	CLA	a	813	X	-	-	-
14	CLA	a	814	X	-	-	-
14	CLA	a	815	X	-	-	-
14	CLA	a	816	X	-	-	-
14	CLA	a	817	X	-	-	-
14	CLA	a	819	X	-	-	-
14	CLA	a	820	X	-	-	-
14	CLA	a	821	X	-	-	-
14	CLA	a	822	X	-	-	-
14	CLA	a	823	X	-	-	-
14	CLA	a	824	X	-	-	-
14	CLA	a	825	X	-	-	-
14	CLA	a	826	X	-	-	-
14	CLA	a	827	X	-	-	-
14	CLA	a	828	X	-	-	-
14	CLA	a	829	X	-	-	-
14	CLA	a	830	X	-	-	-
14	CLA	a	831	X	-	-	-
14	CLA	a	832	X	-	-	-
14	CLA	a	833	X	-	-	-
14	CLA	a	834	X	-	-	-
14	CLA	a	835	X	-	-	-
14	CLA	a	836	X	-	-	-
14	CLA	a	837	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	a	838	X	-	-	-
14	CLA	a	839	X	-	-	-
14	CLA	a	840	X	-	-	-
14	CLA	a	841	X	-	-	-
14	CLA	a	843	X	-	-	-
14	CLA	a	844	X	-	-	-
14	CLA	a	854	X	-	-	-
14	CLA	b	801	X	-	-	-
14	CLA	b	802	X	-	-	-
14	CLA	b	804	X	-	-	-
14	CLA	b	805	X	-	-	-
14	CLA	b	806	X	-	-	-
14	CLA	b	807	X	-	-	-
14	CLA	b	809	X	-	-	-
14	CLA	b	810	X	-	-	-
14	CLA	b	811	X	-	-	-
14	CLA	b	812	X	-	-	-
14	CLA	b	813	X	-	-	-
14	CLA	b	814	X	-	-	-
14	CLA	b	815	X	-	-	-
14	CLA	b	816	X	-	-	-
14	CLA	b	817	X	-	-	-
14	CLA	b	818	X	-	-	-
14	CLA	b	820	X	-	-	-
14	CLA	b	821	X	-	-	-
14	CLA	b	824	X	-	-	-
14	CLA	b	826	X	-	-	-
14	CLA	b	827	X	-	-	-
14	CLA	b	828	X	-	-	-
14	CLA	b	829	X	-	-	-
14	CLA	b	830	X	-	-	-
14	CLA	b	831	X	-	-	-
14	CLA	b	832	X	-	-	-
14	CLA	b	833	X	-	-	-
14	CLA	b	834	X	-	-	-
14	CLA	b	835	X	-	-	-
14	CLA	b	836	X	-	-	-
14	CLA	b	837	X	-	-	-
14	CLA	b	838	X	-	-	-
14	CLA	b	839	X	-	-	-
14	CLA	b	840	X	-	-	-
14	CLA	b	841	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	b	842	X	-	-	-
14	CLA	b	844	X	-	-	-
14	CLA	f	201	X	-	-	-
14	CLA	f	204	X	-	-	-
14	CLA	f	205	X	-	-	-
14	CLA	j	101	X	-	-	-
14	CLA	j	102	X	-	-	-
14	CLA	k	4003	X	-	-	-
14	CLA	l	4203	X	-	-	-
14	CLA	l	4204	X	-	-	-
14	CLA	l	4205	X	-	-	-
14	CLA	l	4206	X	-	-	-

## 2 Entry composition [i](#)

There are 20 unique types of molecules in this entry. The entry contains 72606 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Photosystem I P700 chlorophyll a apoprotein A1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	739	5787	3791	984	985	27	0	0
1	a	739	5787	3791	984	985	27	0	0
1	1	739	5787	3791	984	985	27	0	0

- Molecule 2 is a protein called Photosystem I P700 chlorophyll a apoprotein A2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	733	5806	3824	973	994	15	0	0
2	b	733	5806	3824	973	994	15	0	0
2	2	733	5806	3824	973	994	15	0	0

- Molecule 3 is a protein called Photosystem I iron-sulfur center.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	80	600	369	103	117	11	0	0
3	c	80	600	369	103	117	11	0	0
3	3	80	600	369	103	117	11	0	0

- Molecule 4 is a protein called Photosystem I reaction center subunit II.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	138	1078	683	187	205	3	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
4	d	138	Total	C	N	O	S	0	0
			1078	683	187	205	3		
4	4	138	Total	C	N	O	S	0	0
			1078	683	187	205	3		

- Molecule 5 is a protein called Photosystem I reaction center subunit IV.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	68	Total	C	N	O	0	0	
			537	337	95	105			
5	e	68	Total	C	N	O	0	0	
			537	337	95	105			
5	5	68	Total	C	N	O	0	0	
			537	337	95	105			

- Molecule 6 is a protein called Photosystem I reaction center subunit III.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	141	Total	C	N	O	S	0	0
			1086	702	180	200	4		
6	f	141	Total	C	N	O	S	0	0
			1086	702	180	200	4		
6	6	141	Total	C	N	O	S	0	0
			1086	702	180	200	4		

- Molecule 7 is a protein called Photosystem I reaction center subunit VIII.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	I	37	Total	C	N	O	S	0	0
			293	200	41	49	3		
7	i	37	Total	C	N	O	S	0	0
			293	200	41	49	3		
7	h	37	Total	C	N	O	S	0	0
			293	200	41	49	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	J	39	Total	C	N	O	S	0	0
			311	210	46	52	3		
8	j	39	Total	C	N	O	S	0	0
			311	210	46	52	3		

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Mol	Chain	Residues	Atoms					AltConf	Trace
8	7	39	Total	C	N	O	S	0	0
			311	210	46	52	3		

- Molecule 9 is a protein called Photosystem I reaction center subunit XI.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	L	153	Total	C	N	O	S	0	0
			1138	745	186	205	2		
9	1	153	Total	C	N	O	S	0	0
			1138	745	186	205	2		
9	0	153	Total	C	N	O	S	0	0
			1138	745	186	205	2		

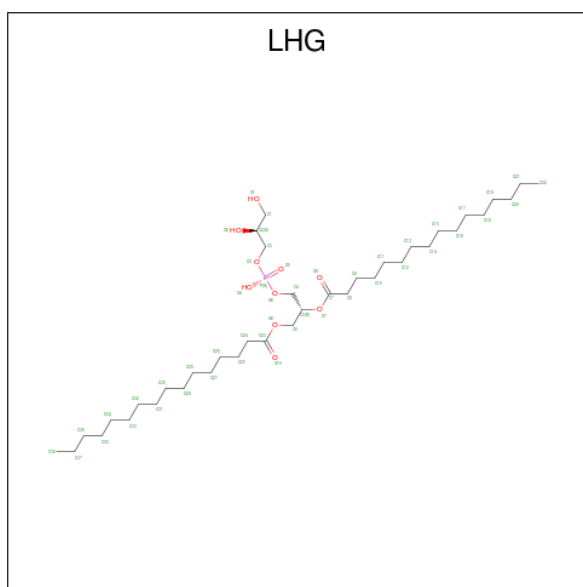
- Molecule 10 is a protein called Photosystem I reaction center subunit XII.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	M	30	Total	C	N	O	0	0
			230	154	35	41		
10	m	30	Total	C	N	O	0	0
			230	154	35	41		
10	9	30	Total	C	N	O	0	0
			230	154	35	41		

- Molecule 11 is a protein called Photosystem I reaction center subunit PsaK 2.

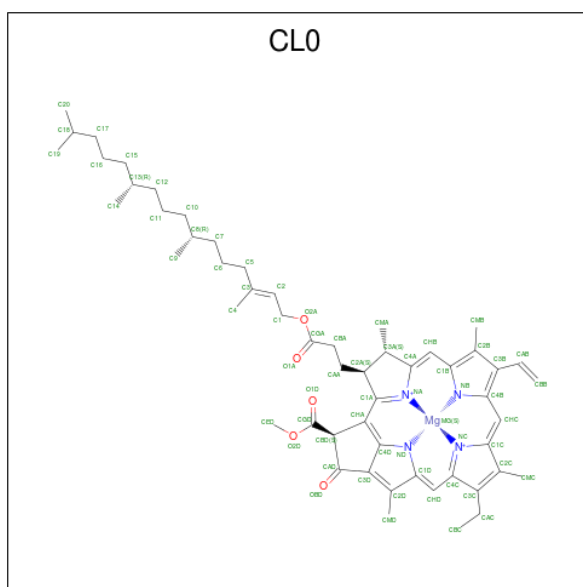
Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	79	Total	C	N	O	S	0	0
			566	373	90	98	5		
11	k	79	Total	C	N	O	S	0	0
			566	373	90	98	5		
11	8	79	Total	C	N	O	S	0	0
			566	373	90	98	5		

- Molecule 12 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: C<sub>38</sub>H<sub>75</sub>O<sub>10</sub>P).



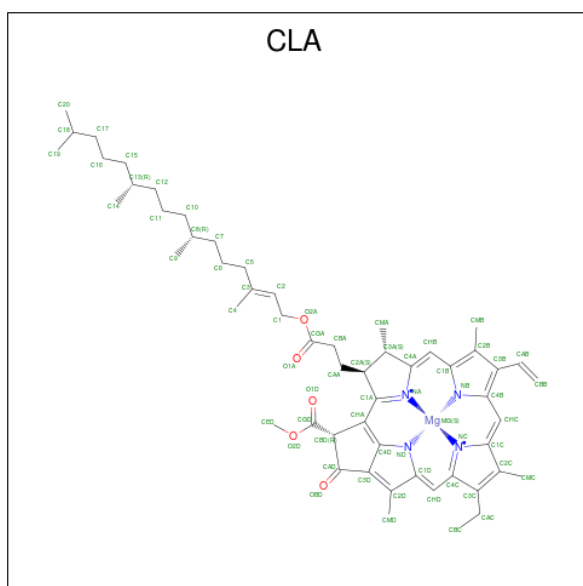
Mol	Chain	Residues	Atoms			AltConf	
			Total	C	O		P
12	A	1	82	60	20	2	0
12	A	1	82	60	20	2	0
12	B	1	39	28	10	1	0
12	M	1	39	28	10	1	0
12	a	1	82	60	20	2	0
12	a	1	82	60	20	2	0
12	1	1	82	60	20	2	0
12	1	1	82	60	20	2	0
12	b	1	39	28	10	1	0
12	2	1	39	28	10	1	0
12	m	1	39	28	10	1	0
12	9	1	39	28	10	1	0

- Molecule 13 is CHLOROPHYLL A ISOMER (three-letter code: CL0) (formula:  $C_{55}H_{72}MgN_4O_5$ ).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	Mg	N		O
13	A	1	65	55	1	4	5	0
13	a	1	65	55	1	4	5	0
13	1	1	65	55	1	4	5	0

- Molecule 14 is CHLOROPHYLL A (three-letter code: CLA) (formula:  $C_{55}H_{72}MgN_4O_5$ ) (labeled as "Ligand of Interest" by depositor).







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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	A	1	Total 2345	C 1935	Mg 41	N 164	O 205	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0
14	B	1	Total 2407	C 1972	Mg 44	N 176	O 215	0

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Mol	Chain	Residues	Atoms					AltConf
14	F	1	Total	C	Mg	N	O	0
			141	111	3	12	15	
14	F	1	Total	C	Mg	N	O	0
			141	111	3	12	15	
14	F	1	Total	C	Mg	N	O	0
			141	111	3	12	15	
14	J	1	Total	C	Mg	N	O	0
			82	66	2	8	6	
14	J	1	Total	C	Mg	N	O	0
			82	66	2	8	6	
14	L	1	Total	C	Mg	N	O	0
			195	165	3	12	15	
14	L	1	Total	C	Mg	N	O	0
			195	165	3	12	15	
14	L	1	Total	C	Mg	N	O	0
			195	165	3	12	15	
14	K	1	Total	C	Mg	N	O	0
			145	115	3	12	15	
14	K	1	Total	C	Mg	N	O	0
			145	115	3	12	15	
14	K	1	Total	C	Mg	N	O	0
			145	115	3	12	15	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	
14	a	1	Total	C	Mg	N	O	0
			2395	1975	42	168	210	

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	a	1	2395	1975	42	168	210	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	1	1	2331	1921	41	164	205	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0
14	b	1	2347	1922	43	172	210	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	b	1	Total 2347	C 1922	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0

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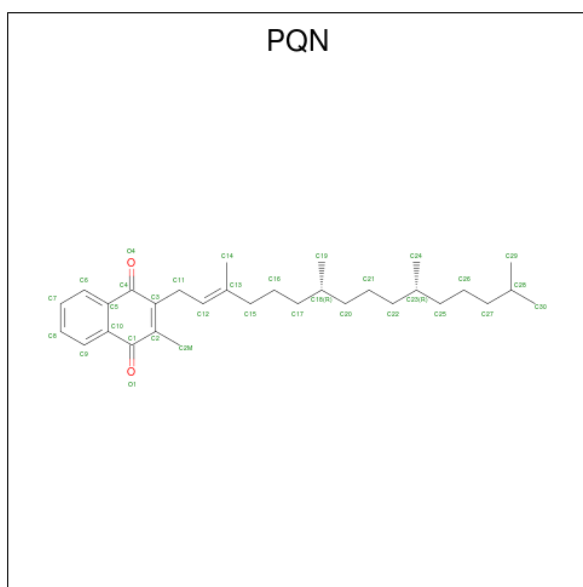
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	2	1	Total 2342	C 1917	Mg 43	N 172	O 210	0
14	f	1	Total 141	C 111	Mg 3	N 12	O 15	0
14	f	1	Total 141	C 111	Mg 3	N 12	O 15	0
14	f	1	Total 141	C 111	Mg 3	N 12	O 15	0
14	6	1	Total 90	C 70	Mg 2	N 8	O 10	0
14	6	1	Total 90	C 70	Mg 2	N 8	O 10	0
14	j	1	Total 82	C 66	Mg 2	N 8	O 6	0
14	j	1	Total 82	C 66	Mg 2	N 8	O 6	0
14	7	1	Total 147	C 121	Mg 3	N 12	O 11	0
14	7	1	Total 147	C 121	Mg 3	N 12	O 11	0

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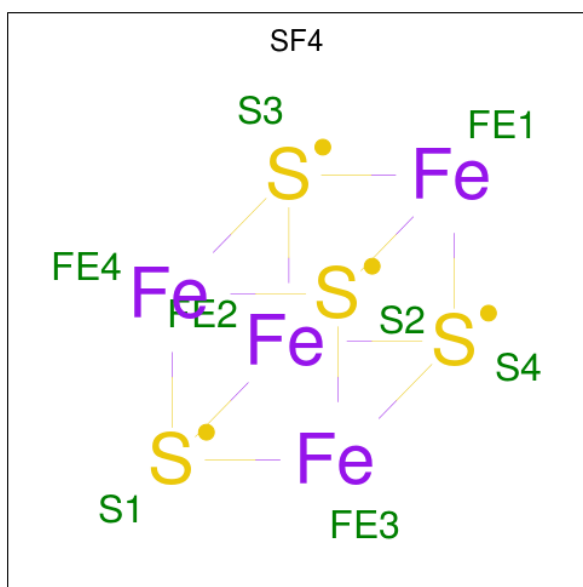
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
14	7	1	Total 147	C 121	Mg 3	N 12	O 11	0
14	k	1	Total 90	C 70	Mg 2	N 8	O 10	0
14	k	1	Total 90	C 70	Mg 2	N 8	O 10	0
14	8	1	Total 145	C 115	Mg 3	N 12	O 15	0
14	8	1	Total 145	C 115	Mg 3	N 12	O 15	0
14	8	1	Total 145	C 115	Mg 3	N 12	O 15	0
14	1	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	1	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	1	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	1	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	0	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	0	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	0	1	Total 260	C 220	Mg 4	N 16	O 20	0
14	0	1	Total 260	C 220	Mg 4	N 16	O 20	0

- Molecule 15 is PHYLLOQUINONE (three-letter code: PQN) (formula: C<sub>31</sub>H<sub>46</sub>O<sub>2</sub>).



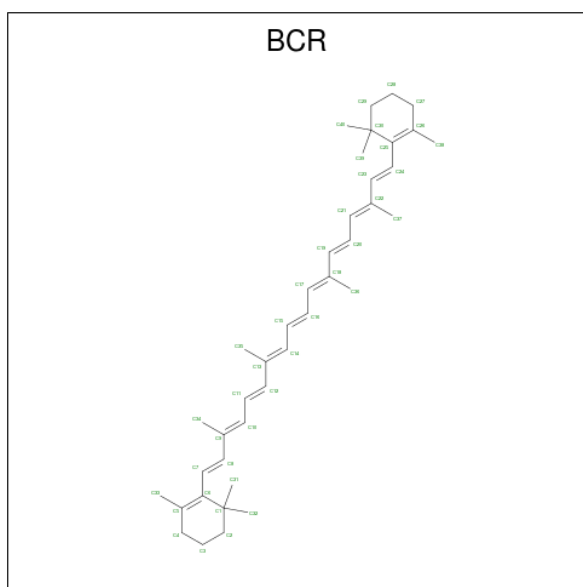
Mol	Chain	Residues	Atoms			AltConf
15	A	1	Total	C	O	0
			33	31	2	
15	B	1	Total	C	O	0
			33	31	2	
15	a	1	Total	C	O	0
			33	31	2	
15	1	1	Total	C	O	0
			33	31	2	
15	b	1	Total	C	O	0
			33	31	2	
15	2	1	Total	C	O	0
			33	31	2	

- Molecule 16 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe<sub>4</sub>S<sub>4</sub>).



Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
16	A	1	8	4	4	0
16	C	1	16	8	8	0
16	C	1	16	8	8	0
16	a	1	8	4	4	0
16	1	1	8	4	4	0
16	c	1	16	8	8	0
16	c	1	16	8	8	0
16	3	1	16	8	8	0
16	3	1	16	8	8	0

- Molecule 17 is BETA-CAROTENE (three-letter code: BCR) (formula: C<sub>40</sub>H<sub>56</sub>).



Mol	Chain	Residues	Atoms		AltConf
17	A	1	Total	C	0
			200	200	
17	A	1	Total	C	0
			200	200	
17	A	1	Total	C	0
			200	200	
17	A	1	Total	C	0
			200	200	
17	A	1	Total	C	0
			200	200	
17	B	1	Total	C	0
			265	265	
17	B	1	Total	C	0
			265	265	
17	B	1	Total	C	0
			265	265	
17	B	1	Total	C	0
			265	265	
17	B	1	Total	C	0
			265	265	
17	B	1	Total	C	0
			265	265	
17	F	1	Total	C	0
			80	80	
17	F	1	Total	C	0
			80	80	

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Mol	Chain	Residues	Atoms		AltConf
17	I	1	Total 80	C 80	0
17	I	1	Total 80	C 80	0
17	J	1	Total 80	C 80	0
17	J	1	Total 80	C 80	0
17	L	1	Total 80	C 80	0
17	L	1	Total 80	C 80	0
17	M	1	Total 40	C 40	0
17	K	1	Total 80	C 80	0
17	K	1	Total 80	C 80	0
17	a	1	Total 200	C 200	0
17	a	1	Total 200	C 200	0
17	a	1	Total 200	C 200	0
17	a	1	Total 200	C 200	0
17	a	1	Total 200	C 200	0
17	1	1	Total 200	C 200	0
17	1	1	Total 200	C 200	0
17	1	1	Total 200	C 200	0
17	1	1	Total 200	C 200	0
17	1	1	Total 200	C 200	0
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0

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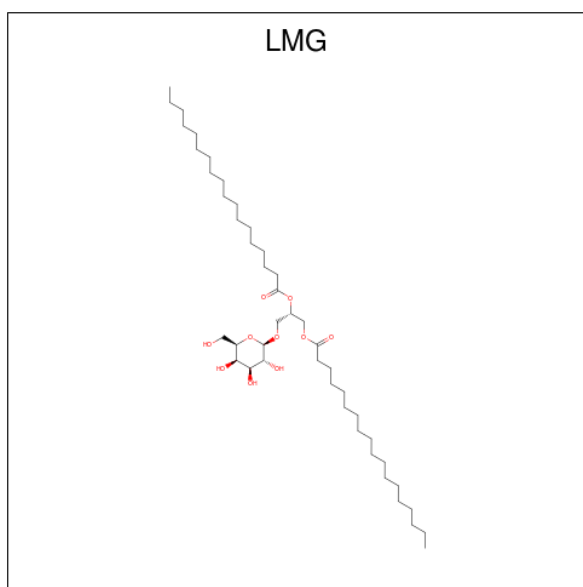
Mol	Chain	Residues	Atoms		AltConf
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0
17	b	1	Total 305	C 305	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	2	1	Total 225	C 225	0
17	f	1	Total 80	C 80	0
17	f	1	Total 80	C 80	0
17	6	1	Total 120	C 120	0
17	6	1	Total 120	C 120	0
17	6	1	Total 120	C 120	0
17	i	1	Total 80	C 80	0
17	i	1	Total 80	C 80	0
17	h	1	Total 80	C 80	0
17	h	1	Total 80	C 80	0

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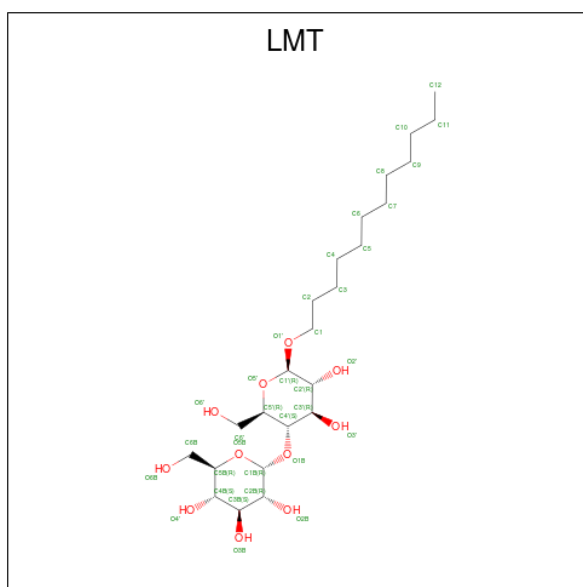
Mol	Chain	Residues	Atoms	AltConf
17	j	1	Total C 80 80	0
17	j	1	Total C 80 80	0
17	7	1	Total C 80 80	0
17	7	1	Total C 80 80	0
17	k	1	Total C 80 80	0
17	k	1	Total C 80 80	0
17	8	1	Total C 80 80	0
17	8	1	Total C 80 80	0
17	l	1	Total C 40 40	0
17	0	1	Total C 120 120	0
17	0	1	Total C 120 120	0
17	0	1	Total C 120 120	0
17	9	1	Total C 40 40	0

- Molecule 18 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: C<sub>45</sub>H<sub>86</sub>O<sub>10</sub>).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
18	A	1	78	58	20	0
18	A	1	78	58	20	0
18	B	1	48	38	10	0
18	L	1	38	28	10	0
18	a	1	78	58	20	0
18	a	1	78	58	20	0
18	1	1	32	22	10	0
18	b	1	48	38	10	0
18	2	1	48	38	10	0
18	1	1	38	28	10	0
18	0	1	84	64	20	0
18	0	1	84	64	20	0

- Molecule 19 is DODECYL-BETA-D-MALTOSE (three-letter code: LMT) (formula:  $C_{24}H_{46}O_{11}$ ).



Mol	Chain	Residues	Atoms			AltConf
19	F	1	Total	C	O	0
			35	24	11	
19	I	1	Total	C	O	0
			35	24	11	
19	f	1	Total	C	O	0
			35	24	11	
19	6	1	Total	C	O	0
			35	24	11	
19	i	1	Total	C	O	0
			35	24	11	
19	h	1	Total	C	O	0
			35	24	11	

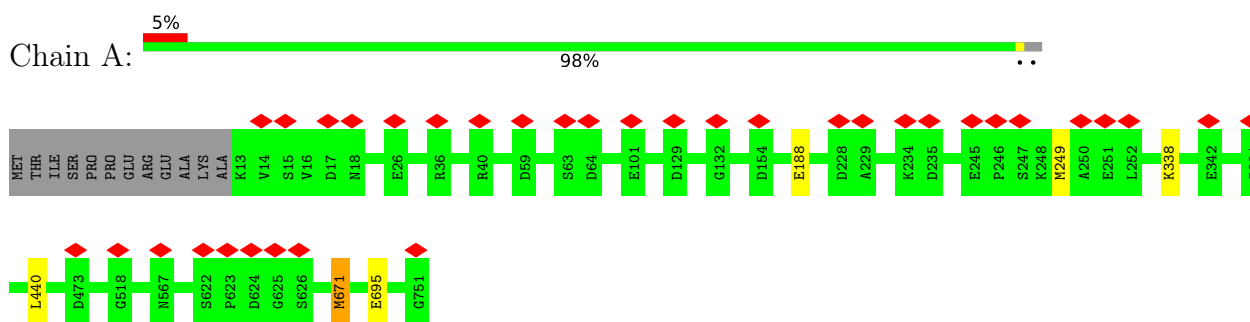
- Molecule 20 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
20	L	1	Total	Ca	0
			1	1	
20	1	1	Total	Ca	0
			1	1	
20	0	1	Total	Ca	0
			1	1	

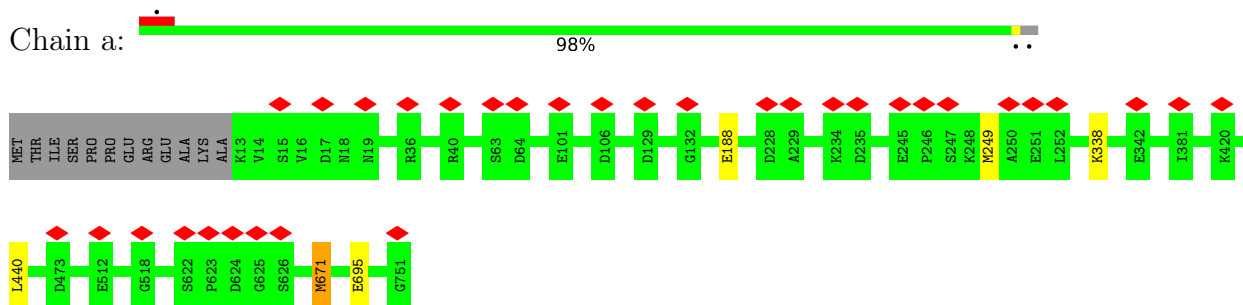
### 3 Residue-property plots [i](#)

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

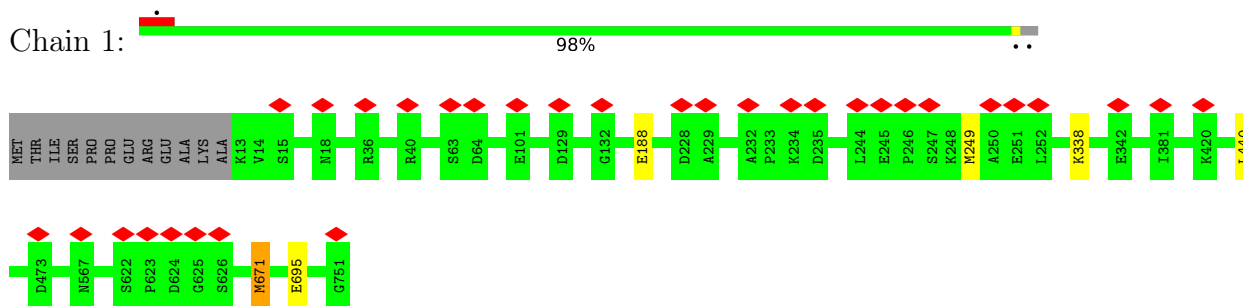
- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1



- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1



- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1



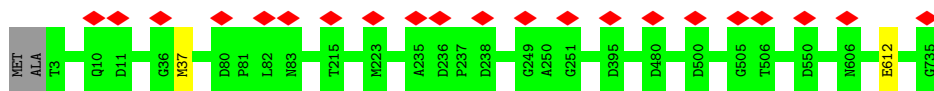
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2





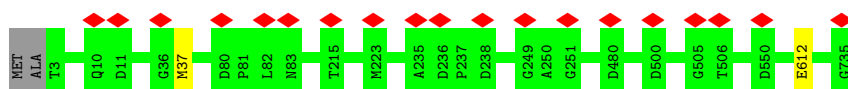
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2

Chain b: 99%



- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2

Chain 2: 99%



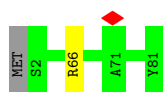
- Molecule 3: Photosystem I iron-sulfur center

Chain C: 98%



- Molecule 3: Photosystem I iron-sulfur center

Chain c: 98%



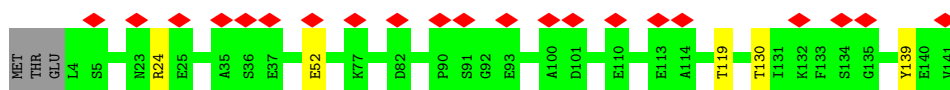
- Molecule 3: Photosystem I iron-sulfur center

Chain 3: 98%

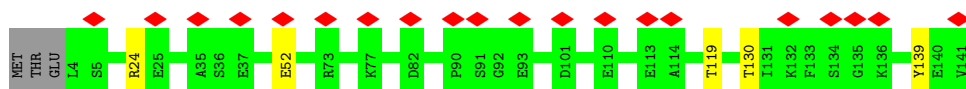


- Molecule 4: Photosystem I reaction center subunit II

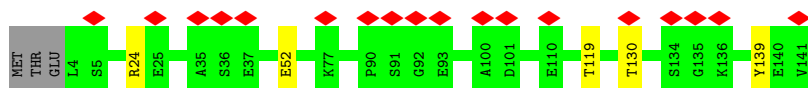
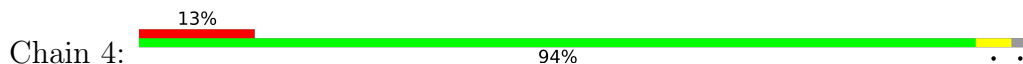
Chain D: 15% 94%



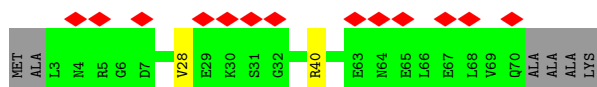
- Molecule 4: Photosystem I reaction center subunit II



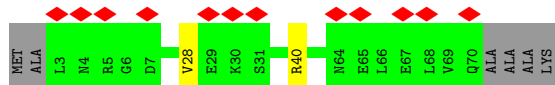
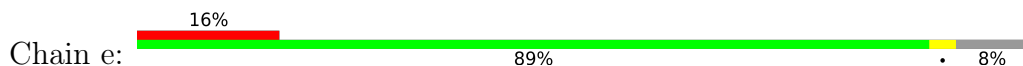
- Molecule 4: Photosystem I reaction center subunit II



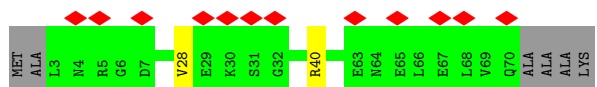
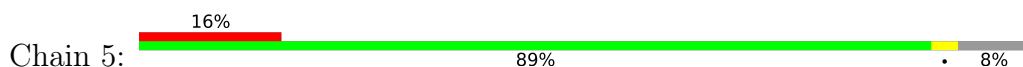
- Molecule 5: Photosystem I reaction center subunit IV



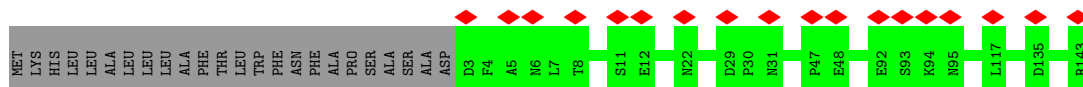
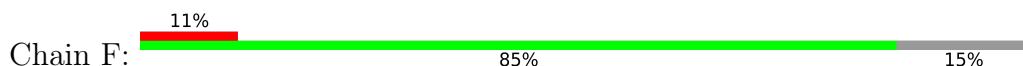
- Molecule 5: Photosystem I reaction center subunit IV



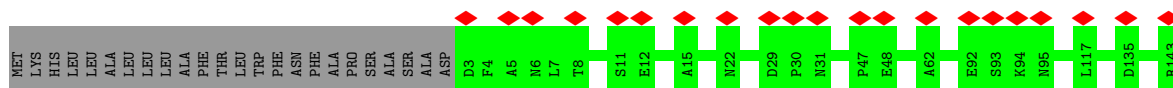
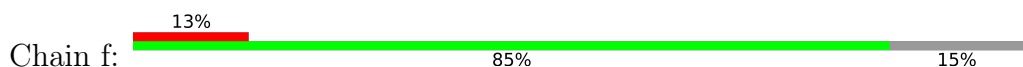
- Molecule 5: Photosystem I reaction center subunit IV



- Molecule 6: Photosystem I reaction center subunit III

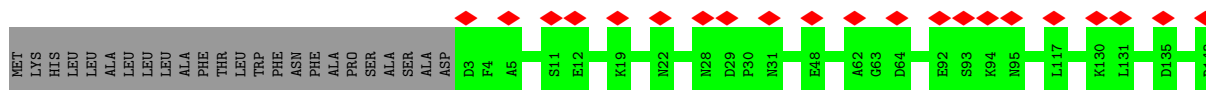
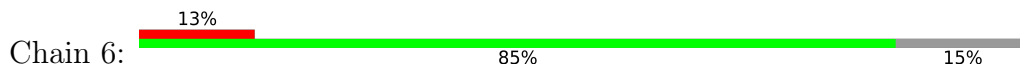


- Molecule 6: Photosystem I reaction center subunit III

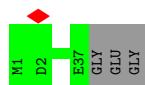




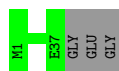
• Molecule 6: Photosystem I reaction center subunit III



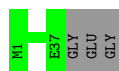
• Molecule 7: Photosystem I reaction center subunit VIII



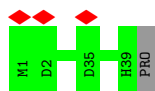
• Molecule 7: Photosystem I reaction center subunit VIII



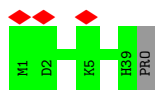
• Molecule 7: Photosystem I reaction center subunit VIII



• Molecule 8: Photosystem I reaction center subunit IX

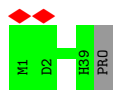


• Molecule 8: Photosystem I reaction center subunit IX

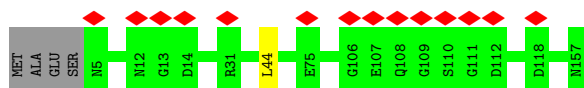


• Molecule 8: Photosystem I reaction center subunit IX

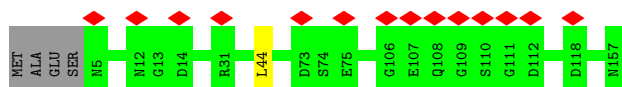




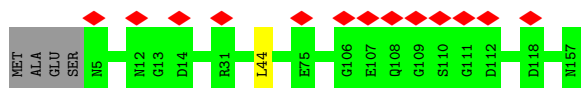
- Molecule 9: Photosystem I reaction center subunit XI



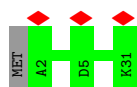
- Molecule 9: Photosystem I reaction center subunit XI



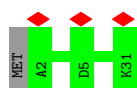
- Molecule 9: Photosystem I reaction center subunit XI



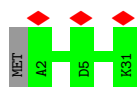
- Molecule 10: Photosystem I reaction center subunit XII



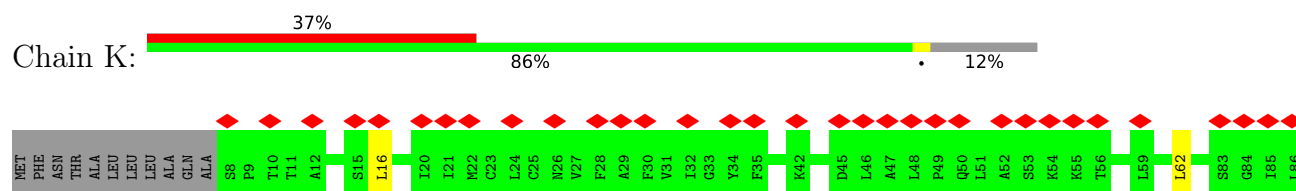
- Molecule 10: Photosystem I reaction center subunit XII



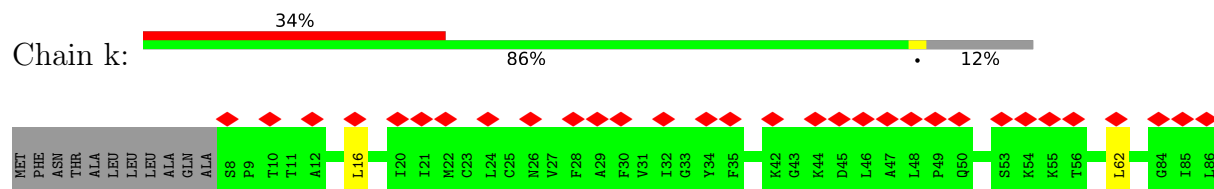
- Molecule 10: Photosystem I reaction center subunit XII



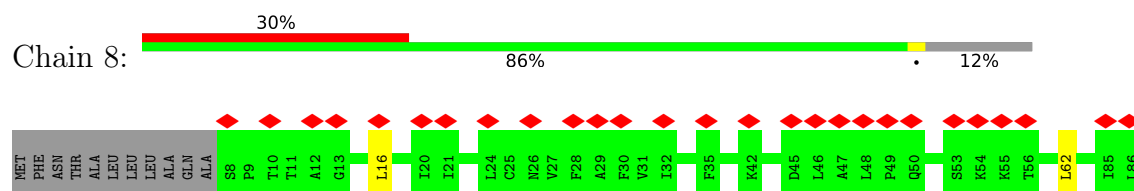
- Molecule 11: Photosystem I reaction center subunit PsaK 2



- Molecule 11: Photosystem I reaction center subunit PsaK 2



- Molecule 11: Photosystem I reaction center subunit PsaK 2



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	196181	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	1.6	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.229	Depositor
Minimum map value	-0.131	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0187	Depositor
Map size ( $\text{\AA}$ )	325.5, 325.5, 325.5	wwPDB
Map dimensions	310, 310, 310	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.05, 1.05, 1.05	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: CLA, BCR, LHG, PQN, CA, LMG, SF4, CL0, LMT

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	1	0.49	0/5985	0.56	3/8158 (0.0%)
1	A	0.49	0/5985	0.56	3/8158 (0.0%)
1	a	0.49	0/5985	0.56	3/8158 (0.0%)
2	2	0.51	0/6021	0.55	0/8237
2	B	0.51	0/6021	0.55	0/8237
2	b	0.51	0/6021	0.55	0/8237
3	3	0.50	0/610	0.54	0/826
3	C	0.50	0/610	0.54	0/826
3	c	0.50	0/610	0.54	0/826
4	4	0.41	0/1102	0.61	0/1485
4	D	0.41	0/1102	0.61	0/1485
4	d	0.41	0/1102	0.61	0/1485
5	5	0.45	0/546	0.51	0/738
5	E	0.45	0/546	0.51	0/738
5	e	0.45	0/546	0.52	0/738
6	6	0.33	0/1116	0.53	0/1520
6	F	0.33	0/1116	0.53	0/1520
6	f	0.33	0/1116	0.53	0/1520
7	I	0.43	0/304	0.57	0/416
7	h	0.43	0/304	0.58	0/416
7	i	0.43	0/304	0.58	0/416
8	7	0.35	0/319	0.58	0/431
8	J	0.35	0/319	0.58	0/431
8	j	0.35	0/319	0.58	0/431
9	0	0.43	0/1168	0.54	0/1588
9	L	0.43	0/1168	0.54	0/1588
9	l	0.43	0/1168	0.54	0/1588
10	9	0.31	0/233	0.55	0/316
10	M	0.31	0/233	0.55	0/316
10	m	0.31	0/233	0.55	0/316
11	8	0.31	0/577	0.61	1/778 (0.1%)
11	K	0.31	0/577	0.62	1/778 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
11	k	0.31	0/577	0.62	1/778 (0.1%)
All	All	0.47	0/53943	0.56	12/73479 (0.0%)

There are no bond length outliers.

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	671	MET	CB-CG-SD	6.90	133.10	112.40
1	a	671	MET	CB-CG-SD	6.88	133.05	112.40
1	1	671	MET	CB-CG-SD	6.88	133.04	112.40
11	K	62	LEU	CA-CB-CG	6.45	130.13	115.30
1	a	671	MET	CG-SD-CE	6.43	110.49	100.20

There are no chirality outliers.

There are no planarity outliers.

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

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

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	737/751 (98%)	712 (97%)	25 (3%)	0	100	100
1	A	737/751 (98%)	712 (97%)	25 (3%)	0	100	100
1	a	737/751 (98%)	712 (97%)	25 (3%)	0	100	100
2	2	731/735 (100%)	700 (96%)	31 (4%)	0	100	100
2	B	731/735 (100%)	700 (96%)	31 (4%)	0	100	100
2	b	731/735 (100%)	700 (96%)	31 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	3	78/81 (96%)	74 (95%)	4 (5%)	0	100	100
3	C	78/81 (96%)	74 (95%)	4 (5%)	0	100	100
3	c	78/81 (96%)	74 (95%)	4 (5%)	0	100	100
4	4	136/141 (96%)	127 (93%)	9 (7%)	0	100	100
4	D	136/141 (96%)	127 (93%)	9 (7%)	0	100	100
4	d	136/141 (96%)	127 (93%)	9 (7%)	0	100	100
5	5	66/74 (89%)	63 (96%)	3 (4%)	0	100	100
5	E	66/74 (89%)	63 (96%)	3 (4%)	0	100	100
5	e	66/74 (89%)	63 (96%)	3 (4%)	0	100	100
6	6	139/165 (84%)	131 (94%)	8 (6%)	0	100	100
6	F	139/165 (84%)	131 (94%)	8 (6%)	0	100	100
6	f	139/165 (84%)	131 (94%)	8 (6%)	0	100	100
7	I	35/40 (88%)	33 (94%)	2 (6%)	0	100	100
7	h	35/40 (88%)	33 (94%)	2 (6%)	0	100	100
7	i	35/40 (88%)	33 (94%)	2 (6%)	0	100	100
8	7	37/40 (92%)	34 (92%)	3 (8%)	0	100	100
8	J	37/40 (92%)	34 (92%)	3 (8%)	0	100	100
8	j	37/40 (92%)	34 (92%)	3 (8%)	0	100	100
9	0	151/157 (96%)	148 (98%)	3 (2%)	0	100	100
9	L	151/157 (96%)	148 (98%)	3 (2%)	0	100	100
9	l	151/157 (96%)	148 (98%)	3 (2%)	0	100	100
10	9	28/31 (90%)	27 (96%)	1 (4%)	0	100	100
10	M	28/31 (90%)	27 (96%)	1 (4%)	0	100	100
10	m	28/31 (90%)	27 (96%)	1 (4%)	0	100	100
11	8	77/90 (86%)	73 (95%)	4 (5%)	0	100	100
11	K	77/90 (86%)	73 (95%)	4 (5%)	0	100	100
11	k	77/90 (86%)	73 (95%)	4 (5%)	0	100	100
All	All	6645/6915 (96%)	6366 (96%)	279 (4%)	0	100	100

There are no Ramachandran outliers to report.

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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1	593/603 (98%)	588 (99%)	5 (1%)	81	92
1	A	593/603 (98%)	588 (99%)	5 (1%)	81	92
1	a	593/603 (98%)	588 (99%)	5 (1%)	81	92
2	2	585/588 (100%)	583 (100%)	2 (0%)	92	96
2	B	585/588 (100%)	583 (100%)	2 (0%)	92	96
2	b	585/588 (100%)	583 (100%)	2 (0%)	92	96
3	3	68/69 (99%)	67 (98%)	1 (2%)	65	85
3	C	68/69 (99%)	67 (98%)	1 (2%)	65	85
3	c	68/69 (99%)	67 (98%)	1 (2%)	65	85
4	4	113/116 (97%)	108 (96%)	5 (4%)	28	61
4	D	113/116 (97%)	108 (96%)	5 (4%)	28	61
4	d	113/116 (97%)	108 (96%)	5 (4%)	28	61
5	5	58/60 (97%)	56 (97%)	2 (3%)	37	69
5	E	58/60 (97%)	56 (97%)	2 (3%)	37	69
5	e	58/60 (97%)	56 (97%)	2 (3%)	37	69
6	6	114/137 (83%)	114 (100%)	0	100	100
6	F	114/137 (83%)	114 (100%)	0	100	100
6	f	114/137 (83%)	114 (100%)	0	100	100
7	I	31/32 (97%)	31 (100%)	0	100	100
7	h	31/32 (97%)	31 (100%)	0	100	100
7	i	31/32 (97%)	31 (100%)	0	100	100
8	7	34/35 (97%)	34 (100%)	0	100	100
8	J	34/35 (97%)	34 (100%)	0	100	100
8	j	34/35 (97%)	34 (100%)	0	100	100
9	0	111/118 (94%)	110 (99%)	1 (1%)	78	91
9	L	111/118 (94%)	110 (99%)	1 (1%)	78	91

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	l	111/118 (94%)	110 (99%)	1 (1%)	78	91
10	9	24/25 (96%)	24 (100%)	0	100	100
10	M	24/25 (96%)	24 (100%)	0	100	100
10	m	24/25 (96%)	24 (100%)	0	100	100
11	8	59/68 (87%)	58 (98%)	1 (2%)	60	83
11	K	59/68 (87%)	58 (98%)	1 (2%)	60	83
11	k	59/68 (87%)	58 (98%)	1 (2%)	60	83
All	All	5370/5553 (97%)	5319 (99%)	51 (1%)	79	91

5 of 51 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	3	66	ARG
4	d	119	THR
9	l	44	LEU
2	b	37	MET
2	2	612	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
9	L	36	ASN
1	1	714	GLN
9	l	6	GLN
9	l	36	ASN
9	0	6	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 408 ligands modelled in this entry, 3 are monoatomic - leaving 405 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
17	BCR	b	848	-	25,25,41	1.17	2 (8%)	33,33,56	1.33	6 (18%)
14	CLA	K	4002	-	45,53,73	1.78	8 (17%)	52,89,113	1.63	9 (17%)
14	CLA	A	832	-	65,73,73	1.49	10 (15%)	76,113,113	1.56	9 (11%)
12	LHG	1	802	14	32,32,48	0.85	1 (3%)	35,38,54	1.31	3 (8%)
17	BCR	B	847	-	41,41,41	1.16	2 (4%)	56,56,56	1.29	7 (12%)
18	LMG	b	803	-	48,48,55	0.78	1 (2%)	56,56,63	1.35	7 (12%)
14	CLA	a	854	-	55,63,73	1.58	9 (16%)	64,101,113	1.39	11 (17%)
14	CLA	6	4404	-	45,53,73	1.72	8 (17%)	52,89,113	1.65	12 (23%)
14	CLA	1	824	-	51,59,73	1.60	8 (15%)	59,96,113	1.68	6 (10%)
18	LMG	l	4202	-	38,38,55	0.87	0	46,46,63	1.29	4 (8%)
17	BCR	A	849	-	41,41,41	1.28	3 (7%)	56,56,56	1.40	7 (12%)
14	CLA	b	807	-	54,62,73	1.56	8 (14%)	62,99,113	1.58	10 (16%)
14	CLA	a	838	1	45,53,73	1.79	8 (17%)	52,89,113	1.71	9 (17%)
17	BCR	A	848	-	41,41,41	1.18	2 (4%)	56,56,56	1.20	6 (10%)
17	BCR	h	101	-	41,41,41	1.24	2 (4%)	56,56,56	1.36	7 (12%)
14	CLA	2	830	-	65,73,73	1.41	9 (13%)	76,113,113	1.48	10 (13%)
14	CLA	2	831	-	60,68,73	1.58	11 (18%)	70,107,113	1.75	8 (11%)
18	LMG	1	852	-	32,32,55	0.91	1 (3%)	40,40,63	1.20	3 (7%)
14	CLA	1	841	-	51,59,73	1.62	9 (17%)	59,96,113	1.49	7 (11%)
17	BCR	6	4402	-	41,41,41	1.27	2 (4%)	56,56,56	1.37	6 (10%)
14	CLA	A	844	12	45,53,73	1.72	10 (22%)	52,89,113	1.63	7 (13%)
14	CLA	b	815	-	65,73,73	1.44	10 (15%)	76,113,113	1.44	8 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	A	840	-	47,55,73	1.67	10 (21%)	54,91,113	1.60	8 (14%)
14	CLA	2	825	-	45,53,73	1.75	9 (20%)	52,89,113	1.65	8 (15%)
14	CLA	F	201	-	51,59,73	1.63	9 (17%)	59,96,113	1.49	7 (11%)
14	CLA	k	4002	-	45,53,73	1.78	8 (17%)	52,89,113	1.64	9 (17%)
14	CLA	b	832	-	45,53,73	1.75	10 (22%)	52,89,113	1.87	10 (19%)
14	CLA	b	834	-	58,66,73	1.54	9 (15%)	67,104,113	1.46	9 (13%)
14	CLA	f	201	-	51,59,73	1.62	9 (17%)	59,96,113	1.50	7 (11%)
14	CLA	2	821	-	47,55,73	1.75	9 (19%)	54,91,113	1.55	9 (16%)
14	CLA	1	808	-	46,54,73	1.70	10 (21%)	53,90,113	1.63	8 (15%)
17	BCR	8	4001	-	41,41,41	1.26	3 (7%)	56,56,56	1.41	8 (14%)
14	CLA	1	818	-	54,62,73	1.53	7 (12%)	62,99,113	1.56	8 (12%)
19	LMT	6	4401	-	36,36,36	1.23	6 (16%)	47,47,47	0.94	1 (2%)
15	PQN	1	845	-	34,34,34	0.39	0	42,45,45	1.23	3 (7%)
15	PQN	b	845	-	34,34,34	0.48	0	42,45,45	1.25	4 (9%)
14	CLA	A	837	1	45,53,73	1.79	8 (17%)	52,89,113	1.71	9 (17%)
14	CLA	a	811	1	65,73,73	1.41	8 (12%)	76,113,113	1.33	8 (10%)
14	CLA	b	812	-	61,69,73	1.48	11 (18%)	71,108,113	1.65	10 (14%)
14	CLA	2	801	-	60,68,73	1.51	9 (15%)	70,107,113	1.66	9 (12%)
14	CLA	A	820	-	54,62,73	1.59	10 (18%)	62,99,113	1.56	10 (16%)
14	CLA	1	817	-	46,54,73	1.73	7 (15%)	53,90,113	1.48	7 (13%)
12	LHG	a	802	14	32,32,48	0.85	1 (3%)	35,38,54	1.30	3 (8%)
14	CLA	A	825	-	51,59,73	1.60	8 (15%)	59,96,113	1.67	6 (10%)
17	BCR	I	101	-	41,41,41	1.24	2 (4%)	56,56,56	1.36	7 (12%)
14	CLA	A	823	-	65,73,73	1.48	9 (13%)	76,113,113	1.45	9 (11%)
17	BCR	L	1505	-	41,41,41	1.14	1 (2%)	56,56,56	1.36	6 (10%)
17	BCR	6	4406	-	41,41,41	1.26	3 (7%)	56,56,56	1.38	8 (14%)
15	PQN	B	846	-	34,34,34	0.48	0	42,45,45	1.25	4 (9%)
19	LMT	F	202	-	36,36,36	1.23	6 (16%)	47,47,47	0.94	1 (2%)
14	CLA	A	815	-	55,63,73	1.56	9 (16%)	64,101,113	1.52	8 (12%)
14	CLA	2	822	-	45,53,73	1.75	7 (15%)	52,89,113	1.64	8 (15%)
14	CLA	B	814	-	45,53,73	1.73	9 (20%)	52,89,113	1.56	9 (17%)
14	CLA	1	837	-	51,59,73	1.59	11 (21%)	59,96,113	1.53	12 (20%)
16	SF4	c	101	3	0,12,12	-	-	-	-	-
17	BCR	j	104	-	41,41,41	1.18	2 (4%)	56,56,56	1.29	6 (10%)
14	CLA	1	805	-	50,58,73	1.62	8 (16%)	58,95,113	1.67	9 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
17	BCR	A	850	-	41,41,41	1.30	3 (7%)	56,56,56	1.41	10 (17%)
14	CLA	2	826	-	55,63,73	1.59	10 (18%)	64,101,113	1.63	11 (17%)
14	CLA	B	833	-	45,53,73	1.75	10 (22%)	52,89,113	1.87	9 (17%)
12	LHG	A	801	-	48,48,48	0.67	1 (2%)	51,54,54	1.27	7 (13%)
14	CLA	A	829	-	65,73,73	1.39	8 (12%)	76,113,113	1.59	7 (9%)
14	CLA	B	840	-	50,58,73	1.60	9 (18%)	58,95,113	1.73	11 (18%)
17	BCR	F	203	-	41,41,41	1.27	2 (4%)	56,56,56	1.37	6 (10%)
14	CLA	j	102	-	38,45,73	1.88	7 (18%)	43,78,113	1.55	5 (11%)
15	PQN	a	845	-	34,34,34	0.39	0	42,45,45	1.23	3 (7%)
14	CLA	a	834	-	50,58,73	1.62	10 (20%)	58,95,113	1.83	11 (18%)
17	BCR	a	847	-	41,41,41	1.22	2 (4%)	56,56,56	1.29	8 (14%)
14	CLA	0	202	-	65,73,73	1.45	9 (13%)	76,113,113	1.39	9 (11%)
14	CLA	2	827	-	50,58,73	1.61	8 (16%)	58,95,113	1.52	11 (18%)
14	CLA	k	4003	-	45,53,73	1.78	6 (13%)	52,89,113	1.69	8 (15%)
14	CLA	1	830	-	65,73,73	1.42	8 (12%)	76,113,113	1.49	10 (13%)
18	LMG	A	853	-	32,32,55	0.91	1 (3%)	40,40,63	1.21	4 (10%)
17	BCR	b	846	-	41,41,41	1.17	2 (4%)	56,56,56	1.28	7 (12%)
14	CLA	A	809	-	46,54,73	1.69	10 (21%)	53,90,113	1.62	8 (15%)
14	CLA	A	839	-	65,73,73	1.46	10 (15%)	76,113,113	1.41	8 (10%)
14	CLA	B	832	-	60,68,73	1.59	11 (18%)	70,107,113	1.75	8 (11%)
14	CLA	J	101	-	45,53,73	1.74	6 (13%)	52,89,113	1.68	8 (15%)
12	LHG	2	852	-	38,38,48	0.70	1 (2%)	41,44,54	1.19	3 (7%)
14	CLA	A	808	-	65,73,73	1.45	9 (13%)	76,113,113	1.56	8 (10%)
14	CLA	a	821	-	54,62,73	1.60	10 (18%)	62,99,113	1.56	10 (16%)
14	CLA	b	804	-	65,73,73	1.50	10 (15%)	76,113,113	1.28	9 (11%)
17	BCR	a	850	-	41,41,41	1.30	3 (7%)	56,56,56	1.41	10 (17%)
14	CLA	1	826	-	65,73,73	1.45	10 (15%)	76,113,113	1.44	10 (13%)
14	CLA	L	1502	-	65,73,73	1.45	10 (15%)	76,113,113	1.48	9 (11%)
14	CLA	a	819	-	46,54,73	1.72	7 (15%)	53,90,113	1.48	7 (13%)
17	BCR	F	206	-	41,41,41	1.16	2 (4%)	56,56,56	1.32	7 (12%)
14	CLA	B	804	-	65,73,73	1.50	10 (15%)	76,113,113	1.28	10 (13%)
19	LMT	i	4101	-	36,36,36	1.23	5 (13%)	47,47,47	1.18	3 (6%)
14	CLA	1	825	-	59,67,73	1.49	9 (15%)	68,105,113	1.60	11 (16%)
14	CLA	a	830	-	65,73,73	1.39	8 (12%)	76,113,113	1.59	7 (9%)
14	CLA	a	832	-	65,73,73	1.42	8 (12%)	76,113,113	1.49	10 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	B	838	-	45,53,73	1.76	10 (22%)	52,89,113	1.63	7 (13%)
14	CLA	l	4206	-	65,73,73	1.43	7 (10%)	76,113,113	1.36	8 (10%)
14	CLA	a	825	-	49,57,73	1.60	8 (16%)	55,93,113	1.69	9 (16%)
14	CLA	2	803	-	65,73,73	1.50	10 (15%)	76,113,113	1.28	10 (13%)
14	CLA	2	839	-	50,58,73	1.59	9 (18%)	58,95,113	1.72	11 (18%)
14	CLA	b	836	-	45,53,73	1.74	8 (17%)	52,89,113	1.67	11 (21%)
14	CLA	0	207	-	65,73,73	1.44	10 (15%)	76,113,113	1.49	9 (11%)
14	CLA	1	809	1	65,73,73	1.41	8 (12%)	76,113,113	1.32	7 (9%)
14	CLA	b	843	-	65,73,73	1.46	10 (15%)	76,113,113	1.48	9 (11%)
17	BCR	1	851	-	41,41,41	1.21	2 (4%)	56,56,56	1.37	8 (14%)
14	CLA	f	204	-	45,53,73	1.71	8 (17%)	52,89,113	1.76	8 (15%)
14	CLA	l	4203	-	65,73,73	1.45	10 (15%)	76,113,113	1.50	10 (13%)
14	CLA	A	806	-	50,58,73	1.62	8 (16%)	58,95,113	1.68	9 (15%)
12	LHG	A	802	14	32,32,48	0.85	1 (3%)	35,38,54	1.30	3 (8%)
14	CLA	B	805	-	65,73,73	1.39	9 (13%)	76,113,113	1.61	13 (17%)
17	BCR	8	4005	-	41,41,41	1.12	2 (4%)	56,56,56	1.23	5 (8%)
14	CLA	B	801	-	60,68,73	1.51	9 (15%)	70,107,113	1.67	10 (14%)
14	CLA	a	826	-	51,59,73	1.61	8 (15%)	59,96,113	1.67	6 (10%)
14	CLA	1	814	-	55,63,73	1.56	8 (14%)	64,101,113	1.52	8 (12%)
14	CLA	1	822	-	65,73,73	1.47	8 (12%)	76,113,113	1.45	9 (11%)
14	CLA	2	824	-	45,53,73	1.72	9 (20%)	52,89,113	1.61	7 (13%)
14	CLA	A	842	-	65,73,73	1.44	10 (15%)	76,113,113	1.45	8 (10%)
17	BCR	a	848	-	41,41,41	1.18	2 (4%)	56,56,56	1.21	7 (12%)
14	CLA	2	836	-	45,53,73	1.74	8 (17%)	52,89,113	1.67	11 (21%)
14	CLA	a	818	-	45,53,73	1.71	9 (20%)	52,89,113	1.60	9 (17%)
14	CLA	b	818	-	55,63,73	1.52	8 (14%)	64,101,113	1.61	8 (12%)
18	LMG	a	853	-	32,32,55	0.92	1 (3%)	40,40,63	1.20	3 (7%)
17	BCR	0	210	-	41,41,41	1.14	2 (4%)	56,56,56	1.36	6 (10%)
14	CLA	0	208	-	65,73,73	1.43	7 (10%)	76,113,113	1.36	8 (10%)
17	BCR	B	854	-	41,41,41	1.26	3 (7%)	56,56,56	1.37	7 (12%)
14	CLA	2	838	-	46,54,73	1.72	7 (15%)	53,90,113	1.64	8 (15%)
17	BCR	B	852	-	41,41,41	1.23	3 (7%)	56,56,56	1.32	8 (14%)
14	CLA	A	819	-	54,62,73	1.52	7 (12%)	62,99,113	1.56	8 (12%)
17	BCR	b	849	-	41,41,41	1.13	2 (4%)	56,56,56	1.39	11 (19%)
14	CLA	a	817	-	45,53,73	1.71	8 (17%)	52,89,113	1.68	6 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	1	828	-	65,73,73	1.40	8 (12%)	76,113,113	1.59	7 (9%)
18	LMG	2	802	-	48,48,55	0.78	1 (2%)	56,56,63	1.35	7 (12%)
17	BCR	b	850	-	41,41,41	1.26	4 (9%)	56,56,56	1.56	11 (19%)
15	PQN	2	845	-	34,34,34	0.48	0	42,45,45	1.25	4 (9%)
12	LHG	1	801	-	48,48,48	0.67	1 (2%)	51,54,54	1.27	7 (13%)
17	BCR	0	209	-	41,41,41	1.20	2 (4%)	56,56,56	1.39	9 (16%)
17	BCR	2	846	-	41,41,41	1.17	2 (4%)	56,56,56	1.28	7 (12%)
14	CLA	A	830	-	65,73,73	1.40	9 (13%)	76,113,113	1.61	11 (14%)
14	CLA	b	842	-	65,73,73	1.45	10 (15%)	76,113,113	1.26	7 (9%)
14	CLA	1	815	-	45,53,73	1.71	8 (17%)	52,89,113	1.69	6 (11%)
14	CLA	a	837	-	54,62,73	1.62	9 (16%)	62,99,113	1.50	8 (12%)
12	LHG	m	101	-	38,38,48	0.66	0	41,44,54	1.24	4 (9%)
14	CLA	B	843	-	65,73,73	1.45	10 (15%)	76,113,113	1.26	7 (9%)
14	CLA	a	822	-	65,73,73	1.41	8 (12%)	76,113,113	1.48	9 (11%)
17	BCR	2	849	-	41,41,41	1.13	2 (4%)	56,56,56	1.40	11 (19%)
14	CLA	b	810	-	60,68,73	1.47	9 (15%)	70,107,113	1.40	9 (12%)
14	CLA	A	827	-	65,73,73	1.47	10 (15%)	76,113,113	1.44	10 (13%)
17	BCR	j	103	-	41,41,41	1.23	2 (4%)	56,56,56	1.31	5 (8%)
17	BCR	b	853	-	41,41,41	1.26	3 (7%)	56,56,56	1.37	7 (12%)
17	BCR	2	847	-	41,41,41	1.16	2 (4%)	56,56,56	1.30	7 (12%)
14	CLA	1	823	-	49,57,73	1.60	8 (16%)	55,93,113	1.68	8 (14%)
14	CLA	2	820	-	60,68,73	1.46	8 (13%)	70,107,113	1.54	10 (14%)
14	CLA	a	809	-	65,73,73	1.45	9 (13%)	76,113,113	1.57	8 (10%)
14	CLA	b	823	-	45,53,73	1.74	8 (17%)	52,89,113	1.68	8 (15%)
14	CLA	1	819	-	54,62,73	1.59	10 (18%)	62,99,113	1.57	10 (16%)
14	CLA	1	843	-	65,73,73	1.48	11 (16%)	76,113,113	1.39	7 (9%)
14	CLA	2	813	-	45,53,73	1.74	10 (22%)	52,89,113	1.56	9 (17%)
16	SF4	C	102	3	0,12,12	-	-	-	-	-
14	CLA	2	806	-	54,62,73	1.56	8 (14%)	62,99,113	1.56	10 (16%)
14	CLA	a	814	-	65,73,73	1.46	10 (15%)	76,113,113	1.52	10 (13%)
17	BCR	k	4004	-	41,41,41	1.12	2 (4%)	56,56,56	1.23	5 (8%)
14	CLA	a	844	12	45,53,73	1.71	10 (22%)	52,89,113	1.63	7 (13%)
14	CLA	F	204	-	45,53,73	1.71	8 (17%)	52,89,113	1.76	8 (15%)
14	CLA	B	830	-	60,68,73	1.46	9 (15%)	70,107,113	1.52	7 (10%)
12	LHG	M	101	-	38,38,48	0.67	0	41,44,54	1.24	4 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	b	824	-	45,53,73	1.74	9 (20%)	52,89,113	1.61	7 (13%)
14	CLA	B	817	-	46,54,73	1.68	7 (15%)	53,90,113	1.65	7 (13%)
14	CLA	b	829	-	60,68,73	1.46	9 (15%)	70,107,113	1.51	7 (10%)
17	BCR	i	4102	-	41,41,41	1.24	2 (4%)	56,56,56	1.36	6 (10%)
14	CLA	B	807	-	54,62,73	1.56	8 (14%)	62,99,113	1.58	10 (16%)
14	CLA	1	811	-	45,53,73	1.76	10 (22%)	52,89,113	1.59	9 (17%)
14	CLA	1	827	-	55,63,73	1.53	8 (14%)	64,101,113	1.43	6 (9%)
14	CLA	B	826	-	45,53,73	1.74	9 (20%)	52,89,113	1.64	7 (13%)
14	CLA	A	814	-	54,62,73	1.58	9 (16%)	62,99,113	1.58	10 (16%)
17	BCR	J	104	-	41,41,41	1.17	2 (4%)	56,56,56	1.29	6 (10%)
14	CLA	1	836	1	45,53,73	1.79	8 (17%)	52,89,113	1.71	10 (19%)
14	CLA	b	841	-	46,54,73	1.65	8 (17%)	53,90,113	1.77	8 (15%)
12	LHG	b	852	-	38,38,48	0.70	1 (2%)	41,44,54	1.19	3 (7%)
14	CLA	a	808	-	65,73,73	1.46	10 (15%)	76,113,113	1.40	8 (10%)
14	CLA	A	835	-	65,73,73	1.42	9 (13%)	76,113,113	1.55	12 (15%)
14	CLA	2	829	-	60,68,73	1.46	9 (15%)	70,107,113	1.53	7 (10%)
17	BCR	k	4001	-	41,41,41	1.26	3 (7%)	56,56,56	1.41	8 (14%)
14	CLA	b	808	-	65,73,73	1.43	9 (13%)	76,113,113	1.46	9 (11%)
14	CLA	A	813	-	65,73,73	1.45	10 (15%)	76,113,113	1.52	10 (13%)
14	CLA	B	810	-	60,68,73	1.47	10 (16%)	70,107,113	1.40	9 (12%)
17	BCR	a	851	-	41,41,41	1.21	2 (4%)	56,56,56	1.36	8 (14%)
14	CLA	7	1103	-	38,45,73	1.87	7 (18%)	43,78,113	1.54	5 (11%)
14	CLA	B	825	-	45,53,73	1.73	9 (20%)	52,89,113	1.61	7 (13%)
14	CLA	b	833	-	55,63,73	1.57	8 (14%)	64,101,113	1.52	9 (14%)
14	CLA	A	818	-	46,54,73	1.72	7 (15%)	53,90,113	1.48	7 (13%)
14	CLA	a	815	-	54,62,73	1.58	10 (18%)	62,99,113	1.58	10 (16%)
14	CLA	2	816	-	46,54,73	1.68	7 (15%)	53,90,113	1.65	7 (13%)
17	BCR	2	851	-	41,41,41	1.22	3 (7%)	56,56,56	1.32	8 (14%)
14	CLA	B	816	-	65,73,73	1.44	10 (15%)	76,113,113	1.44	8 (10%)
14	CLA	A	810	1	65,73,73	1.41	9 (13%)	76,113,113	1.33	8 (10%)
14	CLA	b	827	-	50,58,73	1.60	8 (16%)	58,95,113	1.52	11 (18%)
14	CLA	2	809	-	60,68,73	1.46	9 (15%)	70,107,113	1.40	9 (12%)
14	CLA	b	814	-	45,53,73	1.72	10 (22%)	52,89,113	1.62	9 (17%)
14	CLA	1	844	12	45,53,73	1.71	10 (22%)	52,89,113	1.63	7 (13%)
14	CLA	A	804	-	65,73,73	1.52	10 (15%)	76,113,113	1.19	6 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
19	LMT	I	103	-	36,36,36	1.22	5 (13%)	47,47,47	1.18	3 (6%)
18	LMG	a	852	-	46,46,55	0.84	1 (2%)	54,54,63	1.30	6 (11%)
14	CLA	1	840	-	65,73,73	1.41	10 (15%)	76,113,113	1.53	9 (11%)
17	BCR	2	848	-	25,25,41	1.17	2 (8%)	33,33,56	1.32	5 (15%)
14	CLA	2	833	-	55,63,73	1.57	8 (14%)	64,101,113	1.53	8 (12%)
17	BCR	I	102	-	41,41,41	1.32	4 (9%)	56,56,56	1.42	8 (14%)
14	CLA	A	831	-	65,73,73	1.43	8 (12%)	76,113,113	1.49	10 (13%)
16	SF4	A	846	1,2	0,12,12	-	-	-		
14	CLA	a	840	-	65,73,73	1.46	10 (15%)	76,113,113	1.42	8 (10%)
14	CLA	B	827	-	55,63,73	1.59	10 (18%)	64,101,113	1.61	11 (17%)
14	CLA	B	822	-	47,55,73	1.77	9 (19%)	54,91,113	1.55	9 (16%)
14	CLA	A	833	-	50,58,73	1.62	10 (20%)	58,95,113	1.82	10 (17%)
14	CLA	a	828	-	65,73,73	1.46	9 (13%)	76,113,113	1.44	10 (13%)
14	CLA	1	835	-	54,62,73	1.63	9 (16%)	62,99,113	1.50	8 (12%)
14	CLA	1	820	-	65,73,73	1.42	8 (12%)	76,113,113	1.47	9 (11%)
14	CLA	b	828	-	65,73,73	1.49	10 (15%)	76,113,113	1.32	8 (10%)
14	CLA	B	835	-	58,66,73	1.54	9 (15%)	67,104,113	1.46	9 (13%)
14	CLA	1	813	-	54,62,73	1.58	11 (20%)	62,99,113	1.58	10 (16%)
14	CLA	2	810	-	65,73,73	1.43	10 (15%)	76,113,113	1.43	9 (11%)
14	CLA	1	806	-	65,73,73	1.47	10 (15%)	76,113,113	1.39	8 (10%)
14	CLA	a	820	-	54,62,73	1.53	9 (16%)	62,99,113	1.55	8 (12%)
14	CLA	2	832	-	45,53,73	1.75	10 (22%)	52,89,113	1.87	10 (19%)
14	CLA	2	834	-	58,66,73	1.54	9 (15%)	67,104,113	1.46	9 (13%)
17	BCR	A	851	-	41,41,41	1.21	2 (4%)	56,56,56	1.37	8 (14%)
14	CLA	2	828	-	65,73,73	1.50	9 (13%)	76,113,113	1.32	8 (10%)
14	CLA	B	828	-	50,58,73	1.61	8 (16%)	58,95,113	1.52	11 (18%)
14	CLA	1	804	-	65,73,73	1.52	10 (15%)	76,113,113	1.18	6 (7%)
17	BCR	1	850	-	41,41,41	1.31	3 (7%)	56,56,56	1.41	10 (17%)
17	BCR	f	206	-	41,41,41	1.16	2 (4%)	56,56,56	1.32	7 (12%)
14	CLA	b	819	-	55,63,73	1.58	10 (18%)	64,101,113	1.69	7 (10%)
14	CLA	A	812	-	45,53,73	1.76	9 (20%)	52,89,113	1.58	9 (17%)
14	CLA	2	815	-	65,73,73	1.44	10 (15%)	76,113,113	1.43	8 (10%)
14	CLA	L	1501	9	65,73,73	1.45	10 (15%)	76,113,113	1.48	8 (10%)
14	CLA	b	825	-	45,53,73	1.75	9 (20%)	52,89,113	1.64	7 (13%)
17	BCR	f	203	-	41,41,41	1.27	2 (4%)	56,56,56	1.37	6 (10%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	1	829	-	65,73,73	1.40	9 (13%)	76,113,113	1.61	11 (14%)
17	BCR	b	851	-	41,41,41	1.22	3 (7%)	56,56,56	1.32	8 (14%)
18	LMG	A	852	-	46,46,55	0.85	1 (2%)	54,54,63	1.30	6 (11%)
14	CLA	B	839	-	46,54,73	1.71	7 (15%)	53,90,113	1.64	8 (15%)
14	CLA	a	805	-	65,73,73	1.52	10 (15%)	76,113,113	1.19	6 (7%)
17	BCR	7	1105	-	41,41,41	1.18	2 (4%)	56,56,56	1.30	6 (10%)
14	CLA	b	817	-	45,53,73	1.71	8 (17%)	52,89,113	1.68	6 (11%)
14	CLA	2	818	-	55,63,73	1.53	8 (14%)	64,101,113	1.63	8 (12%)
14	CLA	2	823	-	45,53,73	1.74	8 (17%)	52,89,113	1.68	8 (15%)
14	CLA	F	205	-	45,53,73	1.72	8 (17%)	52,89,113	1.66	12 (23%)
14	CLA	2	819	-	55,63,73	1.57	10 (18%)	64,101,113	1.69	8 (12%)
14	CLA	A	843	-	65,73,73	1.48	11 (16%)	76,113,113	1.39	7 (9%)
14	CLA	a	842	-	65,73,73	1.45	10 (15%)	76,113,113	1.44	8 (10%)
14	CLA	2	808	-	65,73,73	1.47	10 (15%)	76,113,113	1.53	9 (11%)
18	LMG	L	1506	-	38,38,55	0.87	0	46,46,63	1.28	4 (8%)
17	BCR	i	4103	-	41,41,41	1.32	4 (9%)	56,56,56	1.42	8 (14%)
14	CLA	b	822	-	45,53,73	1.75	7 (15%)	52,89,113	1.64	8 (15%)
14	CLA	B	808	-	65,73,73	1.44	9 (13%)	76,113,113	1.46	9 (11%)
14	CLA	B	824	-	45,53,73	1.75	8 (17%)	52,89,113	1.68	8 (15%)
14	CLA	b	811	-	65,73,73	1.43	10 (15%)	76,113,113	1.43	9 (11%)
14	CLA	B	836	-	45,53,73	1.78	11 (24%)	52,89,113	1.69	10 (19%)
18	LMG	0	203	-	46,46,55	0.85	1 (2%)	54,54,63	1.30	6 (11%)
14	CLA	1	833	-	65,73,73	1.38	9 (13%)	76,113,113	1.48	11 (14%)
17	BCR	J	103	-	41,41,41	1.23	2 (4%)	56,56,56	1.30	5 (8%)
14	CLA	a	806	-	65,73,73	1.45	10 (15%)	76,113,113	1.29	8 (10%)
14	CLA	B	806	-	65,73,73	1.43	10 (15%)	76,113,113	1.60	8 (10%)
14	CLA	b	806	-	65,73,73	1.43	10 (15%)	76,113,113	1.61	8 (10%)
17	BCR	M	102	-	41,41,41	1.17	2 (4%)	56,56,56	1.31	8 (14%)
13	CL0	A	803	-	65,73,73	1.40	9 (13%)	76,113,113	1.44	9 (11%)
14	CLA	1	810	1	50,58,73	1.64	10 (20%)	58,95,113	1.67	9 (15%)
14	CLA	b	826	-	55,63,73	1.58	10 (18%)	64,101,113	1.61	11 (17%)
16	SF4	C	101	3	0,12,12	-	-	-	-	-
16	SF4	3	101	3	0,12,12	-	-	-	-	-
14	CLA	B	845	-	29,35,73	2.61	8 (27%)	28,60,113	1.81	6 (21%)
14	CLA	2	811	-	61,69,73	1.47	9 (14%)	71,108,113	1.65	10 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	b	831	-	60,68,73	1.59	11 (18%)	70,107,113	1.74	8 (11%)
14	CLA	1	812	-	65,73,73	1.46	10 (15%)	76,113,113	1.52	10 (13%)
16	SF4	1	846	1,2	0,12,12	-	-	-	-	-
14	CLA	b	844	-	29,35,73	2.61	8 (27%)	28,60,113	1.82	6 (21%)
17	BCR	h	102	-	41,41,41	1.32	4 (9%)	56,56,56	1.42	8 (14%)
14	CLA	K	4004	-	55,63,73	1.59	9 (16%)	64,101,113	1.39	11 (17%)
14	CLA	a	836	-	65,73,73	1.42	9 (13%)	76,113,113	1.56	12 (15%)
14	CLA	a	831	-	65,73,73	1.40	9 (13%)	76,113,113	1.61	11 (14%)
14	CLA	A	805	-	65,73,73	1.45	10 (15%)	76,113,113	1.29	8 (10%)
14	CLA	0	206	9	65,73,73	1.44	7 (10%)	76,113,113	1.47	8 (10%)
17	BCR	B	849	-	25,25,41	1.17	2 (8%)	33,33,56	1.32	5 (15%)
16	SF4	c	102	3	0,12,12	-	-	-	-	-
14	CLA	l	4204	9	65,73,73	1.45	9 (13%)	76,113,113	1.48	8 (10%)
17	BCR	B	850	-	41,41,41	1.13	2 (4%)	56,56,56	1.40	11 (19%)
14	CLA	A	824	-	49,57,73	1.61	9 (18%)	55,93,113	1.68	8 (14%)
14	CLA	6	4403	-	45,53,73	1.71	8 (17%)	52,89,113	1.75	8 (15%)
14	CLA	2	840	-	62,70,73	1.47	9 (14%)	72,109,113	1.36	10 (13%)
14	CLA	1	838	-	65,73,73	1.46	9 (13%)	76,113,113	1.42	8 (10%)
14	CLA	B	829	-	65,73,73	1.49	10 (15%)	76,113,113	1.32	8 (10%)
14	CLA	2	817	-	45,53,73	1.71	8 (17%)	52,89,113	1.68	6 (11%)
14	CLA	a	835	-	65,73,73	1.39	9 (13%)	76,113,113	1.48	11 (14%)
14	CLA	A	807	-	65,73,73	1.46	10 (15%)	76,113,113	1.40	7 (9%)
14	CLA	b	839	-	50,58,73	1.59	8 (16%)	58,95,113	1.73	11 (18%)
14	CLA	B	842	-	46,54,73	1.65	8 (17%)	53,90,113	1.75	8 (15%)
14	CLA	b	820	-	60,68,73	1.45	8 (13%)	70,107,113	1.54	10 (14%)
14	CLA	B	813	-	65,73,73	1.45	10 (15%)	76,113,113	1.52	10 (13%)
14	CLA	a	823	-	60,68,73	1.50	7 (11%)	70,107,113	1.37	6 (8%)
14	CLA	A	841	-	65,73,73	1.42	10 (15%)	76,113,113	1.53	9 (11%)
14	CLA	a	843	-	65,73,73	1.47	10 (15%)	76,113,113	1.39	7 (9%)
14	CLA	8	4004	-	55,63,73	1.60	9 (16%)	64,101,113	1.38	10 (15%)
17	BCR	b	847	-	41,41,41	1.16	2 (4%)	56,56,56	1.30	7 (12%)
14	CLA	2	835	-	45,53,73	1.78	10 (22%)	52,89,113	1.69	10 (19%)
17	BCR	7	1104	-	41,41,41	1.23	2 (4%)	56,56,56	1.31	5 (8%)
14	CLA	B	820	-	55,63,73	1.58	10 (18%)	64,101,113	1.69	7 (10%)
14	CLA	a	804	-	60,68,73	1.52	9 (15%)	70,107,113	1.66	9 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
17	BCR	B	848	-	41,41,41	1.15	2 (4%)	56,56,56	1.30	7 (12%)
14	CLA	a	812	1	50,58,73	1.65	10 (20%)	58,95,113	1.67	9 (15%)
14	CLA	B	812	-	61,69,73	1.48	10 (16%)	71,108,113	1.65	10 (14%)
16	SF4	a	846	1,2	0,12,12	-	-	-	-	-
14	CLA	A	834	-	65,73,73	1.39	9 (13%)	76,113,113	1.47	12 (15%)
14	CLA	2	844	-	29,35,73	2.61	8 (27%)	28,60,113	1.82	5 (17%)
14	CLA	2	804	-	65,73,73	1.39	9 (13%)	76,113,113	1.62	12 (15%)
17	BCR	2	850	-	41,41,41	1.26	4 (9%)	56,56,56	1.56	11 (19%)
14	CLA	A	817	-	45,53,73	1.73	9 (20%)	52,89,113	1.61	9 (17%)
14	CLA	2	842	-	65,73,73	1.45	10 (15%)	76,113,113	1.26	7 (9%)
17	BCR	9	102	-	41,41,41	1.16	2 (4%)	56,56,56	1.31	8 (14%)
14	CLA	B	821	-	60,68,73	1.45	8 (13%)	70,107,113	1.54	10 (14%)
14	CLA	B	841	-	62,70,73	1.47	9 (14%)	72,109,113	1.36	10 (13%)
18	LMG	0	201	-	38,38,55	0.87	0	46,46,63	1.29	4 (8%)
14	CLA	b	802	-	65,73,73	1.41	10 (15%)	76,113,113	1.53	9 (11%)
14	CLA	a	833	-	65,73,73	1.50	10 (15%)	76,113,113	1.56	8 (10%)
17	BCR	6	4405	-	41,41,41	1.17	2 (4%)	56,56,56	1.32	7 (12%)
14	CLA	2	812	-	65,73,73	1.46	10 (15%)	76,113,113	1.51	10 (13%)
14	CLA	2	807	-	65,73,73	1.44	9 (13%)	76,113,113	1.46	9 (11%)
14	CLA	B	815	-	45,53,73	1.73	9 (20%)	52,89,113	1.63	9 (17%)
17	BCR	1	849	-	41,41,41	1.28	3 (7%)	56,56,56	1.41	7 (12%)
17	BCR	L	1504	-	41,41,41	1.21	2 (4%)	56,56,56	1.39	9 (16%)
14	CLA	B	834	-	55,63,73	1.57	8 (14%)	64,101,113	1.52	9 (14%)
14	CLA	B	844	-	65,73,73	1.46	10 (15%)	76,113,113	1.48	10 (13%)
14	CLA	J	102	-	38,45,73	1.89	7 (18%)	43,78,113	1.54	6 (13%)
17	BCR	0	204	-	41,41,41	1.13	2 (4%)	56,56,56	1.36	6 (10%)
14	CLA	b	840	-	62,70,73	1.46	9 (14%)	72,109,113	1.35	10 (13%)
14	CLA	A	826	-	59,67,73	1.49	9 (15%)	68,105,113	1.60	11 (16%)
17	BCR	1	4207	-	41,41,41	1.21	2 (4%)	56,56,56	1.39	10 (17%)
18	LMG	B	803	-	48,48,55	0.78	1 (2%)	56,56,63	1.35	7 (12%)
14	CLA	2	814	-	45,53,73	1.73	10 (22%)	52,89,113	1.62	9 (17%)
19	LMT	f	202	-	36,36,36	1.23	6 (16%)	47,47,47	0.94	1 (2%)
14	CLA	B	818	-	45,53,73	1.70	8 (17%)	52,89,113	1.67	6 (11%)
14	CLA	1	834	-	65,73,73	1.43	9 (13%)	76,113,113	1.56	12 (15%)
17	BCR	1	847	-	41,41,41	1.22	2 (4%)	56,56,56	1.29	8 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
19	LMT	h	103	-	36,36,36	1.22	5 (13%)	47,47,47	1.18	3 (6%)
13	CL0	a	803	-	65,73,73	1.41	9 (13%)	76,113,113	1.45	9 (11%)
14	CLA	1	839	-	47,55,73	1.67	10 (21%)	54,91,113	1.61	9 (16%)
14	CLA	L	1503	-	65,73,73	1.44	7 (10%)	76,113,113	1.37	8 (10%)
17	BCR	1	848	-	41,41,41	1.18	2 (4%)	56,56,56	1.21	6 (10%)
14	CLA	A	838	-	51,59,73	1.59	11 (21%)	59,96,113	1.54	12 (20%)
16	SF4	3	102	3	0,12,12	-	-	-	-	-
14	CLA	A	816	-	45,53,73	1.71	8 (17%)	52,89,113	1.68	6 (11%)
14	CLA	1	821	-	60,68,73	1.49	7 (11%)	70,107,113	1.37	6 (8%)
14	CLA	a	824	-	65,73,73	1.48	8 (12%)	76,113,113	1.45	9 (11%)
14	CLA	1	831	-	65,73,73	1.49	10 (15%)	76,113,113	1.55	9 (11%)
14	CLA	7	1102	-	45,53,73	1.74	6 (13%)	52,89,113	1.68	7 (13%)
12	LHG	B	853	-	38,38,48	0.70	1 (2%)	41,44,54	1.19	3 (7%)
14	CLA	A	836	-	54,62,73	1.62	9 (16%)	62,99,113	1.49	8 (12%)
13	CL0	1	803	-	65,73,73	1.41	8 (12%)	76,113,113	1.44	9 (11%)
14	CLA	1	842	-	65,73,73	1.45	10 (15%)	76,113,113	1.44	8 (10%)
14	CLA	f	205	-	45,53,73	1.72	8 (17%)	52,89,113	1.66	12 (23%)
14	CLA	A	811	1	50,58,73	1.65	10 (20%)	58,95,113	1.66	9 (15%)
14	CLA	B	823	-	45,53,73	1.75	7 (15%)	52,89,113	1.63	8 (15%)
14	CLA	1	832	-	50,58,73	1.63	10 (20%)	58,95,113	1.82	11 (18%)
14	CLA	1	816	-	45,53,73	1.71	9 (20%)	52,89,113	1.60	8 (15%)
14	CLA	b	805	-	65,73,73	1.38	9 (13%)	76,113,113	1.62	12 (15%)
14	CLA	B	819	-	55,63,73	1.53	8 (14%)	64,101,113	1.63	8 (12%)
14	CLA	b	801	-	65,73,73	1.46	9 (13%)	76,113,113	1.39	9 (11%)
14	CLA	b	809	-	65,73,73	1.48	10 (15%)	76,113,113	1.53	9 (11%)
14	CLA	a	827	-	59,67,73	1.50	9 (15%)	68,105,113	1.61	11 (16%)
14	CLA	l	4205	-	65,73,73	1.44	9 (13%)	76,113,113	1.48	9 (11%)
14	CLA	1	807	-	65,73,73	1.45	9 (13%)	76,113,113	1.57	8 (10%)
14	CLA	A	828	-	55,63,73	1.53	8 (14%)	64,101,113	1.43	6 (9%)
17	BCR	B	851	-	41,41,41	1.26	4 (9%)	56,56,56	1.56	11 (19%)
14	CLA	b	837	-	45,53,73	1.75	10 (22%)	52,89,113	1.63	7 (13%)
17	BCR	b	854	-	41,41,41	1.16	2 (4%)	56,56,56	1.31	8 (14%)
14	CLA	B	809	-	65,73,73	1.48	11 (16%)	76,113,113	1.53	9 (11%)
14	CLA	a	813	-	45,53,73	1.75	10 (22%)	52,89,113	1.58	9 (17%)
15	PQN	A	845	-	34,34,34	0.39	0	42,45,45	1.23	3 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
14	CLA	j	101	-	45,53,73	1.73	6 (13%)	52,89,113	1.68	7 (13%)
14	CLA	7	1101	-	65,73,73	1.46	10 (15%)	76,113,113	1.28	8 (10%)
14	CLA	a	829	-	55,63,73	1.54	8 (14%)	64,101,113	1.43	6 (9%)
14	CLA	a	810	-	46,54,73	1.70	10 (21%)	53,90,113	1.62	8 (15%)
14	CLA	B	811	-	65,73,73	1.42	10 (15%)	76,113,113	1.42	9 (11%)
17	BCR	a	849	-	41,41,41	1.28	3 (7%)	56,56,56	1.40	7 (12%)
14	CLA	8	4002	-	45,53,73	1.77	8 (17%)	52,89,113	1.63	9 (17%)
17	BCR	K	4001	-	41,41,41	1.26	3 (7%)	56,56,56	1.41	8 (14%)
14	CLA	8	4003	-	45,53,73	1.78	6 (13%)	52,89,113	1.69	8 (15%)
17	BCR	A	847	-	41,41,41	1.23	2 (4%)	56,56,56	1.29	8 (14%)
14	CLA	K	4003	-	45,53,73	1.77	6 (13%)	52,89,113	1.70	8 (15%)
14	CLA	b	821	-	47,55,73	1.76	9 (19%)	54,91,113	1.55	9 (16%)
14	CLA	2	843	-	65,73,73	1.46	10 (15%)	76,113,113	1.48	9 (11%)
14	CLA	B	802	-	65,73,73	1.45	9 (13%)	76,113,113	1.39	9 (11%)
14	CLA	a	807	-	50,58,73	1.62	8 (16%)	58,95,113	1.68	9 (15%)
17	BCR	K	4005	-	41,41,41	1.12	2 (4%)	56,56,56	1.23	5 (8%)
14	CLA	b	835	-	45,53,73	1.79	11 (24%)	52,89,113	1.69	10 (19%)
14	CLA	a	841	-	47,55,73	1.66	10 (21%)	54,91,113	1.61	8 (14%)
14	CLA	A	821	-	65,73,73	1.40	8 (12%)	76,113,113	1.48	9 (11%)
14	CLA	2	837	-	45,53,73	1.76	10 (22%)	52,89,113	1.62	7 (13%)
14	CLA	B	831	-	65,73,73	1.40	9 (13%)	76,113,113	1.48	10 (13%)
14	CLA	b	813	-	45,53,73	1.73	10 (22%)	52,89,113	1.56	9 (17%)
14	CLA	2	805	-	65,73,73	1.43	9 (13%)	76,113,113	1.60	8 (10%)
14	CLA	B	837	-	45,53,73	1.73	8 (17%)	52,89,113	1.67	11 (21%)
12	LHG	9	101	-	38,38,48	0.66	0	41,44,54	1.24	4 (9%)
14	CLA	a	816	-	55,63,73	1.56	9 (16%)	64,101,113	1.51	8 (12%)
14	CLA	b	838	-	46,54,73	1.72	7 (15%)	53,90,113	1.65	8 (15%)
14	CLA	b	816	-	46,54,73	1.67	7 (15%)	53,90,113	1.65	7 (13%)
12	LHG	a	801	-	48,48,48	0.67	1 (2%)	51,54,54	1.26	7 (13%)
14	CLA	a	839	-	51,59,73	1.59	11 (21%)	59,96,113	1.54	12 (20%)
14	CLA	2	841	-	46,54,73	1.64	8 (17%)	53,90,113	1.76	8 (15%)
14	CLA	b	830	-	65,73,73	1.41	9 (13%)	76,113,113	1.48	10 (13%)
14	CLA	A	822	-	60,68,73	1.50	7 (11%)	70,107,113	1.37	6 (8%)

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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
17	BCR	b	848	-	-	6/18/35/63	0/1/1/2
14	CLA	K	4002	-	-	7/13/91/115	-
14	CLA	A	832	-	1/1/15/20	18/37/115/115	-
12	LHG	1	802	14	-	14/37/37/53	-
17	BCR	B	847	-	-	12/29/63/63	0/2/2/2
18	LMG	b	803	-	-	22/43/63/70	0/1/1/1
14	CLA	a	854	-	1/1/13/20	7/25/103/115	-
14	CLA	6	4404	-	1/1/11/20	6/13/91/115	-
14	CLA	1	824	-	1/1/12/20	11/21/99/115	-
18	LMG	l	4202	-	-	19/33/53/70	0/1/1/1
17	BCR	A	849	-	-	7/29/63/63	0/2/2/2
14	CLA	b	807	-	1/1/12/20	9/24/102/115	-
14	CLA	a	838	1	1/1/11/20	7/13/91/115	-
17	BCR	A	848	-	-	11/29/63/63	0/2/2/2
17	BCR	h	101	-	-	17/29/63/63	0/2/2/2
14	CLA	2	830	-	1/1/15/20	12/37/115/115	-
14	CLA	2	831	-	1/1/14/20	12/31/109/115	-
18	LMG	1	852	-	-	8/27/47/70	0/1/1/1
14	CLA	1	841	-	1/1/12/20	12/21/99/115	-
17	BCR	6	4402	-	-	13/29/63/63	0/2/2/2
14	CLA	A	844	12	1/1/11/20	4/13/91/115	-
14	CLA	b	815	-	1/1/15/20	22/37/115/115	-
14	CLA	A	840	-	1/1/11/20	3/16/94/115	-
14	CLA	2	825	-	-	5/13/91/115	-
14	CLA	F	201	-	1/1/12/20	12/21/99/115	-
14	CLA	k	4002	-	-	7/13/91/115	-
14	CLA	b	832	-	1/1/11/20	7/13/91/115	-
14	CLA	b	834	-	1/1/13/20	13/29/107/115	-
14	CLA	f	201	-	1/1/12/20	12/21/99/115	-
14	CLA	2	821	-	1/1/11/20	4/16/94/115	-
14	CLA	1	808	-	1/1/11/20	6/15/93/115	-
17	BCR	8	4001	-	-	12/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	1	818	-	1/1/12/20	8/24/102/115	-
19	LMT	6	4401	-	-	3/21/61/61	0/2/2/2
15	PQN	1	845	-	-	4/23/43/43	0/2/2/2
15	PQN	b	845	-	-	10/23/43/43	0/2/2/2
14	CLA	A	837	1	1/1/11/20	7/13/91/115	-
14	CLA	a	811	1	1/1/15/20	22/37/115/115	-
14	CLA	b	812	-	1/1/14/20	14/33/111/115	-
14	CLA	2	801	-	1/1/14/20	11/31/109/115	-
14	CLA	A	820	-	1/1/12/20	5/24/102/115	-
14	CLA	1	817	-	1/1/11/20	5/15/93/115	-
12	LHG	a	802	14	-	14/37/37/53	-
14	CLA	A	825	-	1/1/12/20	11/21/99/115	-
17	BCR	I	101	-	-	17/29/63/63	0/2/2/2
14	CLA	A	823	-	1/1/15/20	13/37/115/115	-
17	BCR	L	1505	-	-	14/29/63/63	0/2/2/2
17	BCR	6	4406	-	-	13/29/63/63	0/2/2/2
15	PQN	B	846	-	-	10/23/43/43	0/2/2/2
19	LMT	F	202	-	-	3/21/61/61	0/2/2/2
14	CLA	A	815	-	1/1/13/20	12/25/103/115	-
14	CLA	2	822	-	-	7/13/91/115	-
14	CLA	B	814	-	1/1/11/20	4/13/91/115	-
14	CLA	1	837	-	1/1/12/20	8/21/99/115	-
17	BCR	j	104	-	-	11/29/63/63	0/2/2/2
16	SF4	c	101	3	-	-	0/6/5/5
14	CLA	1	805	-	1/1/12/20	3/19/97/115	-
17	BCR	A	850	-	-	19/29/63/63	0/2/2/2
14	CLA	2	826	-	1/1/13/20	4/25/103/115	-
14	CLA	B	833	-	1/1/11/20	7/13/91/115	-
12	LHG	A	801	-	-	22/53/53/53	-
14	CLA	A	829	-	1/1/15/20	13/37/115/115	-
14	CLA	B	840	-	1/1/12/20	8/19/97/115	-
17	BCR	F	203	-	-	13/29/63/63	0/2/2/2
14	CLA	j	102	-	1/1/8/20	1/2/76/115	-
15	PQN	a	845	-	-	4/23/43/43	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	a	834	-	1/1/12/20	3/19/97/115	-
17	BCR	a	847	-	-	14/29/63/63	0/2/2/2
14	CLA	0	202	-	1/1/15/20	10/37/115/115	-
14	CLA	2	827	-	1/1/12/20	3/19/97/115	-
14	CLA	k	4003	-	1/1/11/20	9/13/91/115	-
14	CLA	1	830	-	1/1/15/20	7/37/115/115	-
18	LMG	A	853	-	-	8/27/47/70	0/1/1/1
17	BCR	b	846	-	-	12/29/63/63	0/2/2/2
14	CLA	A	809	-	1/1/11/20	6/15/93/115	-
14	CLA	A	839	-	1/1/15/20	10/37/115/115	-
14	CLA	B	832	-	1/1/14/20	12/31/109/115	-
14	CLA	J	101	-	1/1/11/20	8/13/91/115	-
12	LHG	2	852	-	-	24/43/43/53	-
14	CLA	A	808	-	1/1/15/20	14/37/115/115	-
14	CLA	a	821	-	1/1/12/20	5/24/102/115	-
14	CLA	b	804	-	1/1/15/20	12/37/115/115	-
17	BCR	a	850	-	-	19/29/63/63	0/2/2/2
14	CLA	1	826	-	1/1/15/20	13/37/115/115	-
14	CLA	L	1502	-	1/1/15/20	9/37/115/115	-
14	CLA	a	819	-	1/1/11/20	5/15/93/115	-
17	BCR	F	206	-	-	14/29/63/63	0/2/2/2
14	CLA	B	804	-	1/1/15/20	12/37/115/115	-
19	LMT	i	4101	-	-	8/21/61/61	0/2/2/2
14	CLA	1	825	-	1/1/13/20	14/30/108/115	-
14	CLA	a	830	-	1/1/15/20	13/37/115/115	-
14	CLA	a	832	-	1/1/15/20	8/37/115/115	-
14	CLA	B	838	-	1/1/11/20	2/13/91/115	-
14	CLA	l	4206	-	1/1/15/20	13/37/115/115	-
14	CLA	a	825	-	1/1/11/20	13/18/96/115	-
14	CLA	2	803	-	1/1/15/20	12/37/115/115	-
14	CLA	2	839	-	1/1/12/20	8/19/97/115	-
14	CLA	b	836	-	1/1/11/20	5/13/91/115	-
14	CLA	0	207	-	1/1/15/20	9/37/115/115	-
14	CLA	1	809	1	1/1/15/20	22/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	b	843	-	-	18/37/115/115	-
17	BCR	1	851	-	-	23/29/63/63	0/2/2/2
14	CLA	f	204	-	1/1/11/20	6/13/91/115	-
14	CLA	l	4203	-	1/1/15/20	9/37/115/115	-
14	CLA	A	806	-	1/1/12/20	3/19/97/115	-
14	CLA	B	805	-	1/1/15/20	13/37/115/115	-
12	LHG	A	802	14	-	14/37/37/53	-
17	BCR	8	4005	-	-	11/29/63/63	0/2/2/2
14	CLA	B	801	-	1/1/14/20	11/31/109/115	-
14	CLA	a	826	-	1/1/12/20	11/21/99/115	-
14	CLA	1	814	-	1/1/13/20	12/25/103/115	-
14	CLA	1	822	-	1/1/15/20	13/37/115/115	-
14	CLA	2	824	-	1/1/11/20	6/13/91/115	-
14	CLA	A	842	-	-	12/37/115/115	-
17	BCR	a	848	-	-	11/29/63/63	0/2/2/2
14	CLA	2	836	-	1/1/11/20	5/13/91/115	-
14	CLA	a	818	-	-	5/13/91/115	-
14	CLA	b	818	-	1/1/13/20	10/25/103/115	-
18	LMG	a	853	-	-	8/27/47/70	0/1/1/1
17	BCR	0	210	-	-	14/29/63/63	0/2/2/2
14	CLA	0	208	-	1/1/15/20	13/37/115/115	-
17	BCR	B	854	-	-	13/29/63/63	0/2/2/2
14	CLA	2	838	-	1/1/11/20	4/15/93/115	-
17	BCR	B	852	-	-	10/29/63/63	0/2/2/2
14	CLA	A	819	-	1/1/12/20	8/24/102/115	-
17	BCR	b	849	-	-	17/29/63/63	0/2/2/2
14	CLA	a	817	-	1/1/11/20	4/13/91/115	-
14	CLA	1	828	-	1/1/15/20	13/37/115/115	-
18	LMG	2	802	-	-	22/43/63/70	0/1/1/1
17	BCR	b	850	-	-	19/29/63/63	0/2/2/2
15	PQN	2	845	-	-	10/23/43/43	0/2/2/2
12	LHG	1	801	-	-	22/53/53/53	-
17	BCR	0	209	-	-	14/29/63/63	0/2/2/2
17	BCR	2	846	-	-	12/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	A	830	-	1/1/15/20	10/37/115/115	-
14	CLA	b	842	-	1/1/15/20	13/37/115/115	-
14	CLA	1	815	-	1/1/11/20	4/13/91/115	-
14	CLA	a	837	-	1/1/12/20	10/24/102/115	-
12	LHG	m	101	-	-	20/43/43/53	-
14	CLA	B	843	-	1/1/15/20	13/37/115/115	-
14	CLA	a	822	-	1/1/15/20	19/37/115/115	-
17	BCR	2	849	-	-	17/29/63/63	0/2/2/2
14	CLA	b	810	-	1/1/14/20	7/31/109/115	-
14	CLA	A	827	-	1/1/15/20	13/37/115/115	-
17	BCR	j	103	-	-	15/29/63/63	0/2/2/2
17	BCR	b	853	-	-	13/29/63/63	0/2/2/2
17	BCR	2	847	-	-	9/29/63/63	0/2/2/2
14	CLA	1	823	-	1/1/11/20	13/18/96/115	-
14	CLA	2	820	-	1/1/14/20	15/31/109/115	-
14	CLA	a	809	-	1/1/15/20	14/37/115/115	-
14	CLA	b	823	-	-	6/13/91/115	-
14	CLA	1	819	-	1/1/12/20	5/24/102/115	-
14	CLA	1	843	-	1/1/15/20	19/37/115/115	-
14	CLA	2	813	-	1/1/11/20	4/13/91/115	-
16	SF4	C	102	3	-	-	0/6/5/5
14	CLA	2	806	-	1/1/12/20	9/24/102/115	-
14	CLA	a	814	-	1/1/15/20	18/37/115/115	-
17	BCR	k	4004	-	-	11/29/63/63	0/2/2/2
14	CLA	a	844	12	1/1/11/20	4/13/91/115	-
14	CLA	F	204	-	1/1/11/20	6/13/91/115	-
14	CLA	B	830	-	1/1/14/20	8/31/109/115	-
12	LHG	M	101	-	-	20/43/43/53	-
14	CLA	b	824	-	1/1/11/20	6/13/91/115	-
14	CLA	B	817	-	1/1/11/20	8/15/93/115	-
14	CLA	b	829	-	1/1/14/20	8/31/109/115	-
17	BCR	i	4102	-	-	17/29/63/63	0/2/2/2
14	CLA	B	807	-	1/1/12/20	9/24/102/115	-
14	CLA	1	811	-	1/1/11/20	9/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	1	827	-	1/1/13/20	7/25/103/115	-
14	CLA	B	826	-	-	5/13/91/115	-
14	CLA	A	814	-	1/1/12/20	11/24/102/115	-
17	BCR	J	104	-	-	11/29/63/63	0/2/2/2
14	CLA	1	836	1	1/1/11/20	7/13/91/115	-
14	CLA	b	841	-	1/1/11/20	6/15/93/115	-
12	LHG	b	852	-	-	24/43/43/53	-
14	CLA	a	808	-	1/1/15/20	17/37/115/115	-
14	CLA	A	835	-	1/1/15/20	7/37/115/115	-
14	CLA	2	829	-	1/1/14/20	8/31/109/115	-
17	BCR	k	4001	-	-	12/29/63/63	0/2/2/2
14	CLA	b	808	-	-	10/37/115/115	-
14	CLA	A	813	-	1/1/15/20	18/37/115/115	-
14	CLA	B	810	-	1/1/14/20	7/31/109/115	-
17	BCR	a	851	-	-	23/29/63/63	0/2/2/2
14	CLA	B	825	-	1/1/11/20	6/13/91/115	-
14	CLA	7	1103	-	1/1/8/20	1/2/76/115	-
14	CLA	b	833	-	1/1/13/20	11/25/103/115	-
14	CLA	A	818	-	1/1/11/20	5/15/93/115	-
14	CLA	a	815	-	1/1/12/20	11/24/102/115	-
14	CLA	2	816	-	1/1/11/20	8/15/93/115	-
17	BCR	2	851	-	-	10/29/63/63	0/2/2/2
14	CLA	B	816	-	1/1/15/20	22/37/115/115	-
14	CLA	A	810	1	1/1/15/20	22/37/115/115	-
14	CLA	b	827	-	1/1/12/20	3/19/97/115	-
14	CLA	2	809	-	1/1/14/20	7/31/109/115	-
14	CLA	b	814	-	1/1/11/20	9/13/91/115	-
14	CLA	1	844	12	1/1/11/20	4/13/91/115	-
14	CLA	A	804	-	1/1/15/20	11/37/115/115	-
19	LMT	I	103	-	-	8/21/61/61	0/2/2/2
18	LMG	a	852	-	-	20/41/61/70	0/1/1/1
14	CLA	1	840	-	1/1/15/20	11/37/115/115	-
17	BCR	2	848	-	-	6/18/35/63	0/1/1/2
14	CLA	2	833	-	1/1/13/20	11/25/103/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
17	BCR	I	102	-	-	20/29/63/63	0/2/2/2
14	CLA	A	831	-	1/1/15/20	7/37/115/115	-
16	SF4	A	846	1,2	-	-	0/6/5/5
14	CLA	a	840	-	1/1/15/20	10/37/115/115	-
14	CLA	B	827	-	1/1/13/20	4/25/103/115	-
14	CLA	B	822	-	1/1/11/20	4/16/94/115	-
14	CLA	A	833	-	1/1/12/20	3/19/97/115	-
14	CLA	a	828	-	1/1/15/20	13/37/115/115	-
14	CLA	1	835	-	1/1/12/20	10/24/102/115	-
14	CLA	1	820	-	1/1/15/20	19/37/115/115	-
14	CLA	b	828	-	1/1/15/20	8/37/115/115	-
14	CLA	B	835	-	1/1/13/20	13/29/107/115	-
14	CLA	1	813	-	1/1/12/20	11/24/102/115	-
14	CLA	2	810	-	1/1/15/20	15/37/115/115	-
14	CLA	1	806	-	1/1/15/20	17/37/115/115	-
14	CLA	a	820	-	1/1/12/20	8/24/102/115	-
14	CLA	2	832	-	1/1/11/20	7/13/91/115	-
14	CLA	2	834	-	1/1/13/20	13/29/107/115	-
17	BCR	A	851	-	-	22/29/63/63	0/2/2/2
14	CLA	2	828	-	1/1/15/20	8/37/115/115	-
14	CLA	B	828	-	1/1/12/20	3/19/97/115	-
14	CLA	1	804	-	1/1/15/20	11/37/115/115	-
17	BCR	1	850	-	-	19/29/63/63	0/2/2/2
17	BCR	f	206	-	-	14/29/63/63	0/2/2/2
14	CLA	b	819	-	-	8/25/103/115	-
14	CLA	A	812	-	1/1/11/20	9/13/91/115	-
14	CLA	2	815	-	1/1/15/20	22/37/115/115	-
14	CLA	L	1501	9	1/1/15/20	16/37/115/115	-
14	CLA	b	825	-	-	5/13/91/115	-
17	BCR	f	203	-	-	13/29/63/63	0/2/2/2
14	CLA	1	829	-	1/1/15/20	10/37/115/115	-
17	BCR	b	851	-	-	10/29/63/63	0/2/2/2
18	LMG	A	852	-	-	20/41/61/70	0/1/1/1
14	CLA	B	839	-	1/1/11/20	4/15/93/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	a	805	-	1/1/15/20	11/37/115/115	-
17	BCR	7	1105	-	-	11/29/63/63	0/2/2/2
14	CLA	b	817	-	1/1/11/20	4/13/91/115	-
14	CLA	2	818	-	1/1/13/20	10/25/103/115	-
14	CLA	2	823	-	-	6/13/91/115	-
14	CLA	F	205	-	1/1/11/20	6/13/91/115	-
14	CLA	2	819	-	-	8/25/103/115	-
14	CLA	A	843	-	1/1/15/20	19/37/115/115	-
14	CLA	a	842	-	-	12/37/115/115	-
14	CLA	2	808	-	1/1/15/20	22/37/115/115	-
18	LMG	L	1506	-	-	19/33/53/70	0/1/1/1
17	BCR	i	4103	-	-	20/29/63/63	0/2/2/2
14	CLA	b	822	-	-	7/13/91/115	-
14	CLA	B	808	-	-	10/37/115/115	-
14	CLA	B	824	-	-	6/13/91/115	-
14	CLA	b	811	-	1/1/15/20	14/37/115/115	-
14	CLA	B	836	-	1/1/11/20	2/13/91/115	-
18	LMG	0	203	-	-	20/41/61/70	0/1/1/1
14	CLA	1	833	-	1/1/15/20	13/37/115/115	-
17	BCR	J	103	-	-	15/29/63/63	0/2/2/2
14	CLA	a	806	-	1/1/15/20	14/37/115/115	-
14	CLA	B	806	-	1/1/15/20	14/37/115/115	-
14	CLA	b	806	-	1/1/15/20	14/37/115/115	-
17	BCR	M	102	-	-	15/29/63/63	0/2/2/2
13	CL0	A	803	-	3/3/20/25	14/37/135/135	-
14	CLA	1	810	1	1/1/12/20	7/19/97/115	-
14	CLA	b	826	-	1/1/13/20	4/25/103/115	-
16	SF4	C	101	3	-	-	0/6/5/5
16	SF4	3	101	3	-	-	0/6/5/5
14	CLA	B	845	-	1/1/5/20	-	-
14	CLA	2	811	-	1/1/14/20	14/33/111/115	-
14	CLA	b	831	-	1/1/14/20	12/31/109/115	-
14	CLA	1	812	-	1/1/15/20	18/37/115/115	-
16	SF4	1	846	1,2	-	-	0/6/5/5
14	CLA	b	844	-	1/1/5/20	-	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
17	BCR	h	102	-	-	20/29/63/63	0/2/2/2
14	CLA	K	4004	-	1/1/13/20	7/25/103/115	-
14	CLA	a	836	-	1/1/15/20	7/37/115/115	-
14	CLA	a	831	-	1/1/15/20	10/37/115/115	-
14	CLA	A	805	-	1/1/15/20	14/37/115/115	-
14	CLA	0	206	9	1/1/15/20	16/37/115/115	-
17	BCR	B	849	-	-	6/18/35/63	0/1/1/2
16	SF4	c	102	3	-	-	0/6/5/5
14	CLA	l	4204	9	1/1/15/20	16/37/115/115	-
17	BCR	B	850	-	-	17/29/63/63	0/2/2/2
14	CLA	A	824	-	1/1/11/20	13/18/96/115	-
14	CLA	6	4403	-	1/1/11/20	6/13/91/115	-
14	CLA	2	840	-	1/1/14/20	6/34/112/115	-
14	CLA	1	838	-	1/1/15/20	10/37/115/115	-
14	CLA	B	829	-	1/1/15/20	8/37/115/115	-
14	CLA	2	817	-	1/1/11/20	4/13/91/115	-
14	CLA	a	835	-	1/1/15/20	13/37/115/115	-
14	CLA	A	807	-	1/1/15/20	17/37/115/115	-
14	CLA	b	839	-	1/1/12/20	8/19/97/115	-
14	CLA	B	842	-	1/1/11/20	6/15/93/115	-
14	CLA	b	820	-	1/1/14/20	15/31/109/115	-
14	CLA	B	813	-	1/1/15/20	9/37/115/115	-
14	CLA	a	823	-	1/1/14/20	7/31/109/115	-
14	CLA	A	841	-	1/1/15/20	11/37/115/115	-
14	CLA	a	843	-	1/1/15/20	19/37/115/115	-
14	CLA	8	4004	-	1/1/13/20	7/25/103/115	-
17	BCR	b	847	-	-	9/29/63/63	0/2/2/2
14	CLA	2	835	-	1/1/11/20	2/13/91/115	-
17	BCR	7	1104	-	-	15/29/63/63	0/2/2/2
14	CLA	a	804	-	1/1/14/20	11/31/109/115	-
14	CLA	B	820	-	-	8/25/103/115	-
17	BCR	B	848	-	-	9/29/63/63	0/2/2/2
14	CLA	a	812	1	1/1/12/20	7/19/97/115	-
14	CLA	B	812	-	1/1/14/20	14/33/111/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	SF4	a	846	1,2	-	-	0/6/5/5
14	CLA	A	834	-	1/1/15/20	13/37/115/115	-
14	CLA	2	844	-	1/1/5/20	-	-
14	CLA	2	804	-	1/1/15/20	13/37/115/115	-
17	BCR	2	850	-	-	19/29/63/63	0/2/2/2
14	CLA	A	817	-	-	5/13/91/115	-
14	CLA	2	842	-	1/1/15/20	13/37/115/115	-
17	BCR	9	102	-	-	15/29/63/63	0/2/2/2
14	CLA	B	821	-	1/1/14/20	15/31/109/115	-
14	CLA	B	841	-	1/1/14/20	6/34/112/115	-
18	LMG	0	201	-	-	19/33/53/70	0/1/1/1
14	CLA	b	802	-	1/1/15/20	11/37/115/115	-
14	CLA	a	833	-	1/1/15/20	18/37/115/115	-
17	BCR	6	4405	-	-	14/29/63/63	0/2/2/2
14	CLA	2	812	-	1/1/15/20	9/37/115/115	-
14	CLA	2	807	-	-	10/37/115/115	-
14	CLA	B	815	-	1/1/11/20	9/13/91/115	-
17	BCR	1	849	-	-	7/29/63/63	0/2/2/2
17	BCR	L	1504	-	-	14/29/63/63	0/2/2/2
14	CLA	B	834	-	1/1/13/20	11/25/103/115	-
14	CLA	J	102	-	1/1/8/20	1/2/76/115	-
14	CLA	B	844	-	-	18/37/115/115	-
17	BCR	0	204	-	-	14/29/63/63	0/2/2/2
14	CLA	b	840	-	1/1/14/20	6/34/112/115	-
14	CLA	A	826	-	1/1/13/20	14/30/108/115	-
17	BCR	l	4207	-	-	14/29/63/63	0/2/2/2
18	LMG	B	803	-	-	22/43/63/70	0/1/1/1
14	CLA	2	814	-	1/1/11/20	9/13/91/115	-
19	LMT	f	202	-	-	3/21/61/61	0/2/2/2
14	CLA	B	818	-	1/1/11/20	4/13/91/115	-
14	CLA	1	834	-	1/1/15/20	7/37/115/115	-
17	BCR	1	847	-	-	14/29/63/63	0/2/2/2
19	LMT	h	103	-	-	8/21/61/61	0/2/2/2
13	CL0	a	803	-	3/3/20/25	14/37/135/135	-
14	CLA	1	839	-	1/1/11/20	3/16/94/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	L	1503	-	1/1/15/20	13/37/115/115	-
17	BCR	1	848	-	-	11/29/63/63	0/2/2/2
14	CLA	A	838	-	1/1/12/20	8/21/99/115	-
16	SF4	3	102	3	-	-	0/6/5/5
14	CLA	A	816	-	1/1/11/20	4/13/91/115	-
14	CLA	1	821	-	1/1/14/20	7/31/109/115	-
14	CLA	a	824	-	1/1/15/20	13/37/115/115	-
14	CLA	1	831	-	1/1/15/20	18/37/115/115	-
14	CLA	7	1102	-	1/1/11/20	8/13/91/115	-
12	LHG	B	853	-	-	24/43/43/53	-
14	CLA	A	836	-	1/1/12/20	10/24/102/115	-
13	CLO	1	803	-	3/3/20/25	14/37/135/135	-
14	CLA	1	842	-	-	12/37/115/115	-
14	CLA	f	205	-	1/1/11/20	6/13/91/115	-
14	CLA	A	811	1	1/1/12/20	7/19/97/115	-
14	CLA	B	823	-	-	7/13/91/115	-
14	CLA	1	832	-	1/1/12/20	3/19/97/115	-
14	CLA	1	816	-	-	5/13/91/115	-
14	CLA	b	805	-	1/1/15/20	13/37/115/115	-
14	CLA	B	819	-	1/1/13/20	10/25/103/115	-
14	CLA	b	801	-	1/1/15/20	10/37/115/115	-
14	CLA	b	809	-	1/1/15/20	22/37/115/115	-
14	CLA	a	827	-	1/1/13/20	14/30/108/115	-
14	CLA	l	4205	-	1/1/15/20	9/37/115/115	-
14	CLA	1	807	-	1/1/15/20	14/37/115/115	-
14	CLA	A	828	-	1/1/13/20	7/25/103/115	-
17	BCR	B	851	-	-	19/29/63/63	0/2/2/2
14	CLA	b	837	-	1/1/11/20	2/13/91/115	-
17	BCR	b	854	-	-	15/29/63/63	0/2/2/2
14	CLA	B	809	-	1/1/15/20	22/37/115/115	-
14	CLA	a	813	-	1/1/11/20	9/13/91/115	-
15	PQN	A	845	-	-	4/23/43/43	0/2/2/2
14	CLA	j	101	-	1/1/11/20	8/13/91/115	-
14	CLA	7	1101	-	1/1/15/20	14/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	a	829	-	1/1/13/20	8/25/103/115	-
14	CLA	a	810	-	1/1/11/20	6/15/93/115	-
14	CLA	B	811	-	1/1/15/20	14/37/115/115	-
17	BCR	a	849	-	-	7/29/63/63	0/2/2/2
14	CLA	8	4002	-	-	7/13/91/115	-
17	BCR	K	4001	-	-	12/29/63/63	0/2/2/2
14	CLA	8	4003	-	1/1/11/20	9/13/91/115	-
17	BCR	A	847	-	-	14/29/63/63	0/2/2/2
14	CLA	K	4003	-	1/1/11/20	9/13/91/115	-
14	CLA	b	821	-	1/1/11/20	4/16/94/115	-
14	CLA	2	843	-	-	18/37/115/115	-
14	CLA	B	802	-	1/1/15/20	10/37/115/115	-
14	CLA	a	807	-	1/1/12/20	3/19/97/115	-
17	BCR	K	4005	-	-	11/29/63/63	0/2/2/2
14	CLA	b	835	-	1/1/11/20	2/13/91/115	-
14	CLA	a	841	-	1/1/11/20	3/16/94/115	-
14	CLA	A	821	-	1/1/15/20	19/37/115/115	-
14	CLA	2	837	-	1/1/11/20	2/13/91/115	-
14	CLA	B	831	-	1/1/15/20	12/37/115/115	-
14	CLA	b	813	-	1/1/11/20	4/13/91/115	-
14	CLA	2	805	-	1/1/15/20	14/37/115/115	-
14	CLA	B	837	-	1/1/11/20	5/13/91/115	-
12	LHG	9	101	-	-	20/43/43/53	-
14	CLA	a	816	-	1/1/13/20	12/25/103/115	-
14	CLA	b	838	-	1/1/11/20	4/15/93/115	-
14	CLA	b	816	-	1/1/11/20	8/15/93/115	-
12	LHG	a	801	-	-	22/53/53/53	-
14	CLA	a	839	-	1/1/12/20	8/21/99/115	-
14	CLA	2	841	-	1/1/11/20	6/15/93/115	-
14	CLA	b	830	-	1/1/15/20	12/37/115/115	-
14	CLA	A	822	-	1/1/14/20	7/31/109/115	-

The worst 5 of 2815 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	B	823	CLA	C4B-NB	7.34	1.41	1.35
14	b	822	CLA	C4B-NB	7.34	1.41	1.35
14	2	822	CLA	C4B-NB	7.29	1.41	1.35
14	k	4003	CLA	C4B-NB	7.29	1.41	1.35
14	B	822	CLA	C4B-NB	7.28	1.41	1.35

The worst 5 of 3182 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	A	829	CLA	C4A-NA-C1A	8.28	110.43	106.71
14	a	830	CLA	C4A-NA-C1A	8.25	110.42	106.71
14	1	828	CLA	C4A-NA-C1A	8.23	110.41	106.71
14	A	825	CLA	C4A-NA-C1A	8.02	110.31	106.71
14	1	824	CLA	C4A-NA-C1A	8.00	110.30	106.71

5 of 270 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
13	A	803	CL0	NA
13	A	803	CL0	ND
13	A	803	CL0	NC
13	a	803	CL0	NA
13	a	803	CL0	ND

5 of 4250 torsion outliers are listed below:

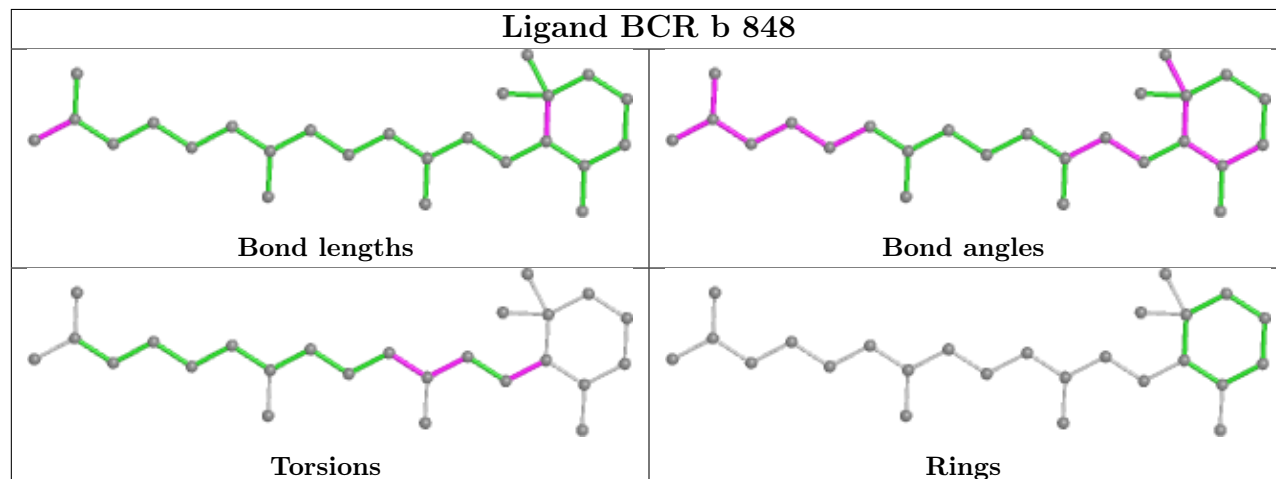
Mol	Chain	Res	Type	Atoms
12	A	801	LHG	C3-O3-P-O4
12	A	801	LHG	C3-O3-P-O6
12	A	801	LHG	O10-C23-O8-C6
12	A	802	LHG	O1-C1-C2-C3
12	A	802	LHG	C3-O3-P-O4

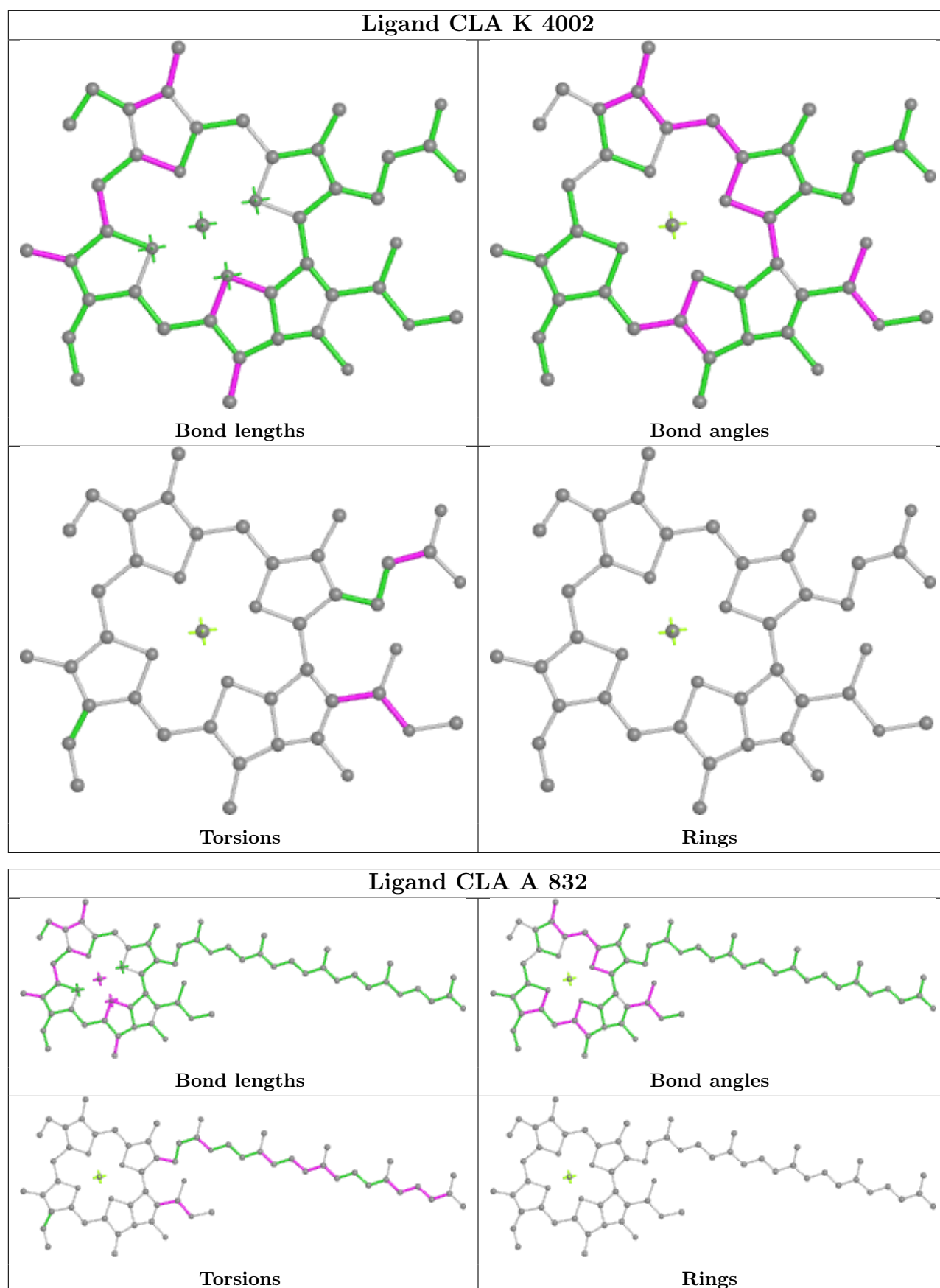
There are no ring outliers.

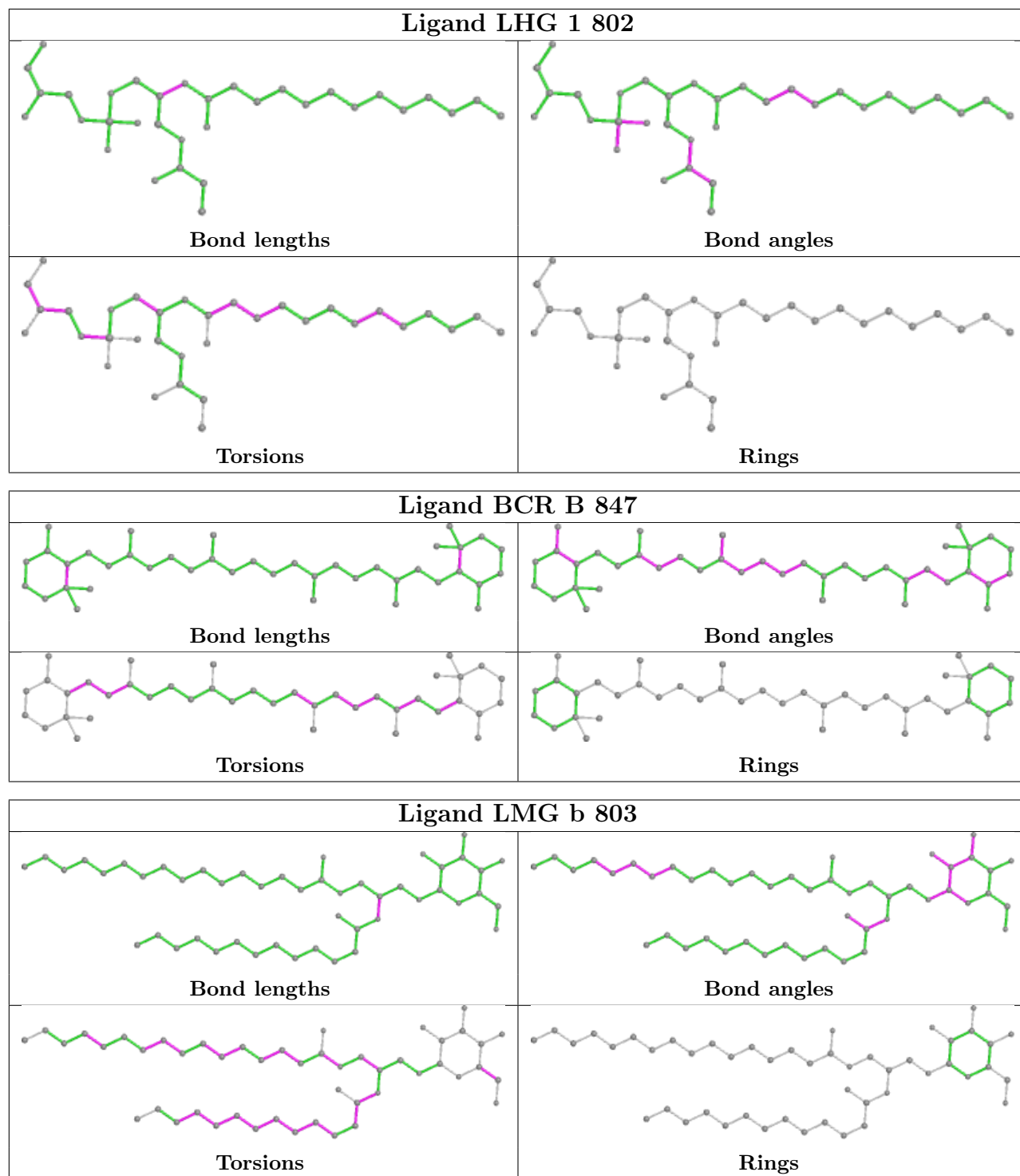
No monomer is involved in short contacts.

