



wwPDB X-ray Structure Validation Summary Report

Oct 10, 2023 – 04:37 AM EDT

PDB ID : 7M75
Title : Room Temperature XFEL Crystallography reveals asymmetry in the vicinity of the two phylloquinones in Photosystem I
Authors : Keable, S.M.; Simon, P.S.; Kolsch, A.; Kern, J.; Yachandra, V.K.; Zouni, A.; Yano, J.
Deposited on : 2021-03-26
Resolution : 2.75 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the  symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

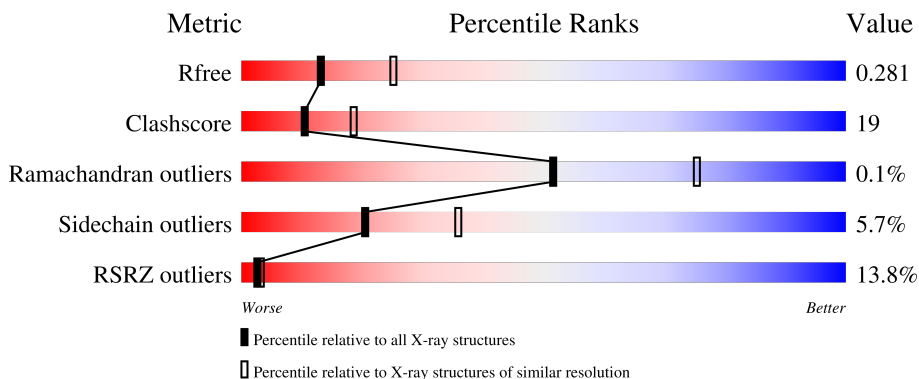
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.75 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1235 (2.78-2.74)
Clashscore	141614	1277 (2.78-2.74)
Ramachandran outliers	138981	1257 (2.78-2.74)
Sidechain outliers	138945	1257 (2.78-2.74)
RSRZ outliers	127900	1207 (2.78-2.74)

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

Mol	Chain	Length	Quality of chain
1	A	755	
2	B	740	
3	C	80	
4	D	138	

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Mol	Chain	Length	Quality of chain
5	E	75	
6	F	164	
7	I	38	
8	J	41	
9	K	83	
10	L	154	
11	M	31	
12	X	35	

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
13	CL0	A	801	X	-	-	-
14	CLA	A	802	X	-	-	-
14	CLA	A	803	X	-	-	-
14	CLA	A	804	X	-	-	-
14	CLA	A	805	X	-	-	-
14	CLA	A	806	X	-	-	-
14	CLA	A	807	X	-	-	-
14	CLA	A	808	X	-	-	-
14	CLA	A	809	X	-	-	-
14	CLA	A	810	X	-	-	-
14	CLA	A	811	X	-	-	-
14	CLA	A	812	X	-	-	-
14	CLA	A	813	X	-	-	-
14	CLA	A	814	X	-	-	-
14	CLA	A	815	X	-	-	-
14	CLA	A	816	X	-	-	-
14	CLA	A	817	X	-	-	-
14	CLA	A	818	X	-	-	-
14	CLA	A	819	X	-	-	-
14	CLA	A	820	X	-	-	-
14	CLA	A	821	X	-	-	-
14	CLA	A	822	X	-	-	-
14	CLA	A	823	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	A	824	X	-	-	-
14	CLA	A	825	X	-	-	-
14	CLA	A	826	X	-	-	-
14	CLA	A	827	X	-	-	-
14	CLA	A	828	X	-	-	-
14	CLA	A	829	X	-	-	-
14	CLA	A	830	X	-	-	-
14	CLA	A	831	X	-	-	-
14	CLA	A	832	X	-	-	-
14	CLA	A	833	X	-	-	-
14	CLA	A	834	X	-	-	-
14	CLA	A	835	X	-	-	-
14	CLA	A	836	X	-	-	-
14	CLA	A	837	X	-	-	-
14	CLA	A	838	X	-	-	-
14	CLA	A	839	X	-	-	-
14	CLA	A	840	X	-	-	-
14	CLA	A	841	X	-	-	-
14	CLA	A	842	X	-	-	-
14	CLA	A	843	X	-	-	-
14	CLA	A	844	X	-	-	-
14	CLA	A	845	X	-	-	-
14	CLA	A	856	X	-	-	-
14	CLA	B	3003	X	-	-	-
14	CLA	B	3004	X	-	-	-
14	CLA	B	3005	X	-	-	-
14	CLA	B	3006	X	-	-	-
14	CLA	B	3007	X	-	-	-
14	CLA	B	3008	X	-	-	-
14	CLA	B	3009	X	-	-	-
14	CLA	B	3010	X	-	-	-
14	CLA	B	3011	X	-	-	-
14	CLA	B	3012	X	-	-	-
14	CLA	B	3013	X	-	-	-
14	CLA	B	3014	X	-	-	-
14	CLA	B	3015	X	-	-	-
14	CLA	B	3016	X	-	-	-
14	CLA	B	3017	X	-	-	-
14	CLA	B	3018	X	-	-	-
14	CLA	B	3019	X	-	-	-
14	CLA	B	3020	X	-	-	-
14	CLA	B	3021	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
14	CLA	B	3022	X	-	-	-
14	CLA	B	3023	X	-	-	-
14	CLA	B	3024	X	-	-	-
14	CLA	B	3026	X	-	-	-
14	CLA	B	3027	X	-	-	-
14	CLA	B	3028	X	-	-	-
14	CLA	B	3029	X	-	-	-
14	CLA	B	3030	X	-	-	-
14	CLA	B	3031	X	-	-	-
14	CLA	B	3032	X	-	-	-
14	CLA	B	3033	X	-	-	-
14	CLA	B	3034	X	-	-	-
14	CLA	B	3035	X	-	-	-
14	CLA	B	3036	X	-	-	-
14	CLA	B	3037	X	-	-	-
14	CLA	B	3038	X	-	-	-
14	CLA	B	3039	X	-	-	-
14	CLA	B	3041	X	-	-	-
14	CLA	F	202	X	-	-	-
14	CLA	I	101	X	-	-	-
14	CLA	J	101	X	-	-	-
14	CLA	J	102	X	-	-	-
14	CLA	K	101	X	-	-	-
14	CLA	K	103	X	-	-	-
14	CLA	L	203	X	-	-	-
14	CLA	L	204	X	-	-	-
14	CLA	L	205	X	-	-	-
14	CLA	M	102	X	-	-	X
14	CLA	X	1701	X	-	-	-
16	BCR	A	847	-	-	-	X
16	BCR	A	848	-	-	-	X
16	BCR	B	3043	-	-	-	X
16	BCR	F	201	-	-	-	X
16	BCR	J	105	-	-	-	X
16	BCR	K	102	-	-	-	X
17	LMG	I	104	-	-	-	X
18	LHG	M	101	-	-	-	X
21	LMT	L	201	-	-	-	X

2 Entry composition [i](#)

There are 23 unique types of molecules in this entry. The entry contains 48896 atoms, of which 24384 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
1	A	740	11422	3794	5638	988	976	26	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
2	B	739	11507	3876	5618	987	1005	21	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
3	C	80	1174	367	576	103	117	11	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
4	D	138	2152	682	1077	186	204	3	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	H	N	O			
5	E	69	1067	342	528	93	104	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
6	F	141	2141	680	1076	184	197	4	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
7	I	38	607	208	306	40	48	5	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
8	J	41	685	231	347	51	54	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
9	K	47	687	217	354	58	57	1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
10	L	151	2244	735	1125	179	201	4	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	143	LEU	SER	conflict	UNP Q8DGB4

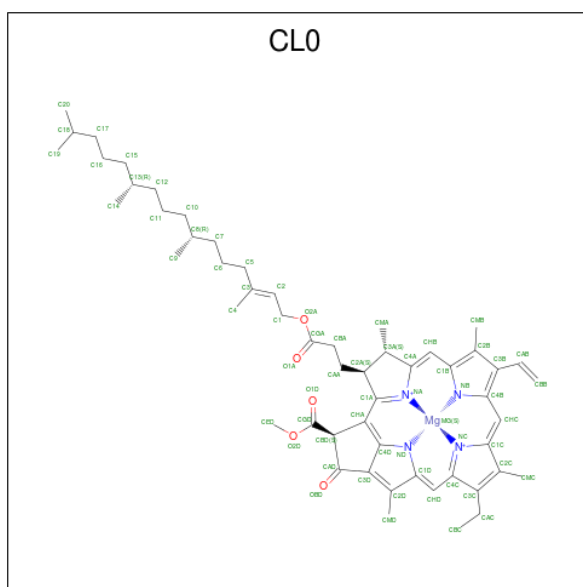
- Molecule 11 is a protein called Photosystem I reaction center subunit XII.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
11	M	31	505	161	264	36	43	1	0	0	0

- Molecule 12 is a protein called Photosystem I 4.8K protein.

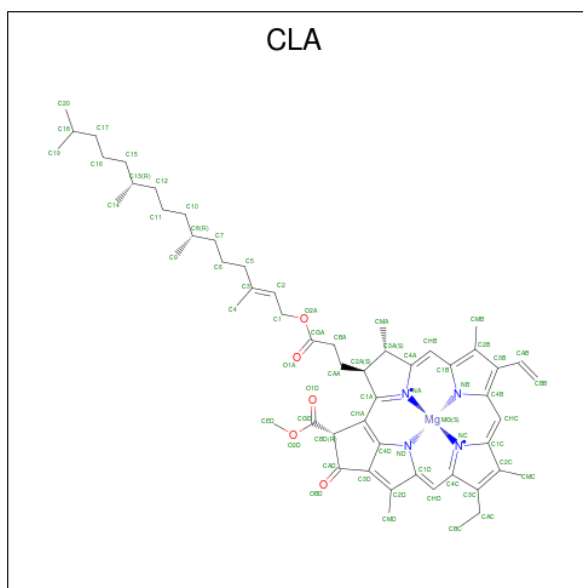
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
			Total	C	H	N				O
12	X	29	459	172	217	35	35	0	0	0

- Molecule 13 is CHLOROPHYLL A ISOMER (three-letter code: CL0) (formula: C₅₅H₇₂MgN₄O₅).



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

- Molecule 14 is CHLOROPHYLL A (three-letter code: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).



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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	H	Mg	N	O		
14	A	1	117	49	58	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	92	41	41	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	78	35	33	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	102	44	48	1	4	5	0	0
14	A	1	119	50	59	1	4	5	0	0
14	A	1	78	35	33	1	4	5	0	0
14	A	1	78	35	33	1	4	5	0	0
14	A	1	88	39	39	1	4	5	0	0
14	A	1	102	44	48	1	4	5	0	0
14	A	1	102	44	48	1	4	5	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	72	35	29	1	4	3	0	0
14	A	1	137	55	72	1	4	5	0	0
14	A	1	88	39	39	1	4	5	0	0
14	A	1	92	41	41	1	4	5	0	0
14	A	1	117	49	58	1	4	5	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			89	40	39	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			102	44	48	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			78	35	33	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			92	41	41	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			82	37	35	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			92	41	41	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			95	42	43	1	4	5		
14	A	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	H	Mg	N	O		
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	102	44	48	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	104	45	49	1	4	5	0	0
14	B	1	117	49	58	1	4	5	0	0
14	B	1	119	50	59	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	82	37	35	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	104	45	49	1	4	5	0	0

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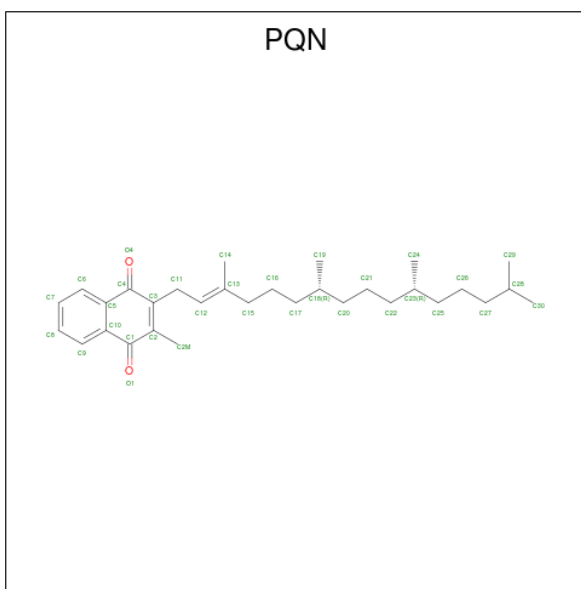
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	H	Mg	N	O		
14	B	1	78	35	33	1	4	5	0	0
14	B	1	102	44	48	1	4	5	0	0
14	B	1	79	36	33	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	88	39	39	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	113	48	55	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	78	35	33	1	4	5	0	0
14	B	1	119	50	59	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	B	1	82	37	35	1	4	5	0	0
14	B	1	137	55	72	1	4	5	0	0
14	F	1	78	35	33	1	4	5	0	0
14	I	1	137	55	72	1	4	5	0	0
14	J	1	78	35	33	1	4	5	0	0

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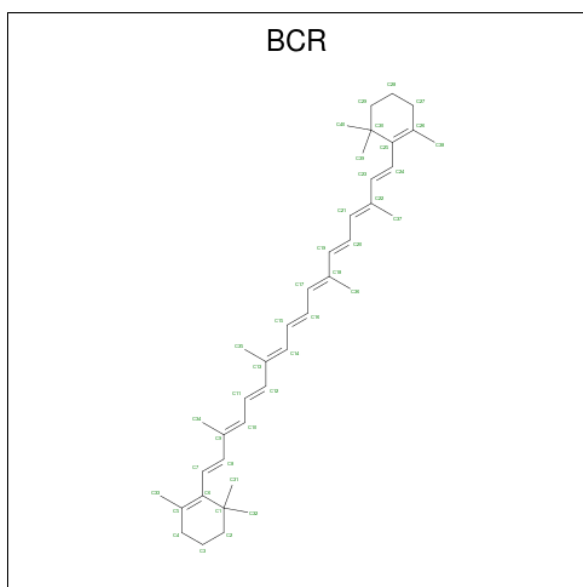
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
14	J	1	Total	C	H	Mg	N	O	0	0
			62	31	25	1	4	1		
14	K	1	Total	C	H	Mg	N	O	0	0
			70	33	29	1	4	3		
14	K	1	Total	C	H	Mg	N	O	0	0
			78	35	33	1	4	5		
14	L	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	L	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	L	1	Total	C	H	Mg	N	O	0	0
			137	55	72	1	4	5		
14	M	1	Total	C	H	Mg	N	O	0	0
			78	35	33	1	4	5		
14	X	1	Total	C	H	Mg	N	O	0	0
			78	35	33	1	4	5		

- Molecule 15 is PHYLLOQUINONE (three-letter code: PQN) (formula: $C_{31}H_{46}O_2$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 16 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).



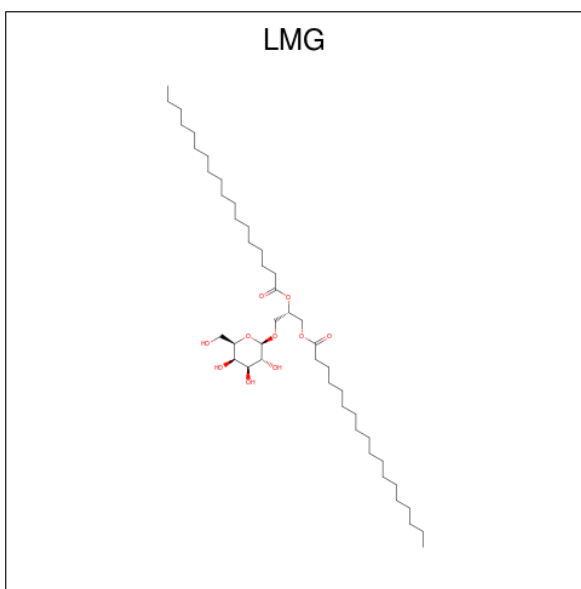
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
16	A	1	Total	C	H	0	0
			96	40	56		
16	A	1	Total	C	H	0	0
			96	40	56		
16	A	1	Total	C	H	0	0
			96	40	56		
16	A	1	Total	C	H	0	0
			96	40	56		
16	A	1	Total	C	H	0	0
			96	40	56		
16	B	1	Total	C	H	0	0
			96	40	56		
16	B	1	Total	C	H	0	0
			96	40	56		
16	B	1	Total	C	H	0	0
			96	40	56		
16	B	1	Total	C	H	0	0
			96	40	56		
16	B	1	Total	C	H	0	0
			96	40	56		
16	F	1	Total	C	H	0	0
			96	40	56		
16	F	1	Total	C	H	0	0
			96	40	56		
16	I	1	Total	C	H	0	0
			96	40	56		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
16	I	1	Total	C	H	0	0
			96	40	56		
16	I	1	Total	C	H	0	0
			96	40	56		
16	J	1	Total	C	H	0	0
			96	40	56		
16	J	1	Total	C	H	0	0
			96	40	56		
16	J	1	Total	C	H	0	0
			96	40	56		
16	K	1	Total	C	H	0	0
			96	40	56		
16	L	1	Total	C	H	0	0
			96	40	56		
16	M	1	Total	C	H	0	0
			96	40	56		

- Molecule 17 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: C₄₅H₈₆O₁₀).



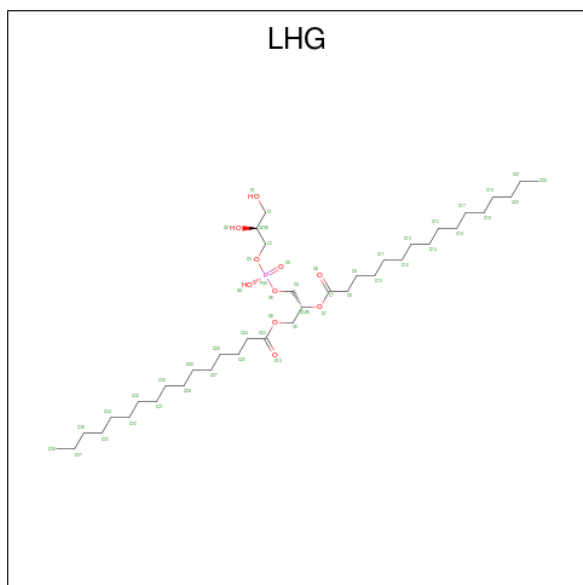
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
17	A	1	Total	C	H	O	0	0
			118	38	70	10		
17	A	1	Total	C	H	O	0	0
			67	22	37	8		
17	B	1	Total	C	H	O	0	0
			141	45	86	10		

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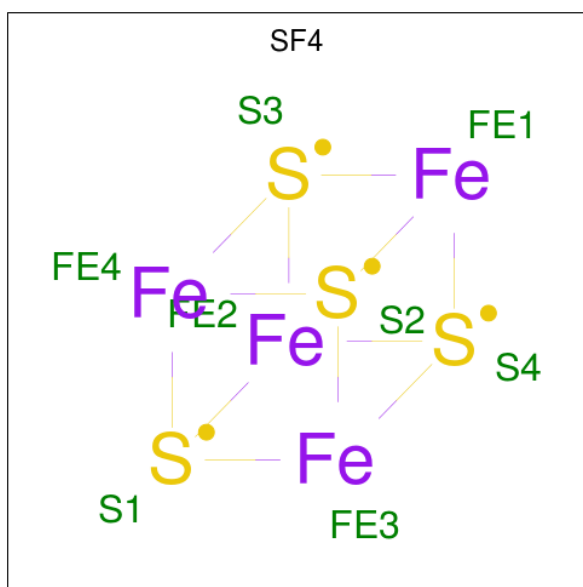
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
17	I	1	91	30	51	10	0	0

- Molecule 18 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: C₃₈H₇₅O₁₀P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	P		
18	A	1	123	38	74	10	1	0	0
18	A	1	53	16	26	10	1	0	0
18	B	1	43	12	20	10	1	0	0
18	M	1	123	38	74	10	1	0	0

- Molecule 19 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).

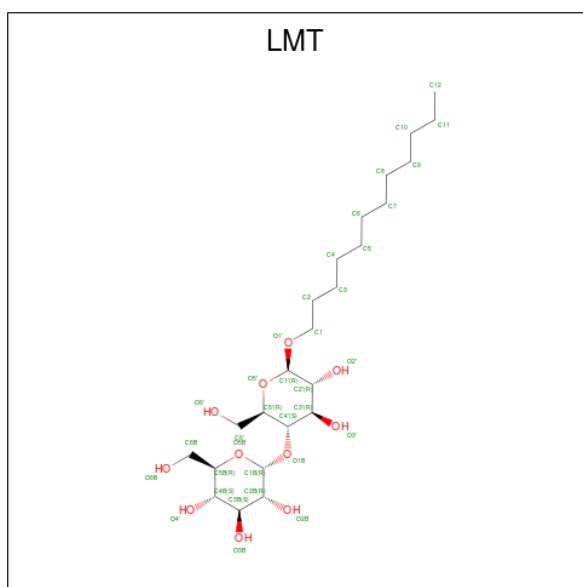


Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
19	B	1	Total	Fe S	0	0
			8	4 4		
19	C	1	Total	Fe S	0	0
			8	4 4		
19	C	1	Total	Fe S	0	0
			8	4 4		

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

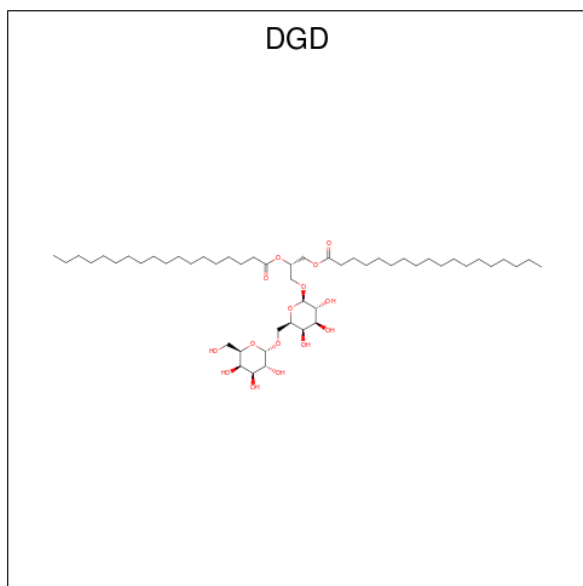
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
20	B	1	Total	Ca	0	0
			1	1		
20	L	1	Total	Ca	0	0
			1	1		

- Molecule 21 is DODECYL-BETA-D-MALTOSE (three-letter code: LMT) (formula: C₂₄H₄₆O₁₁).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
21	L	1	81	24	46	11	0	0

- Molecule 22 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
22	L	1	162	51	96	15	0	0

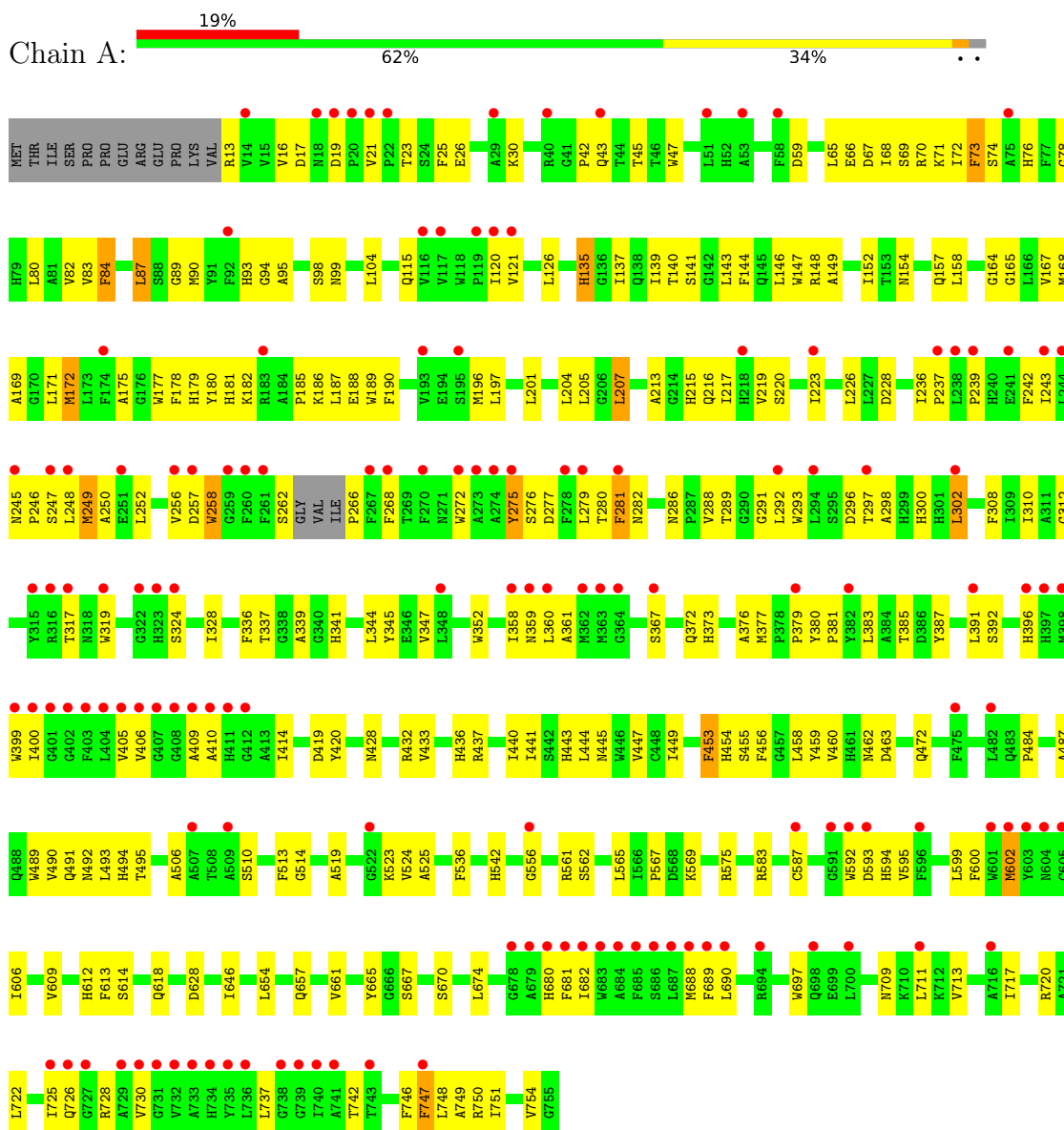
- Molecule 23 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
23	A	30	Total O 30 30	0	0
23	B	41	Total O 41 41	0	0
23	C	11	Total O 11 11	0	0
23	D	14	Total O 14 14	0	0
23	E	1	Total O 1 1	0	0
23	F	2	Total O 2 2	0	0
23	I	3	Total O 3 3	0	0
23	J	1	Total O 1 1	0	0
23	L	15	Total O 15 15	0	0
23	M	1	Total O 1 1	0	0

3 Residue-property plots

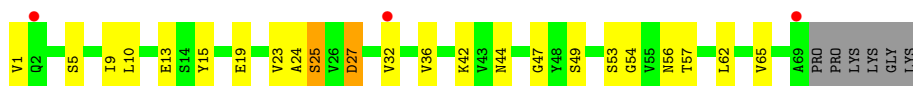
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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

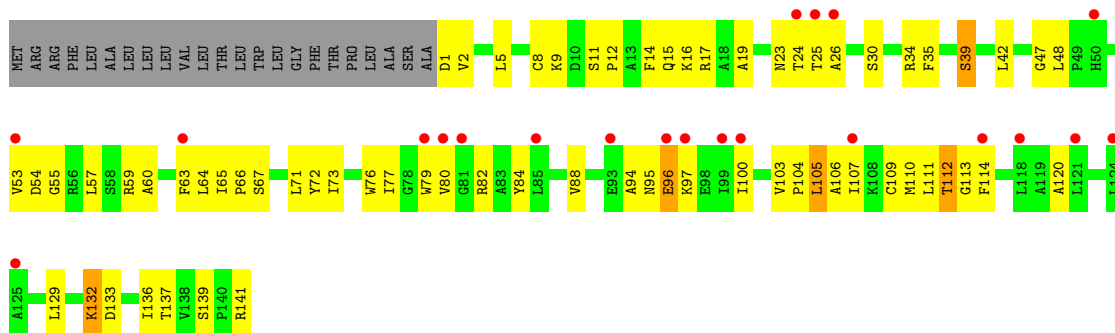
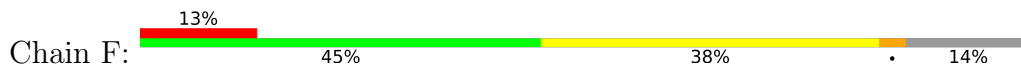


- Molecule 2: Photosystem I P700 chlorophyll a apoprotein A2





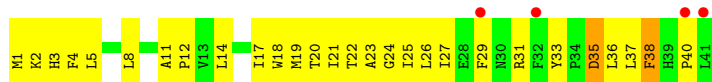
• Molecule 6: Photosystem I reaction center subunit III



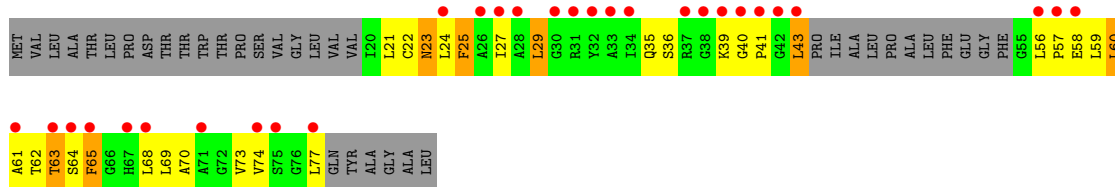
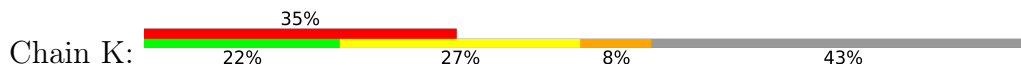
• Molecule 7: Photosystem I reaction center subunit VIII



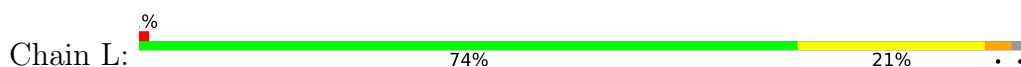
• Molecule 8: Photosystem I reaction center subunit IX



• Molecule 9: Photosystem I reaction center subunit PsaK



• Molecule 10: Photosystem I reaction center subunit XI

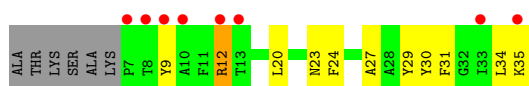




- Molecule 11: Photosystem I reaction center subunit XII



- Molecule 12: Photosystem I 4.8K protein



4 Data and refinement statistics

Property	Value	Source
Space group	P 63	Depositor
Cell constants a, b, c, α , β , γ	285.43Å 285.43Å 166.54Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	56.71 – 2.75 56.71 – 2.75	Depositor EDS
% Data completeness (in resolution range)	95.0 (56.71-2.75) 91.4 (56.71-2.75)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.16 (at 2.77Å)	Xtrriage
Refinement program	PHENIX 1.19.1_4122	Depositor
R, R_{free}	0.264 , 0.279 0.266 , 0.281	Depositor DCC
R_{free} test set	2009 reflections (1.01%)	wwPDB-VP
Wilson B-factor (Å ²)	55.9	Xtrriage
Anisotropy	0.326	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.24 , 61.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	0.035 for h,-h-k,-l	Xtrriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	48896	wwPDB-VP
Average B, all atoms (Å ²)	87.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.64% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: BCR, LMT, CL0, CA, CLA, LHG, PQN, DGD, SF4, LMG

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	0.34	1/5983 (0.0%)	0.58	1/8158 (0.0%)
2	B	0.34	0/6107	0.54	0/8345
3	C	0.34	0/608	0.60	0/824
4	D	0.32	0/1101	0.59	0/1492
5	E	0.31	0/551	0.56	0/750
6	F	0.34	0/1087	0.60	0/1476
7	I	0.34	0/312	0.65	0/425
8	J	0.34	0/350	0.60	0/477
9	K	0.33	0/337	0.74	0/454
10	L	0.37	0/1148	0.59	0/1558
11	M	0.39	0/244	0.63	0/332
12	X	0.38	0/251	0.58	0/342
All	All	0.34	1/18079 (0.0%)	0.58	1/24633 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	258	TRP	CE3-CZ3	-5.22	1.29	1.38

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	249	MET	CA-CB-CG	6.74	124.75	113.30

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	5784	5638	5639	287	0
2	B	5889	5618	5649	207	0
3	C	598	576	580	29	0
4	D	1075	1077	1077	28	0
5	E	539	528	528	17	0
6	F	1065	1076	1077	76	0
7	I	301	306	306	15	0
8	J	338	347	347	50	0
9	K	333	354	354	40	0
10	L	1119	1125	1125	28	0
11	M	241	264	264	13	0
12	X	242	217	249	13	0
13	A	65	72	72	3	0
14	A	2628	2615	2615	126	0
14	B	2219	2160	2160	93	0
14	F	45	33	33	8	0
14	I	65	72	72	8	0
14	J	82	58	58	2	0
14	K	86	62	62	1	0
14	L	195	216	216	4	0
14	M	45	33	33	5	0
14	X	45	33	33	2	0
15	A	33	46	46	8	0
15	B	33	46	46	5	0
16	A	200	280	280	16	0
16	B	240	336	336	12	0
16	F	80	112	112	8	0
16	I	120	168	168	8	0
16	J	120	168	168	13	0
16	K	40	56	56	4	0
16	L	40	56	56	2	0
16	M	40	56	56	3	0
17	A	78	107	105	0	0
17	B	55	86	86	1	0
17	I	40	51	50	0	0
18	A	76	100	98	3	0
18	B	23	20	16	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	M	49	74	74	1	0
19	B	8	0	0	0	0
19	C	16	0	0	0	0
20	B	1	0	0	0	0
20	L	1	0	0	0	0
21	L	35	46	46	0	0
22	L	66	96	96	2	0
23	A	30	0	0	6	0
23	B	41	0	0	5	0
23	C	11	0	0	2	0
23	D	14	0	0	1	0
23	E	1	0	0	0	0
23	F	2	0	0	0	0
23	I	3	0	0	2	0
23	J	1	0	0	0	0
23	L	15	0	0	0	0
23	M	1	0	0	0	0
All	All	24512	24384	24444	908	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 19.

