



## wwPDB EM Validation Summary Report ⓘ

Nov 14, 2022 – 11:18 pm GMT

PDB ID : 7ZQ9  
EMDB ID : EMD-14867  
Title : Dimeric PSI of Chlamydomonas reinhardtii at 2.74 Å resolution (symmetry expanded)  
Authors : Naschberger, A.; Amunts, A.  
Deposited on : 2022-04-29  
Resolution : 2.74 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.dev43  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

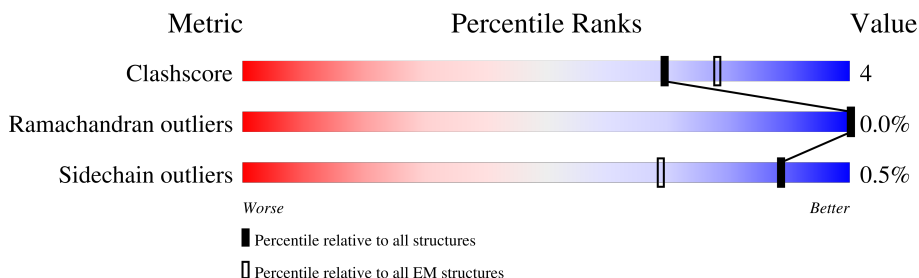
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.74 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	735	
3	C	81	
4	D	196	
5	E	97	
6	F	227	
7	G	126	
8	I	106	

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Mol	Chain	Length	Quality of chain
8	I2	106	
9	J	40	
10	L	196	
10	L2	196	
11	K	113	
12	1	228	
12	Z	228	
13	3	298	
14	7	241	
15	8	243	
16	4	264	
17	5	257	
18	6	257	
19	9	213	
19	92	213	
20	B2	180	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
21	CL0	A	801	X	-	-	-
22	CLA	1	602	X	-	-	-
22	CLA	1	603	X	-	-	-
22	CLA	1	604	X	-	-	-
22	CLA	1	608	X	-	-	-
22	CLA	1	609	X	-	-	-
22	CLA	1	610	X	-	-	-
22	CLA	1	611	X	-	-	-
22	CLA	1	612	X	-	-	-
22	CLA	1	613	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	1	614	X	-	-	-
22	CLA	1	616	X	-	-	-
22	CLA	3	602	X	-	-	-
22	CLA	3	603	X	-	-	-
22	CLA	3	604	X	-	-	-
22	CLA	3	606	X	-	-	-
22	CLA	3	607	X	-	-	-
22	CLA	3	609	X	-	-	-
22	CLA	3	610	X	-	-	-
22	CLA	3	611	X	-	-	-
22	CLA	3	612	X	-	-	-
22	CLA	3	613	X	-	-	-
22	CLA	3	614	X	-	-	-
22	CLA	3	615	X	-	-	-
22	CLA	3	617	X	-	-	-
22	CLA	4	602	X	-	-	-
22	CLA	4	603	X	-	-	-
22	CLA	4	604	X	-	-	-
22	CLA	4	609	X	-	-	-
22	CLA	4	610	X	-	-	-
22	CLA	4	611	X	-	-	-
22	CLA	4	612	X	-	-	-
22	CLA	4	613	X	-	-	-
22	CLA	4	614	X	-	-	-
22	CLA	4	616	X	-	-	-
22	CLA	5	601	X	-	-	-
22	CLA	5	602	X	-	-	-
22	CLA	5	603	X	-	-	-
22	CLA	5	604	X	-	-	-
22	CLA	5	609	X	-	-	-
22	CLA	5	610	X	-	-	-
22	CLA	5	611	X	-	-	-
22	CLA	5	612	X	-	-	-
22	CLA	5	613	X	-	-	-
22	CLA	5	614	X	-	-	-
22	CLA	5	616	X	-	-	-
22	CLA	5	617	X	-	-	-
22	CLA	5	621	X	-	-	-
22	CLA	6	602	X	-	-	-
22	CLA	6	603	X	-	-	-
22	CLA	6	604	X	-	-	-
22	CLA	6	609	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	6	610	X	-	-	-
22	CLA	6	611	X	-	-	-
22	CLA	6	612	X	-	-	-
22	CLA	6	613	X	-	-	-
22	CLA	6	614	X	-	-	-
22	CLA	6	617	X	-	-	-
22	CLA	6	622	X	-	-	-
22	CLA	7	602	X	-	-	-
22	CLA	7	603	X	-	-	-
22	CLA	7	604	X	-	-	-
22	CLA	7	608	X	-	-	-
22	CLA	7	609	X	-	-	-
22	CLA	7	610	X	-	-	-
22	CLA	7	611	X	-	-	-
22	CLA	7	612	X	-	-	-
22	CLA	7	613	X	-	-	-
22	CLA	7	614	X	-	-	-
22	CLA	7	616	X	-	-	-
22	CLA	7	620	X	-	-	-
22	CLA	8	602	X	-	-	-
22	CLA	8	603	X	-	-	-
22	CLA	8	604	X	-	-	-
22	CLA	8	608	X	-	-	-
22	CLA	8	609	X	-	-	-
22	CLA	8	610	X	-	-	-
22	CLA	8	611	X	-	-	-
22	CLA	8	612	X	-	-	-
22	CLA	8	613	X	-	-	-
22	CLA	8	614	X	-	-	-
22	CLA	8	616	X	-	-	-
22	CLA	9	601	X	-	-	-
22	CLA	9	602	X	-	-	-
22	CLA	9	603	X	-	-	-
22	CLA	9	604	X	-	-	-
22	CLA	9	609	X	-	-	-
22	CLA	9	610	X	-	-	-
22	CLA	9	611	X	-	-	-
22	CLA	9	612	X	-	-	-
22	CLA	9	613	X	-	-	-
22	CLA	9	614	X	-	-	-
22	CLA	92	601	X	-	-	-
22	CLA	92	602	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	92	603	X	-	-	-
22	CLA	92	604	X	-	-	-
22	CLA	92	609	X	-	-	-
22	CLA	92	610	X	-	-	-
22	CLA	92	611	X	-	-	-
22	CLA	92	612	X	-	-	-
22	CLA	92	613	X	-	-	-
22	CLA	92	614	X	-	-	-
22	CLA	A	802	X	-	-	-
22	CLA	A	803	X	-	-	-
22	CLA	A	804	X	-	-	-
22	CLA	A	805	X	-	-	-
22	CLA	A	806	X	-	-	-
22	CLA	A	807	X	-	-	-
22	CLA	A	808	X	-	-	-
22	CLA	A	809	X	-	-	-
22	CLA	A	810	X	-	-	-
22	CLA	A	811	X	-	-	-
22	CLA	A	812	X	-	-	-
22	CLA	A	813	X	-	-	-
22	CLA	A	814	X	-	-	-
22	CLA	A	815	X	-	-	-
22	CLA	A	816	X	-	-	-
22	CLA	A	817	X	-	-	-
22	CLA	A	818	X	-	-	-
22	CLA	A	819	X	-	-	-
22	CLA	A	820	X	-	-	-
22	CLA	A	821	X	-	-	-
22	CLA	A	822	X	-	-	-
22	CLA	A	823	X	-	-	-
22	CLA	A	824	X	-	-	-
22	CLA	A	825	X	-	-	-
22	CLA	A	826	X	-	-	-
22	CLA	A	827	X	-	-	-
22	CLA	A	828	X	-	-	-
22	CLA	A	829	X	-	-	-
22	CLA	A	830	X	-	-	-
22	CLA	A	831	X	-	-	-
22	CLA	A	832	X	-	-	-
22	CLA	A	833	X	-	-	-
22	CLA	A	834	X	-	-	-
22	CLA	A	835	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	A	836	X	-	-	-
22	CLA	A	837	X	-	-	-
22	CLA	A	838	X	-	-	-
22	CLA	A	839	X	-	-	-
22	CLA	A	840	X	-	-	-
22	CLA	A	841	X	-	-	-
22	CLA	A	842	X	-	-	-
22	CLA	A	843	X	-	-	-
22	CLA	A	845	X	-	-	-
22	CLA	A	854	X	-	-	-
22	CLA	B	802	X	-	-	-
22	CLA	B	803	X	-	-	-
22	CLA	B	804	X	-	-	-
22	CLA	B	805	X	-	-	-
22	CLA	B	806	X	-	-	-
22	CLA	B	807	X	-	-	-
22	CLA	B	808	X	-	-	-
22	CLA	B	809	X	-	-	-
22	CLA	B	810	X	-	-	-
22	CLA	B	811	X	-	-	-
22	CLA	B	812	X	-	-	-
22	CLA	B	813	X	-	-	-
22	CLA	B	814	X	-	-	-
22	CLA	B	815	X	-	-	-
22	CLA	B	816	X	-	-	-
22	CLA	B	817	X	-	-	-
22	CLA	B	818	X	-	-	-
22	CLA	B	819	X	-	-	-
22	CLA	B	820	X	-	-	-
22	CLA	B	821	X	-	-	-
22	CLA	B	822	X	-	-	-
22	CLA	B	823	X	-	-	-
22	CLA	B	824	X	-	-	-
22	CLA	B	825	X	-	-	-
22	CLA	B	826	X	-	-	-
22	CLA	B	827	X	-	-	-
22	CLA	B	828	X	-	-	-
22	CLA	B	829	X	-	-	-
22	CLA	B	830	X	-	-	-
22	CLA	B	831	X	-	-	-
22	CLA	B	832	X	-	-	-
22	CLA	B	833	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	B	834	X	-	-	-
22	CLA	B	835	X	-	-	-
22	CLA	B	836	X	-	-	-
22	CLA	B	837	X	-	-	-
22	CLA	B	838	X	-	-	-
22	CLA	B	839	X	-	-	-
22	CLA	B	840	X	-	-	-
22	CLA	B	841	X	-	-	-
22	CLA	B2	804	X	-	-	-
22	CLA	B2	805	X	-	-	-
22	CLA	B2	806	X	-	-	-
22	CLA	B2	807	X	-	-	-
22	CLA	B2	808	X	-	-	-
22	CLA	B2	809	X	-	-	-
22	CLA	B2	810	X	-	-	-
22	CLA	B2	811	X	-	-	-
22	CLA	B2	812	X	-	-	-
22	CLA	B2	813	X	-	-	-
22	CLA	B2	814	X	-	-	-
22	CLA	B2	815	X	-	-	-
22	CLA	B2	820	X	-	-	-
22	CLA	B2	828	X	-	-	-
22	CLA	B2	829	X	-	-	-
22	CLA	B2	839	X	-	-	-
22	CLA	F	301	X	-	-	-
22	CLA	F	303	X	-	-	-
22	CLA	F	304	X	-	-	-
22	CLA	G	203	X	-	-	-
22	CLA	G	204	X	-	-	-
22	CLA	J	101	X	-	-	-
22	CLA	K	201	X	-	-	-
22	CLA	K	203	X	-	-	-
22	CLA	K	204	X	-	-	-
22	CLA	K	206	X	-	-	-
22	CLA	L	203	X	-	-	-
22	CLA	L	204	X	-	-	-
22	CLA	L2	203	X	-	-	-
22	CLA	L2	204	X	-	-	-
22	CLA	Z	602	X	-	-	-
22	CLA	Z	603	X	-	-	-
22	CLA	Z	604	X	-	-	-
22	CLA	Z	608	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
22	CLA	Z	609	X	-	-	-
22	CLA	Z	610	X	-	-	-
22	CLA	Z	611	X	-	-	-
22	CLA	Z	612	X	-	-	-
22	CLA	Z	613	X	-	-	-
22	CLA	Z	614	X	-	-	-
22	CLA	Z	616	X	-	-	-
31	CHL	1	601	X	-	-	-
31	CHL	1	606	X	-	-	-
31	CHL	1	607	X	-	-	-
31	CHL	3	608	X	-	-	-
31	CHL	4	601	X	-	-	-
31	CHL	4	606	X	-	-	-
31	CHL	4	607	X	-	-	-
31	CHL	4	608	X	-	-	-
31	CHL	4	618	X	-	-	-
31	CHL	5	606	X	-	-	-
31	CHL	5	607	X	-	-	-
31	CHL	5	608	X	-	-	-
31	CHL	5	618	X	-	-	-
31	CHL	6	601	X	-	-	-
31	CHL	6	606	X	-	-	-
31	CHL	6	607	X	-	-	-
31	CHL	6	608	X	-	-	-
31	CHL	6	616	X	-	-	-
31	CHL	6	618	X	-	-	-
31	CHL	7	601	X	-	-	-
31	CHL	7	606	X	-	-	-
31	CHL	7	607	X	-	-	-
31	CHL	8	601	X	-	-	-
31	CHL	8	606	X	-	-	-
31	CHL	8	607	X	-	-	-
31	CHL	9	606	X	-	-	-
31	CHL	9	607	X	-	-	-
31	CHL	92	606	X	-	-	-
31	CHL	92	607	X	-	-	-
31	CHL	Z	601	X	-	-	-
31	CHL	Z	606	X	-	-	-
31	CHL	Z	607	X	-	-	-
32	XAT	1	618	X	-	-	-
32	XAT	5	624	X	-	-	-
33	NEX	6	625	X	-	-	-

## 2 Entry composition [i](#)

There are 34 unique types of molecules in this entry. The entry contains 113459 atoms, of which 56999 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	H	N	O	S		
1	A	742	11500	3808	5675	994	1001	22	0	0

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

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	B	733	11400	3824	5576	977	1005	18	0	0

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

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	C	80	1183	369	582	103	117	12	0	0

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

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	144	2284	725	1151	200	201	7	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	H	N	O		
5	E	64	1011	322	505	89	95	0	0

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

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
6	F	165	2568	817	1302	213	233	3	0	0

- Molecule 7 is a protein called Photosystem I reaction center subunit V, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	H	N	O		
7	G	95	1393	452	687	119	135	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
8	I	37	573	195	292	39	46	1	0	0
8	I2	37	573	195	292	39	46	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
9	J	40	657	224	328	46	58	1	0	0

- Molecule 10 is a protein called PSI subunit V.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
10	L	124	1806	586	907	146	164	3	0	0
10	L2	102	1487	487	748	120	130	2	0	0

- Molecule 11 is a protein called Photosystem I reaction center subunit psaK, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
11	K	86	1203	370	620	100	111	2	0	0

- Molecule 12 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
12	1	194	2842	941	1397	240	261	3	0	0
12	Z	194	2842	941	1397	240	261	3	0	0

- Molecule 13 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
13	3	227	3431	1128	1695	283	317	8	0	0

- Molecule 14 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
14	7	213	3240	1072	1590	274	298	6	0	0

- Molecule 15 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
15	8	217	3280	1073	1630	280	293	4	0	0

- Molecule 16 is a protein called Chlorophyll a-b binding protein, chloroplastic (Lhca4).

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
16	4	212	3251	1080	1603	268	295	5	0	0

- Molecule 17 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
17	5	227	3522	1154	1747	297	316	8	0	0

- Molecule 18 is a protein called Chlorophyll a-b binding protein, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
18	6	230	3542	1167	1770	293	306	6	0	0

- Molecule 19 is a protein called Chlorophyll a-b binding protein, chloroplastic.

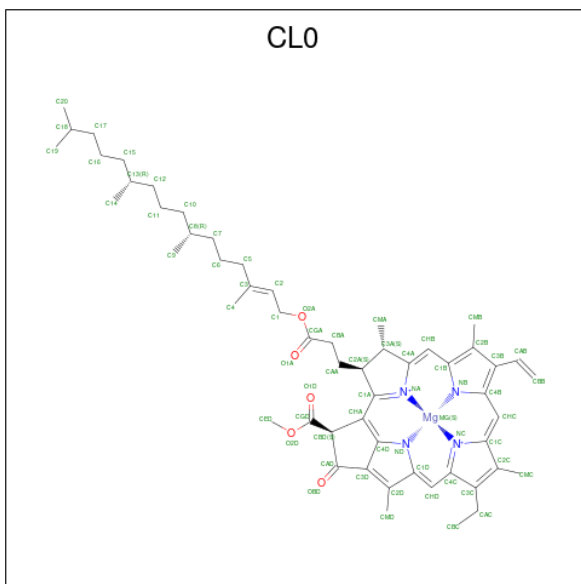
Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
19	9	186	2820	918	1400	238	257	7	0	0
19	92	184	2802	913	1392	236	254	7	0	0

- Molecule 20 is a protein called Photosystem I P700 chlorophyll a apoprotein A2.



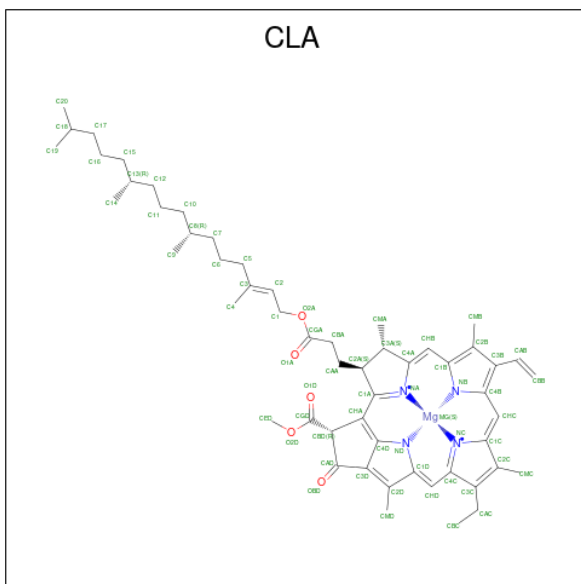
Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
20	B2	180	2865	972	1396	247	247	3	0	0

- Molecule 21 is CHLOROPHYLL A ISOMER (three-letter code: CLO) (formula:  $C_{55}H_{72}MgN_4O_5$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
21	A	1	137	55	72	1	4	5	0

- Molecule 22 is CHLOROPHYLL A (three-letter code: CLA) (formula:  $C_{55}H_{72}MgN_4O_5$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						AltConf
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	
22	A	1	Total	C	H	Mg	N	O	0
			5574	2278	2856	44	176	220	

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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0
22	A	1	5574	2278	2856	44	176	220	0

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Mol	Chain	Residues	Atoms						AltConf
			Total	C	H	Mg	N	O	
22	A	1	Total 5574	C 2278	H 2856	Mg 44	N 176	O 220	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0
22	B	1	Total 5043	C 2063	H 2580	Mg 40	N 160	O 200	0

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Mol	Chain	Residues	Atoms					AltConf	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	B	1	Total	C	H	Mg	N	O	0
			5043	2063	2580	40	160	200	
22	F	1	Total	C	H	Mg	N	O	0
			352	145	177	3	12	15	

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Mol	Chain	Residues	Atoms						AltConf
			Total	C	H	Mg	N	O	
22	F	1	Total 352	C 145	H 177	Mg 3	N 12	O 15	0
22	F	1	Total 352	C 145	H 177	Mg 3	N 12	O 15	0
22	G	1	Total 198	C 86	H 92	Mg 2	N 8	O 10	0
22	G	1	Total 198	C 86	H 92	Mg 2	N 8	O 10	0
22	J	1	Total 104	C 45	H 49	Mg 1	N 4	O 5	0
22	L	1	Total 215	C 90	H 105	Mg 2	N 8	O 10	0
22	L	1	Total 215	C 90	H 105	Mg 2	N 8	O 10	0
22	K	1	Total 354	C 156	H 158	Mg 4	N 16	O 20	0
22	K	1	Total 354	C 156	H 158	Mg 4	N 16	O 20	0
22	K	1	Total 354	C 156	H 158	Mg 4	N 16	O 20	0
22	K	1	Total 354	C 156	H 158	Mg 4	N 16	O 20	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0

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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
22	1	1	Total 1264	C 529	H 625	Mg 11	N 44	O 55	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	3	1	Total 1458	C 612	H 718	Mg 13	N 52	O 63	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0

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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	7	1	Total 1250	C 534	H 598	Mg 12	N 48	O 58	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	8	1	Total 1192	C 504	H 578	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0

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Mol	Chain	Residues	Atoms						AltConf
			Total	C	H	Mg	N	O	
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	Z	1	Total 1220	C 517	H 593	Mg 11	N 44	O 55	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	4	1	Total 1099	C 465	H 534	Mg 10	N 40	O 50	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0

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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	5	1	Total 1452	C 610	H 712	Mg 13	N 52	O 65	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	6	1	Total 1233	C 518	H 605	Mg 11	N 44	O 55	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0

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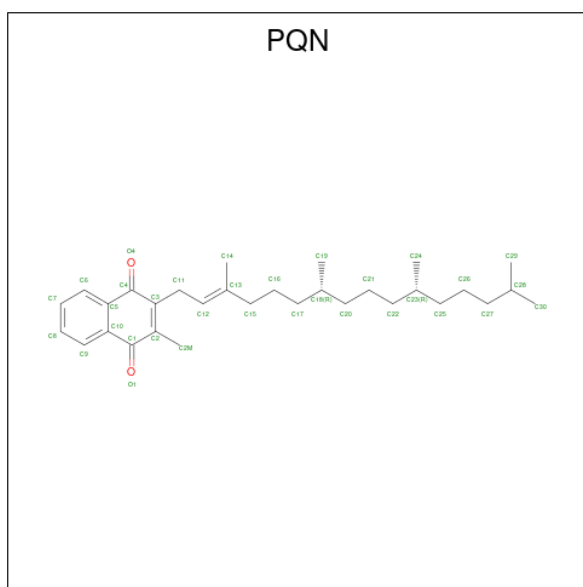
Mol	Chain	Residues	Atoms						AltConf
			Total	C	H	Mg	N	O	
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	9	1	Total 1100	C 465	H 535	Mg 10	N 40	O 50	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0

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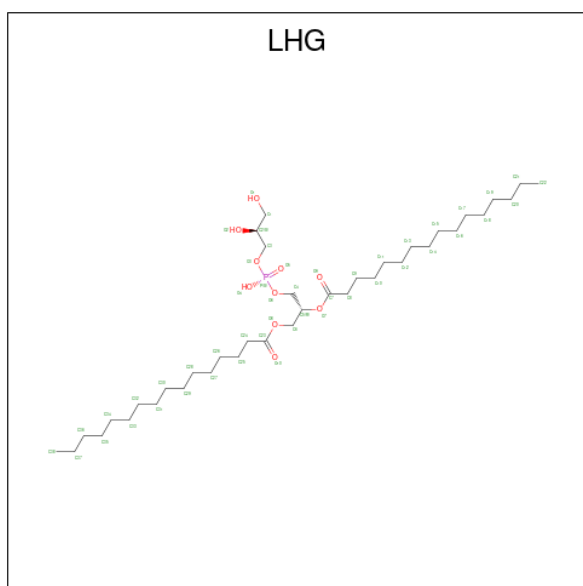
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	B2	1	Total 1810	C 759	H 891	Mg 16	N 64	O 80	0
22	L2	1	Total 156	C 70	H 66	Mg 2	N 8	O 10	0
22	L2	1	Total 156	C 70	H 66	Mg 2	N 8	O 10	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0
22	92	1	Total 1050	C 445	H 505	Mg 10	N 40	O 50	0

- Molecule 23 is PHYLLOQUINONE (three-letter code: PQN) (formula:  $C_{31}H_{46}O_2$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
23	A	1	Total	C	H	O	0
			79	31	46	2	
23	B	1	Total	C	H	O	0
			79	31	46	2	

- Molecule 24 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula:  $C_{38}H_{75}O_{10}P$ ) (labeled as "Ligand of Interest" by depositor).



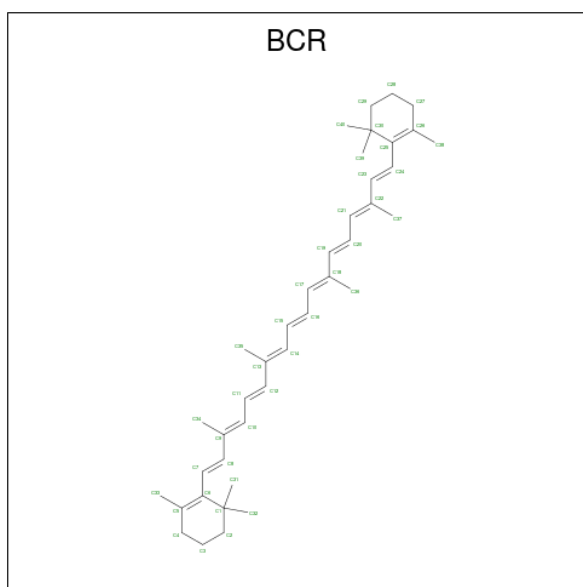
Mol	Chain	Residues	Atoms					AltConf
			Total	C	H	O	P	
24	A	1	Total	C	H	O	P	0
			210	65	123	20	2	

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	H	O	P	
24	A	1	210	65	123	20	2	0
24	B	1	108	34	63	10	1	0
24	1	1	87	28	48	10	1	0
24	3	1	177	56	99	20	2	0
24	3	1	177	56	99	20	2	0
24	7	1	123	38	74	10	1	0
24	8	1	105	33	61	10	1	0
24	Z	1	87	28	48	10	1	0
24	4	1	210	65	123	20	2	0
24	4	1	210	65	123	20	2	0
24	5	1	81	26	44	10	1	0
24	6	1	201	63	116	20	2	0
24	6	1	201	63	116	20	2	0
24	9	1	96	30	55	10	1	0
24	92	1	57	18	28	10	1	0

- Molecule 25 is BETA-CAROTENE (three-letter code: BCR) (formula: C<sub>40</sub>H<sub>56</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	H	
25	A	1	480	200	280	0
25	A	1	480	200	280	0
25	A	1	480	200	280	0
25	A	1	480	200	280	0
25	A	1	480	200	280	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	B	1	672	280	392	0
25	G	1	96	40	56	0
25	I	1	96	40	56	0

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Mol	Chain	Residues	Atoms			AltConf
			Total	C	H	
25	J	1	96	40	56	0
25	L	1	192	80	112	0
25	L	1	192	80	112	0
25	K	1	192	80	112	0
25	K	1	192	80	112	0
25	3	1	288	120	168	0
25	3	1	288	120	168	0
25	3	1	288	120	168	0
25	7	1	96	40	56	0
25	8	1	96	40	56	0
25	4	1	96	40	56	0
25	5	1	96	40	56	0
25	6	1	96	40	56	0
25	9	1	96	40	56	0
25	B2	1	273	114	159	0
25	B2	1	273	114	159	0
25	B2	1	273	114	159	0
25	B2	1	273	114	159	0
25	I2	1	96	40	56	0
25	L2	1	192	80	112	0
25	L2	1	192	80	112	0

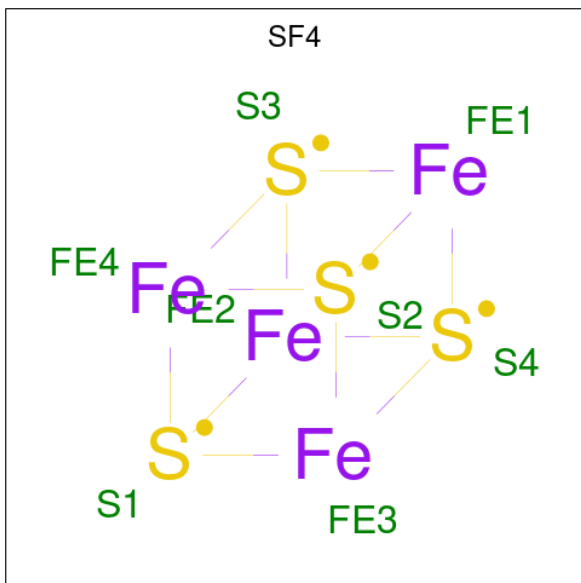
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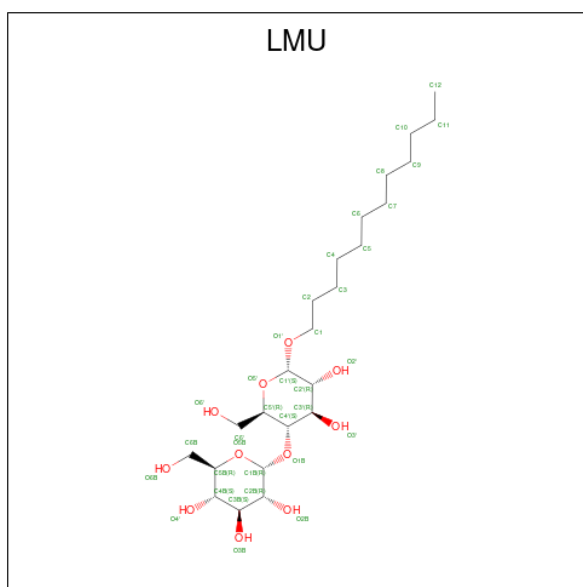
Mol	Chain	Residues	Atoms			AltConf
			Total	C	H	
25	92	1	96	40	56	0

- Molecule 26 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe<sub>4</sub>S<sub>4</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
26	A	1	8	4	4	0
26	C	1	16	8	8	0
26	C	1	16	8	8	0

- Molecule 27 is DODECYL-ALPHA-D-MALTOSE (three-letter code: LMU) (formula: C<sub>24</sub>H<sub>46</sub>O<sub>11</sub>) (labeled as "Ligand of Interest" by depositor).



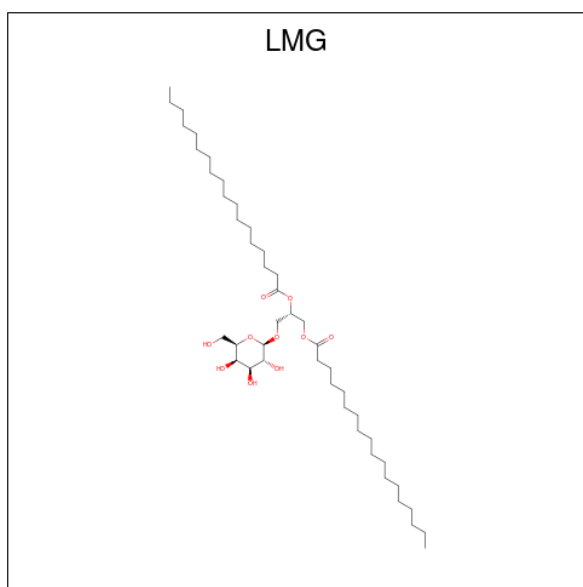
Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	A	1	Total	C	H	O	0
			458	139	262	57	
27	B	1	Total	C	H	O	0
			81	24	46	11	
27	G	1	Total	C	H	O	0
			59	18	35	6	
27	K	1	Total	C	H	O	0
			59	18	35	6	
27	1	1	Total	C	H	O	0
			349	107	201	41	
27	1	1	Total	C	H	O	0
			349	107	201	41	
27	1	1	Total	C	H	O	0
			349	107	201	41	
27	1	1	Total	C	H	O	0
			349	107	201	41	

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Mol	Chain	Residues	Atoms				AltConf
27	1	1	Total	C	H	O	0
			349	107	201	41	
27	1	1	Total	C	H	O	0
			349	107	201	41	
27	7	1	Total	C	H	O	0
			173	53	92	28	
27	7	1	Total	C	H	O	0
			173	53	92	28	
27	7	1	Total	C	H	O	0
			173	53	92	28	
27	8	1	Total	C	H	O	0
			258	78	151	29	
27	8	1	Total	C	H	O	0
			258	78	151	29	
27	8	1	Total	C	H	O	0
			258	78	151	29	
27	8	1	Total	C	H	O	0
			258	78	151	29	
27	Z	1	Total	C	H	O	0
			116	36	63	17	
27	Z	1	Total	C	H	O	0
			116	36	63	17	
27	4	1	Total	C	H	O	0
			116	36	63	17	
27	4	1	Total	C	H	O	0
			116	36	63	17	
27	5	1	Total	C	H	O	0
			59	18	35	6	
27	6	1	Total	C	H	O	0
			221	68	129	24	
27	6	1	Total	C	H	O	0
			221	68	129	24	
27	6	1	Total	C	H	O	0
			221	68	129	24	
27	6	1	Total	C	H	O	0
			221	68	129	24	
27	9	1	Total	C	H	O	0
			59	18	35	6	
27	92	1	Total	C	H	O	0
			81	24	46	11	

- Molecule 28 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: C<sub>45</sub>H<sub>86</sub>O<sub>10</sub>) (labeled as "Ligand of Interest" by depositor).



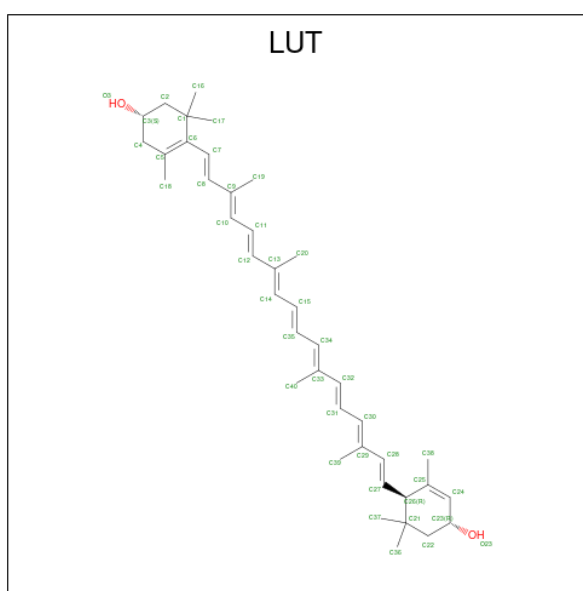
Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
28	A	1	195	64	111	20	0
28	A	1	195	64	111	20	0
28	B	1	177	59	98	20	0
28	B	1	177	59	98	20	0
28	J	1	174	57	97	20	0
28	J	1	174	57	97	20	0
28	1	1	174	58	96	20	0
28	1	1	174	58	96	20	0
28	3	1	120	40	75	5	0
28	7	1	81	27	44	10	0
28	8	1	165	54	91	20	0
28	8	1	165	54	91	20	0
28	4	1	96	31	55	10	0
28	6	1	55	18	35	2	0

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Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
28	9	1	Total	C	H	O	0
			105	34	61	10	
28	B2	1	Total	C	H	O	0
			162	54	88	20	
28	B2	1	Total	C	H	O	0
			162	54	88	20	

- Molecule 29 is (3R,3'R,6S)-4,5-DIDEHYDRO-5,6-DIHYDRO-BETA,BETA-CAROTENE-3,3'-DIOL (three-letter code: LUT) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>2</sub>) (labeled as "Ligand of Interest" by depositor).



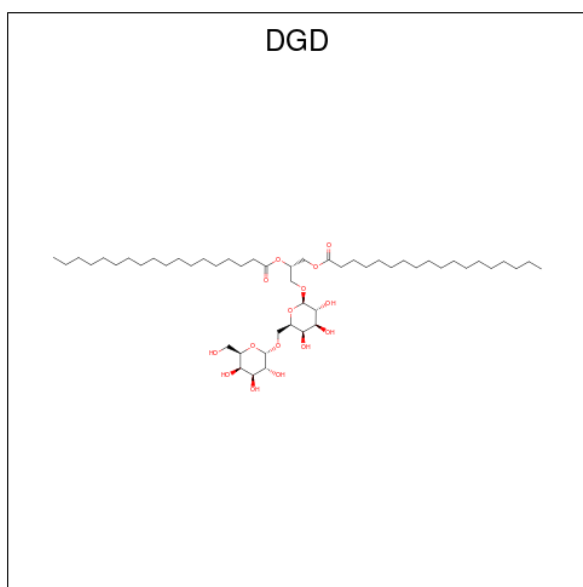
Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
29	A	1	Total	C	H	O	0
			98	40	56	2	
29	F	1	Total	C	H	O	0
			98	40	56	2	
29	1	1	Total	C	H	O	0
			196	80	112	4	
29	1	1	Total	C	H	O	0
			196	80	112	4	
29	3	1	Total	C	H	O	0
			294	120	168	6	
29	3	1	Total	C	H	O	0
			294	120	168	6	
29	3	1	Total	C	H	O	0
			294	120	168	6	

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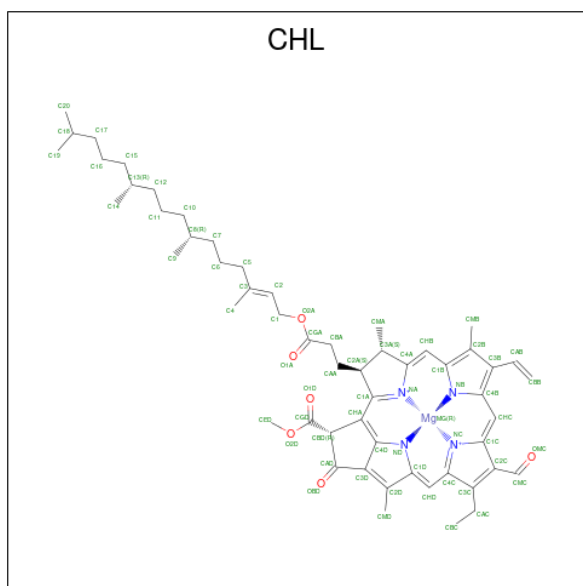
Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
29	7	1	196	80	112	4	0
29	7	1	196	80	112	4	0
29	8	1	98	40	56	2	0
29	Z	1	157	65	89	3	0
29	Z	1	157	65	89	3	0
29	4	1	98	40	56	2	0
29	5	1	196	80	112	4	0
29	5	1	196	80	112	4	0
29	6	1	98	40	56	2	0
29	9	1	196	80	112	4	0
29	9	1	196	80	112	4	0
29	92	1	196	80	112	4	0
29	92	1	196	80	112	4	0

- Molecule 30 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: C<sub>51</sub>H<sub>96</sub>O<sub>15</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
30	B	1	138	44	79	15	0

- Molecule 31 is CHLOROPHYLL B (three-letter code: CHL) (formula:  $C_{55}H_{70}MgN_4O_6$ ).



Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
31	1	1	290	125	132	3	12	18	0
31	1	1	290	125	132	3	12	18	0
31	1	1	290	125	132	3	12	18	0

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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
31	3	1	Total 136	C 55	H 70	Mg 1	N 4	O 6	0
31	7	1	Total 290	C 125	H 132	Mg 3	N 12	O 18	0
31	7	1	Total 290	C 125	H 132	Mg 3	N 12	O 18	0
31	7	1	Total 290	C 125	H 132	Mg 3	N 12	O 18	0
31	8	1	Total 408	C 165	H 210	Mg 3	N 12	O 18	0
31	8	1	Total 408	C 165	H 210	Mg 3	N 12	O 18	0
31	8	1	Total 408	C 165	H 210	Mg 3	N 12	O 18	0
31	Z	1	Total 349	C 145	H 171	Mg 3	N 12	O 18	0
31	Z	1	Total 349	C 145	H 171	Mg 3	N 12	O 18	0
31	Z	1	Total 349	C 145	H 171	Mg 3	N 12	O 18	0
31	4	1	Total 588	C 245	H 288	Mg 5	N 20	O 30	0
31	4	1	Total 588	C 245	H 288	Mg 5	N 20	O 30	0
31	4	1	Total 588	C 245	H 288	Mg 5	N 20	O 30	0
31	4	1	Total 588	C 245	H 288	Mg 5	N 20	O 30	0
31	4	1	Total 588	C 245	H 288	Mg 5	N 20	O 30	0
31	5	1	Total 373	C 164	H 167	Mg 4	N 16	O 22	0
31	5	1	Total 373	C 164	H 167	Mg 4	N 16	O 22	0
31	5	1	Total 373	C 164	H 167	Mg 4	N 16	O 22	0
31	5	1	Total 373	C 164	H 167	Mg 4	N 16	O 22	0
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0

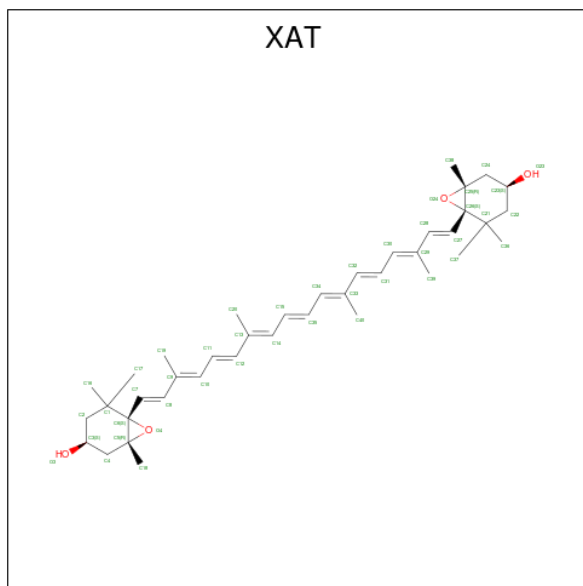
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Mol	Chain	Residues	Atoms					AltConf	
			Total	C	H	Mg	N		O
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0
31	6	1	Total 677	C 286	H 327	Mg 6	N 24	O 34	0
31	9	1	Total 157	C 73	H 64	Mg 2	N 8	O 10	0
31	9	1	Total 157	C 73	H 64	Mg 2	N 8	O 10	0
31	92	1	Total 146	C 68	H 58	Mg 2	N 8	O 10	0
31	92	1	Total 146	C 68	H 58	Mg 2	N 8	O 10	0

- Molecule 32 is (3S,5R,6S,3'S,5'R,6'S)-5,6,5',6'-DIEPOXY-5,6,5',6'-TETRAHYDRO-BETA ,BETA-CAROTENE-3,3'-DIOL (three-letter code: XAT) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>4</sub>) (labeled as "Ligand of Interest" by depositor).



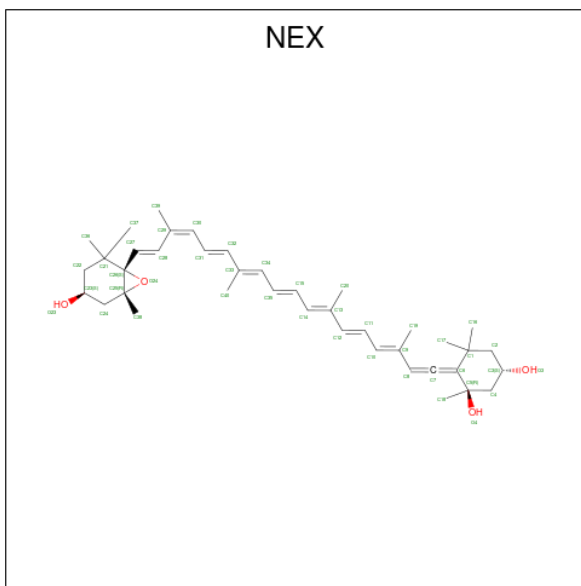
Mol	Chain	Residues	Atoms			AltConf	
			Total	C	H		O
32	1	1	Total 100	C 40	H 56	O 4	0
32	7	1	Total 100	C 40	H 56	O 4	0

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Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
32	8	1	Total	C	H	O	0
			100	40	56	4	
32	Z	1	Total	C	H	O	0
			100	40	56	4	
32	4	1	Total	C	H	O	0
			100	40	56	4	
32	5	1	Total	C	H	O	0
			100	40	56	4	
32	6	1	Total	C	H	O	0
			100	40	56	4	

- Molecule 33 is (1R,3R)-6-[(3E,5E,7E,9E,11E,13E,15E,17E)-18-[(1S,4R,6R)-4-HYDROXY-2,2,6-TRIMETHYL-7-OXABICYCLO[4.1.0]HEPT-1-YL]-3,7,12,16-TETRAMETHYLOCTADEC-1,3,5,7,9,11,13,15,17-NONAENYLIDENE]-1,5,5-TRIMETHYLCYCLOHEXANE-1,3-DIOL (three-letter code: NEX) (formula: C<sub>40</sub>H<sub>56</sub>O<sub>4</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
33	5	1	Total	C	H	O	0
			100	40	56	4	
33	6	1	Total	C	H	O	0
			100	40	56	4	

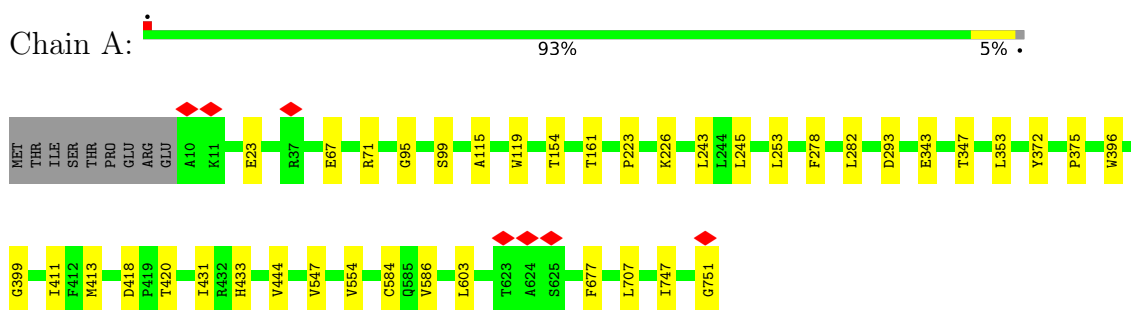
- Molecule 34 is water.

Mol	Chain	Residues	Atoms	AltConf
34	H	11	Total O 88 88	0
34	H	20	Total O 88 88	0
34	H	1	Total O 88 88	0
34	H	1	Total O 88 88	0
34	H	4	Total O 88 88	0
34	H	2	Total O 88 88	0
34	H	7	Total O 88 88	0
34	H	6	Total O 88 88	0
34	H	7	Total O 88 88	0
34	H	7	Total O 88 88	0
34	H	5	Total O 88 88	0
34	H	4	Total O 88 88	0
34	H	7	Total O 88 88	0
34	H	5	Total O 88 88	0
34	H	1	Total O 88 88	0

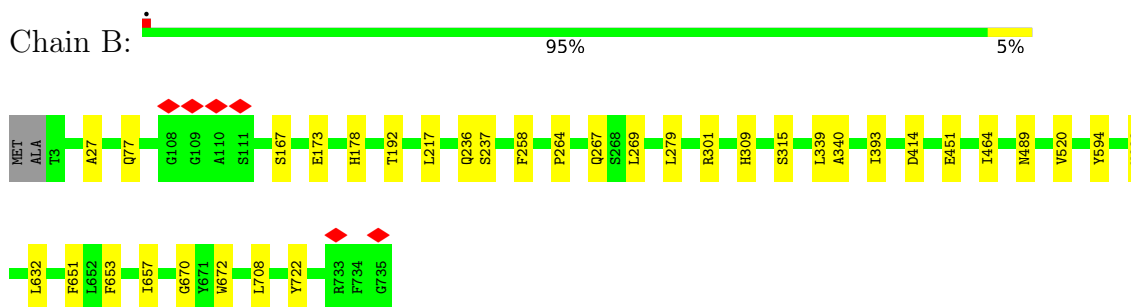
### 3 Residue-property plots

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.

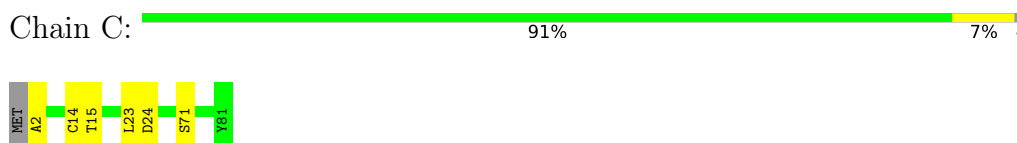
- Molecule 1: Photosystem I P700 chlorophyll a apoprotein A1



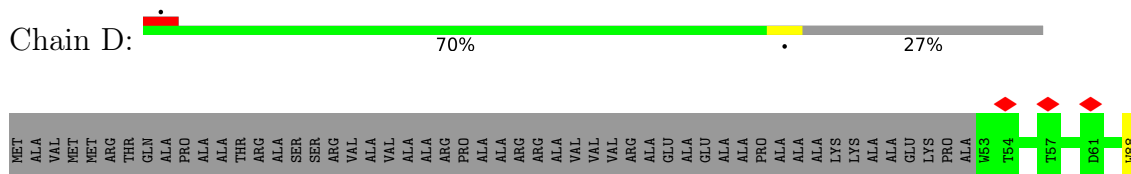
- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2



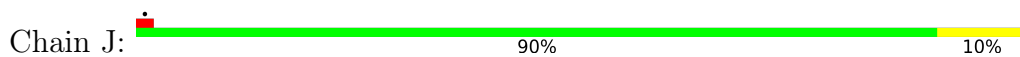
- Molecule 3: Photosystem I iron-sulfur center



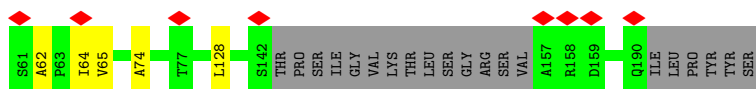
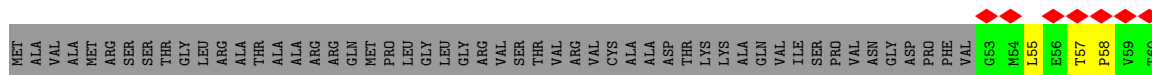
- Molecule 4: Photosystem I reaction center subunit II, chloroplastic



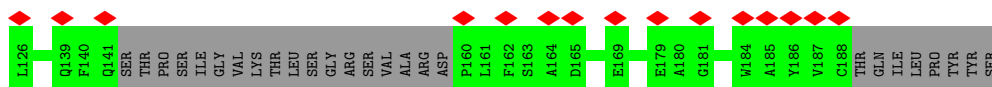
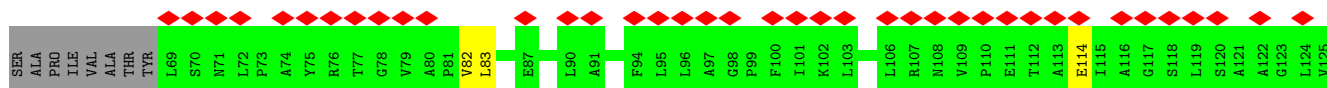




- Molecule 10: PSI subunit V



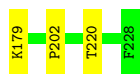
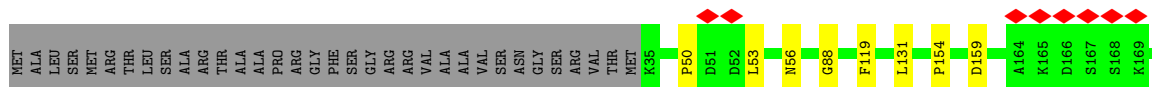
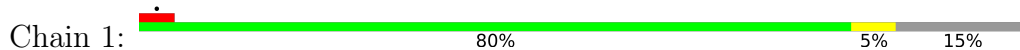
- Molecule 10: PSI subunit V



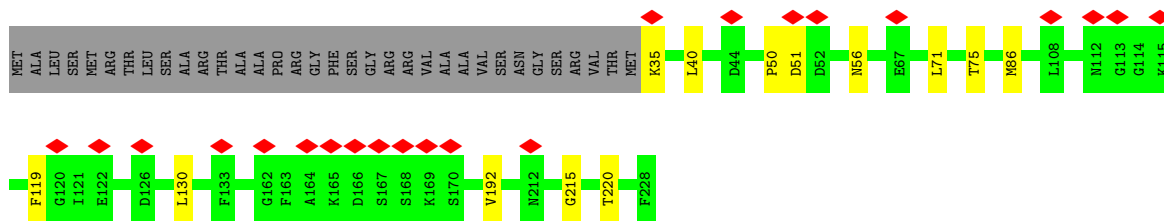
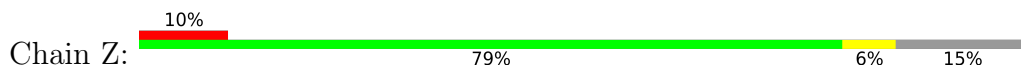
- Molecule 11: Photosystem I reaction center subunit psaK, chloroplastic



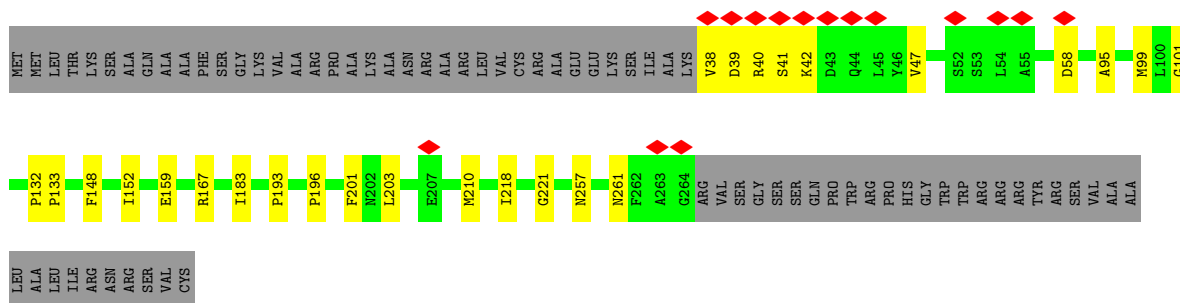
- Molecule 12: Chlorophyll a-b binding protein, chloroplastic



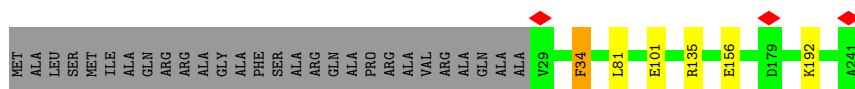
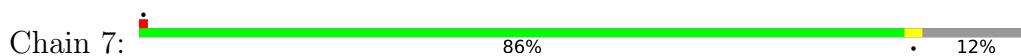
- Molecule 12: Chlorophyll a-b binding protein, chloroplastic



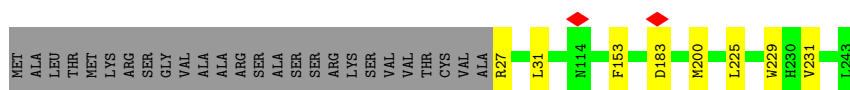
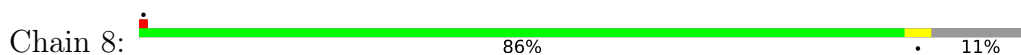
● Molecule 13: Chlorophyll a-b binding protein, chloroplastic



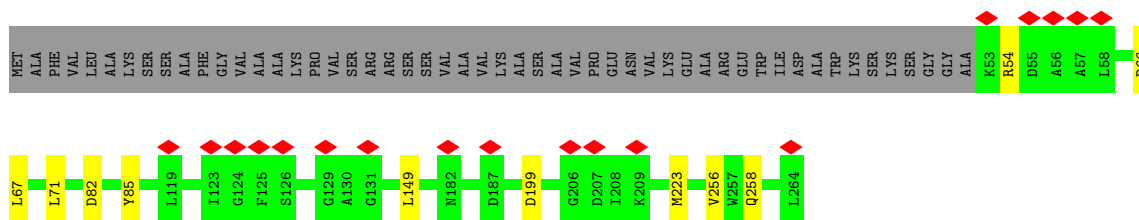
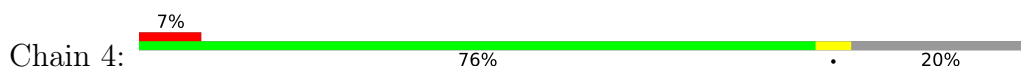
● Molecule 14: Chlorophyll a-b binding protein, chloroplastic



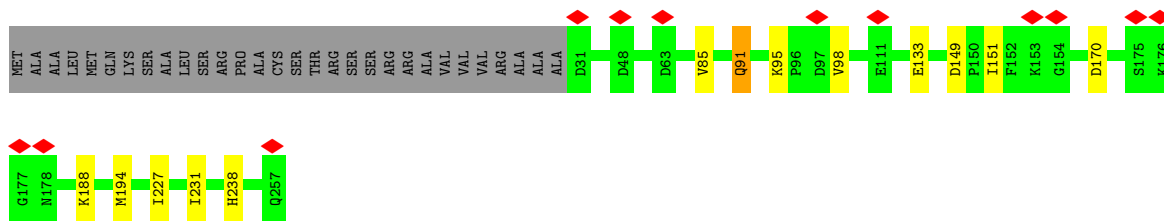
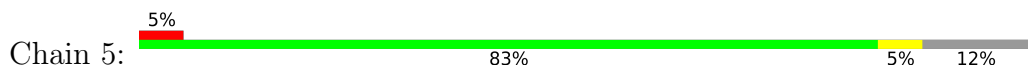
● Molecule 15: Chlorophyll a-b binding protein, chloroplastic



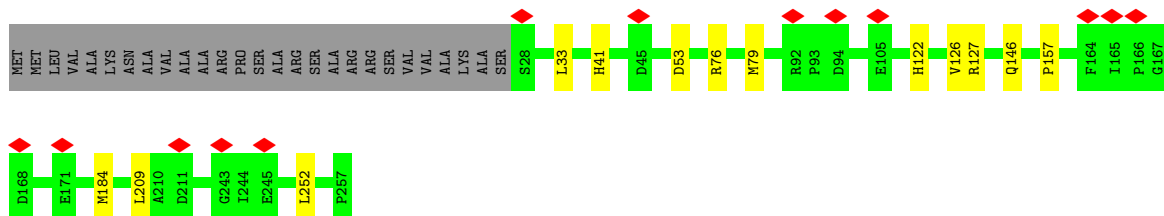
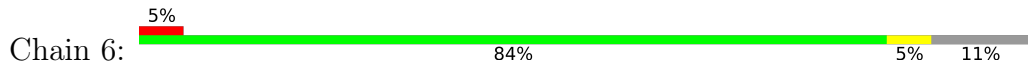
● Molecule 16: Chlorophyll a-b binding protein, chloroplastic (Lhca4)



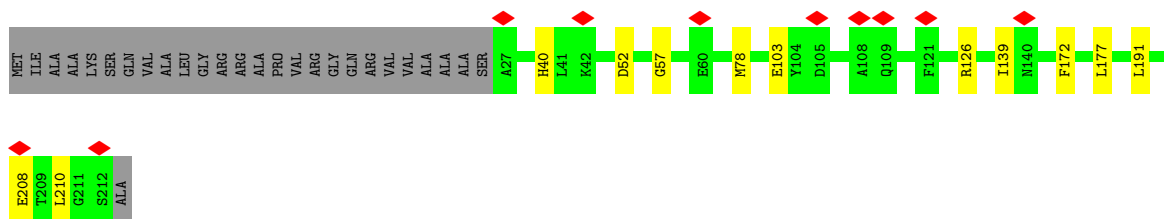
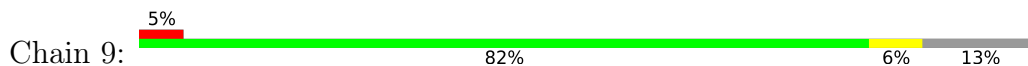
● Molecule 17: Chlorophyll a-b binding protein, chloroplastic



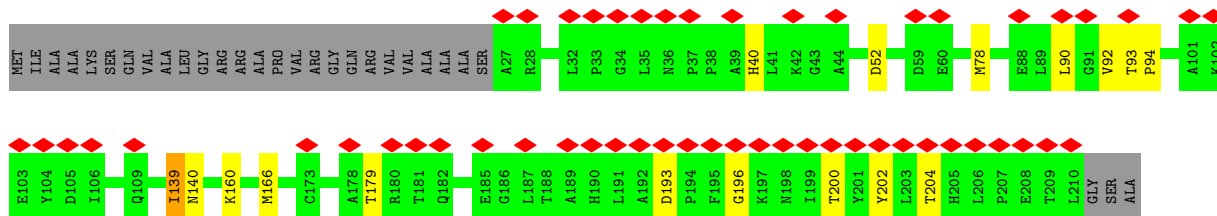
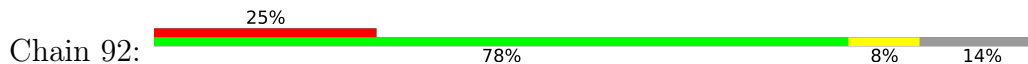
• Molecule 18: Chlorophyll a-b binding protein, chloroplastic



• Molecule 19: Chlorophyll a-b binding protein, chloroplastic



• Molecule 19: Chlorophyll a-b binding protein, chloroplastic



• Molecule 20: Photosystem I P700 chlorophyll a apoprotein A2







## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	28346	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	45.8	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.175	Depositor
Minimum map value	-0.075	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.031	Depositor
Map size ( $\text{\AA}$ )	588.0, 588.0, 588.0	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.84, 0.84, 0.84	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: AME, NEX, DGD, CL0, XAT, LMU, SF4, LUT, PQN, CHL, BCR, LMG, CLA, LHG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.28	0/6021	0.43	0/8208
2	B	0.29	0/6036	0.43	0/8240
3	C	0.28	0/611	0.51	0/826
4	D	0.28	0/1161	0.48	0/1567
5	E	0.30	0/516	0.48	0/700
6	F	0.27	0/1292	0.44	0/1747
7	G	0.27	0/721	0.43	0/980
8	I	0.28	0/293	0.38	0/406
8	I2	0.26	0/293	0.38	0/406
9	J	0.30	0/329	0.42	0/452
10	L	0.28	0/920	0.42	0/1257
10	L2	0.25	0/757	0.39	0/1031
11	K	0.26	0/588	0.43	0/795
12	1	0.28	0/1491	0.42	0/2028
12	Z	0.26	0/1491	0.40	0/2028
13	3	0.29	0/1784	0.43	0/2420
14	7	0.29	0/1702	0.42	0/2310
15	8	0.28	0/1701	0.43	0/2315
16	4	0.27	0/1703	0.41	0/2321
17	5	0.27	0/1830	0.42	0/2492
18	6	0.27	0/1834	0.42	0/2505
19	9	0.27	0/1461	0.42	0/1987
19	92	0.26	0/1451	0.43	0/1974
20	B2	0.24	0/1522	0.39	0/2071
All	All	0.28	0/37508	0.43	0/51066

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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	5825	5675	5675	28	0
2	B	5824	5576	5577	33	0
3	C	601	582	581	3	0
4	D	1133	1151	1150	4	0
5	E	506	505	504	1	0
6	F	1266	1302	1301	10	0
7	G	706	687	686	4	0
8	I	281	292	292	1	0
8	I2	281	292	292	1	0
9	J	329	328	328	2	0
10	L	899	907	905	8	0
10	L2	739	748	747	2	0
11	K	583	620	620	6	0
12	1	1445	1397	1396	11	0
12	Z	1445	1397	1396	11	0
13	3	1736	1695	1694	17	0
14	7	1650	1590	1589	7	0
15	8	1650	1630	1629	7	0
16	4	1648	1603	1602	9	0
17	5	1775	1747	1746	13	0
18	6	1772	1770	1770	13	0
19	9	1420	1400	1399	11	0
19	92	1410	1392	1391	12	0
20	B2	1469	1396	1395	4	0
21	A	65	72	72	1	0
22	1	639	625	625	14	0
22	3	740	718	718	20	0
22	4	565	534	534	10	0
22	5	740	712	712	11	0
22	6	628	605	605	9	0
22	7	652	598	598	7	0
22	8	614	578	578	13	0
22	9	565	535	535	7	0
22	92	545	505	505	11	0
22	A	2718	2856	2856	44	0
22	B	2463	2580	2580	46	0
22	B2	919	891	891	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	F	175	177	177	1	0
22	G	106	92	92	0	0
22	J	55	49	49	1	0
22	K	196	158	158	2	0
22	L	110	105	105	2	0
22	L2	90	66	66	0	0
22	Z	627	593	593	12	0
23	A	33	46	46	0	0
23	B	33	46	46	1	0
24	1	39	48	48	1	0
24	3	78	99	99	1	0
24	4	87	123	123	1	0
24	5	37	44	44	1	0
24	6	85	116	116	1	0
24	7	49	74	74	1	0
24	8	44	61	61	0	0
24	9	41	55	55	0	0
24	92	29	28	28	1	0
24	A	87	123	123	0	0
24	B	45	63	63	0	0
24	Z	39	48	48	0	0
25	3	120	168	168	7	0
25	4	40	56	56	0	0
25	5	40	56	56	0	0
25	6	40	56	56	3	0
25	7	40	56	56	0	0
25	8	40	56	56	2	0
25	9	40	56	56	2	0
25	92	40	56	56	3	0
25	A	200	280	280	12	0
25	B	280	392	392	12	0
25	B2	114	159	159	6	0
25	G	40	56	56	0	0
25	I	40	56	56	1	0
25	I2	40	56	56	0	0
25	J	40	56	56	1	0
25	K	80	112	112	6	0
25	L	80	112	112	5	0
25	L2	80	112	112	3	0
26	A	8	0	0	0	0
26	C	16	0	0	0	0
27	1	148	201	201	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	4	53	63	63	0	0
27	5	24	35	35	0	0
27	6	92	129	129	1	0
27	7	81	92	92	1	0
27	8	107	151	151	2	0
27	9	24	35	35	1	0
27	92	35	46	46	2	0
27	A	196	262	262	4	0
27	B	35	46	46	3	0
27	G	24	35	35	0	0
27	K	24	35	35	0	0
27	Z	53	63	63	1	0
28	1	78	96	96	0	0
28	3	45	75	75	1	0
28	4	41	55	55	0	0
28	6	20	35	35	0	0
28	7	37	44	44	0	0
28	8	74	91	91	0	0
28	9	44	61	61	2	0
28	A	84	111	111	1	0
28	B	79	98	98	1	0
28	B2	74	88	88	0	0
28	J	77	97	97	2	0
29	1	84	112	112	4	0
29	3	126	168	168	6	0
29	4	42	56	56	2	0
29	5	84	112	112	4	0
29	6	42	56	56	2	0
29	7	84	112	112	5	0
29	8	42	56	56	0	0
29	9	84	112	112	5	0
29	92	84	112	112	2	0
29	A	42	56	56	1	0
29	F	42	56	56	4	0
29	Z	68	89	89	1	0
30	B	59	79	79	1	0
31	1	158	132	132	1	0
31	3	66	70	70	1	0
31	4	300	288	288	6	0
31	5	206	167	167	2	0
31	6	350	327	327	9	0
31	7	158	132	132	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
31	8	198	210	210	5	0
31	9	93	64	64	0	0
31	92	88	58	58	0	0
31	Z	178	171	171	4	0
32	1	44	56	56	2	0
32	4	44	56	56	1	0
32	5	44	56	56	1	0
32	6	44	56	56	1	0
32	7	44	56	56	1	0
32	8	44	56	56	1	0
32	Z	44	56	56	1	0
33	5	44	56	56	0	0
33	6	44	56	56	1	0
34	H	88	0	0	12	0
All	All	56460	56999	56982	423	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 4.

The worst 5 of 423 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)
29:7:624:LUT:H381	29:7:624:LUT:H28	1.51	0.92
27:B:853:LMU:H2O1	27:B:853:LMU:H6'	1.13	0.87
1:A:95:GLY:O	1:A:99:SER:OG	1.94	0.83
17:5:170:ASP:OD1	29:5:620:LUT:O23	1.96	0.82
2:B:301:ARG:NH1	7:G:68:GLY:O	2.15	0.80

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	740/751 (98%)	729 (98%)	11 (2%)	0	100	100
2	B	731/735 (100%)	718 (98%)	13 (2%)	0	100	100
3	C	78/81 (96%)	76 (97%)	2 (3%)	0	100	100
4	D	142/196 (72%)	138 (97%)	4 (3%)	0	100	100
5	E	62/97 (64%)	61 (98%)	1 (2%)	0	100	100
6	F	163/227 (72%)	162 (99%)	1 (1%)	0	100	100
7	G	93/126 (74%)	93 (100%)	0	0	100	100
8	I	35/106 (33%)	35 (100%)	0	0	100	100
8	I2	35/106 (33%)	34 (97%)	1 (3%)	0	100	100
9	J	38/40 (95%)	37 (97%)	1 (3%)	0	100	100
10	L	120/196 (61%)	117 (98%)	3 (2%)	0	100	100
10	L2	98/196 (50%)	95 (97%)	3 (3%)	0	100	100
11	K	84/113 (74%)	82 (98%)	2 (2%)	0	100	100
12	1	192/228 (84%)	192 (100%)	0	0	100	100
12	Z	192/228 (84%)	189 (98%)	3 (2%)	0	100	100
13	3	225/298 (76%)	218 (97%)	7 (3%)	0	100	100
14	7	211/241 (88%)	210 (100%)	1 (0%)	0	100	100
15	8	215/243 (88%)	213 (99%)	2 (1%)	0	100	100
16	4	210/264 (80%)	207 (99%)	3 (1%)	0	100	100
17	5	225/257 (88%)	220 (98%)	5 (2%)	0	100	100
18	6	228/257 (89%)	225 (99%)	3 (1%)	0	100	100
19	9	184/213 (86%)	179 (97%)	4 (2%)	1 (0%)	29	48
19	92	182/213 (85%)	178 (98%)	3 (2%)	1 (0%)	29	48
20	B2	166/180 (92%)	164 (99%)	2 (1%)	0	100	100
All	All	4649/5592 (83%)	4572 (98%)	75 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	92	139	ILE
19	9	139	ILE



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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	601/610 (98%)	597 (99%)	4 (1%)	84	90
2	B	596/597 (100%)	595 (100%)	1 (0%)	93	96
3	C	69/70 (99%)	68 (99%)	1 (1%)	67	80
4	D	121/152 (80%)	120 (99%)	1 (1%)	81	89
5	E	55/81 (68%)	55 (100%)	0	100	100
6	F	127/169 (75%)	126 (99%)	1 (1%)	81	89
7	G	71/94 (76%)	71 (100%)	0	100	100
8	I	31/76 (41%)	31 (100%)	0	100	100
8	I2	31/76 (41%)	30 (97%)	1 (3%)	39	59
9	J	35/35 (100%)	35 (100%)	0	100	100
10	L	90/148 (61%)	89 (99%)	1 (1%)	73	84
10	L2	72/148 (49%)	72 (100%)	0	100	100
11	K	59/80 (74%)	59 (100%)	0	100	100
12	1	137/162 (85%)	137 (100%)	0	100	100
12	Z	137/162 (85%)	137 (100%)	0	100	100
13	3	174/230 (76%)	171 (98%)	3 (2%)	60	76
14	7	164/181 (91%)	163 (99%)	1 (1%)	86	91
15	8	163/183 (89%)	161 (99%)	2 (1%)	71	83
16	4	166/205 (81%)	165 (99%)	1 (1%)	86	91
17	5	184/206 (89%)	182 (99%)	2 (1%)	73	84
18	6	184/203 (91%)	184 (100%)	0	100	100
19	9	142/159 (89%)	142 (100%)	0	100	100
19	92	141/159 (89%)	141 (100%)	0	100	100
20	B2	153/153 (100%)	153 (100%)	0	100	100
All	All	3703/4339 (85%)	3684 (100%)	19 (0%)	89	92

5 of 19 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
15	8	153	PHE
17	5	238	HIS
8	I2	69	PHE
17	5	91	GLN
10	L	64	ILE

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

Mol	Chain	Res	Type
1	A	369	HIS
12	1	195	HIS
13	3	256	ASN
19	9	109	GLN
19	92	140	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
9	AME	J	1	9	9,10,11	0.51	0	9,11,13	0.89	1 (11%)

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
9	AME	J	1	9	-	2/9/10/12	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	J	1	AME	O-C-CA	-2.53	118.15	124.78

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	J	1	AME	C-CA-CB-CG
9	J	1	AME	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

397 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
22	CLA	8	604	34	60,68,73	1.10	4 (6%)	70,107,113	0.92	2 (2%)
22	CLA	B2	809	20	52,60,73	1.16	3 (5%)	60,97,113	0.94	2 (3%)
32	XAT	4	620	-	39,47,47	0.12	0	54,74,74	0.66	0
22	CLA	92	602	19	65,73,73	1.02	4 (6%)	76,113,113	0.89	3 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
31	CHL	4	618	16	46,54,74	2.40	10 (21%)	49,90,114	1.38	7 (14%)
22	CLA	B	837	-	65,73,73	1.01	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	B	828	-	65,73,73	1.02	4 (6%)	76,113,113	0.83	2 (2%)
22	CLA	5	610	17	60,68,73	1.04	3 (5%)	70,107,113	0.87	2 (2%)
22	CLA	8	611	24	45,53,73	1.26	4 (8%)	52,89,113	1.04	2 (3%)
25	BCR	L2	201	-	41,41,41	0.14	0	56,56,56	0.37	0
22	CLA	4	611	24	60,68,73	1.08	3 (5%)	70,107,113	0.89	2 (2%)
25	BCR	B	845	-	41,41,41	0.15	0	56,56,56	0.37	0
31	CHL	6	601	18	66,74,74	2.00	10 (15%)	73,114,114	1.18	9 (12%)
29	LUT	5	626	-	42,43,43	0.24	0	51,60,60	0.36	0
22	CLA	7	613	14	65,73,73	1.03	4 (6%)	76,113,113	0.87	2 (2%)
28	LMG	A	859	-	48,48,55	0.18	0	56,56,63	0.18	0
25	BCR	3	620	-	41,41,41	0.21	0	56,56,56	0.36	0
31	CHL	6	616	18	66,74,74	2.00	10 (15%)	73,114,114	1.15	9 (12%)
22	CLA	Z	610	12	60,68,73	1.07	4 (6%)	70,107,113	0.89	2 (2%)
22	CLA	B	833	-	58,66,73	1.07	4 (6%)	67,104,113	0.95	2 (2%)
25	BCR	3	718	-	41,41,41	0.17	0	56,56,56	0.34	0
31	CHL	6	618	18	43,51,74	2.48	9 (20%)	45,86,114	1.46	7 (15%)
22	CLA	L2	203	-	45,53,73	1.24	3 (6%)	52,89,113	1.03	3 (5%)
22	CLA	B	830	-	45,53,73	1.21	4 (8%)	52,89,113	1.02	2 (3%)
25	BCR	B2	844	-	41,41,41	0.14	0	56,56,56	0.30	0
28	LMG	3	722	-	44,44,55	0.21	0	46,46,63	0.26	0
22	CLA	A	840	-	65,73,73	1.01	3 (4%)	76,113,113	0.86	2 (2%)
29	LUT	7	621	-	42,43,43	0.27	0	51,60,60	0.38	0
22	CLA	B	808	-	65,73,73	1.03	4 (6%)	76,113,113	0.83	2 (2%)
33	NEX	5	625	-	38,46,46	0.46	1 (2%)	50,70,70	0.77	3 (6%)
29	LUT	Z	617	-	42,43,43	0.29	0	51,60,60	0.41	0
22	CLA	6	614	-	50,58,73	1.19	4 (8%)	58,95,113	0.98	2 (3%)
22	CLA	7	610	14	65,73,73	1.03	4 (6%)	76,113,113	0.90	2 (2%)
28	LMG	B2	852	-	43,43,55	0.18	0	51,51,63	0.18	0
26	SF4	C	101	3	0,12,12	-	-	-	-	-
22	CLA	A	812	-	65,73,73	1.00	4 (6%)	76,113,113	0.84	2 (2%)
22	CLA	A	803	34	65,73,73	1.05	4 (6%)	76,113,113	0.87	2 (2%)
28	LMG	A	860	-	36,36,55	0.20	0	44,44,63	0.24	0
28	LMG	7	626	-	37,37,55	0.19	0	45,45,63	0.26	0
22	CLA	A	809	1	65,73,73	1.02	4 (6%)	76,113,113	0.94	3 (3%)
22	CLA	6	612	18	45,53,73	1.24	3 (6%)	52,89,113	1.02	2 (3%)
32	XAT	5	624	-	39,47,47	0.12	0	54,74,74	0.60	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
29	LUT	4	619	-	42,43,43	0.27	0	51,60,60	0.43	0
22	CLA	L	204	-	45,53,73	1.27	3 (6%)	52,89,113	1.06	3 (5%)
22	CLA	A	825	-	55,63,73	1.13	4 (7%)	64,101,113	0.94	2 (3%)
22	CLA	B	817	-	65,73,73	1.01	4 (6%)	76,113,113	0.87	2 (2%)
22	CLA	B2	814	-	60,68,73	1.08	3 (5%)	70,107,113	0.89	2 (2%)
22	CLA	B2	813	-	65,73,73	1.05	3 (4%)	76,113,113	0.86	2 (2%)
29	LUT	1	617	-	42,43,43	0.28	0	51,60,60	0.40	0
25	BCR	B	843	-	41,41,41	0.17	0	56,56,56	0.32	0
27	LMU	A	858	-	36,36,36	0.09	0	47,47,47	0.19	0
27	LMU	4	625	-	34,34,36	0.10	0	45,45,47	0.19	0
25	BCR	3	719	-	41,41,41	0.12	0	56,56,56	0.40	0
22	CLA	K	201	11	45,53,73	1.28	3 (6%)	52,89,113	1.01	2 (3%)
26	SF4	C	102	3	0,12,12	-	-	-	-	-
22	CLA	1	614	-	60,68,73	1.07	4 (6%)	70,107,113	0.93	2 (2%)
29	LUT	9	616	-	42,43,43	0.28	0	51,60,60	0.36	0
31	CHL	4	601	16	66,74,74	1.99	10 (15%)	73,114,114	1.15	7 (9%)
22	CLA	B2	808	-	45,53,73	1.26	3 (6%)	52,89,113	1.02	2 (3%)
22	CLA	B	812	-	65,73,73	1.04	4 (6%)	76,113,113	0.87	2 (2%)
28	LMG	B2	855	-	31,31,55	0.21	0	39,39,63	0.17	0
22	CLA	7	616	14	46,54,73	1.21	4 (8%)	53,90,113	1.01	2 (3%)
29	LUT	3	720	-	42,43,43	0.22	0	51,60,60	0.34	0
31	CHL	1	606	34	46,54,74	2.38	10 (21%)	49,90,114	1.37	7 (14%)
27	LMU	A	864	-	24,24,36	0.12	0	29,29,47	0.31	0
22	CLA	3	617	13	46,54,73	1.21	3 (6%)	53,90,113	1.03	2 (3%)
25	BCR	L	201	-	41,41,41	0.18	0	56,56,56	0.35	0
24	LHG	9	622	22	40,40,48	0.25	0	43,46,54	0.28	0
22	CLA	B	825	34	65,73,73	1.01	4 (6%)	76,113,113	0.81	2 (2%)
25	BCR	L2	205	-	41,41,41	0.14	0	56,56,56	0.34	0
22	CLA	6	604	-	65,73,73	1.03	3 (4%)	76,113,113	0.85	2 (2%)
27	LMU	8	625	-	24,24,36	0.12	0	29,29,47	0.29	0
24	LHG	7	625	22	48,48,48	0.25	0	51,54,54	0.22	0
27	LMU	K	208	-	24,24,36	0.11	0	29,29,47	0.31	0
27	LMU	1	622	-	19,19,36	0.14	0	24,24,47	0.30	0
22	CLA	5	611	24	55,63,73	1.10	4 (7%)	64,101,113	0.92	2 (3%)
27	LMU	6	632	-	20,20,36	0.16	0	25,25,47	0.26	0
29	LUT	8	617	-	42,43,43	0.31	0	51,60,60	0.42	0
25	BCR	B2	845	-	41,41,41	0.14	0	56,56,56	0.33	0
22	CLA	5	601	17	65,73,73	1.05	3 (4%)	76,113,113	0.87	2 (2%)
28	LMG	8	626	-	32,32,55	0.20	0	40,40,63	0.19	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
31	CHL	6	608	34	51,59,74	2.30	9 (17%)	55,96,114	1.33	8 (14%)
31	CHL	7	607	34	46,54,74	2.35	9 (19%)	49,90,114	1.40	7 (14%)
27	LMU	8	628	-	24,24,36	0.16	0	29,29,47	0.33	0
31	CHL	1	601	12	66,74,74	1.95	9 (13%)	73,114,114	1.12	7 (9%)
27	LMU	Z	621	-	22,22,36	0.14	0	27,27,47	0.27	0
25	BCR	I	172	-	41,41,41	0.20	0	56,56,56	0.37	0
22	CLA	4	612	16	45,53,73	1.27	3 (6%)	52,89,113	1.01	2 (3%)
22	CLA	Z	602	12	60,68,73	1.07	4 (6%)	70,107,113	0.93	2 (2%)
22	CLA	6	609	18	55,63,73	1.11	4 (7%)	64,101,113	0.96	3 (4%)
22	CLA	1	616	12	46,54,73	1.22	3 (6%)	53,90,113	1.03	2 (3%)
25	BCR	B2	843	-	20,20,41	0.75	1 (5%)	27,27,56	0.25	0
22	CLA	A	828	-	65,73,73	1.04	4 (6%)	76,113,113	0.79	2 (2%)
25	BCR	B	846	-	41,41,41	0.13	0	56,56,56	0.34	0
22	CLA	Z	609	12	65,73,73	1.06	3 (4%)	76,113,113	0.86	2 (2%)
22	CLA	B2	812	-	60,68,73	1.06	3 (5%)	70,107,113	0.90	2 (2%)
28	LMG	B	852	-	43,43,55	0.17	0	51,51,63	0.23	0
22	CLA	F	304	6	65,73,73	1.03	3 (4%)	76,113,113	0.95	3 (3%)
22	CLA	5	603	-	65,73,73	1.01	4 (6%)	76,113,113	0.87	3 (3%)
25	BCR	L	205	-	41,41,41	0.15	0	56,56,56	0.37	0
22	CLA	3	602	13	60,68,73	1.05	4 (6%)	70,107,113	0.89	2 (2%)
22	CLA	L2	204	-	45,53,73	1.25	3 (6%)	52,89,113	1.05	3 (5%)
27	LMU	1	626	-	24,24,36	0.13	0	29,29,47	0.27	0
22	CLA	A	837	1	57,65,73	1.12	3 (5%)	66,103,113	0.93	2 (3%)
22	CLA	B	822	-	59,67,73	1.09	4 (6%)	68,105,113	0.92	2 (2%)
28	LMG	6	633	-	19,19,55	0.31	0	19,19,63	0.29	0
22	CLA	4	604	34	50,58,73	1.18	4 (8%)	58,95,113	0.99	3 (5%)
31	CHL	92	607	-	46,54,74	2.41	9 (19%)	49,90,114	1.38	7 (14%)
22	CLA	A	836	-	65,73,73	1.04	4 (6%)	76,113,113	0.86	2 (2%)
29	LUT	92	616	-	42,43,43	0.26	0	51,60,60	0.29	0
24	LHG	1	620	22	38,38,48	0.28	0	41,44,54	0.30	0
24	LHG	4	623	-	37,37,48	0.25	0	40,43,54	0.30	0
27	LMU	5	627	-	24,24,36	0.12	0	29,29,47	0.26	0
24	LHG	A	846	-	48,48,48	0.24	0	51,54,54	0.30	0
22	CLA	A	820	-	65,73,73	1.01	4 (6%)	76,113,113	0.88	3 (3%)
31	CHL	1	607	34	46,54,74	2.34	9 (19%)	49,90,114	1.41	9 (18%)
22	CLA	A	835	-	65,73,73	1.02	3 (4%)	76,113,113	0.86	2 (2%)
22	CLA	B	821	-	65,73,73	1.02	4 (6%)	76,113,113	0.84	2 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	6	617	-	45,53,73	1.25	3 (6%)	52,89,113	1.02	3 (5%)
22	CLA	B2	807	-	55,63,73	1.12	3 (5%)	64,101,113	0.92	2 (3%)
32	XAT	7	622	-	39,47,47	0.14	0	54,74,74	0.59	0
22	CLA	92	611	24	65,73,73	1.05	3 (4%)	76,113,113	0.86	2 (2%)
22	CLA	8	609	15	45,53,73	1.23	4 (8%)	52,89,113	1.01	2 (3%)
27	LMU	G	206	-	24,24,36	0.14	0	29,29,47	0.24	0
22	CLA	3	610	13	65,73,73	1.00	4 (6%)	76,113,113	0.86	2 (2%)
27	LMU	6	630	-	24,24,36	0.15	0	29,29,47	0.29	0
22	CLA	92	614	-	45,53,73	1.27	3 (6%)	52,89,113	1.04	2 (3%)
22	CLA	Z	613	34	65,73,73	1.03	4 (6%)	76,113,113	0.89	3 (3%)
22	CLA	B	835	34	45,53,73	1.25	3 (6%)	52,89,113	1.02	2 (3%)
25	BCR	8	619	-	41,41,41	0.15	0	56,56,56	0.31	0
22	CLA	92	609	19	45,53,73	1.26	3 (6%)	52,89,113	1.05	2 (3%)
31	CHL	Z	601	12	66,74,74	1.95	10 (15%)	73,114,114	1.15	7 (9%)
33	NEX	6	625	-	38,46,46	0.31	0	50,70,70	0.84	2 (4%)
31	CHL	9	606	-	42,50,74	2.59	11 (26%)	44,85,114	1.44	7 (15%)
22	CLA	Z	616	12	60,68,73	1.08	3 (5%)	70,107,113	0.89	2 (2%)
27	LMU	7	627	-	33,33,36	0.11	0	44,44,47	0.17	0
22	CLA	K	204	-	46,54,73	1.22	4 (8%)	53,90,113	1.05	2 (3%)
25	BCR	A	851	-	41,41,41	0.15	0	56,56,56	0.33	0
22	CLA	8	616	15	45,53,73	1.21	4 (8%)	52,89,113	1.04	2 (3%)
22	CLA	8	610	15	65,73,73	1.00	3 (4%)	76,113,113	0.84	2 (2%)
27	LMU	6	631	-	24,24,36	0.14	0	29,29,47	0.28	0
22	CLA	9	612	19	65,73,73	1.03	3 (4%)	76,113,113	0.83	2 (2%)
31	CHL	4	607	34	66,74,74	1.98	10 (15%)	73,114,114	1.13	8 (10%)
22	CLA	K	206	11	45,53,73	1.25	3 (6%)	52,89,113	1.03	2 (3%)
22	CLA	G	204	7	46,54,73	1.22	3 (6%)	53,90,113	1.01	2 (3%)
22	CLA	A	845	24	45,53,73	1.23	3 (6%)	52,89,113	0.99	2 (3%)
27	LMU	6	628	-	24,24,36	0.13	0	29,29,47	0.30	0
22	CLA	7	611	24	65,73,73	1.03	4 (6%)	76,113,113	0.84	2 (2%)
22	CLA	7	603	-	52,60,73	1.13	4 (7%)	60,97,113	0.98	2 (3%)
32	XAT	Z	618	-	39,47,47	0.16	0	54,74,74	0.57	0
22	CLA	92	601	19	45,53,73	1.24	3 (6%)	52,89,113	1.00	2 (3%)
27	LMU	4	626	-	20,20,36	0.15	0	25,25,47	0.28	0
22	CLA	1	602	12	60,68,73	1.05	4 (6%)	70,107,113	0.91	2 (2%)
23	PQN	A	844	-	34,34,34	0.31	0	42,45,45	0.37	0
22	CLA	7	620	34	53,61,73	1.15	3 (5%)	61,98,113	0.94	2 (3%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	Z	614	-	50,58,73	1.17	3 (6%)	58,95,113	0.99	3 (5%)
31	CHL	4	606	34	56,64,74	2.14	9 (16%)	61,102,114	1.32	8 (13%)
29	LUT	F	305	-	42,43,43	0.39	0	51,60,60	0.77	1 (1%)
25	BCR	J	102	-	41,41,41	0.15	0	56,56,56	0.30	0
22	CLA	92	603	19	45,53,73	1.26	4 (8%)	52,89,113	1.02	2 (3%)
22	CLA	4	603	16	65,73,73	1.05	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	7	612	14	52,60,73	1.16	4 (7%)	60,97,113	0.94	2 (3%)
24	LHG	92	622	22	28,28,48	0.29	0	31,34,54	0.29	0
27	LMU	B	853	-	36,36,36	0.12	0	47,47,47	0.68	2 (4%)
25	BCR	9	623	-	41,41,41	0.12	0	56,56,56	0.35	0
24	LHG	Z	620	22	38,38,48	0.27	0	41,44,54	0.30	0
22	CLA	9	614	-	45,53,73	1.25	3 (6%)	52,89,113	1.03	2 (3%)
27	LMU	1	627	-	22,22,36	0.14	0	27,27,47	0.30	0
22	CLA	92	613	19	60,68,73	1.07	3 (5%)	70,107,113	0.90	2 (2%)
25	BCR	A	848	-	41,41,41	0.15	0	56,56,56	0.30	0
31	CHL	Z	607	34	66,74,74	1.97	9 (13%)	73,114,114	1.14	7 (9%)
22	CLA	A	811	-	65,73,73	1.00	4 (6%)	76,113,113	0.87	2 (2%)
22	CLA	B	841	24	65,73,73	1.02	4 (6%)	76,113,113	0.88	3 (3%)
22	CLA	A	817	34	55,63,73	1.12	3 (5%)	64,101,113	0.92	2 (3%)
22	CLA	3	609	13	61,69,73	1.03	4 (6%)	71,108,113	0.87	2 (2%)
28	LMG	1	624	-	36,36,55	0.20	0	44,44,63	0.18	0
22	CLA	1	603	-	57,65,73	1.09	4 (7%)	66,103,113	0.92	2 (3%)
22	CLA	3	614	-	45,53,73	1.23	4 (8%)	52,89,113	1.03	3 (5%)
22	CLA	9	604	19	53,61,73	1.13	4 (7%)	61,98,113	0.96	3 (4%)
22	CLA	A	854	34	65,73,73	1.04	4 (6%)	76,113,113	0.81	2 (2%)
22	CLA	3	615	34	65,73,73	1.04	3 (4%)	76,113,113	0.87	2 (2%)
22	CLA	A	829	-	65,73,73	1.03	3 (4%)	76,113,113	0.83	2 (2%)
29	LUT	92	617	-	42,43,43	0.21	0	51,60,60	0.37	0
22	CLA	5	609	17	65,73,73	1.03	4 (6%)	76,113,113	0.84	2 (2%)
22	CLA	4	616	16	45,53,73	1.25	3 (6%)	52,89,113	1.02	2 (3%)
22	CLA	A	843	34	65,73,73	1.02	4 (6%)	76,113,113	0.89	2 (2%)
28	LMG	B	854	-	36,36,55	0.20	0	44,44,63	0.17	0
22	CLA	Z	611	24	60,68,73	1.07	3 (5%)	70,107,113	0.89	2 (2%)
22	CLA	A	833	-	65,73,73	1.04	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	1	613	34	65,73,73	1.01	4 (6%)	76,113,113	0.88	3 (3%)
25	BCR	K	202	-	41,41,41	0.16	0	56,56,56	0.35	0
29	LUT	1	619	-	42,43,43	0.21	0	51,60,60	0.40	0



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	B	839	34	65,73,73	1.03	4 (6%)	76,113,113	0.87	2 (2%)
31	CHL	4	608	-	66,74,74	2.00	10 (15%)	73,114,114	1.13	7 (9%)
24	LHG	6	619	22	48,48,48	0.23	0	51,54,54	0.24	0
22	CLA	92	612	19	65,73,73	1.02	3 (4%)	76,113,113	0.85	2 (2%)
22	CLA	A	813	-	65,73,73	1.02	4 (6%)	76,113,113	0.91	2 (2%)
22	CLA	A	834	-	65,73,73	1.02	4 (6%)	76,113,113	0.87	2 (2%)
22	CLA	8	614	-	57,65,73	1.10	3 (5%)	66,103,113	0.91	2 (3%)
22	CLA	B	805	-	65,73,73	0.99	4 (6%)	76,113,113	0.89	2 (2%)
22	CLA	92	610	19	60,68,73	1.07	4 (6%)	70,107,113	0.92	3 (4%)
27	LMU	7	629	-	28,28,36	0.11	0	39,39,47	0.27	0
32	XAT	1	618	-	39,47,47	0.14	0	54,74,74	0.69	2 (3%)
22	CLA	B	829	-	65,73,73	0.98	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	3	607	13	55,63,73	1.12	4 (7%)	64,101,113	0.94	2 (3%)
24	LHG	5	623	22	36,36,48	0.27	0	39,42,54	0.28	0
22	CLA	A	832	-	55,63,73	1.12	4 (7%)	64,101,113	0.95	2 (3%)
22	CLA	A	826	34	65,73,73	1.03	3 (4%)	76,113,113	0.83	2 (2%)
22	CLA	A	821	-	55,63,73	1.11	4 (7%)	64,101,113	0.89	2 (3%)
22	CLA	1	612	12	45,53,73	1.24	3 (6%)	52,89,113	1.01	2 (3%)
22	CLA	5	616	17	53,61,73	1.14	4 (7%)	61,98,113	0.96	2 (3%)
27	LMU	A	861	-	24,24,36	0.13	0	29,29,47	0.30	0
31	CHL	8	606	34	66,74,74	1.96	9 (13%)	73,114,114	1.13	8 (10%)
31	CHL	8	601	15	66,74,74	1.99	9 (13%)	73,114,114	1.10	7 (9%)
25	BCR	4	621	-	41,41,41	0.15	0	56,56,56	0.35	0
22	CLA	B	819	34	60,68,73	1.06	4 (6%)	70,107,113	0.89	2 (2%)
22	CLA	6	613	34	65,73,73	1.02	3 (4%)	76,113,113	0.87	2 (2%)
25	BCR	B	847	-	41,41,41	0.21	0	56,56,56	0.41	0
22	CLA	F	301	34	65,73,73	0.98	3 (4%)	76,113,113	0.83	2 (2%)
22	CLA	5	612	17	45,53,73	1.25	3 (6%)	52,89,113	1.00	2 (3%)
22	CLA	B	818	-	65,73,73	1.00	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	A	810	1	65,73,73	1.01	3 (4%)	76,113,113	0.87	2 (2%)
22	CLA	5	604	34	55,63,73	1.13	3 (5%)	64,101,113	0.94	2 (3%)
22	CLA	B	834	-	60,68,73	1.06	3 (5%)	70,107,113	0.89	2 (2%)
22	CLA	1	608	34	65,73,73	1.03	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	B	832	-	65,73,73	1.02	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	A	824	-	45,53,73	1.21	4 (8%)	52,89,113	1.04	2 (3%)
22	CLA	A	814	-	65,73,73	1.03	4 (6%)	76,113,113	0.84	2 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	3	613	13	60,68,73	1.07	4 (6%)	70,107,113	0.87	2 (2%)
31	CHL	5	606	34	46,54,74	2.37	10 (21%)	49,90,114	1.37	7 (14%)
24	LHG	4	622	22	48,48,48	0.24	0	51,54,54	0.28	0
22	CLA	B	815	-	65,73,73	1.03	3 (4%)	76,113,113	0.84	2 (2%)
22	CLA	8	608	34	50,58,73	1.17	4 (8%)	58,95,113	0.97	2 (3%)
25	BCR	A	850	-	41,41,41	0.16	0	56,56,56	0.24	0
29	LUT	3	621	-	42,43,43	0.32	0	51,60,60	0.37	0
31	CHL	3	608	34	66,74,74	1.95	9 (13%)	73,114,114	1.15	7 (9%)
27	LMU	9	624	-	24,24,36	0.14	0	29,29,47	0.29	0
29	LUT	9	617	-	42,43,43	0.21	0	51,60,60	0.39	0
24	LHG	B	851	22	44,44,48	0.26	0	47,50,54	0.32	0
22	CLA	A	806	-	65,73,73	1.00	4 (6%)	76,113,113	0.88	3 (3%)
28	LMG	J	103	-	42,42,55	0.18	0	50,50,63	0.40	0
27	LMU	8	624	-	24,24,36	0.14	0	29,29,47	0.27	0
22	CLA	1	604	34	50,58,73	1.17	4 (8%)	58,95,113	0.99	2 (3%)
22	CLA	6	610	18	60,68,73	1.06	4 (6%)	70,107,113	0.88	2 (2%)
22	CLA	L	203	-	65,73,73	1.01	4 (6%)	76,113,113	0.84	2 (2%)
31	CHL	5	618	17	43,51,74	2.49	10 (23%)	45,86,114	1.44	7 (15%)
25	BCR	B2	848	-	14,14,41	0.36	0	19,20,56	0.33	0
22	CLA	B	824	34	65,73,73	1.02	3 (4%)	76,113,113	0.85	2 (2%)
22	CLA	F	303	34	45,53,73	1.25	4 (8%)	52,89,113	1.03	2 (3%)
22	CLA	3	603	-	65,73,73	1.00	3 (4%)	76,113,113	0.83	2 (2%)
22	CLA	4	614	-	55,63,73	1.13	3 (5%)	64,101,113	0.92	2 (3%)
22	CLA	4	609	16	60,68,73	1.09	3 (5%)	70,107,113	0.90	2 (2%)
22	CLA	B	814	-	60,68,73	1.05	4 (6%)	70,107,113	0.90	3 (4%)
22	CLA	6	602	18	65,73,73	1.01	4 (6%)	76,113,113	0.86	2 (2%)
24	LHG	8	620	22	43,43,48	0.27	0	46,49,54	0.26	0
22	CLA	3	606	34	42,50,73	1.27	4 (9%)	48,85,113	1.06	2 (4%)
22	CLA	B	826	-	65,73,73	1.01	4 (6%)	76,113,113	0.84	2 (2%)
22	CLA	B	809	2	65,73,73	1.03	3 (4%)	76,113,113	0.82	2 (2%)
31	CHL	8	607	34	66,74,74	1.98	10 (15%)	73,114,114	1.17	8 (10%)
22	CLA	5	614	-	45,53,73	1.24	3 (6%)	52,89,113	1.02	2 (3%)
27	LMU	A	862	-	20,20,36	0.13	0	25,25,47	0.28	0
21	CL0	A	801	-	65,73,73	1.92	9 (13%)	76,113,113	1.09	6 (7%)
22	CLA	B	806	2	65,73,73	1.02	4 (6%)	76,113,113	0.81	2 (2%)
22	CLA	4	602	16	60,68,73	1.07	4 (6%)	70,107,113	0.87	2 (2%)
22	CLA	8	613	15	65,73,73	1.01	4 (6%)	76,113,113	0.85	2 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
27	LMU	8	627	-	36,36,36	0.11	0	47,47,47	0.37	0
27	LMU	A	857	-	35,35,36	0.10	0	46,46,47	0.18	0
28	LMG	4	624	-	41,41,55	0.19	0	49,49,63	0.26	0
22	CLA	6	603	-	65,73,73	1.03	4 (6%)	76,113,113	0.82	2 (2%)
22	CLA	B	836	-	60,68,73	1.06	3 (5%)	70,107,113	0.91	2 (2%)
27	LMU	Z	622	-	32,32,36	0.10	0	43,43,47	0.18	0
25	BCR	I2	172	-	41,41,41	0.12	0	56,56,56	0.32	0
25	BCR	7	623	-	41,41,41	0.16	0	56,56,56	0.38	0
25	BCR	A	849	-	41,41,41	0.18	0	56,56,56	0.32	0
22	CLA	3	604	34	65,73,73	1.01	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	7	614	-	43,51,73	1.29	4 (9%)	49,86,113	1.07	2 (4%)
22	CLA	1	611	24	61,69,73	1.07	4 (6%)	71,108,113	0.86	2 (2%)
22	CLA	B2	810	-	65,73,73	1.04	3 (4%)	76,113,113	0.85	2 (2%)
25	BCR	B	801	-	41,41,41	0.17	0	56,56,56	0.38	0
22	CLA	Z	603	-	55,63,73	1.13	3 (5%)	64,101,113	0.91	2 (3%)
22	CLA	B	813	-	65,73,73	1.02	4 (6%)	76,113,113	0.84	2 (2%)
27	LMU	1	623	-	24,24,36	0.14	0	29,29,47	0.26	0
22	CLA	A	842	-	65,73,73	1.00	4 (6%)	76,113,113	0.84	2 (2%)
31	CHL	Z	606	34	46,54,74	2.37	10 (21%)	49,90,114	1.36	8 (16%)
25	BCR	92	623	-	41,41,41	0.14	0	56,56,56	0.33	0
22	CLA	7	604	34	51,59,73	1.14	4 (7%)	59,96,113	0.96	2 (3%)
22	CLA	B2	828	-	65,73,73	1.05	3 (4%)	76,113,113	0.84	2 (2%)
30	DGD	B	850	-	60,60,67	0.17	0	74,74,81	0.35	0
25	BCR	G	205	-	41,41,41	0.15	0	56,56,56	0.32	0
22	CLA	K	203	34	60,68,73	1.09	3 (5%)	70,107,113	0.90	2 (2%)
22	CLA	B2	804	-	45,53,73	1.25	3 (6%)	52,89,113	1.04	2 (3%)
31	CHL	5	607	34	66,74,74	1.99	9 (13%)	73,114,114	1.18	8 (10%)
22	CLA	5	617	-	65,73,73	1.04	3 (4%)	76,113,113	0.85	2 (2%)
25	BCR	K	207	-	41,41,41	0.14	0	56,56,56	0.28	0
26	SF4	A	853	2,1	0,12,12	-	-	-	-	-
29	LUT	Z	619	-	26,26,43	0.36	0	34,35,60	0.38	0
22	CLA	A	827	34	65,73,73	1.03	4 (6%)	76,113,113	0.87	2 (2%)
22	CLA	J	101	9	55,63,73	1.13	3 (5%)	64,101,113	0.92	2 (3%)
27	LMU	A	865	-	24,24,36	0.13	0	29,29,47	0.46	0
22	CLA	A	805	-	55,63,73	1.11	4 (7%)	64,101,113	0.90	2 (3%)
22	CLA	B2	839	-	45,53,73	1.26	3 (6%)	52,89,113	1.07	2 (3%)
22	CLA	8	602	15	62,70,73	1.06	4 (6%)	72,109,113	0.89	2 (2%)
22	CLA	B2	806	20	65,73,73	1.03	3 (4%)	76,113,113	0.83	2 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	3	612	13	46,54,73	1.23	4 (8%)	53,90,113	1.00	2 (3%)
28	LMG	8	629	-	42,42,55	0.19	0	50,50,63	0.16	0
28	LMG	1	628	-	42,42,55	0.19	0	50,50,63	0.29	0
28	LMG	9	620	22	44,44,55	0.18	0	52,52,63	0.37	0
22	CLA	A	819	-	60,68,73	1.08	3 (5%)	70,107,113	0.92	2 (2%)
22	CLA	5	621	34	46,54,73	1.28	3 (6%)	53,90,113	1.12	5 (9%)
25	BCR	5	622	-	41,41,41	0.17	0	56,56,56	0.31	0
22	CLA	B	803	-	65,73,73	1.00	3 (4%)	76,113,113	0.82	2 (2%)
22	CLA	B	827	-	65,73,73	1.01	3 (4%)	76,113,113	0.85	2 (2%)
24	LHG	6	629	-	35,35,48	0.26	0	38,41,54	0.28	0
31	CHL	6	606	34	58,66,74	2.13	9 (15%)	63,104,114	1.22	7 (11%)
22	CLA	A	838	-	51,59,73	1.15	3 (5%)	59,96,113	0.97	2 (3%)
22	CLA	Z	608	34	50,58,73	1.18	4 (8%)	58,95,113	0.99	2 (3%)
31	CHL	6	607	34	66,74,74	2.04	10 (15%)	73,114,114	1.16	7 (9%)
22	CLA	A	815	-	55,63,73	1.11	3 (5%)	64,101,113	0.92	2 (3%)
22	CLA	8	603	-	65,73,73	1.05	4 (6%)	76,113,113	0.82	2 (2%)
25	BCR	6	623	-	41,41,41	0.18	0	56,56,56	0.34	0
22	CLA	4	610	16	60,68,73	1.06	3 (5%)	70,107,113	0.87	2 (2%)
22	CLA	4	613	16	65,73,73	1.05	4 (6%)	76,113,113	0.88	2 (2%)
22	CLA	A	841	-	65,73,73	1.00	4 (6%)	76,113,113	0.85	2 (2%)
31	CHL	5	608	34	51,59,74	2.26	10 (19%)	55,96,114	1.35	8 (14%)
22	CLA	7	608	34	50,58,73	1.17	3 (6%)	58,95,113	0.95	2 (3%)
22	CLA	B2	820	-	56,64,73	1.13	3 (5%)	65,102,113	0.93	2 (3%)
22	CLA	A	823	-	65,73,73	1.02	4 (6%)	76,113,113	0.85	3 (3%)
22	CLA	Z	604	34	57,65,73	1.09	4 (7%)	66,103,113	0.93	2 (3%)
22	CLA	5	613	17	56,64,73	1.11	4 (7%)	65,102,113	0.93	2 (3%)
29	LUT	5	620	-	42,43,43	0.28	0	51,60,60	0.45	0
25	BCR	A	852	-	41,41,41	0.14	0	56,56,56	0.39	0
22	CLA	B	811	-	65,73,73	1.00	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	5	602	17	65,73,73	1.03	3 (4%)	76,113,113	0.85	2 (2%)
22	CLA	A	804	-	65,73,73	1.02	4 (6%)	76,113,113	0.86	3 (3%)
28	LMG	J	104	-	35,35,55	0.20	0	43,43,63	0.20	0
22	CLA	A	802	-	65,73,73	1.00	4 (6%)	76,113,113	0.82	2 (2%)
22	CLA	A	807	1	65,73,73	1.02	4 (6%)	76,113,113	0.82	2 (2%)
22	CLA	B	838	-	50,58,73	1.19	3 (6%)	58,95,113	0.98	2 (3%)
22	CLA	9	602	19	60,68,73	1.06	3 (5%)	70,107,113	0.89	2 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	A	831	-	65,73,73	1.02	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	B	810	-	65,73,73	1.01	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	A	839	-	65,73,73	1.02	4 (6%)	76,113,113	0.86	2 (2%)
29	LUT	7	624	-	42,43,43	0.22	0	51,60,60	0.41	0
32	XAT	8	618	-	39,47,47	0.17	0	54,74,74	0.57	0
32	XAT	6	624	-	39,47,47	0.13	0	54,74,74	0.61	0
22	CLA	1	610	12	65,73,73	1.01	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	B	823	-	65,73,73	1.02	4 (6%)	76,113,113	0.88	2 (2%)
22	CLA	9	611	24	65,73,73	1.04	4 (6%)	76,113,113	0.85	2 (2%)
31	CHL	7	606	34	46,54,74	2.35	10 (21%)	49,90,114	1.36	7 (14%)
22	CLA	9	609	19	51,59,73	1.16	4 (7%)	59,96,113	0.96	2 (3%)
22	CLA	8	612	15	55,63,73	1.12	4 (7%)	64,101,113	0.89	2 (3%)
22	CLA	B	840	-	65,73,73	0.98	4 (6%)	76,113,113	0.85	2 (2%)
27	LMU	92	624	-	36,36,36	0.10	0	47,47,47	0.22	0
22	CLA	B	804	-	45,53,73	1.23	3 (6%)	52,89,113	0.99	2 (3%)
23	PQN	B	842	-	34,34,34	0.31	0	42,45,45	0.37	0
29	LUT	A	856	-	42,43,43	0.29	0	51,60,60	0.36	0
22	CLA	B2	805	-	65,73,73	1.05	3 (4%)	76,113,113	0.85	2 (2%)
22	CLA	B	807	-	55,63,73	1.12	4 (7%)	64,101,113	0.93	2 (3%)
29	LUT	3	622	-	42,43,43	0.31	0	51,60,60	0.36	0
22	CLA	9	601	19	46,54,73	1.23	3 (6%)	53,90,113	1.04	2 (3%)
24	LHG	3	623	-	46,46,48	0.24	0	49,52,54	0.27	0
22	CLA	A	818	-	65,73,73	1.01	4 (6%)	76,113,113	0.84	2 (2%)
22	CLA	B	831	-	55,63,73	1.08	4 (7%)	64,101,113	0.92	2 (3%)
24	LHG	3	721	-	30,30,48	0.27	0	33,36,54	0.35	0
22	CLA	3	611	-	65,73,73	1.03	4 (6%)	76,113,113	0.86	2 (2%)
22	CLA	6	611	24	58,66,73	1.10	3 (5%)	67,104,113	0.91	2 (2%)
22	CLA	B2	811	-	54,62,73	1.16	4 (7%)	67,100,113	1.08	4 (5%)
31	CHL	7	601	14	66,74,74	1.99	10 (15%)	73,114,114	1.14	7 (9%)
22	CLA	A	816	-	65,73,73	1.03	3 (4%)	76,113,113	0.87	2 (2%)
22	CLA	A	822	34	65,73,73	1.01	4 (6%)	76,113,113	0.84	2 (2%)
27	LMU	A	863	-	36,36,36	0.10	0	47,47,47	0.27	0
22	CLA	B	802	-	65,73,73	0.99	4 (6%)	76,113,113	0.86	3 (3%)
27	LMU	7	628	-	22,22,36	0.14	0	27,27,47	0.32	0
22	CLA	G	203	-	60,68,73	1.08	3 (5%)	70,107,113	0.84	2 (2%)
22	CLA	B2	815	-	57,65,73	1.11	3 (5%)	66,103,113	0.91	2 (3%)
24	LHG	A	847	22	37,37,48	0.28	0	40,43,54	0.30	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
22	CLA	9	603	28,19	55,63,73	1.13	4 (7%)	64,101,113	0.94	2 (3%)
31	CHL	92	606	-	42,50,74	2.62	11 (26%)	44,85,114	1.48	7 (15%)
22	CLA	Z	612	12	45,53,73	1.25	3 (6%)	52,89,113	1.01	2 (3%)
29	LUT	6	621	-	42,43,43	0.26	0	51,60,60	0.39	0
22	CLA	92	604	19	50,58,73	1.19	3 (6%)	58,95,113	0.99	2 (3%)
22	CLA	B	820	-	56,64,73	1.10	4 (7%)	65,102,113	0.90	2 (3%)
25	BCR	B	848	-	41,41,41	0.13	0	56,56,56	0.46	0
22	CLA	B	816	-	65,73,73	1.01	4 (6%)	76,113,113	0.87	2 (2%)
27	LMU	1	625	-	24,24,36	0.11	0	29,29,47	0.31	0
22	CLA	7	602	14	65,73,73	1.02	4 (6%)	76,113,113	0.85	2 (2%)
22	CLA	7	609	14	45,53,73	1.25	4 (8%)	52,89,113	1.00	2 (3%)
31	CHL	9	607	34	51,59,74	2.26	9 (17%)	55,96,114	1.31	8 (14%)
22	CLA	6	622	34	55,63,73	1.12	3 (5%)	64,101,113	0.92	2 (3%)
22	CLA	9	613	19	65,73,73	1.01	4 (6%)	76,113,113	0.89	2 (2%)
27	LMU	1	621	-	36,36,36	0.10	0	47,47,47	0.29	0
22	CLA	B2	829	-	65,73,73	1.04	3 (4%)	76,113,113	0.86	2 (2%)
22	CLA	A	830	-	65,73,73	1.02	4 (6%)	76,113,113	0.84	2 (2%)
25	BCR	B	844	-	41,41,41	0.14	0	56,56,56	0.45	0
22	CLA	9	610	19	60,68,73	1.06	4 (6%)	70,107,113	0.95	3 (4%)
22	CLA	A	808	-	50,58,73	1.17	4 (8%)	58,95,113	0.95	2 (3%)
22	CLA	1	609	12	65,73,73	1.03	4 (6%)	76,113,113	0.86	2 (2%)