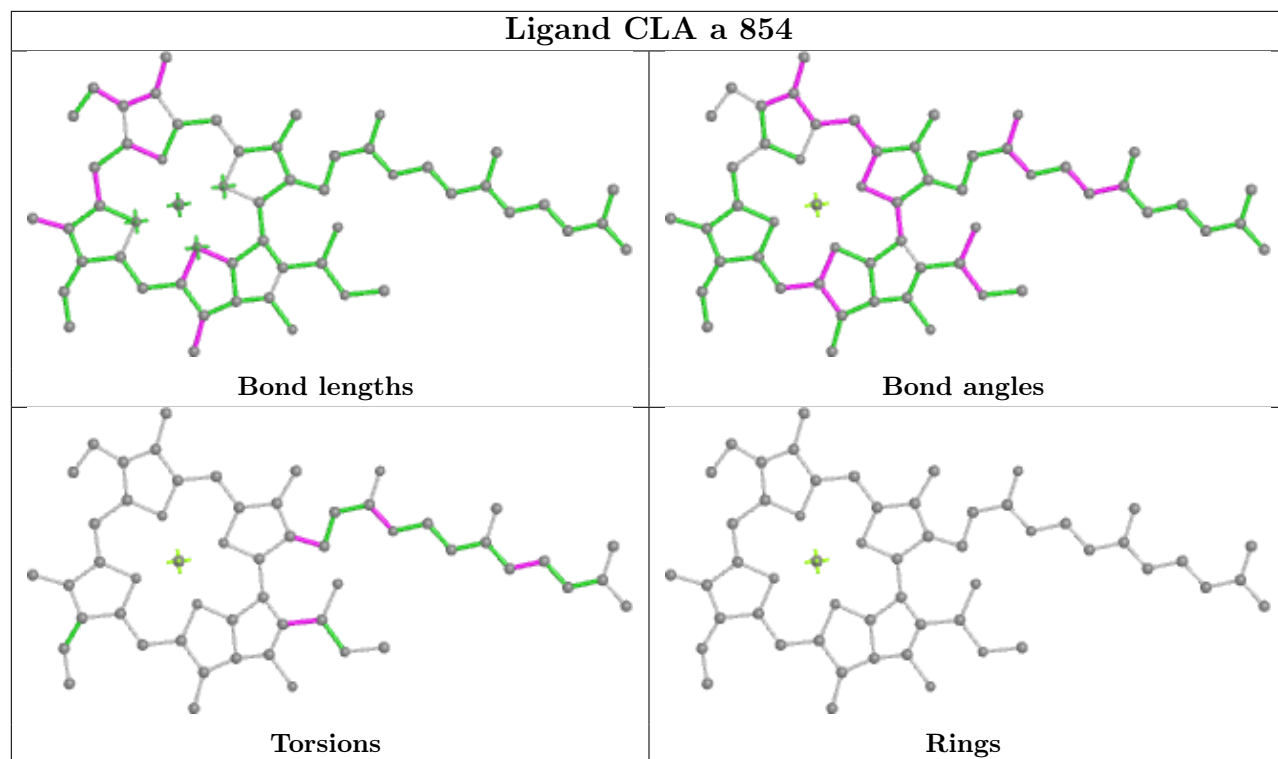
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

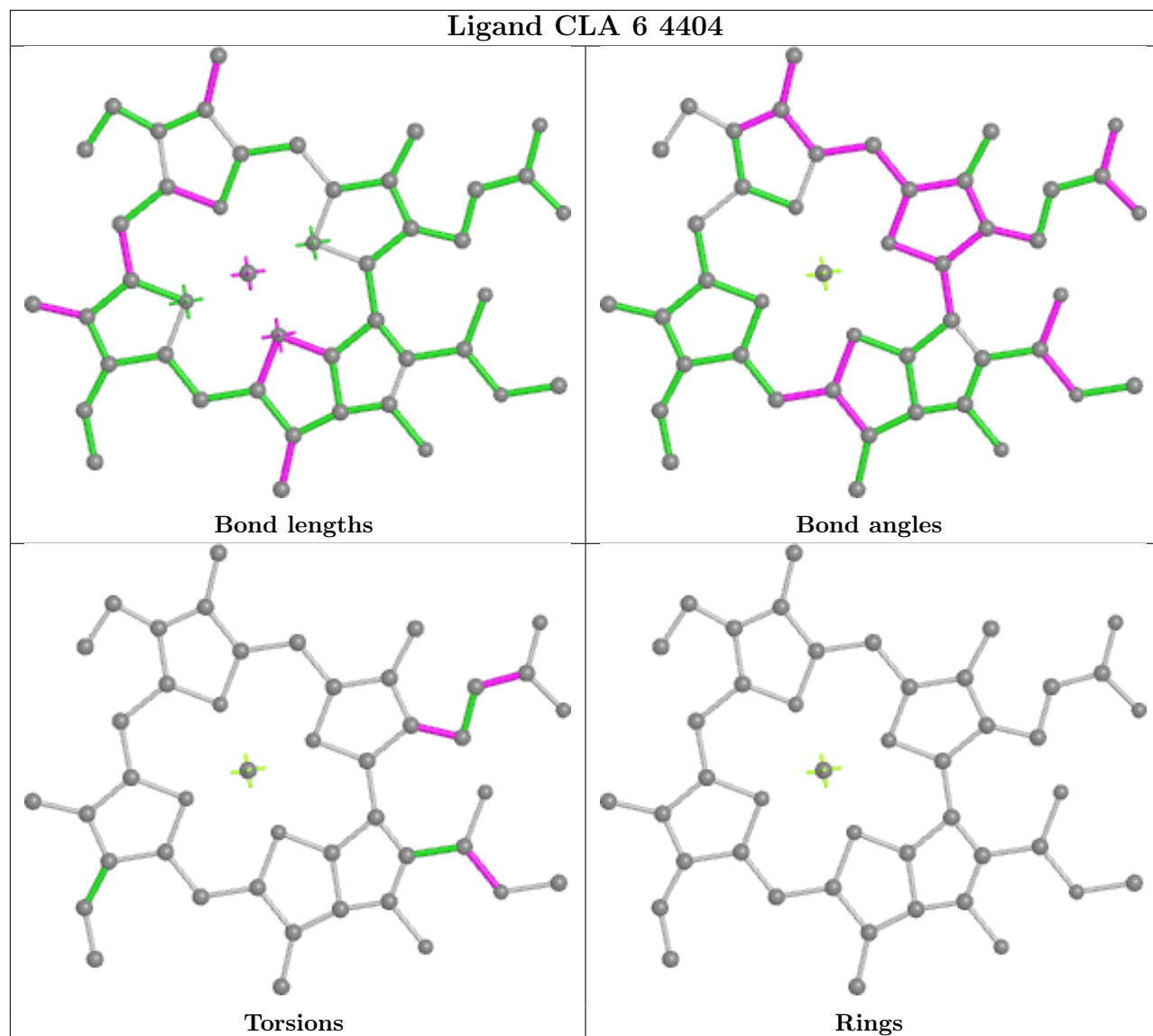
in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

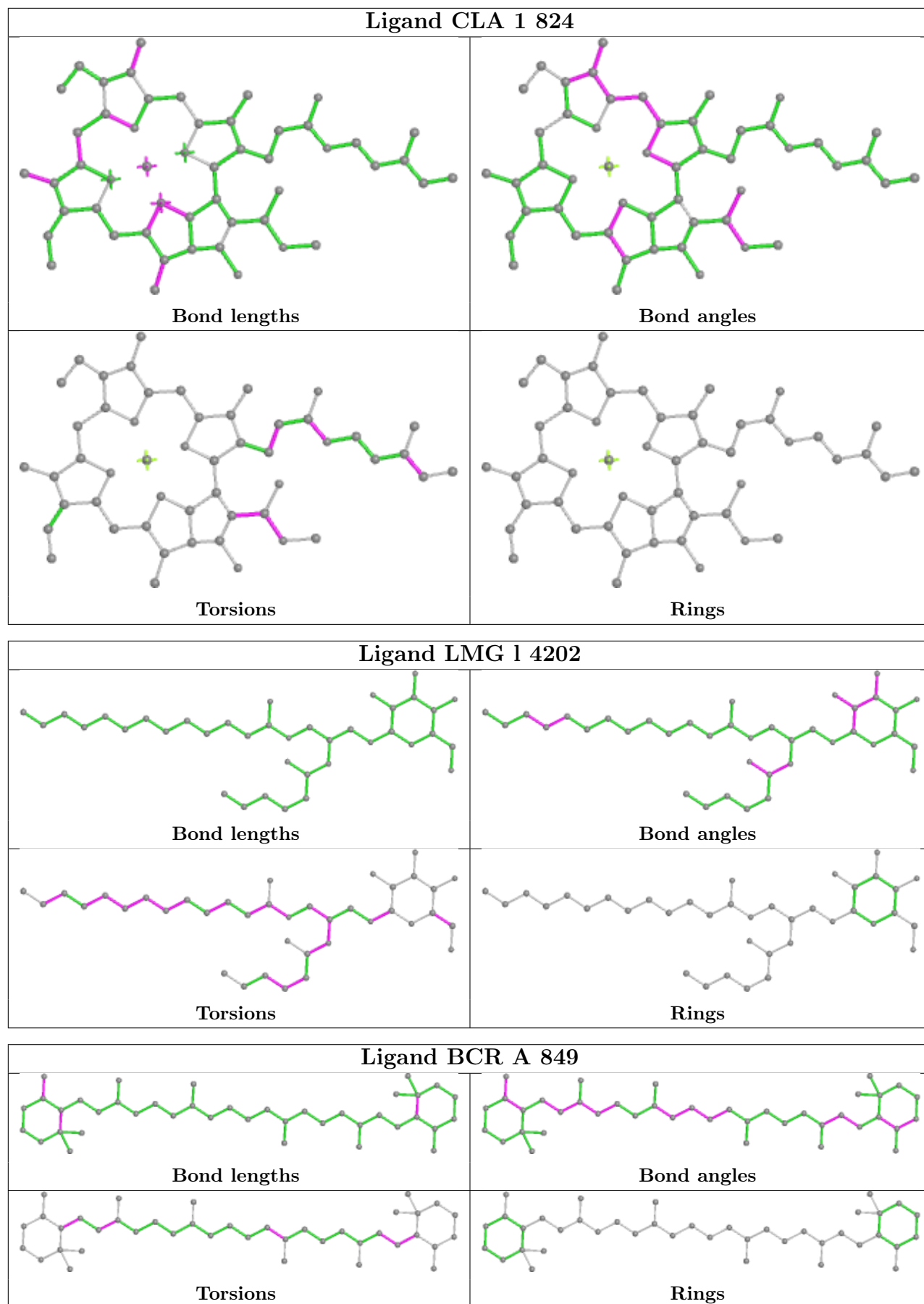




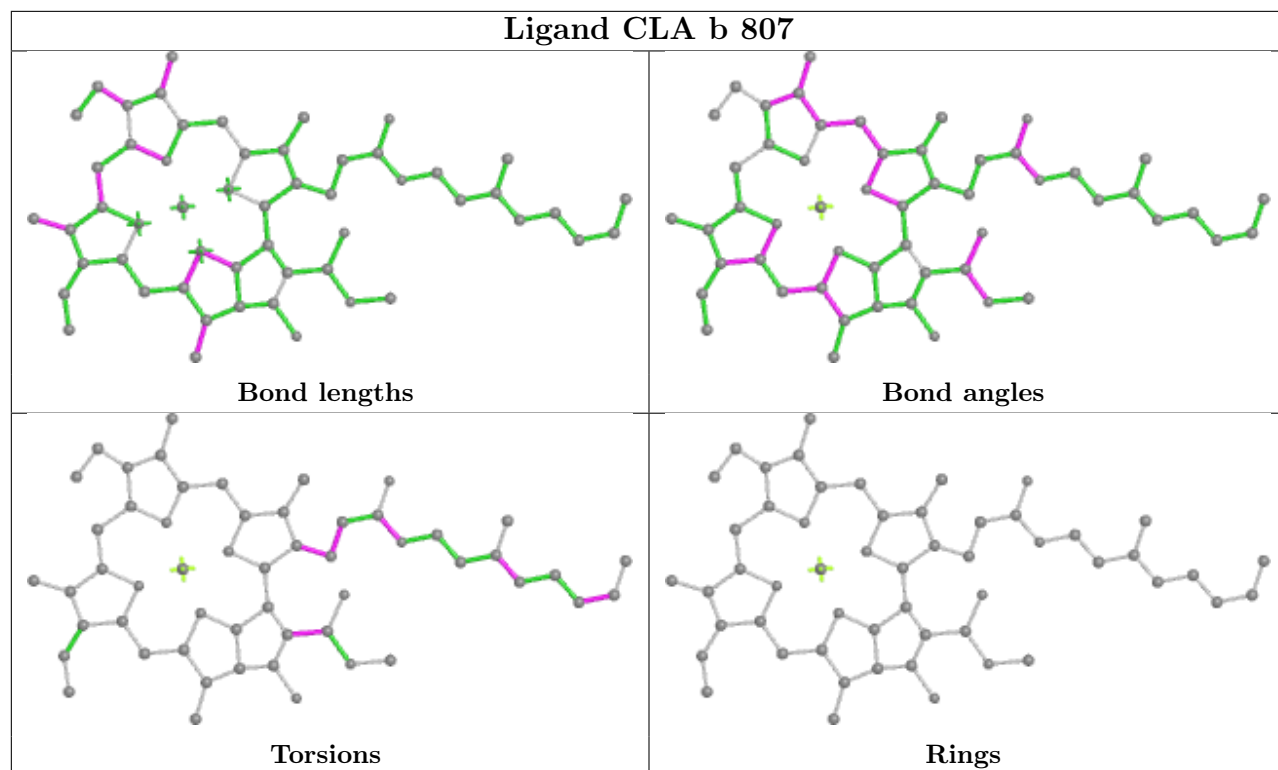


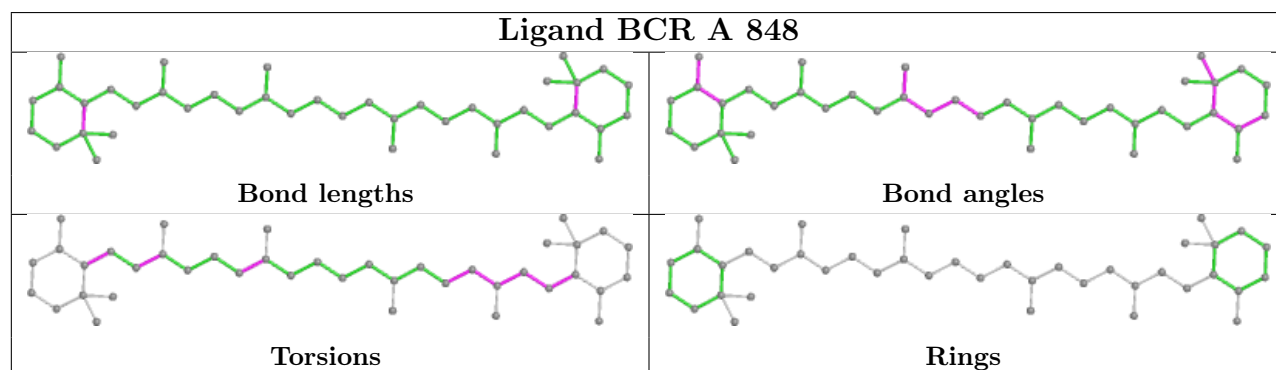
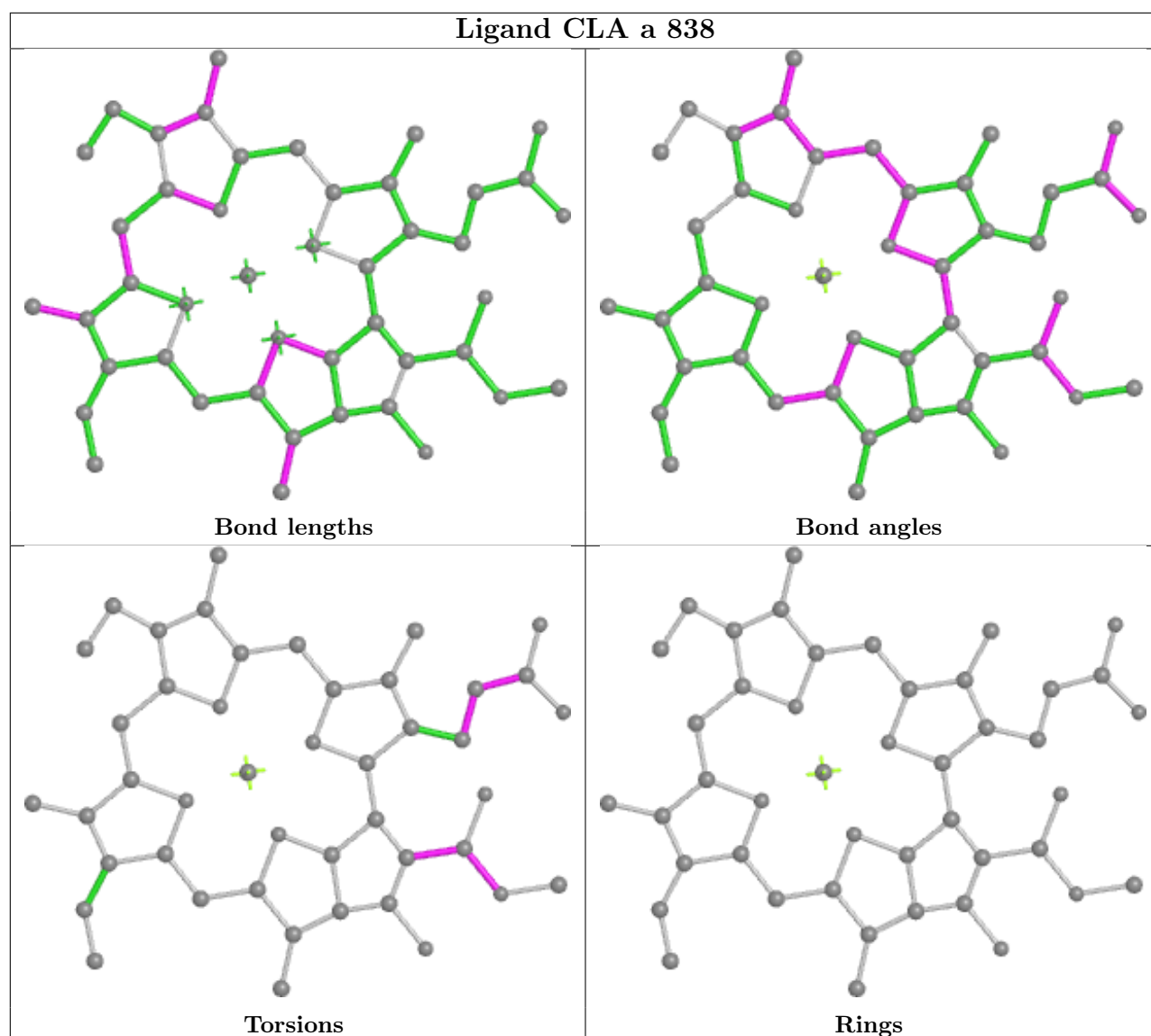


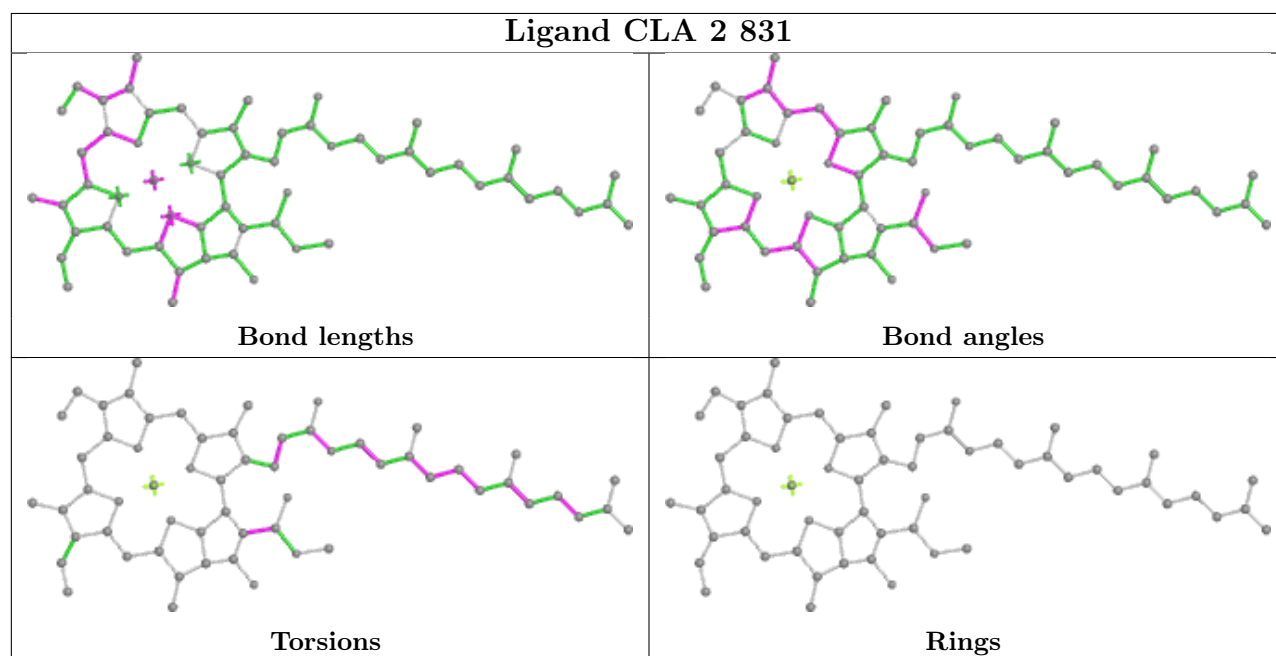
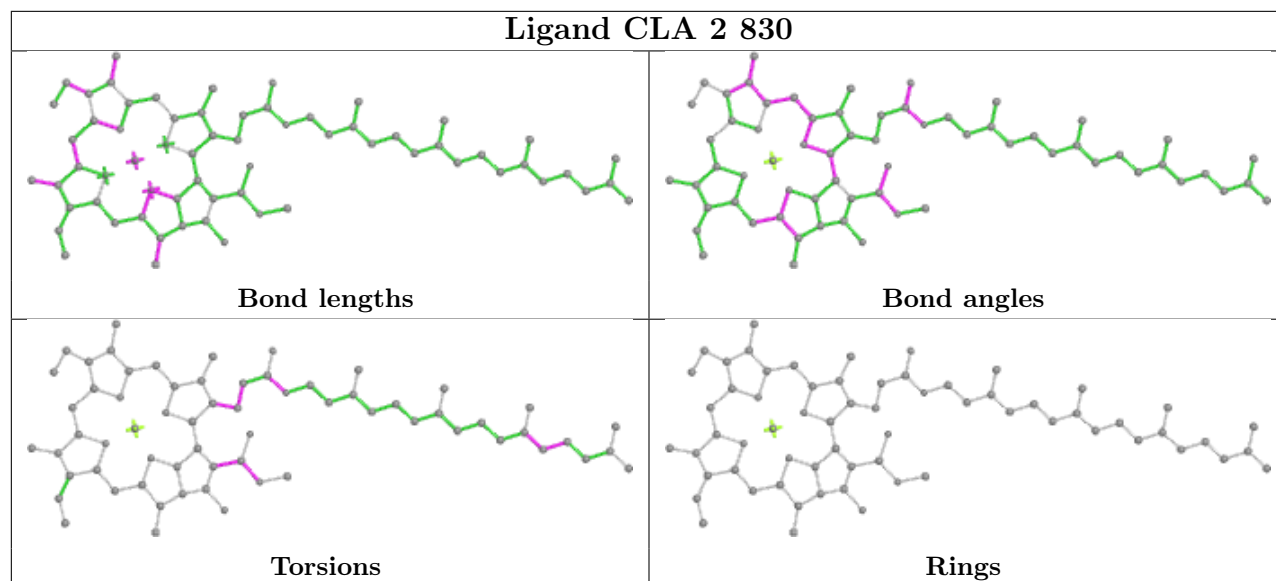
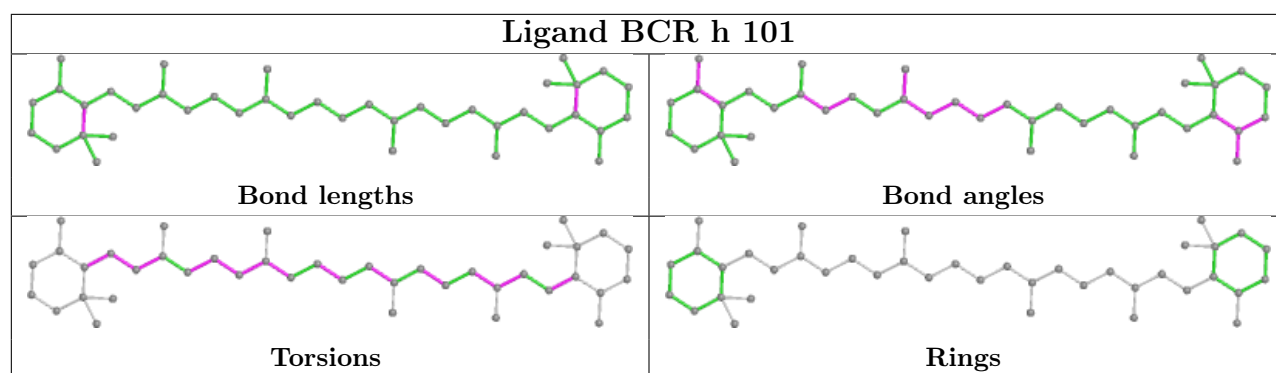


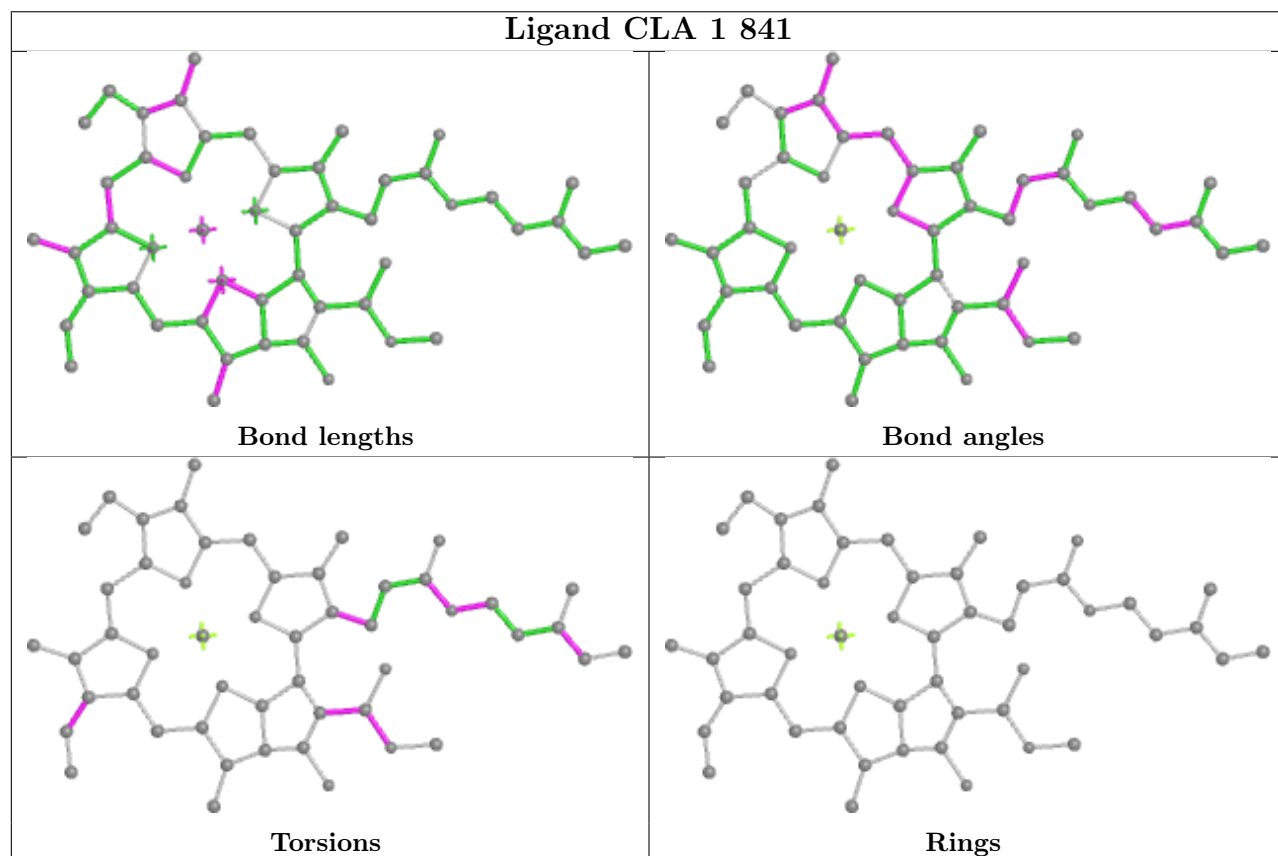
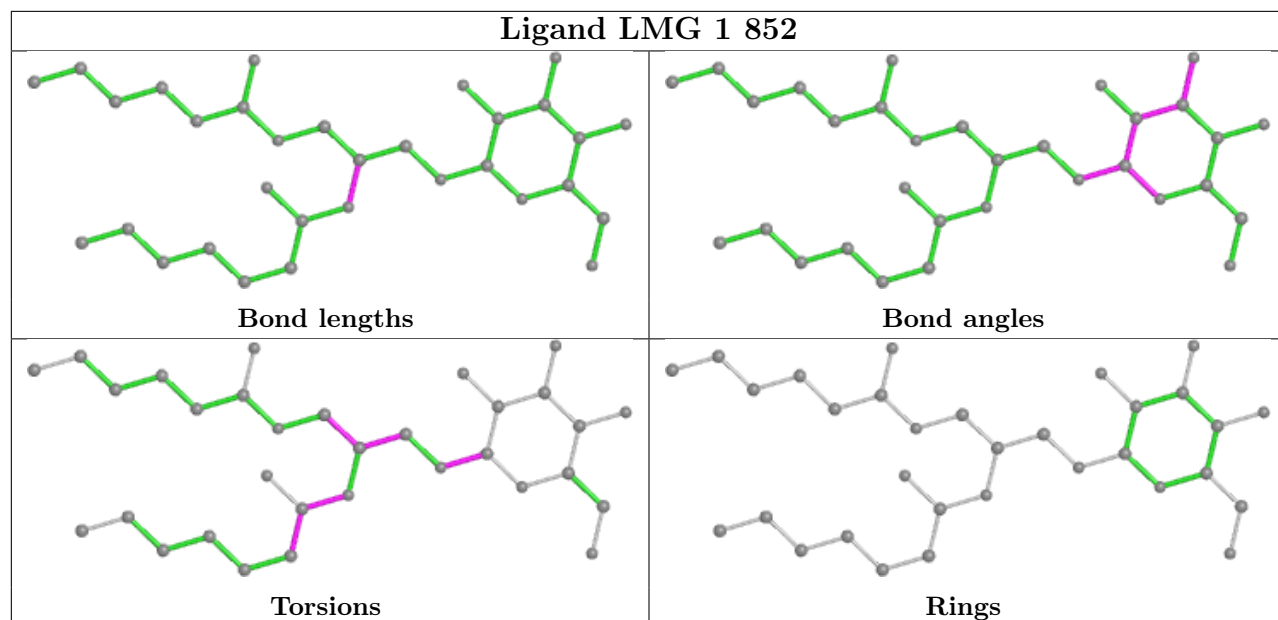


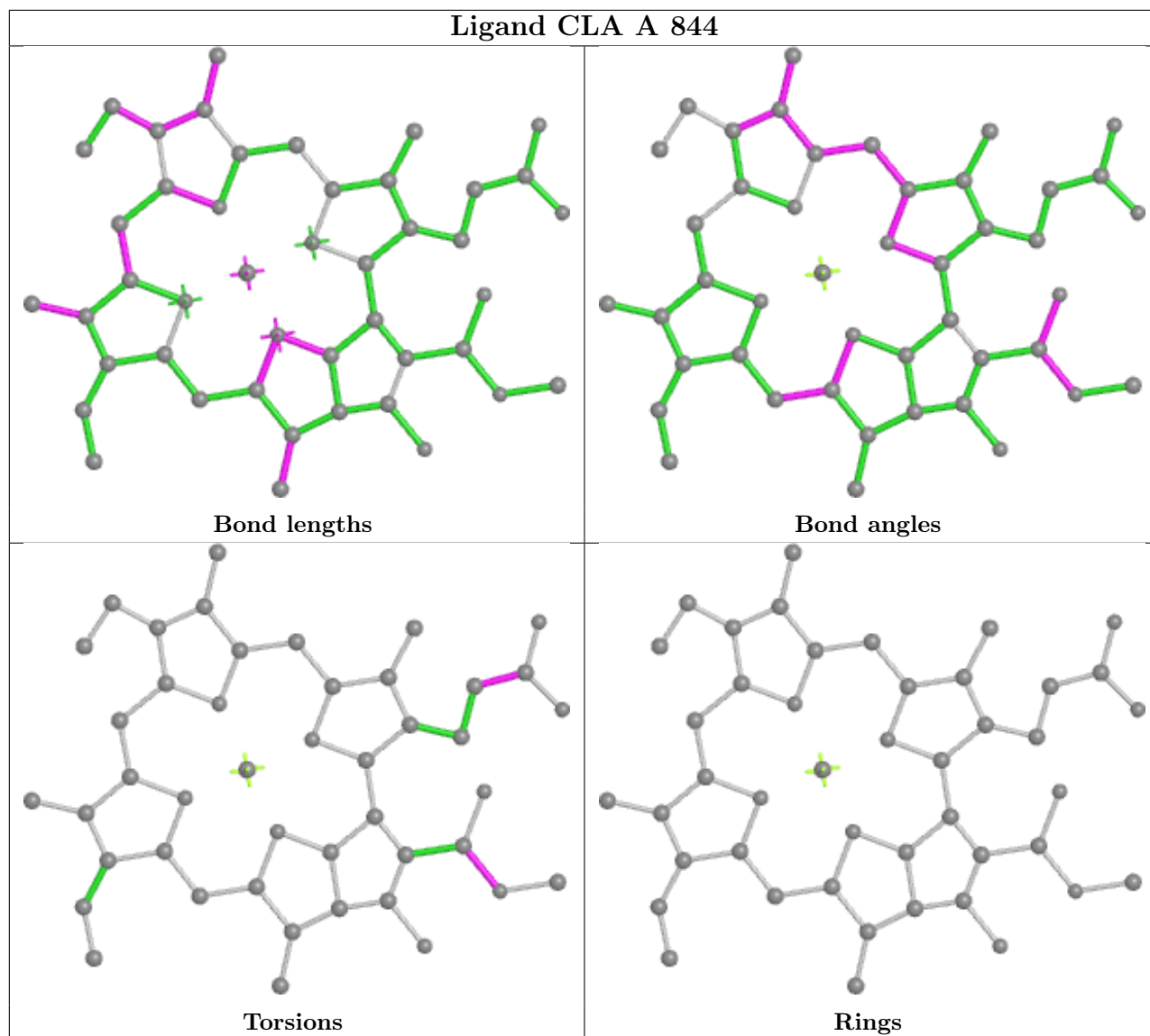
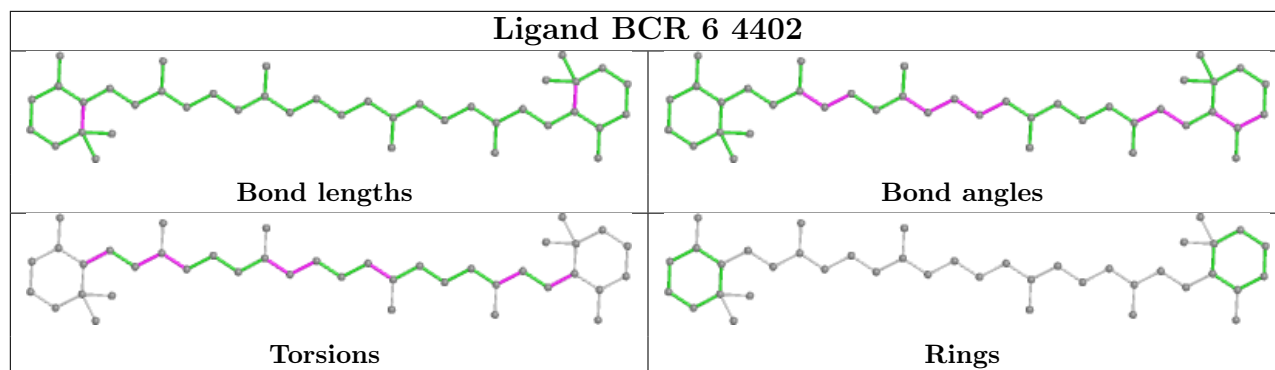


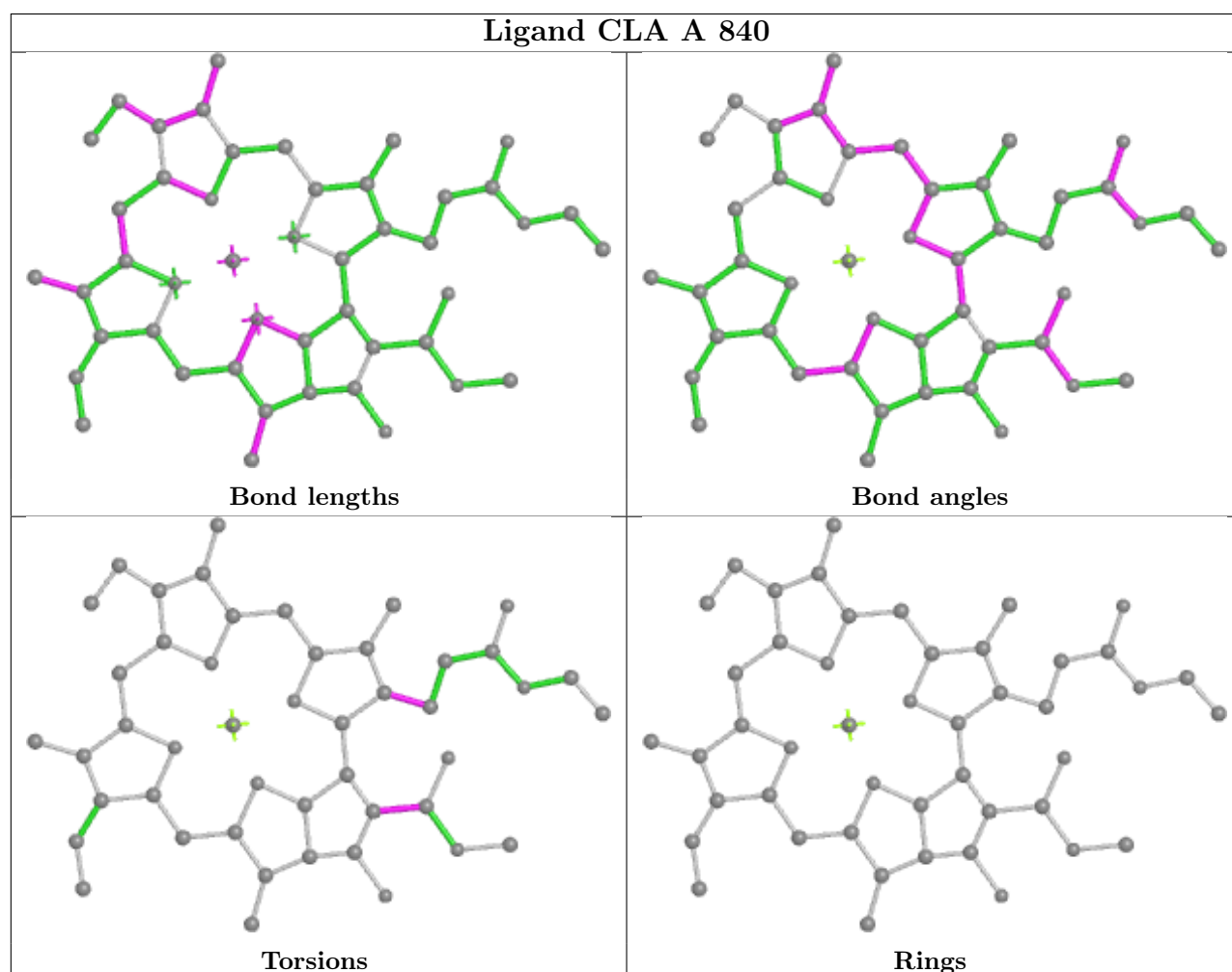
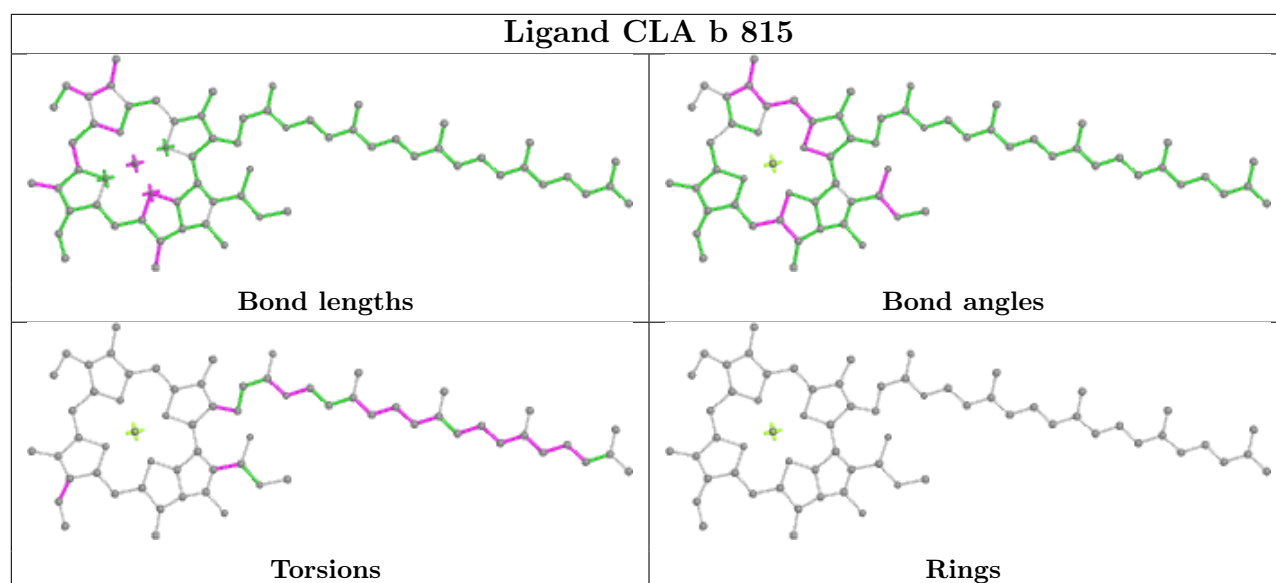


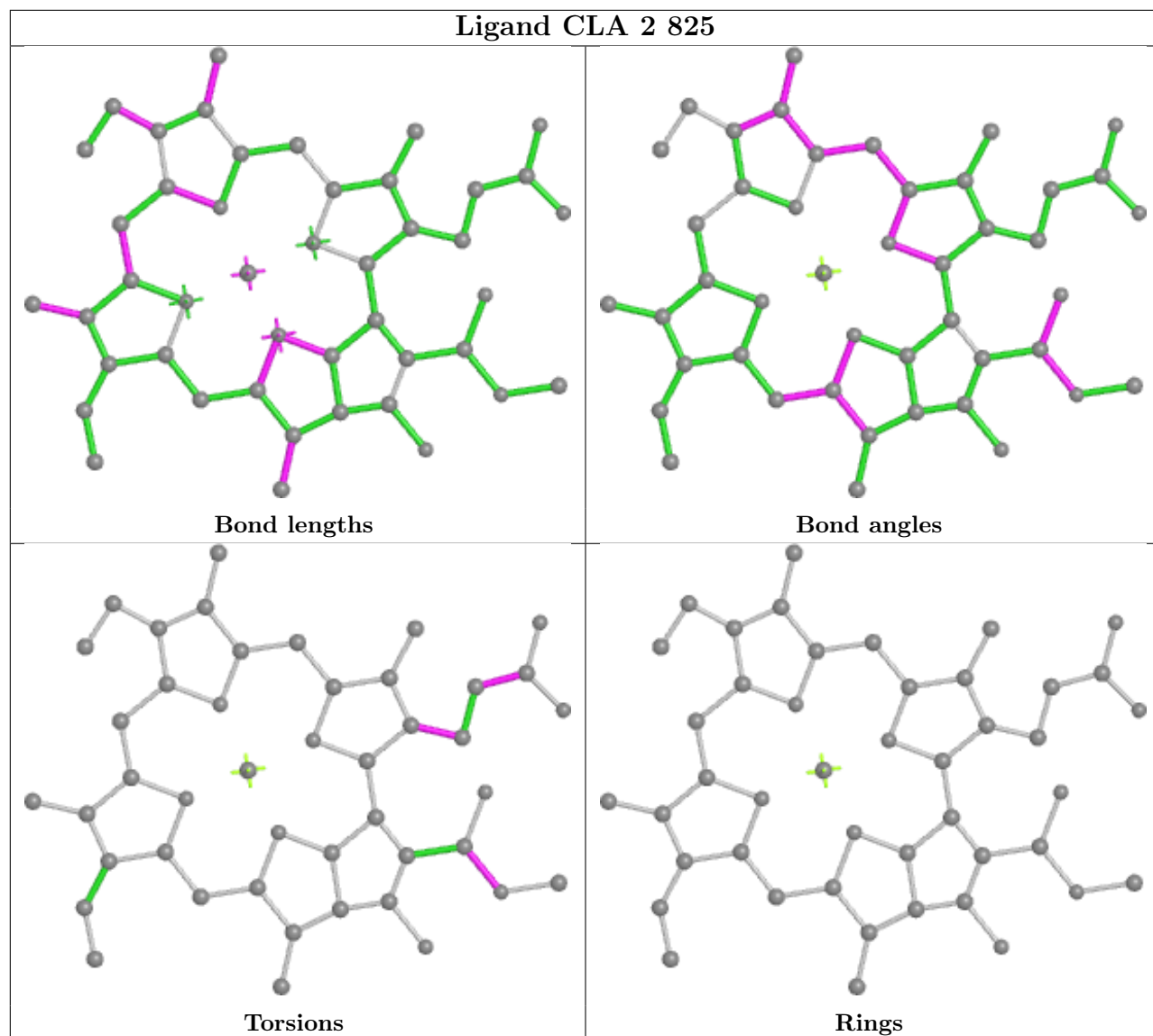


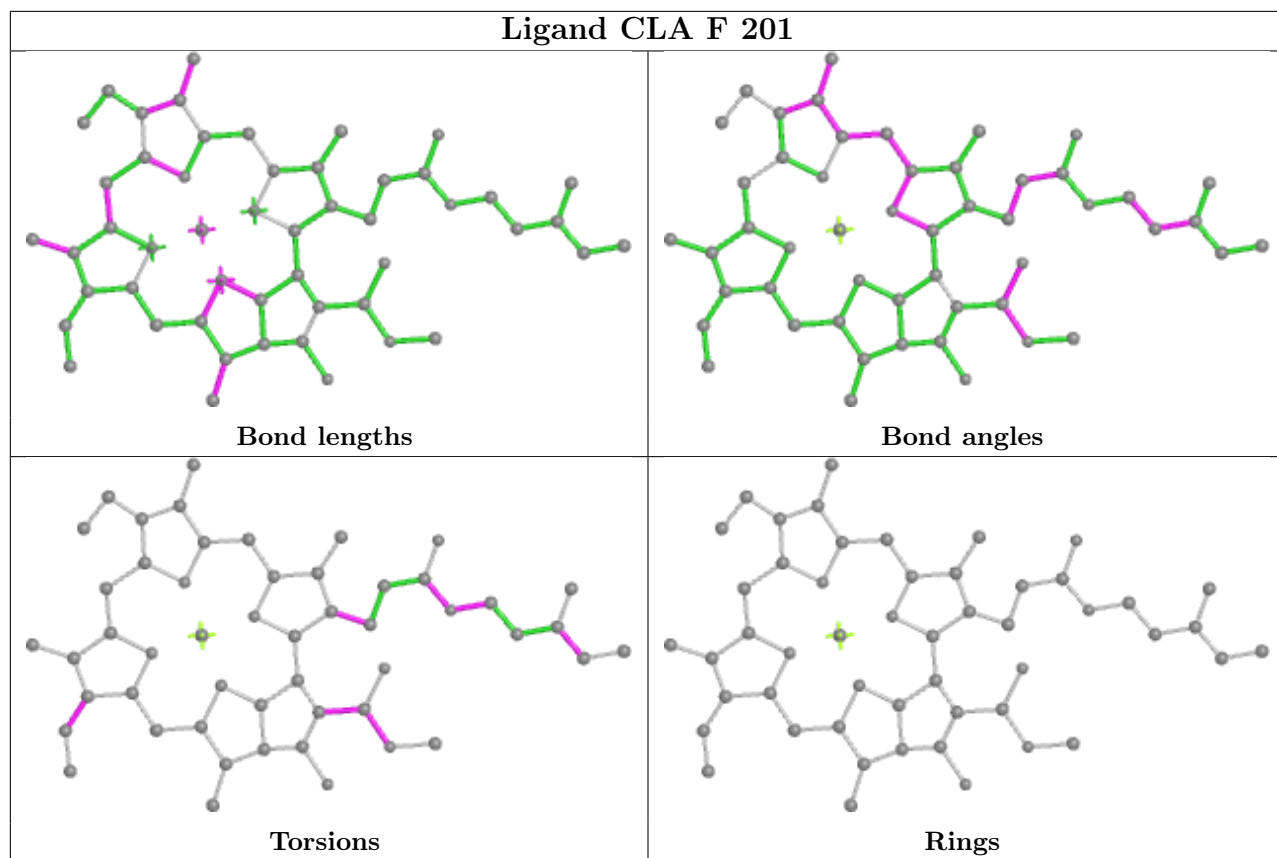




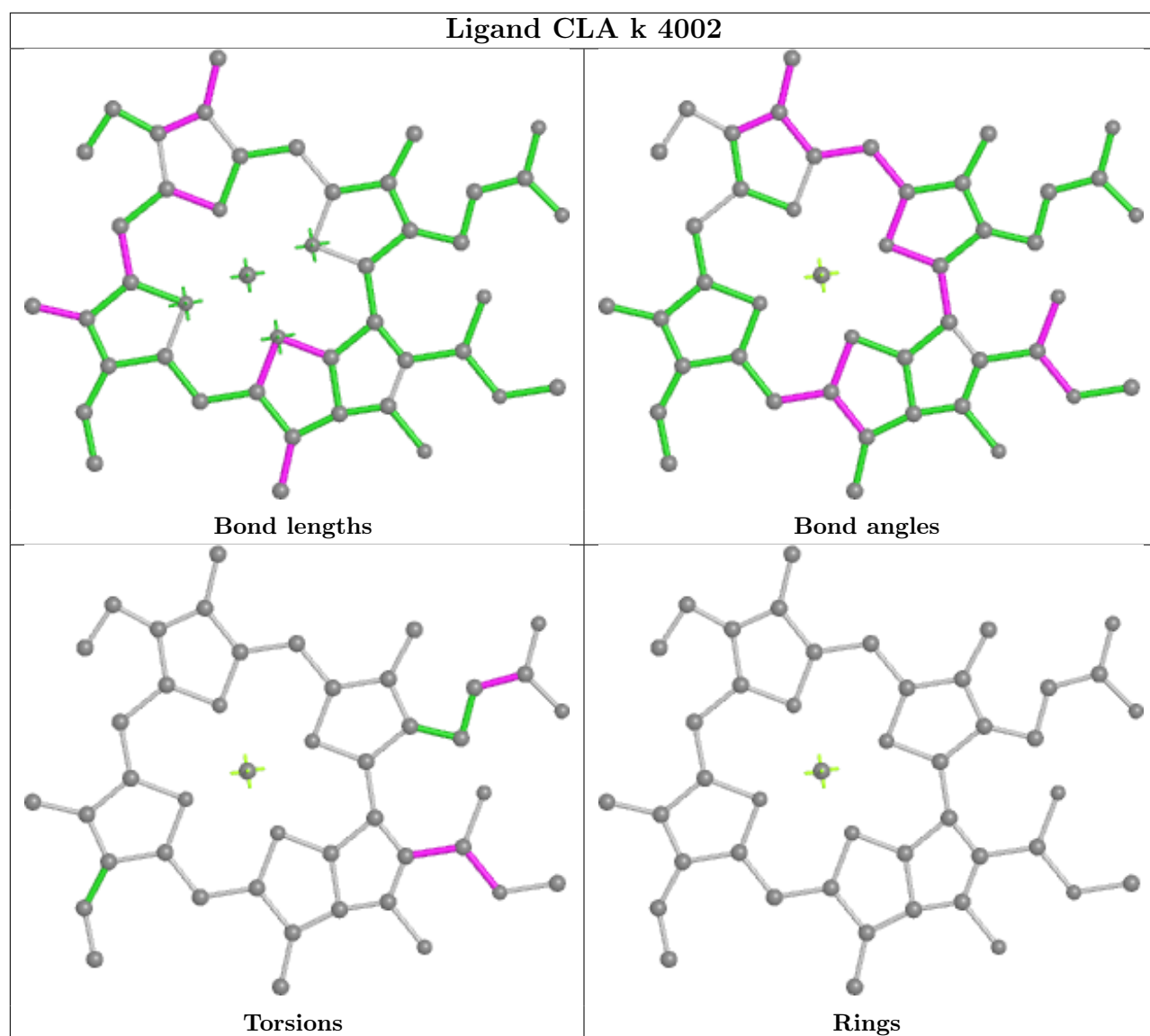


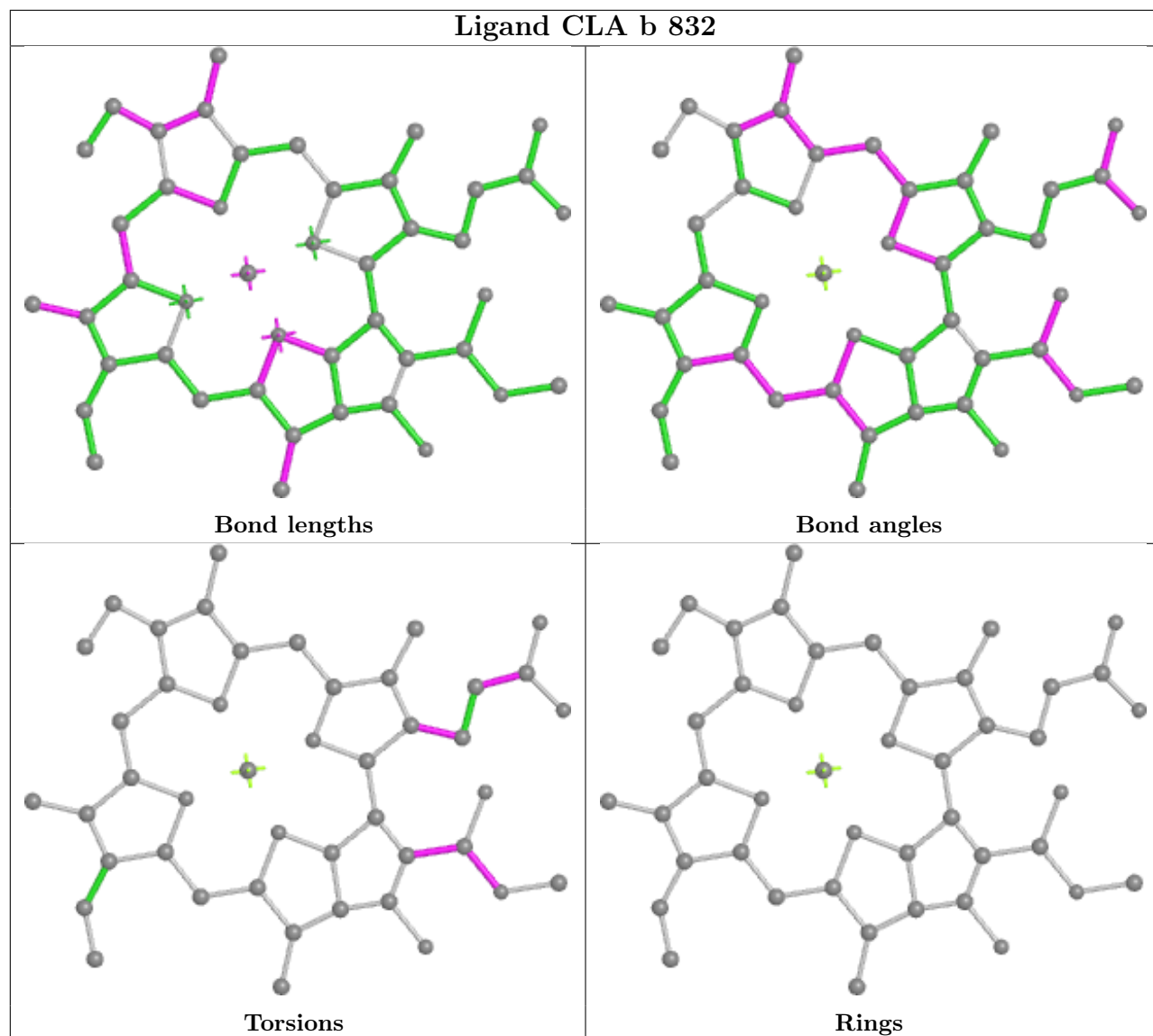


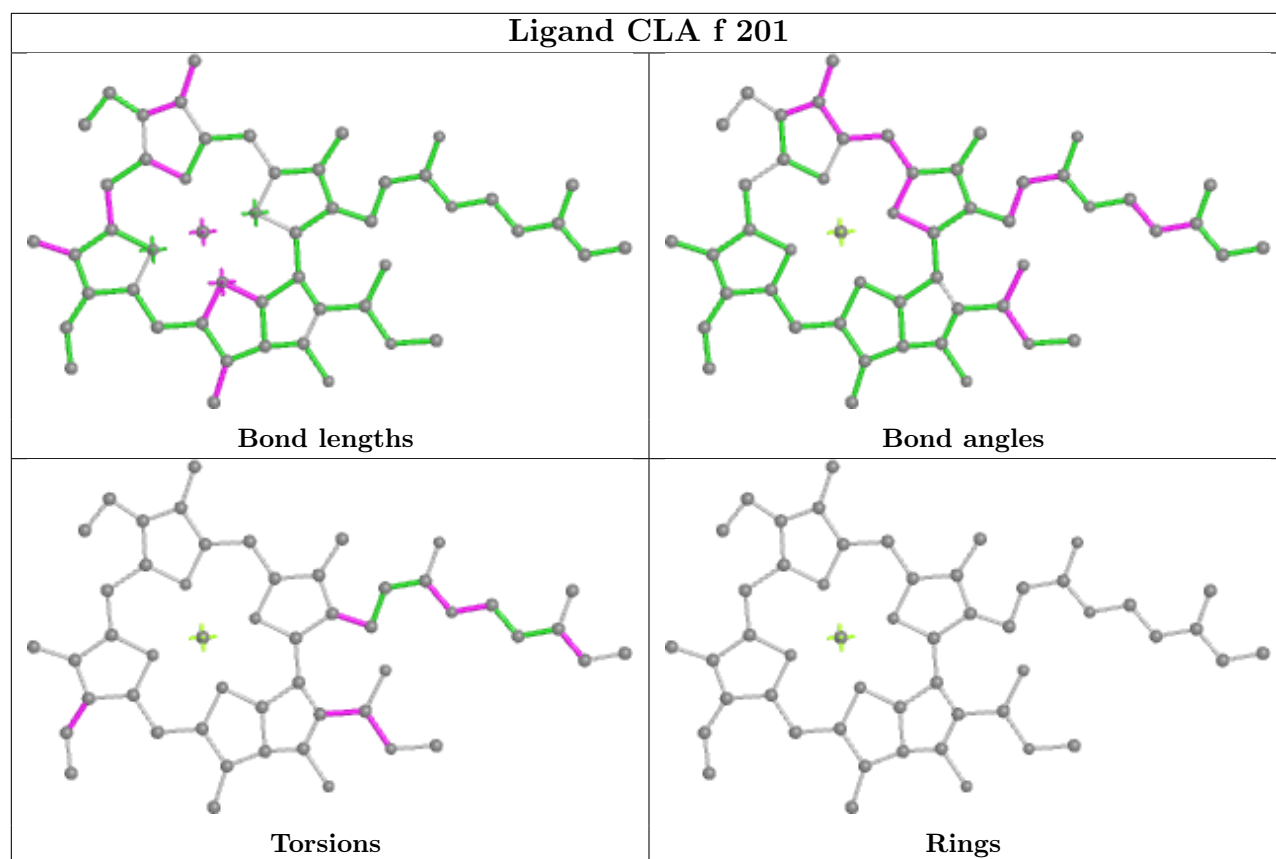
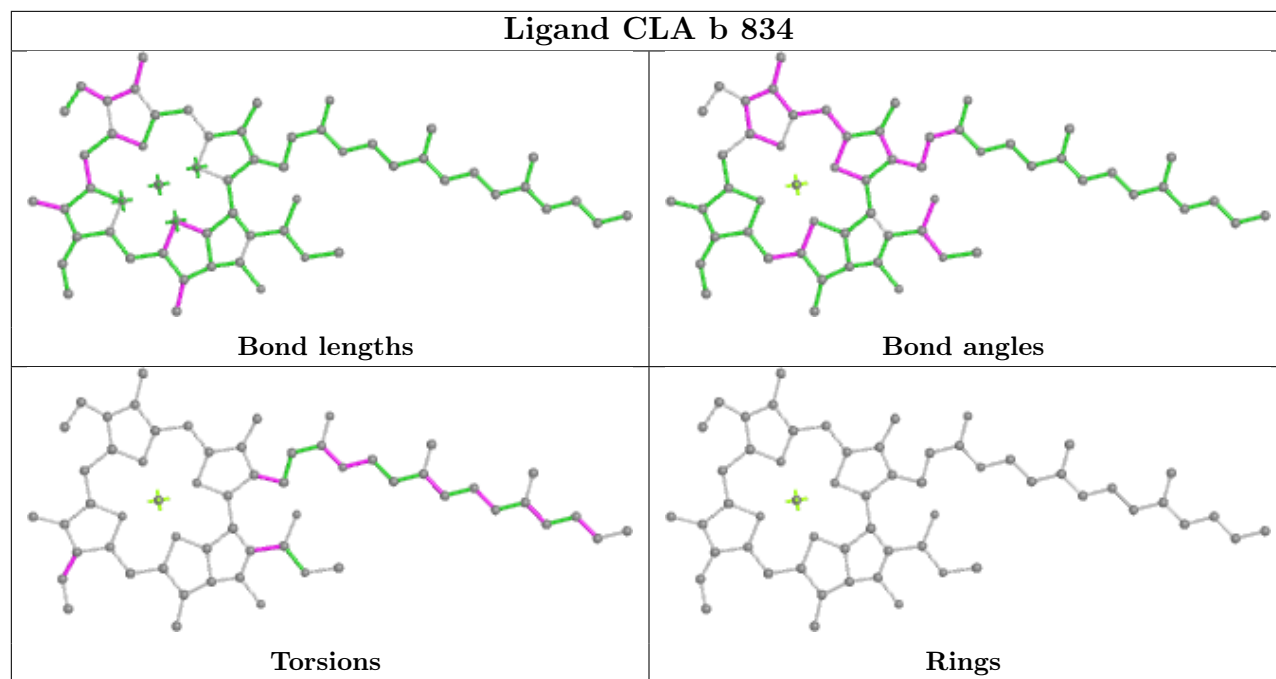


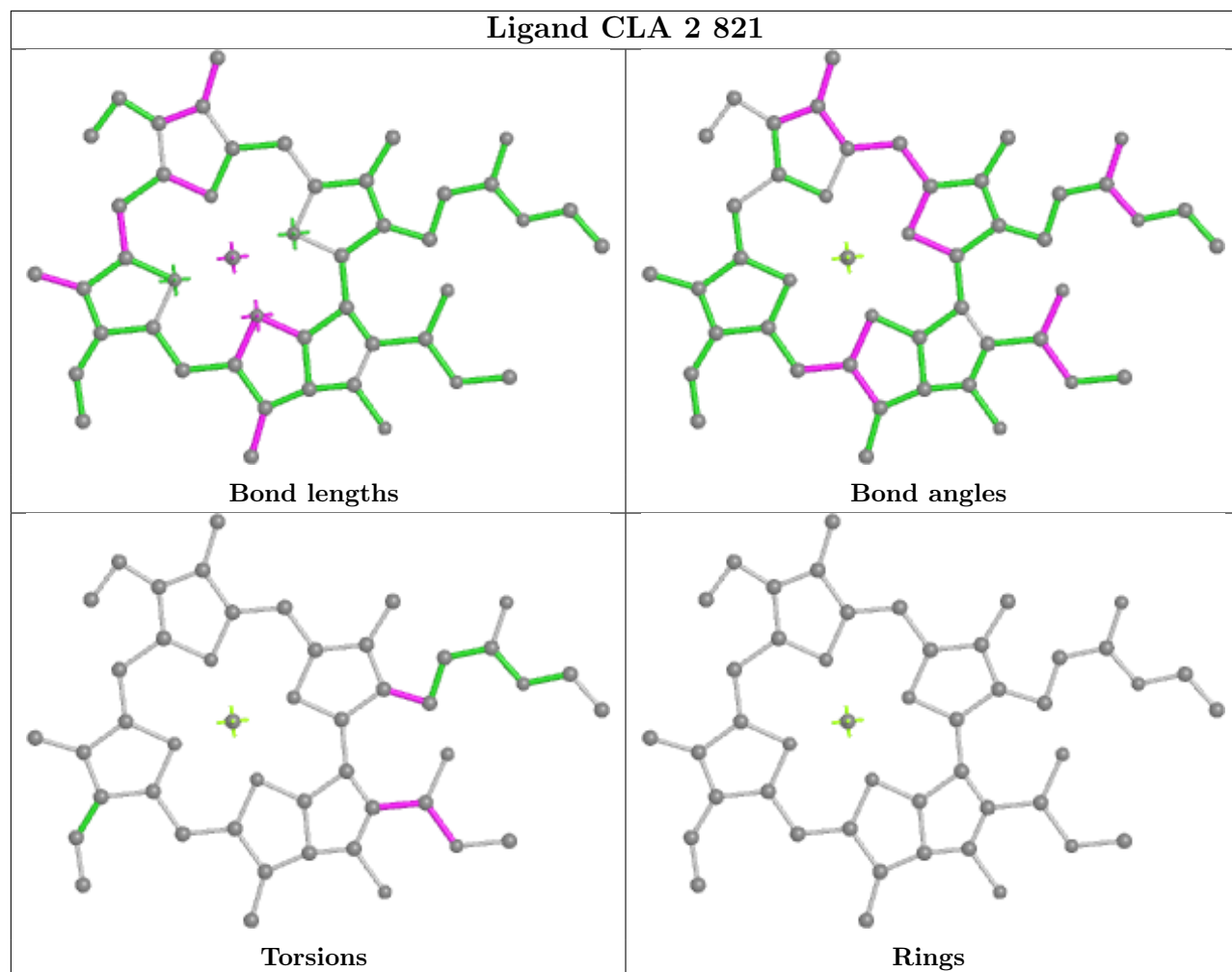


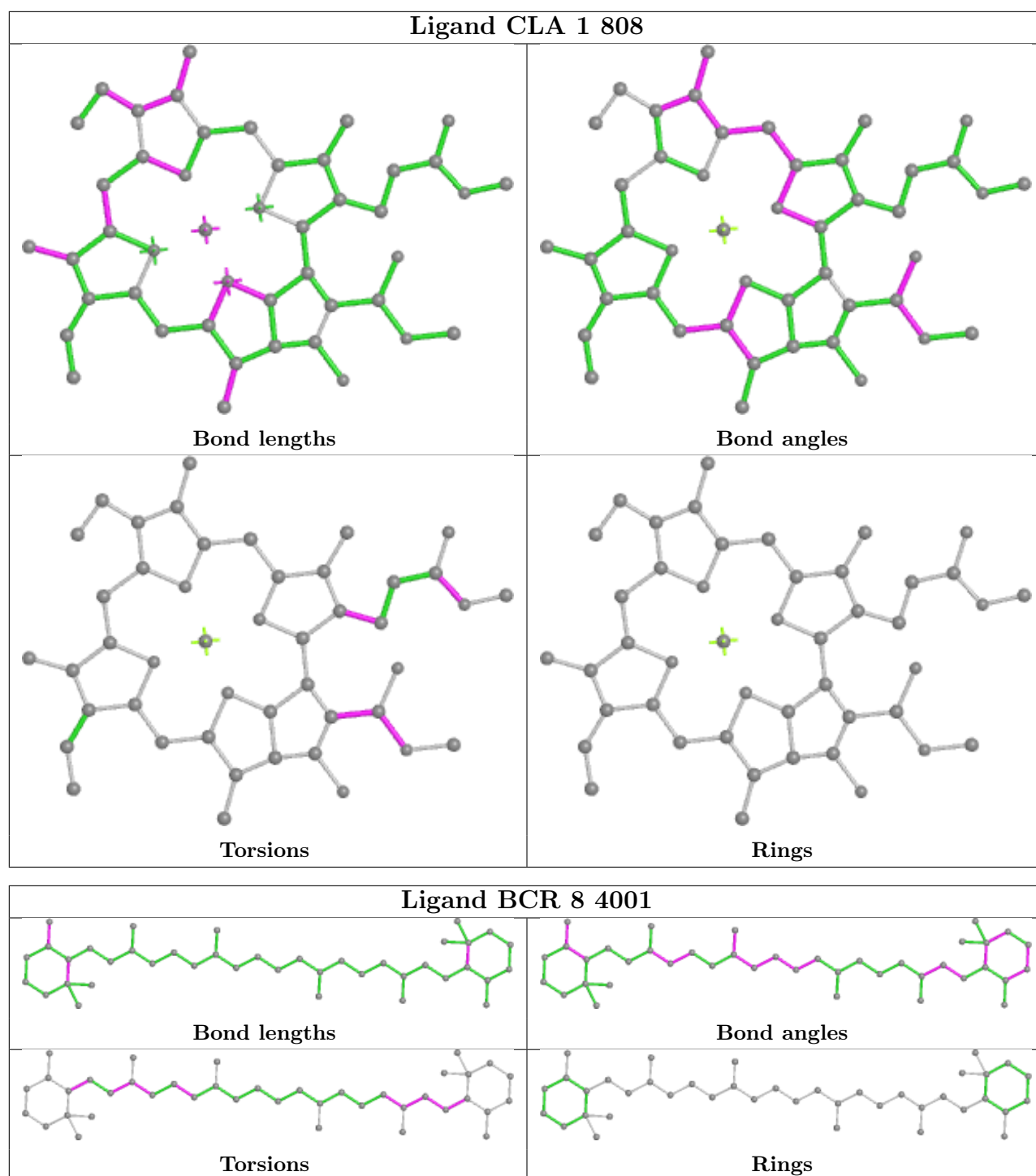


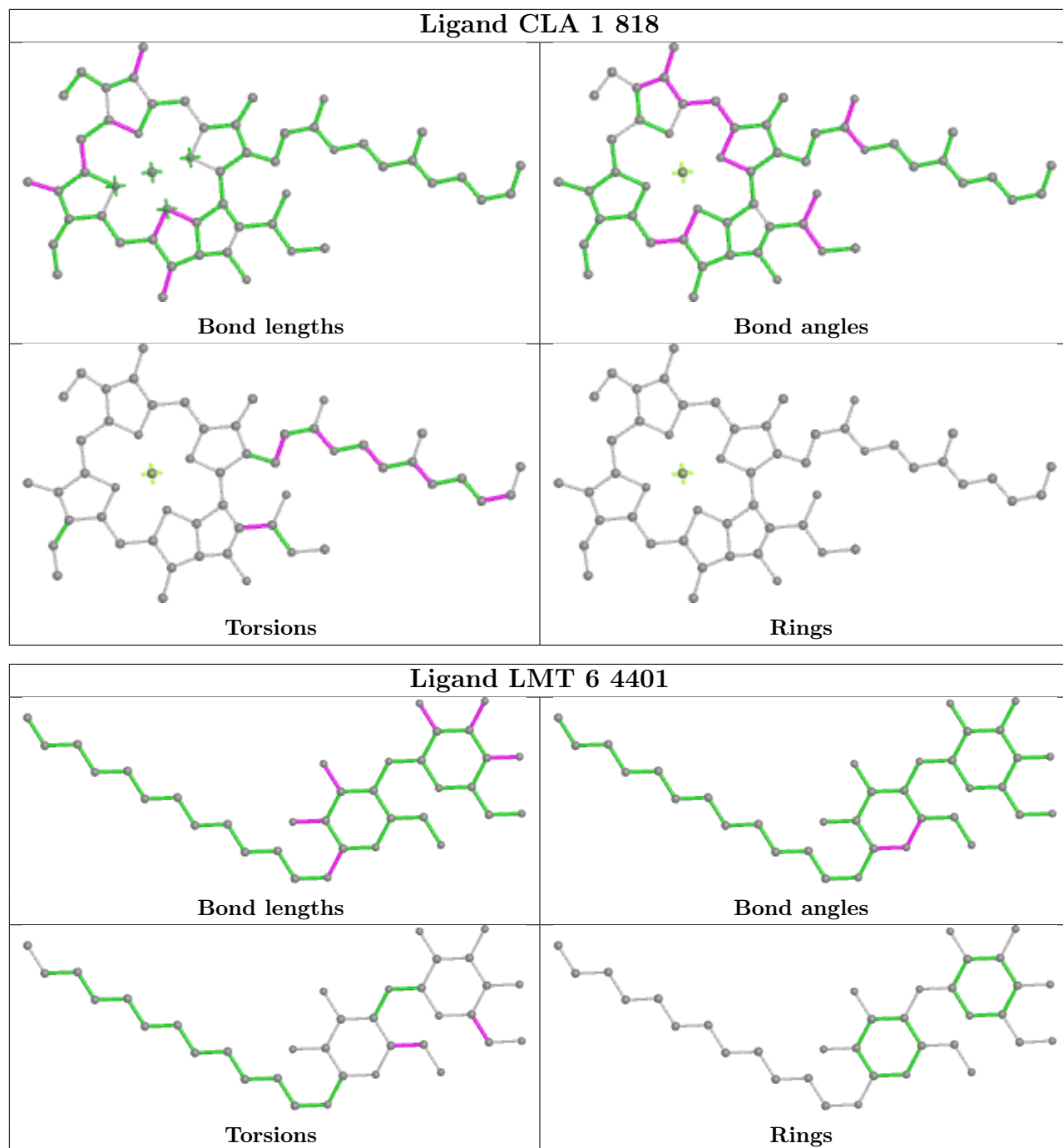


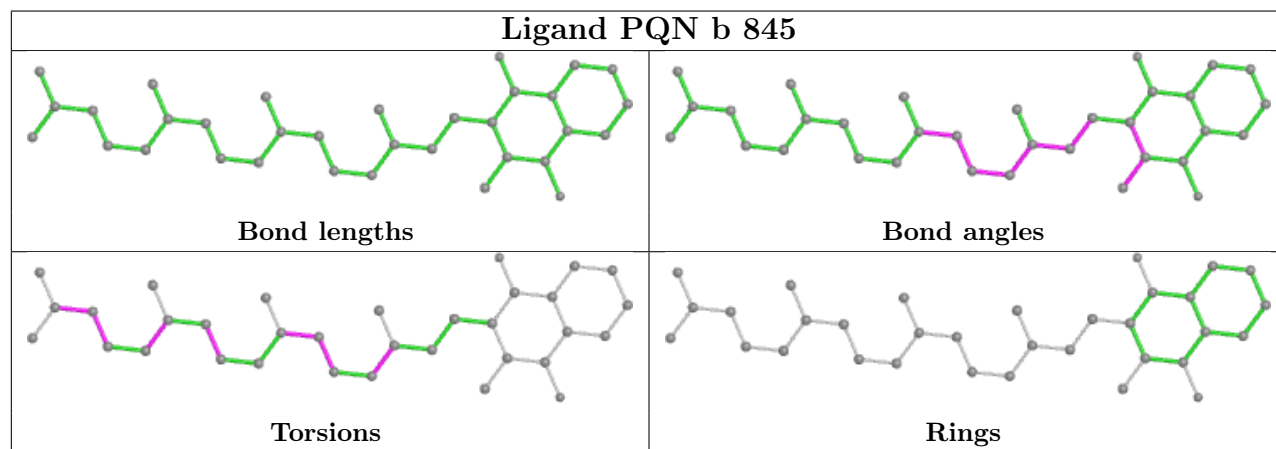
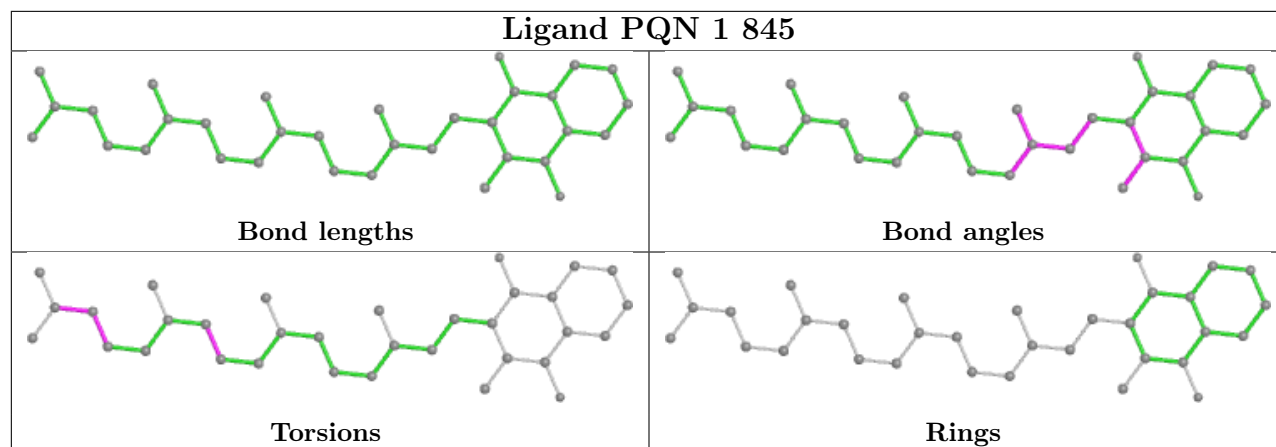


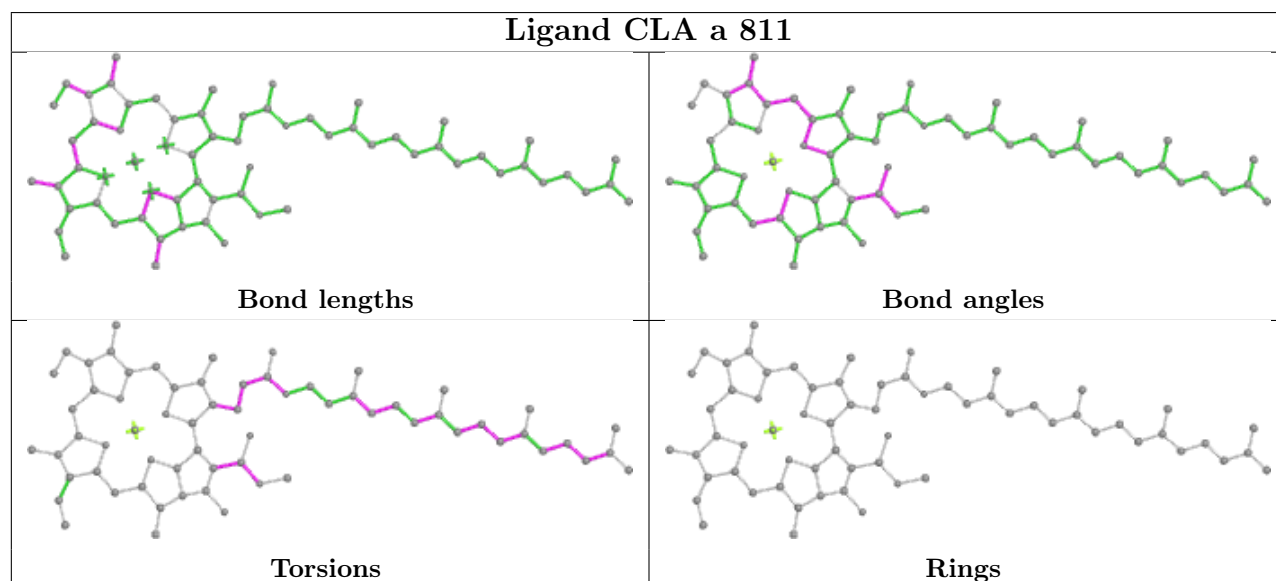
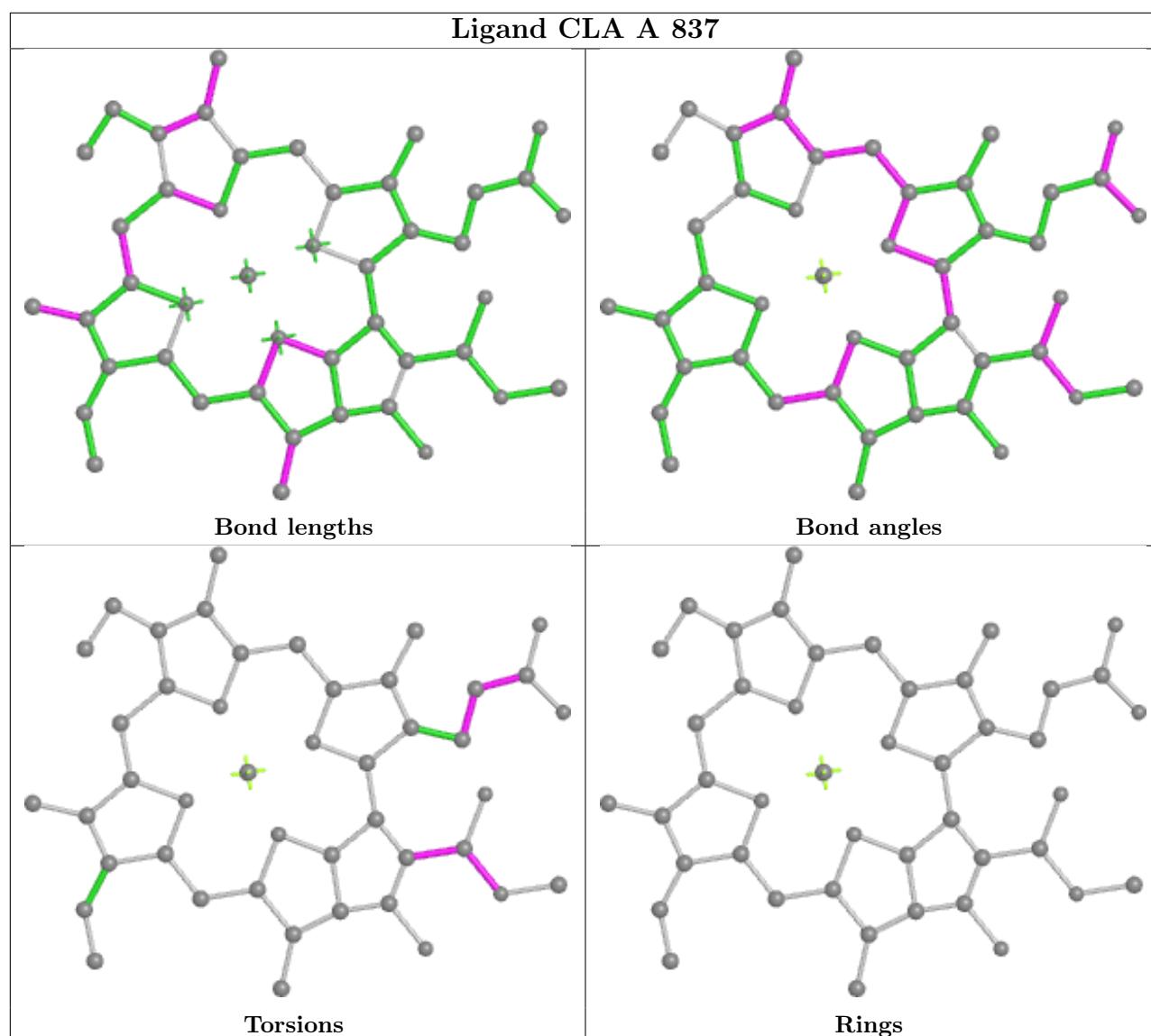




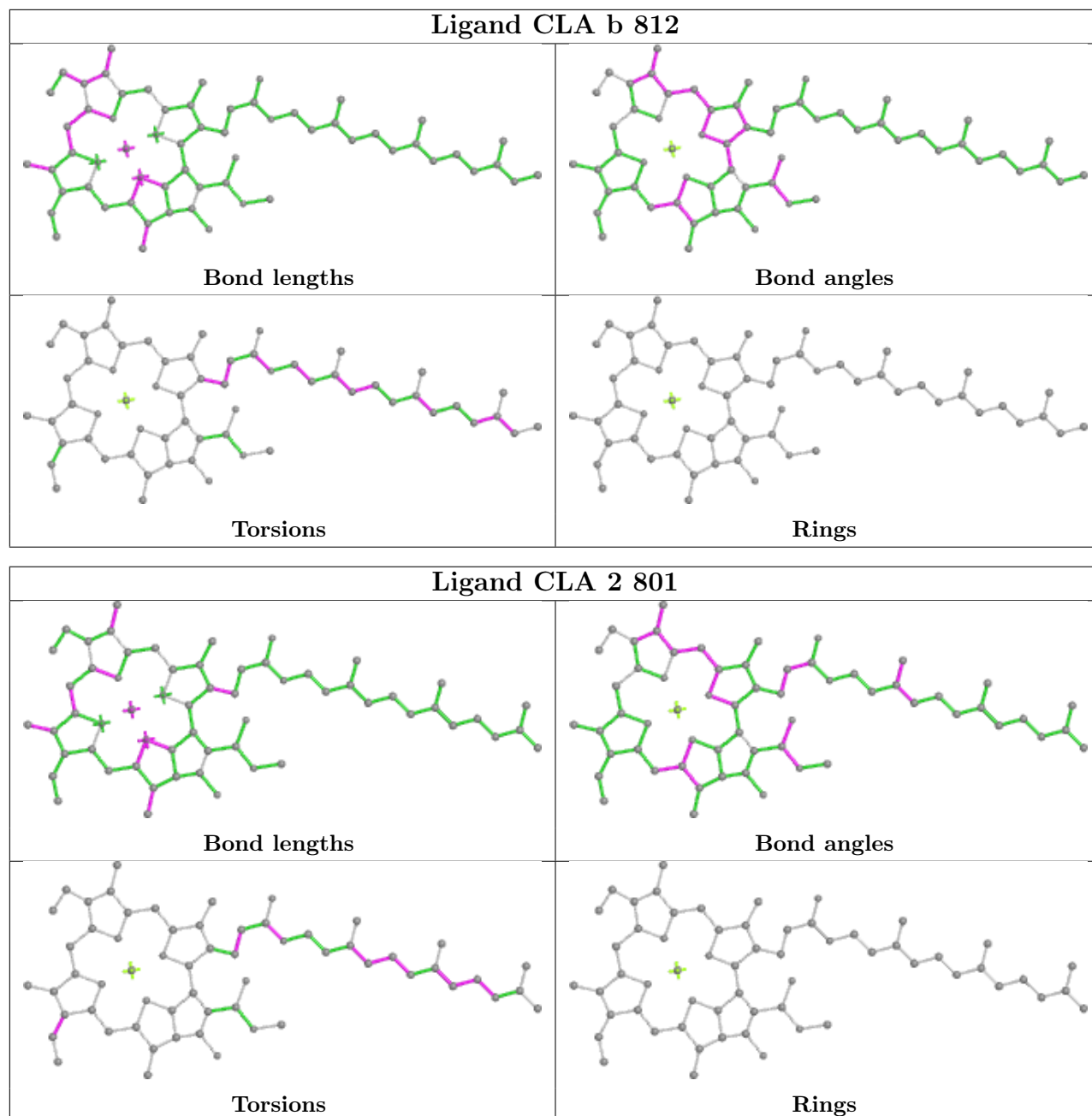


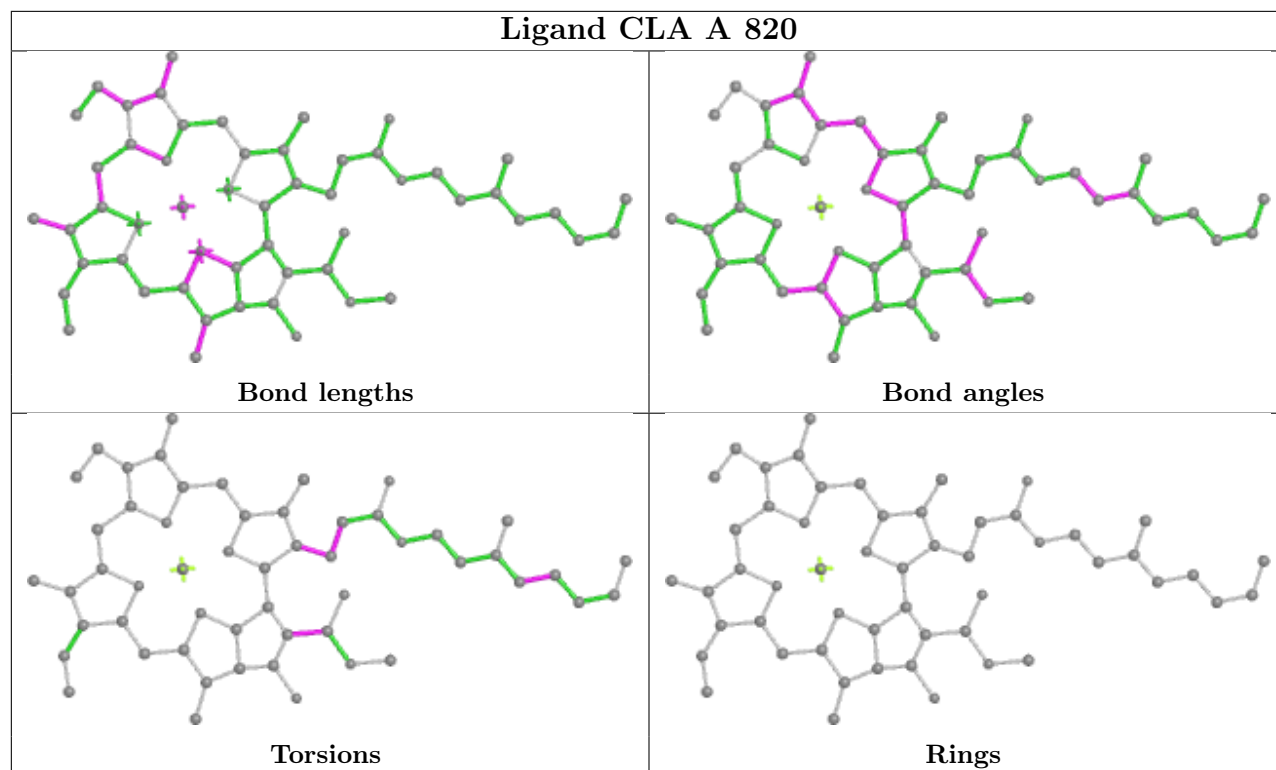


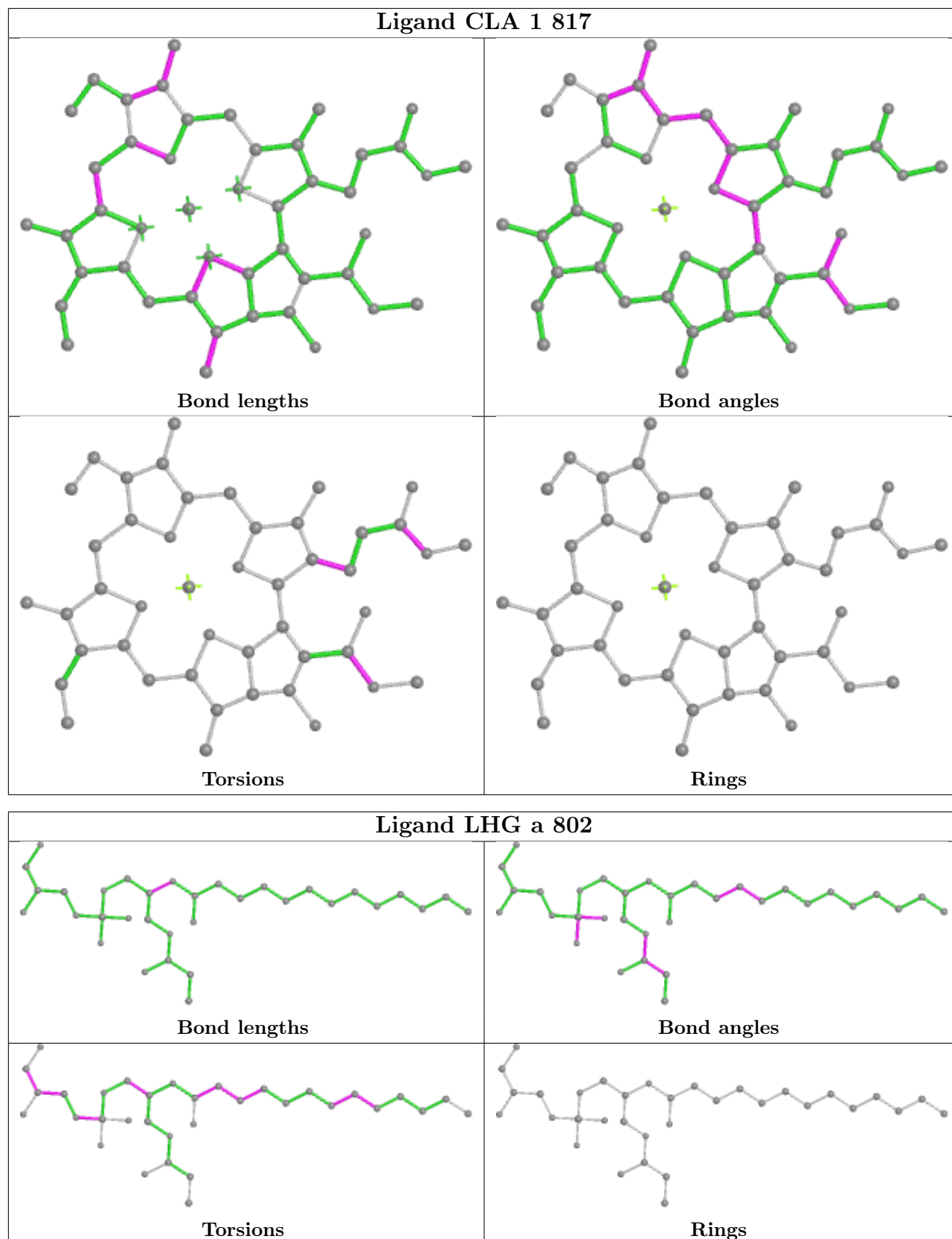


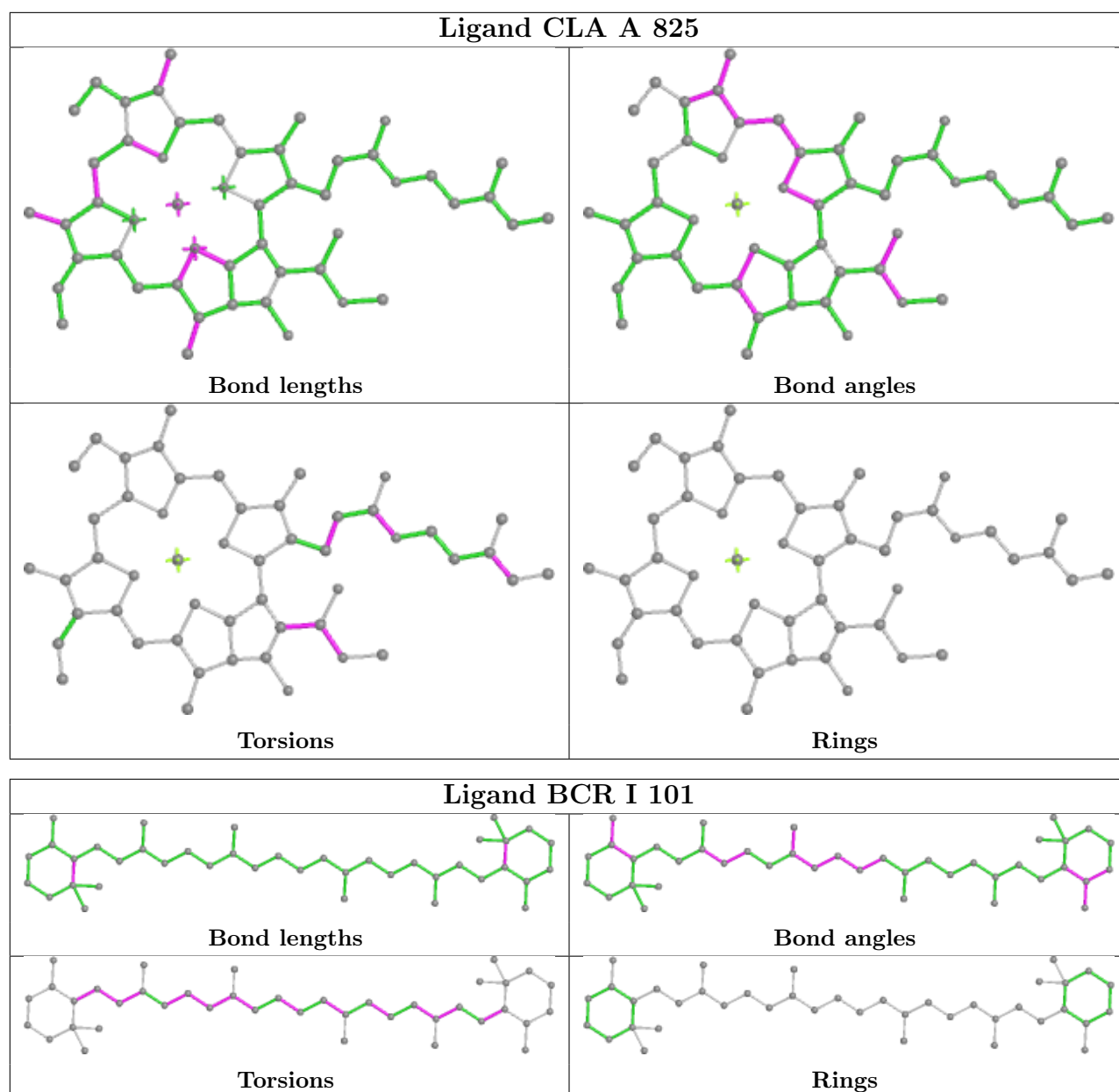


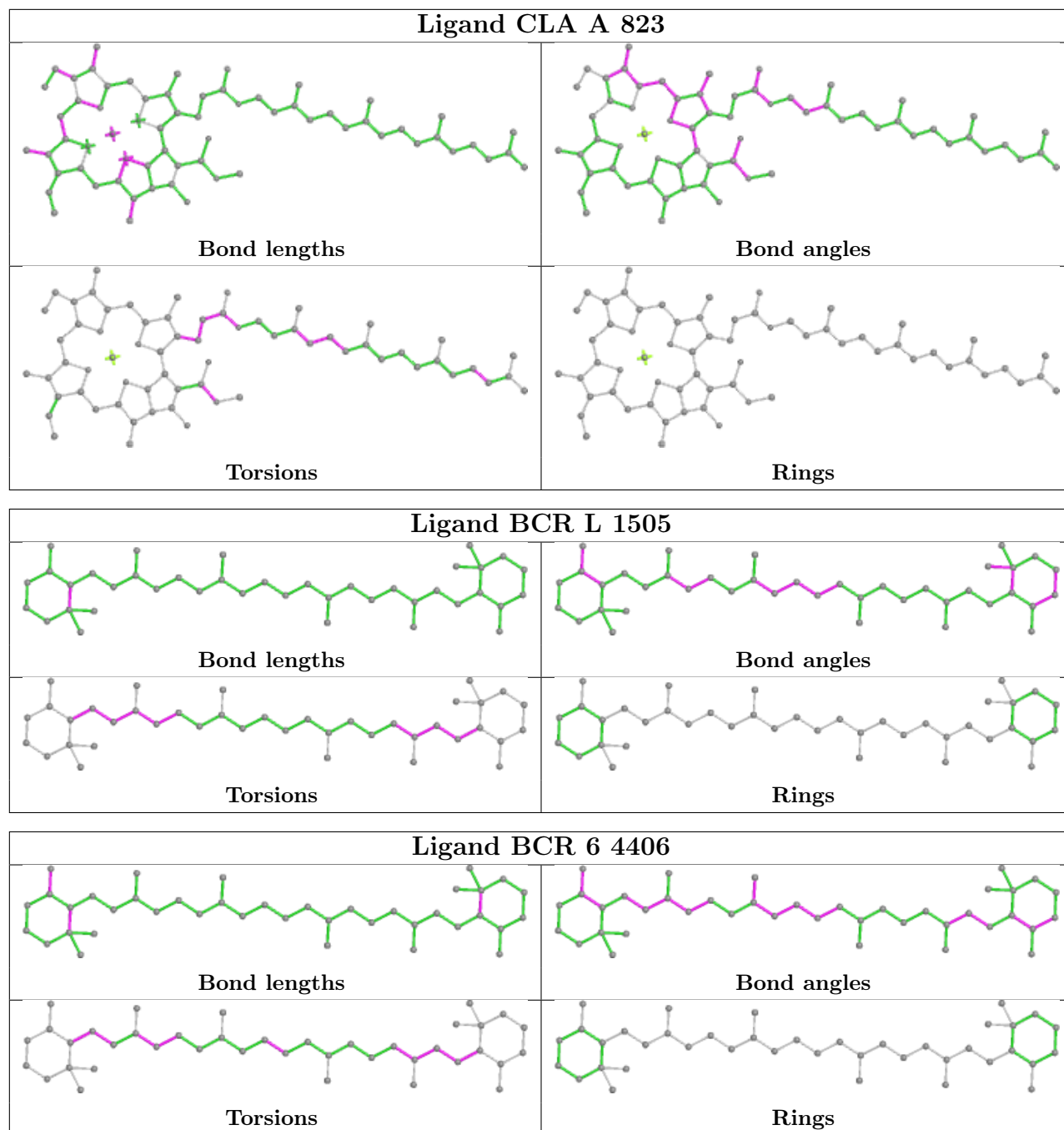


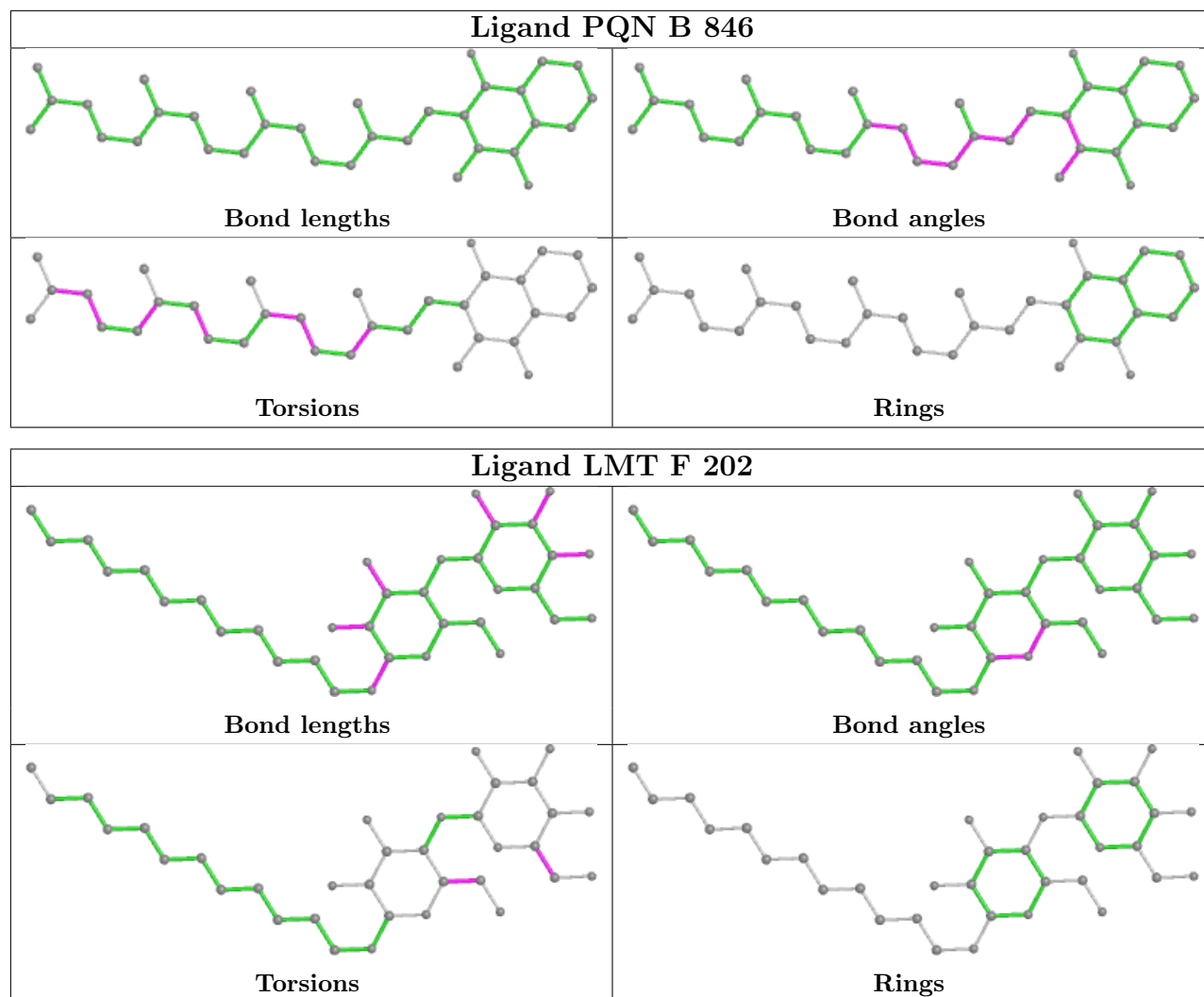


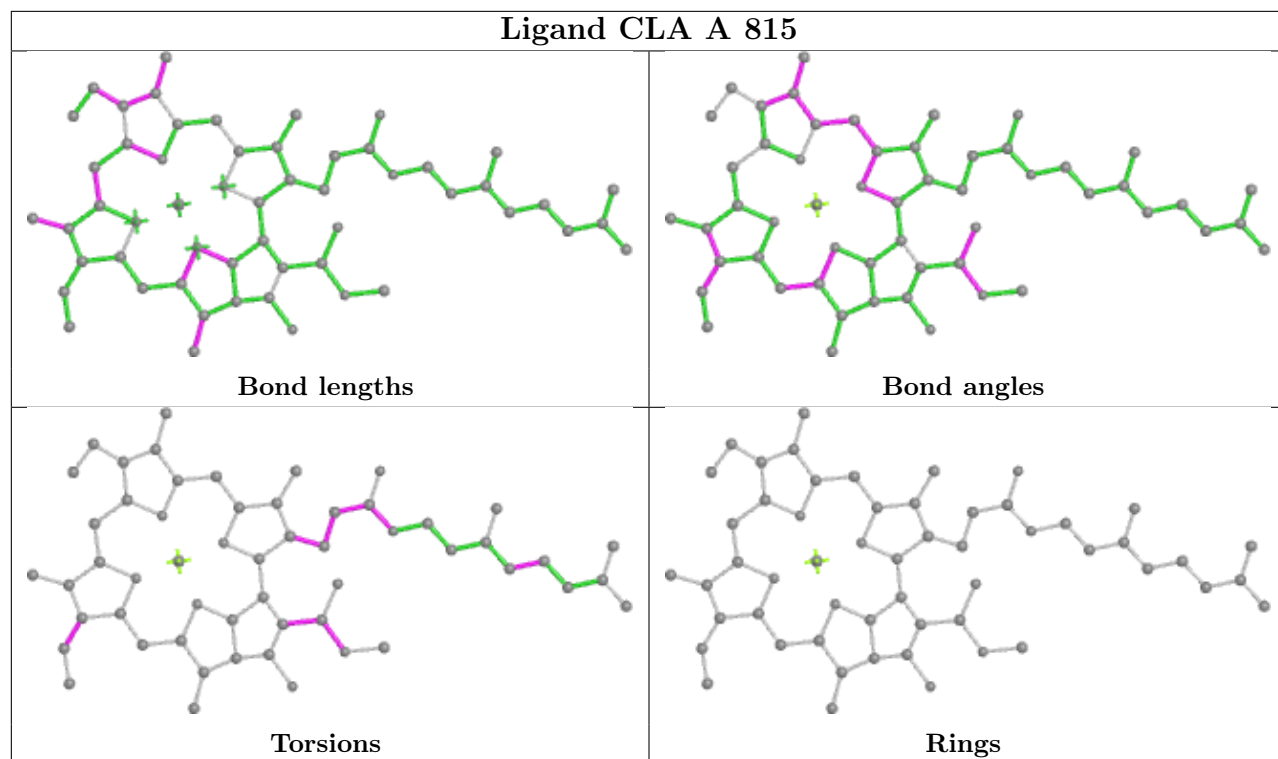


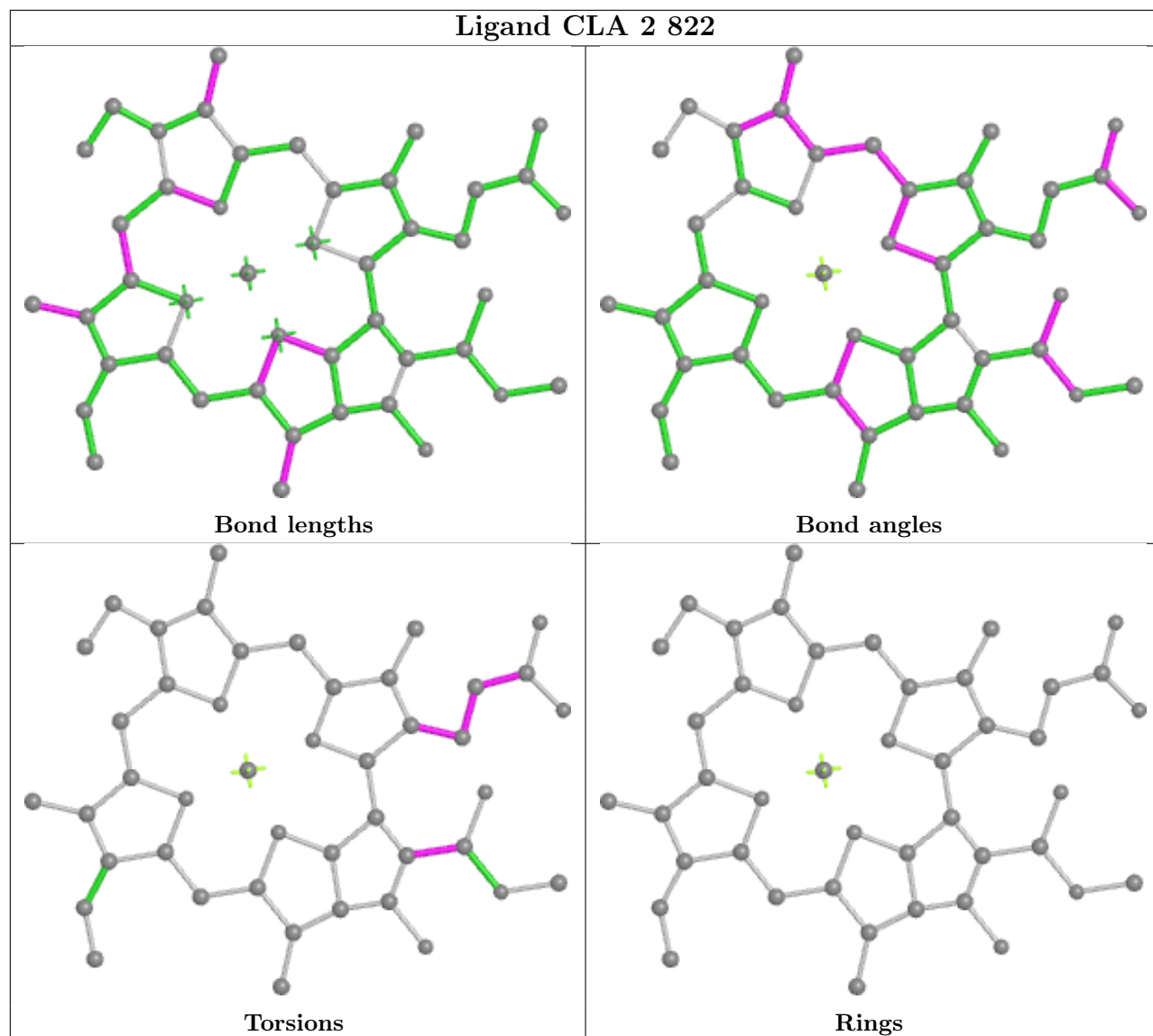




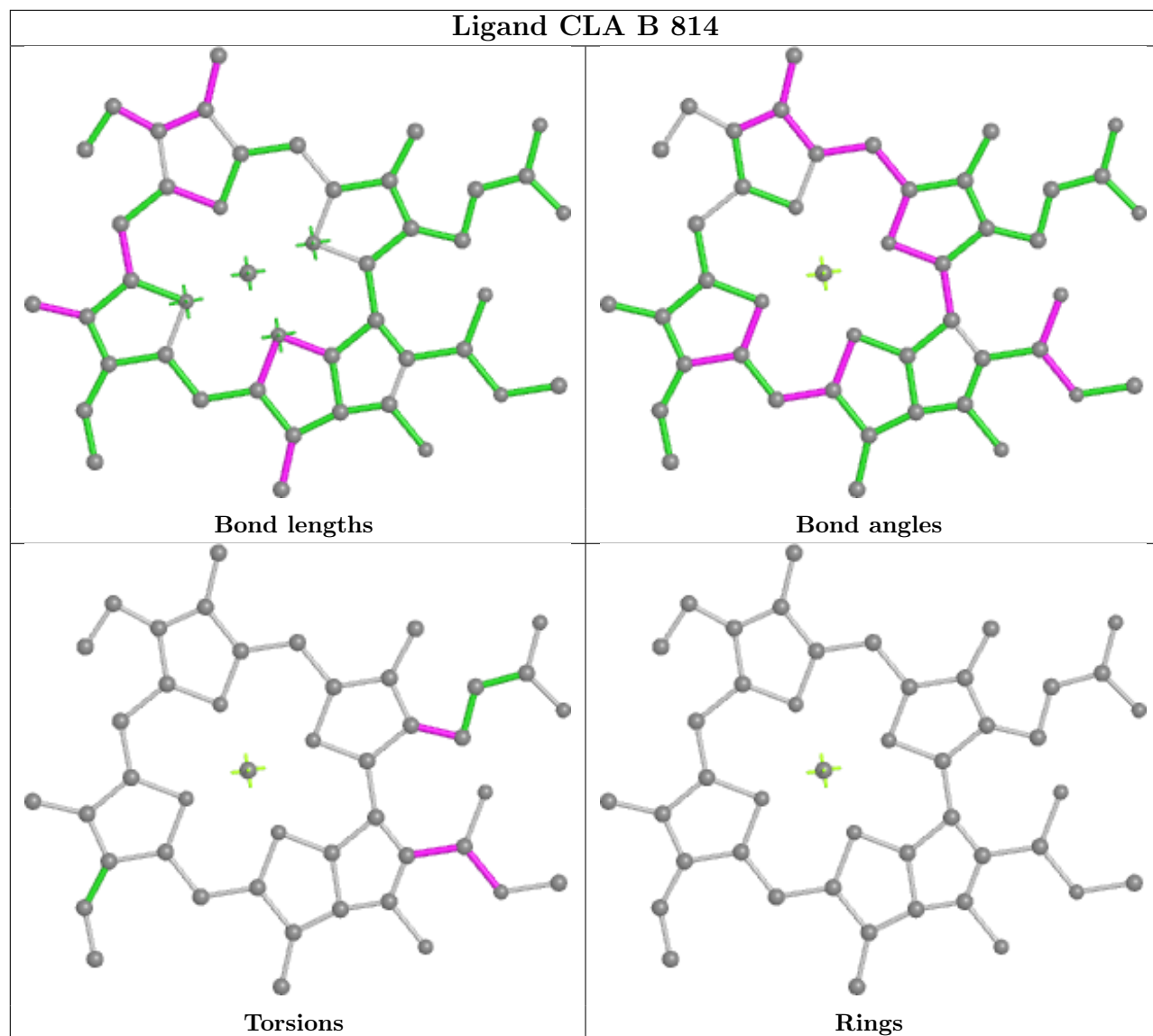


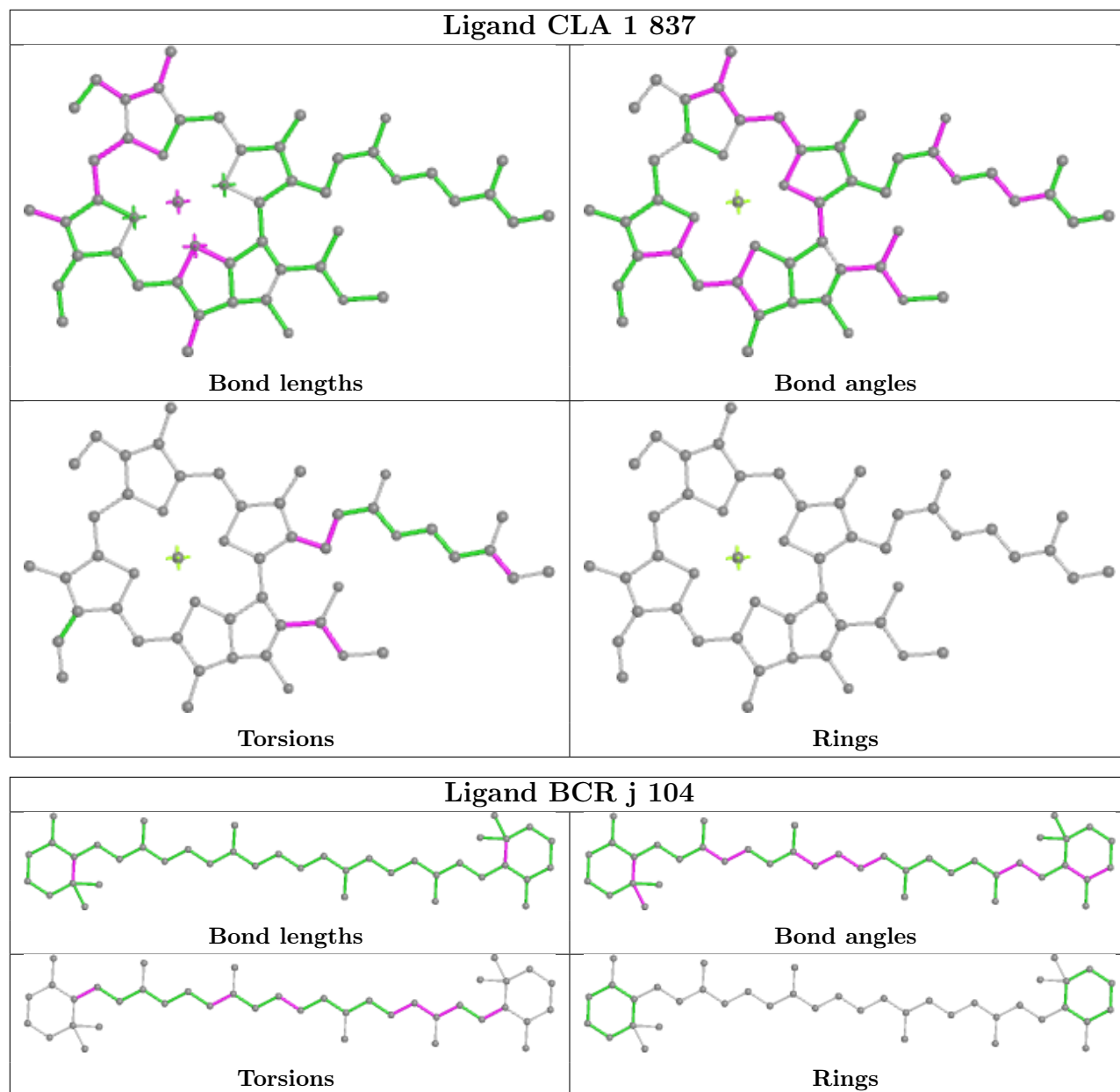


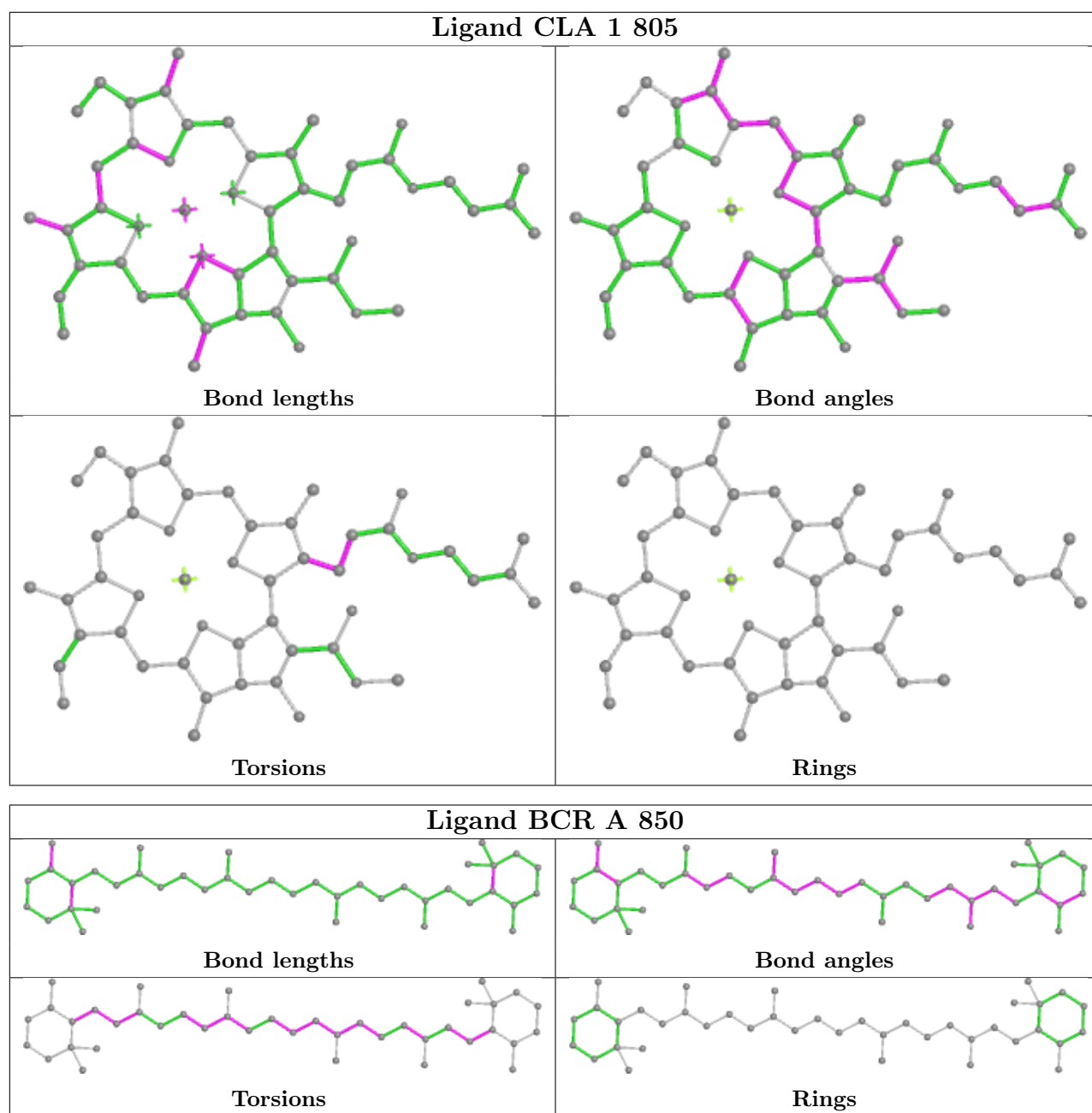


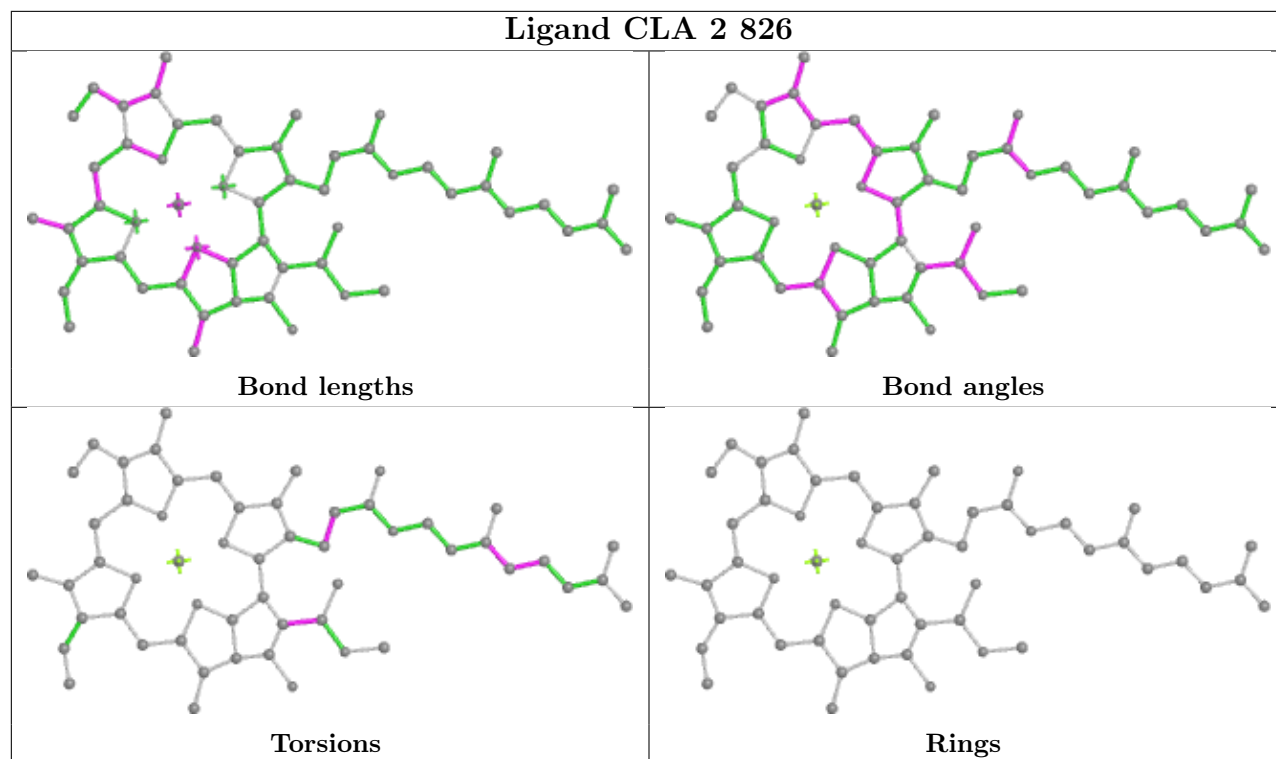


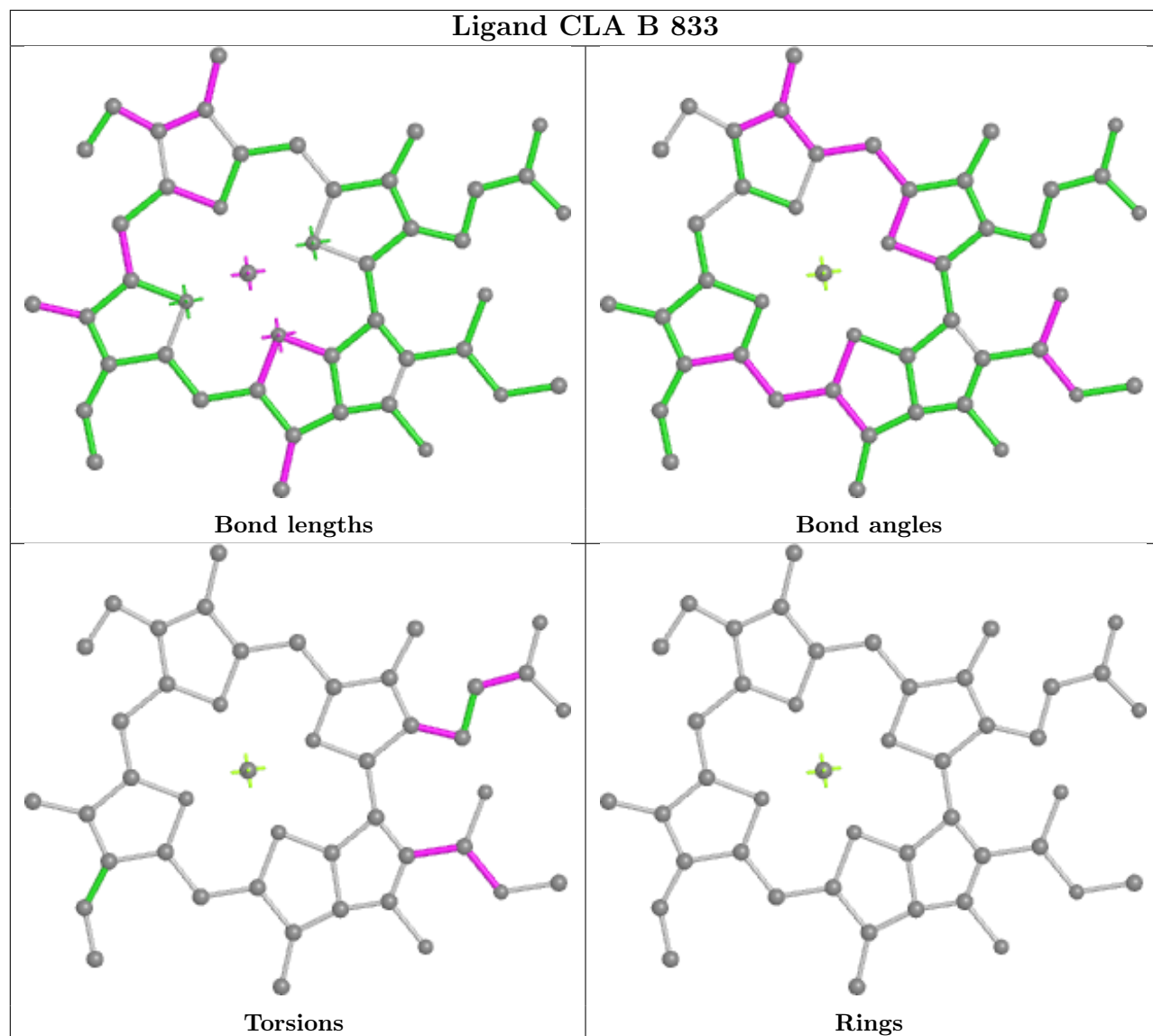


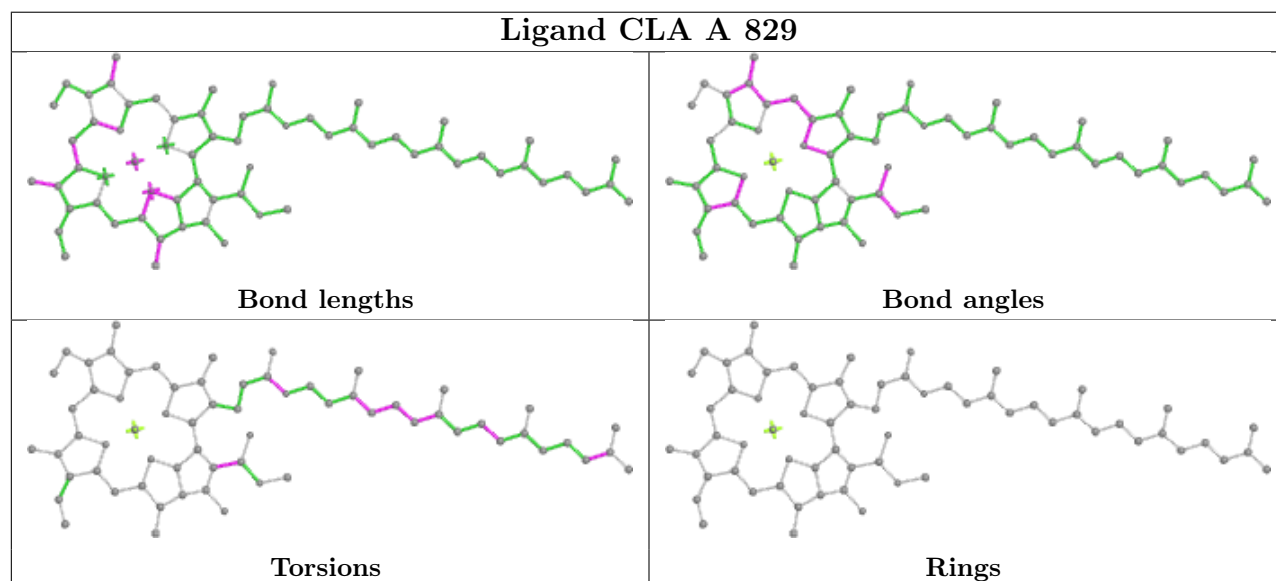
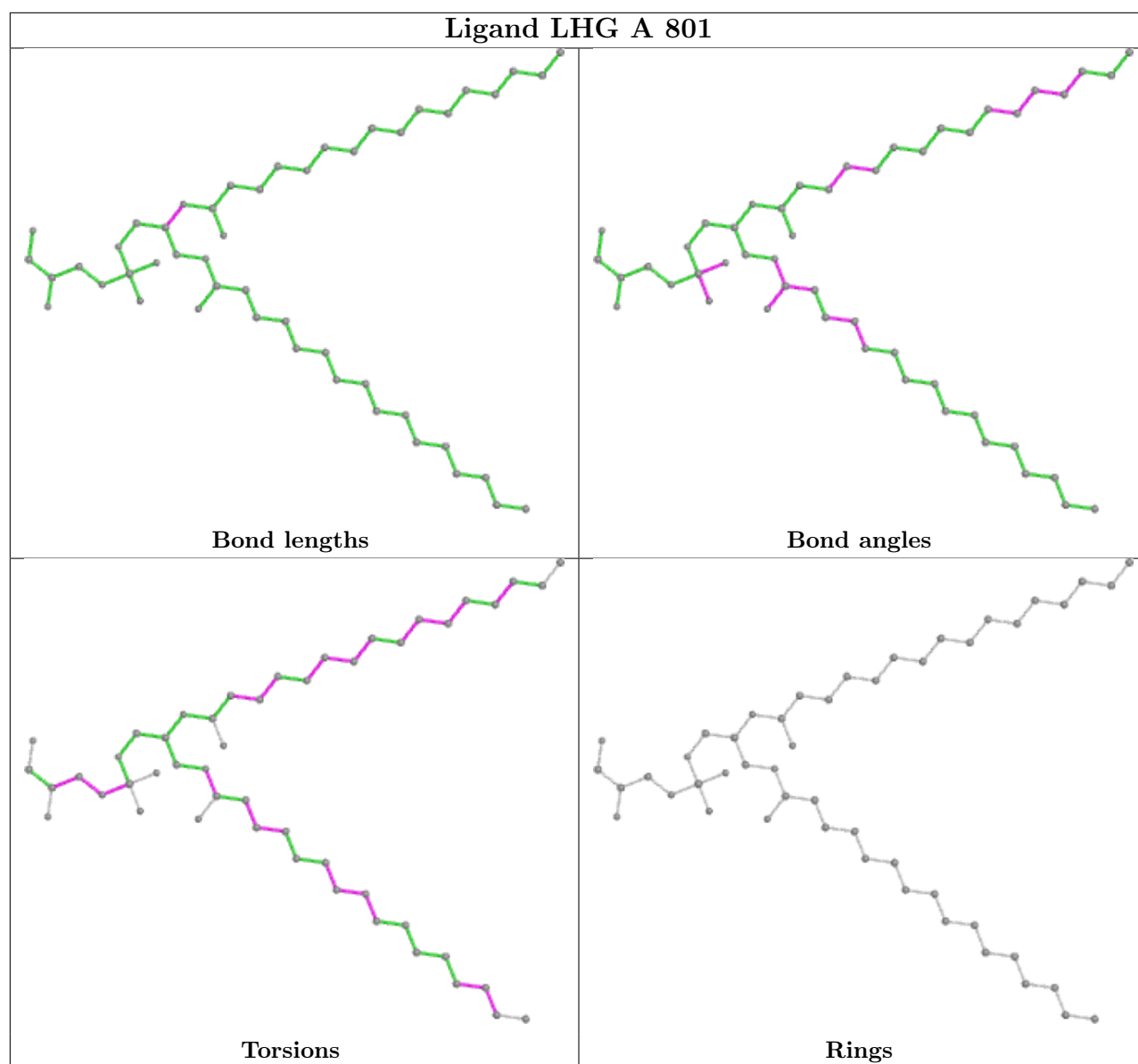