The worst 5 of 908 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)
4:D:32:THR:OG1	4:D:79:ASP:OD2	1.81	0.98
4:D:3:LEU:HD21	4:D:91:THR:HG21	1.47	0.95
2:B:307:LYS:O	2:B:314:VAL:HG23	1.68	0.93
9:K:60:LEU:O	9:K:63:THR:OG1	1.87	0.93
1:A:661:VAL:HG21	1:A:746:PHE:HA	1.51	0.91

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 X-ray entries followed by that with respect to entries of similar resolution.

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	736/755 (98%)	678 (92%)	58 (8%)	0	100	100
2	B	737/740 (100%)	684 (93%)	52 (7%)	1 (0%)	51	75
3	C	78/80 (98%)	73 (94%)	5 (6%)	0	100	100
4	D	136/138 (99%)	123 (90%)	13 (10%)	0	100	100
5	E	67/75 (89%)	55 (82%)	11 (16%)	1 (2%)	10	18
6	F	139/164 (85%)	124 (89%)	15 (11%)	0	100	100
7	I	36/38 (95%)	29 (81%)	7 (19%)	0	100	100
8	J	39/41 (95%)	35 (90%)	4 (10%)	0	100	100
9	K	43/83 (52%)	35 (81%)	8 (19%)	0	100	100
10	L	149/154 (97%)	140 (94%)	9 (6%)	0	100	100
11	M	29/31 (94%)	29 (100%)	0	0	100	100
12	X	27/35 (77%)	26 (96%)	1 (4%)	0	100	100
All	All	2216/2334 (95%)	2031 (92%)	183 (8%)	2 (0%)	51	75

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	E	25	SER
2	B	194	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 X-ray entries followed by that with respect to entries of similar resolution.

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	589/603 (98%)	558 (95%)	31 (5%)	22	38
2	B	597/597 (100%)	568 (95%)	29 (5%)	25	43
3	C	67/67 (100%)	61 (91%)	6 (9%)	9	16
4	D	115/115 (100%)	111 (96%)	4 (4%)	36	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	E	59/64 (92%)	56 (95%)	3 (5%)	24	41
6	F	109/128 (85%)	101 (93%)	8 (7%)	14	25
7	I	32/32 (100%)	31 (97%)	1 (3%)	40	60
8	J	36/36 (100%)	34 (94%)	2 (6%)	21	36
9	K	33/61 (54%)	26 (79%)	7 (21%)	1	1
10	L	117/119 (98%)	109 (93%)	8 (7%)	16	28
11	M	26/26 (100%)	26 (100%)	0	100	100
12	X	23/27 (85%)	20 (87%)	3 (13%)	4	6
All	All	1803/1875 (96%)	1701 (94%)	102 (6%)	20	36

5 of 102 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	621	TYR
5	E	27	ASP
12	X	12	ARG
2	B	650	SER
3	C	65	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 24 such sidechains are listed below:

Mol	Chain	Res	Type
4	D	71	GLN
6	F	90	ASN
5	E	59	ASN
6	F	134	ASN
2	B	121	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 135 ligands modelled in this entry, 2 are monoatomic - leaving 133 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	B	3004	-	65,73,73	1.55	8 (12%)	76,113,113	1.40	10 (13%)
14	CLA	A	816	-	45,53,73	1.79	5 (11%)	52,89,113	1.69	9 (17%)
14	CLA	A	836	-	54,62,73	1.69	5 (9%)	62,99,113	1.44	7 (11%)
16	BCR	J	104	-	41,41,41	1.16	3 (7%)	56,56,56	1.25	7 (12%)
14	CLA	A	817	23	49,57,73	1.76	5 (10%)	55,93,113	1.49	8 (14%)
16	BCR	I	105	-	41,41,41	1.14	3 (7%)	56,56,56	1.46	10 (17%)
14	CLA	I	101	-	65,73,73	1.54	6 (9%)	76,113,113	1.48	8 (10%)
14	CLA	A	808	-	51,59,73	1.75	5 (9%)	59,96,113	1.47	8 (13%)
14	CLA	A	845	18	52,60,73	1.67	5 (9%)	60,97,113	1.59	9 (15%)
14	CLA	B	3018	-	59,67,73	1.58	5 (8%)	68,105,113	1.43	9 (13%)
16	BCR	F	203	-	41,41,41	1.12	3 (7%)	56,56,56	1.23	5 (8%)
18	LHG	M	101	-	48,48,48	0.62	1 (2%)	51,54,54	1.17	3 (5%)
16	BCR	I	103	-	41,41,41	1.19	3 (7%)	56,56,56	1.38	7 (12%)
14	CLA	B	3031	-	45,53,73	1.87	5 (11%)	52,89,113	1.64	8 (15%)
14	CLA	A	807	-	65,73,73	1.56	6 (9%)	76,113,113	1.26	7 (9%)
14	CLA	B	3014	-	65,73,73	1.52	5 (7%)	76,113,113	1.34	7 (9%)
14	CLA	X	1701	12	45,53,73	1.85	6 (13%)	52,89,113	1.62	8 (15%)
14	CLA	B	3003	-	65,73,73	1.53	6 (9%)	76,113,113	1.43	7 (9%)
16	BCR	J	103	-	41,41,41	1.15	3 (7%)	56,56,56	1.20	6 (10%)
16	BCR	A	847	-	41,41,41	1.18	3 (7%)	56,56,56	1.22	6 (10%)
16	BCR	K	102	-	41,41,41	1.09	3 (7%)	56,56,56	1.38	9 (16%)
14	CLA	A	831	-	65,73,73	1.50	5 (7%)	76,113,113	1.34	6 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
18	LHG	A	853	-	48,48,48	0.61	1 (2%)	51,54,54	1.22	4 (7%)
14	CLA	A	813	-	54,62,73	1.66	6 (11%)	62,99,113	1.42	7 (11%)
14	CLA	B	3009	-	65,73,73	1.52	7 (10%)	76,113,113	1.36	5 (6%)
17	LMG	B	3048	-	55,55,55	0.73	0	63,63,63	1.33	6 (9%)
16	BCR	A	850	-	41,41,41	1.09	3 (7%)	56,56,56	1.25	7 (12%)
18	LHG	A	854	14	26,26,48	0.99	1 (3%)	29,32,54	1.32	3 (10%)
14	CLA	B	3016	-	45,53,73	1.79	5 (11%)	52,89,113	1.62	8 (15%)
16	BCR	A	848	-	41,41,41	1.15	3 (7%)	56,56,56	1.29	7 (12%)
14	CLA	L	203	10	65,73,73	1.47	7 (10%)	76,113,113	1.56	11 (14%)
14	CLA	A	812	14	65,73,73	1.52	6 (9%)	76,113,113	1.35	10 (13%)
14	CLA	A	815	-	45,53,73	1.82	5 (11%)	52,89,113	1.51	8 (15%)
14	CLA	B	3028	-	65,73,73	1.49	6 (9%)	76,113,113	1.29	7 (9%)
14	CLA	B	3039	-	65,73,73	1.54	5 (7%)	76,113,113	1.37	8 (10%)
14	CLA	B	3025	2	54,62,73	1.68	5 (9%)	62,99,113	1.47	9 (14%)
16	BCR	F	201	-	41,41,41	1.17	3 (7%)	56,56,56	1.19	5 (8%)
13	CL0	A	801	-	65,73,73	1.50	6 (9%)	76,113,113	1.38	10 (13%)
14	CLA	A	802	23	65,73,73	1.51	7 (10%)	76,113,113	1.40	9 (11%)
14	CLA	A	833	-	65,73,73	1.50	6 (9%)	76,113,113	1.34	6 (7%)
14	CLA	B	3005	-	54,62,73	1.64	6 (11%)	62,99,113	1.53	7 (11%)
14	CLA	K	101	-	42,49,73	1.82	6 (14%)	48,83,113	1.54	7 (14%)
14	CLA	B	3037	23	45,53,73	1.90	6 (13%)	52,89,113	1.46	8 (15%)
14	CLA	B	3017	-	55,63,73	1.66	5 (9%)	64,101,113	1.40	6 (9%)
14	CLA	A	856	23	65,73,73	1.49	6 (9%)	76,113,113	1.42	8 (10%)
14	CLA	A	803	-	65,73,73	1.55	6 (9%)	76,113,113	1.36	9 (11%)
14	CLA	B	3038	-	60,68,73	1.60	5 (8%)	70,107,113	1.35	7 (10%)
14	CLA	B	3030	-	65,73,73	1.56	5 (7%)	76,113,113	1.37	9 (11%)
14	CLA	B	3040	-	47,55,73	1.82	5 (10%)	54,91,113	1.51	7 (12%)
14	CLA	A	839	-	65,73,73	1.48	7 (10%)	76,113,113	1.51	8 (10%)
14	CLA	A	821	-	42,50,73	1.83	5 (11%)	47,84,113	1.67	9 (19%)
14	CLA	A	844	23	65,73,73	1.52	6 (9%)	76,113,113	1.44	8 (10%)
14	CLA	B	3006	-	65,73,73	1.53	5 (7%)	76,113,113	1.37	7 (9%)
19	SF4	C	102	3	0,12,12	-	-	-	-	-
14	CLA	B	3023	23	55,63,73	1.62	6 (10%)	64,101,113	1.43	7 (10%)
14	CLA	B	3019	-	60,68,73	1.59	5 (8%)	70,107,113	1.36	8 (11%)
14	CLA	B	3010	2	65,73,73	1.53	8 (12%)	76,113,113	1.48	11 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
16	BCR	B	3045	-	41,41,41	1.12	3 (7%)	56,56,56	1.22	7 (12%)
16	BCR	I	102	-	41,41,41	1.07	3 (7%)	56,56,56	1.36	8 (14%)
14	CLA	A	819	-	54,62,73	1.68	8 (14%)	62,99,113	1.48	9 (14%)
14	CLA	B	3007	-	65,73,73	1.53	6 (9%)	76,113,113	1.36	6 (7%)
14	CLA	B	3035	-	45,53,73	1.81	6 (13%)	52,89,113	1.58	7 (13%)
14	CLA	L	204	-	65,73,73	1.48	5 (7%)	76,113,113	1.42	7 (9%)
14	CLA	A	805	14	59,67,73	1.63	6 (10%)	68,105,113	1.33	7 (10%)
14	CLA	A	809	1	65,73,73	1.50	5 (7%)	76,113,113	1.31	8 (10%)
14	CLA	A	835	-	65,73,73	1.46	5 (7%)	76,113,113	1.33	10 (13%)
17	LMG	I	104	-	40,40,55	1.15	4 (10%)	48,48,63	1.15	3 (6%)
14	CLA	A	825	-	59,67,73	1.60	5 (8%)	68,105,113	1.34	8 (11%)
14	CLA	B	3034	-	58,66,73	1.57	5 (8%)	67,104,113	1.48	11 (16%)
14	CLA	B	3029	-	65,73,73	1.52	7 (10%)	76,113,113	1.39	9 (11%)
14	CLA	B	3015	-	65,73,73	1.48	5 (7%)	76,113,113	1.31	7 (9%)
14	CLA	A	822	23	65,73,73	1.48	5 (7%)	76,113,113	1.32	7 (9%)
14	CLA	B	3008	-	65,73,73	1.47	6 (9%)	76,113,113	1.46	8 (10%)
16	BCR	B	3047	-	41,41,41	1.12	3 (7%)	56,56,56	1.26	7 (12%)
14	CLA	F	202	23	45,53,73	1.89	5 (11%)	52,89,113	1.38	6 (11%)
16	BCR	A	851	-	41,41,41	1.14	3 (7%)	56,56,56	1.37	7 (12%)
16	BCR	B	3043	-	41,41,41	1.10	3 (7%)	56,56,56	1.20	6 (10%)
21	LMT	L	201	-	36,36,36	1.11	5 (13%)	47,47,47	1.17	3 (6%)
14	CLA	A	806	-	65,73,73	1.52	5 (7%)	76,113,113	1.38	9 (11%)
16	BCR	A	849	-	41,41,41	1.09	3 (7%)	56,56,56	1.21	5 (8%)
17	LMG	A	852	-	48,48,55	0.85	1 (2%)	56,56,63	1.26	5 (8%)
14	CLA	L	205	23	65,73,73	1.49	5 (7%)	76,113,113	1.49	9 (11%)
14	CLA	B	3032	-	49,57,73	1.71	5 (10%)	55,93,113	1.57	9 (16%)
14	CLA	J	101	8	45,53,73	1.84	5 (11%)	52,89,113	1.47	6 (11%)
14	CLA	M	102	23	45,53,73	1.84	8 (17%)	52,89,113	1.50	10 (19%)
16	BCR	M	103	-	41,41,41	1.14	3 (7%)	56,56,56	1.11	3 (5%)
16	BCR	B	3046	-	41,41,41	1.13	3 (7%)	56,56,56	1.29	8 (14%)
14	CLA	A	824	-	51,59,73	1.72	5 (9%)	59,96,113	1.45	8 (13%)
14	CLA	A	830	-	65,73,73	1.52	5 (7%)	76,113,113	1.29	7 (9%)
14	CLA	B	3013	-	45,53,73	1.87	5 (11%)	52,89,113	1.54	8 (15%)
16	BCR	B	3044	-	41,41,41	1.13	3 (7%)	56,56,56	1.20	6 (10%)
19	SF4	B	3001	2,1	0,12,12	-	-	-	-	-

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	A	814	-	60,68,73	1.57	6 (10%)	70,107,113	1.37	9 (12%)
14	CLA	B	3026	23	46,54,73	1.81	5 (10%)	53,90,113	1.60	8 (15%)
14	CLA	A	826	23	65,73,73	1.51	5 (7%)	76,113,113	1.33	9 (11%)
14	CLA	B	3020	23	65,73,73	1.49	7 (10%)	76,113,113	1.39	8 (10%)
16	BCR	B	3050	-	41,41,41	1.19	3 (7%)	56,56,56	1.24	6 (10%)
14	CLA	A	834	-	65,73,73	1.57	6 (9%)	76,113,113	1.32	7 (9%)
14	CLA	A	810	1	65,73,73	1.50	6 (9%)	76,113,113	1.40	9 (11%)
14	CLA	B	3012	-	45,53,73	1.83	6 (13%)	52,89,113	1.68	8 (15%)
14	CLA	B	3027	-	65,73,73	1.54	5 (7%)	76,113,113	1.29	8 (10%)
14	CLA	A	820	-	65,73,73	1.50	6 (9%)	76,113,113	1.54	11 (14%)
14	CLA	A	804	-	65,73,73	1.54	6 (9%)	76,113,113	1.24	7 (9%)
17	LMG	A	855	-	30,30,55	1.16	2 (6%)	37,37,63	1.26	4 (10%)
14	CLA	A	818	-	54,62,73	1.67	5 (9%)	62,99,113	1.41	7 (11%)
14	CLA	A	837	1	45,53,73	1.86	5 (11%)	52,89,113	1.50	6 (11%)
14	CLA	A	838	-	51,59,73	1.72	6 (11%)	59,96,113	1.38	7 (11%)
14	CLA	K	103	-	45,53,73	1.81	6 (13%)	52,89,113	1.51	8 (15%)
16	BCR	J	105	-	41,41,41	1.09	3 (7%)	56,56,56	1.31	9 (16%)
14	CLA	B	3022	-	45,53,73	1.82	5 (11%)	52,89,113	1.53	7 (13%)
18	LHG	B	3049	-	22,22,48	1.16	2 (9%)	25,28,54	1.20	1 (4%)
22	DGD	L	206	-	67,67,67	0.99	5 (7%)	81,81,81	1.29	8 (9%)
16	BCR	L	207	-	41,41,41	1.14	3 (7%)	56,56,56	1.25	6 (10%)
14	CLA	B	3036	23	45,53,73	1.85	5 (11%)	52,89,113	1.53	6 (11%)
14	CLA	B	3021	-	47,55,73	1.79	6 (12%)	54,91,113	1.60	9 (16%)
14	CLA	A	823	-	49,57,73	1.75	5 (10%)	55,93,113	1.59	9 (16%)
14	CLA	A	843	-	65,73,73	1.52	5 (7%)	76,113,113	1.32	7 (9%)
14	CLA	B	3041	-	65,73,73	1.55	6 (9%)	76,113,113	1.42	7 (9%)
15	PQN	A	846	-	34,34,34	2.10	7 (20%)	42,45,45	1.28	6 (14%)
14	CLA	A	841	-	65,73,73	1.49	5 (7%)	76,113,113	1.44	10 (13%)
19	SF4	C	101	3	0,12,12	-	-	-	-	-
14	CLA	A	829	-	65,73,73	1.51	5 (7%)	76,113,113	1.31	7 (9%)
14	CLA	A	832	-	50,58,73	1.72	6 (12%)	58,95,113	1.53	9 (15%)
14	CLA	A	827	23	65,73,73	1.50	6 (9%)	76,113,113	1.31	10 (13%)
14	CLA	A	828	-	65,73,73	1.56	5 (7%)	76,113,113	1.30	8 (10%)
15	PQN	B	3042	-	34,34,34	1.98	7 (20%)	42,45,45	1.20	6 (14%)
14	CLA	A	840	-	47,55,73	1.84	5 (10%)	54,91,113	1.52	9 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
14	CLA	B	3011	2	65,73,73	1.50	6 (9%)	76,113,113	1.38	10 (13%)
14	CLA	B	3033	-	65,73,73	1.50	5 (7%)	76,113,113	1.37	8 (10%)
14	CLA	B	3024	-	45,53,73	1.82	8 (17%)	52,89,113	1.53	9 (17%)
14	CLA	A	811	-	45,53,73	1.79	6 (13%)	52,89,113	1.53	8 (15%)
14	CLA	A	842	23	51,59,73	1.70	6 (11%)	59,96,113	1.54	7 (11%)
14	CLA	J	102	-	38,45,73	1.96	6 (15%)	43,78,113	1.51	7 (16%)

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
14	CLA	B	3004	-	1/1/20/20	8/37/115/115	-
14	CLA	A	816	-	1/1/15/20	5/13/91/115	-
14	CLA	A	836	-	1/1/17/20	7/24/102/115	-
16	BCR	J	104	-	-	15/29/63/63	0/2/2/2
14	CLA	A	817	23	1/1/16/20	7/18/96/115	-
16	BCR	I	105	-	-	18/29/63/63	0/2/2/2
14	CLA	I	101	-	1/1/20/20	10/37/115/115	-
14	CLA	A	808	-	1/1/17/20	10/21/99/115	-
14	CLA	A	845	18	1/1/17/20	8/22/100/115	-
14	CLA	B	3018	-	1/1/18/20	12/30/108/115	-
16	BCR	F	203	-	-	12/29/63/63	0/2/2/2
18	LHG	M	101	-	-	26/53/53/53	-
16	BCR	I	103	-	-	6/29/63/63	0/2/2/2
14	CLA	B	3031	-	1/1/15/20	7/13/91/115	-
14	CLA	A	807	-	1/1/20/20	15/37/115/115	-
14	CLA	B	3014	-	1/1/20/20	14/37/115/115	-
14	CLA	X	1701	12	1/1/15/20	4/13/91/115	-
14	CLA	B	3003	-	1/1/20/20	16/37/115/115	-
16	BCR	J	103	-	-	12/29/63/63	0/2/2/2
16	BCR	A	847	-	-	14/29/63/63	0/2/2/2
16	BCR	K	102	-	-	9/29/63/63	0/2/2/2
14	CLA	A	831	-	1/1/20/20	9/37/115/115	-
18	LHG	A	853	-	-	24/53/53/53	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	CLA	A	813	-	1/1/17/20	5/24/102/115	-
14	CLA	B	3009	-	1/1/20/20	9/37/115/115	-
17	LMG	B	3048	-	-	24/50/70/70	0/1/1/1
16	BCR	A	850	-	-	9/29/63/63	0/2/2/2
18	LHG	A	854	14	-	12/31/31/53	-
14	CLA	B	3016	-	1/1/15/20	3/13/91/115	-
16	BCR	A	848	-	-	8/29/63/63	0/2/2/2
14	CLA	L	203	10	1/1/20/20	11/37/115/115	-
14	CLA	A	812	14	1/1/20/20	11/37/115/115	-
14	CLA	A	815	-	1/1/15/20	3/13/91/115	-
14	CLA	B	3028	-	1/1/20/20	13/37/115/115	-
14	CLA	B	3039	-	1/1/20/20	9/37/115/115	-
14	CLA	B	3025	2	-	9/24/102/115	-
16	BCR	F	201	-	-	9/29/63/63	0/2/2/2
13	CL0	A	801	-	3/3/25/25	10/37/135/135	-
14	CLA	A	802	23	1/1/20/20	10/37/115/115	-
14	CLA	A	833	-	1/1/20/20	8/37/115/115	-
14	CLA	B	3005	-	1/1/17/20	5/24/102/115	-
14	CLA	K	101	-	1/1/13/20	1/7/81/115	-
14	CLA	B	3037	23	1/1/15/20	4/13/91/115	-
14	CLA	B	3017	-	1/1/18/20	5/25/103/115	-
14	CLA	A	856	23	1/1/20/20	16/37/115/115	-
14	CLA	A	803	-	1/1/20/20	6/37/115/115	-
14	CLA	B	3038	-	1/1/19/20	10/31/109/115	-
14	CLA	B	3030	-	1/1/20/20	13/37/115/115	-
14	CLA	B	3040	-	-	5/16/94/115	-
14	CLA	A	839	-	1/1/20/20	11/37/115/115	-
14	CLA	A	821	-	1/1/14/20	2/8/86/115	-
14	CLA	A	844	23	1/1/20/20	12/37/115/115	-
14	CLA	B	3006	-	1/1/20/20	14/37/115/115	-
19	SF4	C	102	3	-	-	0/6/5/5
14	CLA	B	3023	23	1/1/18/20	6/25/103/115	-
14	CLA	B	3019	-	1/1/19/20	10/31/109/115	-
14	CLA	B	3010	2	1/1/20/20	14/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	BCR	B	3045	-	-	9/29/63/63	0/2/2/2
16	BCR	I	102	-	-	5/29/63/63	0/2/2/2
14	CLA	A	819	-	1/1/17/20	8/24/102/115	-
14	CLA	B	3007	-	1/1/20/20	10/37/115/115	-
14	CLA	B	3035	-	1/1/15/20	5/13/91/115	-
14	CLA	L	204	-	1/1/20/20	5/37/115/115	-
14	CLA	A	805	14	1/1/18/20	8/30/108/115	-
14	CLA	A	809	1	1/1/20/20	17/37/115/115	-
14	CLA	A	835	-	1/1/20/20	9/37/115/115	-
17	LMG	I	104	-	-	18/35/55/70	0/1/1/1
14	CLA	A	825	-	1/1/18/20	13/30/108/115	-
14	CLA	B	3034	-	1/1/18/20	10/29/107/115	-
14	CLA	B	3029	-	1/1/20/20	17/37/115/115	-
14	CLA	B	3015	-	1/1/20/20	14/37/115/115	-
14	CLA	A	822	23	1/1/20/20	15/37/115/115	-
14	CLA	B	3008	-	1/1/20/20	10/37/115/115	-
16	BCR	B	3047	-	-	2/29/63/63	0/2/2/2
14	CLA	F	202	23	1/1/15/20	4/13/91/115	-
16	BCR	A	851	-	-	17/29/63/63	0/2/2/2
16	BCR	B	3043	-	-	9/29/63/63	0/2/2/2
21	LMT	L	201	-	-	11/21/61/61	0/2/2/2
14	CLA	A	806	-	1/1/20/20	20/37/115/115	-
16	BCR	A	849	-	-	7/29/63/63	0/2/2/2
17	LMG	A	852	-	-	24/43/63/70	0/1/1/1
14	CLA	L	205	23	1/1/20/20	8/37/115/115	-
14	CLA	B	3032	-	1/1/16/20	7/18/96/115	-
14	CLA	J	101	8	1/1/15/20	7/13/91/115	-
14	CLA	M	102	23	1/1/15/20	6/13/91/115	-
16	BCR	M	103	-	-	7/29/63/63	0/2/2/2
16	BCR	B	3046	-	-	14/29/63/63	0/2/2/2
14	CLA	A	824	-	1/1/17/20	4/21/99/115	-
14	CLA	A	830	-	1/1/20/20	15/37/115/115	-
14	CLA	B	3013	-	1/1/15/20	5/13/91/115	-
16	BCR	B	3044	-	-	11/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
19	SF4	B	3001	2,1	-	-	0/6/5/5
14	CLA	A	814	-	1/1/19/20	5/31/109/115	-
14	CLA	B	3026	23	1/1/15/20	2/15/93/115	-
14	CLA	A	826	23	1/1/20/20	11/37/115/115	-
14	CLA	B	3020	23	1/1/20/20	12/37/115/115	-
16	BCR	B	3050	-	-	11/29/63/63	0/2/2/2
14	CLA	A	834	-	1/1/20/20	7/37/115/115	-
14	CLA	A	810	1	1/1/20/20	11/37/115/115	-
14	CLA	B	3012	-	1/1/15/20	4/13/91/115	-
14	CLA	B	3027	-	1/1/20/20	12/37/115/115	-
14	CLA	A	820	-	1/1/20/20	19/37/115/115	-
14	CLA	A	804	-	1/1/20/20	11/37/115/115	-
17	LMG	A	855	-	-	12/23/43/70	0/1/1/1
14	CLA	A	818	-	1/1/17/20	4/24/102/115	-
14	CLA	A	837	1	1/1/15/20	10/13/91/115	-
14	CLA	A	838	-	1/1/17/20	6/21/99/115	-
14	CLA	K	103	-	1/1/15/20	6/13/91/115	-
16	BCR	J	105	-	-	11/29/63/63	0/2/2/2
14	CLA	B	3022	-	1/1/15/20	6/13/91/115	-
18	LHG	B	3049	-	-	11/26/26/53	-
22	DGD	L	206	-	-	19/55/95/95	0/2/2/2
16	BCR	L	207	-	-	9/29/63/63	0/2/2/2
14	CLA	B	3036	23	1/1/15/20	6/13/91/115	-
14	CLA	B	3021	-	1/1/15/20	12/16/94/115	-
14	CLA	A	823	-	1/1/16/20	12/18/96/115	-
14	CLA	A	843	-	1/1/20/20	7/37/115/115	-
14	CLA	B	3041	-	1/1/20/20	7/37/115/115	-
15	PQN	A	846	-	-	11/23/43/43	0/2/2/2
14	CLA	A	841	-	1/1/20/20	7/37/115/115	-
19	SF4	C	101	3	-	-	0/6/5/5
14	CLA	A	829	-	1/1/20/20	11/37/115/115	-
14	CLA	A	832	-	1/1/17/20	7/19/97/115	-
14	CLA	A	827	23	1/1/20/20	10/37/115/115	-
14	CLA	A	828	-	1/1/20/20	8/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
15	PQN	B	3042	-	-	9/23/43/43	0/2/2/2
14	CLA	A	840	-	1/1/15/20	5/16/94/115	-
14	CLA	B	3011	2	1/1/20/20	16/37/115/115	-
14	CLA	B	3033	-	1/1/20/20	18/37/115/115	-
14	CLA	B	3024	-	1/1/15/20	6/13/91/115	-
14	CLA	A	811	-	1/1/15/20	8/13/91/115	-
14	CLA	A	842	23	1/1/17/20	6/21/99/115	-
14	CLA	J	102	-	1/1/12/20	0/2/76/115	-

The worst 5 of 645 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	A	834	CLA	C4B-NB	8.40	1.42	1.35
14	B	3037	CLA	C4B-NB	8.33	1.42	1.35
14	A	805	CLA	C4B-NB	8.28	1.42	1.35
14	B	3030	CLA	C4B-NB	8.28	1.42	1.35
14	B	3013	CLA	C4B-NB	8.21	1.42	1.35

The worst 5 of 969 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	B	3033	CLA	C4A-NA-C1A	7.73	110.18	106.71
14	A	842	CLA	C4A-NA-C1A	7.71	110.17	106.71
14	I	101	CLA	C4A-NA-C1A	7.61	110.13	106.71
14	A	816	CLA	C4A-NA-C1A	7.55	110.10	106.71
14	B	3005	CLA	C4A-NA-C1A	7.50	110.08	106.71

5 of 96 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
13	A	801	CL0	NC
13	A	801	CL0	ND
13	A	801	CL0	NA
14	A	802	CLA	ND
14	A	803	CLA	ND

5 of 1281 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
13	A	801	CL0	C1A-C2A-CAA-CBA

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Mol	Chain	Res	Type	Atoms
13	A	801	CL0	C3A-C2A-CAA-CBA
14	A	806	CLA	C1A-C2A-CAA-CBA
14	A	806	CLA	CAD-CBD-CGD-O1D
14	A	806	CLA	CAD-CBD-CGD-O2D

There are no ring outliers.