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
22	CLA	8	604	34	1/1/19/20	2/31/109/115	-
22	CLA	B2	809	20	1/1/17/20	0/22/100/115	-
32	XAT	4	620	-	-	0/31/93/93	0/4/4/4
22	CLA	92	602	19	1/1/20/20	8/37/115/115	-
31	CHL	4	618	16	3/3/21/26	1/15/113/137	-
22	CLA	B	837	-	1/1/20/20	1/37/115/115	-
22	CLA	B	828	-	1/1/20/20	4/37/115/115	-
22	CLA	5	610	17	1/1/19/20	2/31/109/115	-
22	CLA	8	611	24	1/1/15/20	2/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	BCR	L2	201	-	-	4/29/63/63	0/2/2/2
22	CLA	4	611	24	1/1/19/20	4/31/109/115	-
25	BCR	B	845	-	-	4/29/63/63	0/2/2/2
31	CHL	6	601	18	3/3/26/26	8/39/137/137	-
29	LUT	5	626	-	-	4/29/67/67	0/2/2/2
22	CLA	7	613	14	1/1/20/20	1/37/115/115	-
28	LMG	A	859	-	-	8/43/63/70	0/1/1/1
25	BCR	3	620	-	-	4/29/63/63	0/2/2/2
31	CHL	6	616	18	3/3/26/26	5/39/137/137	-
22	CLA	Z	610	12	1/1/19/20	0/31/109/115	-
22	CLA	B	833	-	1/1/18/20	4/29/107/115	-
25	BCR	3	718	-	-	2/29/63/63	0/2/2/2
31	CHL	6	618	18	3/3/20/26	2/12/110/137	-
22	CLA	L2	203	-	1/1/15/20	2/13/91/115	-
22	CLA	B	830	-	1/1/15/20	0/13/91/115	-
25	BCR	B2	844	-	-	0/29/63/63	0/2/2/2
28	LMG	3	722	-	-	6/46/46/70	-
22	CLA	A	840	-	1/1/20/20	8/37/115/115	-
29	LUT	7	621	-	-	2/29/67/67	0/2/2/2
22	CLA	B	808	-	1/1/20/20	7/37/115/115	-
33	NEX	5	625	-	-	2/27/83/83	1/3/3/3
29	LUT	Z	617	-	-	2/29/67/67	0/2/2/2
22	CLA	6	614	-	1/1/17/20	0/19/97/115	-
22	CLA	7	610	14	1/1/20/20	5/37/115/115	-
28	LMG	B2	852	-	-	3/38/58/70	0/1/1/1
26	SF4	C	101	3	-	-	0/6/5/5
22	CLA	A	812	-	1/1/20/20	8/37/115/115	-
22	CLA	A	803	34	1/1/20/20	2/37/115/115	-
28	LMG	A	860	-	-	7/31/51/70	0/1/1/1
28	LMG	7	626	-	-	8/32/52/70	0/1/1/1
22	CLA	A	809	1	1/1/20/20	5/37/115/115	-
22	CLA	6	612	18	1/1/15/20	2/13/91/115	-
32	XAT	5	624	-	1/1/26/26	0/31/93/93	0/4/4/4
29	LUT	4	619	-	-	2/29/67/67	0/2/2/2
22	CLA	L	204	-	1/1/15/20	2/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	A	825	-	1/1/18/20	7/25/103/115	-
22	CLA	B	817	-	1/1/20/20	6/37/115/115	-
22	CLA	B2	814	-	1/1/19/20	3/31/109/115	-
22	CLA	B2	813	-	1/1/20/20	4/37/115/115	-
29	LUT	1	617	-	-	2/29/67/67	0/2/2/2
25	BCR	B	843	-	-	0/29/63/63	0/2/2/2
27	LMU	A	858	-	-	6/21/61/61	0/2/2/2
27	LMU	4	625	-	-	3/19/59/61	0/2/2/2
25	BCR	3	719	-	-	2/29/63/63	0/2/2/2
22	CLA	K	201	11	1/1/15/20	1/13/91/115	-
26	SF4	C	102	3	-	-	0/6/5/5
22	CLA	1	614	-	1/1/19/20	4/31/109/115	-
31	CHL	4	601	16	3/3/26/26	6/39/137/137	-
29	LUT	9	616	-	-	2/29/67/67	0/2/2/2
22	CLA	B2	808	-	1/1/15/20	2/13/91/115	-
22	CLA	B	812	-	1/1/20/20	2/37/115/115	-
28	LMG	B2	855	-	-	3/26/46/70	0/1/1/1
22	CLA	7	616	14	1/1/15/20	3/15/93/115	-
29	LUT	3	720	-	-	0/29/67/67	0/2/2/2
31	CHL	1	606	34	3/3/21/26	0/15/113/137	-
27	LMU	A	864	-	-	2/15/35/61	0/1/1/2
22	CLA	3	617	13	1/1/15/20	2/15/93/115	-
25	BCR	L	201	-	-	4/29/63/63	0/2/2/2
24	LHG	9	622	22	-	13/45/45/53	-
22	CLA	B	825	34	1/1/20/20	2/37/115/115	-
25	BCR	L2	205	-	-	2/29/63/63	0/2/2/2
22	CLA	6	604	-	1/1/20/20	4/37/115/115	-
27	LMU	8	625	-	-	2/15/35/61	0/1/1/2
24	LHG	7	625	22	-	17/53/53/53	-
27	LMU	K	208	-	-	3/15/35/61	0/1/1/2
27	LMU	1	622	-	-	4/10/30/61	0/1/1/2
22	CLA	5	611	24	1/1/18/20	2/25/103/115	-
27	LMU	6	632	-	-	3/11/31/61	0/1/1/2
29	LUT	8	617	-	-	2/29/67/67	0/2/2/2
25	BCR	B2	845	-	-	4/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	5	601	17	1/1/20/20	5/37/115/115	-
28	LMG	8	626	-	-	6/27/47/70	0/1/1/1
31	CHL	6	608	34	3/3/23/26	0/21/119/137	-
31	CHL	7	607	34	3/3/21/26	0/15/113/137	-
31	CHL	1	601	12	3/3/26/26	9/39/137/137	-
27	LMU	8	628	-	-	4/15/35/61	0/1/1/2
27	LMU	Z	621	-	-	2/13/33/61	0/1/1/2
25	BCR	I	172	-	-	0/29/63/63	0/2/2/2
22	CLA	4	612	16	1/1/15/20	4/13/91/115	-
22	CLA	Z	602	12	1/1/19/20	2/31/109/115	-
22	CLA	6	609	18	1/1/18/20	2/25/103/115	-
22	CLA	1	616	12	1/1/15/20	2/15/93/115	-
25	BCR	B2	843	-	-	0/13/30/63	0/1/1/2
22	CLA	A	828	-	1/1/20/20	6/37/115/115	-
25	BCR	B	846	-	-	2/29/63/63	0/2/2/2
22	CLA	Z	609	12	1/1/20/20	7/37/115/115	-
22	CLA	B2	812	-	1/1/19/20	3/31/109/115	-
28	LMG	B	852	-	-	7/38/58/70	0/1/1/1
22	CLA	F	304	6	1/1/20/20	8/37/115/115	-
22	CLA	5	603	-	1/1/20/20	15/37/115/115	-
25	BCR	L	205	-	-	2/29/63/63	0/2/2/2
22	CLA	3	602	13	1/1/19/20	1/31/109/115	-
22	CLA	L2	204	-	1/1/15/20	4/13/91/115	-
27	LMU	1	626	-	-	0/15/35/61	0/1/1/2
22	CLA	A	837	1	1/1/18/20	4/28/106/115	-
22	CLA	B	822	-	1/1/18/20	5/30/108/115	-
28	LMG	6	633	-	-	1/17/17/70	-
22	CLA	4	604	34	1/1/17/20	1/19/97/115	-
31	CHL	92	607	-	3/3/21/26	4/15/113/137	-
22	CLA	A	836	-	1/1/20/20	4/37/115/115	-
29	LUT	92	616	-	-	2/29/67/67	0/2/2/2
24	LHG	1	620	22	-	10/43/43/53	-
24	LHG	4	623	-	-	15/42/42/53	-
27	LMU	5	627	-	-	1/15/35/61	0/1/1/2
24	LHG	A	846	-	-	10/53/53/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	A	820	-	1/1/20/20	8/37/115/115	-
31	CHL	1	607	34	3/3/21/26	3/15/113/137	-
22	CLA	A	835	-	1/1/20/20	4/37/115/115	-
22	CLA	B	821	-	1/1/20/20	3/37/115/115	-
22	CLA	6	617	-	1/1/15/20	0/13/91/115	-
22	CLA	B2	807	-	1/1/18/20	0/25/103/115	-
32	XAT	7	622	-	-	0/31/93/93	0/4/4/4
22	CLA	92	611	24	1/1/20/20	2/37/115/115	-
22	CLA	8	609	15	1/1/15/20	0/13/91/115	-
27	LMU	G	206	-	-	4/15/35/61	0/1/1/2
22	CLA	3	610	13	1/1/20/20	0/37/115/115	-
27	LMU	6	630	-	-	1/15/35/61	0/1/1/2
22	CLA	92	614	-	1/1/15/20	2/13/91/115	-
22	CLA	Z	613	34	1/1/20/20	2/37/115/115	-
22	CLA	B	835	34	1/1/15/20	2/13/91/115	-
25	BCR	8	619	-	-	4/29/63/63	0/2/2/2
22	CLA	92	609	19	1/1/15/20	6/13/91/115	-
31	CHL	Z	601	12	3/3/26/26	7/39/137/137	-
33	NEX	6	625	-	1/1/25/25	4/27/83/83	0/3/3/3
31	CHL	9	606	-	3/3/20/26	0/10/108/137	-
22	CLA	Z	616	12	1/1/19/20	1/31/109/115	-
27	LMU	7	627	-	-	2/18/58/61	0/2/2/2
22	CLA	K	204	-	1/1/15/20	1/15/93/115	-
25	BCR	A	851	-	-	2/29/63/63	0/2/2/2
22	CLA	8	616	15	1/1/15/20	0/13/91/115	-
22	CLA	8	610	15	1/1/20/20	2/37/115/115	-
27	LMU	6	631	-	-	4/15/35/61	0/1/1/2
22	CLA	9	612	19	1/1/20/20	6/37/115/115	-
31	CHL	4	607	34	3/3/26/26	0/39/137/137	-
22	CLA	K	206	11	1/1/15/20	2/13/91/115	-
22	CLA	G	204	7	1/1/15/20	4/15/93/115	-
22	CLA	A	845	24	1/1/15/20	4/13/91/115	-
27	LMU	6	628	-	-	2/15/35/61	0/1/1/2
22	CLA	7	611	24	1/1/20/20	5/37/115/115	-
22	CLA	7	603	-	1/1/17/20	5/22/100/115	-
32	XAT	Z	618	-	-	0/31/93/93	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	92	601	19	1/1/15/20	2/13/91/115	-
27	LMU	4	626	-	-	0/11/31/61	0/1/1/2
22	CLA	1	602	12	1/1/19/20	2/31/109/115	-
23	PQN	A	844	-	-	3/23/43/43	0/2/2/2
22	CLA	7	620	34	1/1/17/20	5/23/101/115	-
22	CLA	Z	614	-	1/1/17/20	0/19/97/115	-
31	CHL	4	606	34	3/3/24/26	1/27/125/137	-
29	LUT	F	305	-	-	5/29/67/67	0/2/2/2
25	BCR	J	102	-	-	2/29/63/63	0/2/2/2
22	CLA	92	603	19	1/1/15/20	2/13/91/115	-
22	CLA	4	603	16	1/1/20/20	6/37/115/115	-
22	CLA	7	612	14	1/1/17/20	3/22/100/115	-
24	LHG	92	622	22	-	10/33/33/53	-
27	LMU	B	853	-	-	7/21/61/61	0/2/2/2
25	BCR	9	623	-	-	2/29/63/63	0/2/2/2
24	LHG	Z	620	22	-	7/43/43/53	-
22	CLA	9	614	-	1/1/15/20	2/13/91/115	-
27	LMU	1	627	-	-	3/13/33/61	0/1/1/2
22	CLA	92	613	19	1/1/19/20	4/31/109/115	-
25	BCR	A	848	-	-	2/29/63/63	0/2/2/2
31	CHL	Z	607	34	3/3/26/26	3/39/137/137	-
22	CLA	A	811	-	1/1/20/20	4/37/115/115	-
22	CLA	B	841	24	1/1/20/20	6/37/115/115	-
22	CLA	A	817	34	1/1/18/20	4/25/103/115	-
22	CLA	3	609	13	1/1/19/20	3/33/111/115	-
28	LMG	1	624	-	-	4/31/51/70	0/1/1/1
22	CLA	1	603	-	1/1/18/20	5/28/106/115	-
22	CLA	3	614	-	1/1/15/20	0/13/91/115	-
22	CLA	9	604	19	1/1/17/20	1/23/101/115	-
22	CLA	A	854	34	1/1/20/20	1/37/115/115	-
22	CLA	3	615	34	1/1/20/20	6/37/115/115	-
22	CLA	A	829	-	1/1/20/20	8/37/115/115	-
29	LUT	92	617	-	-	0/29/67/67	0/2/2/2
22	CLA	5	609	17	1/1/20/20	2/37/115/115	-
22	CLA	4	616	16	1/1/15/20	0/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	A	843	34	1/1/20/20	7/37/115/115	-
28	LMG	B	854	-	-	2/31/51/70	0/1/1/1
22	CLA	Z	611	24	1/1/19/20	4/31/109/115	-
22	CLA	A	833	-	1/1/20/20	1/37/115/115	-
22	CLA	1	613	34	1/1/20/20	4/37/115/115	-
25	BCR	K	202	-	-	2/29/63/63	0/2/2/2
29	LUT	1	619	-	-	2/29/67/67	0/2/2/2
22	CLA	B	839	34	1/1/20/20	4/37/115/115	-
31	CHL	4	608	-	3/3/26/26	3/39/137/137	-
24	LHG	6	619	22	-	7/53/53/53	-
22	CLA	92	612	19	1/1/20/20	6/37/115/115	-
22	CLA	A	813	-	1/1/20/20	5/37/115/115	-
22	CLA	A	834	-	1/1/20/20	5/37/115/115	-
22	CLA	8	614	-	1/1/18/20	8/28/106/115	-
22	CLA	B	805	-	1/1/20/20	9/37/115/115	-
22	CLA	92	610	19	1/1/19/20	0/31/109/115	-
32	XAT	1	618	-	1/1/26/26	0/31/93/93	0/4/4/4
27	LMU	7	629	-	-	4/13/53/61	0/2/2/2
22	CLA	B	829	-	1/1/20/20	4/37/115/115	-
22	CLA	3	607	13	1/1/18/20	4/25/103/115	-
24	LHG	5	623	22	-	12/41/41/53	-
22	CLA	A	832	-	1/1/18/20	1/25/103/115	-
22	CLA	A	826	34	1/1/20/20	9/37/115/115	-
22	CLA	A	821	-	1/1/18/20	2/25/103/115	-
22	CLA	1	612	12	1/1/15/20	2/13/91/115	-
22	CLA	5	616	17	1/1/17/20	5/23/101/115	-
31	CHL	8	606	34	3/3/26/26	3/39/137/137	-
27	LMU	A	861	-	-	3/15/35/61	0/1/1/2
31	CHL	8	601	15	3/3/26/26	10/39/137/137	-
25	BCR	4	621	-	-	2/29/63/63	0/2/2/2
22	CLA	B	819	34	1/1/19/20	3/31/109/115	-
22	CLA	6	613	34	1/1/20/20	3/37/115/115	-
25	BCR	B	847	-	-	2/29/63/63	0/2/2/2
22	CLA	F	301	34	1/1/20/20	3/37/115/115	-
22	CLA	5	612	17	1/1/15/20	3/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	B	818	-	1/1/20/20	2/37/115/115	-
22	CLA	A	810	1	1/1/20/20	8/37/115/115	-
22	CLA	5	604	34	1/1/18/20	5/25/103/115	-
22	CLA	B	834	-	1/1/19/20	6/31/109/115	-
22	CLA	1	608	34	1/1/20/20	2/37/115/115	-
22	CLA	B	832	-	1/1/20/20	3/37/115/115	-
22	CLA	A	824	-	1/1/15/20	2/13/91/115	-
22	CLA	A	814	-	1/1/20/20	5/37/115/115	-
22	CLA	3	613	13	1/1/19/20	3/31/109/115	-
31	CHL	5	606	34	3/3/21/26	0/15/113/137	-
24	LHG	4	622	22	-	13/53/53/53	-
22	CLA	B	815	-	1/1/20/20	4/37/115/115	-
22	CLA	8	608	34	1/1/17/20	0/19/97/115	-
25	BCR	A	850	-	-	0/29/63/63	0/2/2/2
29	LUT	3	621	-	-	2/29/67/67	0/2/2/2
31	CHL	3	608	34	3/3/26/26	3/39/137/137	-
27	LMU	9	624	-	-	4/15/35/61	0/1/1/2
29	LUT	9	617	-	-	0/29/67/67	0/2/2/2
24	LHG	B	851	22	-	13/49/49/53	-
22	CLA	A	806	-	1/1/20/20	12/37/115/115	-
28	LMG	J	103	-	-	2/37/57/70	0/1/1/1
27	LMU	8	624	-	-	1/15/35/61	0/1/1/2
22	CLA	1	604	34	1/1/17/20	1/19/97/115	-
22	CLA	6	610	18	1/1/19/20	3/31/109/115	-
22	CLA	L	203	-	1/1/20/20	6/37/115/115	-
31	CHL	5	618	17	3/3/20/26	2/12/110/137	-
25	BCR	B2	848	-	-	2/5/22/63	0/1/1/2
22	CLA	B	824	34	1/1/20/20	4/37/115/115	-
22	CLA	F	303	34	1/1/15/20	1/13/91/115	-
22	CLA	3	603	-	1/1/20/20	5/37/115/115	-
22	CLA	4	614	-	1/1/18/20	4/25/103/115	-
22	CLA	4	609	16	1/1/19/20	5/31/109/115	-
22	CLA	B	814	-	1/1/19/20	3/31/109/115	-
22	CLA	6	602	18	1/1/20/20	2/37/115/115	-
24	LHG	8	620	22	-	15/48/48/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	3	606	34	1/1/14/20	0/10/88/115	-
22	CLA	B	826	-	1/1/20/20	3/37/115/115	-
22	CLA	B	809	2	1/1/20/20	5/37/115/115	-
31	CHL	8	607	34	3/3/26/26	8/39/137/137	-
22	CLA	5	614	-	1/1/15/20	2/13/91/115	-
27	LMU	A	862	-	-	2/11/31/61	0/1/1/2
21	CL0	A	801	-	3/3/25/25	1/37/135/135	-
22	CLA	B	806	2	1/1/20/20	3/37/115/115	-
22	CLA	4	602	16	1/1/19/20	2/31/109/115	-
22	CLA	8	613	15	1/1/20/20	5/37/115/115	-
27	LMU	8	627	-	-	9/21/61/61	0/2/2/2
27	LMU	A	857	-	-	3/20/60/61	0/2/2/2
28	LMG	4	624	-	-	5/36/56/70	0/1/1/1
22	CLA	6	603	-	1/1/20/20	6/37/115/115	-
22	CLA	B	836	-	1/1/19/20	5/31/109/115	-
27	LMU	Z	622	-	-	3/17/57/61	0/2/2/2
25	BCR	I2	172	-	-	0/29/63/63	0/2/2/2
25	BCR	7	623	-	-	2/29/63/63	0/2/2/2
25	BCR	A	849	-	-	0/29/63/63	0/2/2/2
22	CLA	3	604	34	1/1/20/20	1/37/115/115	-
22	CLA	7	614	-	1/1/14/20	4/11/89/115	-
22	CLA	1	611	24	1/1/19/20	3/33/111/115	-
22	CLA	B2	810	-	1/1/20/20	4/37/115/115	-
25	BCR	B	801	-	-	0/29/63/63	0/2/2/2
22	CLA	Z	603	-	1/1/18/20	5/25/103/115	-
22	CLA	B	813	-	1/1/20/20	3/37/115/115	-
27	LMU	1	623	-	-	1/15/35/61	0/1/1/2
22	CLA	A	842	-	1/1/20/20	1/37/115/115	-
31	CHL	Z	606	34	3/3/21/26	5/15/113/137	-
25	BCR	92	623	-	-	4/29/63/63	0/2/2/2
22	CLA	7	604	34	1/1/17/20	1/21/99/115	-
22	CLA	B2	828	-	1/1/20/20	3/37/115/115	-
30	DGD	B	850	-	-	10/48/88/95	0/2/2/2
25	BCR	G	205	-	-	2/29/63/63	0/2/2/2
22	CLA	K	203	34	1/1/19/20	4/31/109/115	-
22	CLA	B2	804	-	1/1/15/20	2/13/91/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
31	CHL	5	607	34	3/3/26/26	8/39/137/137	-
22	CLA	5	617	-	1/1/20/20	6/37/115/115	-
25	BCR	K	207	-	-	4/29/63/63	0/2/2/2
26	SF4	A	853	2,1	-	-	0/6/5/5
29	LUT	Z	619	-	-	2/18/37/67	0/1/1/2
22	CLA	A	827	34	1/1/20/20	3/37/115/115	-
22	CLA	J	101	9	1/1/18/20	5/25/103/115	-
27	LMU	A	865	-	-	3/15/35/61	0/1/1/2
22	CLA	A	805	-	1/1/18/20	1/25/103/115	-
22	CLA	B2	839	-	1/1/15/20	3/13/91/115	-
22	CLA	8	602	15	1/1/19/20	2/34/112/115	-
22	CLA	B2	806	20	1/1/20/20	4/37/115/115	-
22	CLA	3	612	13	1/1/15/20	1/15/93/115	-
28	LMG	8	629	-	-	8/37/57/70	0/1/1/1
28	LMG	1	628	-	-	5/37/57/70	0/1/1/1
28	LMG	9	620	22	-	7/39/59/70	0/1/1/1
22	CLA	A	819	-	1/1/19/20	1/31/109/115	-
22	CLA	5	621	34	1/1/15/20	8/15/93/115	-
25	BCR	5	622	-	-	3/29/63/63	0/2/2/2
22	CLA	B	803	-	1/1/20/20	2/37/115/115	-
22	CLA	B	827	-	1/1/20/20	5/37/115/115	-
24	LHG	6	629	-	-	10/40/40/53	-
31	CHL	6	606	34	3/3/24/26	0/30/128/137	-
22	CLA	A	838	-	1/1/17/20	1/21/99/115	-
22	CLA	Z	608	34	1/1/17/20	0/19/97/115	-
31	CHL	6	607	34	3/3/26/26	9/39/137/137	-
22	CLA	A	815	-	1/1/18/20	3/25/103/115	-
22	CLA	8	603	-	1/1/20/20	5/37/115/115	-
25	BCR	6	623	-	-	2/29/63/63	0/2/2/2
22	CLA	4	610	16	1/1/19/20	3/31/109/115	-
22	CLA	4	613	16	1/1/20/20	5/37/115/115	-
22	CLA	A	841	-	1/1/20/20	6/37/115/115	-
31	CHL	5	608	34	3/3/23/26	0/21/119/137	-
22	CLA	7	608	34	1/1/17/20	0/19/97/115	-
22	CLA	B2	820	-	1/1/18/20	6/27/105/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	A	823	-	1/1/20/20	6/37/115/115	-
22	CLA	Z	604	34	1/1/18/20	2/28/106/115	-
22	CLA	5	613	17	1/1/18/20	4/27/105/115	-
29	LUT	5	620	-	-	2/29/67/67	0/2/2/2
25	BCR	A	852	-	-	4/29/63/63	0/2/2/2
22	CLA	B	811	-	1/1/20/20	8/37/115/115	-
22	CLA	5	602	17	1/1/20/20	1/37/115/115	-
22	CLA	A	804	-	1/1/20/20	5/37/115/115	-
28	LMG	J	104	-	-	8/30/50/70	0/1/1/1
22	CLA	A	802	-	1/1/20/20	0/37/115/115	-
22	CLA	A	807	1	1/1/20/20	4/37/115/115	-
22	CLA	B	838	-	1/1/17/20	1/19/97/115	-
22	CLA	9	602	19	1/1/19/20	2/31/109/115	-
22	CLA	A	831	-	1/1/20/20	2/37/115/115	-
22	CLA	B	810	-	1/1/20/20	3/37/115/115	-
22	CLA	A	839	-	1/1/20/20	2/37/115/115	-
29	LUT	7	624	-	-	4/29/67/67	0/2/2/2
32	XAT	8	618	-	-	0/31/93/93	0/4/4/4
32	XAT	6	624	-	-	0/31/93/93	0/4/4/4
22	CLA	1	610	12	1/1/20/20	0/37/115/115	-
22	CLA	B	823	-	1/1/20/20	7/37/115/115	-
22	CLA	9	611	24	1/1/20/20	4/37/115/115	-
31	CHL	7	606	34	3/3/21/26	3/15/113/137	-
22	CLA	9	609	19	1/1/17/20	2/21/99/115	-
22	CLA	8	612	15	1/1/18/20	6/25/103/115	-
22	CLA	B	840	-	1/1/20/20	5/37/115/115	-
27	LMU	92	624	-	-	1/21/61/61	0/2/2/2
22	CLA	B	804	-	1/1/15/20	4/13/91/115	-
23	PQN	B	842	-	-	1/23/43/43	0/2/2/2
29	LUT	A	856	-	-	4/29/67/67	0/2/2/2
22	CLA	B2	805	-	1/1/20/20	3/37/115/115	-
22	CLA	B	807	-	1/1/18/20	2/25/103/115	-
29	LUT	3	622	-	-	2/29/67/67	0/2/2/2
22	CLA	9	601	19	1/1/15/20	0/15/93/115	-
24	LHG	3	623	-	-	13/51/51/53	-
22	CLA	A	818	-	1/1/20/20	2/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	CLA	B	831	-	1/1/18/20	1/25/103/115	-
24	LHG	3	721	-	-	12/35/35/53	-
22	CLA	3	611	-	1/1/20/20	4/37/115/115	-
22	CLA	6	611	24	1/1/18/20	2/29/107/115	-
22	CLA	B2	811	-	1/1/17/20	3/25/101/115	-
31	CHL	7	601	14	3/3/26/26	5/39/137/137	-
22	CLA	A	816	-	1/1/20/20	5/37/115/115	-
22	CLA	A	822	34	1/1/20/20	0/37/115/115	-
27	LMU	A	863	-	-	7/21/61/61	0/2/2/2
22	CLA	B	802	-	1/1/20/20	4/37/115/115	-
27	LMU	7	628	-	-	3/13/33/61	0/1/1/2
22	CLA	G	203	-	1/1/19/20	3/31/109/115	-
22	CLA	B2	815	-	1/1/18/20	2/28/106/115	-
24	LHG	A	847	22	-	6/42/42/53	-
22	CLA	9	603	28,19	1/1/18/20	4/25/103/115	-
31	CHL	92	606	-	3/3/20/26	0/10/108/137	-
22	CLA	Z	612	12	1/1/15/20	3/13/91/115	-
29	LUT	6	621	-	-	2/29/67/67	0/2/2/2
22	CLA	92	604	19	1/1/17/20	2/19/97/115	-
22	CLA	B	820	-	1/1/18/20	4/27/105/115	-
25	BCR	B	848	-	-	2/29/63/63	0/2/2/2
22	CLA	B	816	-	1/1/20/20	1/37/115/115	-
22	CLA	7	602	14	1/1/20/20	2/37/115/115	-
22	CLA	7	609	14	1/1/15/20	0/13/91/115	-
27	LMU	1	625	-	-	5/15/35/61	0/1/1/2
31	CHL	9	607	34	3/3/23/26	0/21/119/137	-
22	CLA	6	622	34	1/1/18/20	3/25/103/115	-
22	CLA	9	613	19	1/1/20/20	3/37/115/115	-
27	LMU	1	621	-	-	6/21/61/61	0/2/2/2
22	CLA	B2	829	-	1/1/20/20	0/37/115/115	-
22	CLA	A	830	-	1/1/20/20	4/37/115/115	-
25	BCR	B	844	-	-	0/29/63/63	0/2/2/2
22	CLA	9	610	19	1/1/19/20	0/31/109/115	-
22	CLA	A	808	-	1/1/17/20	1/19/97/115	-
22	CLA	1	609	12	1/1/20/20	5/37/115/115	-

The worst 5 of 1129 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	92	606	CHL	C4B-NB	11.96	1.45	1.35
31	6	607	CHL	C4B-NB	11.95	1.45	1.35
31	9	606	CHL	C4B-NB	11.93	1.45	1.35
31	6	608	CHL	C4B-NB	11.81	1.45	1.35
31	5	618	CHL	C4B-NB	11.77	1.45	1.35

The worst 5 of 736 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	9	610	CLA	C1D-ND-C4D	-4.48	103.16	106.33
31	3	608	CHL	CHD-C1D-ND	-4.44	120.37	124.45
22	Z	613	CLA	C1D-ND-C4D	-4.42	103.20	106.33
22	9	604	CLA	C1D-ND-C4D	-4.36	103.24	106.33
22	L	204	CLA	C1D-ND-C4D	-4.32	103.27	106.33

5 of 328 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
21	A	801	CL0	NA
21	A	801	CL0	NC
21	A	801	CL0	ND
22	A	802	CLA	ND
22	A	803	CLA	ND

5 of 1376 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
22	A	806	CLA	CHA-CBD-CGD-O1D
22	A	806	CLA	CHA-CBD-CGD-O2D
22	A	806	CLA	CAD-CBD-CGD-O1D
22	A	806	CLA	CAD-CBD-CGD-O2D
22	A	806	CLA	C2-C3-C5-C6

All (1) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
33	5	625	NEX	C1-C2-C3-C4-C5-C6

222 monomers are involved in 324 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	8	604	CLA	4	0
32	4	620	XAT	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	92	602	CLA	3	0
22	B	837	CLA	3	0
22	8	611	CLA	1	0
22	4	611	CLA	1	0
25	B	845	BCR	3	0
31	6	601	CHL	3	0
29	5	626	LUT	1	0
25	3	620	BCR	1	0
22	Z	610	CLA	1	0
22	B	833	CLA	2	0
25	3	718	BCR	1	0
22	B	830	CLA	1	0
25	B2	844	BCR	4	0
28	3	722	LMG	1	0
22	A	840	CLA	4	0
29	7	621	LUT	1	0
22	B	808	CLA	3	0
29	Z	617	LUT	1	0
22	6	614	CLA	3	0
22	7	610	CLA	4	0
22	A	812	CLA	1	0
22	A	803	CLA	2	0
28	A	860	LMG	1	0
22	A	809	CLA	2	0
32	5	624	XAT	1	0
29	4	619	LUT	2	0
22	A	825	CLA	1	0
22	B	817	CLA	2	0
29	1	617	LUT	3	0
25	B	843	BCR	2	0
27	A	858	LMU	2	0
25	3	719	BCR	5	0
22	K	201	CLA	1	0
22	1	614	CLA	1	0
29	9	616	LUT	2	0
31	4	601	CHL	1	0
25	L	201	BCR	1	0
25	L2	205	BCR	3	0
27	8	625	LMU	1	0
24	7	625	LHG	1	0
25	B2	845	BCR	2	0
31	6	608	CHL	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
31	1	601	CHL	1	0
25	I	172	BCR	1	0
22	4	612	CLA	2	0
22	Z	602	CLA	2	0
22	6	609	CLA	1	0
22	Z	609	CLA	1	0
22	F	304	CLA	1	0
22	5	603	CLA	1	0
25	L	205	BCR	4	0
22	3	602	CLA	2	0
29	92	616	LUT	1	0
24	1	620	LHG	1	0
24	4	623	LHG	1	0
22	A	820	CLA	2	0
22	B	821	CLA	1	0
22	6	617	CLA	1	0
32	7	622	XAT	1	0
22	92	611	CLA	1	0
22	3	610	CLA	4	0
22	Z	613	CLA	1	0
22	B	835	CLA	3	0
25	8	619	BCR	2	0
22	92	609	CLA	2	0
31	Z	601	CHL	2	0
33	6	625	NEX	1	0
22	Z	616	CLA	3	0
22	K	204	CLA	1	0
25	A	851	BCR	3	0
22	8	610	CLA	1	0
22	9	612	CLA	1	0
27	6	628	LMU	1	0
32	Z	618	XAT	1	0
22	1	602	CLA	2	0
22	7	620	CLA	1	0
31	4	606	CHL	4	0
29	F	305	LUT	4	0
25	J	102	BCR	1	0
22	92	603	CLA	1	0
22	4	603	CLA	1	0
24	92	622	LHG	1	0
27	B	853	LMU	3	0
25	9	623	BCR	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	9	614	CLA	1	0
22	92	613	CLA	2	0
25	A	848	BCR	3	0
22	A	811	CLA	2	0
22	B	841	CLA	5	0
22	A	817	CLA	2	0
22	3	609	CLA	1	0
22	1	603	CLA	4	0
22	A	854	CLA	5	0
22	3	615	CLA	5	0
22	A	829	CLA	3	0
29	92	617	LUT	1	0
22	A	843	CLA	3	0
28	B	854	LMG	1	0
22	A	833	CLA	3	0
22	1	613	CLA	2	0
25	K	202	BCR	3	0
29	1	619	LUT	1	0
22	B	839	CLA	2	0
31	4	608	CHL	1	0
24	6	619	LHG	1	0
22	A	813	CLA	2	0
22	8	614	CLA	1	0
22	92	610	CLA	2	0
32	1	618	XAT	2	0
22	B	829	CLA	6	0
22	3	607	CLA	3	0
24	5	623	LHG	1	0
22	A	826	CLA	3	0
22	5	616	CLA	3	0
31	8	606	CHL	3	0
31	8	601	CHL	2	0
22	B	819	CLA	1	0
22	6	613	CLA	2	0
25	B	847	BCR	1	0
22	A	810	CLA	2	0
22	B	834	CLA	3	0
22	1	608	CLA	2	0
22	B	832	CLA	2	0
31	5	606	CHL	1	0
25	A	850	BCR	1	0
29	3	621	LUT	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
31	3	608	CHL	1	0
27	9	624	LMU	1	0
29	9	617	LUT	3	0
22	A	806	CLA	1	0
28	J	103	LMG	1	0
22	1	604	CLA	2	0
22	6	610	CLA	2	0
22	L	203	CLA	2	0
22	B	824	CLA	1	0
22	3	603	CLA	3	0
22	4	614	CLA	1	0
22	4	609	CLA	2	0
22	6	602	CLA	2	0
22	3	606	CLA	2	0
27	A	862	LMU	1	0
21	A	801	CL0	1	0
22	B	806	CLA	2	0
22	4	602	CLA	2	0
22	8	613	CLA	1	0
27	8	627	LMU	1	0
27	A	857	LMU	1	0
22	6	603	CLA	1	0
22	B	836	CLA	2	0
27	Z	622	LMU	1	0
25	A	849	BCR	2	0
25	B	801	BCR	2	0
22	Z	603	CLA	3	0
22	B	813	CLA	2	0
31	Z	606	CHL	2	0
25	92	623	BCR	3	0
22	B2	828	CLA	4	0
30	B	850	DGD	1	0
22	5	617	CLA	2	0
25	K	207	BCR	3	0
22	J	101	CLA	1	0
22	8	602	CLA	3	0
22	3	612	CLA	1	0
28	9	620	LMG	2	0
22	5	621	CLA	3	0
22	B	827	CLA	1	0
31	6	606	CHL	2	0
22	A	838	CLA	1	0

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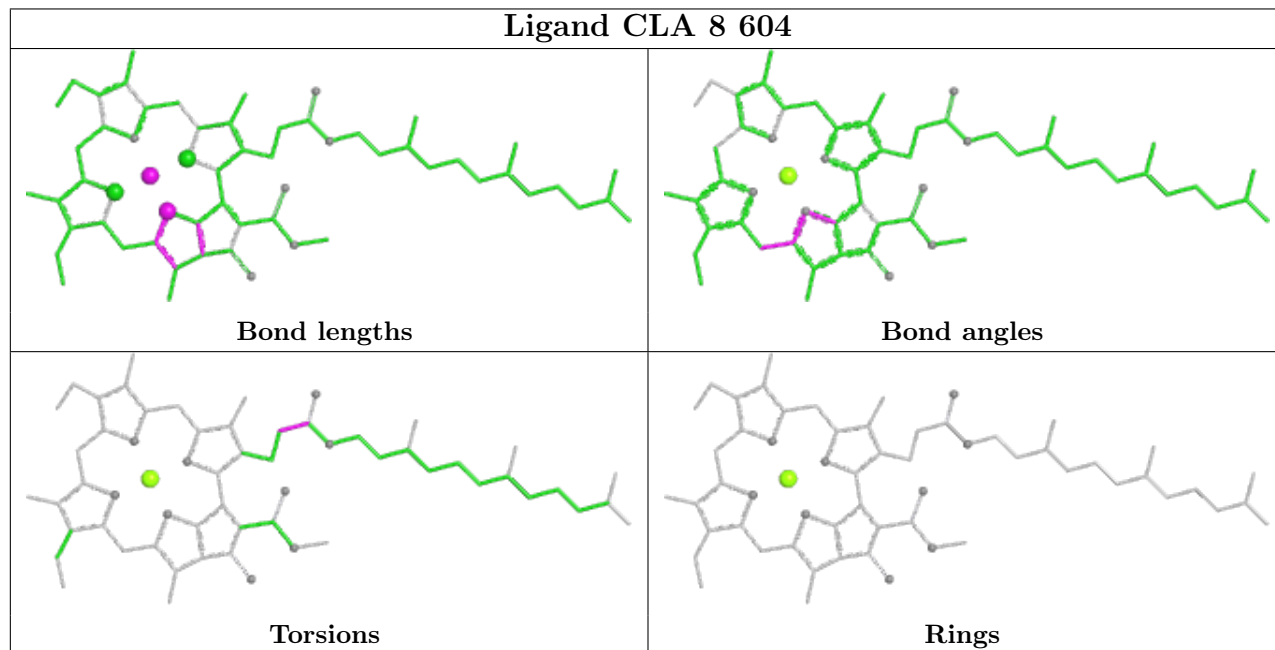
Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	Z	608	CLA	1	0
31	6	607	CHL	1	0
22	8	603	CLA	1	0
25	6	623	BCR	3	0
22	4	610	CLA	2	0
22	4	613	CLA	2	0
31	5	608	CHL	1	0
22	7	608	CLA	1	0
22	A	823	CLA	1	0
22	Z	604	CLA	1	0
29	5	620	LUT	3	0
25	A	852	BCR	4	0
22	B	811	CLA	1	0
22	5	602	CLA	3	0
22	A	804	CLA	1	0
28	J	104	LMG	1	0
22	A	802	CLA	4	0
22	B	838	CLA	1	0
22	9	602	CLA	1	0
22	A	831	CLA	1	0
22	A	839	CLA	1	0
29	7	624	LUT	4	0
32	8	618	XAT	1	0
32	6	624	XAT	1	0
22	1	610	CLA	1	0
22	B	823	CLA	2	0
22	9	609	CLA	1	0
22	8	612	CLA	1	0
22	B	840	CLA	2	0
27	92	624	LMU	2	0
23	B	842	PQN	1	0
29	A	856	LUT	1	0
29	3	622	LUT	4	0
24	3	623	LHG	1	0
22	A	818	CLA	1	0
22	3	611	CLA	1	0
31	7	601	CHL	3	0
22	A	822	CLA	2	0
27	A	863	LMU	1	0
22	B	802	CLA	4	0
27	7	628	LMU	1	0
29	6	621	LUT	2	0

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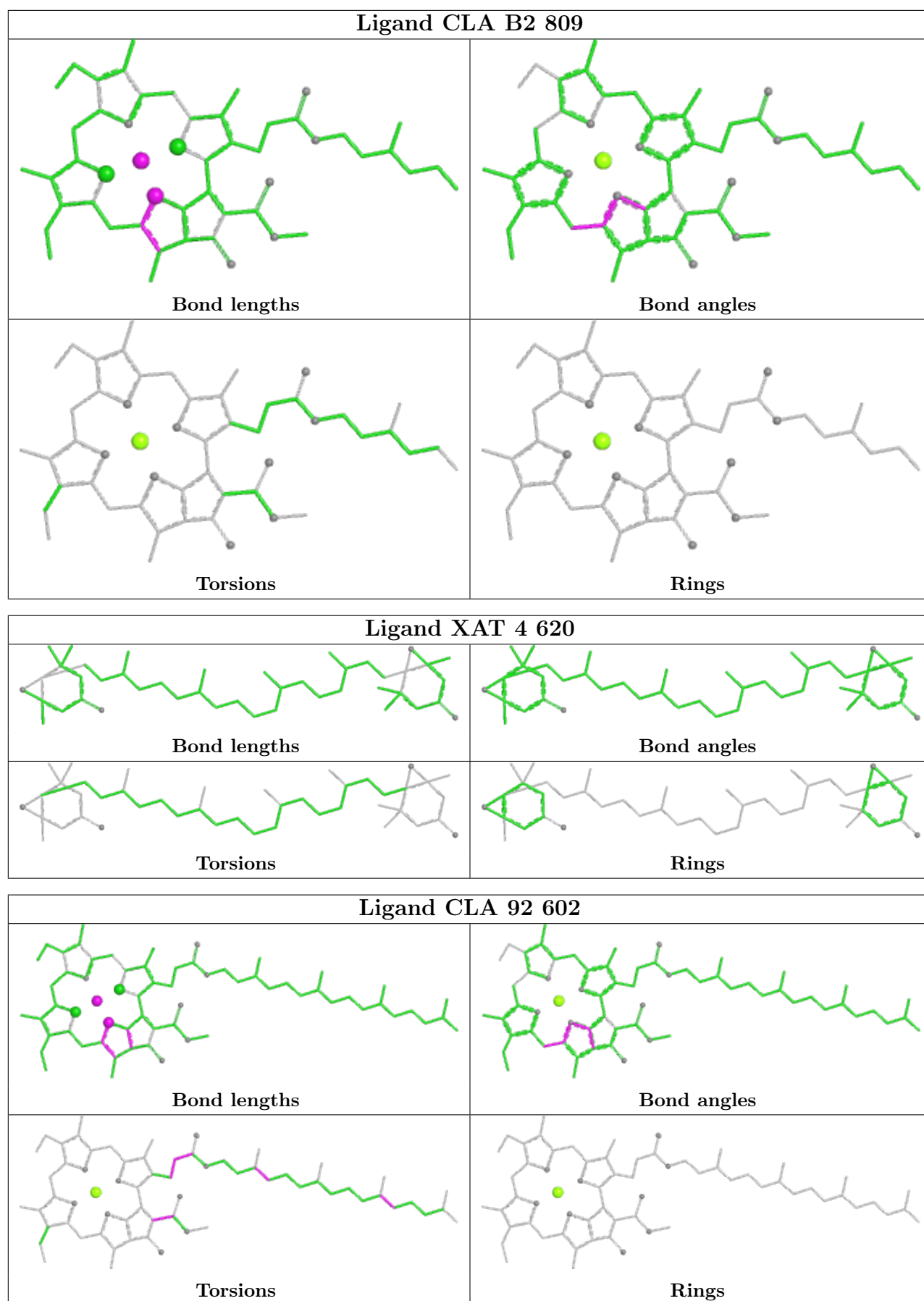
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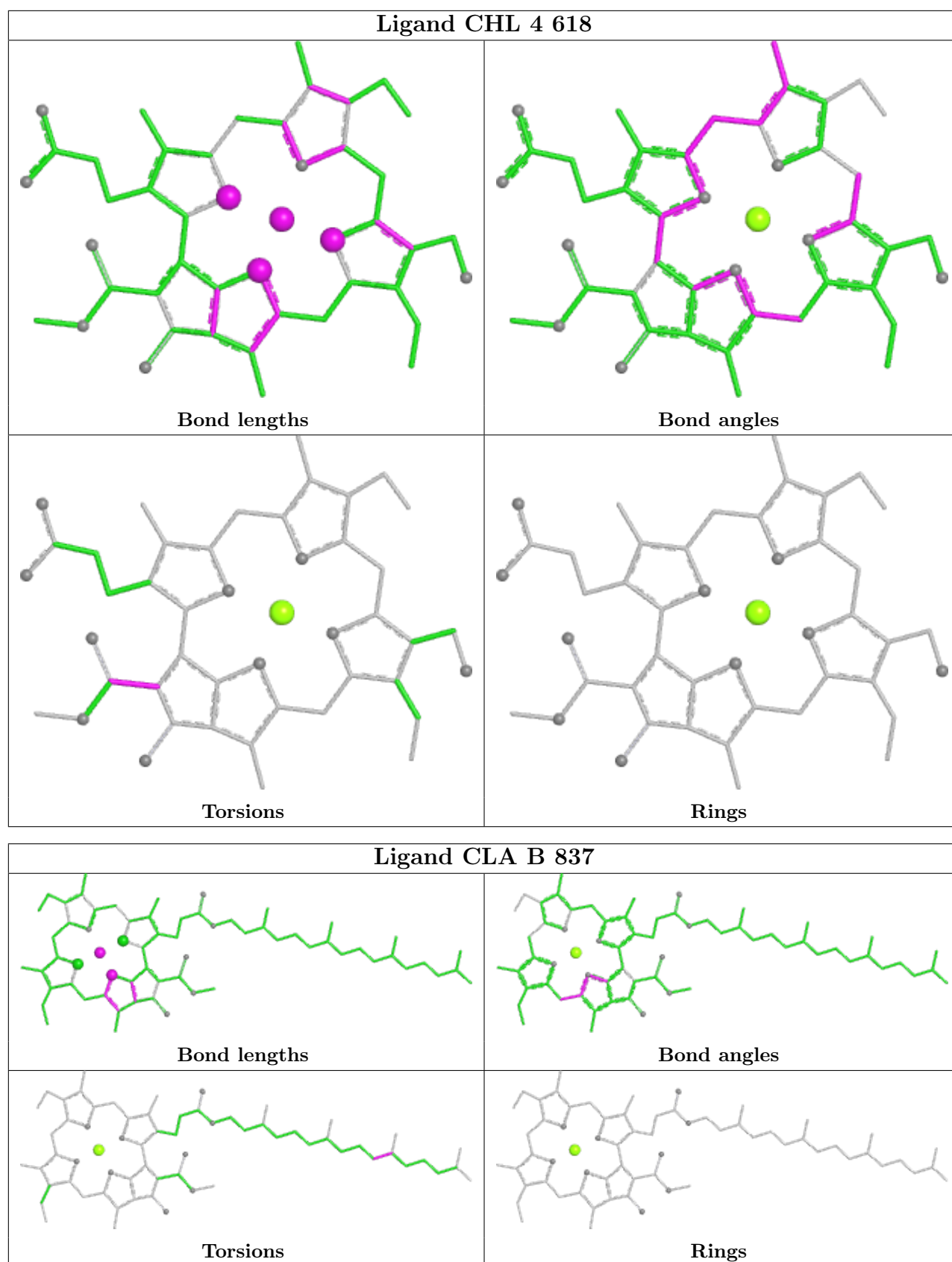
Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	92	604	CLA	1	0
25	B	848	BCR	1	0
22	B	816	CLA	2	0
22	7	602	CLA	1	0
22	7	609	CLA	1	0
22	B2	829	CLA	1	0
22	A	830	CLA	1	0
25	B	844	BCR	3	0
22	9	610	CLA	3	0
22	1	609	CLA	1	0

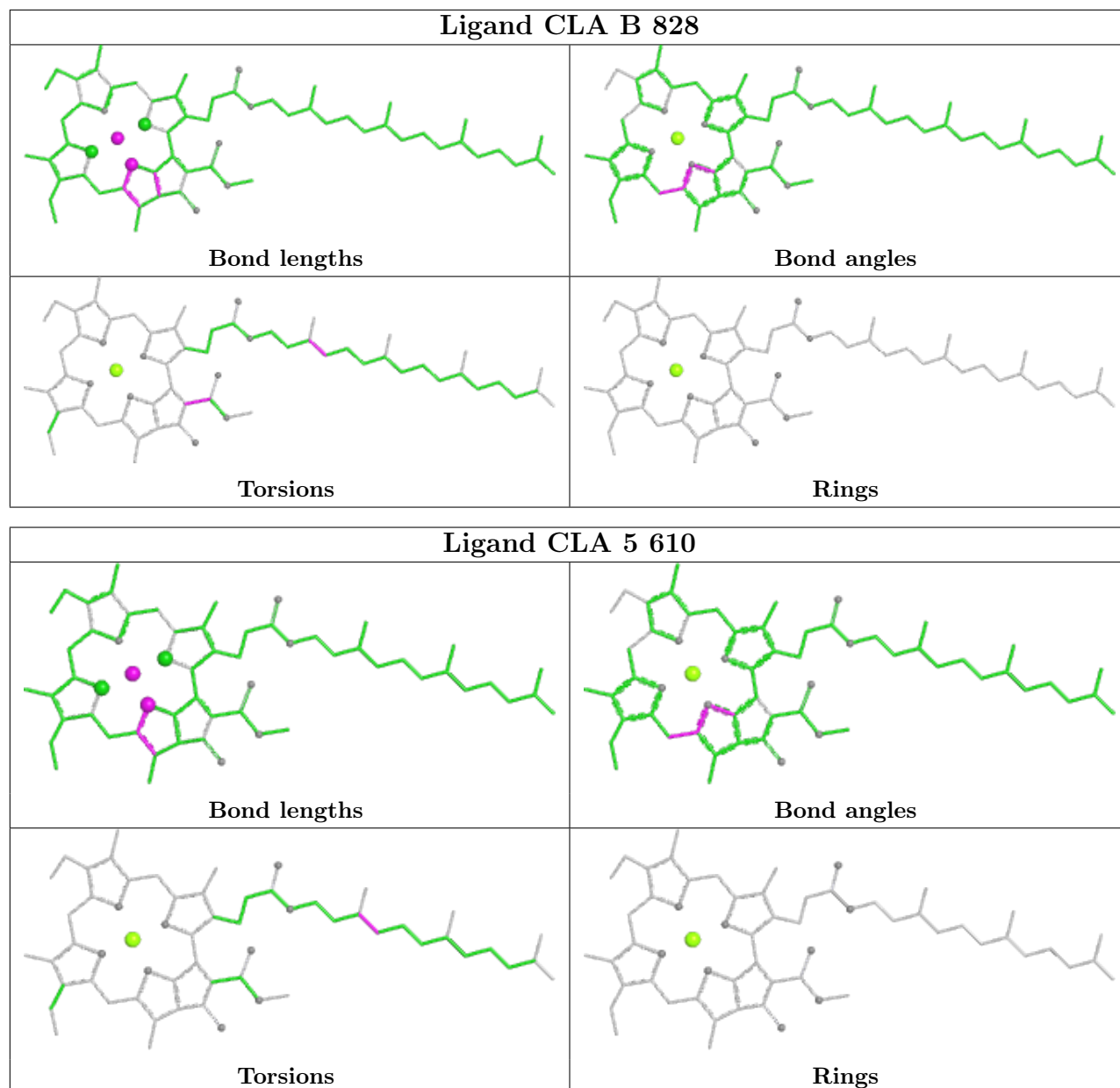
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

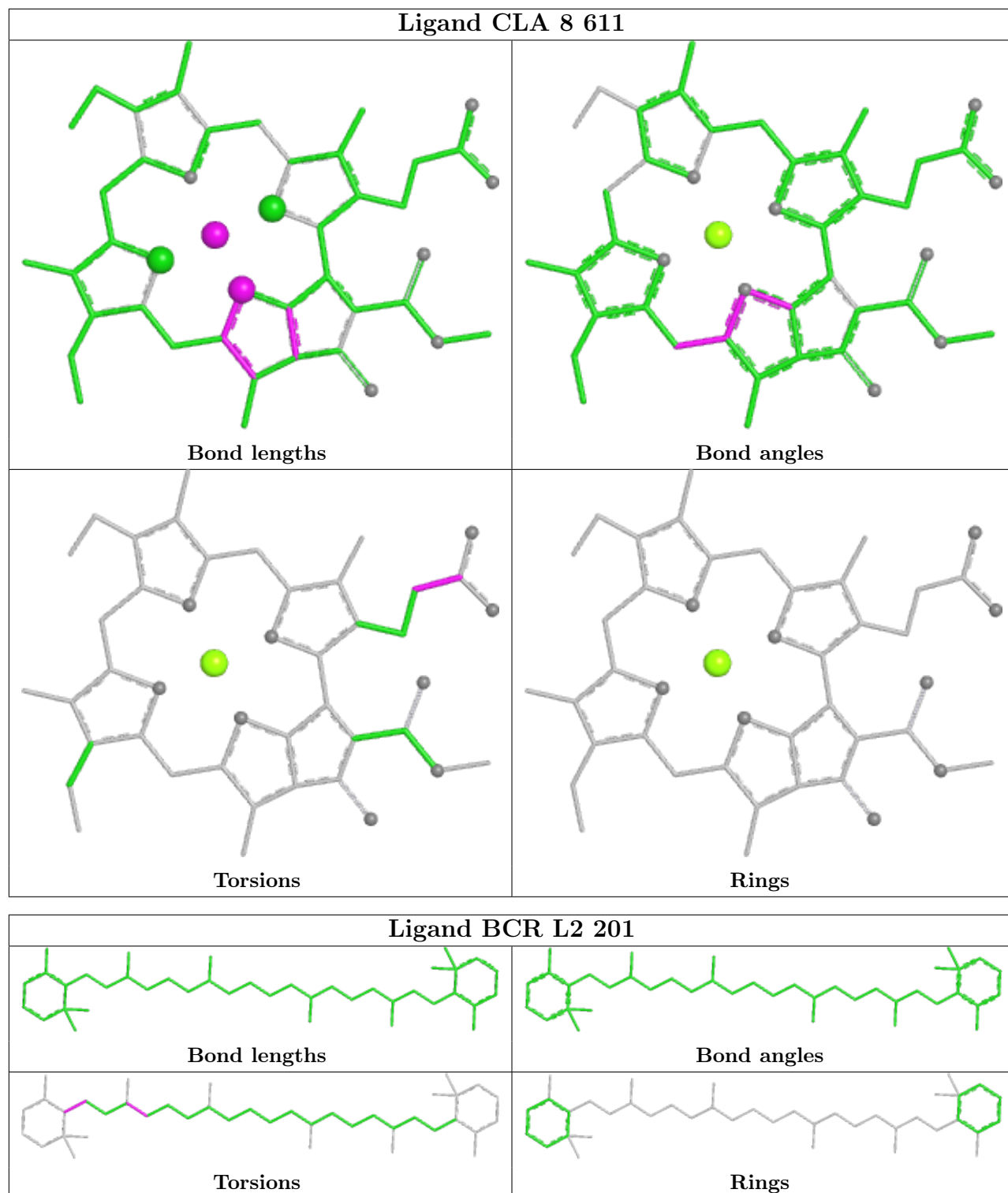


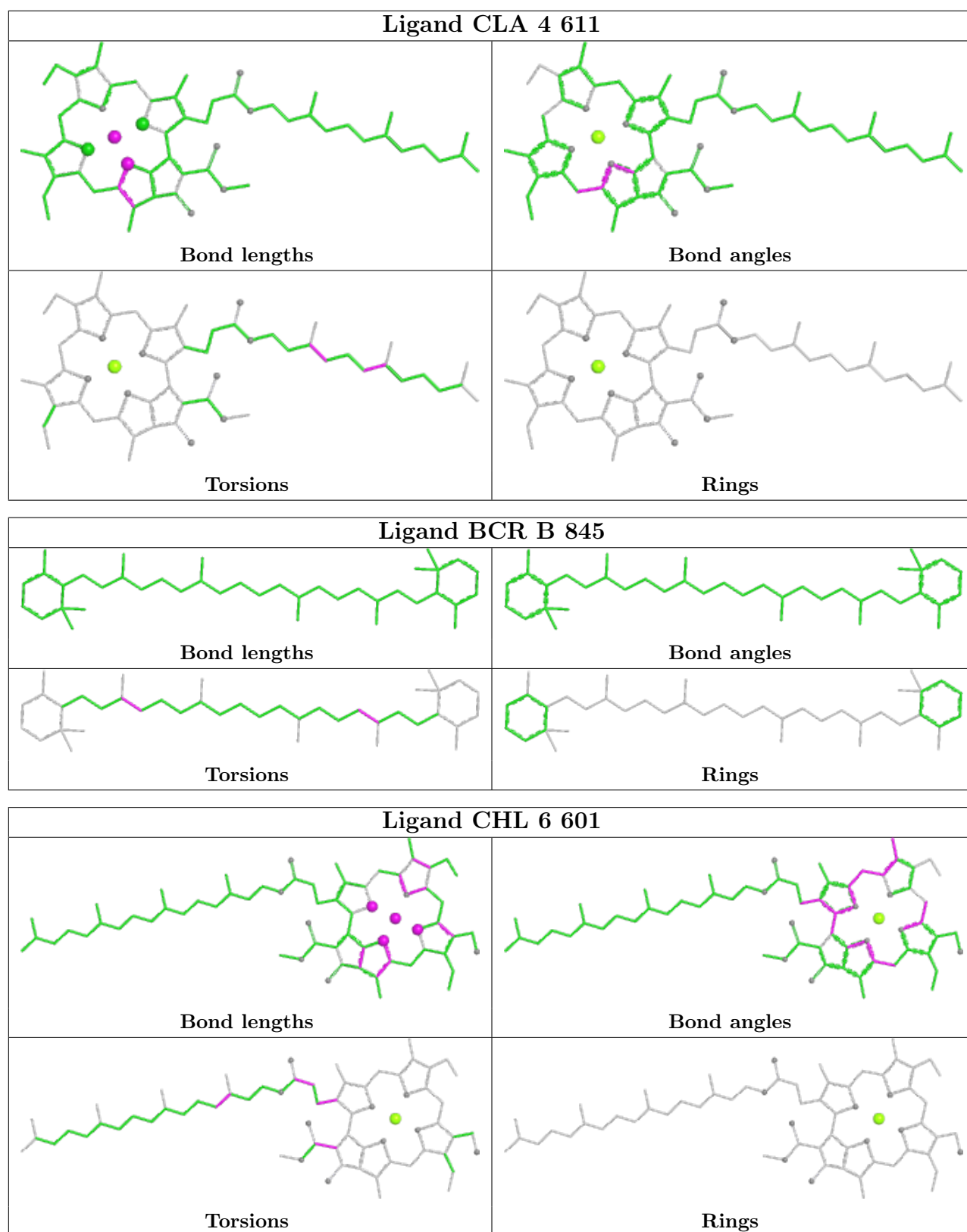


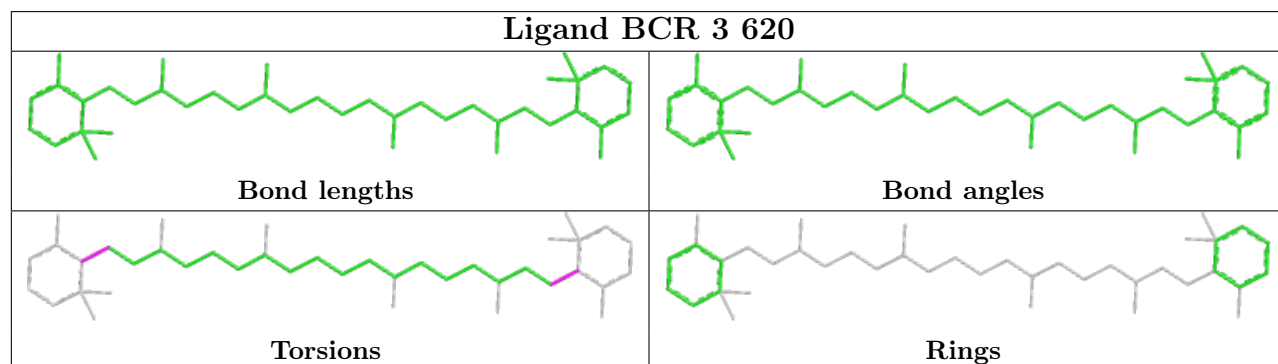
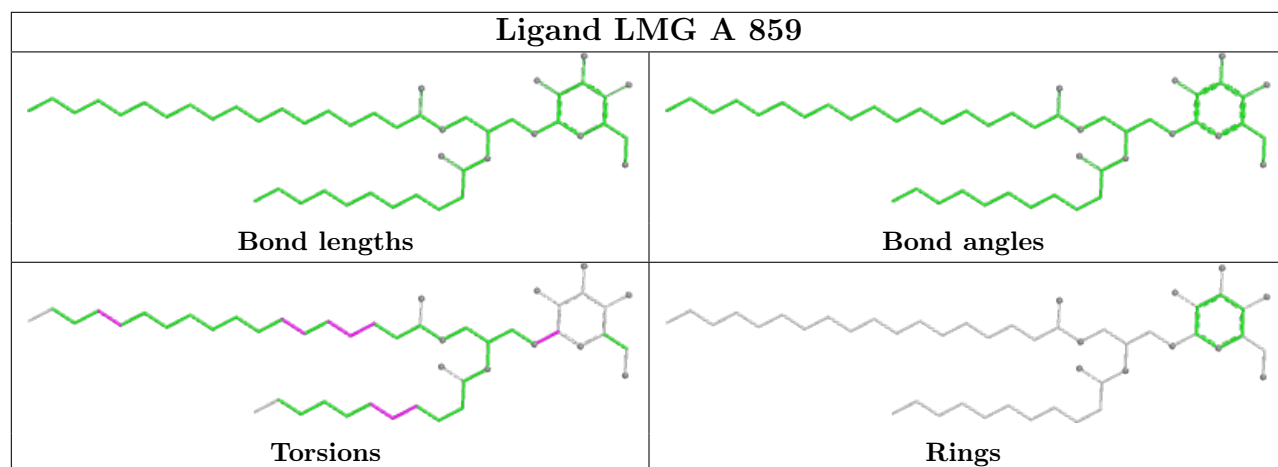
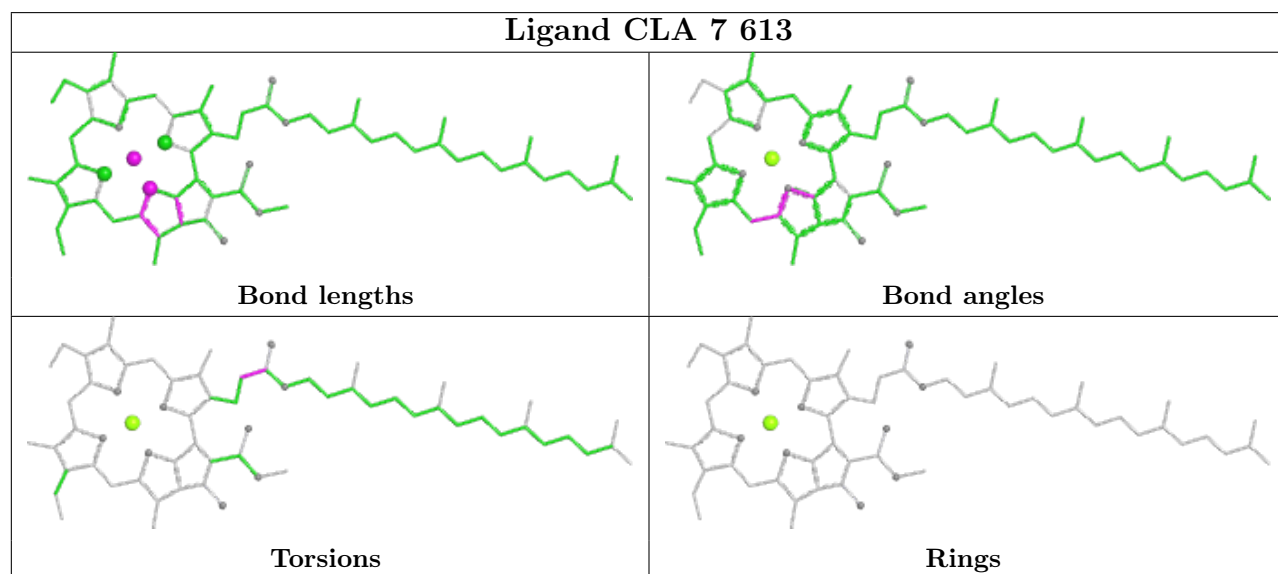
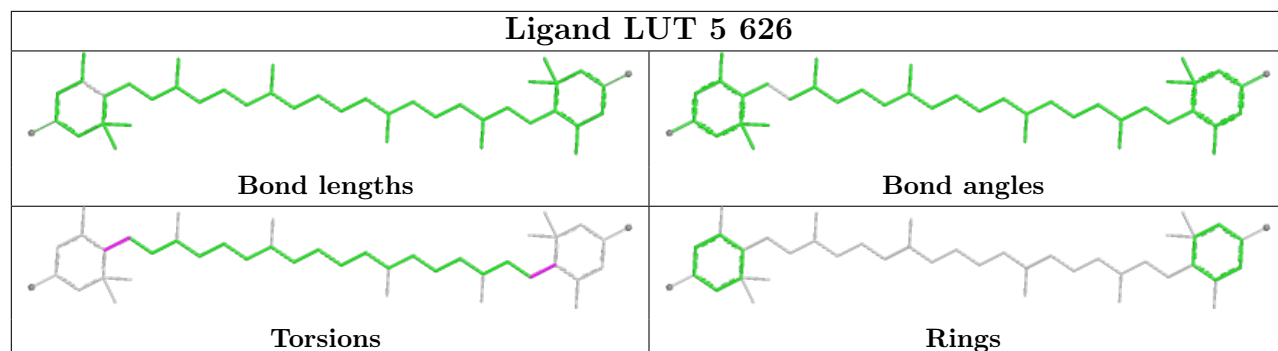


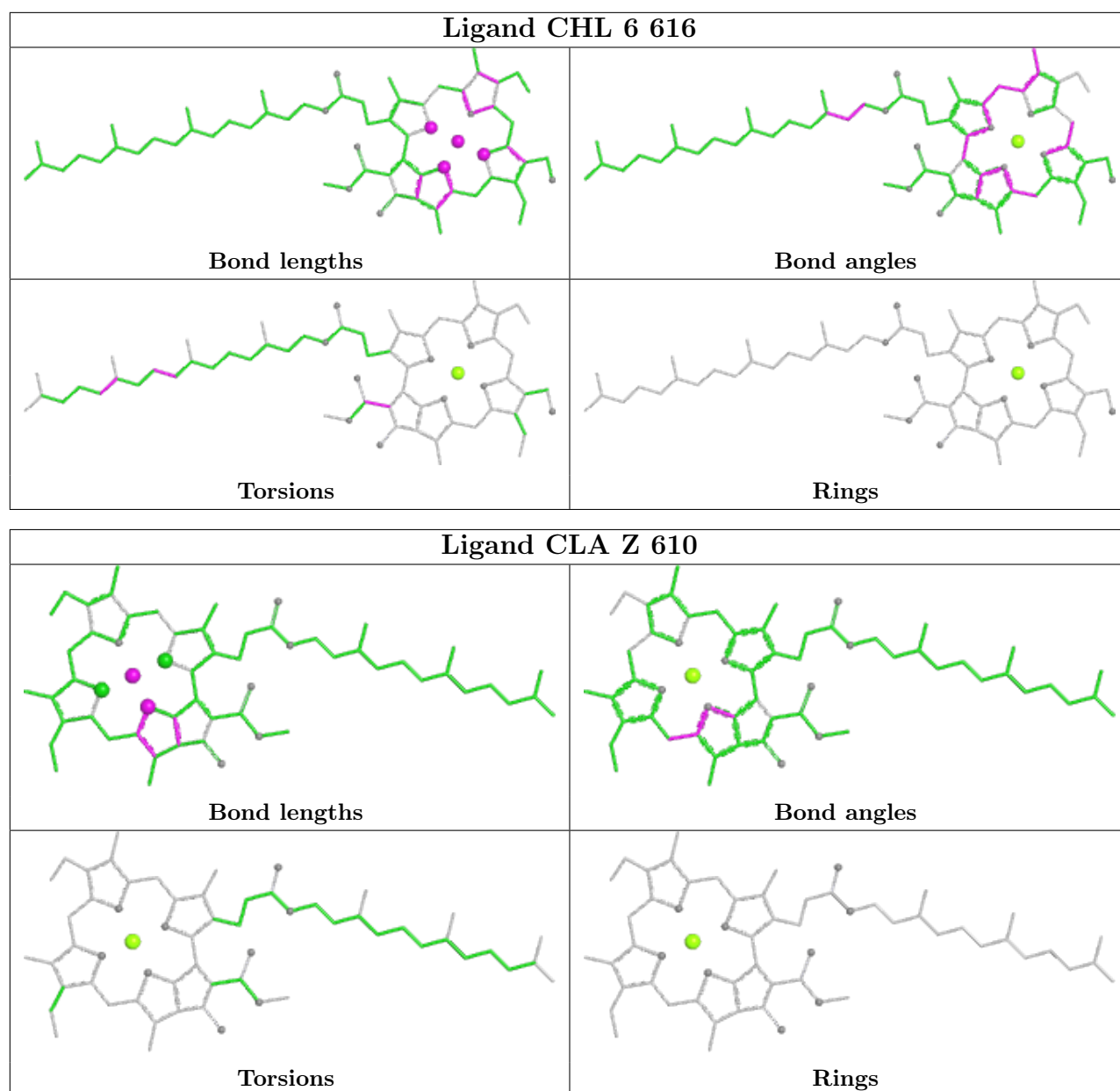


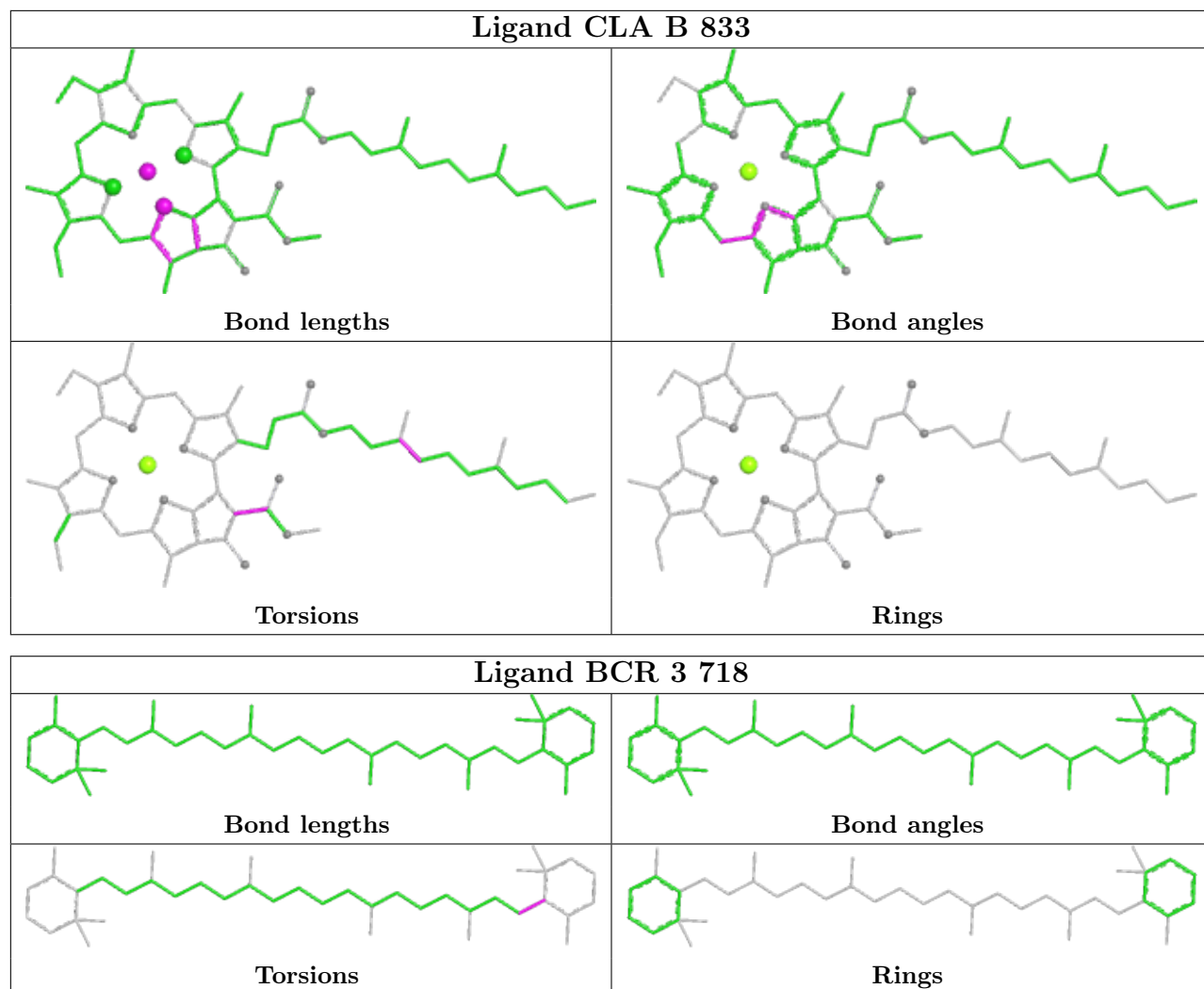




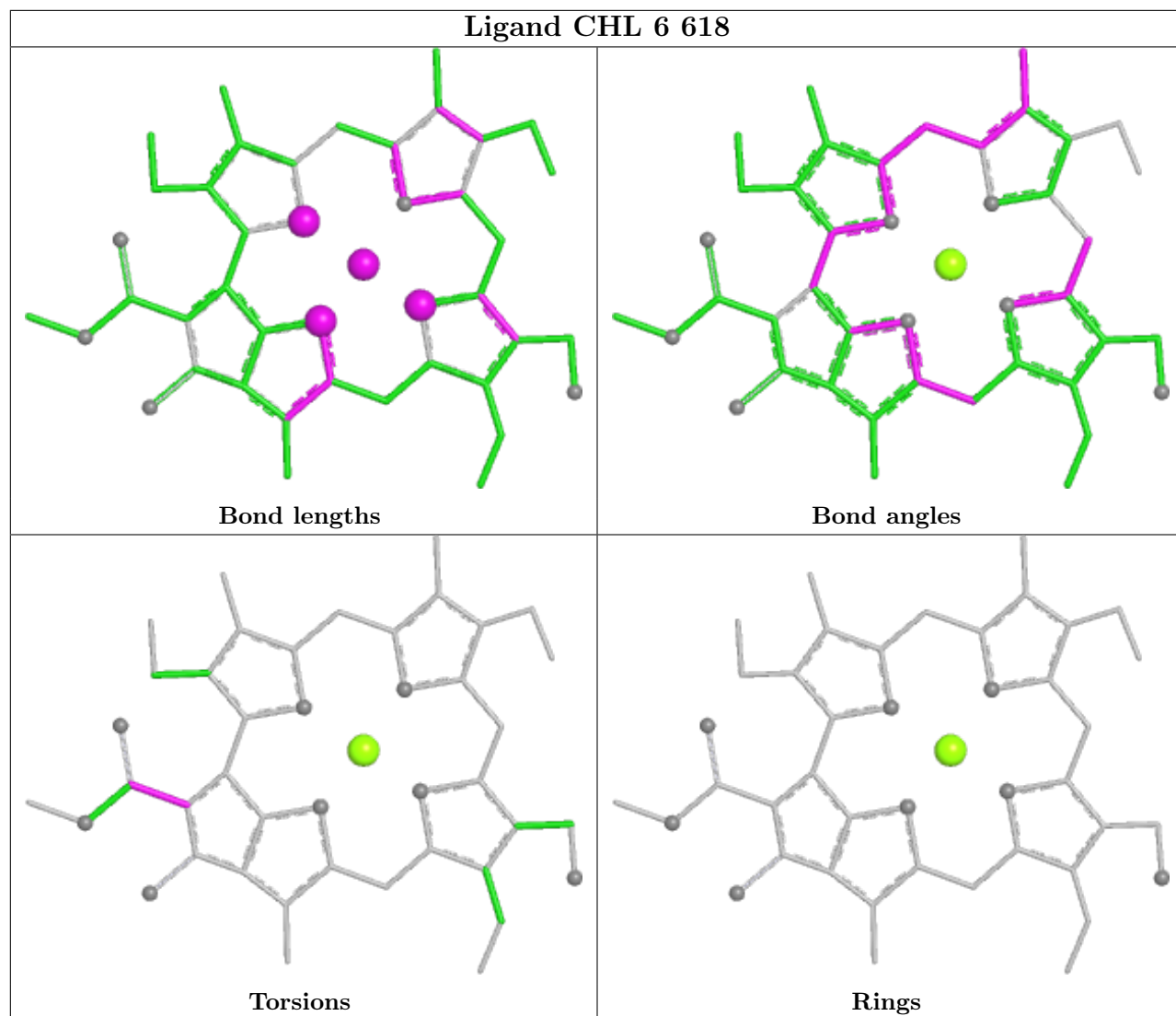


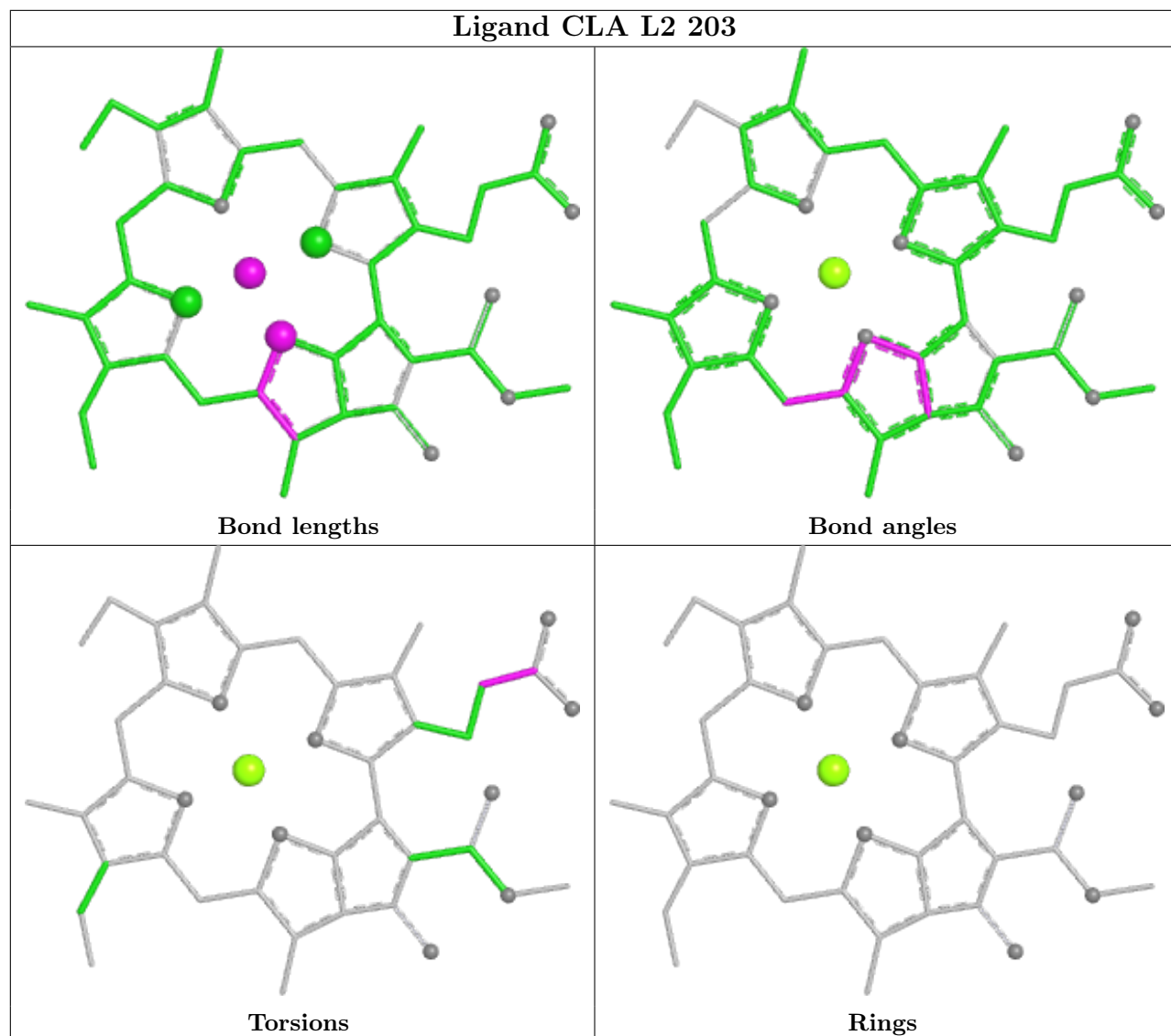


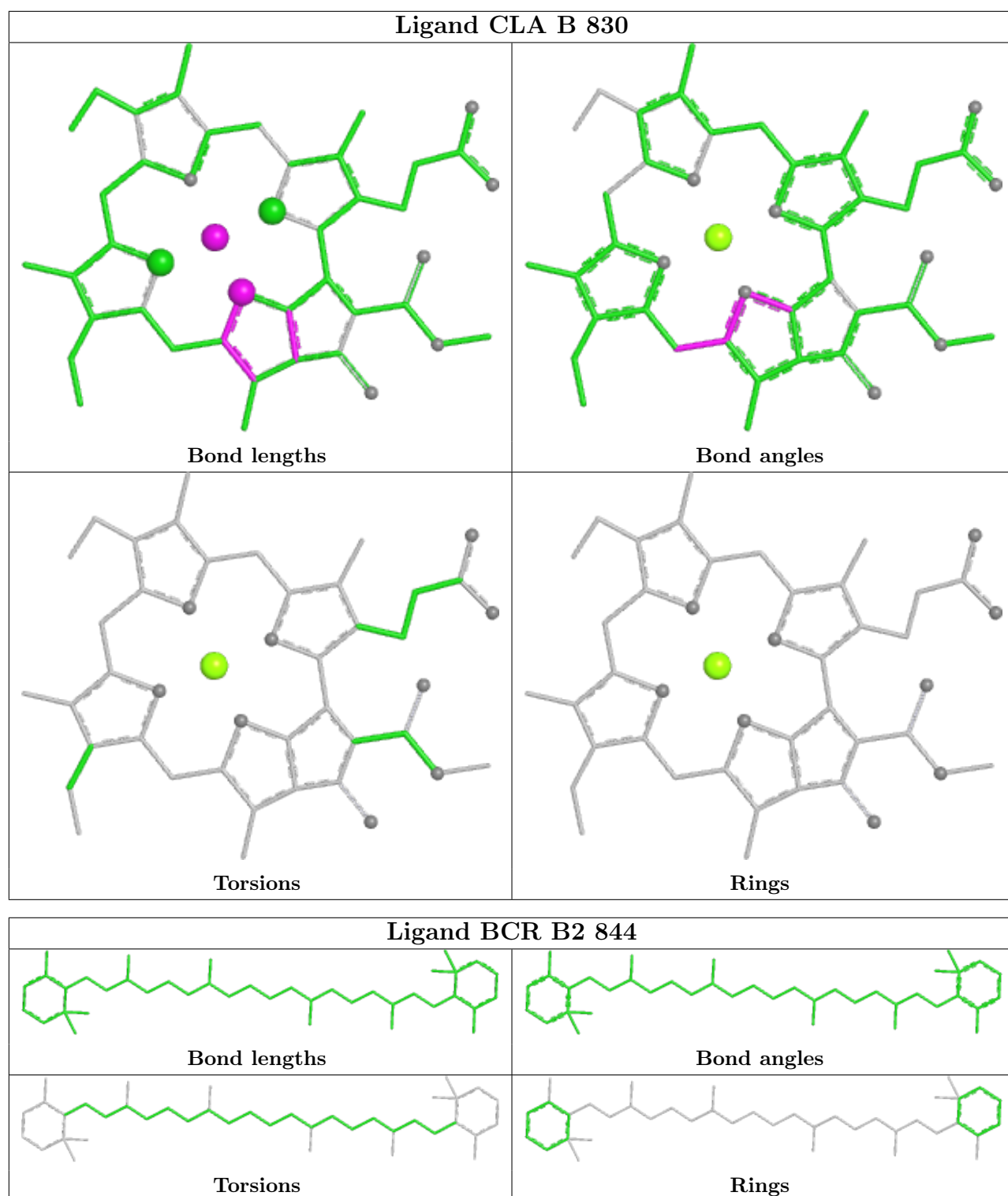


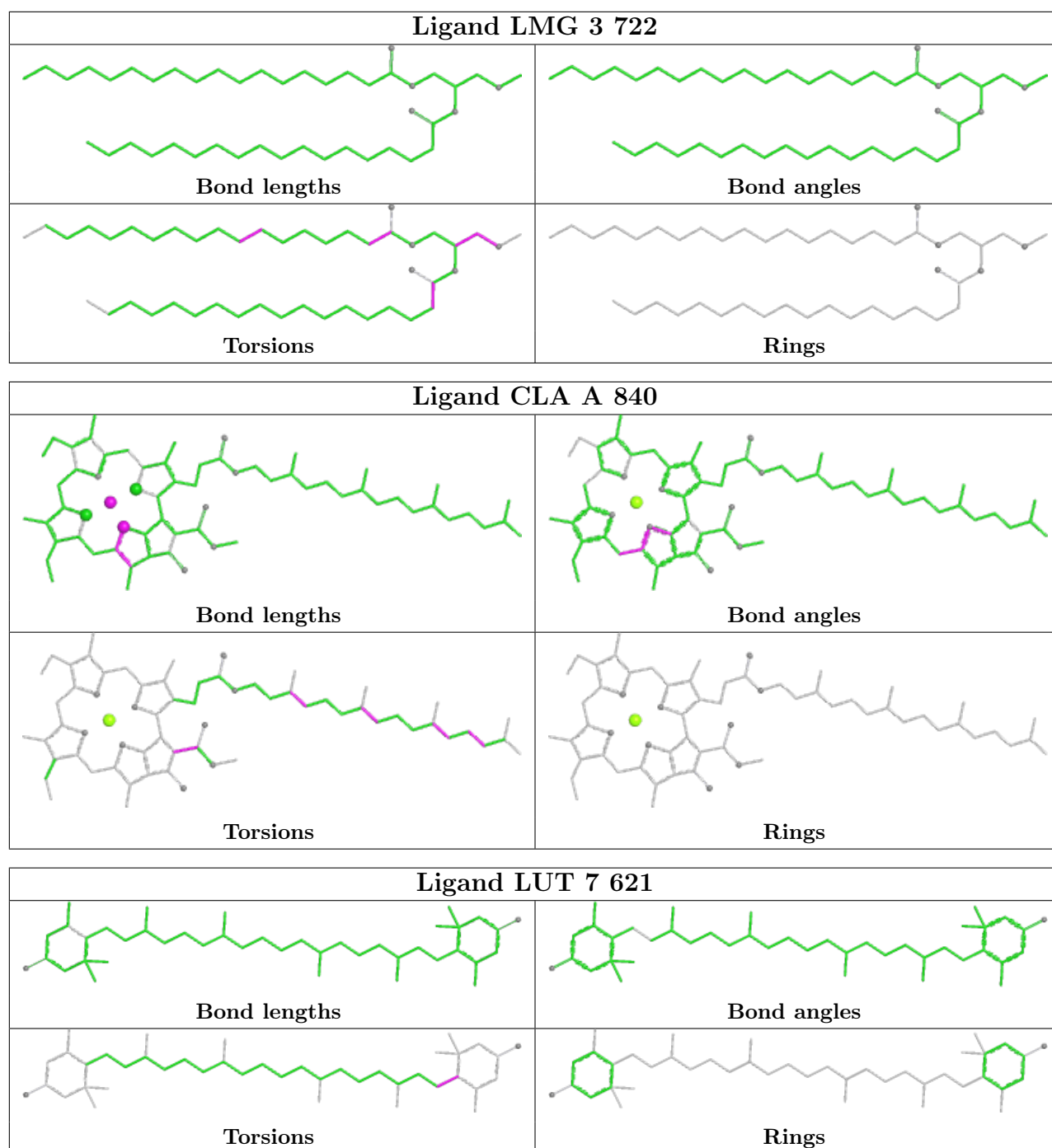


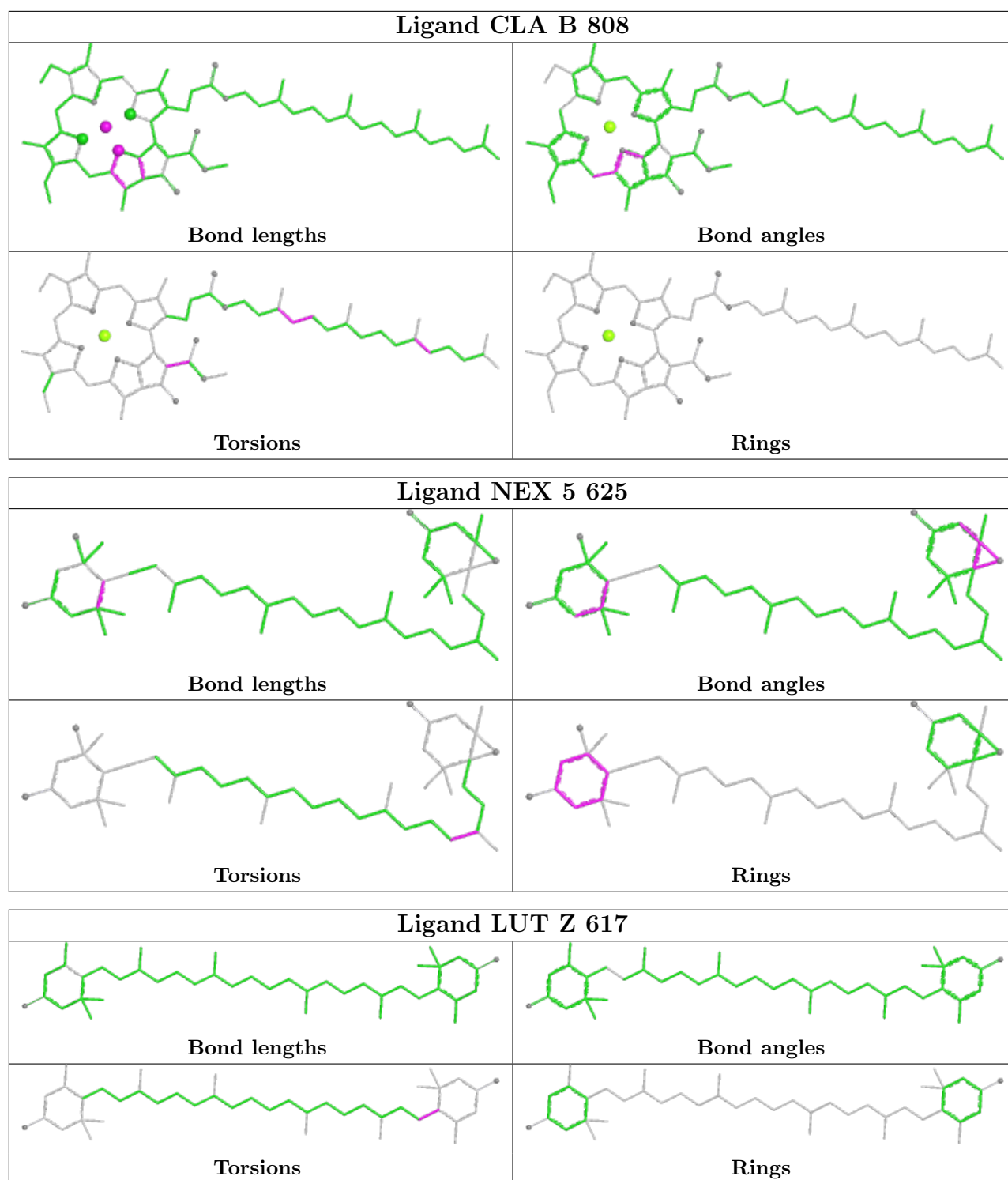


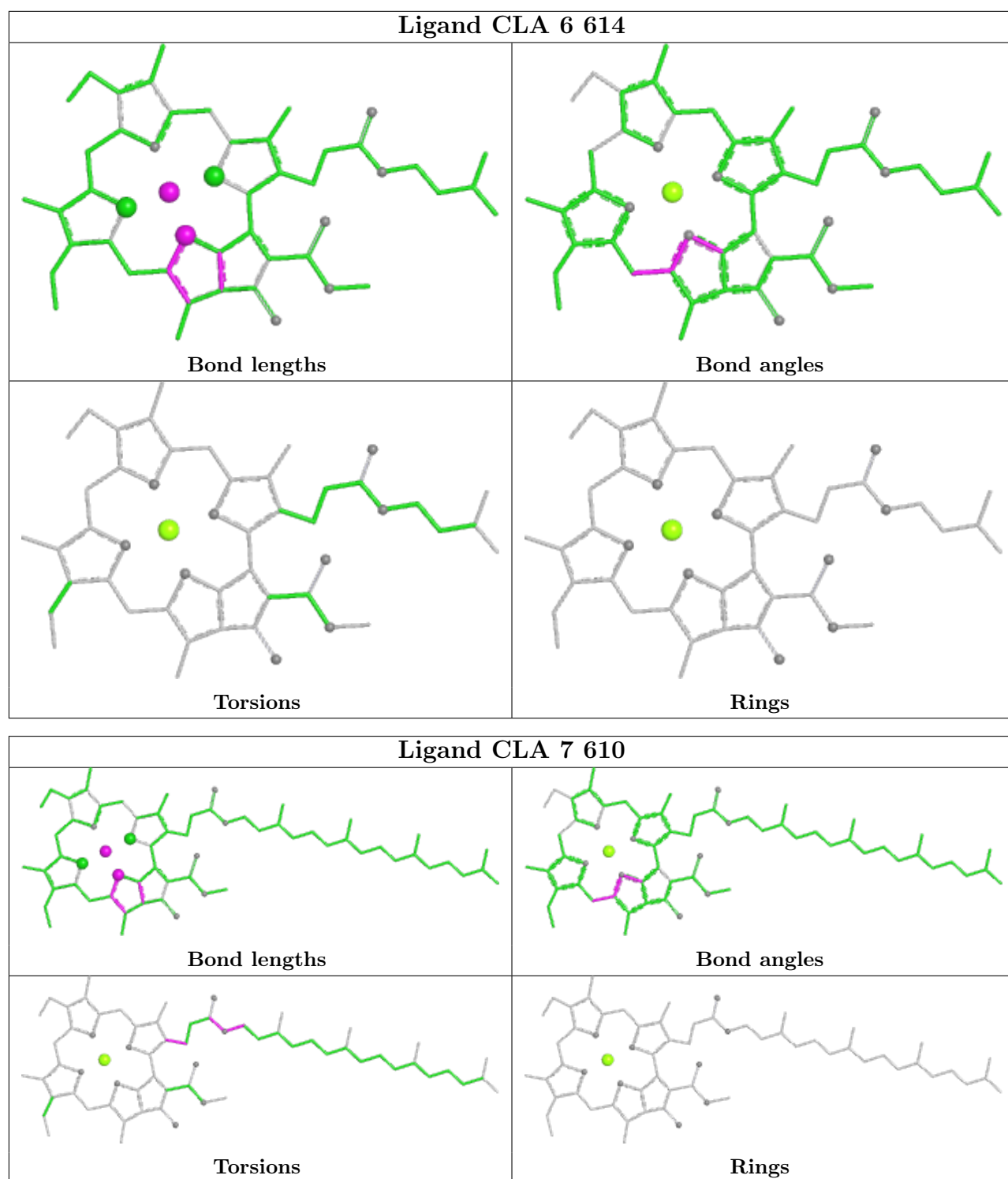


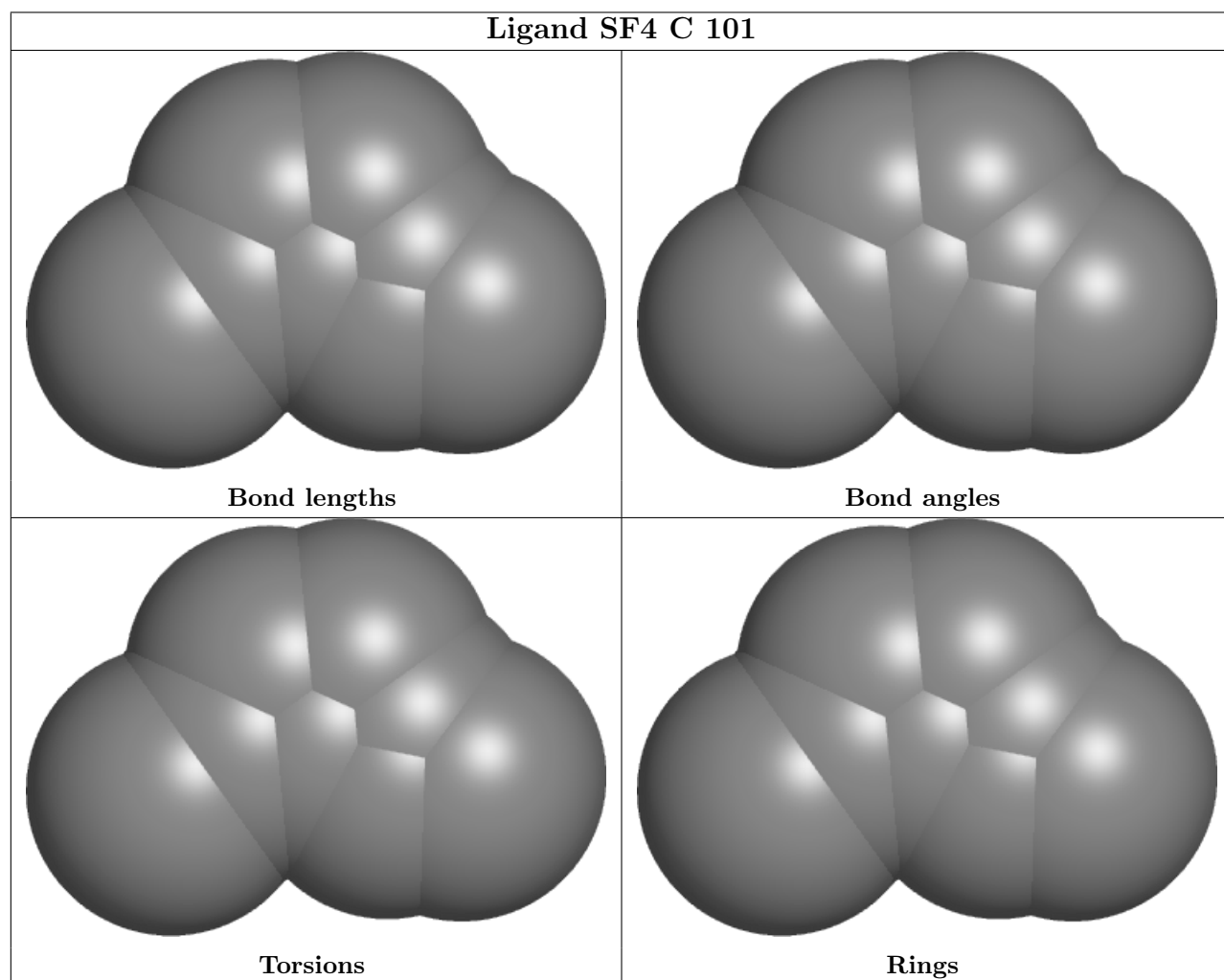
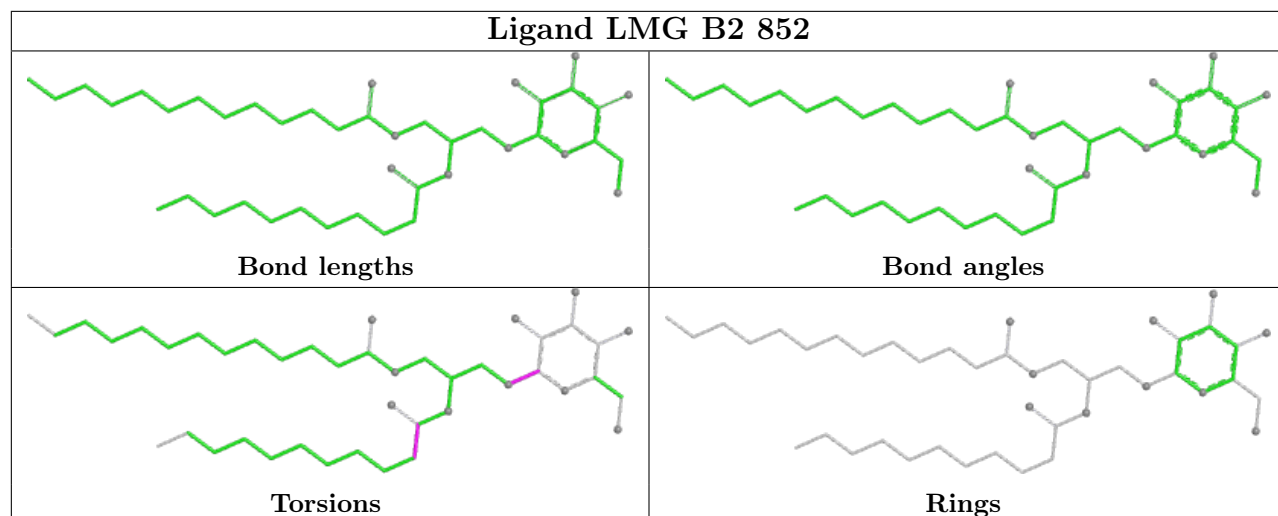


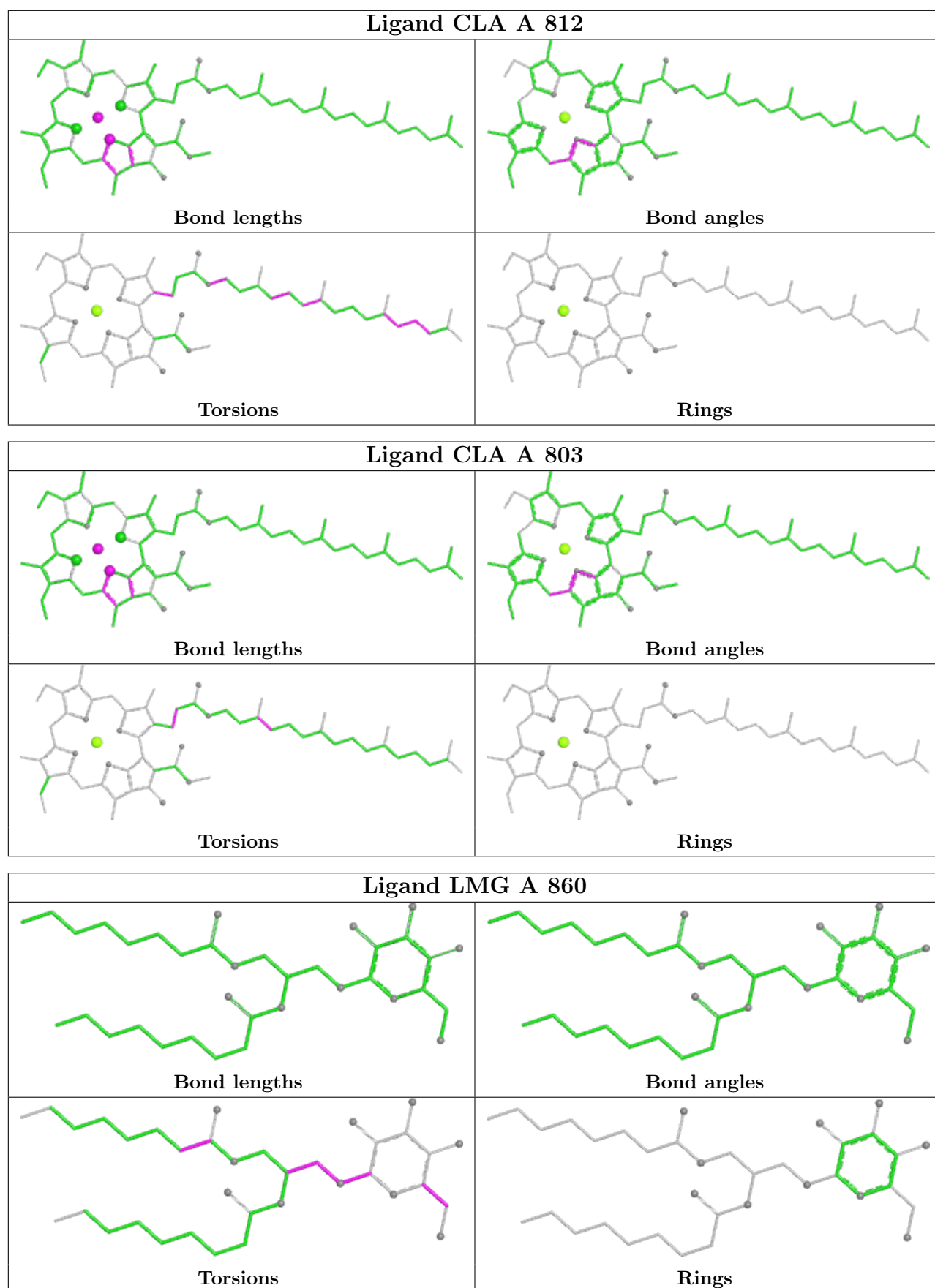




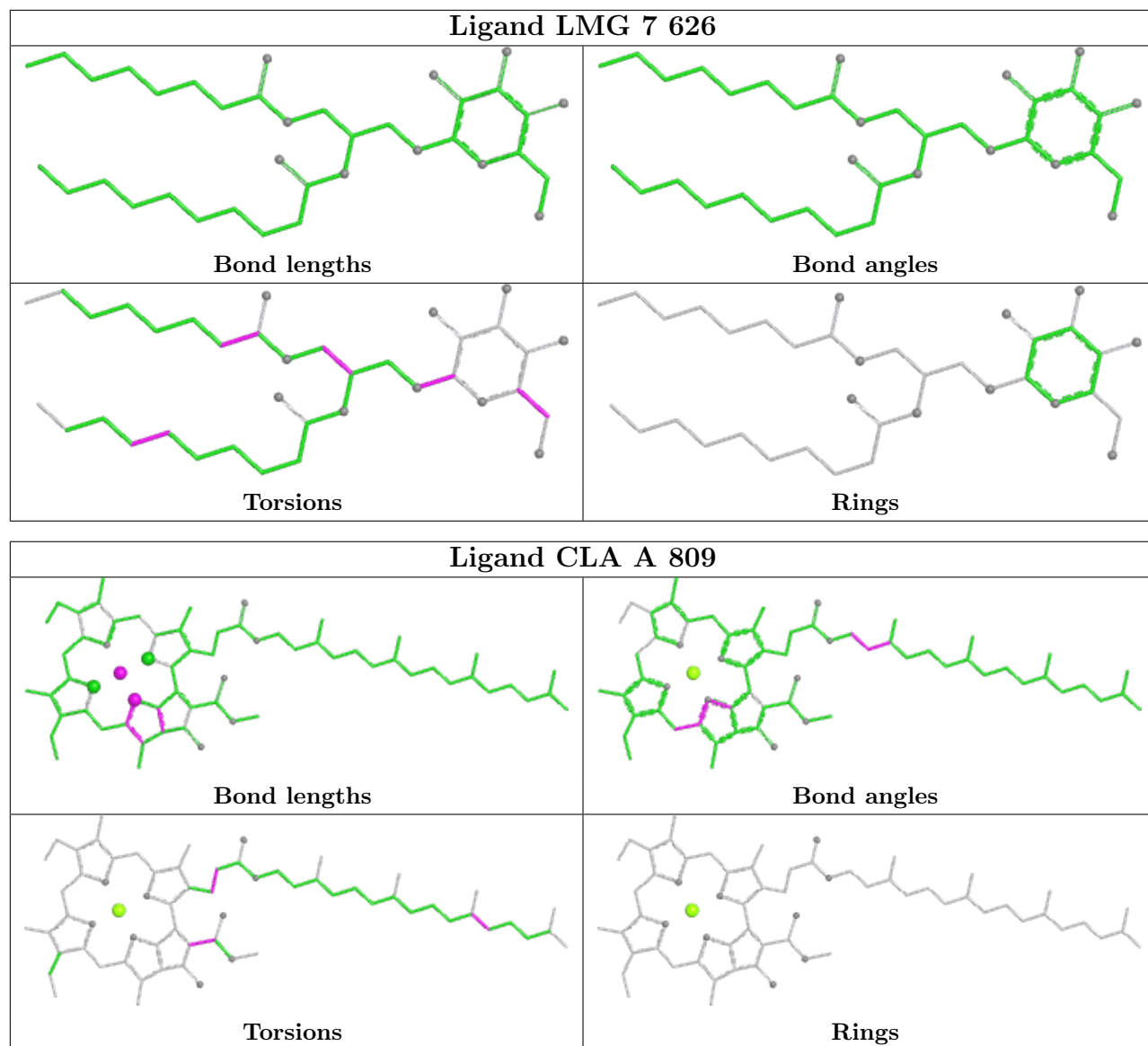


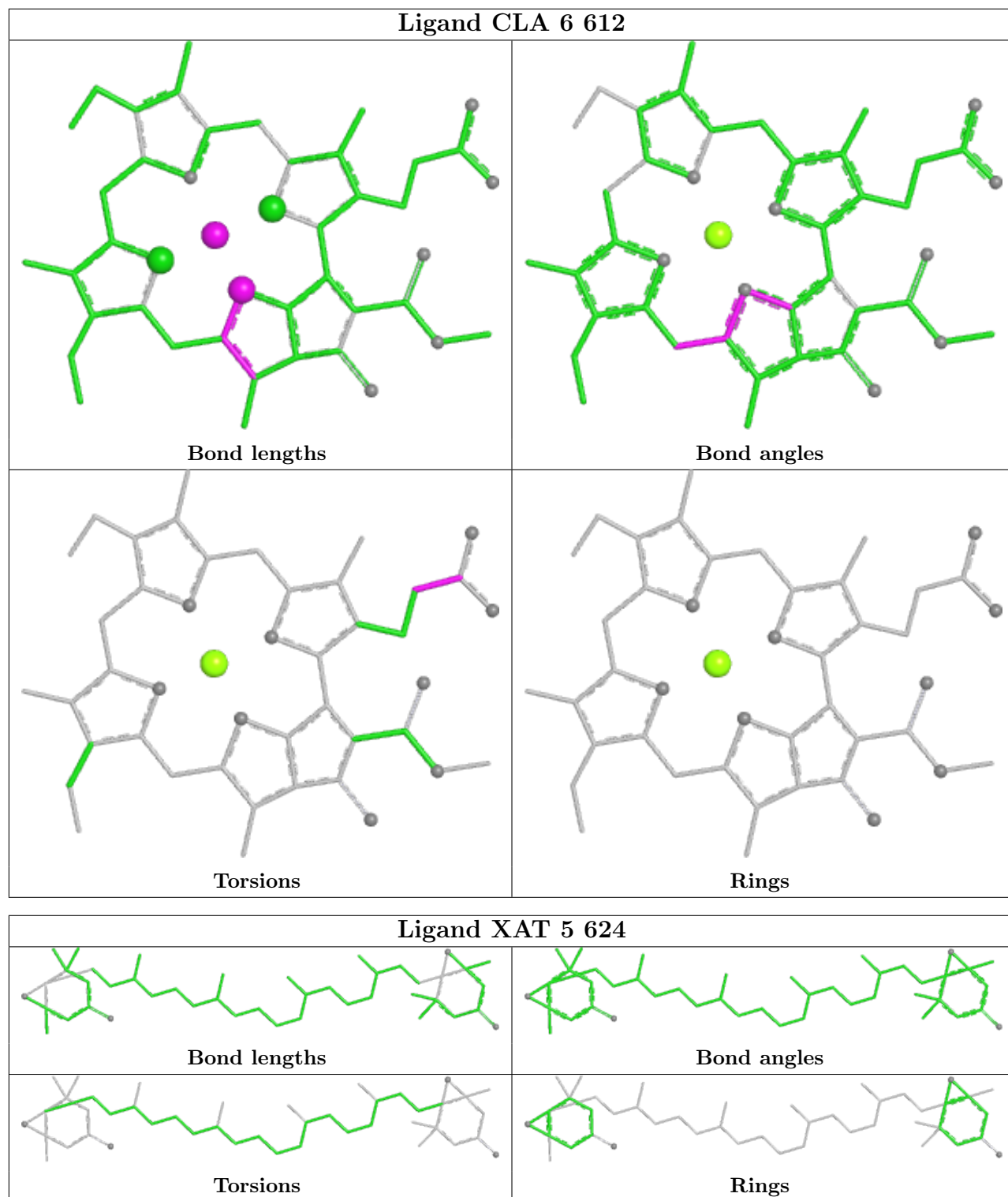


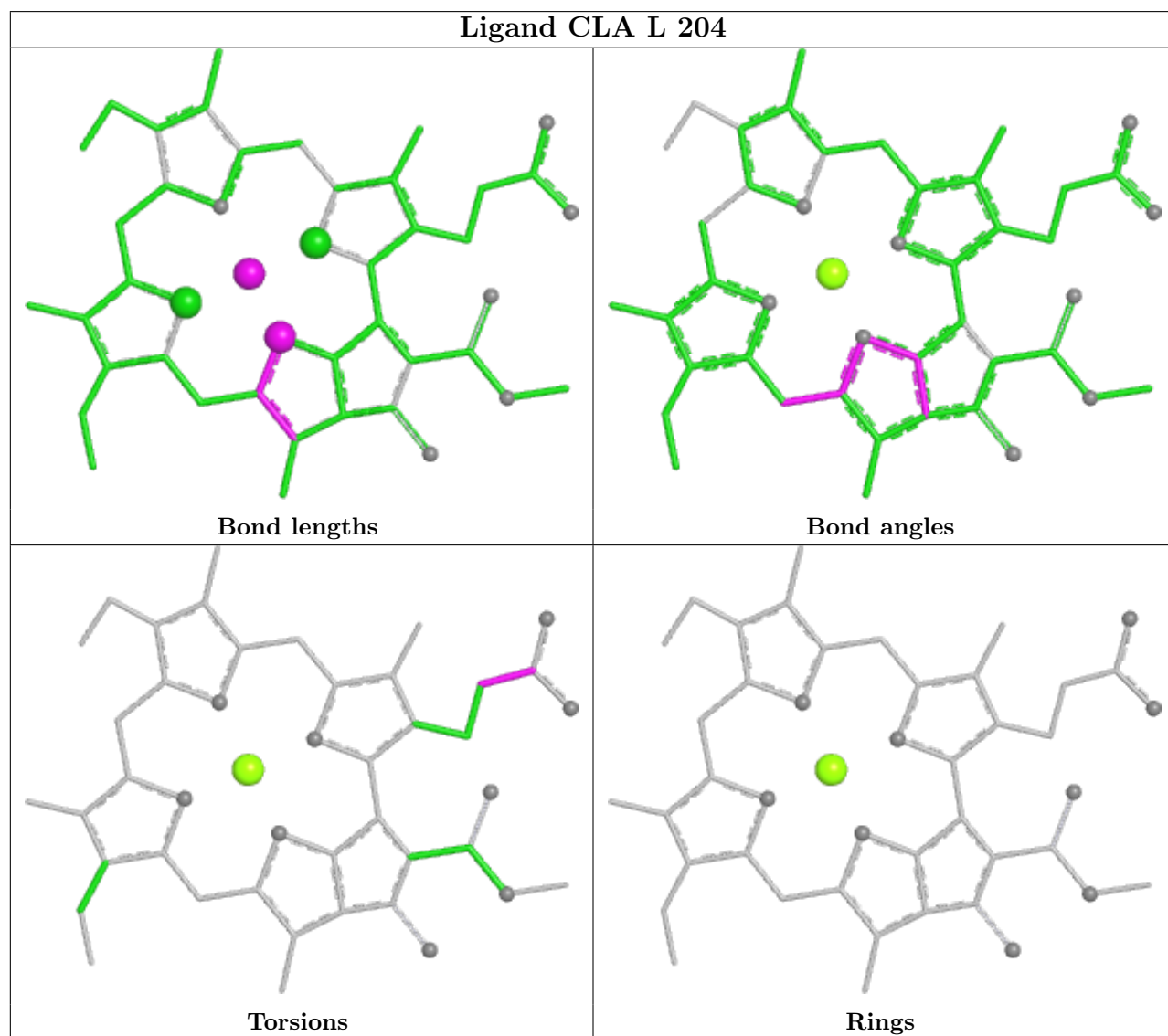
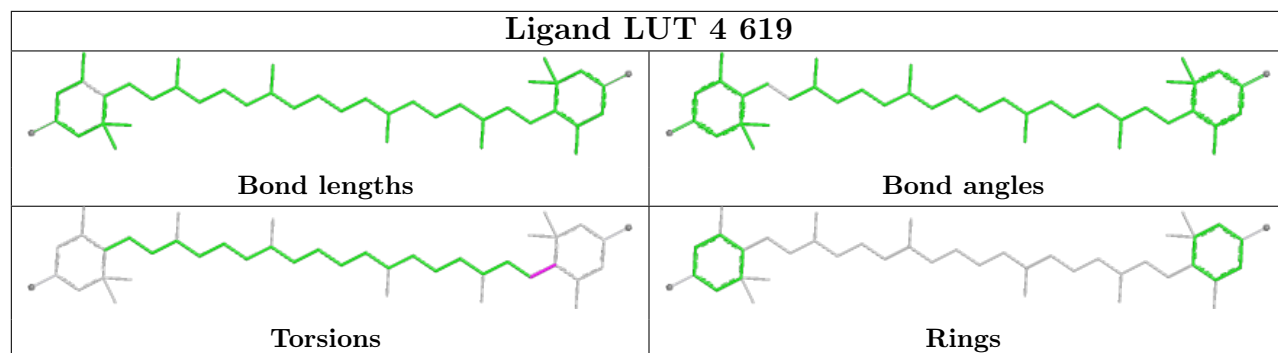


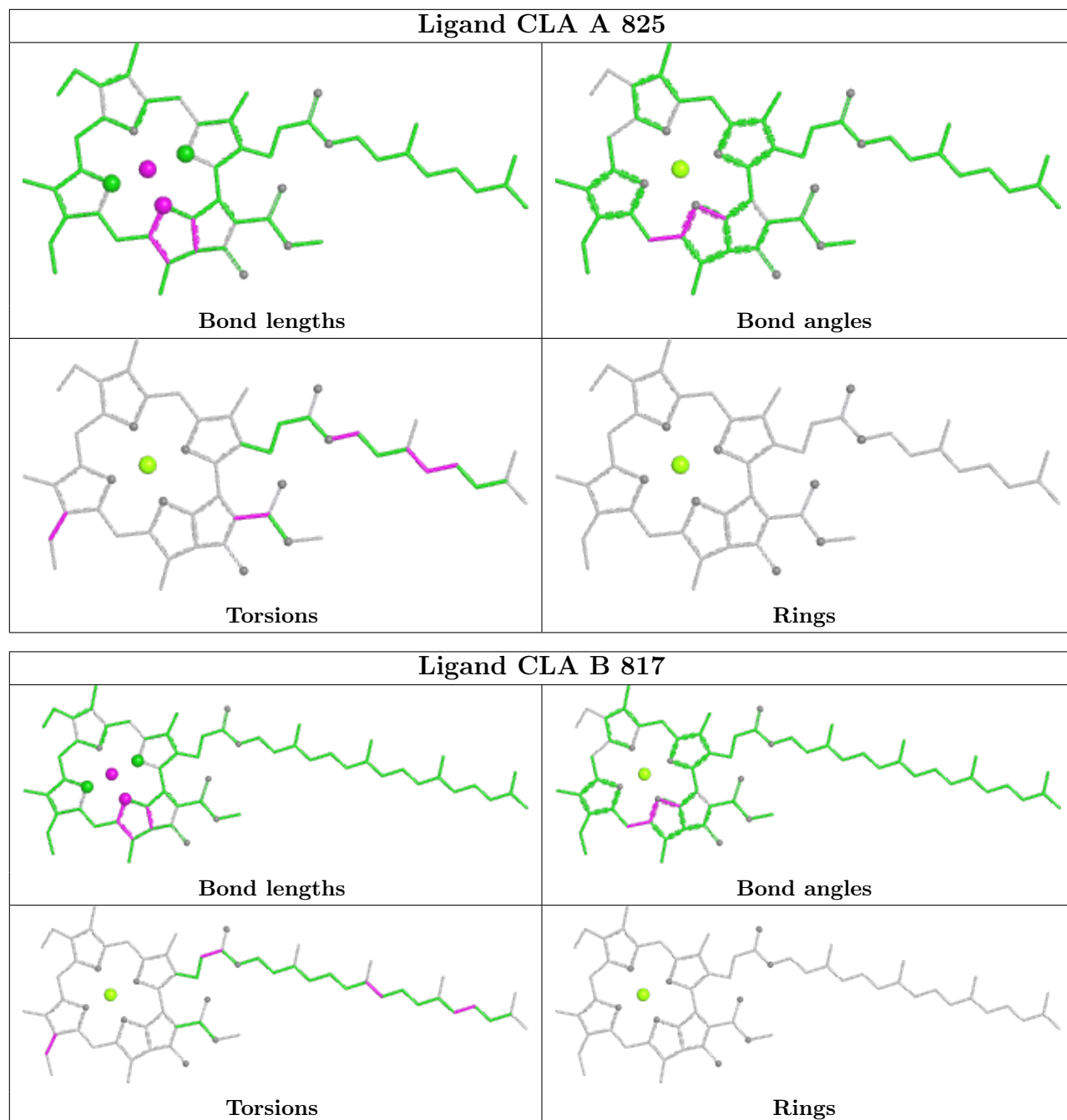


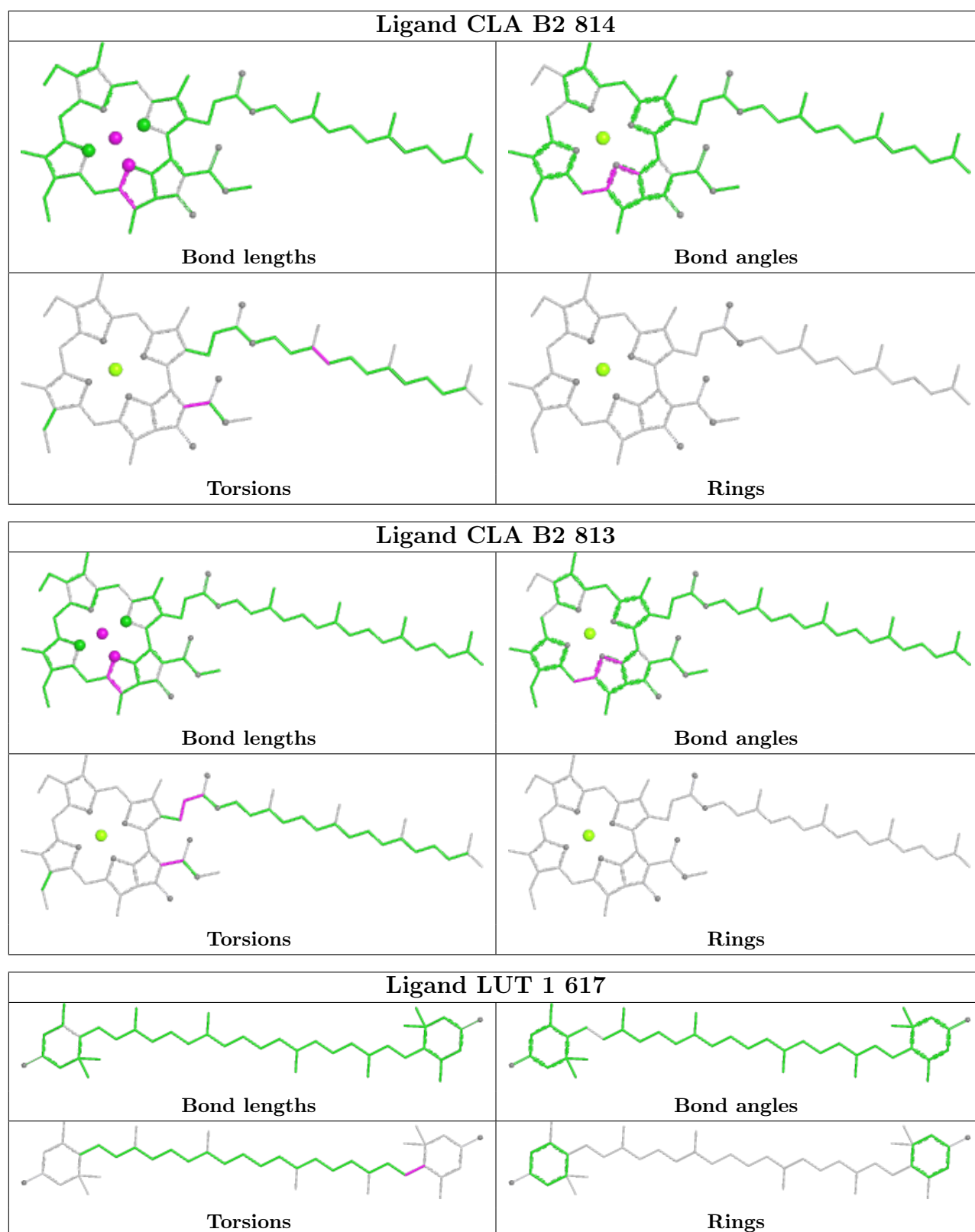


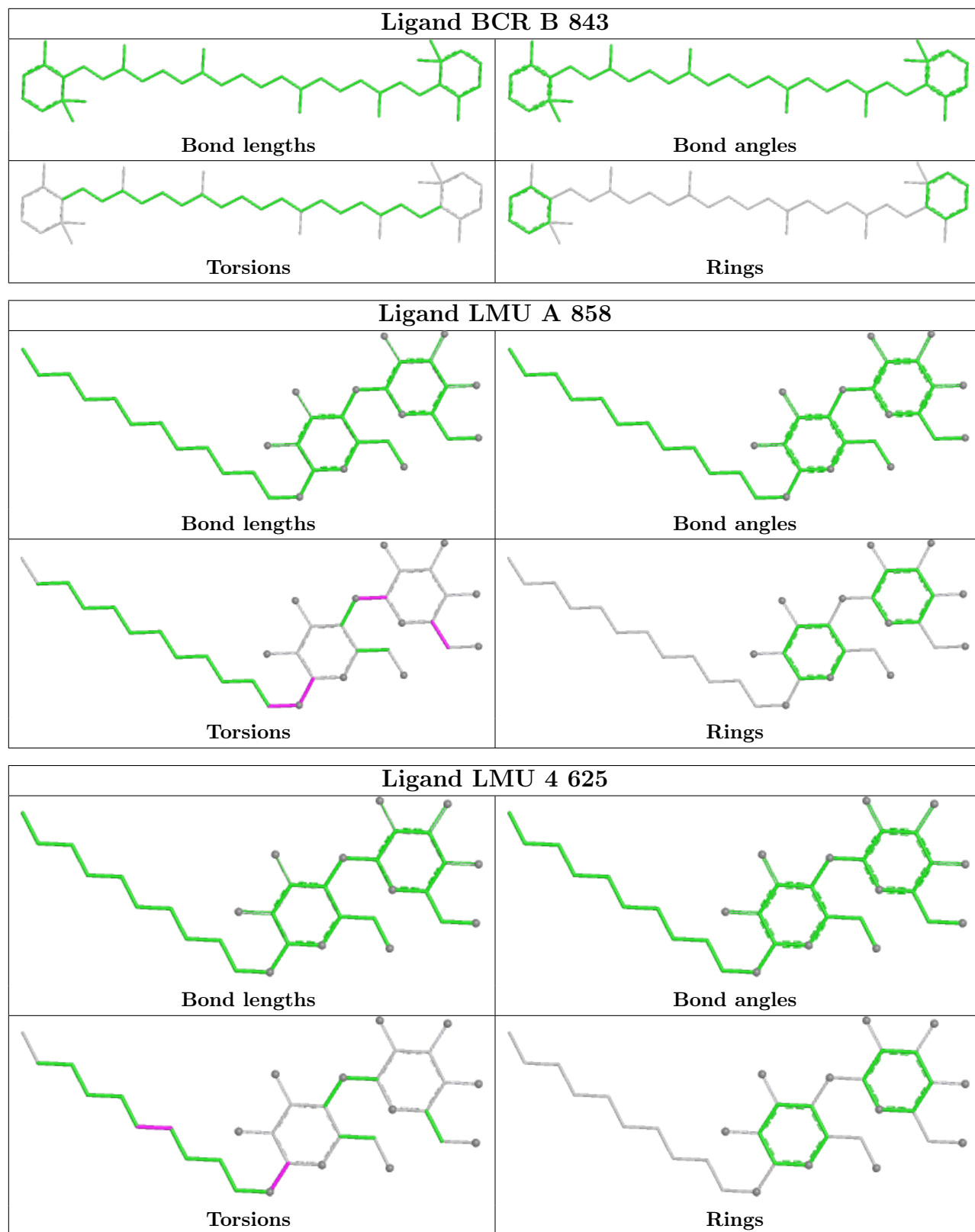


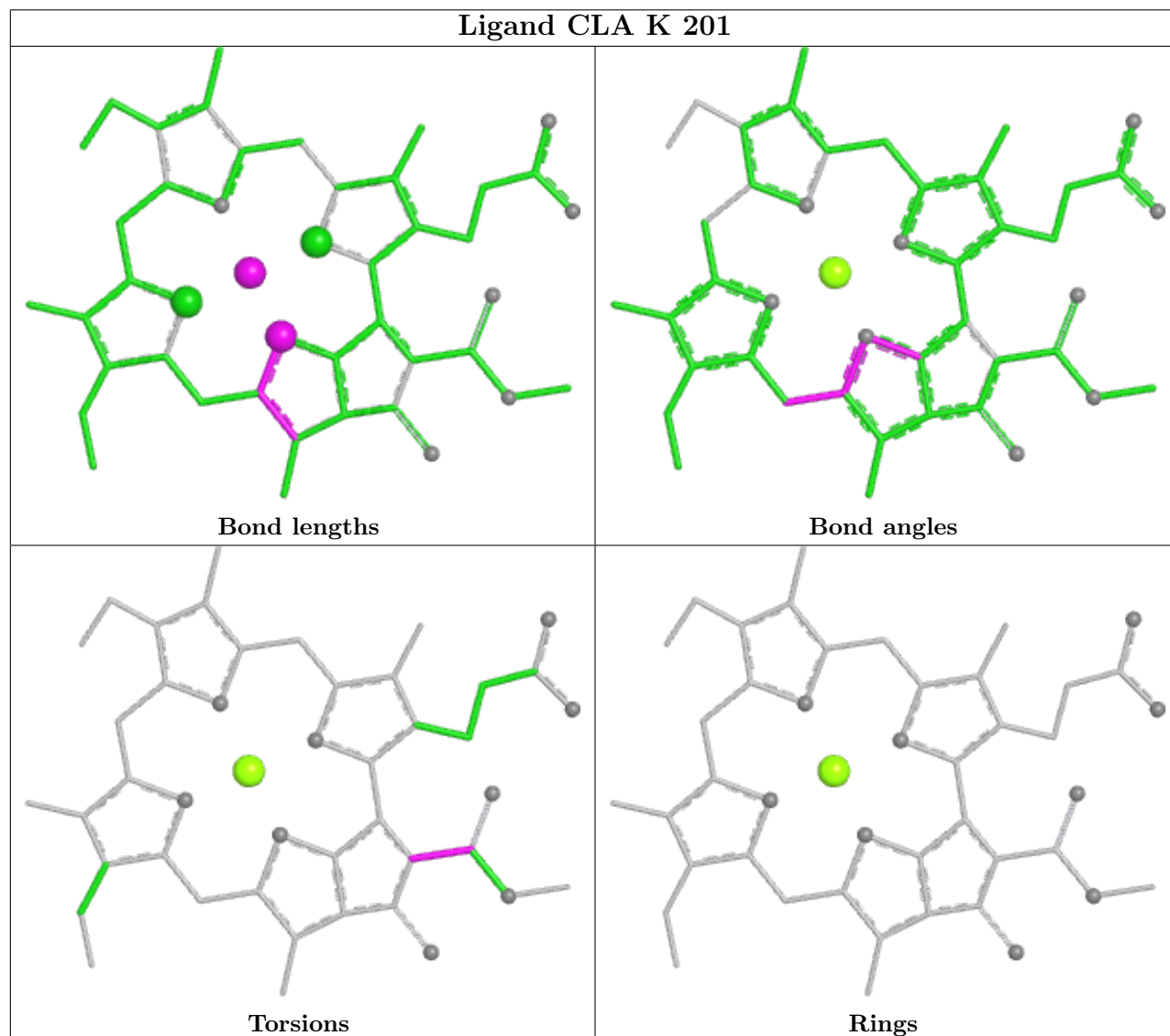
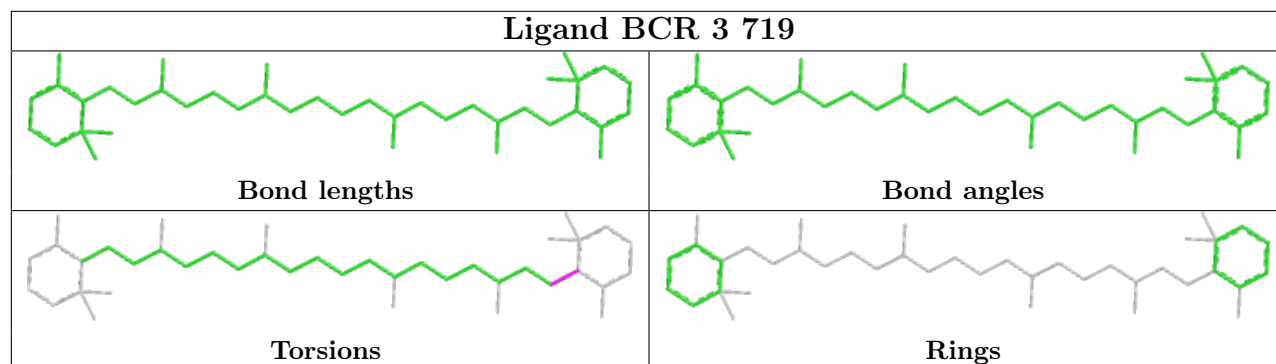