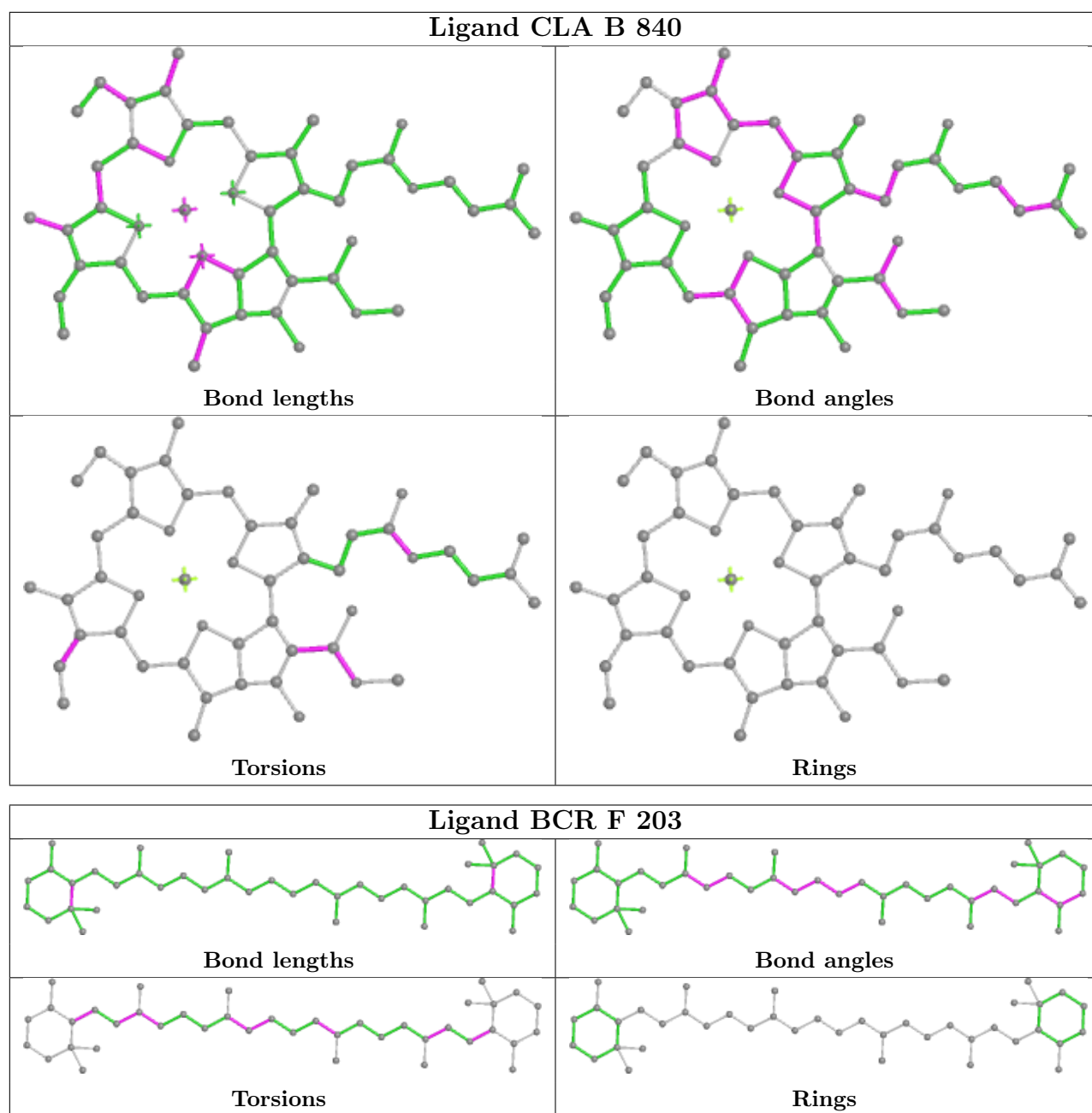


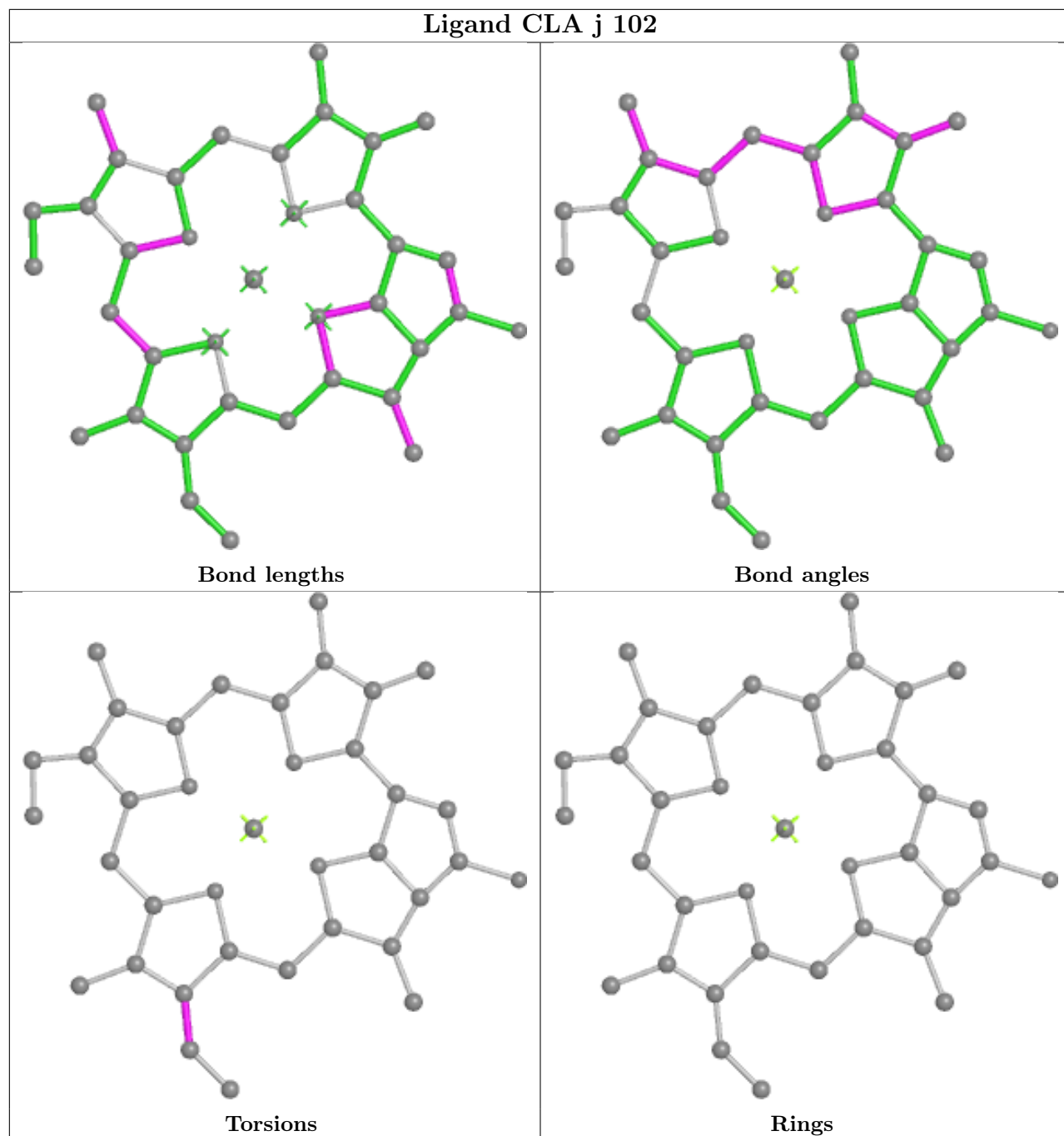




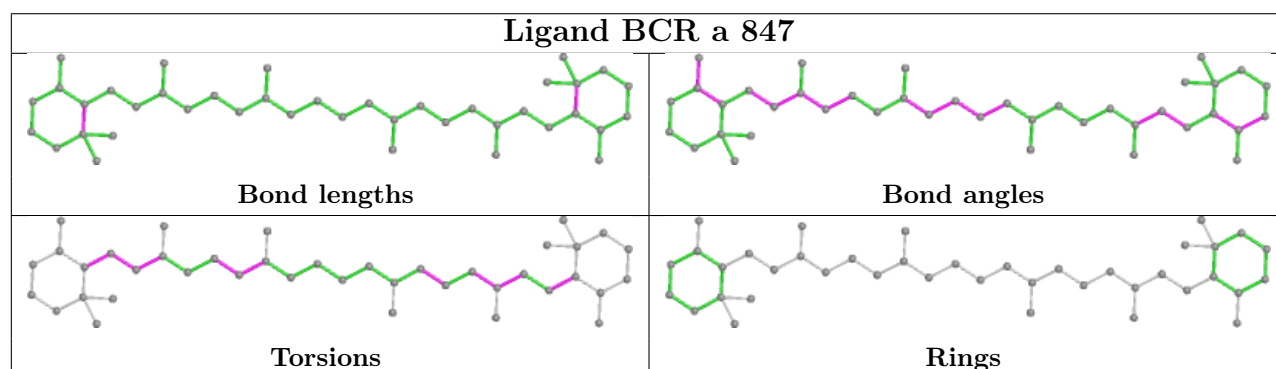
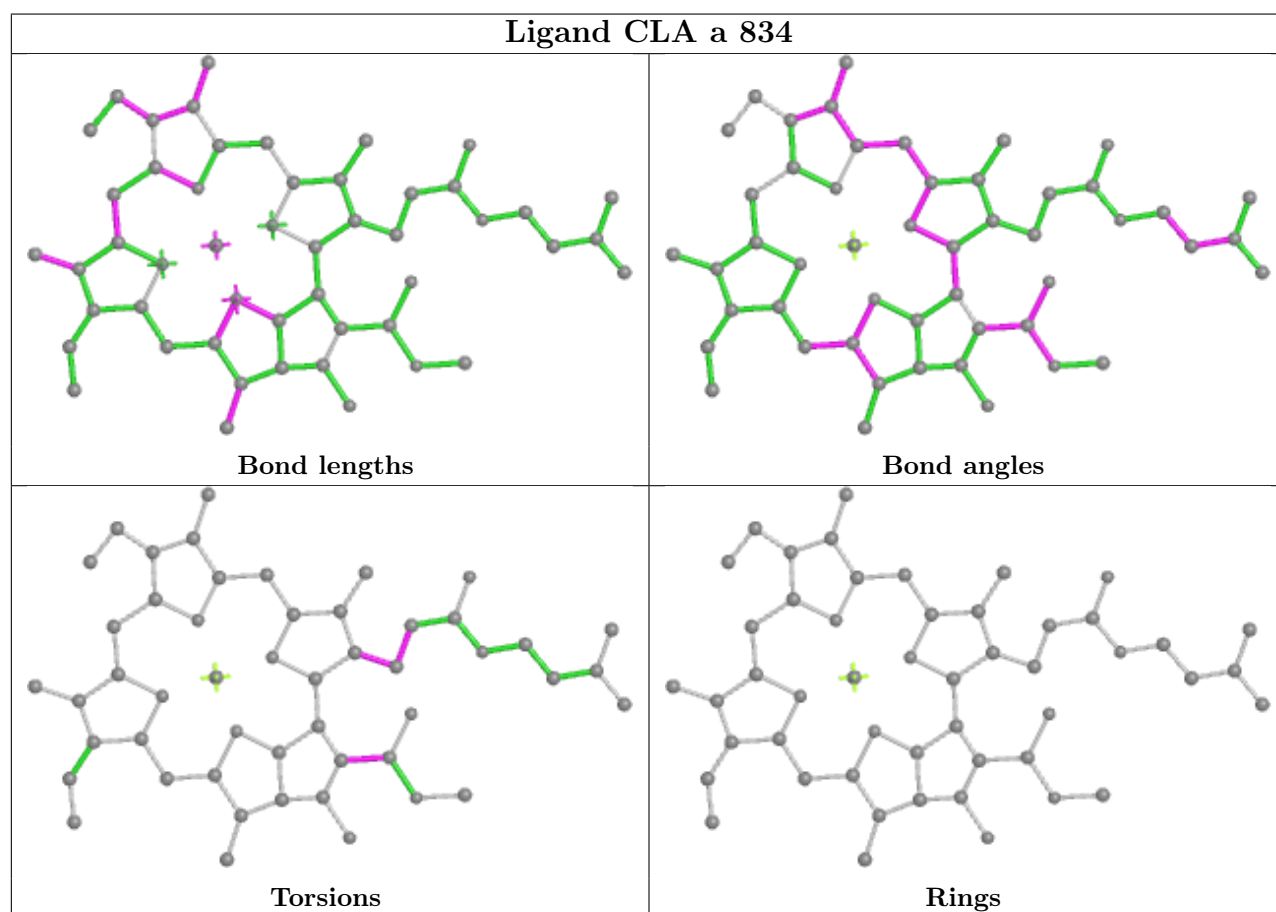
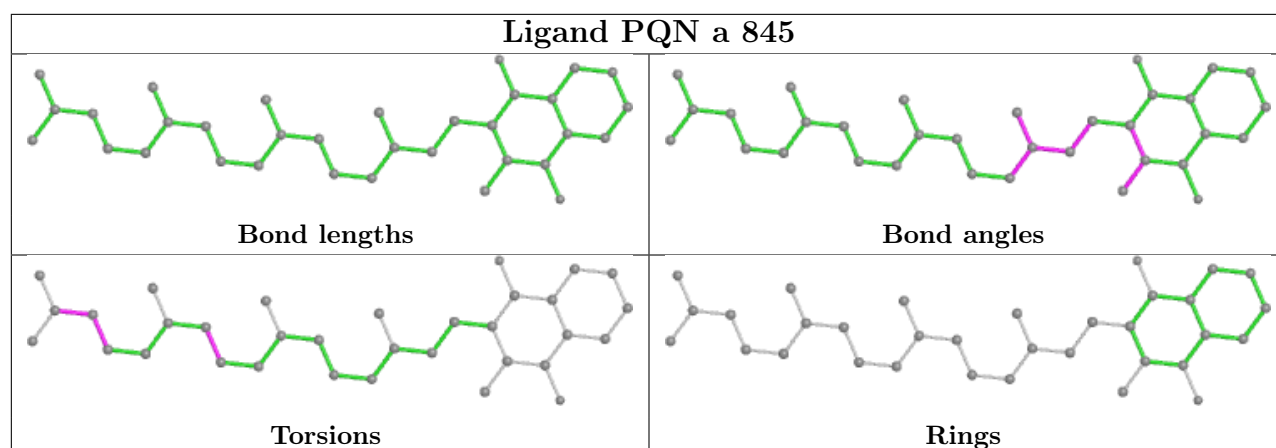


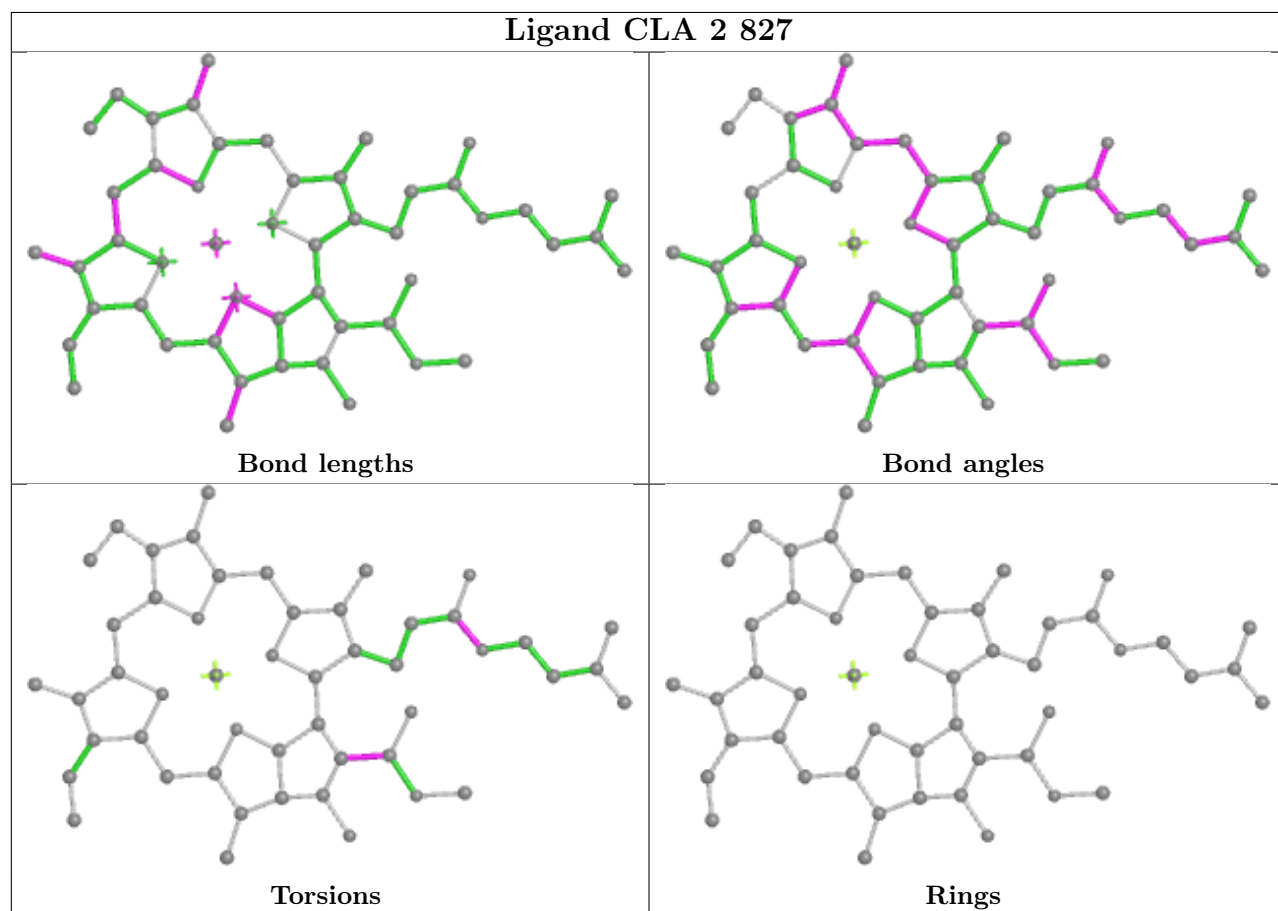
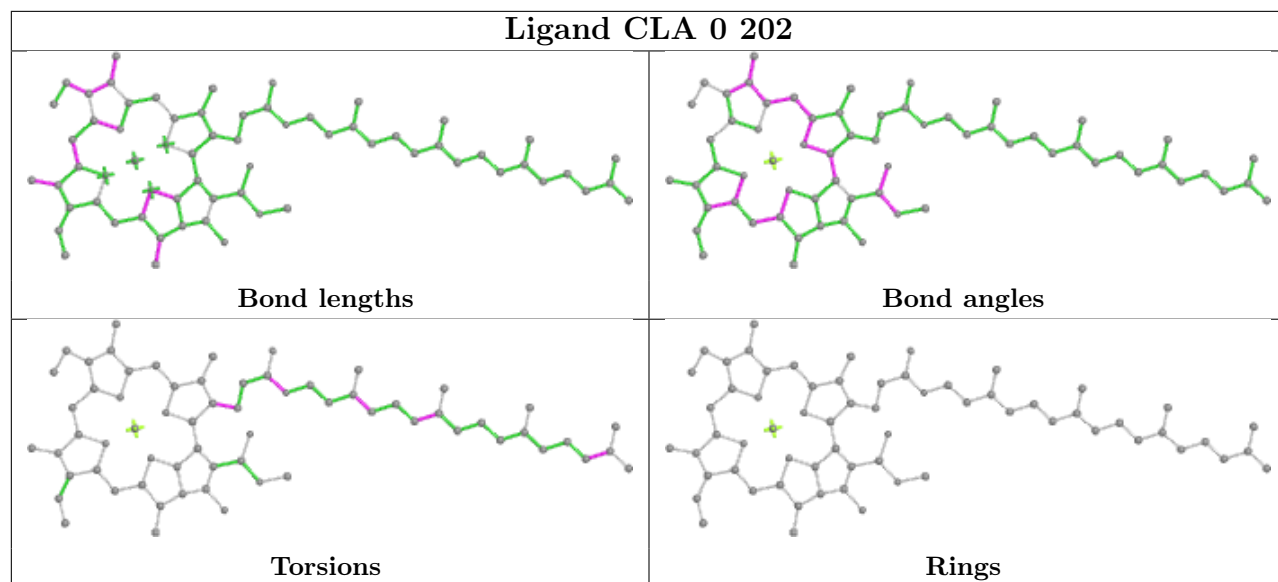


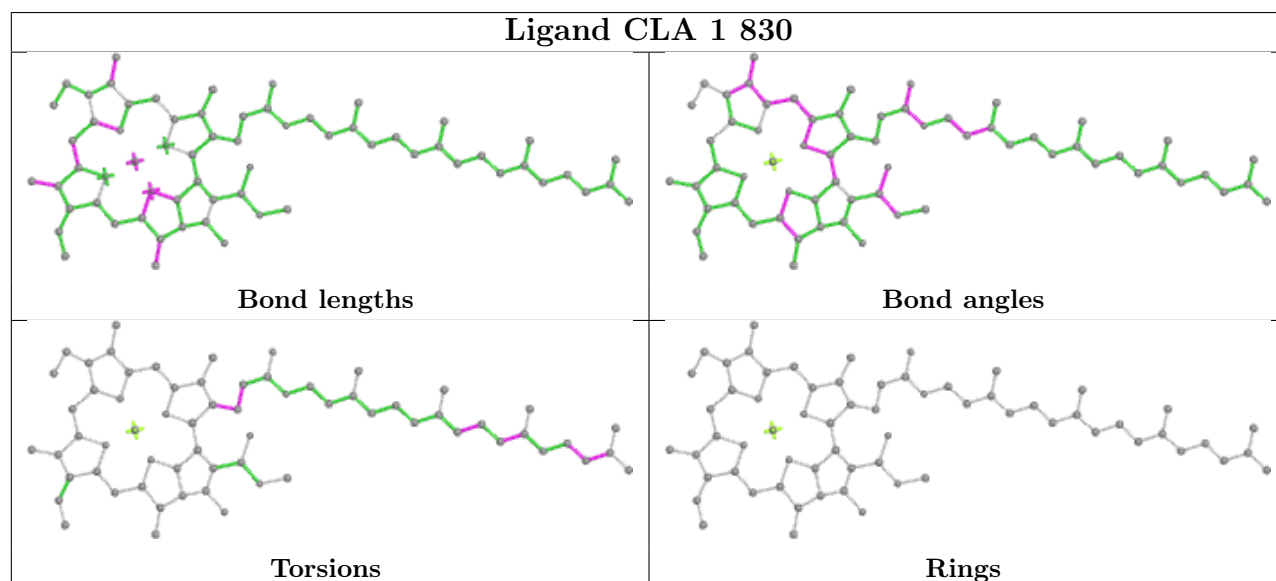
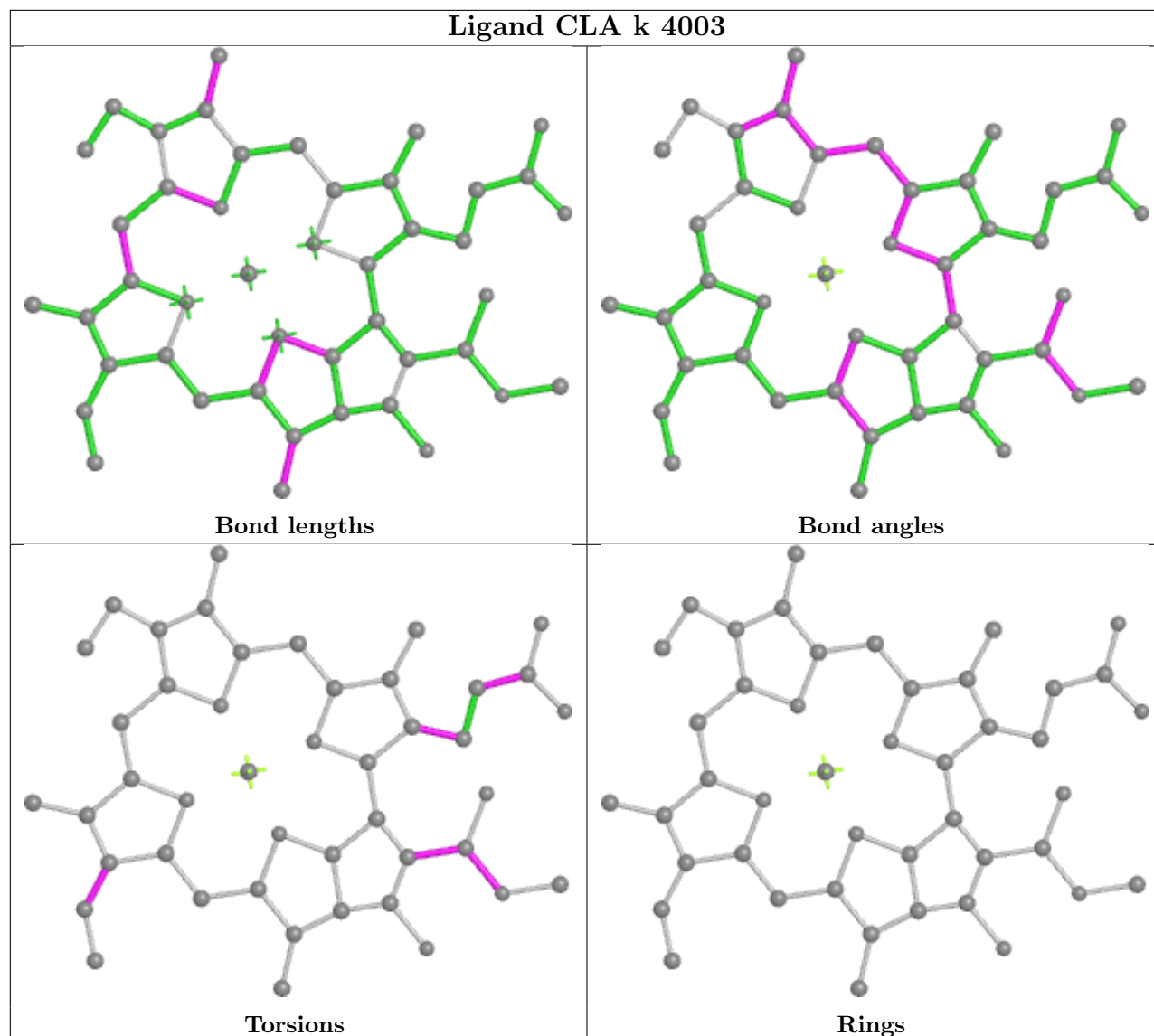


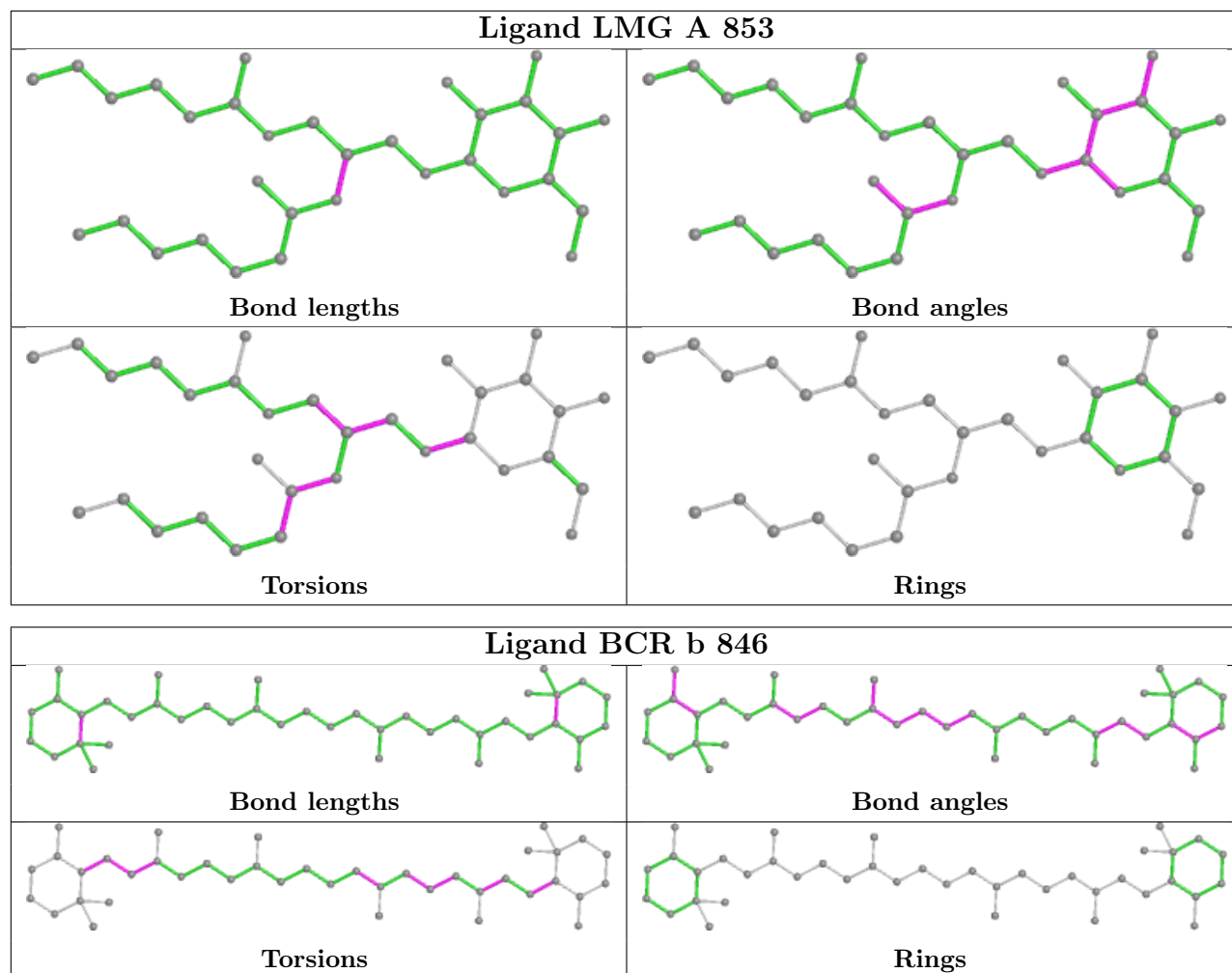


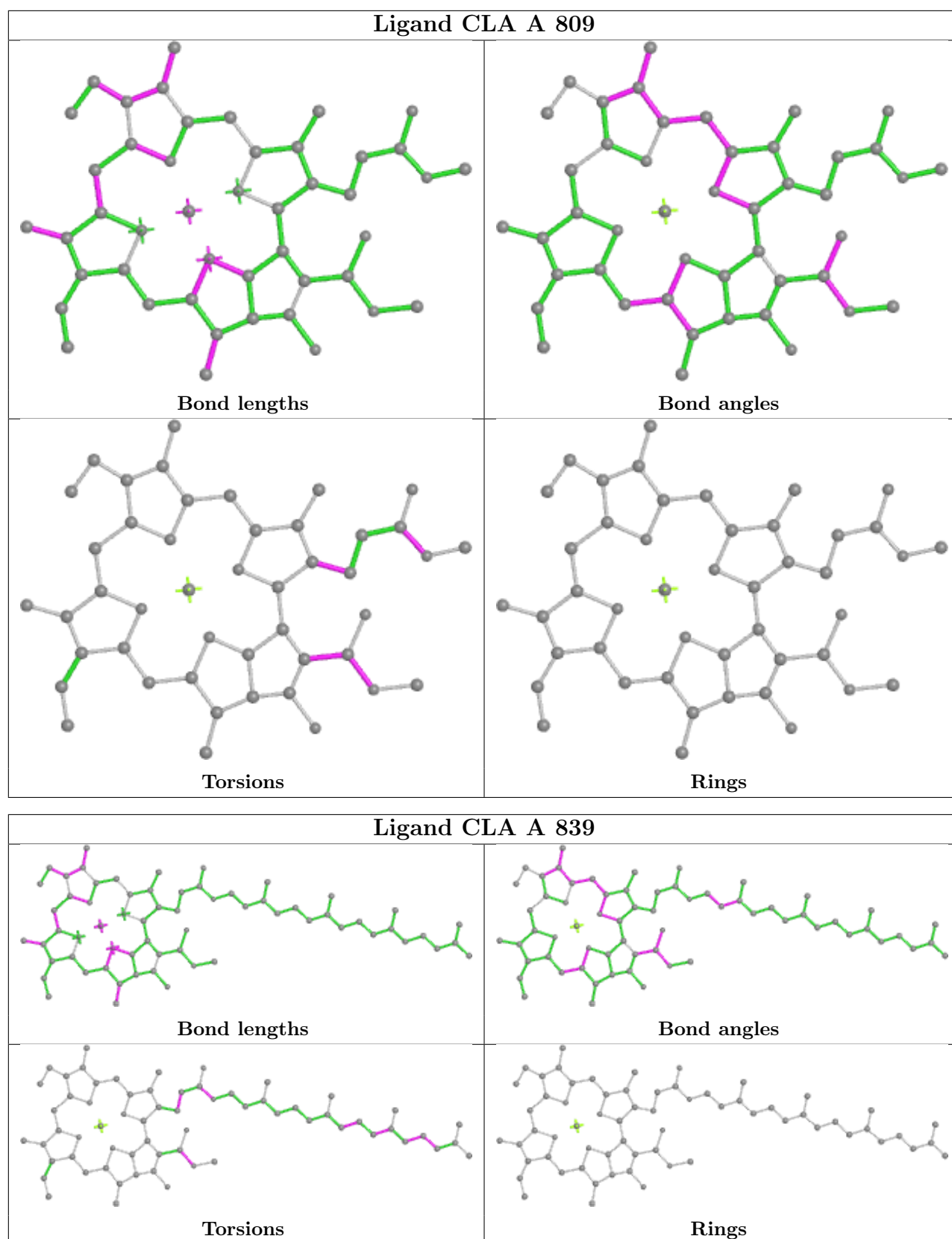


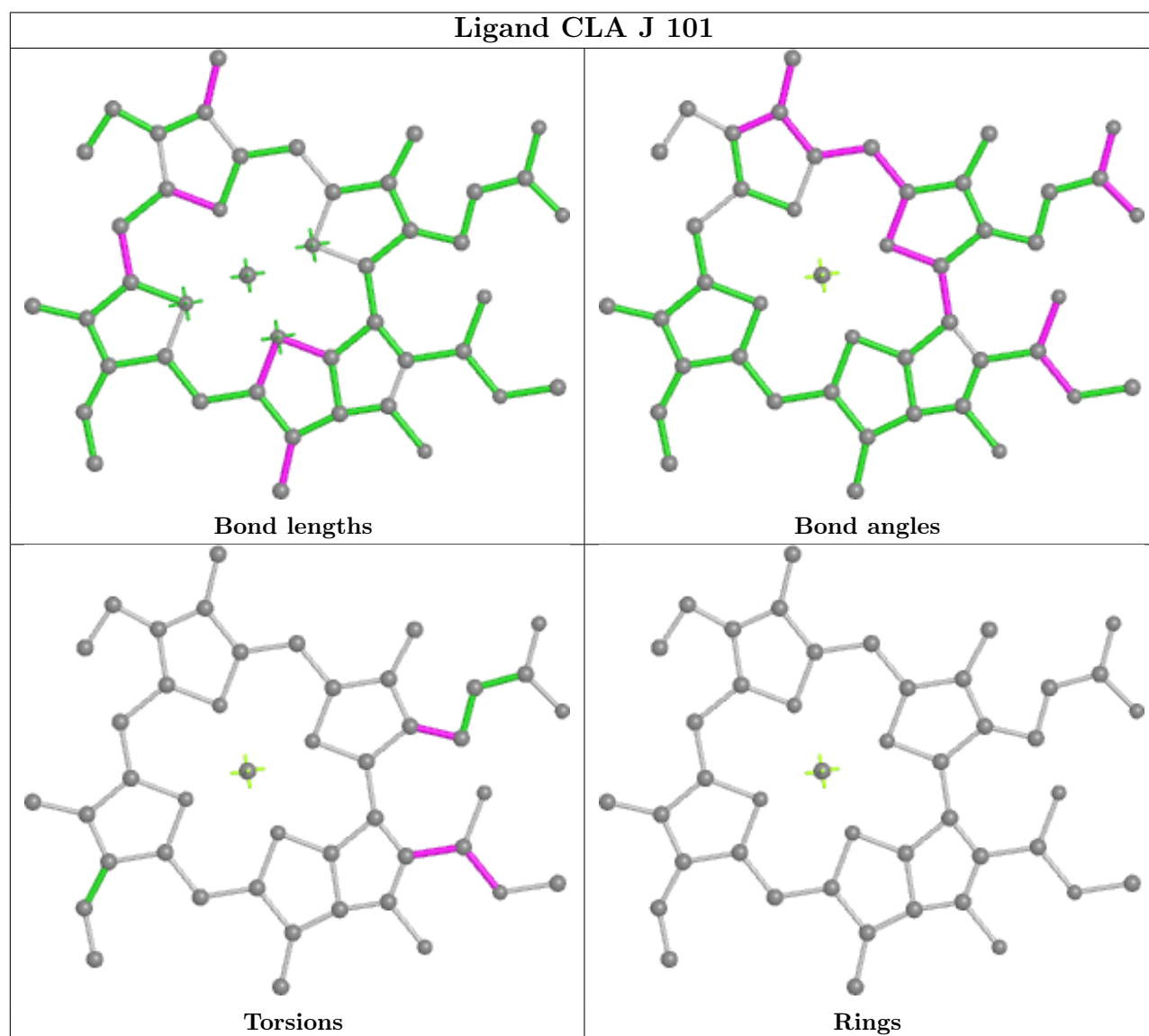
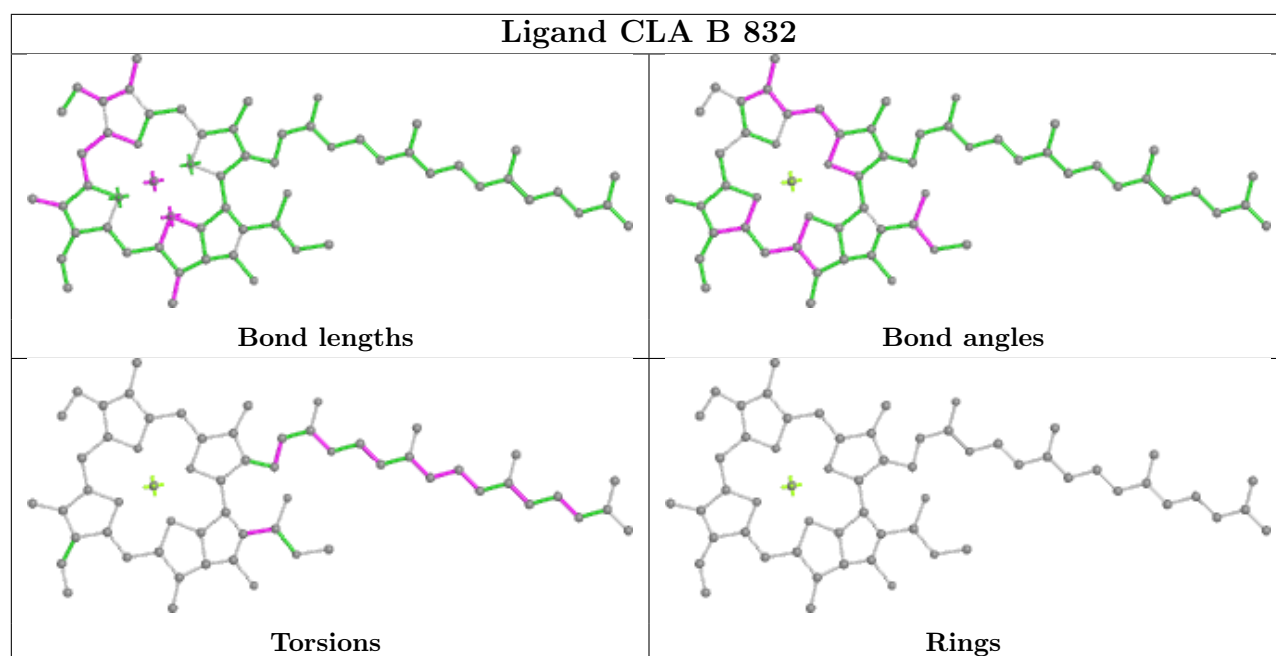


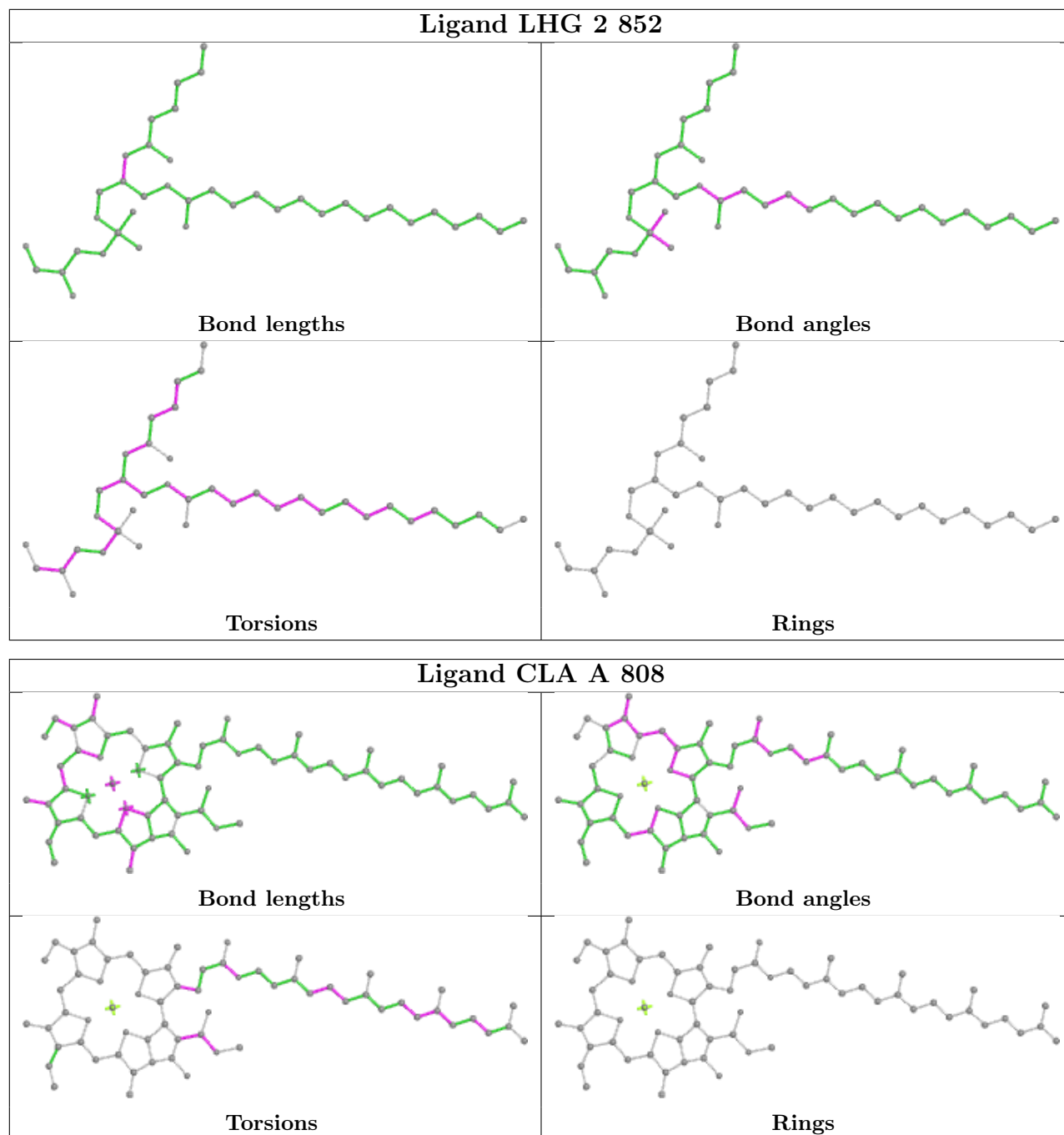


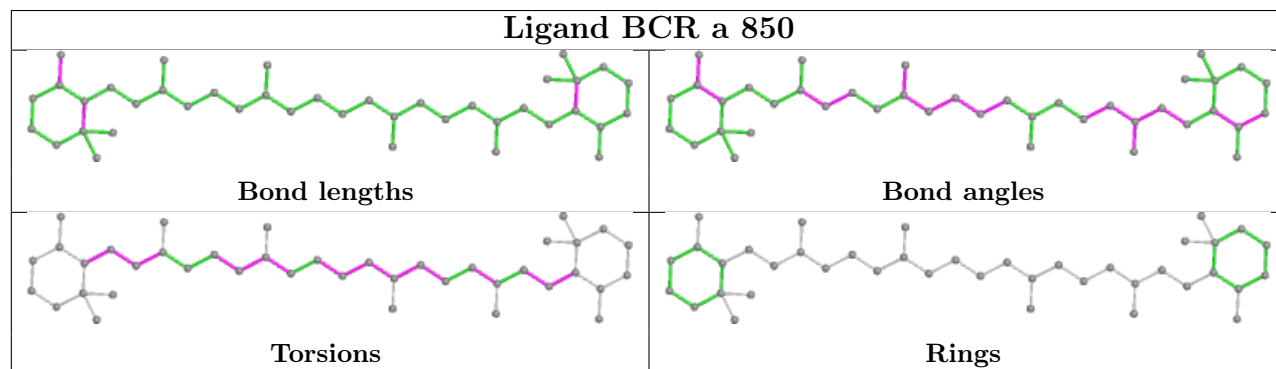
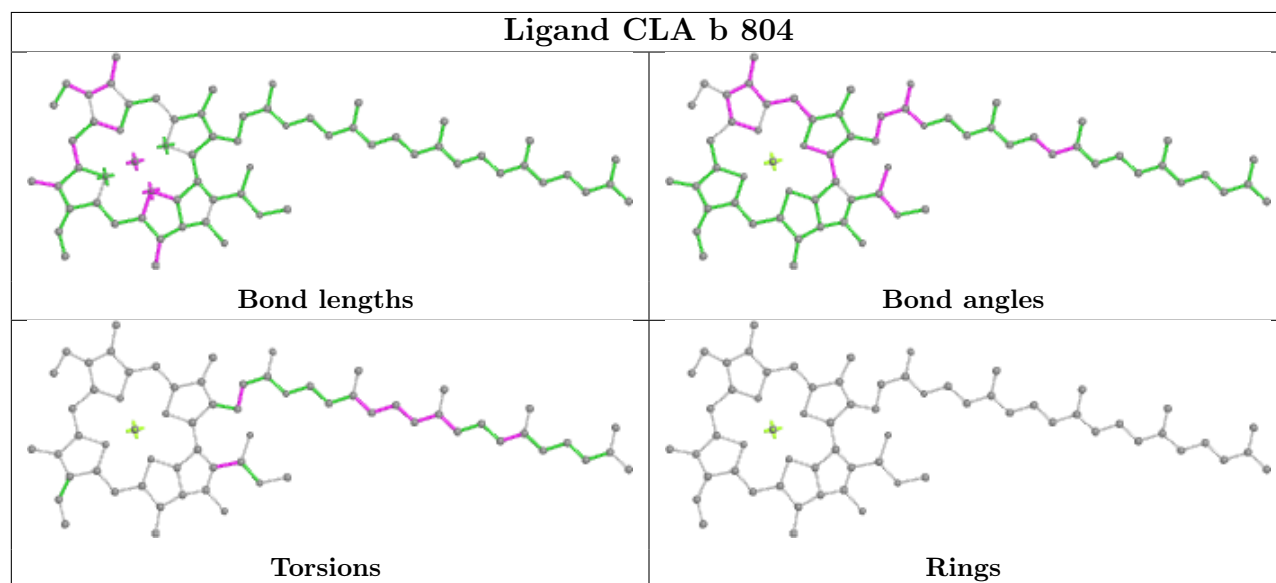
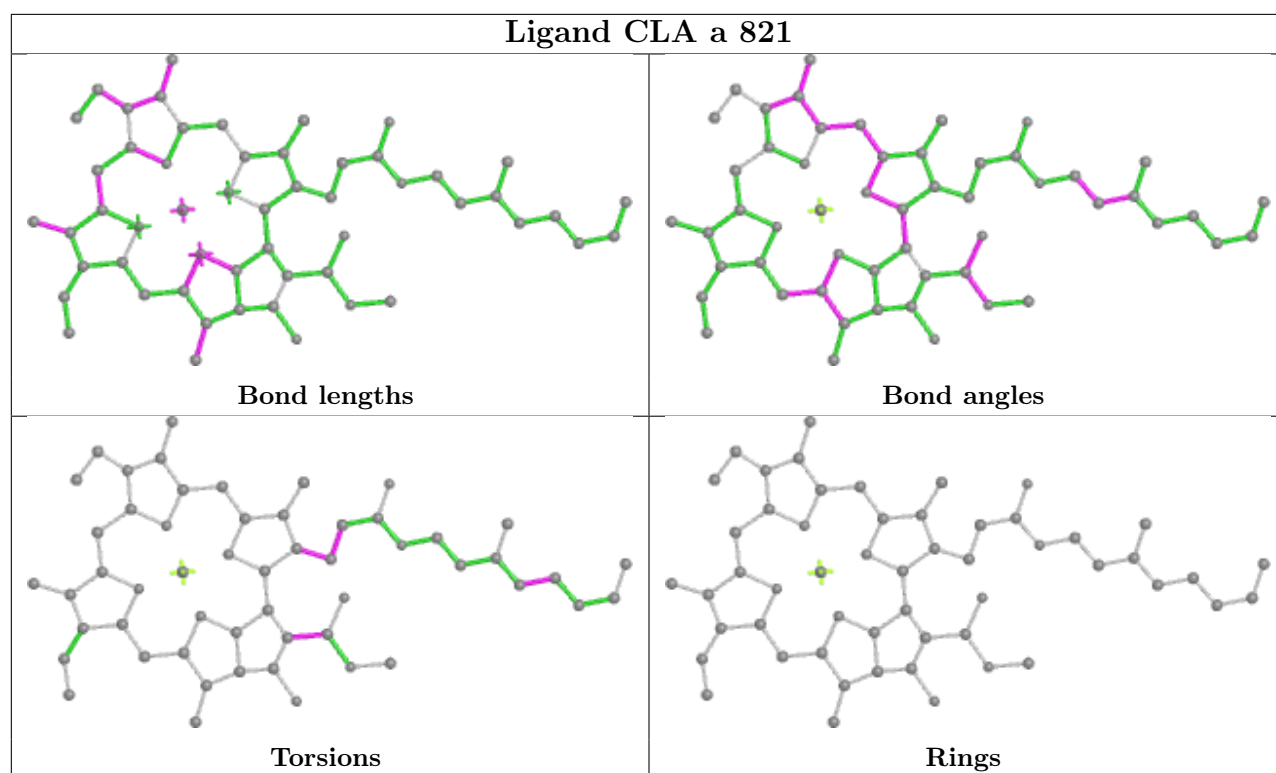




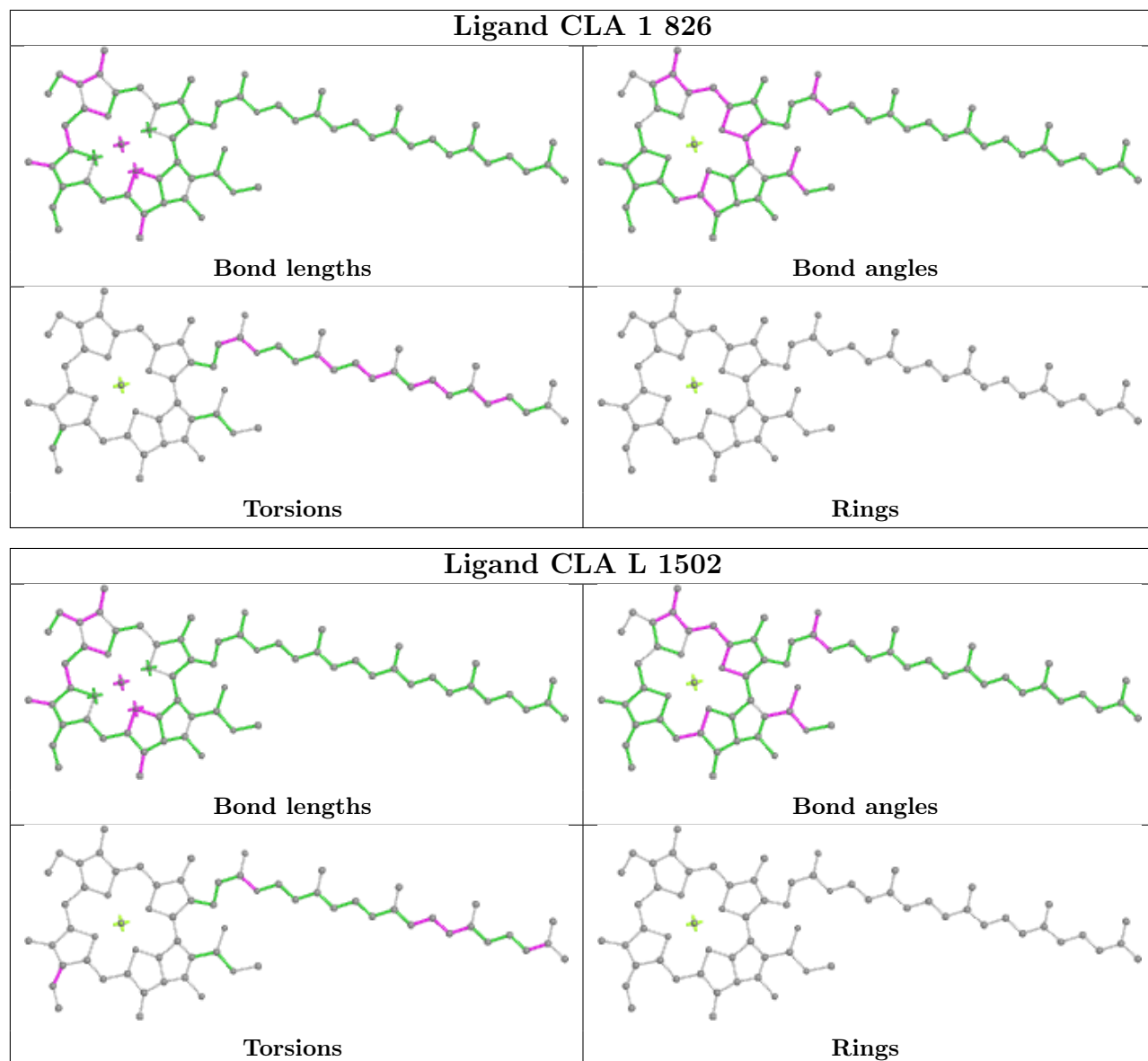


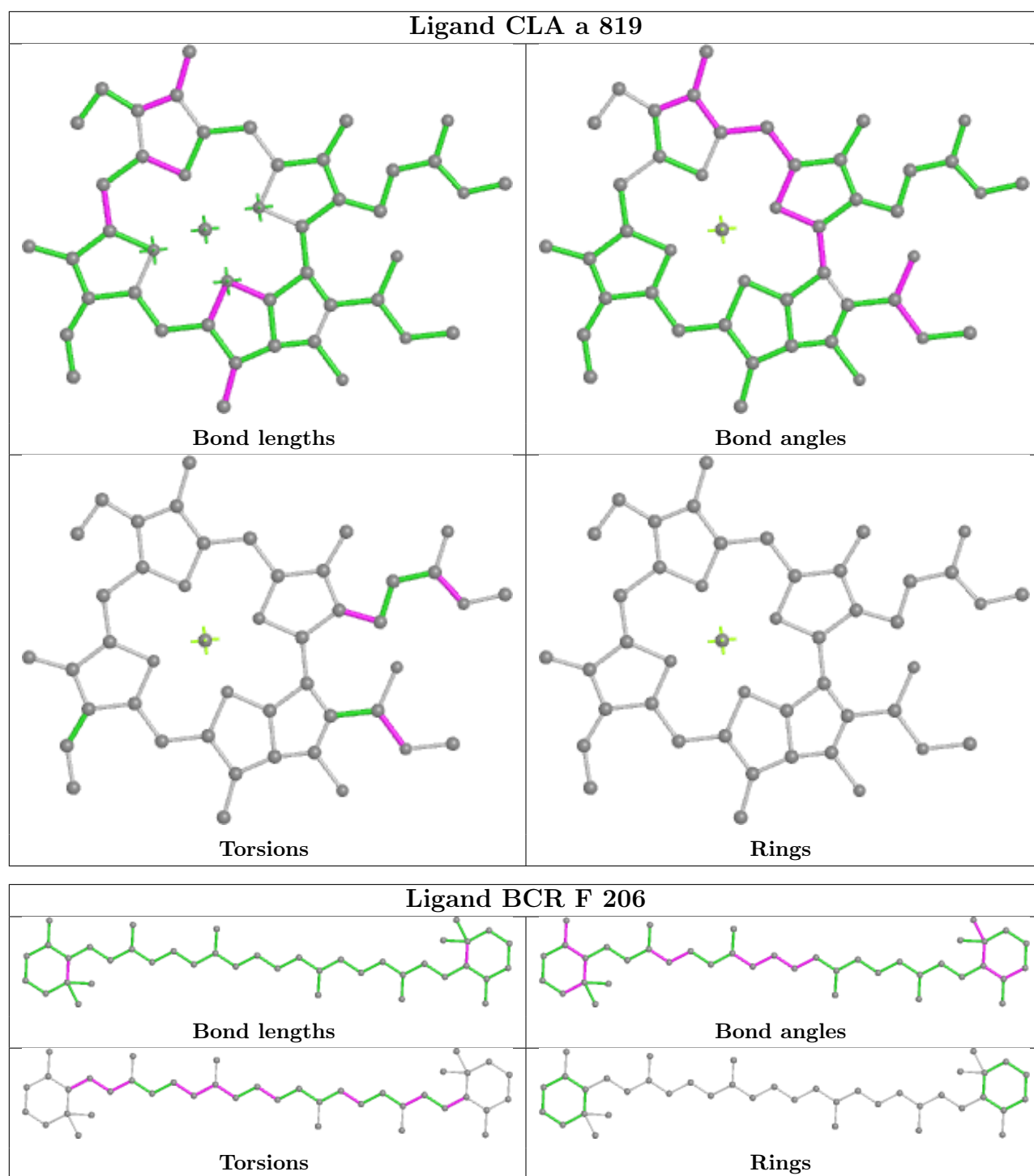


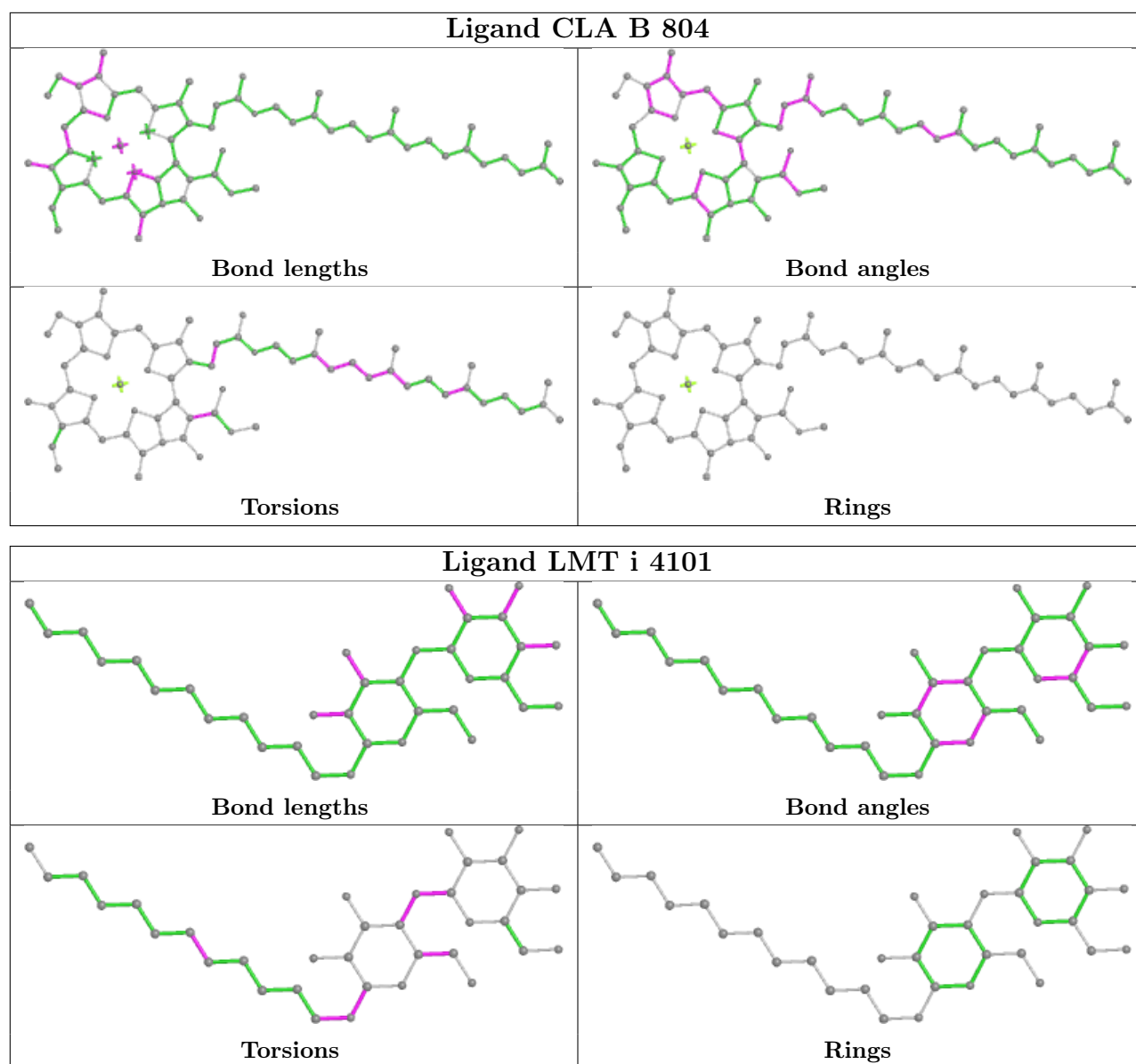


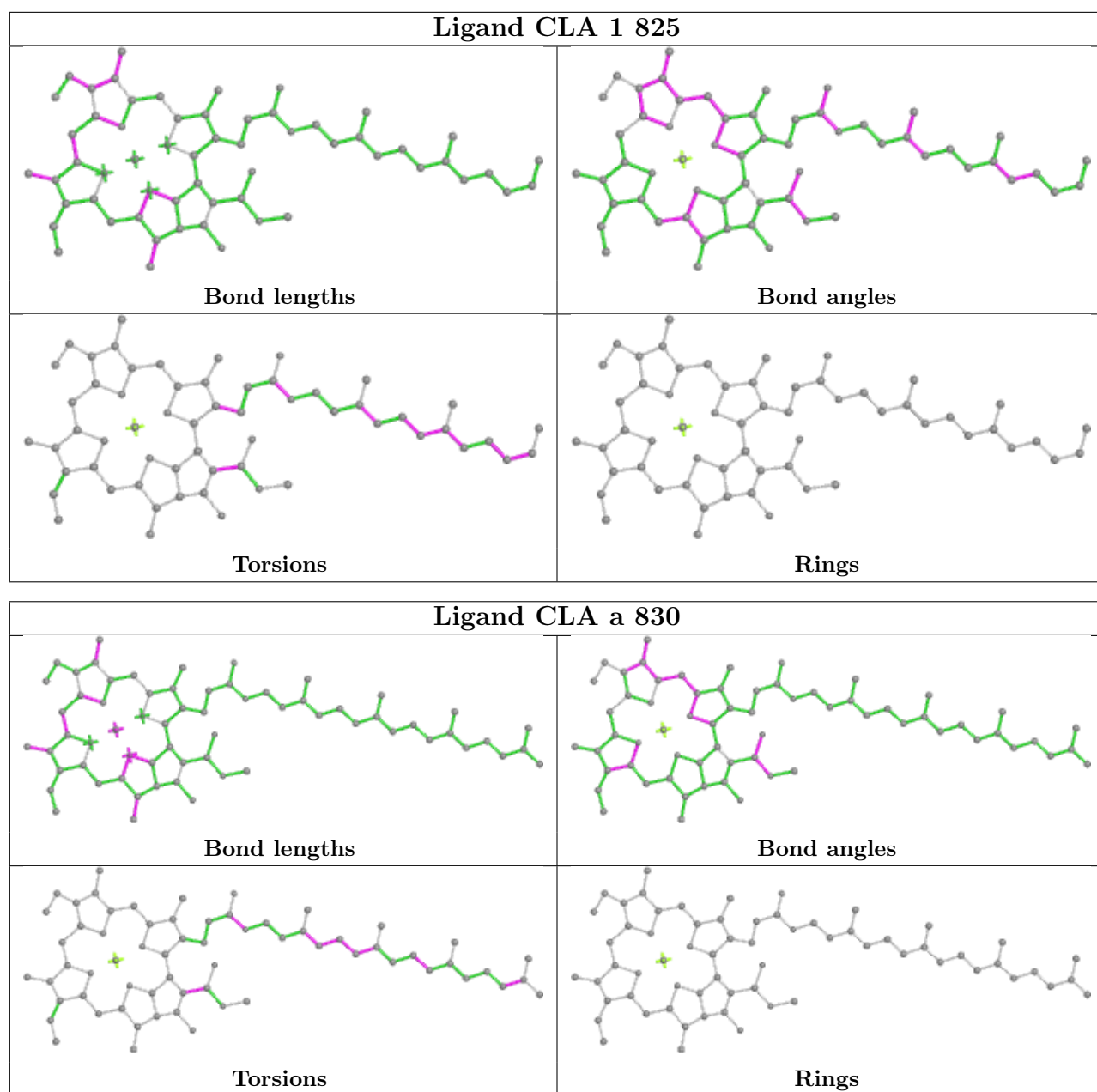


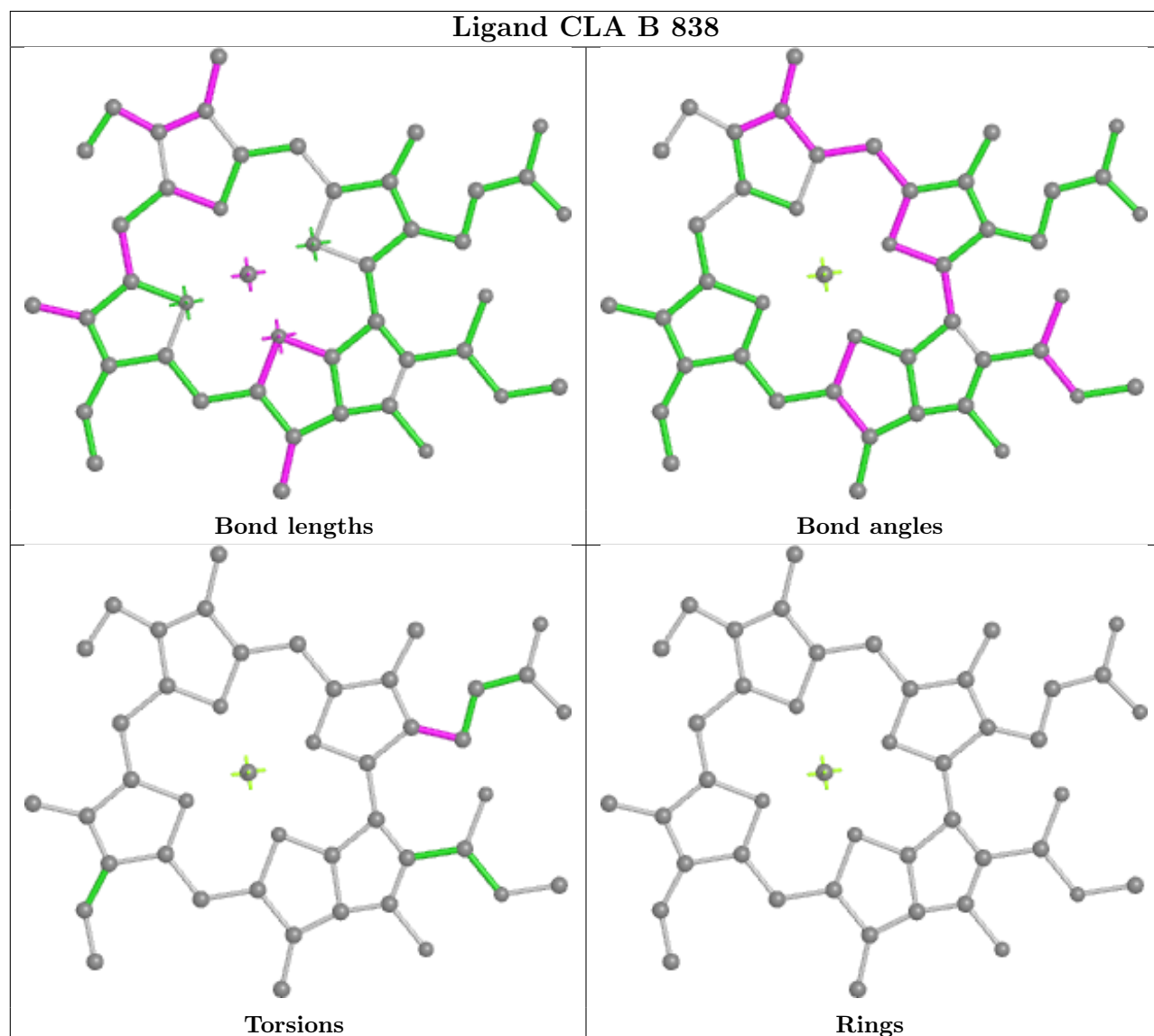
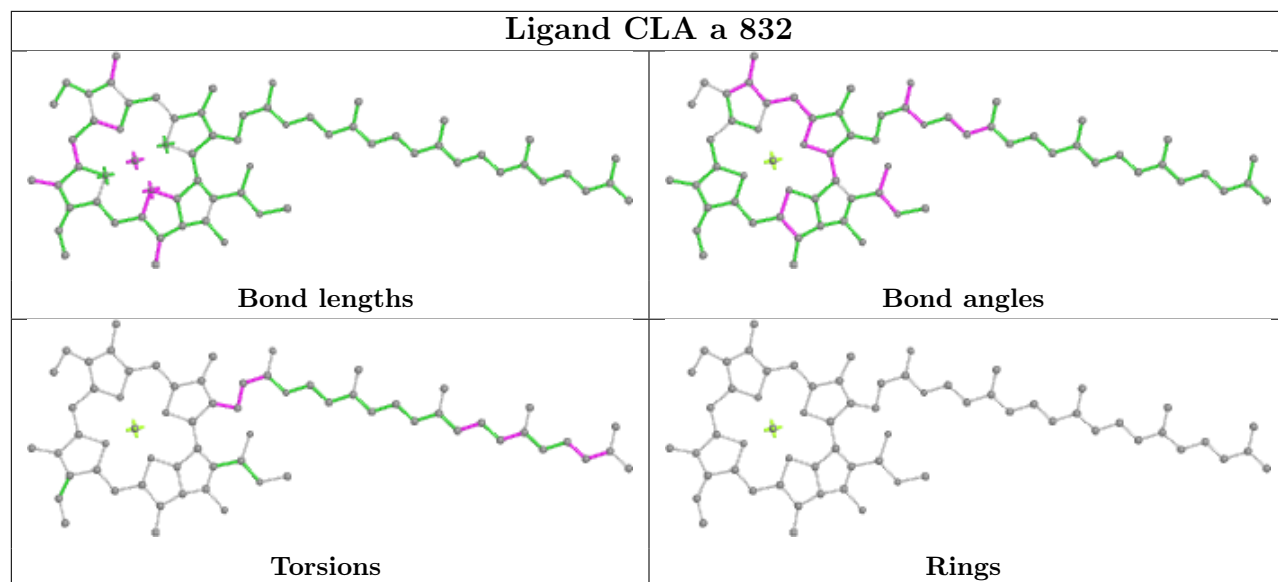


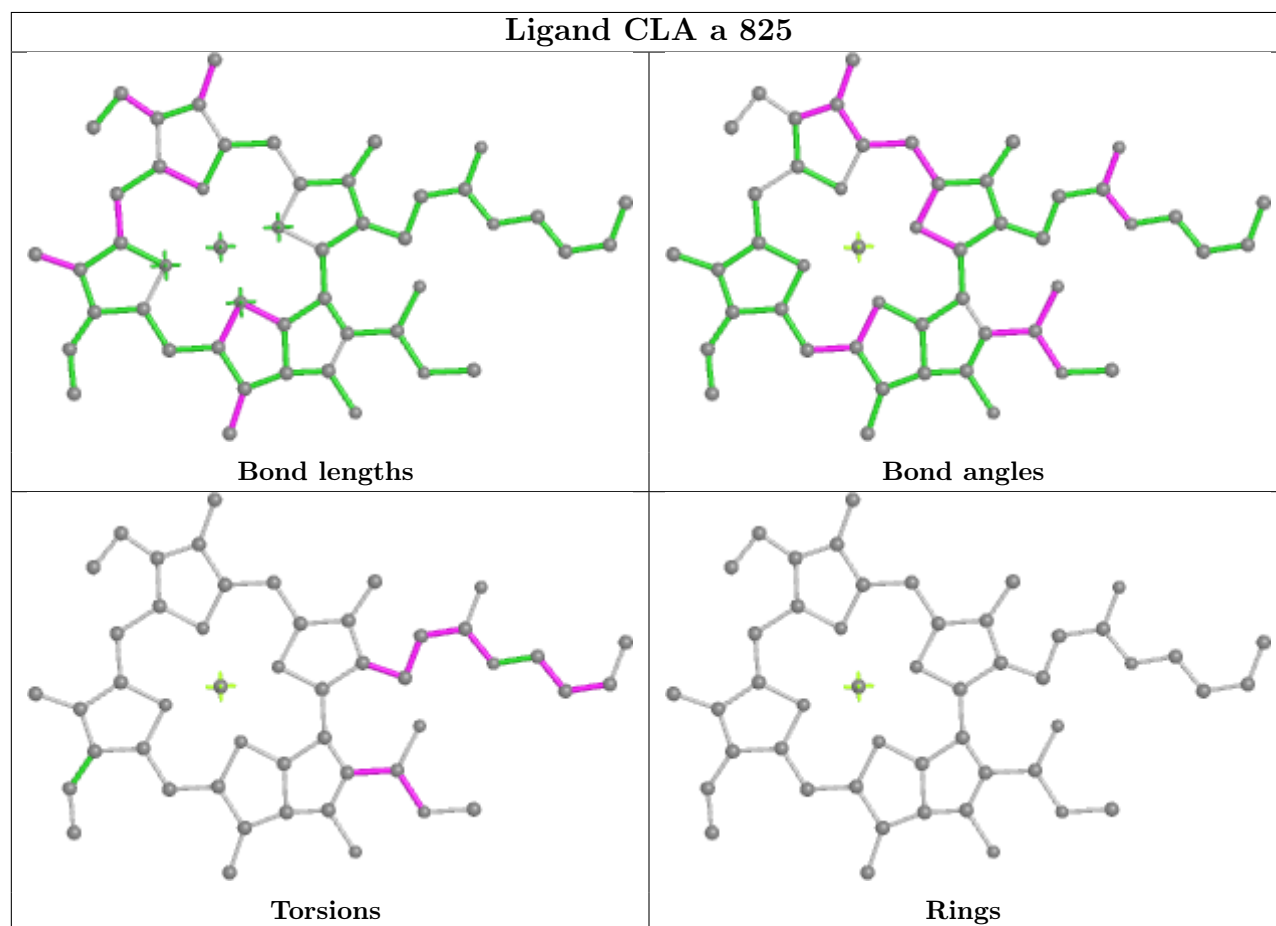
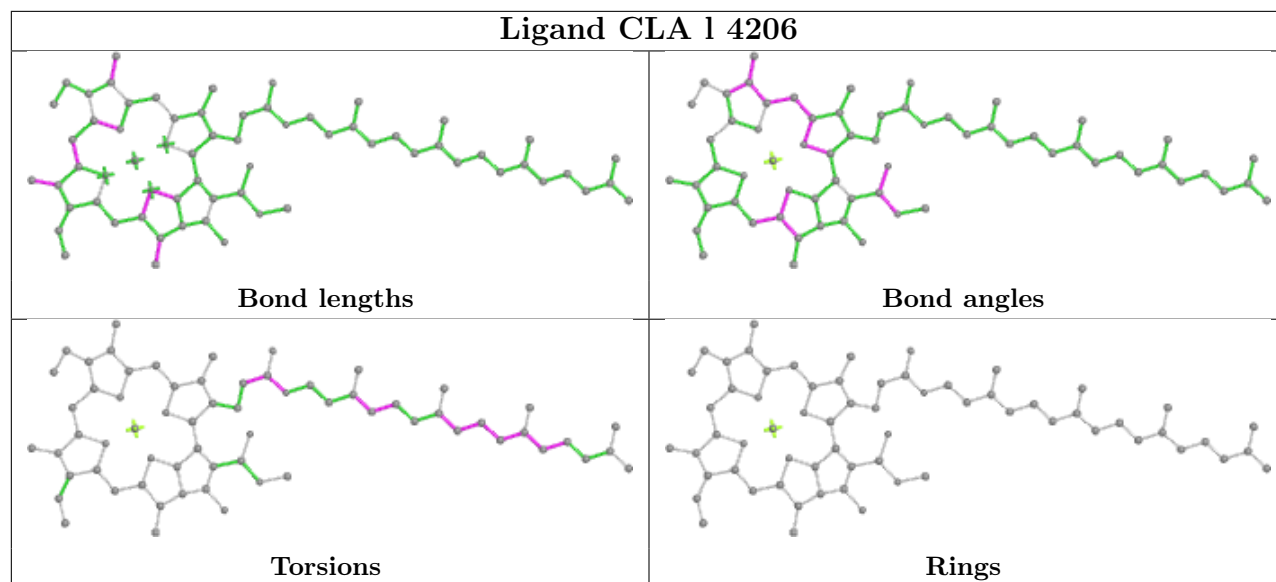


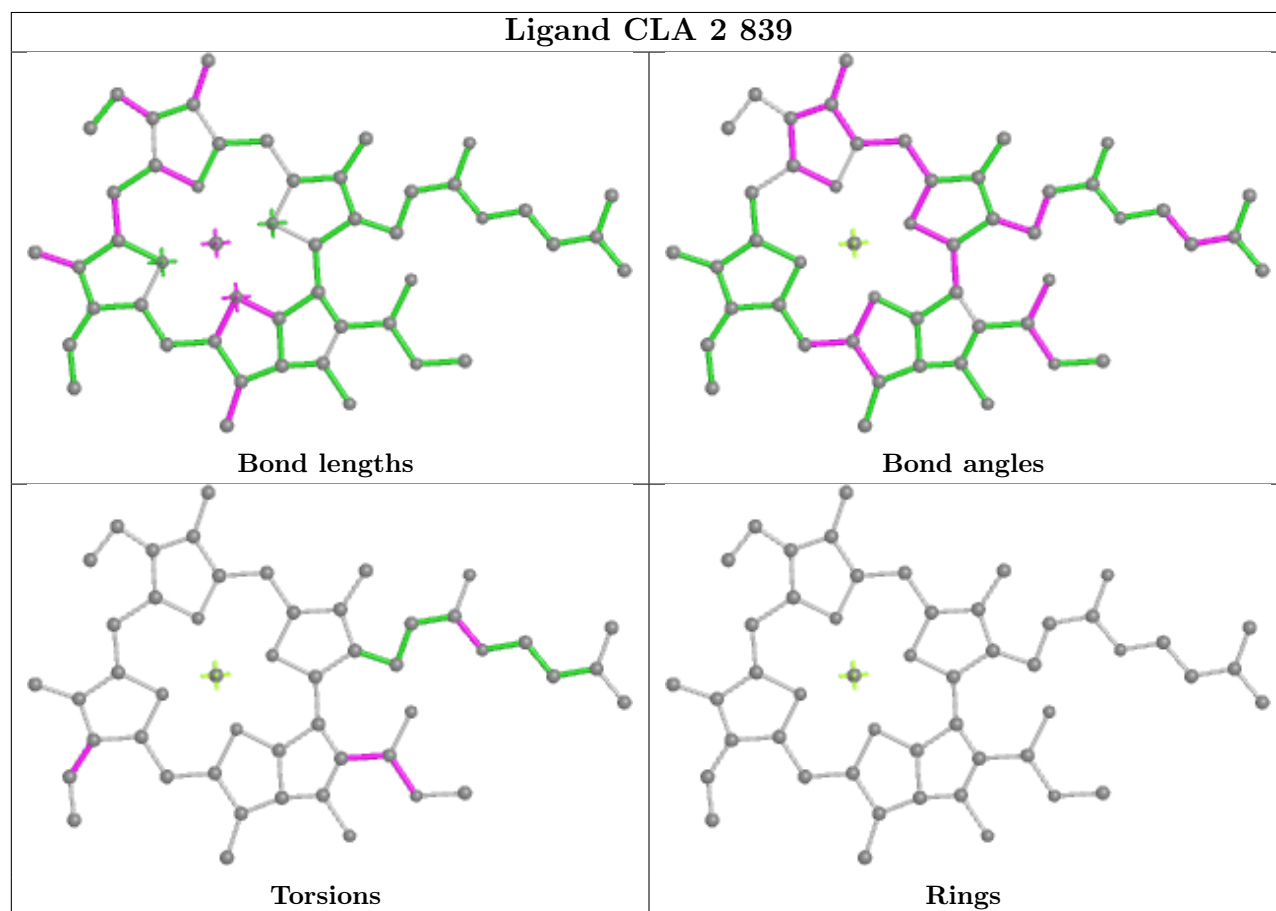
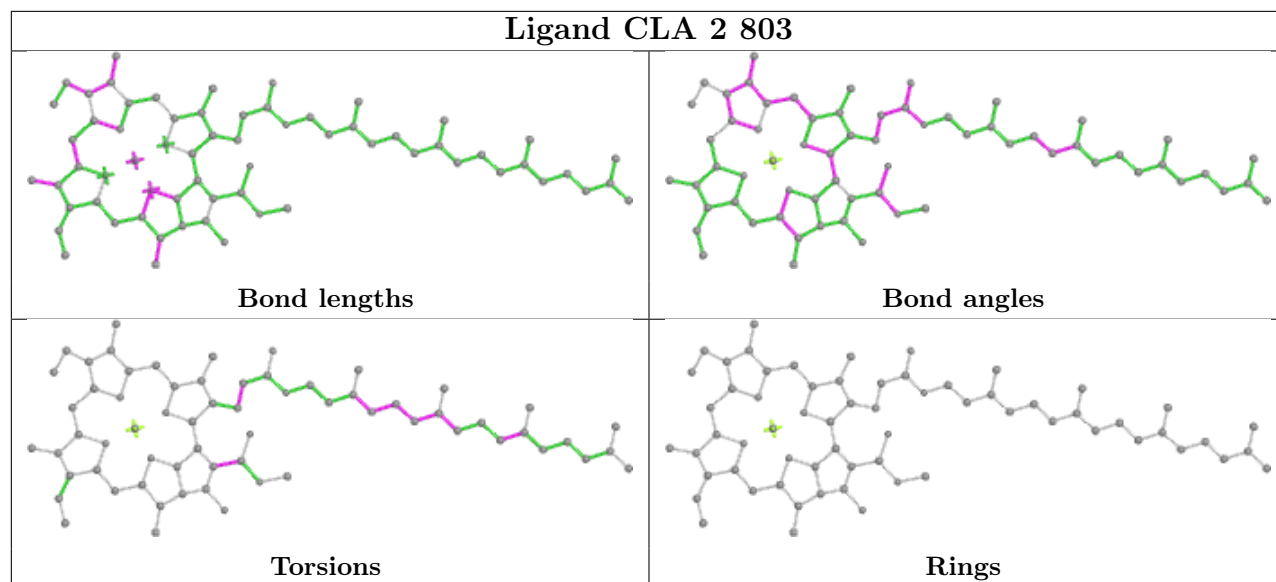


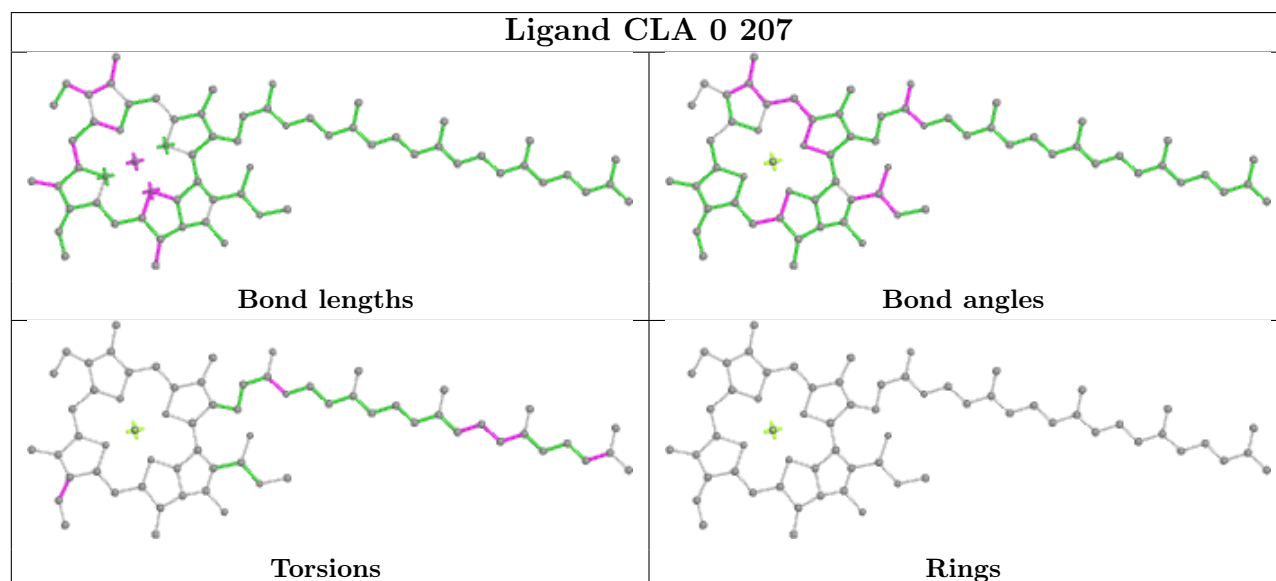
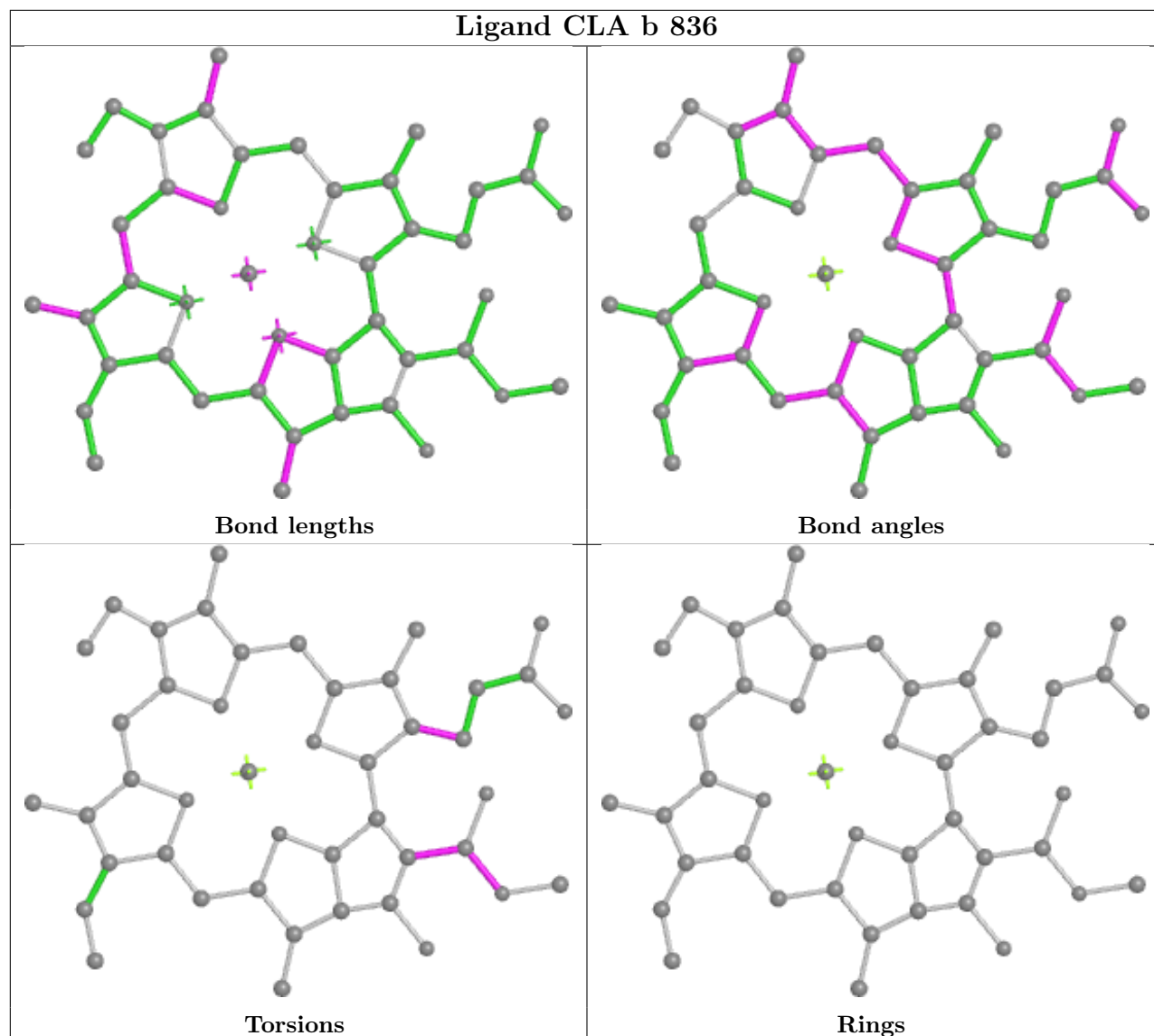




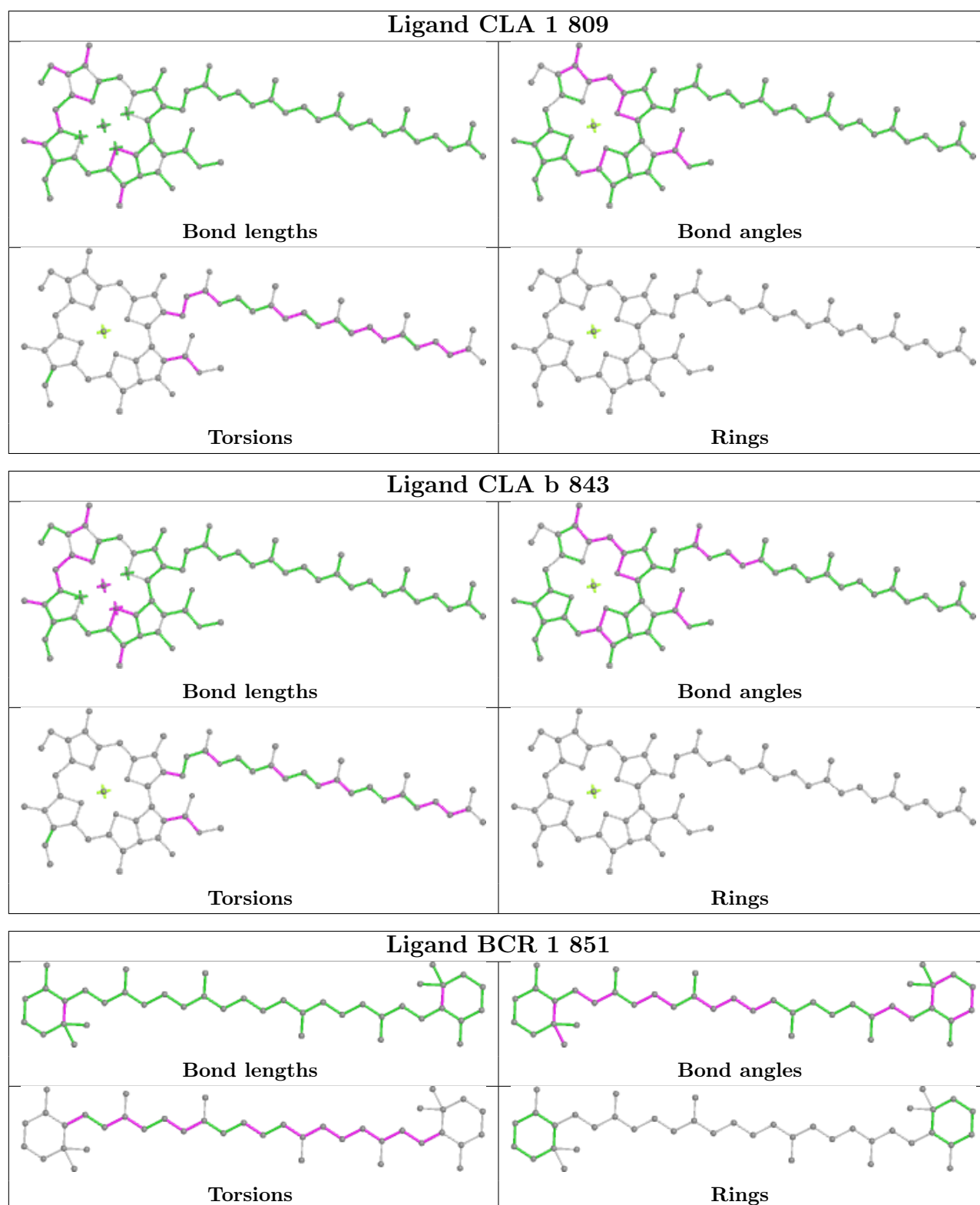


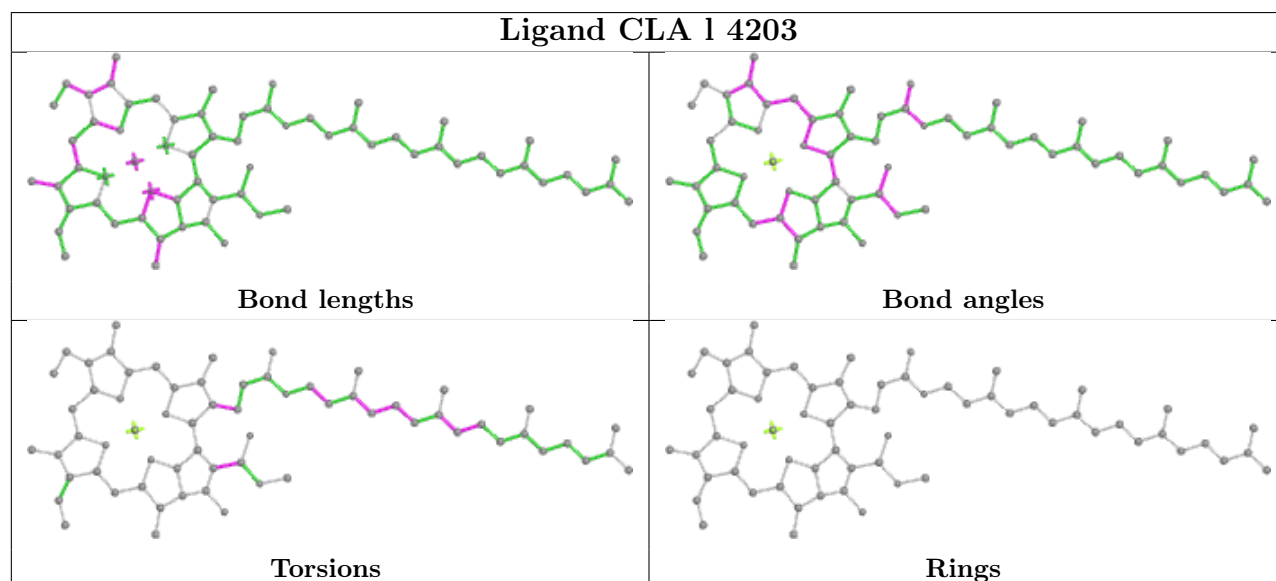
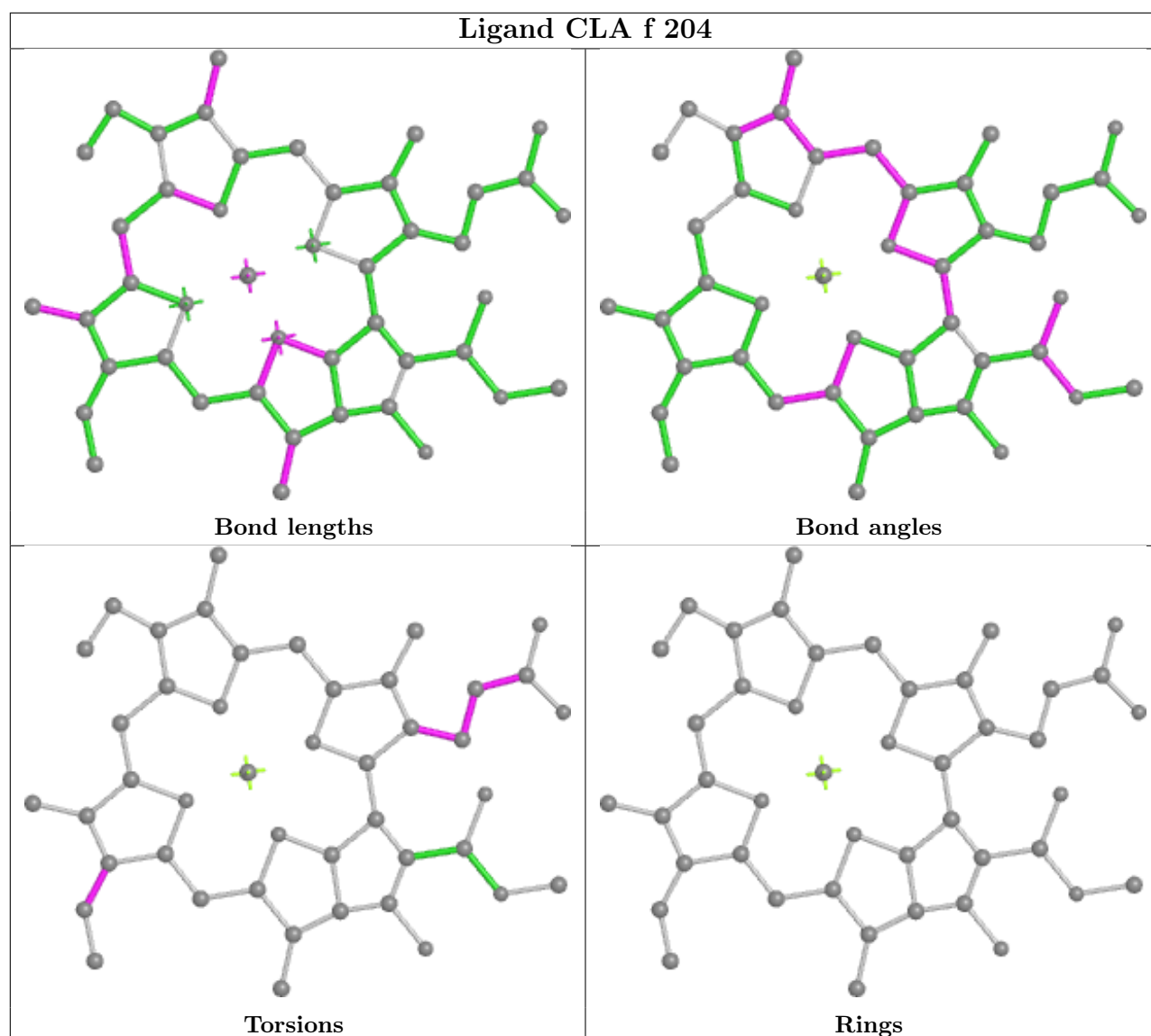


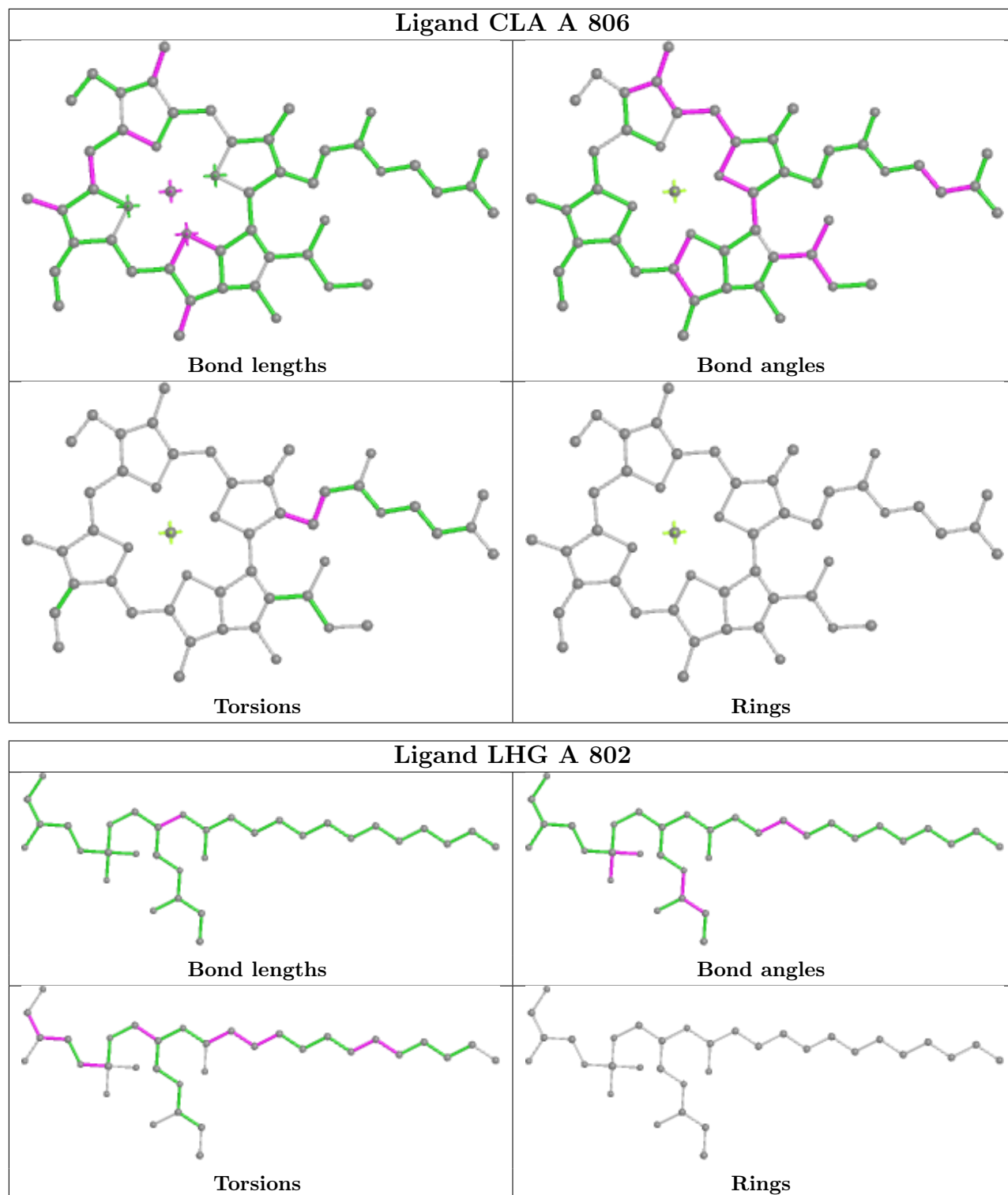


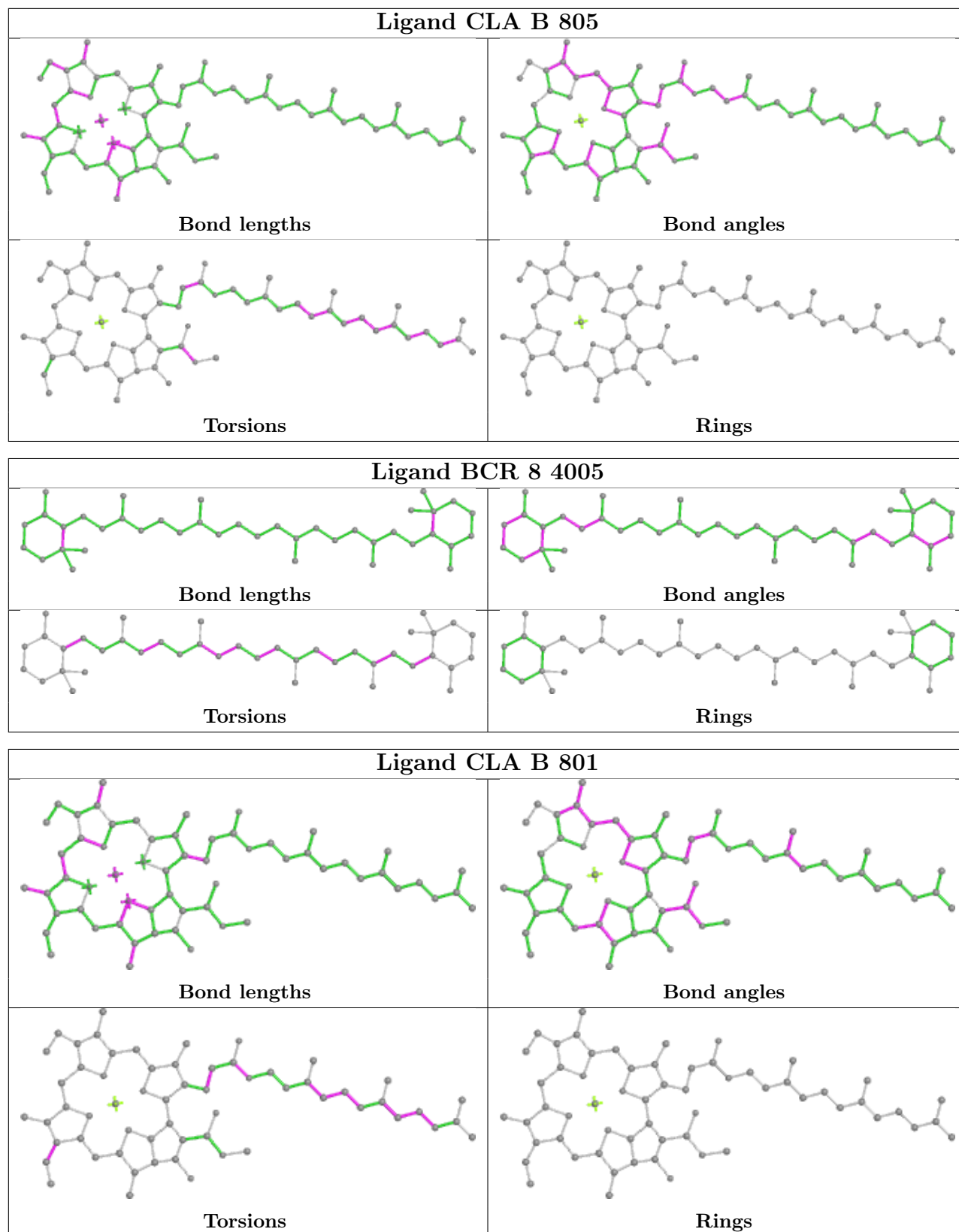


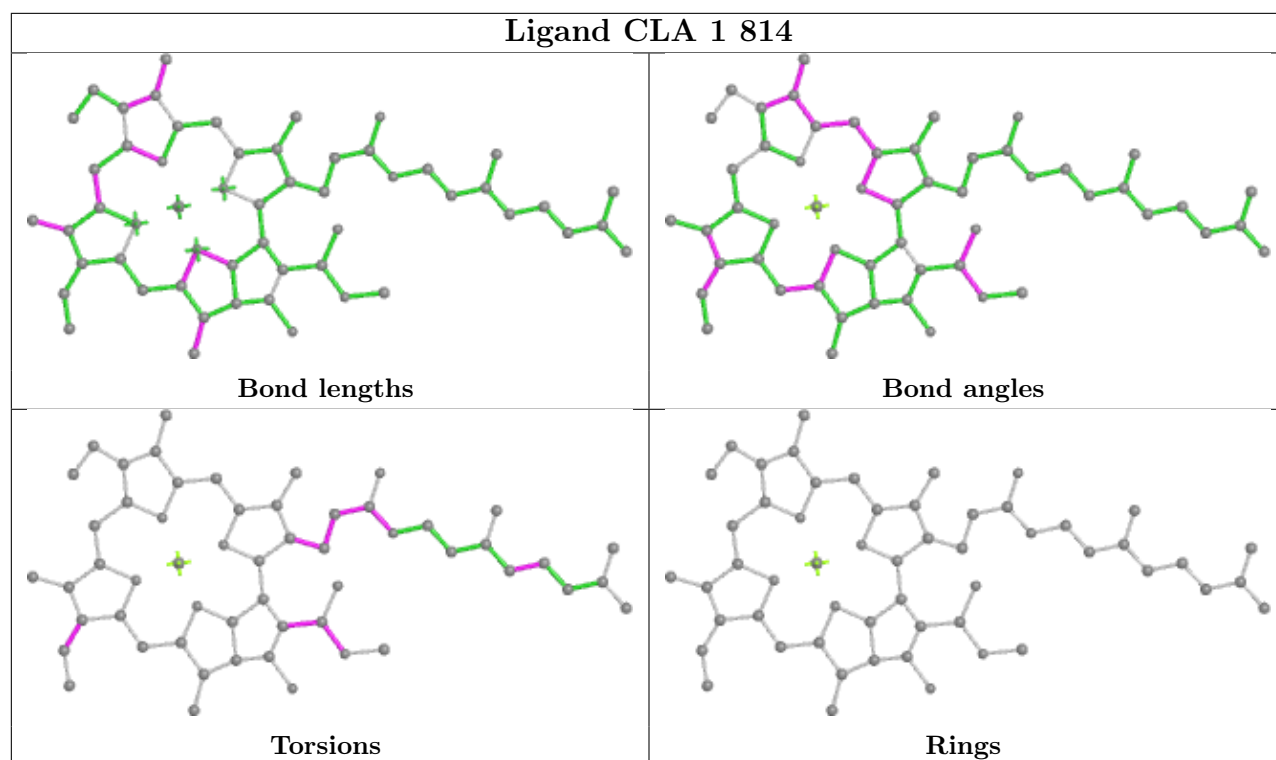
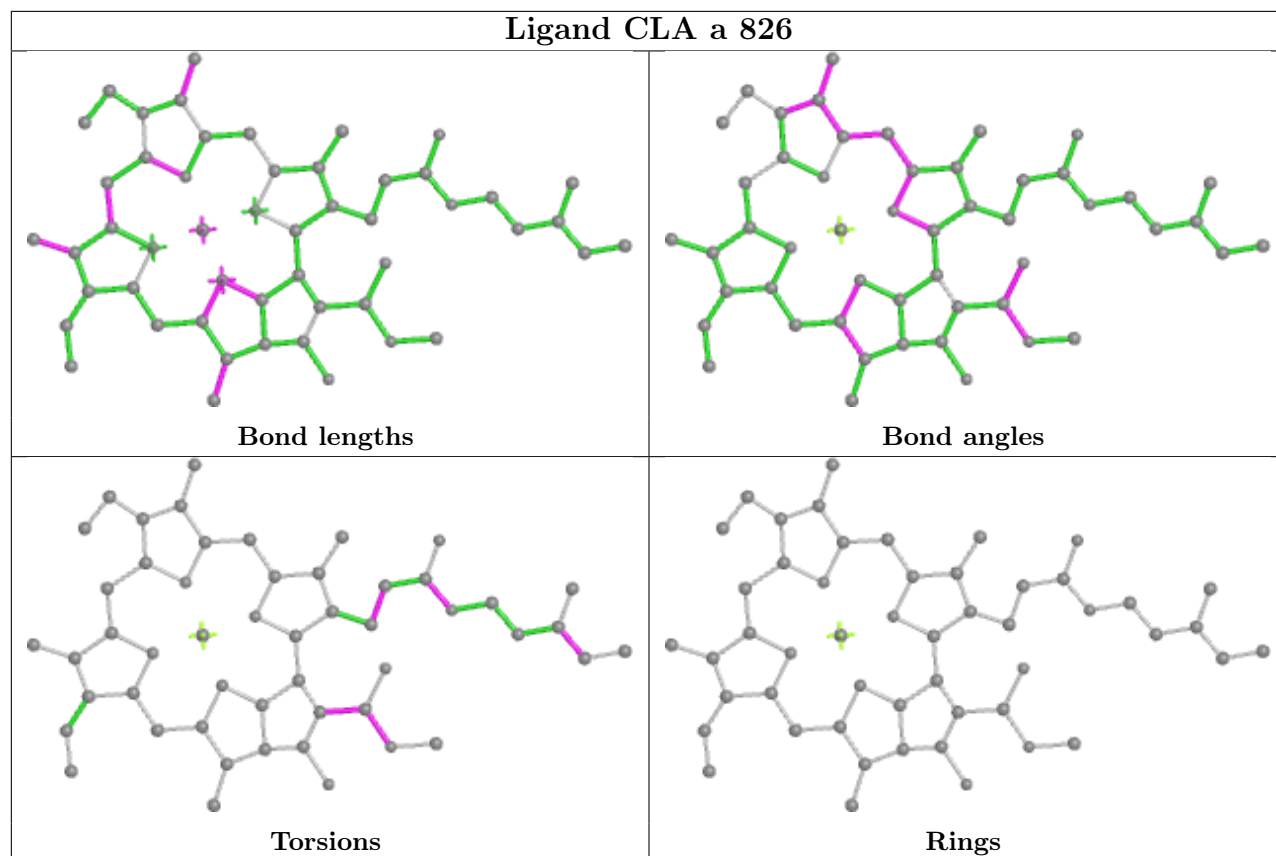


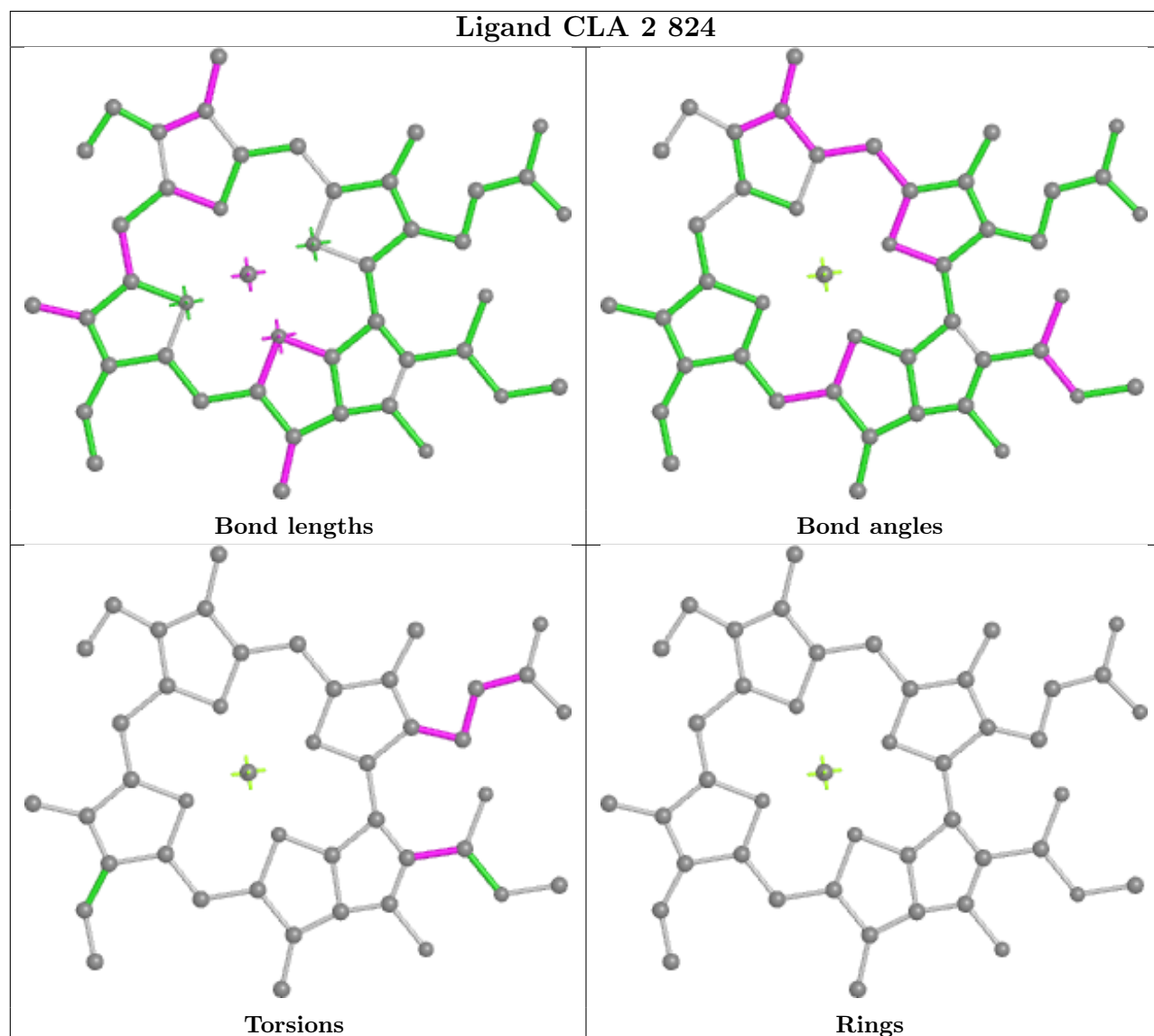
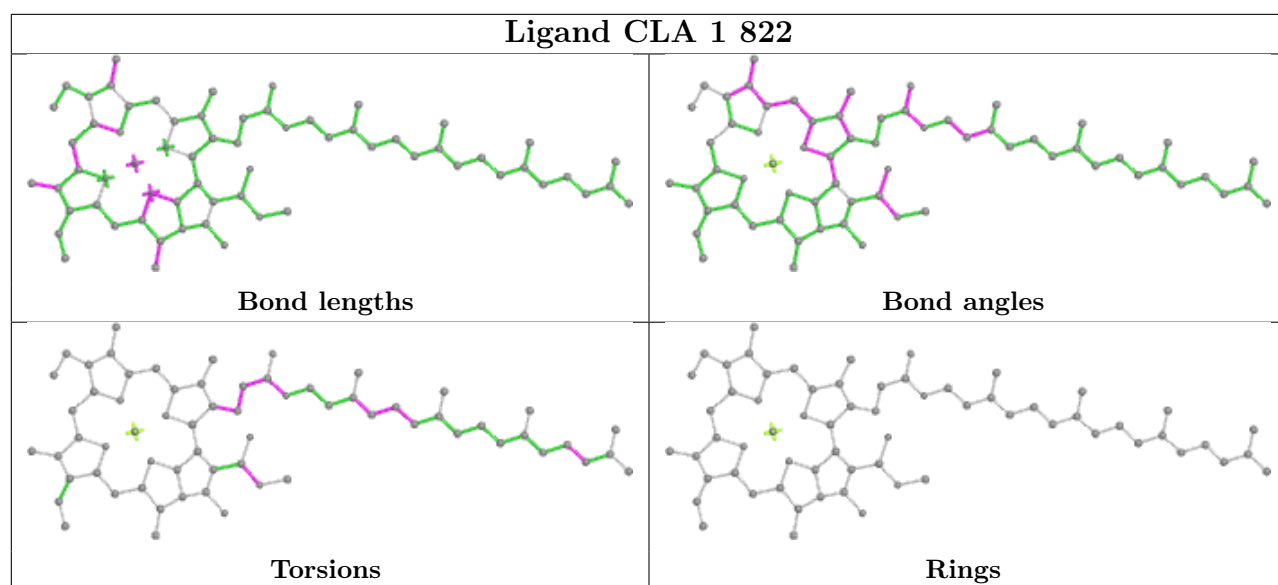


