



## wwPDB EM Validation Summary Report ⓘ

Mar 22, 2026 – 03:13 PM JST

PDB ID : 9V7U / pdb\_00009v7u  
EMDB ID : EMD-64824  
Title : PSI-LHCE supercomplex from Euglena gracilis.  
Authors : Bai, T.Y.; Mao, Z.Y.; Tian, L.R.  
Deposited on : 2025-05-28  
Resolution : 2.63 Å (reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

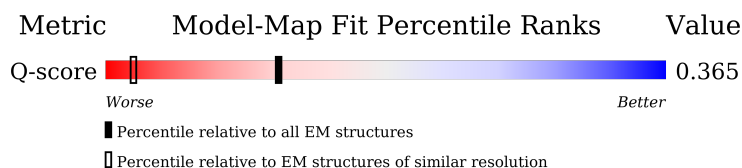
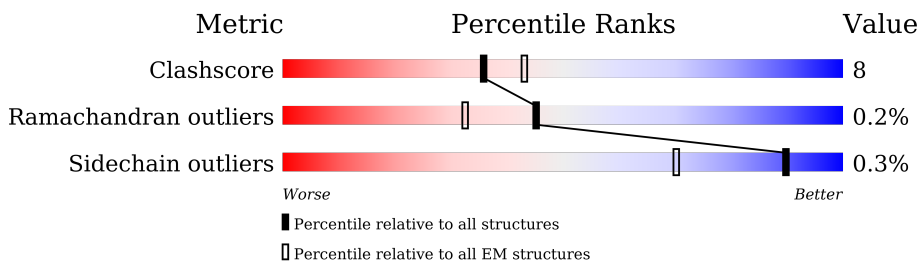
EMDB validation analysis : 0.0.1.dev132  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4-5-2 with Phenix2.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.48.1

# 1 Overall quality at a glance

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

The reported resolution of this entry is 2.63 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	8888 ( 2.13 - 3.13 )

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

Mol	Chain	Length	Quality of chain
1	A	751	
2	B	734	
3	C	81	
4	D	186	

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Mol	Chain	Length	Quality of chain
5	E	63	
6	F	168	
7	J	37	
8	M	31	
9	a	166	
10	b	169	
11	c	221	
12	d	220	
13	e	199	
14	h	174	
15	i	177	
16	j	183	
17	k	172	
18	l	167	
19	m	168	
20	f	174	
21	g	178	
22	n	184	
23	o	164	
24	p	148	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	801	X	-	-	-
25	CLA	A	802	X	-	-	-
25	CLA	A	804	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	806	X	-	-	-
25	CLA	A	807	X	-	-	-
25	CLA	A	808	X	-	-	-
25	CLA	A	809	X	-	-	-
25	CLA	A	810	X	-	-	-
25	CLA	A	811	X	-	-	-
25	CLA	A	812	X	-	-	-
25	CLA	A	813	X	-	-	-
25	CLA	A	814	X	-	-	-
25	CLA	A	815	X	-	-	-
25	CLA	A	816	X	-	-	-
25	CLA	A	817	X	-	-	-
25	CLA	A	818	X	-	-	-
25	CLA	A	819	X	-	-	-
25	CLA	A	820	X	-	-	-
25	CLA	A	821	X	-	-	-
25	CLA	A	822	X	-	-	-
25	CLA	A	823	X	-	-	-
25	CLA	A	824	X	-	-	-
25	CLA	A	825	X	-	-	-
25	CLA	A	826	X	-	-	-
25	CLA	A	827	X	-	-	-
25	CLA	A	828	X	-	-	-
25	CLA	A	829	X	-	-	-
25	CLA	A	830	X	-	-	-
25	CLA	A	831	X	-	-	-
25	CLA	A	832	X	-	-	-
25	CLA	A	833	X	-	-	-
25	CLA	A	840	X	-	-	-
25	CLA	A	841	X	-	-	-
25	CLA	A	842	X	-	-	-
25	CLA	A	843	X	-	-	-
25	CLA	A	844	X	-	-	-
25	CLA	A	845	X	-	-	-
25	CLA	A	846	X	-	-	-
25	CLA	A	847	X	-	-	-
25	CLA	A	848	X	-	-	-
25	CLA	A	849	X	-	-	-
25	CLA	A	850	X	-	-	-
25	CLA	A	851	X	-	-	-
25	CLA	A	852	X	-	-	-
25	CLA	A	853	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	857	X	-	-	-
25	CLA	B	802	X	-	-	-
25	CLA	B	803	X	-	-	-
25	CLA	B	804	X	-	-	-
25	CLA	B	805	X	-	-	-
25	CLA	B	806	X	-	-	-
25	CLA	B	807	X	-	-	-
25	CLA	B	808	X	-	-	-
25	CLA	B	809	X	-	-	-
25	CLA	B	810	X	-	-	-
25	CLA	B	811	X	-	-	-
25	CLA	B	812	X	-	-	-
25	CLA	B	813	X	-	-	-
25	CLA	B	814	X	-	-	-
25	CLA	B	815	X	-	-	-
25	CLA	B	816	X	-	-	-
25	CLA	B	817	X	-	-	-
25	CLA	B	818	X	-	-	-
25	CLA	B	819	X	-	-	-
25	CLA	B	820	X	-	-	-
25	CLA	B	821	X	-	-	-
25	CLA	B	822	X	-	-	-
25	CLA	B	823	X	-	-	-
25	CLA	B	824	X	-	-	-
25	CLA	B	825	X	-	-	-
25	CLA	B	826	X	-	-	-
25	CLA	B	834	X	-	-	-
25	CLA	B	836	X	-	-	-
25	CLA	B	837	X	-	-	-
25	CLA	B	838	X	-	-	-
25	CLA	B	839	X	-	-	-
25	CLA	B	840	X	-	-	-
25	CLA	B	841	X	-	-	-
25	CLA	B	842	X	-	-	-
25	CLA	B	843	X	-	-	-
25	CLA	B	844	X	-	-	-
25	CLA	B	845	X	-	-	-
25	CLA	B	846	X	-	-	-
25	CLA	B	847	X	-	-	-
25	CLA	B	848	X	-	-	-
25	CLA	F	201	X	-	-	-
25	CLA	F	202	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	J	103	X	-	-	-
25	CLA	a	203	X	-	-	-
25	CLA	a	204	X	-	-	-
25	CLA	a	205	X	-	-	-
25	CLA	a	206	X	-	-	-
25	CLA	a	207	X	-	-	-
25	CLA	a	208	X	-	-	-
25	CLA	a	209	X	-	-	-
25	CLA	a	210	X	-	-	-
25	CLA	a	211	X	-	-	-
25	CLA	a	212	X	-	-	-
25	CLA	a	213	X	-	-	-
25	CLA	b	203	X	-	-	-
25	CLA	b	204	X	-	-	-
25	CLA	b	205	X	-	-	-
25	CLA	b	206	X	-	-	-
25	CLA	b	207	X	-	-	-
25	CLA	b	208	X	-	-	-
25	CLA	b	209	X	-	-	-
25	CLA	b	210	X	-	-	-
25	CLA	b	211	X	-	-	-
25	CLA	b	212	X	-	-	-
25	CLA	b	213	X	-	-	-
25	CLA	c	302	X	-	-	-
25	CLA	c	303	X	-	-	-
25	CLA	c	304	X	-	-	-
25	CLA	c	305	X	-	-	-
25	CLA	c	306	X	-	-	-
25	CLA	c	308	X	-	-	-
25	CLA	c	309	X	-	-	-
25	CLA	c	310	X	-	-	-
25	CLA	c	311	X	-	-	-
25	CLA	c	312	X	-	-	-
25	CLA	c	313	X	-	-	-
25	CLA	c	314	X	-	-	-
25	CLA	c	315	X	-	-	-
25	CLA	d	301	X	-	-	-
25	CLA	d	303	X	-	-	-
25	CLA	d	304	X	-	-	-
25	CLA	d	305	X	-	-	-
25	CLA	d	306	X	-	-	-
25	CLA	d	311	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	d	312	X	-	-	-
25	CLA	d	313	X	-	-	-
25	CLA	d	314	X	-	-	-
25	CLA	d	315	X	-	-	-
25	CLA	d	316	X	-	-	-
25	CLA	e	201	X	-	-	-
25	CLA	e	204	X	-	-	-
25	CLA	e	205	X	-	-	-
25	CLA	e	206	X	-	-	-
25	CLA	e	207	X	-	-	-
25	CLA	e	208	X	-	-	-
25	CLA	e	210	X	-	-	-
25	CLA	e	211	X	-	-	-
25	CLA	e	212	X	-	-	-
25	CLA	e	213	X	-	-	-
25	CLA	e	214	X	-	-	-
25	CLA	e	215	X	-	-	-
25	CLA	e	216	X	-	-	-
25	CLA	e	217	X	-	-	-
25	CLA	f	601	X	-	-	-
25	CLA	f	602	X	-	-	-
25	CLA	f	603	X	-	-	-
25	CLA	f	604	X	-	-	-
25	CLA	f	605	X	-	-	-
25	CLA	f	606	X	-	-	-
25	CLA	f	607	X	-	-	-
25	CLA	f	608	X	-	-	-
25	CLA	f	609	X	-	-	-
25	CLA	f	610	X	-	-	-
25	CLA	f	611	X	-	-	-
25	CLA	f	612	X	-	-	-
25	CLA	g	203	X	-	-	-
25	CLA	g	204	X	-	-	-
25	CLA	g	205	X	-	-	-
25	CLA	g	206	X	-	-	-
25	CLA	g	207	X	-	-	-
25	CLA	g	208	X	-	-	-
25	CLA	g	209	X	-	-	-
25	CLA	g	210	X	-	-	-
25	CLA	g	211	X	-	-	-
25	CLA	g	212	X	-	-	-
25	CLA	g	213	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	g	214	X	-	-	-
25	CLA	g	215	X	-	-	-
25	CLA	h	203	X	-	-	-
25	CLA	h	204	X	-	-	-
25	CLA	h	205	X	-	-	-
25	CLA	h	206	X	-	-	-
25	CLA	h	207	X	-	-	-
25	CLA	h	208	X	-	-	-
25	CLA	h	209	X	-	-	-
25	CLA	h	210	X	-	-	-
25	CLA	h	211	X	-	-	-
25	CLA	h	212	X	-	-	-
25	CLA	h	213	X	-	-	-
25	CLA	h	214	X	-	-	-
25	CLA	h	215	X	-	-	-
25	CLA	i	202	X	-	-	-
25	CLA	i	203	X	-	-	-
25	CLA	i	204	X	-	-	-
25	CLA	i	205	X	-	-	-
25	CLA	i	206	X	-	-	-
25	CLA	i	207	X	-	-	-
25	CLA	i	208	X	-	-	-
25	CLA	i	209	X	-	-	-
25	CLA	i	210	X	-	-	-
25	CLA	i	211	X	-	-	-
25	CLA	i	212	X	-	-	-
25	CLA	i	213	X	-	-	-
25	CLA	j	203	X	-	-	-
25	CLA	j	204	X	-	-	-
25	CLA	j	205	X	-	-	-
25	CLA	j	206	X	-	-	-
25	CLA	j	207	X	-	-	-
25	CLA	j	208	X	-	-	-
25	CLA	j	209	X	-	-	-
25	CLA	j	210	X	-	-	-
25	CLA	j	211	X	-	-	-
25	CLA	j	212	X	-	-	-
25	CLA	j	213	X	-	-	-
25	CLA	j	214	X	-	-	-
25	CLA	j	215	X	-	-	-
25	CLA	k	202	X	-	-	-
25	CLA	k	203	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	k	204	X	-	-	-
25	CLA	k	205	X	-	-	-
25	CLA	k	206	X	-	-	-
25	CLA	k	207	X	-	-	-
25	CLA	k	208	X	-	-	-
25	CLA	k	209	X	-	-	-
25	CLA	k	210	X	-	-	-
25	CLA	k	211	X	-	-	-
25	CLA	k	212	X	-	-	-
25	CLA	k	213	X	-	-	-
25	CLA	k	214	X	-	-	-
25	CLA	l	601	X	-	-	-
25	CLA	l	602	X	-	-	-
25	CLA	l	603	X	-	-	-
25	CLA	l	604	X	-	-	-
25	CLA	l	605	X	-	-	-
25	CLA	l	606	X	-	-	-
25	CLA	l	607	X	-	-	-
25	CLA	l	608	X	-	-	-
25	CLA	l	609	X	-	-	-
25	CLA	l	610	X	-	-	-
25	CLA	l	611	X	-	-	-
25	CLA	l	612	X	-	-	-
25	CLA	m	202	X	-	-	-
25	CLA	m	203	X	-	-	-
25	CLA	m	204	X	-	-	-
25	CLA	m	205	X	-	-	-
25	CLA	m	206	X	-	-	-
25	CLA	m	207	X	-	-	-
25	CLA	m	208	X	-	-	-
25	CLA	m	209	X	-	-	-
25	CLA	m	210	X	-	-	-
25	CLA	m	211	X	-	-	-
25	CLA	n	201	X	-	-	-
25	CLA	n	202	X	-	-	-
25	CLA	n	203	X	-	-	-
25	CLA	n	204	X	-	-	-
25	CLA	n	205	X	-	-	-
25	CLA	n	206	X	-	-	-
25	CLA	n	207	X	-	-	-
25	CLA	n	208	X	-	-	-
25	CLA	n	209	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	n	210	X	-	-	-
25	CLA	n	211	X	-	-	-
25	CLA	o	601	X	-	-	-
25	CLA	o	602	X	-	-	-
25	CLA	o	603	X	-	-	-
25	CLA	o	604	X	-	-	-
25	CLA	o	605	X	-	-	-
25	CLA	o	606	X	-	-	-
25	CLA	o	607	X	-	-	-
25	CLA	o	608	X	-	-	-
25	CLA	o	609	X	-	-	-
25	CLA	o	610	X	-	-	-
25	CLA	p	601	X	-	-	-
25	CLA	p	602	X	-	-	-
25	CLA	p	603	X	-	-	-
25	CLA	p	604	X	-	-	-
25	CLA	p	605	X	-	-	-
25	CLA	p	606	X	-	-	-
25	CLA	p	607	X	-	-	-
25	CLA	p	608	X	-	-	-
25	CLA	p	609	X	-	-	-
35	CHL	c	307	X	-	-	-
35	CHL	d	307	X	-	-	-
35	CHL	d	308	X	-	-	-
35	CHL	d	309	X	-	-	-
35	CHL	d	310	X	-	-	-
35	CHL	e	209	X	-	-	-

## 2 Entry composition [i](#)

There are 35 unique types of molecules in this entry. The entry contains 55406 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	741	5878	3860	994	1003	21	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	731	5861	3855	984	1007	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	596	363	104	118	11	0	0

- Molecule 4 is a protein called PsaD.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	186	1393	892	235	262	4	0	0

- Molecule 5 is a protein called PsaE.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
5	E	63	481	311	81	89	0	0

- Molecule 6 is a protein called PsaF.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	168	1250	801	206	239	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	J	37	305	209	43	52	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	M	31	243	162	37	43	1	0	0

- Molecule 9 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	a	166	1274	819	220	228	7	0	0

- Molecule 10 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	b	169	1302	842	213	243	4	0	0

- Molecule 11 is a protein called LHCE 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	c	221	1676	1087	282	302	5	0	0

- Molecule 12 is a protein called Light harvesting chlorophyll a /b binding protein of PSII.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	d	220	1669	1088	275	302	4	0	0

- Molecule 13 is a protein called Chloroplast light-harvesting complex II protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	e	199	1517	981	256	275	5	0	0

- Molecule 14 is a protein called LHCE 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	h	174	1350	865	233	247	5	0	0

- Molecule 15 is a protein called LHCE 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	i	177	1355	865	242	244	4	0	0

- Molecule 16 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	j	183	1450	944	246	254	6	0	0

- Molecule 17 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	k	172	1338	860	232	241	5	0	0

- Molecule 18 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	l	167	1256	811	214	227	4	0	0

- Molecule 19 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	m	168	1260	813	215	228	4	0	0

- Molecule 20 is a protein called Chloroplast light-harvesting complex I protein, Lhca7\_2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	f	174	1332	851	236	241	4	0	0

- Molecule 21 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	g	178	1406	914	240	246	6	0	0

- Molecule 22 is a protein called Chloroplast light-harvesting complex II protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	n	184	1411	921	232	254	4	0	0

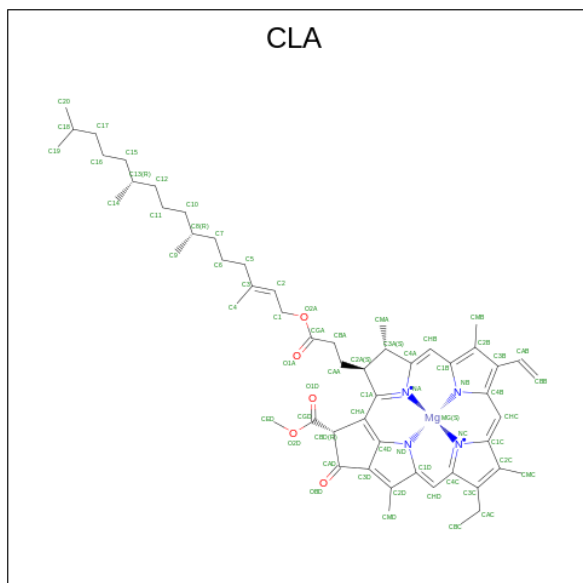
- Molecule 23 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	o	164	1230	794	208	224	4	0	0

- Molecule 24 is a protein called Chloroplast light-harvesting complex I protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	p	148	1126	727	188	207	4	0	0

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



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

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	A	1	63	53	1	4	5	0
25	A	1	60	50	1	4	5	0
25	A	1	45	35	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	60	50	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	50	40	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	58	48	1	4	5	0
25	A	1	59	49	1	4	5	0
25	A	1	58	48	1	4	5	0
25	A	1	43	35	1	4	3	0
25	A	1	56	46	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	57	47	1	4	5	0
25	A	1	64	55	1	4	4	0
25	A	1	53	43	1	4	5	0
25	A	1	64	54	1	4	5	0
25	A	1	58	48	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	A	1	65	55	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	43	35	1	4	3	0
25	A	1	43	35	1	4	3	0
25	A	1	58	48	1	4	5	0
25	A	1	52	42	1	4	5	0
25	A	1	48	38	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	63	53	1	4	5	0
25	A	1	57	47	1	4	5	0
25	A	1	49	39	1	4	5	0
25	A	1	52	42	1	4	5	0
25	A	1	60	50	1	4	5	0
25	A	1	48	38	1	4	5	0
25	A	1	65	55	1	4	5	0
25	A	1	43	35	1	4	3	0
25	A	1	51	41	1	4	5	0
25	A	1	50	40	1	4	5	0
25	A	1	55	45	1	4	5	0
25	A	1	45	35	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	A	1	48	38	1	4	5	0
25	A	1	53	43	1	4	5	0
25	A	1	53	43	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	55	45	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	42	34	1	4	3	0
25	B	1	65	55	1	4	5	0
25	B	1	43	35	1	4	3	0
25	B	1	42	34	1	4	3	0
25	B	1	43	35	1	4	3	0
25	B	1	63	53	1	4	5	0
25	B	1	64	54	1	4	5	0
25	B	1	49	40	1	4	4	0
25	B	1	59	49	1	4	5	0
25	B	1	49	39	1	4	5	0
25	B	1	60	50	1	4	5	0
25	B	1	50	40	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	B	1	43	35	1	4	3	0
25	B	1	60	50	1	4	5	0
25	B	1	60	50	1	4	5	0
25	B	1	60	50	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	43	35	1	4	3	0
25	B	1	43	35	1	4	3	0
25	B	1	55	45	1	4	5	0
25	B	1	53	43	1	4	5	0
25	B	1	50	40	1	4	5	0
25	B	1	61	51	1	4	5	0
25	B	1	60	50	1	4	5	0
25	B	1	50	40	1	4	5	0
25	B	1	59	49	1	4	5	0
25	B	1	53	43	1	4	5	0
25	B	1	63	53	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	65	55	1	4	5	0
25	B	1	50	40	1	4	5	0
25	B	1	50	40	1	4	5	0
25	B	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	F	1	42	34	1	4	3	0
25	F	1	45	35	1	4	5	0
25	J	1	50	40	1	4	5	0
25	a	1	50	40	1	4	5	0
25	a	1	60	50	1	4	5	0
25	a	1	53	43	1	4	5	0
25	a	1	45	35	1	4	5	0
25	a	1	53	43	1	4	5	0
25	a	1	50	40	1	4	5	0
25	a	1	54	44	1	4	5	0
25	a	1	45	35	1	4	5	0
25	a	1	43	35	1	4	3	0
25	a	1	55	45	1	4	5	0
25	a	1	63	53	1	4	5	0
25	b	1	42	34	1	4	3	0
25	b	1	53	43	1	4	5	0
25	b	1	43	35	1	4	3	0
25	b	1	45	35	1	4	5	0
25	b	1	45	35	1	4	5	0
25	b	1	41	33	1	4	3	0
25	b	1	45	35	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	b	1	42	34	1	4	3	0
25	b	1	42	34	1	4	3	0
25	b	1	52	42	1	4	5	0
25	b	1	42	34	1	4	3	0
25	c	1	42	34	1	4	3	0
25	c	1	59	49	1	4	5	0
25	c	1	53	43	1	4	5	0
25	c	1	48	38	1	4	5	0
25	c	1	43	35	1	4	3	0
25	c	1	50	40	1	4	5	0
25	c	1	60	50	1	4	5	0
25	c	1	55	45	1	4	5	0
25	c	1	43	35	1	4	3	0
25	c	1	43	35	1	4	3	0
25	c	1	53	43	1	4	5	0
25	c	1	42	34	1	4	3	0
25	c	1	47	37	1	4	5	0
25	d	1	41	33	1	4	3	0
25	d	1	50	40	1	4	5	0
25	d	1	57	47	1	4	5	0
25	d	1	42	34	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	d	1	52	42	1	4	5	0
25	d	1	49	39	1	4	5	0
25	d	1	59	49	1	4	5	0
25	d	1	45	35	1	4	5	0
25	d	1	42	34	1	4	3	0
25	d	1	42	34	1	4	3	0
25	d	1	42	34	1	4	3	0
25	e	1	53	43	1	4	5	0
25	e	1	41	33	1	4	3	0
25	e	1	65	55	1	4	5	0
25	e	1	45	35	1	4	5	0
25	e	1	50	40	1	4	5	0
25	e	1	42	34	1	4	3	0
25	e	1	43	35	1	4	3	0
25	e	1	48	38	1	4	5	0
25	e	1	52	42	1	4	5	0
25	e	1	55	45	1	4	5	0
25	e	1	42	34	1	4	3	0
25	e	1	43	35	1	4	3	0
25	e	1	55	45	1	4	5	0
25	e	1	42	34	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	h	1	50	40	1	4	5	0
25	h	1	55	45	1	4	5	0
25	h	1	43	35	1	4	3	0
25	h	1	60	50	1	4	5	0
25	h	1	48	38	1	4	5	0
25	h	1	50	40	1	4	5	0
25	h	1	54	44	1	4	5	0
25	h	1	43	35	1	4	3	0
25	h	1	58	48	1	4	5	0
25	h	1	53	43	1	4	5	0
25	h	1	43	35	1	4	3	0
25	h	1	42	34	1	4	3	0
25	h	1	43	35	1	4	3	0
25	i	1	53	43	1	4	5	0
25	i	1	64	54	1	4	5	0
25	i	1	43	35	1	4	3	0
25	i	1	43	35	1	4	3	0
25	i	1	65	55	1	4	5	0
25	i	1	43	35	1	4	3	0
25	i	1	55	45	1	4	5	0
25	i	1	43	35	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	i	1	43	35	1	4	3	0
25	i	1	59	49	1	4	5	0
25	i	1	42	34	1	4	3	0
25	i	1	50	40	1	4	5	0
25	j	1	50	40	1	4	5	0
25	j	1	55	45	1	4	5	0
25	j	1	42	34	1	4	3	0
25	j	1	57	47	1	4	5	0
25	j	1	47	37	1	4	5	0
25	j	1	50	40	1	4	5	0
25	j	1	64	54	1	4	5	0
25	j	1	50	40	1	4	5	0
25	j	1	55	45	1	4	5	0
25	j	1	62	52	1	4	5	0
25	j	1	42	34	1	4	3	0
25	j	1	43	35	1	4	3	0
25	j	1	50	40	1	4	5	0
25	k	1	43	35	1	4	3	0
25	k	1	53	43	1	4	5	0
25	k	1	42	34	1	4	3	0
25	k	1	65	55	1	4	5	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	k	1	50	40	1	4	5	0
25	k	1	50	40	1	4	5	0
25	k	1	57	47	1	4	5	0
25	k	1	42	34	1	4	3	0
25	k	1	43	35	1	4	3	0
25	k	1	52	42	1	4	5	0
25	k	1	42	34	1	4	3	0
25	k	1	42	34	1	4	3	0
25	k	1	50	40	1	4	5	0
25	l	1	42	34	1	4	3	0
25	l	1	59	49	1	4	5	0
25	l	1	43	35	1	4	3	0
25	l	1	43	35	1	4	3	0
25	l	1	43	35	1	4	3	0
25	l	1	60	50	1	4	5	0
25	l	1	54	44	1	4	5	0
25	l	1	43	35	1	4	3	0
25	l	1	43	35	1	4	3	0
25	l	1	48	38	1	4	5	0
25	l	1	42	34	1	4	3	0
25	l	1	42	34	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	m	1	42	34	1	4	3	0
25	m	1	60	50	1	4	5	0
25	m	1	54	44	1	4	5	0
25	m	1	43	35	1	4	3	0
25	m	1	42	34	1	4	3	0
25	m	1	50	40	1	4	5	0
25	m	1	42	34	1	4	3	0
25	m	1	43	35	1	4	3	0
25	m	1	43	35	1	4	3	0
25	m	1	42	34	1	4	3	0
25	f	1	42	34	1	4	3	0
25	f	1	59	49	1	4	5	0
25	f	1	43	35	1	4	3	0
25	f	1	42	34	1	4	3	0
25	f	1	42	34	1	4	3	0
25	f	1	55	45	1	4	5	0
25	f	1	42	34	1	4	3	0
25	f	1	42	34	1	4	3	0
25	f	1	59	49	1	4	5	0
25	f	1	42	34	1	4	3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	f	1	43	35	1	4	3	0
25	g	1	42	34	1	4	3	0
25	g	1	53	43	1	4	5	0
25	g	1	42	34	1	4	3	0
25	g	1	43	35	1	4	3	0
25	g	1	45	35	1	4	5	0
25	g	1	50	40	1	4	5	0
25	g	1	55	45	1	4	5	0
25	g	1	42	34	1	4	3	0
25	g	1	42	34	1	4	3	0
25	g	1	55	45	1	4	5	0
25	g	1	42	34	1	4	3	0
25	g	1	42	34	1	4	3	0
25	g	1	45	35	1	4	5	0
25	n	1	59	49	1	4	5	0
25	n	1	55	45	1	4	5	0
25	n	1	48	38	1	4	5	0
25	n	1	42	34	1	4	3	0
25	n	1	42	34	1	4	3	0
25	n	1	42	34	1	4	3	0
25	n	1	42	34	1	4	3	0
25	n	1	41	33	1	4	3	0

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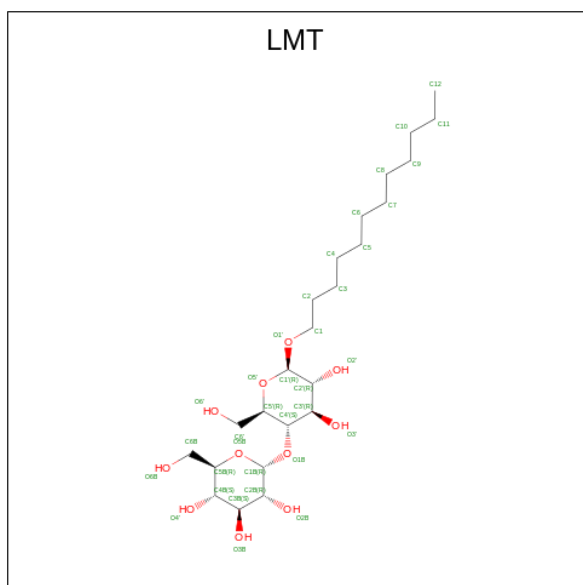
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	n	1	45	35	1	4	5	0
25	n	1	41	33	1	4	3	0
25	n	1	42	34	1	4	3	0
25	n	1	42	34	1	4	3	0
25	o	1	41	33	1	4	3	0
25	o	1	47	37	1	4	5	0
25	o	1	43	35	1	4	3	0
25	o	1	42	34	1	4	3	0
25	o	1	43	35	1	4	3	0
25	o	1	45	35	1	4	5	0
25	o	1	41	33	1	4	3	0
25	o	1	42	35	1	4	2	0
25	o	1	42	34	1	4	3	0
25	o	1	43	35	1	4	3	0
25	p	1	42	34	1	4	3	0
25	p	1	43	35	1	4	3	0
25	p	1	42	34	1	4	3	0
25	p	1	43	35	1	4	3	0
25	p	1	42	34	1	4	3	0
25	p	1	50	40	1	4	5	0
25	p	1	45	35	1	4	5	0

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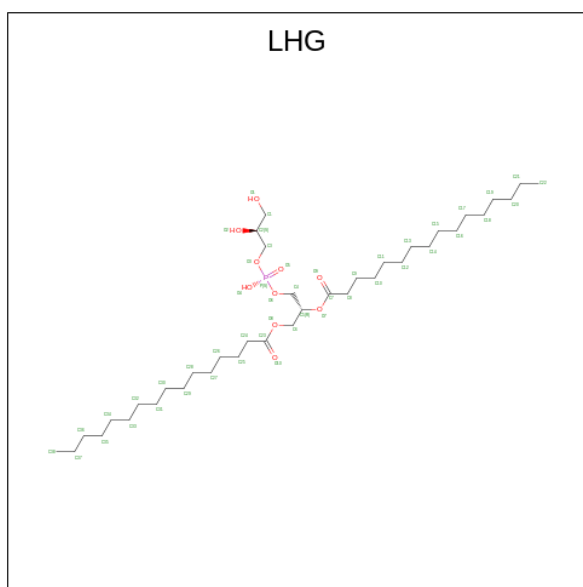
Mol	Chain	Residues	Atoms					AltConf
			Total	C	Mg	N	O	
25	p	1	43	35	1	4	3	0
25	p	1	43	35	1	4	3	0

- Molecule 26 is DODECYL-BETA-D-MALTOSE (CCD ID: LMT) (formula:  $C_{24}H_{46}O_{11}$ ).



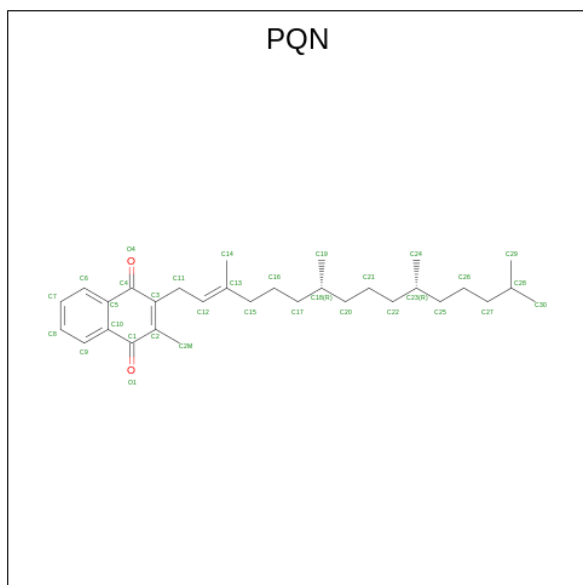
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
26	A	1	35	24	11	0

- Molecule 27 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (CCD ID: LHG) (formula:  $C_{38}H_{75}O_{10}P$ ).



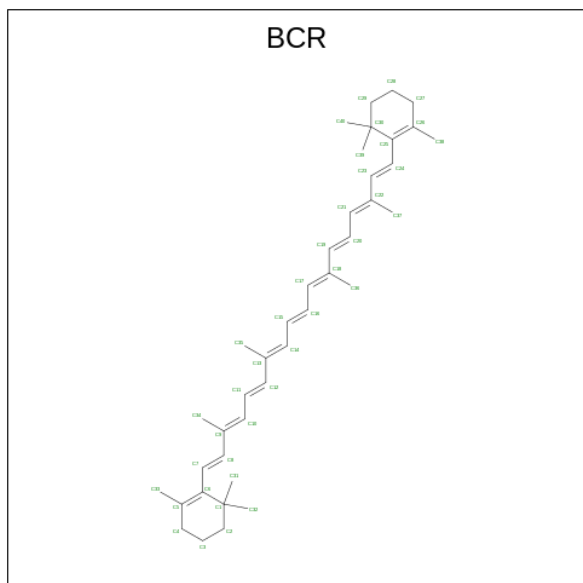
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
27	A	1	38	27	10	1	0
27	A	1	49	38	10	1	0
27	a	1	26	15	10	1	0
27	b	1	31	20	10	1	0
27	c	1	30	19	10	1	0
27	d	1	29	18	10	1	0
27	h	1	30	19	10	1	0
27	h	1	31	20	10	1	0
27	i	1	36	25	10	1	0
27	j	1	37	26	10	1	0
27	m	1	32	21	10	1	0
27	g	1	35	24	10	1	0

- Molecule 28 is PHYLLOQUINONE (CCD ID: PQN) (formula:  $C_{31}H_{46}O_2$ ).



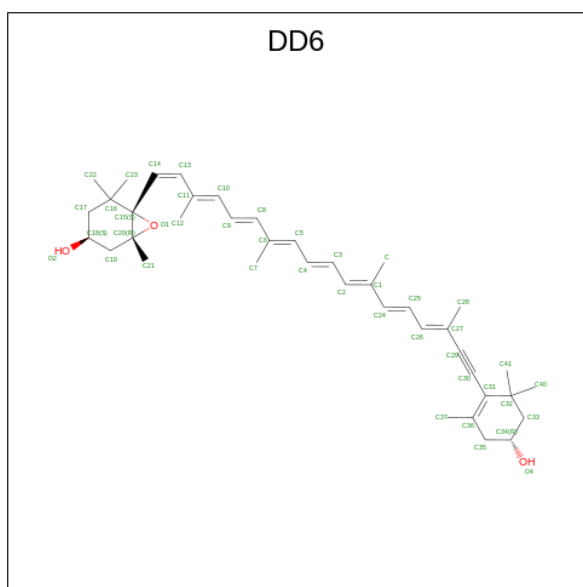
Mol	Chain	Residues	Atoms			AltConf
28	A	1	Total	C	O	0
			33	31	2	
28	B	1	Total	C	O	0
			33	31	2	
28	B	1	Total	C	O	0
			27	25	2	
28	F	1	Total	C	O	0
			26	24	2	

- Molecule 29 is BETA-CAROTENE (CCD ID: BCR) (formula:  $C_{40}H_{56}$ ).



Mol	Chain	Residues	Atoms	AltConf
29	A	1	Total C 40 40	0
29	A	1	Total C 40 40	0
29	A	1	Total C 40 40	0
29	A	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	B	1	Total C 40 40	0
29	J	1	Total C 40 40	0
29	M	1	Total C 40 40	0

- Molecule 30 is (3S,3'R,5R,6S,7cis)-7',8'-didehydro-5,6-dihydro-5,6-epoxy-beta,beta-carotene -3,3'-diol (CCD ID: DD6) (formula: C<sub>40</sub>H<sub>54</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			AltConf
30	A	1	Total	C	O	0
			43	40	3	
30	A	1	Total	C	O	0
			43	40	3	
30	F	1	Total	C	O	0
			43	40	3	
30	J	1	Total	C	O	0
			43	40	3	
30	J	1	Total	C	O	0
			43	40	3	
30	a	1	Total	C	O	0
			43	40	3	
30	a	1	Total	C	O	0
			43	40	3	
30	b	1	Total	C	O	0
			43	40	3	
30	b	1	Total	C	O	0
			43	40	3	
30	c	1	Total	C	O	0
			43	40	3	
30	c	1	Total	C	O	0
			43	40	3	
30	c	1	Total	C	O	0
			43	40	3	
30	d	1	Total	C	O	0
			43	40	3	
30	d	1	Total	C	O	0
			43	40	3	

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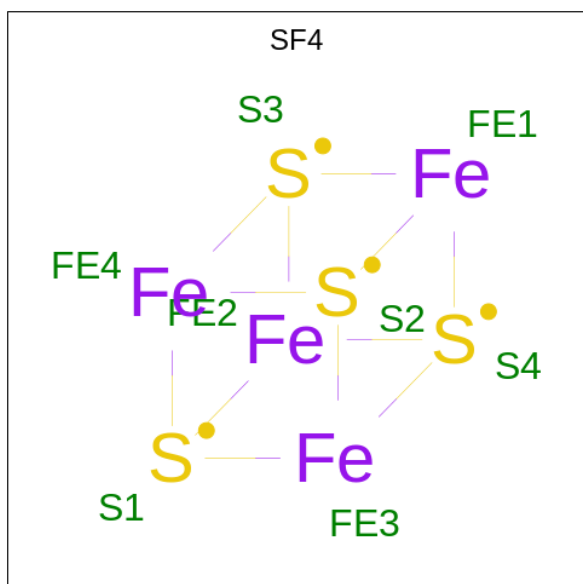
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
30	d	1	43	40	3	0
30	e	1	43	40	3	0
30	e	1	43	40	3	0
30	e	1	43	40	3	0
30	h	1	43	40	3	0
30	h	1	43	40	3	0
30	i	1	43	40	3	0
30	i	1	43	40	3	0
30	i	1	43	40	3	0
30	j	1	43	40	3	0
30	j	1	43	40	3	0
30	k	1	43	40	3	0
30	k	1	43	40	3	0
30	l	1	43	40	3	0
30	l	1	43	40	3	0
30	m	1	43	40	3	0
30	m	1	43	40	3	0
30	f	1	43	40	3	0
30	f	1	43	40	3	0
30	g	1	43	40	3	0
30	g	1	43	40	3	0

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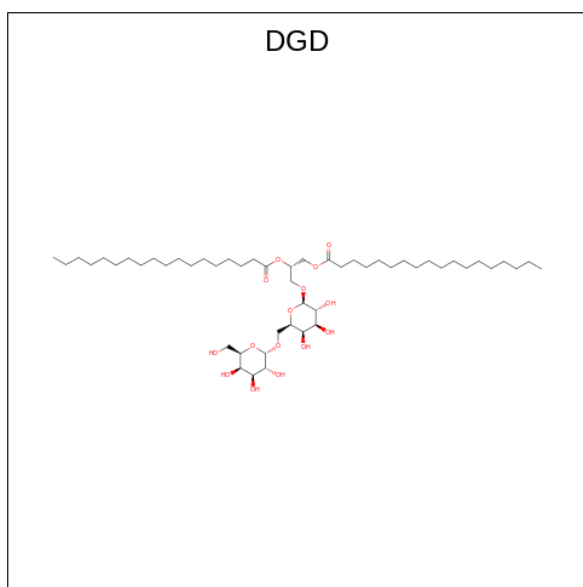
Mol	Chain	Residues	Atoms			AltConf
30	n	1	Total	C	O	0
			43	40	3	
30	n	1	Total	C	O	0
			43	40	3	
30	n	1	Total	C	O	0
			43	40	3	
30	o	1	Total	C	O	0
			43	40	3	
30	o	1	Total	C	O	0
			43	40	3	
30	p	1	Total	C	O	0
			43	40	3	

- Molecule 31 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe<sub>4</sub>S<sub>4</sub>).



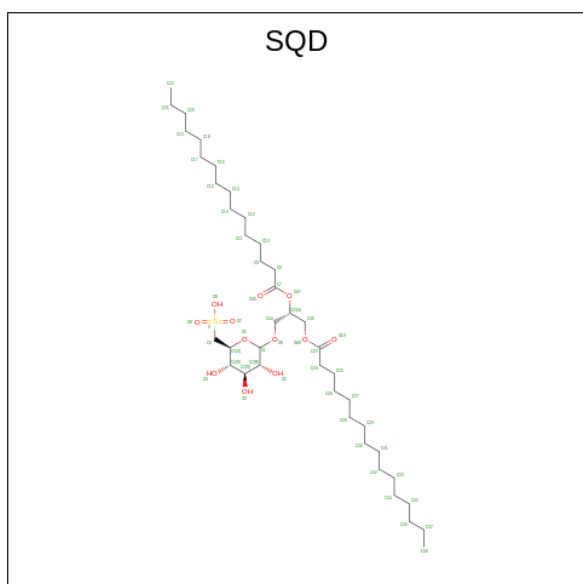
Mol	Chain	Residues	Atoms			AltConf
31	A	1	Total	Fe	S	0
			8	4	4	
31	C	1	Total	Fe	S	0
			8	4	4	
31	C	1	Total	Fe	S	0
			8	4	4	

- Molecule 32 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula: C<sub>51</sub>H<sub>96</sub>O<sub>15</sub>).



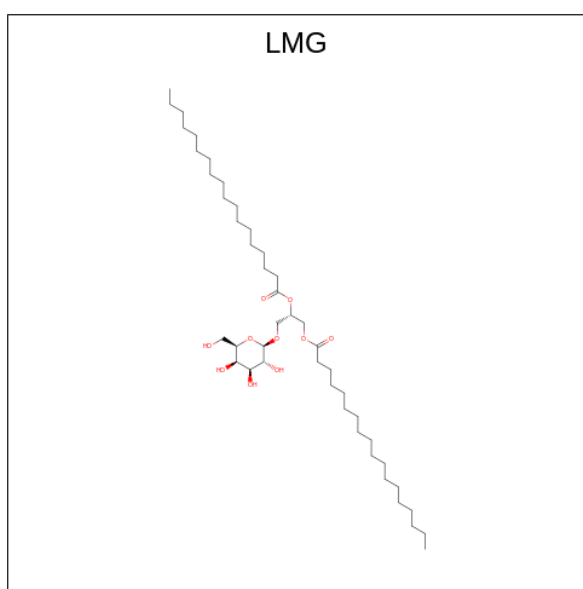
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
32	B	1	54	39	15	0
32	b	1	48	33	15	0
32	e	1	36	21	15	0

- Molecule 33 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (CCD ID: SQD) (formula: C<sub>41</sub>H<sub>78</sub>O<sub>12</sub>S).



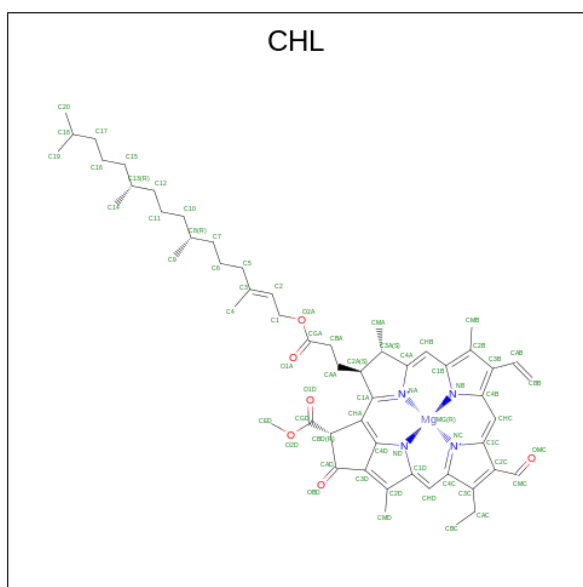
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	S	
33	D	1	36	23	12	1	0
33	F	1	39	26	12	1	0
33	J	1	27	14	12	1	0
33	g	1	32	19	12	1	0

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



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
34	a	1	43	33	10	0
34	e	1	52	42	10	0
34	j	1	44	34	10	0
34	k	1	36	26	10	0

- Molecule 35 is CHLOROPHYLL B (CCD ID: CHL) (formula:  $C_{55}H_{70}MgN_4O_6$ ).

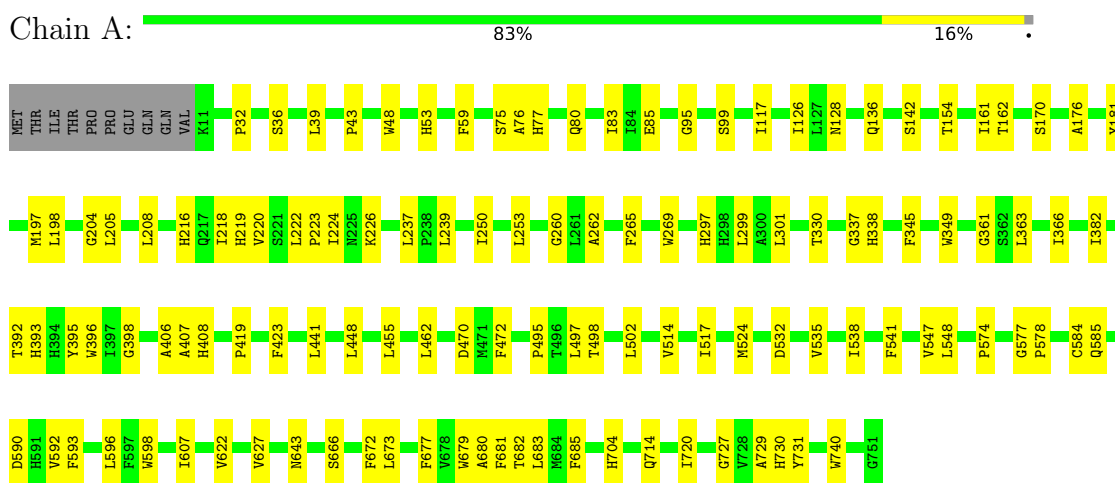


Mol	Chain	Residues	Atoms				AltConf	
			Total	C	Mg	N		O
35	c	1	49	38	1	4	6	0
35	d	1	51	40	1	4	6	0
35	d	1	46	35	1	4	6	0
35	d	1	43	34	1	4	4	0
35	d	1	46	35	1	4	6	0
35	e	1	46	35	1	4	6	0

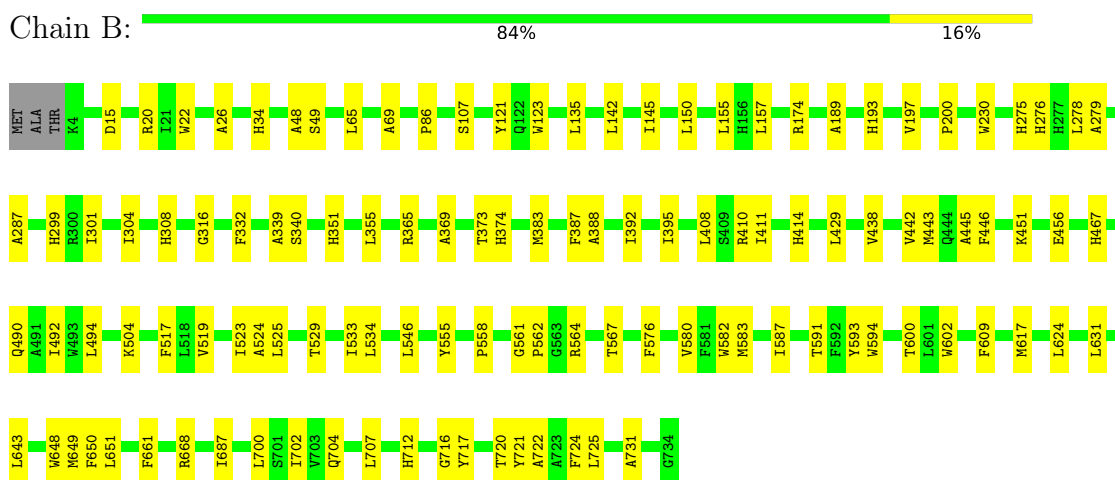
### 3 Residue-property plots

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.

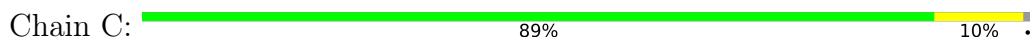
- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1



- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2

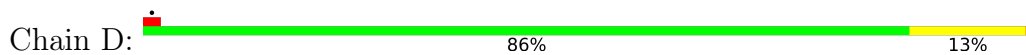


- Molecule 3: Photosystem I iron-sulfur center

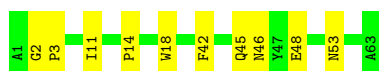
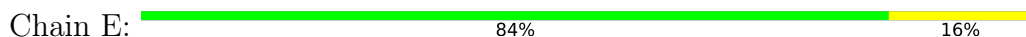




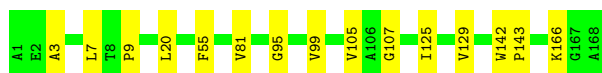
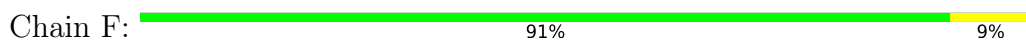
- Molecule 4: PsaD



- Molecule 5: PsaE



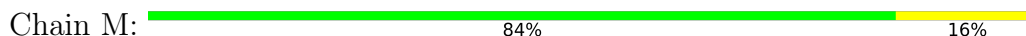
- Molecule 6: PsaF



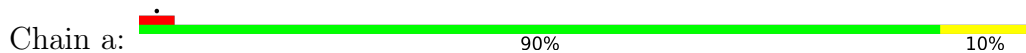
- Molecule 7: Photosystem I reaction center subunit IX



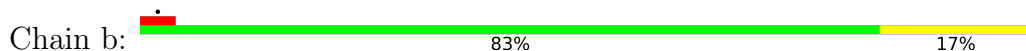
- Molecule 8: Photosystem I reaction center subunit XII

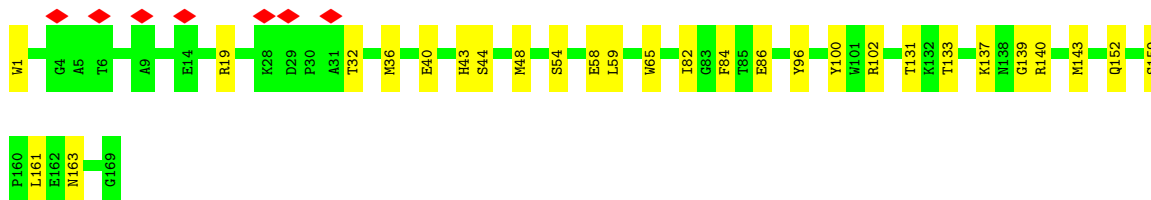


- Molecule 9: Chloroplast light-harvesting complex I protein



- Molecule 10: Chloroplast light-harvesting complex I protein

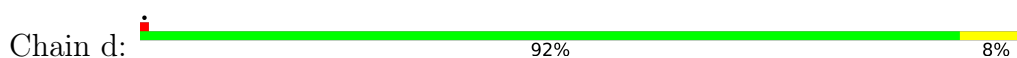




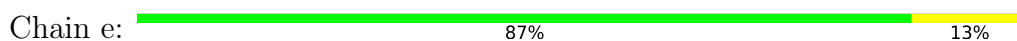
- Molecule 11: LHCE 3



- Molecule 12: Light harvesting chlorophyll a /b binding protein of PSII



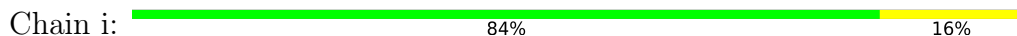
- Molecule 13: Chloroplast light-harvesting complex II protein



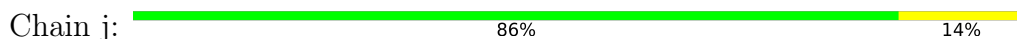
- Molecule 14: LHCE 8



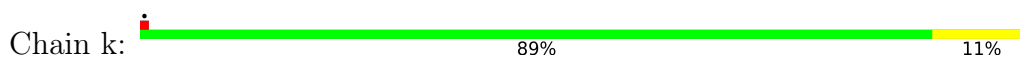
- Molecule 15: LHCE 9



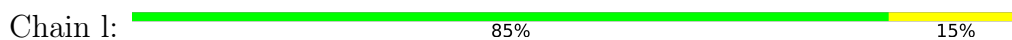
- Molecule 16: Chloroplast light-harvesting complex I protein



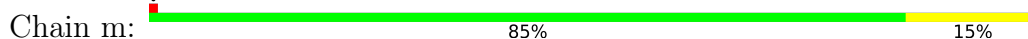
- Molecule 17: Chloroplast light-harvesting complex I protein



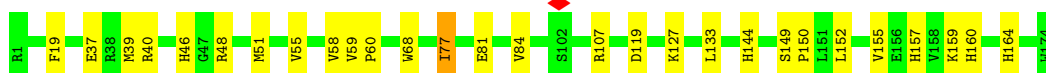
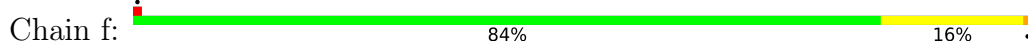
- Molecule 18: Chloroplast light-harvesting complex I protein



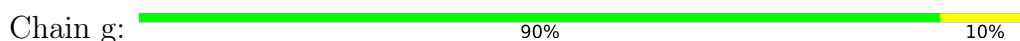
- Molecule 19: Chloroplast light-harvesting complex I protein



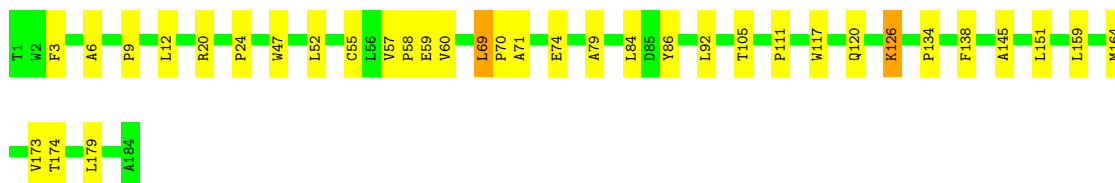
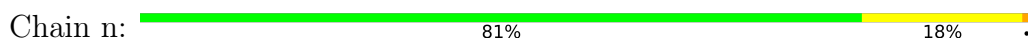
- Molecule 20: Chloroplast light-harvesting complex I protein, Lhca7\_2



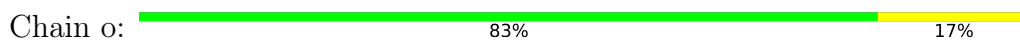
- Molecule 21: Chloroplast light-harvesting complex I protein



- Molecule 22: Chloroplast light-harvesting complex II protein



- Molecule 23: Chloroplast light-harvesting complex I protein





- Molecule 24: Chloroplast light-harvesting complex I protein

Chain p: 85% 15%



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	562173	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.404	Depositor
Minimum map value	-0.611	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.1	Depositor
Map size ( $\text{\AA}$ )	532.48, 532.48, 532.48	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.04, 1.04, 1.04	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: DGD, BCR, CHL, DD6, SF4, PQN, SQD, LHG, LMG, CLA, 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	A	0.17	0/6079	0.28	0/8287
2	B	0.17	0/6071	0.28	0/8277
3	C	0.16	0/606	0.30	0/819
4	D	0.13	0/1426	0.27	0/1941
5	E	0.13	0/491	0.25	0/669
6	F	0.14	0/1275	0.26	0/1739
7	J	0.14	0/314	0.24	0/429
8	M	0.16	0/247	0.24	0/332
9	a	0.14	0/1311	0.25	0/1772
10	b	0.13	0/1344	0.28	0/1829
11	c	0.14	0/1719	0.25	0/2336
12	d	0.15	0/1719	0.27	0/2343
13	e	0.13	0/1566	0.25	0/2141
14	h	0.14	0/1388	0.28	0/1886
15	i	0.16	0/1391	0.30	0/1894
16	j	0.16	0/1499	0.27	0/2045
17	k	0.14	0/1377	0.26	0/1871
18	l	0.13	0/1293	0.26	0/1763
19	m	0.14	0/1297	0.30	0/1768
20	f	0.10	0/1367	0.26	0/1861
21	g	0.12	0/1452	0.25	0/1980
22	n	0.11	0/1458	0.26	0/1993
23	o	0.12	0/1266	0.28	0/1727
24	p	0.11	0/1156	0.26	0/1572
All	All	0.15	0/39112	0.27	0/53274

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	D	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	D	138	HIS	Peptide

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5878	0	5745	99	0
2	B	5861	0	5659	102	0
3	C	596	0	571	6	0
4	D	1393	0	1371	17	0
5	E	481	0	479	9	0
6	F	1250	0	1259	13	0
7	J	305	0	317	2	0
8	M	243	0	258	4	0
9	a	1274	0	1235	13	0
10	b	1302	0	1244	19	0
11	c	1676	0	1689	16	0
12	d	1669	0	1650	16	0
13	e	1517	0	1468	19	0
14	h	1350	0	1324	18	0
15	i	1355	0	1336	24	0
16	j	1450	0	1401	20	0
17	k	1338	0	1314	13	0
18	l	1256	0	1234	20	0
19	m	1260	0	1236	24	0
20	f	1332	0	1312	16	0
21	g	1406	0	1358	15	0
22	n	1411	0	1372	24	0
23	o	1230	0	1205	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	p	1126	0	1115	13	0
25	A	2599	0	2480	118	0
25	B	2182	0	2078	111	0
25	F	87	0	64	6	0
25	J	50	0	39	2	0
25	a	571	0	488	24	0
25	b	492	0	373	14	0
25	c	638	0	527	22	0
25	d	521	0	418	11	0
25	e	676	0	551	18	0
25	f	553	0	448	10	0
25	g	598	0	467	22	0
25	h	642	0	533	27	0
25	i	603	0	527	15	0
25	j	667	0	568	19	0
25	k	631	0	520	14	0
25	l	562	0	459	17	0
25	m	461	0	369	15	0
25	n	499	0	389	14	0
25	o	429	0	320	12	0
25	p	393	0	297	9	0
26	A	35	0	46	0	0
27	A	87	0	123	7	0
27	a	26	0	22	1	0
27	b	31	0	32	3	0
27	c	30	0	29	3	0
27	d	29	0	28	3	0
27	g	35	0	40	0	0
27	h	61	0	62	3	0
27	i	36	0	42	2	0
27	j	37	0	44	4	0
27	m	32	0	34	2	0
28	A	33	0	46	5	0
28	B	60	0	78	2	0
28	F	26	0	29	0	0
29	A	160	0	224	9	0
29	B	280	0	392	26	0
29	J	40	0	56	3	0
29	M	40	0	56	2	0
30	A	86	0	0	0	0
30	F	43	0	0	0	0
30	J	86	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	a	86	0	0	1	0
30	b	86	0	0	0	0
30	c	129	0	0	0	0
30	d	129	0	0	1	0
30	e	129	0	0	0	0
30	f	86	0	0	0	0
30	g	86	0	0	0	0
30	h	86	0	0	0	0
30	i	129	0	0	1	0
30	j	86	0	0	0	0
30	k	86	0	0	0	0
30	l	86	0	0	0	0
30	m	86	0	0	2	0
30	n	129	0	0	1	0
30	o	86	0	0	0	0
30	p	43	0	0	0	0
31	A	8	0	0	0	0
31	C	16	0	0	0	0
32	B	54	0	66	2	0
32	b	48	0	54	3	0
32	e	36	0	30	2	0
33	D	36	0	36	0	0
33	F	39	0	42	0	0
33	J	27	0	18	0	0
33	g	32	0	28	2	0
34	a	43	0	56	0	0
34	e	52	0	77	5	0
34	j	44	0	61	0	0
34	k	36	0	42	3	0
35	c	49	0	34	3	0
35	d	186	0	128	7	0
35	e	46	0	31	0	0
All	All	55406	0	51153	806	0

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

The worst 5 of 806 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:m:7:PHE:HA	25:m:202:CLA:NB	1.93	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:e:30:ALA:HB2	25:e:205:CLA:HBA1	1.63	0.81
23:o:47:ALA:HB1	23:o:132:GLY:HA3	1.64	0.78
25:A:824:CLA:HBD	25:A:824:CLA:HBA1	1.67	0.76
1:A:740:TRP:HB2	25:A:824:CLA:HBB1	1.69	0.74

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	739/751 (98%)	713 (96%)	24 (3%)	2 (0%)	37	51
2	B	729/734 (99%)	705 (97%)	23 (3%)	1 (0%)	48	65
3	C	78/81 (96%)	74 (95%)	4 (5%)	0	100	100
4	D	184/186 (99%)	173 (94%)	10 (5%)	1 (0%)	25	37
5	E	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
6	F	166/168 (99%)	163 (98%)	3 (2%)	0	100	100
7	J	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
8	M	29/31 (94%)	29 (100%)	0	0	100	100
9	a	164/166 (99%)	158 (96%)	6 (4%)	0	100	100
10	b	167/169 (99%)	158 (95%)	9 (5%)	0	100	100
11	c	219/221 (99%)	208 (95%)	11 (5%)	0	100	100
12	d	218/220 (99%)	207 (95%)	10 (5%)	1 (0%)	25	37
13	e	197/199 (99%)	190 (96%)	6 (3%)	1 (0%)	25	37
14	h	172/174 (99%)	166 (96%)	6 (4%)	0	100	100
15	i	175/177 (99%)	166 (95%)	9 (5%)	0	100	100
16	j	181/183 (99%)	179 (99%)	2 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	k	170/172 (99%)	162 (95%)	8 (5%)	0	100	100
18	l	165/167 (99%)	162 (98%)	3 (2%)	0	100	100
19	m	166/168 (99%)	155 (93%)	11 (7%)	0	100	100
20	f	172/174 (99%)	151 (88%)	20 (12%)	1 (1%)	22	32
21	g	176/178 (99%)	173 (98%)	3 (2%)	0	100	100
22	n	182/184 (99%)	155 (85%)	25 (14%)	2 (1%)	12	17
23	o	162/164 (99%)	150 (93%)	11 (7%)	1 (1%)	22	32
24	p	146/148 (99%)	131 (90%)	14 (10%)	1 (1%)	19	28
All	All	4853/4915 (99%)	4619 (95%)	223 (5%)	11 (0%)	45	59

5 of 11 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
20	f	77	ILE
1	A	205	LEU
1	A	497	LEU
2	B	107	SER
13	e	95	VAL

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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	621/632 (98%)	619 (100%)	2 (0%)	91	96
2	B	607/609 (100%)	607 (100%)	0	100	100
3	C	69/70 (99%)	68 (99%)	1 (1%)	62	78
4	D	140/140 (100%)	139 (99%)	1 (1%)	81	90
5	E	49/49 (100%)	49 (100%)	0	100	100
6	F	127/127 (100%)	127 (100%)	0	100	100
7	J	34/34 (100%)	34 (100%)	0	100	100
8	M	26/26 (100%)	26 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	a	125/125 (100%)	125 (100%)	0	100	100
10	b	130/130 (100%)	129 (99%)	1 (1%)	79	89
11	c	172/172 (100%)	172 (100%)	0	100	100
12	d	167/167 (100%)	167 (100%)	0	100	100
13	e	152/152 (100%)	152 (100%)	0	100	100
14	h	142/142 (100%)	140 (99%)	2 (1%)	62	78
15	i	137/137 (100%)	137 (100%)	0	100	100
16	j	145/145 (100%)	145 (100%)	0	100	100
17	k	141/141 (100%)	140 (99%)	1 (1%)	81	90
18	l	122/122 (100%)	122 (100%)	0	100	100
19	m	122/122 (100%)	122 (100%)	0	100	100
20	f	135/135 (100%)	134 (99%)	1 (1%)	81	90
21	g	140/140 (100%)	140 (100%)	0	100	100
22	n	140/140 (100%)	140 (100%)	0	100	100
23	o	119/119 (100%)	118 (99%)	1 (1%)	79	89
24	p	114/114 (100%)	111 (97%)	3 (3%)	41	61
All	All	3876/3890 (100%)	3863 (100%)	13 (0%)	90	96

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

Mol	Chain	Res	Type
17	k	31	LYS
20	f	127	LYS
24	p	134	THR
24	p	115	LYS
24	p	127	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 37 such sidechains are listed below:

Mol	Chain	Res	Type
16	j	89	GLN
22	n	63	ASN
16	j	179	HIS
20	f	164	HIS
5	E	21	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 oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

367 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	e	210	-	43,51,73	1.56	7 (16%)	49,86,113	1.98	7 (14%)
35	CHL	d	307	12	51,59,74	1.66	9 (17%)	55,96,114	2.15	15 (27%)
27	LHG	d	302	25	28,28,48	1.76	2 (7%)	31,34,54	1.33	5 (16%)
25	CLA	f	612	20	43,51,73	1.57	7 (16%)	49,86,113	1.96	8 (16%)
27	LHG	c	301	25	29,29,48	1.76	2 (6%)	32,35,54	1.37	5 (15%)
25	CLA	d	315	12	42,50,73	1.55	7 (16%)	48,85,113	1.94	6 (12%)
25	CLA	c	313	11	53,61,73	1.46	7 (13%)	61,98,113	1.83	11 (18%)
25	CLA	m	203	19	60,68,73	1.39	6 (10%)	70,107,113	1.58	10 (14%)
25	CLA	d	305	12	42,50,73	1.54	7 (16%)	48,85,113	2.04	7 (14%)
25	CLA	k	214	17	50,58,73	1.50	7 (14%)	58,95,113	1.87	9 (15%)
31	SF4	A	856	2,1	0,12,12	-	-	-	-	-
25	CLA	B	839	-	60,68,73	1.41	7 (11%)	70,107,113	1.83	11 (15%)
25	CLA	g	213	21	42,50,73	1.58	7 (16%)	48,85,113	1.99	7 (14%)
25	CLA	A	831	1	48,56,73	1.53	7 (14%)	55,92,113	1.89	8 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
29	BCR	A	838	-	41,41,41	0.78	1 (2%)	56,56,56	1.06	4 (7%)
25	CLA	B	825	-	43,51,73	1.53	7 (16%)	49,86,113	1.73	7 (14%)
25	CLA	f	611	20	42,50,73	1.58	7 (16%)	48,85,113	1.87	9 (18%)
25	CLA	A	823	1	64,72,73	1.31	7 (10%)	74,111,113	1.88	9 (12%)
25	CLA	A	843	1	52,60,73	1.47	7 (13%)	60,97,113	1.99	10 (16%)
25	CLA	b	213	10	42,50,73	1.57	7 (16%)	48,85,113	1.95	8 (16%)
30	DD6	g	216	-	39,45,45	1.31	4 (10%)	52,67,67	2.28	16 (30%)
25	CLA	i	208	15	55,63,73	1.40	6 (10%)	64,101,113	1.85	9 (14%)
31	SF4	C	102	3	0,12,12	-	-	-	-	-
25	CLA	i	206	-	65,73,73	1.33	7 (10%)	76,113,113	1.74	11 (14%)
30	DD6	n	214	-	39,45,45	1.63	7 (17%)	52,67,67	1.72	10 (19%)
25	CLA	b	209	10	45,53,73	1.56	7 (15%)	52,89,113	1.91	10 (19%)
25	CLA	B	816	-	60,68,73	1.35	6 (10%)	70,107,113	1.82	14 (20%)
25	CLA	n	210	22	42,50,73	1.57	7 (16%)	48,85,113	2.03	6 (12%)
25	CLA	f	606	20	42,50,73	1.60	7 (16%)	48,85,113	1.92	8 (16%)
25	CLA	e	211	-	48,56,73	1.51	7 (14%)	55,92,113	1.82	8 (14%)
25	CLA	n	208	22	45,53,73	1.57	7 (15%)	52,89,113	1.99	7 (13%)
25	CLA	l	607	18	54,62,73	1.46	6 (11%)	62,99,113	1.79	9 (14%)
25	CLA	n	206	-	42,50,73	1.59	7 (16%)	48,85,113	1.93	6 (12%)
29	BCR	A	839	-	41,41,41	0.74	0	56,56,56	1.03	4 (7%)
25	CLA	d	316	12	42,50,73	1.54	7 (16%)	48,85,113	1.89	7 (14%)
25	CLA	e	214	-	42,50,73	1.58	7 (16%)	48,85,113	1.84	8 (16%)
25	CLA	e	201	-	53,61,73	1.48	7 (13%)	61,98,113	1.92	9 (14%)
30	DD6	m	213	-	39,45,45	1.36	5 (12%)	52,67,67	2.12	17 (32%)
25	CLA	l	611	18	42,50,73	1.61	7 (16%)	48,85,113	2.01	7 (14%)
25	CLA	i	202	15	53,61,73	1.46	7 (13%)	61,98,113	1.85	10 (16%)
25	CLA	n	202	22	55,63,73	1.47	7 (12%)	64,101,113	1.82	8 (12%)
25	CLA	A	822	-	53,61,73	1.47	7 (13%)	61,98,113	1.85	10 (16%)
25	CLA	j	209	16	64,72,73	1.33	6 (9%)	74,111,113	1.63	11 (14%)
25	CLA	A	853	27	53,61,73	1.44	7 (13%)	61,98,113	1.99	12 (19%)
29	BCR	B	831	-	41,41,41	1.66	8 (19%)	56,56,56	1.42	10 (17%)
25	CLA	B	811	2	63,71,73	1.33	7 (11%)	73,110,113	1.80	10 (13%)
25	CLA	j	203	16	50,58,73	1.51	7 (14%)	58,95,113	1.82	11 (18%)
25	CLA	c	302	11	42,50,73	1.56	7 (16%)	48,85,113	1.85	8 (16%)
25	CLA	j	213	16	42,50,73	1.56	7 (16%)	48,85,113	1.98	9 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	e	204	13	41,49,73	1.60	7 (17%)	47,84,113	1.97	9 (19%)
25	CLA	k	203	17	53,61,73	1.47	7 (13%)	61,98,113	1.82	11 (18%)
25	CLA	A	826	1	65,73,73	1.35	7 (10%)	76,113,113	1.81	9 (11%)
33	SQD	g	202	-	31,32,54	1.85	7 (22%)	40,43,65	1.58	6 (15%)
30	DD6	c	317	-	39,45,45	1.42	5 (12%)	52,67,67	2.12	16 (30%)
25	CLA	d	301	12	41,49,73	1.62	8 (19%)	47,84,113	2.14	9 (19%)
25	CLA	A	827	1	43,51,73	1.56	7 (16%)	49,86,113	1.96	9 (18%)
25	CLA	n	201	22	59,67,73	1.38	6 (10%)	68,105,113	1.87	11 (16%)
25	CLA	c	308	-	50,58,73	1.51	7 (14%)	58,95,113	1.80	9 (15%)
25	CLA	p	609	24	43,51,73	1.60	7 (16%)	49,86,113	2.00	10 (20%)
25	CLA	i	210	15	43,51,73	1.55	7 (16%)	49,86,113	1.96	8 (16%)
34	LMG	k	201	-	36,36,55	0.96	1 (2%)	44,44,63	1.12	3 (6%)
29	BCR	B	829	-	41,41,41	0.75	0	56,56,56	1.08	4 (7%)
25	CLA	B	844	2	65,73,73	1.36	7 (10%)	76,113,113	1.79	15 (19%)
25	CLA	b	206	-	45,53,73	1.54	7 (15%)	52,89,113	1.97	7 (13%)
25	CLA	h	212	14	53,61,73	1.47	6 (11%)	61,98,113	1.85	12 (19%)
30	DD6	A	855	-	39,45,45	1.35	4 (10%)	52,67,67	2.35	20 (38%)
25	CLA	A	852	1	48,56,73	1.50	7 (14%)	55,92,113	2.02	10 (18%)
25	CLA	p	603	24	42,50,73	1.65	7 (16%)	48,85,113	1.74	6 (12%)
25	CLA	h	210	27	43,51,73	1.54	7 (16%)	49,86,113	1.92	8 (16%)
25	CLA	c	304	11	53,61,73	1.46	7 (13%)	61,98,113	1.85	10 (16%)
25	CLA	e	212	13	52,60,73	1.48	7 (13%)	60,97,113	1.88	9 (15%)
25	CLA	e	213	13	55,63,73	1.42	7 (12%)	64,101,113	1.79	11 (17%)
25	CLA	f	601	20	42,50,73	1.58	7 (16%)	48,85,113	1.89	7 (14%)
25	CLA	l	601	18	42,50,73	1.58	7 (16%)	48,85,113	1.85	6 (12%)
25	CLA	A	851	1	45,53,73	1.54	7 (15%)	52,89,113	1.93	10 (19%)
30	DD6	a	215	-	39,45,45	1.42	5 (12%)	52,67,67	2.10	16 (30%)
25	CLA	o	609	23	42,50,73	1.58	7 (16%)	48,85,113	1.97	6 (12%)
25	CLA	c	303	11	59,67,73	1.37	8 (13%)	68,105,113	1.78	12 (17%)
25	CLA	A	857	-	53,61,73	1.47	7 (13%)	61,98,113	1.80	9 (14%)
27	LHG	g	201	25	34,34,48	1.60	2 (5%)	37,40,54	1.31	5 (13%)
25	CLA	o	605	-	43,51,73	1.55	7 (16%)	49,86,113	1.93	8 (16%)
25	CLA	n	204	22	42,50,73	1.59	7 (16%)	48,85,113	1.94	8 (16%)
25	CLA	A	813	1	58,66,73	1.42	7 (12%)	67,104,113	1.77	10 (14%)
30	DD6	p	610	-	39,45,45	1.29	4 (10%)	52,67,67	2.28	17 (32%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	d	311	12	49,57,73	1.51	7 (14%)	55,93,113	1.96	8 (14%)
25	CLA	B	804	2	65,73,73	1.30	7 (10%)	76,113,113	1.77	9 (11%)
25	CLA	o	603	23	43,51,73	1.58	7 (16%)	49,86,113	1.92	6 (12%)
25	CLA	a	206	-	45,53,73	1.57	7 (15%)	52,89,113	1.86	8 (15%)
25	CLA	B	840	2	50,58,73	1.51	7 (14%)	58,95,113	1.72	11 (18%)
30	DD6	F	203	-	39,45,45	1.53	7 (17%)	52,67,67	1.51	11 (21%)
25	CLA	g	203	21	42,50,73	1.56	7 (16%)	48,85,113	1.95	8 (16%)
25	CLA	A	832	1	65,73,73	1.32	7 (10%)	76,113,113	1.64	11 (14%)
25	CLA	l	609	18	43,51,73	1.55	7 (16%)	49,86,113	1.95	8 (16%)
30	DD6	o	611	-	39,45,45	1.30	4 (10%)	52,67,67	2.13	15 (28%)
25	CLA	B	824	2	65,73,73	1.32	7 (10%)	76,113,113	1.68	11 (14%)
25	CLA	i	204	15	43,51,73	1.53	7 (16%)	49,86,113	1.89	9 (18%)
25	CLA	h	204	14	55,63,73	1.46	7 (12%)	64,101,113	1.83	12 (18%)
25	CLA	j	212	16	62,70,73	1.36	6 (9%)	72,109,113	1.75	11 (15%)
25	CLA	A	829	1	58,66,73	1.43	7 (12%)	67,104,113	1.74	9 (13%)
25	CLA	l	602	18	59,67,73	1.40	7 (11%)	68,105,113	1.75	11 (16%)
25	CLA	g	209	21	55,63,73	1.43	7 (12%)	64,101,113	1.77	9 (14%)
30	DD6	i	214	-	39,45,45	1.42	5 (12%)	52,67,67	2.13	14 (26%)
32	DGD	b	202	-	49,49,67	1.23	6 (12%)	63,63,81	1.08	4 (6%)
25	CLA	l	608	-	43,51,73	1.56	7 (16%)	49,86,113	1.96	8 (16%)
25	CLA	e	208	13	42,50,73	1.58	7 (16%)	48,85,113	2.01	7 (14%)
25	CLA	A	825	1	65,73,73	1.35	7 (10%)	76,113,113	1.67	11 (14%)
25	CLA	o	610	23	43,51,73	1.58	7 (16%)	49,86,113	1.93	9 (18%)
25	CLA	B	845	2	65,73,73	1.32	7 (10%)	76,113,113	1.76	11 (14%)
25	CLA	i	203	15	64,72,73	1.36	7 (10%)	74,111,113	1.72	11 (14%)
30	DD6	j	216	-	39,45,45	1.44	5 (12%)	52,67,67	2.13	15 (28%)
35	CHL	d	309	-	43,51,74	1.62	8 (18%)	45,86,114	2.21	10 (22%)
25	CLA	A	848	1	51,59,73	1.49	7 (13%)	59,96,113	1.93	10 (16%)
30	DD6	o	612	-	39,45,45	1.34	4 (10%)	52,67,67	2.13	16 (30%)
25	CLA	n	203	-	48,56,73	1.54	7 (14%)	55,92,113	1.91	9 (16%)
30	DD6	e	219	-	39,45,45	1.41	5 (12%)	52,67,67	2.14	14 (26%)
25	CLA	p	604	-	43,51,73	1.58	7 (16%)	49,86,113	1.98	8 (16%)
30	DD6	e	218	-	39,45,45	1.52	8 (20%)	52,67,67	1.49	9 (17%)
25	CLA	A	820	1	57,65,73	1.41	7 (12%)	66,103,113	1.86	11 (16%)
25	CLA	B	821	2	60,68,73	1.38	7 (11%)	70,107,113	1.80	12 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	A	819	-	65,73,73	1.31	7 (10%)	76,113,113	1.66	13 (17%)
25	CLA	a	205	9	53,61,73	1.47	7 (13%)	61,98,113	1.84	10 (16%)
25	CLA	A	814	1	59,67,73	1.40	7 (11%)	68,105,113	1.84	12 (17%)
25	CLA	B	836	2	53,61,73	1.48	7 (13%)	61,98,113	1.83	11 (18%)
30	DD6	d	319	-	39,45,45	1.32	4 (10%)	52,67,67	2.40	19 (36%)
25	CLA	i	213	15	50,58,73	1.51	7 (14%)	58,95,113	1.89	9 (15%)
25	CLA	B	805	2	65,73,73	1.30	7 (10%)	76,113,113	1.75	13 (17%)
25	CLA	B	841	2	59,67,73	1.42	7 (11%)	68,105,113	1.83	10 (14%)
25	CLA	A	830	1	52,60,73	1.49	6 (11%)	60,97,113	1.79	13 (21%)
25	CLA	c	314	11	42,50,73	1.57	7 (16%)	48,85,113	1.89	8 (16%)
30	DD6	J	105	-	39,45,45	1.54	8 (20%)	52,67,67	1.53	9 (17%)
26	LMT	A	803	-	36,36,36	0.55	0	47,47,47	0.66	0
30	DD6	i	216	-	39,45,45	1.32	4 (10%)	52,67,67	2.17	16 (30%)
30	DD6	h	216	-	39,45,45	1.39	4 (10%)	52,67,67	2.11	16 (30%)
25	CLA	d	306	-	52,60,73	1.52	7 (13%)	60,97,113	1.82	7 (11%)
25	CLA	A	828	1	43,51,73	1.55	7 (16%)	49,86,113	1.98	9 (18%)
25	CLA	h	209	14	54,62,73	1.40	5 (9%)	62,99,113	1.92	8 (12%)
25	CLA	A	844	1	60,68,73	1.40	7 (11%)	70,107,113	1.83	13 (18%)
25	CLA	k	204	17	42,50,73	1.55	7 (16%)	48,85,113	2.13	6 (12%)
25	CLA	a	210	27	45,53,73	1.57	7 (15%)	52,89,113	1.93	9 (17%)
25	CLA	b	208	-	41,49,73	1.59	7 (17%)	47,84,113	2.00	9 (19%)
25	CLA	B	842	2	53,61,73	1.47	7 (13%)	61,98,113	1.74	11 (18%)
25	CLA	A	815	1	58,66,73	1.37	7 (12%)	67,104,113	1.94	11 (16%)
25	CLA	B	814	2	59,67,73	1.41	7 (11%)	68,105,113	1.81	11 (16%)
25	CLA	p	602	24	43,51,73	1.59	8 (18%)	49,86,113	2.06	8 (16%)
25	CLA	A	840	-	63,71,73	1.35	7 (11%)	73,110,113	1.70	11 (15%)
28	PQN	B	827	-	34,34,34	1.13	4 (11%)	42,45,45	1.87	10 (23%)
25	CLA	A	841	-	57,65,73	1.40	7 (12%)	66,103,113	1.78	10 (15%)
25	CLA	i	207	15	43,51,73	1.54	7 (16%)	49,86,113	1.98	5 (10%)
25	CLA	B	806	2	42,50,73	1.56	7 (16%)	48,85,113	1.95	8 (16%)
25	CLA	g	212	21	55,63,73	1.45	7 (12%)	64,101,113	1.85	11 (17%)
25	CLA	A	842	1	49,57,73	1.50	6 (12%)	55,93,113	1.91	8 (14%)
25	CLA	A	846	1	65,73,73	1.32	7 (10%)	76,113,113	1.75	12 (15%)
27	LHG	a	201	25	25,25,48	1.86	2 (8%)	28,31,54	1.42	5 (17%)
34	LMG	j	201	-	44,44,55	0.86	1 (2%)	52,52,63	1.08	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	j	210	27	50,58,73	1.51	7 (14%)	58,95,113	1.90	9 (15%)
25	CLA	d	303	-	50,58,73	1.50	7 (14%)	58,95,113	1.98	12 (20%)
25	CLA	h	214	14	42,50,73	1.55	7 (16%)	48,85,113	2.04	7 (14%)
25	CLA	j	208	16	50,58,73	1.52	7 (14%)	58,95,113	1.92	9 (15%)
25	CLA	l	606	18	60,68,73	1.39	7 (11%)	70,107,113	1.82	10 (14%)
25	CLA	B	826	2	43,51,73	1.54	7 (16%)	49,86,113	1.93	6 (12%)
33	SQD	D	200	-	35,36,54	1.75	7 (20%)	44,47,65	1.75	10 (22%)
25	CLA	h	208	14	50,58,73	1.51	7 (14%)	58,95,113	1.87	9 (15%)
30	DD6	f	614	-	39,45,45	1.28	4 (10%)	52,67,67	2.47	19 (36%)
25	CLA	h	206	-	60,68,73	1.40	7 (11%)	70,107,113	1.79	9 (12%)
25	CLA	B	823	2	60,68,73	1.38	6 (10%)	70,107,113	1.65	12 (17%)
25	CLA	k	205	17	65,73,73	1.34	7 (10%)	76,113,113	1.69	10 (13%)
35	CHL	d	310	-	46,54,74	1.69	10 (21%)	49,90,114	2.13	12 (24%)
25	CLA	p	605	-	42,50,73	1.56	7 (16%)	48,85,113	1.97	8 (16%)
25	CLA	c	311	27	43,51,73	1.55	7 (16%)	49,86,113	1.89	8 (16%)
34	LMG	a	202	-	43,43,55	0.89	1 (2%)	51,51,63	1.18	2 (3%)
25	CLA	B	818	2	65,73,73	1.34	7 (10%)	76,113,113	1.68	11 (14%)
25	CLA	B	802	2	65,73,73	1.32	7 (10%)	76,113,113	1.63	11 (14%)
25	CLA	a	209	9	54,62,73	1.44	6 (11%)	62,99,113	1.92	10 (16%)
27	LHG	h	202	25	30,30,48	1.69	2 (6%)	33,36,54	1.38	5 (15%)
25	CLA	k	213	17	42,50,73	1.57	7 (16%)	48,85,113	2.03	7 (14%)
25	CLA	a	211	9	43,51,73	1.56	7 (16%)	49,86,113	1.98	6 (12%)
25	CLA	f	609	20	42,50,73	1.62	7 (16%)	48,85,113	1.73	7 (14%)
25	CLA	b	207	-	45,53,73	1.56	7 (15%)	52,89,113	1.96	8 (15%)
28	PQN	A	834	-	34,34,34	1.02	3 (8%)	42,45,45	1.80	10 (23%)
25	CLA	A	845	-	48,56,73	1.52	7 (14%)	55,92,113	1.85	9 (16%)
30	DD6	l	614	-	39,45,45	1.41	5 (12%)	52,67,67	2.10	18 (34%)
25	CLA	i	205	-	43,51,73	1.54	7 (16%)	49,86,113	1.88	5 (10%)
30	DD6	A	854	-	39,45,45	1.36	4 (10%)	52,67,67	2.35	17 (32%)
25	CLA	B	808	2	43,51,73	1.58	7 (16%)	49,86,113	1.91	5 (10%)
32	DGD	e	203	-	37,37,67	1.23	1 (2%)	51,51,81	1.10	1 (1%)
30	DD6	J	104	-	39,45,45	1.42	4 (10%)	52,67,67	2.22	15 (28%)
30	DD6	k	216	-	39,45,45	1.36	4 (10%)	52,67,67	2.10	16 (30%)
25	CLA	o	602	23	47,55,73	1.53	7 (14%)	54,91,113	1.92	9 (16%)
29	BCR	A	837	-	41,41,41	1.65	10 (24%)	56,56,56	1.50	12 (21%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	c	310	11	55,63,73	1.42	7 (12%)	64,101,113	1.87	9 (14%)
25	CLA	j	211	16	55,63,73	1.42	7 (12%)	64,101,113	1.85	10 (15%)
25	CLA	e	216	13	55,63,73	1.46	7 (12%)	64,101,113	1.78	8 (12%)
25	CLA	g	206	-	43,51,73	1.55	7 (16%)	49,86,113	1.81	5 (10%)
25	CLA	A	811	1	50,58,73	1.53	7 (14%)	58,95,113	1.92	12 (20%)
25	CLA	m	205	-	43,51,73	1.56	7 (16%)	49,86,113	2.04	6 (12%)
30	DD6	a	214	-	39,45,45	1.38	4 (10%)	52,67,67	2.22	15 (28%)
25	CLA	d	313	27	45,53,73	1.57	7 (15%)	52,89,113	1.91	9 (17%)
25	CLA	B	843	2	63,71,73	1.33	7 (11%)	73,110,113	1.68	11 (15%)
25	CLA	o	608	23	43,50,73	1.69	9 (20%)	44,84,113	2.17	8 (18%)
25	CLA	a	208	9	50,58,73	1.53	7 (14%)	58,95,113	1.91	9 (15%)
25	CLA	A	812	1	65,73,73	1.32	6 (9%)	76,113,113	1.69	9 (11%)
25	CLA	o	601	23	41,49,73	1.65	8 (19%)	47,84,113	1.86	11 (23%)
25	CLA	p	607	24	45,53,73	1.61	8 (17%)	52,89,113	1.82	8 (15%)
30	DD6	f	613	-	39,45,45	1.27	4 (10%)	52,67,67	2.31	15 (28%)
25	CLA	c	305	-	48,56,73	1.53	7 (14%)	55,92,113	1.88	9 (16%)
25	CLA	f	602	20	59,67,73	1.41	7 (11%)	68,105,113	1.76	12 (17%)
25	CLA	b	210	10	42,50,73	1.56	7 (16%)	48,85,113	1.95	8 (16%)
31	SF4	C	101	3	0,12,12	-	-	-	-	-
25	CLA	B	834	2	55,63,73	1.46	7 (12%)	64,101,113	1.83	10 (15%)
30	DD6	e	220	-	39,45,45	1.58	8 (20%)	52,67,67	1.69	9 (17%)
29	BCR	B	830	-	41,41,41	0.77	2 (4%)	56,56,56	1.01	3 (5%)
28	PQN	B	835	-	28,28,34	1.04	2 (7%)	34,37,45	2.00	10 (29%)
25	CLA	e	215	13	43,51,73	1.55	7 (16%)	49,86,113	2.00	8 (16%)
25	CLA	e	207	-	50,58,73	1.54	7 (14%)	58,95,113	1.84	10 (17%)
25	CLA	m	202	19	42,50,73	1.59	7 (16%)	48,85,113	1.76	7 (14%)
25	CLA	B	810	2	43,51,73	1.55	7 (16%)	49,86,113	1.90	7 (14%)
25	CLA	e	205	13	65,73,73	1.32	7 (10%)	76,113,113	1.65	12 (15%)
30	DD6	n	212	-	39,45,45	1.29	4 (10%)	52,67,67	2.54	16 (30%)
25	CLA	A	849	1	50,58,73	1.50	7 (14%)	58,95,113	1.86	11 (18%)
33	SQD	J	102	-	26,27,54	1.81	7 (26%)	35,38,65	1.69	8 (22%)
27	LHG	b	201	-	30,30,48	1.77	2 (6%)	33,36,54	1.35	5 (15%)
25	CLA	B	820	2	43,51,73	1.54	7 (16%)	49,86,113	1.93	7 (14%)
25	CLA	m	211	19	42,50,73	1.57	7 (16%)	48,85,113	1.92	7 (14%)
25	CLA	B	815	2	49,57,73	1.50	7 (14%)	55,93,113	1.81	10 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	A	801	1	65,73,73	1.32	7 (10%)	76,113,113	1.81	15 (19%)
25	CLA	a	204	9	60,68,73	1.37	6 (10%)	70,107,113	1.66	15 (21%)
25	CLA	d	304	12	57,65,73	1.40	6 (10%)	66,103,113	1.83	11 (16%)
25	CLA	n	209	22	41,49,73	1.63	7 (17%)	47,84,113	1.89	10 (21%)
25	CLA	f	608	-	42,50,73	1.59	7 (16%)	48,85,113	2.05	6 (12%)
25	CLA	e	206	13	45,53,73	1.57	7 (15%)	52,89,113	1.93	8 (15%)
25	CLA	A	817	1	56,64,73	1.42	8 (14%)	65,102,113	1.77	9 (13%)
30	DD6	c	316	-	39,45,45	1.46	5 (12%)	52,67,67	2.14	18 (34%)
25	CLA	m	204	19	54,62,73	1.46	7 (12%)	62,99,113	1.80	11 (17%)
25	CLA	p	601	-	42,50,73	1.57	7 (16%)	48,85,113	1.79	8 (16%)
25	CLA	j	207	-	47,55,73	1.54	7 (14%)	54,91,113	1.97	8 (14%)
25	CLA	B	807	2	65,73,73	1.33	7 (10%)	76,113,113	1.73	10 (13%)
25	CLA	b	211	-	42,50,73	1.58	7 (16%)	48,85,113	1.97	6 (12%)
30	DD6	l	613	-	39,45,45	1.35	4 (10%)	52,67,67	2.14	16 (30%)
25	CLA	k	212	17	42,50,73	1.57	7 (16%)	48,85,113	1.92	6 (12%)
25	CLA	l	604	-	43,51,73	1.57	7 (16%)	49,86,113	1.83	7 (14%)
25	CLA	m	208	19	42,50,73	1.56	7 (16%)	48,85,113	1.86	7 (14%)
25	CLA	n	207	-	41,49,73	1.61	8 (19%)	47,84,113	1.99	11 (23%)
25	CLA	g	214	21	42,50,73	1.58	7 (16%)	48,85,113	1.98	6 (12%)
25	CLA	k	202	17	43,51,73	1.56	7 (16%)	49,86,113	1.88	8 (16%)
25	CLA	f	605	20	42,50,73	1.57	7 (16%)	48,85,113	2.03	6 (12%)
34	LMG	e	202	-	52,52,55	0.81	2 (3%)	60,60,63	1.07	3 (5%)
25	CLA	A	804	1	60,68,73	1.41	7 (11%)	70,107,113	1.81	9 (12%)
25	CLA	A	850	1	55,63,73	1.42	6 (10%)	64,101,113	1.74	10 (15%)
25	CLA	j	205	16	42,50,73	1.57	7 (16%)	48,85,113	1.97	7 (14%)
25	CLA	i	212	15	42,50,73	1.57	7 (16%)	48,85,113	1.86	8 (16%)
27	LHG	h	201	-	29,29,48	1.74	2 (6%)	32,35,54	1.10	2 (6%)
25	CLA	a	213	-	63,71,73	1.37	7 (11%)	73,110,113	1.78	12 (16%)
28	PQN	F	205	-	27,27,34	1.04	2 (7%)	33,36,45	1.99	9 (27%)
27	LHG	m	201	-	31,31,48	1.73	2 (6%)	34,37,54	1.34	5 (14%)
29	BCR	B	801	-	41,41,41	0.71	0	56,56,56	1.24	7 (12%)
27	LHG	j	202	25	36,36,48	1.55	2 (5%)	39,42,54	1.28	5 (12%)
25	CLA	A	824	1	58,66,73	1.41	7 (12%)	67,104,113	1.78	10 (14%)
25	CLA	A	810	1	65,73,73	1.31	7 (10%)	76,113,113	1.77	12 (15%)
27	LHG	A	835	-	48,48,48	1.35	2 (4%)	51,54,54	1.18	5 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	l	603	18	43,51,73	1.55	7 (16%)	49,86,113	2.01	8 (16%)
25	CLA	a	203	9	50,58,73	1.53	7 (14%)	58,95,113	1.77	9 (15%)
25	CLA	B	809	2	42,50,73	1.55	7 (16%)	48,85,113	1.96	7 (14%)
25	CLA	g	211	21	42,50,73	1.58	7 (16%)	48,85,113	2.00	5 (10%)
30	DD6	d	317	-	39,45,45	1.38	4 (10%)	52,67,67	2.14	15 (28%)
25	CLA	m	210	19	43,51,73	1.54	7 (16%)	49,86,113	1.95	8 (16%)
25	CLA	B	822	2	60,68,73	1.36	7 (11%)	70,107,113	1.81	12 (17%)
25	CLA	j	215	16	50,58,73	1.52	7 (14%)	58,95,113	1.91	9 (15%)
30	DD6	d	318	-	39,45,45	1.47	5 (12%)	52,67,67	2.19	16 (30%)
25	CLA	c	306	-	43,51,73	1.56	7 (16%)	49,86,113	1.92	8 (16%)
25	CLA	h	215	14	43,51,73	1.55	7 (16%)	49,86,113	1.89	7 (14%)
25	CLA	h	207	-	48,56,73	1.53	7 (14%)	55,92,113	1.91	7 (12%)
25	CLA	F	202	6	45,53,73	1.56	7 (15%)	52,89,113	1.87	8 (15%)
25	CLA	k	210	17	43,51,73	1.55	7 (16%)	49,86,113	1.94	8 (16%)
25	CLA	B	803	-	55,63,73	1.41	6 (10%)	64,101,113	2.03	11 (17%)
25	CLA	c	312	11	43,51,73	1.55	7 (16%)	49,86,113	1.94	9 (18%)
25	CLA	k	208	17	57,65,73	1.38	7 (12%)	66,103,113	1.82	10 (15%)
25	CLA	o	604	-	42,50,73	1.59	7 (16%)	48,85,113	1.93	8 (16%)
30	DD6	c	318	-	39,45,45	1.32	4 (10%)	52,67,67	2.38	19 (36%)
25	CLA	m	207	19	50,58,73	1.52	7 (14%)	58,95,113	1.90	9 (15%)
25	CLA	a	207	-	53,61,73	1.46	7 (13%)	61,98,113	1.83	11 (18%)
25	CLA	f	610	20	59,67,73	1.40	7 (11%)	68,105,113	1.77	11 (16%)
25	CLA	d	314	12	42,50,73	1.56	7 (16%)	48,85,113	2.02	6 (12%)
25	CLA	A	809	1	65,73,73	1.30	7 (10%)	76,113,113	1.73	10 (13%)
25	CLA	F	201	-	42,50,73	1.57	7 (16%)	48,85,113	2.02	6 (12%)
25	CLA	A	847	1	43,51,73	1.55	6 (13%)	49,86,113	1.79	5 (10%)
25	CLA	b	203	-	42,50,73	1.59	7 (16%)	48,85,113	1.97	7 (14%)
29	BCR	B	833	-	41,41,41	0.80	1 (2%)	56,56,56	1.12	4 (7%)
27	LHG	i	201	25	35,35,48	1.55	2 (5%)	38,41,54	1.29	5 (13%)
25	CLA	p	608	24	43,51,73	1.55	7 (16%)	49,86,113	1.75	8 (16%)
25	CLA	o	606	23	45,53,73	1.56	7 (15%)	52,89,113	1.96	9 (17%)
25	CLA	A	821	-	64,72,73	1.33	7 (10%)	74,111,113	1.72	12 (16%)
25	CLA	i	209	27	43,51,73	1.55	7 (16%)	49,86,113	1.98	7 (14%)
25	CLA	l	610	18	48,56,73	1.52	7 (14%)	55,92,113	1.85	8 (14%)
25	CLA	B	813	2	49,57,73	1.56	7 (14%)	56,93,113	1.84	11 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	f	603	20	43,51,73	1.58	7 (16%)	49,86,113	1.95	7 (14%)
30	DD6	h	217	-	39,45,45	1.38	4 (10%)	52,67,67	2.10	14 (26%)
29	BCR	A	836	-	41,41,41	0.83	1 (2%)	56,56,56	1.10	4 (7%)
25	CLA	A	808	1	60,68,73	1.36	7 (11%)	70,107,113	1.83	11 (15%)
29	BCR	J	101	-	41,41,41	1.71	8 (19%)	56,56,56	1.58	11 (19%)
25	CLA	h	213	14	43,51,73	1.55	7 (16%)	49,86,113	1.82	6 (12%)
25	CLA	g	215	21	45,53,73	1.56	7 (15%)	52,89,113	1.89	8 (15%)
25	CLA	B	812	2	64,72,73	1.37	7 (10%)	74,111,113	1.75	10 (13%)
25	CLA	m	206	-	42,50,73	1.57	7 (16%)	48,85,113	1.98	5 (10%)
25	CLA	k	209	-	42,50,73	1.58	7 (16%)	48,85,113	1.93	7 (14%)
25	CLA	g	208	21	50,58,73	1.53	7 (14%)	58,95,113	1.86	8 (13%)
25	CLA	i	211	15	59,67,73	1.40	7 (11%)	68,105,113	1.80	10 (14%)
29	BCR	B	832	-	41,41,41	1.67	8 (19%)	56,56,56	1.40	9 (16%)
29	BCR	B	828	-	41,41,41	0.78	1 (2%)	56,56,56	1.18	6 (10%)
25	CLA	k	211	17	52,60,73	1.47	7 (13%)	60,97,113	1.90	10 (16%)
30	DD6	i	215	-	39,45,45	1.46	5 (12%)	52,67,67	2.12	15 (28%)
25	CLA	A	802	-	63,71,73	1.33	6 (9%)	73,110,113	1.73	11 (15%)
25	CLA	j	214	16	43,51,73	1.53	7 (16%)	49,86,113	1.98	6 (12%)
25	CLA	n	211	22	42,50,73	1.57	7 (16%)	48,85,113	1.84	6 (12%)
25	CLA	B	846	2	50,58,73	1.46	7 (14%)	58,95,113	2.05	11 (18%)
25	CLA	B	837	2	50,58,73	1.51	7 (14%)	58,95,113	1.91	8 (13%)
35	CHL	d	308	-	46,54,74	1.69	9 (19%)	49,90,114	2.22	10 (20%)
25	CLA	A	807	-	65,73,73	1.31	7 (10%)	76,113,113	1.73	10 (13%)
27	LHG	A	805	25	37,37,48	1.49	2 (5%)	40,43,54	1.24	5 (12%)
32	DGD	B	849	-	55,55,67	1.10	0	69,69,81	1.04	2 (2%)
30	DD6	j	217	-	39,45,45	1.42	5 (12%)	52,67,67	2.15	15 (28%)
25	CLA	B	817	-	50,58,73	1.53	6 (12%)	58,95,113	1.81	9 (15%)
25	CLA	c	315	11	47,55,73	1.51	7 (14%)	54,91,113	1.84	9 (16%)
25	CLA	o	607	23	41,49,73	1.63	7 (17%)	47,84,113	1.89	10 (21%)
29	BCR	M	201	-	41,41,41	0.78	0	56,56,56	1.16	5 (8%)
25	CLA	A	816	1	43,51,73	1.54	7 (16%)	49,86,113	1.93	7 (14%)
35	CHL	e	209	-	46,54,74	1.69	10 (21%)	49,90,114	2.24	10 (20%)
30	DD6	g	217	-	39,45,45	1.37	5 (12%)	52,67,67	2.21	14 (26%)
25	CLA	A	833	1	65,73,73	1.31	7 (10%)	76,113,113	1.59	13 (17%)
25	CLA	n	205	-	42,50,73	1.57	7 (16%)	48,85,113	1.96	6 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	B	848	-	65,73,73	1.30	7 (10%)	76,113,113	1.75	11 (14%)
30	DD6	b	214	-	39,45,45	1.34	4 (10%)	52,67,67	2.25	16 (30%)
25	CLA	g	205	21	42,50,73	1.59	7 (16%)	48,85,113	1.86	5 (10%)
30	DD6	b	215	-	39,45,45	1.38	4 (10%)	52,67,67	2.13	16 (30%)
25	CLA	j	206	-	57,65,73	1.43	7 (12%)	66,103,113	1.84	10 (15%)
25	CLA	e	217	13	42,50,73	1.54	7 (16%)	48,85,113	1.93	6 (12%)
25	CLA	m	209	-	43,51,73	1.56	7 (16%)	49,86,113	1.86	7 (14%)
25	CLA	c	309	11	60,68,73	1.39	7 (11%)	70,107,113	1.82	10 (14%)
25	CLA	k	206	-	50,58,73	1.52	7 (14%)	58,95,113	1.93	10 (17%)
25	CLA	h	211	14	58,66,73	1.41	7 (12%)	67,104,113	1.79	8 (11%)
25	CLA	g	207	-	45,53,73	1.60	7 (15%)	52,89,113	1.94	7 (13%)
25	CLA	b	205	10	43,51,73	1.54	7 (16%)	49,86,113	1.96	7 (14%)
25	CLA	A	818	1	65,73,73	1.35	7 (10%)	76,113,113	1.65	13 (17%)
25	CLA	p	606	24	50,58,73	1.57	7 (14%)	58,95,113	1.87	8 (13%)
25	CLA	d	312	12	59,67,73	1.38	7 (11%)	68,105,113	1.86	10 (14%)
25	CLA	B	819	2	65,73,73	1.34	7 (10%)	76,113,113	1.57	8 (10%)
25	CLA	A	806	1	45,53,73	1.52	7 (15%)	52,89,113	1.99	9 (17%)
25	CLA	g	210	27	42,50,73	1.57	7 (16%)	48,85,113	1.99	8 (16%)
25	CLA	B	838	2	61,69,73	1.39	7 (11%)	71,108,113	1.81	12 (16%)
25	CLA	f	604	-	42,50,73	1.59	7 (16%)	48,85,113	1.93	6 (12%)
25	CLA	J	103	7	50,58,73	1.52	7 (14%)	58,95,113	1.89	10 (17%)
30	DD6	k	215	-	39,45,45	1.37	4 (10%)	52,67,67	2.12	14 (26%)
25	CLA	j	204	16	55,63,73	1.39	6 (10%)	64,101,113	1.84	11 (17%)
25	CLA	h	205	14	43,51,73	1.53	7 (16%)	49,86,113	2.02	8 (16%)
25	CLA	b	212	10	52,60,73	1.49	7 (13%)	60,97,113	1.91	10 (16%)
25	CLA	h	203	14	50,58,73	1.53	7 (14%)	58,95,113	1.89	11 (18%)
25	CLA	a	212	9	55,63,73	1.45	6 (10%)	64,101,113	1.83	9 (14%)
30	DD6	n	213	-	39,45,45	1.52	8 (20%)	52,67,67	1.48	9 (17%)
25	CLA	l	612	-	42,50,73	1.59	7 (16%)	48,85,113	2.11	6 (12%)
25	CLA	g	204	21	53,61,73	1.47	7 (13%)	61,98,113	1.76	8 (13%)
35	CHL	c	307	-	49,57,74	1.63	9 (18%)	52,93,114	2.19	13 (25%)
25	CLA	l	605	-	43,51,73	1.54	7 (16%)	49,86,113	1.92	6 (12%)
25	CLA	k	207	17	50,58,73	1.51	7 (14%)	58,95,113	1.86	8 (13%)
30	DD6	m	212	-	39,45,45	1.32	4 (10%)	52,67,67	2.14	14 (26%)
25	CLA	B	847	2	50,58,73	1.51	7 (14%)	58,95,113	1.89	8 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
25	CLA	b	204	10	53,61,73	1.47	7 (13%)	61,98,113	1.85	10 (16%)
25	CLA	f	607	20	55,63,73	1.48	7 (12%)	64,101,113	1.82	11 (17%)
33	SQD	F	204	-	38,39,54	1.73	8 (21%)	47,50,65	1.54	7 (14%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	e	210	-	1/1/10/20	5/11/89/115	-
35	CHL	d	307	12	3/3/17/26	8/21/119/137	-
27	LHG	d	302	25	-	14/33/33/53	-
25	CLA	f	612	20	1/1/10/20	7/11/89/115	-
27	LHG	c	301	25	-	11/34/34/53	-
25	CLA	d	315	12	1/1/10/20	4/10/88/115	-
25	CLA	c	313	11	1/1/12/20	8/23/101/115	-
25	CLA	m	203	19	1/1/14/20	16/31/109/115	-
25	CLA	d	305	12	1/1/10/20	5/10/88/115	-
25	CLA	k	214	17	1/1/12/20	3/19/97/115	-
31	SF4	A	856	2,1	-	-	0/6/5/5
25	CLA	B	839	-	1/1/14/20	13/31/109/115	-
25	CLA	g	213	21	1/1/10/20	3/10/88/115	-
25	CLA	A	831	1	1/1/11/20	4/17/95/115	-
29	BCR	A	838	-	-	5/29/63/63	0/2/2/2
25	CLA	B	825	-	1/1/10/20	4/11/89/115	-
25	CLA	f	611	20	1/1/10/20	6/10/88/115	-
25	CLA	A	823	1	1/1/14/20	14/36/114/115	-
25	CLA	A	843	1	1/1/12/20	10/22/100/115	-
25	CLA	b	213	10	1/1/10/20	5/10/88/115	-
30	DD6	g	216	-	-	4/26/80/80	0/3/3/3
25	CLA	i	208	15	1/1/13/20	10/25/103/115	-
31	SF4	C	102	3	-	-	0/6/5/5
25	CLA	i	206	-	1/1/15/20	13/37/115/115	-
30	DD6	n	214	-	-	8/26/80/80	0/3/3/3
25	CLA	b	209	10	1/1/11/20	3/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	816	-	1/1/14/20	8/31/109/115	-
25	CLA	n	210	22	1/1/10/20	4/10/88/115	-
25	CLA	f	606	20	1/1/10/20	4/10/88/115	-
25	CLA	e	211	-	1/1/11/20	6/17/95/115	-
25	CLA	n	208	22	1/1/11/20	5/13/91/115	-
25	CLA	l	607	18	1/1/12/20	12/24/102/115	-
25	CLA	n	206	-	1/1/10/20	3/10/88/115	-
29	BCR	A	839	-	-	12/29/63/63	0/2/2/2
25	CLA	d	316	12	1/1/10/20	4/10/88/115	-
25	CLA	e	214	-	1/1/10/20	3/10/88/115	-
25	CLA	e	201	-	1/1/12/20	7/23/101/115	-
30	DD6	m	213	-	-	6/26/80/80	0/3/3/3
25	CLA	l	611	18	1/1/10/20	5/10/88/115	-
25	CLA	i	202	15	1/1/12/20	12/23/101/115	-
25	CLA	n	202	22	1/1/13/20	14/25/103/115	-
25	CLA	A	822	-	1/1/12/20	6/23/101/115	-
25	CLA	j	209	16	1/1/14/20	18/36/114/115	-
25	CLA	A	853	27	1/1/12/20	10/23/101/115	-
29	BCR	B	831	-	-	11/29/63/63	0/2/2/2
25	CLA	B	811	2	1/1/14/20	19/35/113/115	-
25	CLA	j	203	16	1/1/12/20	6/19/97/115	-
25	CLA	c	302	11	1/1/10/20	6/10/88/115	-
25	CLA	j	213	16	1/1/10/20	1/10/88/115	-
25	CLA	e	204	13	1/1/10/20	5/8/86/115	-
25	CLA	k	203	17	1/1/12/20	8/23/101/115	-
25	CLA	A	826	1	1/1/15/20	11/37/115/115	-
33	SQD	g	202	-	-	13/27/47/69	0/1/1/1
30	DD6	c	317	-	-	0/26/80/80	0/3/3/3
25	CLA	d	301	12	1/1/10/20	5/8/86/115	-
25	CLA	A	827	1	1/1/10/20	3/11/89/115	-
25	CLA	n	201	22	1/1/13/20	14/30/108/115	-
25	CLA	c	308	-	1/1/12/20	11/19/97/115	-
25	CLA	p	609	24	1/1/10/20	5/11/89/115	-
25	CLA	i	210	15	1/1/10/20	5/11/89/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
34	LMG	k	201	-	-	16/31/51/70	0/1/1/1
29	BCR	B	829	-	-	2/29/63/63	0/2/2/2
25	CLA	B	844	2	1/1/15/20	15/37/115/115	-
25	CLA	b	206	-	1/1/11/20	3/13/91/115	-
25	CLA	h	212	14	1/1/12/20	10/23/101/115	-
30	DD6	A	855	-	-	9/26/80/80	0/3/3/3
25	CLA	A	852	1	1/1/11/20	5/17/95/115	-
25	CLA	p	603	24	1/1/10/20	4/10/88/115	-
25	CLA	h	210	27	1/1/10/20	3/11/89/115	-
25	CLA	c	304	11	1/1/12/20	6/23/101/115	-
25	CLA	e	212	13	1/1/12/20	6/22/100/115	-
25	CLA	e	213	13	1/1/13/20	6/25/103/115	-
25	CLA	f	601	20	1/1/10/20	5/10/88/115	-
25	CLA	l	601	18	1/1/10/20	4/10/88/115	-
25	CLA	A	851	1	1/1/11/20	2/13/91/115	-
30	DD6	a	215	-	-	0/26/80/80	0/3/3/3
25	CLA	o	609	23	1/1/10/20	8/10/88/115	-
25	CLA	c	303	11	1/1/13/20	12/30/108/115	-
25	CLA	A	857	-	1/1/12/20	8/23/101/115	-
27	LHG	g	201	25	-	25/39/39/53	-
25	CLA	o	605	-	1/1/10/20	3/11/89/115	-
25	CLA	n	204	22	1/1/10/20	6/10/88/115	-
25	CLA	A	813	1	1/1/13/20	9/29/107/115	-
30	DD6	p	610	-	-	3/26/80/80	0/3/3/3
25	CLA	d	311	12	1/1/11/20	5/18/96/115	-
25	CLA	B	804	2	1/1/15/20	16/37/115/115	-
25	CLA	o	603	23	1/1/10/20	6/11/89/115	-
25	CLA	a	206	-	1/1/11/20	7/13/91/115	-
25	CLA	B	840	2	1/1/12/20	8/19/97/115	-
30	DD6	F	203	-	-	18/26/80/80	0/3/3/3
25	CLA	g	203	21	1/1/10/20	4/10/88/115	-
25	CLA	A	832	1	1/1/15/20	10/37/115/115	-
25	CLA	l	609	18	1/1/10/20	6/11/89/115	-
30	DD6	o	611	-	-	5/26/80/80	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	824	2	1/1/15/20	20/37/115/115	-
25	CLA	i	204	15	1/1/10/20	6/11/89/115	-
25	CLA	h	204	14	1/1/13/20	13/25/103/115	-
25	CLA	j	212	16	1/1/14/20	10/34/112/115	-
25	CLA	A	829	1	1/1/13/20	14/29/107/115	-
25	CLA	l	602	18	1/1/13/20	12/30/108/115	-
25	CLA	g	209	21	1/1/13/20	8/25/103/115	-
30	DD6	i	214	-	-	2/26/80/80	0/3/3/3
32	DGD	b	202	-	-	18/37/77/95	0/2/2/2
25	CLA	l	608	-	1/1/10/20	3/11/89/115	-
25	CLA	e	208	13	1/1/10/20	3/10/88/115	-
25	CLA	A	825	1	1/1/15/20	8/37/115/115	-
25	CLA	o	610	23	1/1/10/20	5/11/89/115	-
25	CLA	B	845	2	1/1/15/20	11/37/115/115	-
25	CLA	i	203	15	1/1/14/20	11/36/114/115	-
30	DD6	j	216	-	-	4/26/80/80	0/3/3/3
35	CHL	d	309	-	3/3/15/26	4/12/110/137	-
25	CLA	A	848	1	1/1/12/20	8/21/99/115	-
30	DD6	o	612	-	-	3/26/80/80	0/3/3/3
25	CLA	n	203	-	1/1/11/20	6/17/95/115	-
30	DD6	e	219	-	-	5/26/80/80	0/3/3/3
25	CLA	p	604	-	1/1/10/20	5/11/89/115	-
30	DD6	e	218	-	-	9/26/80/80	0/3/3/3
25	CLA	A	820	1	1/1/13/20	10/28/106/115	-
25	CLA	B	821	2	1/1/14/20	15/31/109/115	-
25	CLA	A	819	-	1/1/15/20	10/37/115/115	-
25	CLA	a	205	9	1/1/12/20	8/23/101/115	-
25	CLA	A	814	1	1/1/13/20	10/30/108/115	-
25	CLA	B	836	2	1/1/12/20	7/23/101/115	-
30	DD6	d	319	-	-	4/26/80/80	0/3/3/3
25	CLA	i	213	15	1/1/12/20	4/19/97/115	-
25	CLA	B	805	2	1/1/15/20	13/37/115/115	-
25	CLA	B	841	2	1/1/13/20	10/30/108/115	-
25	CLA	A	830	1	1/1/12/20	8/22/100/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	c	314	11	1/1/10/20	4/10/88/115	-
30	DD6	J	105	-	-	15/26/80/80	0/3/3/3
26	LMT	A	803	-	-	7/21/61/61	0/2/2/2
30	DD6	i	216	-	-	1/26/80/80	0/3/3/3
30	DD6	h	216	-	-	3/26/80/80	0/3/3/3
25	CLA	d	306	-	1/1/12/20	5/22/100/115	-
25	CLA	A	828	1	1/1/10/20	5/11/89/115	-
25	CLA	h	209	14	1/1/12/20	10/24/102/115	-
25	CLA	A	844	1	1/1/14/20	15/31/109/115	-
25	CLA	k	204	17	1/1/10/20	5/10/88/115	-
25	CLA	a	210	27	1/1/11/20	6/13/91/115	-
25	CLA	b	208	-	1/1/10/20	0/8/86/115	-
25	CLA	B	842	2	1/1/12/20	11/23/101/115	-
25	CLA	A	815	1	1/1/13/20	16/29/107/115	-
25	CLA	B	814	2	1/1/13/20	12/30/108/115	-
25	CLA	p	602	24	1/1/10/20	7/11/89/115	-
25	CLA	A	840	-	1/1/14/20	10/35/113/115	-
28	PQN	B	827	-	-	7/23/43/43	0/2/2/2
25	CLA	A	841	-	1/1/13/20	8/28/106/115	-
25	CLA	i	207	15	1/1/10/20	2/11/89/115	-
25	CLA	B	806	2	1/1/10/20	2/10/88/115	-
25	CLA	g	212	21	1/1/13/20	12/25/103/115	-
25	CLA	A	842	1	1/1/11/20	7/18/96/115	-
25	CLA	A	846	1	1/1/15/20	18/37/115/115	-
27	LHG	a	201	25	-	9/30/30/53	-
34	LMG	j	201	-	-	11/39/59/70	0/1/1/1
25	CLA	j	210	27	1/1/12/20	6/19/97/115	-
25	CLA	d	303	-	1/1/12/20	6/19/97/115	-
25	CLA	h	214	14	1/1/10/20	4/10/88/115	-
25	CLA	j	208	16	1/1/12/20	5/19/97/115	-
25	CLA	l	606	18	1/1/14/20	13/31/109/115	-
25	CLA	B	826	2	1/1/10/20	4/11/89/115	-
33	SQD	D	200	-	-	12/31/51/69	0/1/1/1
25	CLA	h	208	14	1/1/12/20	8/19/97/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
30	DD6	f	614	-	-	7/26/80/80	0/3/3/3
25	CLA	h	206	-	1/1/14/20	8/31/109/115	-
25	CLA	B	823	2	1/1/14/20	9/31/109/115	-
25	CLA	k	205	17	1/1/15/20	18/37/115/115	-
35	CHL	d	310	-	3/3/16/26	6/15/113/137	-
25	CLA	p	605	-	1/1/10/20	4/10/88/115	-
25	CLA	c	311	27	1/1/10/20	1/11/89/115	-
34	LMG	a	202	-	-	18/38/58/70	0/1/1/1
25	CLA	B	818	2	1/1/15/20	13/37/115/115	-
25	CLA	B	802	2	1/1/15/20	8/37/115/115	-
25	CLA	a	209	9	1/1/12/20	8/24/102/115	-
27	LHG	h	202	25	-	11/35/35/53	-
25	CLA	k	213	17	1/1/10/20	3/10/88/115	-
25	CLA	a	211	9	1/1/10/20	5/11/89/115	-
25	CLA	f	609	20	1/1/10/20	4/10/88/115	-
25	CLA	b	207	-	1/1/11/20	4/13/91/115	-
28	PQN	A	834	-	-	8/23/43/43	0/2/2/2
25	CLA	A	845	-	1/1/11/20	5/17/95/115	-
30	DD6	l	614	-	-	3/26/80/80	0/3/3/3
25	CLA	i	205	-	1/1/10/20	1/11/89/115	-
30	DD6	A	854	-	-	3/26/80/80	0/3/3/3
25	CLA	B	808	2	1/1/10/20	1/11/89/115	-
32	DGD	e	203	-	-	6/24/64/95	0/2/2/2
30	DD6	J	104	-	-	2/26/80/80	0/3/3/3
30	DD6	k	216	-	-	3/26/80/80	0/3/3/3
25	CLA	o	602	23	1/1/11/20	8/16/94/115	-
29	BCR	A	837	-	-	11/29/63/63	0/2/2/2
25	CLA	c	310	11	1/1/13/20	11/25/103/115	-
25	CLA	j	211	16	1/1/13/20	9/25/103/115	-
25	CLA	e	216	13	1/1/13/20	4/25/103/115	-
25	CLA	g	206	-	1/1/10/20	5/11/89/115	-
25	CLA	A	811	1	1/1/12/20	2/19/97/115	-
25	CLA	m	205	-	1/1/10/20	5/11/89/115	-
30	DD6	a	214	-	-	5/26/80/80	0/3/3/3
25	CLA	d	313	27	1/1/11/20	5/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	843	2	1/1/14/20	12/35/113/115	-
25	CLA	o	608	23	1/1/9/20	4/11/85/115	-
25	CLA	a	208	9	1/1/12/20	5/19/97/115	-
25	CLA	A	812	1	1/1/15/20	14/37/115/115	-
25	CLA	o	601	23	1/1/10/20	2/8/86/115	-
25	CLA	p	607	24	1/1/11/20	9/13/91/115	-
30	DD6	f	613	-	-	5/26/80/80	0/3/3/3
25	CLA	c	305	-	1/1/11/20	4/17/95/115	-
25	CLA	f	602	20	1/1/13/20	14/30/108/115	-
25	CLA	b	210	10	1/1/10/20	2/10/88/115	-
31	SF4	C	101	3	-	-	0/6/5/5
25	CLA	B	834	2	1/1/13/20	6/25/103/115	-
30	DD6	e	220	-	-	15/26/80/80	0/3/3/3
29	BCR	B	830	-	-	7/29/63/63	0/2/2/2
28	PQN	B	835	-	-	5/16/36/43	0/2/2/2
25	CLA	e	215	13	1/1/10/20	2/11/89/115	-
25	CLA	e	207	-	1/1/12/20	4/19/97/115	-
25	CLA	m	202	19	1/1/10/20	5/10/88/115	-
25	CLA	B	810	2	1/1/10/20	3/11/89/115	-
25	CLA	e	205	13	1/1/15/20	18/37/115/115	-
30	DD6	n	212	-	-	5/26/80/80	0/3/3/3
25	CLA	A	849	1	1/1/12/20	8/19/97/115	-
33	SQD	J	102	-	-	10/21/41/69	0/1/1/1
27	LHG	b	201	-	-	24/35/35/53	-
25	CLA	B	820	2	1/1/10/20	5/11/89/115	-
25	CLA	m	211	19	1/1/10/20	5/10/88/115	-
25	CLA	B	815	2	1/1/11/20	8/18/96/115	-
25	CLA	A	801	1	1/1/15/20	18/37/115/115	-
25	CLA	a	204	9	1/1/14/20	15/31/109/115	-
25	CLA	d	304	12	1/1/13/20	3/28/106/115	-
25	CLA	n	209	22	1/1/10/20	1/8/86/115	-
25	CLA	f	608	-	1/1/10/20	2/10/88/115	-
25	CLA	e	206	13	1/1/11/20	5/13/91/115	-
25	CLA	A	817	1	1/1/13/20	10/27/105/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
30	DD6	c	316	-	-	4/26/80/80	0/3/3/3
25	CLA	m	204	19	1/1/12/20	10/24/102/115	-
25	CLA	p	601	-	1/1/10/20	3/10/88/115	-
25	CLA	j	207	-	1/1/11/20	5/16/94/115	-
25	CLA	B	807	2	1/1/15/20	15/37/115/115	-
25	CLA	b	211	-	1/1/10/20	4/10/88/115	-
30	DD6	l	613	-	-	2/26/80/80	0/3/3/3
25	CLA	k	212	17	1/1/10/20	4/10/88/115	-
25	CLA	l	604	-	1/1/10/20	4/11/89/115	-
25	CLA	m	208	19	1/1/10/20	4/10/88/115	-
25	CLA	n	207	-	1/1/10/20	2/8/86/115	-
25	CLA	g	214	21	1/1/10/20	0/10/88/115	-
25	CLA	k	202	17	1/1/10/20	3/11/89/115	-
25	CLA	f	605	20	1/1/10/20	2/10/88/115	-
34	LMG	e	202	-	-	19/47/67/70	0/1/1/1
25	CLA	A	804	1	1/1/14/20	8/31/109/115	-
25	CLA	A	850	1	1/1/13/20	6/25/103/115	-
25	CLA	j	205	16	1/1/10/20	2/10/88/115	-
25	CLA	i	212	15	1/1/10/20	3/10/88/115	-
27	LHG	h	201	-	-	14/33/33/53	-
25	CLA	a	213	-	1/1/14/20	12/35/113/115	-
28	PQN	F	205	-	-	5/15/35/43	0/2/2/2
27	LHG	m	201	-	-	20/36/36/53	-
29	BCR	B	801	-	-	9/29/63/63	0/2/2/2
27	LHG	j	202	25	-	24/41/41/53	-
25	CLA	A	824	1	1/1/13/20	14/29/107/115	-
25	CLA	A	810	1	1/1/15/20	12/37/115/115	-
27	LHG	A	835	-	-	22/53/53/53	-
25	CLA	l	603	18	1/1/10/20	2/11/89/115	-
25	CLA	a	203	9	1/1/12/20	6/19/97/115	-
25	CLA	B	809	2	1/1/10/20	4/10/88/115	-
25	CLA	g	211	21	1/1/10/20	4/10/88/115	-
30	DD6	d	317	-	-	2/26/80/80	0/3/3/3
25	CLA	m	210	19	1/1/10/20	3/11/89/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	822	2	1/1/14/20	16/31/109/115	-
25	CLA	j	215	16	1/1/12/20	6/19/97/115	-
30	DD6	d	318	-	-	3/26/80/80	0/3/3/3
25	CLA	c	306	-	1/1/10/20	4/11/89/115	-
25	CLA	h	215	14	1/1/10/20	2/11/89/115	-
25	CLA	h	207	-	1/1/11/20	7/17/95/115	-
25	CLA	F	202	6	1/1/11/20	9/13/91/115	-
25	CLA	k	210	17	1/1/10/20	2/11/89/115	-
25	CLA	B	803	-	1/1/13/20	7/25/103/115	-
25	CLA	c	312	11	1/1/10/20	4/11/89/115	-
25	CLA	k	208	17	1/1/13/20	12/28/106/115	-
25	CLA	o	604	-	1/1/10/20	2/10/88/115	-
30	DD6	c	318	-	-	8/26/80/80	0/3/3/3
25	CLA	m	207	19	1/1/12/20	4/19/97/115	-
25	CLA	a	207	-	1/1/12/20	11/23/101/115	-
25	CLA	f	610	20	1/1/13/20	14/30/108/115	-
25	CLA	d	314	12	1/1/10/20	3/10/88/115	-
25	CLA	A	809	1	1/1/15/20	21/37/115/115	-
25	CLA	F	201	-	1/1/10/20	0/10/88/115	-
25	CLA	A	847	1	1/1/10/20	4/11/89/115	-
25	CLA	b	203	-	1/1/10/20	4/10/88/115	-
29	BCR	B	833	-	-	5/29/63/63	0/2/2/2
27	LHG	i	201	25	-	19/40/40/53	-
25	CLA	p	608	24	1/1/10/20	5/11/89/115	-
25	CLA	o	606	23	1/1/11/20	5/13/91/115	-
25	CLA	A	821	-	1/1/14/20	11/35/113/115	-
25	CLA	i	209	27	1/1/10/20	4/11/89/115	-
25	CLA	l	610	18	1/1/11/20	7/17/95/115	-
25	CLA	B	813	2	1/1/11/20	3/17/95/115	-
25	CLA	f	603	20	1/1/10/20	1/11/89/115	-
30	DD6	h	217	-	-	0/26/80/80	0/3/3/3
29	BCR	A	836	-	-	5/29/63/63	0/2/2/2
25	CLA	A	808	1	1/1/14/20	11/31/109/115	-
29	BCR	J	101	-	-	17/29/63/63	0/2/2/2
25	CLA	h	213	14	1/1/10/20	2/11/89/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	g	215	21	1/1/11/20	2/13/91/115	-
25	CLA	B	812	2	1/1/14/20	11/36/114/115	-
25	CLA	m	206	-	1/1/10/20	0/10/88/115	-
25	CLA	k	209	-	1/1/10/20	5/10/88/115	-
25	CLA	g	208	21	1/1/12/20	5/19/97/115	-
25	CLA	i	211	15	1/1/13/20	9/30/108/115	-
29	BCR	B	832	-	-	14/29/63/63	0/2/2/2
29	BCR	B	828	-	-	7/29/63/63	0/2/2/2
25	CLA	k	211	17	1/1/12/20	10/22/100/115	-
30	DD6	i	215	-	-	3/26/80/80	0/3/3/3
25	CLA	A	802	-	1/1/14/20	8/35/113/115	-
25	CLA	j	214	16	1/1/10/20	3/11/89/115	-
25	CLA	n	211	22	1/1/10/20	4/10/88/115	-
25	CLA	B	846	2	1/1/12/20	4/19/97/115	-
25	CLA	B	837	2	1/1/12/20	10/19/97/115	-
35	CHL	d	308	-	3/3/16/26	6/15/113/137	-
25	CLA	A	807	-	1/1/15/20	8/37/115/115	-
27	LHG	A	805	25	-	19/42/42/53	-
32	DGD	B	849	-	-	19/43/83/95	0/2/2/2
30	DD6	j	217	-	-	3/26/80/80	0/3/3/3
25	CLA	B	817	-	1/1/12/20	6/19/97/115	-
25	CLA	c	315	11	1/1/11/20	5/16/94/115	-
25	CLA	o	607	23	1/1/10/20	0/8/86/115	-
29	BCR	M	201	-	-	6/29/63/63	0/2/2/2
25	CLA	A	816	1	1/1/10/20	4/11/89/115	-
35	CHL	e	209	-	3/3/16/26	8/15/113/137	-
30	DD6	g	217	-	-	4/26/80/80	0/3/3/3
25	CLA	A	833	1	1/1/15/20	15/37/115/115	-
25	CLA	n	205	-	1/1/10/20	4/10/88/115	-
25	CLA	B	848	-	1/1/15/20	18/37/115/115	-
30	DD6	b	214	-	-	5/26/80/80	0/3/3/3
25	CLA	g	205	21	1/1/10/20	4/10/88/115	-
30	DD6	b	215	-	-	1/26/80/80	0/3/3/3
25	CLA	j	206	-	1/1/13/20	11/28/106/115	-
25	CLA	e	217	13	1/1/10/20	4/10/88/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	m	209	-	1/1/10/20	3/11/89/115	-
25	CLA	c	309	11	1/1/14/20	16/31/109/115	-
25	CLA	k	206	-	1/1/12/20	2/19/97/115	-
25	CLA	h	211	14	1/1/13/20	8/29/107/115	-
25	CLA	g	207	-	1/1/11/20	7/13/91/115	-
25	CLA	b	205	10	1/1/10/20	6/11/89/115	-
25	CLA	A	818	1	1/1/15/20	13/37/115/115	-
25	CLA	p	606	24	1/1/12/20	10/19/97/115	-
25	CLA	d	312	12	1/1/13/20	12/30/108/115	-
25	CLA	B	819	2	1/1/15/20	13/37/115/115	-
25	CLA	A	806	1	1/1/11/20	5/13/91/115	-
25	CLA	g	210	27	1/1/10/20	3/10/88/115	-
25	CLA	B	838	2	1/1/14/20	6/33/111/115	-
25	CLA	f	604	-	1/1/10/20	5/10/88/115	-
25	CLA	J	103	7	1/1/12/20	12/19/97/115	-
30	DD6	k	215	-	-	2/26/80/80	0/3/3/3
25	CLA	j	204	16	1/1/13/20	2/25/103/115	-
25	CLA	h	205	14	1/1/10/20	5/11/89/115	-
25	CLA	b	212	10	1/1/12/20	11/22/100/115	-
25	CLA	h	203	14	1/1/12/20	9/19/97/115	-
25	CLA	a	212	9	1/1/13/20	14/25/103/115	-
30	DD6	n	213	-	-	13/26/80/80	0/3/3/3
25	CLA	l	612	-	1/1/10/20	6/10/88/115	-
25	CLA	g	204	21	1/1/12/20	14/23/101/115	-
35	CHL	c	307	-	3/3/16/26	6/19/117/137	-
25	CLA	l	605	-	1/1/10/20	4/11/89/115	-
25	CLA	k	207	17	1/1/12/20	2/19/97/115	-
30	DD6	m	212	-	-	5/26/80/80	0/3/3/3
25	CLA	B	847	2	1/1/12/20	3/19/97/115	-
25	CLA	b	204	10	1/1/12/20	9/23/101/115	-
25	CLA	f	607	20	1/1/13/20	15/25/103/115	-
33	SQD	F	204	-	-	21/34/54/69	0/1/1/1

The worst 5 of 2286 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	b	201	LHG	P-O3	6.37	1.85	1.59
27	m	201	LHG	P-O3	6.32	1.84	1.59
27	c	301	LHG	P-O3	6.28	1.84	1.59
27	d	302	LHG	P-O3	6.22	1.84	1.59
27	h	201	LHG	P-O3	6.19	1.84	1.59

The worst 5 of 3391 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	A	823	CLA	C4A-NA-C1A	11.56	111.90	106.71
25	k	204	CLA	C4A-NA-C1A	11.50	111.88	106.71
25	B	803	CLA	C4A-NA-C1A	11.20	111.74	106.71
25	o	608	CLA	C4A-NA-C1A	11.17	111.73	106.71
25	A	826	CLA	C4A-NA-C1A	11.10	111.70	106.71

5 of 294 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
25	A	801	CLA	ND
25	A	802	CLA	ND
25	A	804	CLA	ND
25	A	806	CLA	ND
25	A	807	CLA	ND

5 of 2730 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
25	A	801	CLA	CHA-CBD-CGD-O2D
25	A	802	CLA	C1-C2-C3-C4
25	A	802	CLA	C1-C2-C3-C5
25	A	808	CLA	CHA-CBD-CGD-O2D
25	A	809	CLA	CHA-CBD-CGD-O1D

There are no ring outliers.