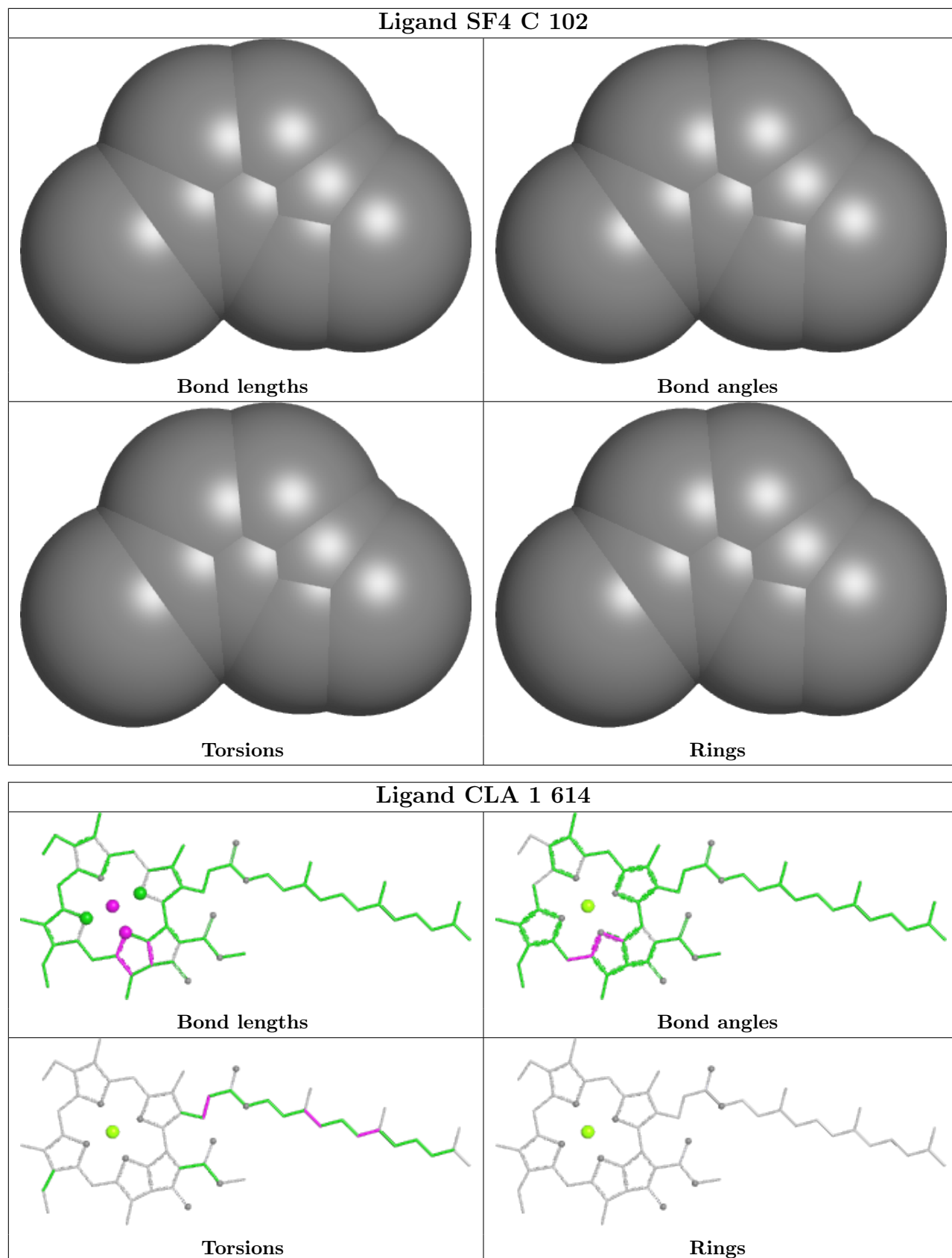




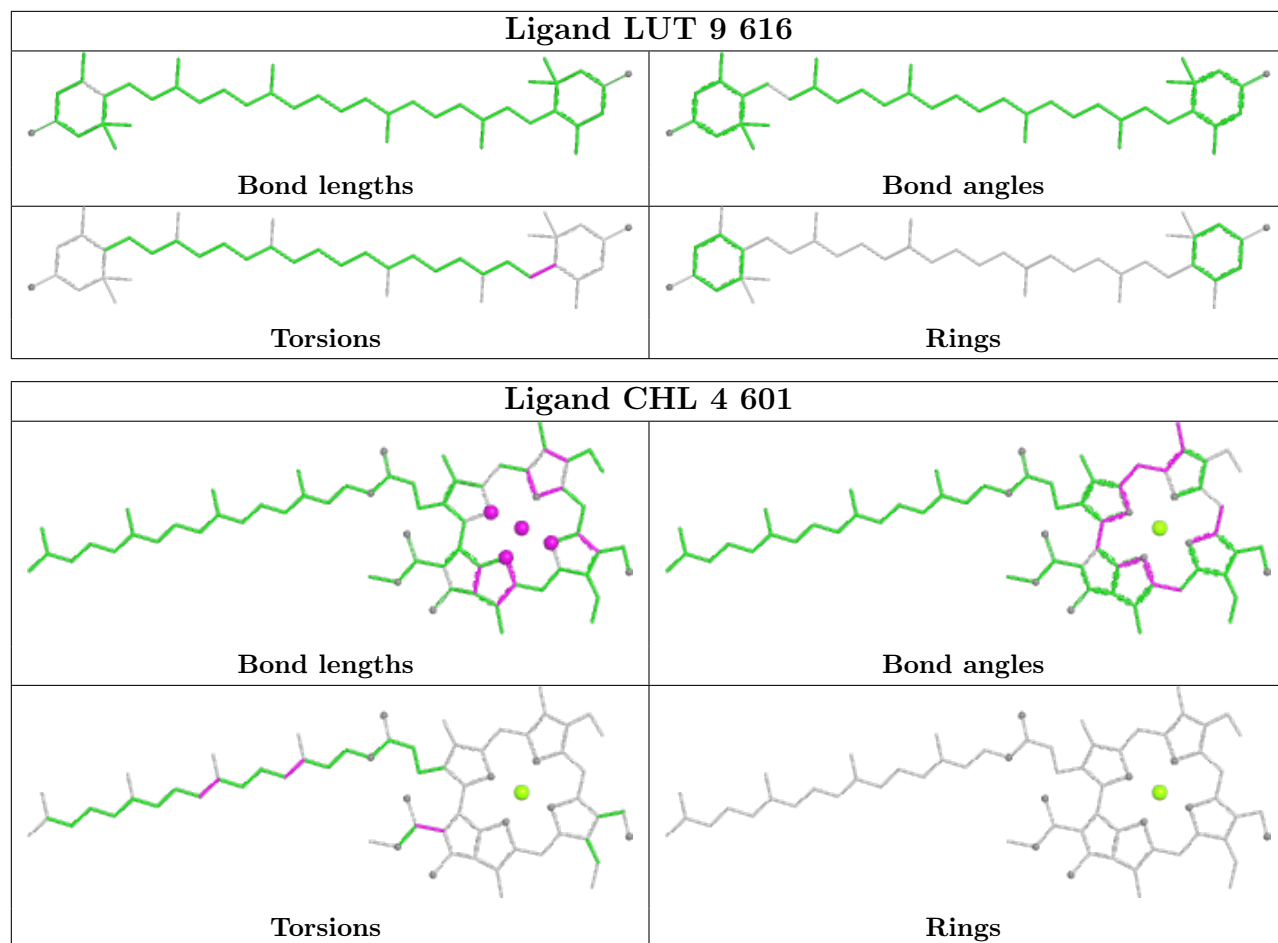


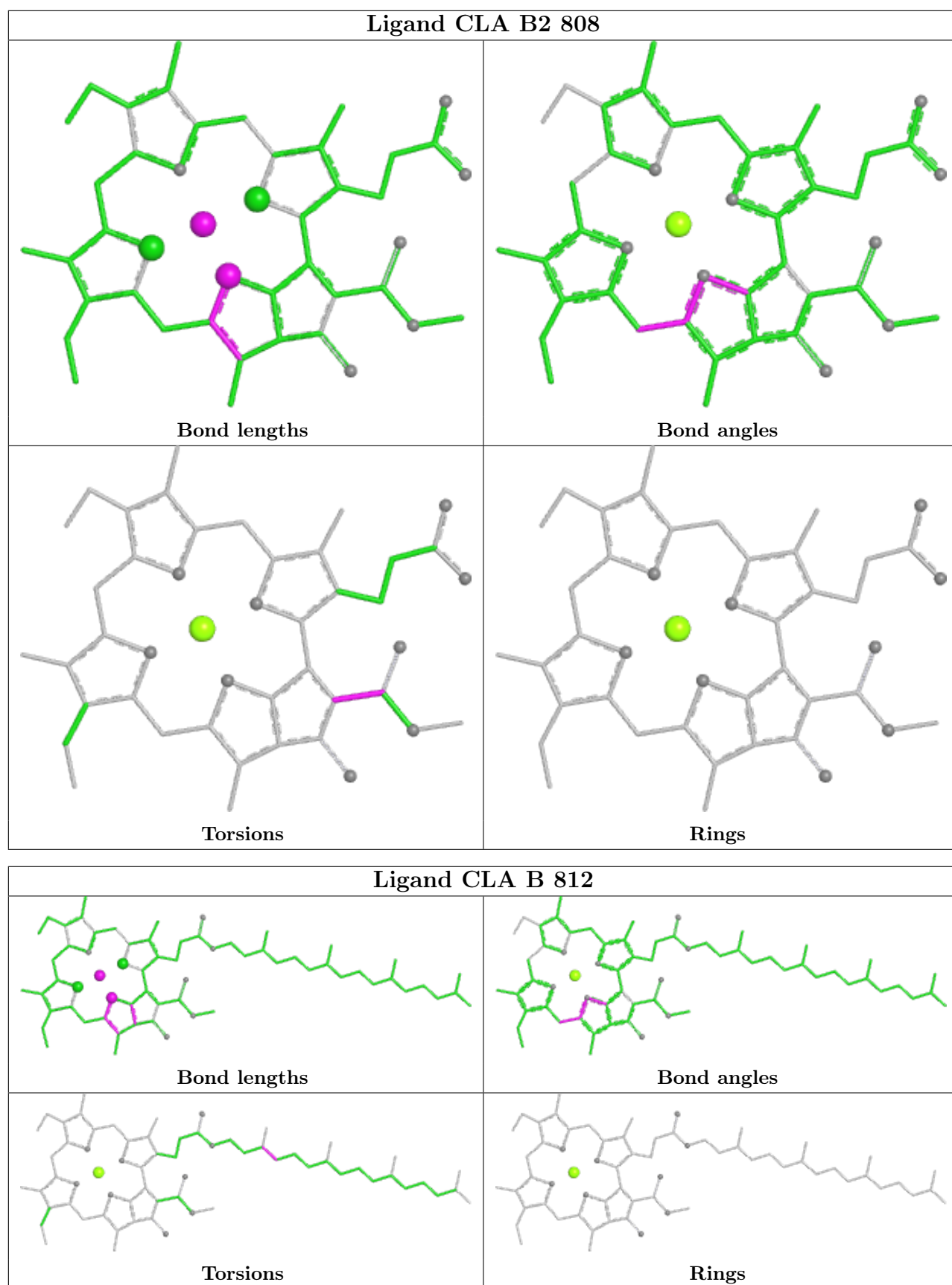


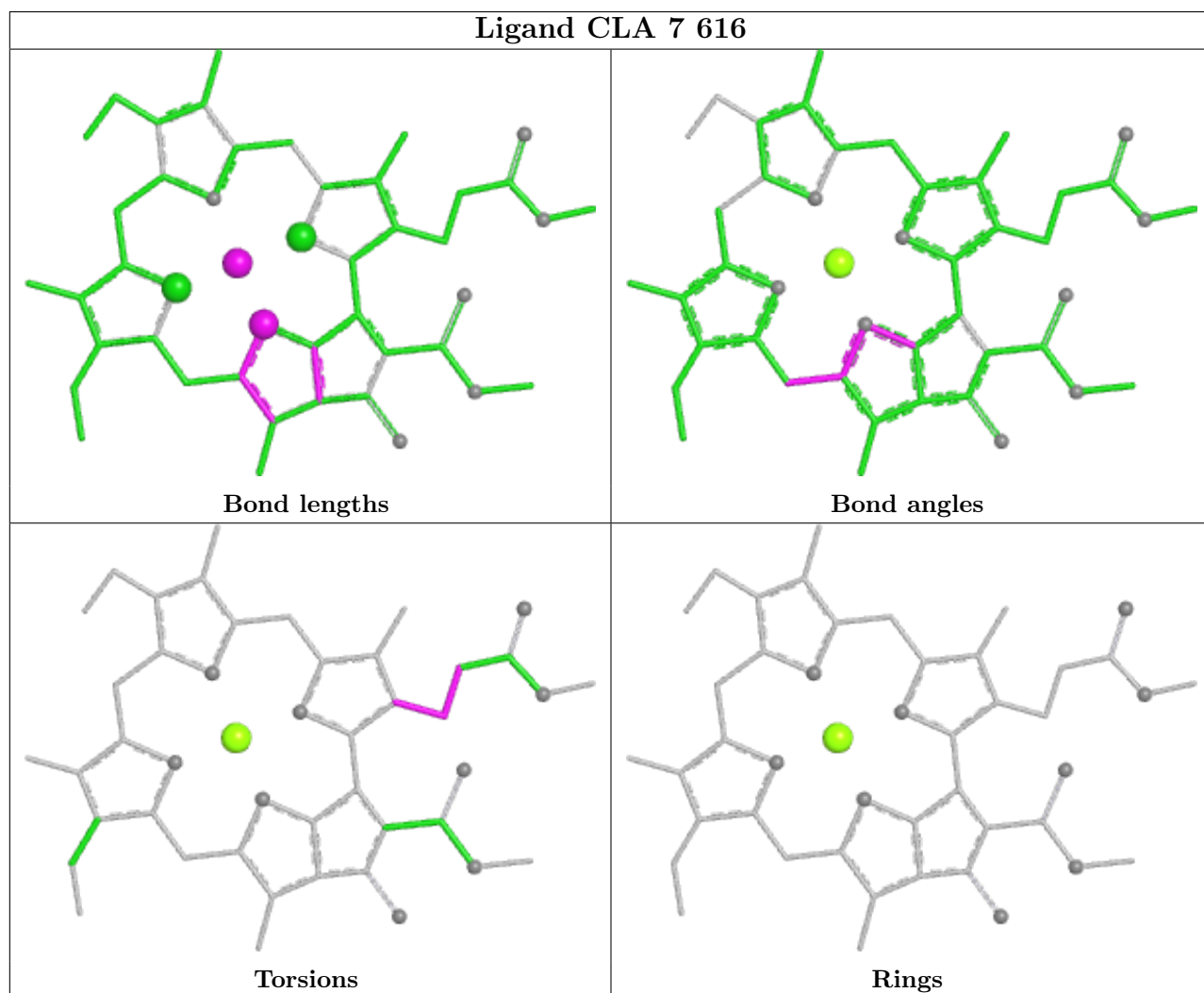
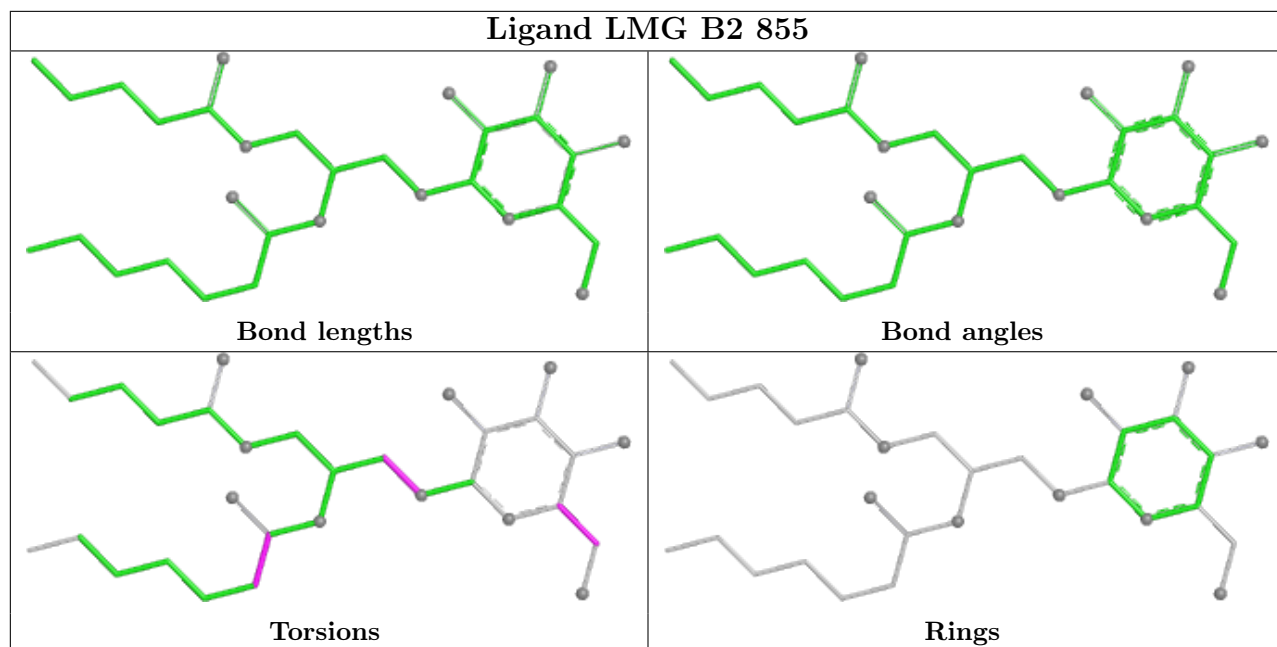


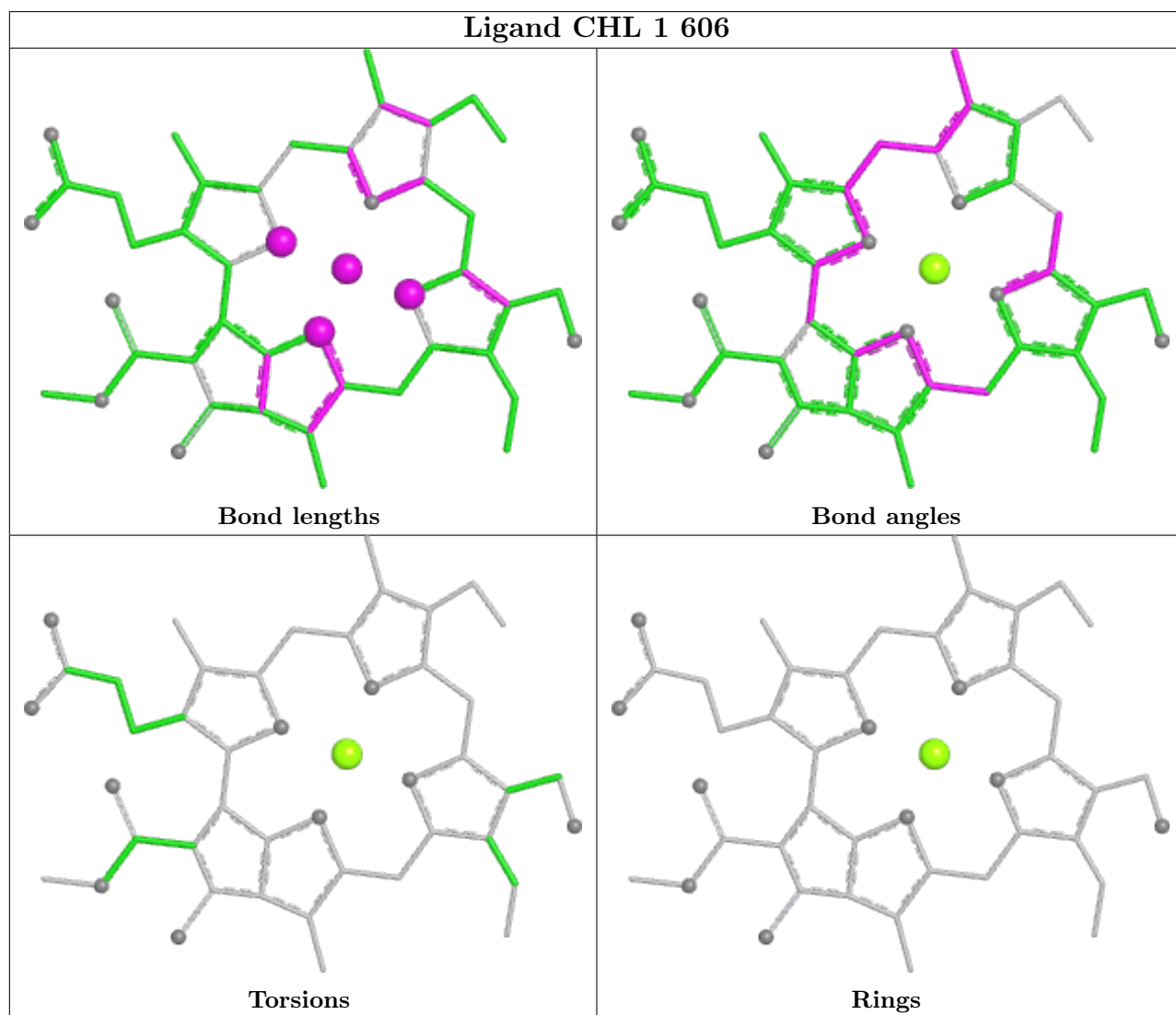
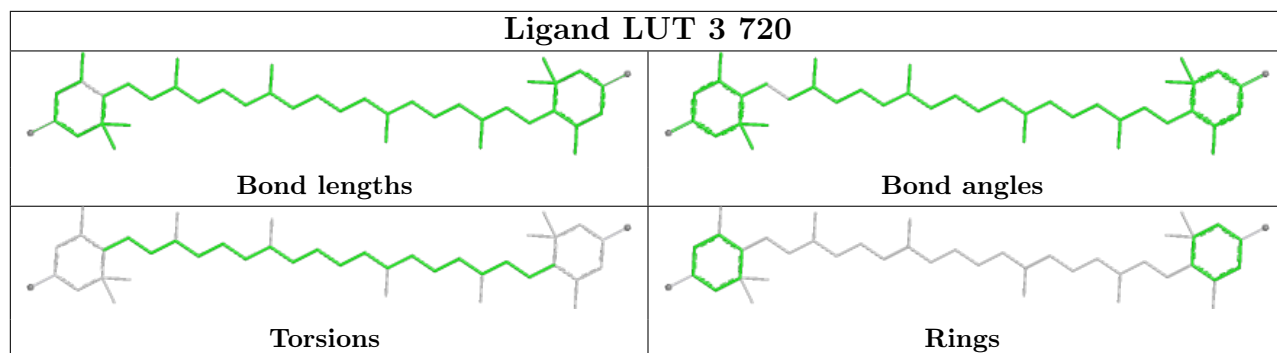


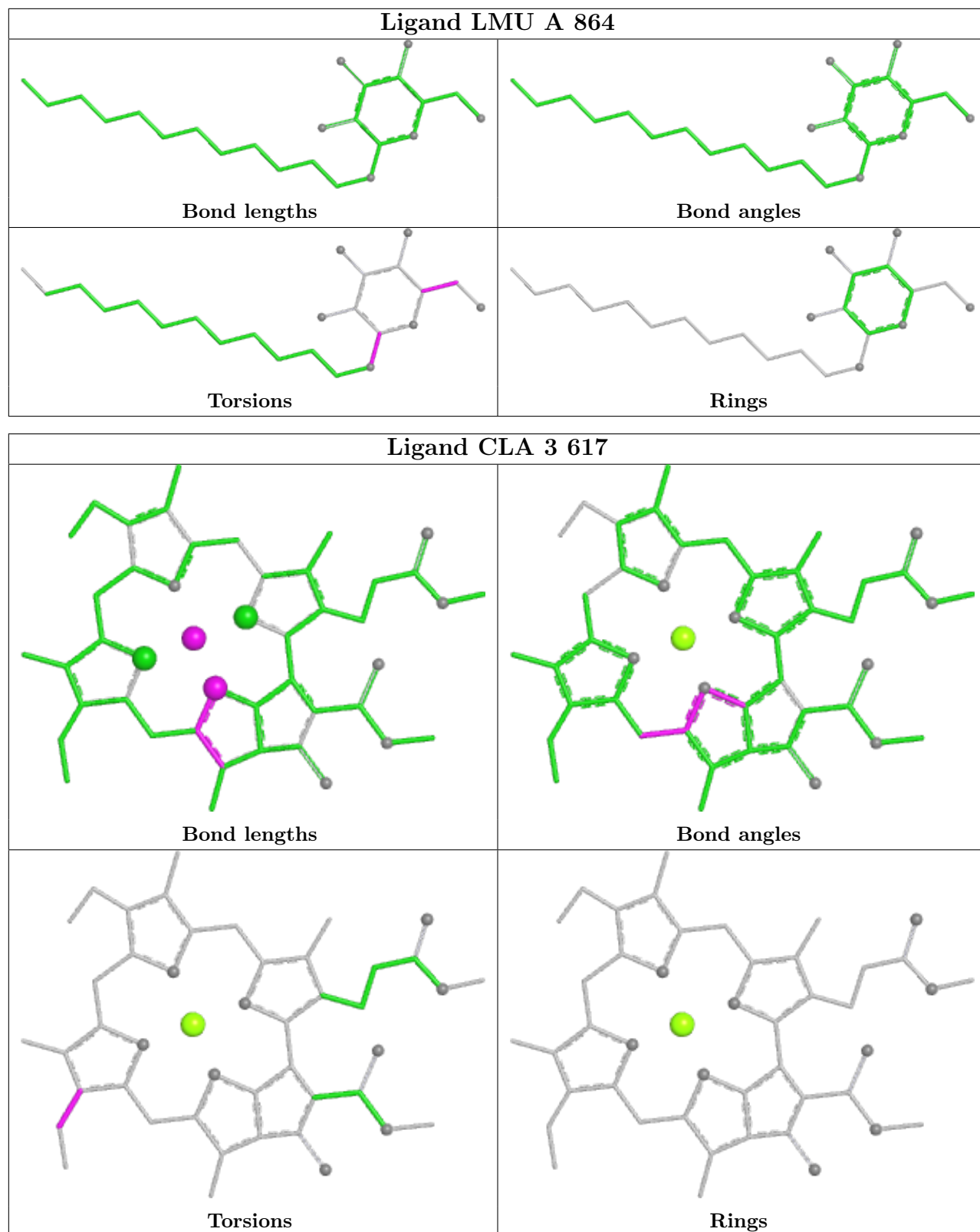


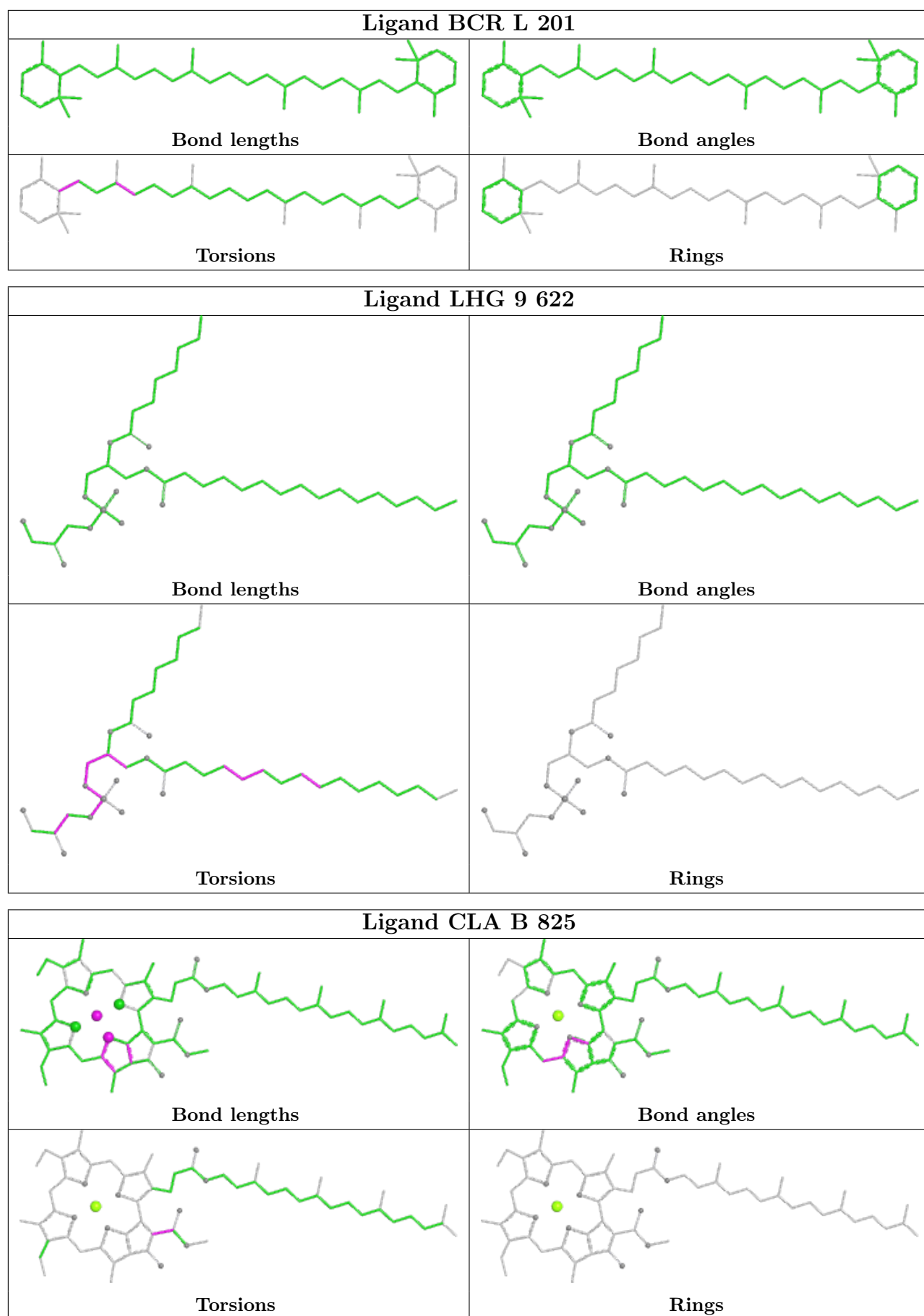


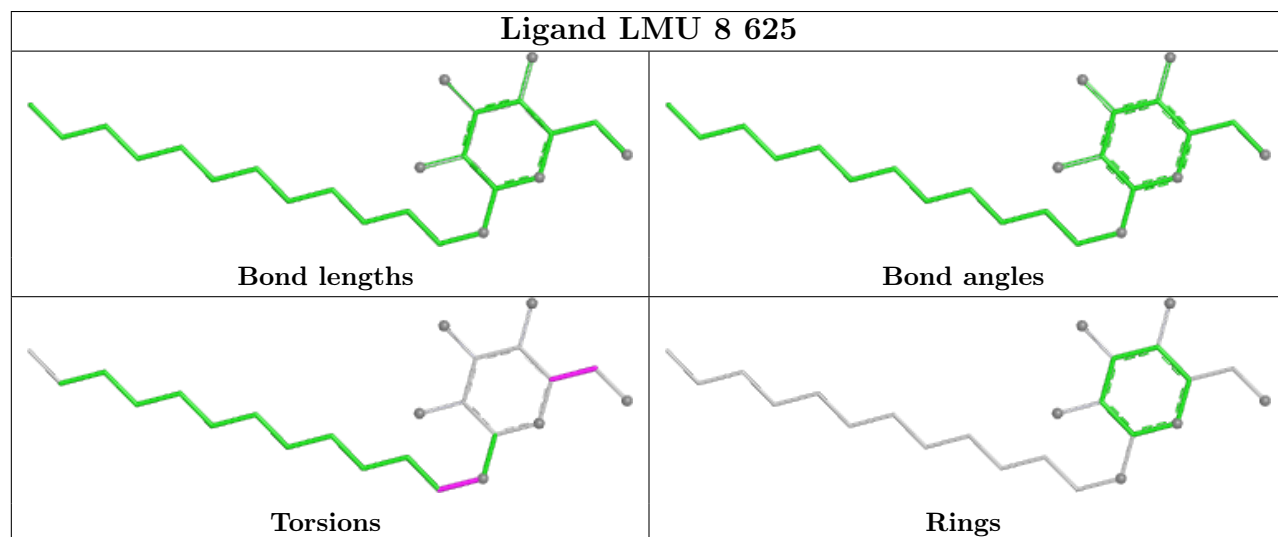
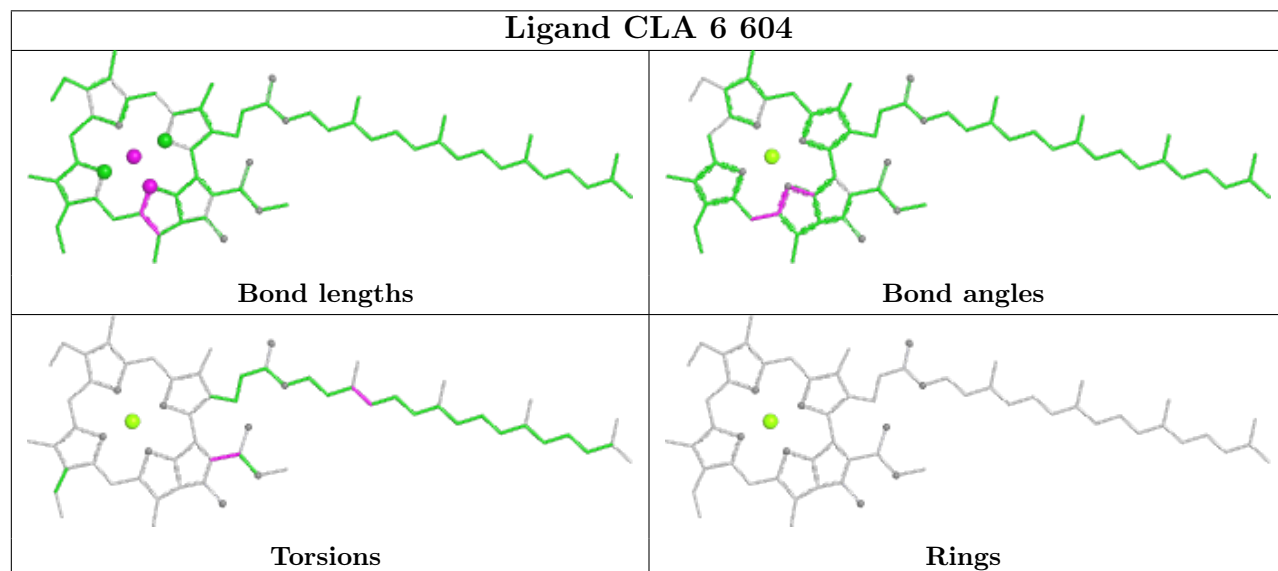
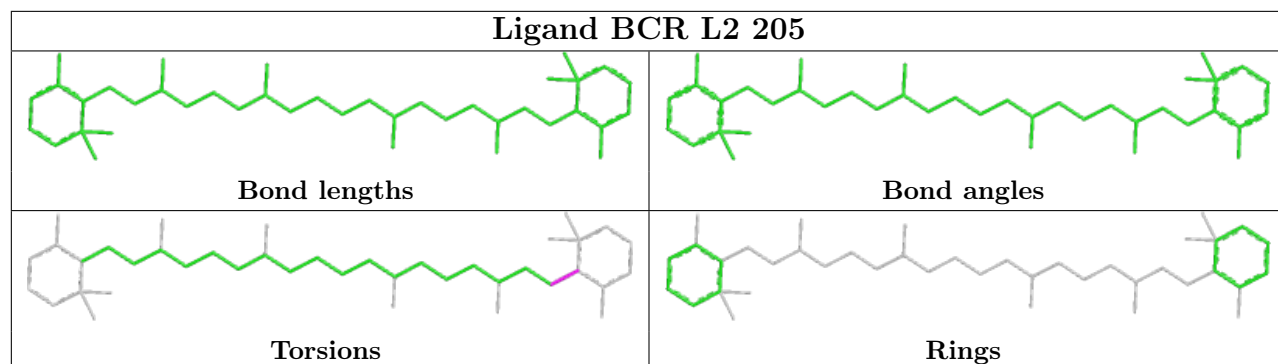


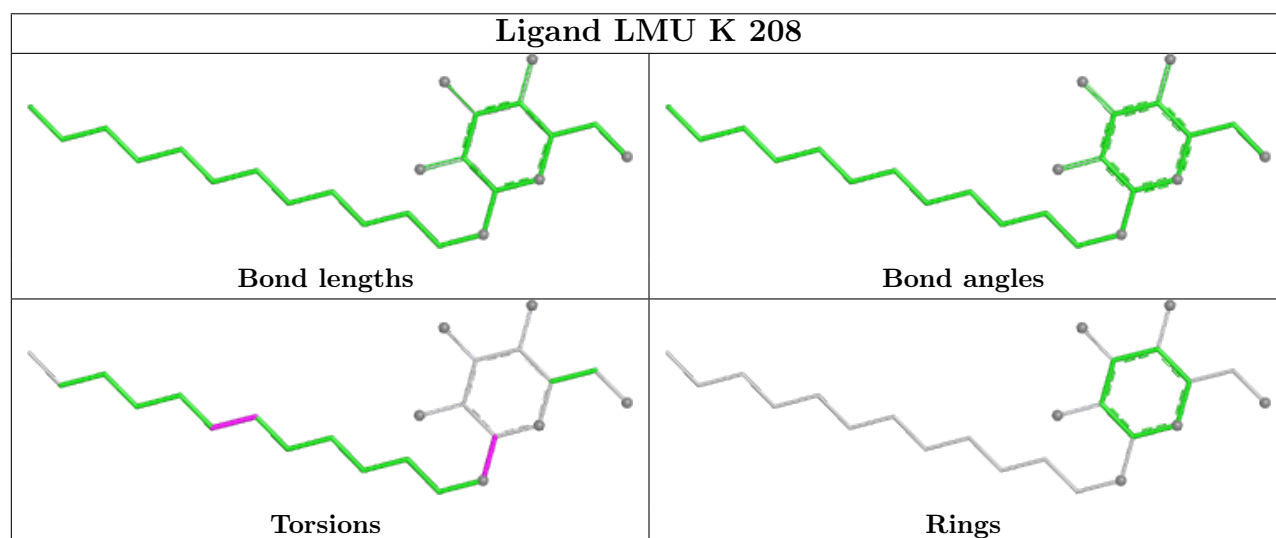
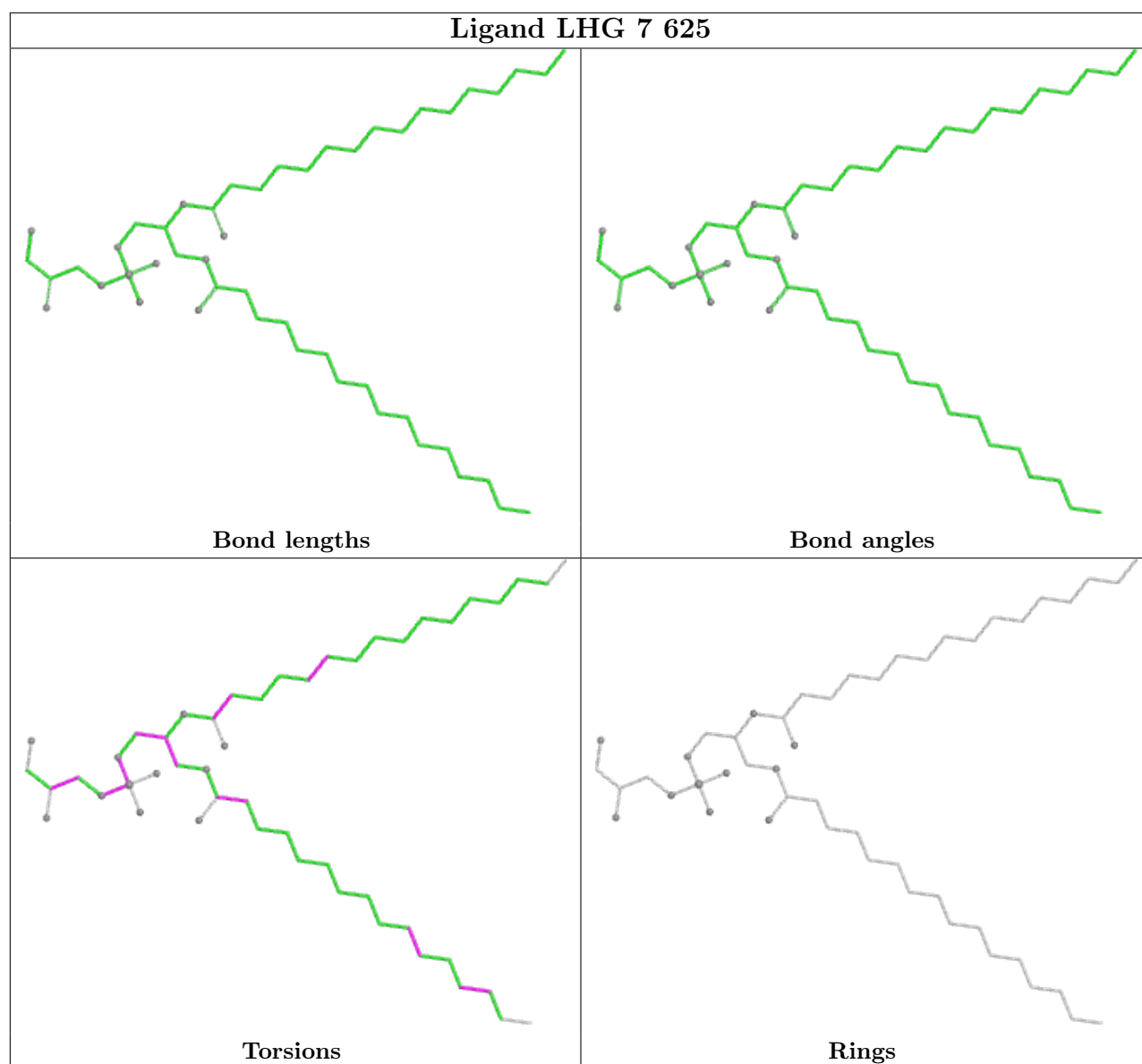




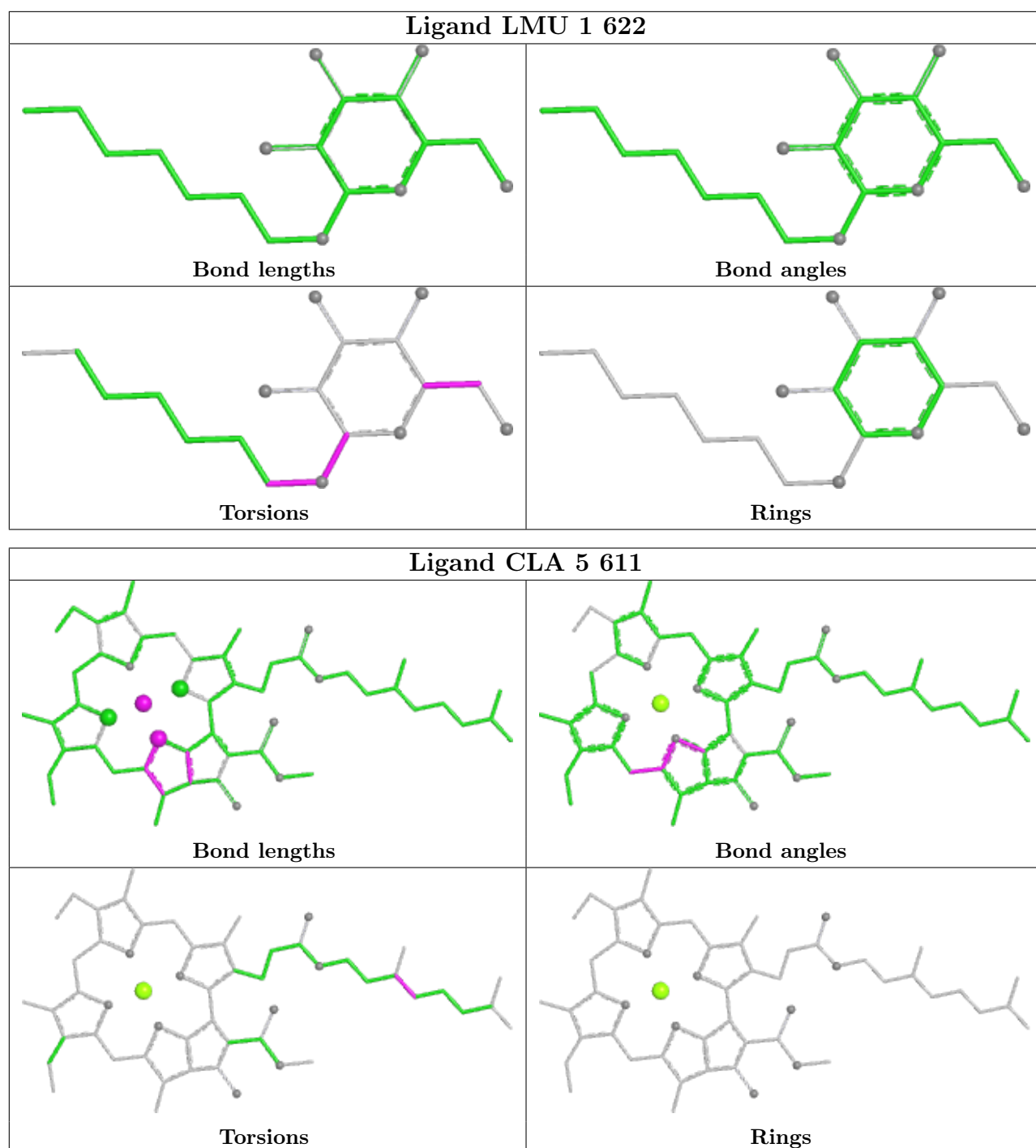


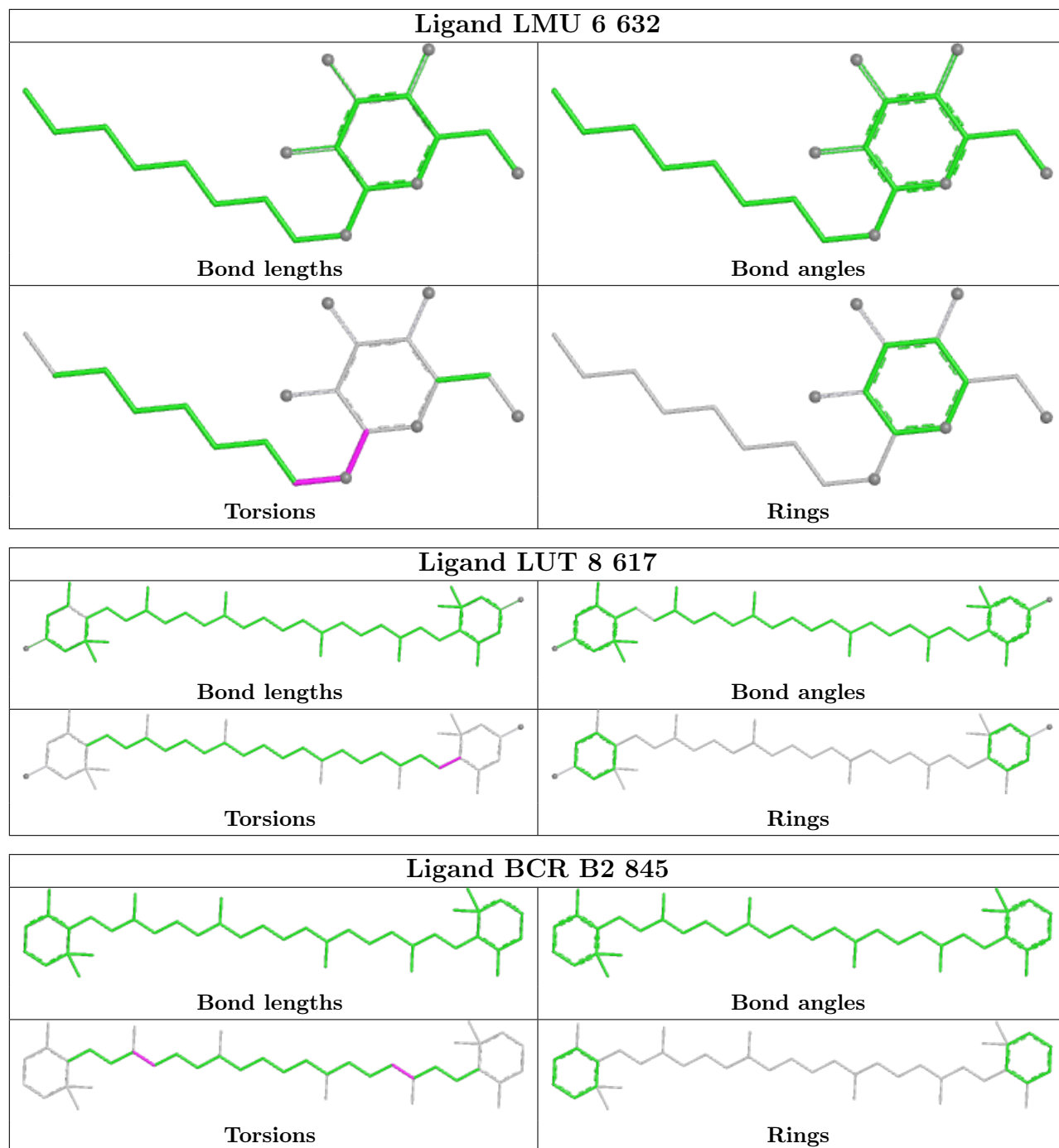


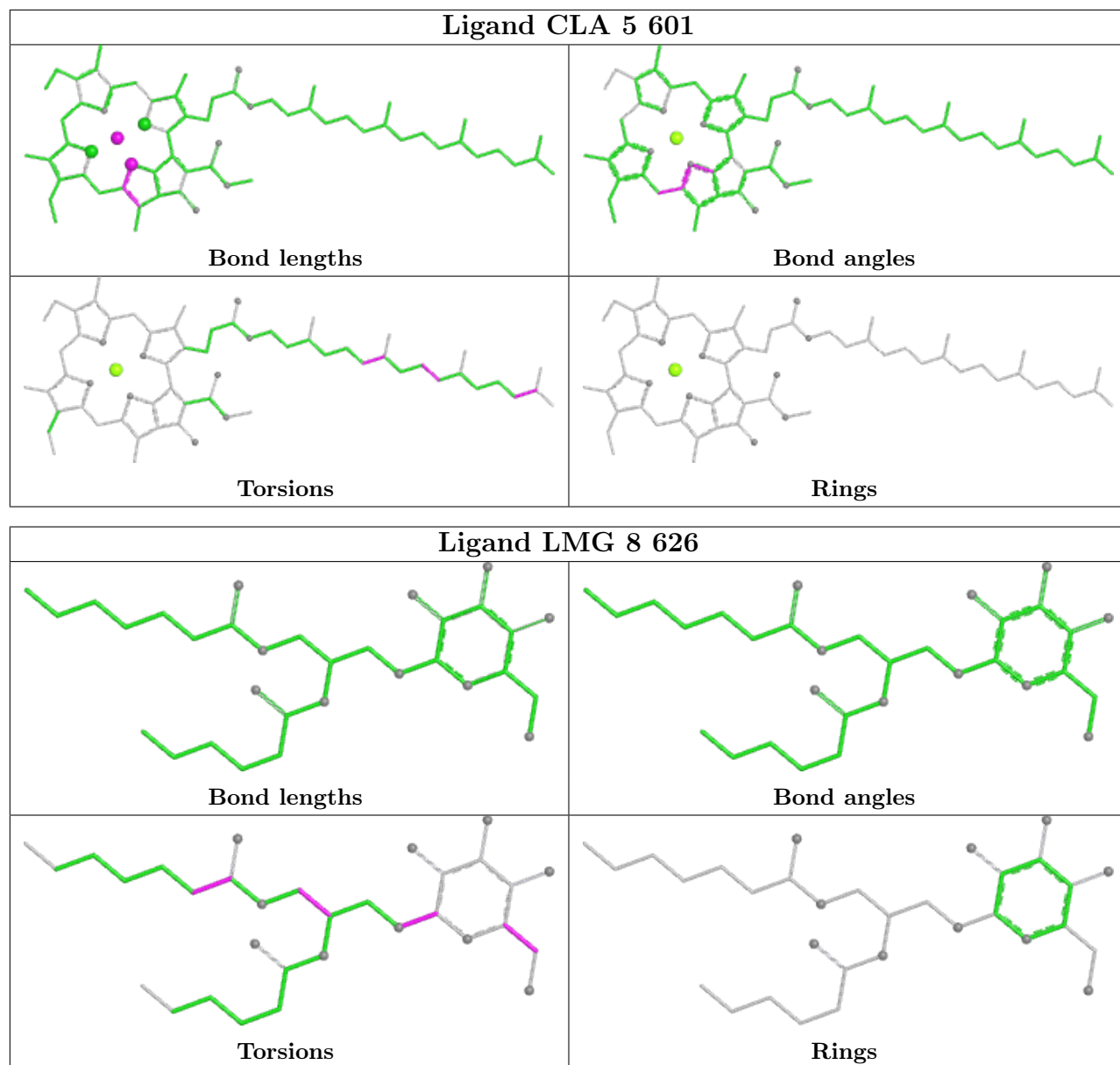


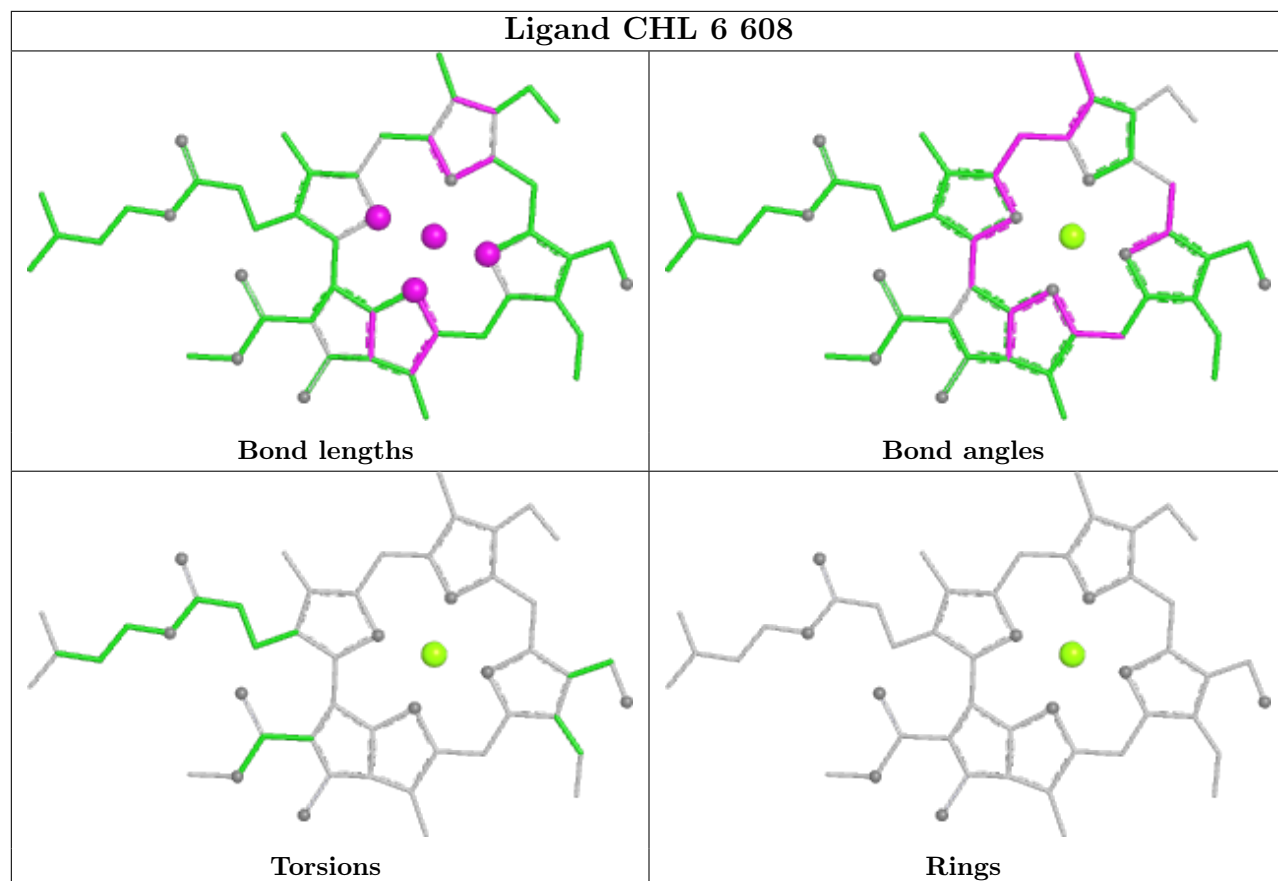


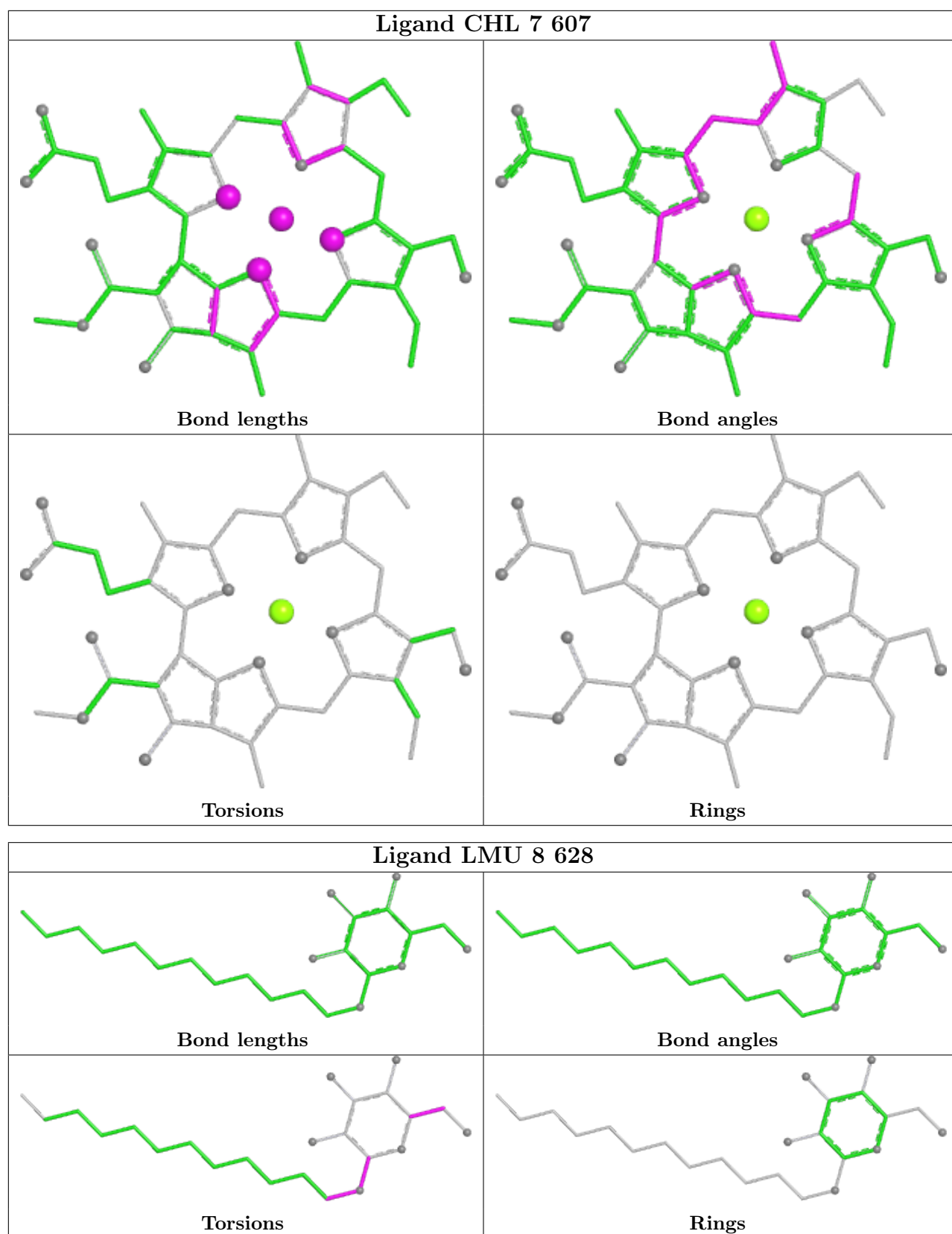


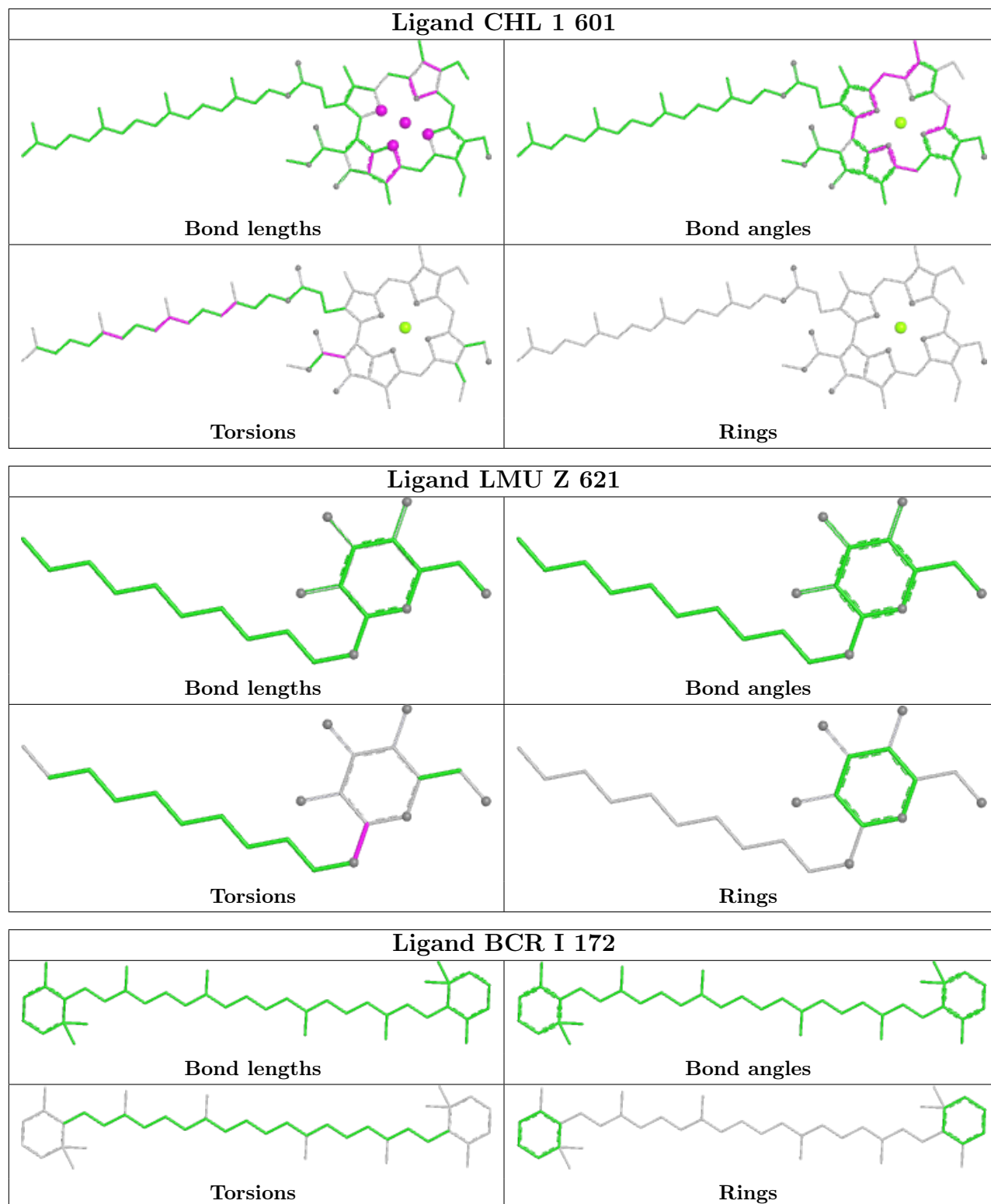


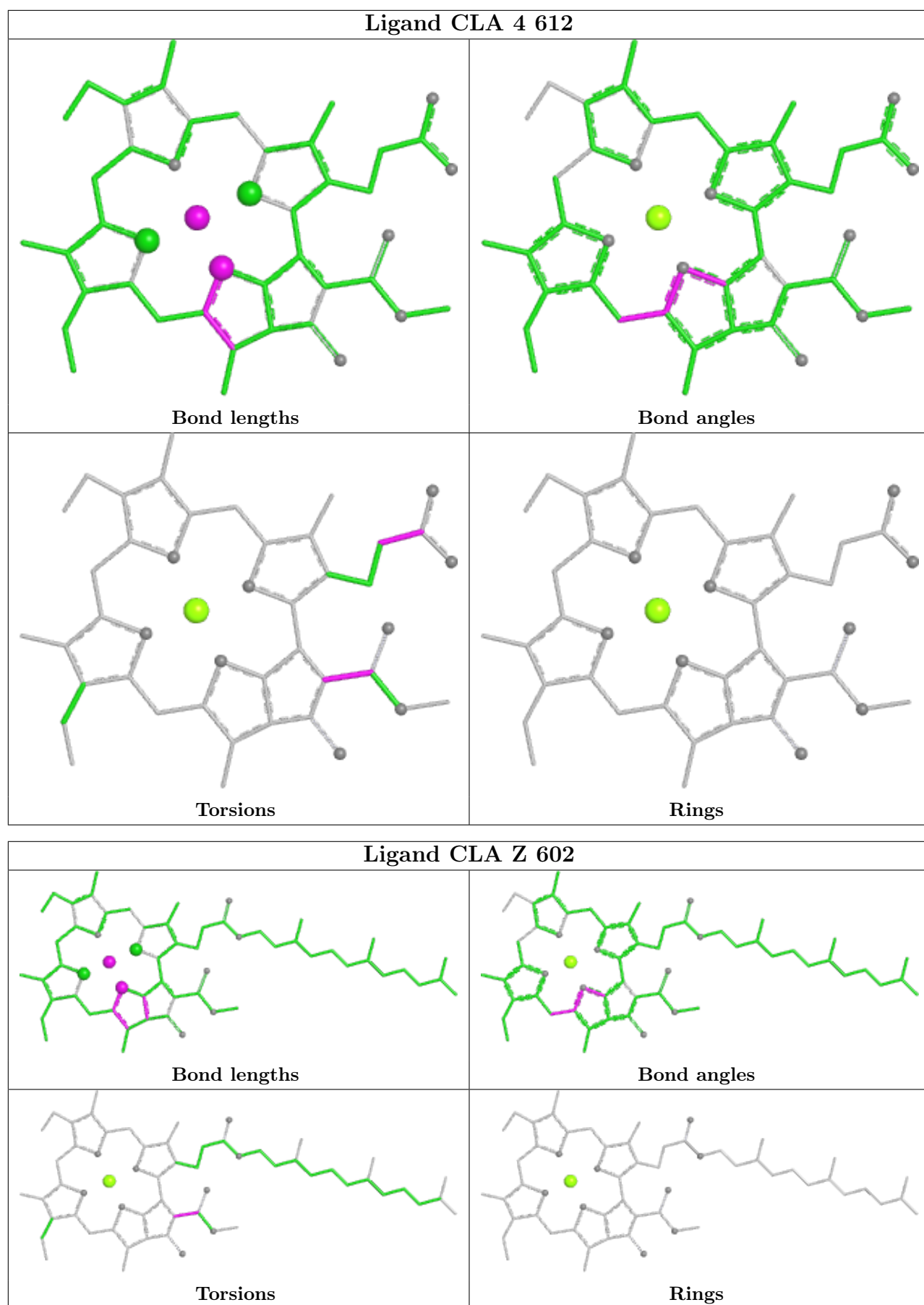


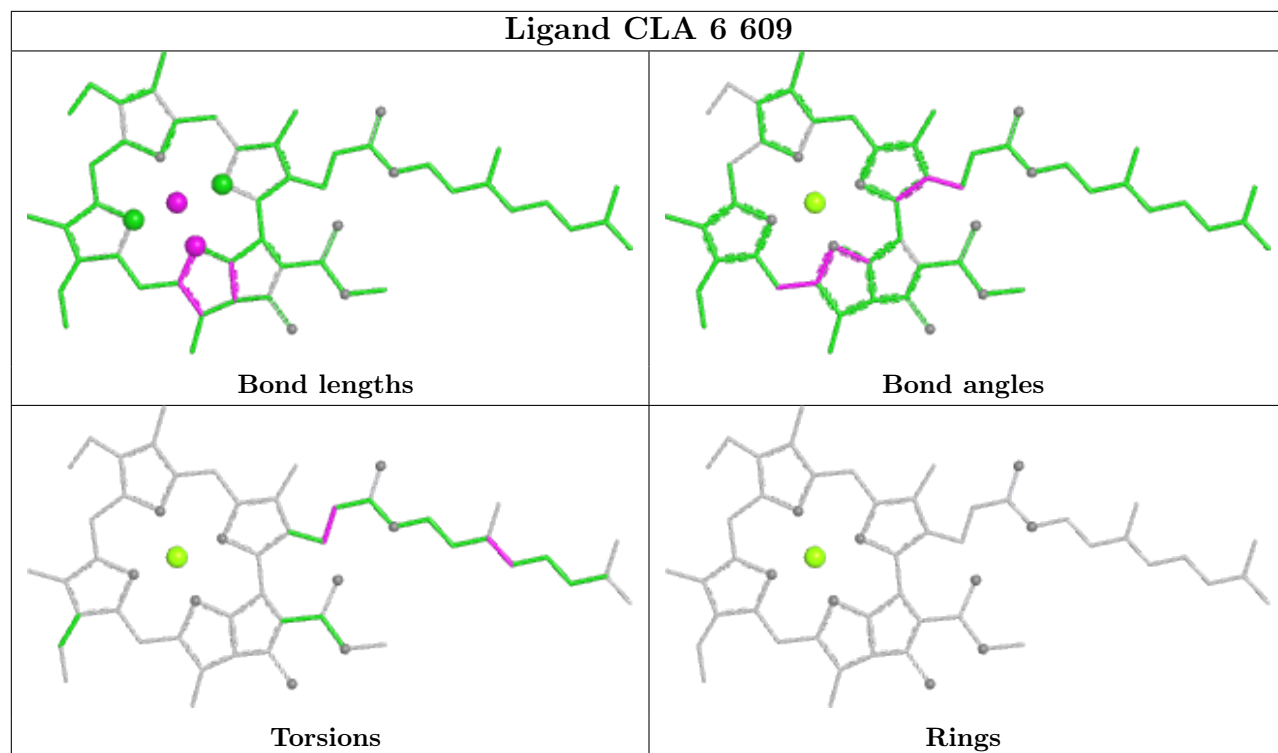




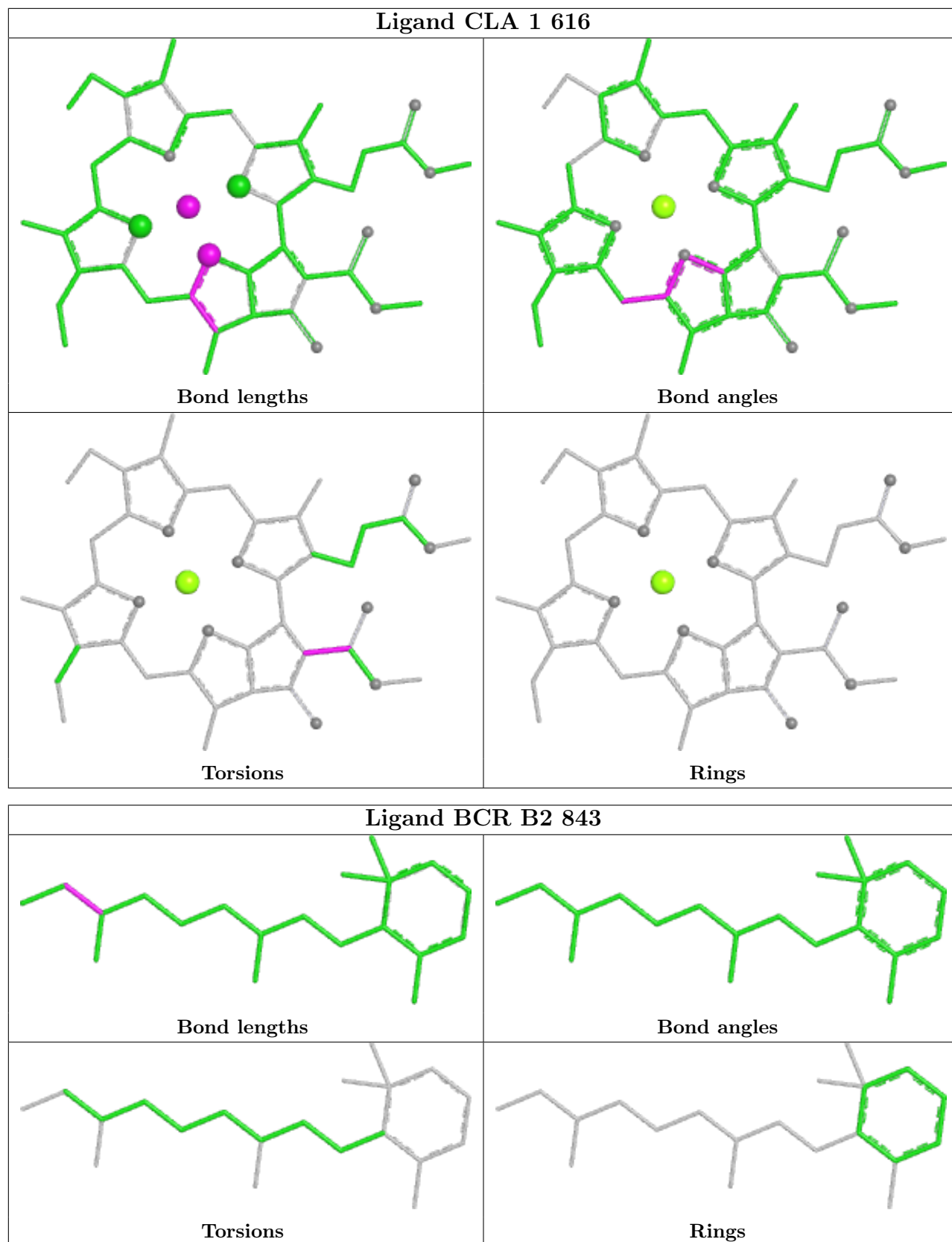


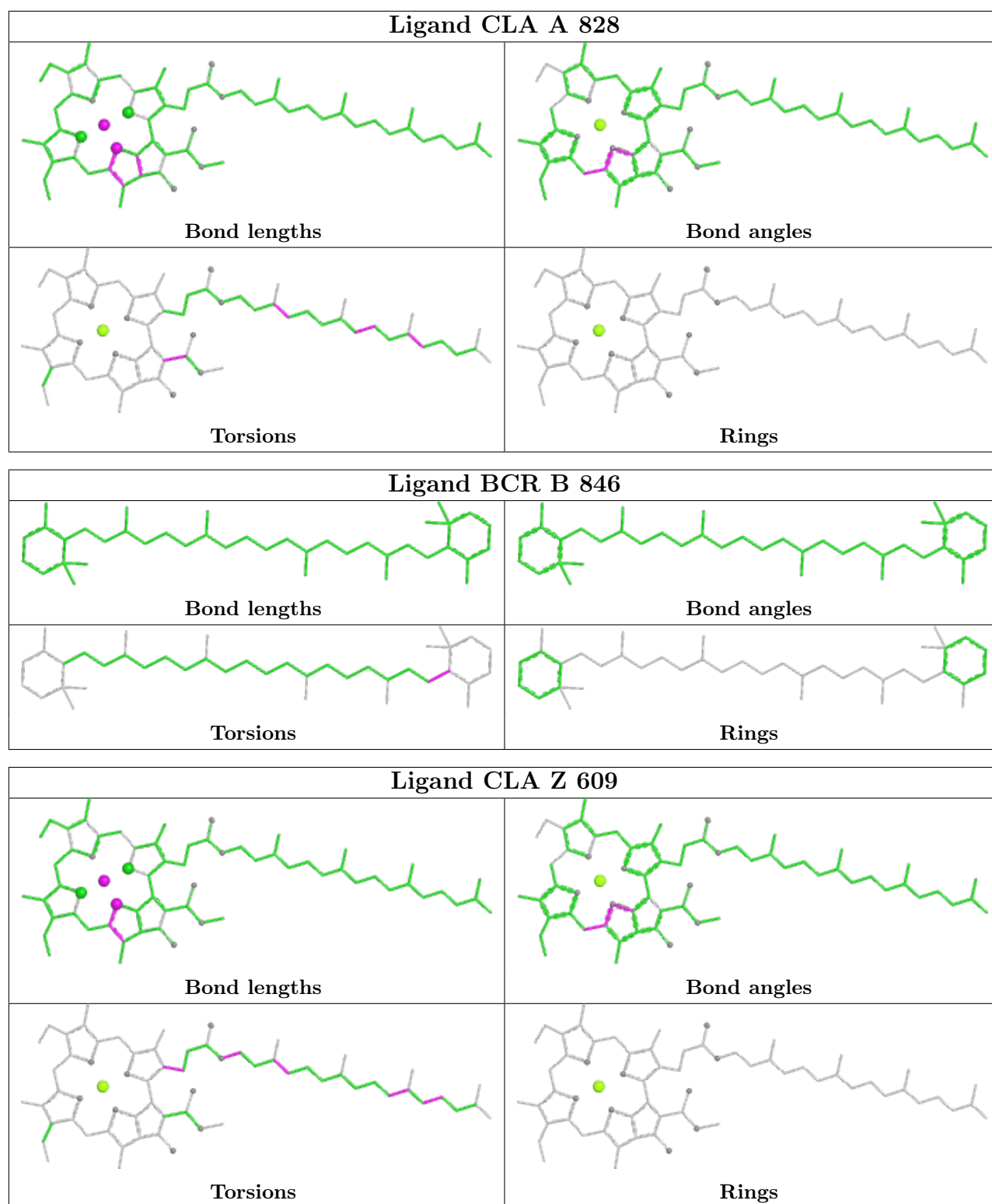


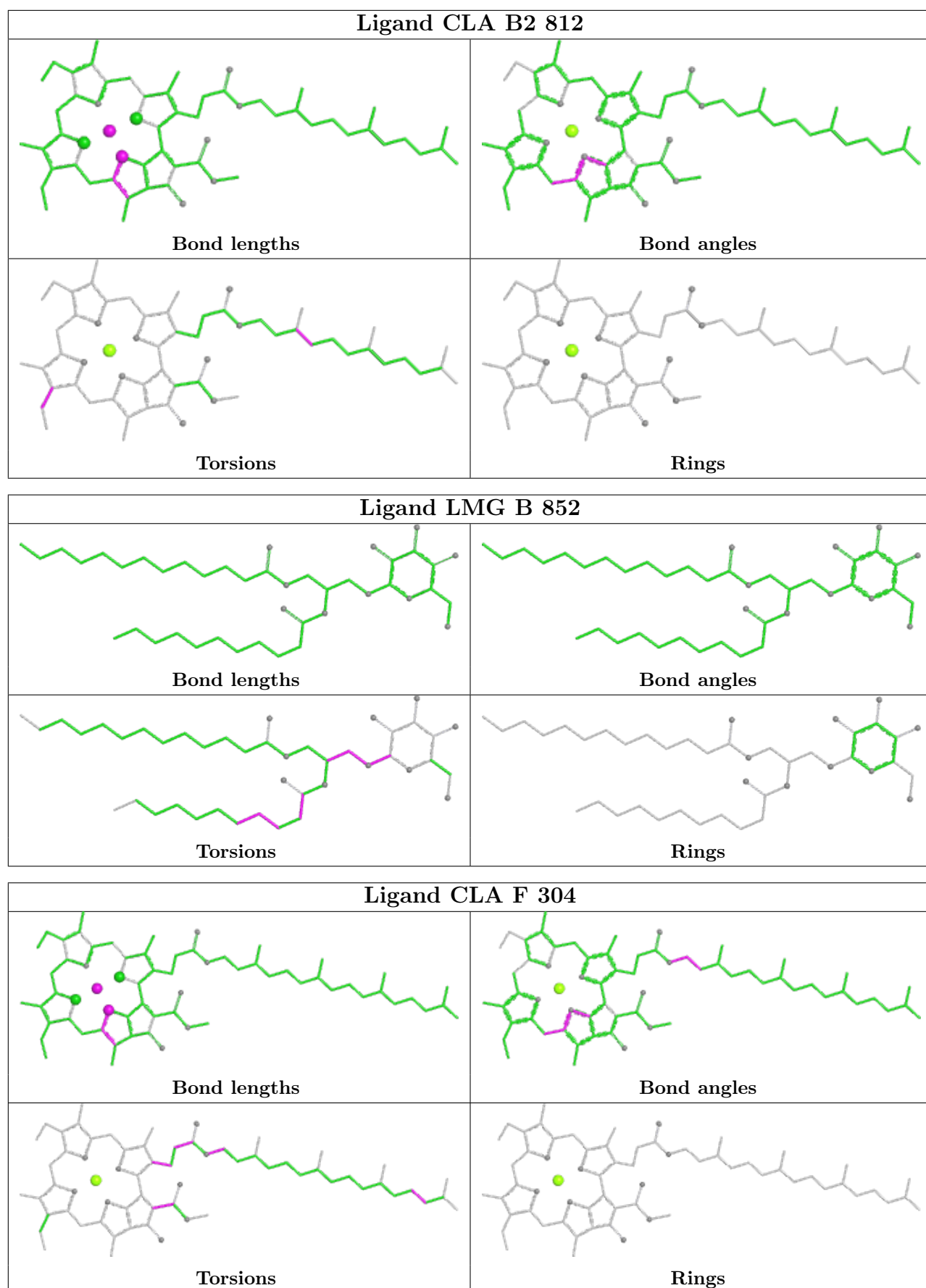


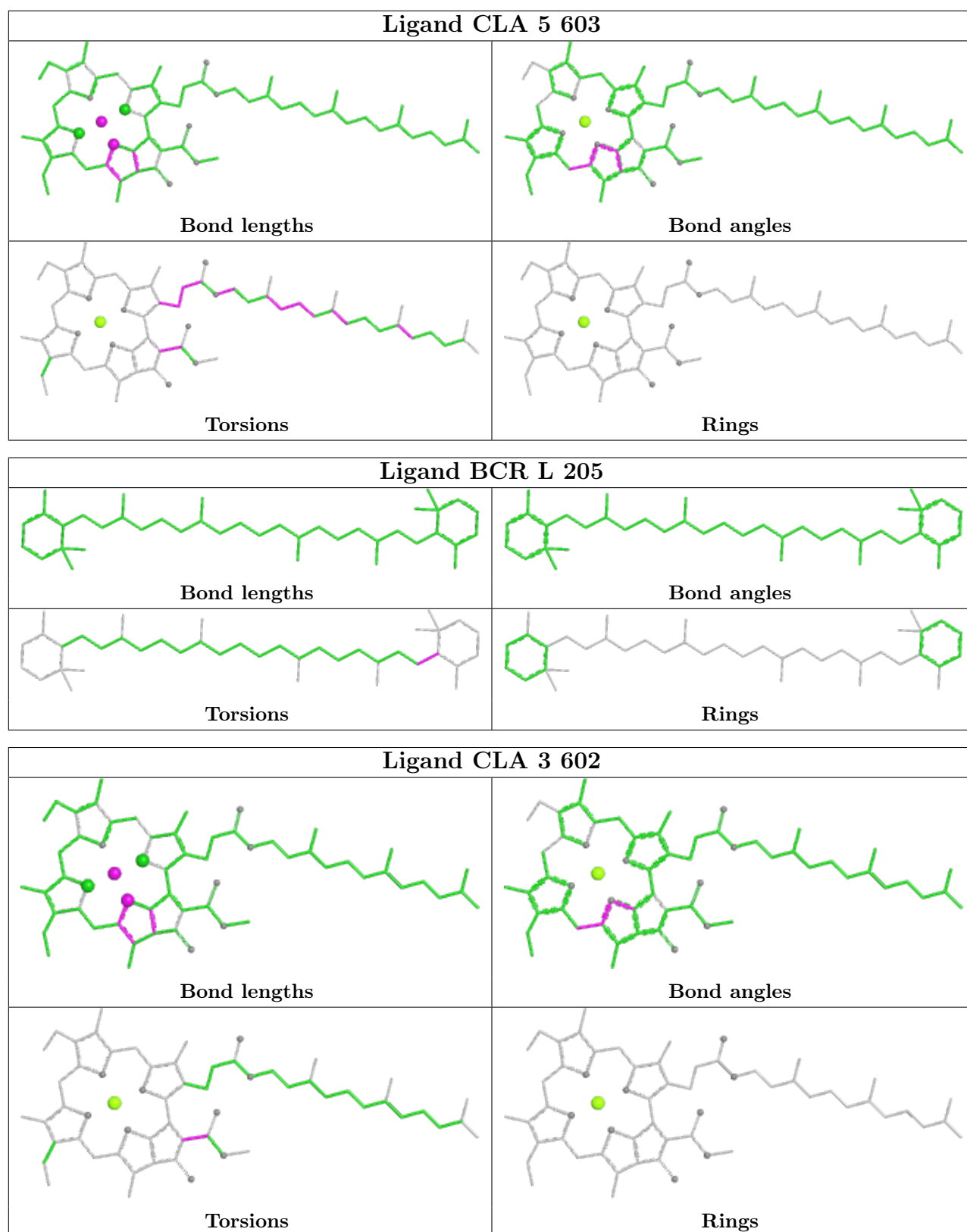


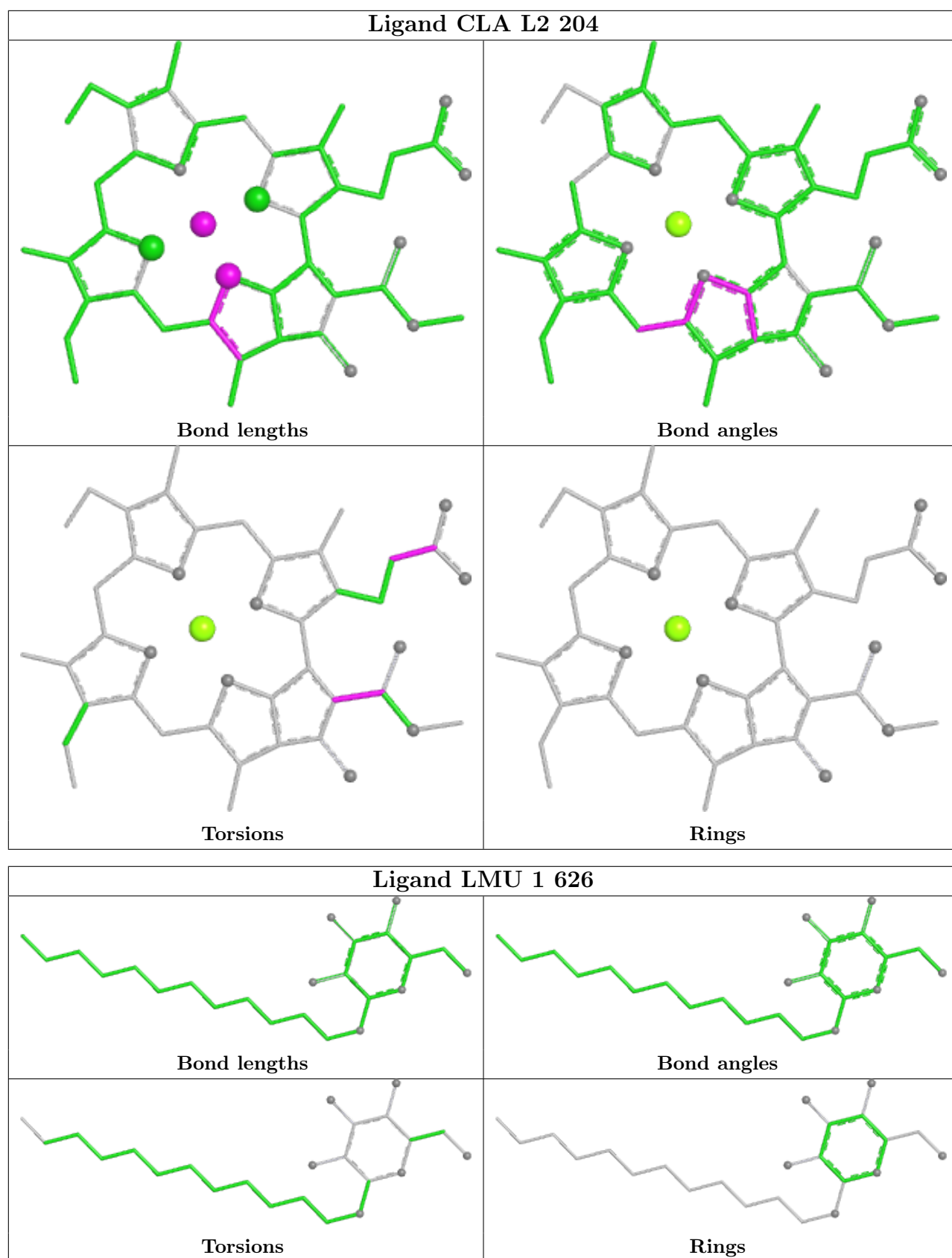


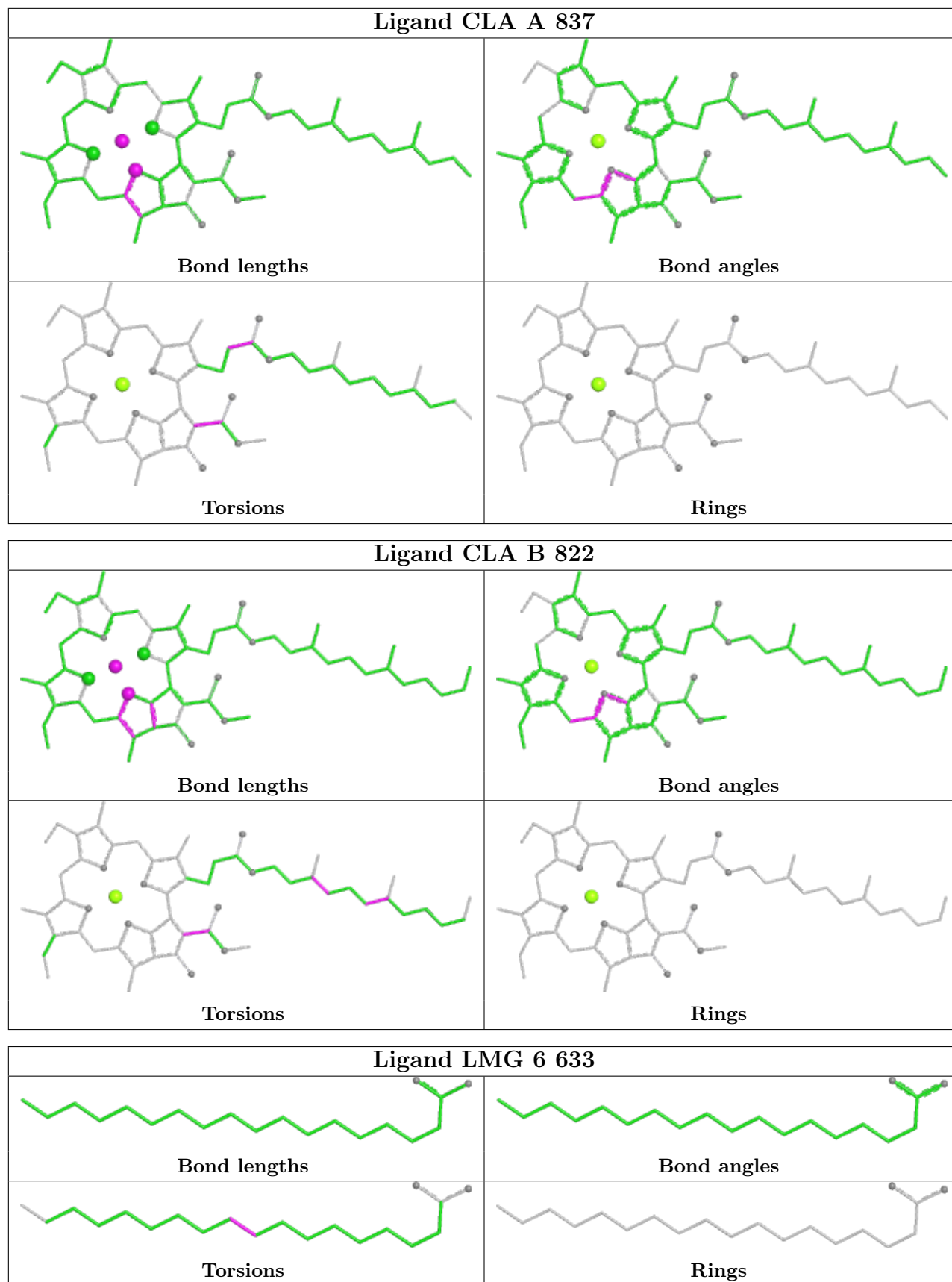


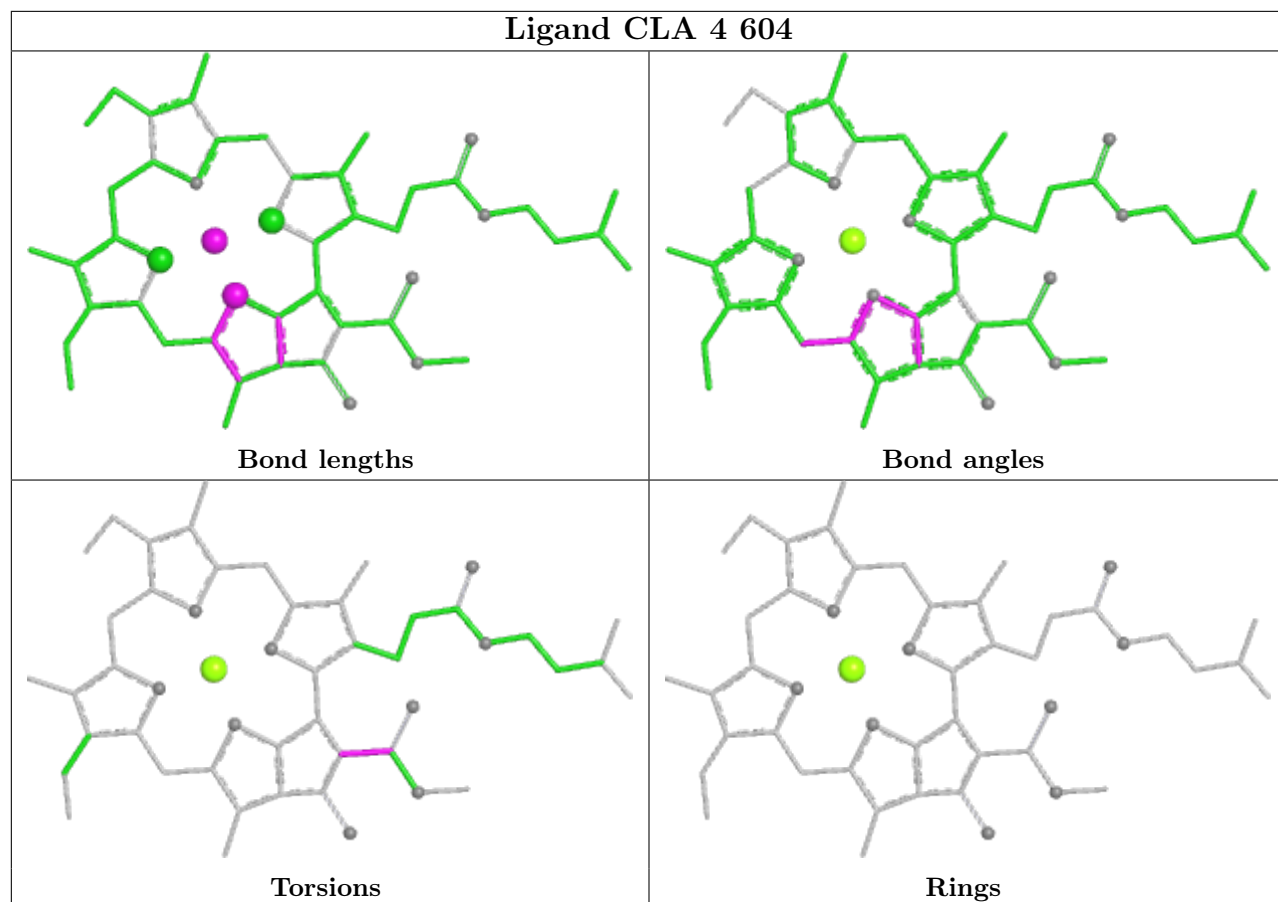


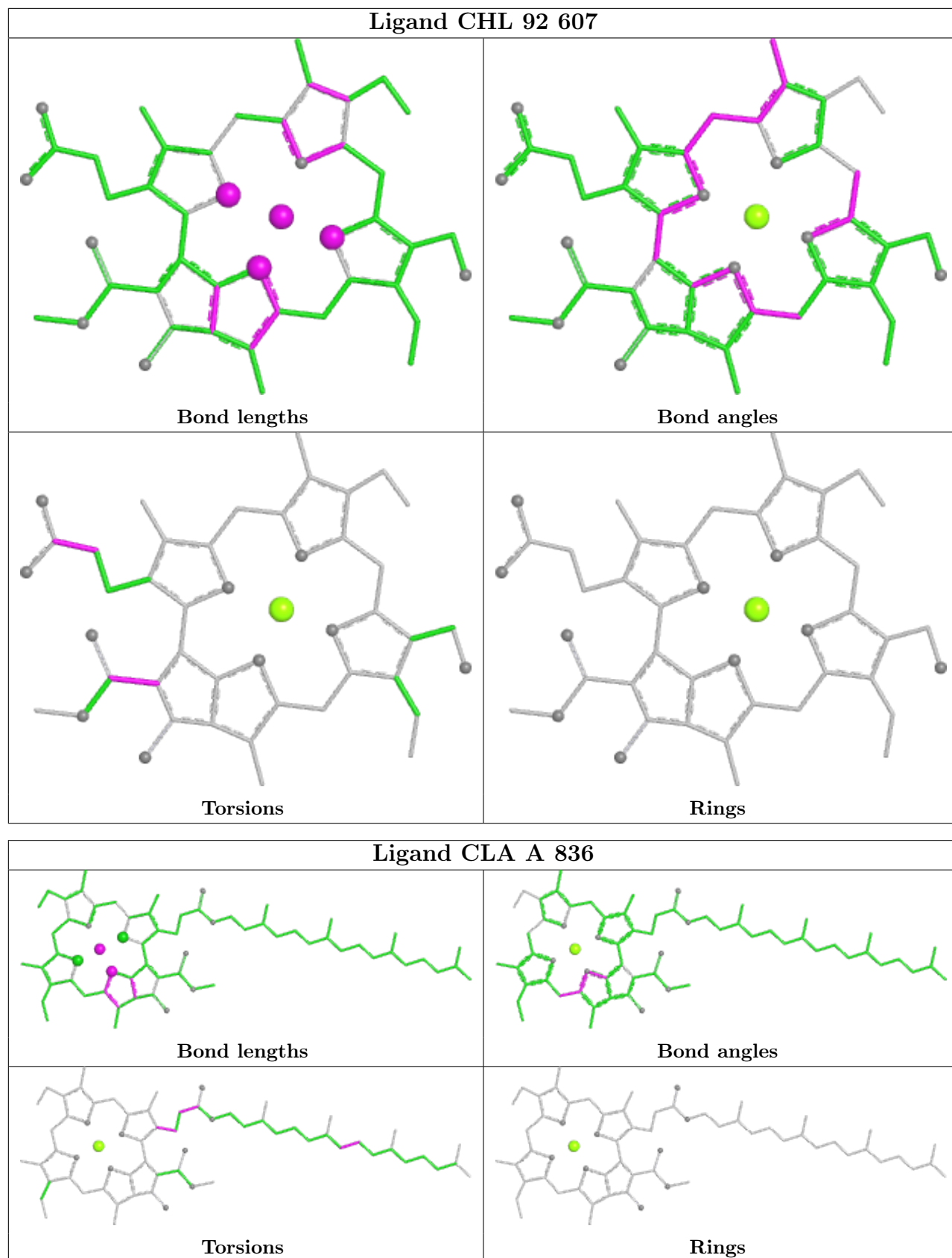




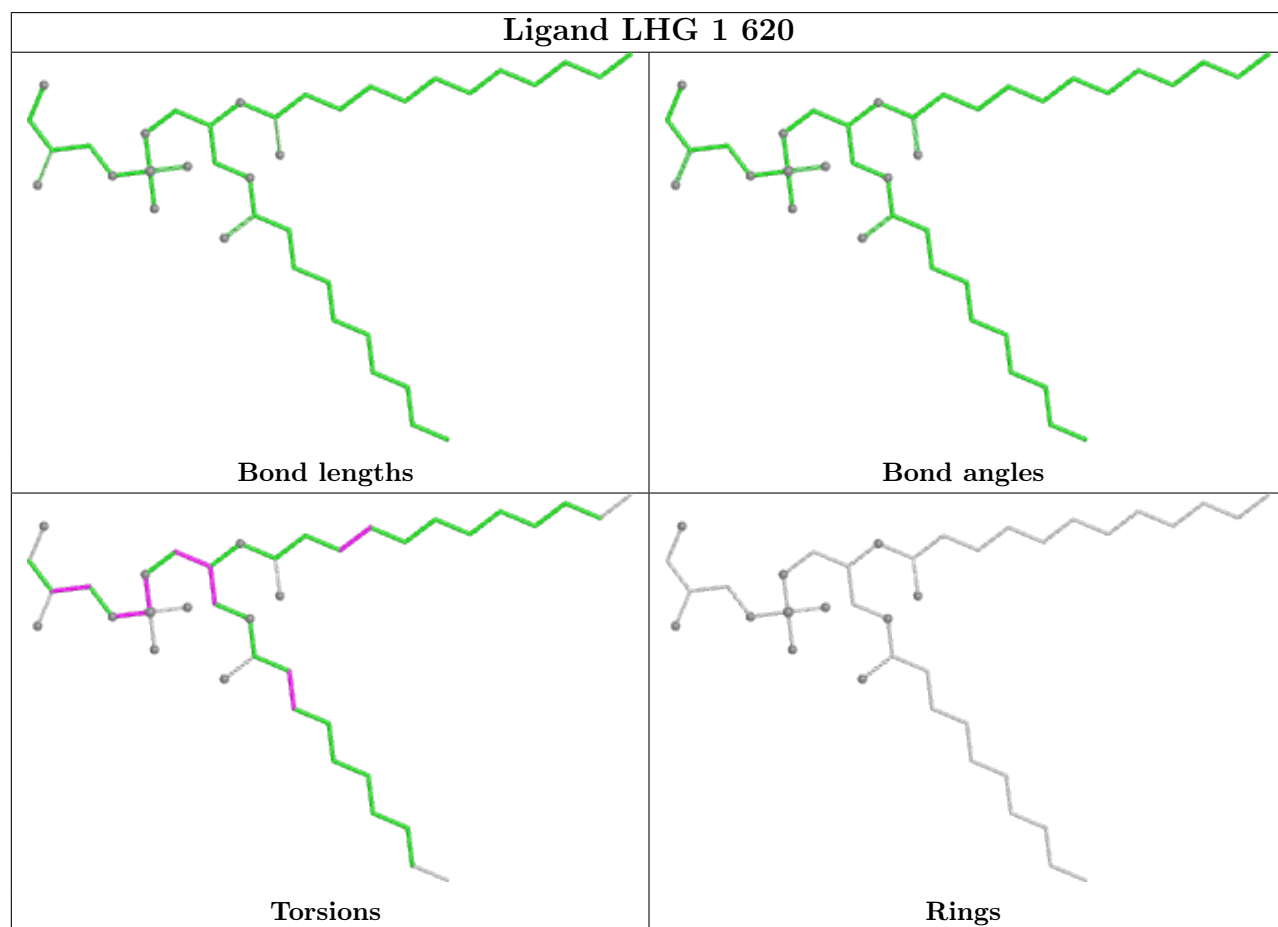
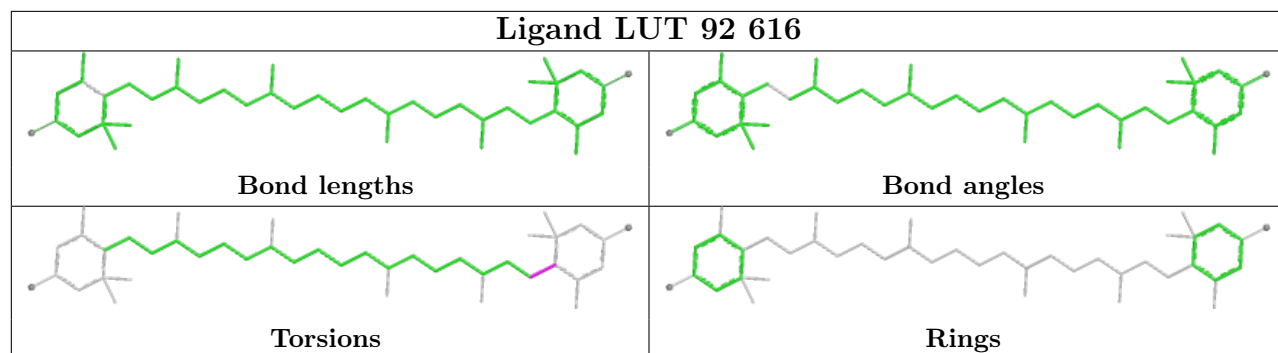


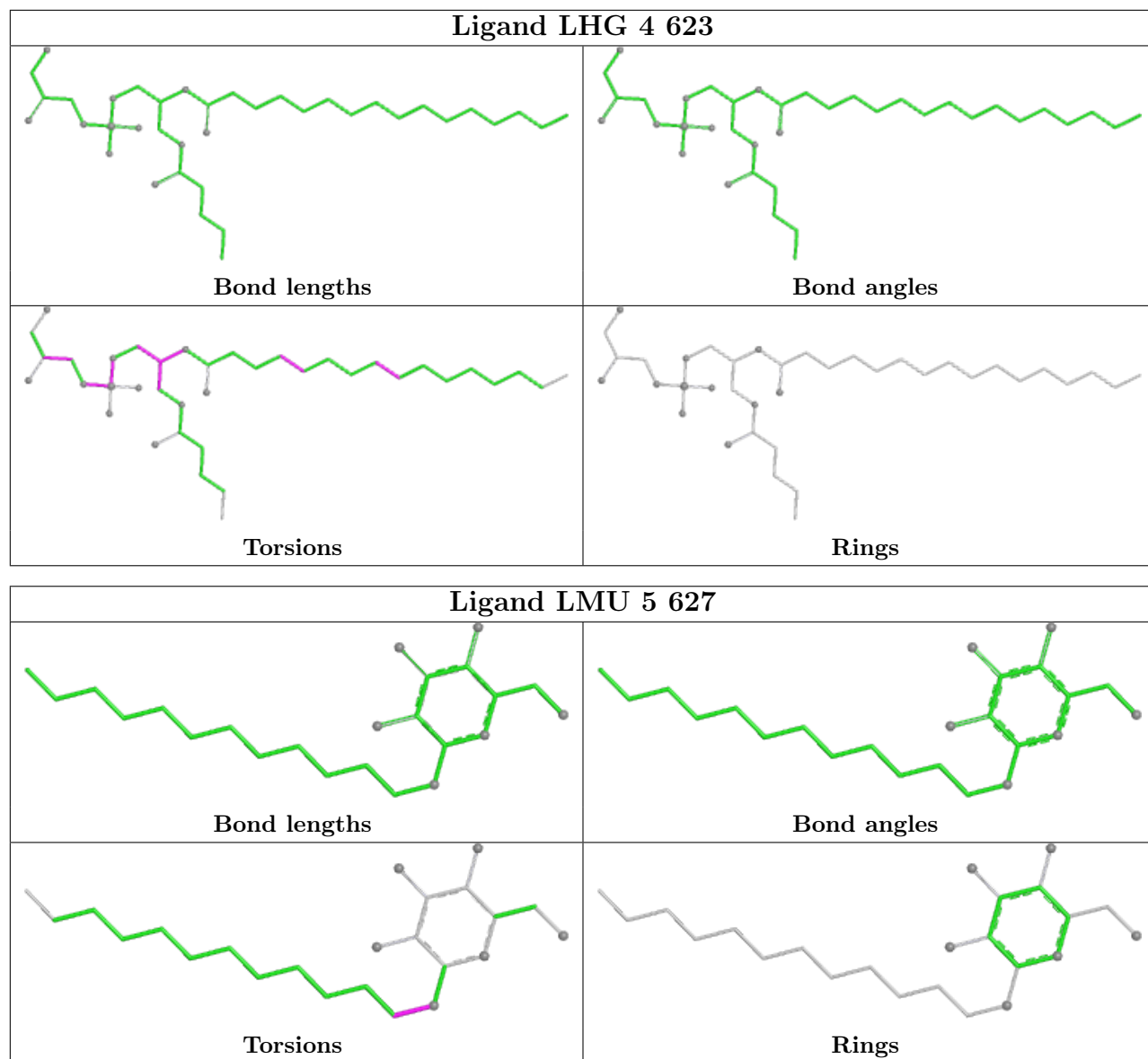


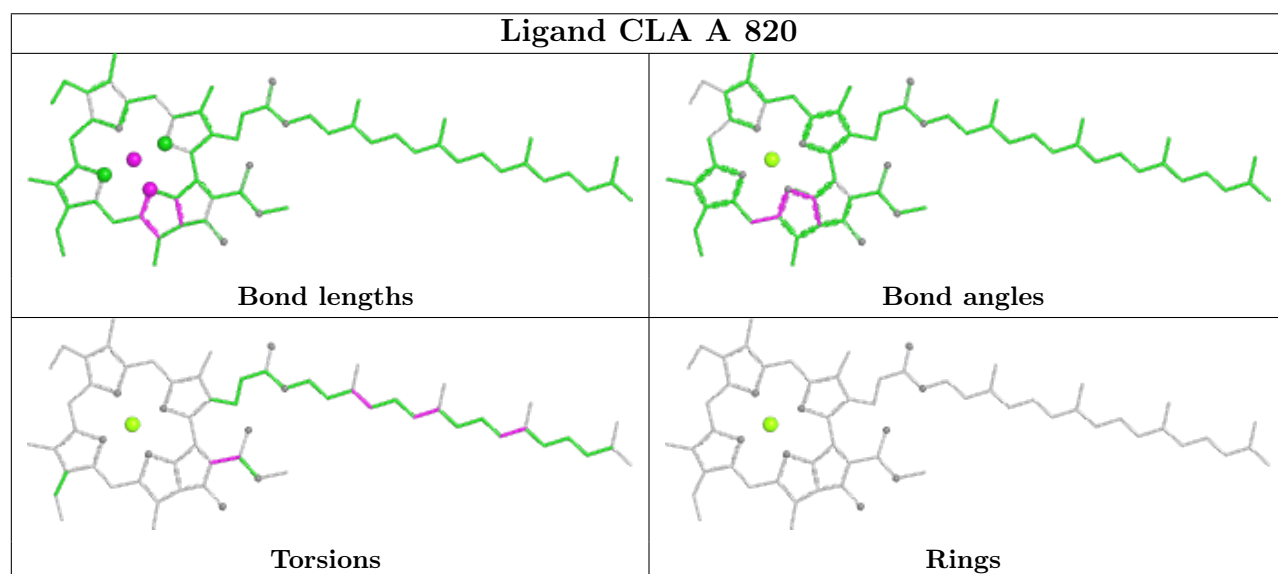
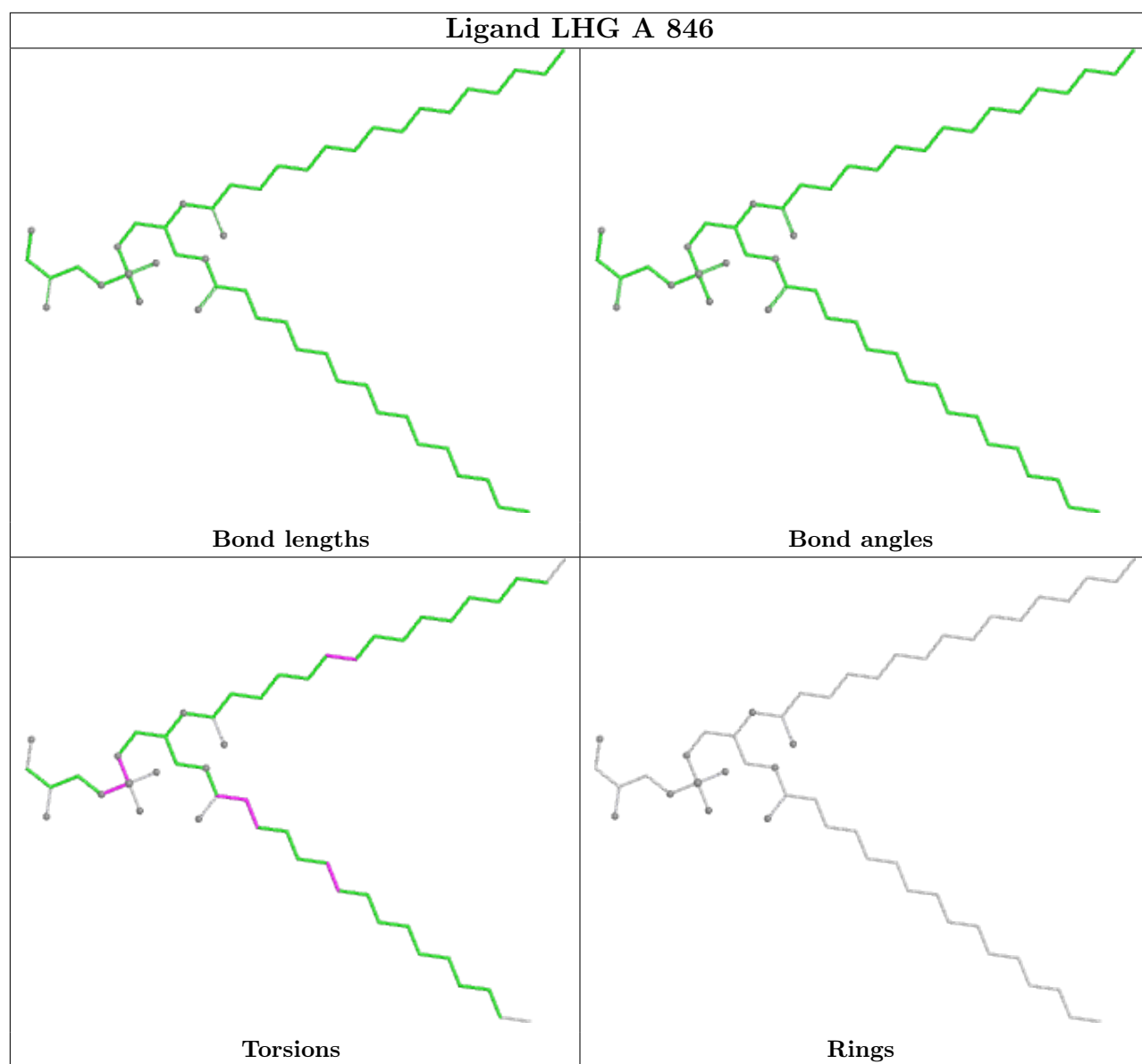


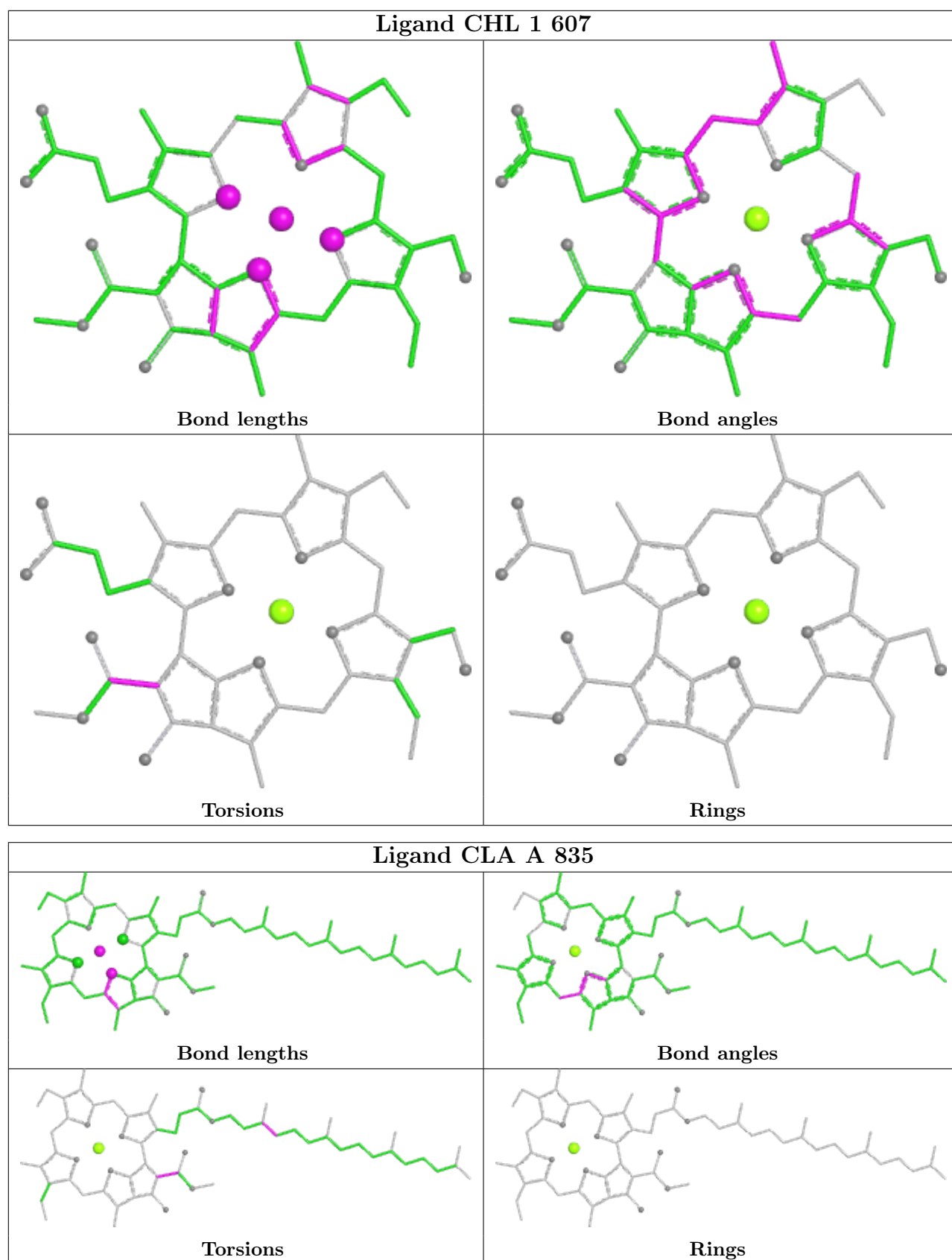


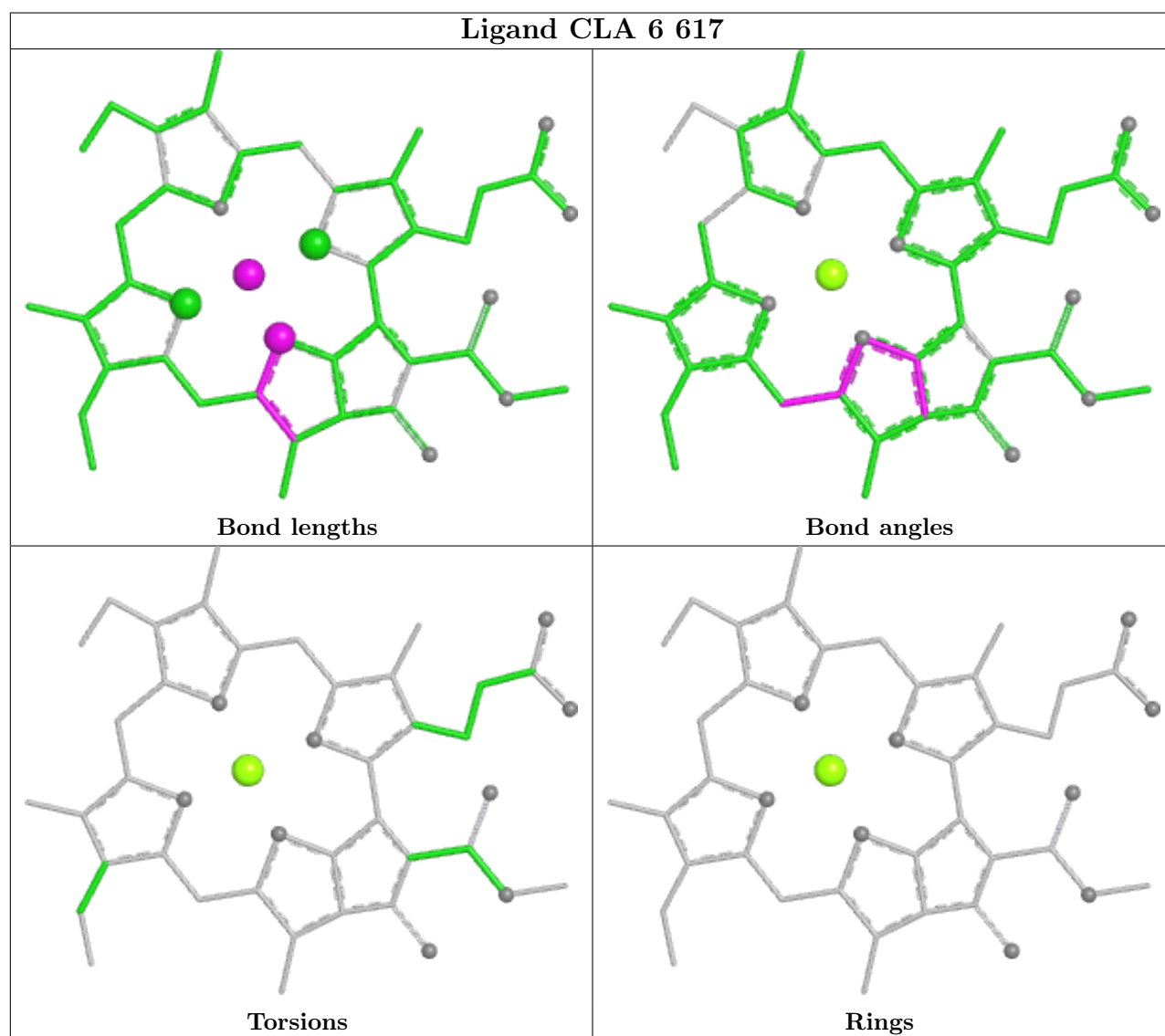
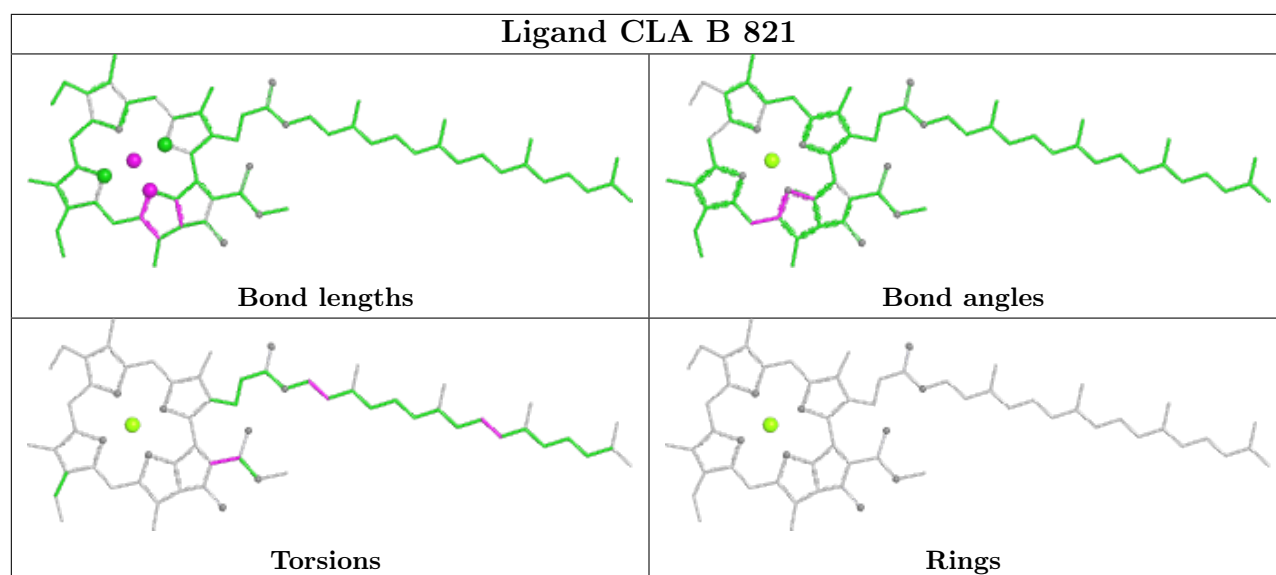