114 monomers are involved in 316 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
14	B	3004	CLA	5	0
14	A	836	CLA	1	0
16	J	104	BCR	3	0
14	A	817	CLA	3	0
16	I	105	BCR	3	0
14	I	101	CLA	8	0
14	A	808	CLA	2	0
14	A	845	CLA	2	0
14	B	3018	CLA	5	0
16	F	203	BCR	3	0
18	M	101	LHG	1	0
16	I	103	BCR	1	0
14	B	3031	CLA	4	0
14	B	3014	CLA	6	0
14	X	1701	CLA	2	0
14	B	3003	CLA	3	0
16	J	103	BCR	4	0
16	A	847	BCR	4	0
16	K	102	BCR	4	0
14	A	831	CLA	3	0
18	A	853	LHG	2	0
14	A	813	CLA	4	0
14	B	3009	CLA	2	0
17	B	3048	LMG	1	0
16	A	850	BCR	5	0
18	A	854	LHG	1	0
14	L	203	CLA	3	0
14	A	812	CLA	2	0
14	A	815	CLA	1	0
14	B	3028	CLA	2	0
14	B	3039	CLA	3	0
14	B	3025	CLA	6	0
16	F	201	BCR	5	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
13	A	801	CL0	3	0
14	A	802	CLA	3	0
14	A	833	CLA	4	0
14	B	3005	CLA	2	0
14	K	101	CLA	1	0
14	B	3037	CLA	2	0
14	B	3017	CLA	5	0
14	A	856	CLA	4	0
14	A	803	CLA	5	0
14	B	3038	CLA	5	0
14	B	3030	CLA	4	0
14	B	3040	CLA	3	0
14	A	839	CLA	2	0
14	A	821	CLA	4	0
14	A	844	CLA	3	0
14	B	3006	CLA	1	0
14	B	3023	CLA	1	0
14	B	3019	CLA	2	0
14	B	3010	CLA	7	0
16	B	3045	BCR	2	0
16	I	102	BCR	4	0
14	A	819	CLA	5	0
14	B	3007	CLA	1	0
14	B	3035	CLA	1	0
14	L	204	CLA	1	0
14	A	805	CLA	1	0
14	A	809	CLA	5	0
14	A	835	CLA	2	0
14	A	825	CLA	3	0
14	B	3034	CLA	7	0
14	B	3015	CLA	1	0
14	A	822	CLA	4	0
14	B	3008	CLA	2	0
14	F	202	CLA	8	0
16	A	851	BCR	6	0
14	A	806	CLA	5	0
16	A	849	BCR	2	0
14	B	3032	CLA	2	0
14	J	101	CLA	1	0
14	M	102	CLA	5	0
16	M	103	BCR	3	0
16	B	3046	BCR	5	0

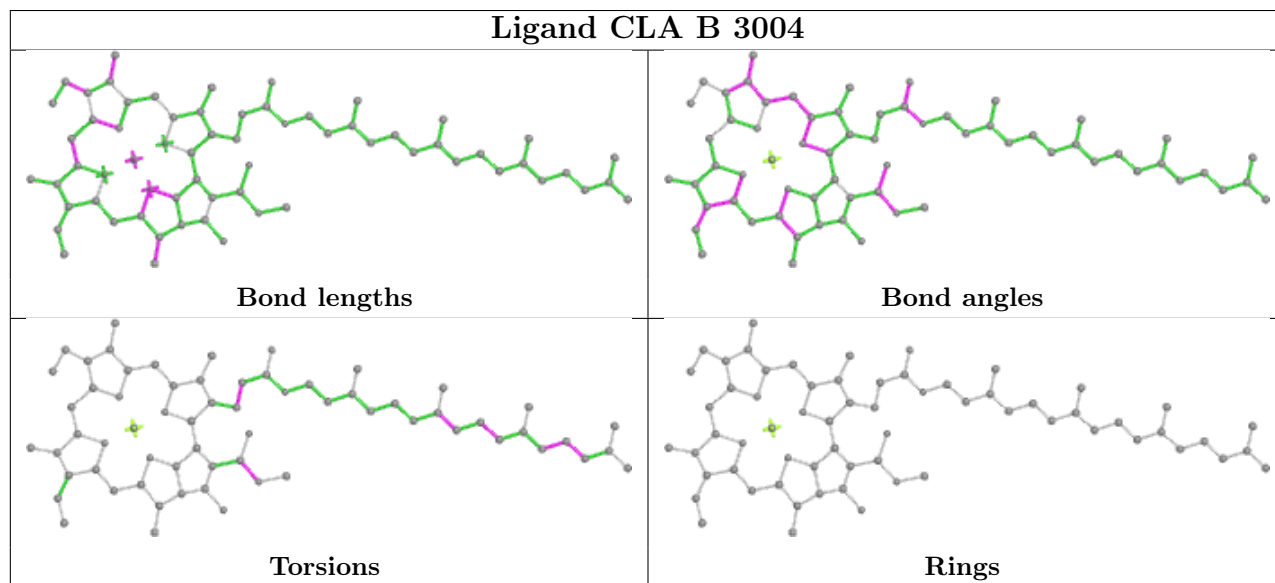
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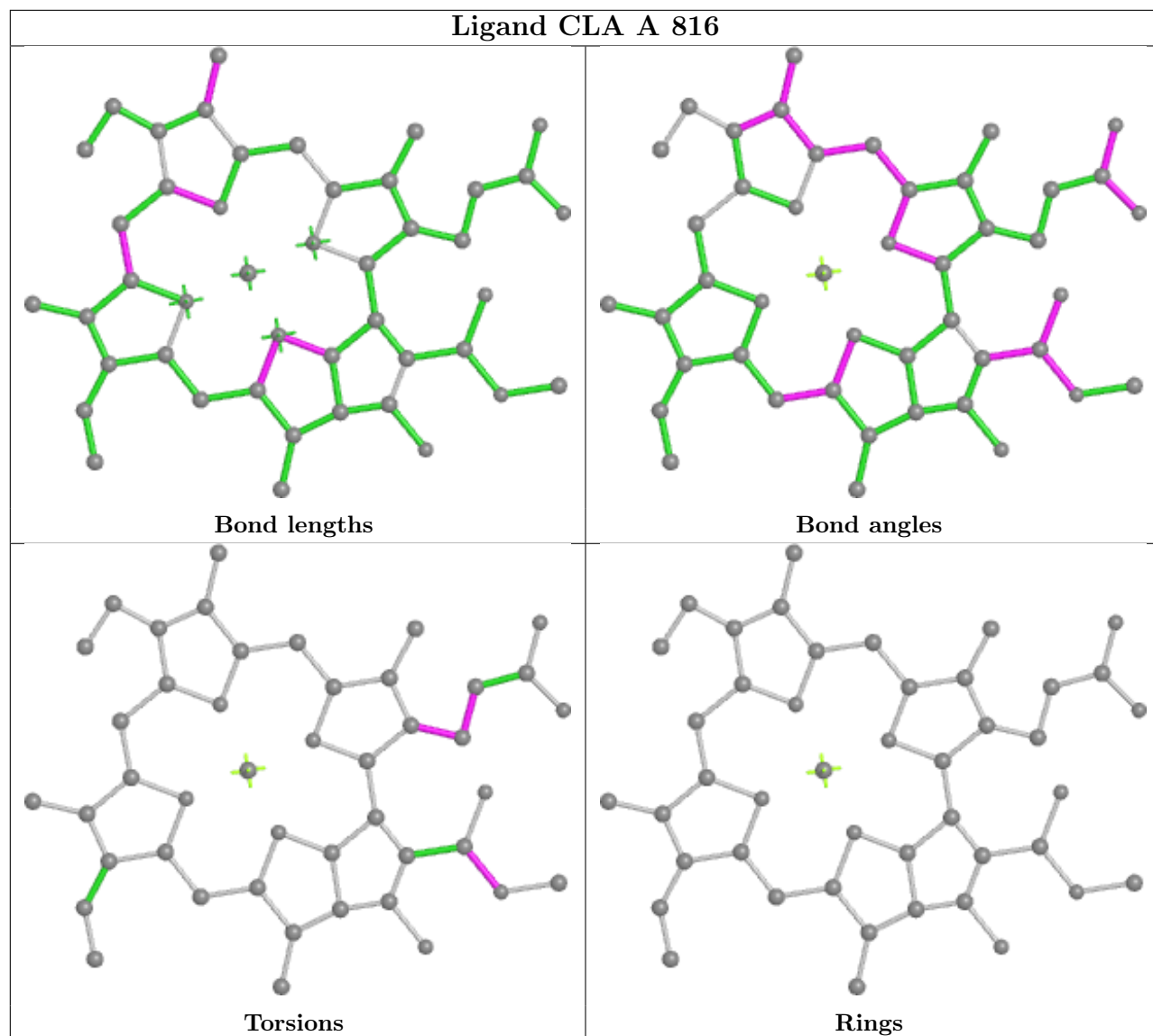
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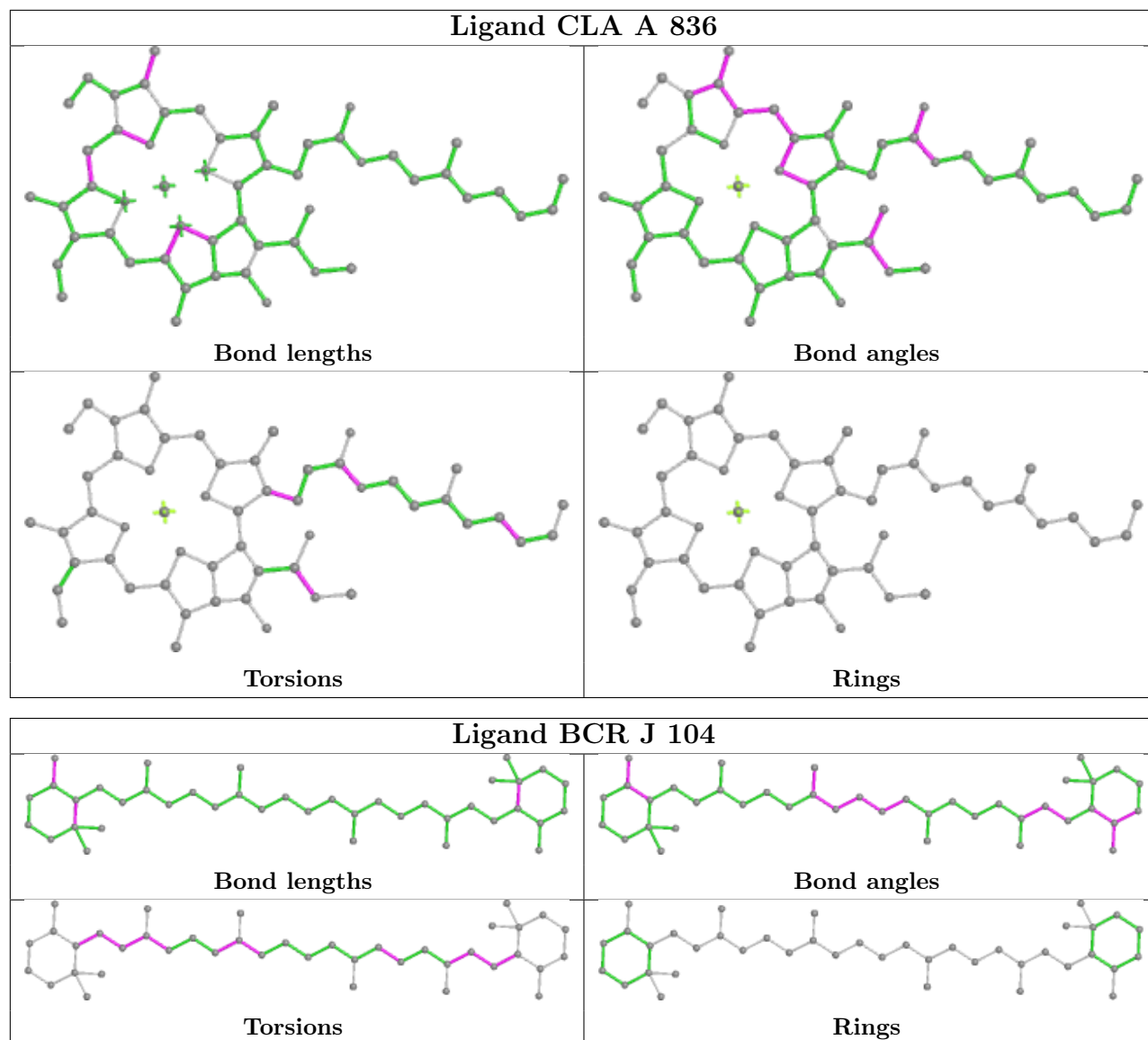
Mol	Chain	Res	Type	Clashes	Symm-Clashes
14	A	824	CLA	1	0
14	A	830	CLA	3	0
14	B	3013	CLA	2	0
16	B	3044	BCR	3	0
14	A	814	CLA	8	0
14	B	3026	CLA	4	0
14	A	826	CLA	7	0
16	B	3050	BCR	2	0
14	A	834	CLA	2	0
14	A	810	CLA	5	0
14	B	3012	CLA	1	0
14	B	3027	CLA	1	0
14	A	820	CLA	6	0
14	A	804	CLA	7	0
14	A	818	CLA	2	0
14	A	838	CLA	3	0
16	J	105	BCR	6	0
14	B	3022	CLA	1	0
18	B	3049	LHG	2	0
22	L	206	DGD	2	0
16	L	207	BCR	2	0
14	B	3036	CLA	1	0
14	B	3021	CLA	1	0
14	A	823	CLA	1	0
14	A	843	CLA	3	0
14	B	3041	CLA	1	0
15	A	846	PQN	8	0
14	A	841	CLA	4	0
14	A	829	CLA	8	0
14	A	832	CLA	5	0
14	A	827	CLA	2	0
14	A	828	CLA	3	0
15	B	3042	PQN	5	0
14	A	840	CLA	3	0
14	B	3011	CLA	4	0
14	B	3033	CLA	3	0
14	B	3024	CLA	4	0
14	A	811	CLA	8	0
14	J	102	CLA	1	0

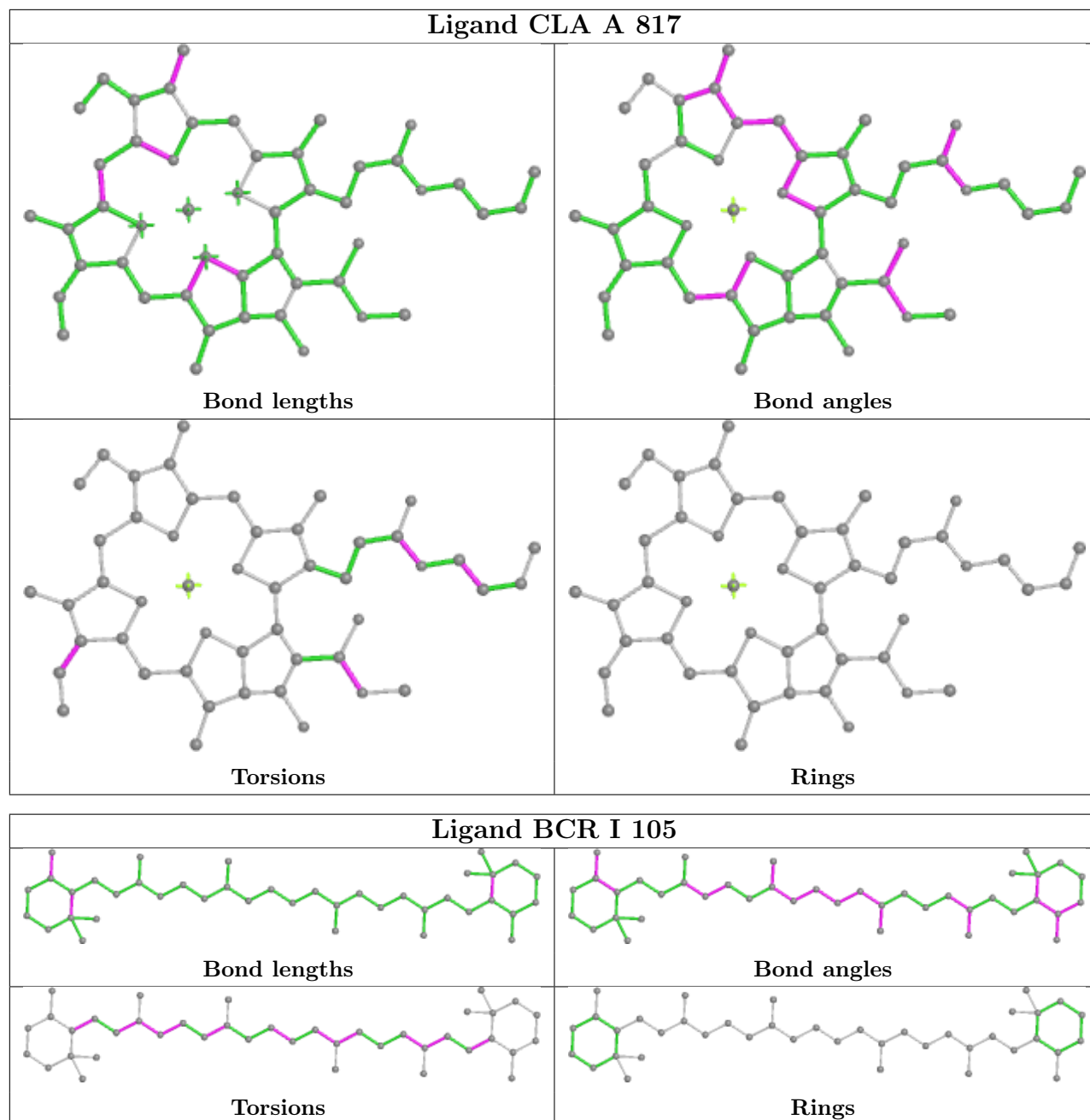
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will

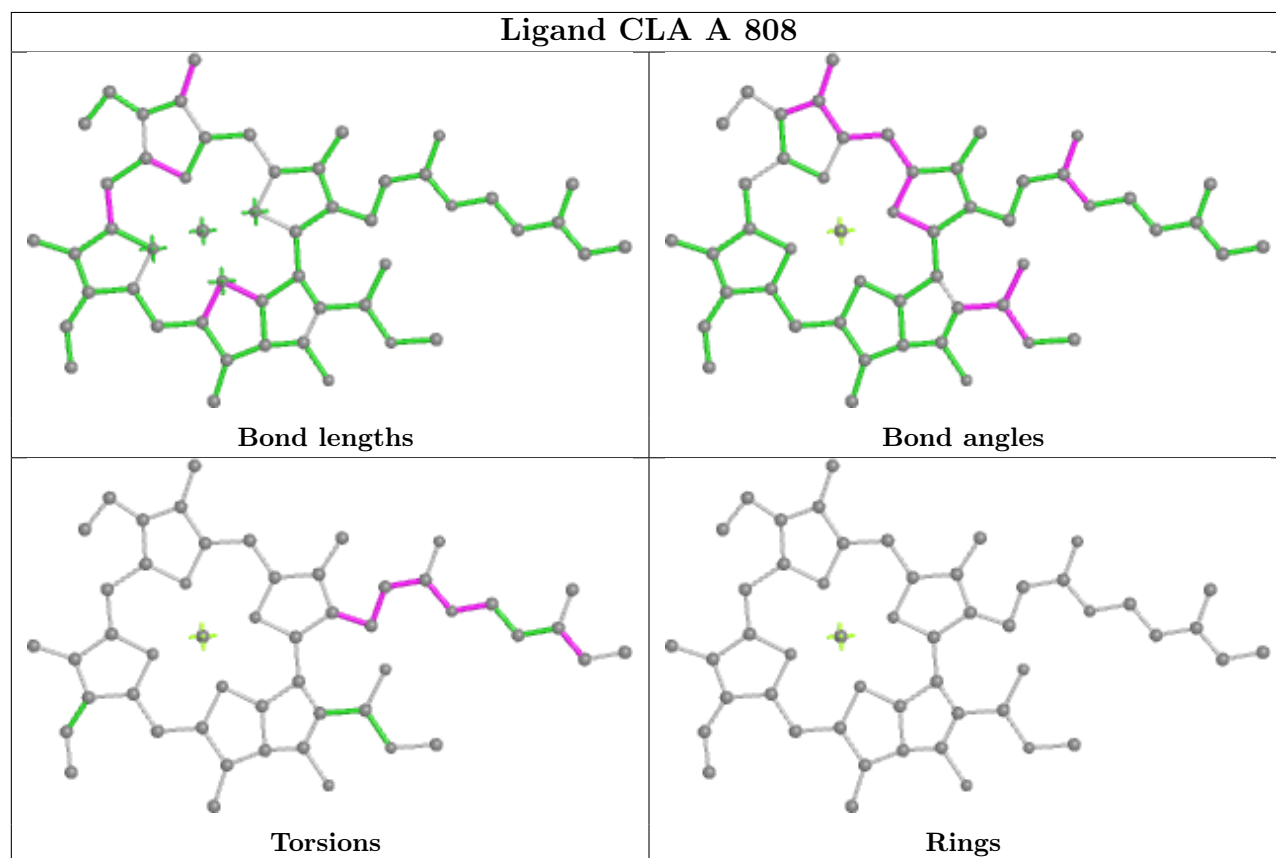
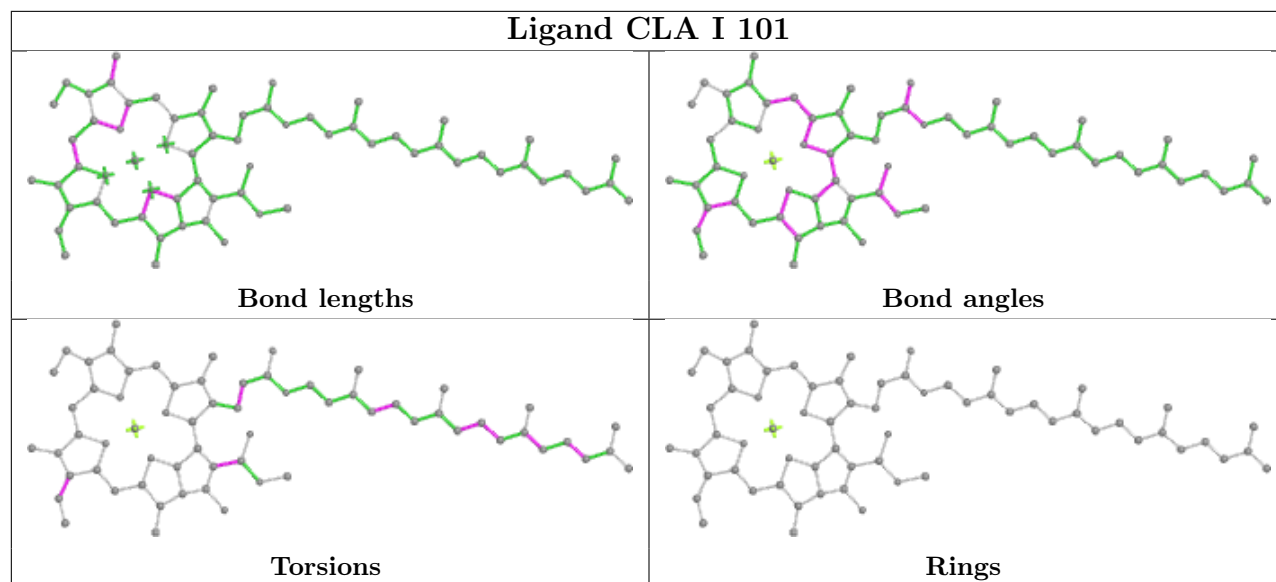
also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

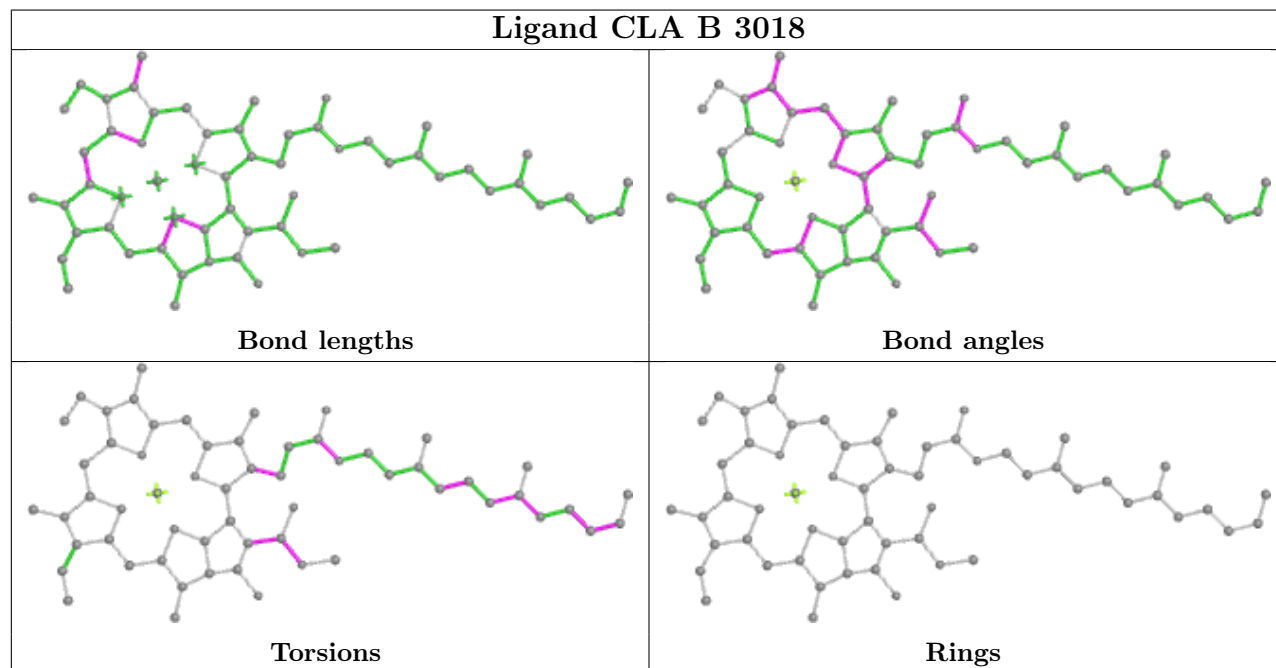
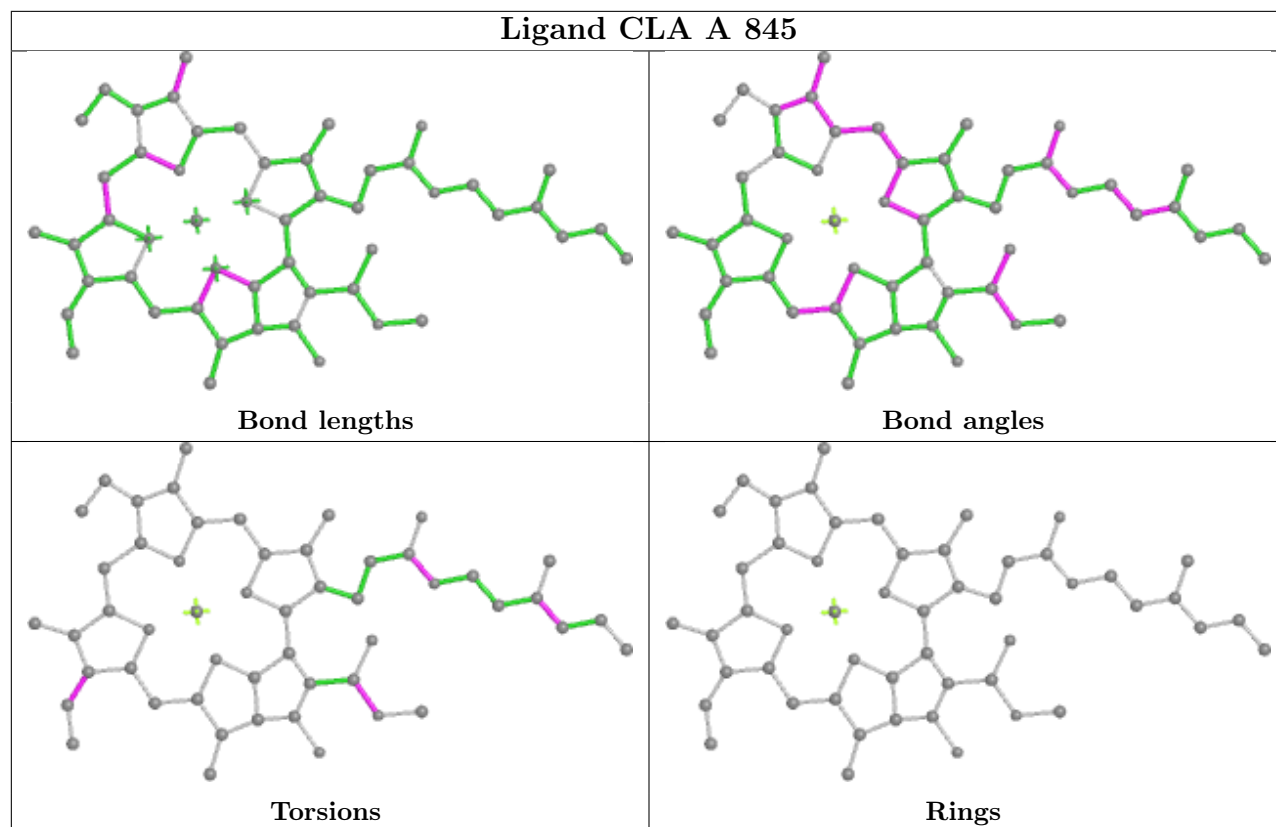