259 monomers are involved in 540 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
35	d	307	CHL	1	0
27	d	302	LHG	3	0
25	f	612	CLA	1	0
27	c	301	LHG	3	0
25	d	315	CLA	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	c	313	CLA	2	0
25	m	203	CLA	5	0
25	d	305	CLA	2	0
25	k	214	CLA	2	0
25	B	839	CLA	5	0
25	A	831	CLA	2	0
29	A	838	BCR	1	0
25	B	825	CLA	1	0
25	f	611	CLA	1	0
25	A	823	CLA	3	0
25	A	843	CLA	3	0
25	i	208	CLA	3	0
25	i	206	CLA	2	0
25	b	209	CLA	2	0
25	B	816	CLA	4	0
25	n	210	CLA	1	0
25	e	211	CLA	3	0
25	n	208	CLA	1	0
25	l	607	CLA	4	0
25	n	206	CLA	1	0
29	A	839	BCR	2	0
25	d	316	CLA	1	0
25	e	214	CLA	1	0
25	e	201	CLA	2	0
30	m	213	DD6	1	0
25	l	611	CLA	3	0
25	i	202	CLA	2	0
25	n	202	CLA	3	0
25	A	822	CLA	3	0
25	j	209	CLA	3	0
25	A	853	CLA	2	0
29	B	831	BCR	4	0
25	B	811	CLA	3	0
25	j	203	CLA	4	0
25	c	302	CLA	1	0
25	k	203	CLA	1	0
25	A	826	CLA	4	0
33	g	202	SQD	2	0
25	n	201	CLA	2	0
25	c	308	CLA	3	0
25	p	609	CLA	1	0
25	i	210	CLA	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
34	k	201	LMG	3	0
29	B	829	BCR	2	0
25	B	844	CLA	2	0
25	b	206	CLA	3	0
25	h	212	CLA	3	0
25	p	603	CLA	4	0
25	h	210	CLA	1	0
25	c	304	CLA	4	0
25	e	213	CLA	4	0
30	a	215	DD6	1	0
25	c	303	CLA	2	0
25	A	857	CLA	1	0
25	o	605	CLA	1	0
25	A	813	CLA	1	0
25	B	804	CLA	3	0
25	a	206	CLA	1	0
25	B	840	CLA	5	0
25	g	203	CLA	2	0
25	A	832	CLA	5	0
25	B	824	CLA	5	0
25	i	204	CLA	2	0
25	h	204	CLA	1	0
25	j	212	CLA	4	0
25	A	829	CLA	3	0
25	l	602	CLA	4	0
25	g	209	CLA	7	0
32	b	202	DGD	3	0
25	e	208	CLA	1	0
25	A	825	CLA	3	0
25	o	610	CLA	4	0
25	B	845	CLA	9	0
25	i	203	CLA	2	0
35	d	309	CHL	2	0
25	n	203	CLA	2	0
25	A	820	CLA	2	0
25	B	821	CLA	2	0
25	A	819	CLA	4	0
25	a	205	CLA	1	0
25	A	814	CLA	3	0
25	B	836	CLA	3	0
30	d	319	DD6	1	0
25	i	213	CLA	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	B	805	CLA	5	0
25	B	841	CLA	4	0
25	A	830	CLA	2	0
25	c	314	CLA	1	0
25	d	306	CLA	2	0
25	h	209	CLA	9	0
25	A	844	CLA	5	0
25	k	204	CLA	1	0
25	a	210	CLA	1	0
25	b	208	CLA	1	0
25	B	842	CLA	5	0
25	A	815	CLA	5	0
25	B	814	CLA	1	0
25	p	602	CLA	3	0
25	A	840	CLA	6	0
28	B	827	PQN	2	0
25	A	841	CLA	3	0
25	i	207	CLA	1	0
25	g	212	CLA	3	0
25	A	842	CLA	2	0
25	A	846	CLA	1	0
27	a	201	LHG	1	0
25	j	210	CLA	2	0
25	d	303	CLA	1	0
25	h	214	CLA	2	0
25	j	208	CLA	2	0
25	l	606	CLA	3	0
25	B	826	CLA	3	0
25	h	208	CLA	2	0
25	h	206	CLA	2	0
25	B	823	CLA	2	0
25	k	205	CLA	1	0
35	d	310	CHL	2	0
25	p	605	CLA	1	0
25	c	311	CLA	3	0
25	B	818	CLA	6	0
25	B	802	CLA	9	0
25	a	209	CLA	3	0
27	h	202	LHG	2	0
25	b	207	CLA	1	0
28	A	834	PQN	5	0
25	A	845	CLA	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	i	205	CLA	1	0
25	B	808	CLA	1	0
32	e	203	DGD	2	0
25	o	602	CLA	2	0
29	A	837	BCR	3	0
25	c	310	CLA	3	0
25	e	216	CLA	1	0
25	d	313	CLA	1	0
25	B	843	CLA	7	0
25	o	608	CLA	1	0
25	a	208	CLA	1	0
25	A	812	CLA	3	0
25	o	601	CLA	1	0
25	p	607	CLA	1	0
25	f	602	CLA	2	0
25	b	210	CLA	2	0
29	B	830	BCR	5	0
25	e	215	CLA	3	0
25	e	207	CLA	1	0
25	m	202	CLA	5	0
25	B	810	CLA	1	0
25	e	205	CLA	4	0
25	A	849	CLA	2	0
27	b	201	LHG	3	0
25	m	211	CLA	1	0
25	B	815	CLA	1	0
25	A	801	CLA	7	0
25	a	204	CLA	7	0
25	d	304	CLA	1	0
25	n	209	CLA	1	0
25	e	206	CLA	1	0
25	A	817	CLA	3	0
25	m	204	CLA	1	0
25	j	207	CLA	1	0
25	B	807	CLA	3	0
25	l	604	CLA	1	0
25	m	208	CLA	3	0
25	n	207	CLA	3	0
25	g	214	CLA	1	0
25	f	605	CLA	1	0
34	e	202	LMG	5	0
25	A	804	CLA	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	A	850	CLA	2	0
25	i	212	CLA	1	0
27	h	201	LHG	1	0
25	a	213	CLA	5	0
27	m	201	LHG	2	0
29	B	801	BCR	2	0
27	j	202	LHG	4	0
25	A	824	CLA	7	0
25	A	810	CLA	3	0
27	A	835	LHG	5	0
25	l	603	CLA	1	0
25	a	203	CLA	1	0
25	g	211	CLA	1	0
25	B	822	CLA	4	0
25	j	215	CLA	1	0
25	c	306	CLA	1	0
25	h	207	CLA	3	0
25	F	202	CLA	3	0
25	k	210	CLA	1	0
25	B	803	CLA	4	0
25	c	312	CLA	3	0
25	k	208	CLA	4	0
25	a	207	CLA	3	0
25	f	610	CLA	3	0
25	A	809	CLA	6	0
25	F	201	CLA	3	0
25	b	203	CLA	1	0
29	B	833	BCR	3	0
27	i	201	LHG	2	0
25	p	608	CLA	1	0
25	o	606	CLA	1	0
25	A	821	CLA	4	0
25	l	610	CLA	1	0
25	B	813	CLA	4	0
29	A	836	BCR	3	0
29	J	101	BCR	3	0
25	B	812	CLA	3	0
25	m	206	CLA	1	0
25	g	208	CLA	3	0
25	i	211	CLA	2	0
29	B	832	BCR	8	0
29	B	828	BCR	2	0

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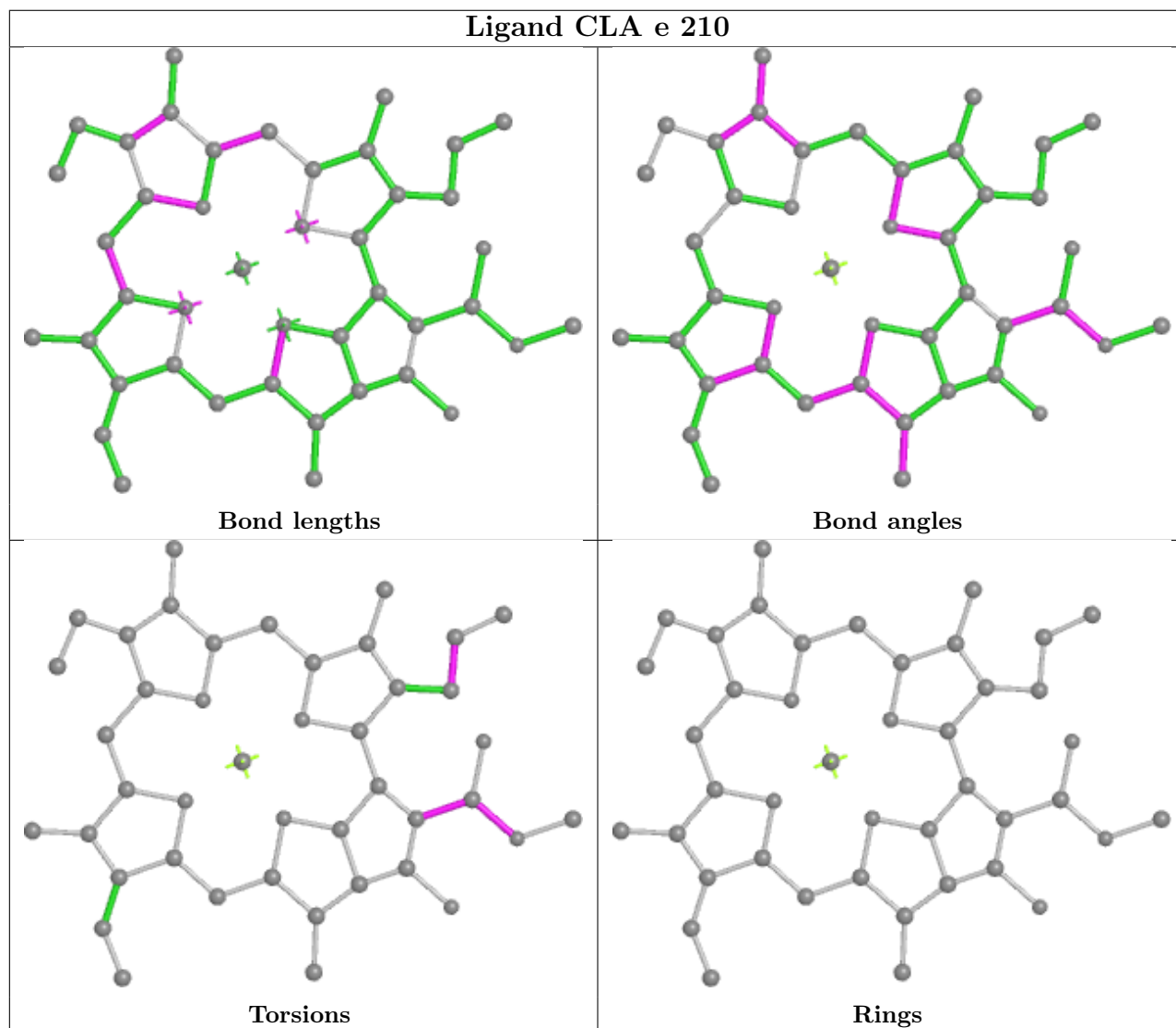
Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	k	211	CLA	2	0
30	i	215	DD6	1	0
25	A	802	CLA	7	0
25	B	846	CLA	4	0
25	B	837	CLA	3	0
35	d	308	CHL	2	0
25	A	807	CLA	6	0
27	A	805	LHG	2	0
32	B	849	DGD	2	0
25	B	817	CLA	4	0
25	o	607	CLA	3	0
29	M	201	BCR	2	0
25	A	816	CLA	3	0
25	A	833	CLA	7	0
25	n	205	CLA	2	0
25	B	848	CLA	2	0
25	g	205	CLA	1	0
25	j	206	CLA	2	0
25	c	309	CLA	2	0
25	k	206	CLA	3	0
25	h	211	CLA	2	0
25	g	207	CLA	4	0
25	A	818	CLA	5	0
25	p	606	CLA	1	0
25	d	312	CLA	4	0
25	B	819	CLA	6	0
25	A	806	CLA	1	0
25	B	838	CLA	5	0
25	f	604	CLA	1	0
25	J	103	CLA	2	0
25	h	205	CLA	1	0
25	b	212	CLA	4	0
25	h	203	CLA	3	0
25	a	212	CLA	2	0
30	n	213	DD6	1	0
25	l	612	CLA	1	0
25	g	204	CLA	3	0
35	c	307	CHL	3	0
25	l	605	CLA	1	0
25	k	207	CLA	1	0
30	m	212	DD6	1	0
25	B	847	CLA	3	0

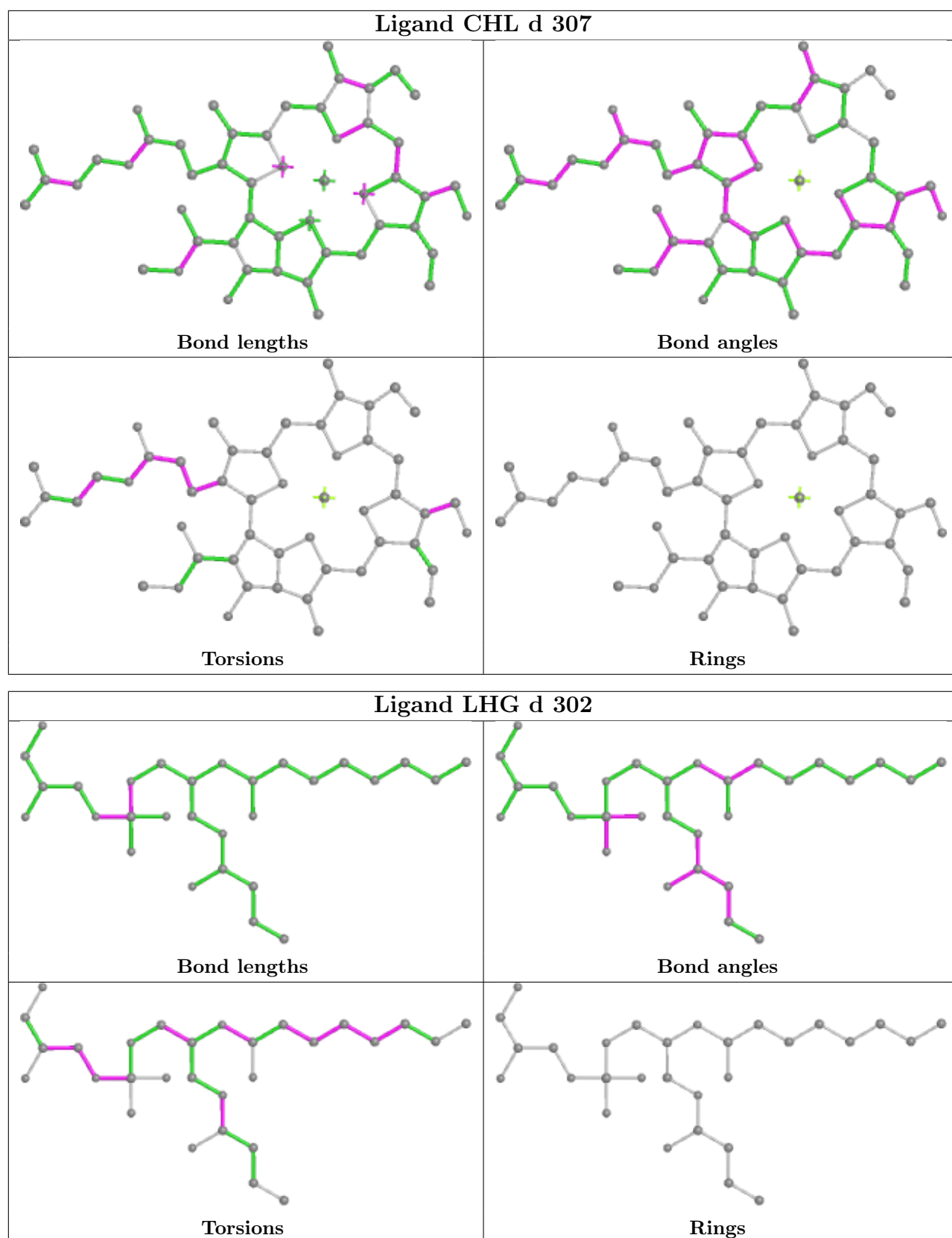
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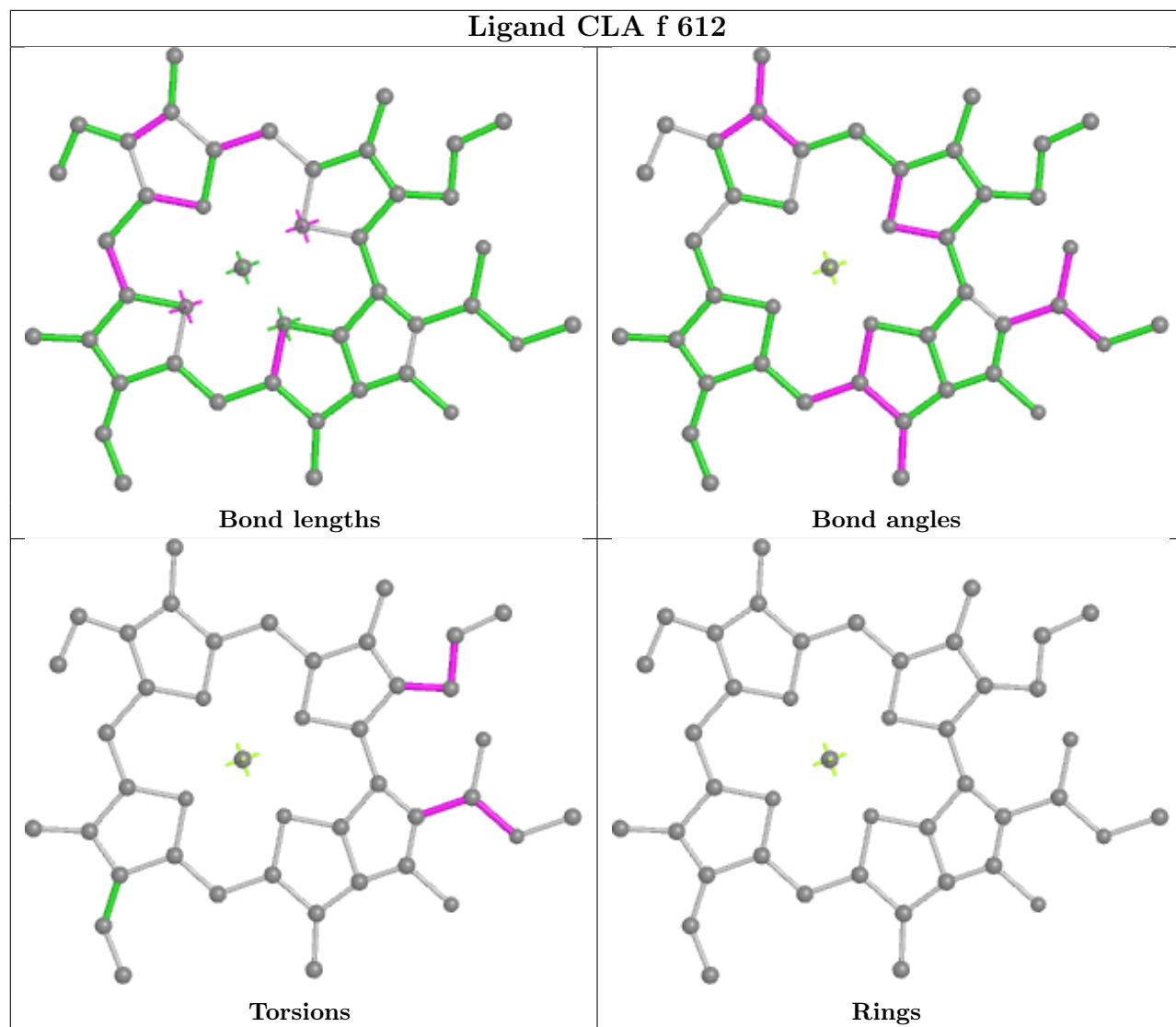
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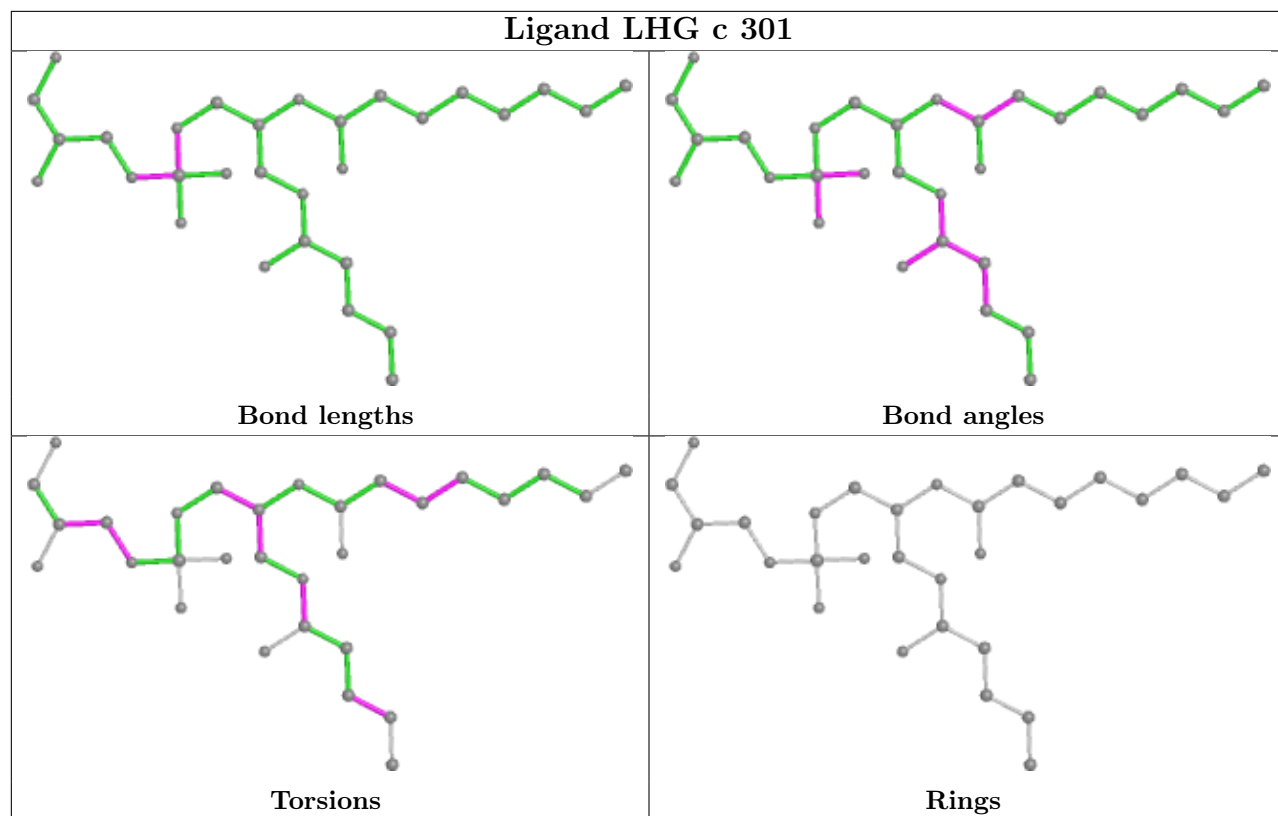
Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	b	204	CLA	1	0
25	f	607	CLA	1	0

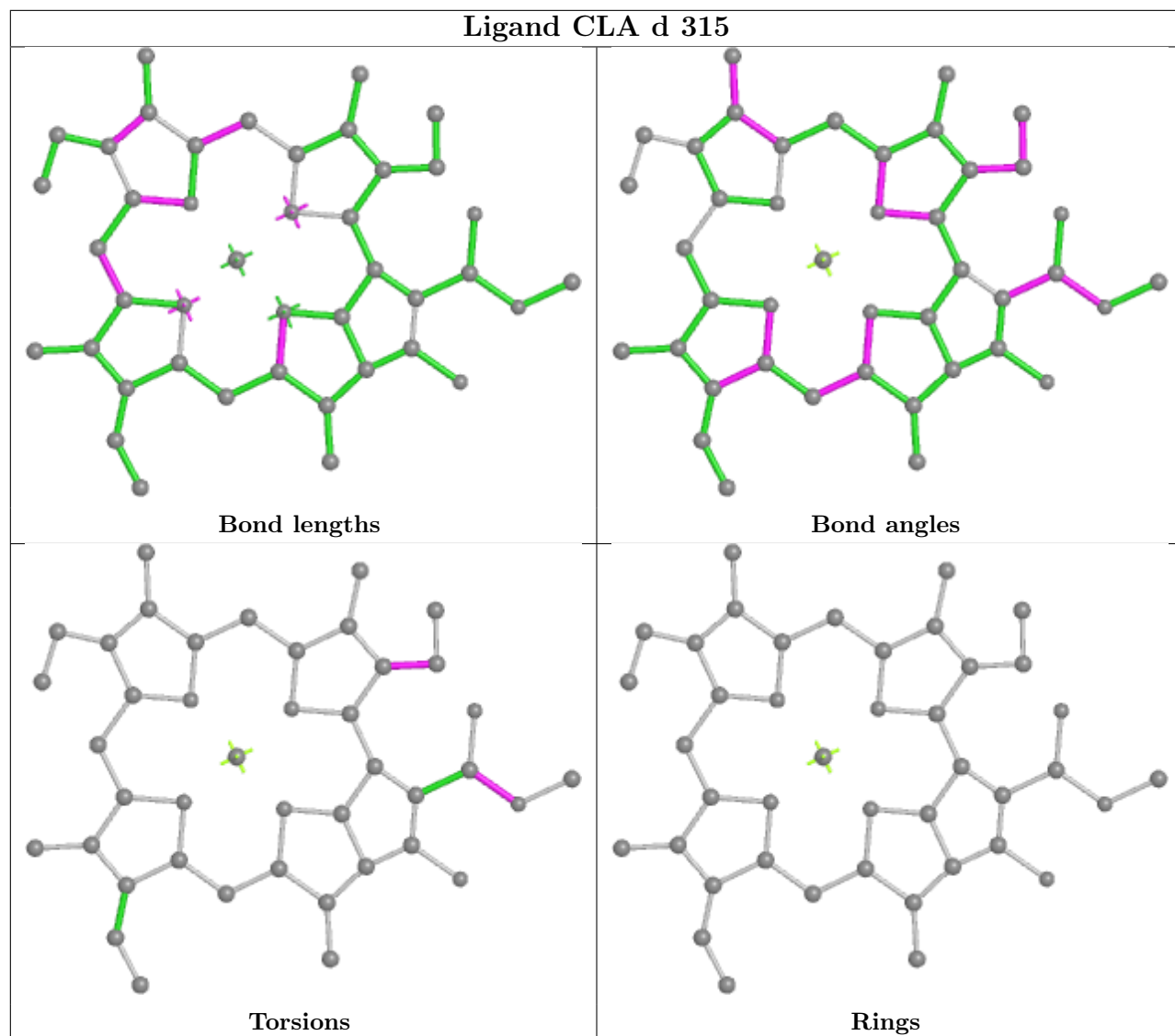
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

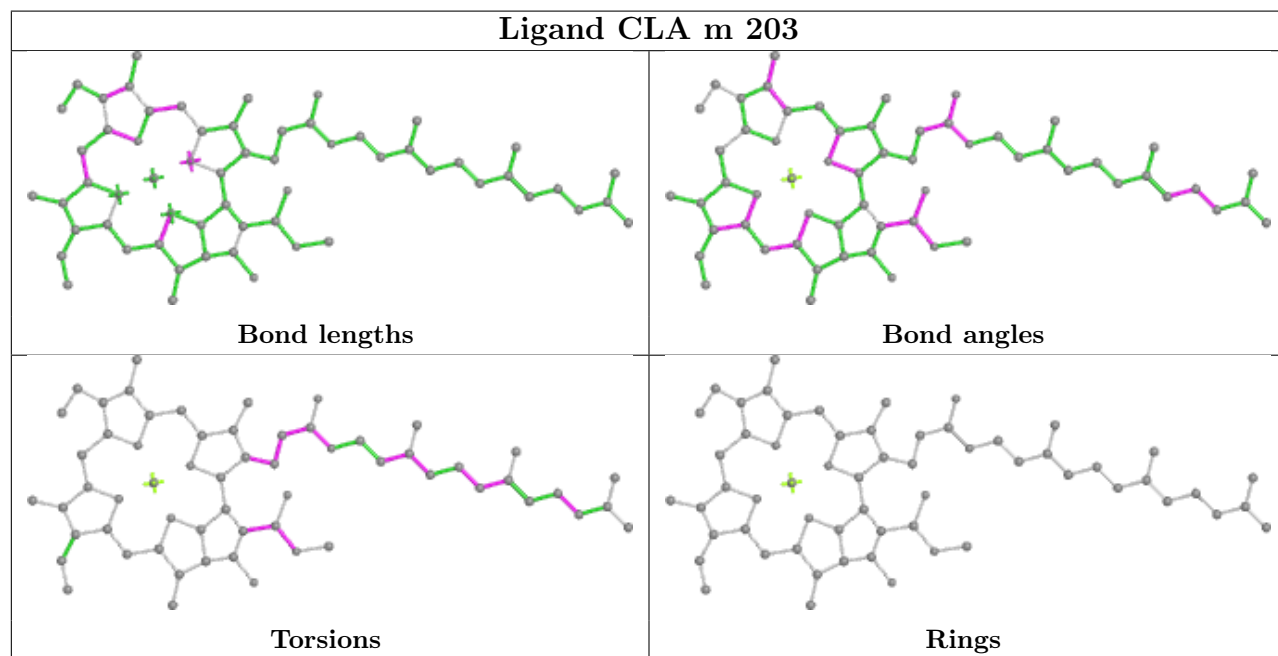
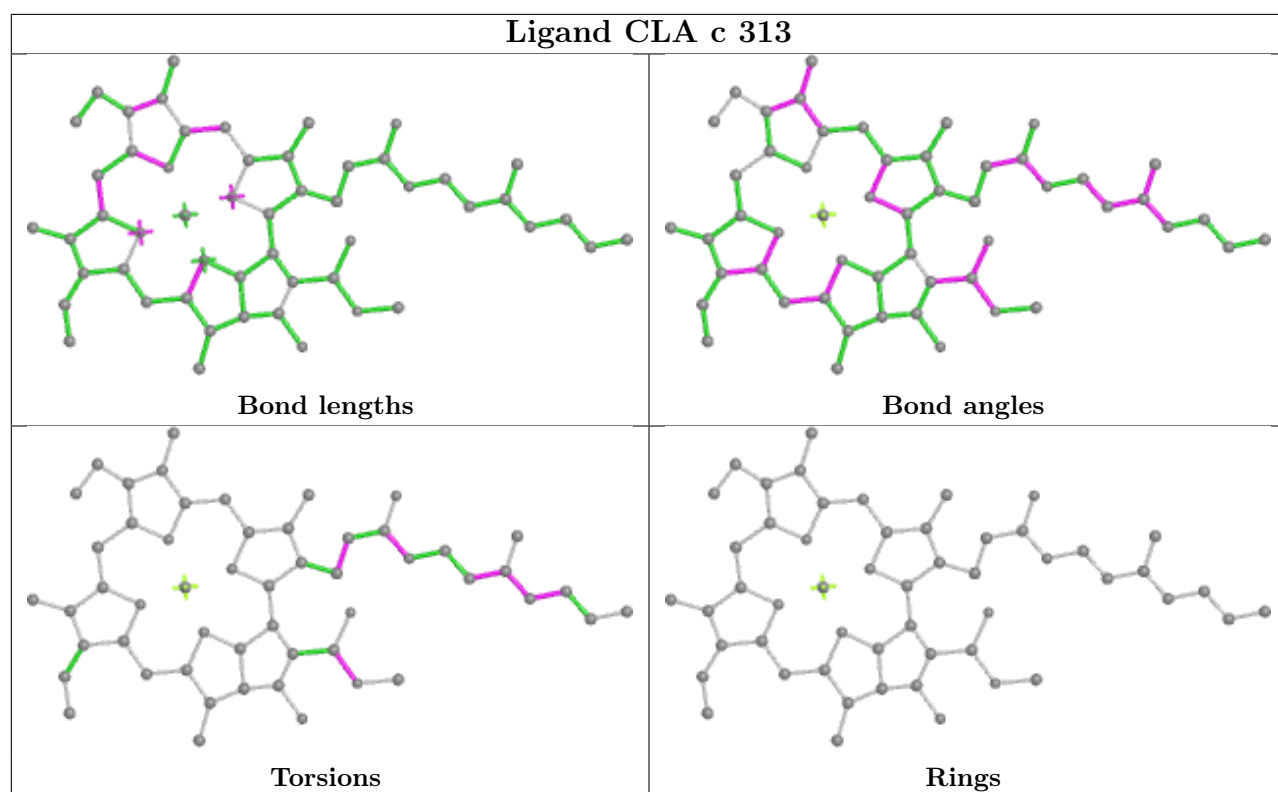


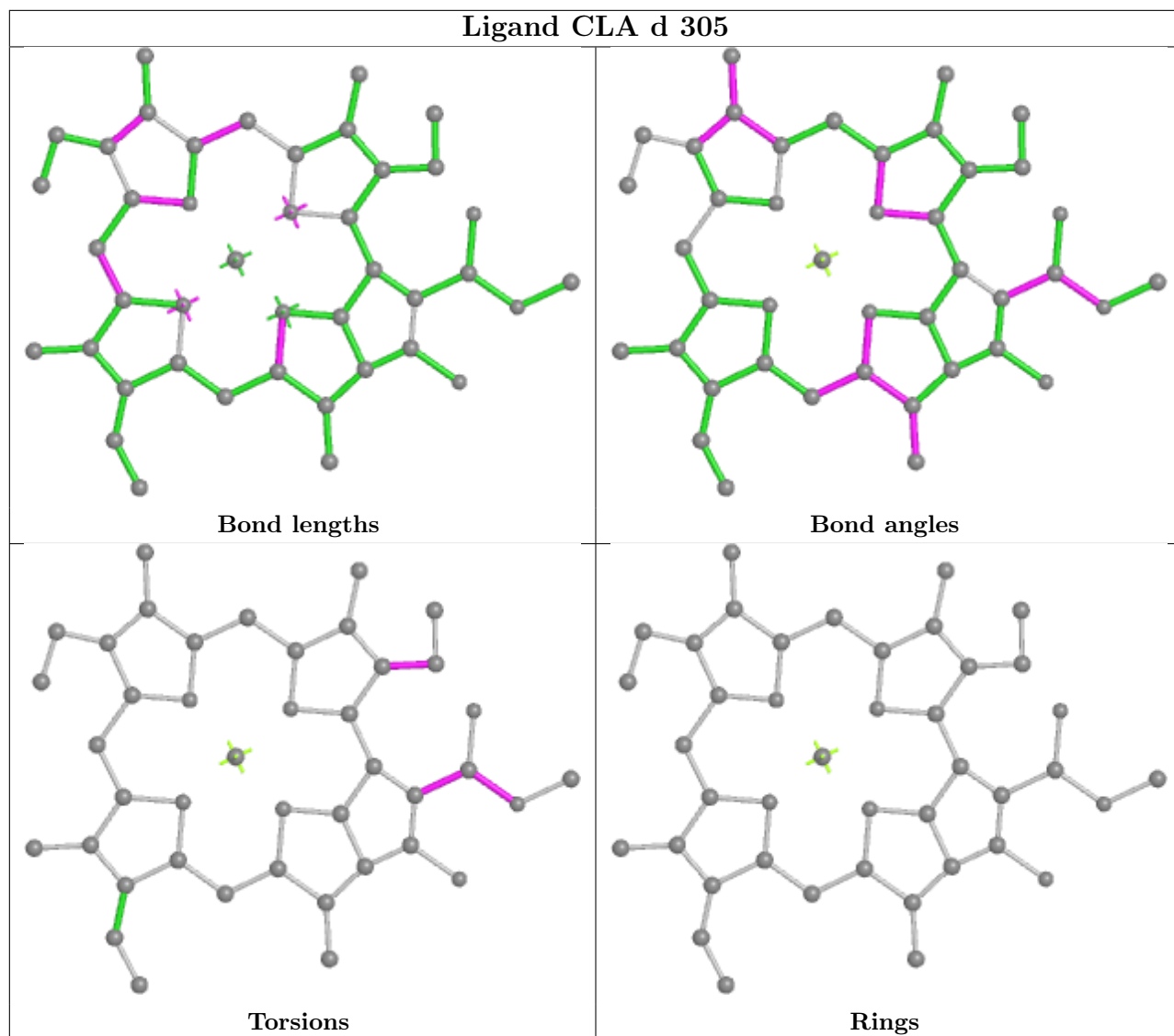


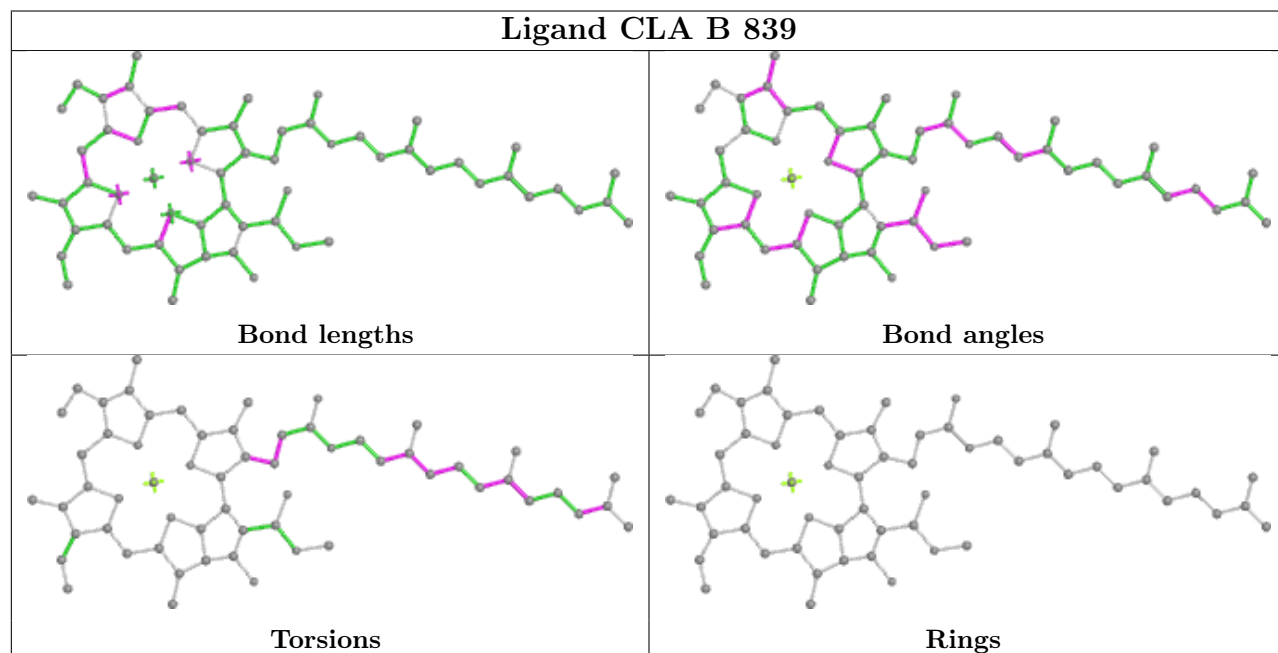
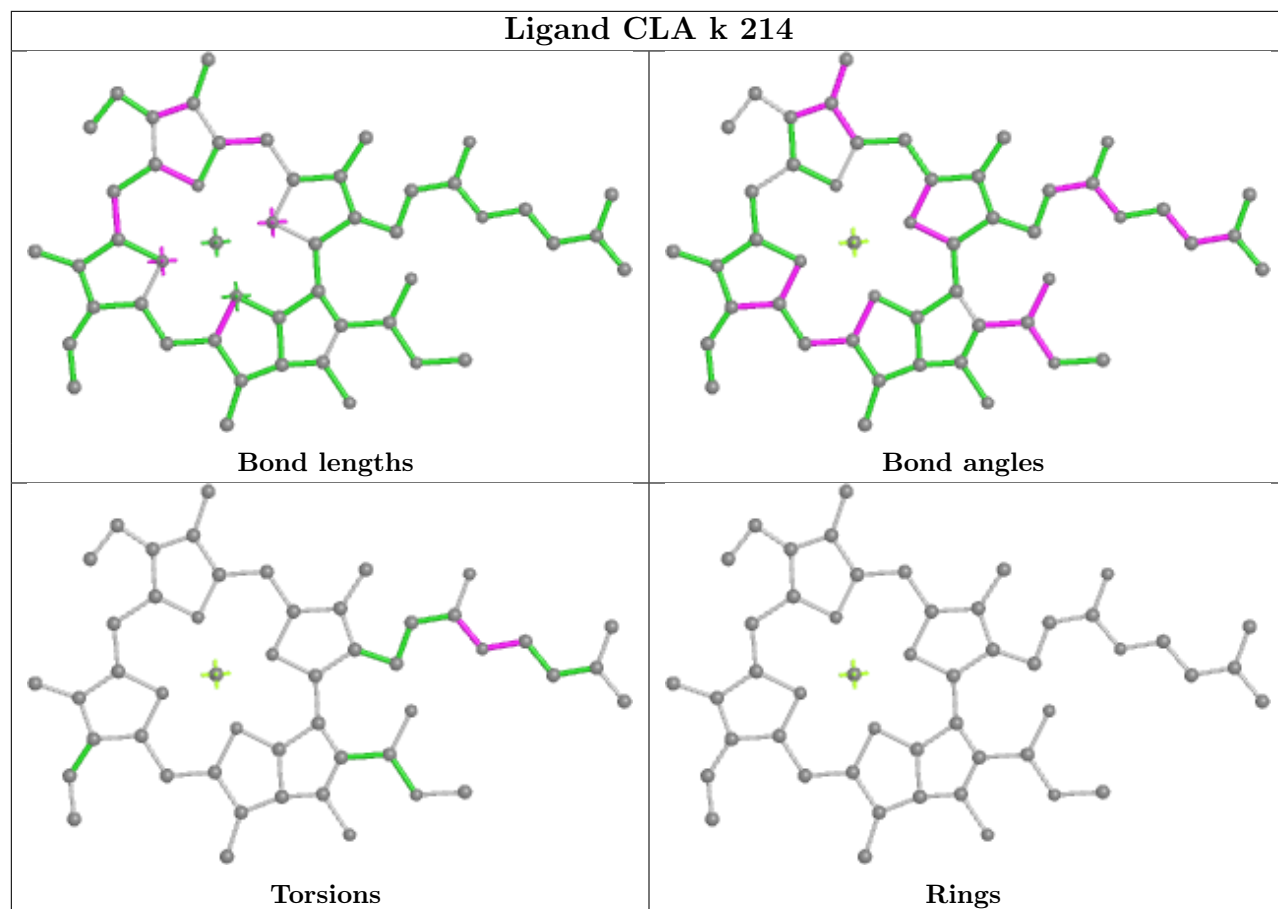


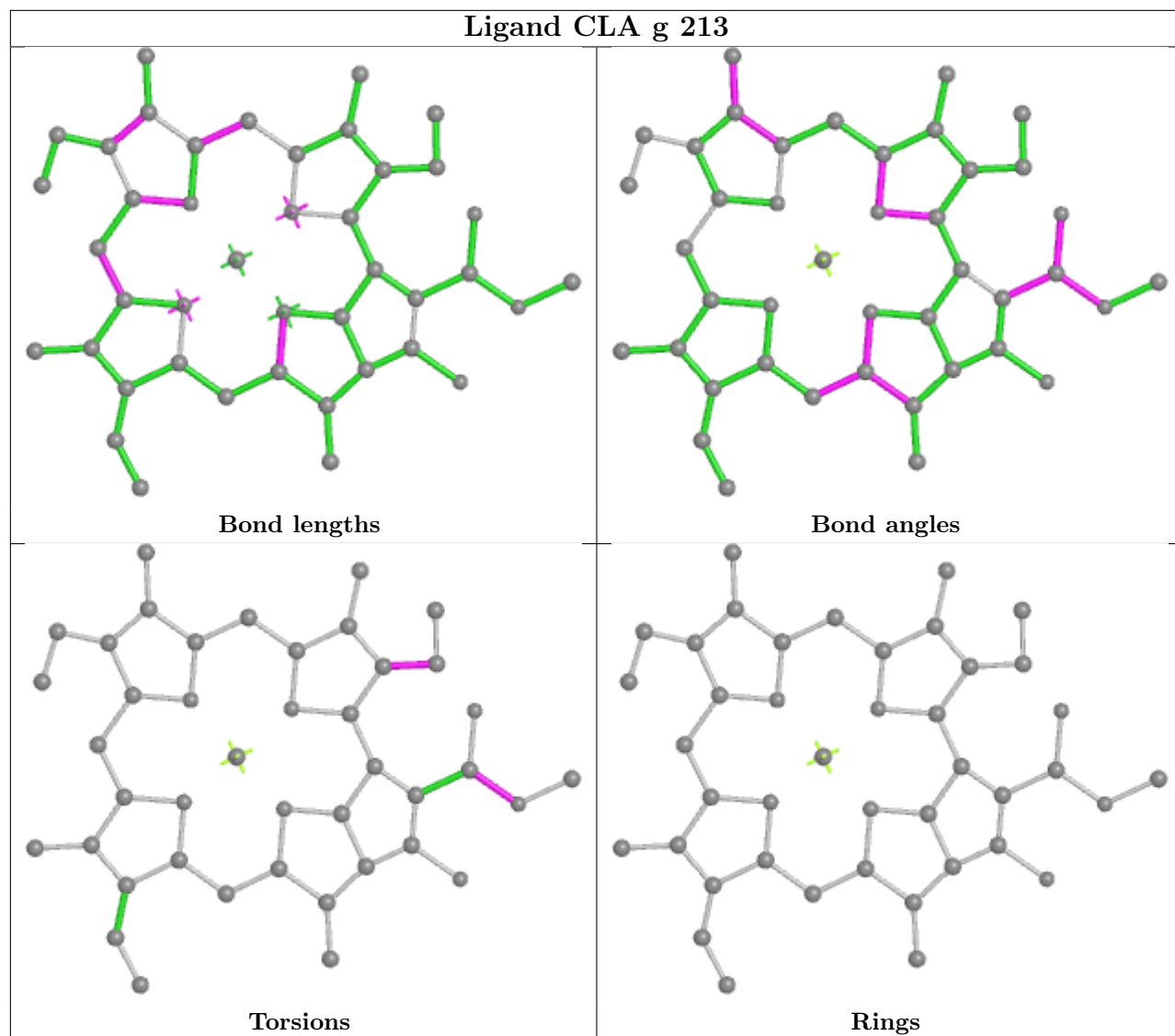


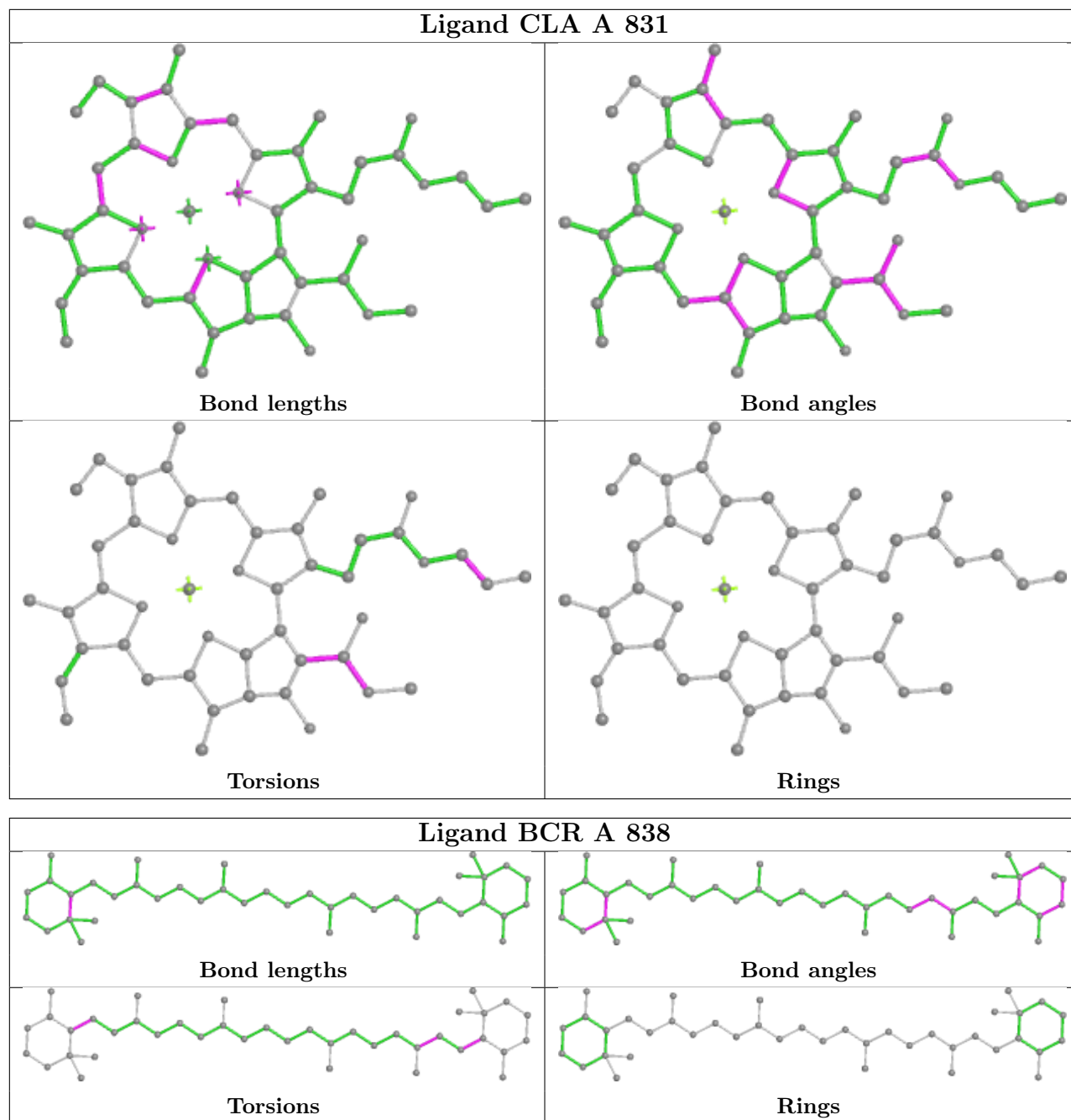


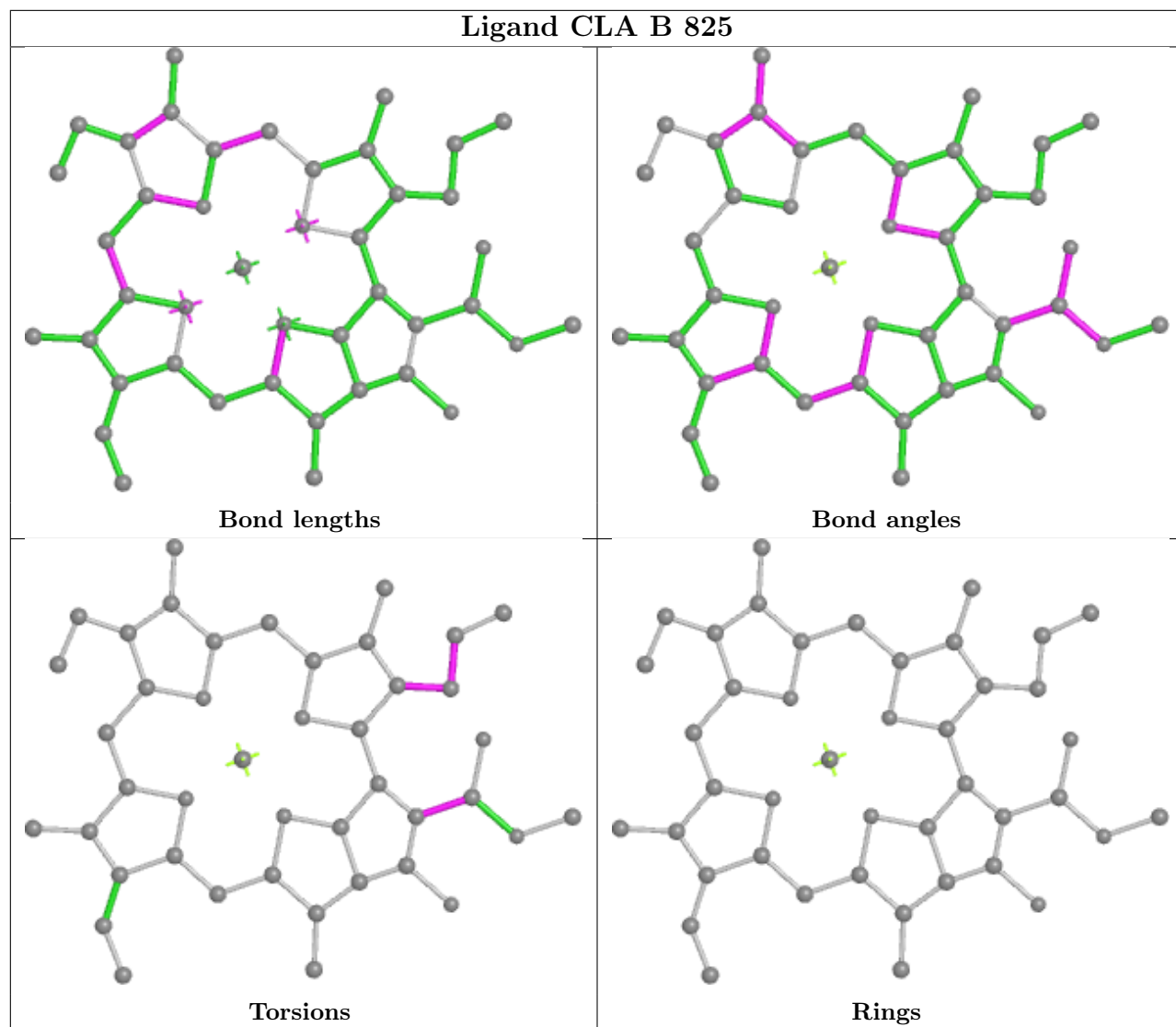


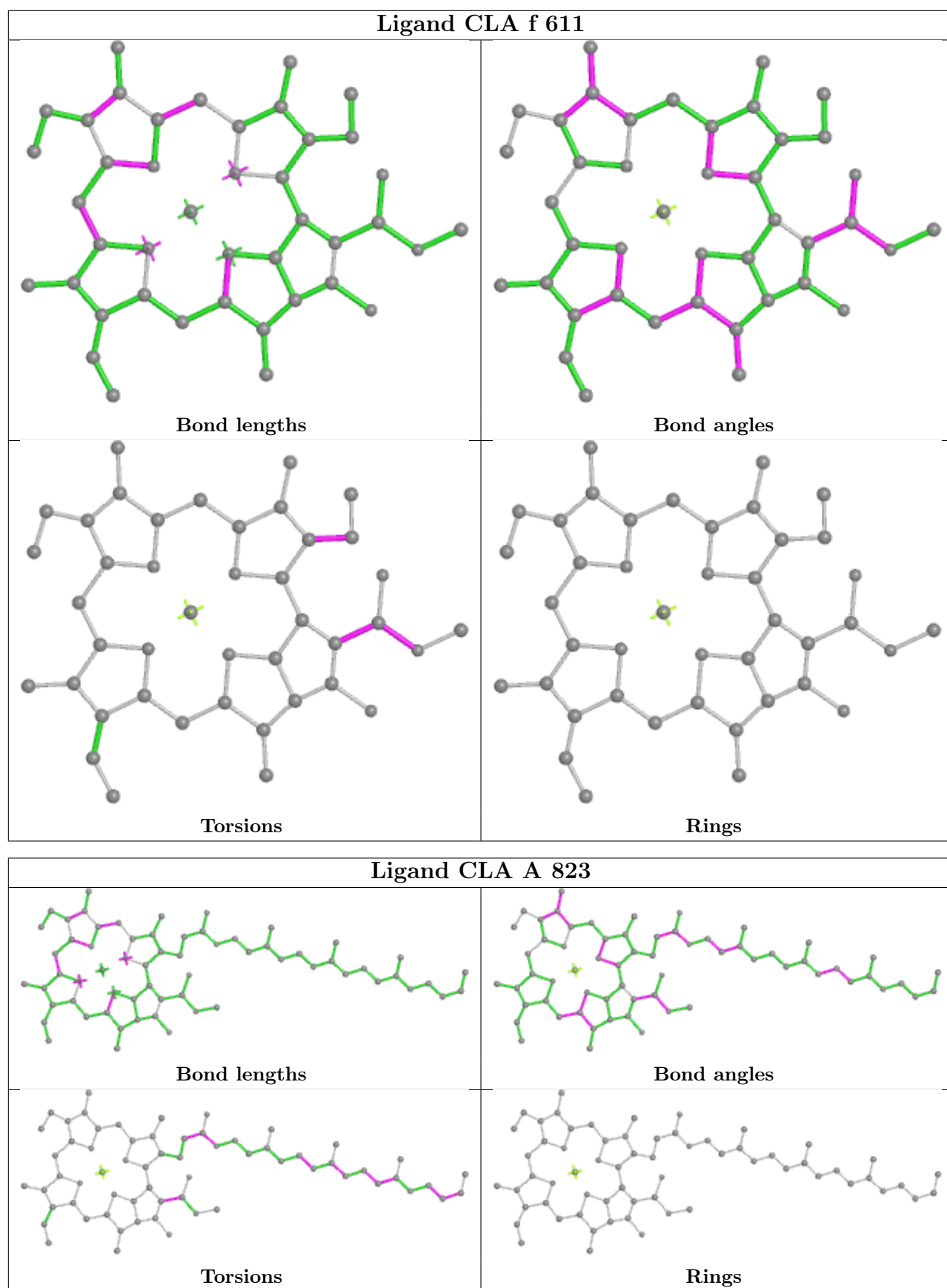


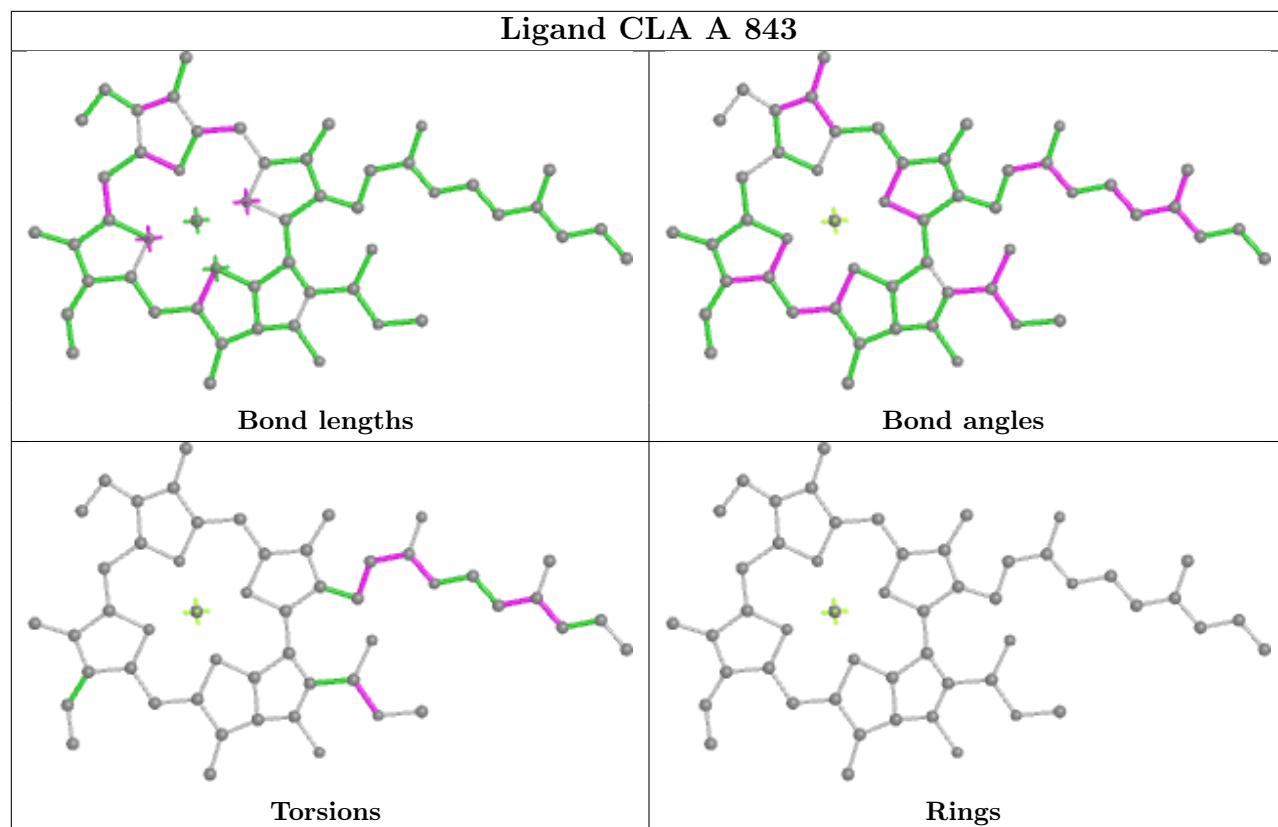


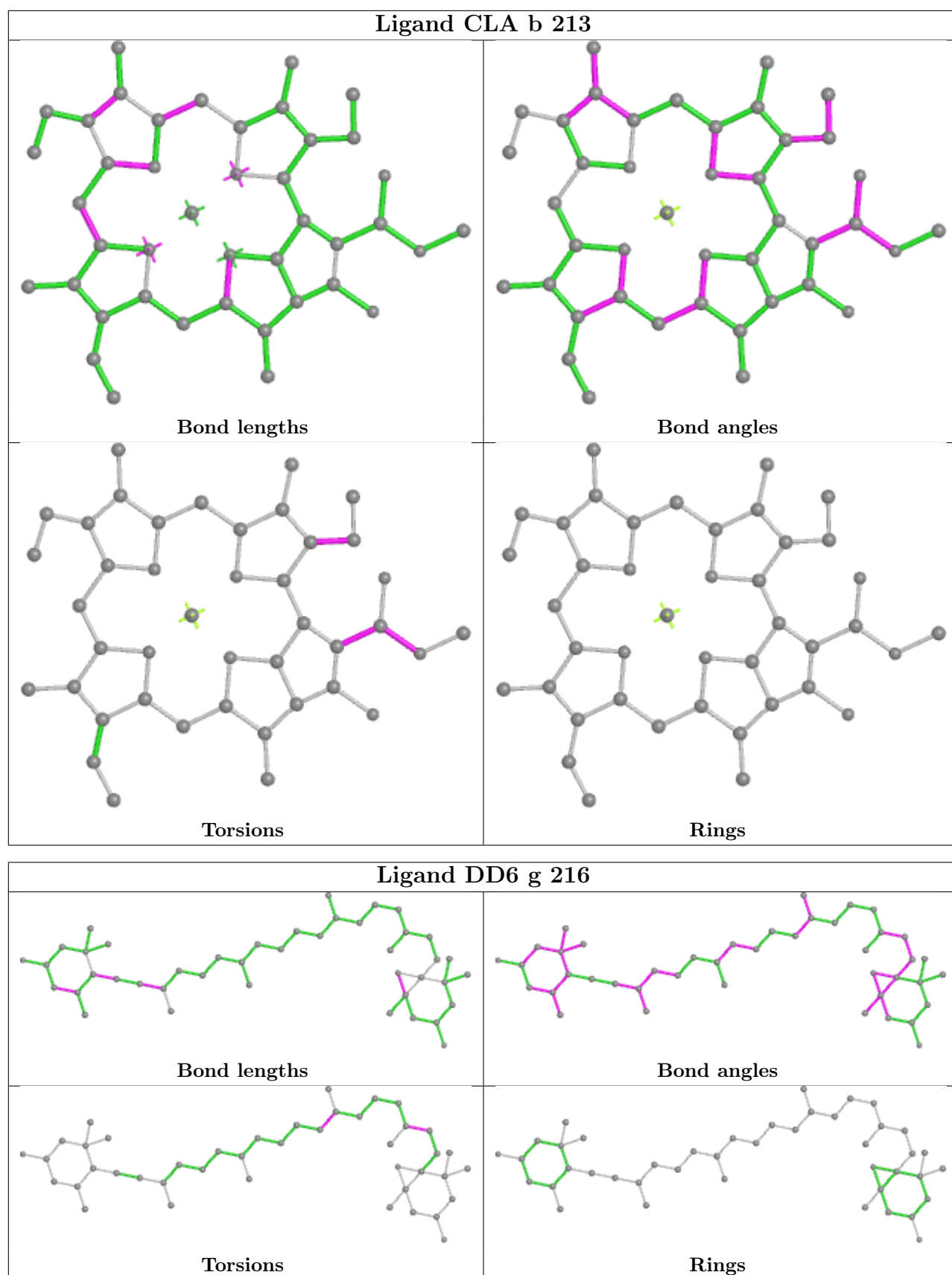


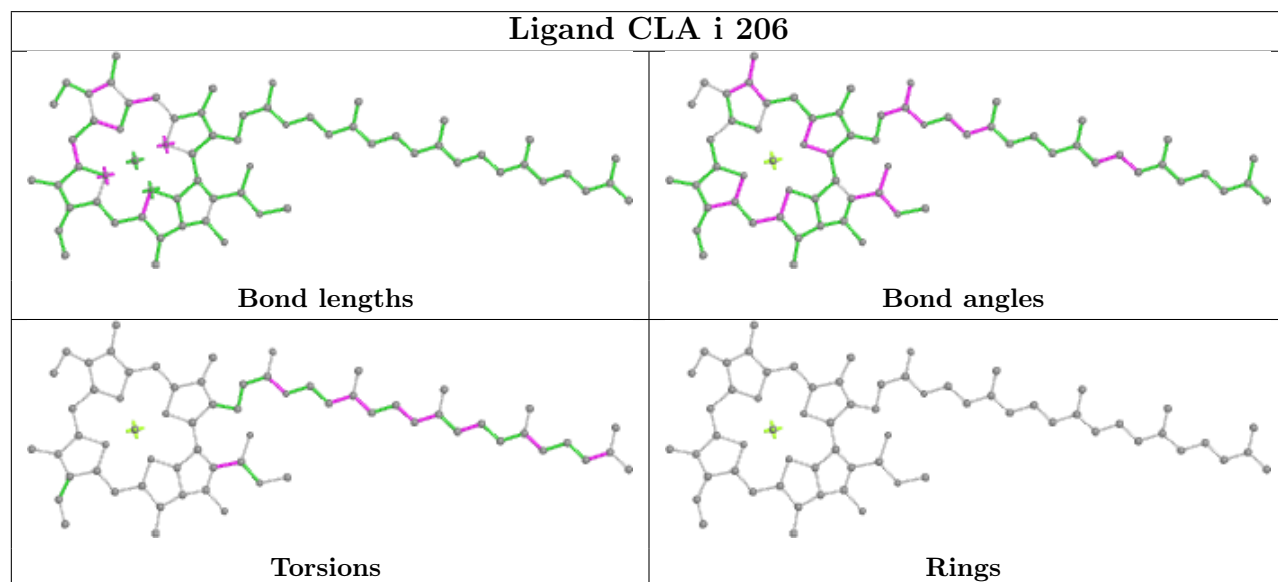
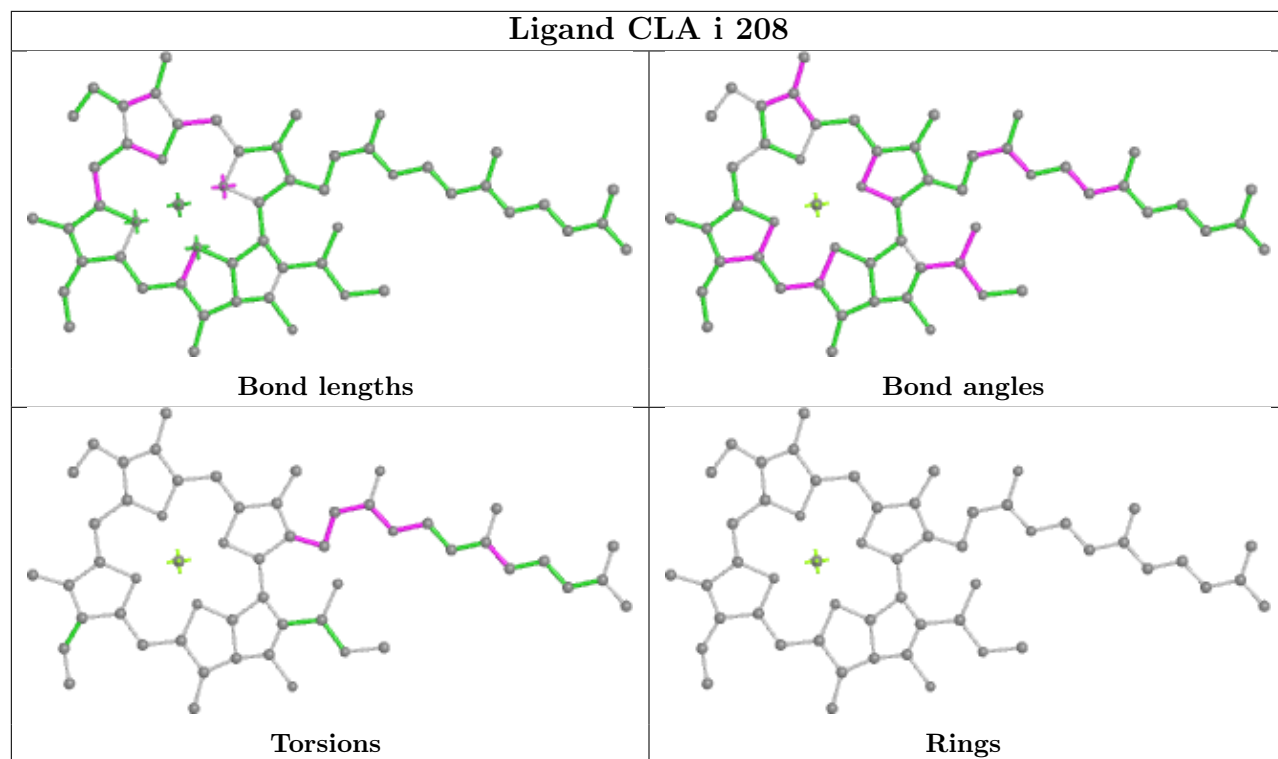


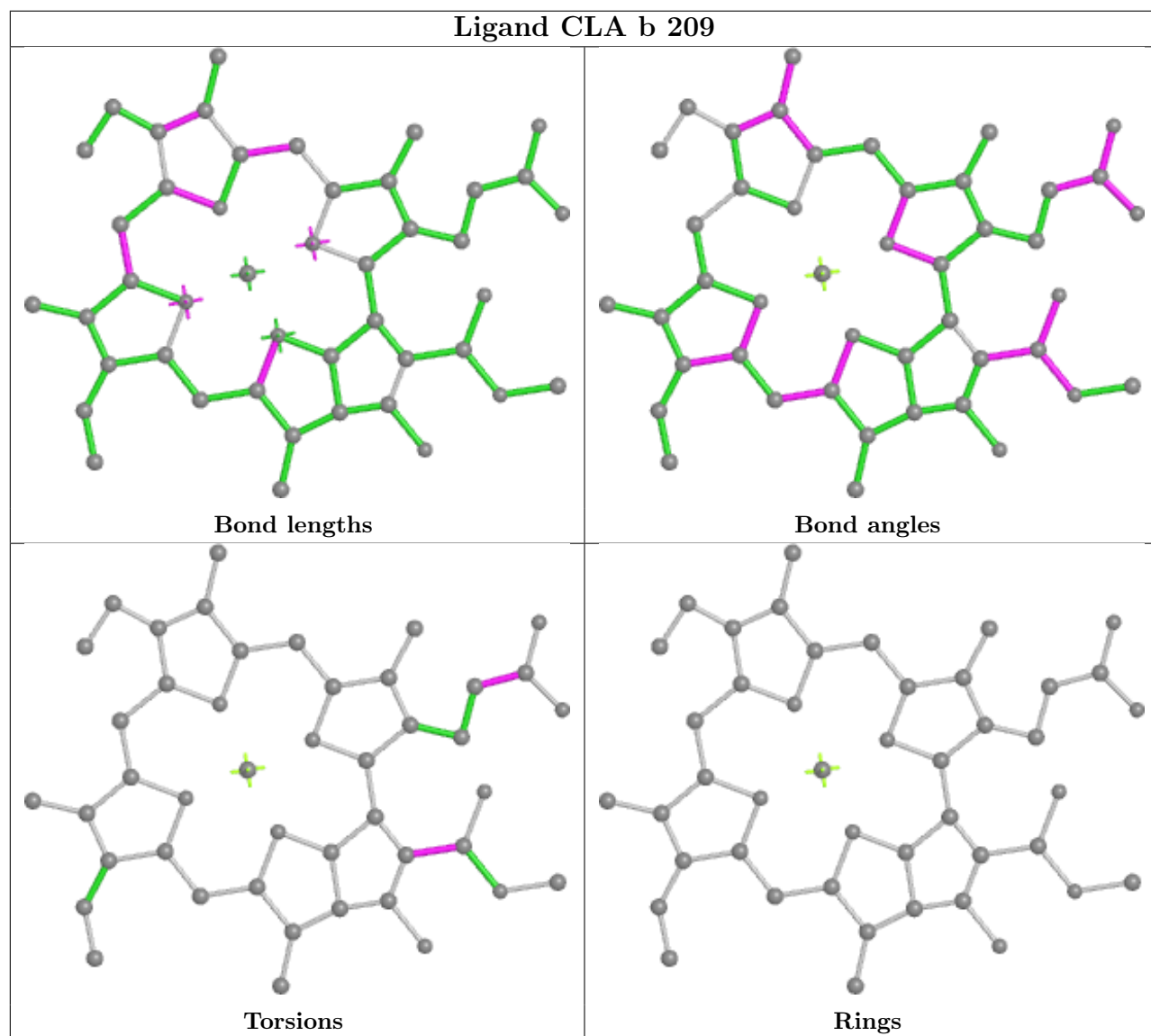
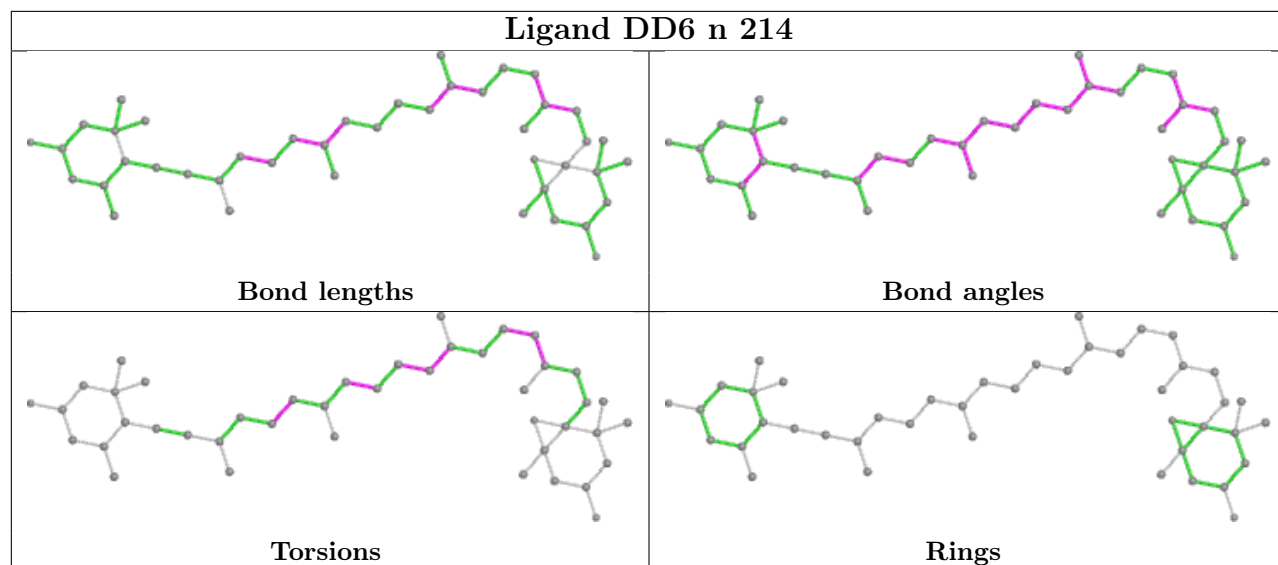


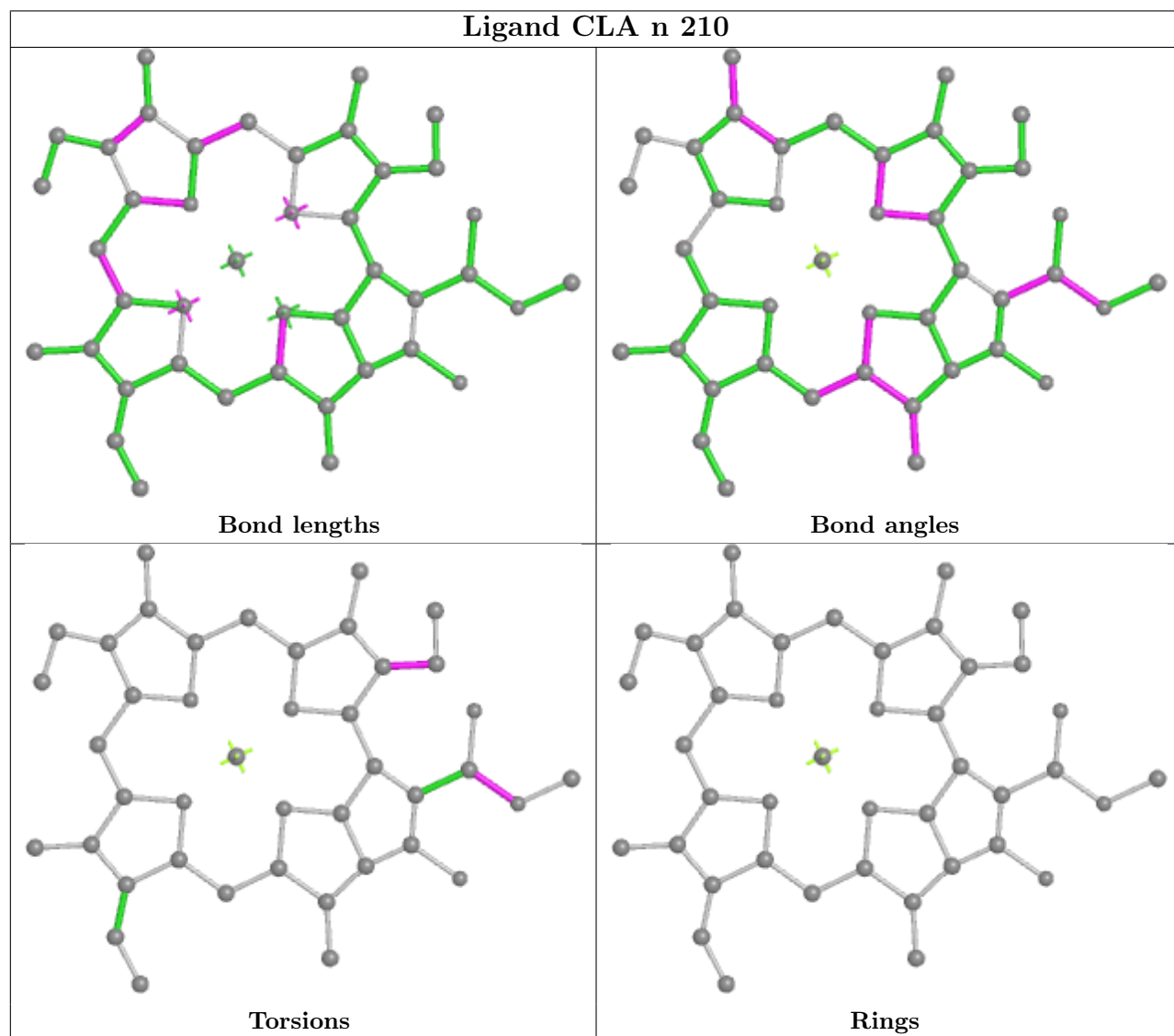
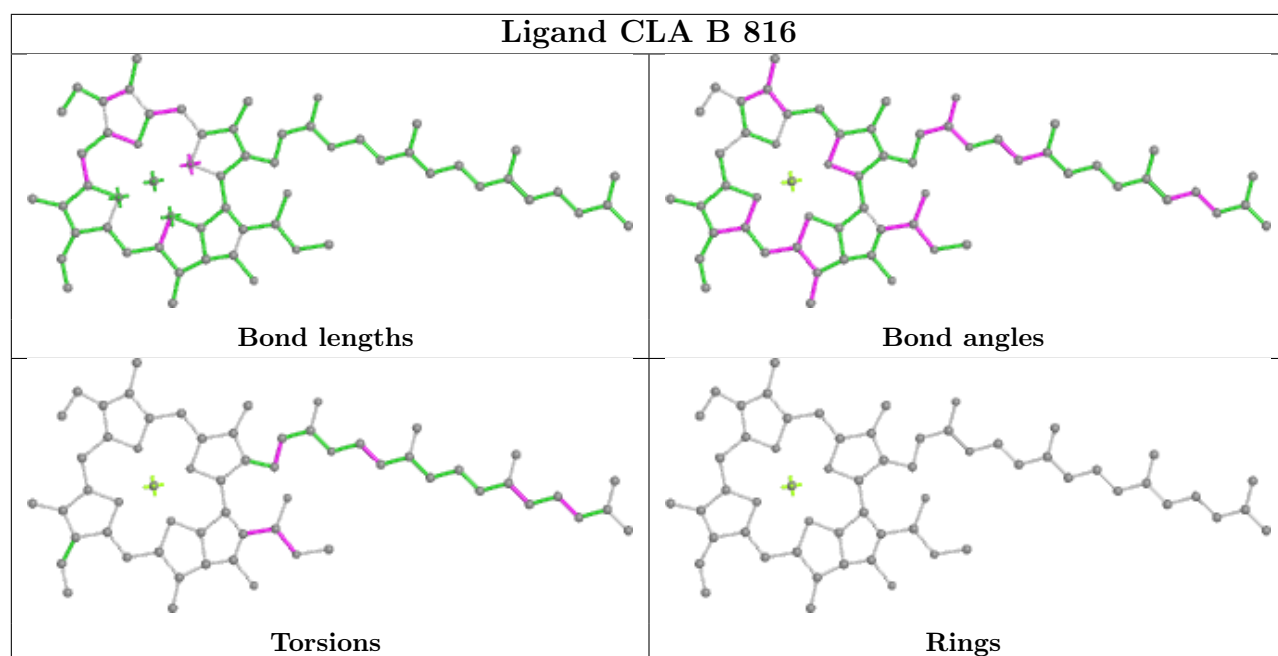


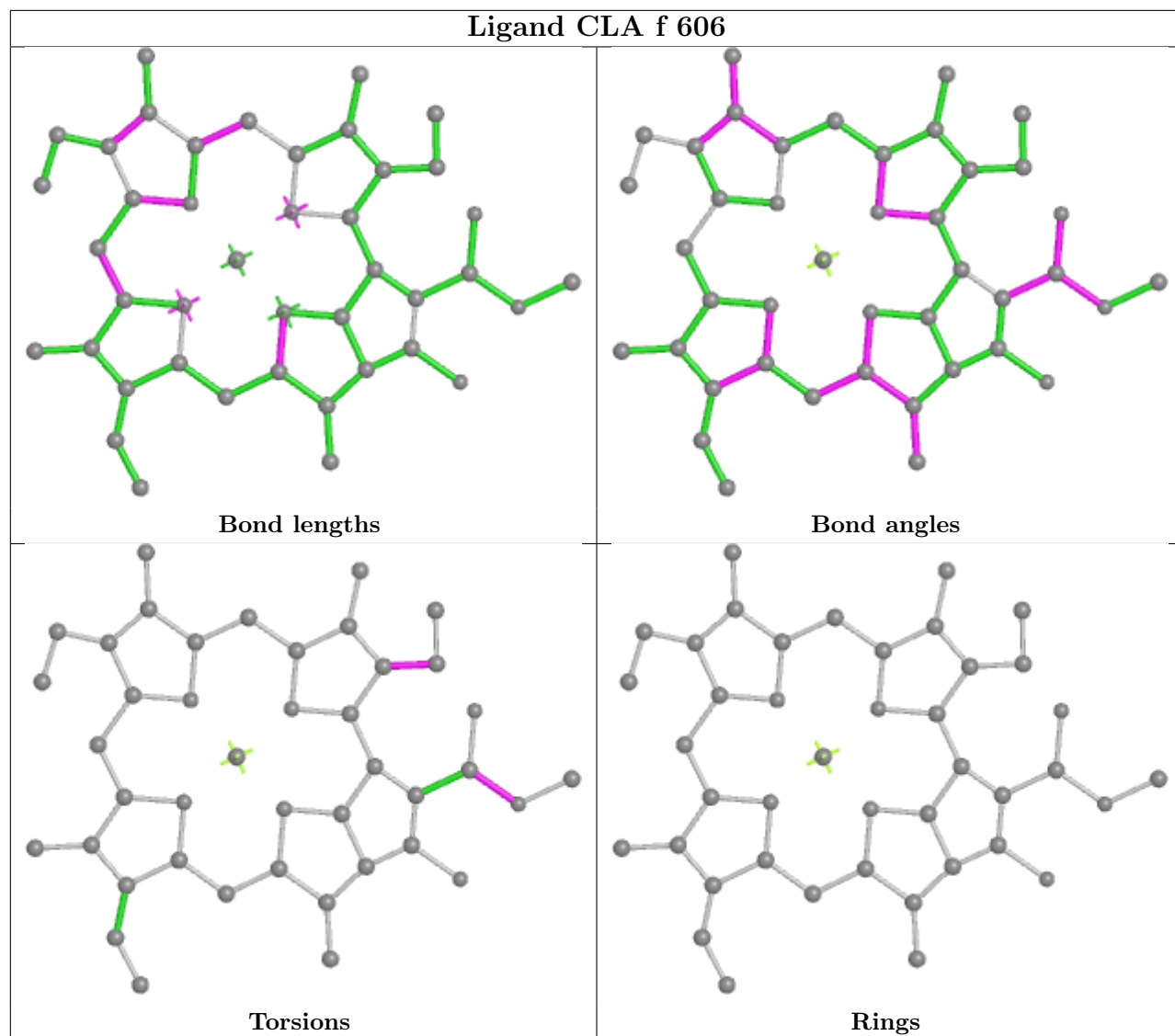


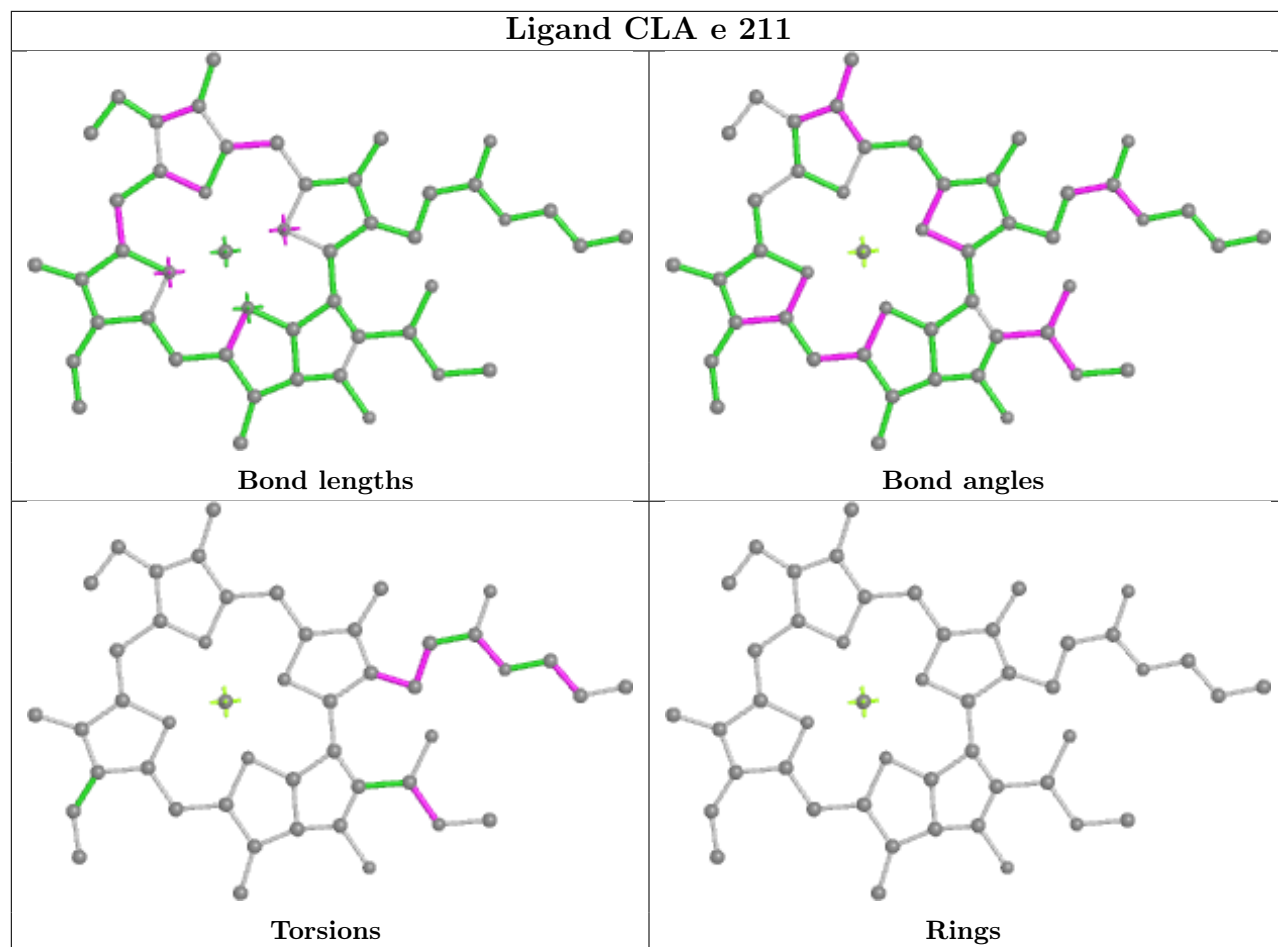


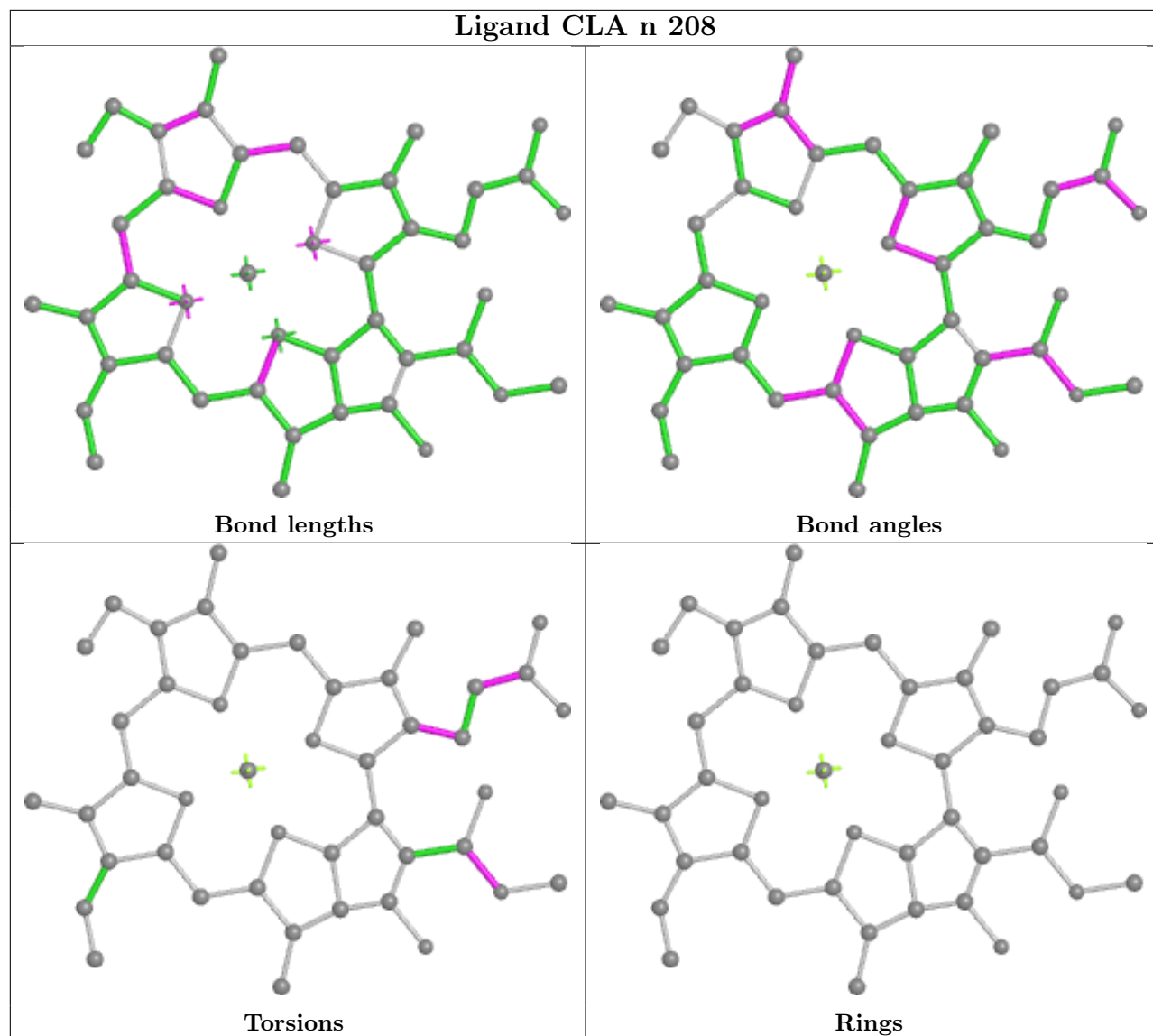


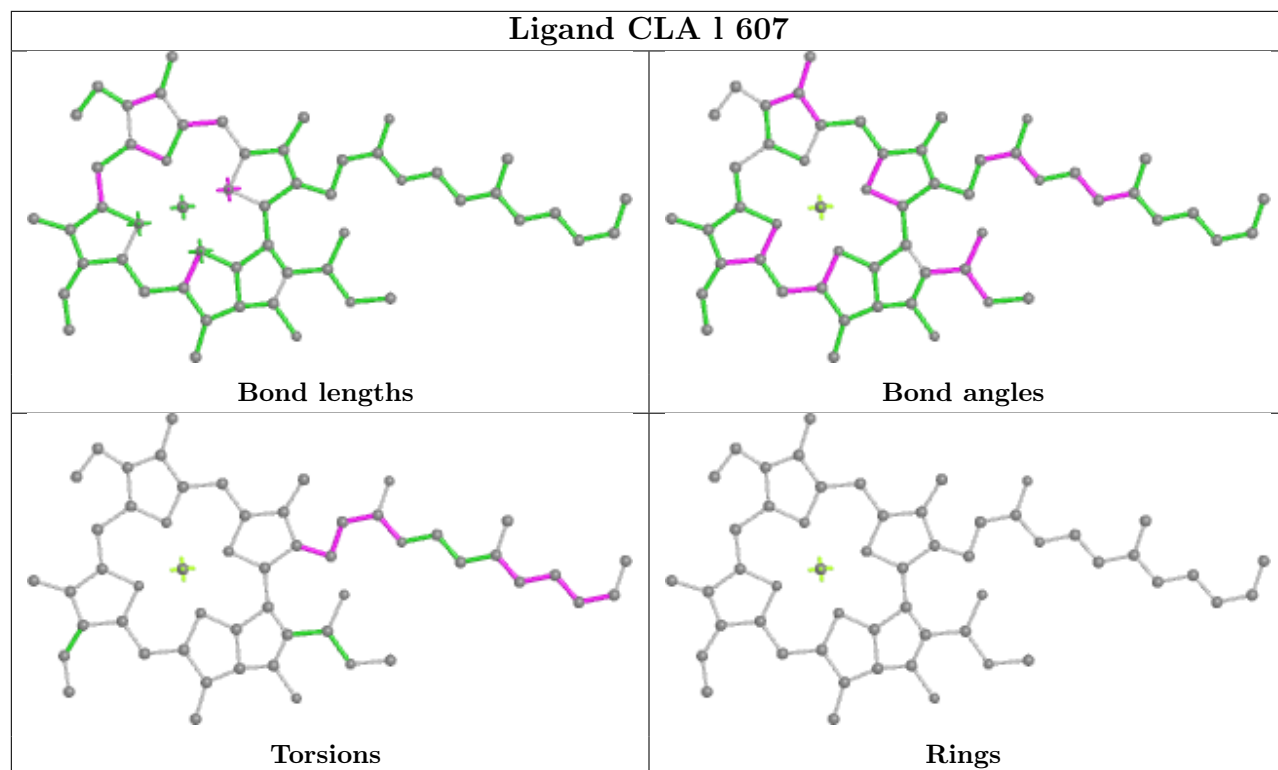


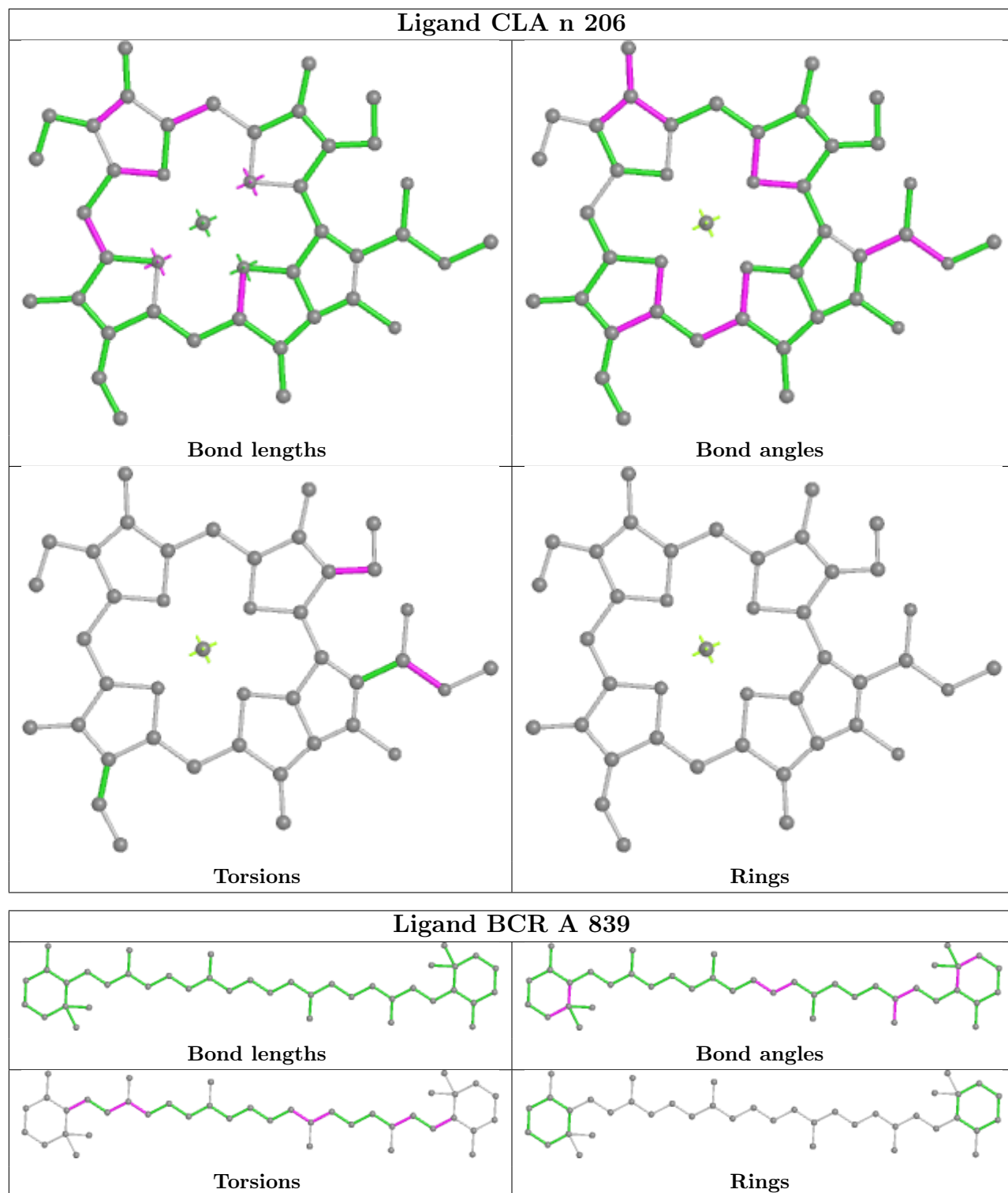


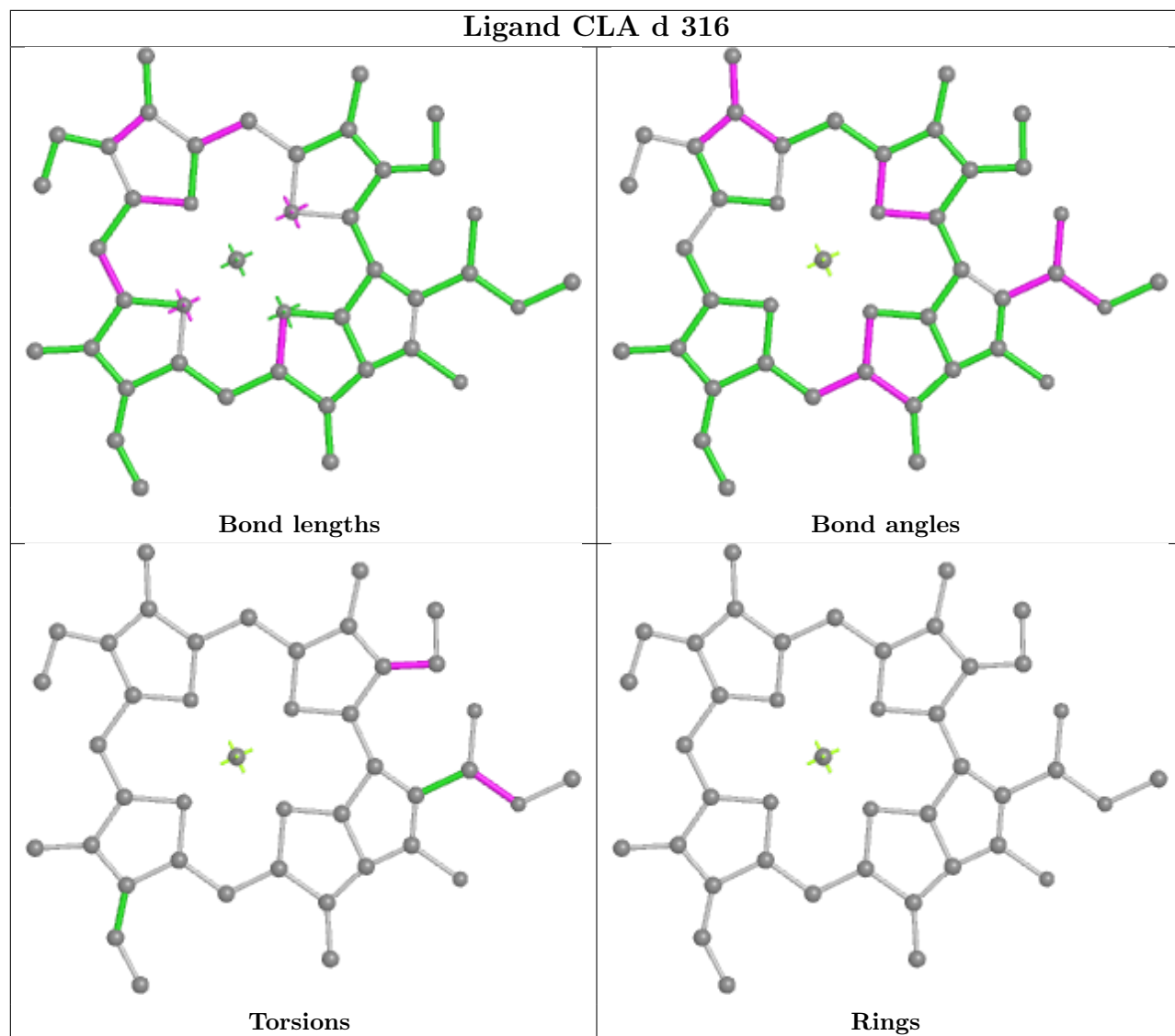


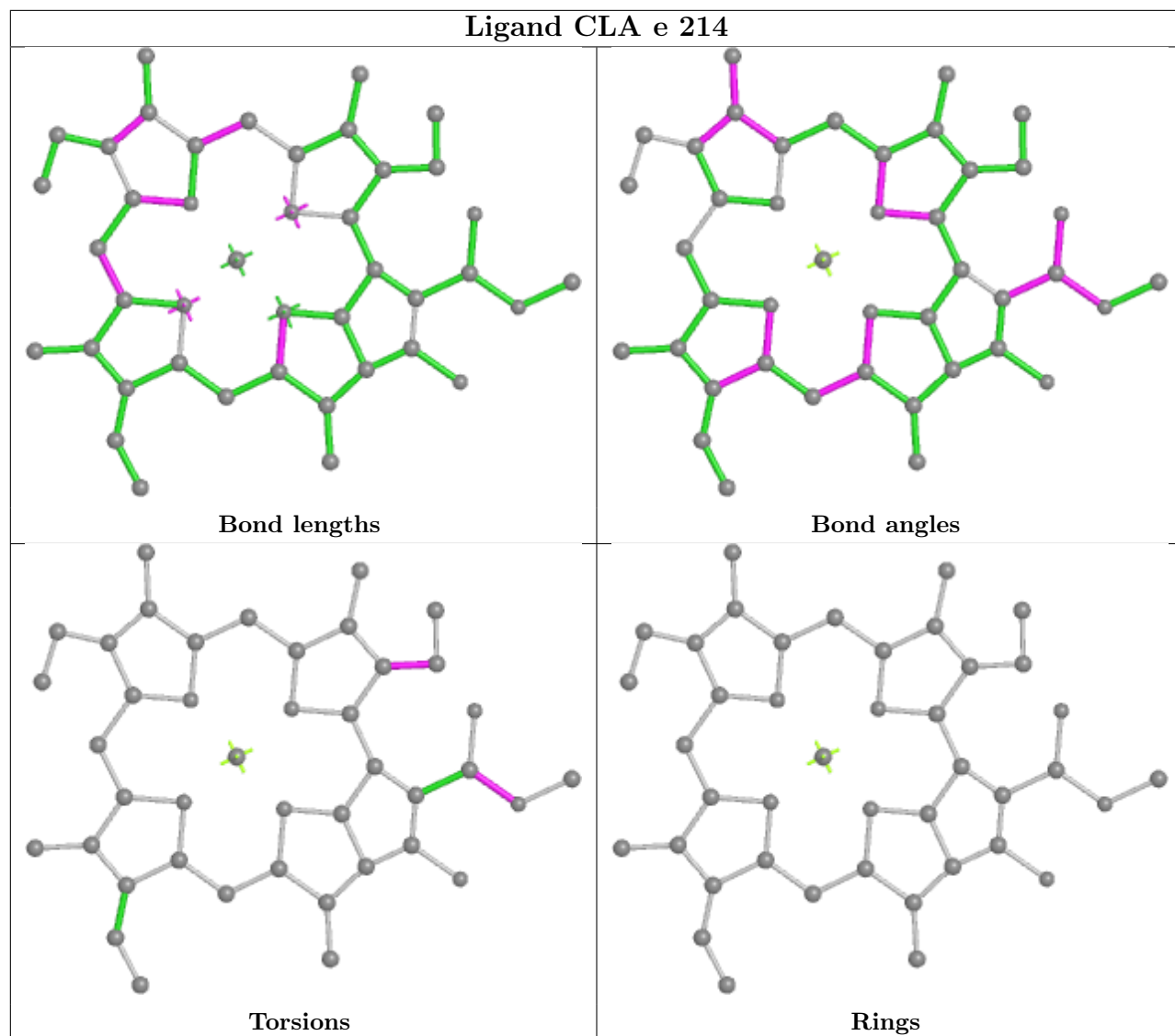


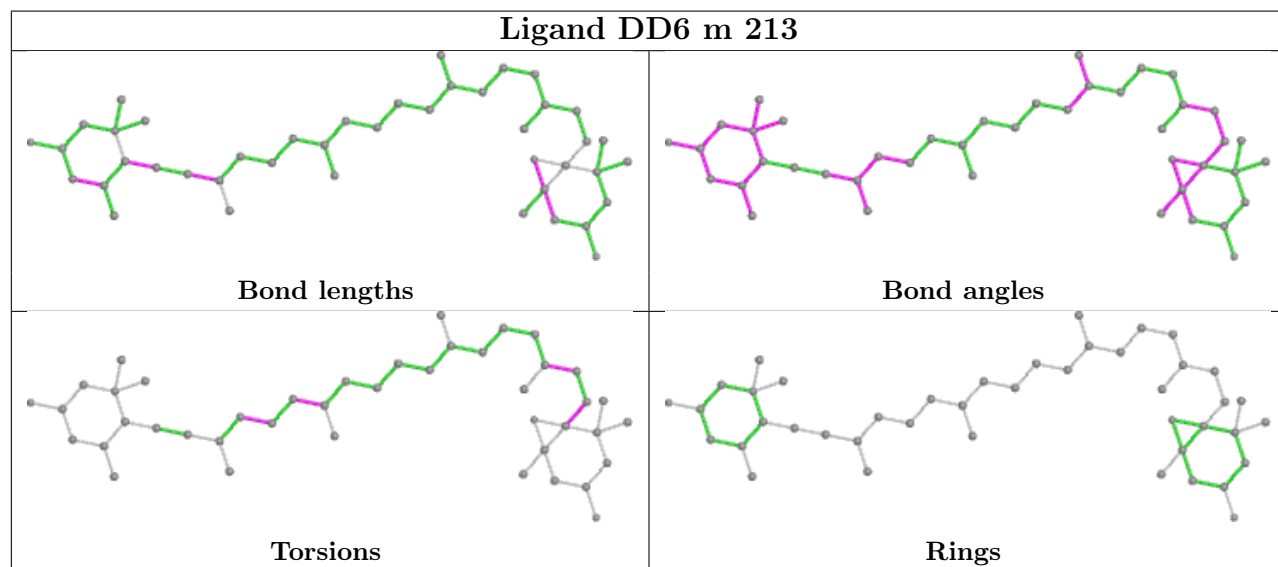
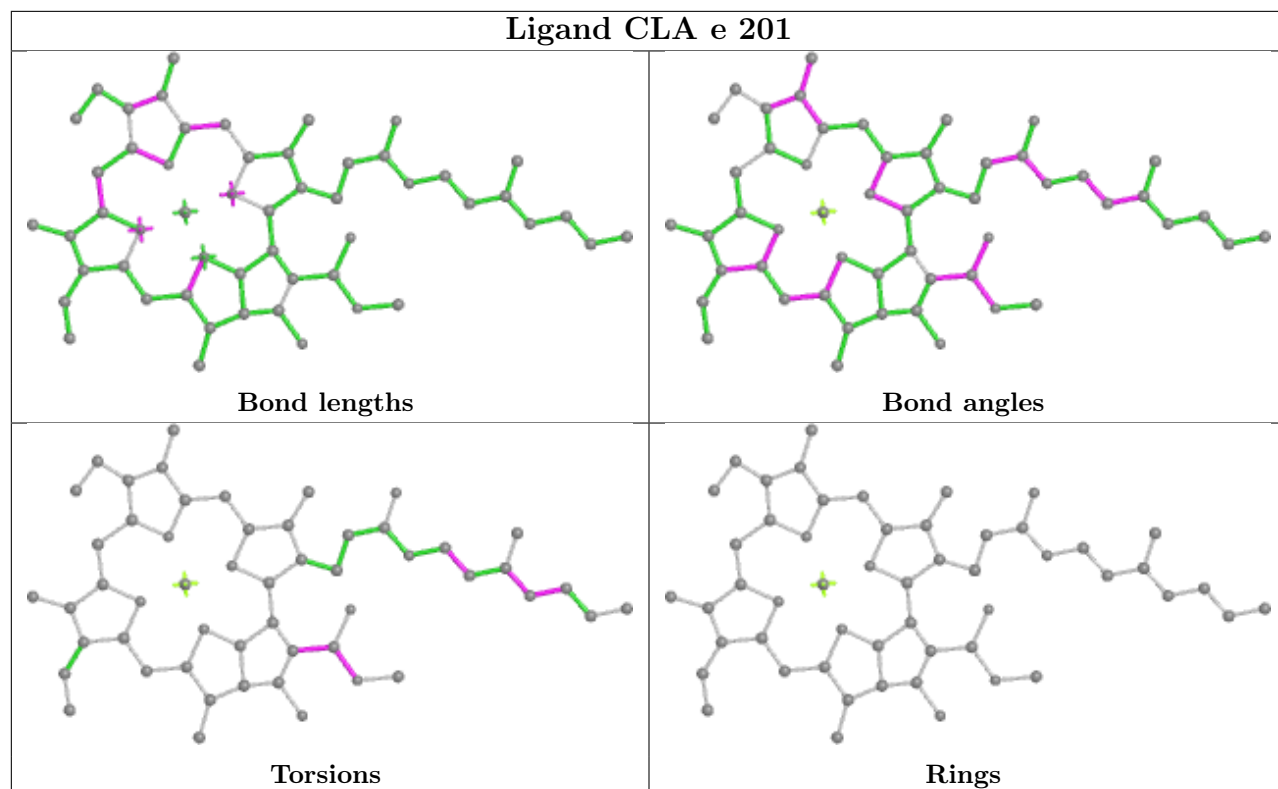


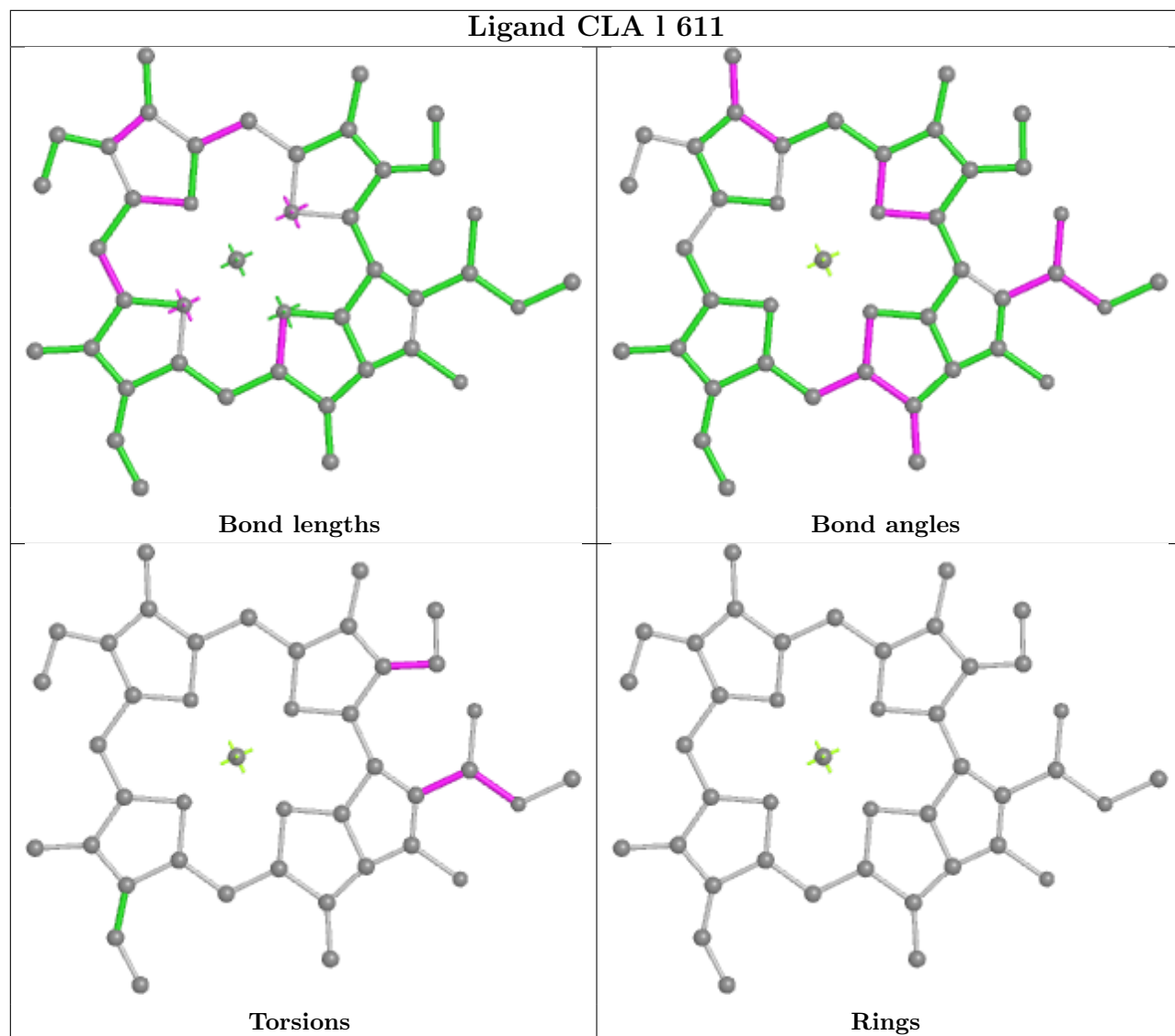


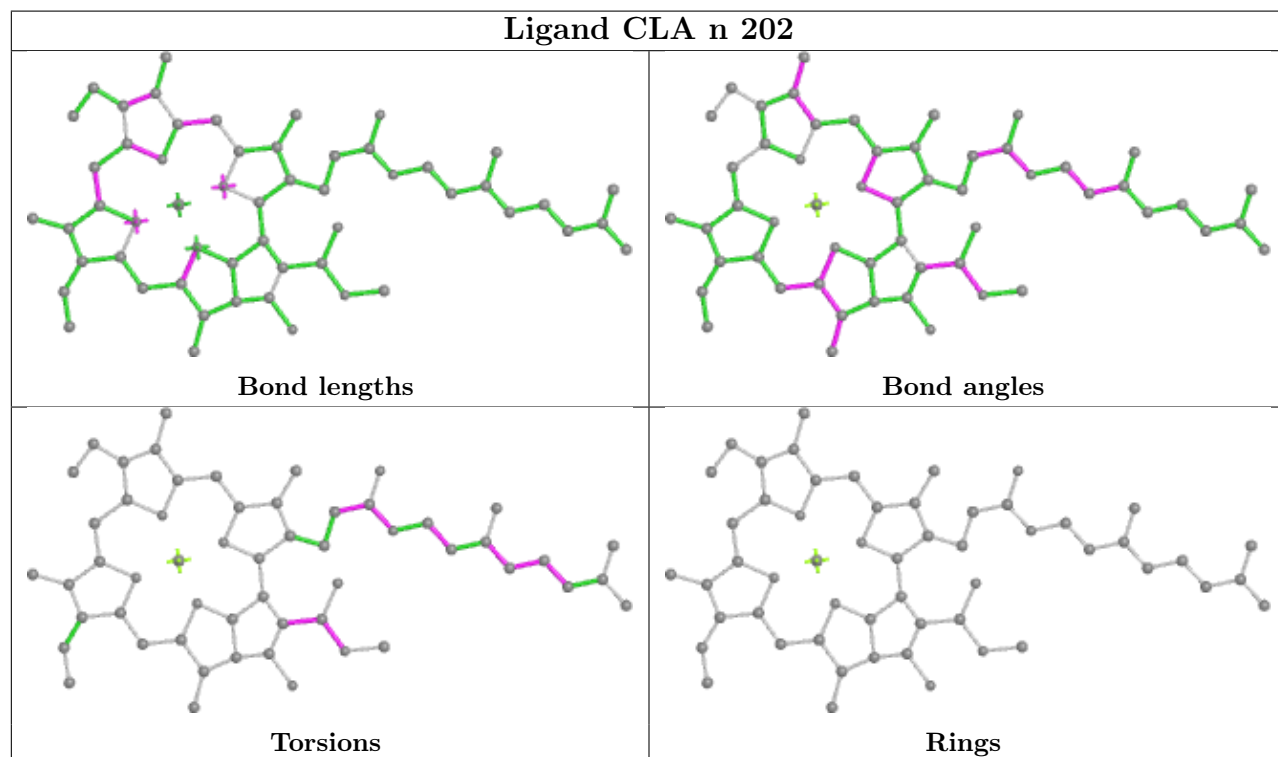
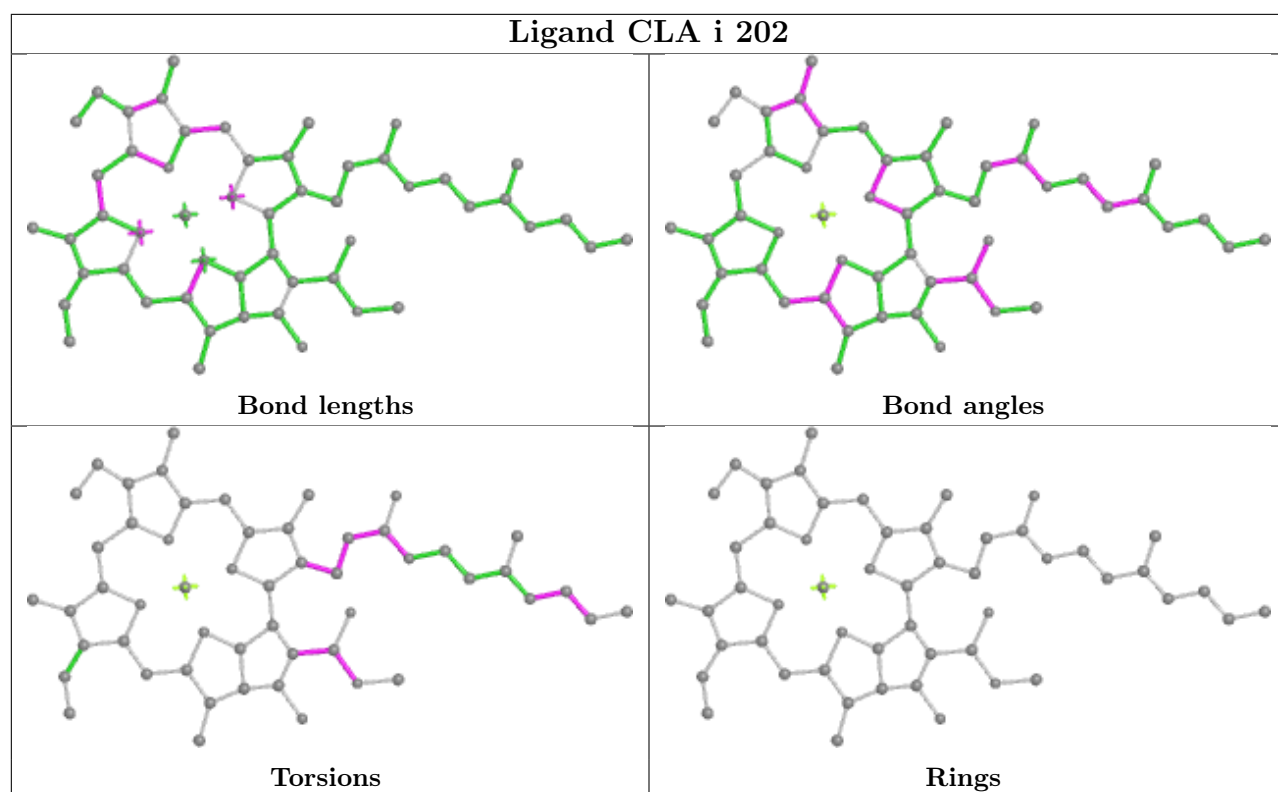


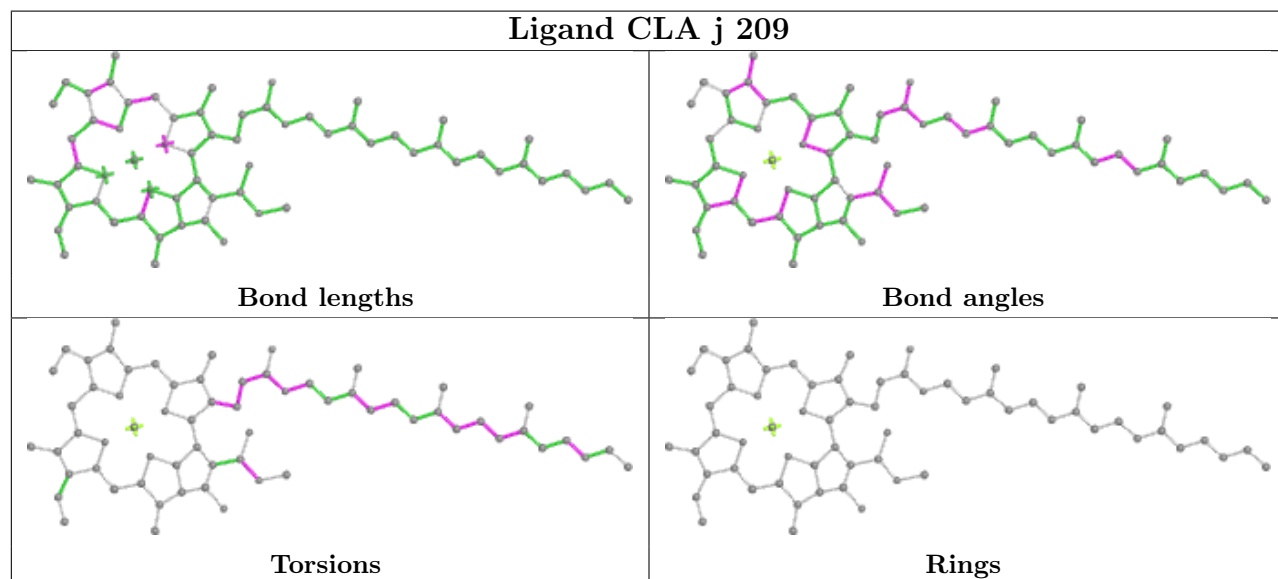
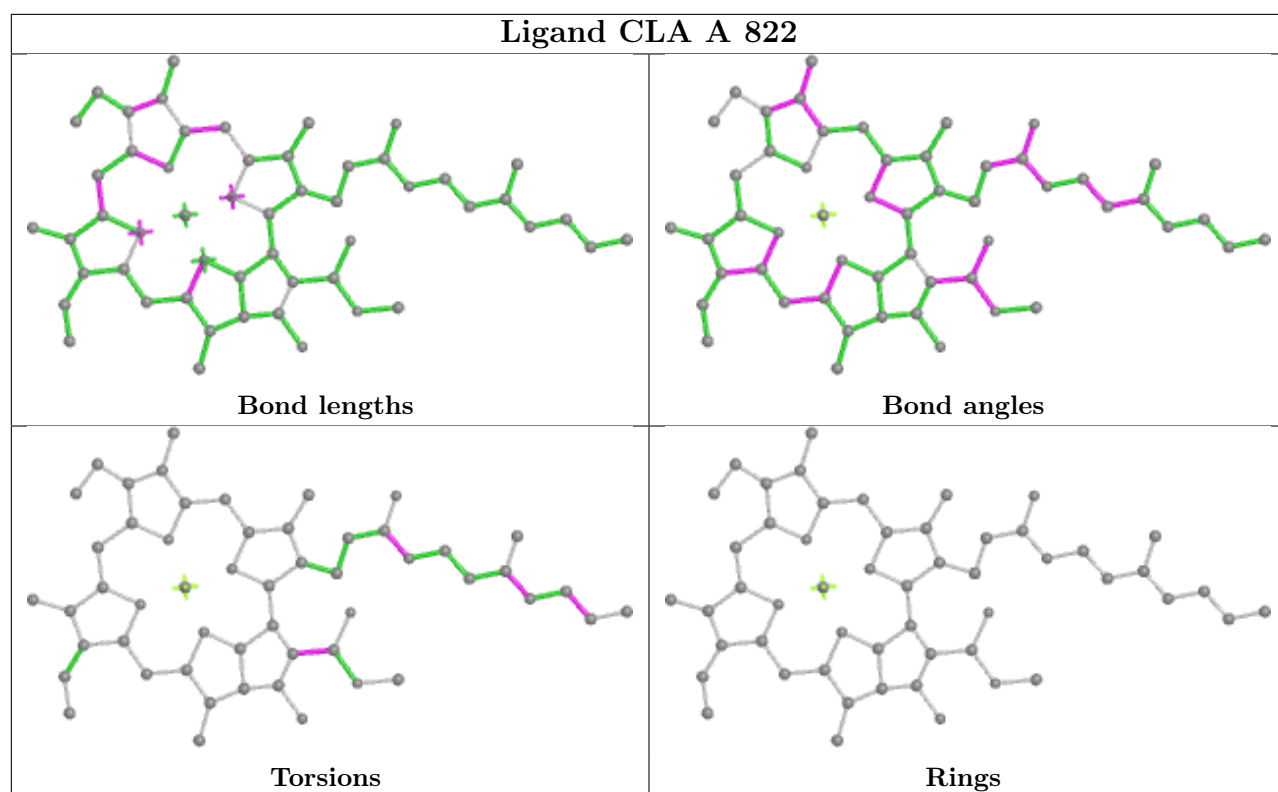


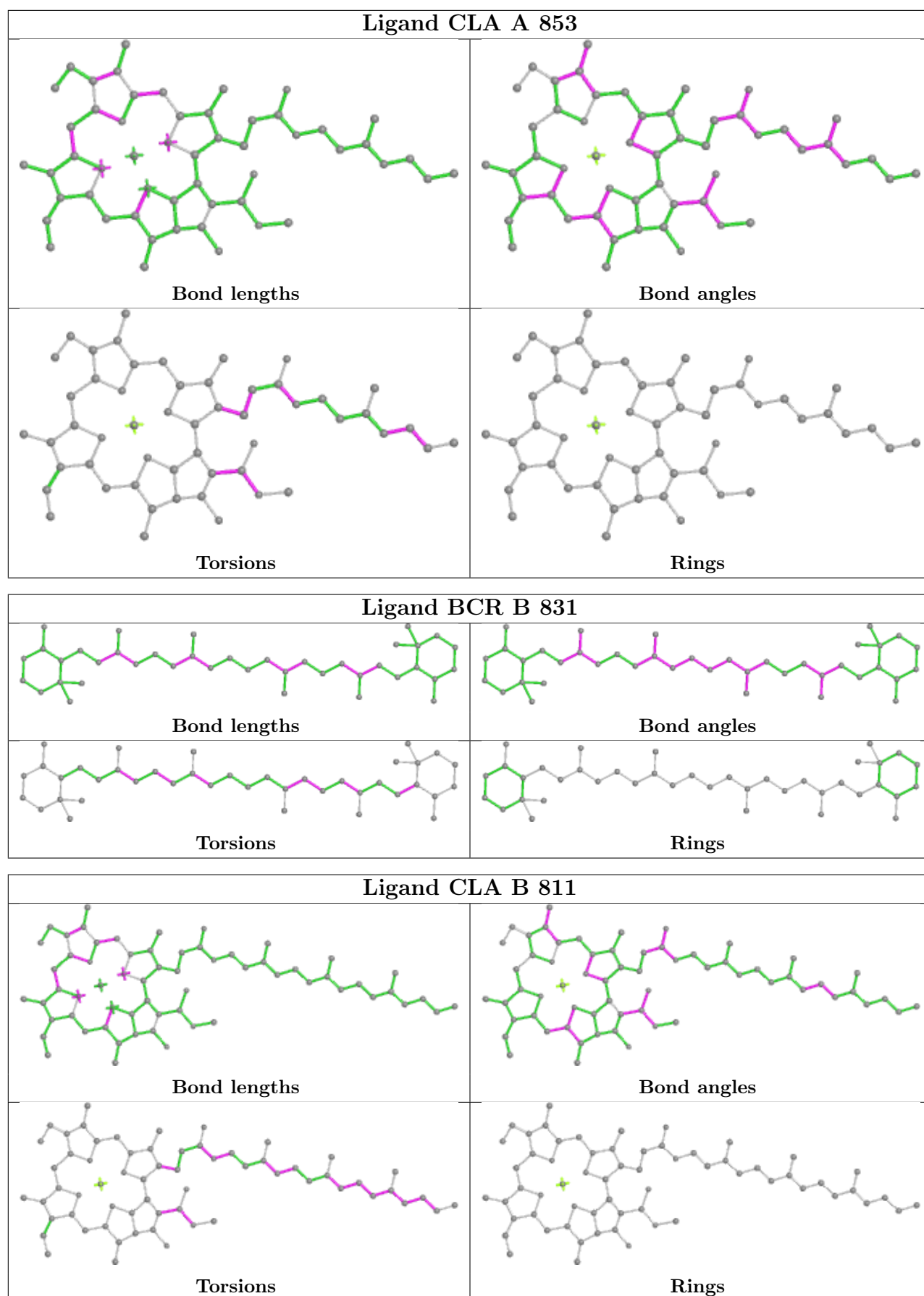


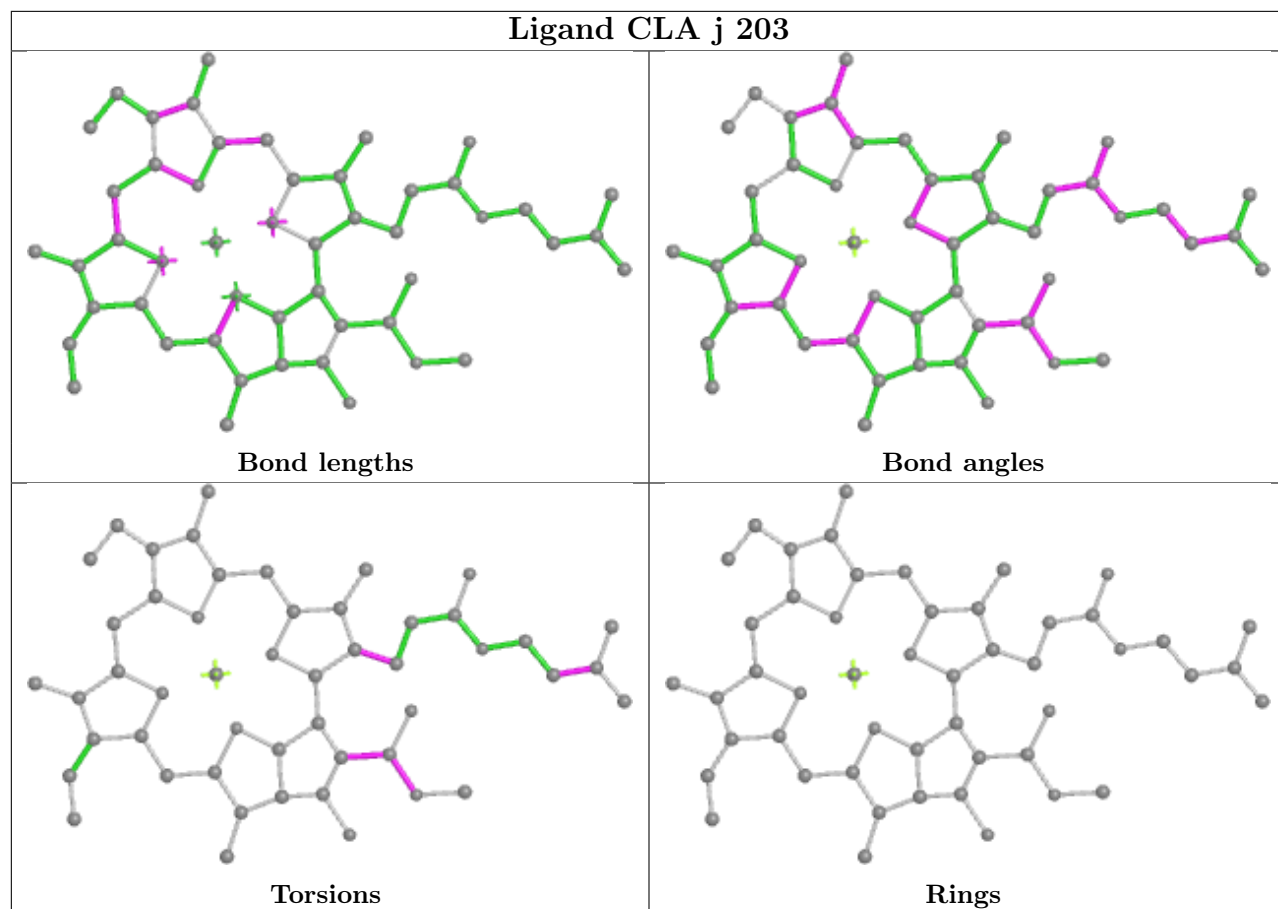


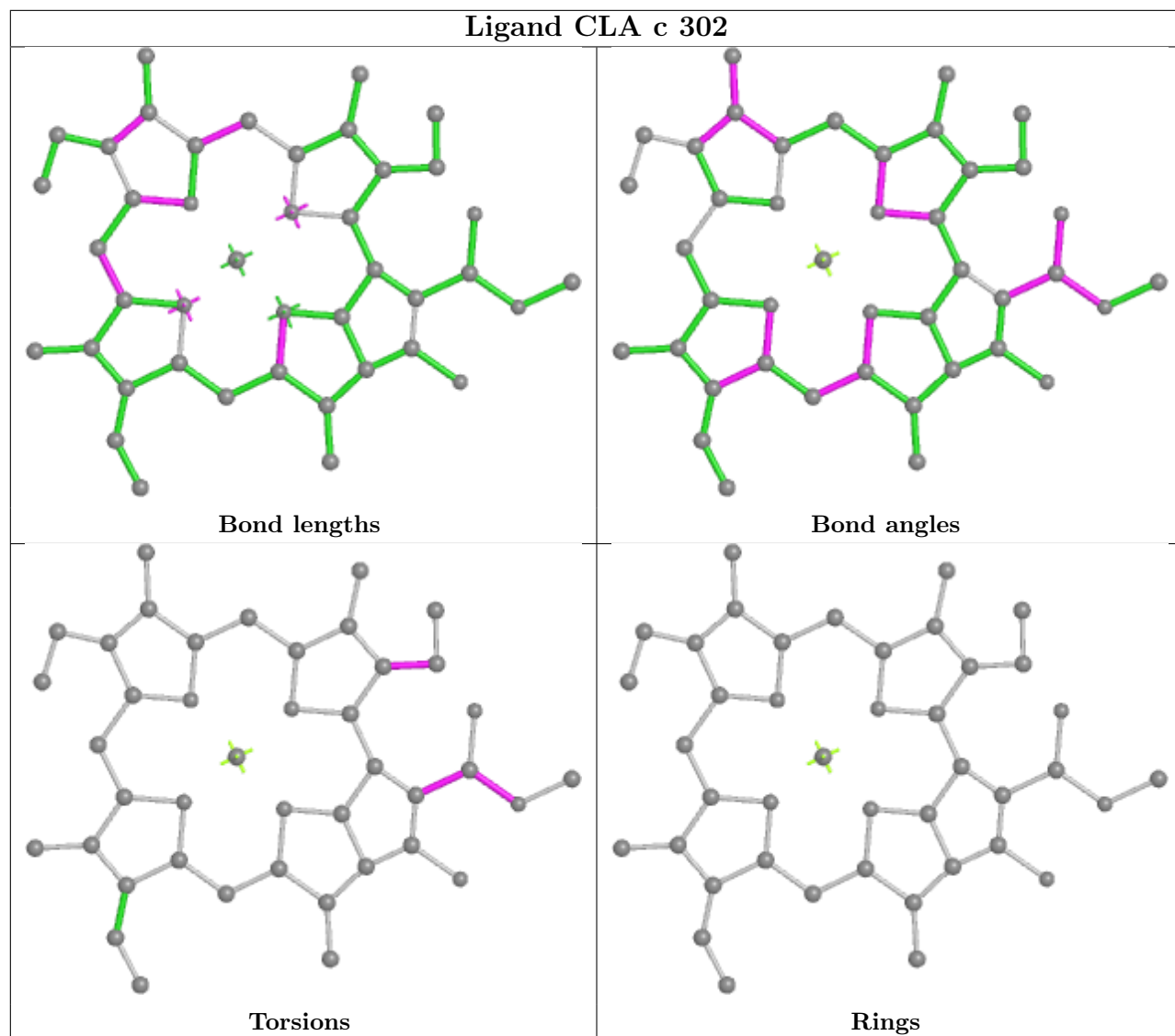


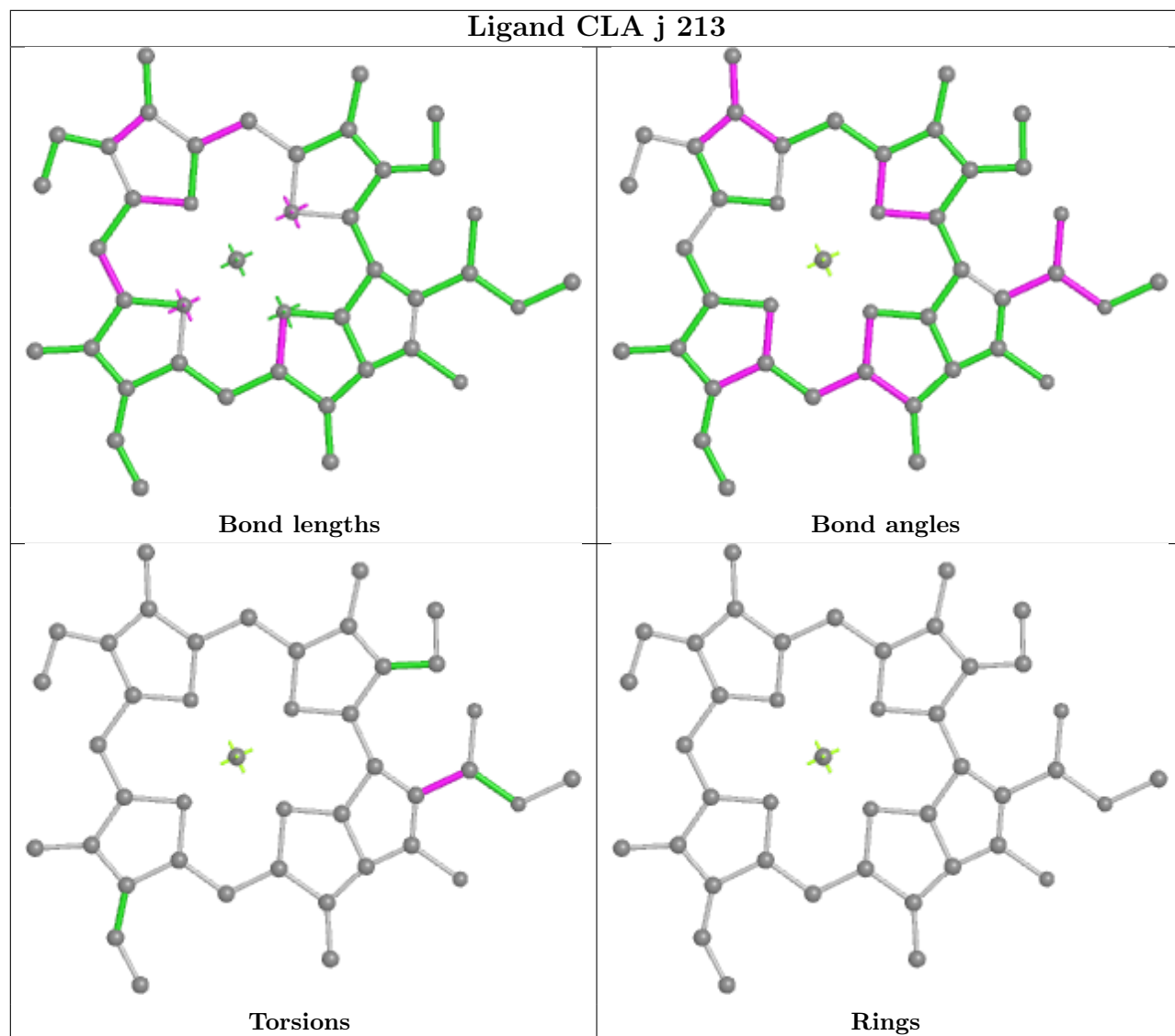


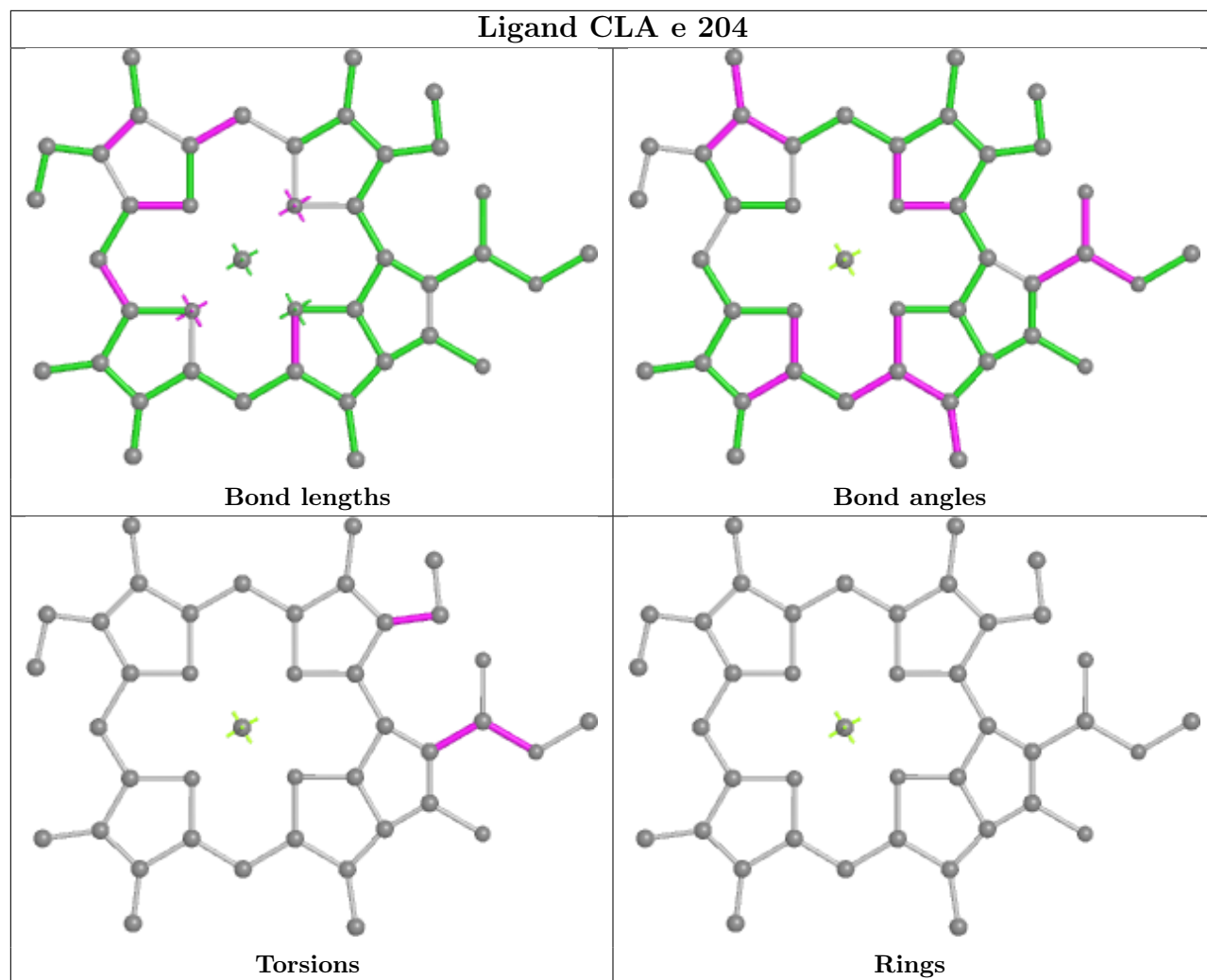


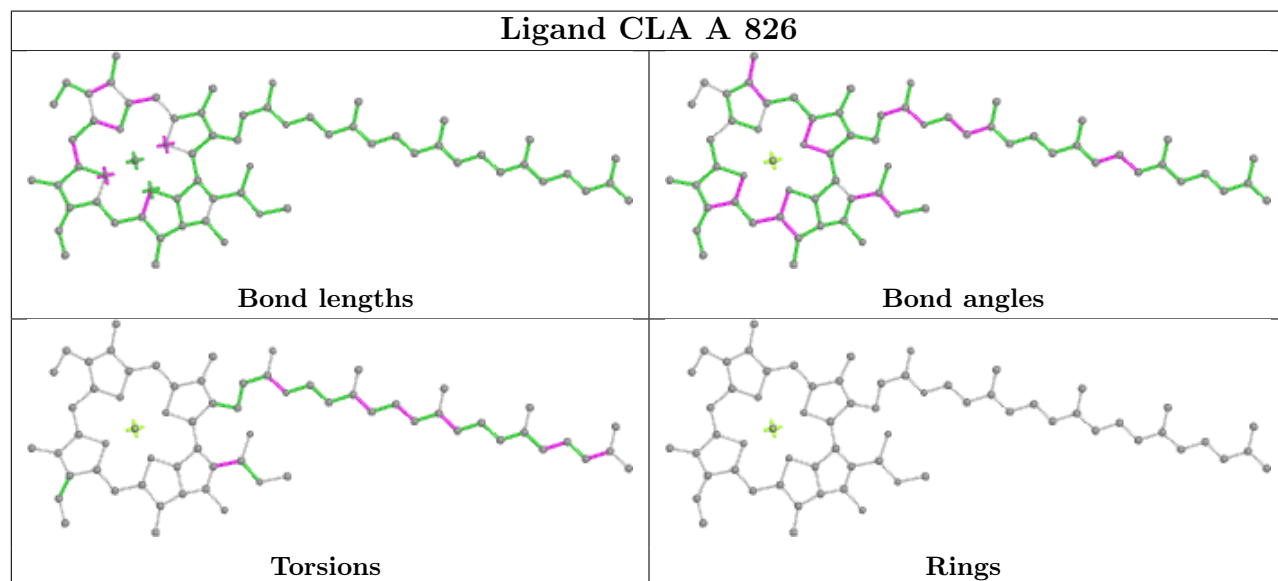
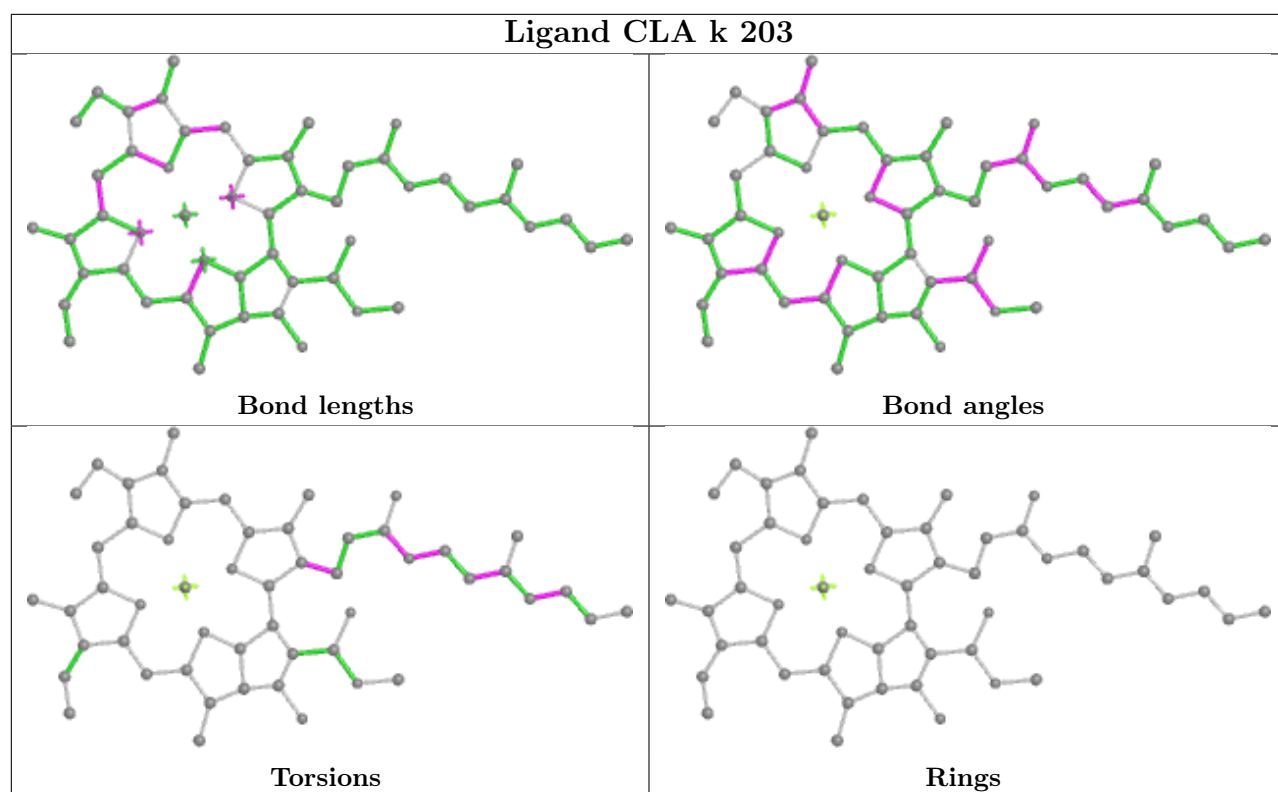