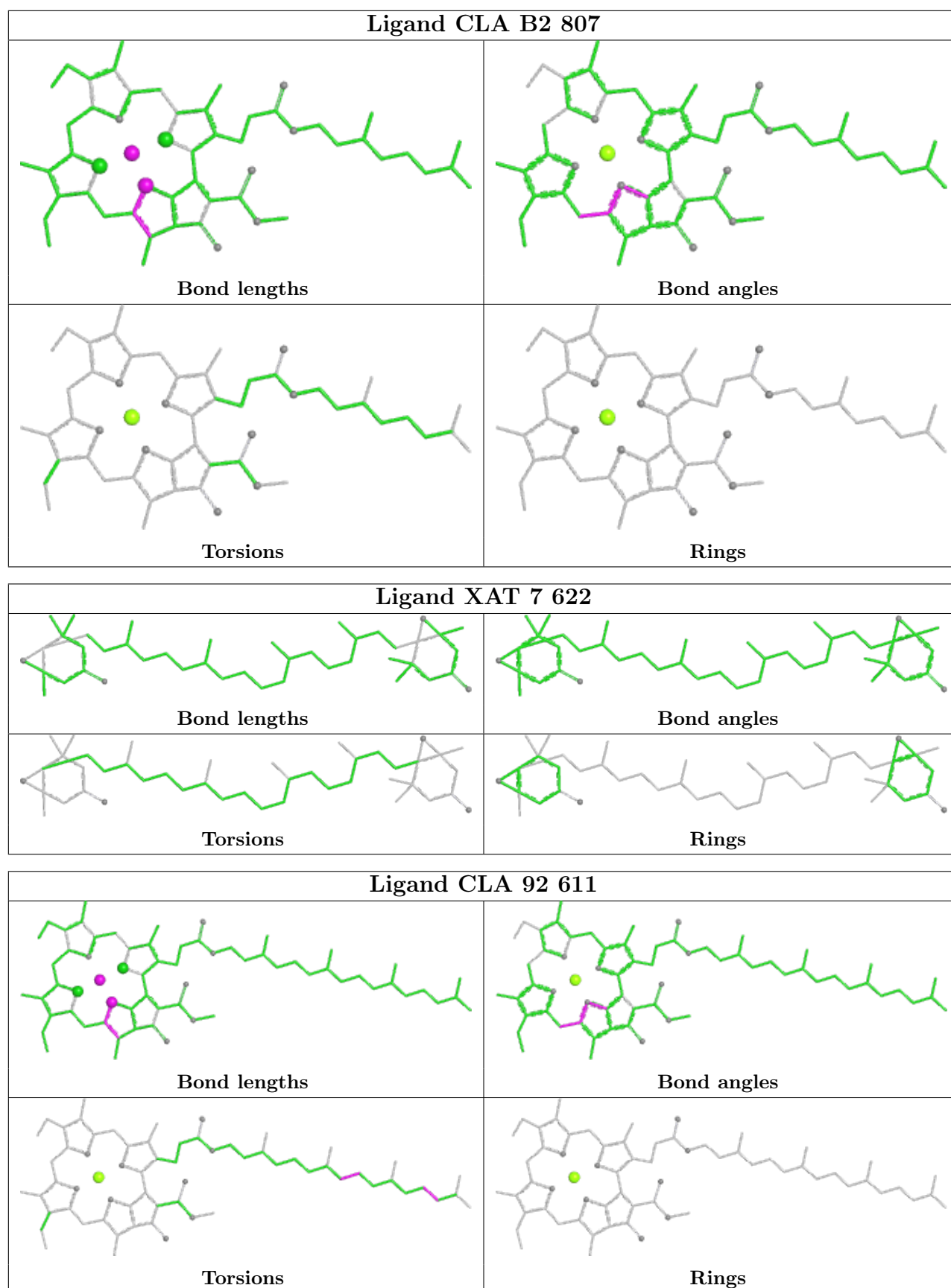


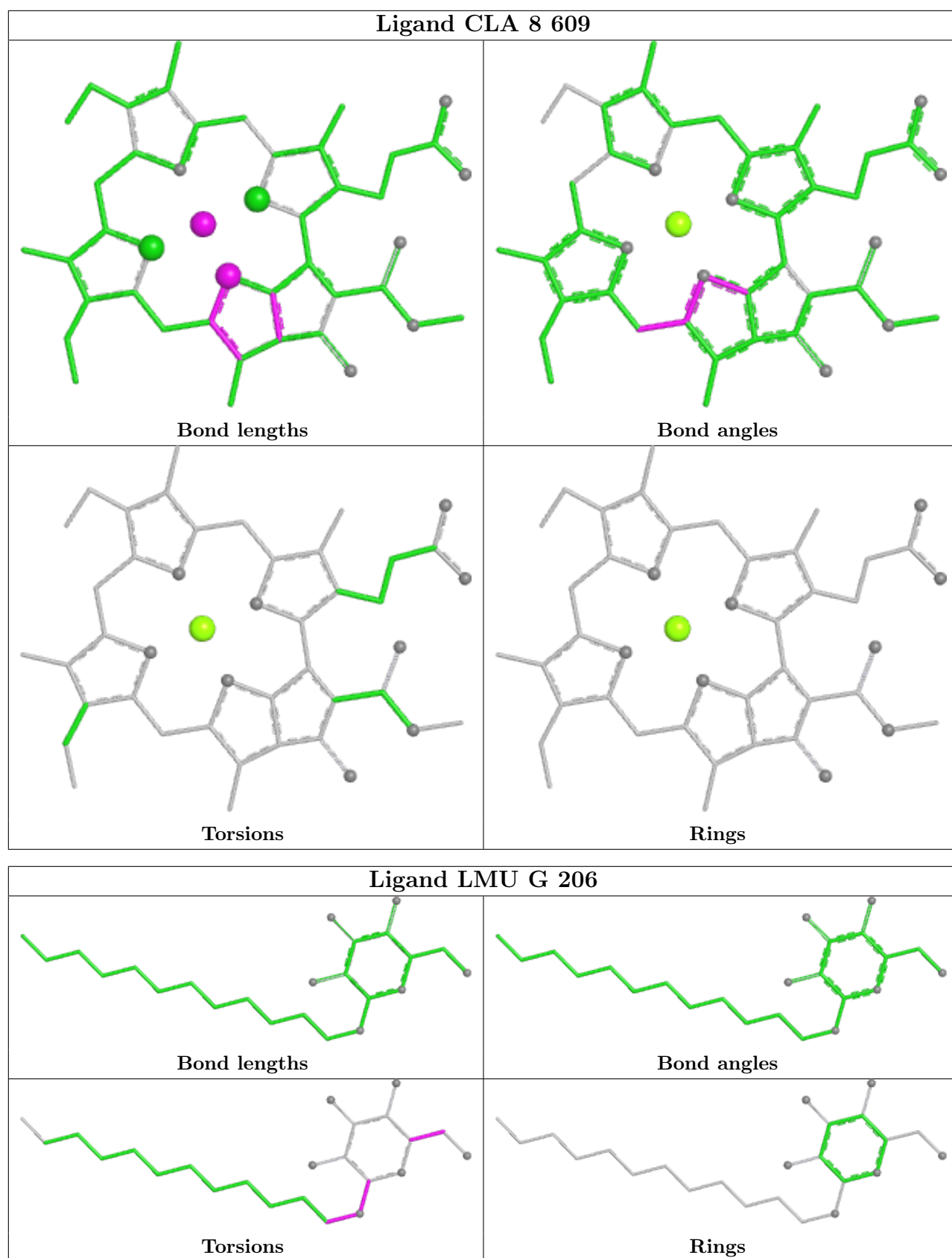


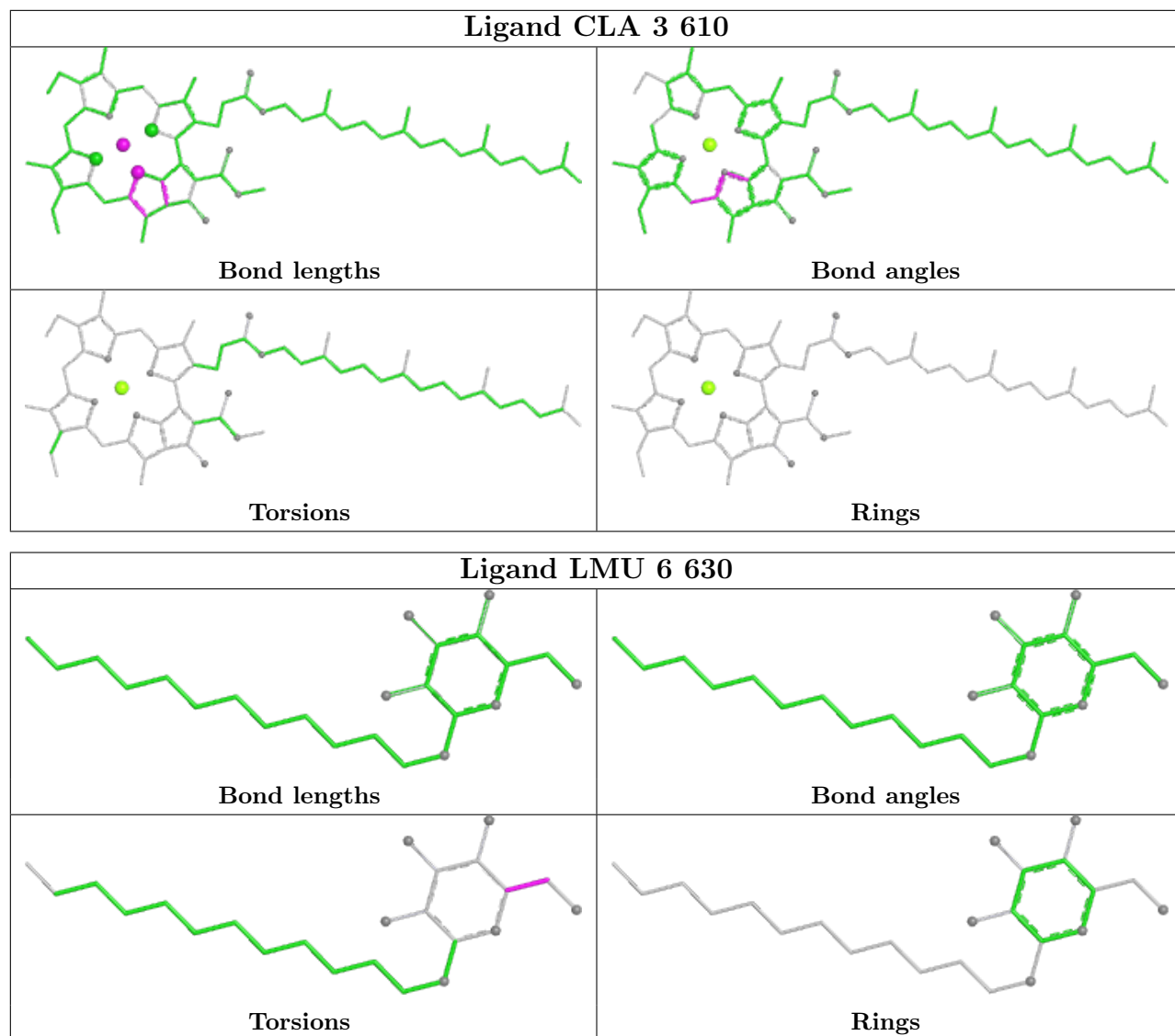




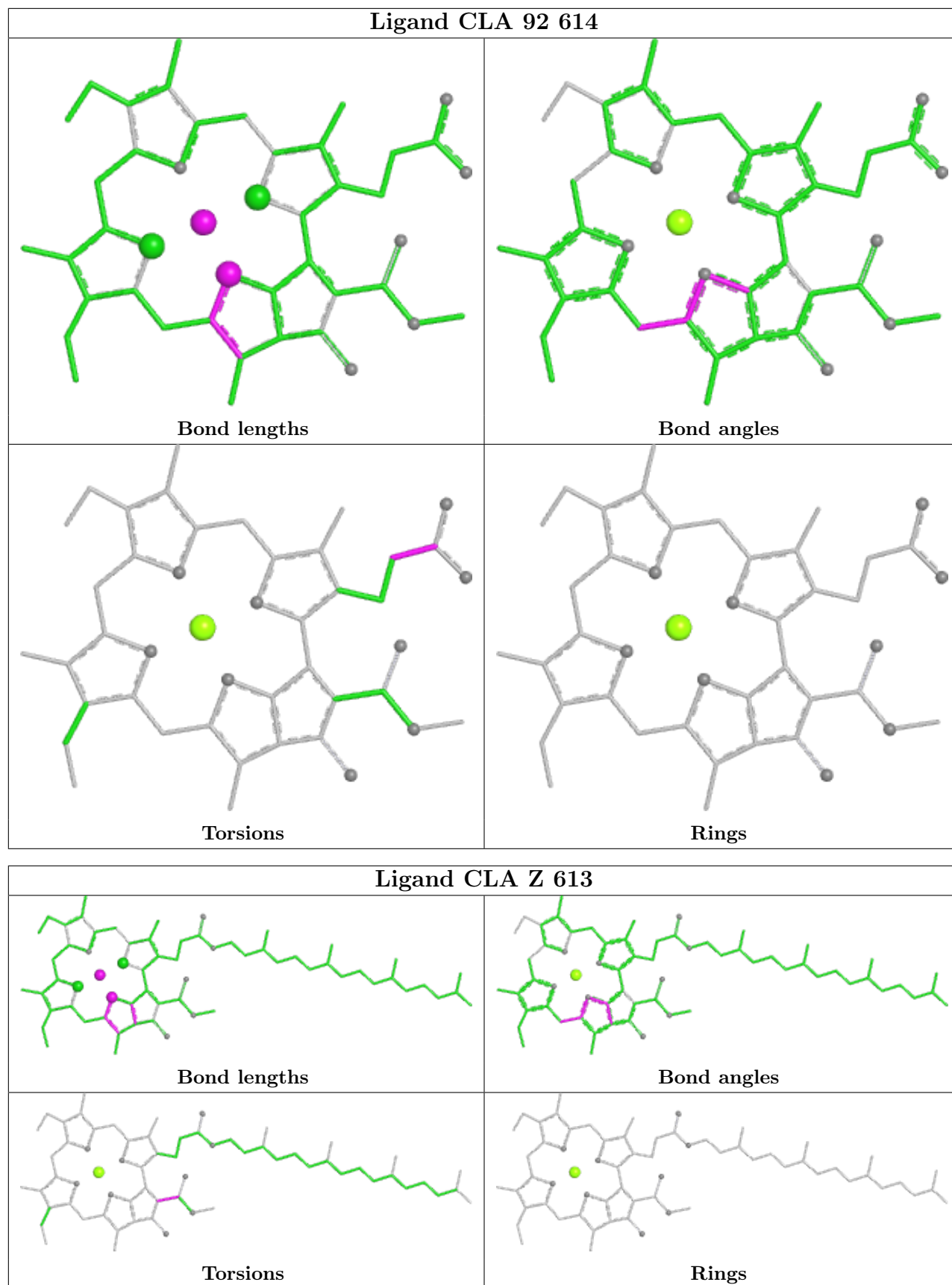


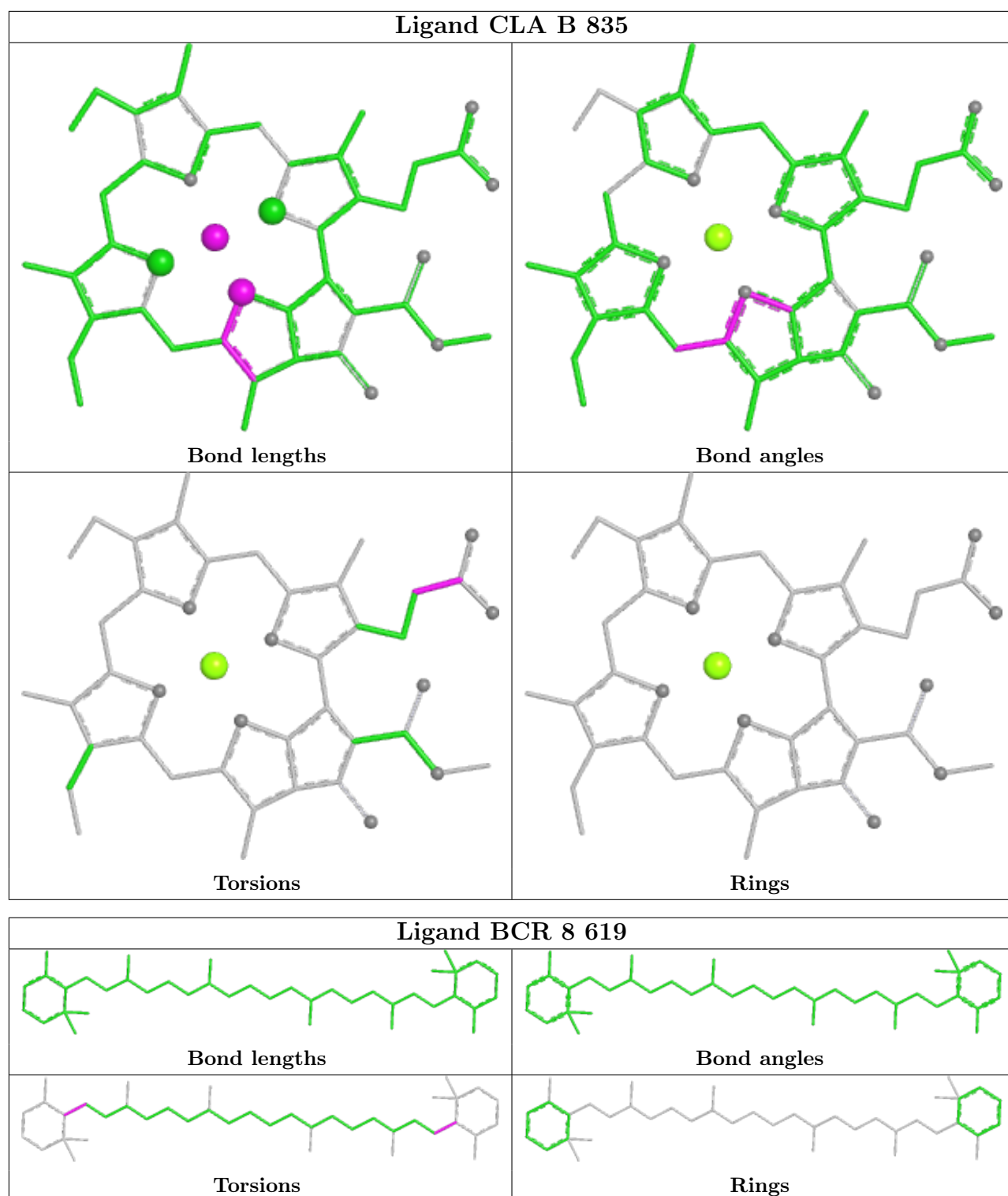


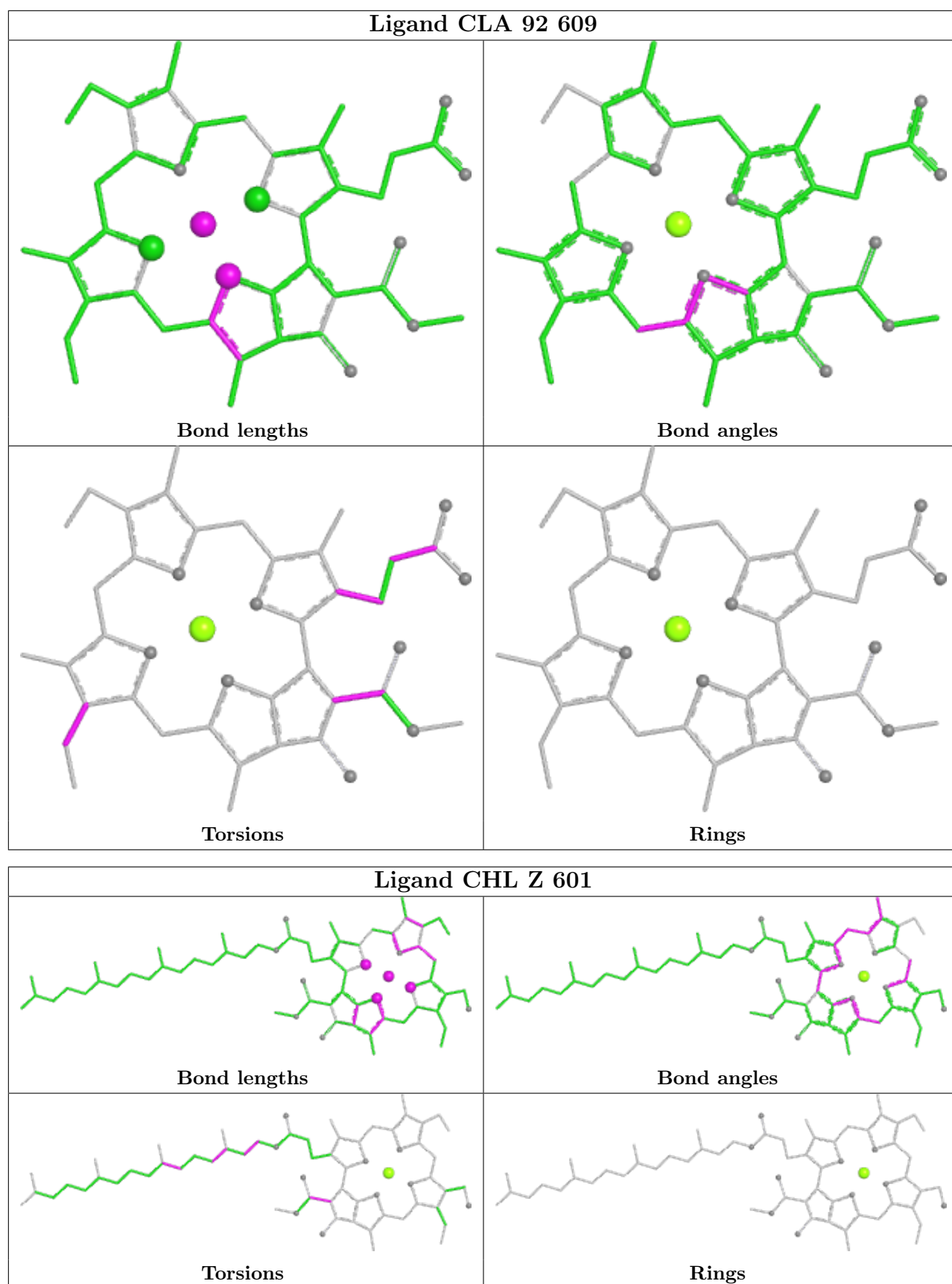


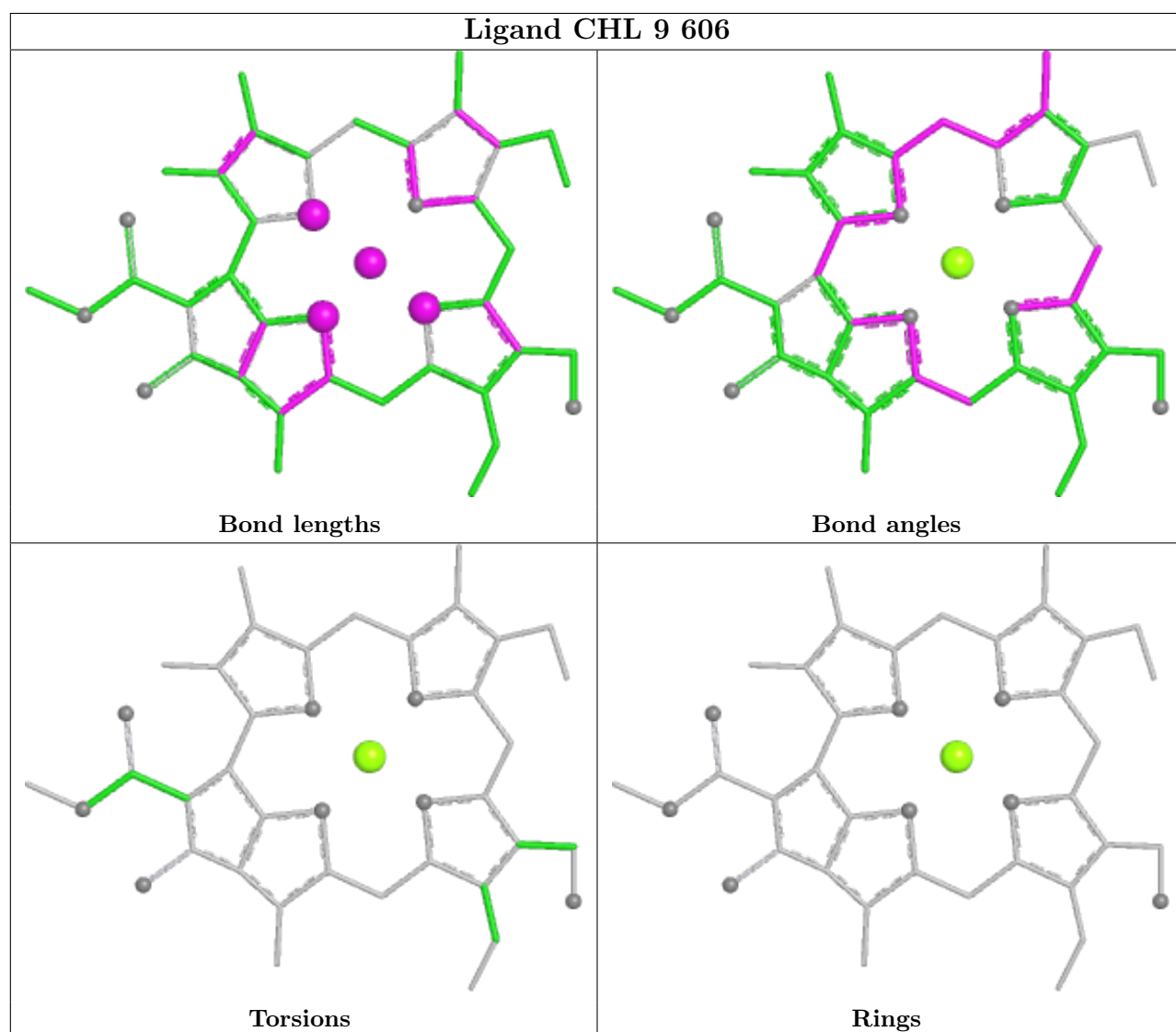
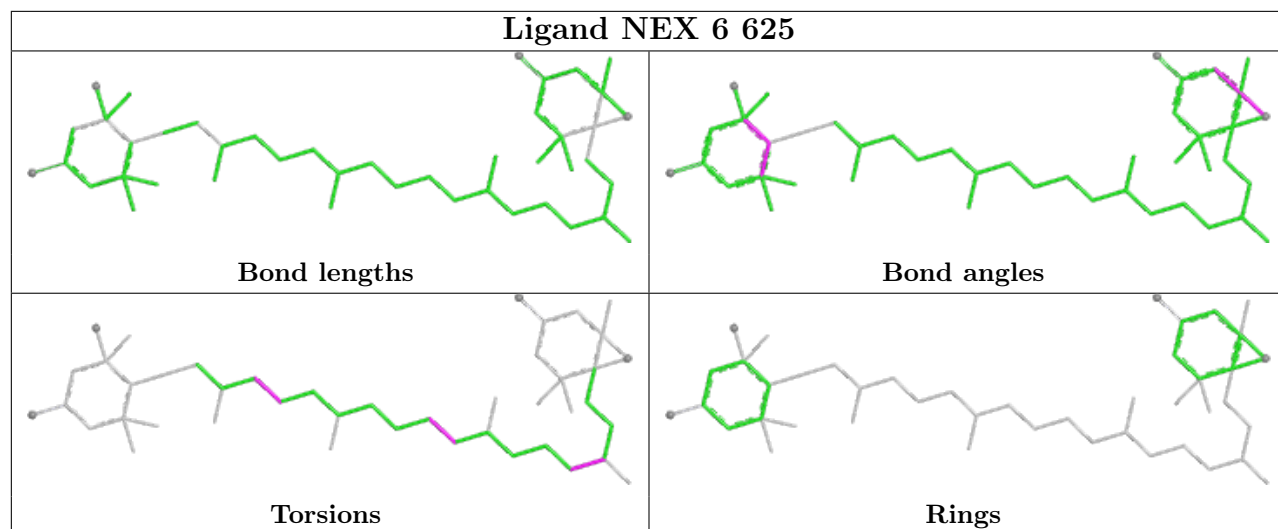


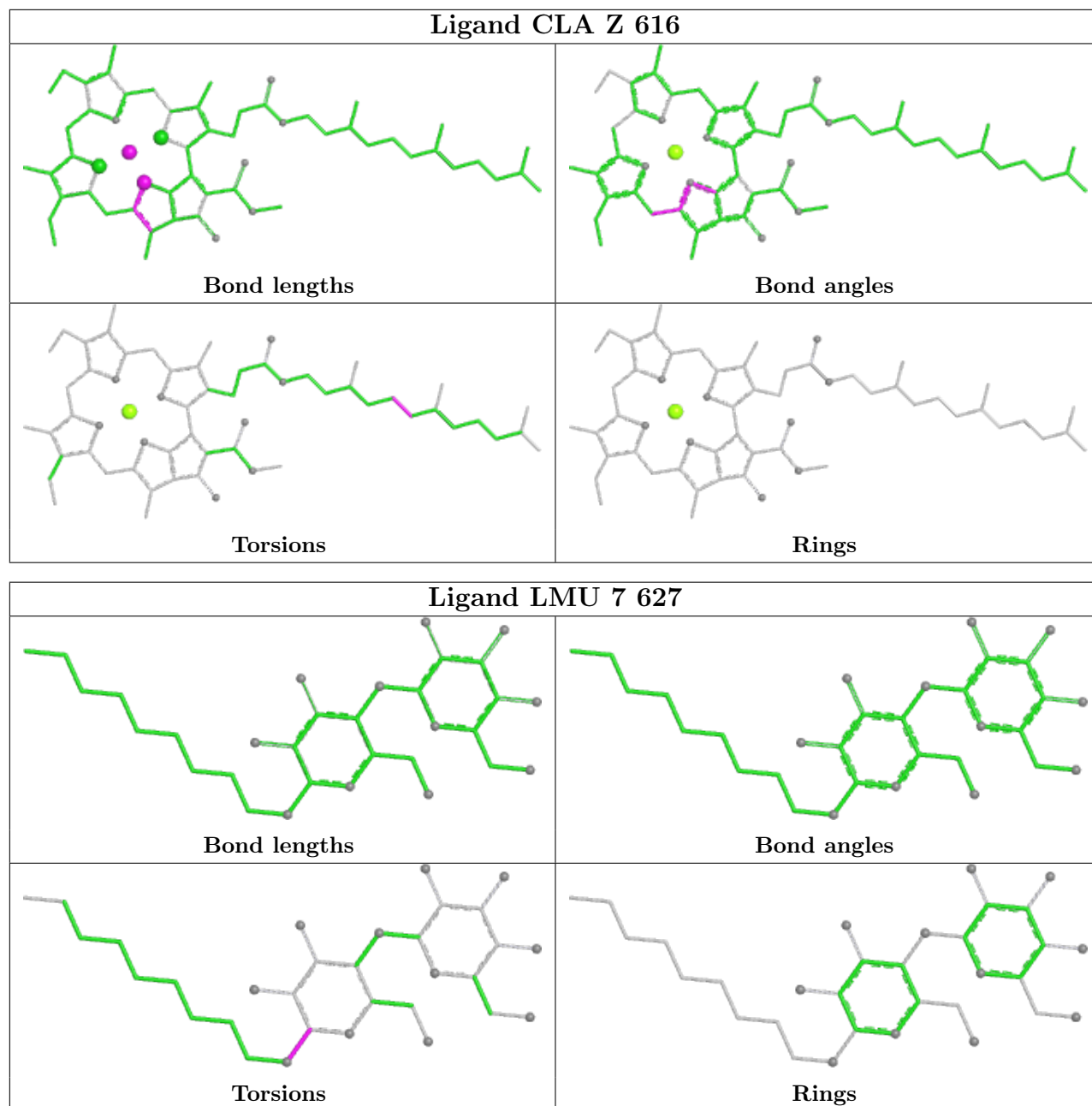


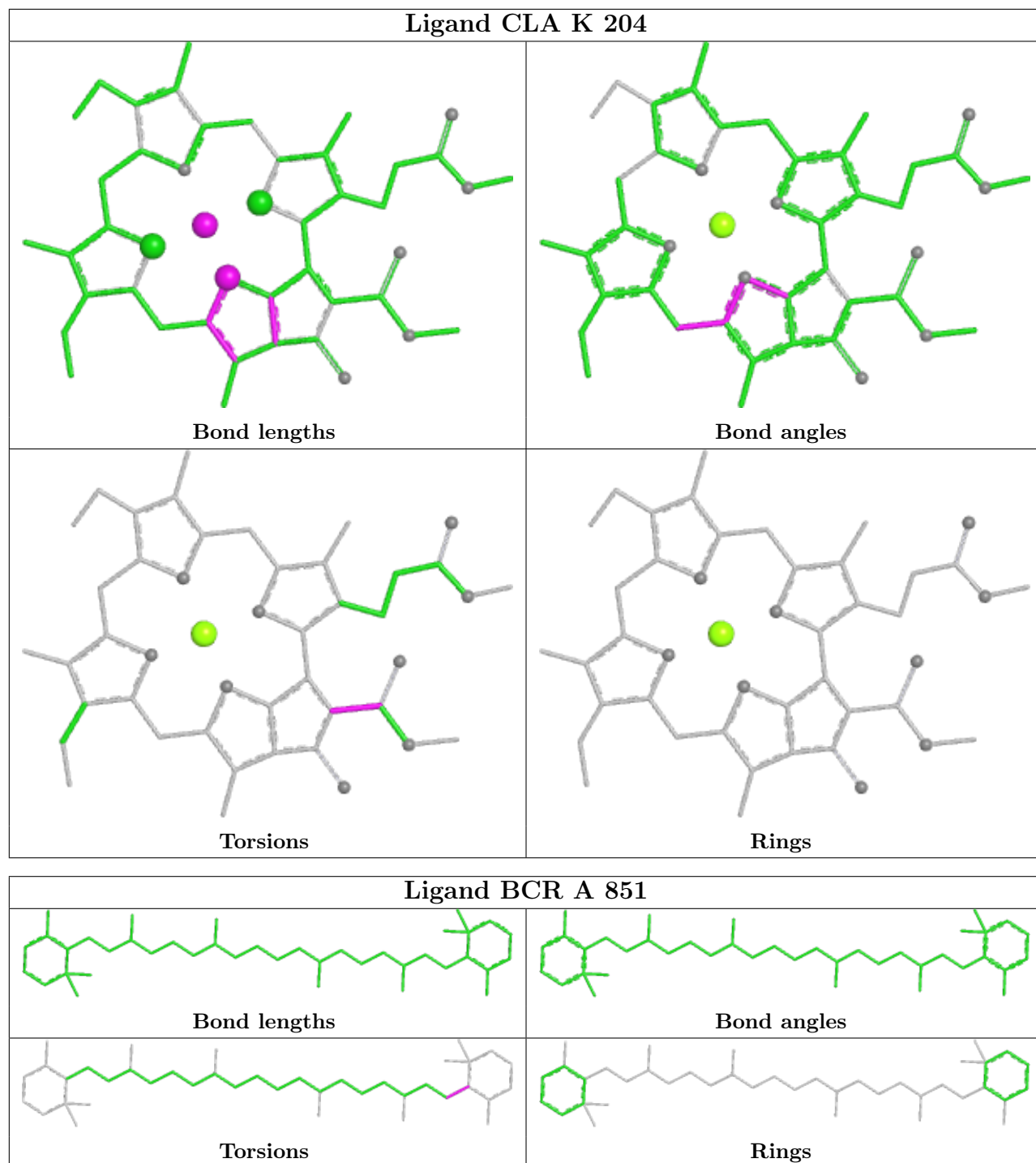


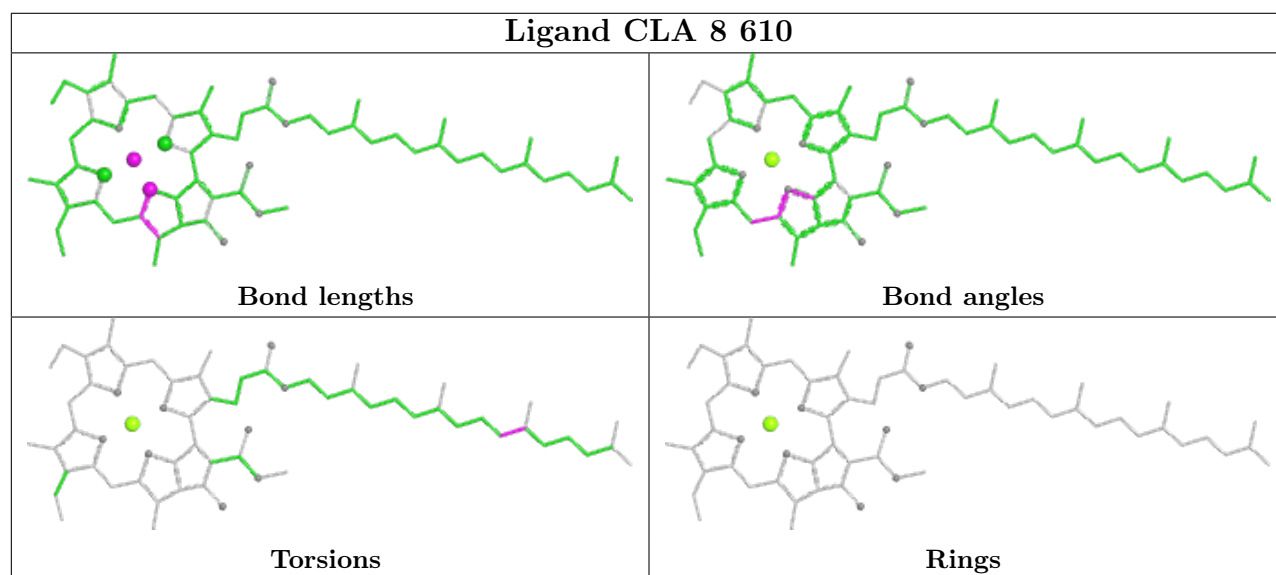
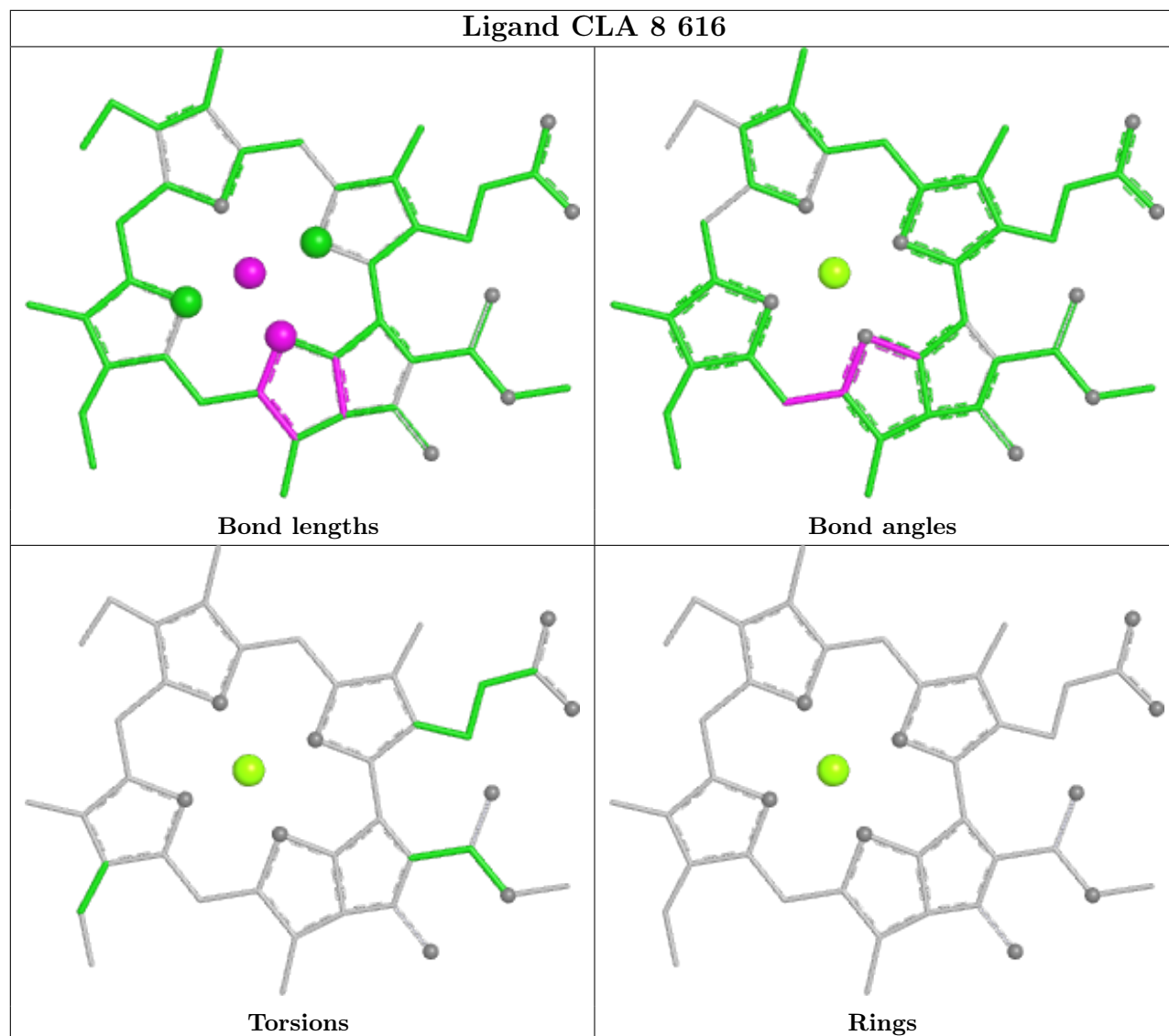


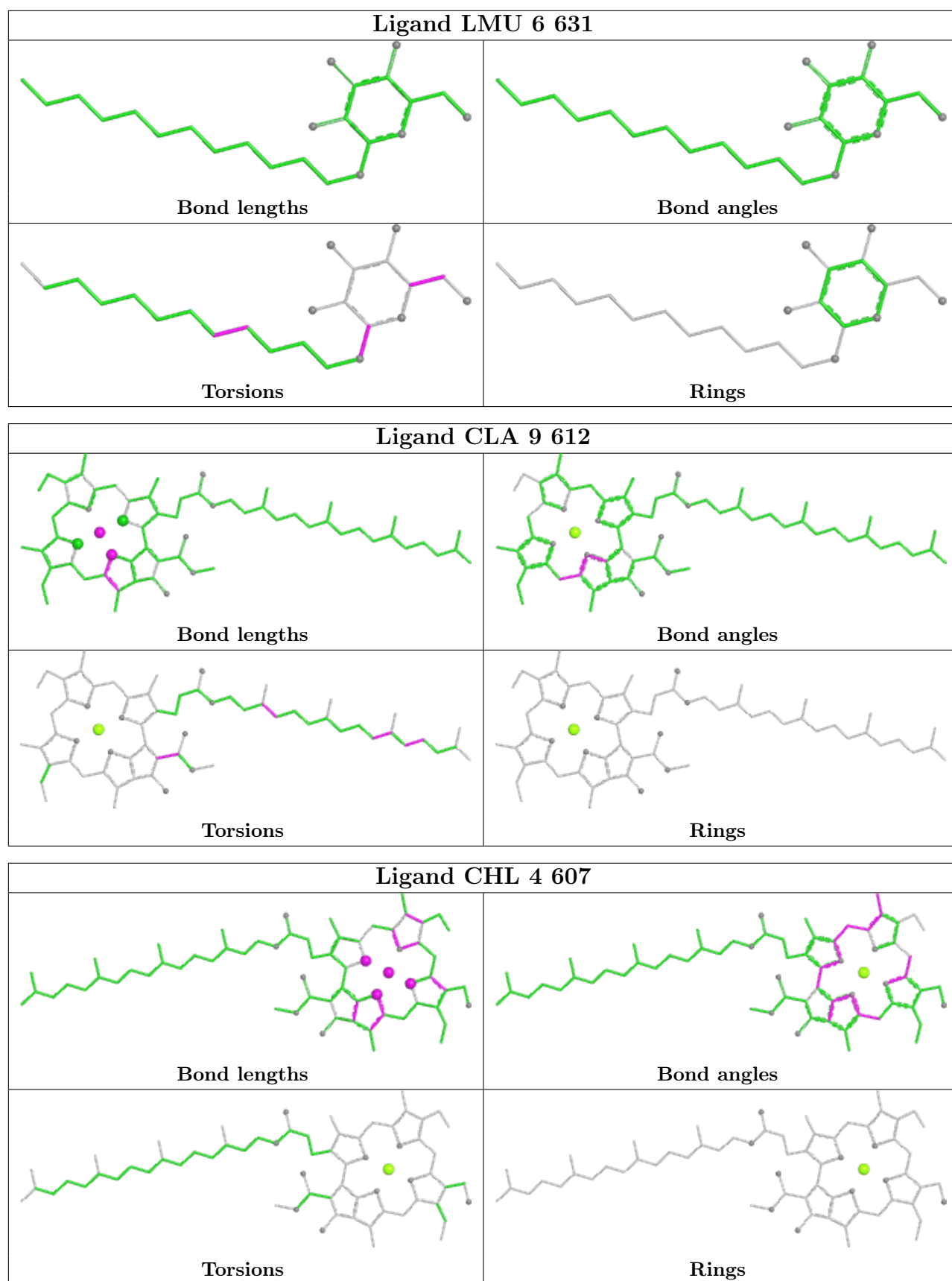




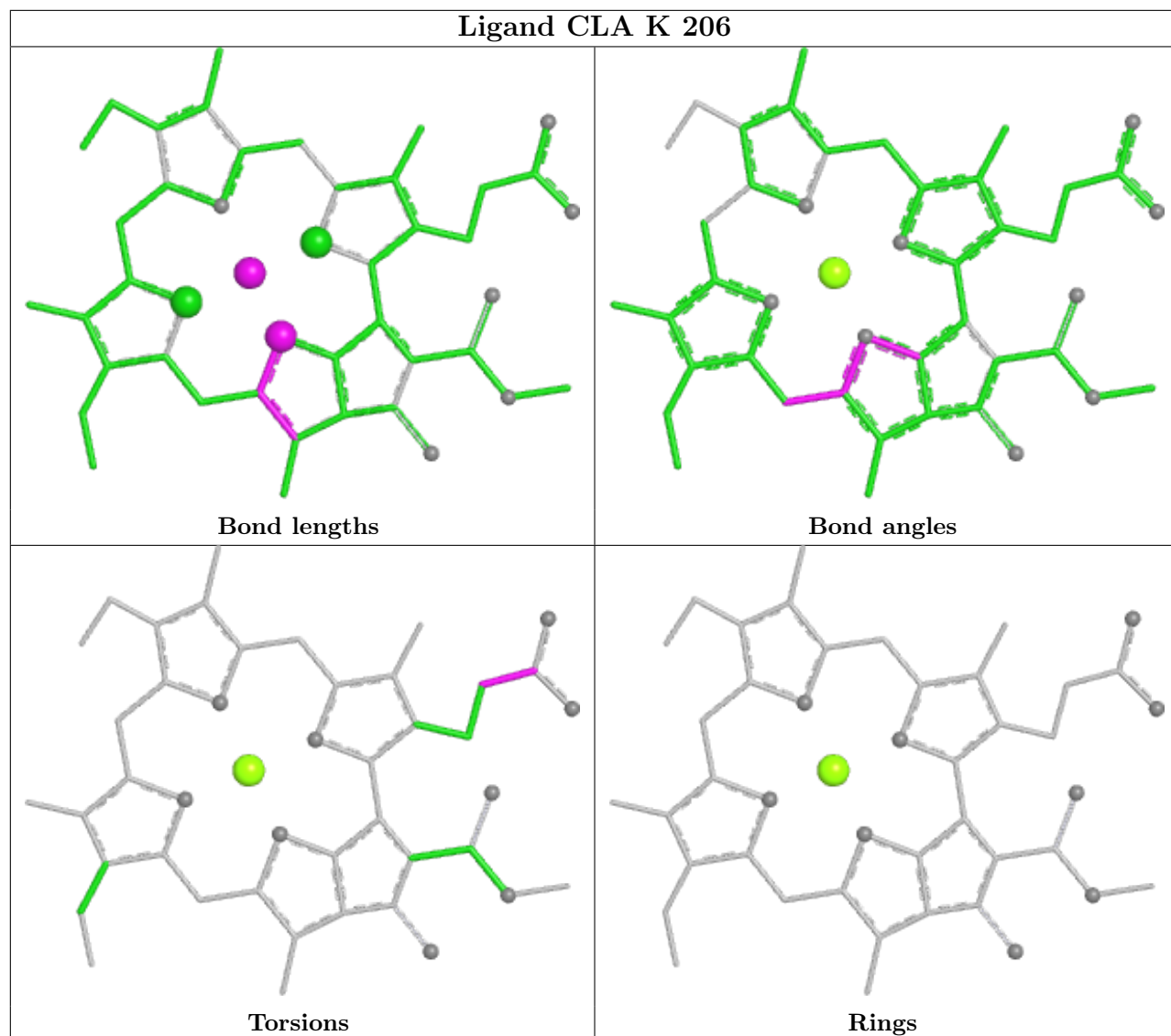


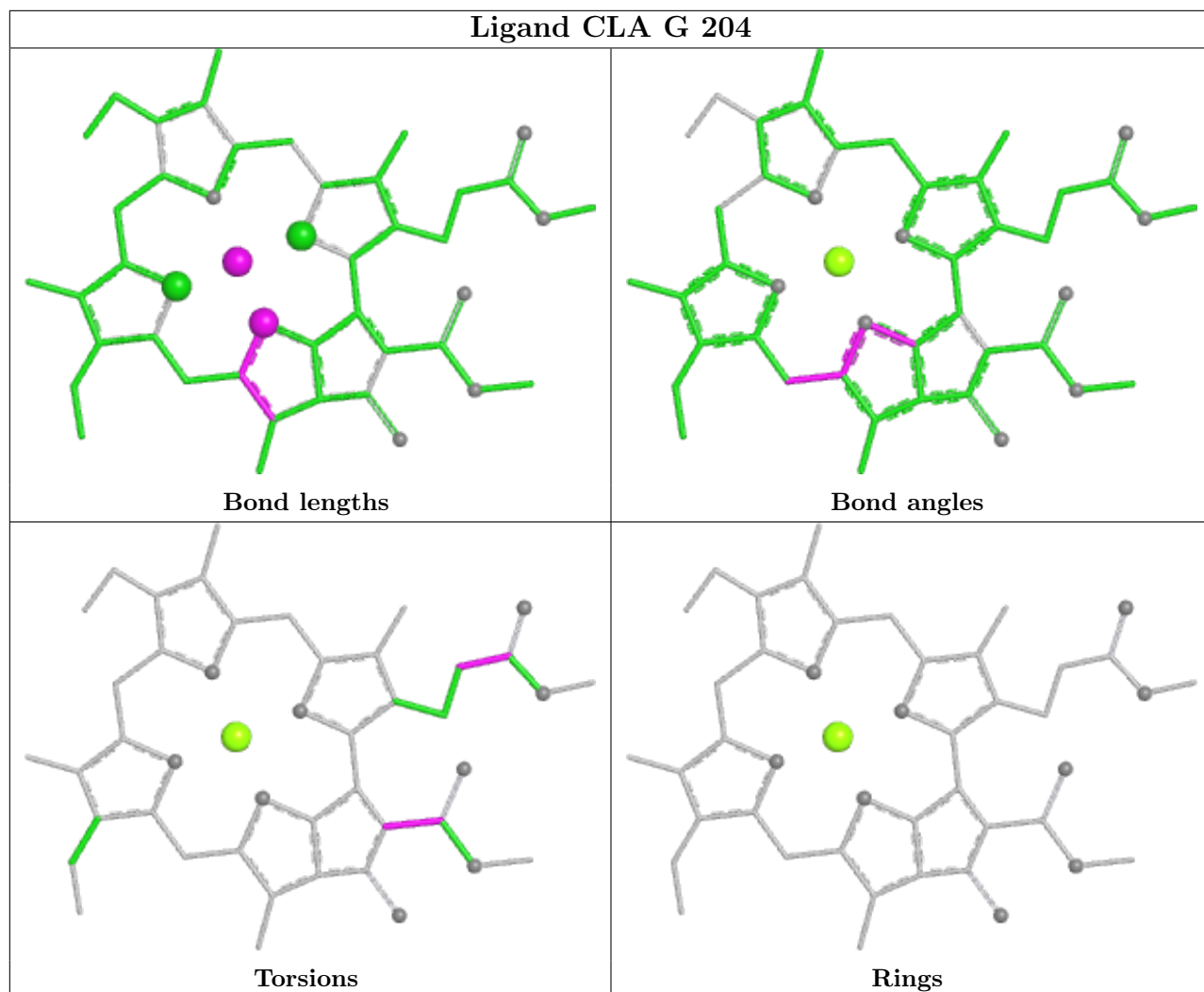


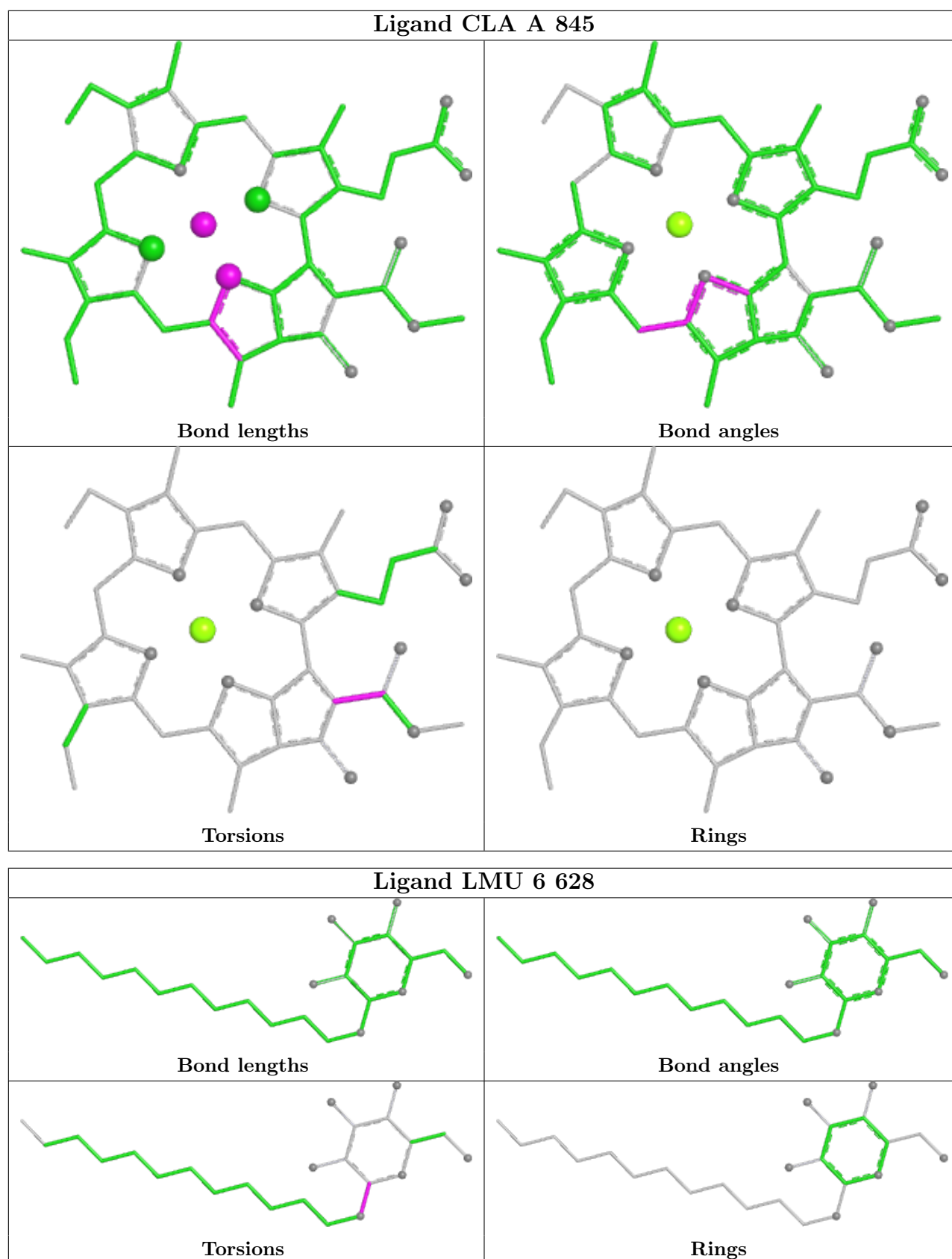


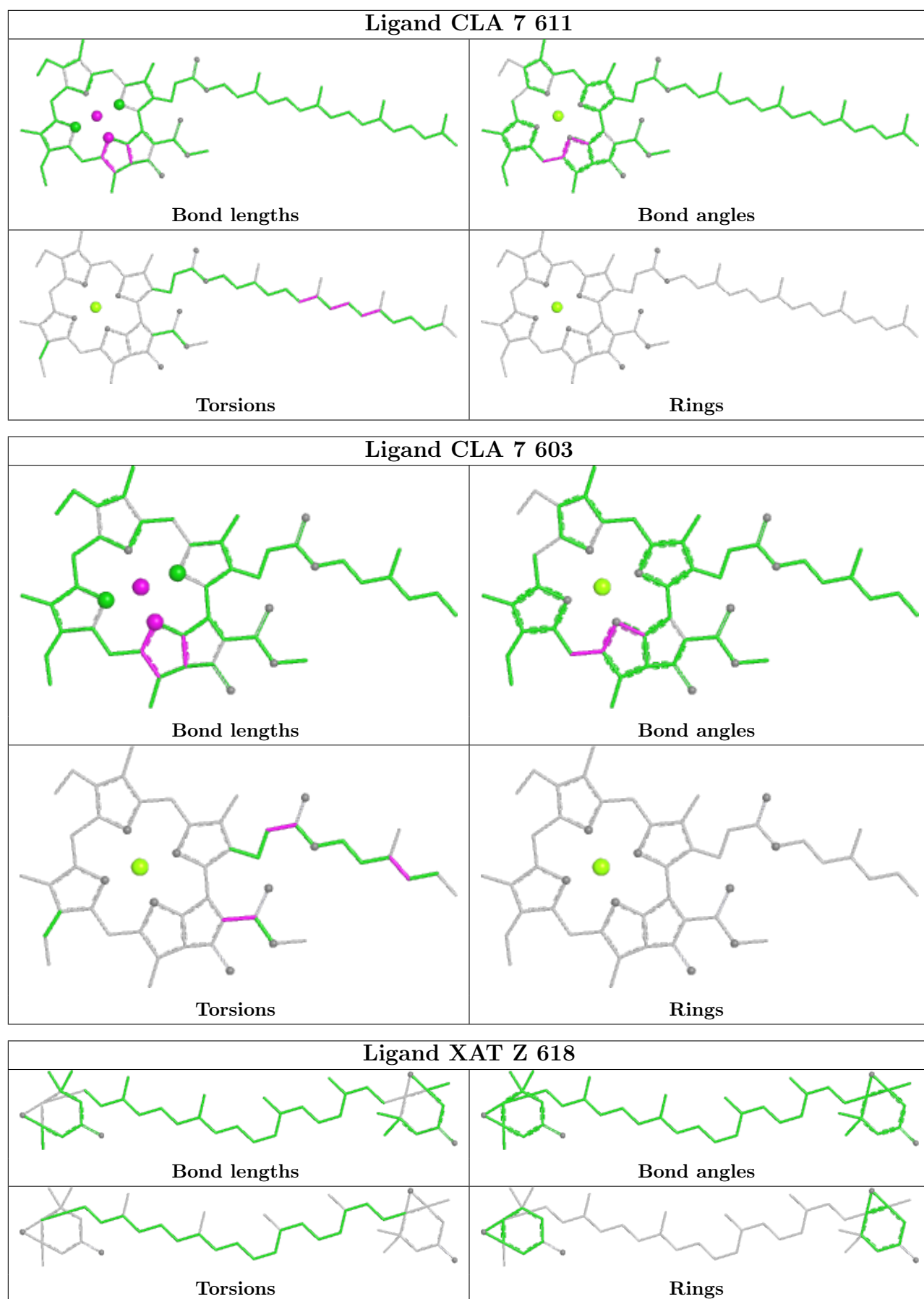


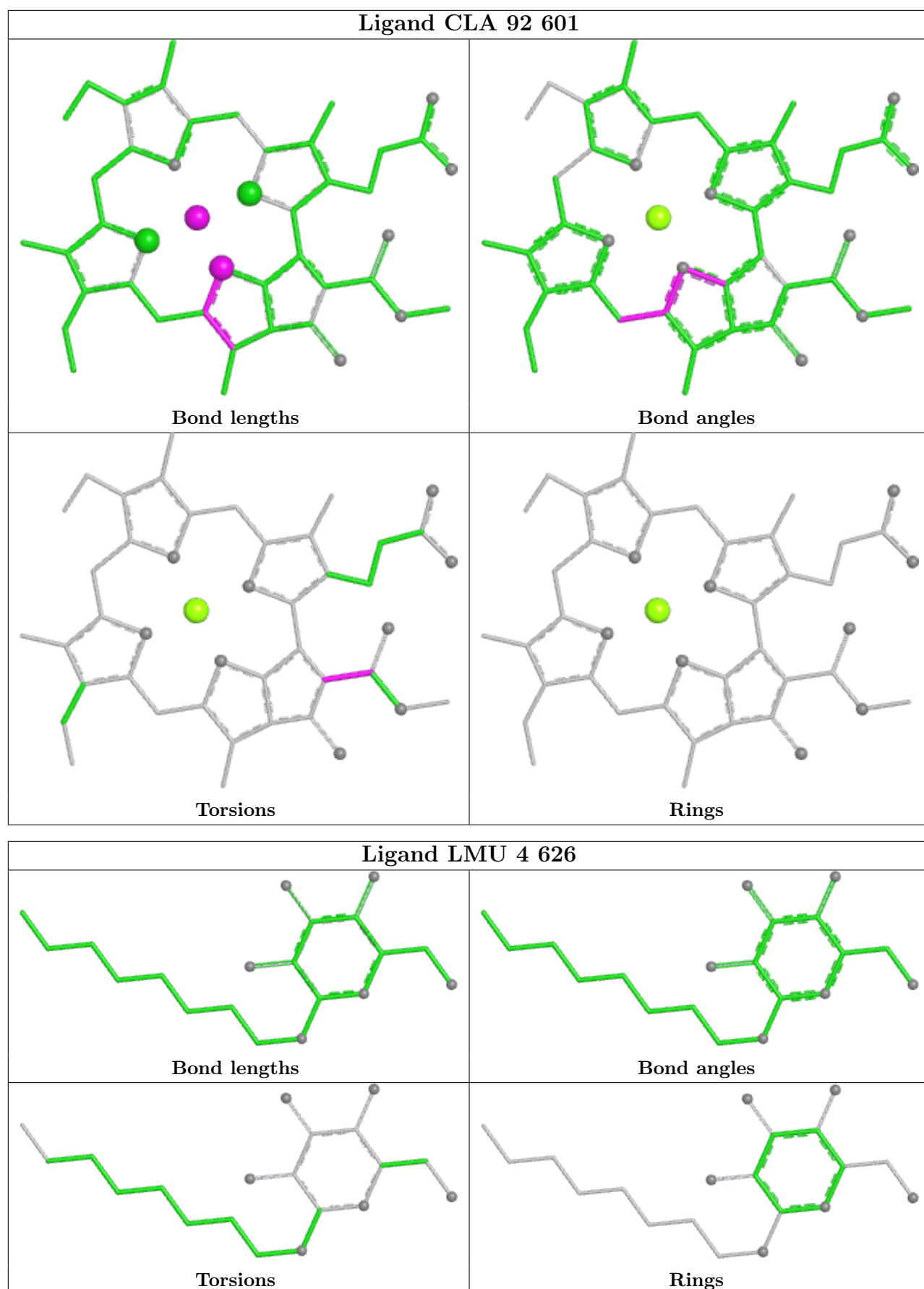


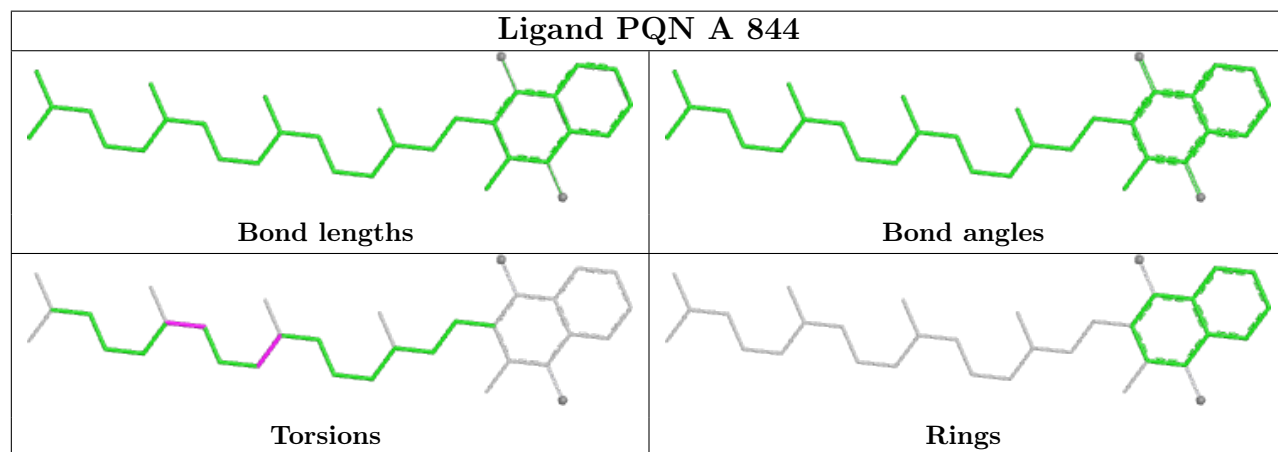
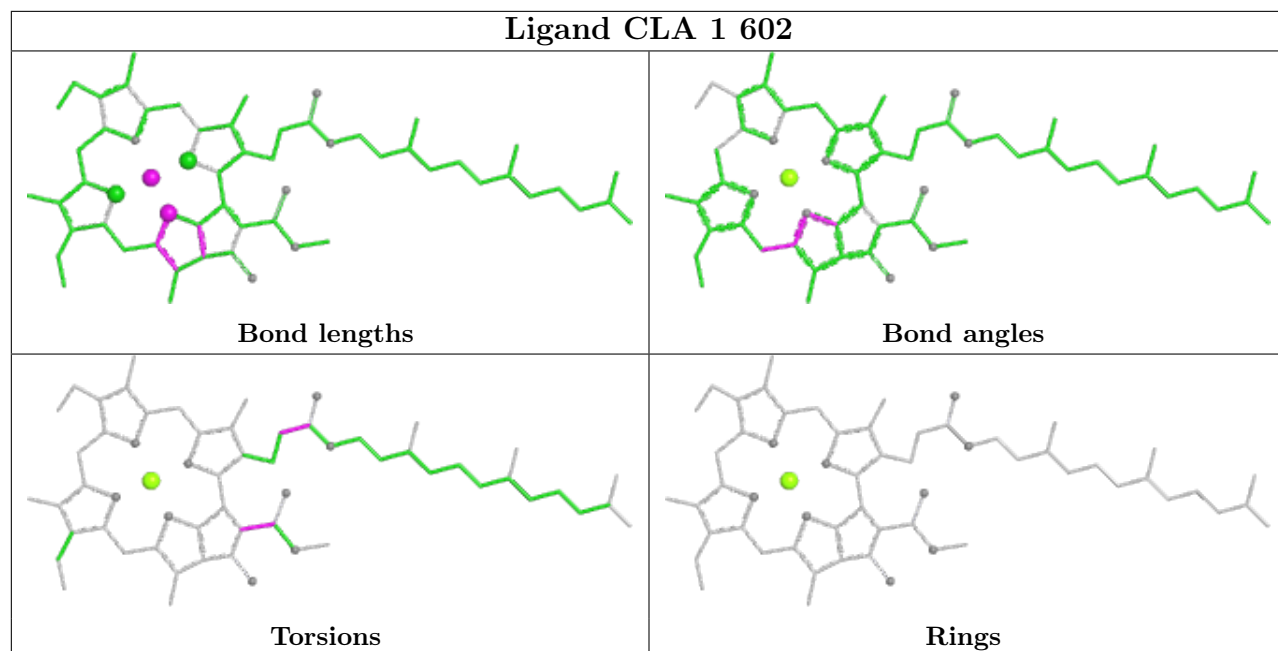


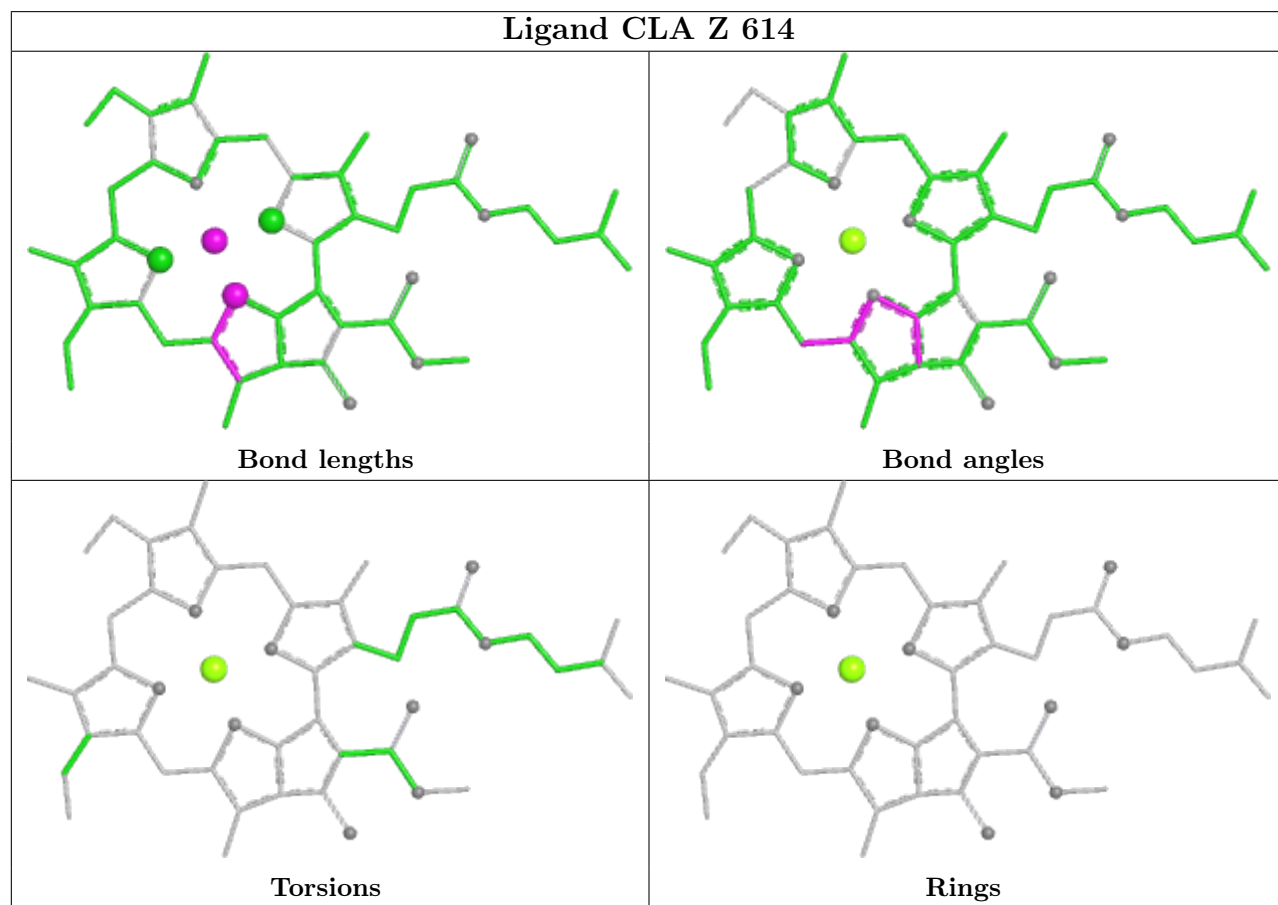
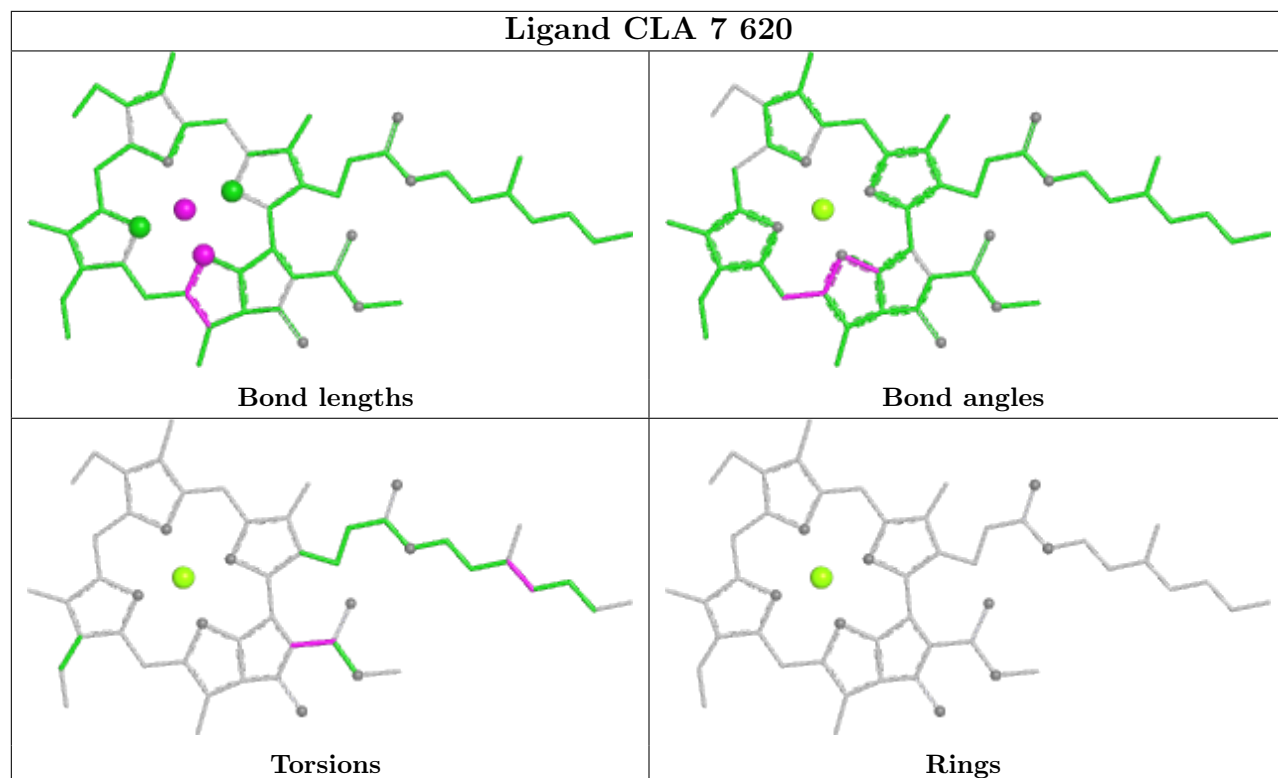


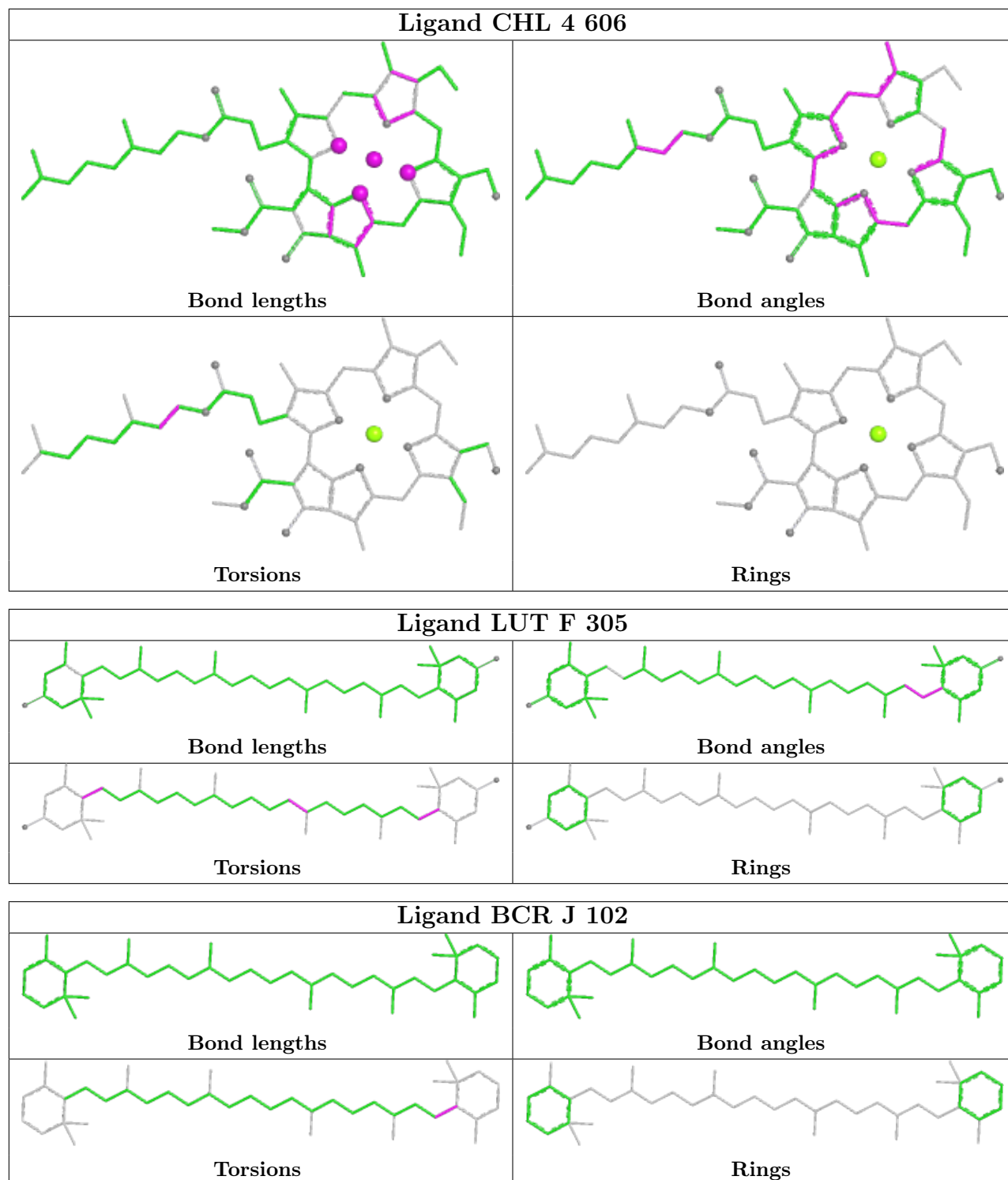




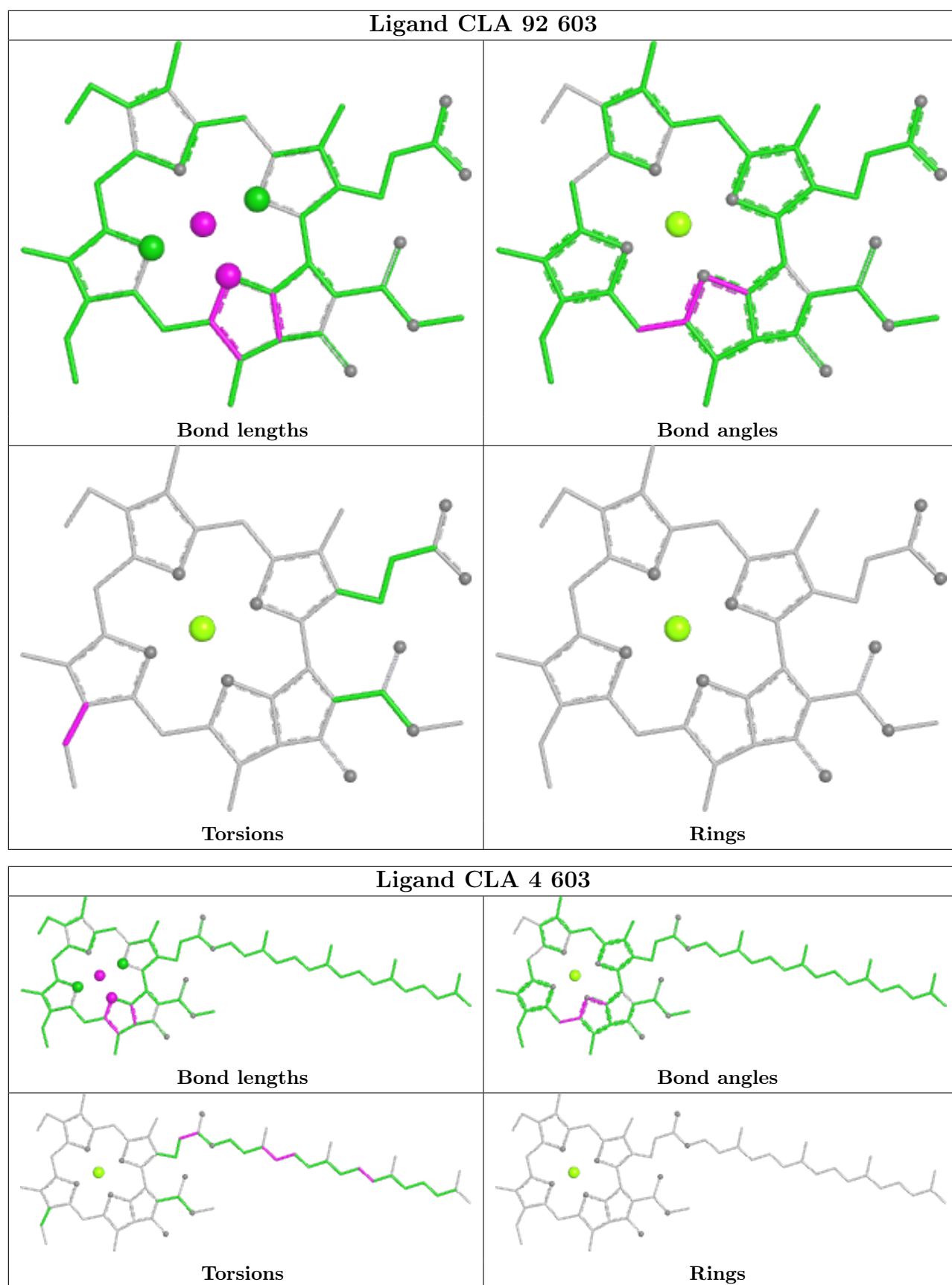


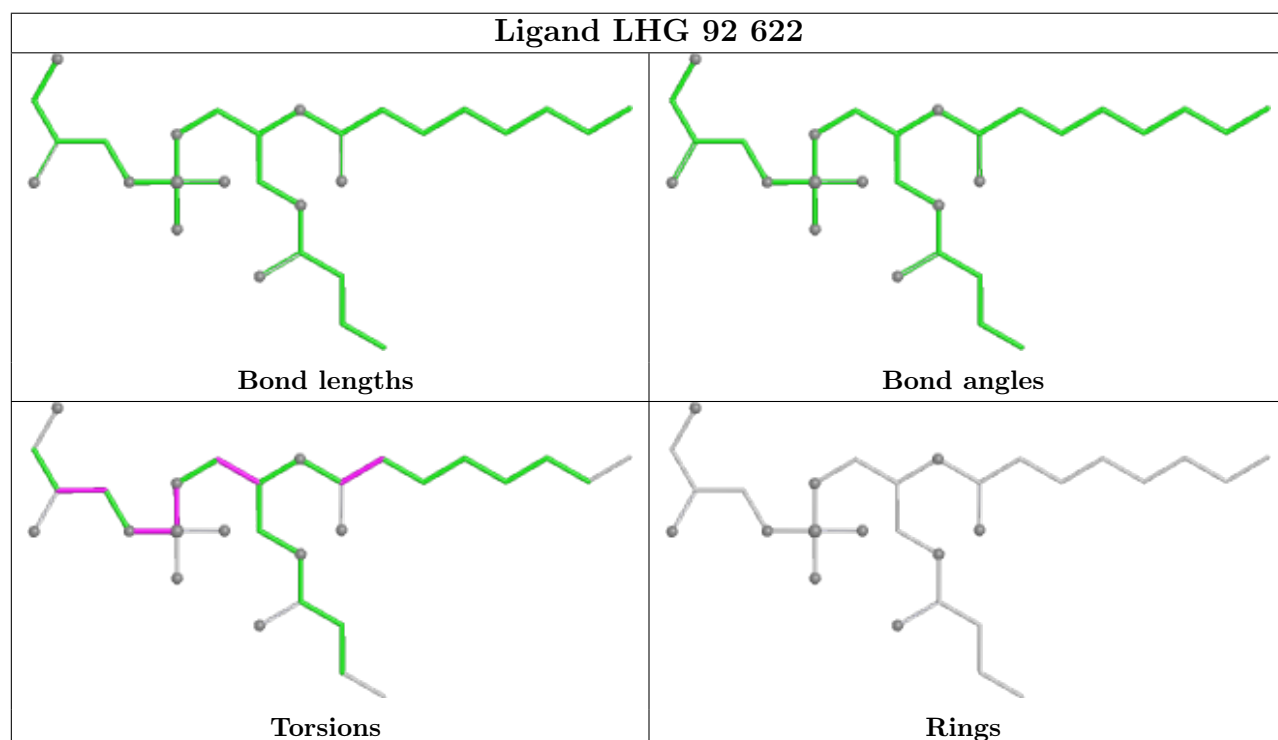
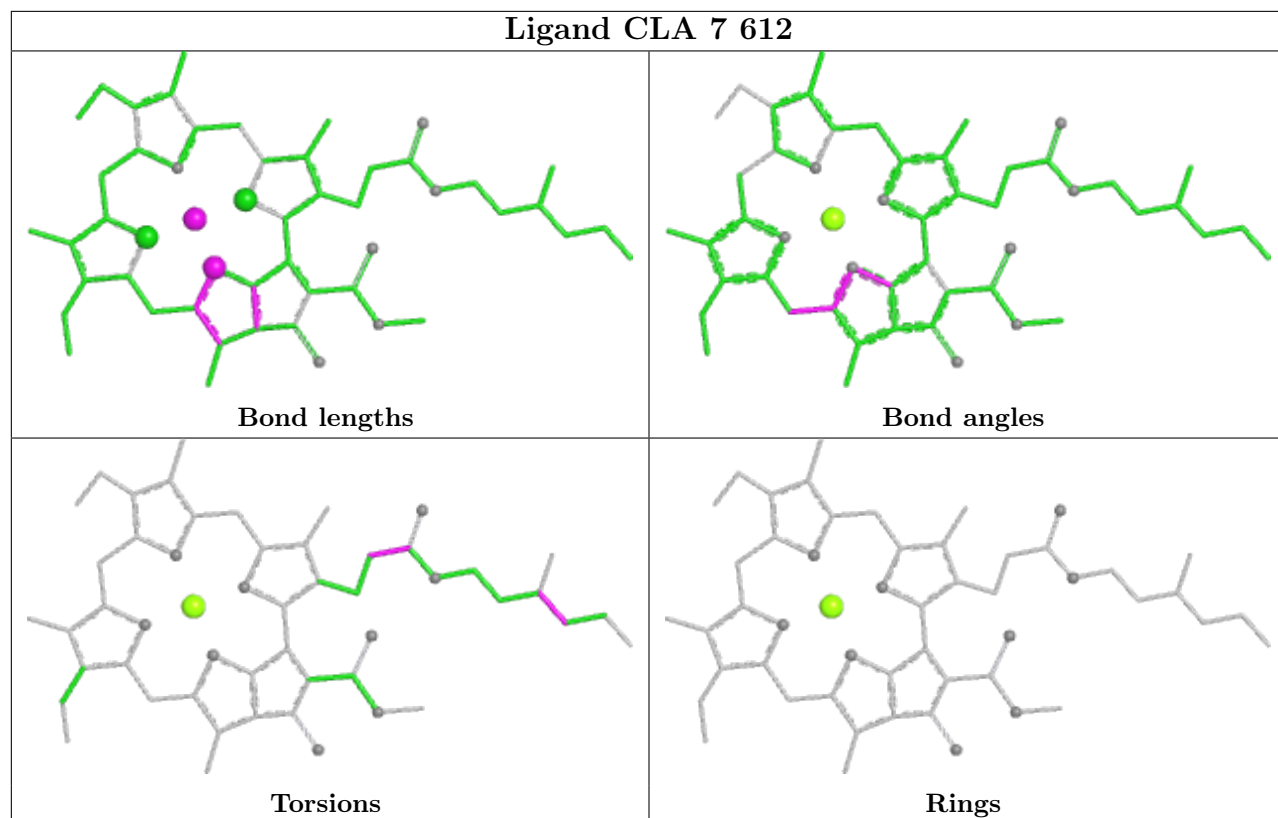


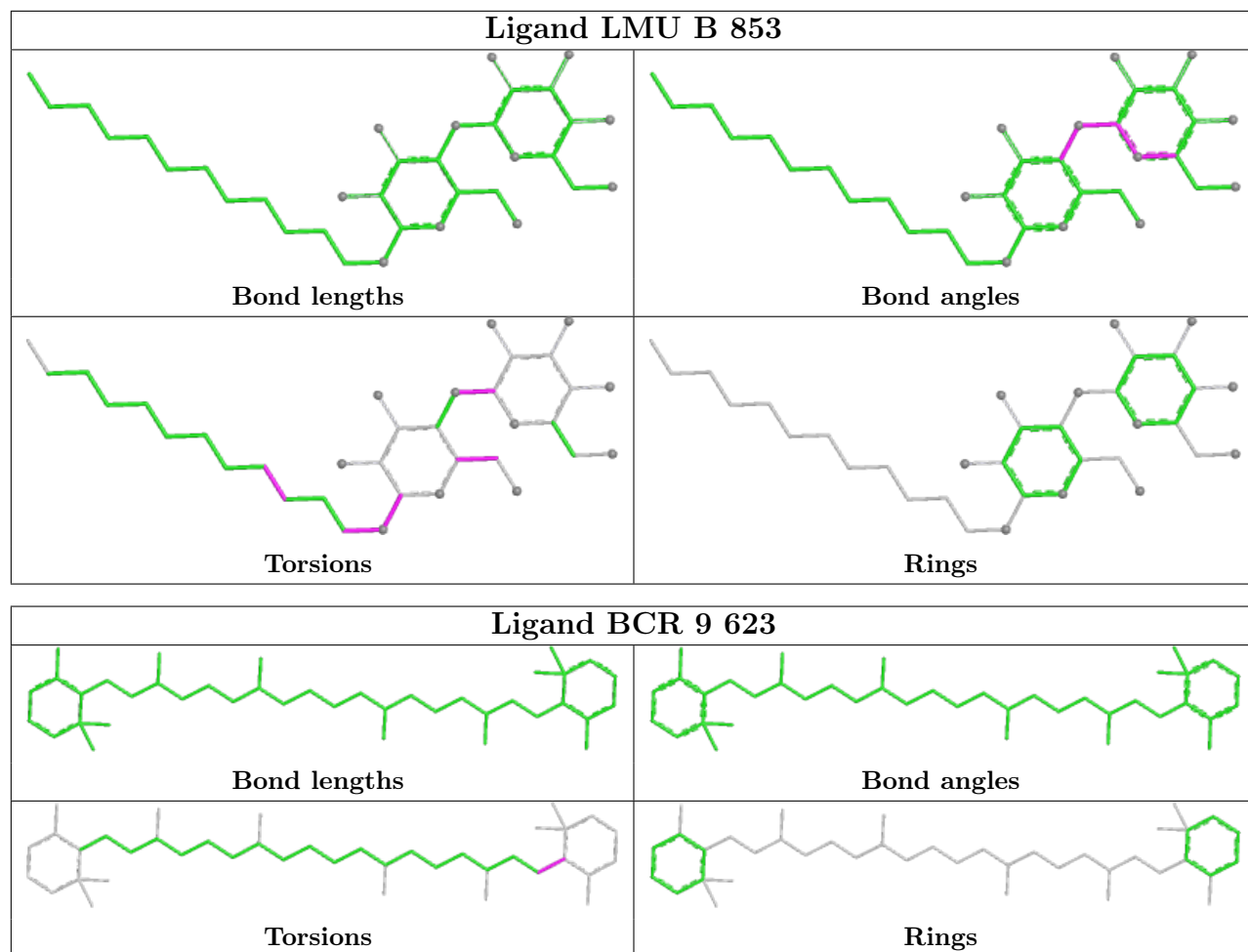


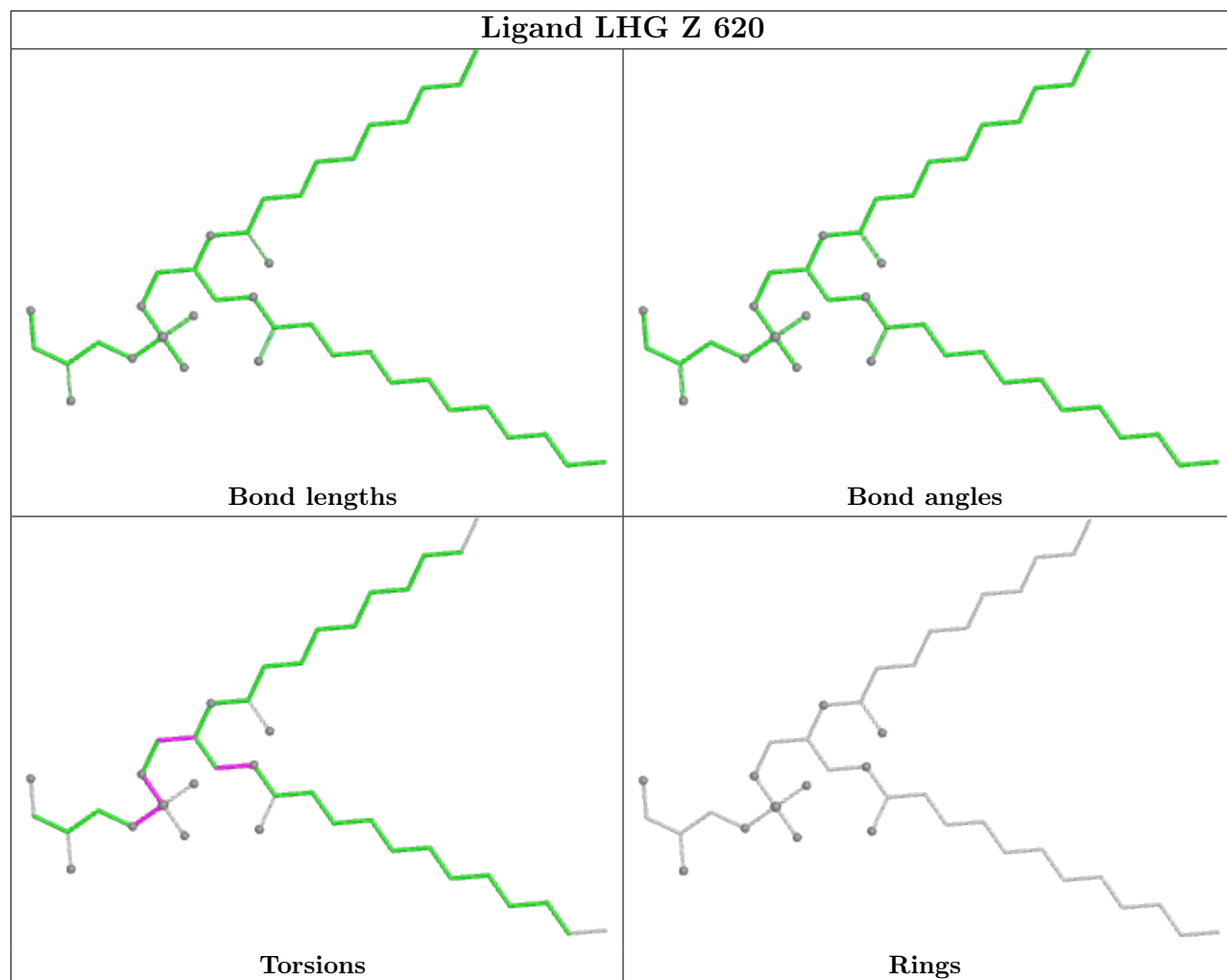


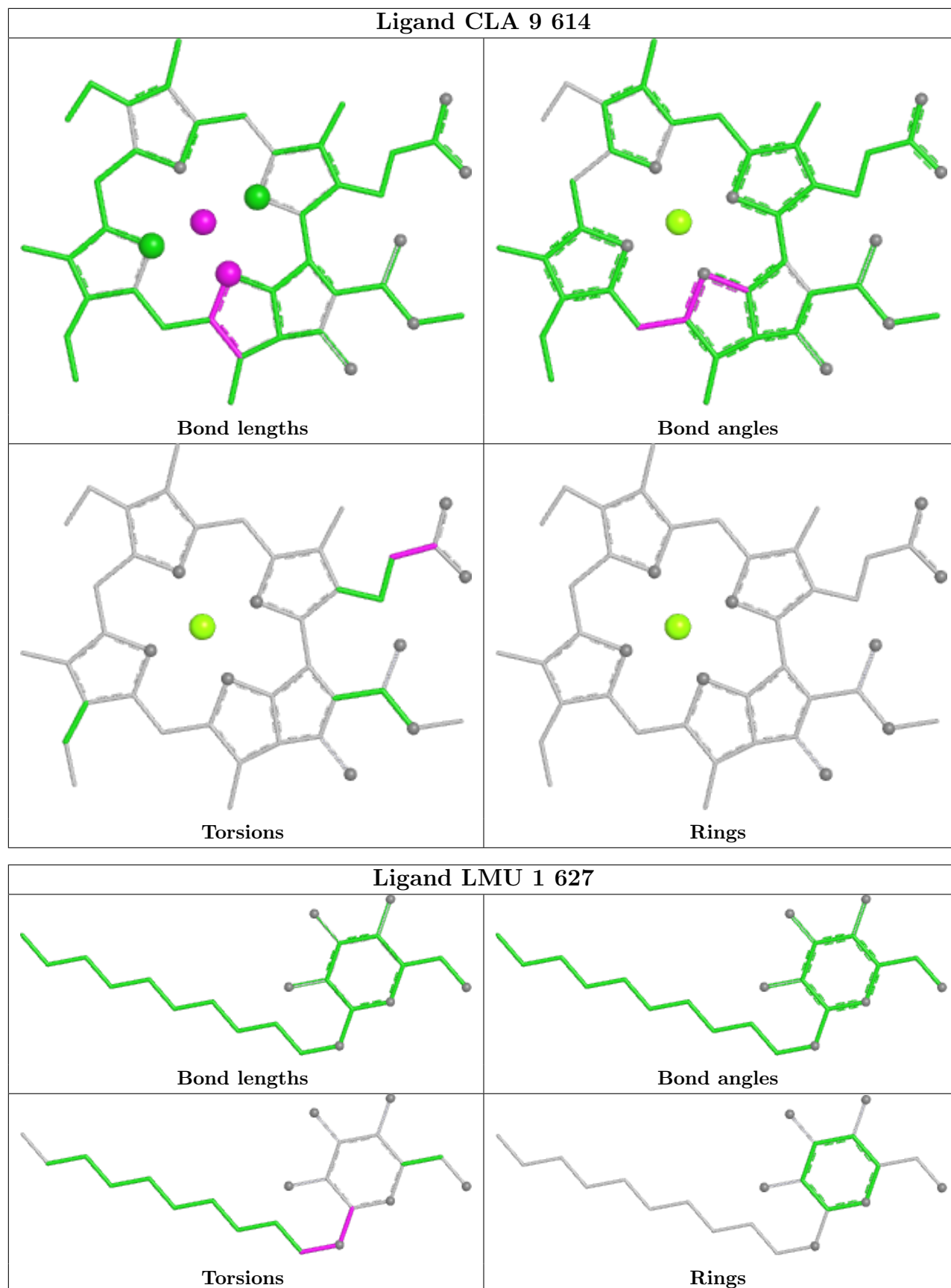


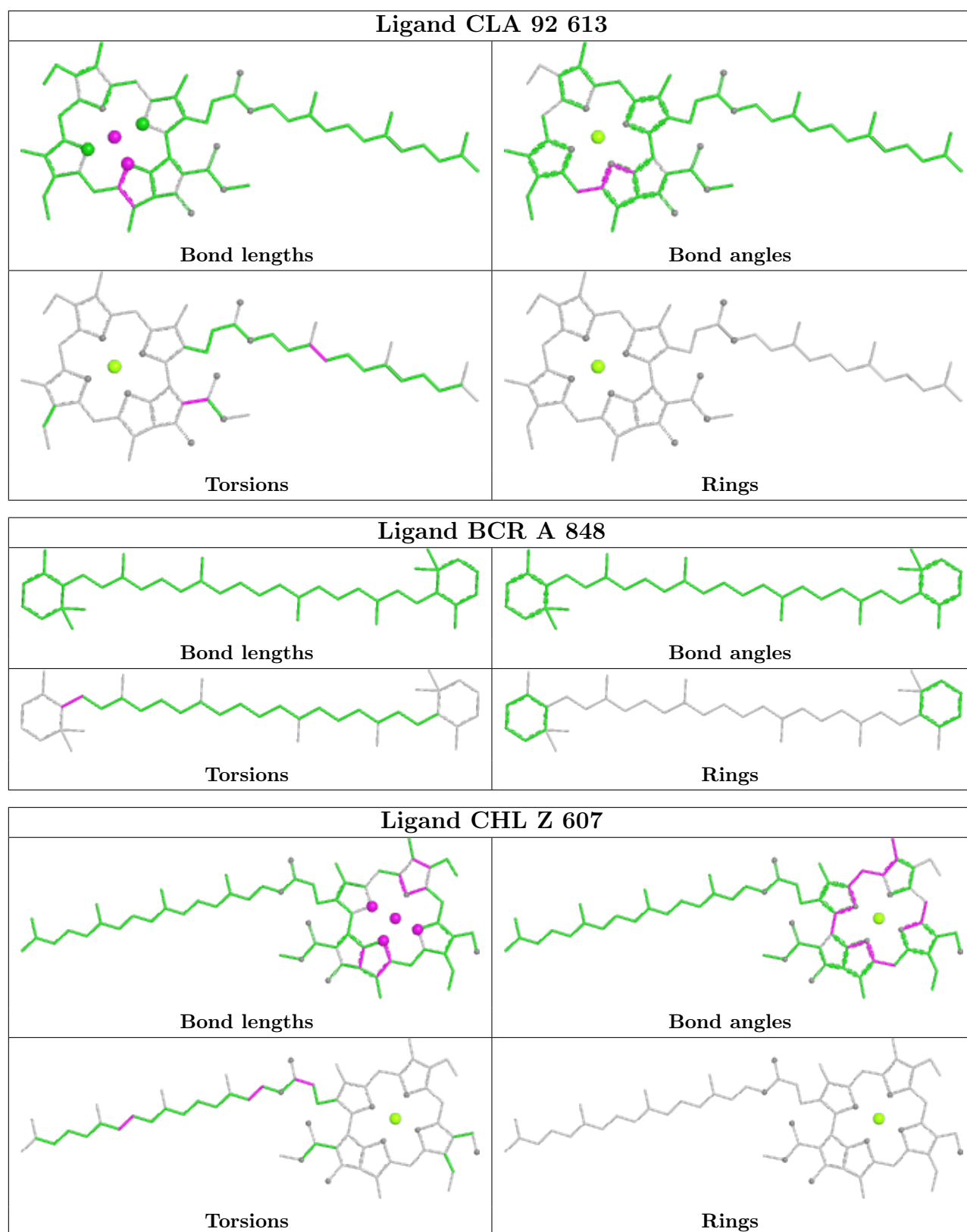


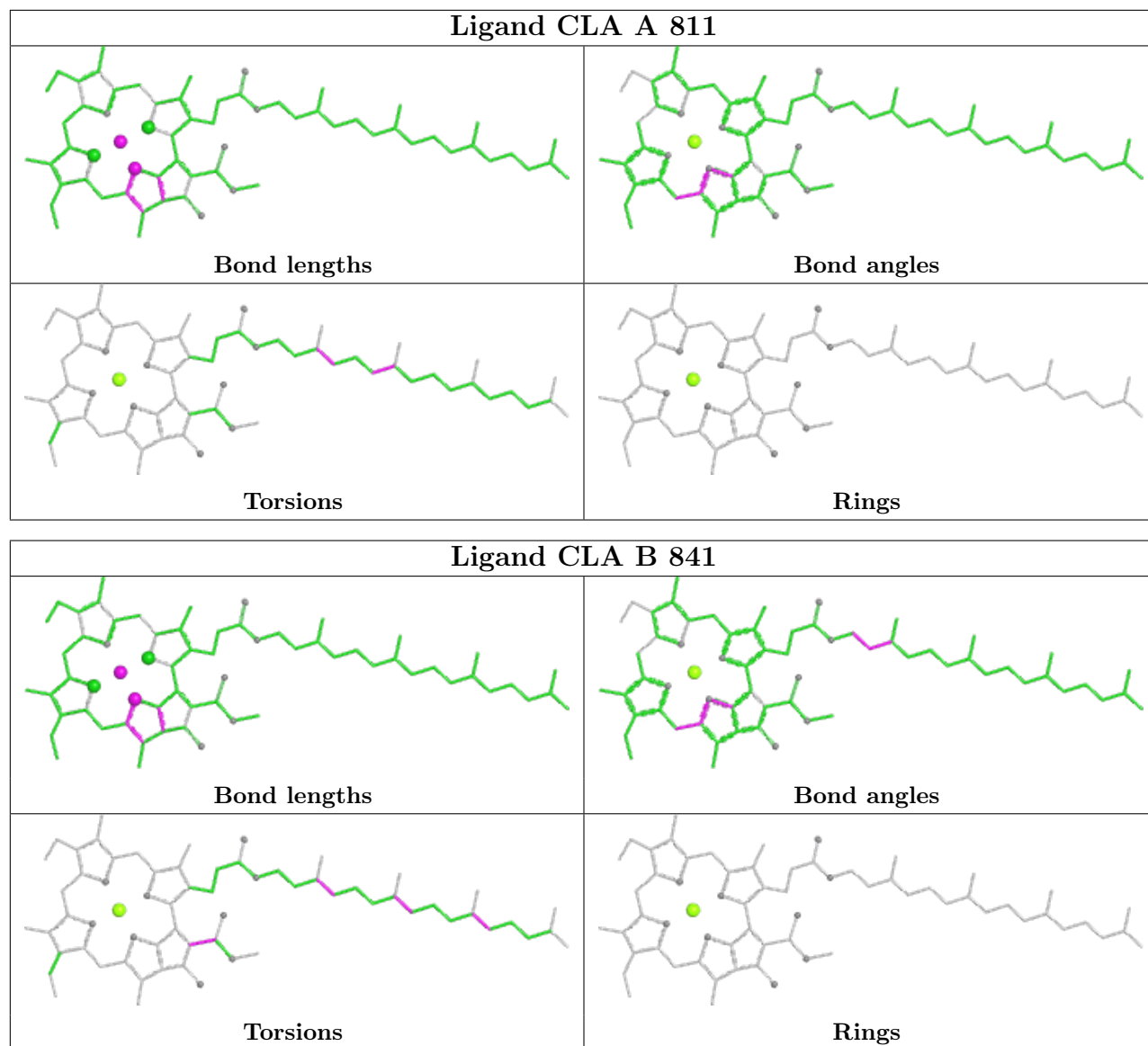


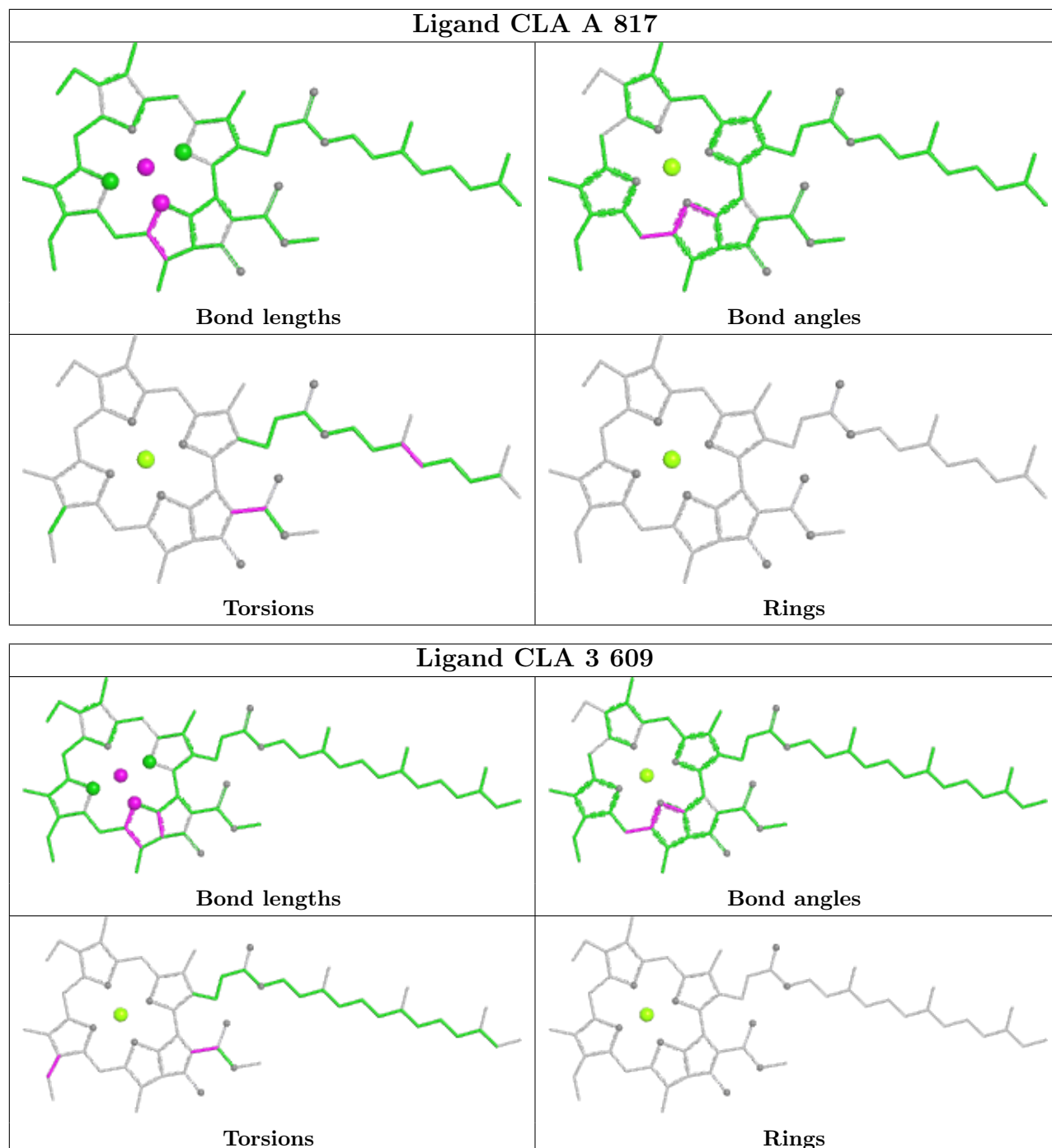




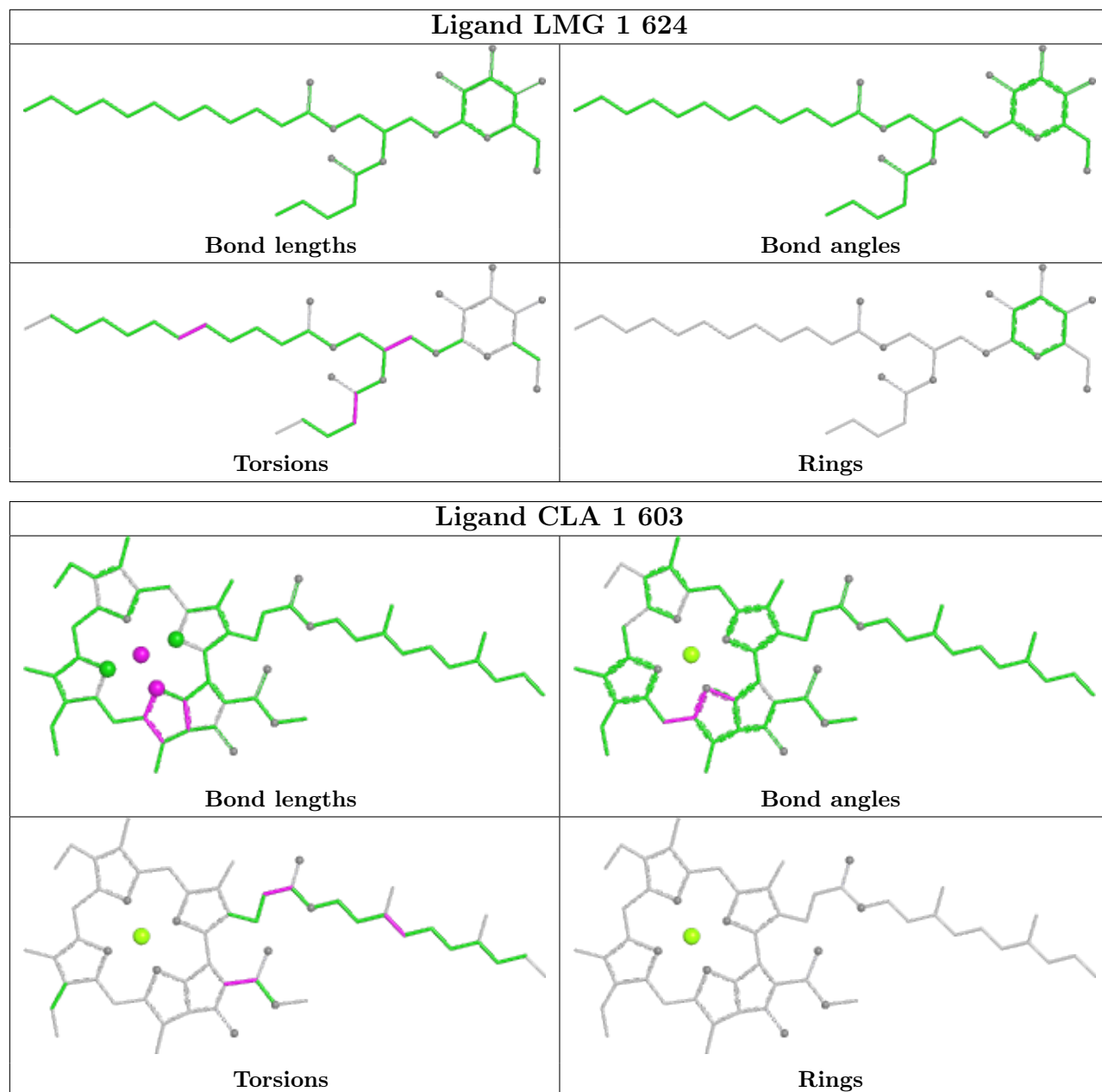


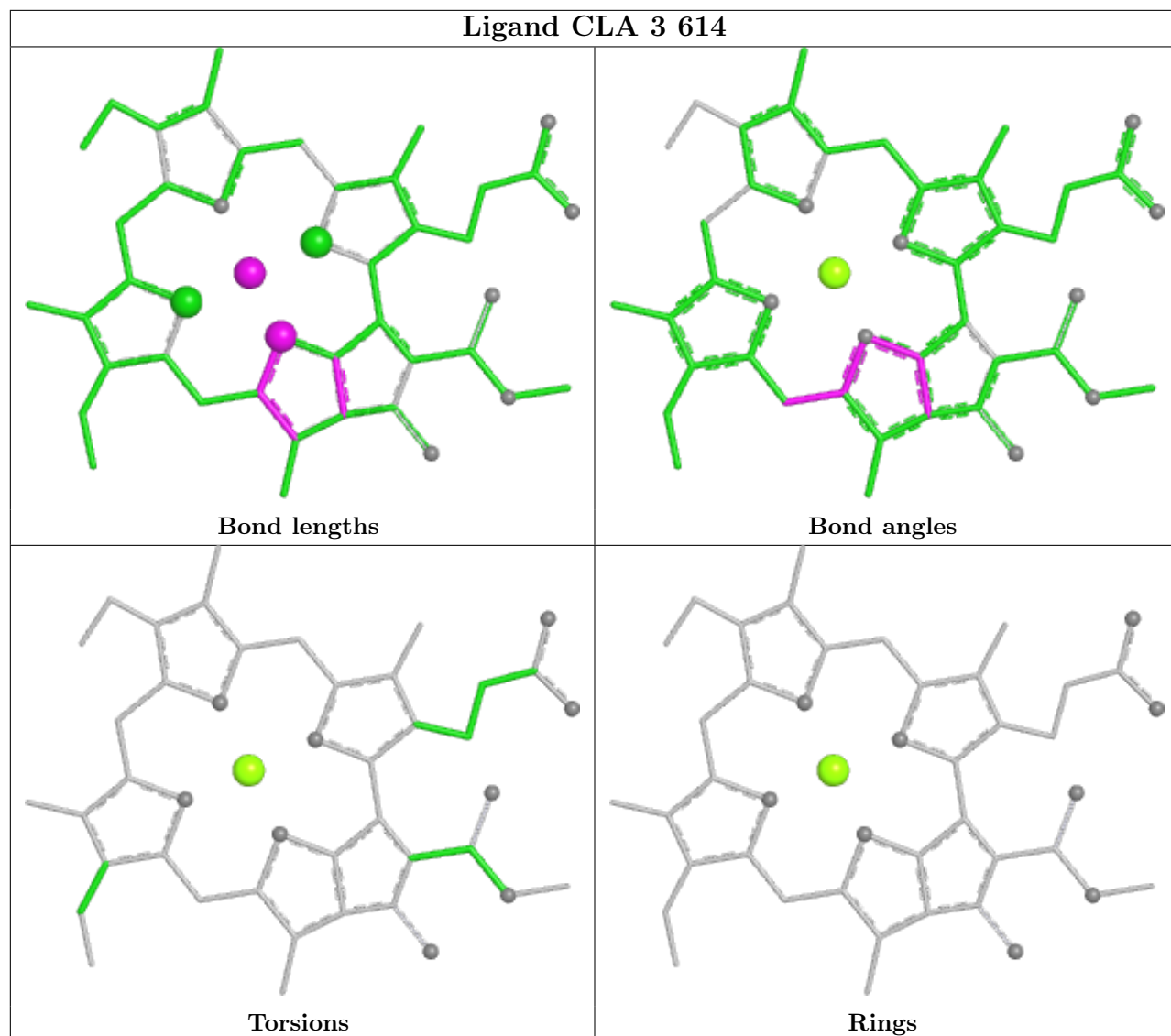


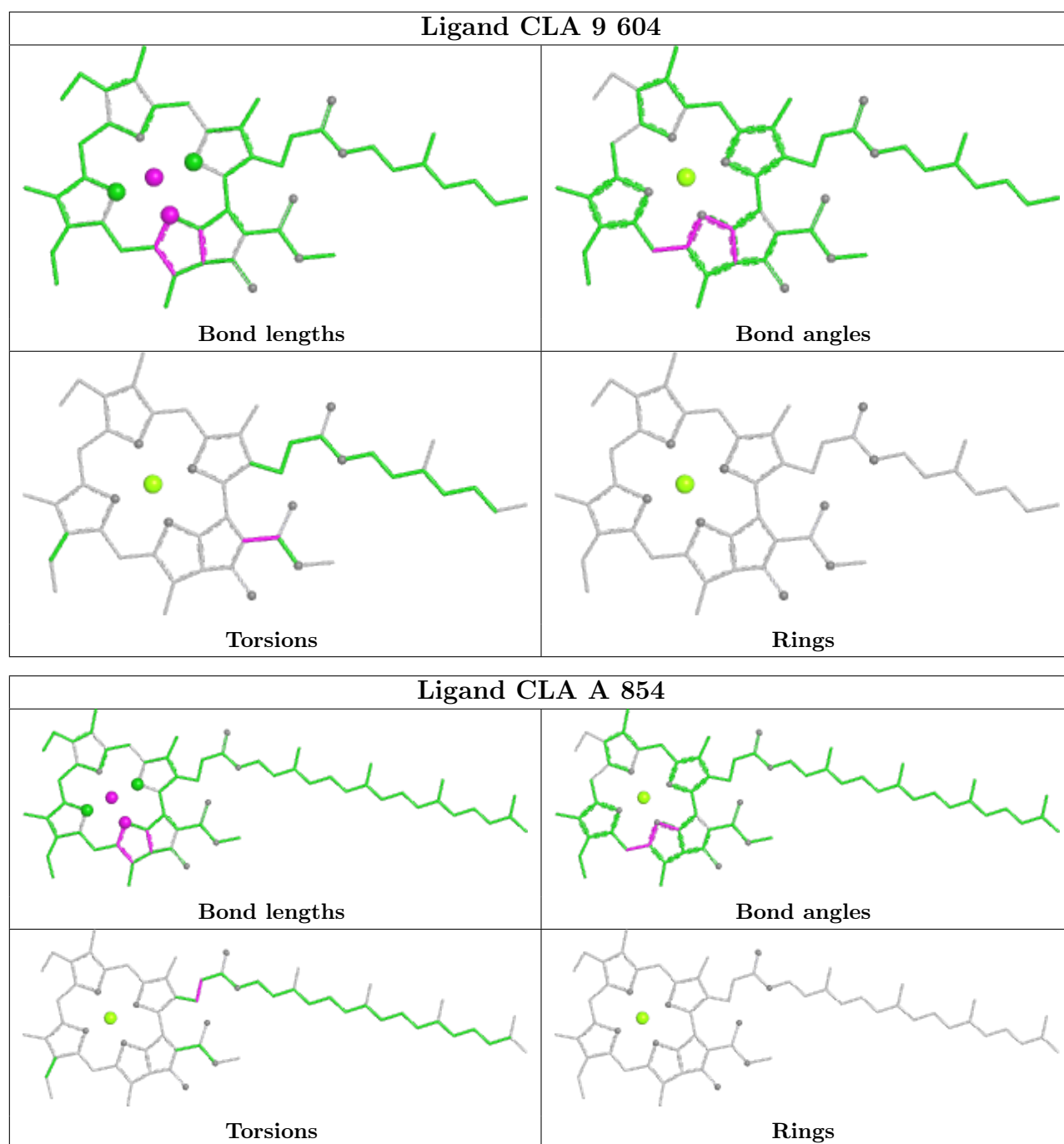


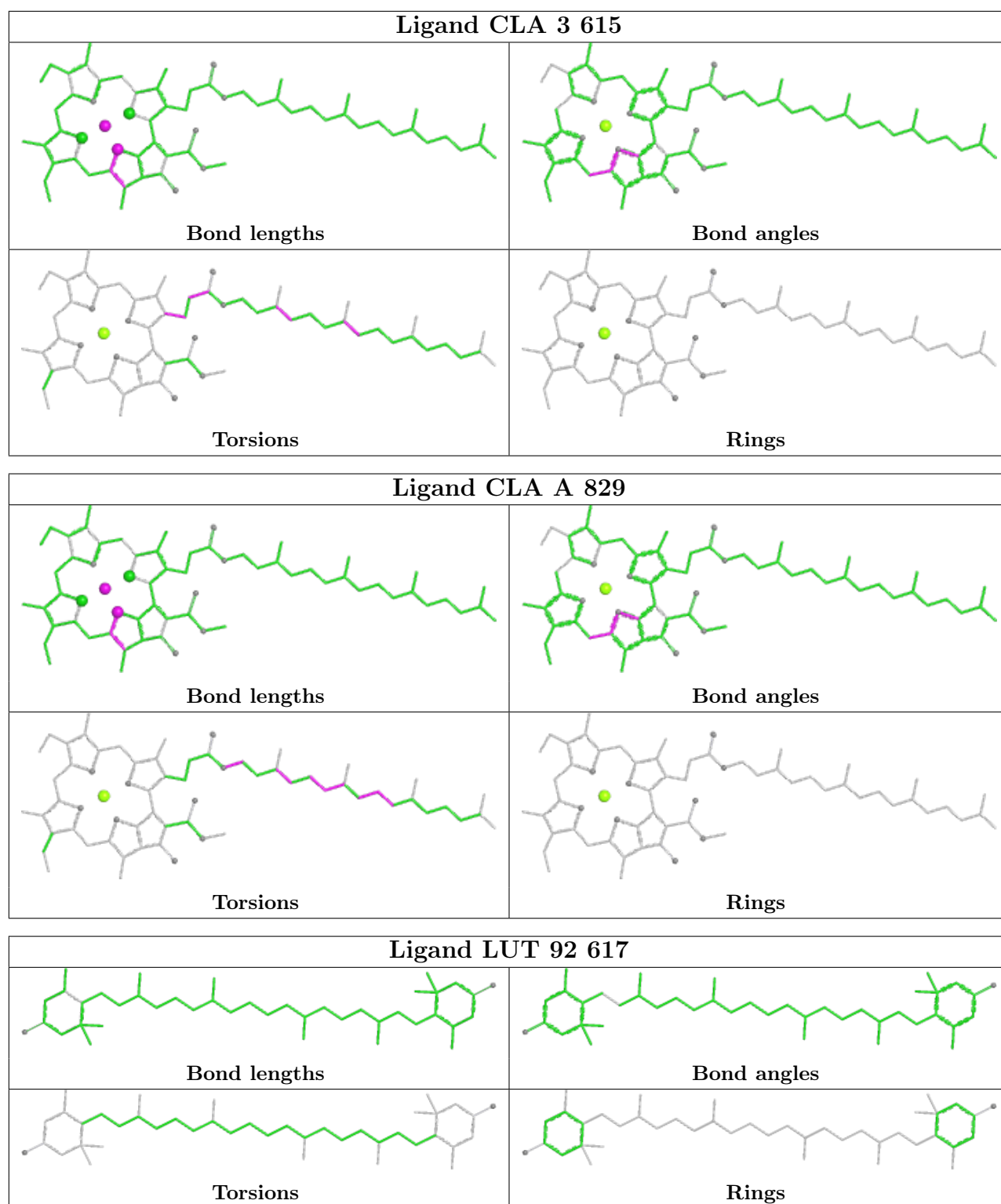


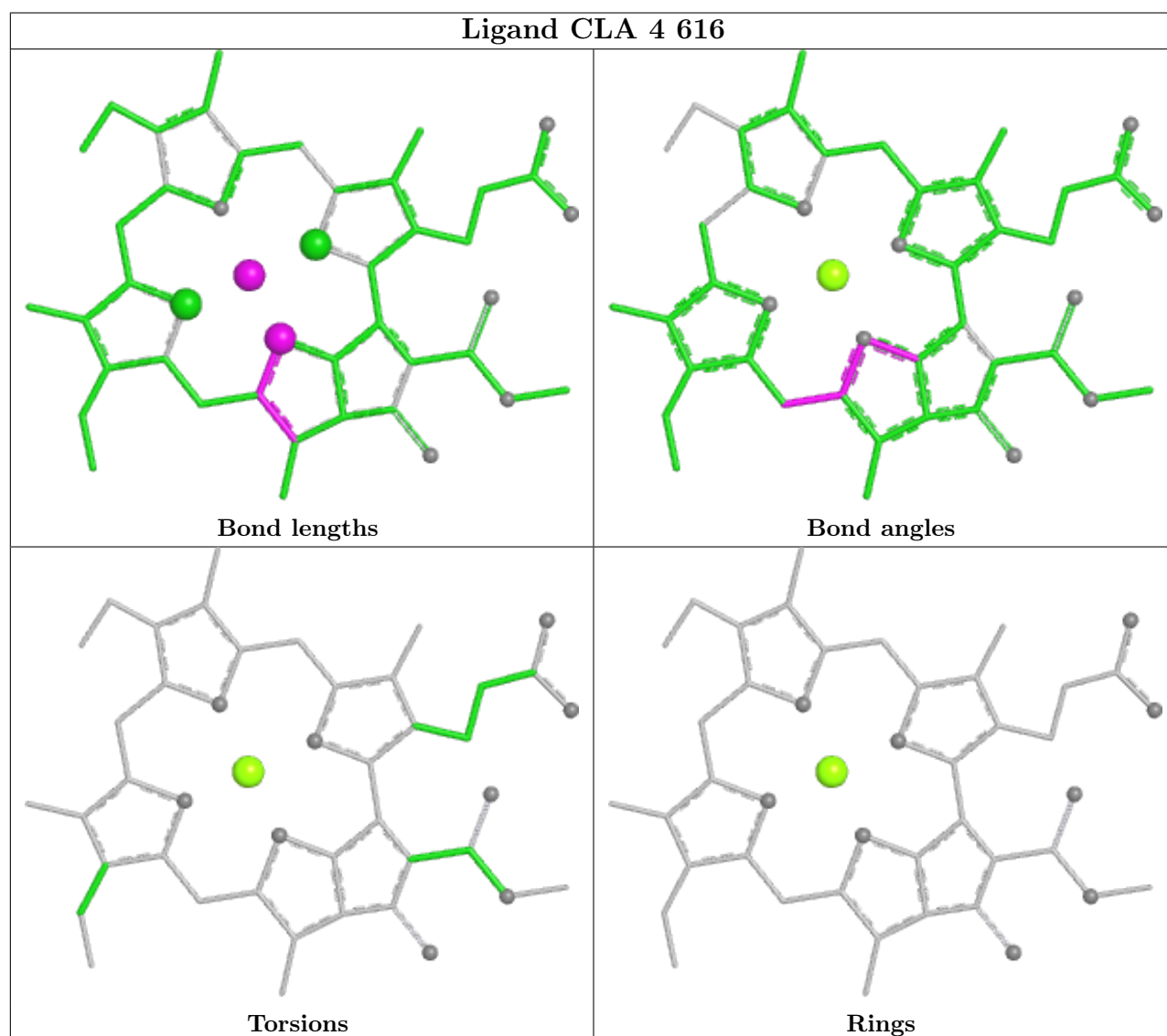
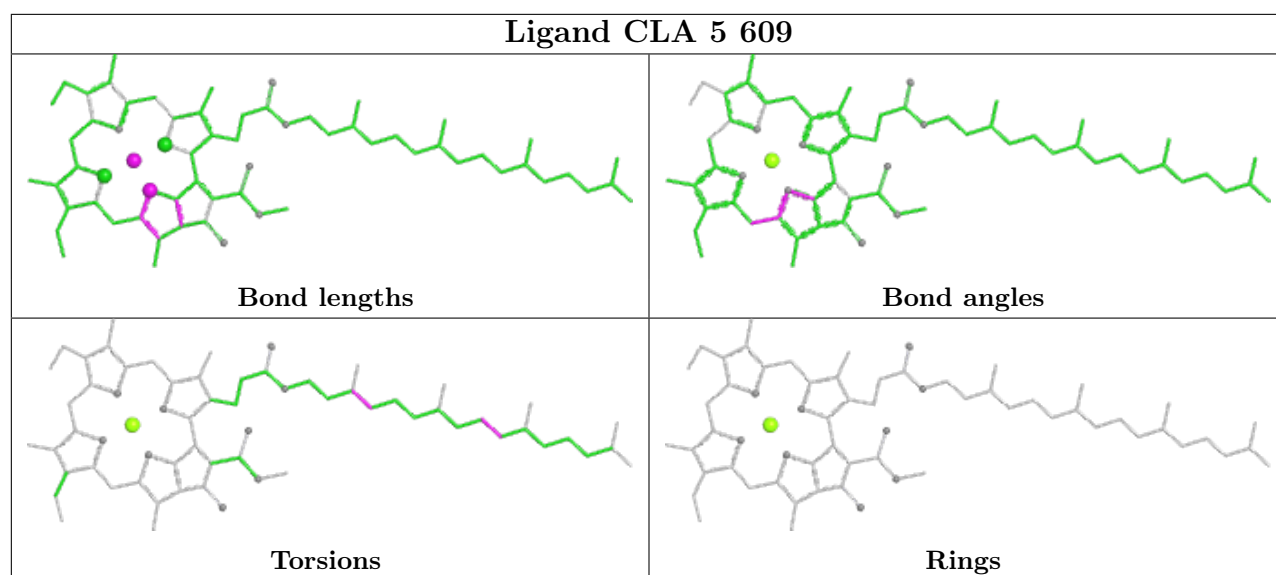