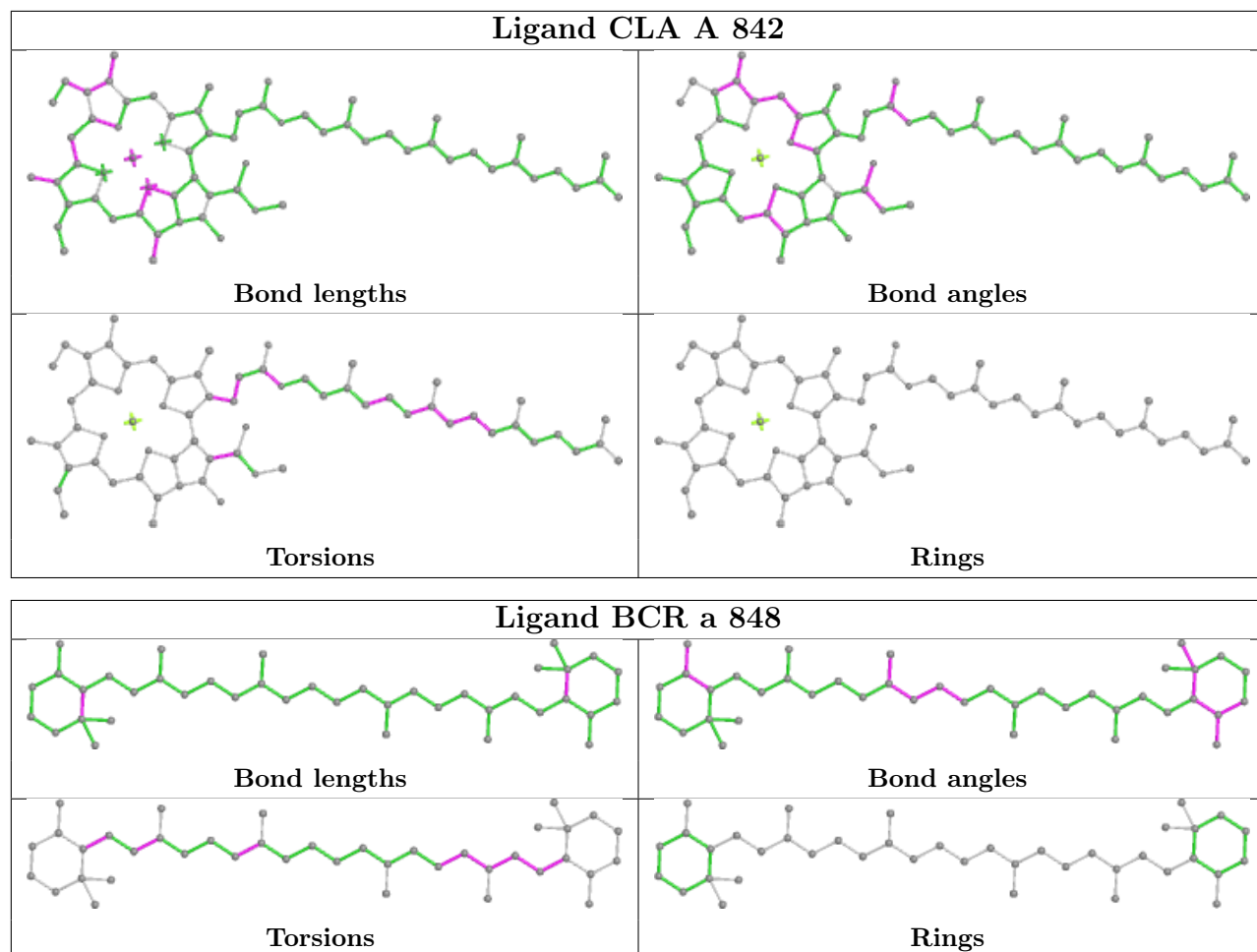


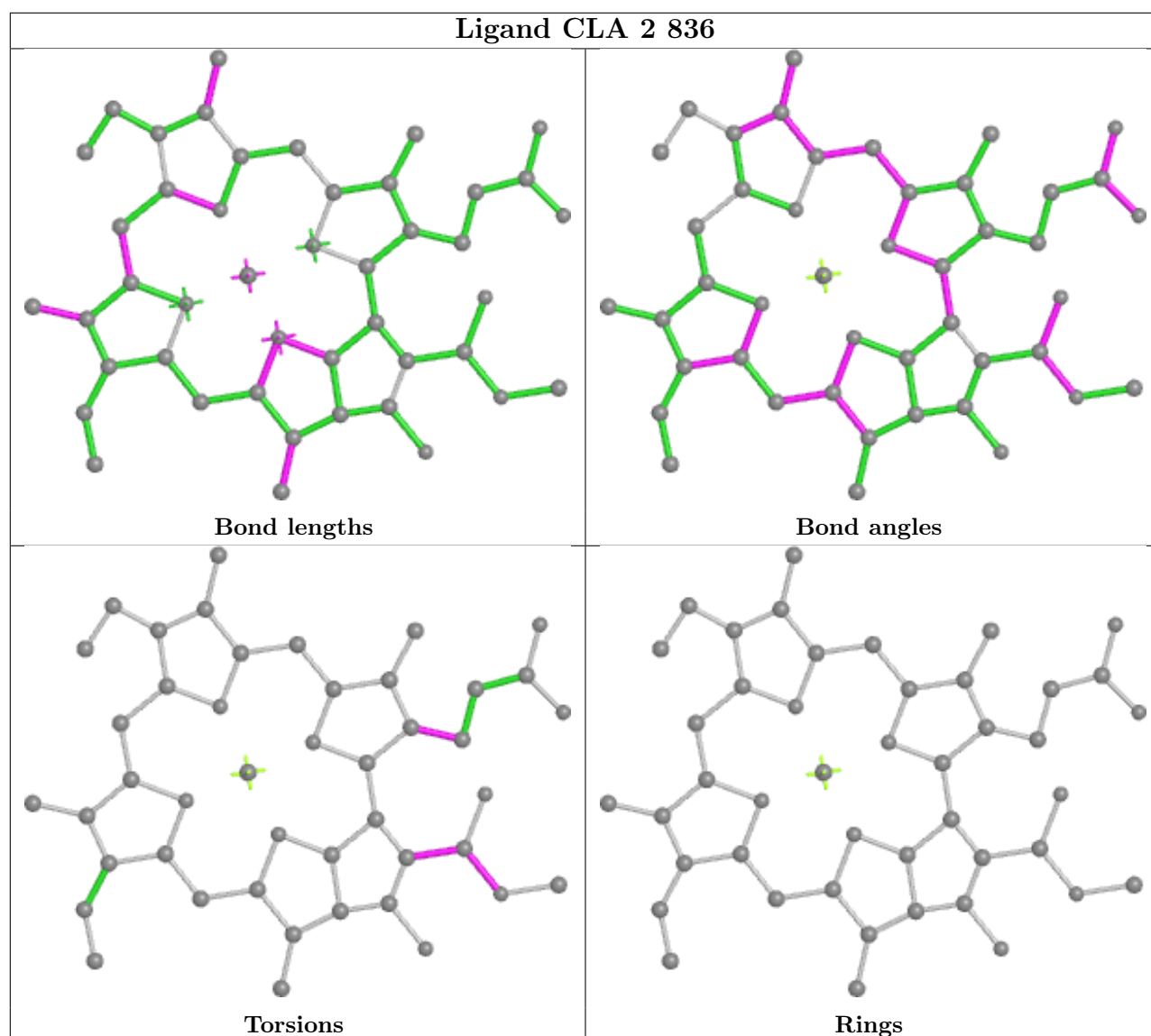




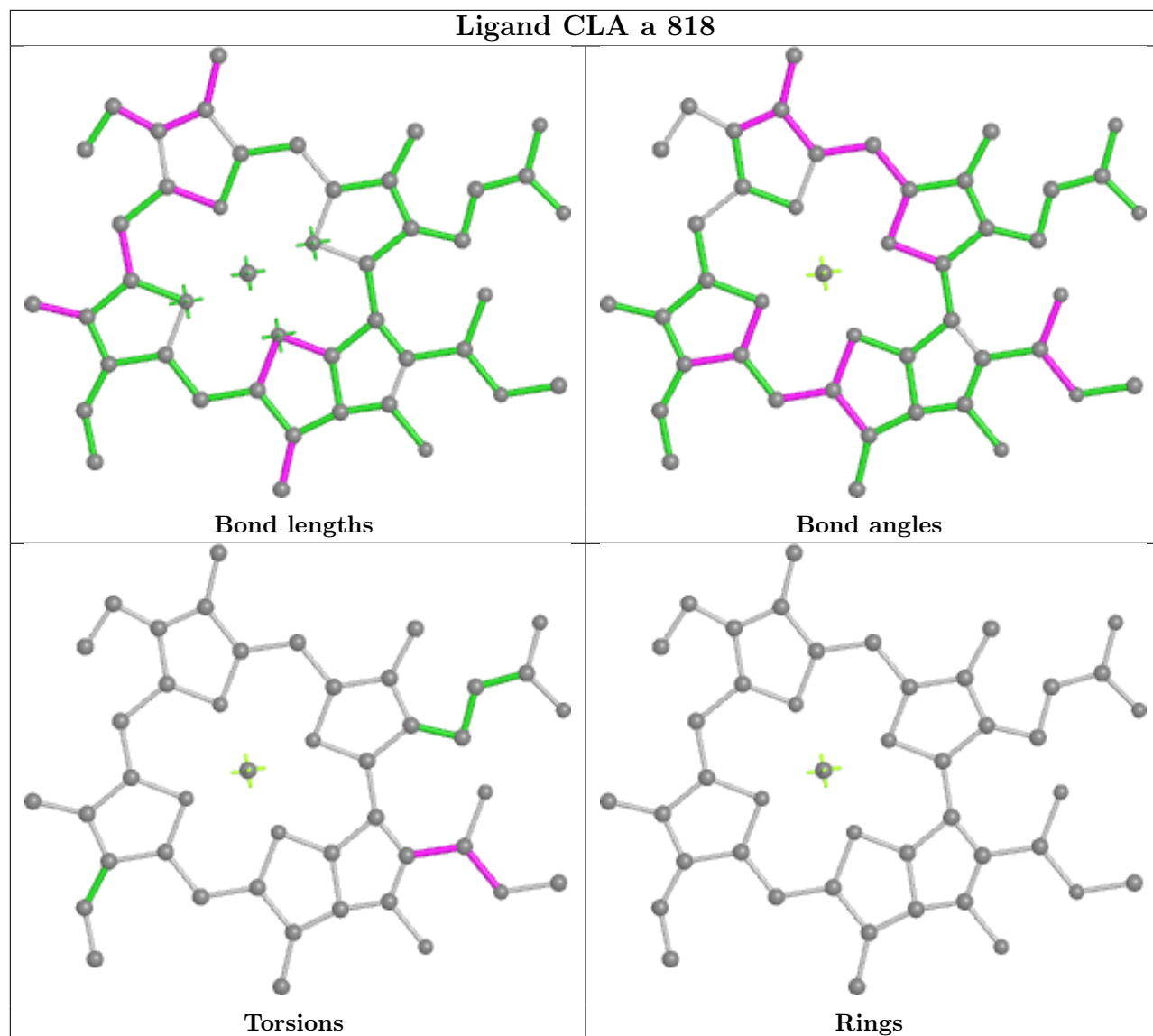


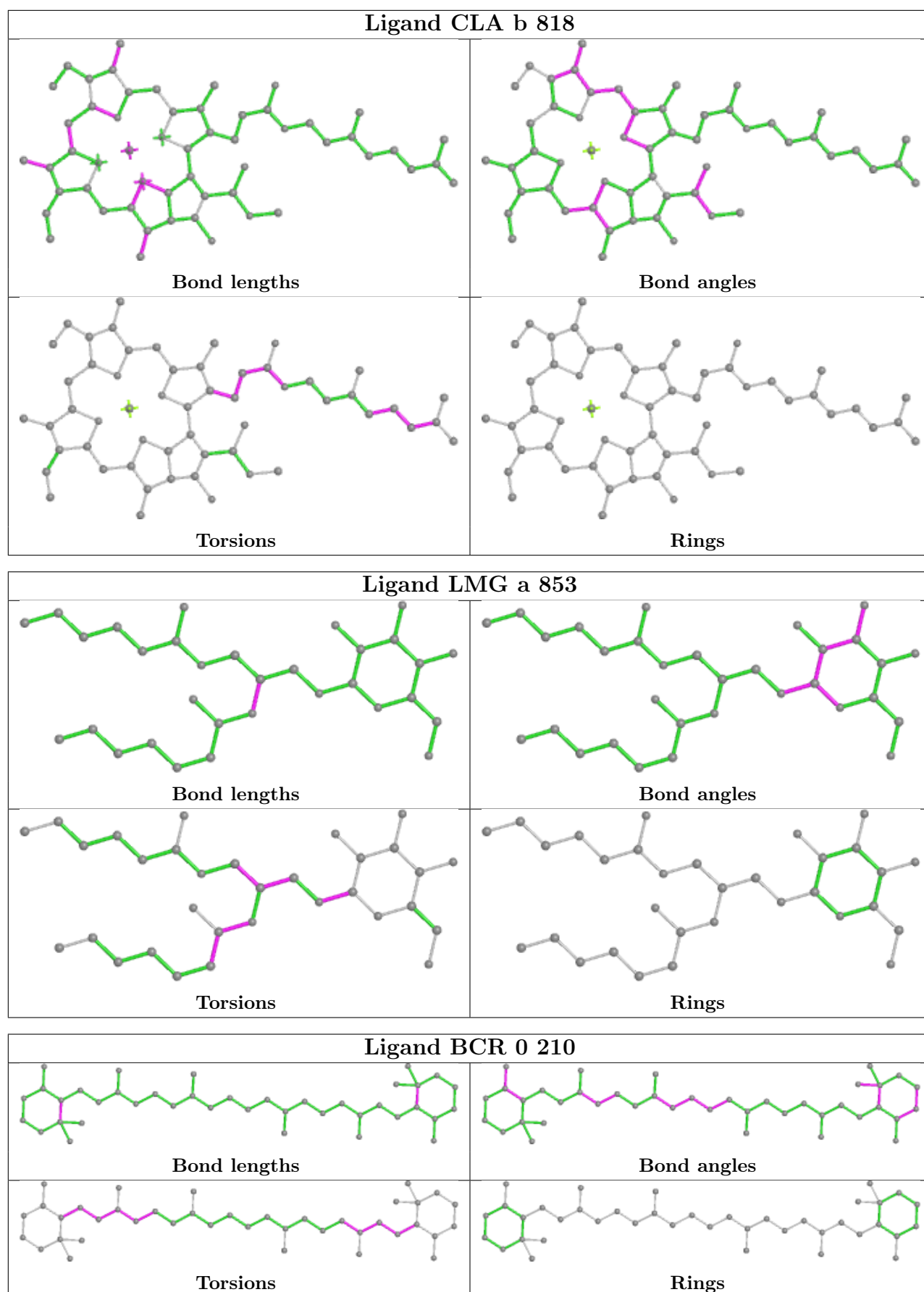


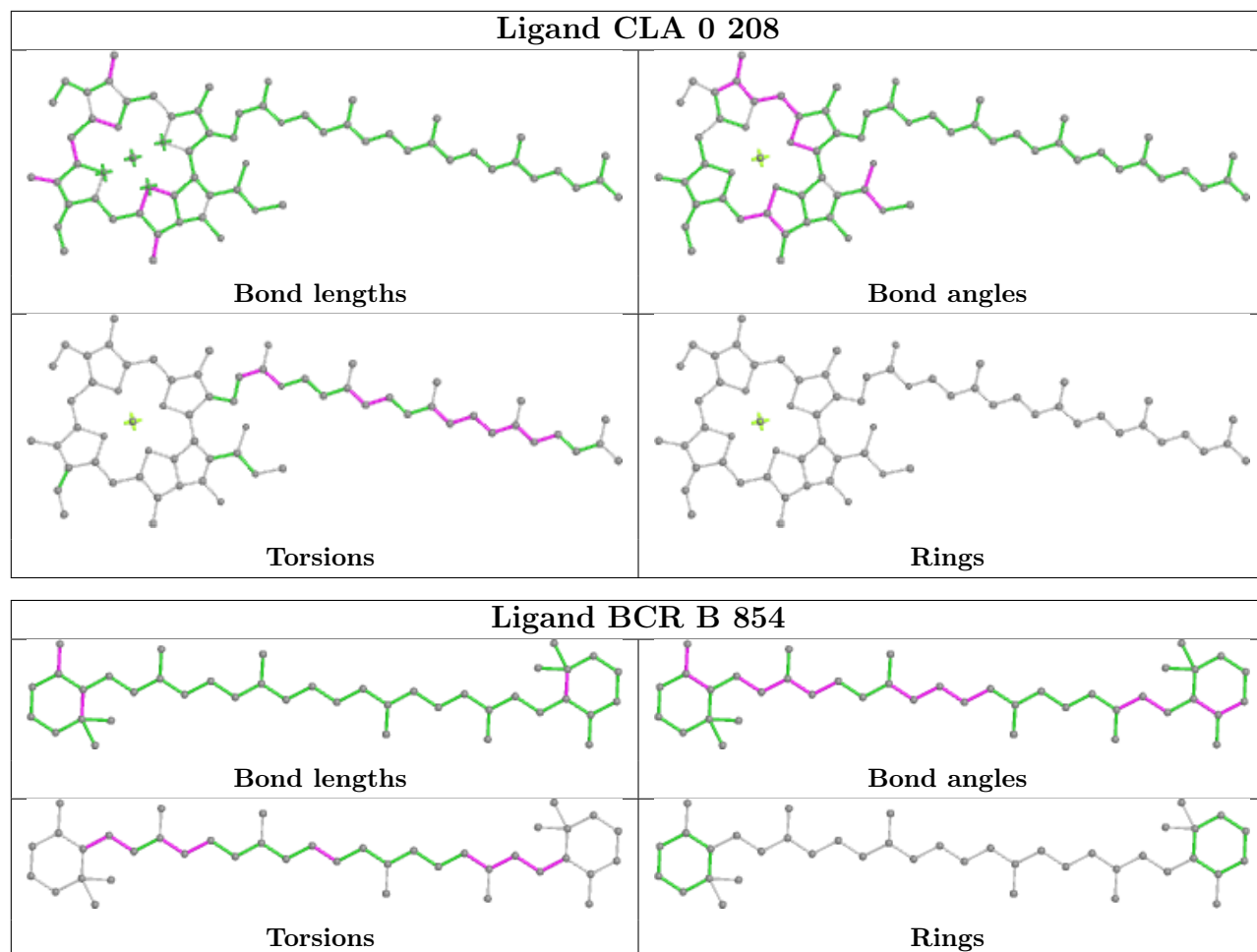


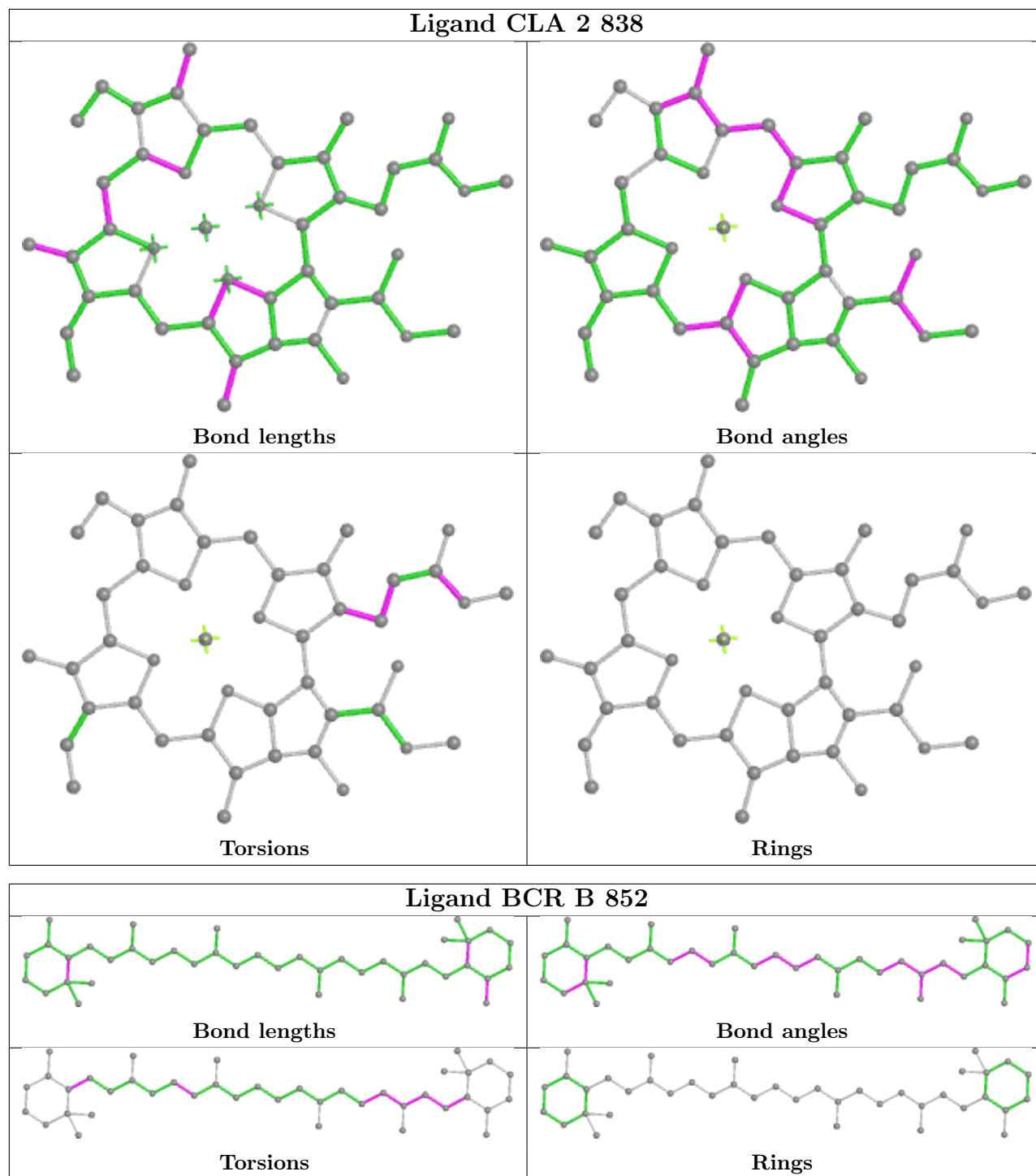


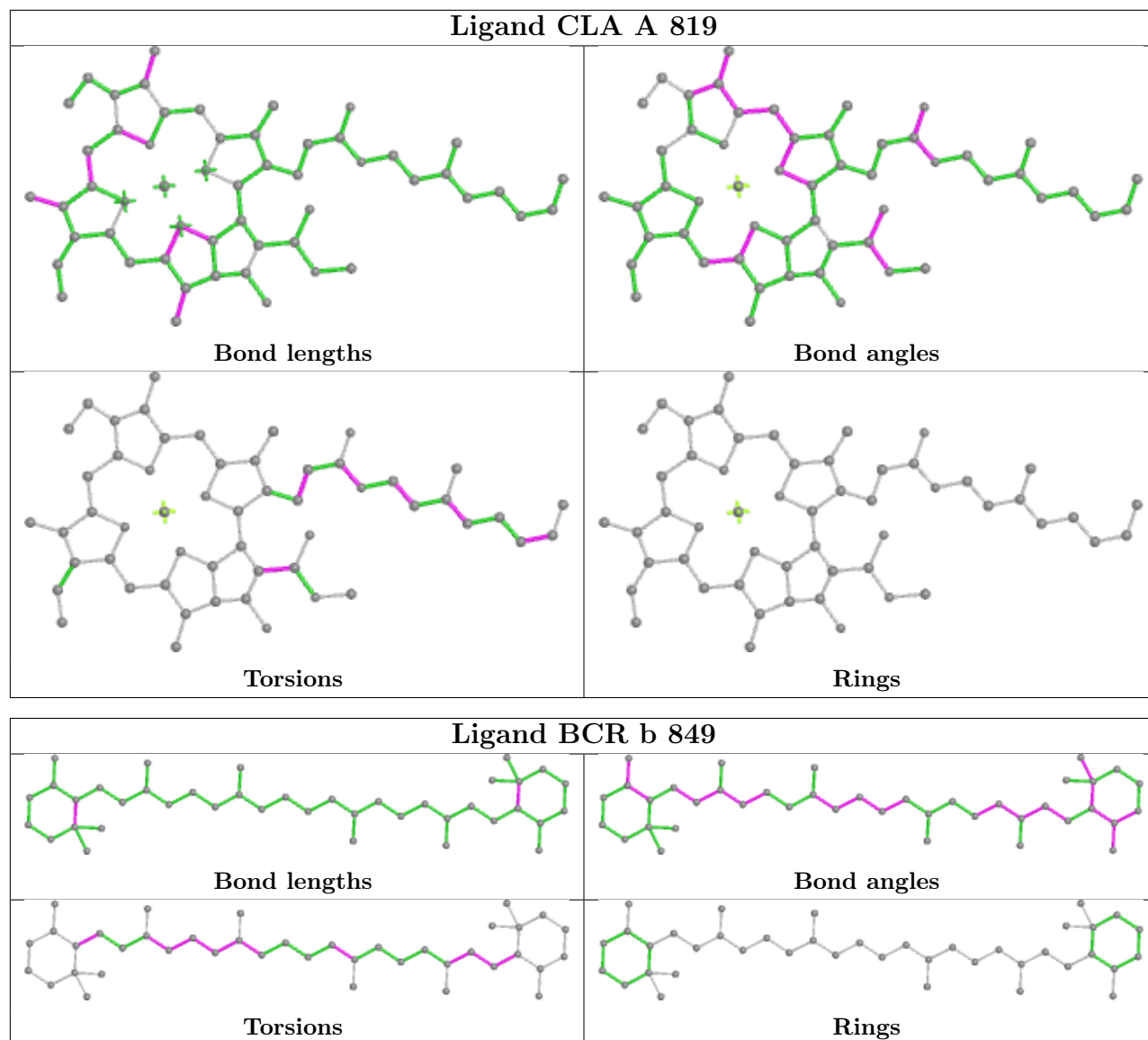


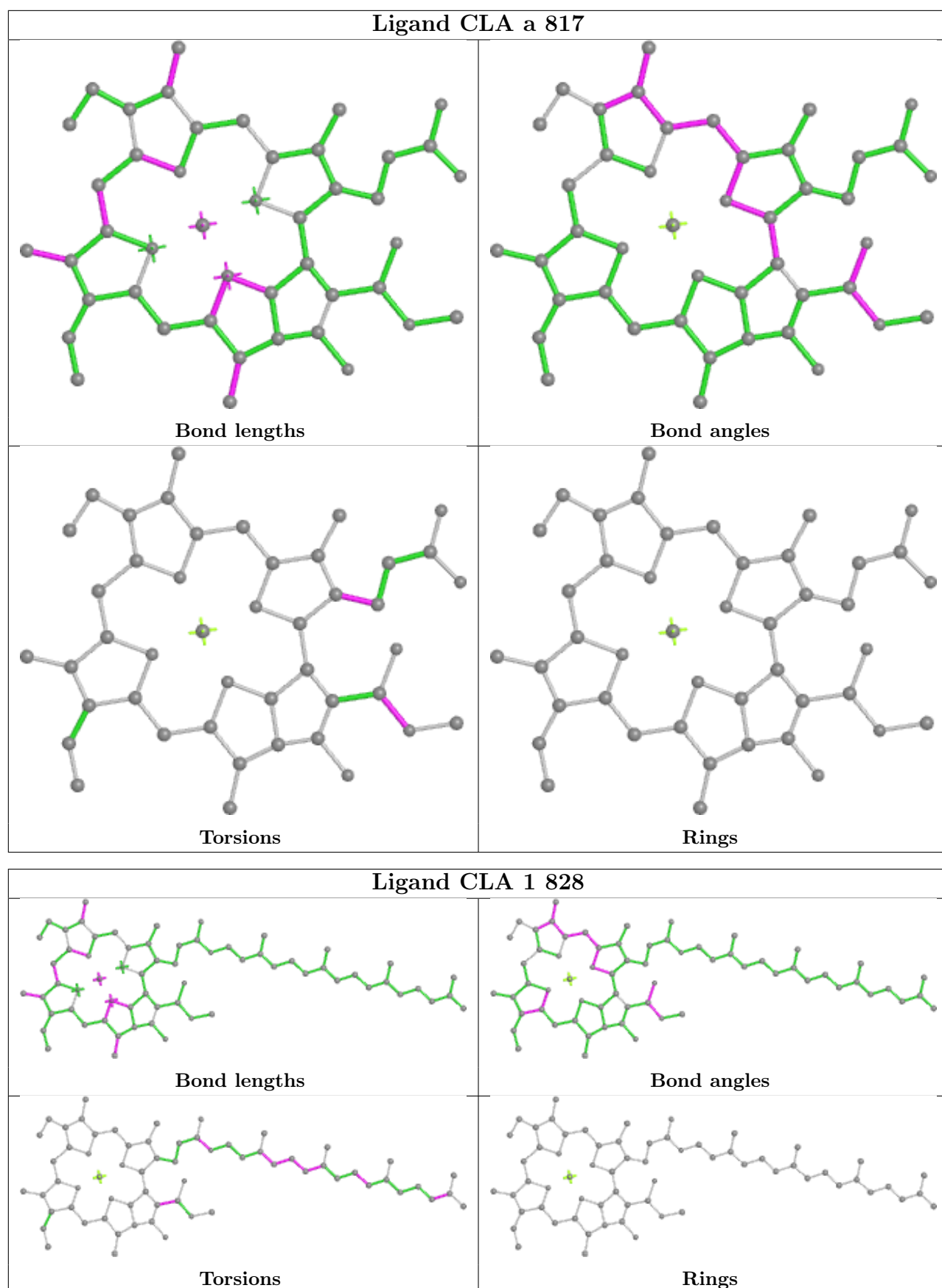


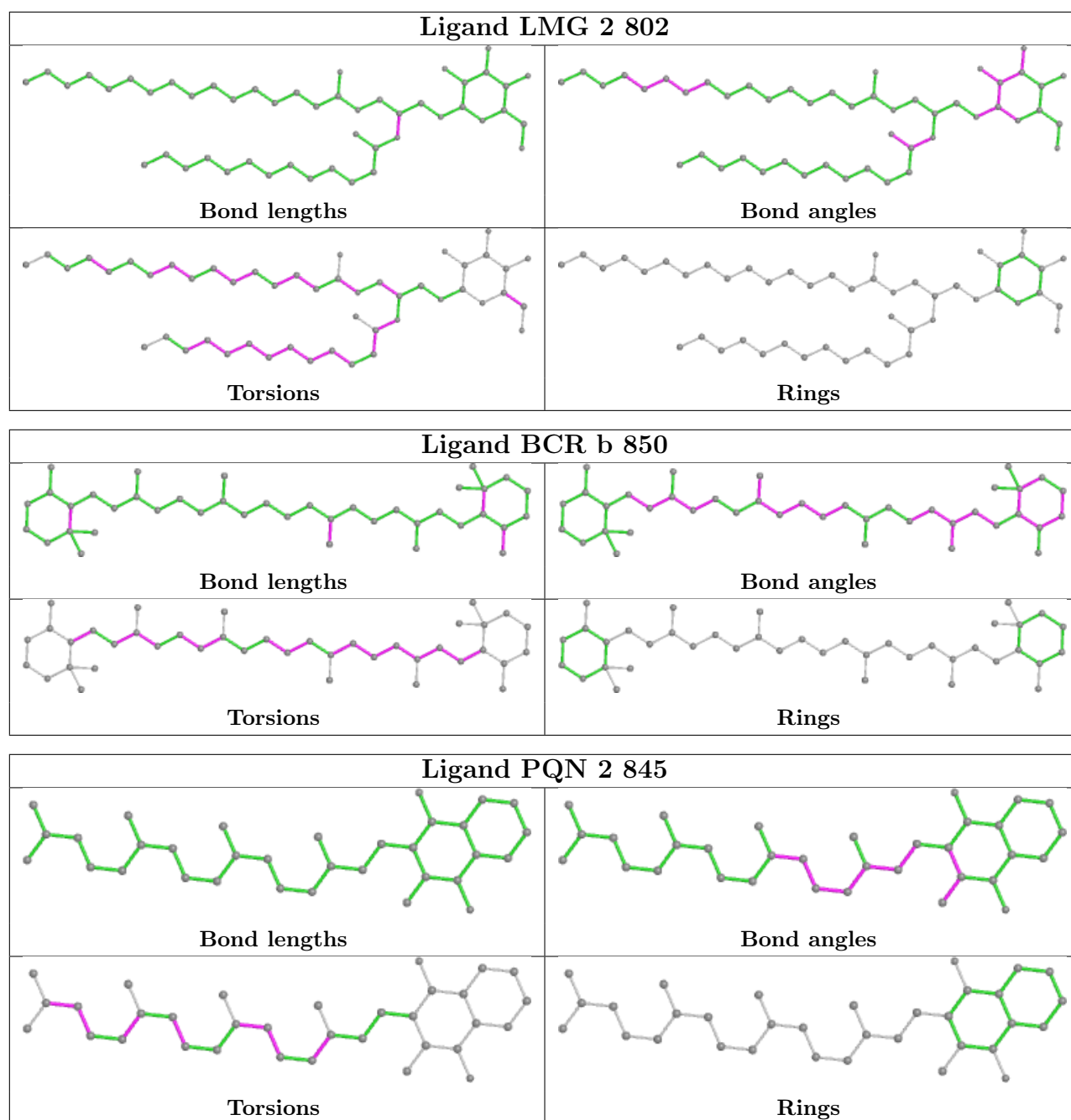


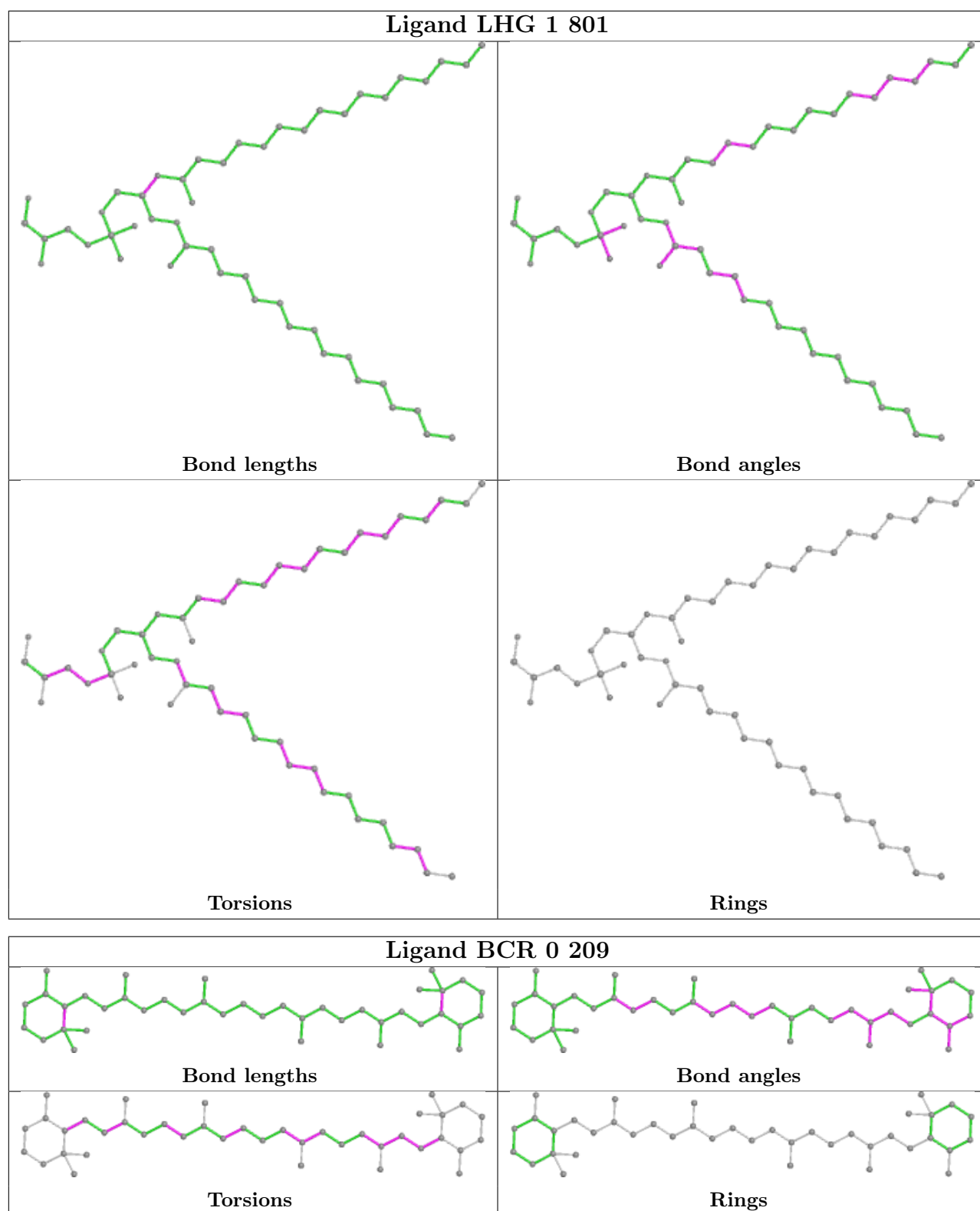




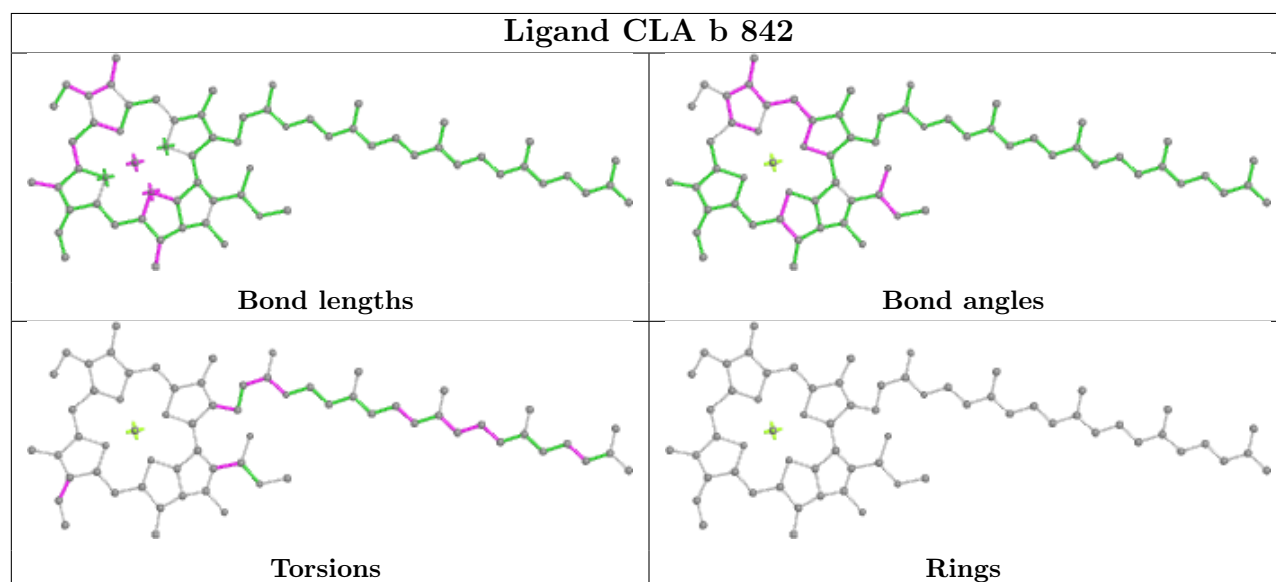
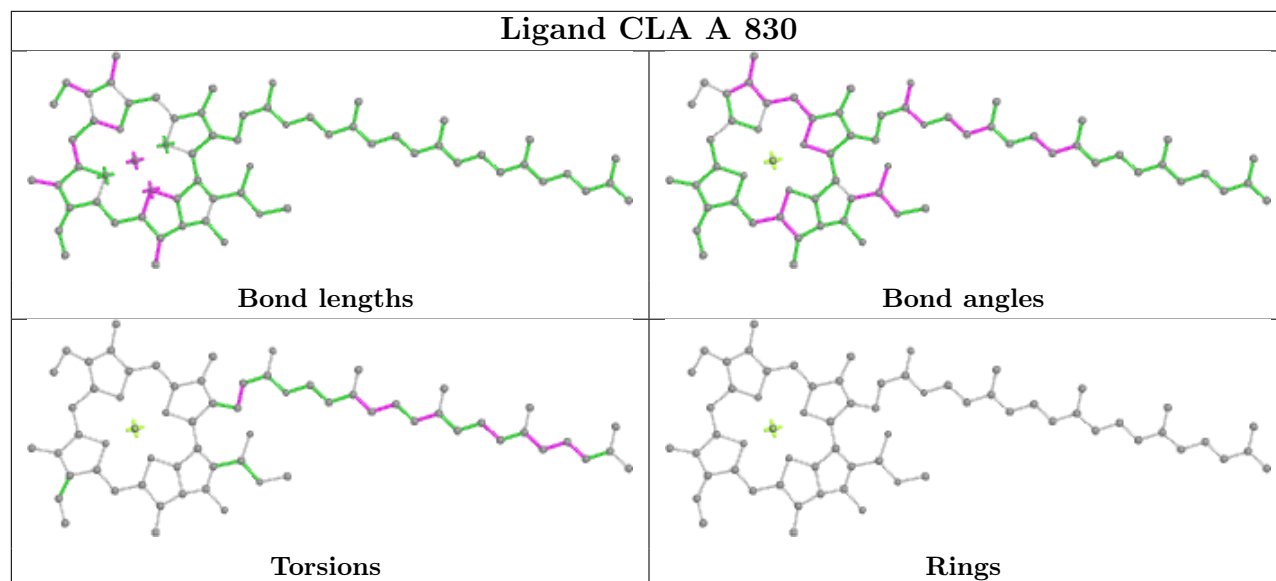
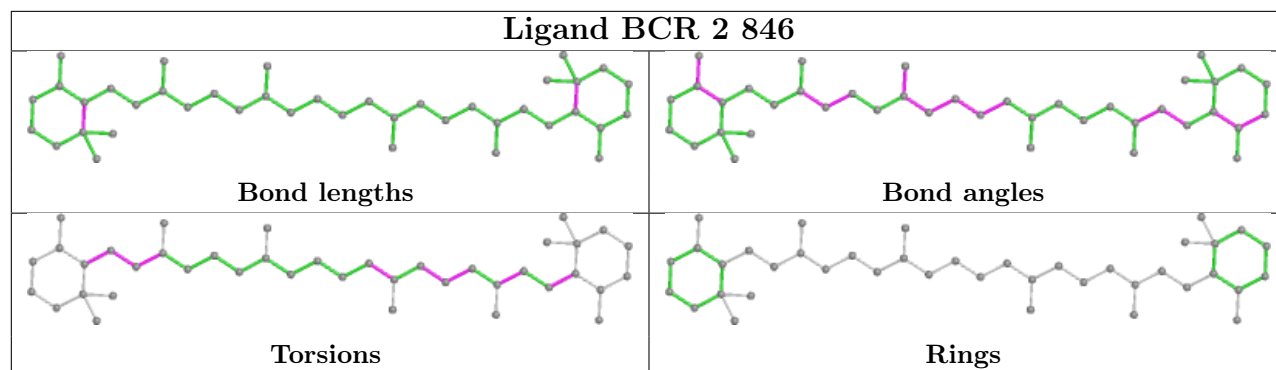


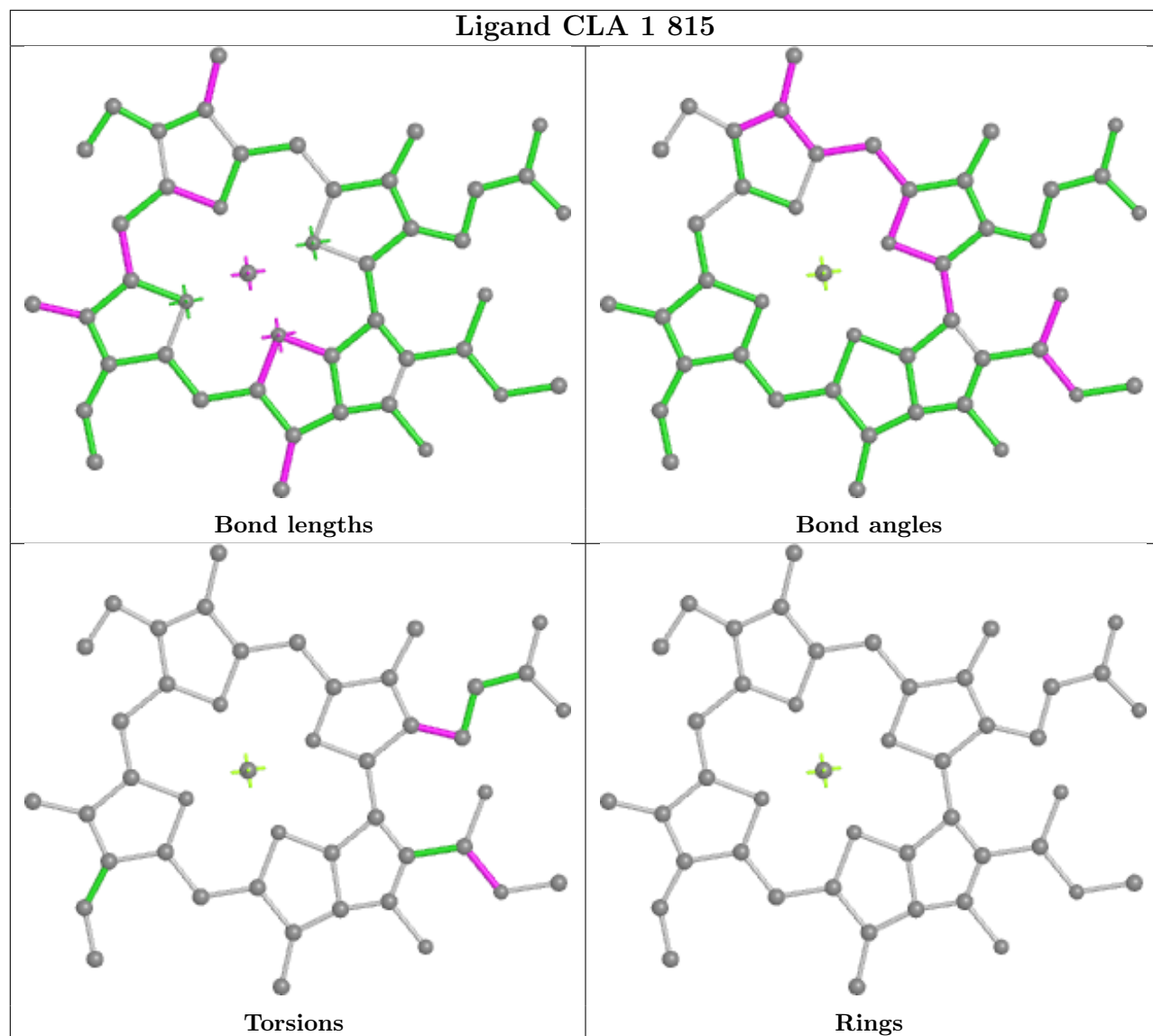


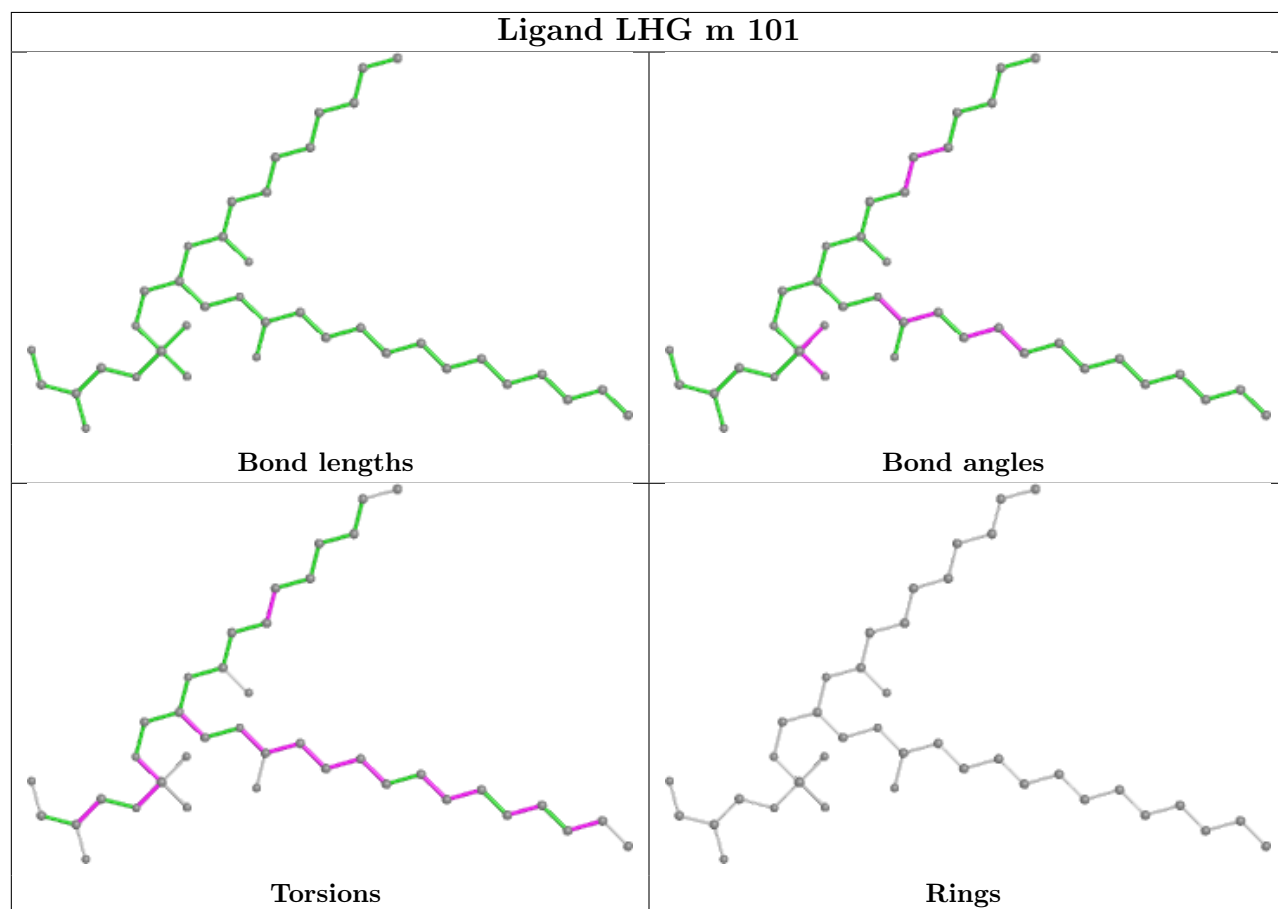
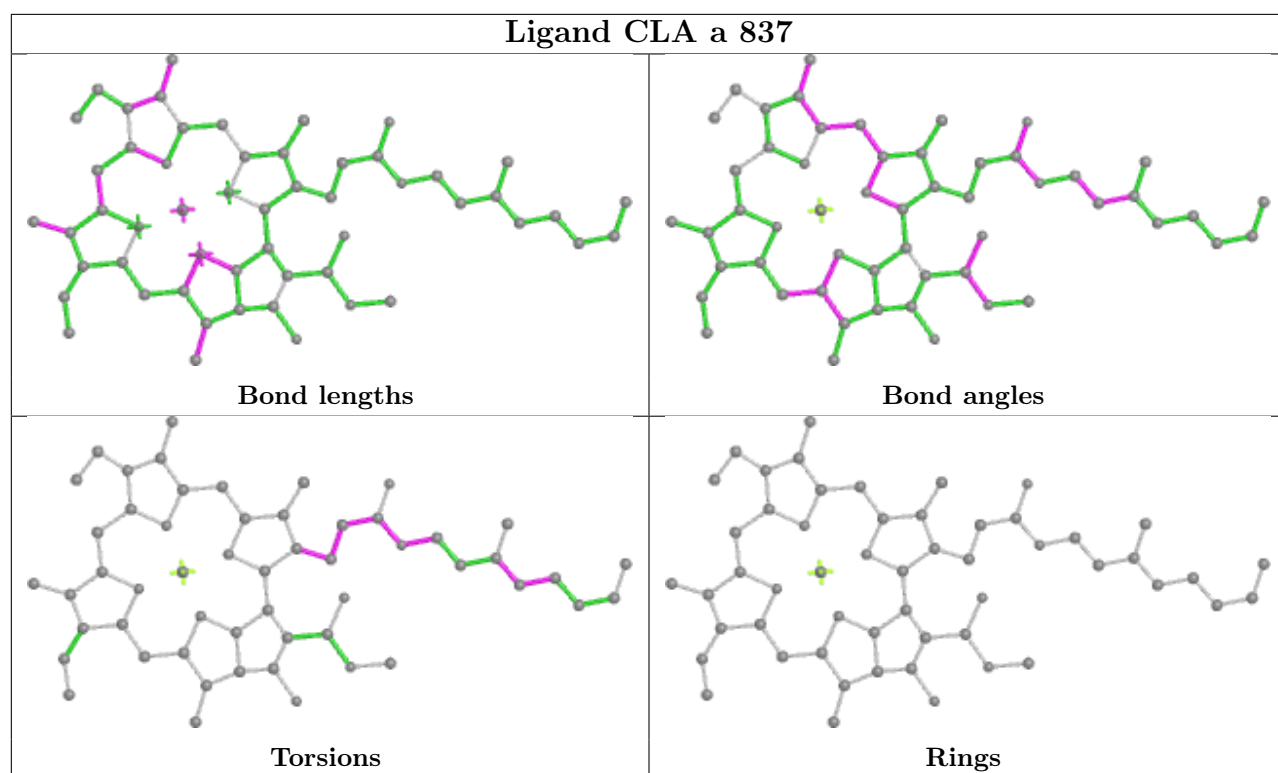


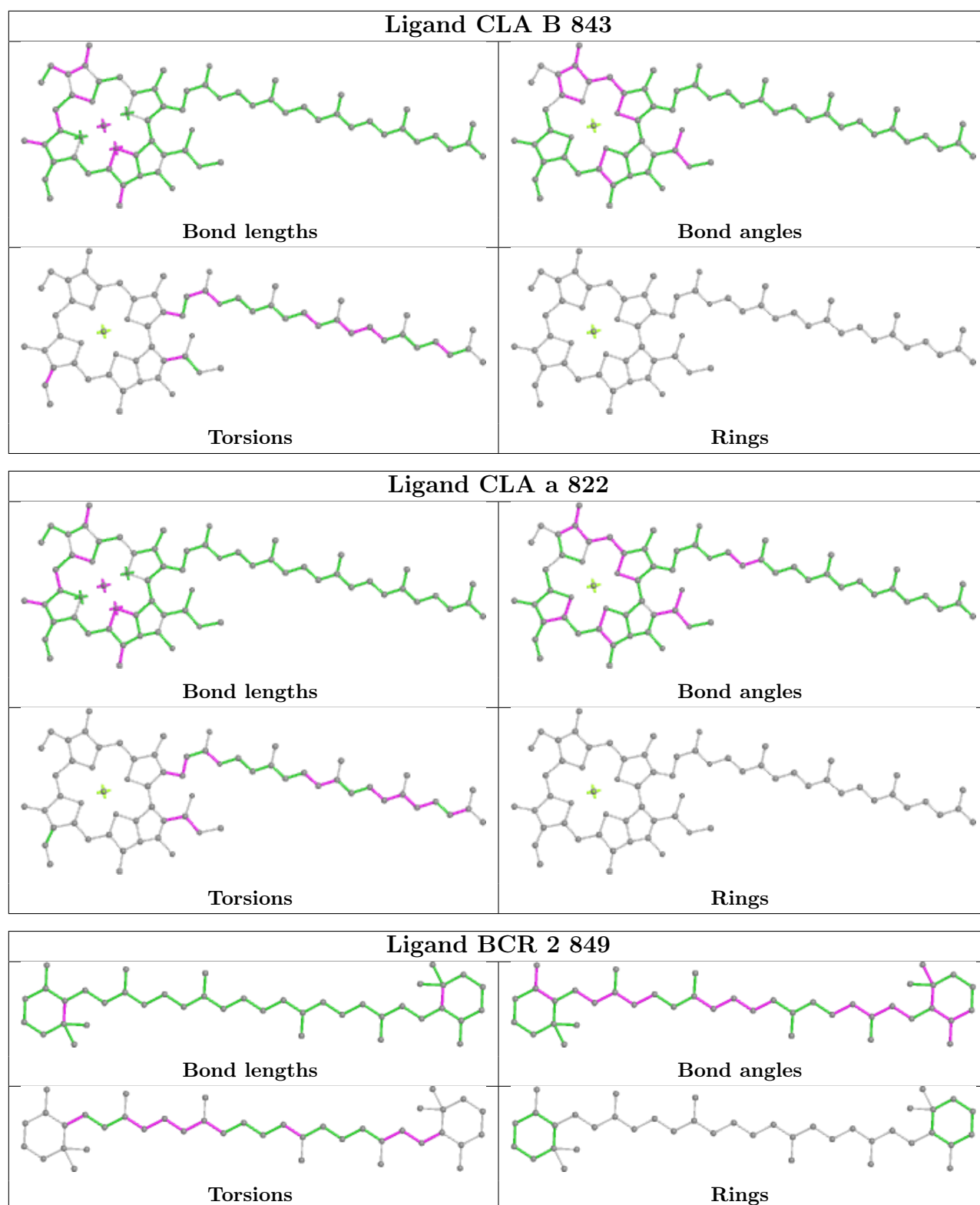


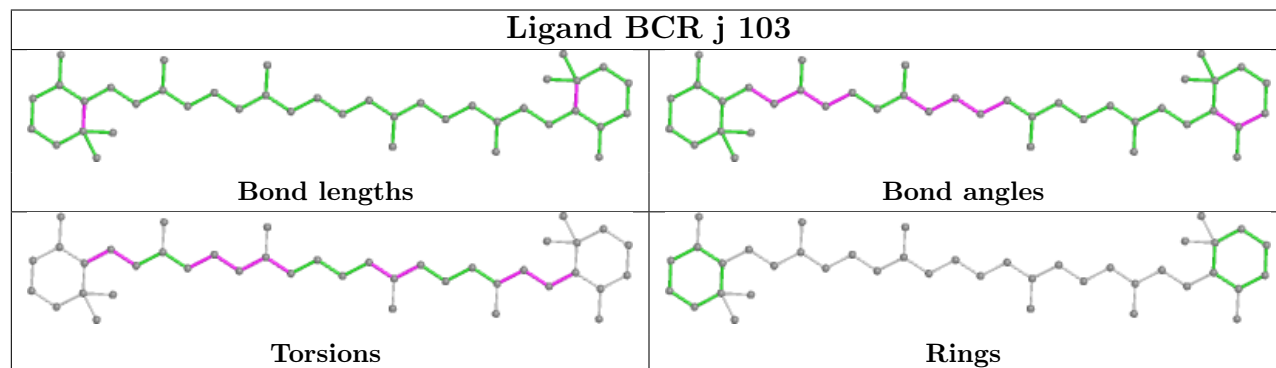
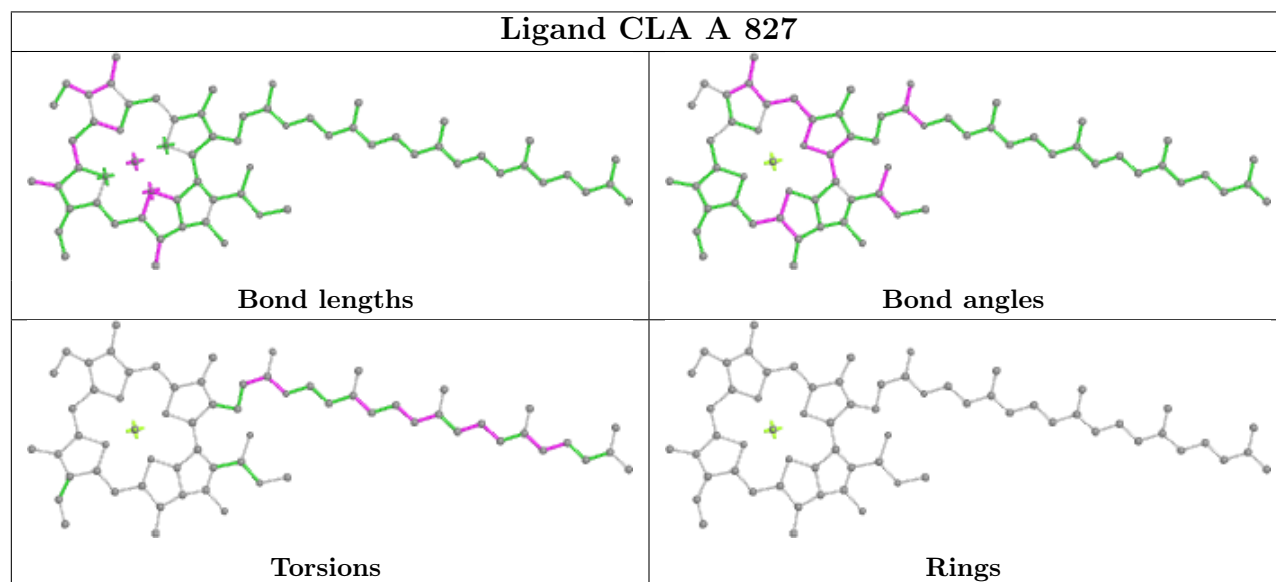
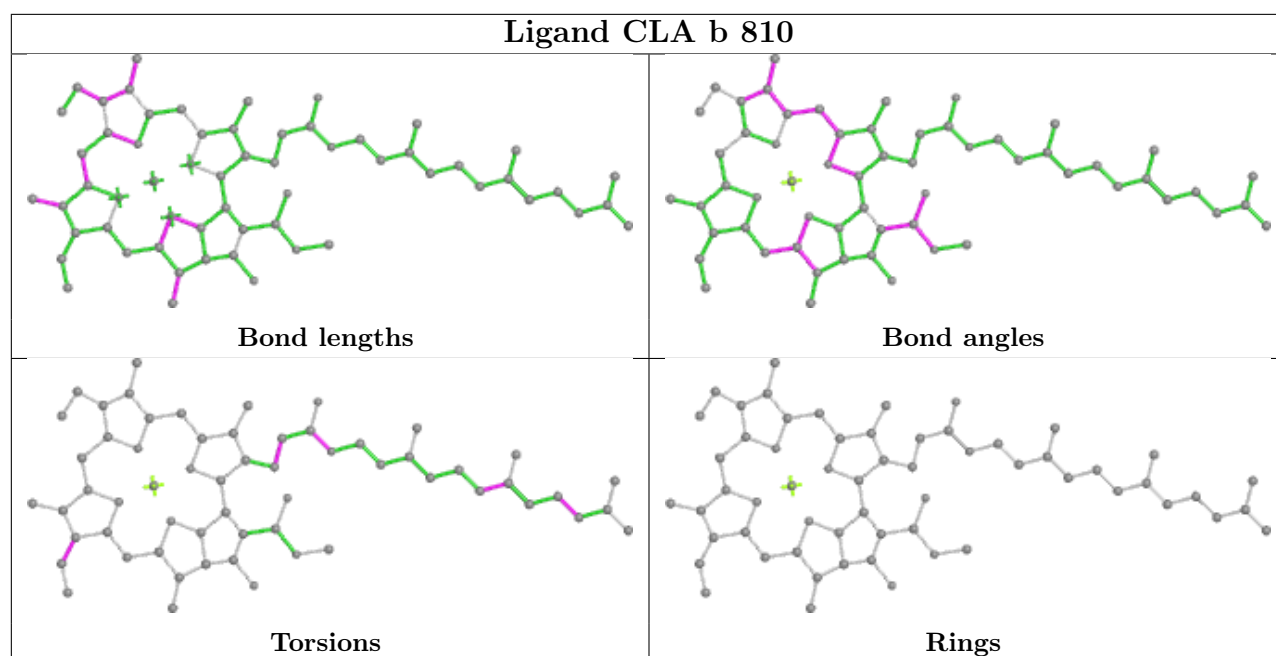


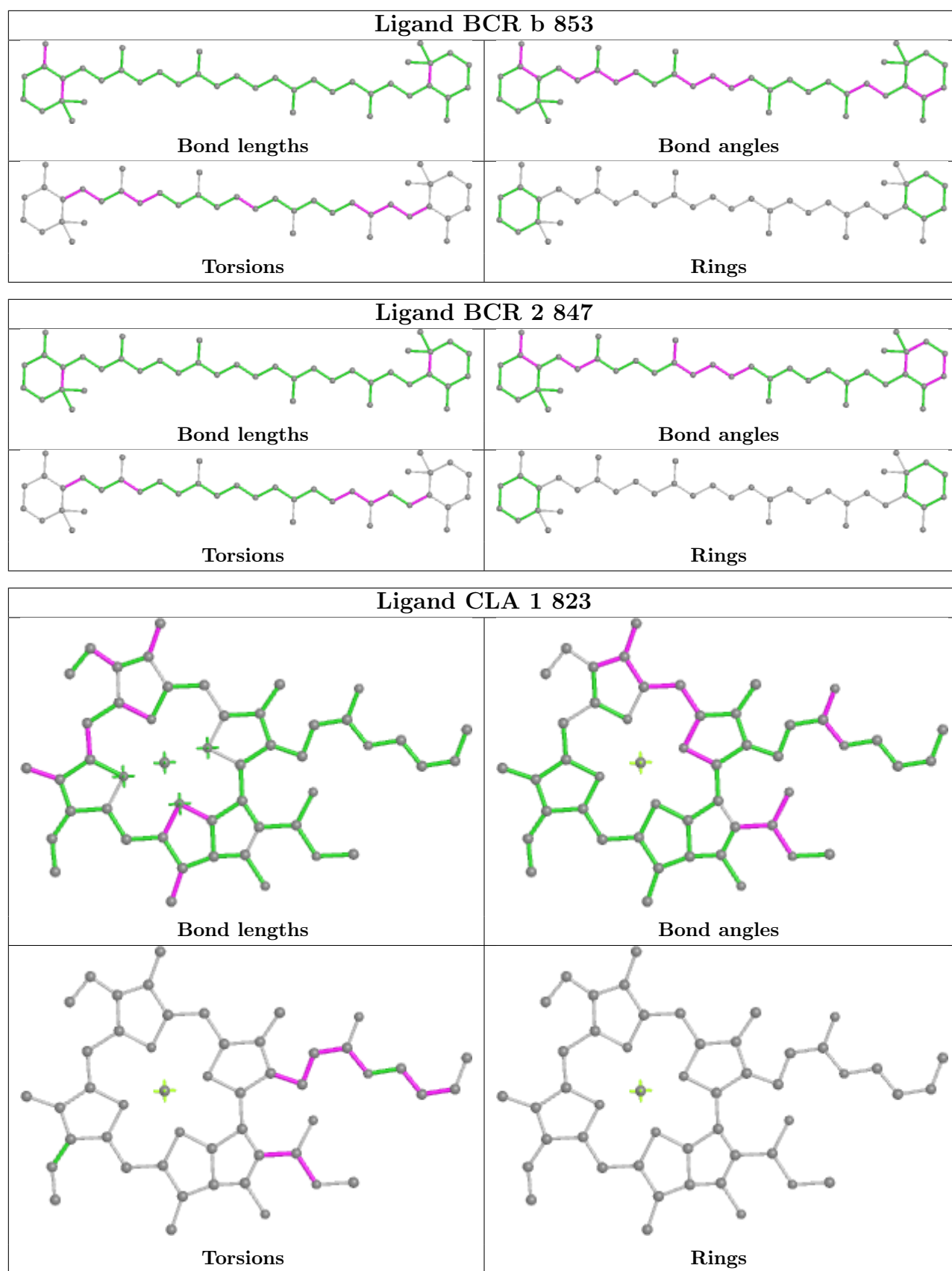


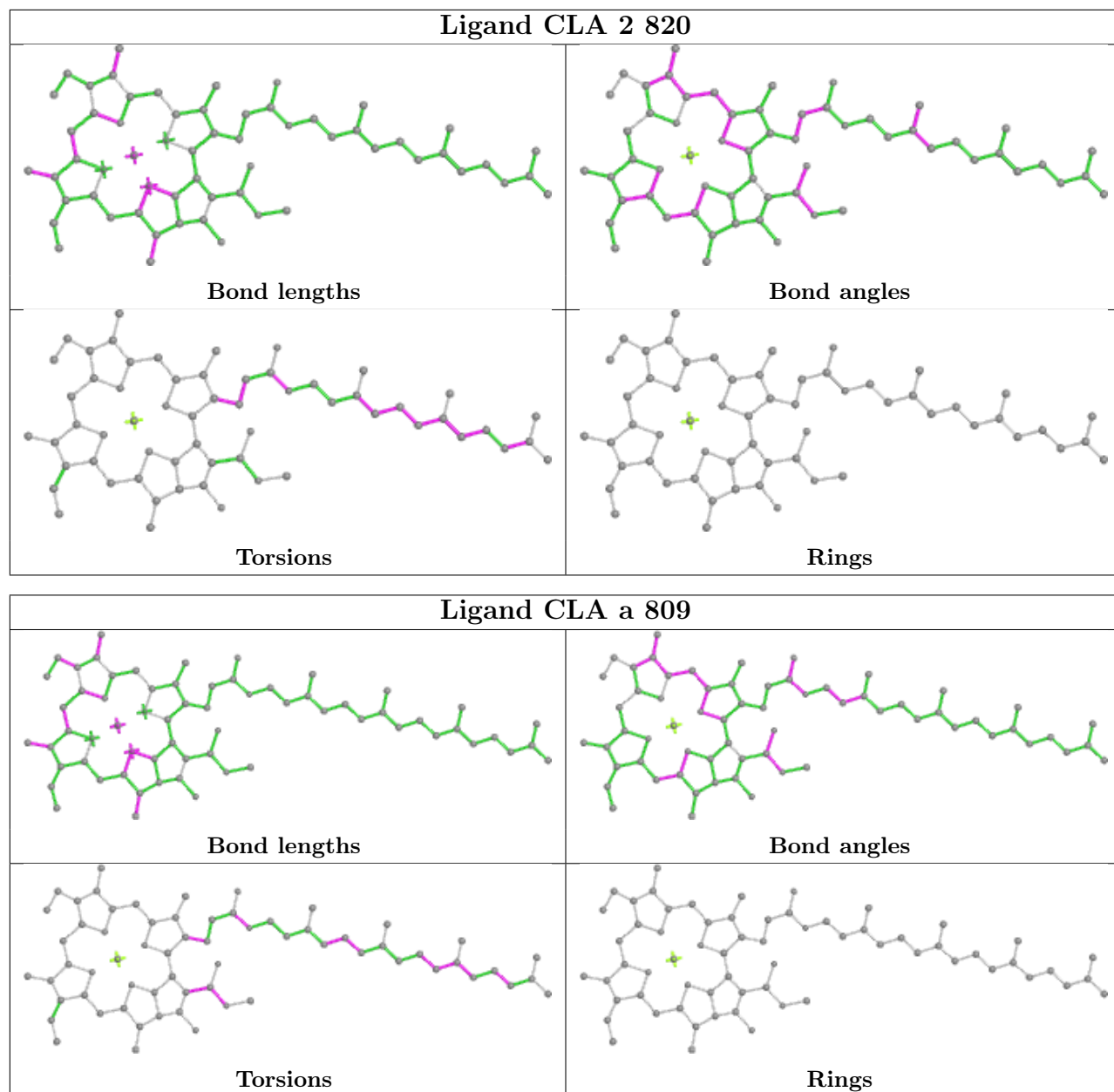


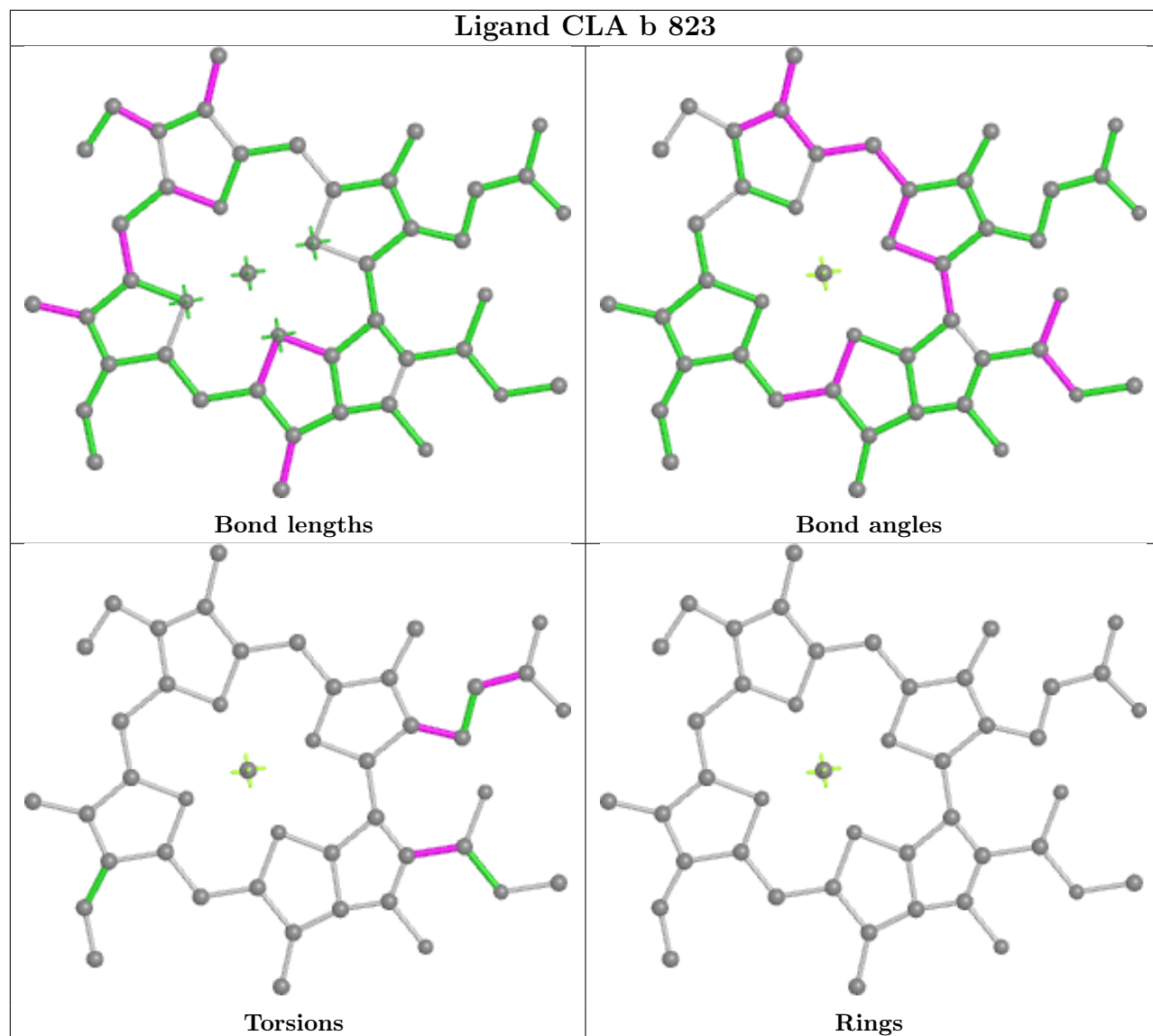




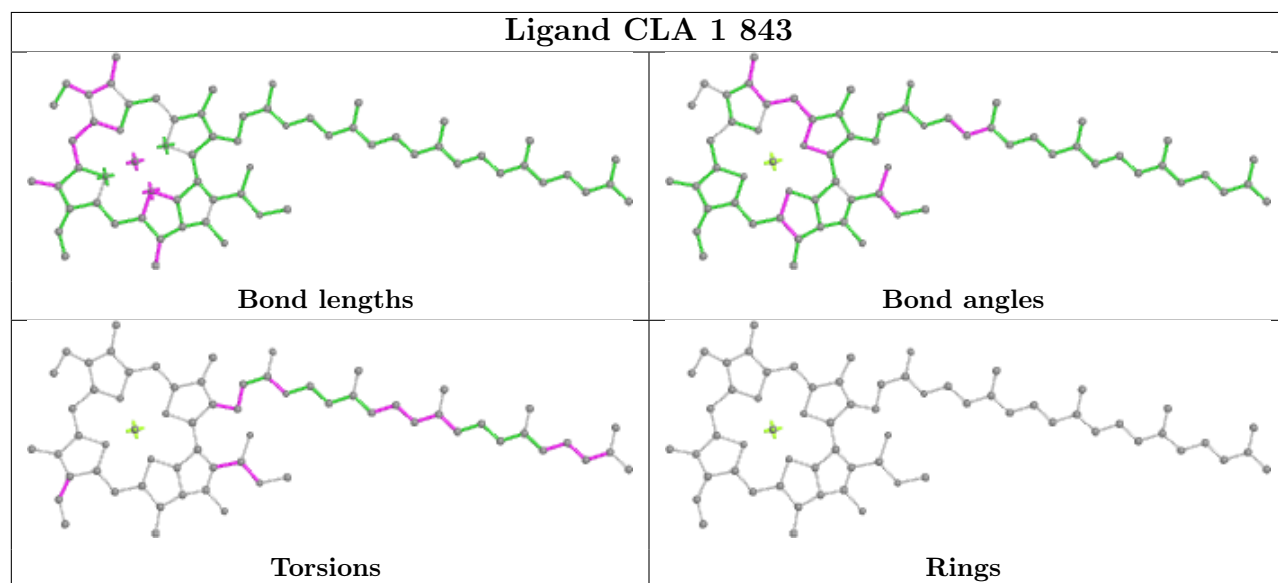
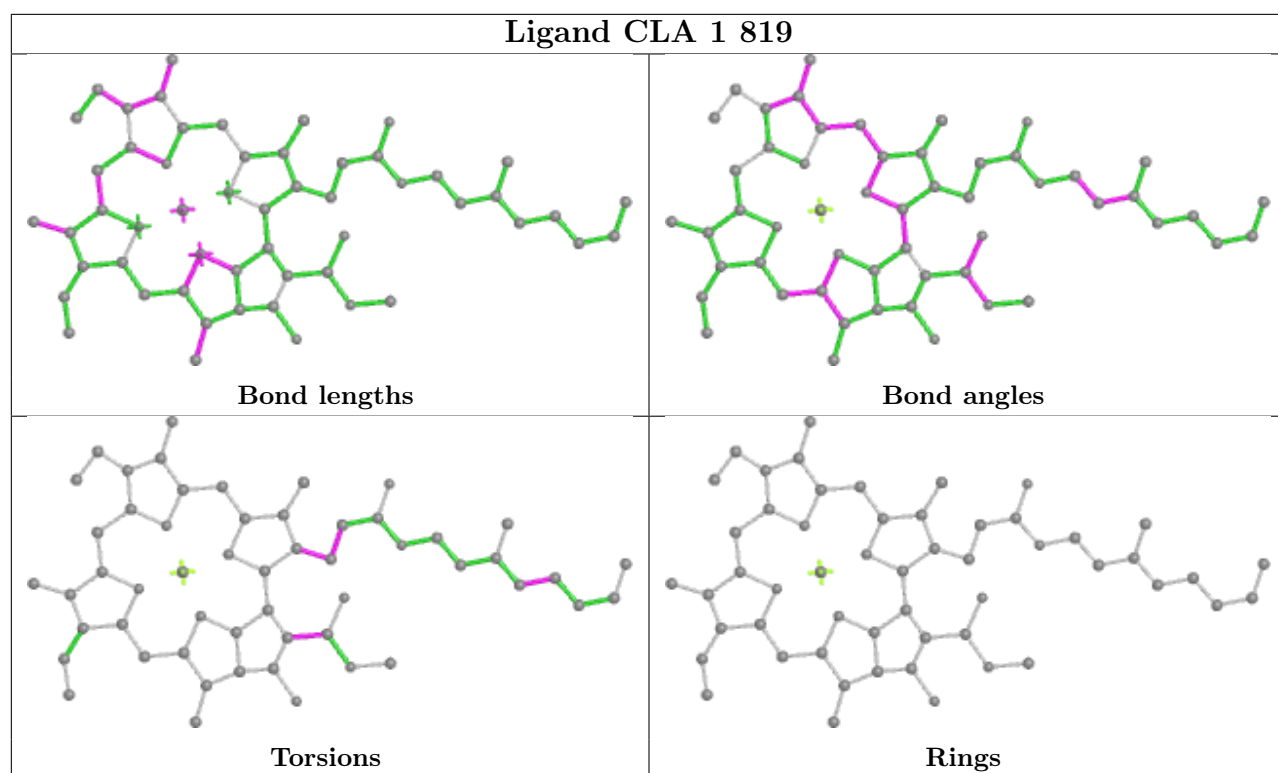


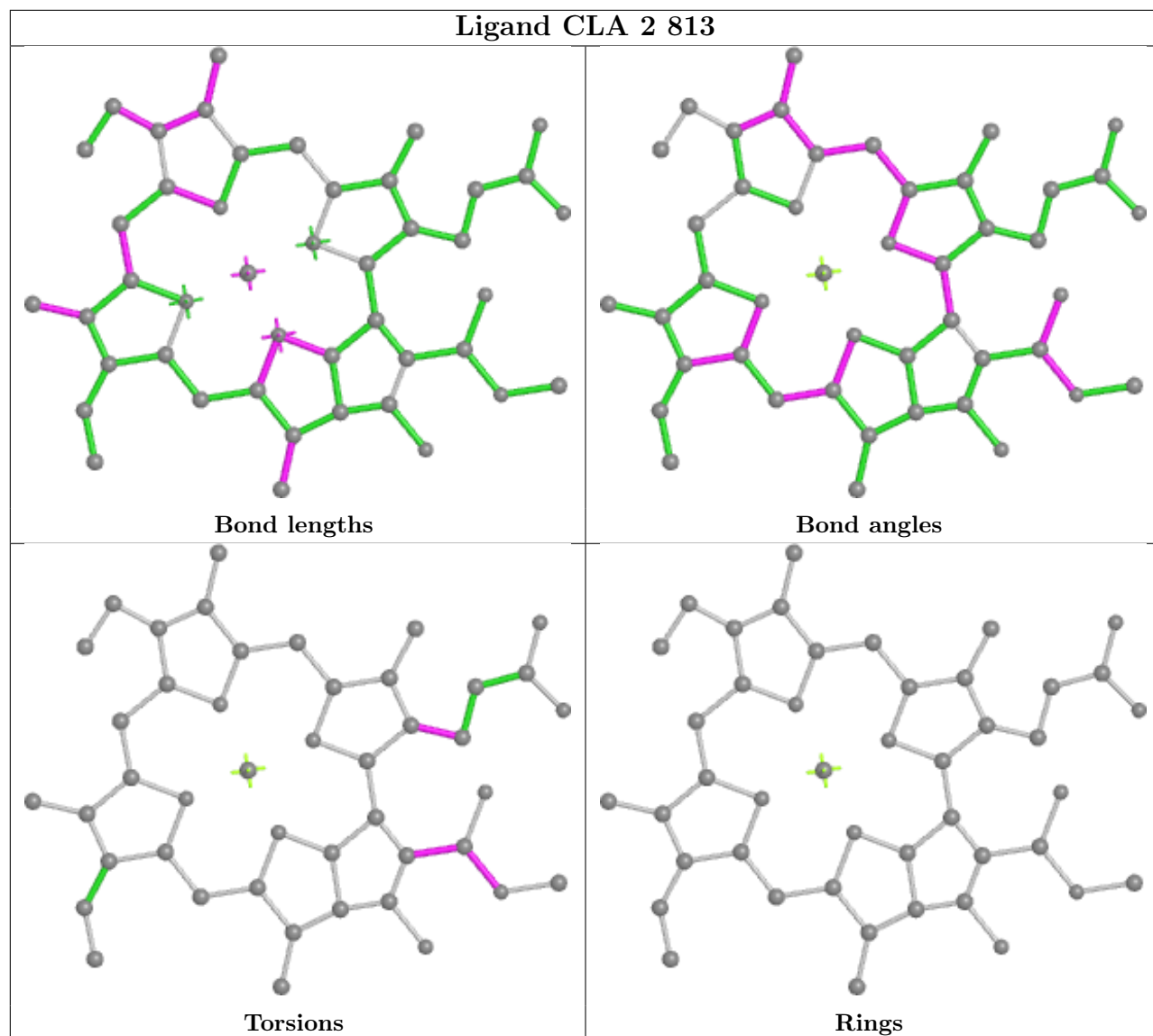


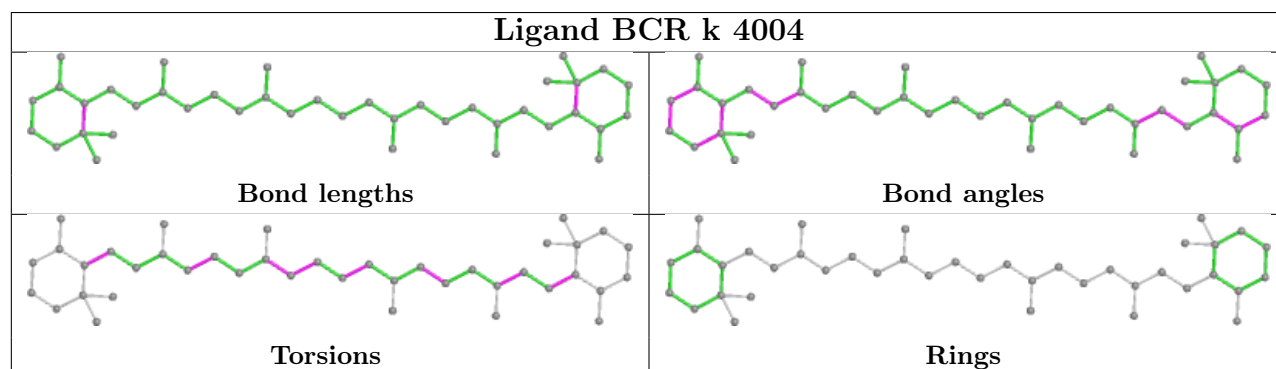
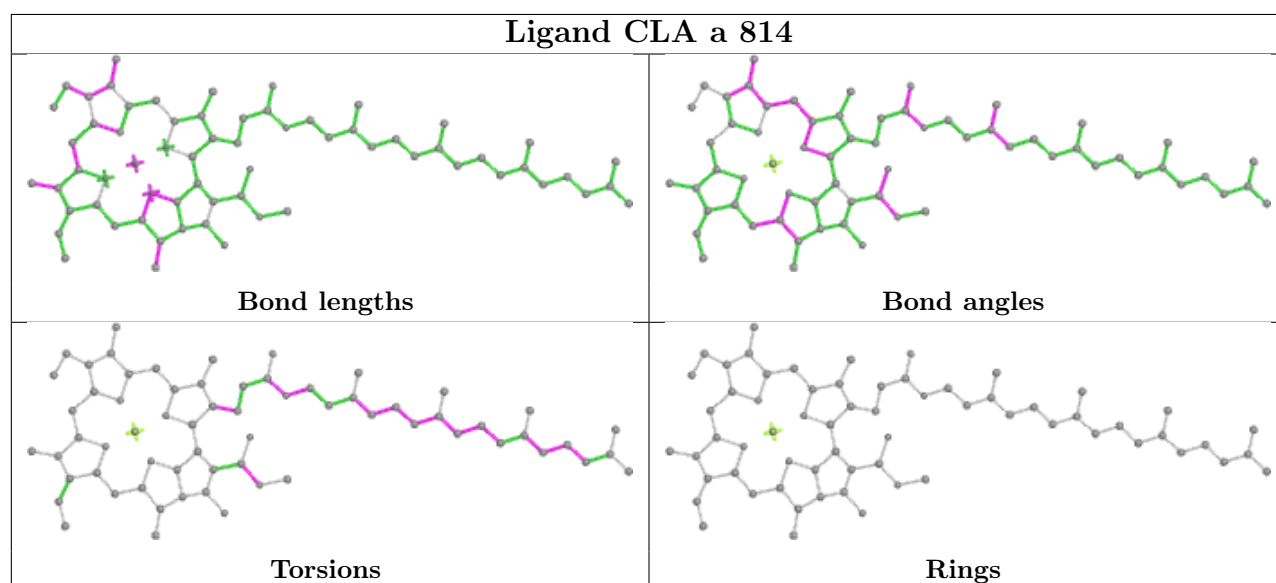
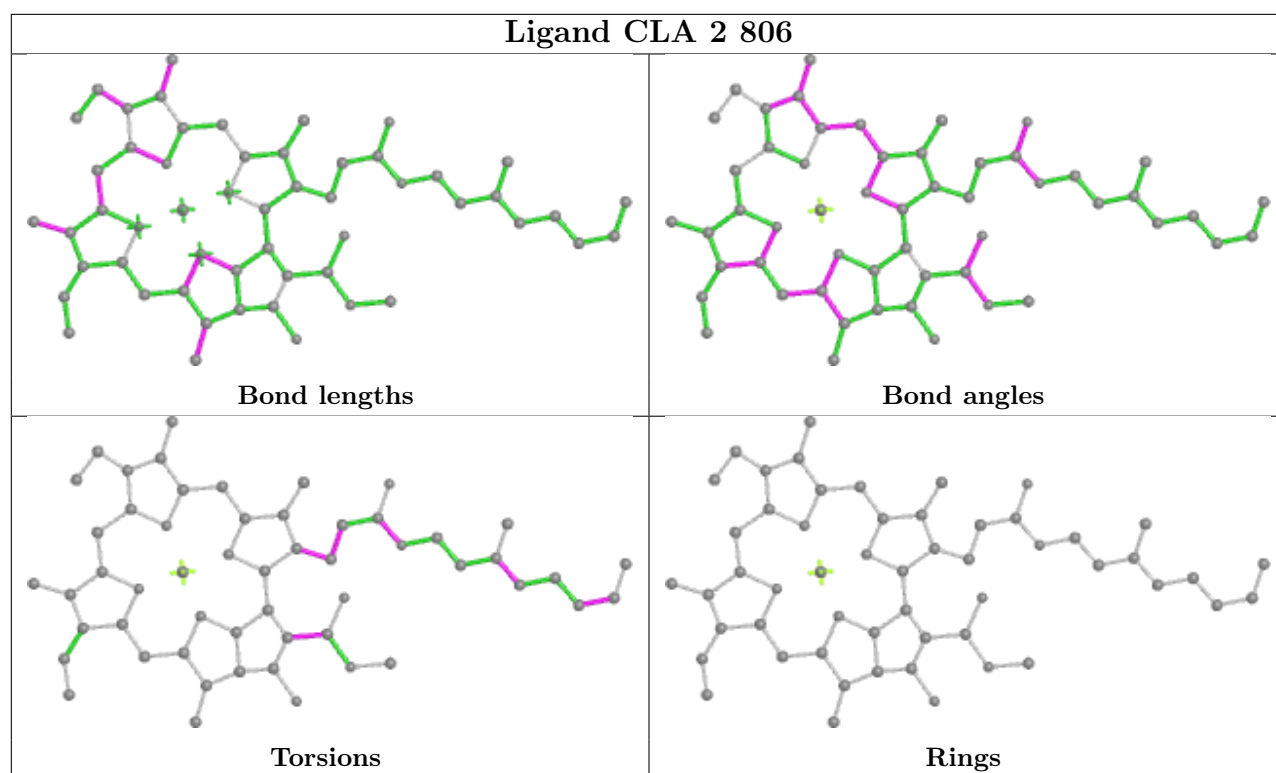


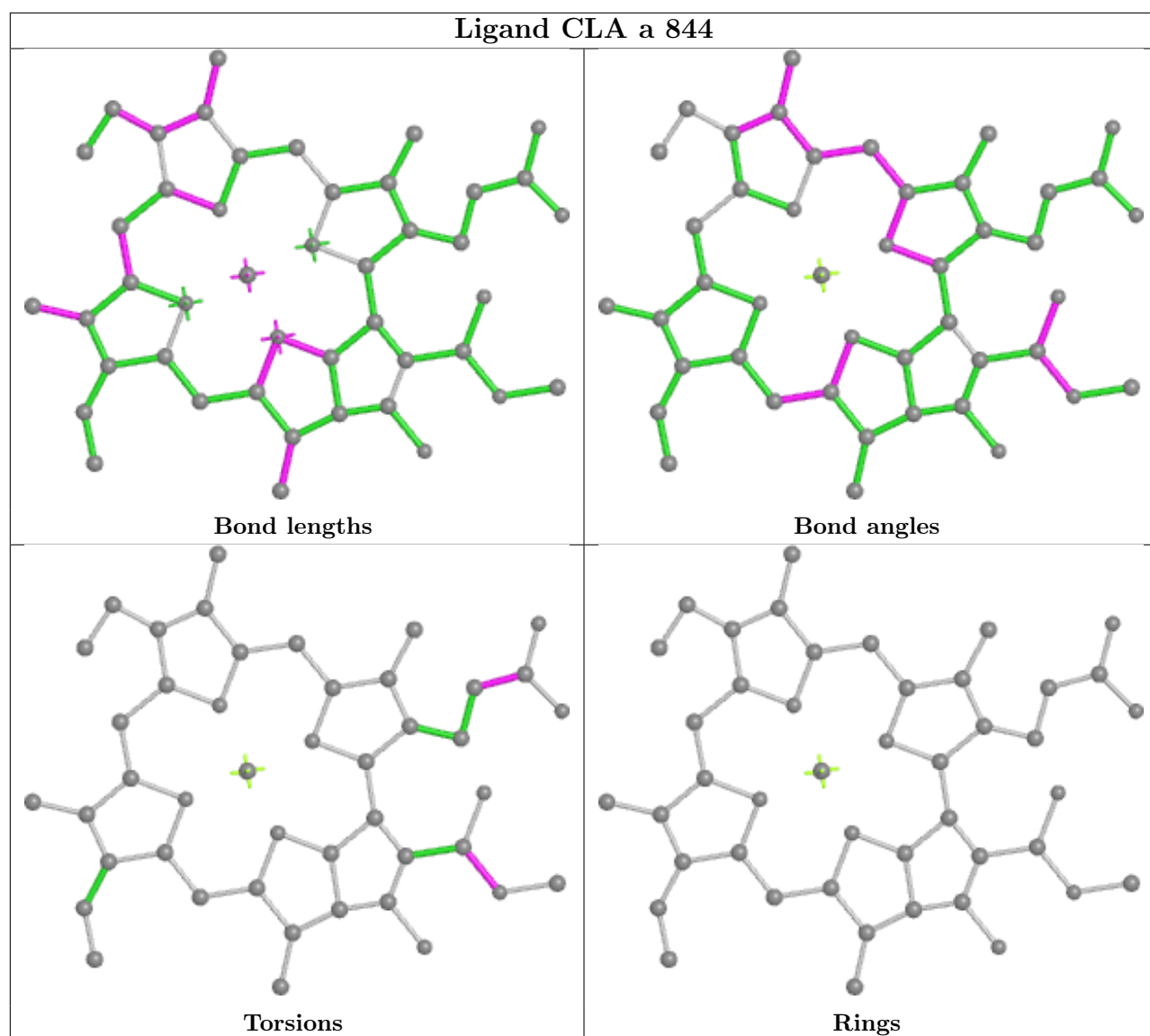


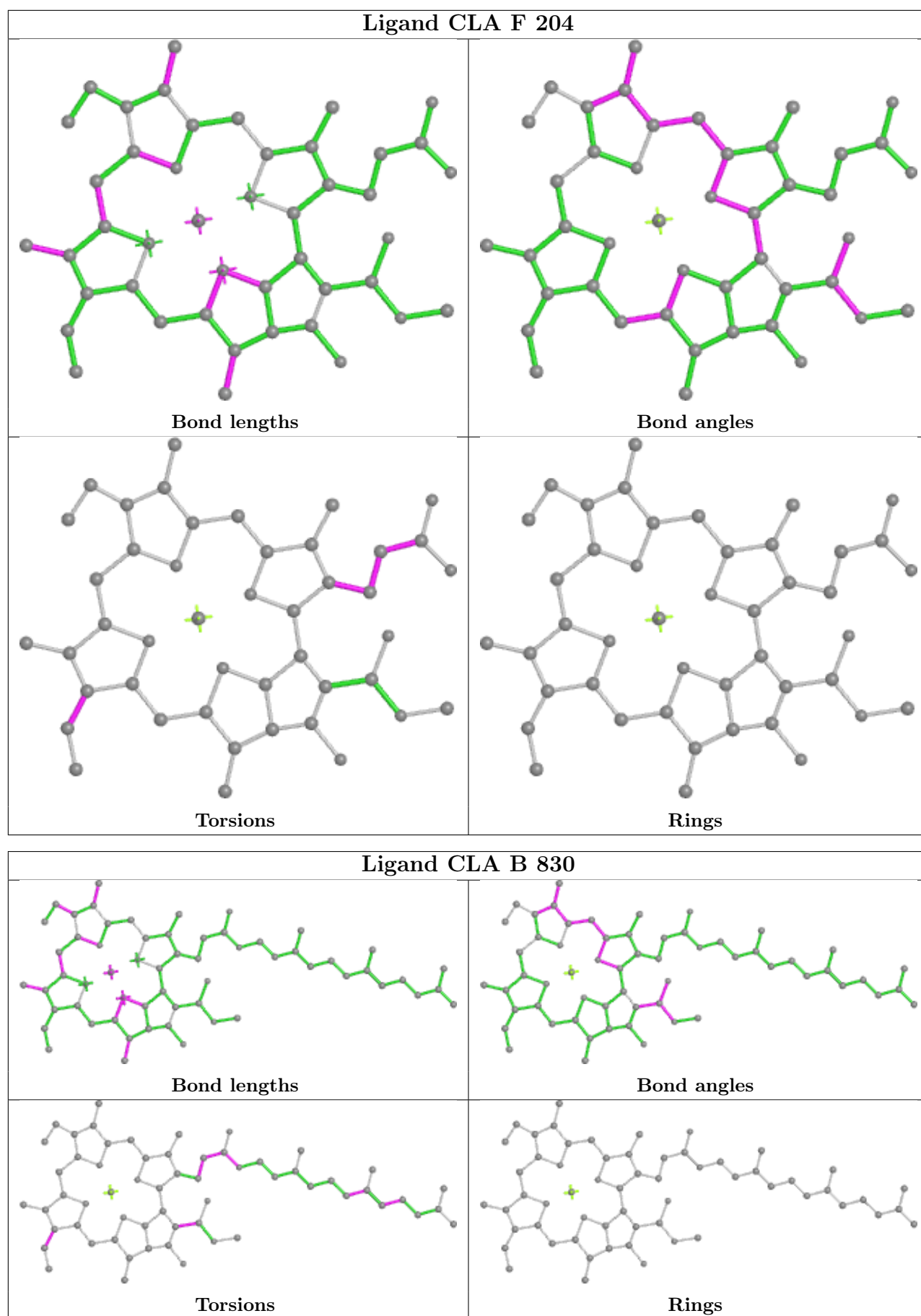


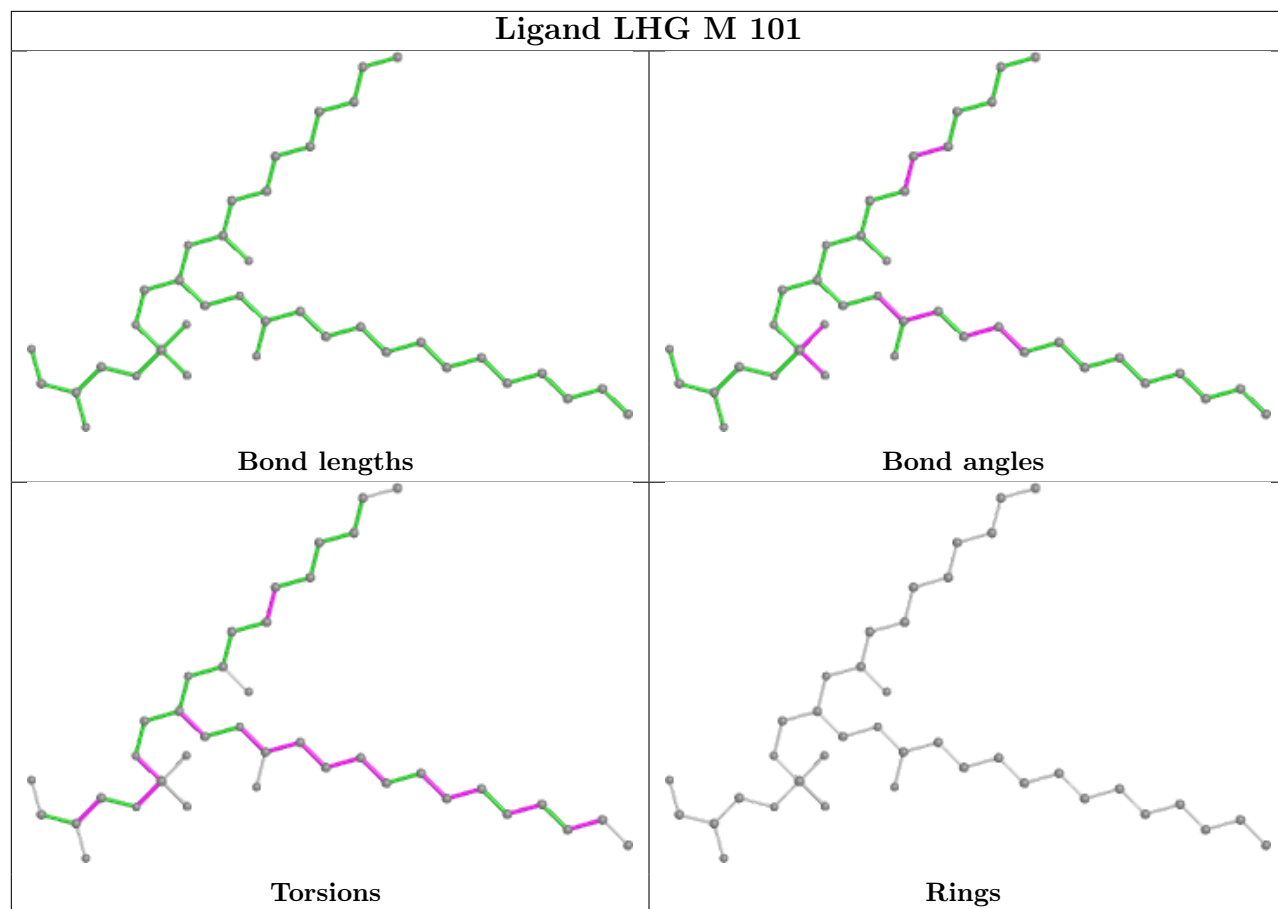


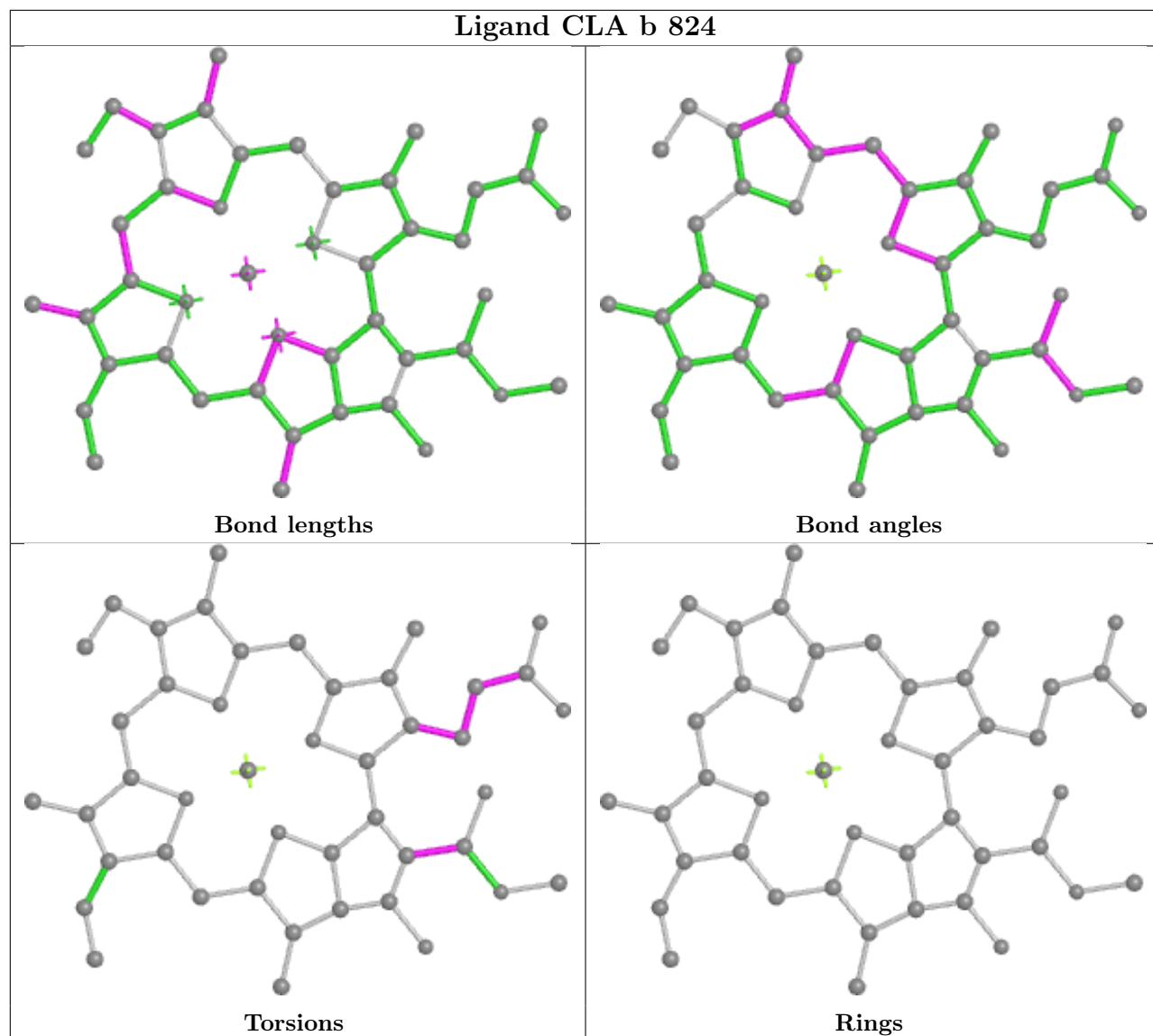


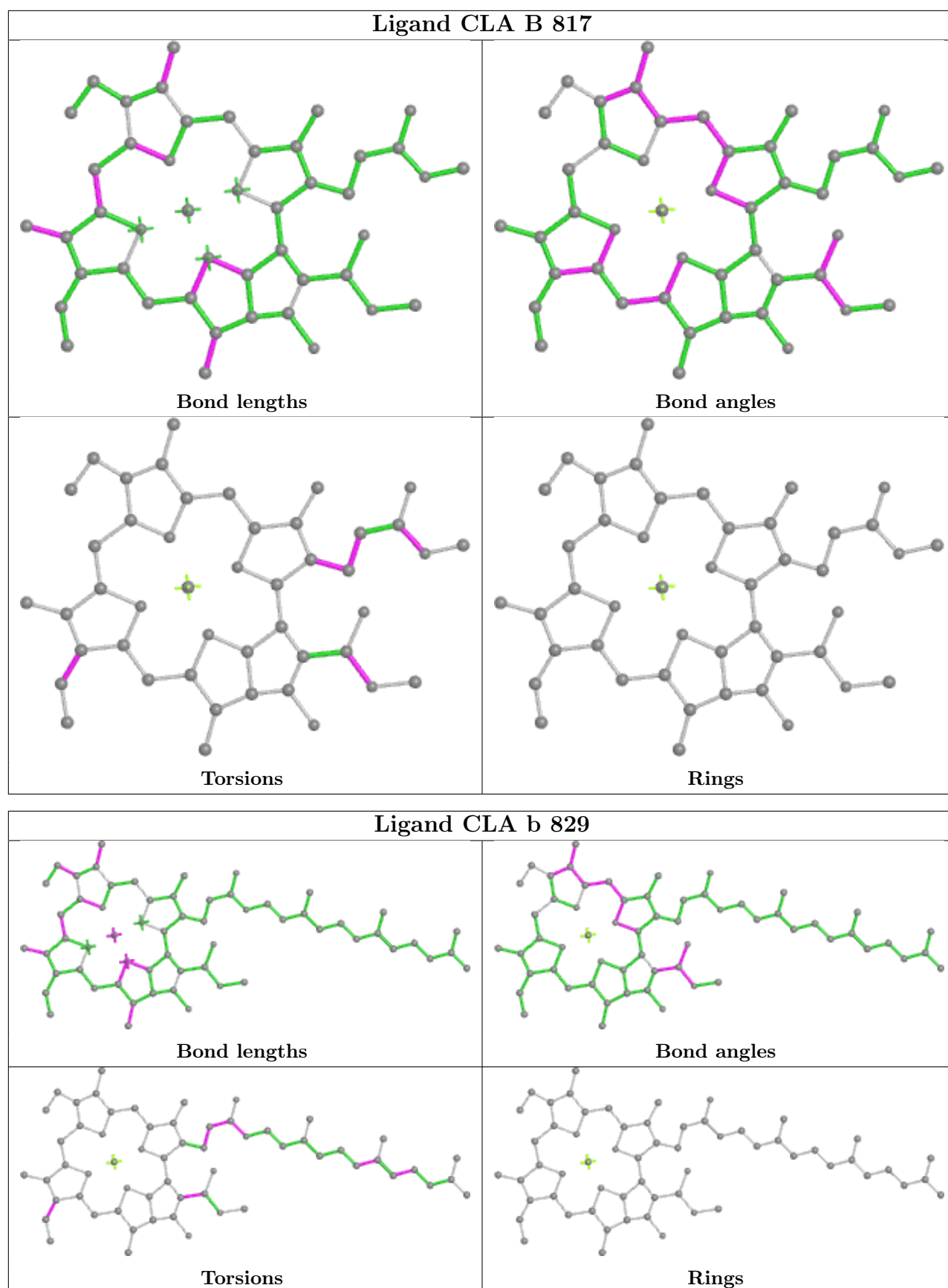




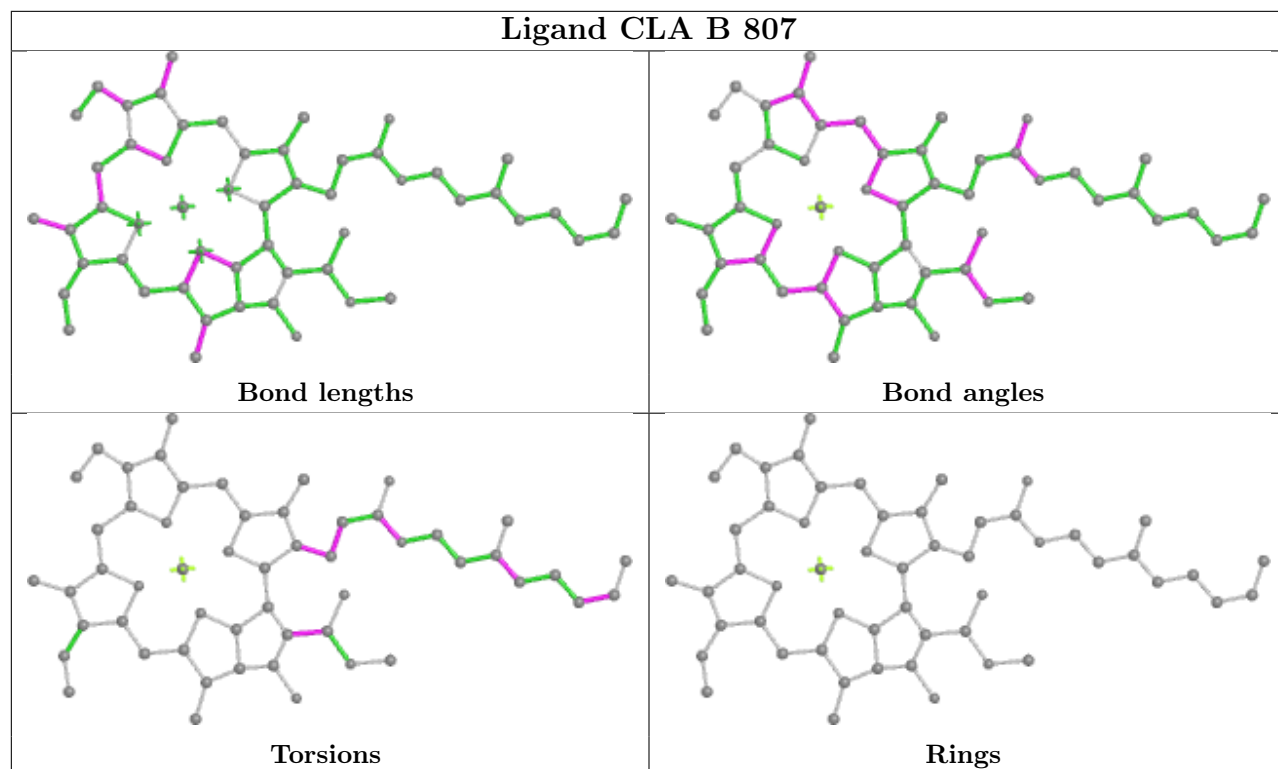
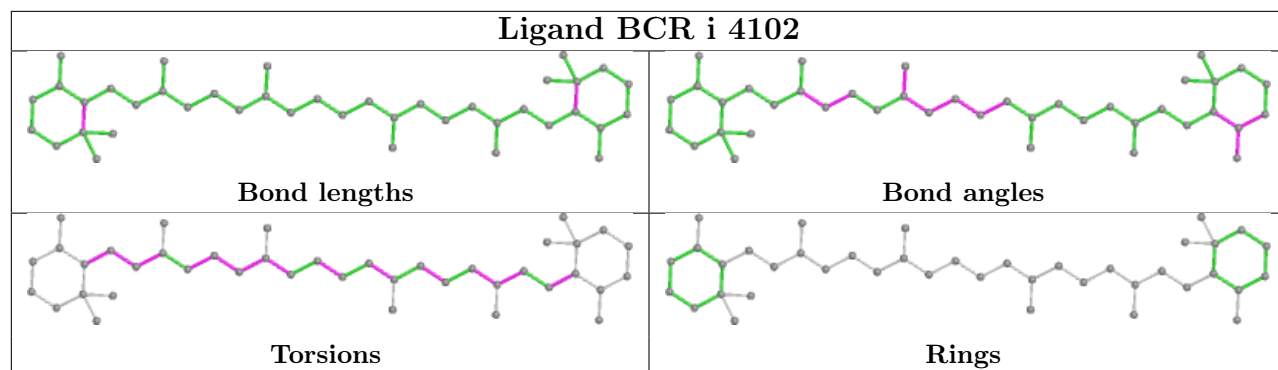