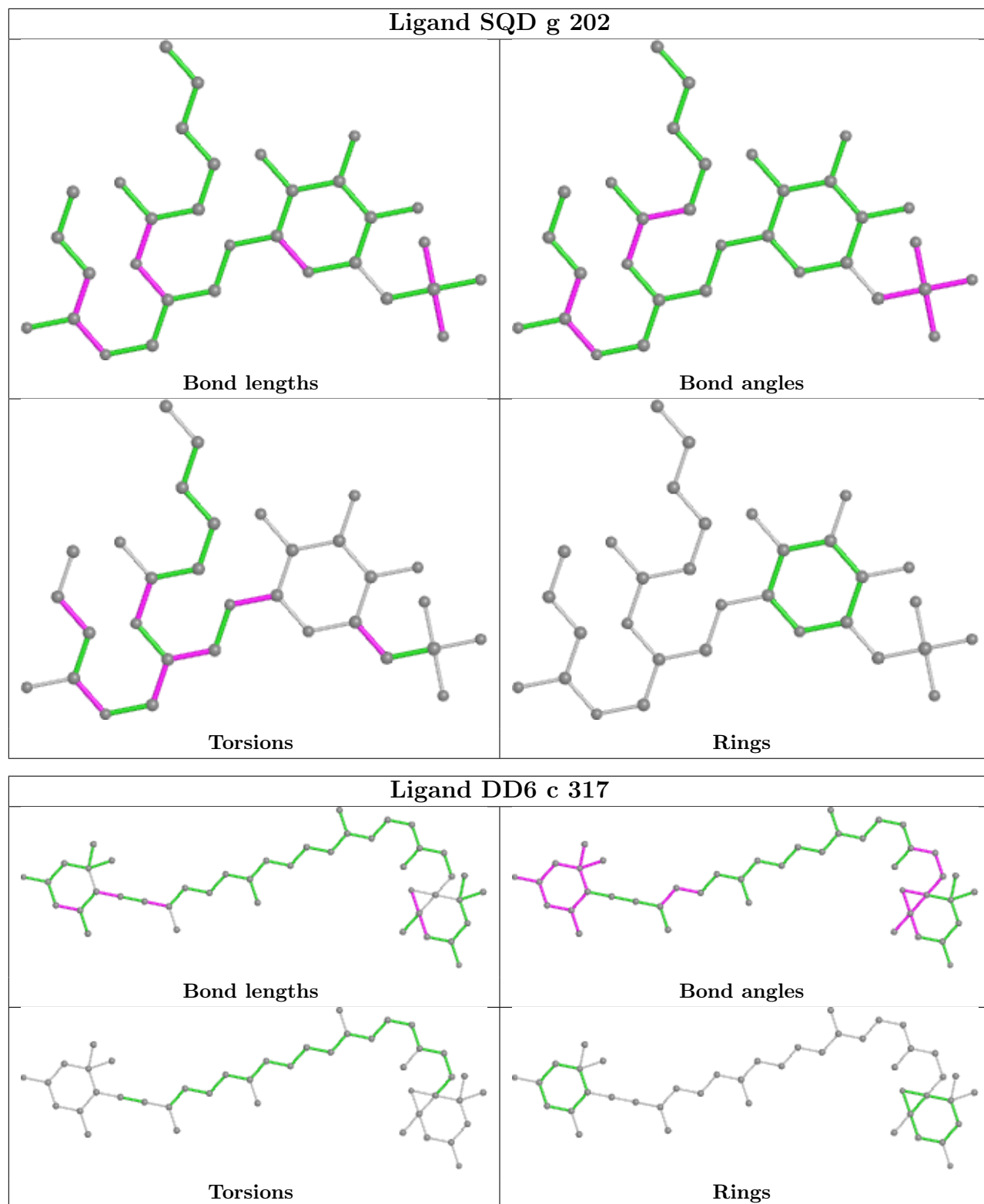


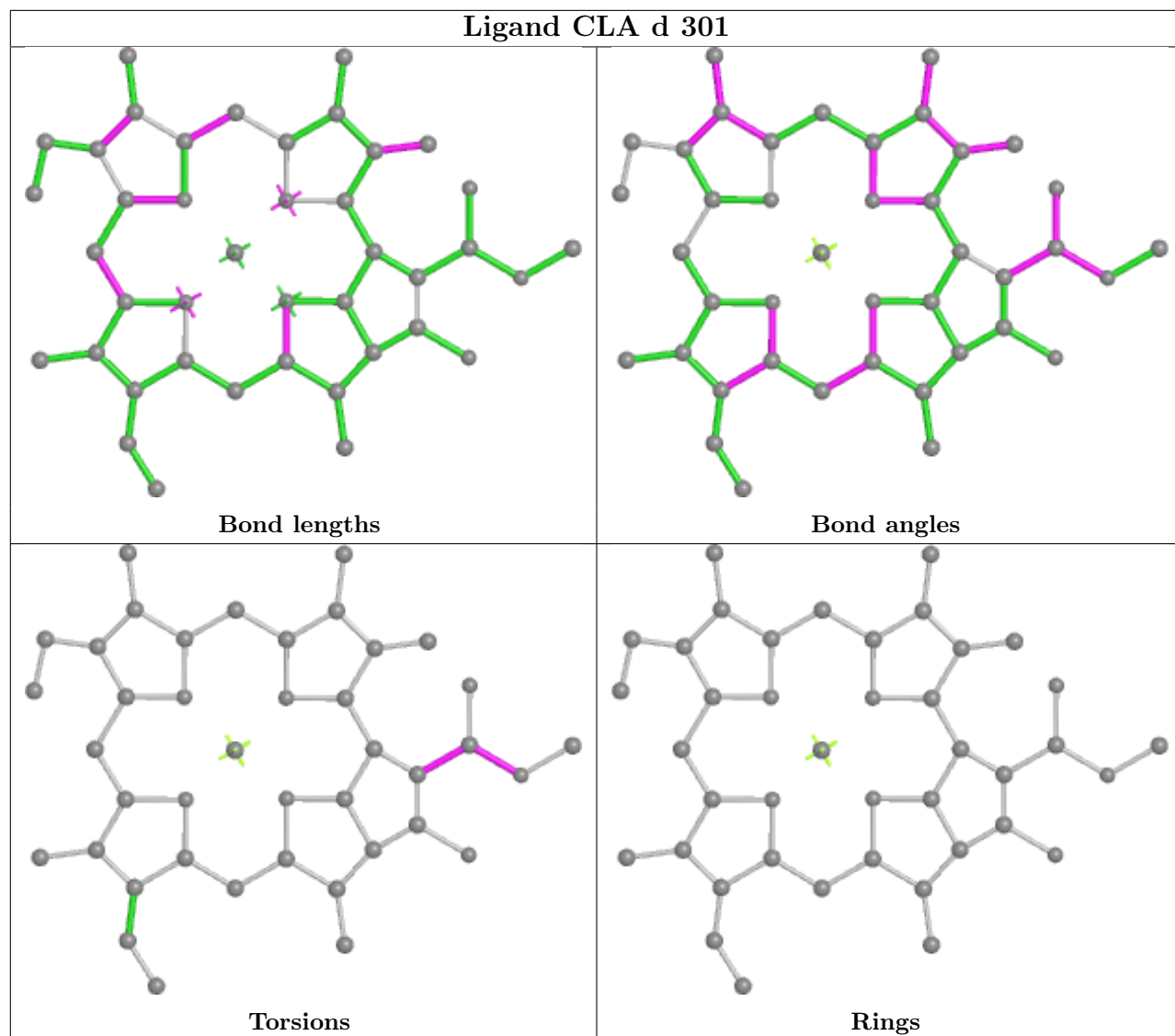


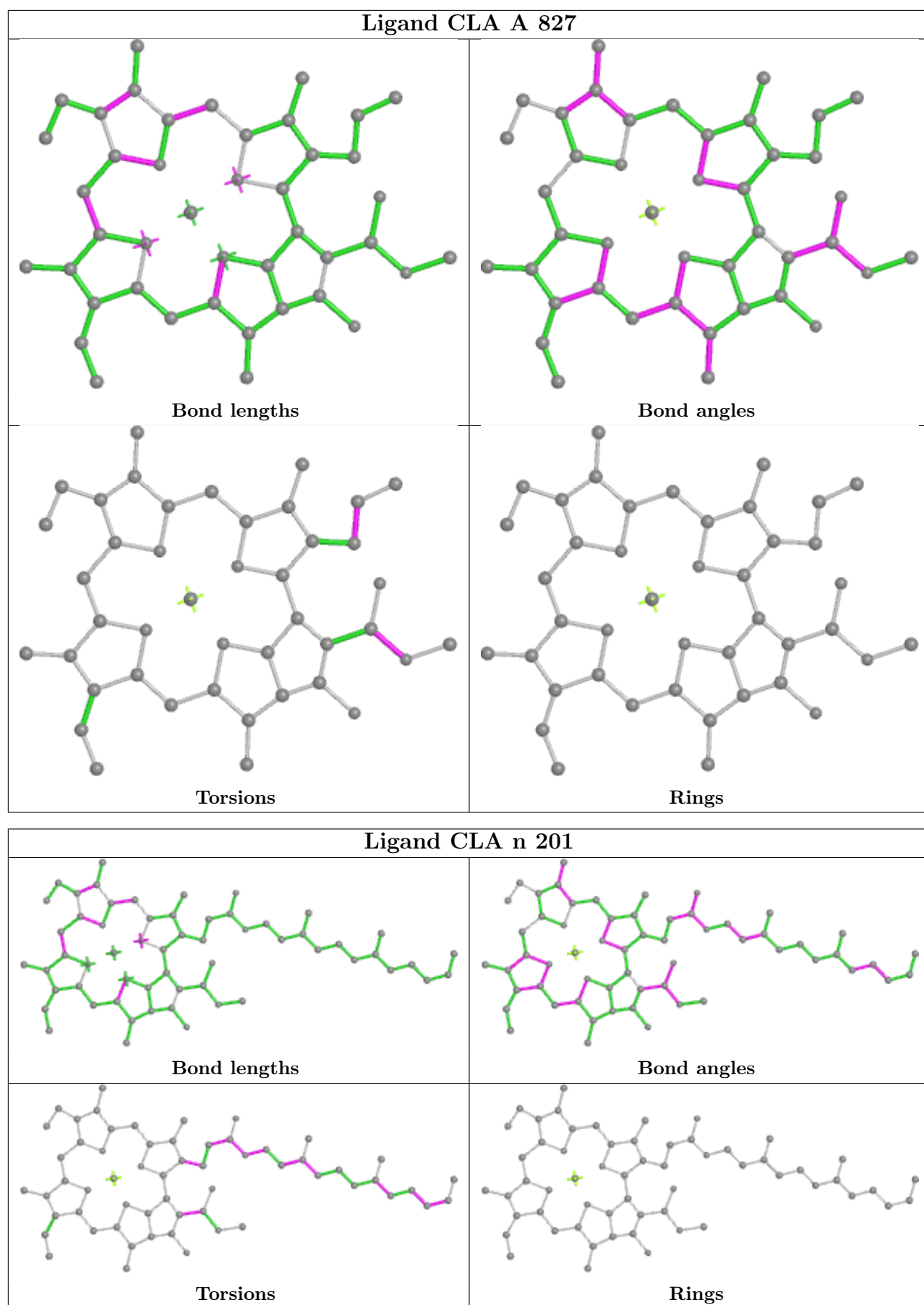


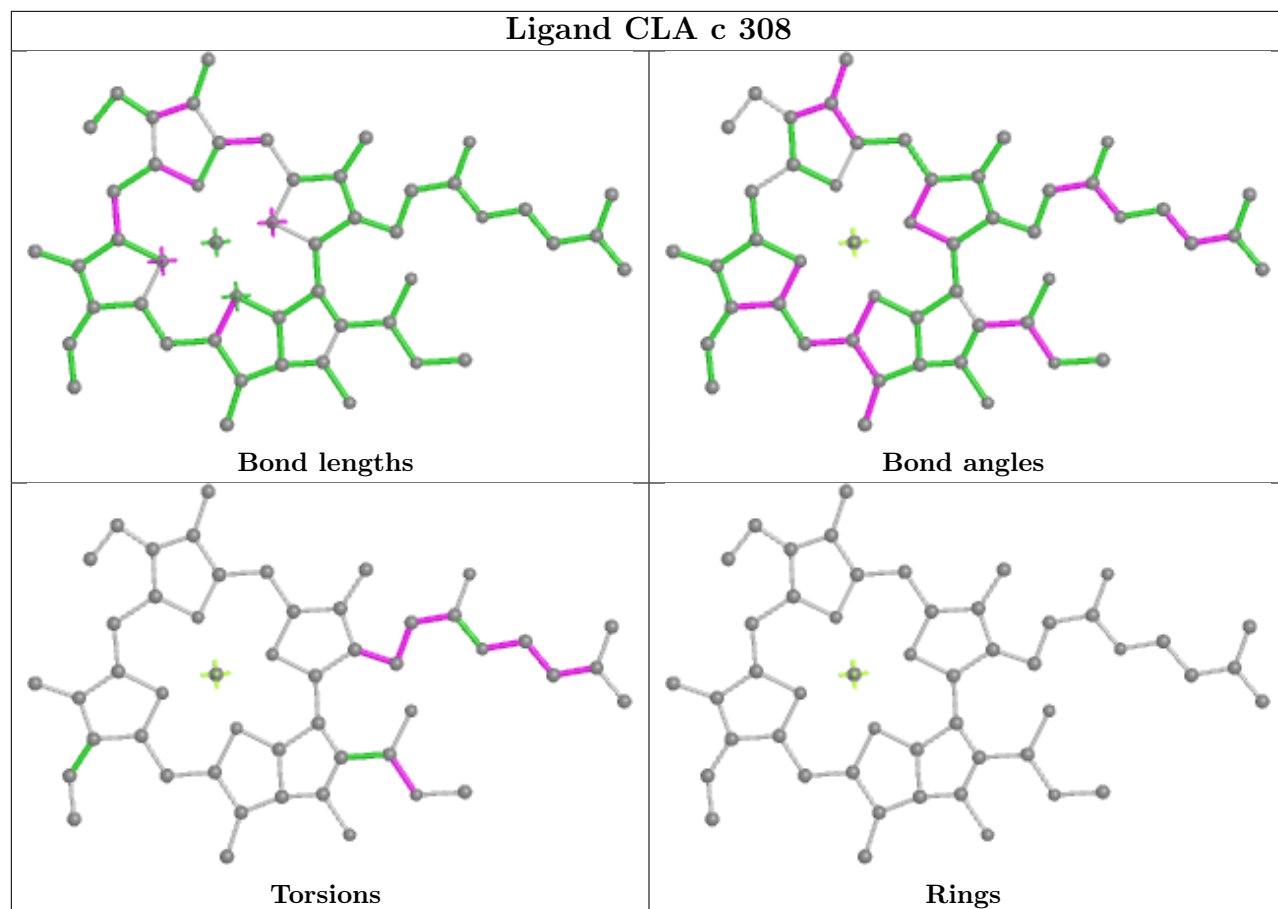


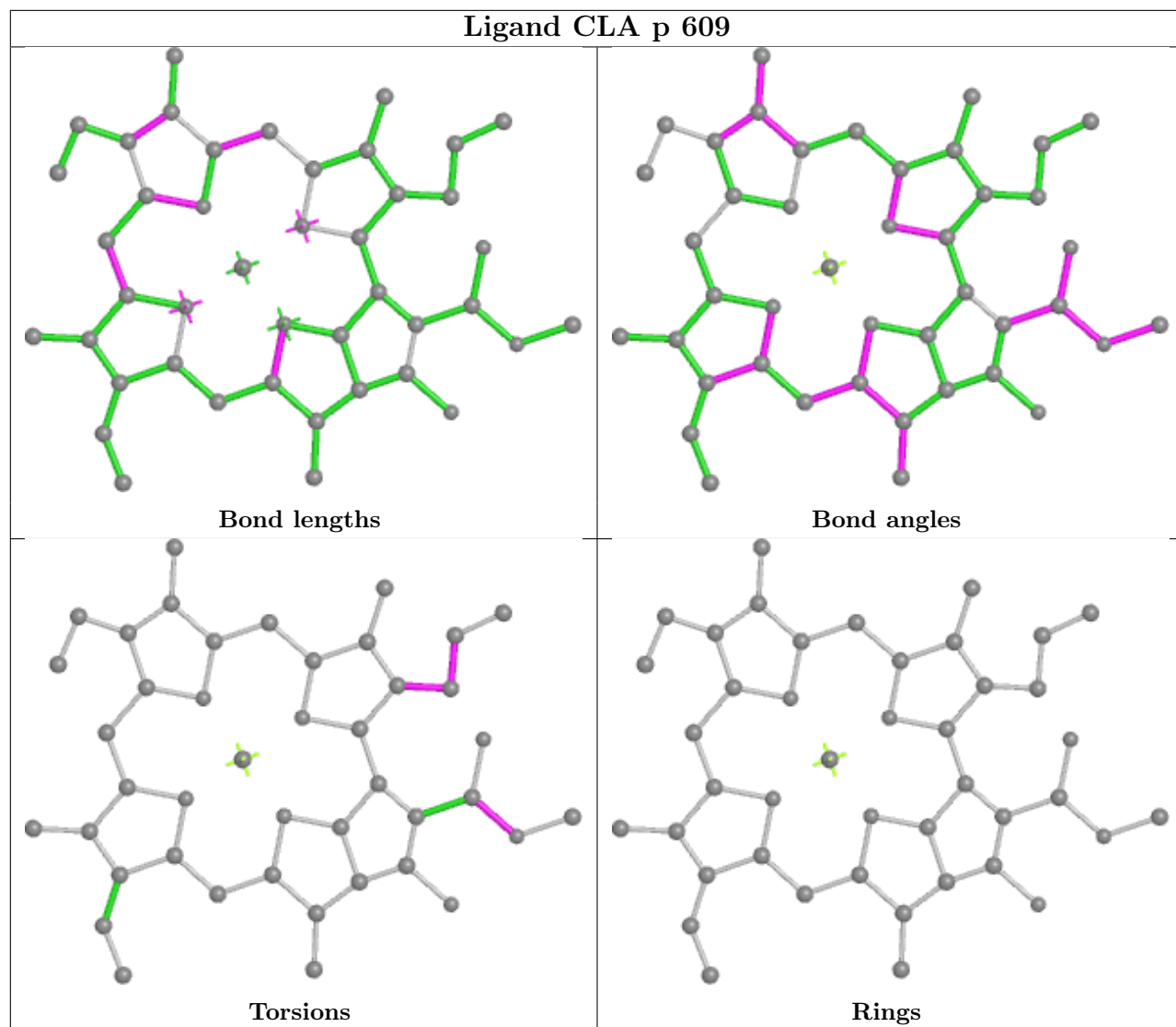


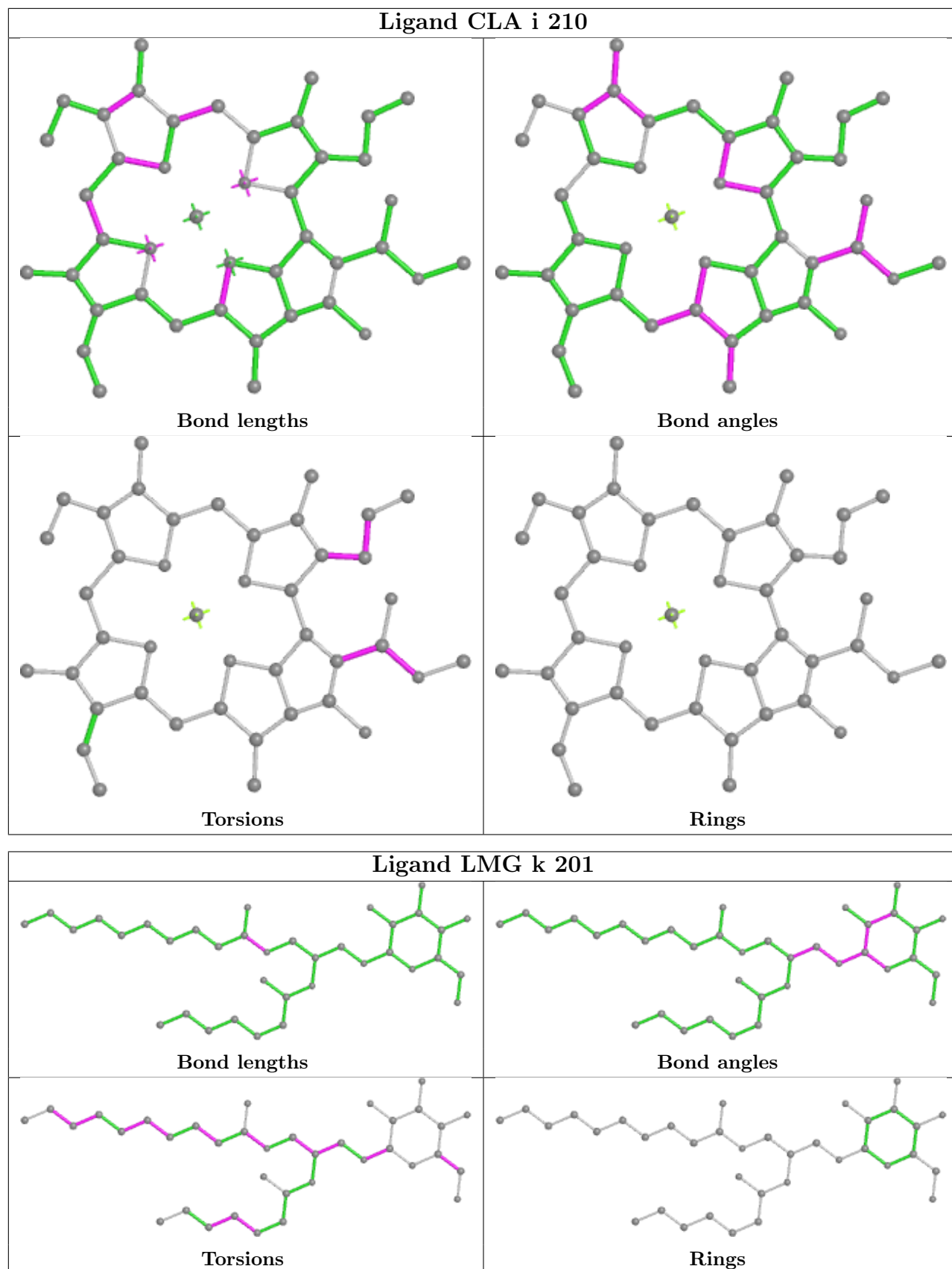


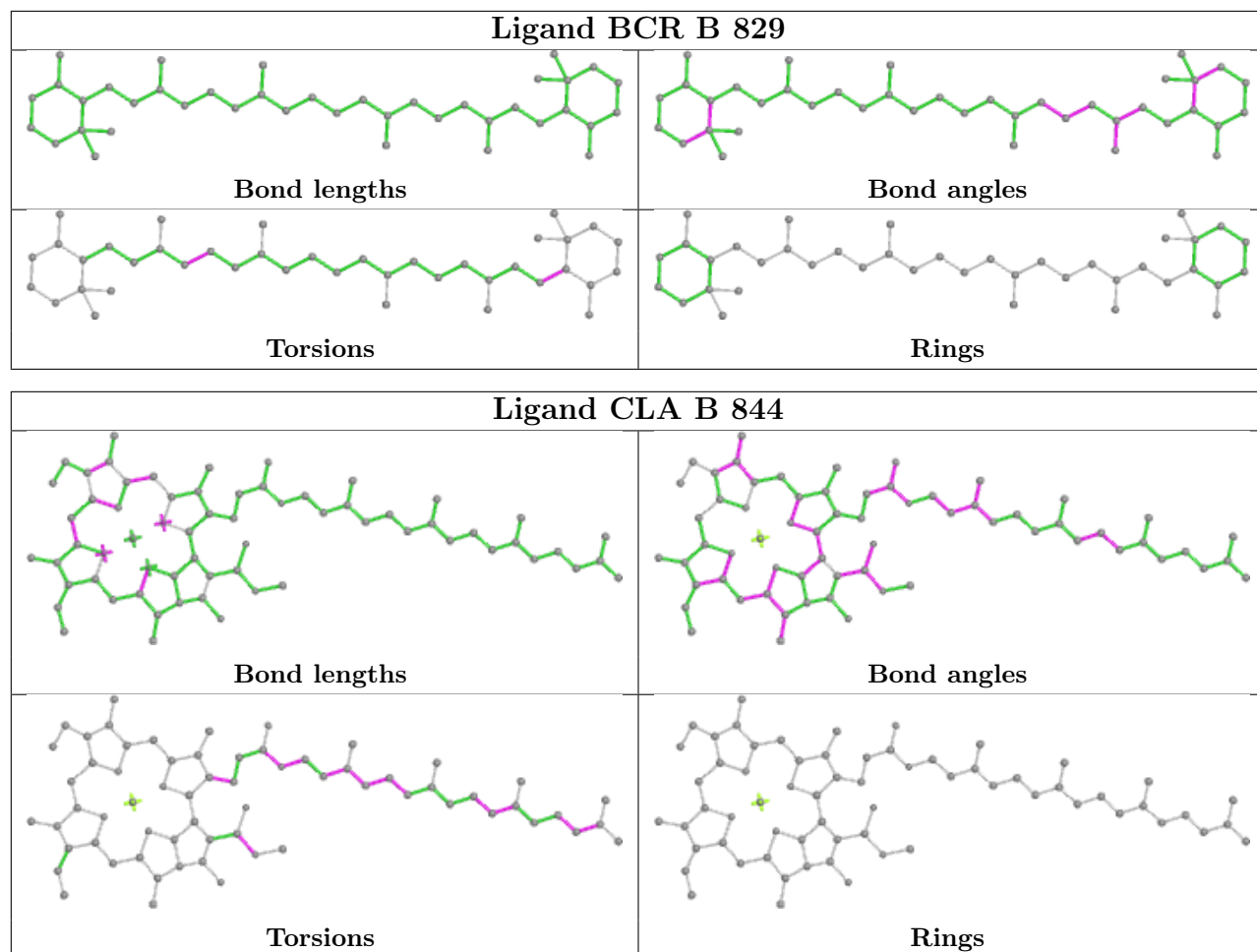


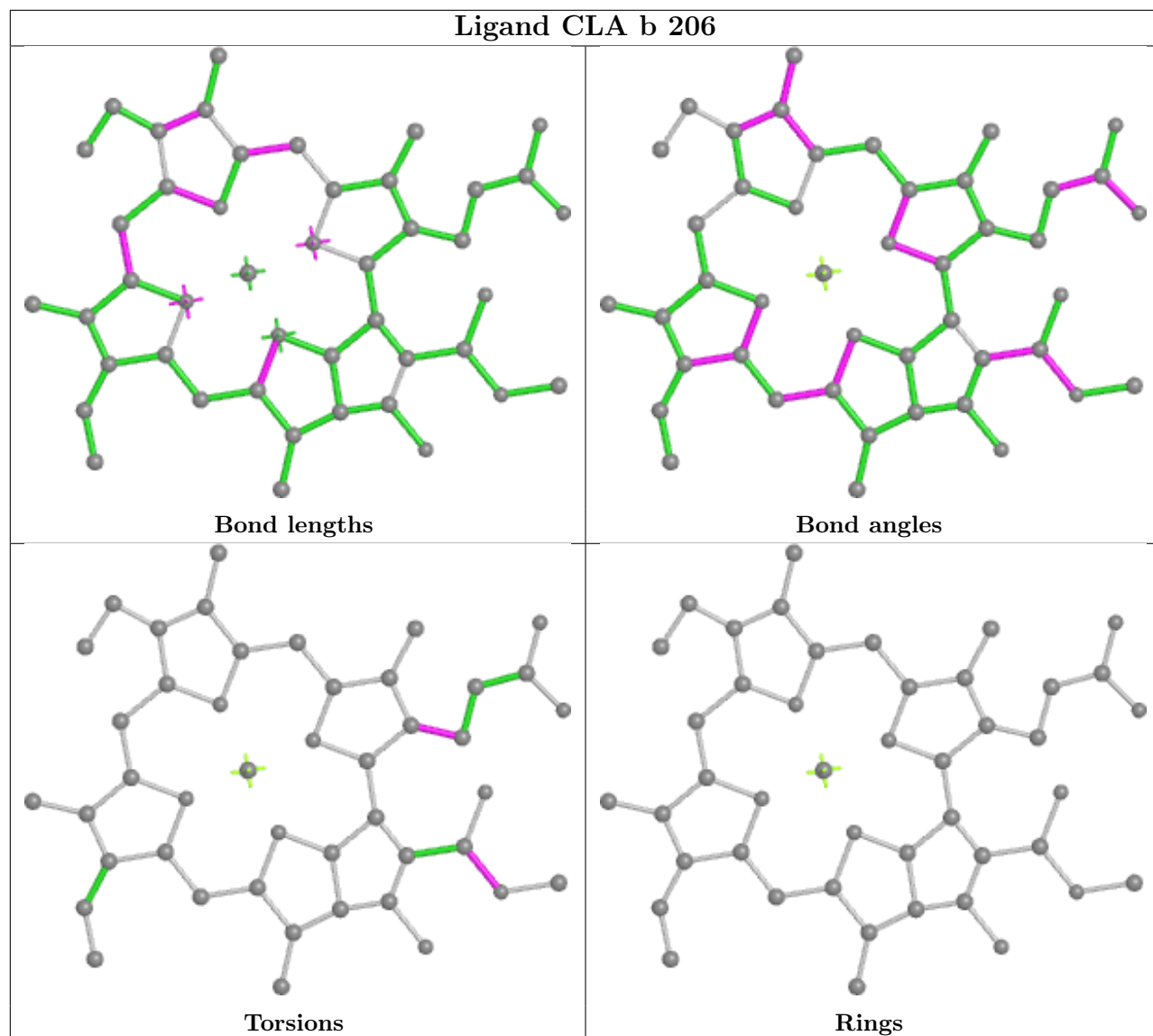


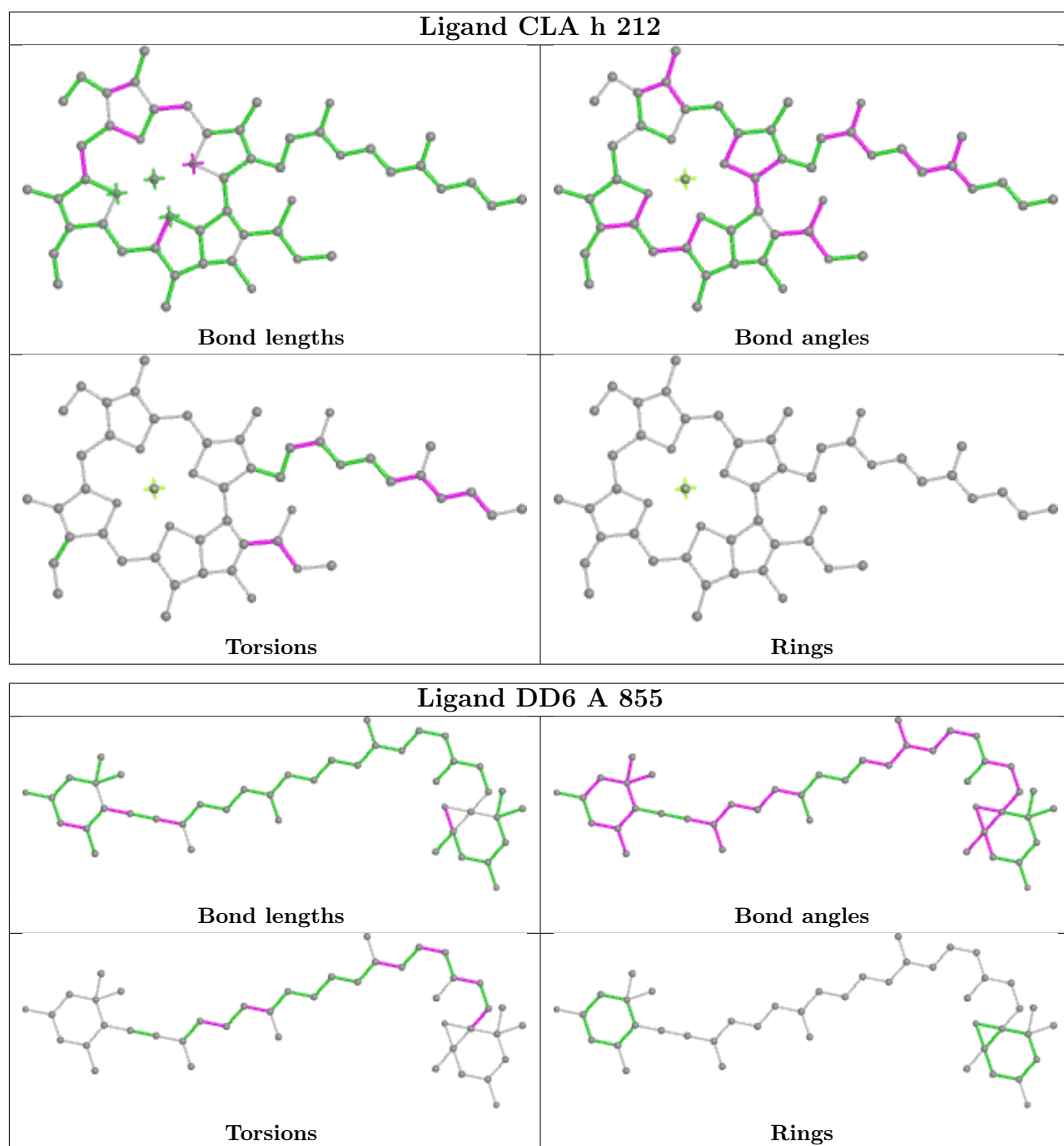


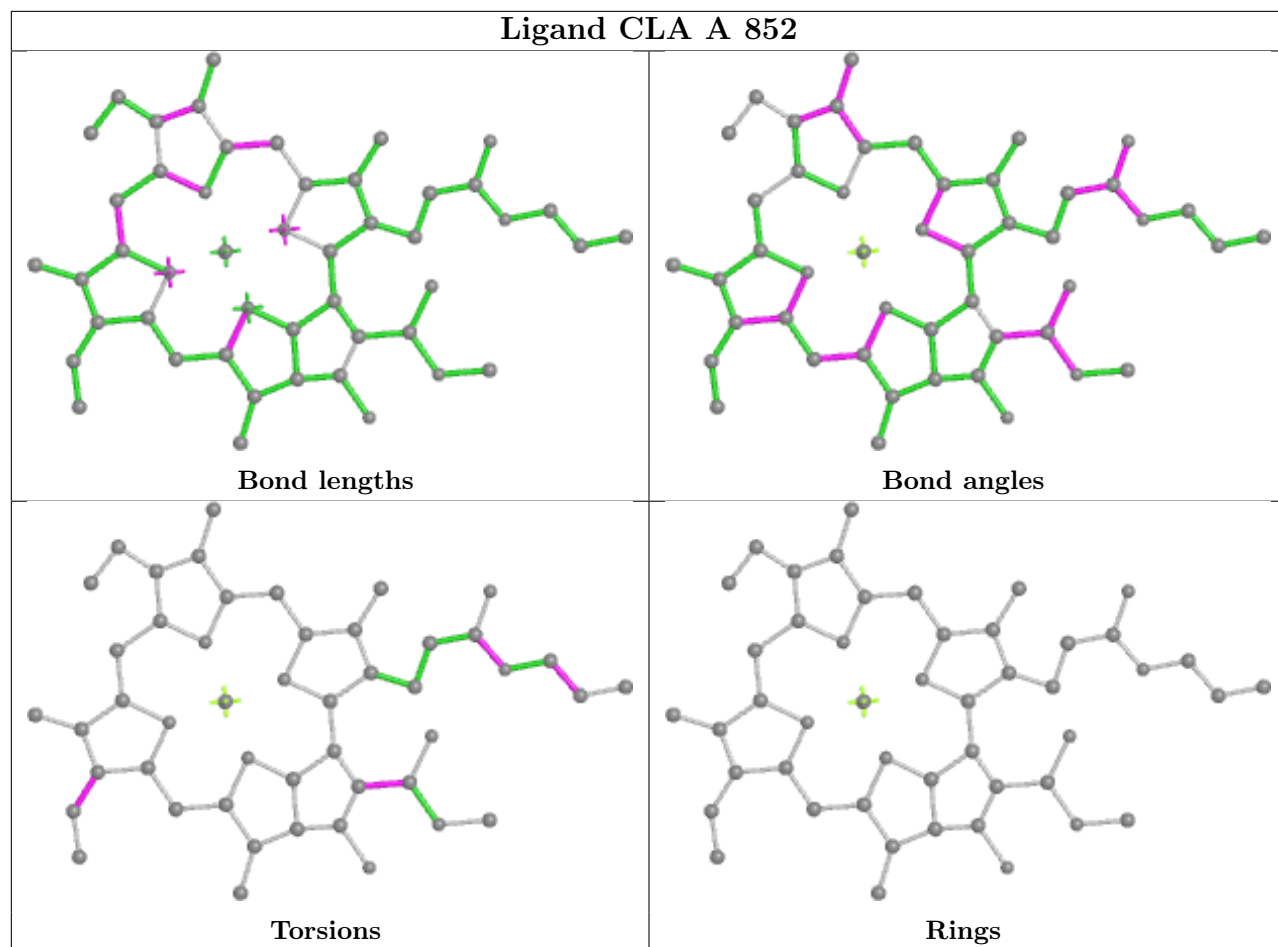


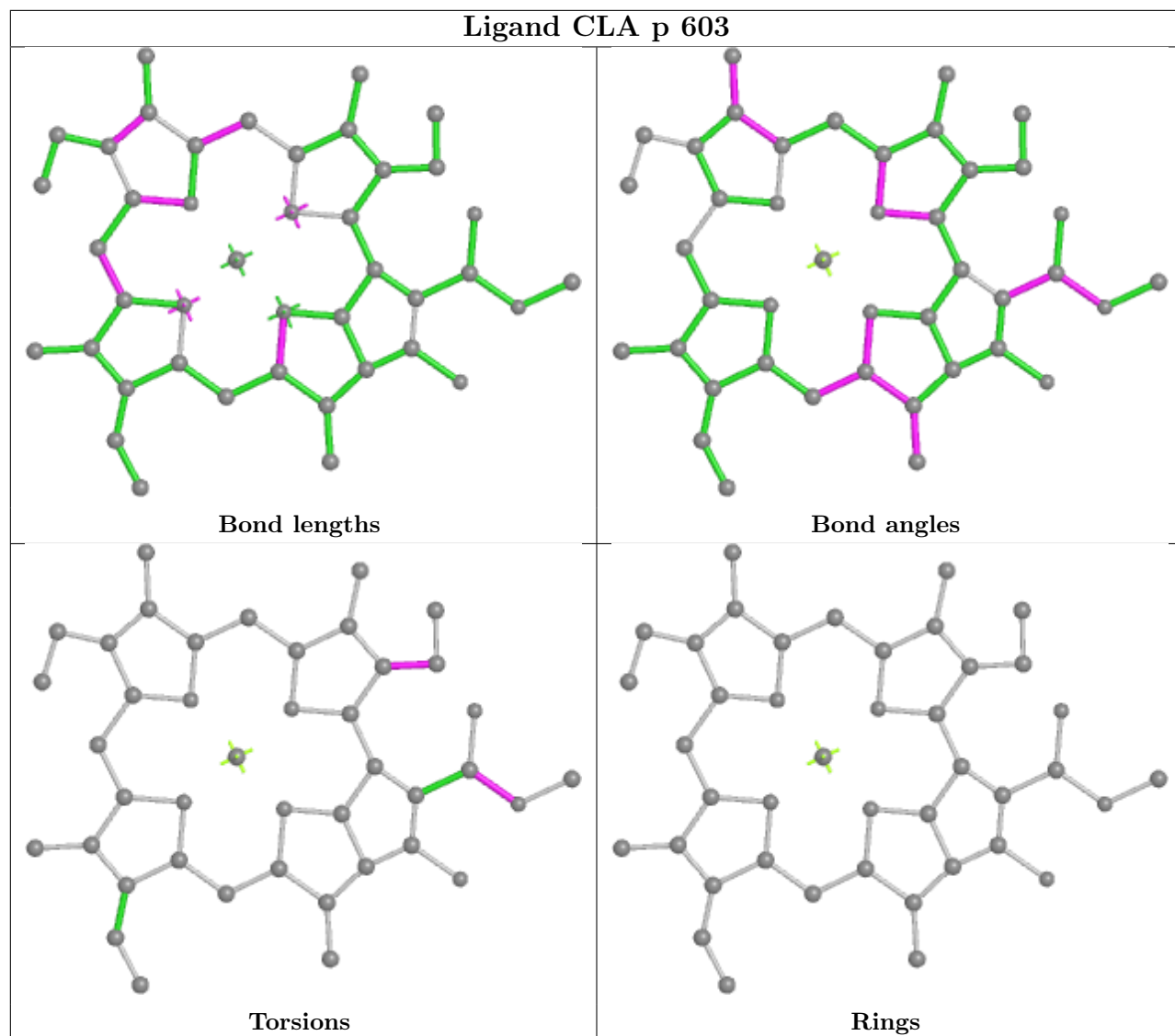


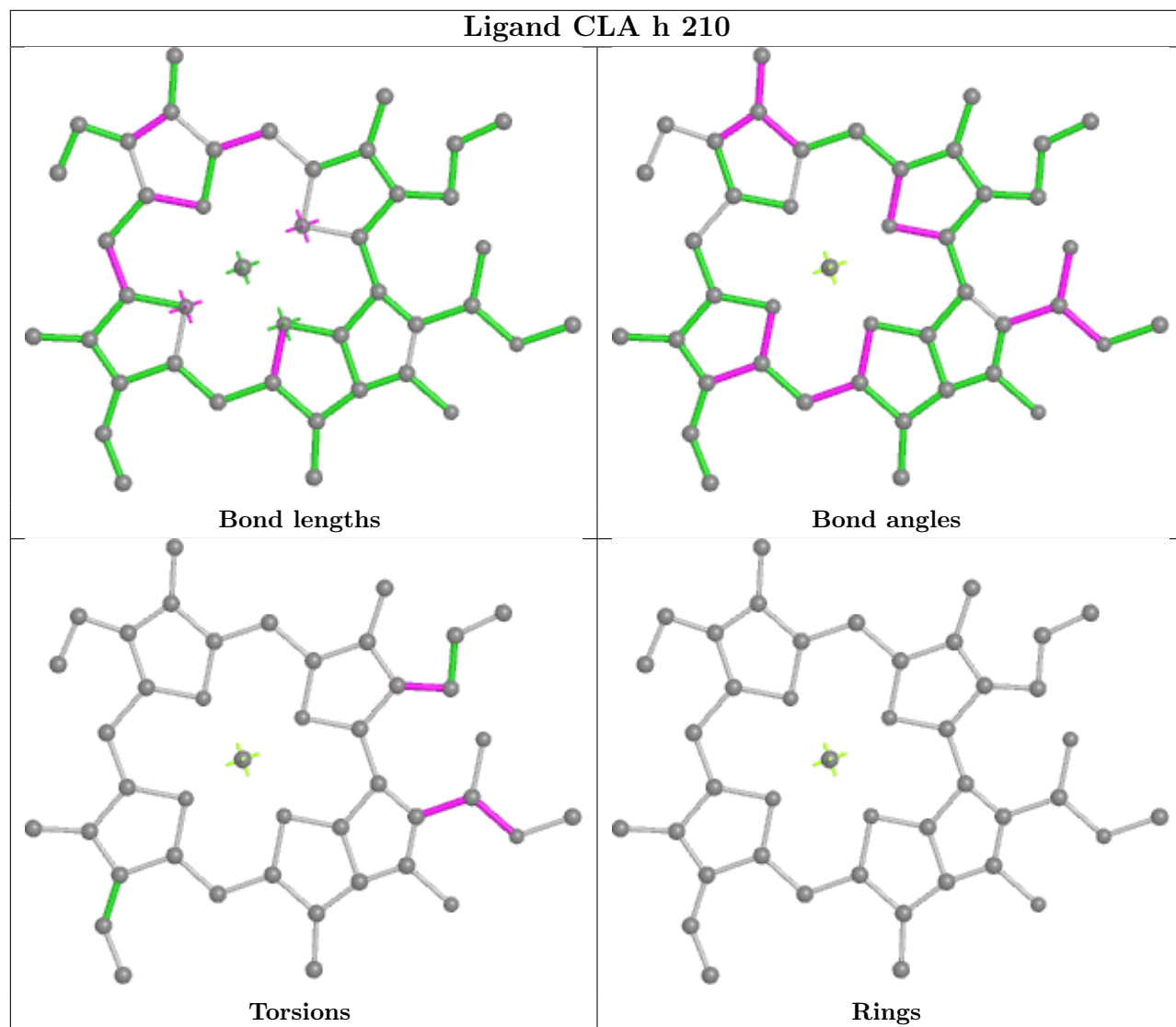


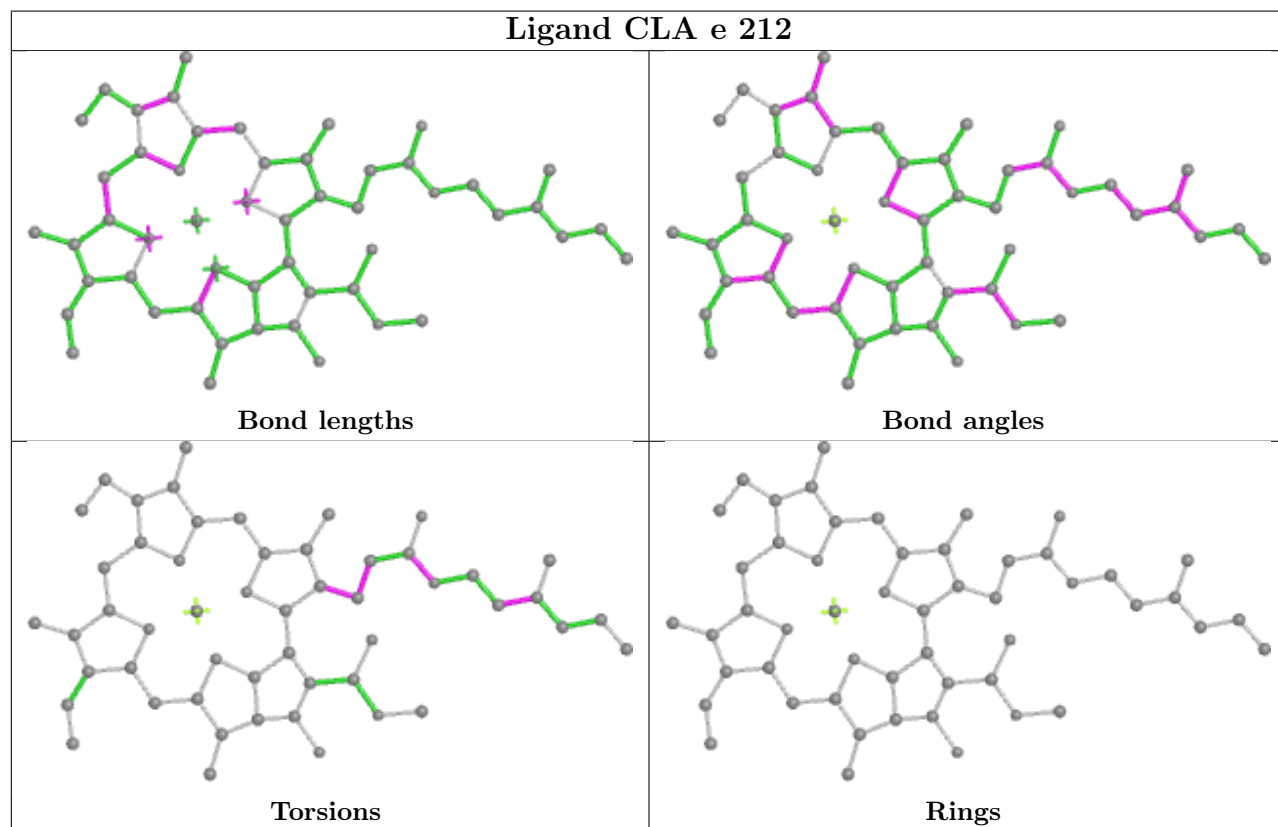
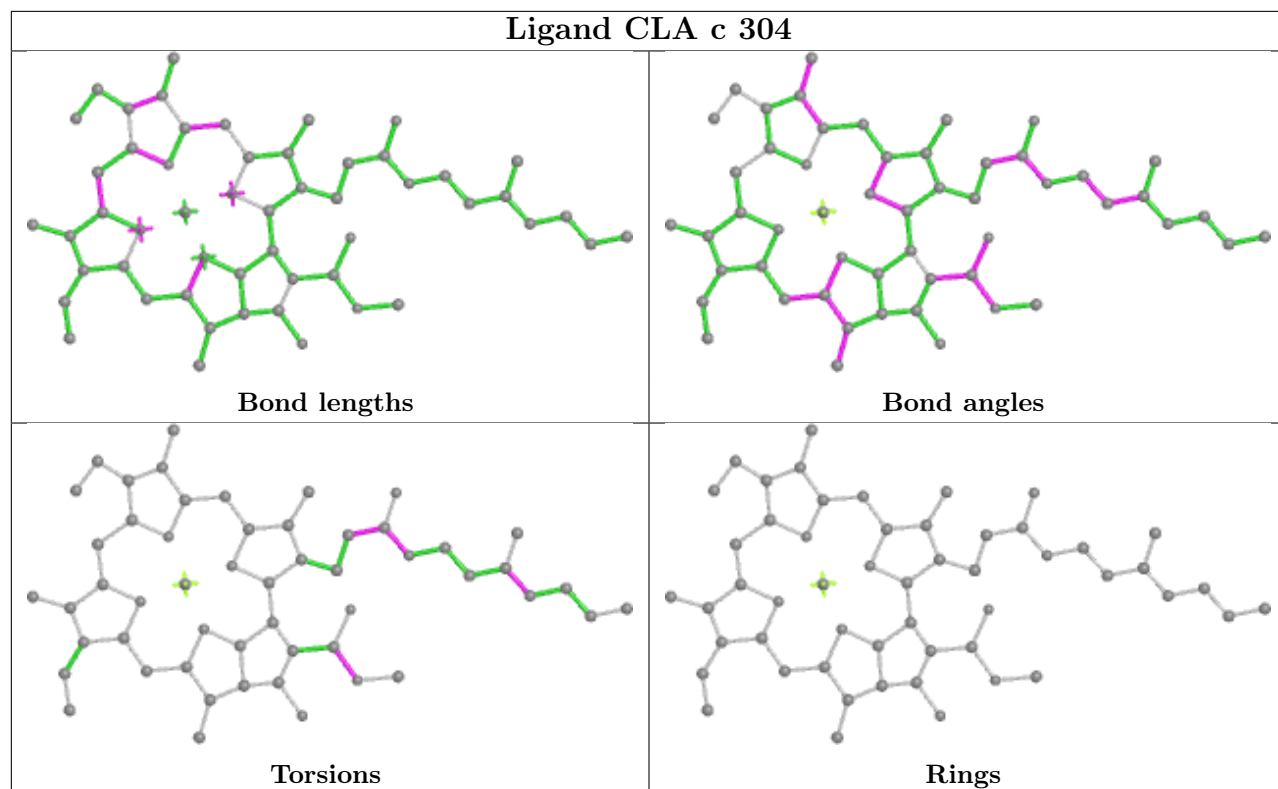


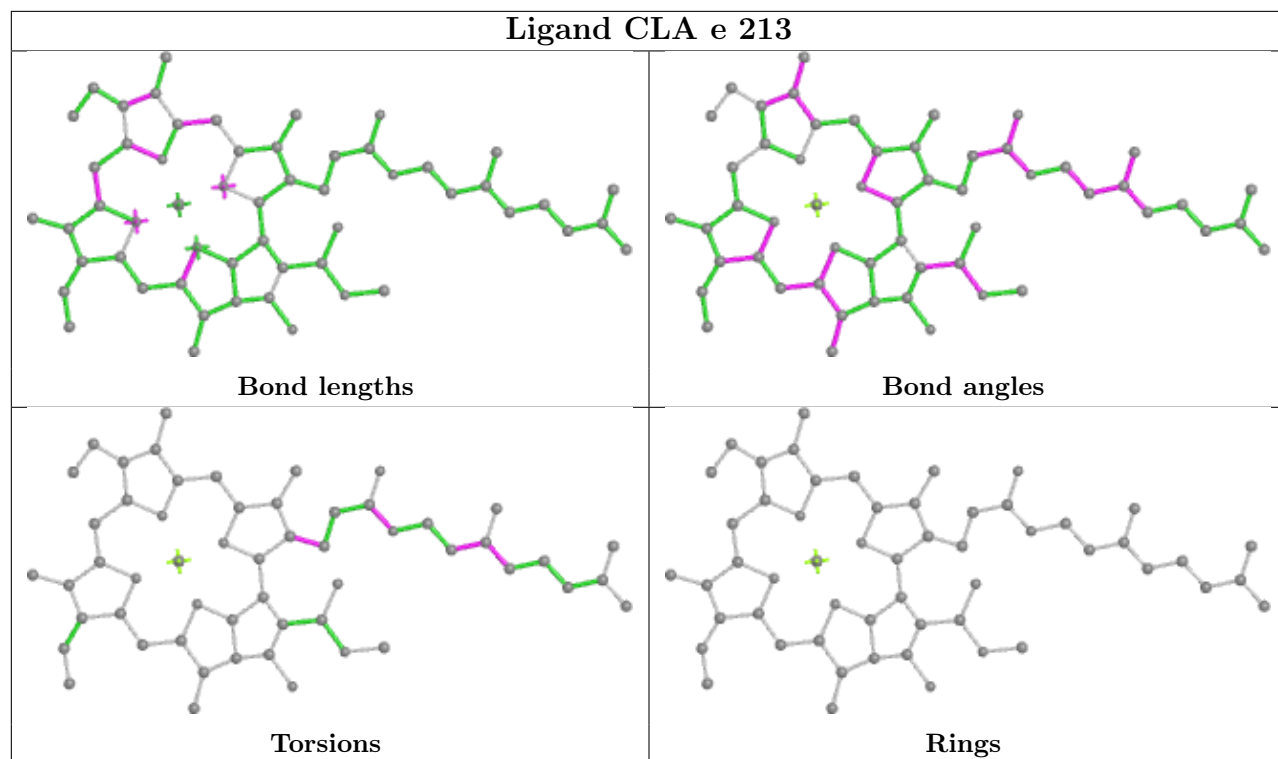


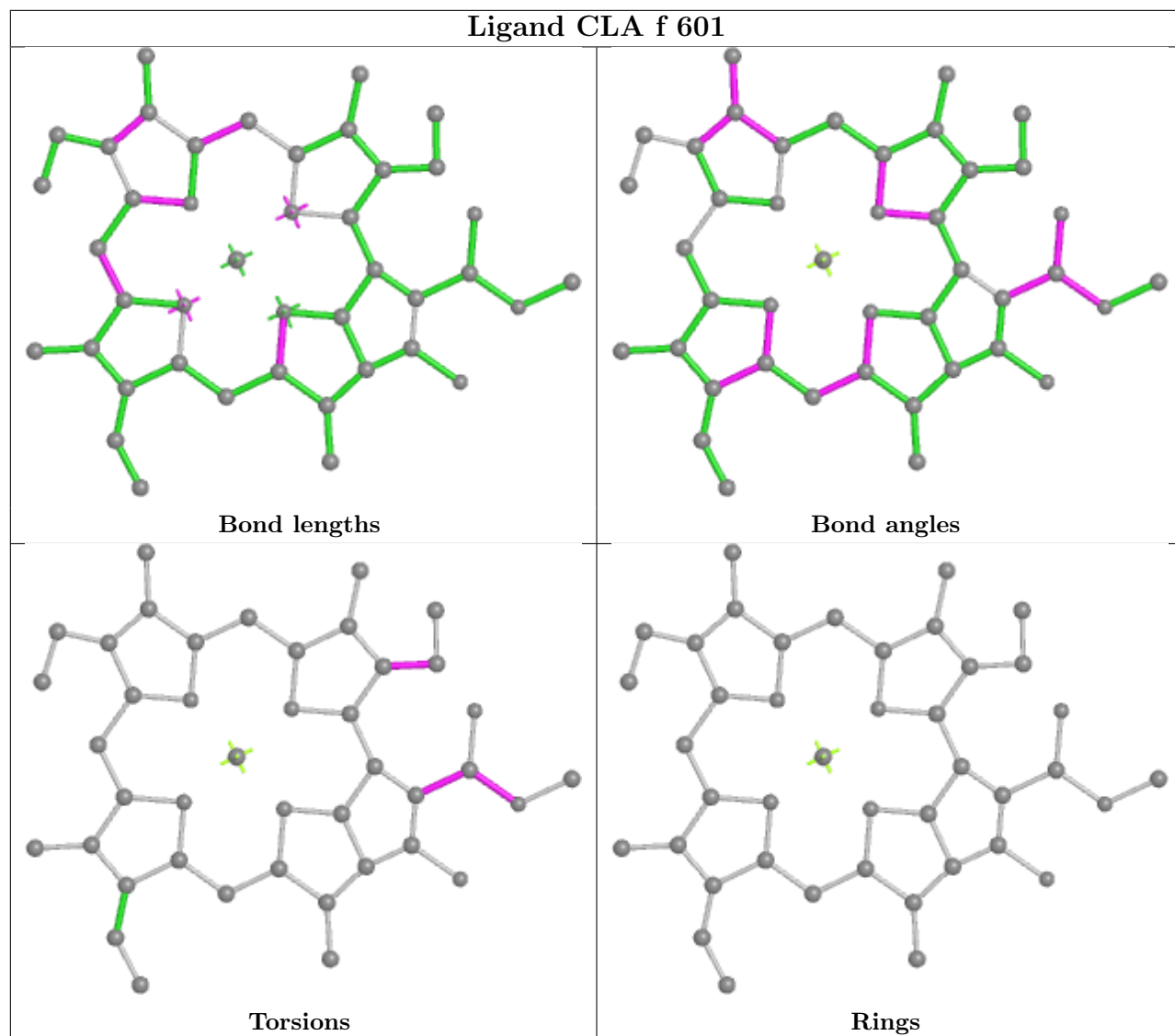


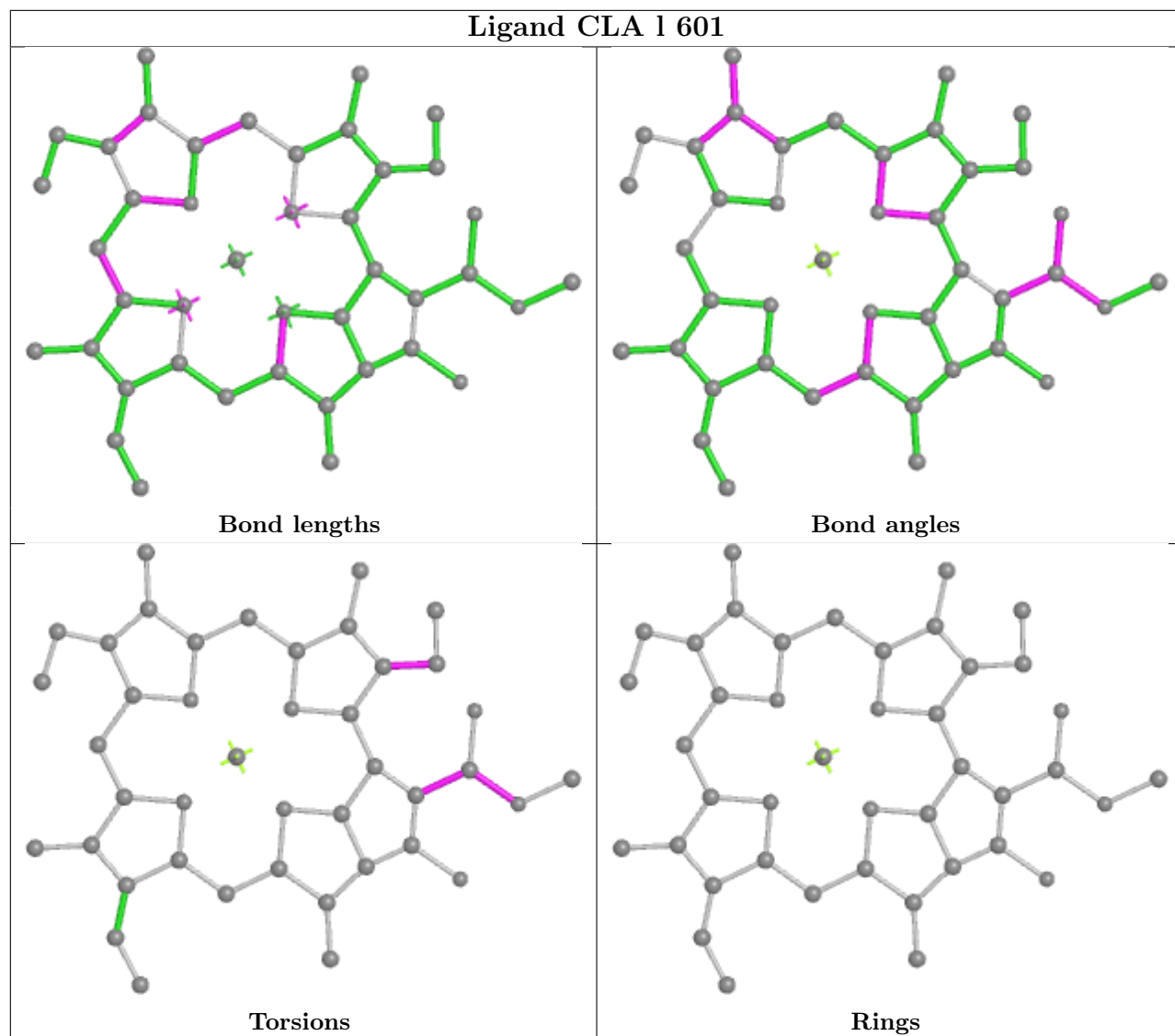


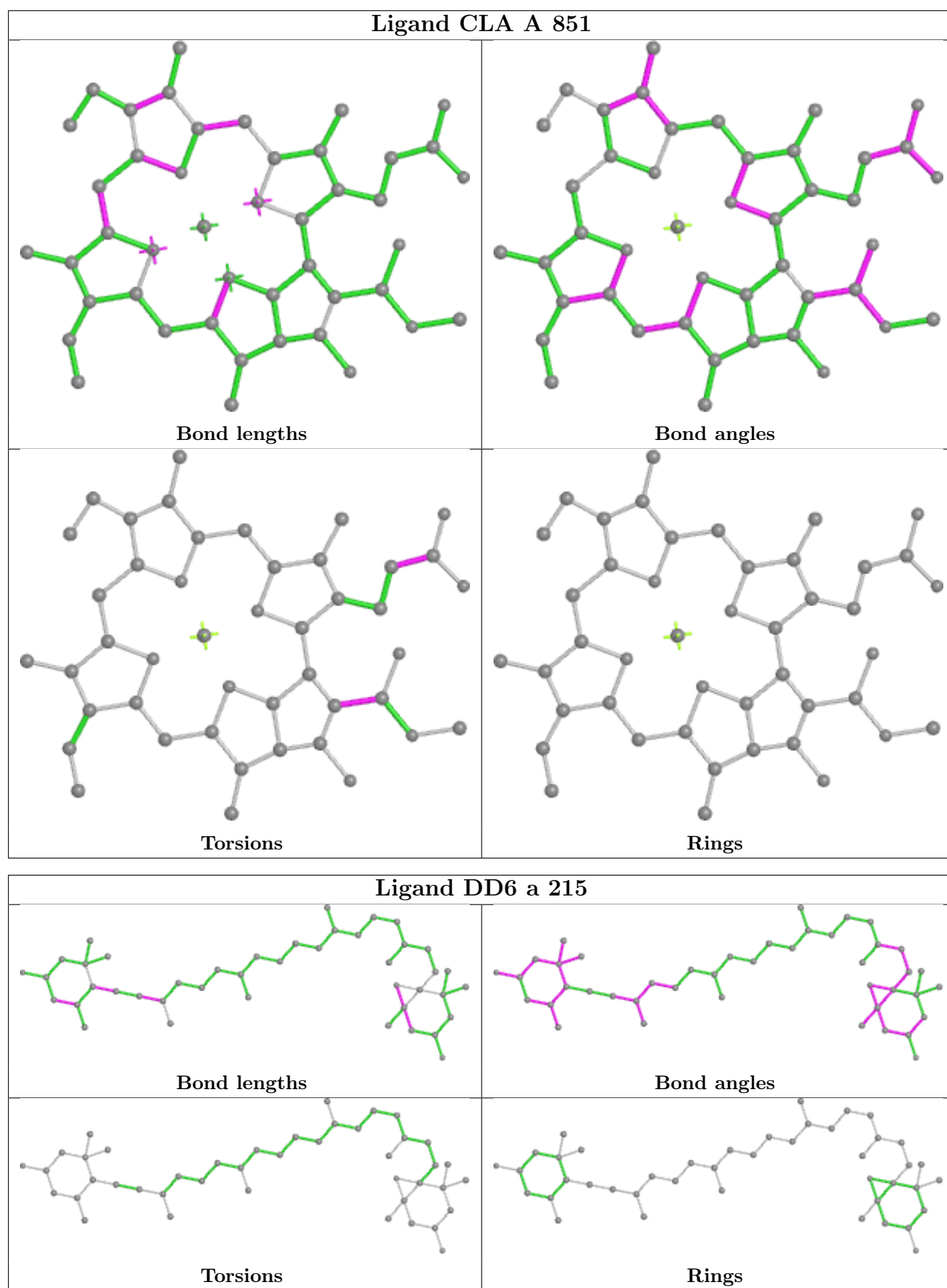


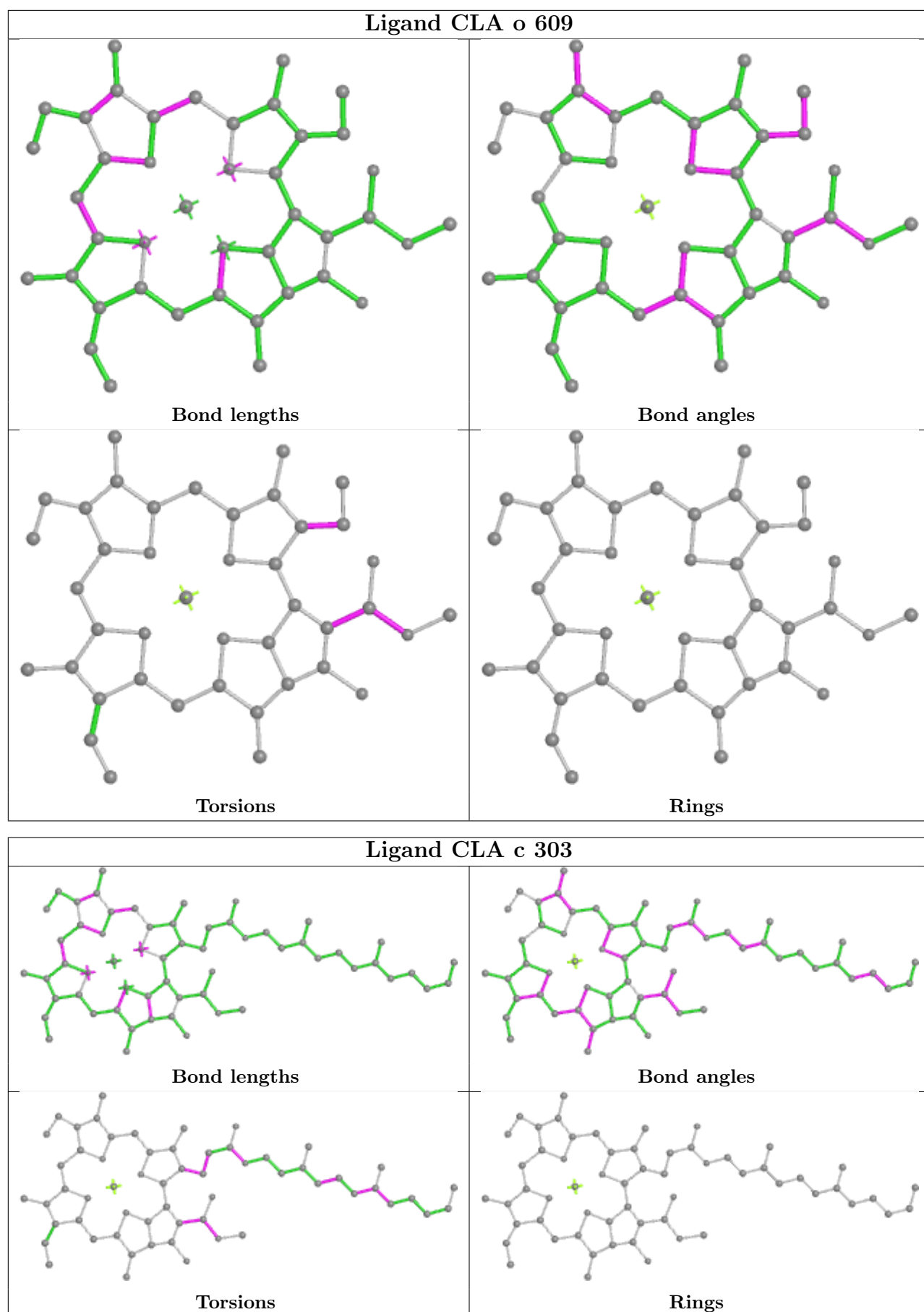


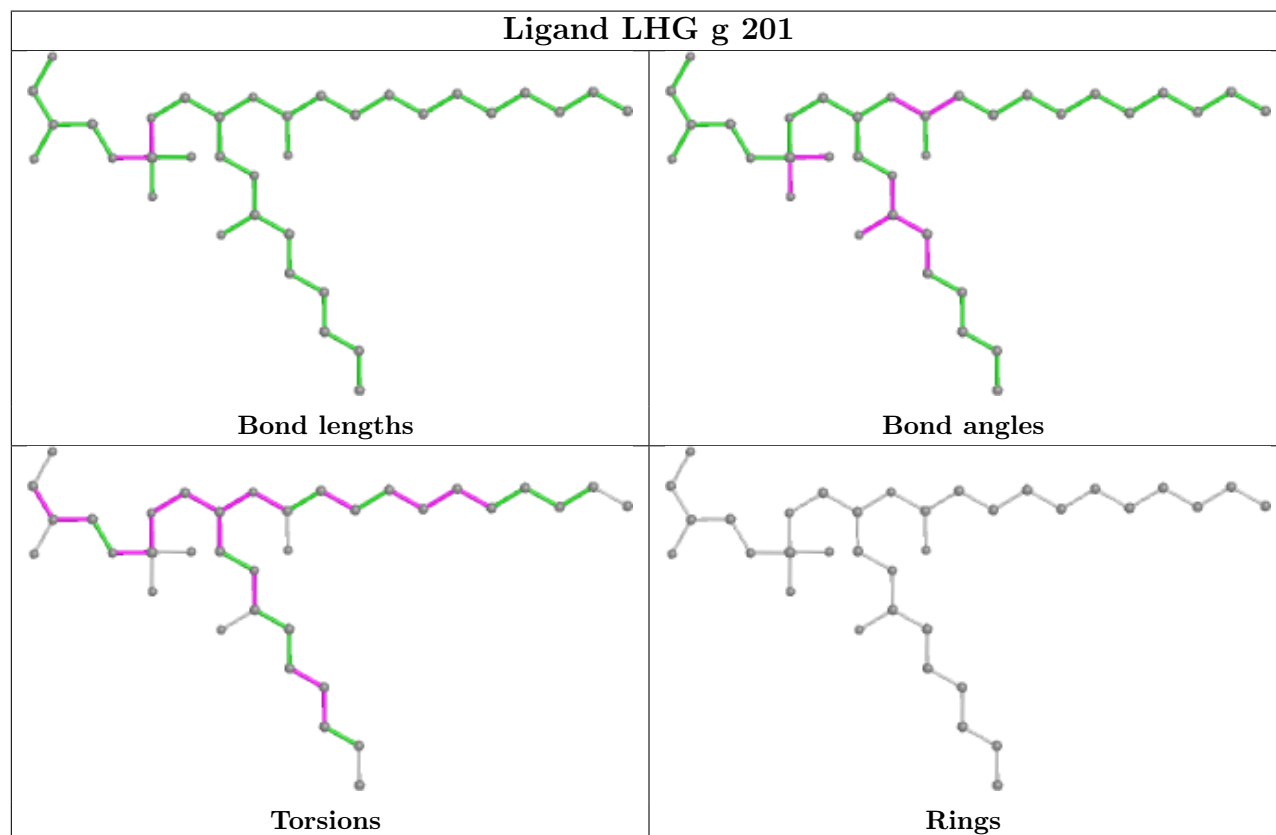
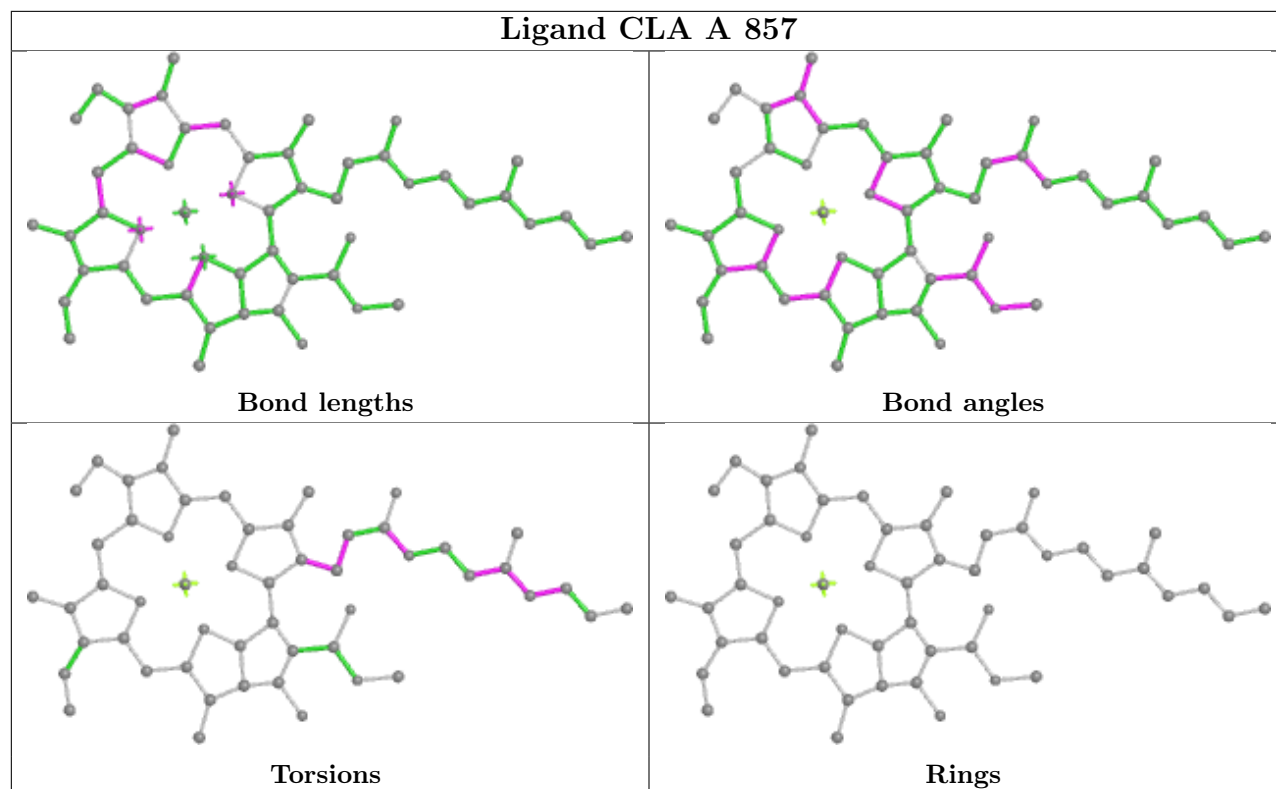


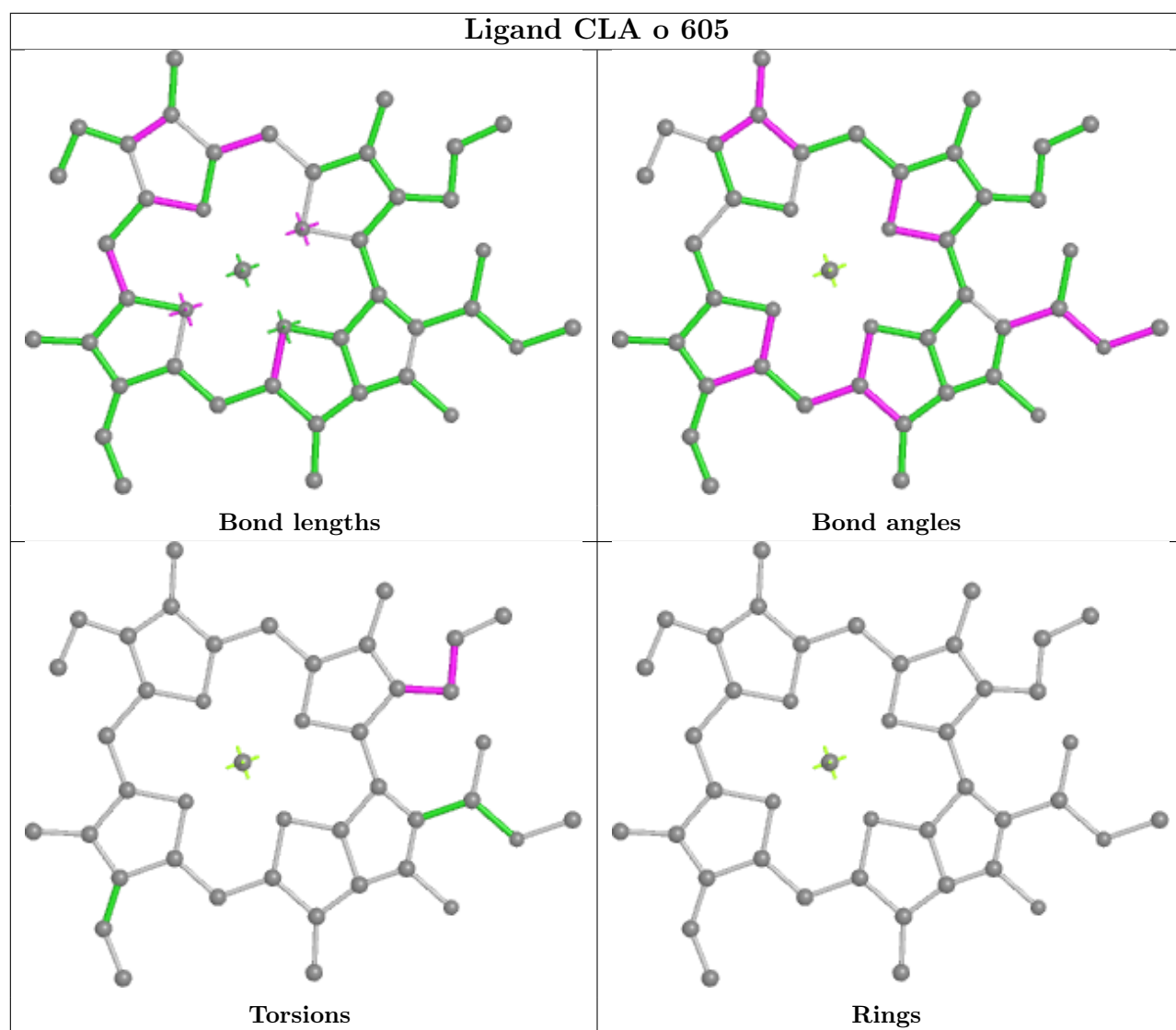


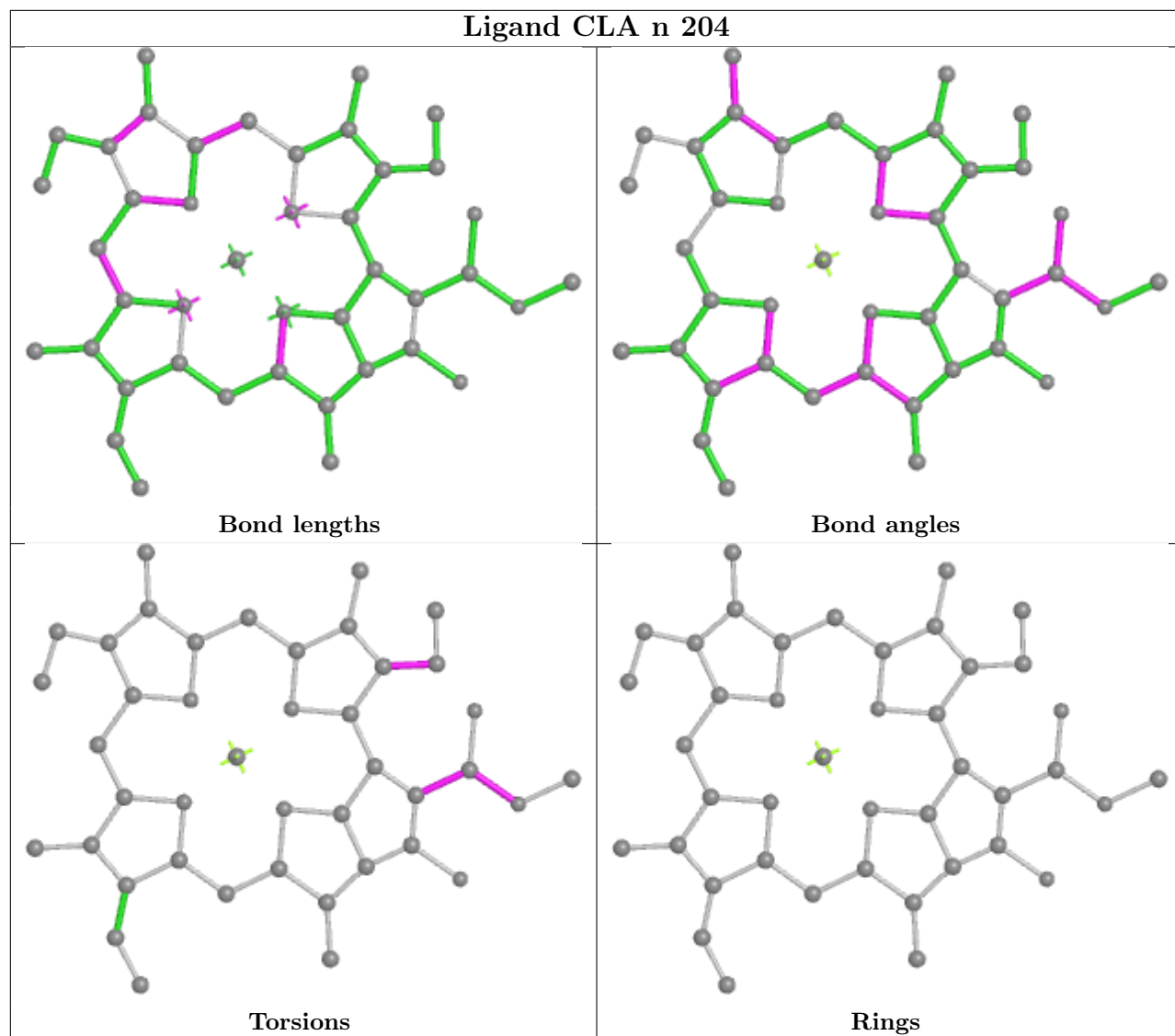


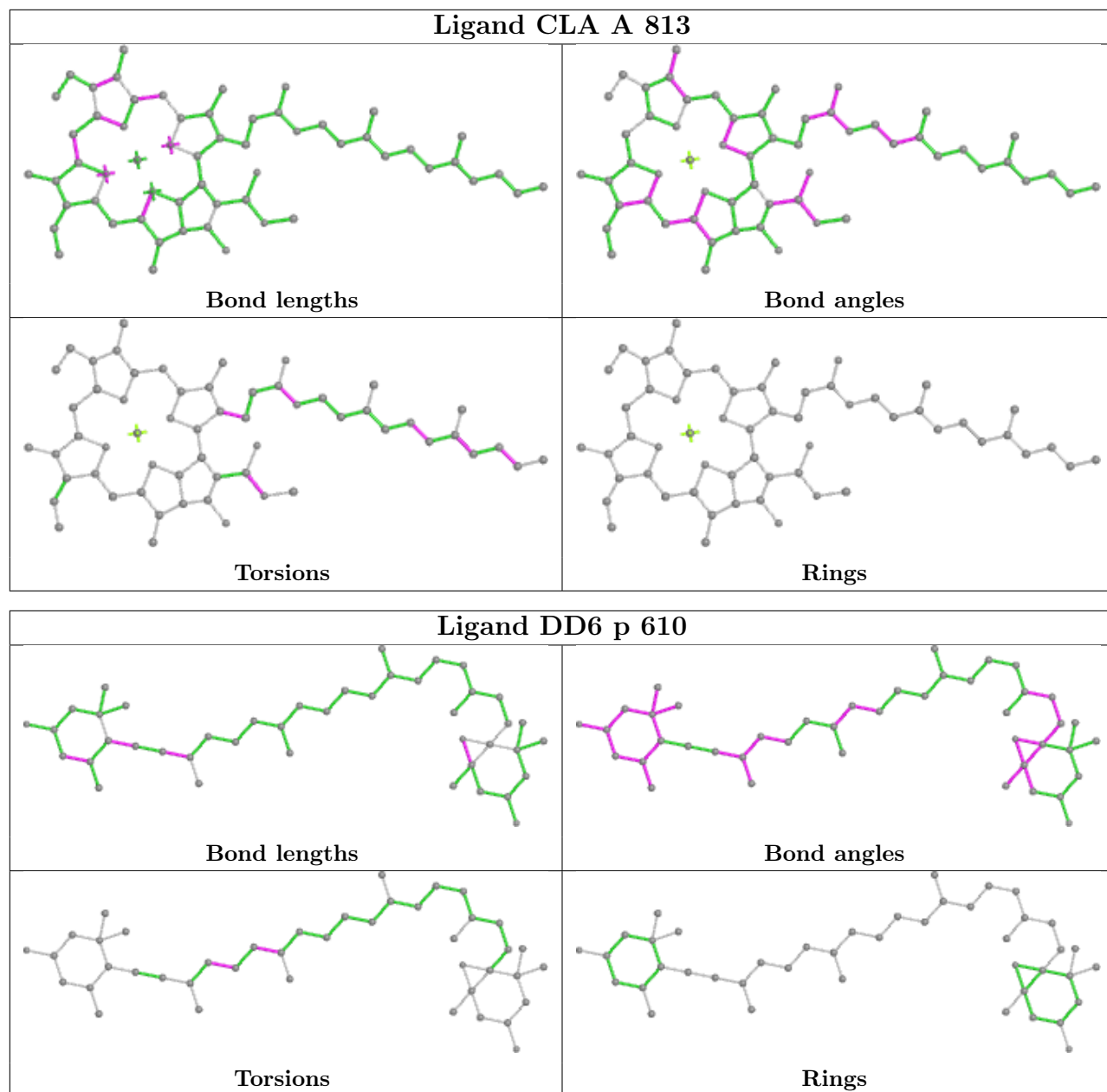


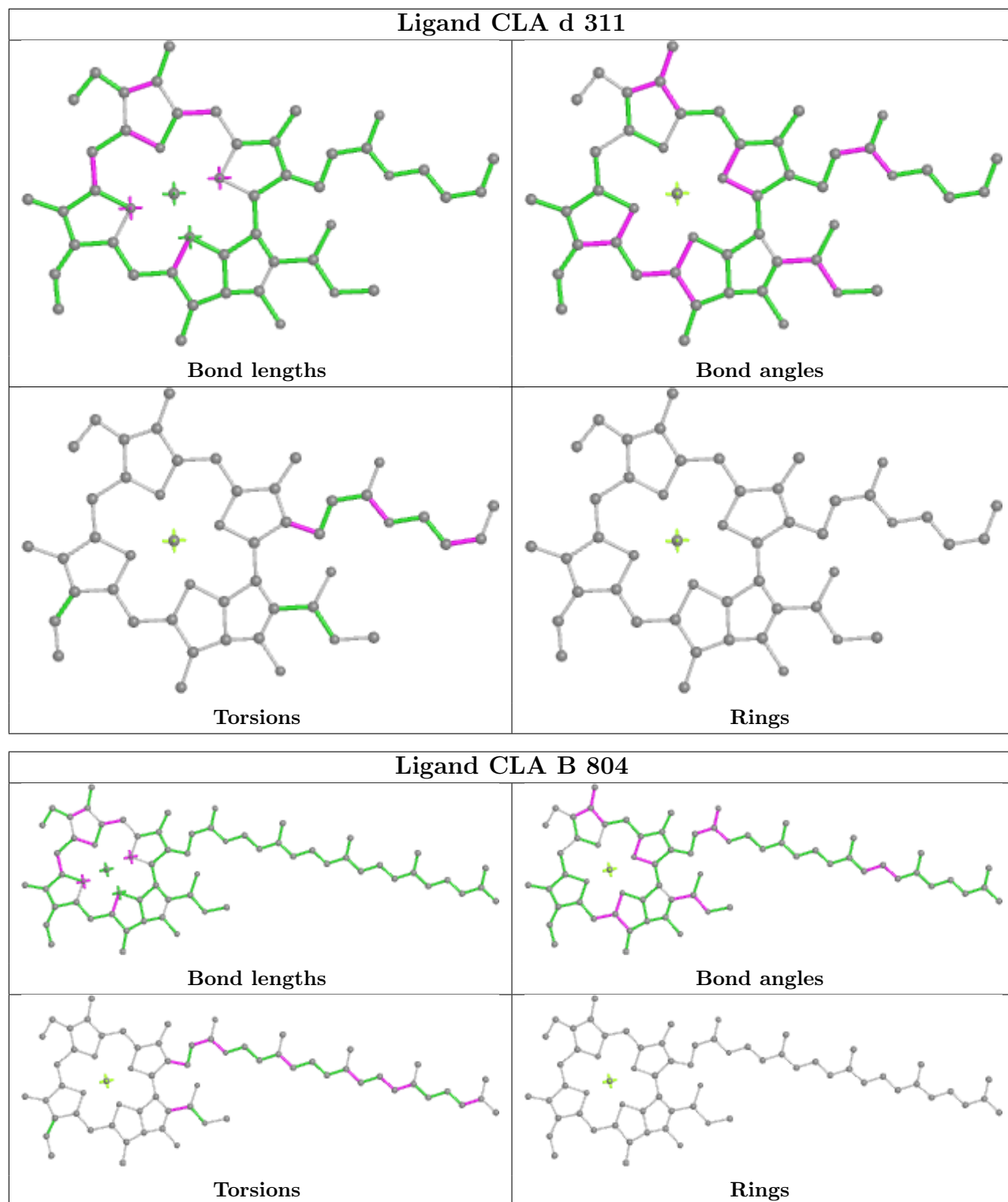


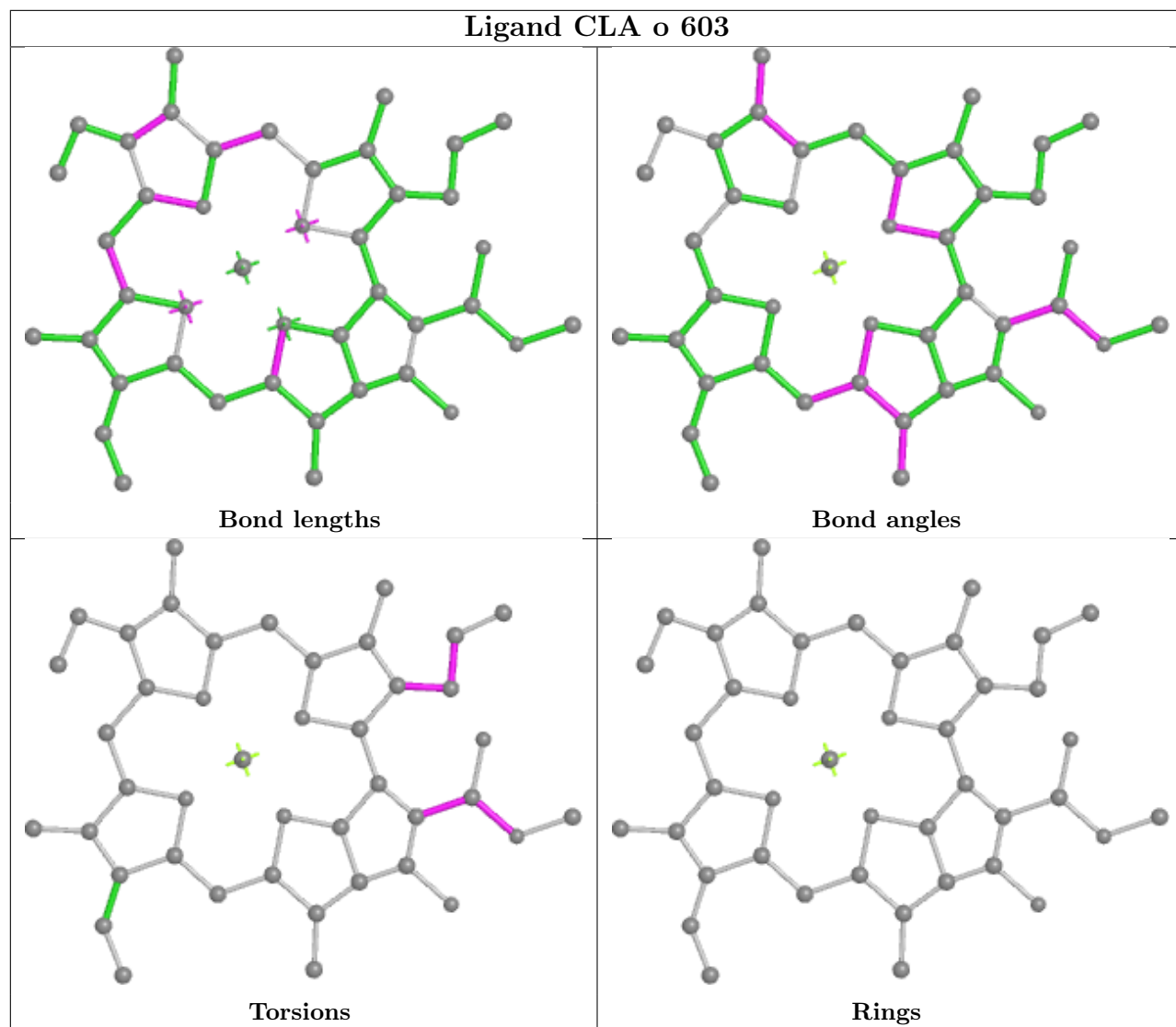


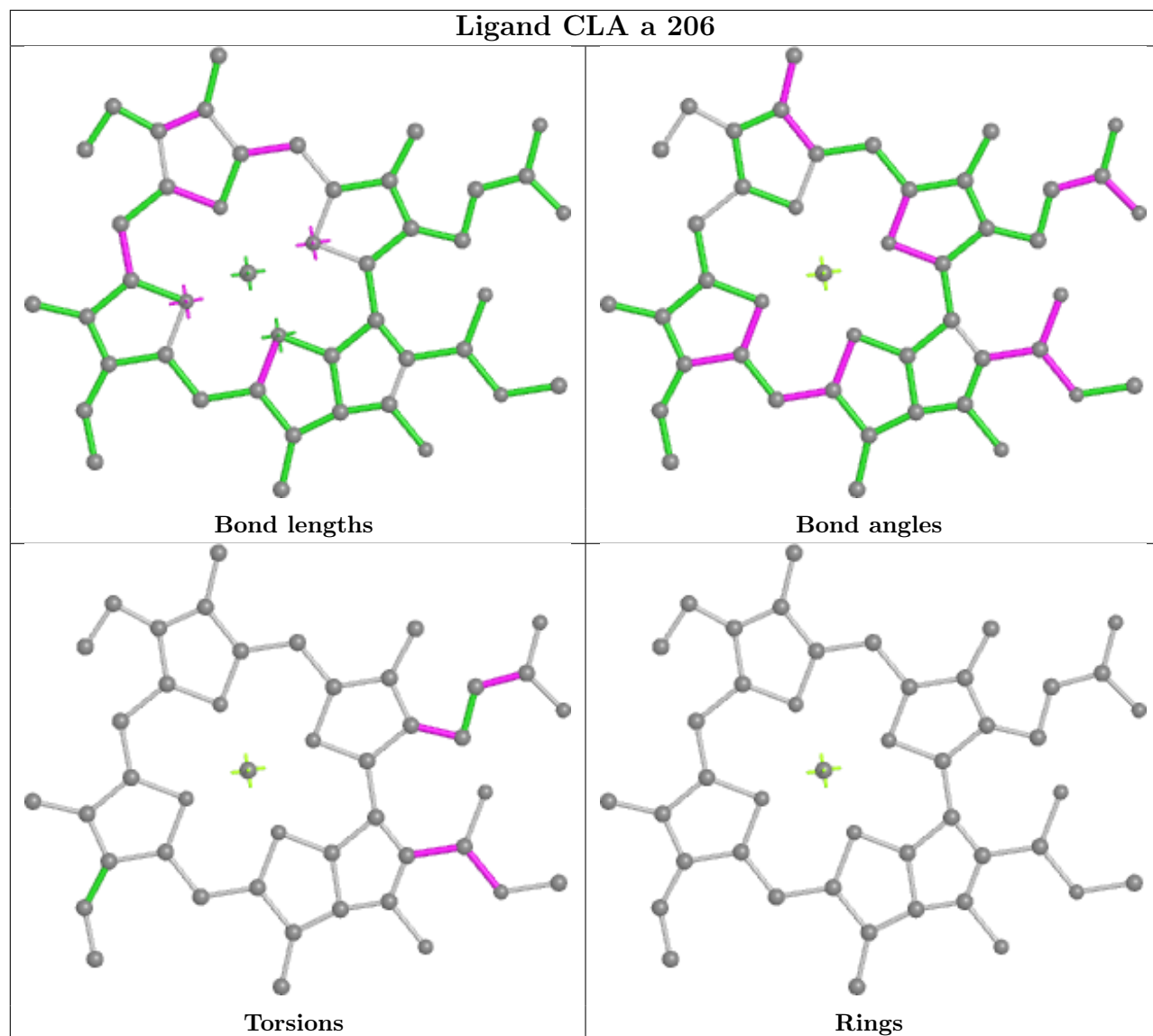


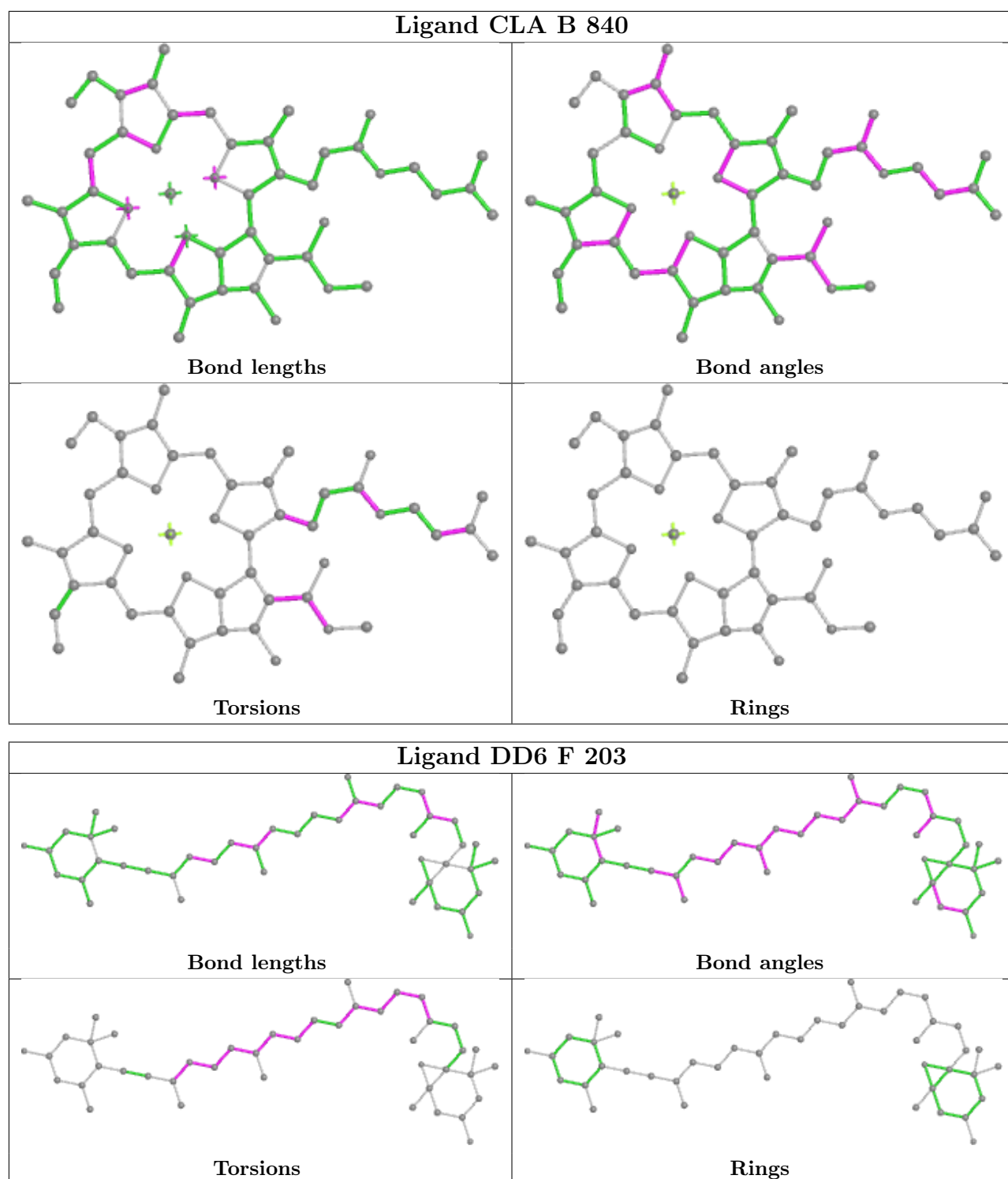


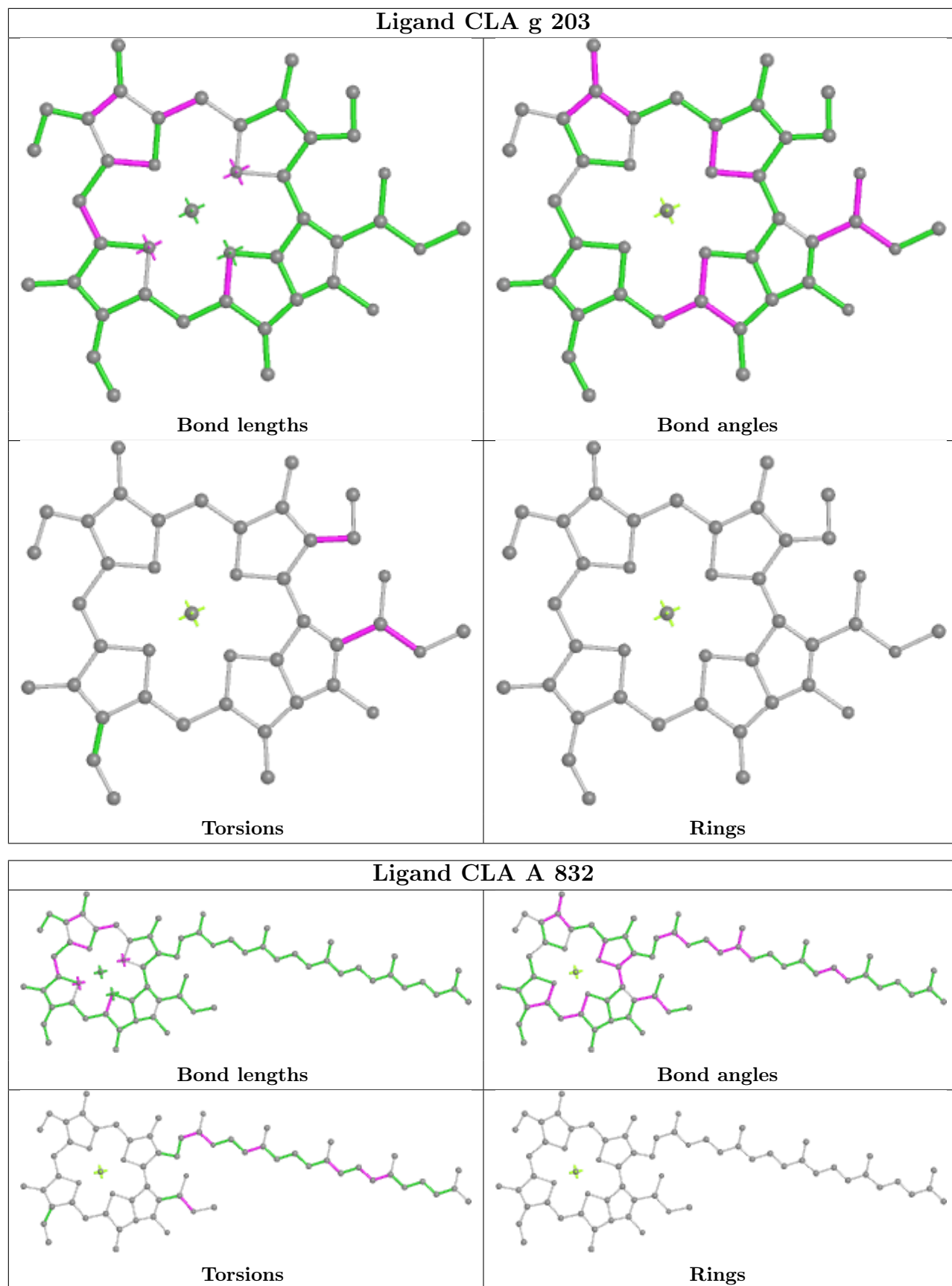


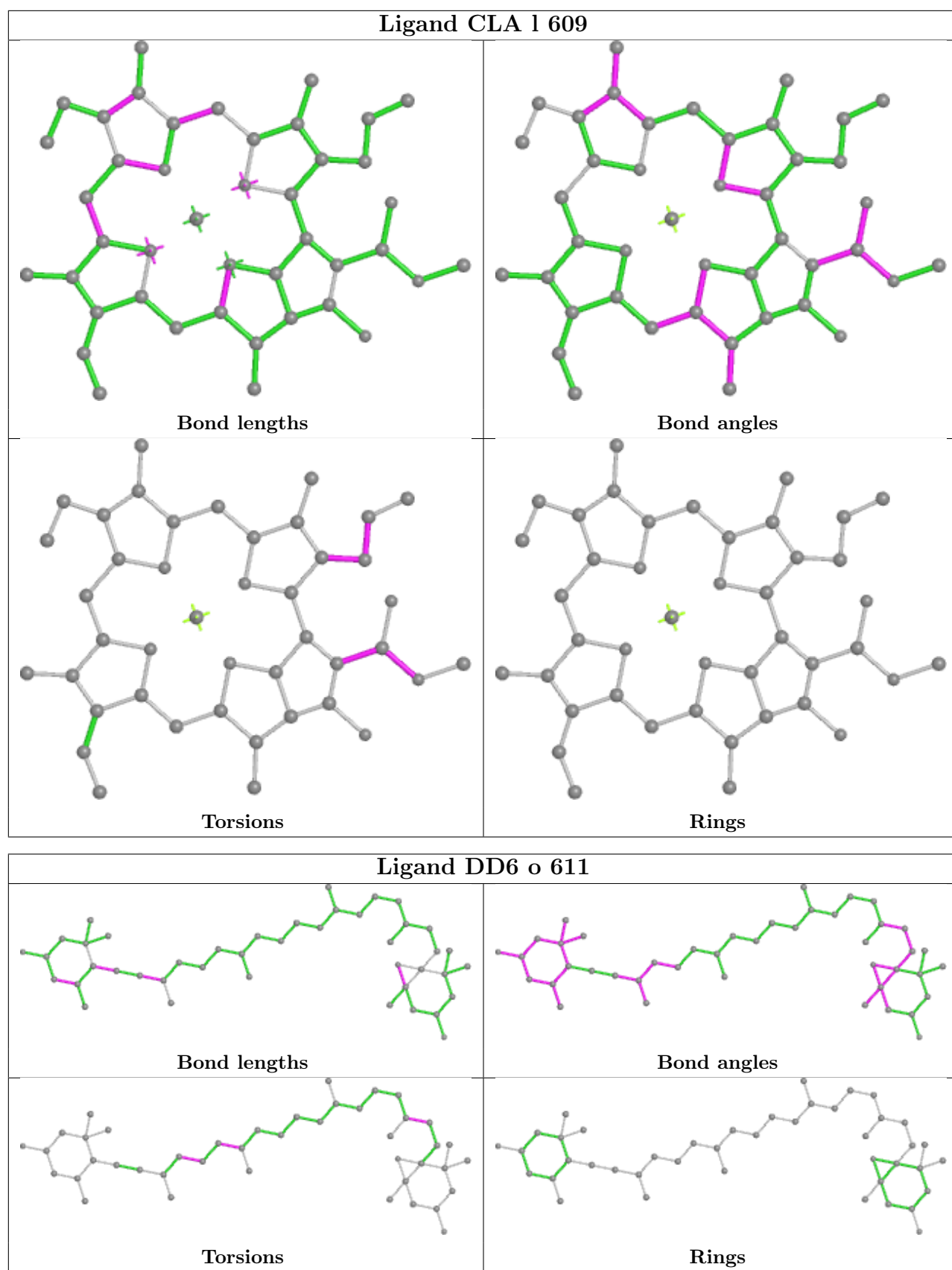


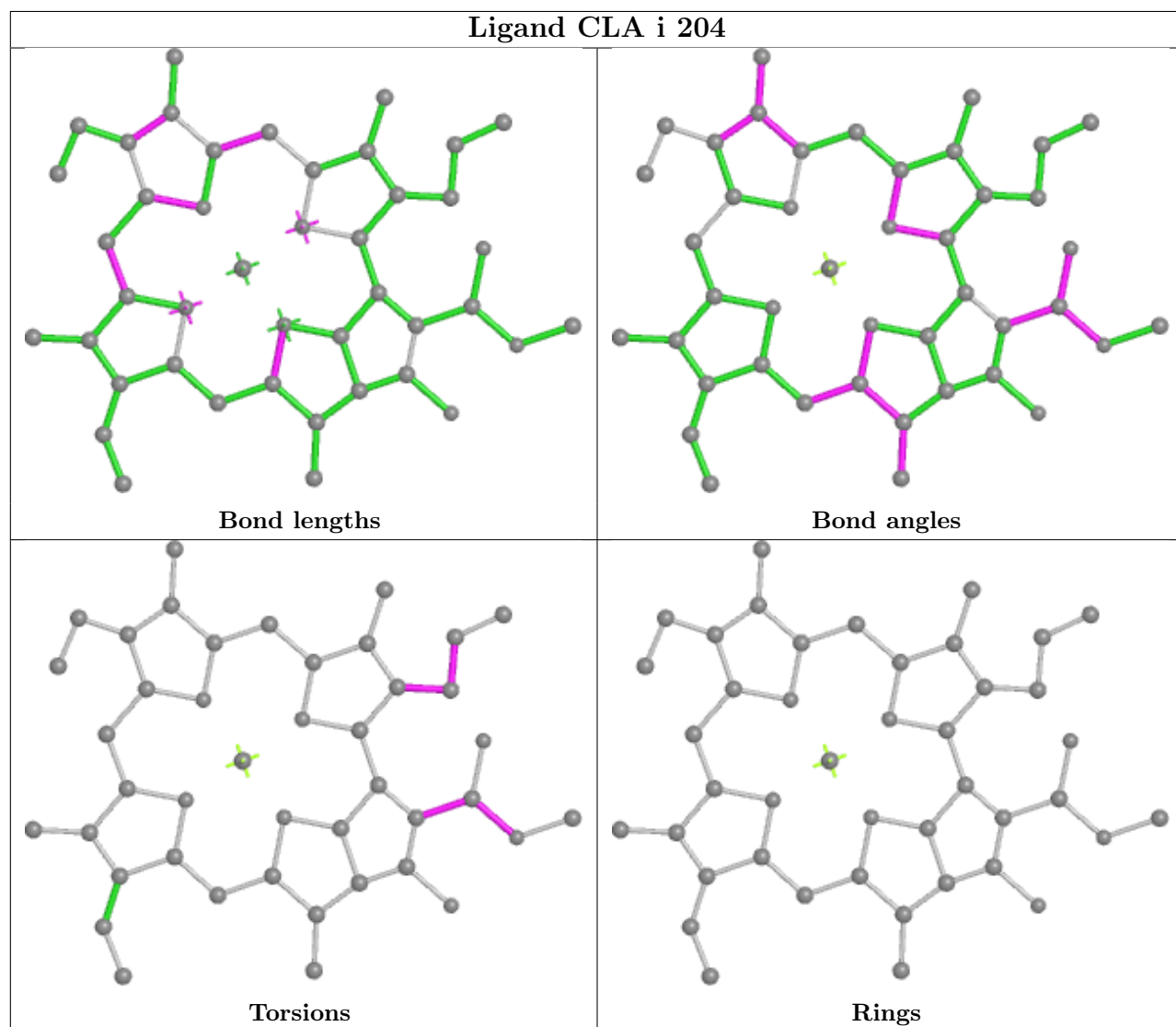
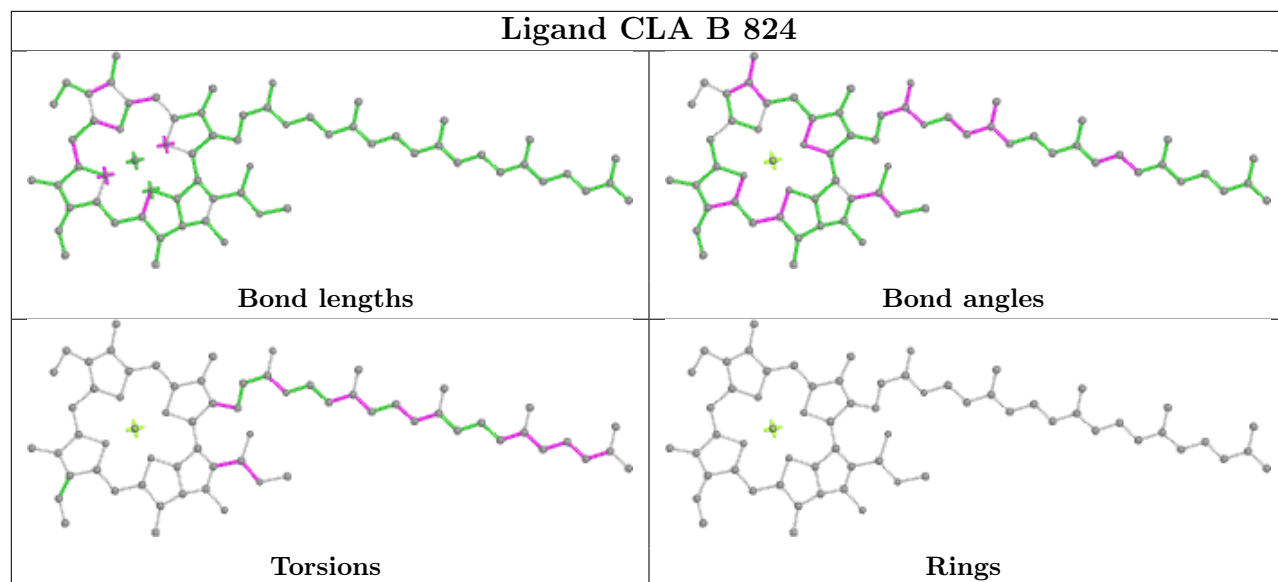


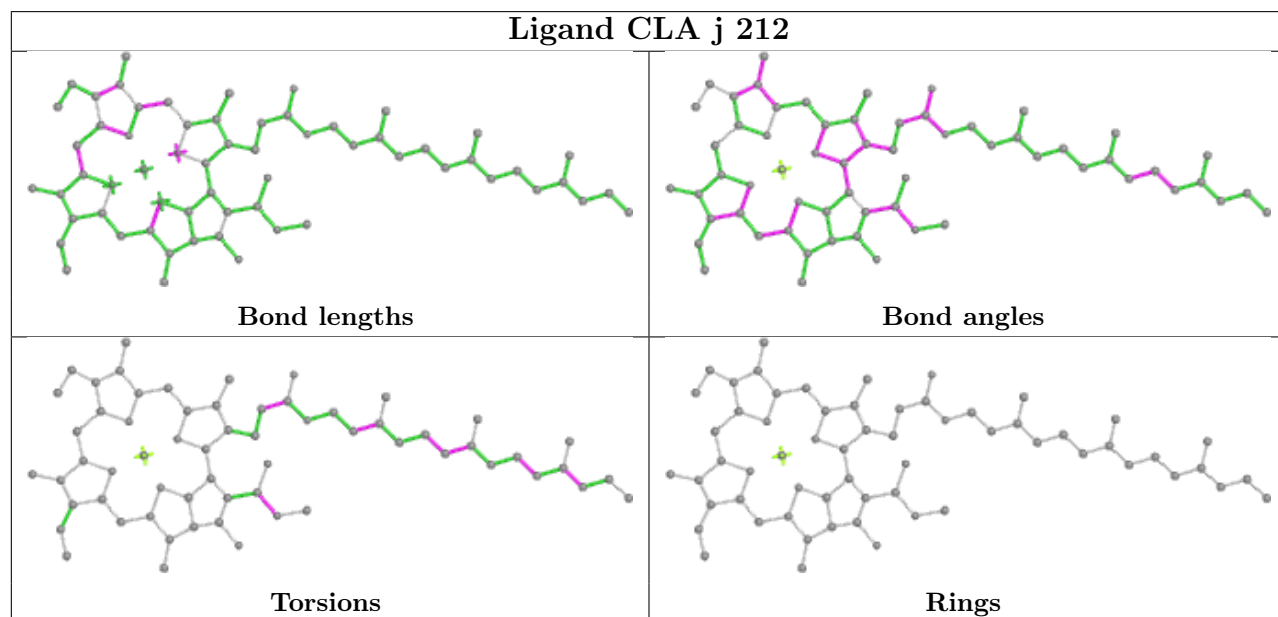
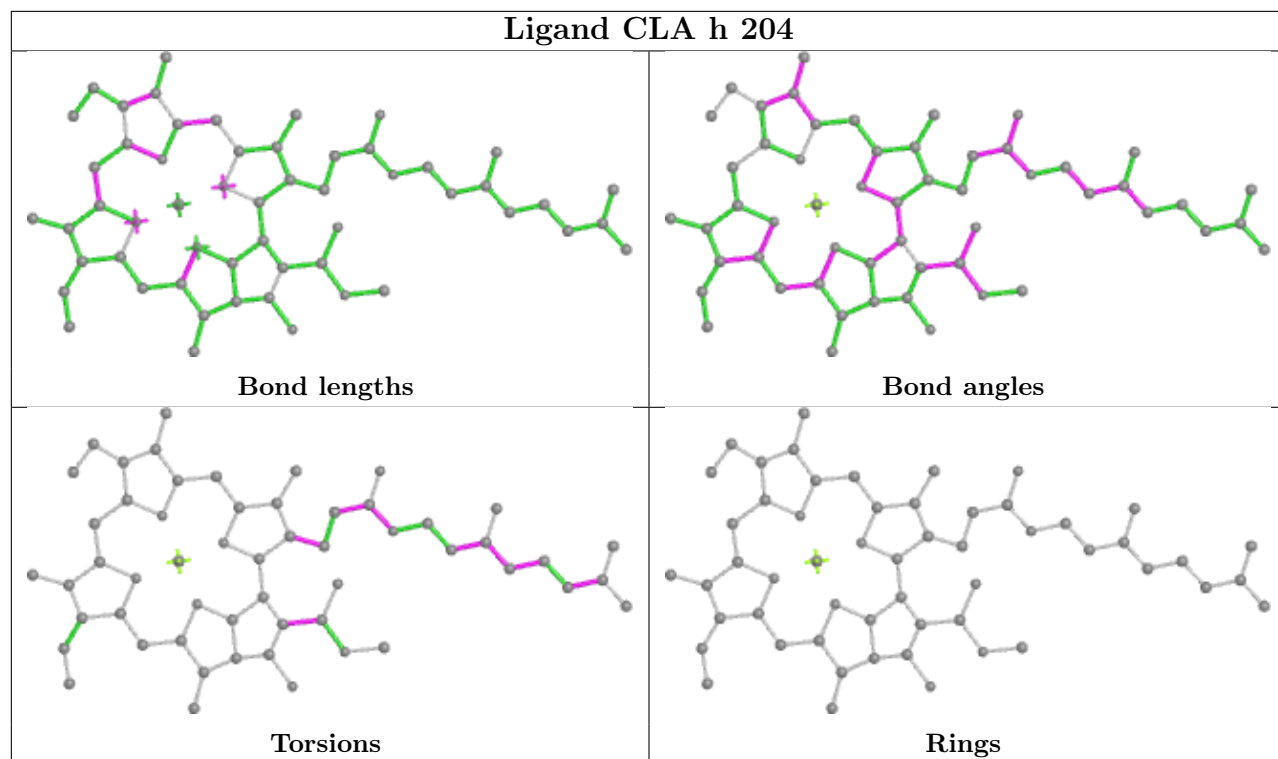


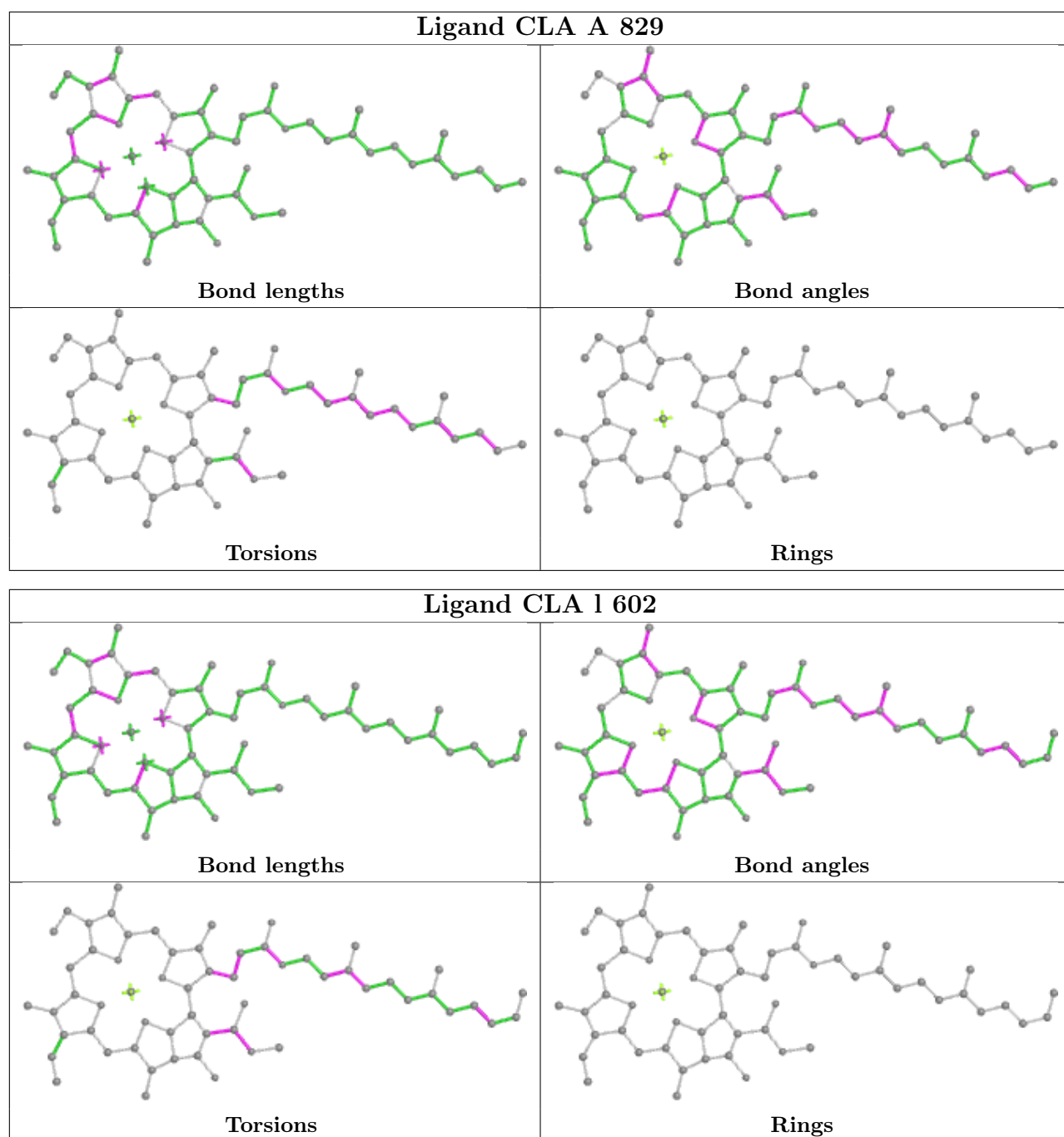


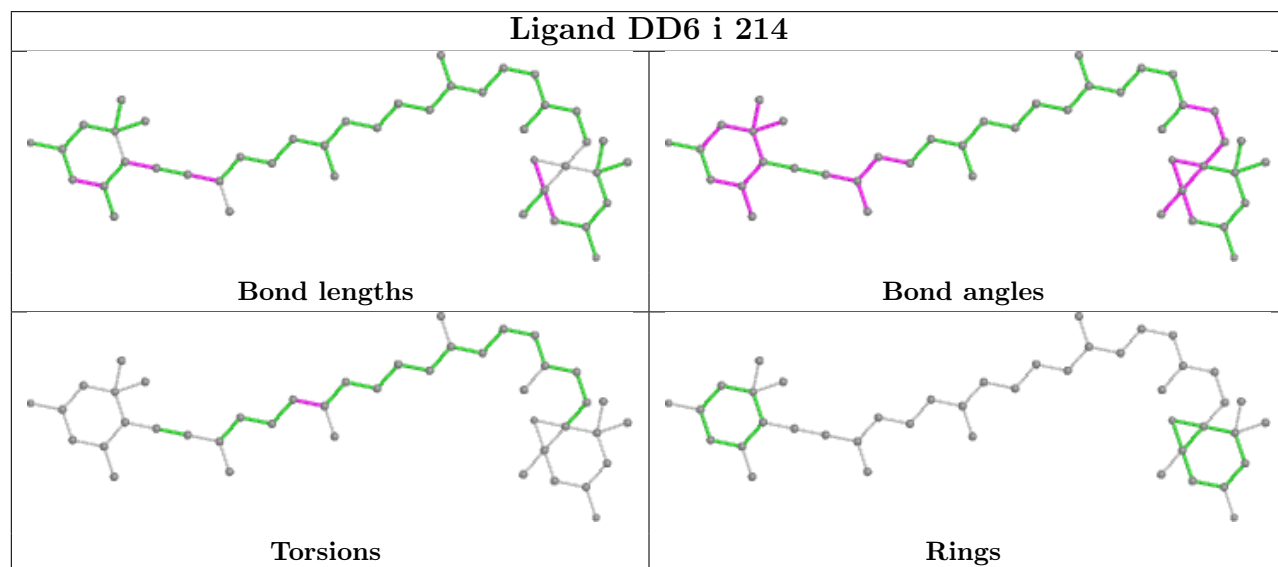
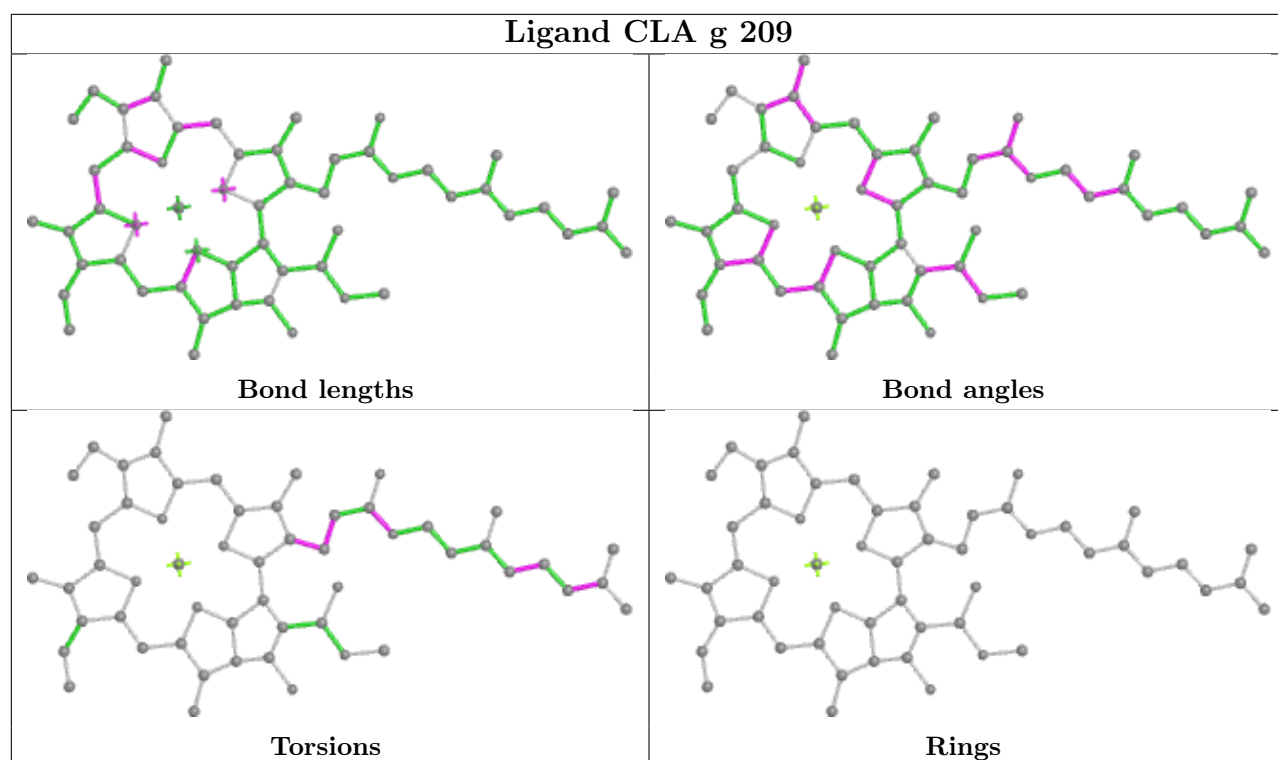


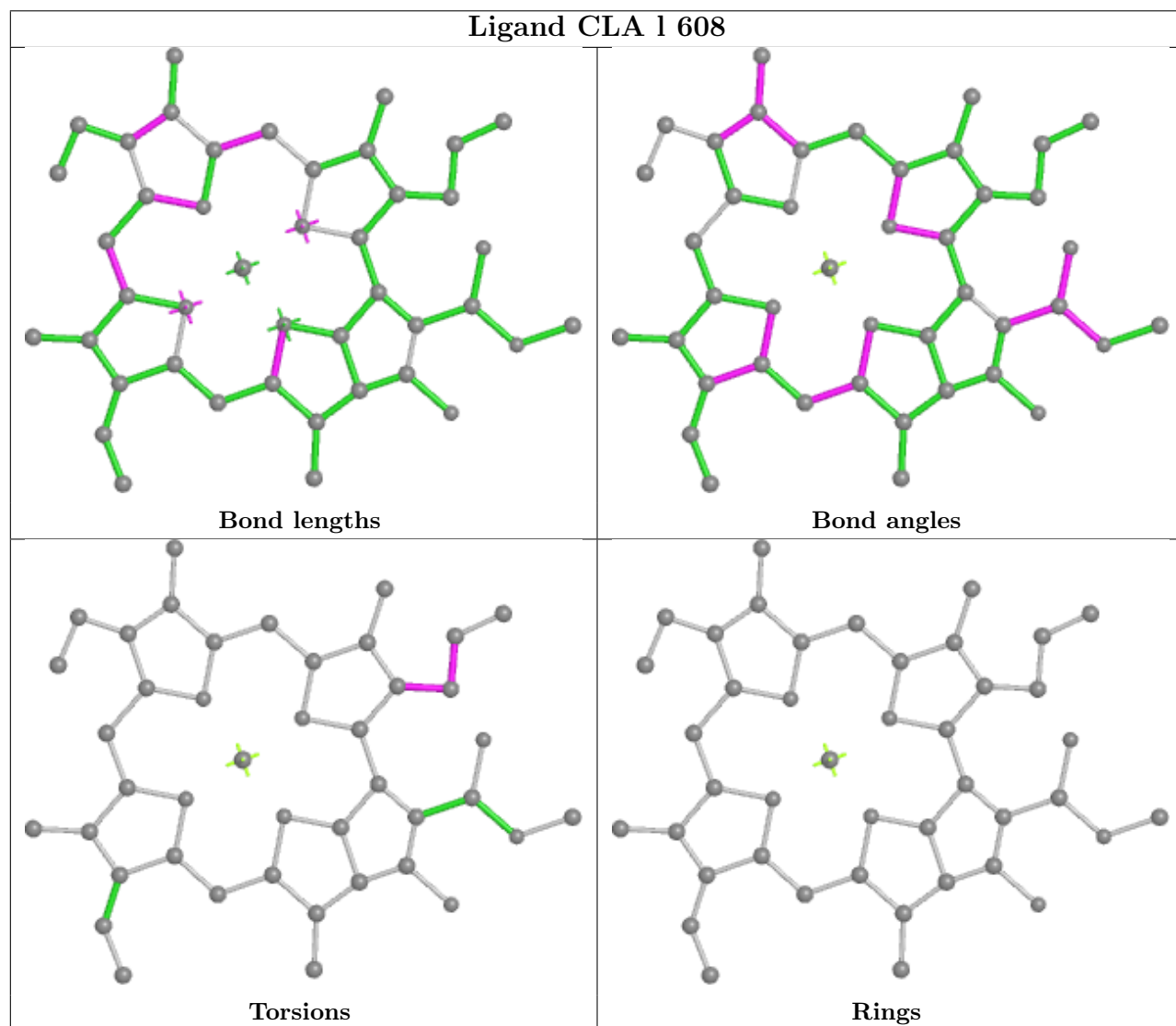
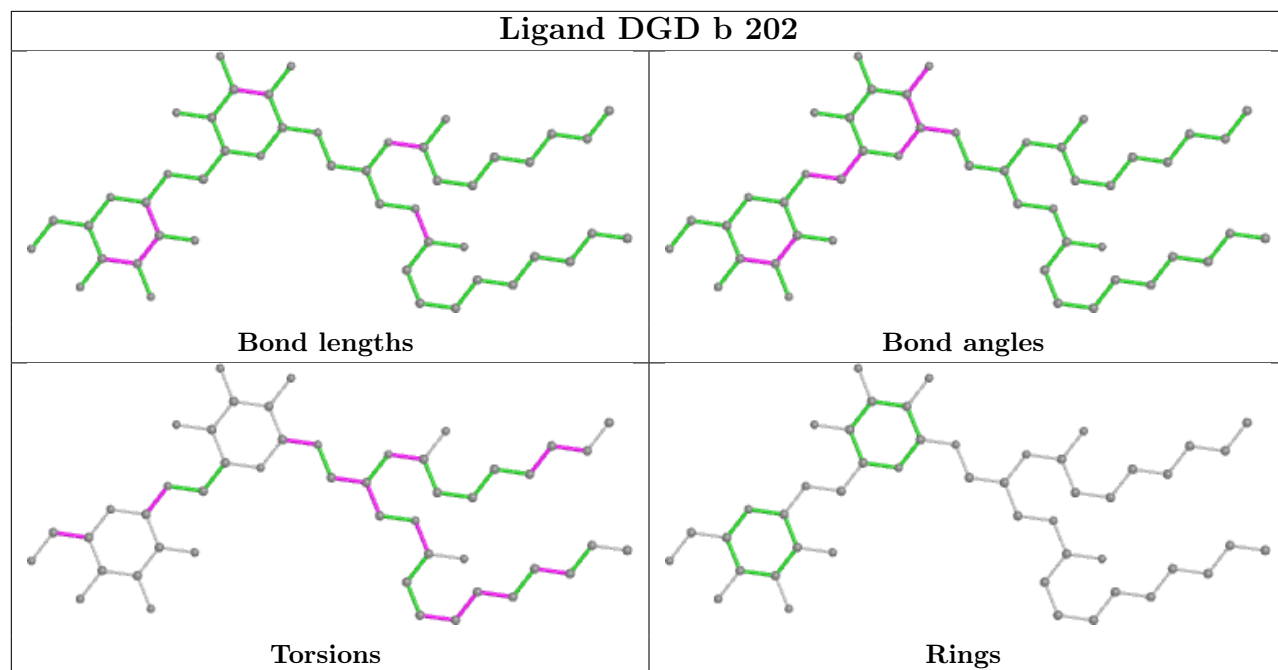