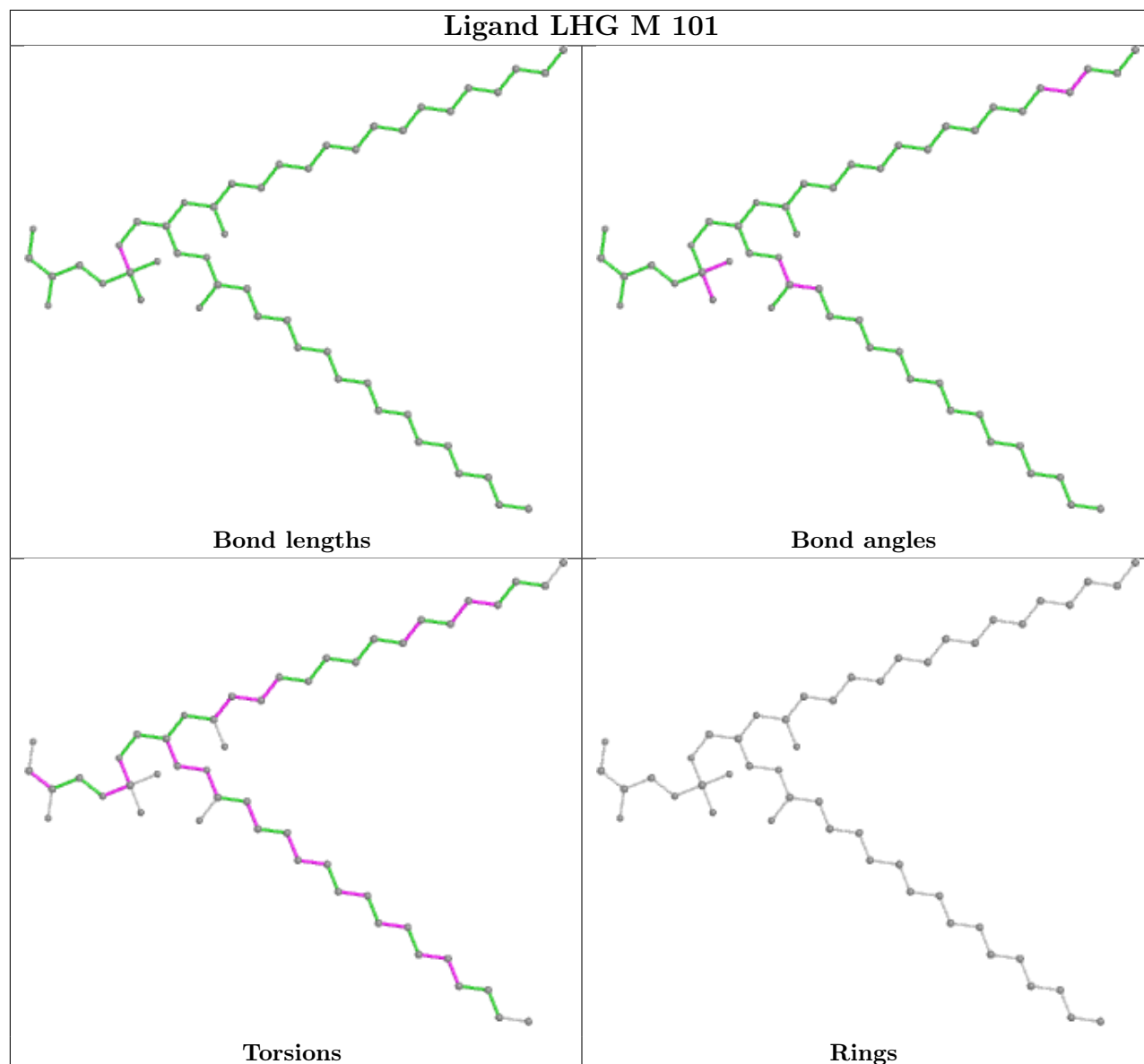
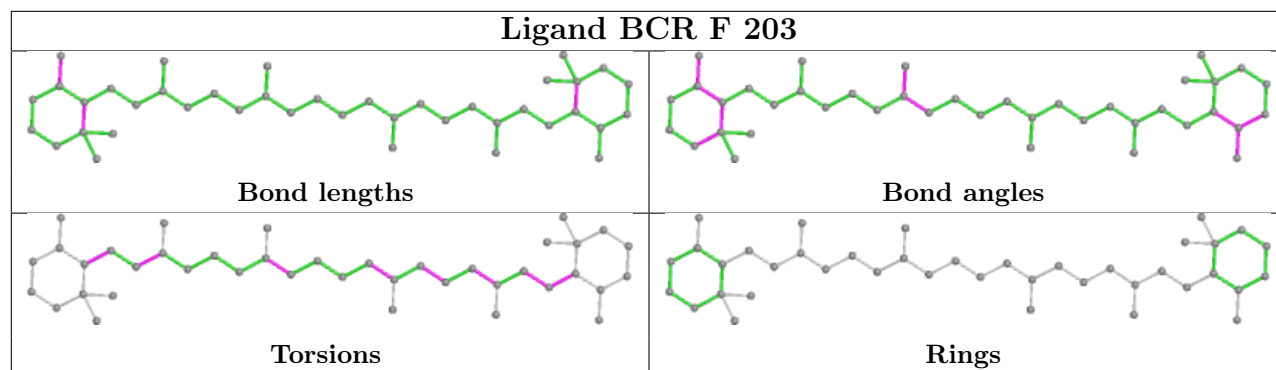


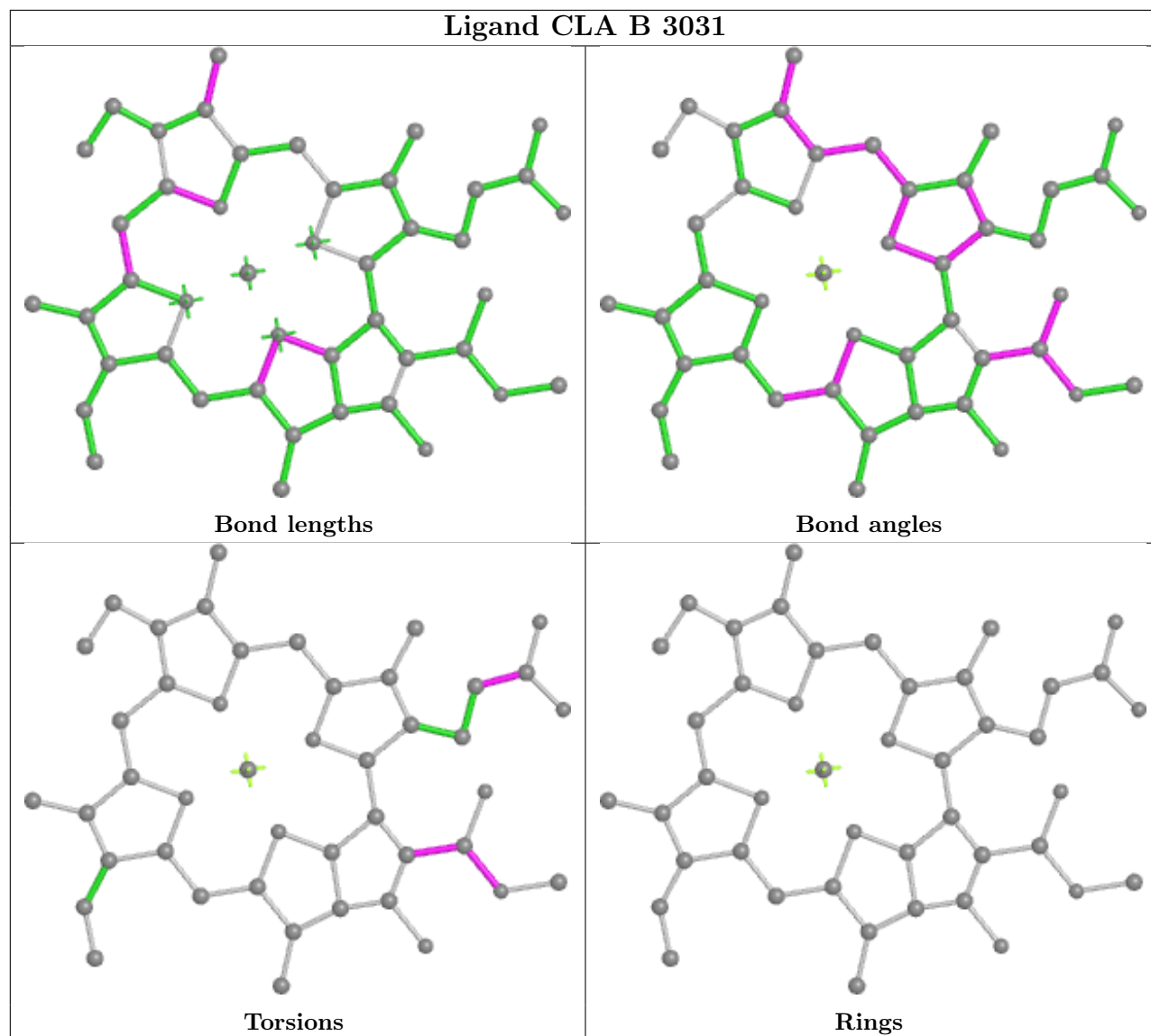
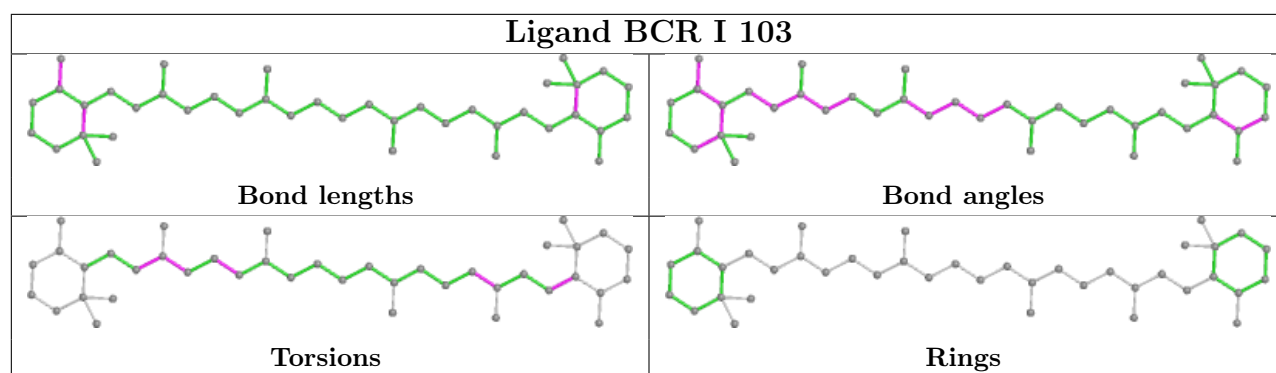