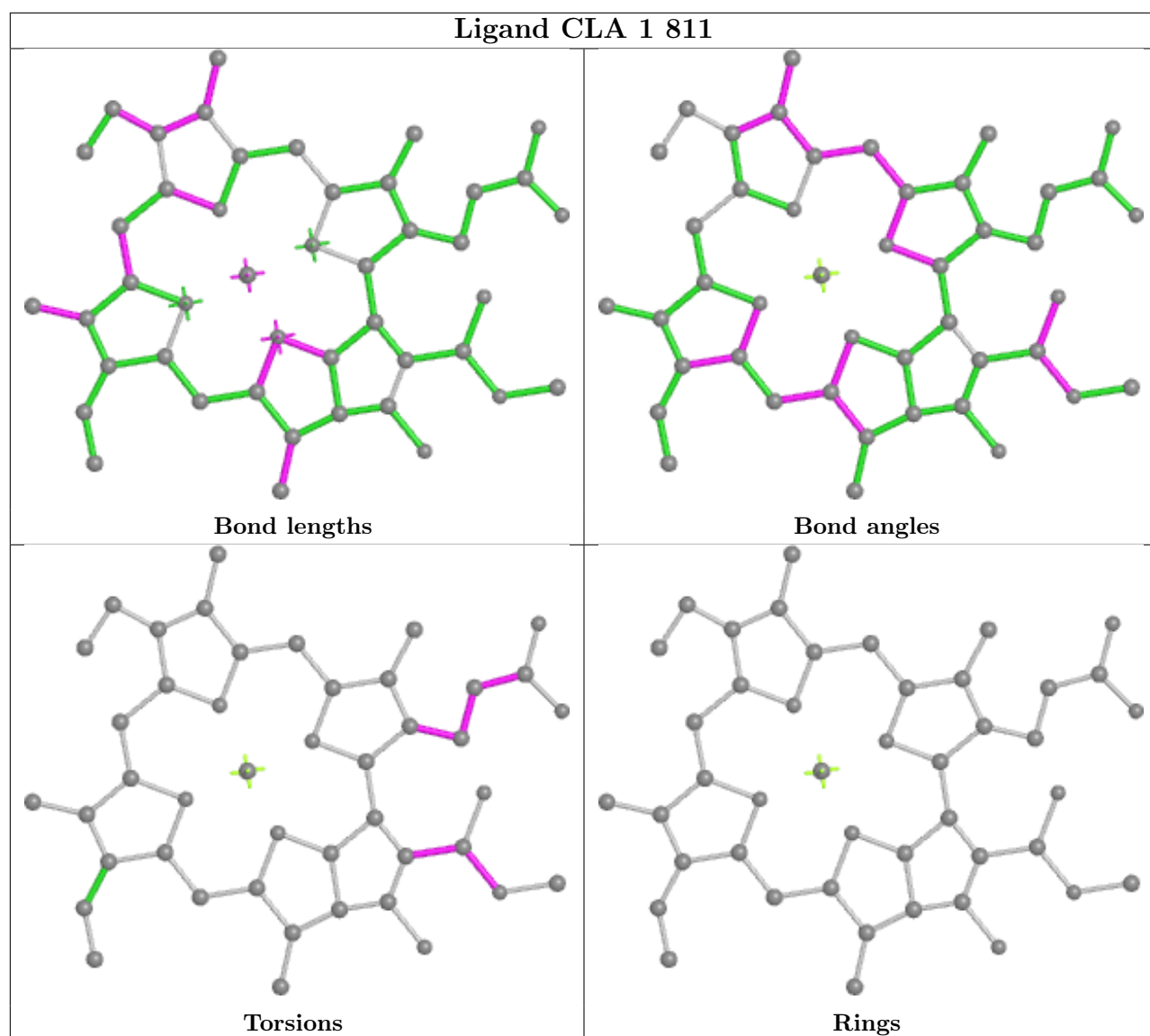


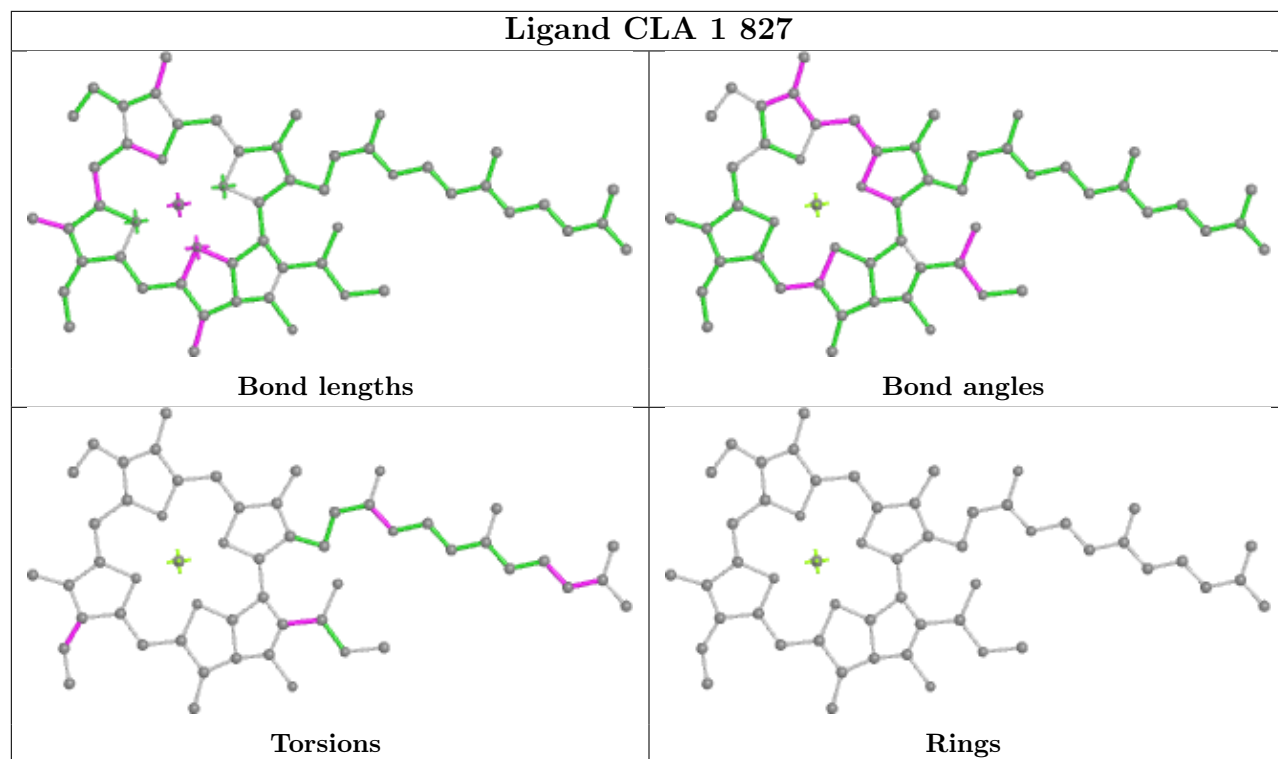


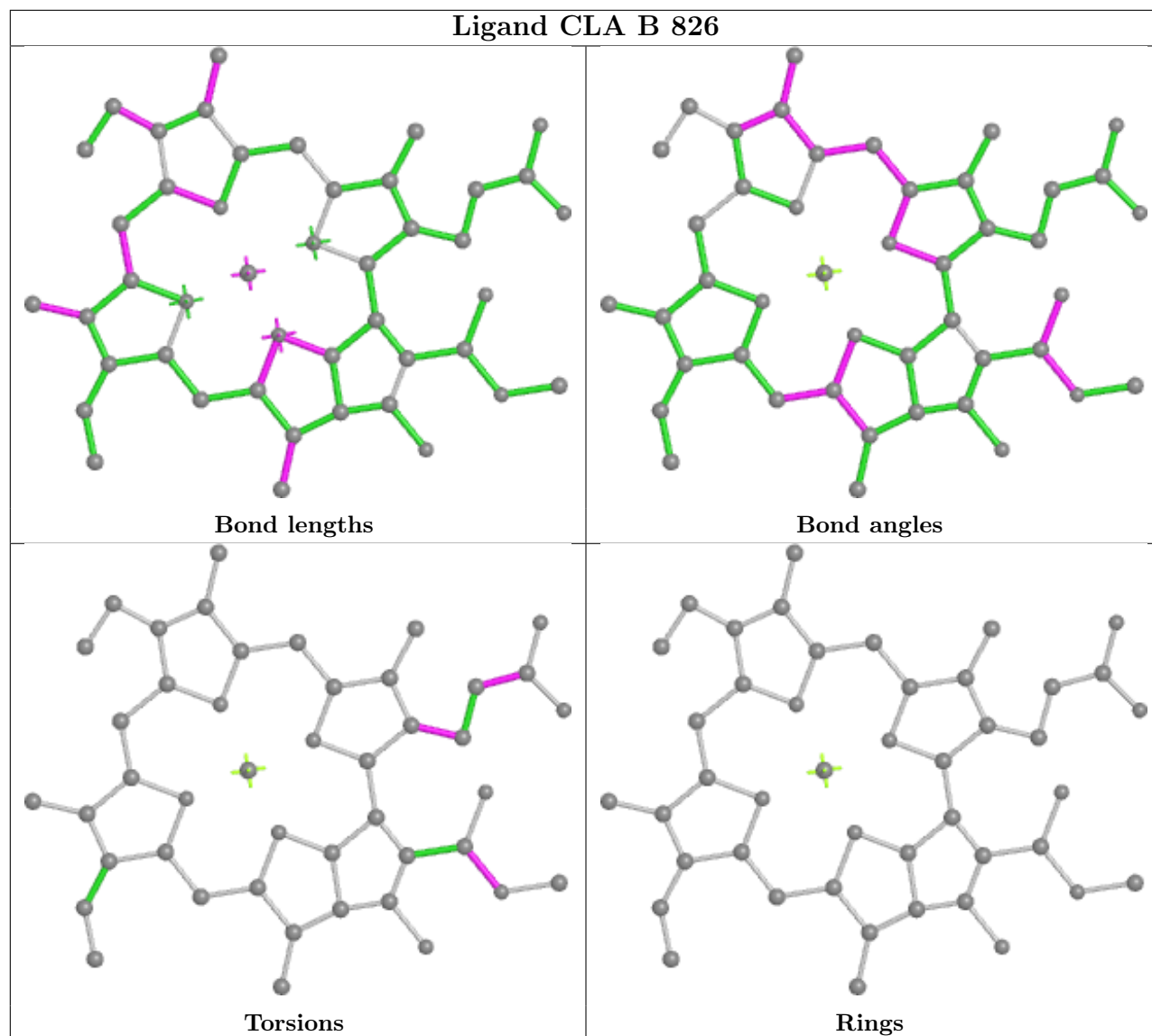


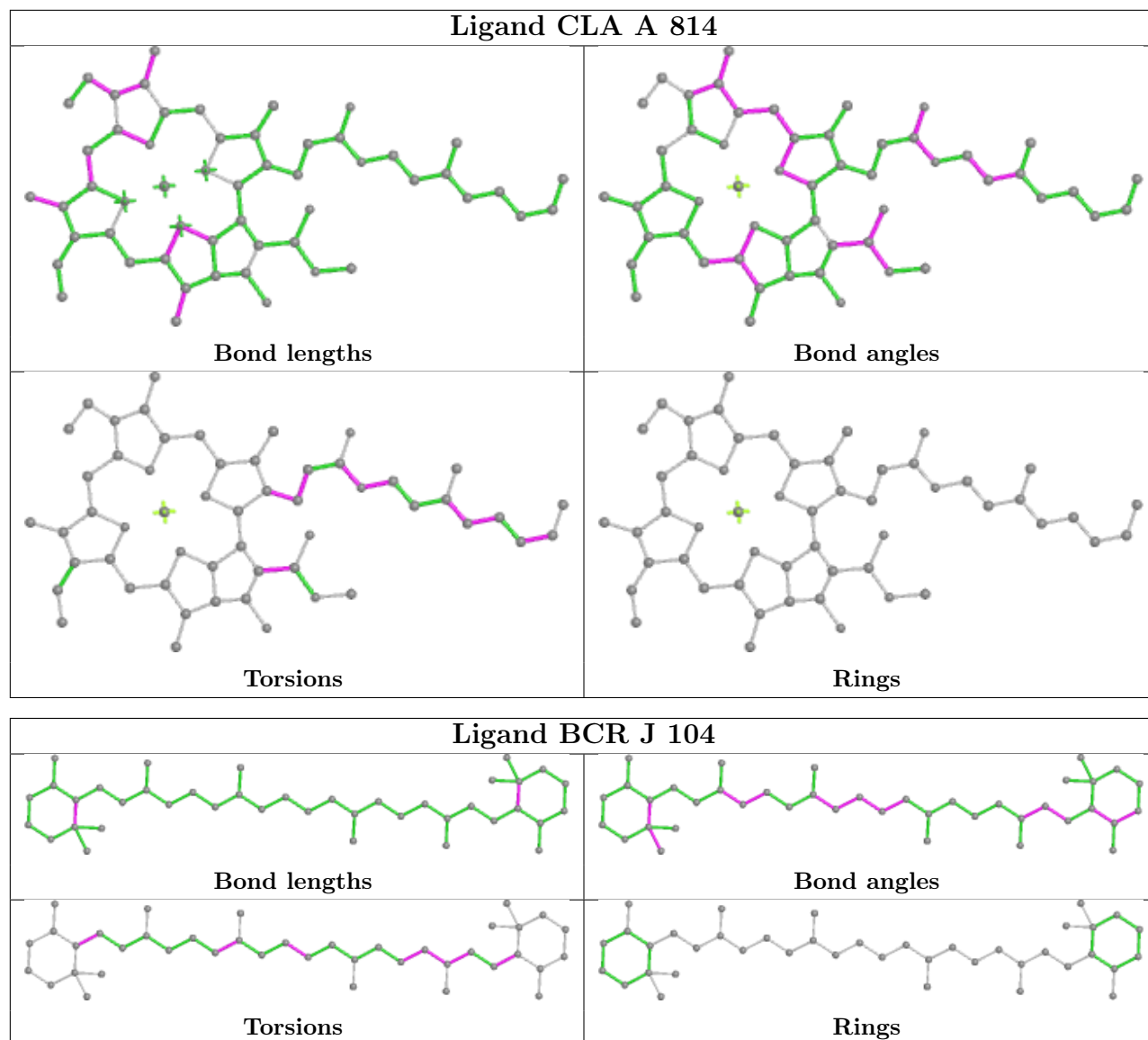


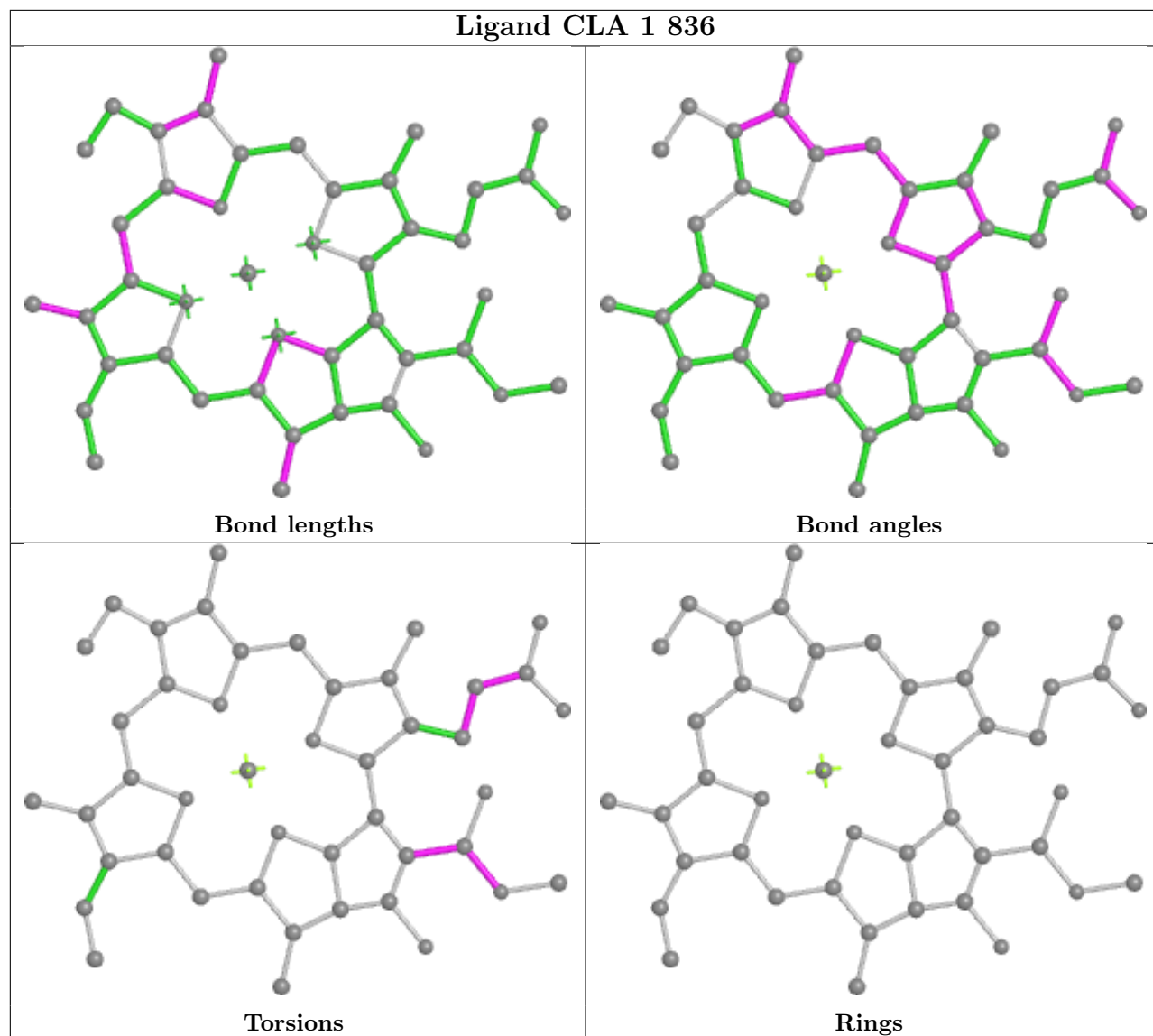


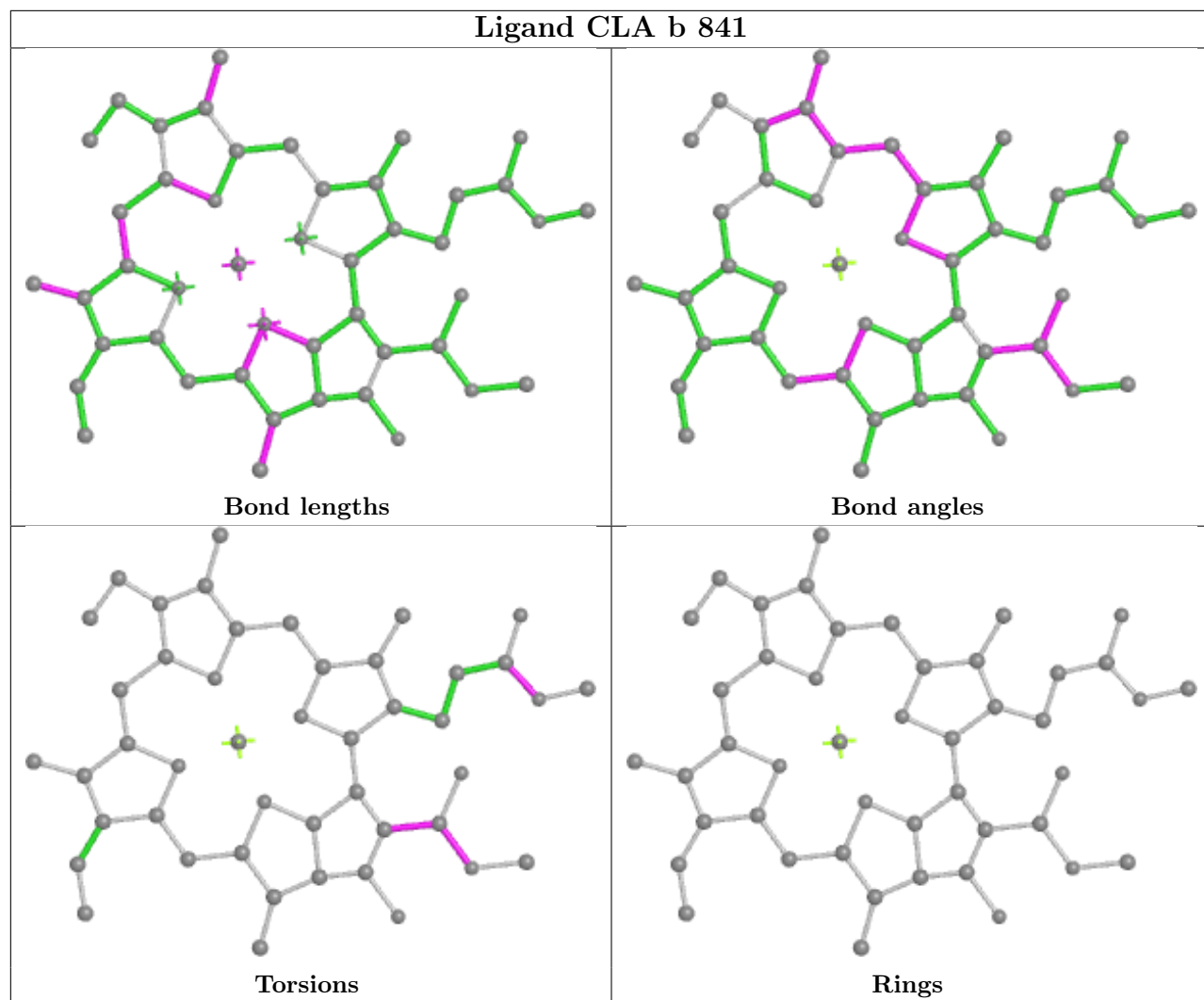


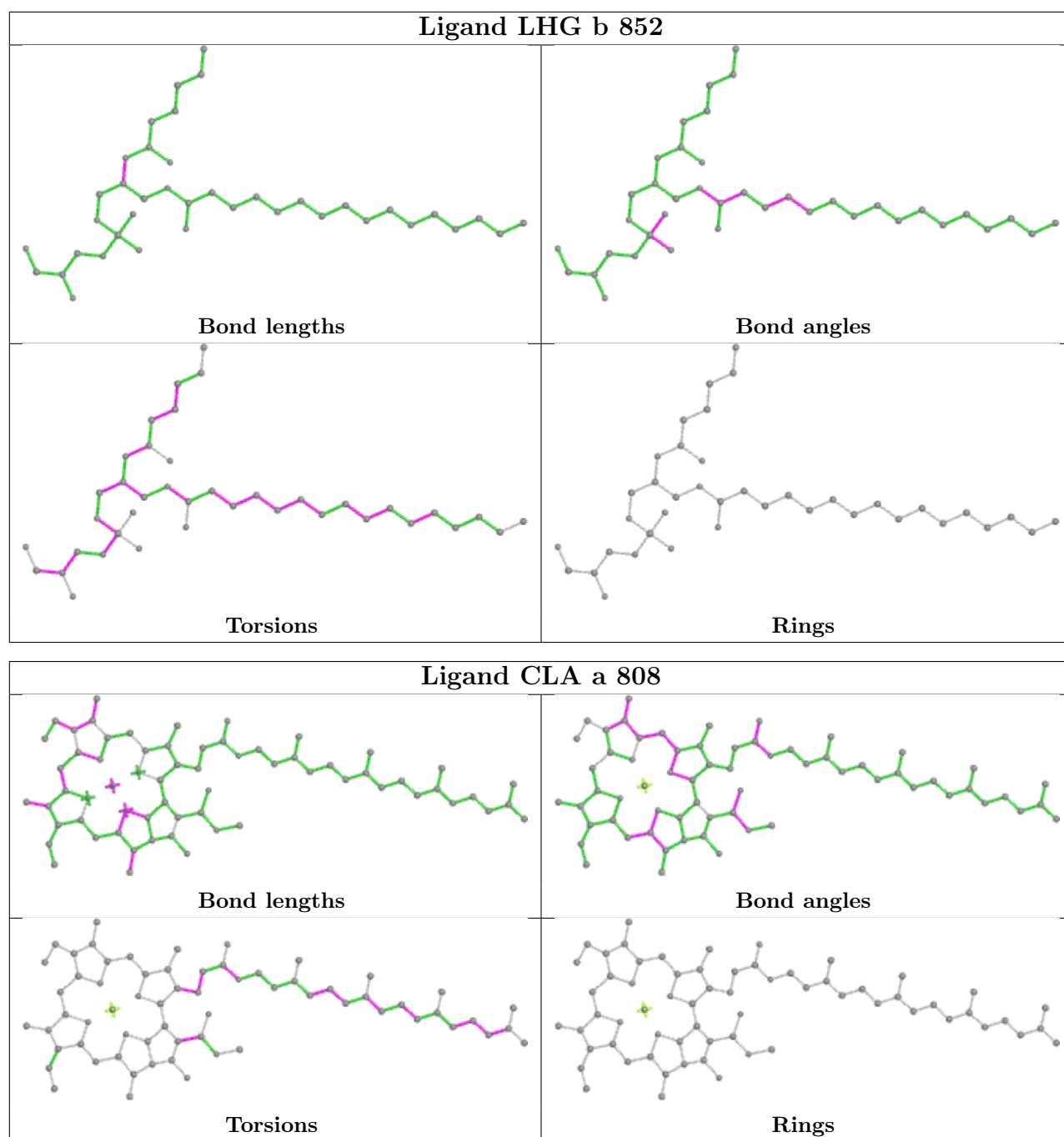




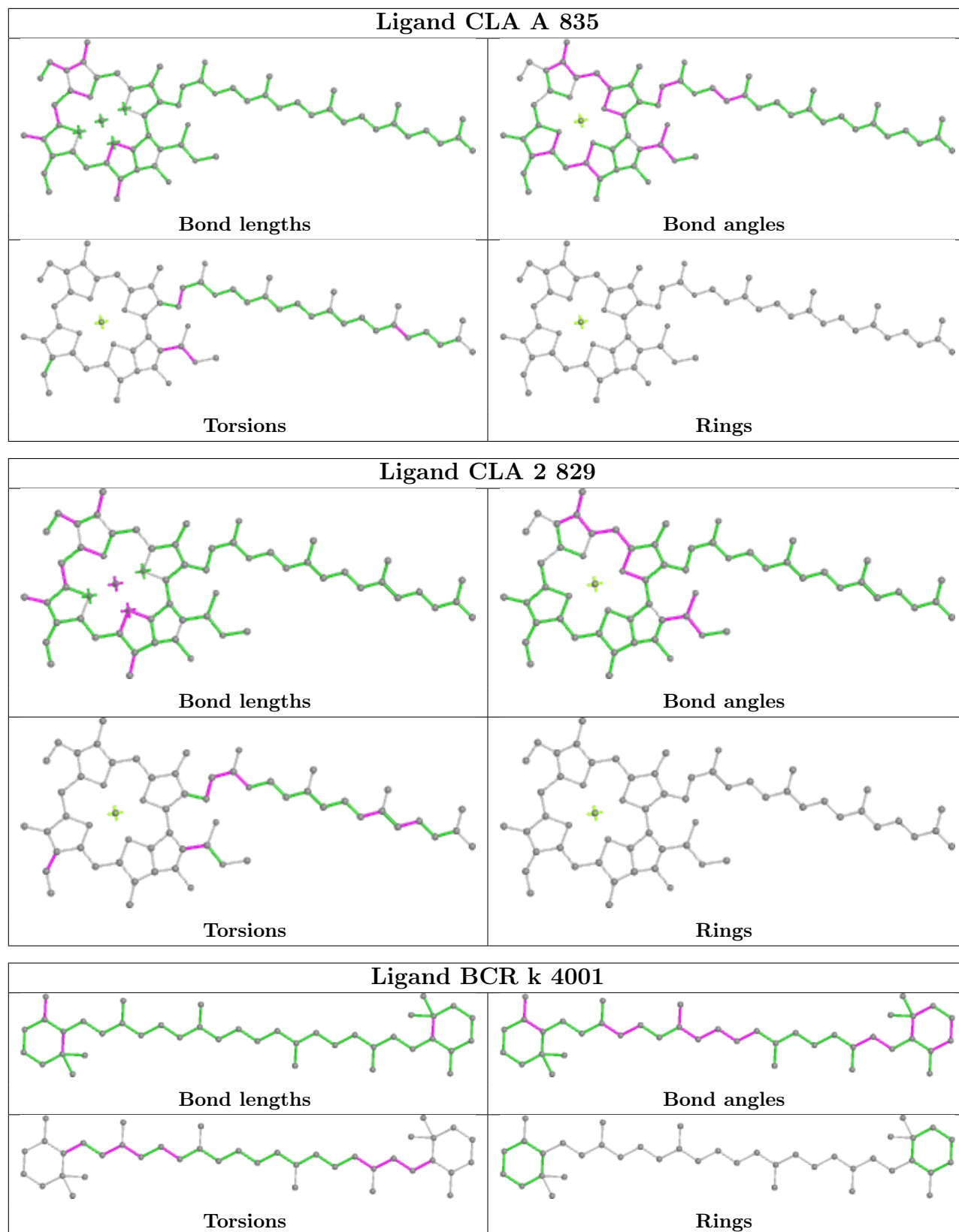


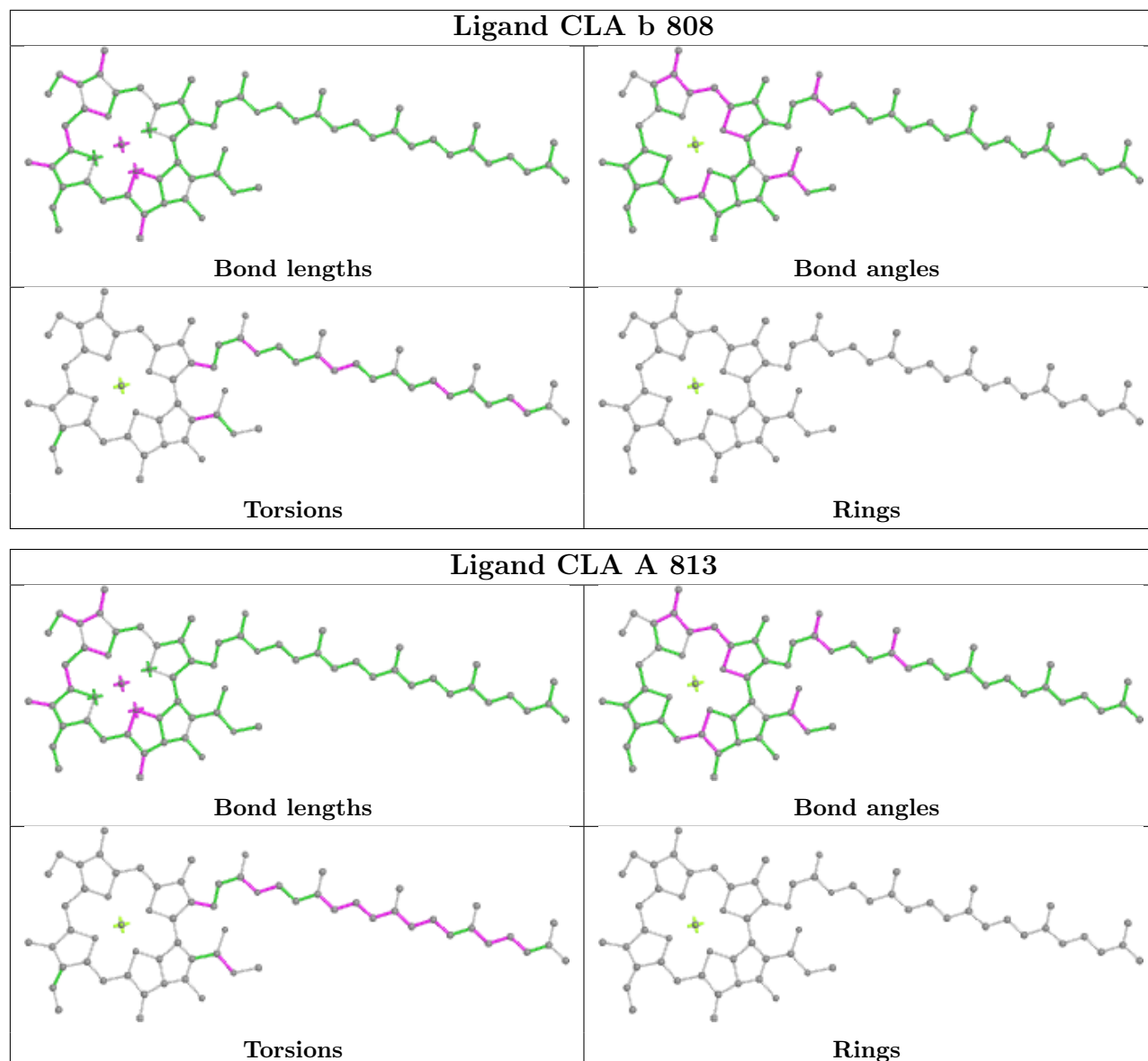


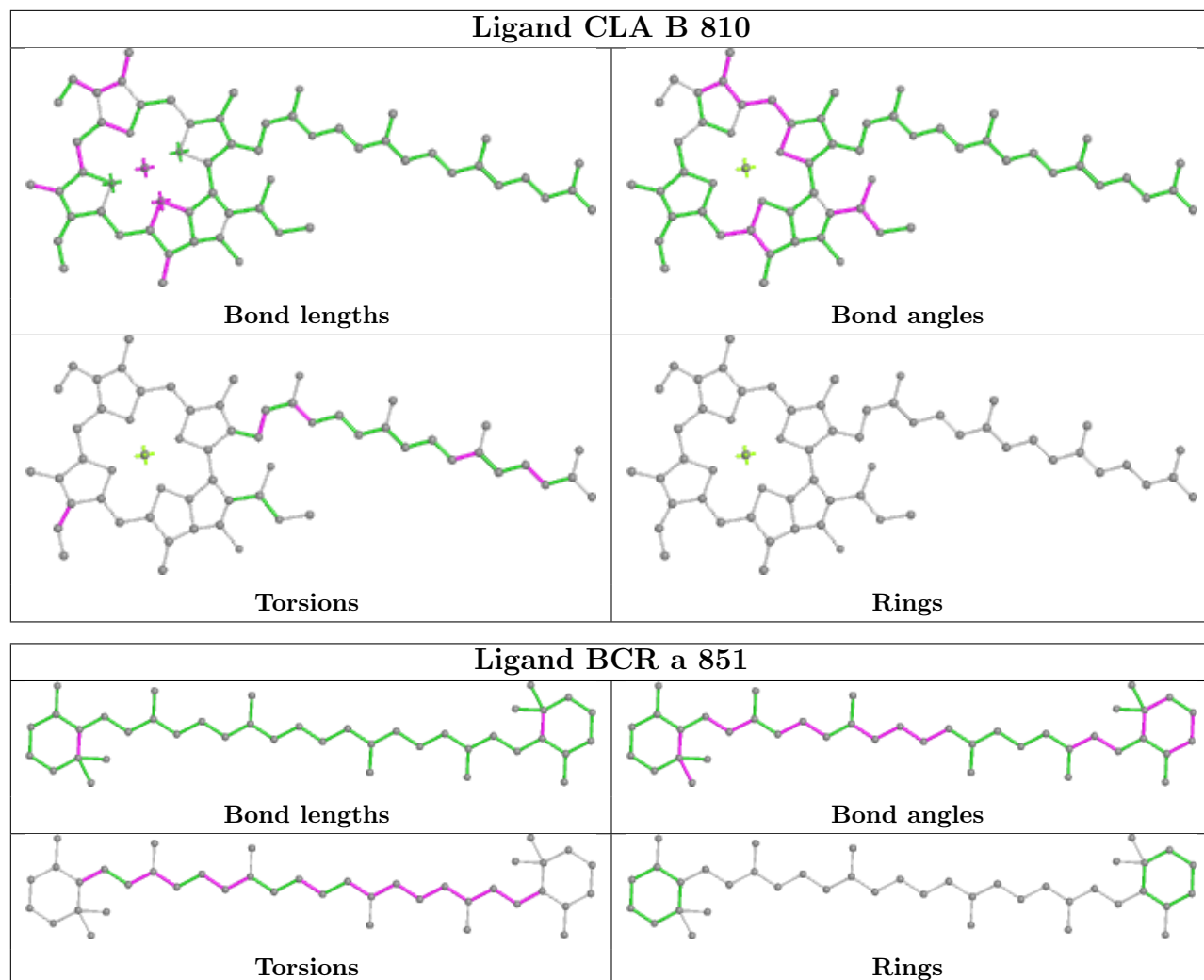


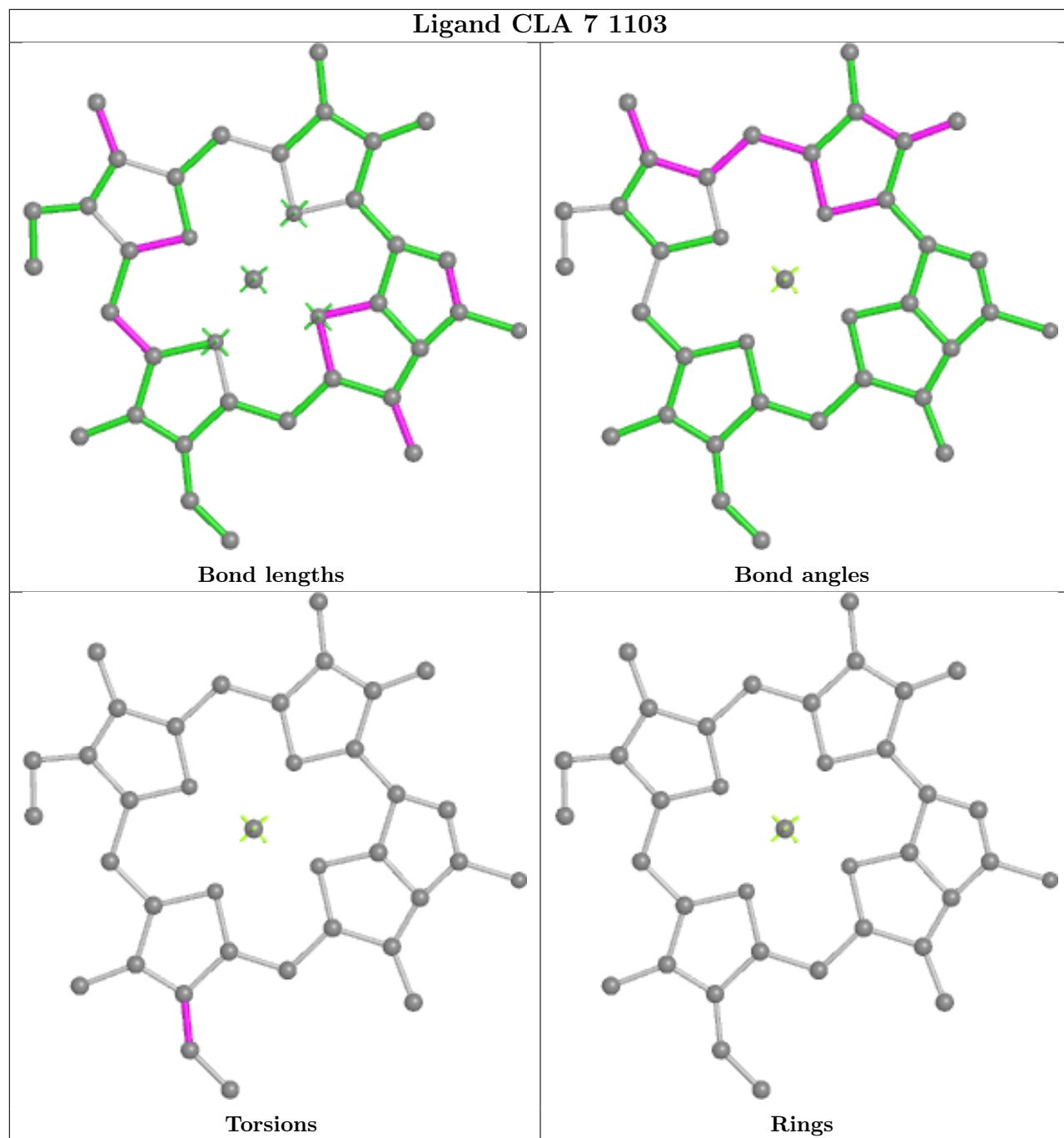


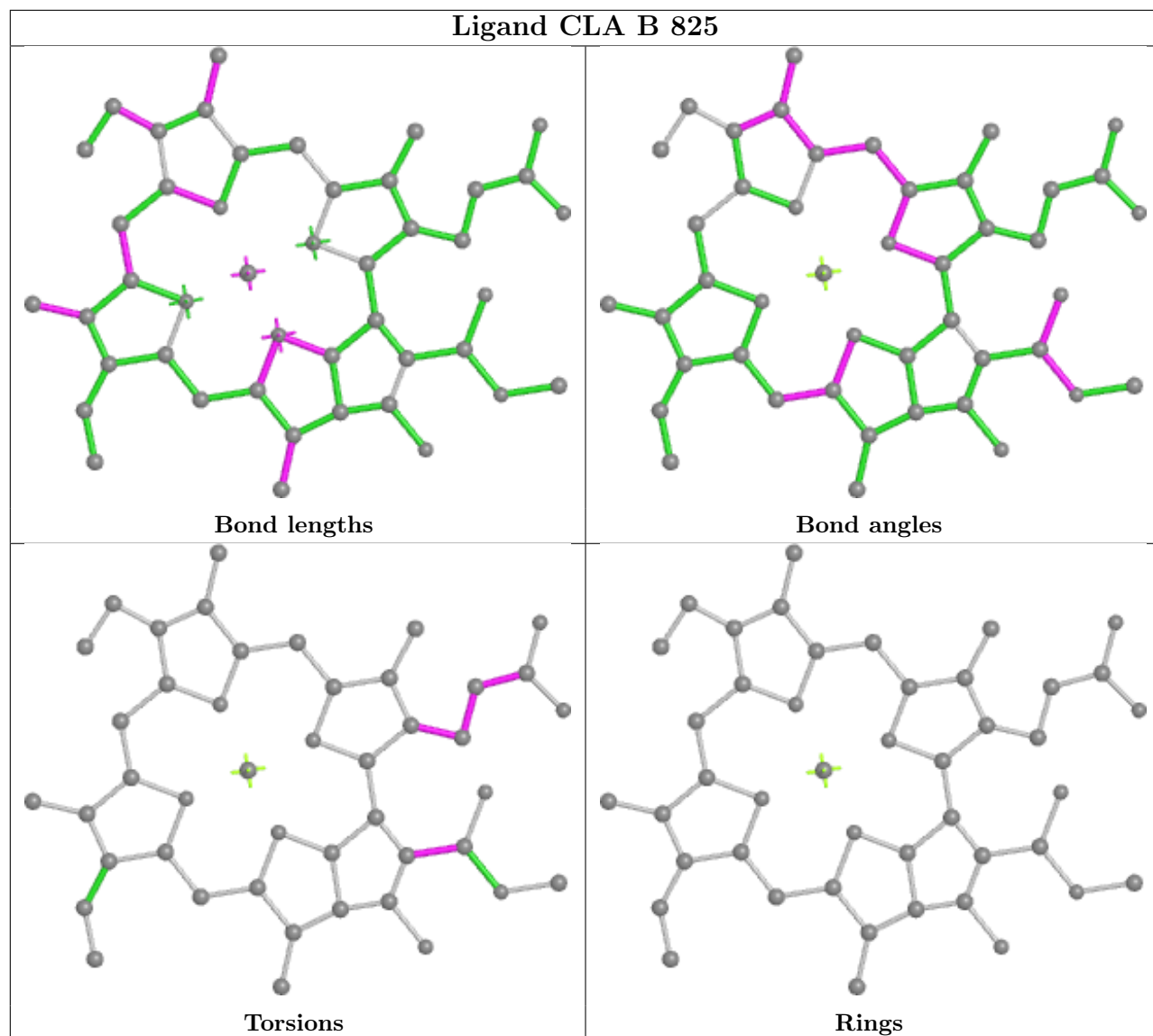


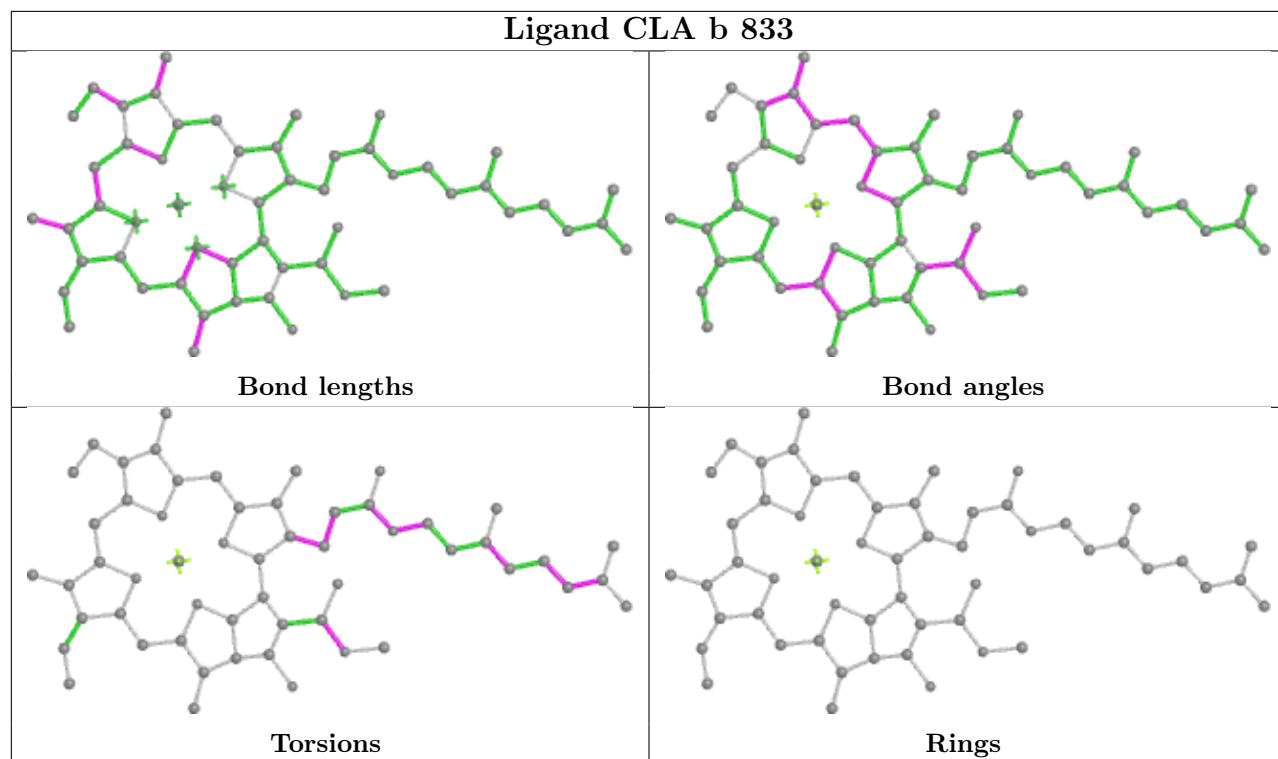


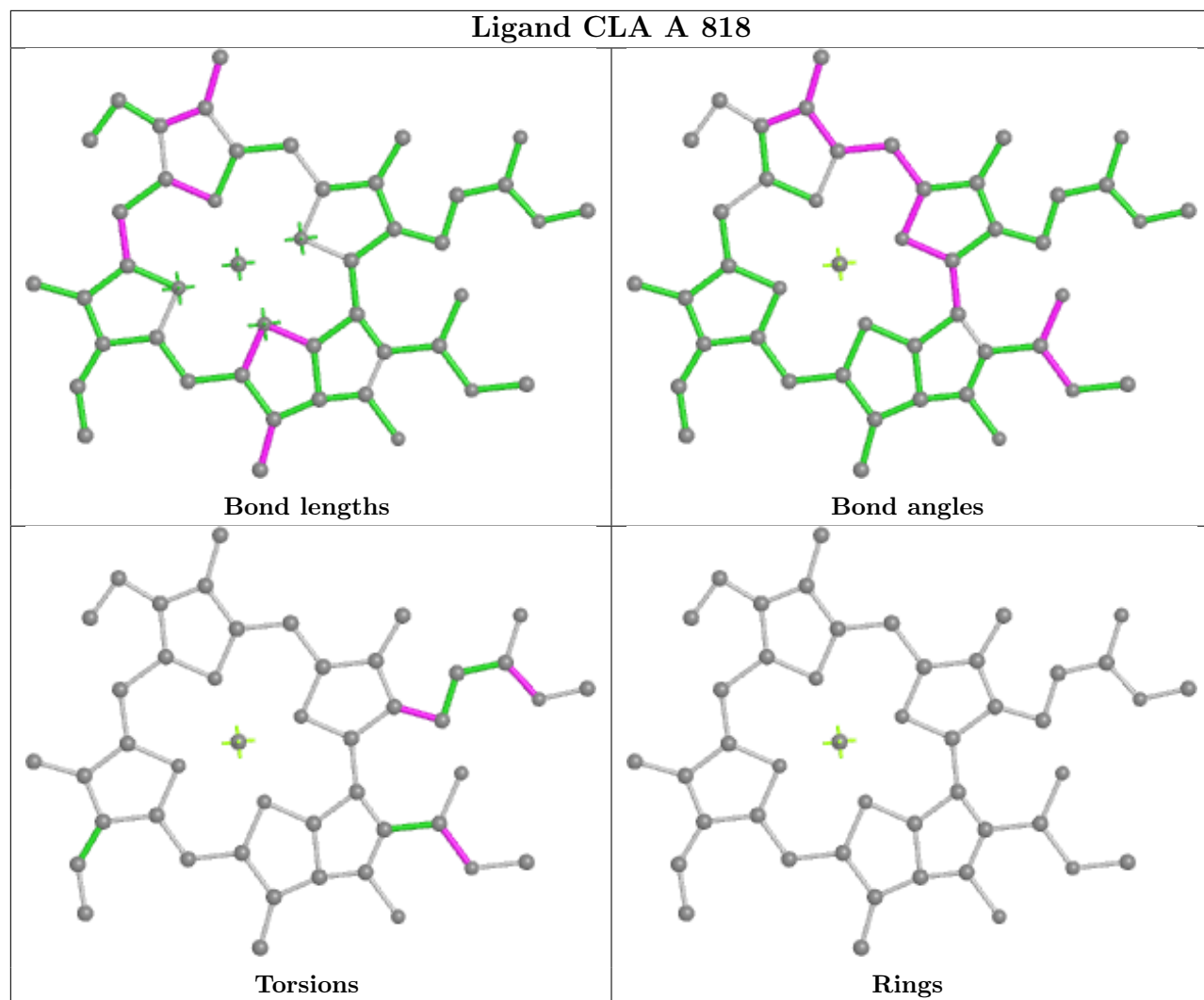


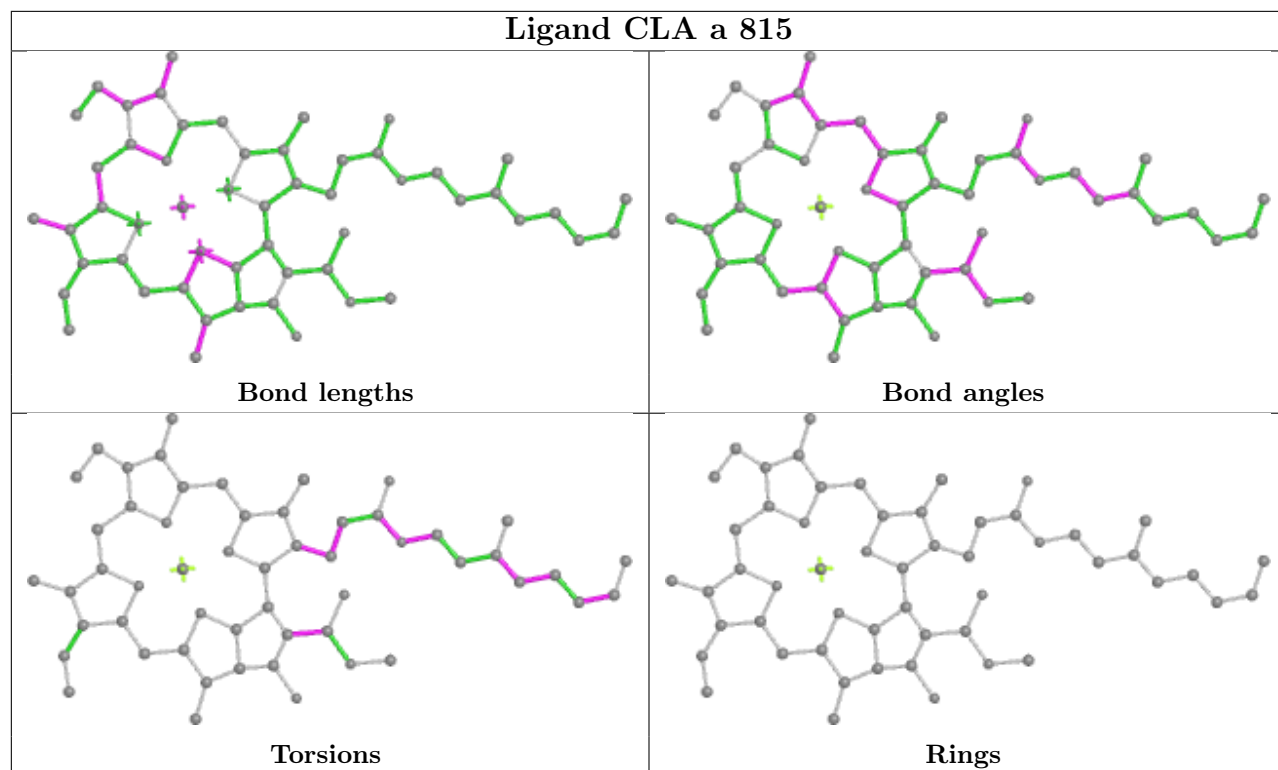




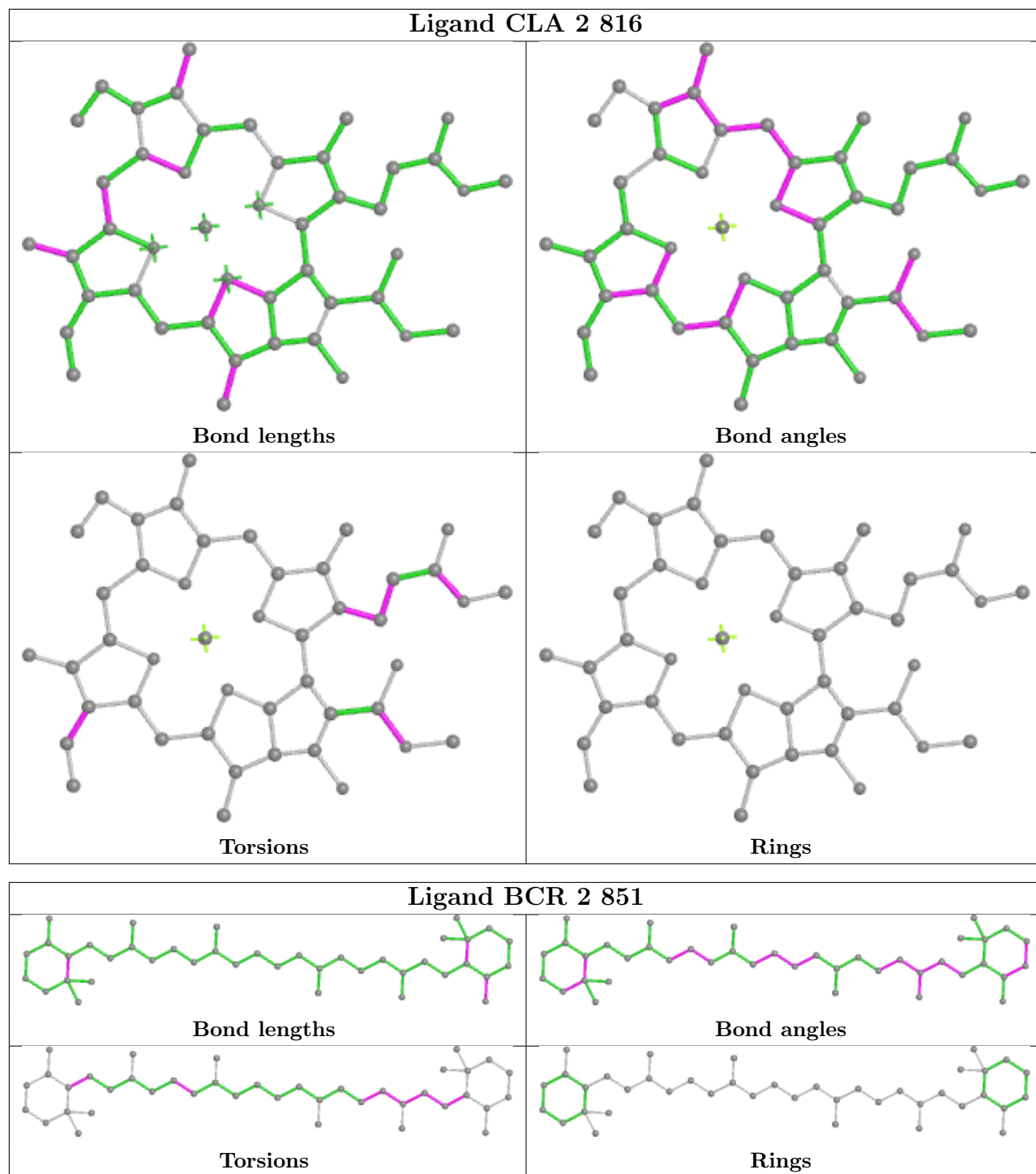


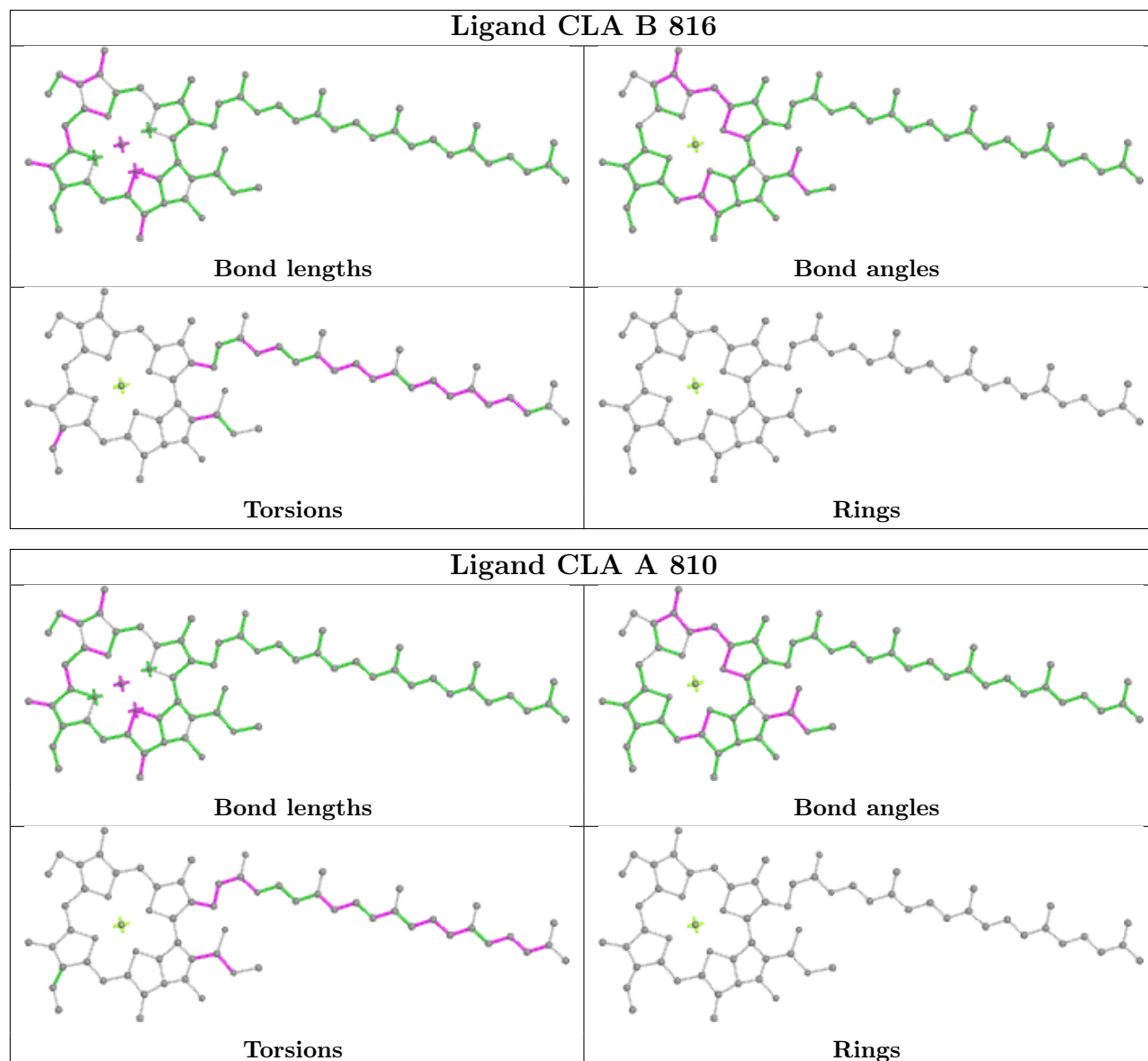


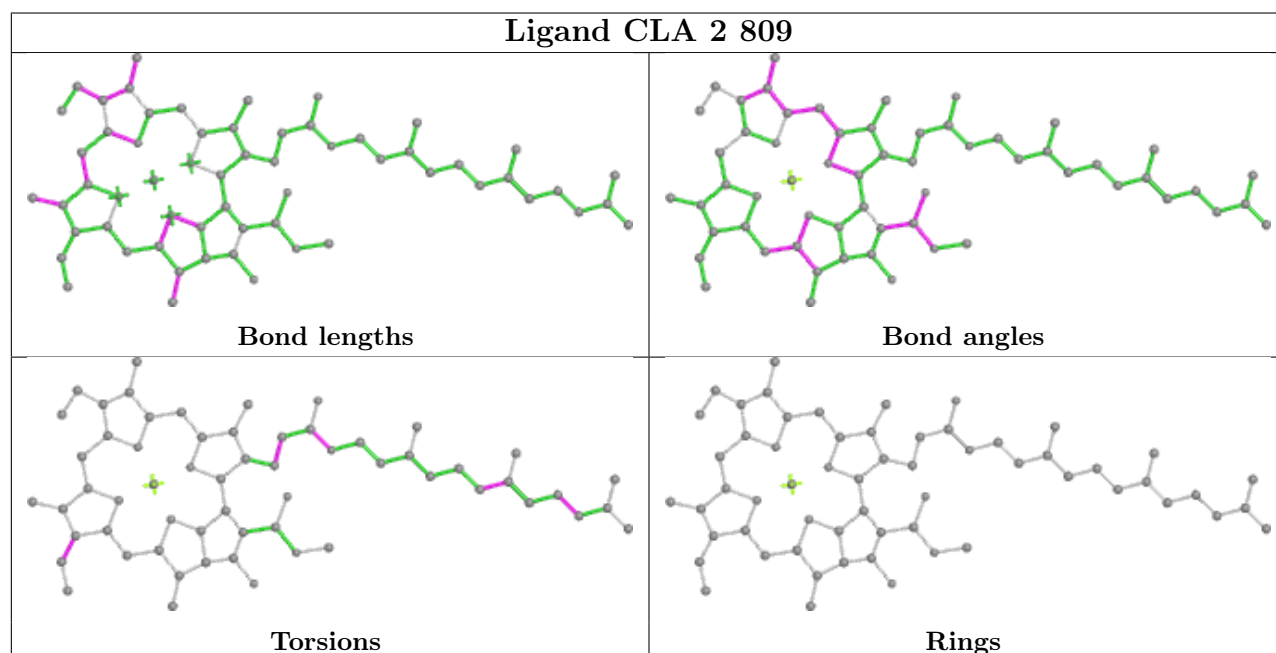
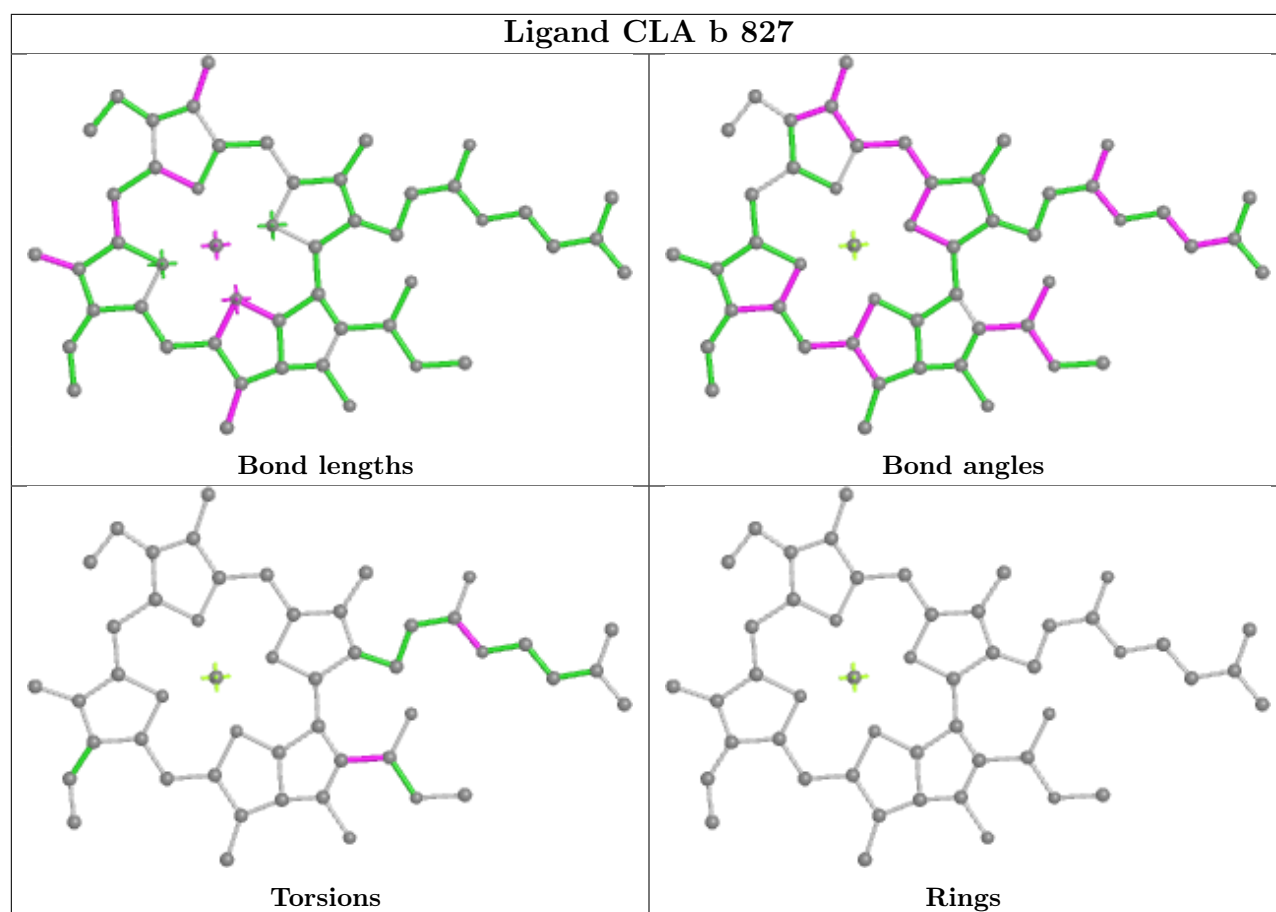


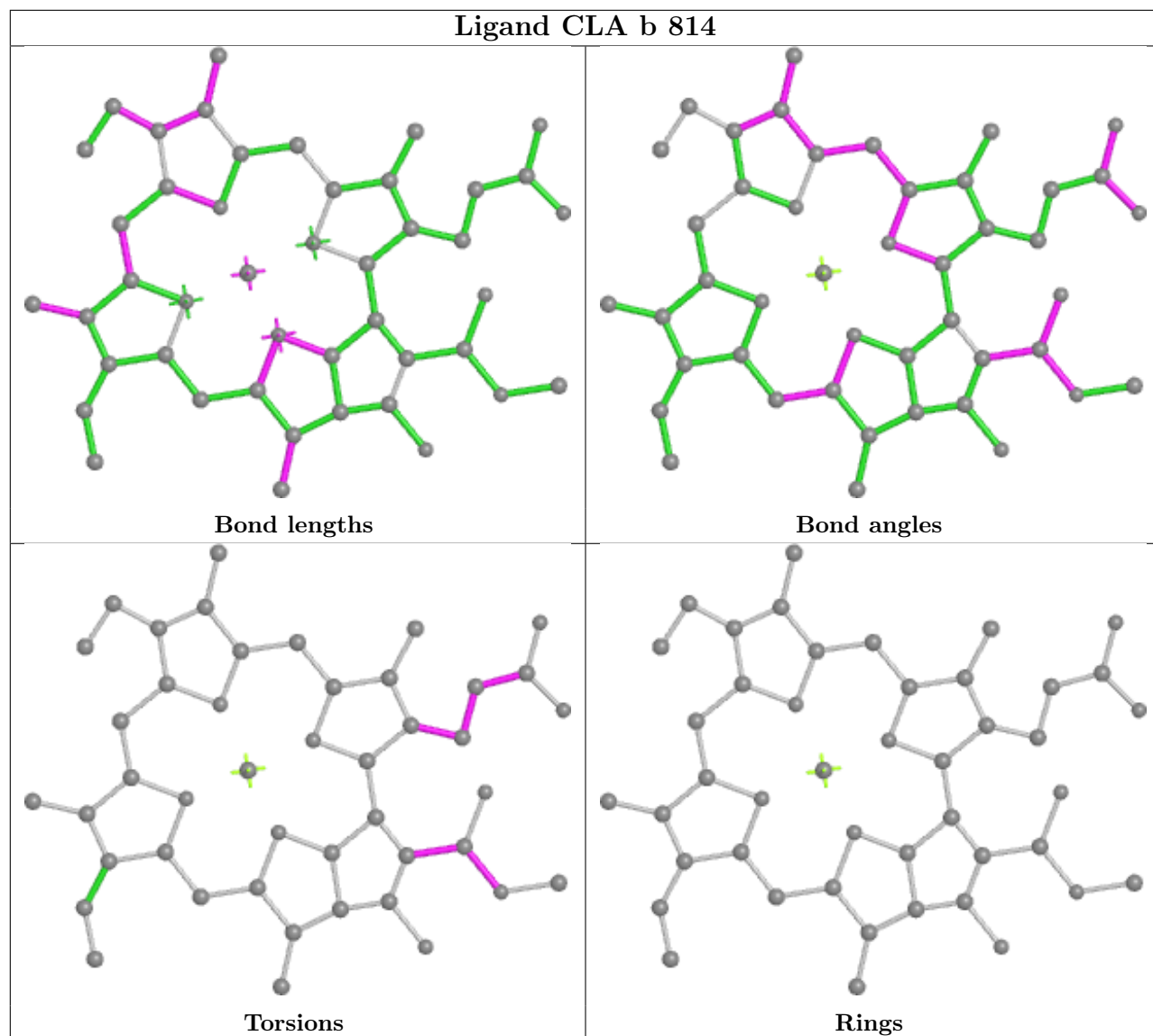


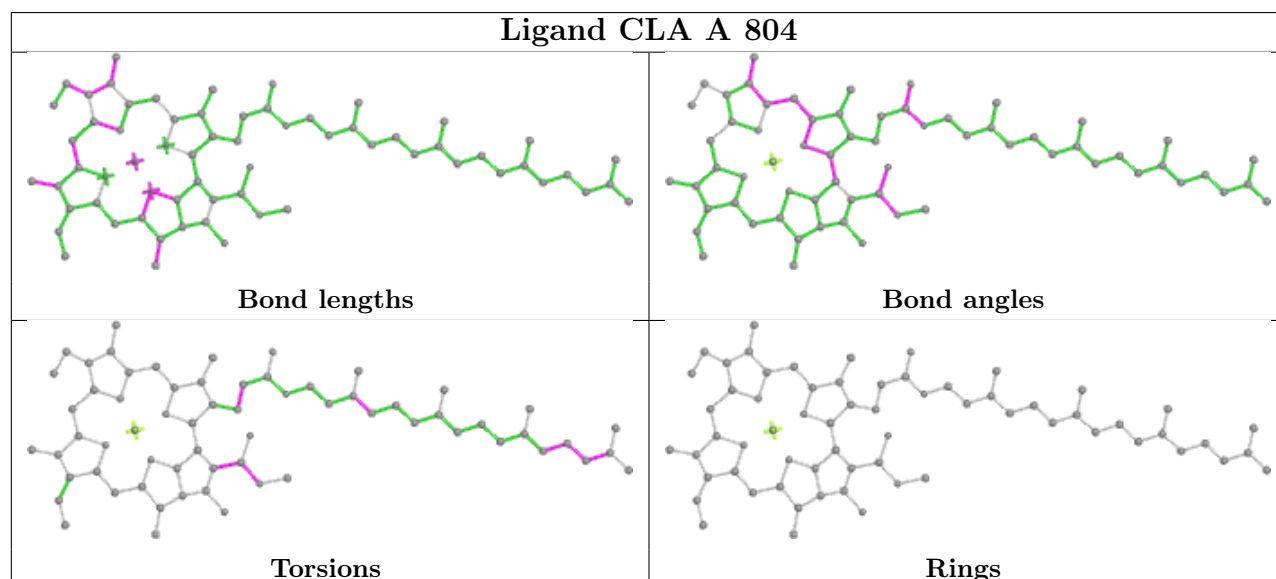
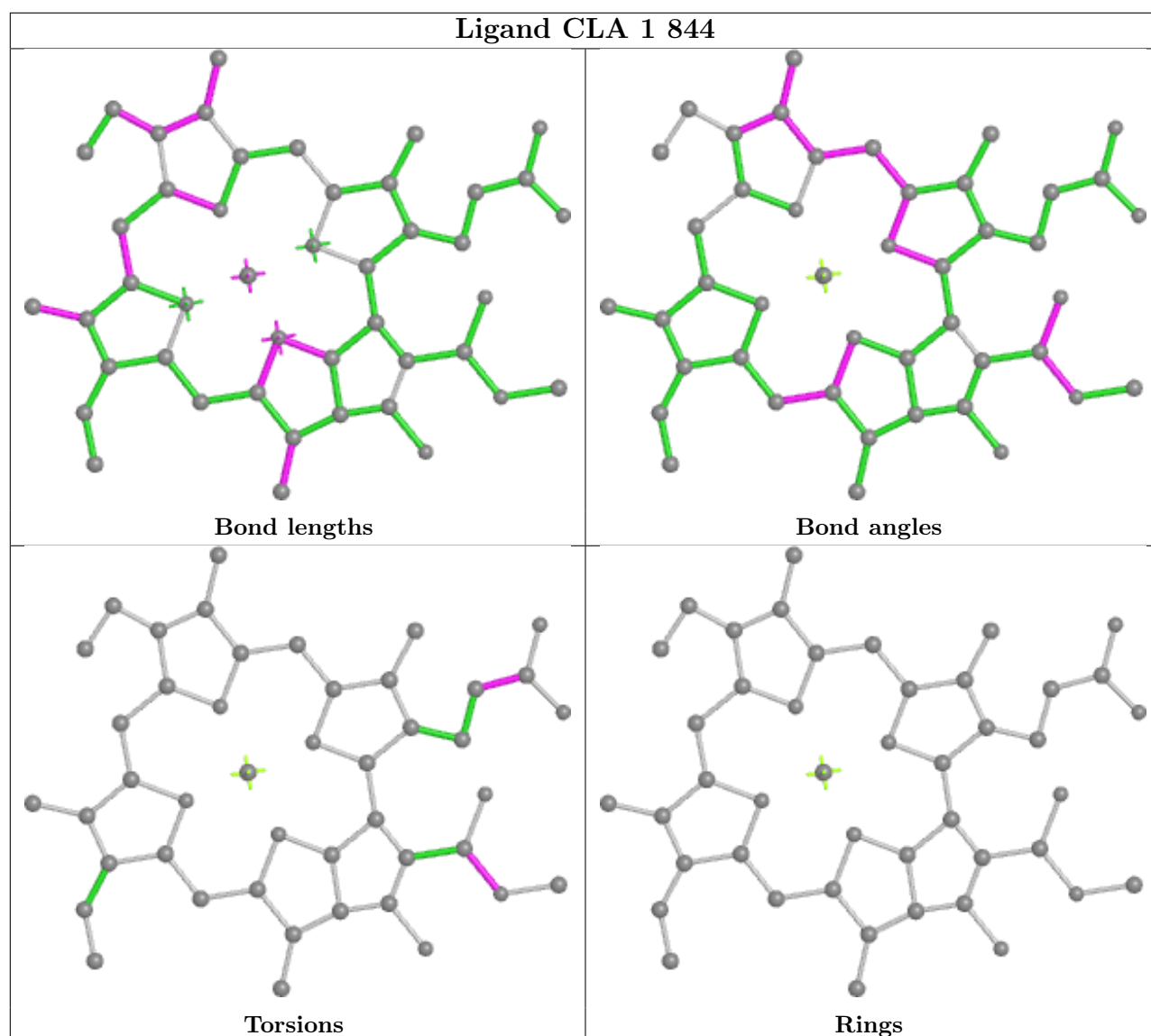


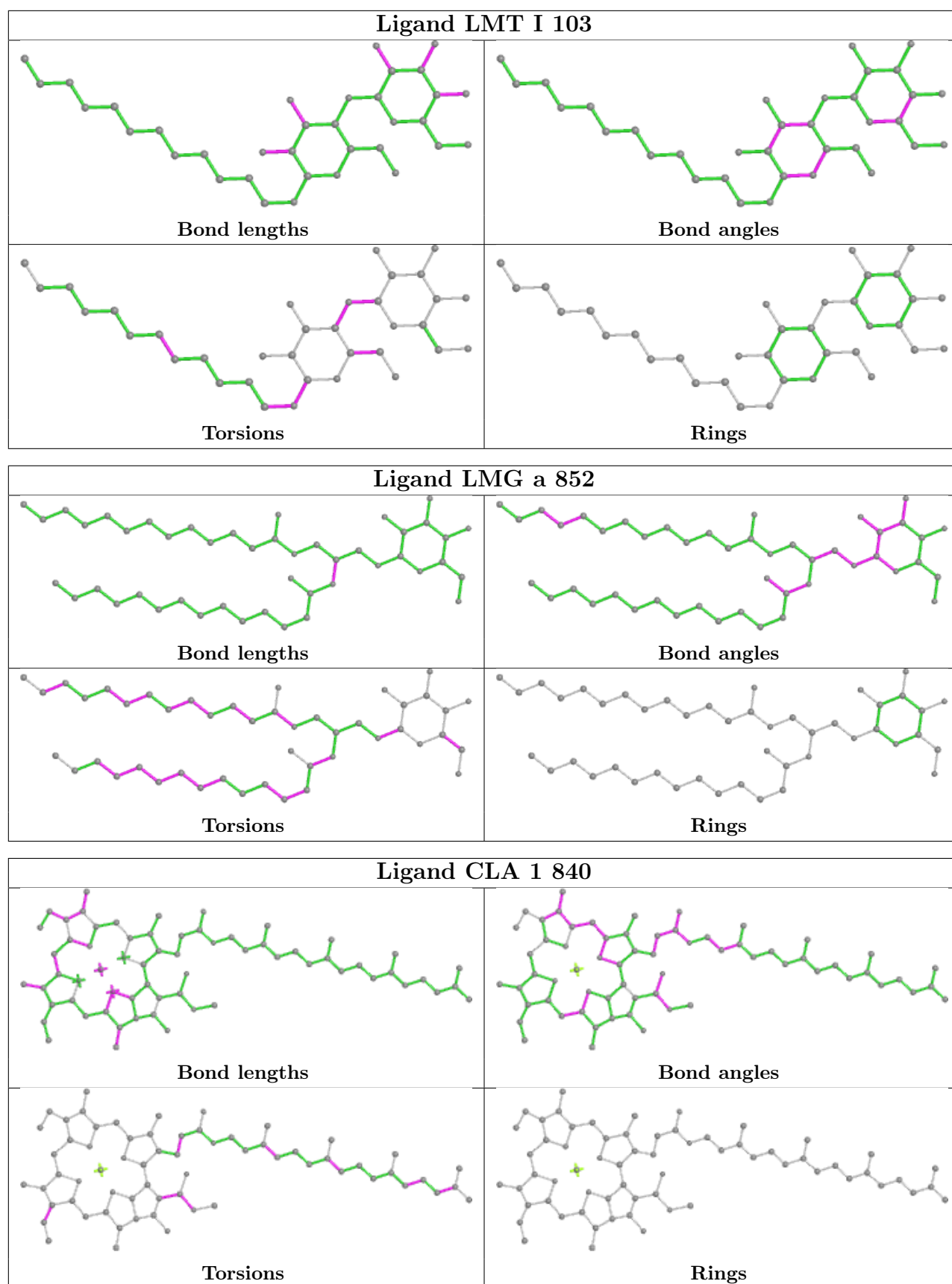


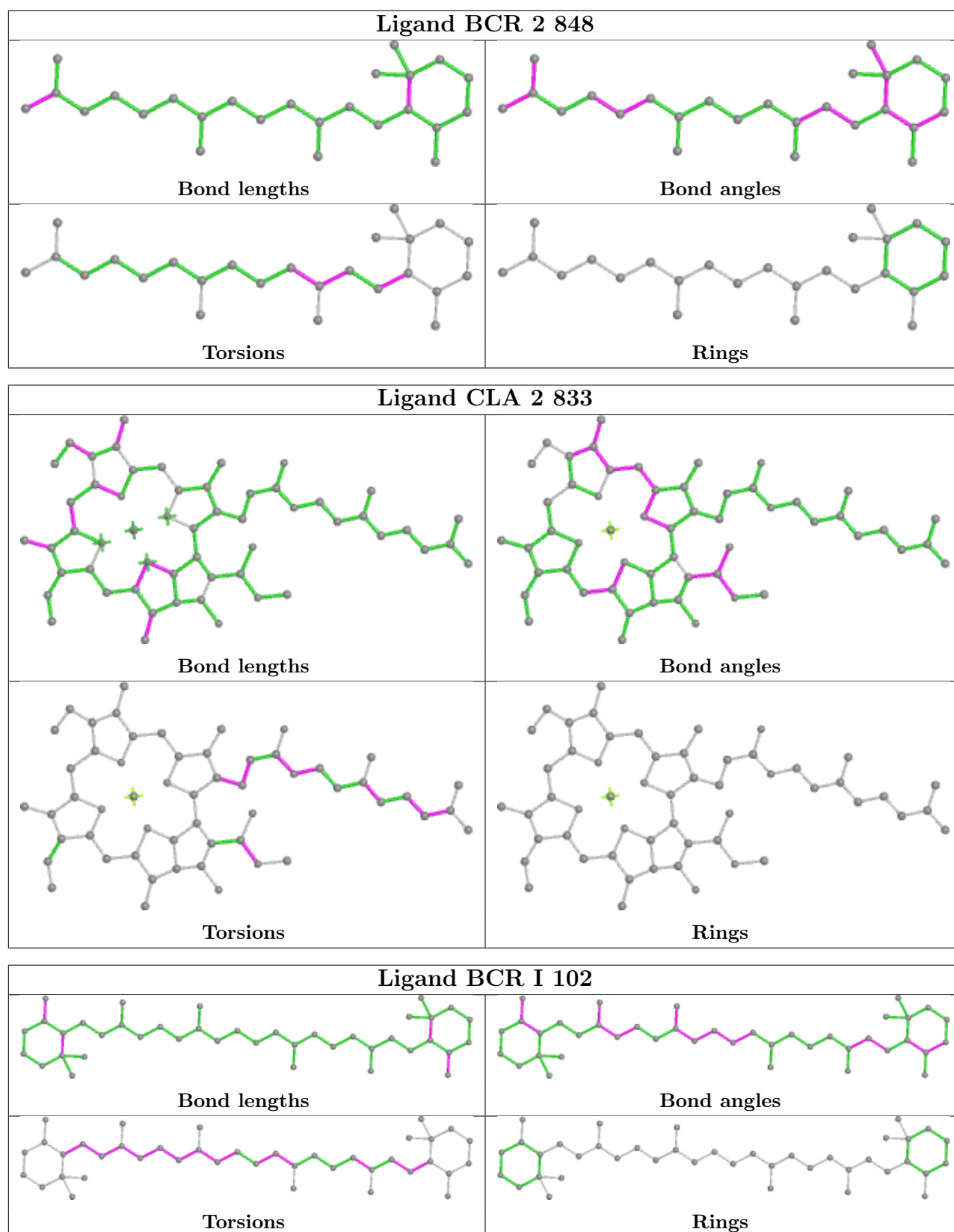


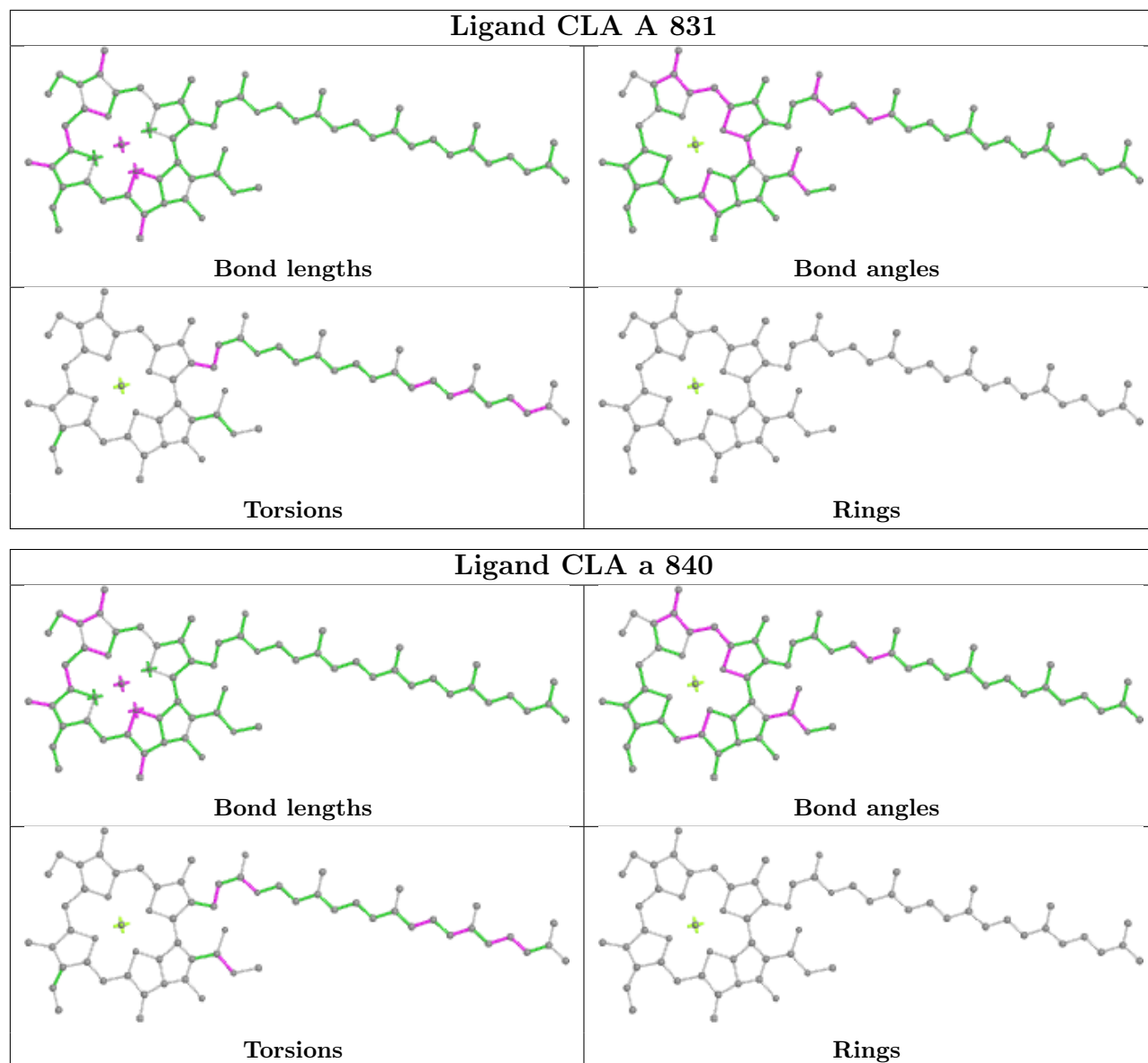




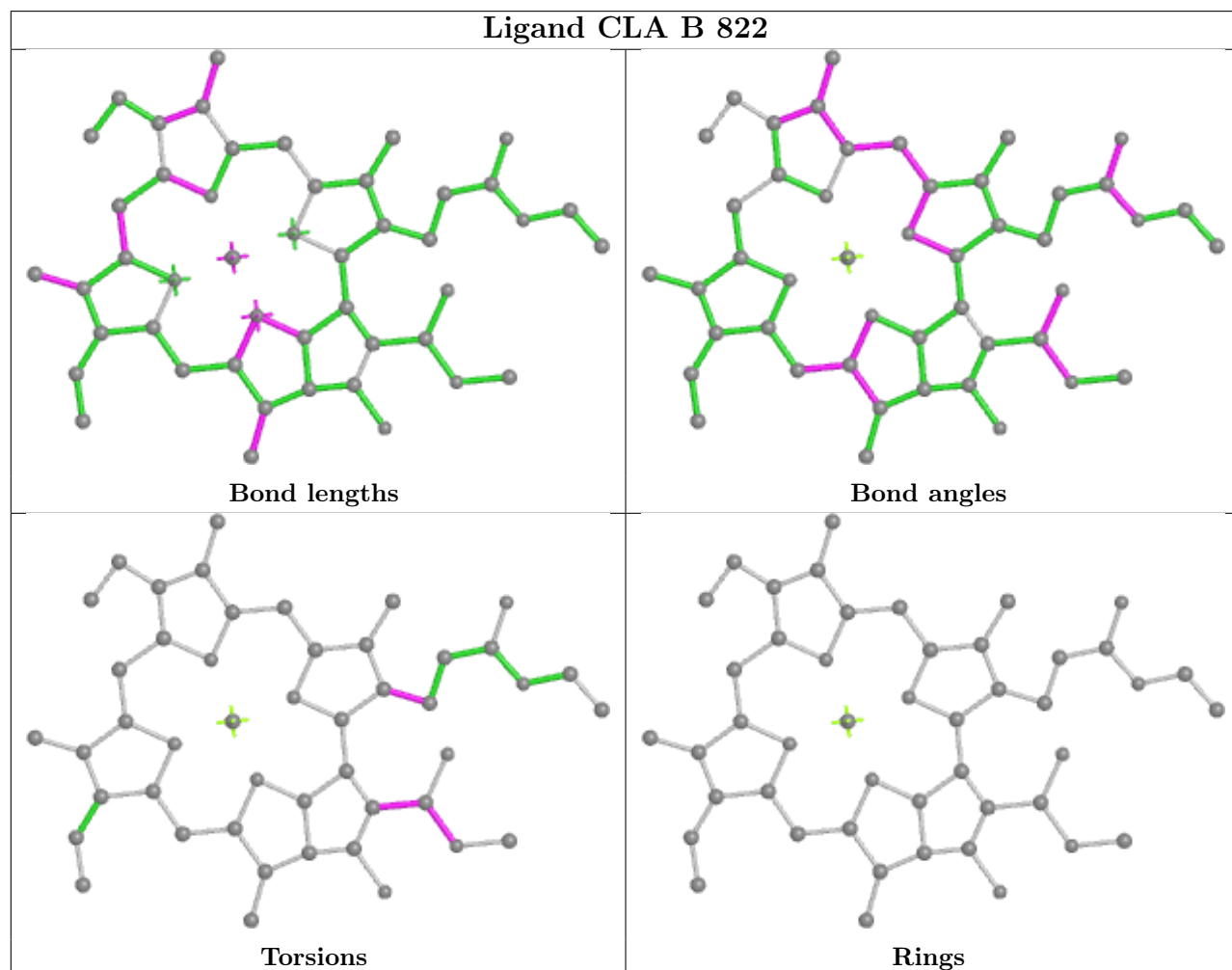
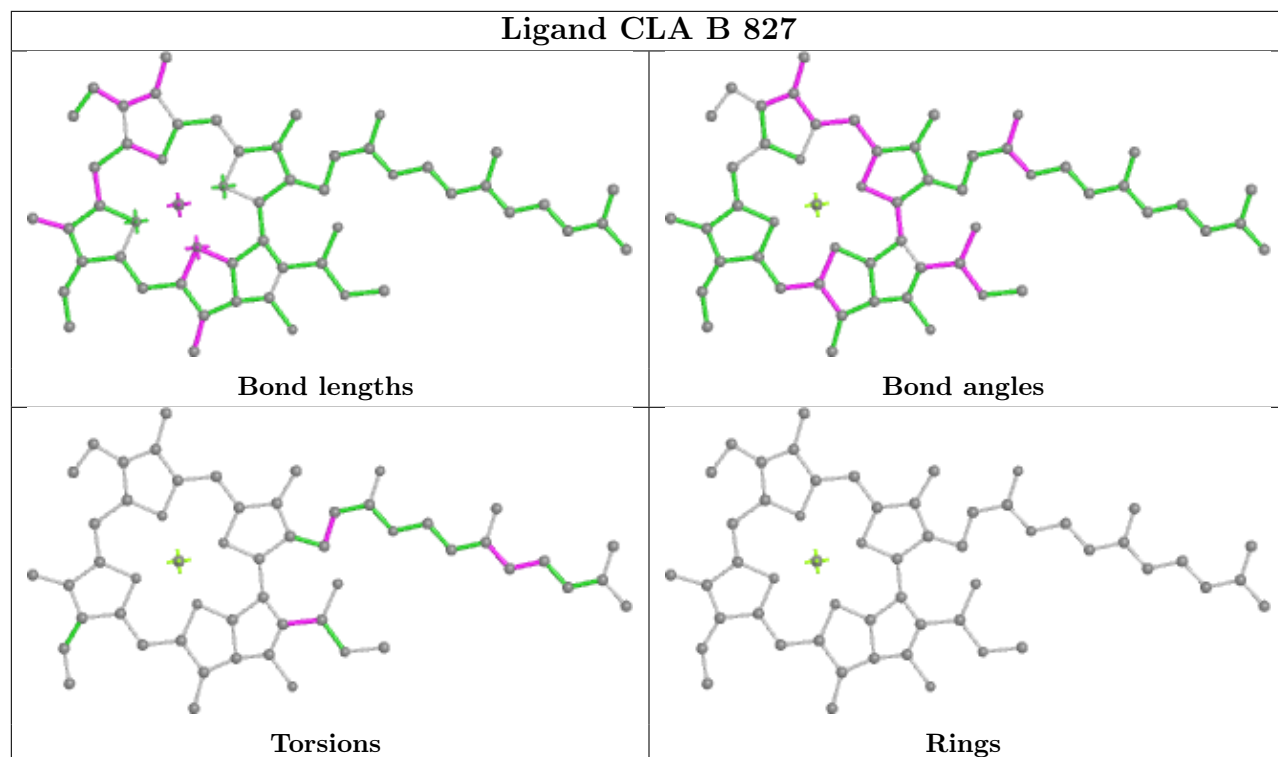


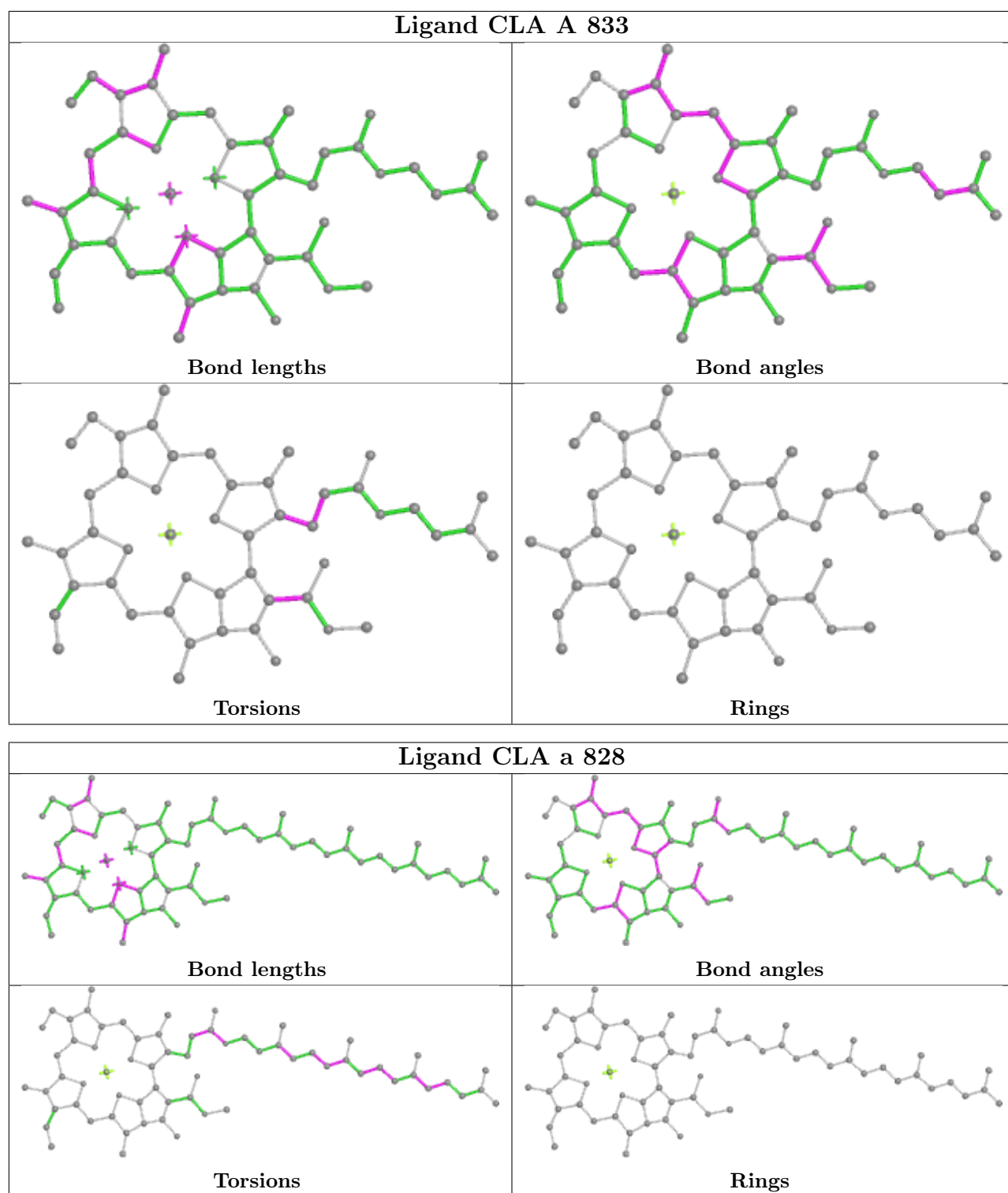


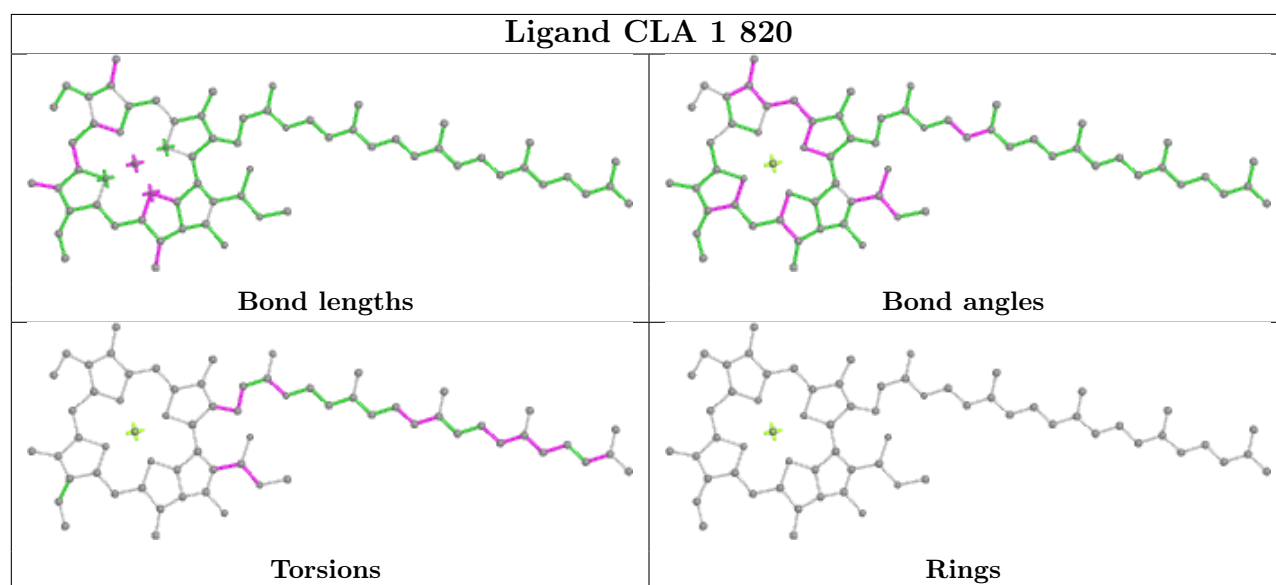
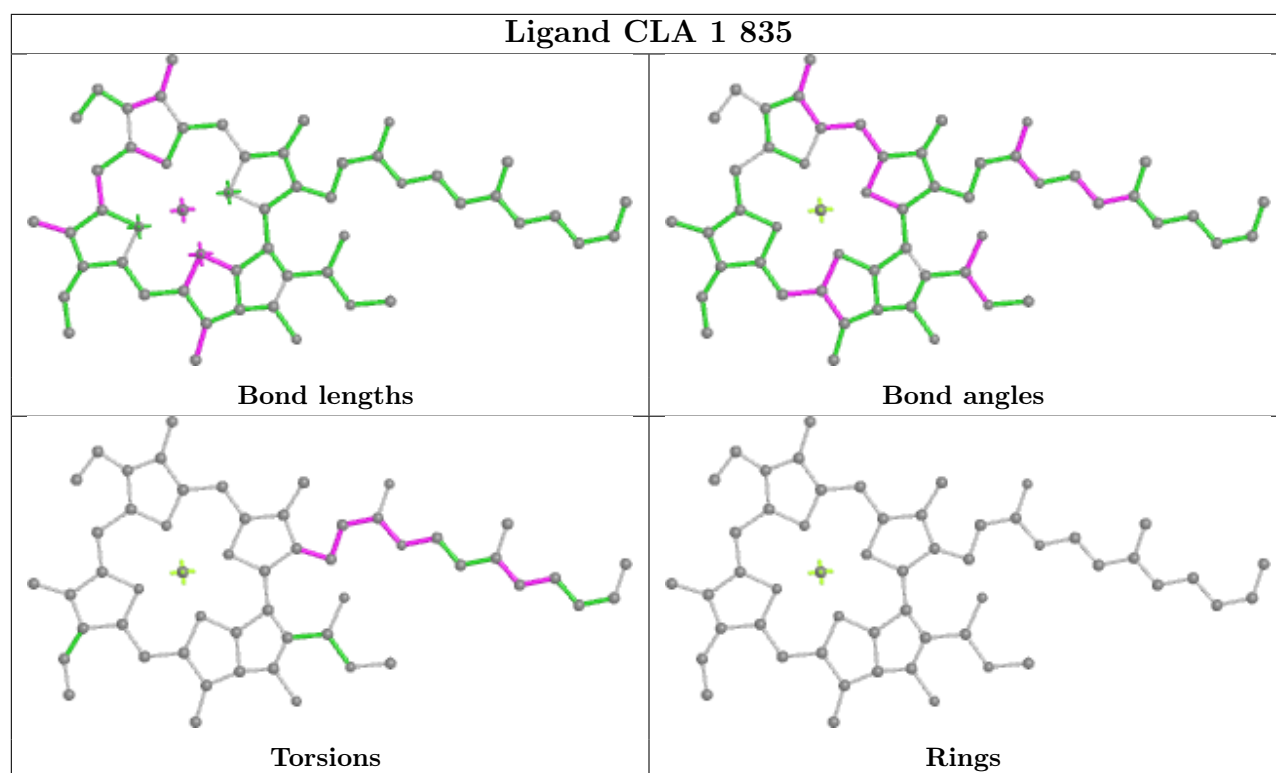


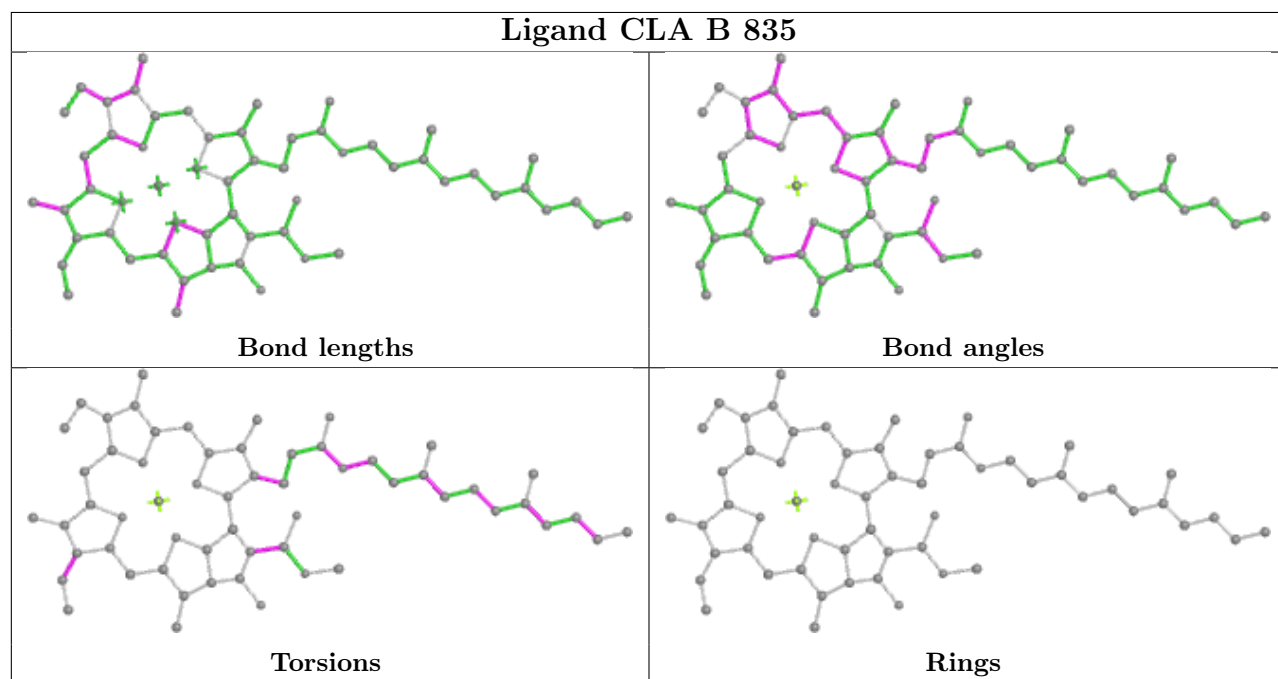
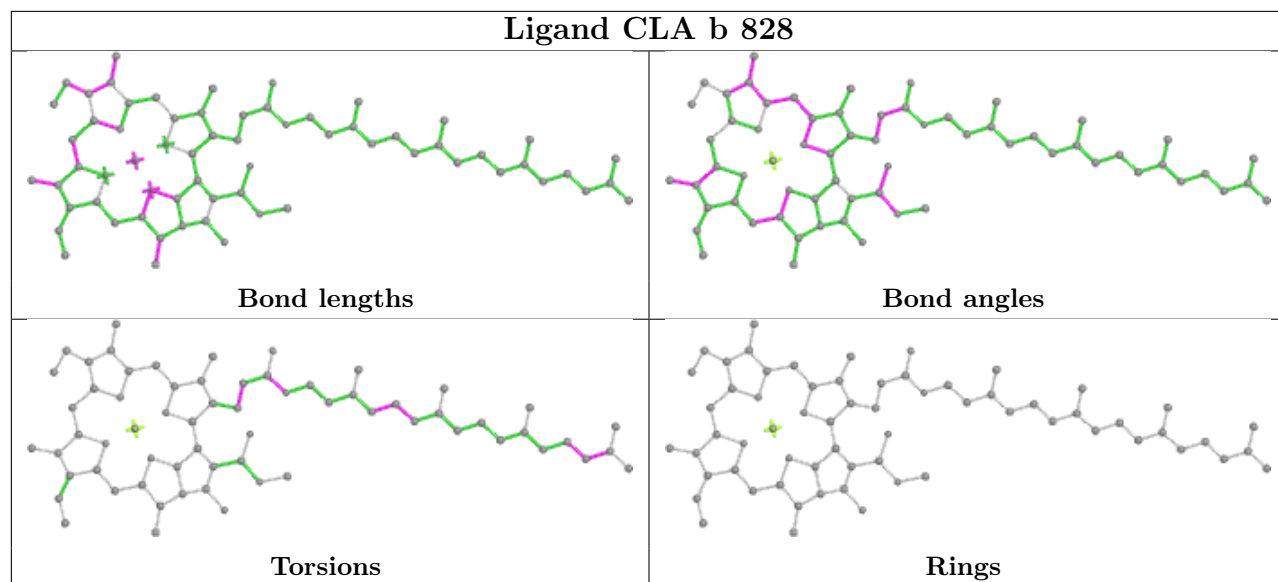


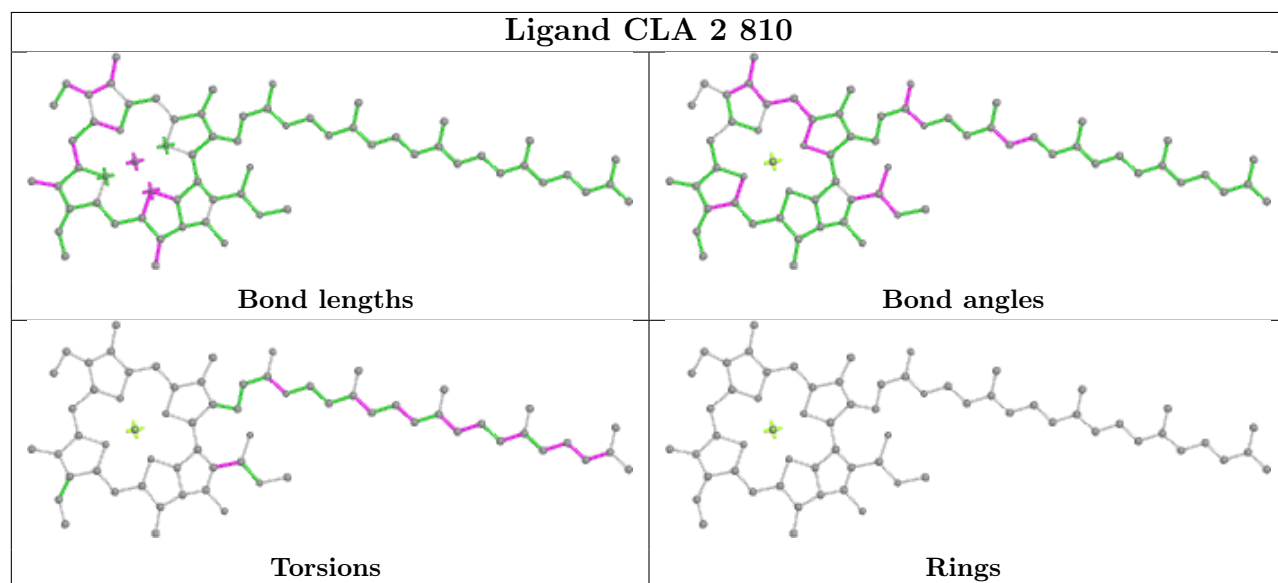
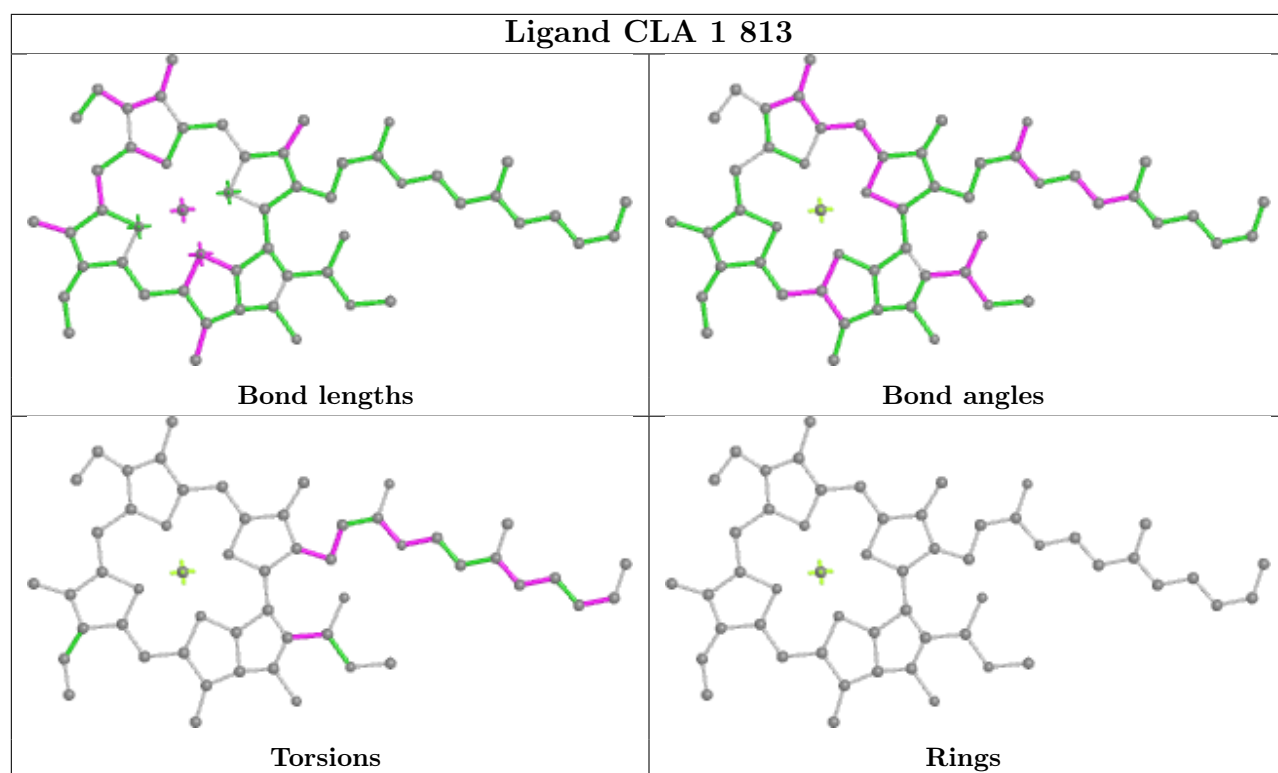


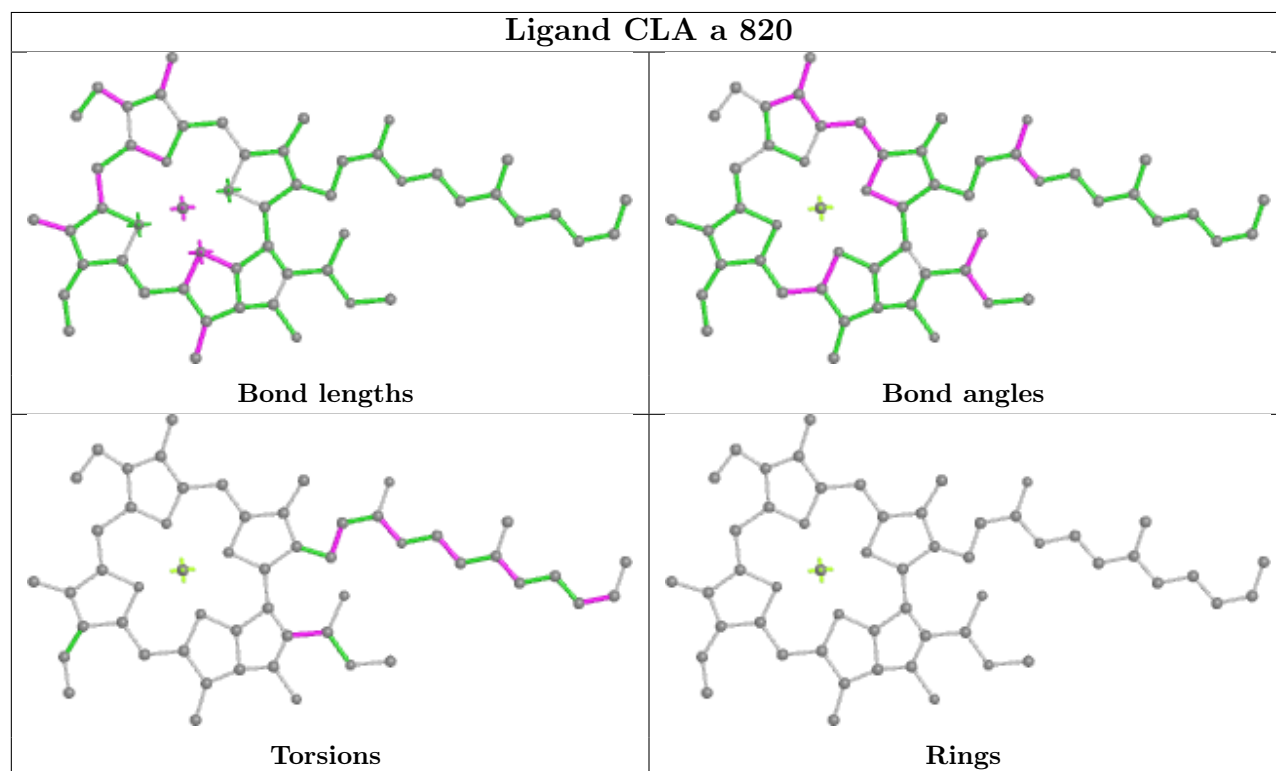
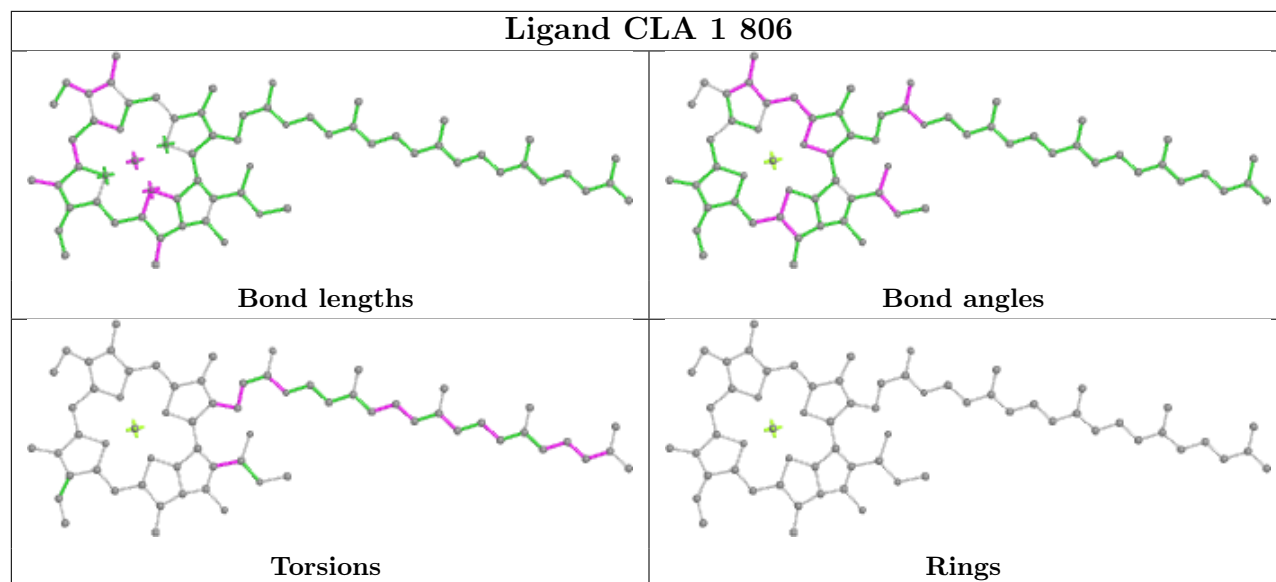


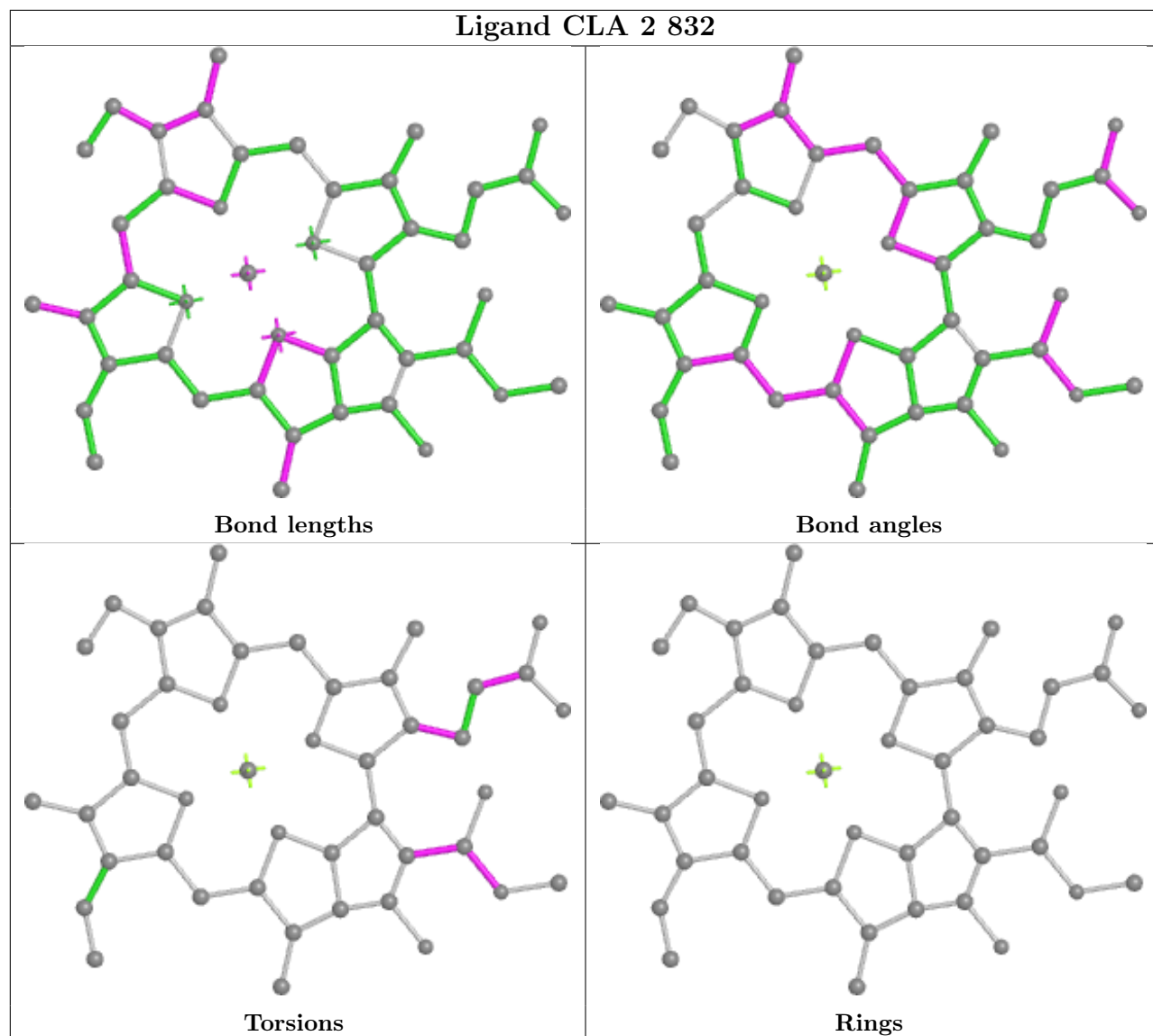


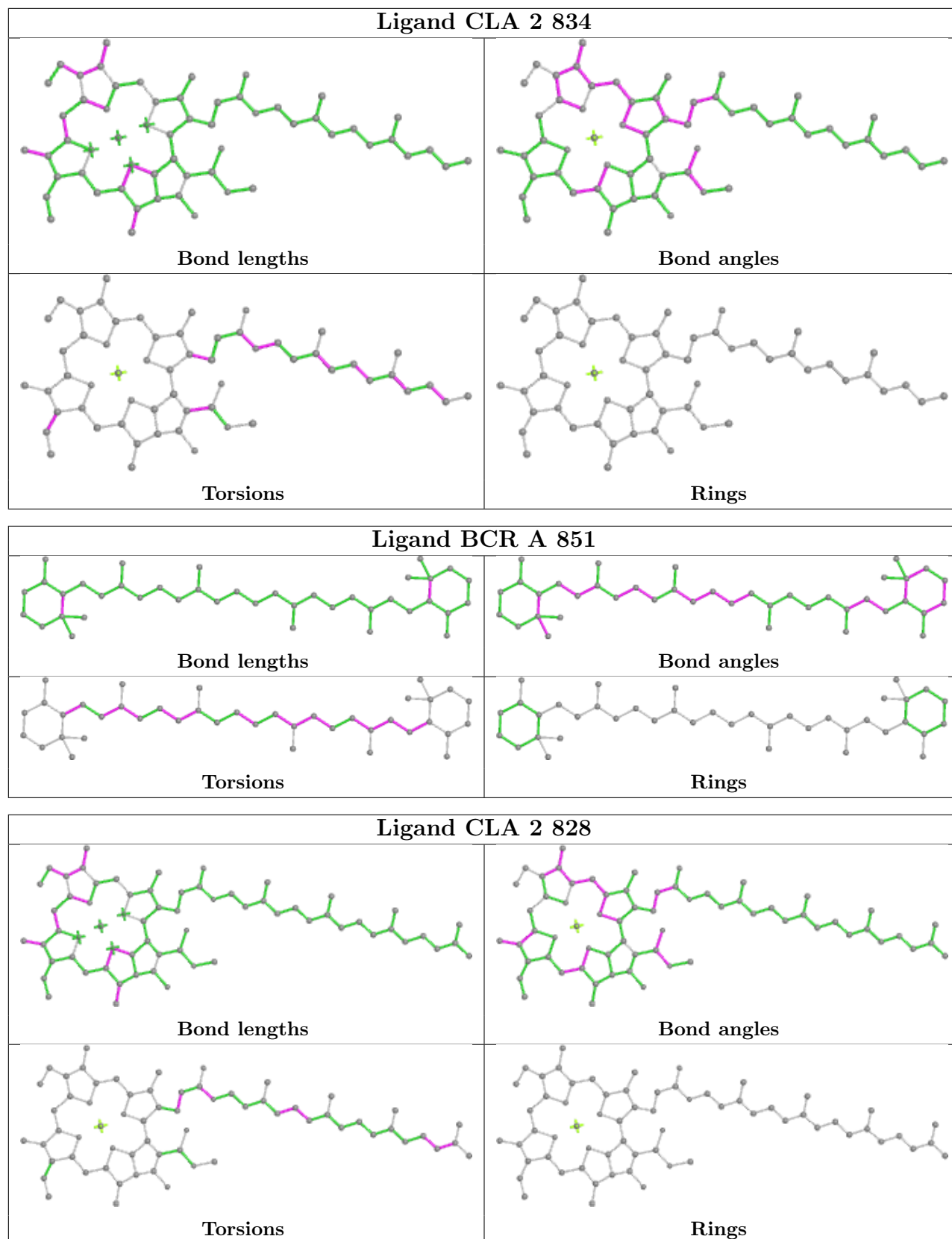




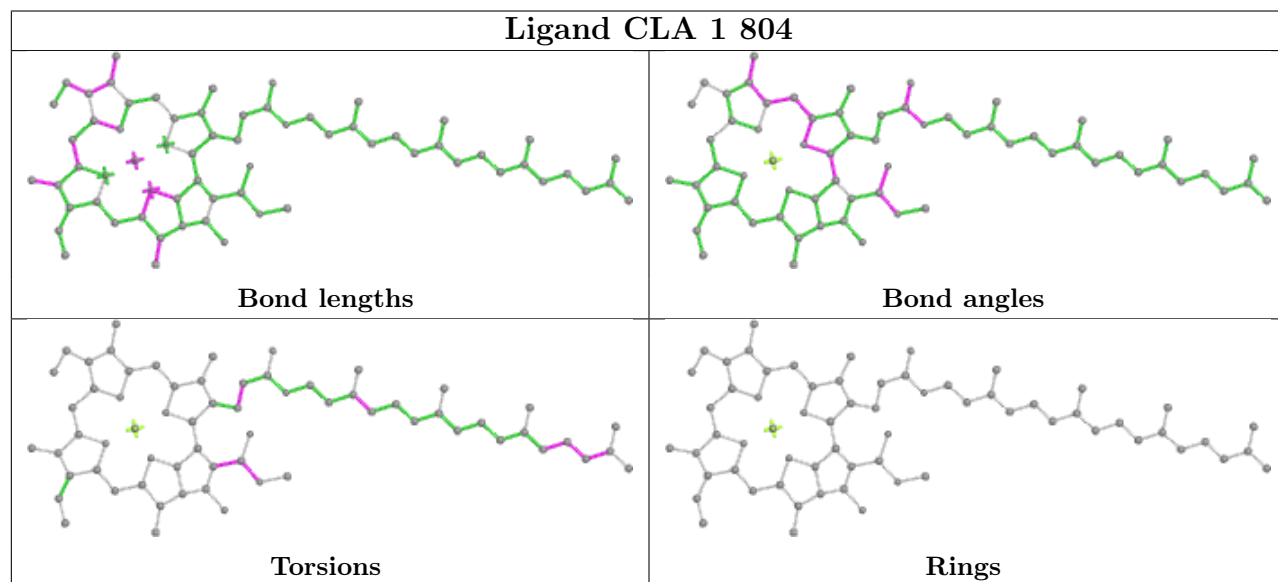
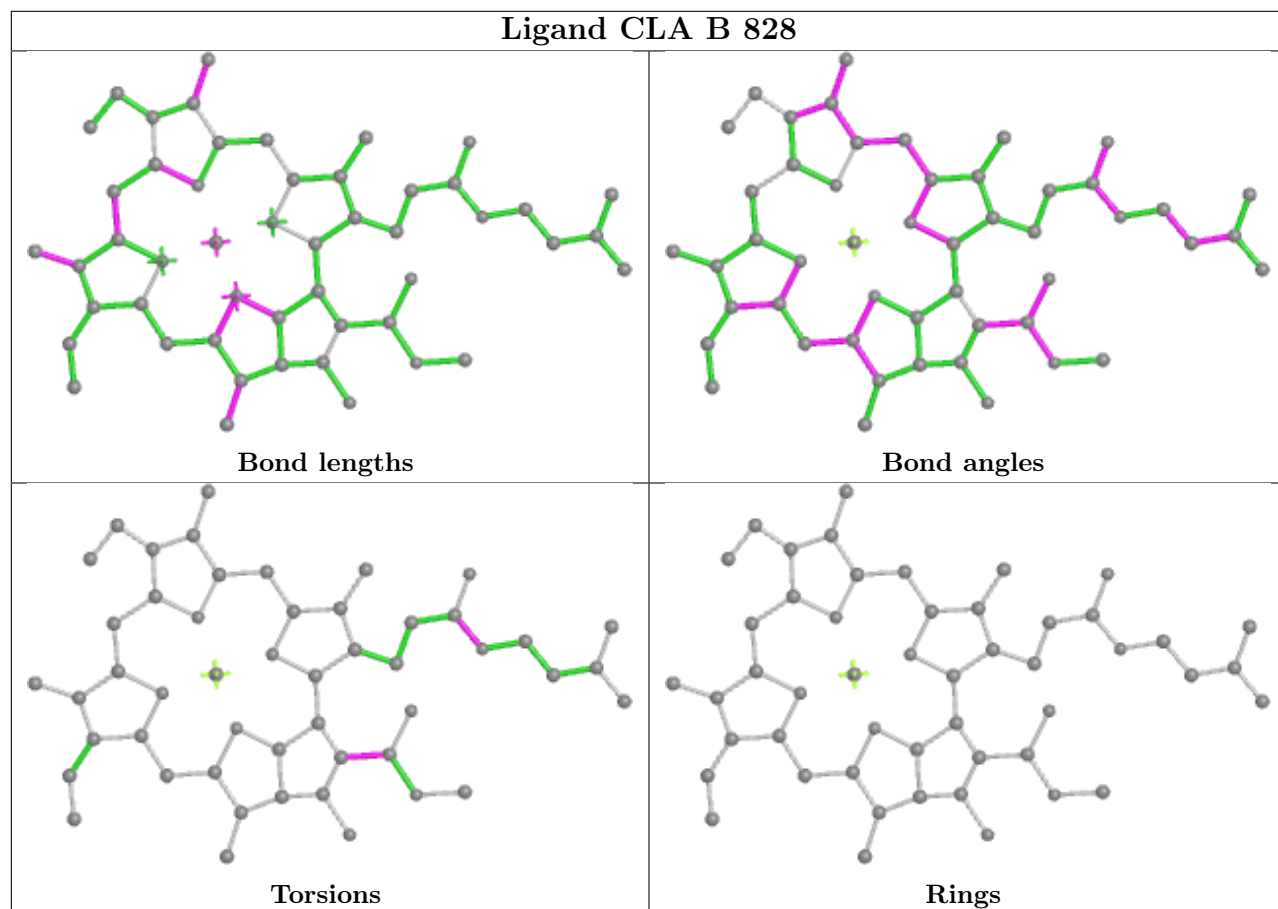


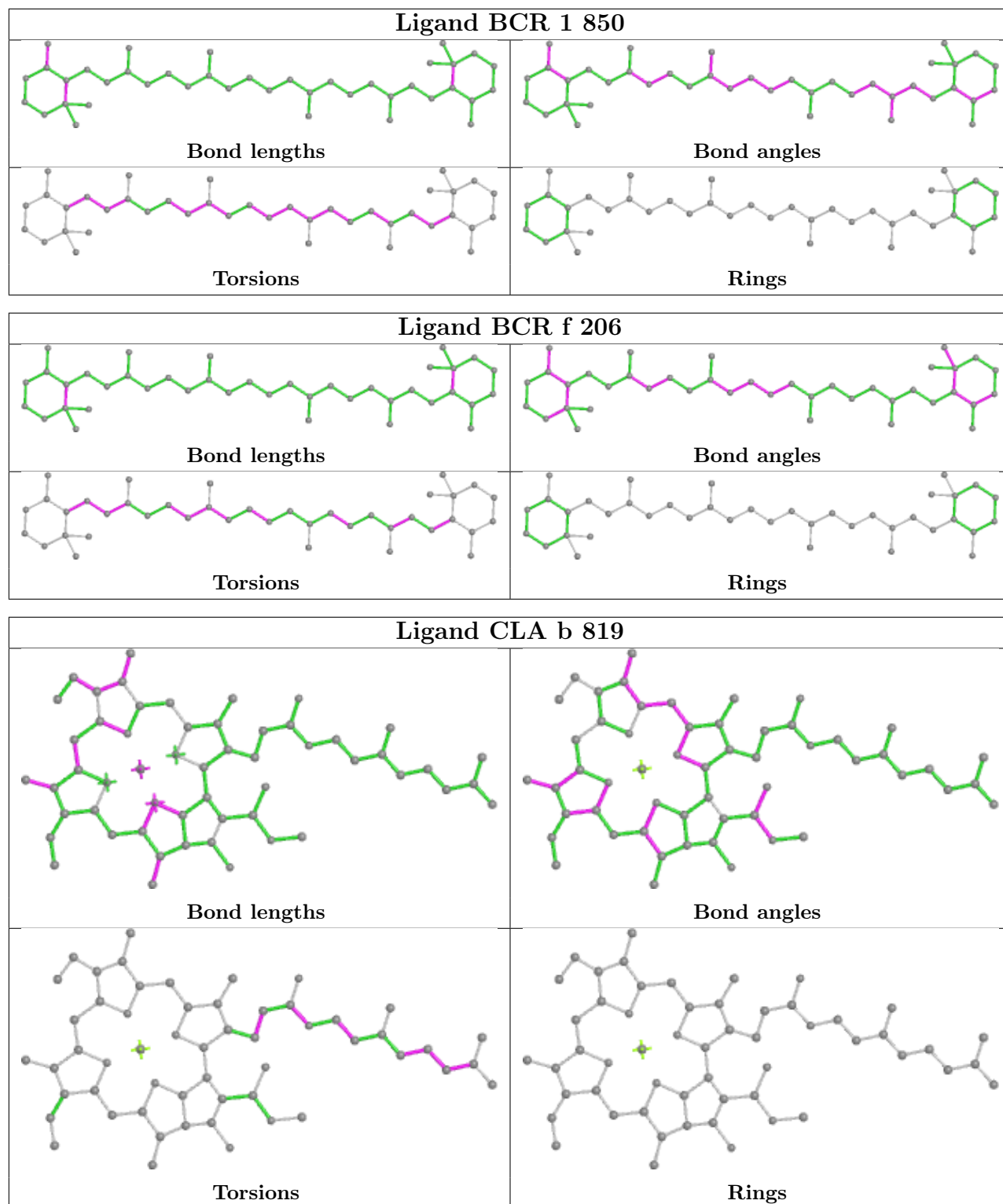


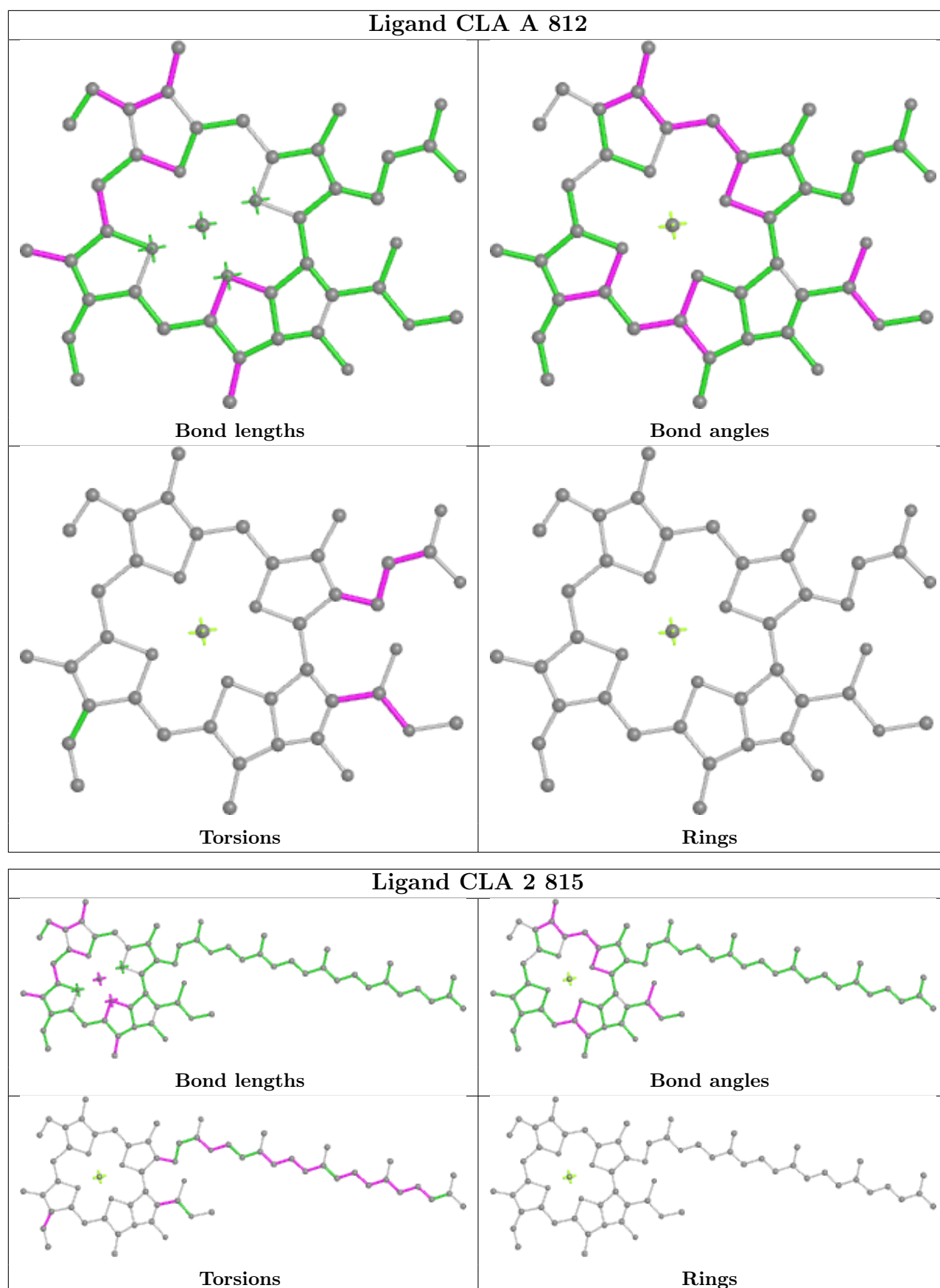


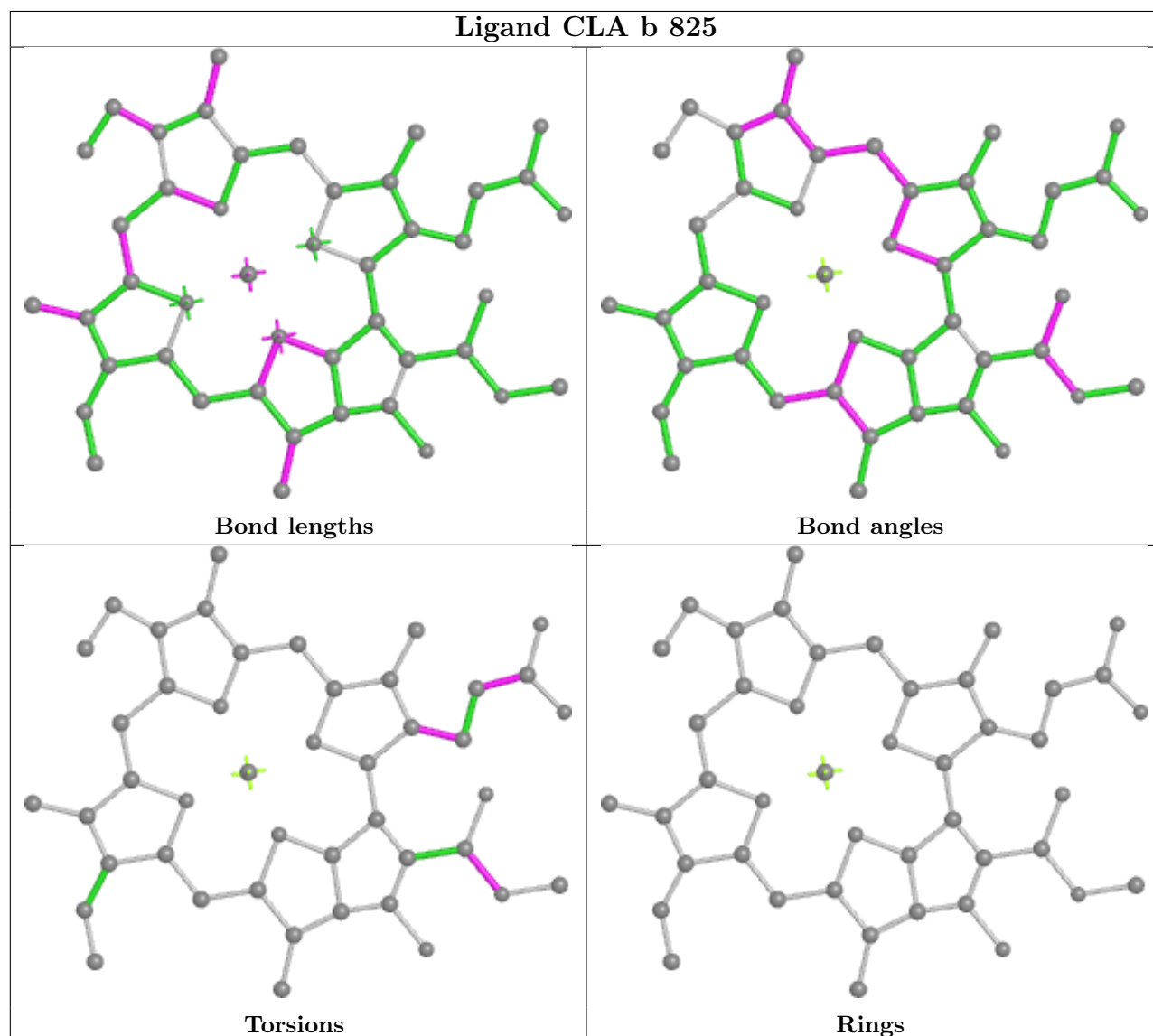
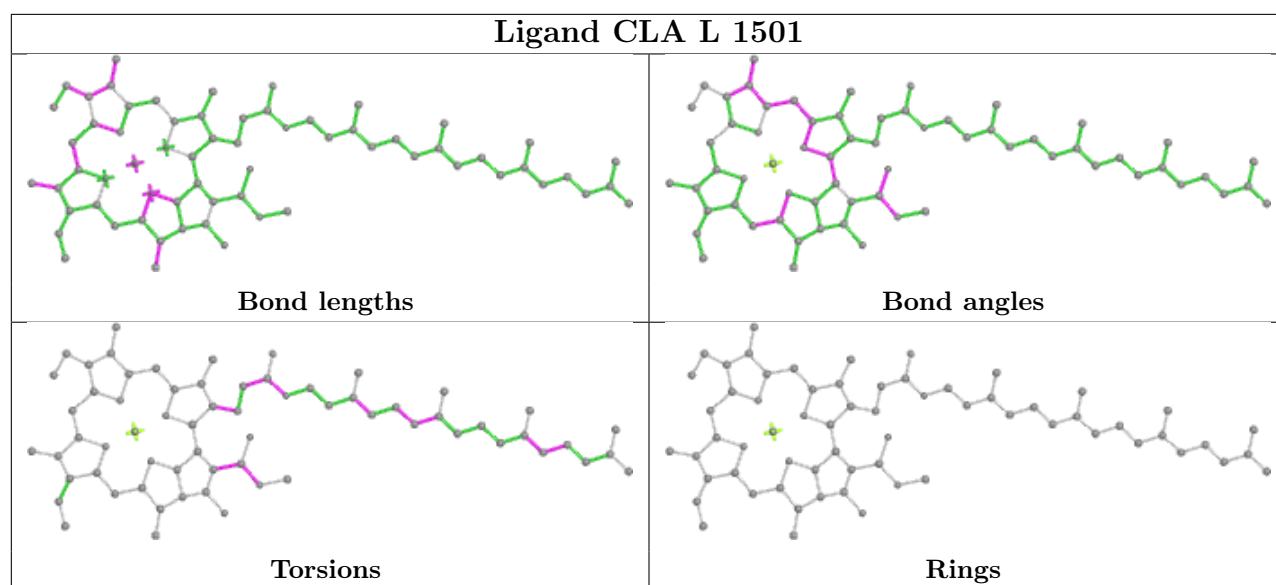


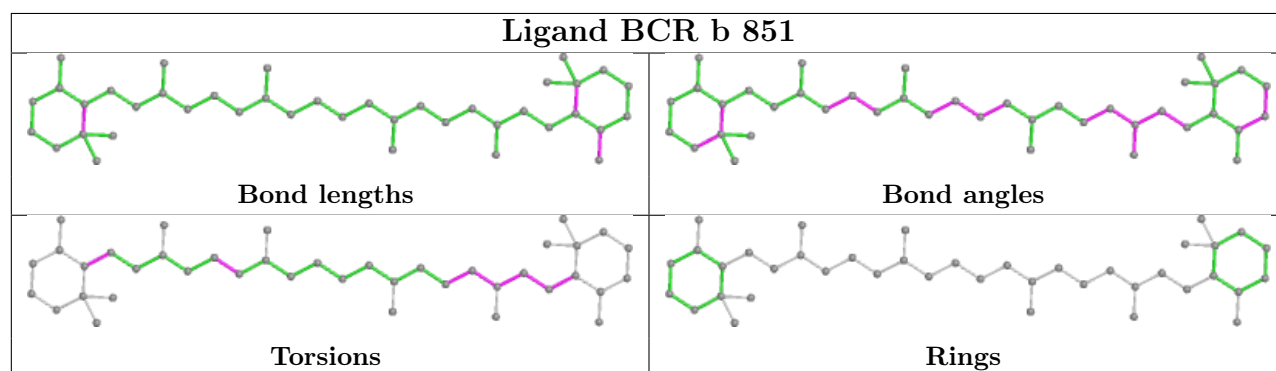
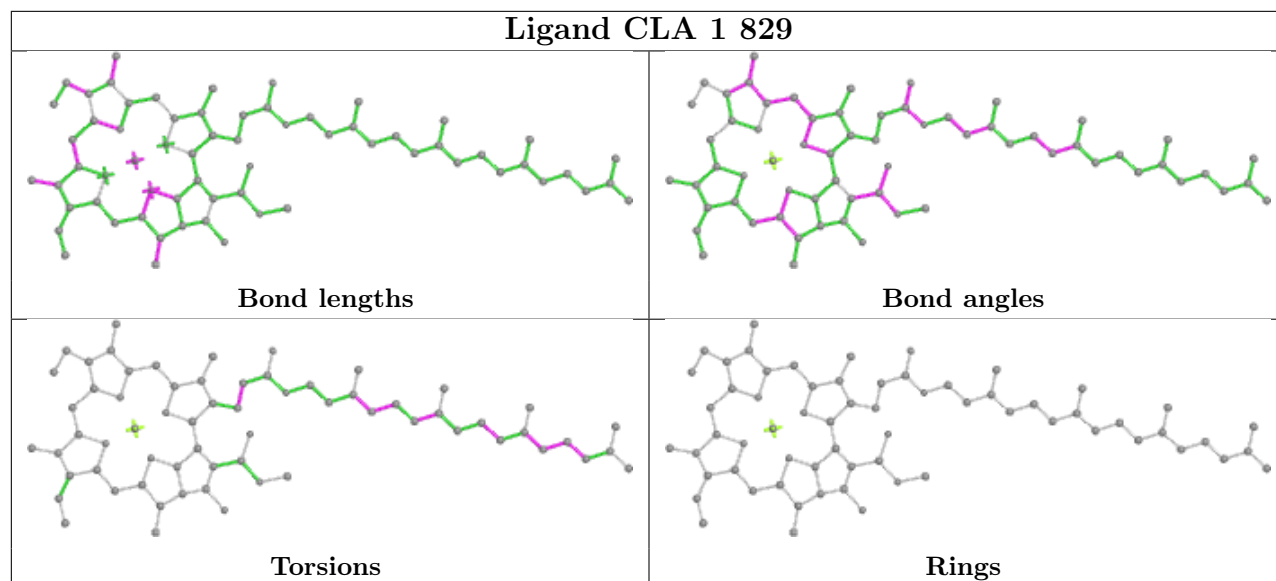
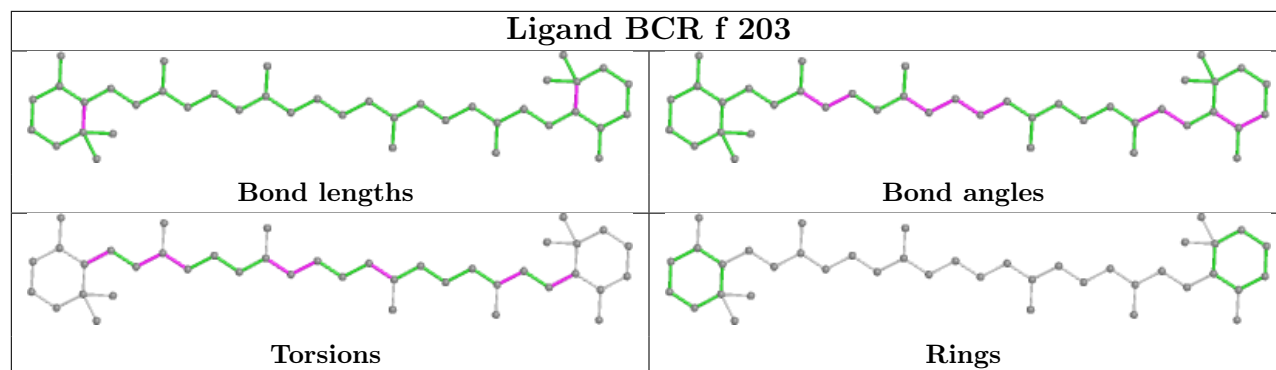


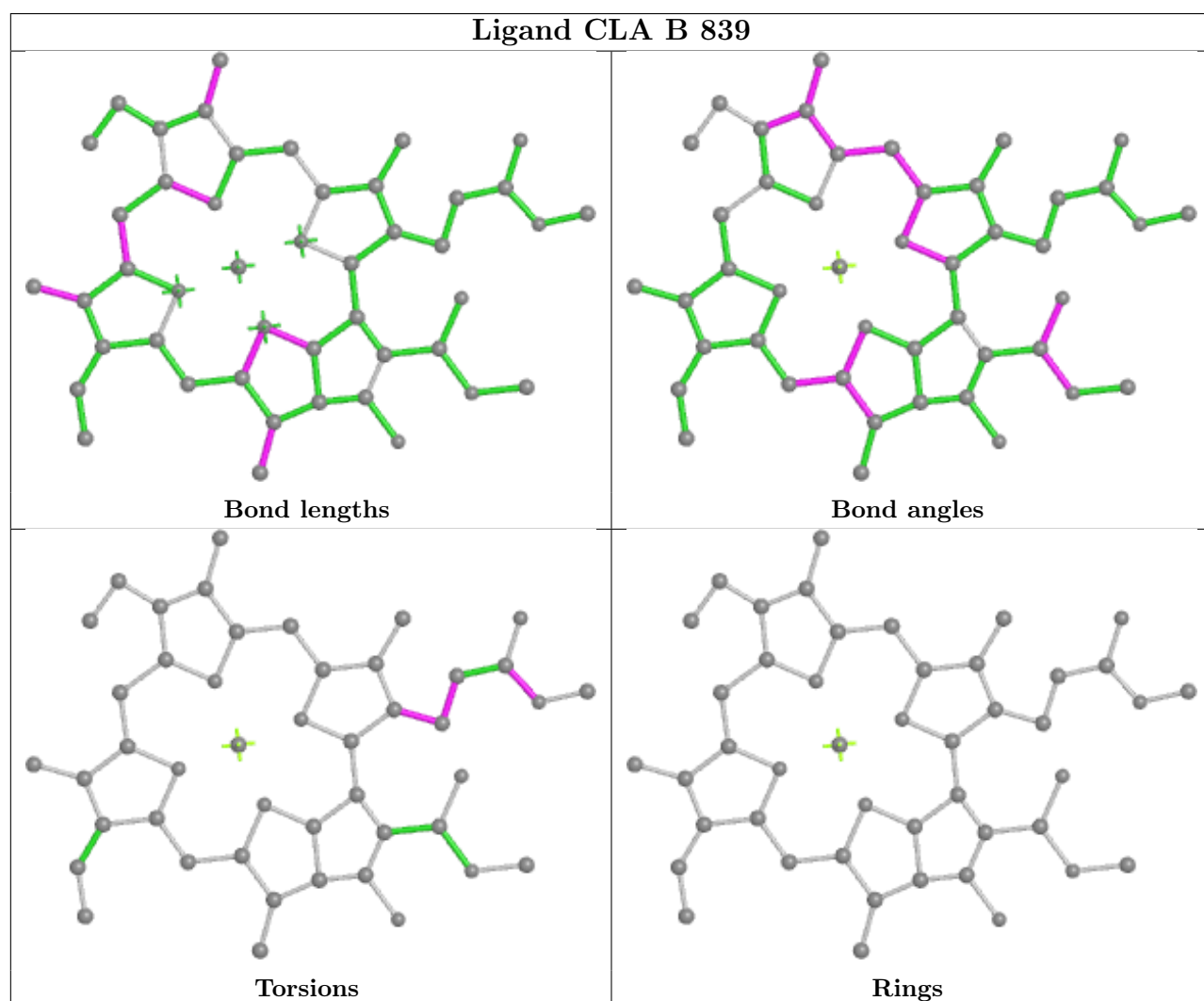
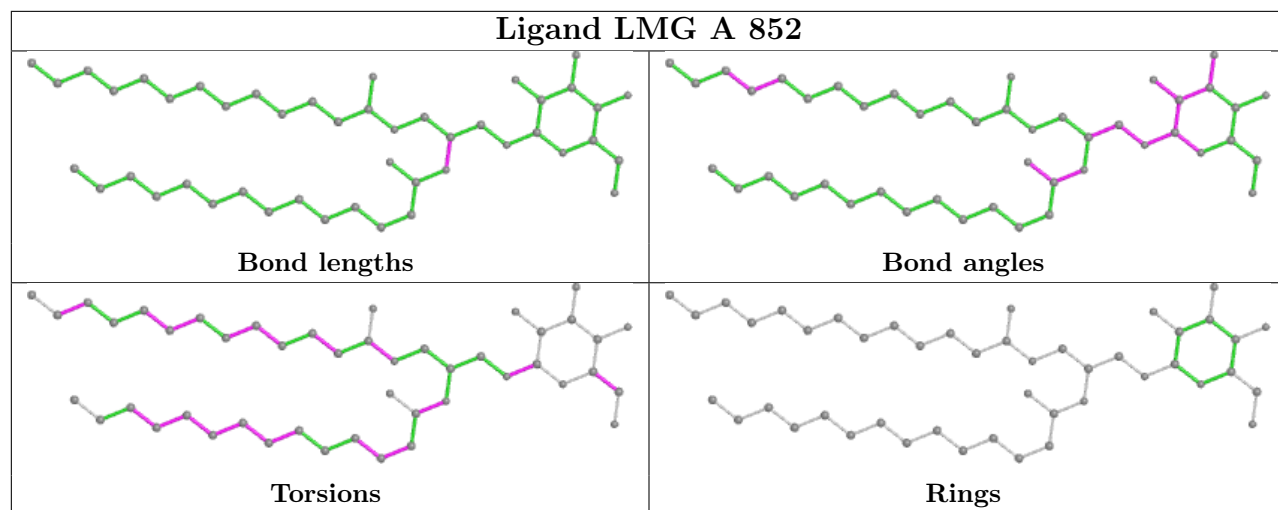


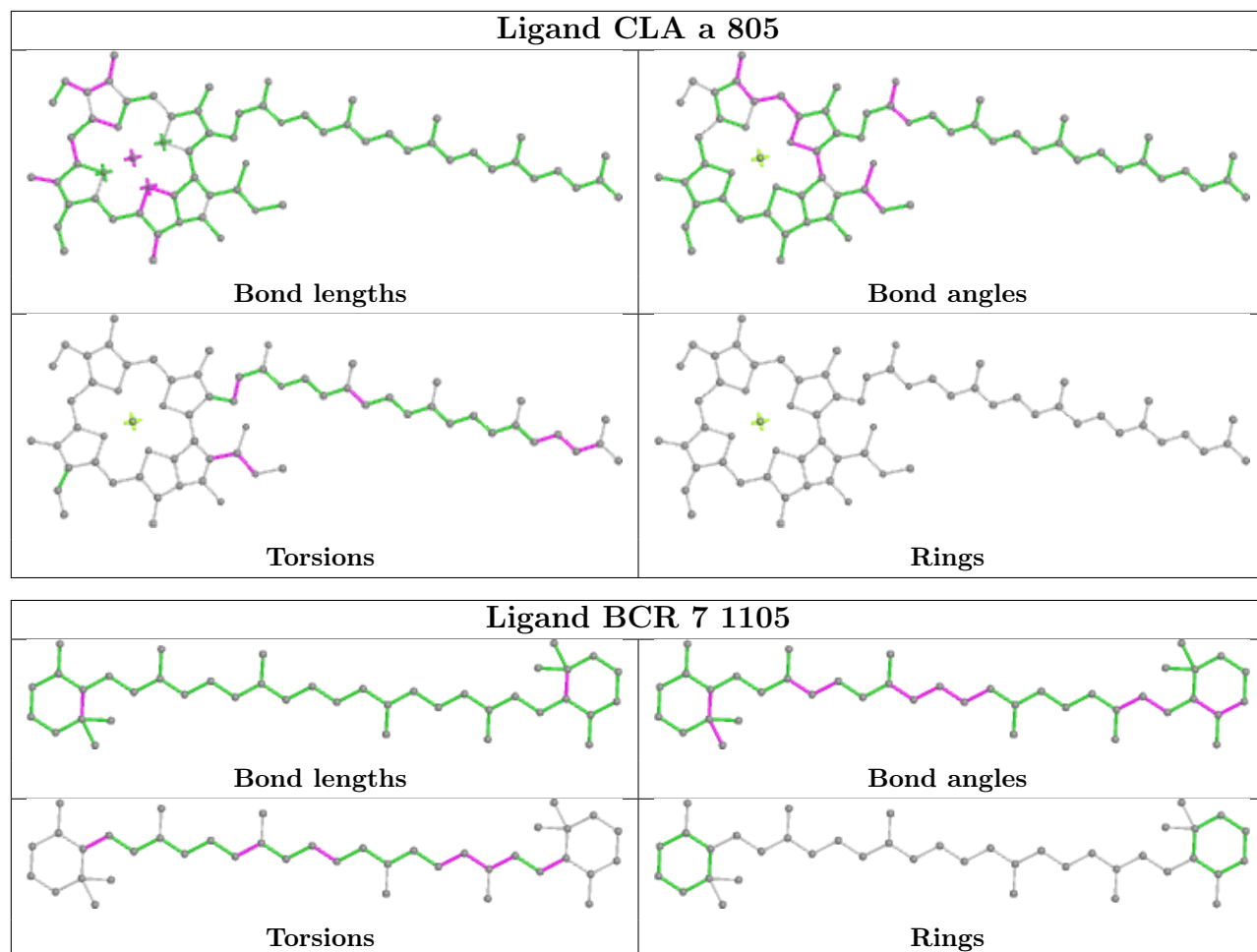


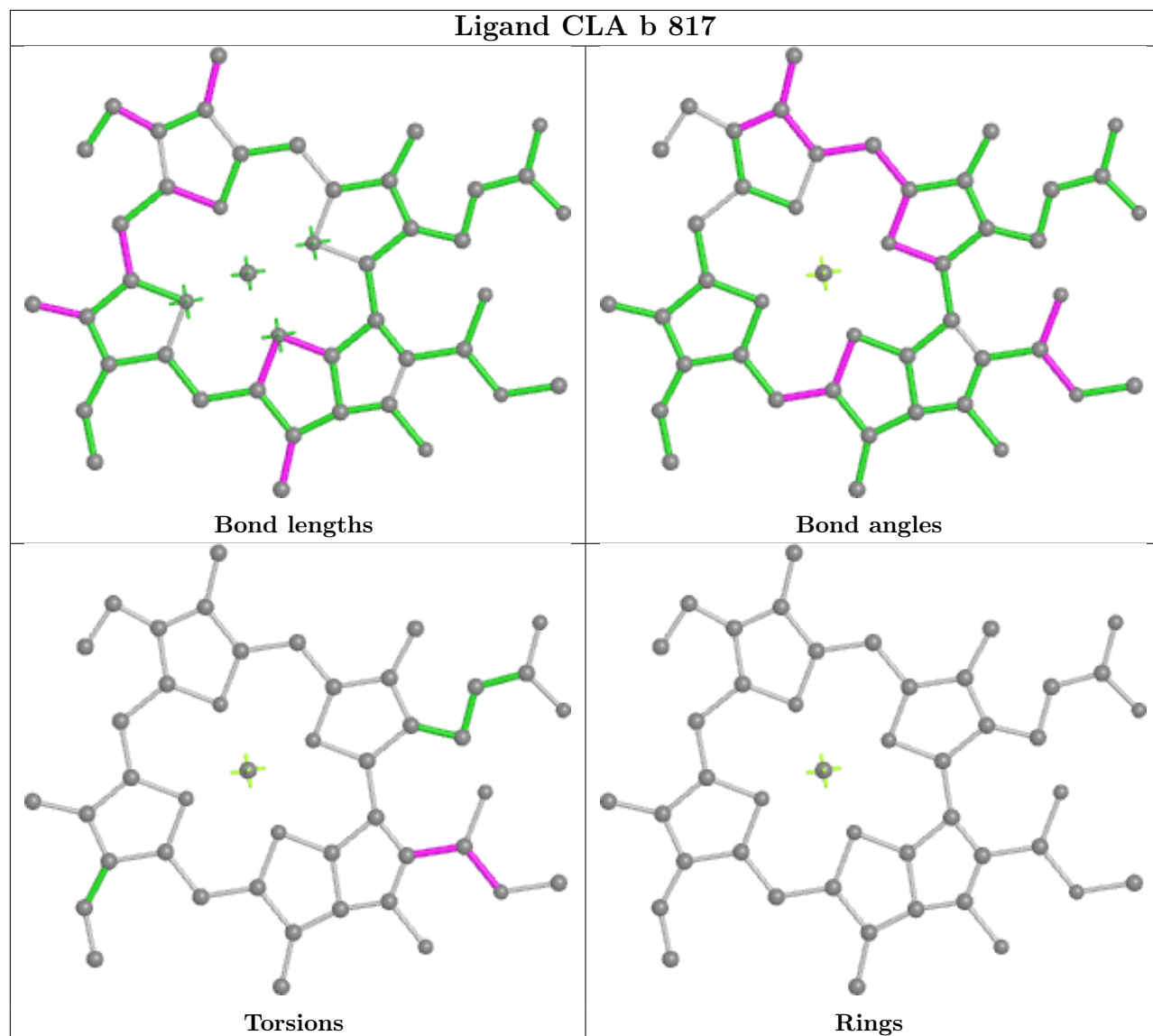




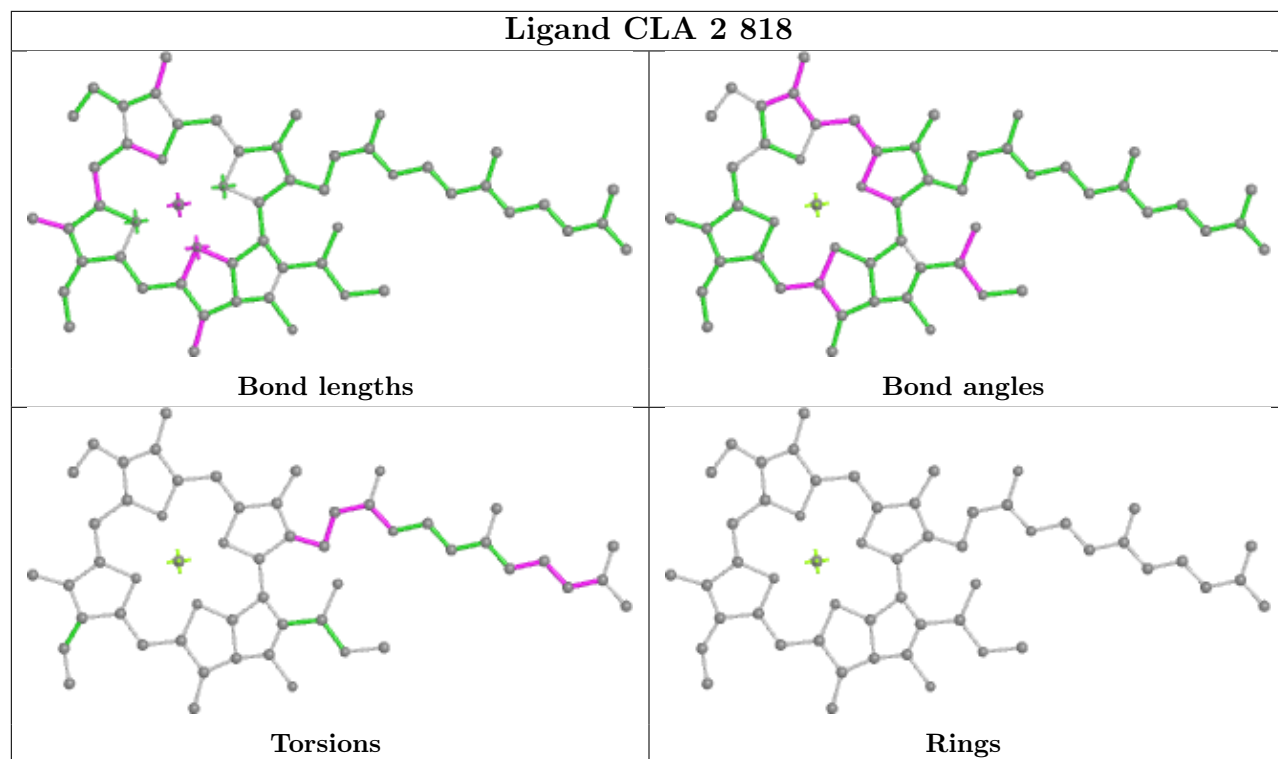


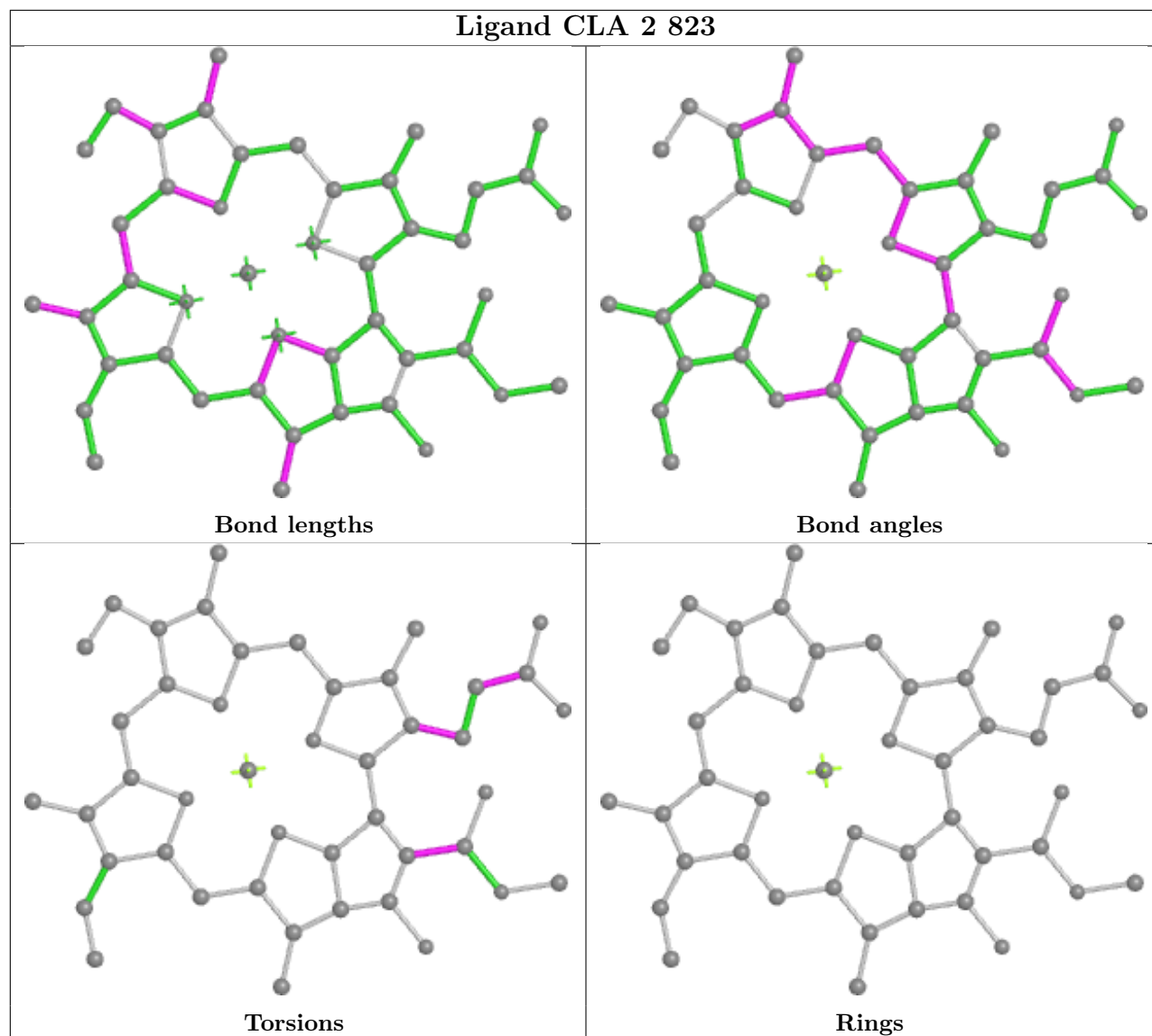


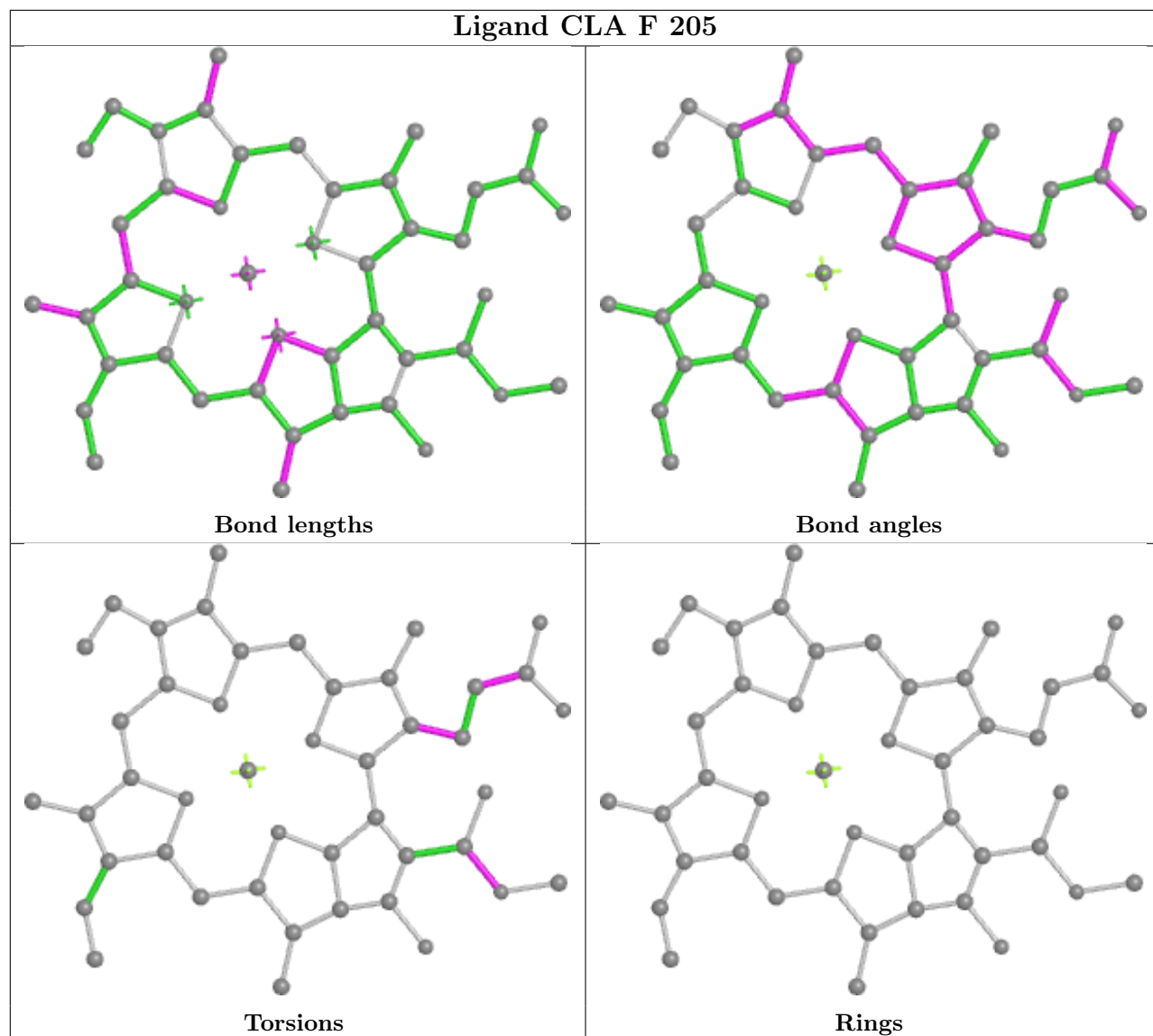


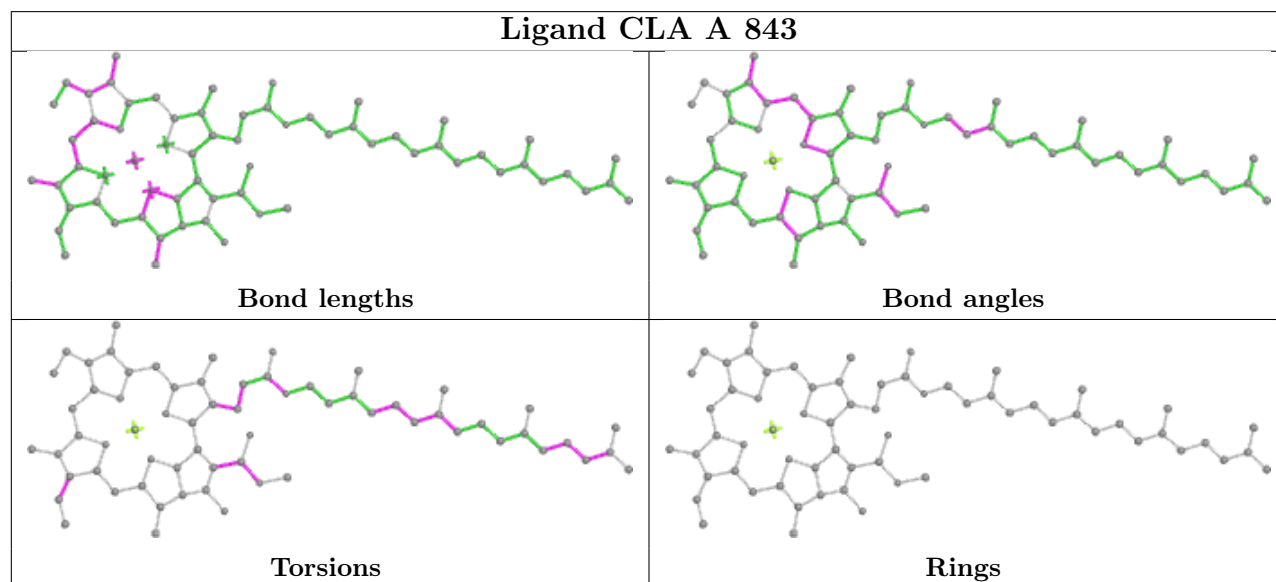
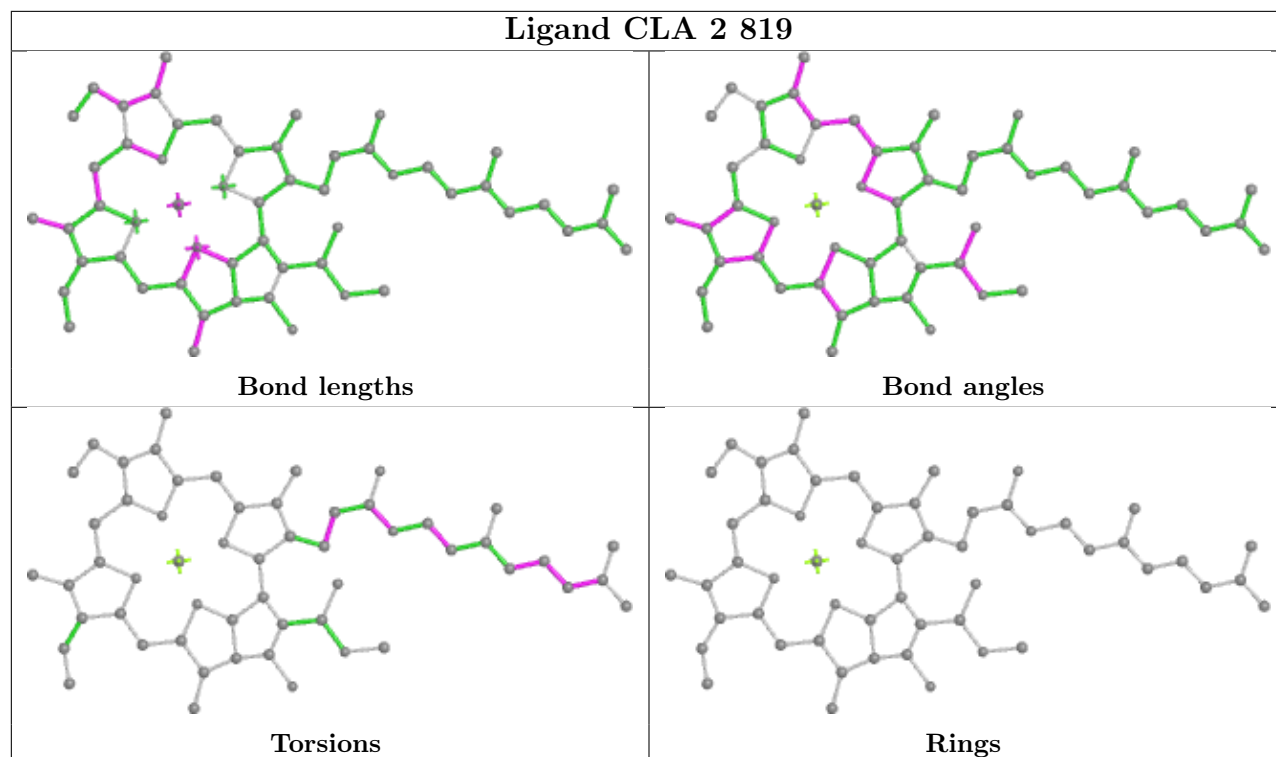