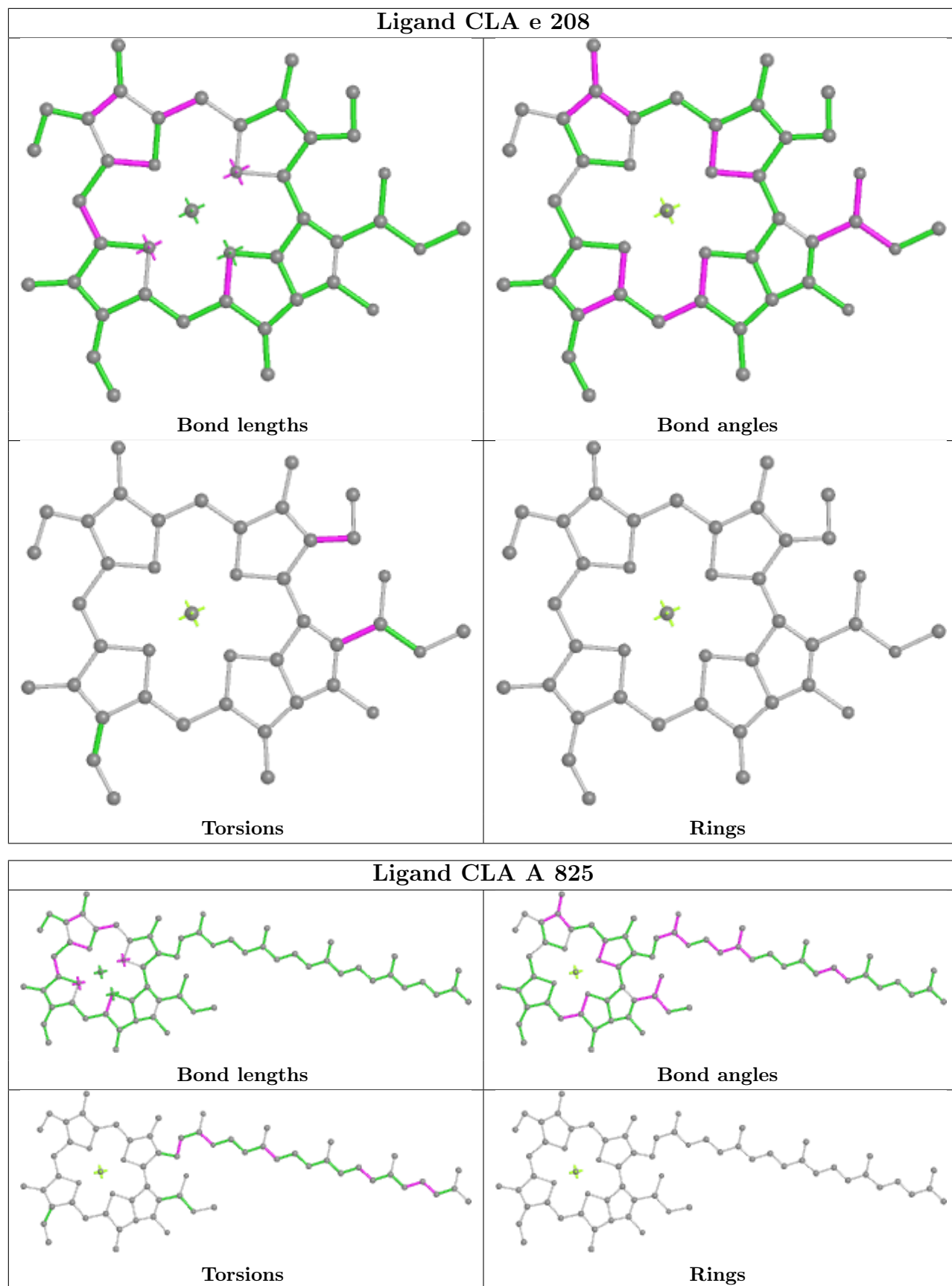


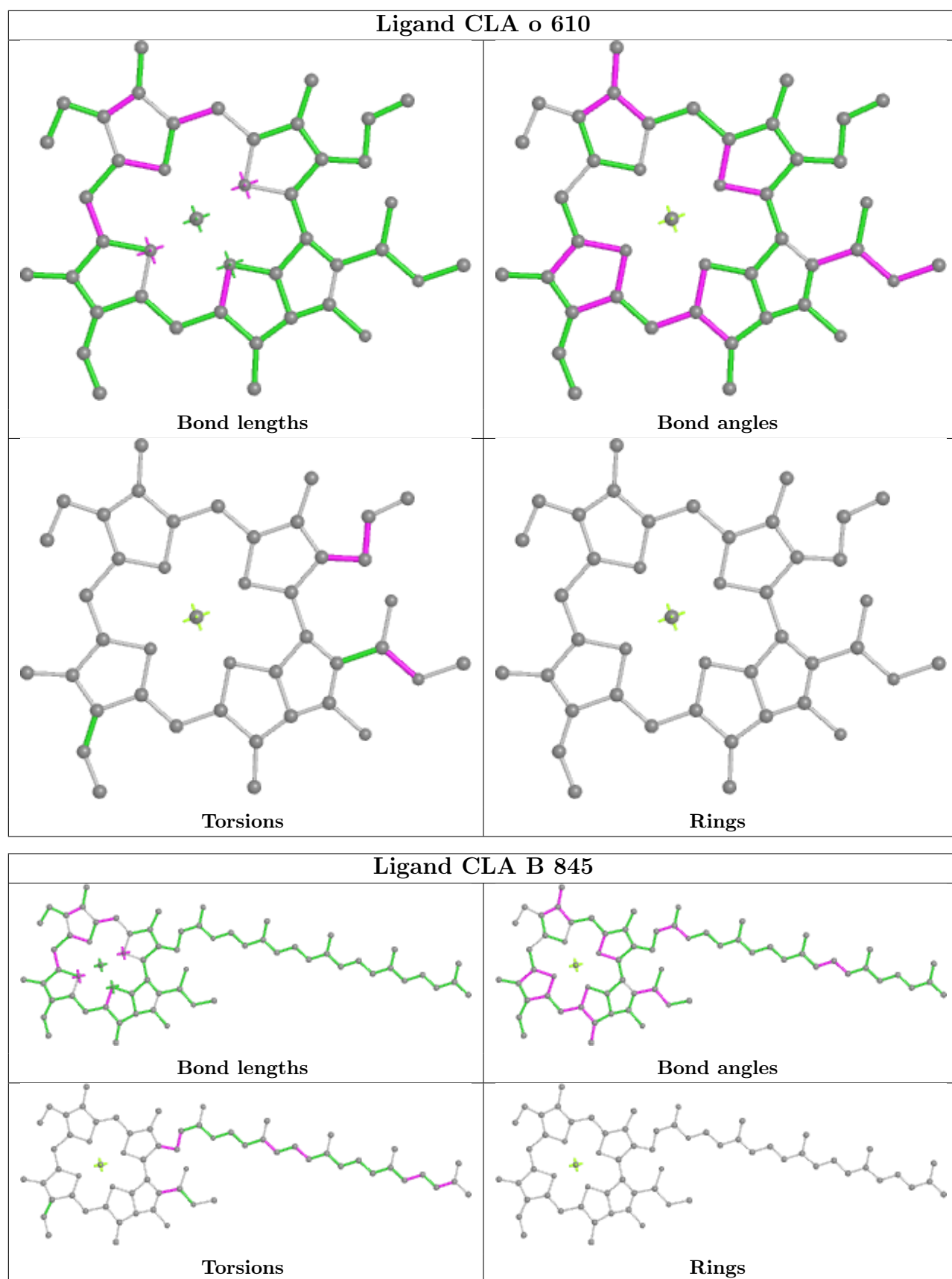


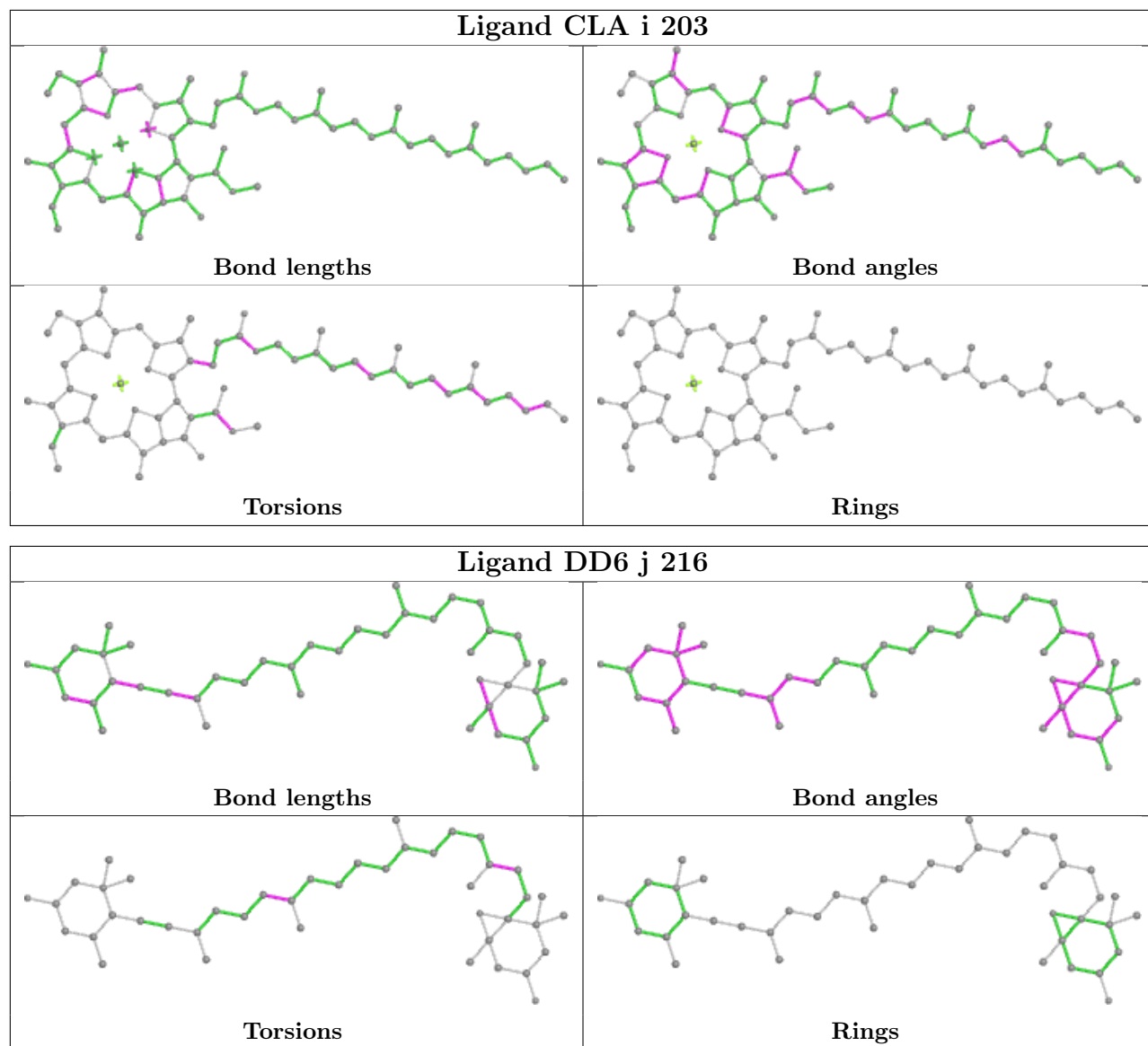


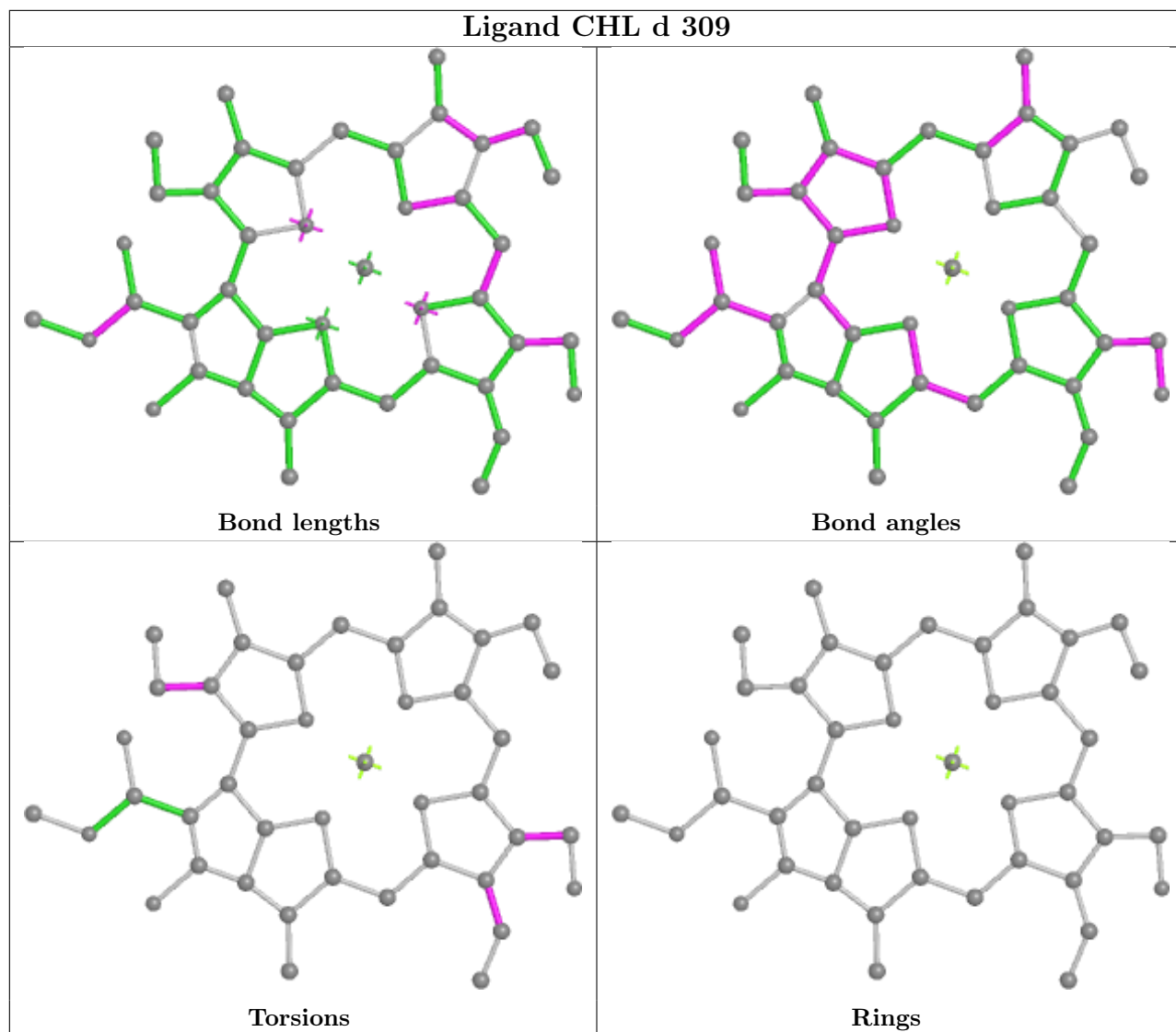


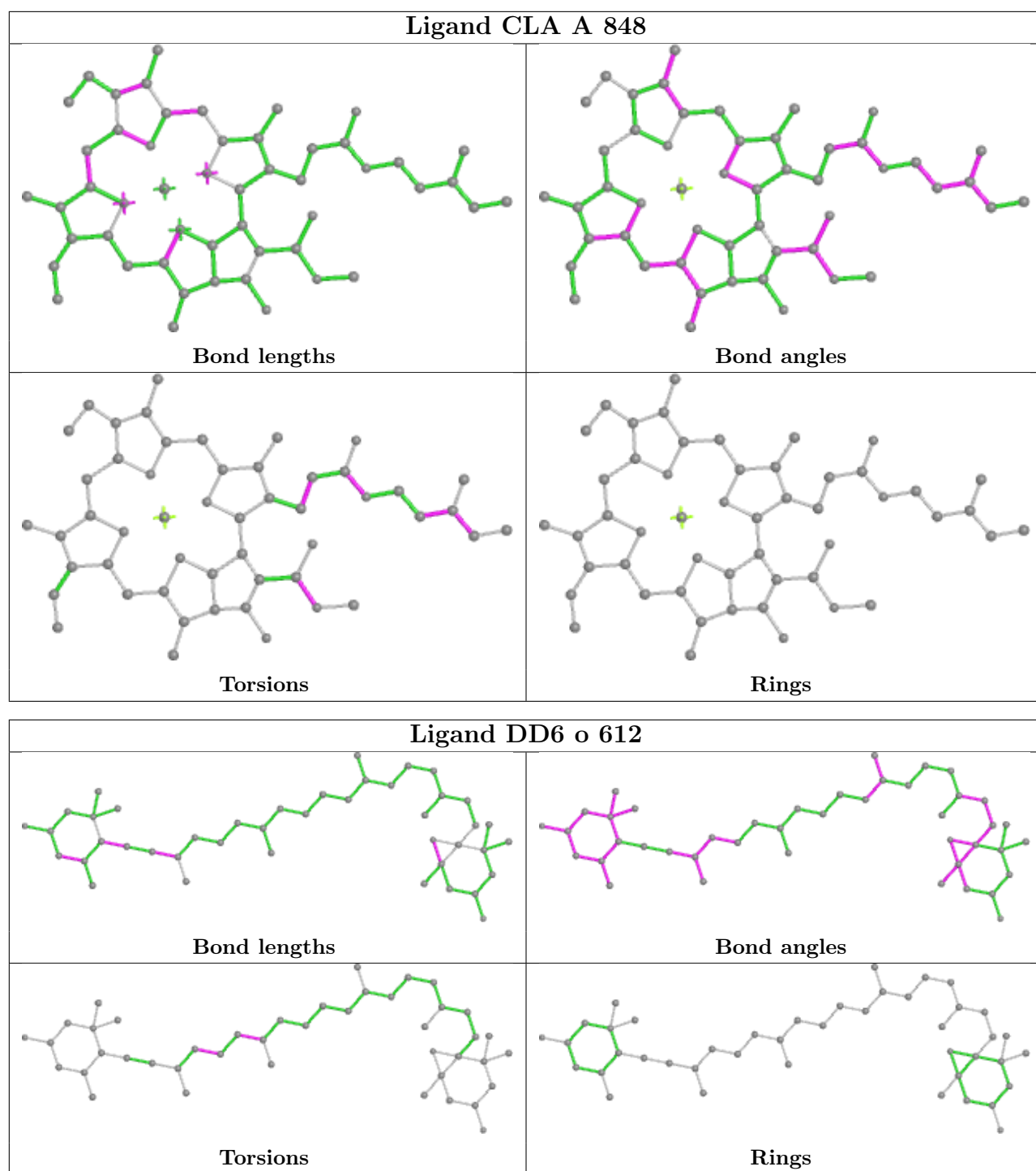


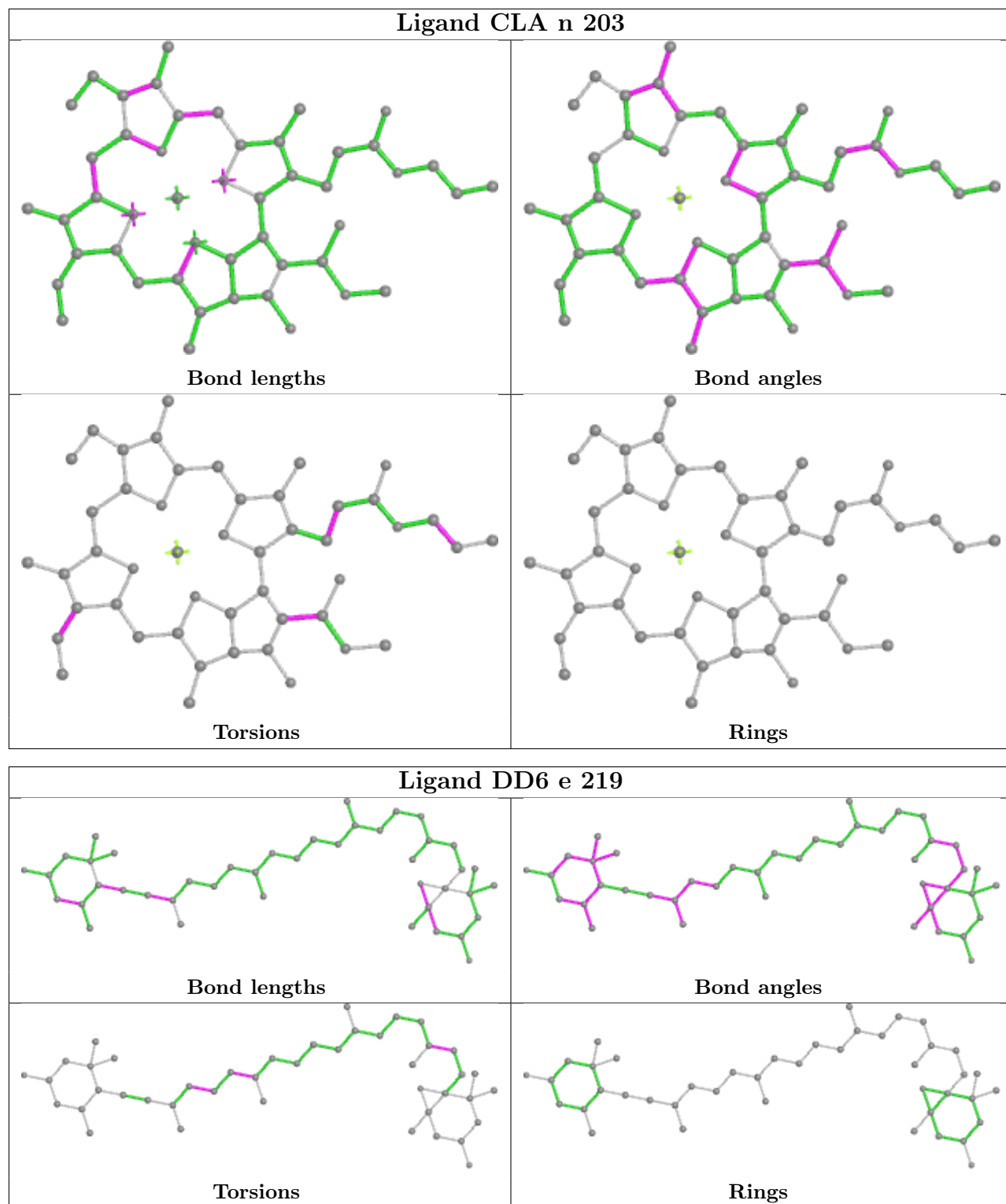


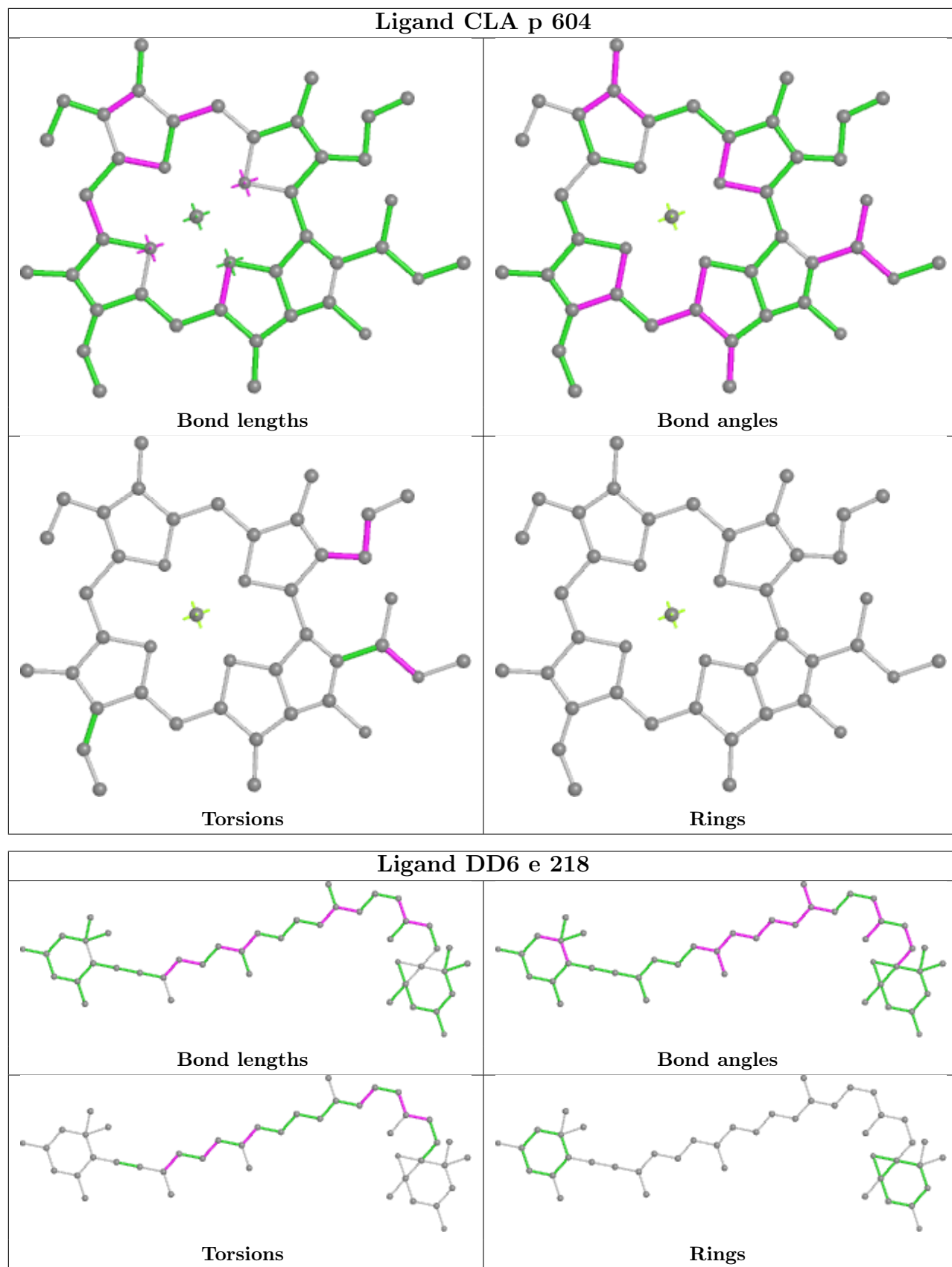


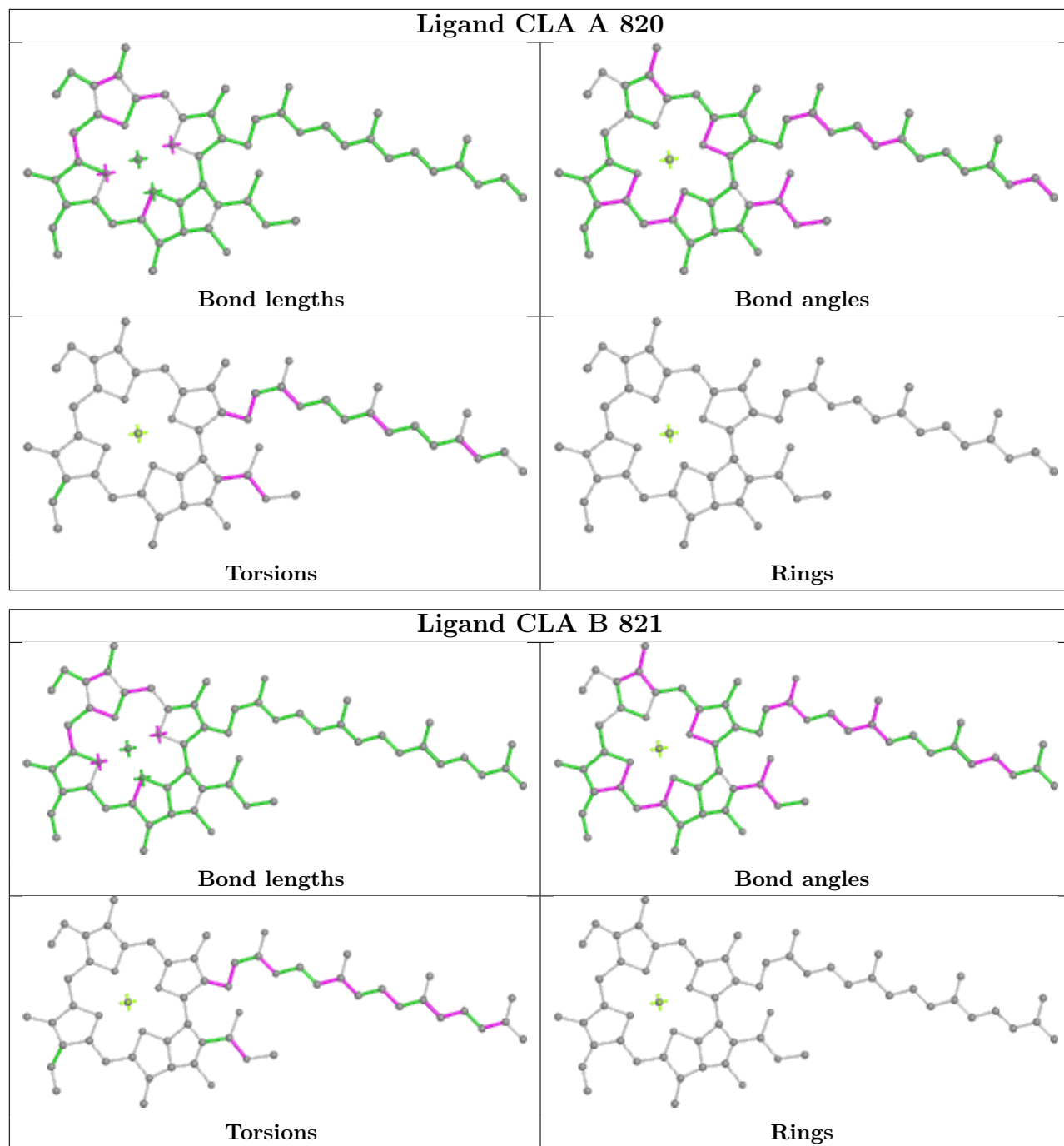


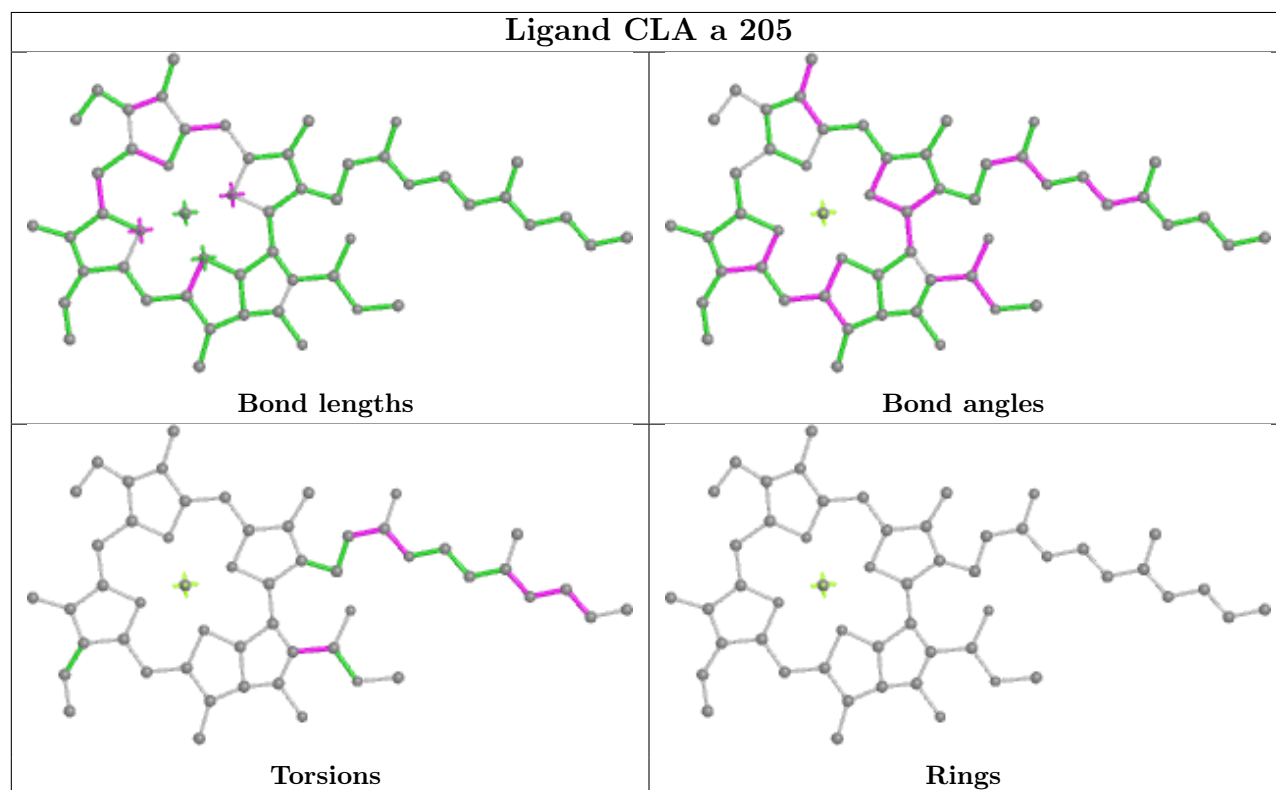
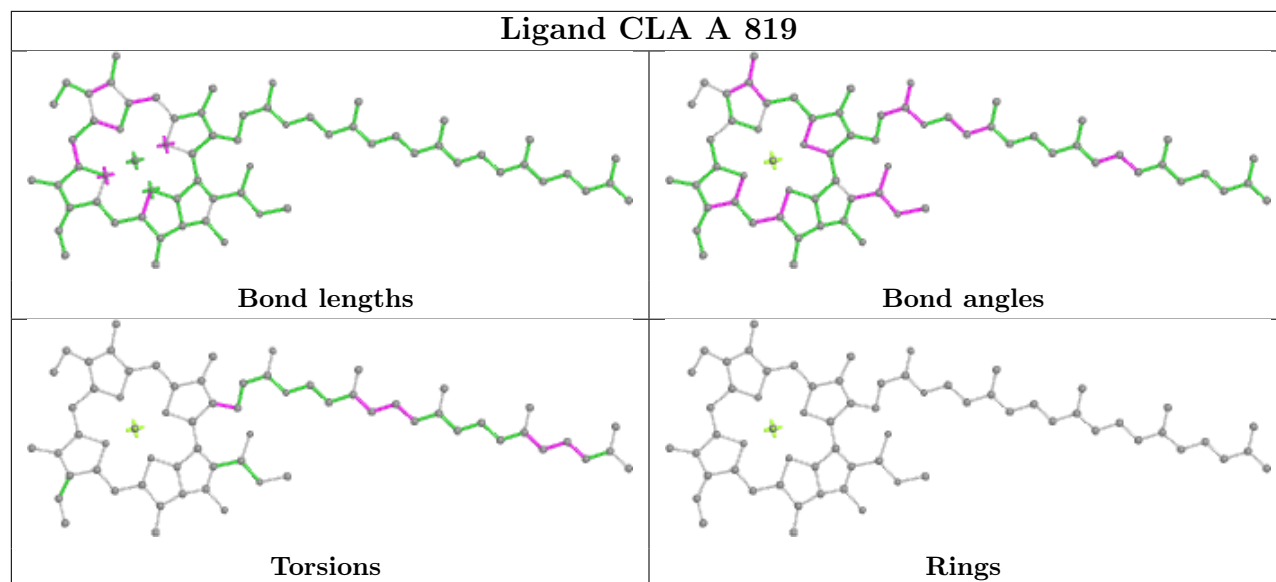


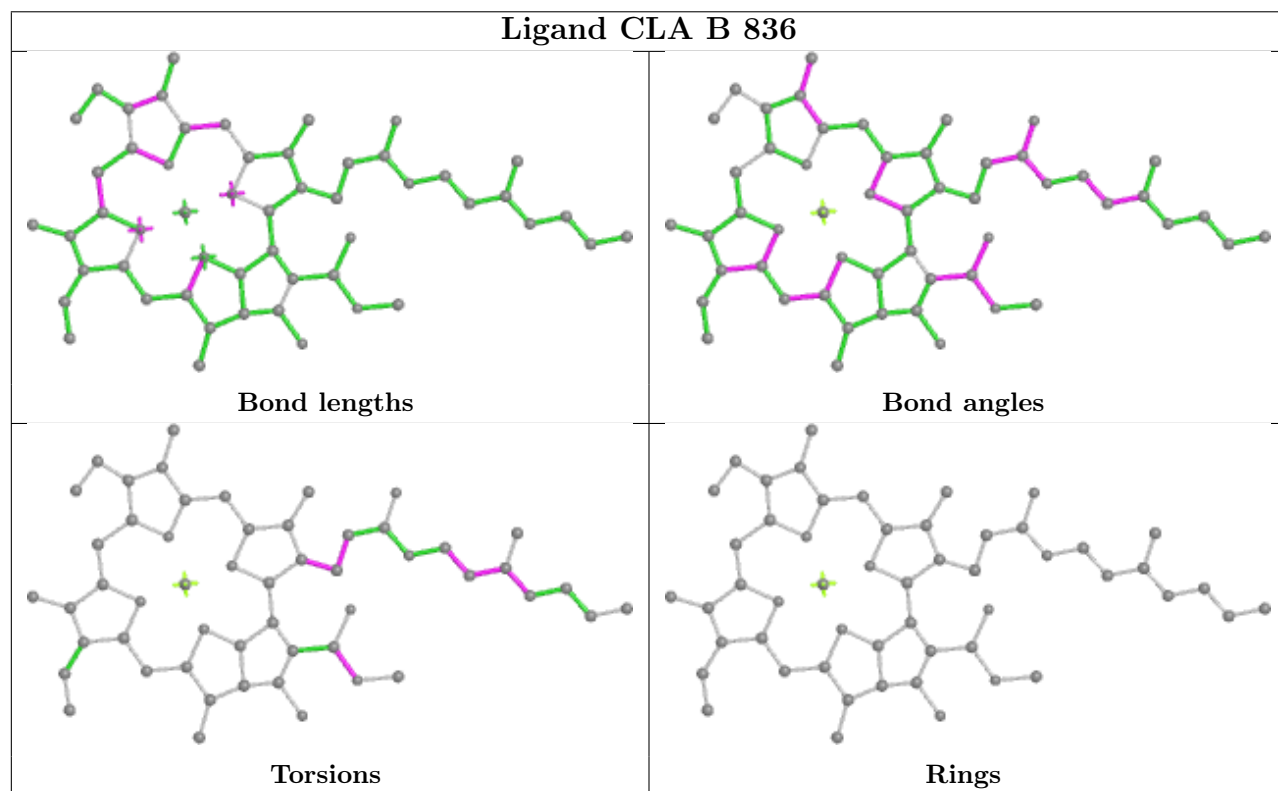
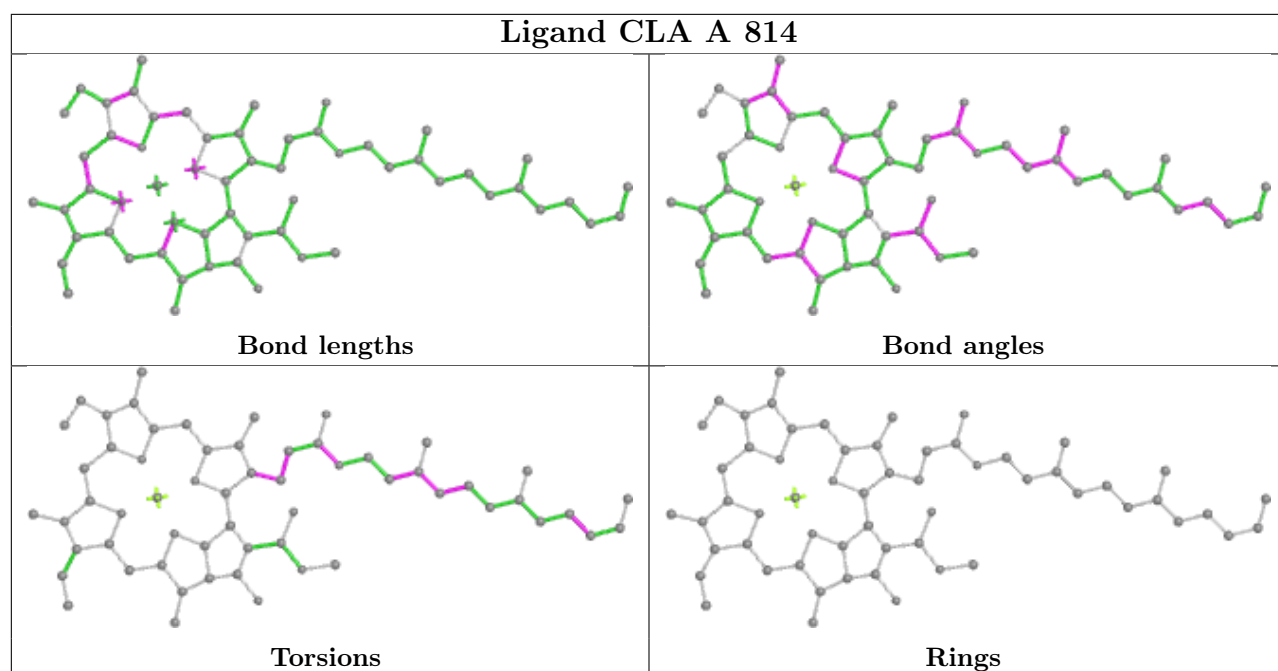


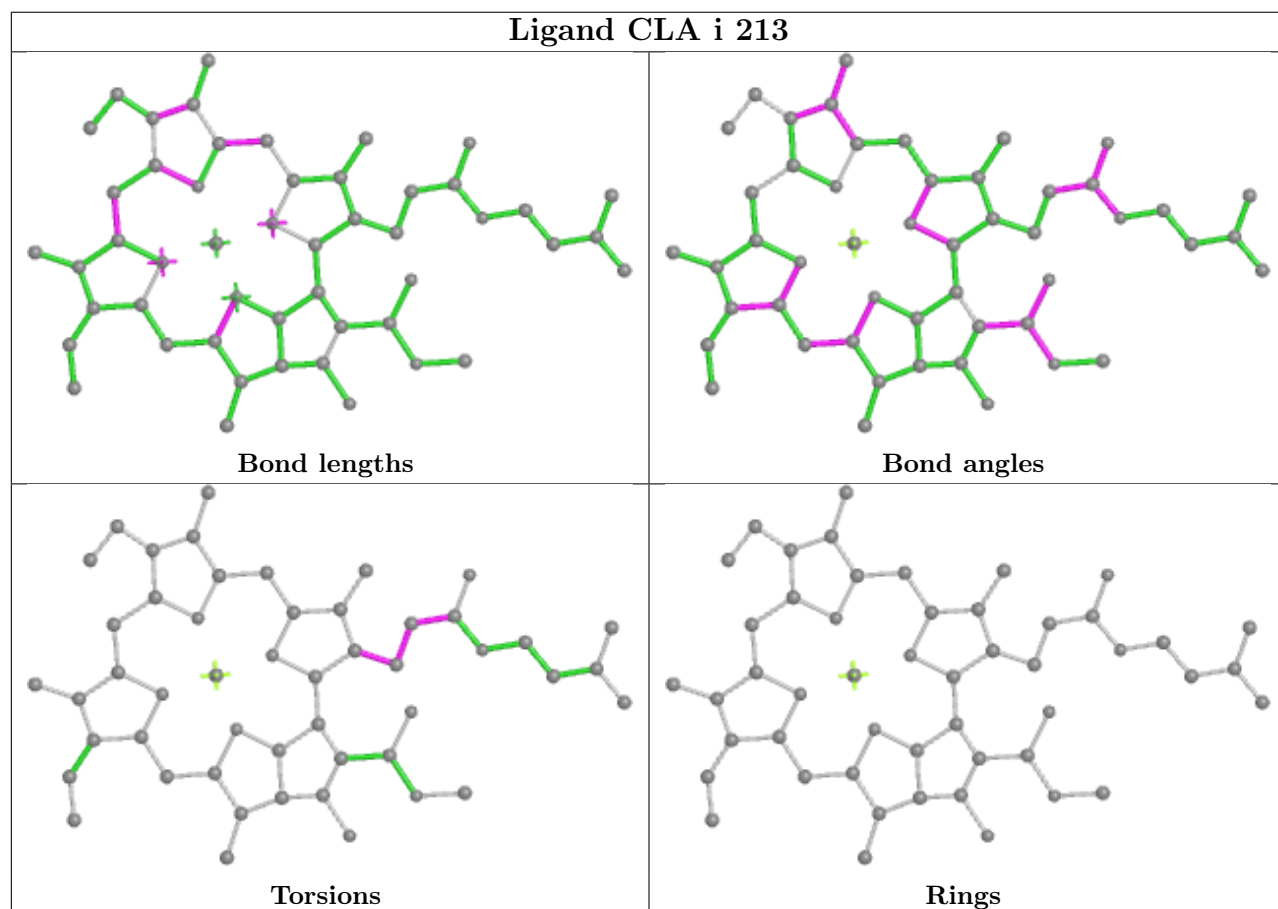
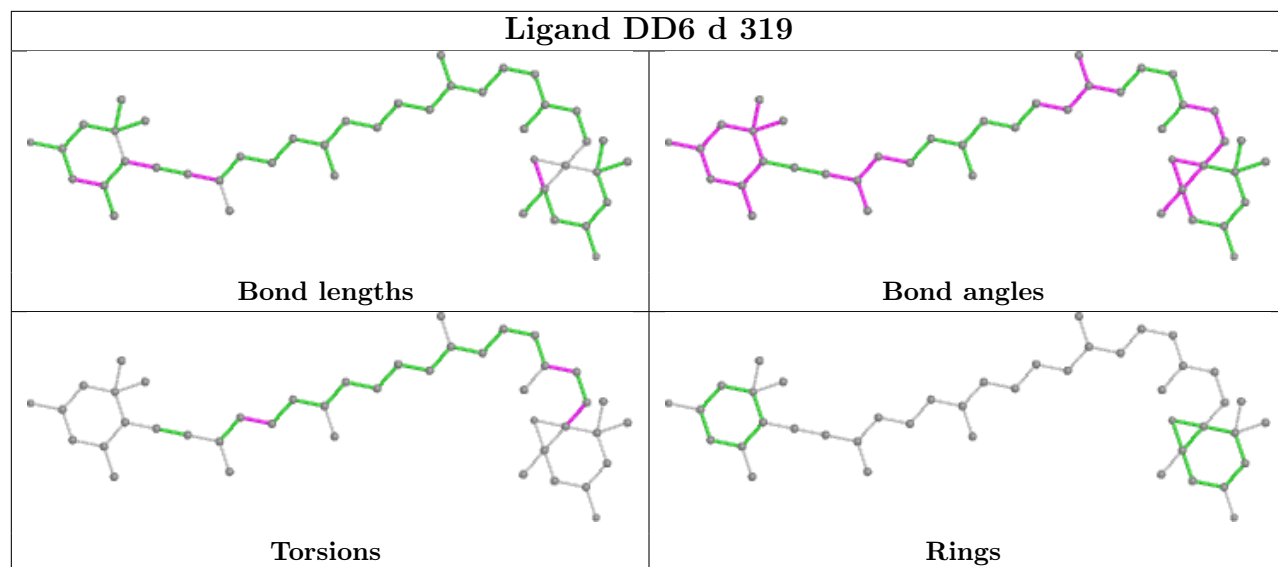


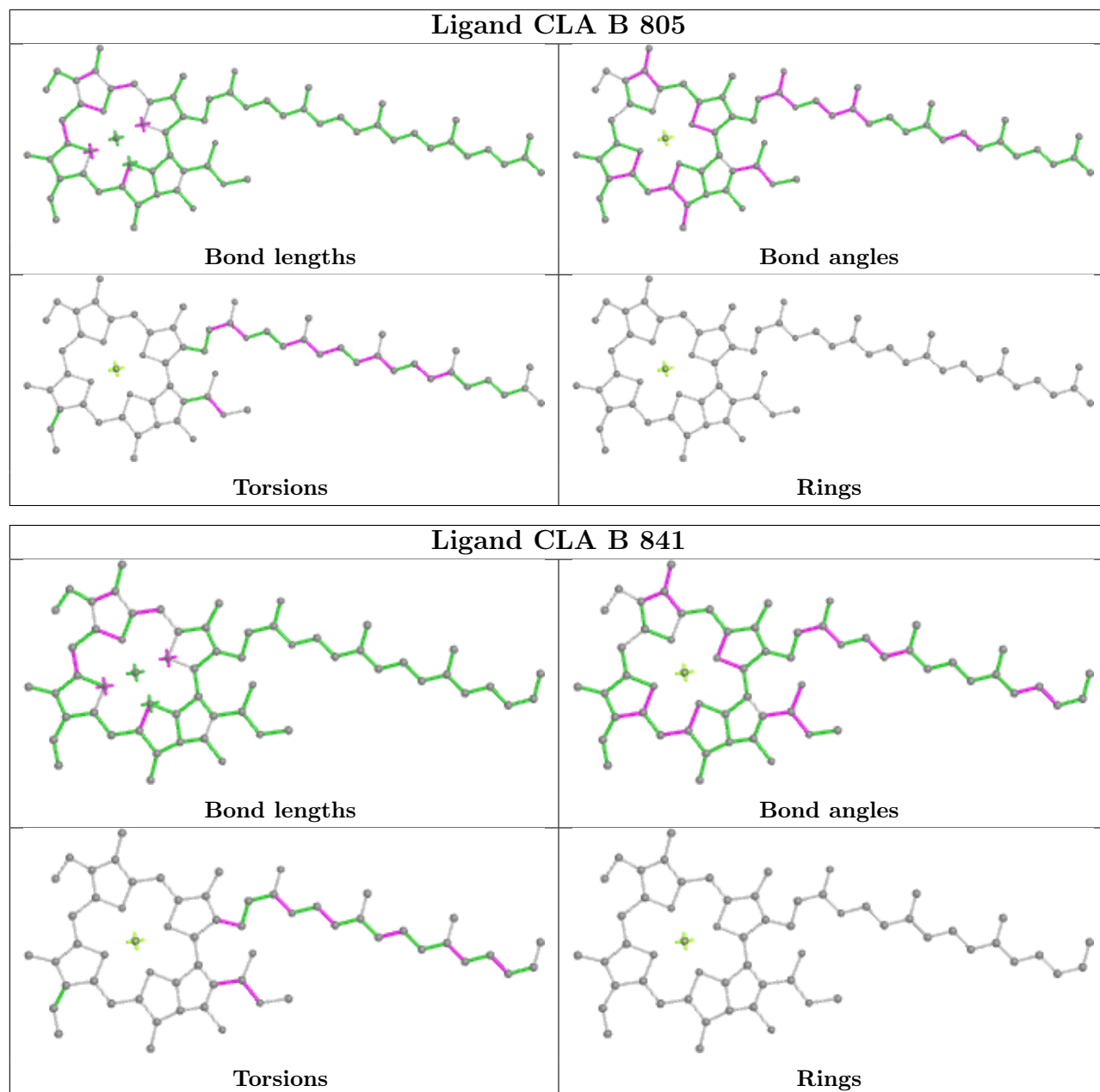


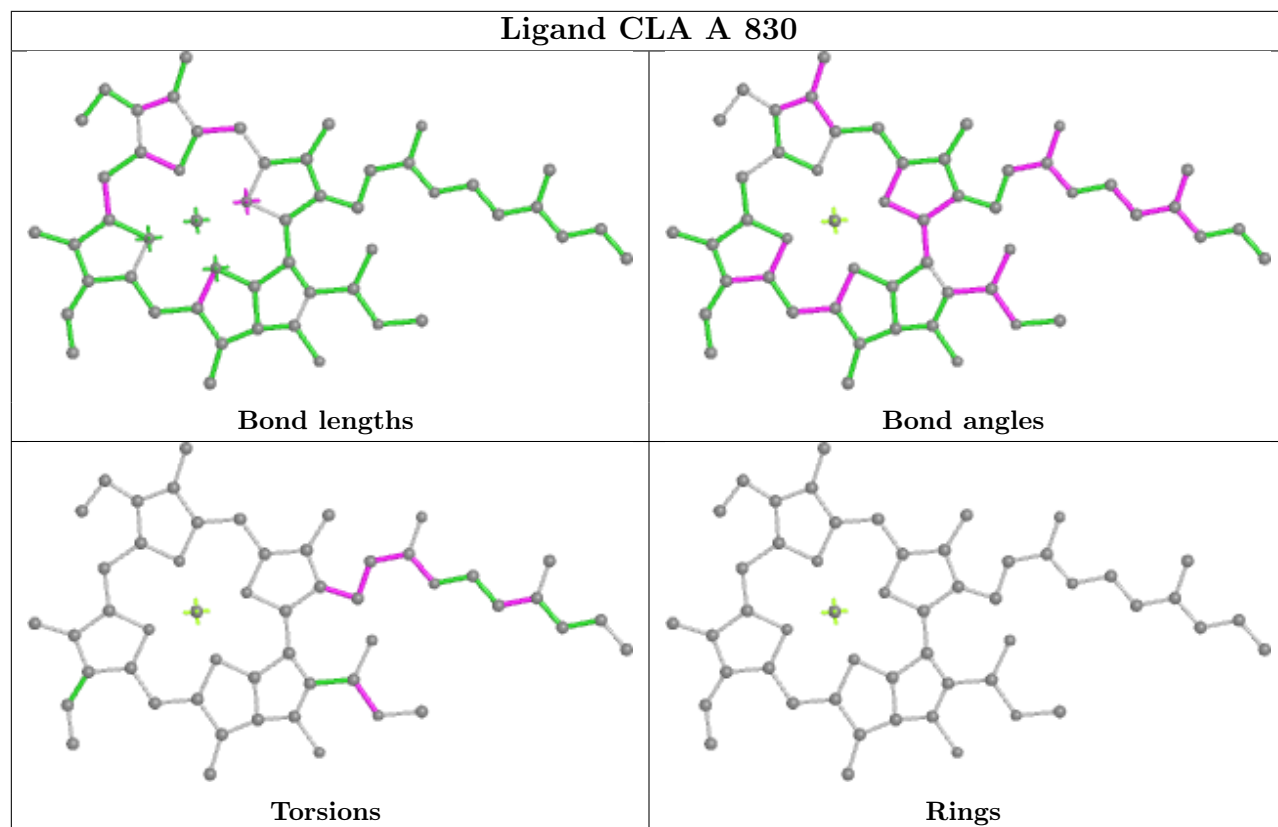


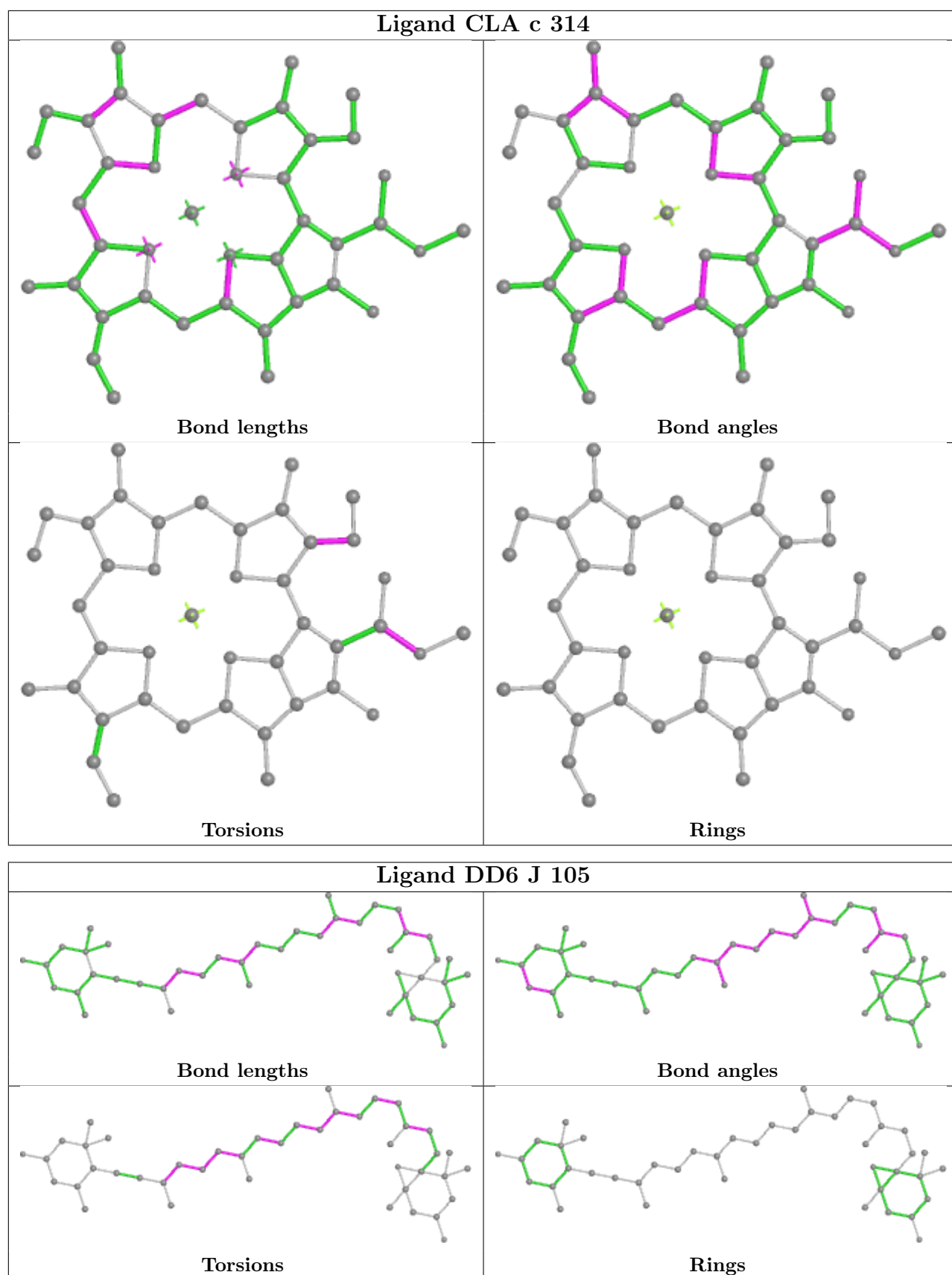


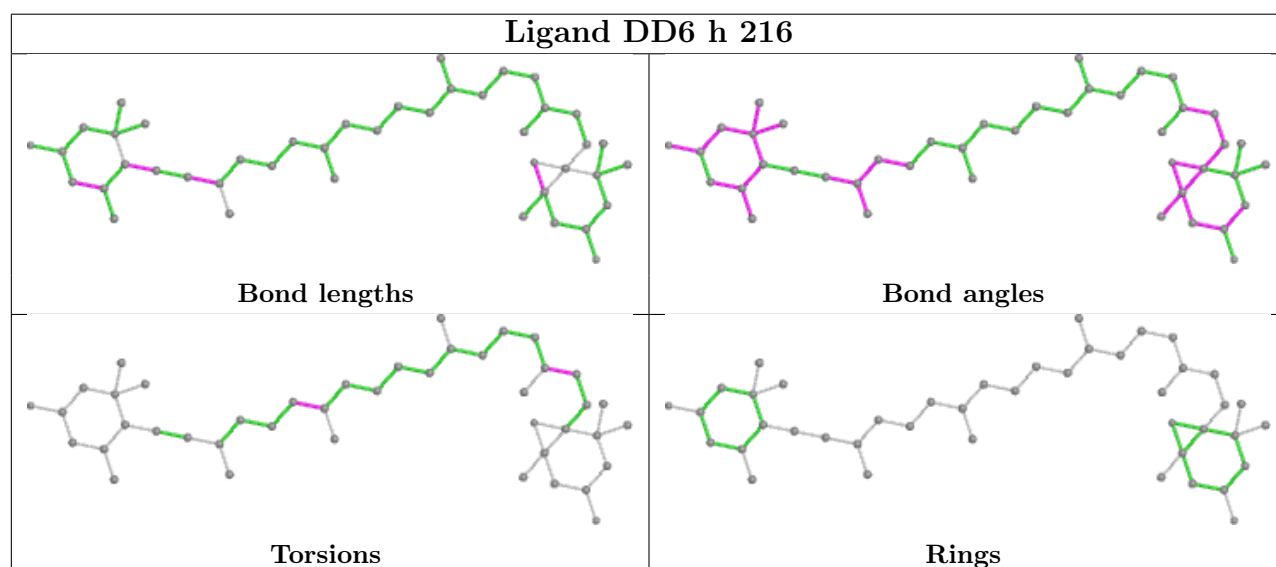
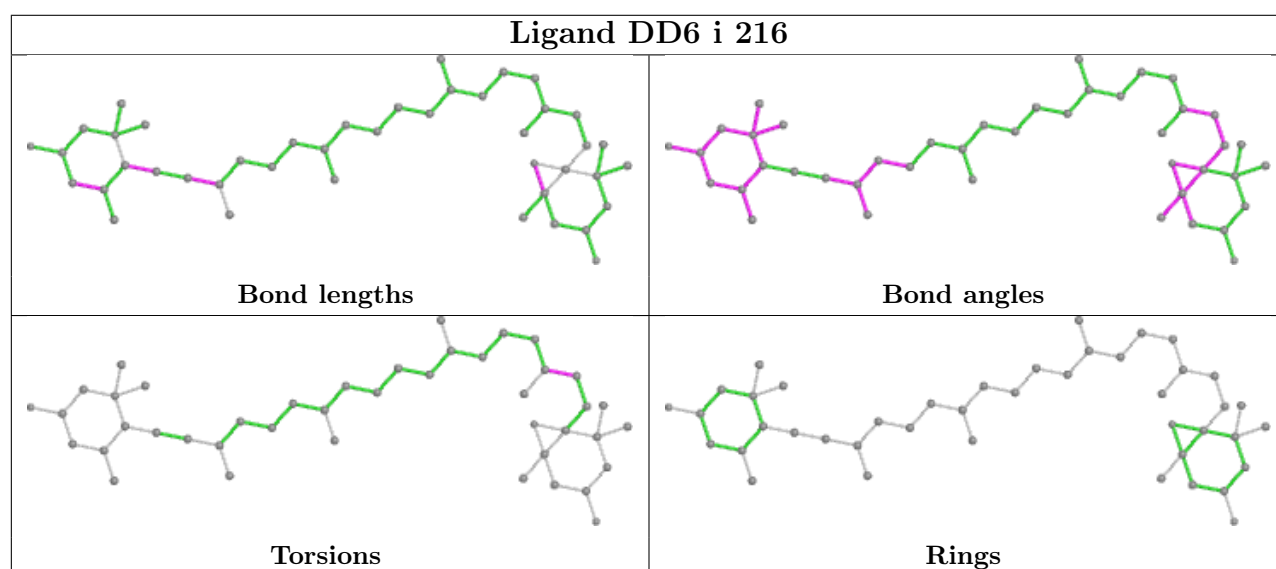
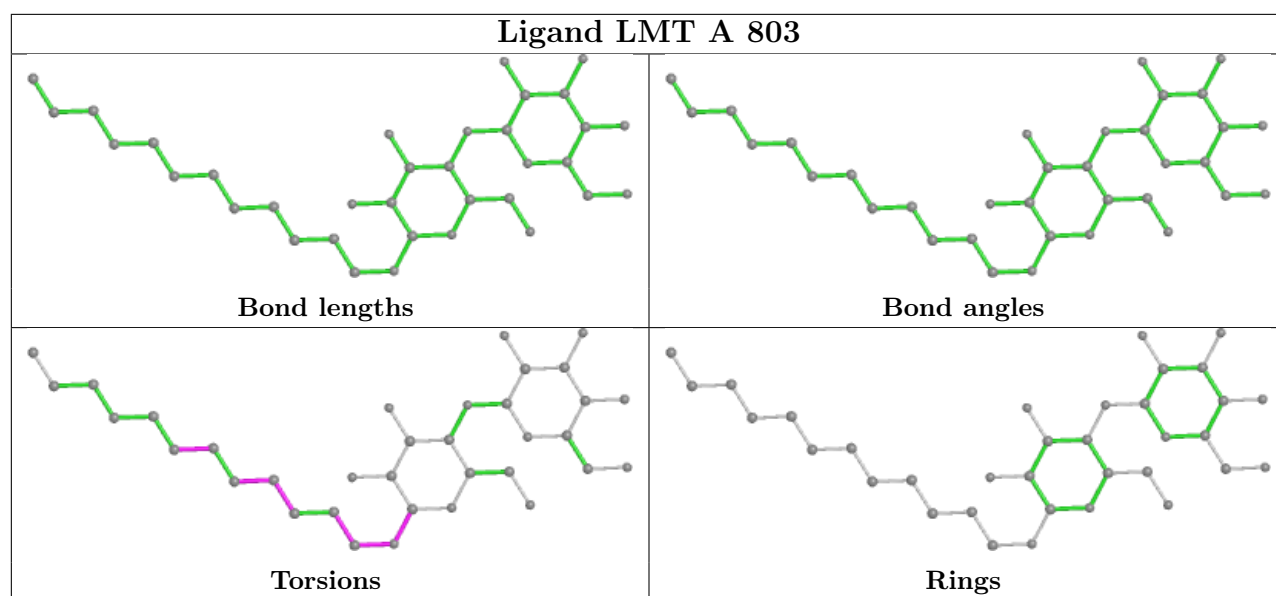


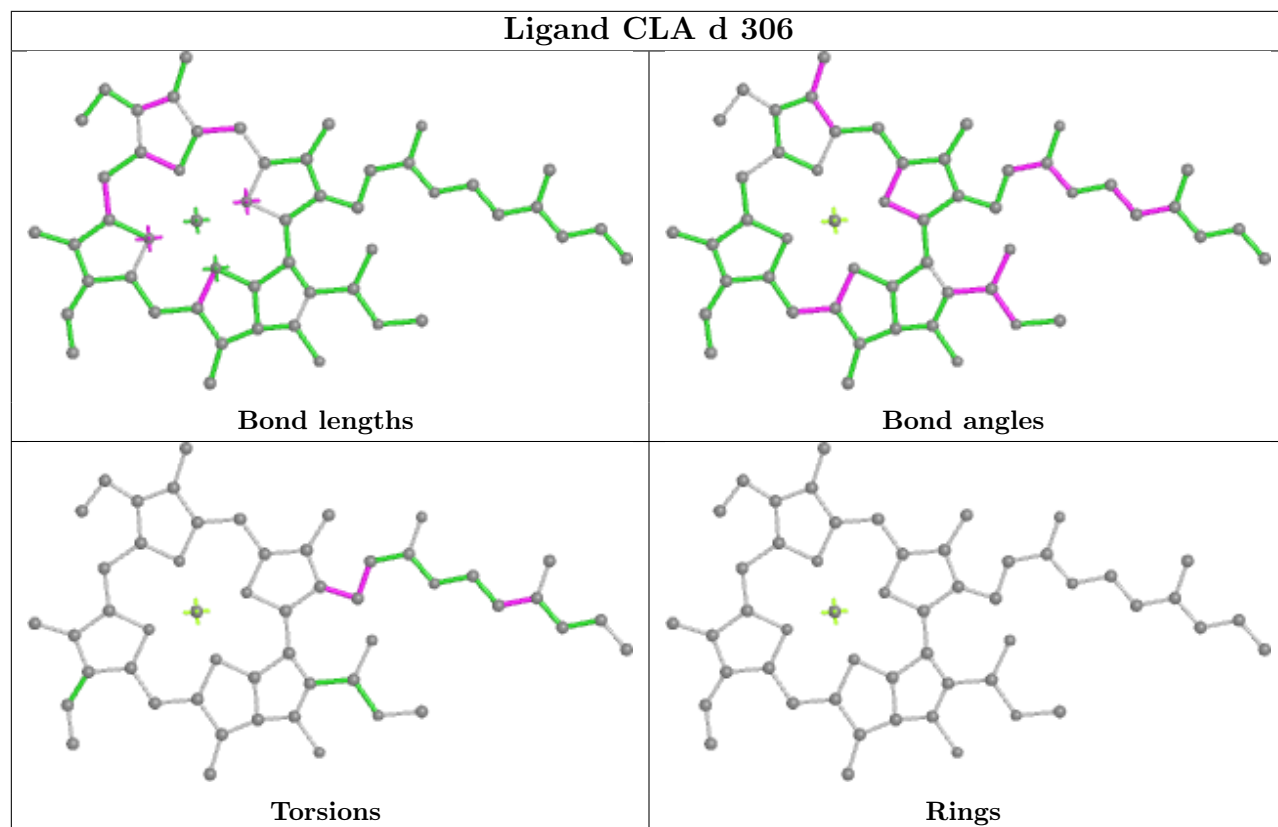


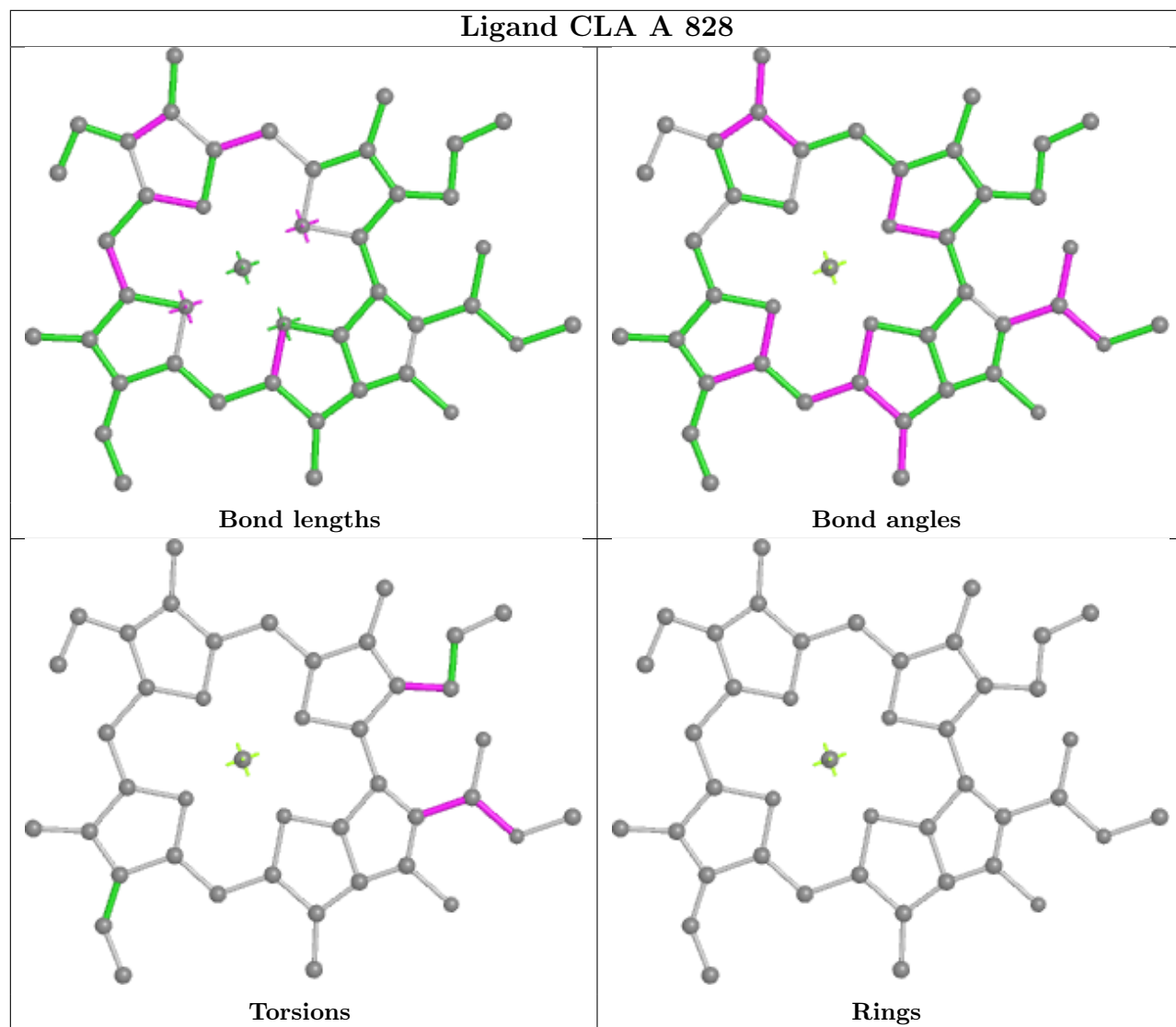


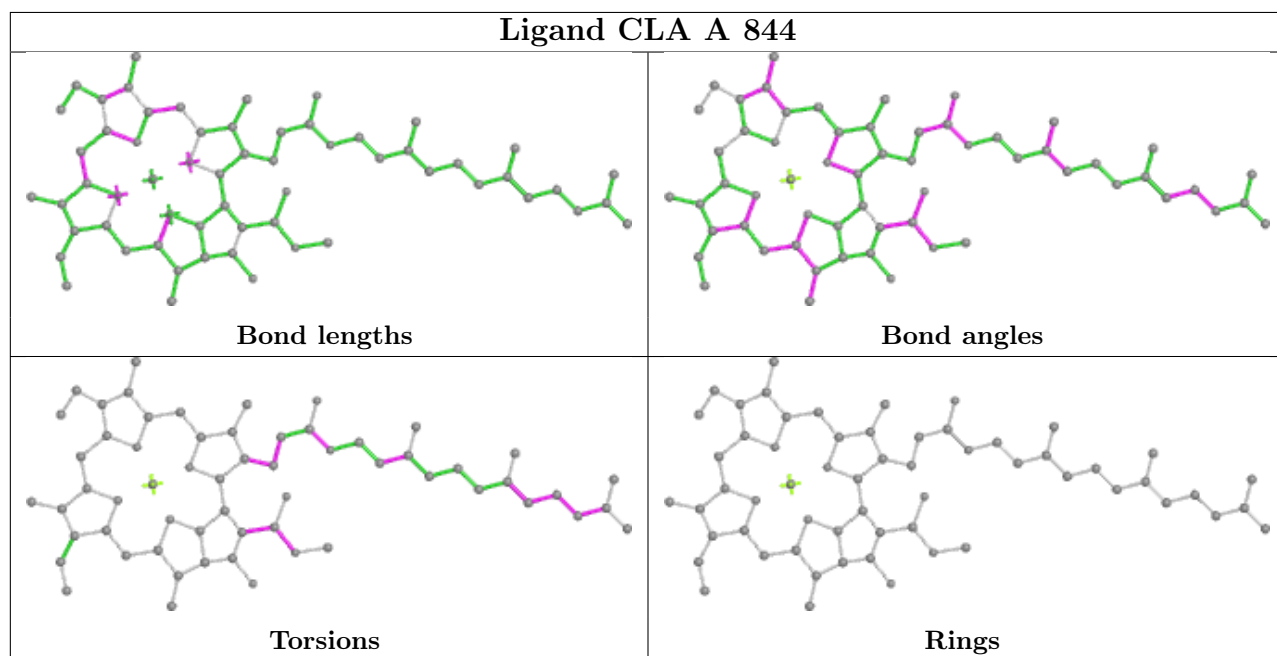
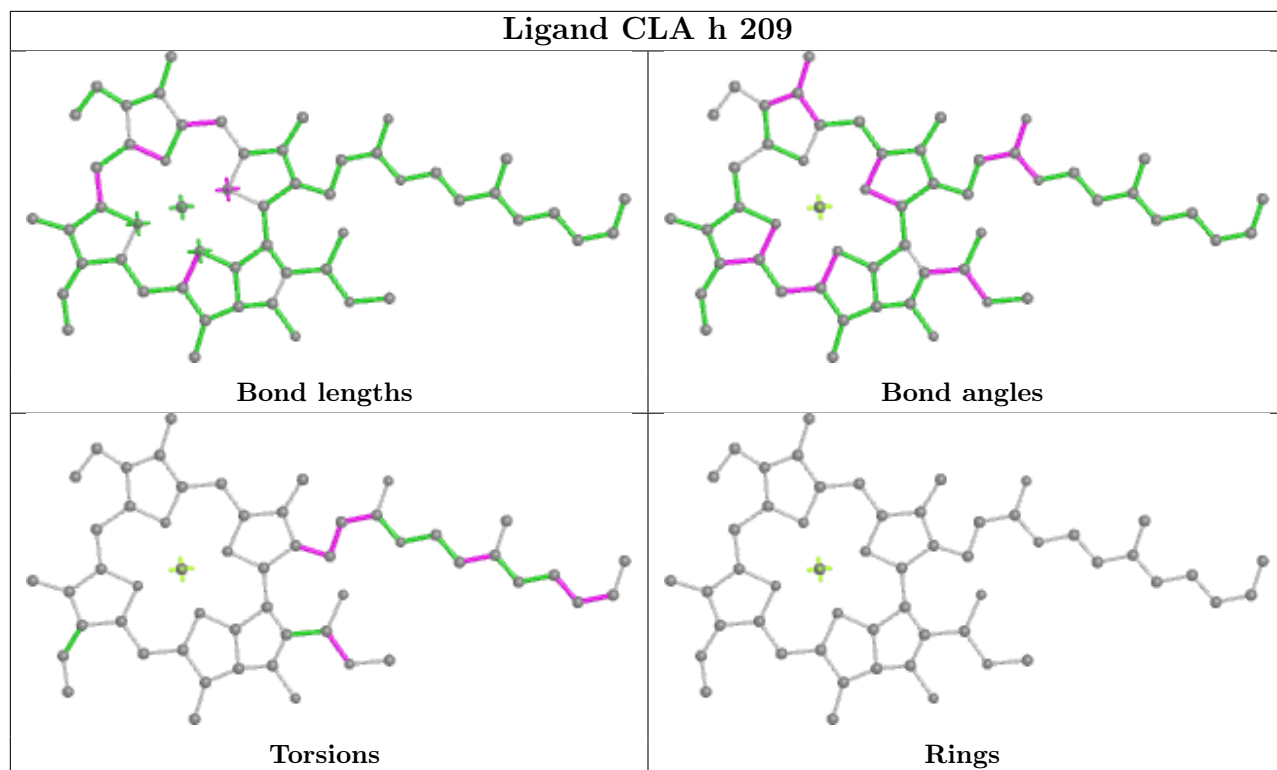


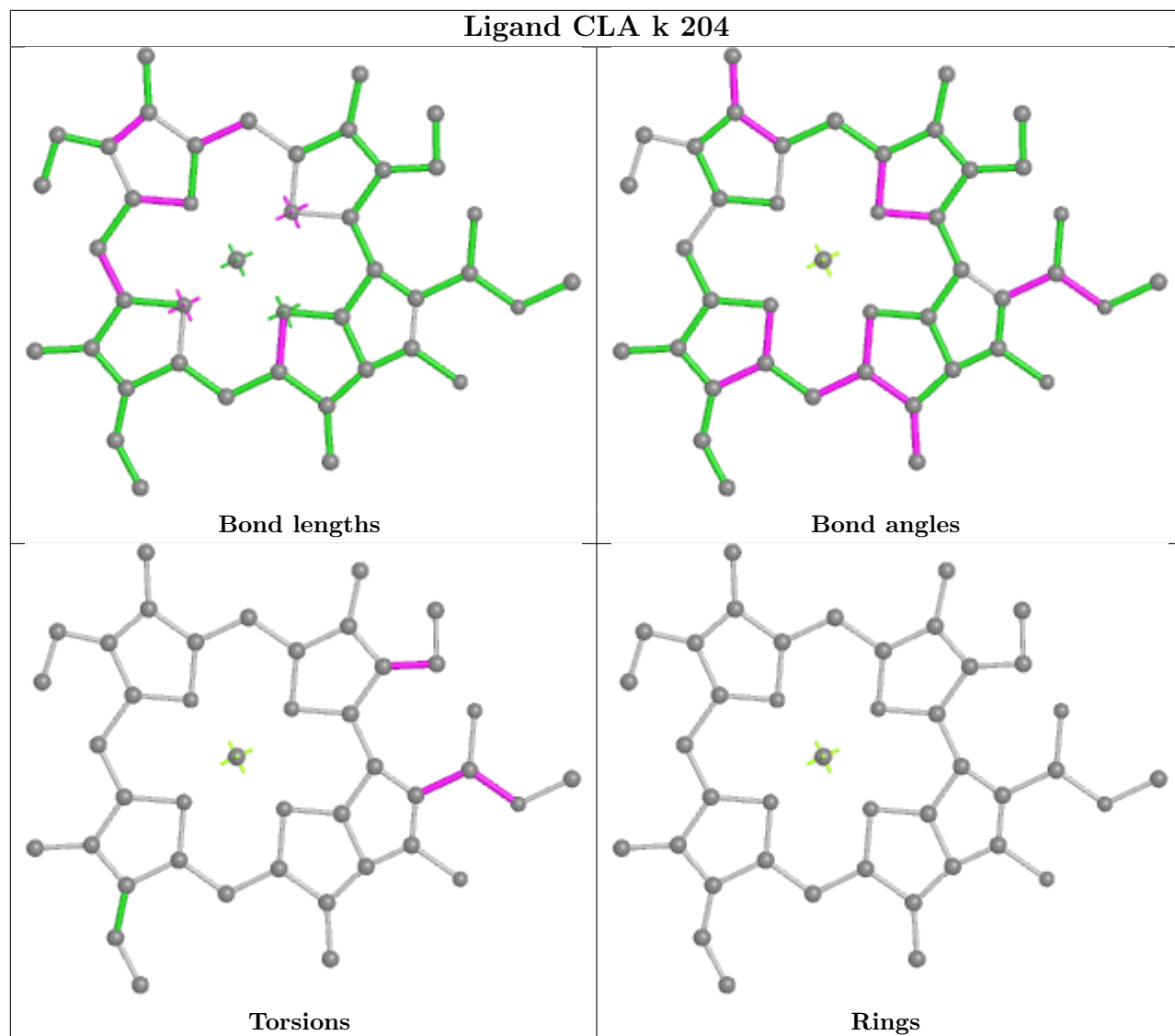


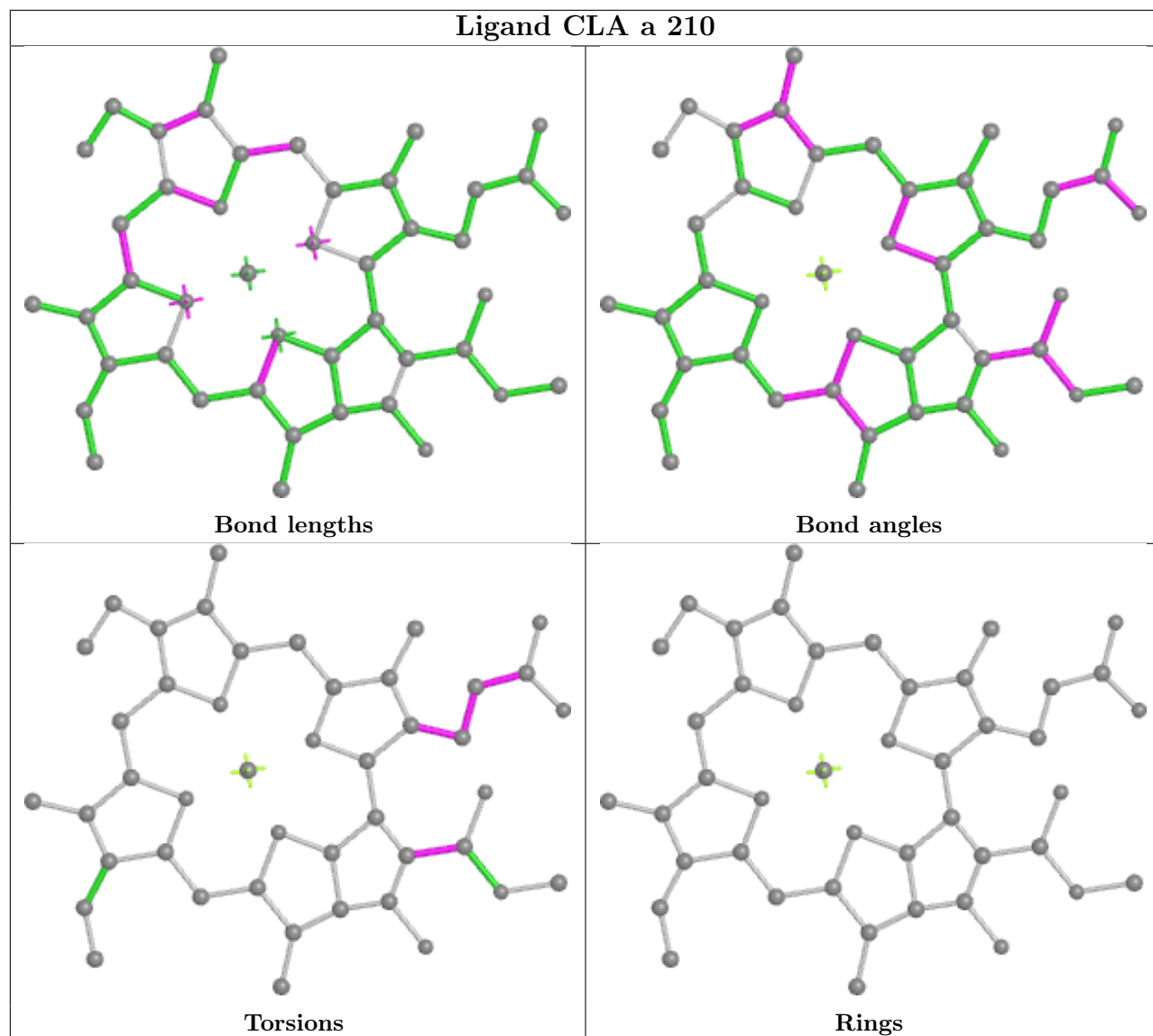


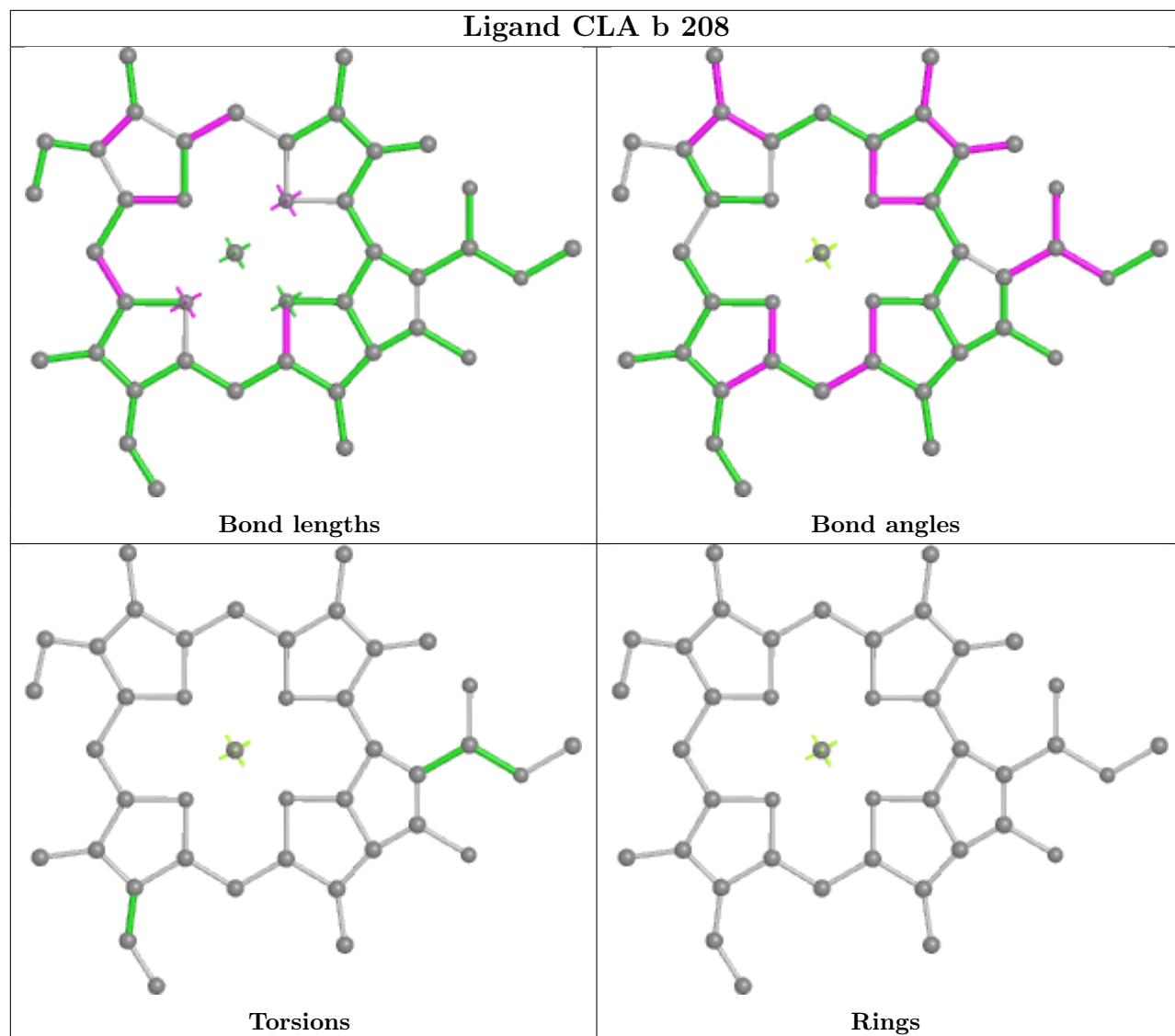


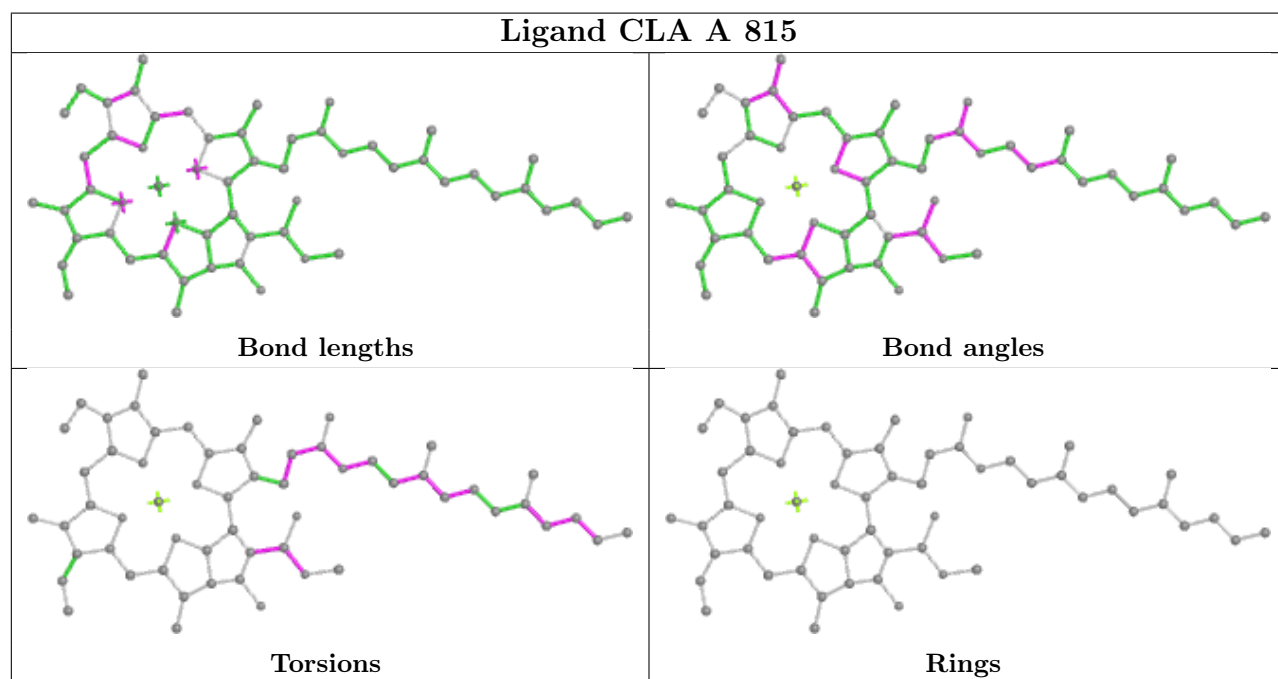
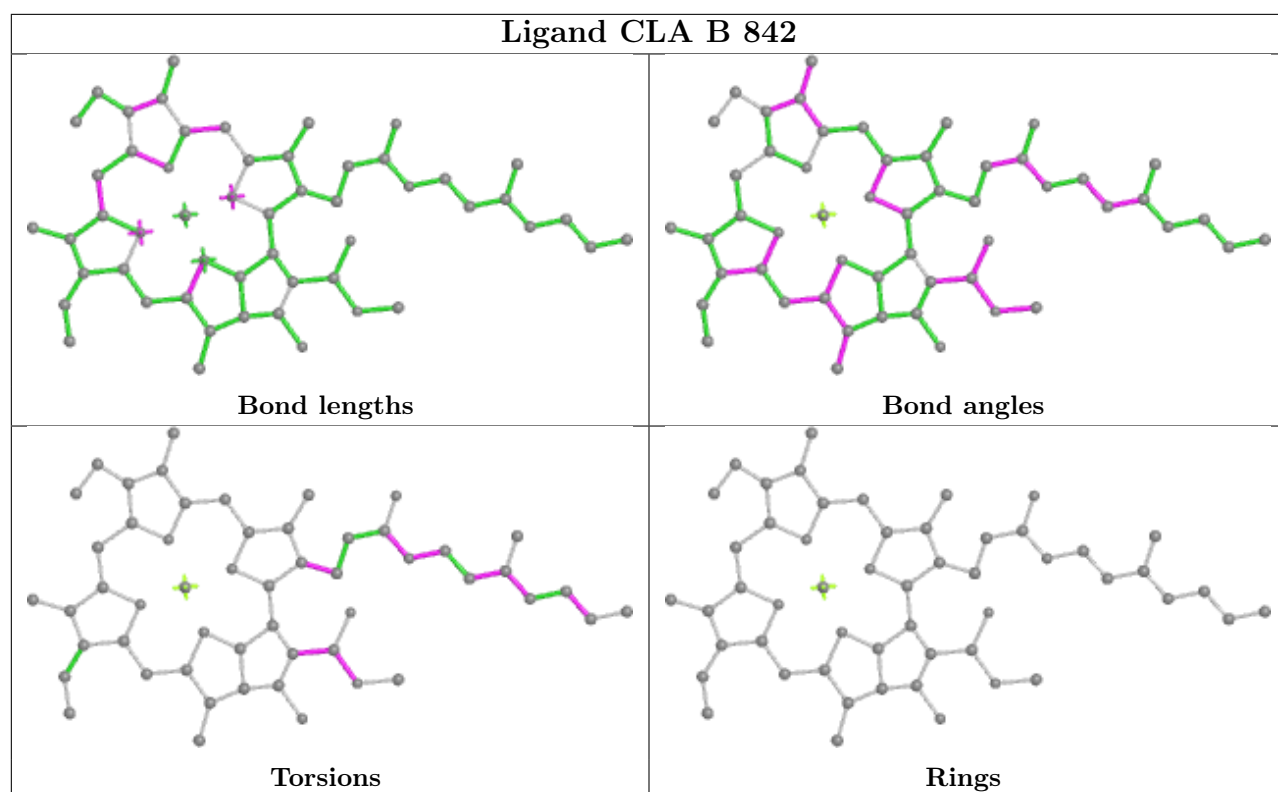


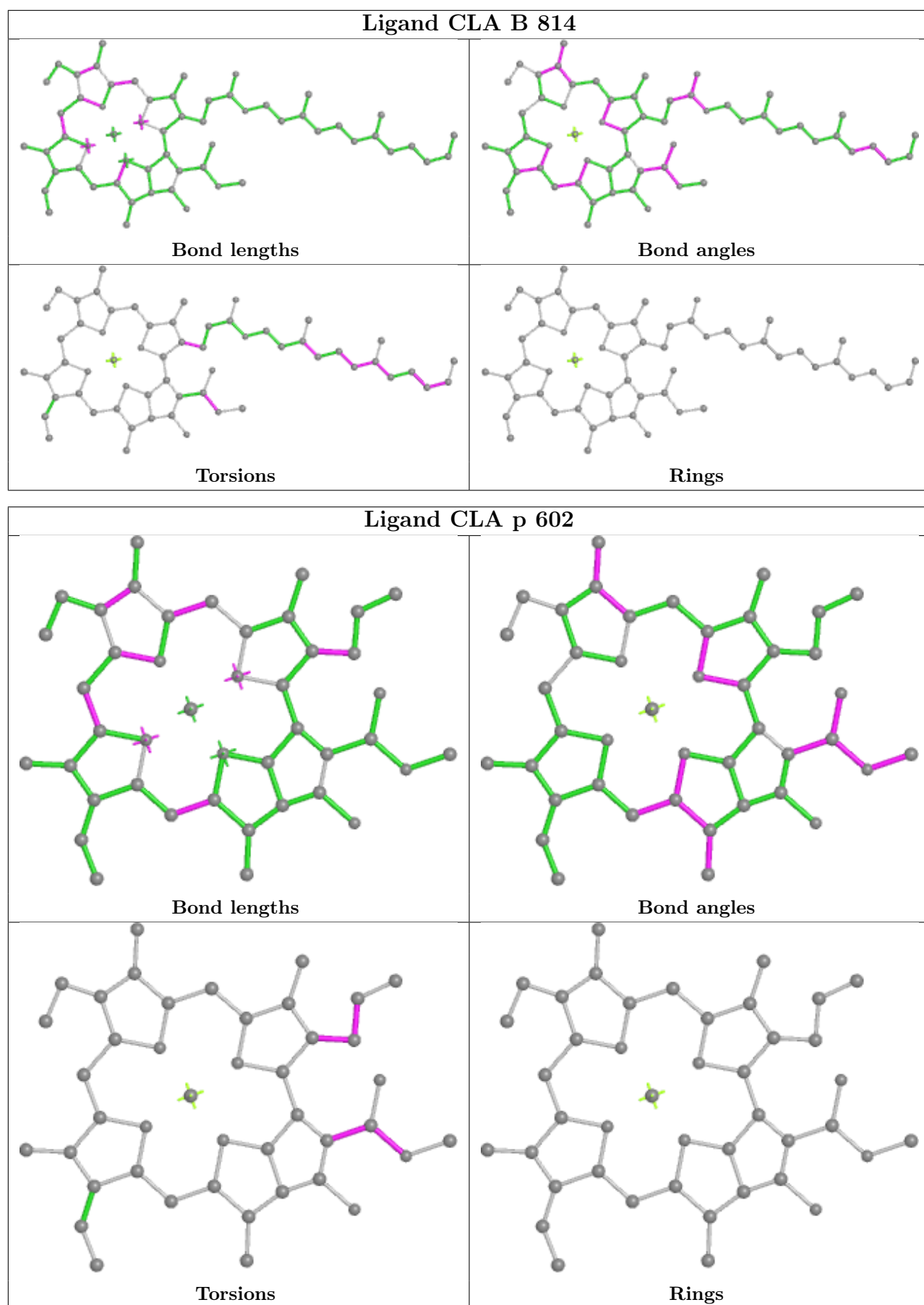


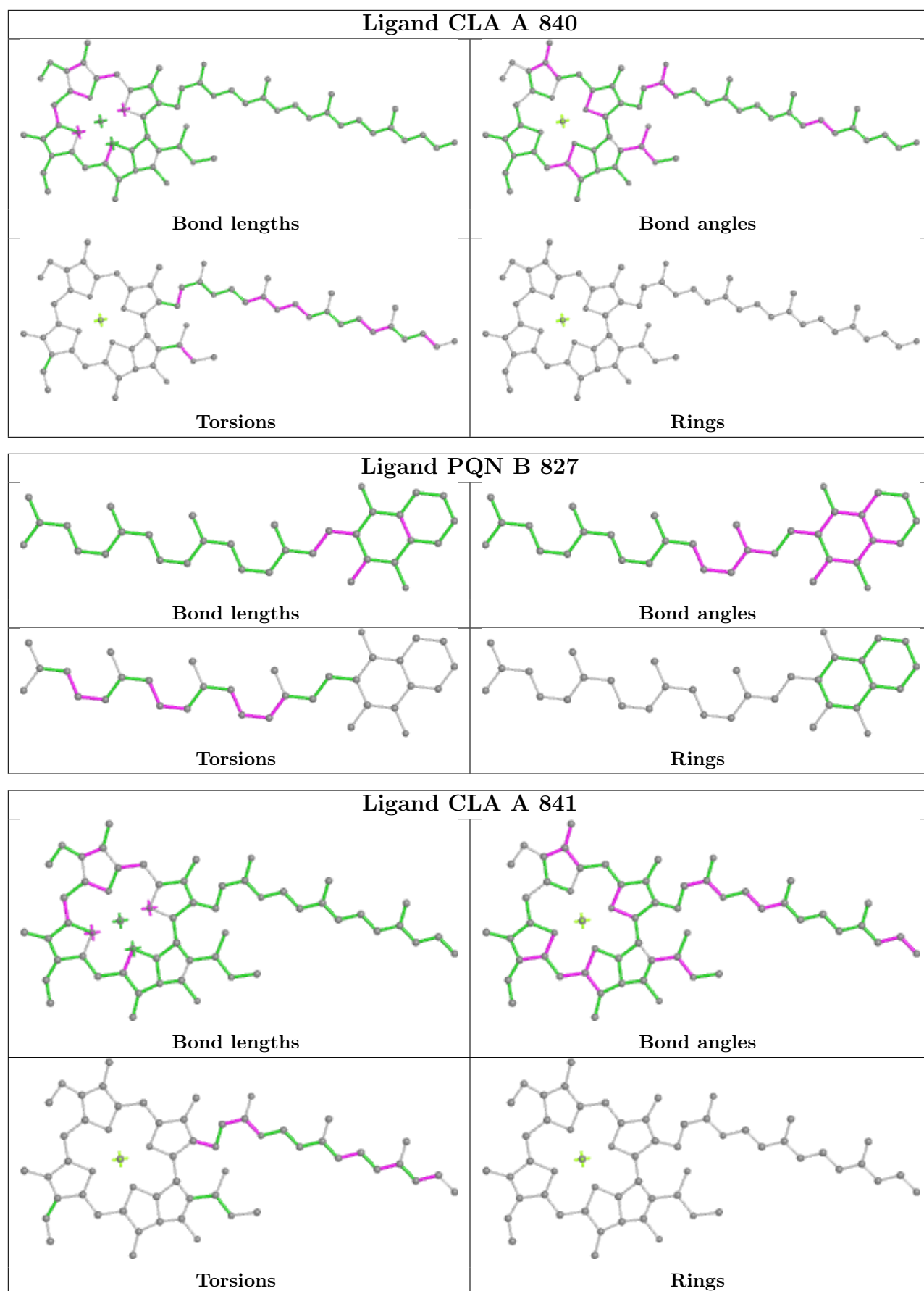


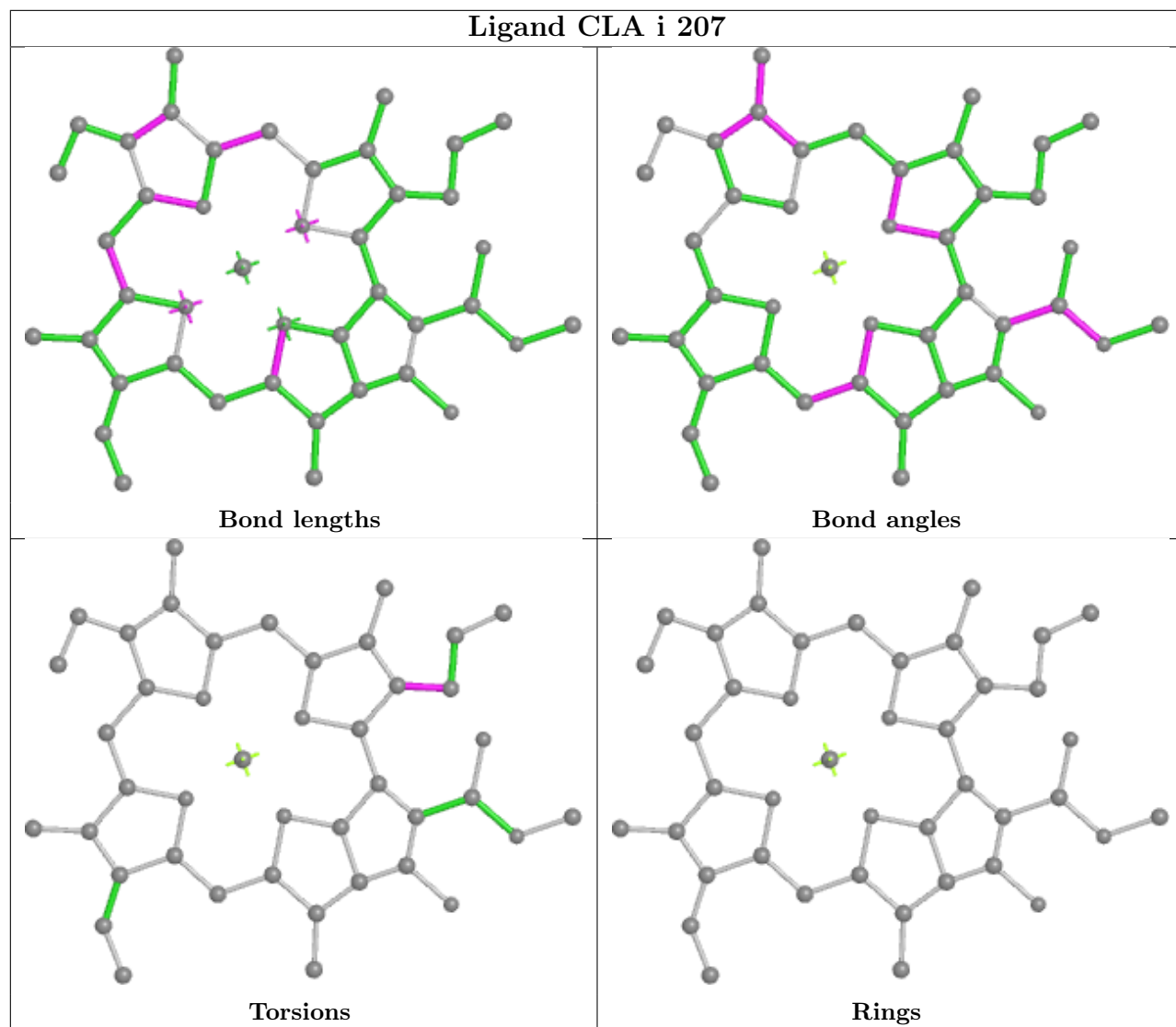


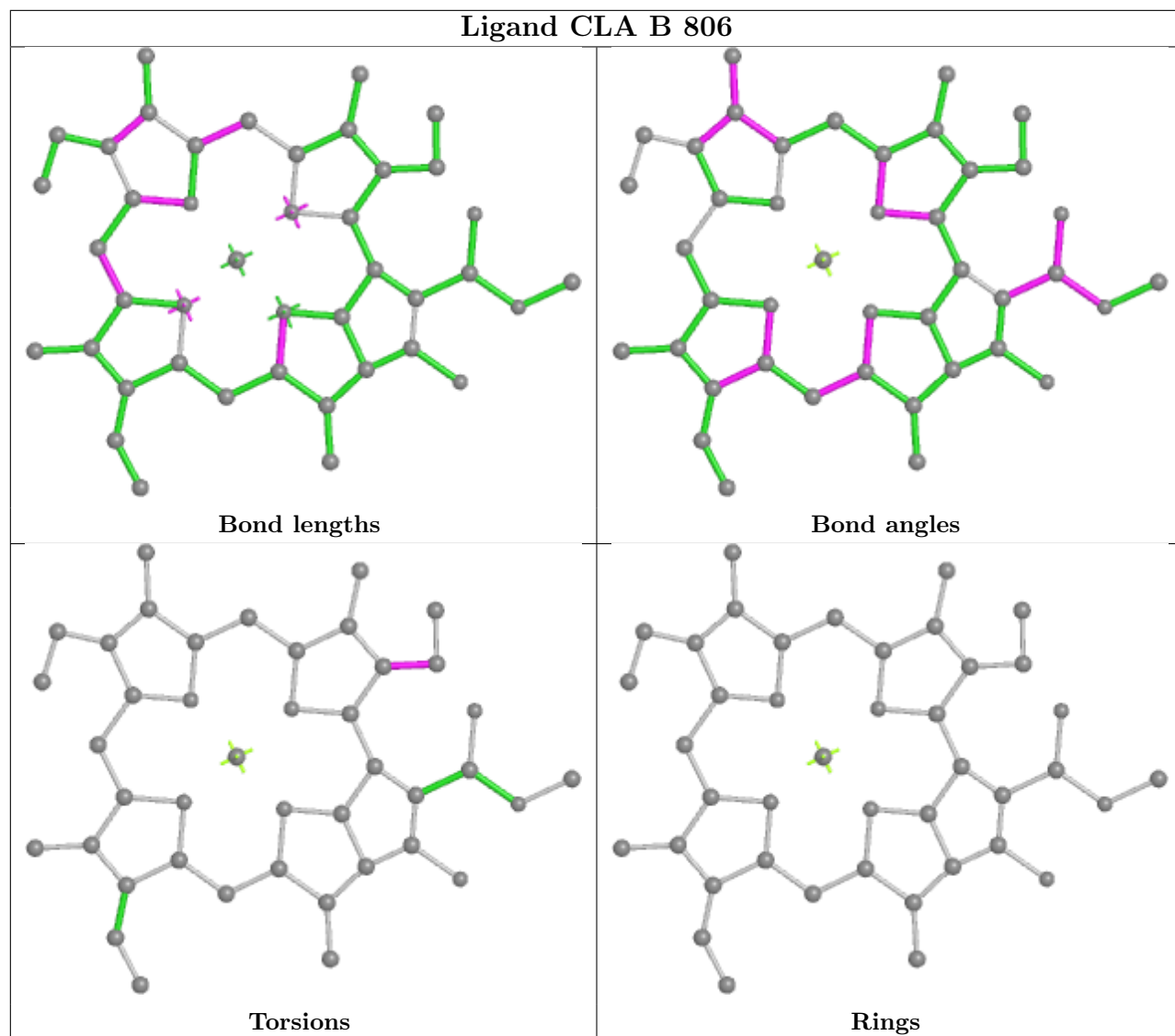


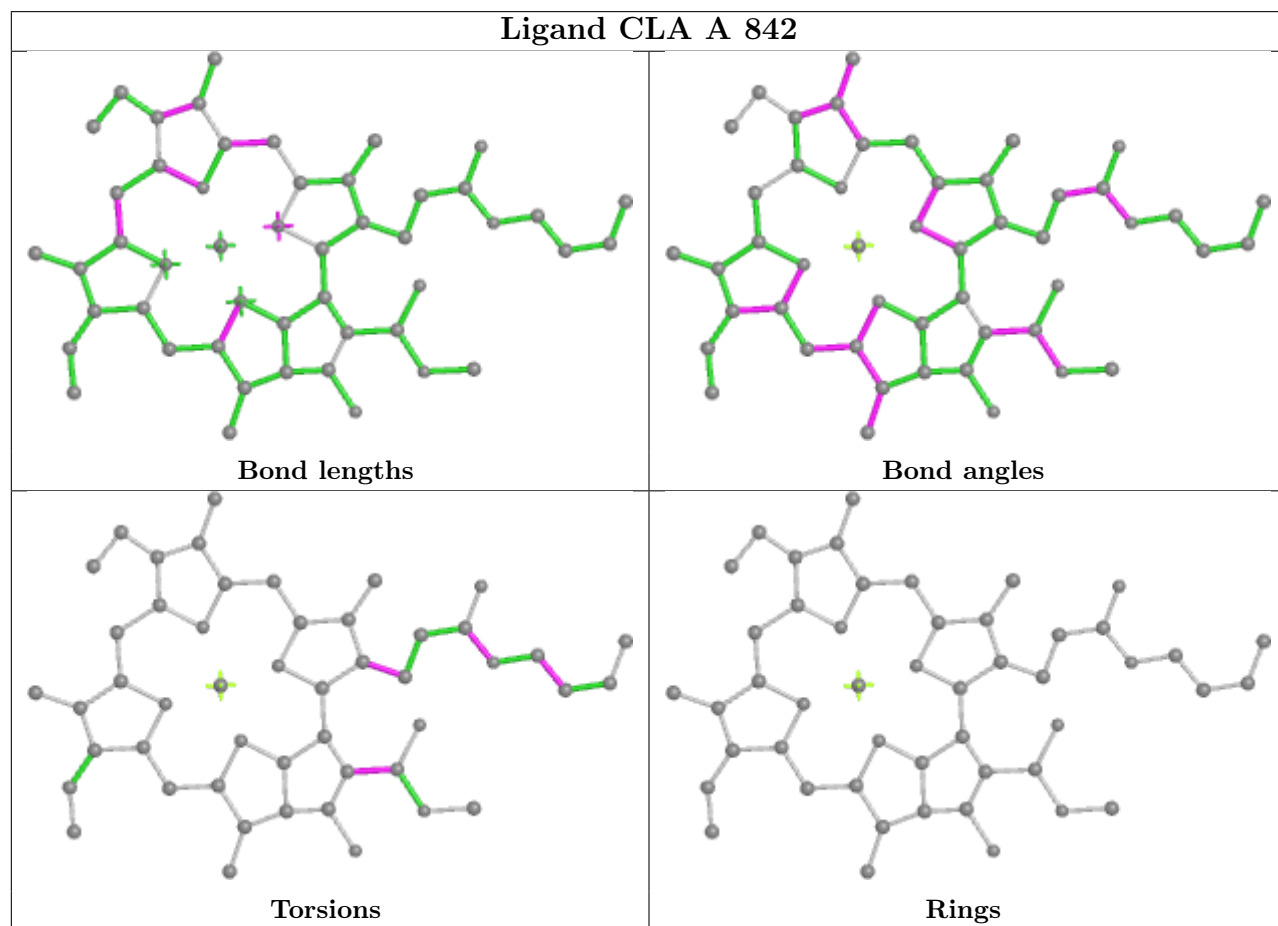
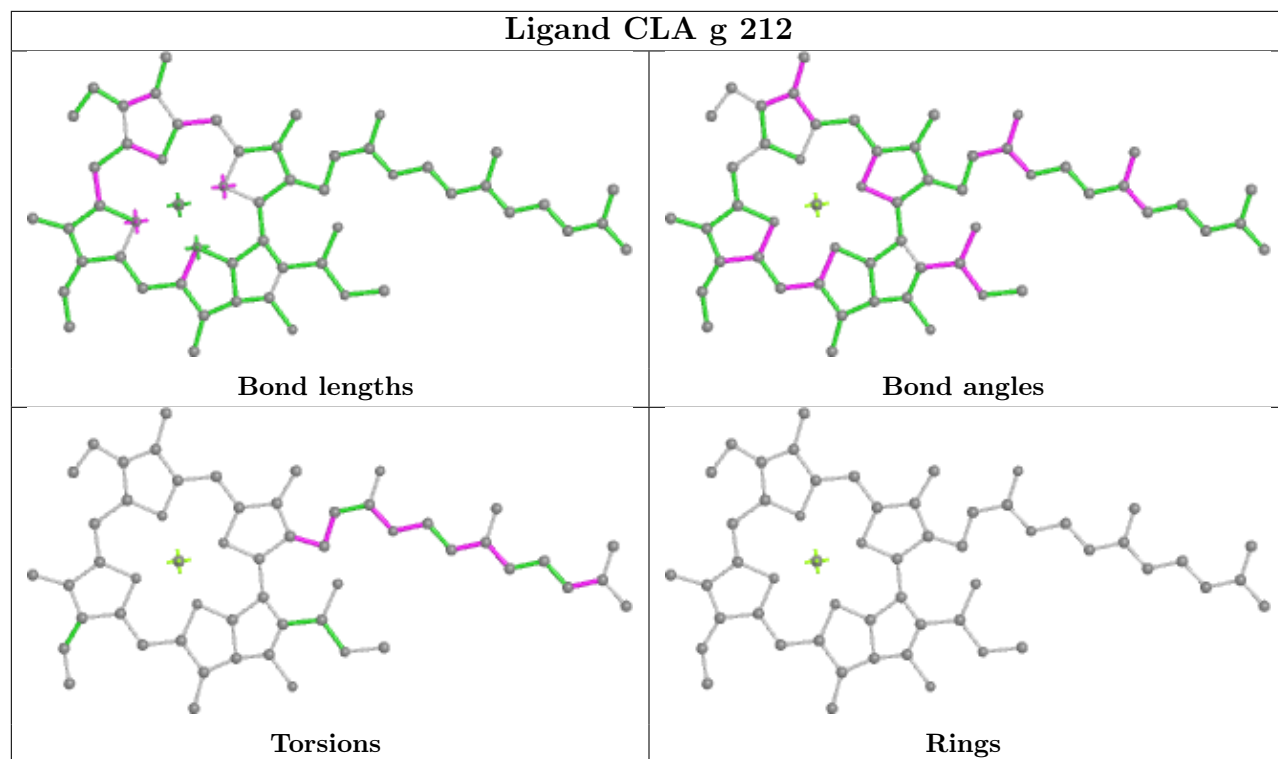


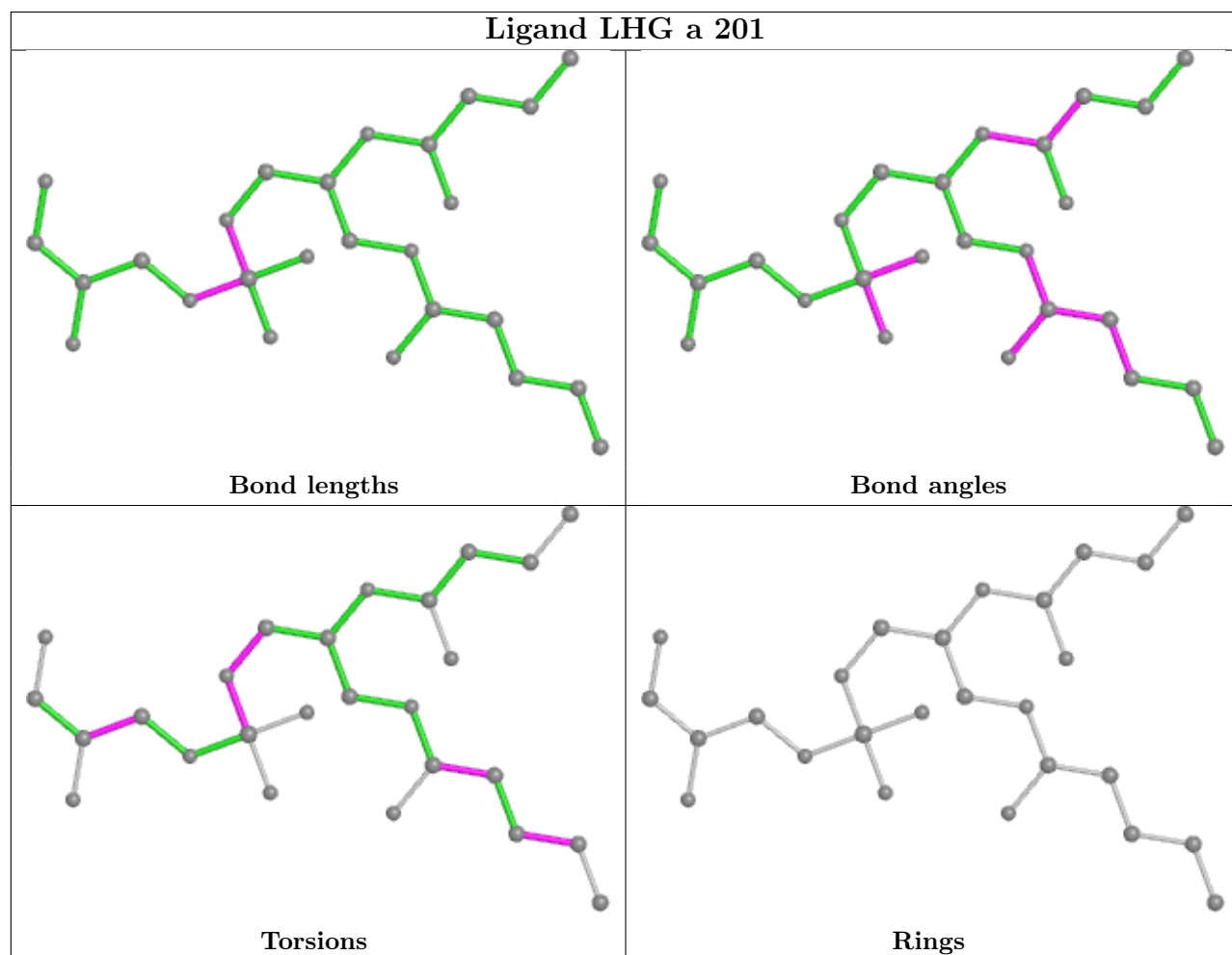
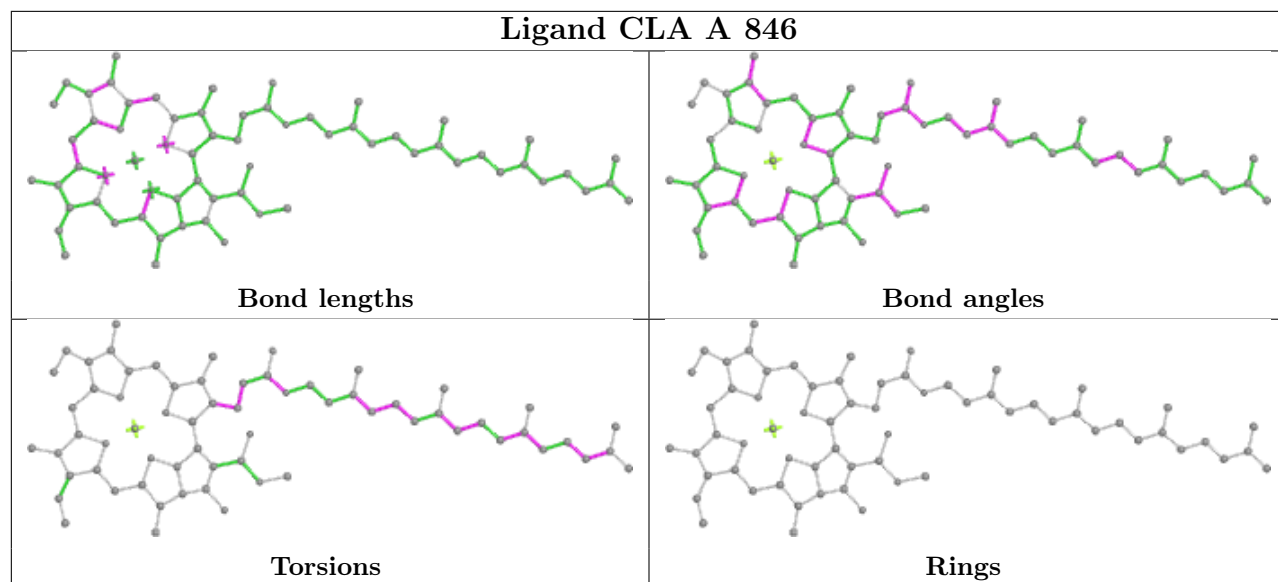


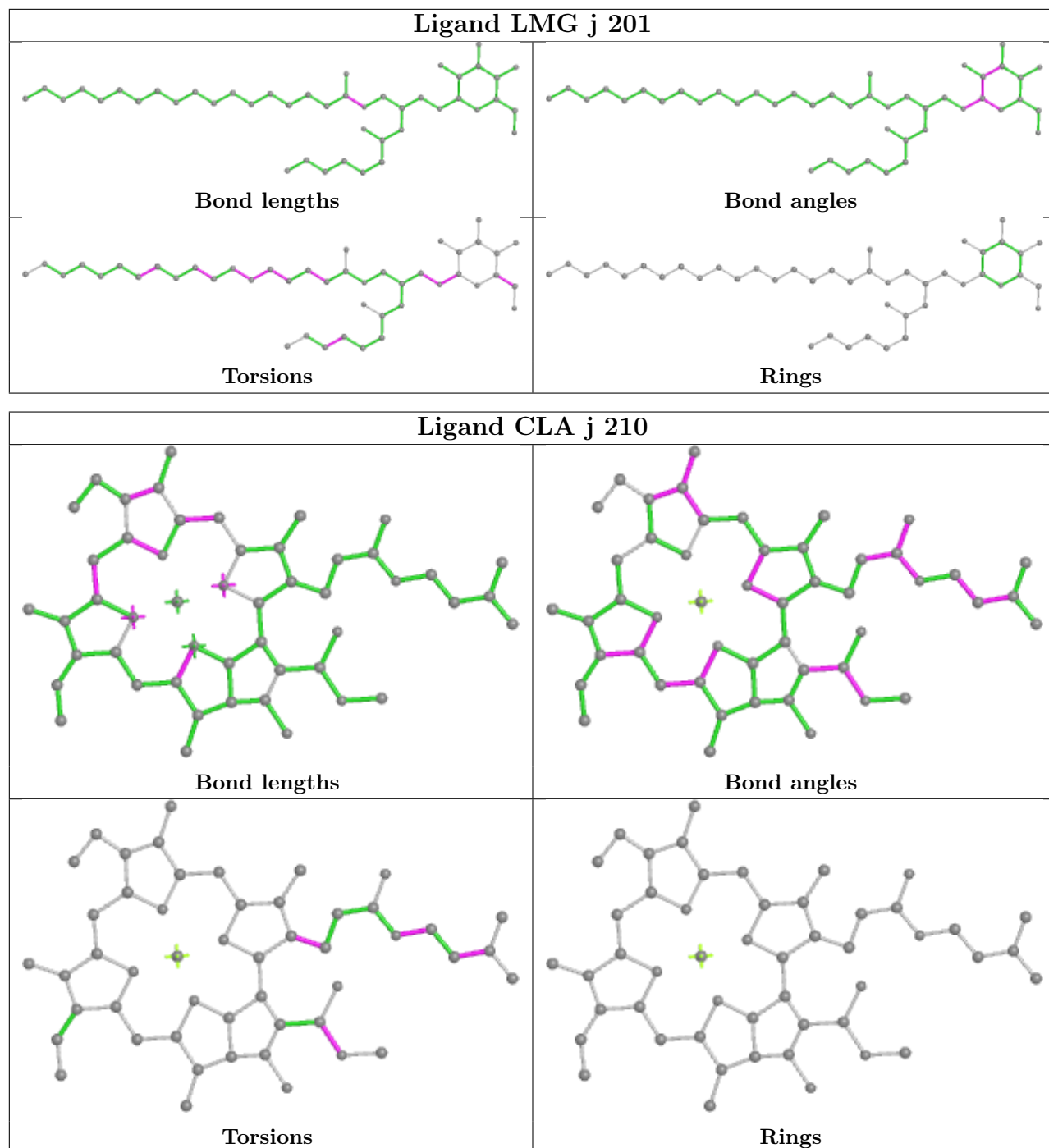


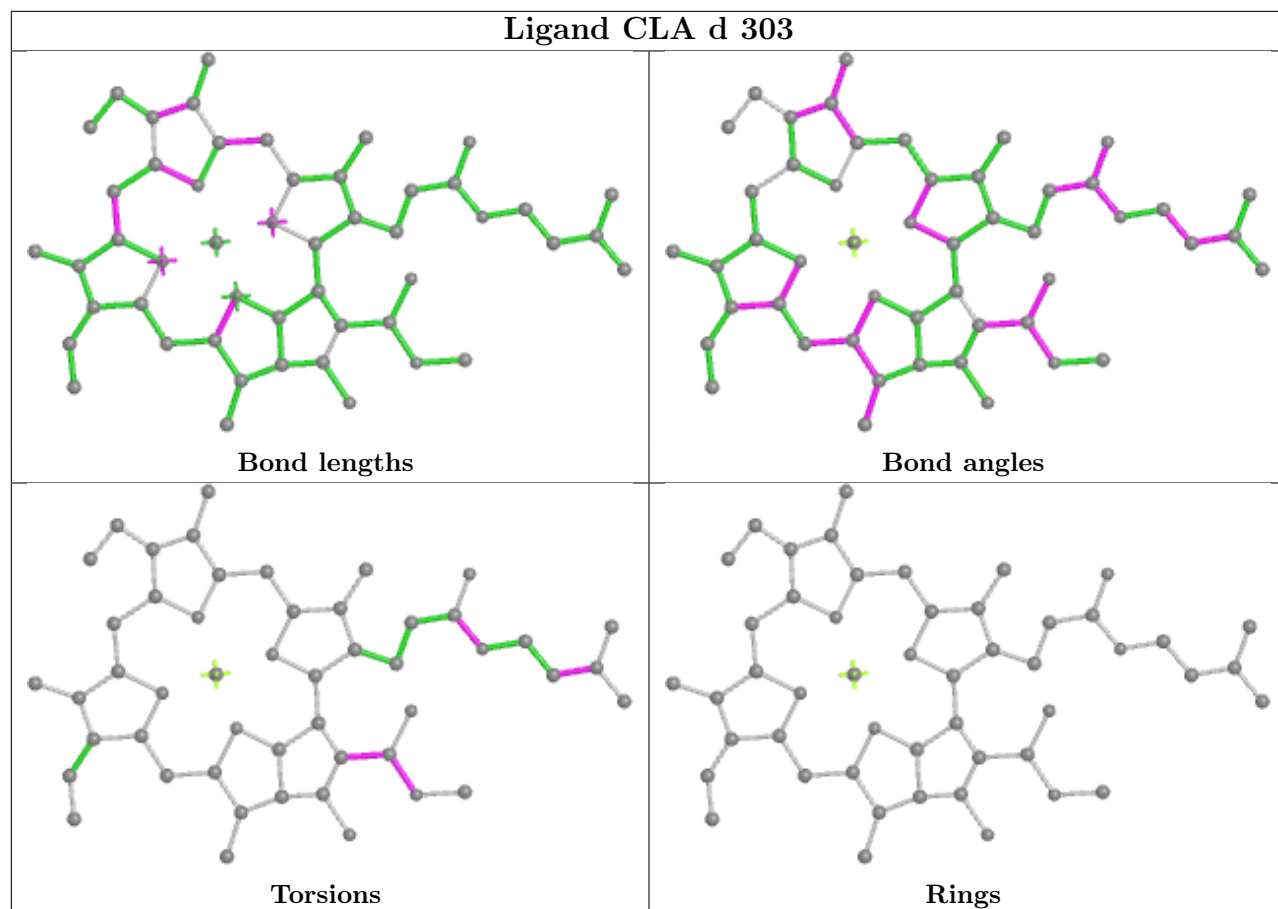


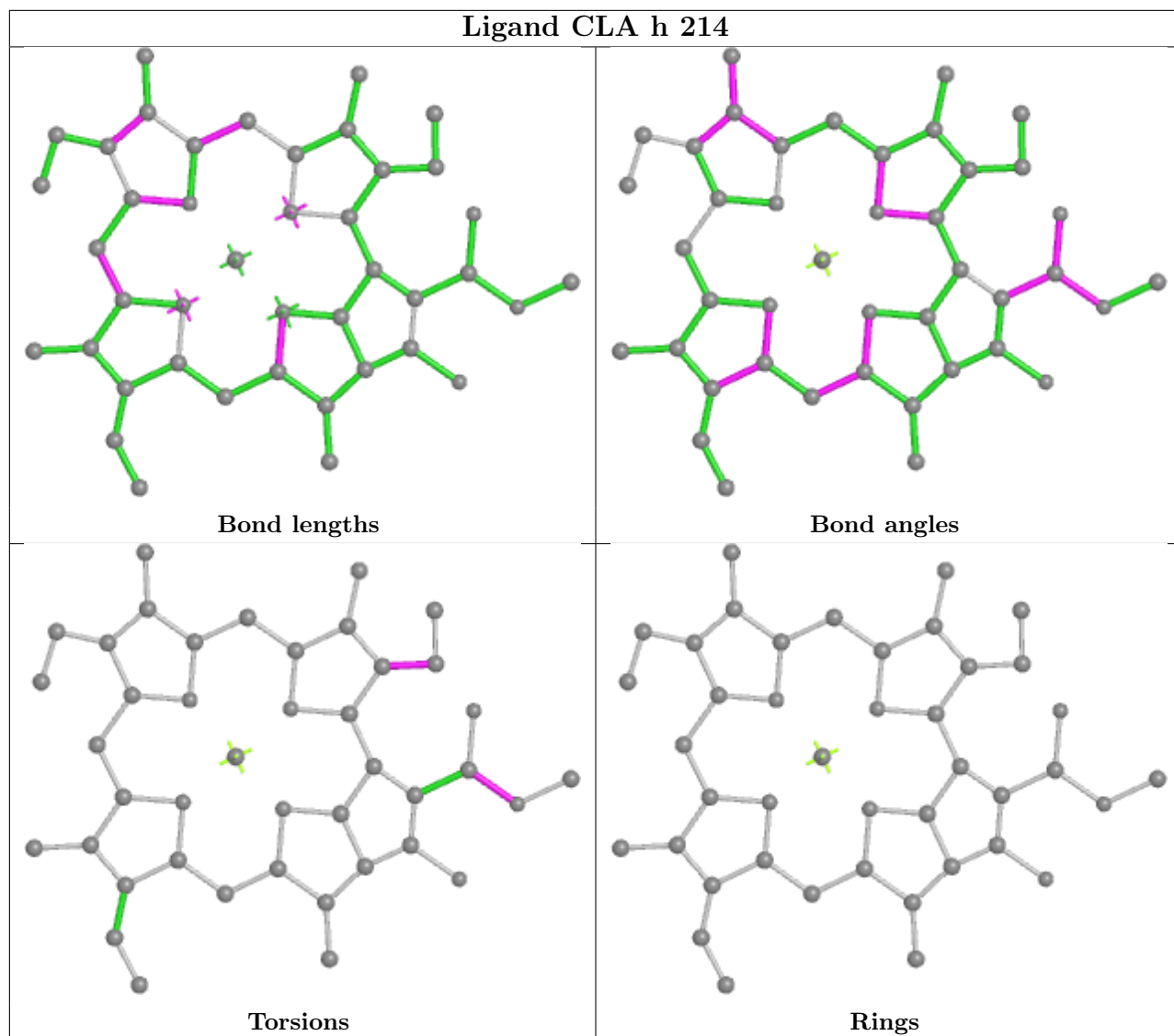


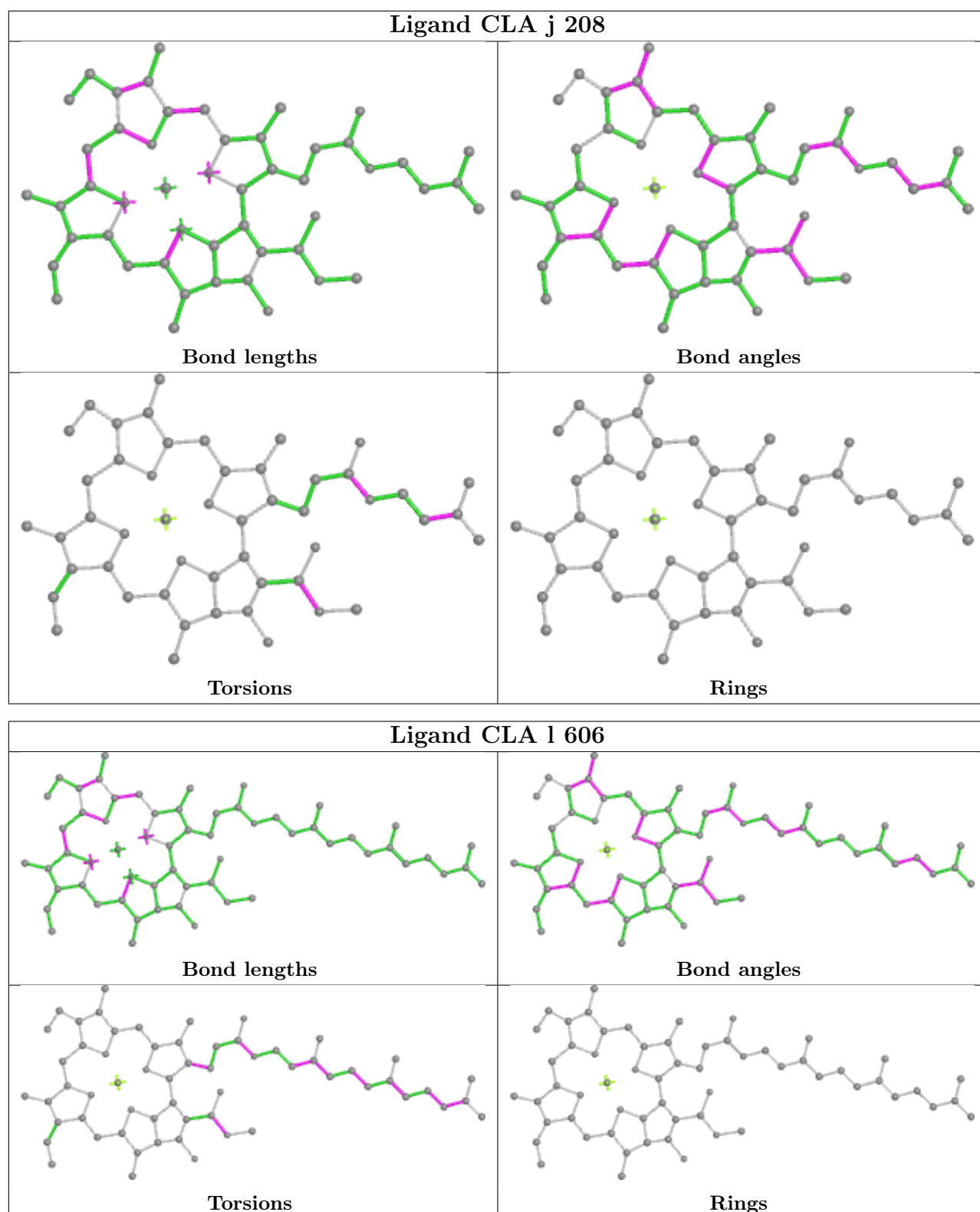


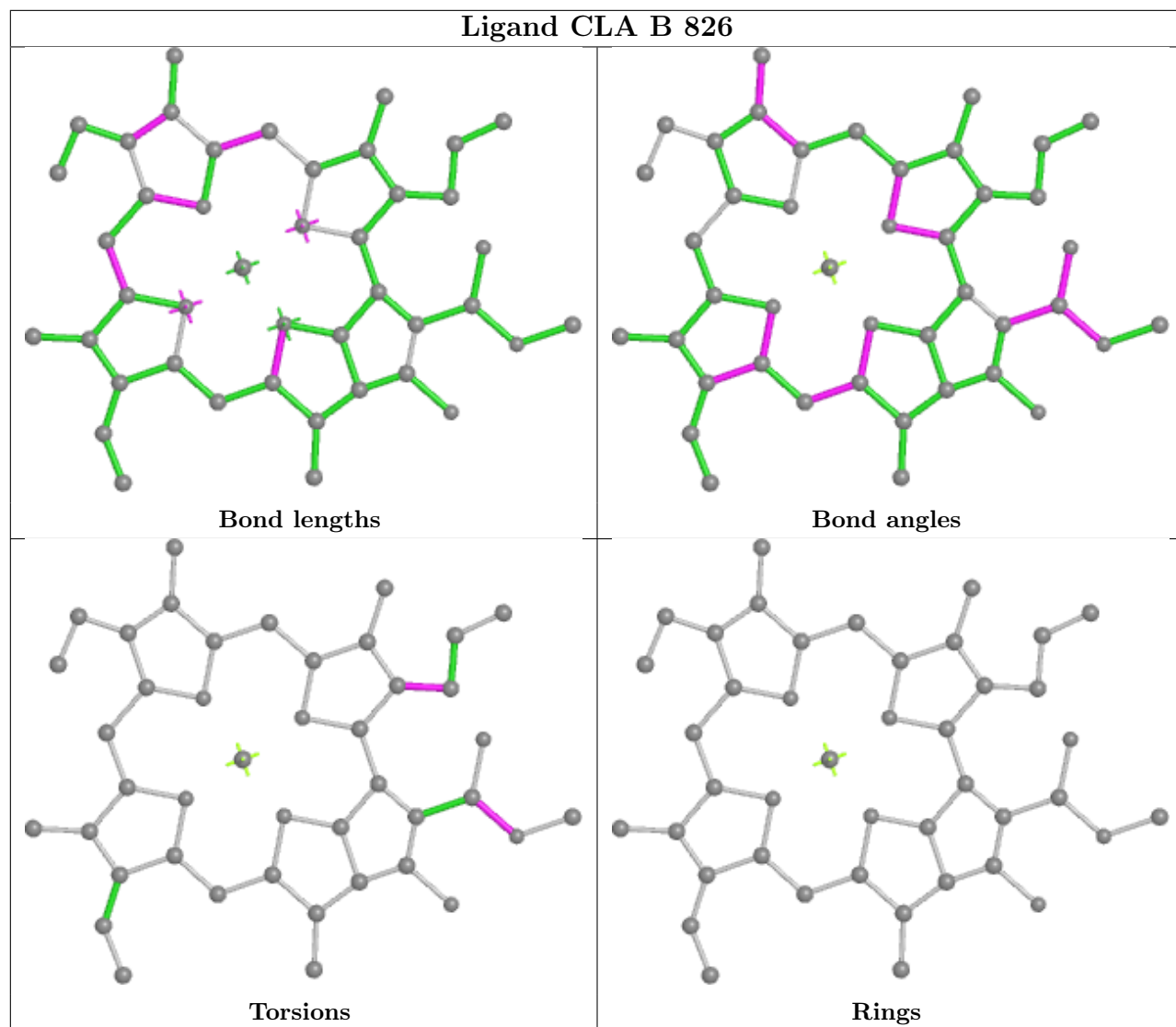


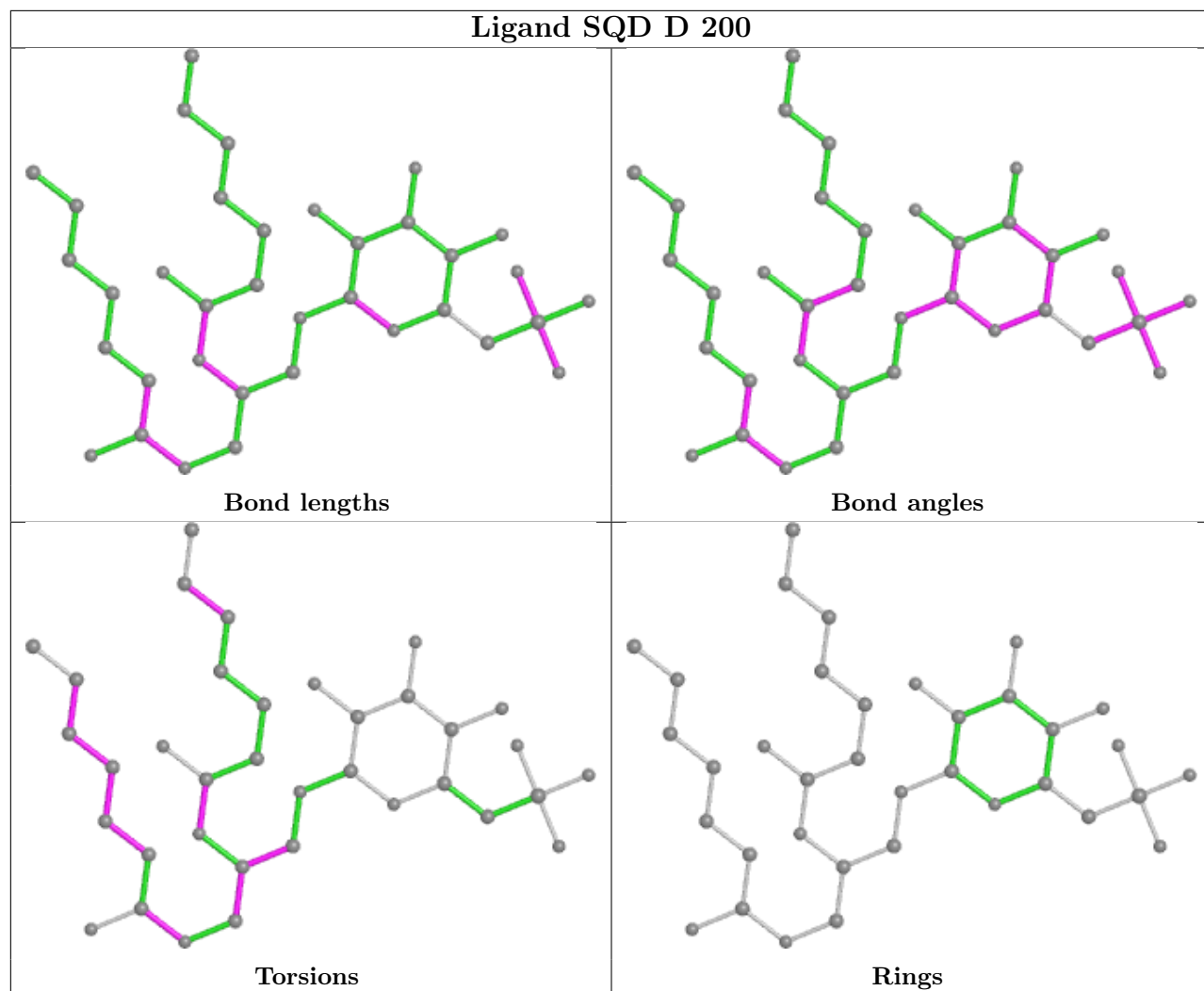


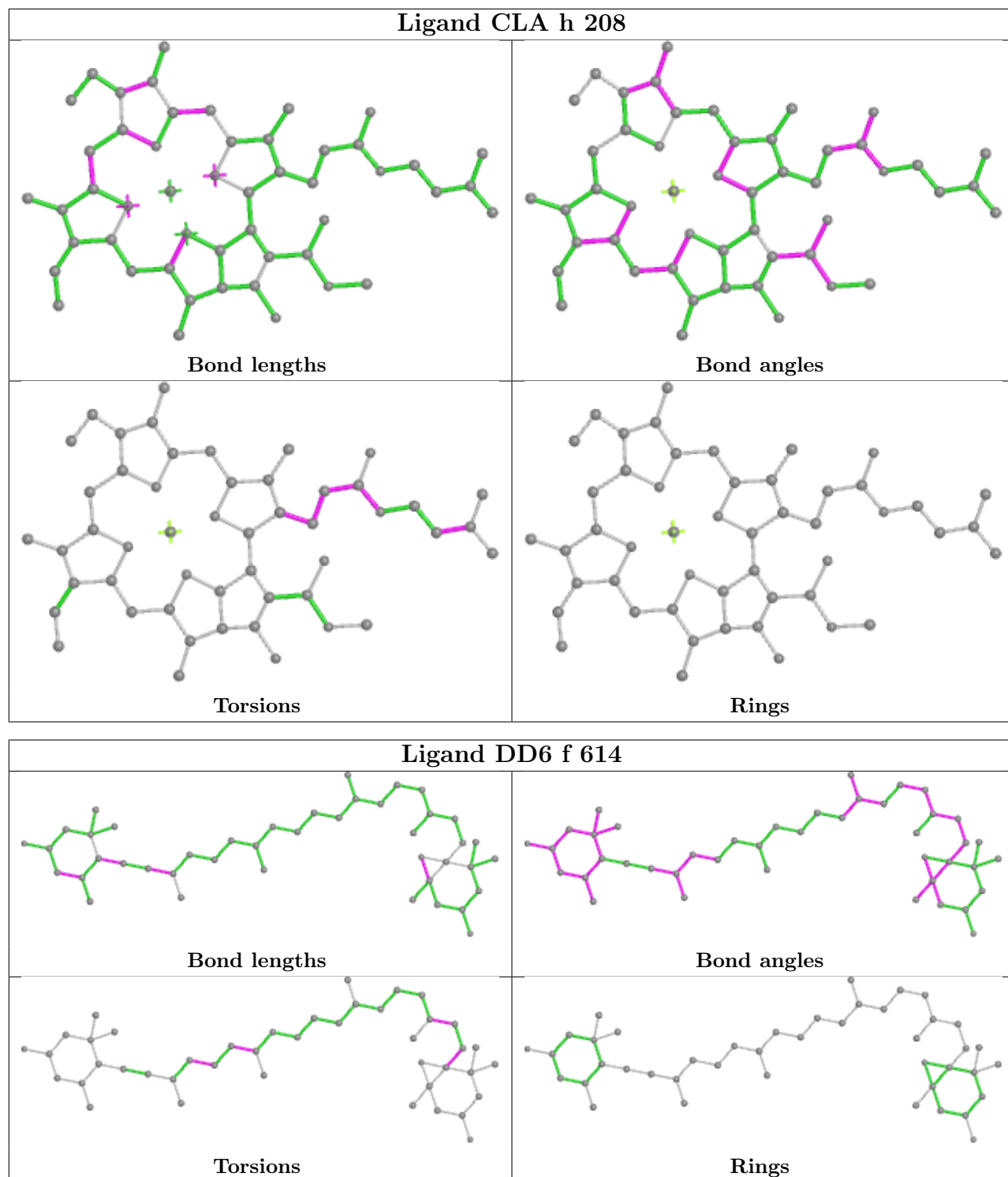


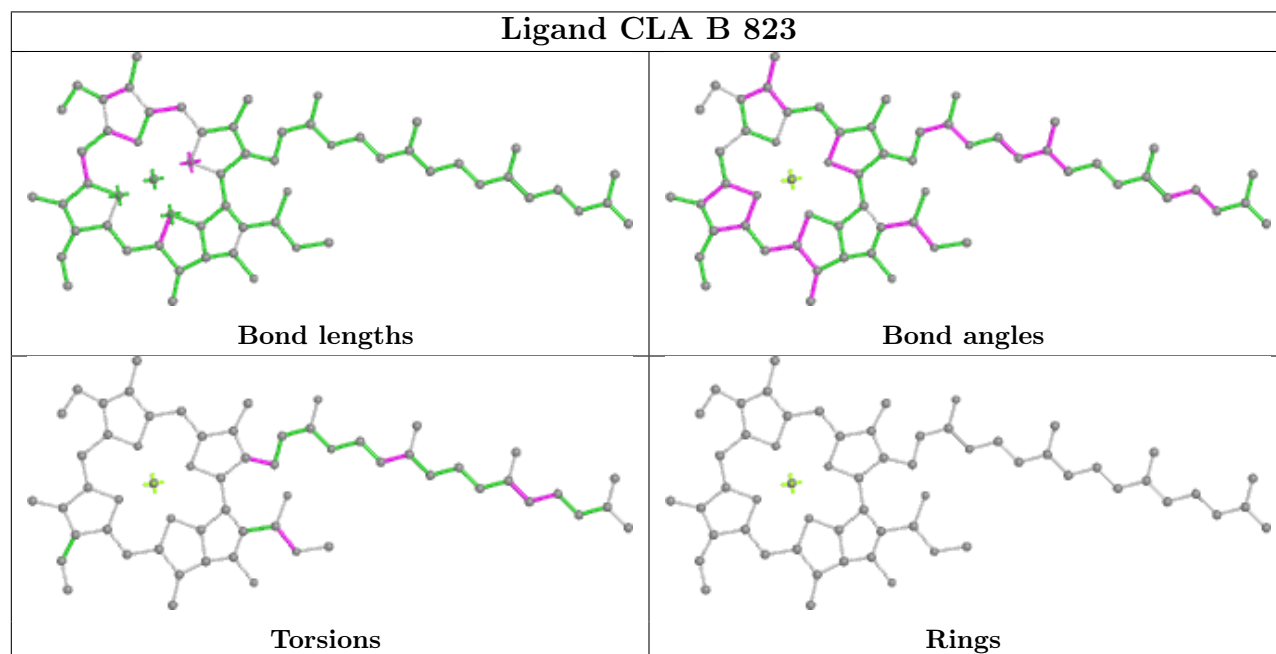
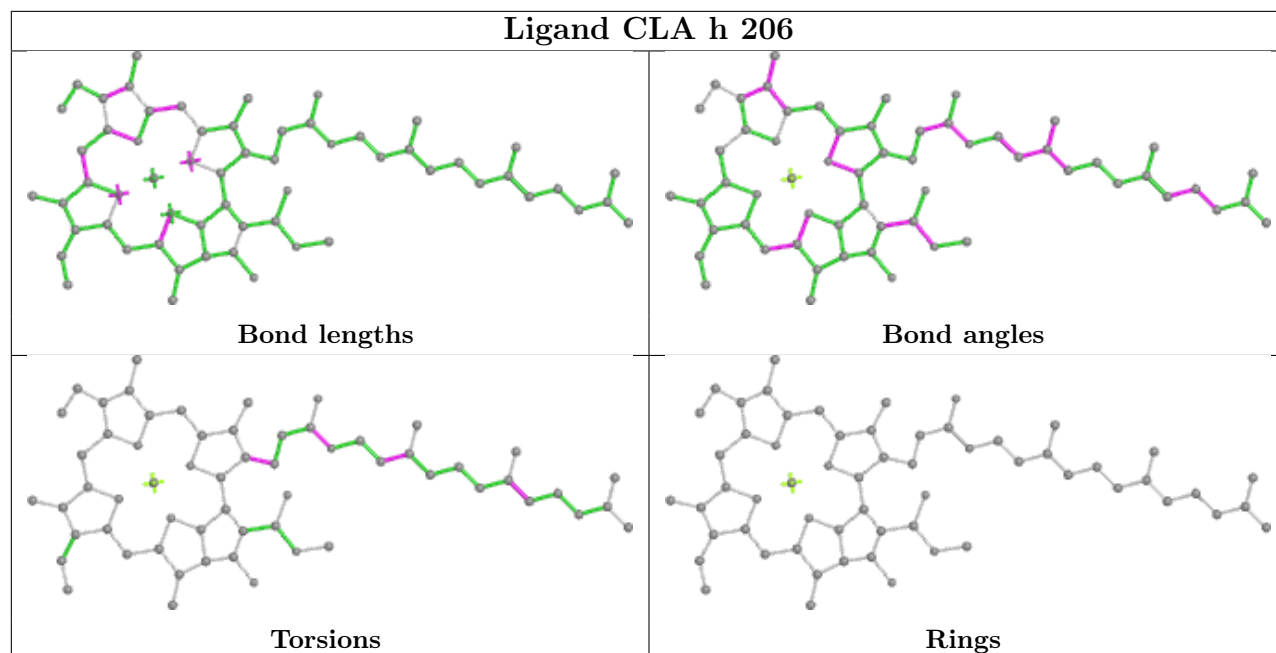


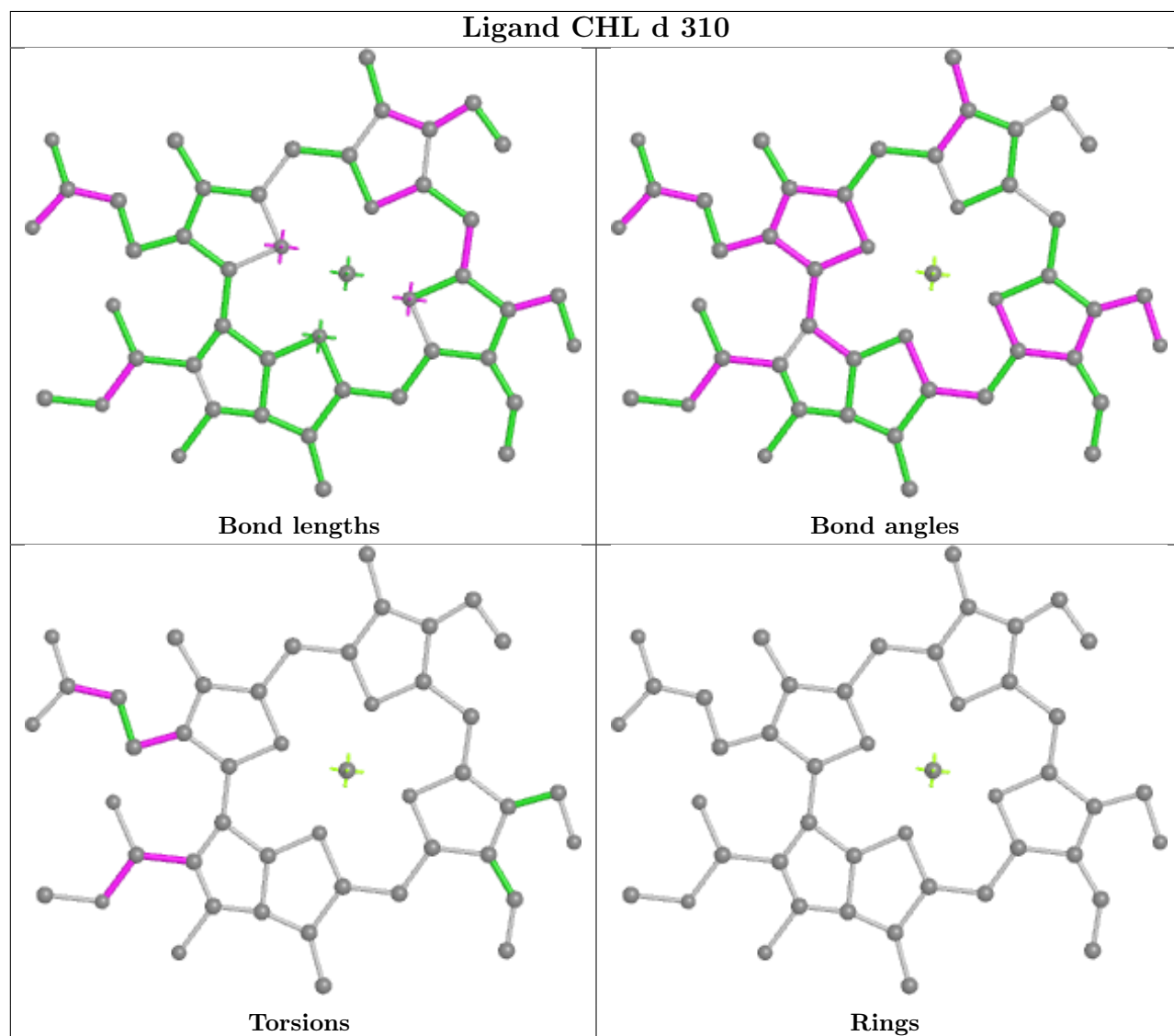
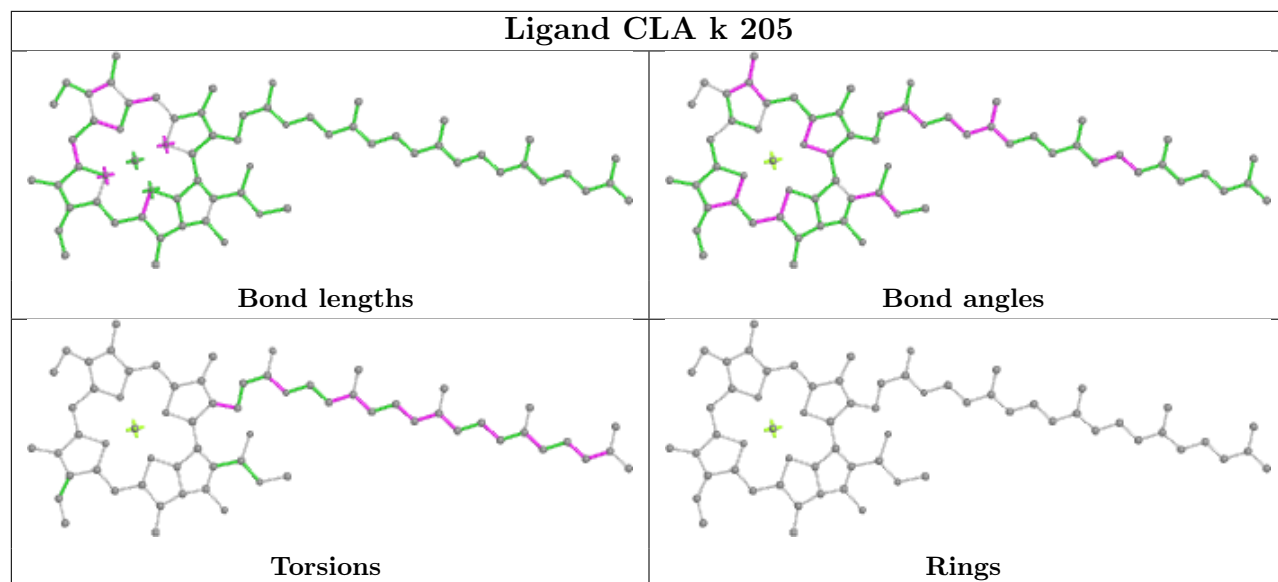