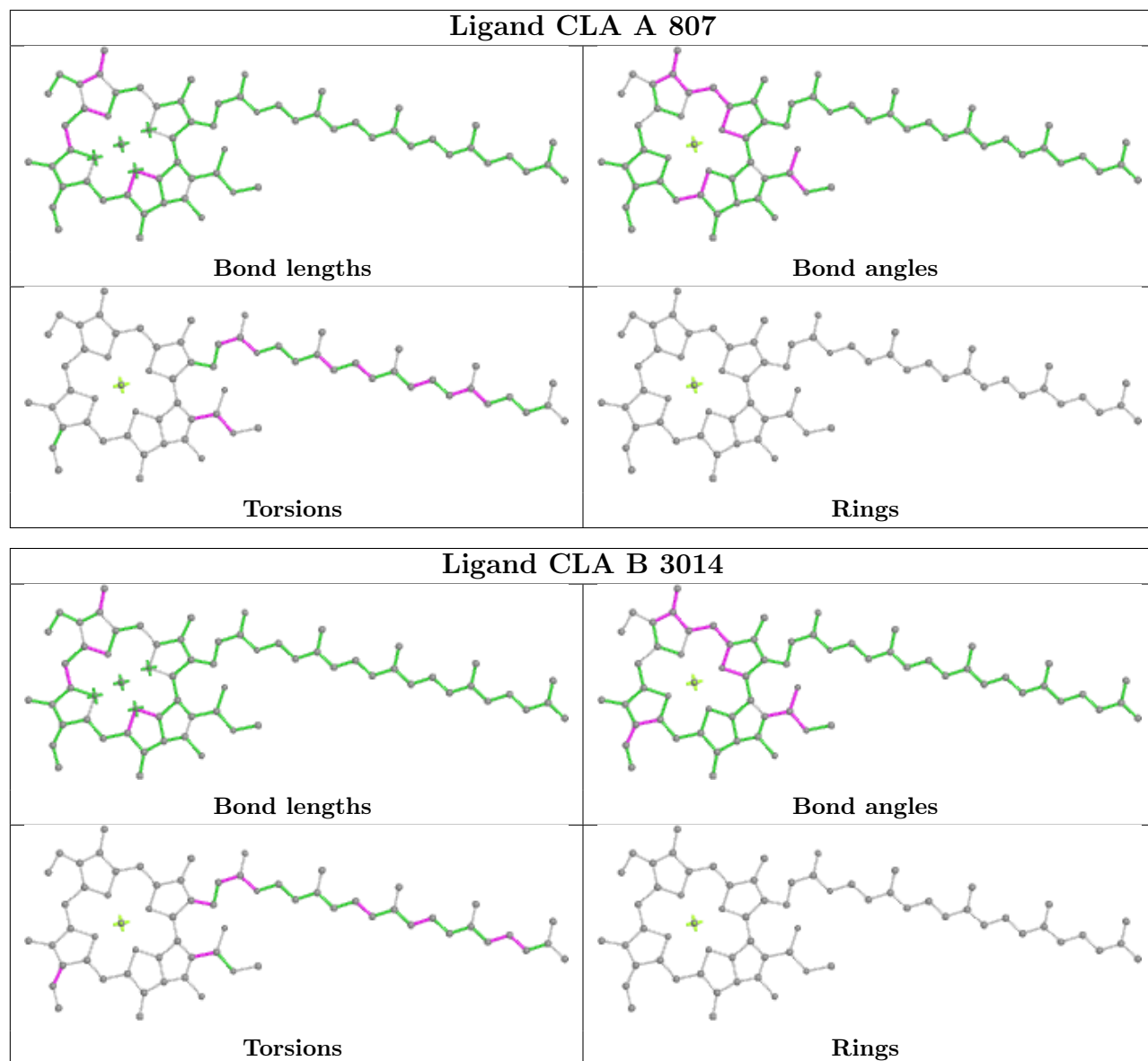


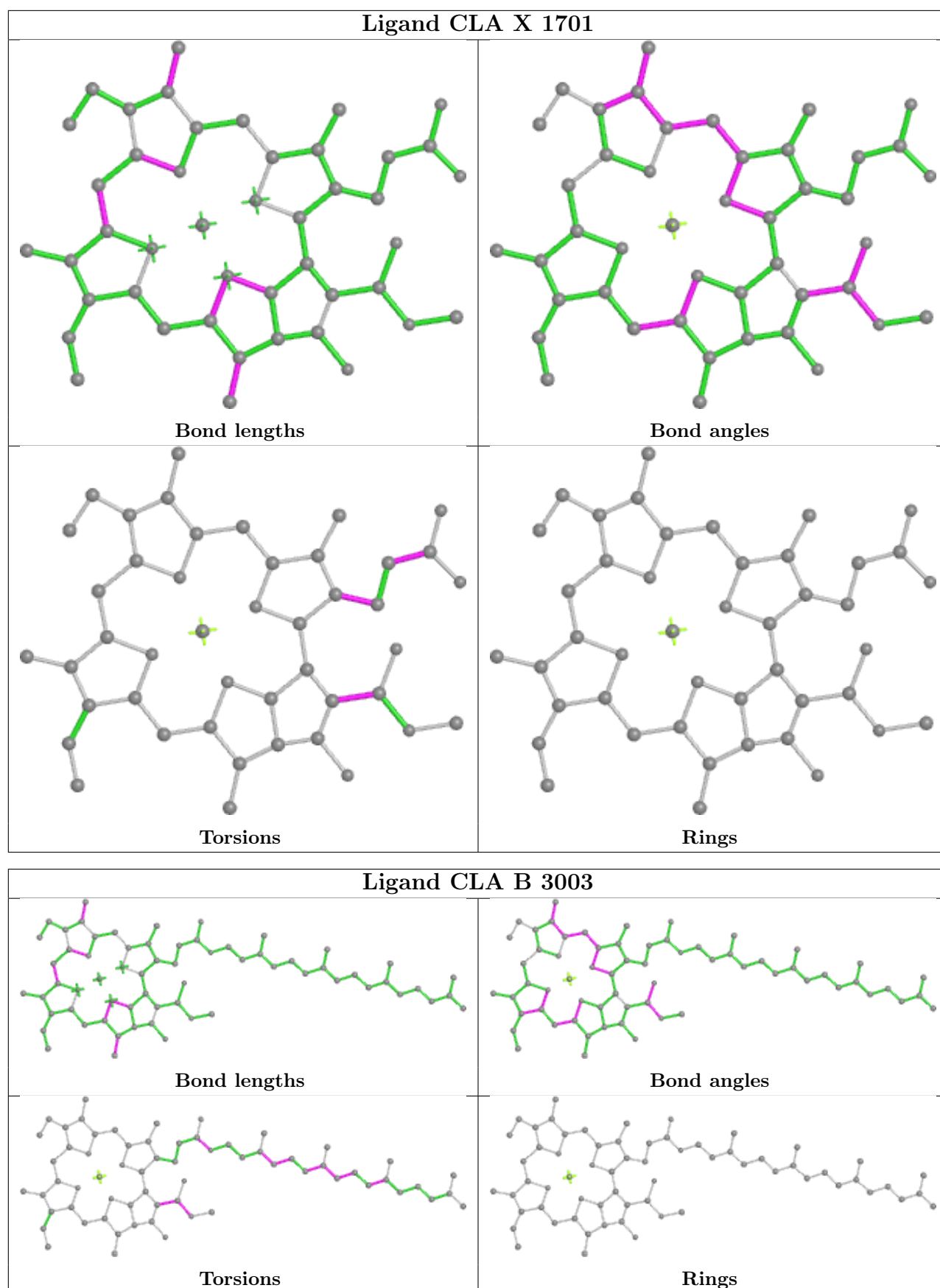


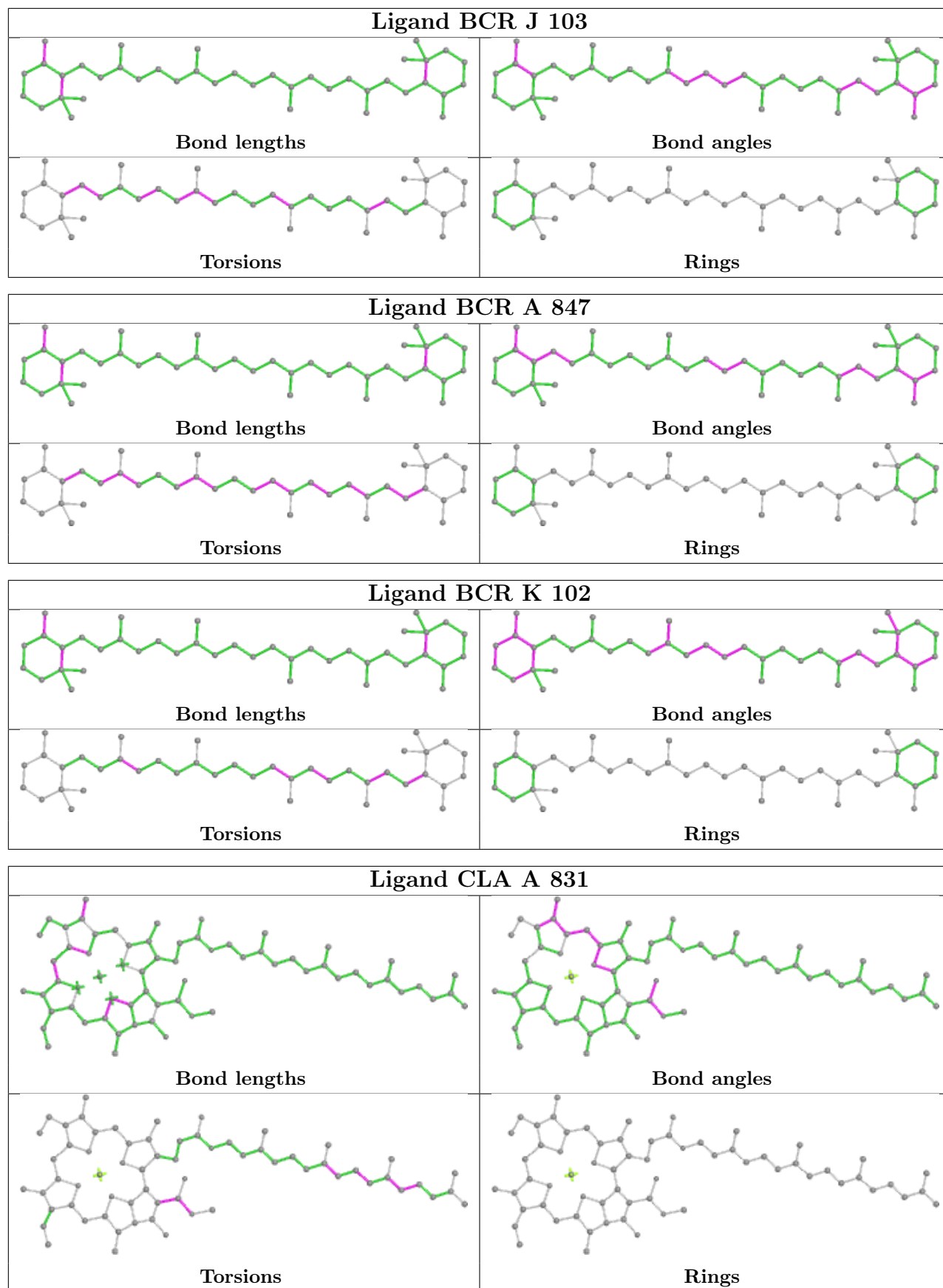


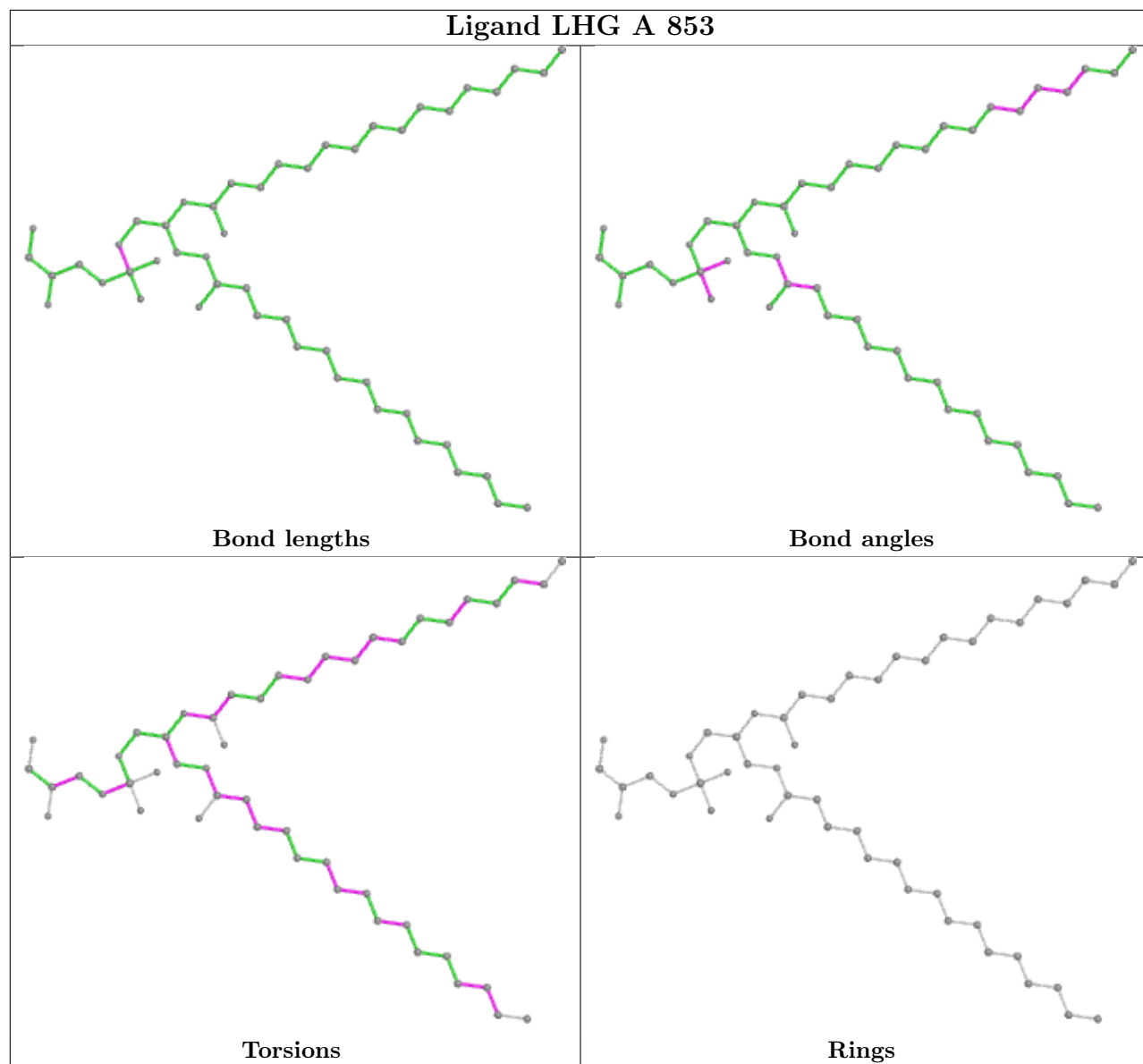


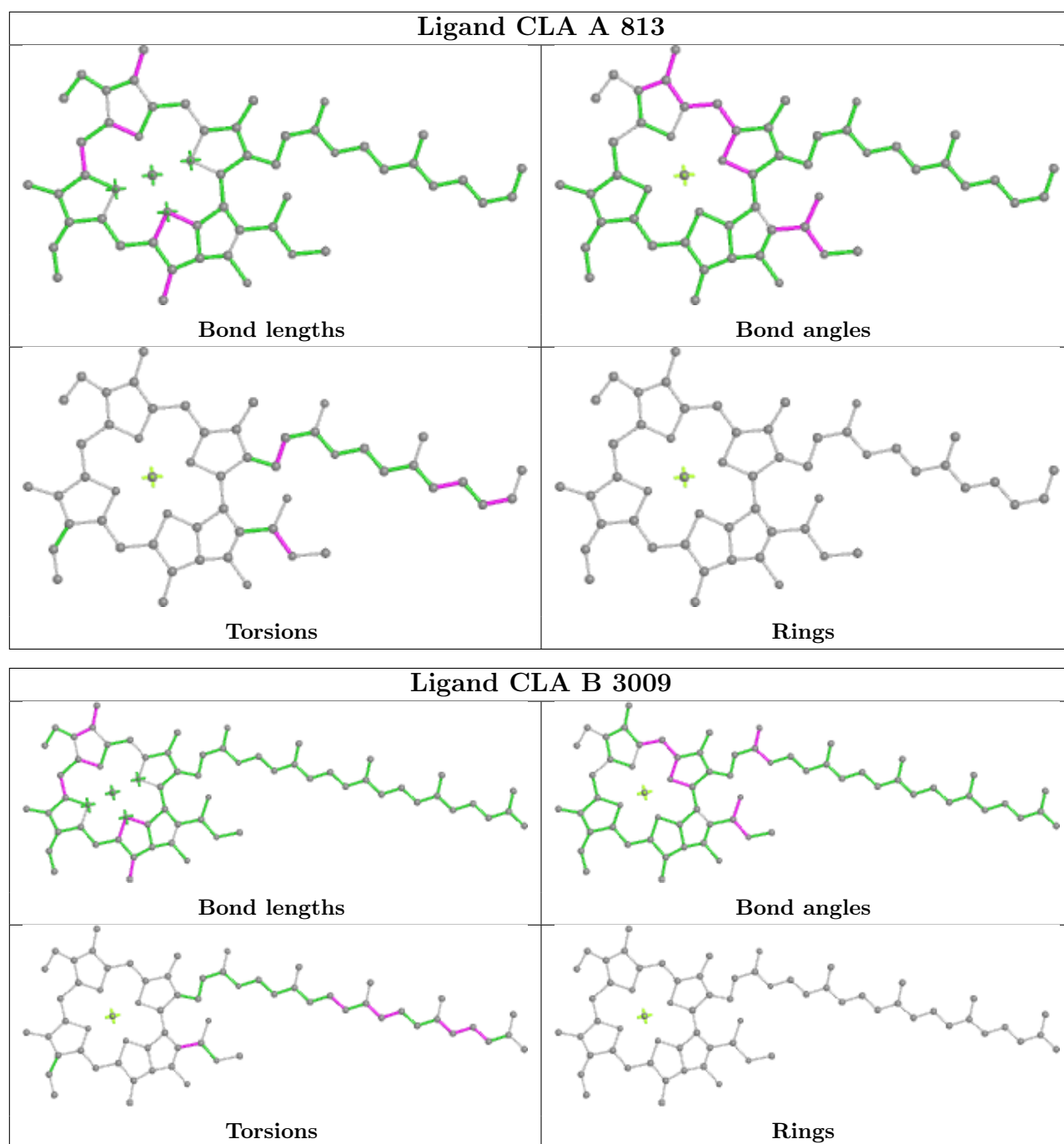


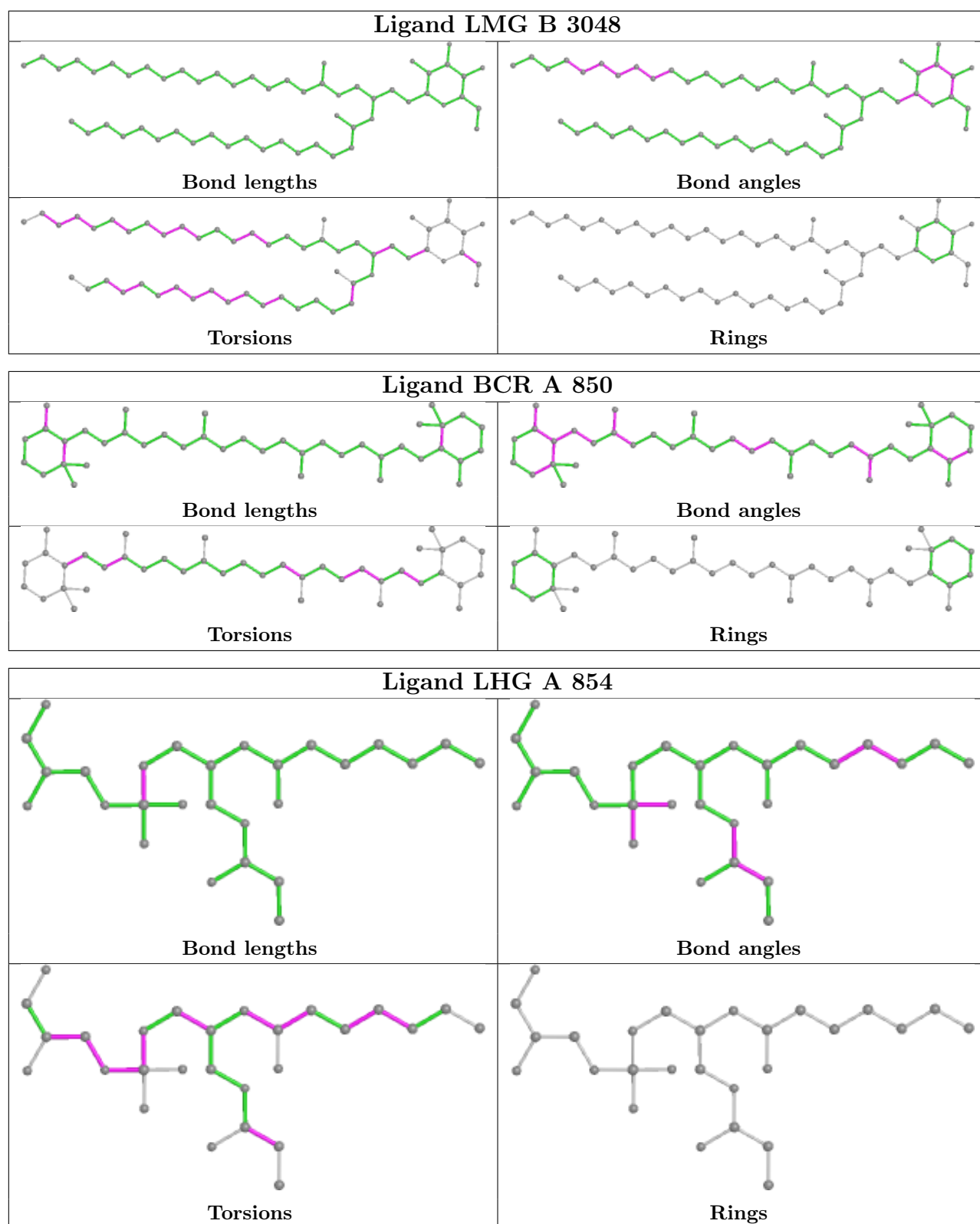


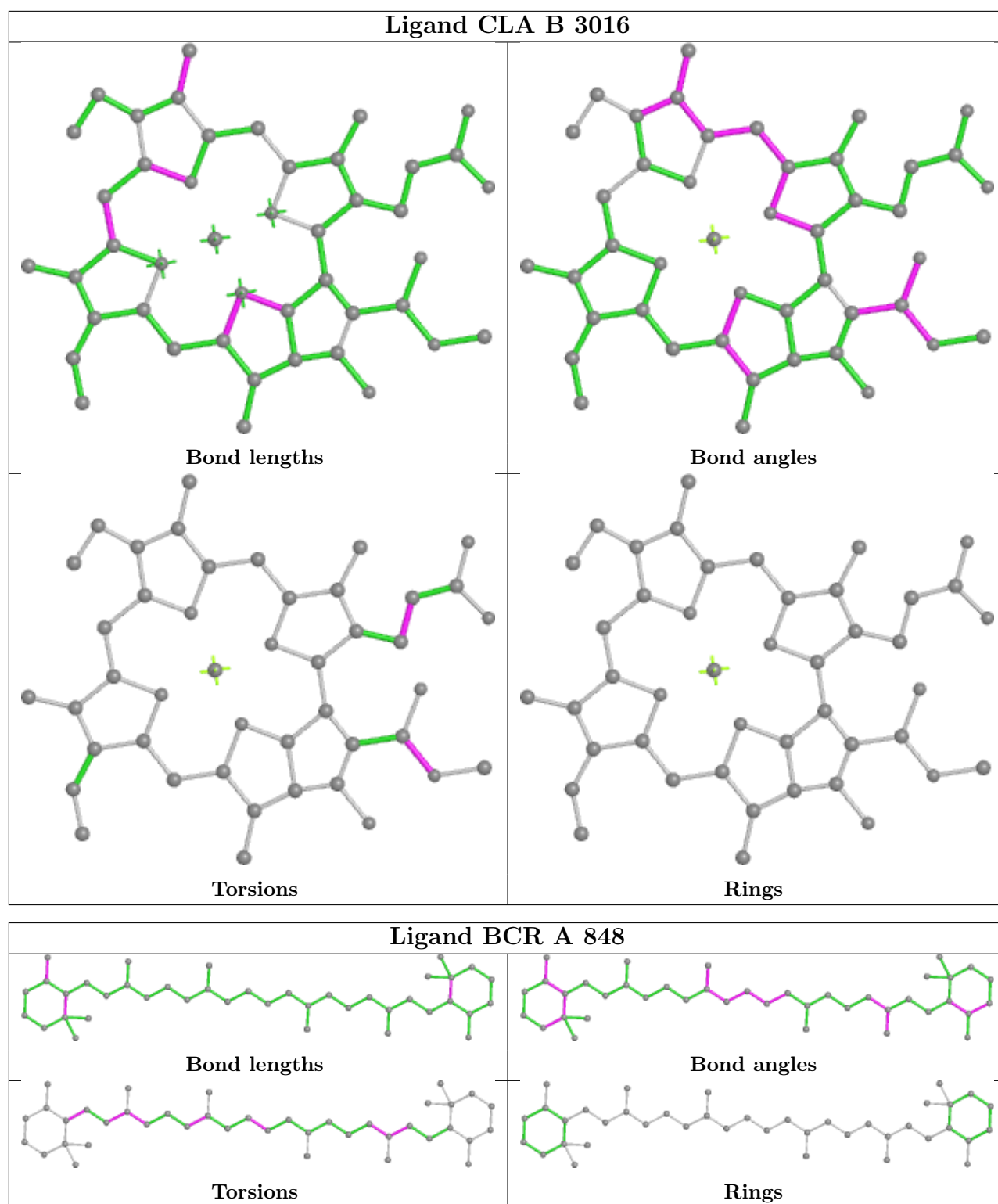


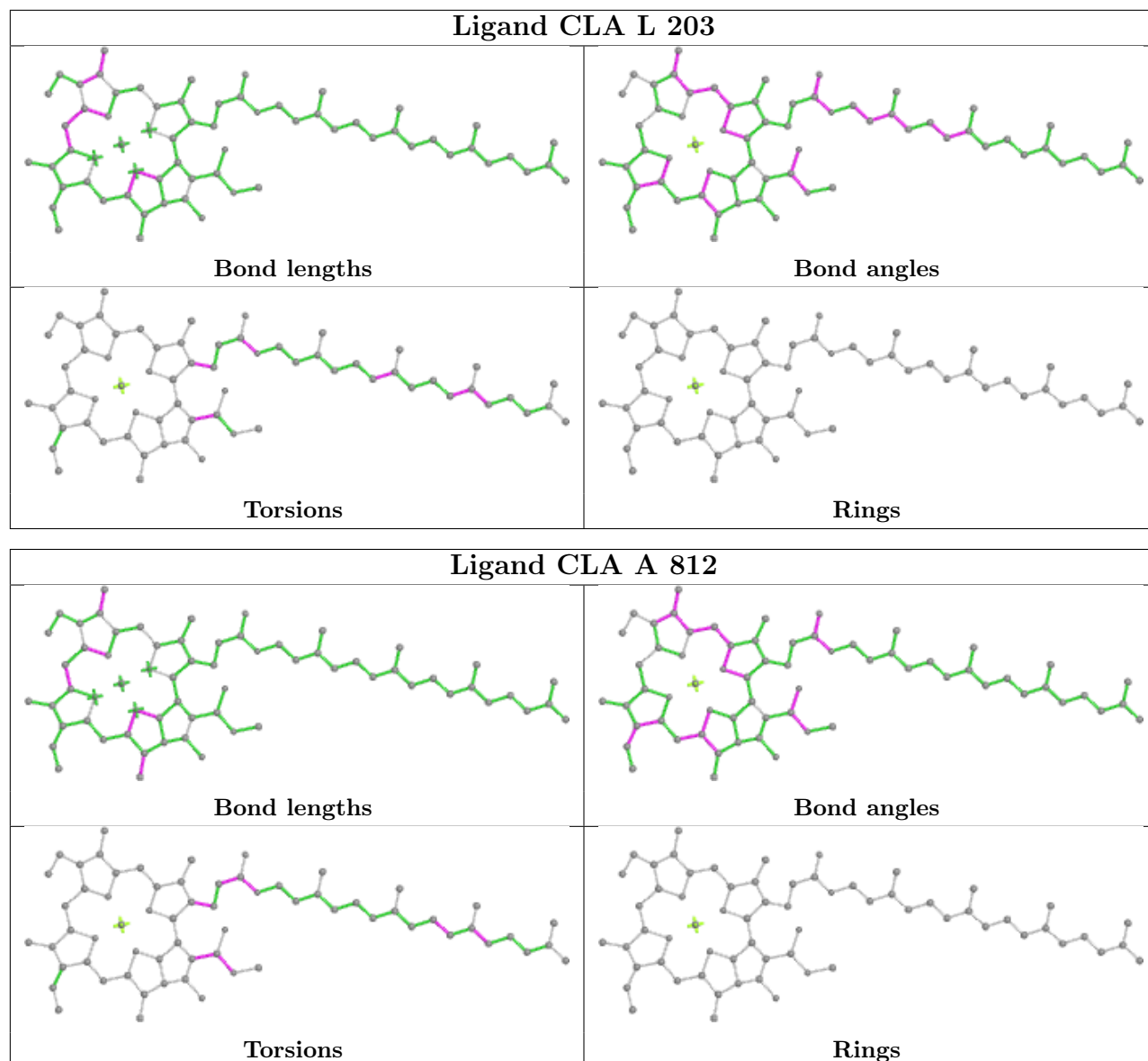


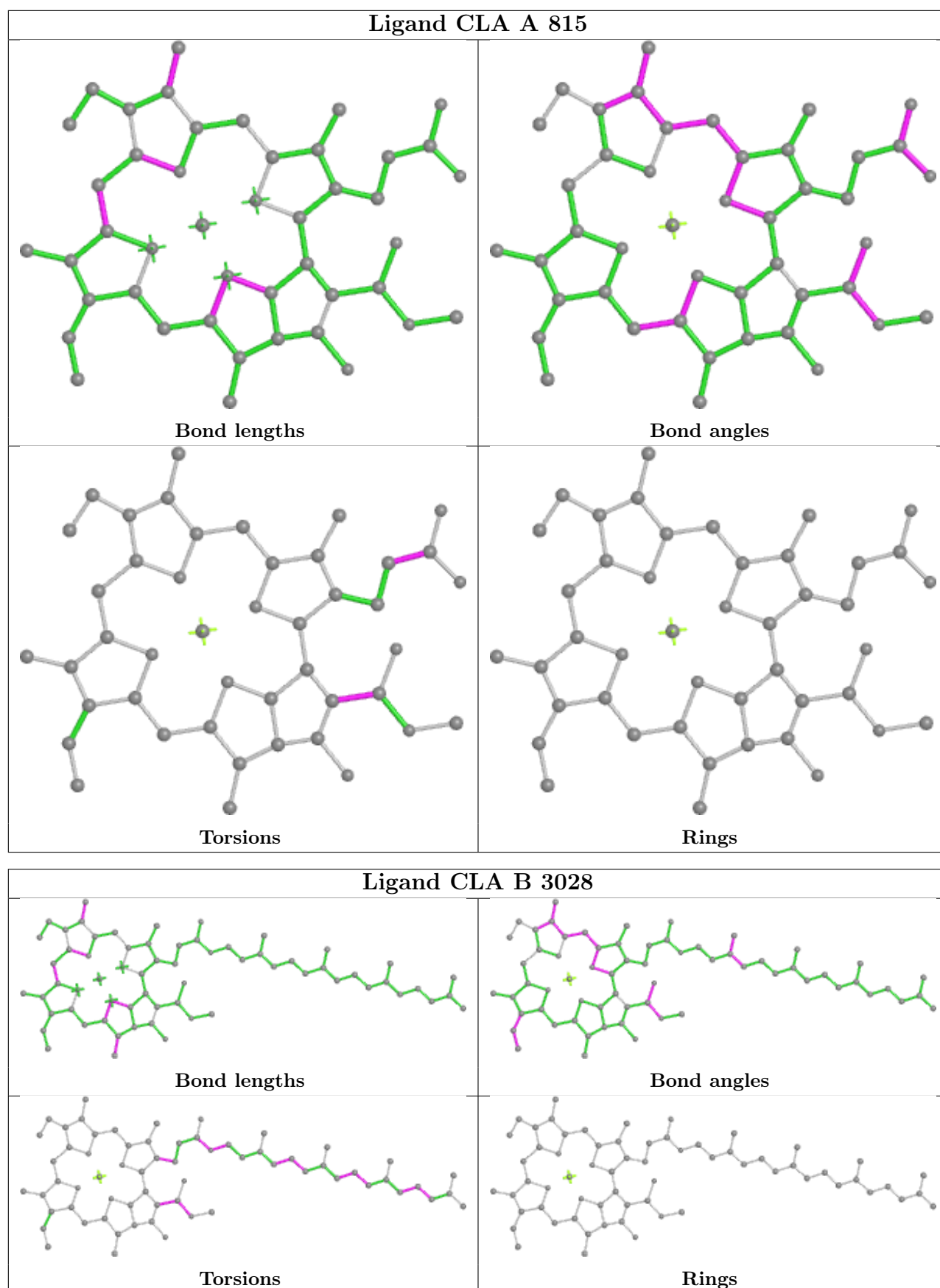


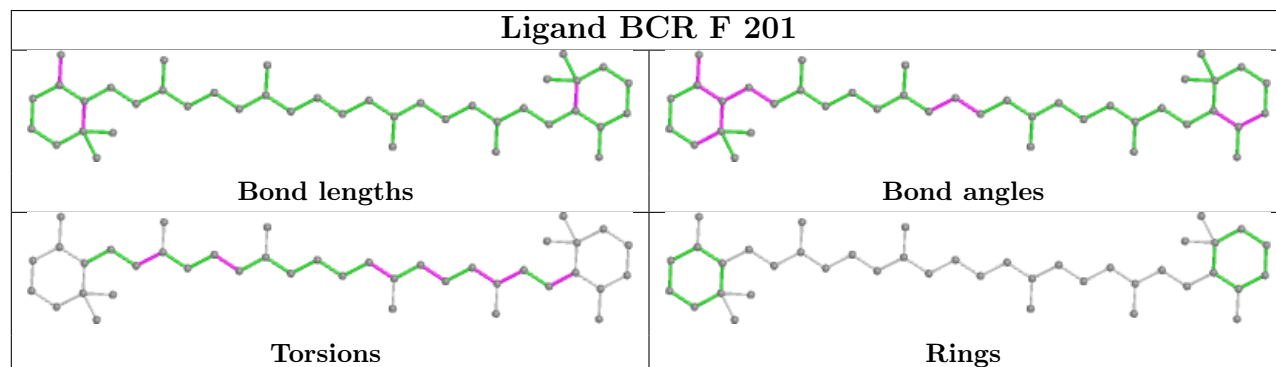
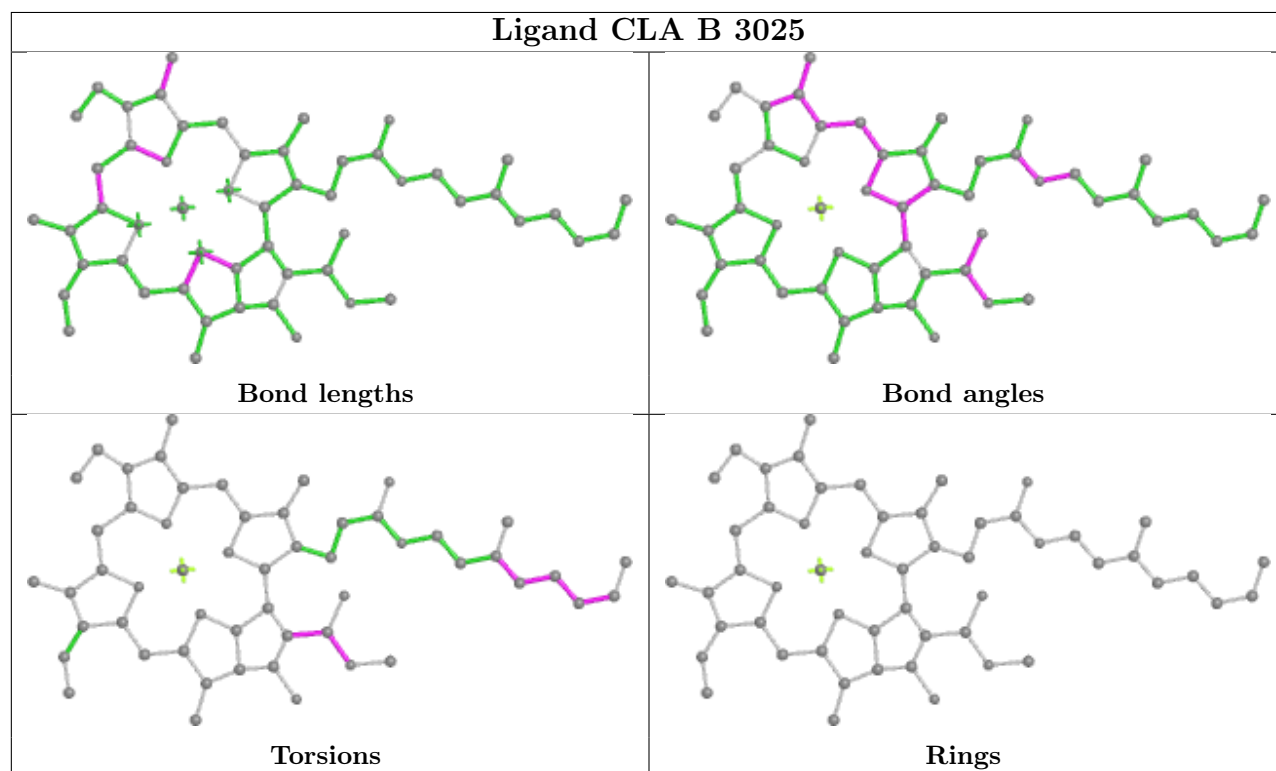
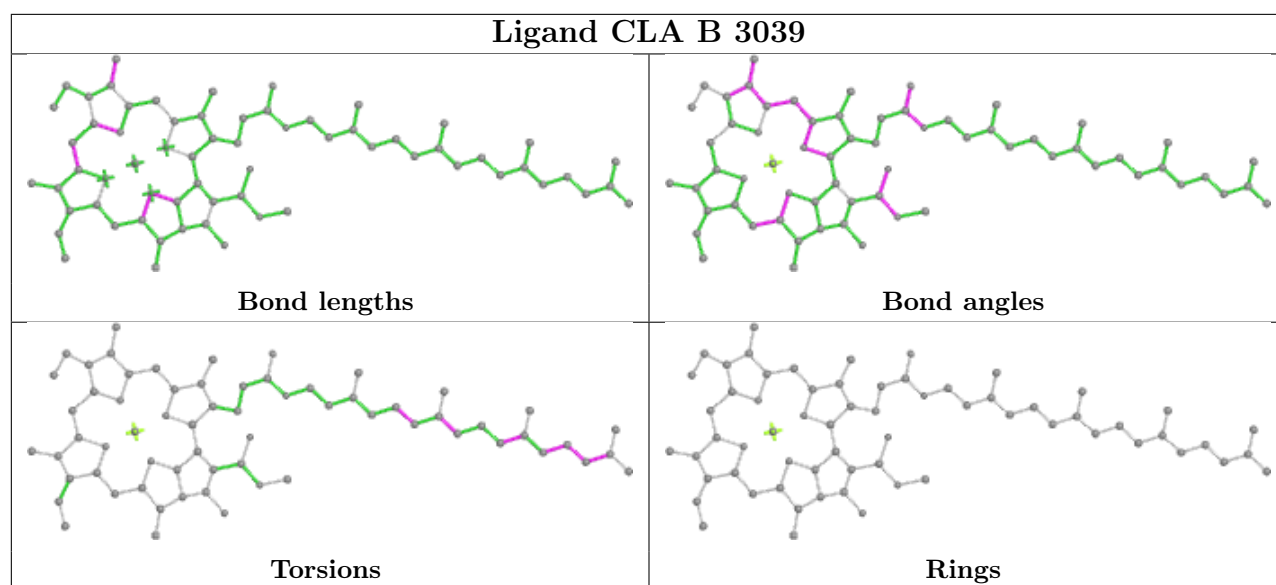