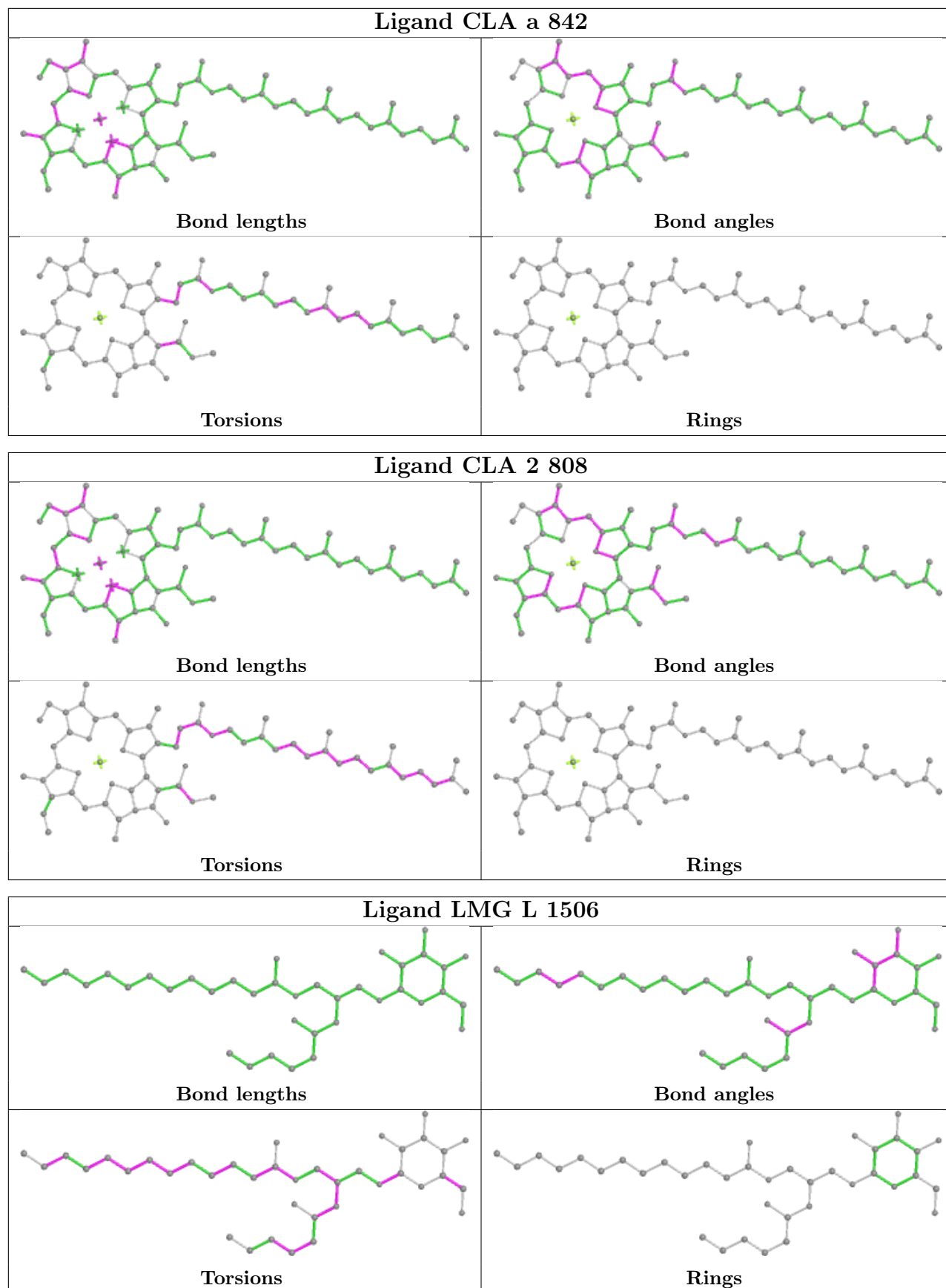


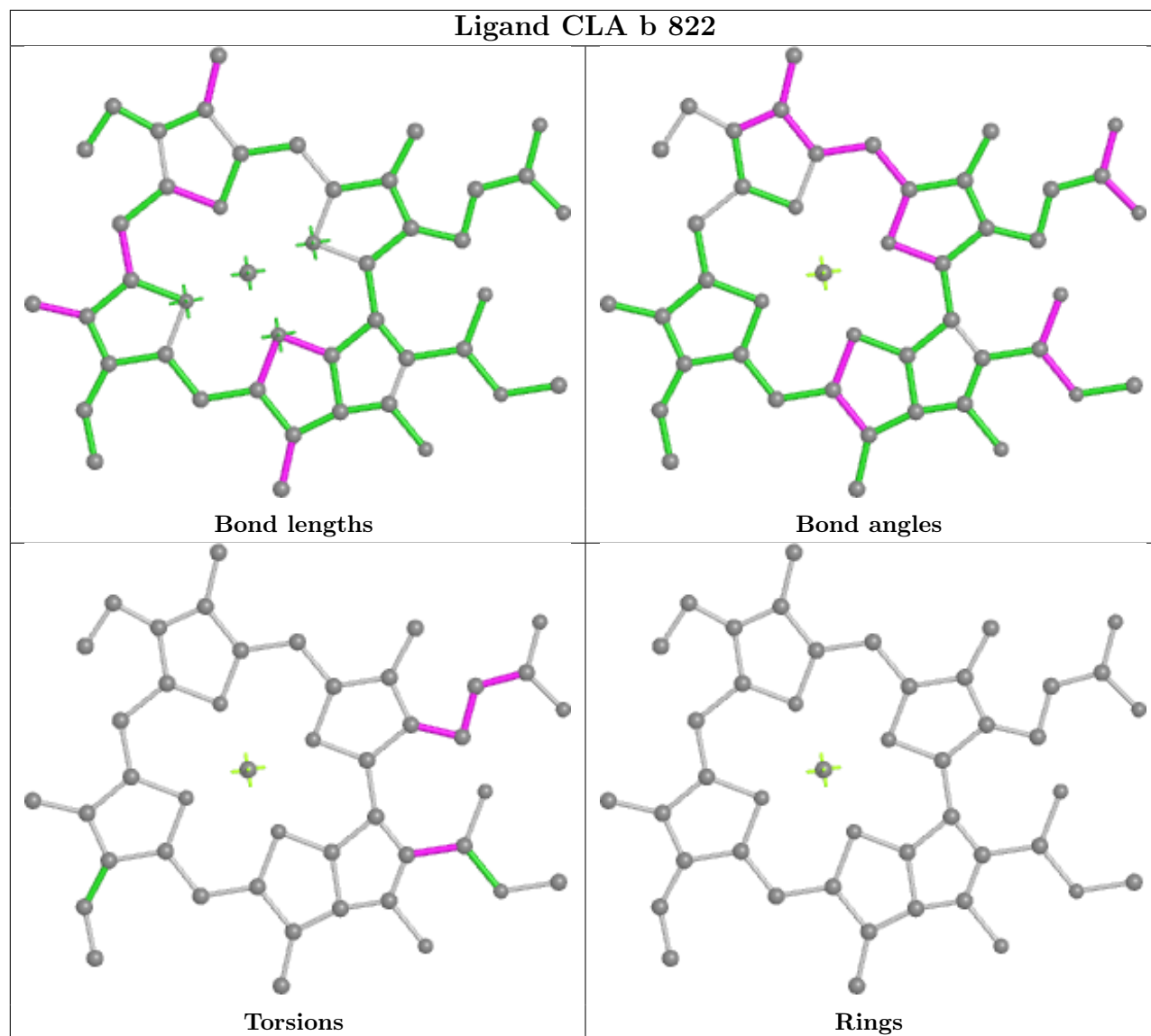
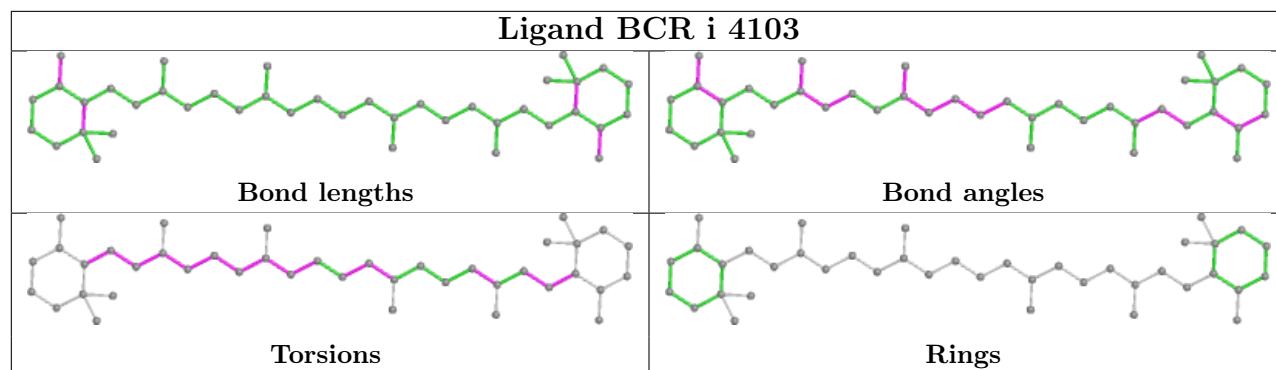


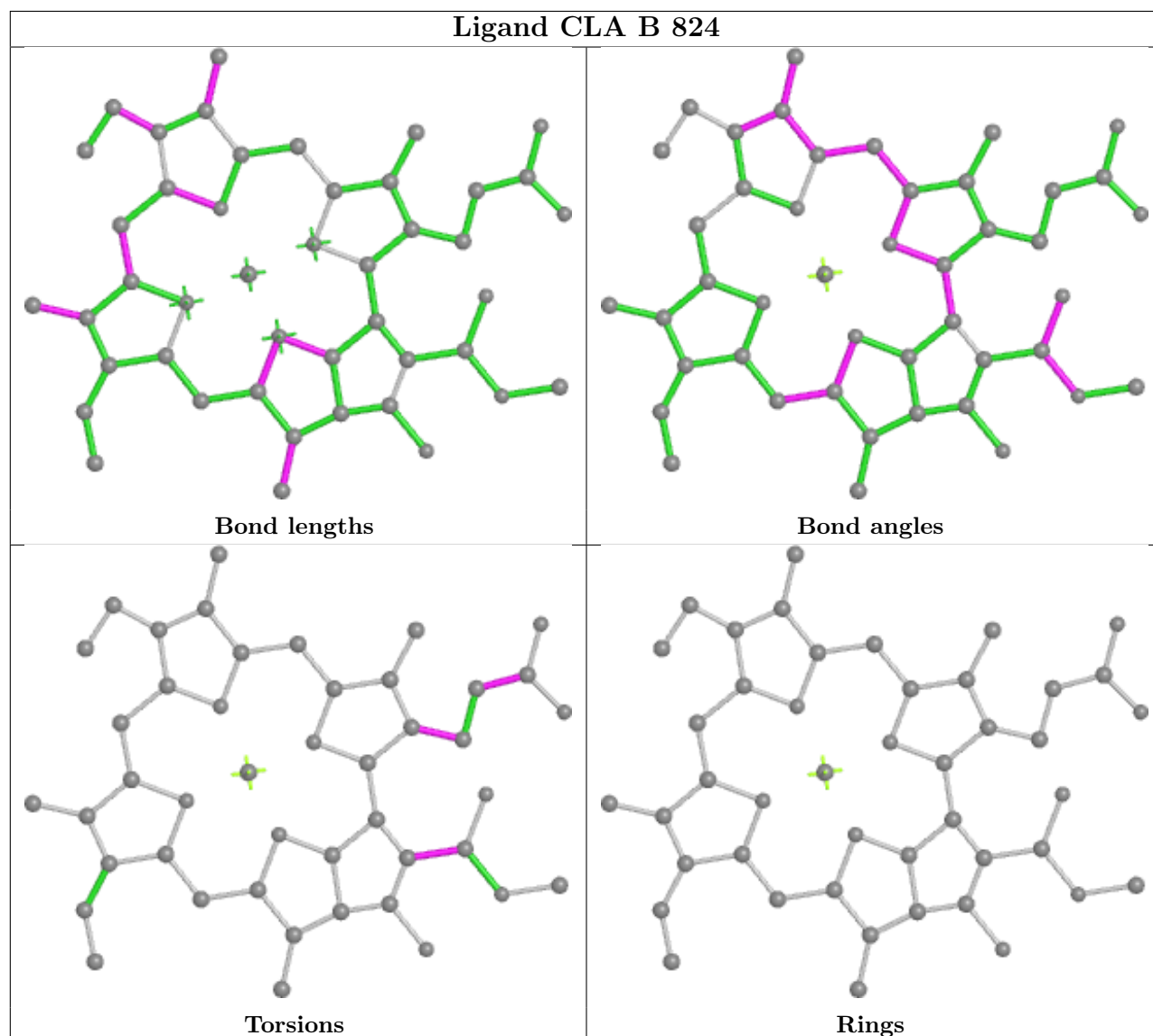
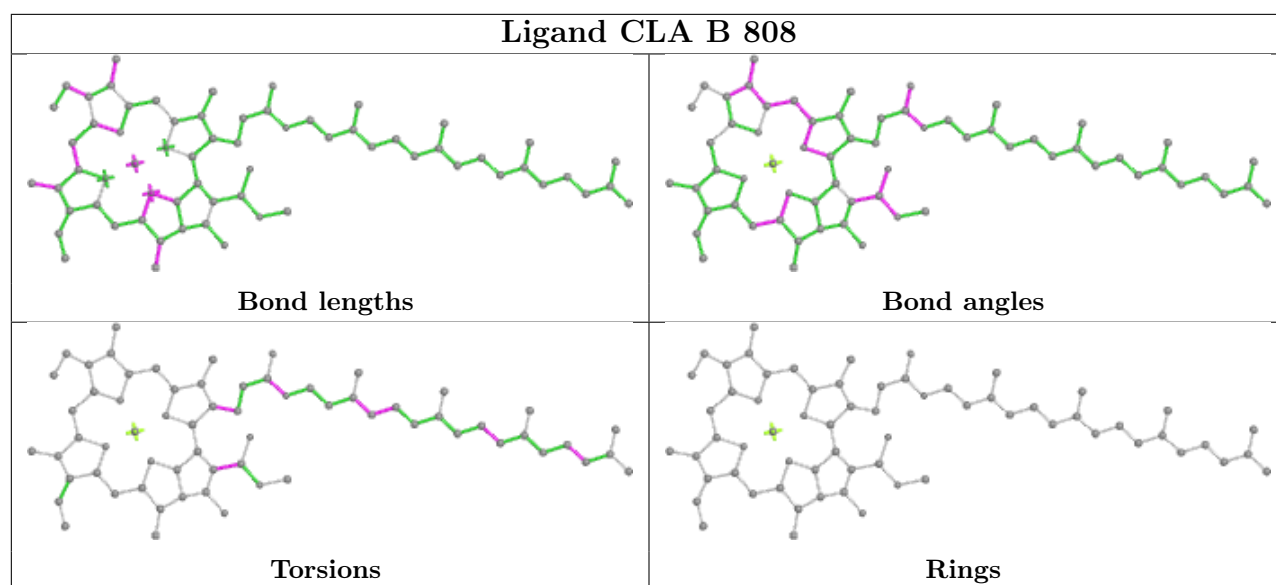


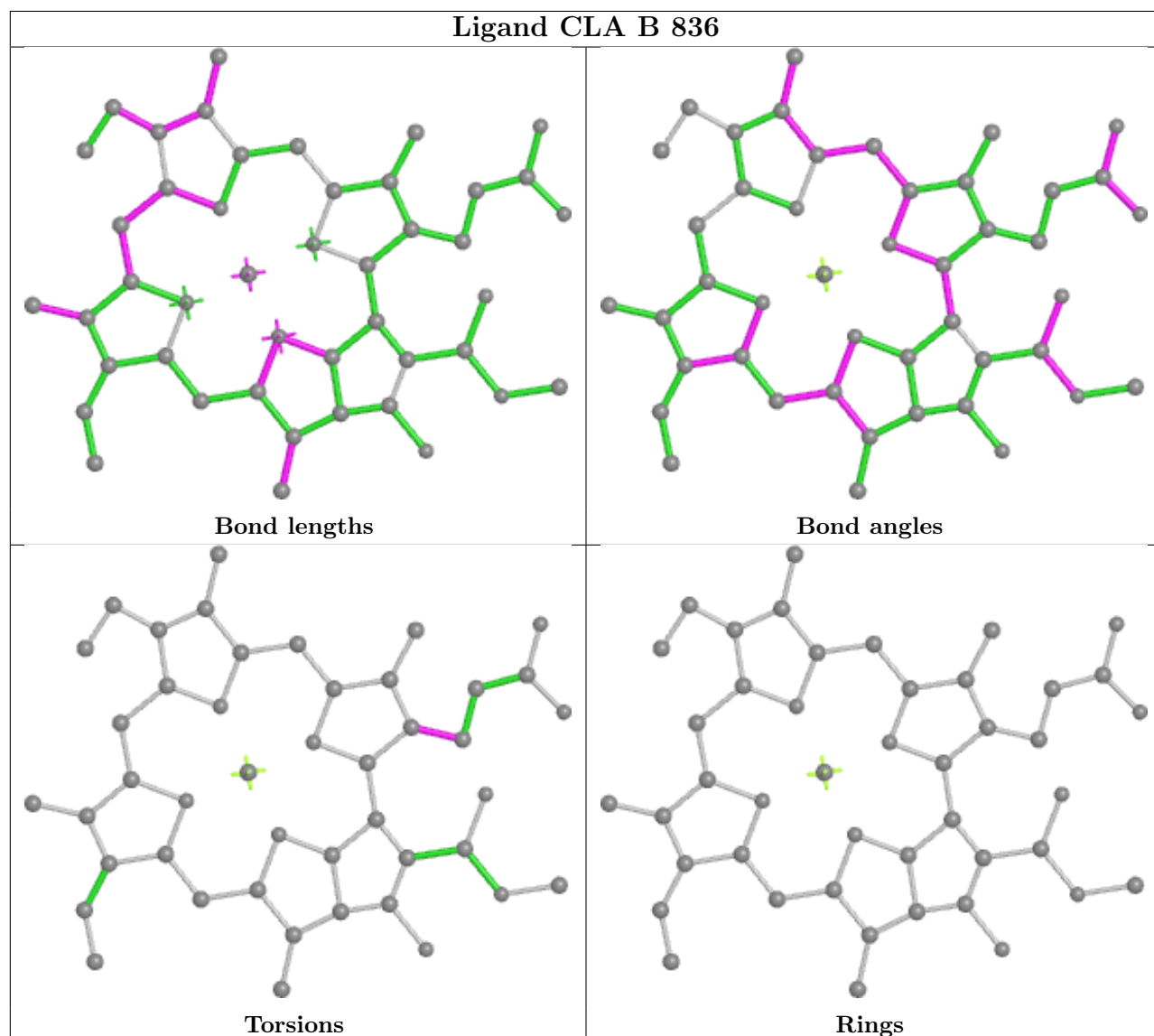
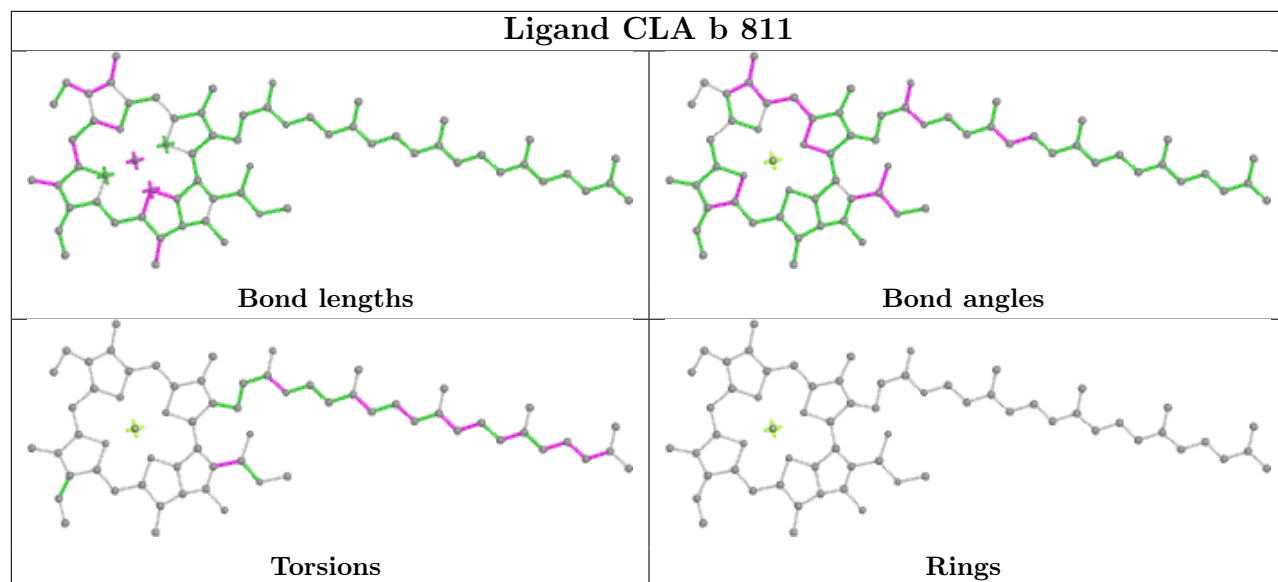




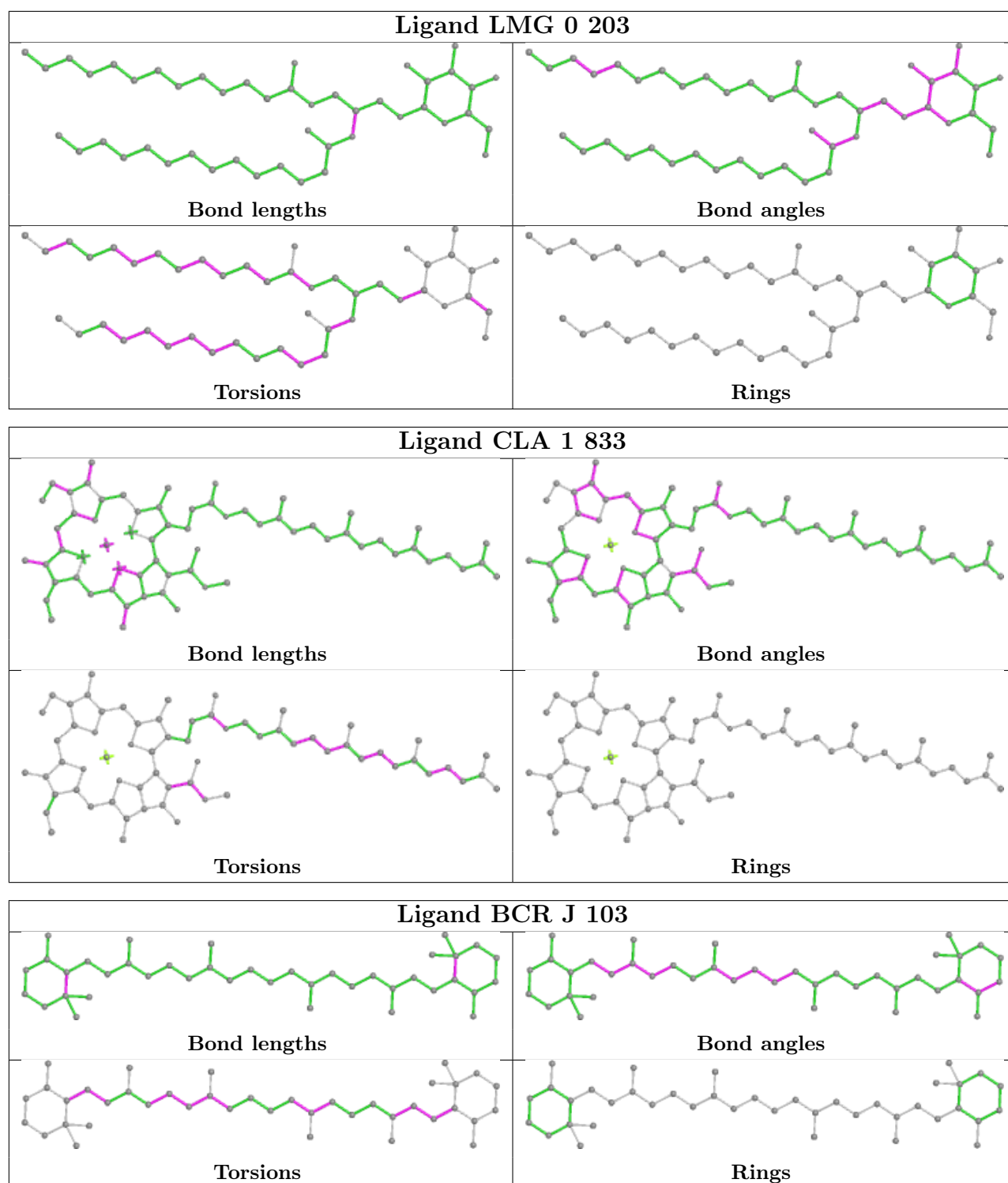


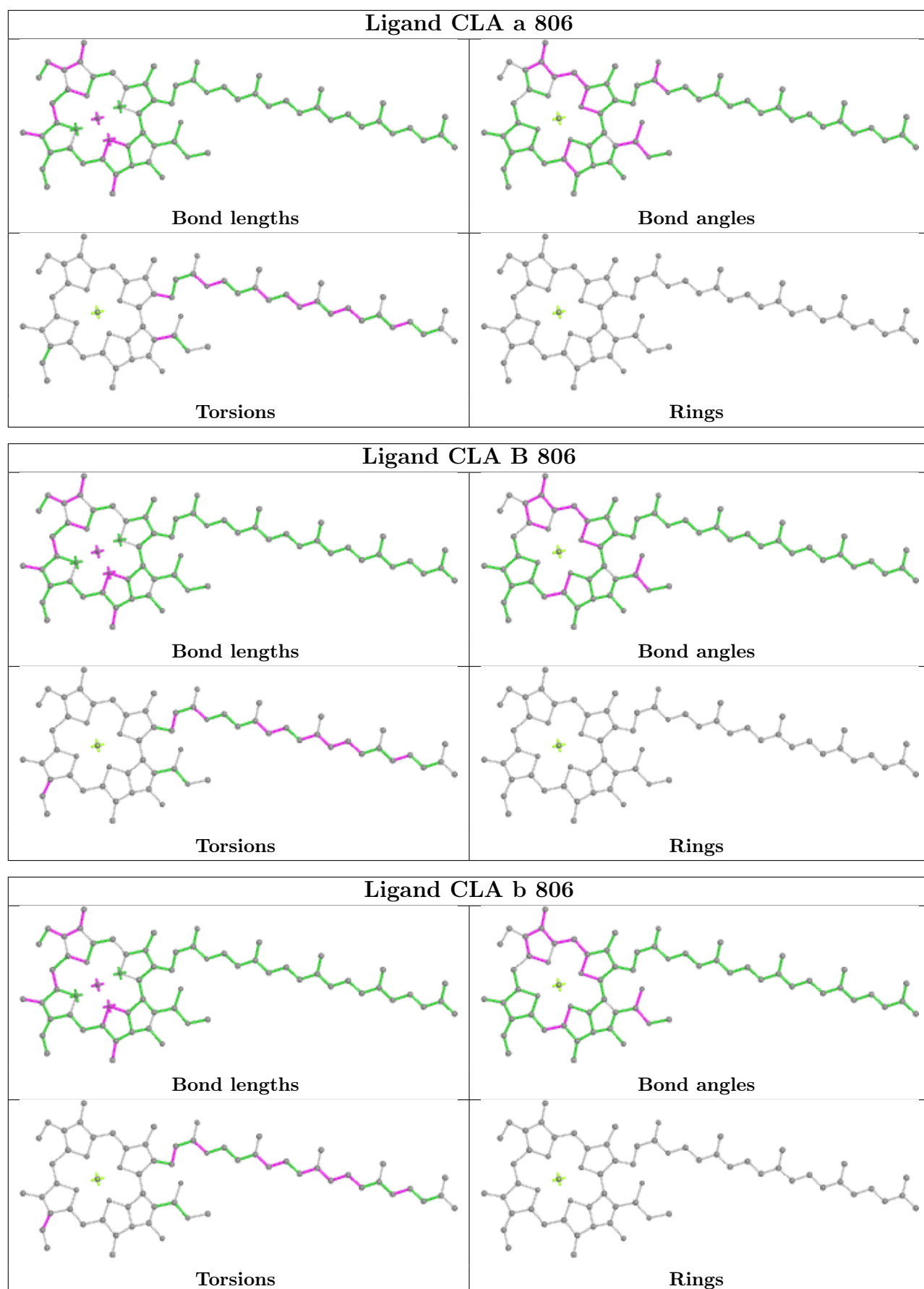


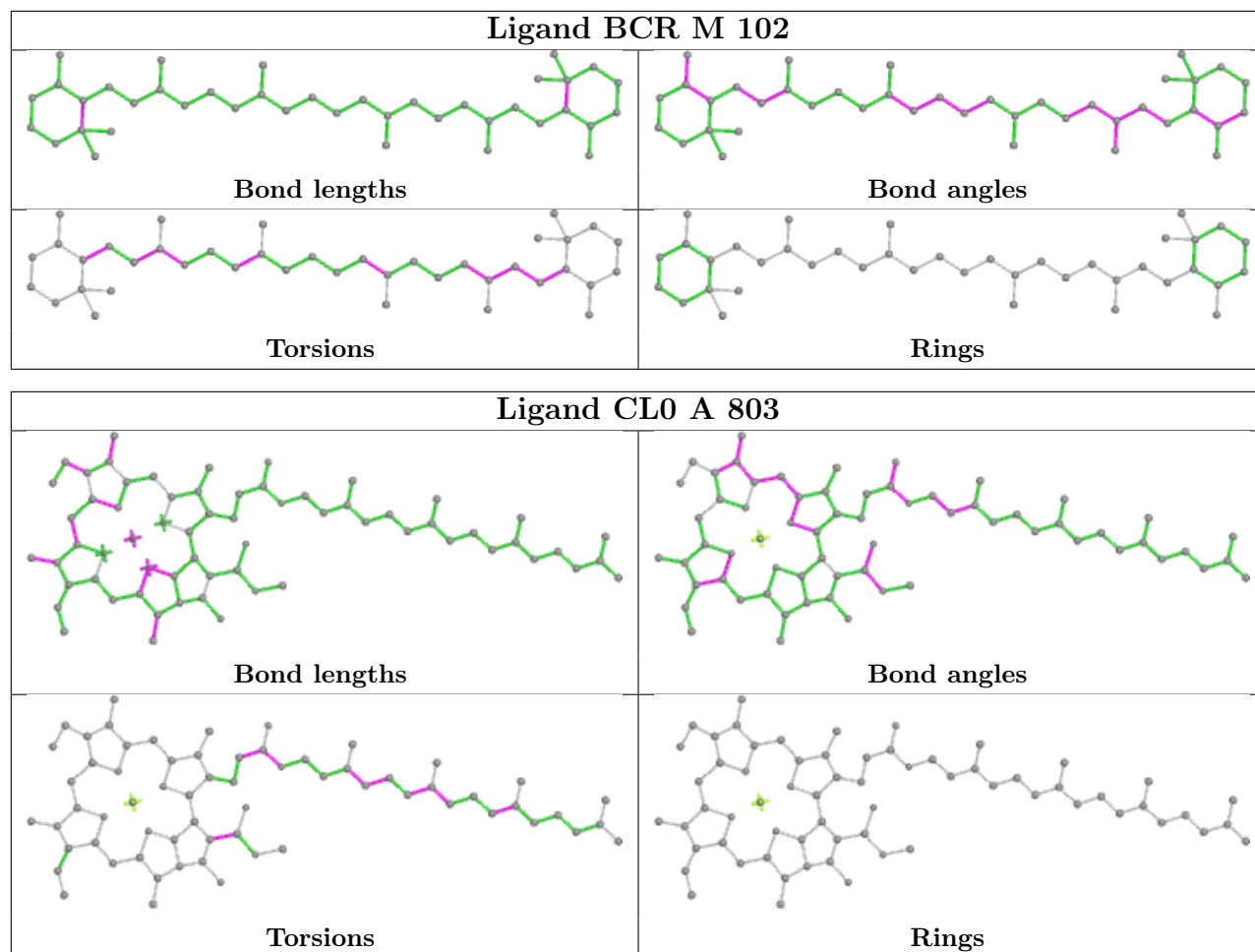


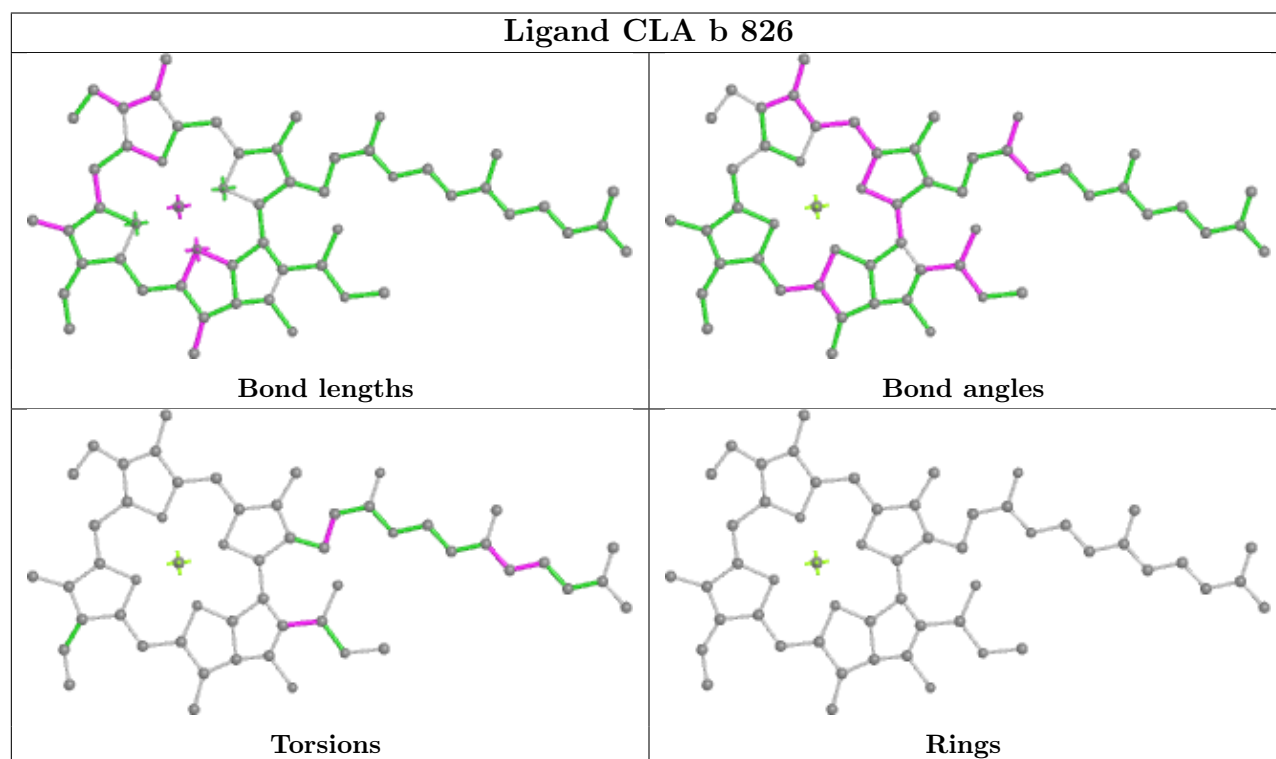
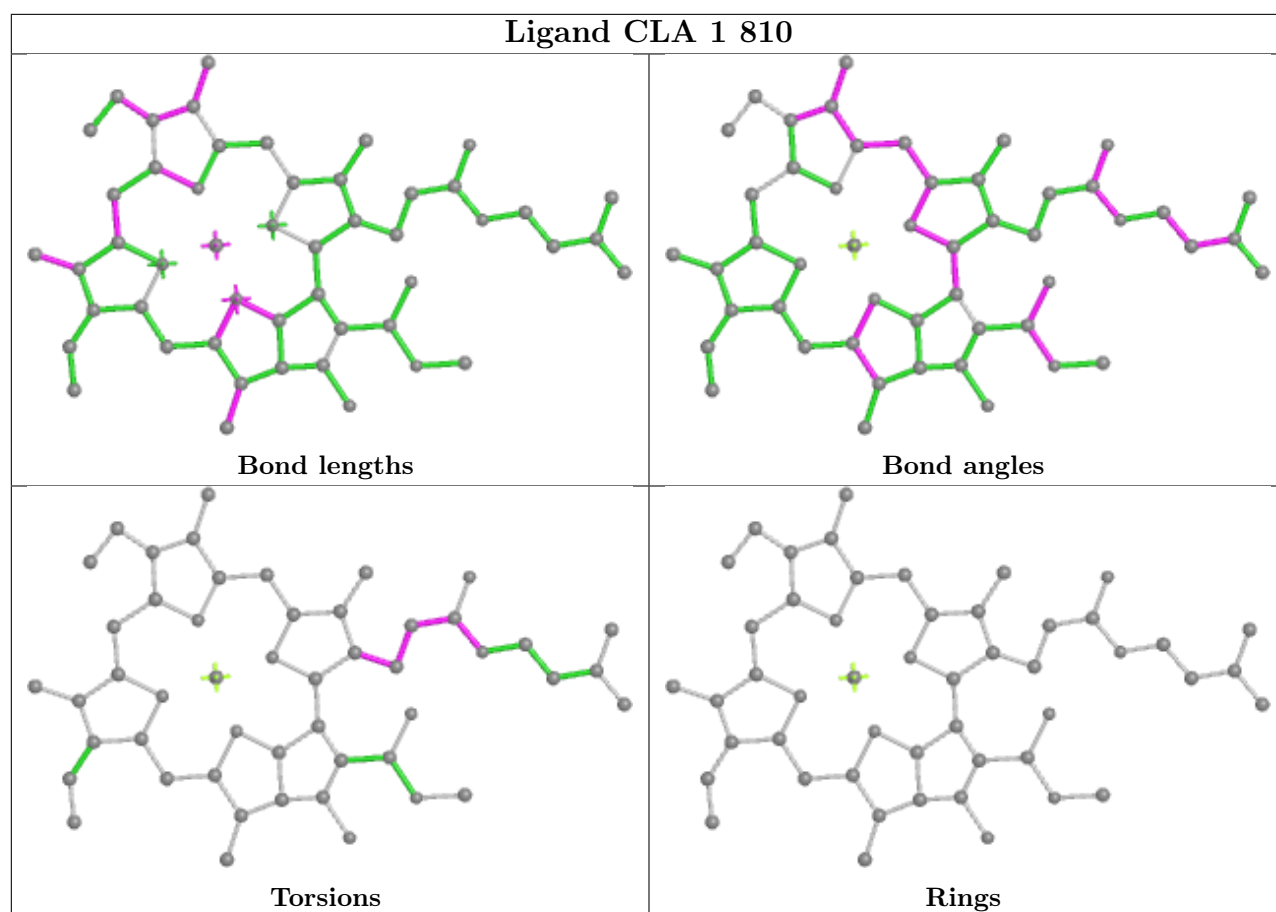


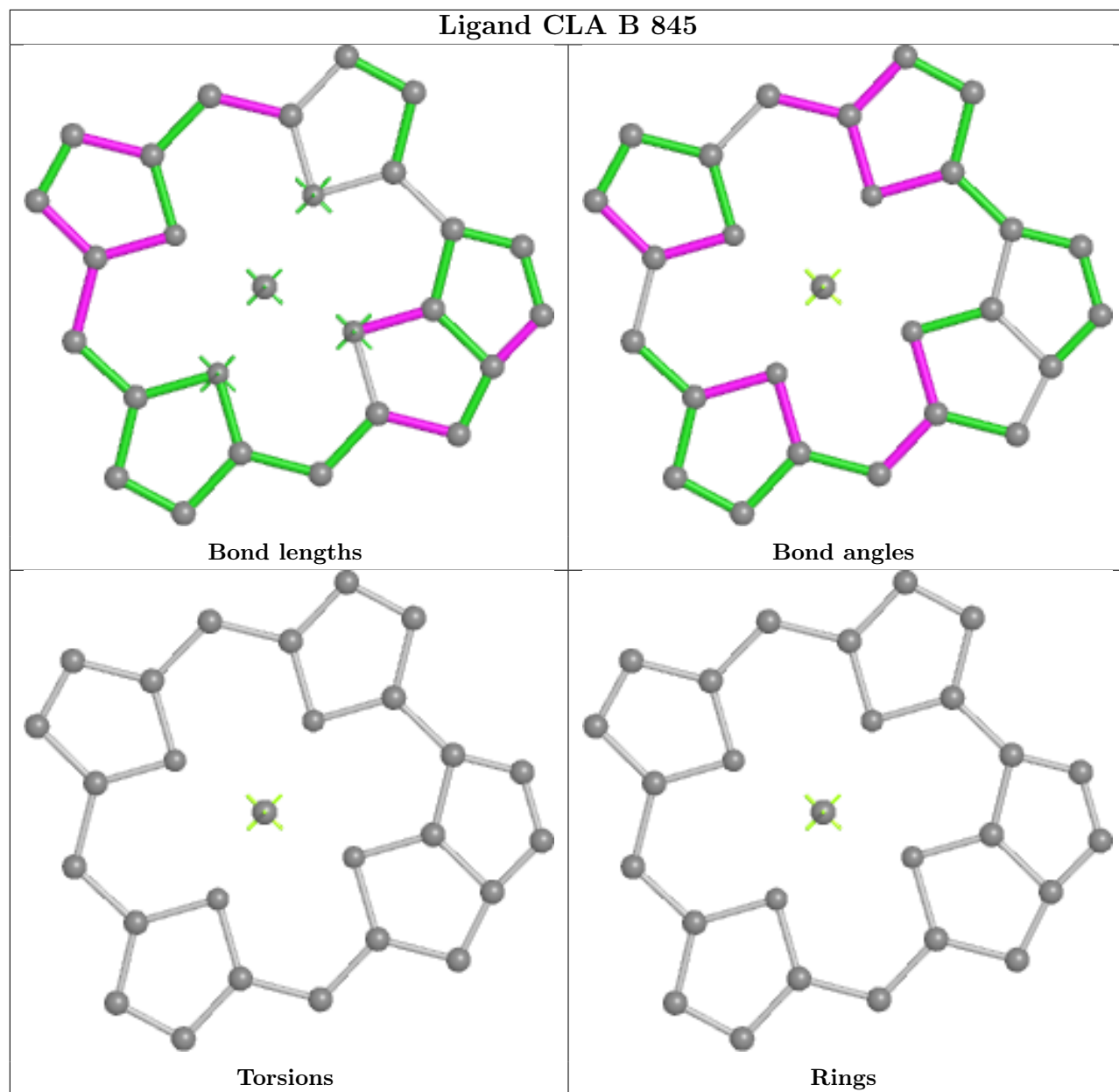


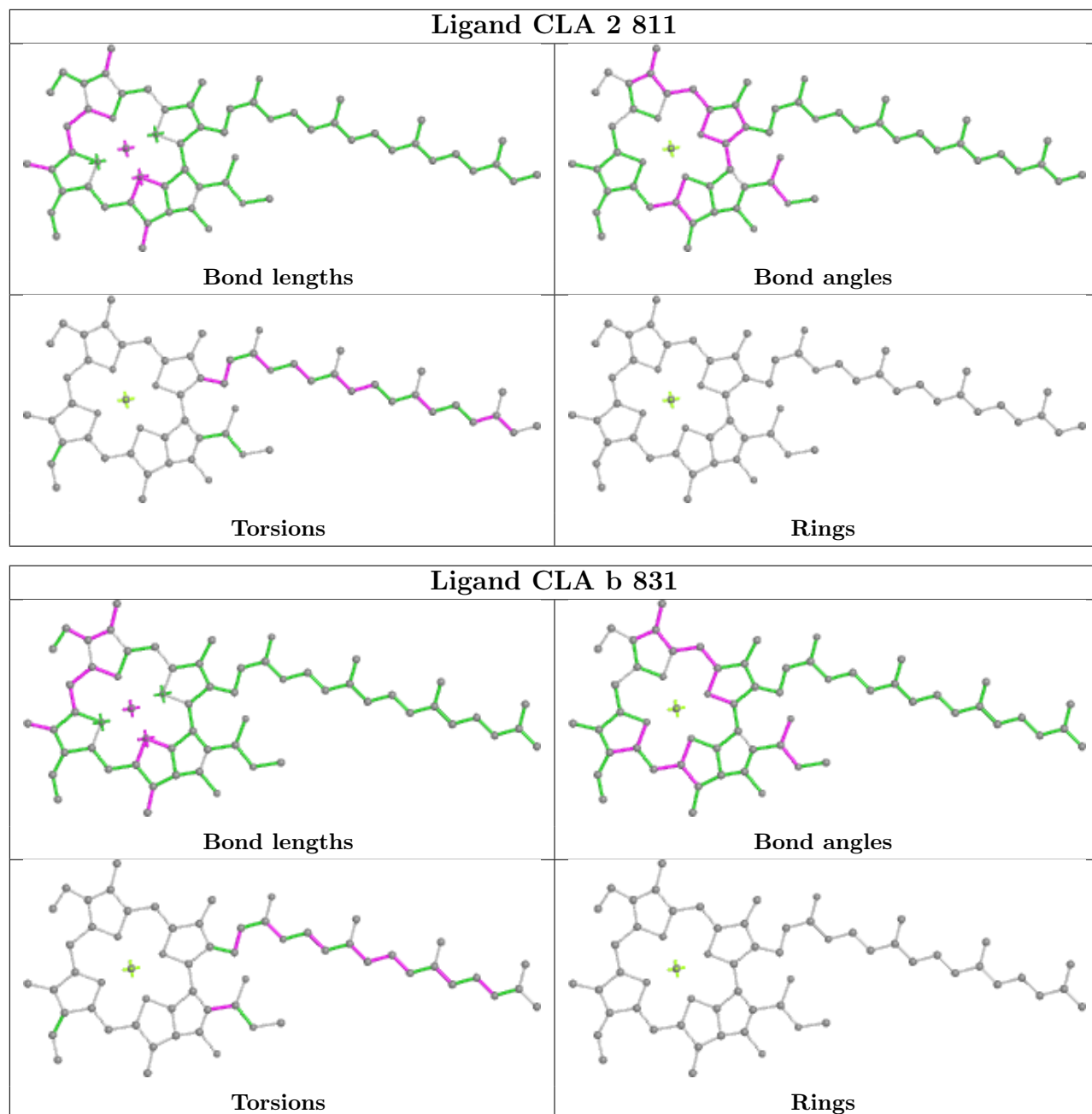


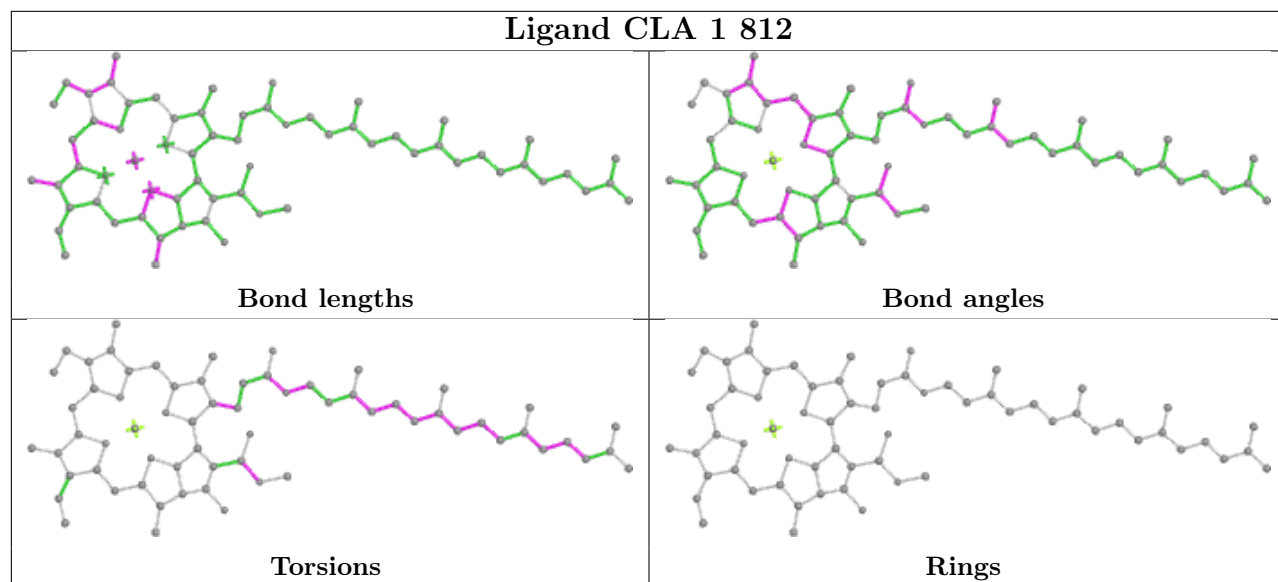


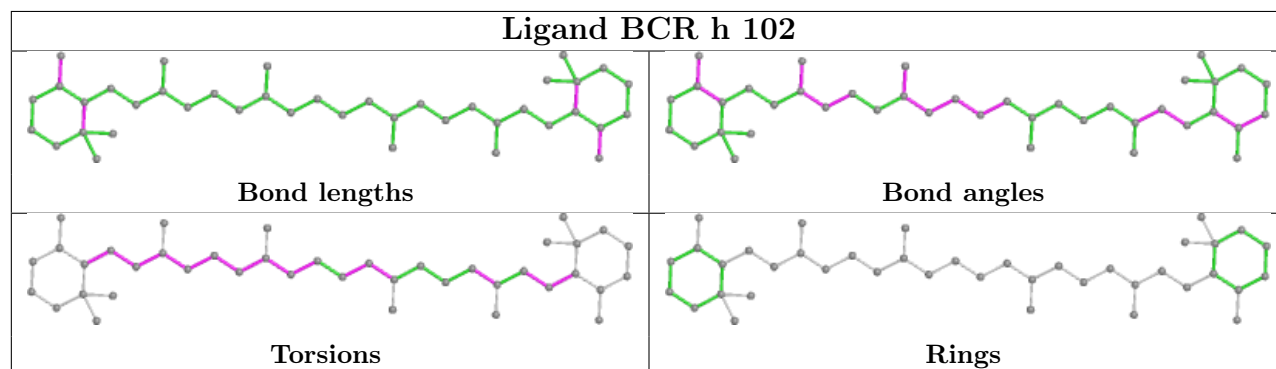
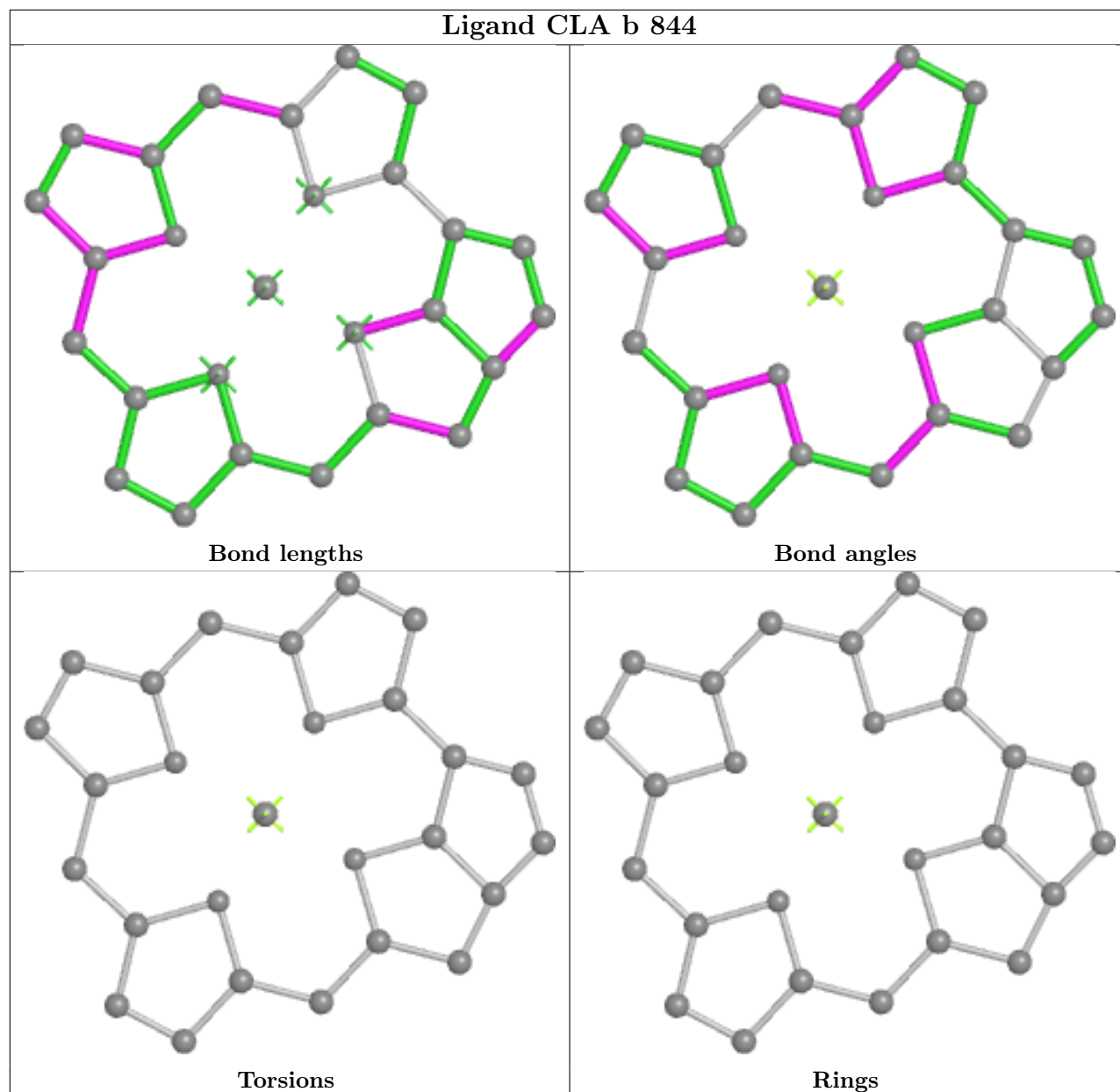




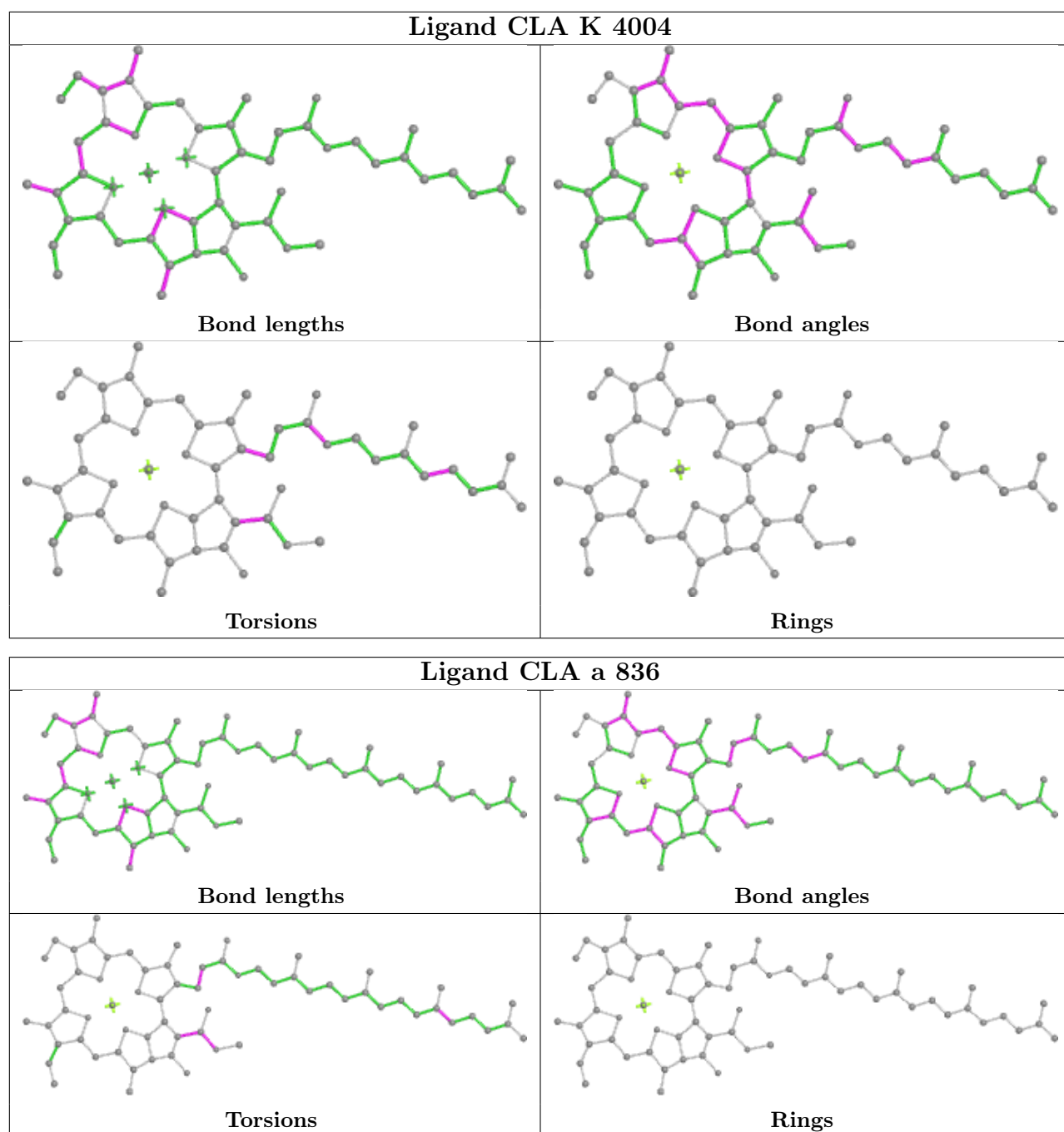


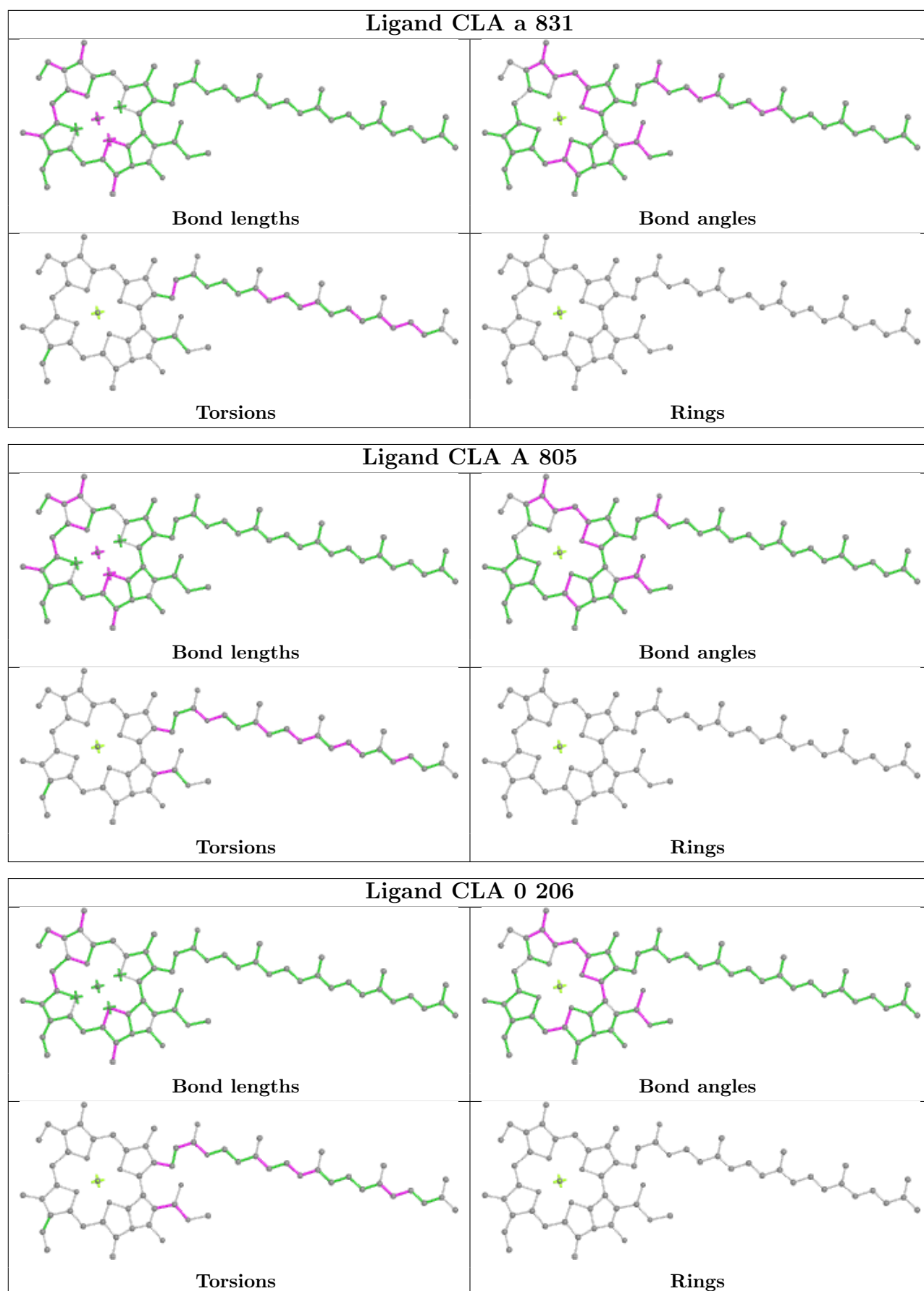


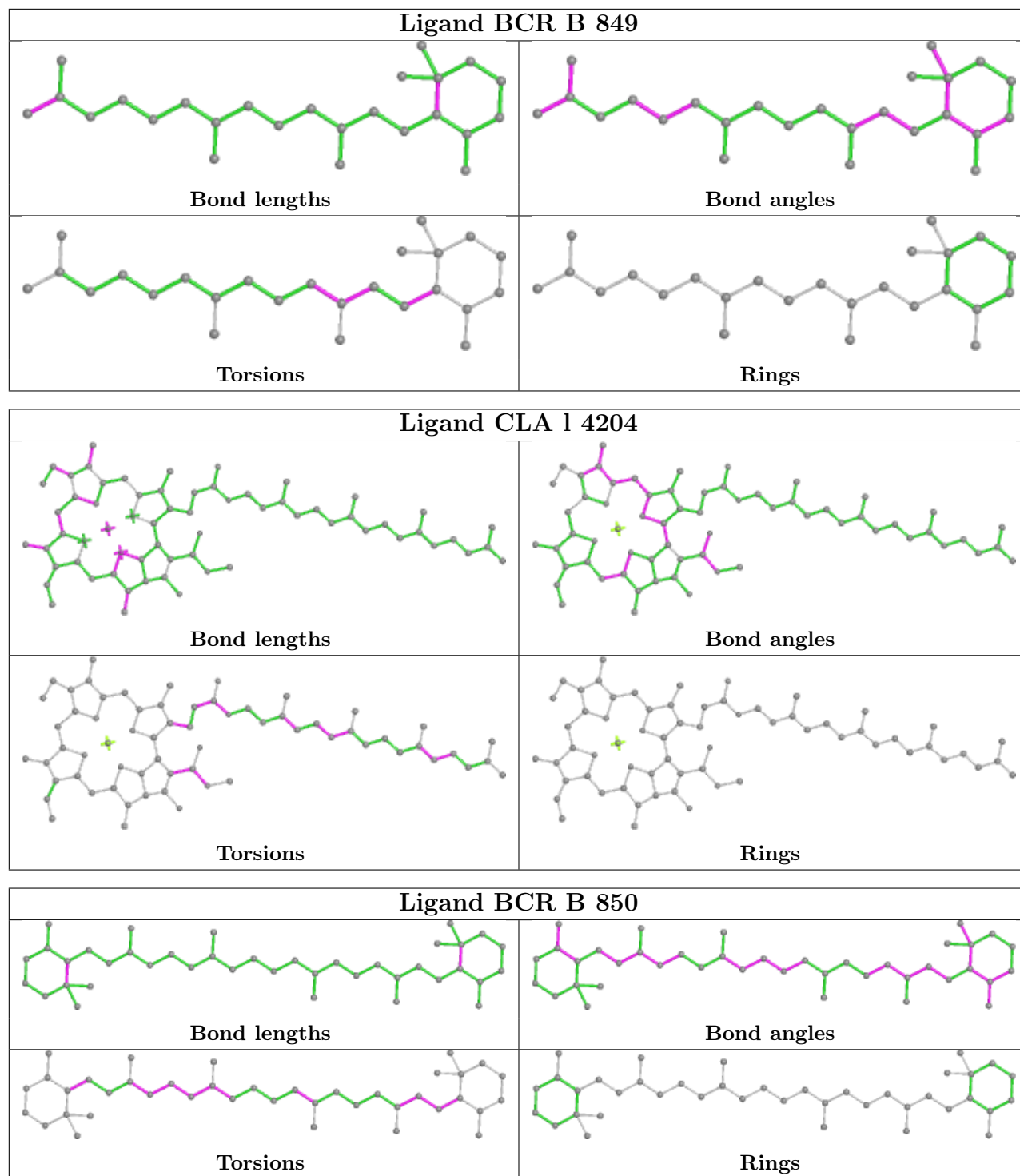


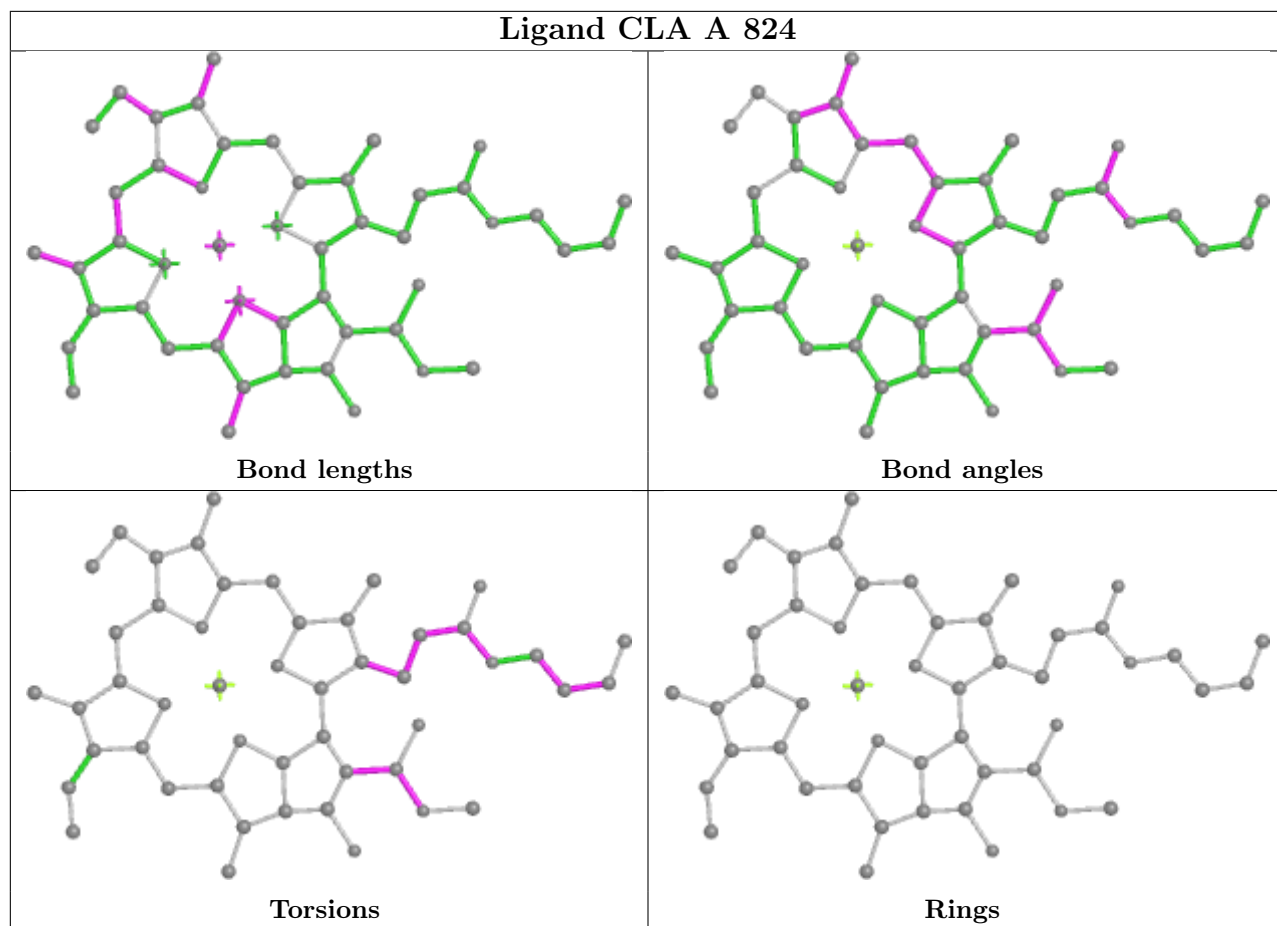


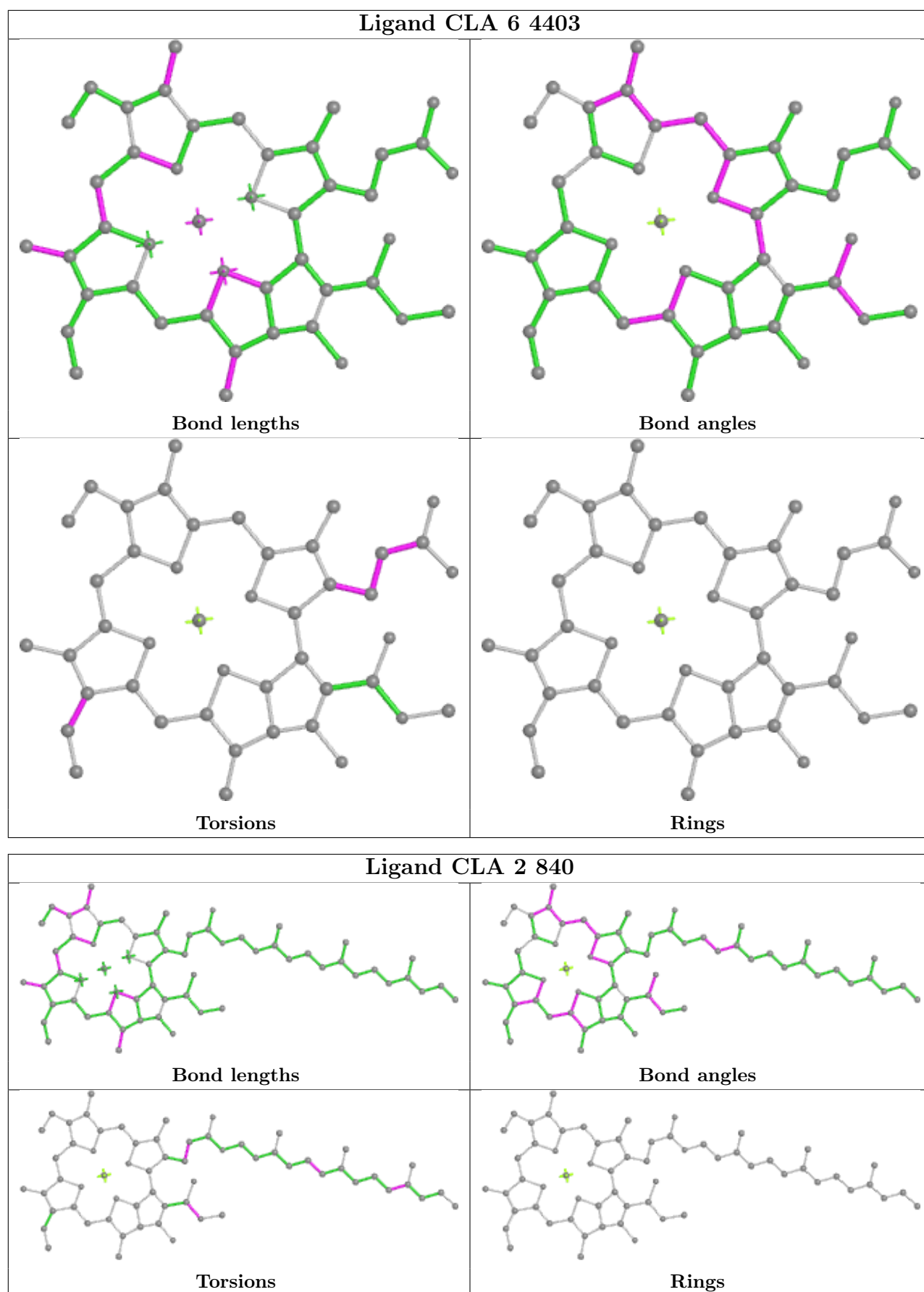


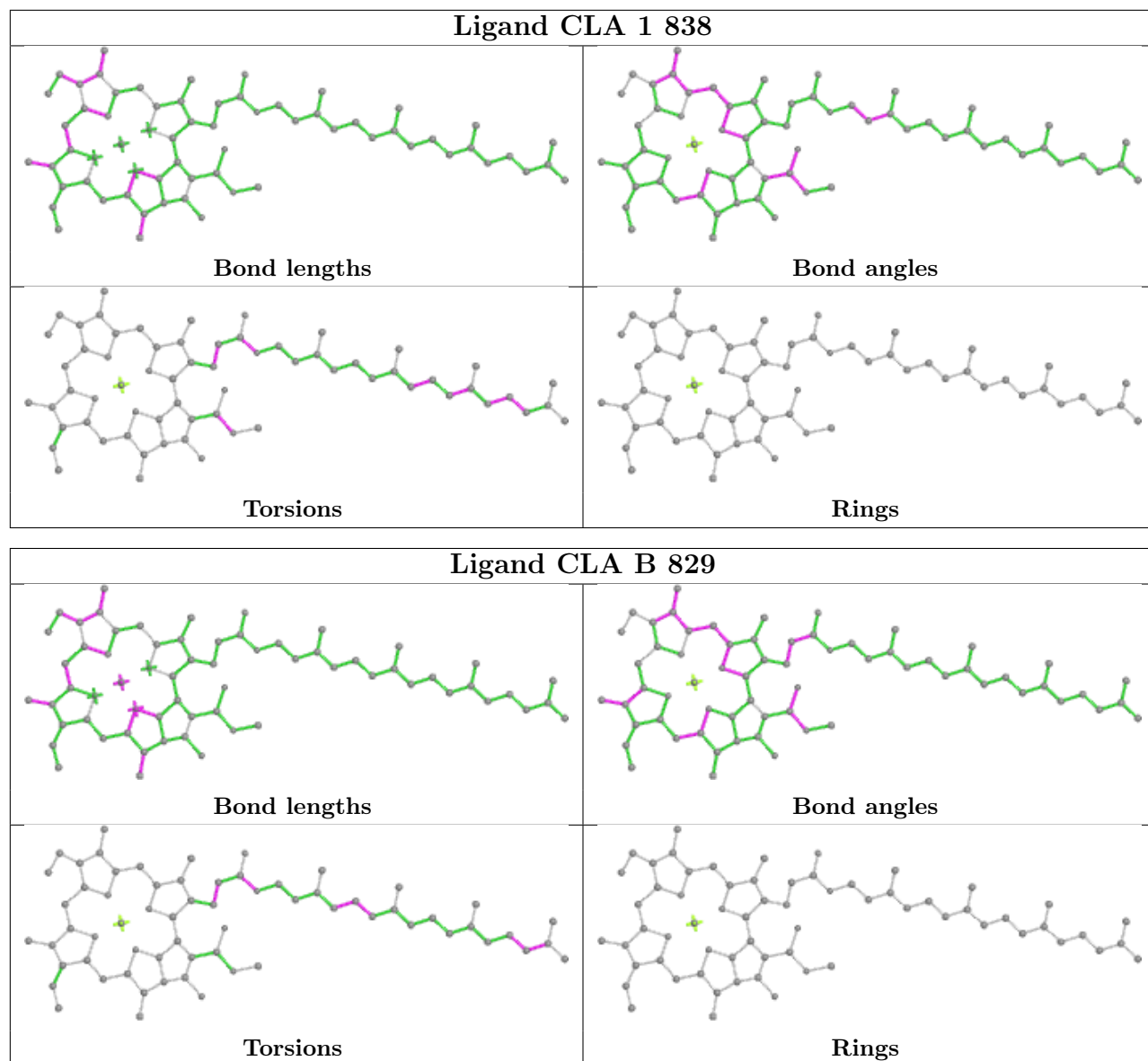


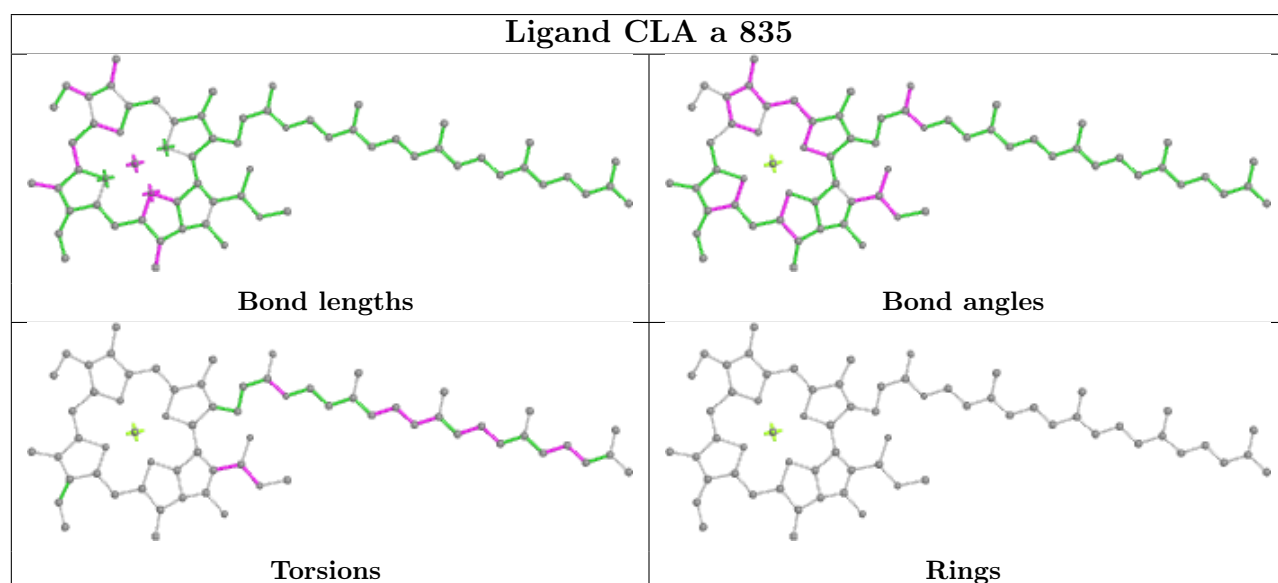
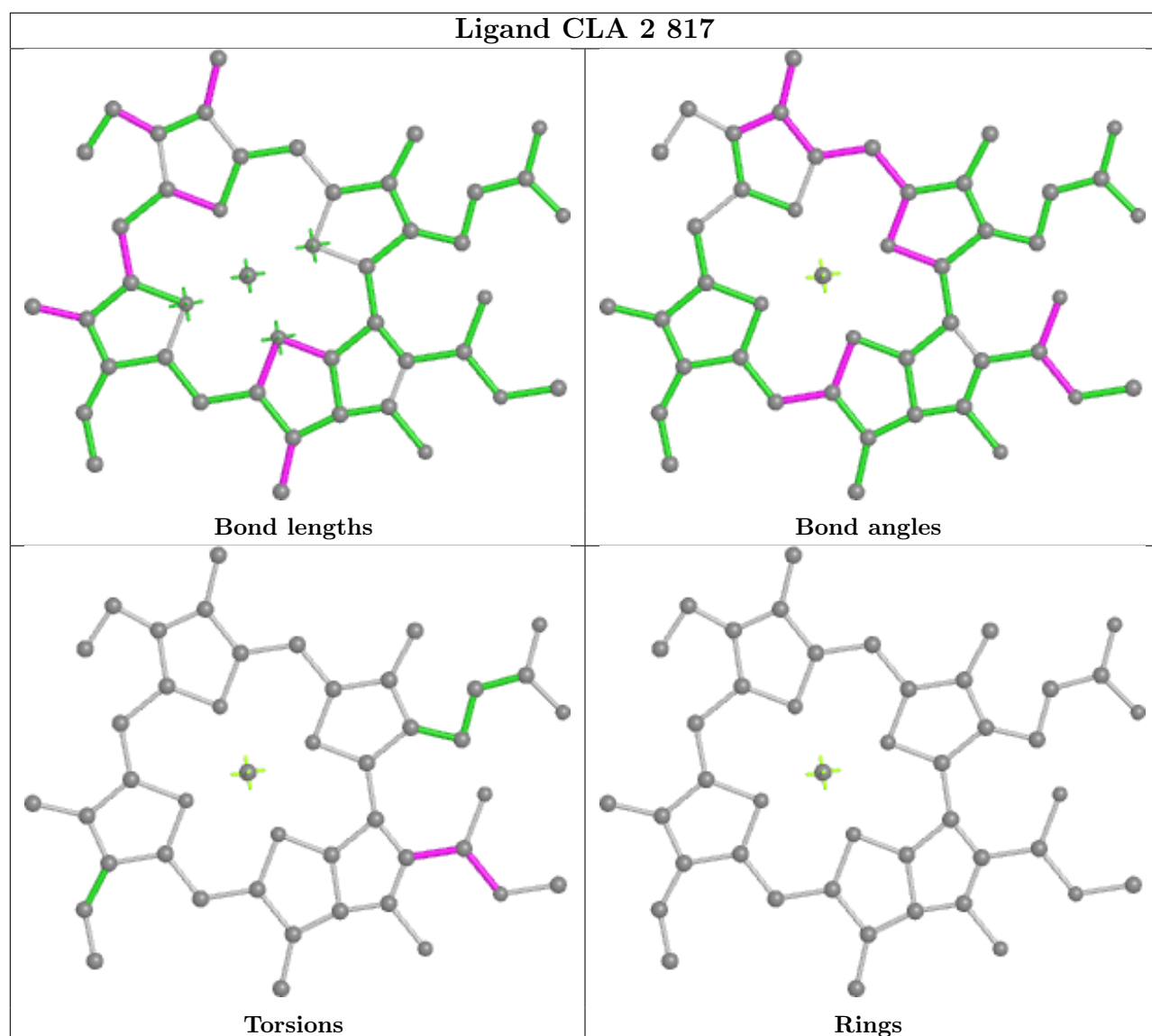


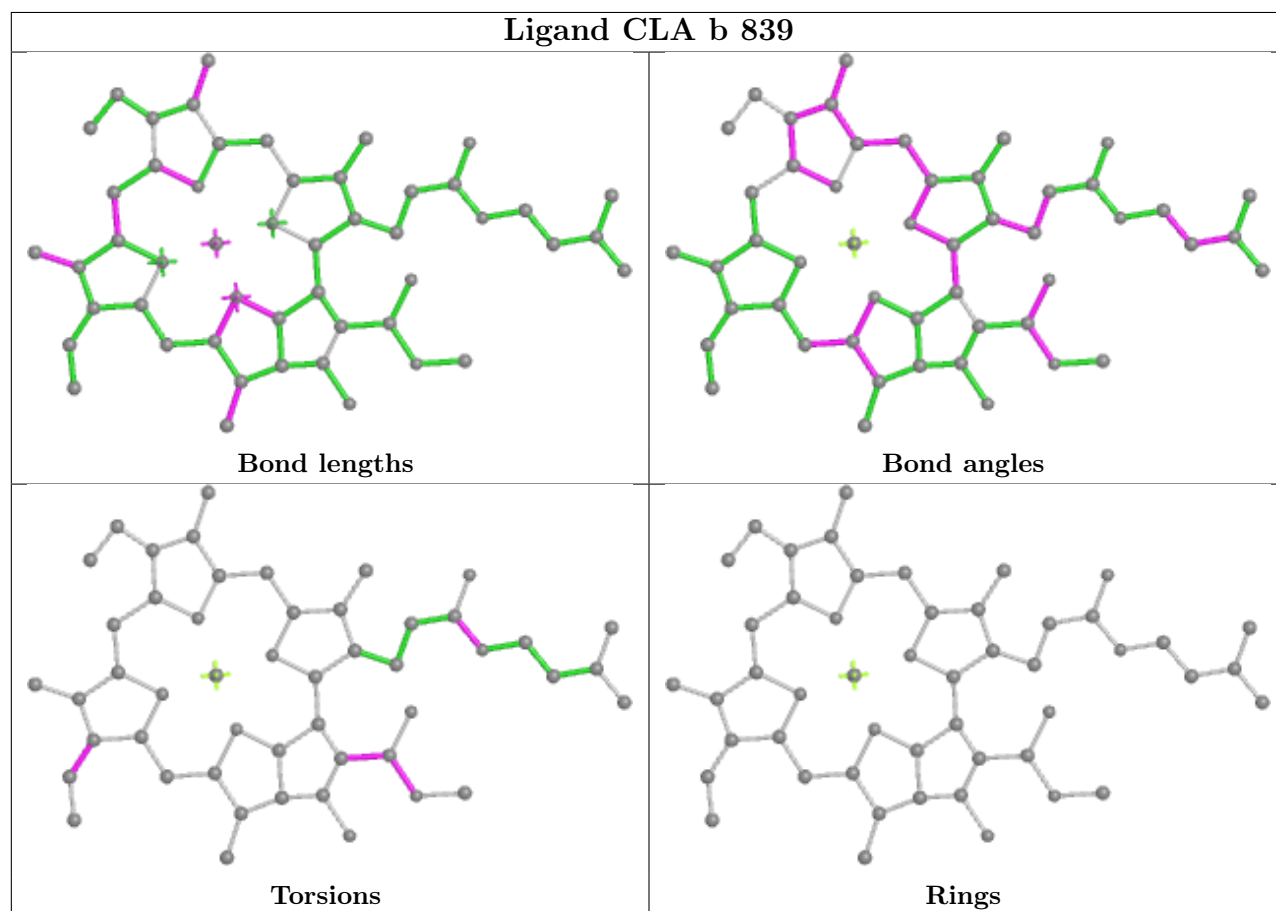
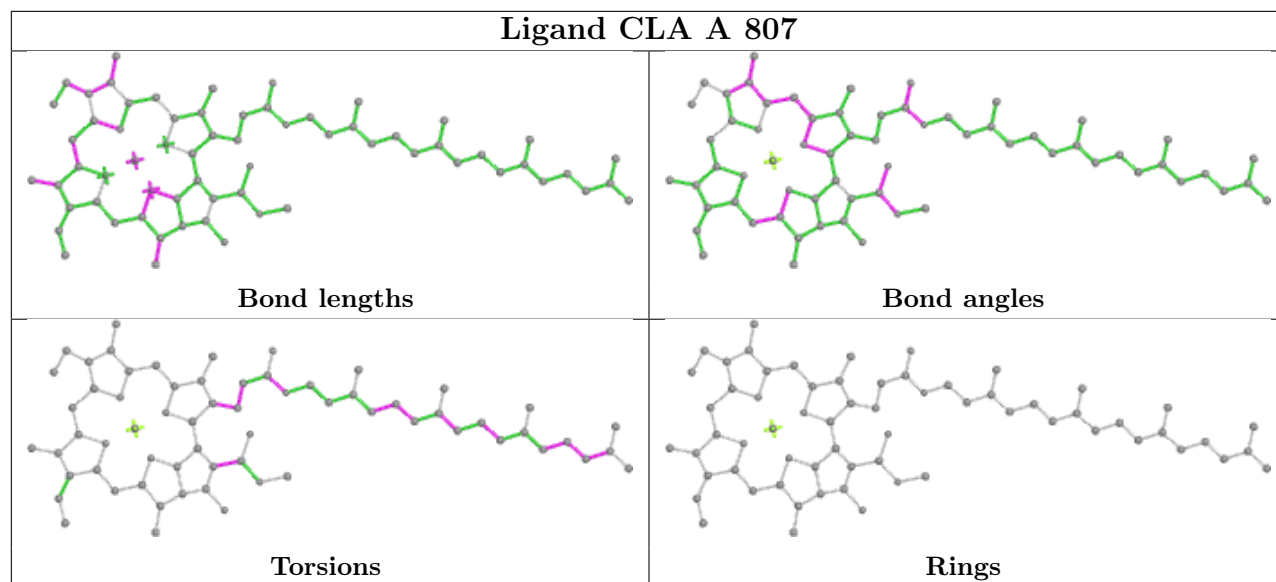




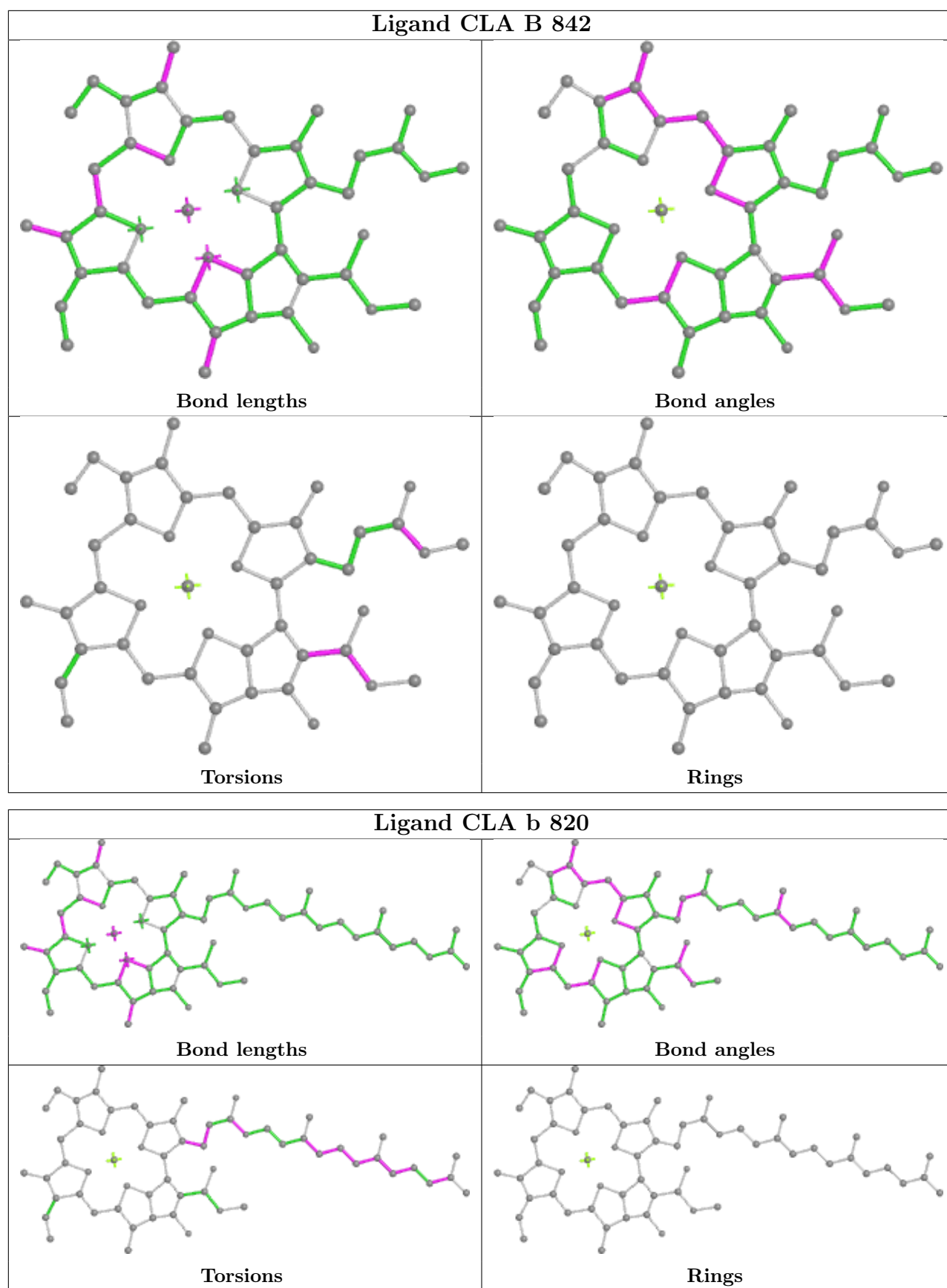


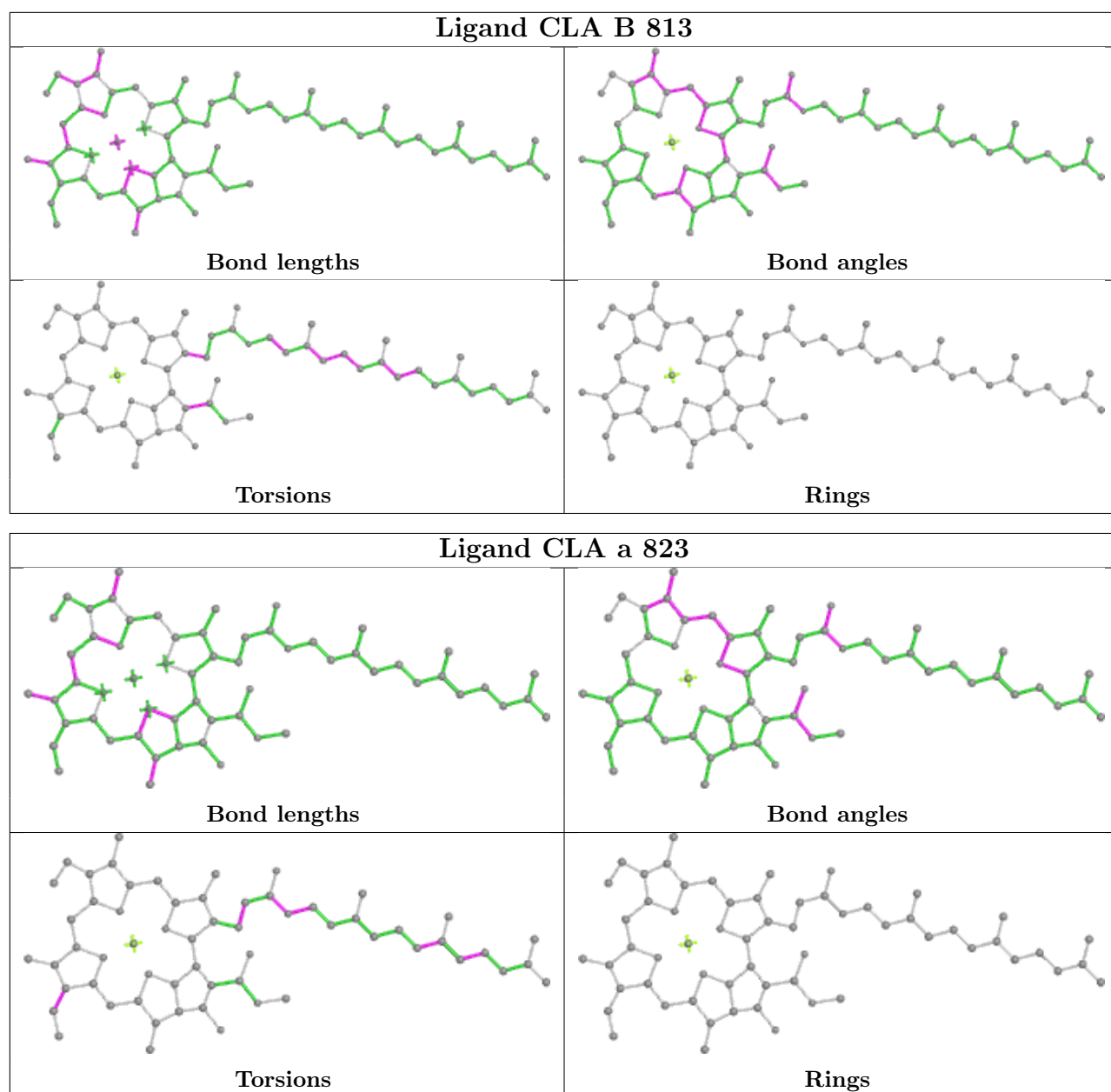


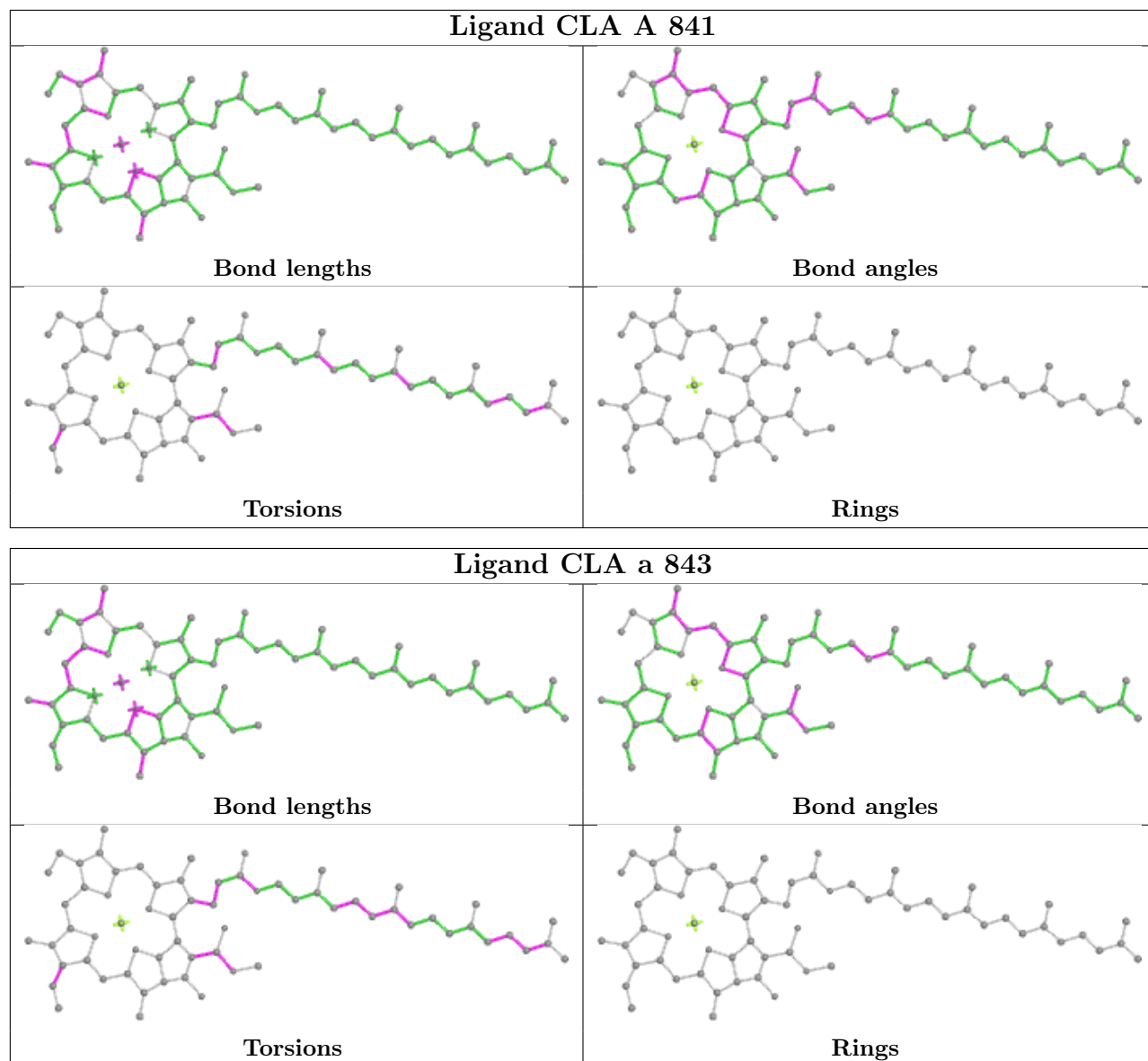


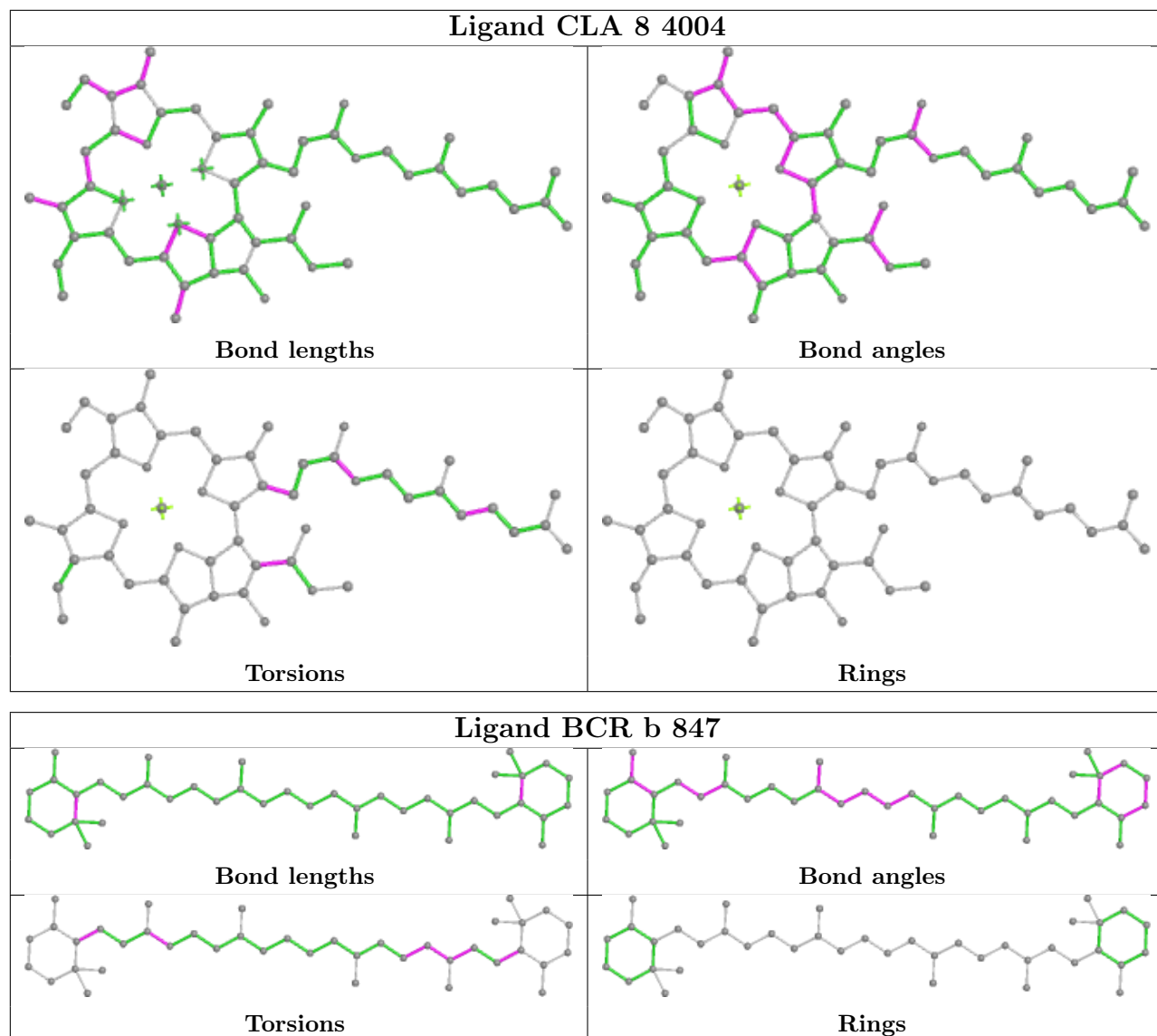


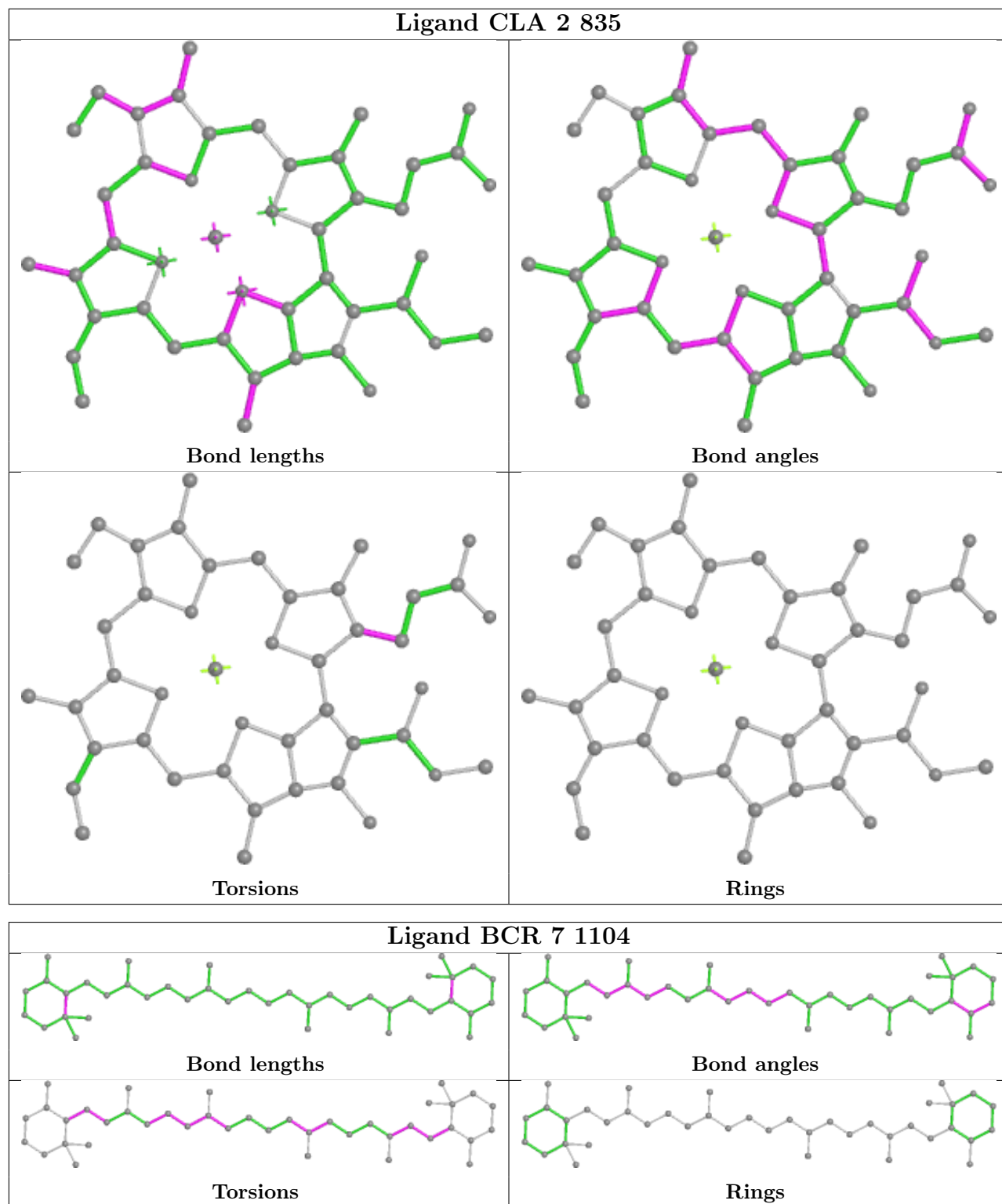


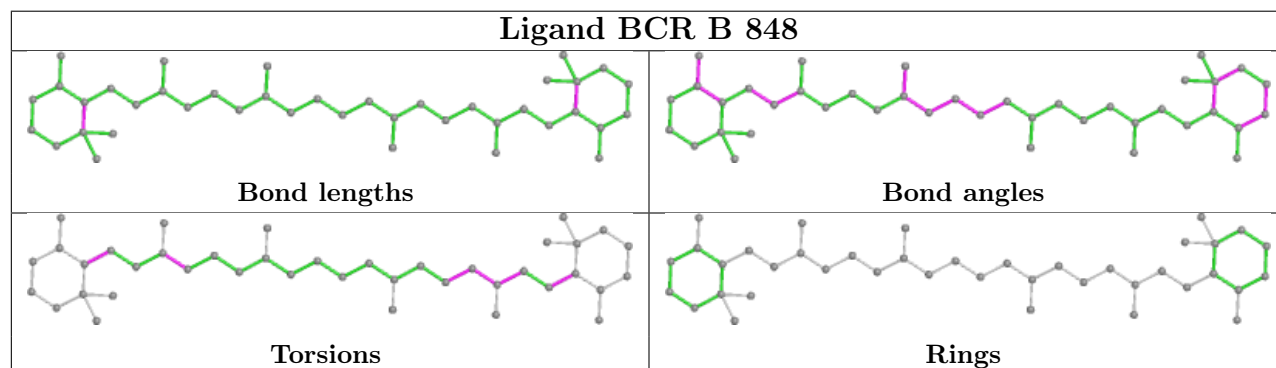
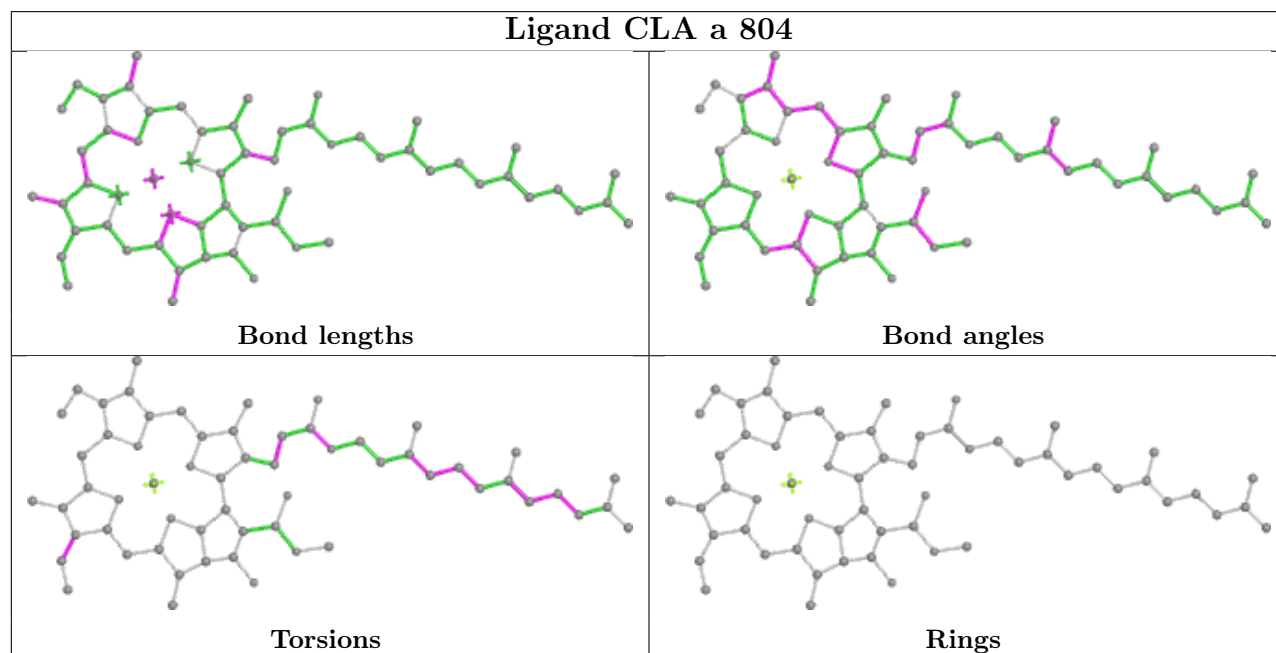
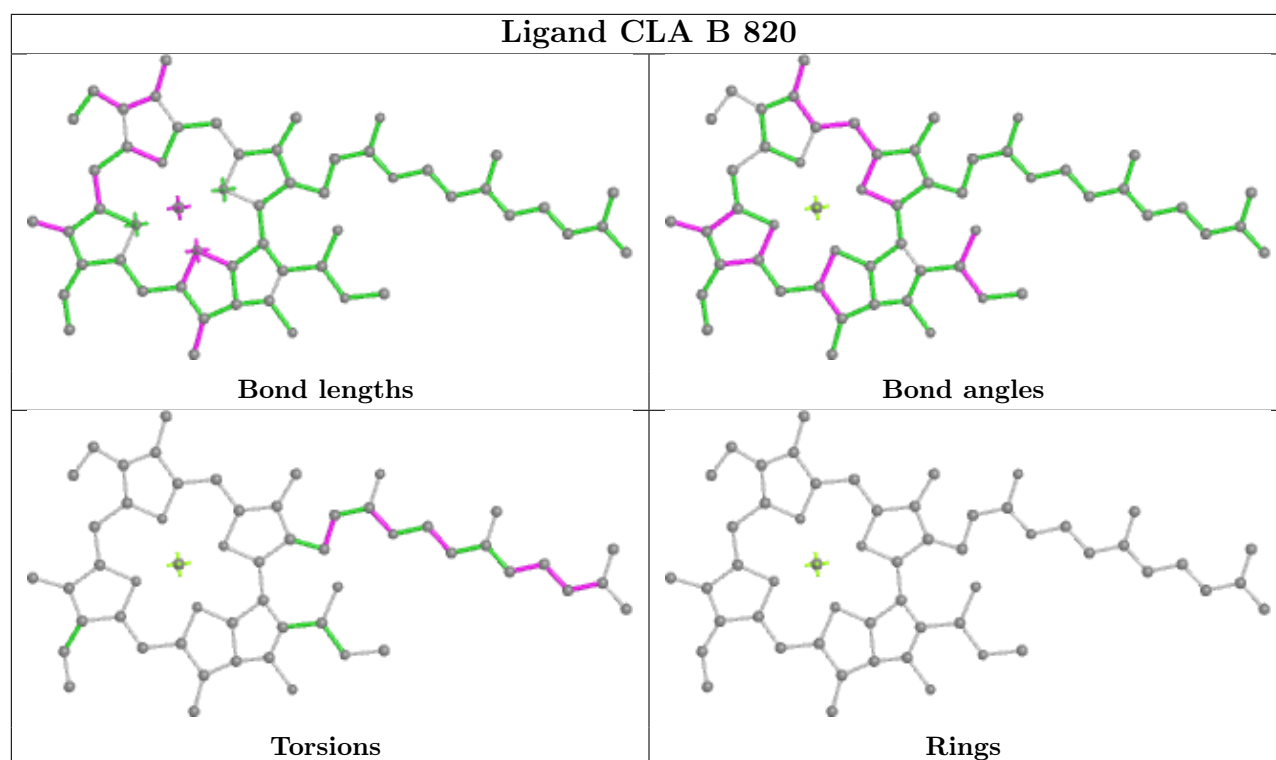