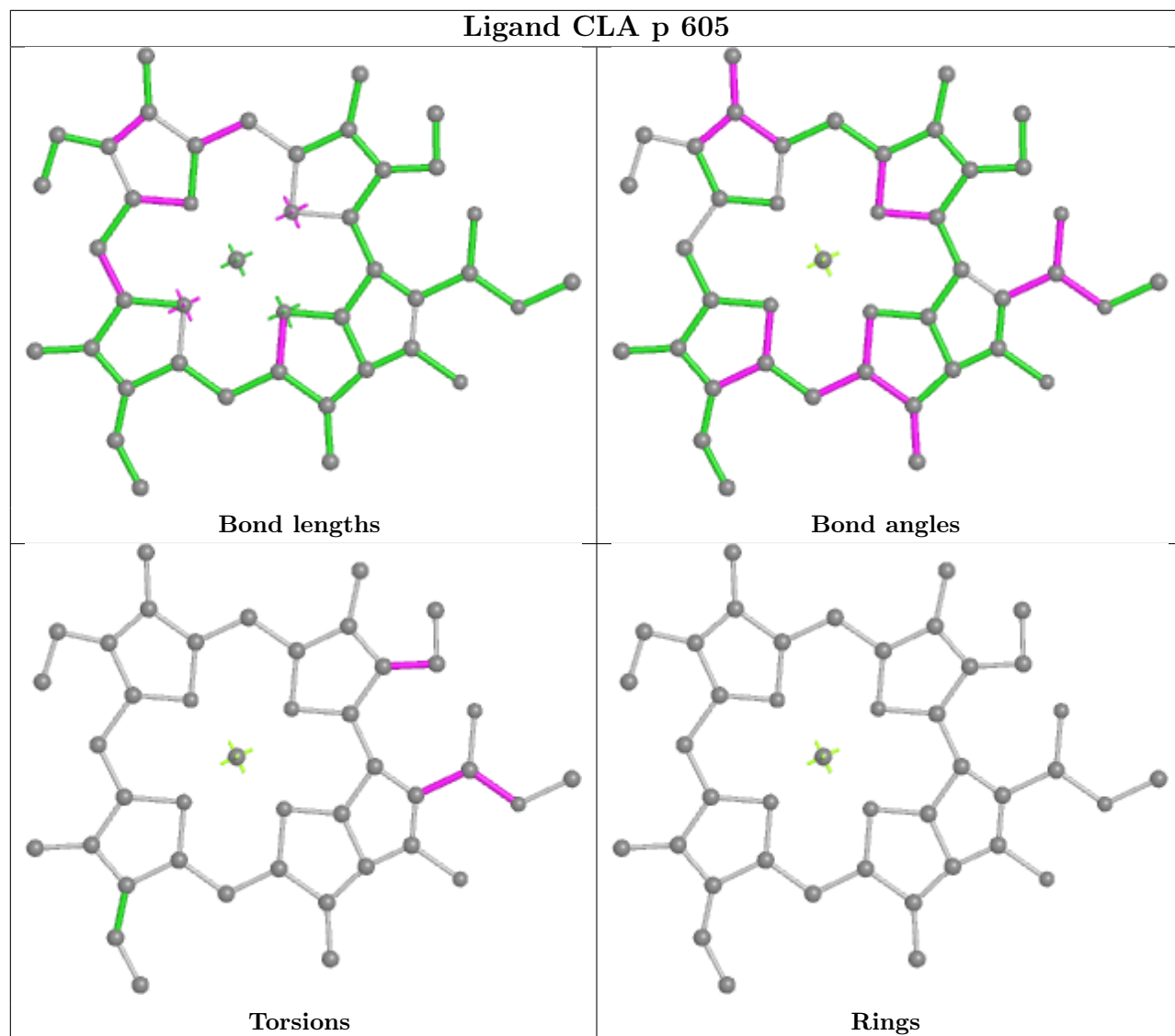


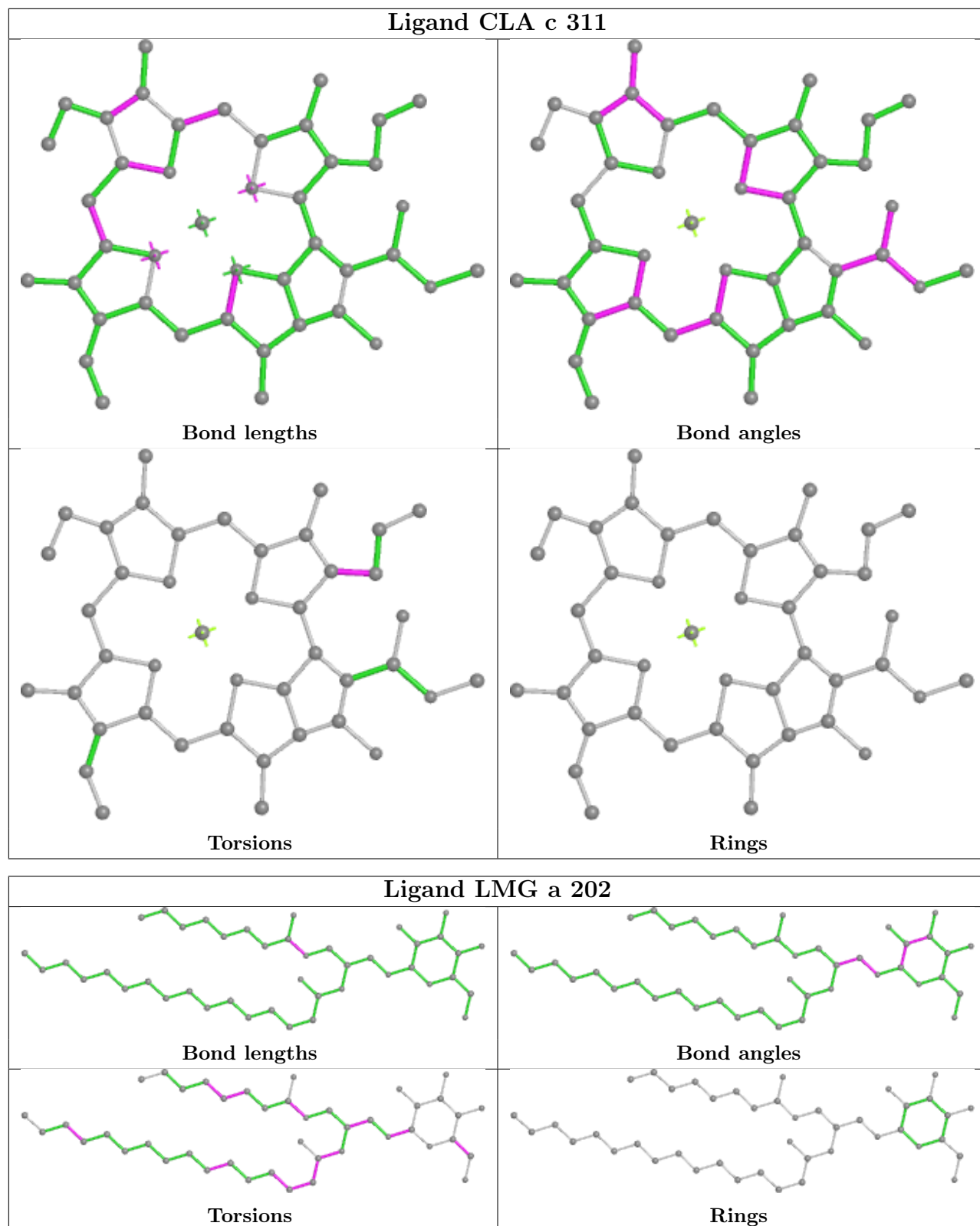


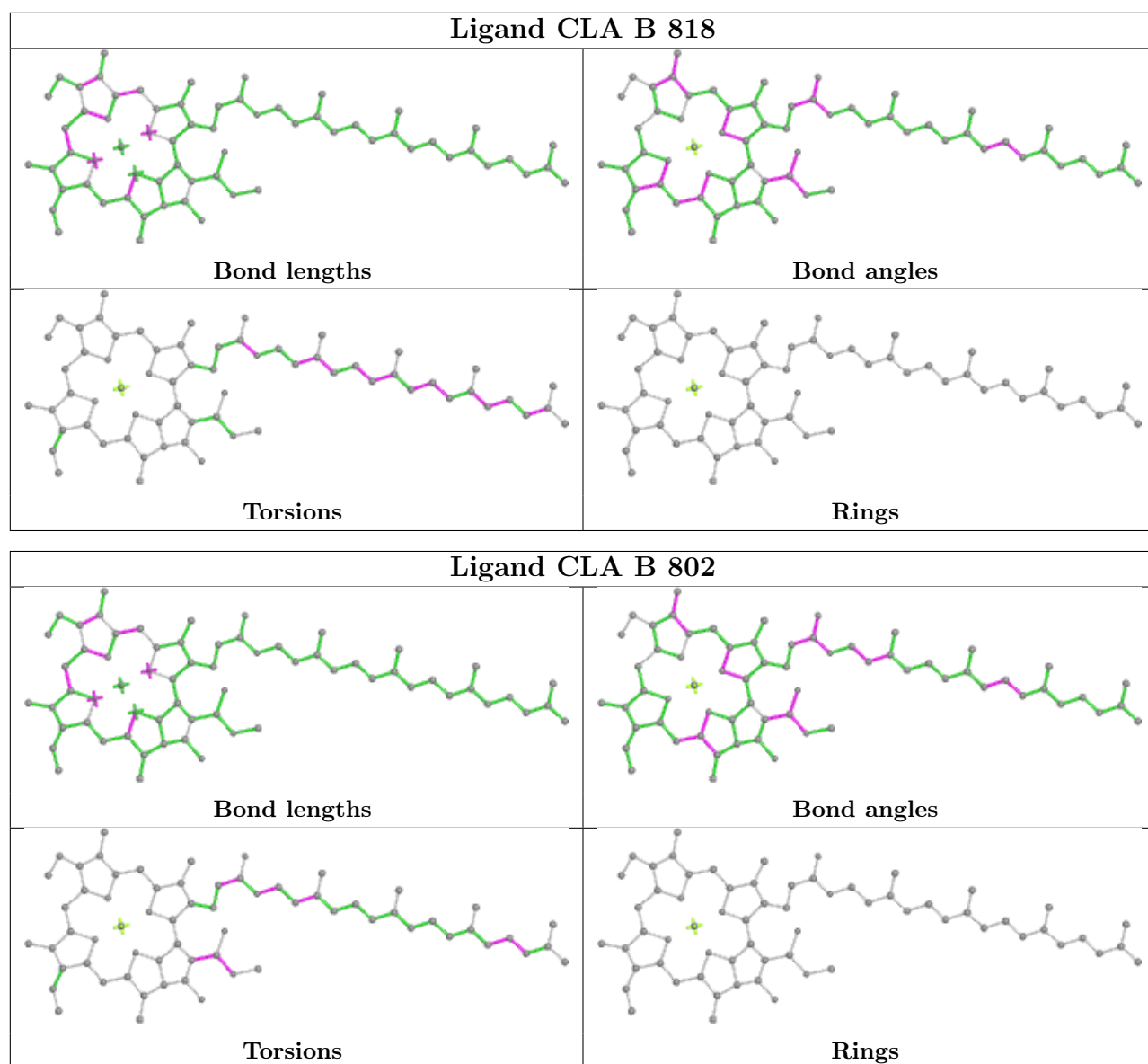


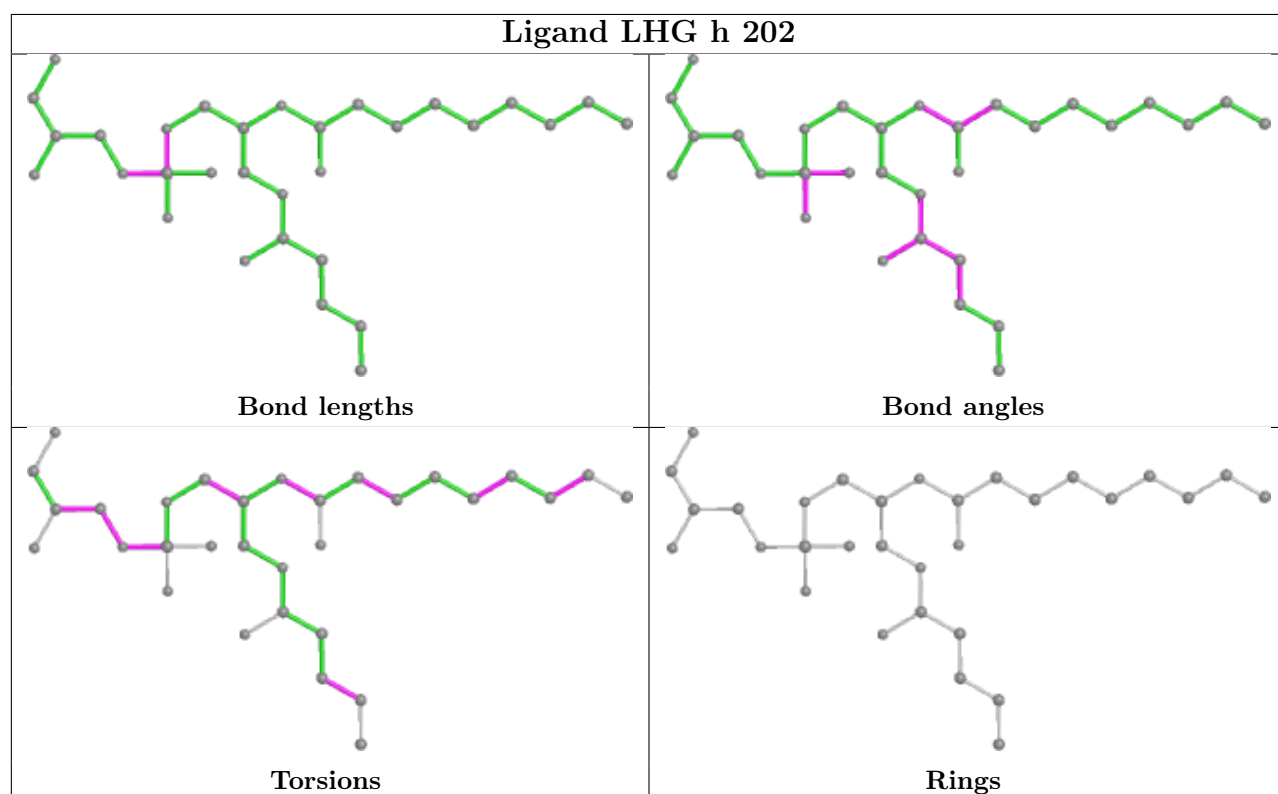
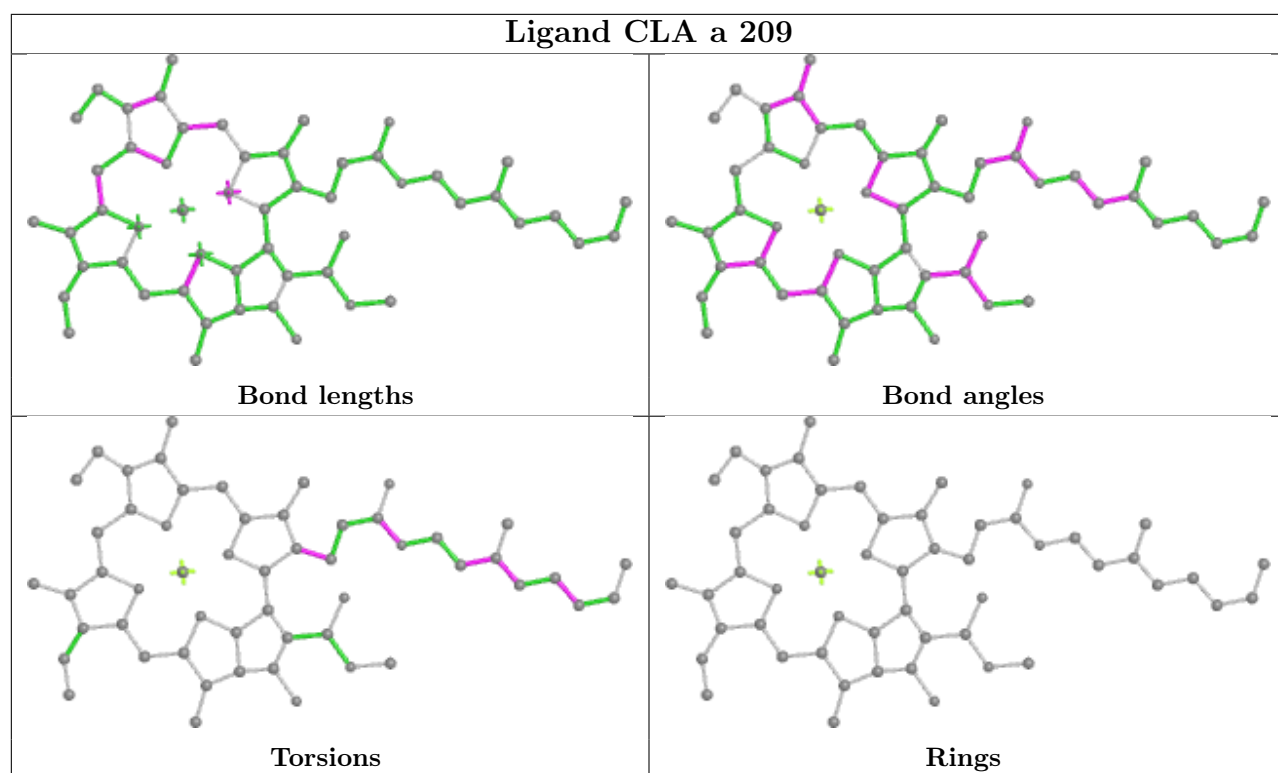


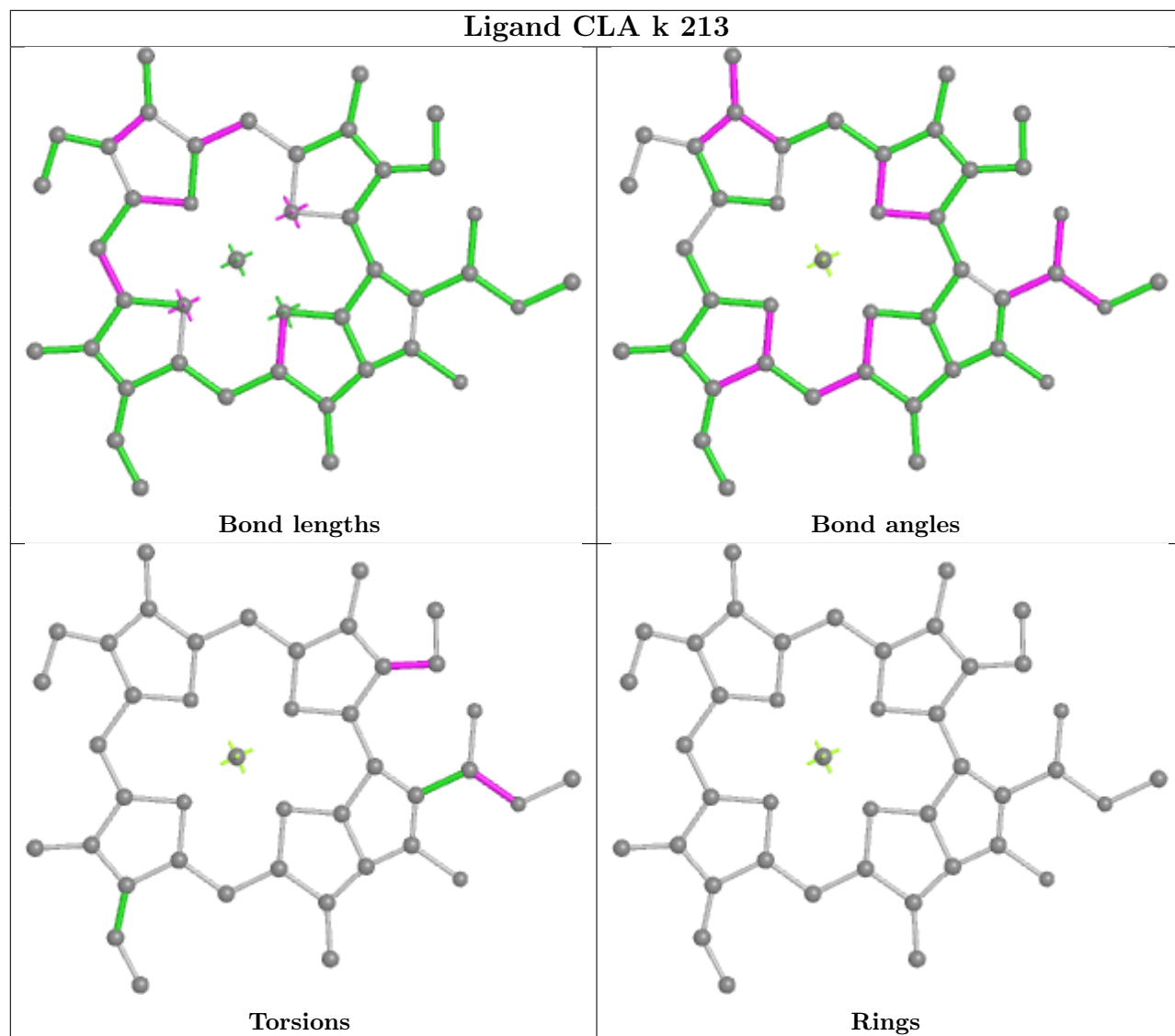


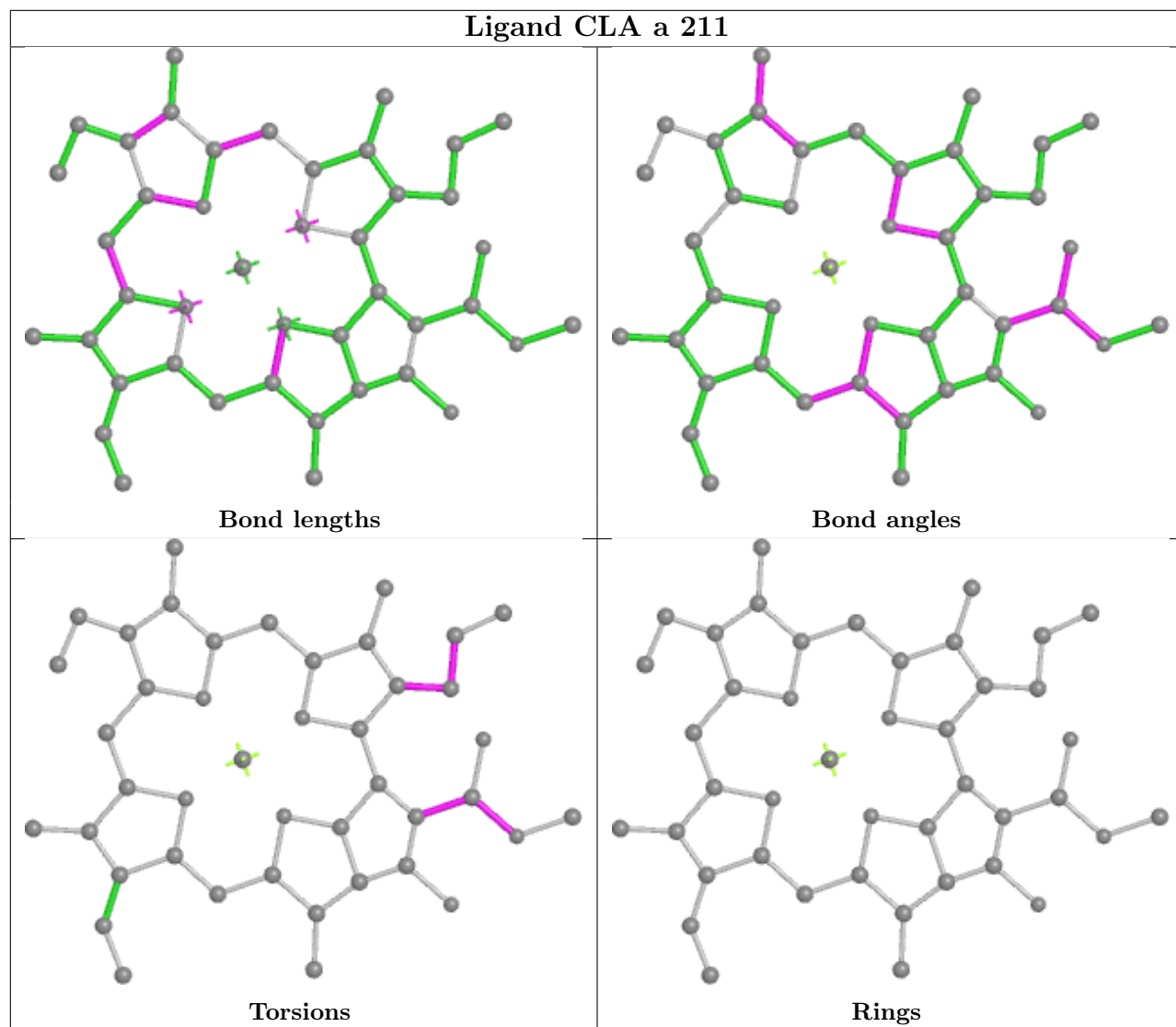


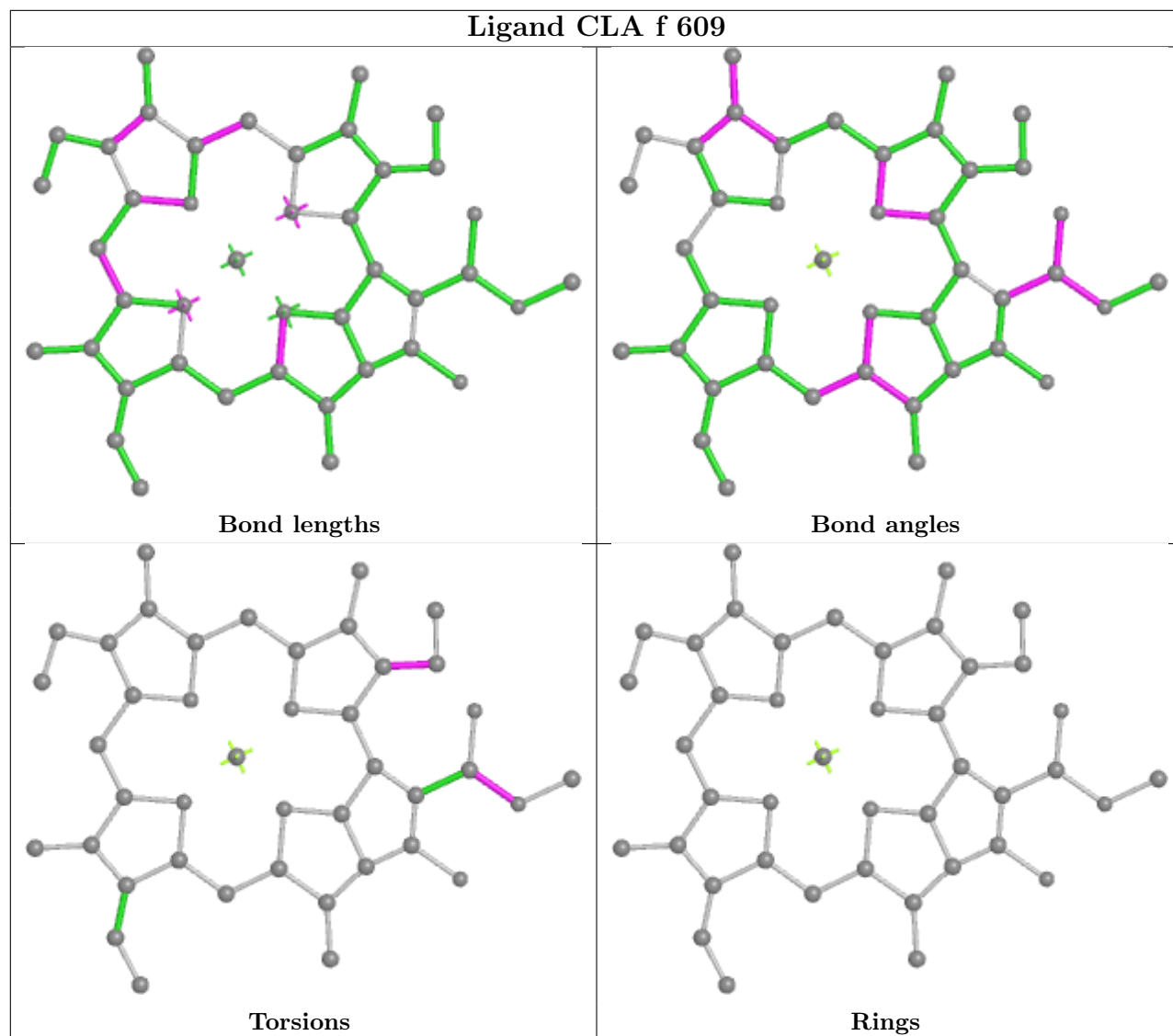


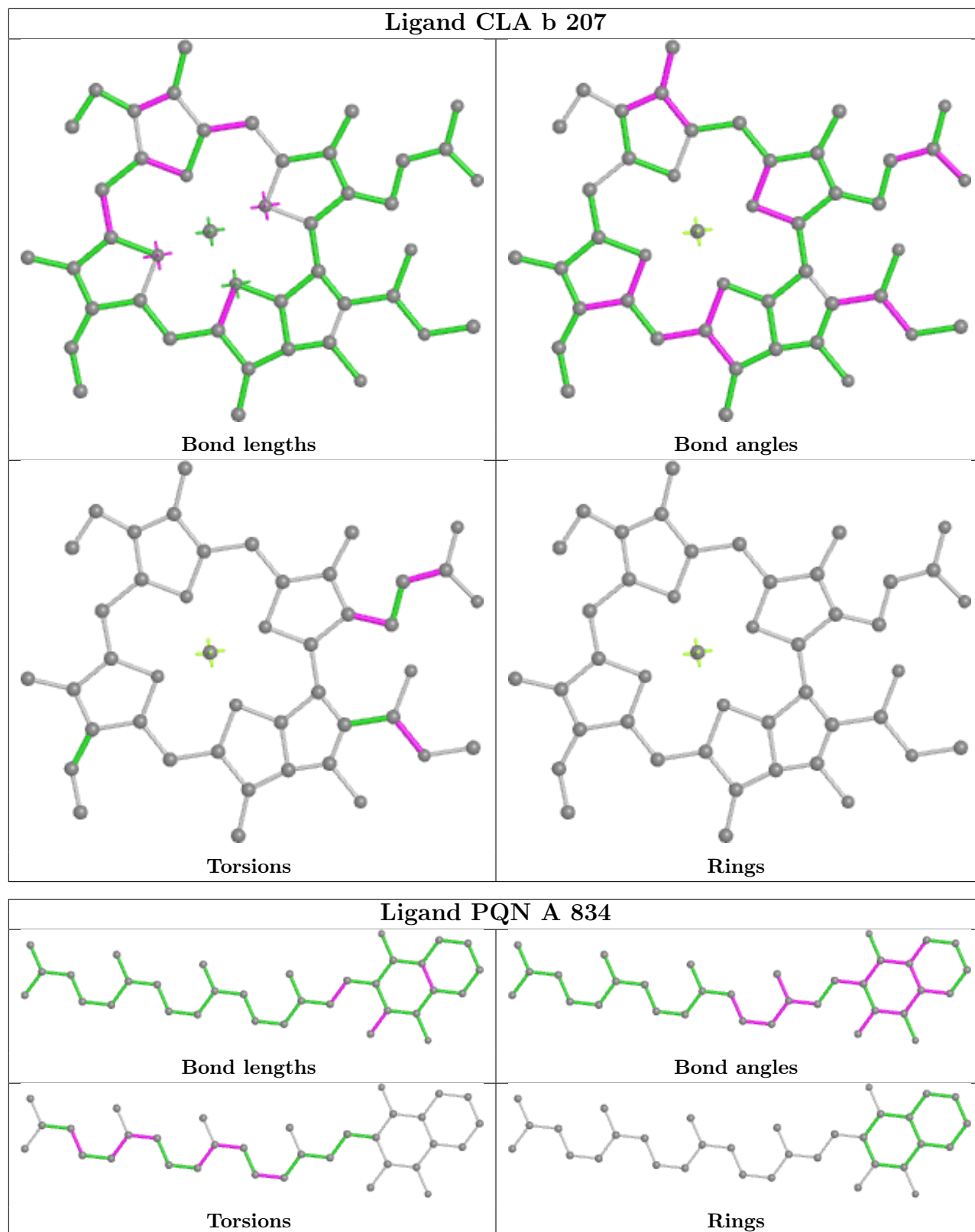


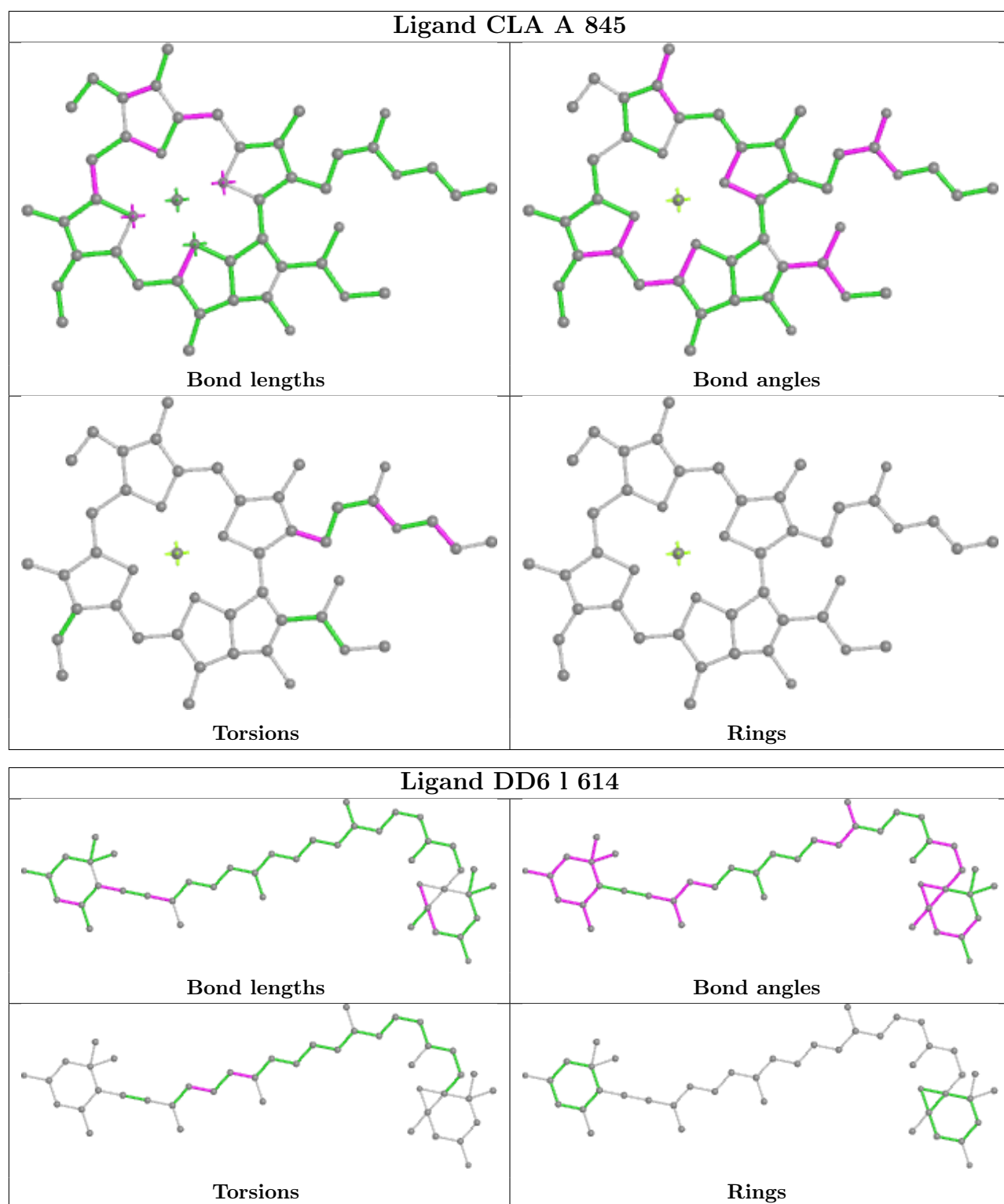


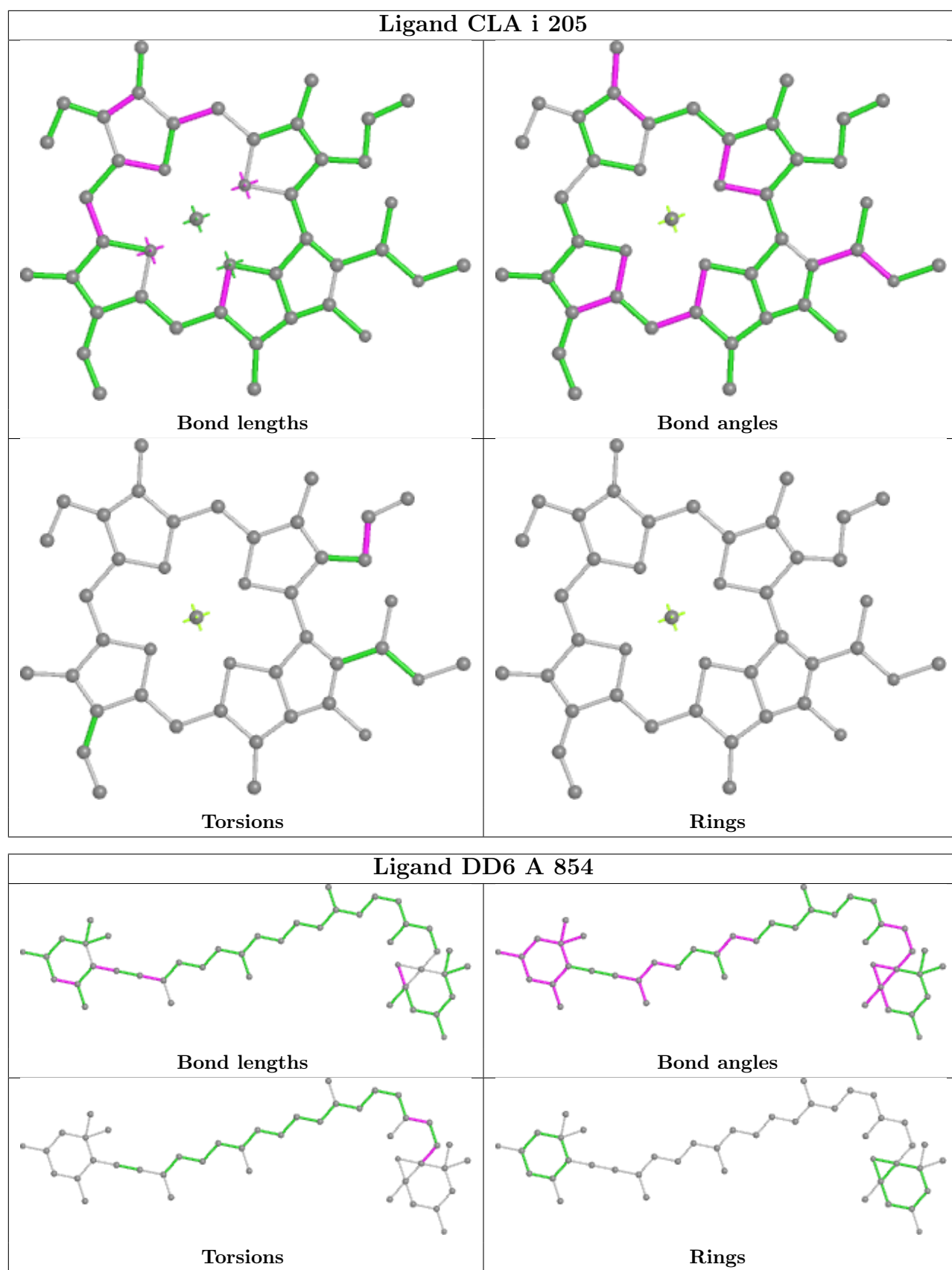


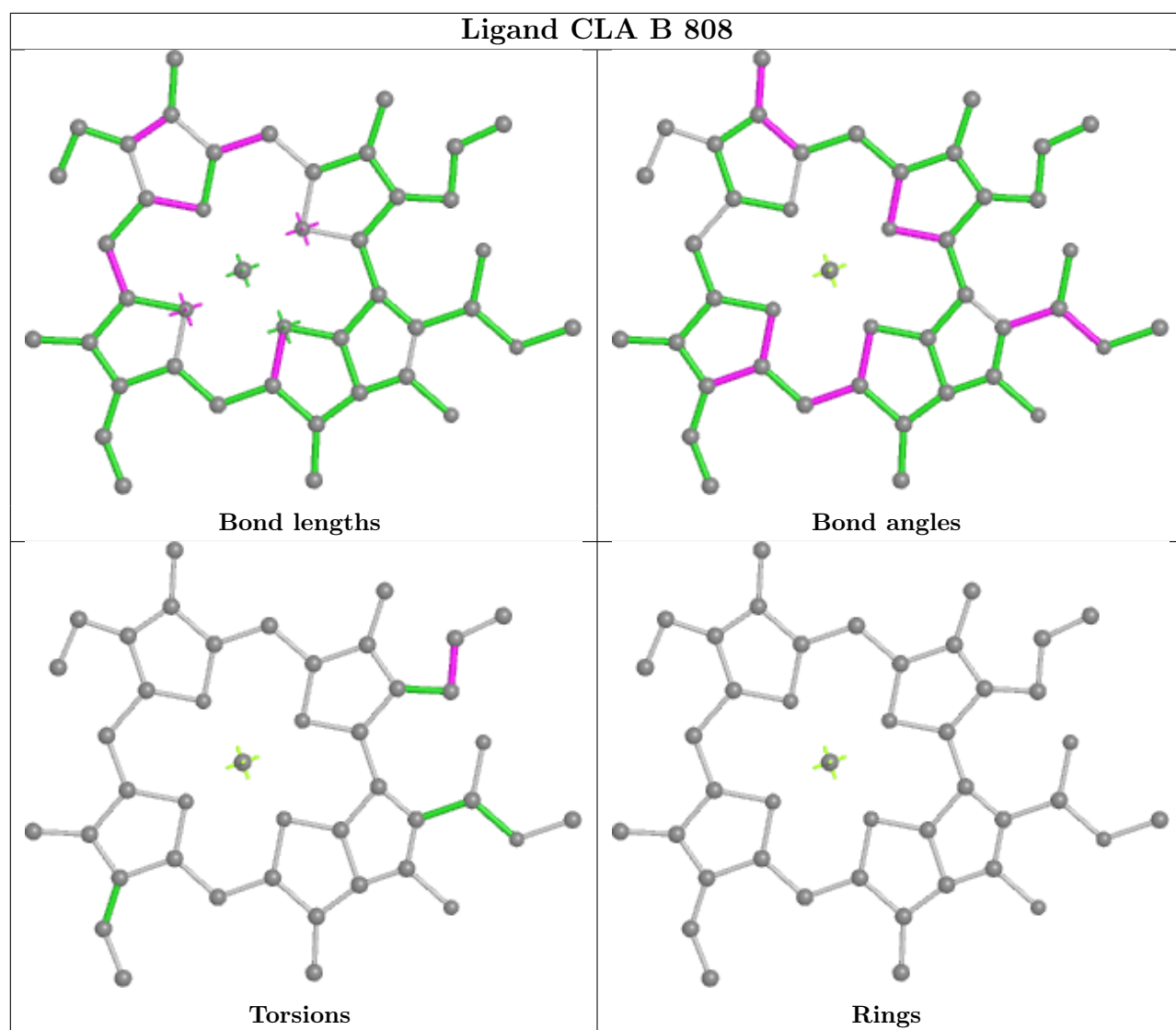


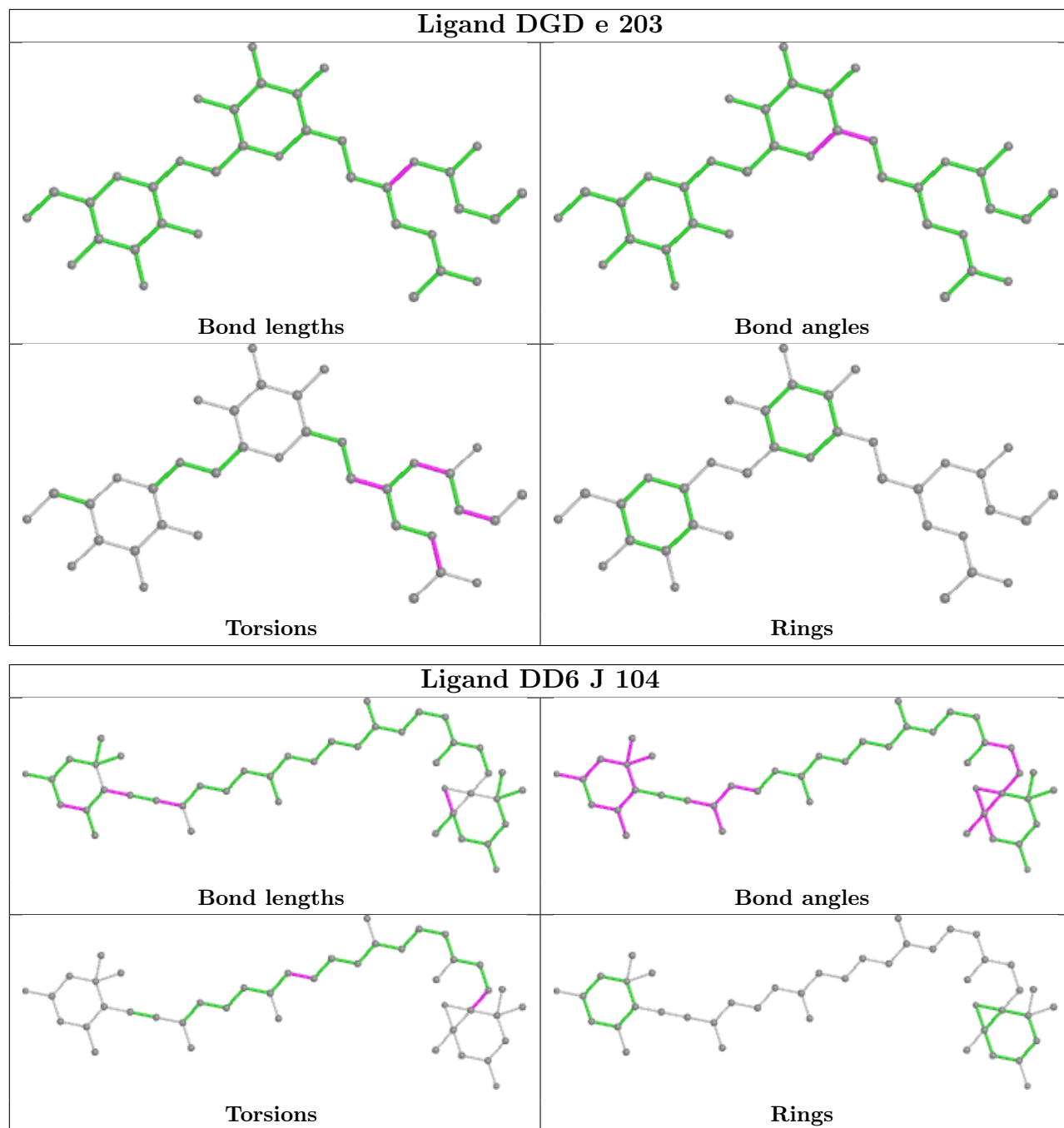


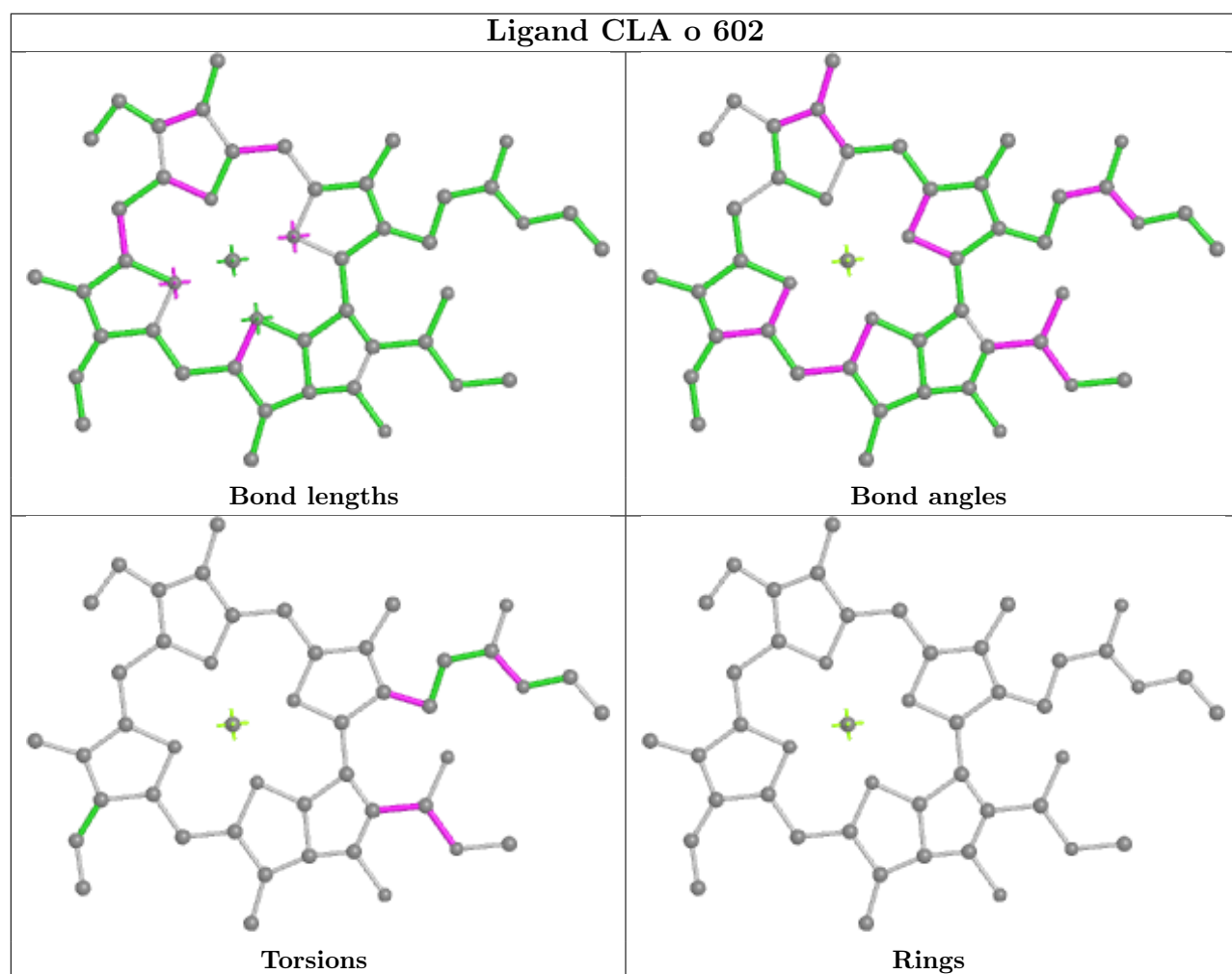
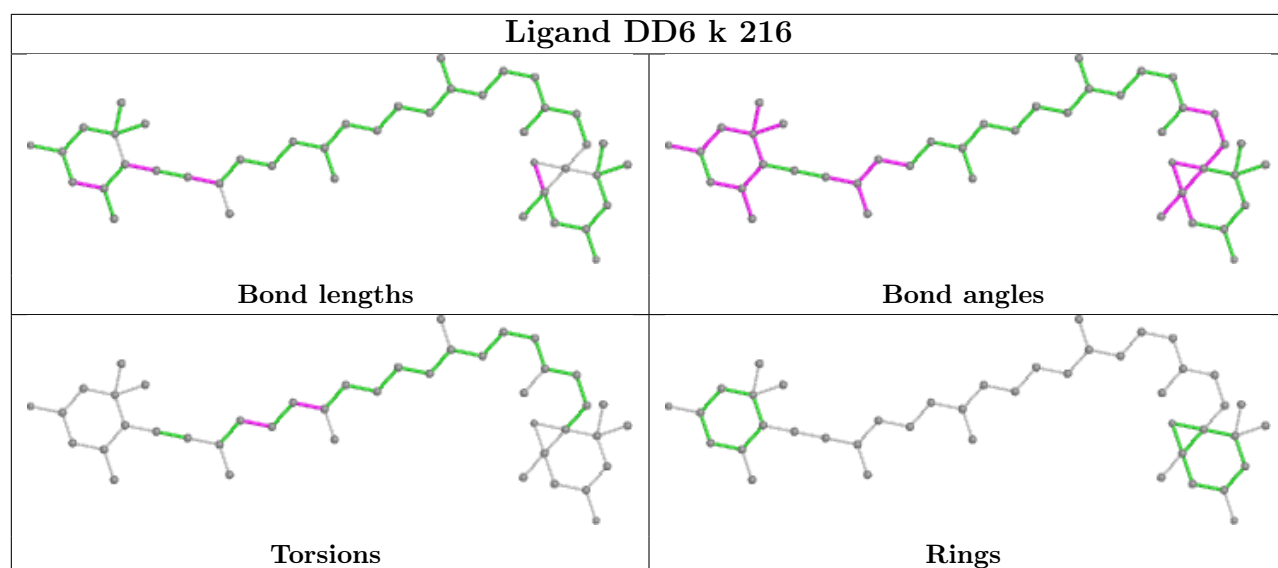


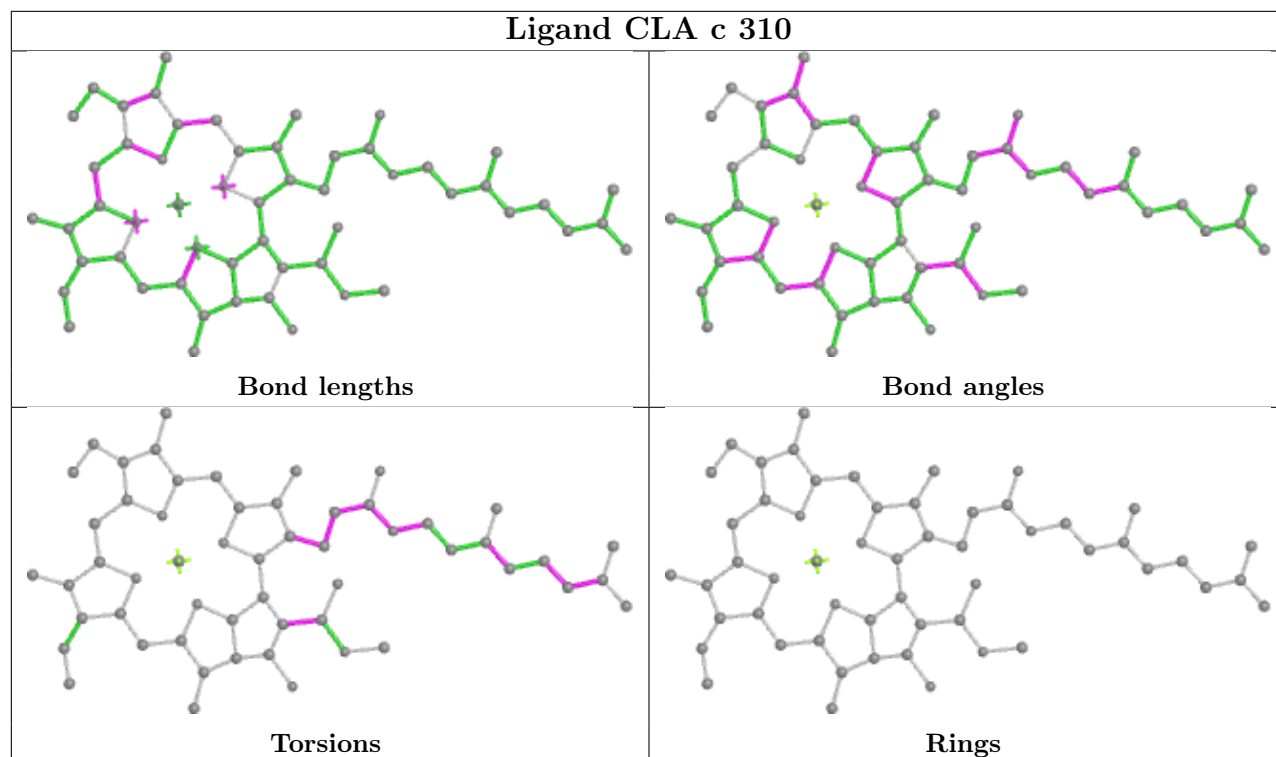
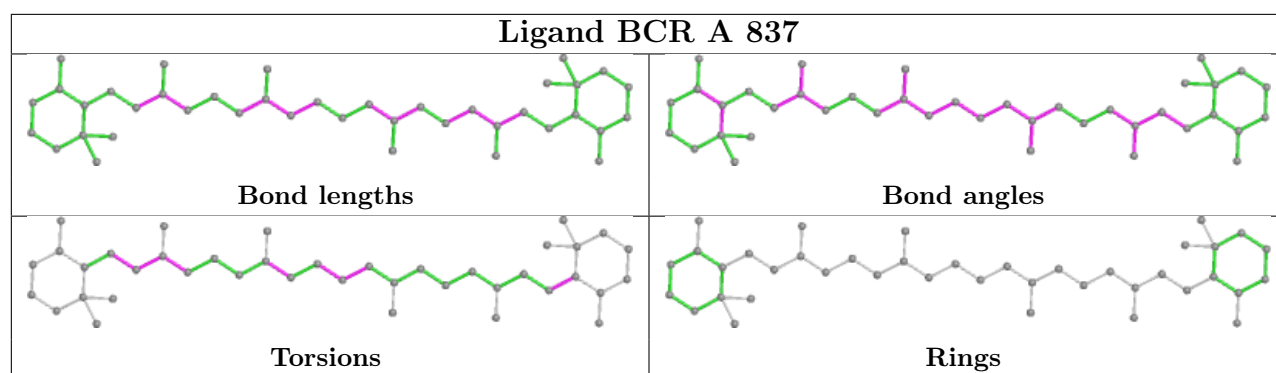


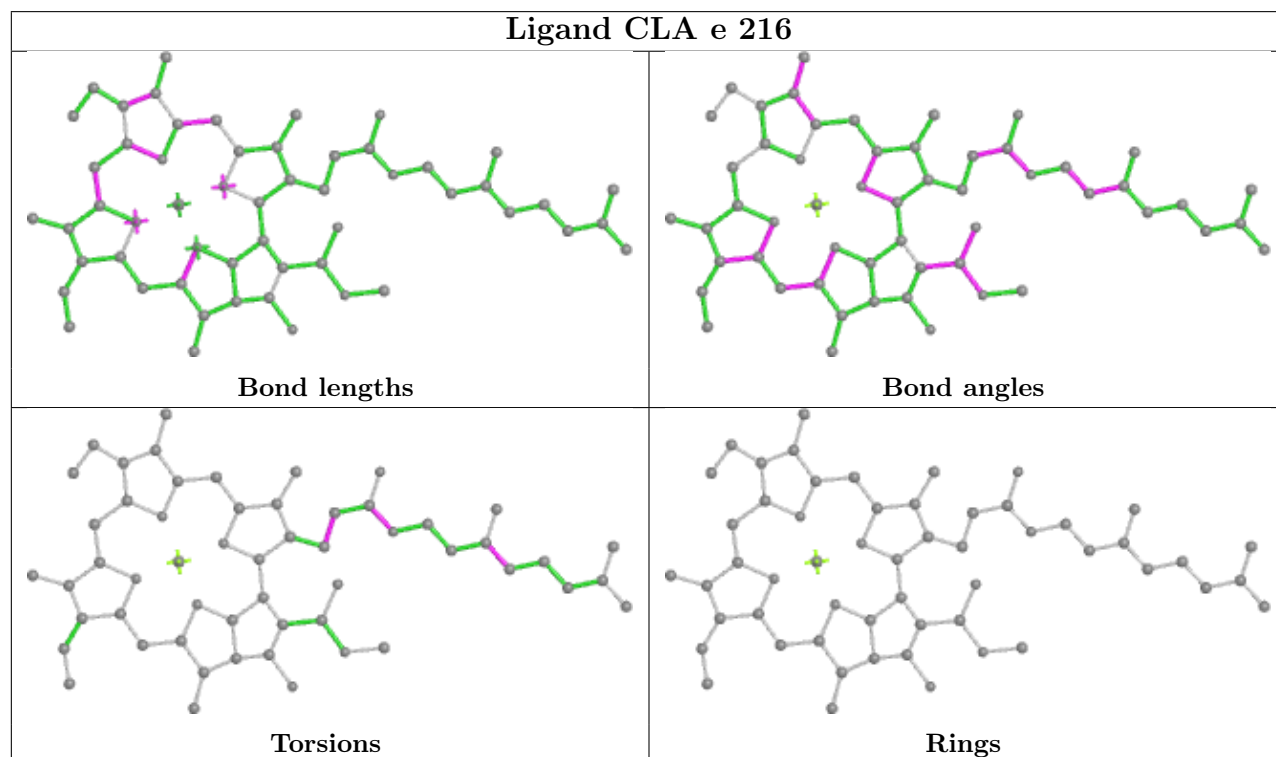
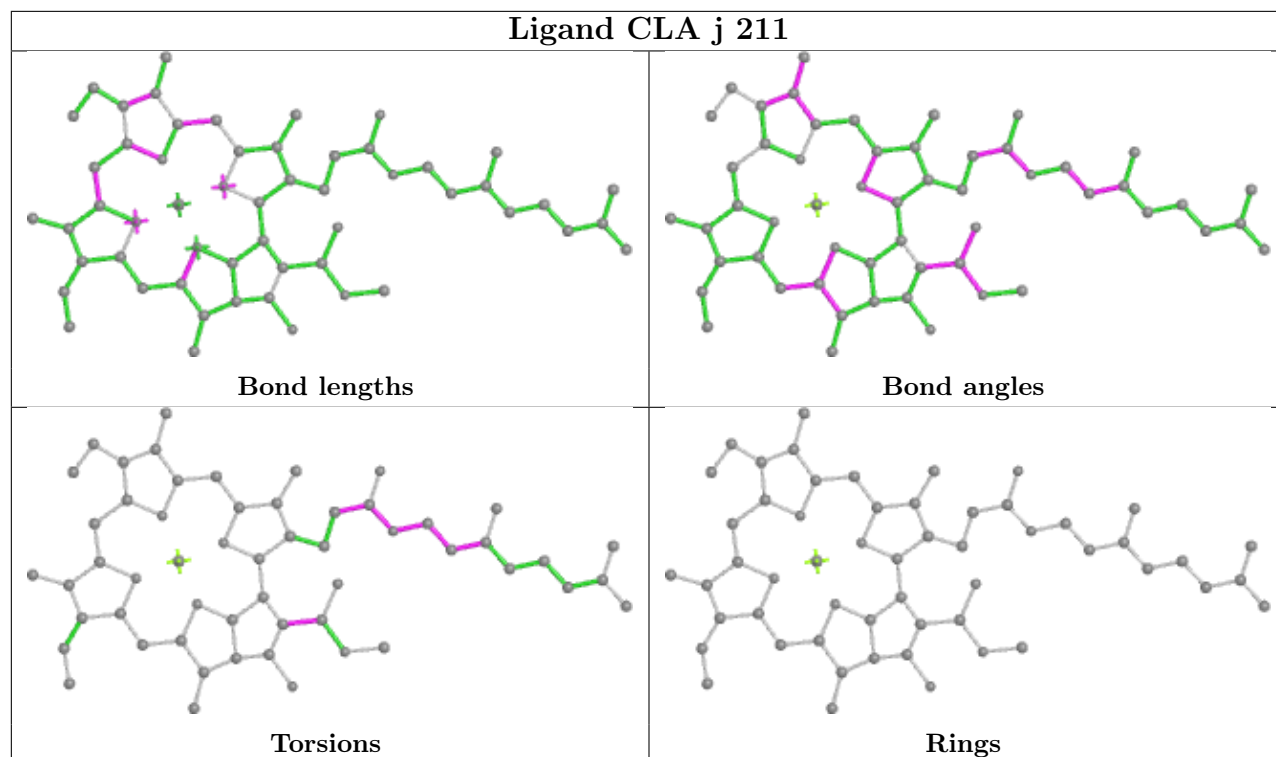


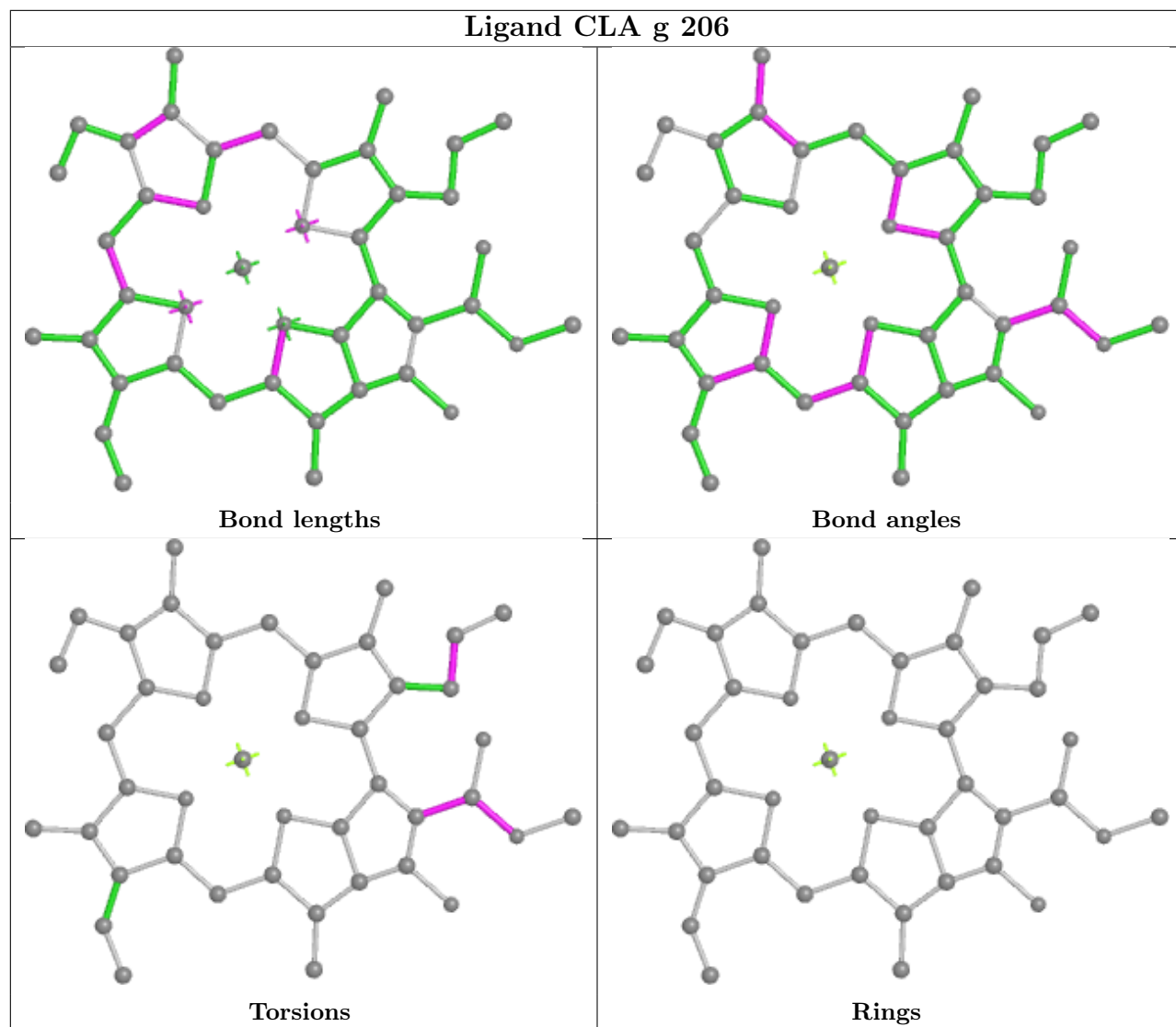


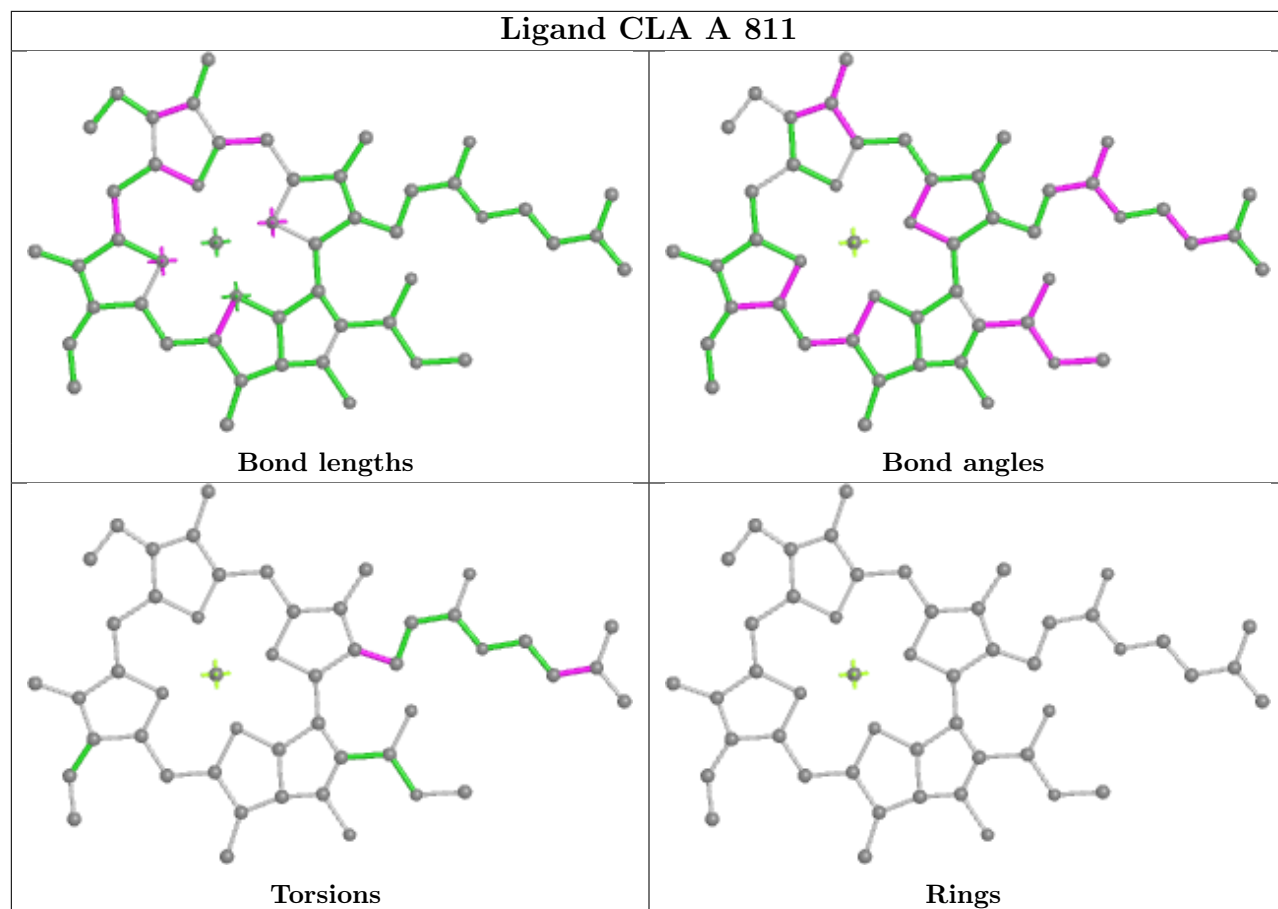


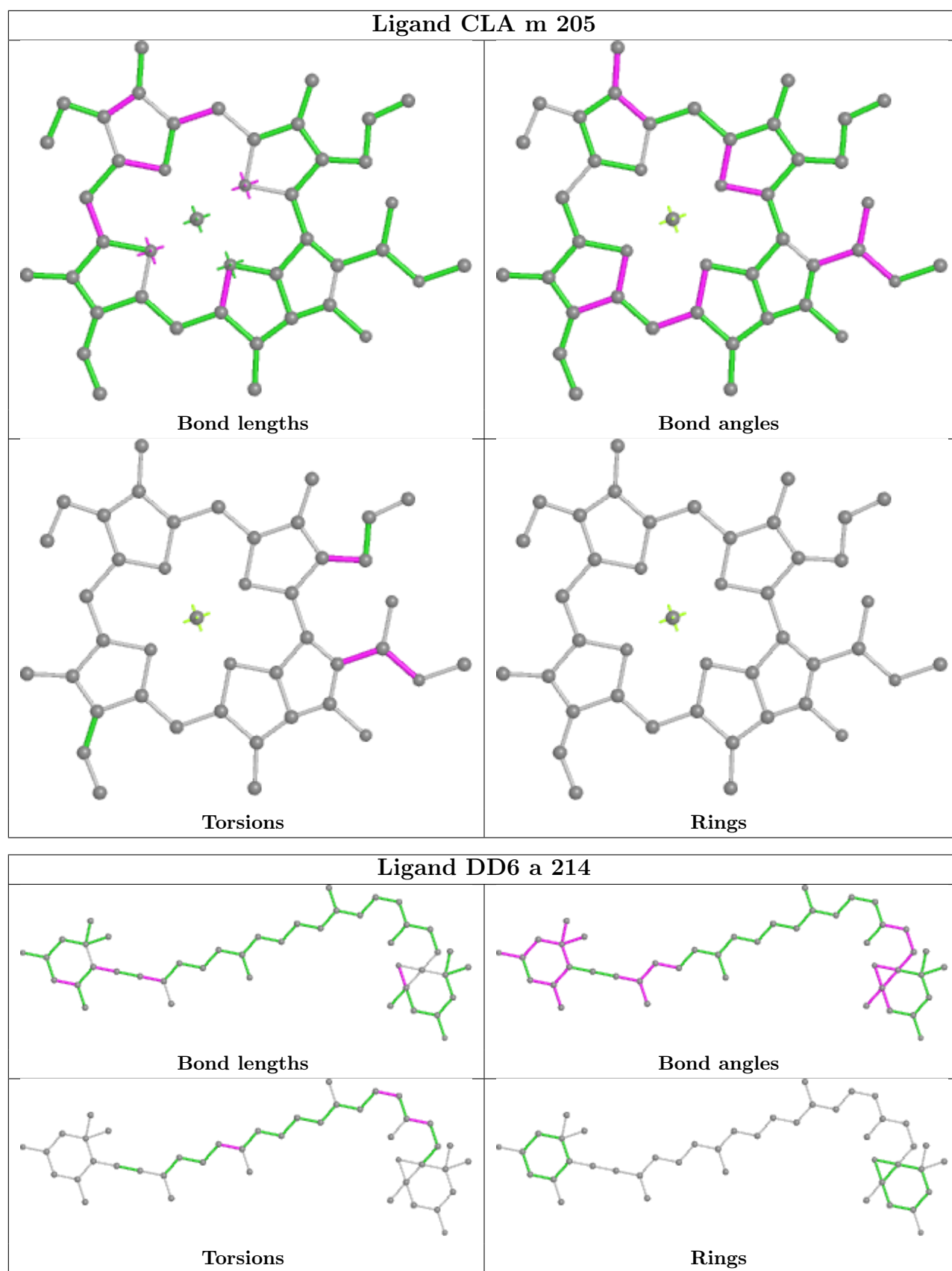


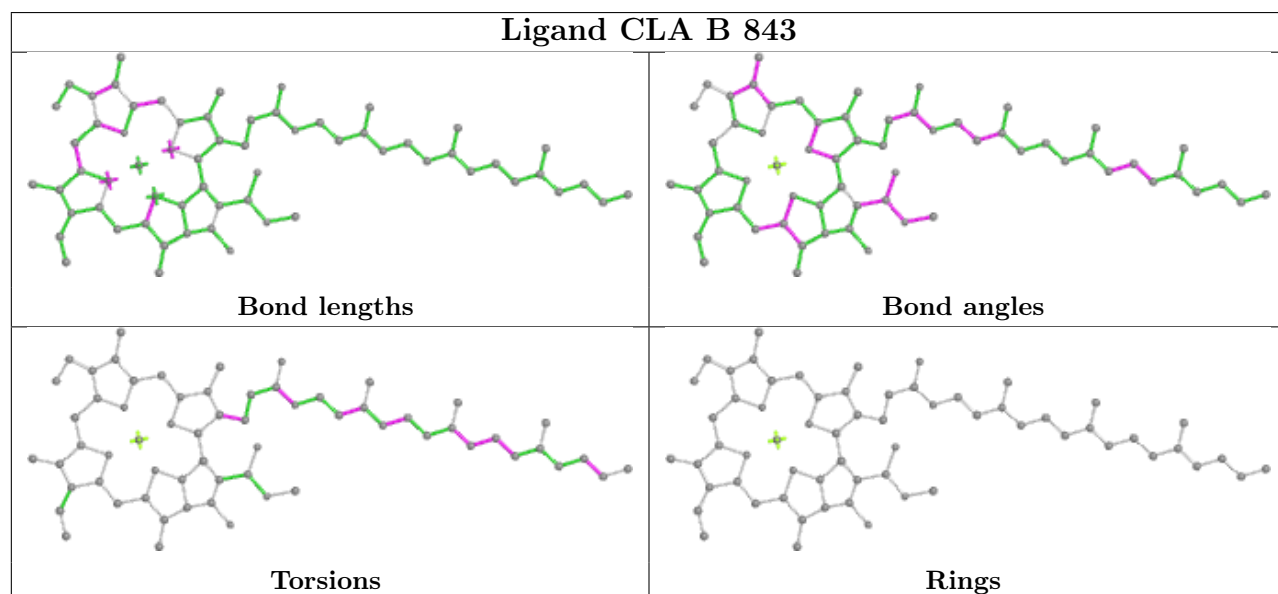
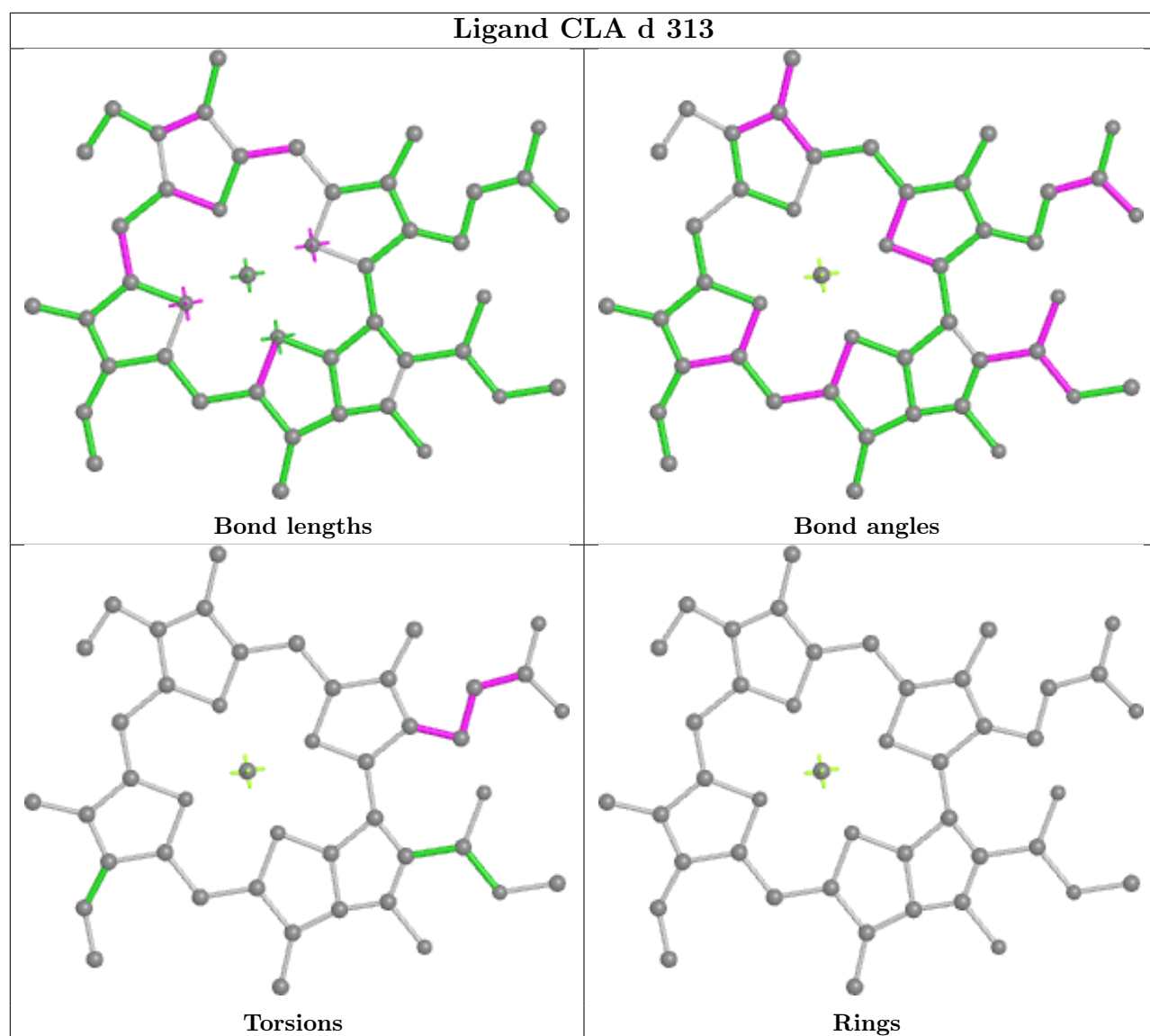


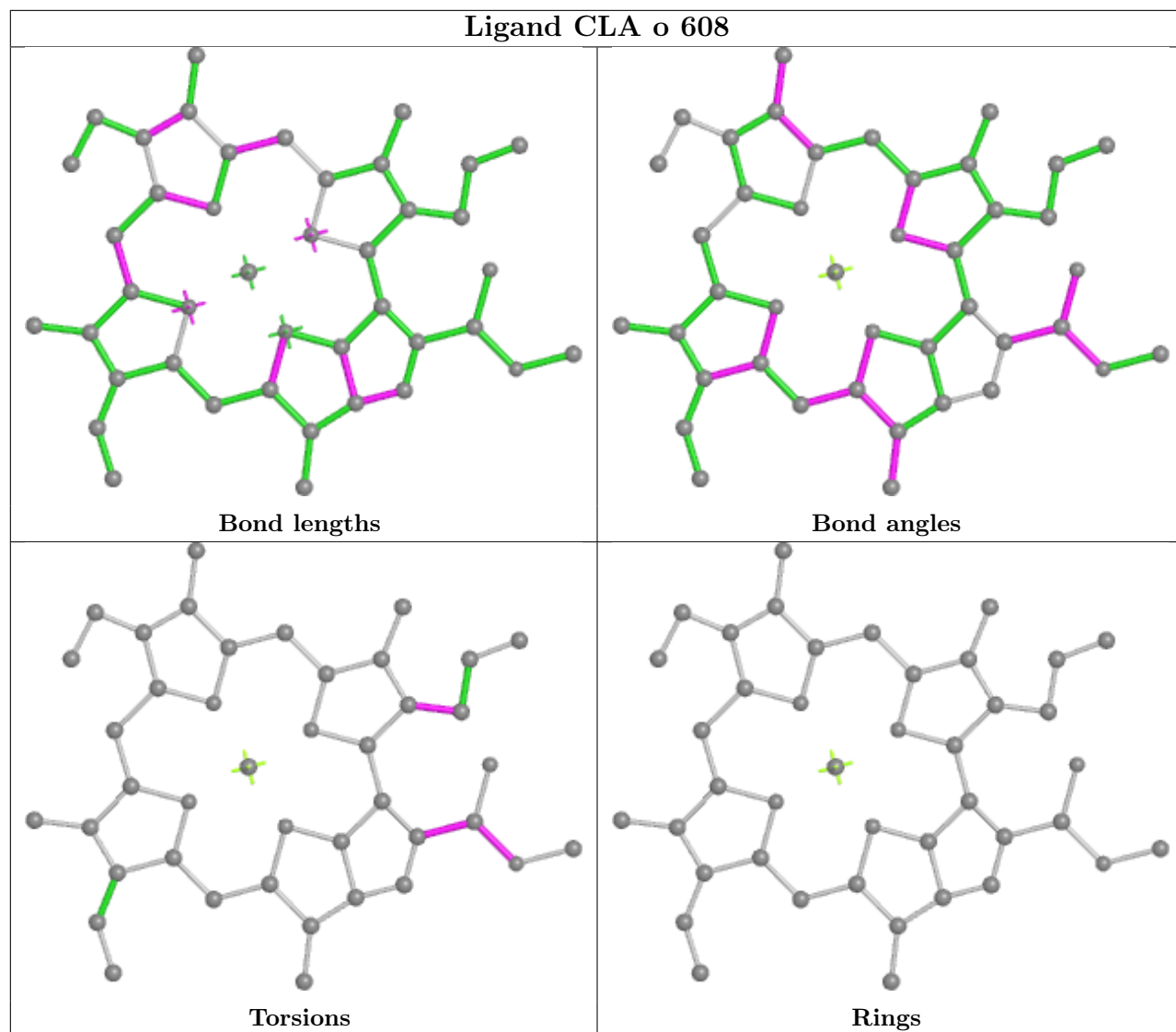


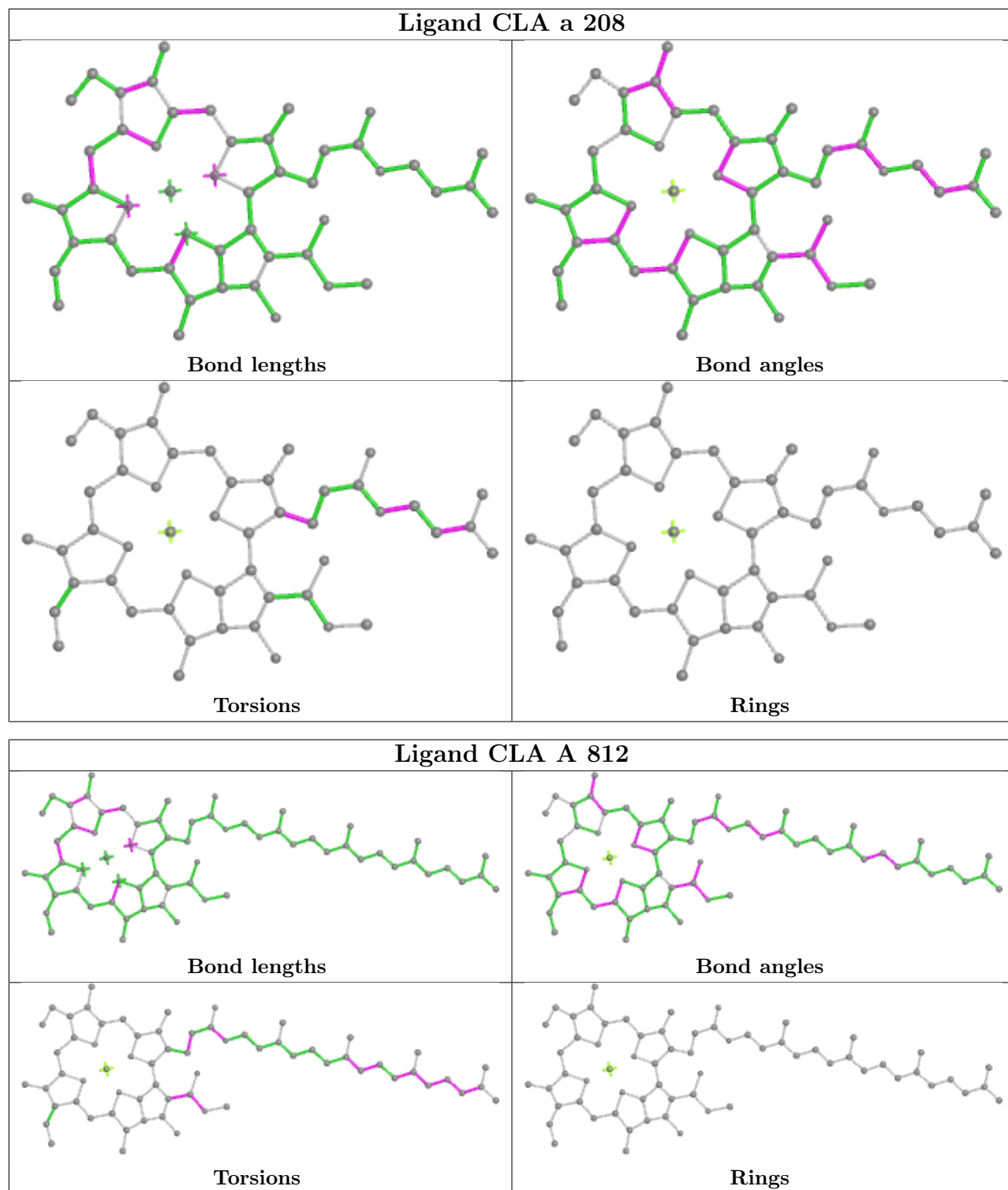


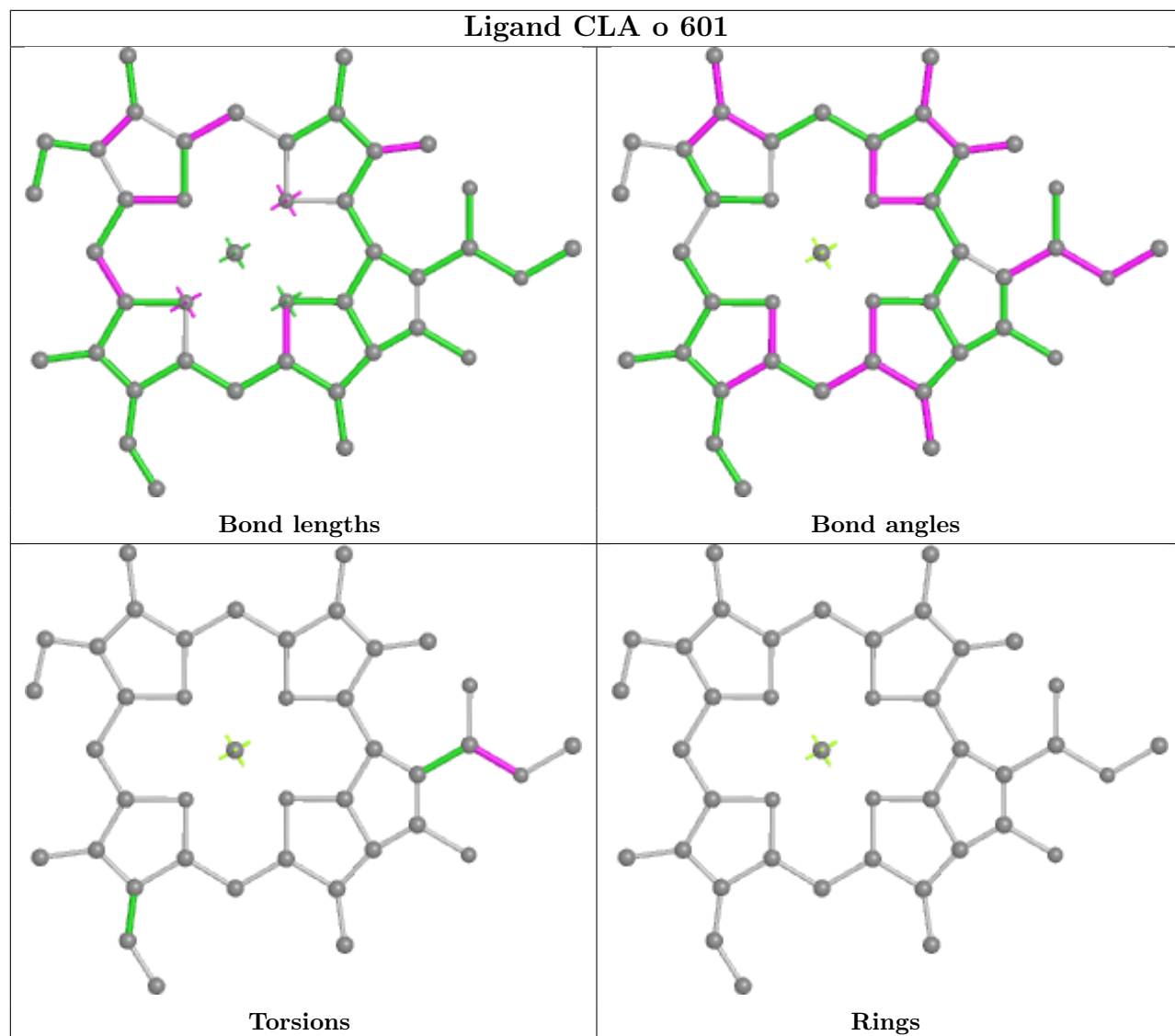


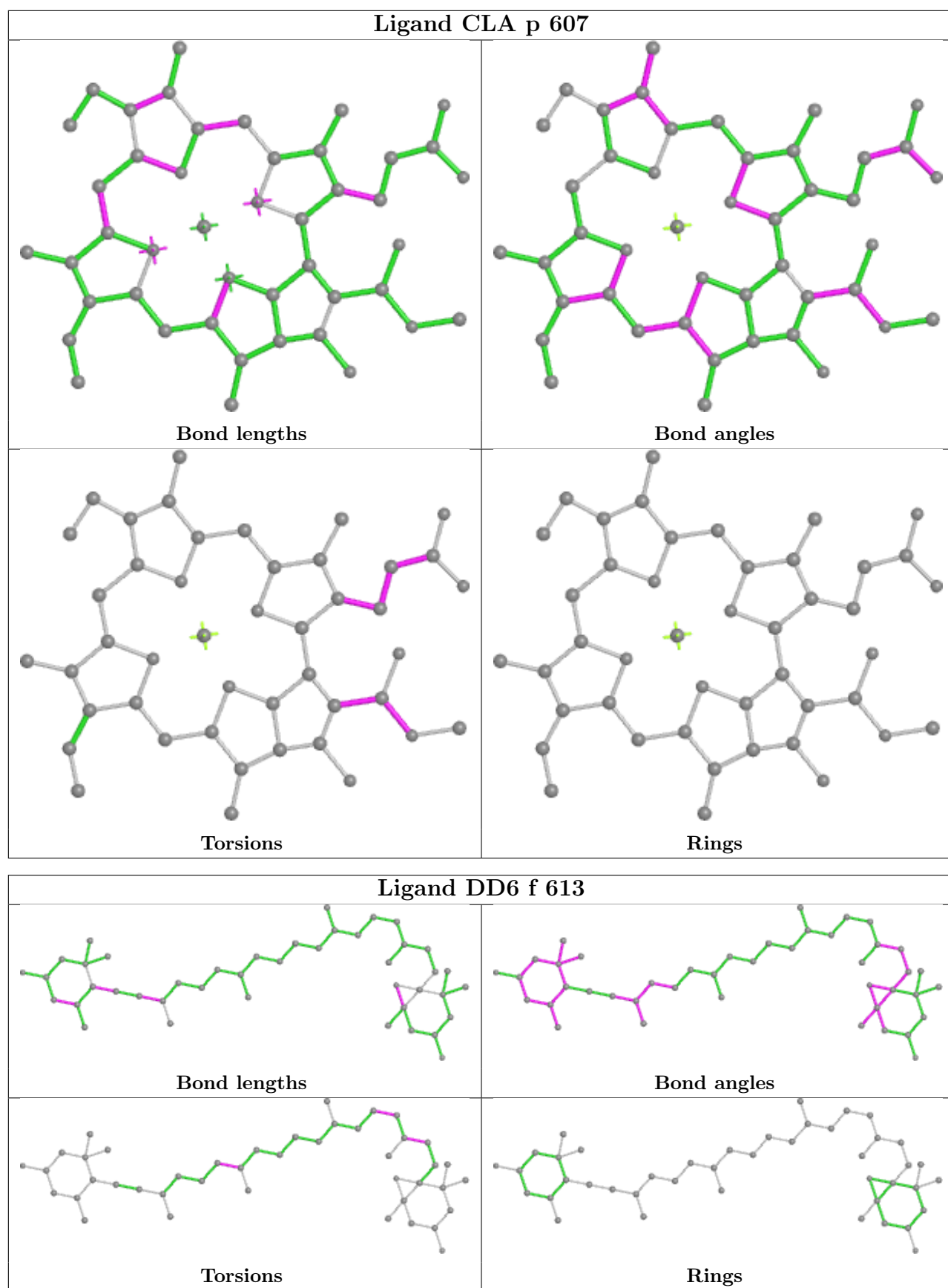


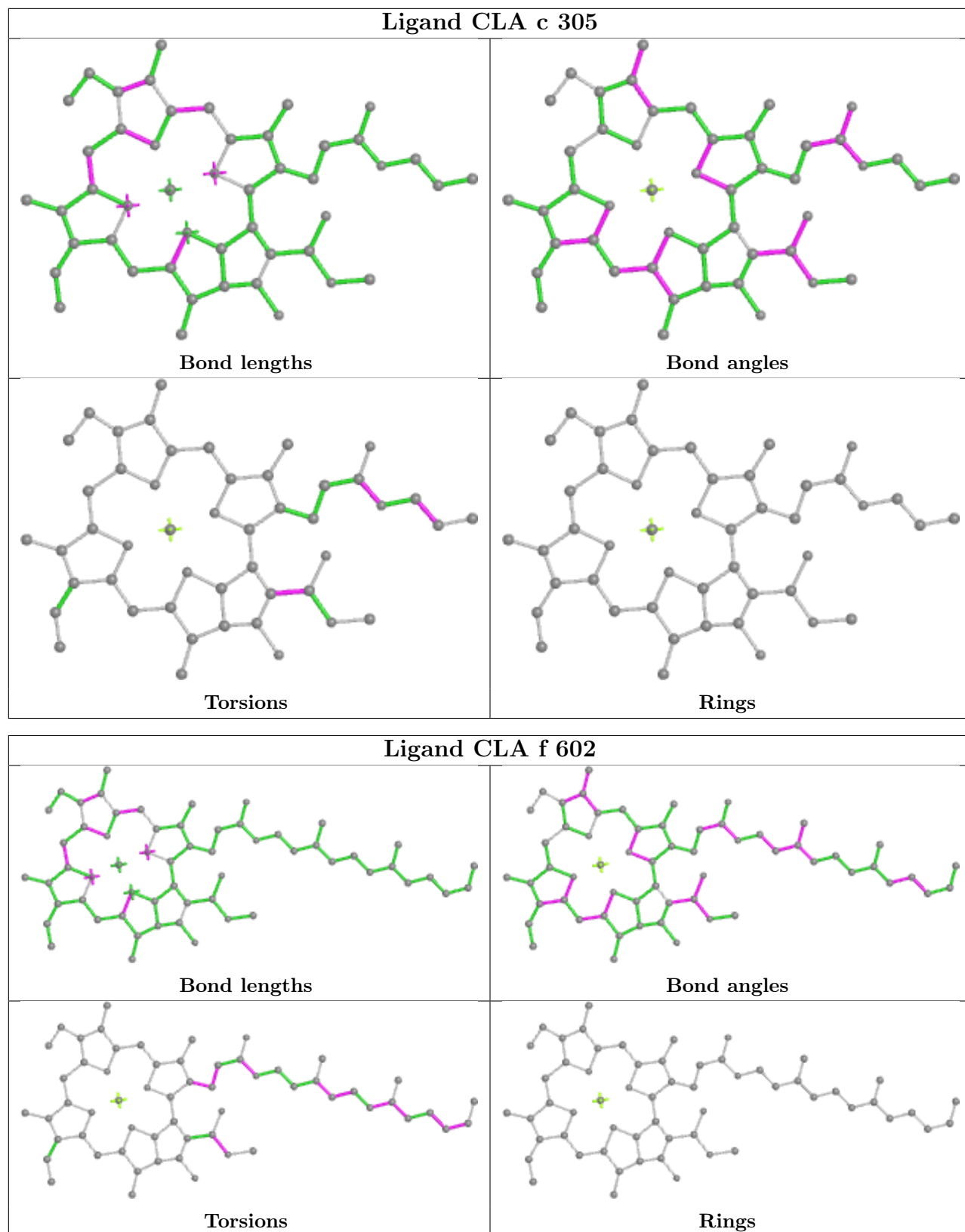


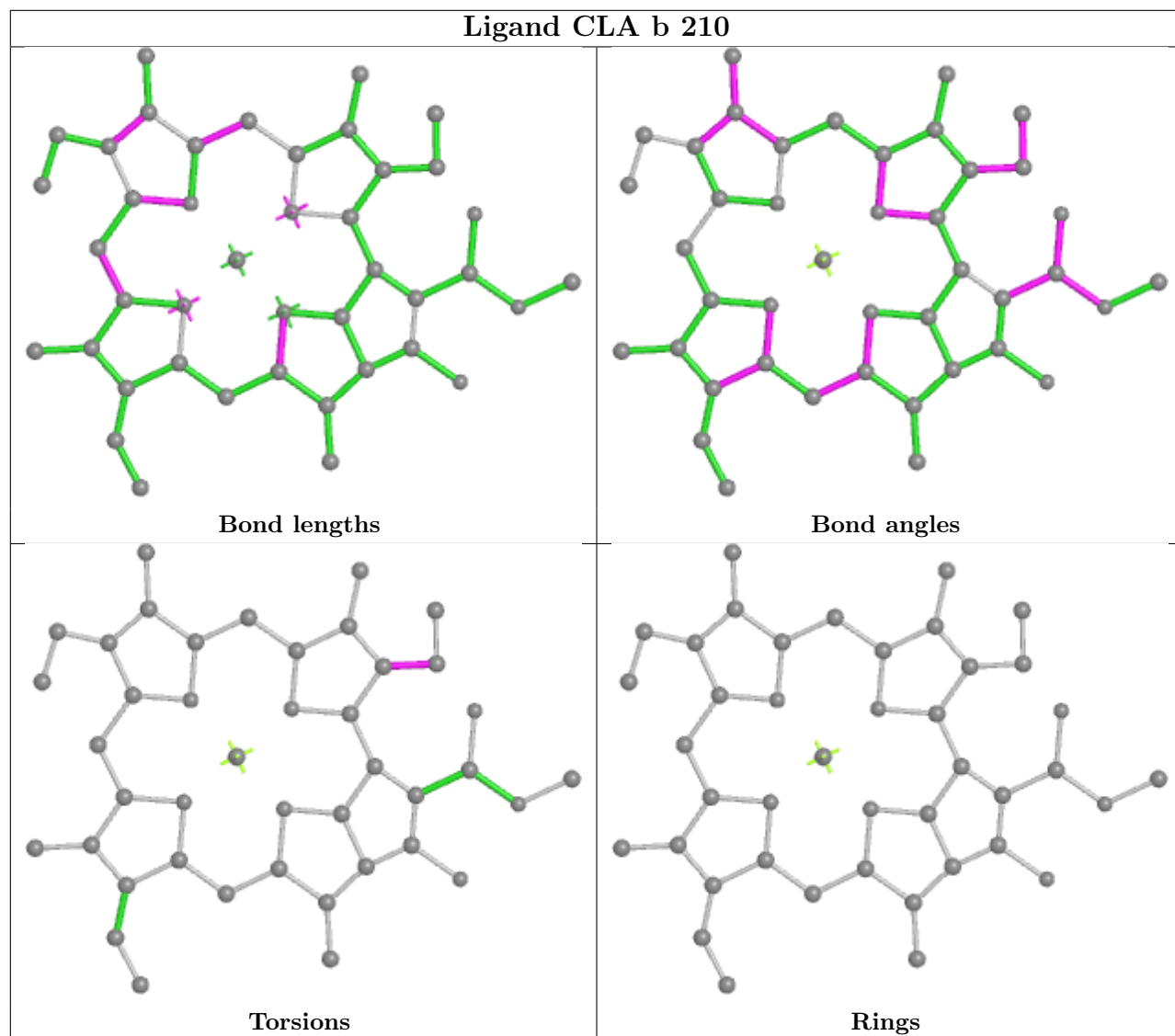


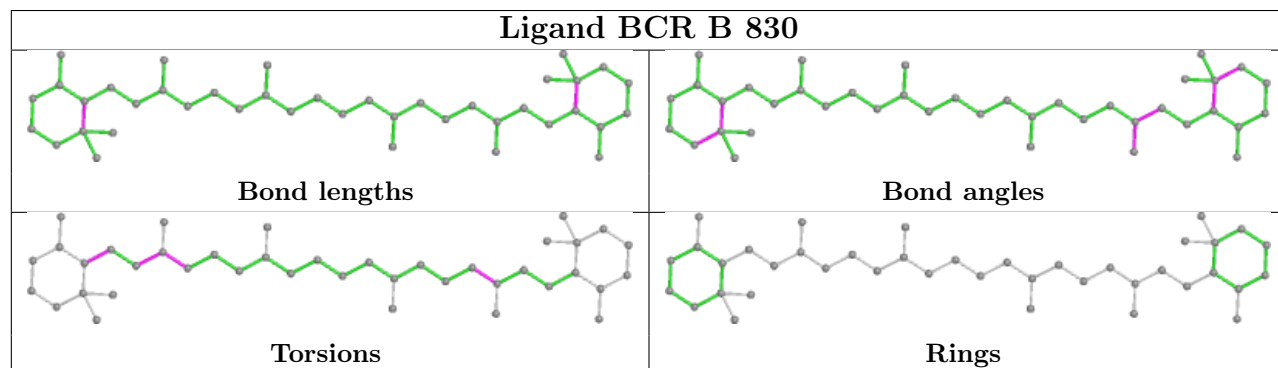
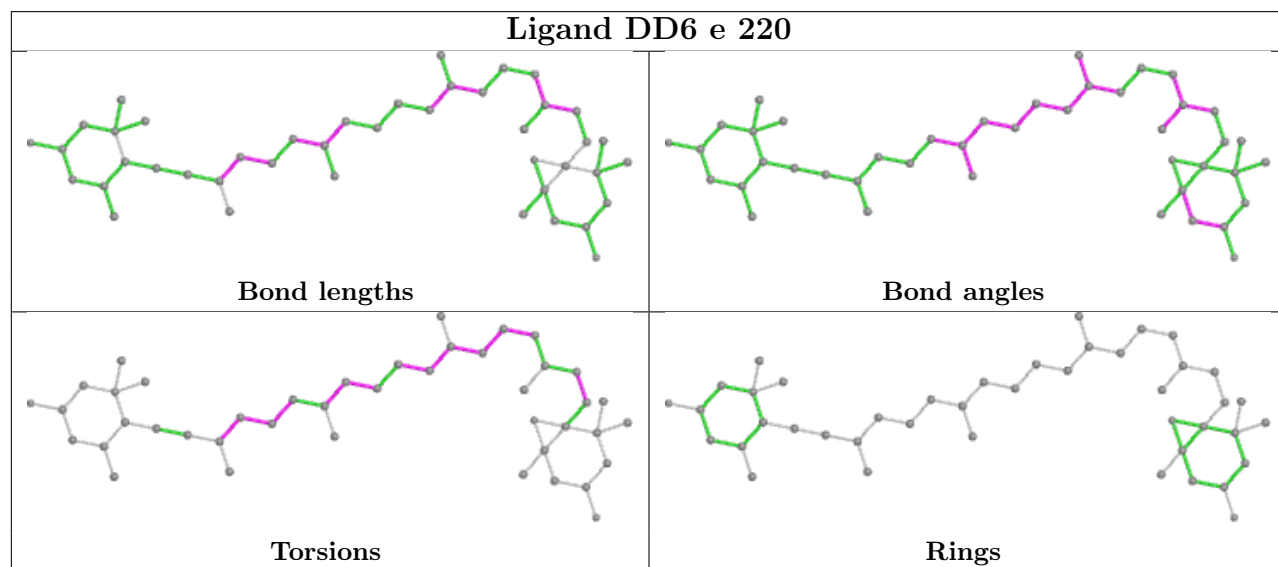
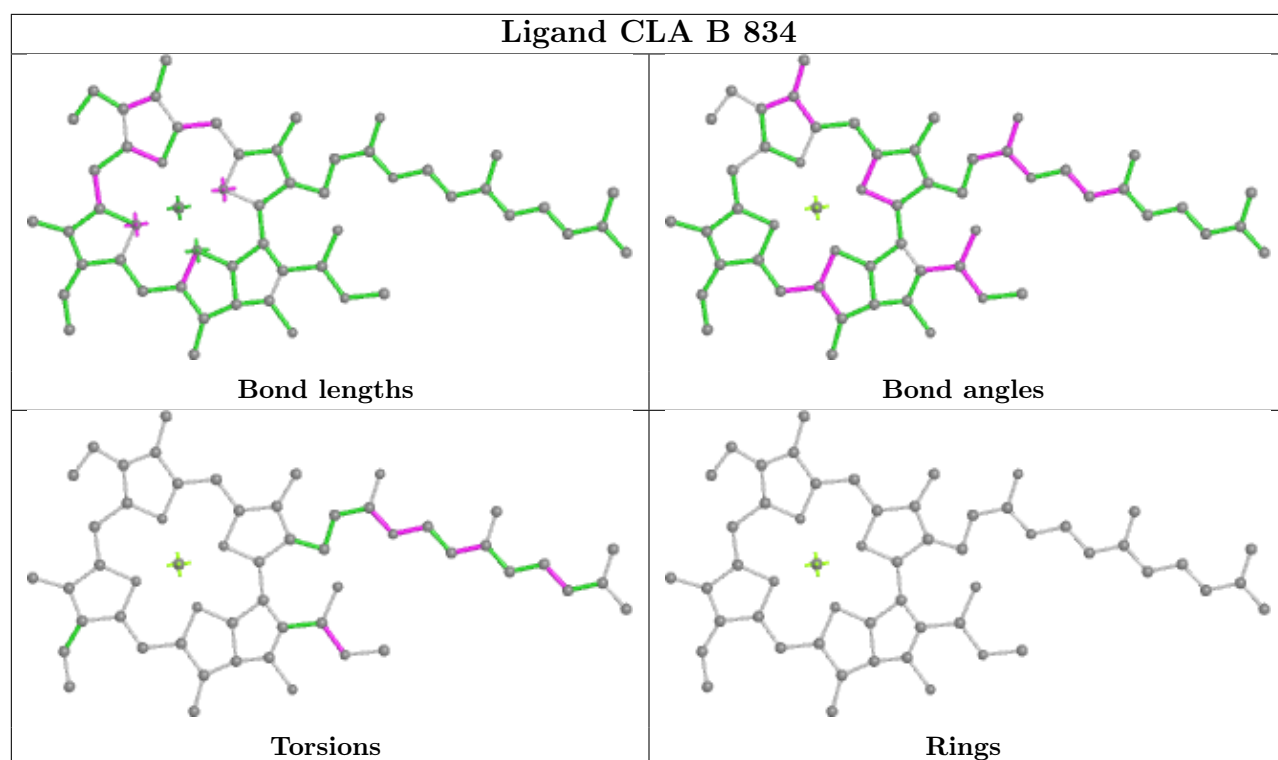


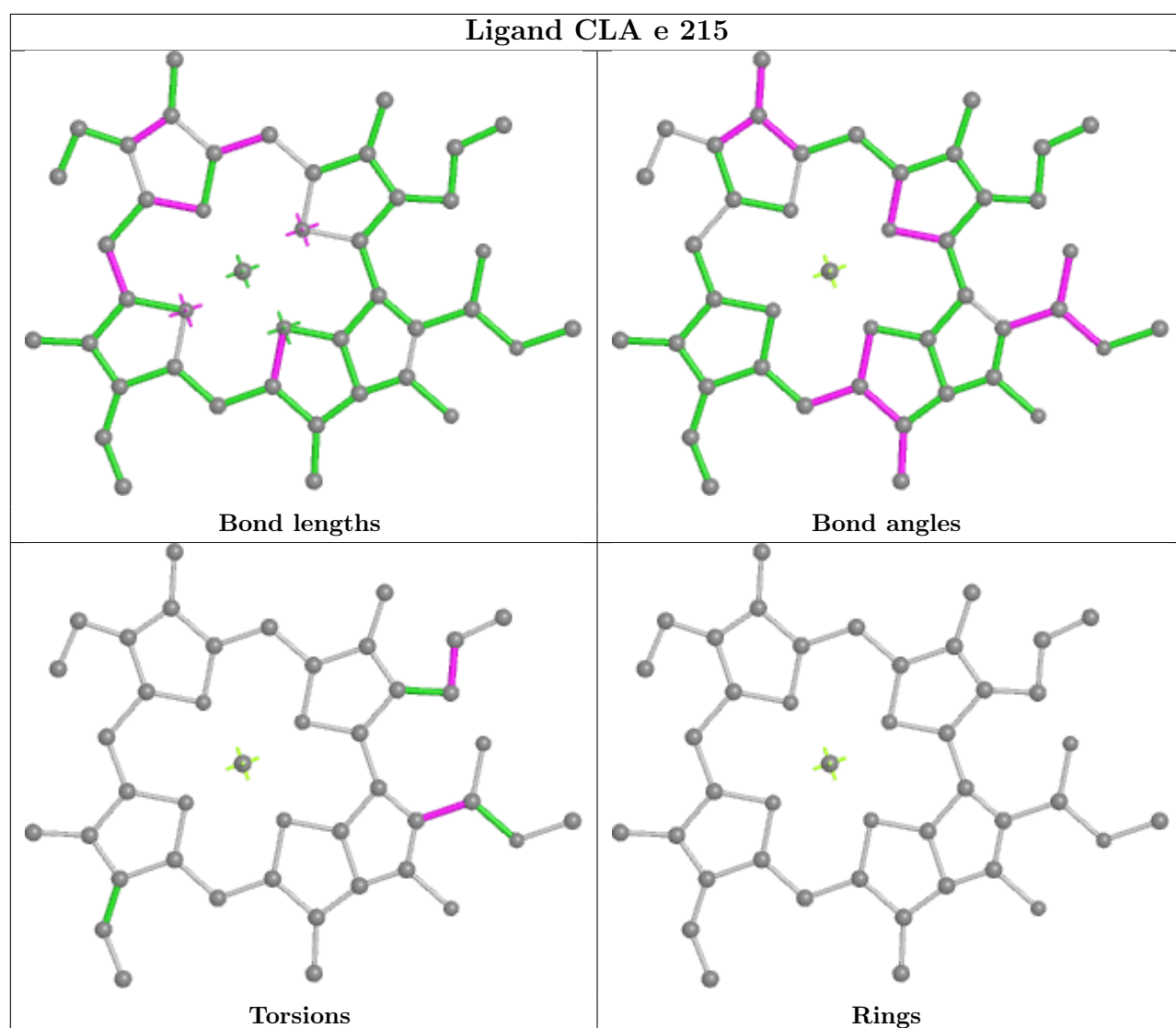
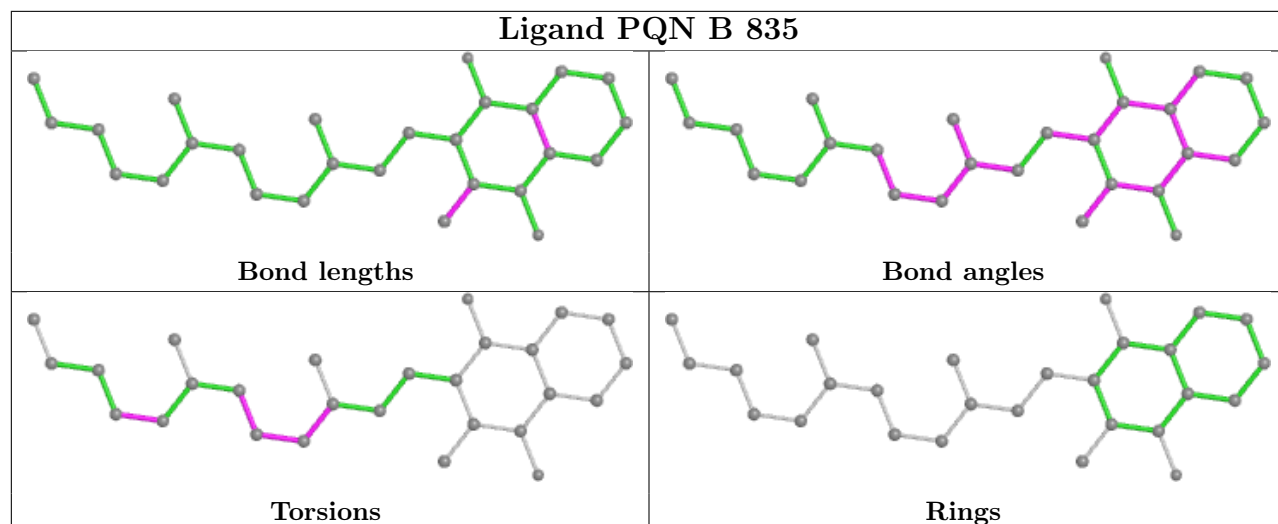


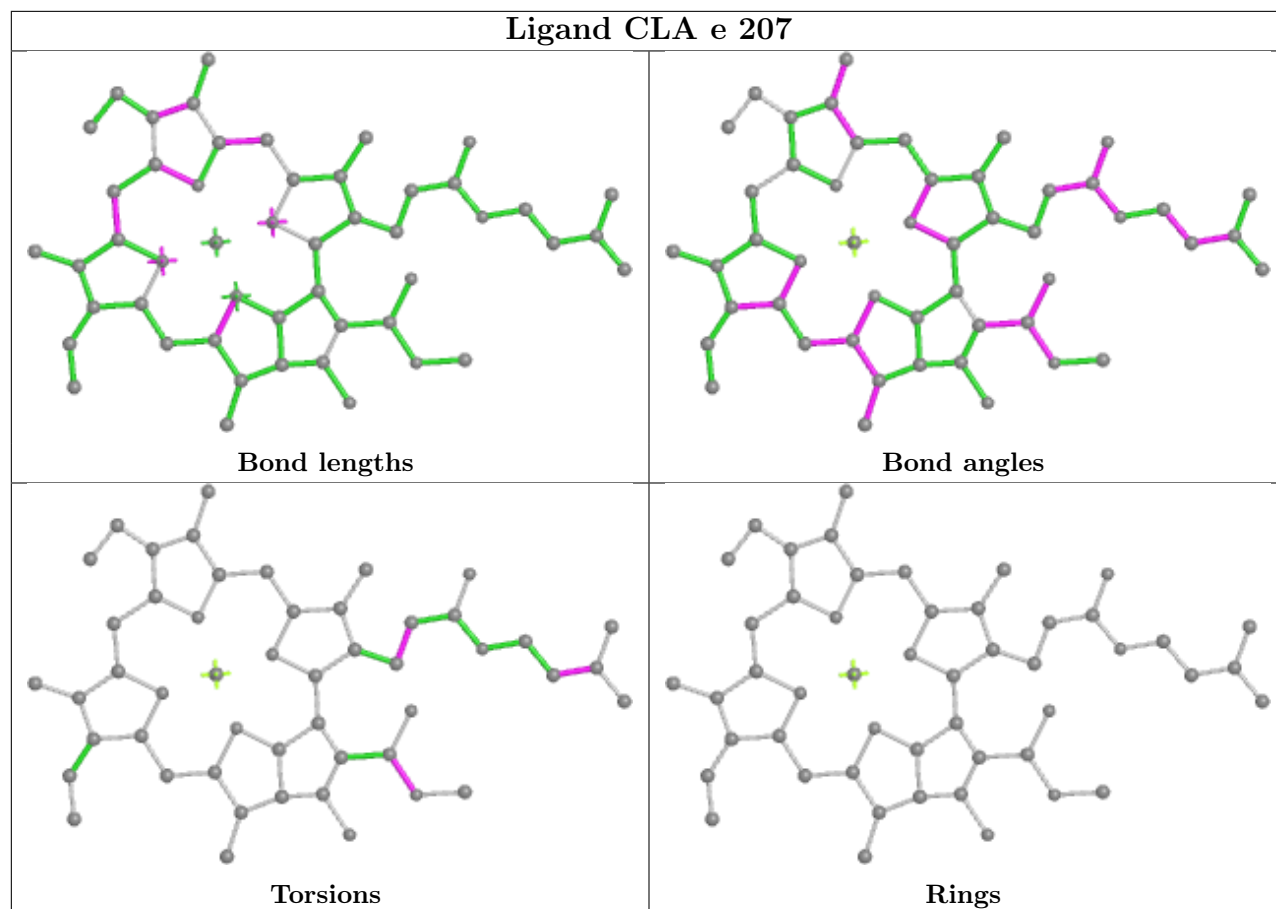


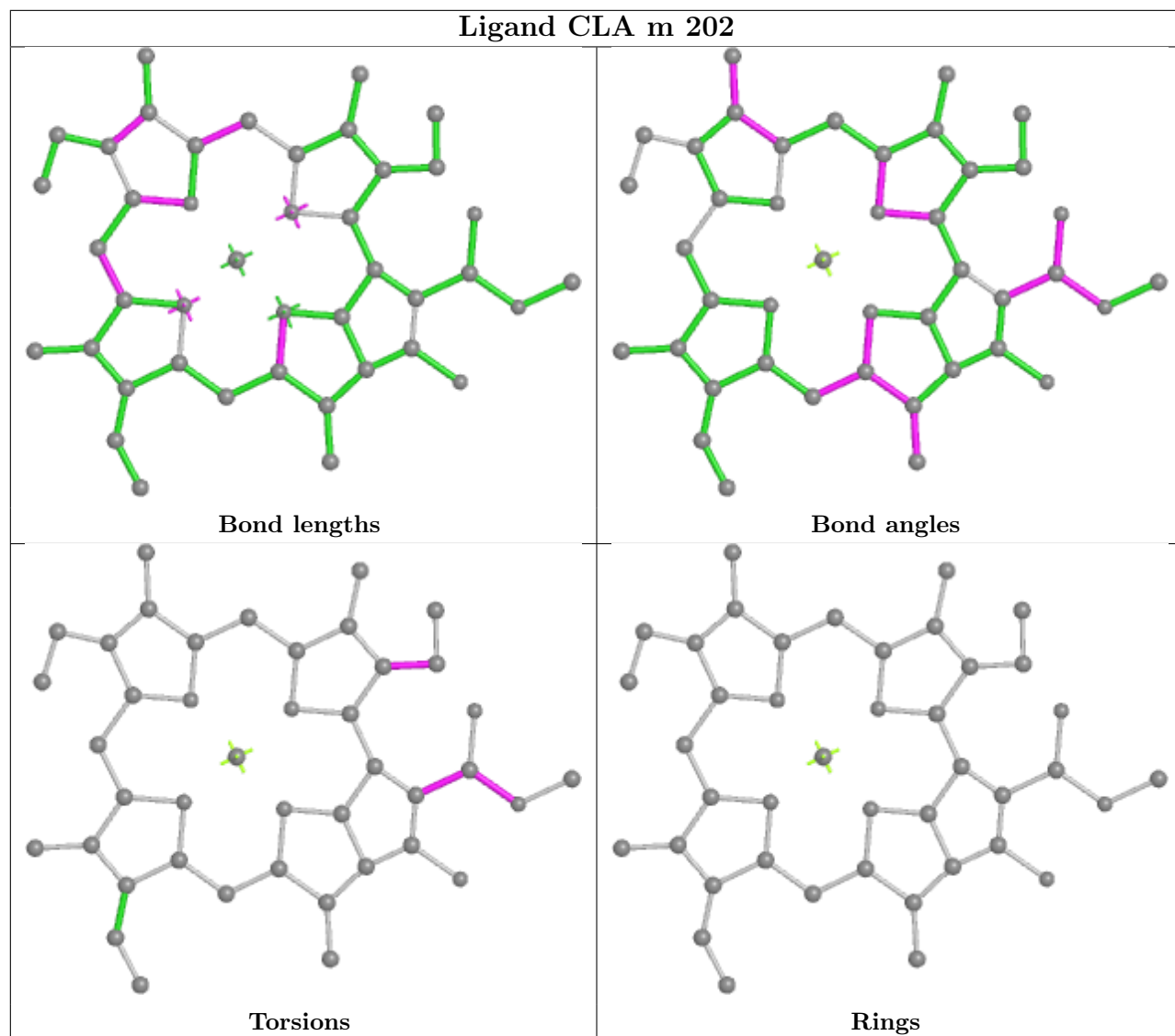


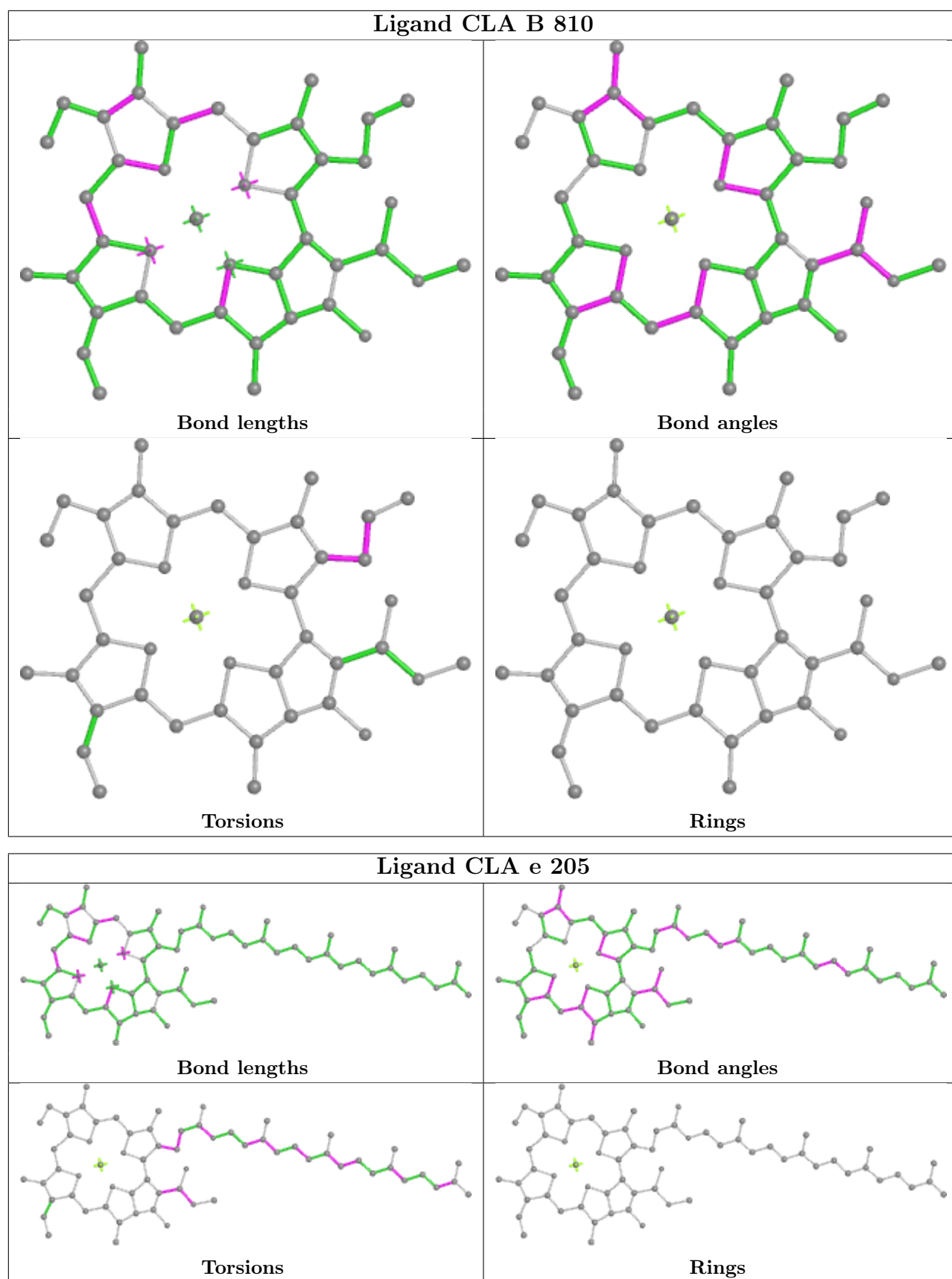


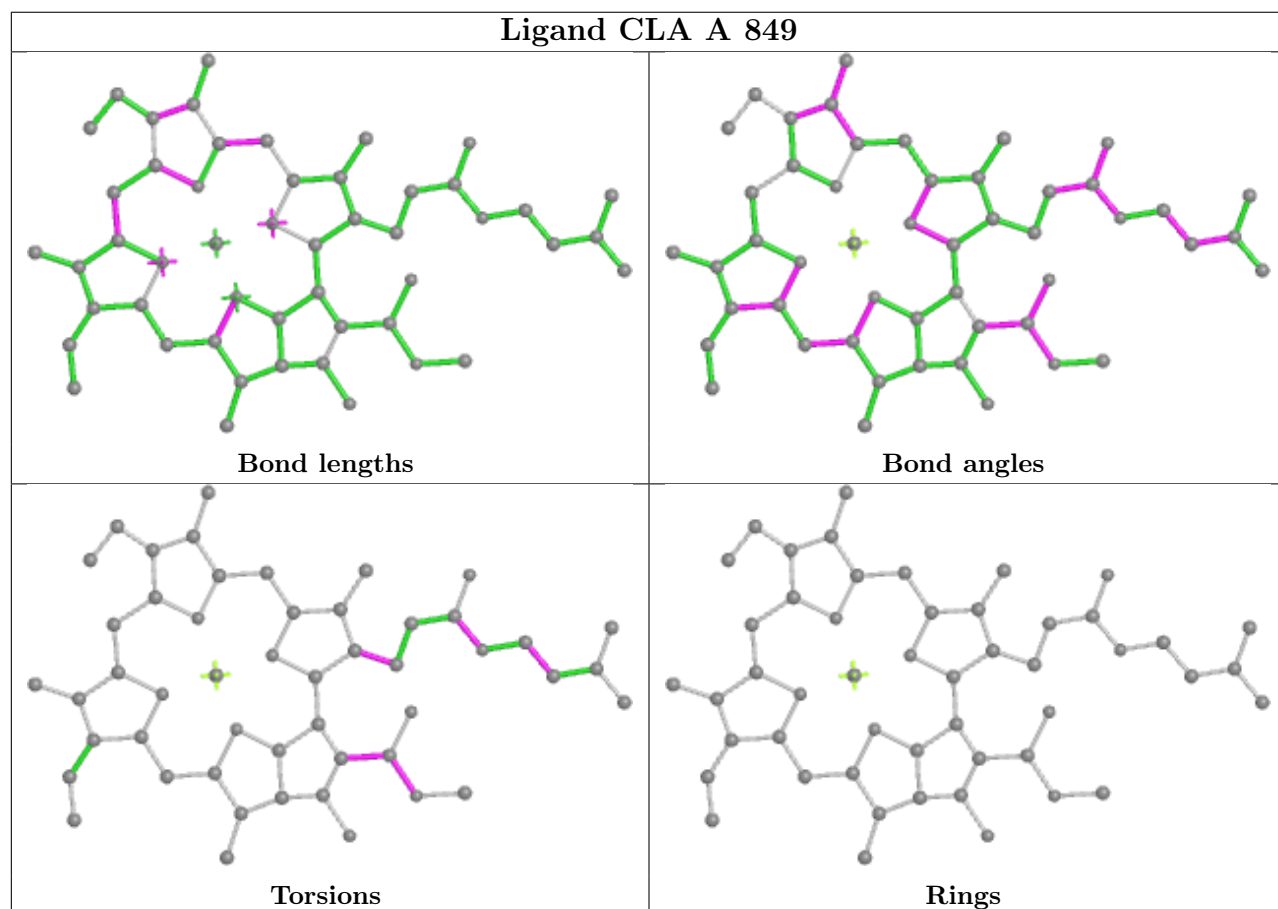
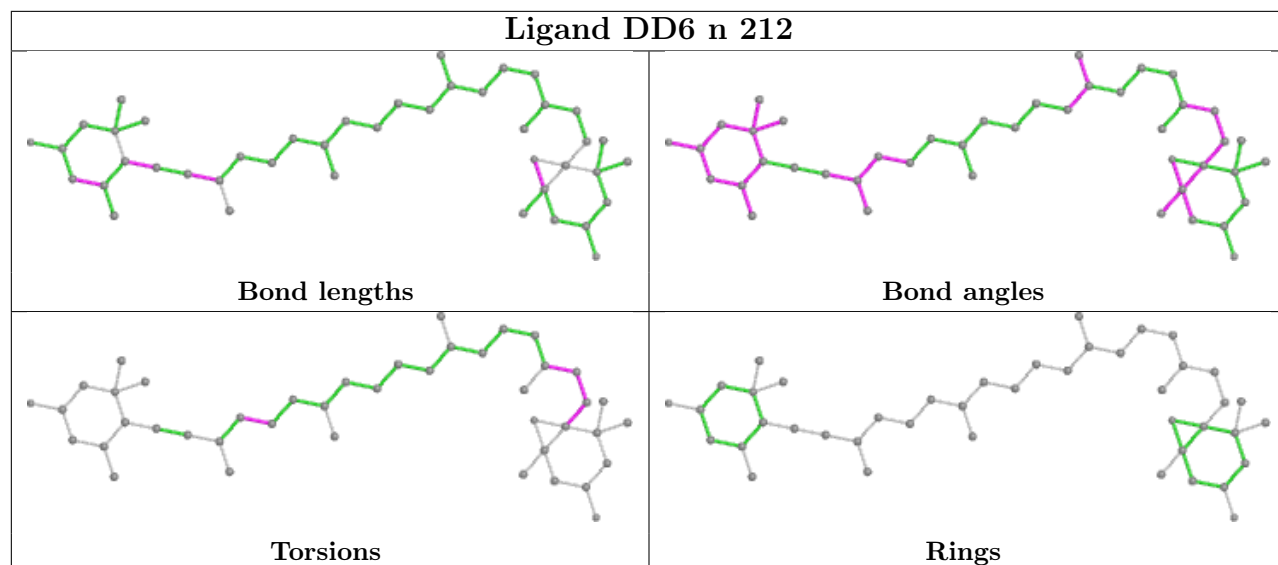


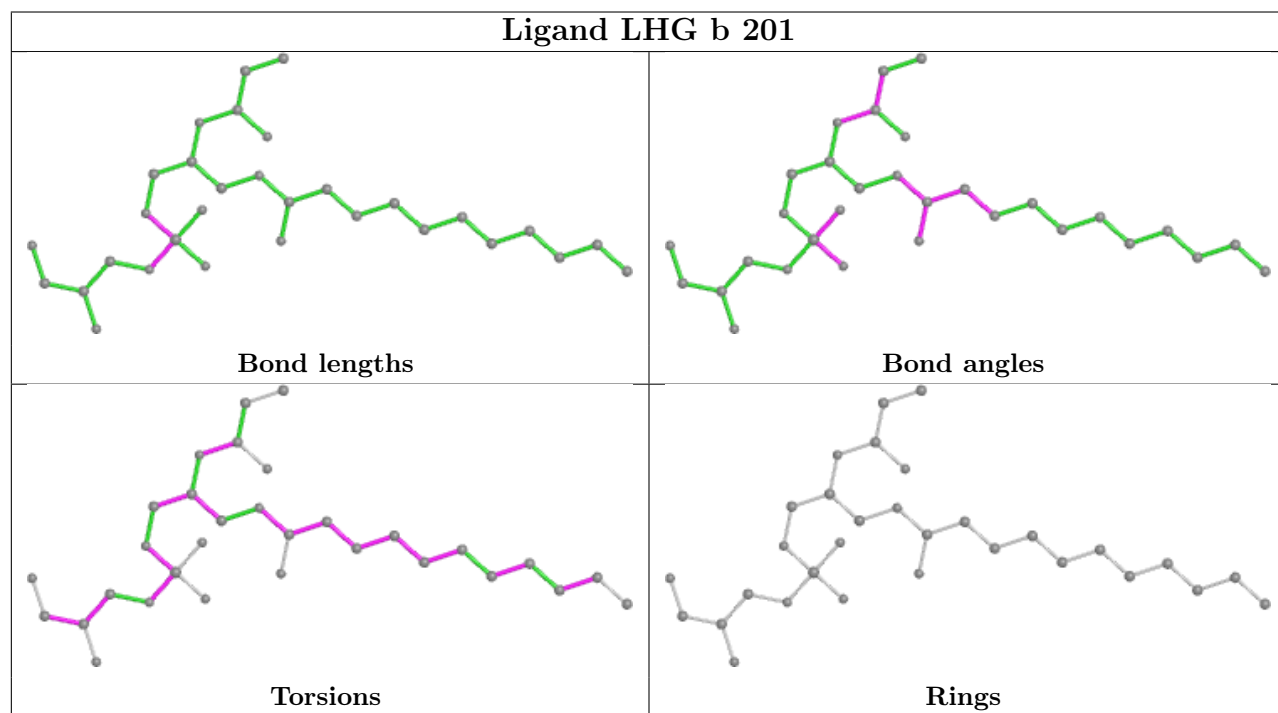
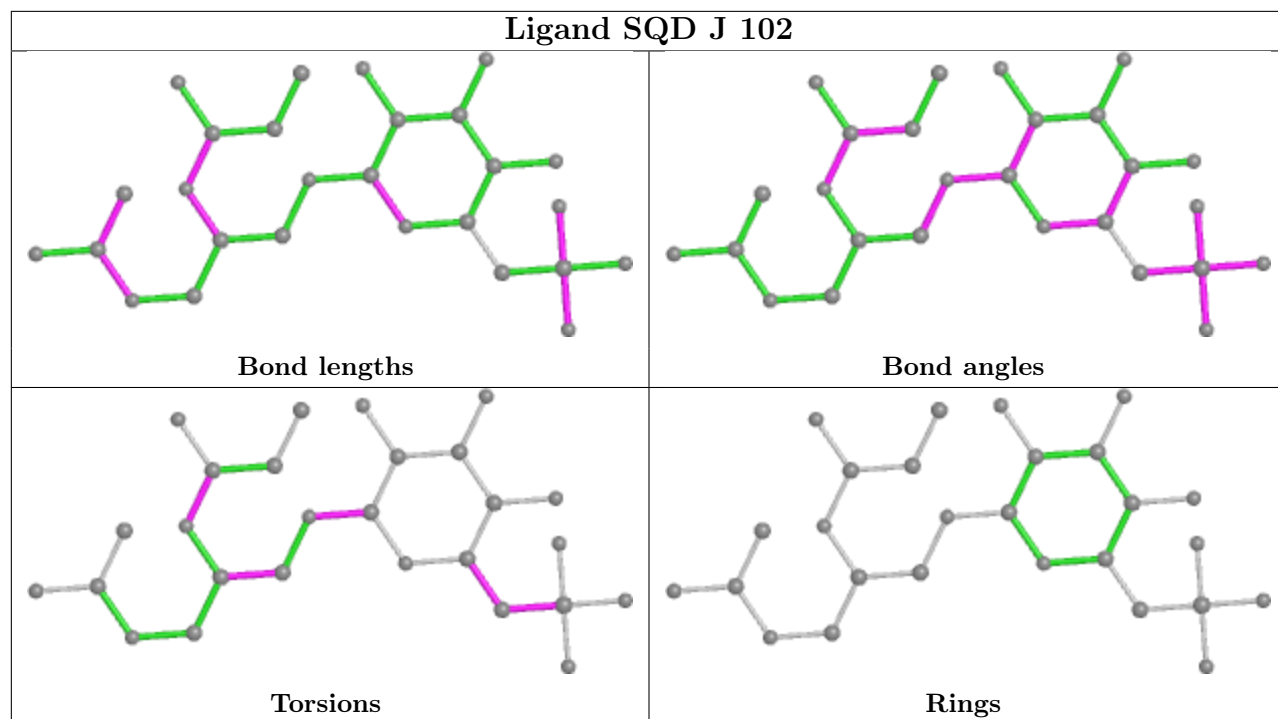


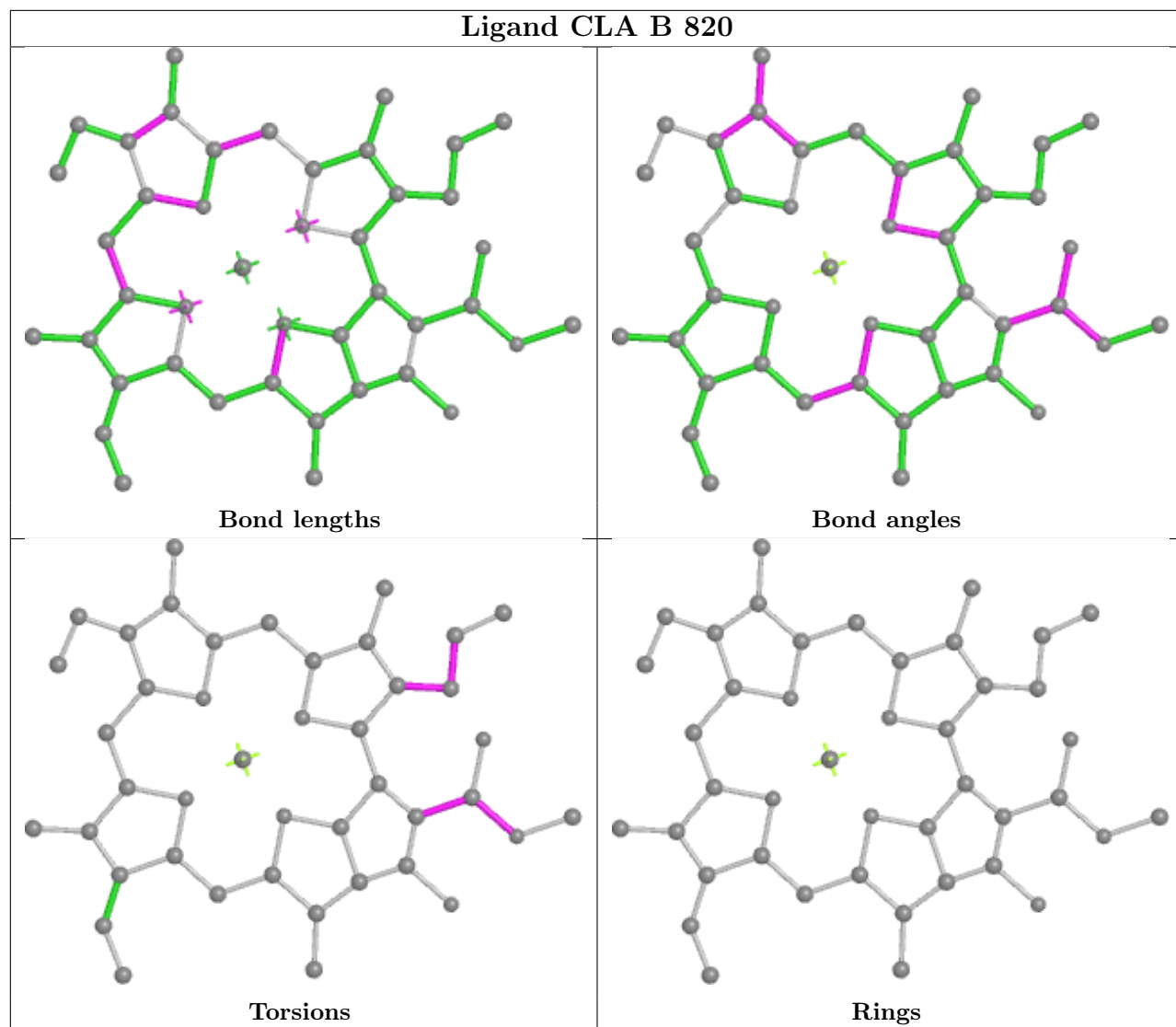


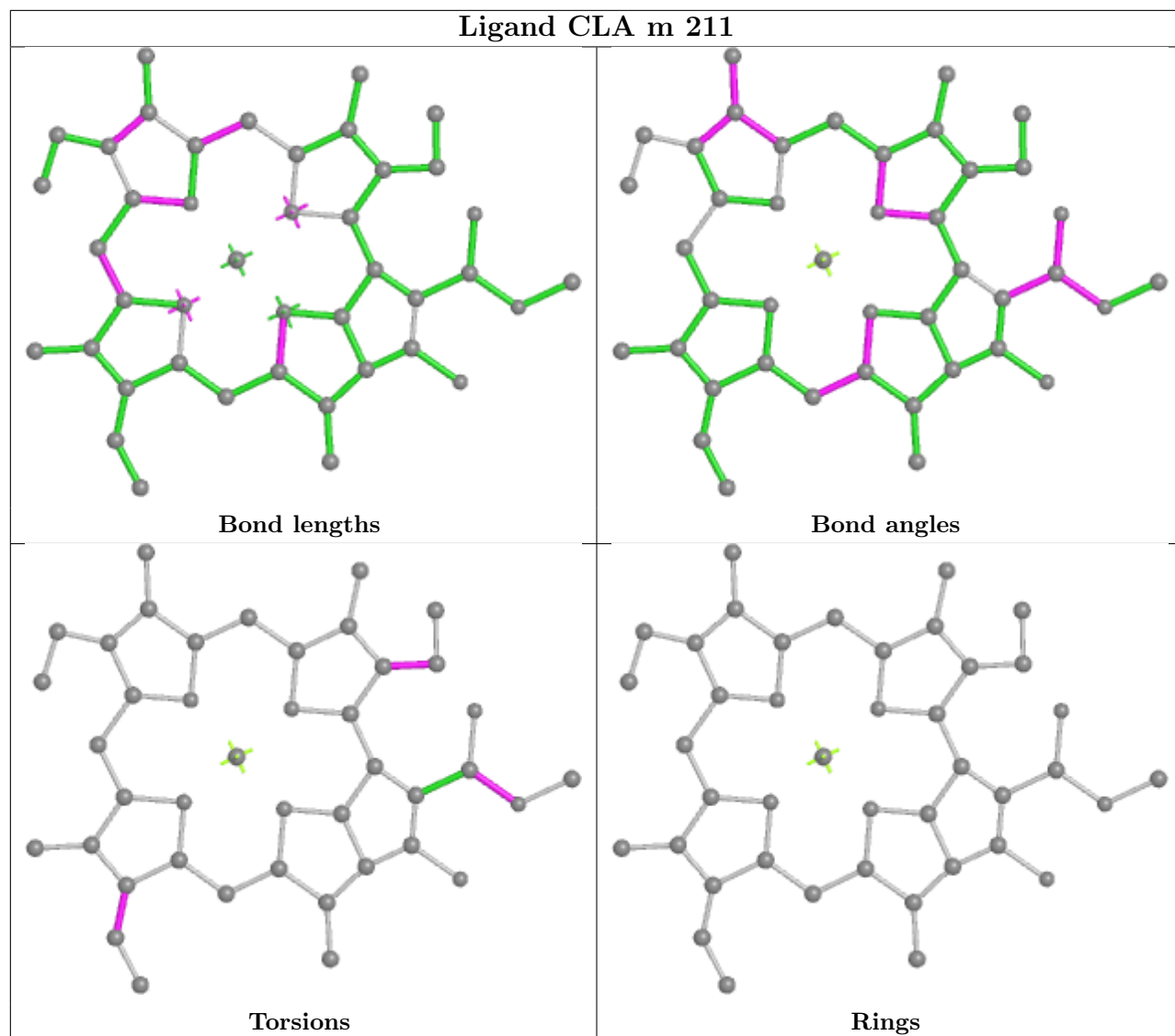


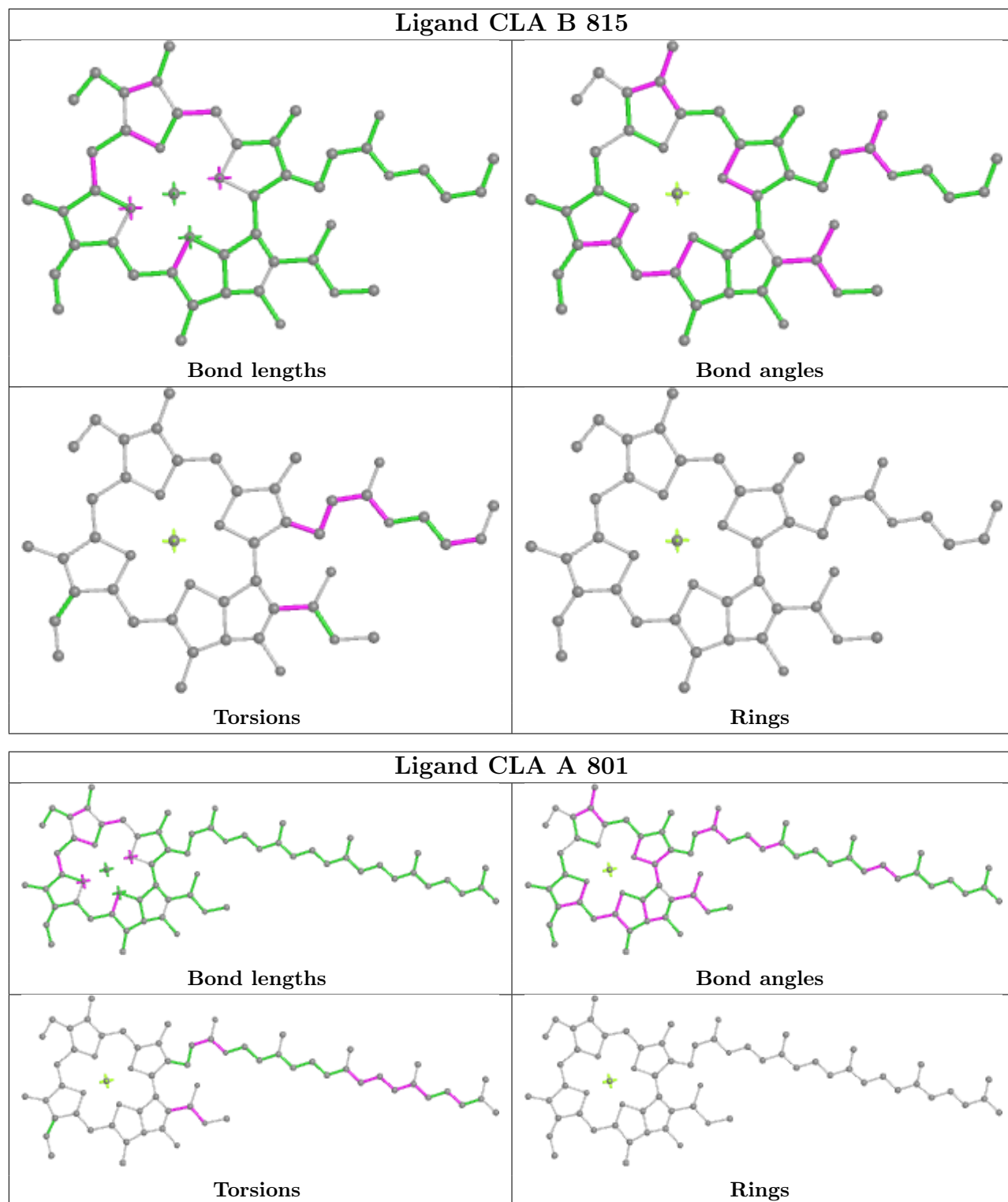


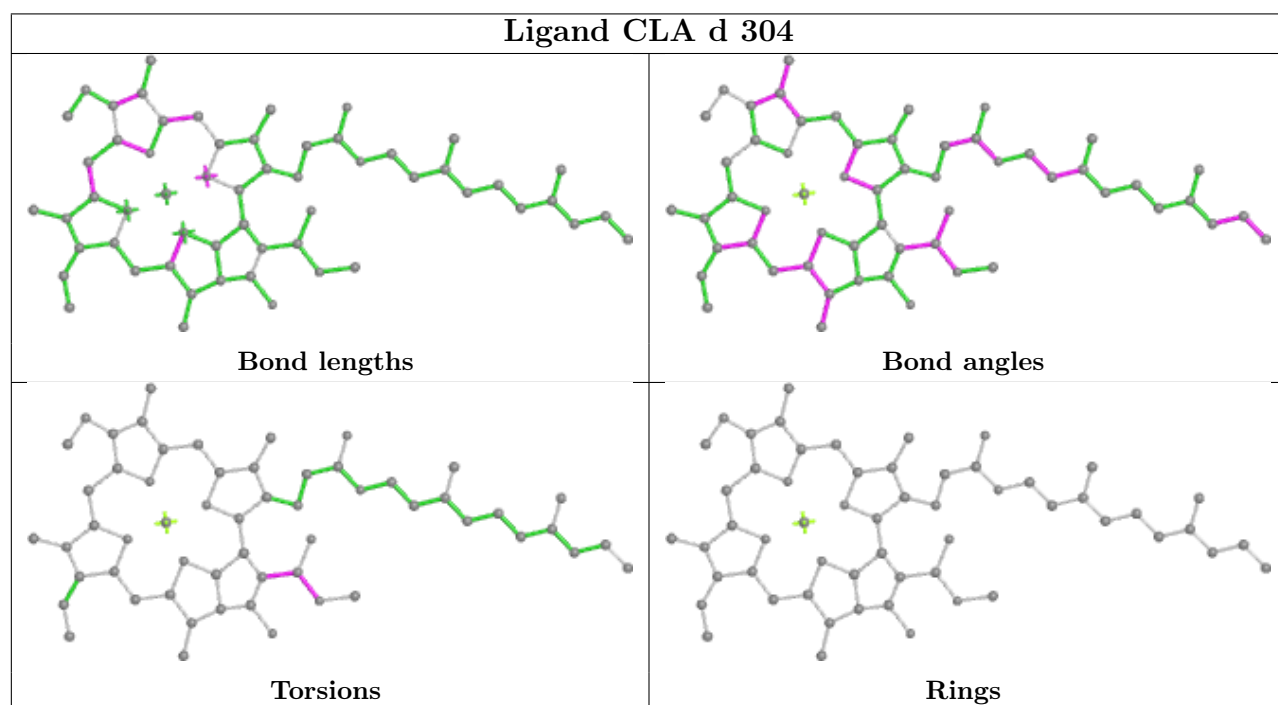
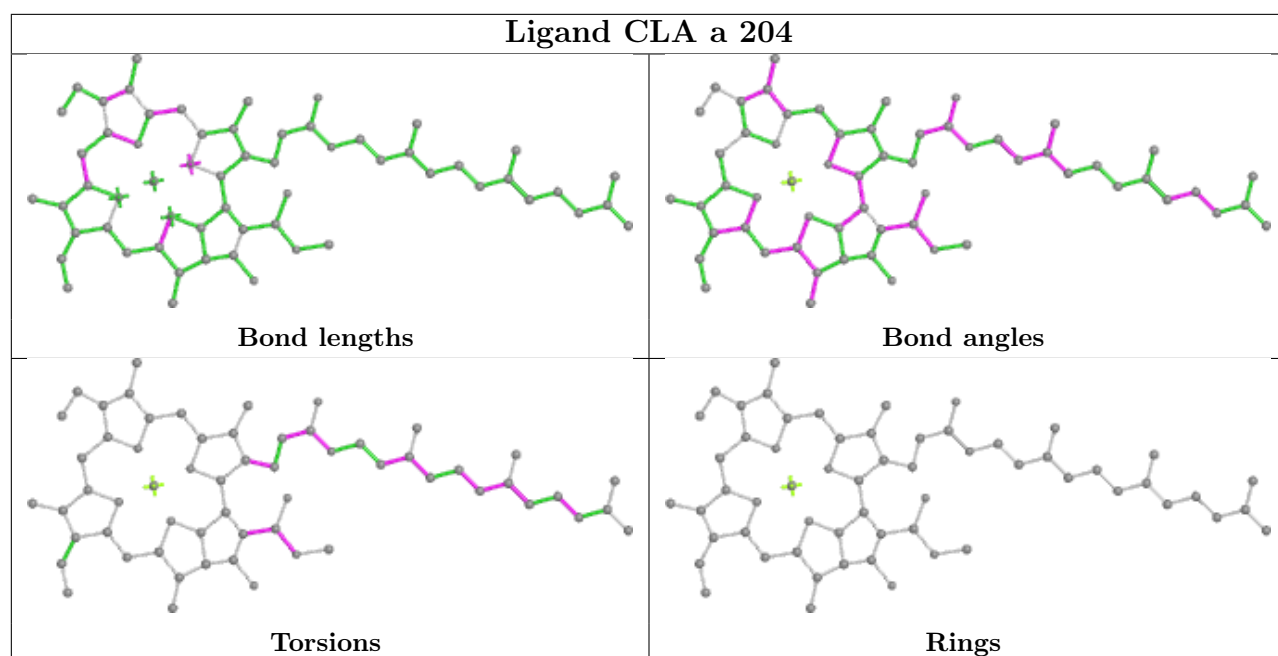