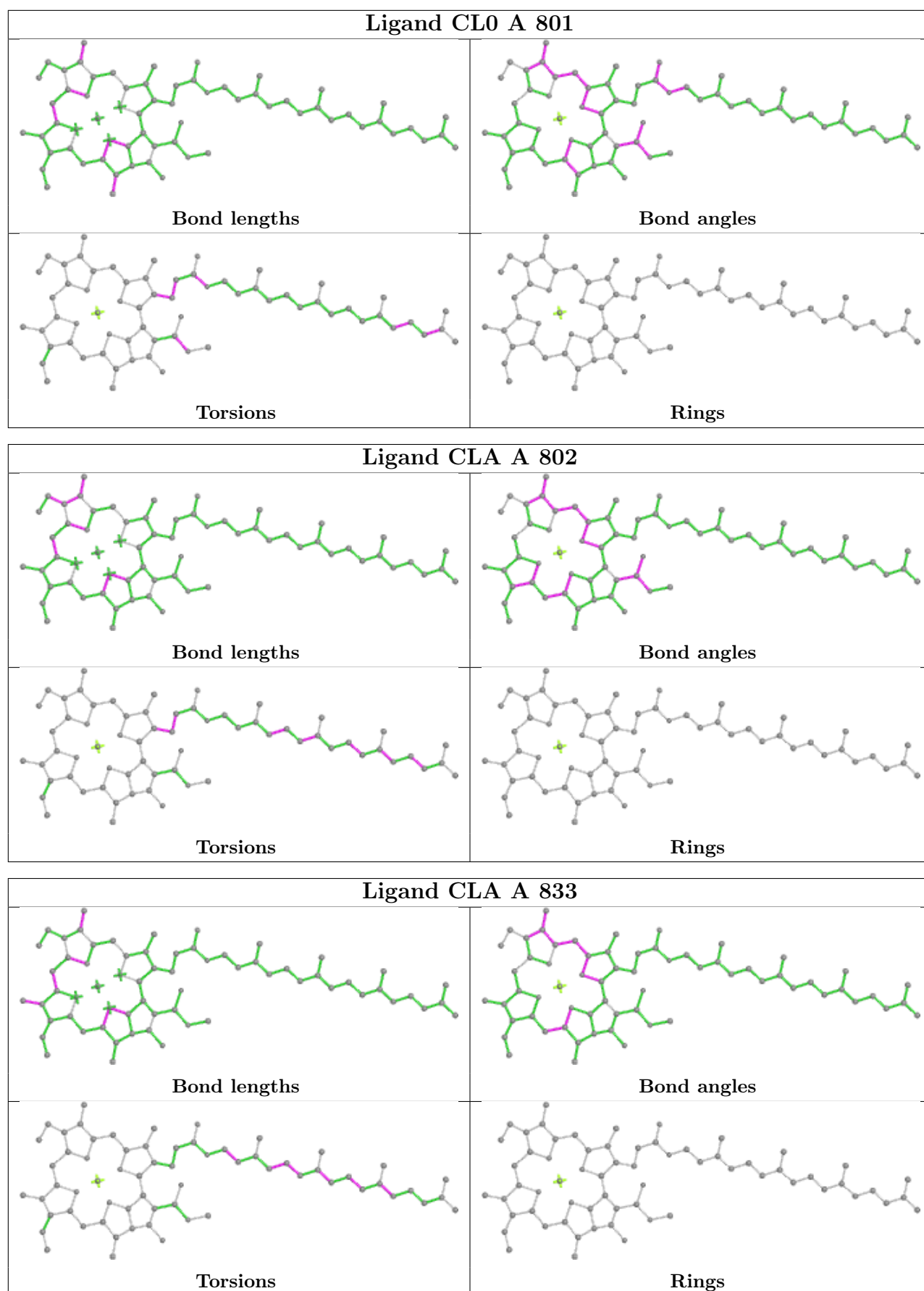


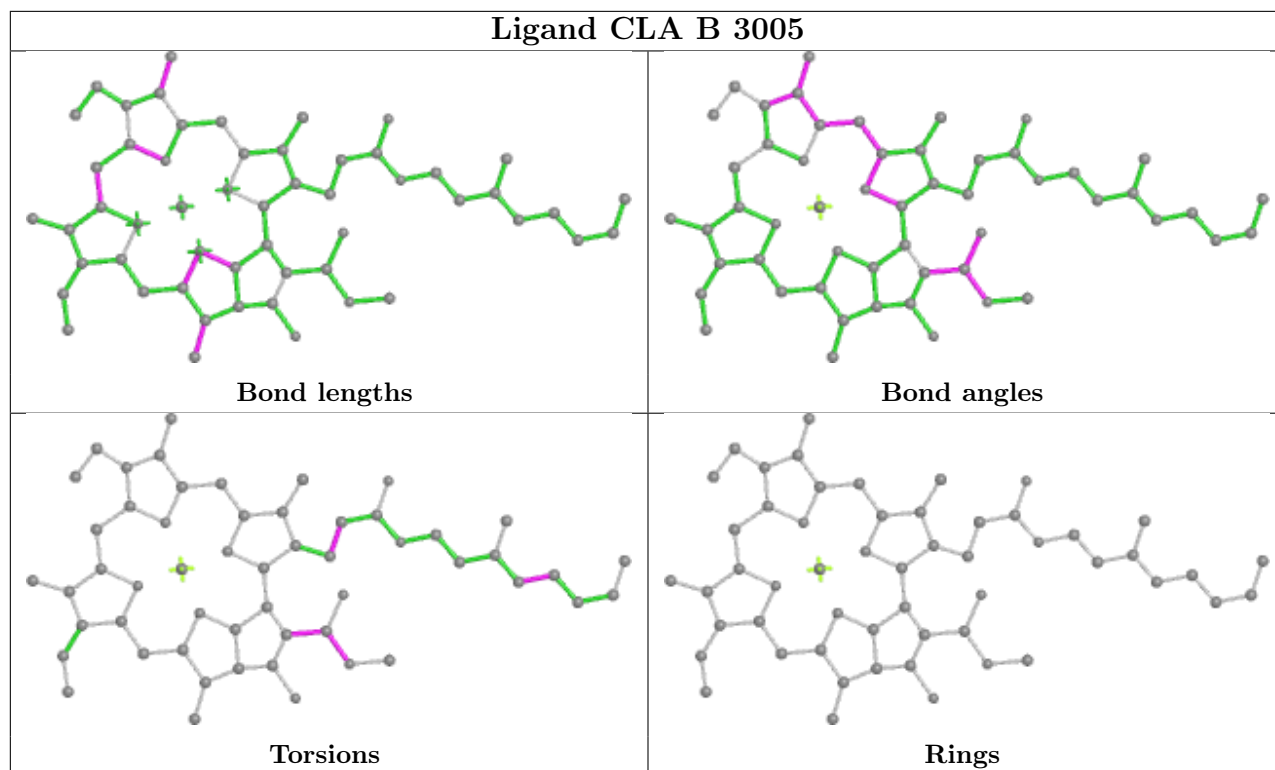


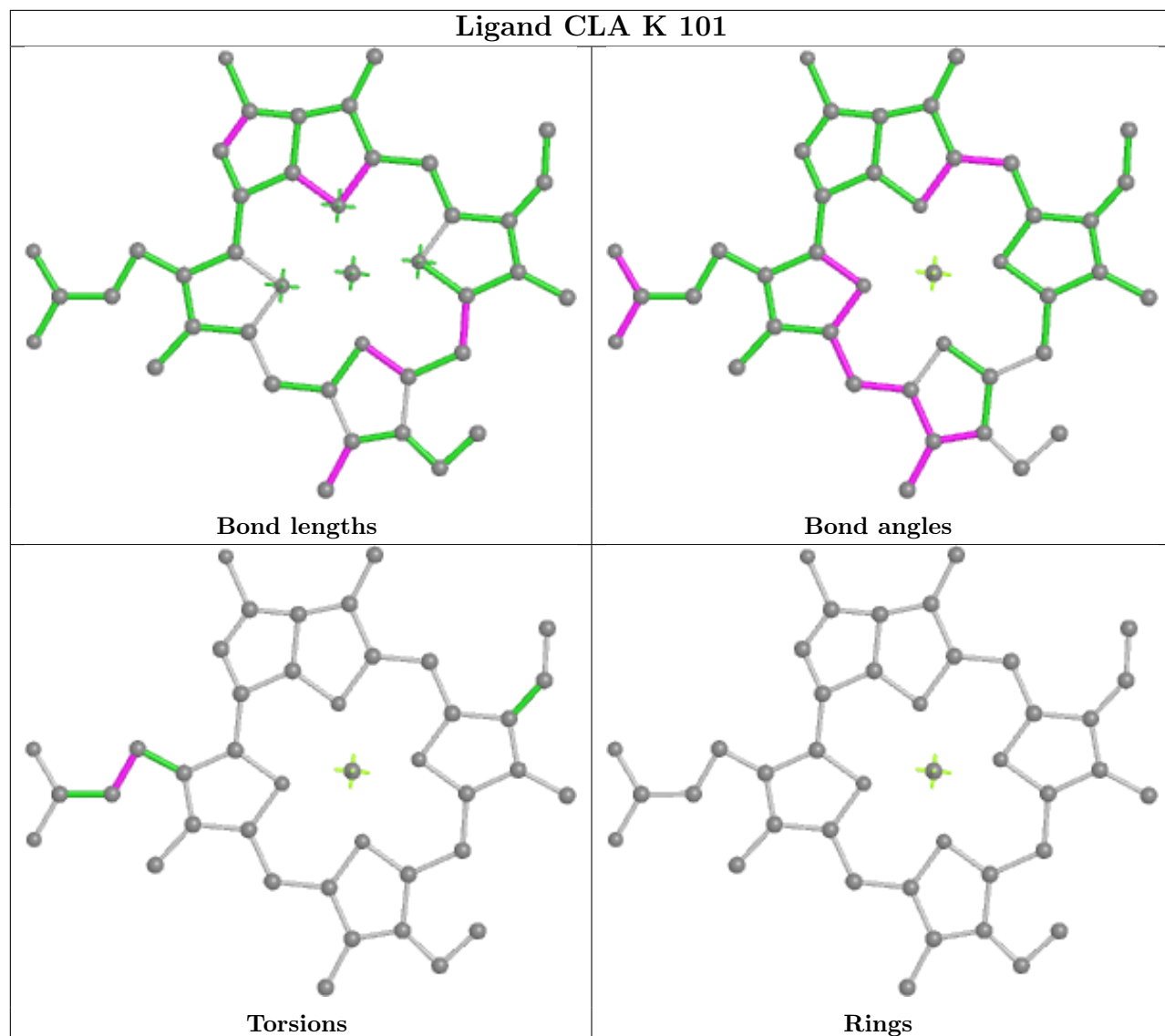


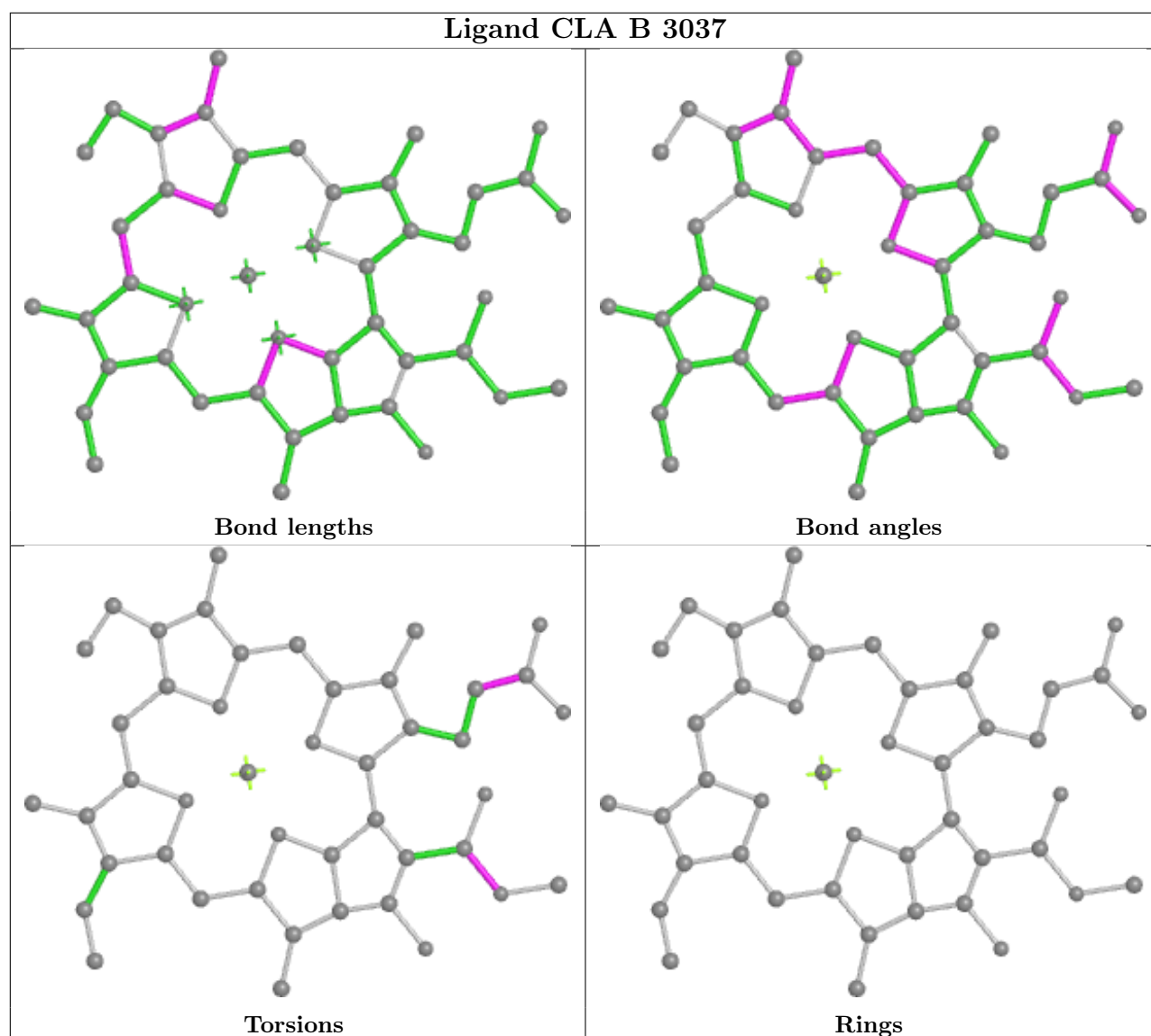


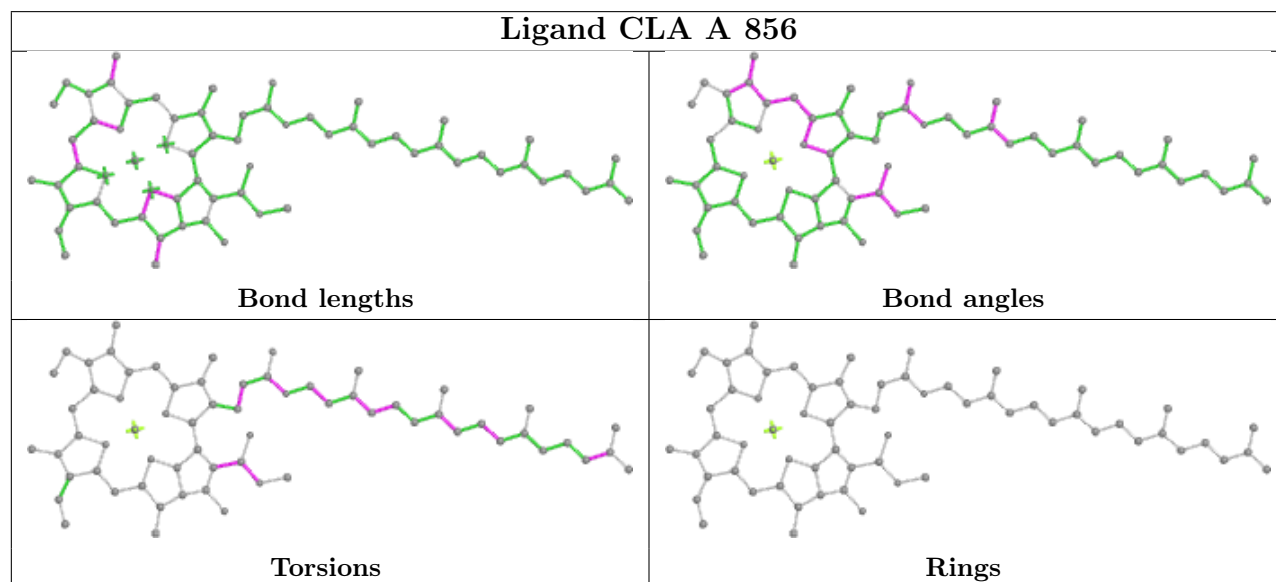
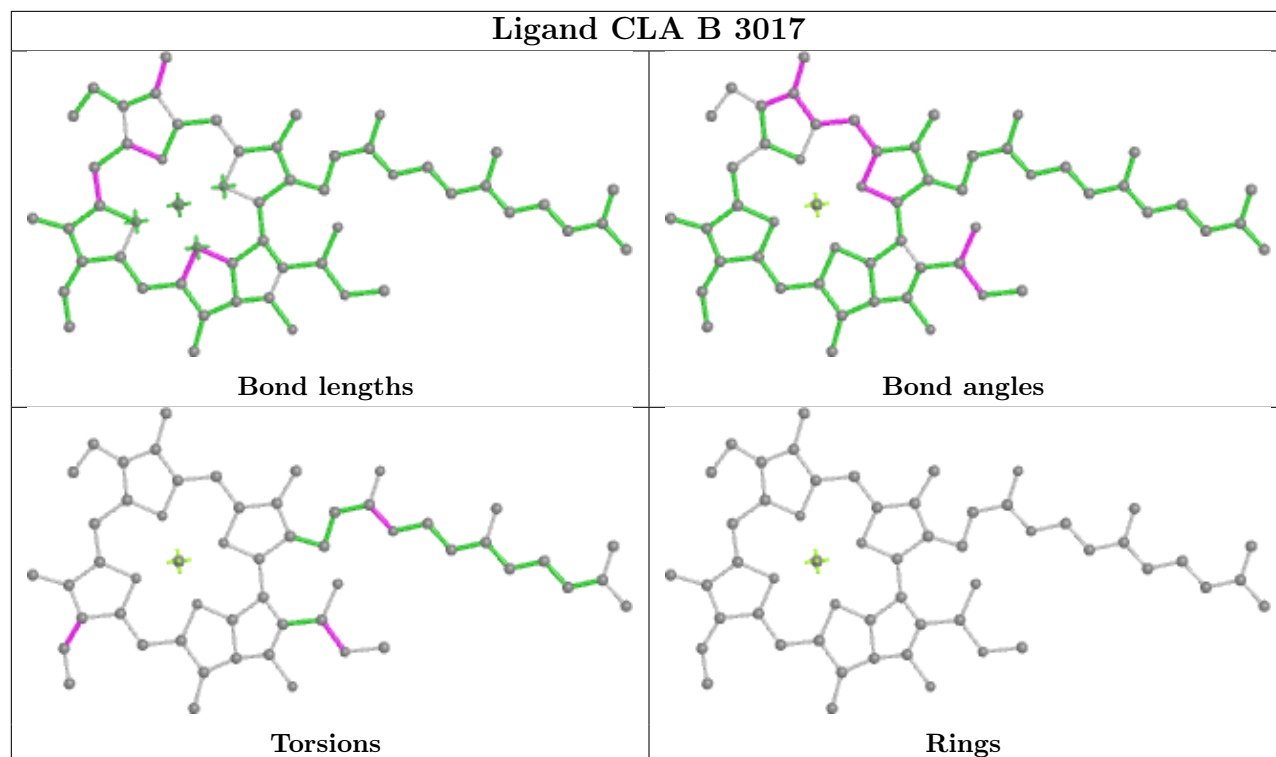


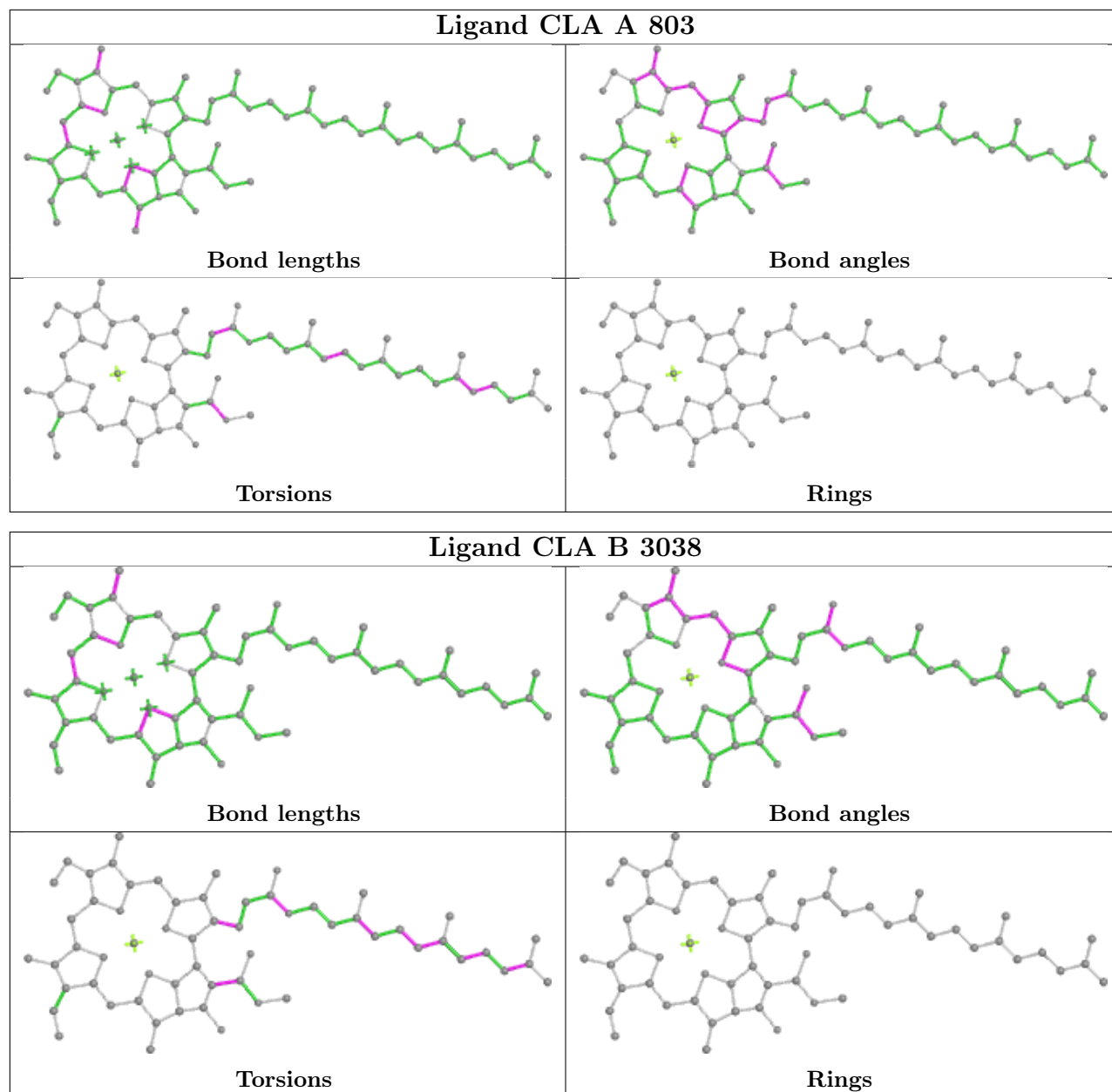


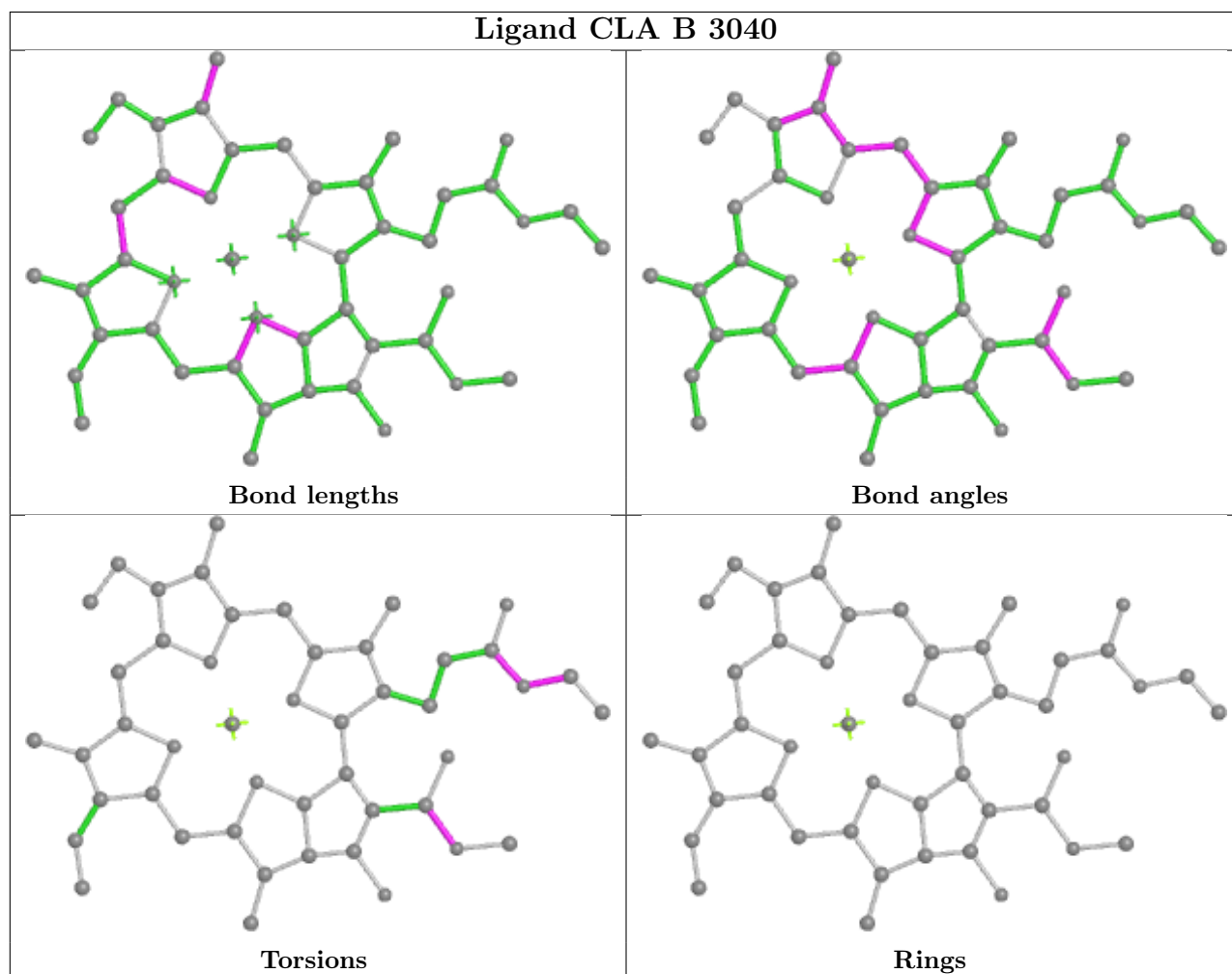
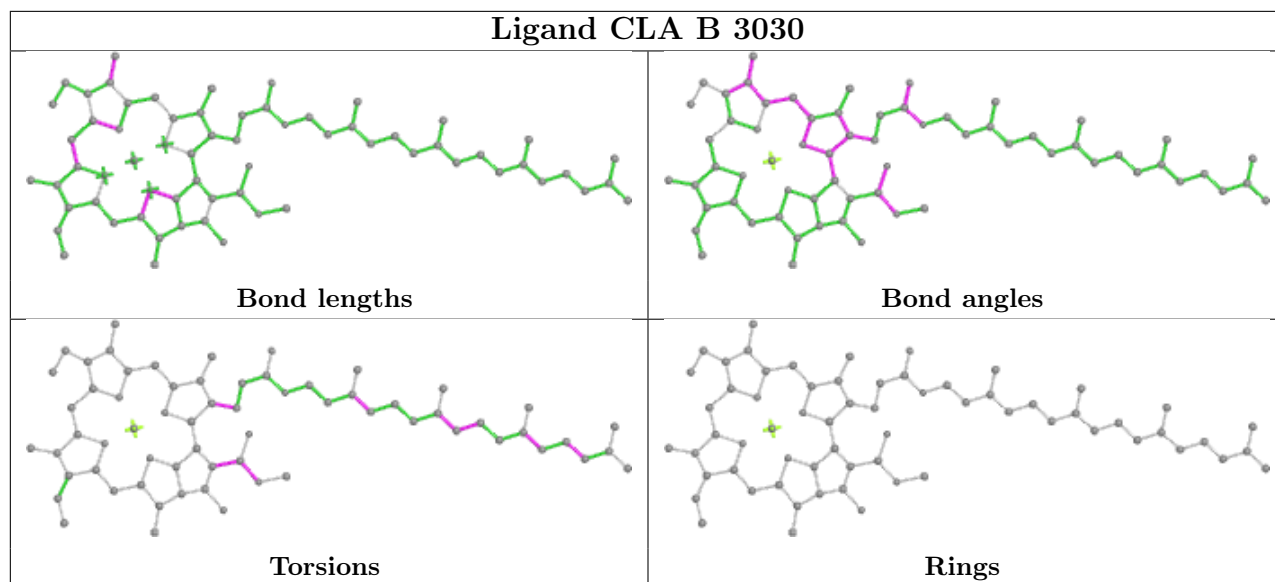


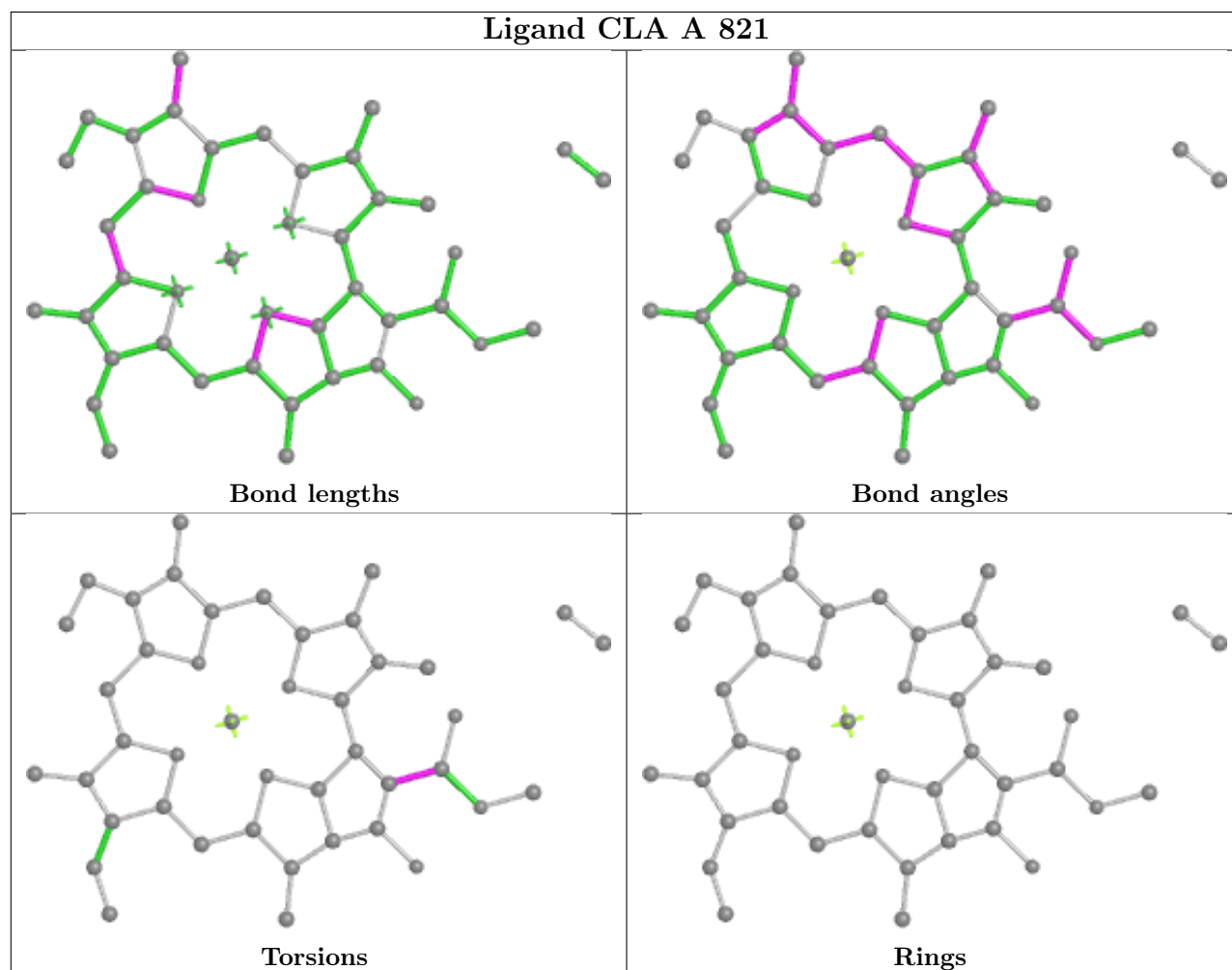
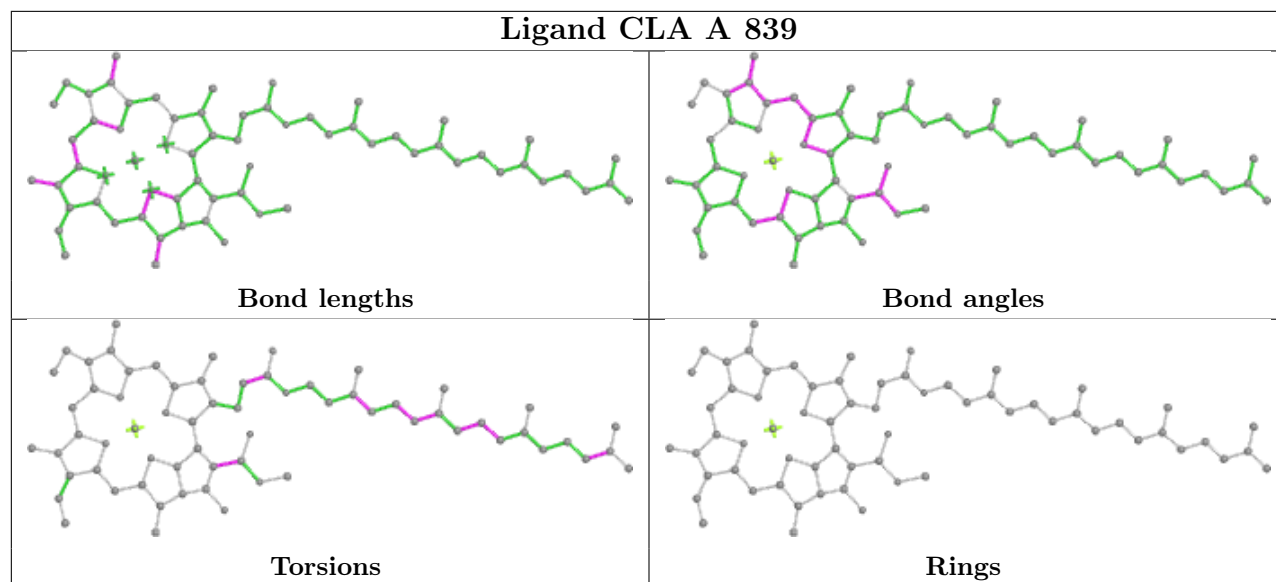