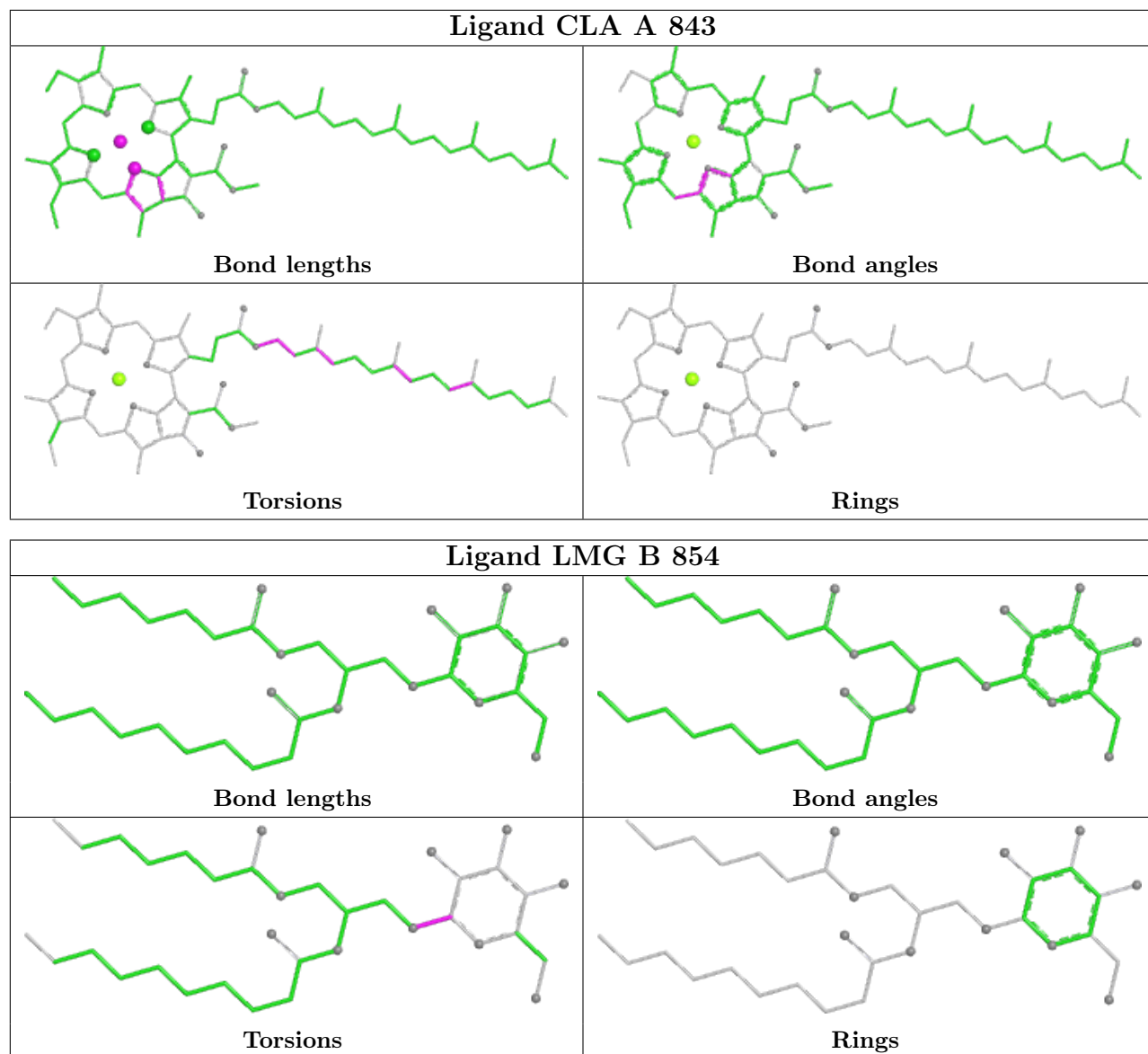


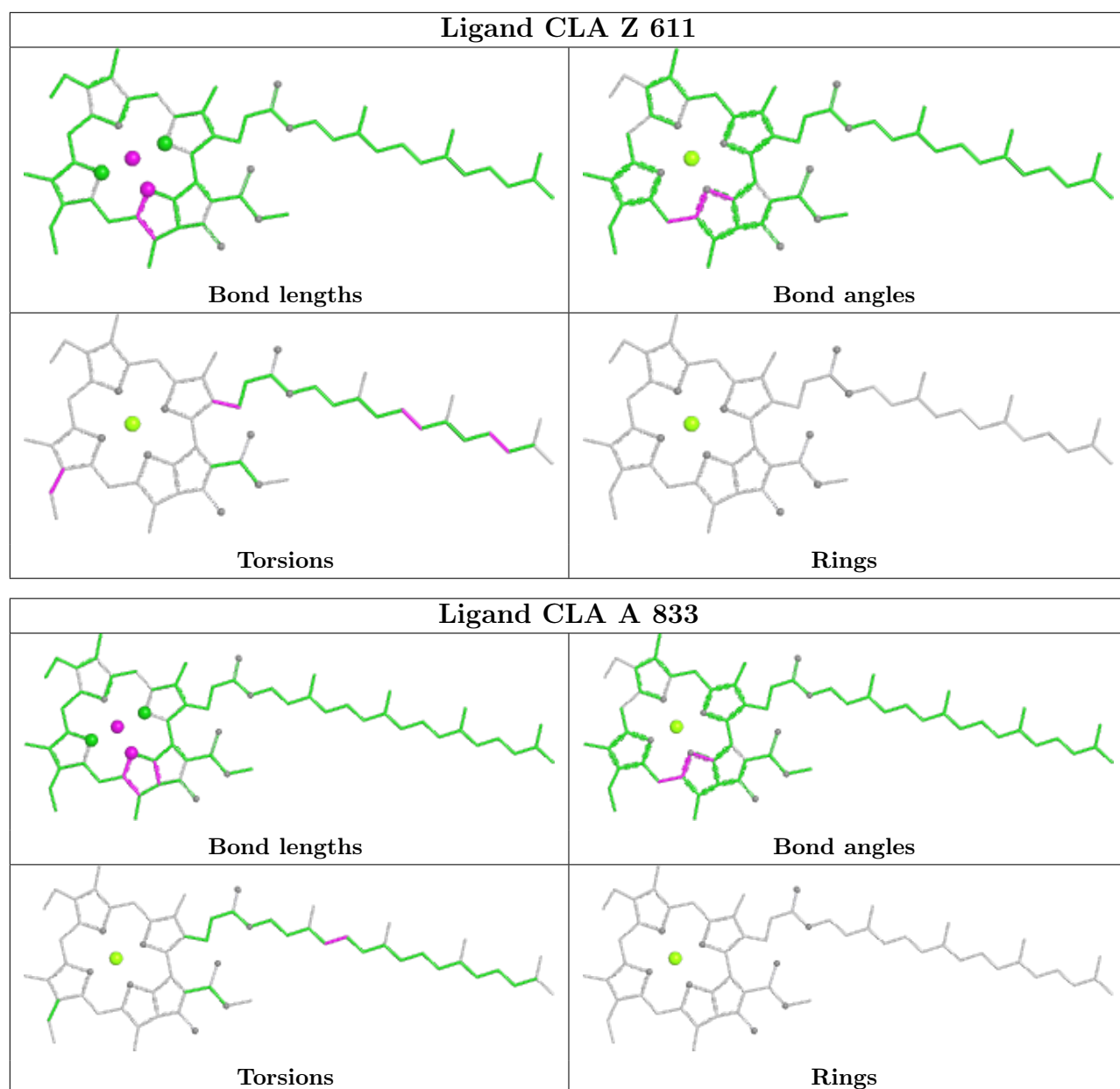


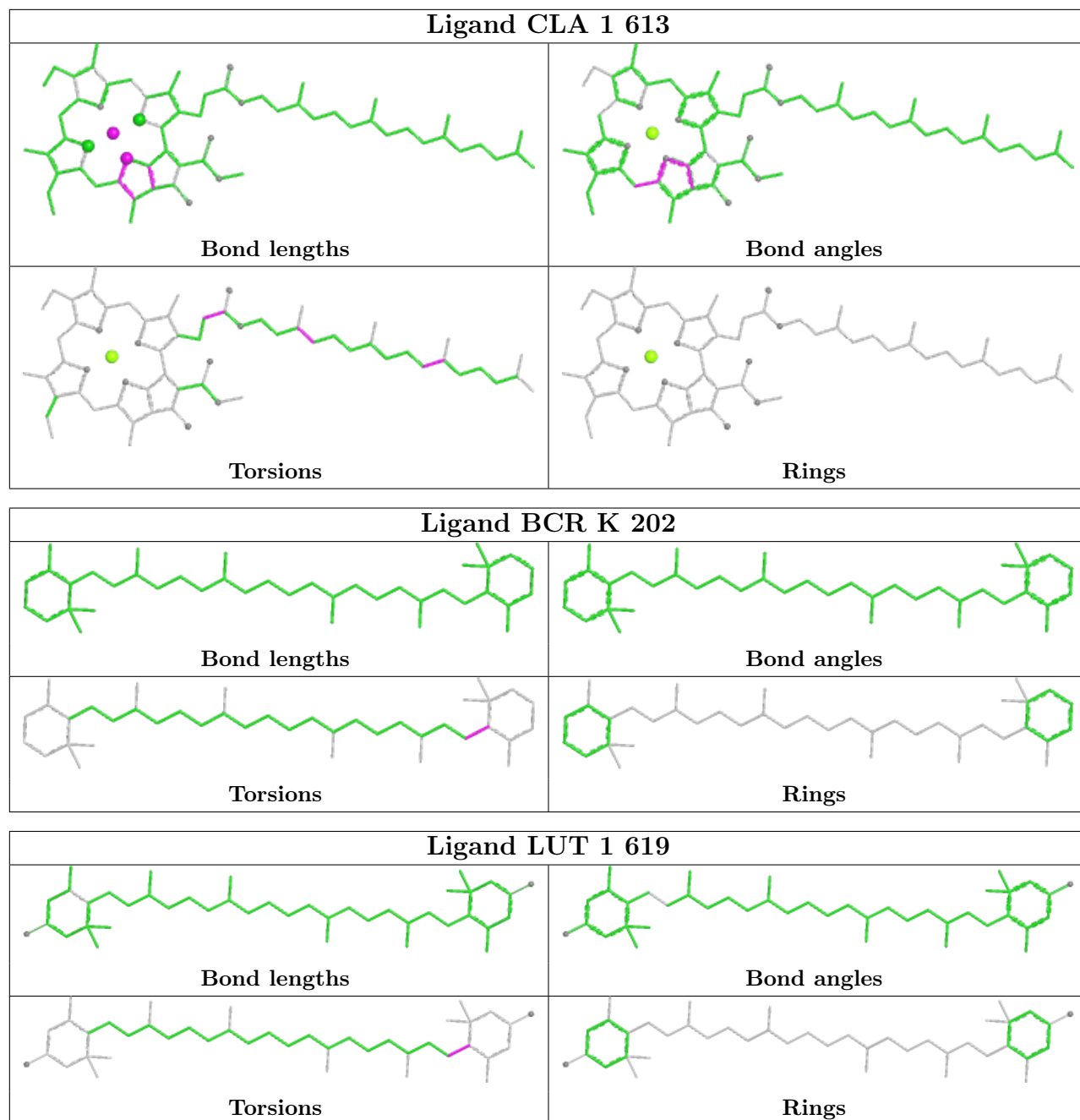




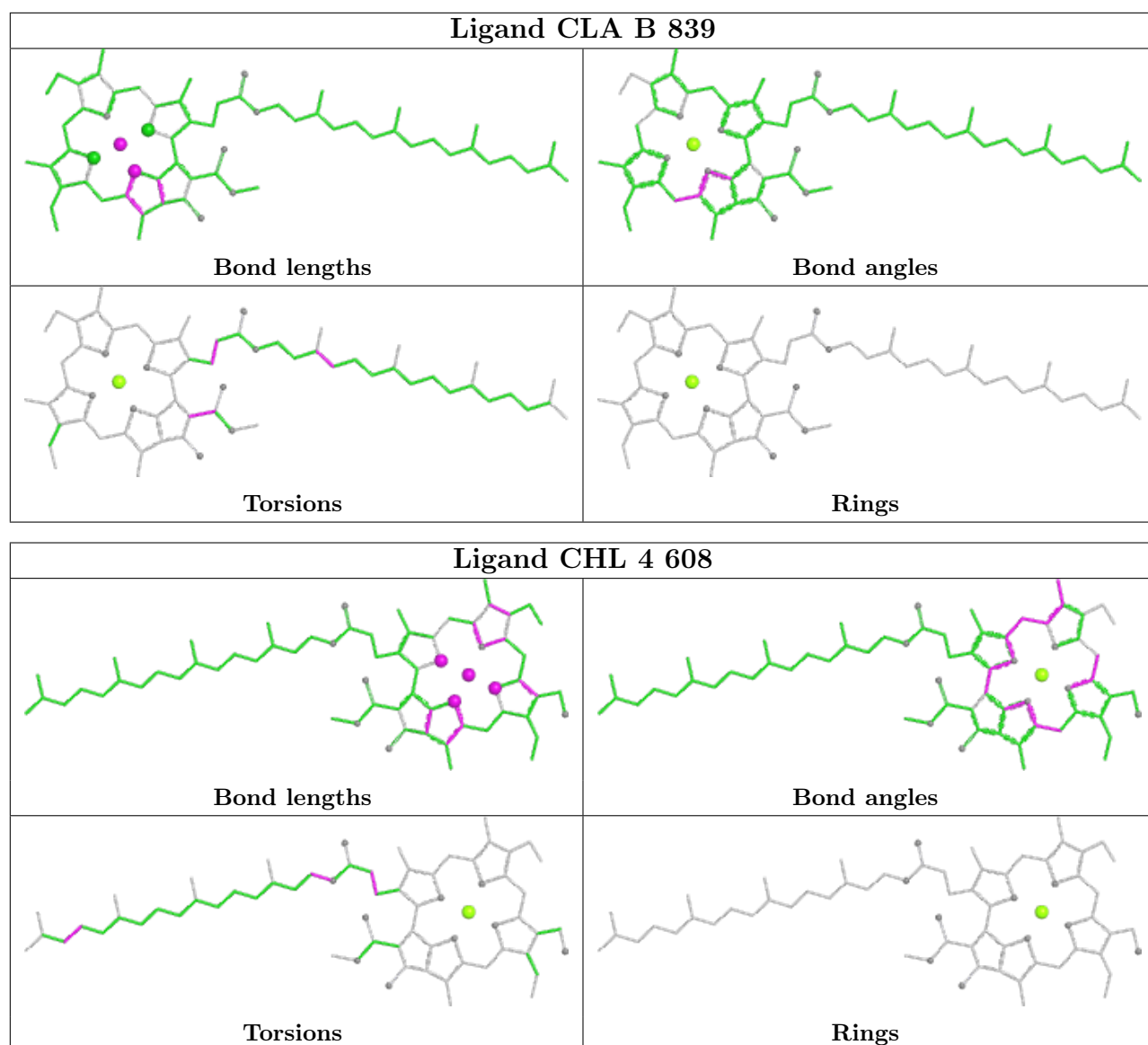


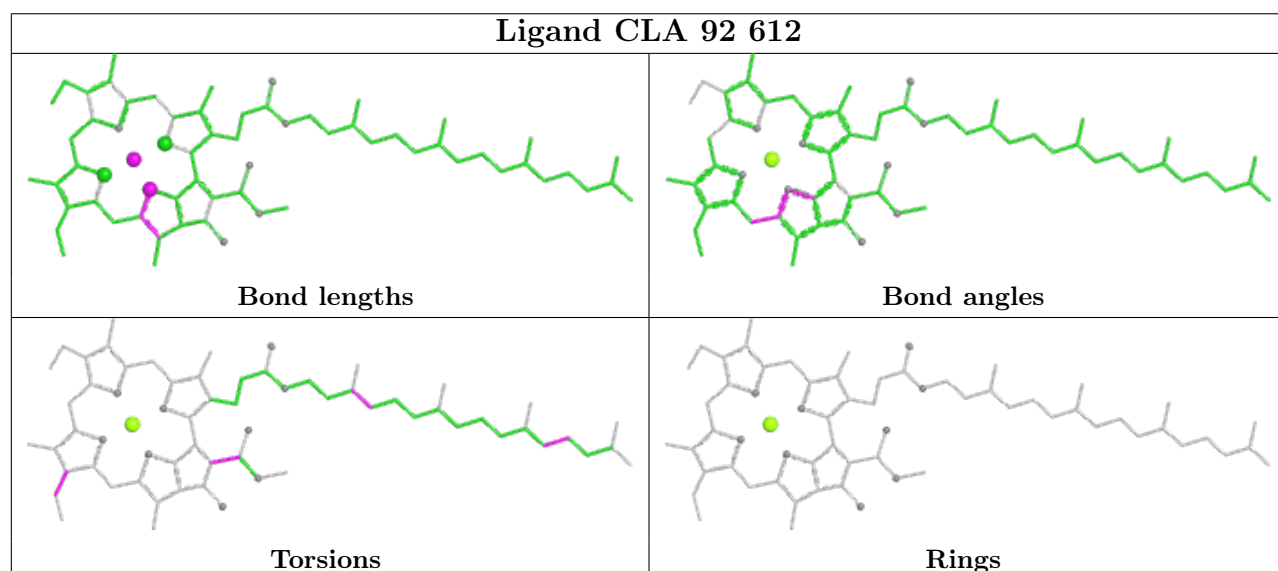
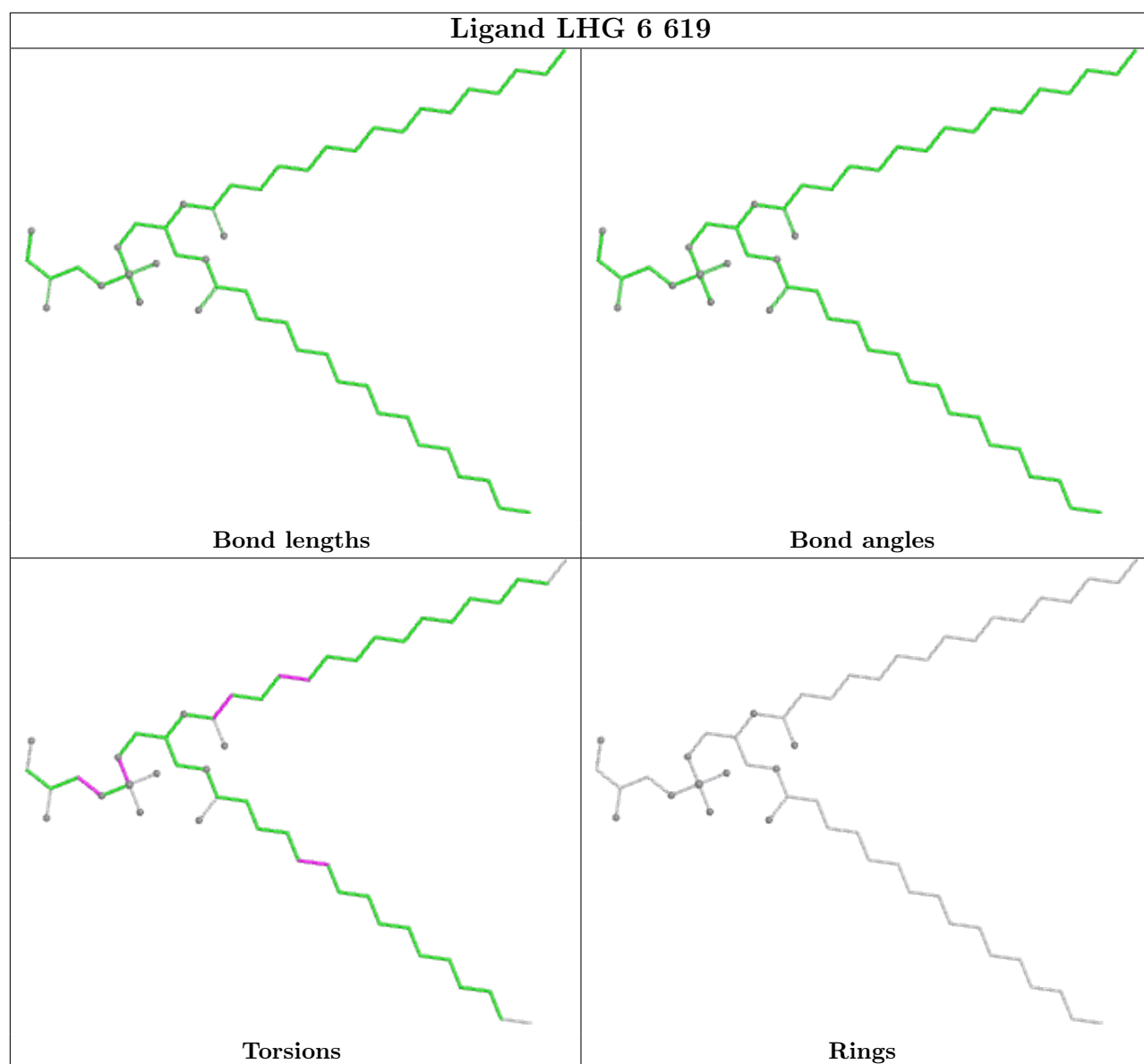


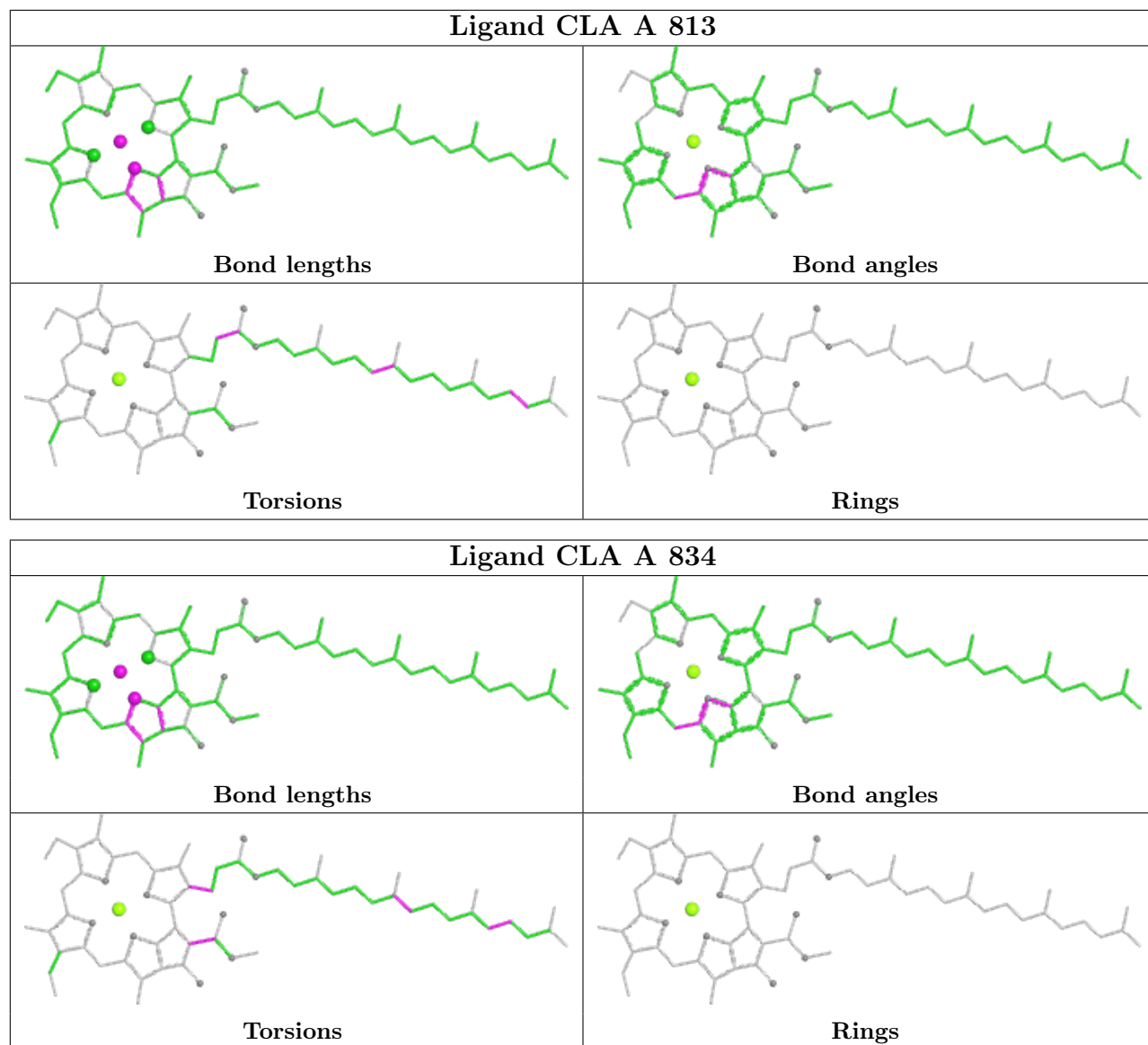


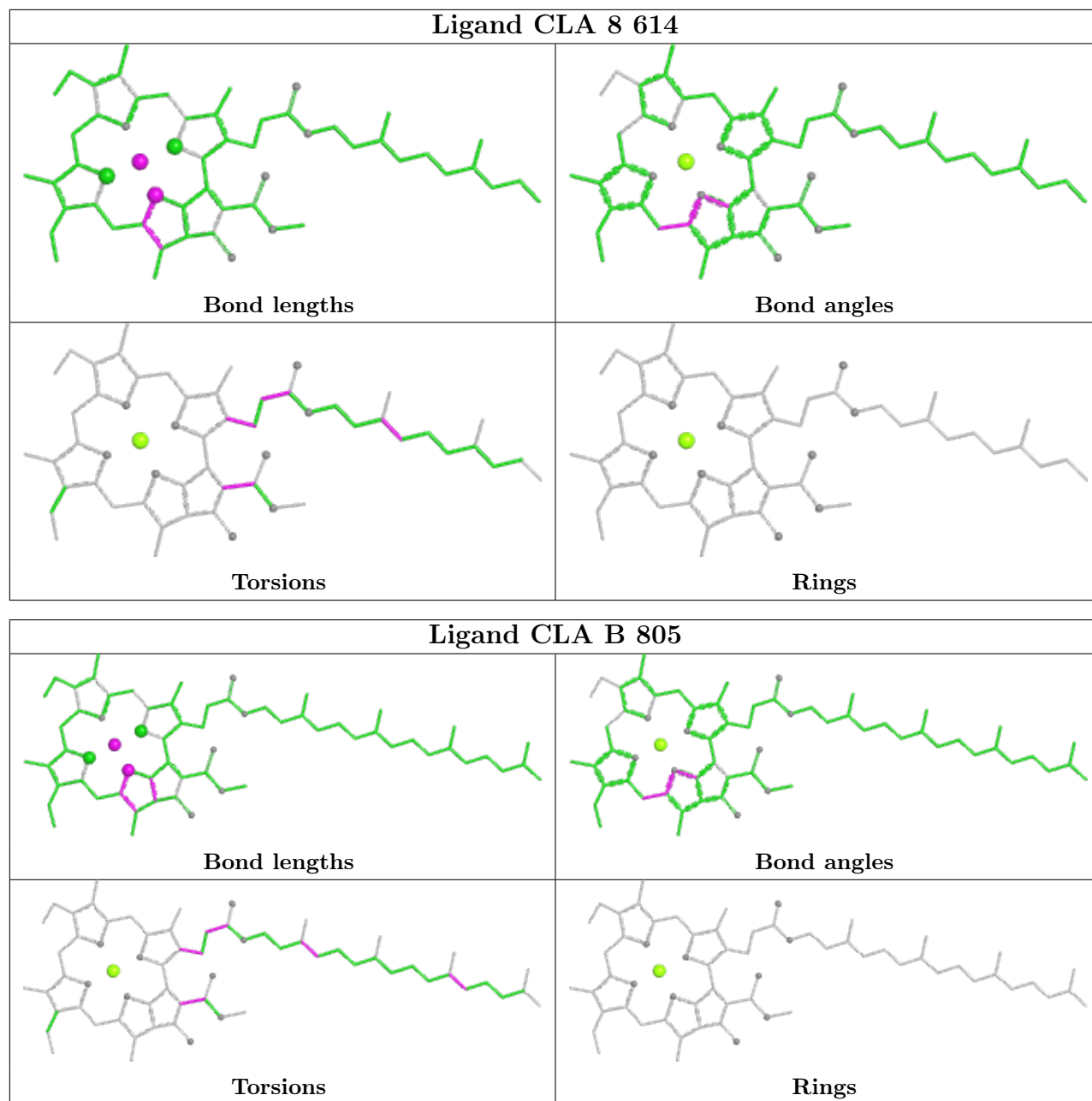


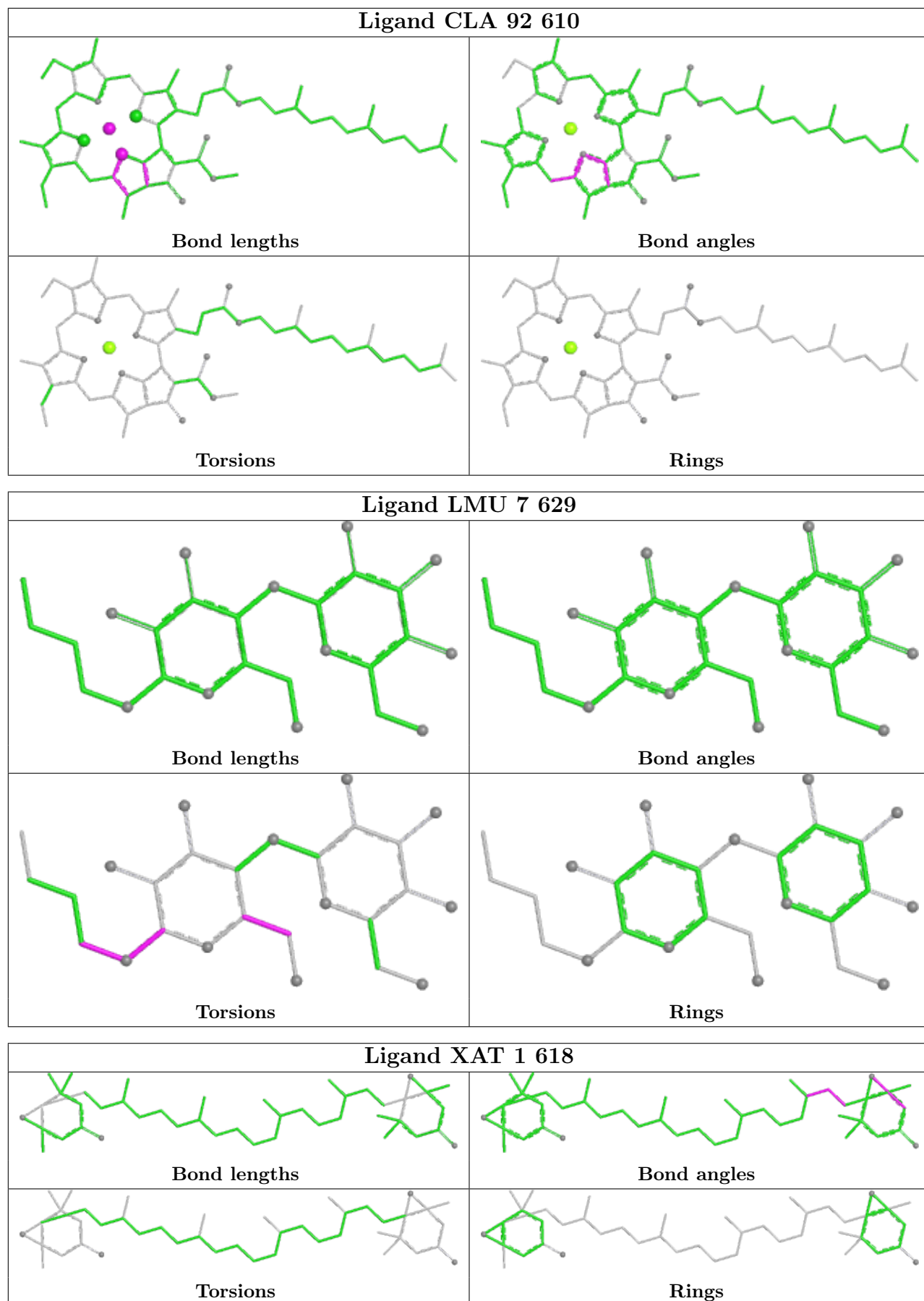


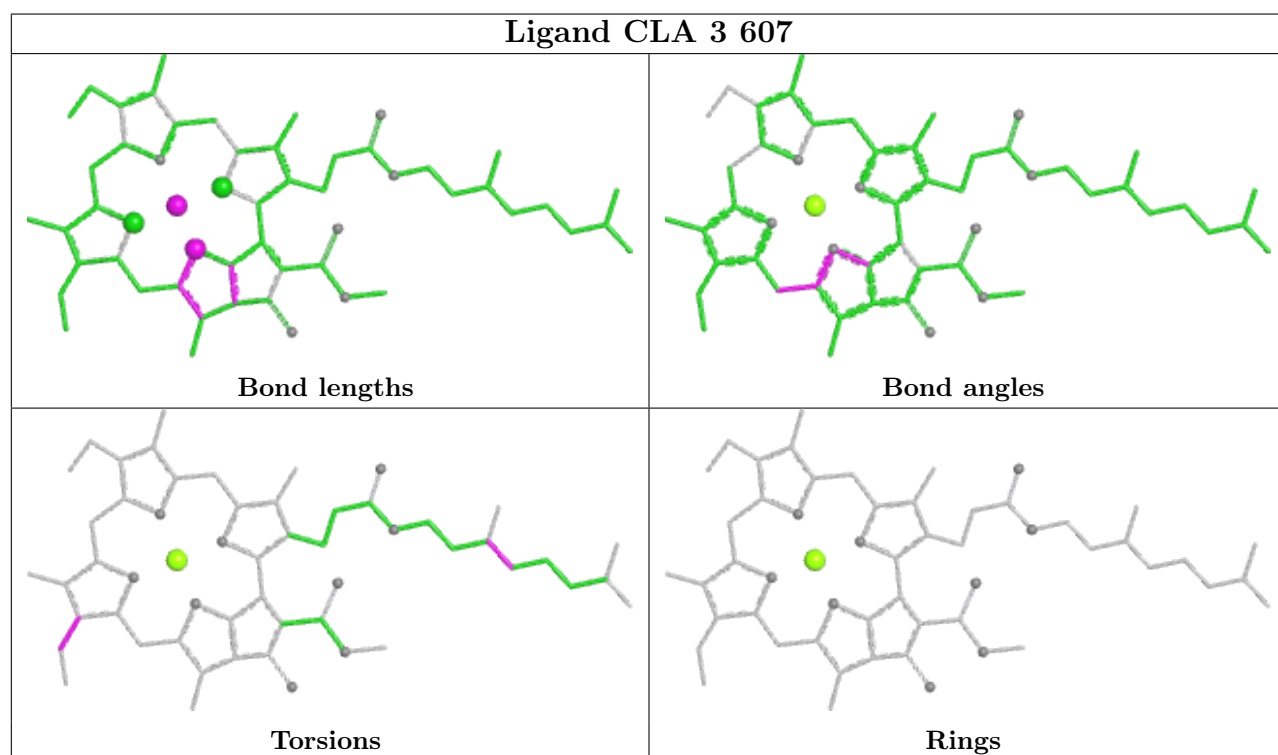
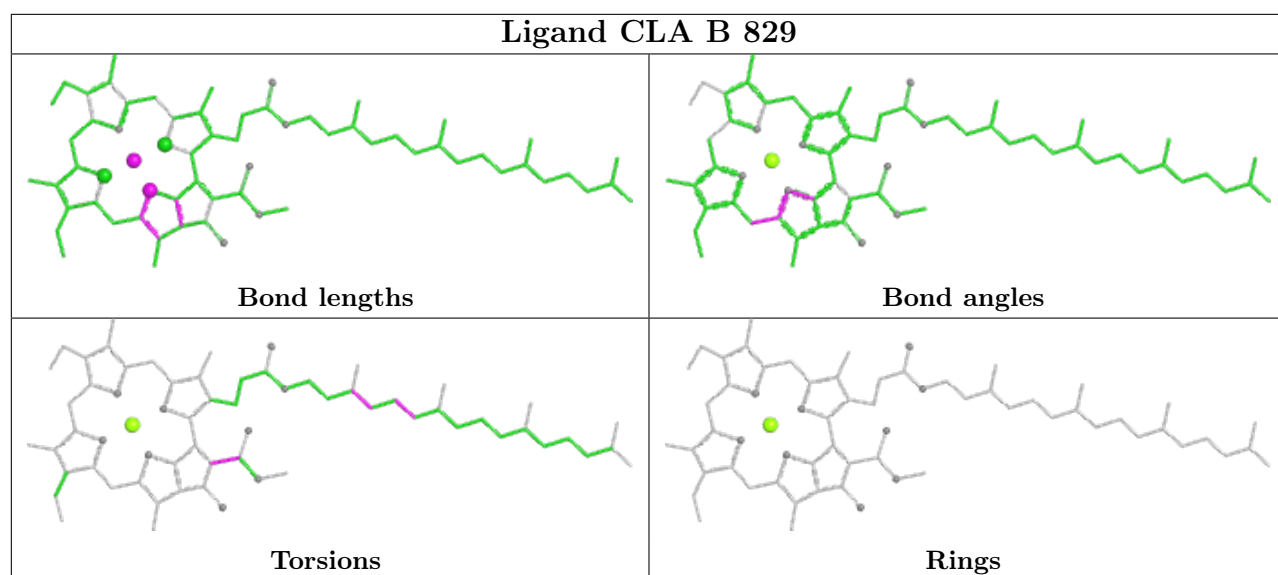


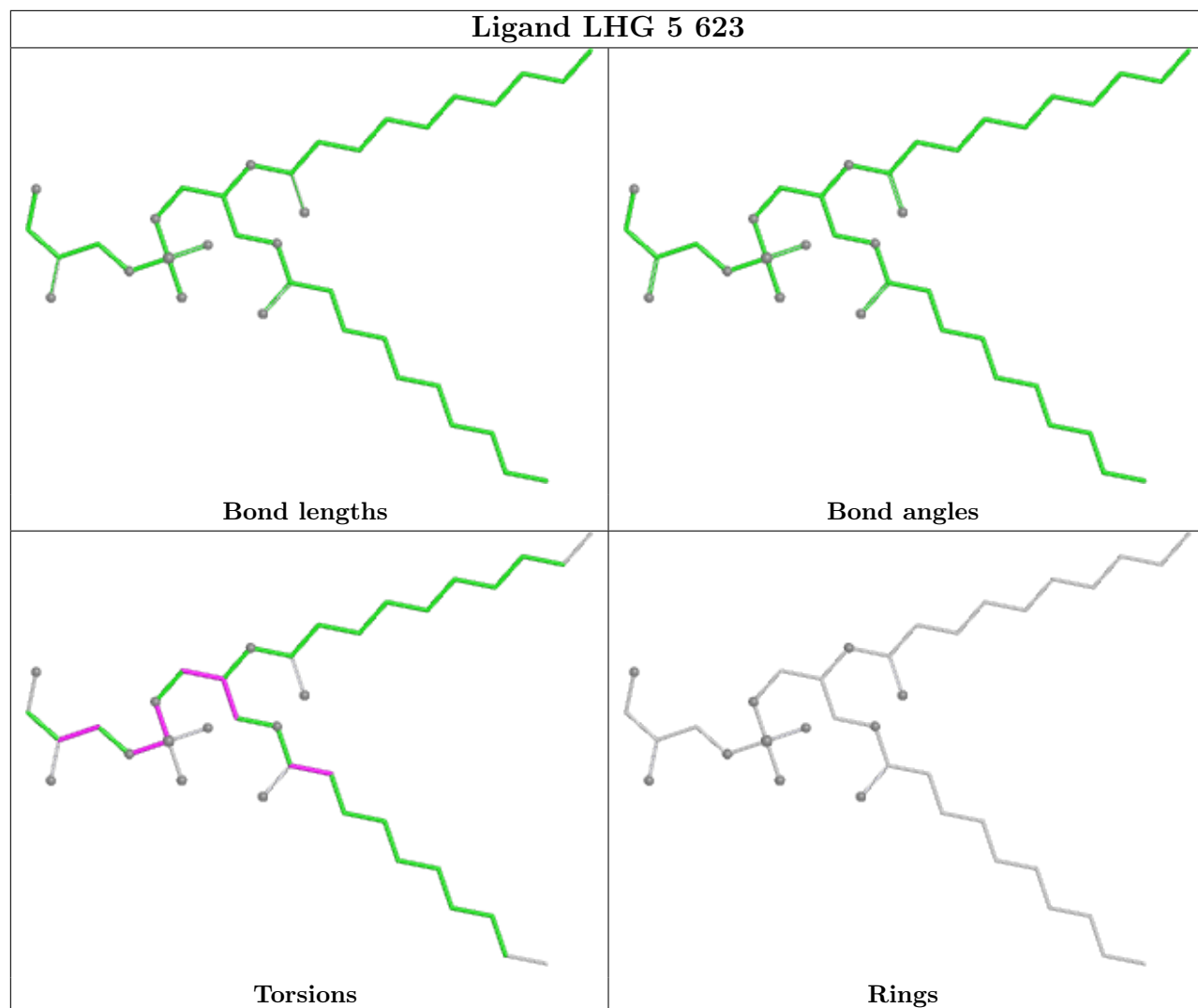


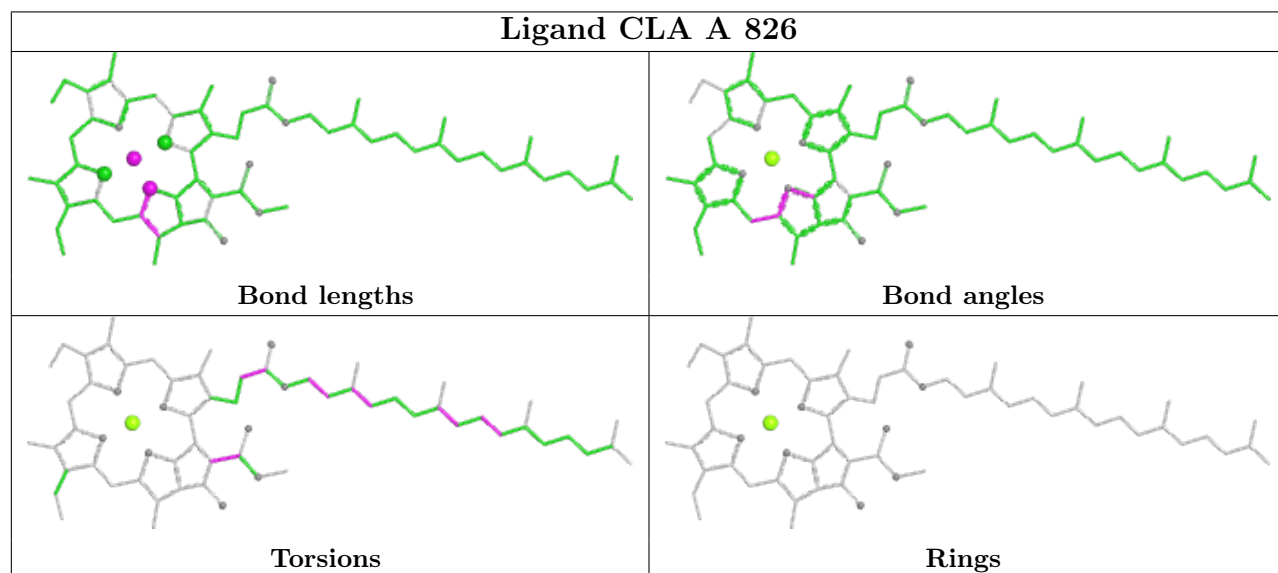
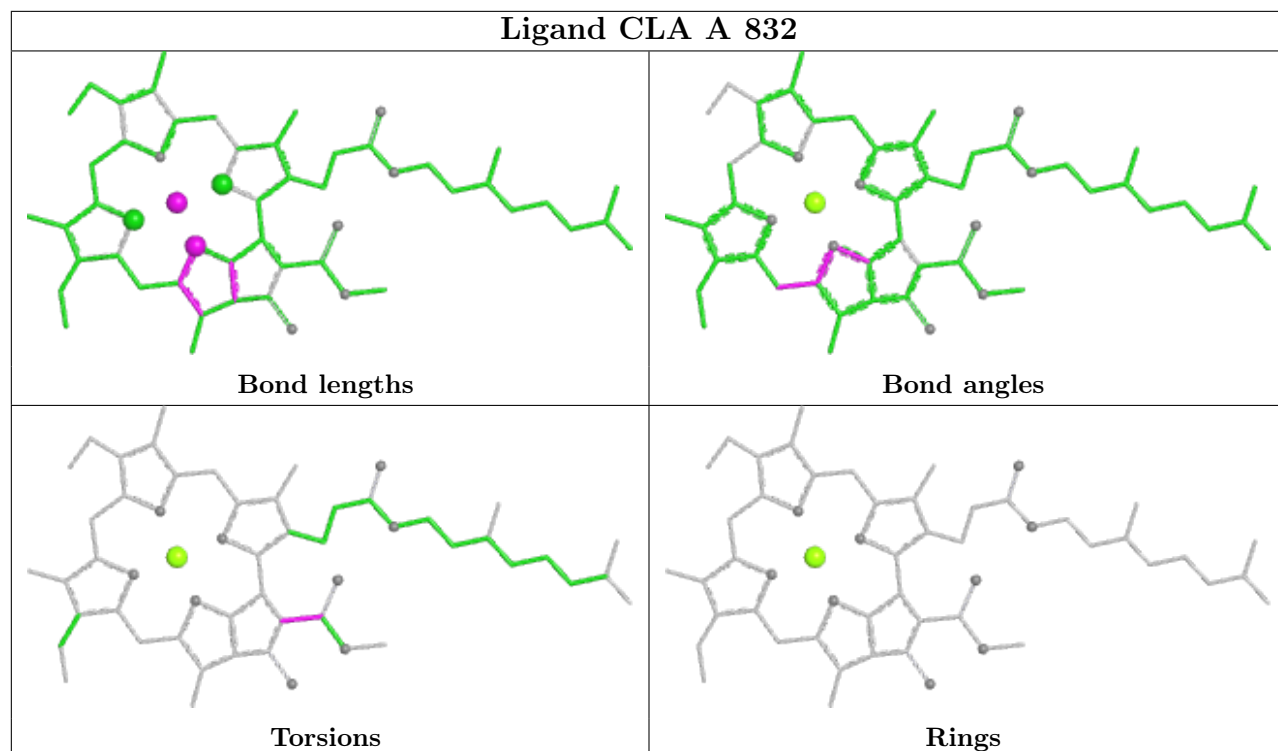




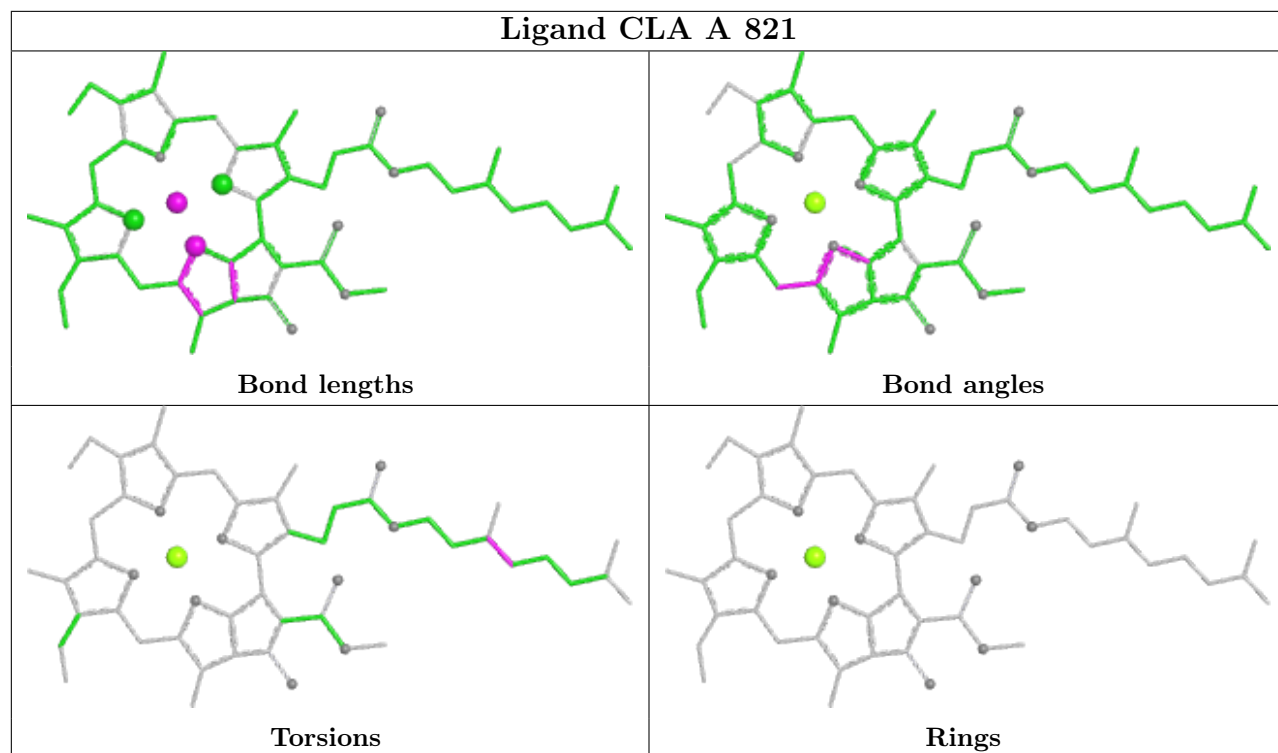


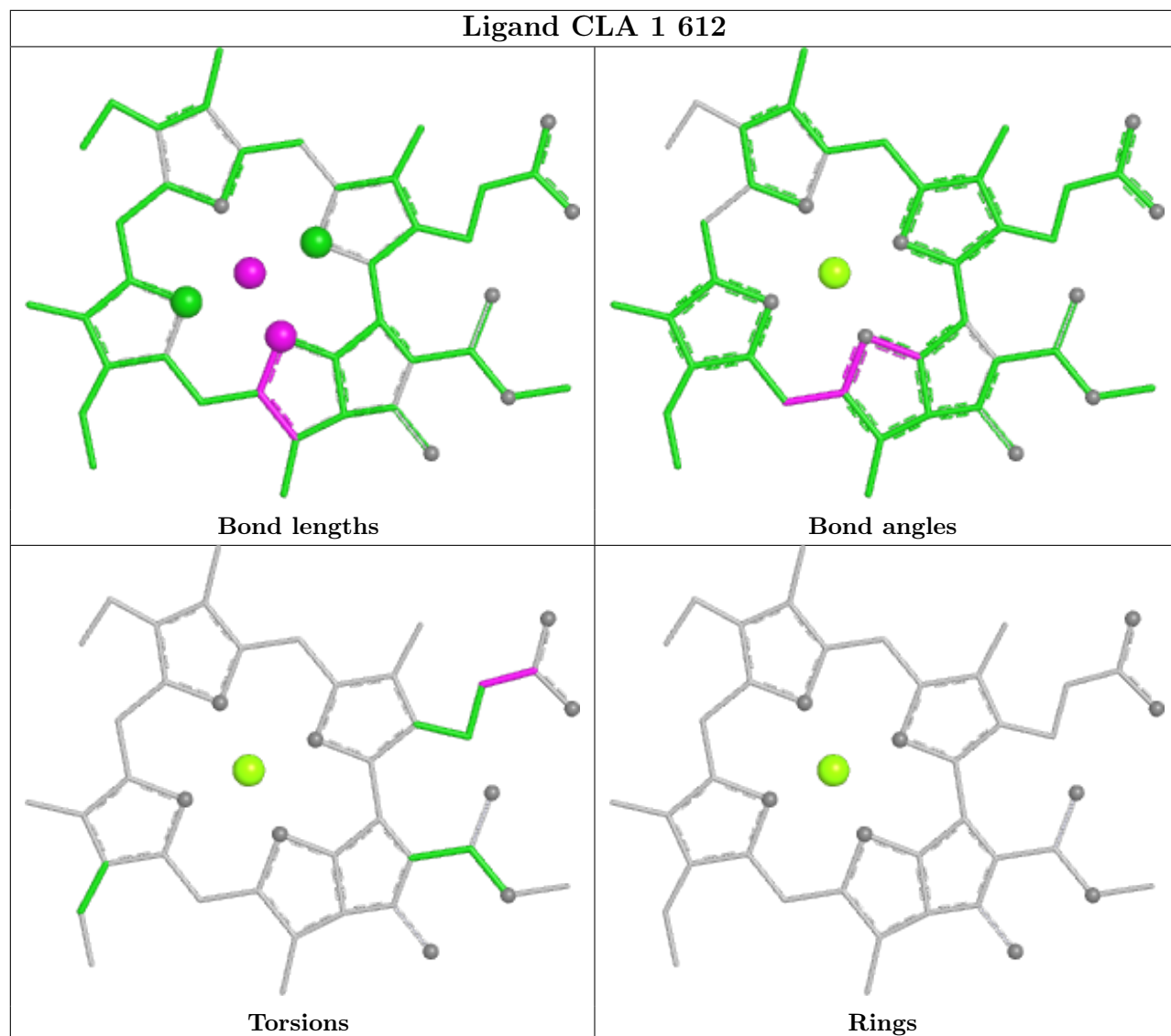


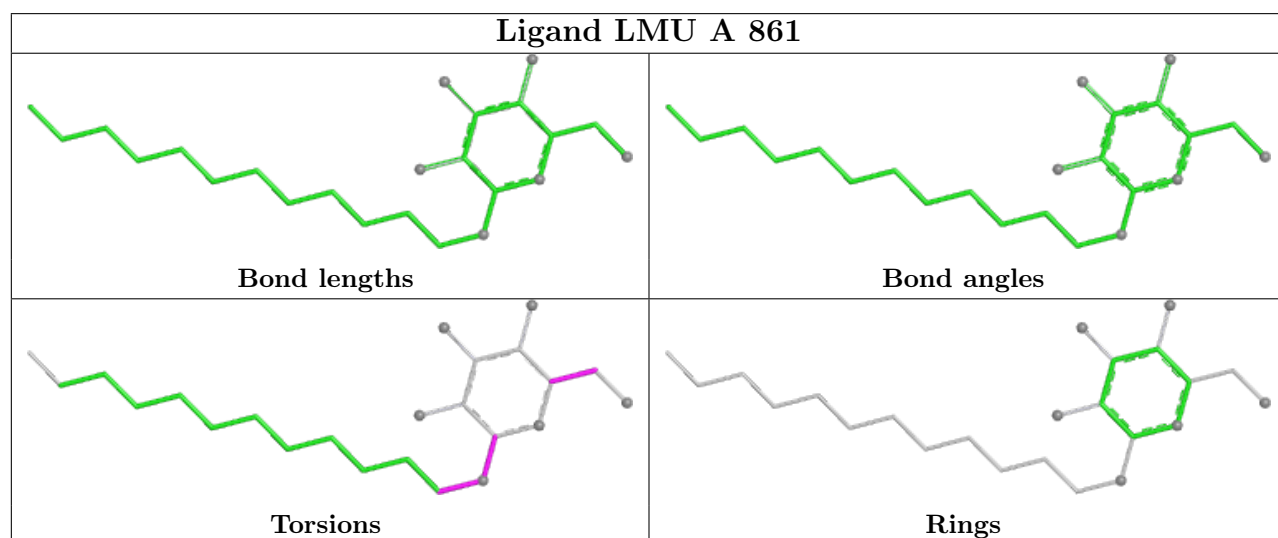
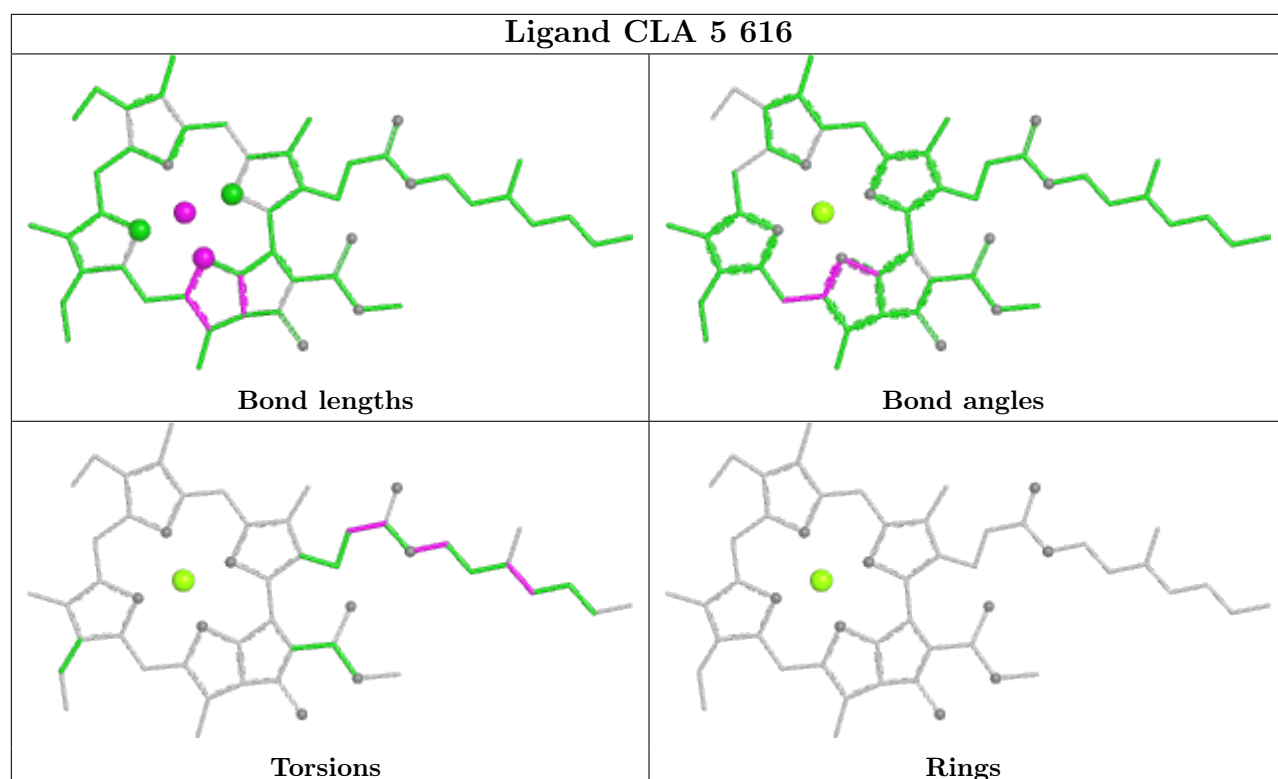


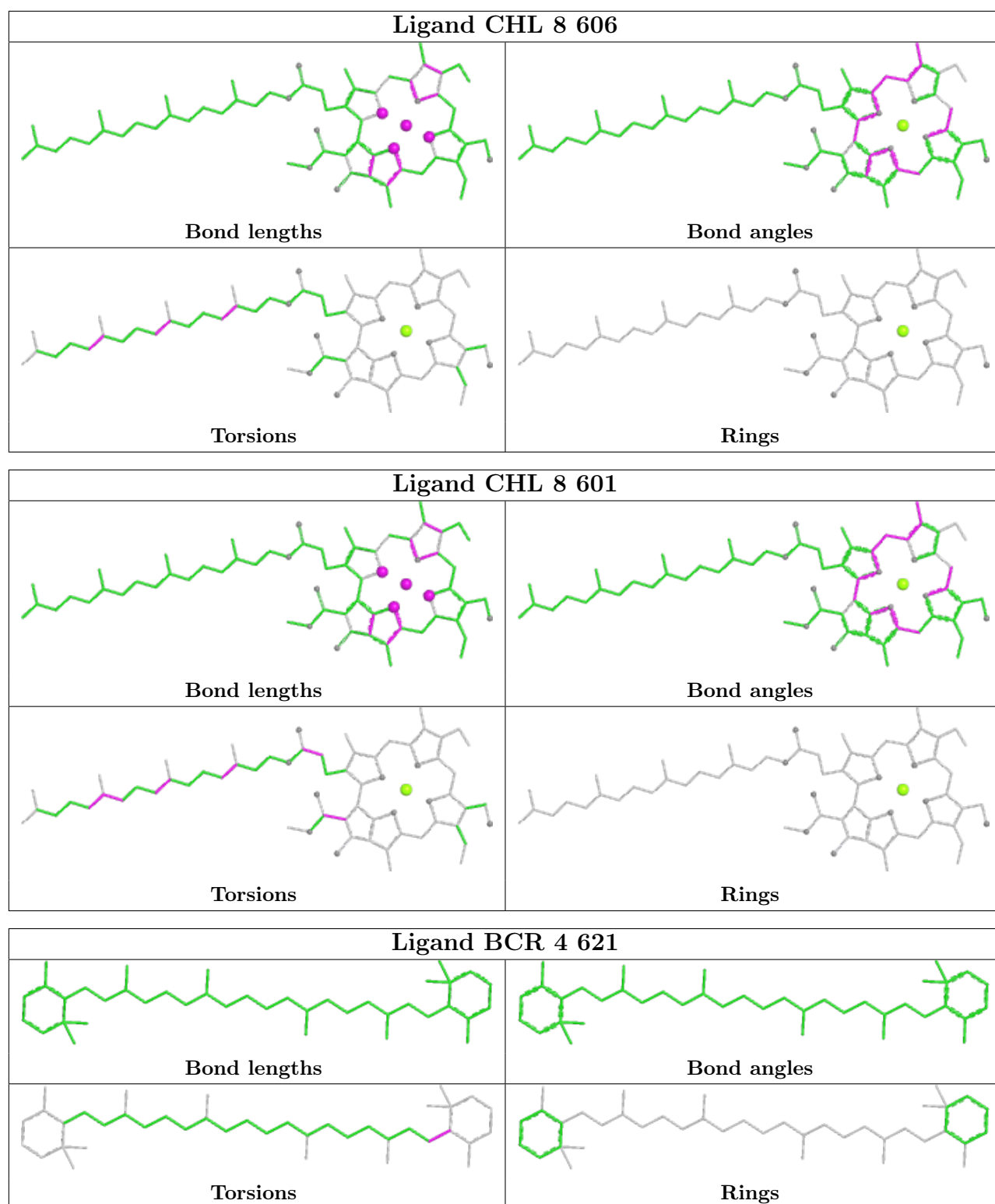


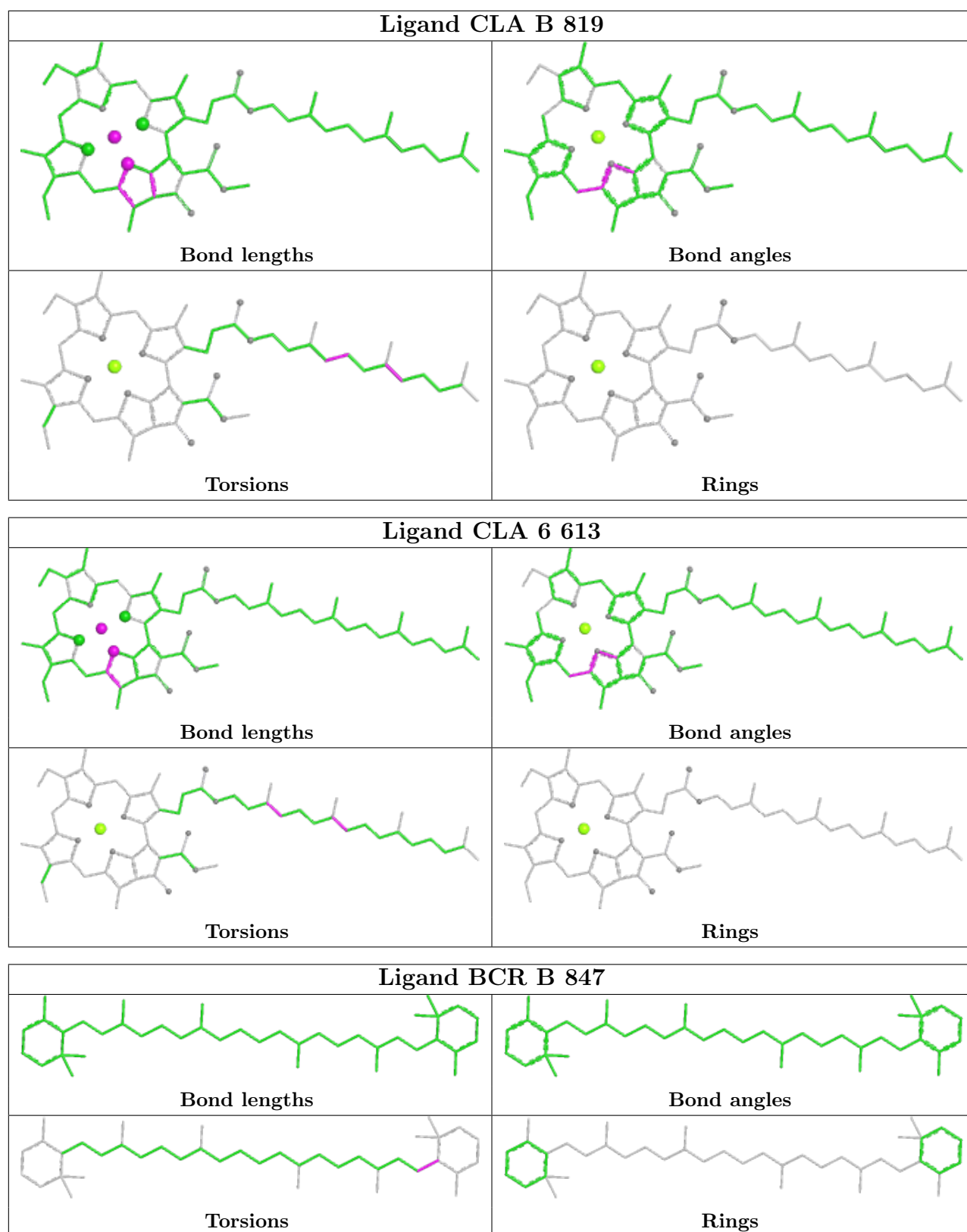


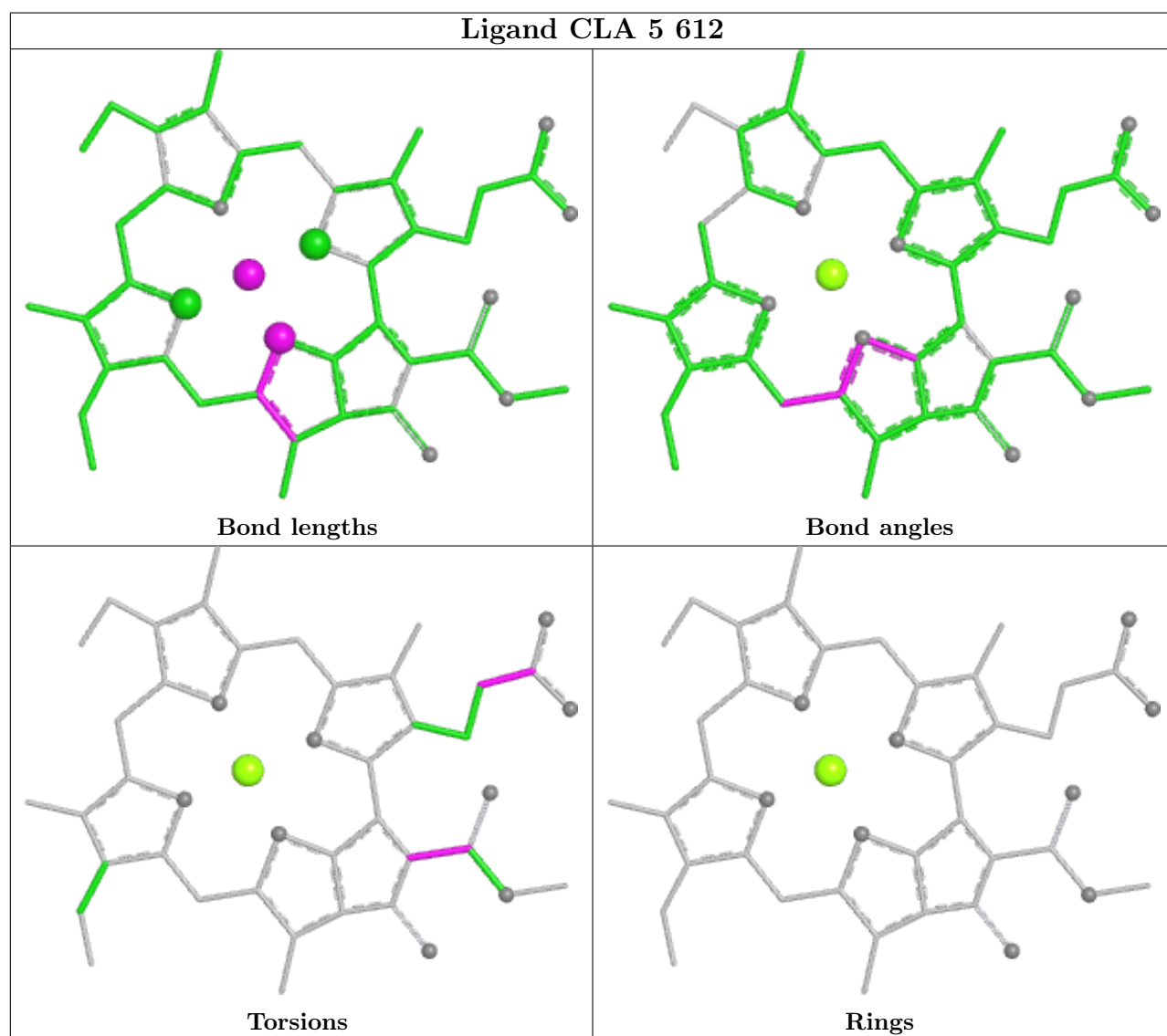
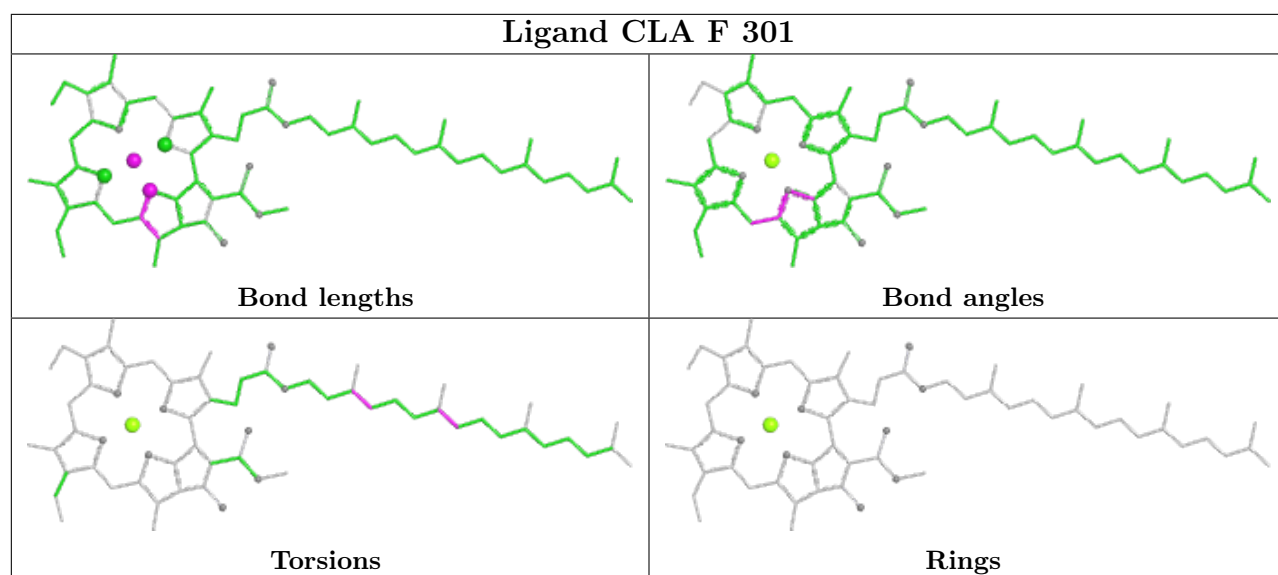


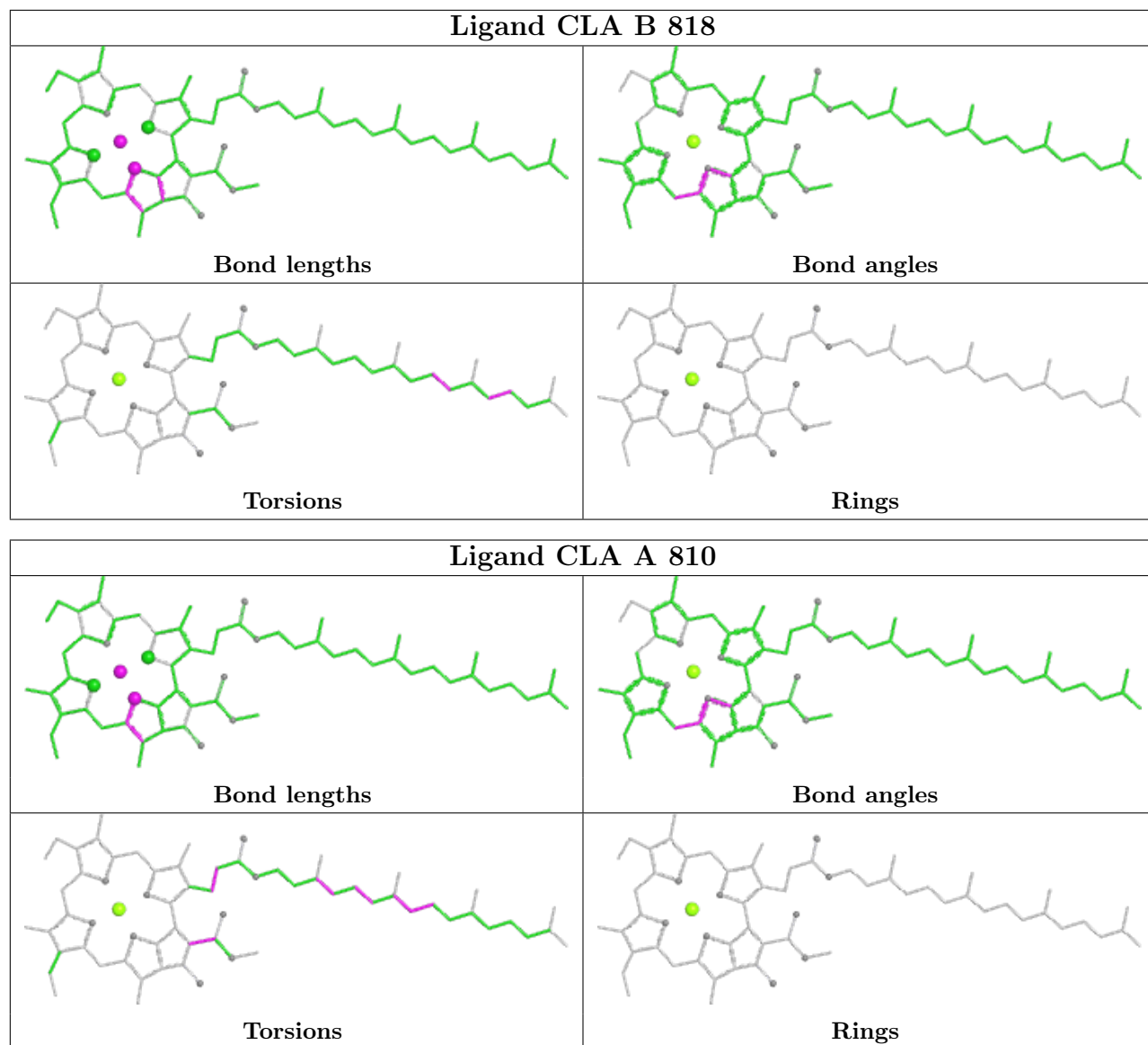


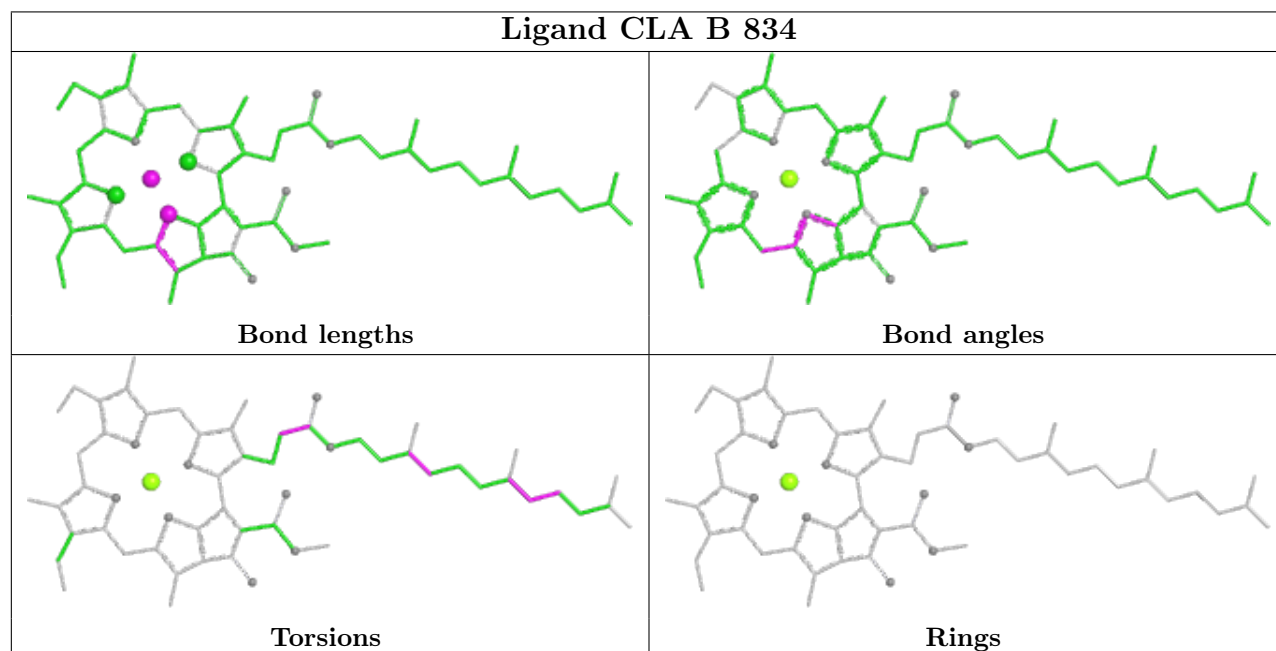
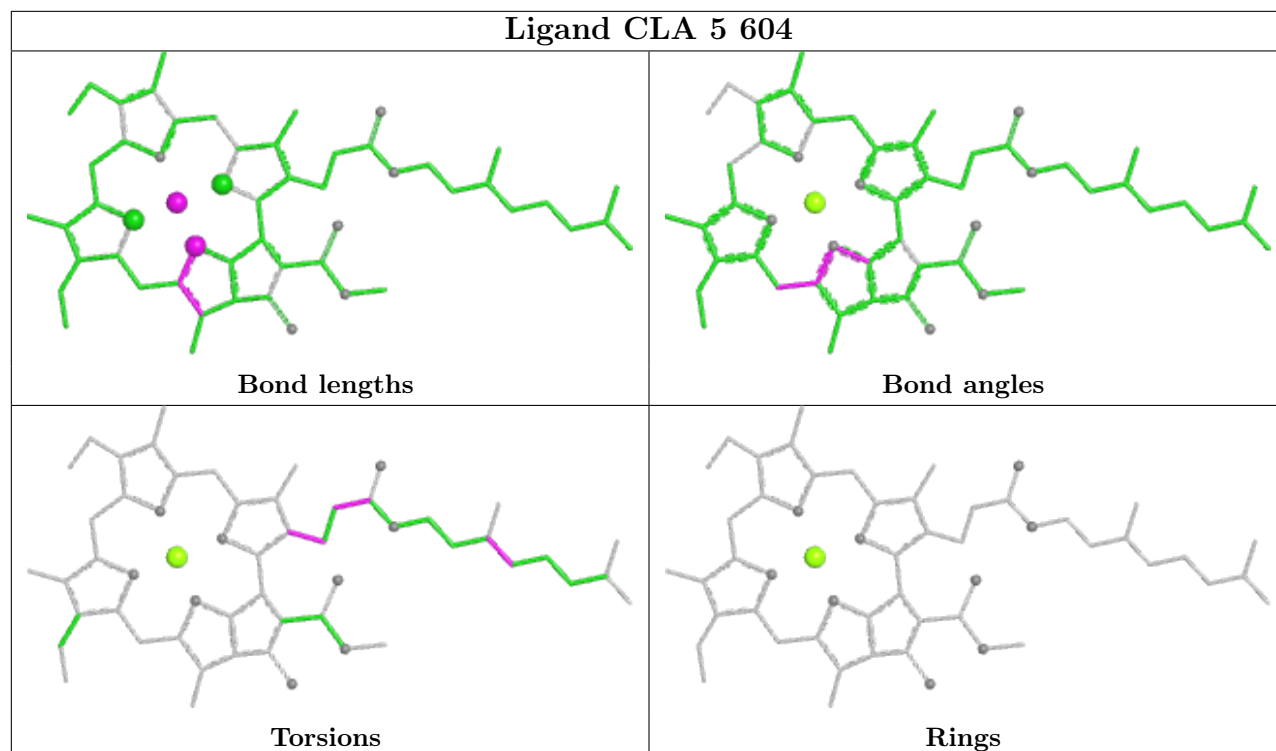




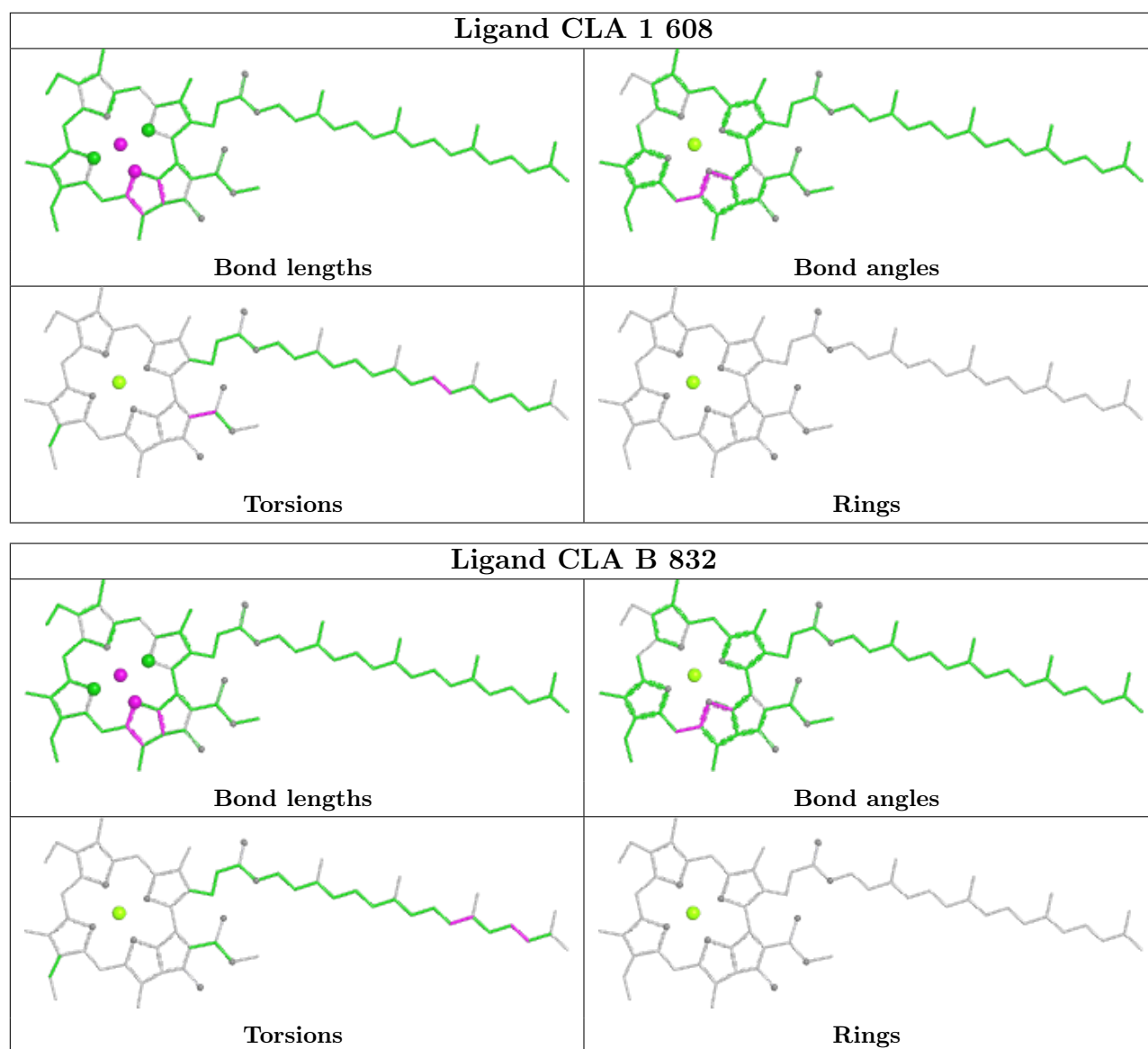


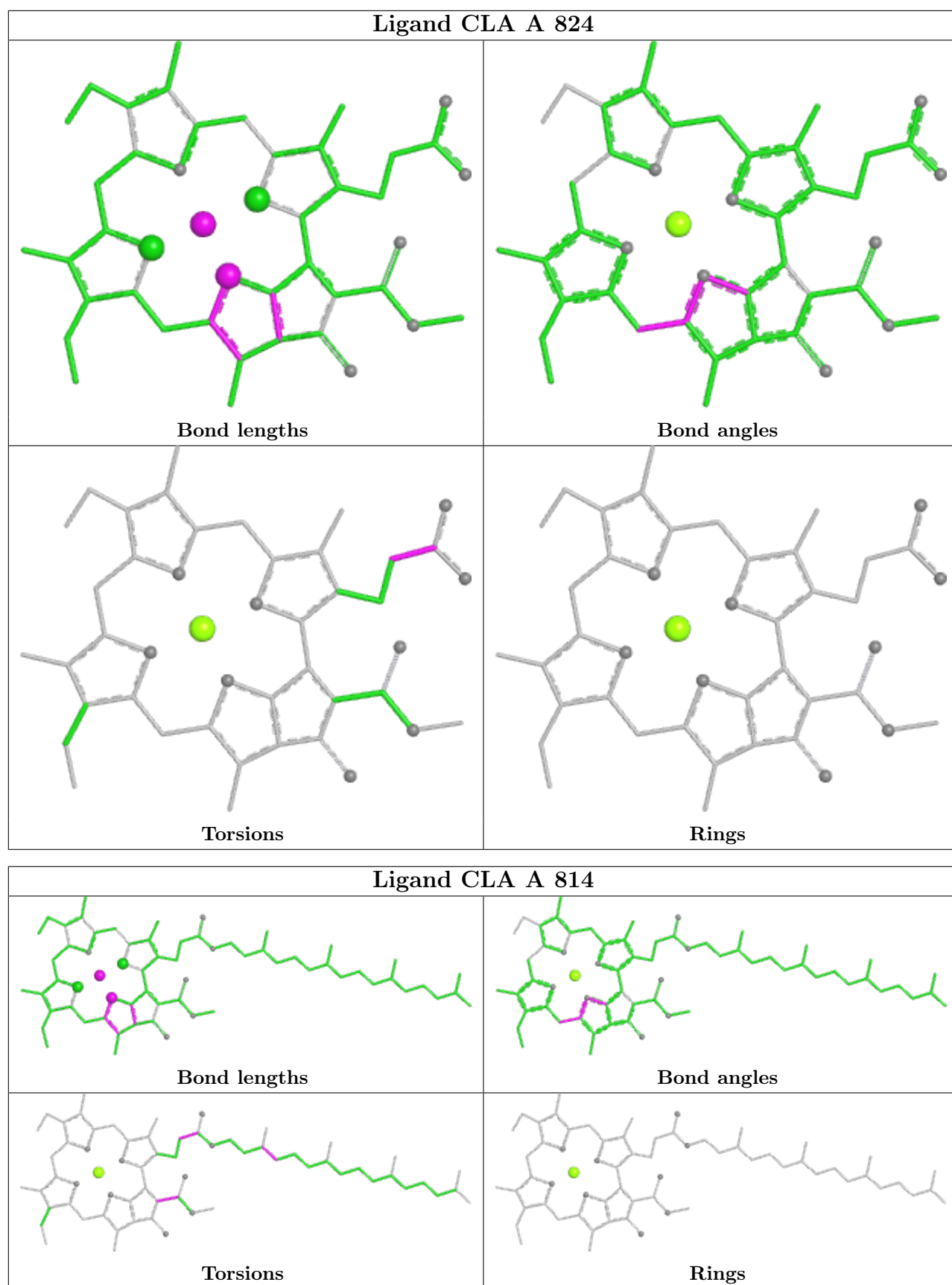


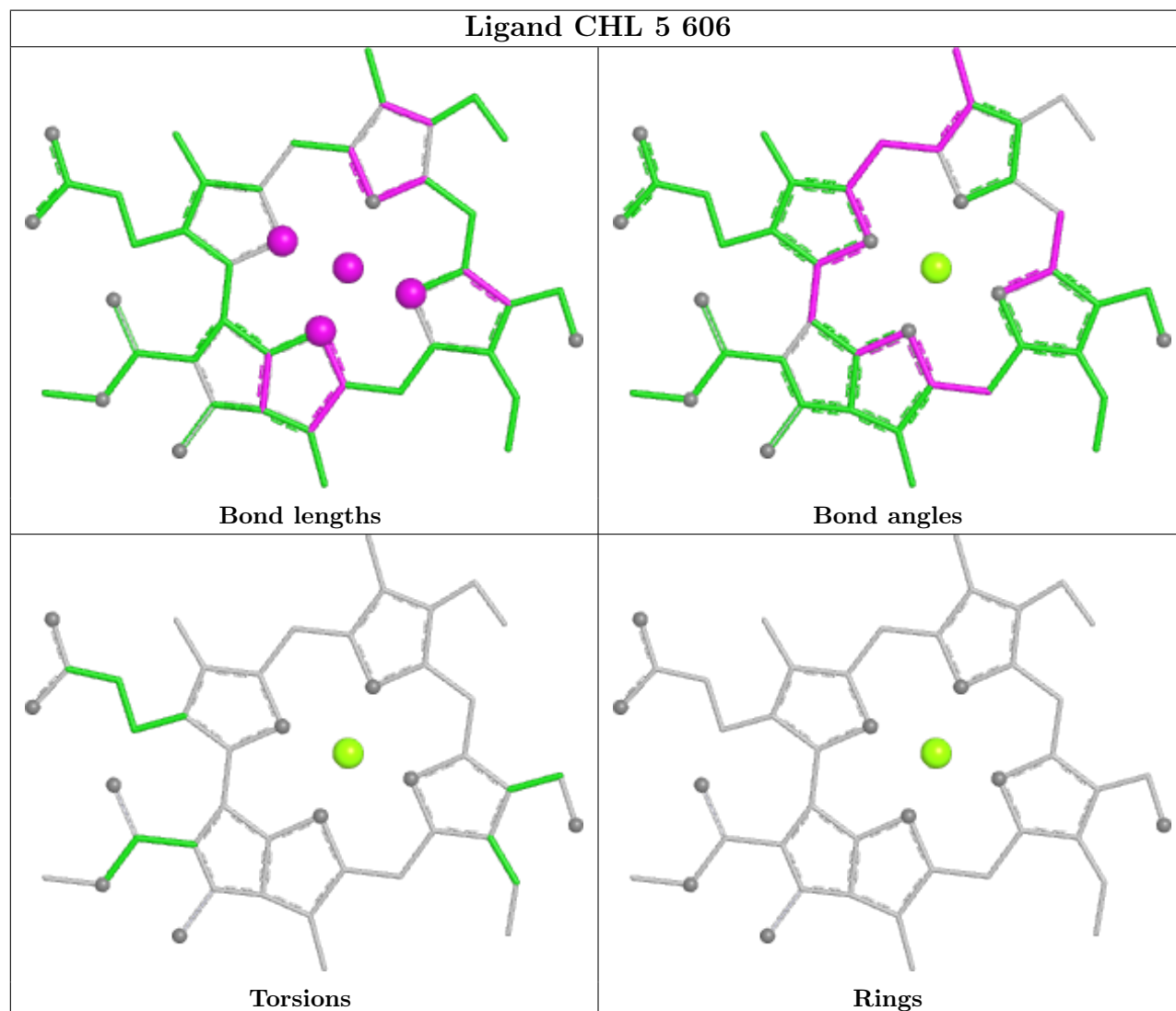
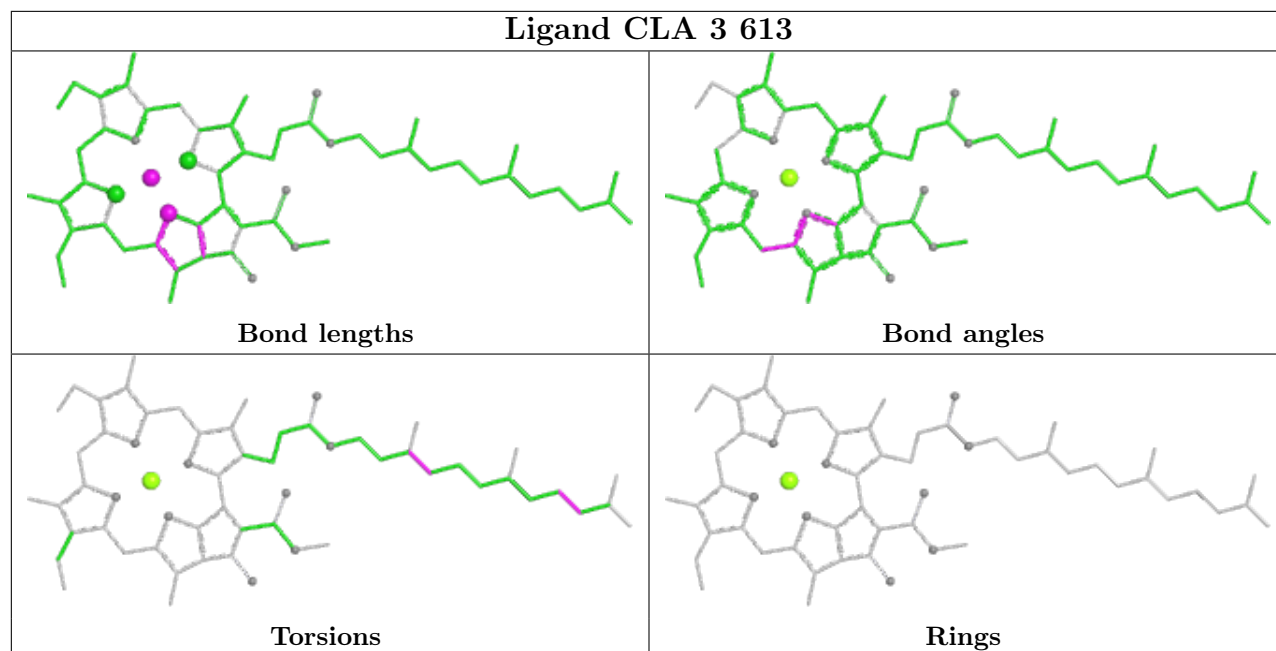


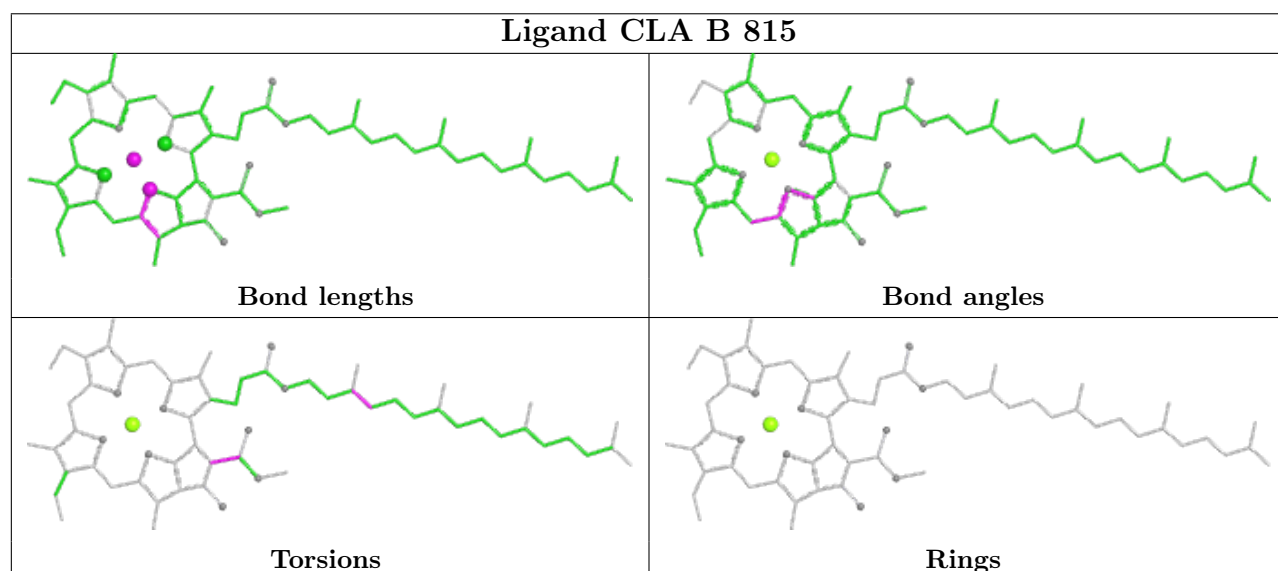
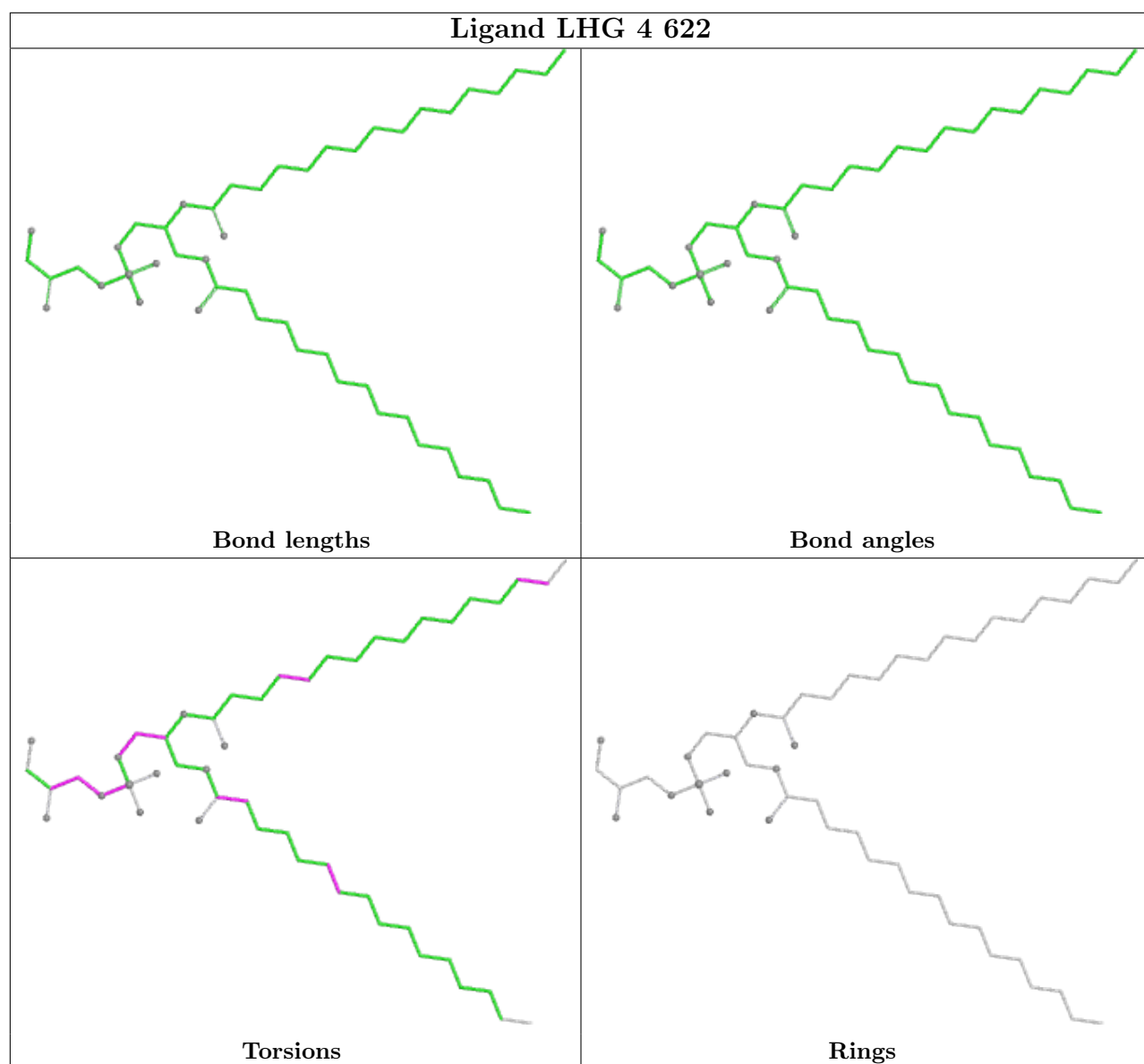


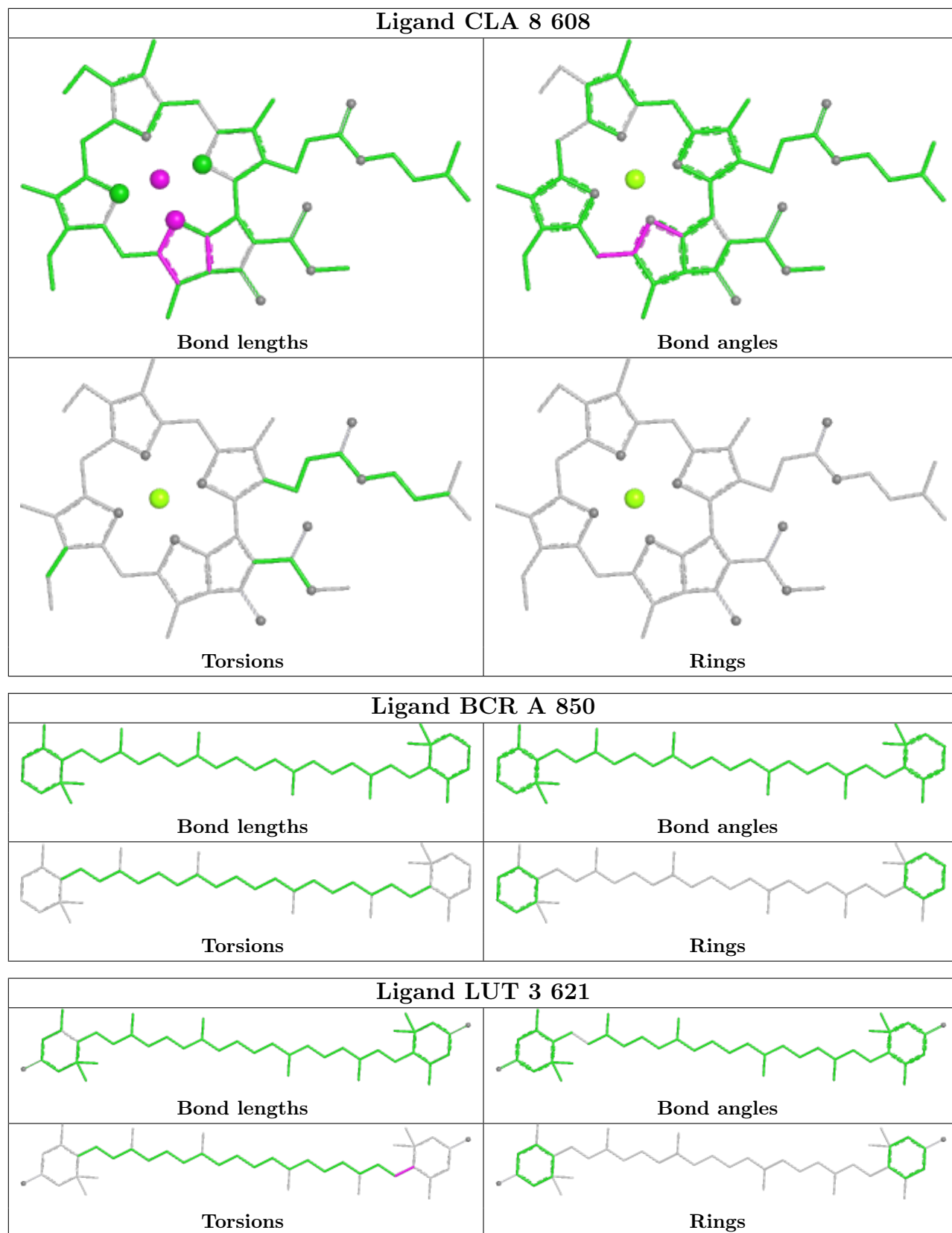


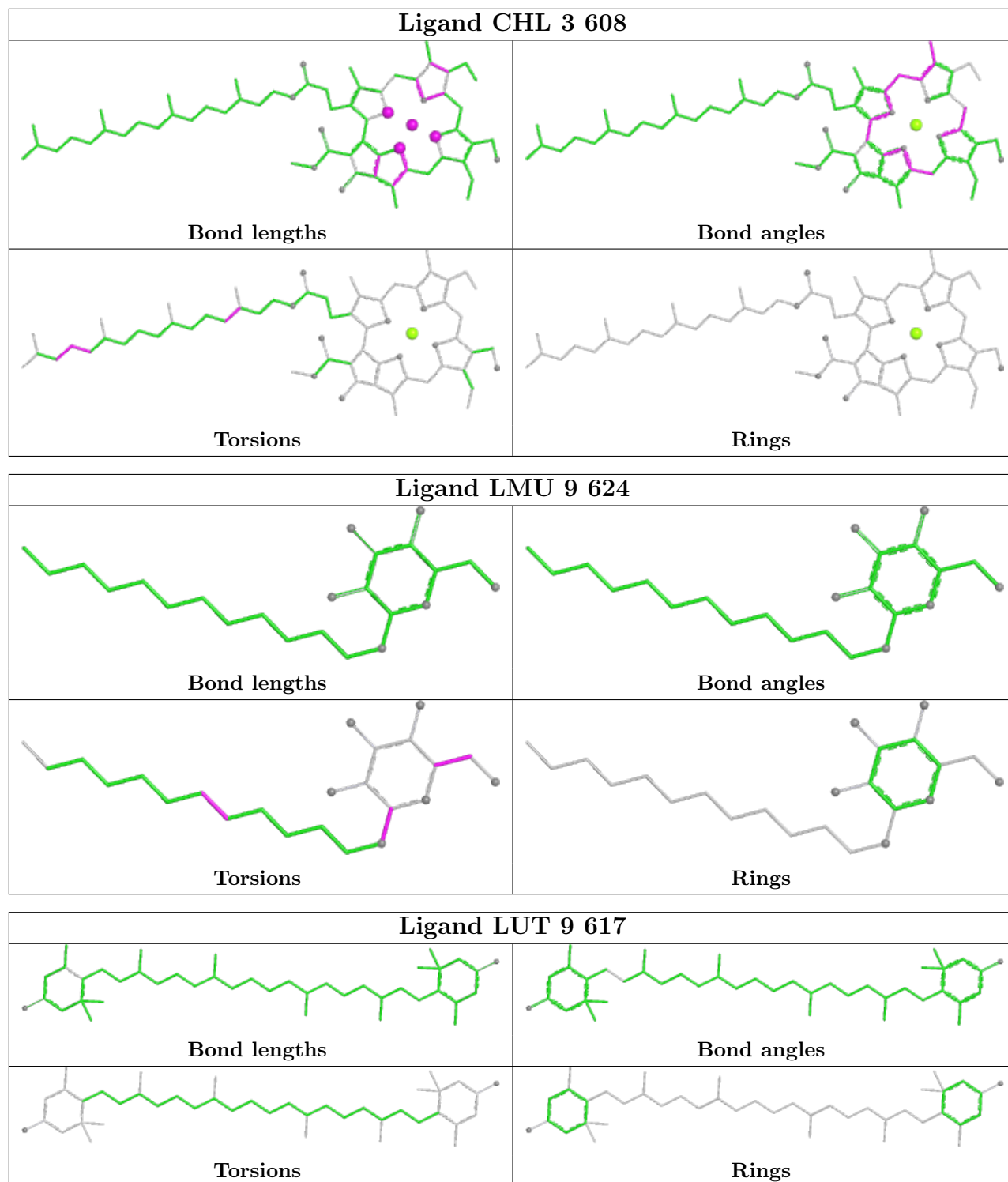


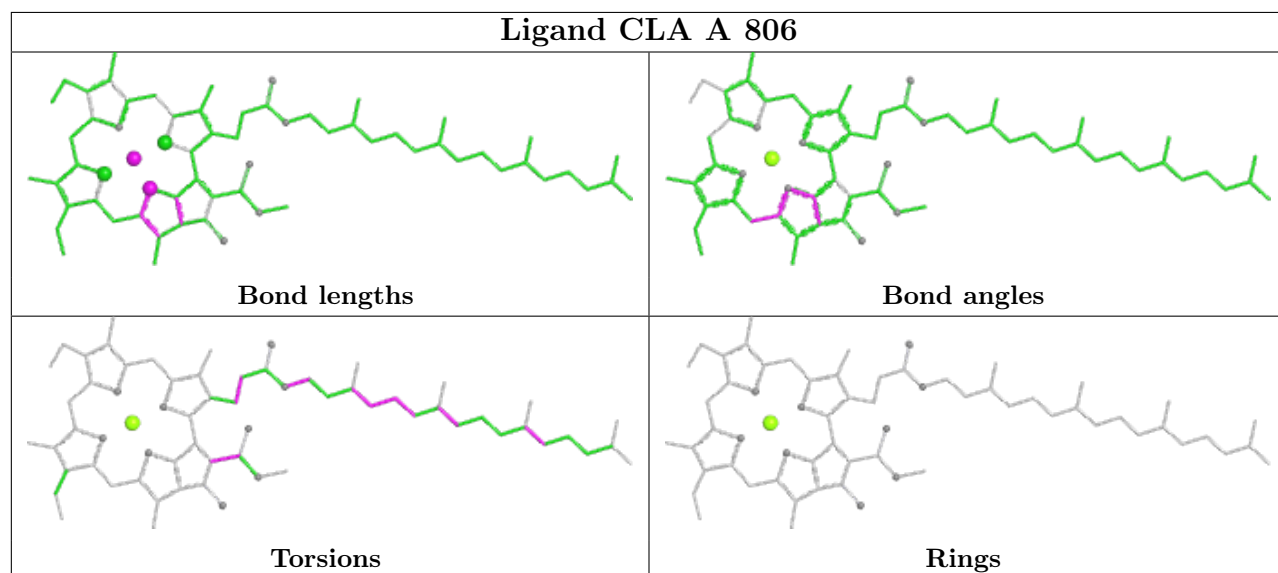
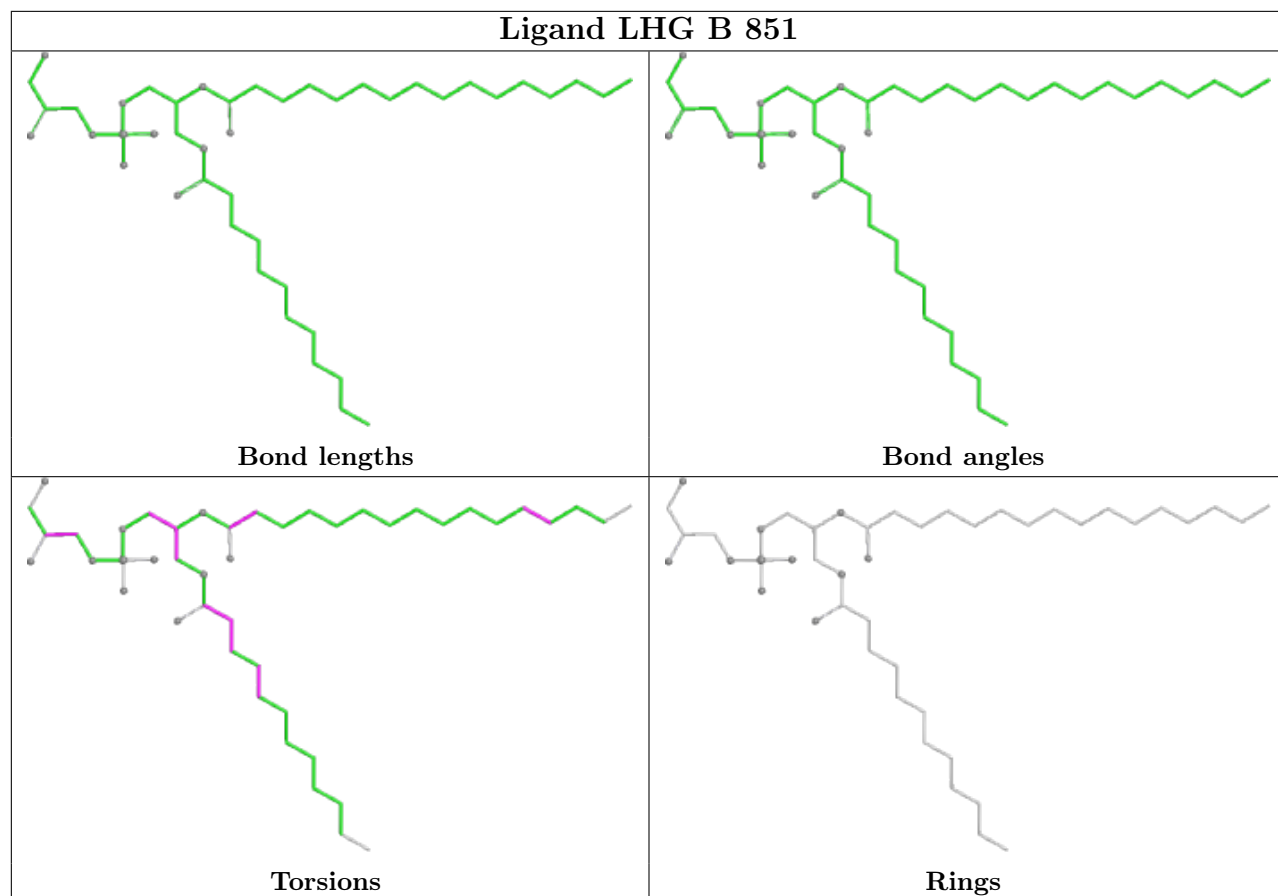