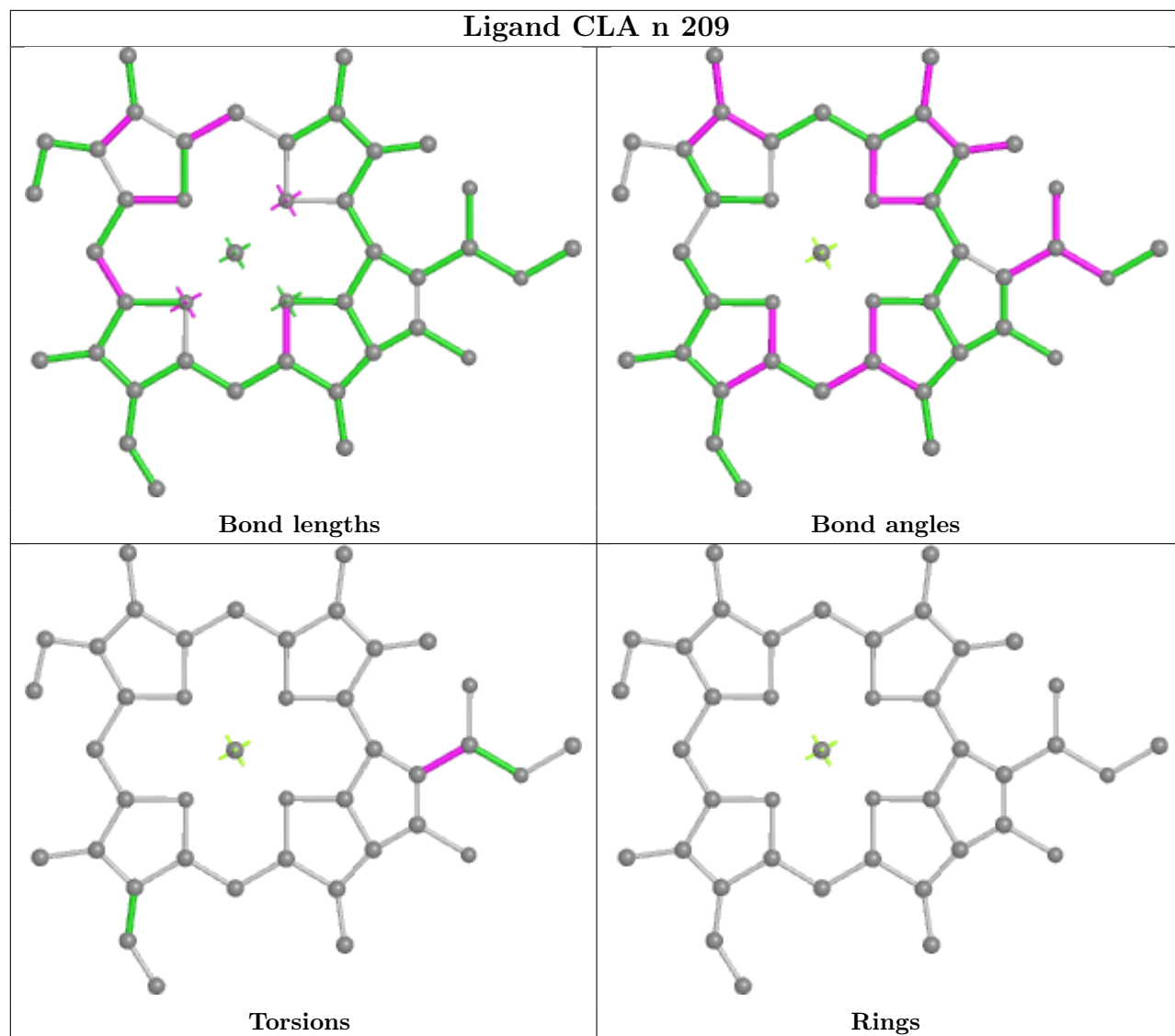


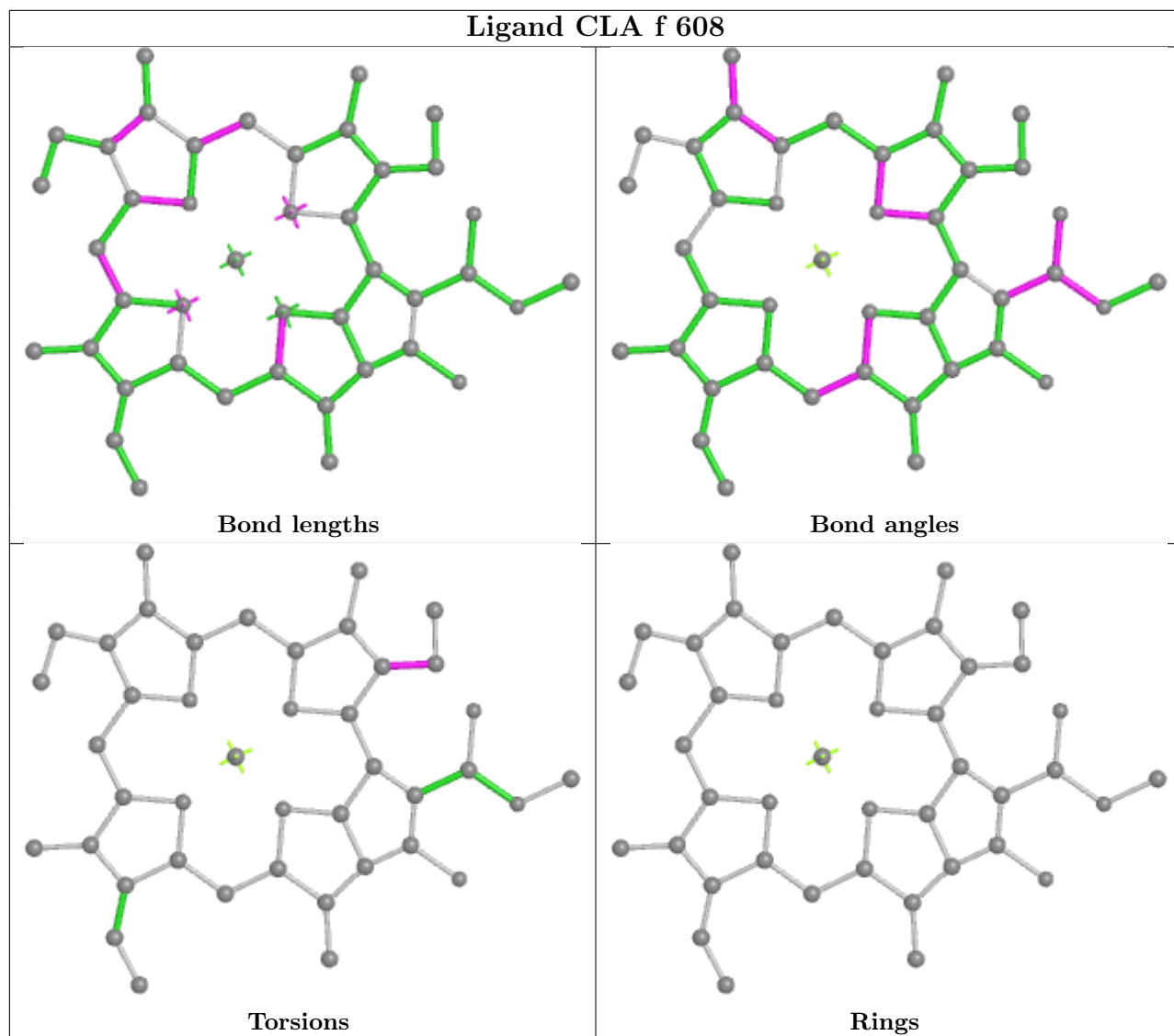


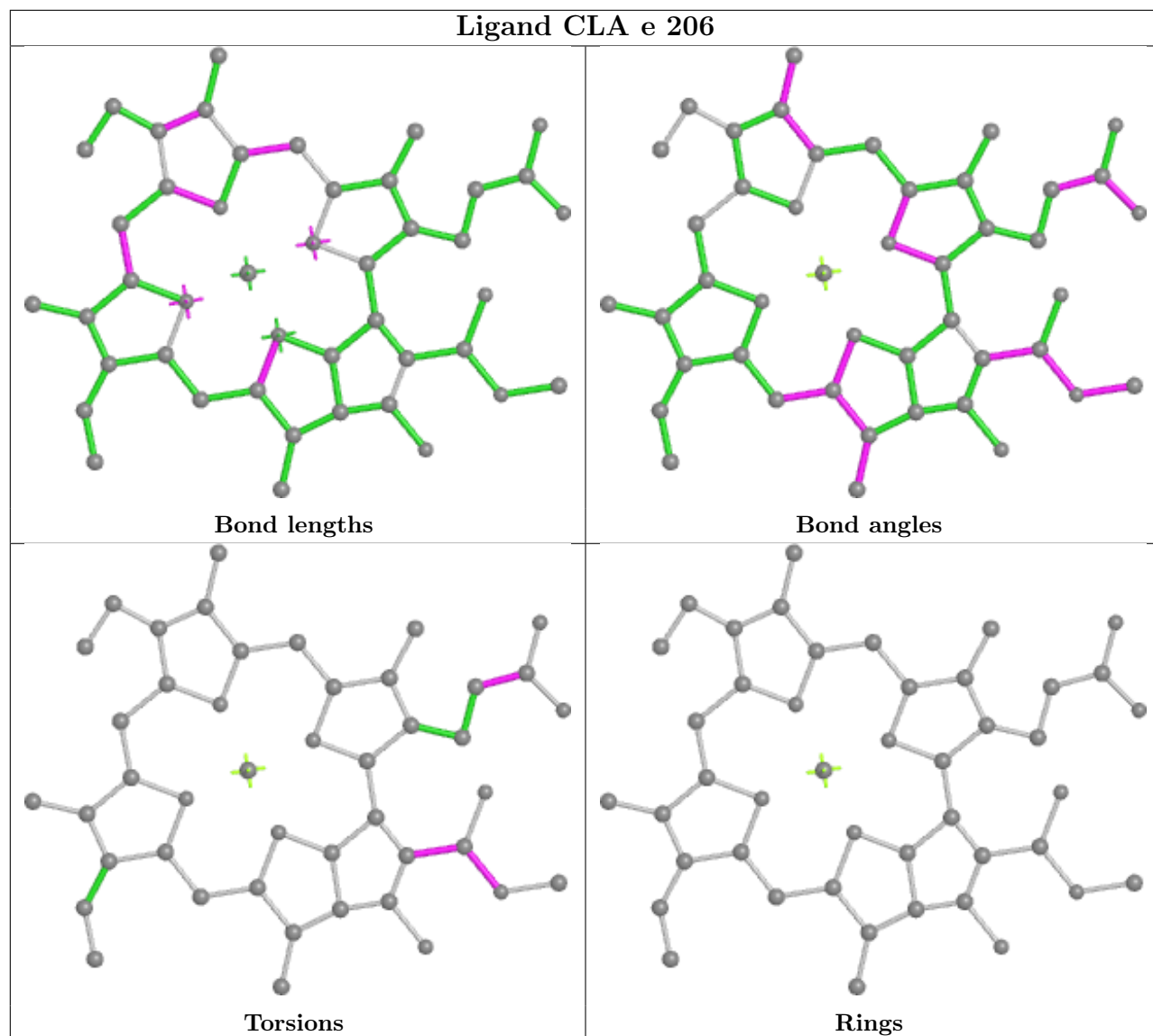


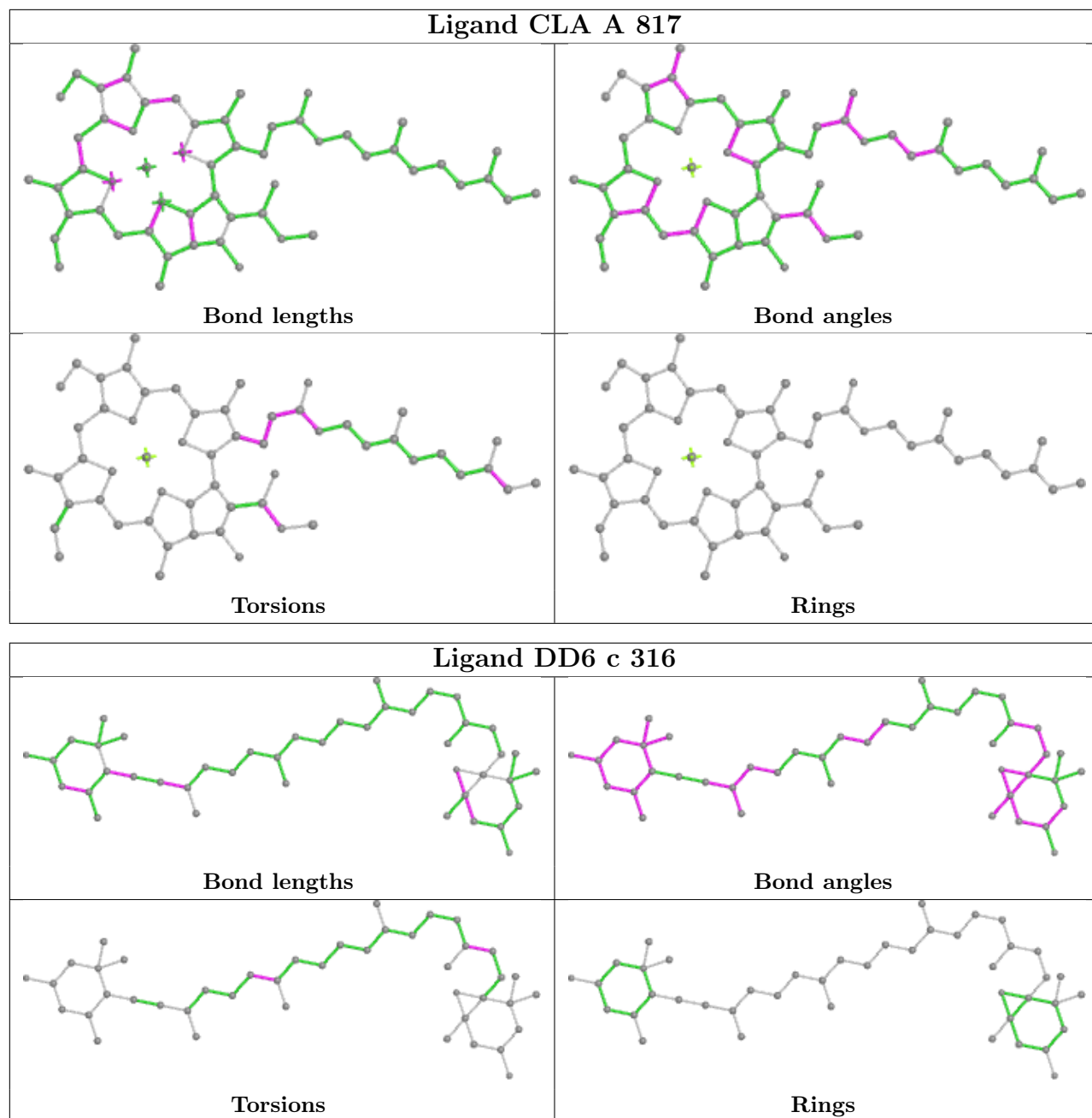


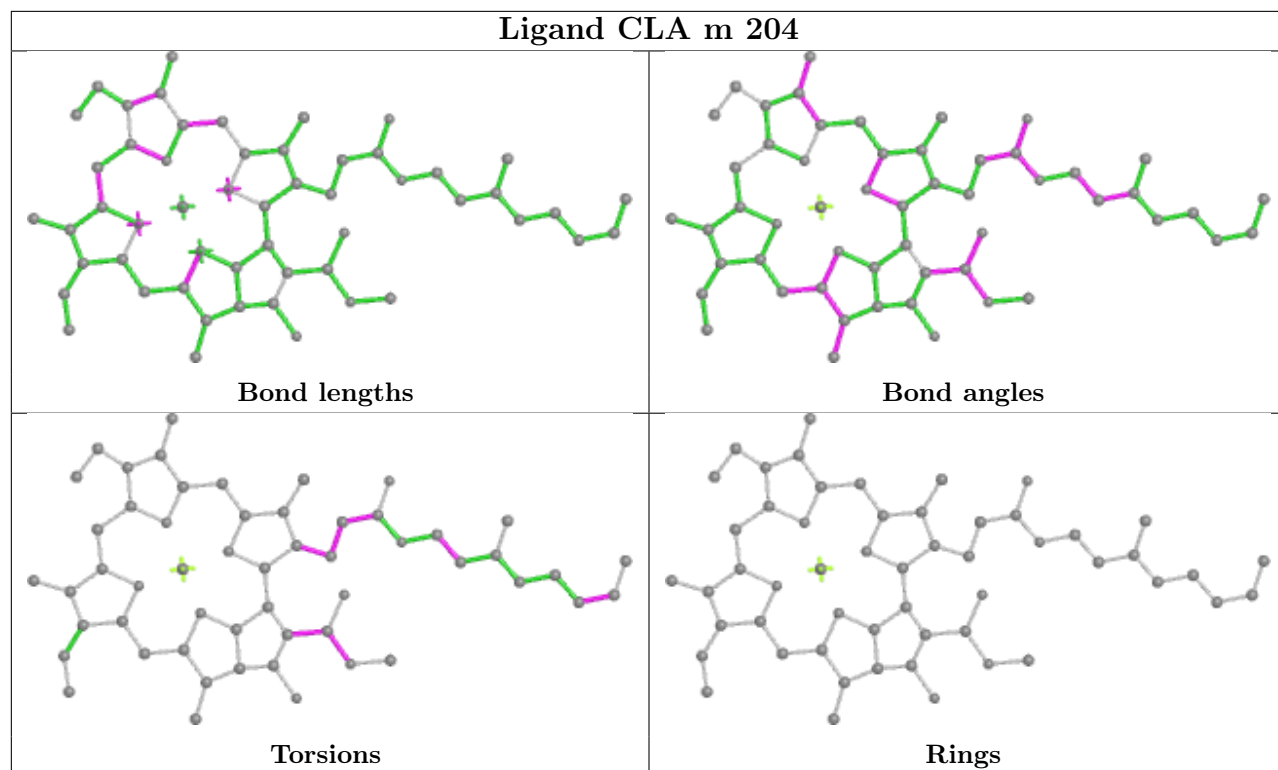


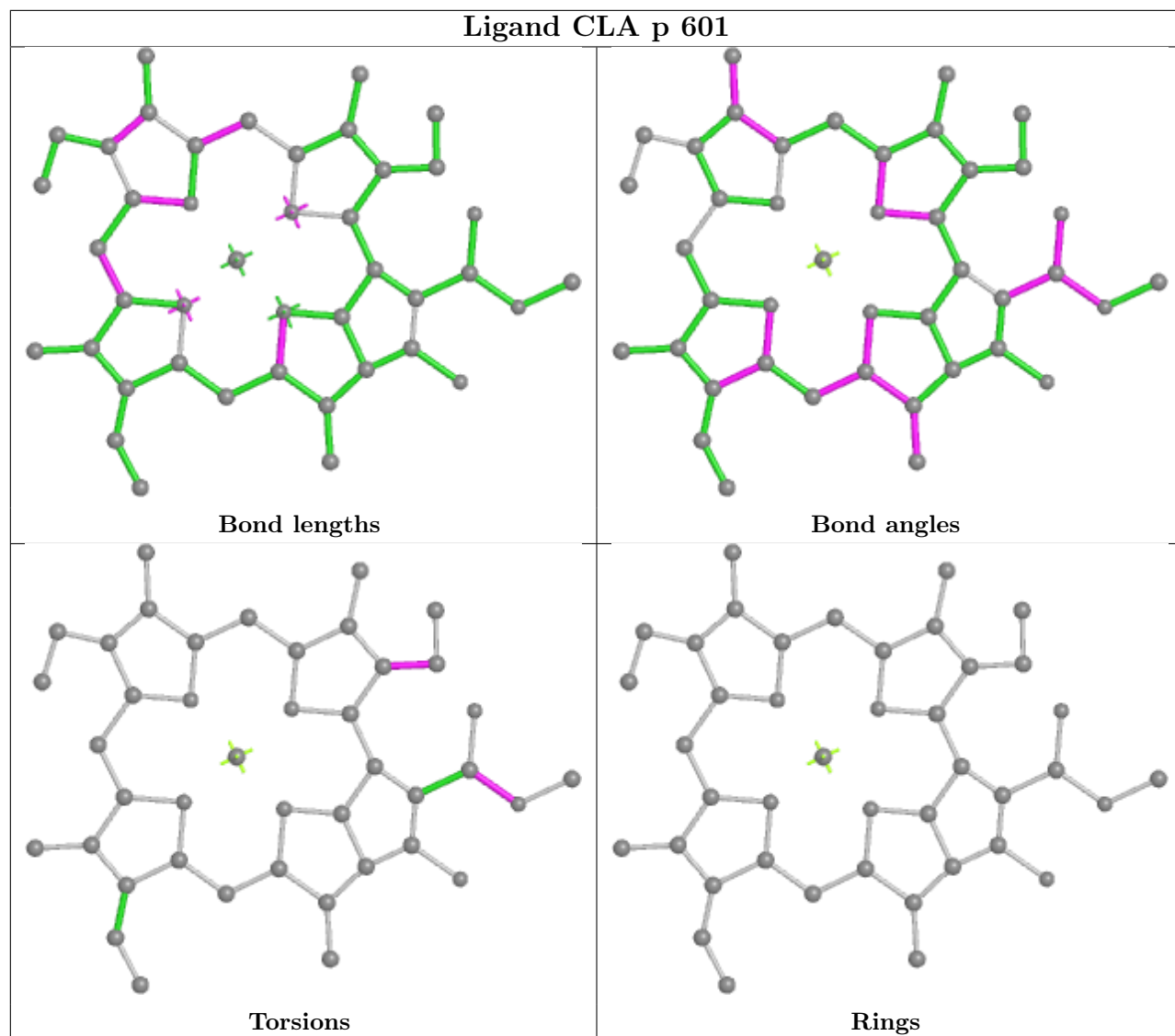


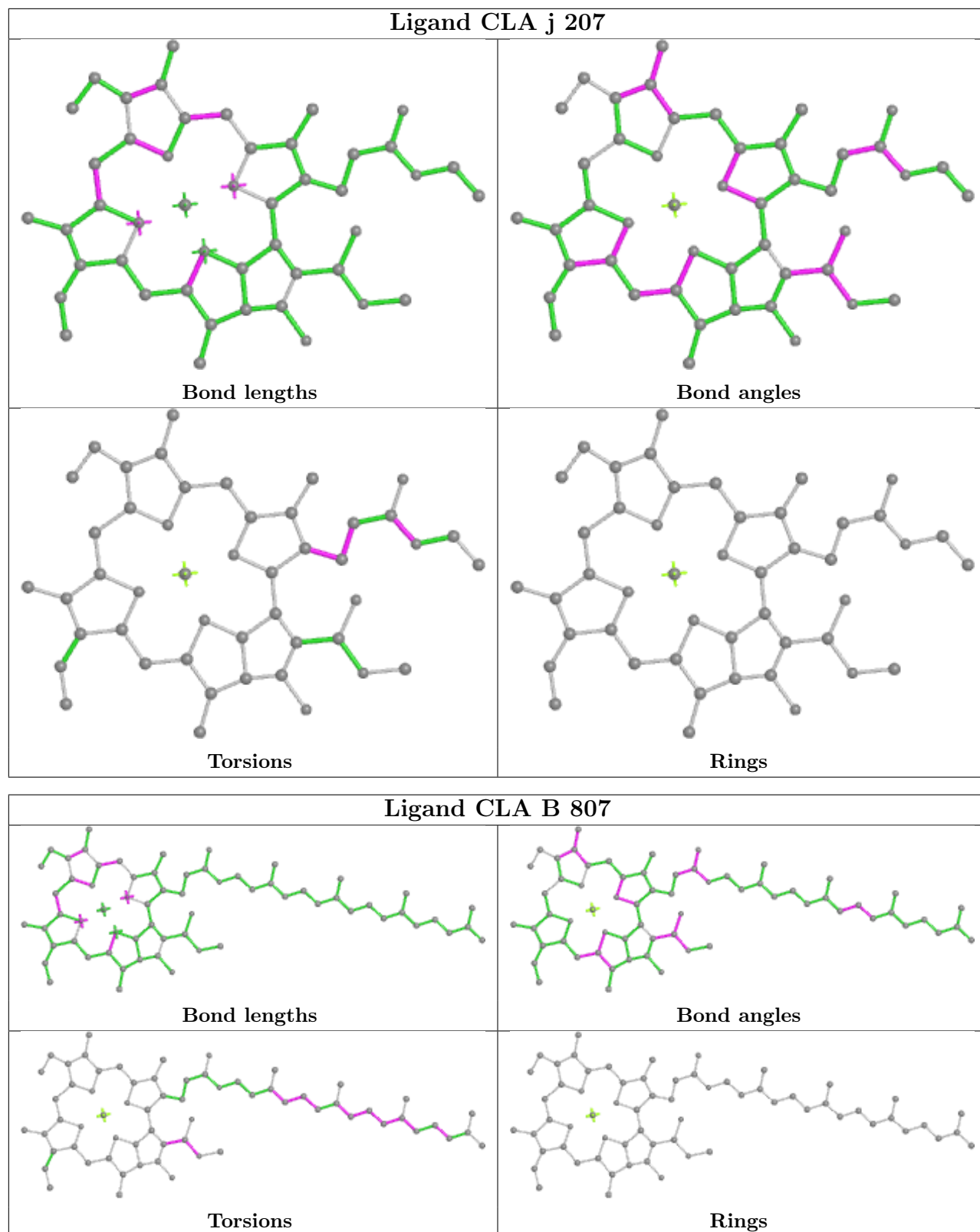


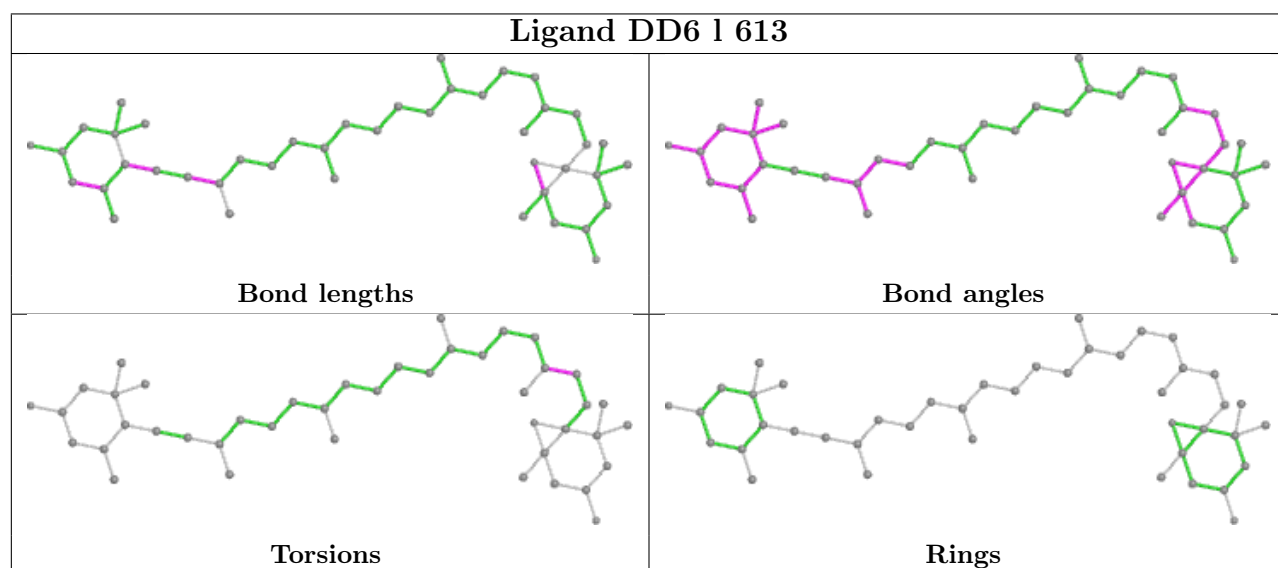
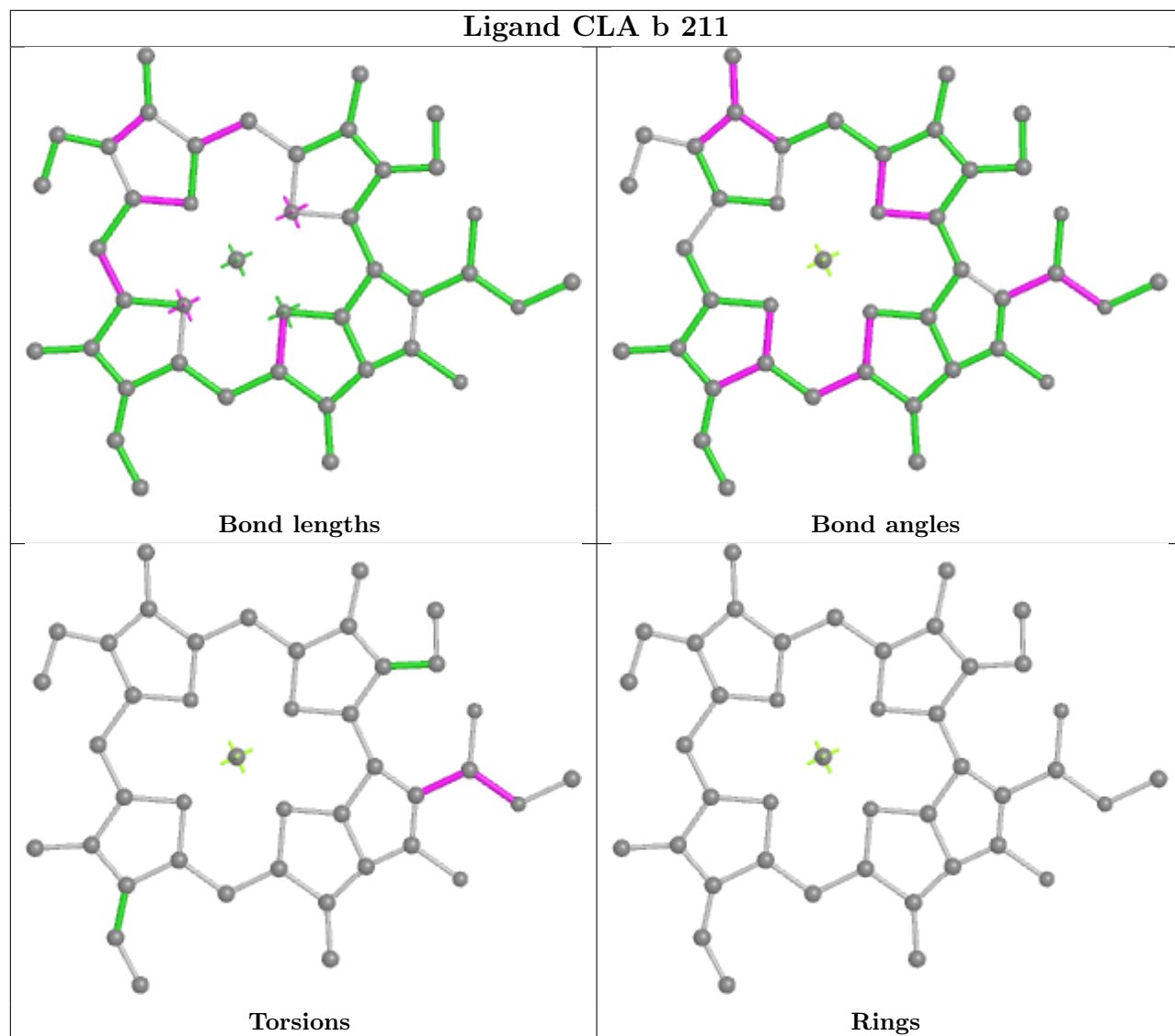


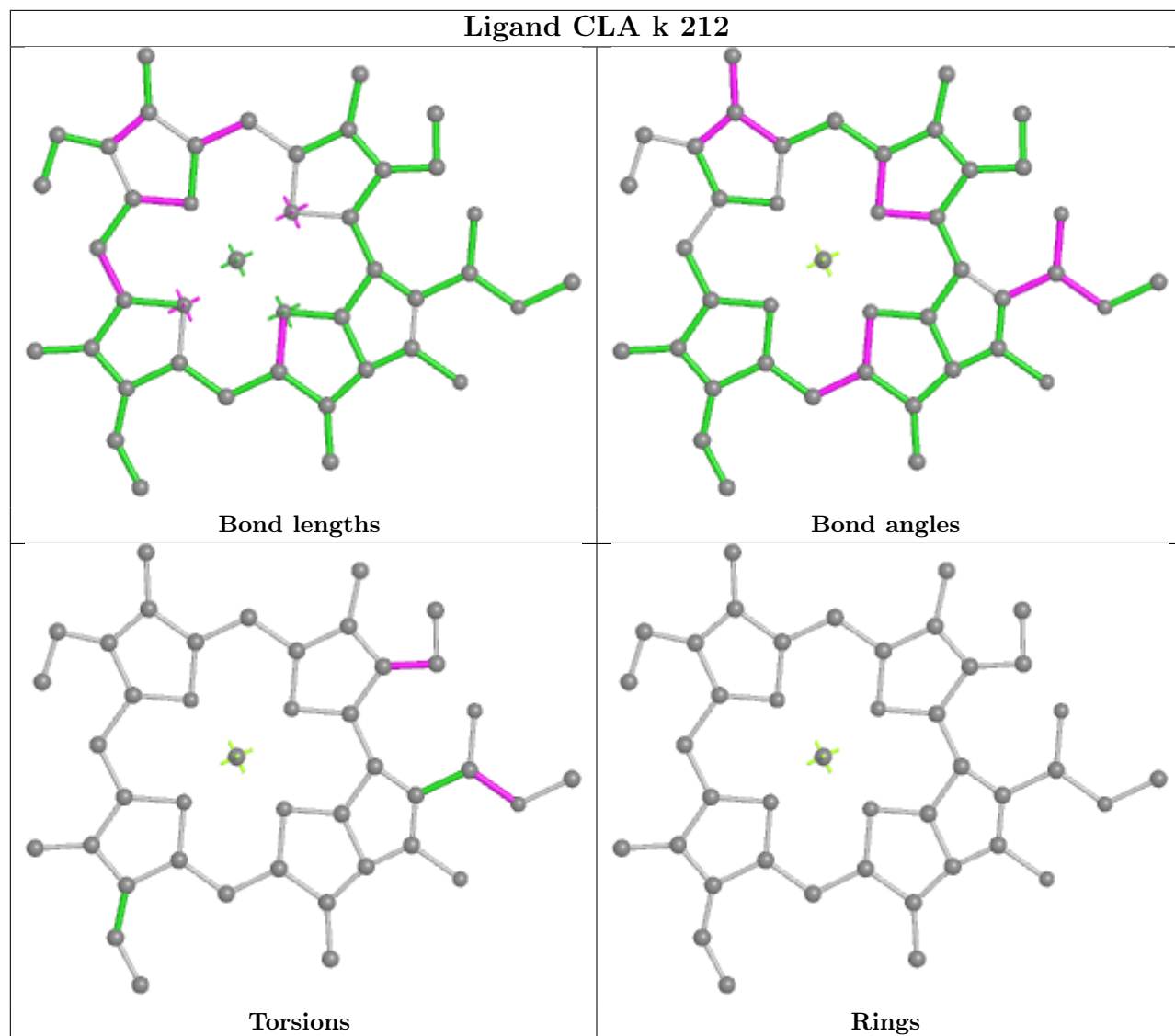


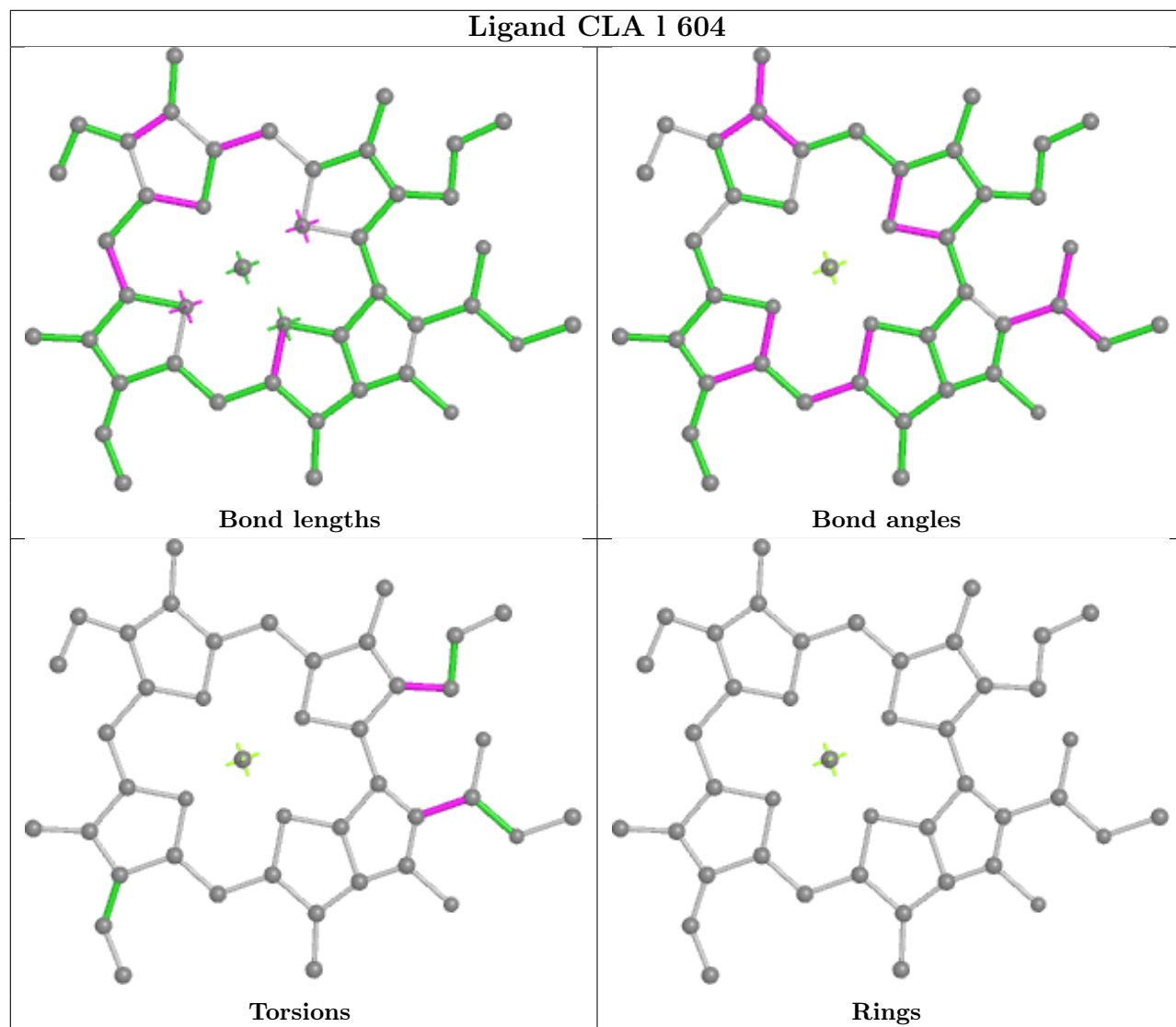


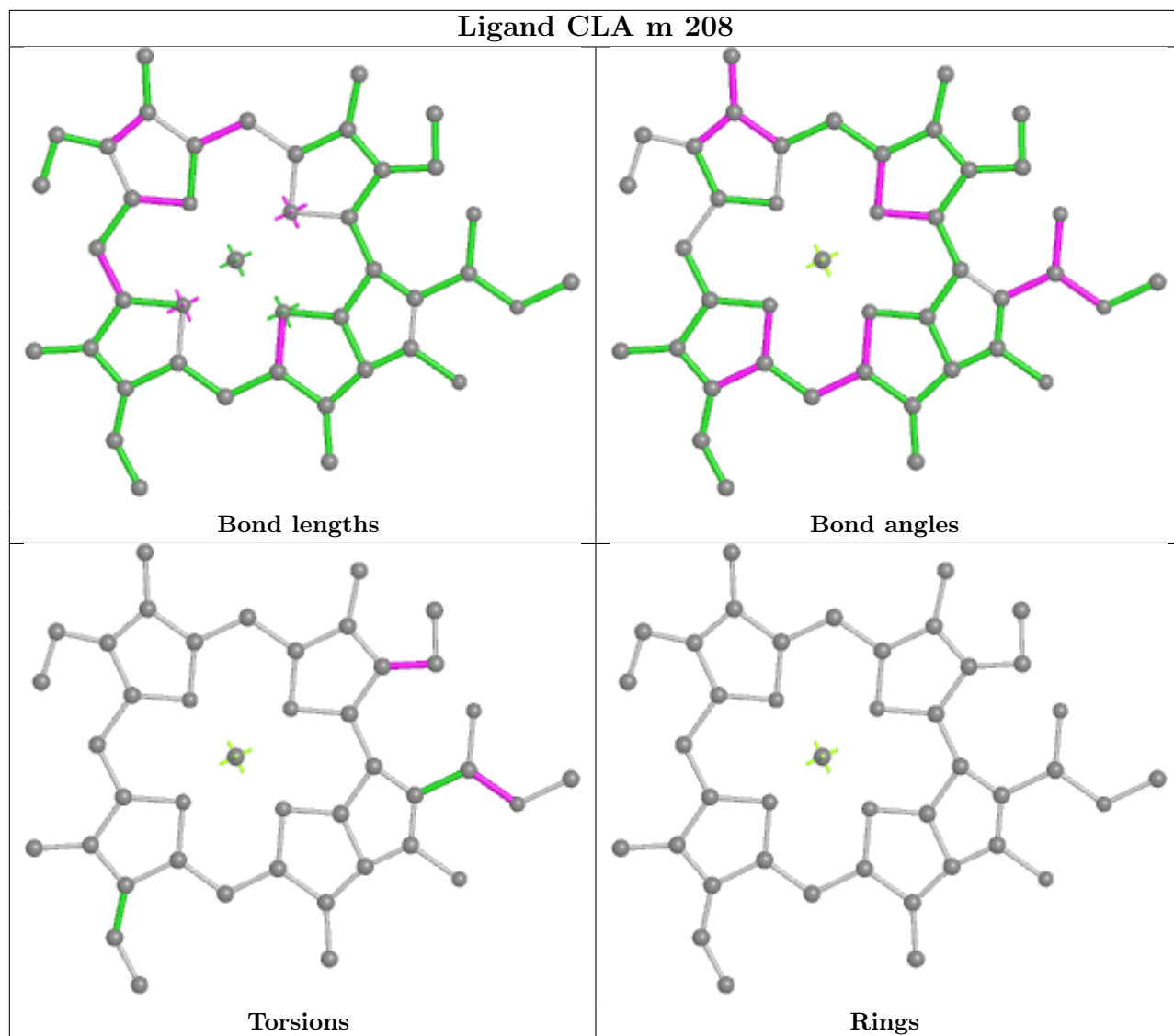


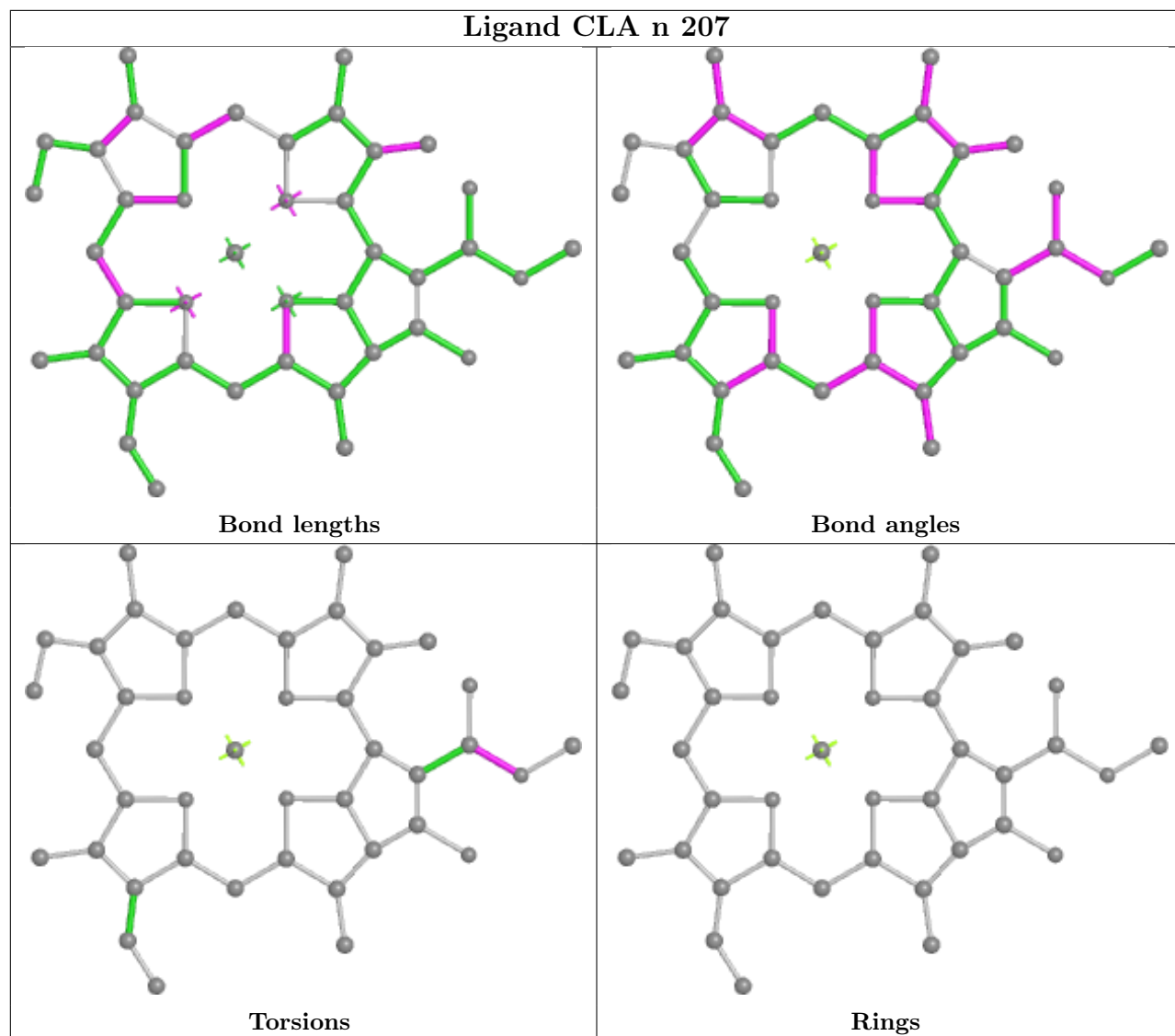


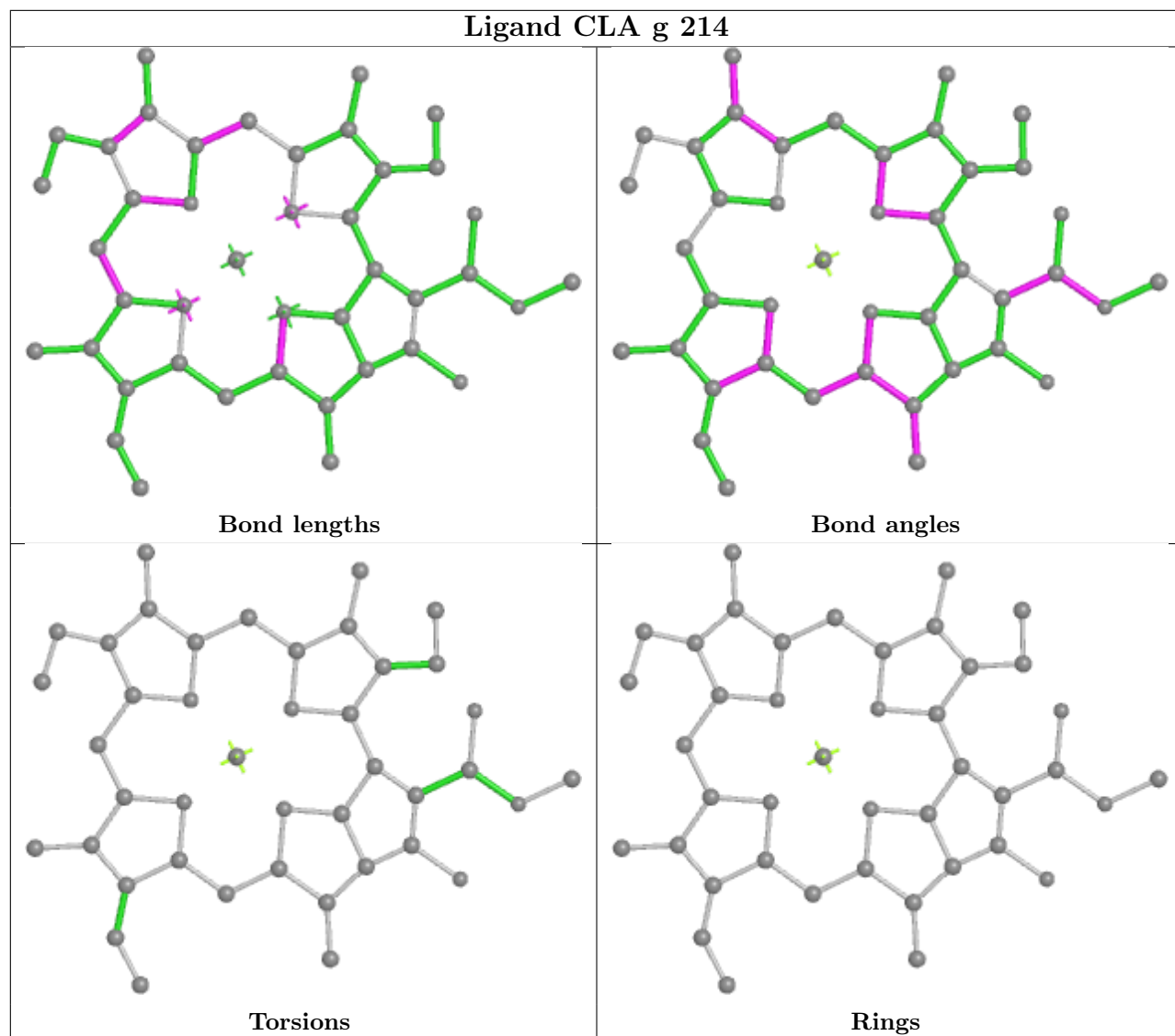


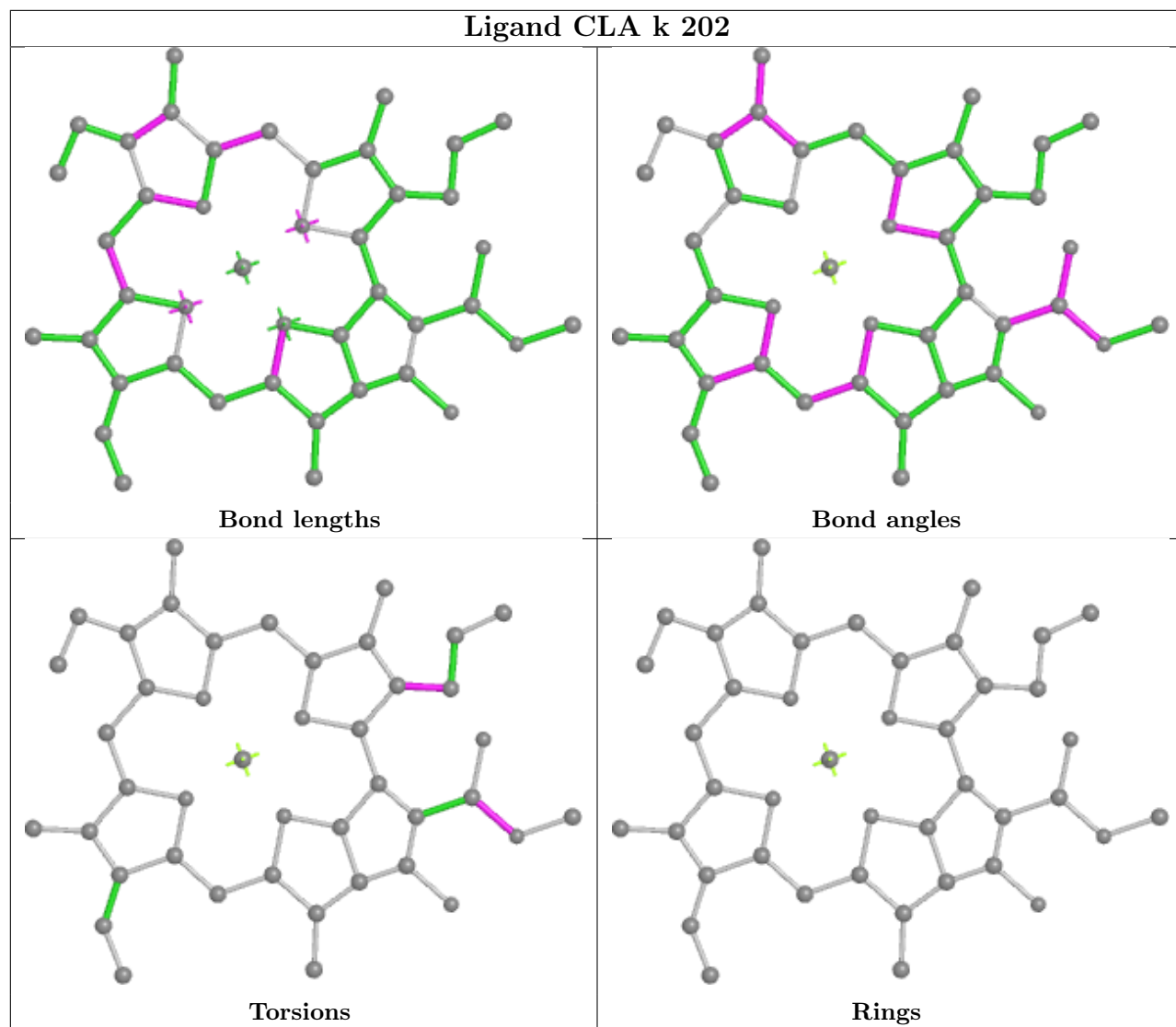


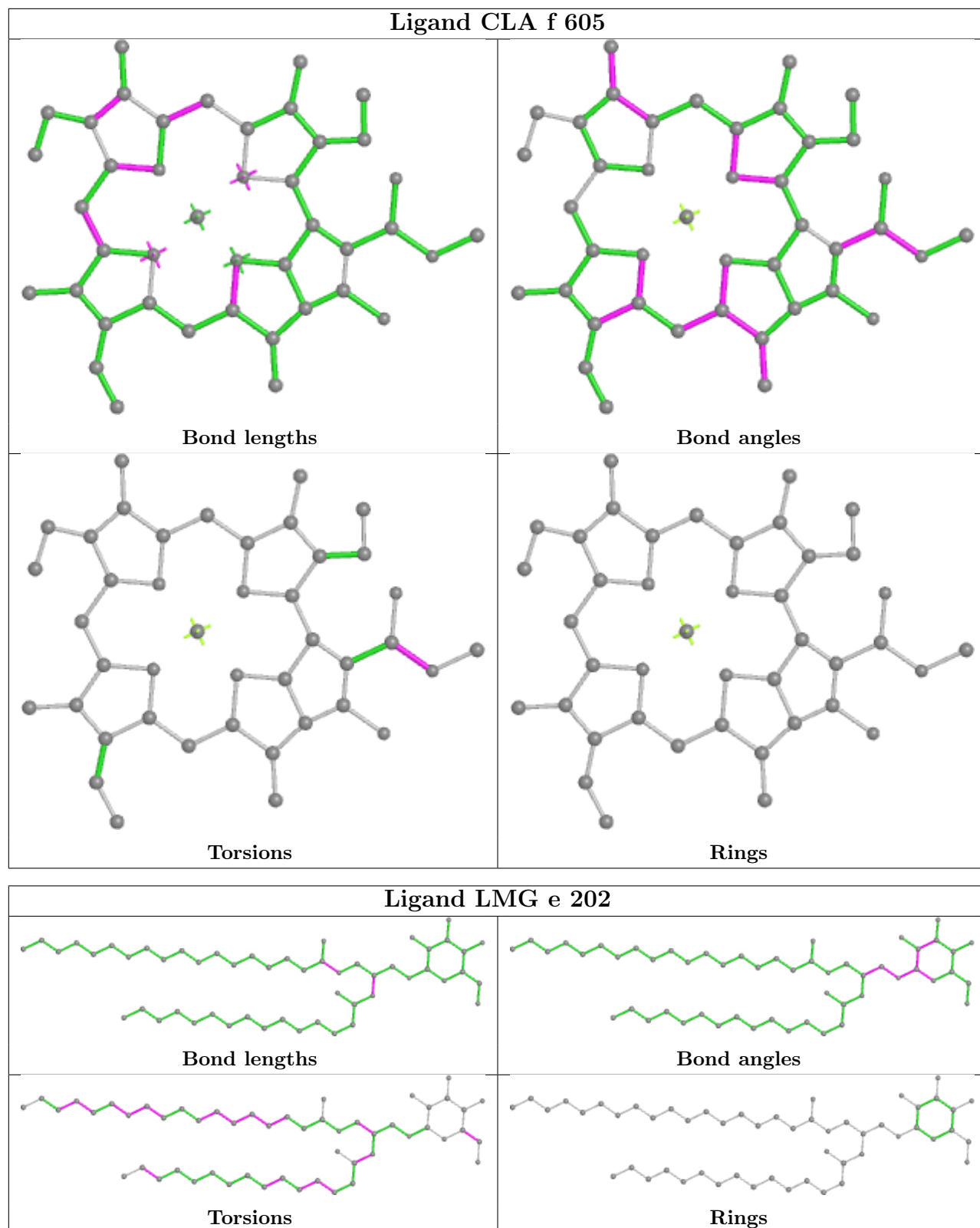


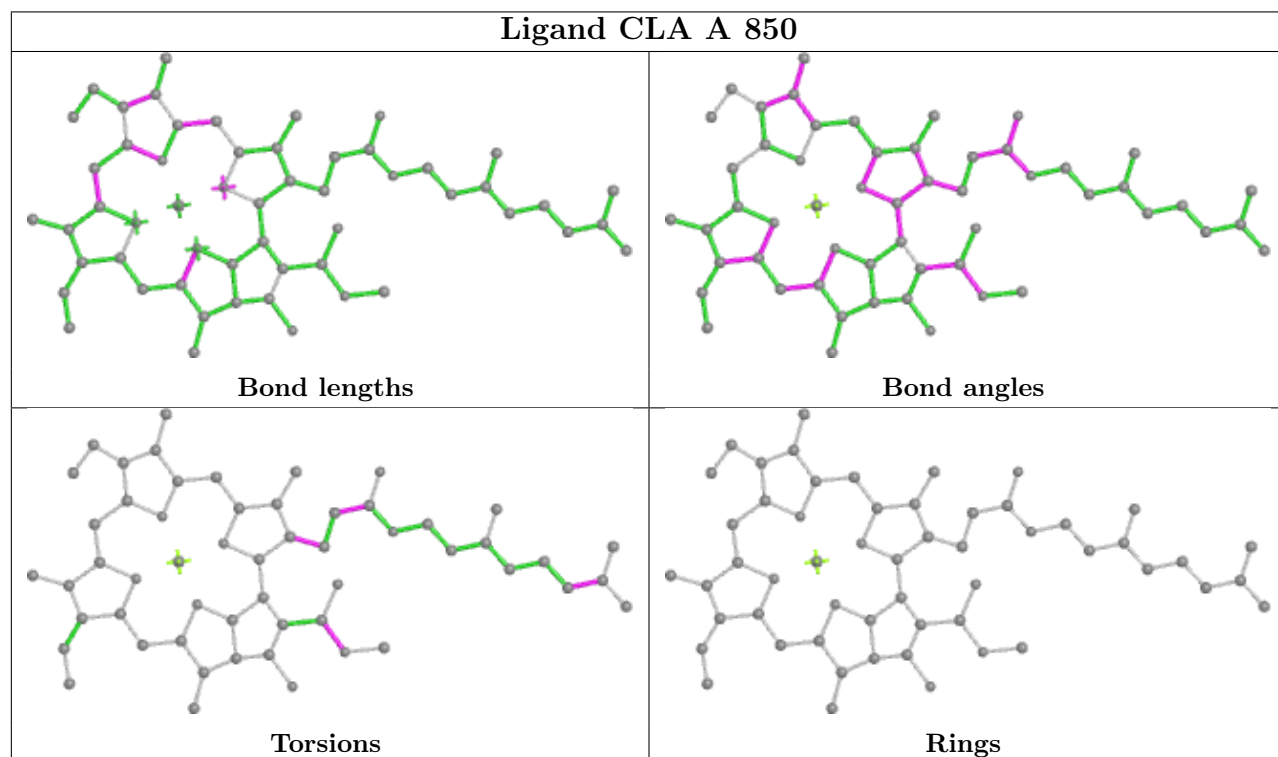
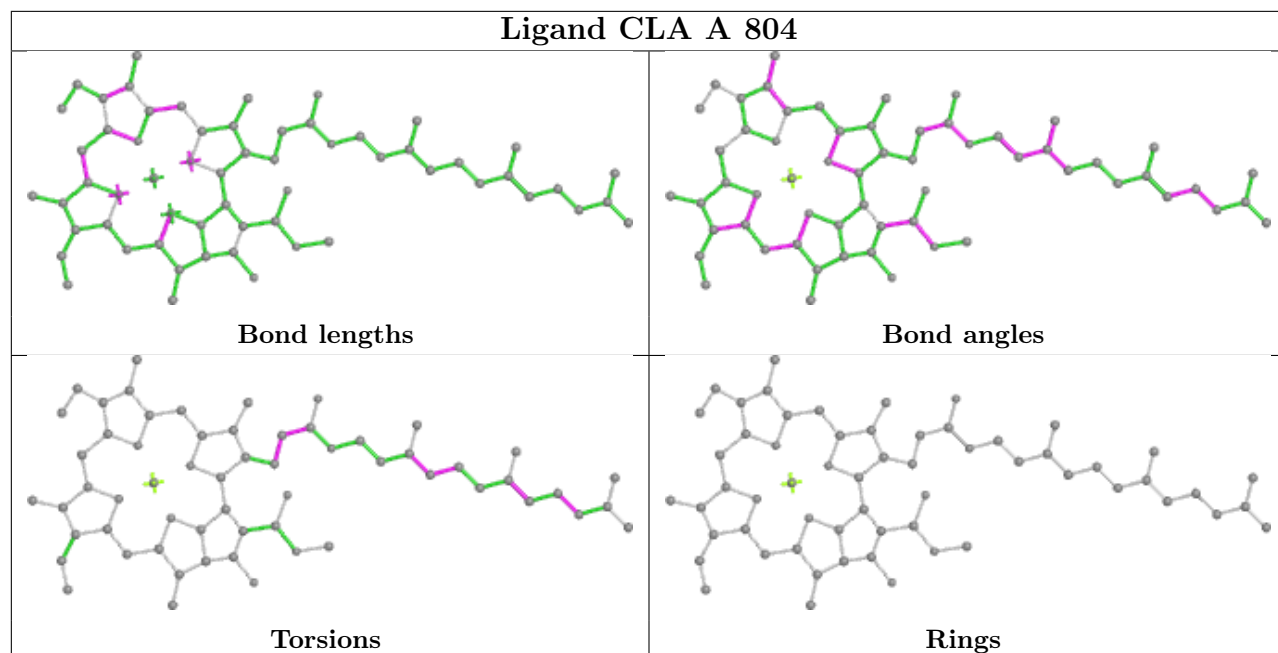


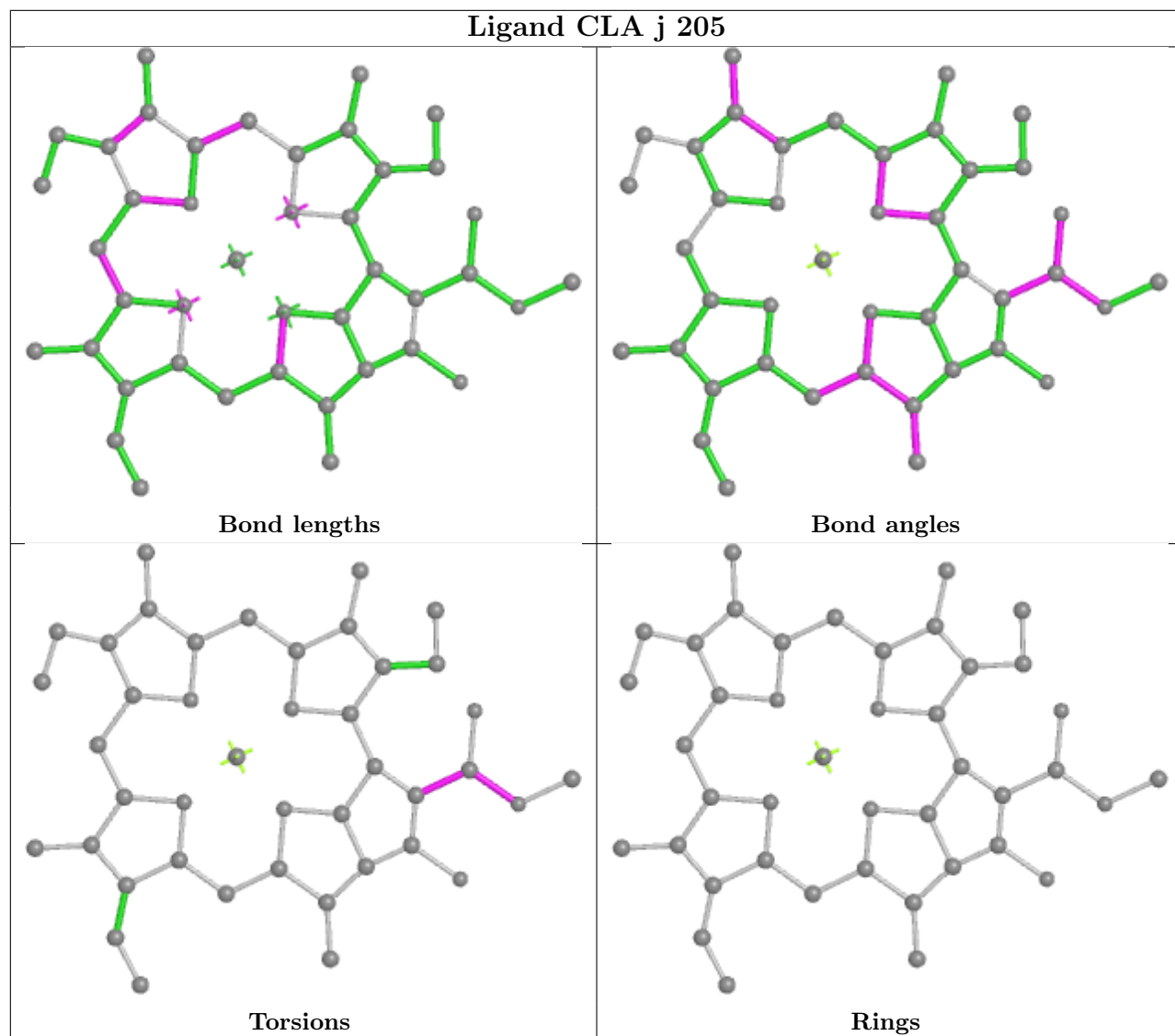


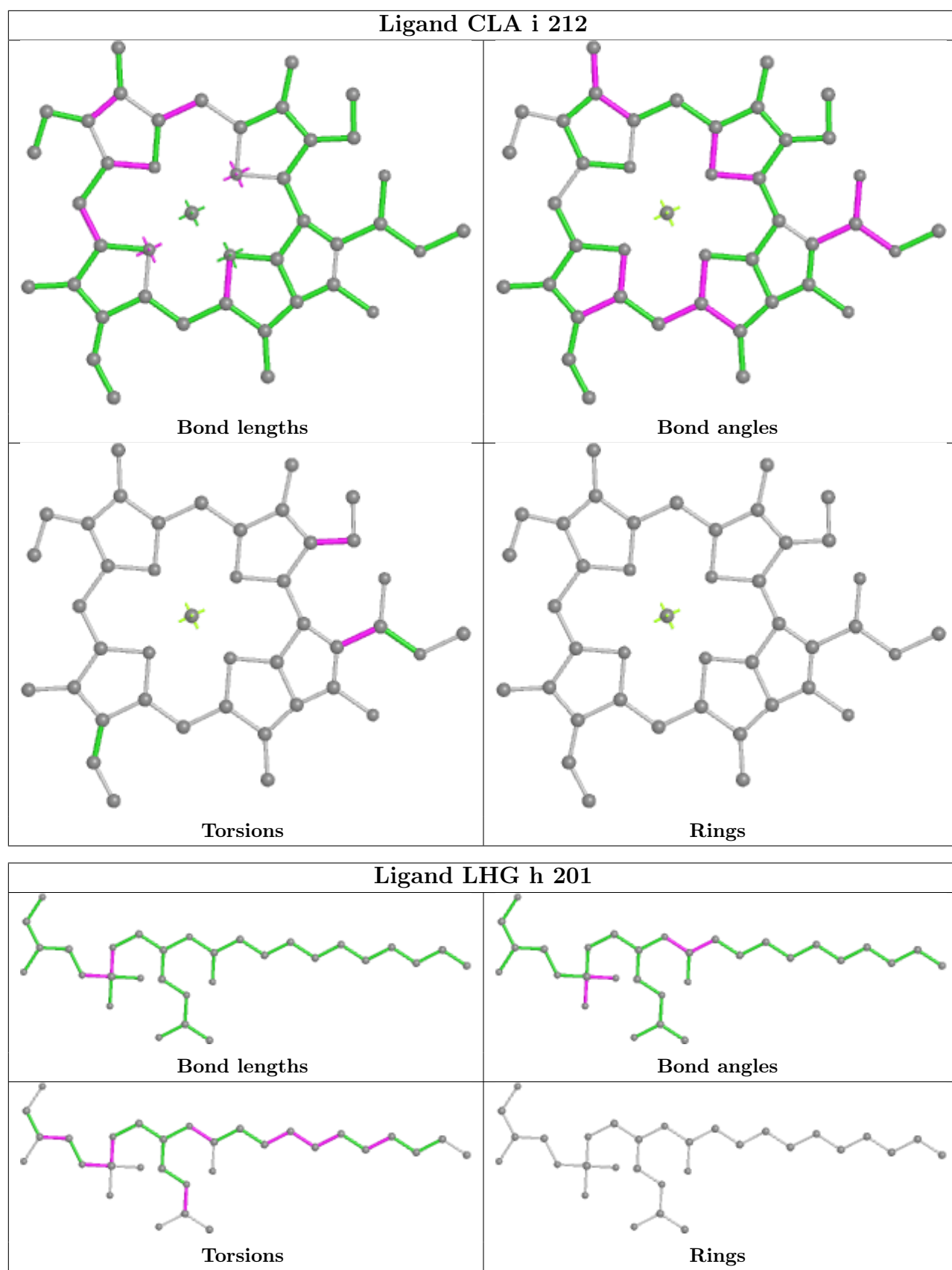


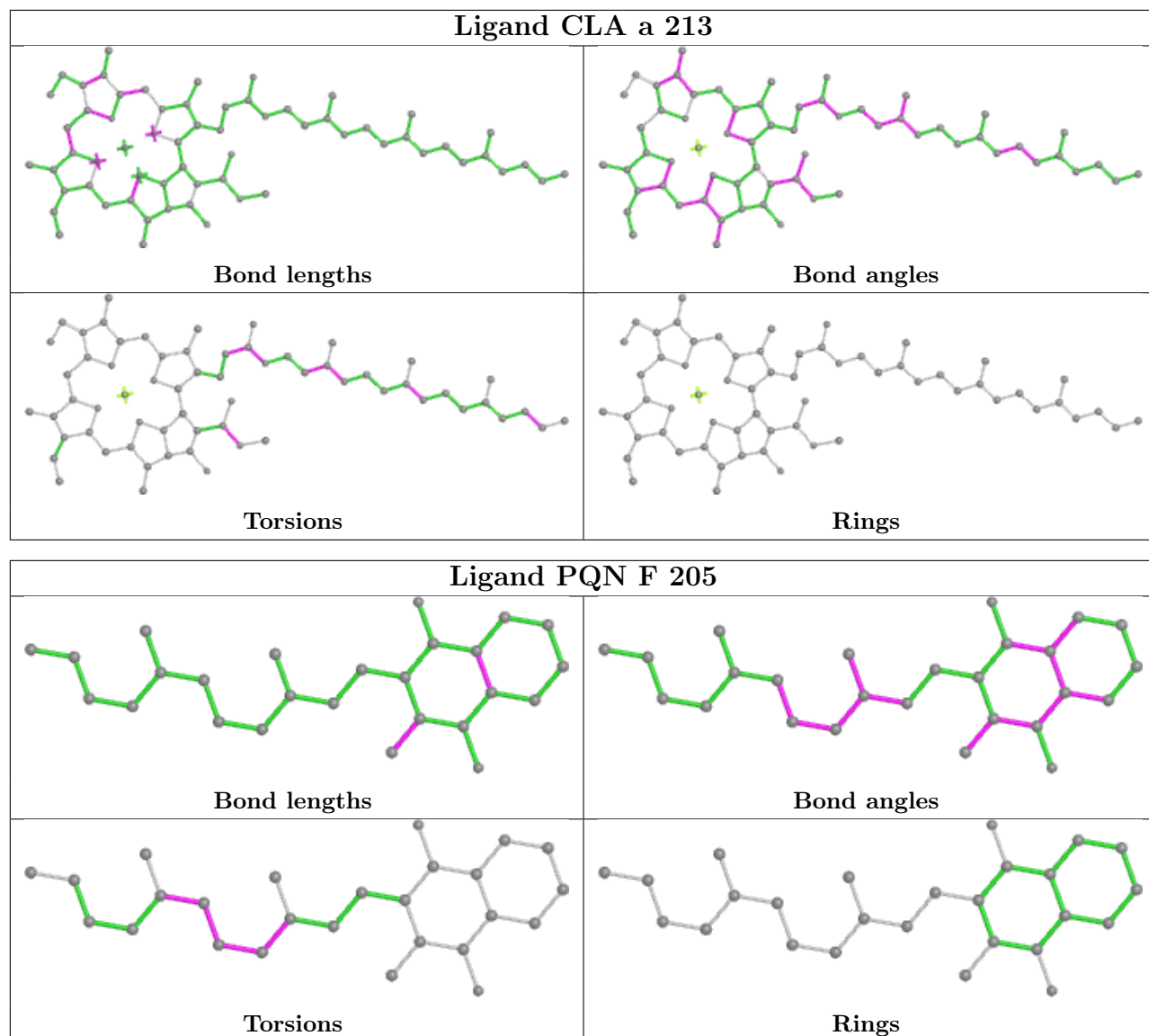


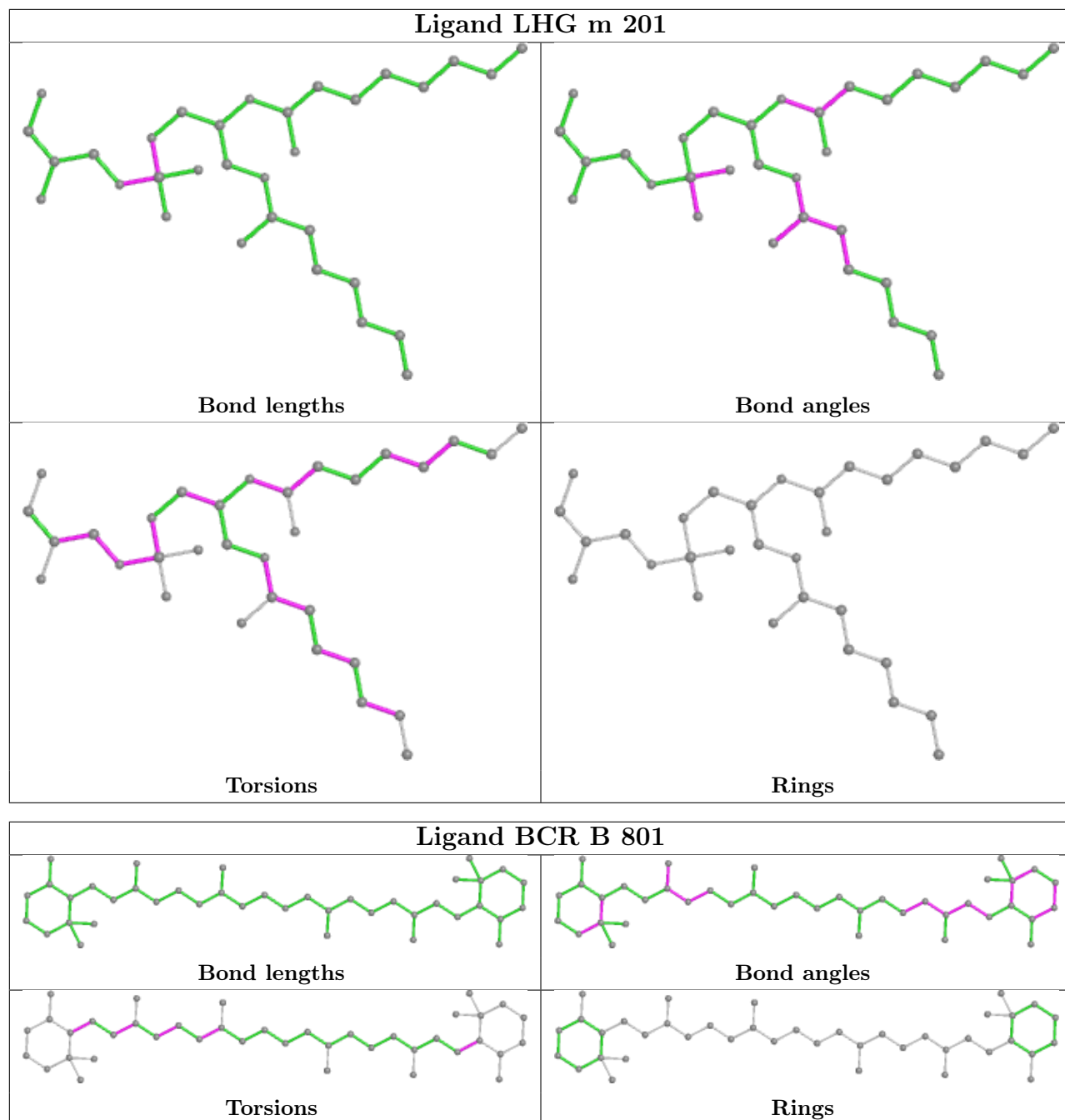


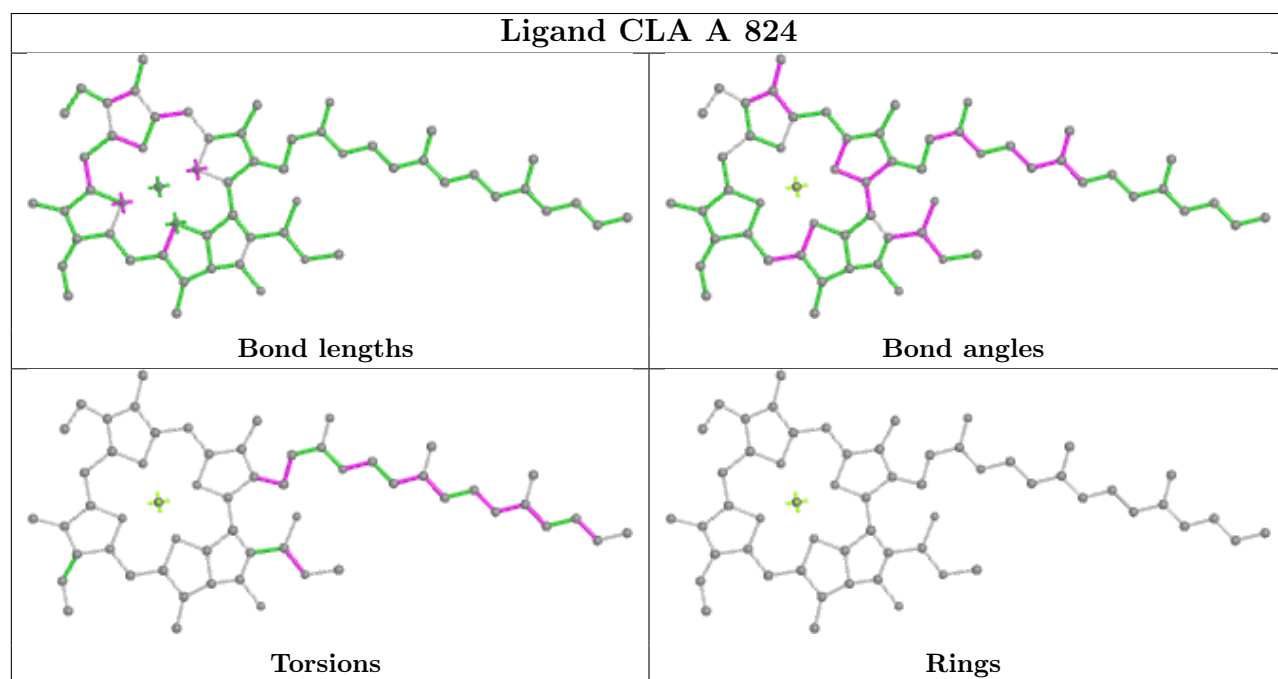
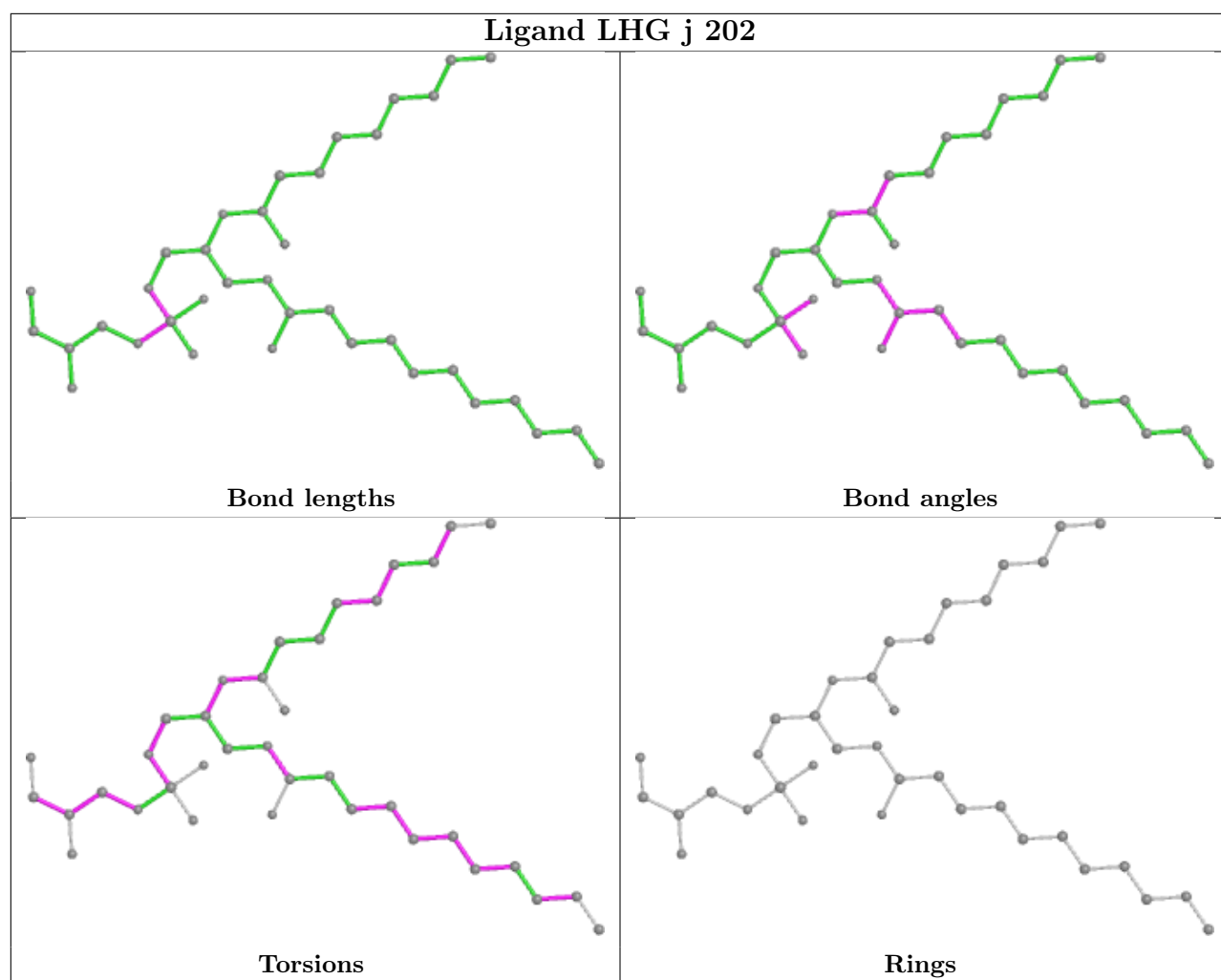


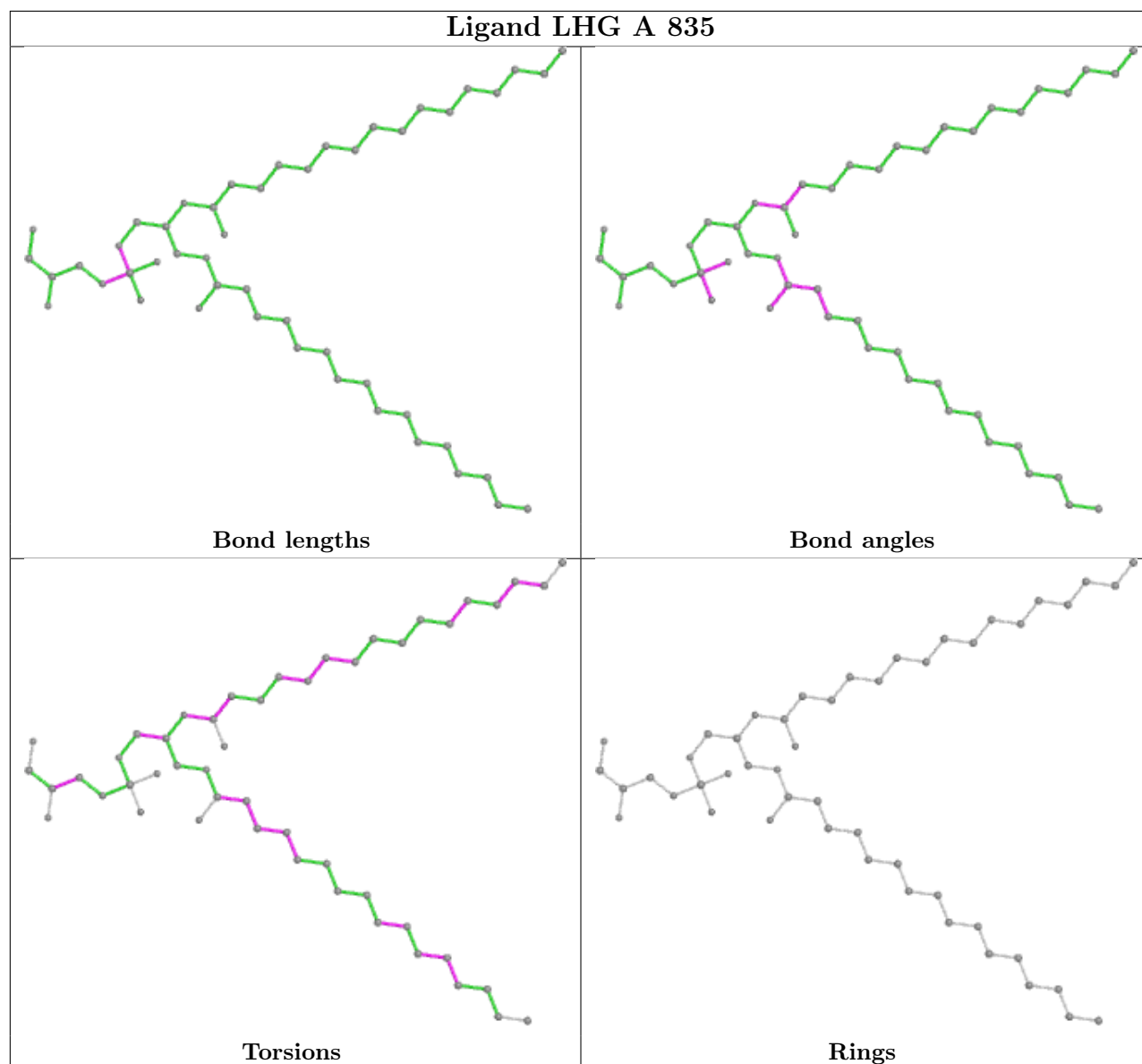
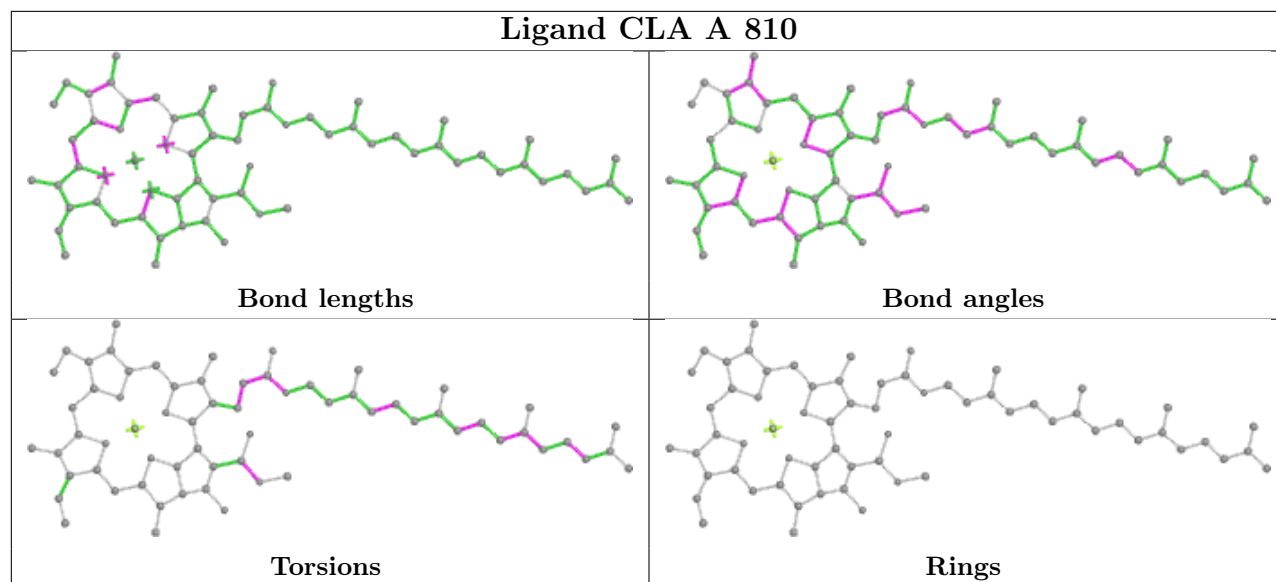


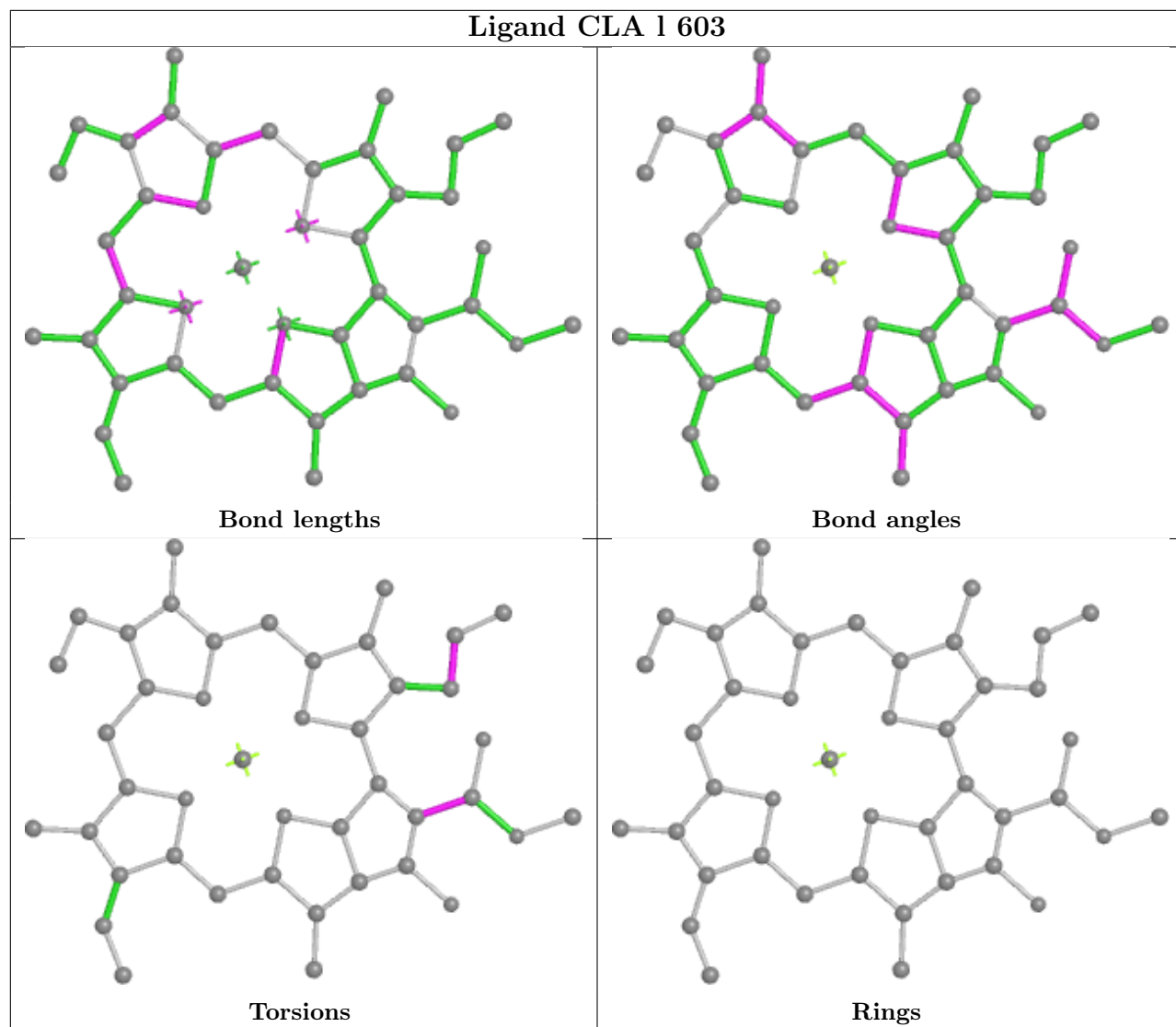


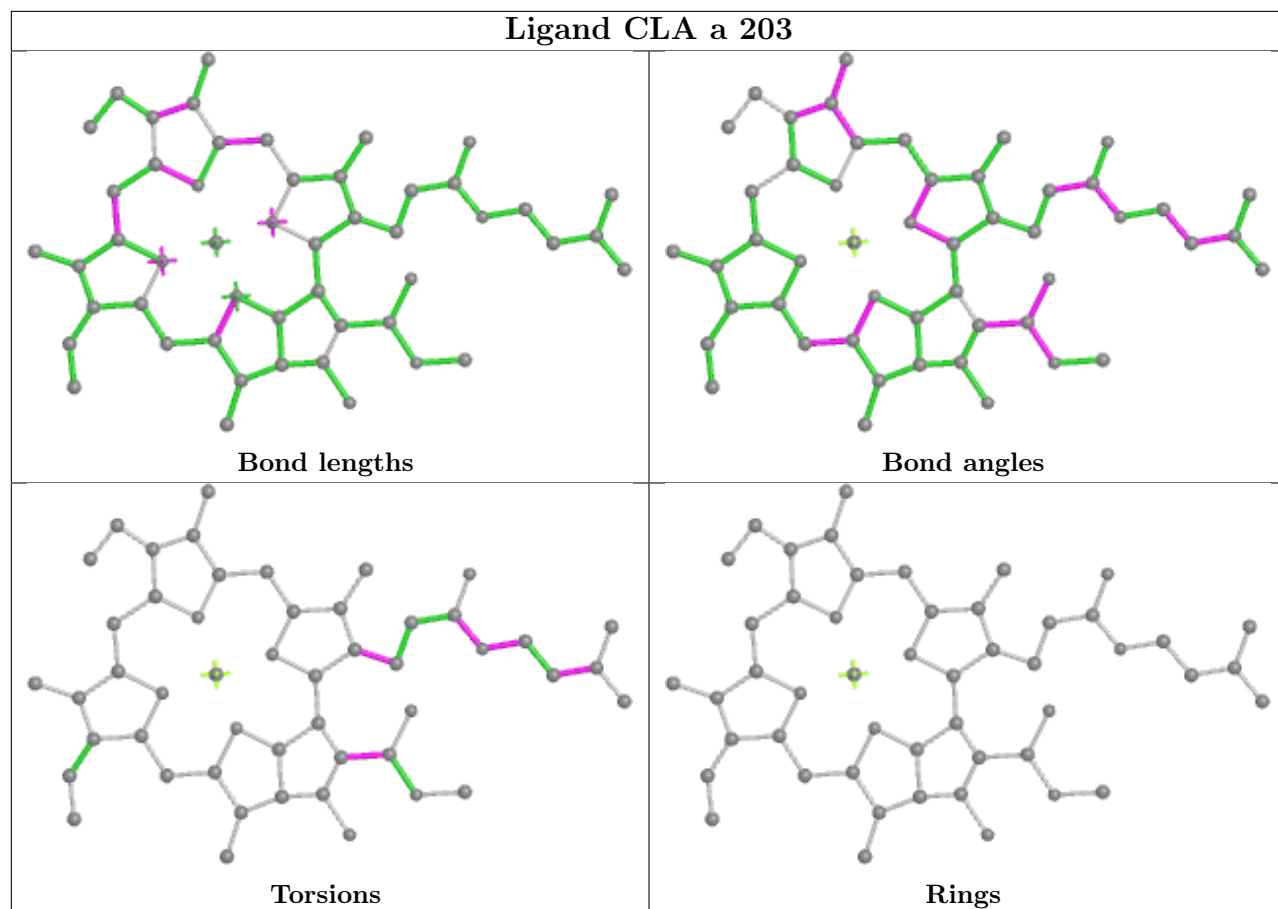


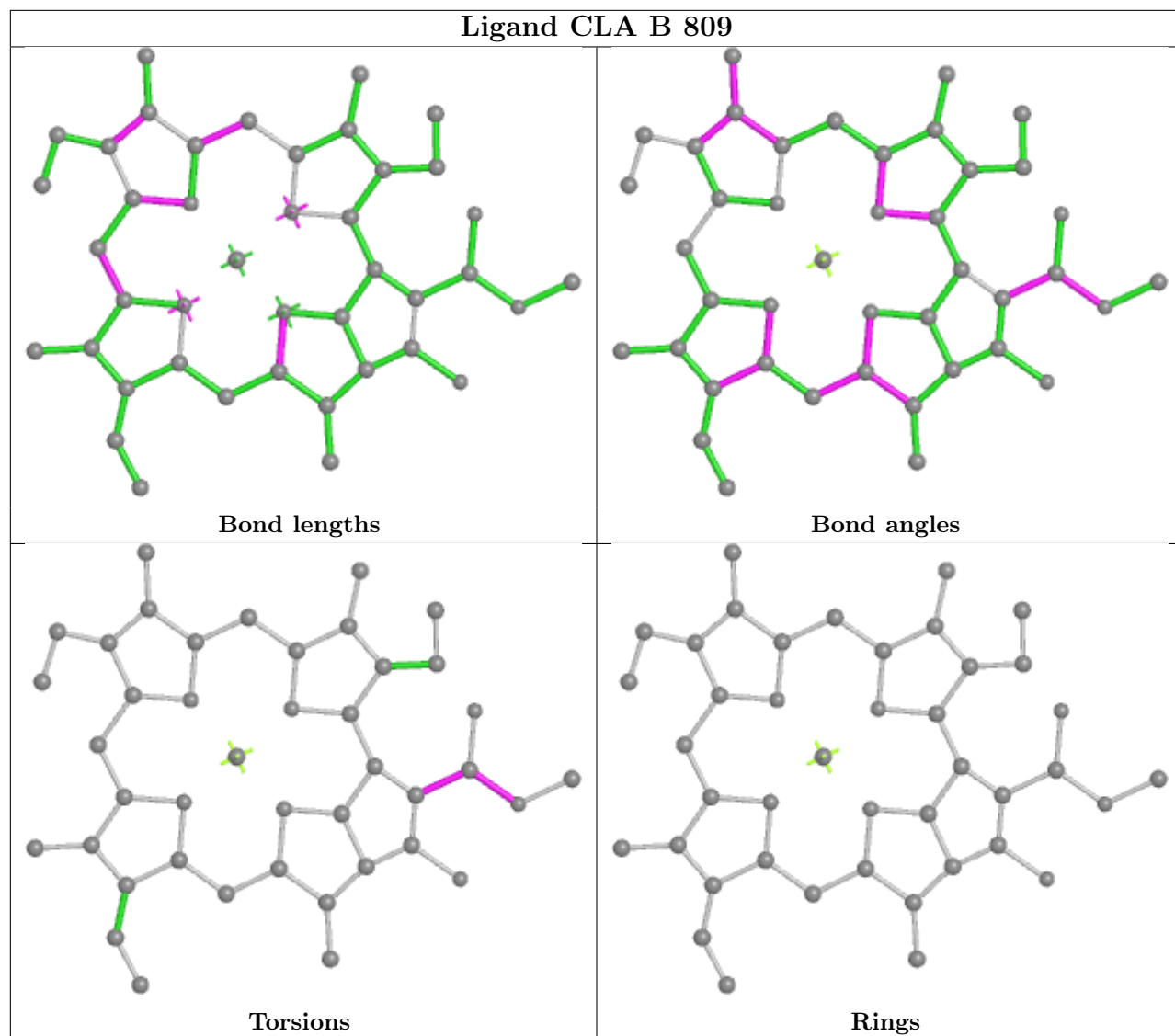


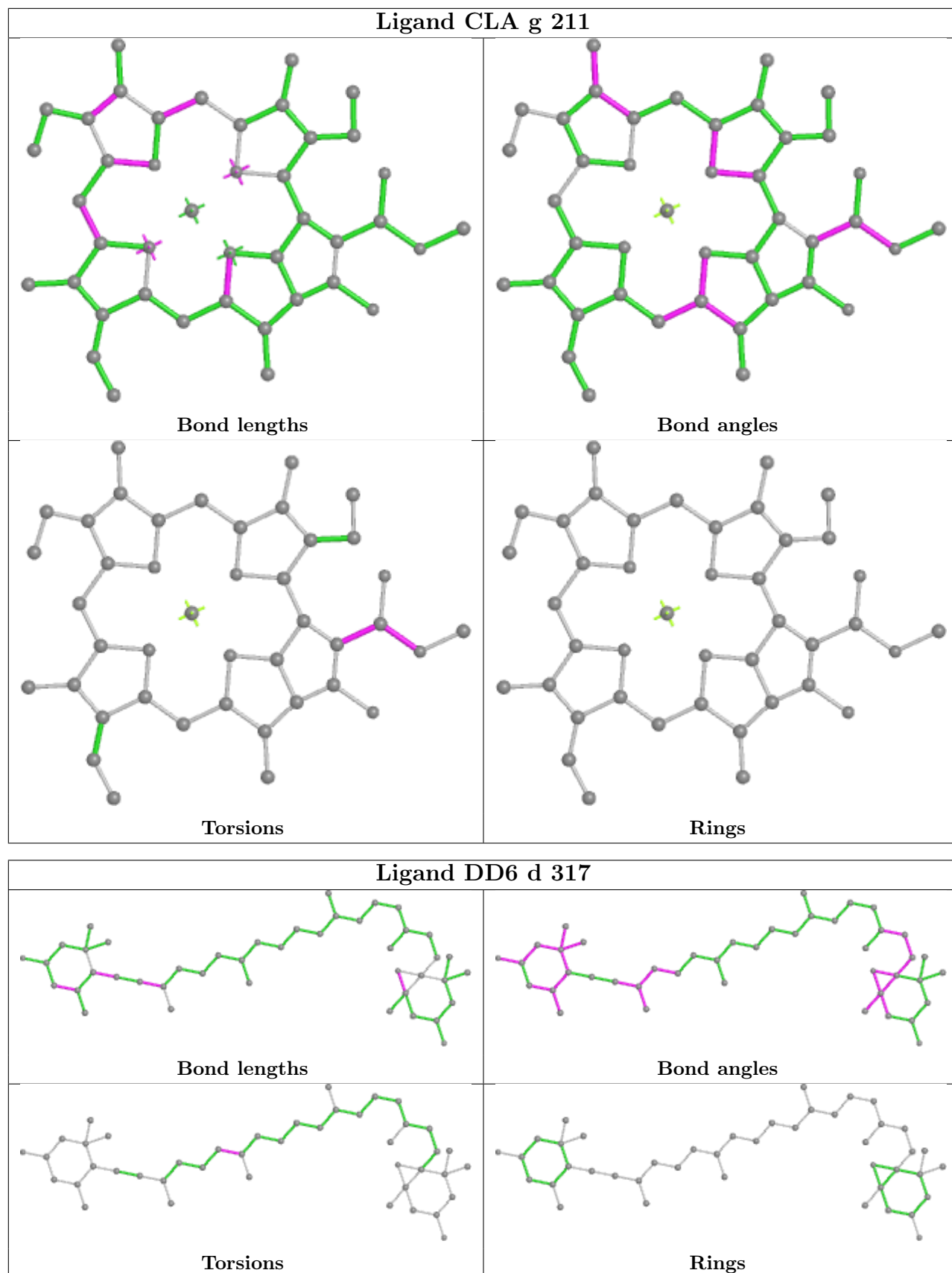


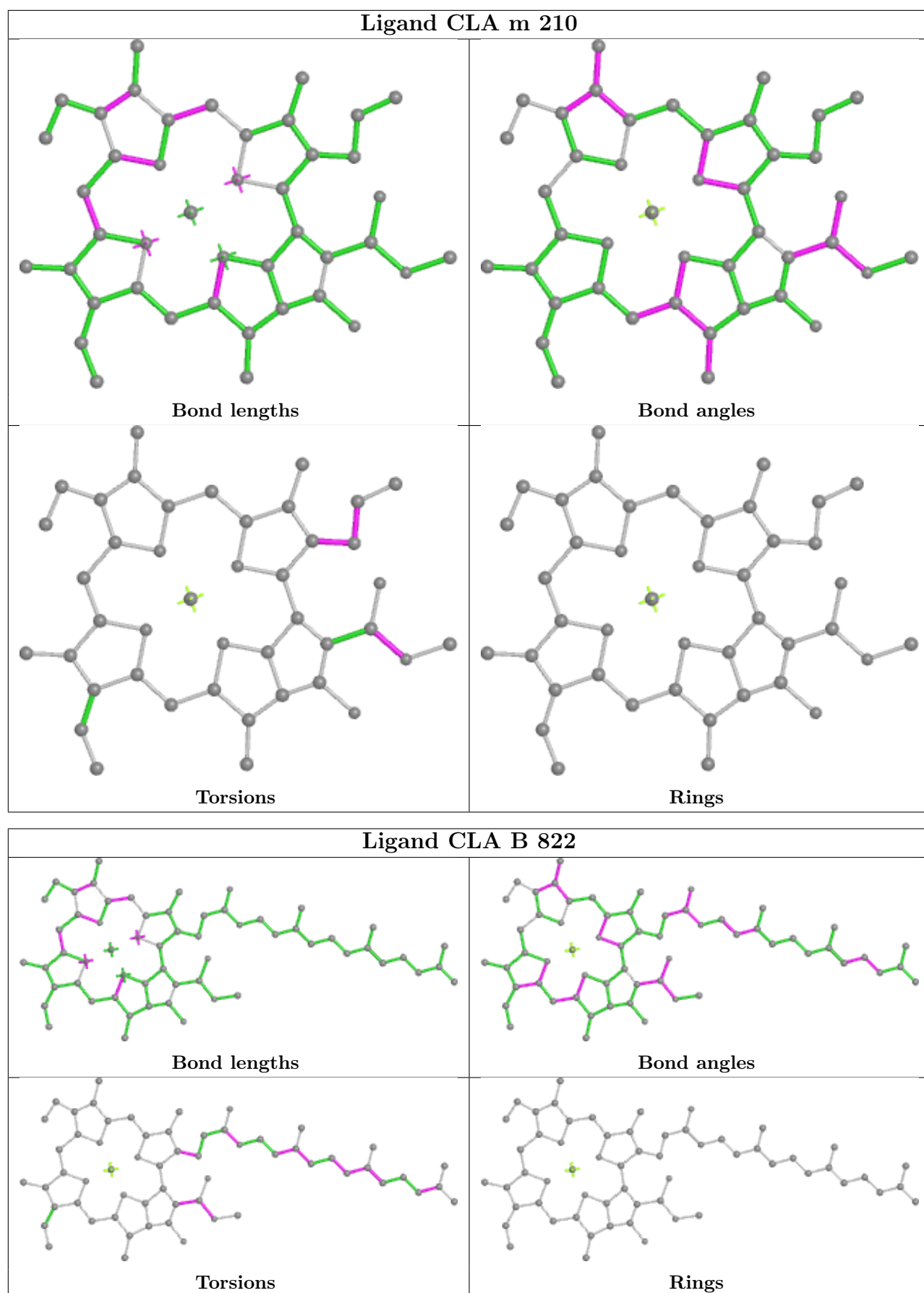


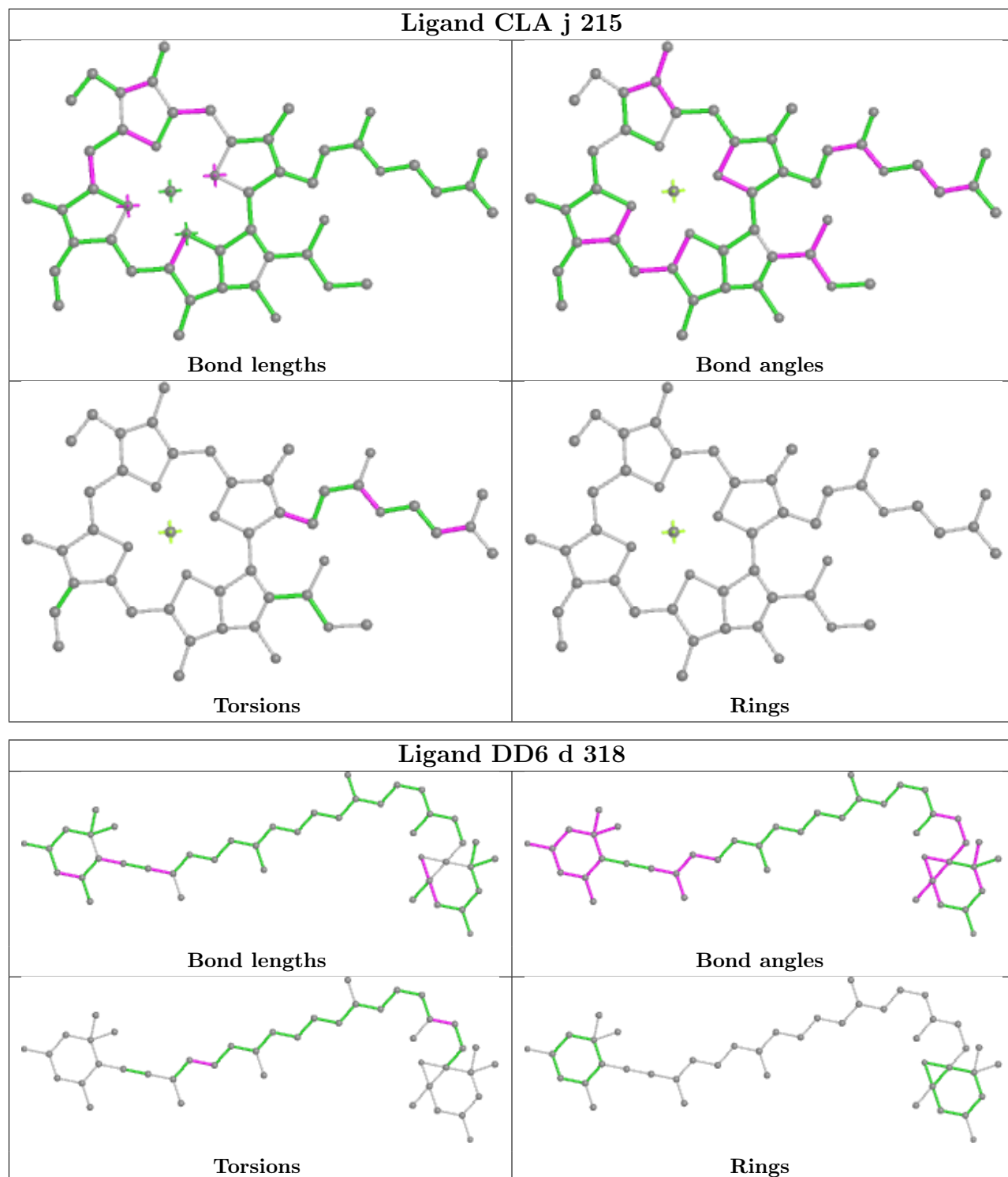


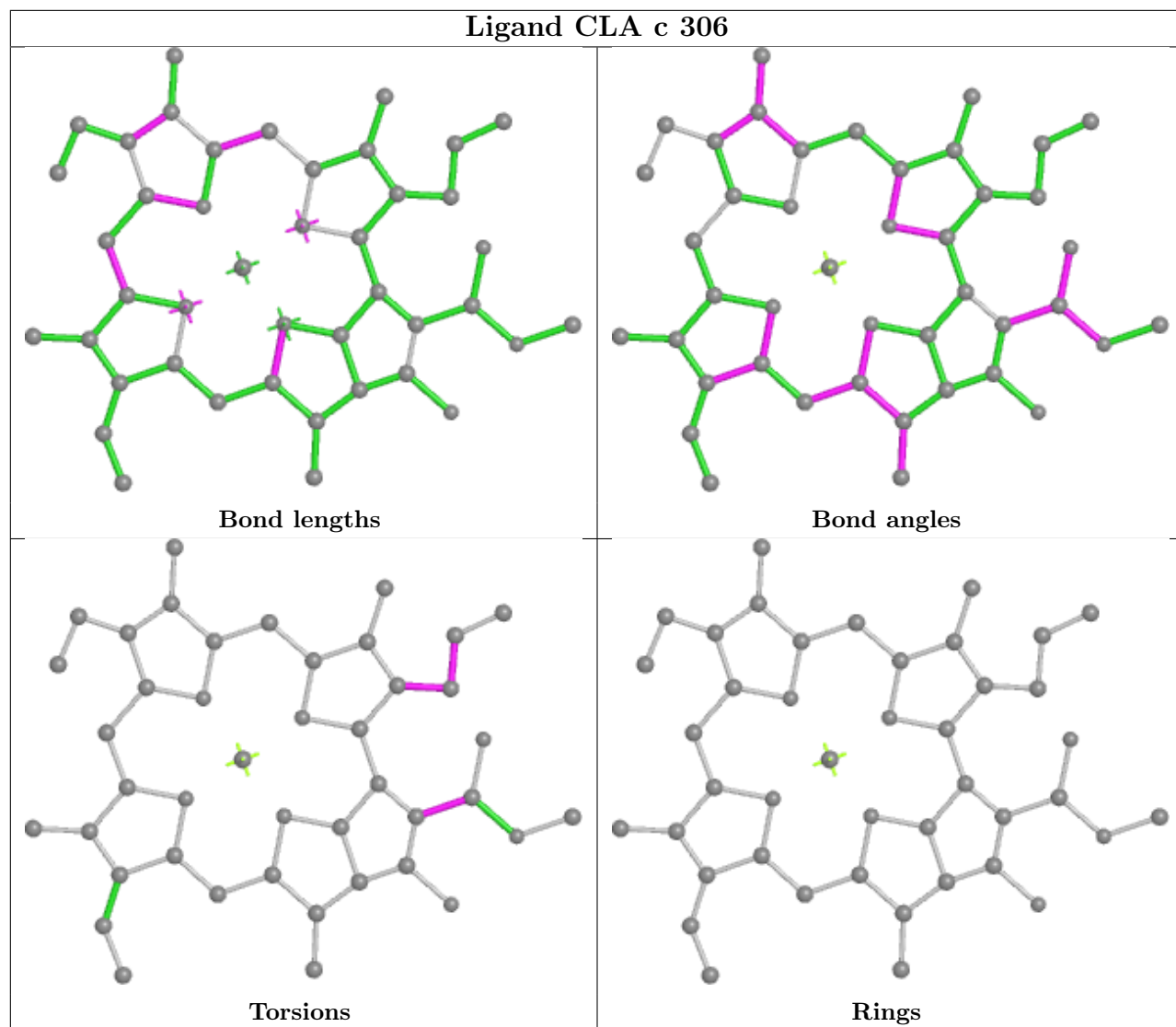


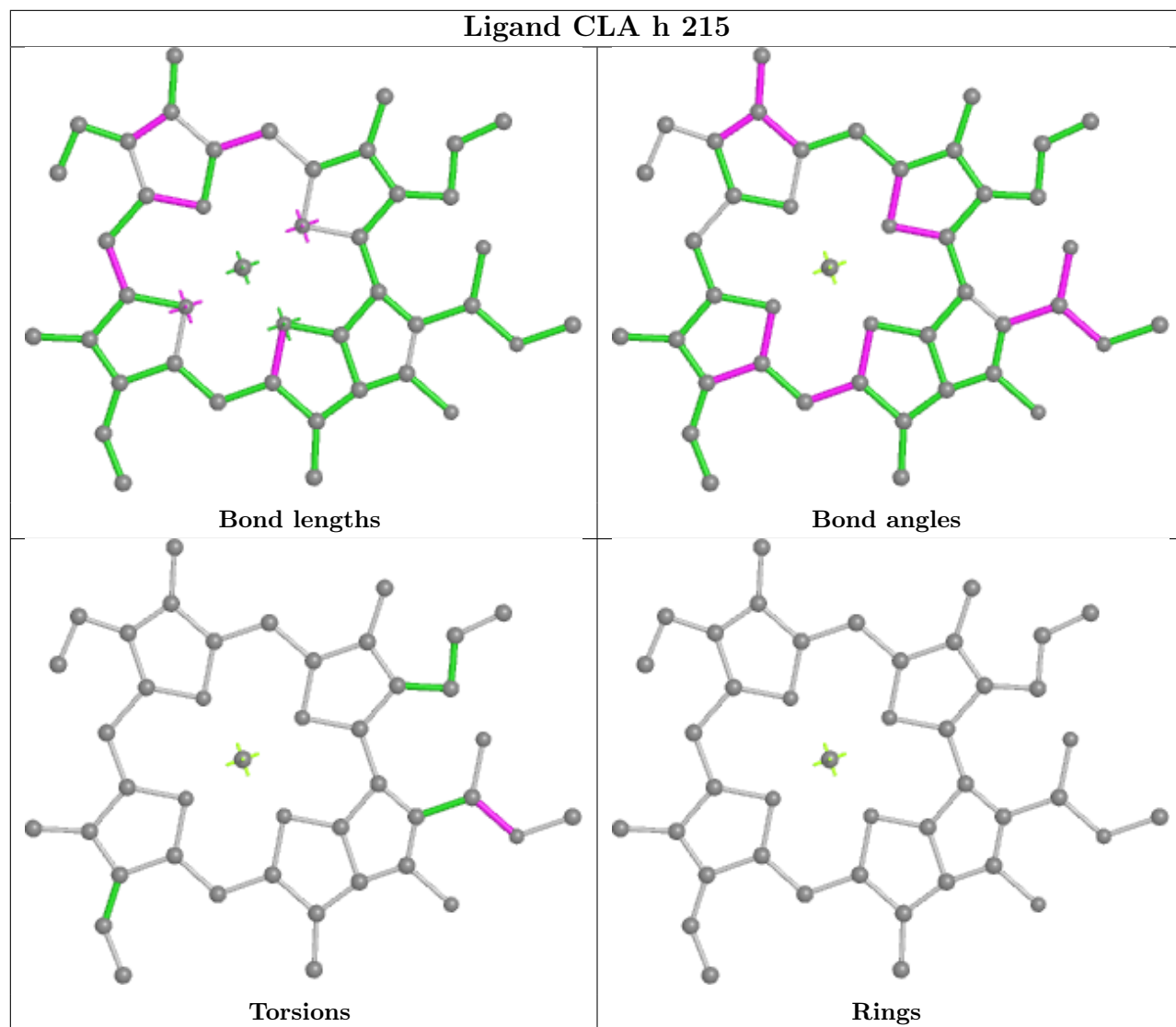


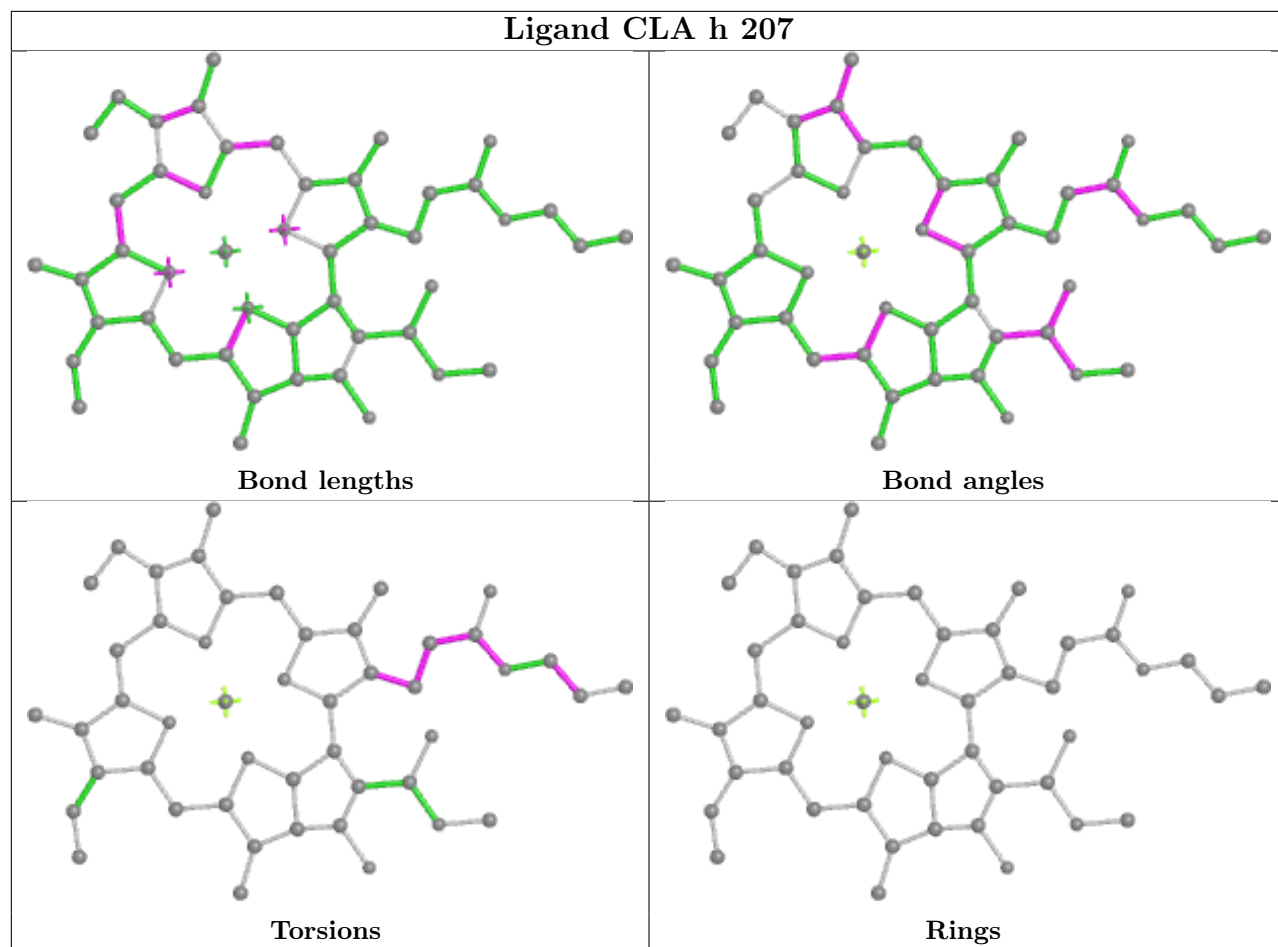


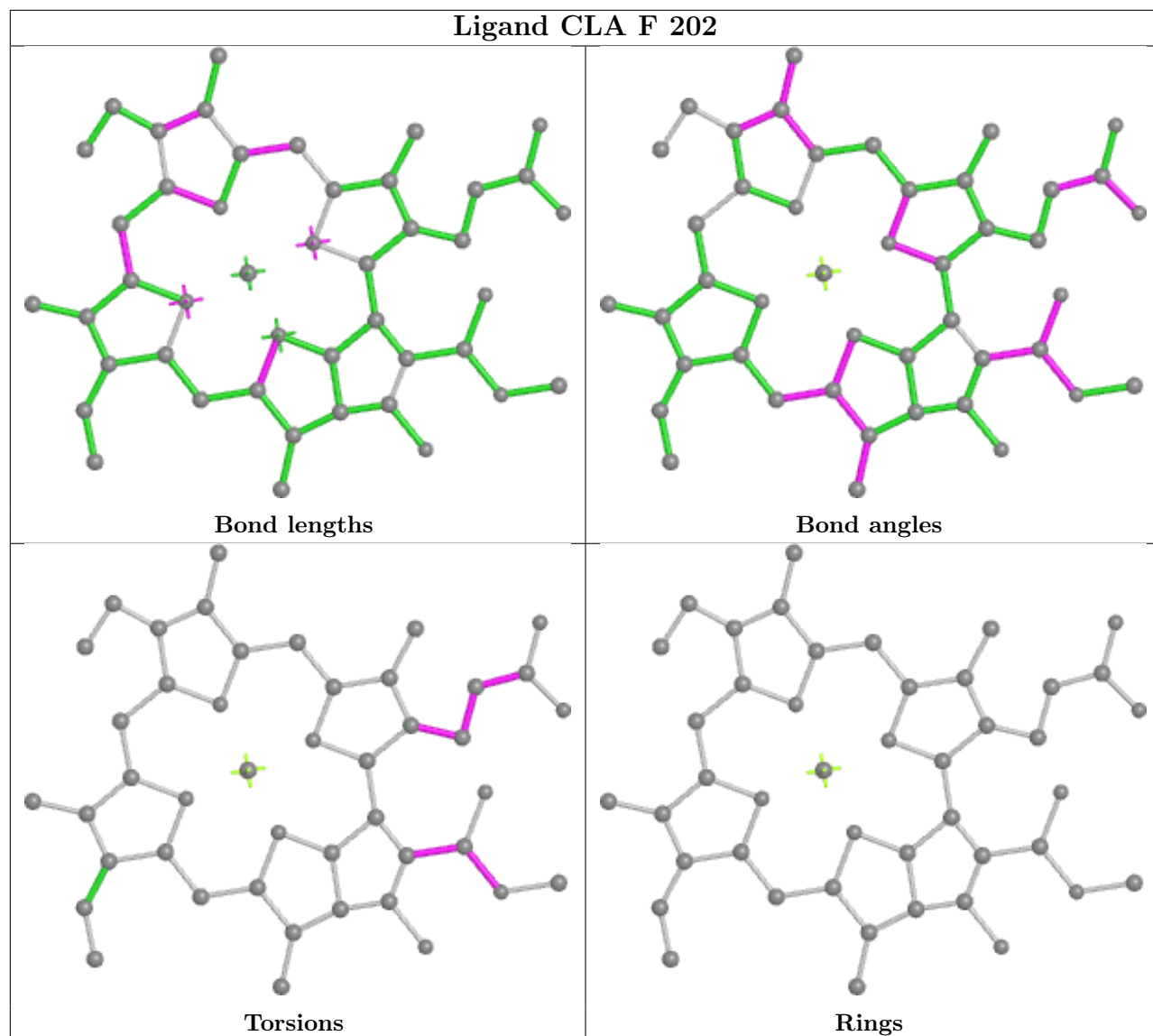


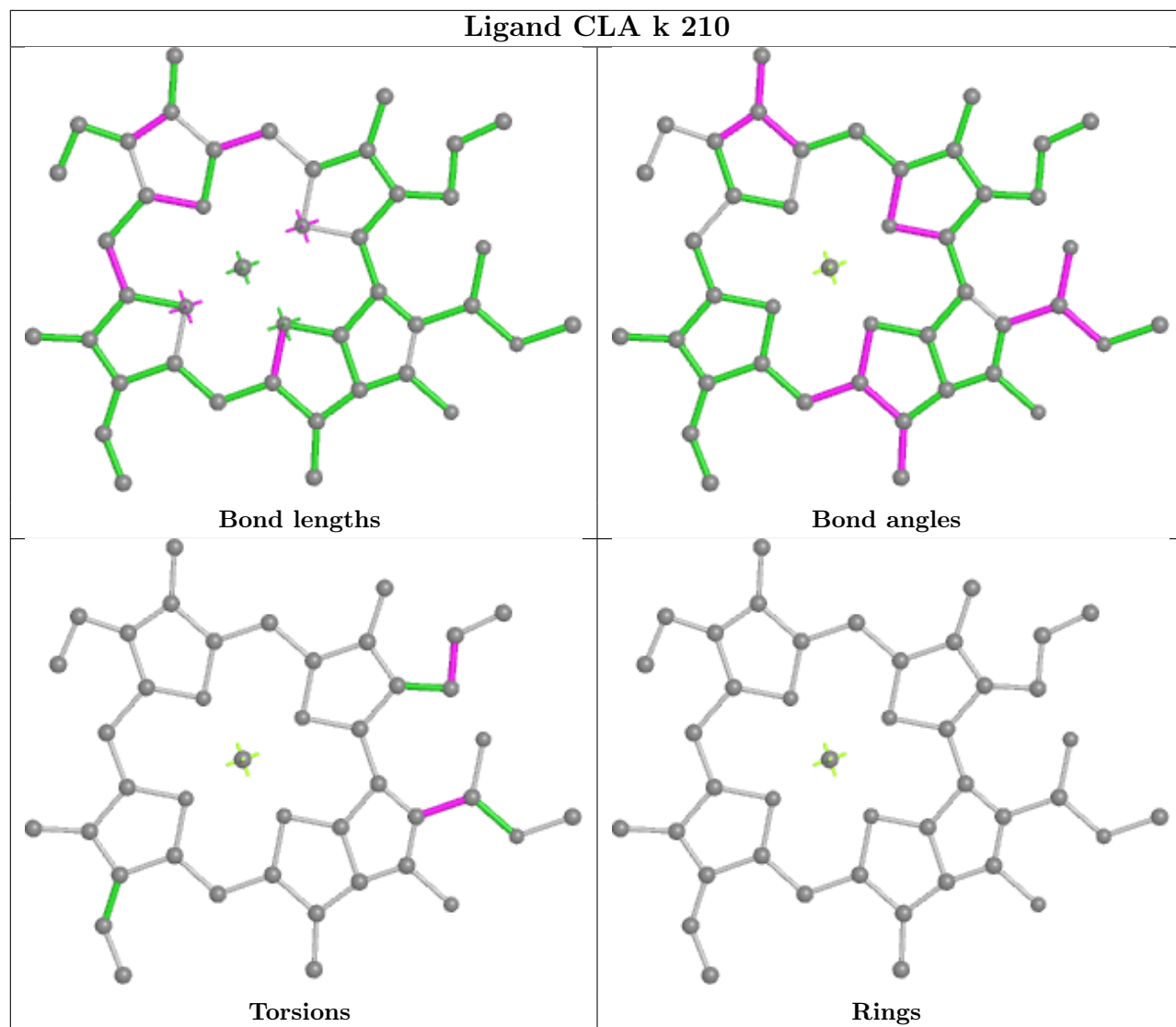


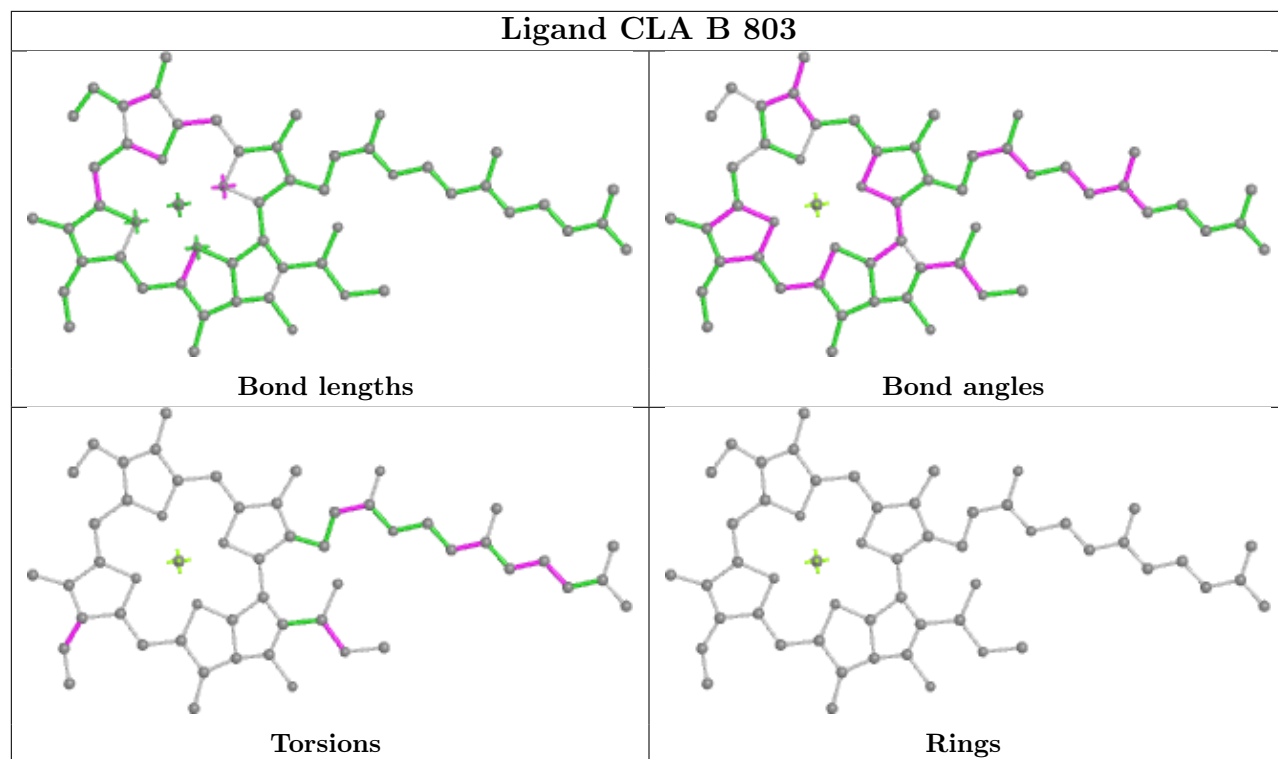


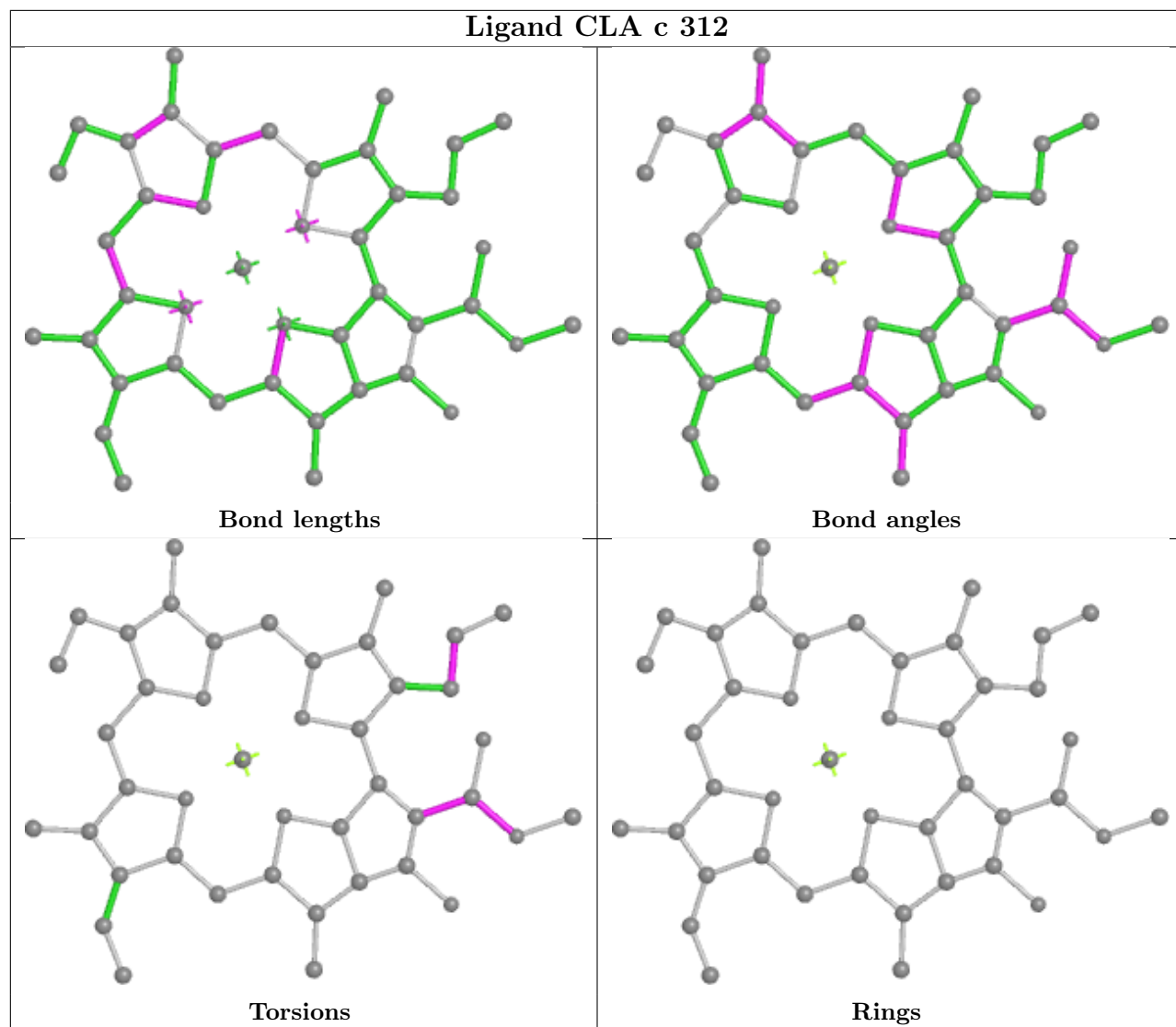


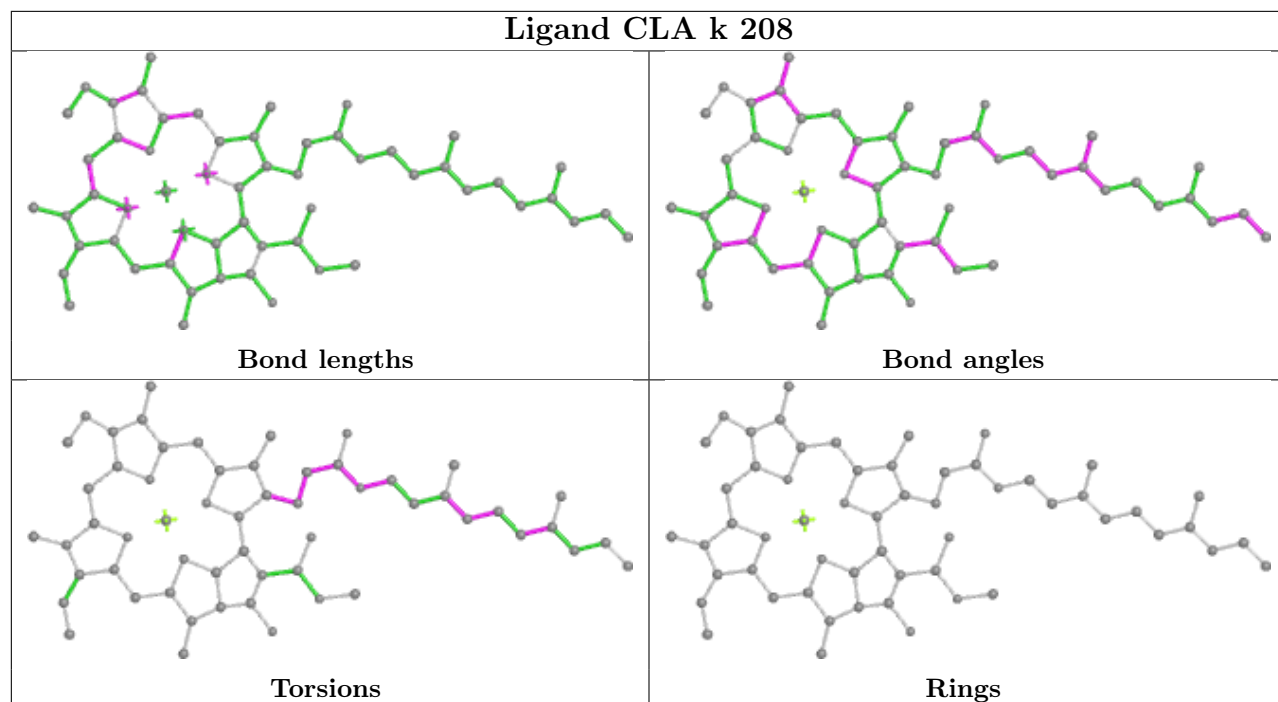


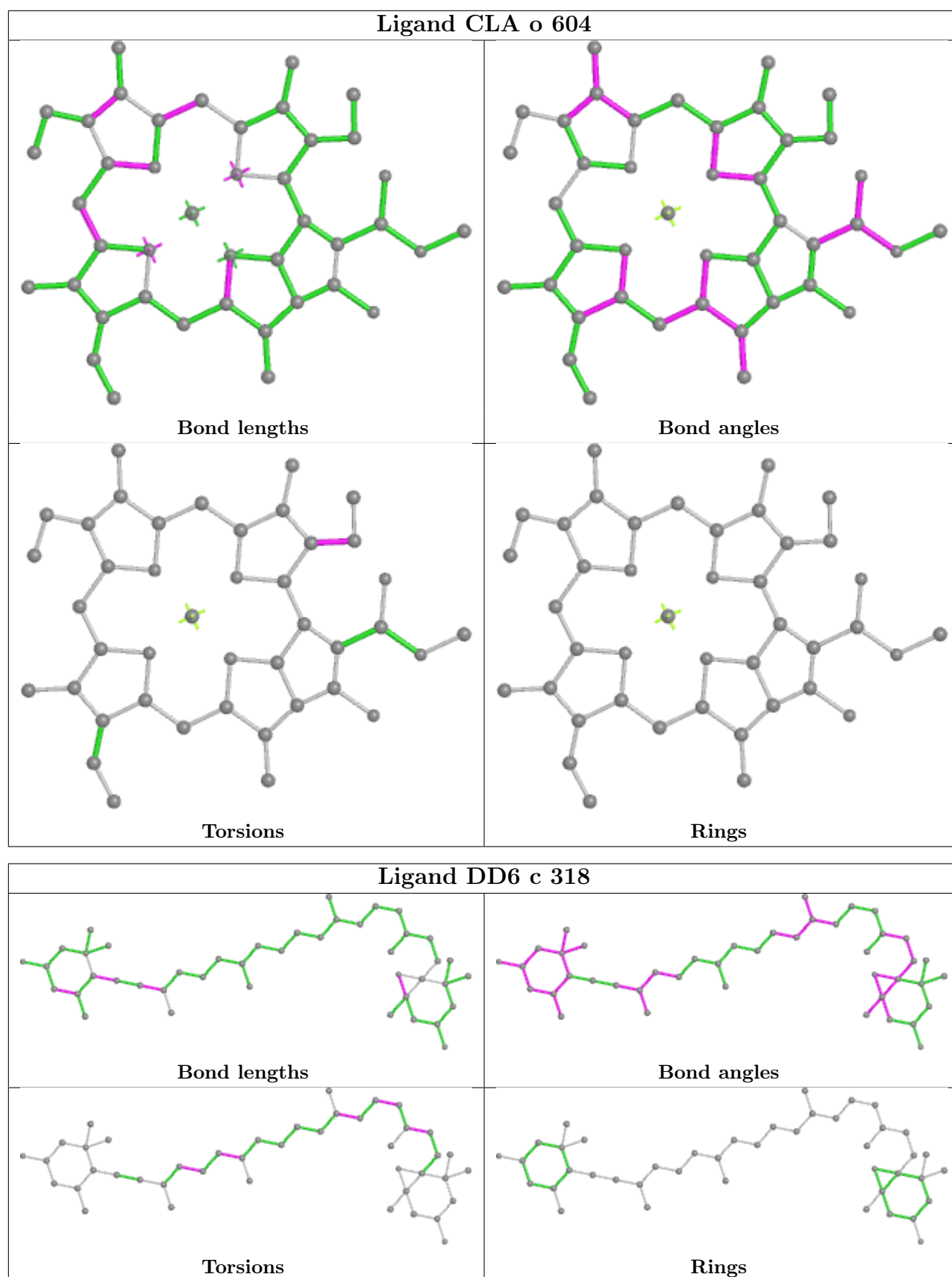


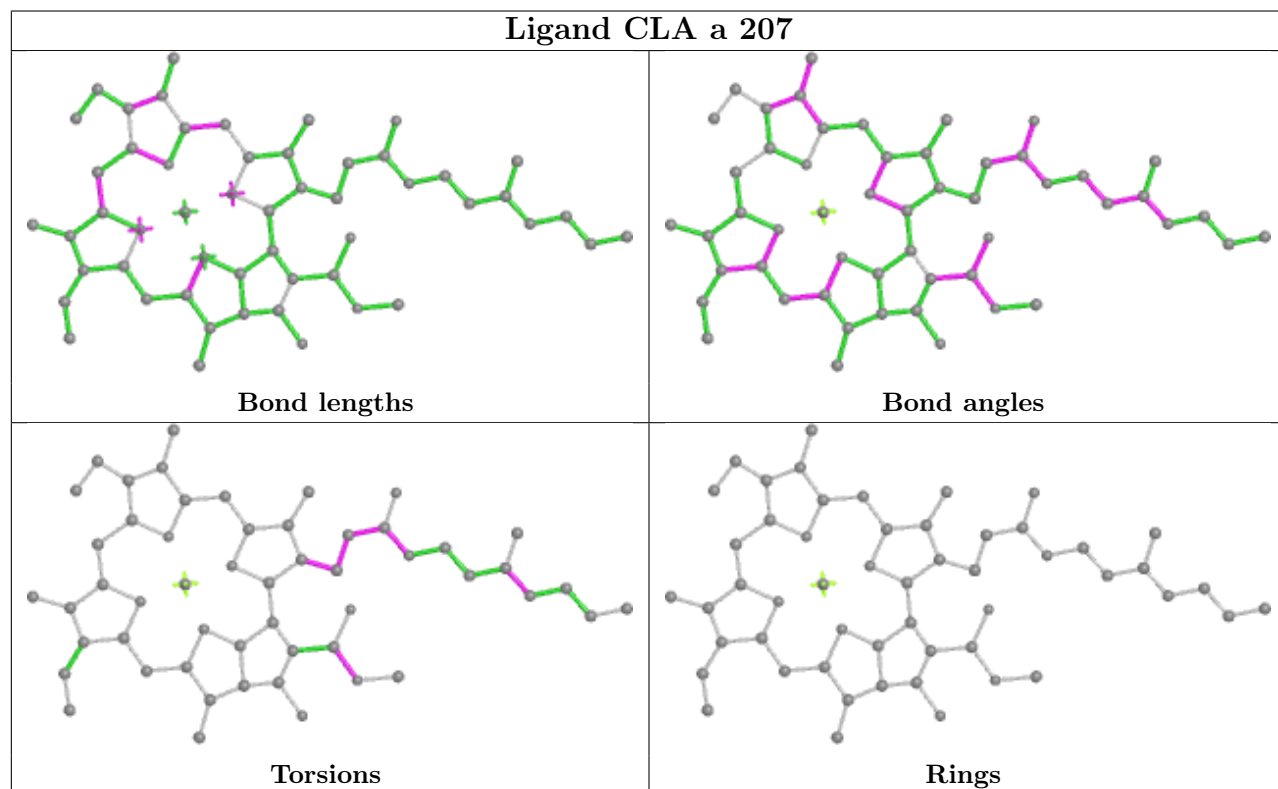
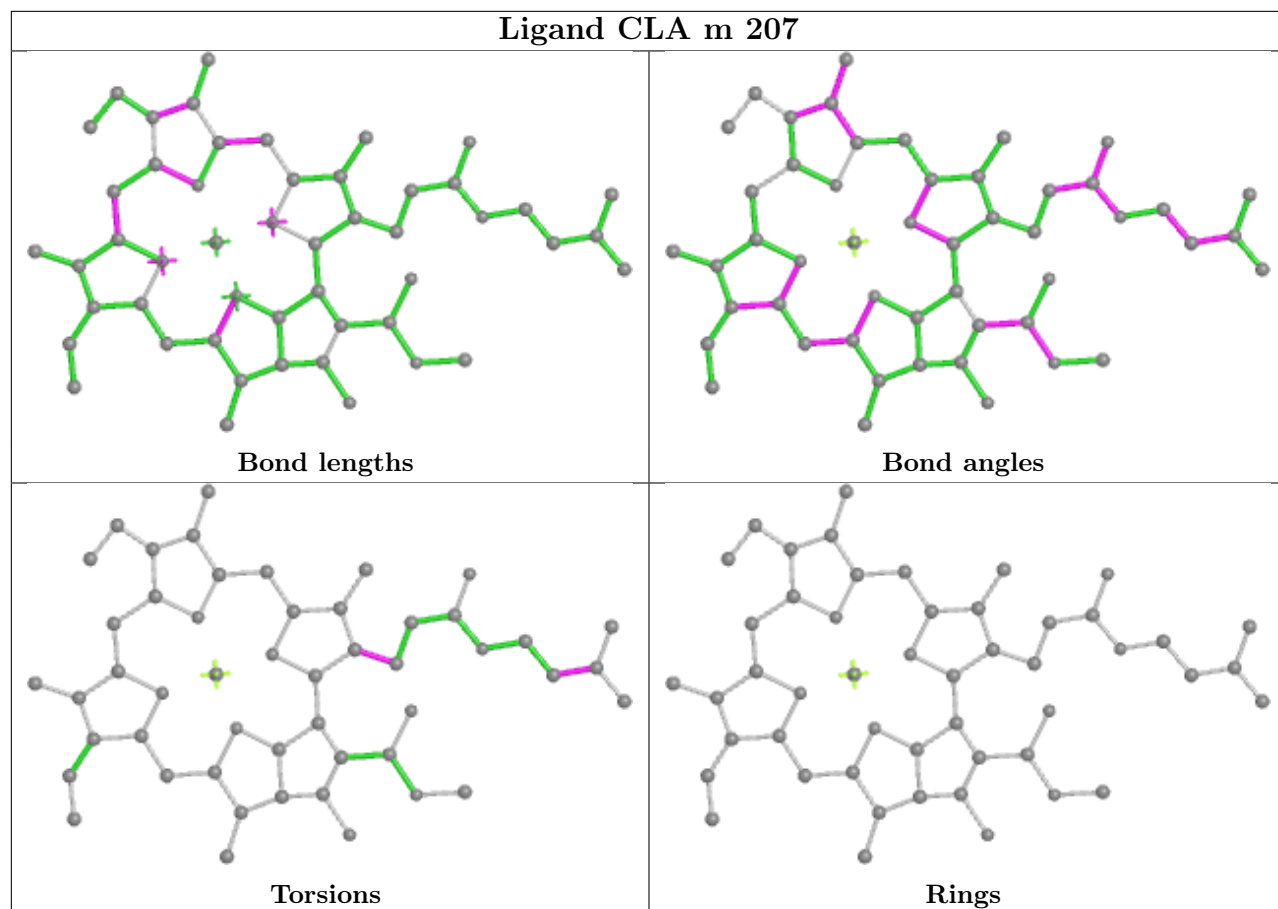