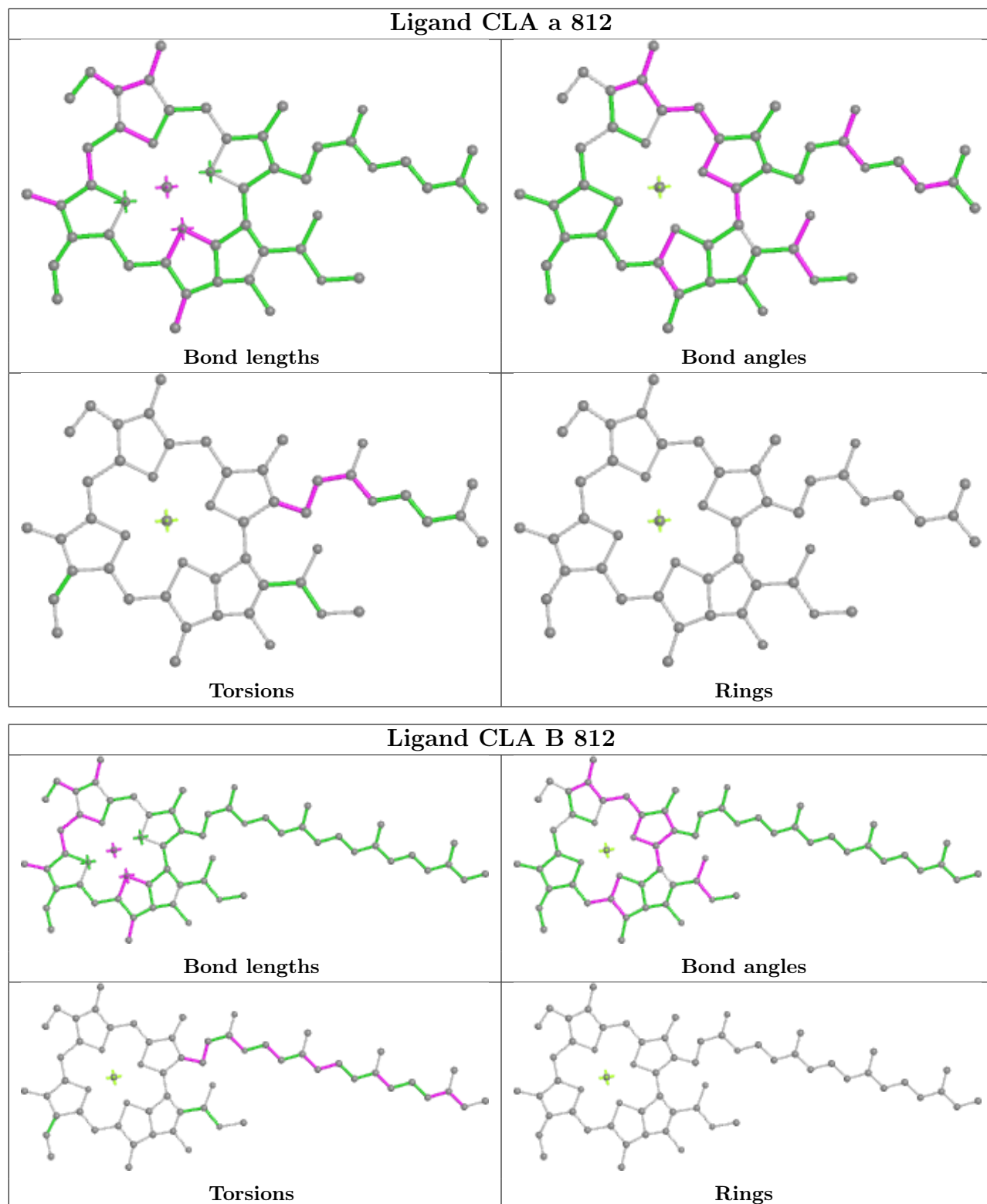


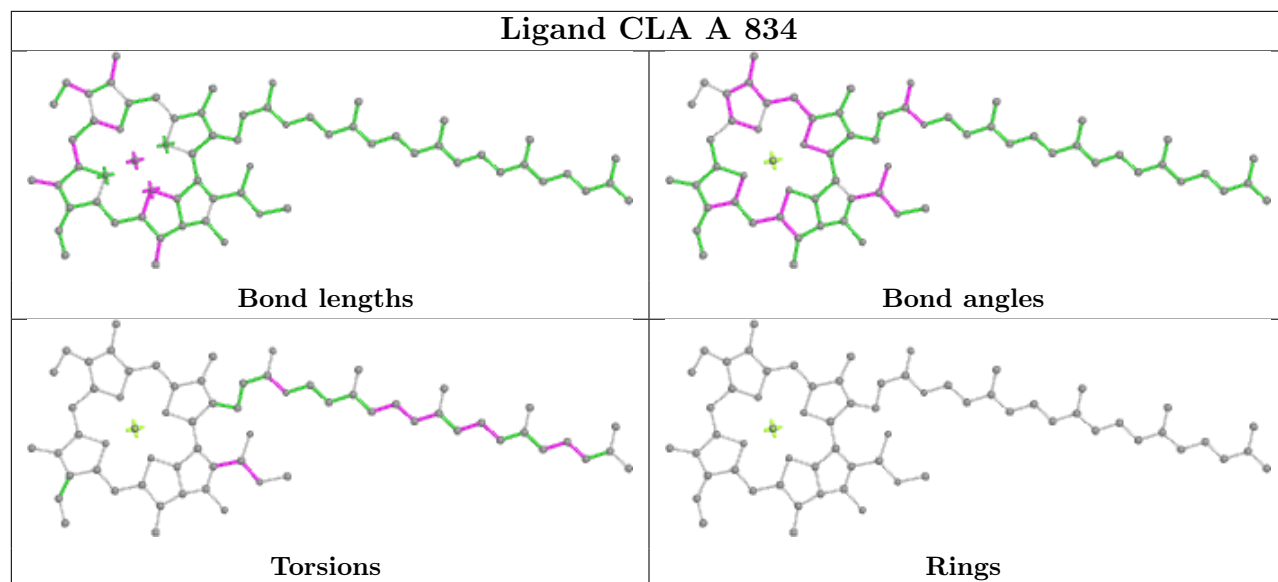




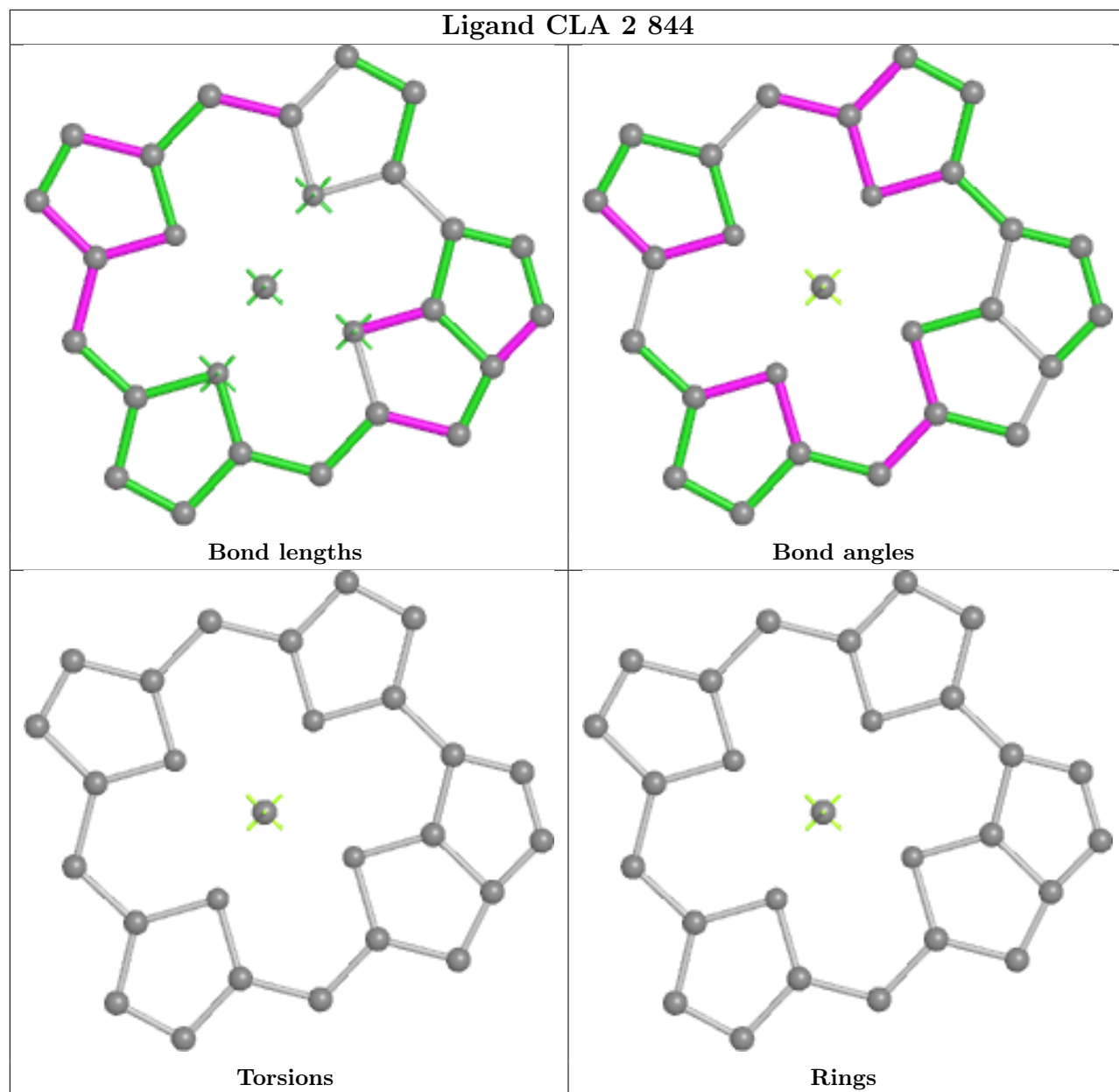


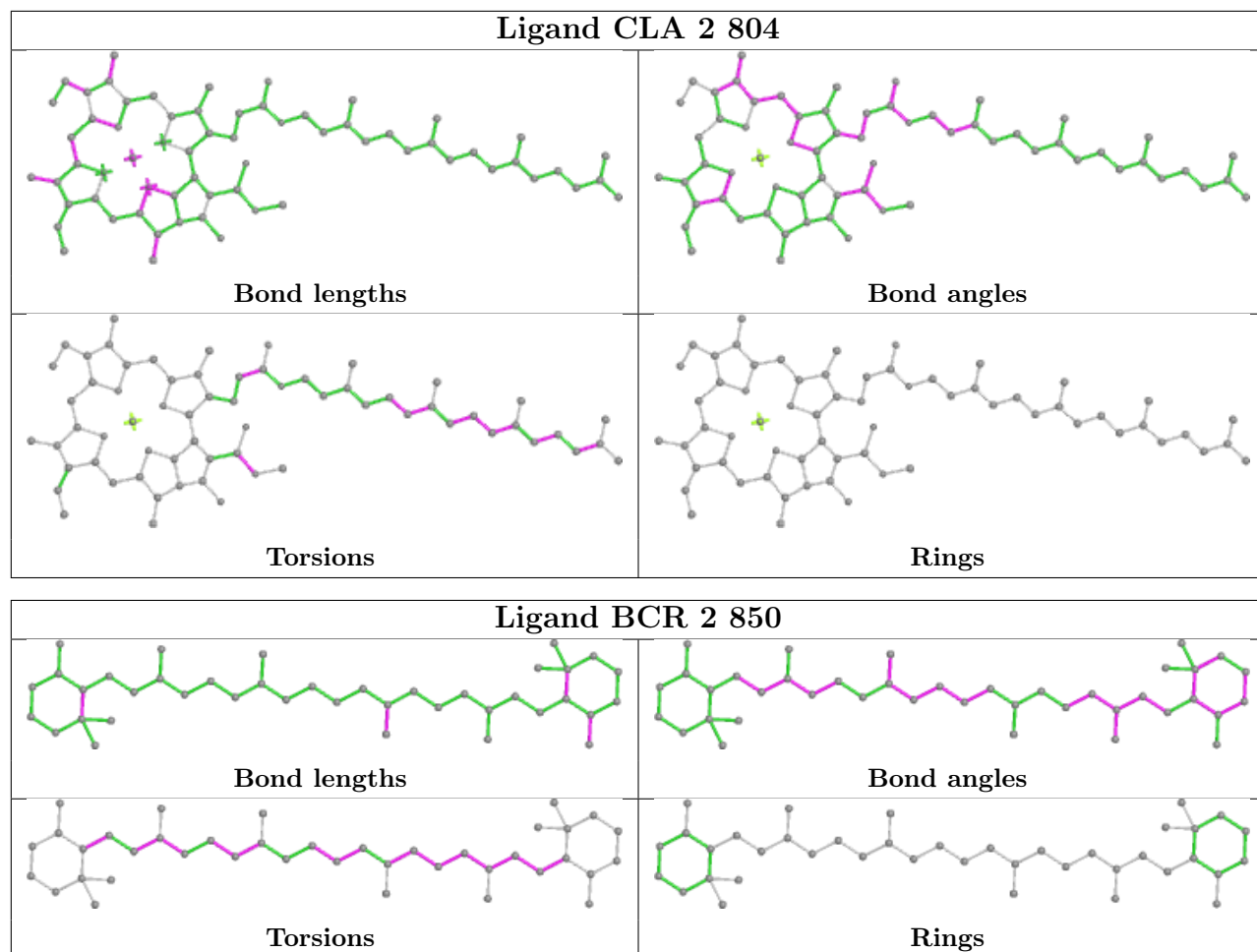


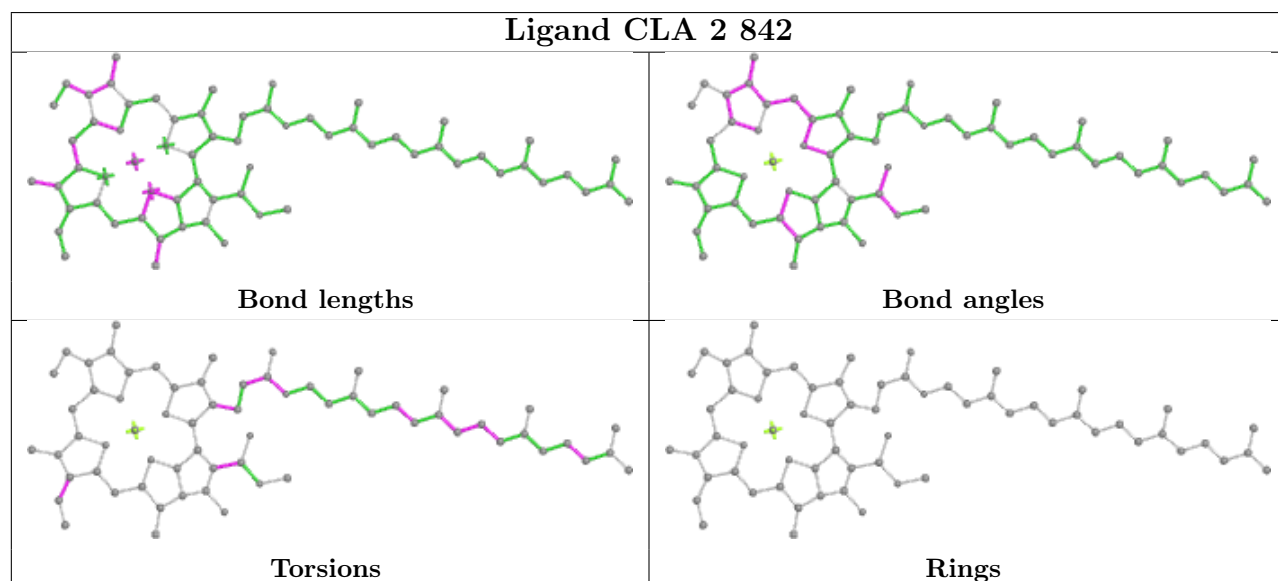
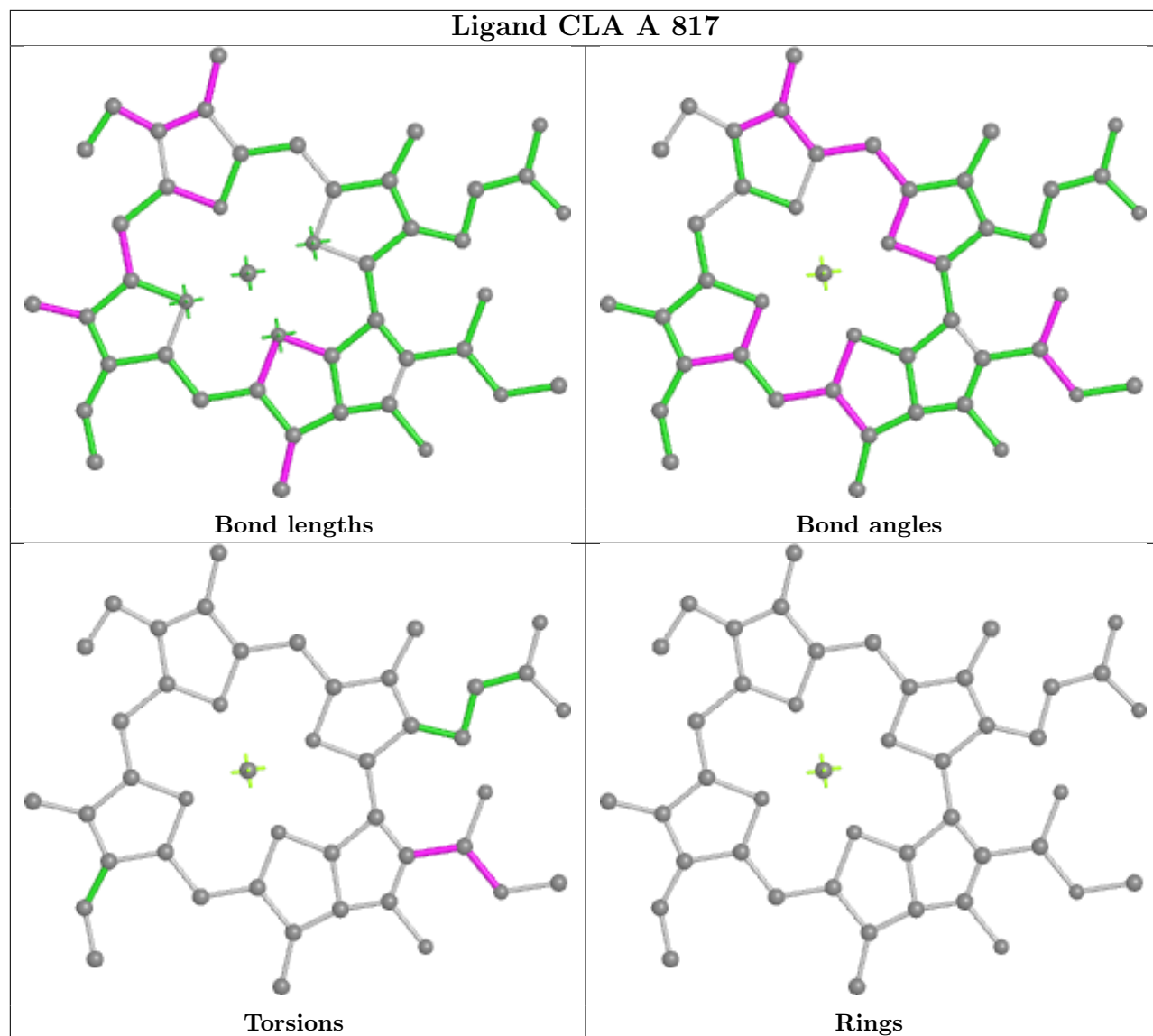


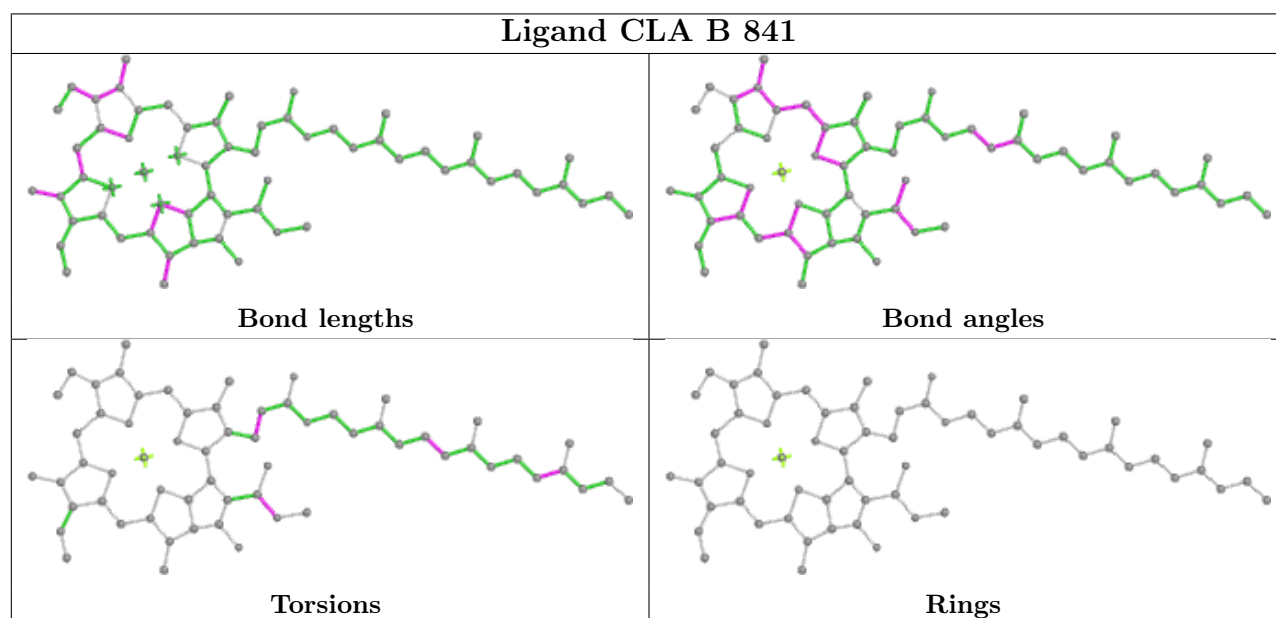
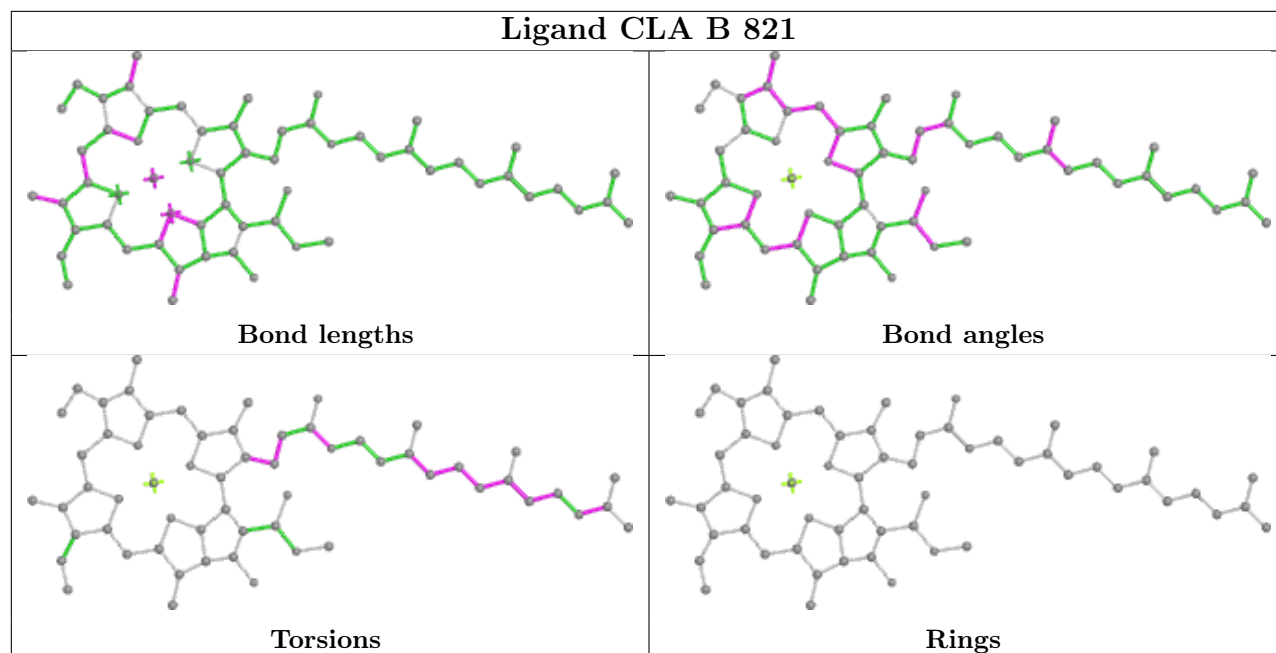
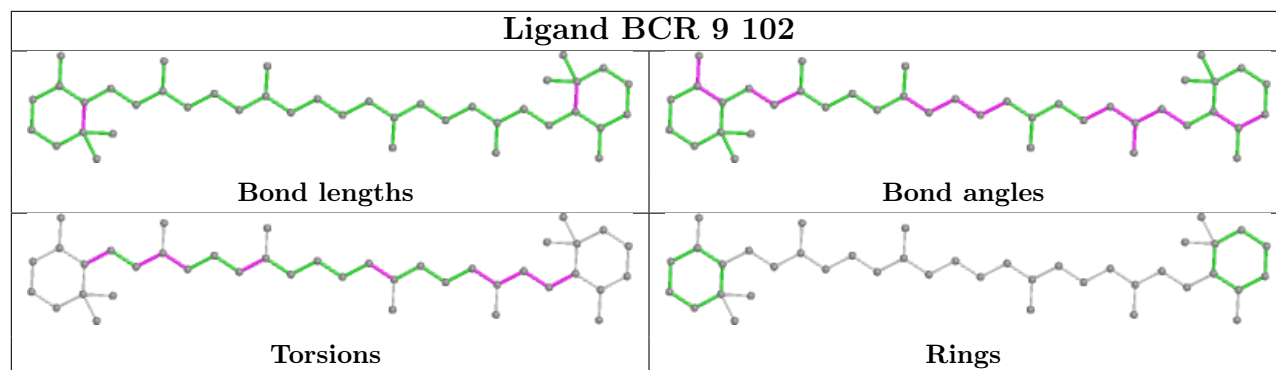


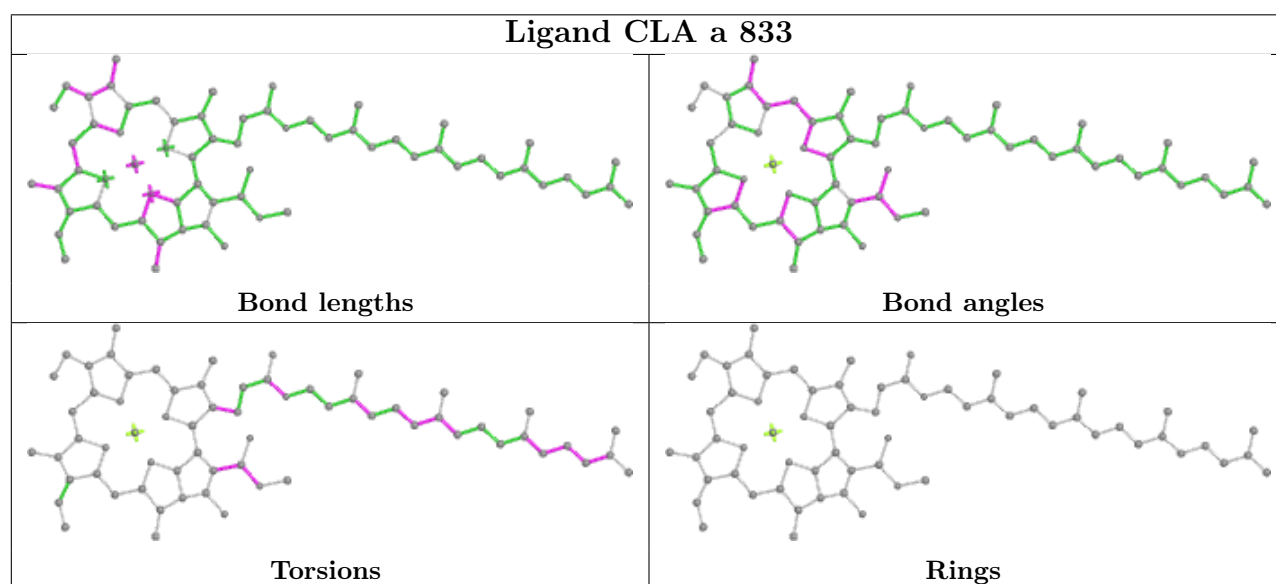
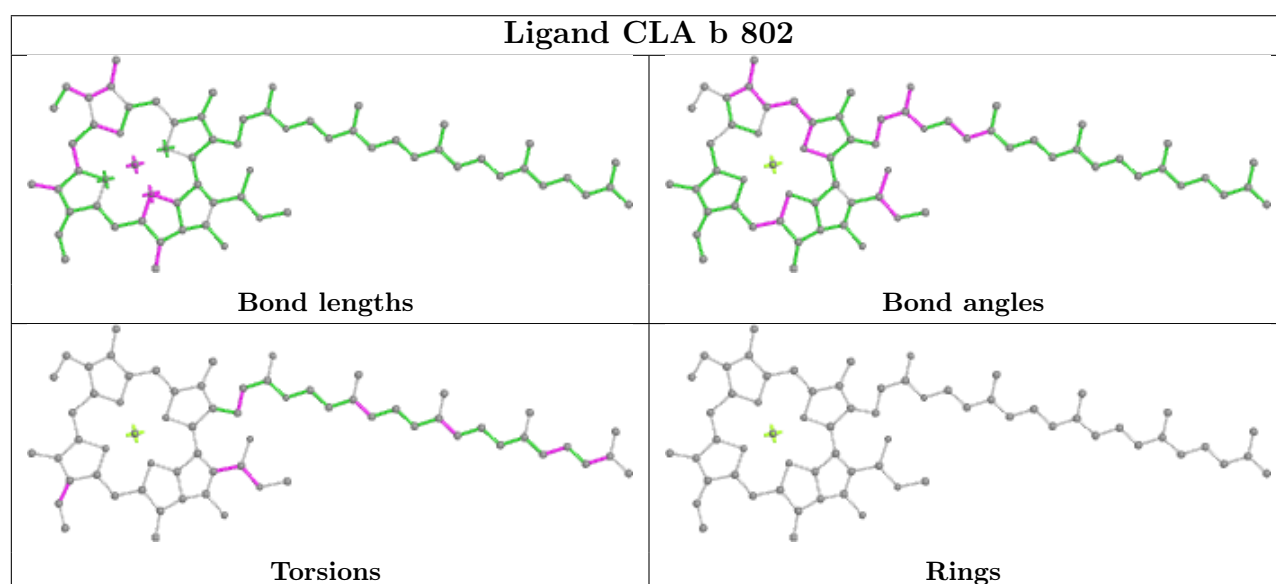
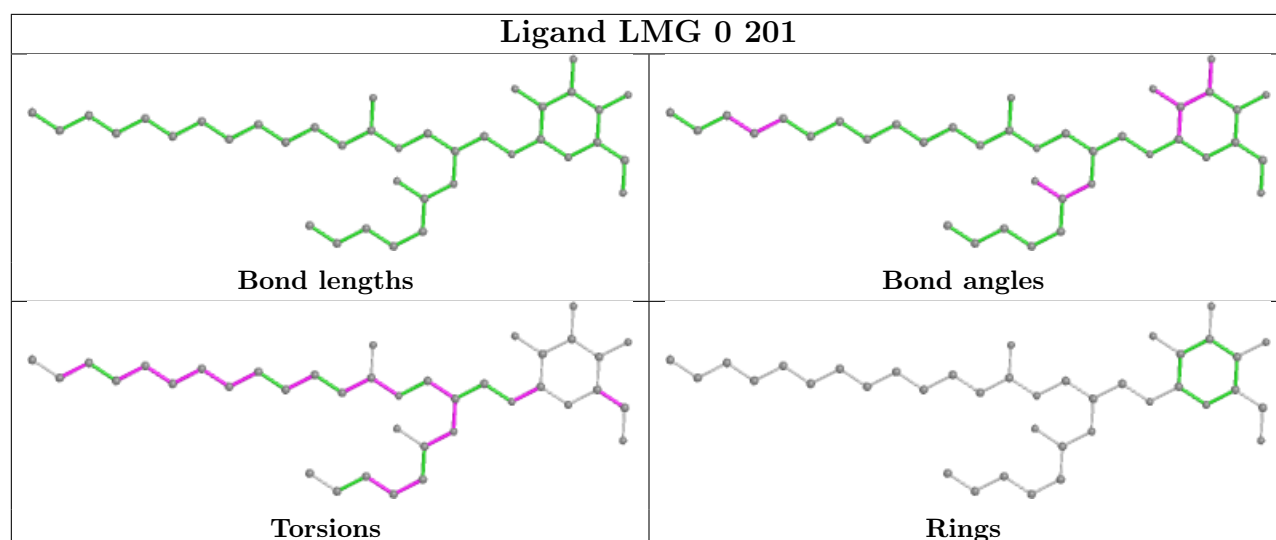


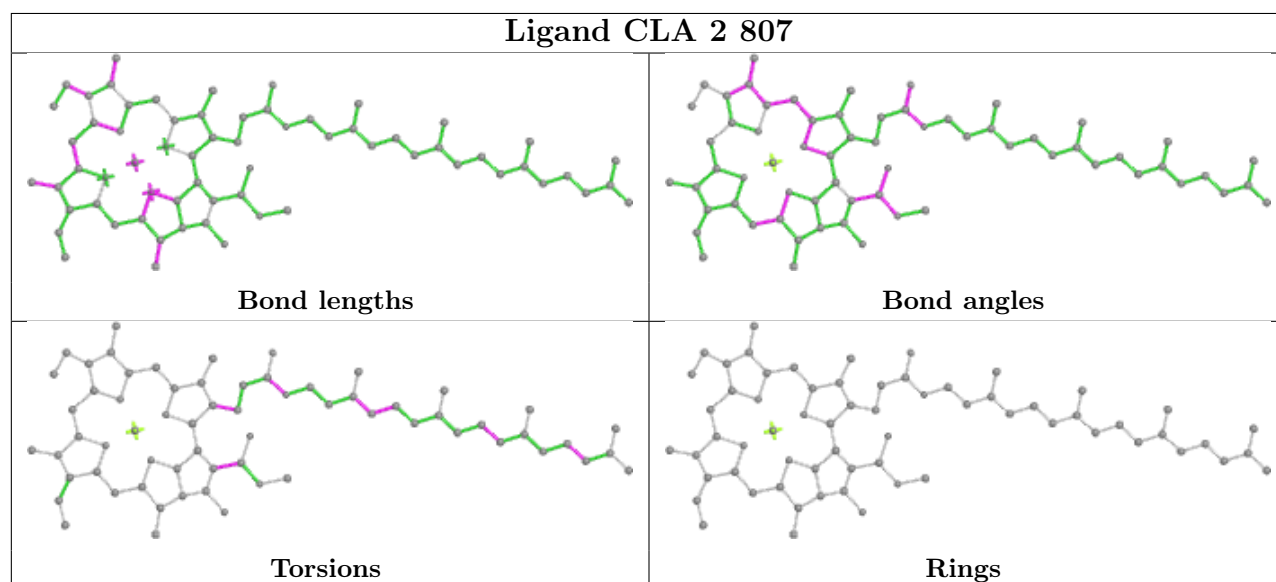
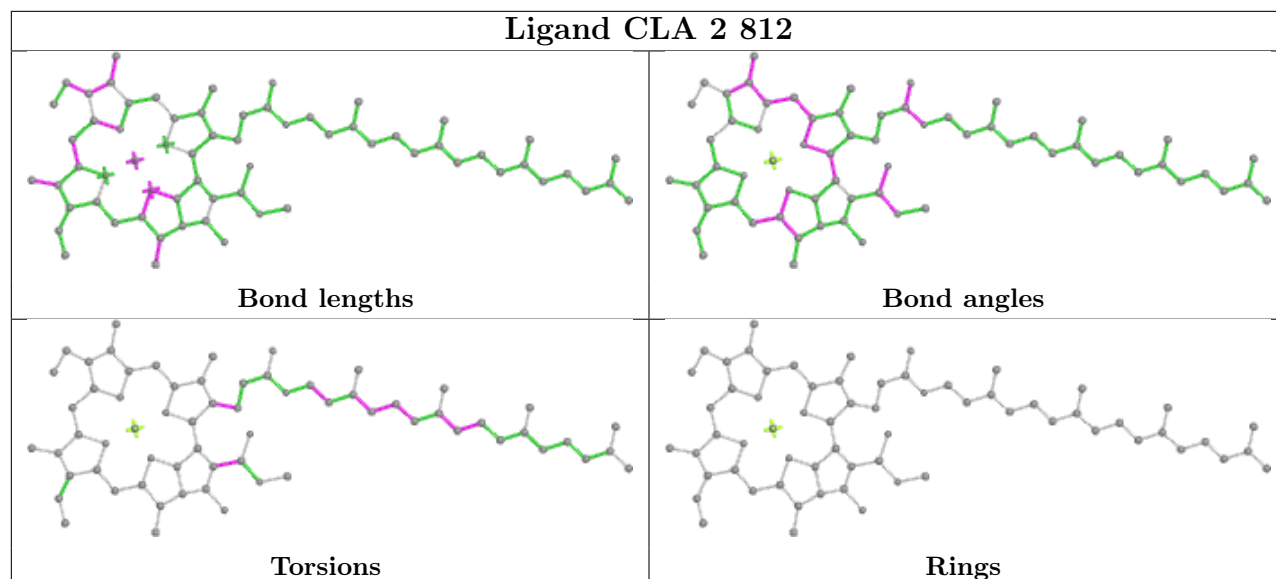
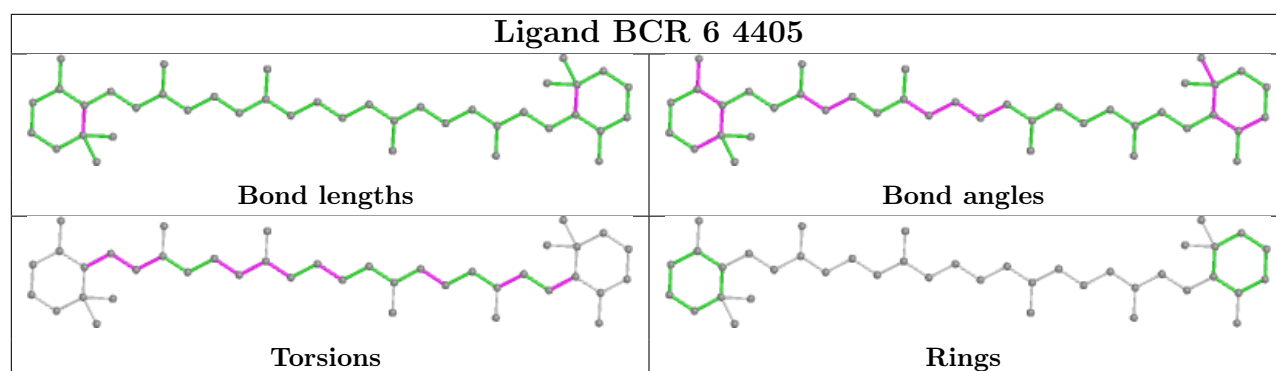


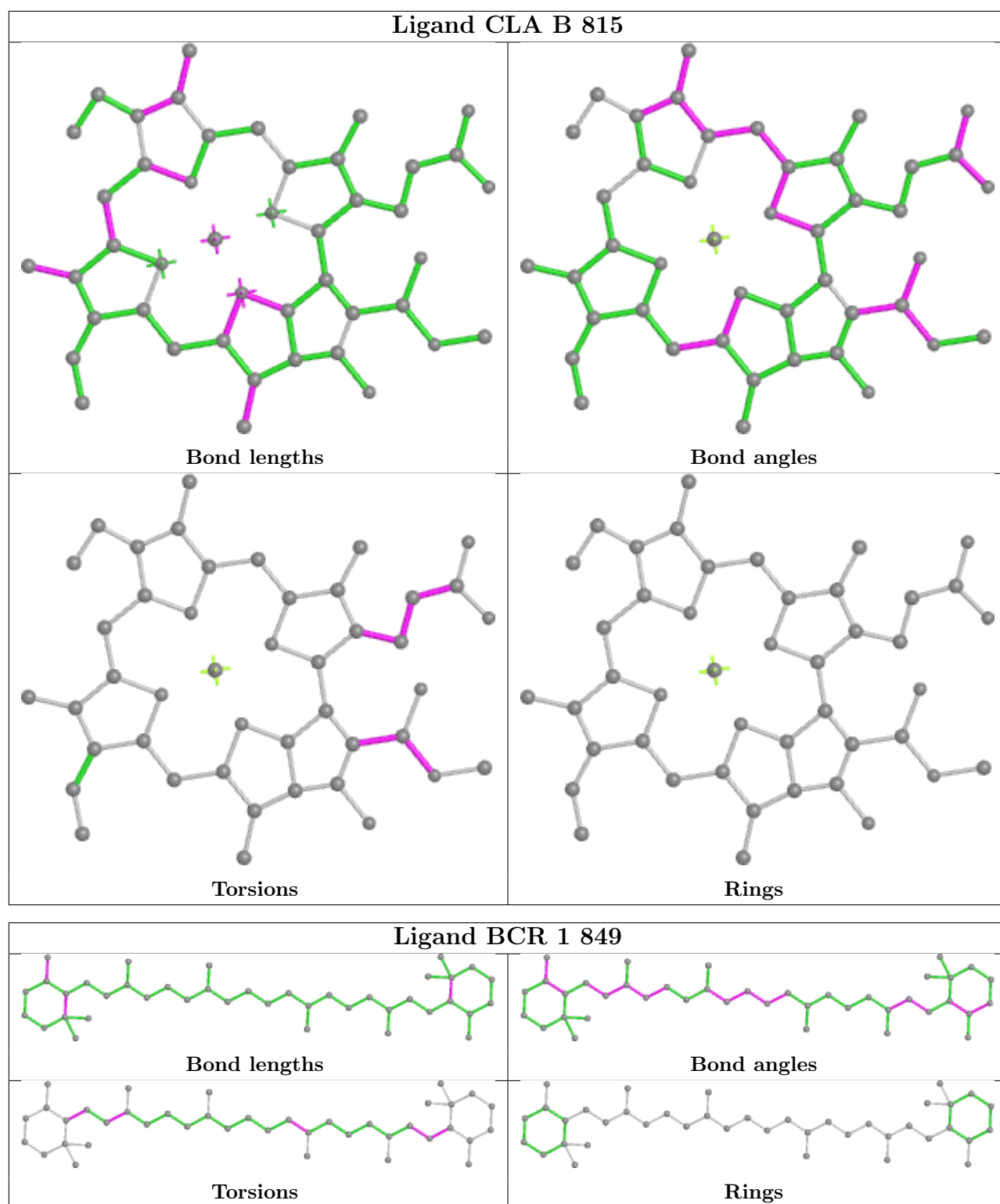


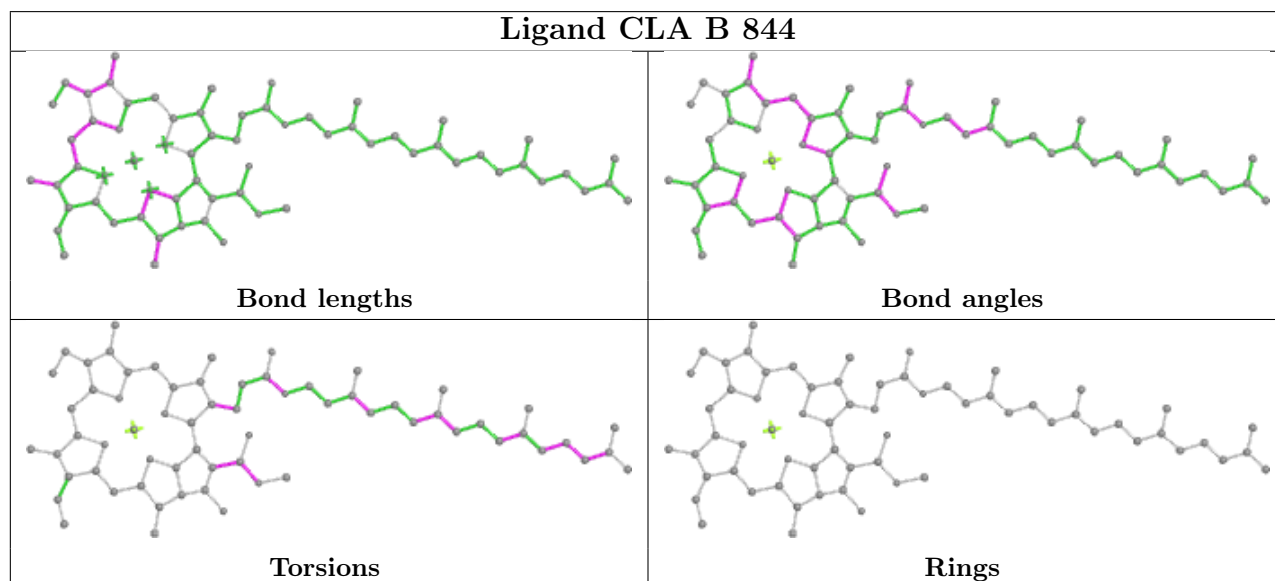
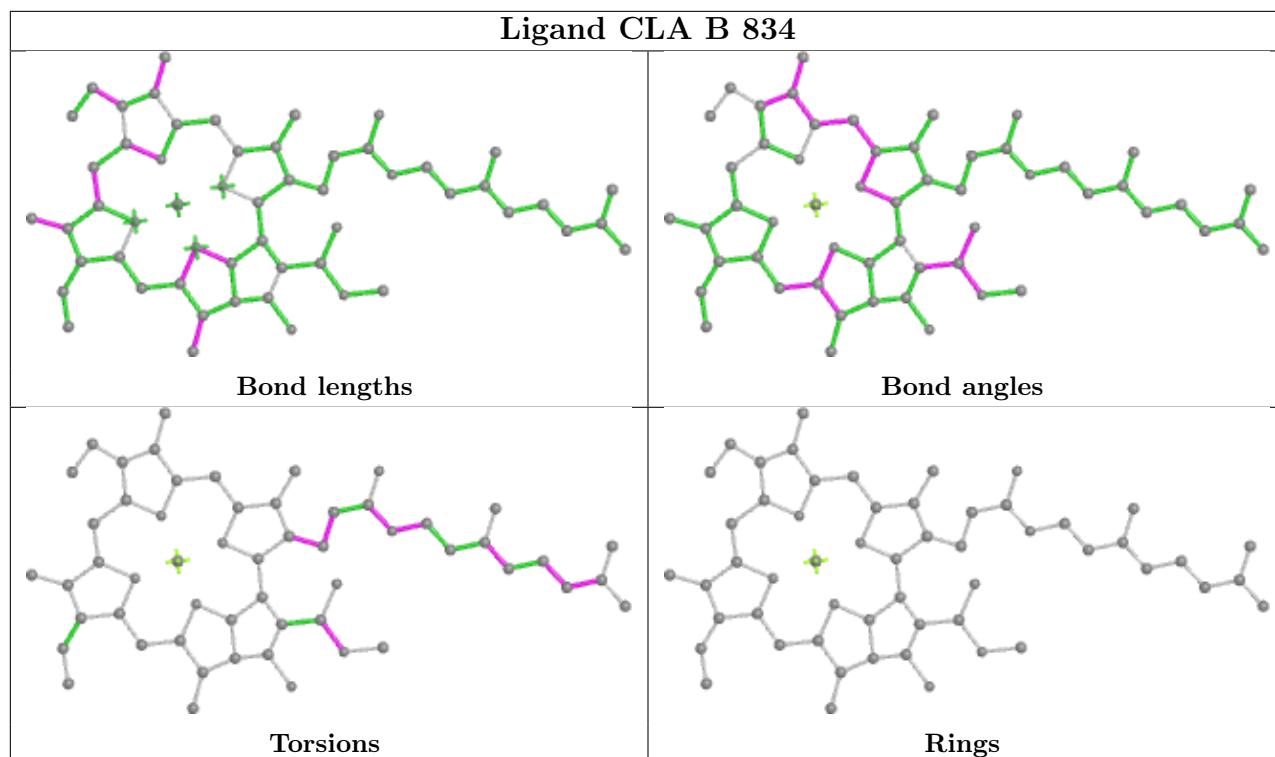
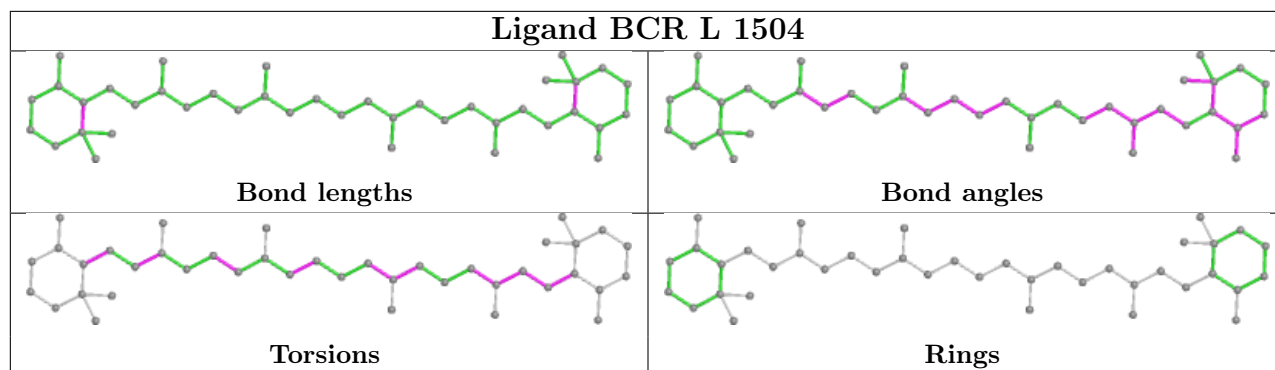




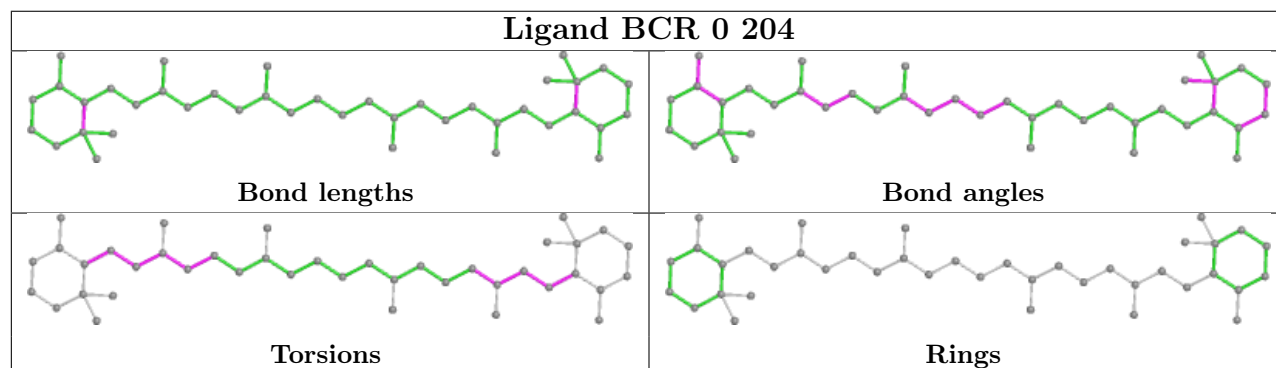
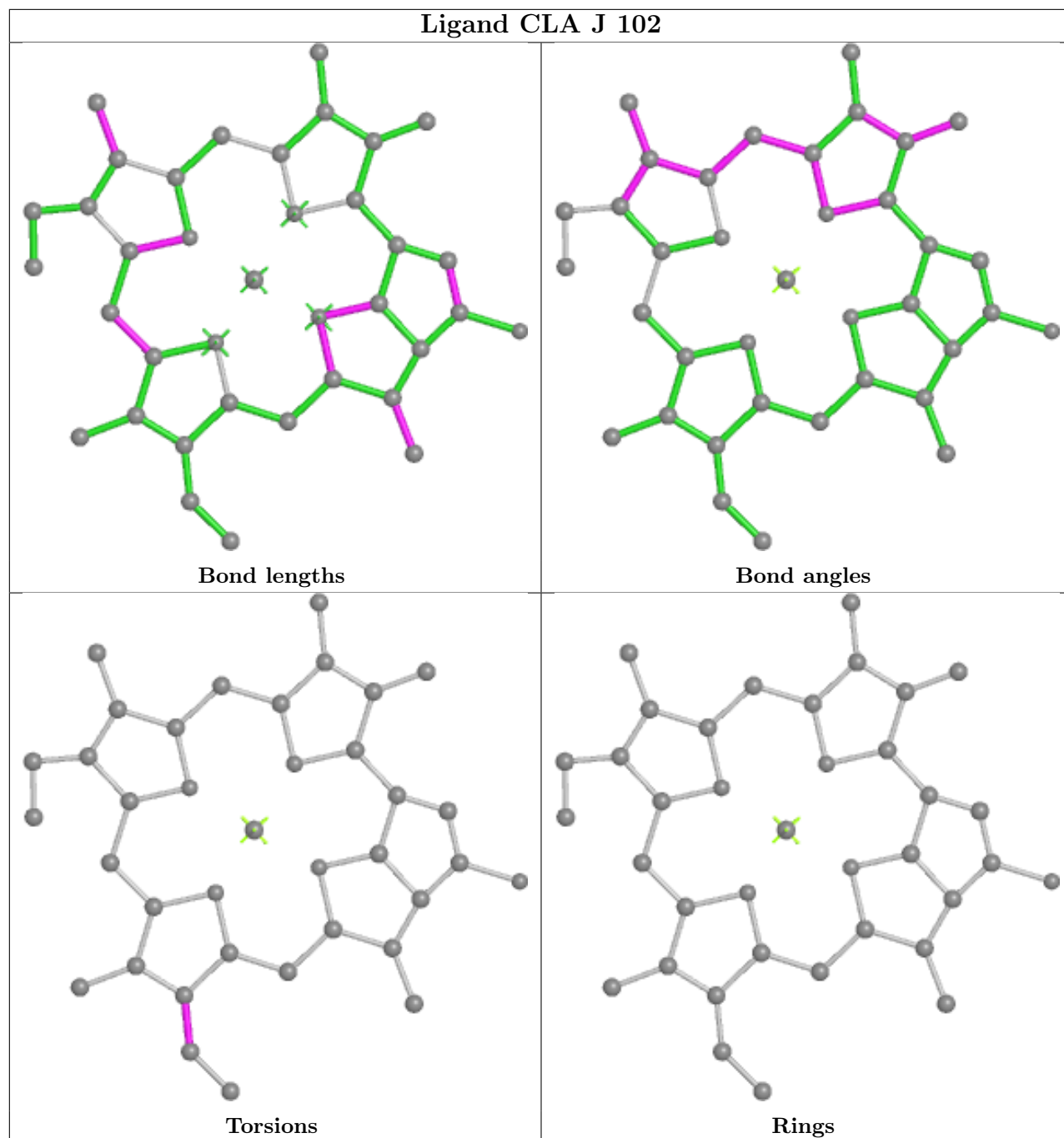


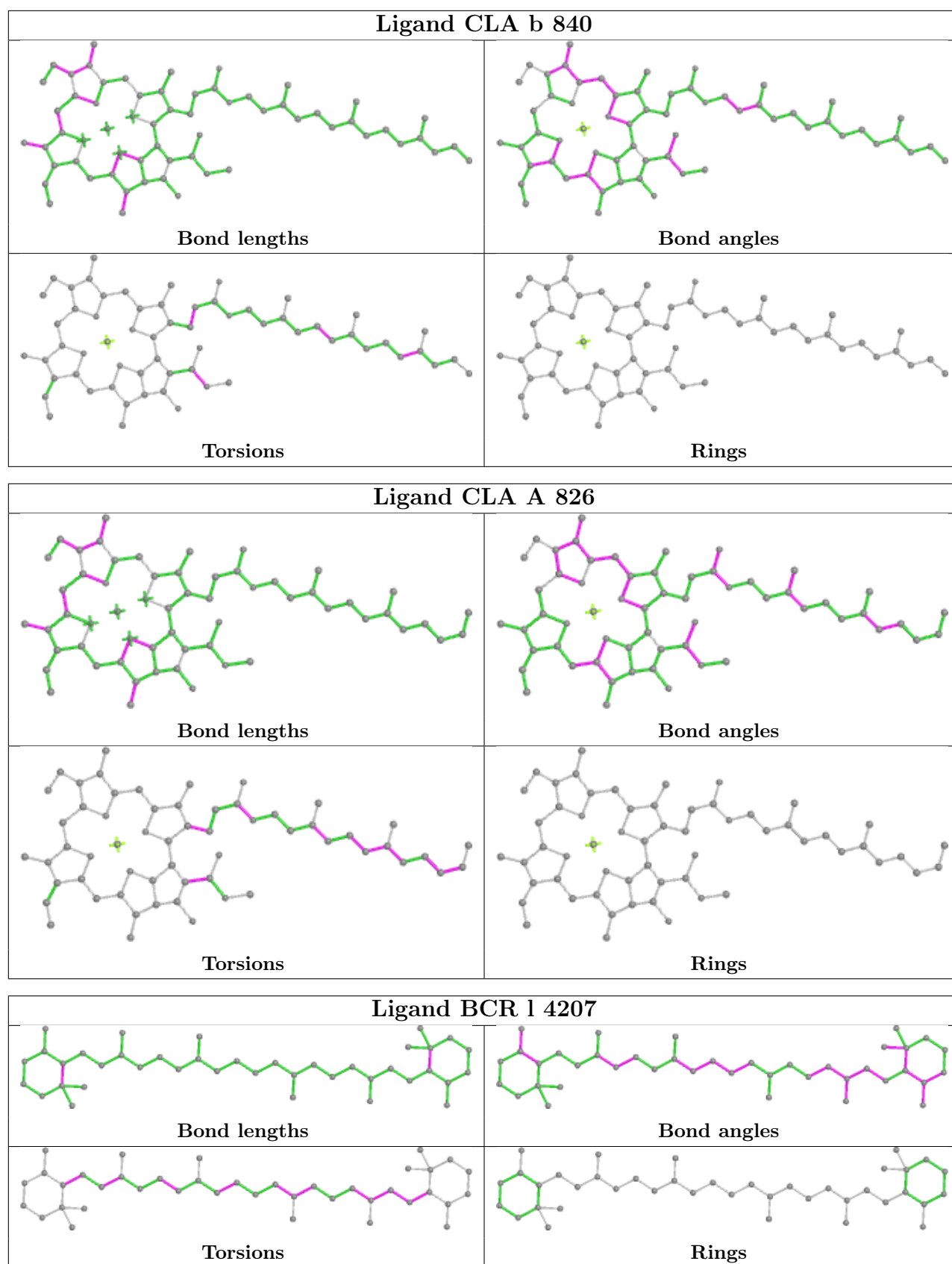


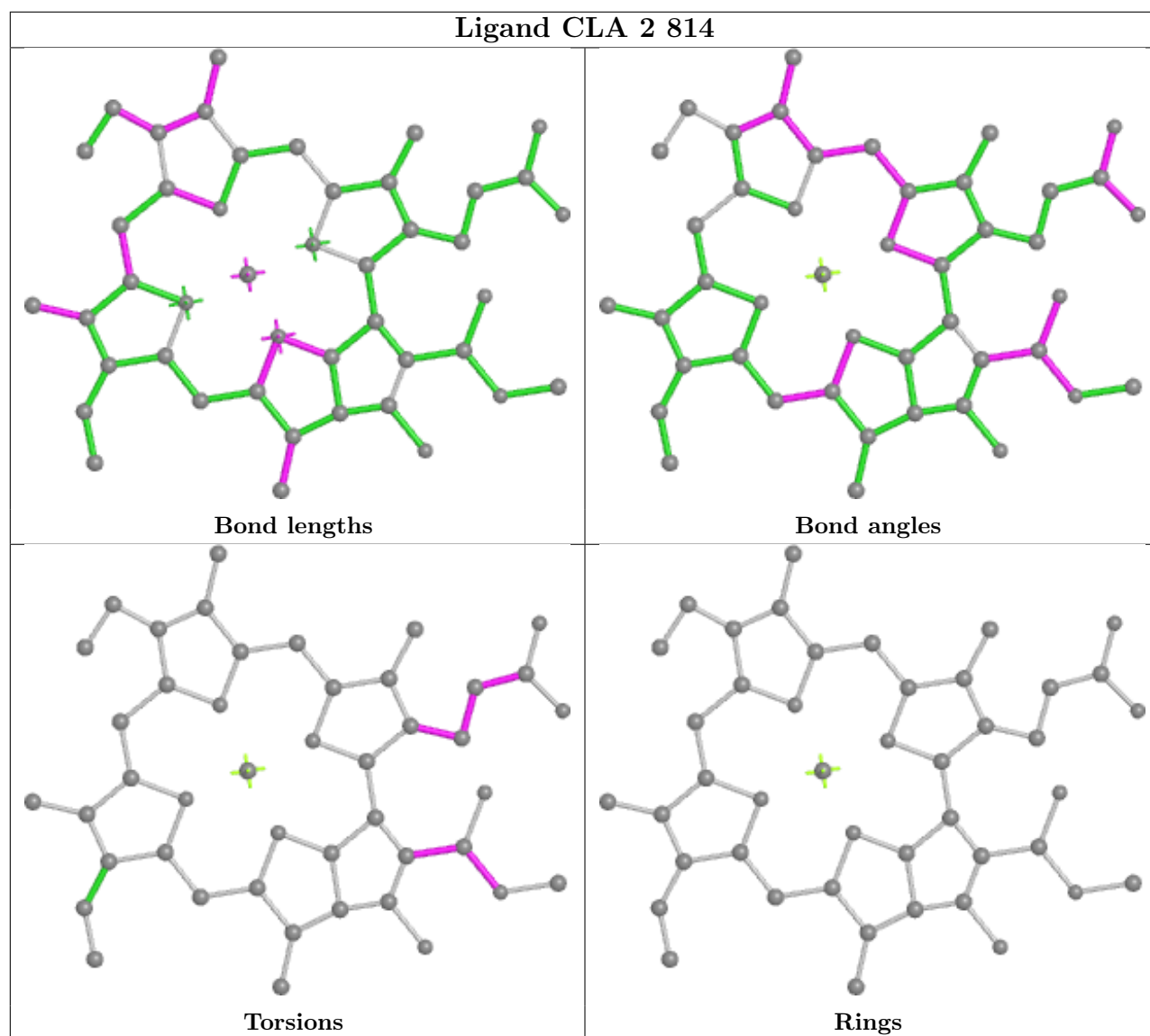
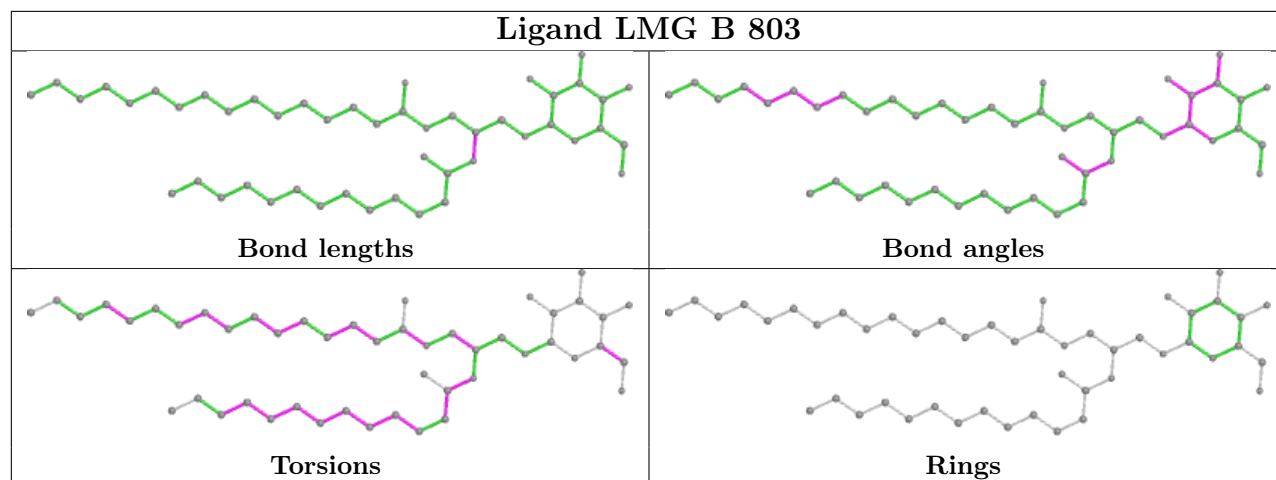


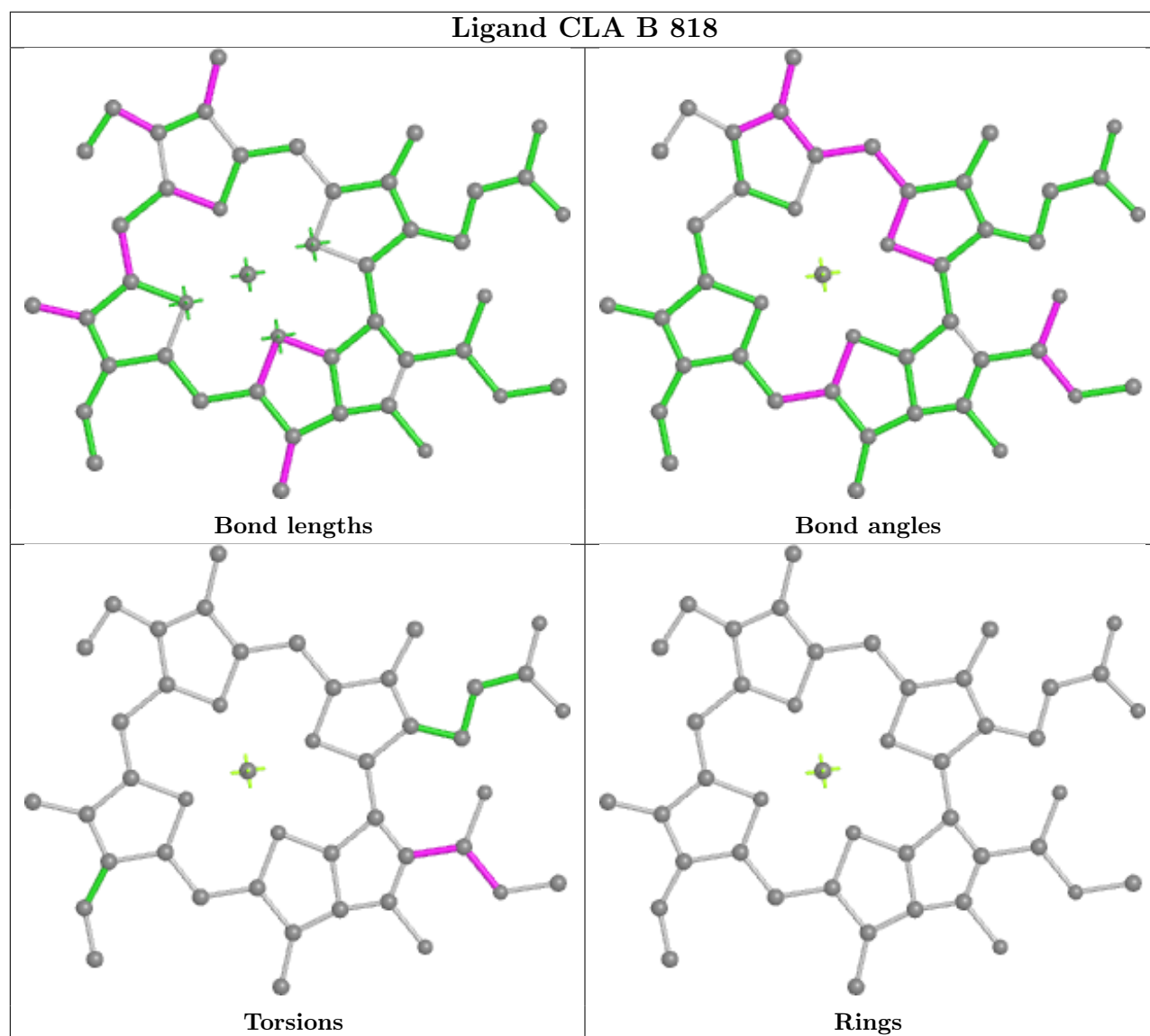
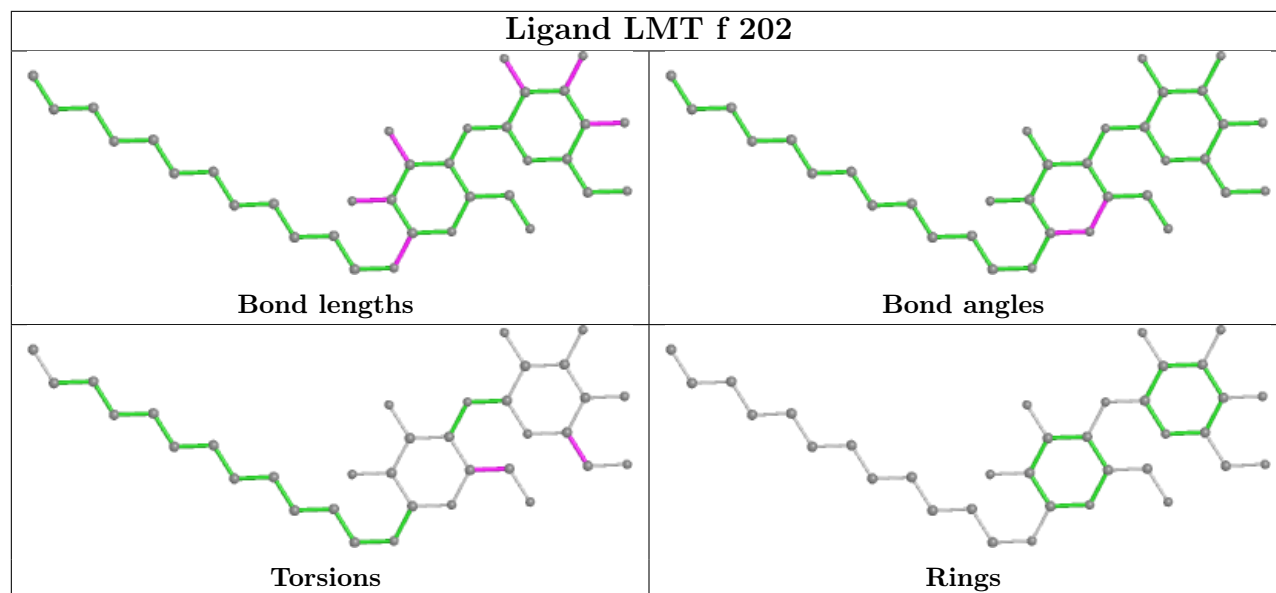


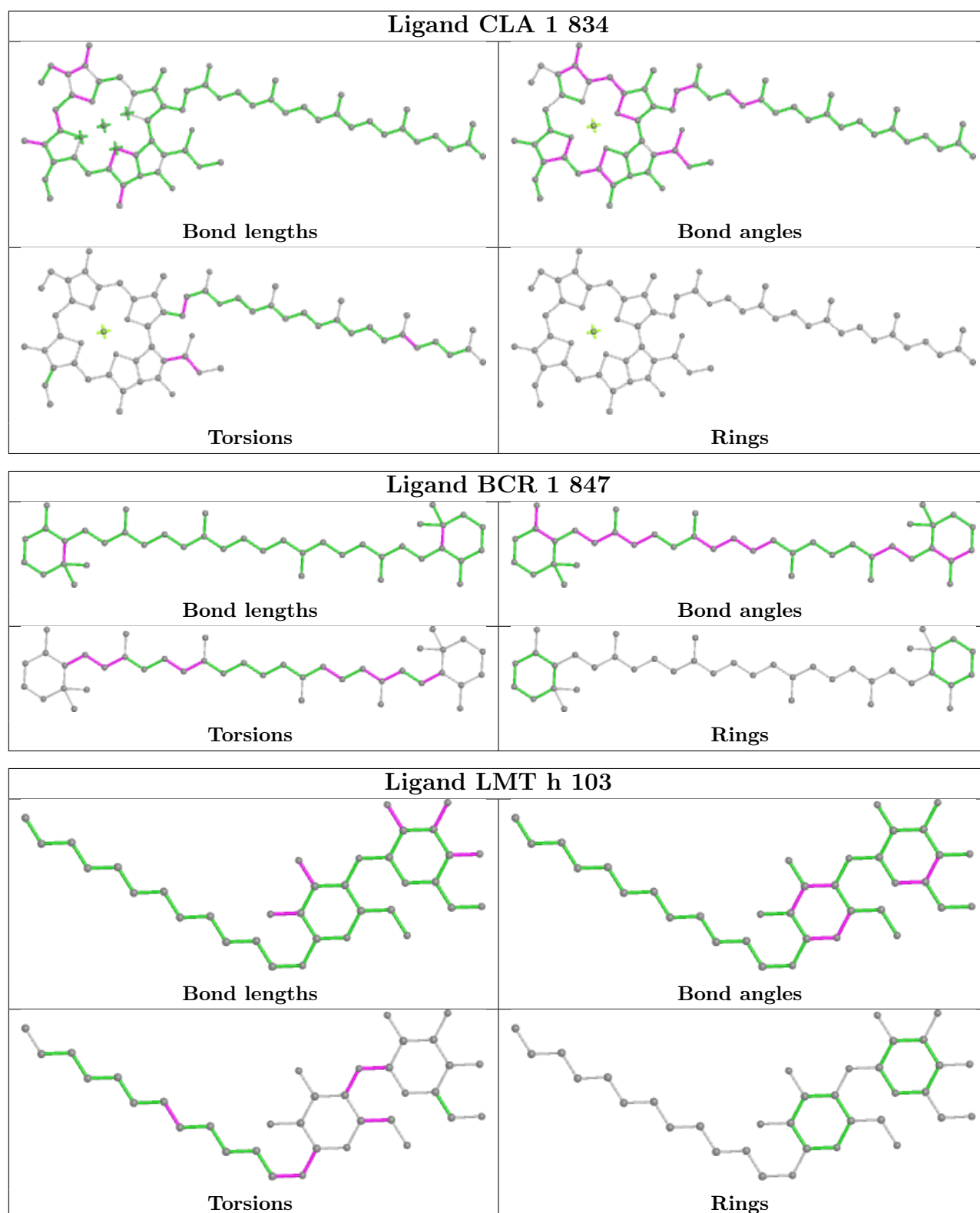


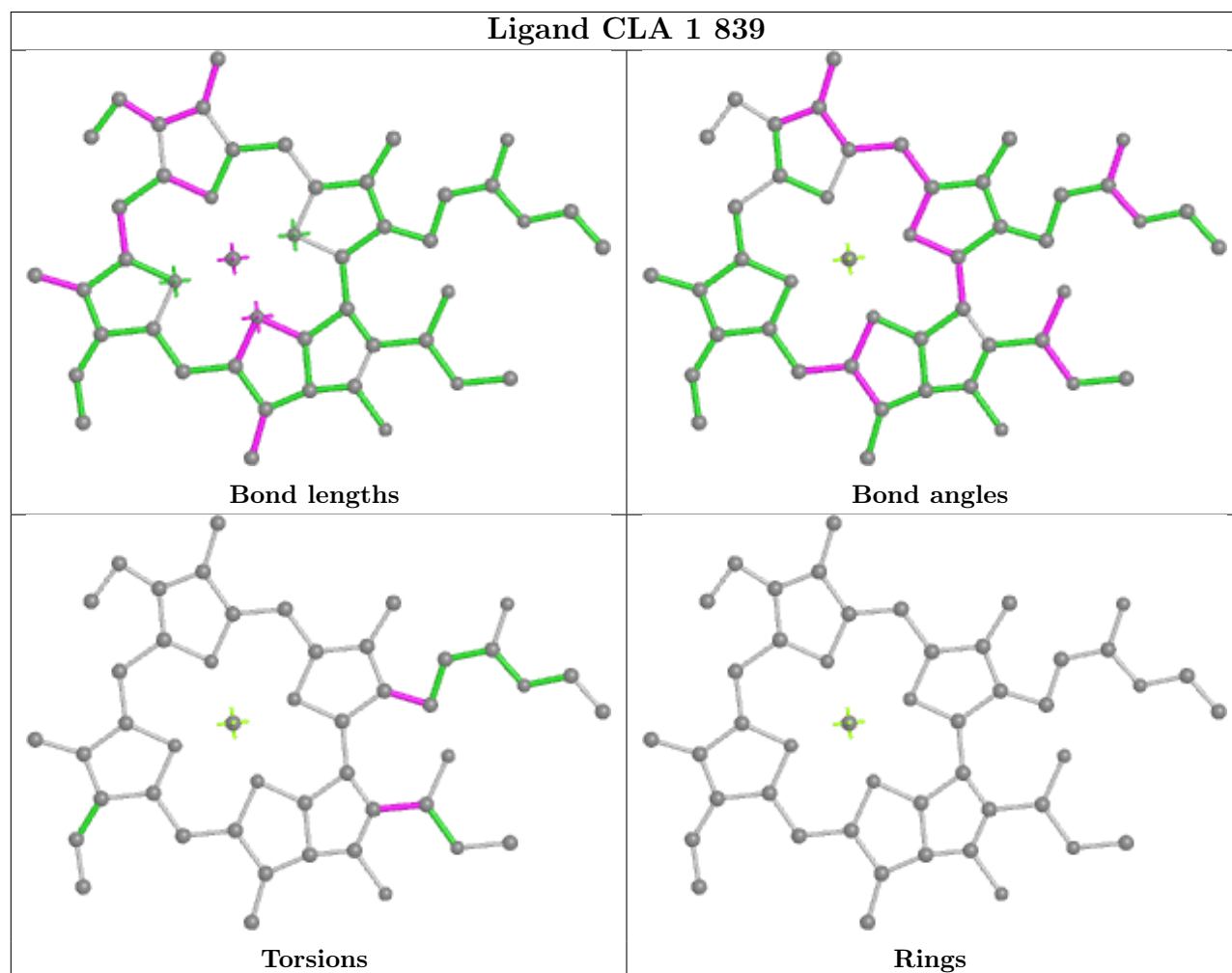
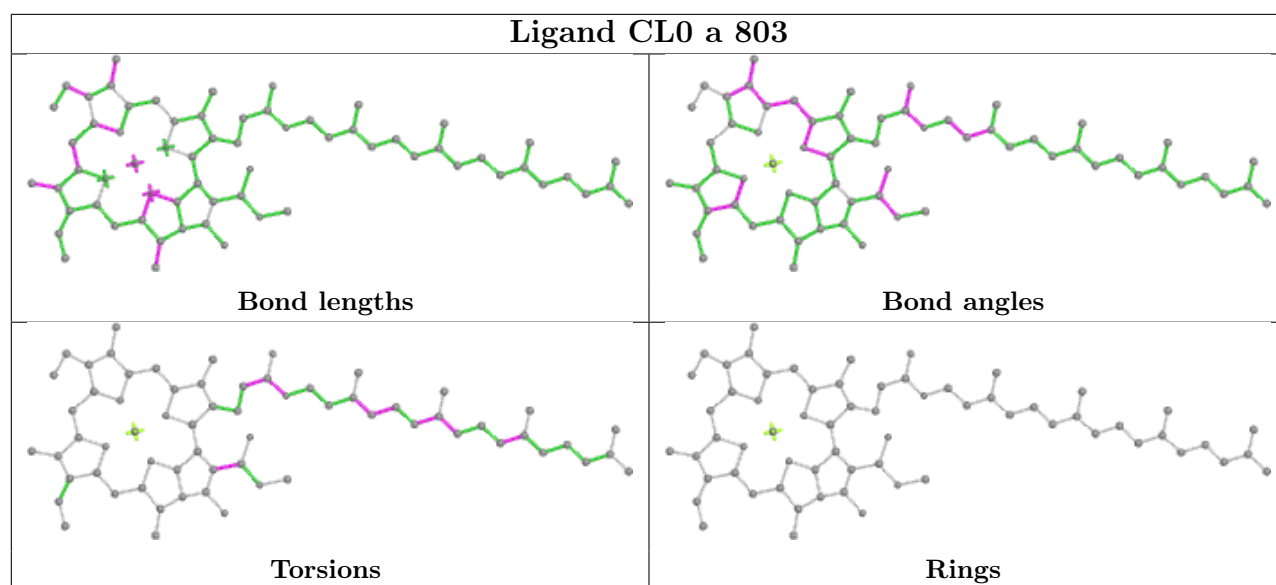


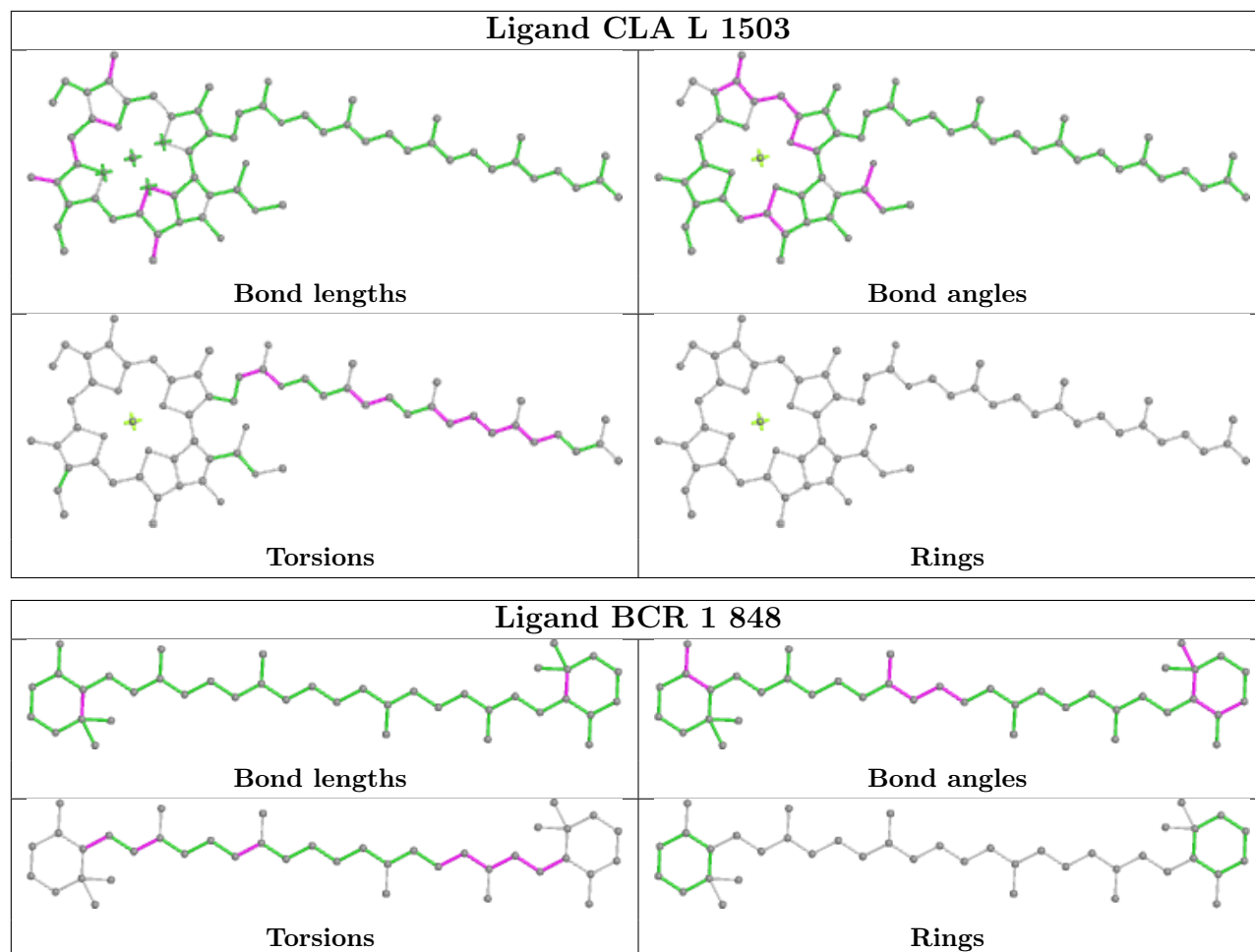


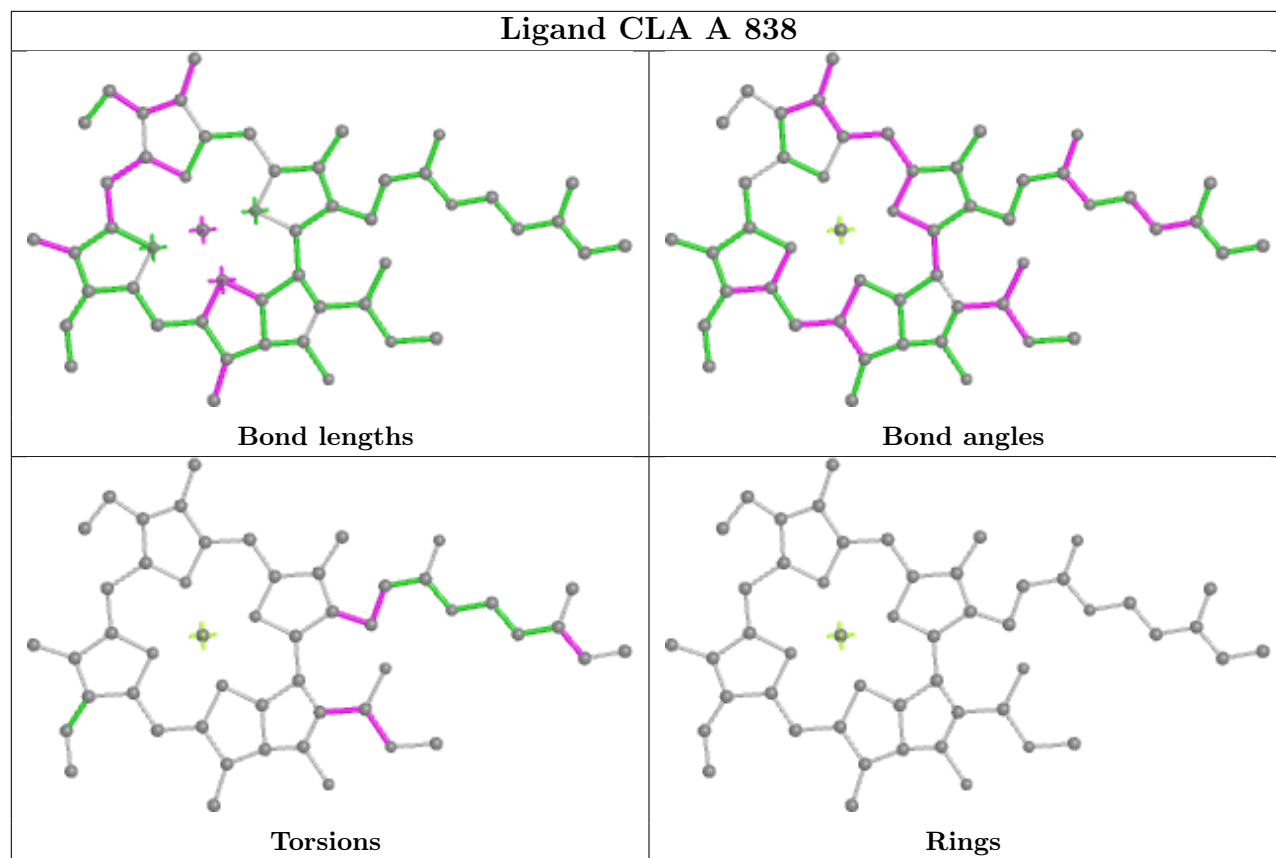




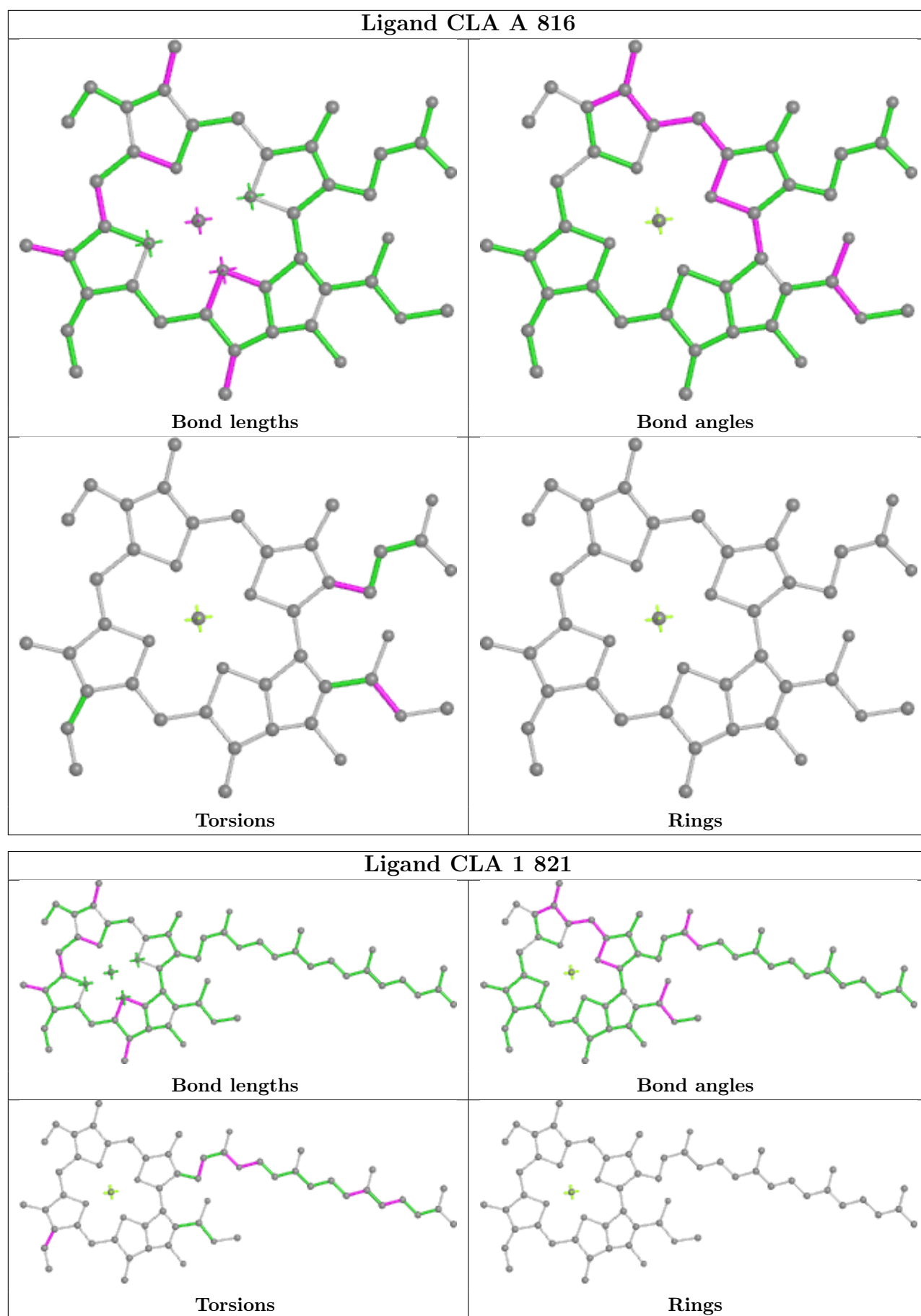


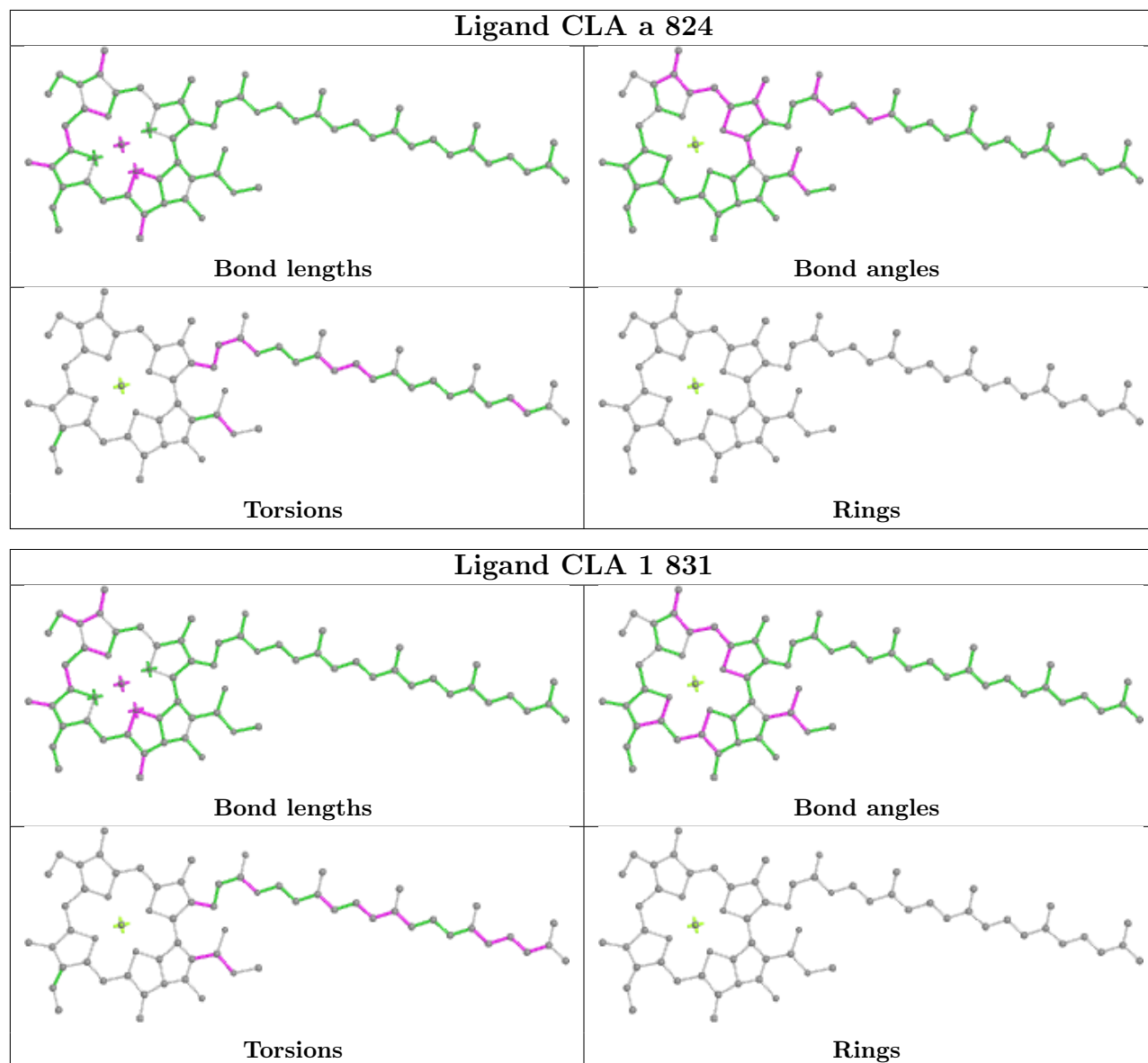


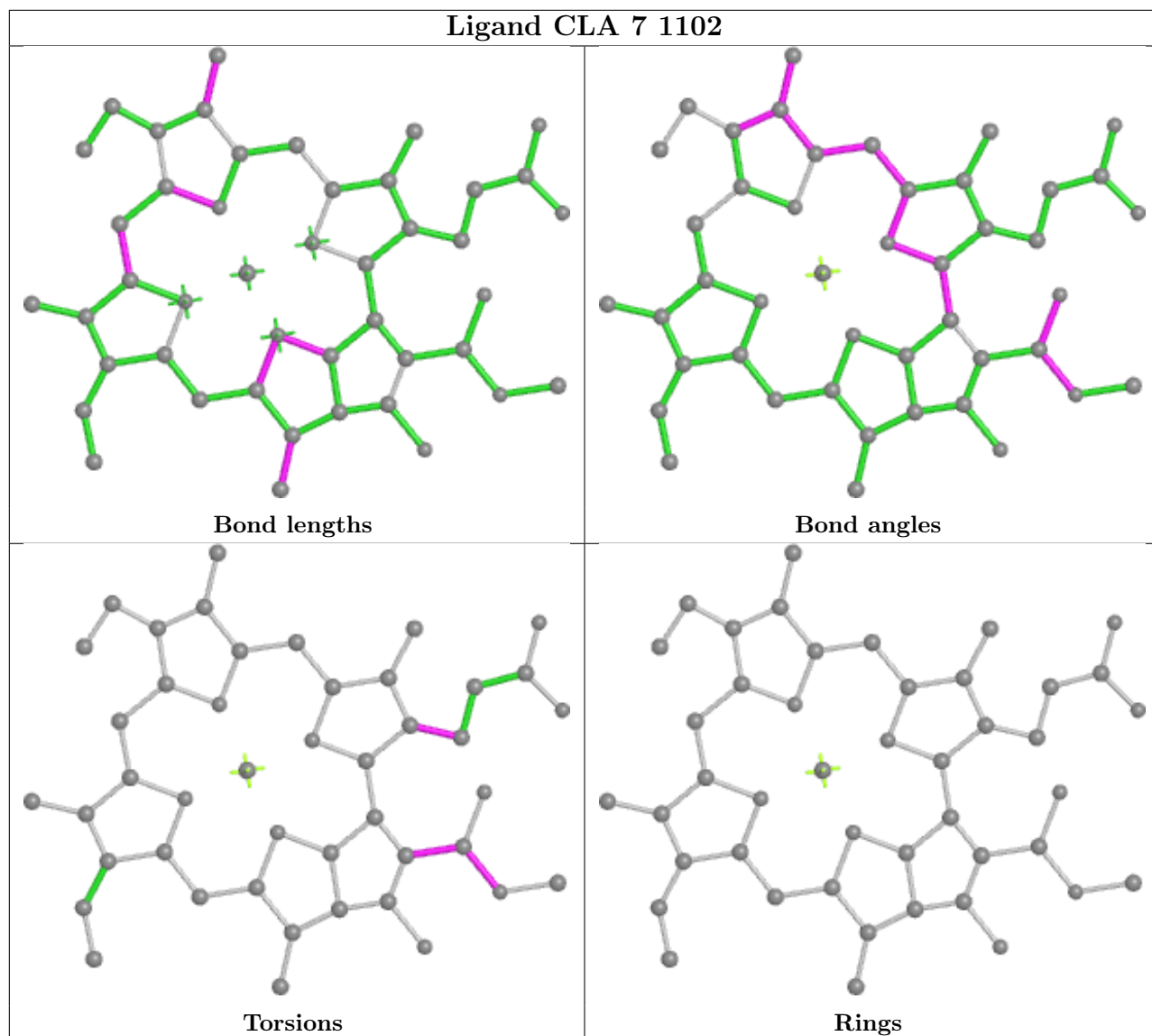


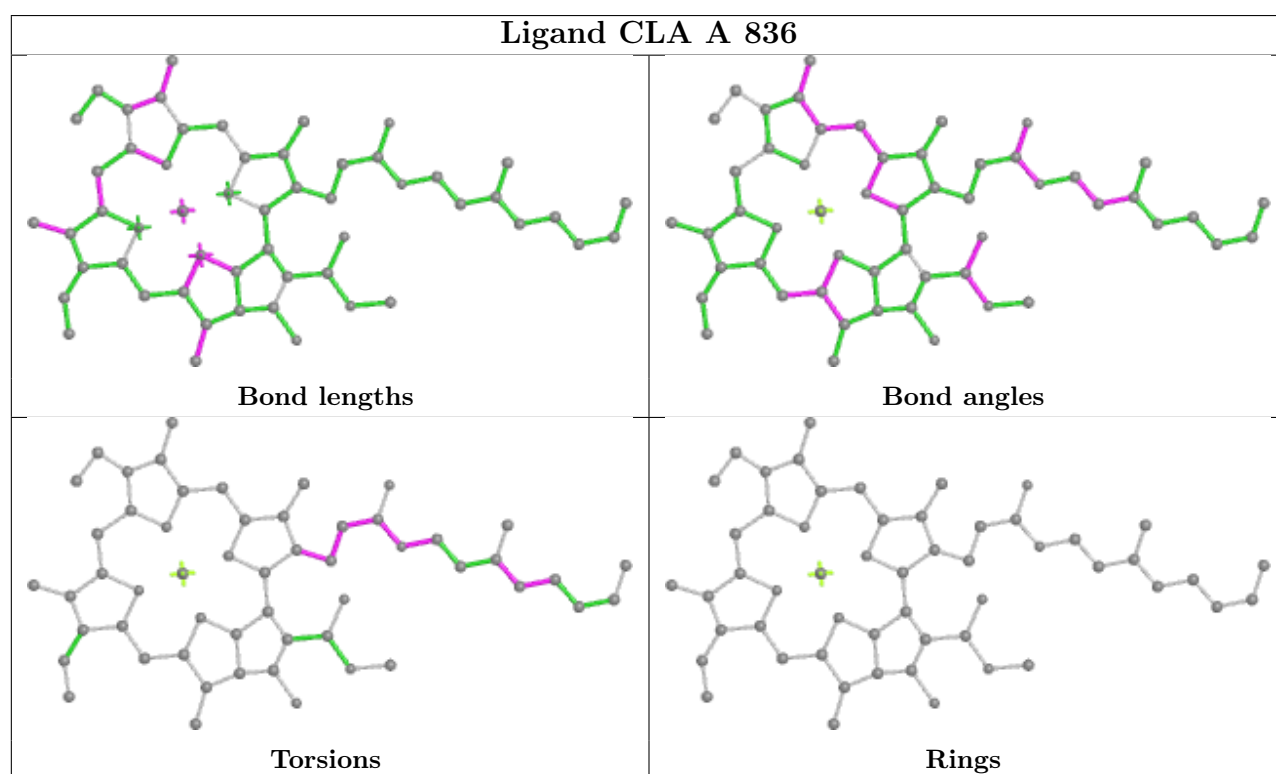
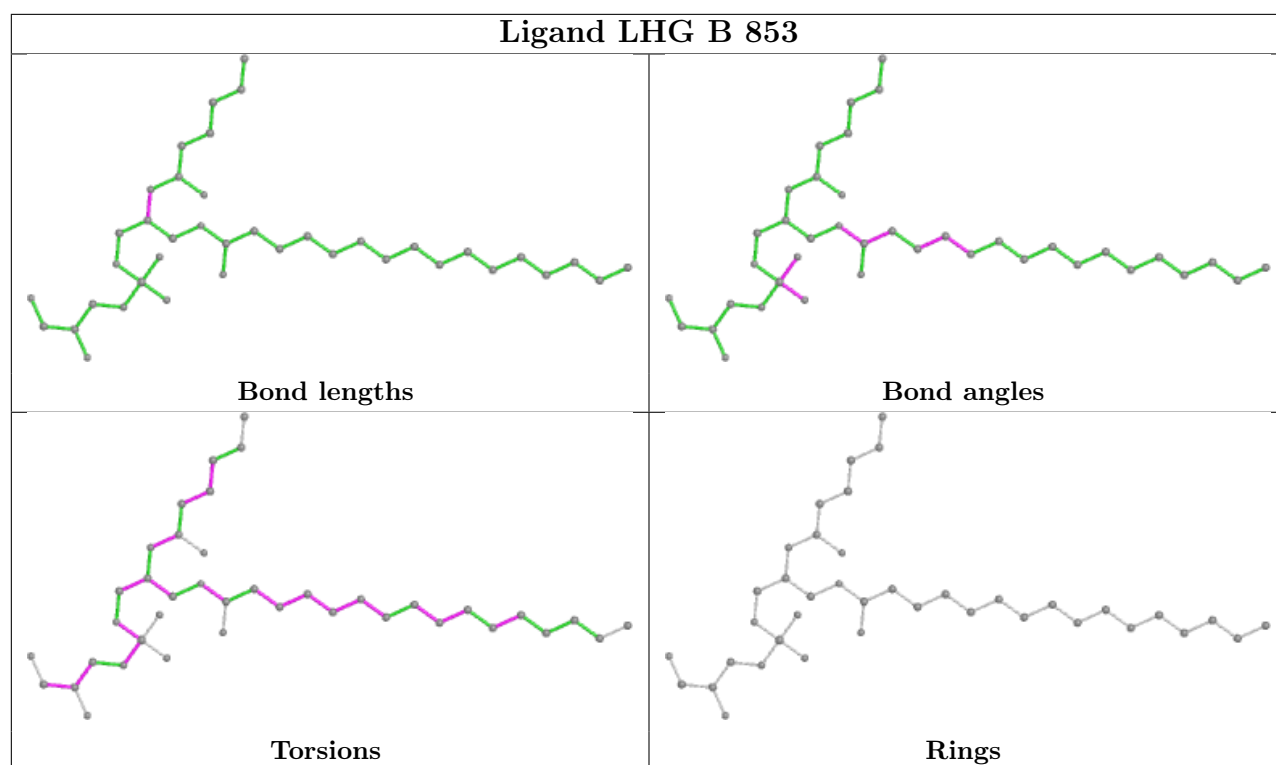


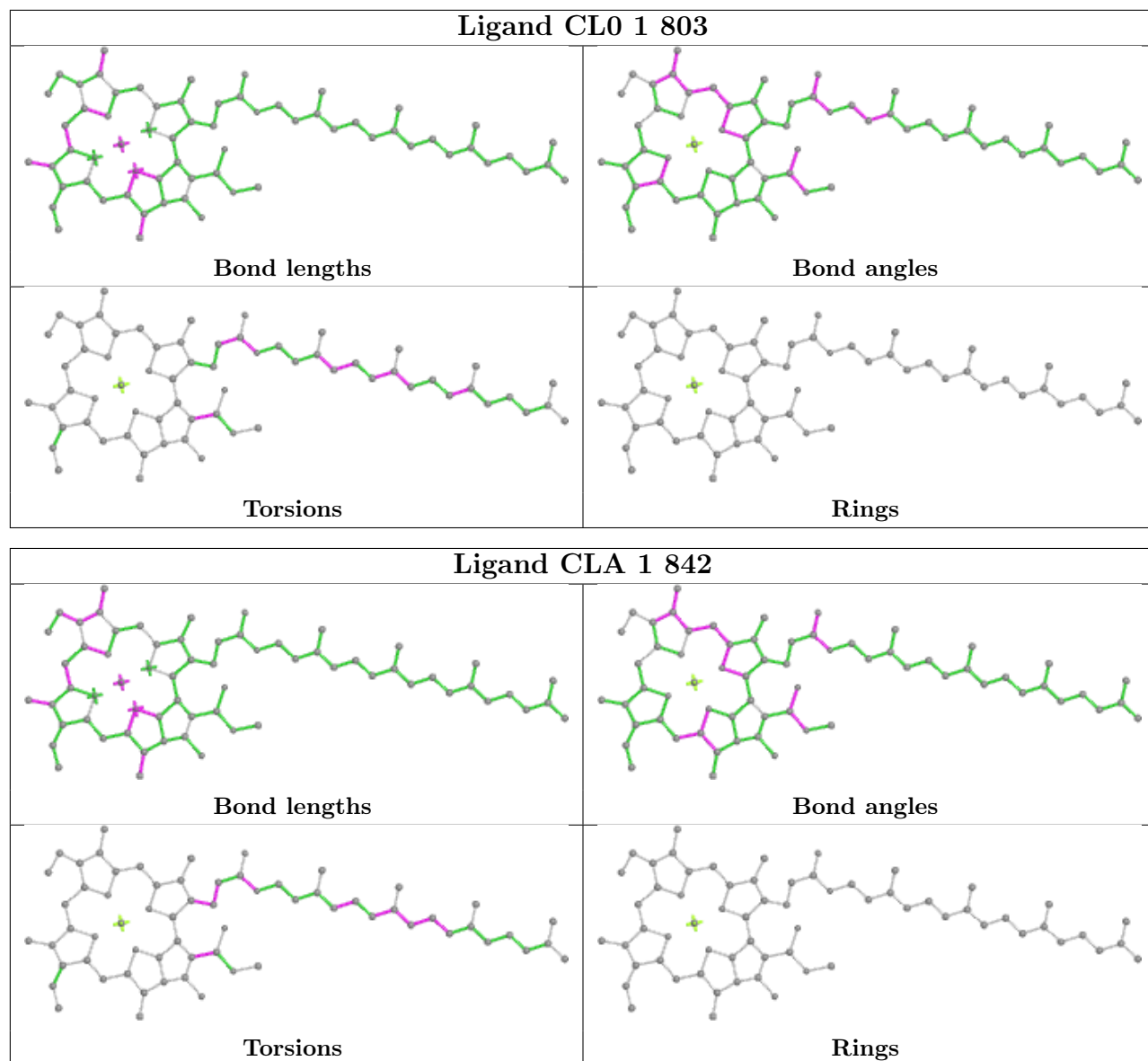


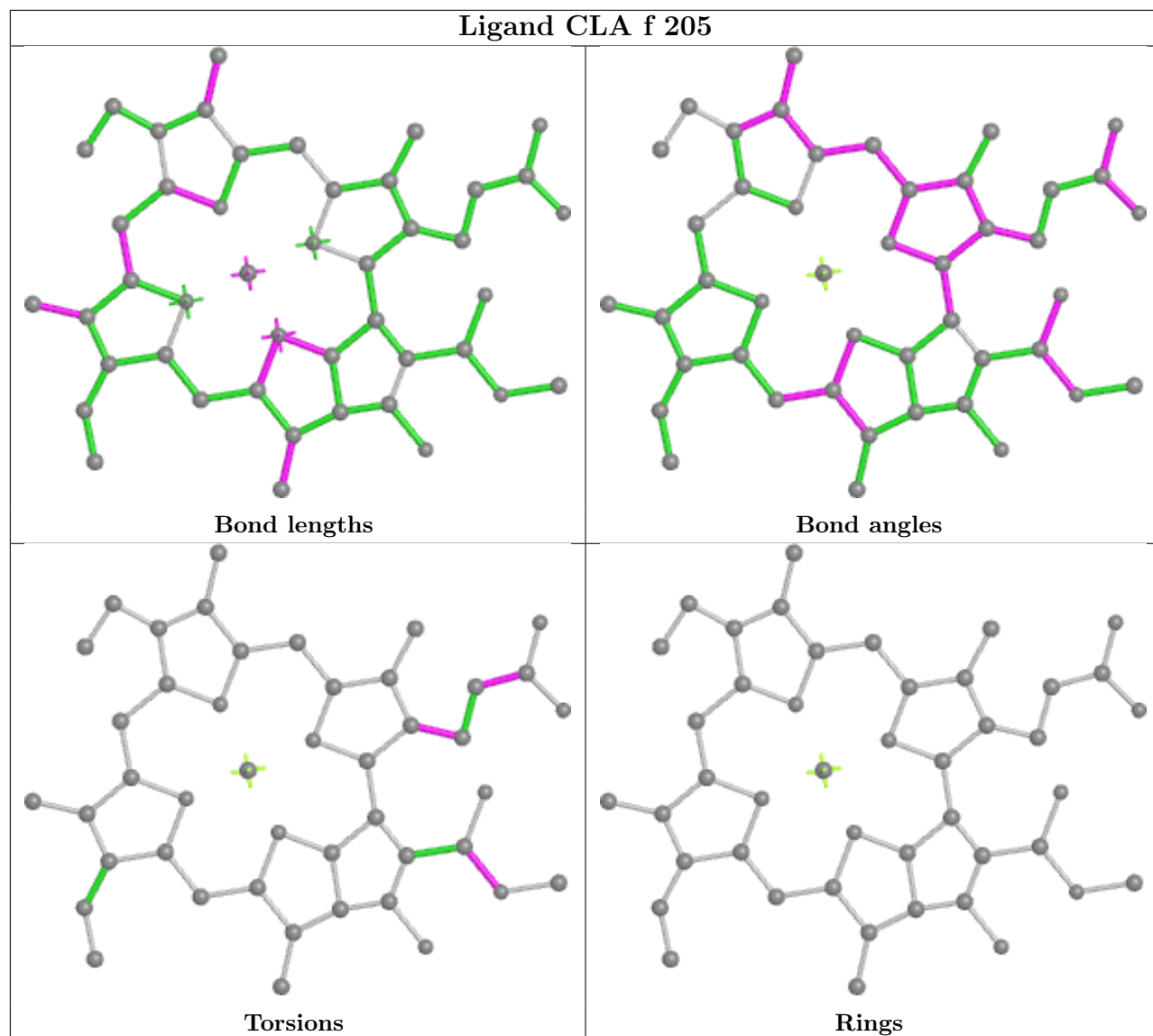


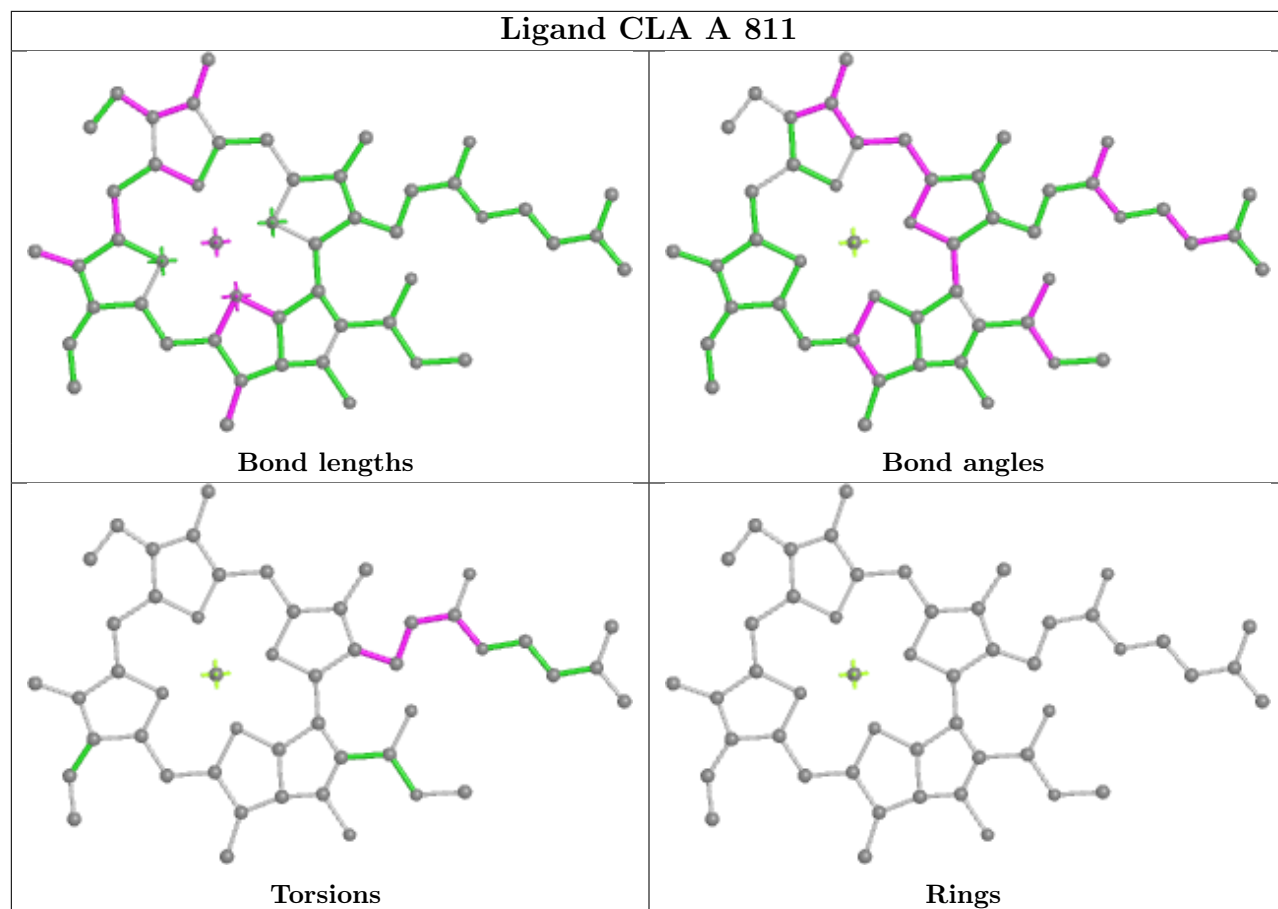


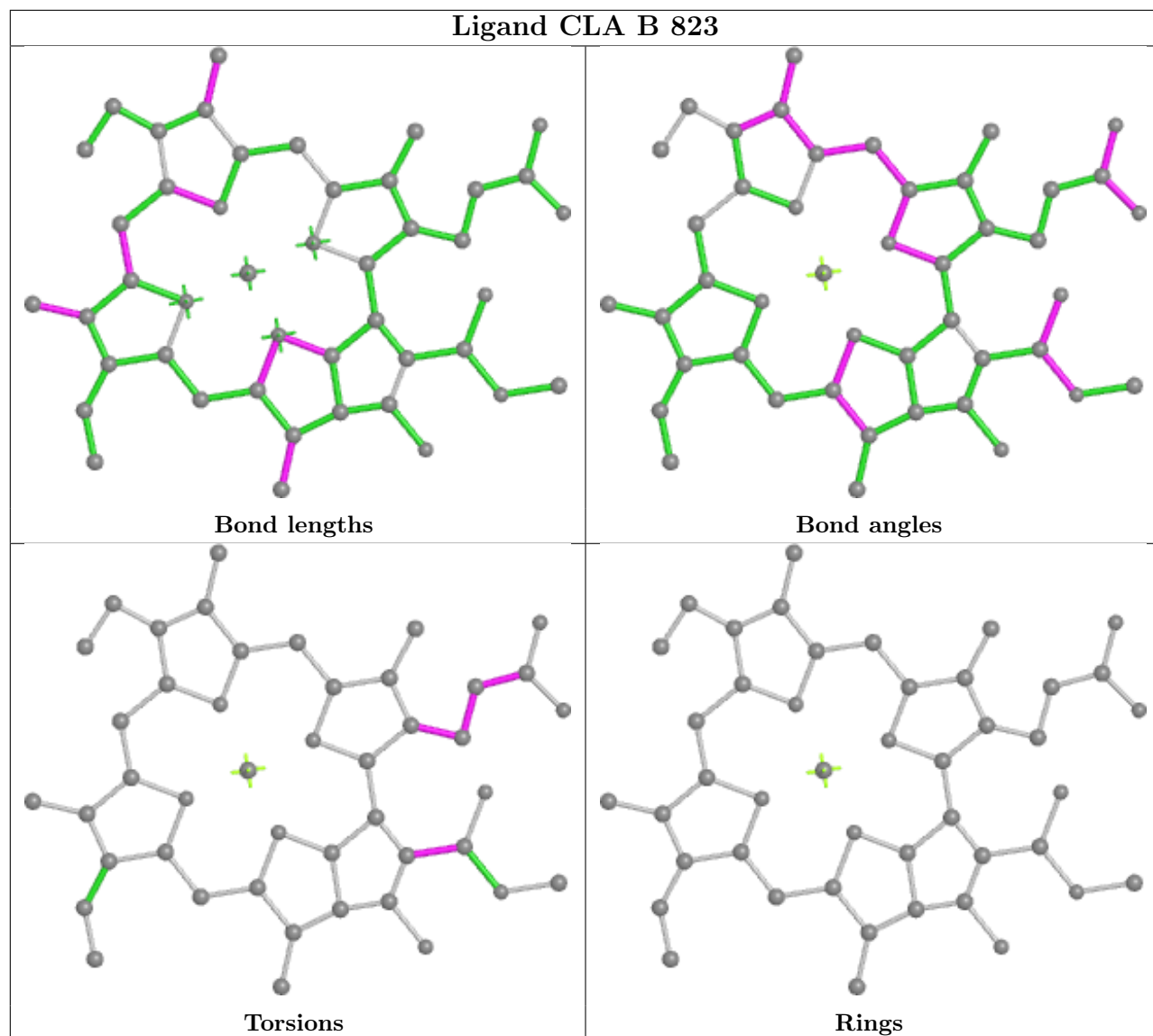




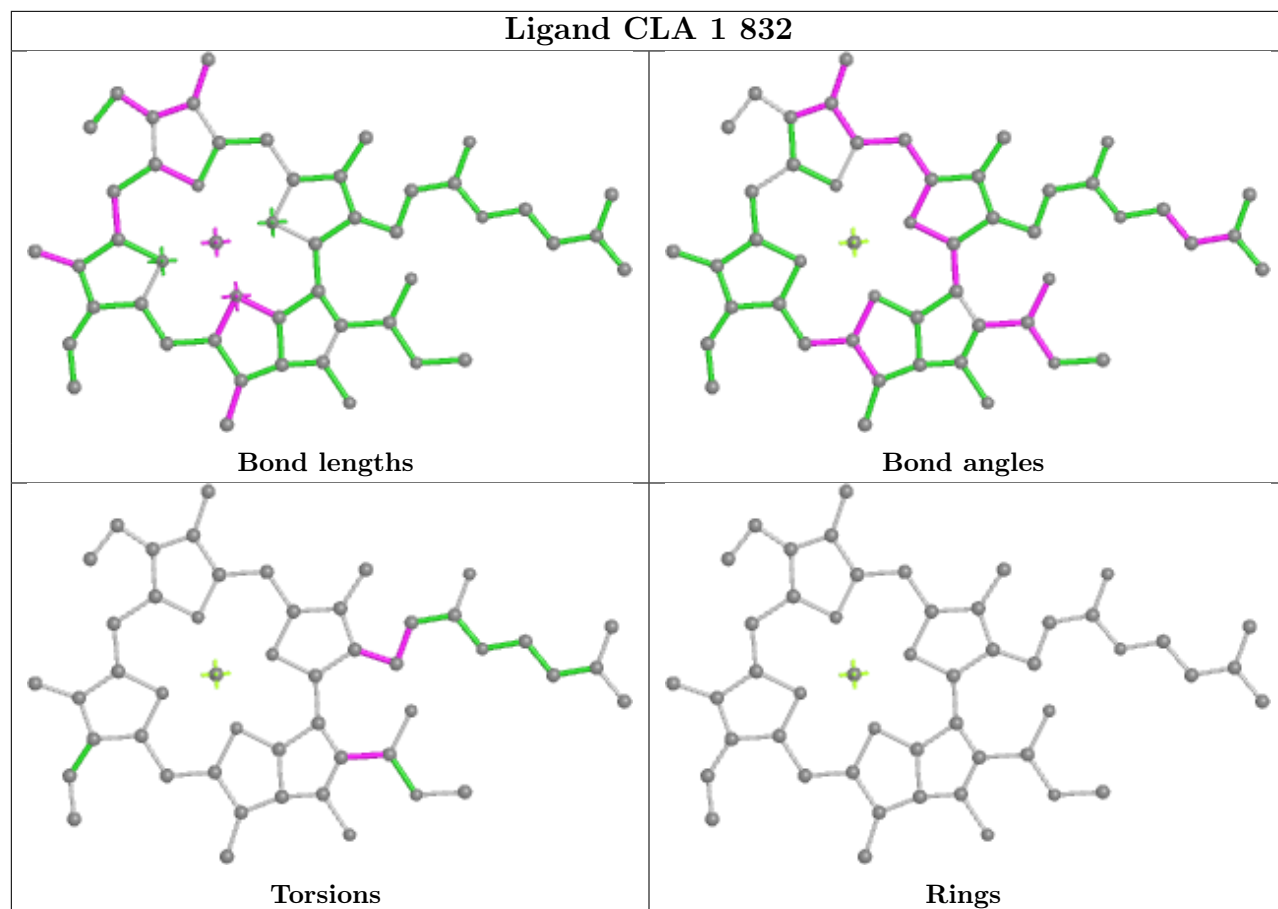


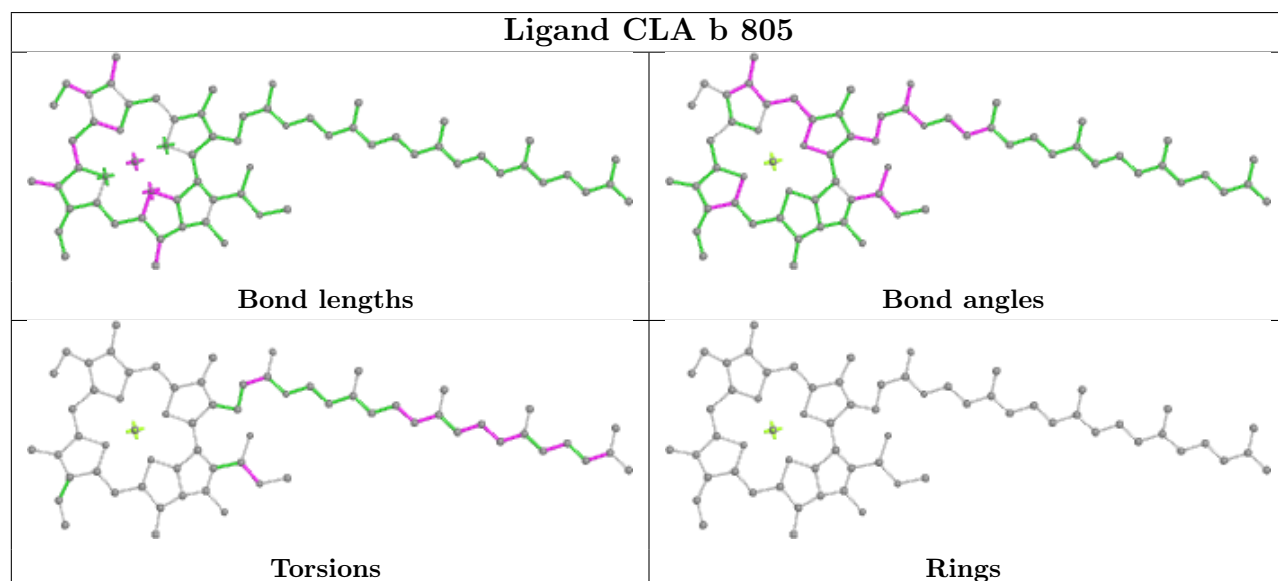
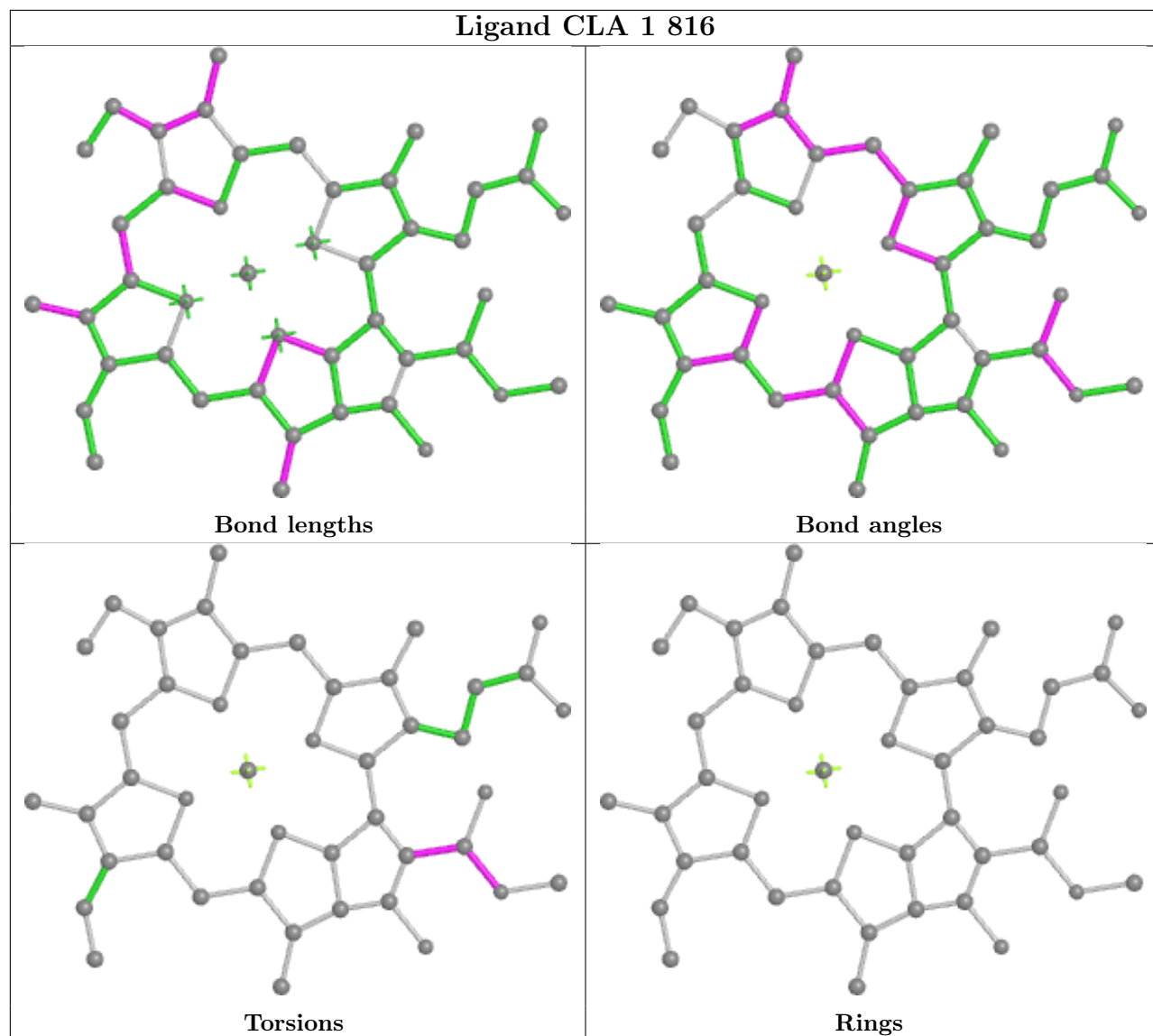


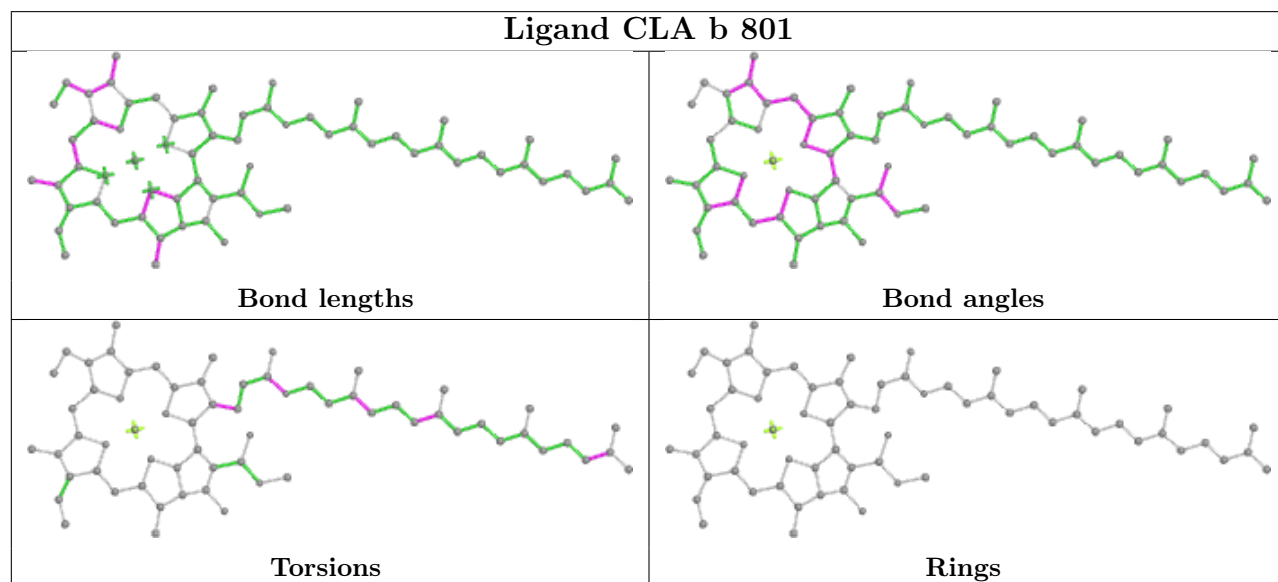
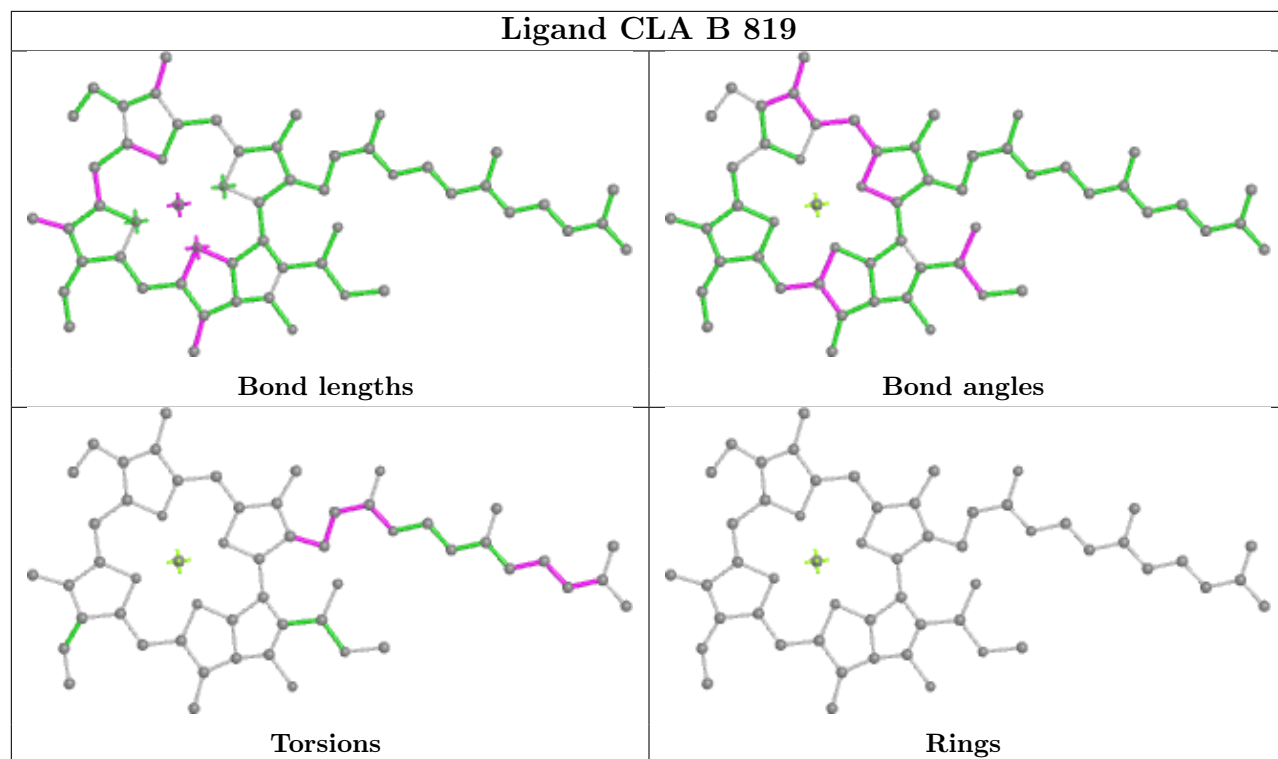


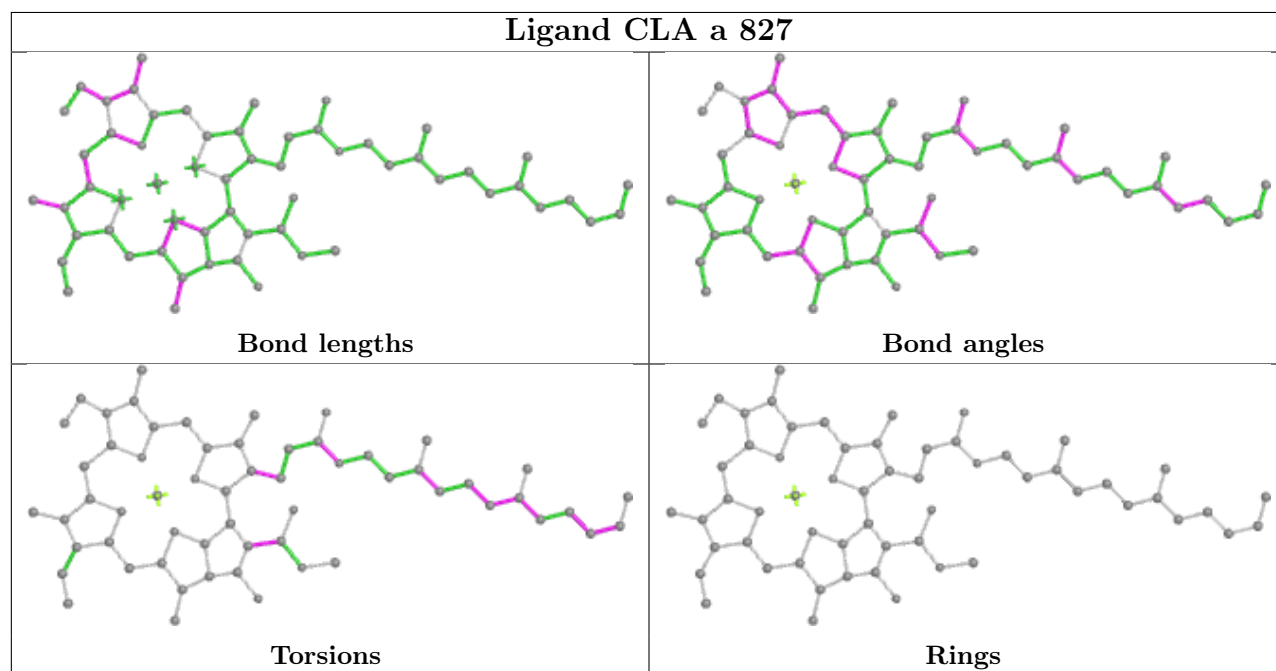
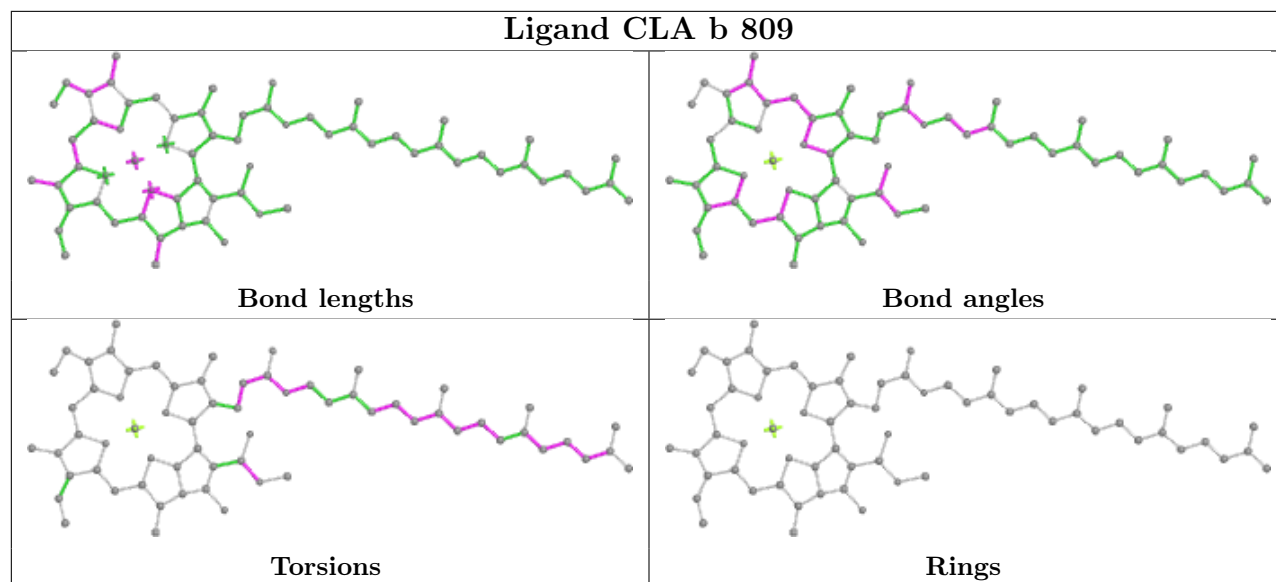