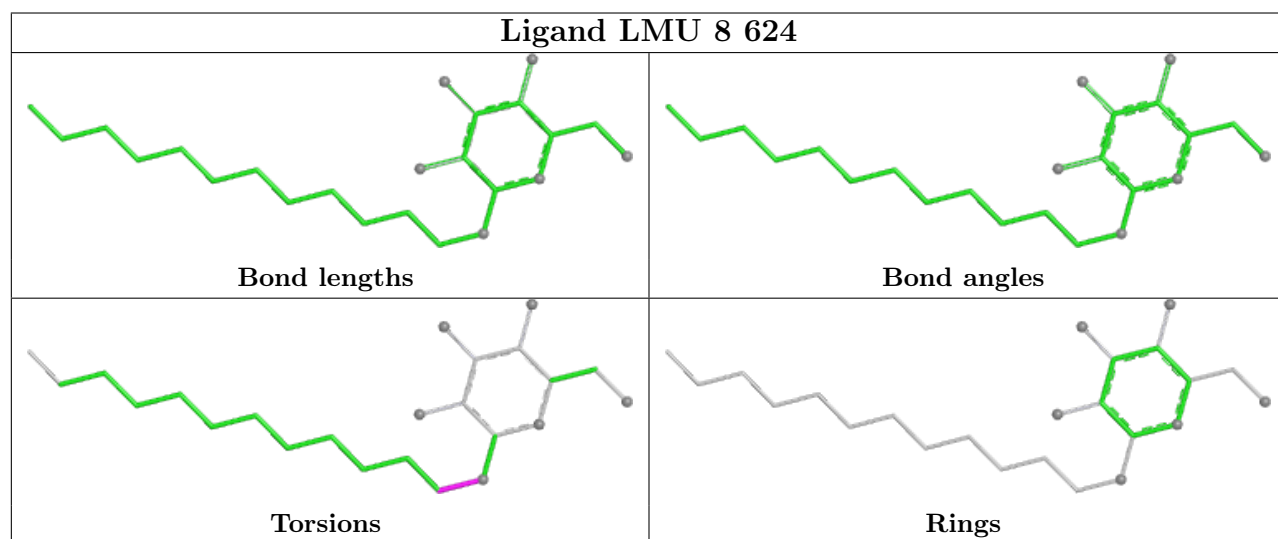
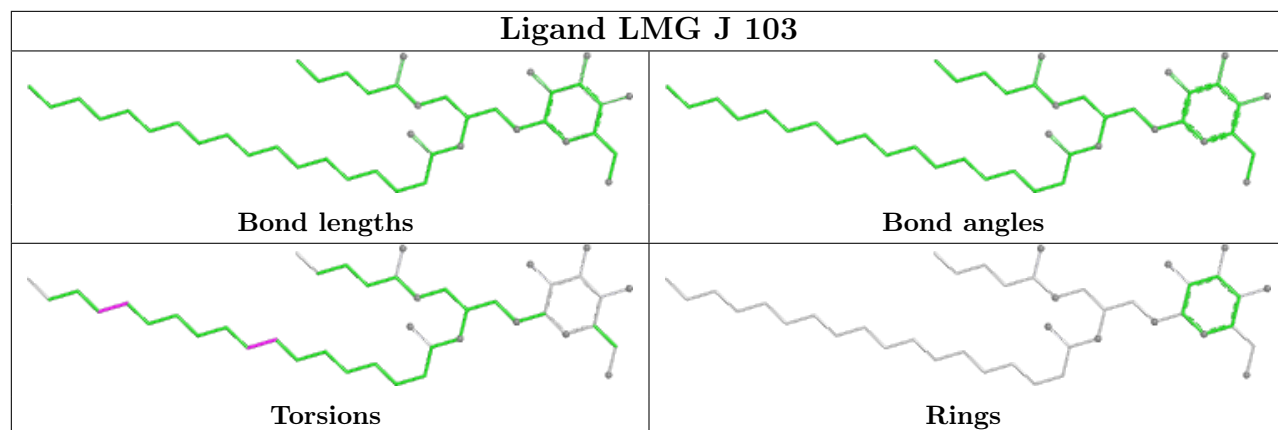




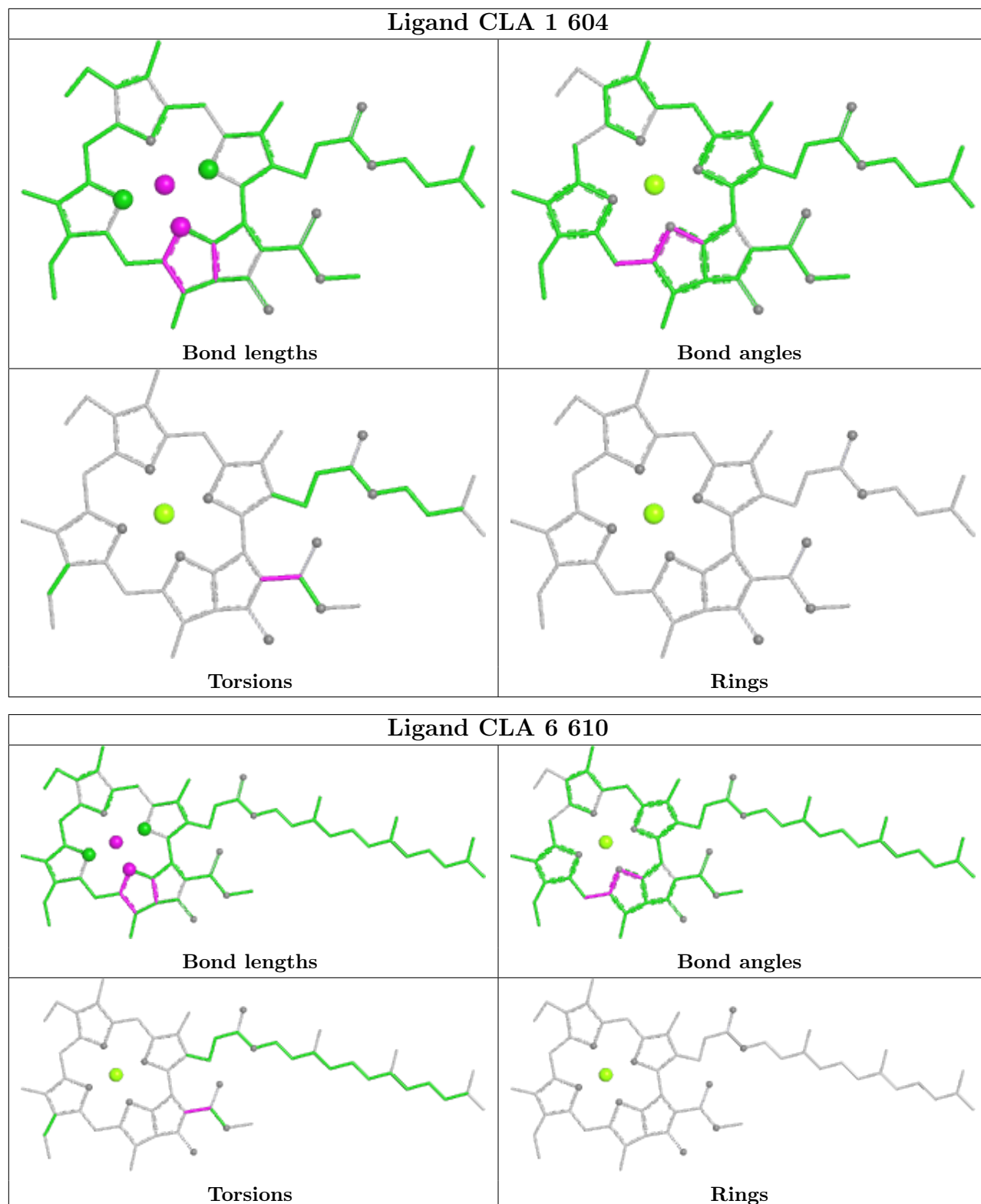


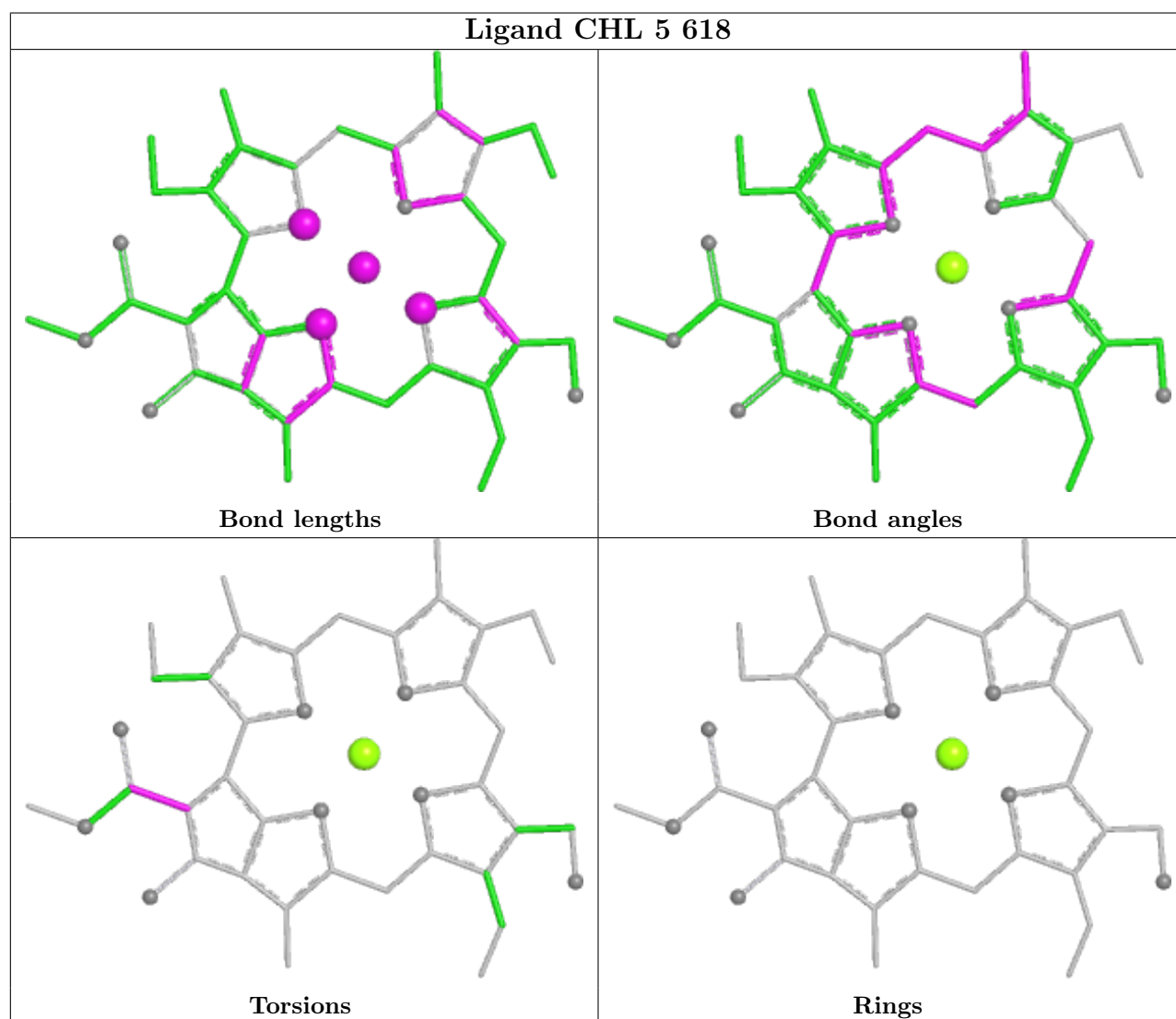
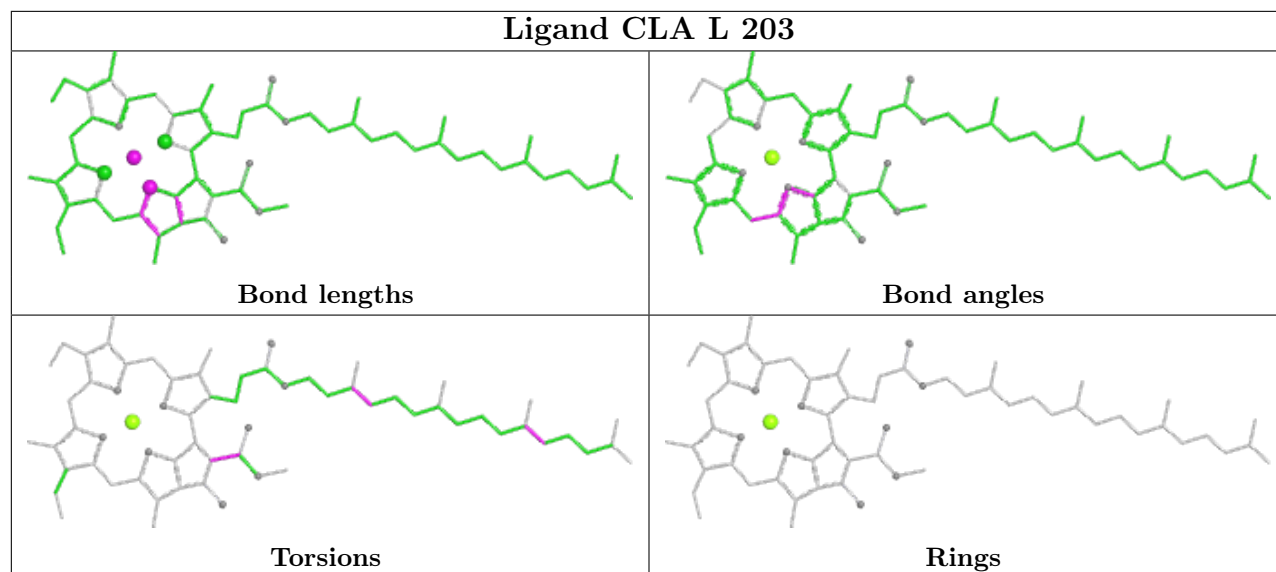


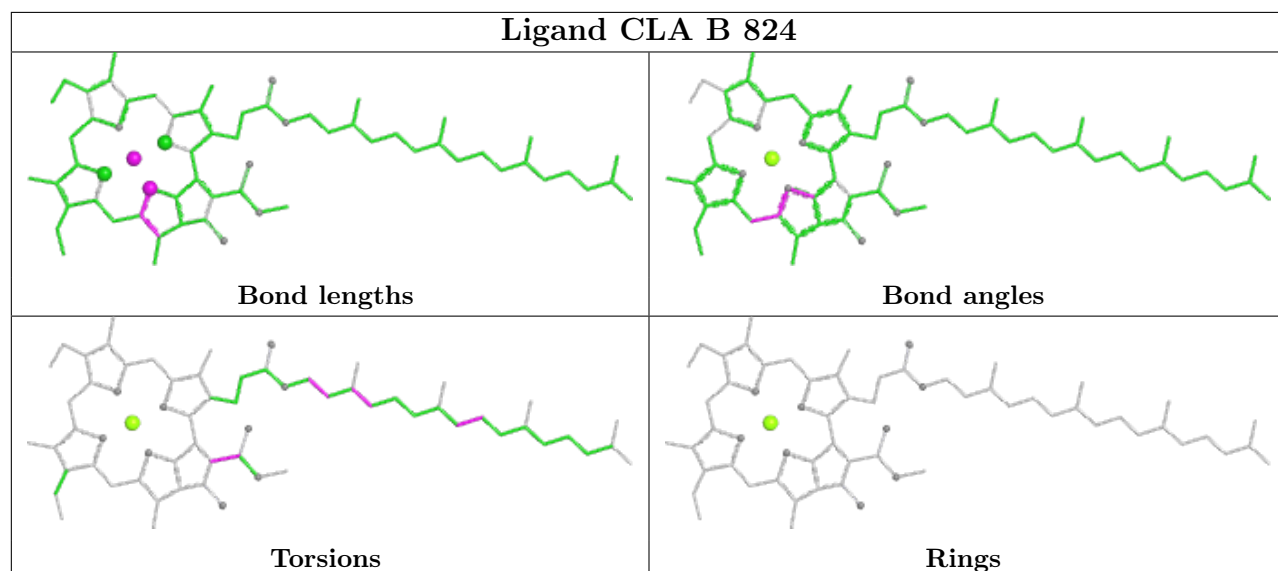
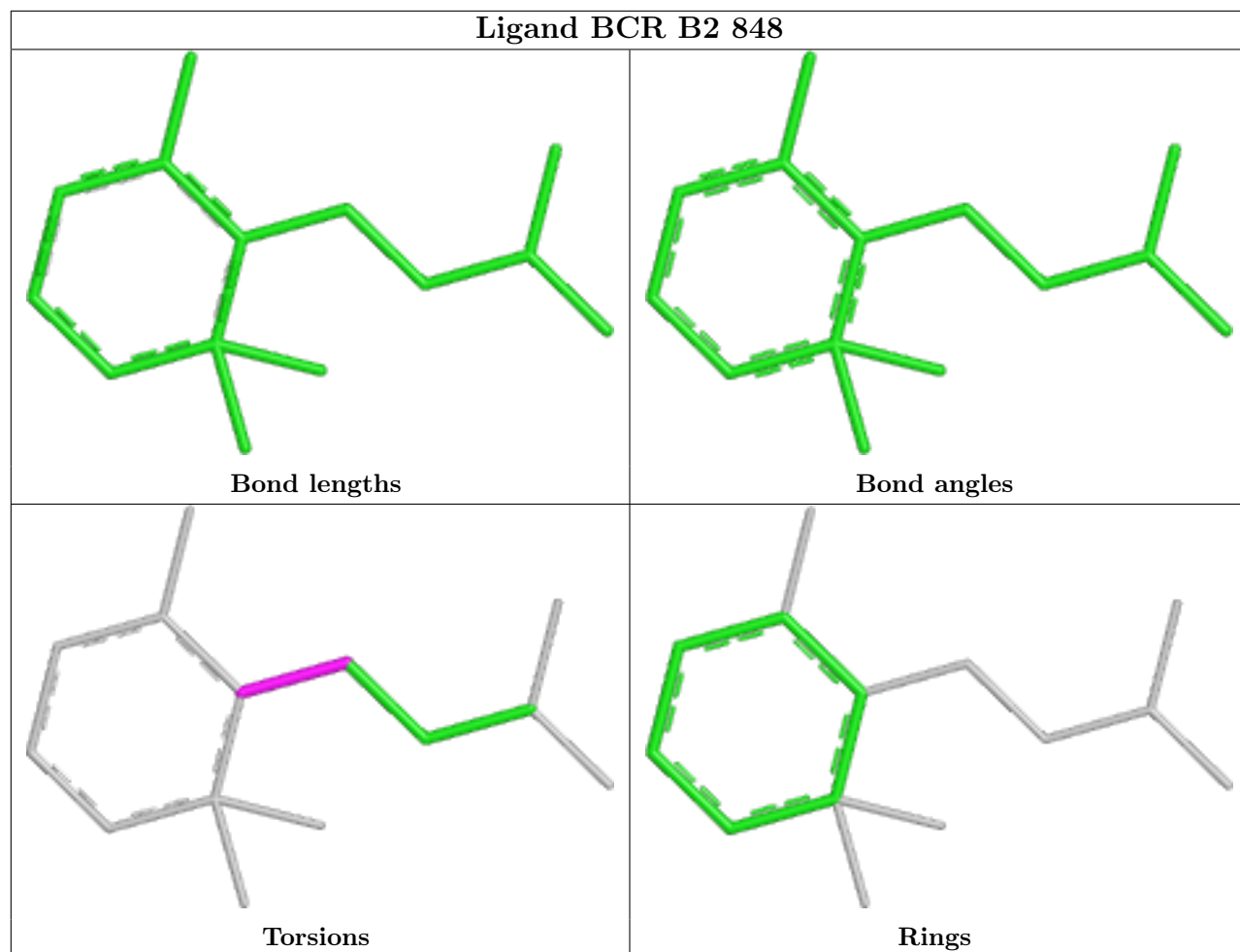


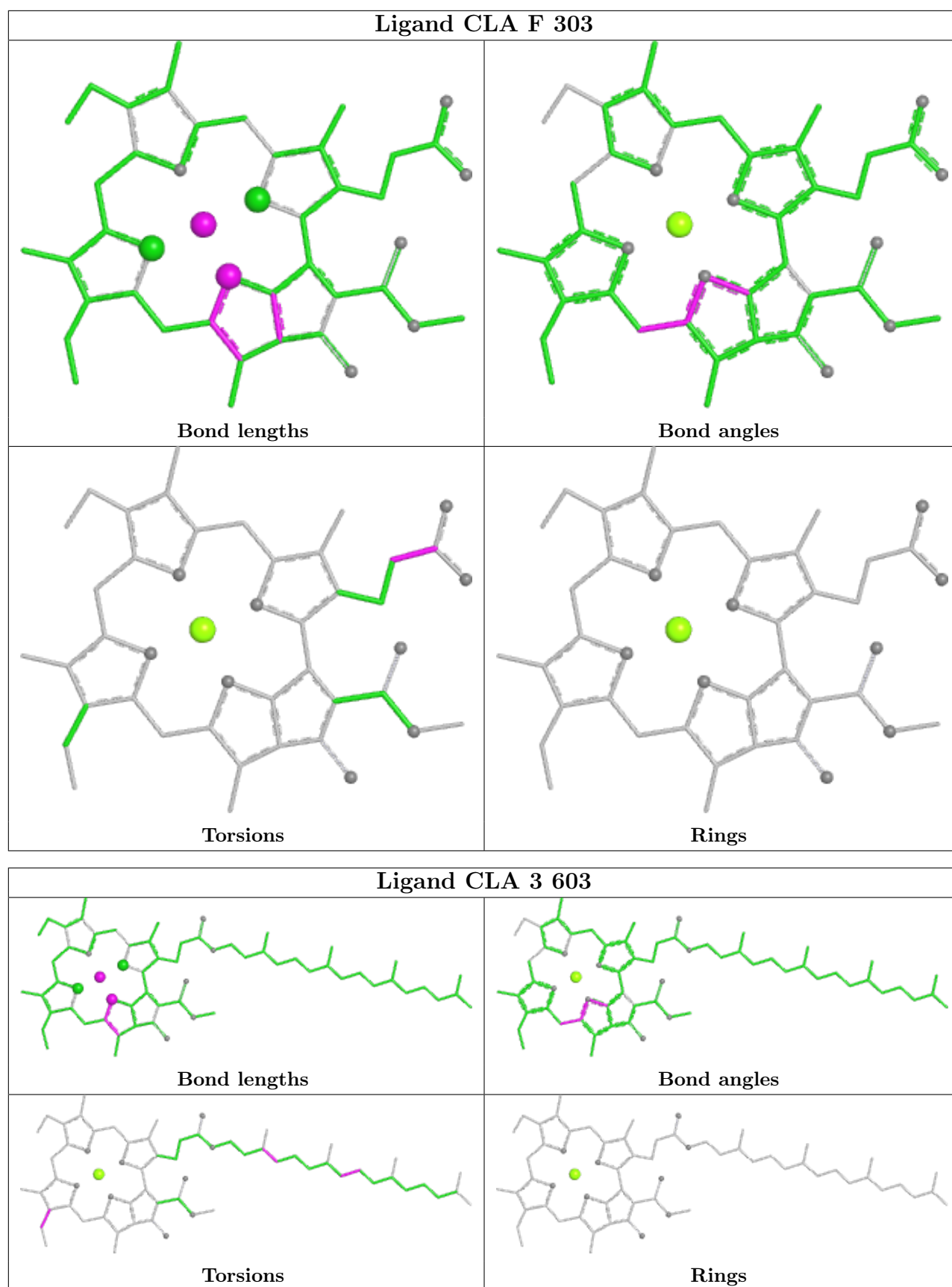


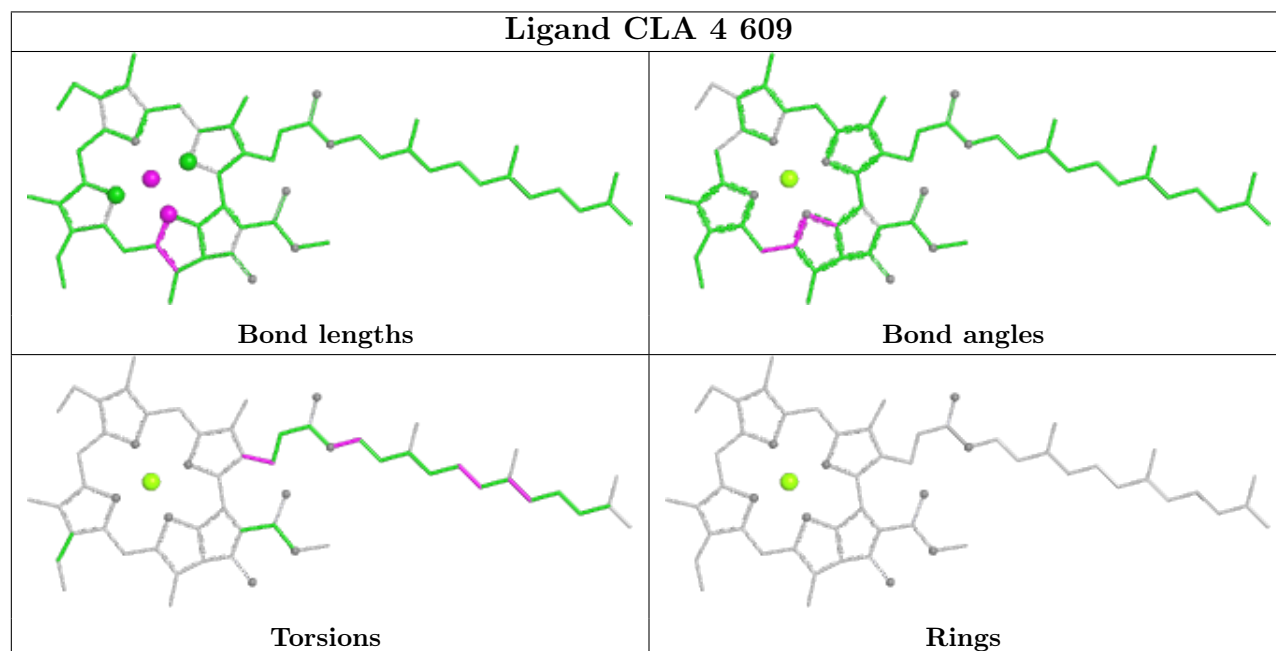
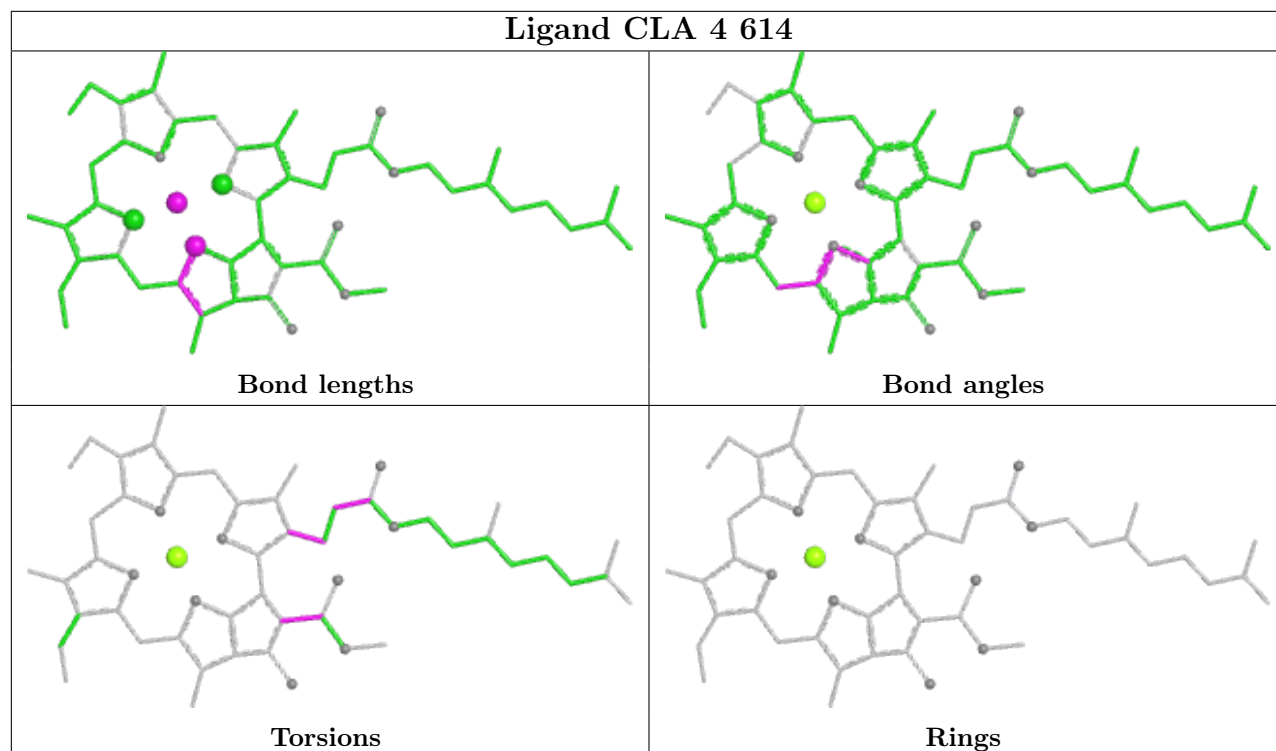


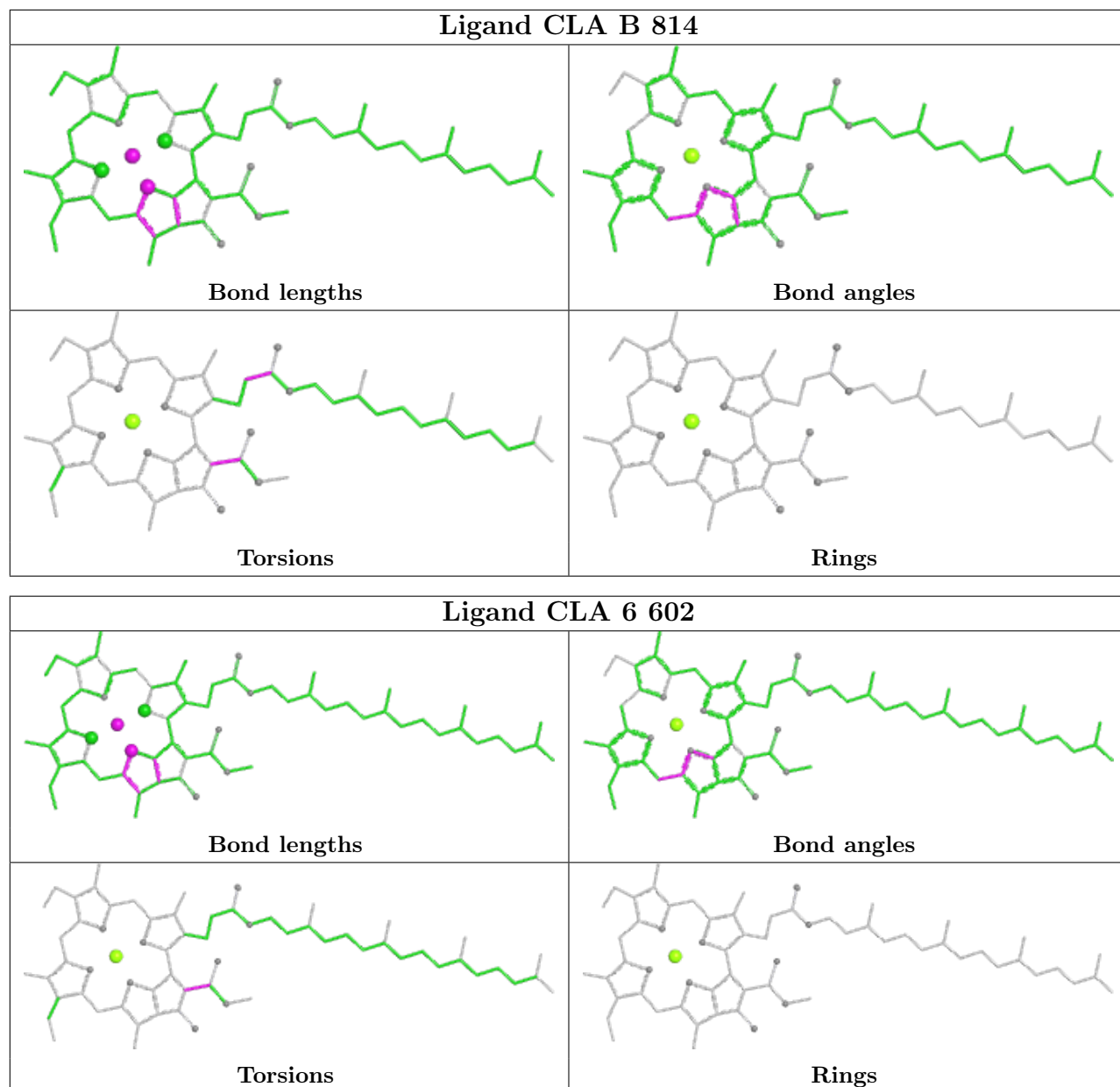


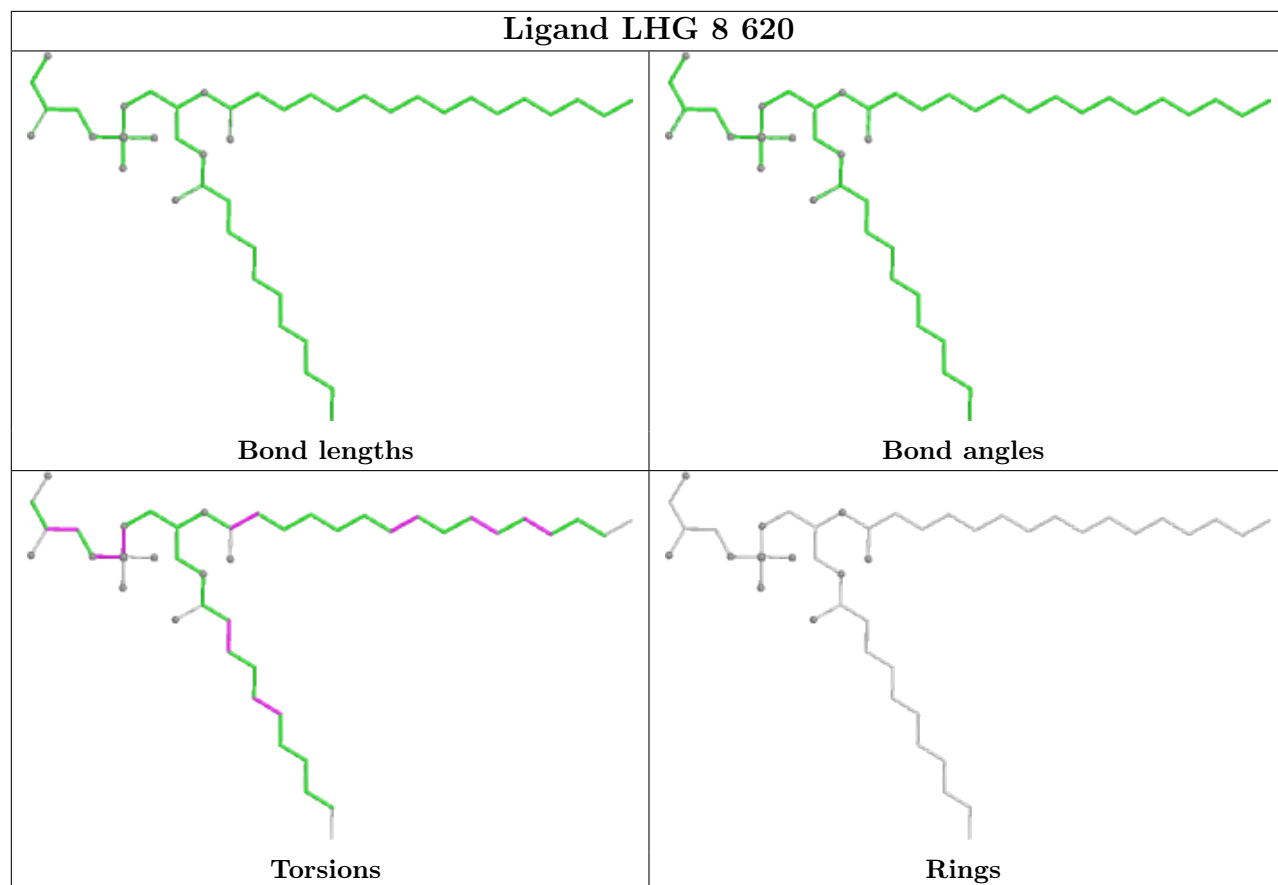


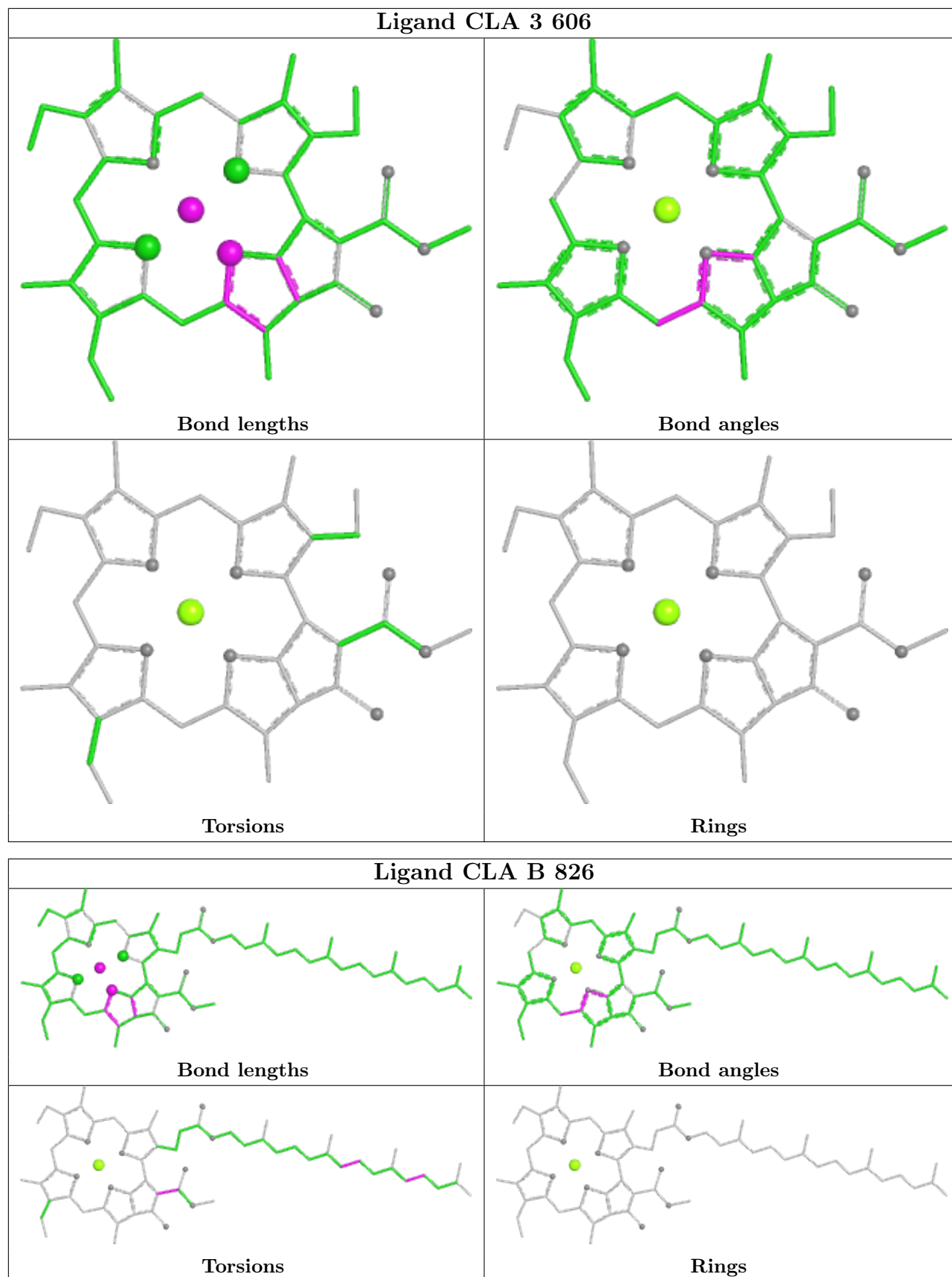




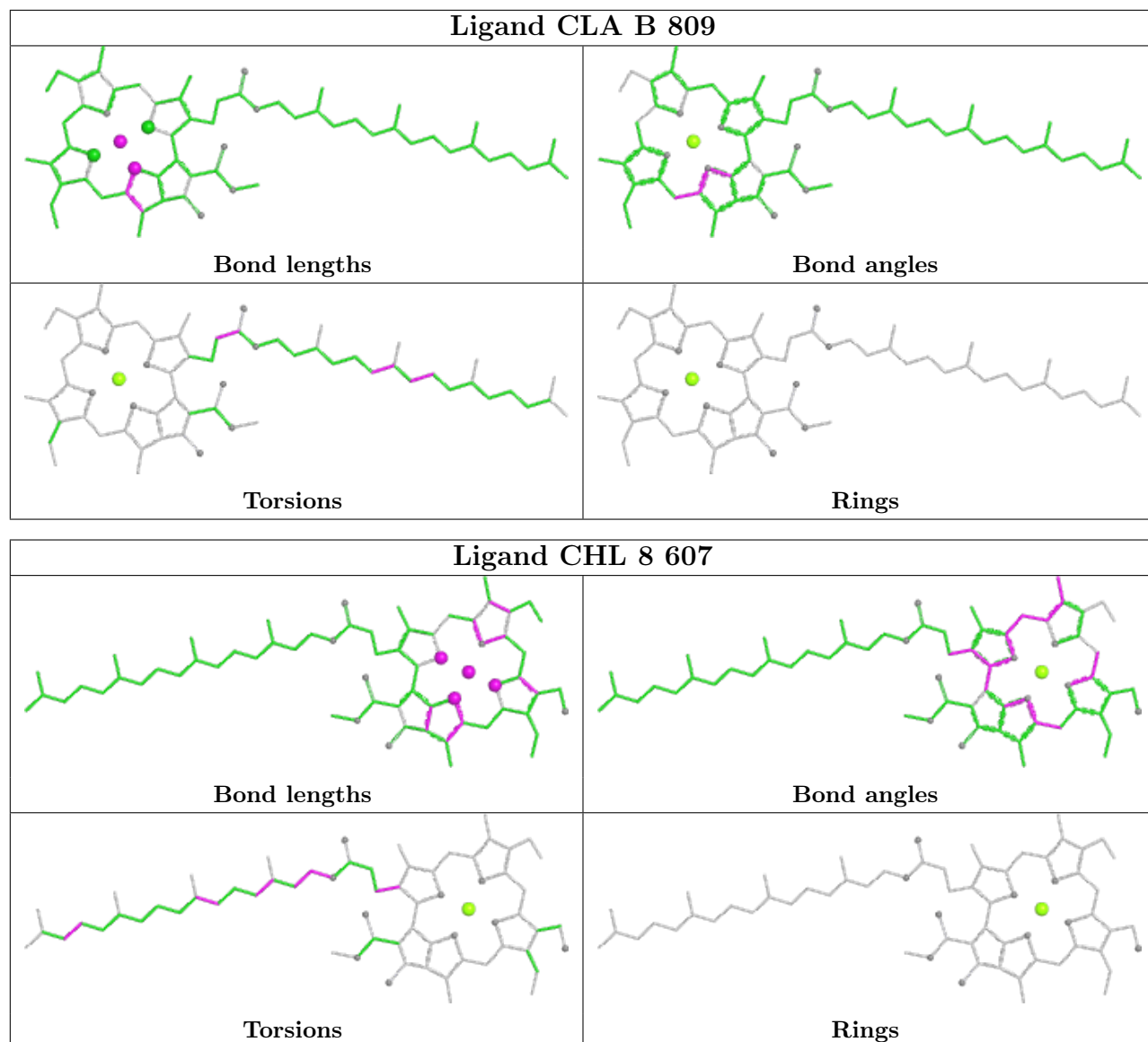


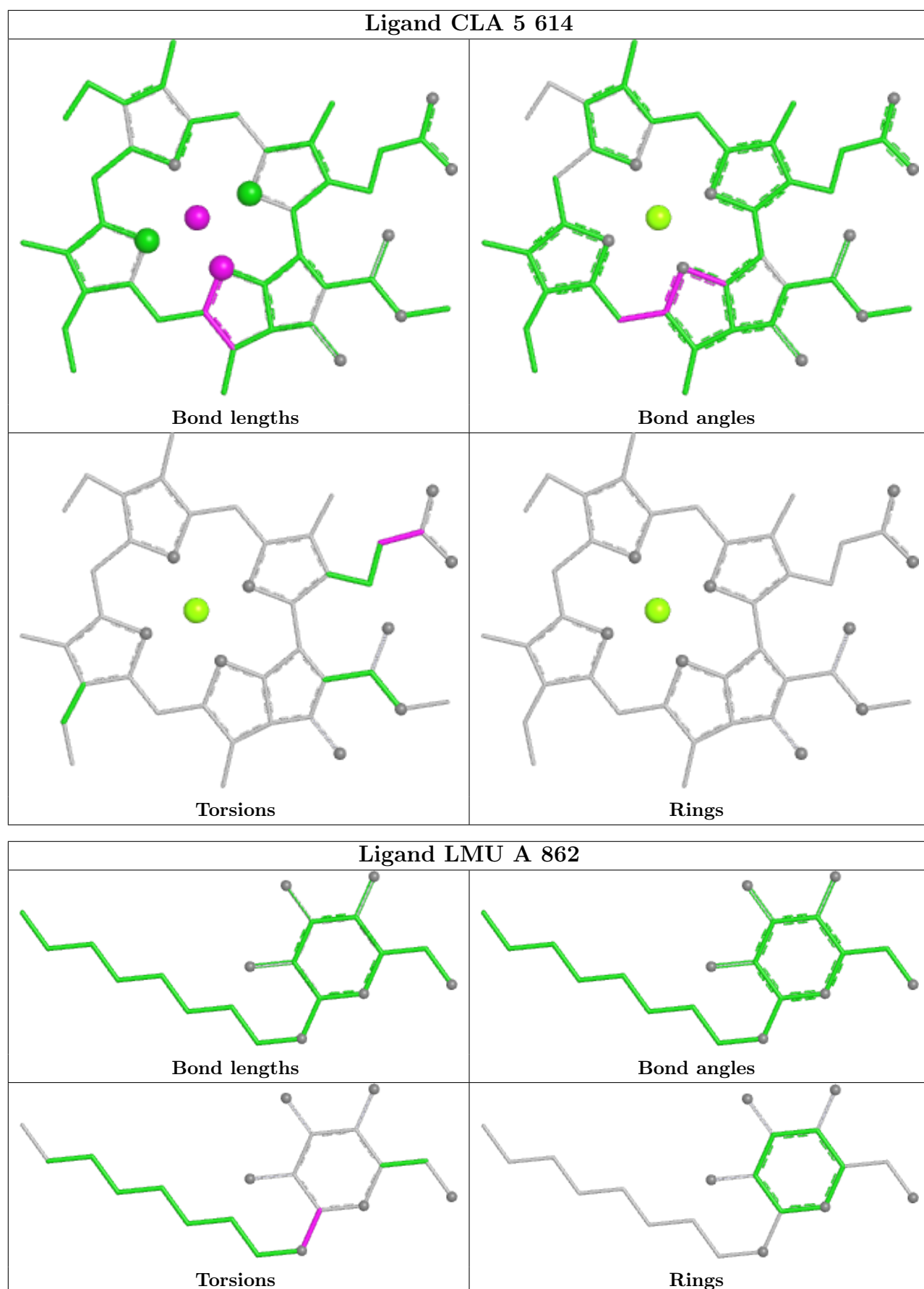


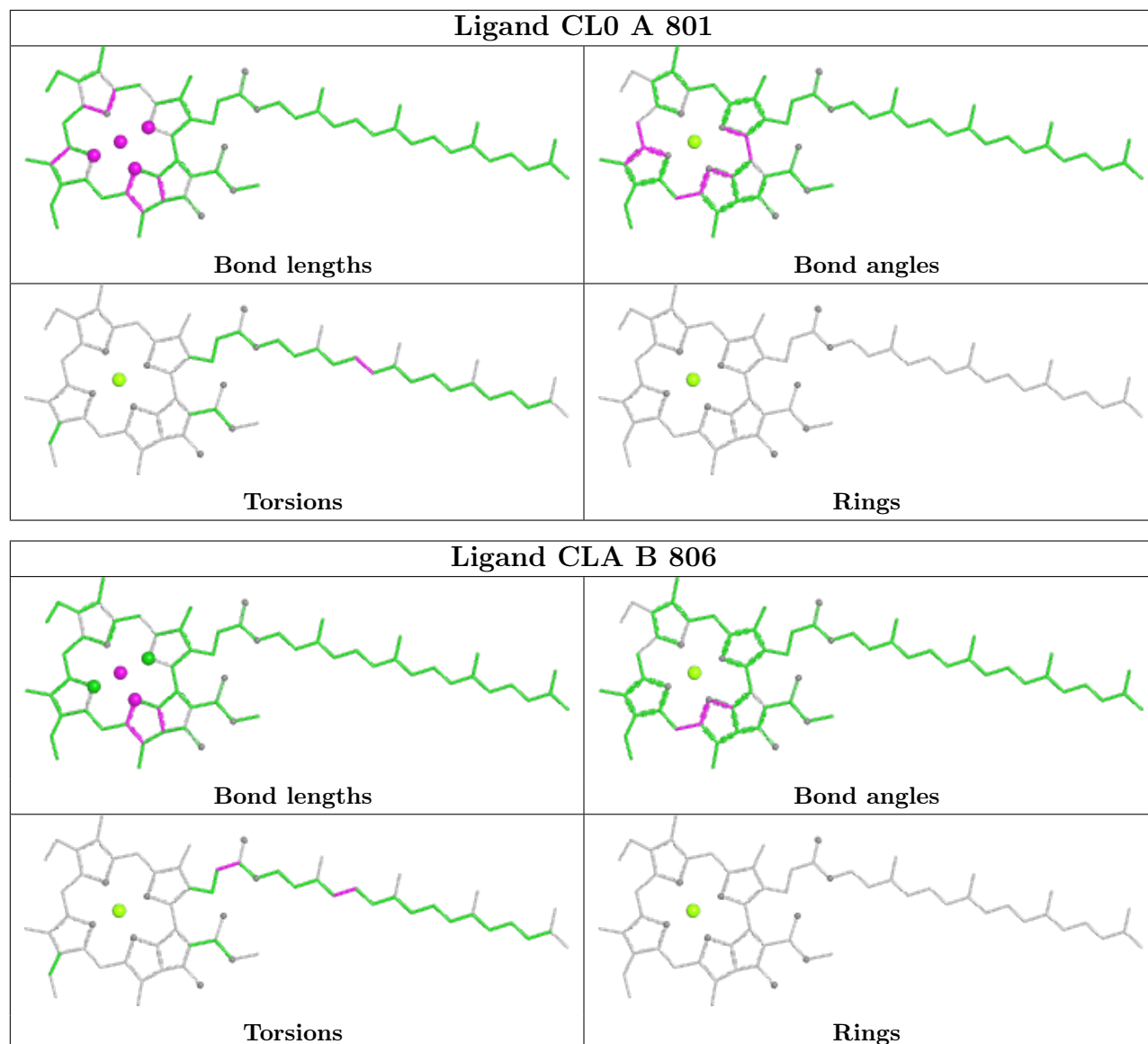


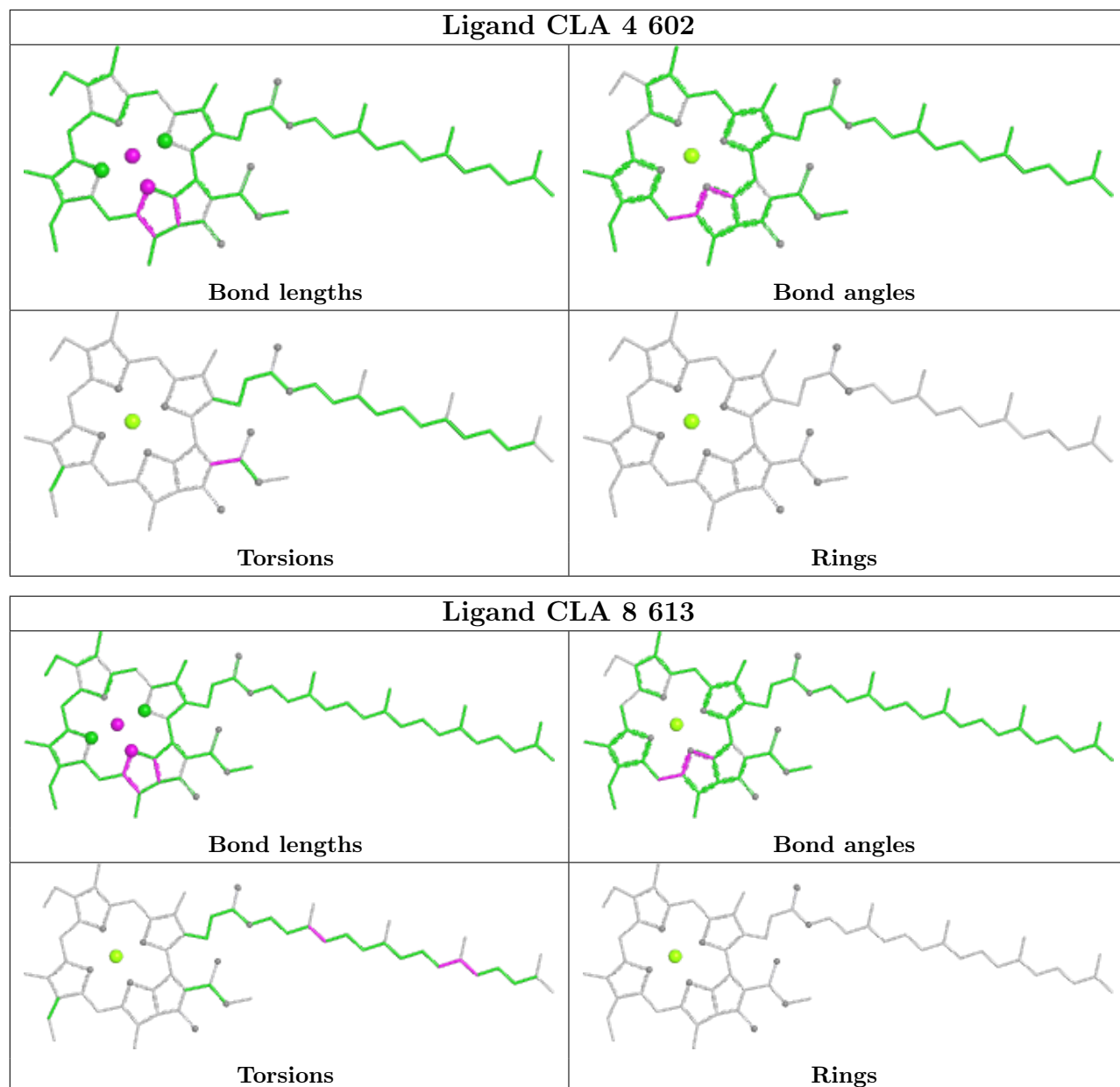


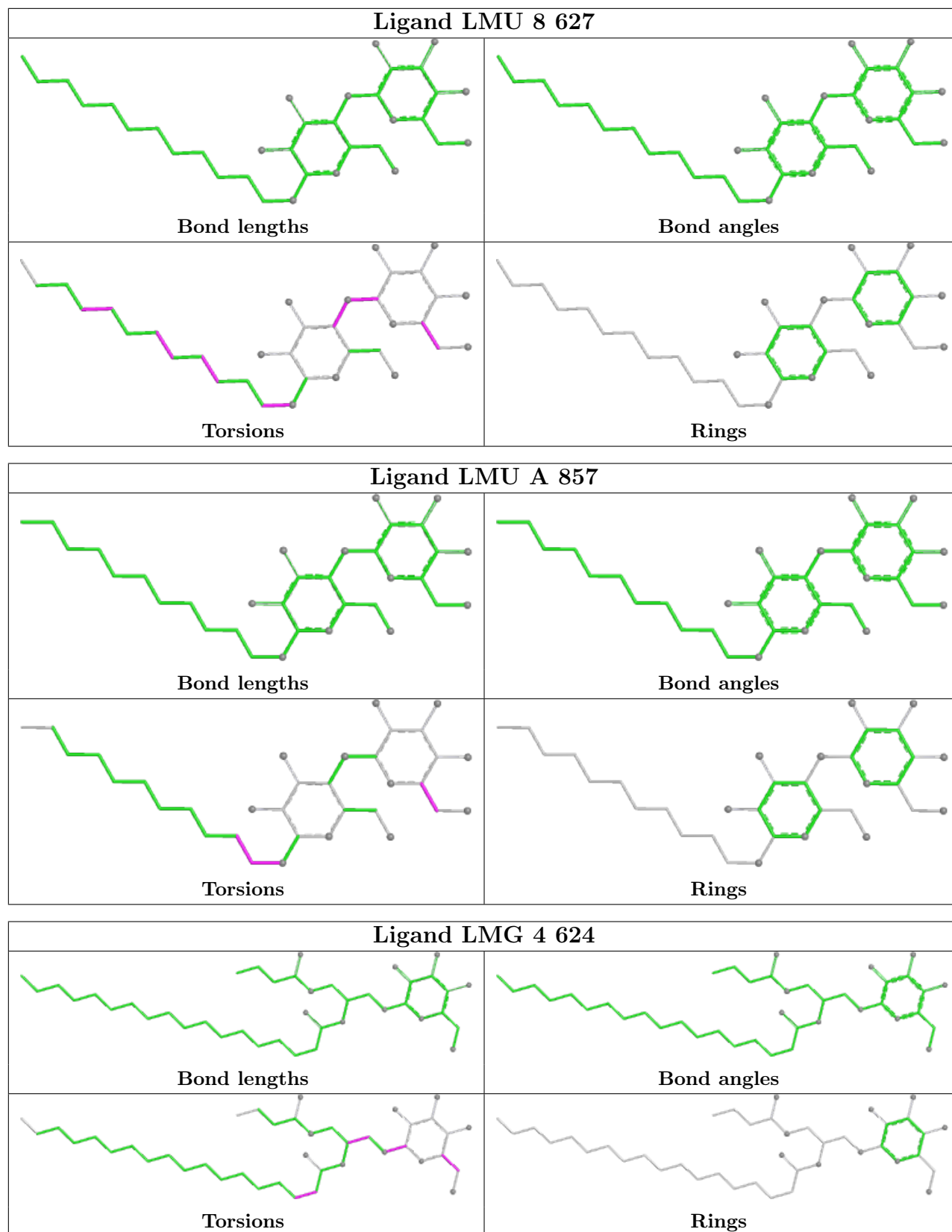


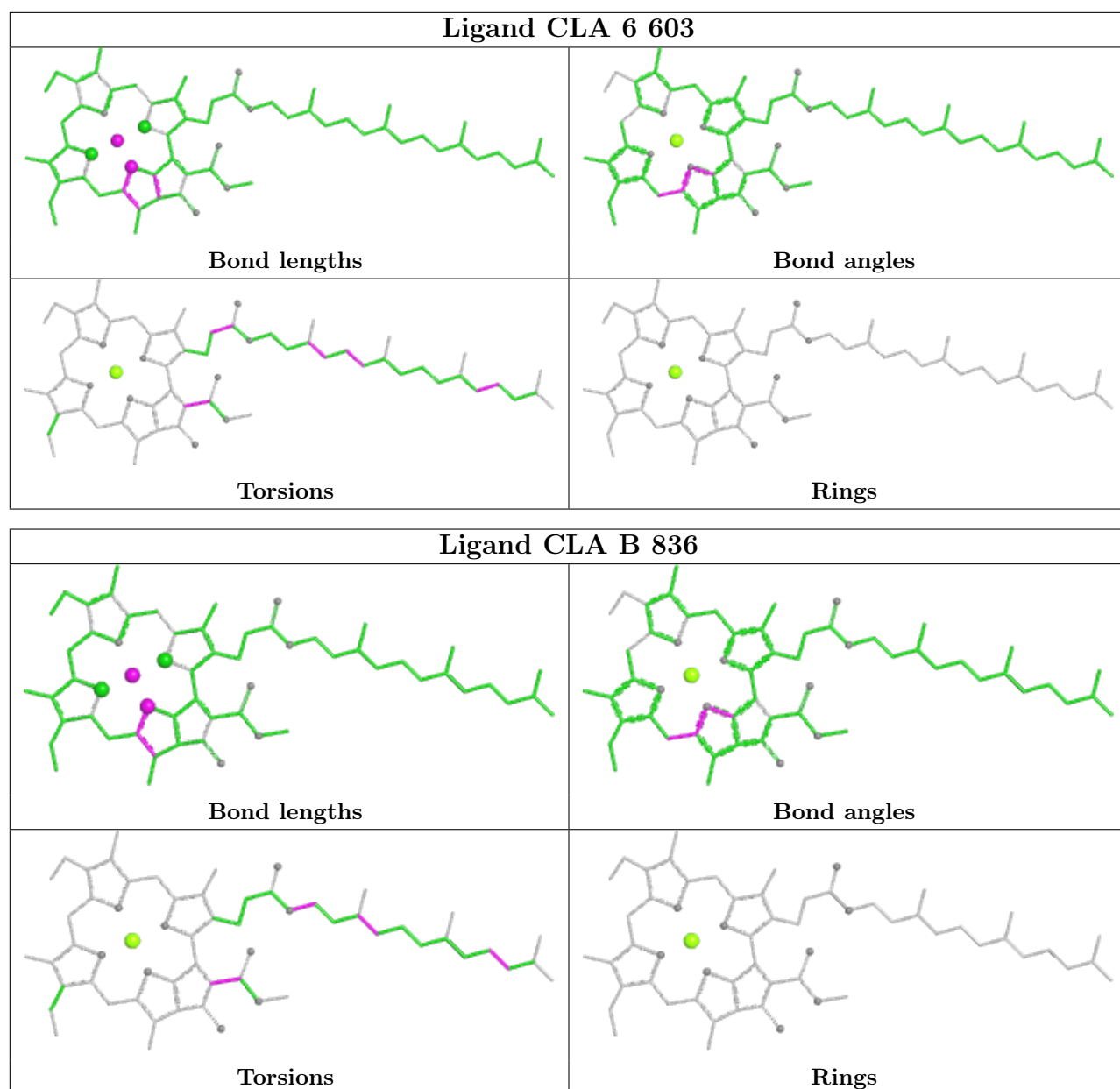


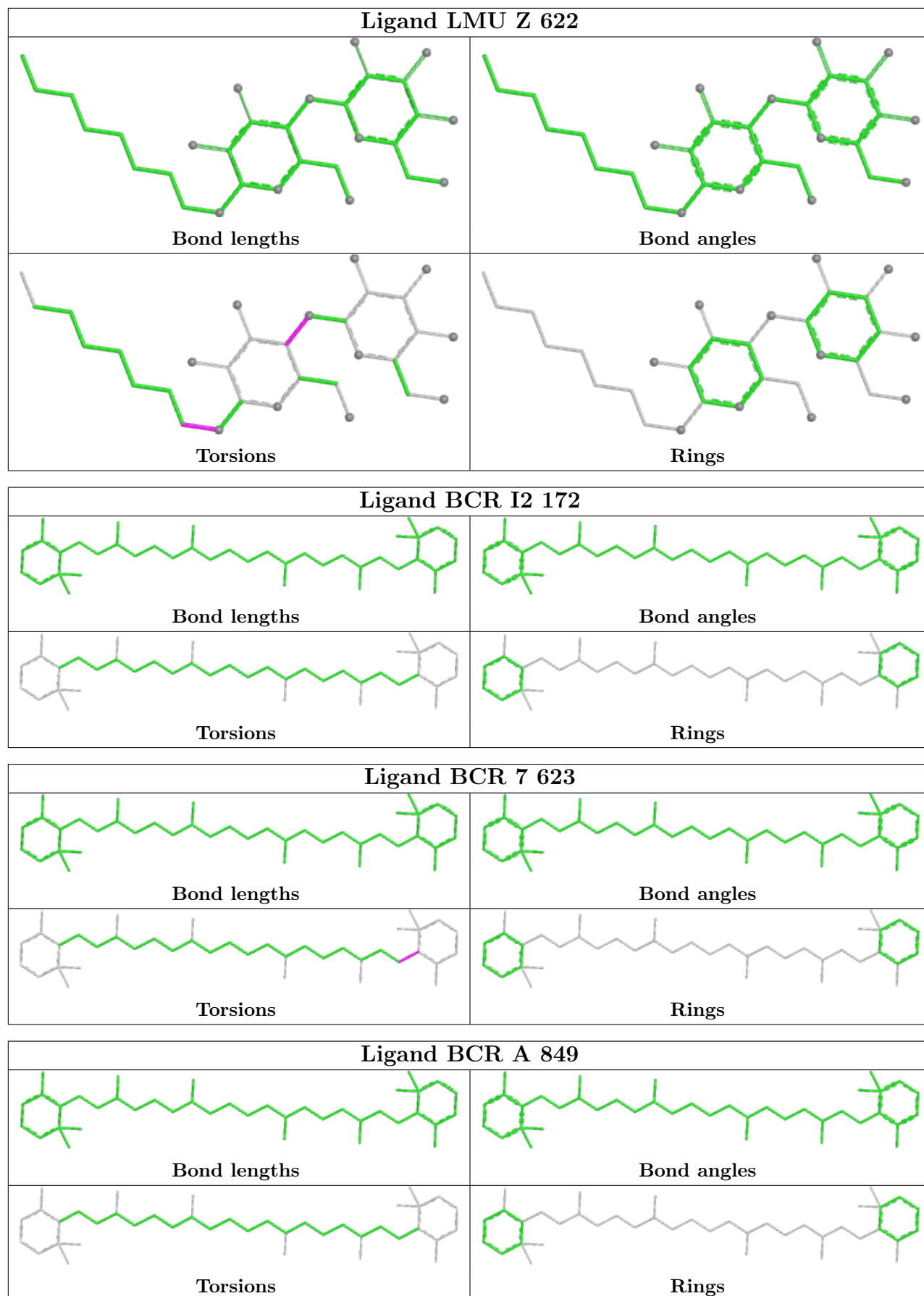


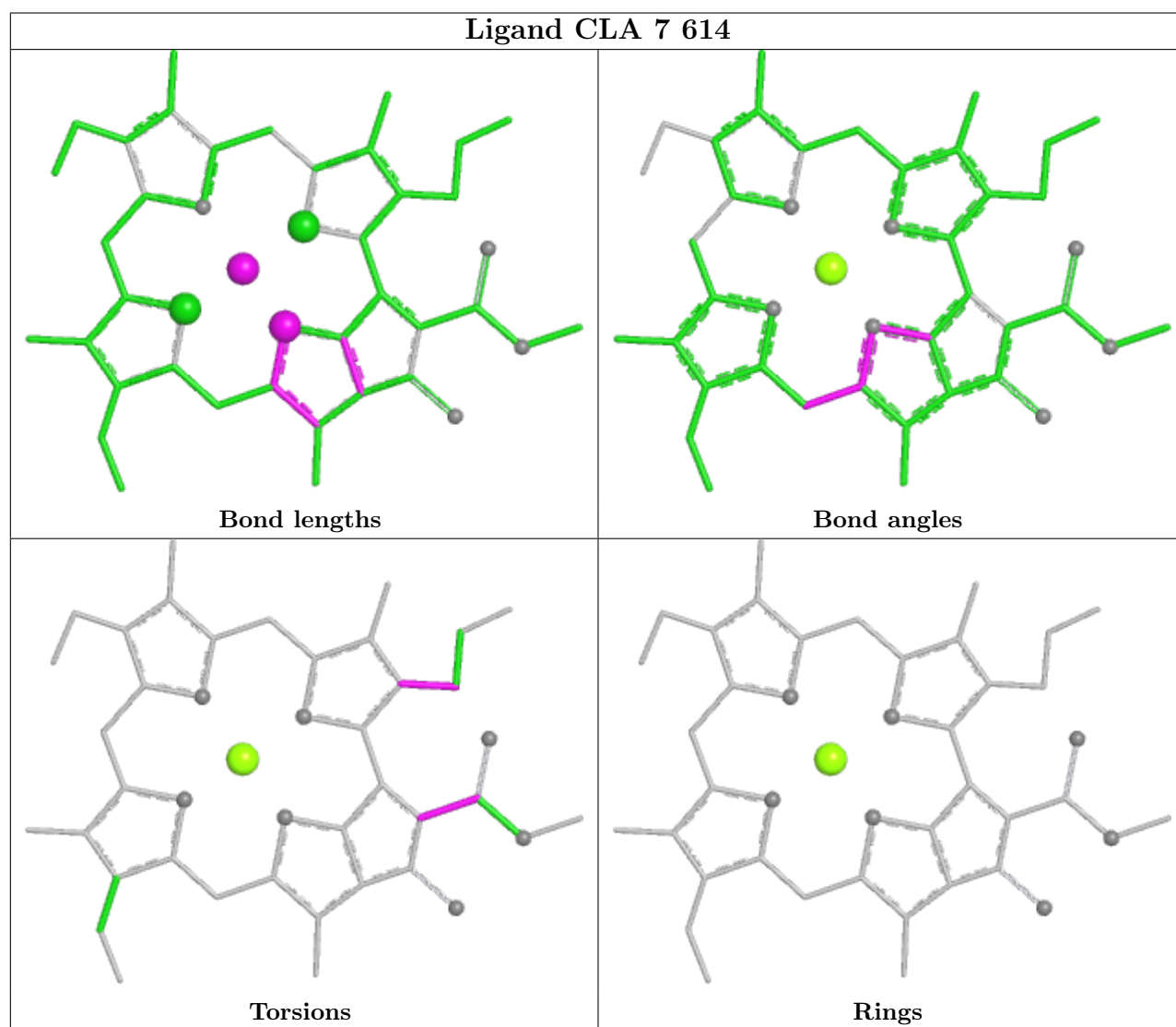
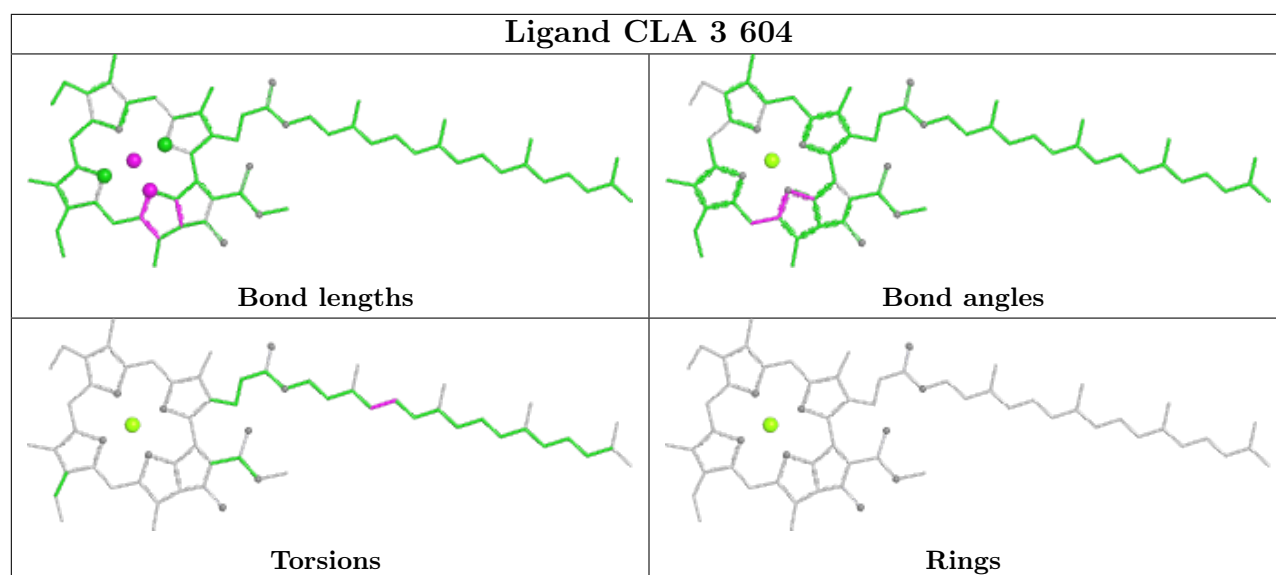




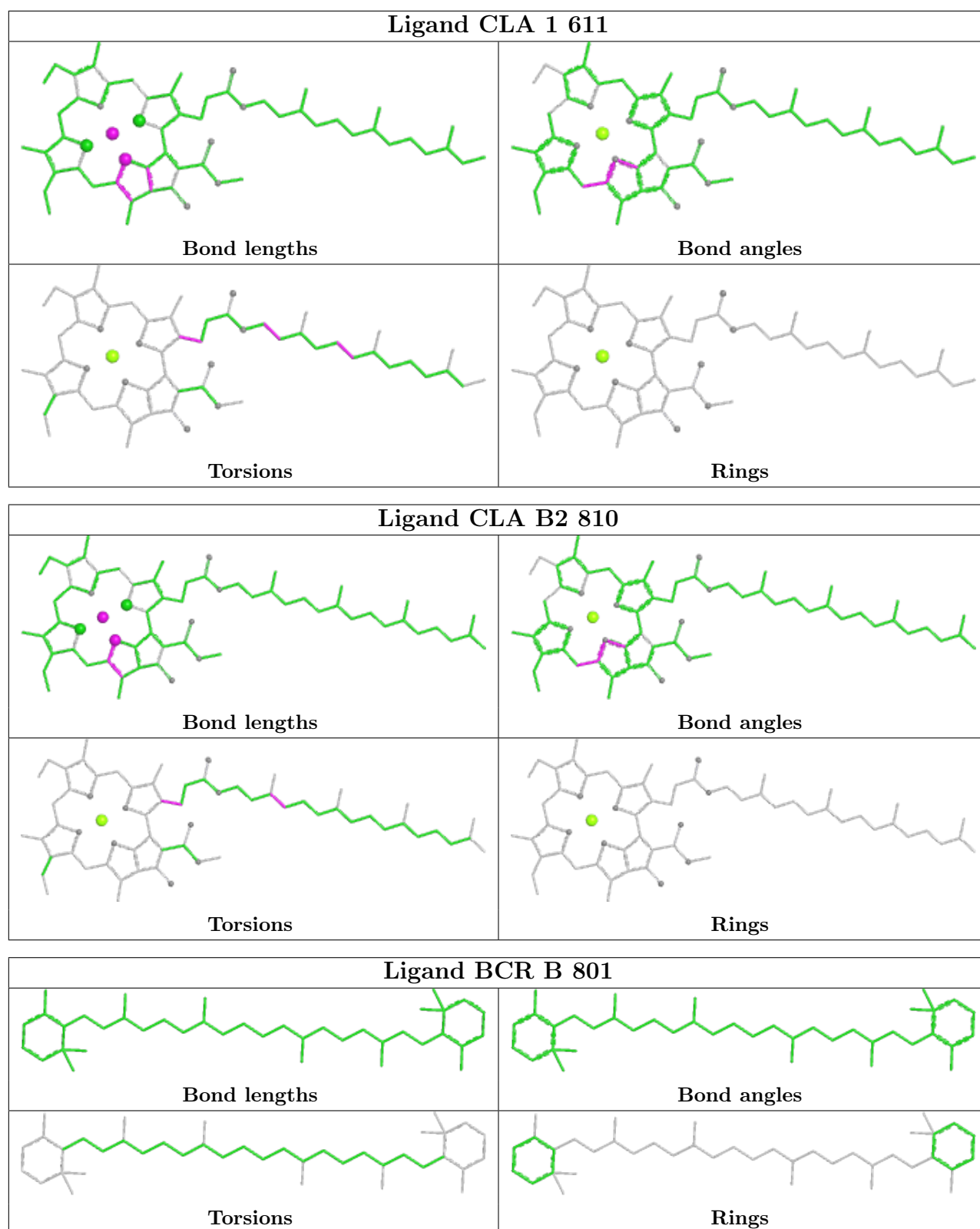


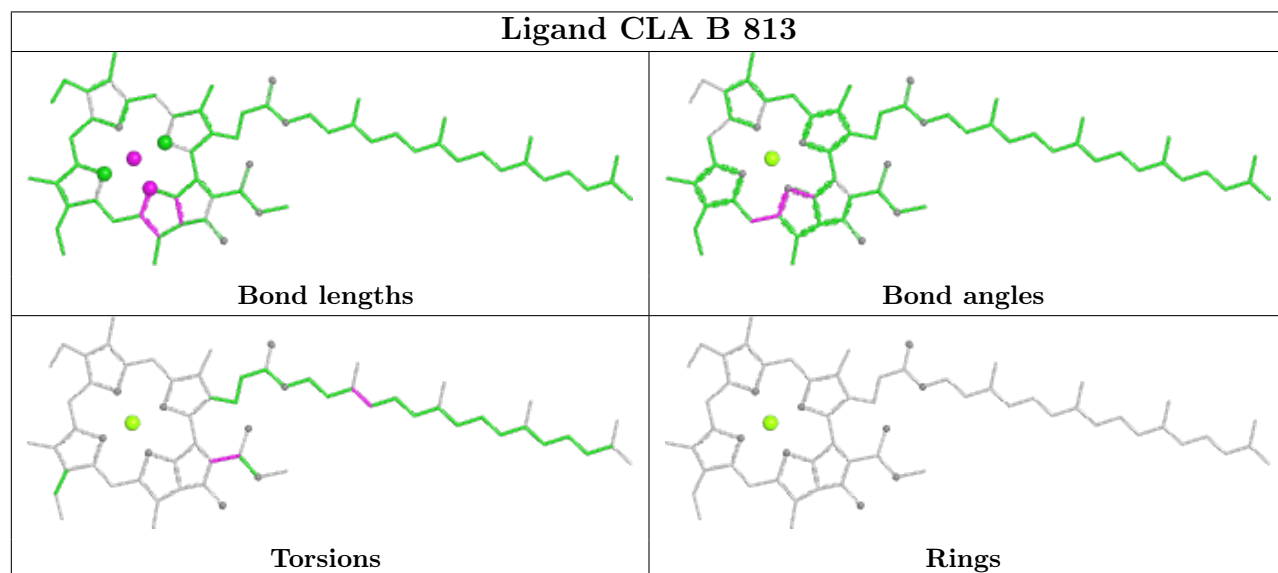
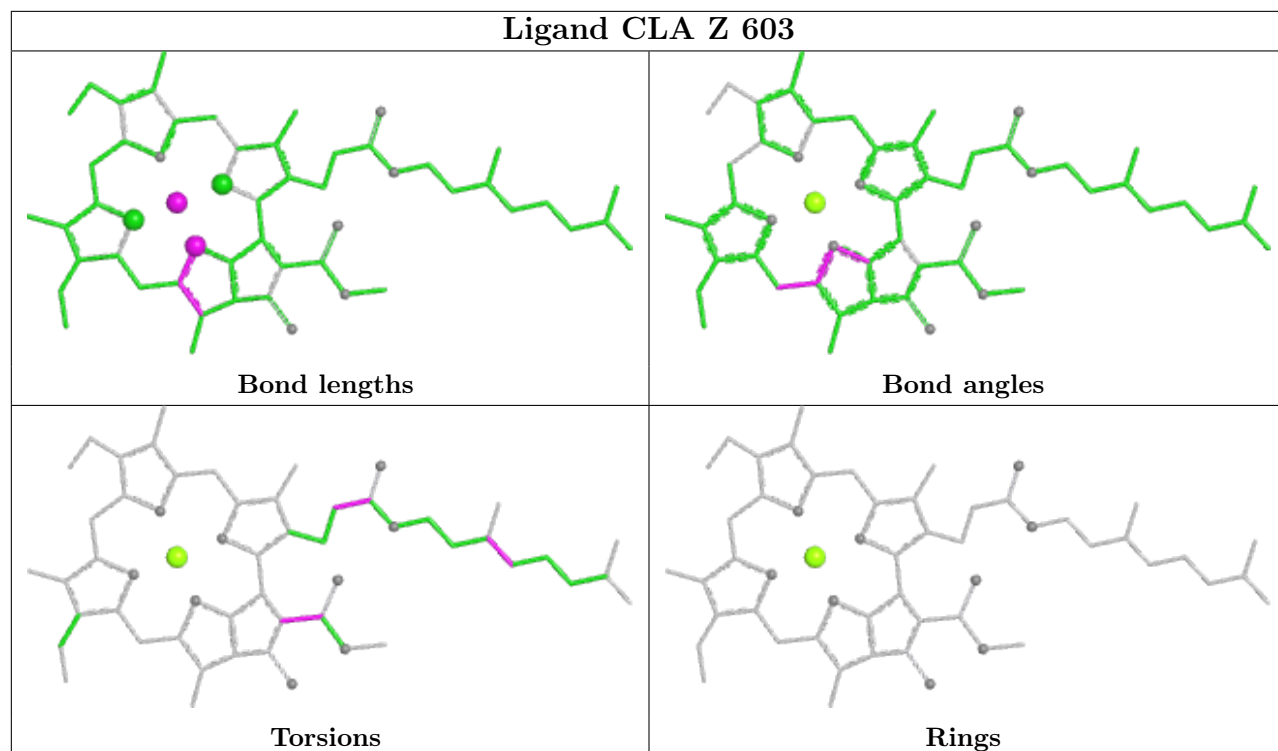


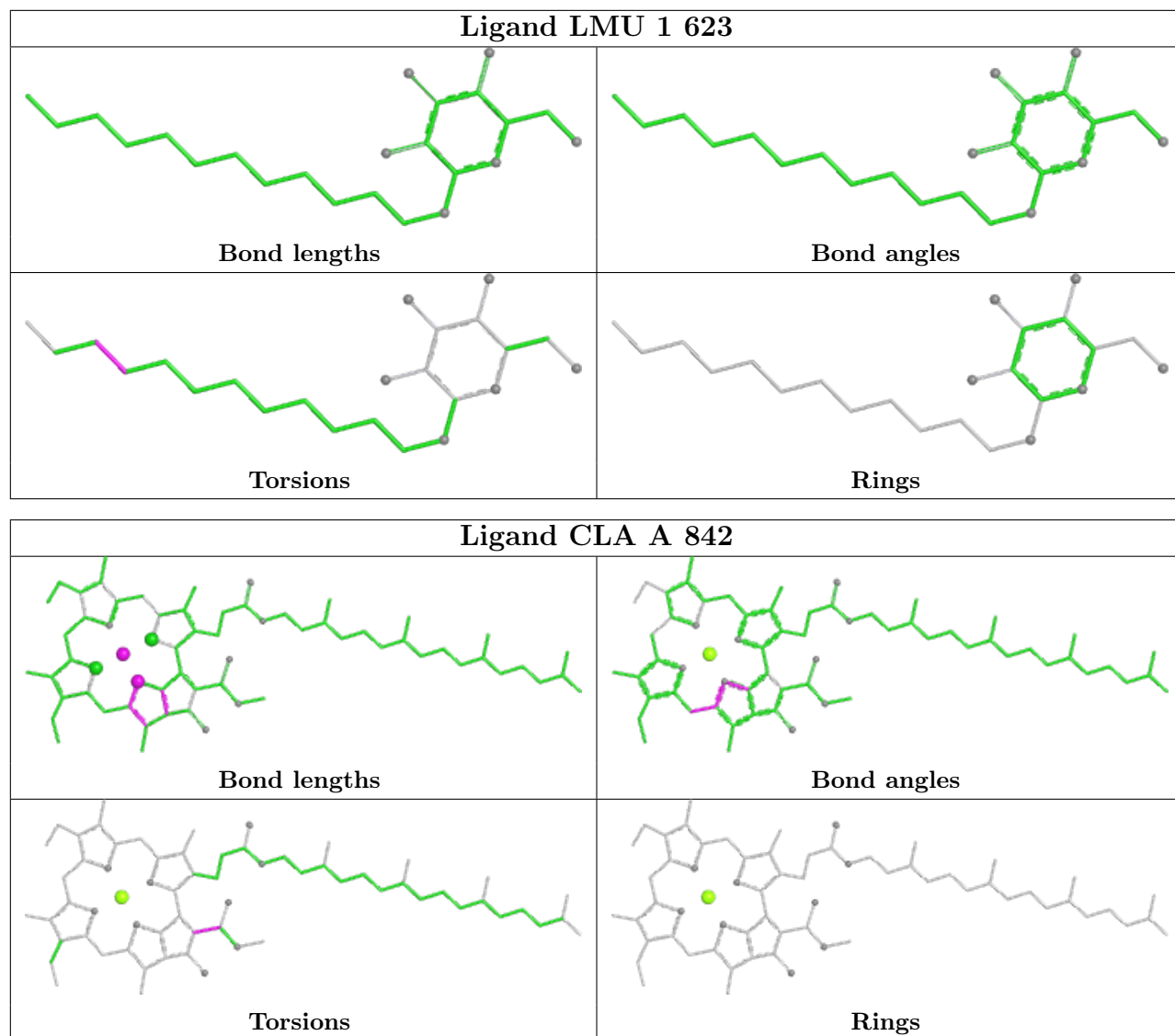


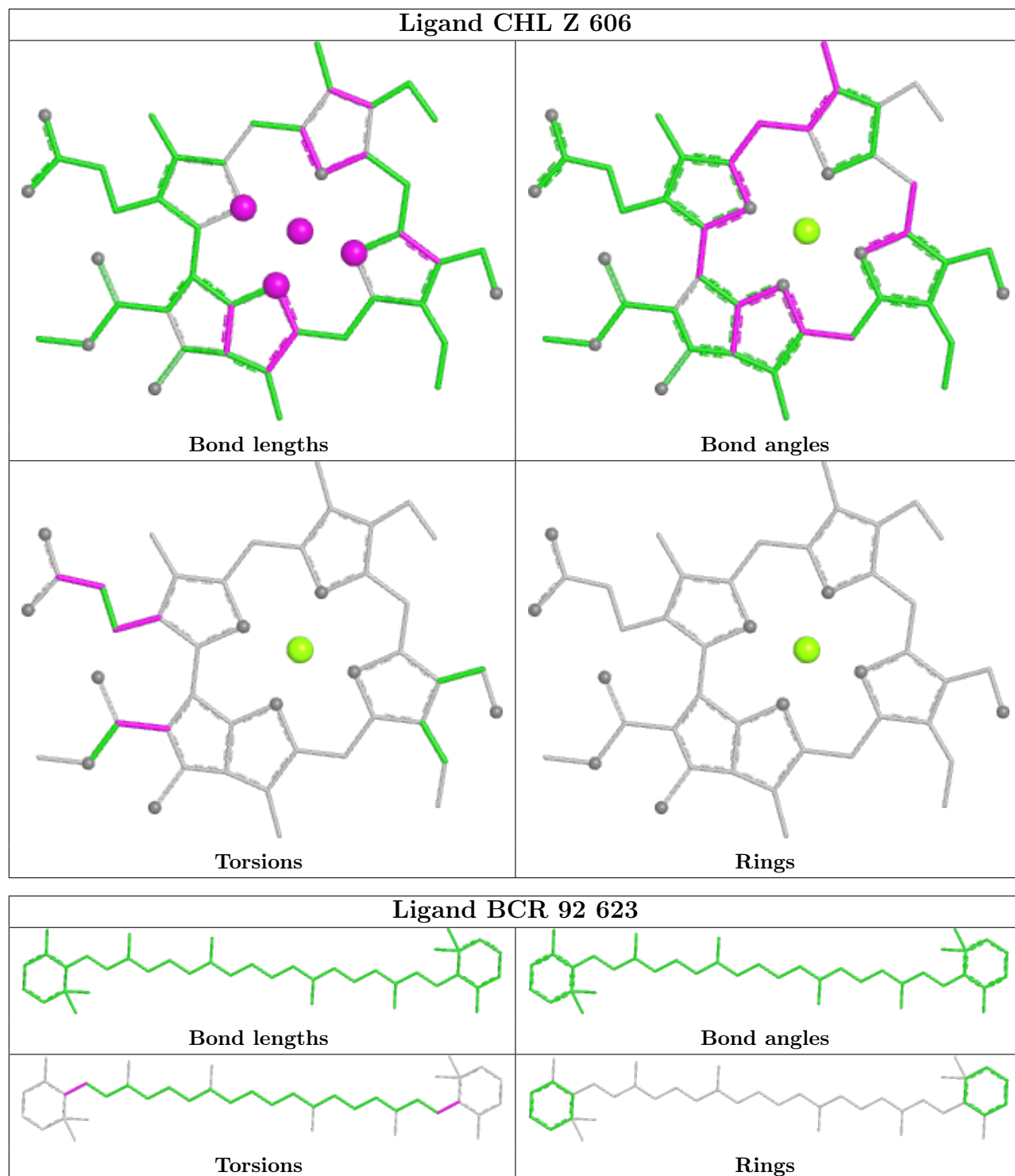


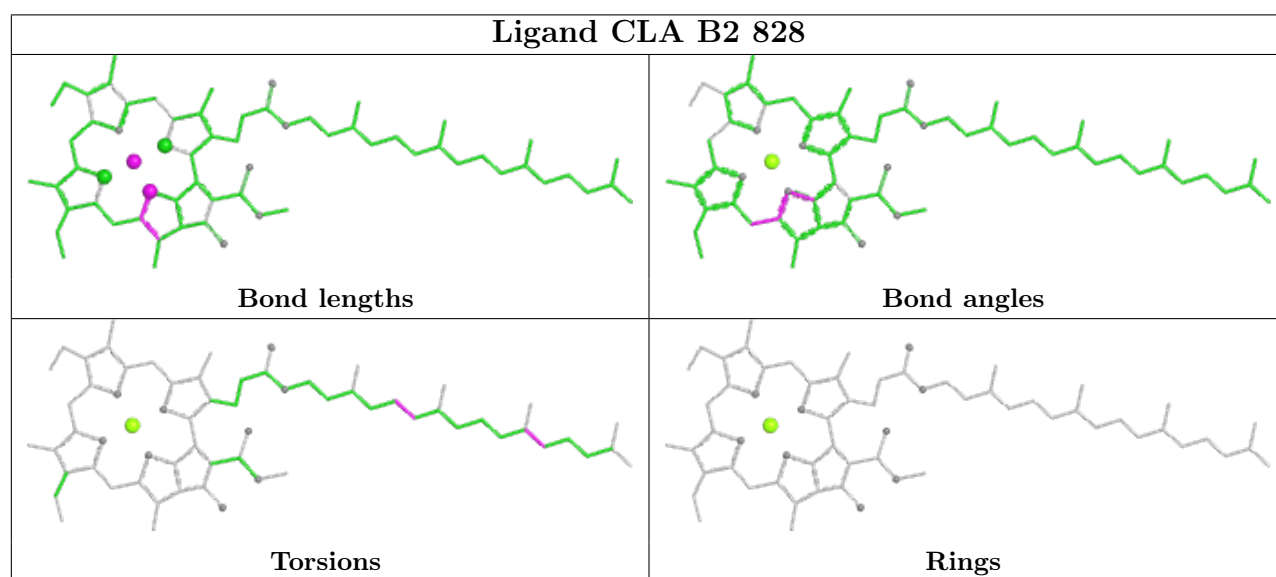
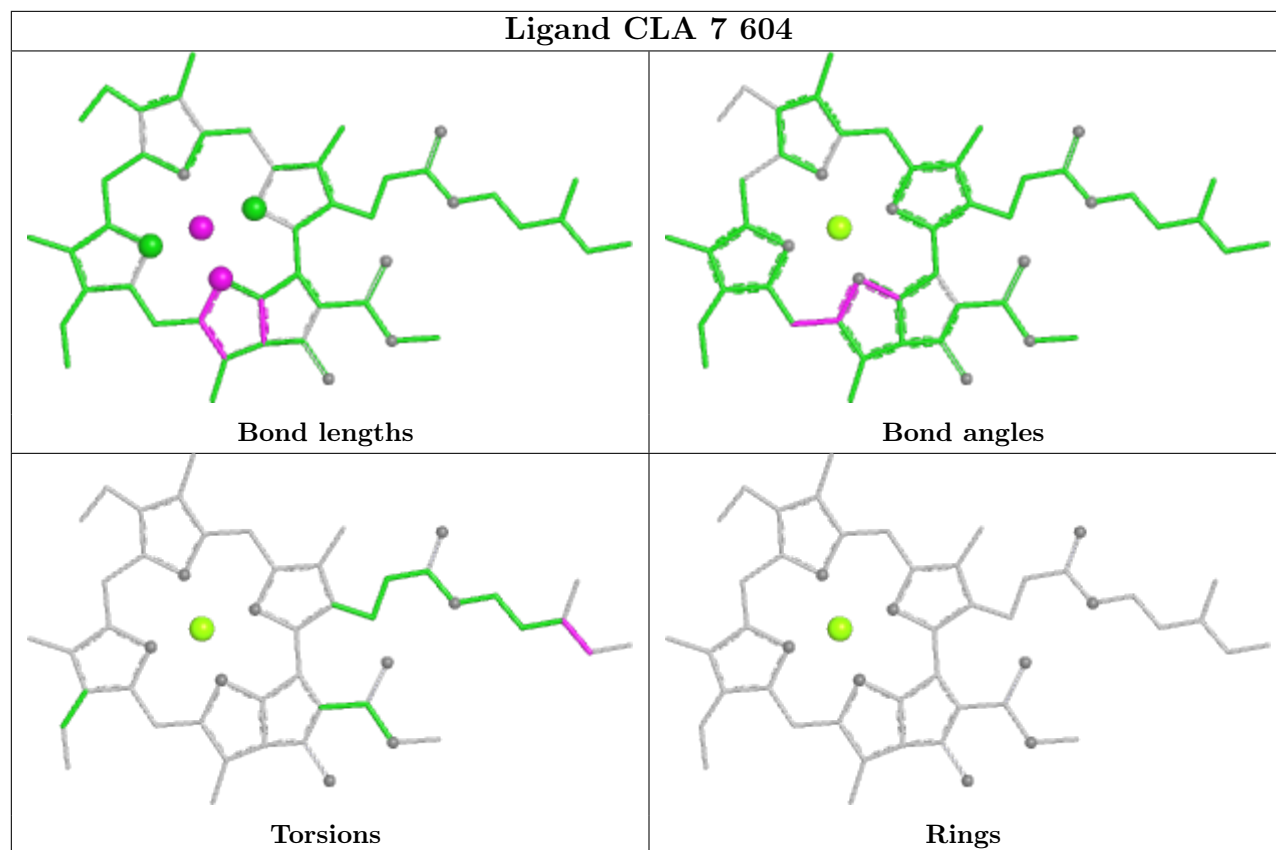


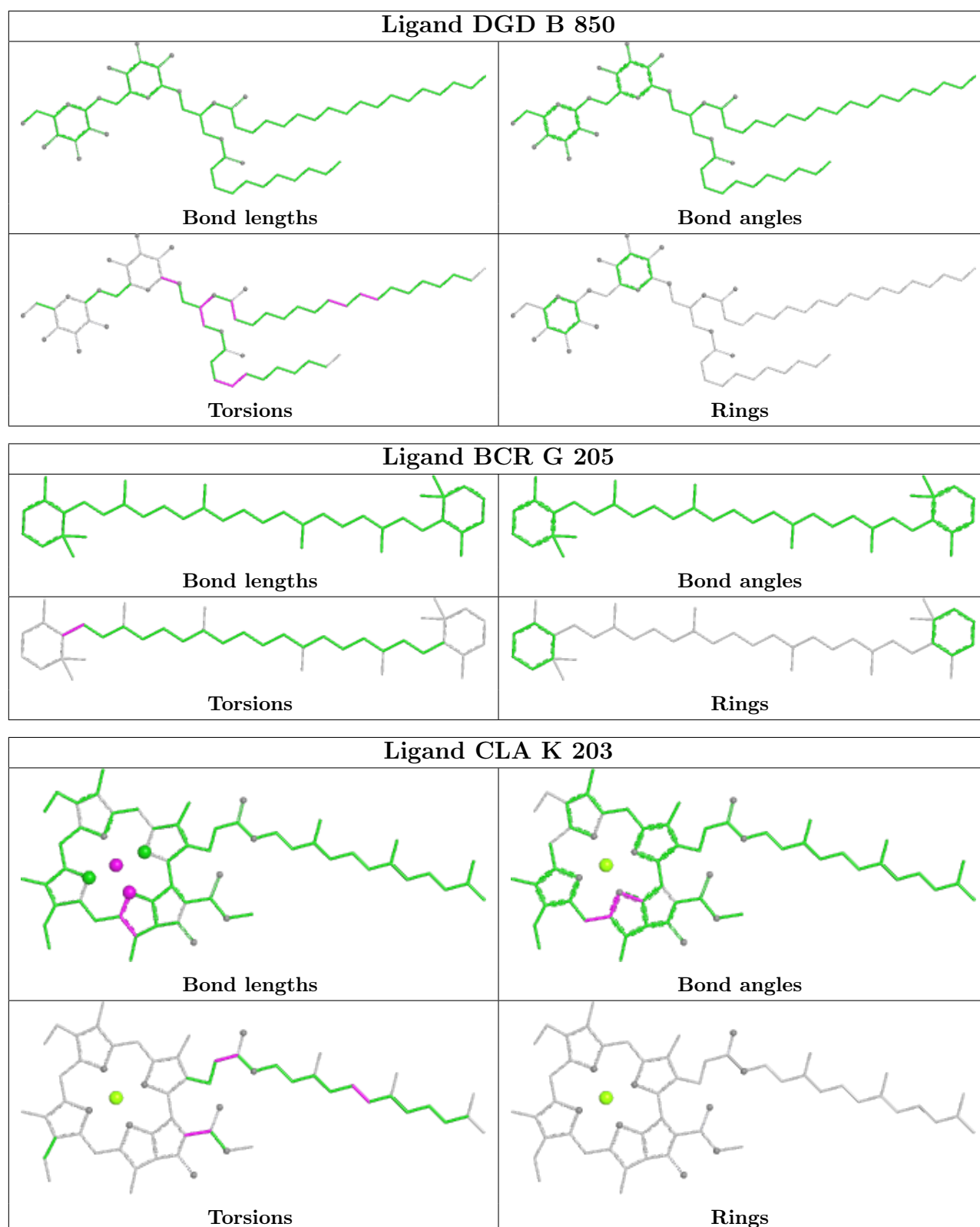


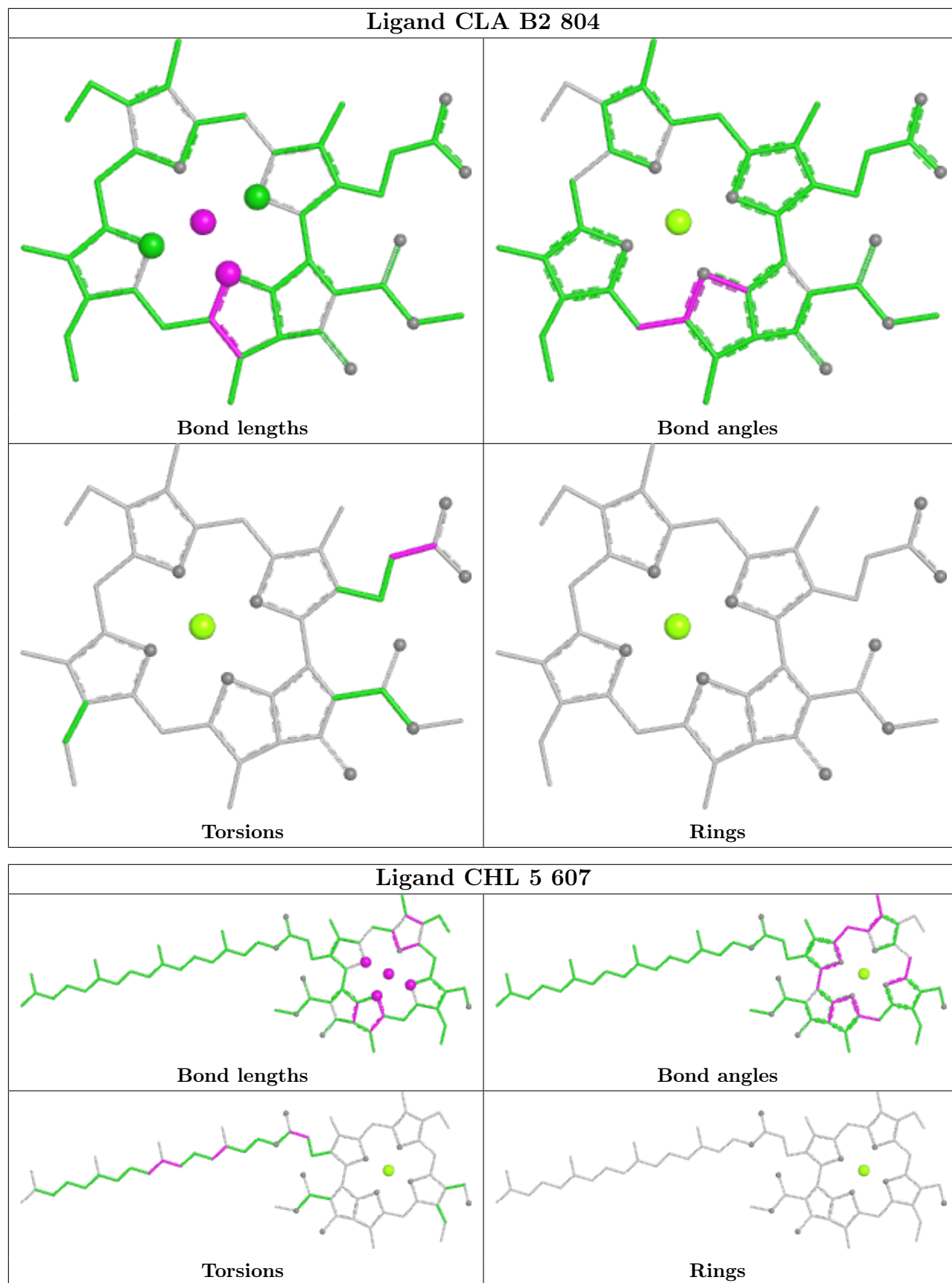


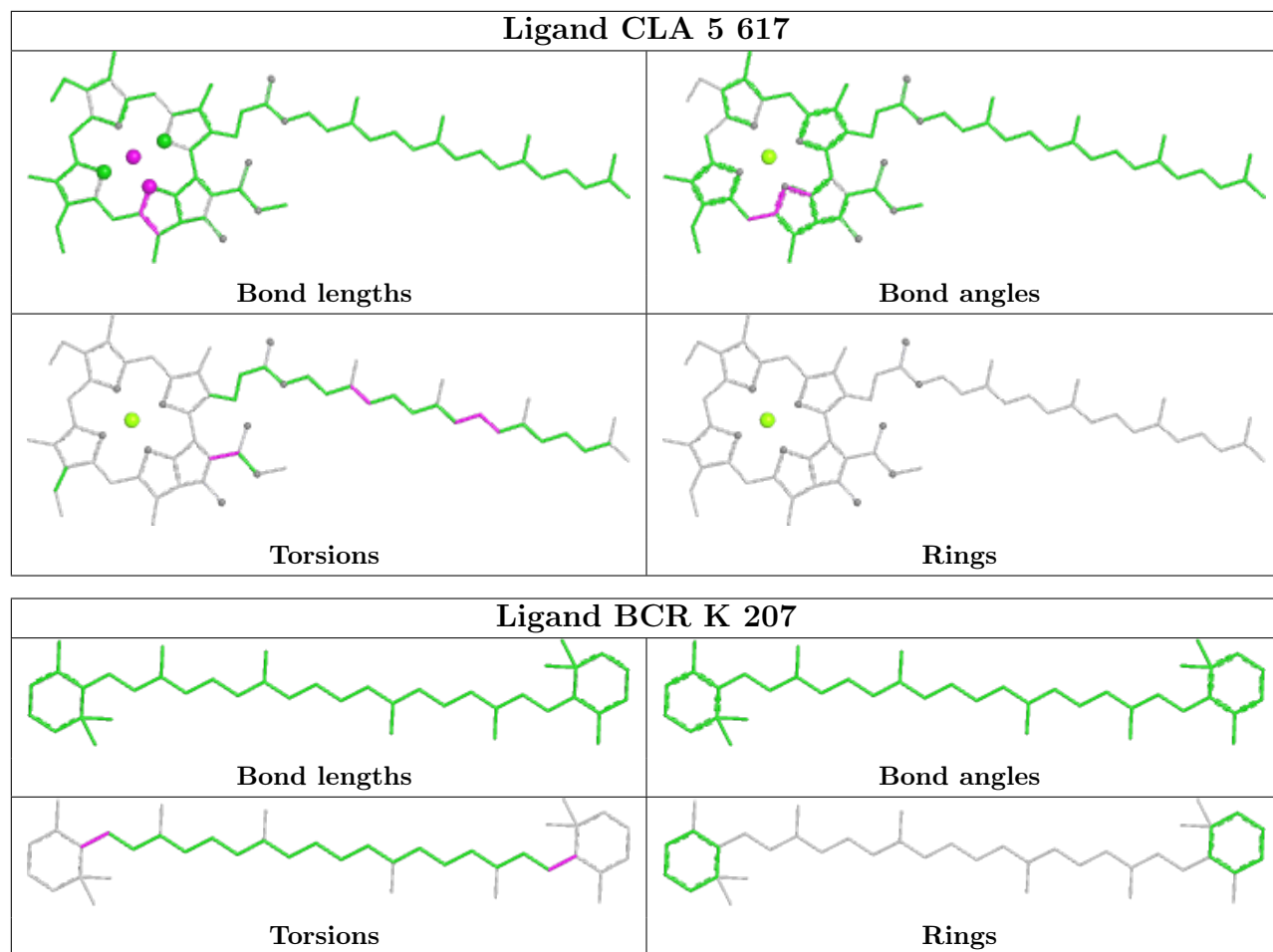




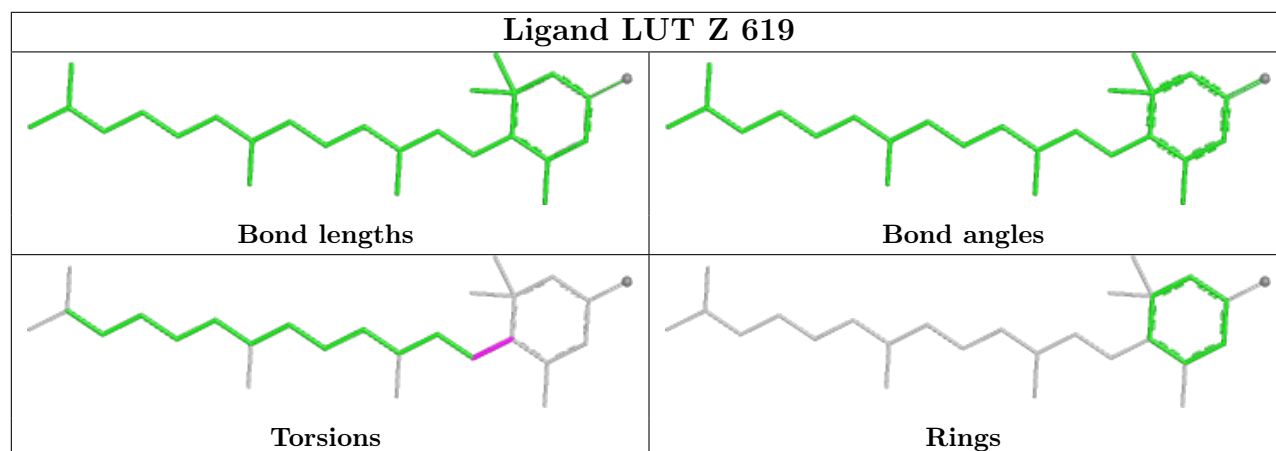
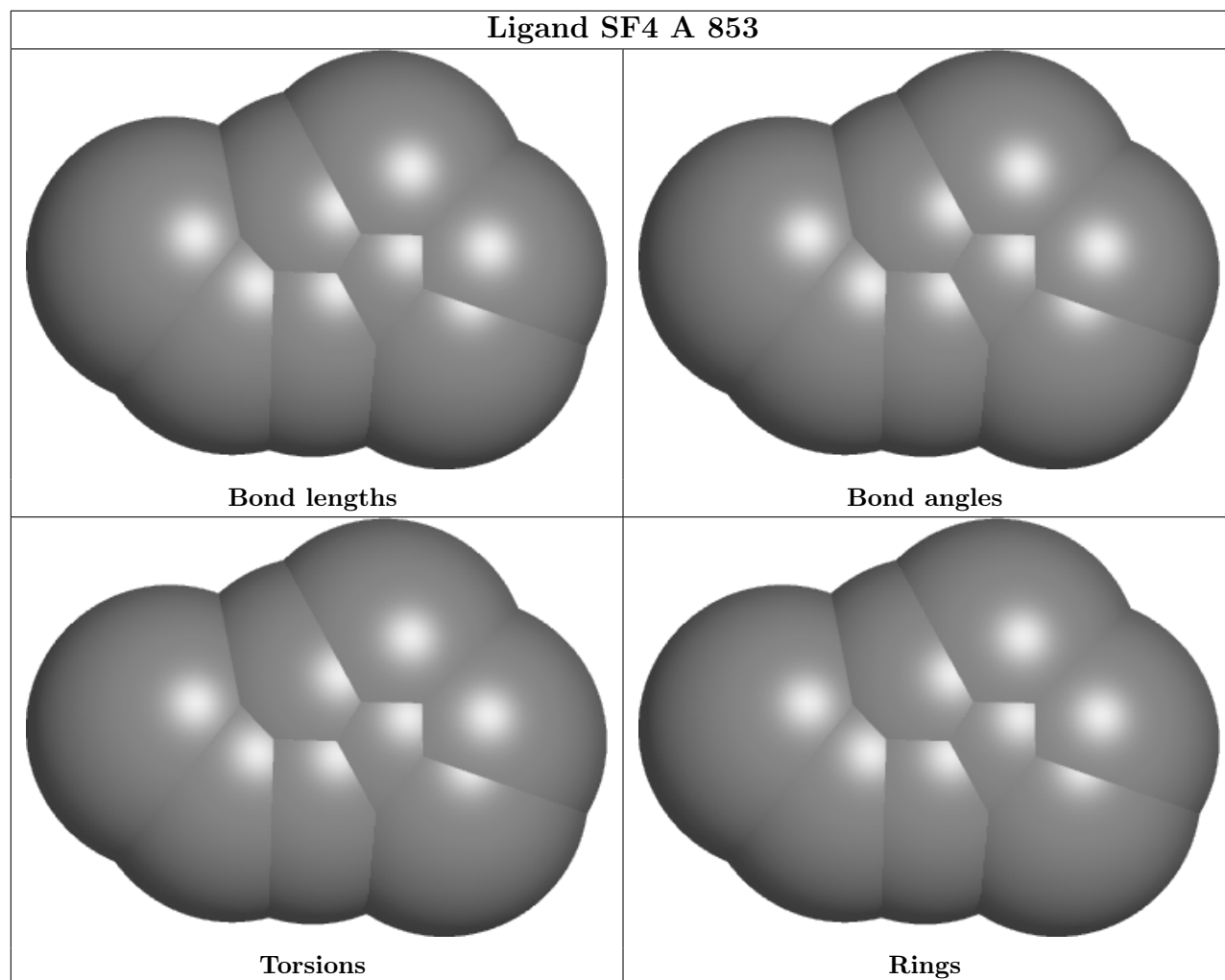


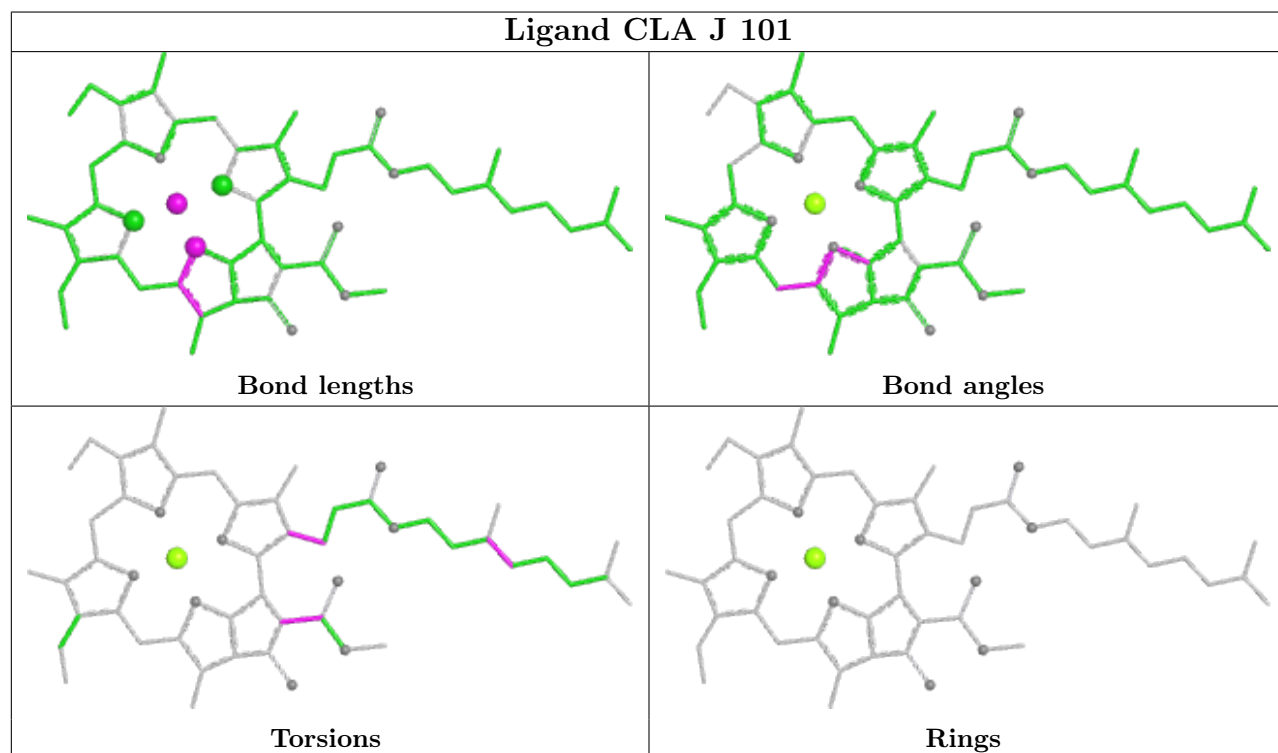
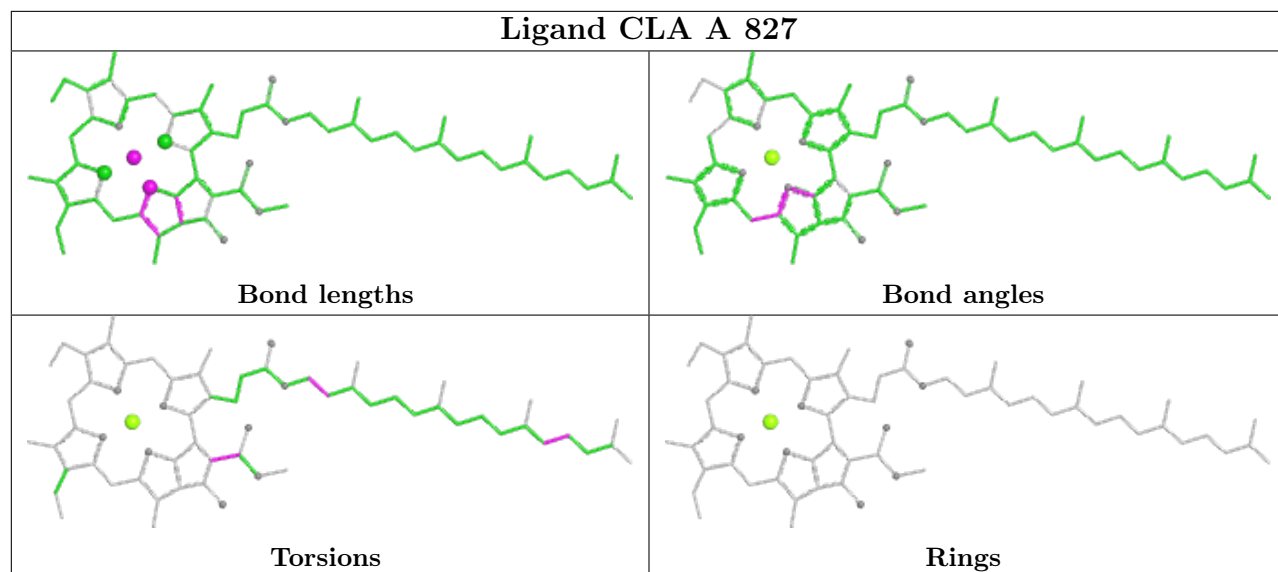