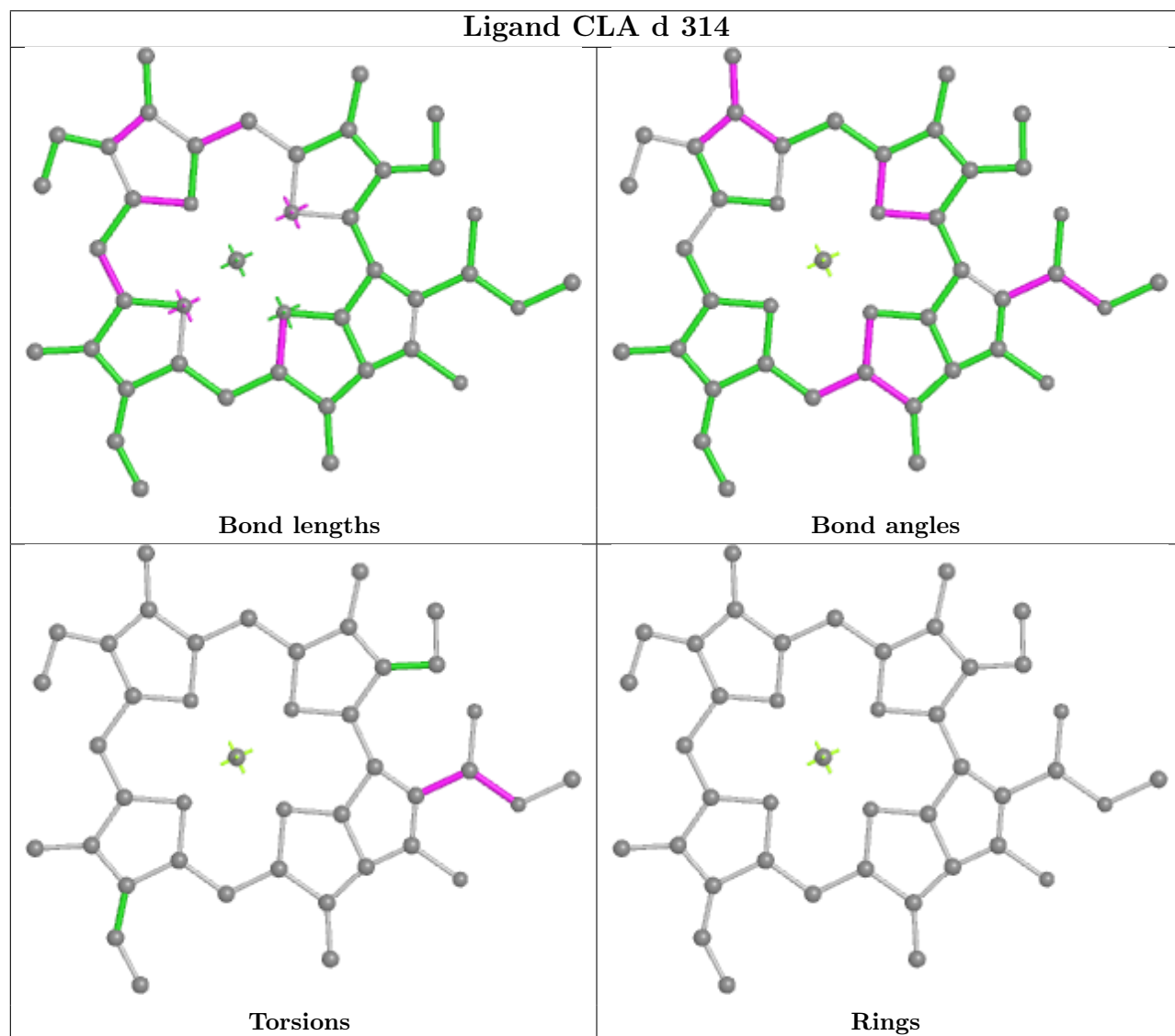
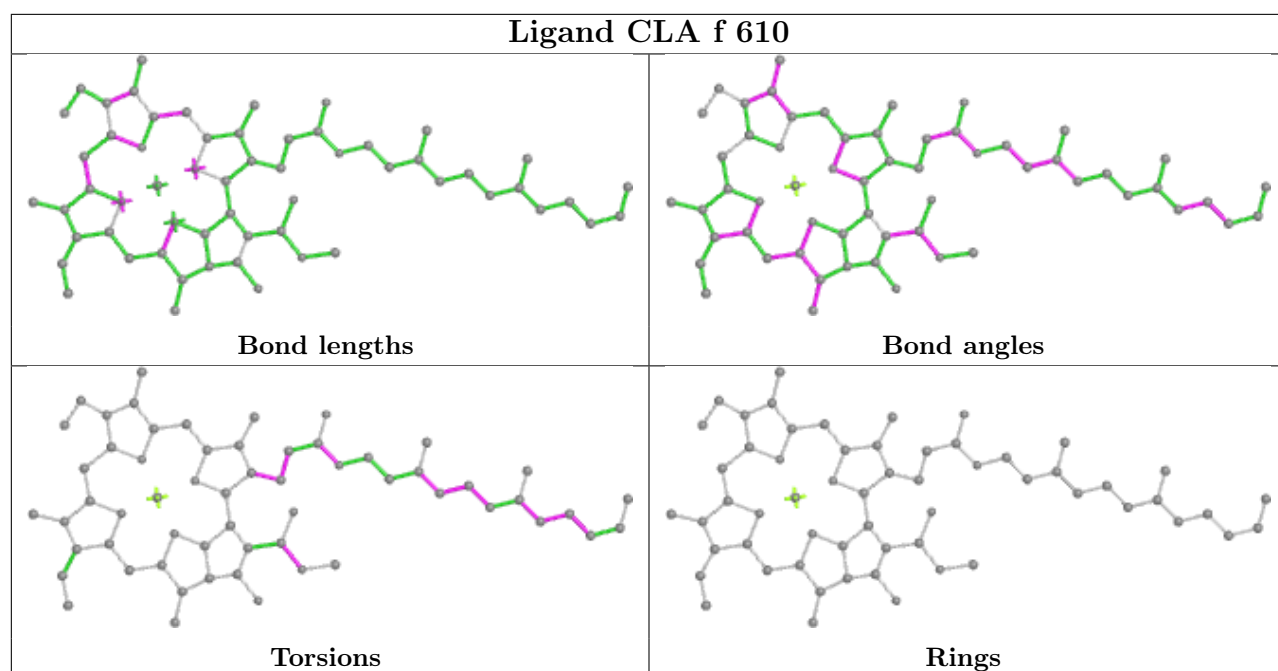


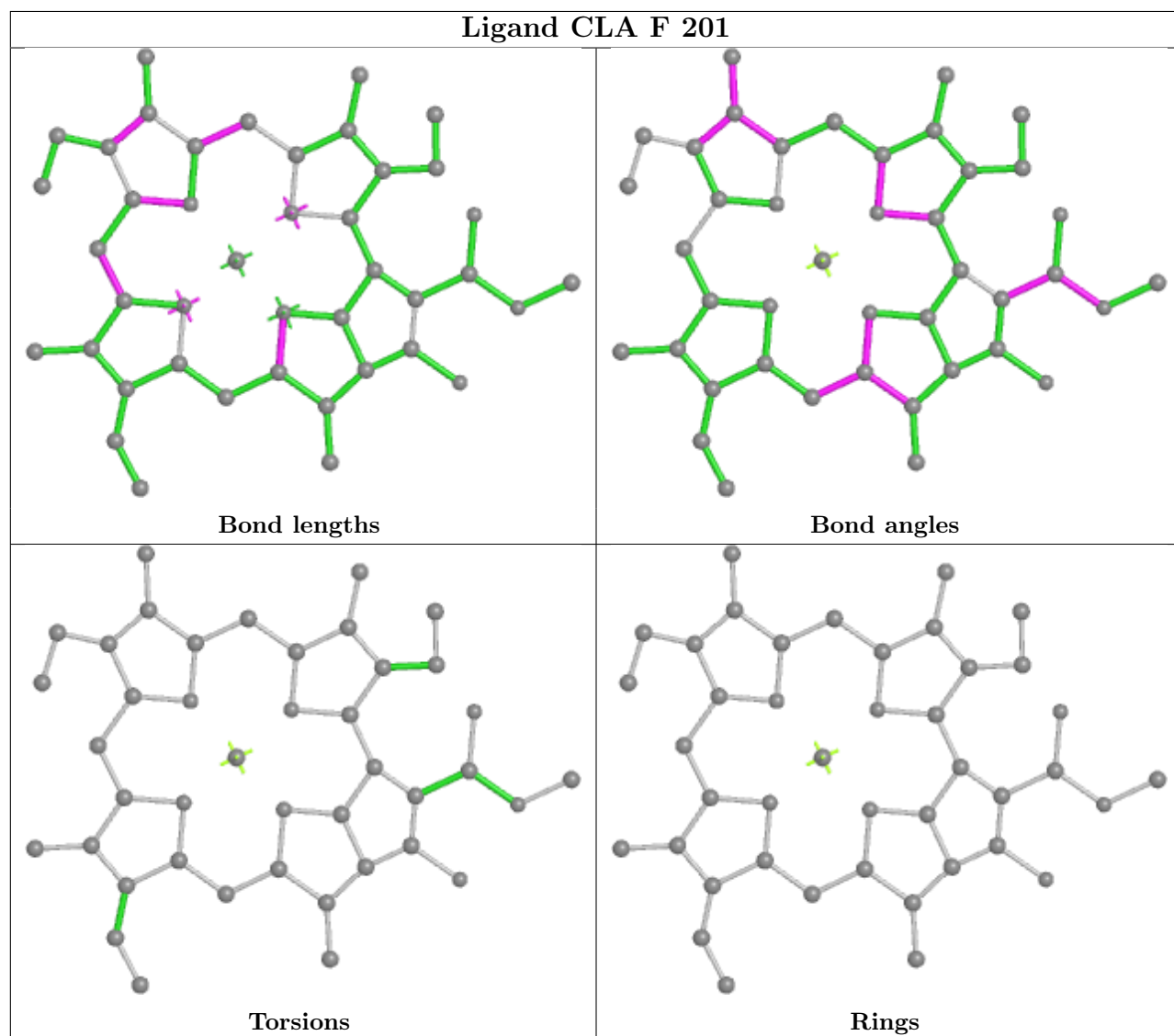
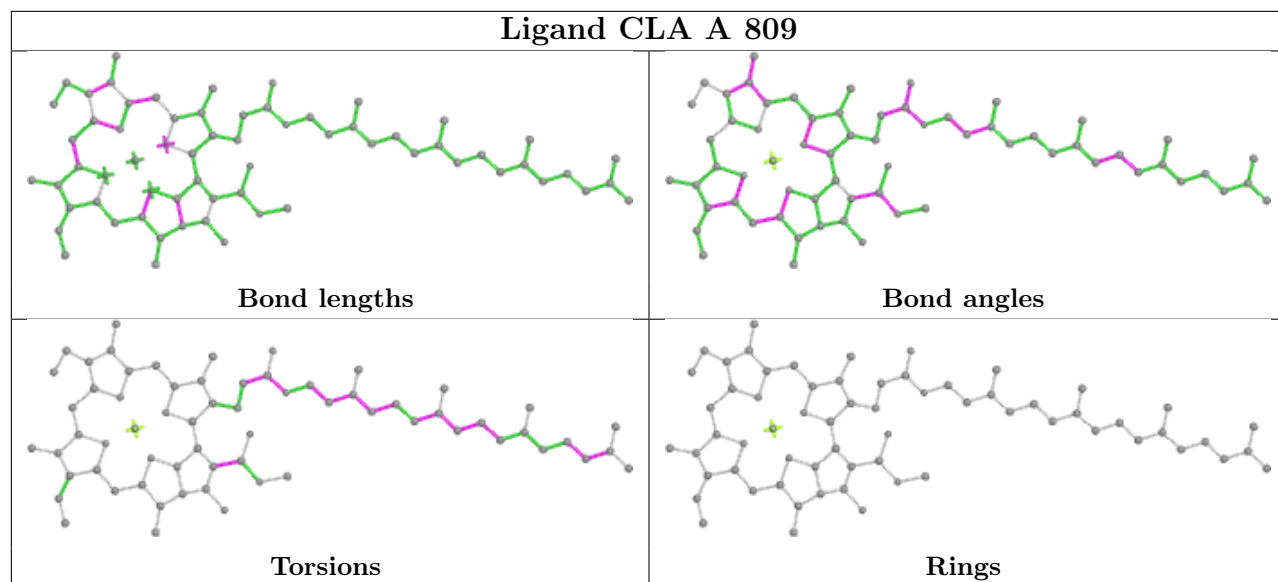


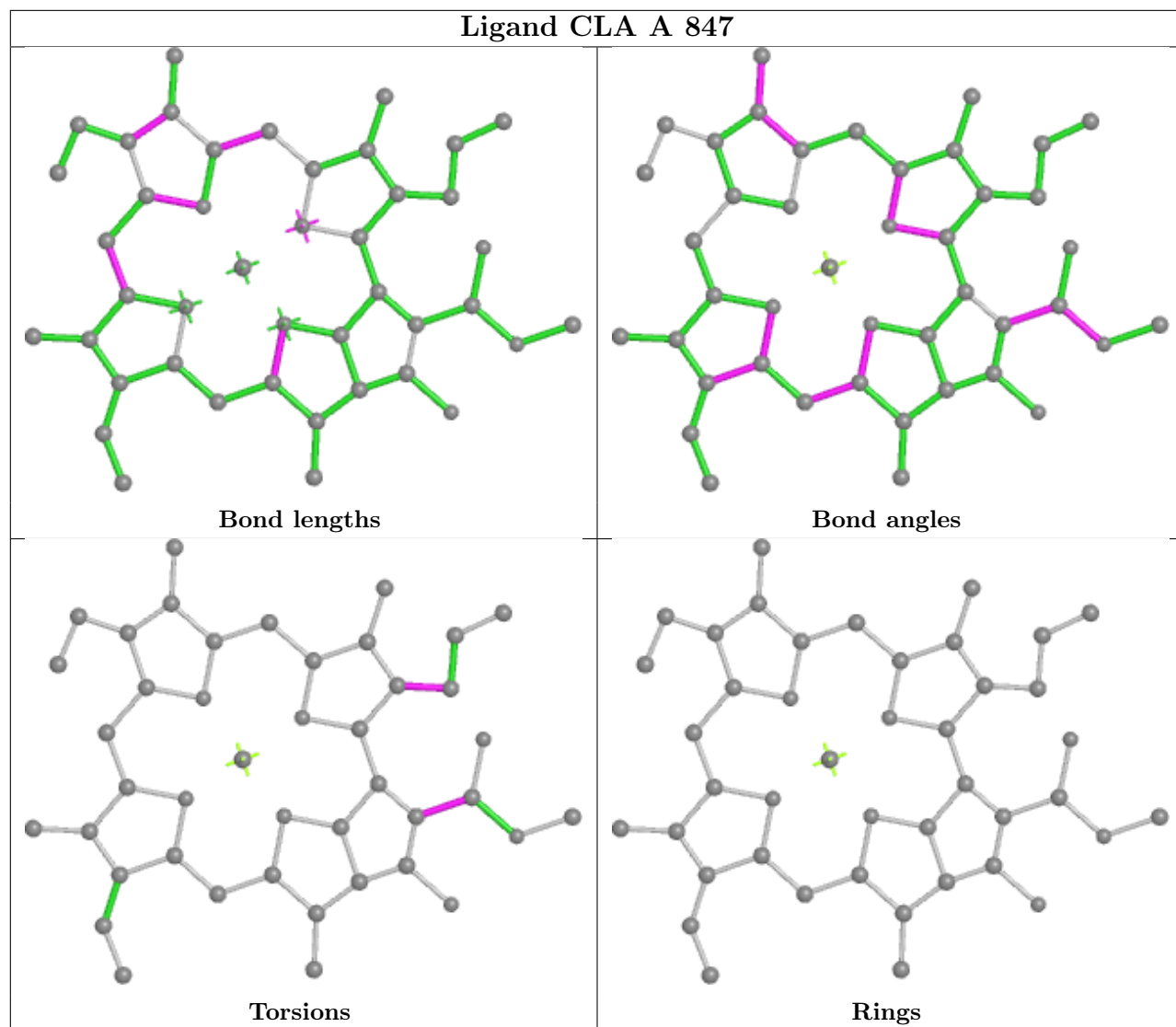


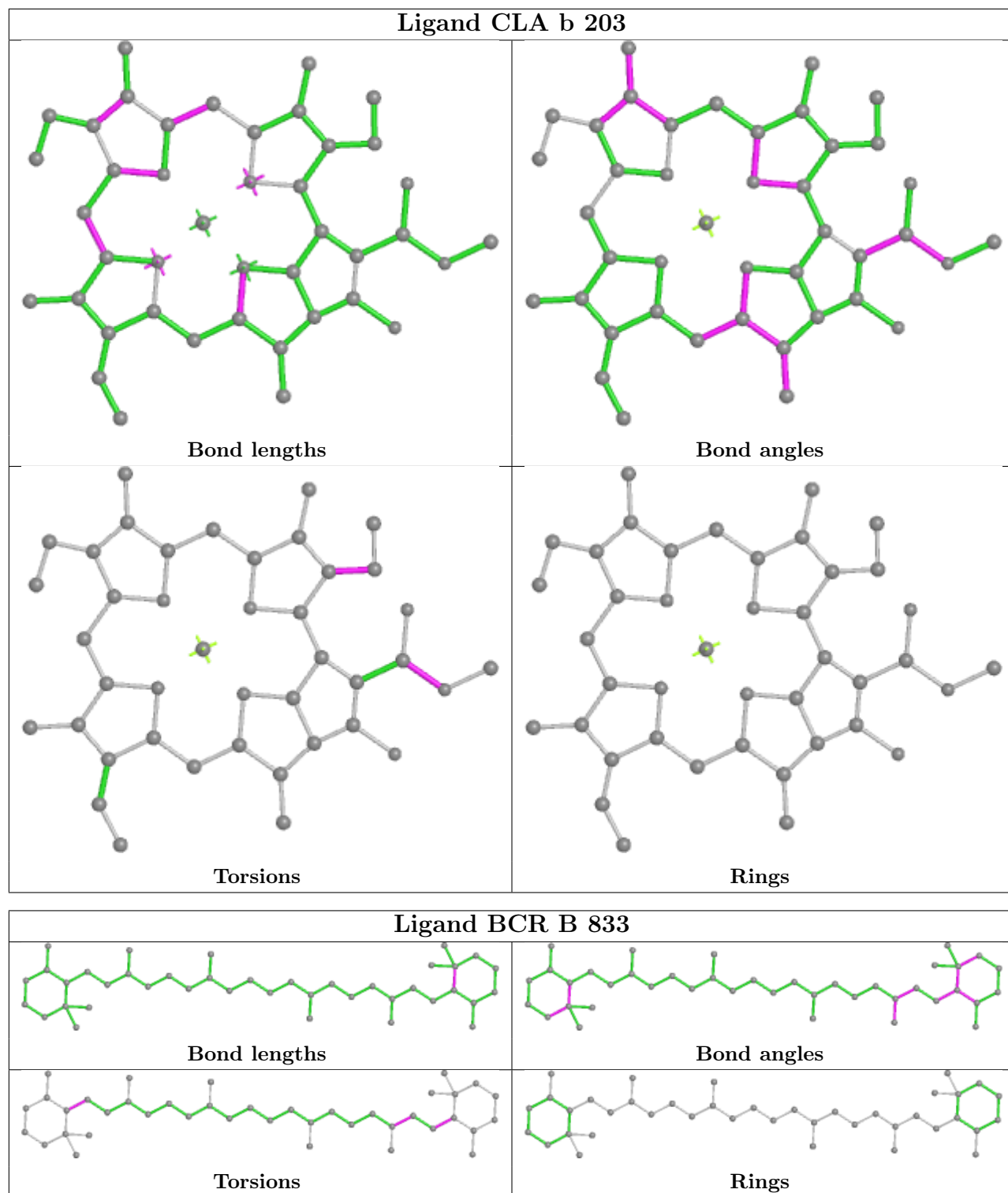


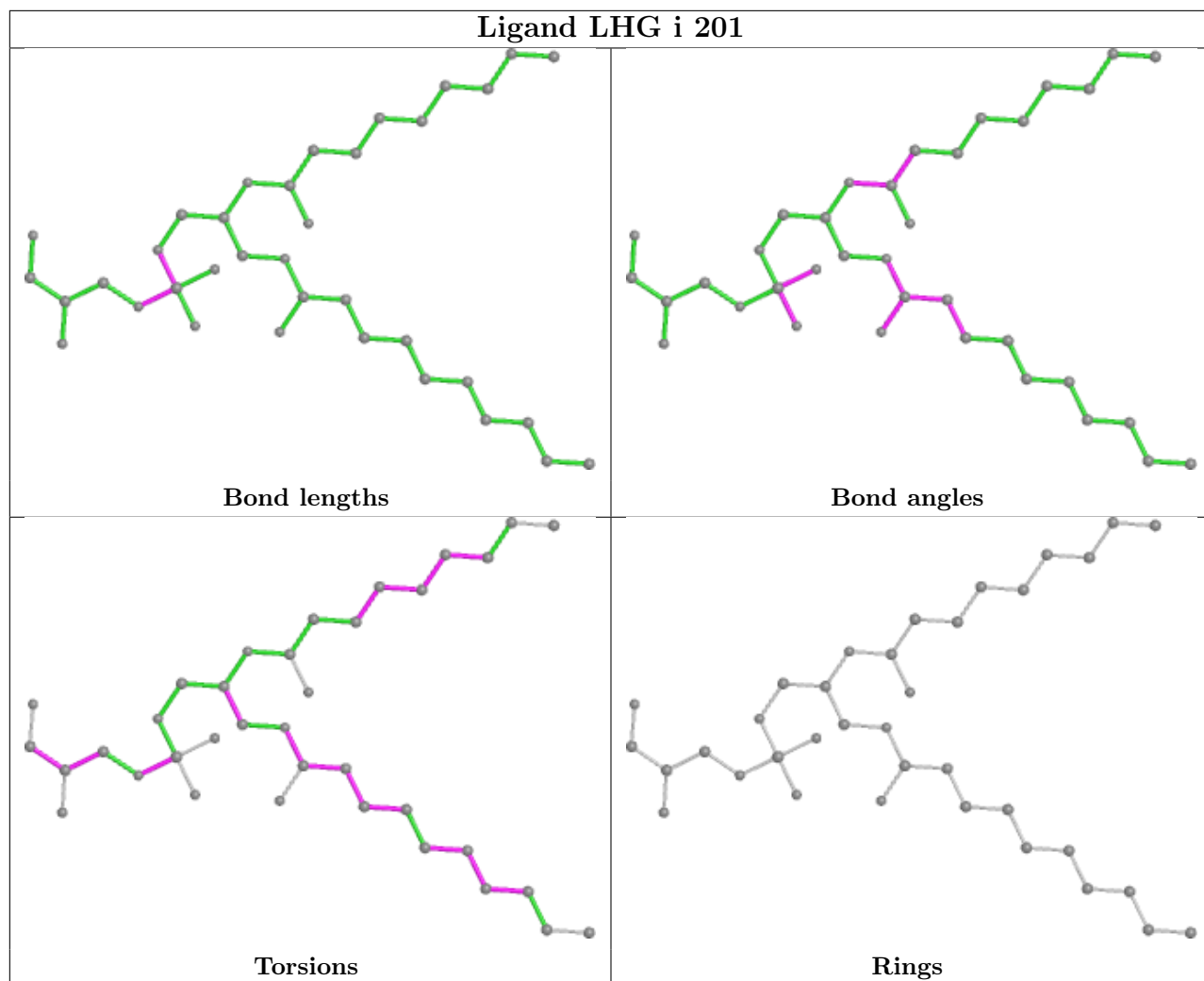


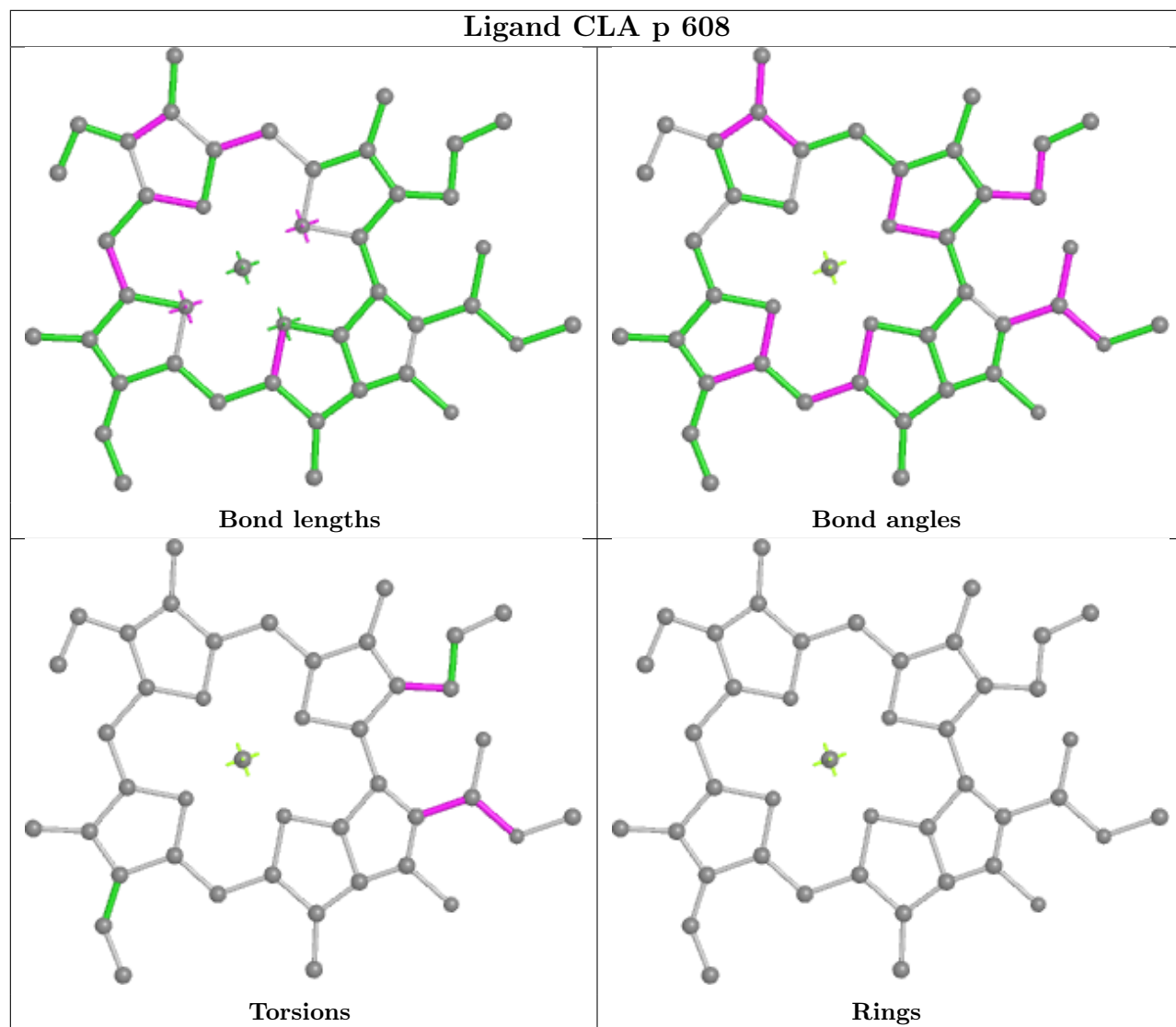


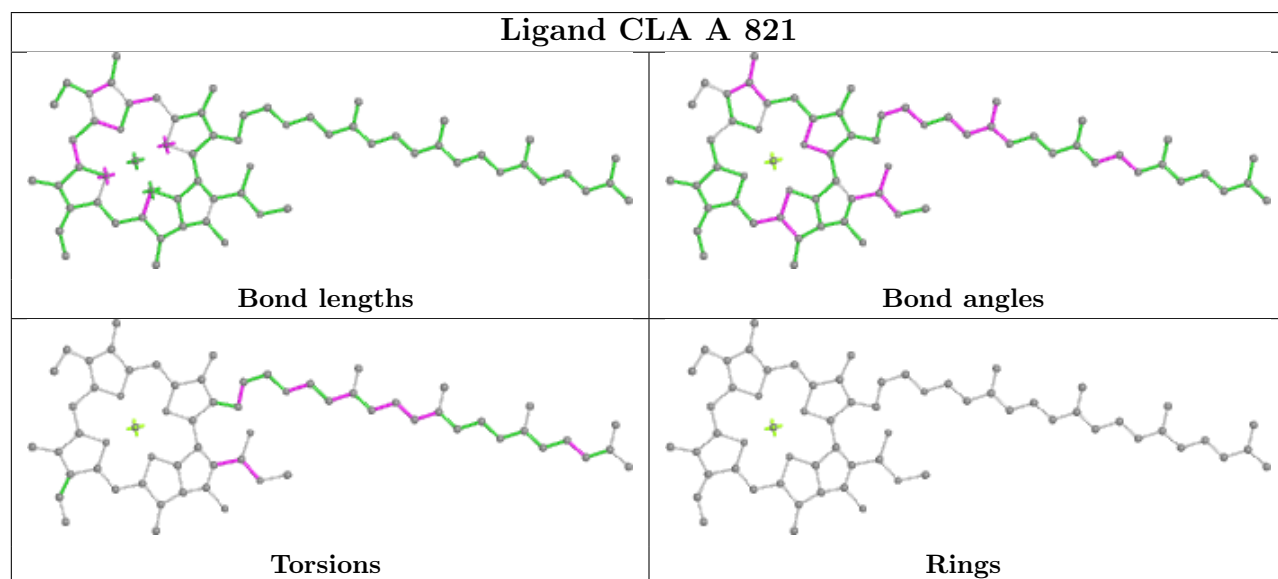
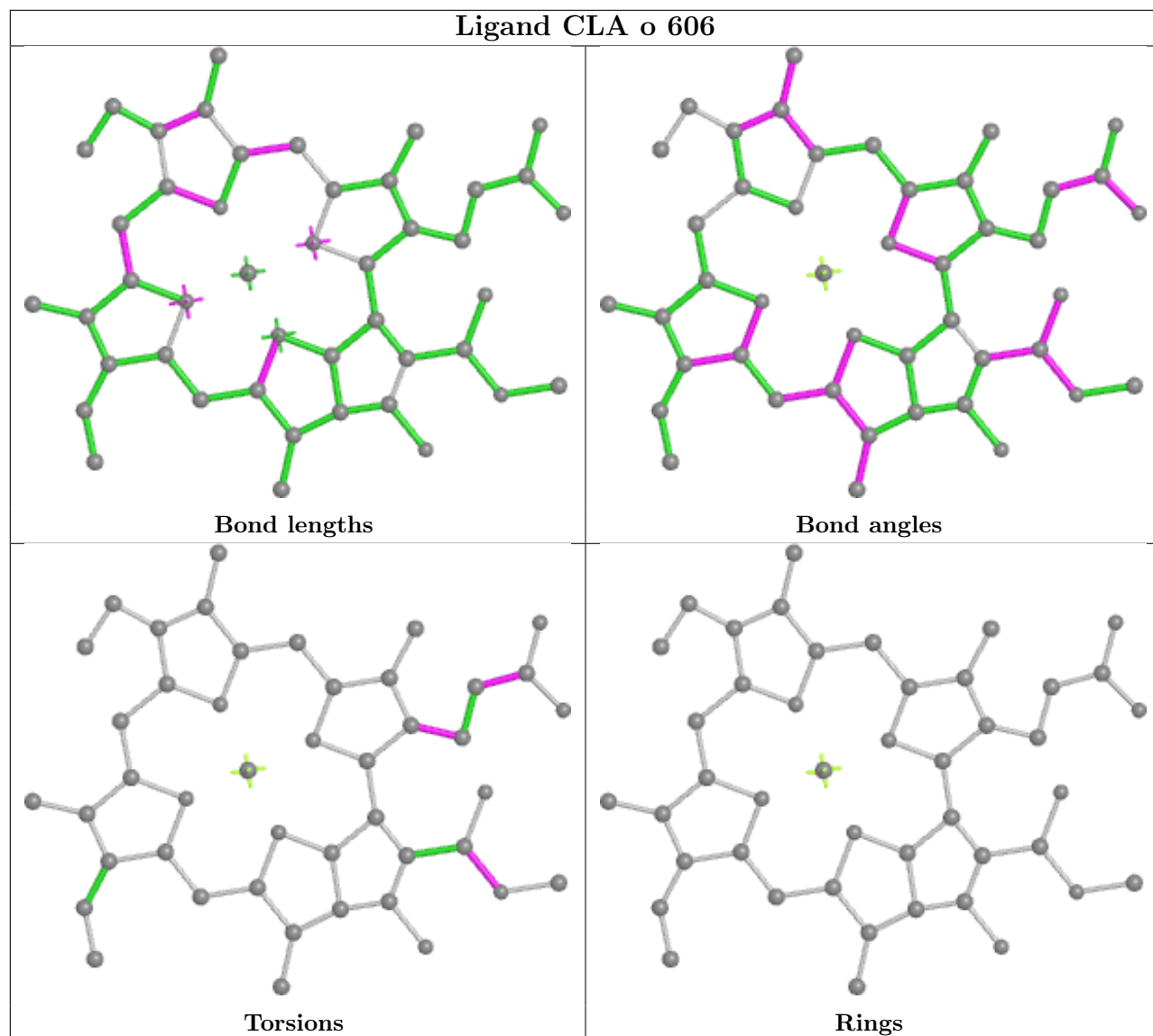


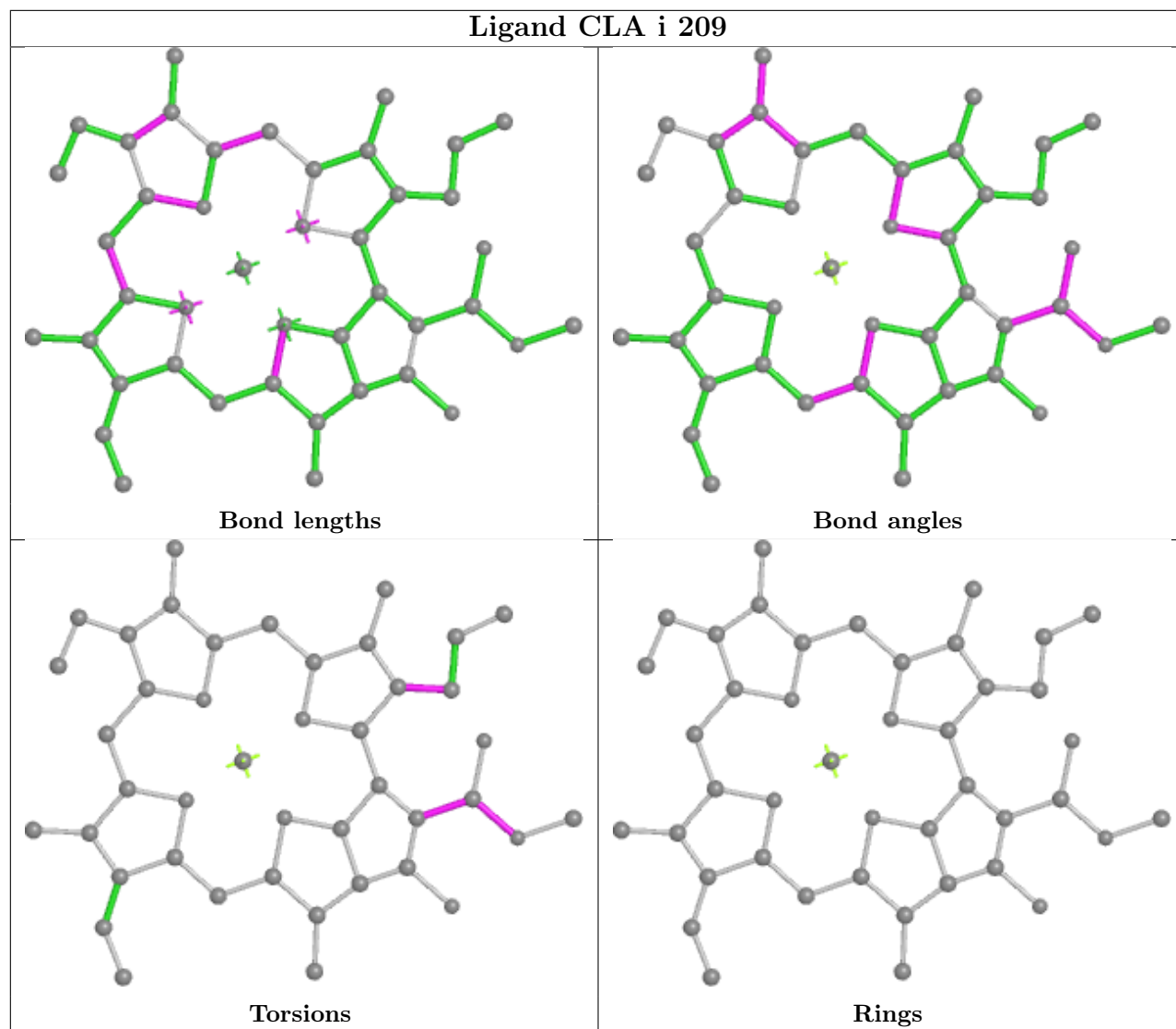


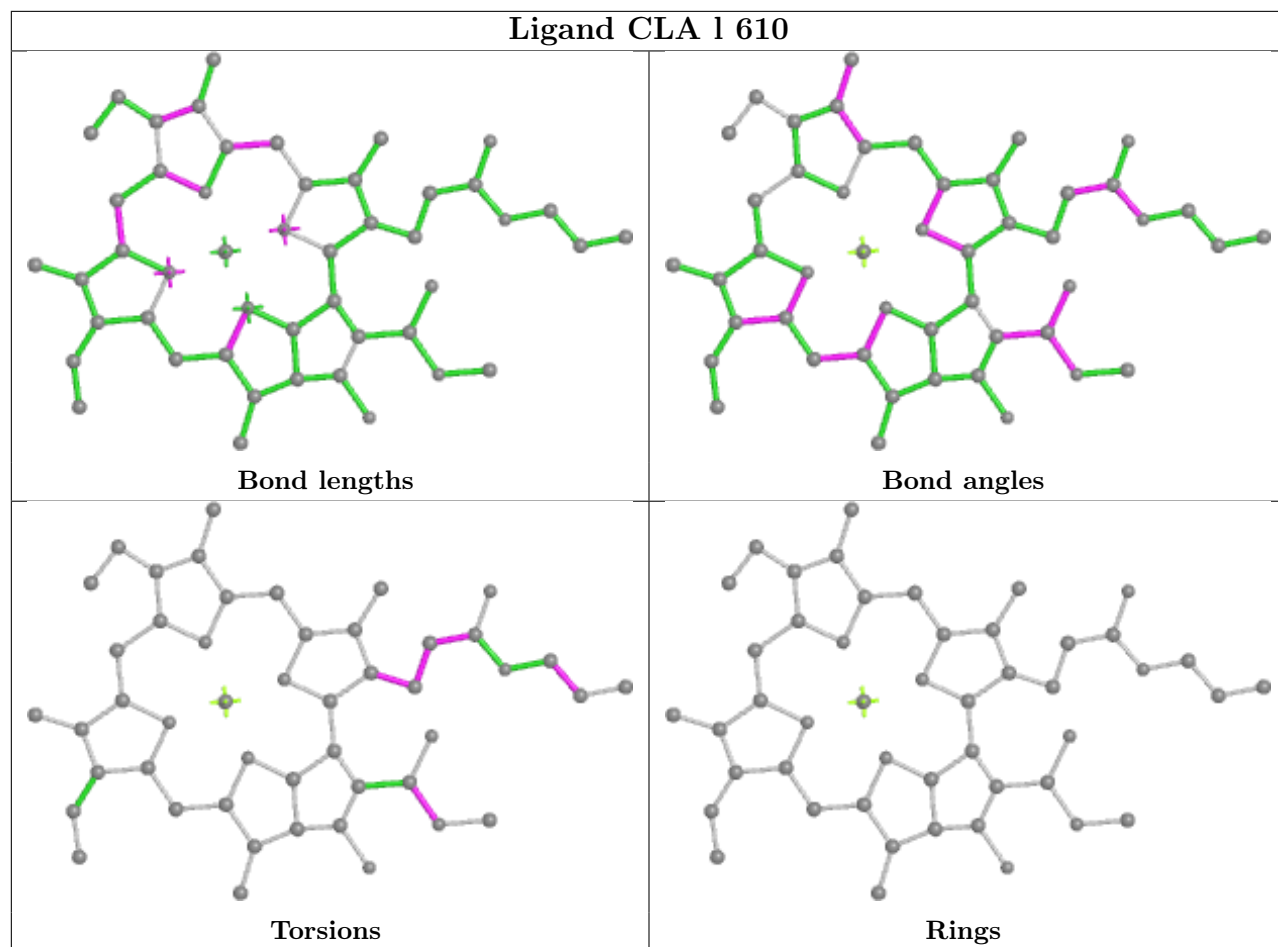


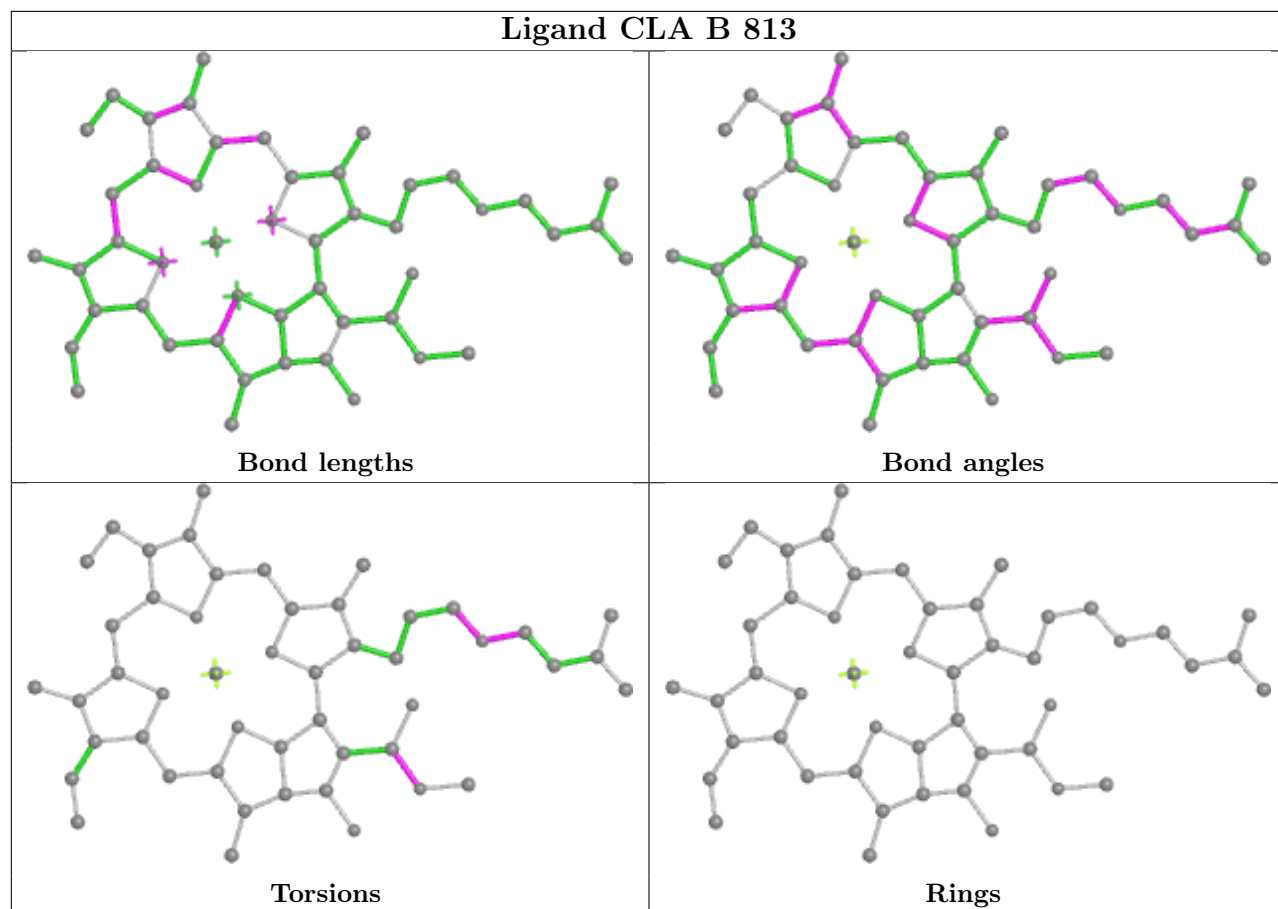


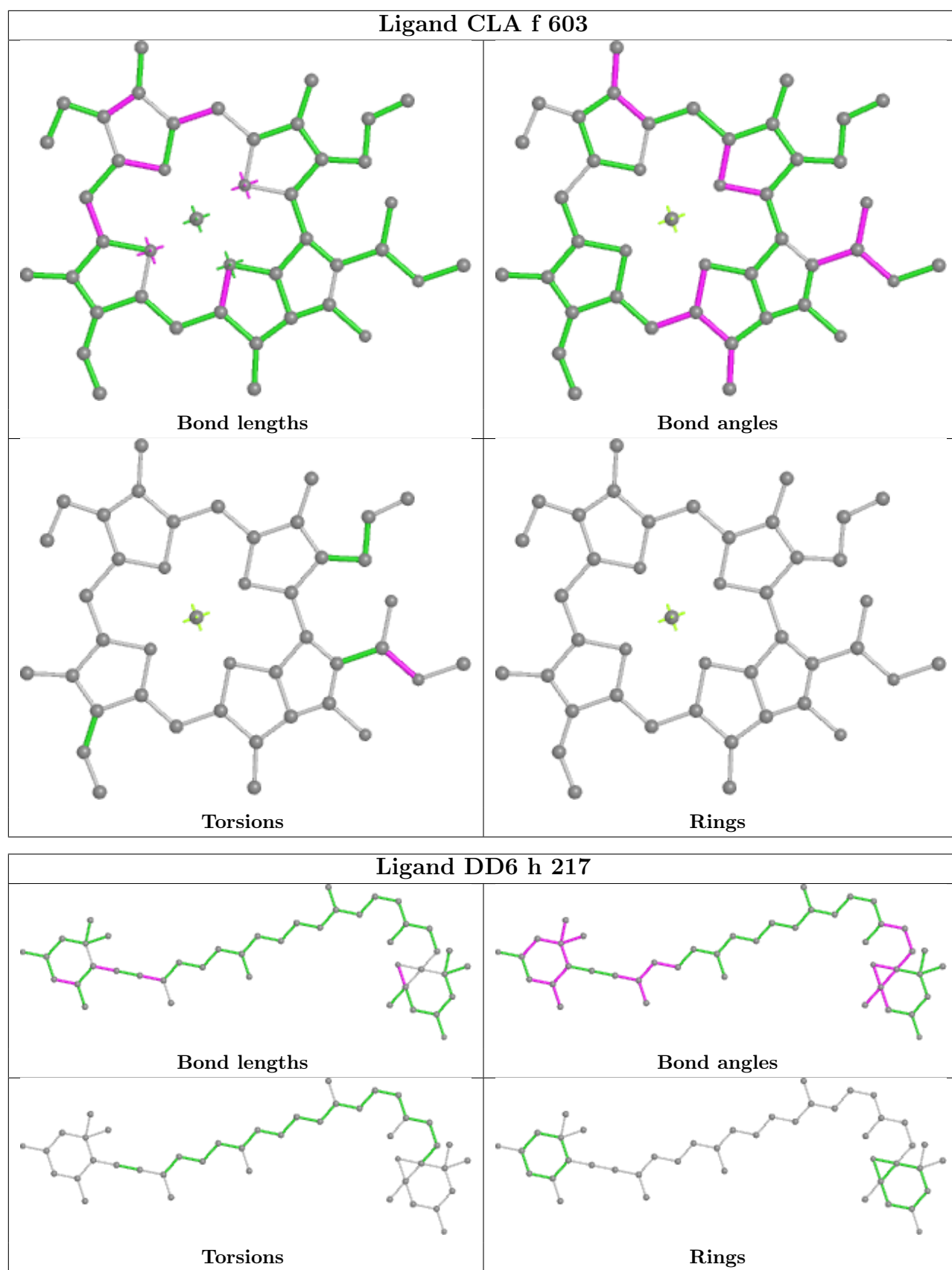


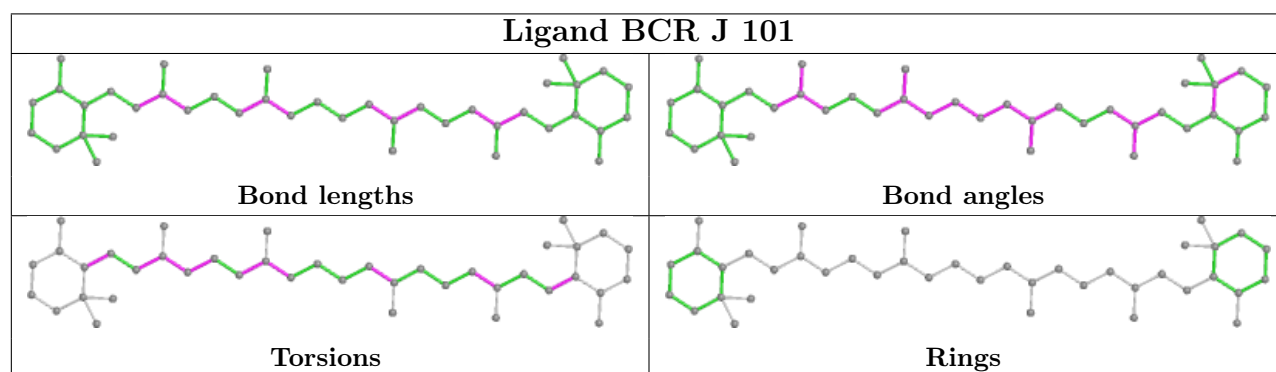
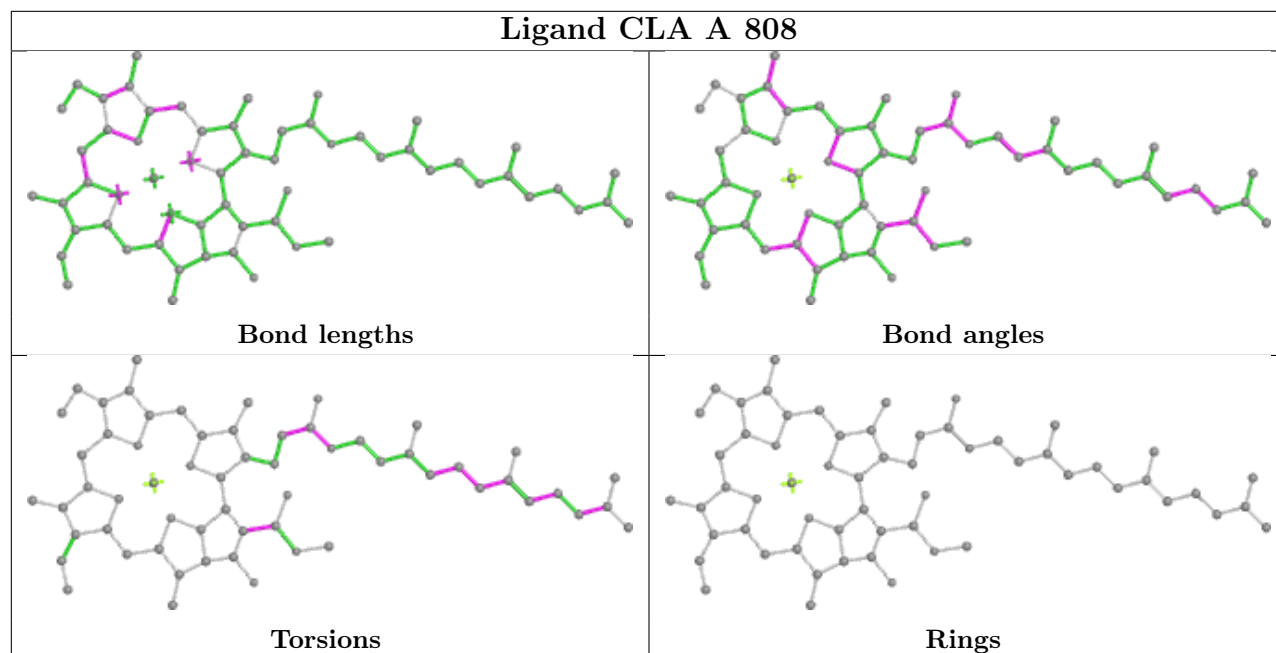
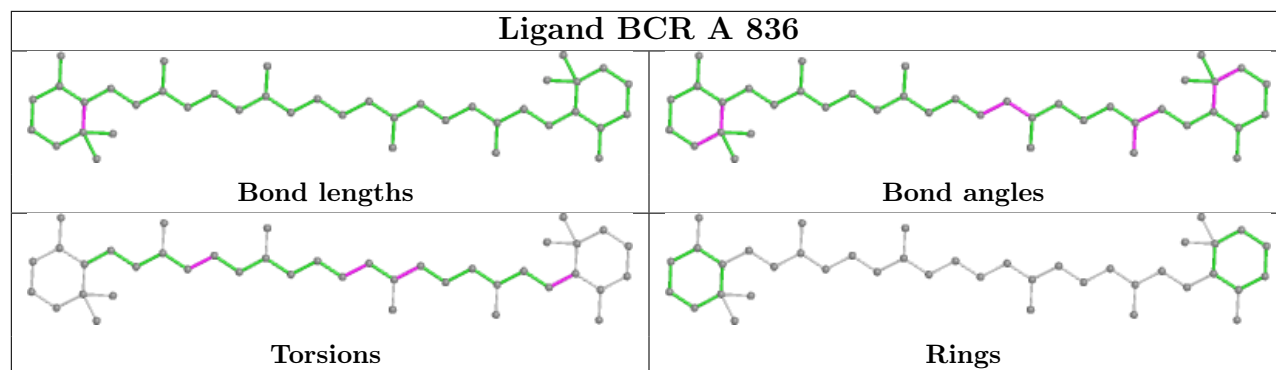


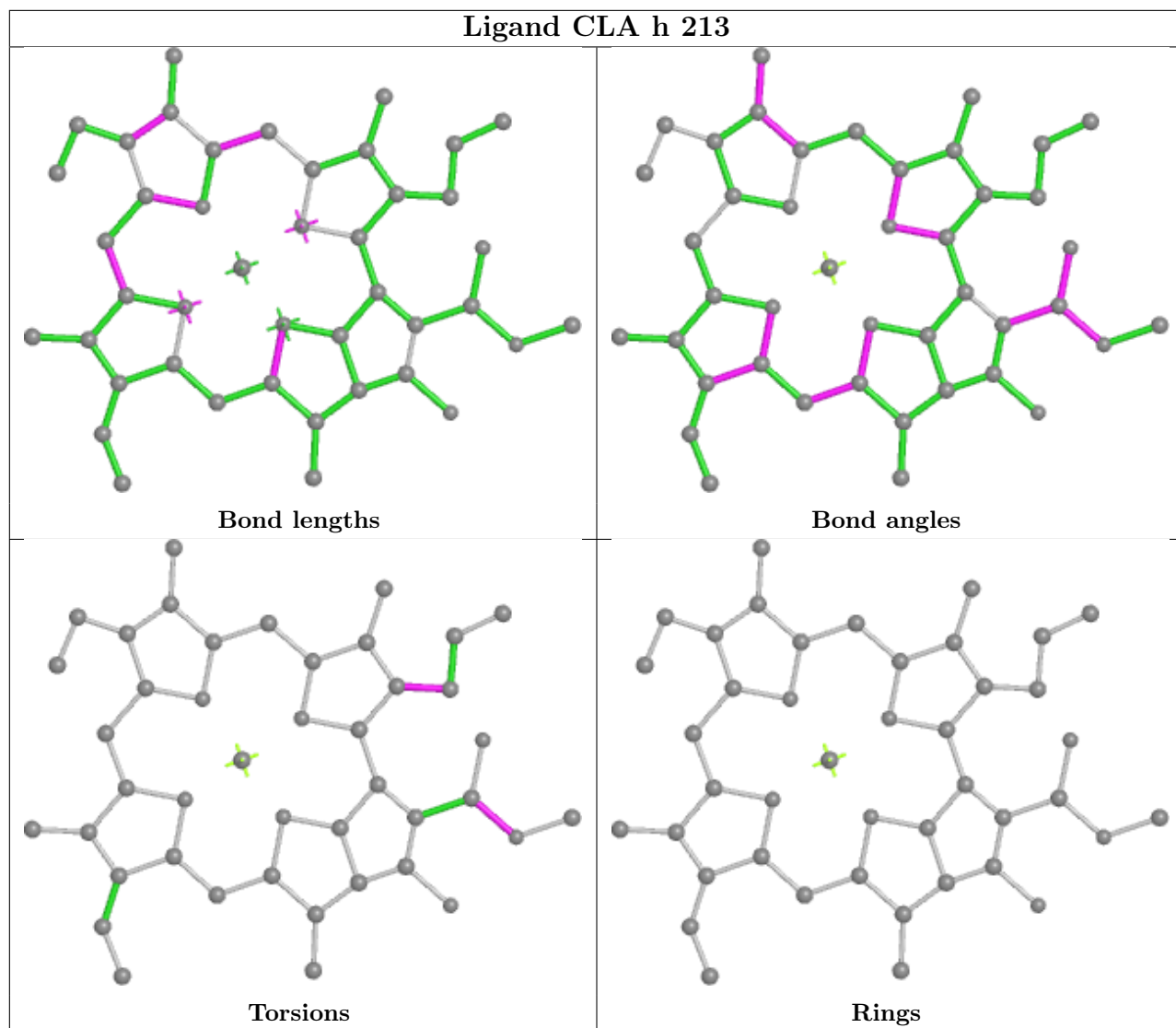


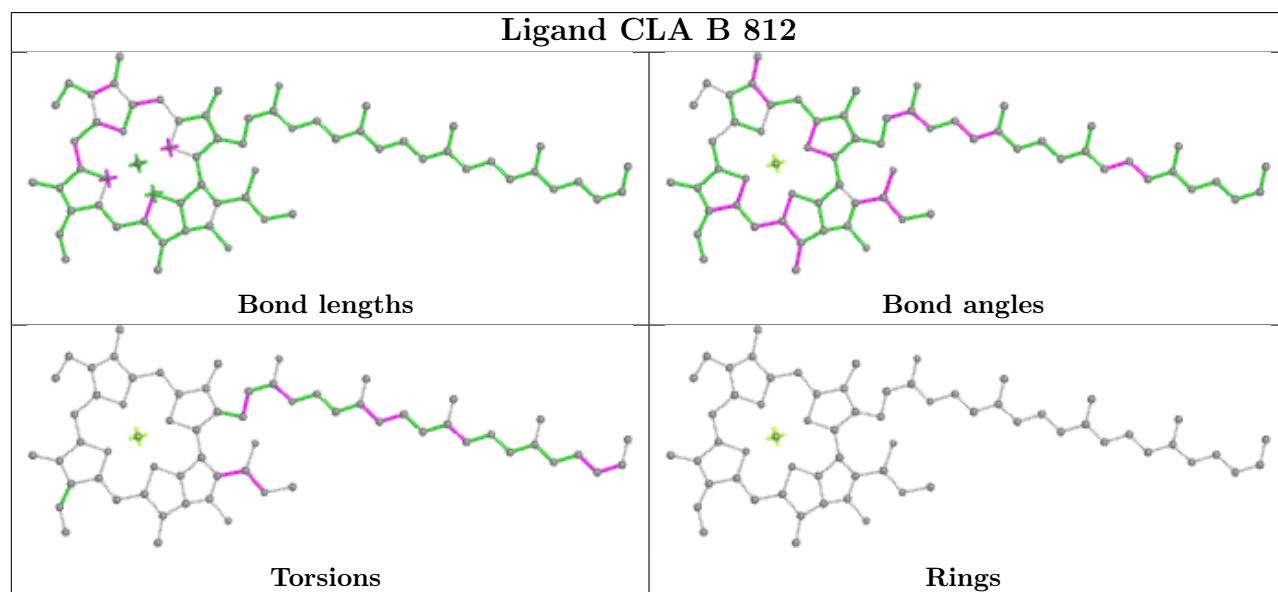
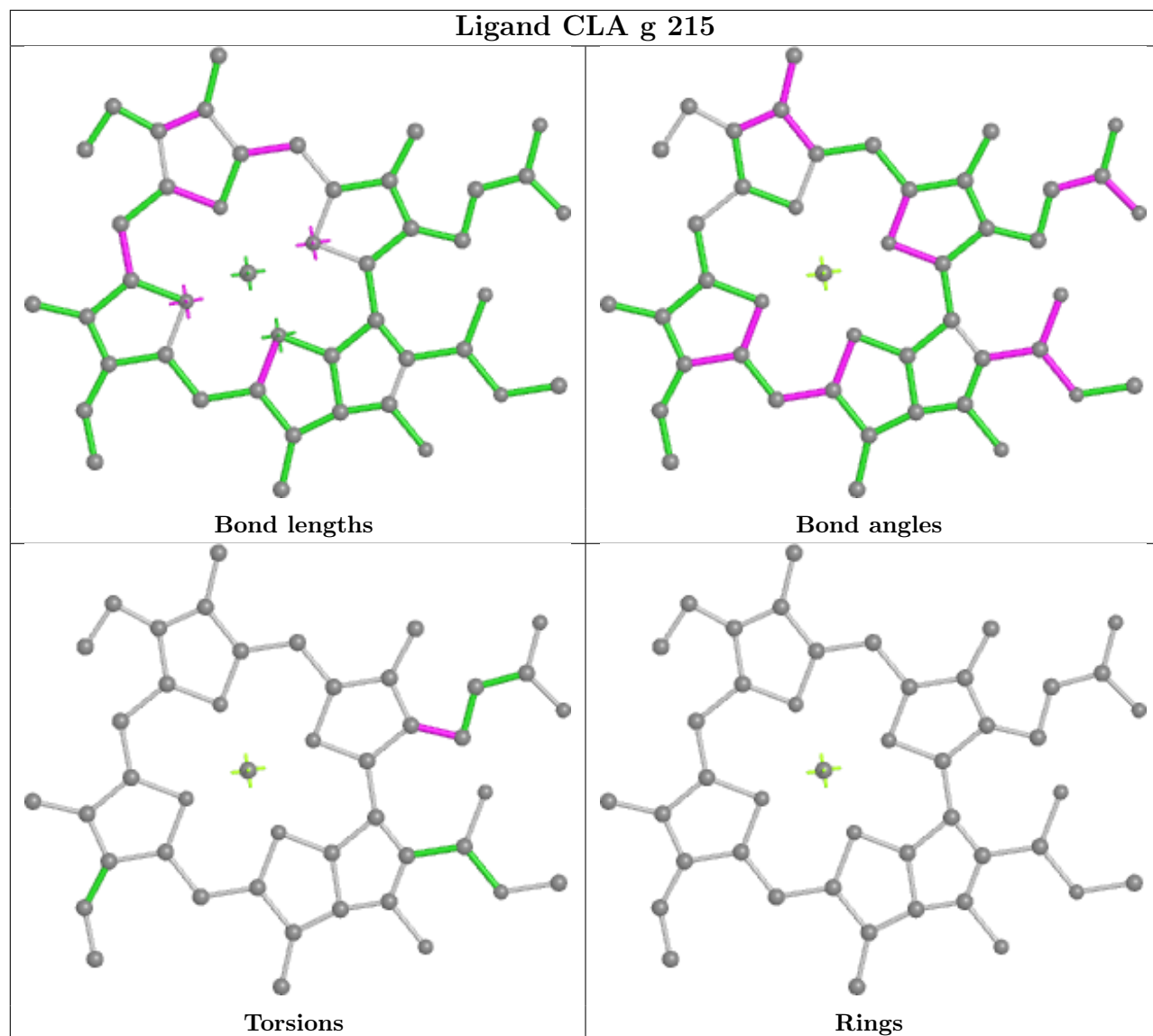


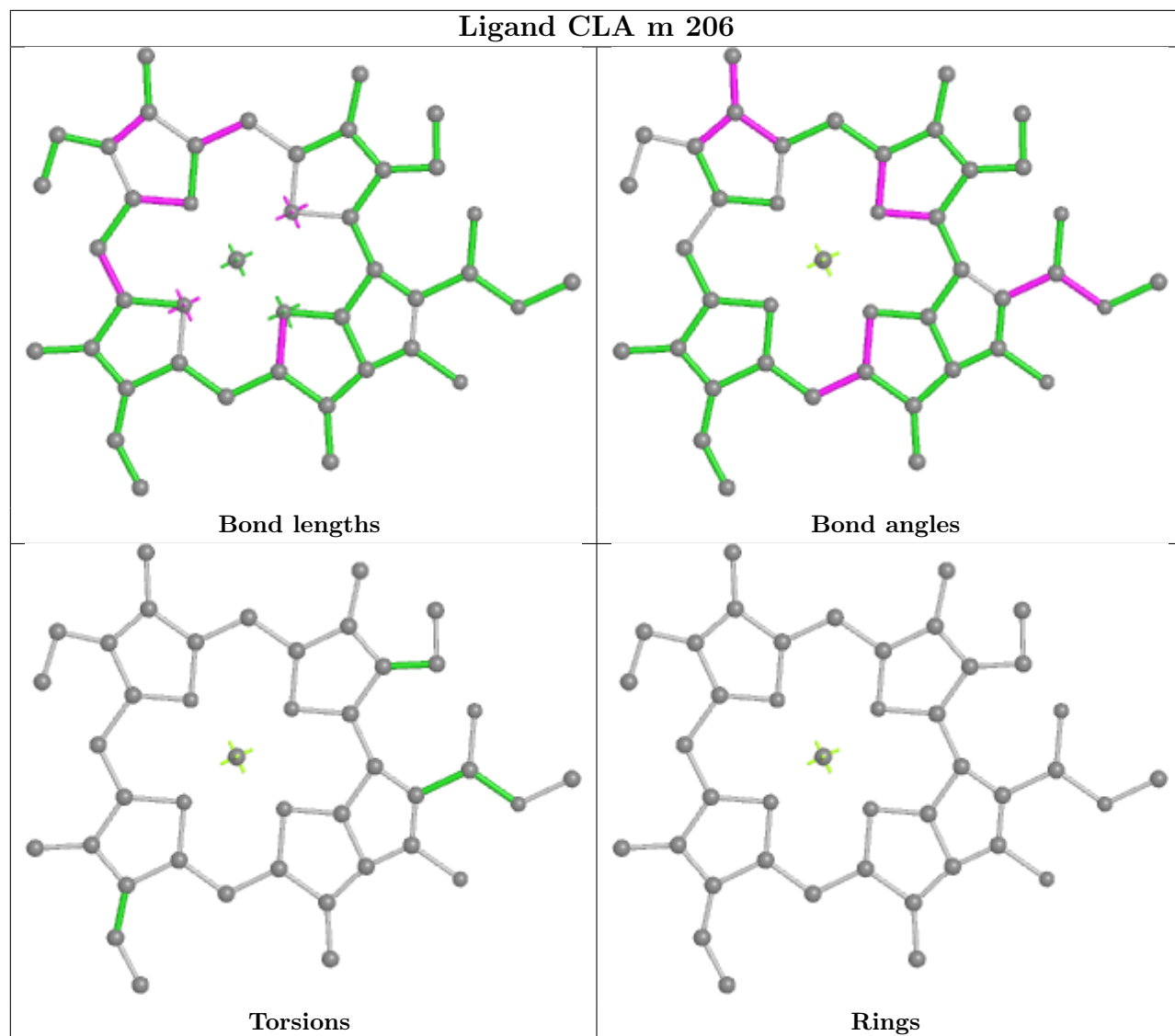


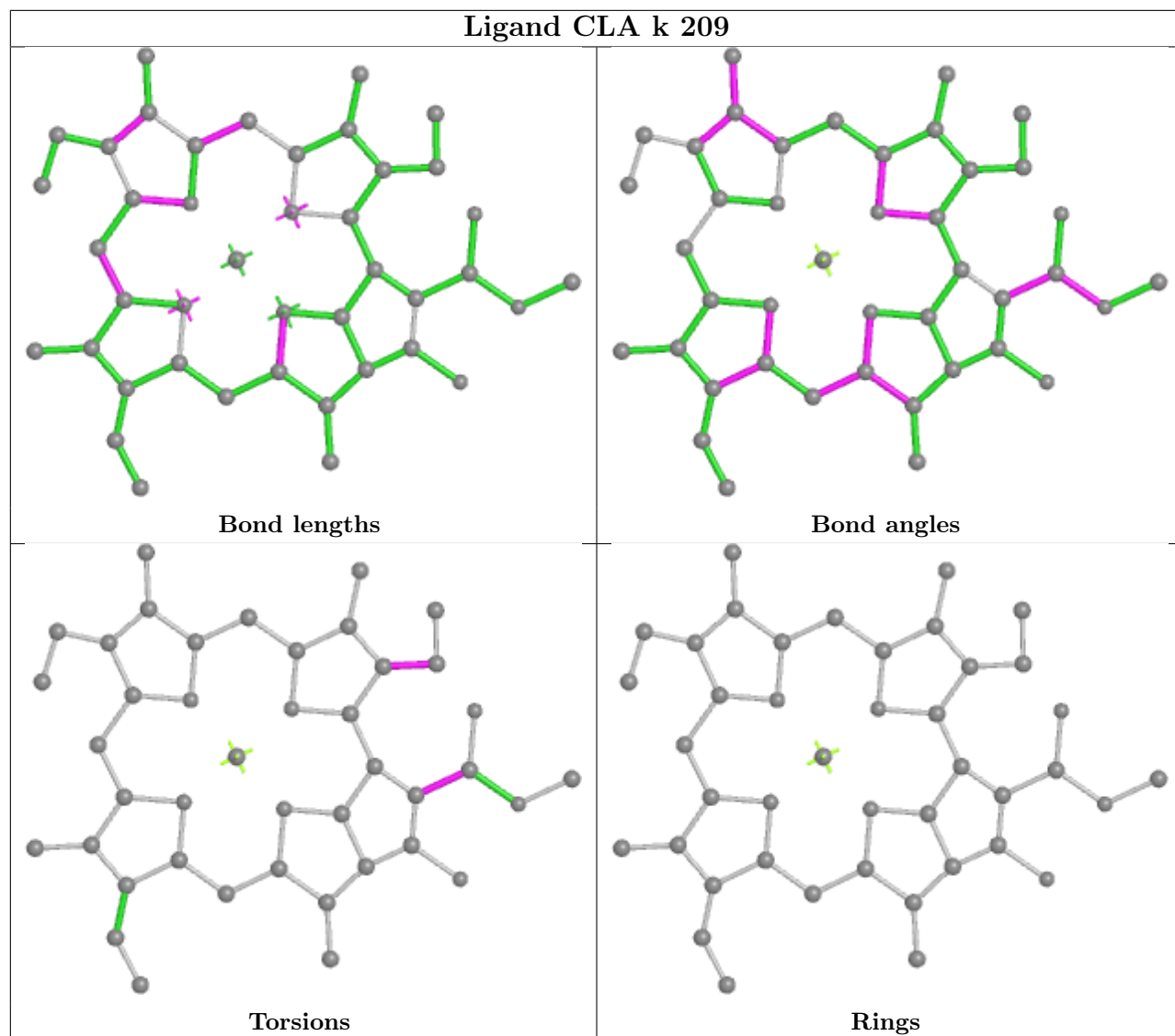


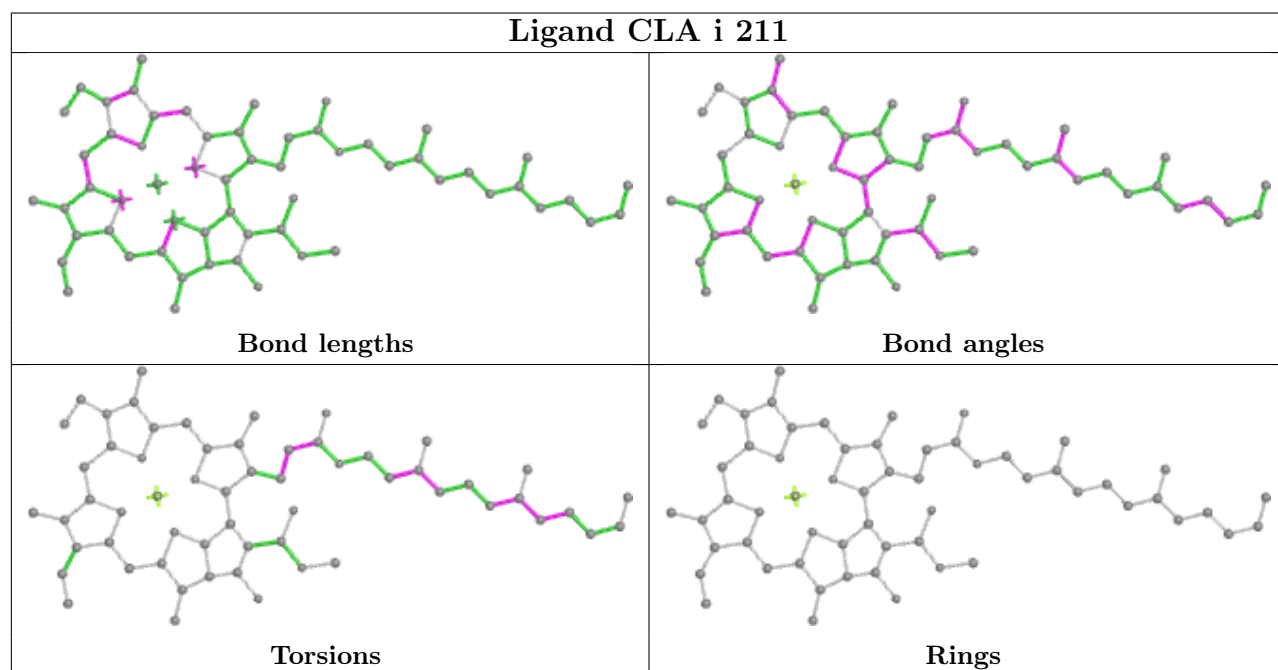
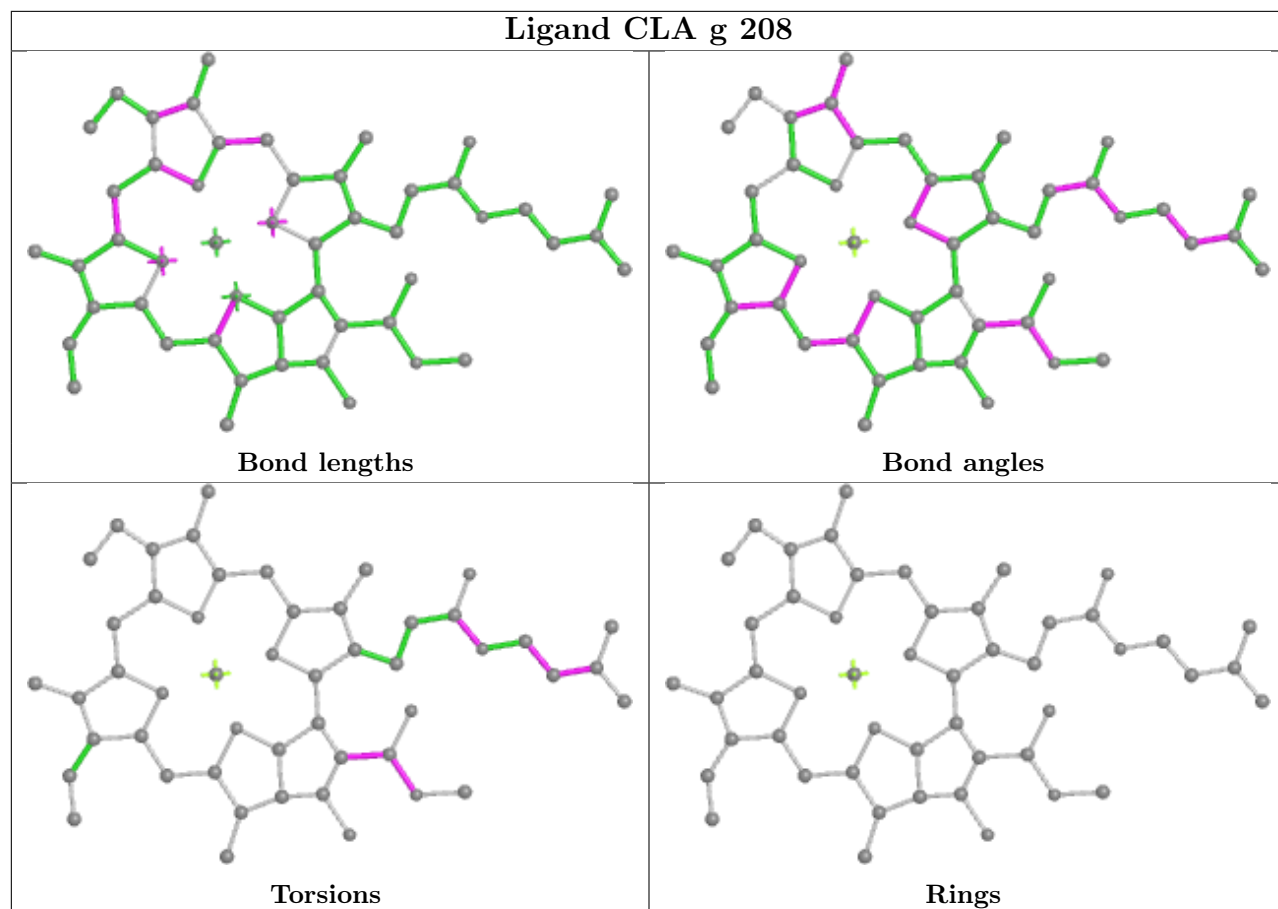


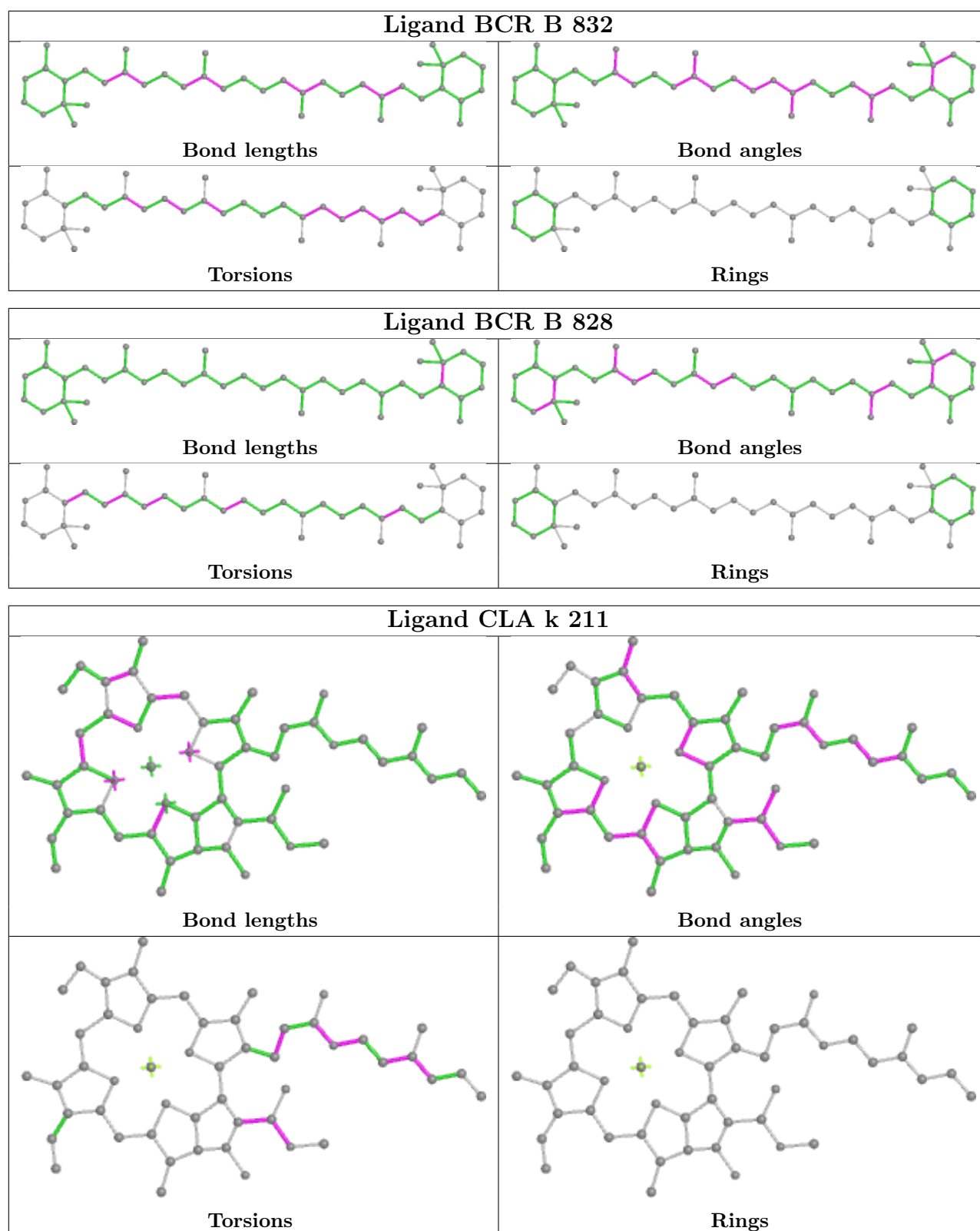


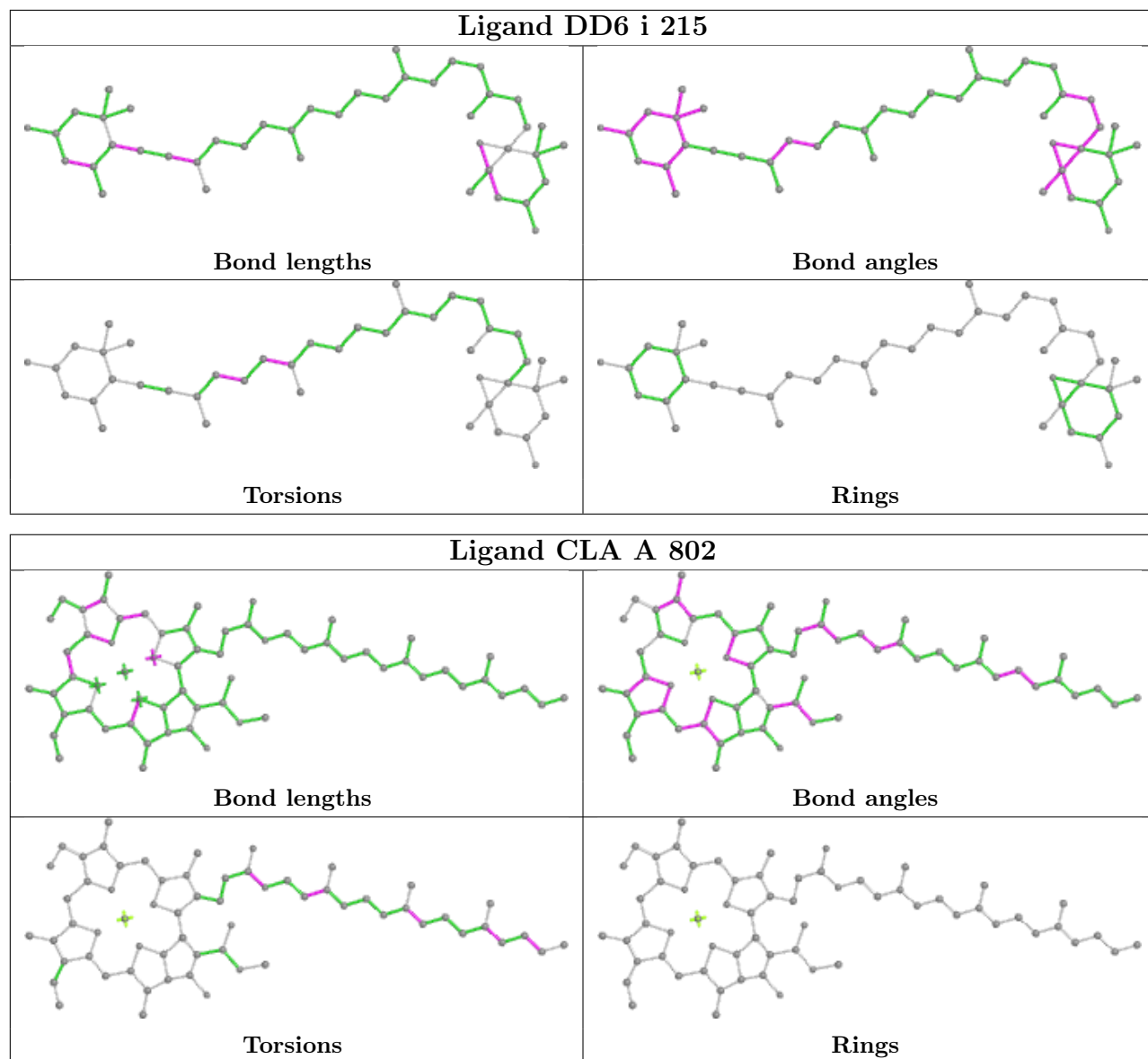


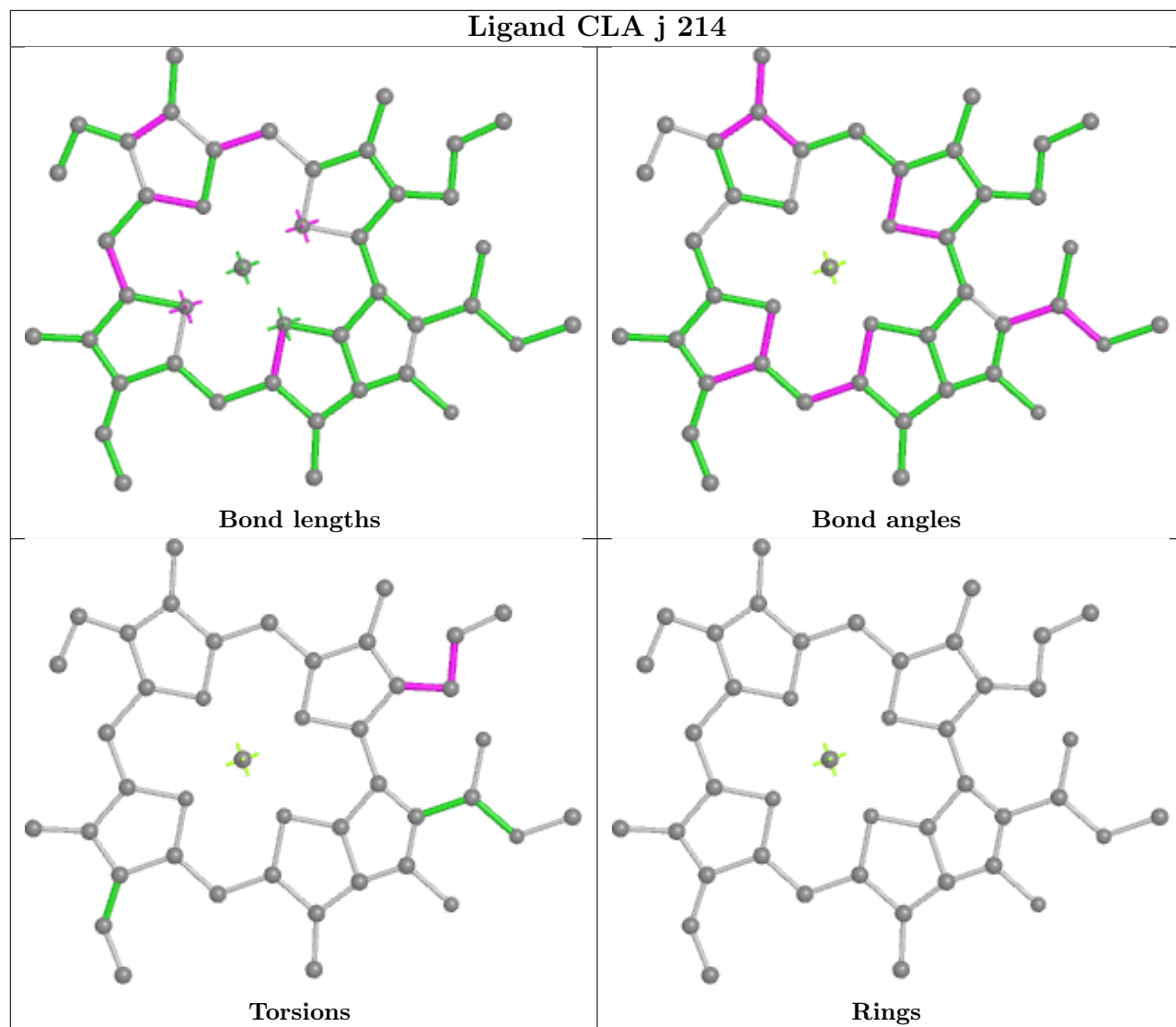


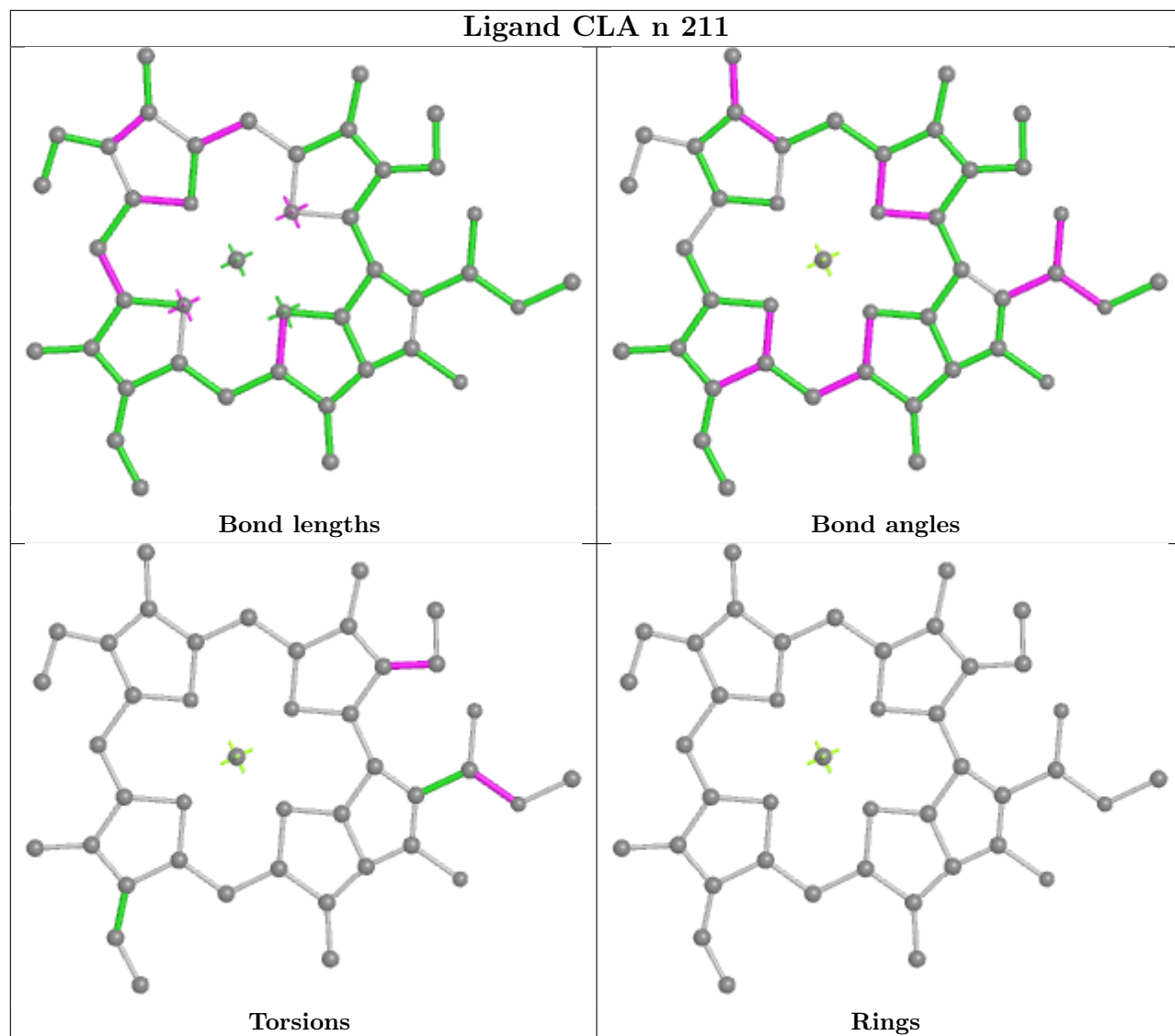


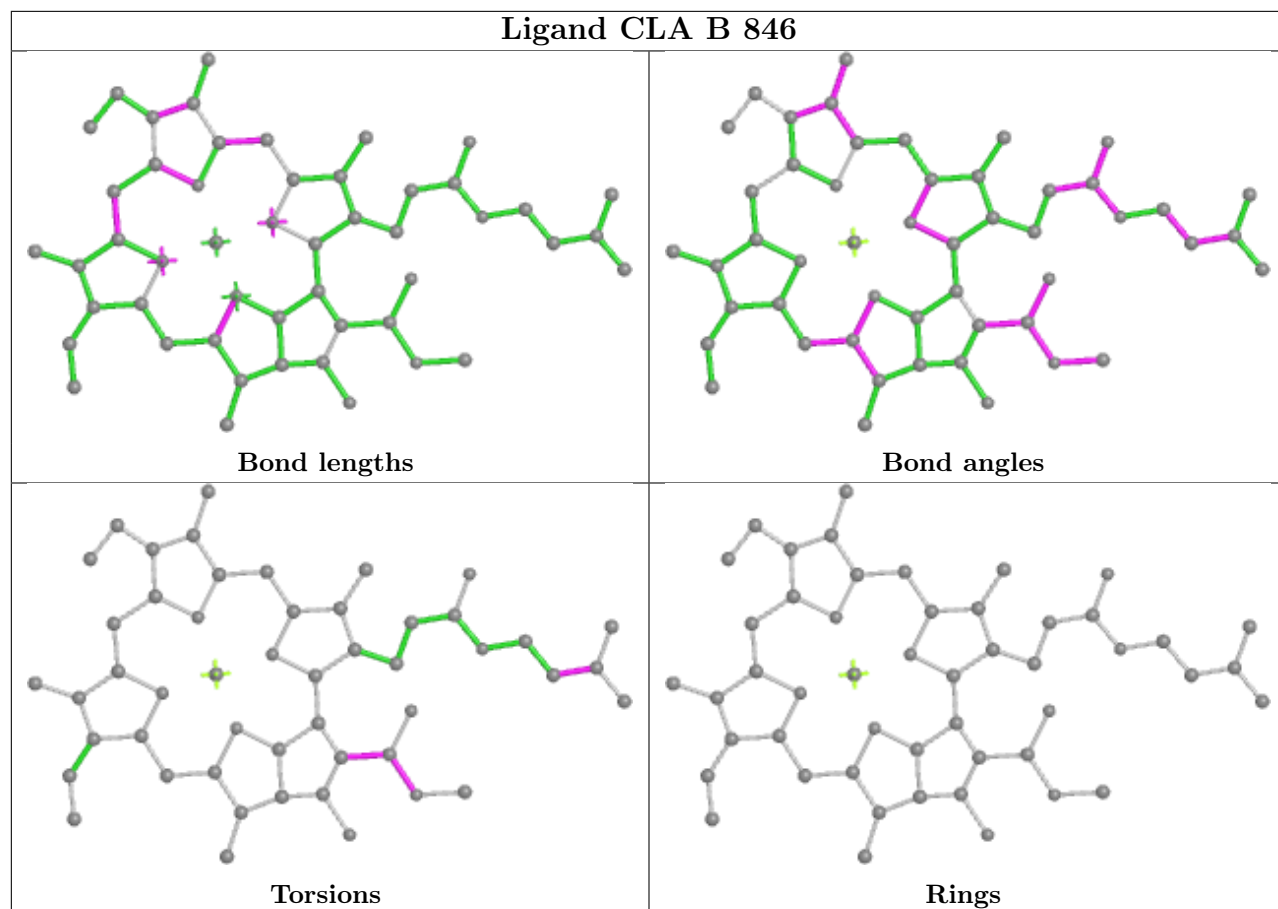


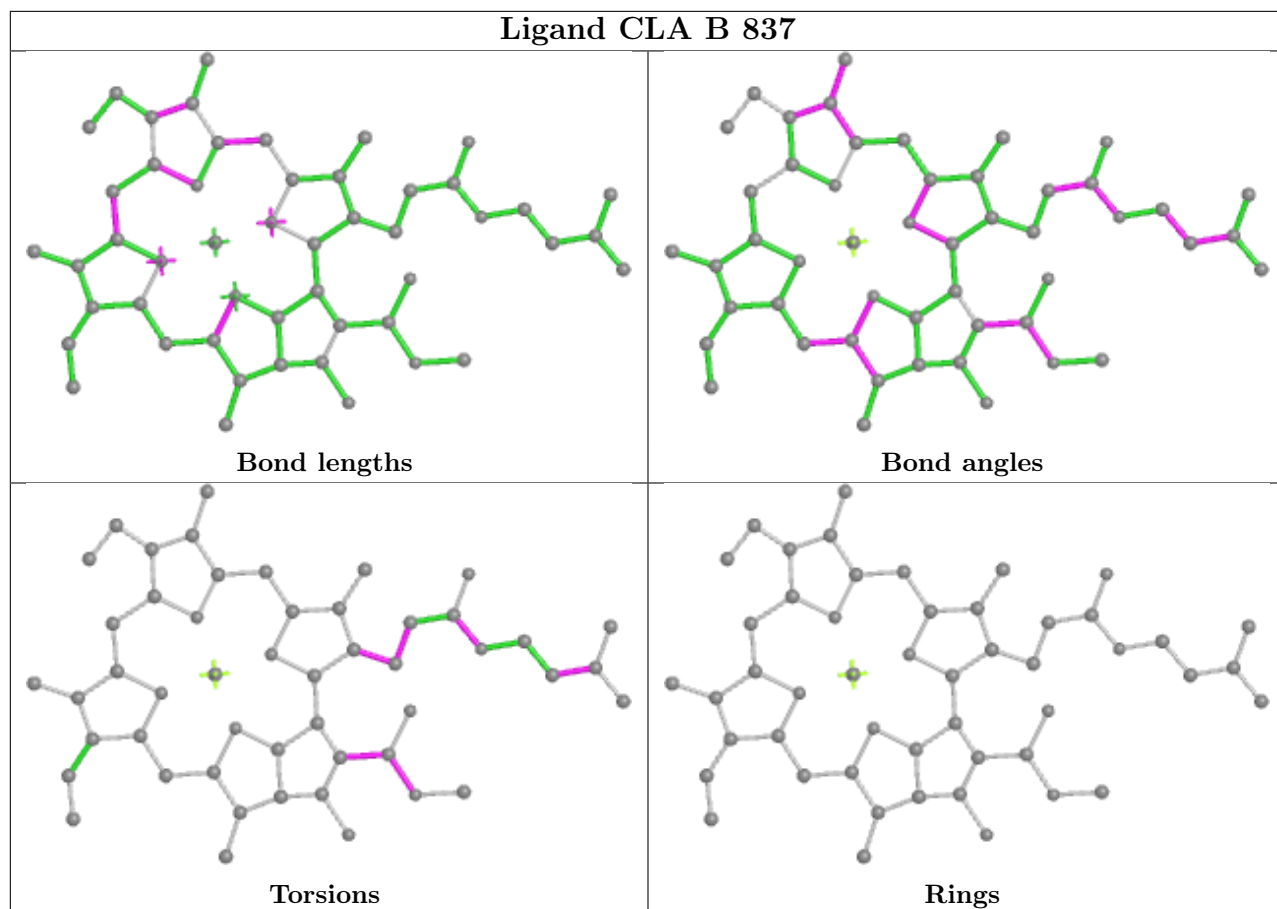


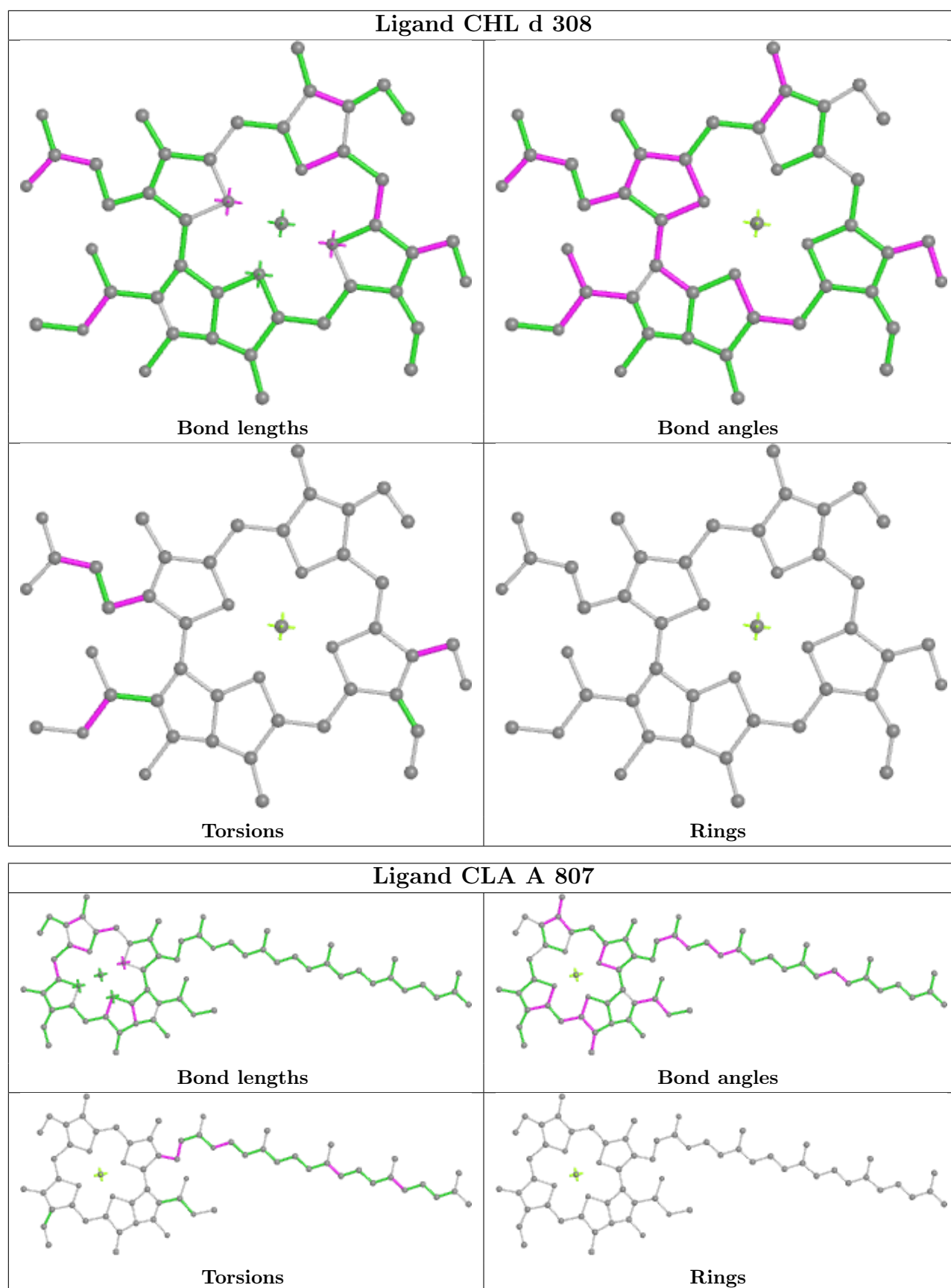


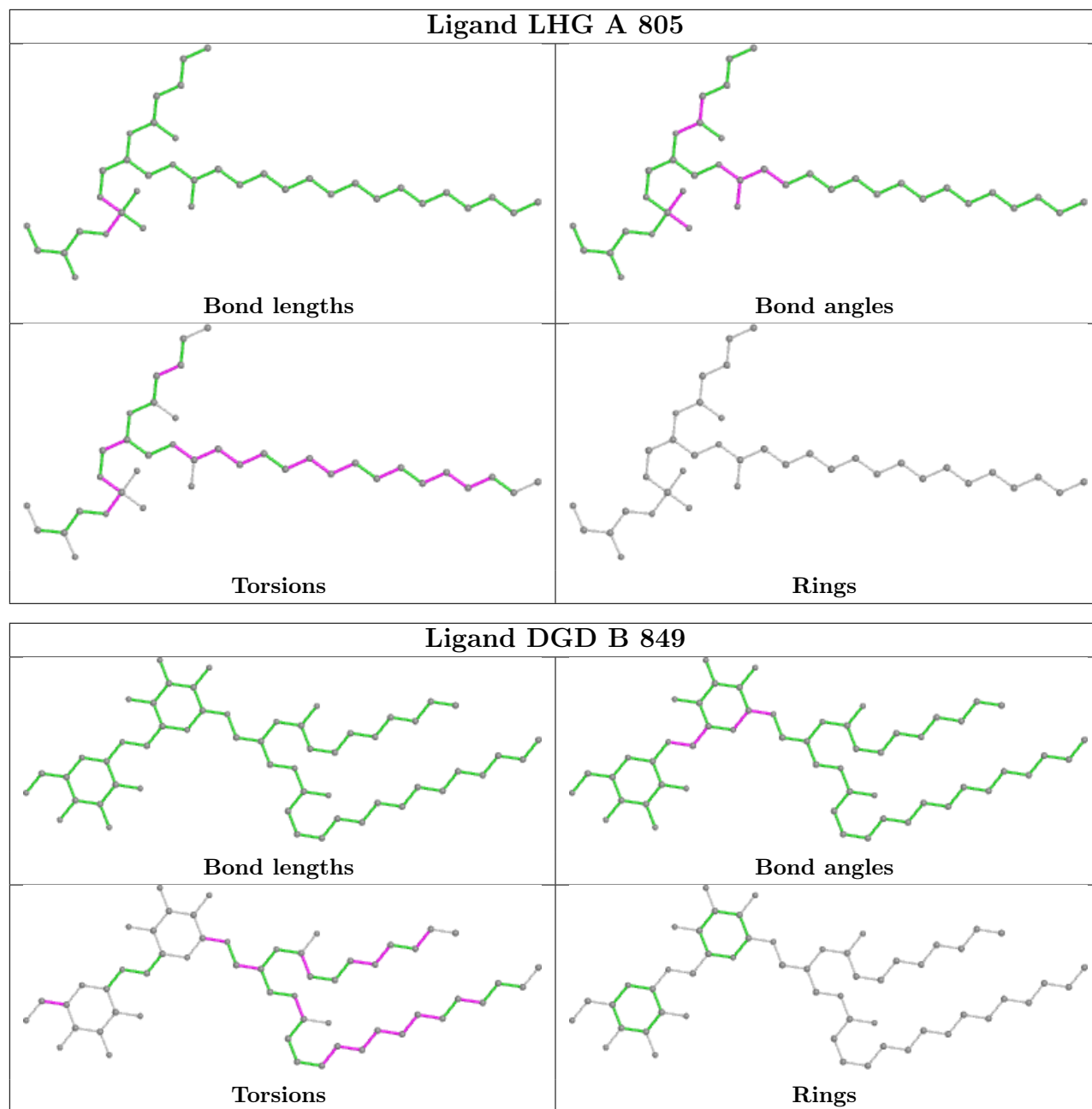


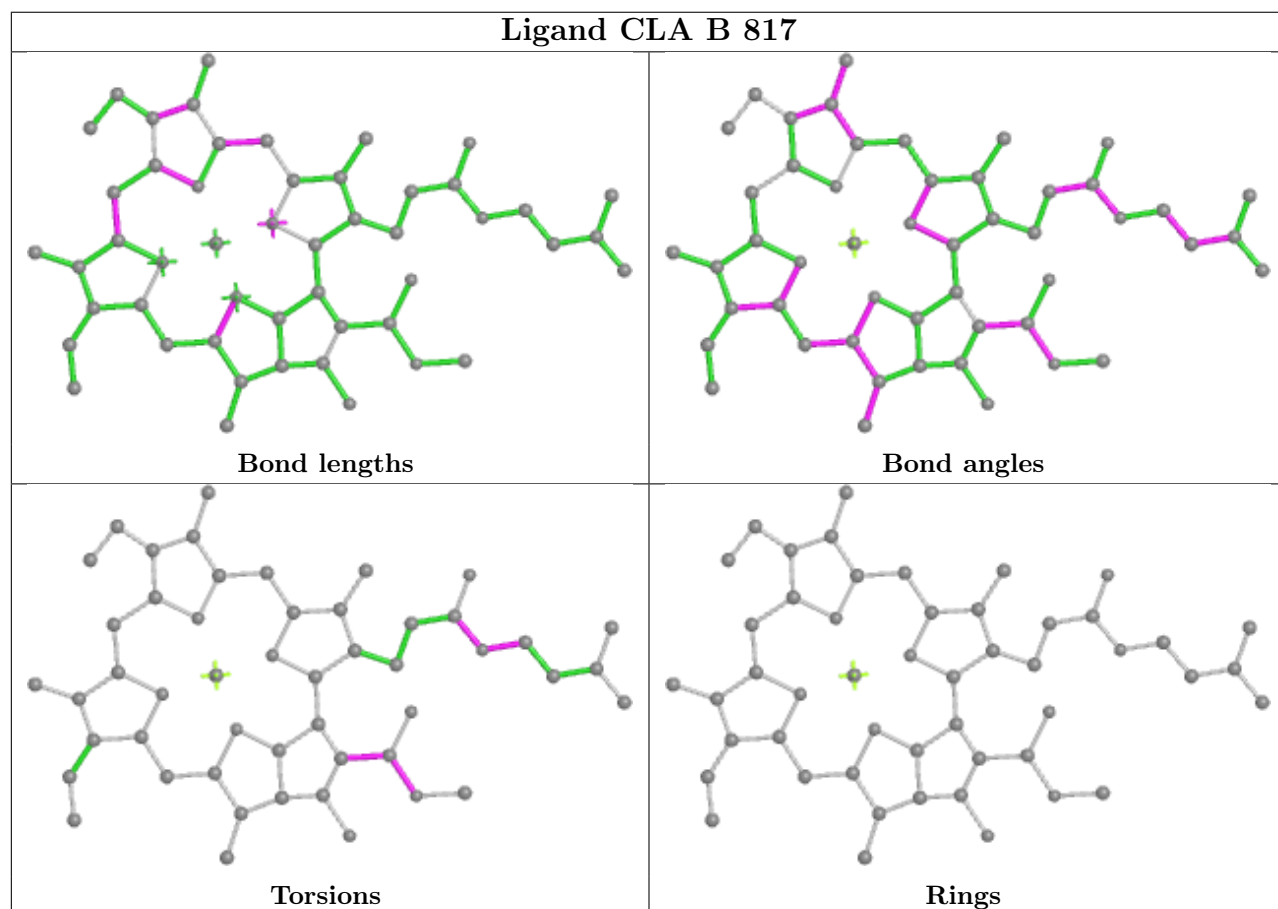
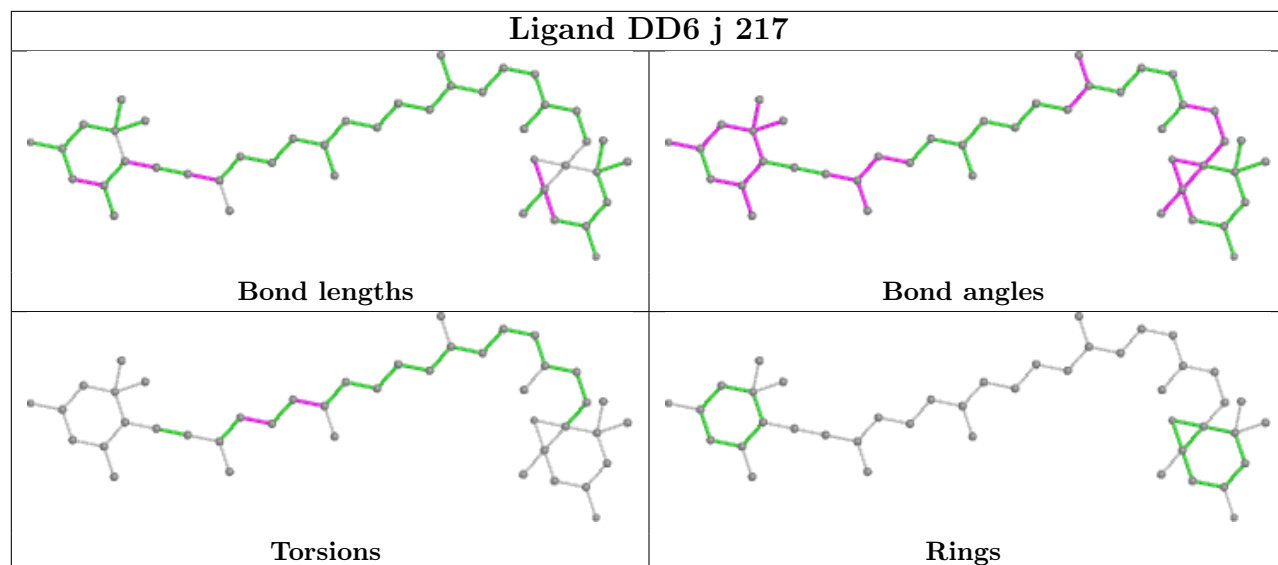


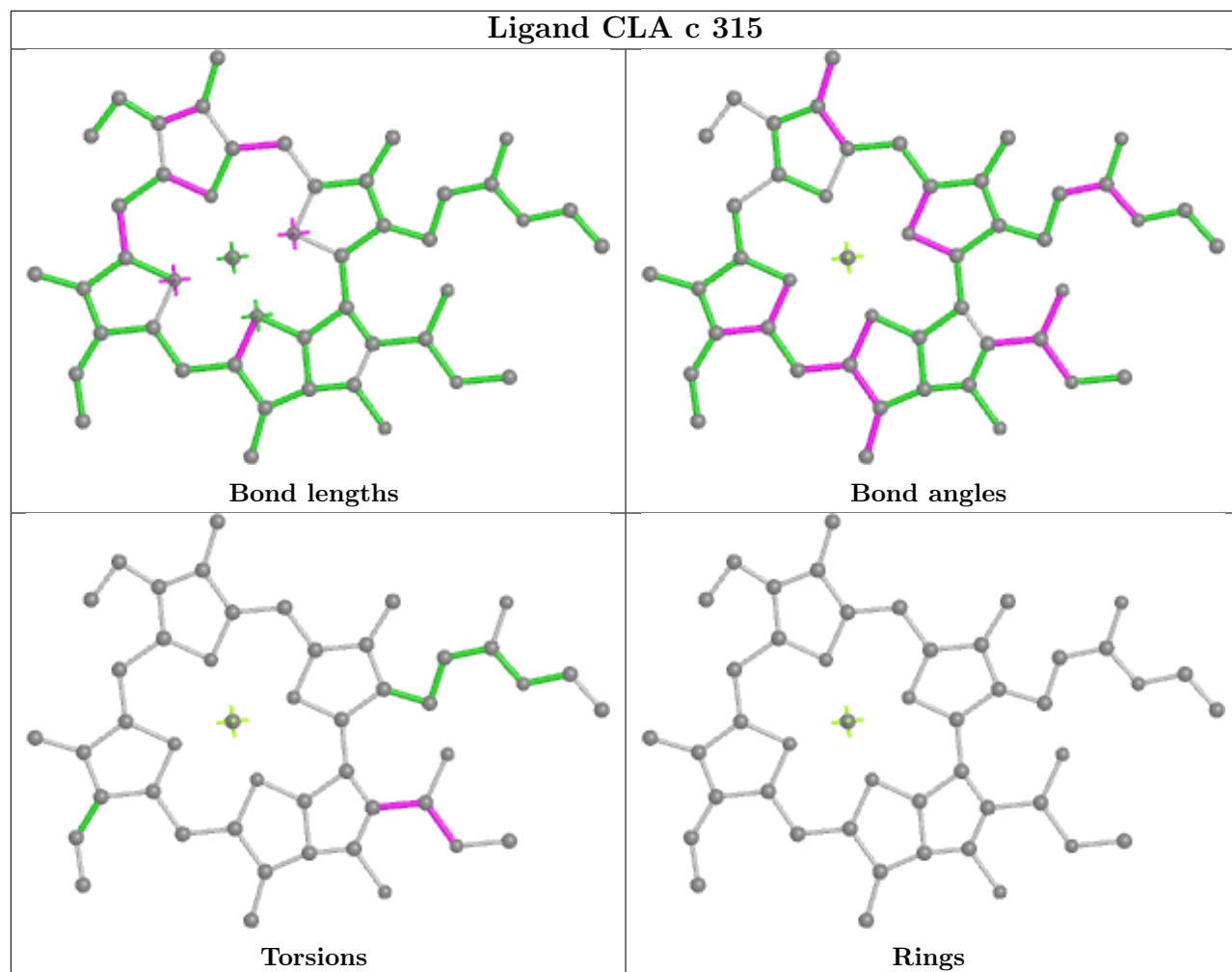


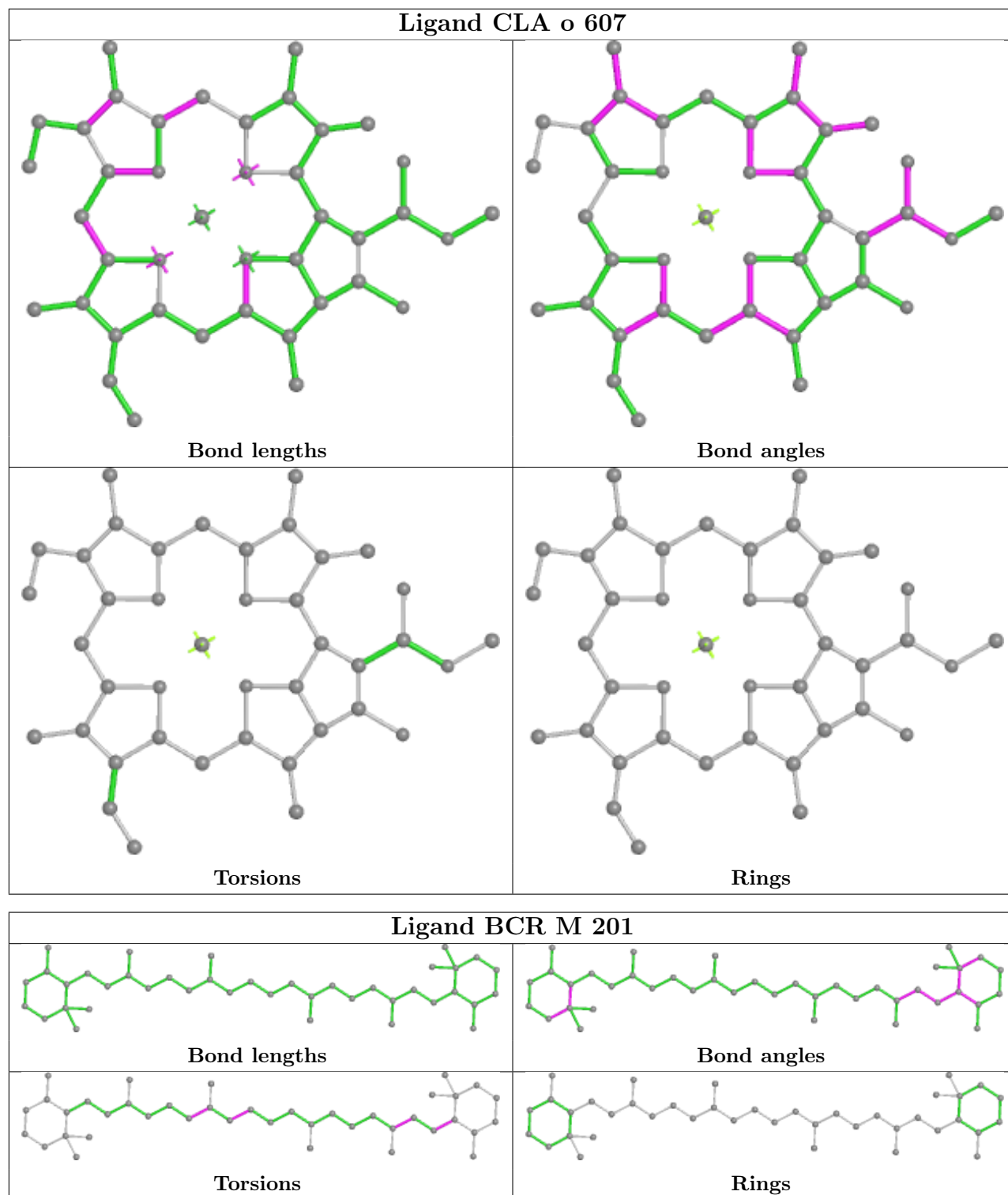


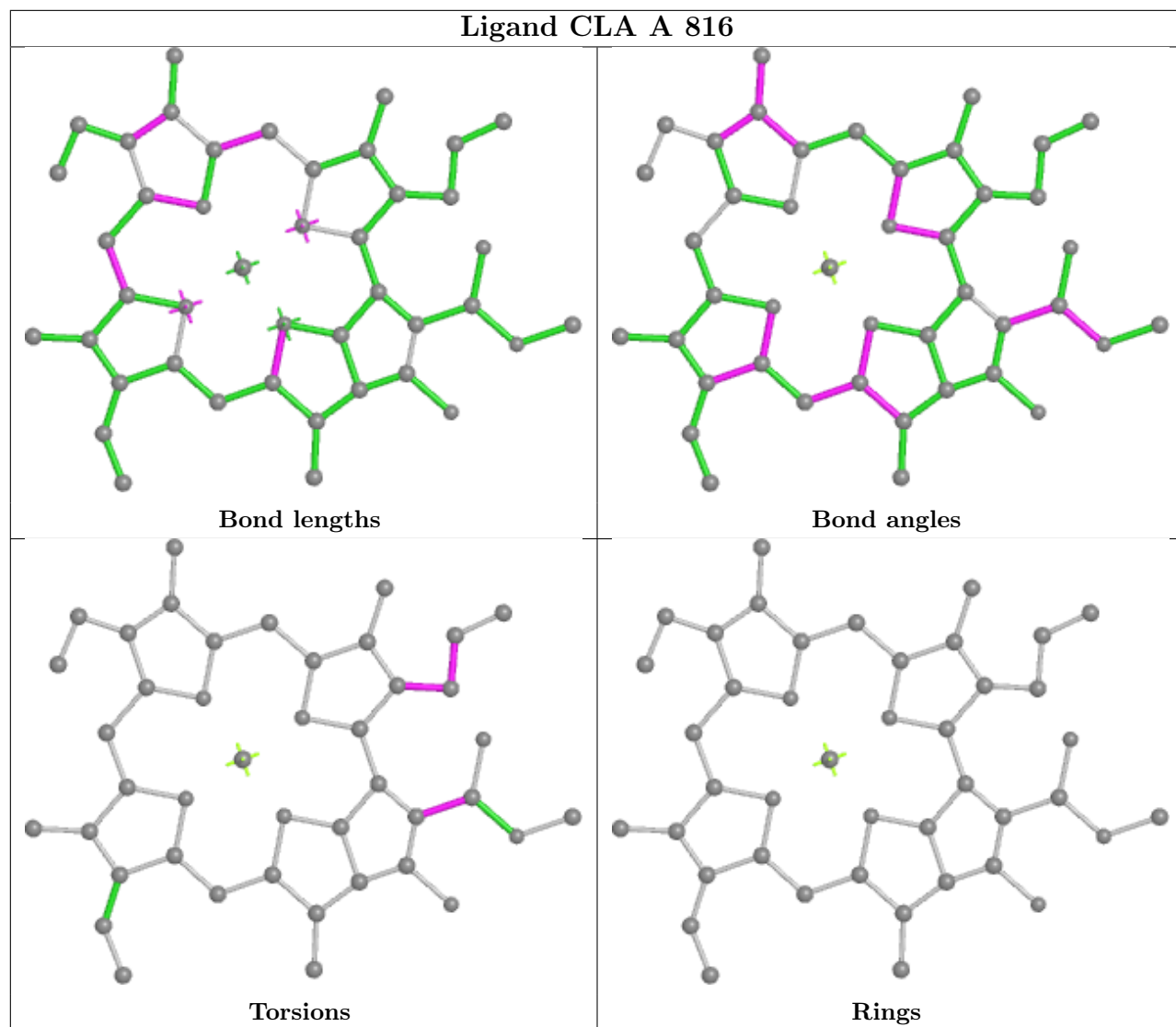


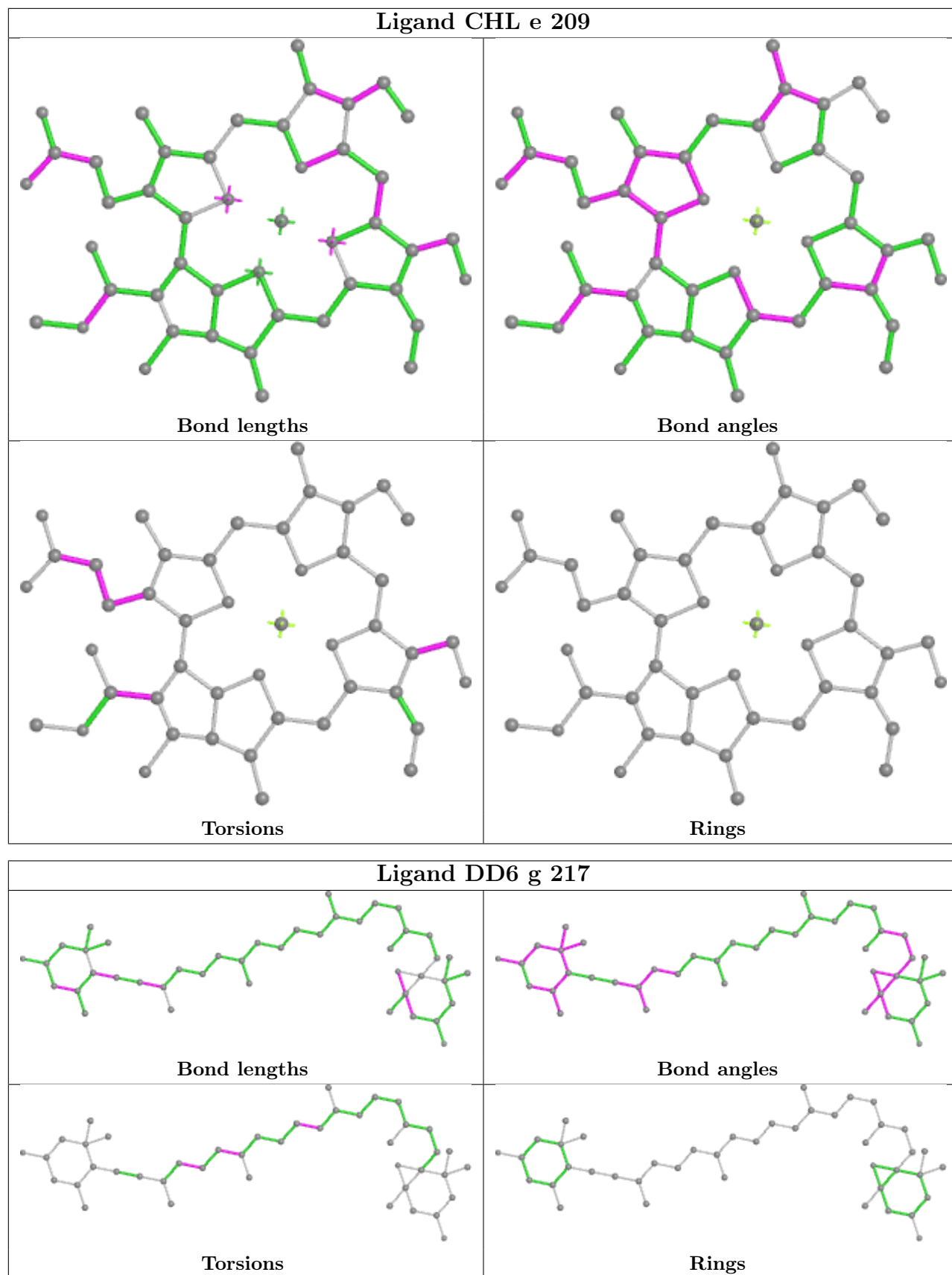


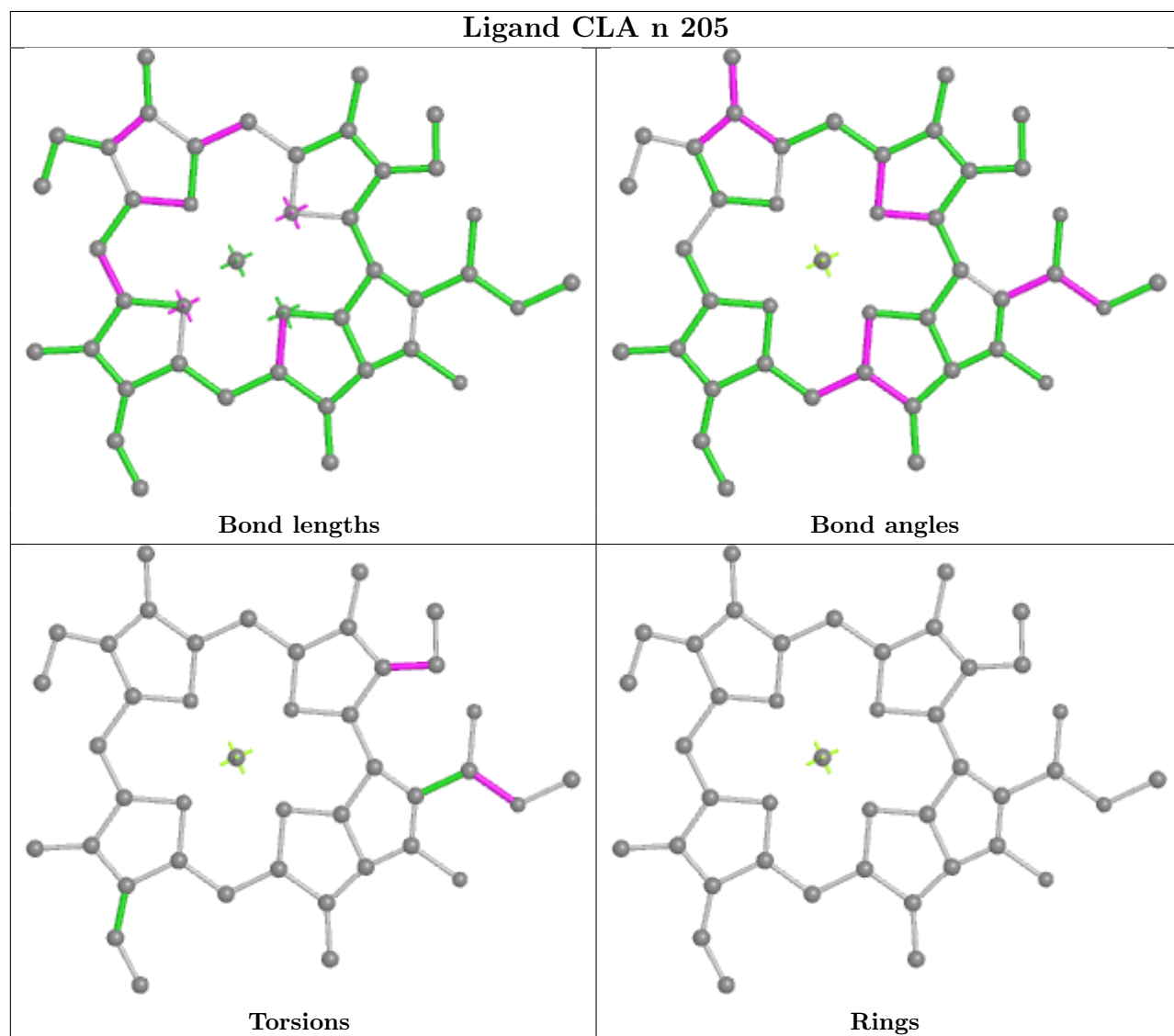
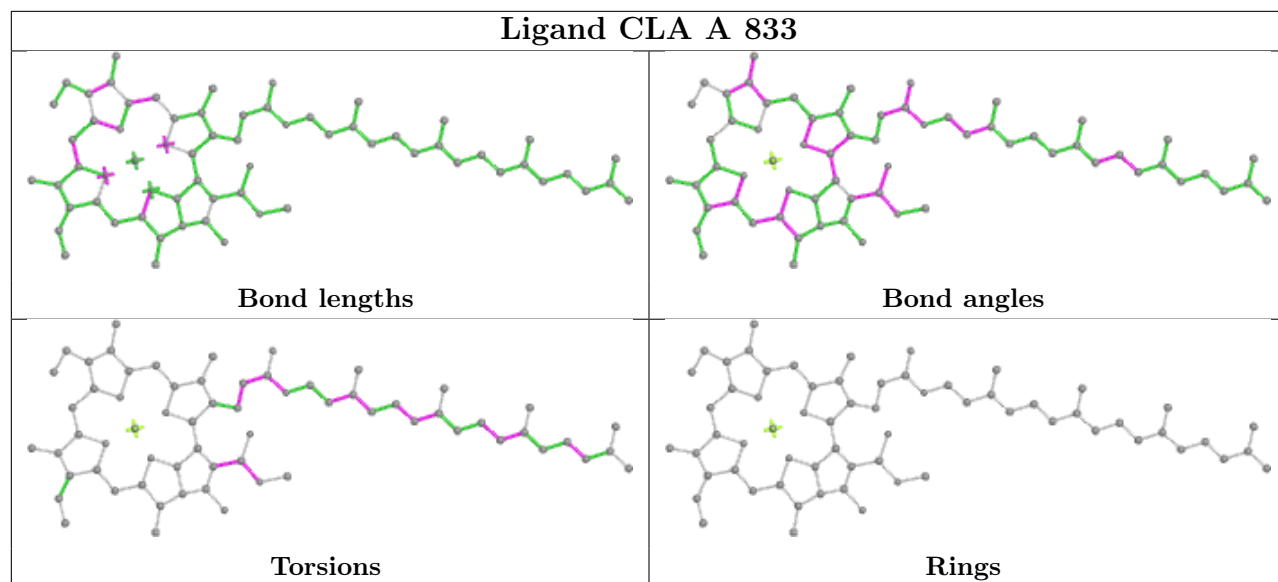