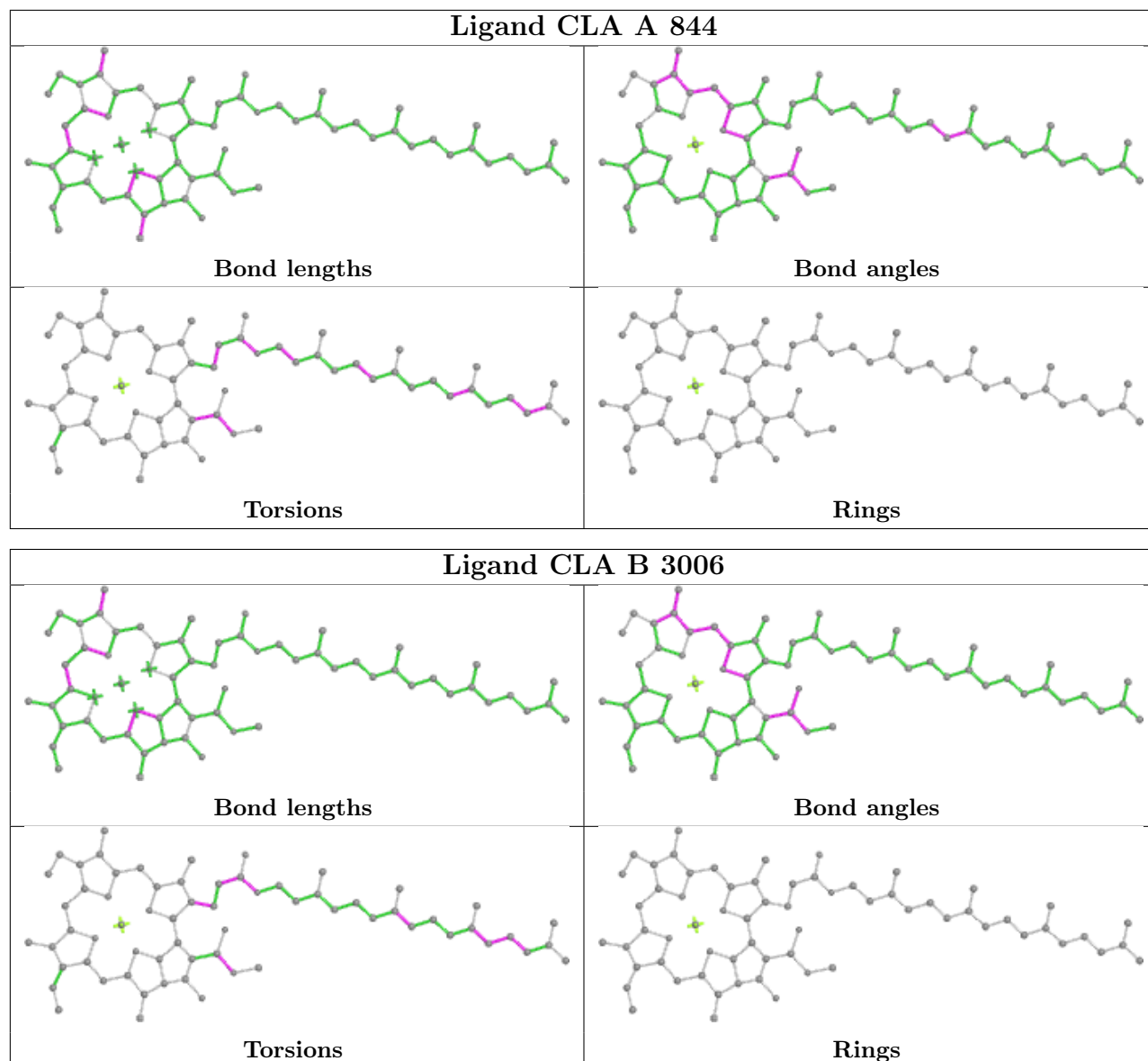


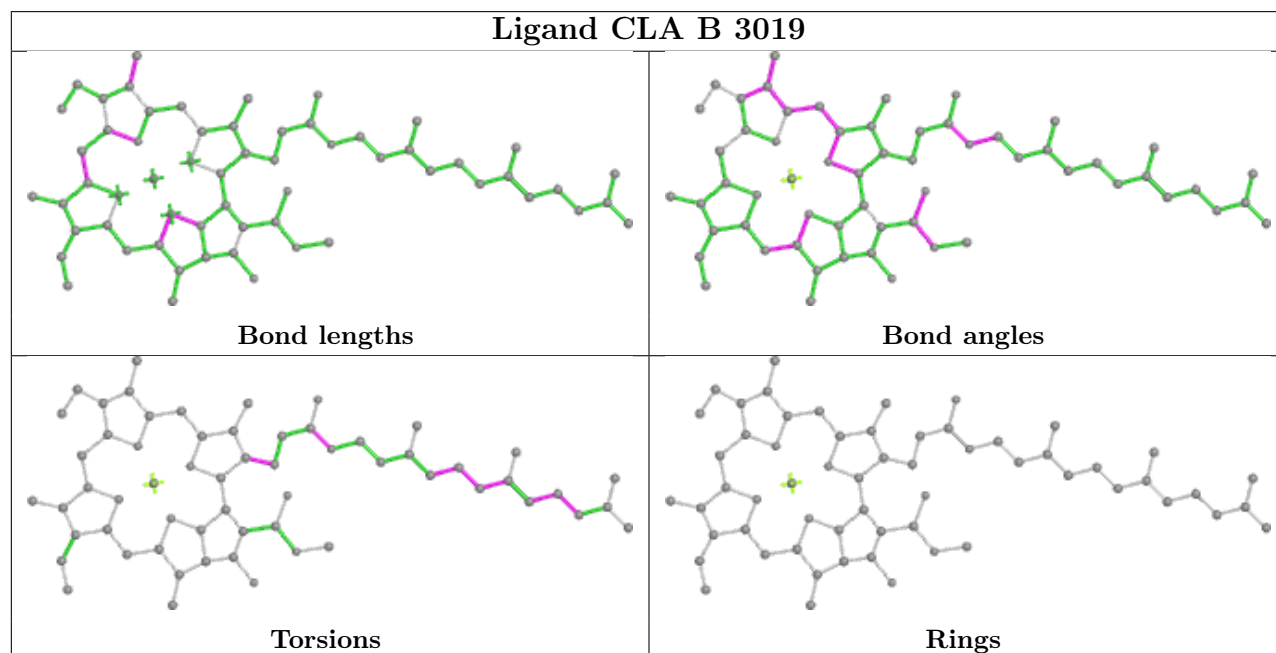
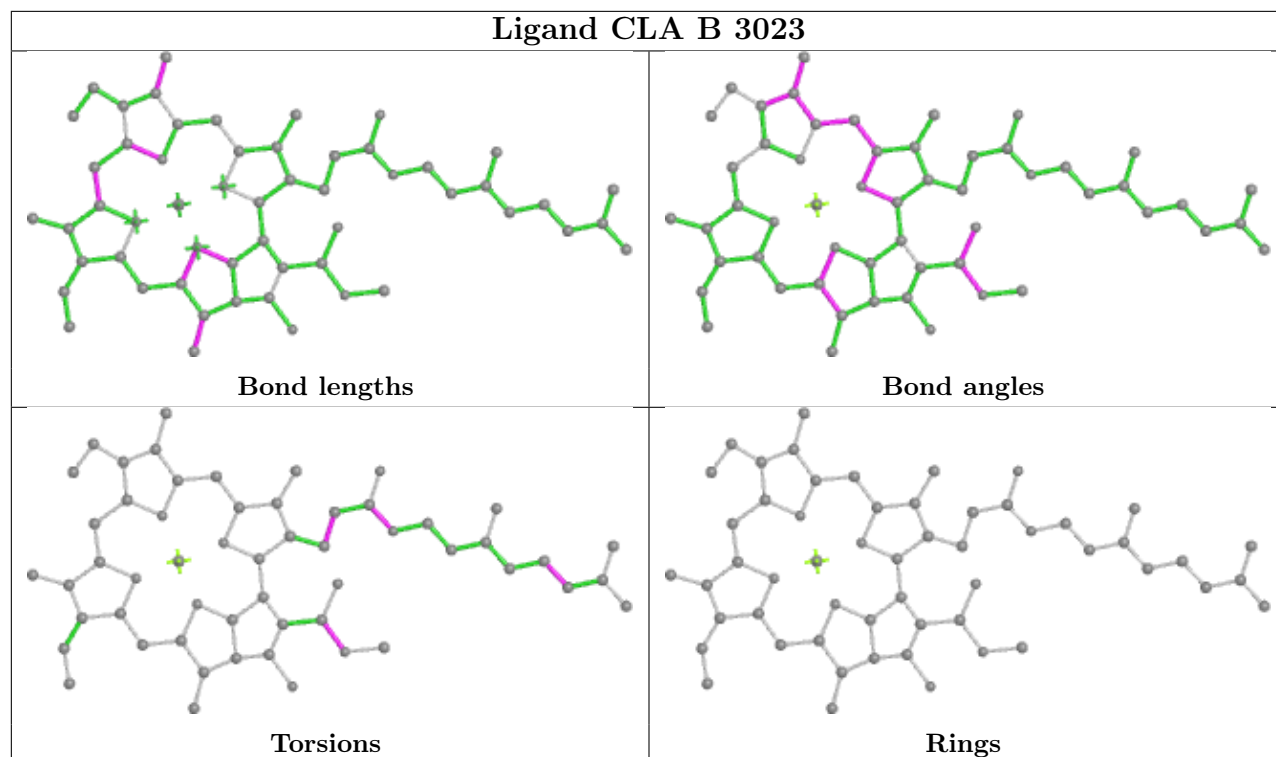