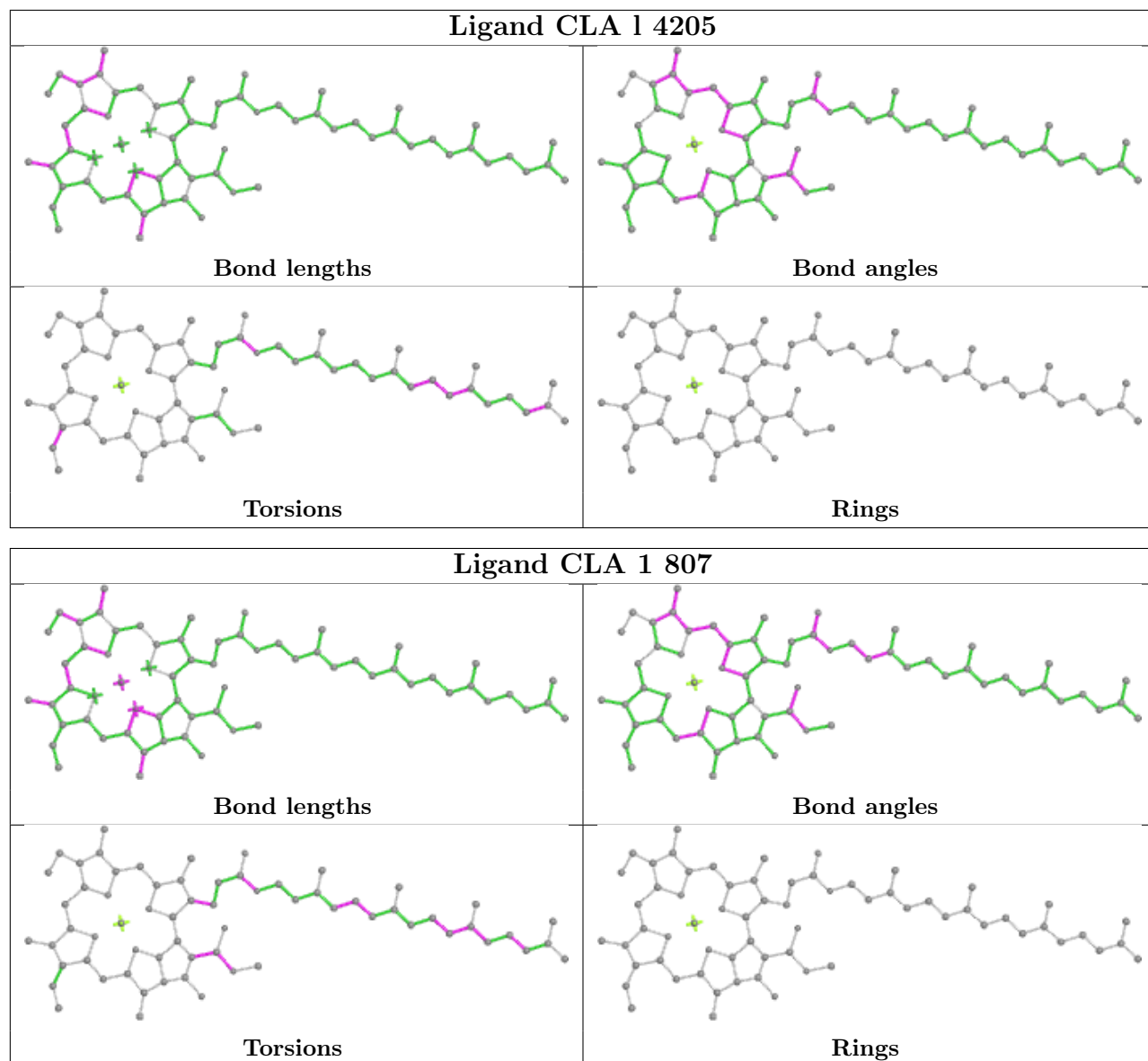


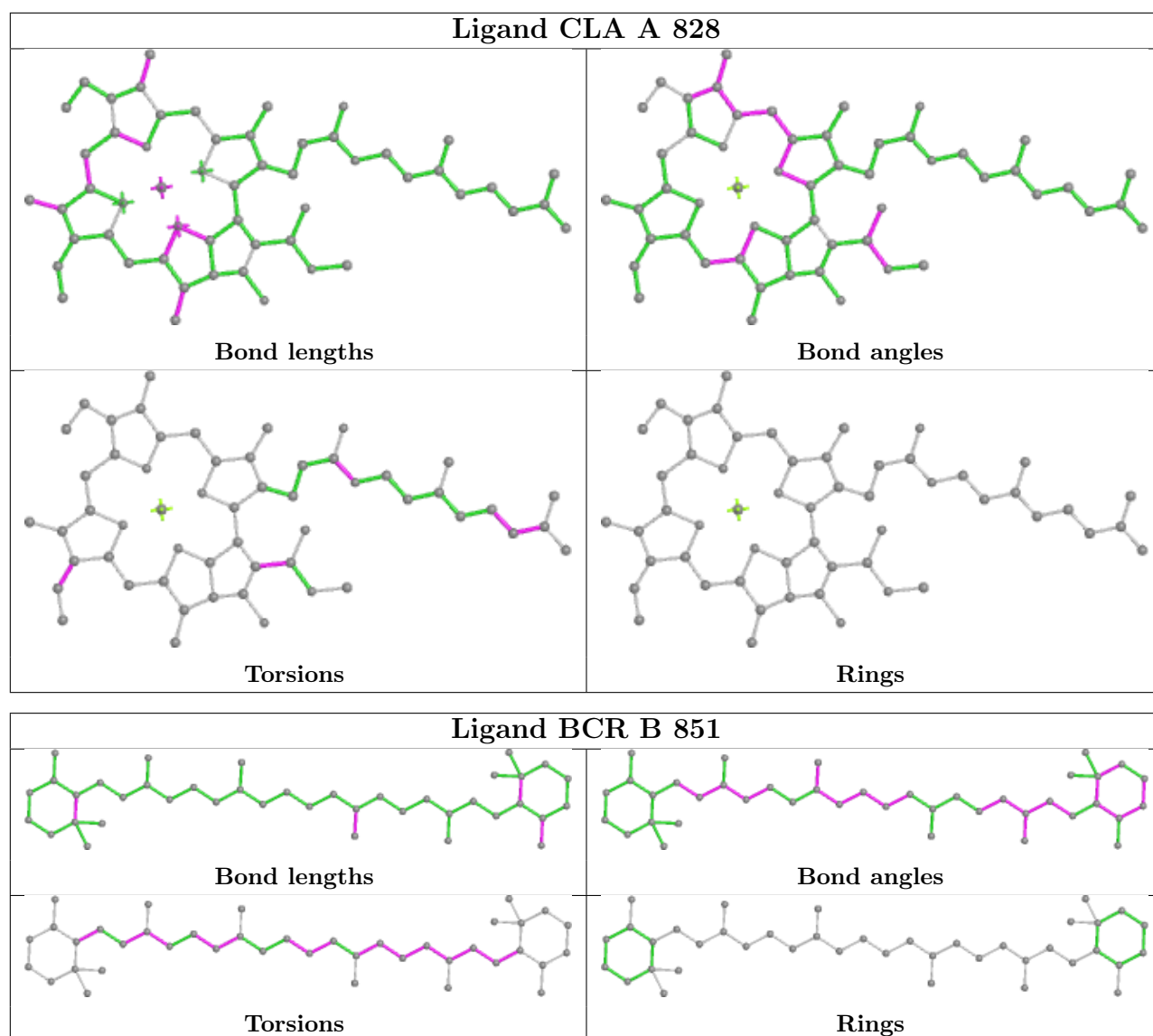


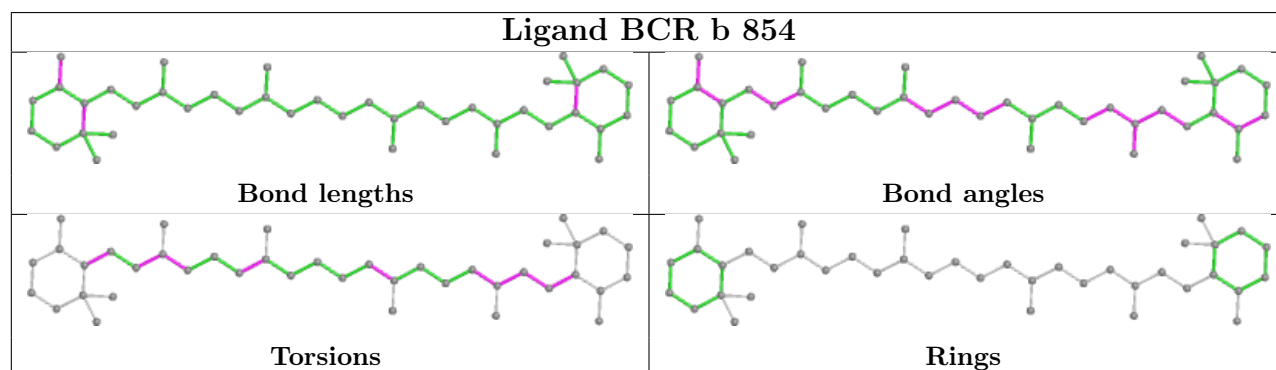
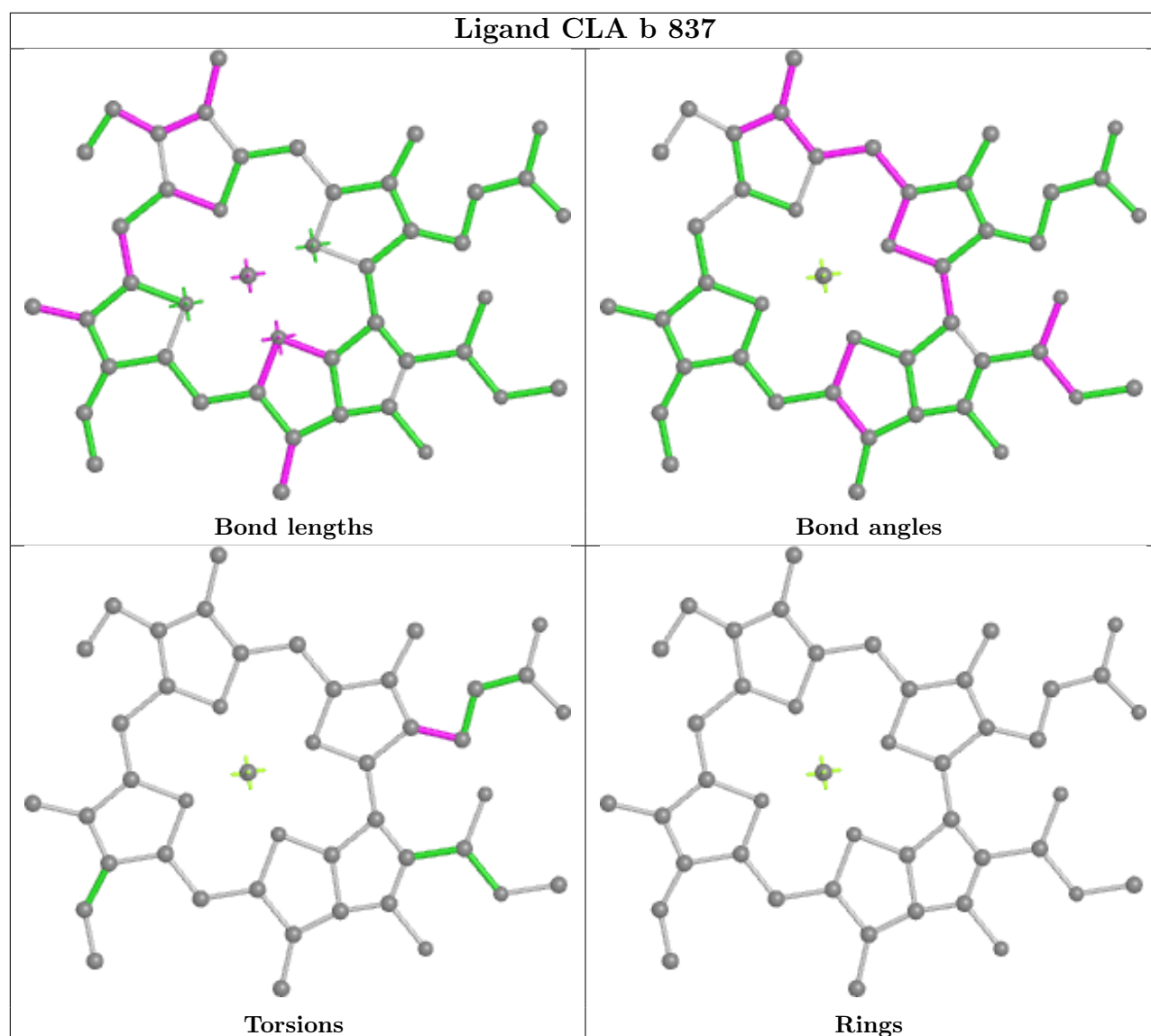


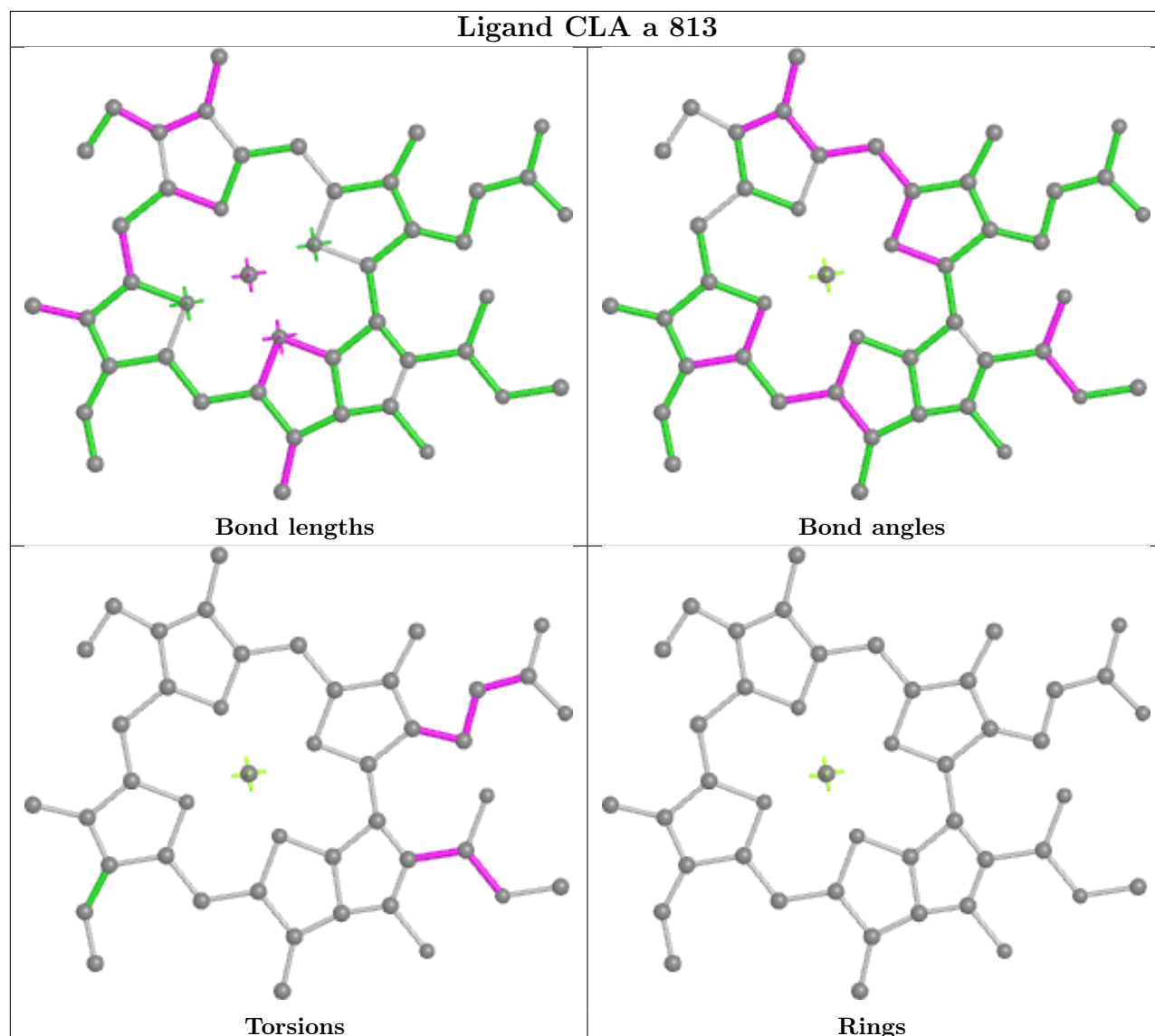
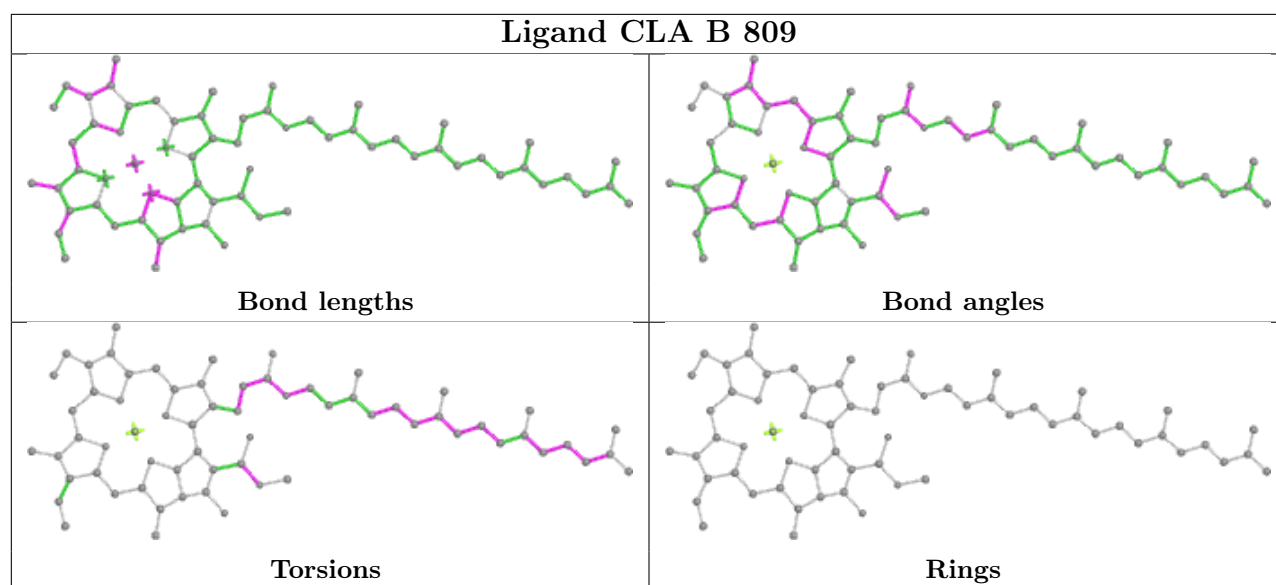




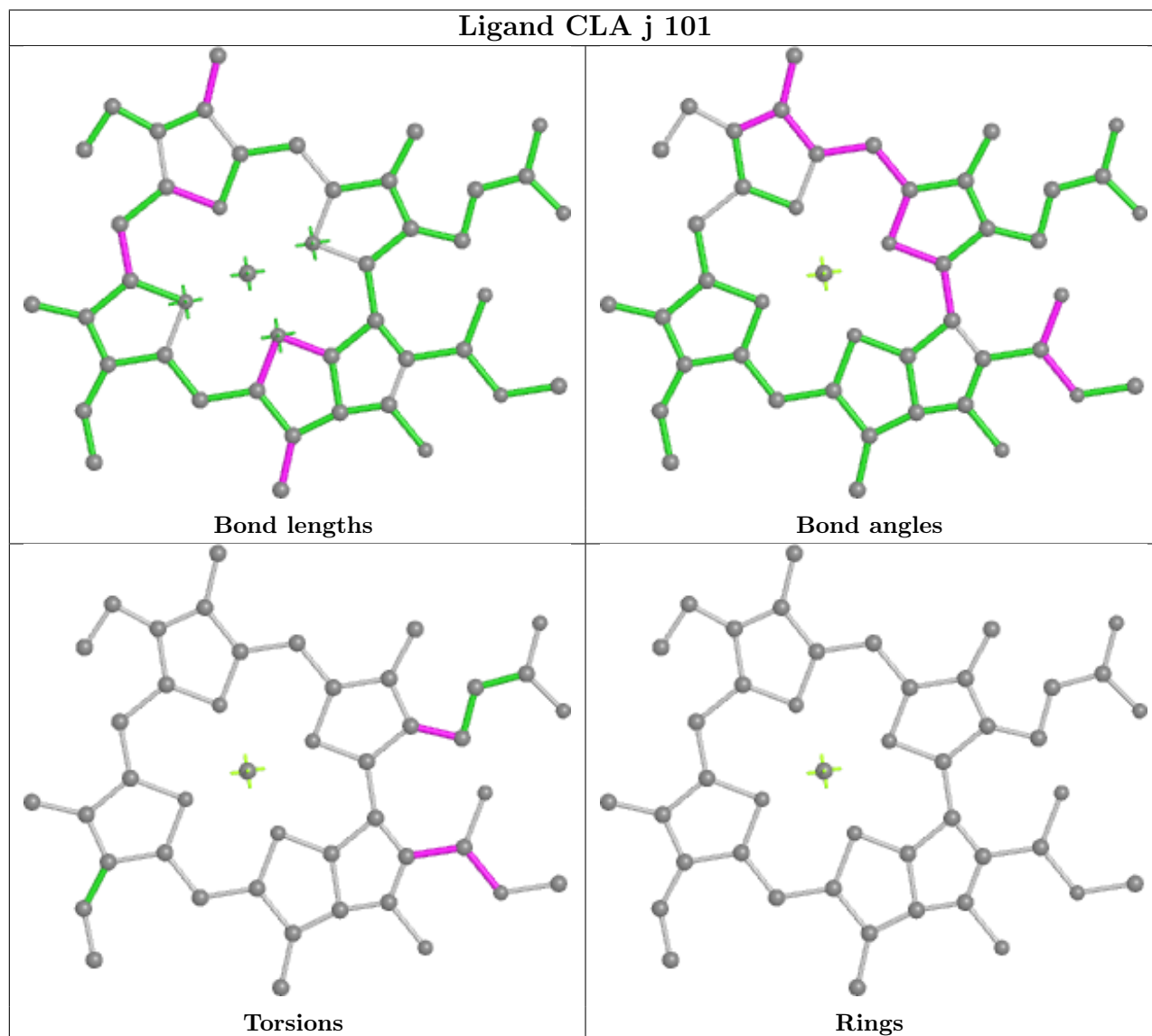
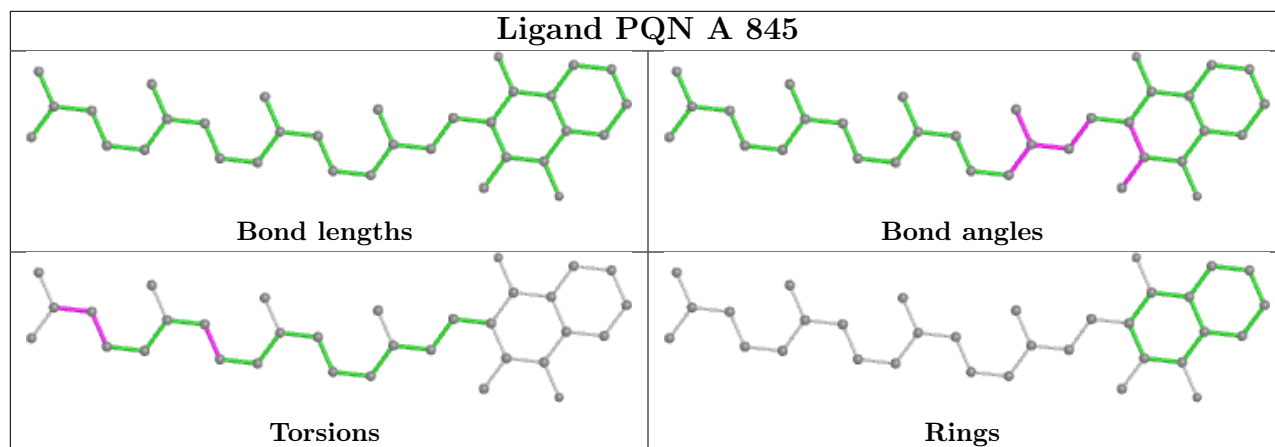


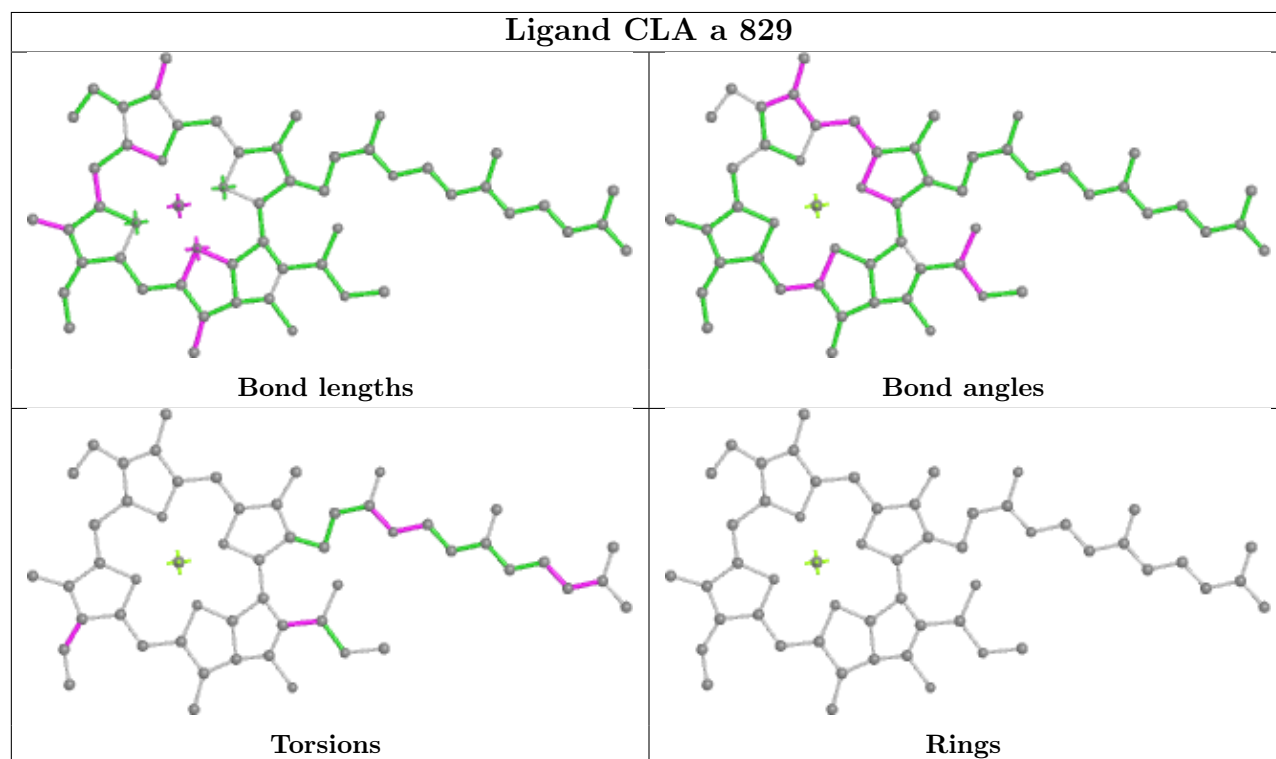
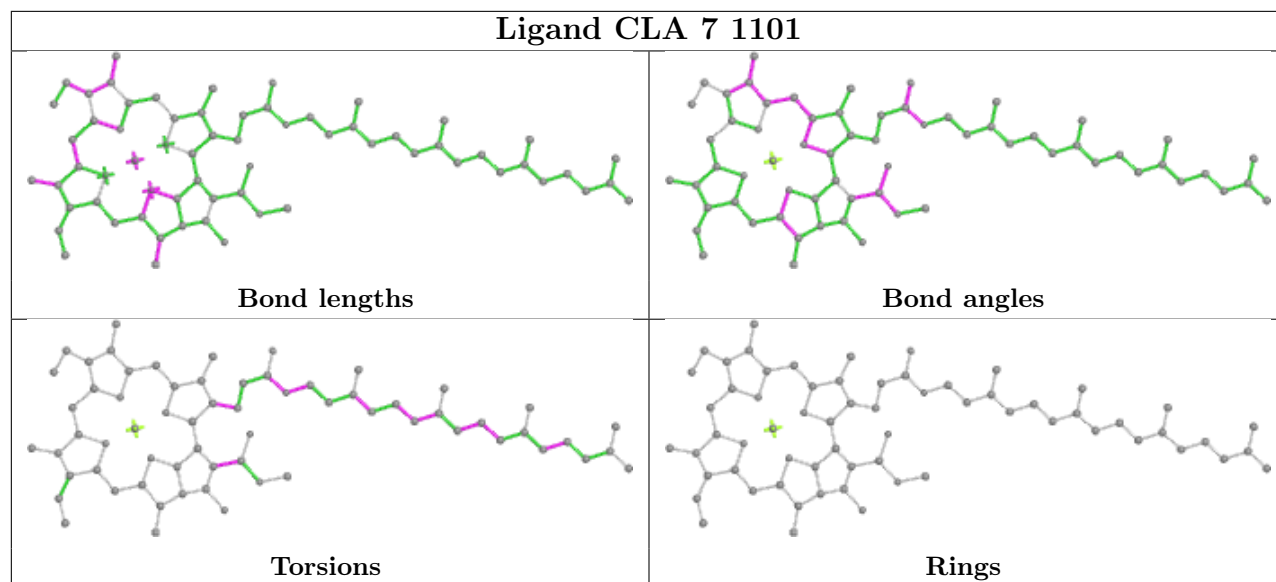


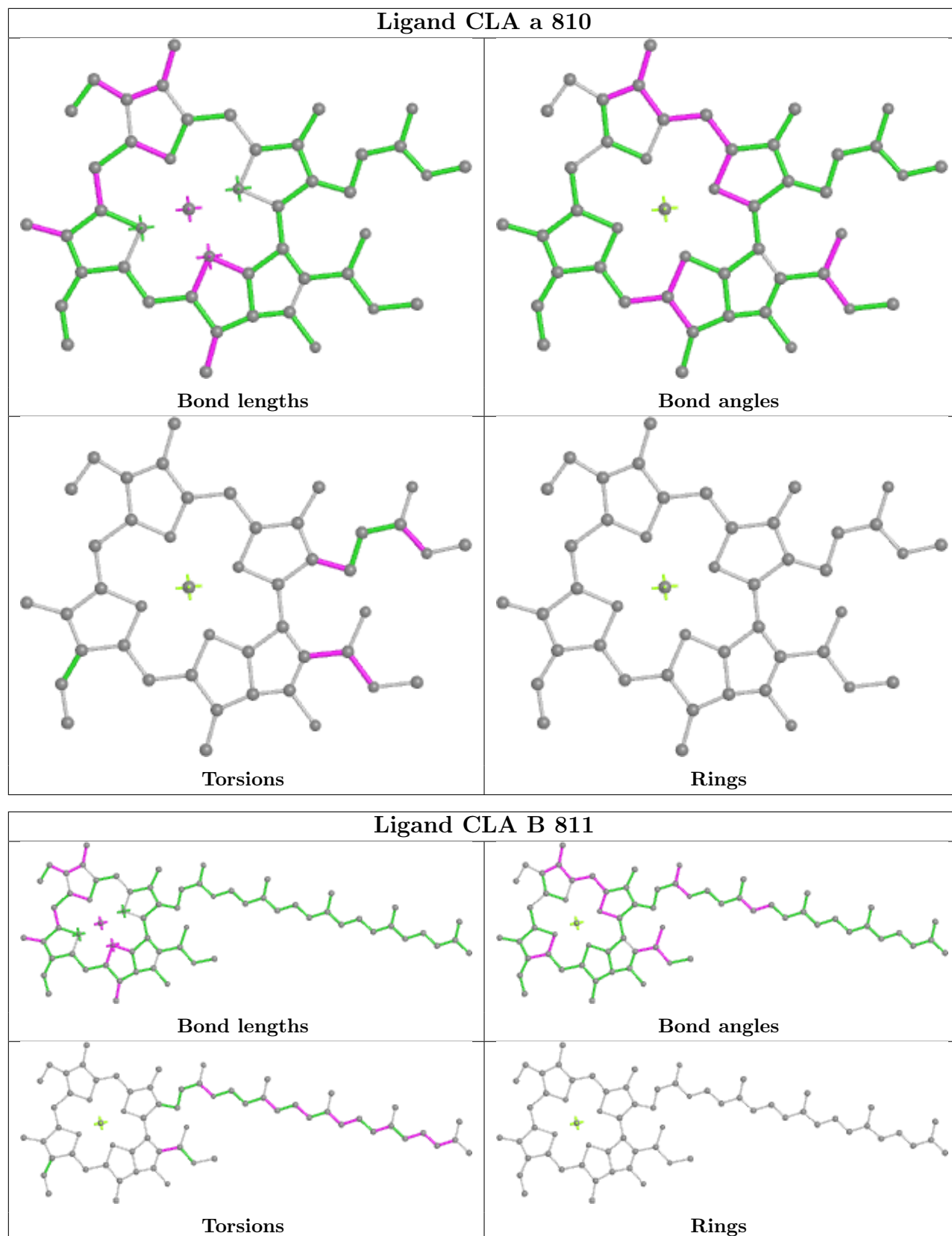


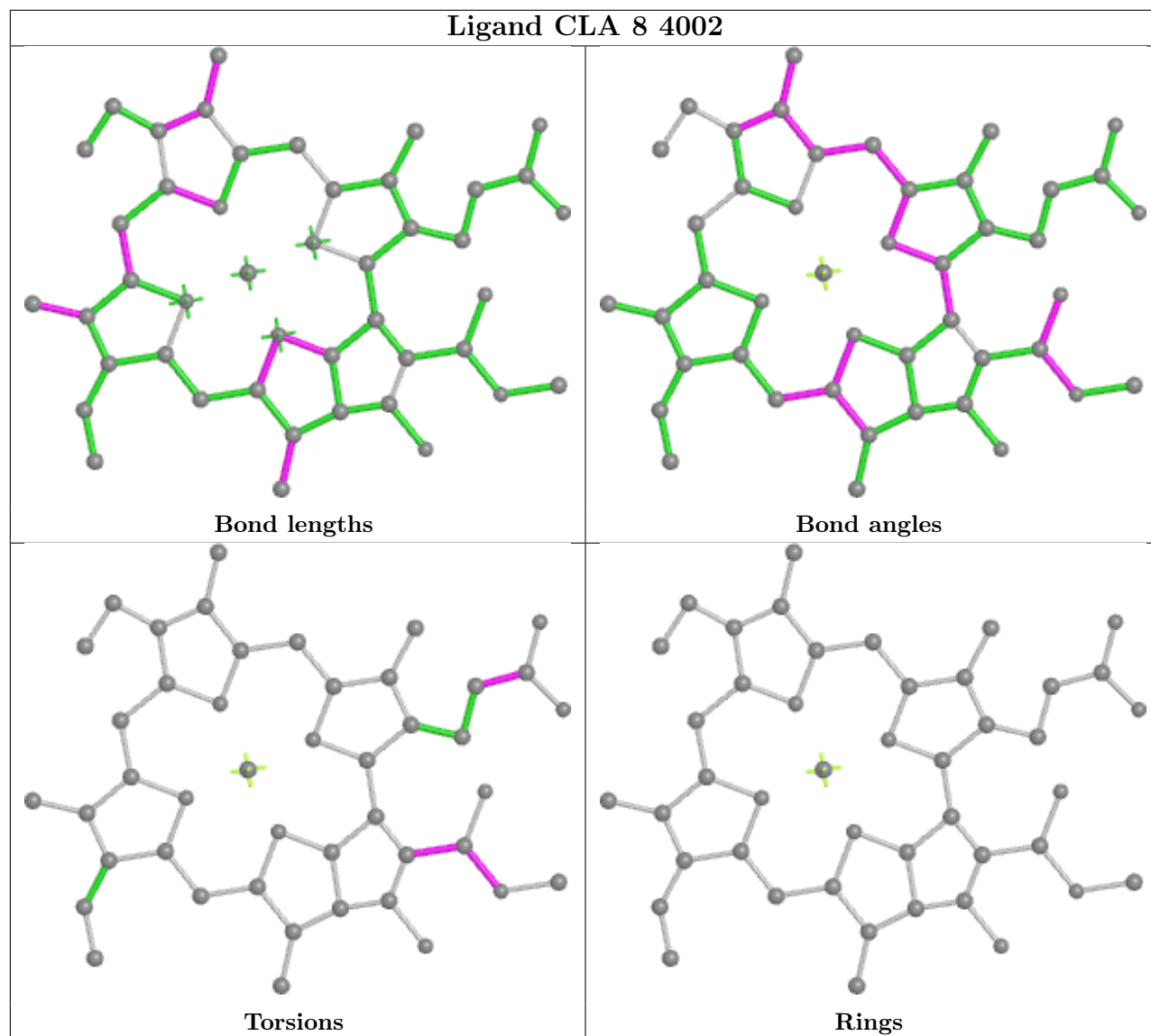
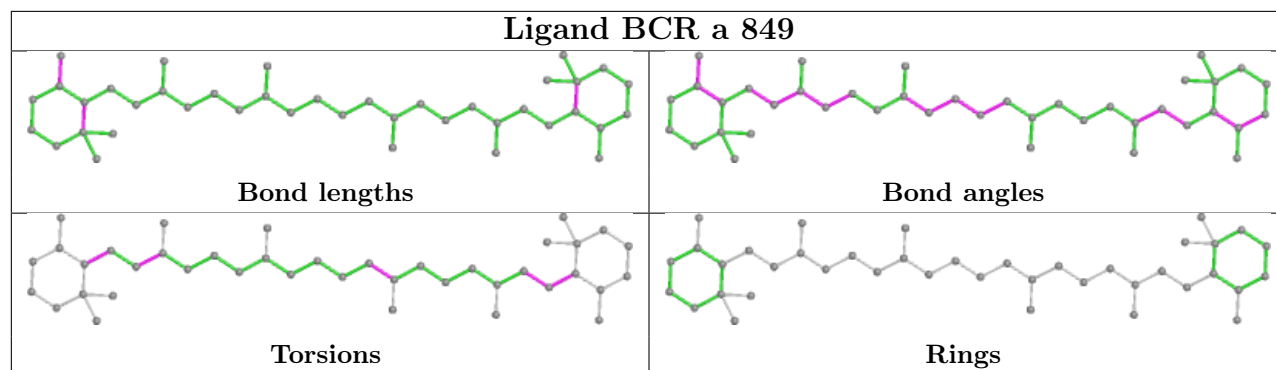


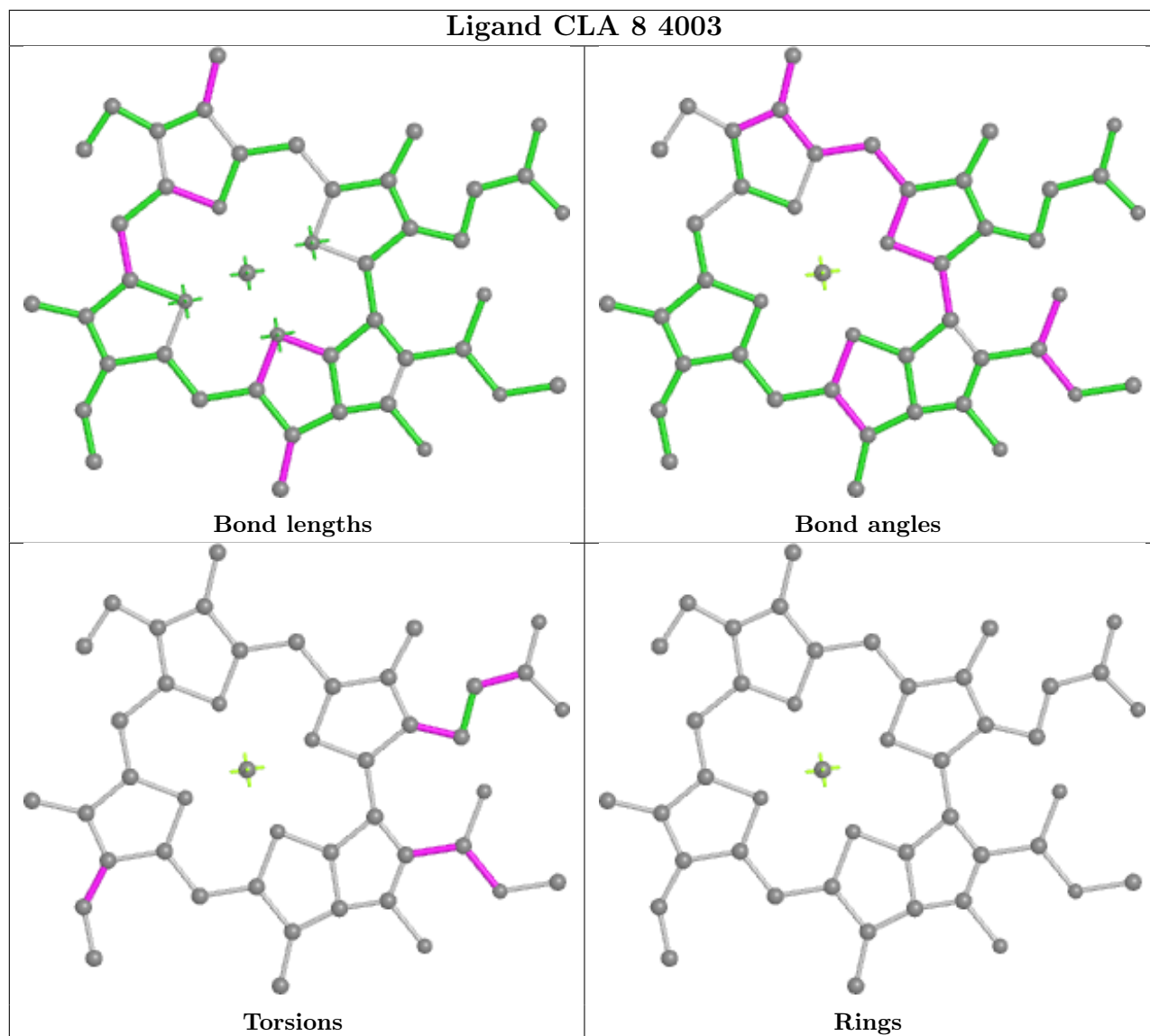
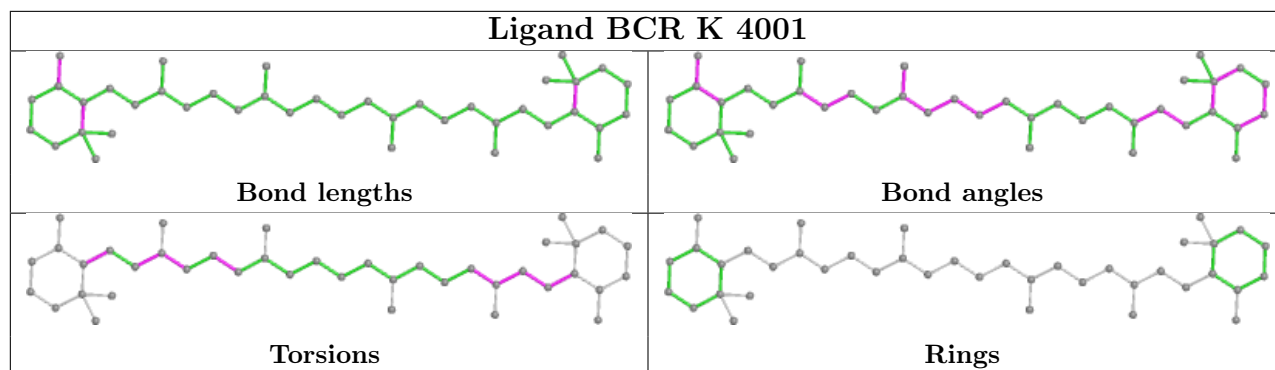


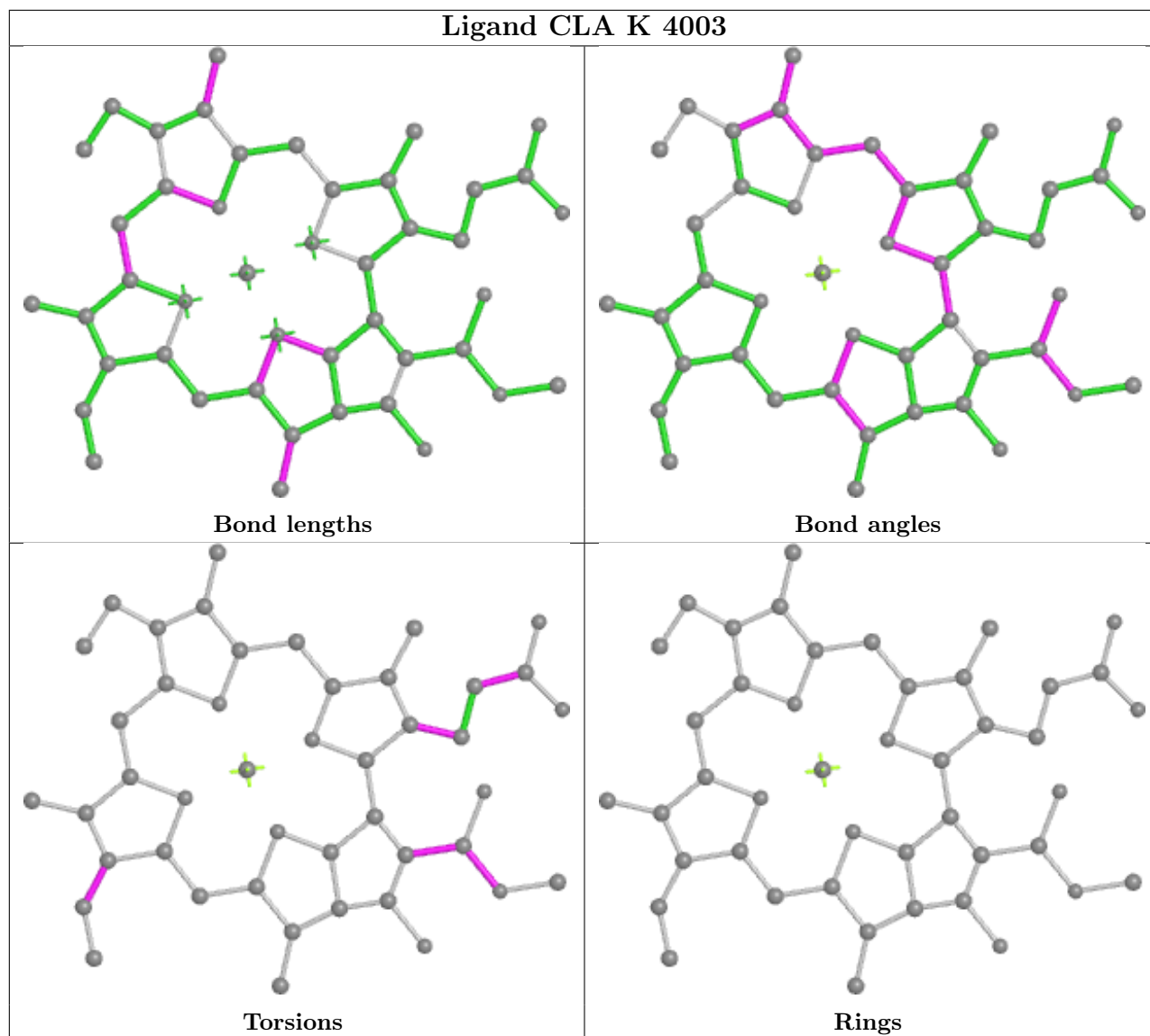
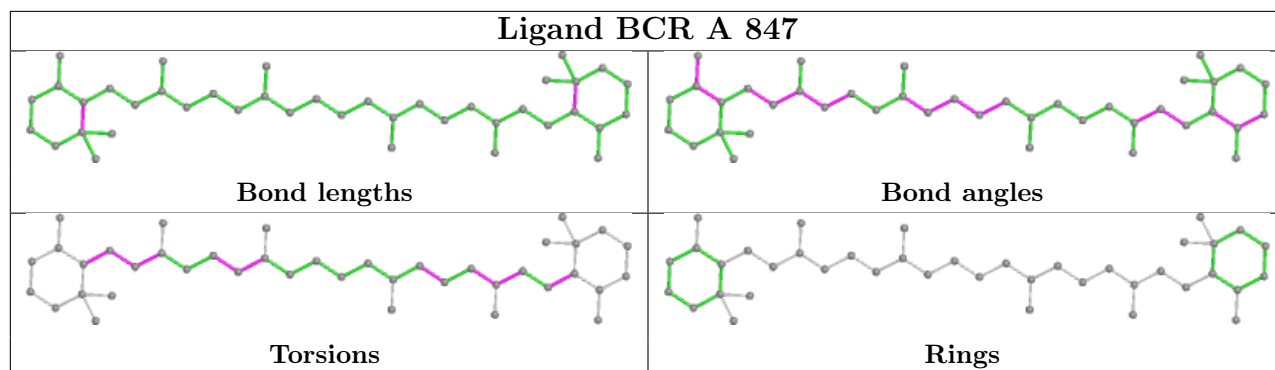


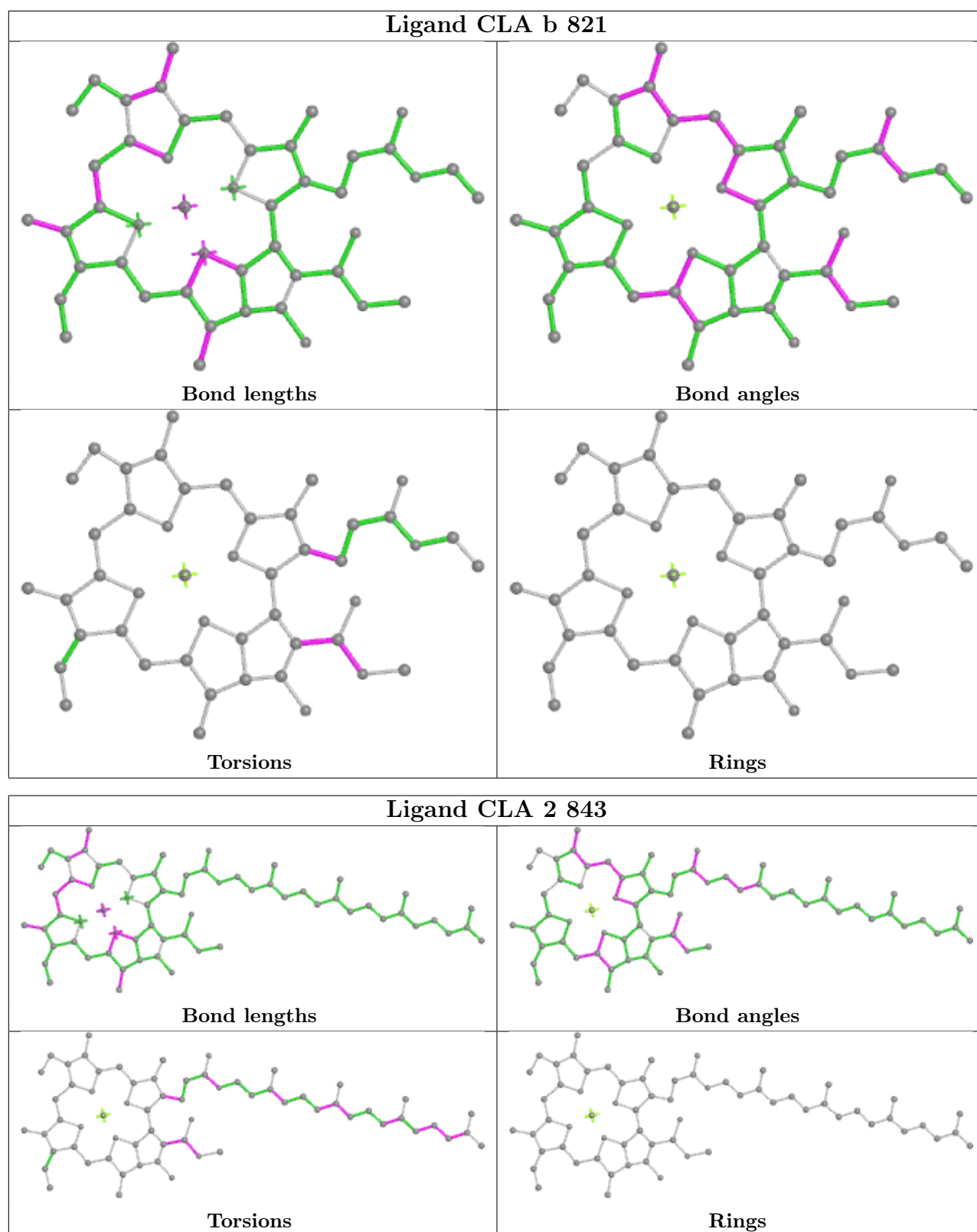


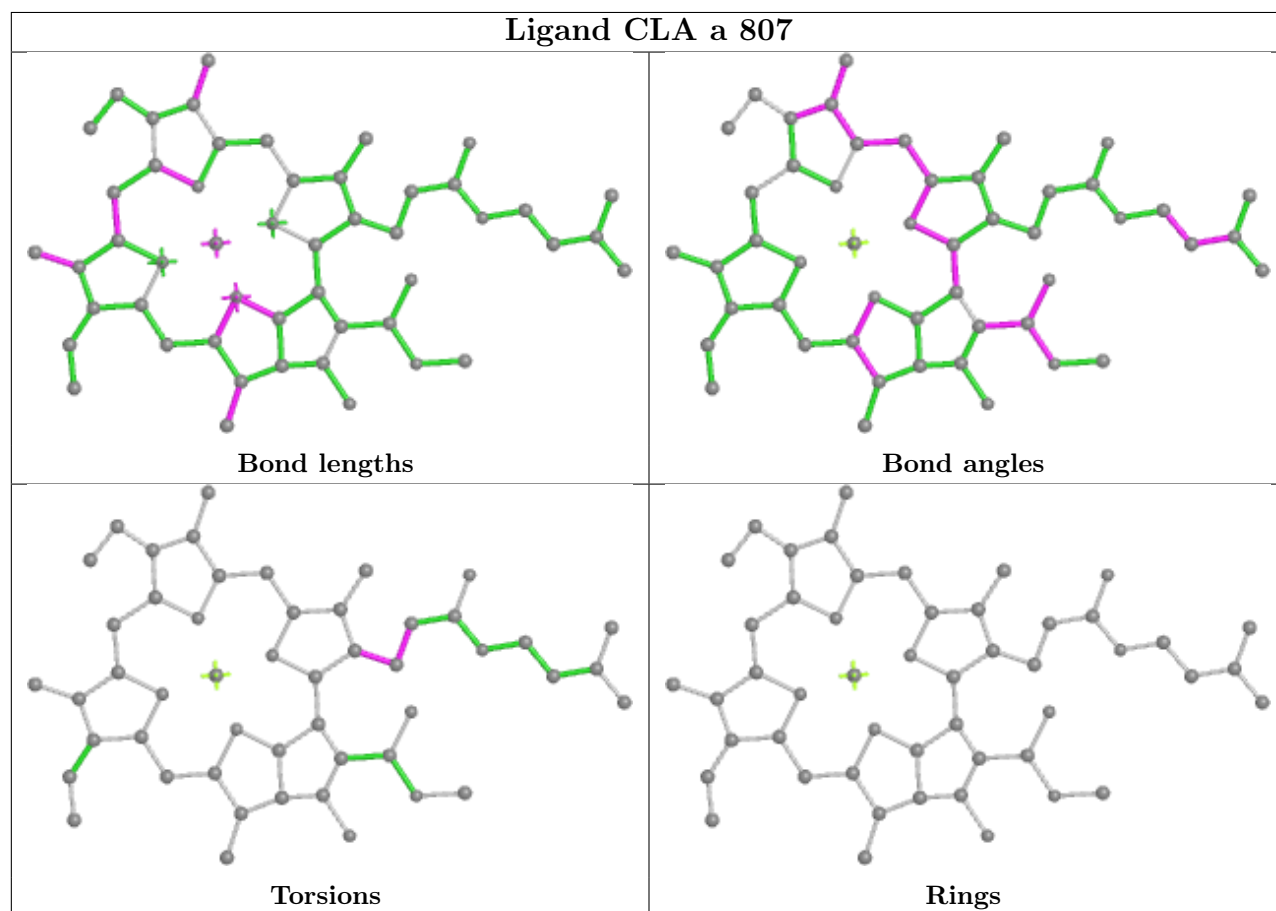
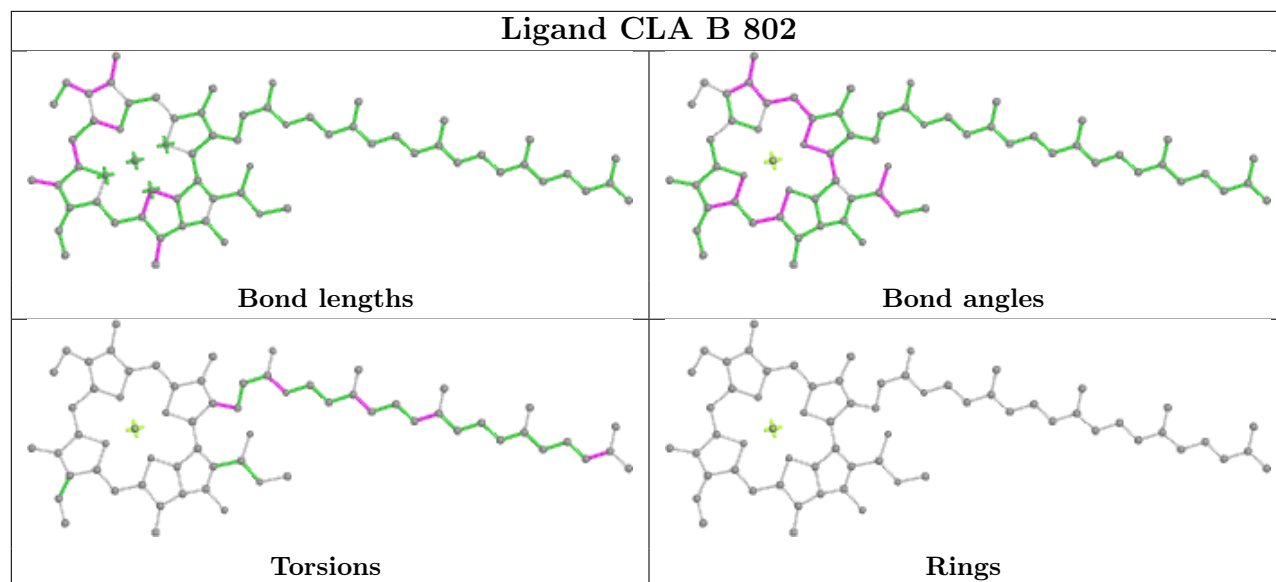




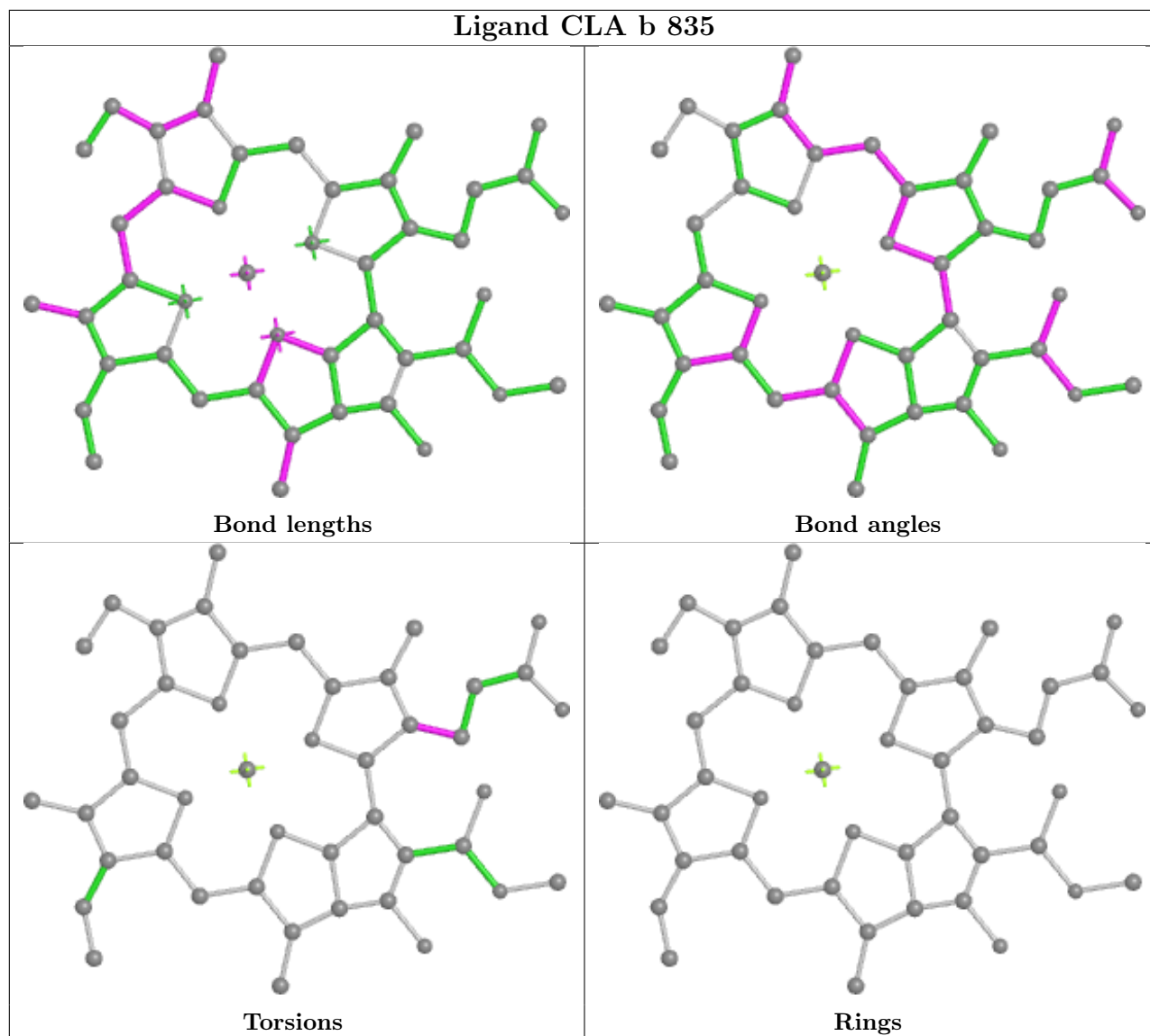
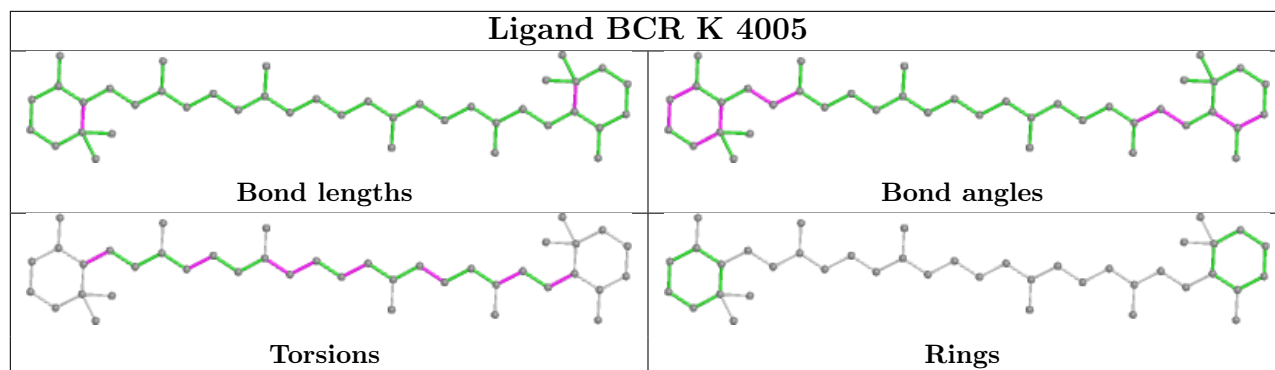


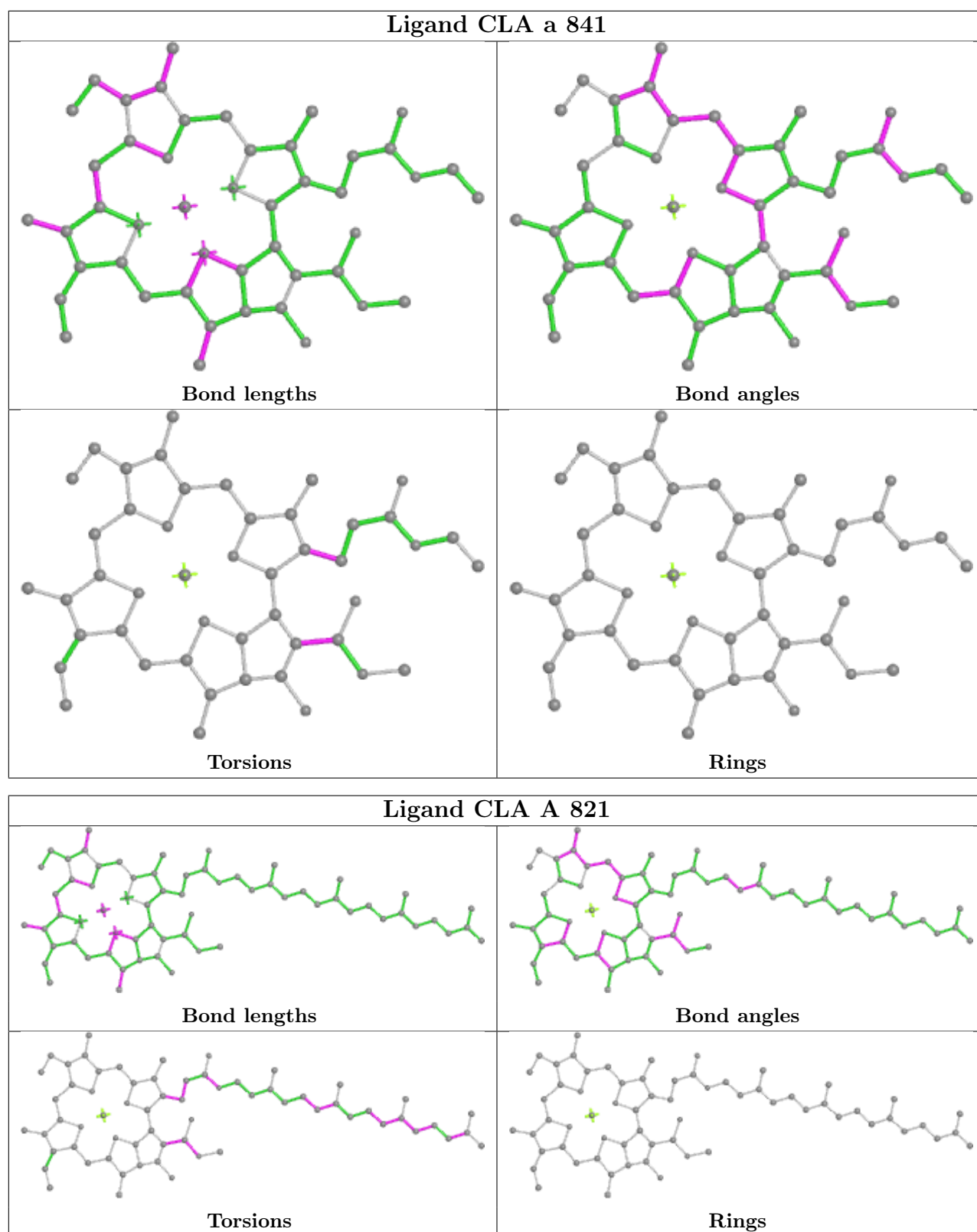


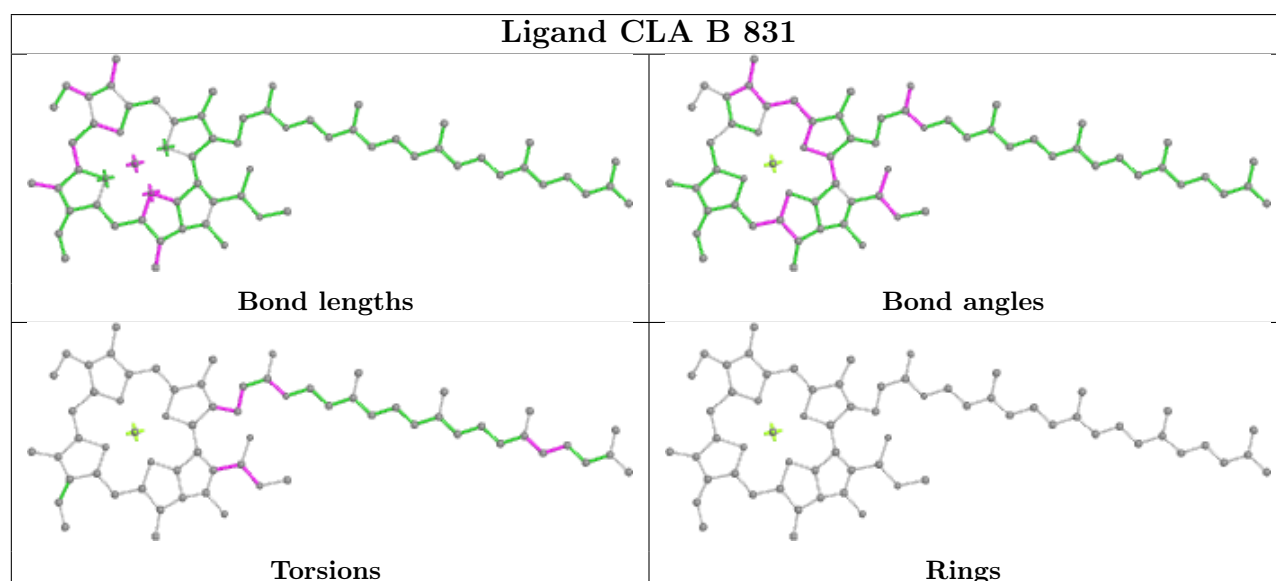
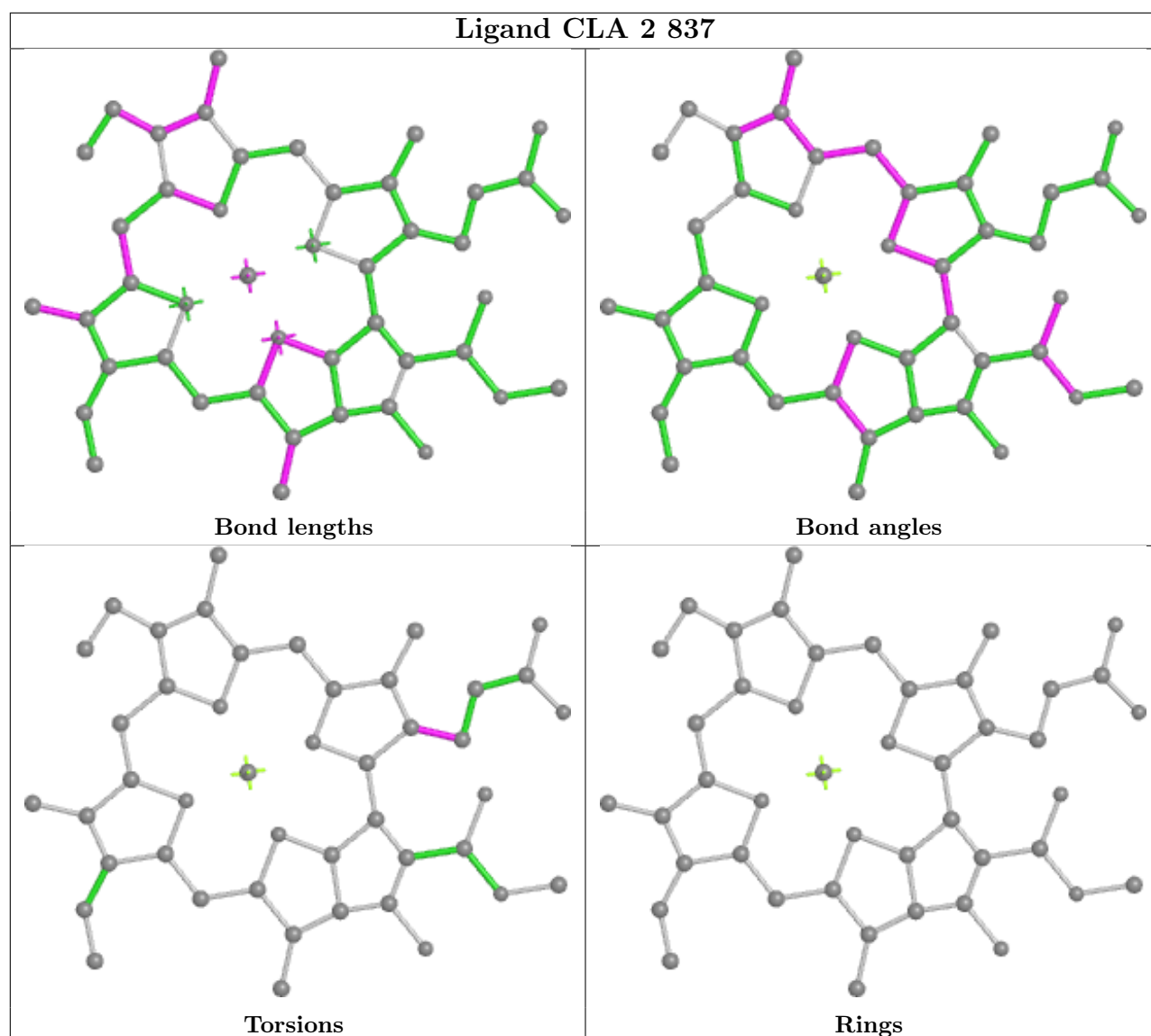


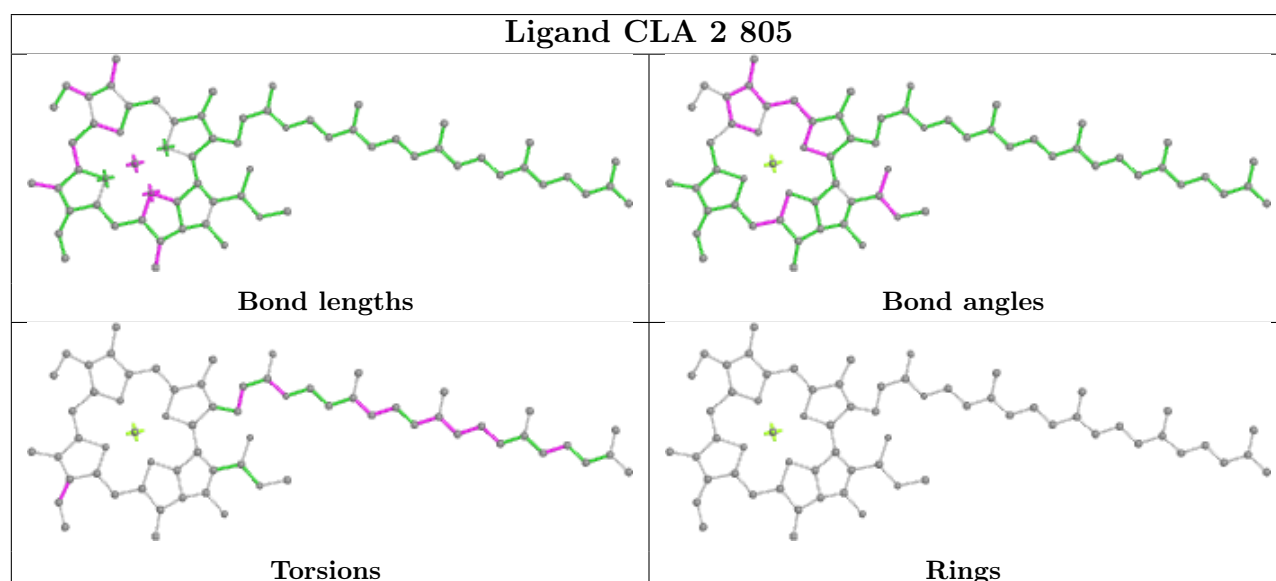
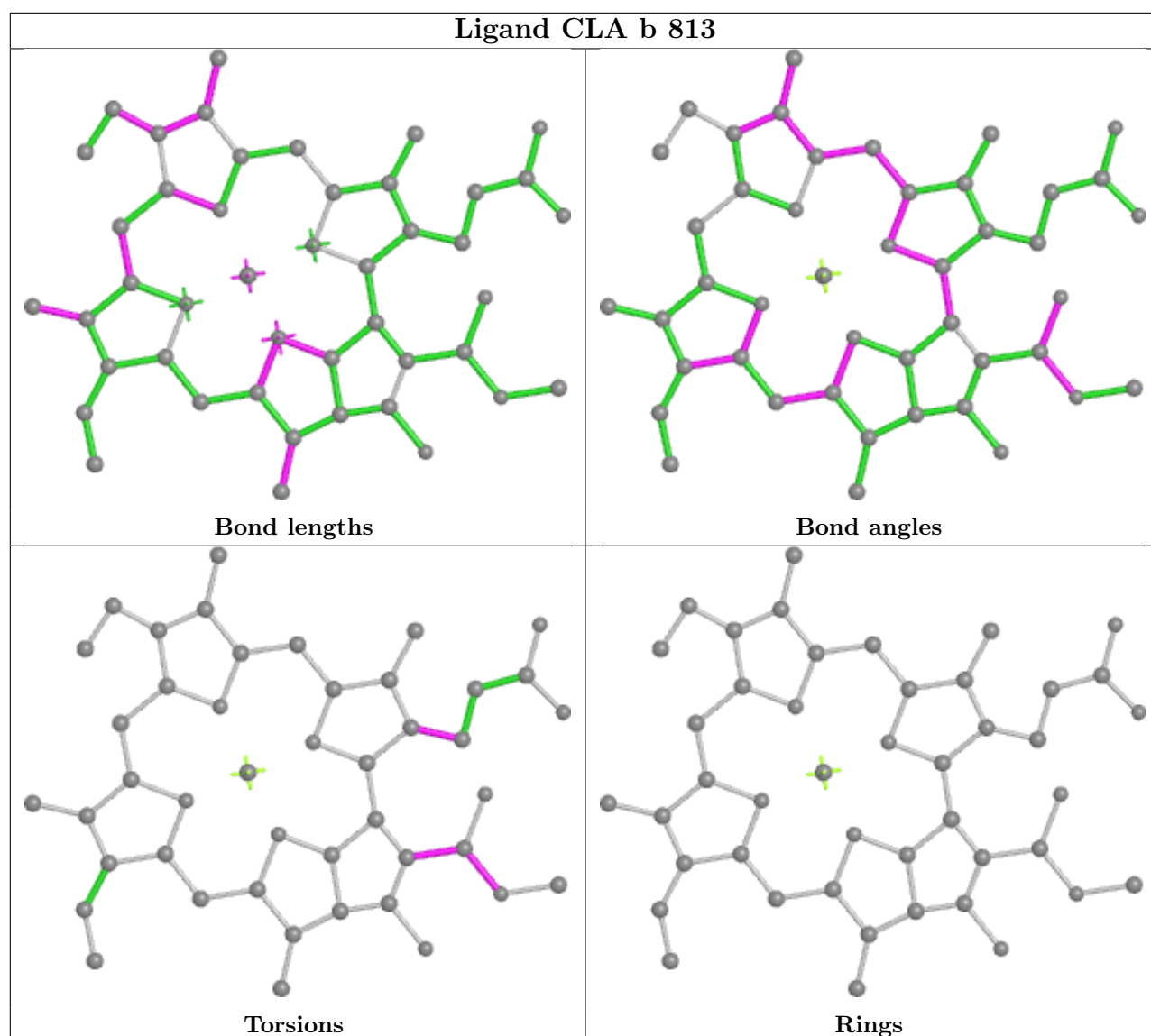


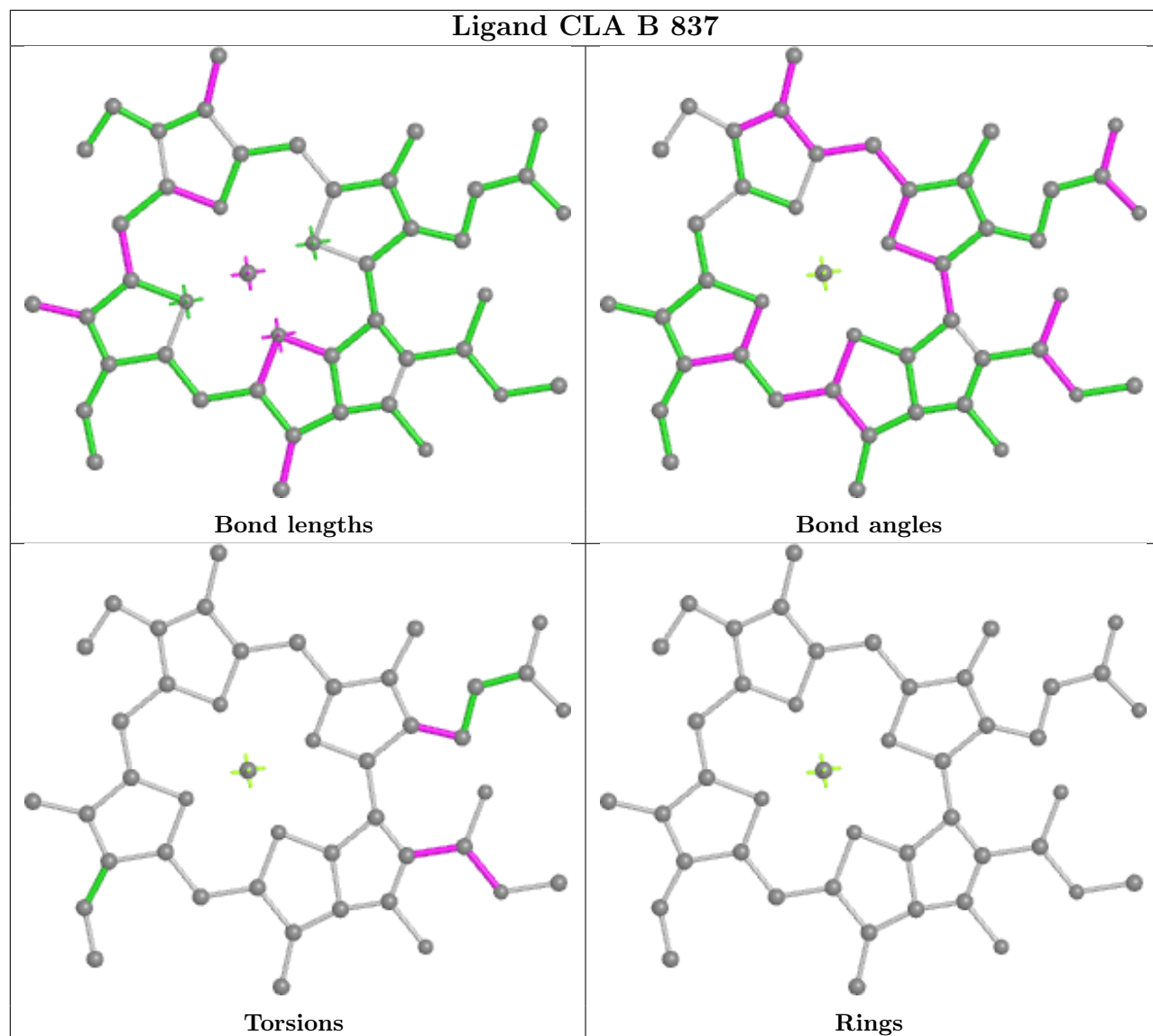


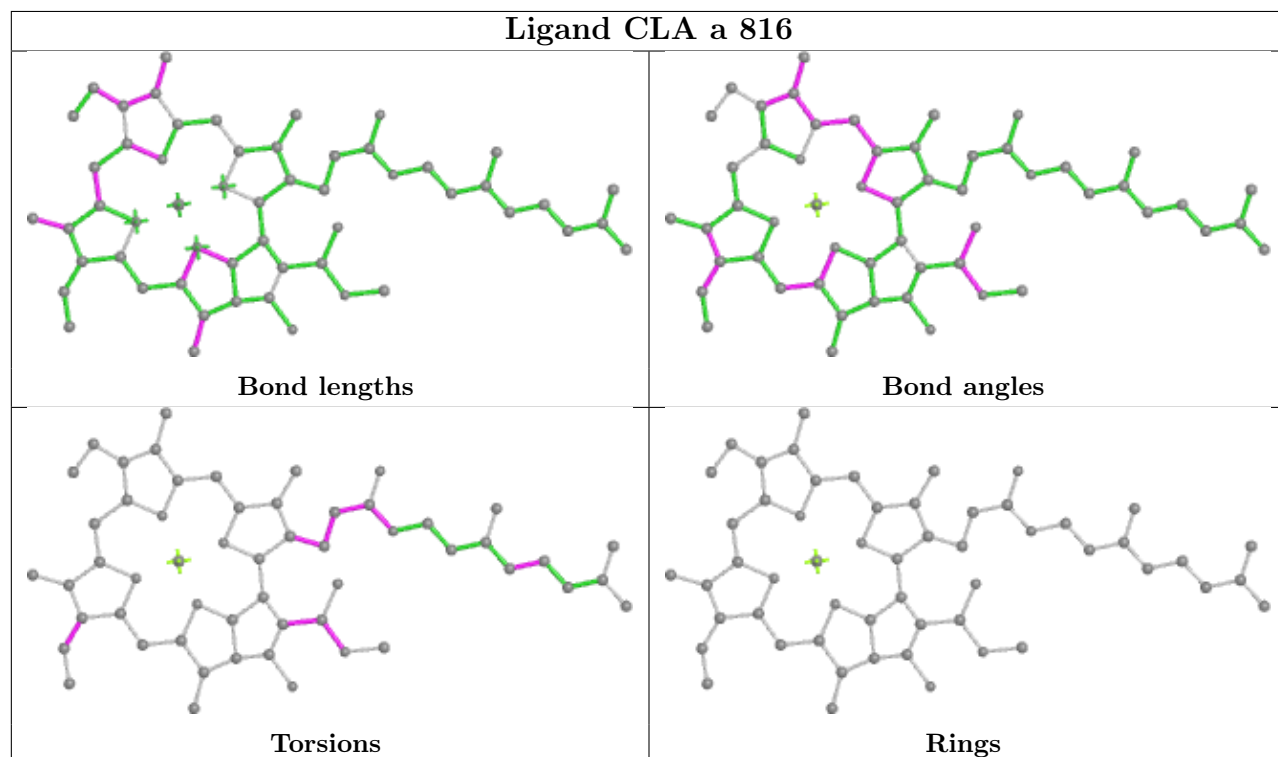
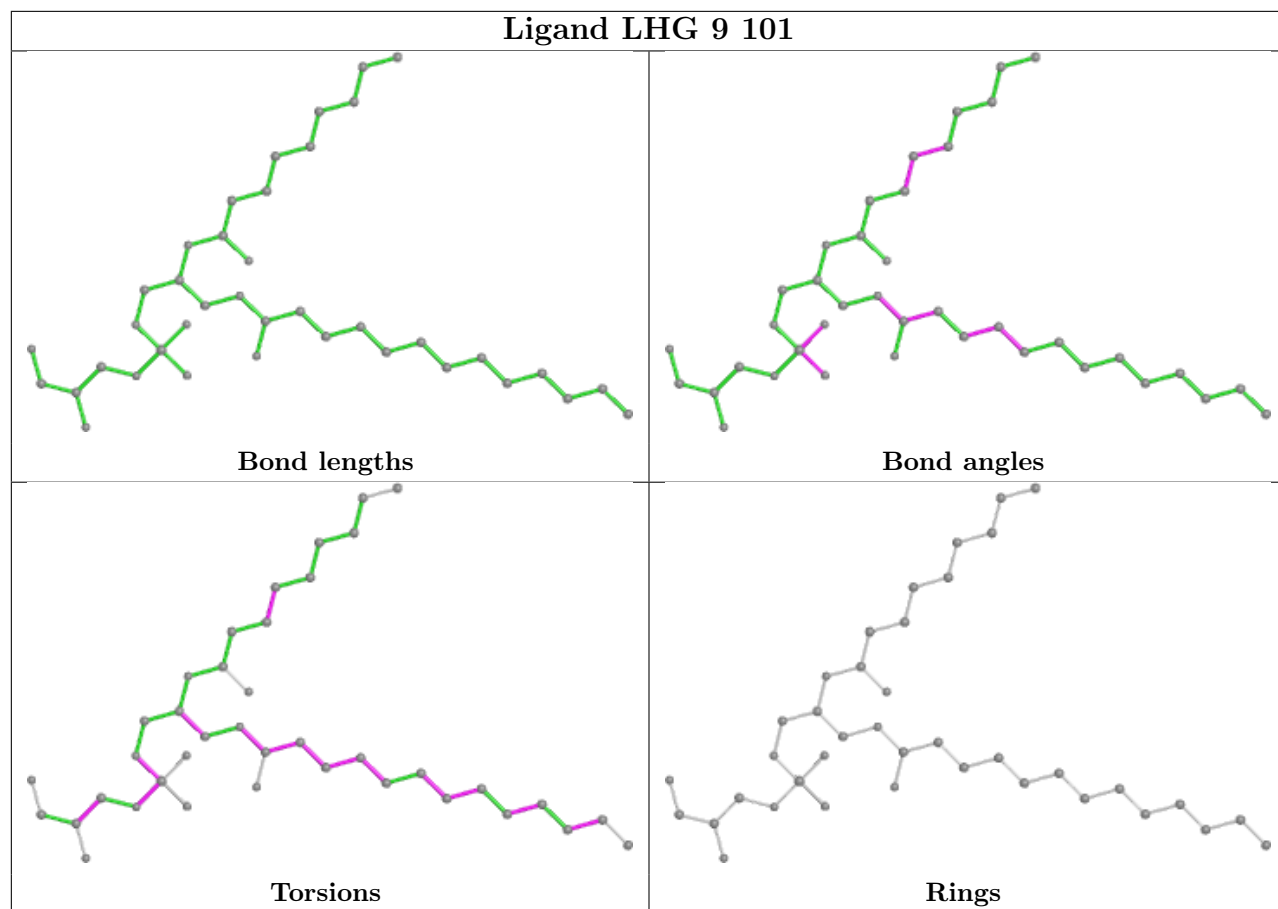


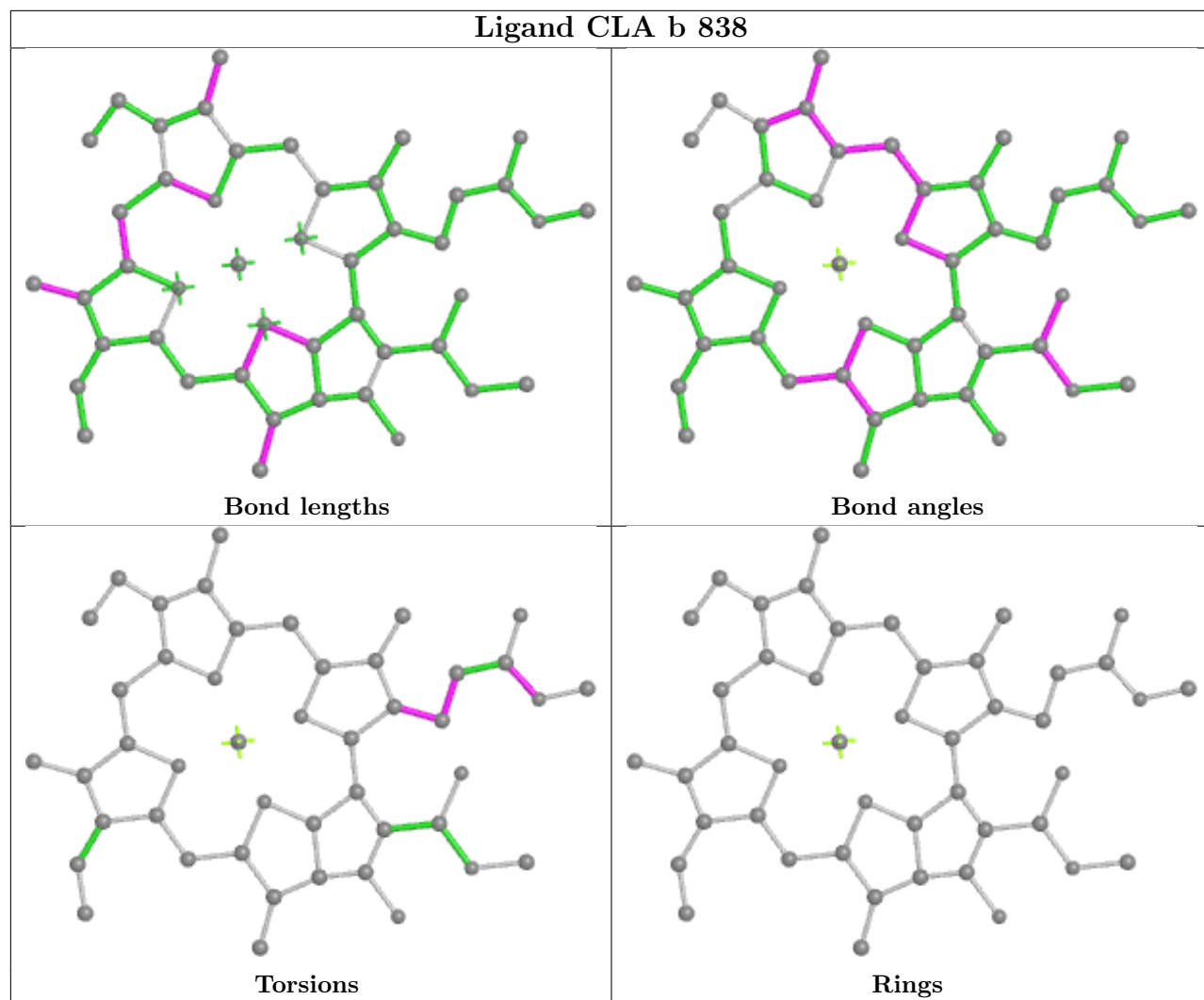


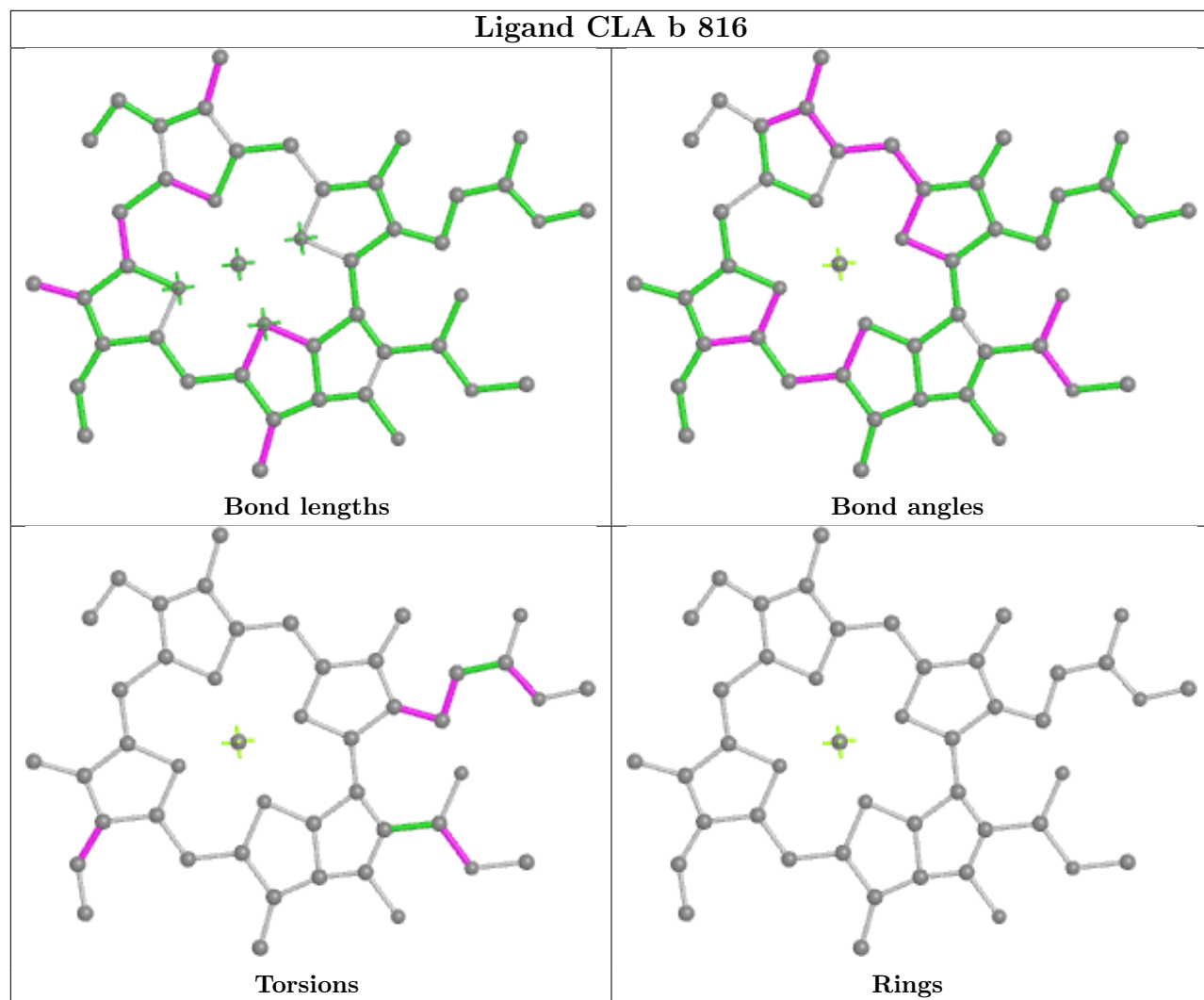




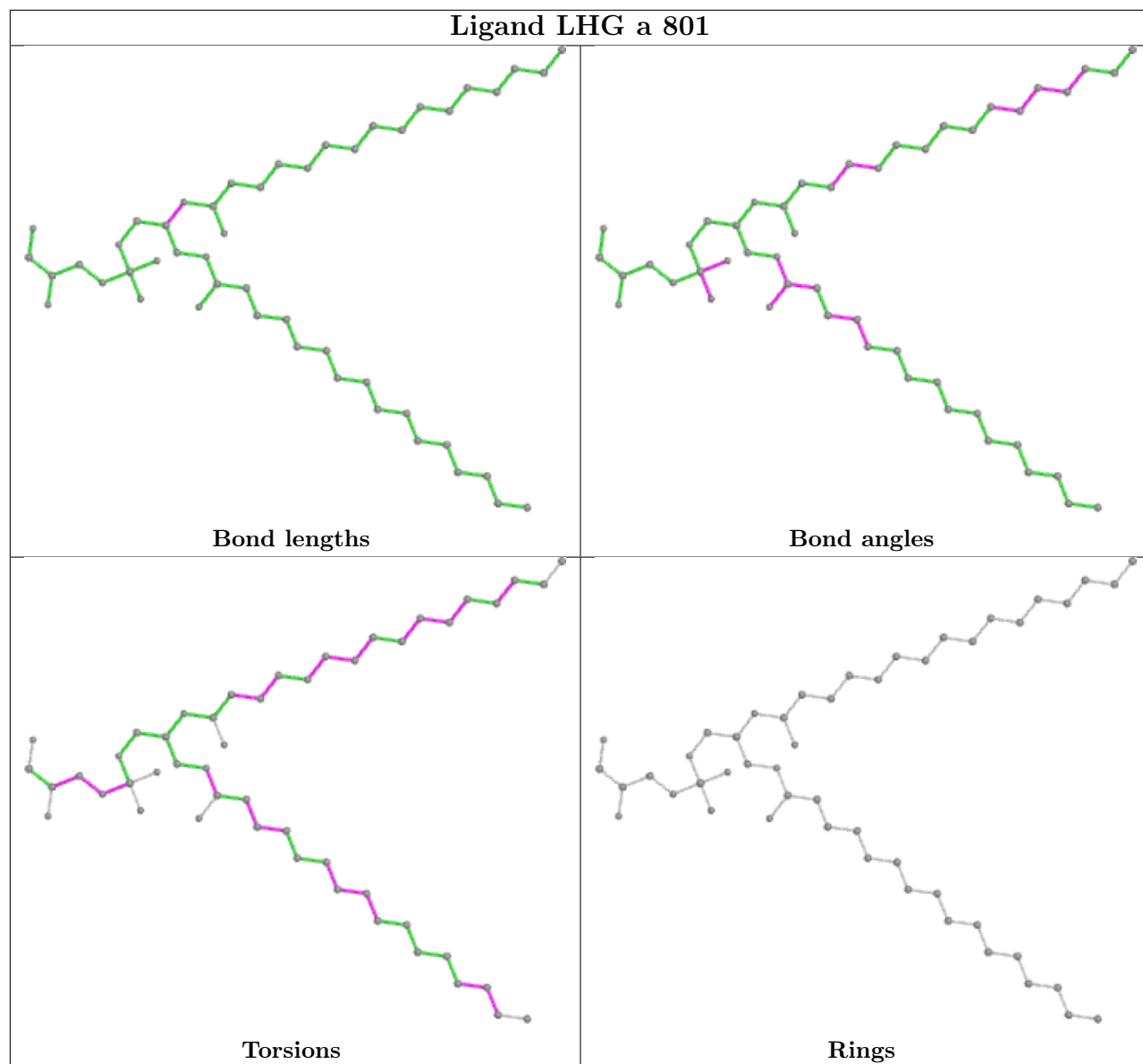


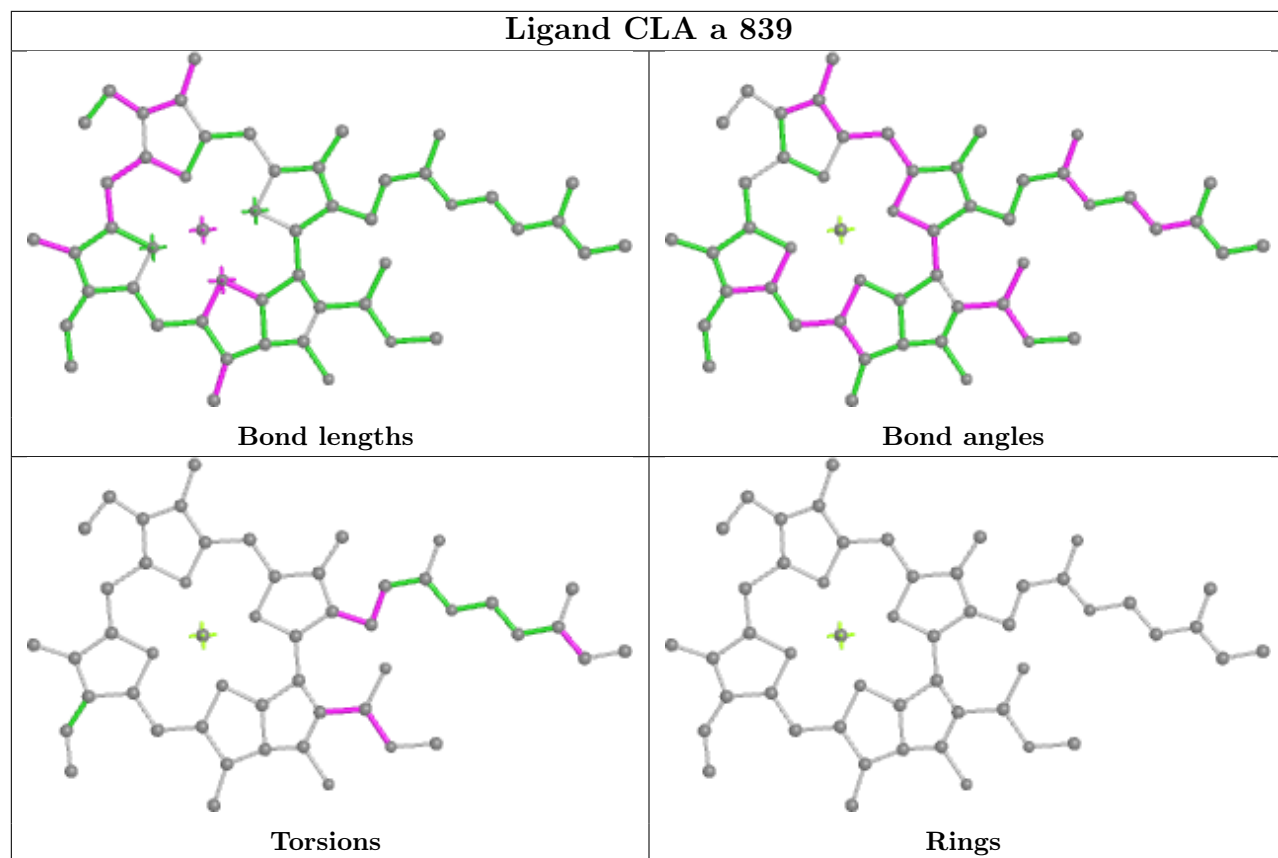


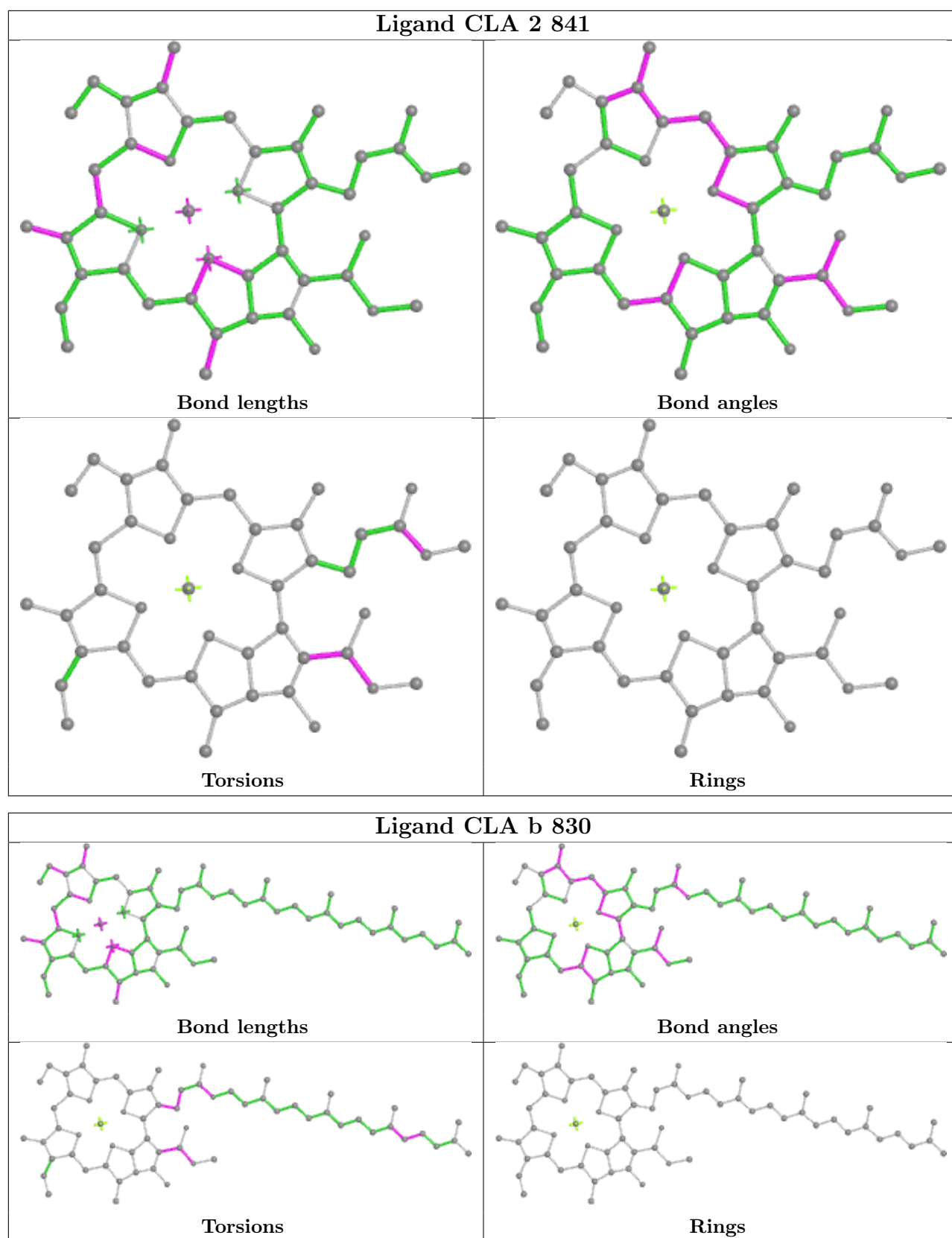


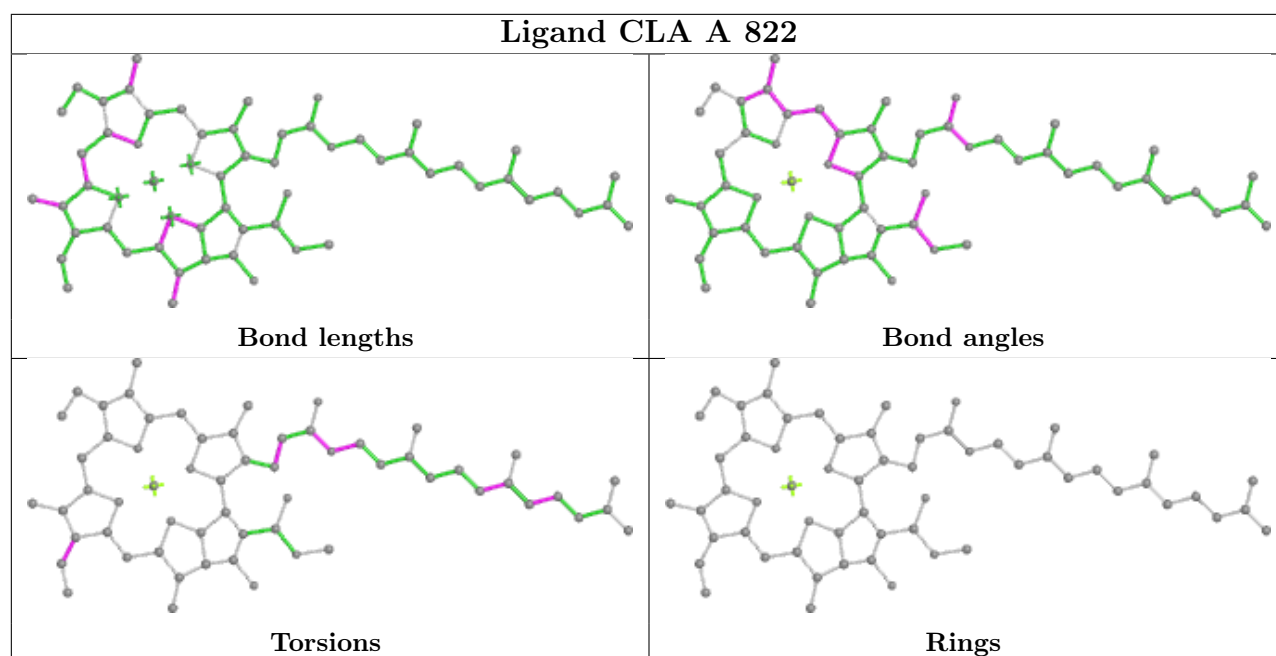












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

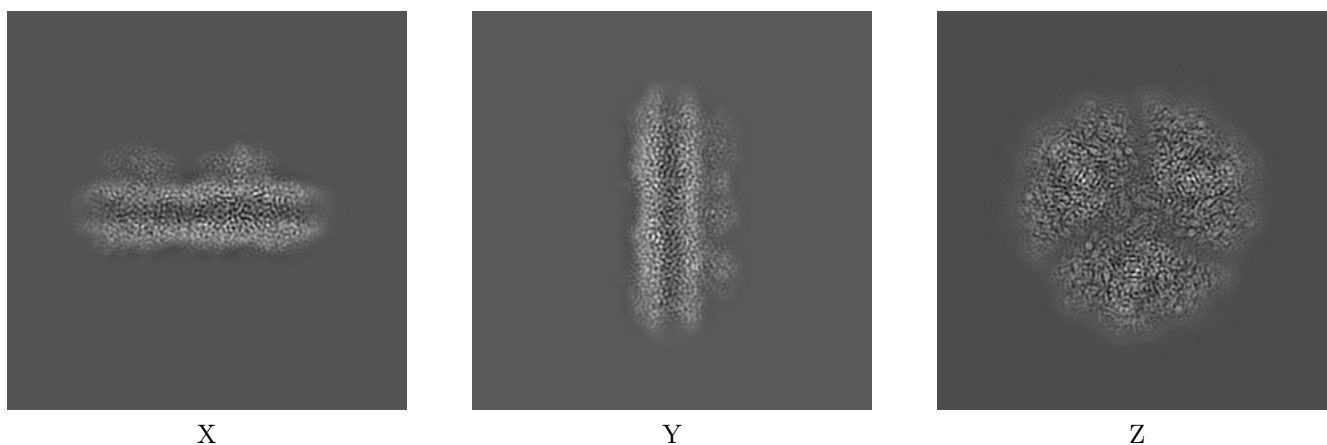
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20963. 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](#)

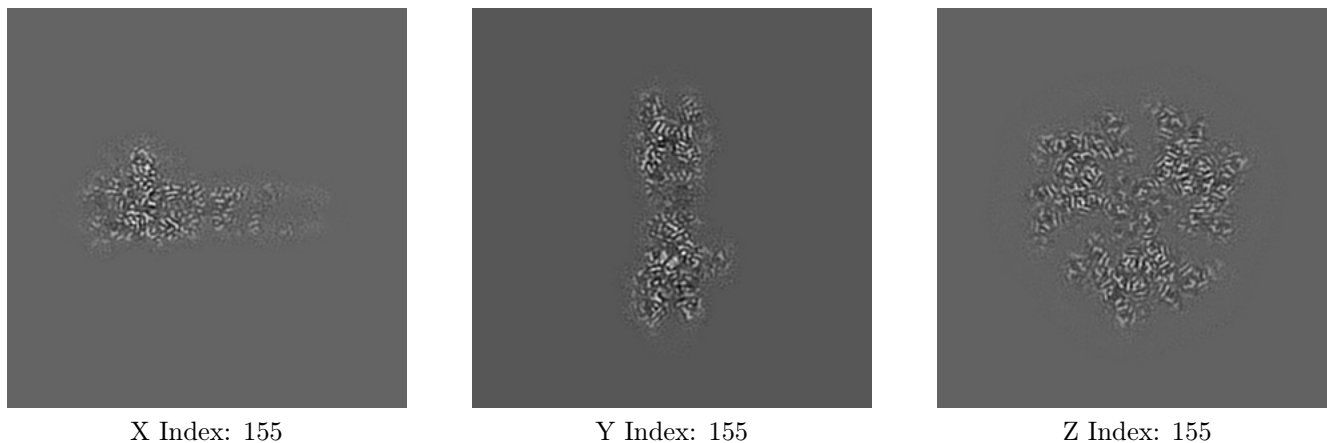
#### 6.1.1 Primary map



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

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

#### 6.2.1 Primary map



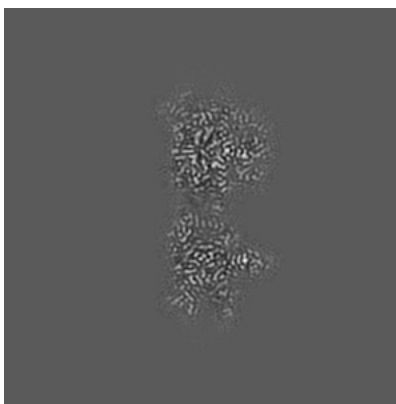
The images above show central slices of the map in three orthogonal directions.

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

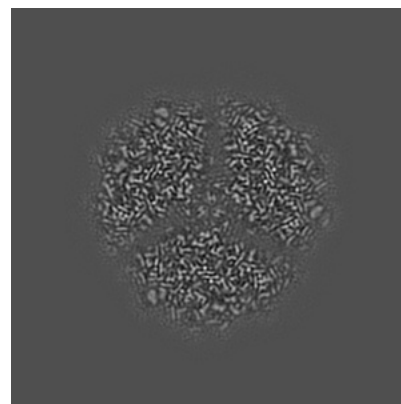
### 6.3.1 Primary map



X Index: 113



Y Index: 179



Z Index: 143

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

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

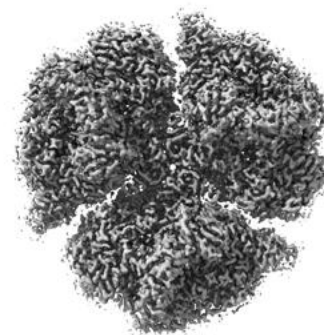
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0187. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

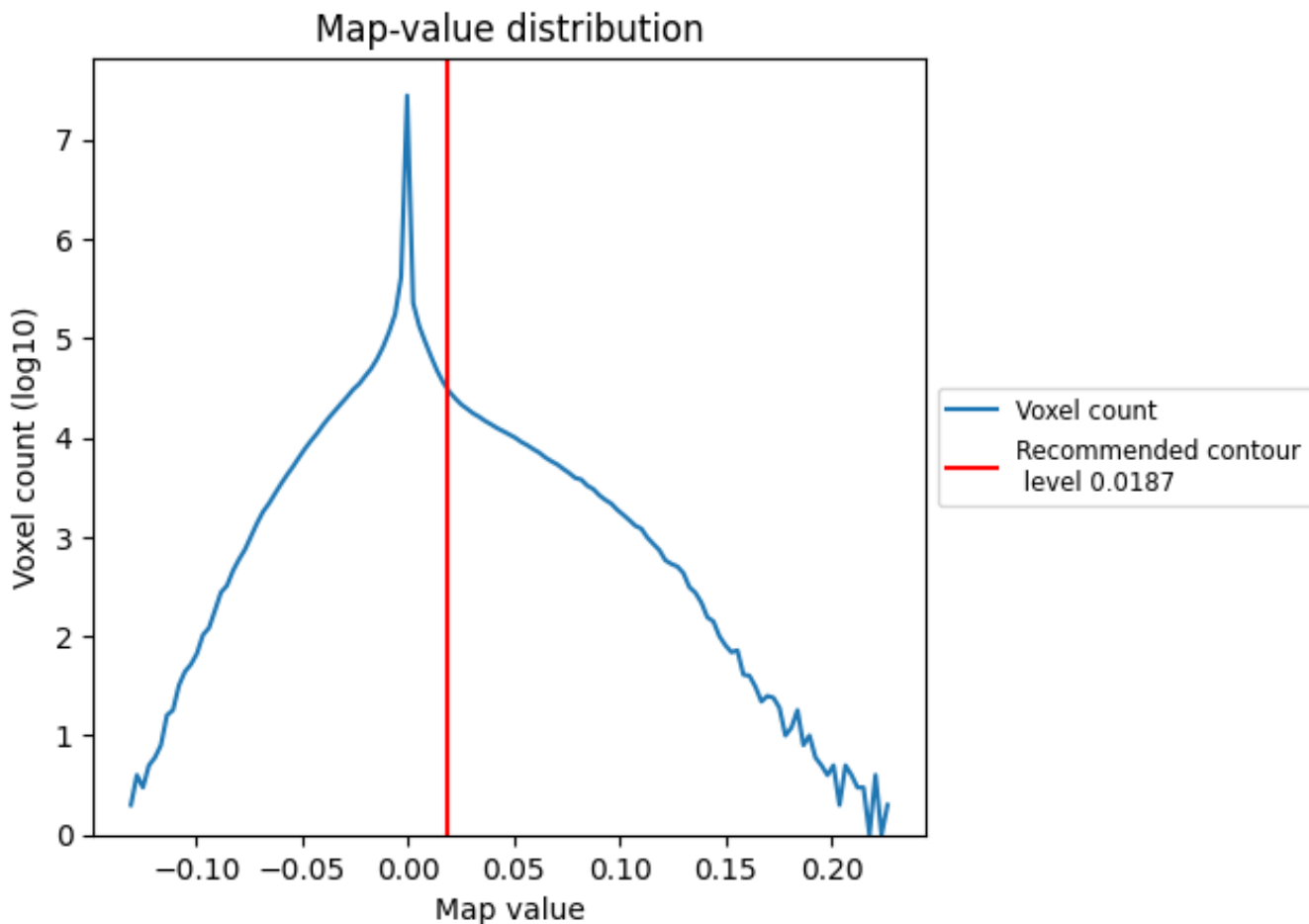
## 6.5 Mask visualisation

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.

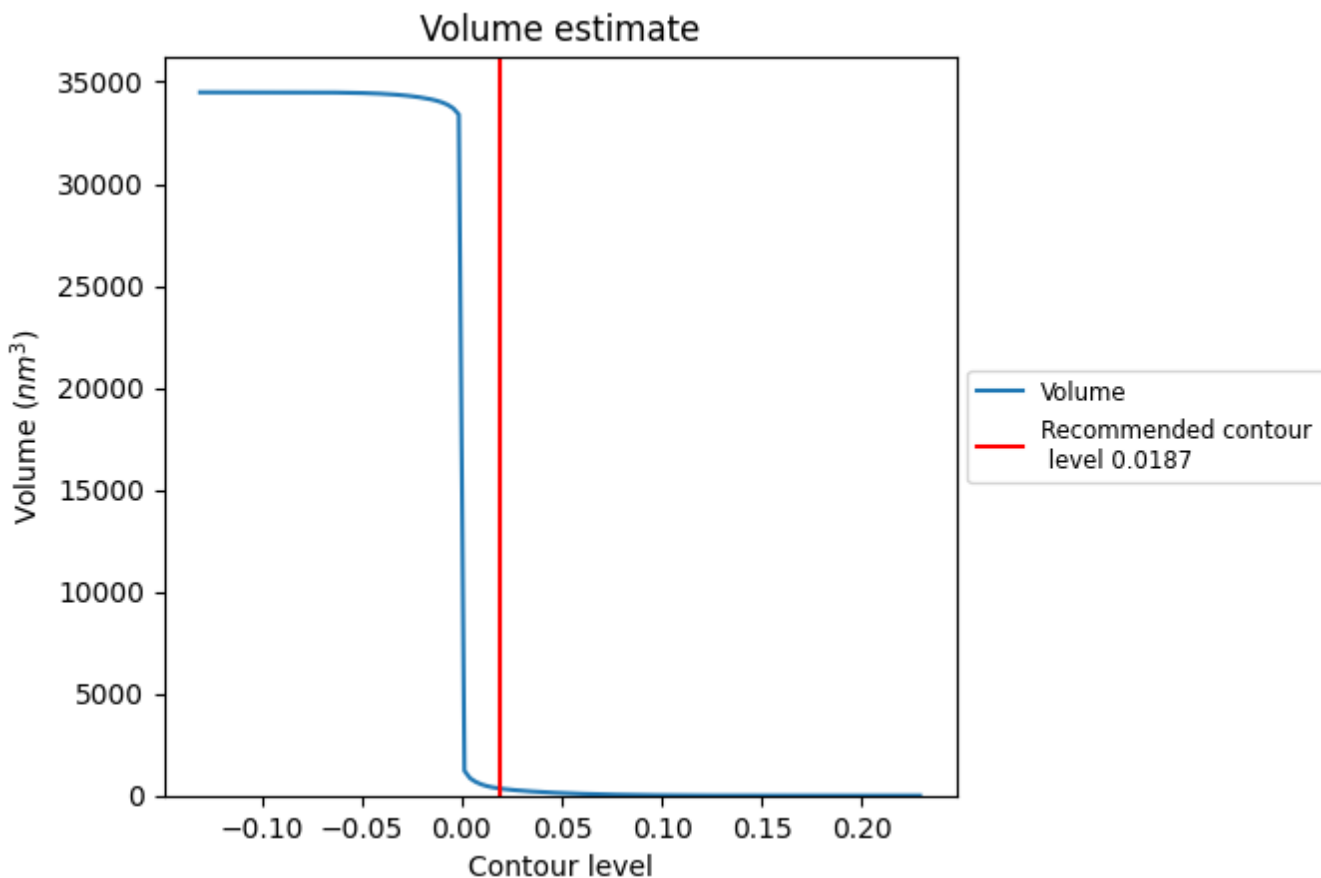
### 7.1 Map-value distribution [i](#)



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.



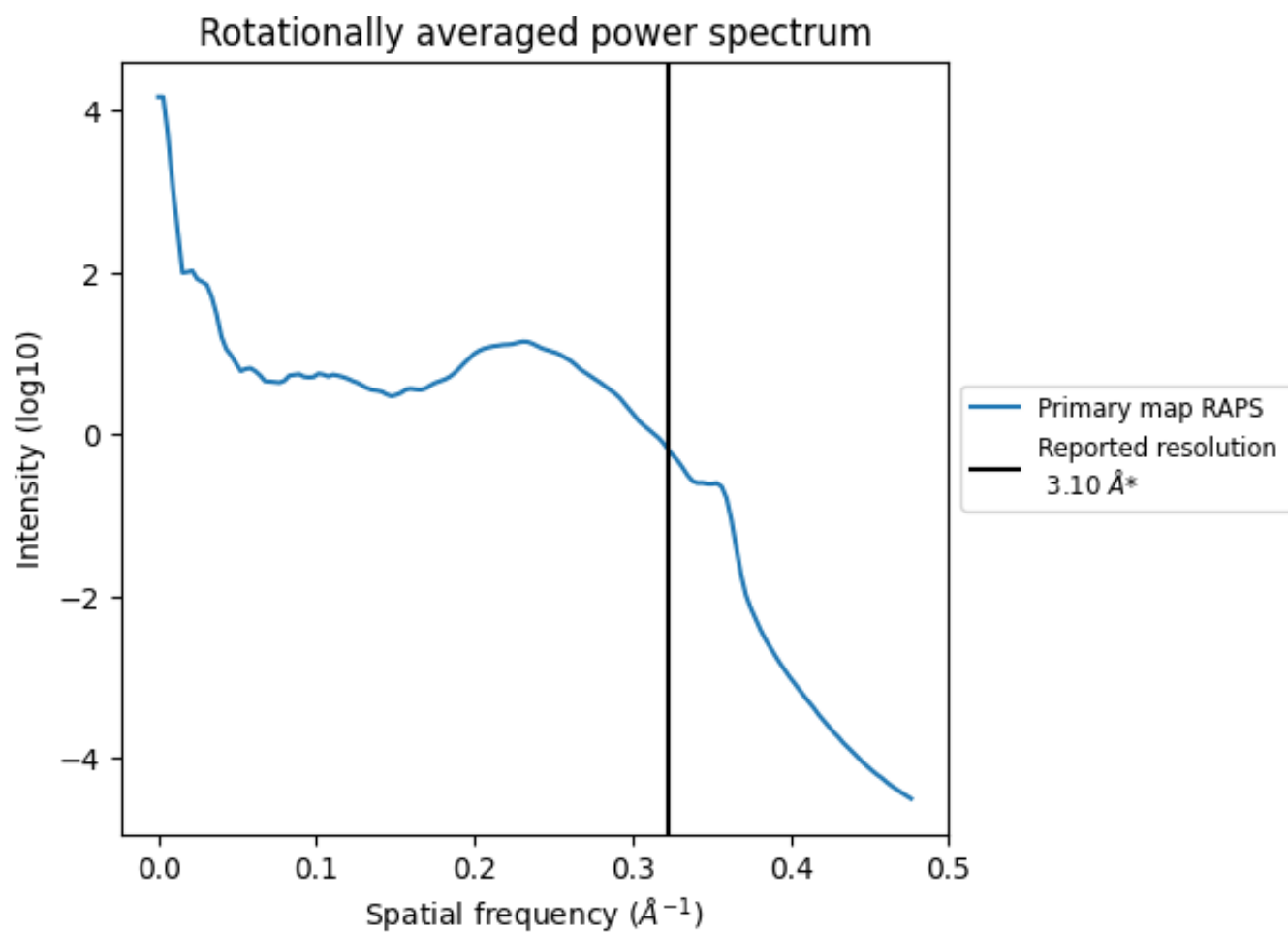
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 351 nm<sup>3</sup>; this corresponds to an approximate mass of 317 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  $0.323 \text{\AA}^{-1}$

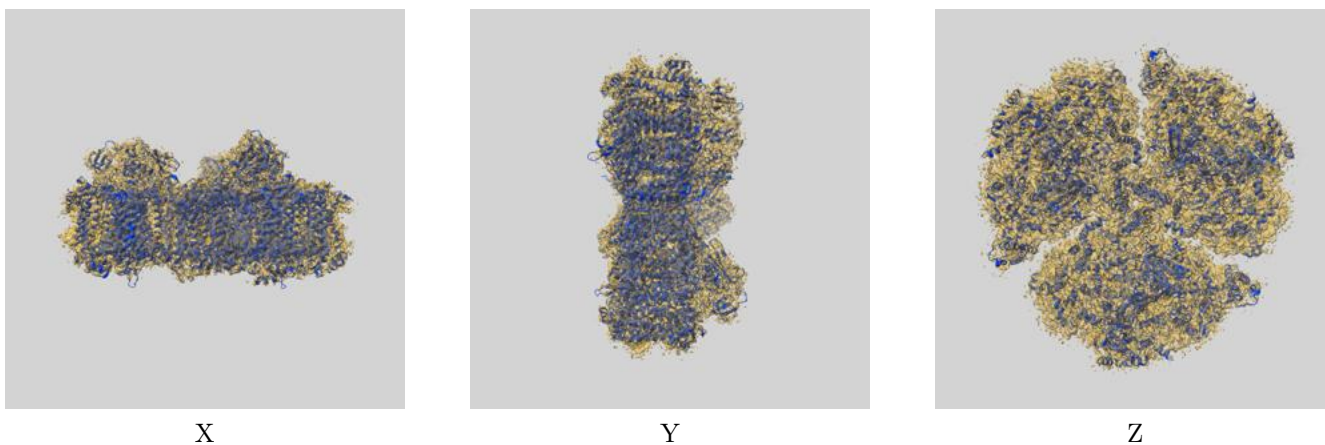
## 8 Fourier-Shell correlation

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

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

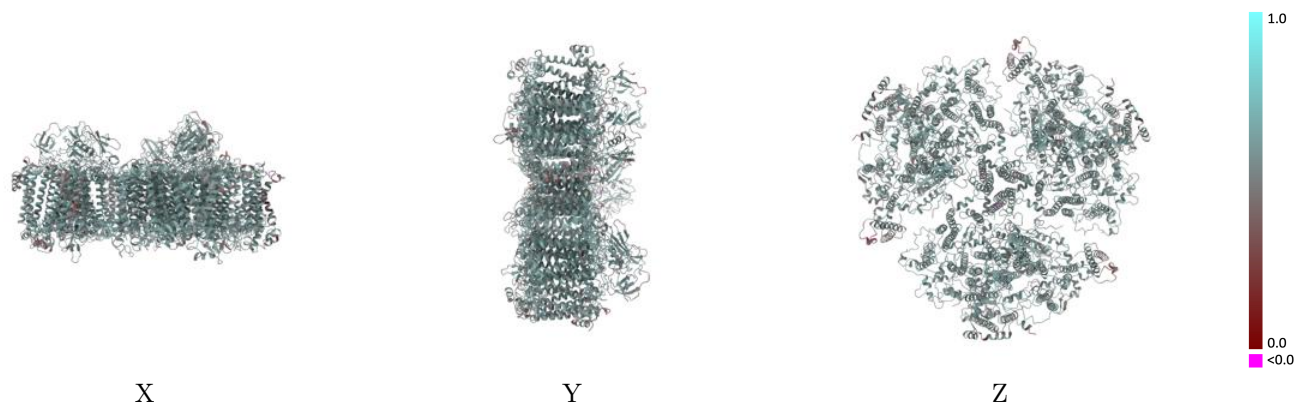
This section contains information regarding the fit between EMDB map EMD-20963 and PDB model 6UZV. Per-residue inclusion information can be found in section 3 on page 38.

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



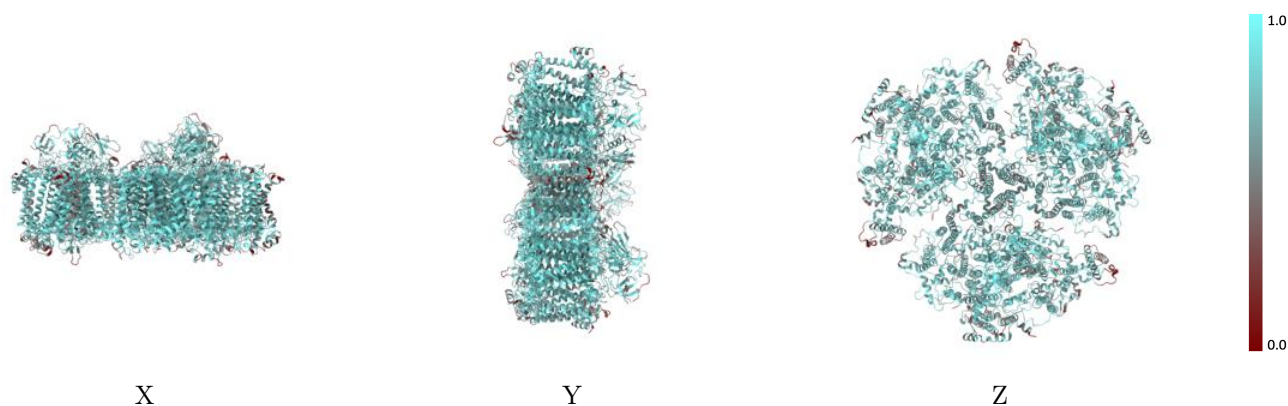
The images above show the 3D surface view of the map at the recommended contour level 0.0187 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



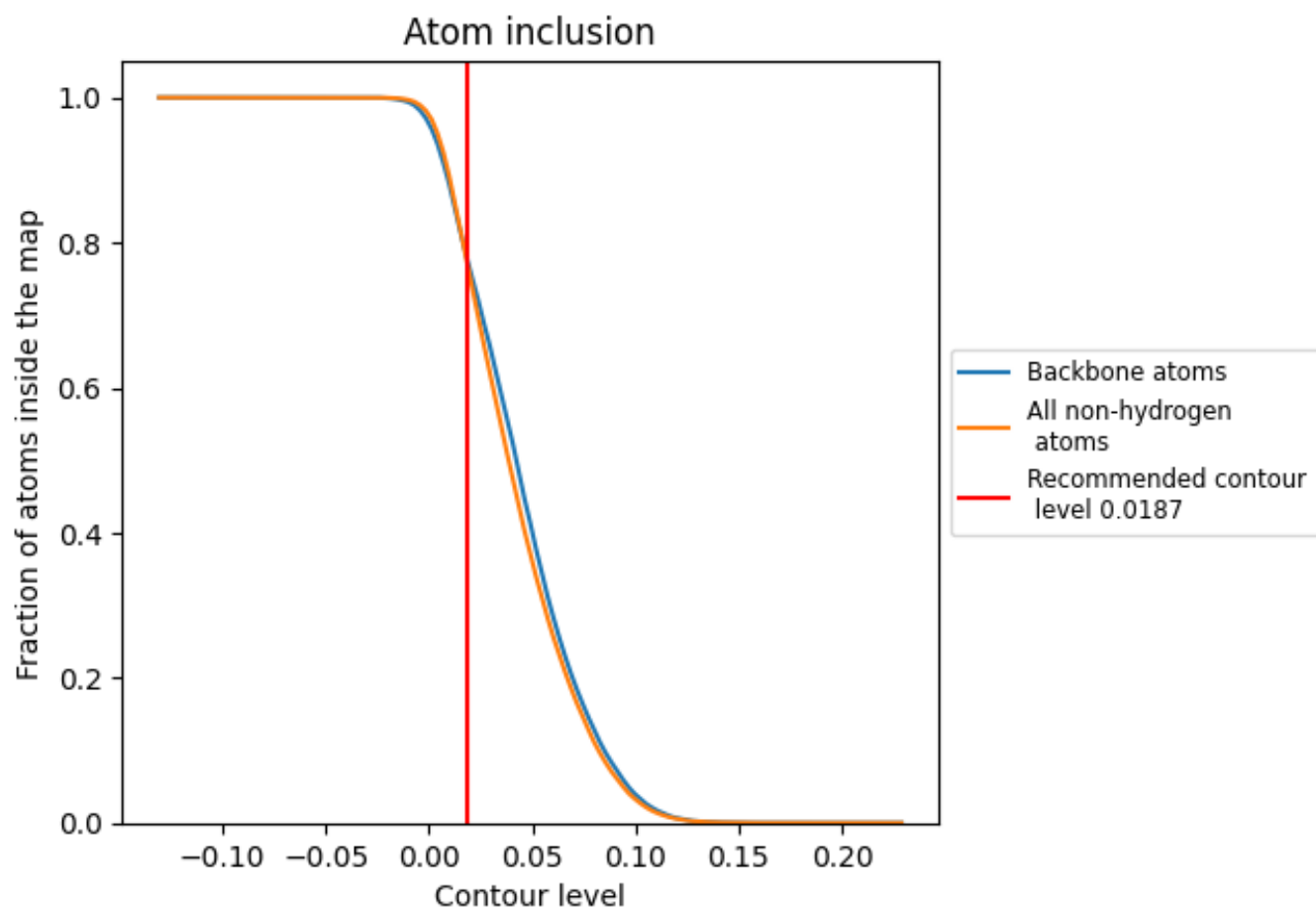
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0187).





































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 77% 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 (0.0187) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7685	 0.5660
0	 0.7079	 0.5640
1	 0.8109	 0.5790
2	 0.8169	 0.5800
3	 0.8339	 0.5710
4	 0.6648	 0.5280
5	 0.6552	 0.5010
6	 0.6367	 0.5200
7	 0.6539	 0.5280
8	 0.5148	 0.4620
9	 0.6176	 0.5450
A	 0.8031	 0.5800
B	 0.8121	 0.5820
C	 0.8339	 0.5710
D	 0.6458	 0.5280
E	 0.6379	 0.5110
F	 0.6509	 0.5260
I	 0.7450	 0.5690
J	 0.6320	 0.5210
K	 0.5006	 0.4640
L	 0.7016	 0.5600
M	 0.6242	 0.5470
a	 0.8057	 0.5790
b	 0.8198	 0.5820
c	 0.8339	 0.5710
d	 0.6525	 0.5240
e	 0.6418	 0.5020
f	 0.6425	 0.5220
h	 0.7475	 0.5690
i	 0.7450	 0.5670
j	 0.6450	 0.5260
k	 0.4904	 0.4500
l	 0.7164	 0.5640
m	 0.6165	 0.5450