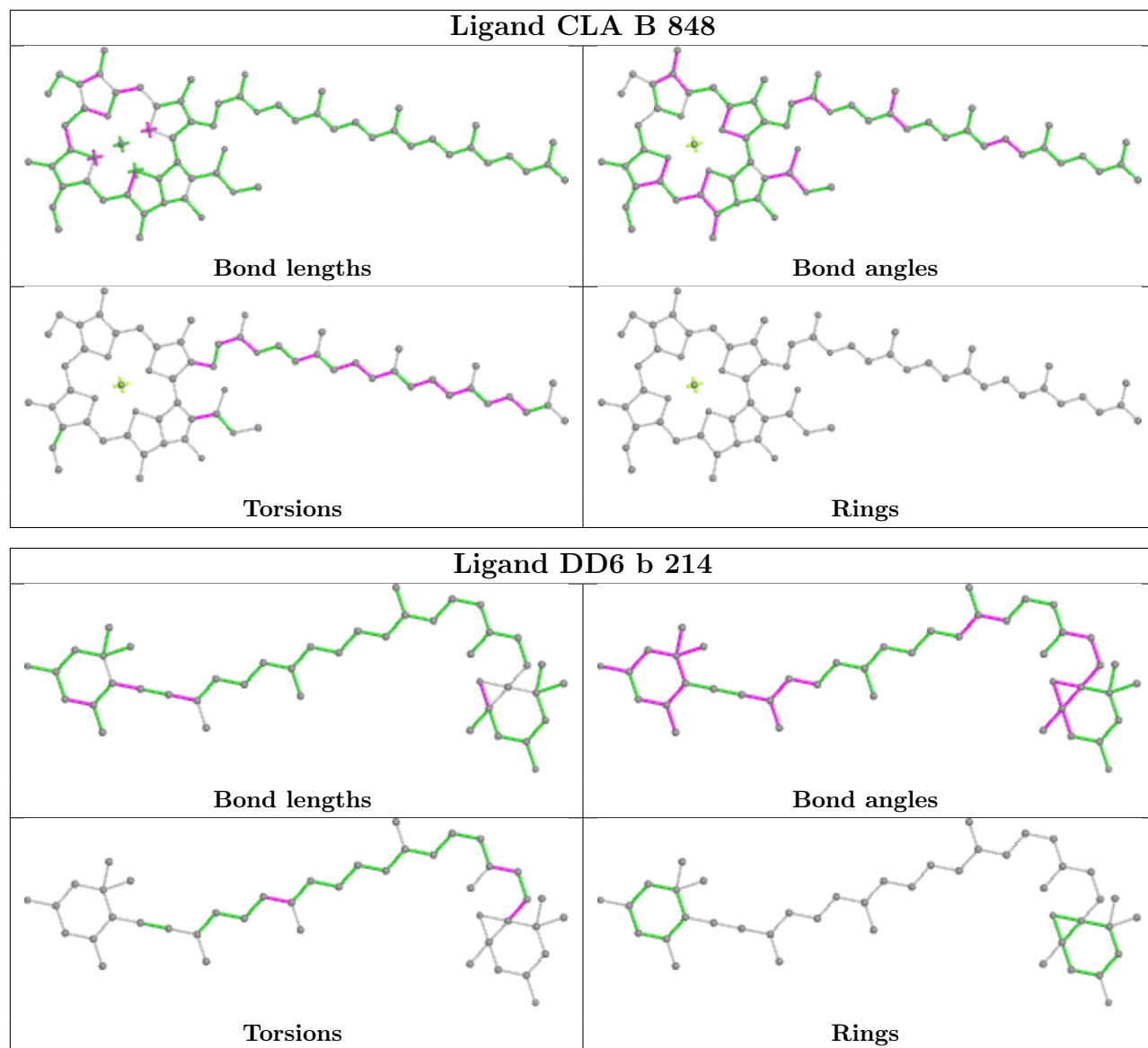


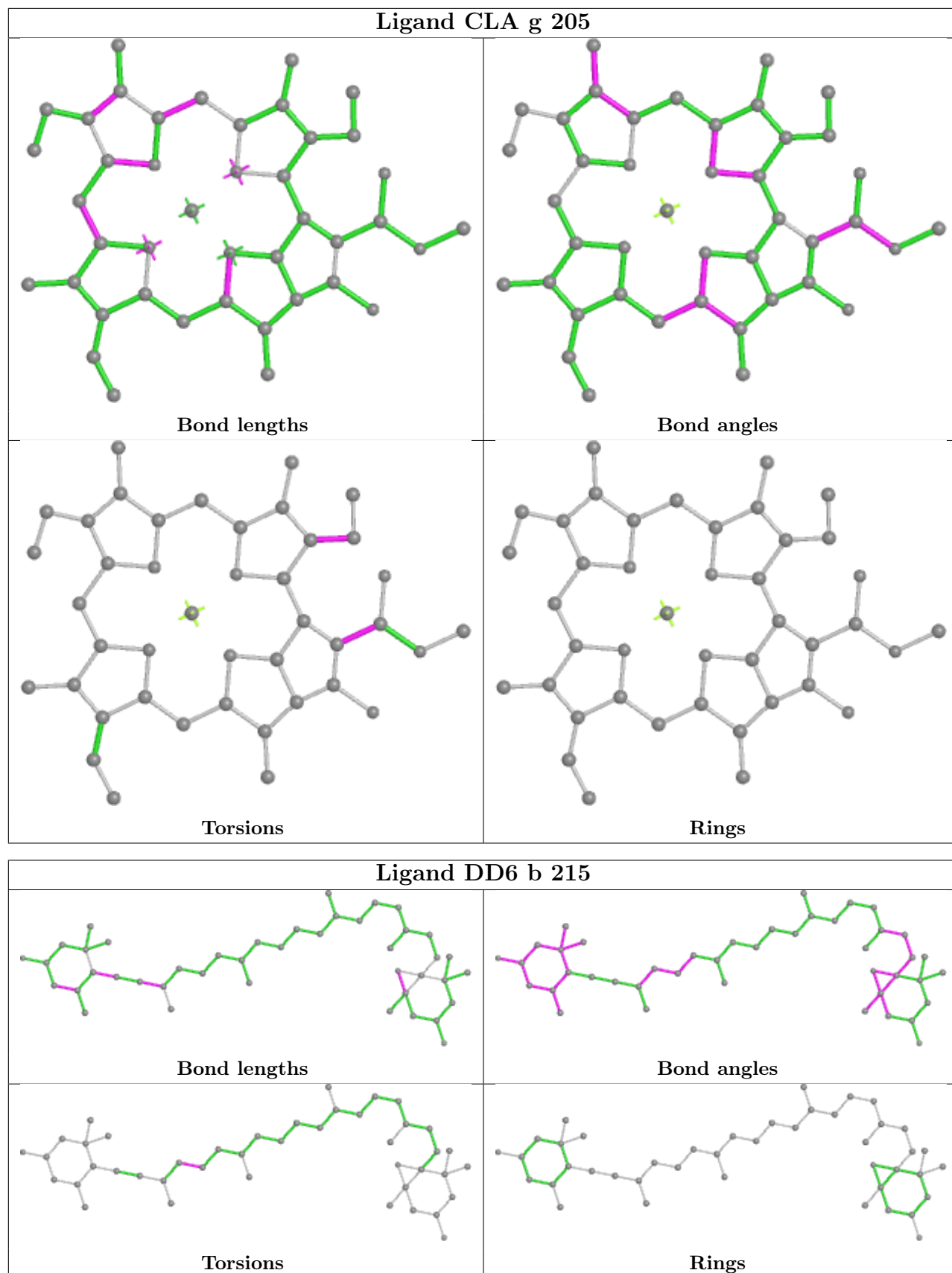


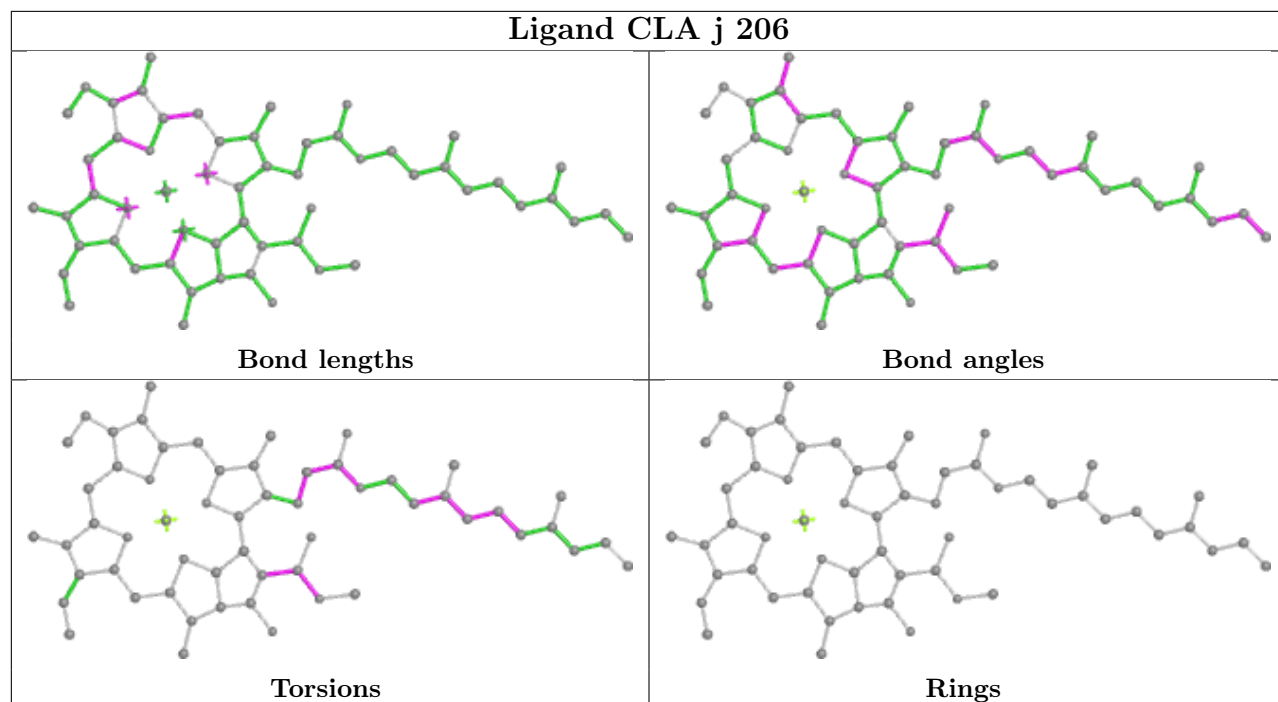


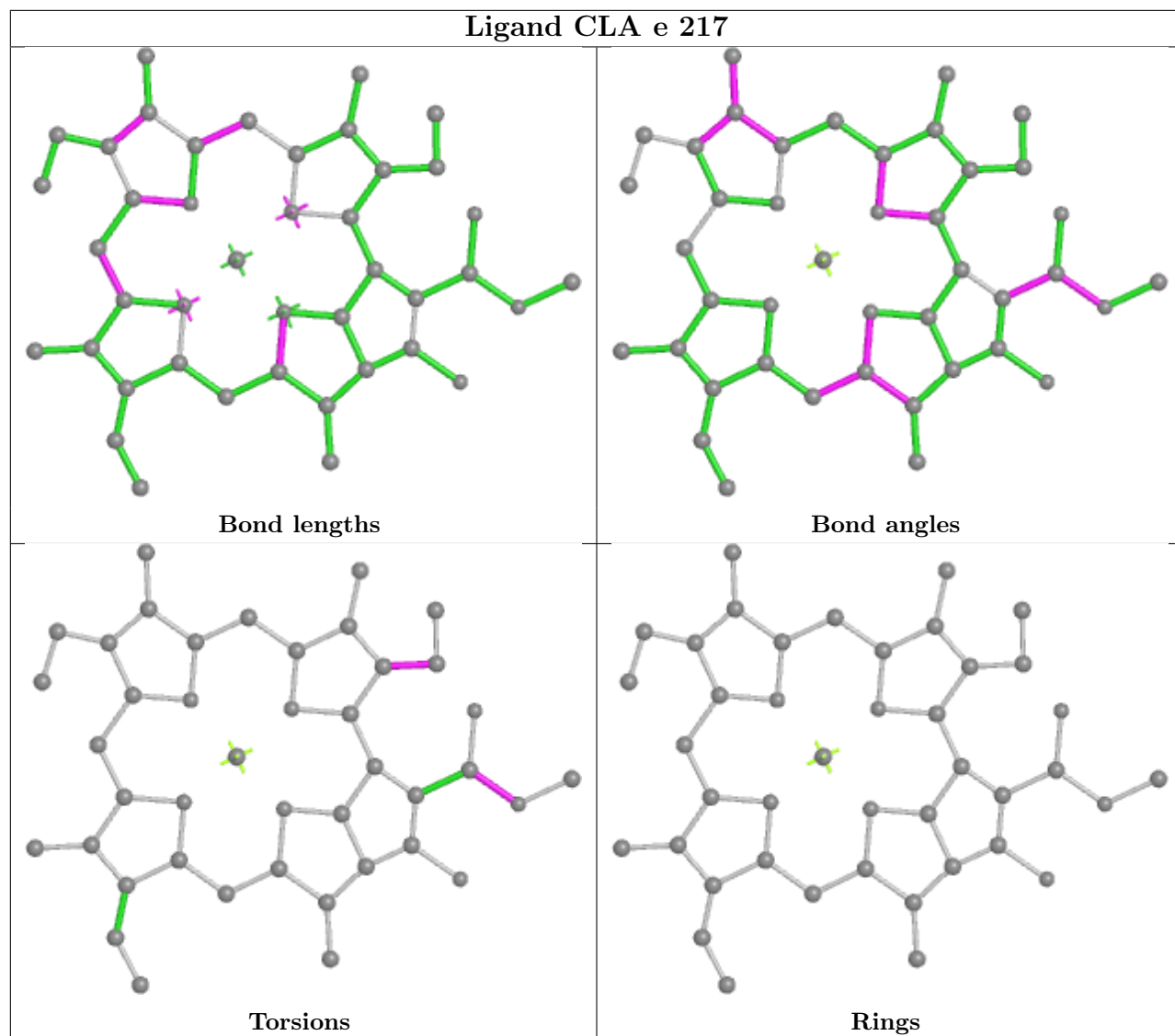


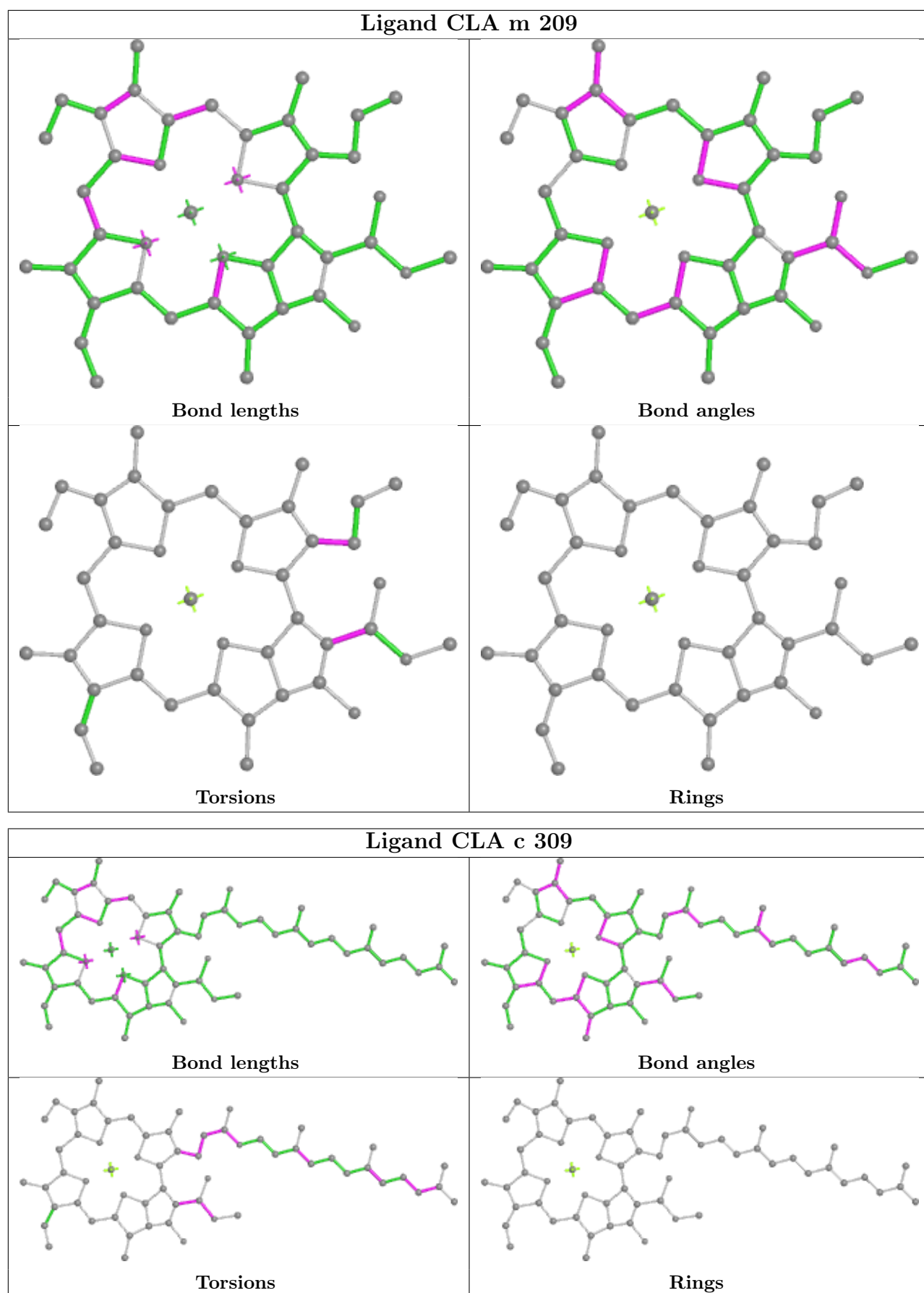


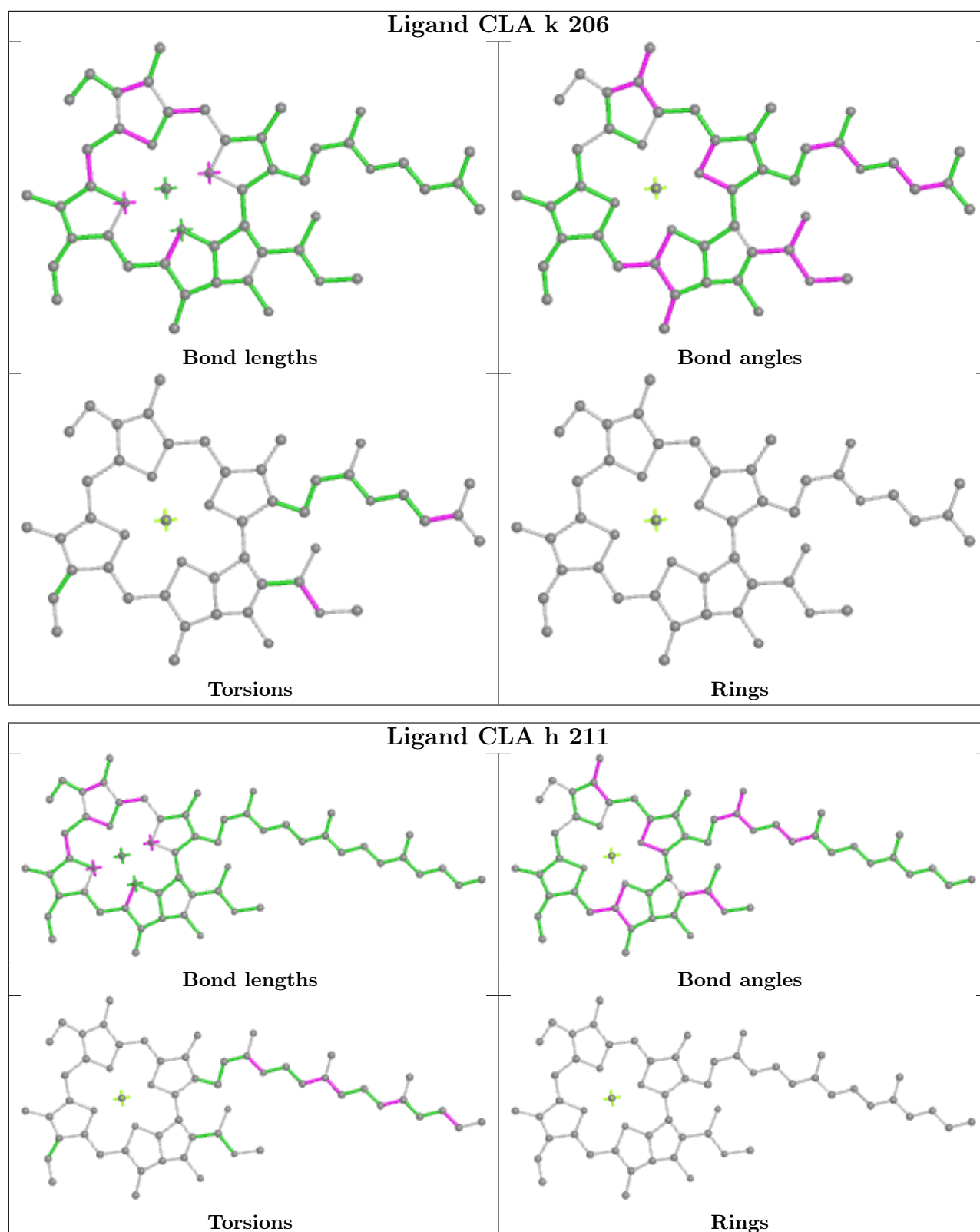


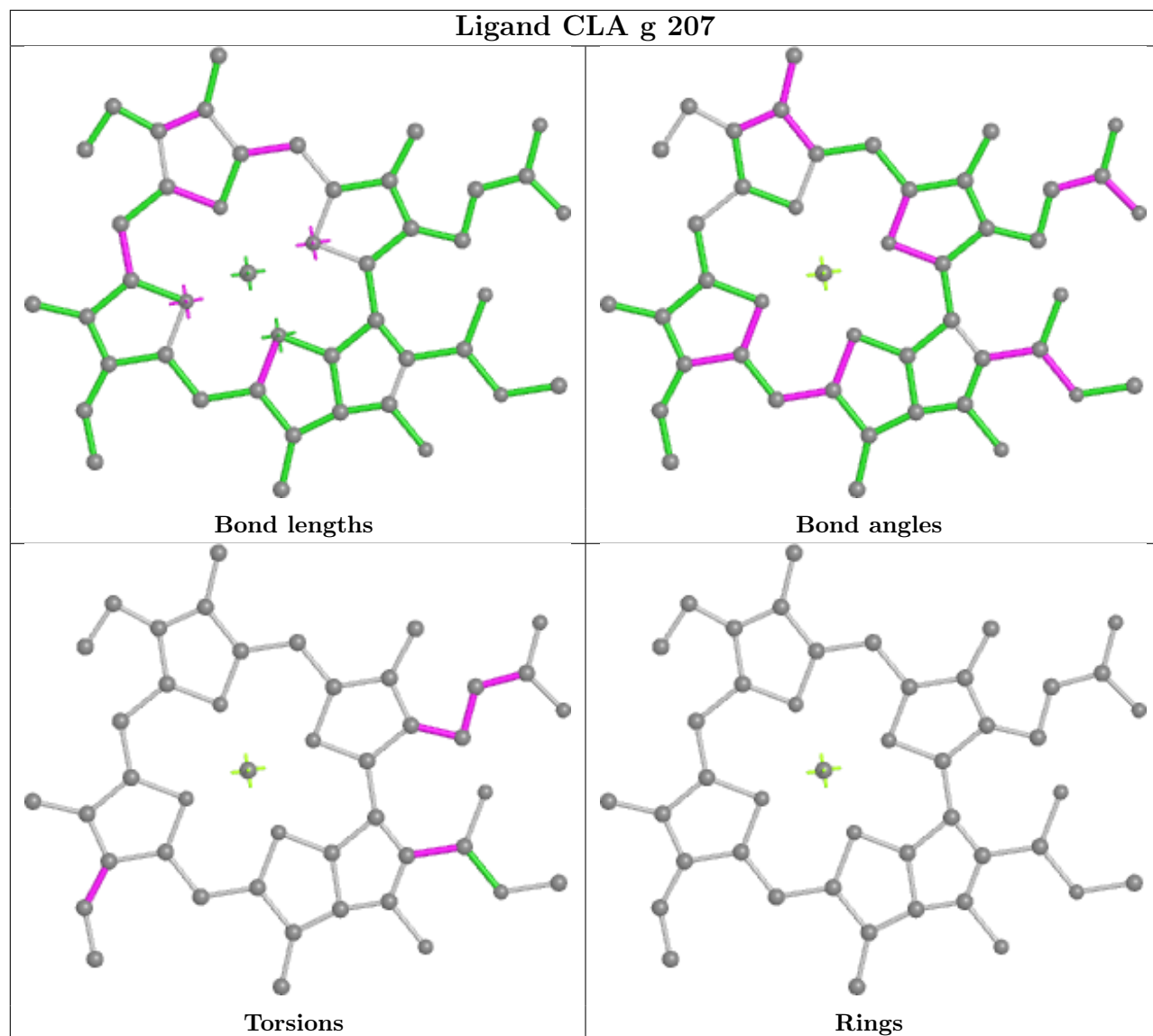


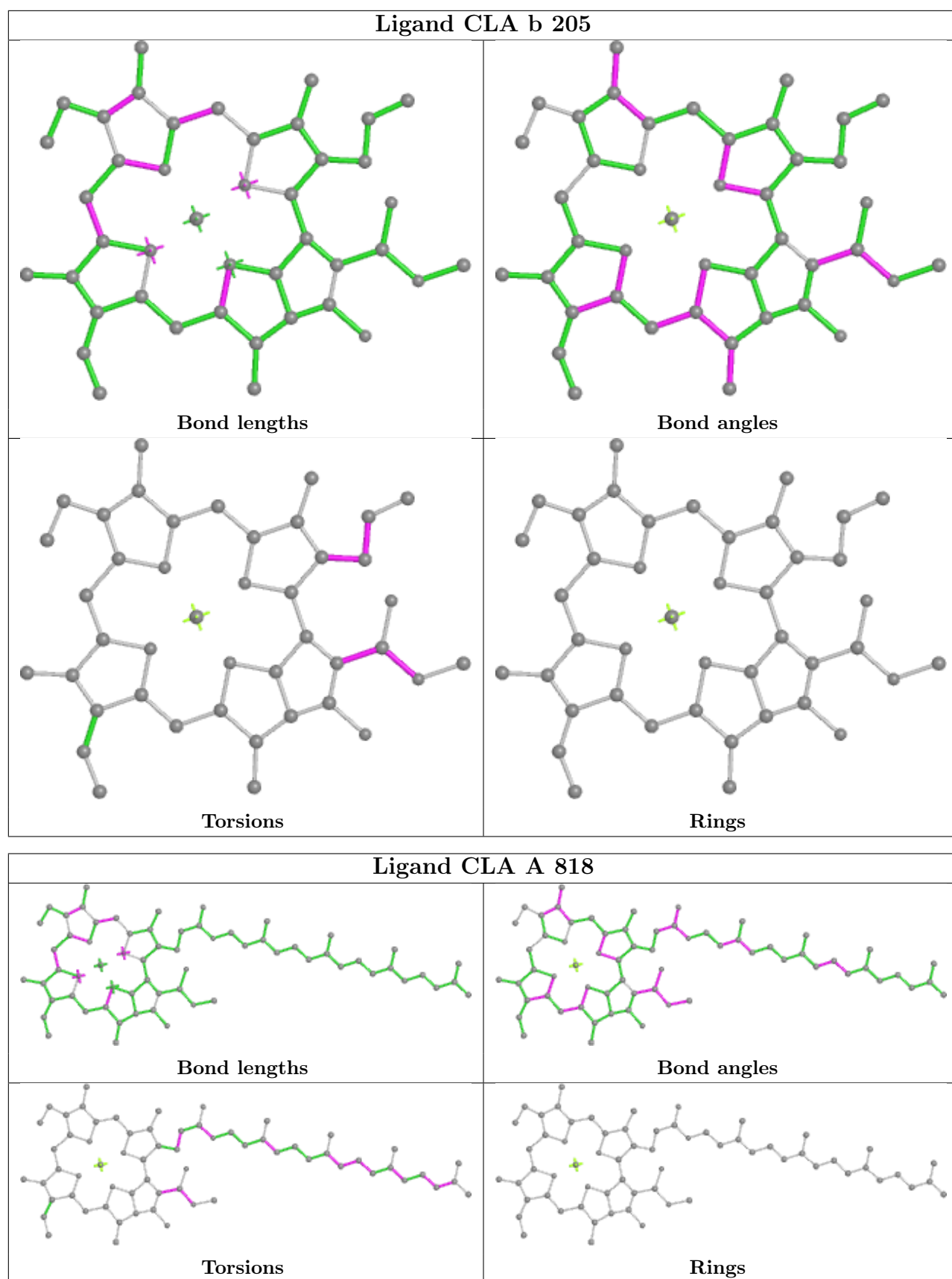


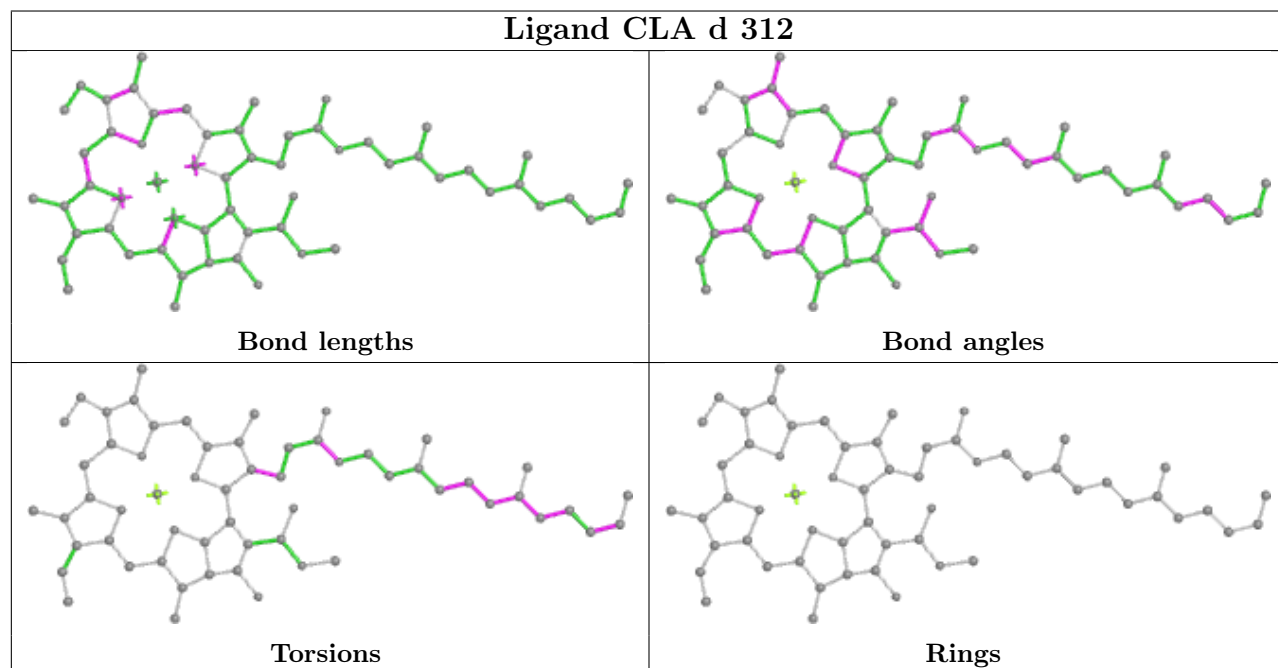
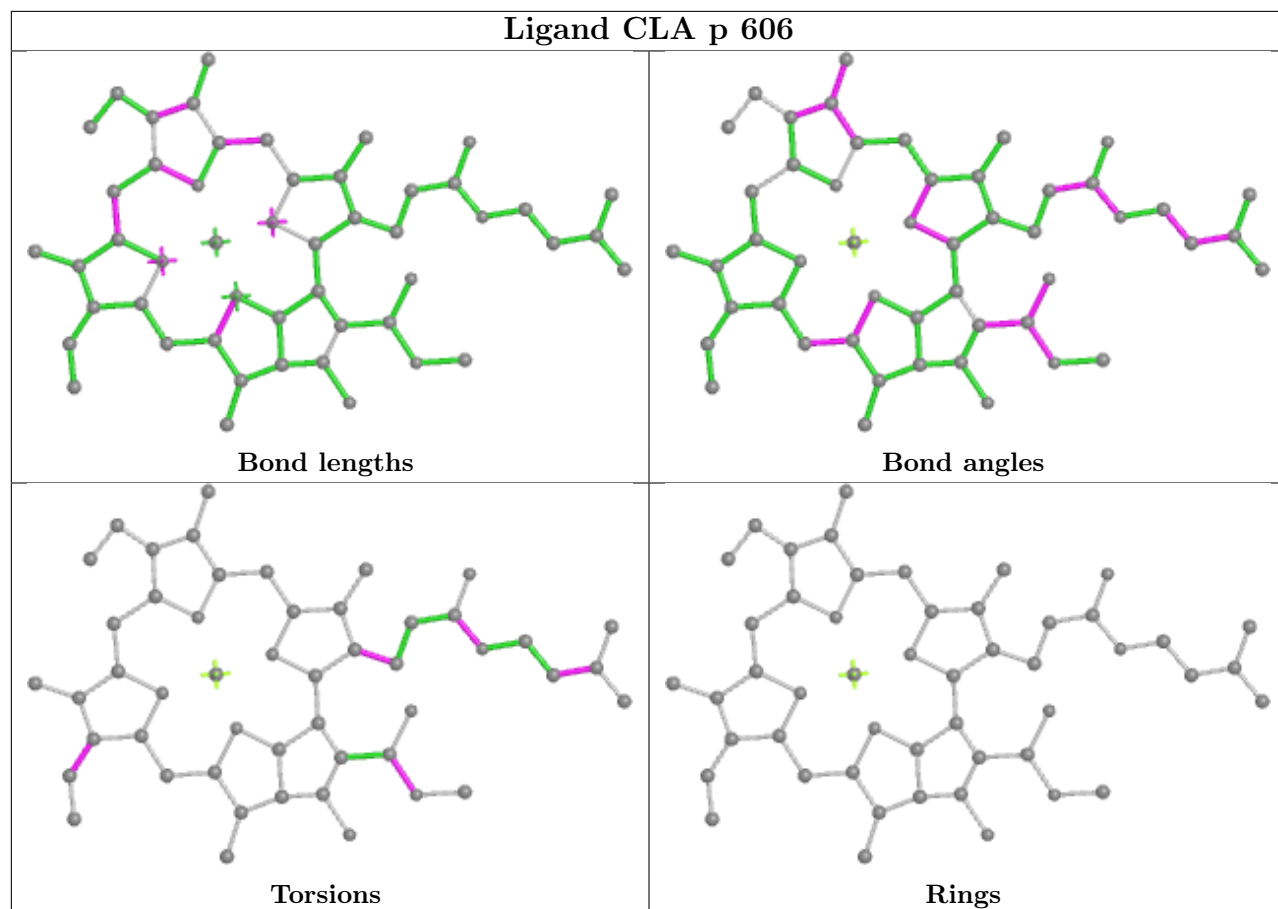


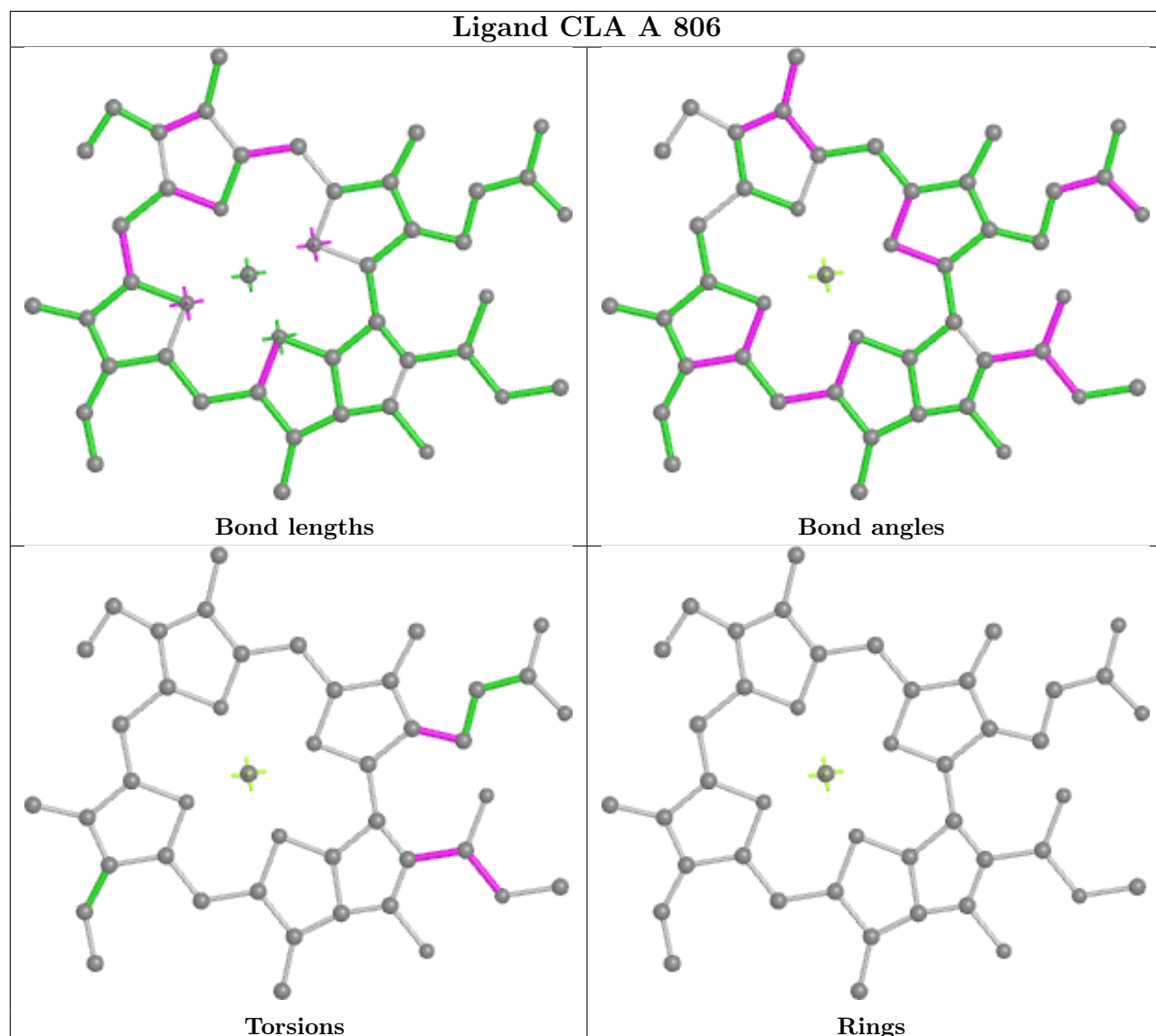
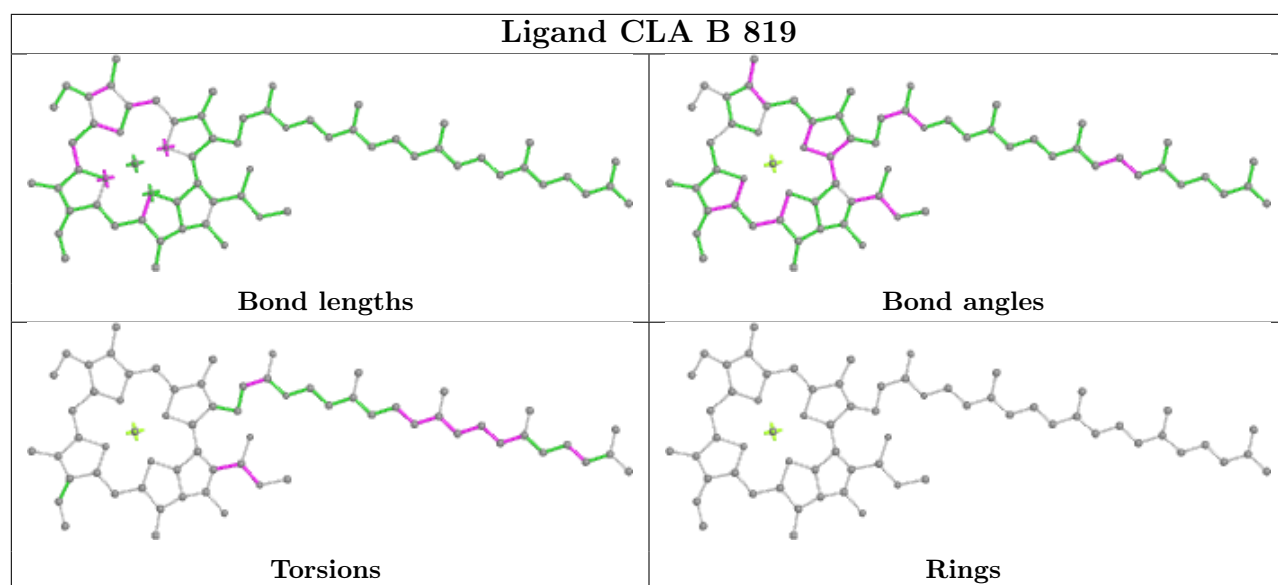


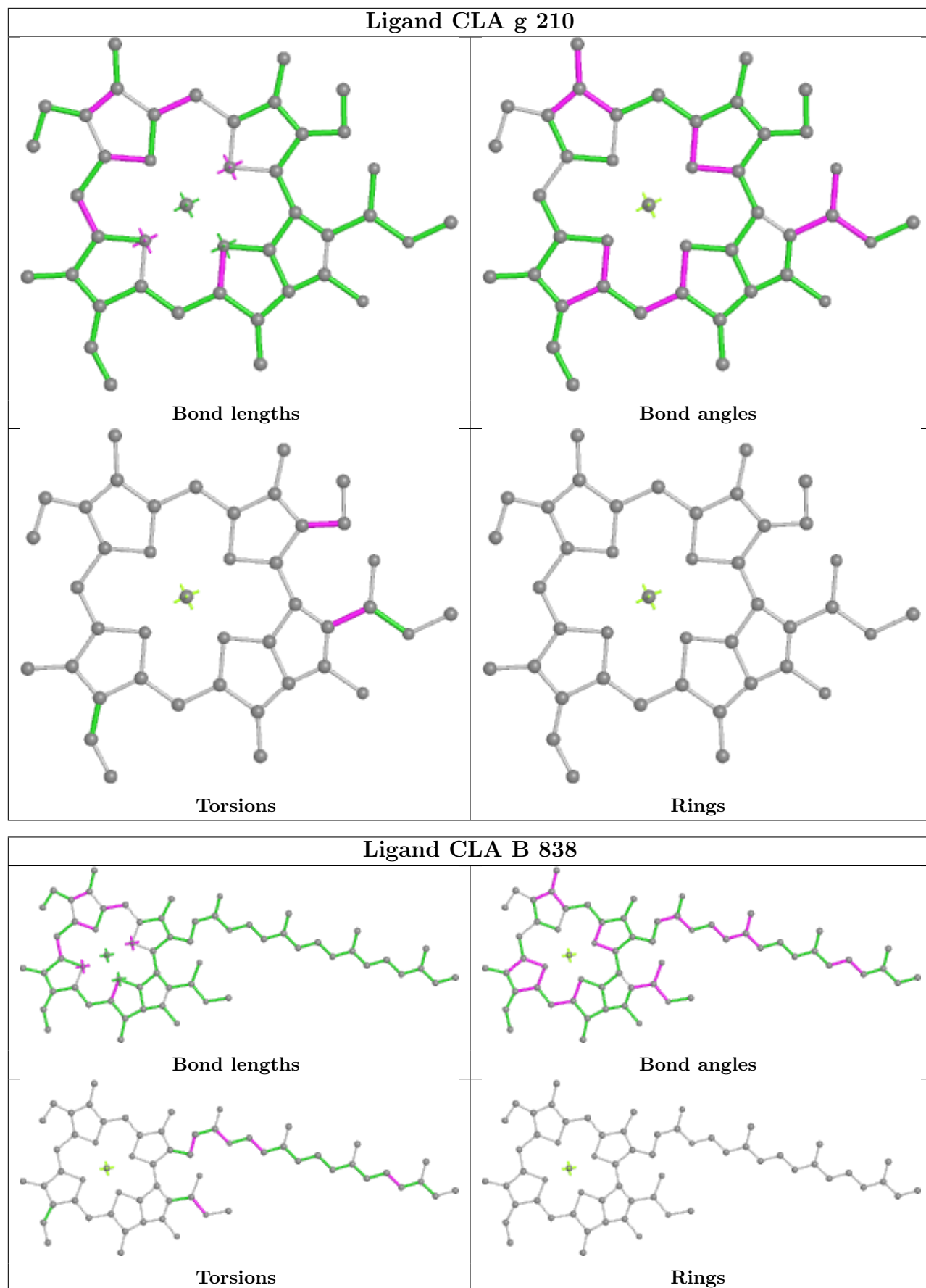


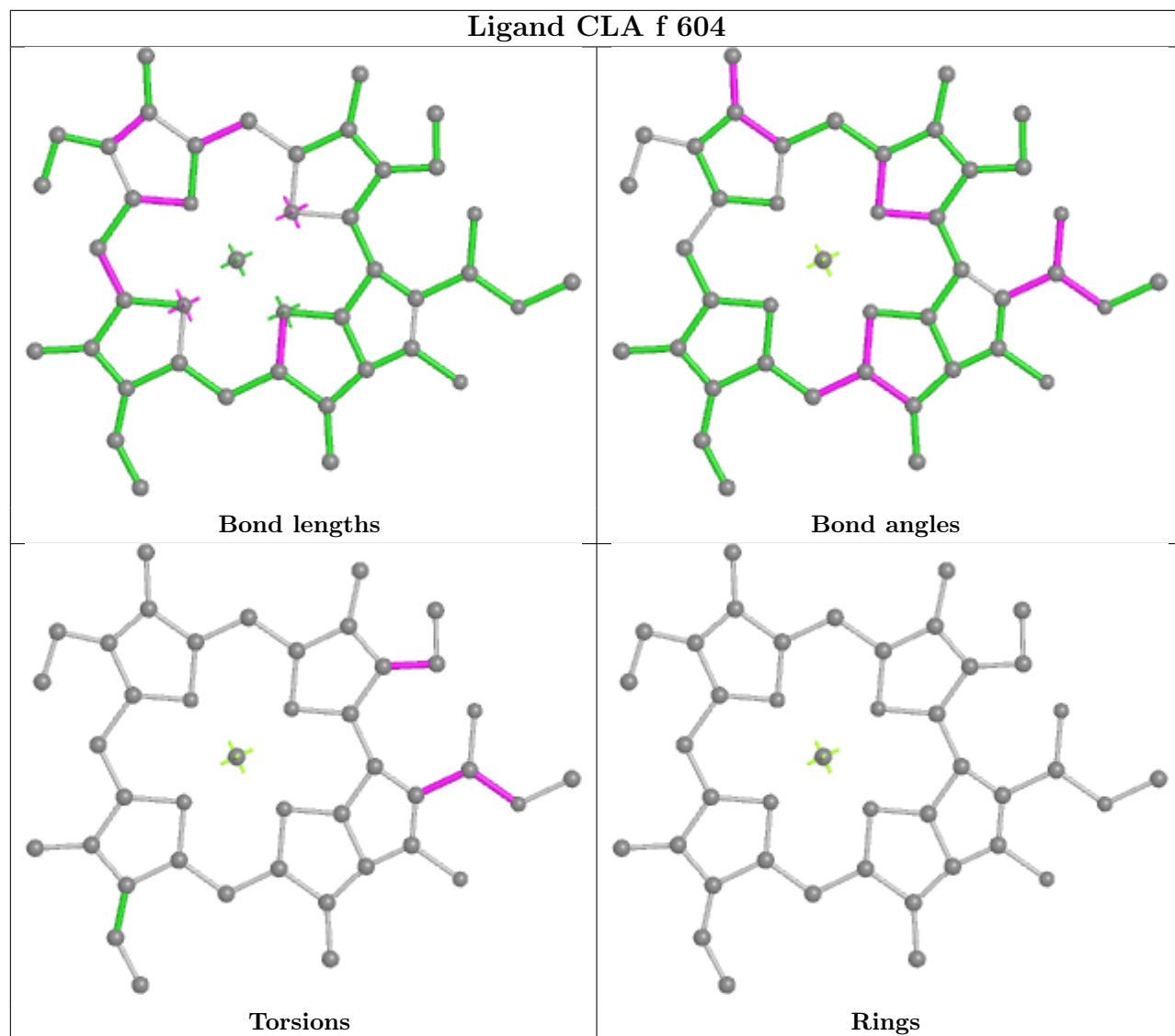


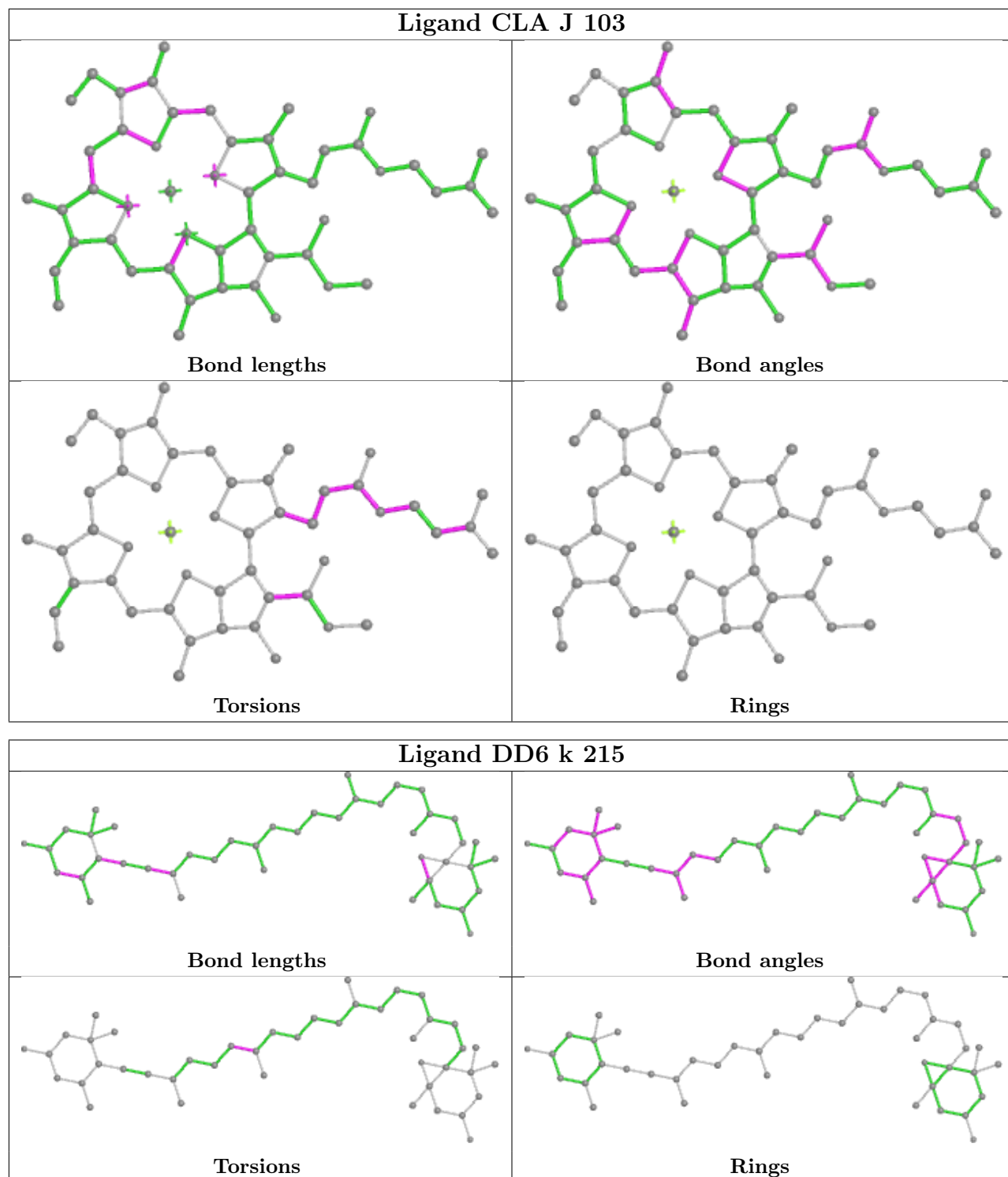


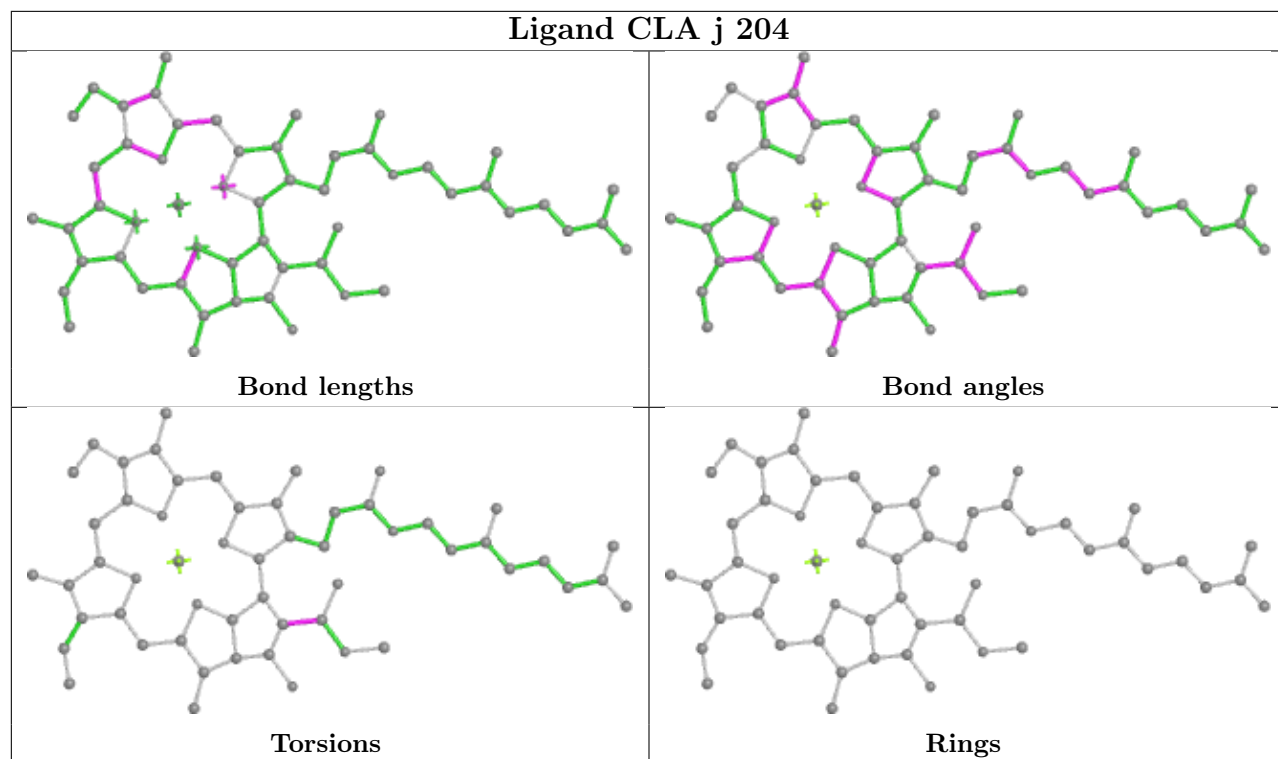


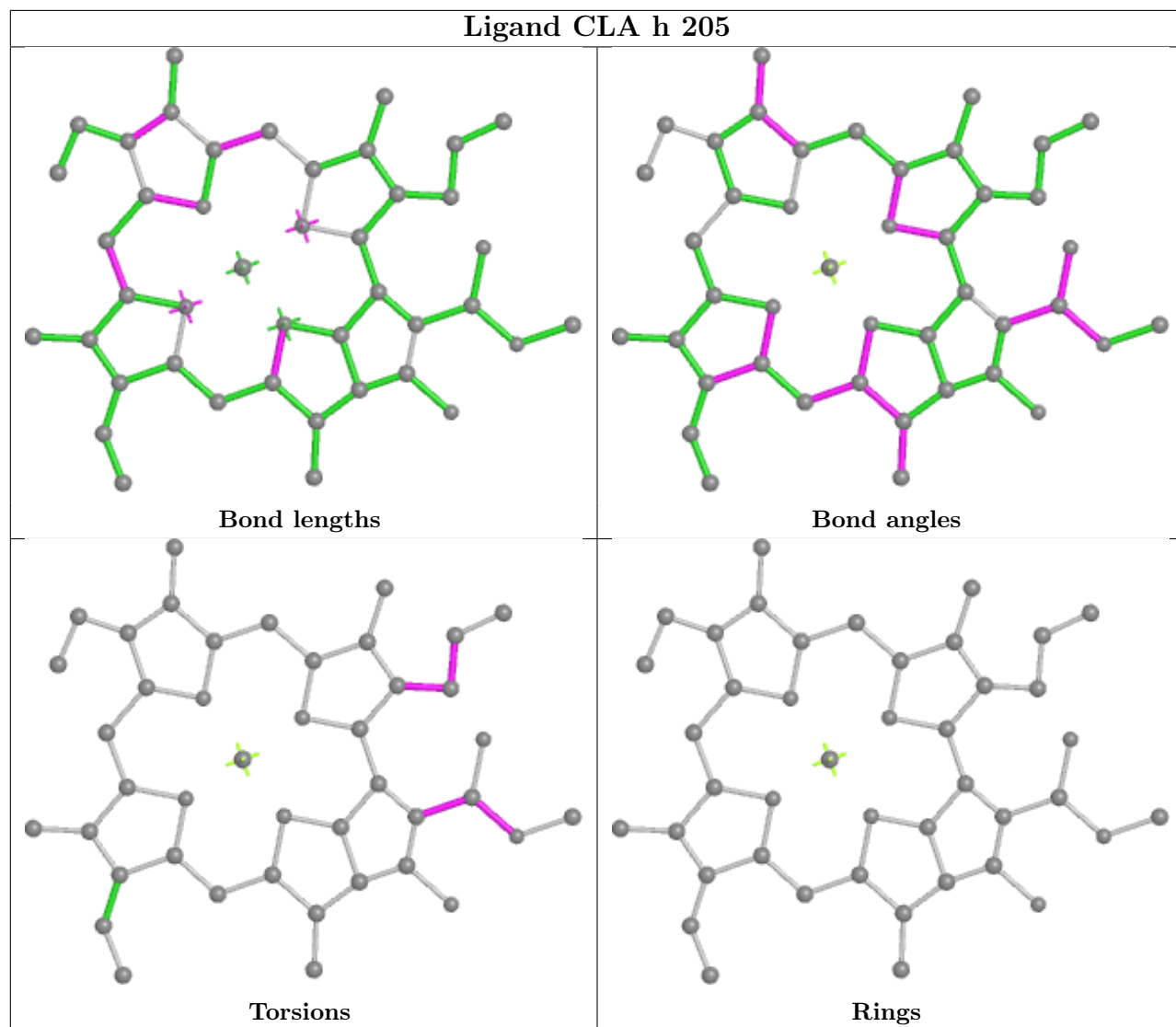


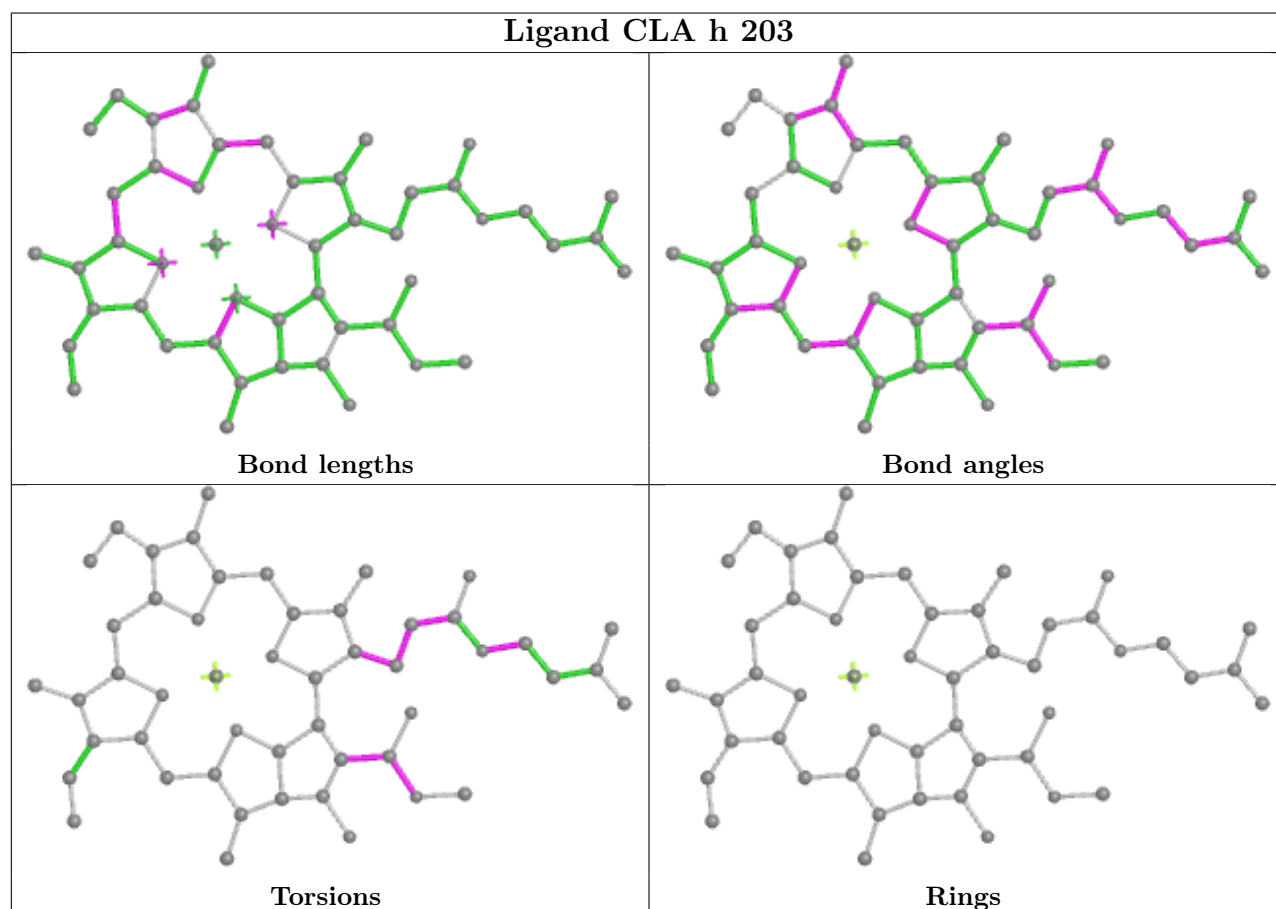
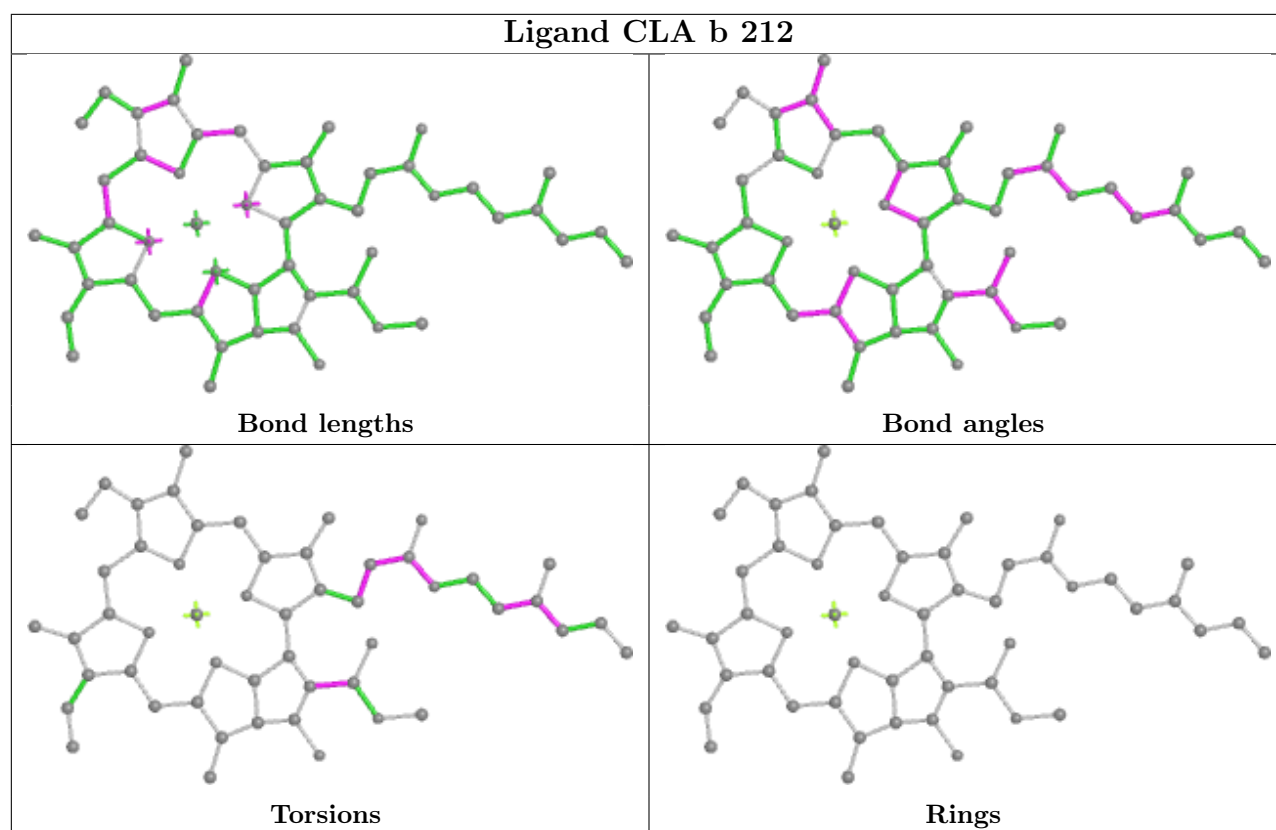


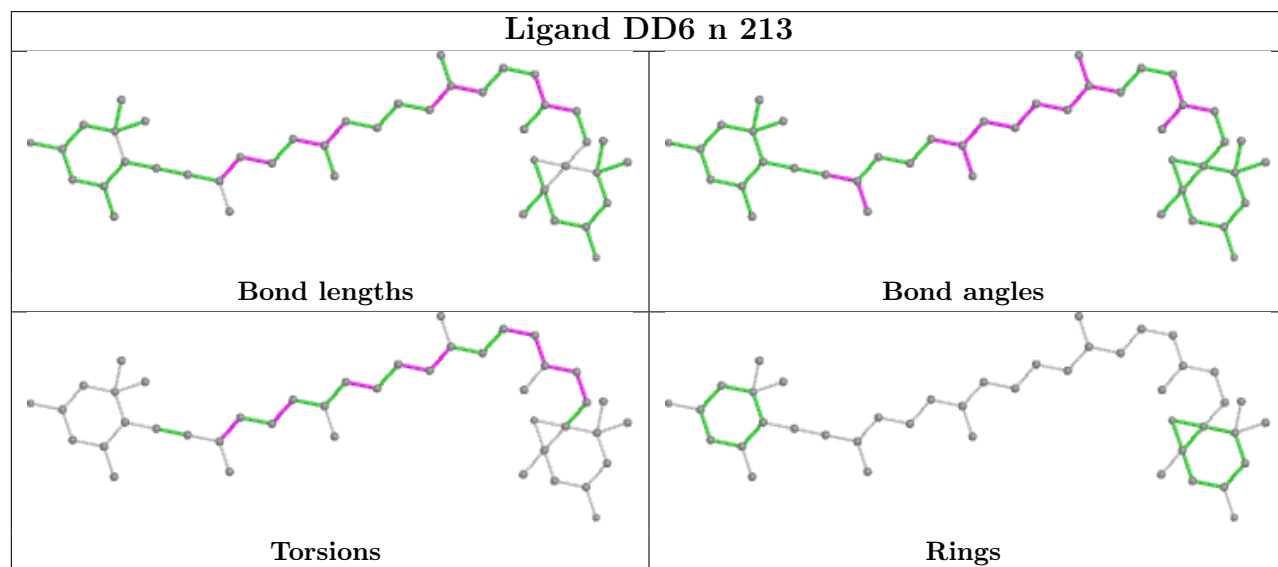
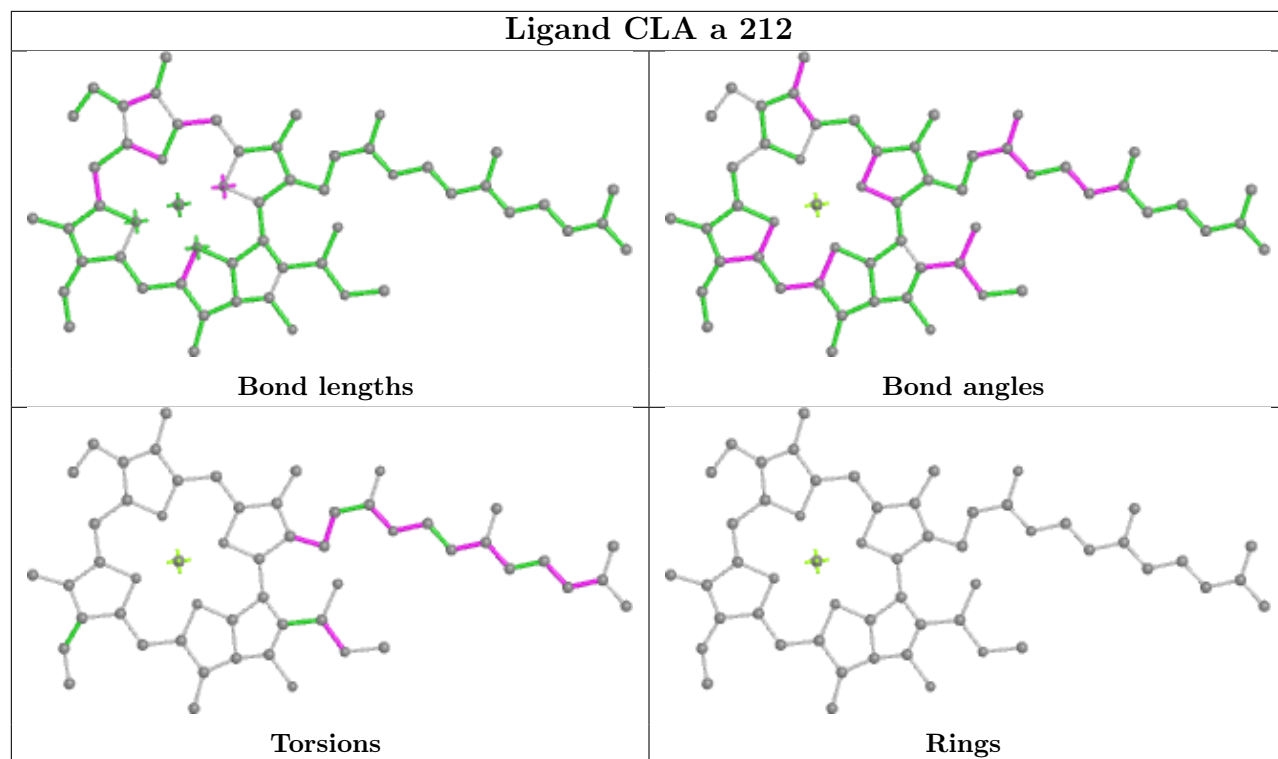


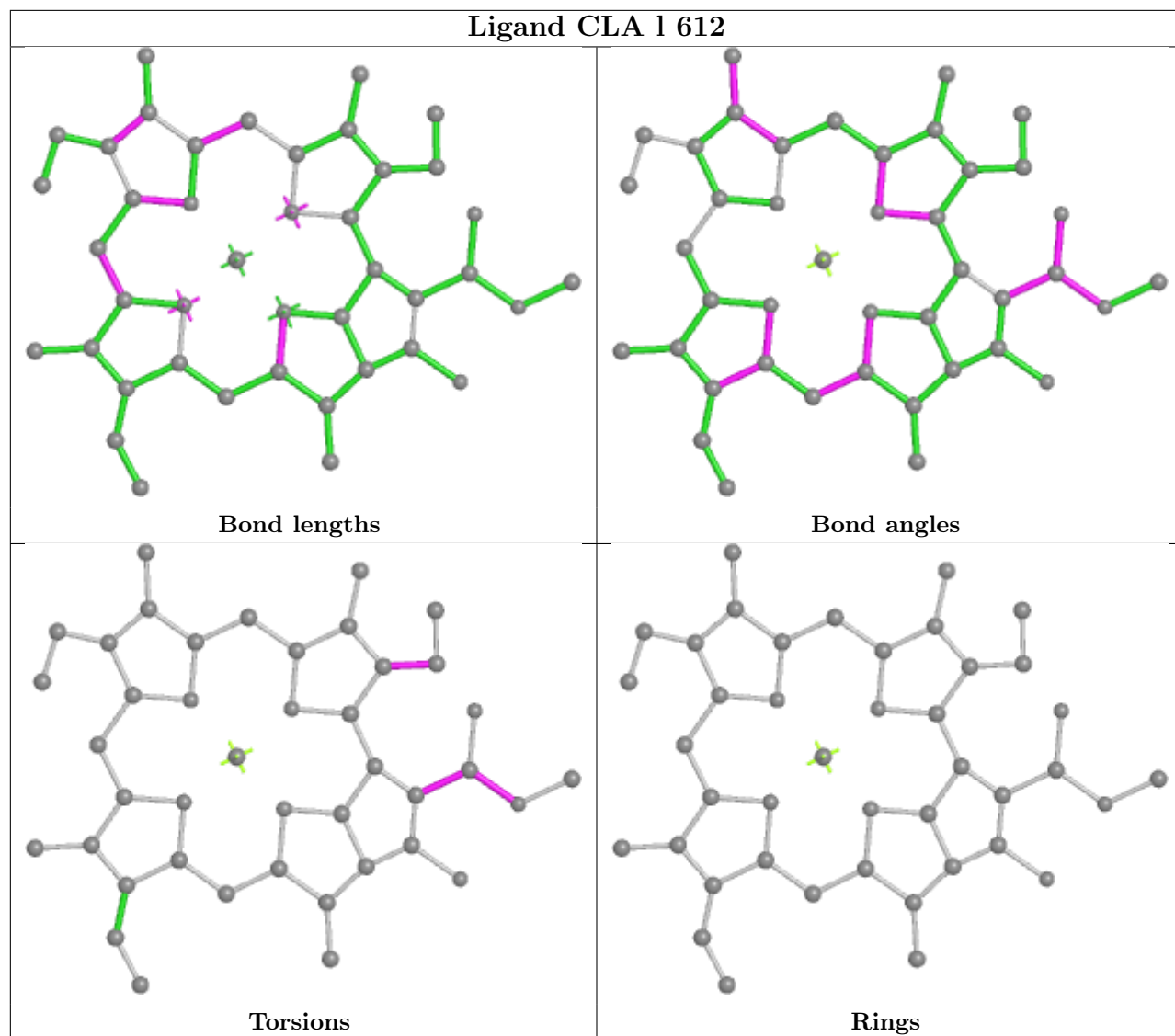


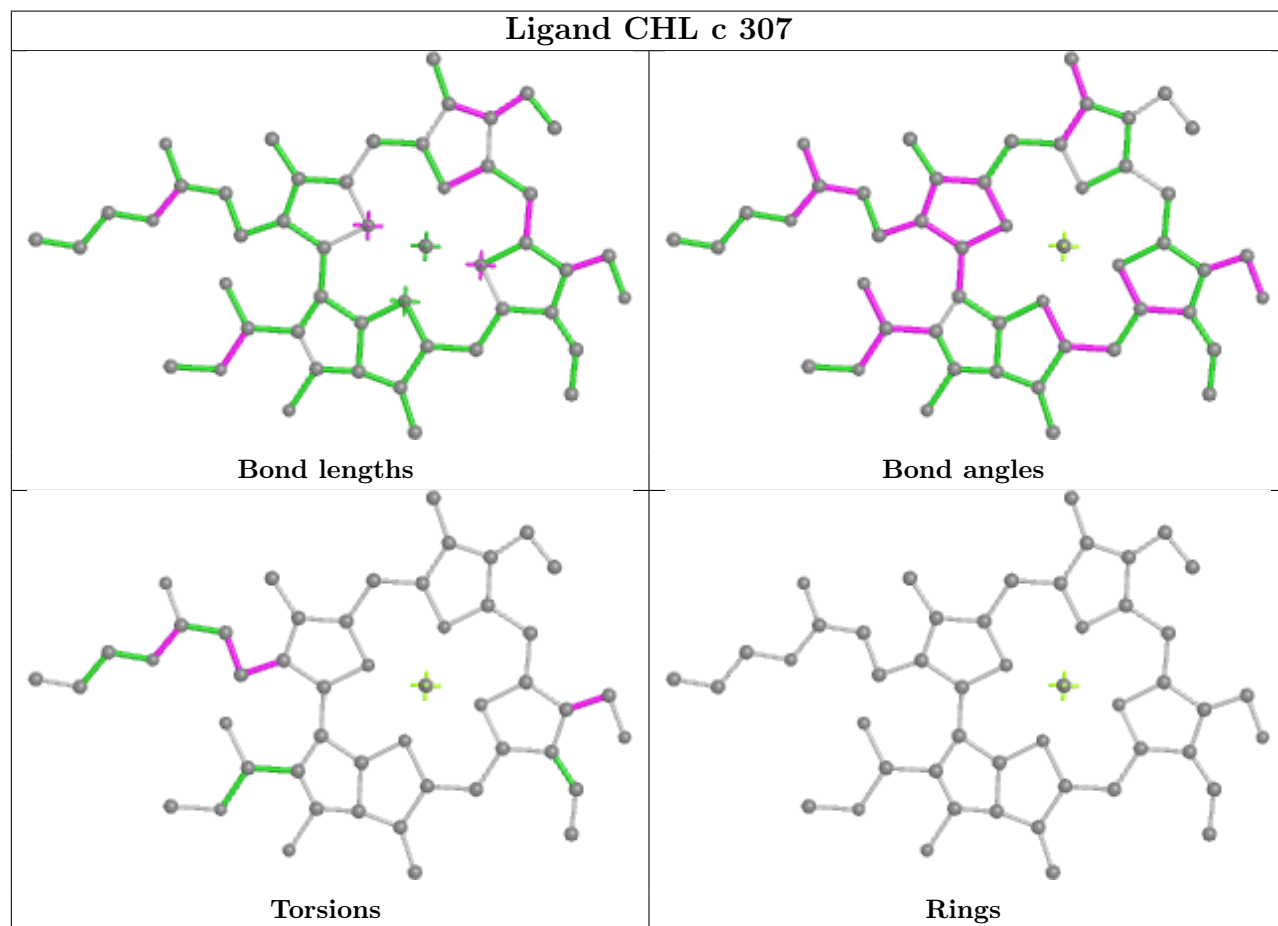
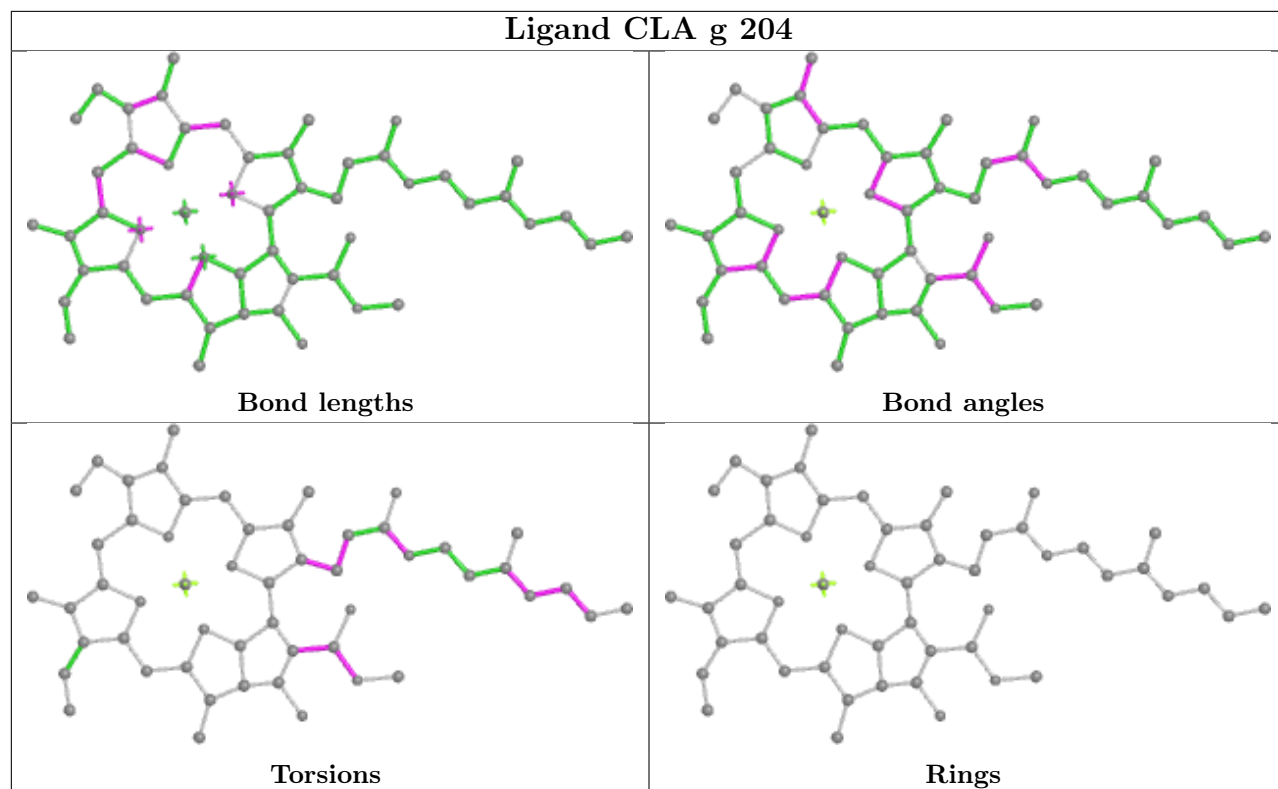


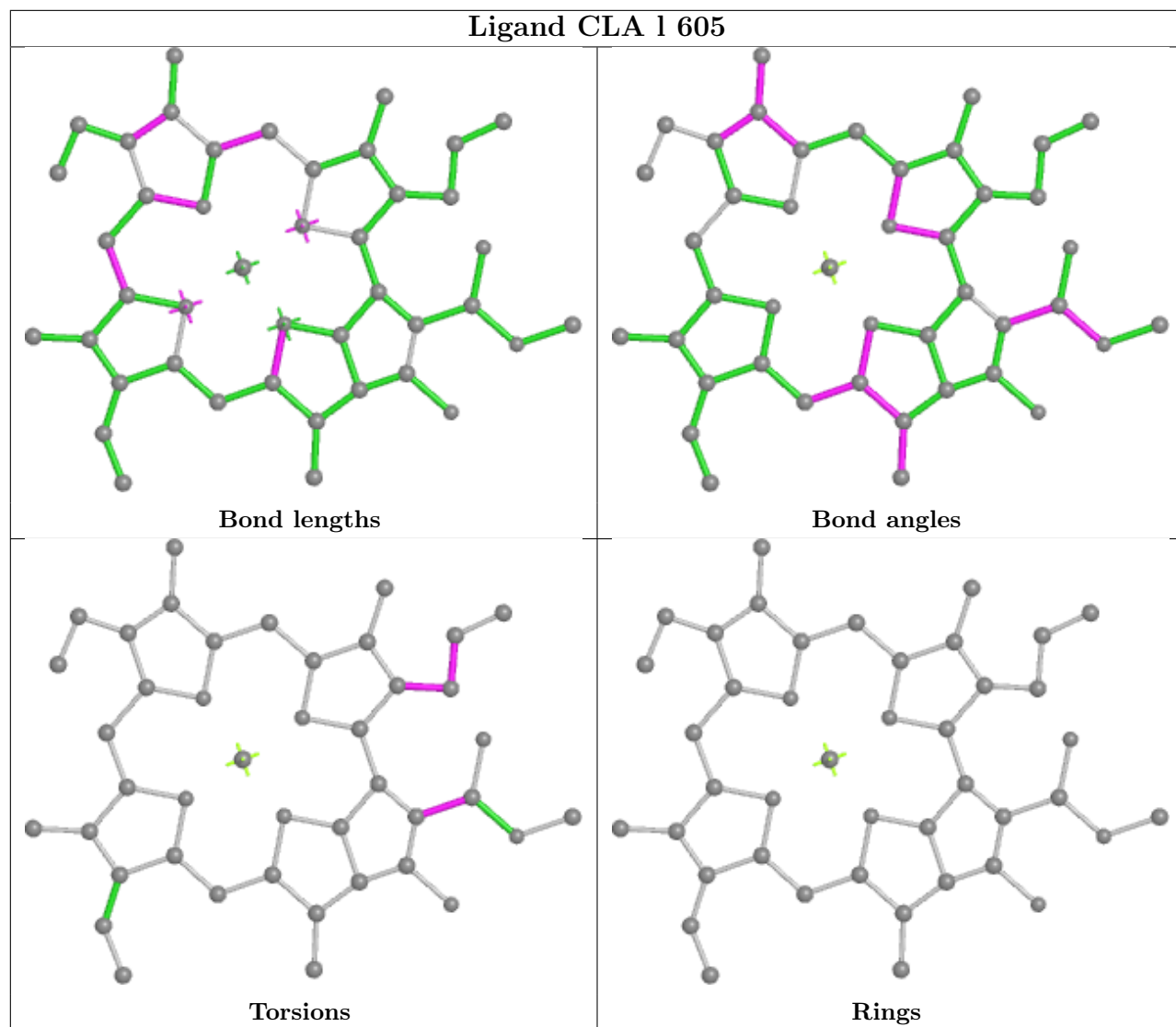


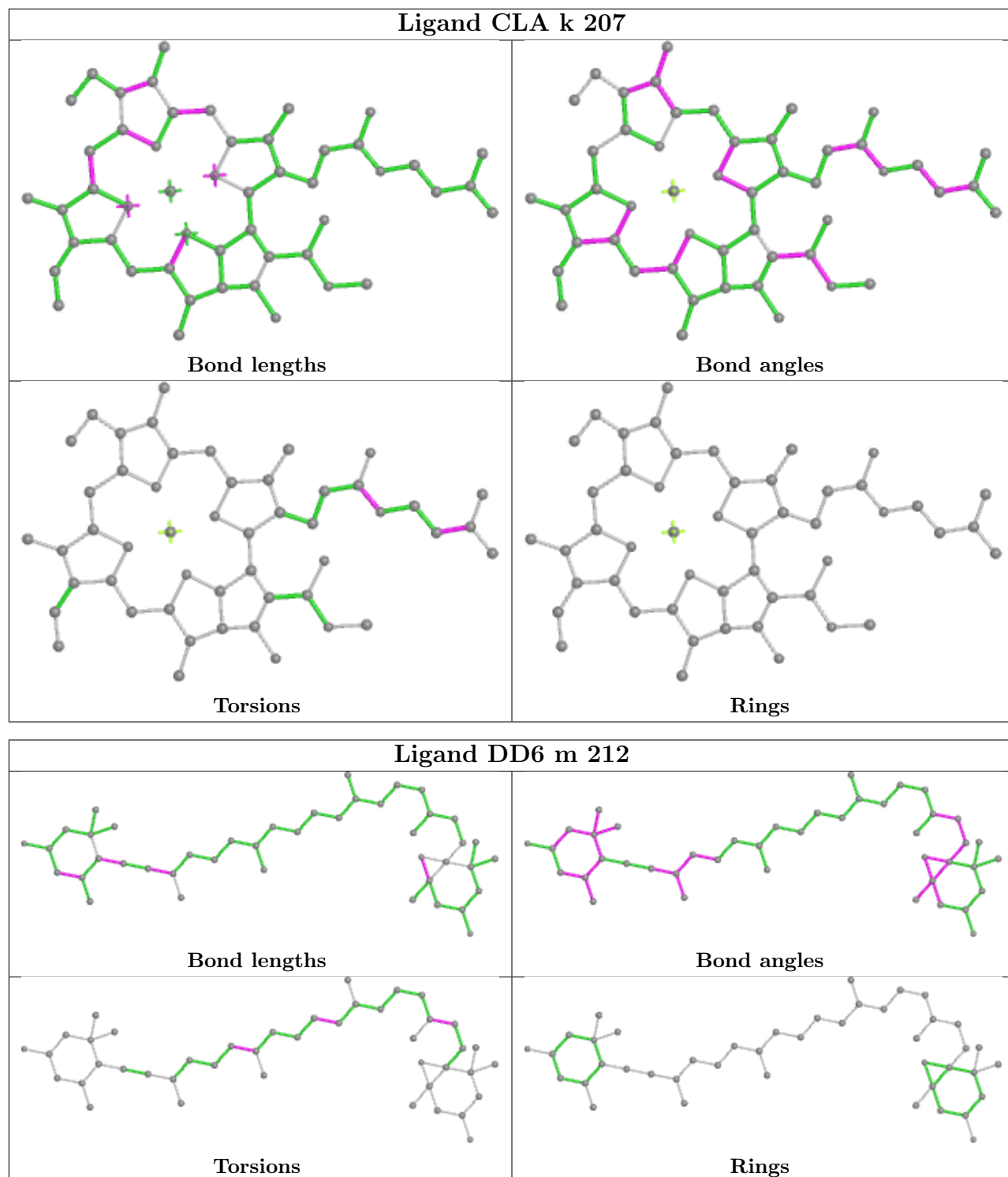


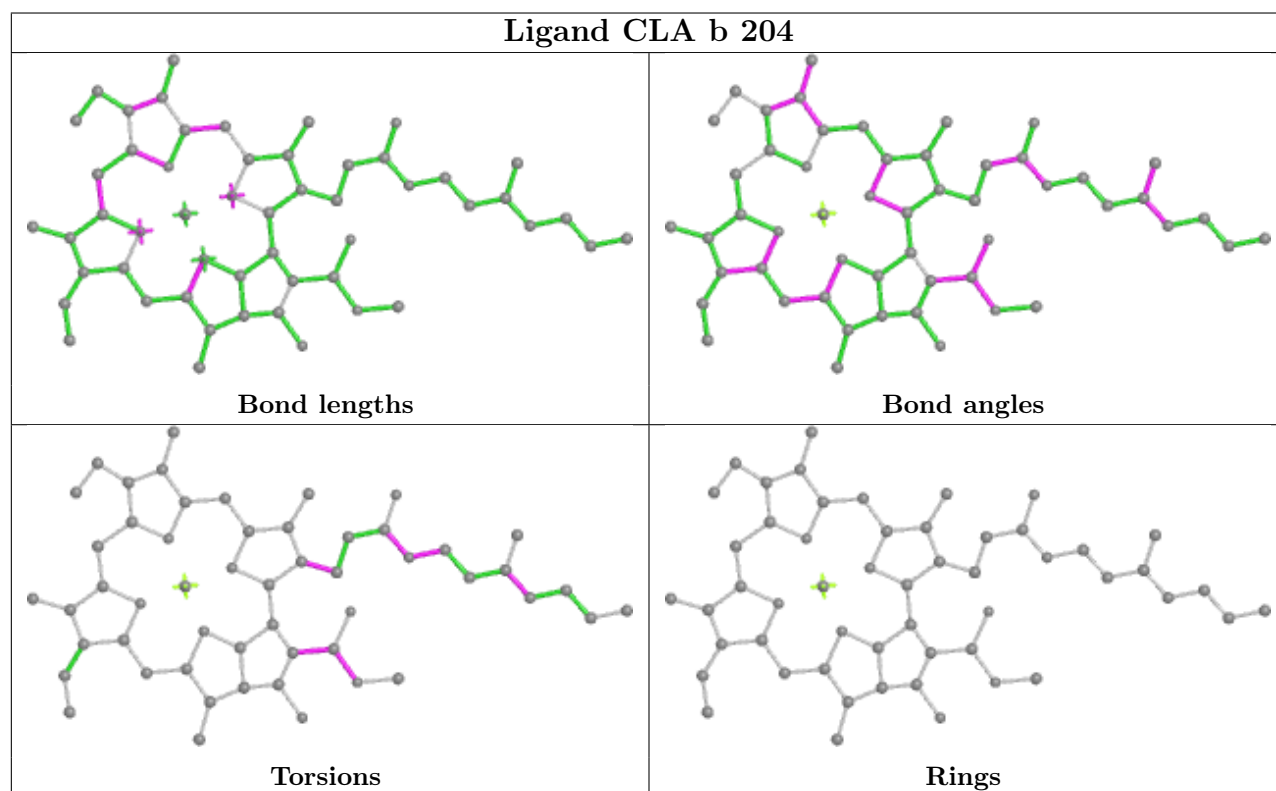
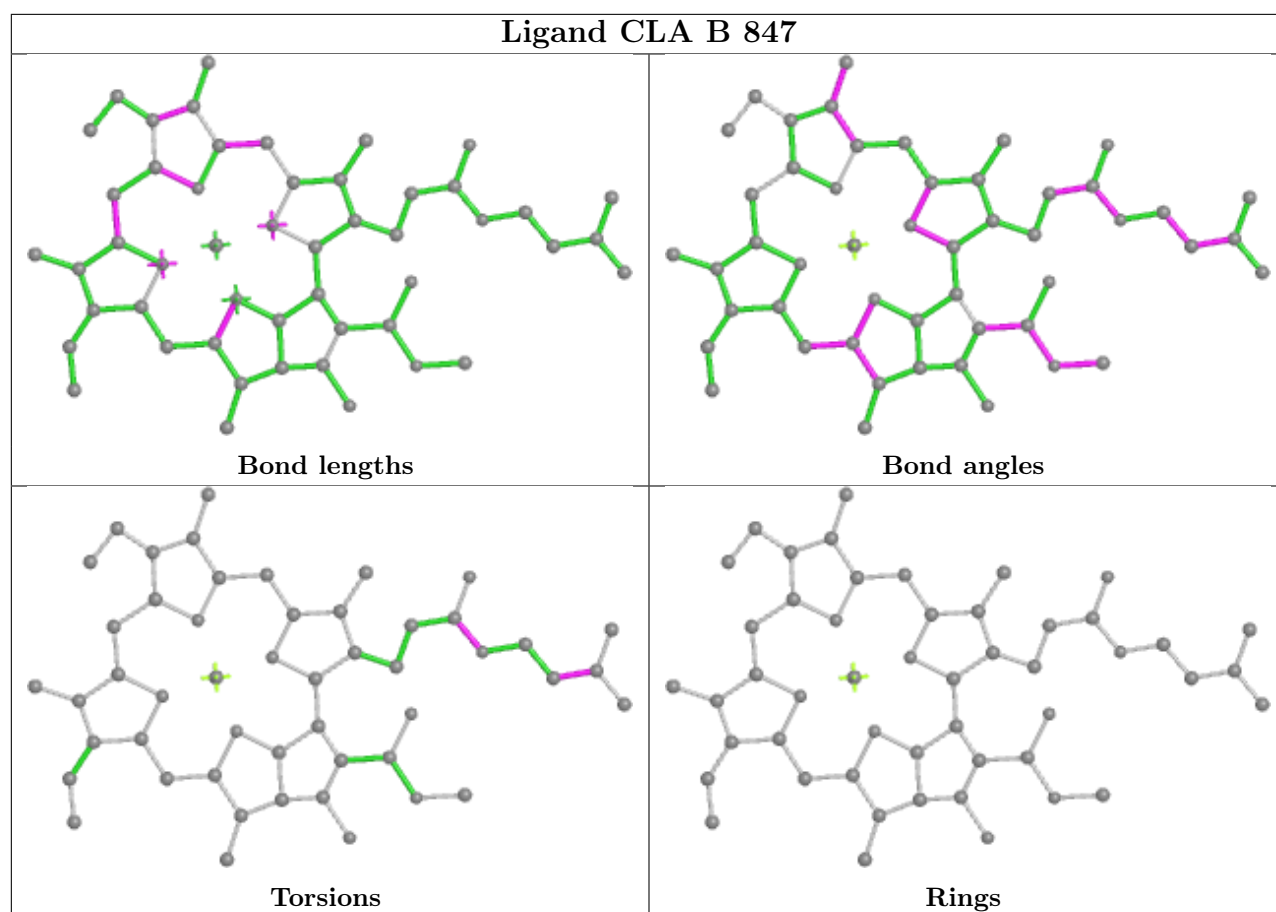


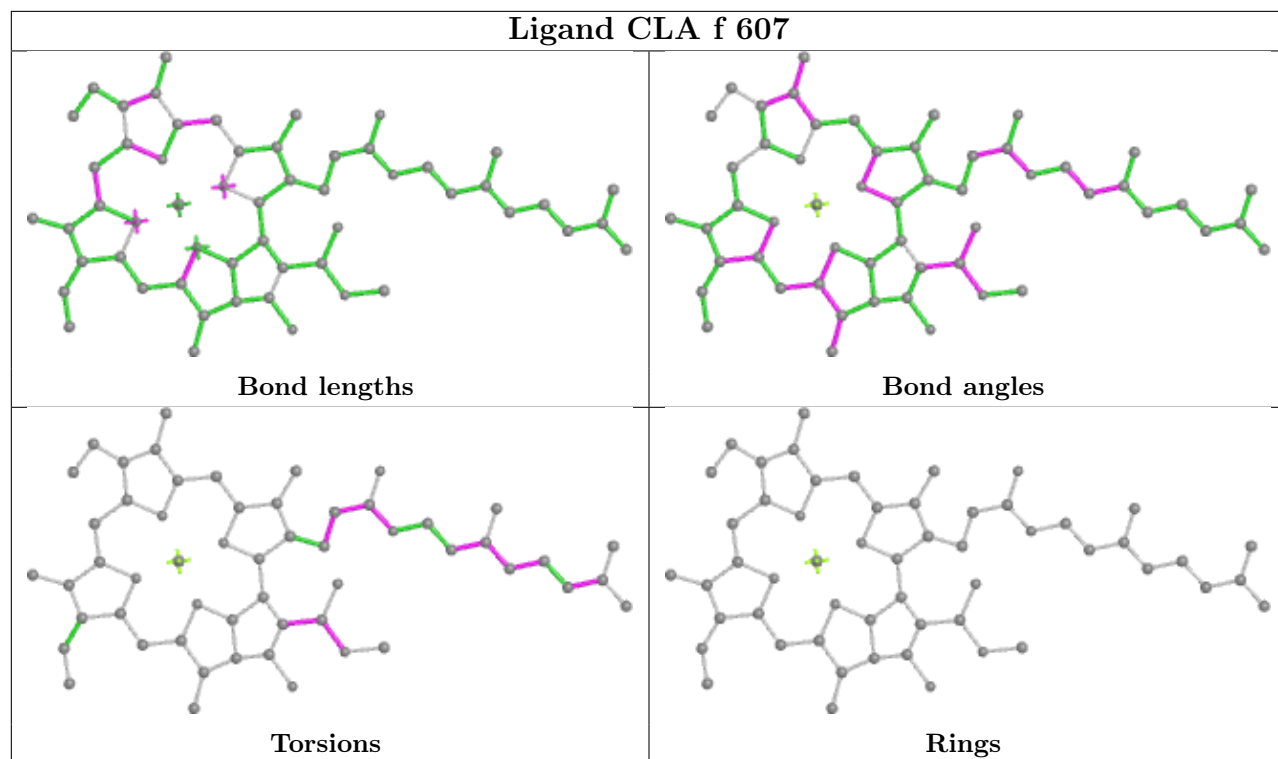


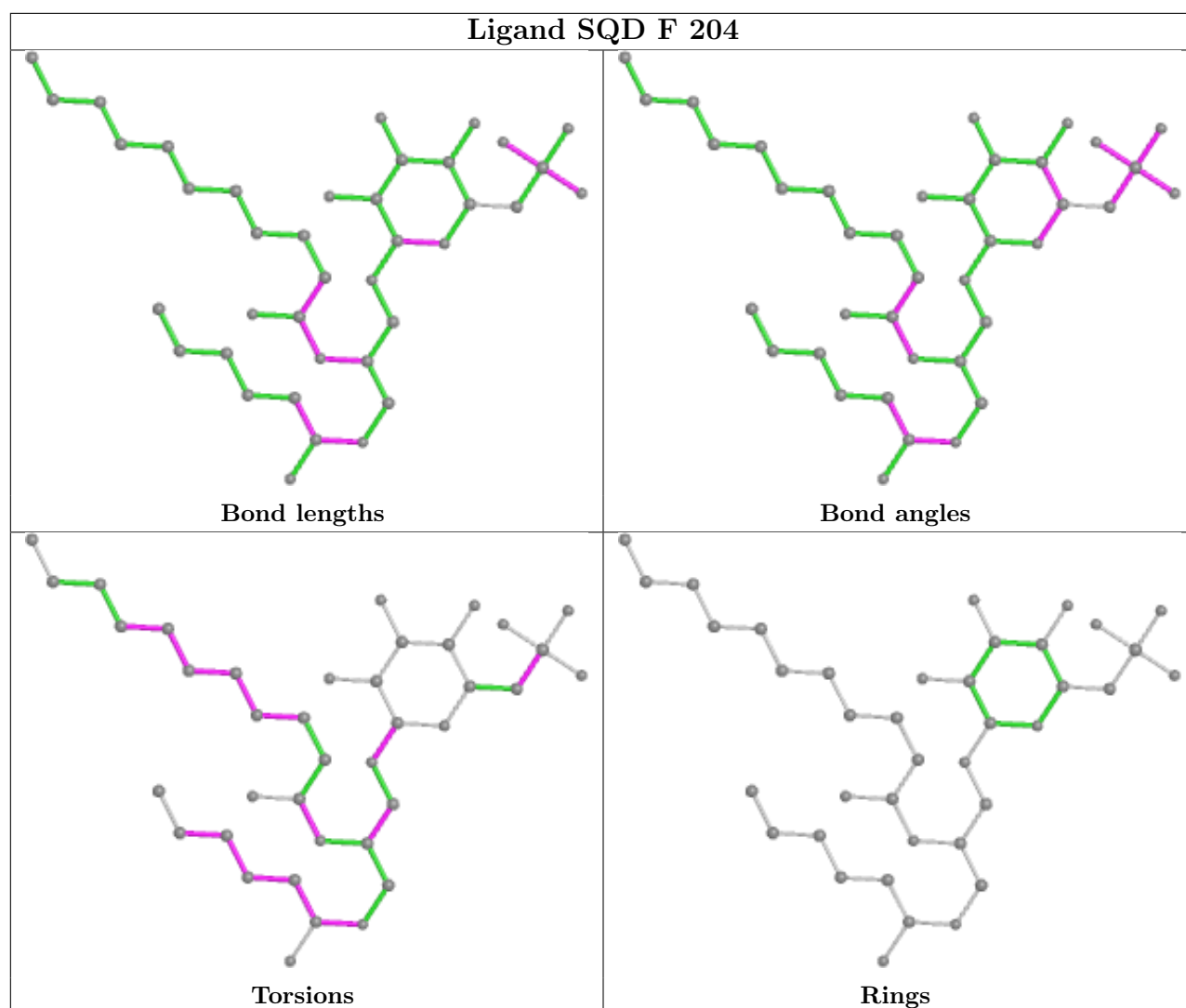












## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

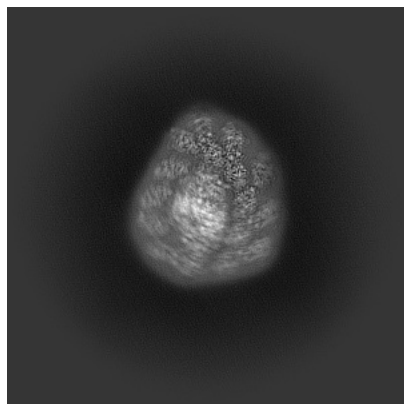
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-64824. These allow visual inspection of the internal detail of the map and identification of artifacts.

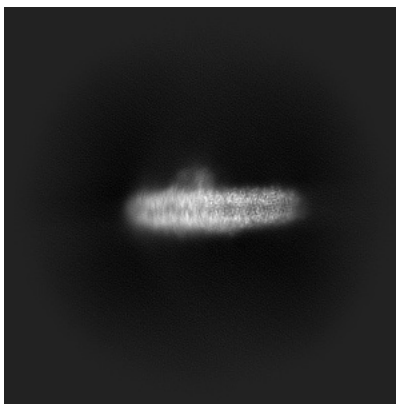
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

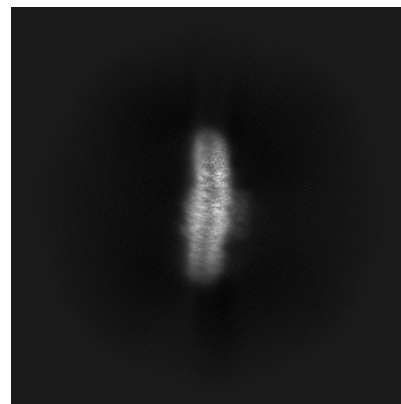
#### 6.1.1 Primary map



X

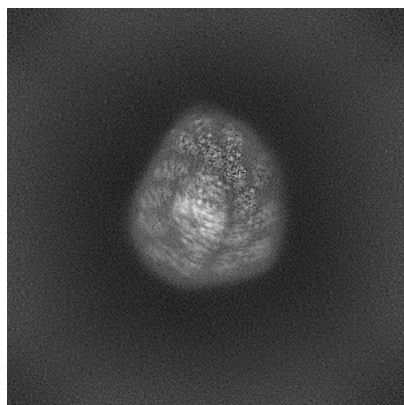


Y

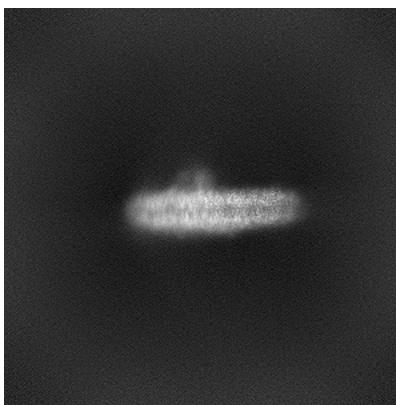


Z

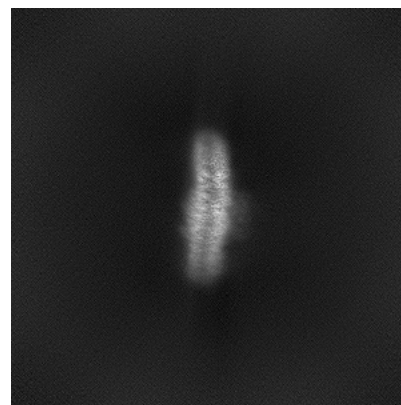
#### 6.1.2 Raw map



X



Y

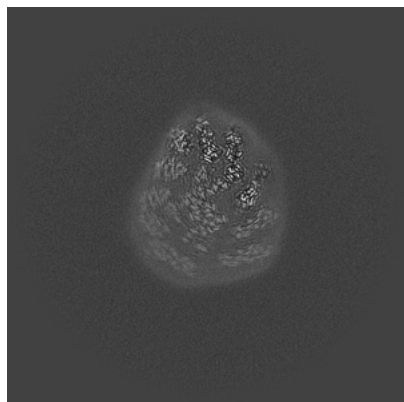


Z

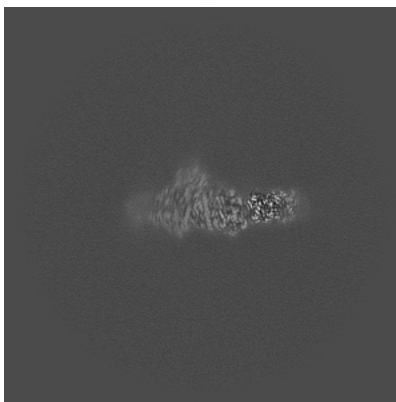
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

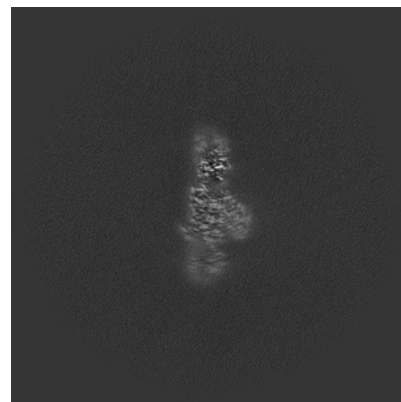
### 6.2.1 Primary map



X Index: 256

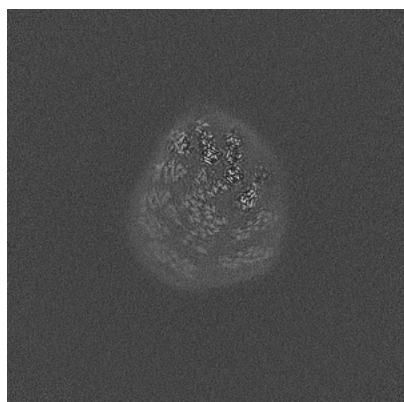


Y Index: 256

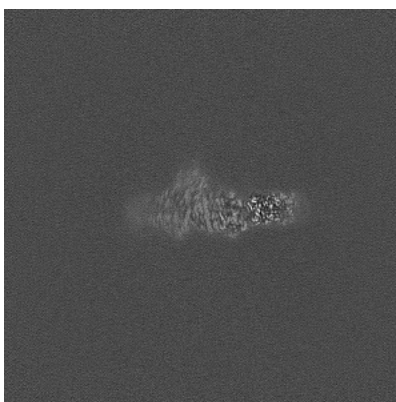


Z Index: 256

### 6.2.2 Raw map



X Index: 256



Y Index: 256

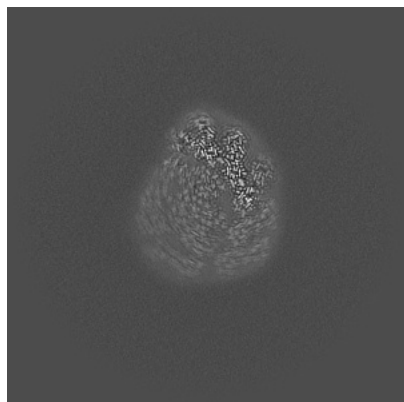


Z Index: 256

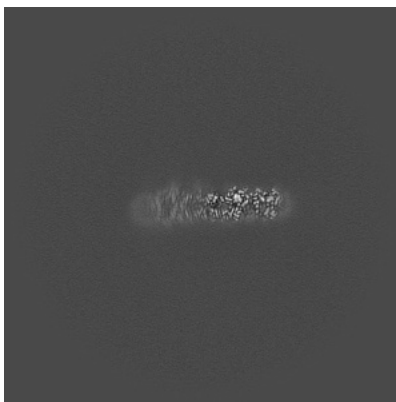
The images above show central slices of the map in three orthogonal directions.

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

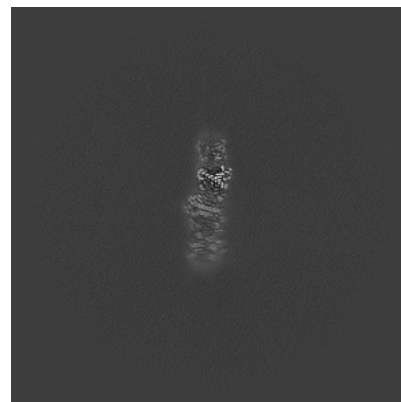
### 6.3.1 Primary map



X Index: 265

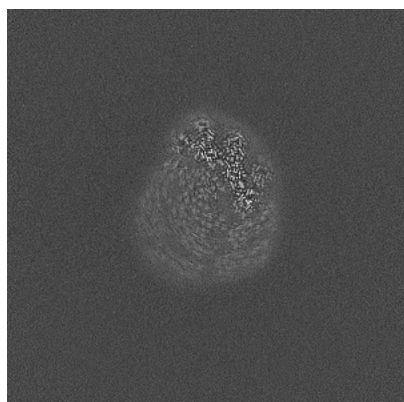


Y Index: 298

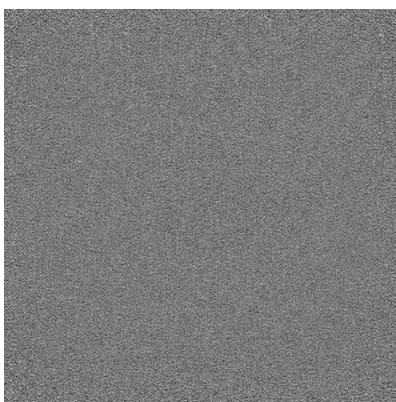


Z Index: 296

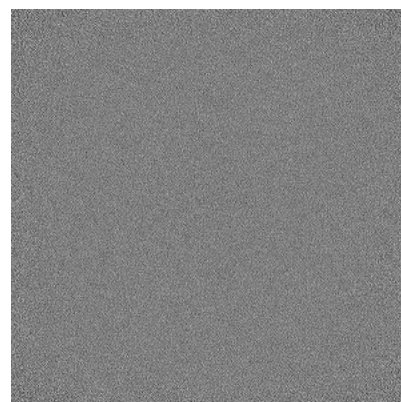
### 6.3.2 Raw map



X Index: 265



Y Index: 0

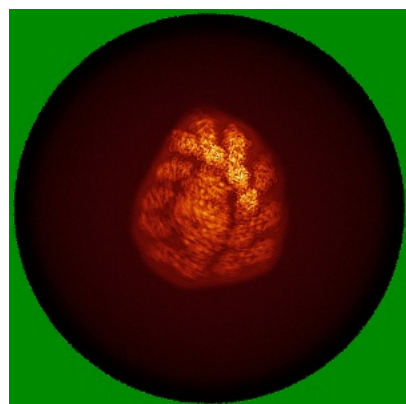


Z Index: 0

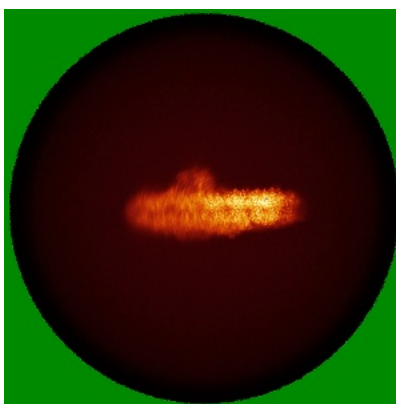
The images above show the largest variance slices of the map in three orthogonal directions.

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

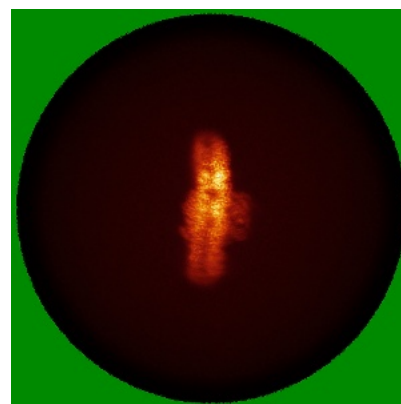
### 6.4.1 Primary map



X

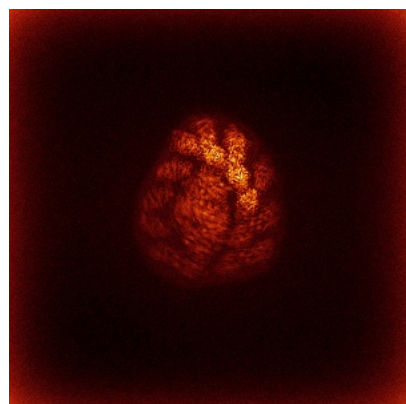


Y

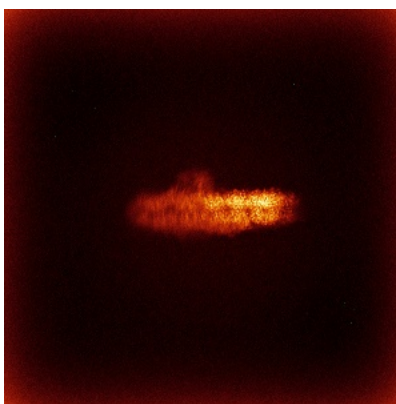


Z

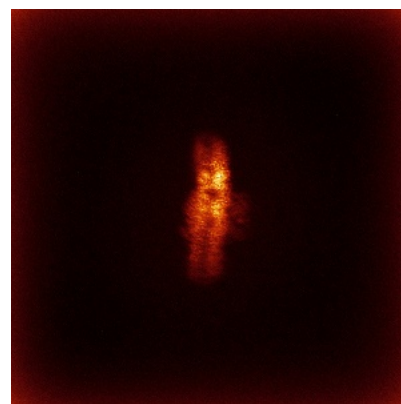
### 6.4.2 Raw map



X



Y

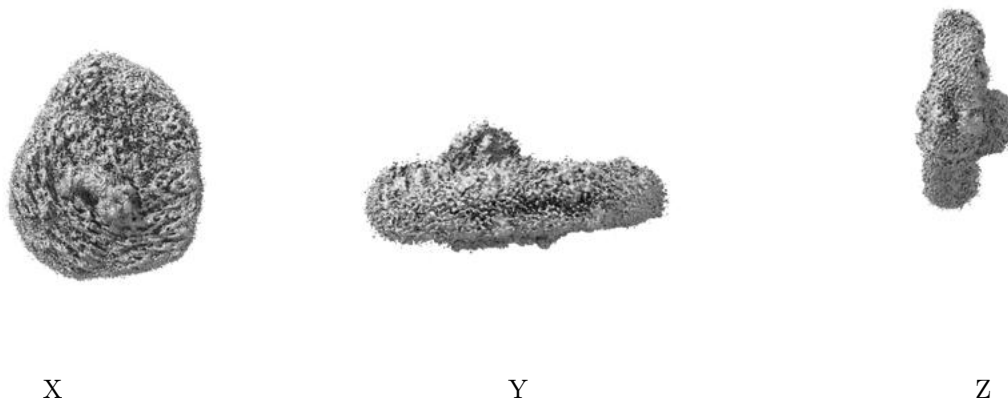


Z

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

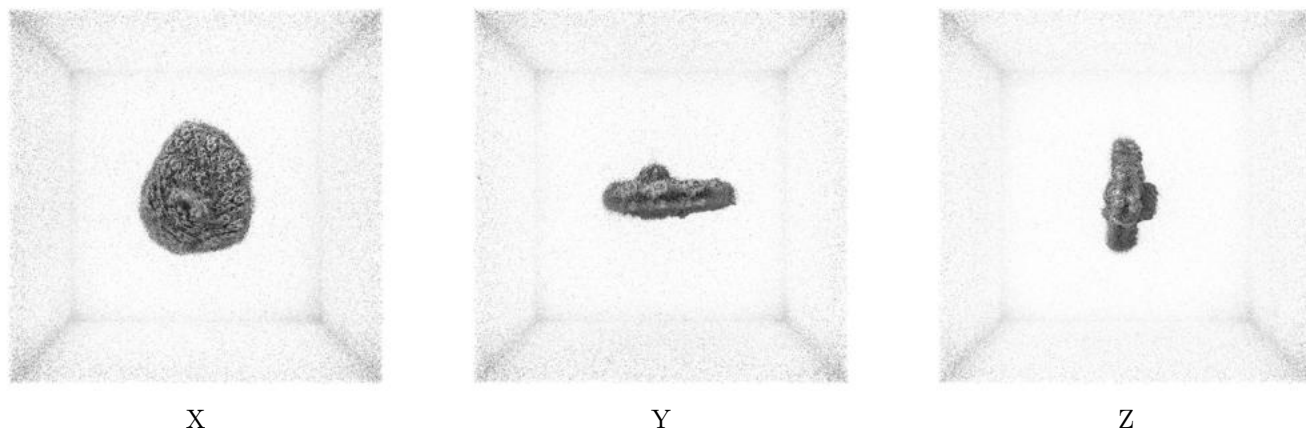
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



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

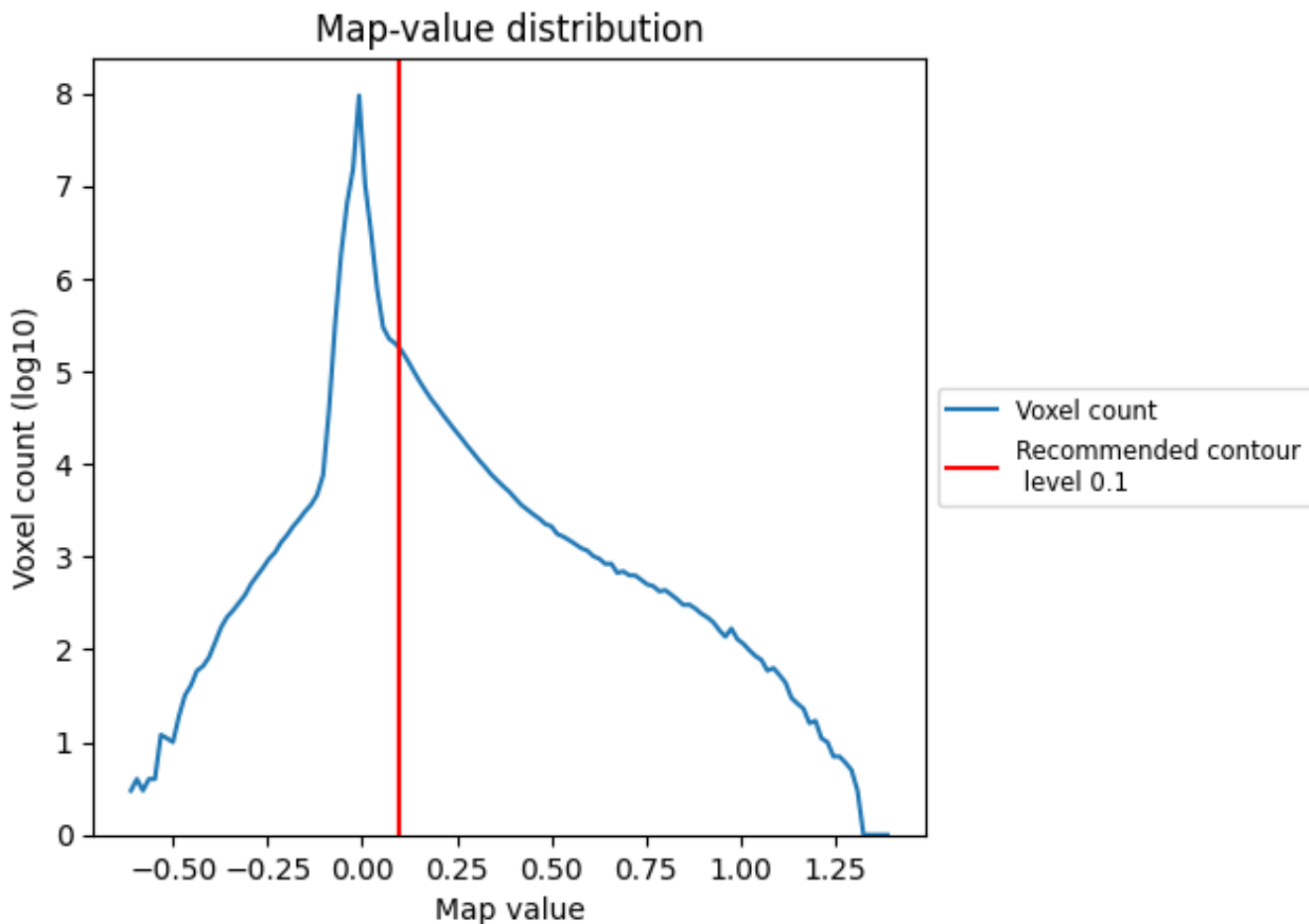
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

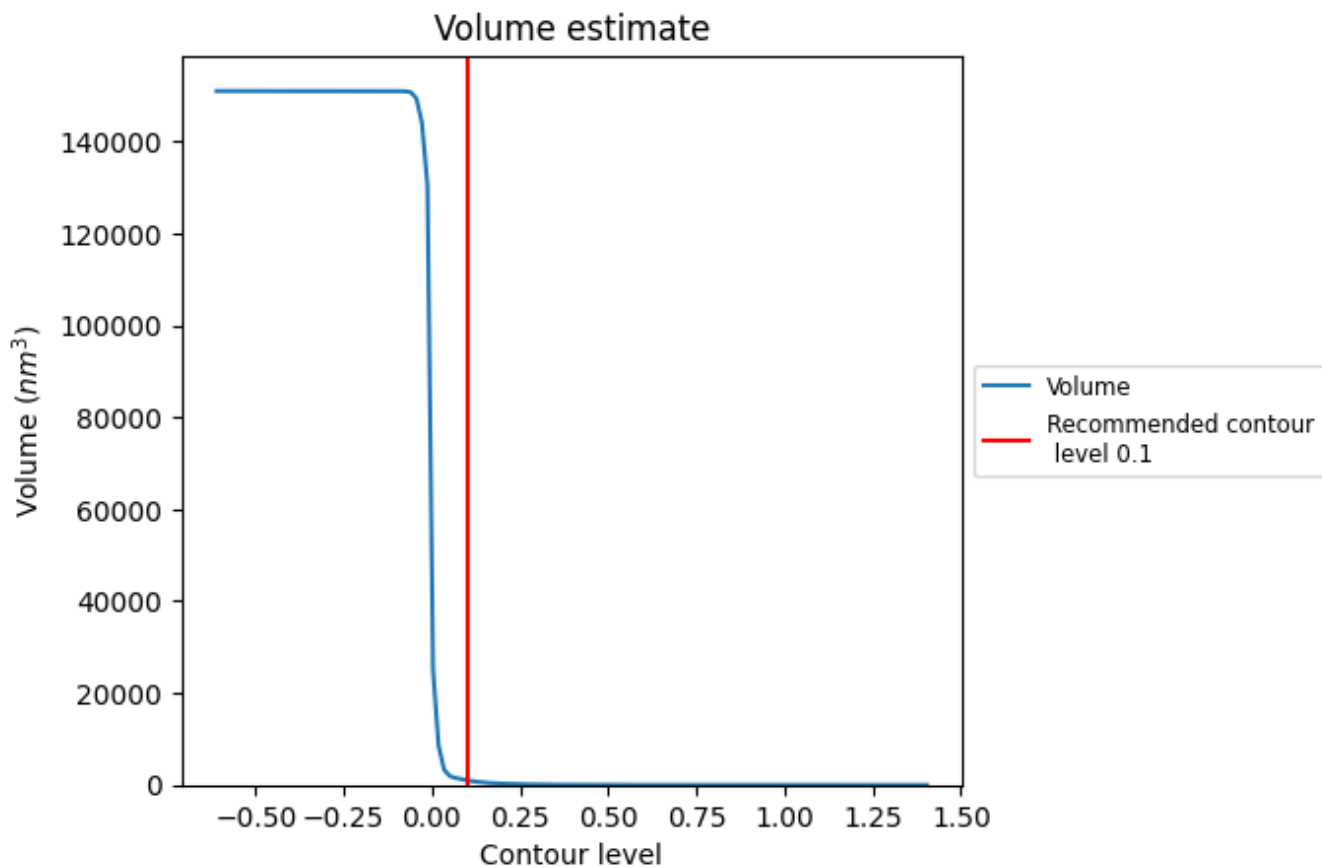
This section contains the results of statistical analysis of the map.

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



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

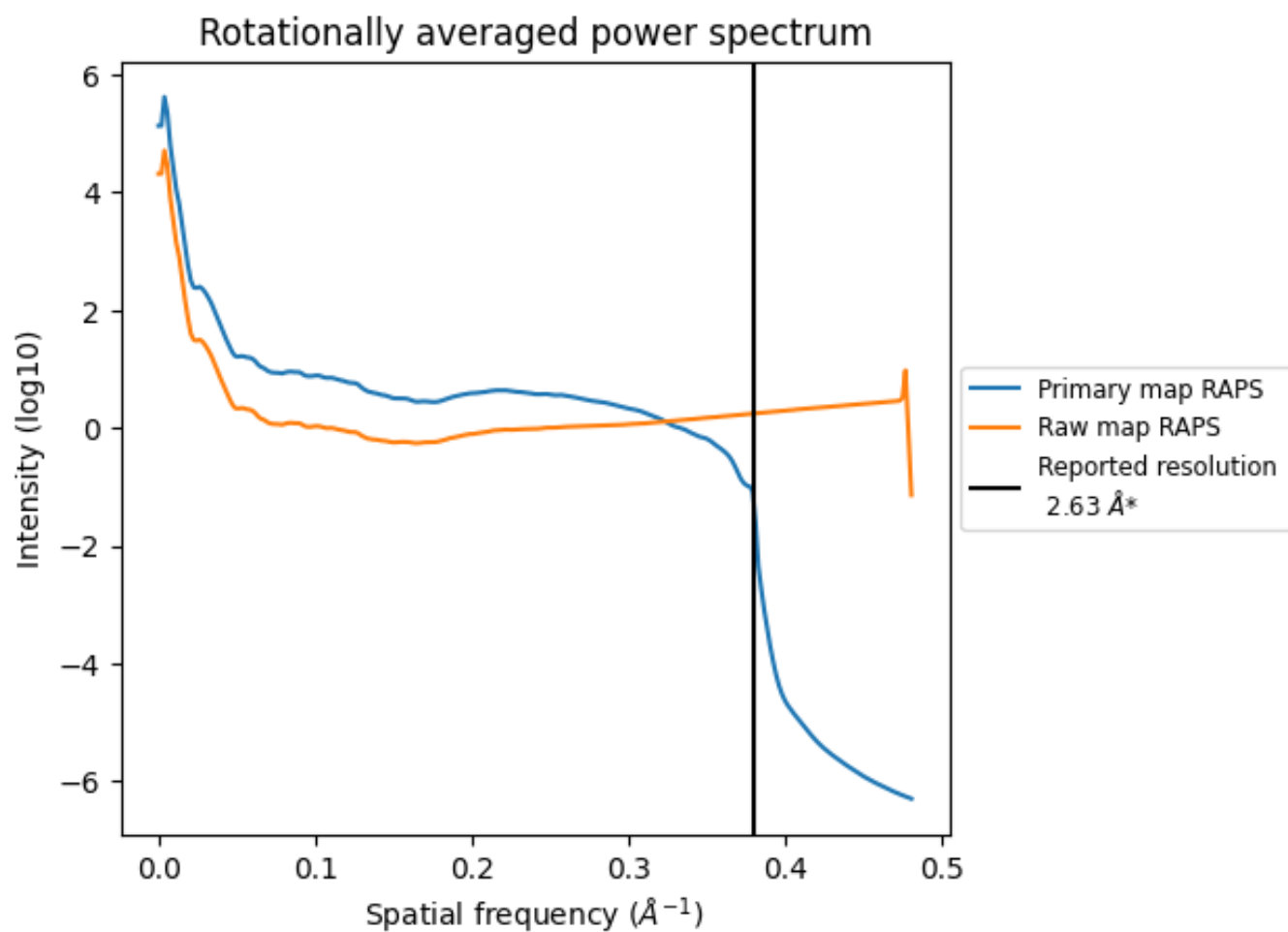
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1012 nm<sup>3</sup>; this corresponds to an approximate mass of 914 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](#)

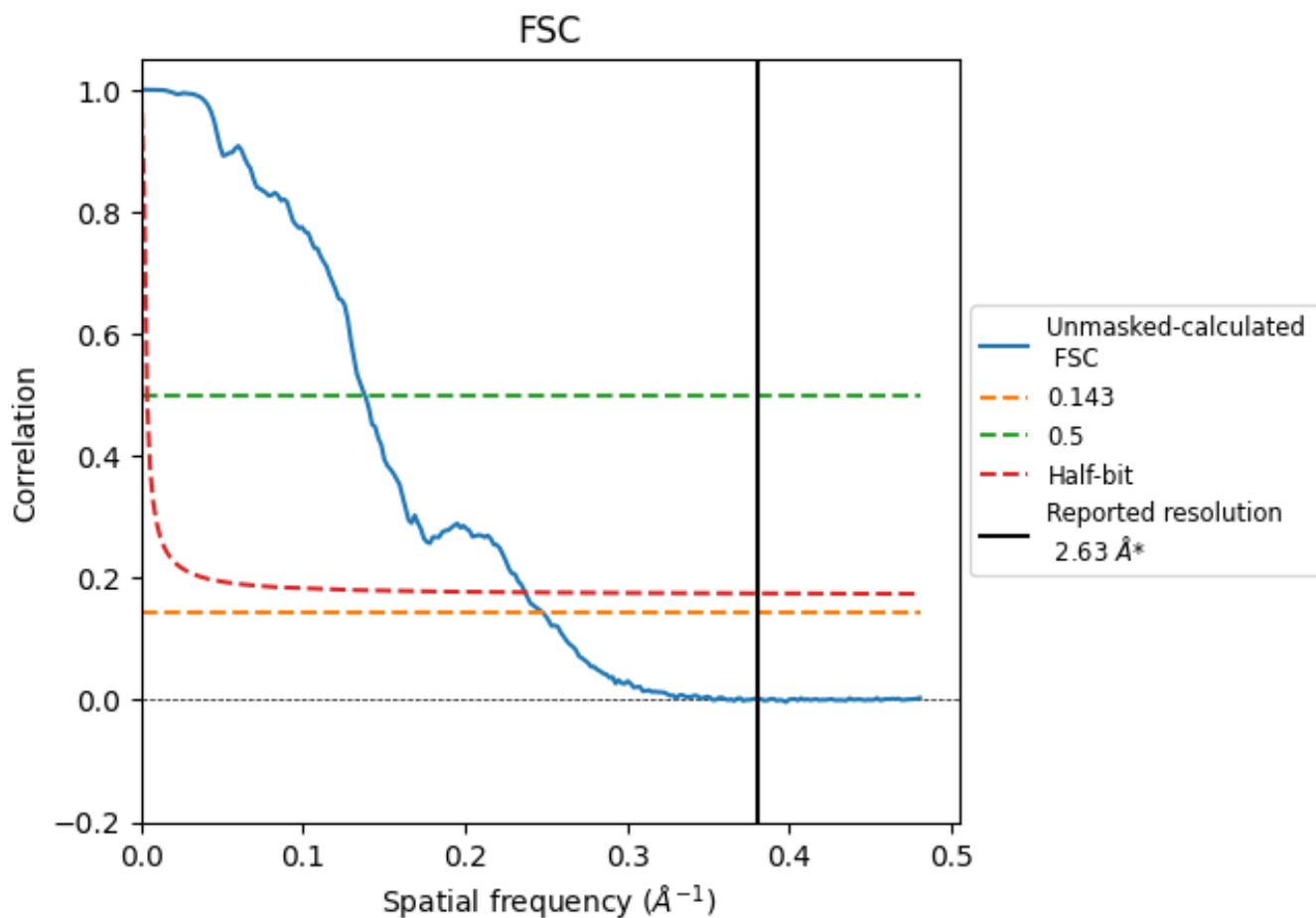


\*Reported resolution corresponds to spatial frequency of 0.380 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.380 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

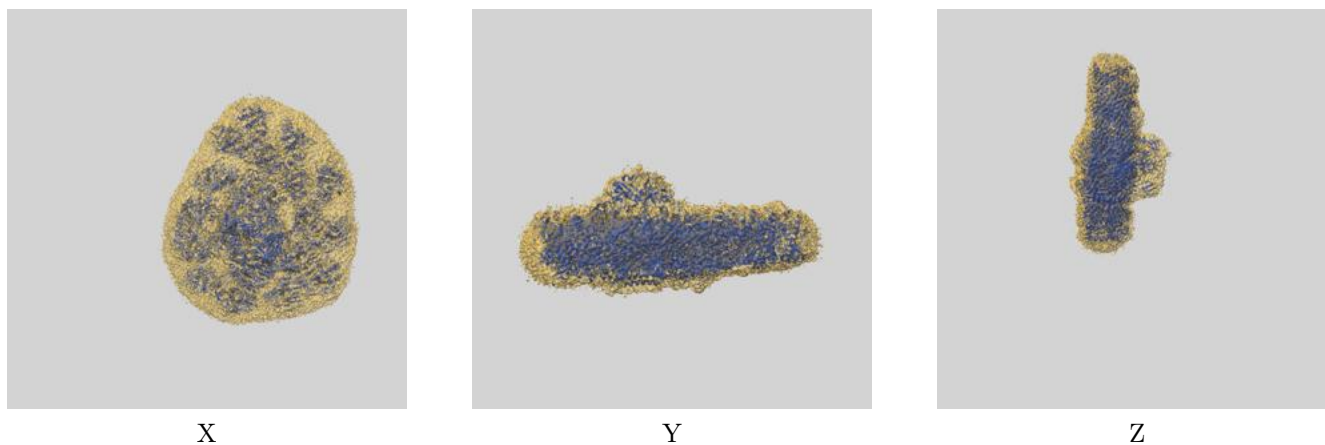
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.63	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.03	7.25	4.22

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.03 differs from the reported value 2.63 by more than 10 %

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

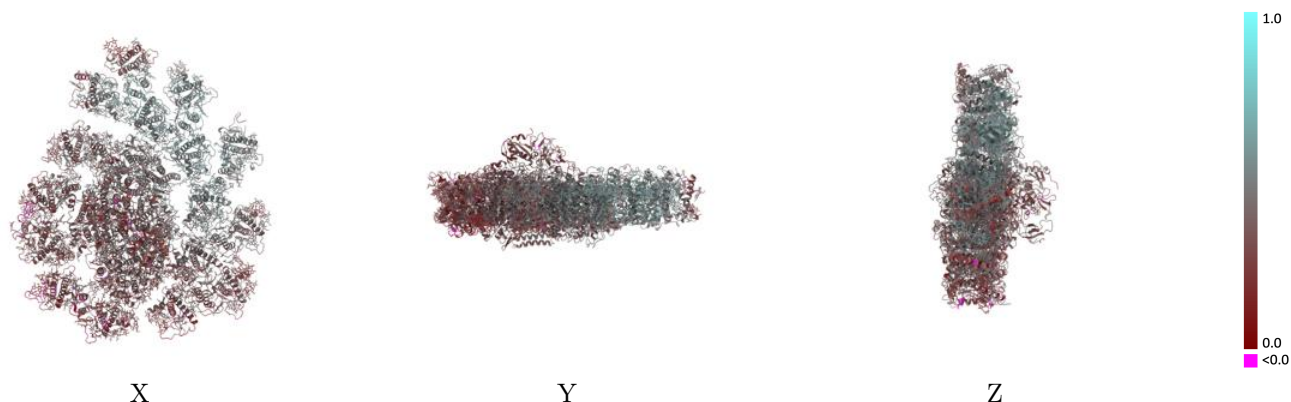
This section contains information regarding the fit between EMDB map EMD-64824 and PDB model 9V7U. Per-residue inclusion information can be found in section 3 on page 38.

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



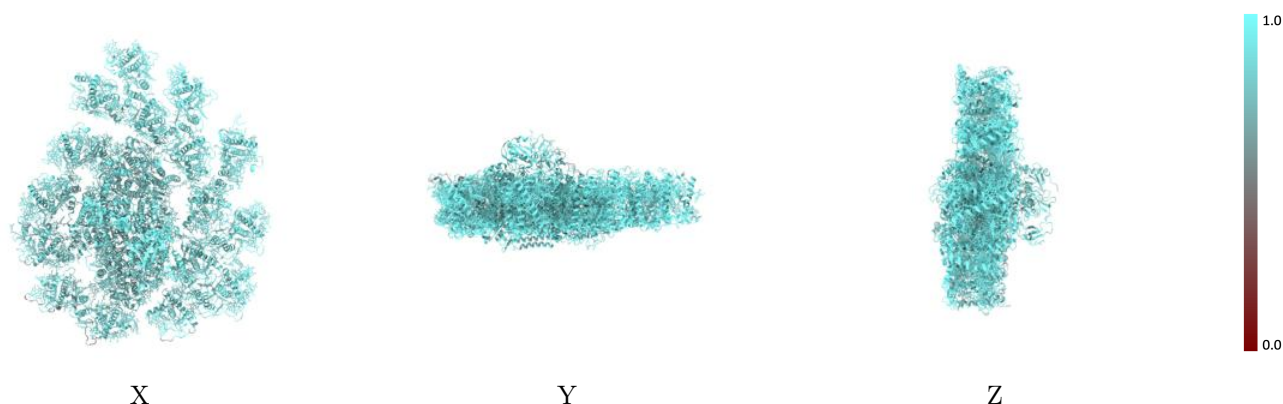
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



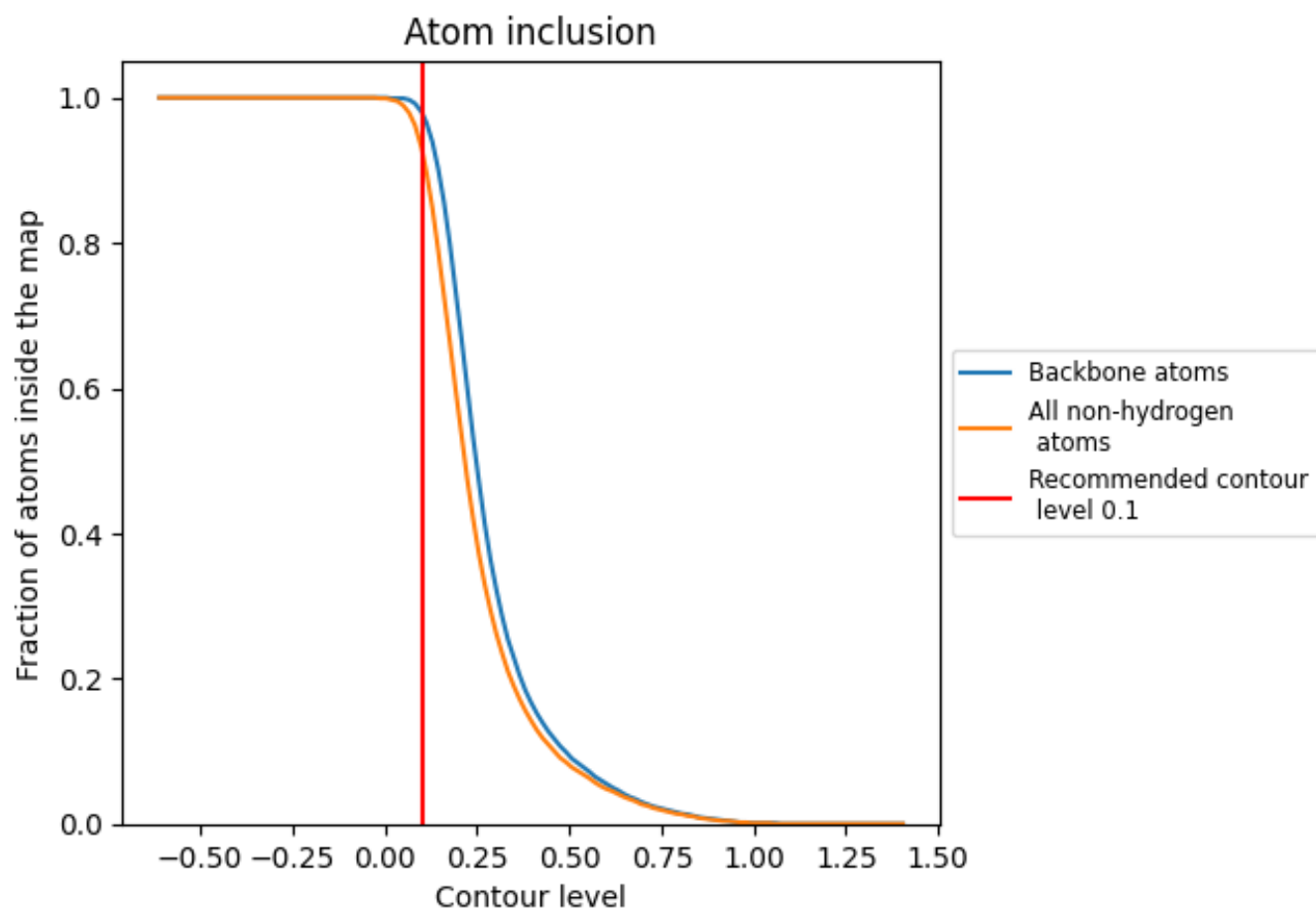
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.1).



















































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 93% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9300	 0.3650
A	 0.9150	 0.3280
B	 0.9370	 0.3980
C	 0.9800	 0.3050
D	 0.9200	 0.2760
E	 0.9700	 0.3010
F	 0.9170	 0.3260
J	 0.8700	 0.3290
M	 0.9400	 0.4520
a	 0.8740	 0.2280
b	 0.8760	 0.2060
c	 0.8870	 0.2730
d	 0.9070	 0.2940
e	 0.9270	 0.3610
f	 0.9430	 0.4350
g	 0.9730	 0.5340
h	 0.9770	 0.5390
i	 0.9650	 0.4940
j	 0.9360	 0.3740
k	 0.9110	 0.2750
l	 0.9430	 0.2730
m	 0.9470	 0.3760
n	 0.9480	 0.4760
o	 0.9810	 0.5140
p	 0.9400	 0.3720