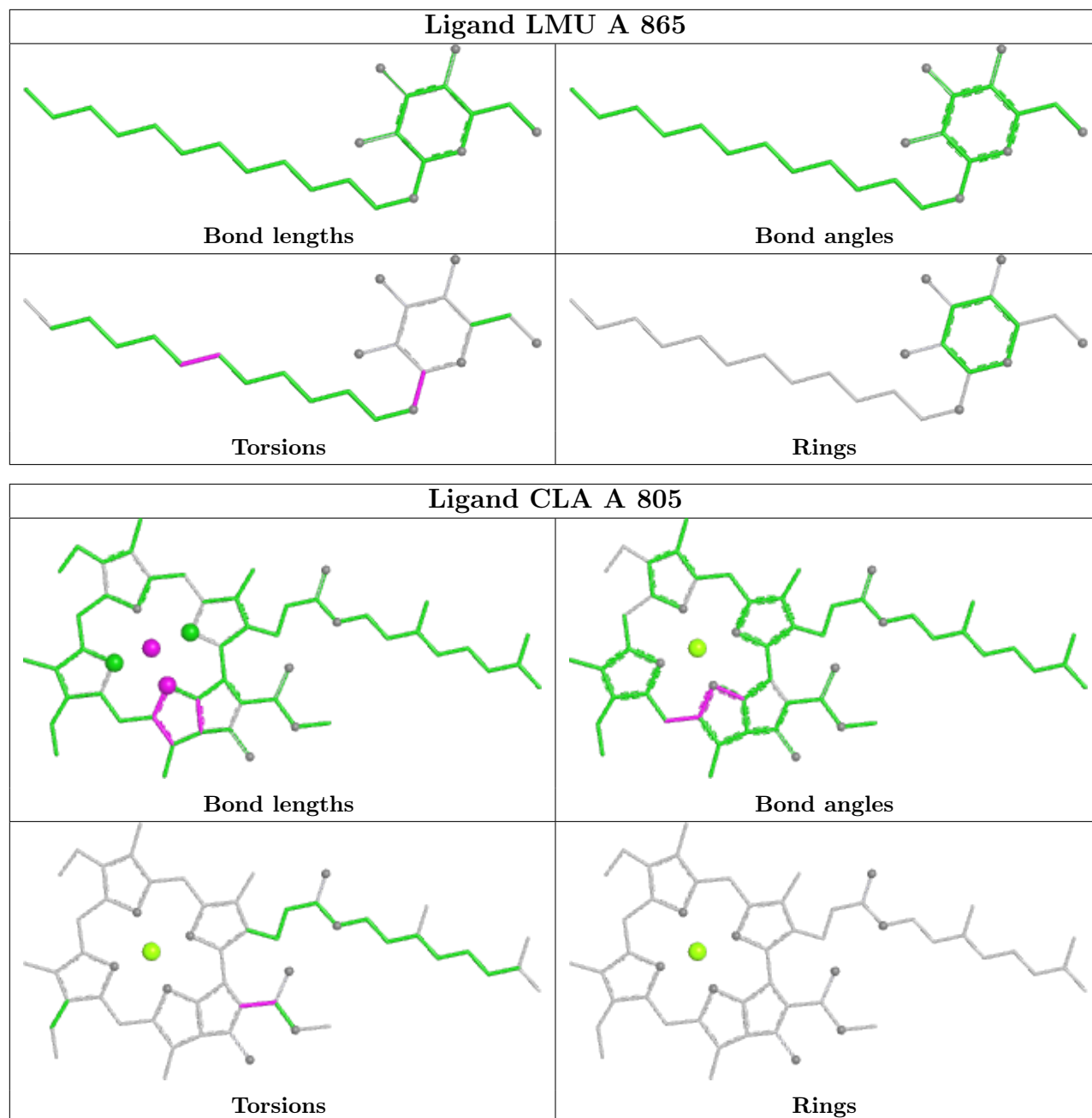


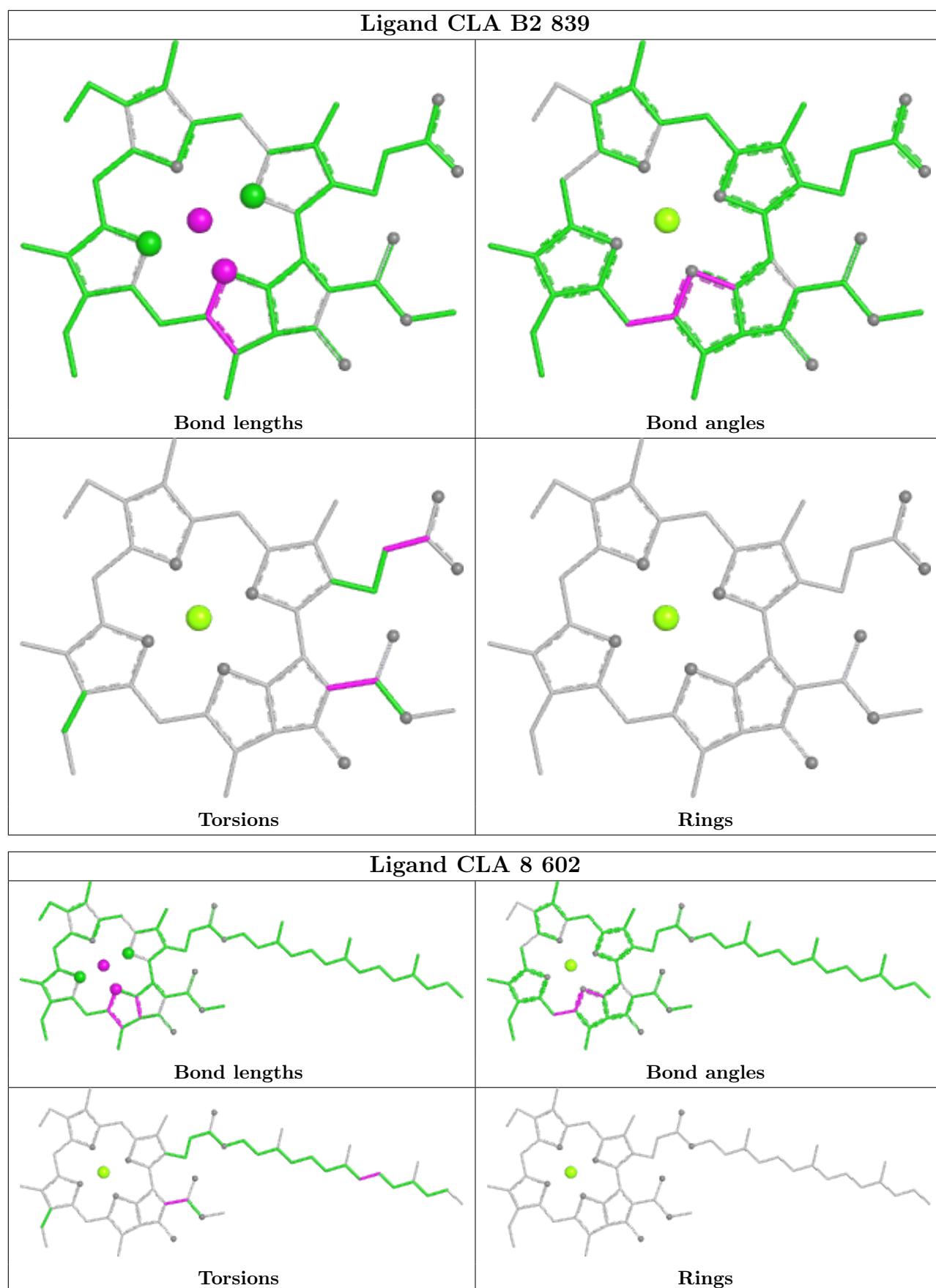


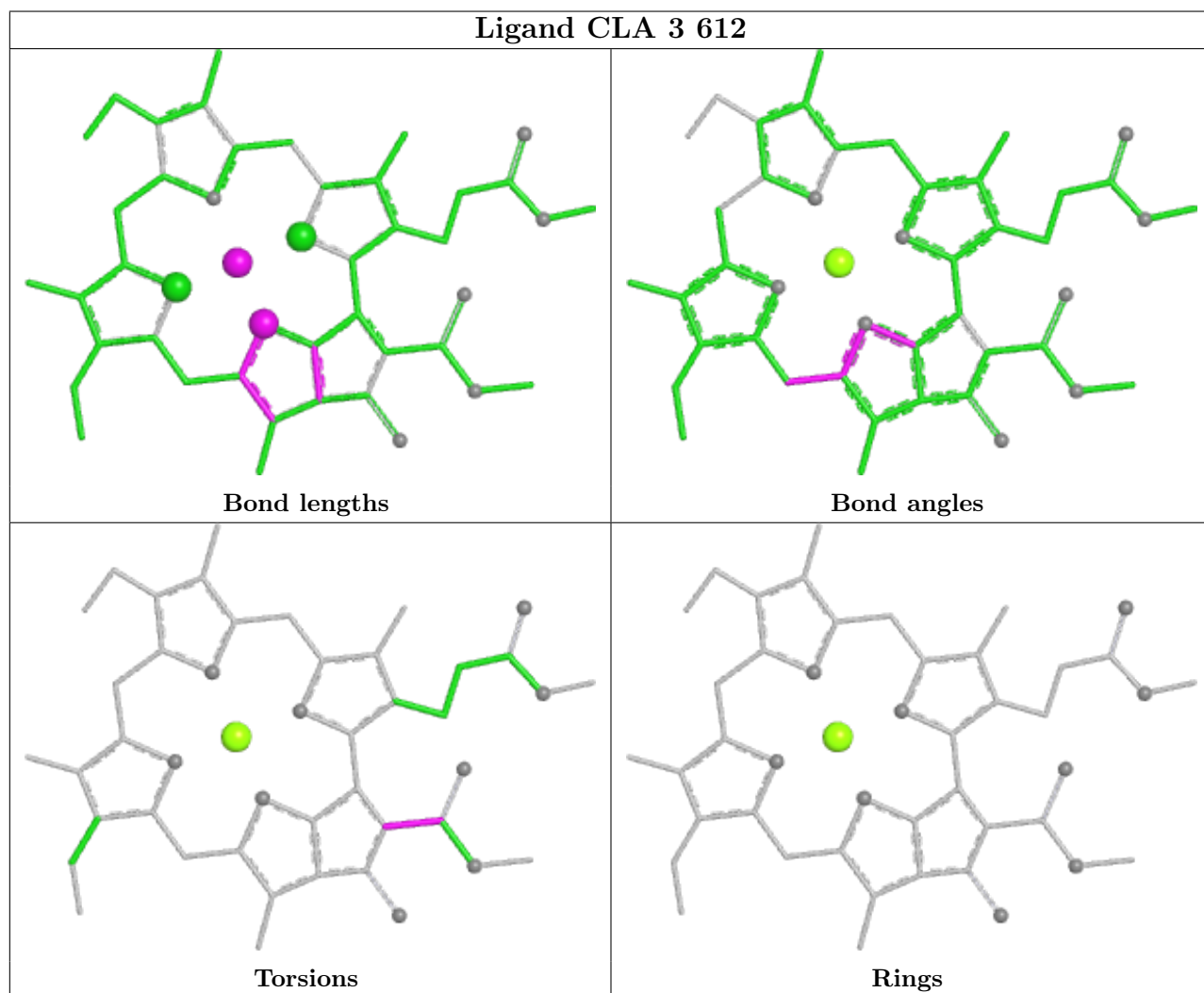
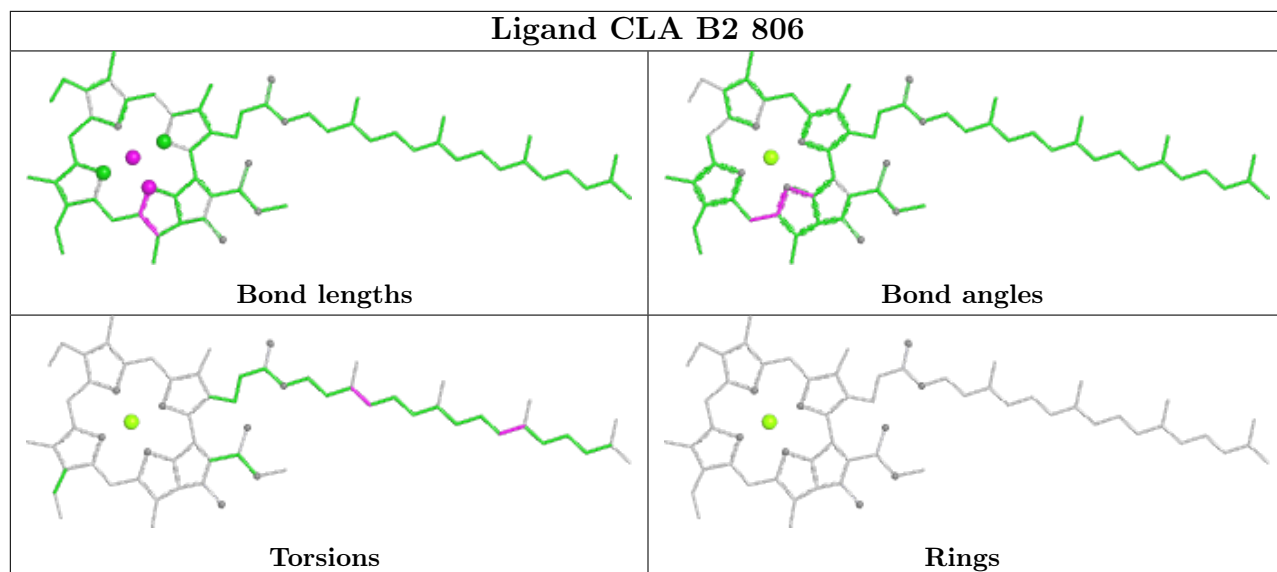


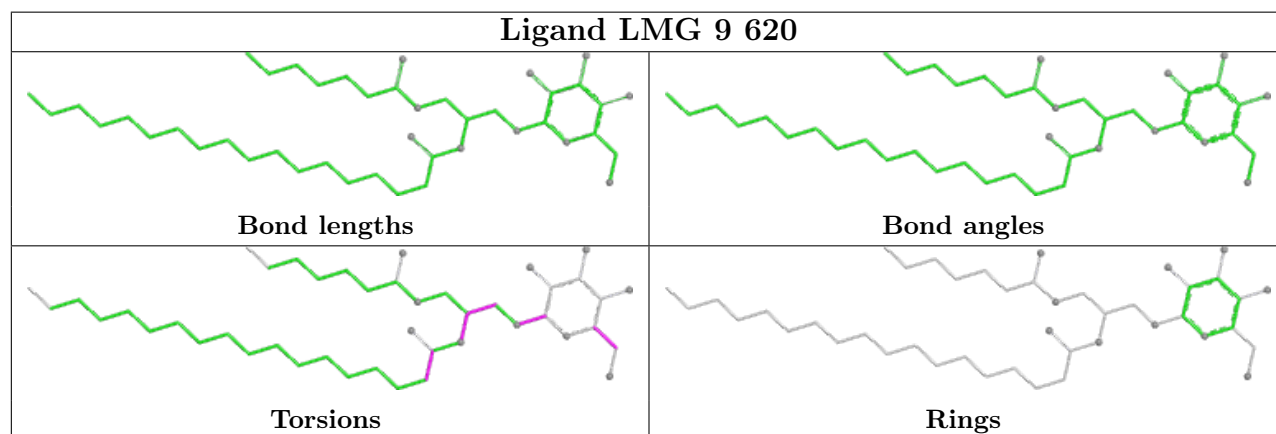
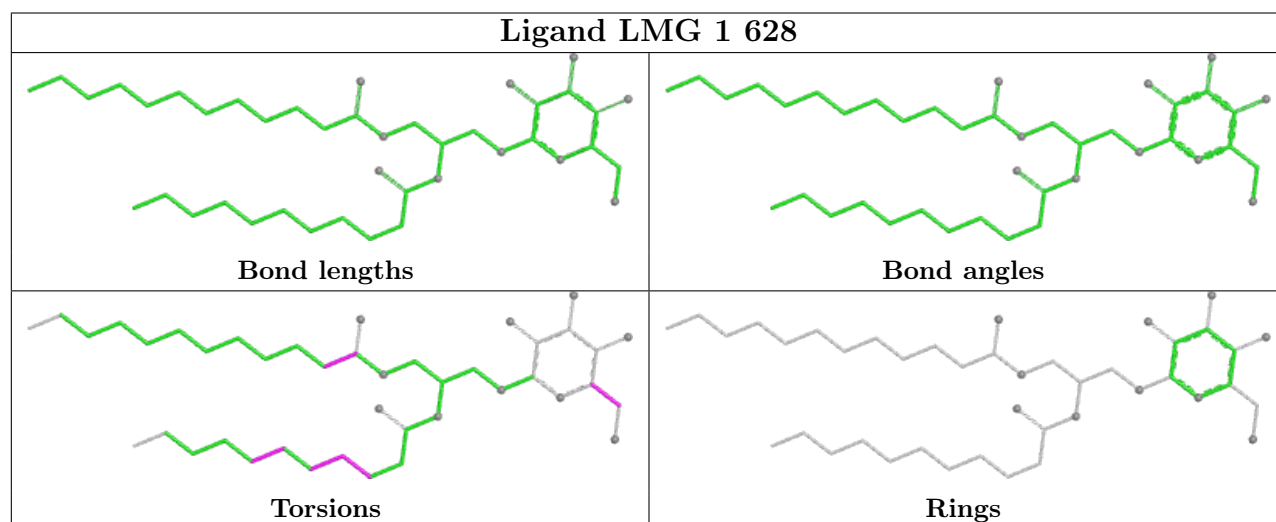
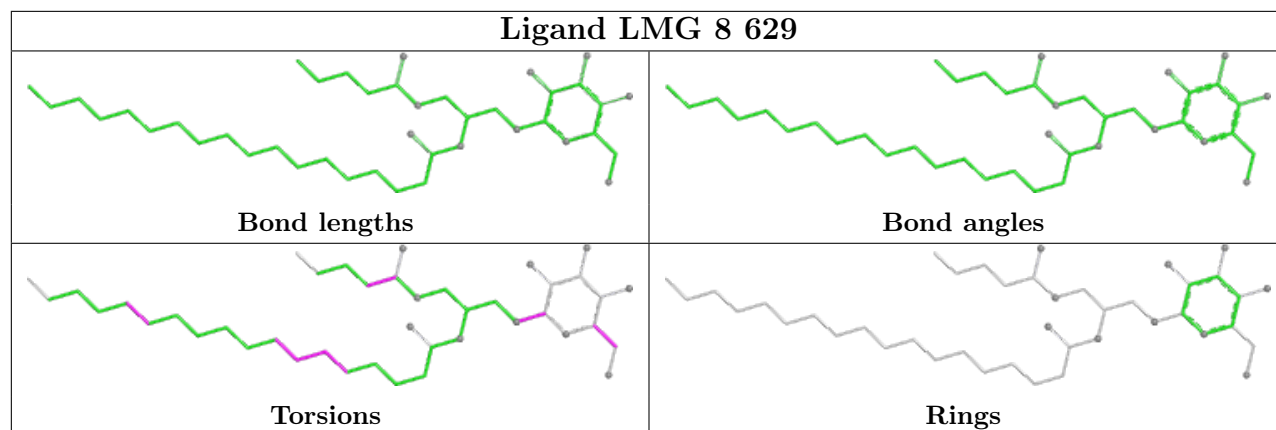


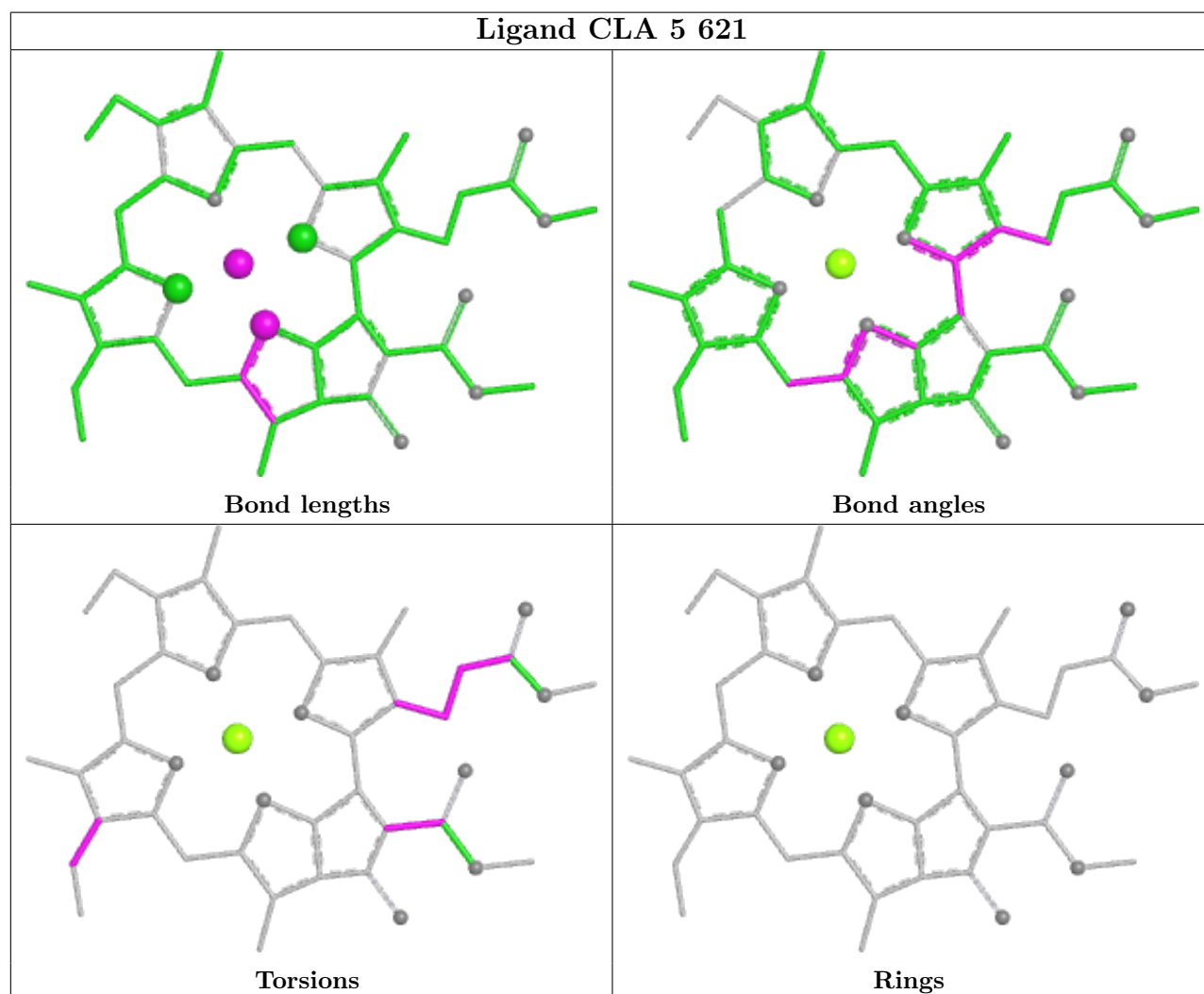
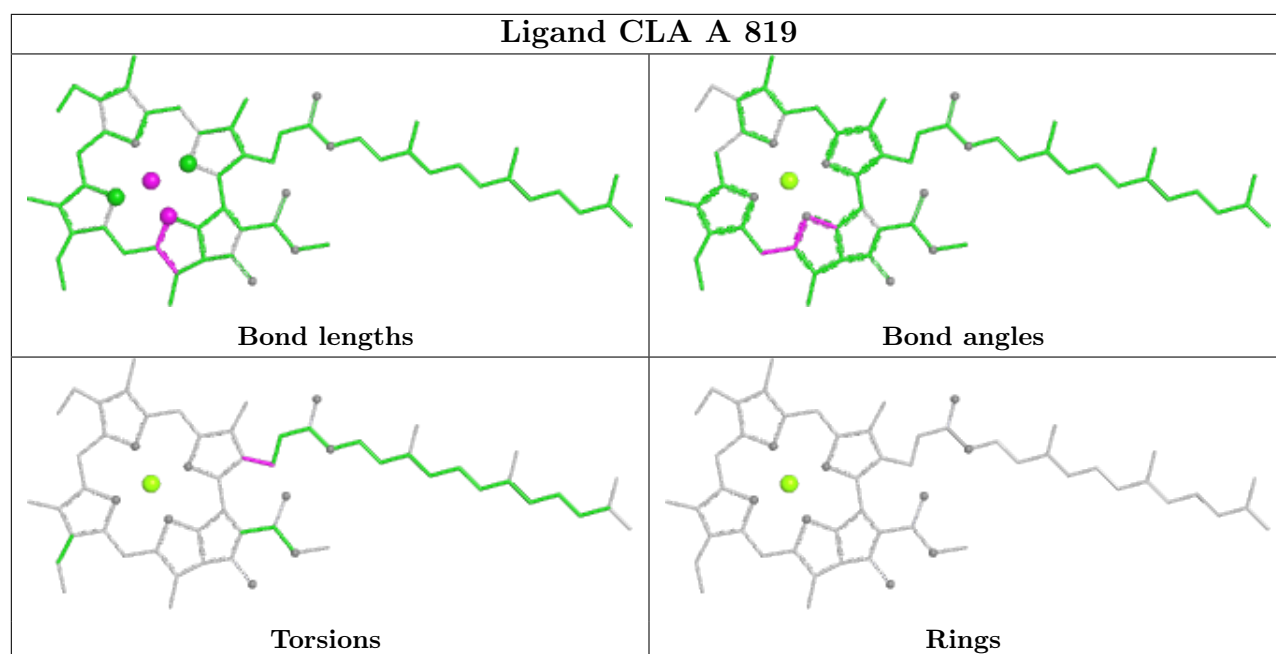


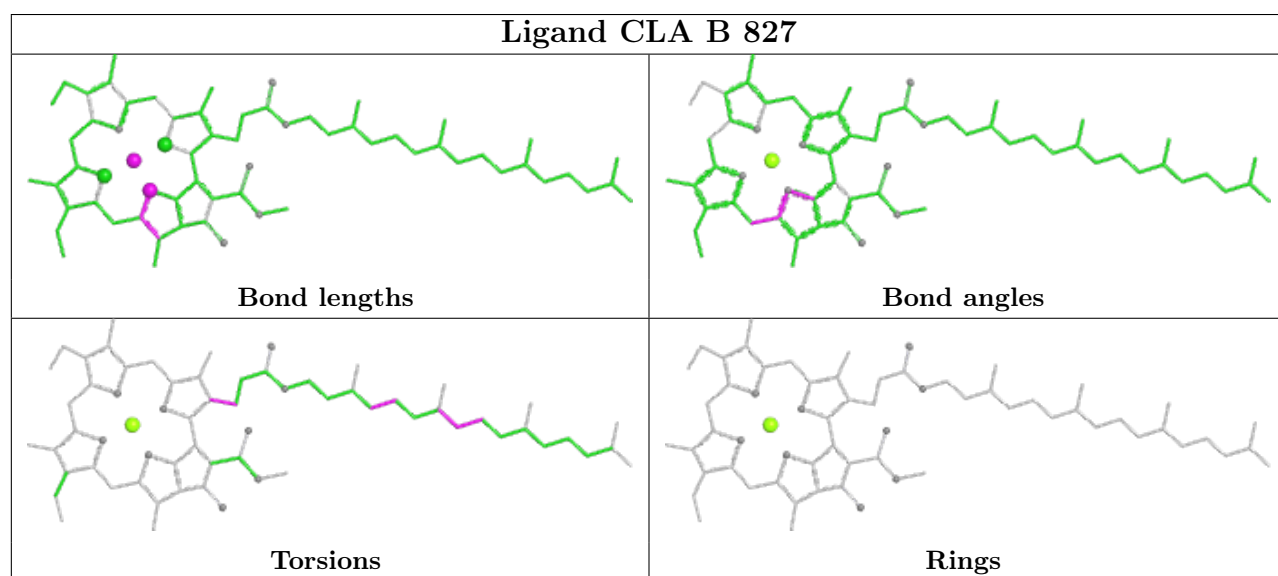
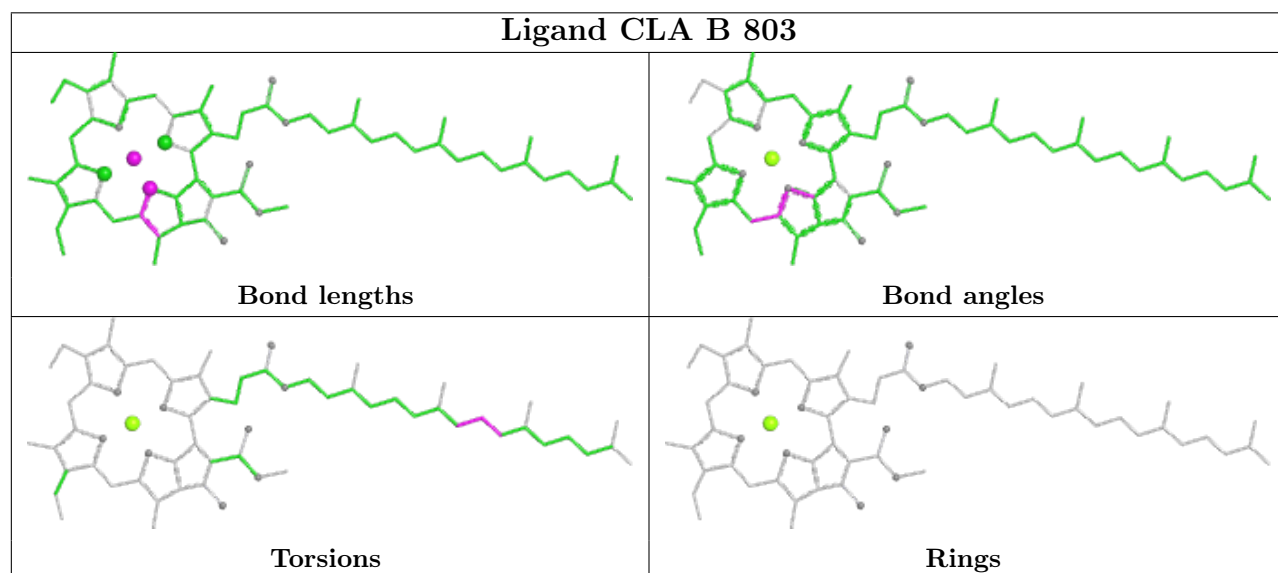
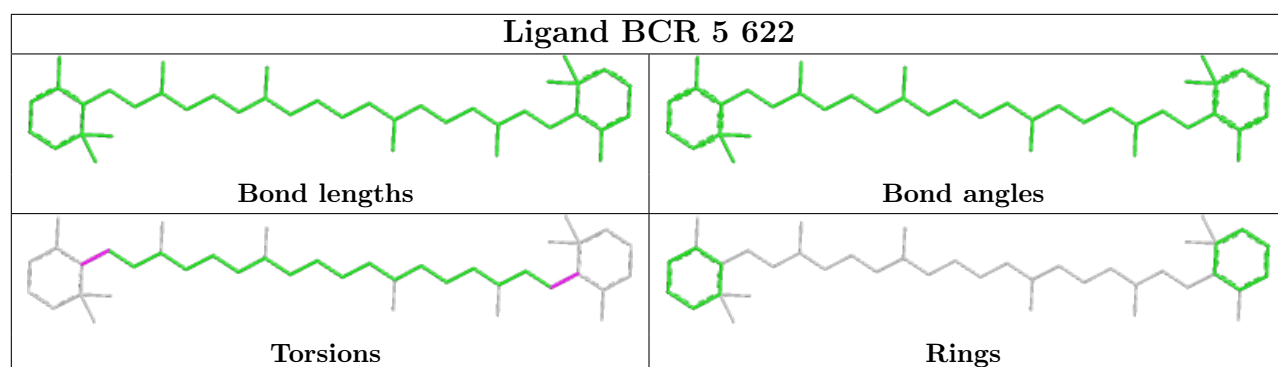




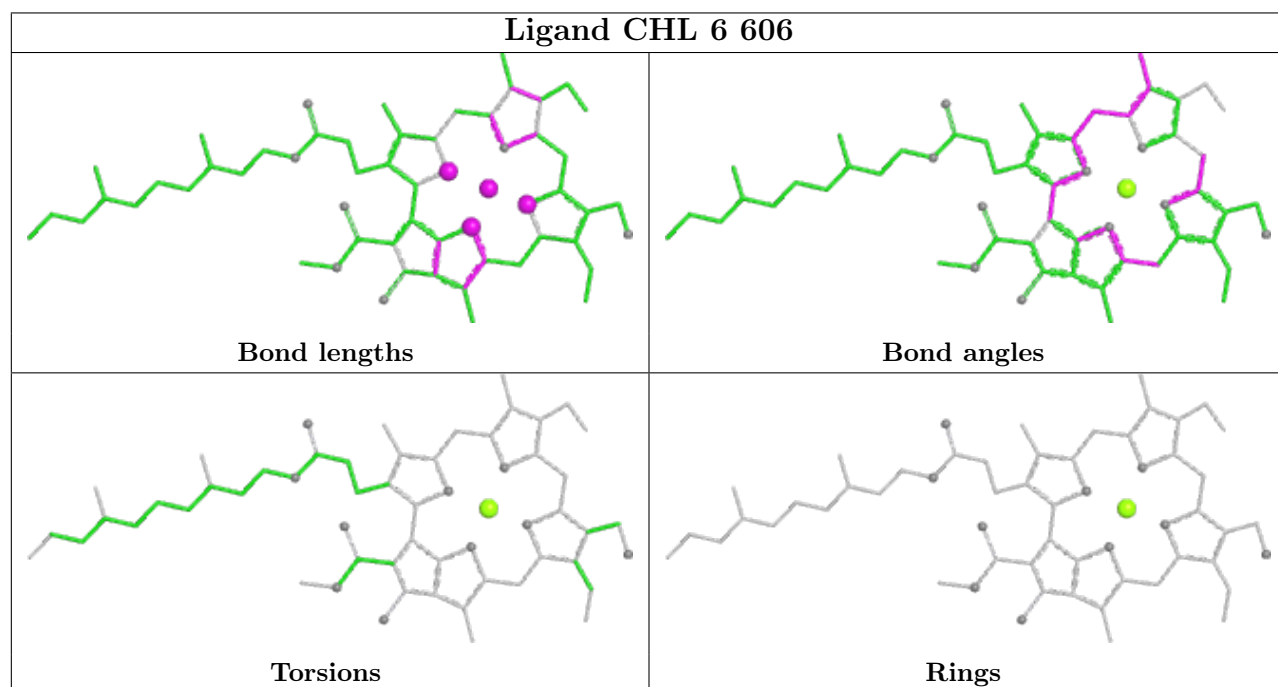
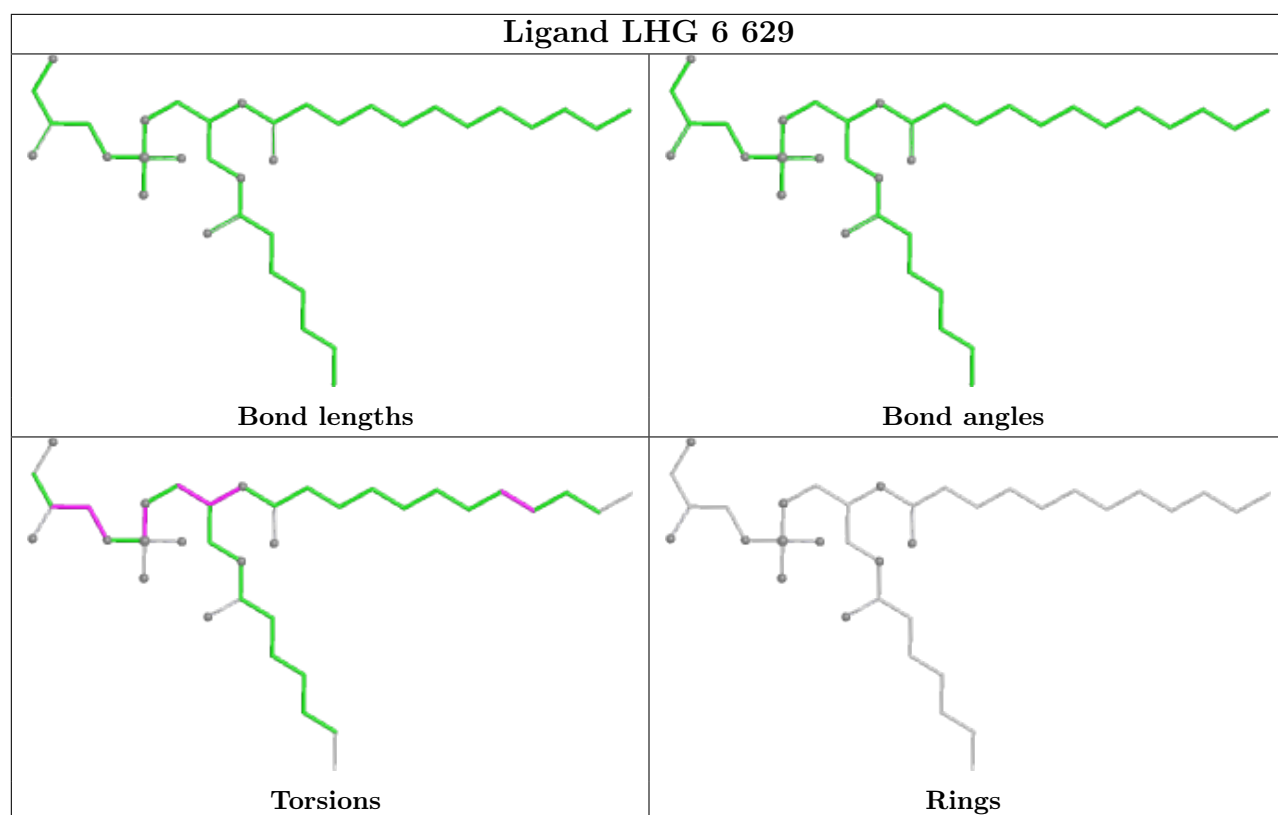


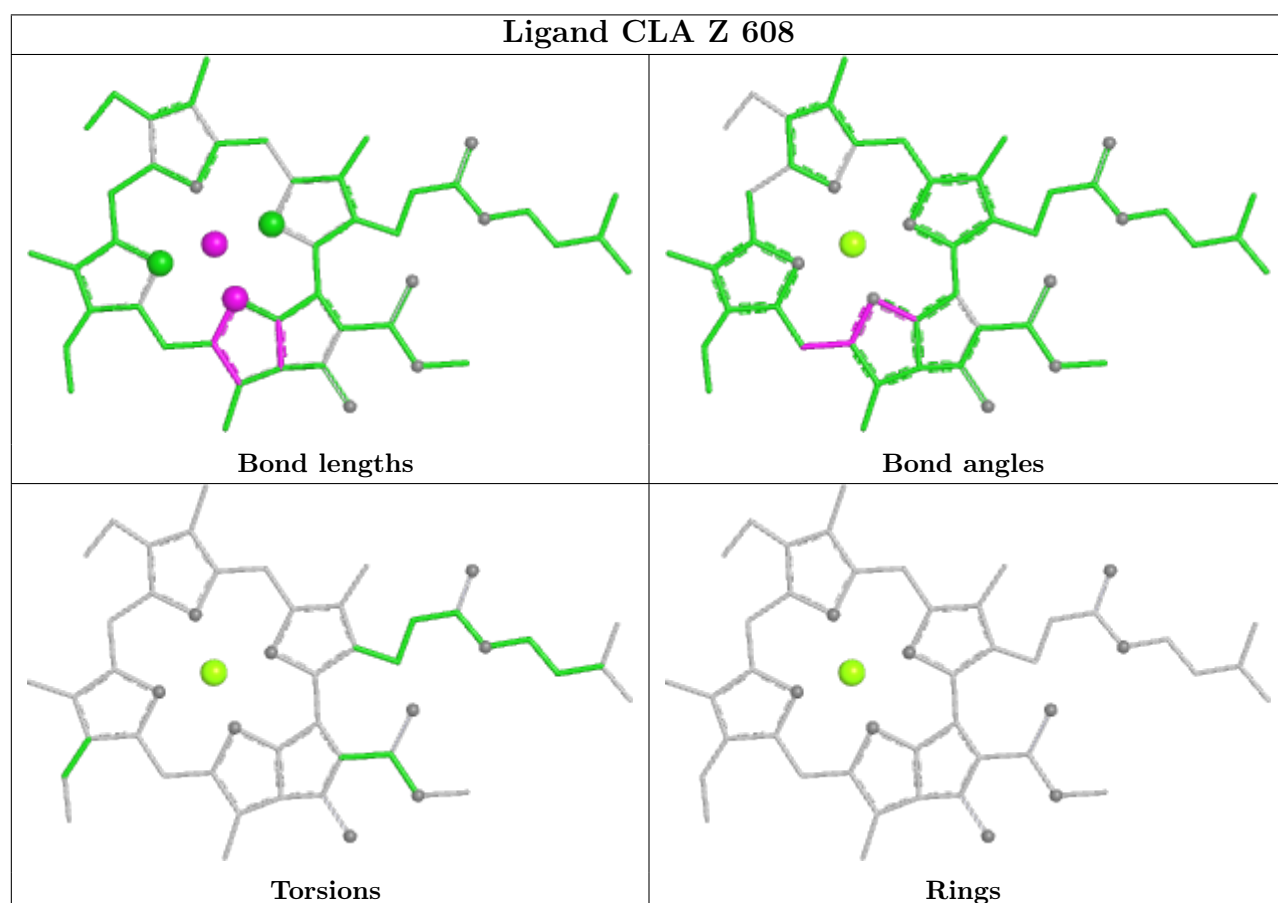
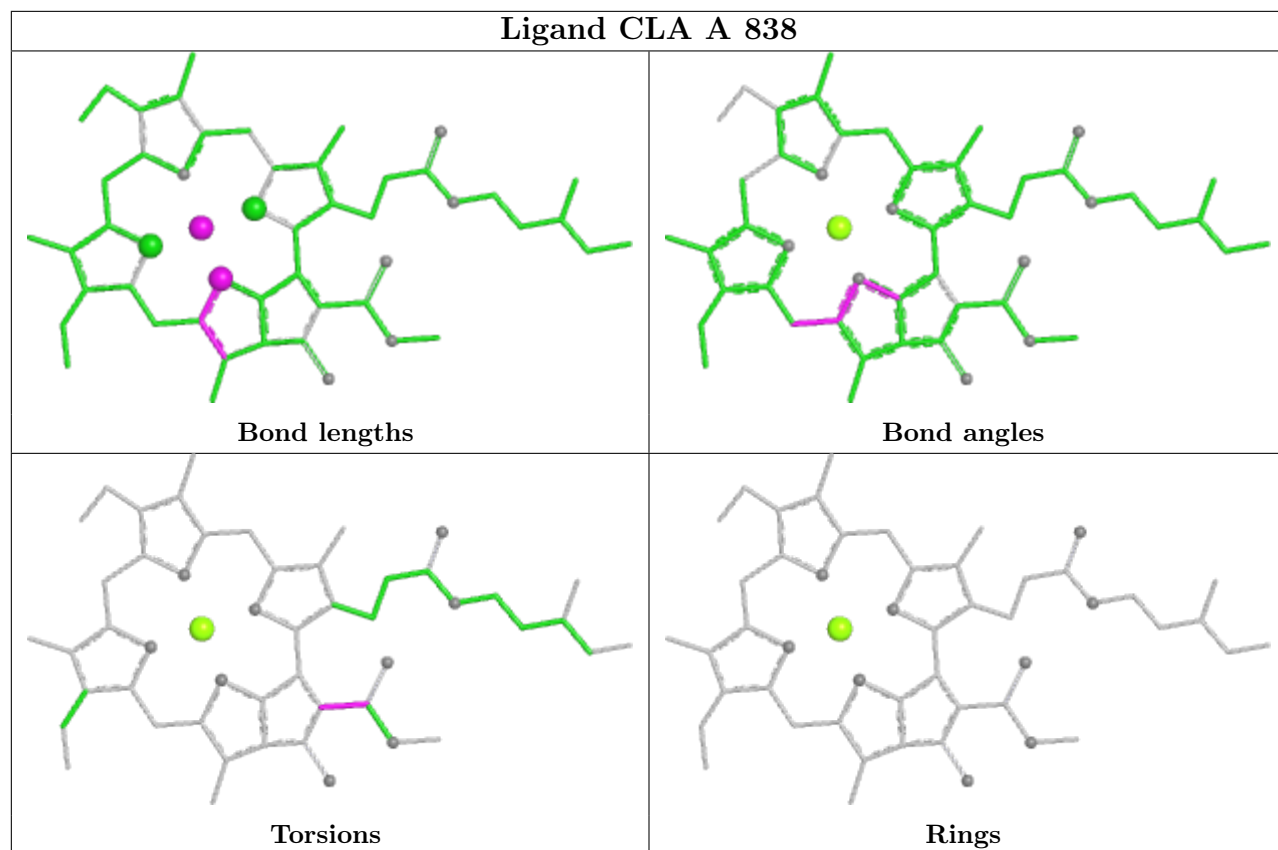


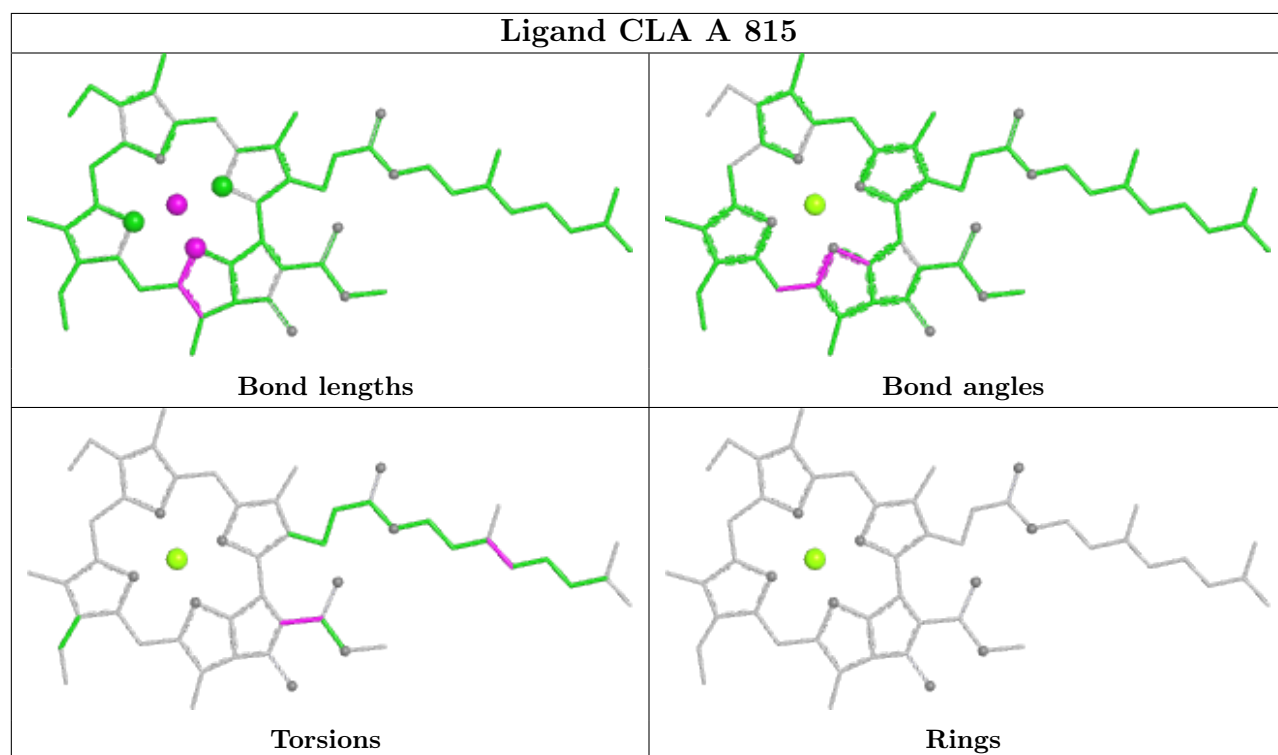
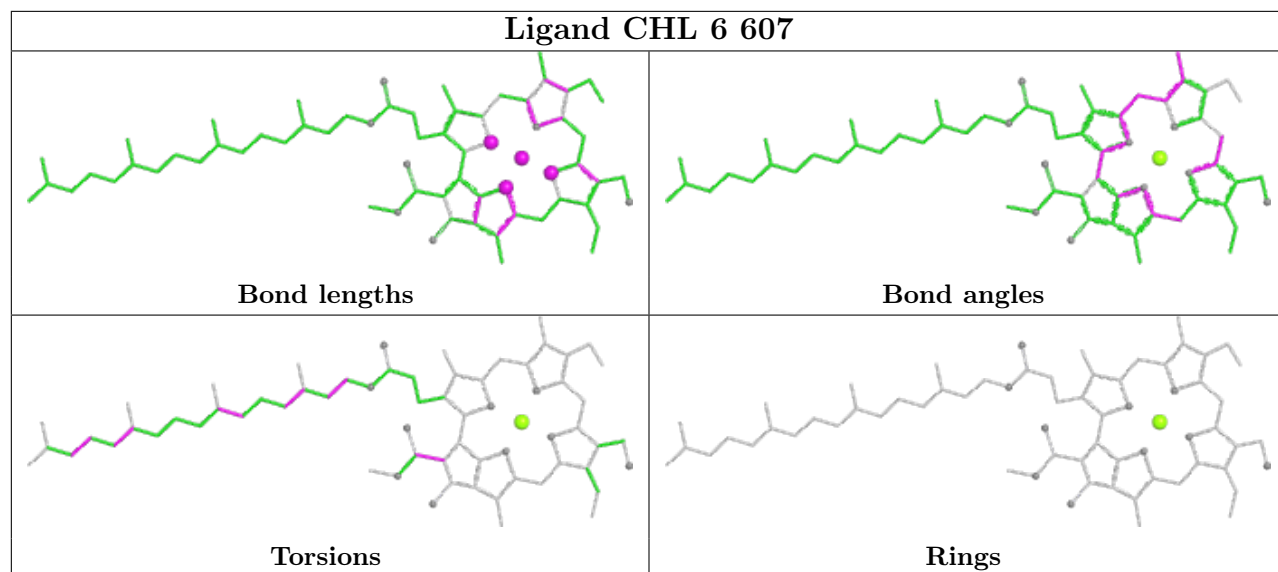


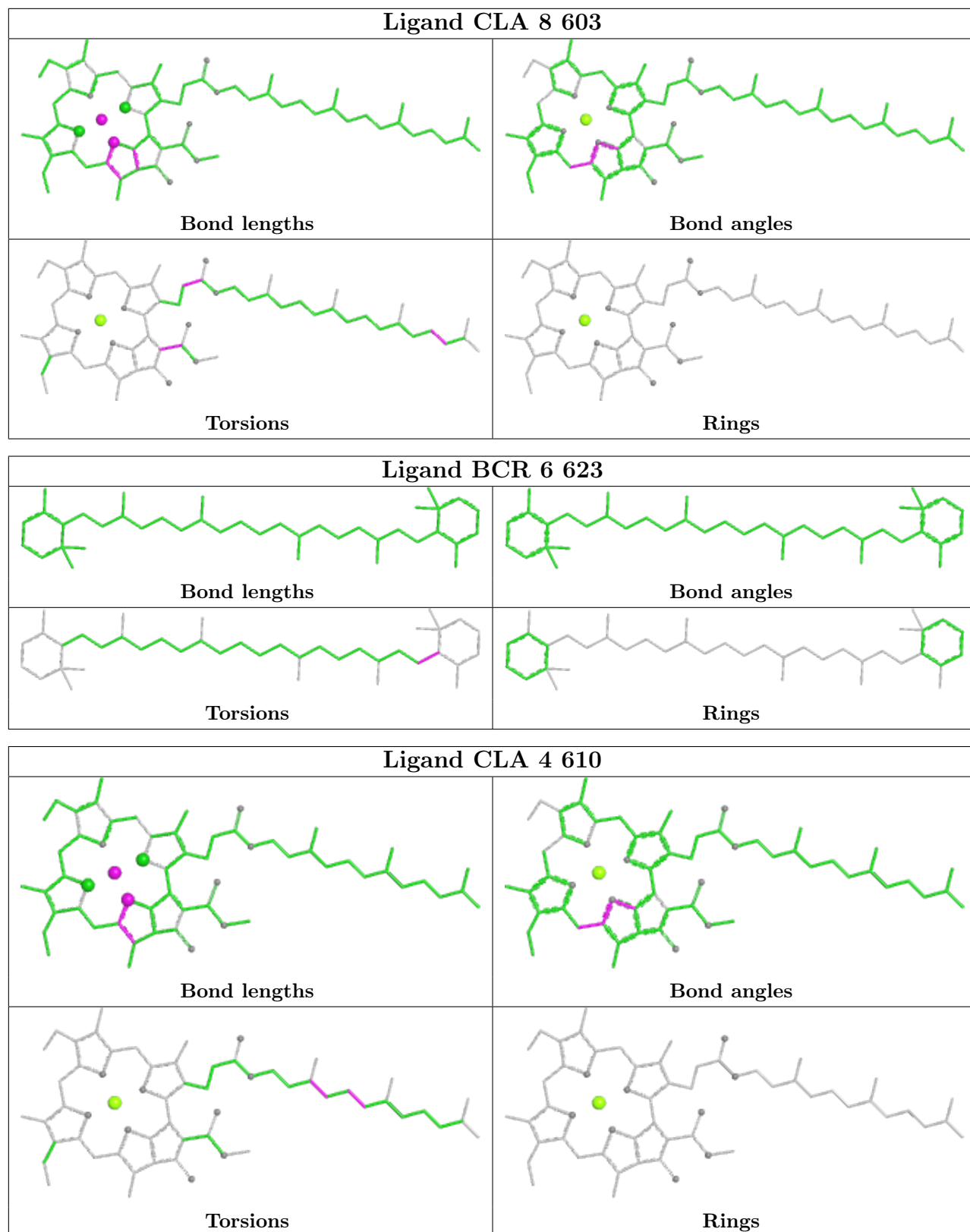


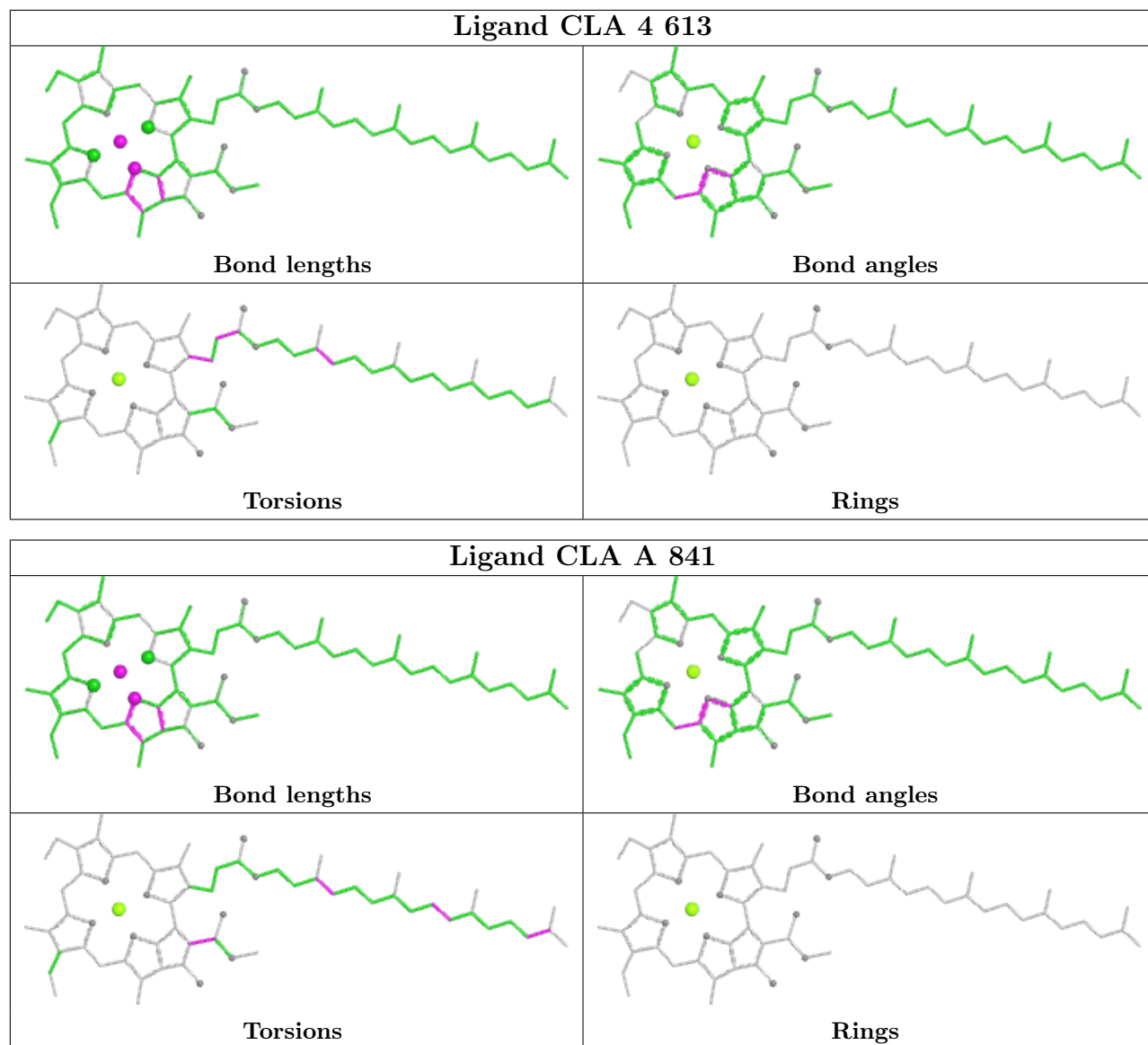


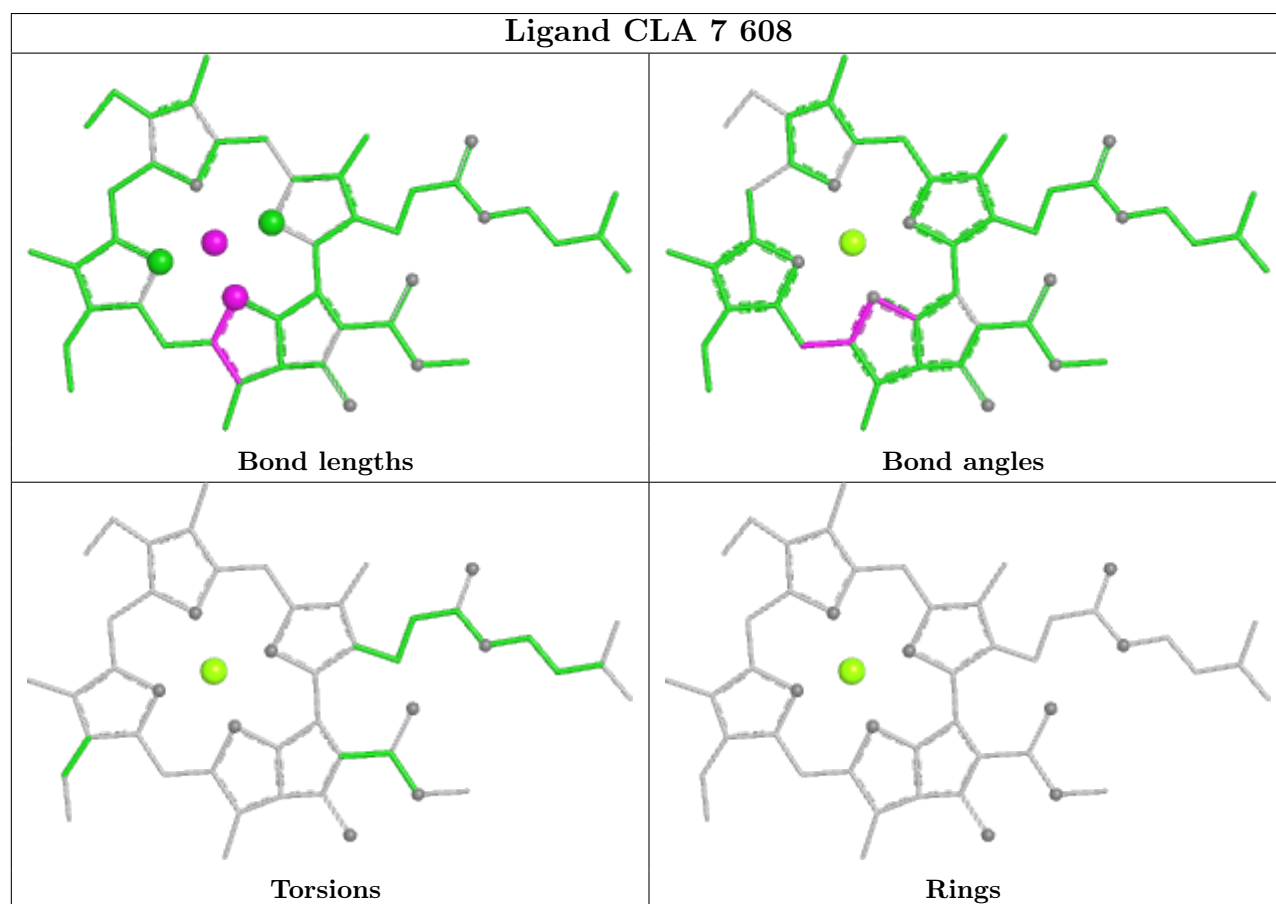
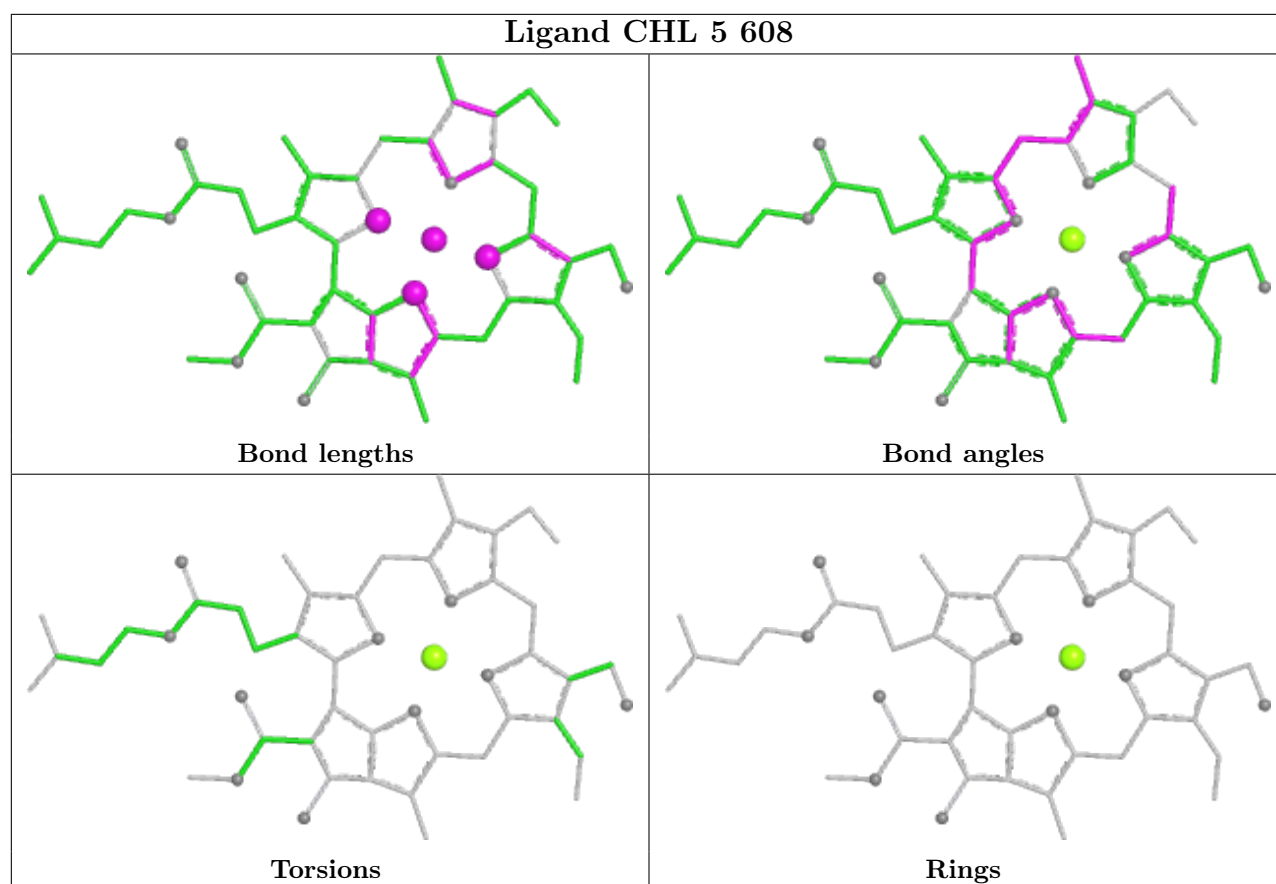


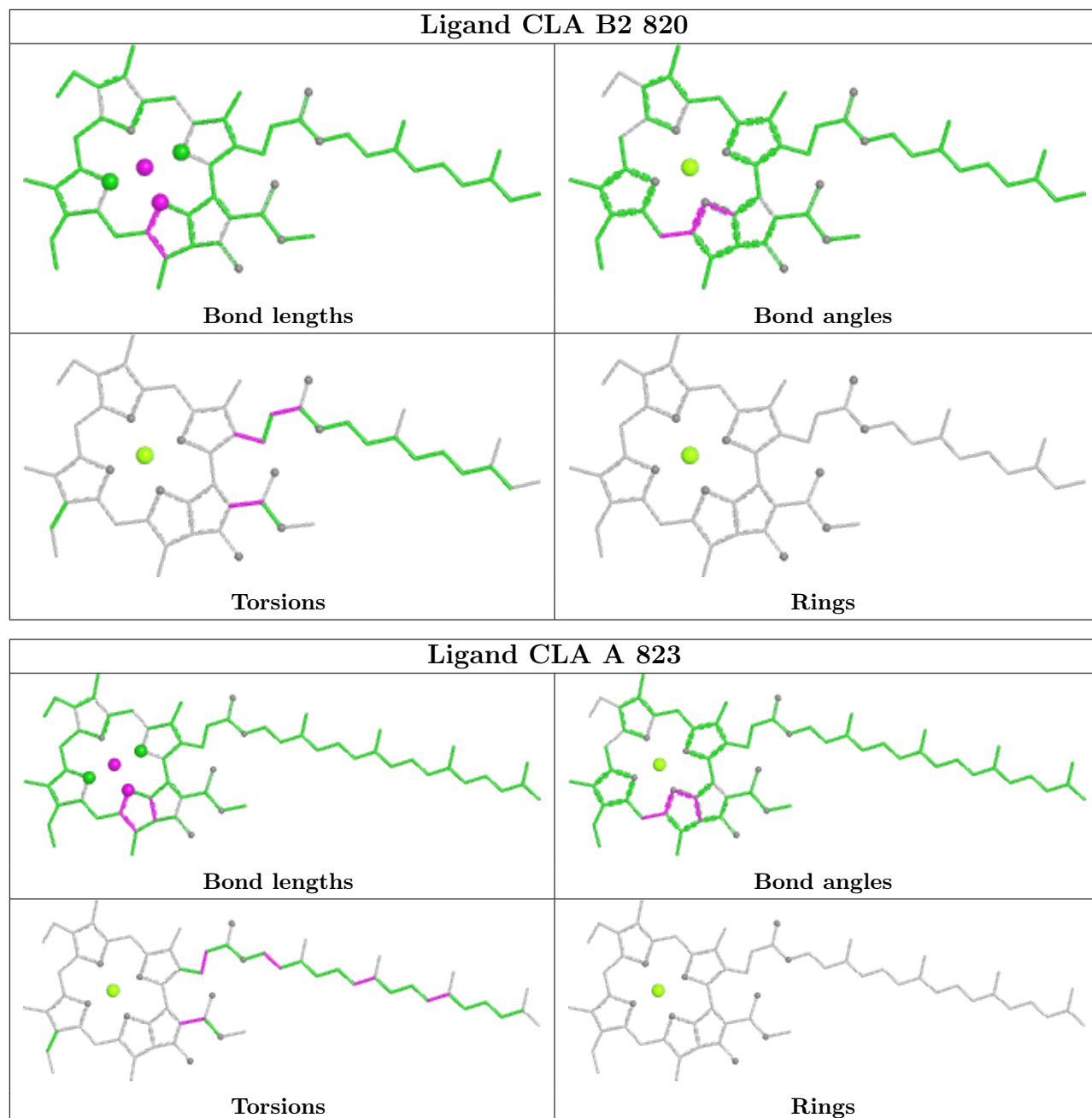


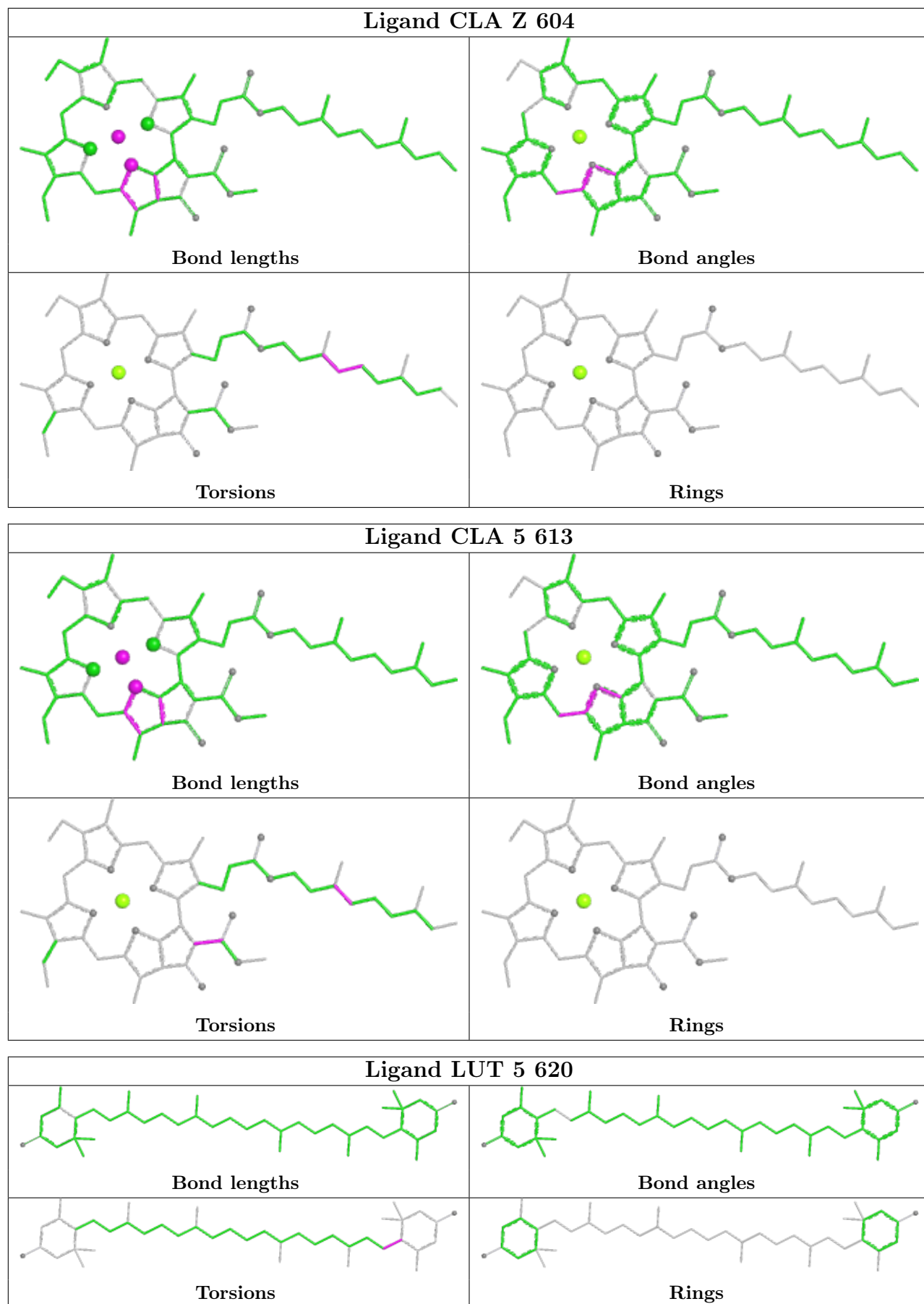




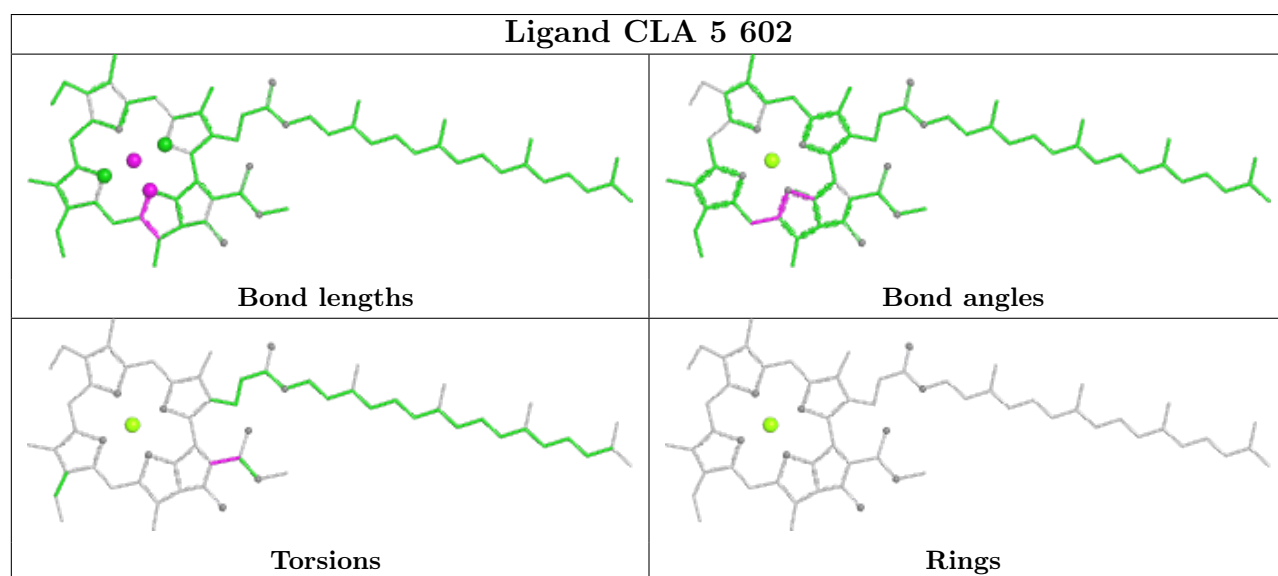
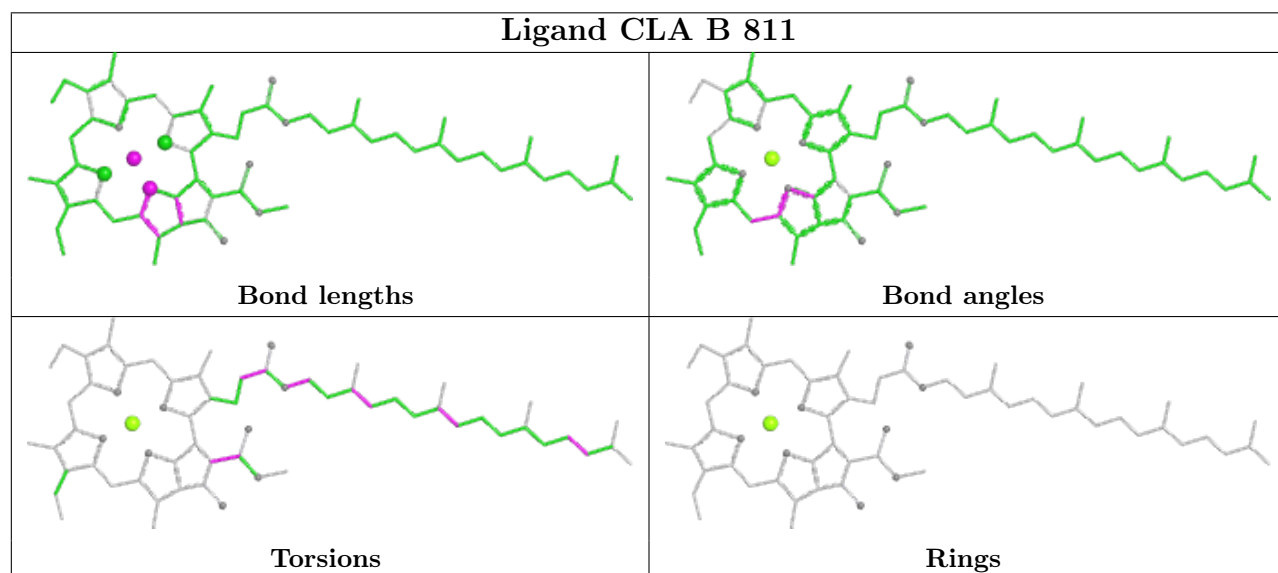
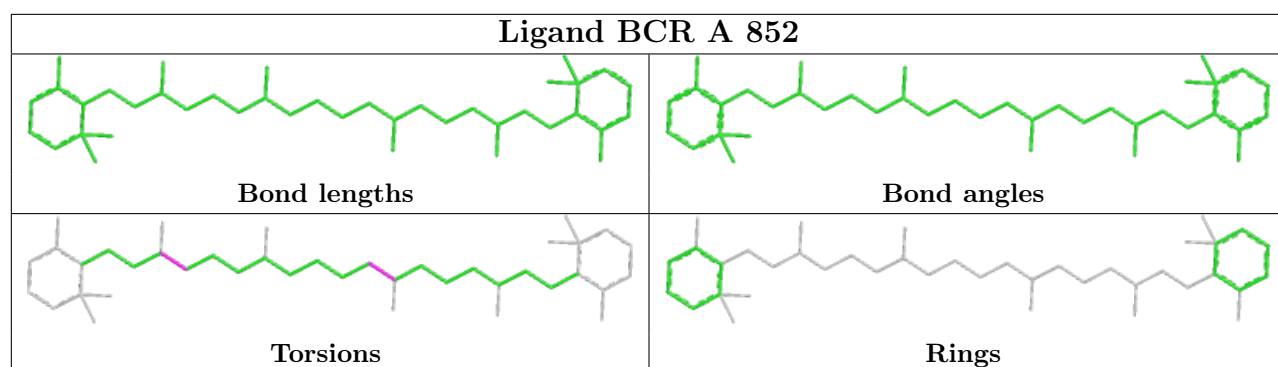


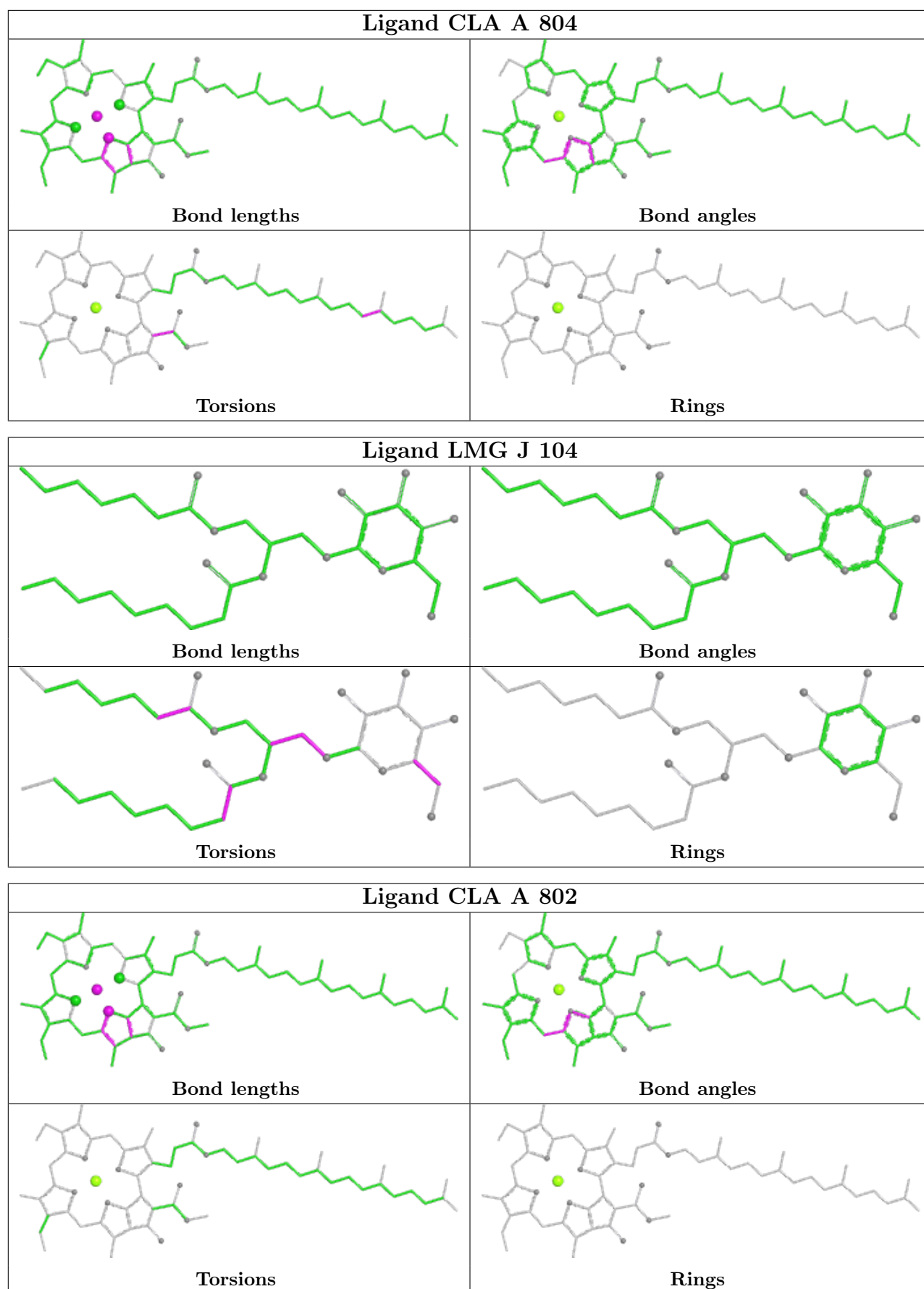


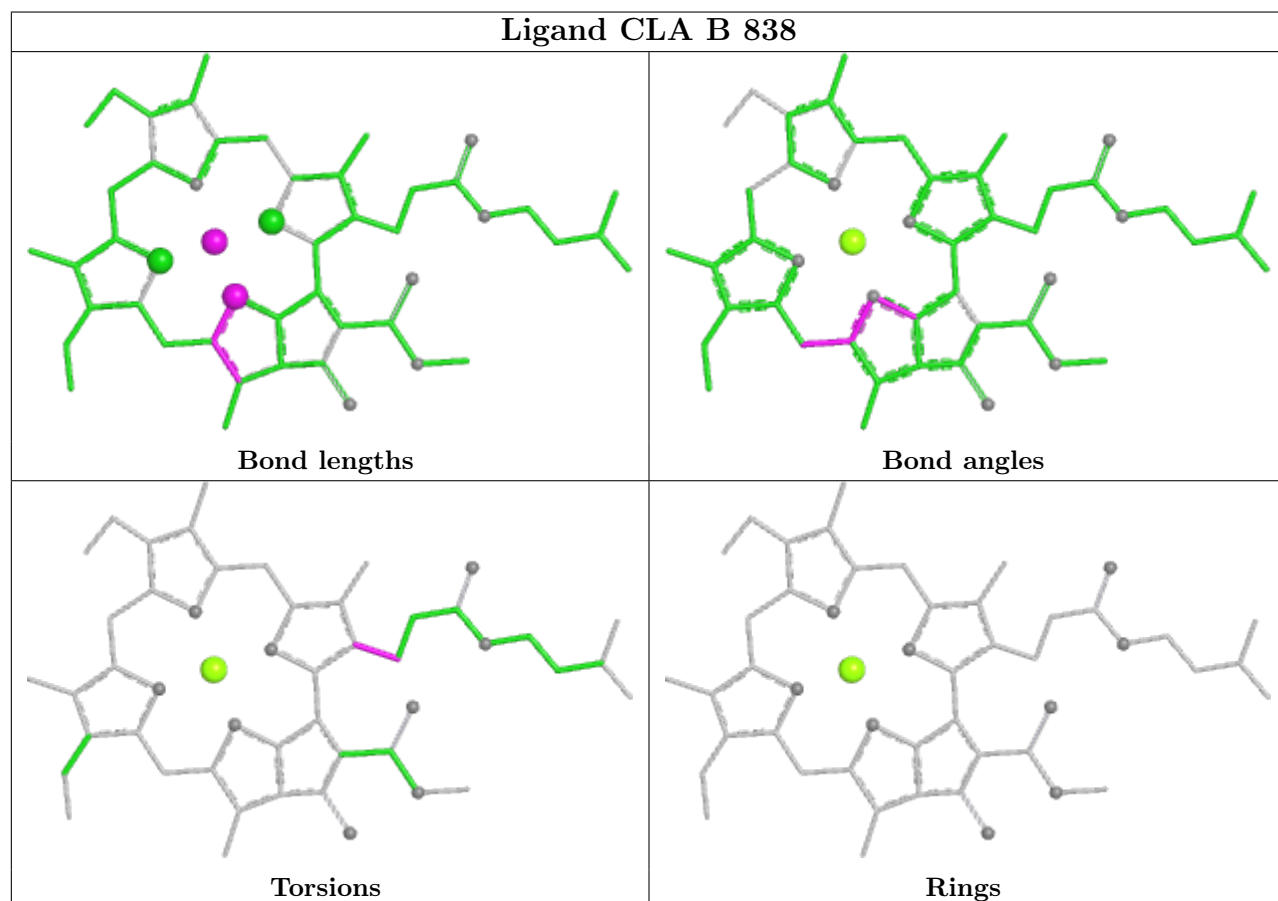
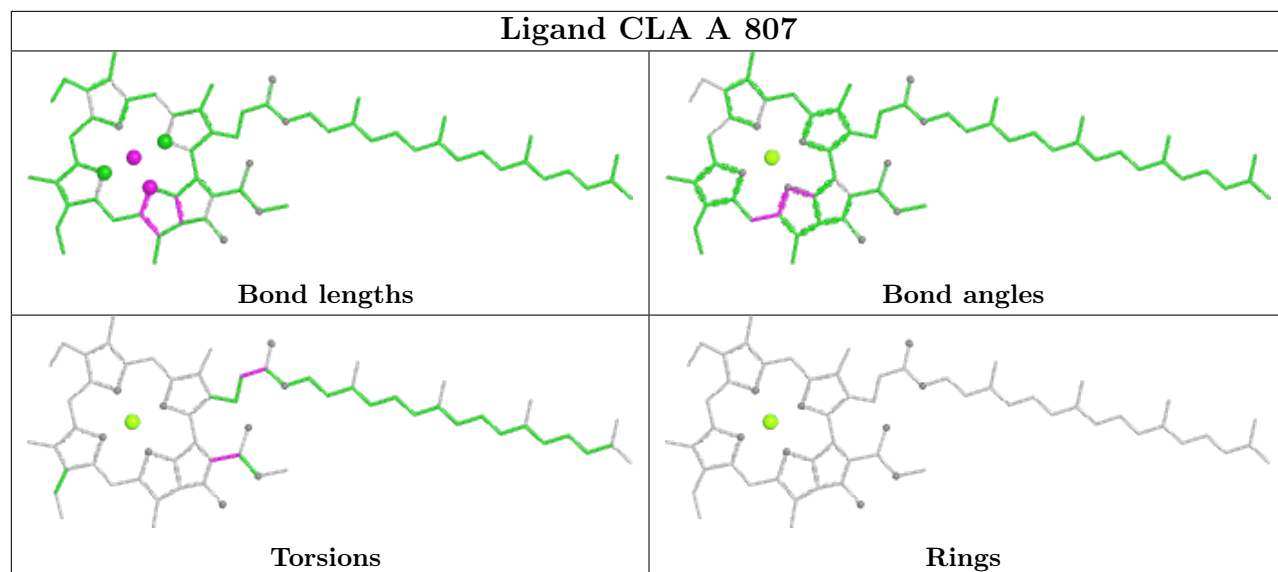


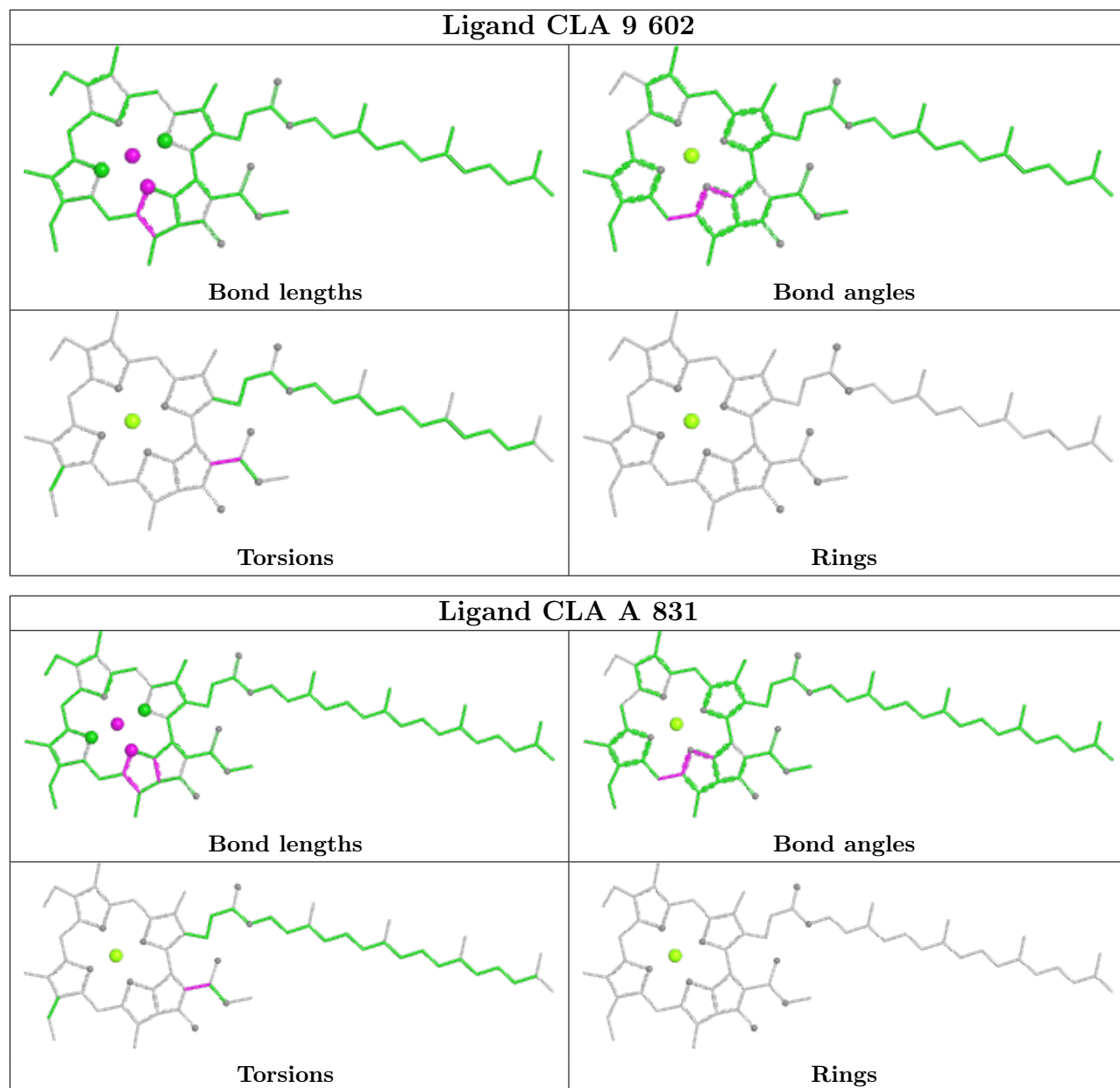


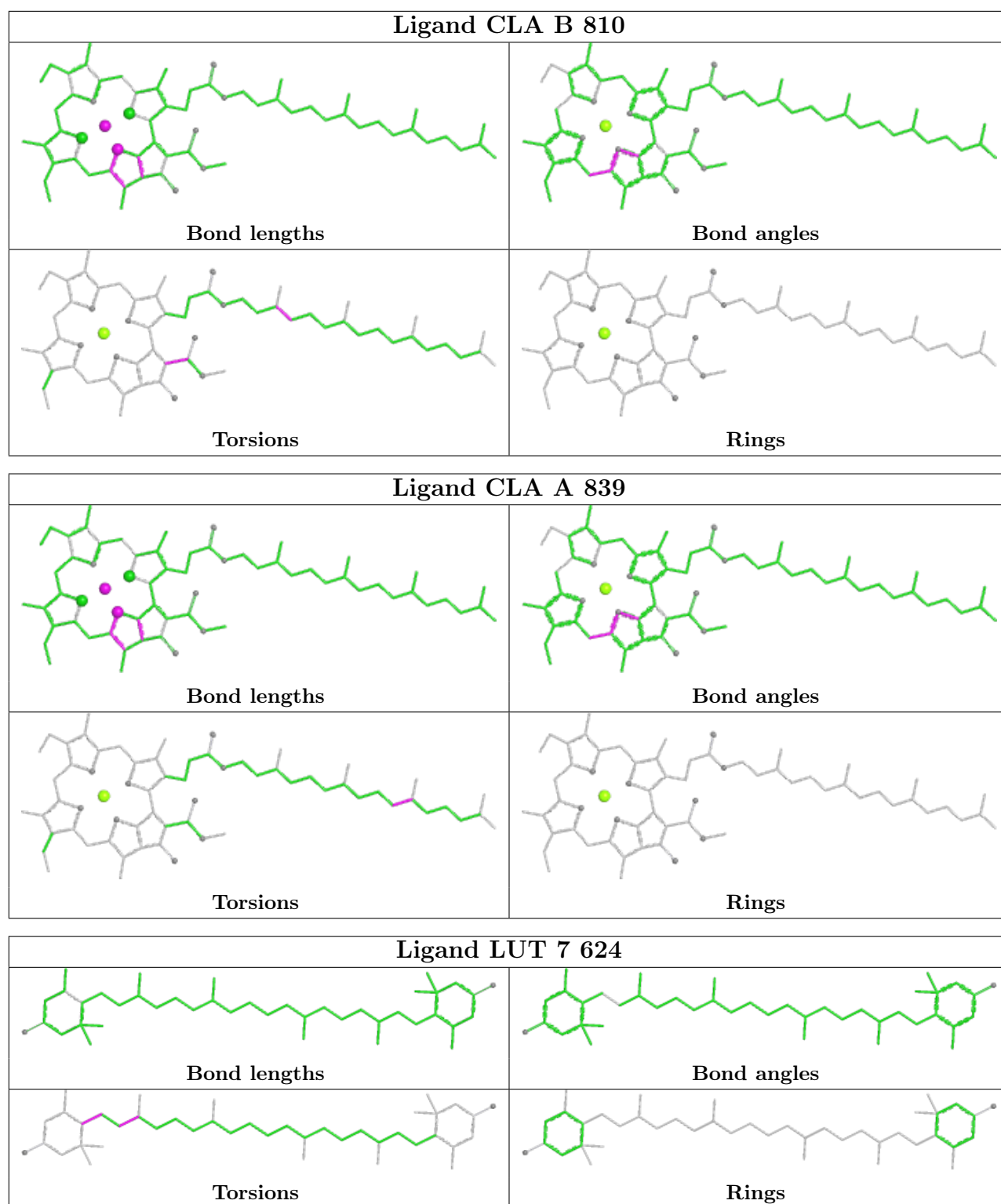


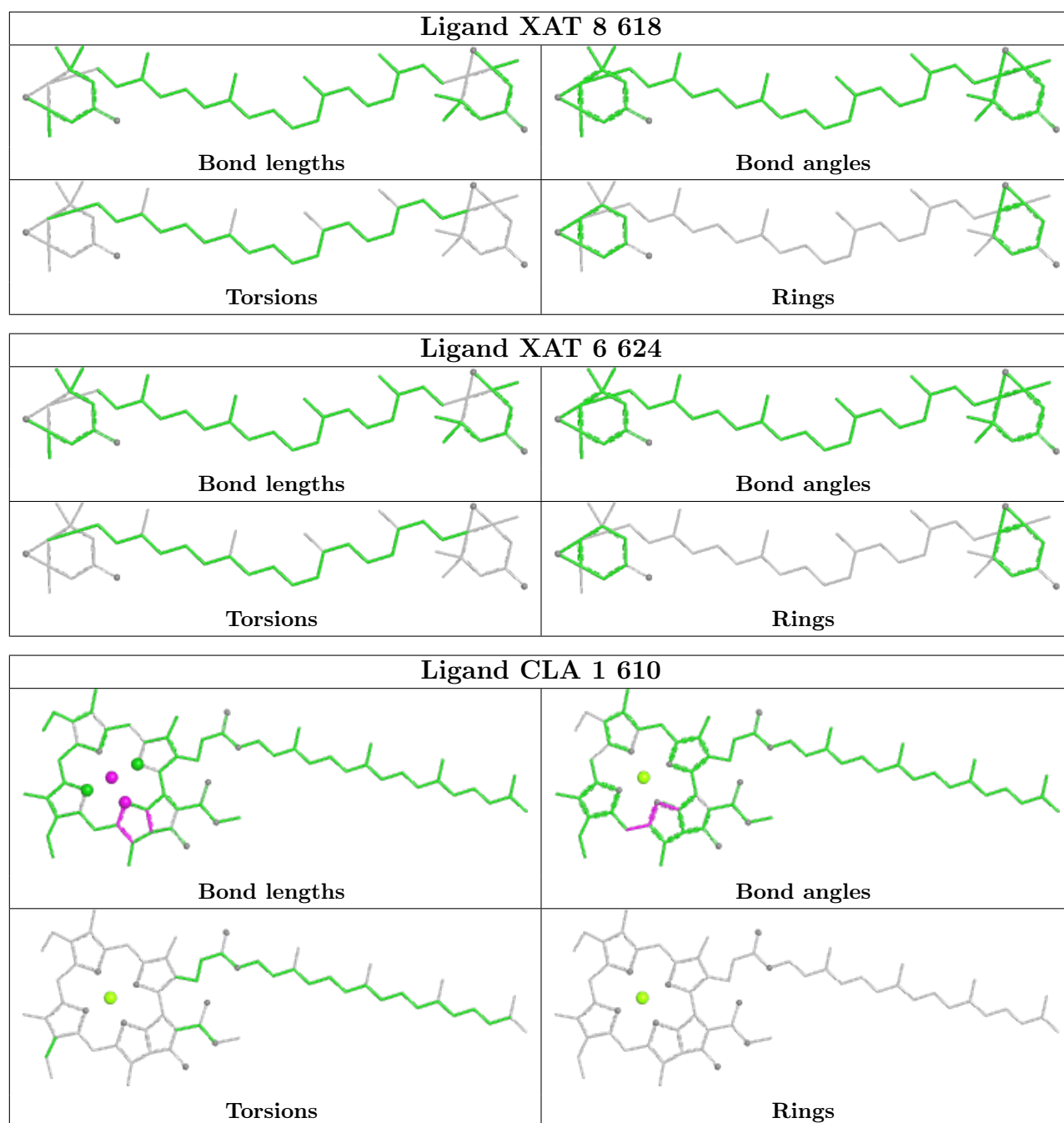


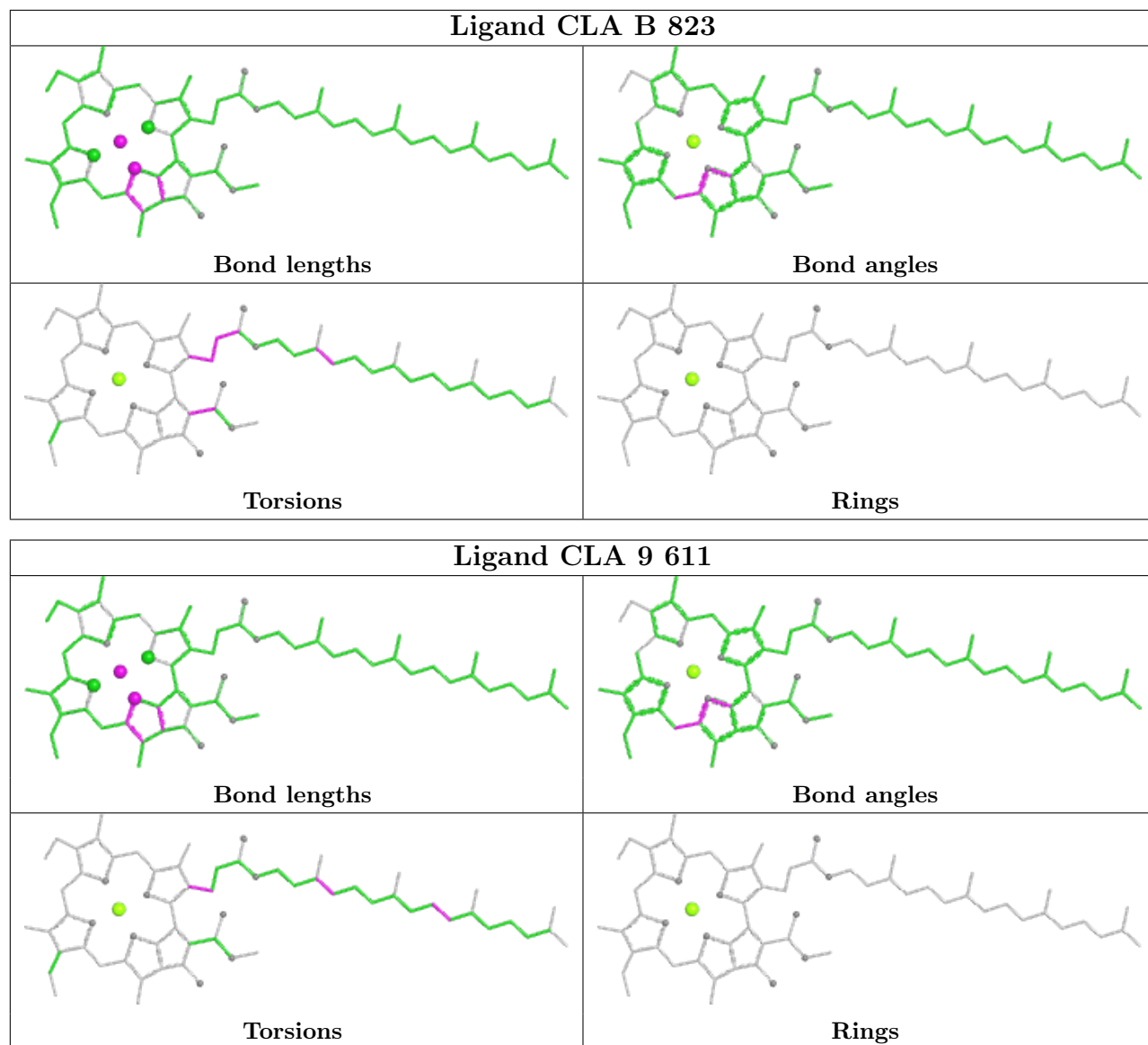


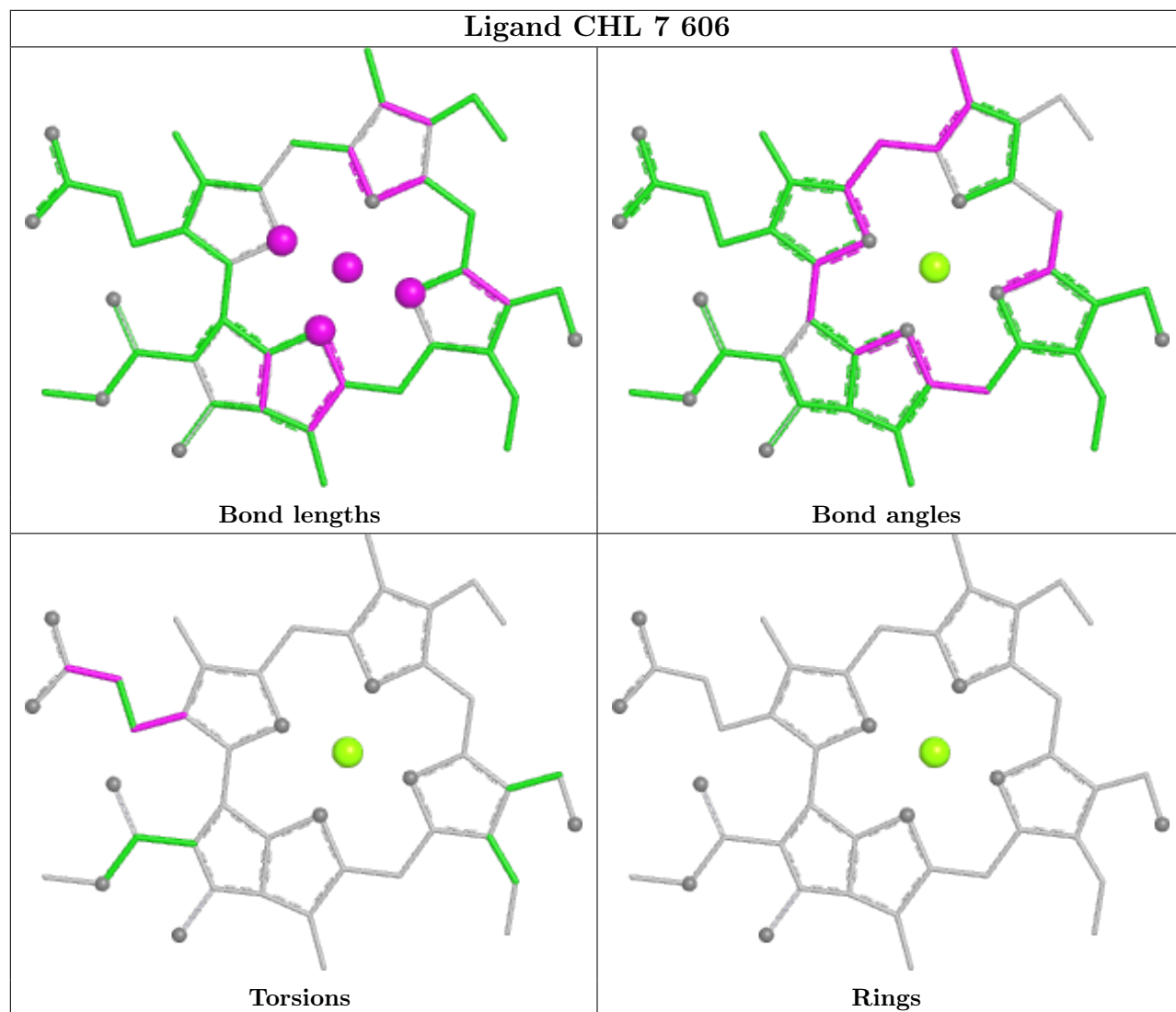




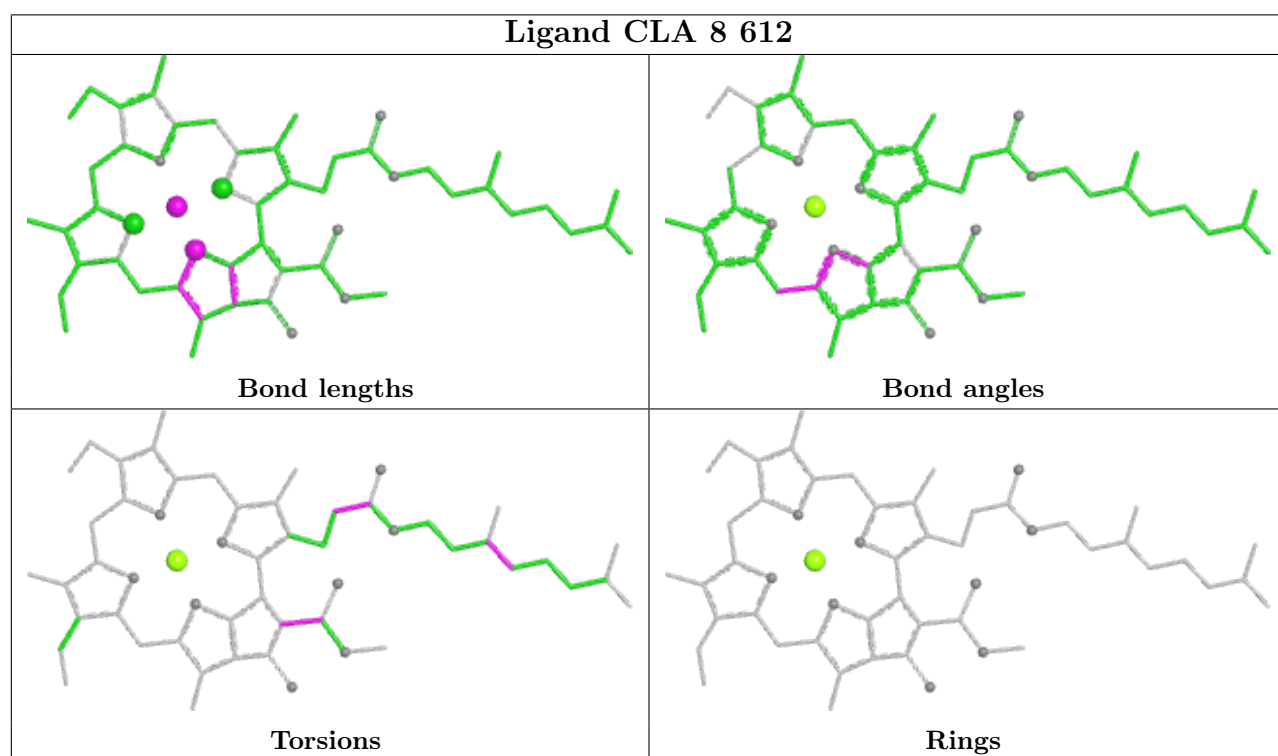
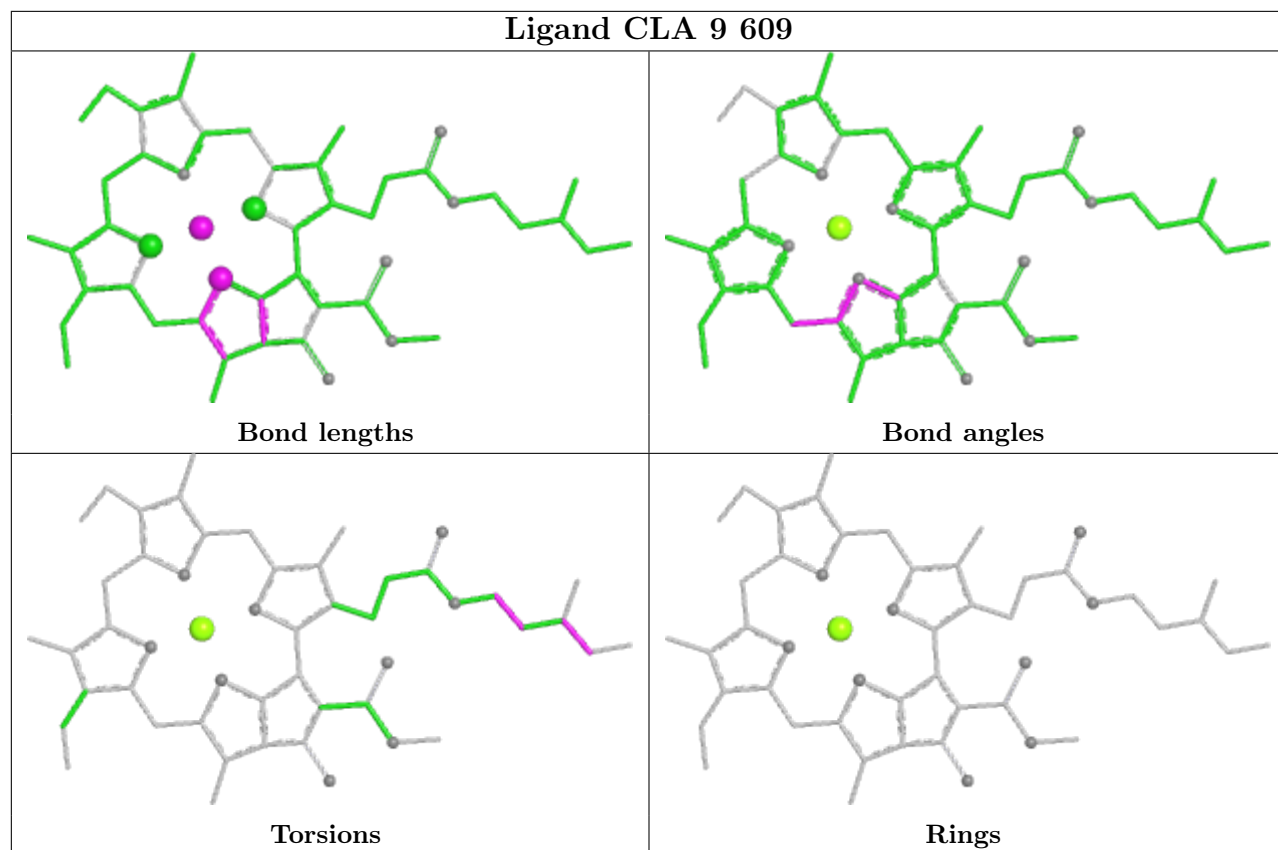


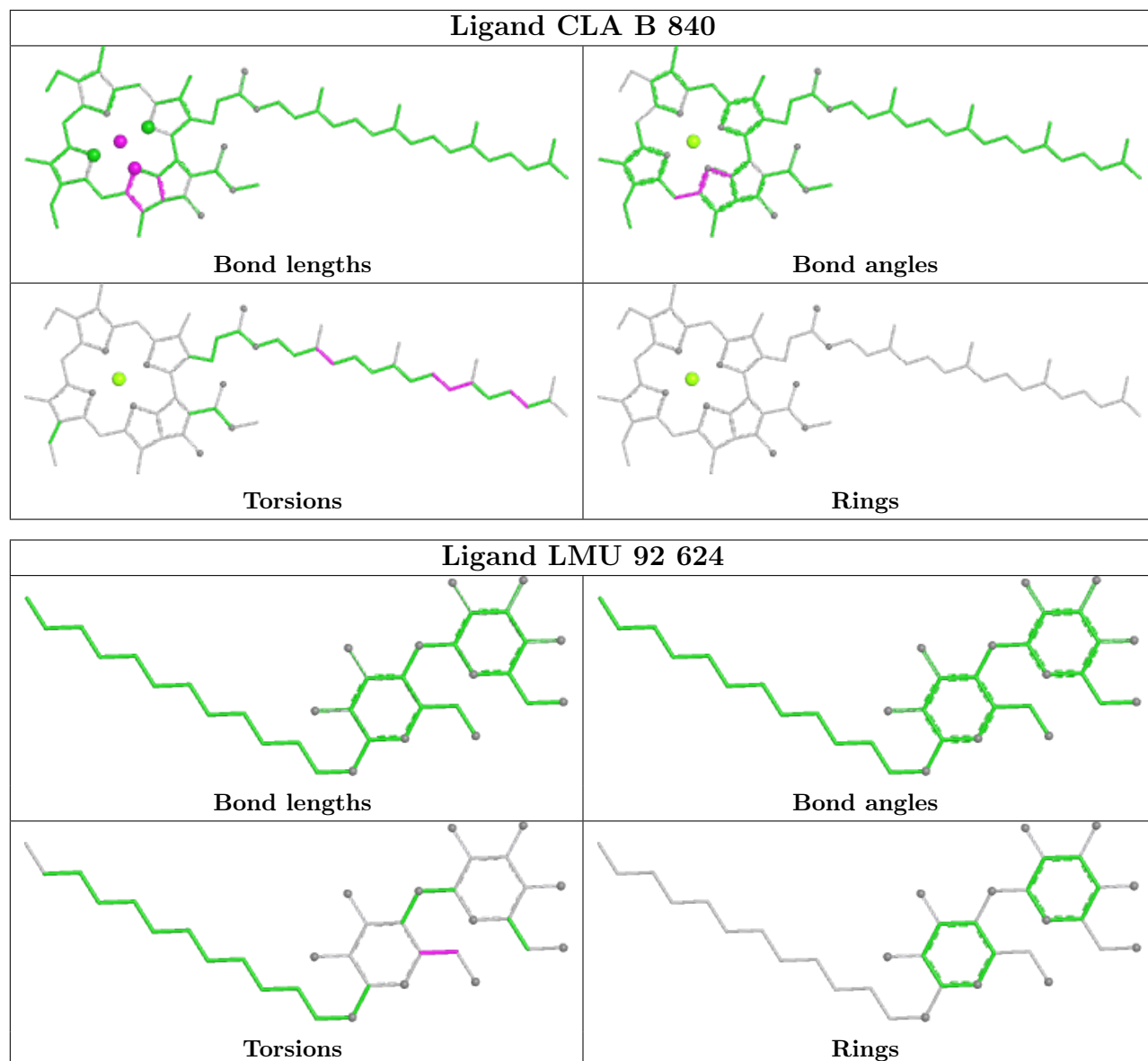


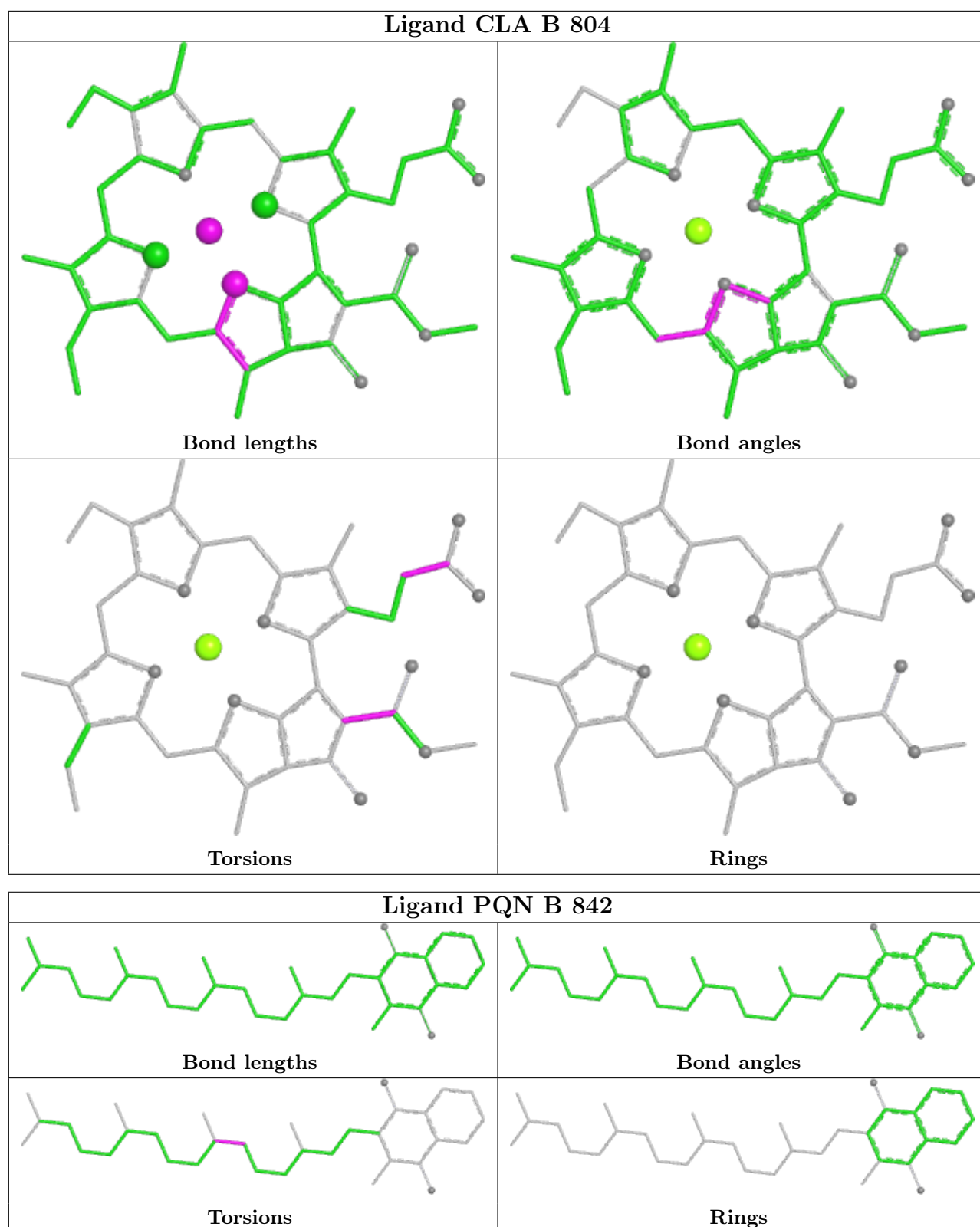


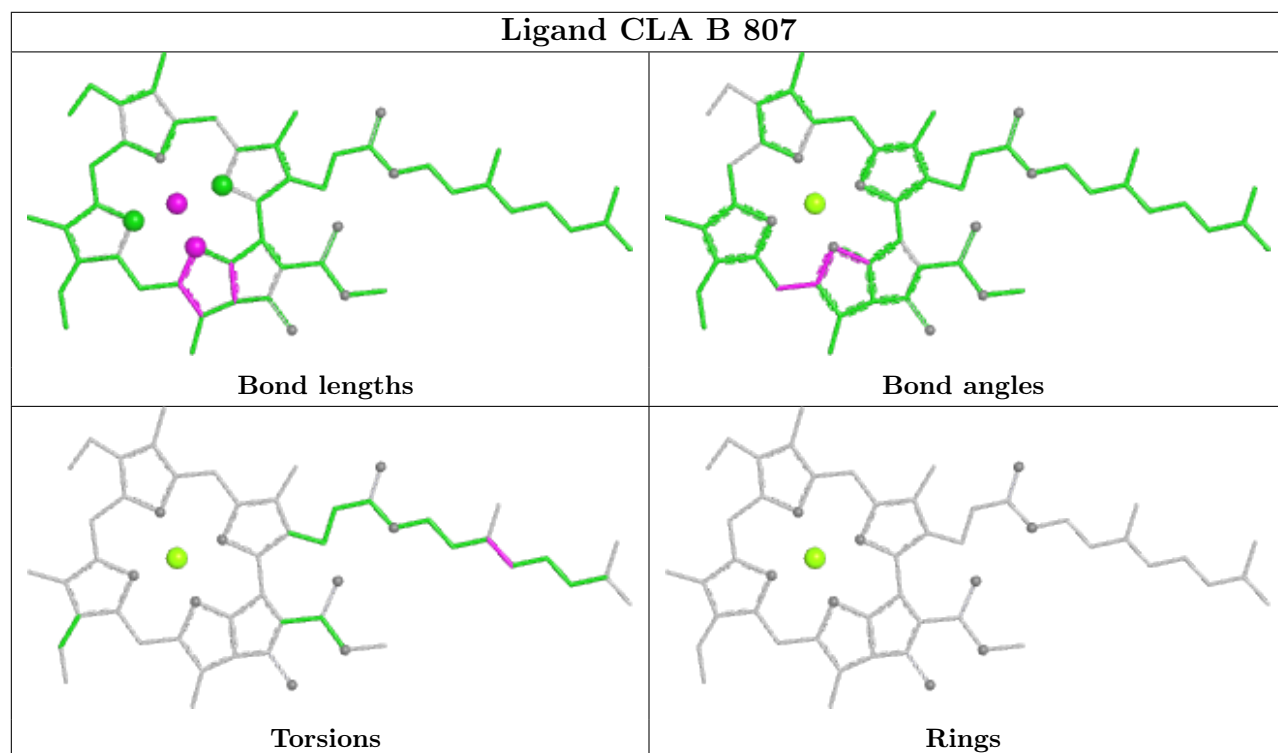
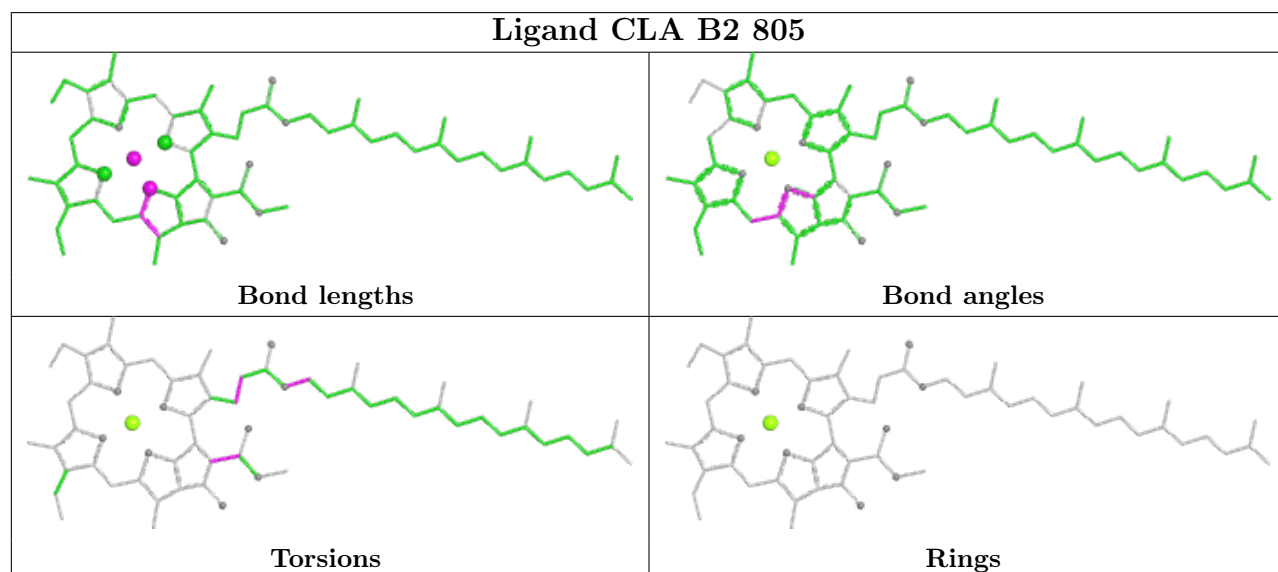
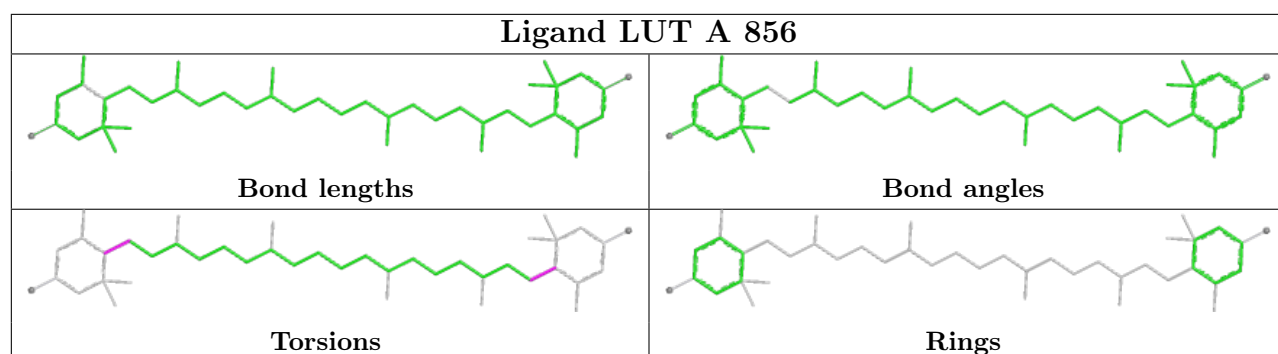


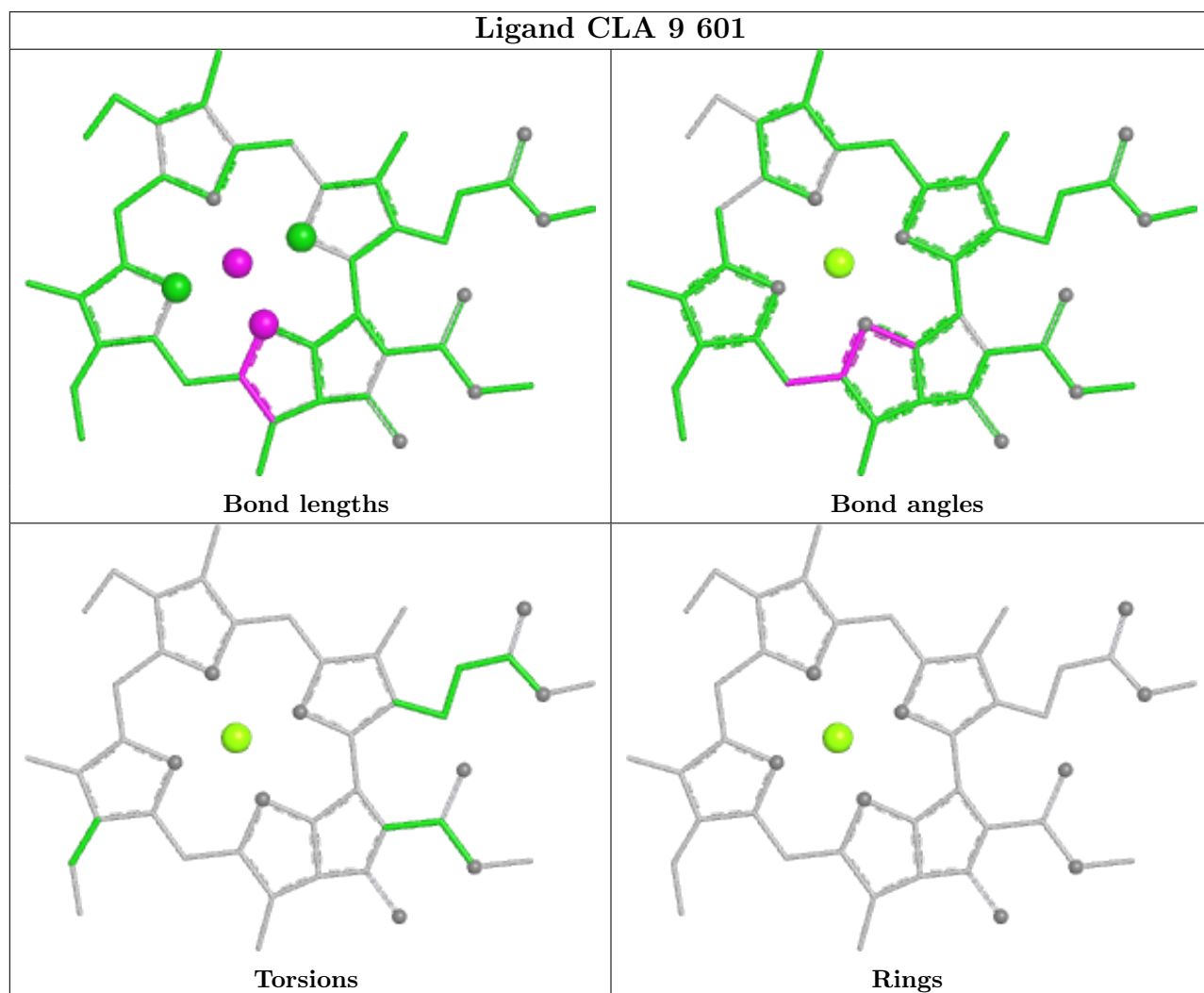
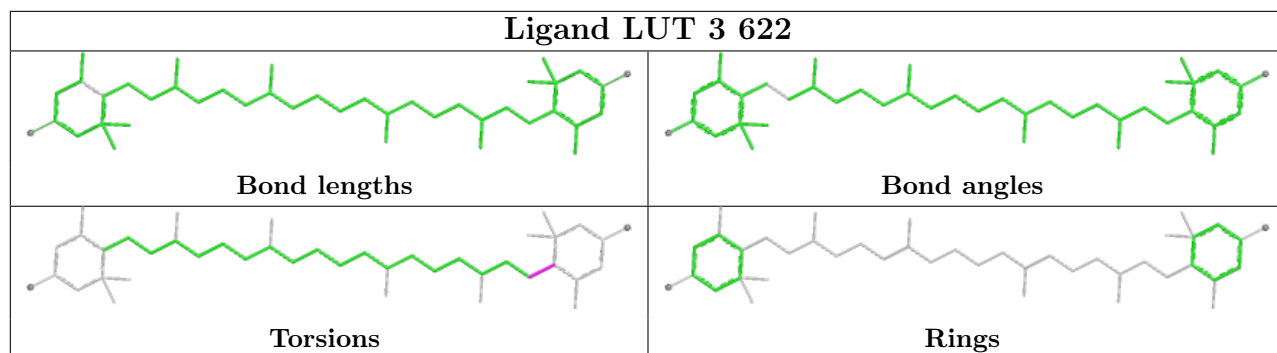


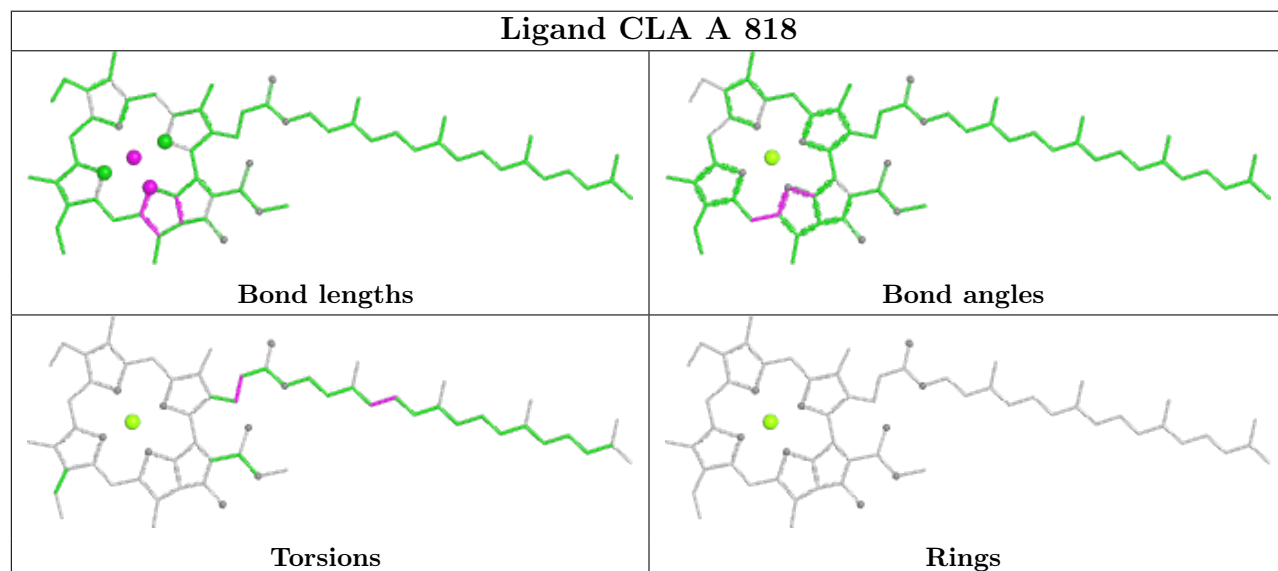
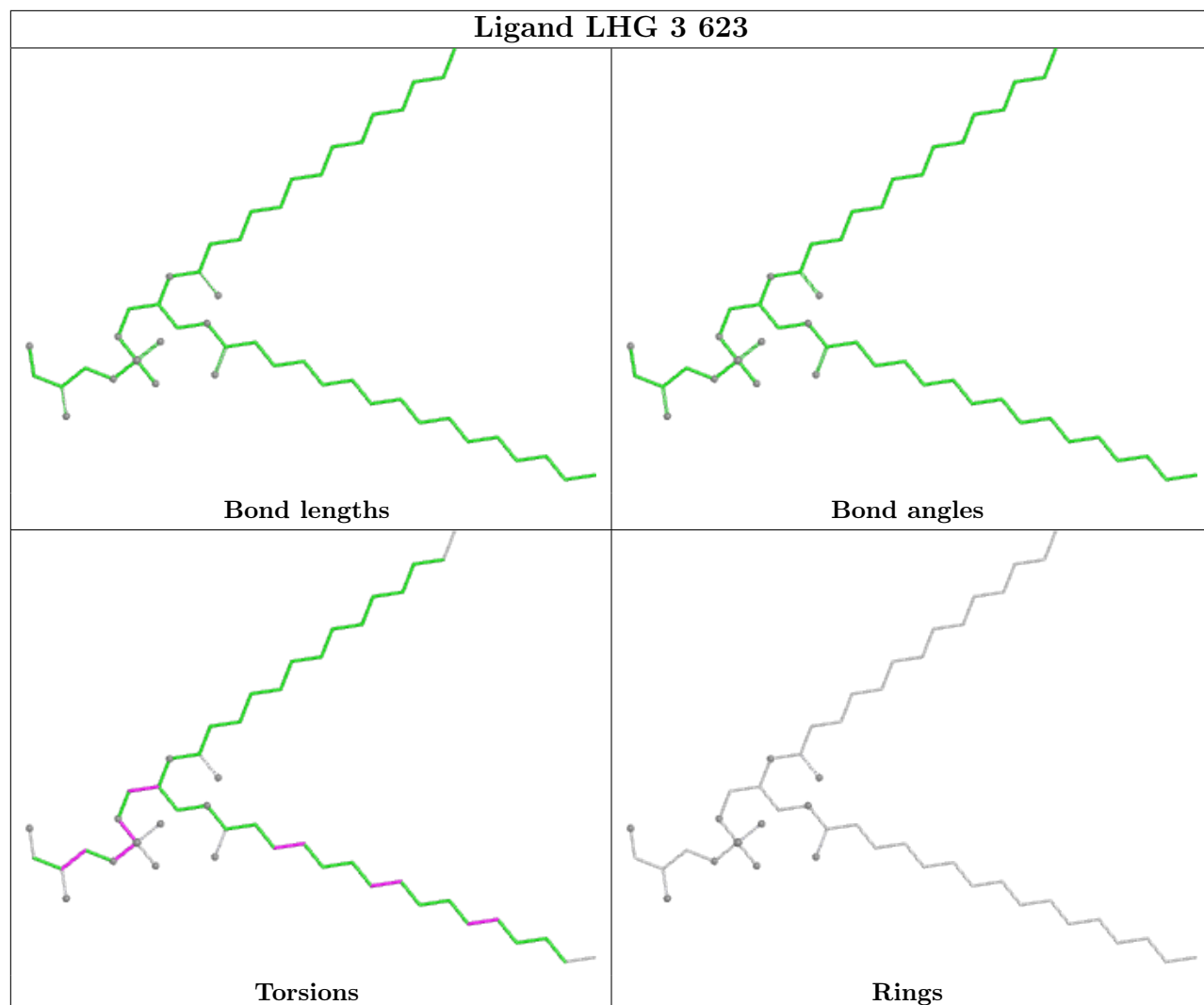


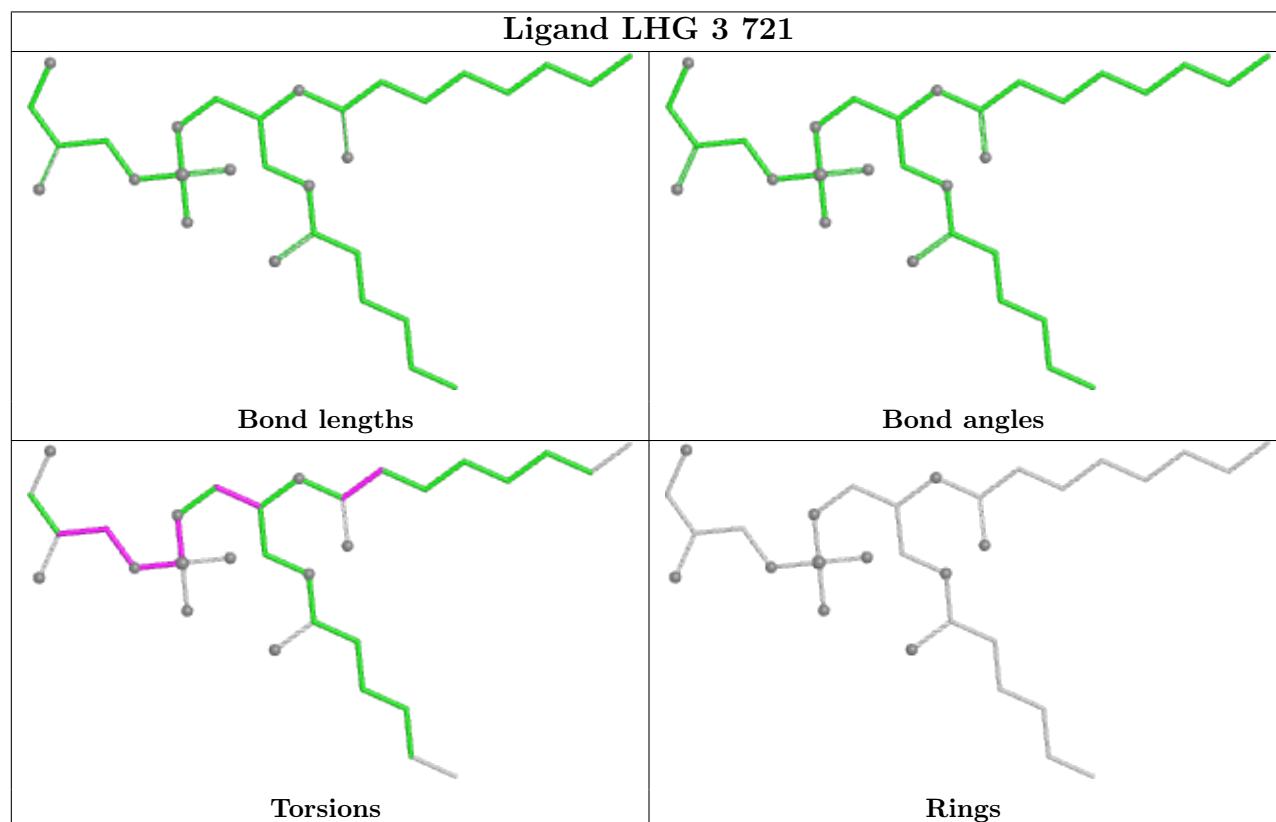
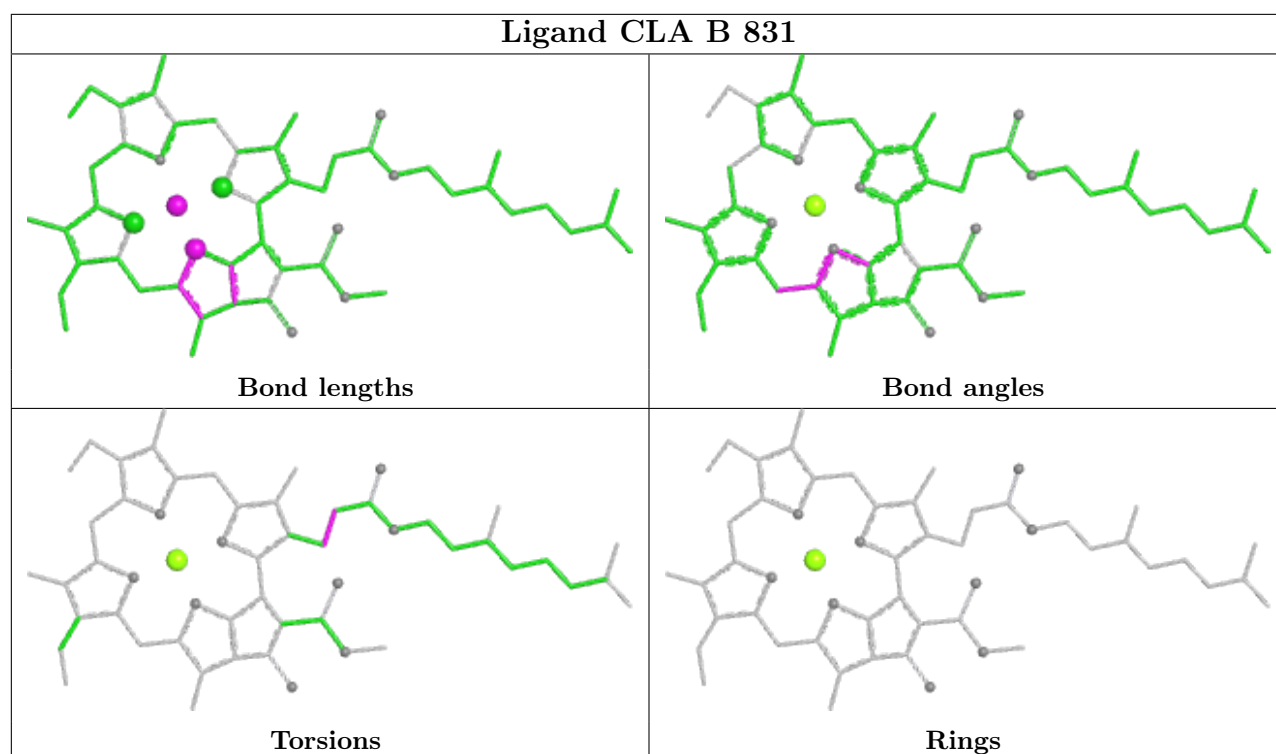


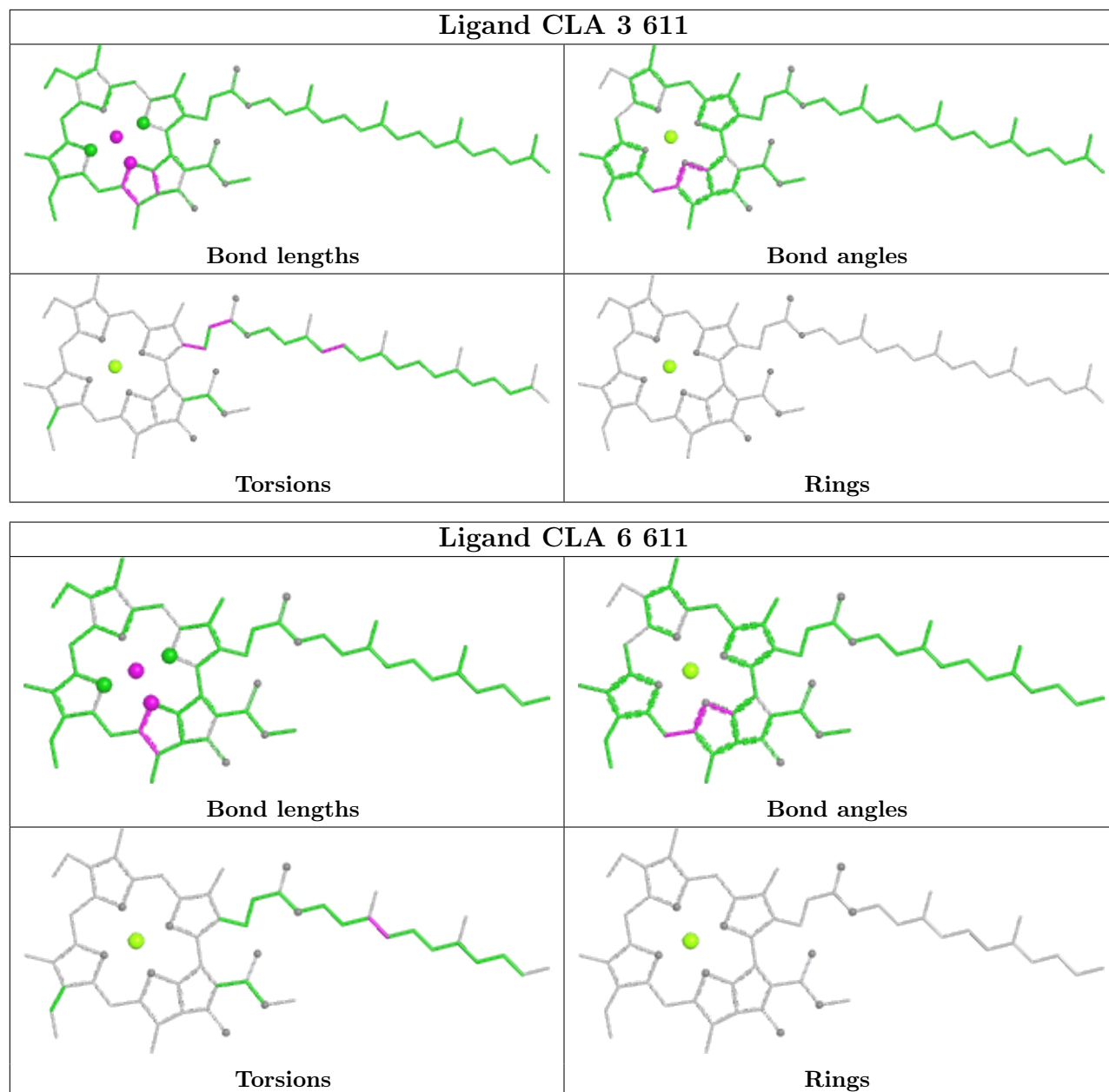




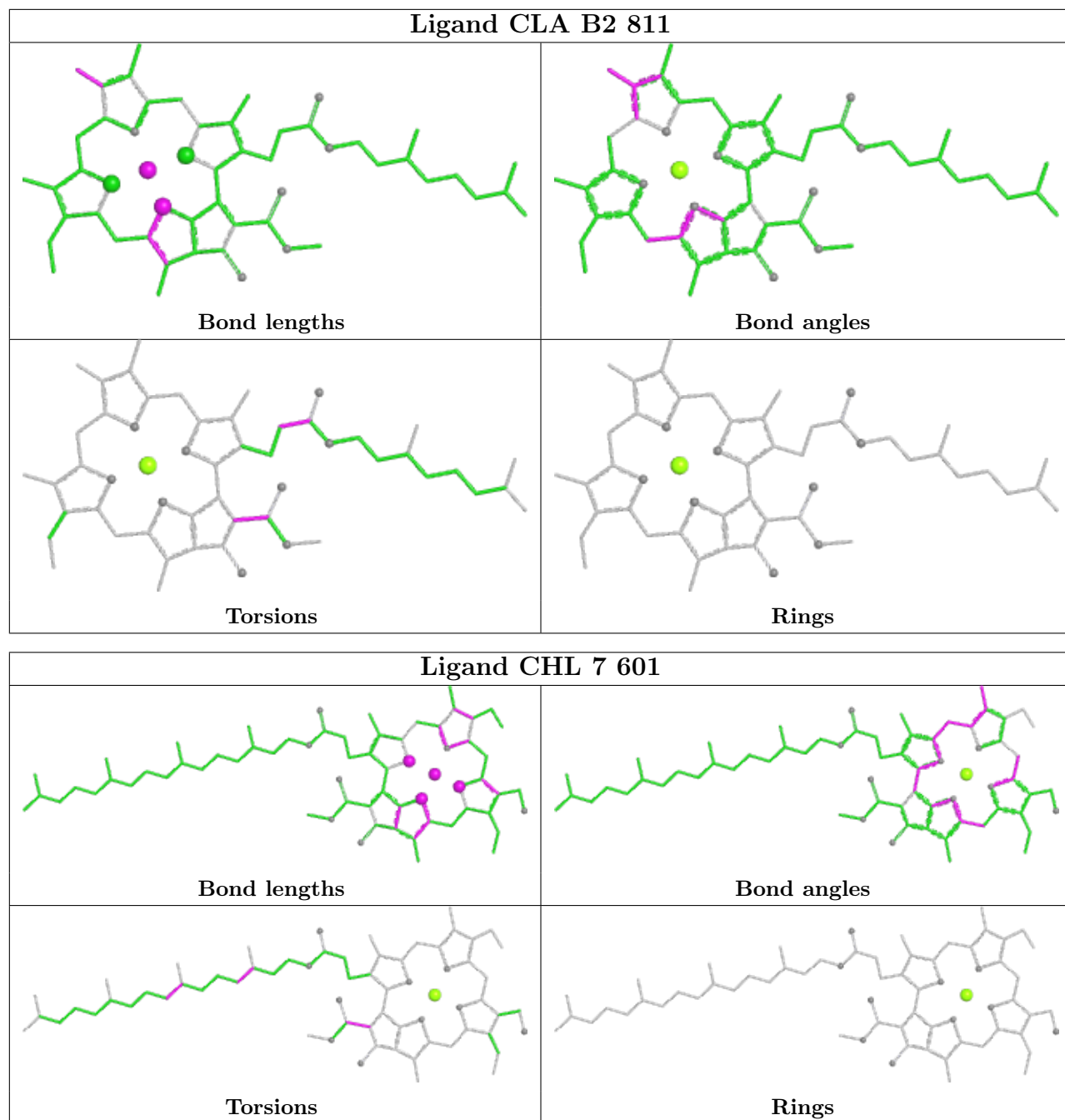


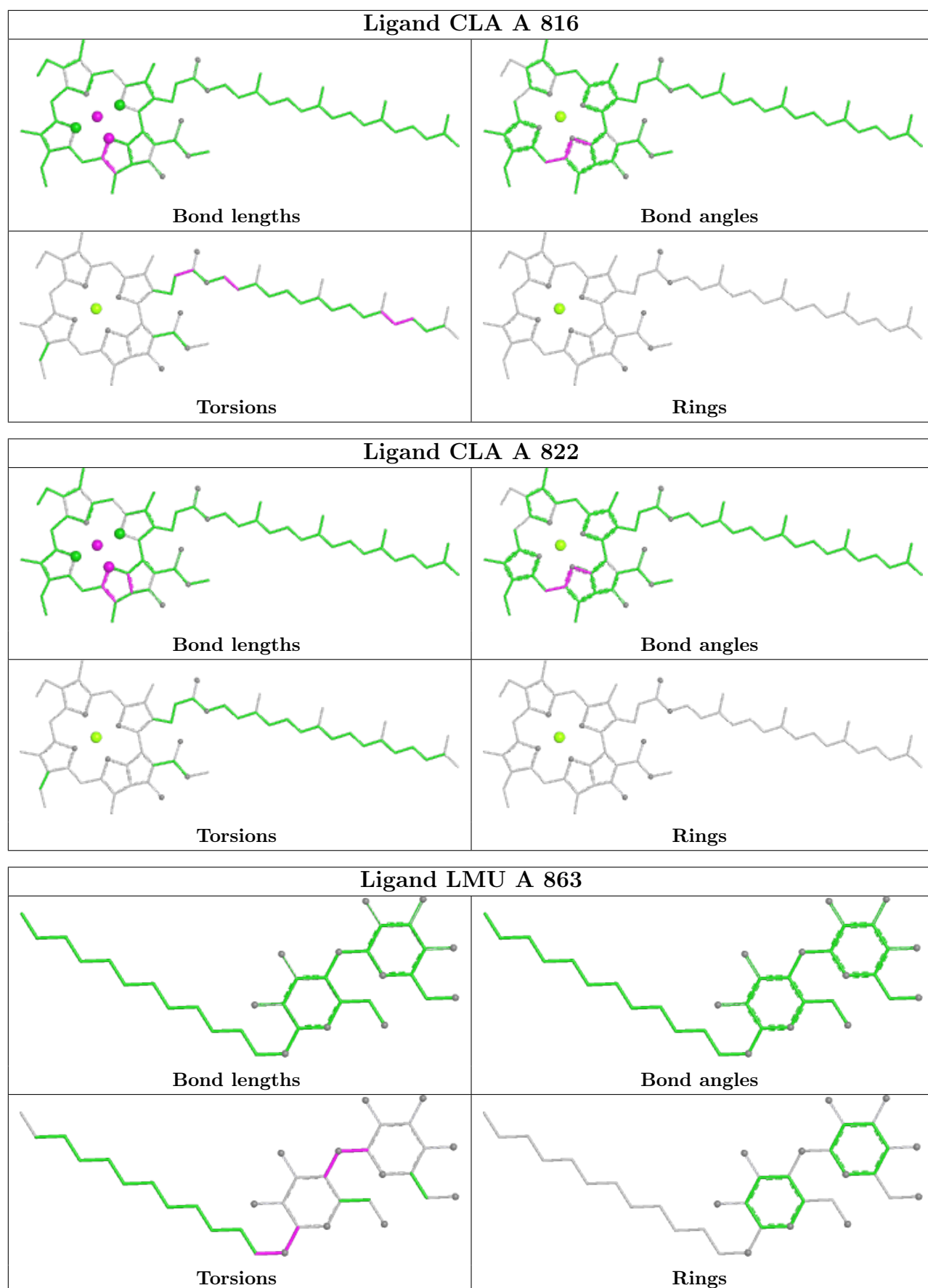


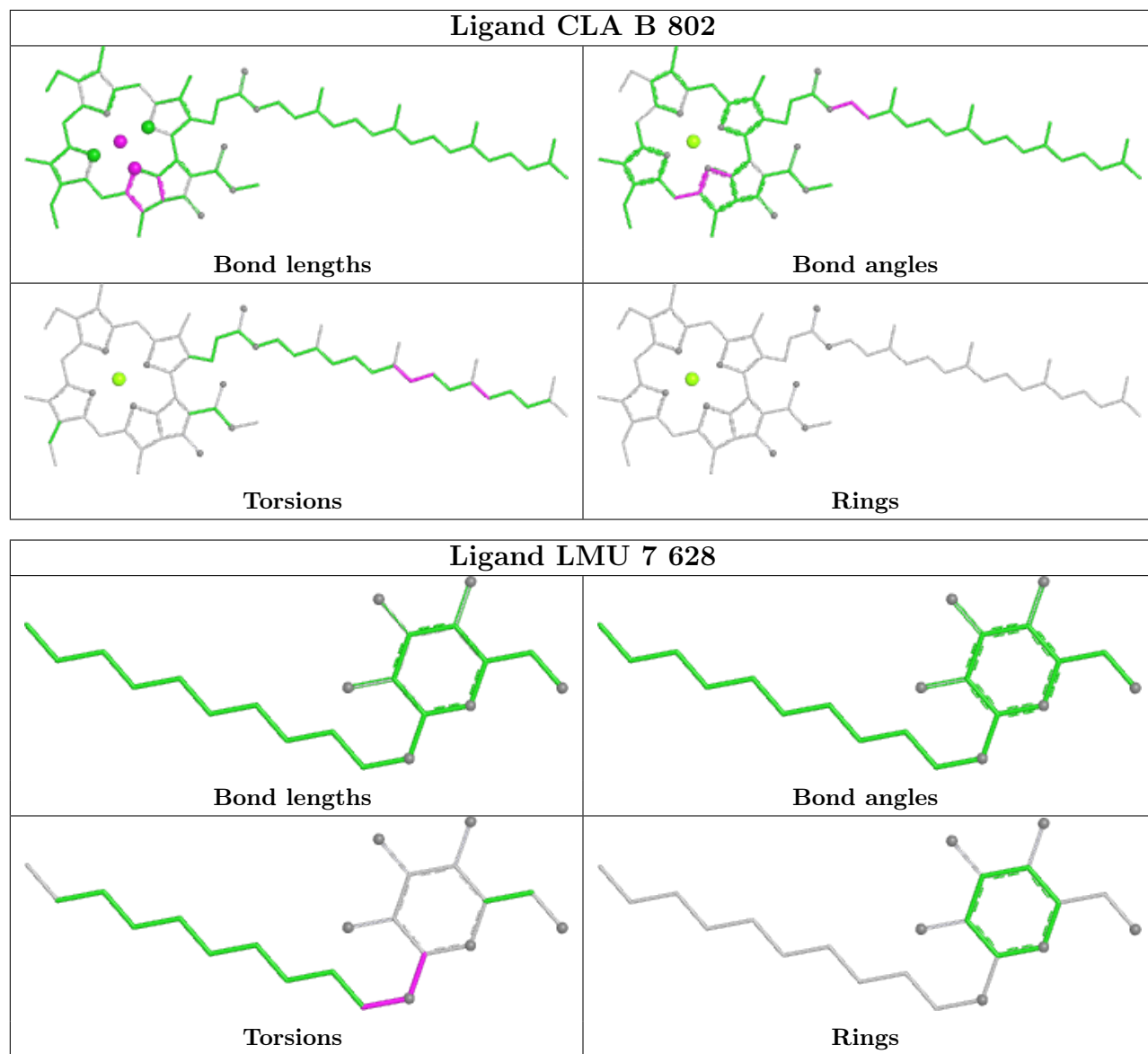


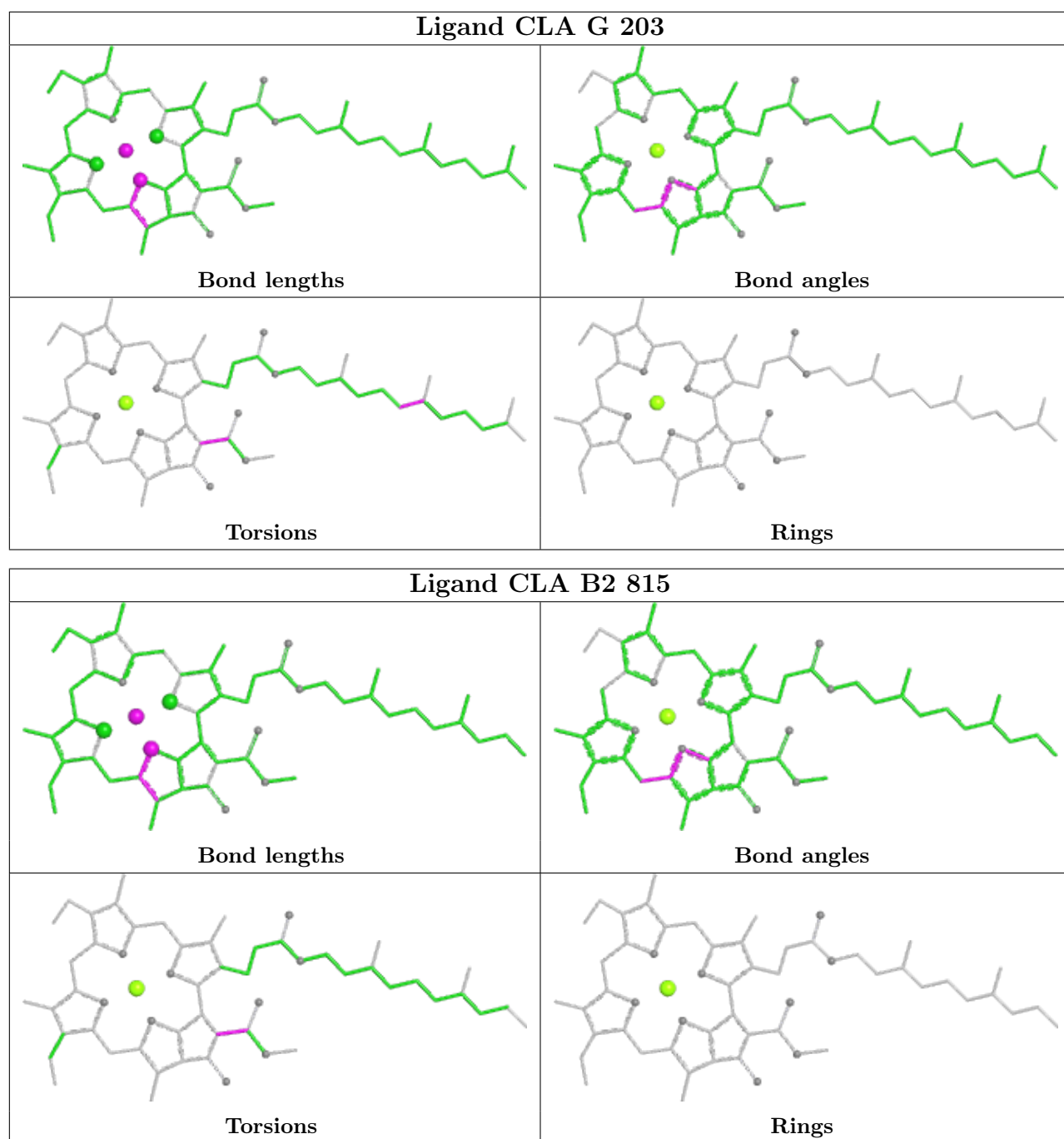


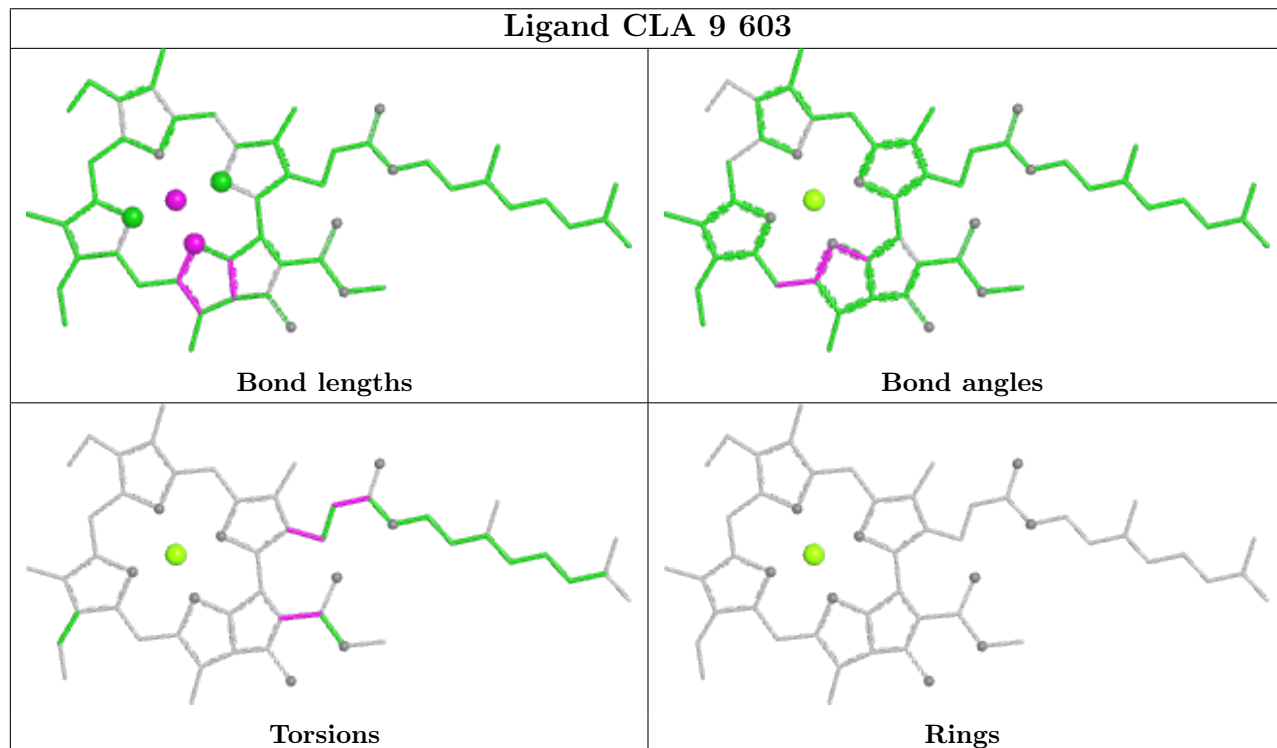
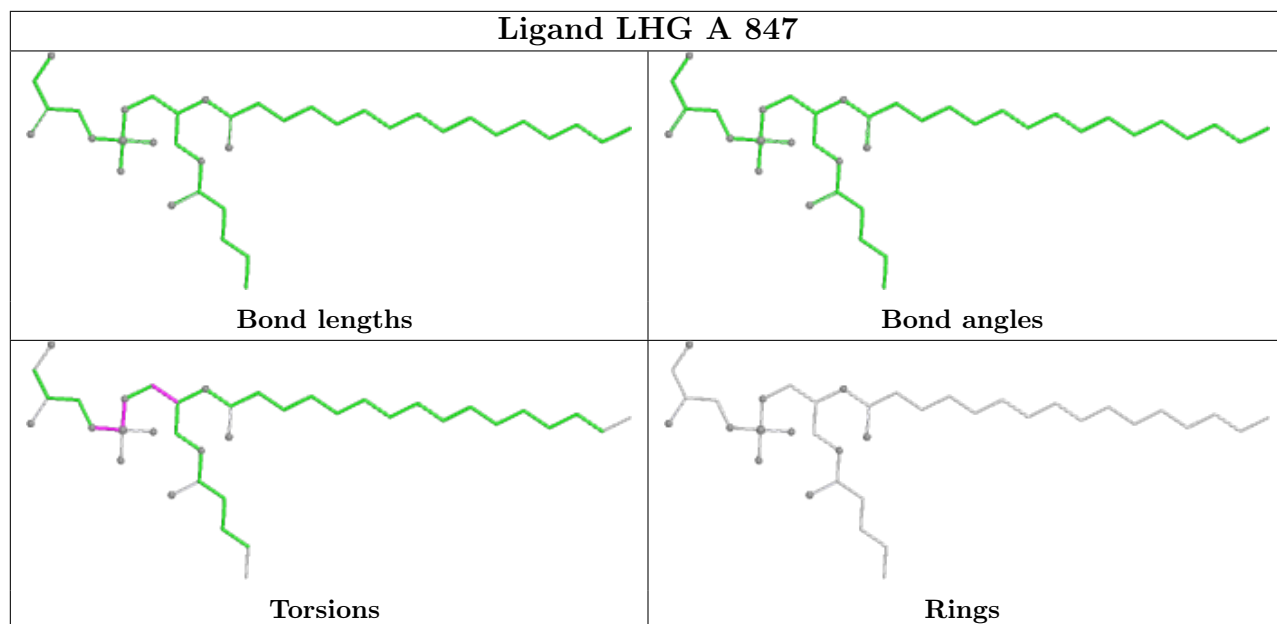


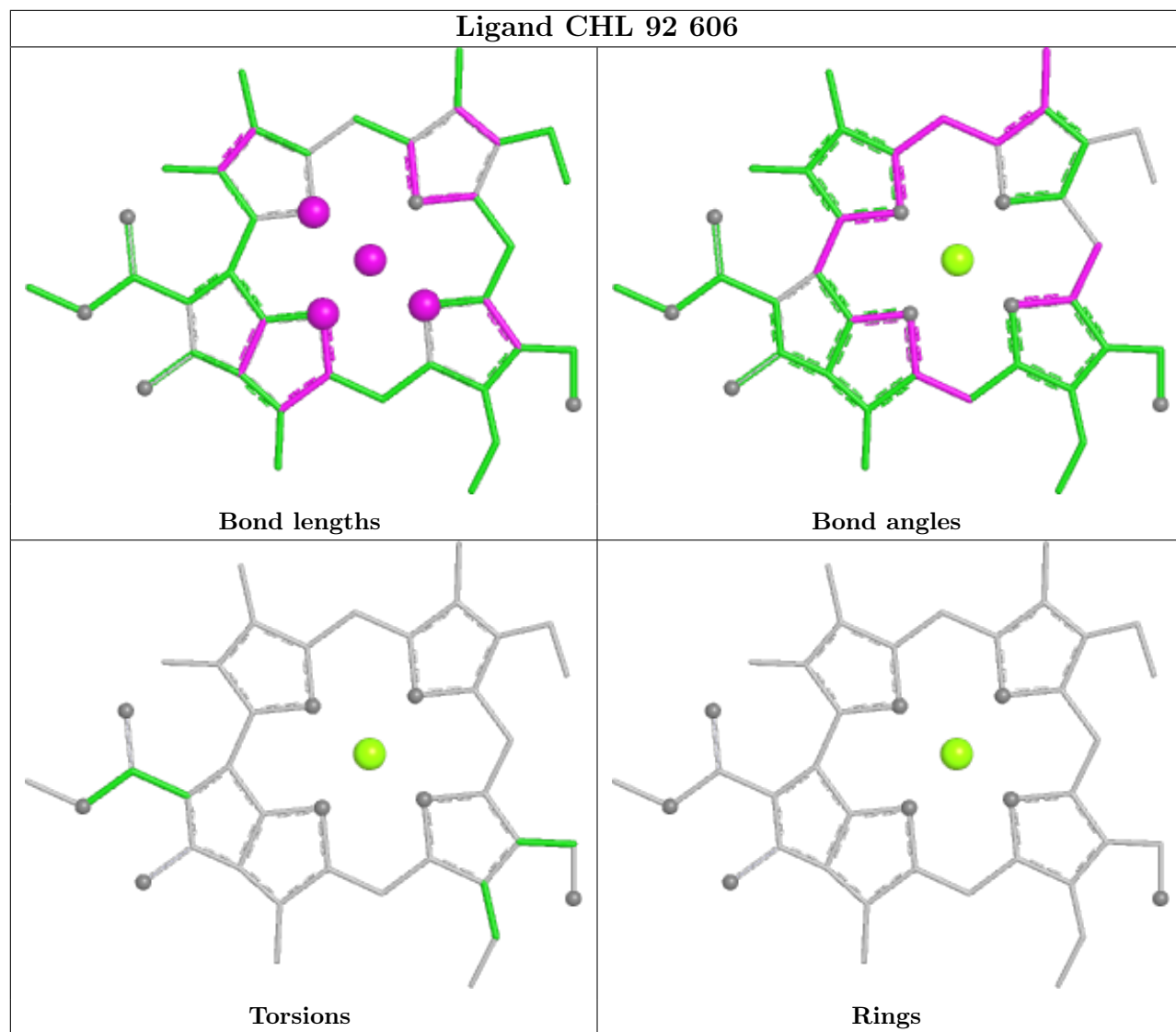


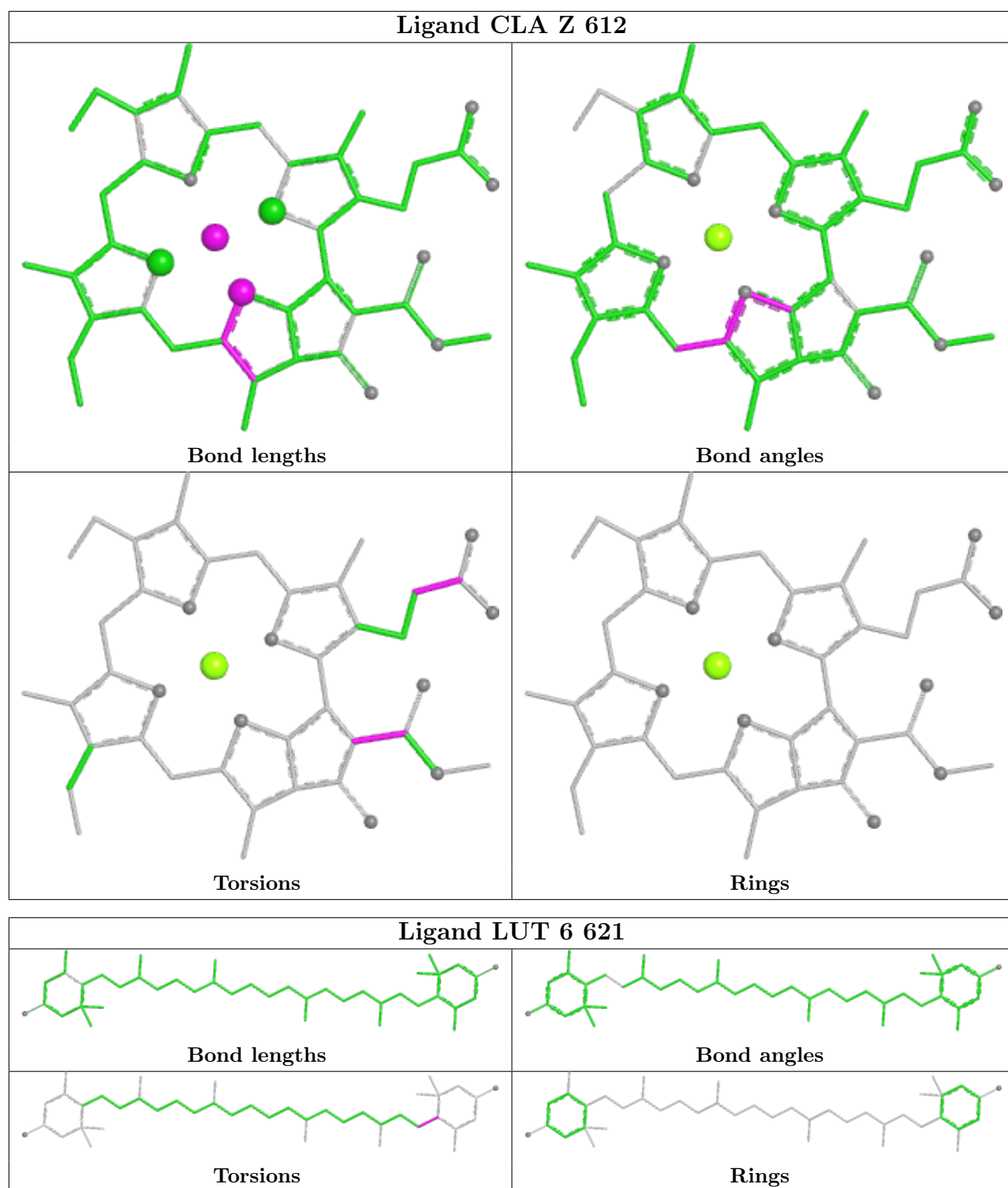


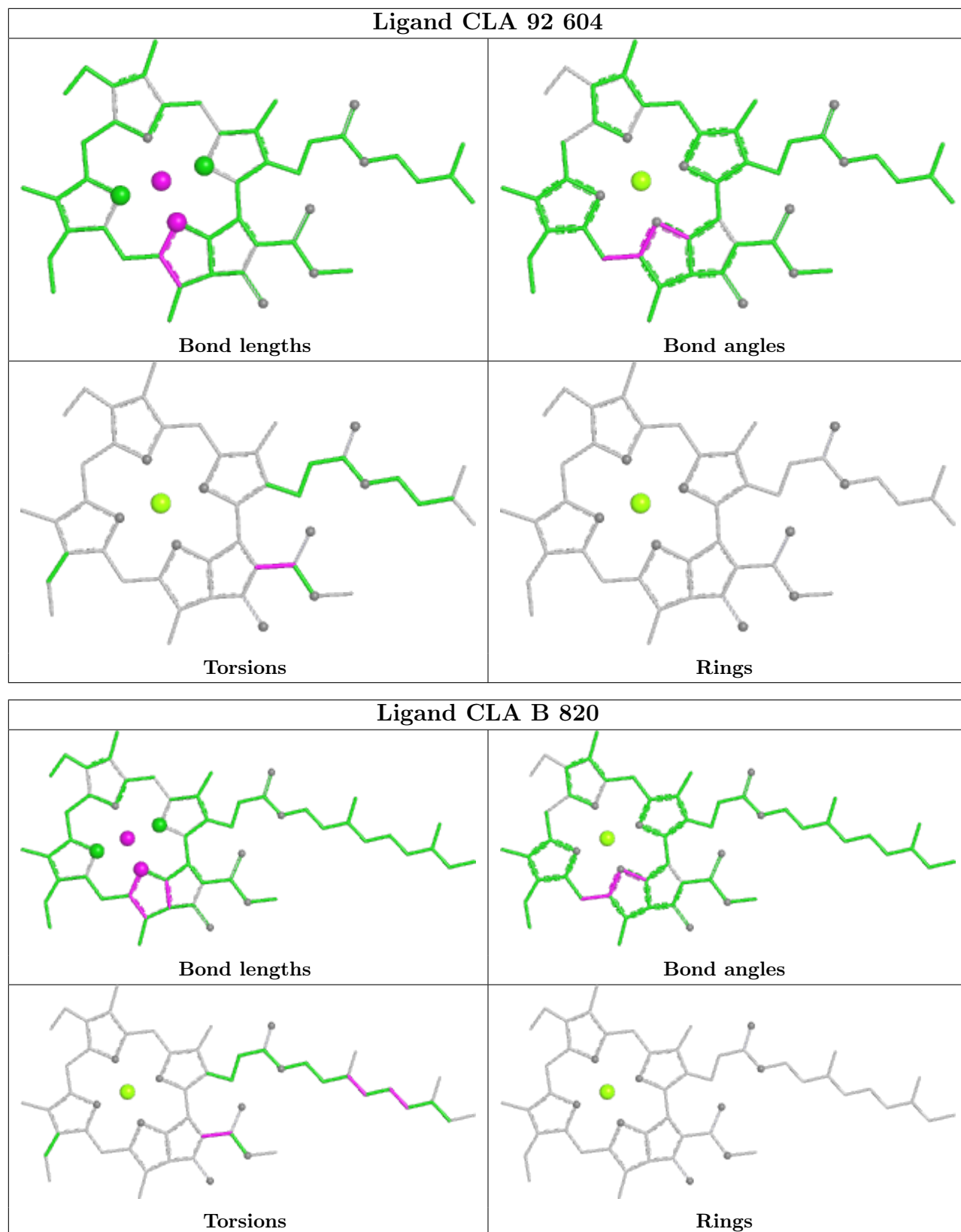




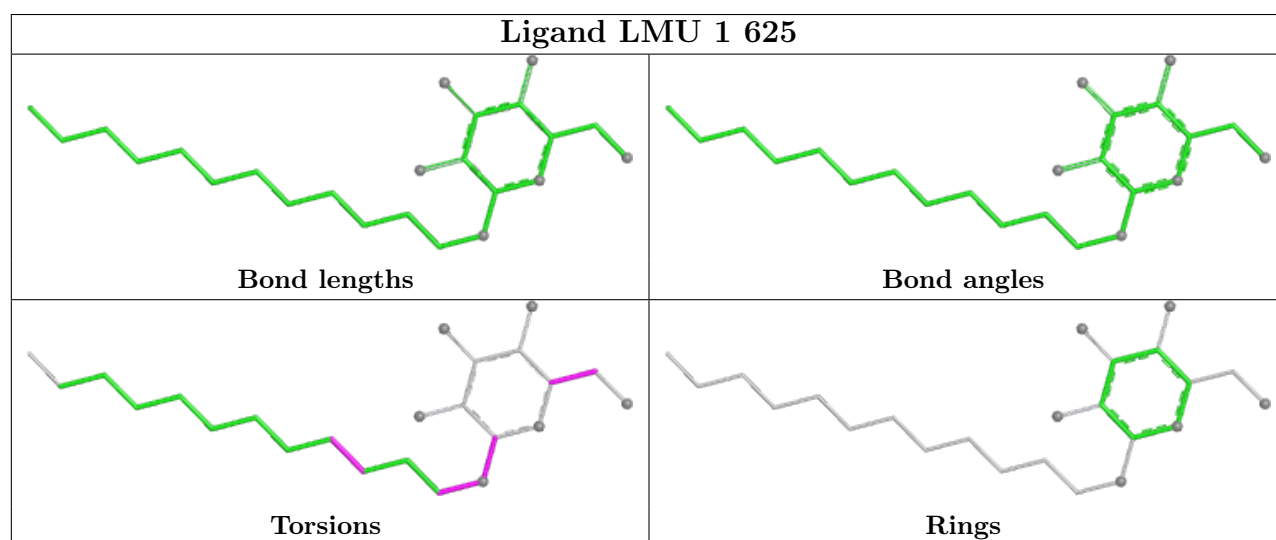
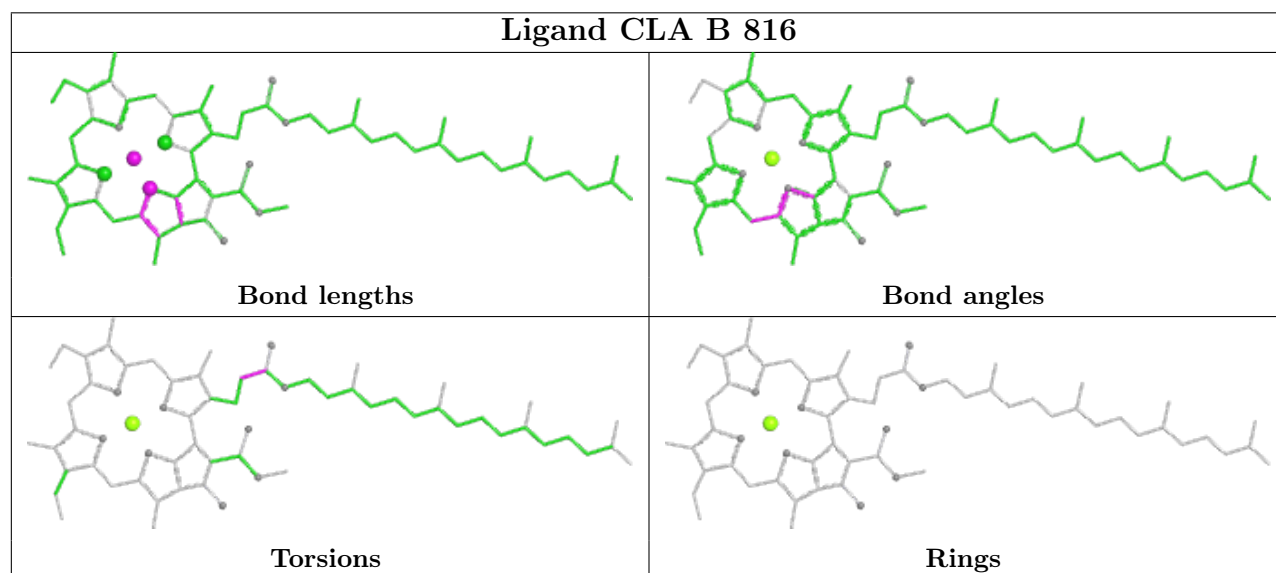
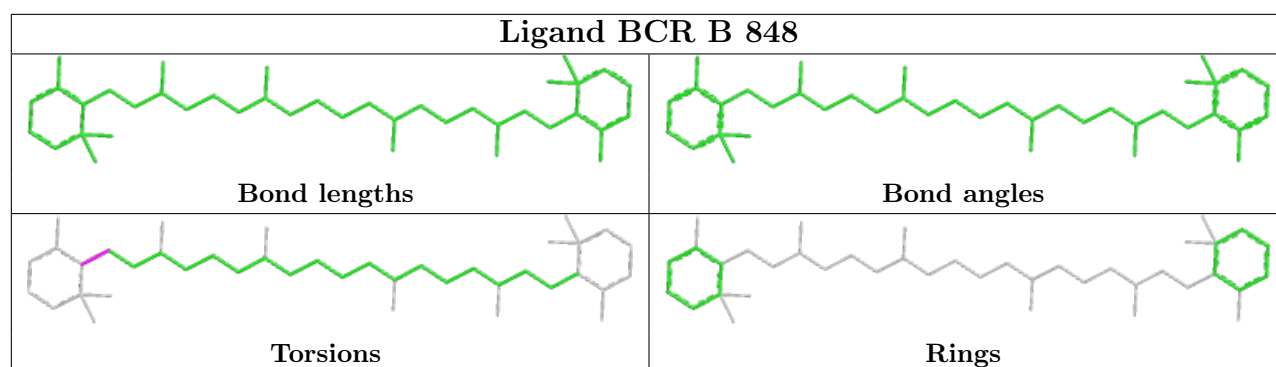


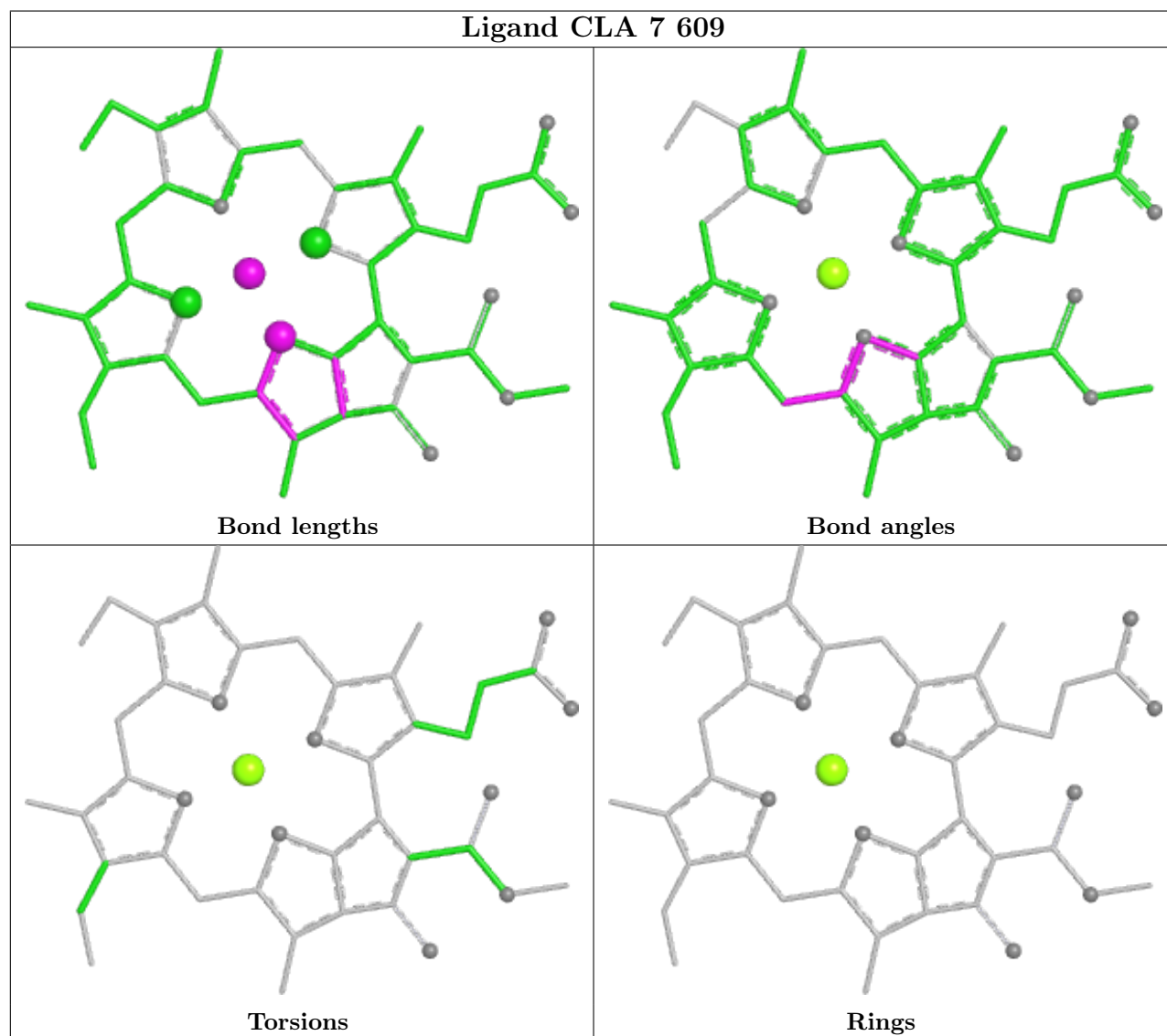
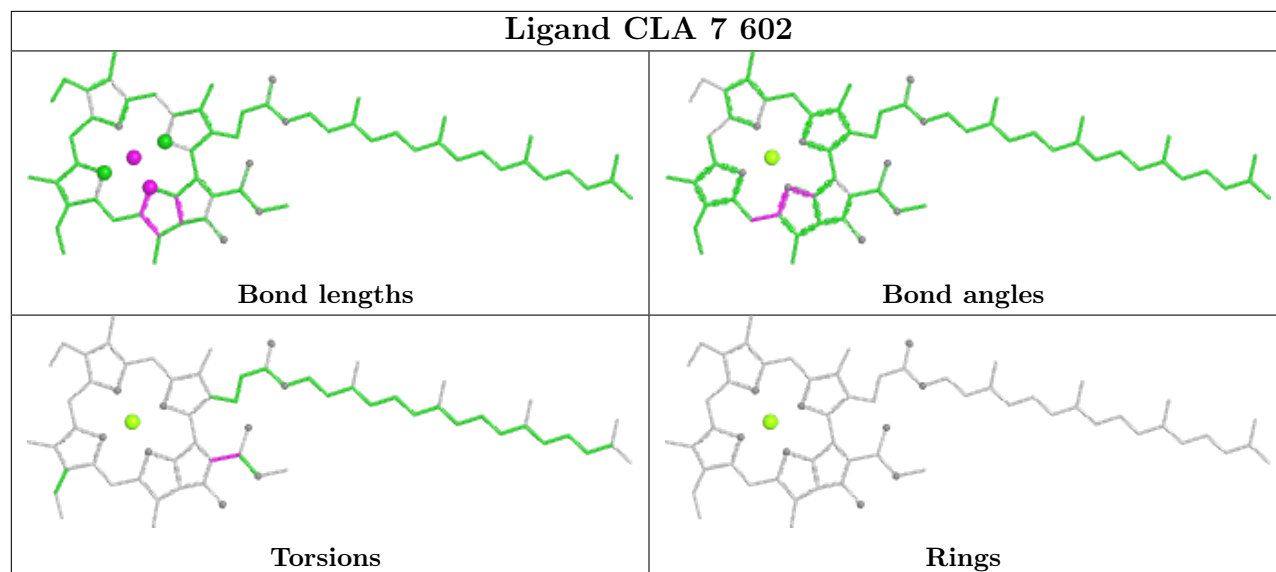


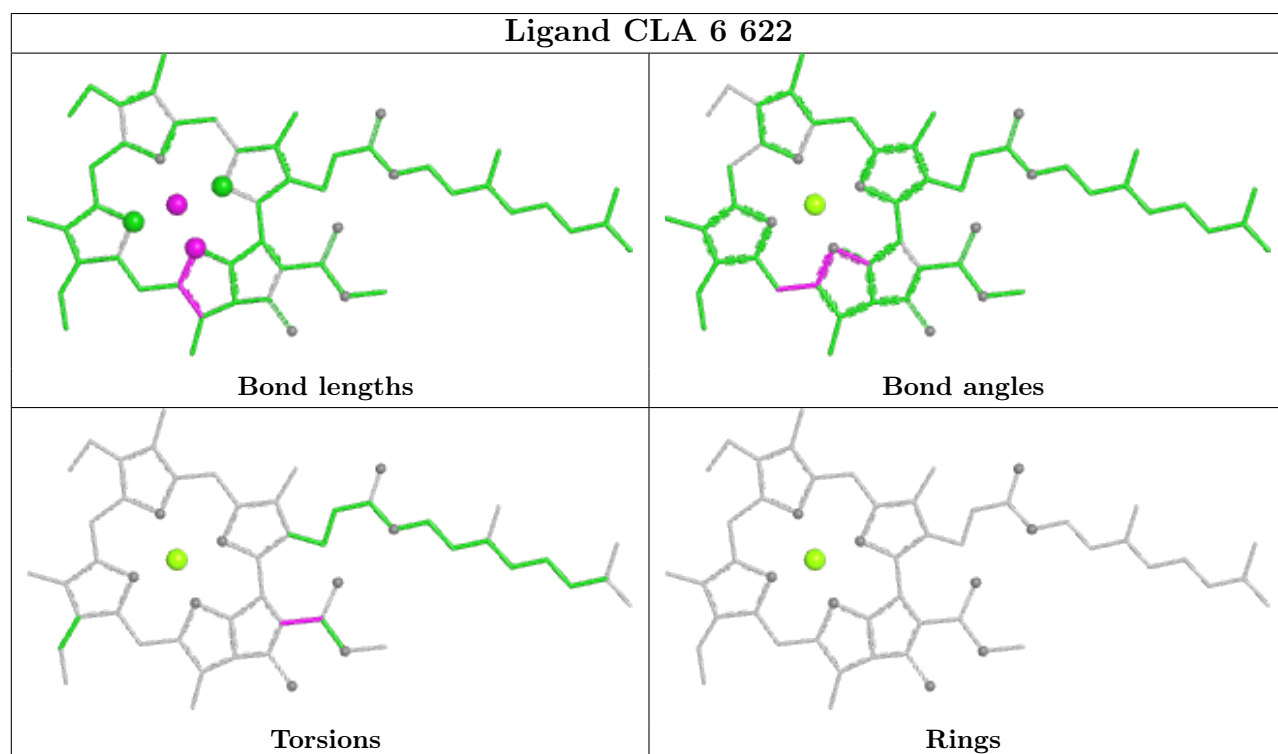
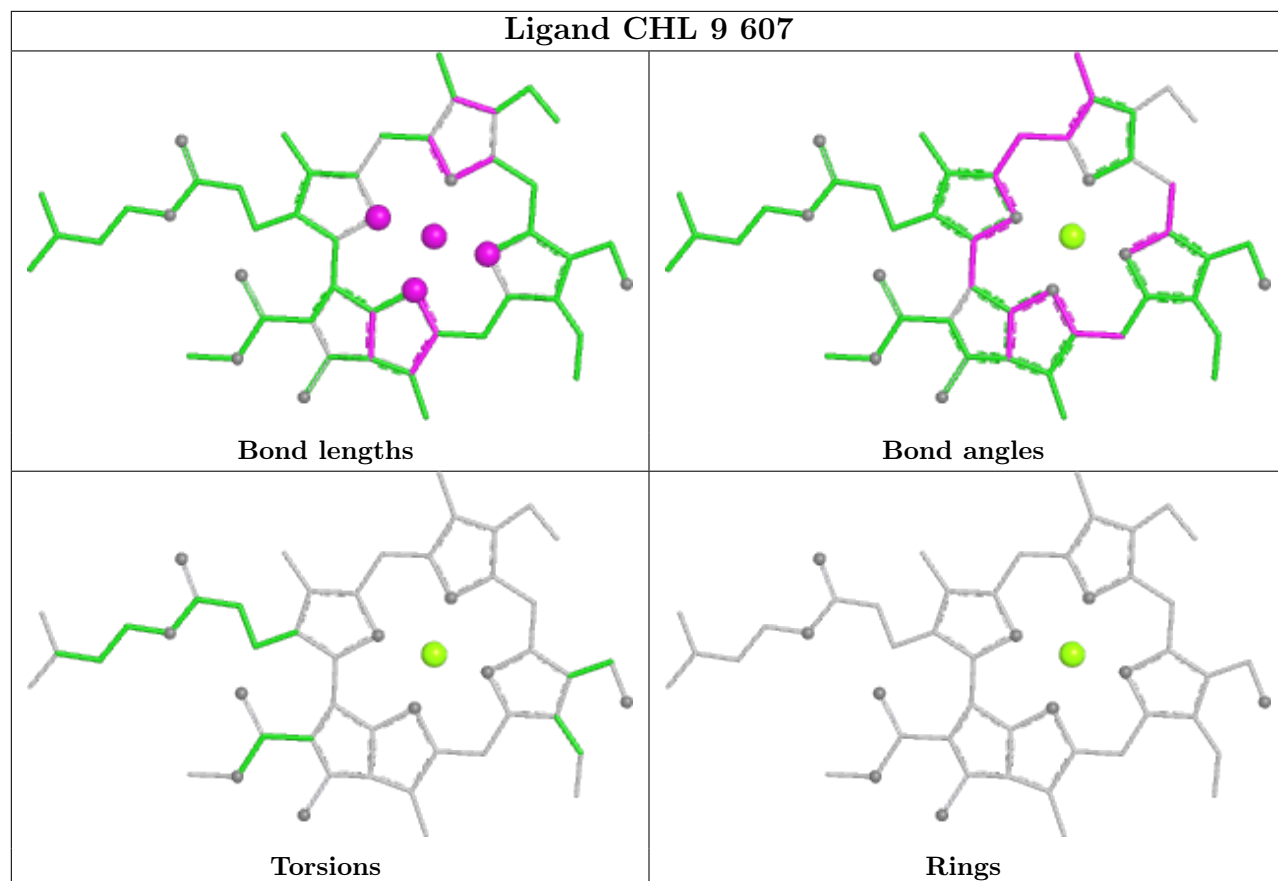


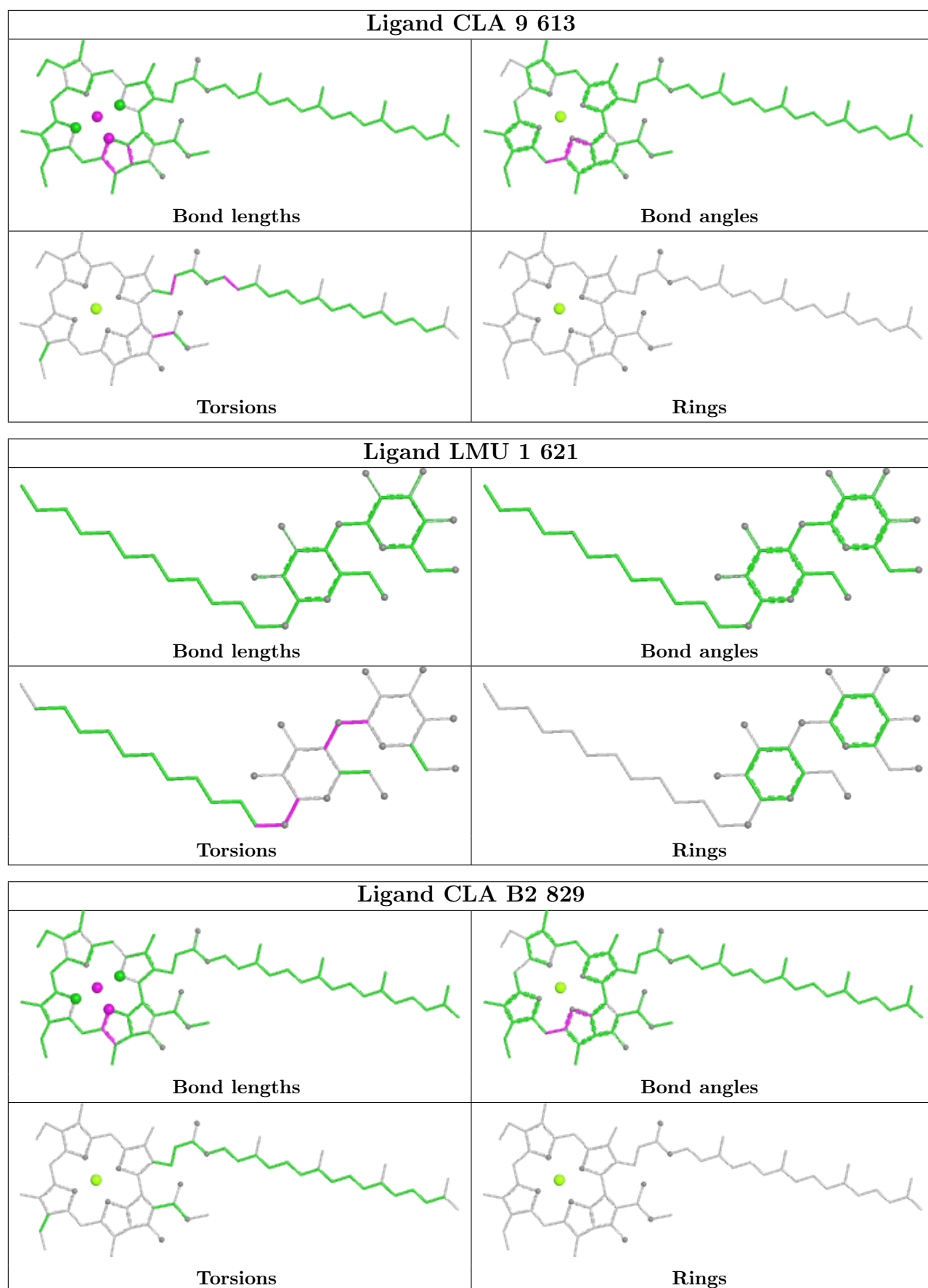


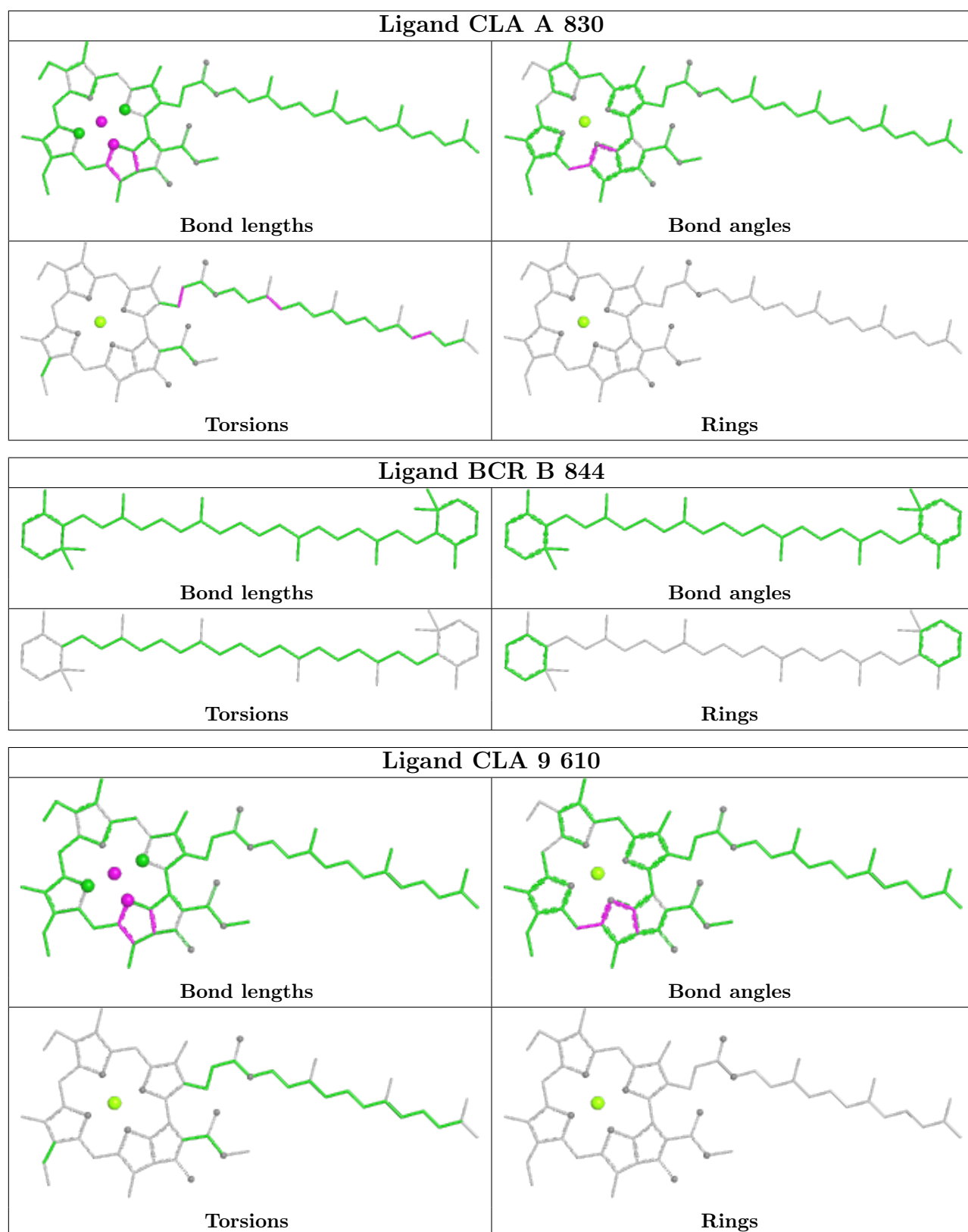


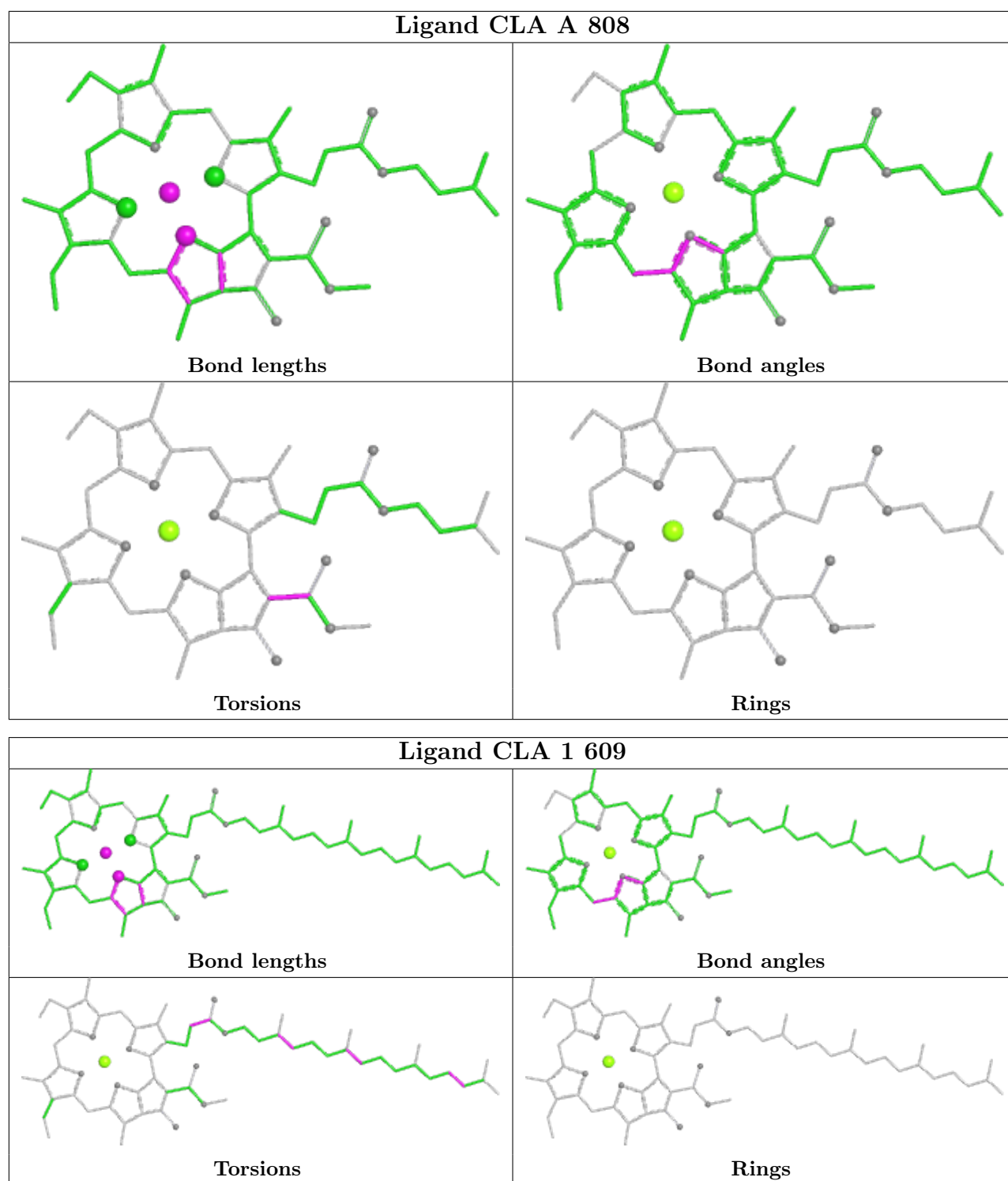












## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
20	B2	6

The worst 5 of 6 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B2	218:PRO	C	683:HIS	N	78.76
1	B2	169:PHE	C	191:TRP	N	27.65
1	B2	115:ASN	C	128:ILE	N	22.89
1	B2	77:GLN	C	88:ILE	N	9.86
1	B2	107:ARG	C	112:GLY	N	7.45

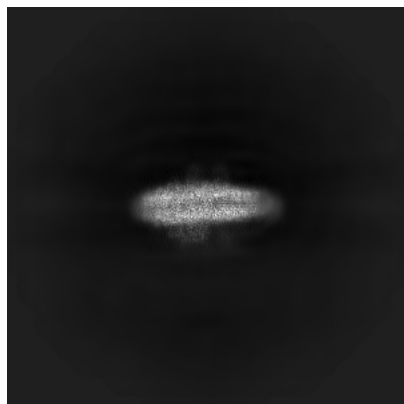
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14867. These allow visual inspection of the internal detail of the map and identification of artifacts.

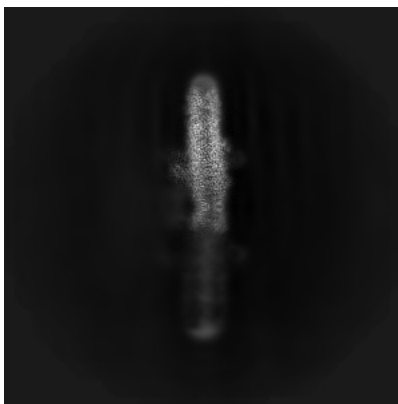
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

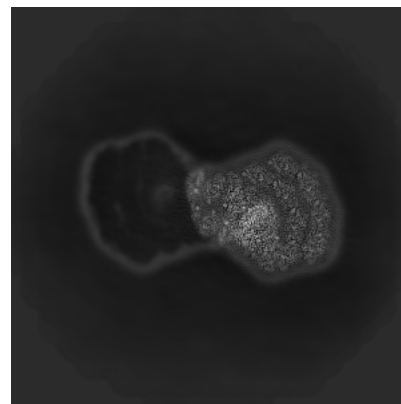
#### 6.1.1 Primary map



X

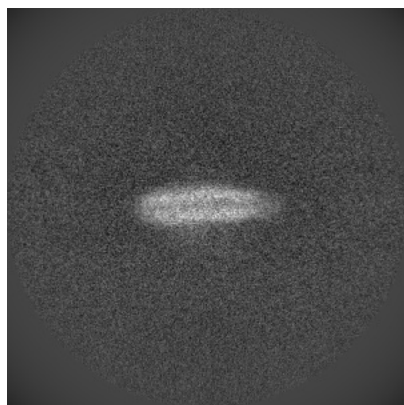


Y

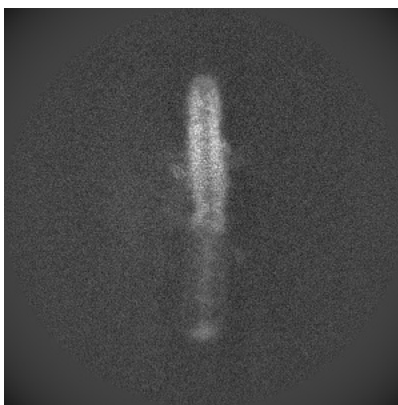


Z

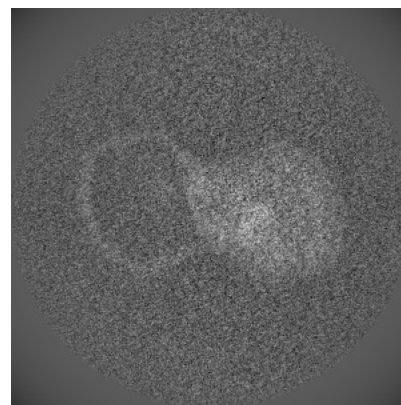
#### 6.1.2 Raw map



X



Y



Z

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



## 6.2 Central slices [i](#)

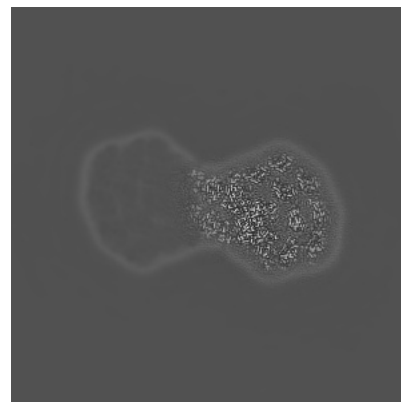
### 6.2.1 Primary map



X Index: 350

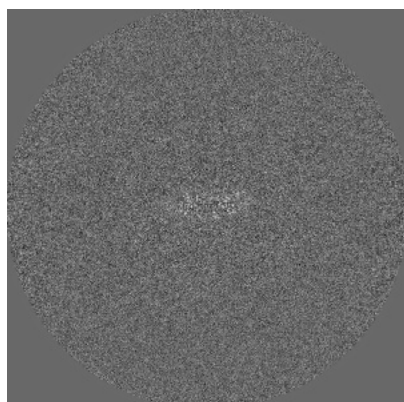


Y Index: 350

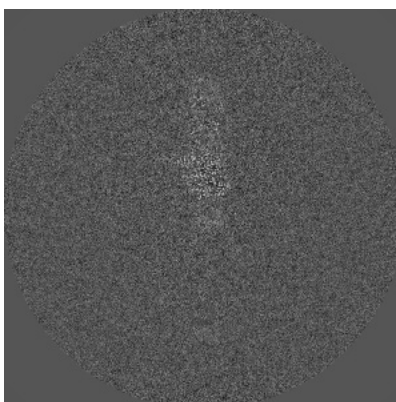


Z Index: 350

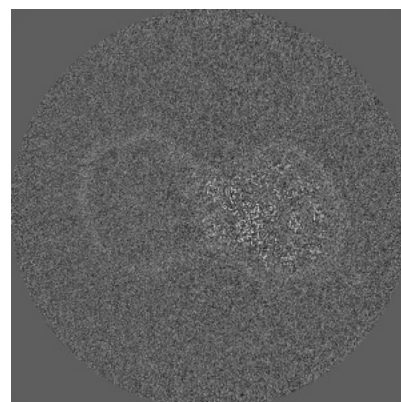
### 6.2.2 Raw map



X Index: 350



Y Index: 350



Z Index: 350

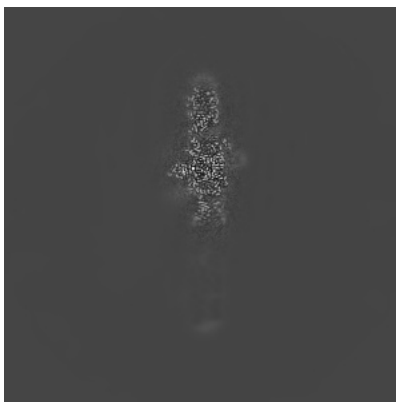
The images above show central slices of the map in three orthogonal directions.

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

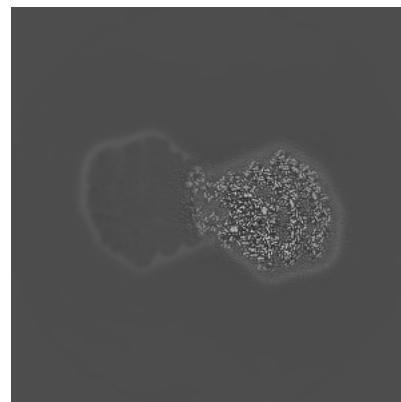
### 6.3.1 Primary map



X Index: 416

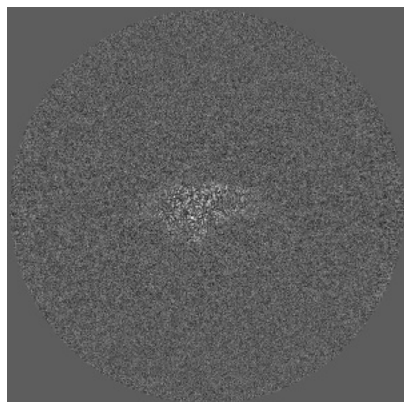


Y Index: 323

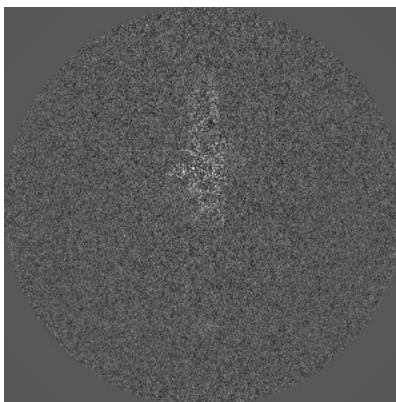


Z Index: 340

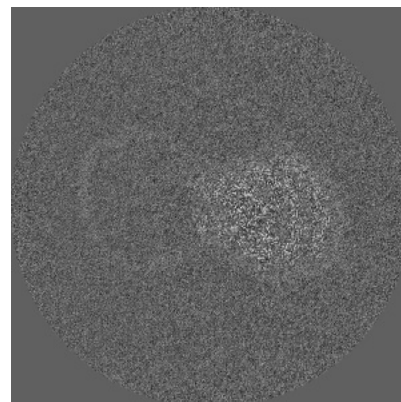
### 6.3.2 Raw map



X Index: 415



Y Index: 323

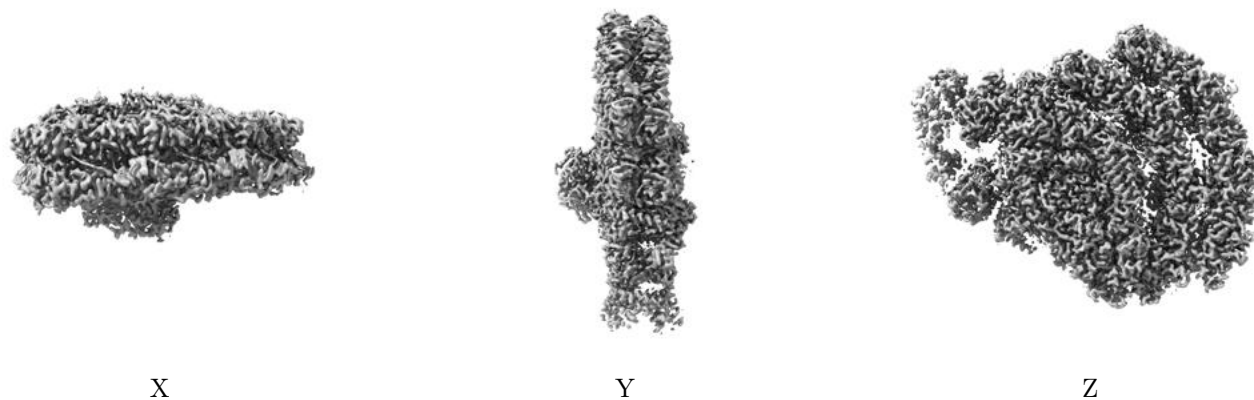


Z Index: 340

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

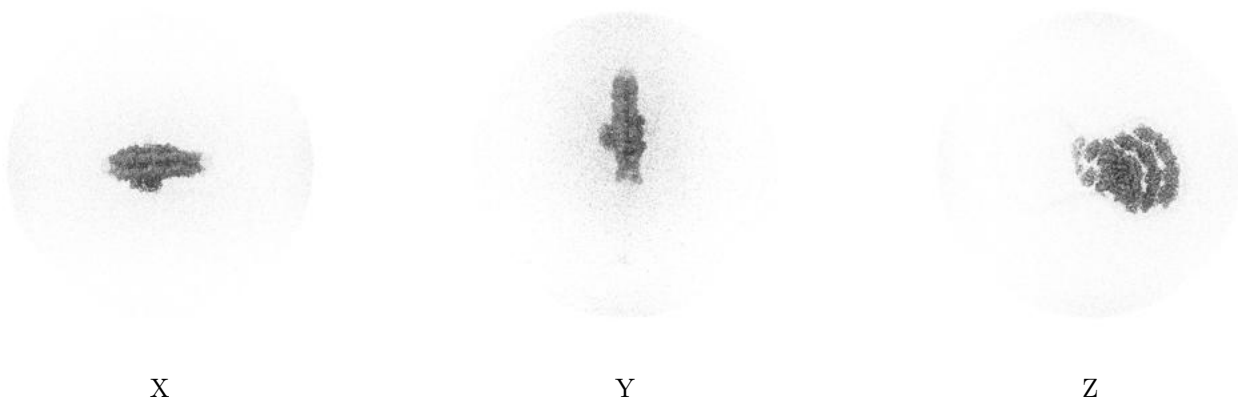
## 6.4 Orthogonal surface views [i](#)

### 6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.031. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.4.2 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.

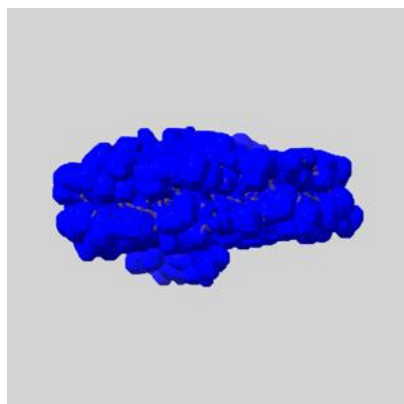
## 6.5 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

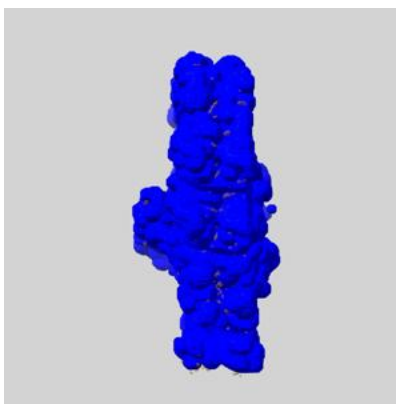
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

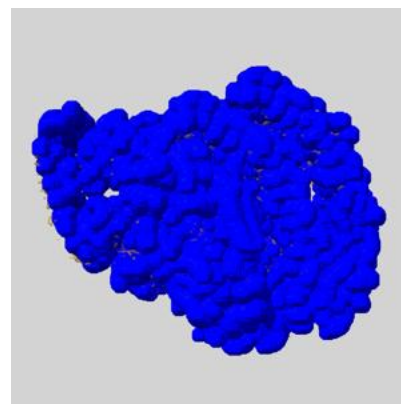
### 6.5.1 emd\_14867\_msk\_1.map [i](#)



X



Y

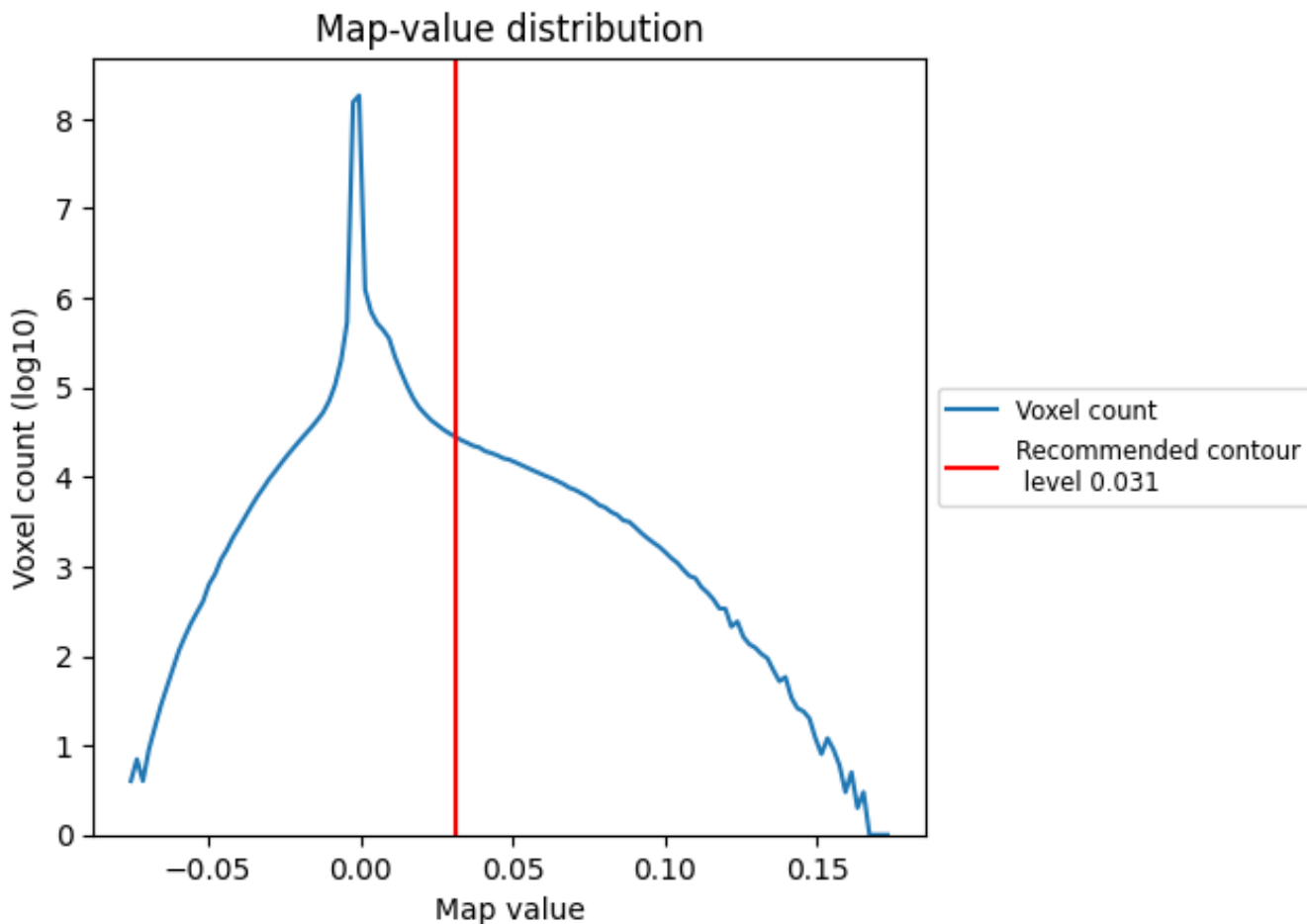


Z

## 7 Map analysis [i](#)

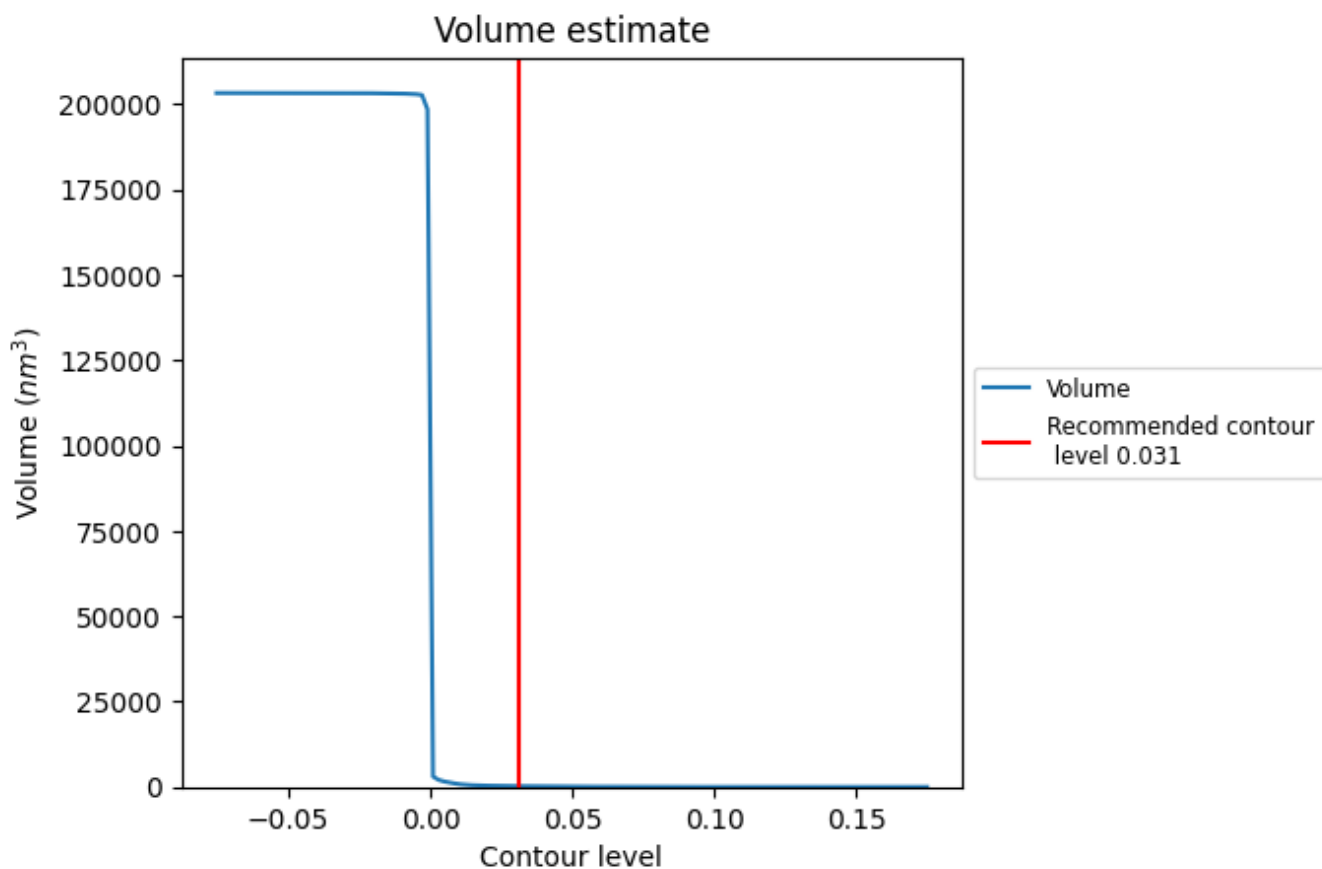
This section contains the results of statistical analysis of the map.

### 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.

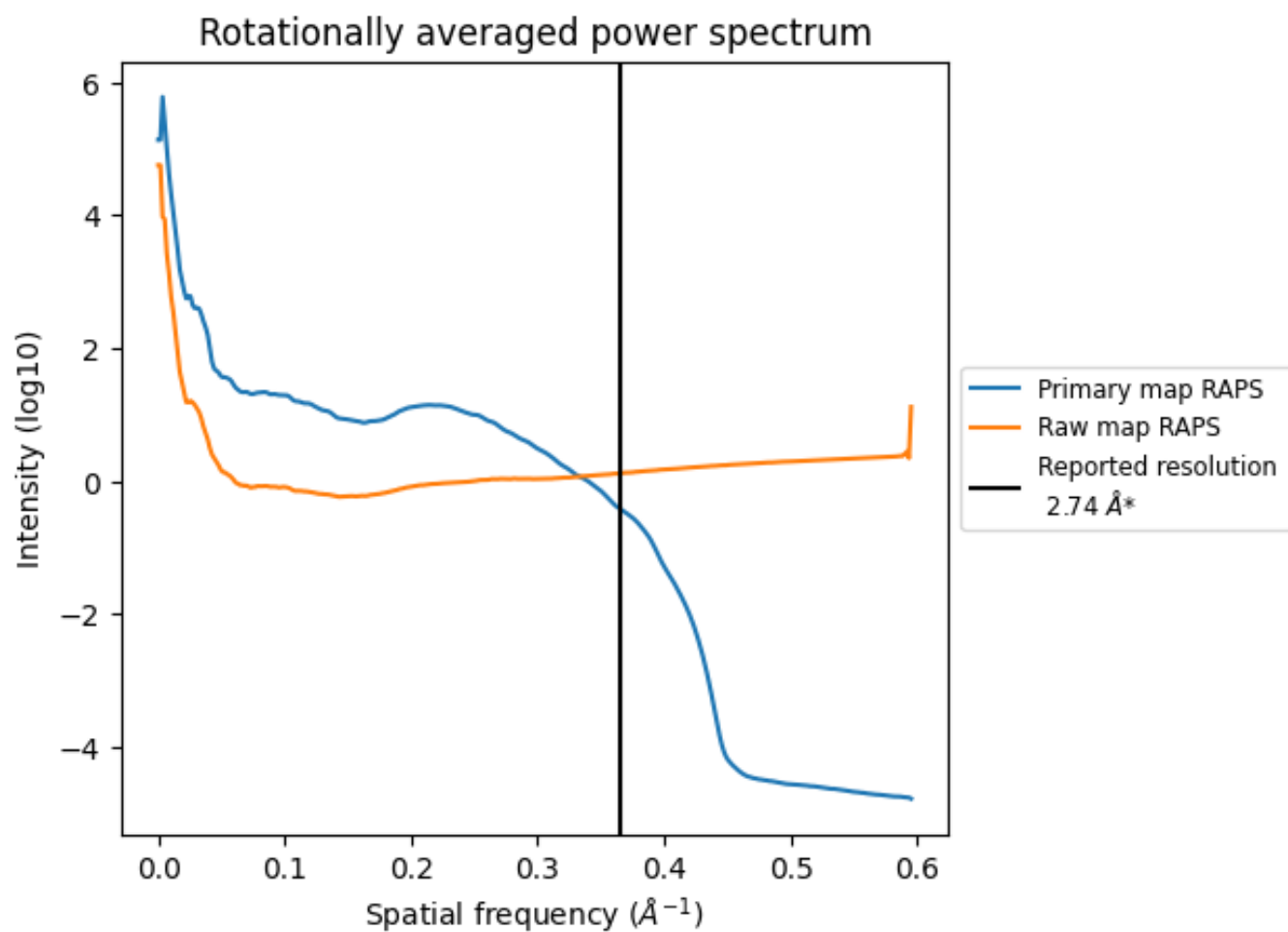
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 231  $\text{nm}^3$ ; this corresponds to an approximate mass of 209 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](#)

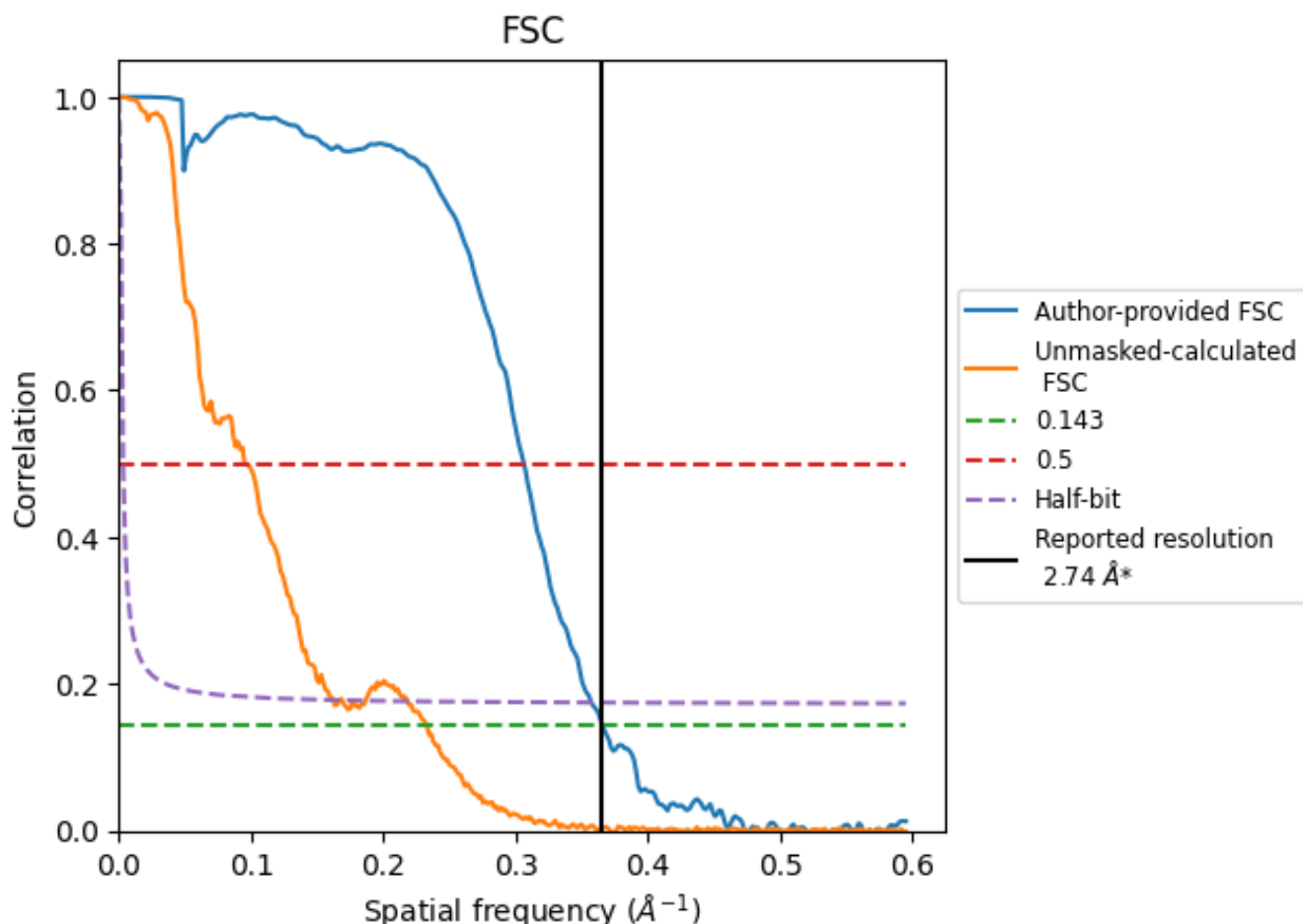


\*Reported resolution corresponds to spatial frequency of  $0.365 \text{ \AA}^{-1}$

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

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.365 Å<sup>-1</sup>



## 8.2 Resolution estimates [i](#)

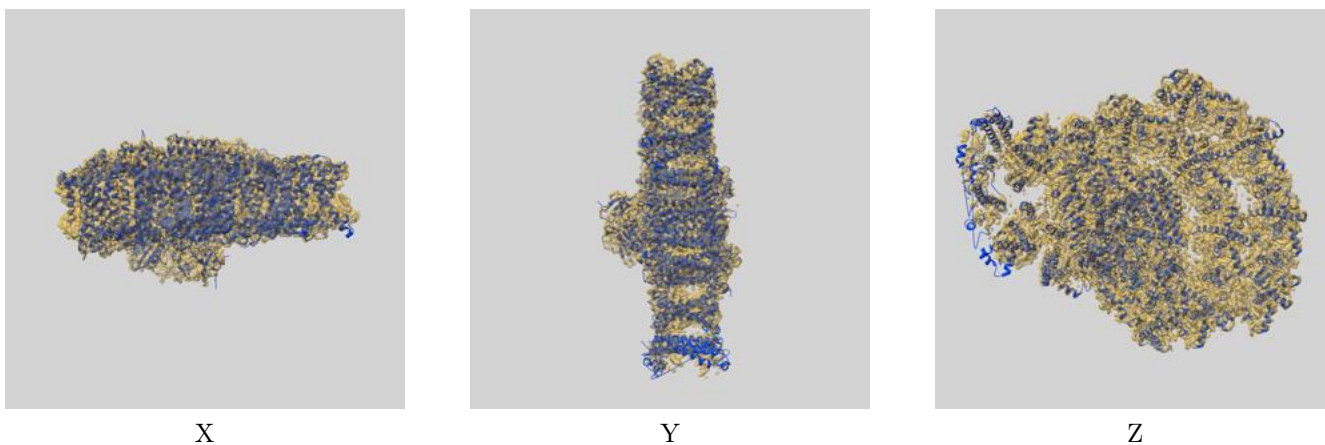
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.74	-	-
Author-provided FSC curve	2.73	3.26	2.80
Unmasked-calculated*	4.30	10.50	6.17

\*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 4.30 differs from the reported value 2.74 by more than 10 %

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

This section contains information regarding the fit between EMDB map EMD-14867 and PDB model 7ZQ9. Per-residue inclusion information can be found in section 3 on page 40.

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

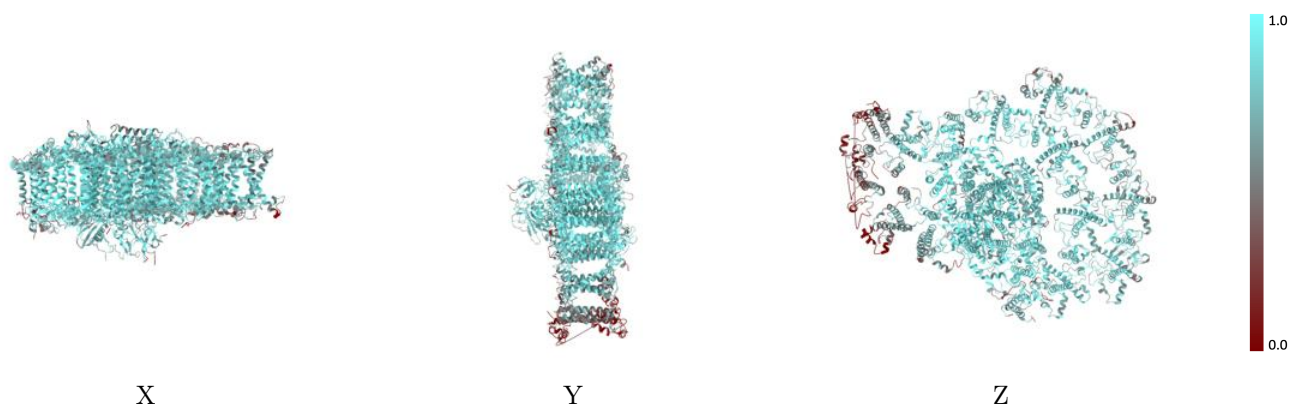


The images above show the 3D surface view of the map at the recommended contour level 0.031 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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

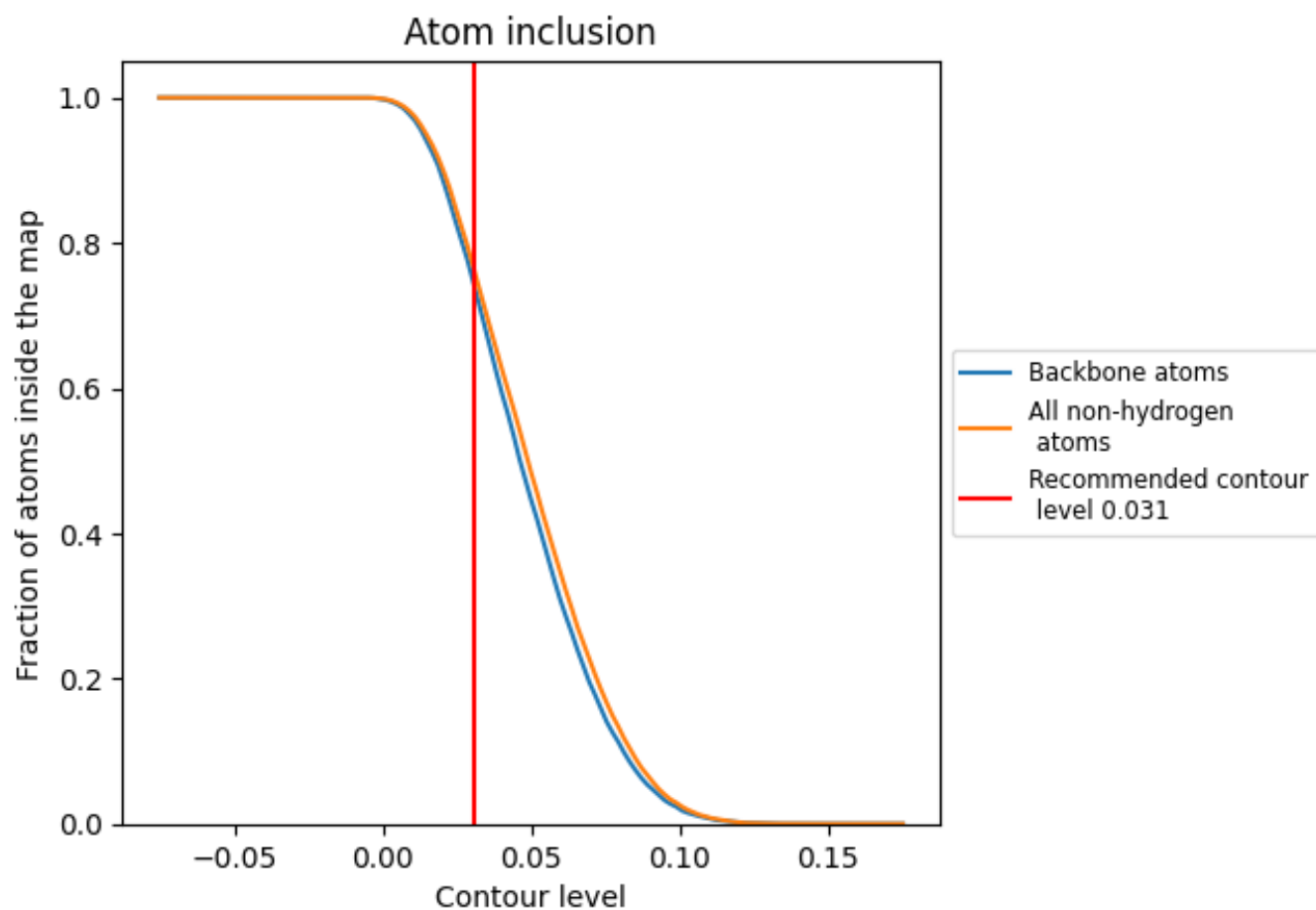
This section was not generated.

## 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 (0.031).


























## 9.4 Atom inclusion [i](#)



At the recommended contour level, 74% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.031) and Q-score for the entire model and for each chain.

Chain	Atom inclusion
All	 0.7582
1	 0.7688
3	 0.7890
4	 0.6764
5	 0.7357
6	 0.6907
7	 0.8217
8	 0.8331
9	 0.7149
92	 0.5280
A	 0.8970
B	 0.9099
B2	 0.2377
C	 0.9071
D	 0.7903
E	 0.7728
F	 0.8130
G	 0.7113
I	 0.8025
I2	 0.3950
J	 0.8415
K	 0.6185
L	 0.6654
L2	 0.3427
Z	 0.6755