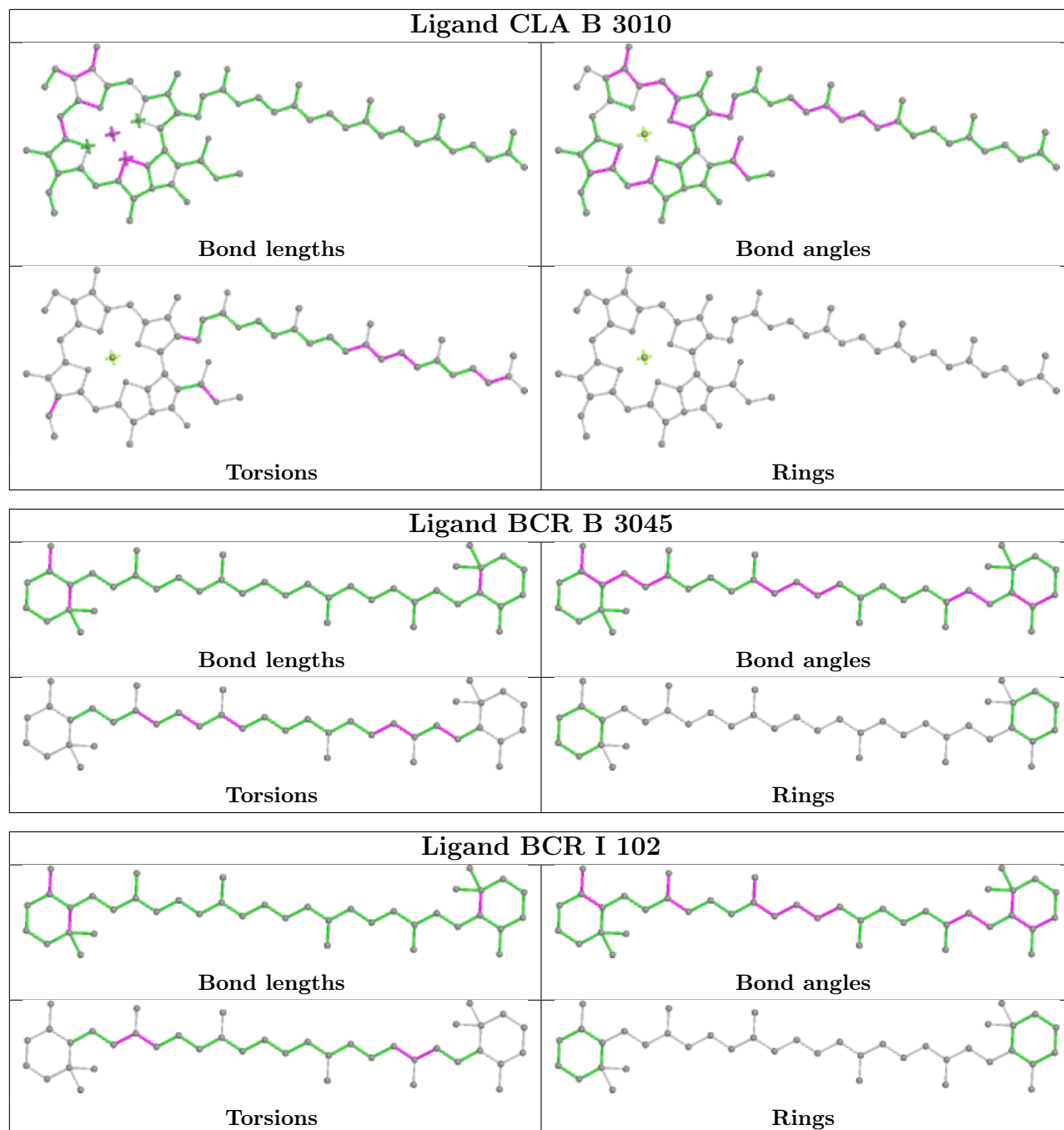


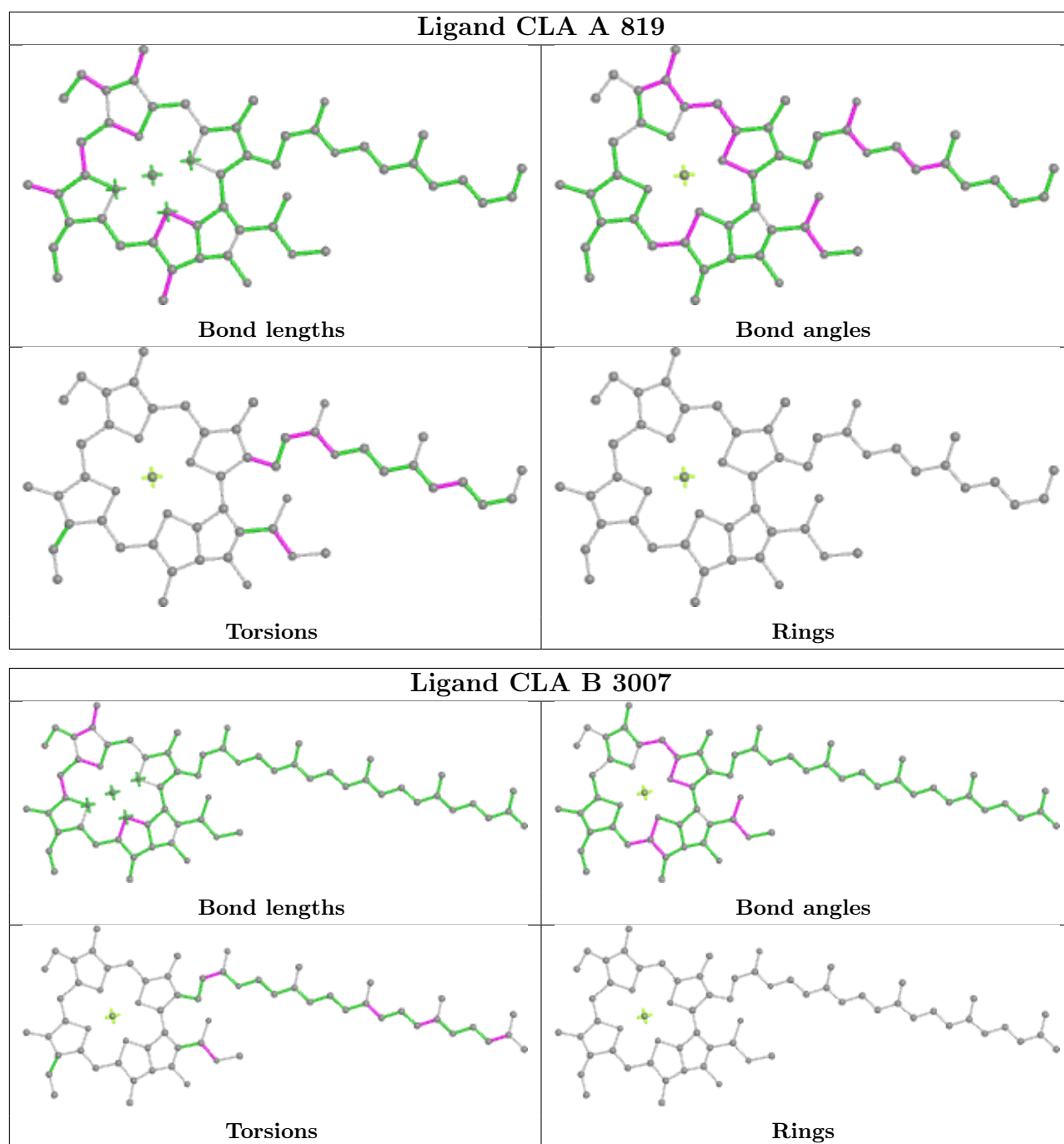


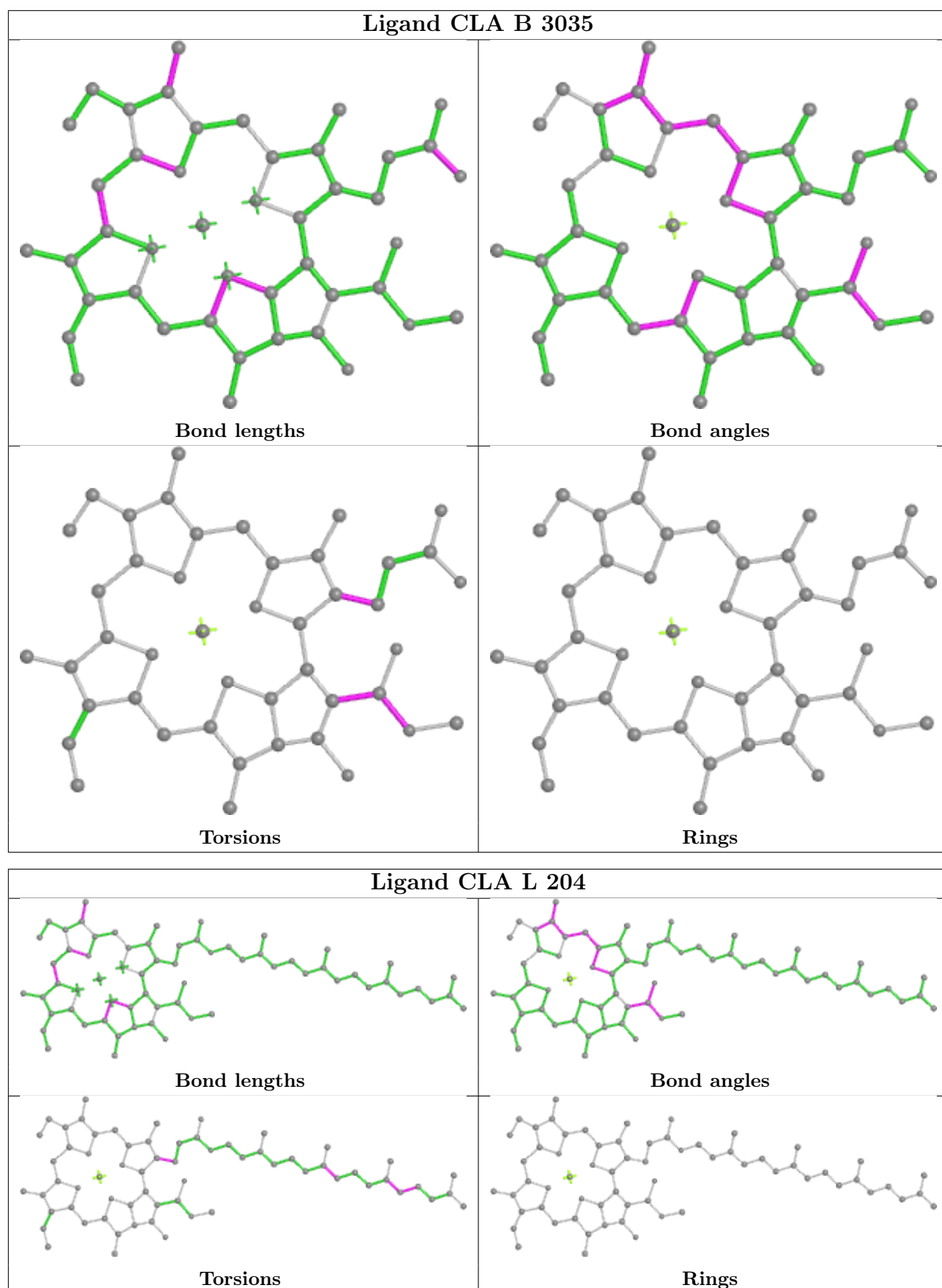


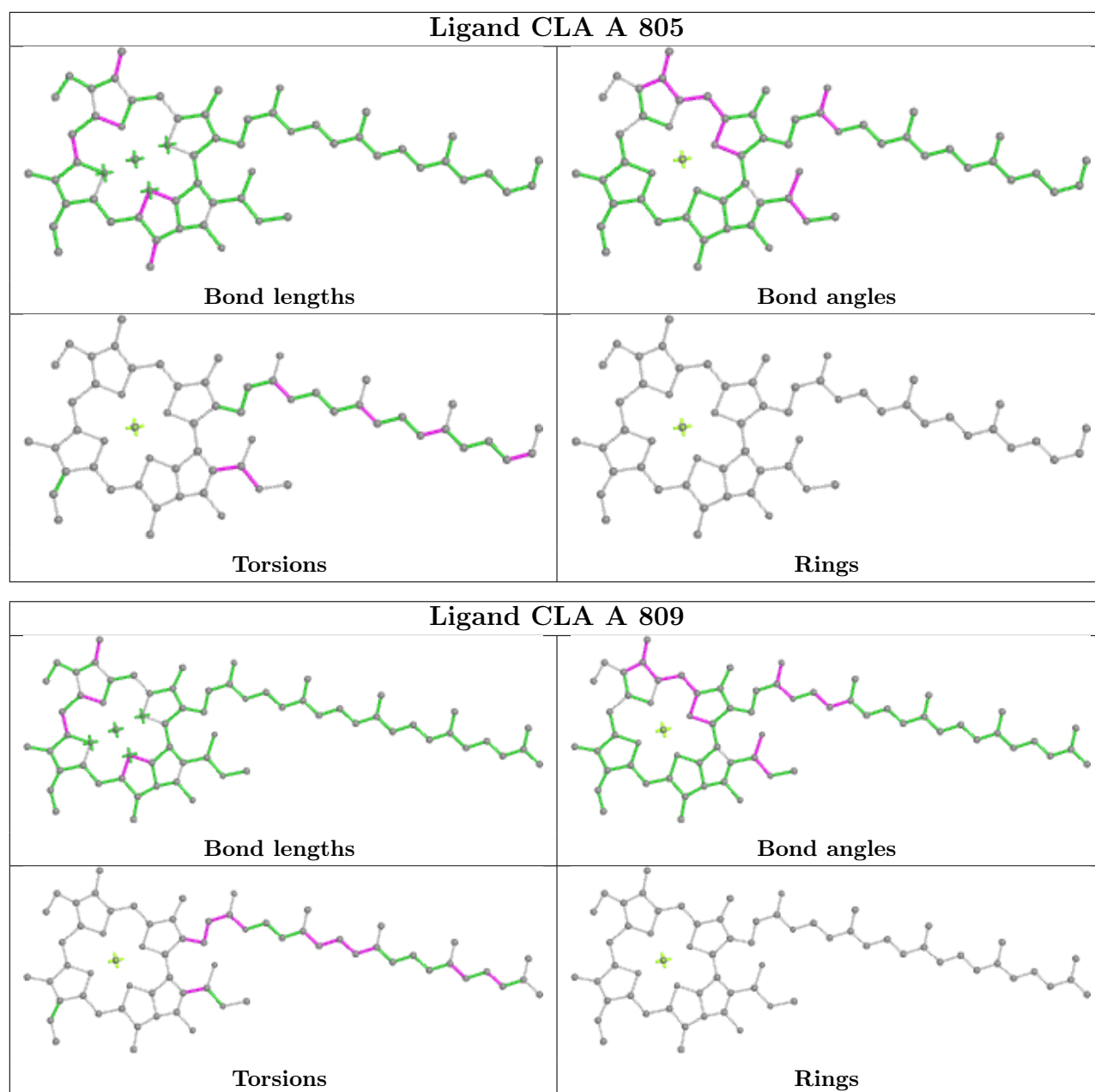


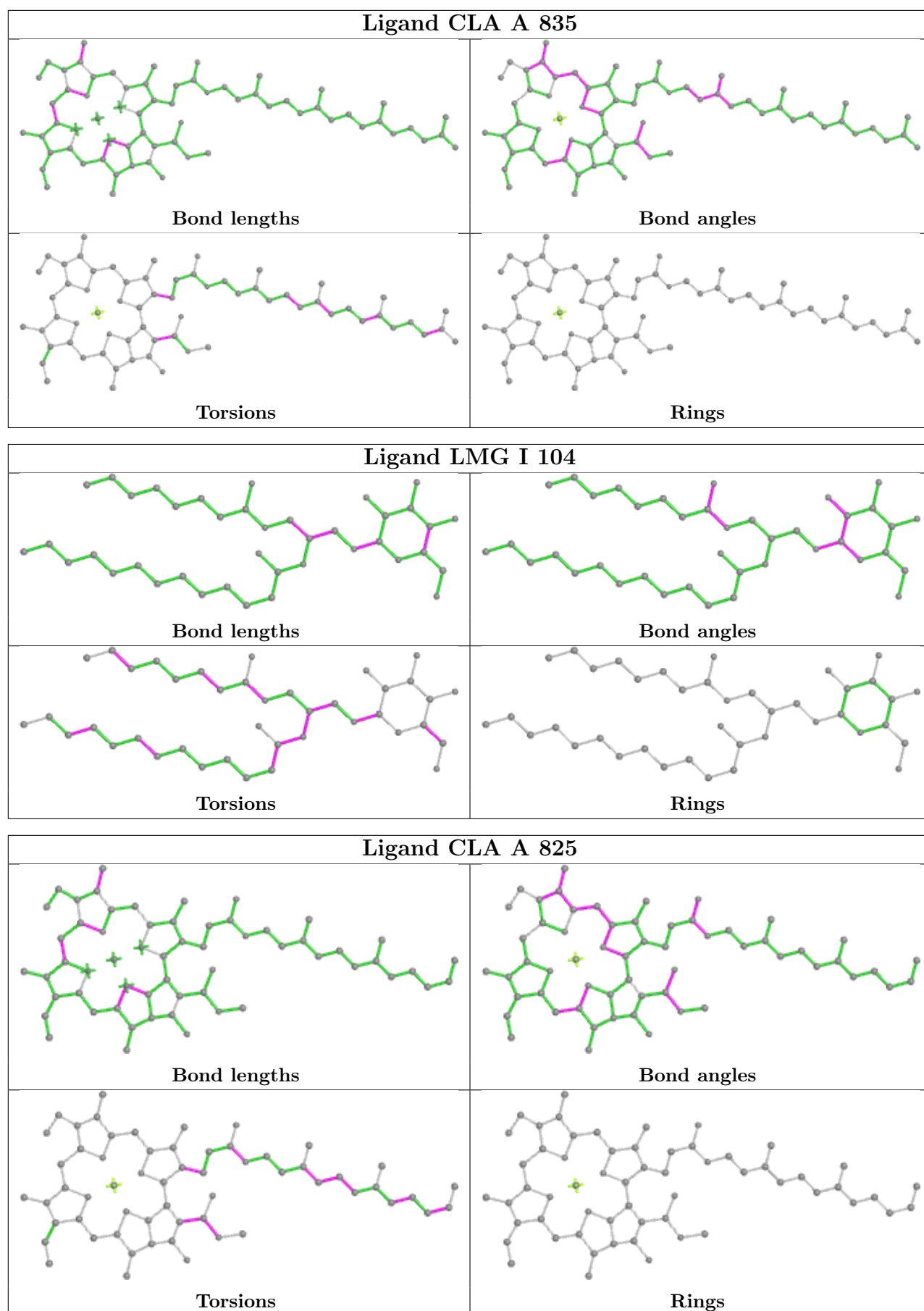


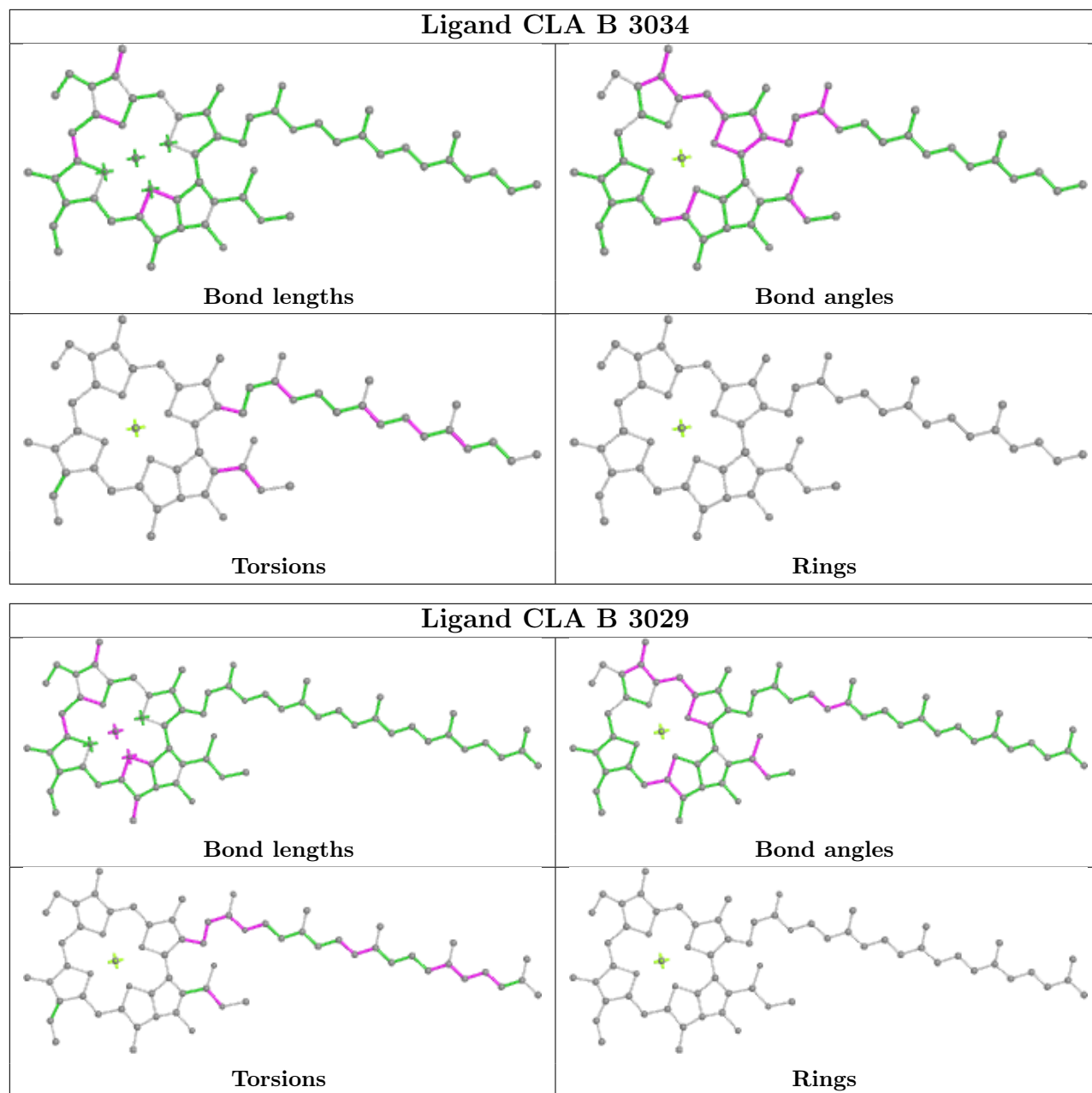


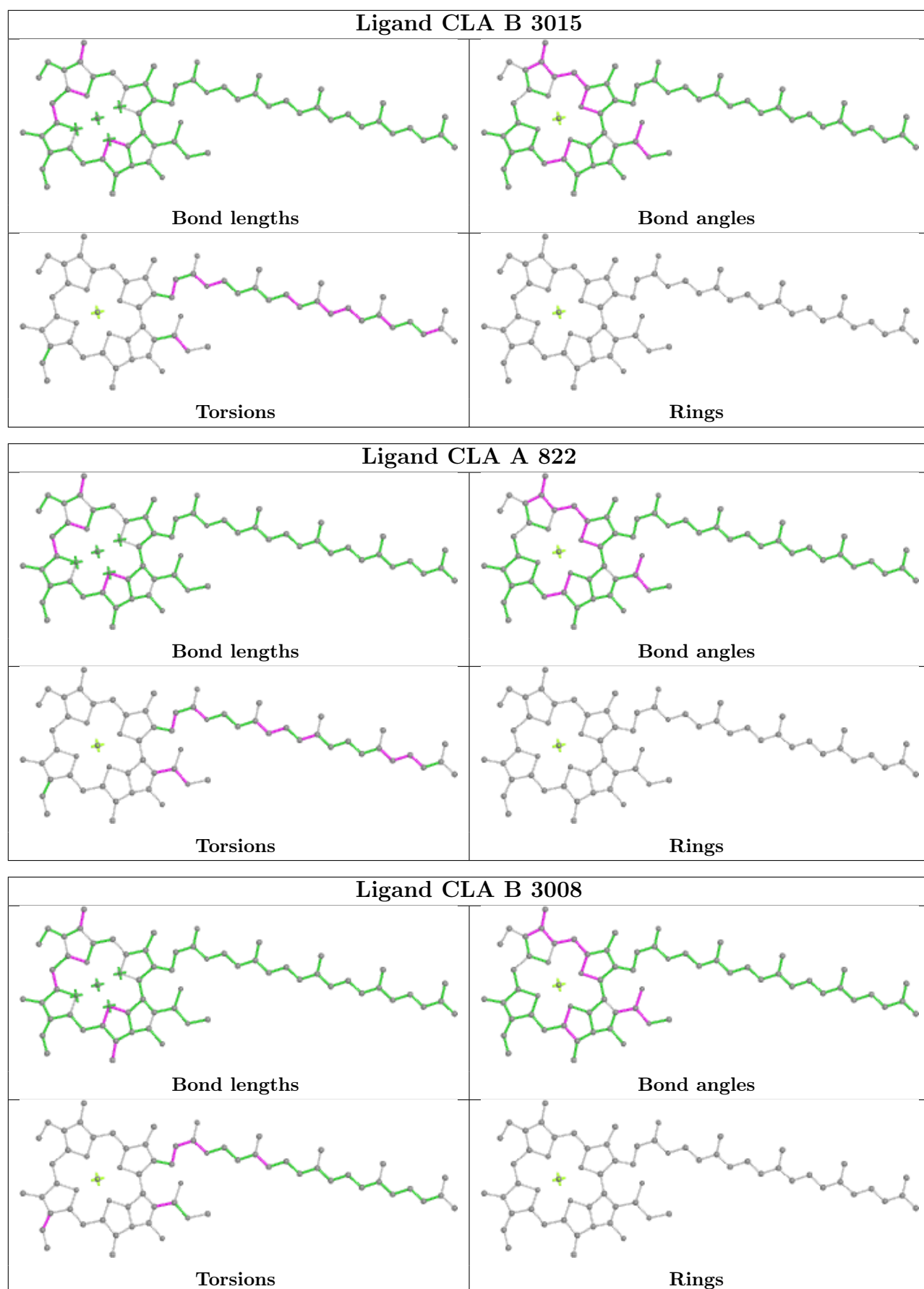


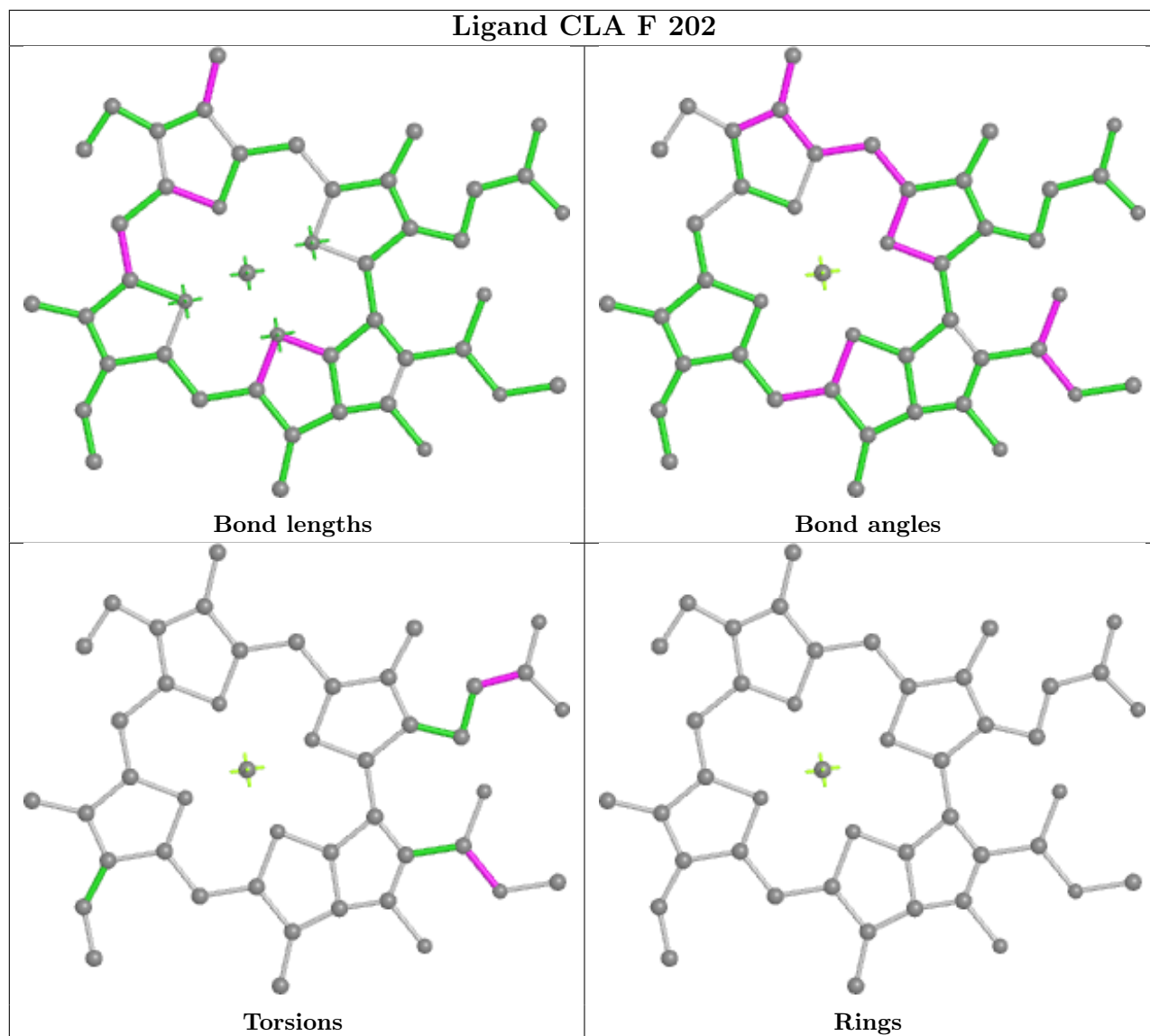
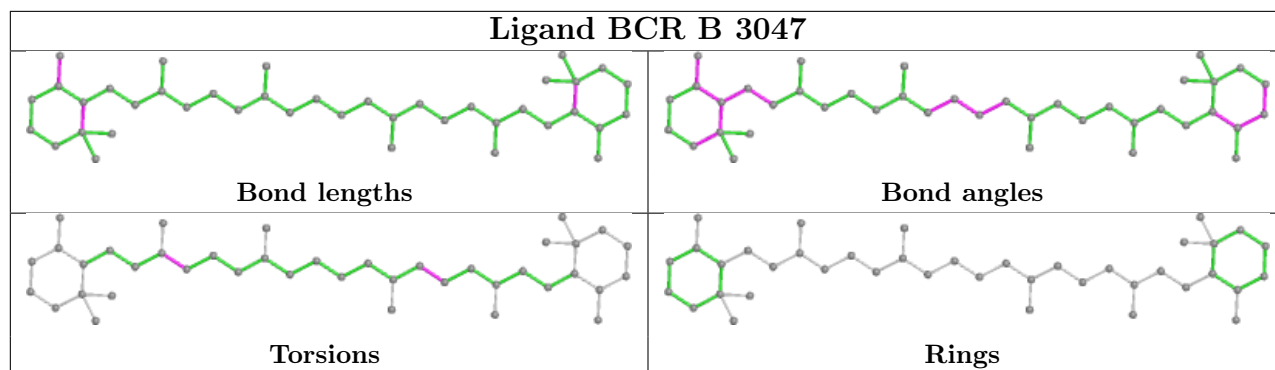


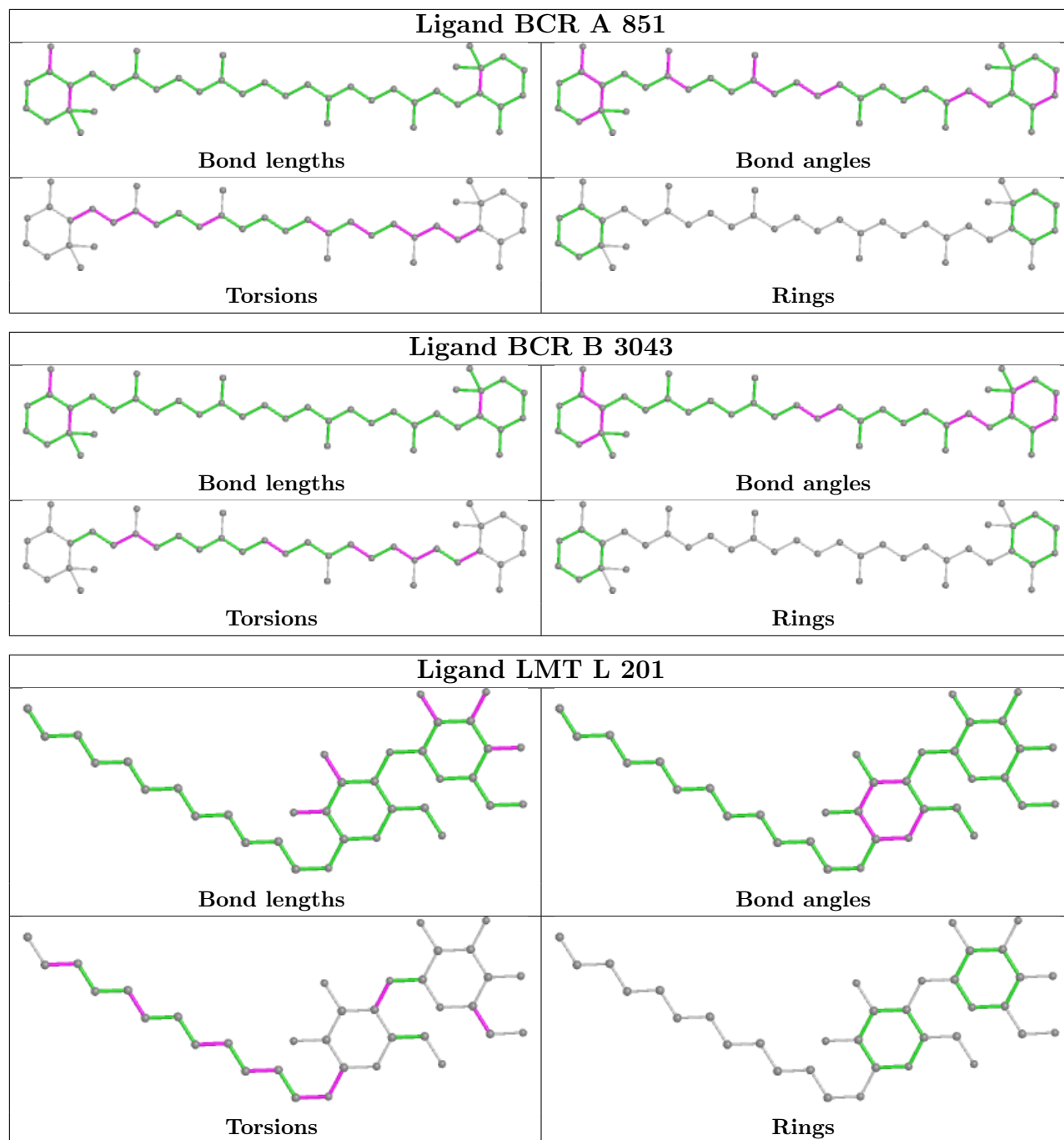


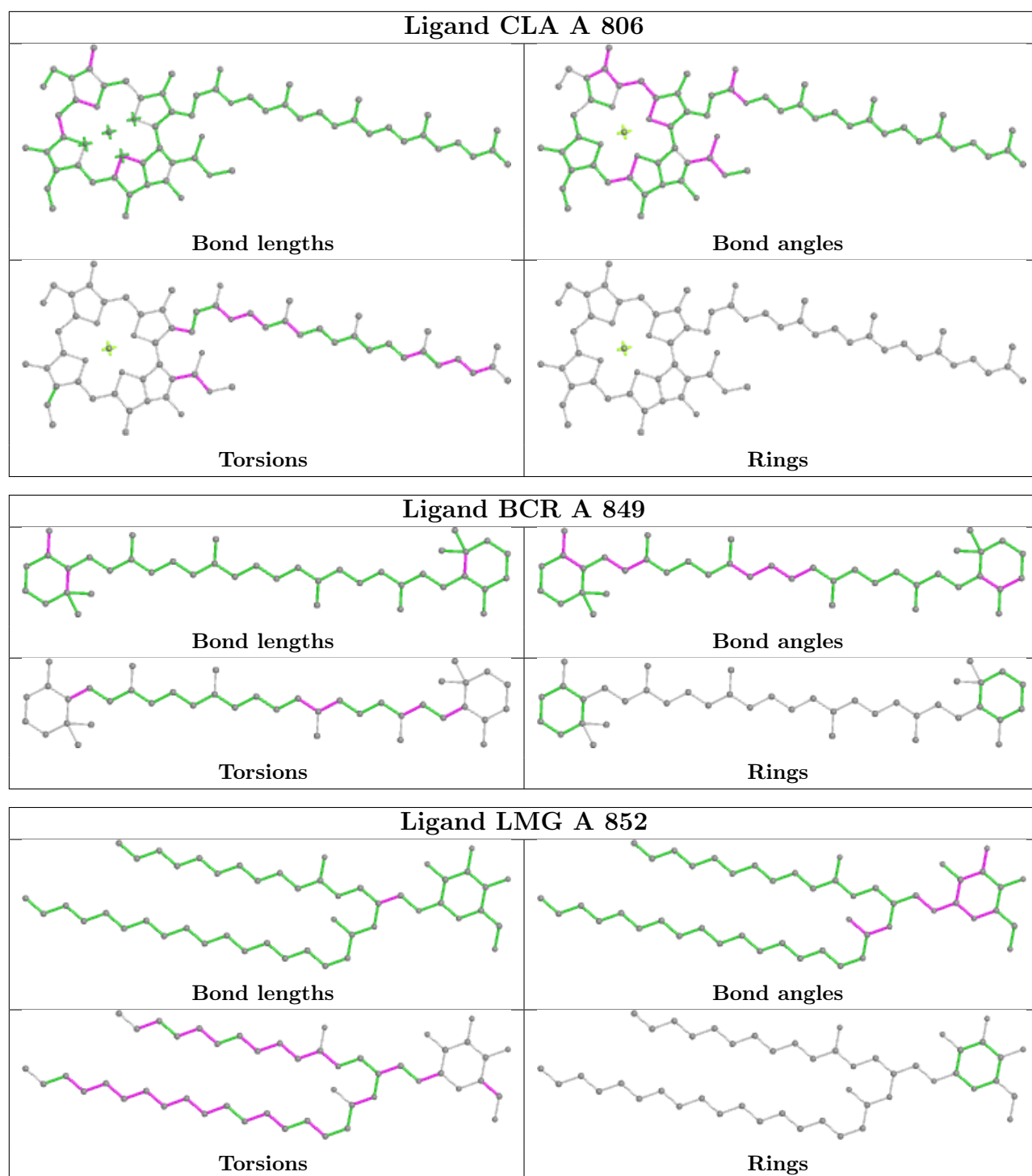


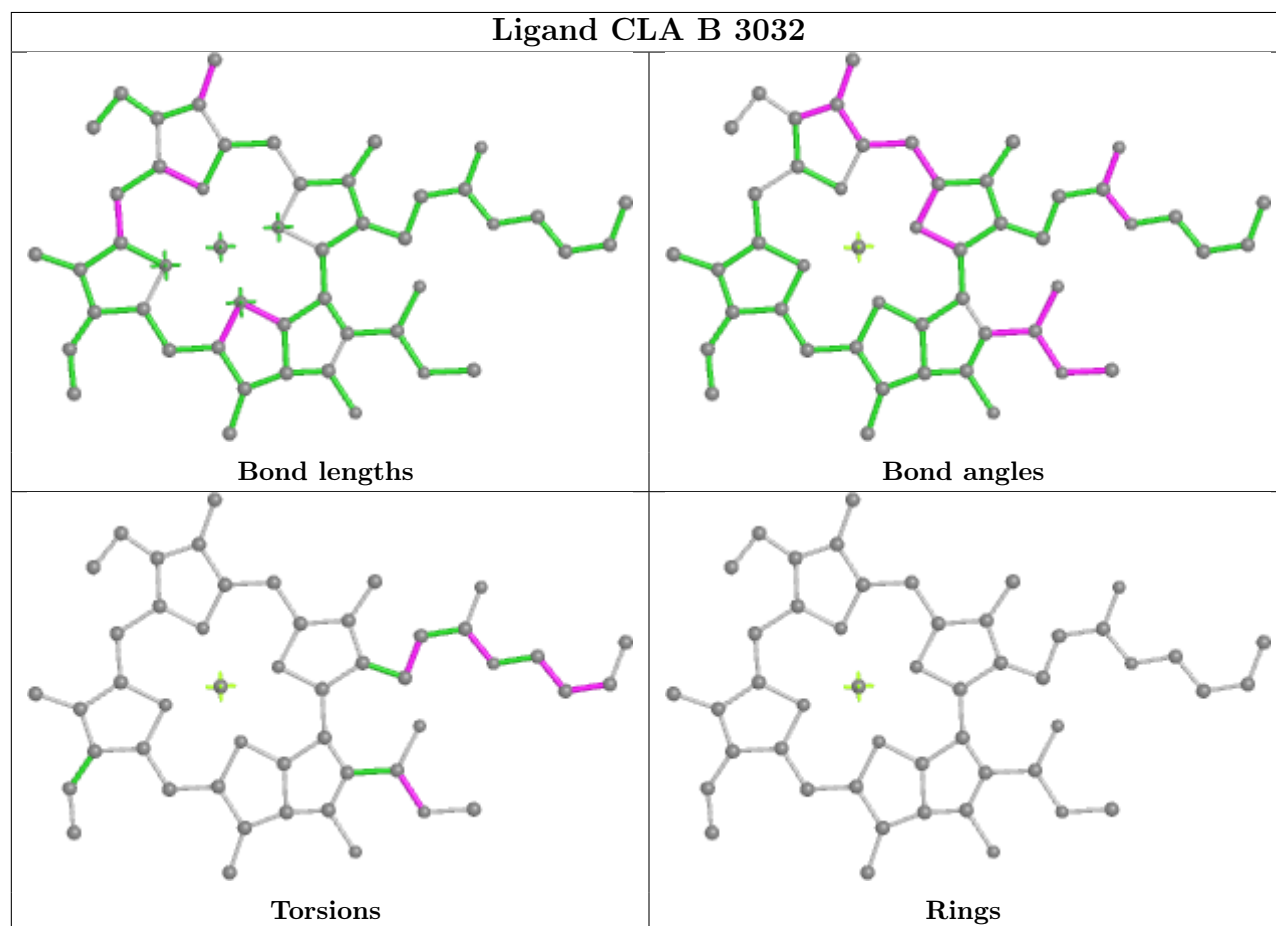
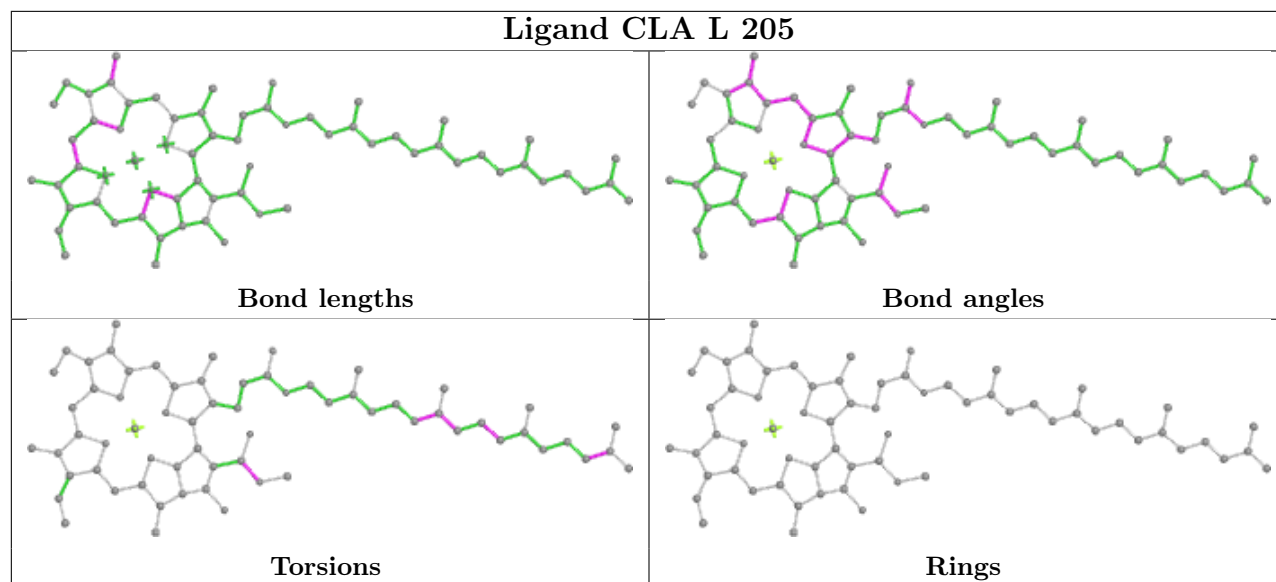


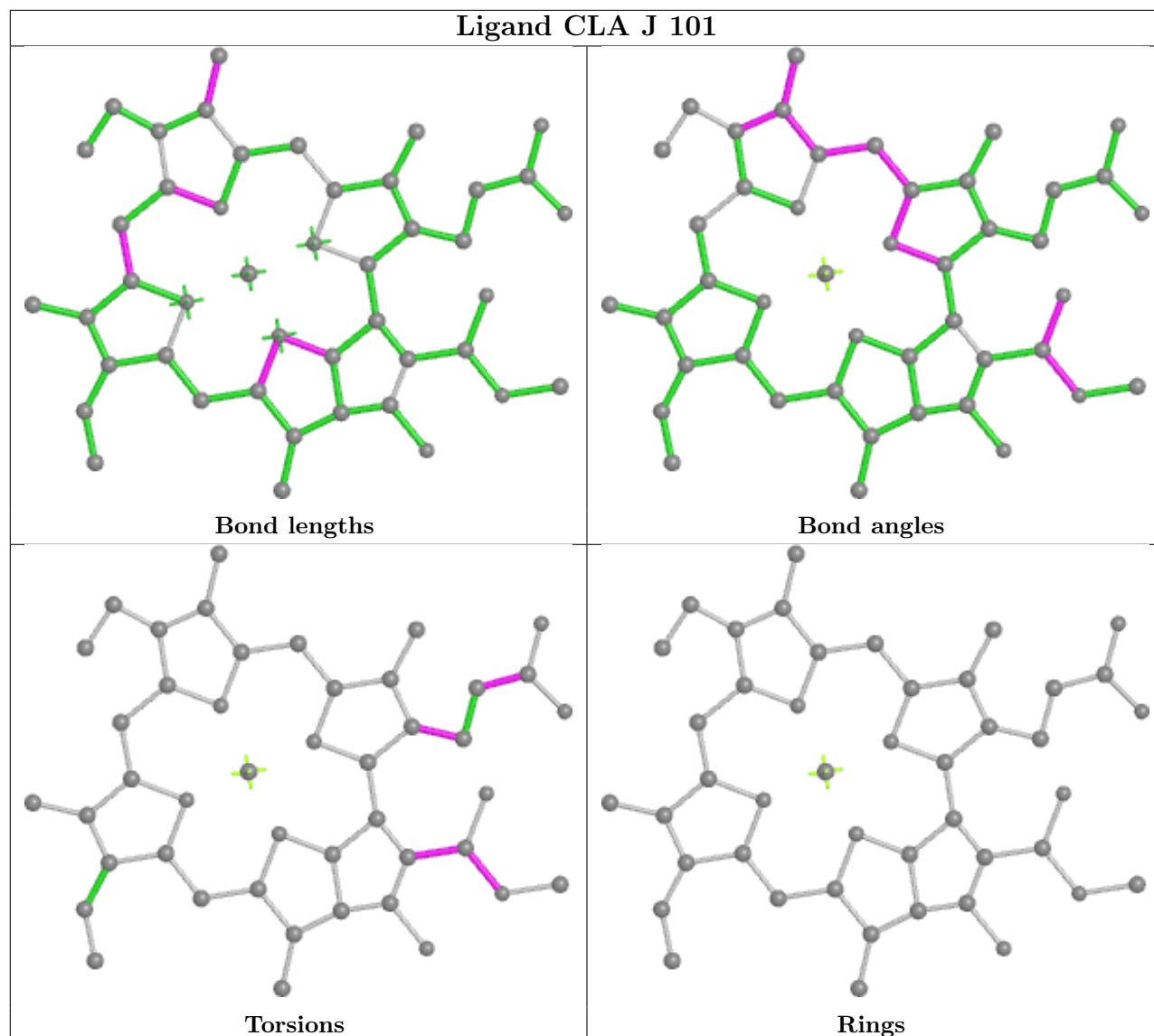


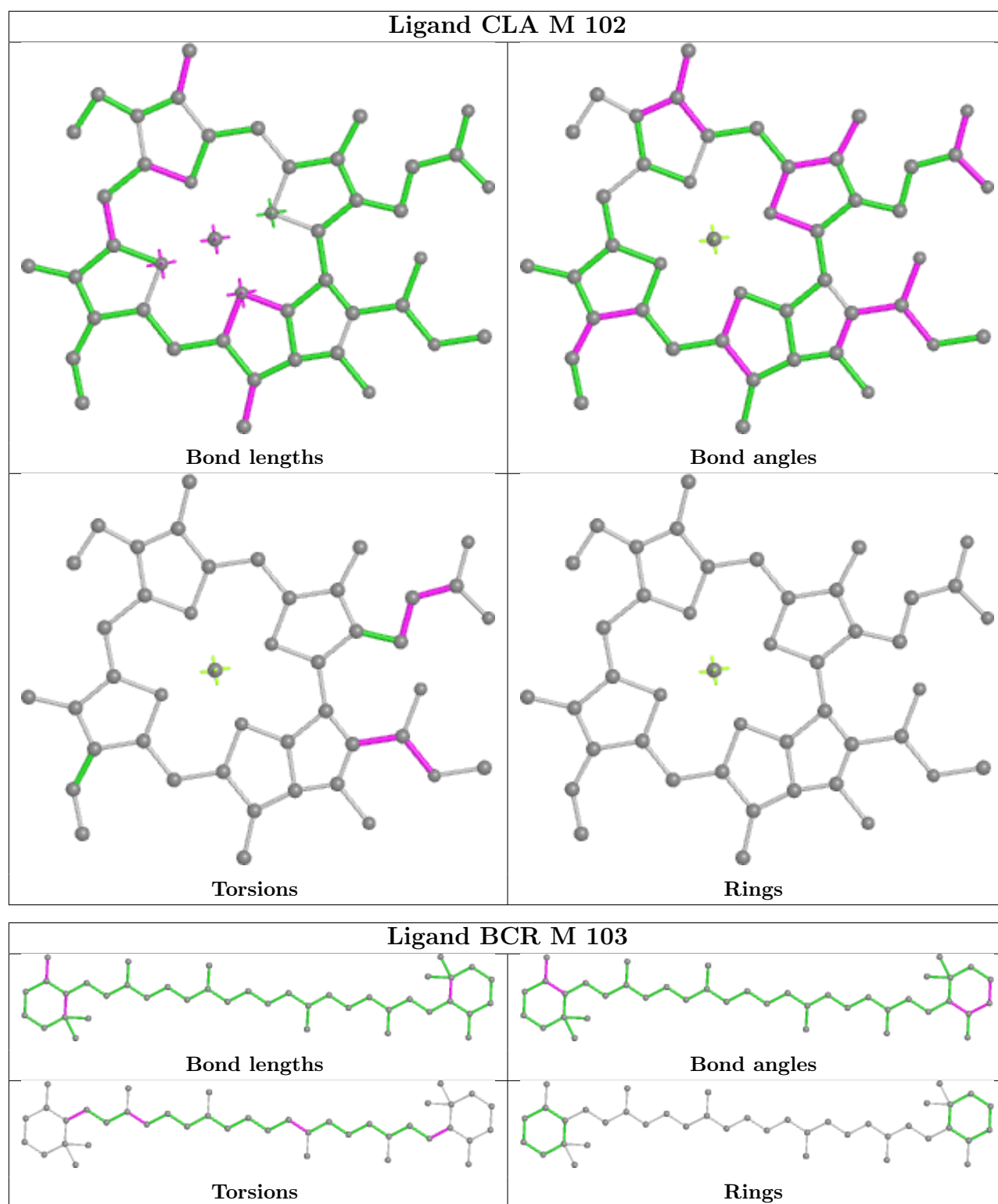


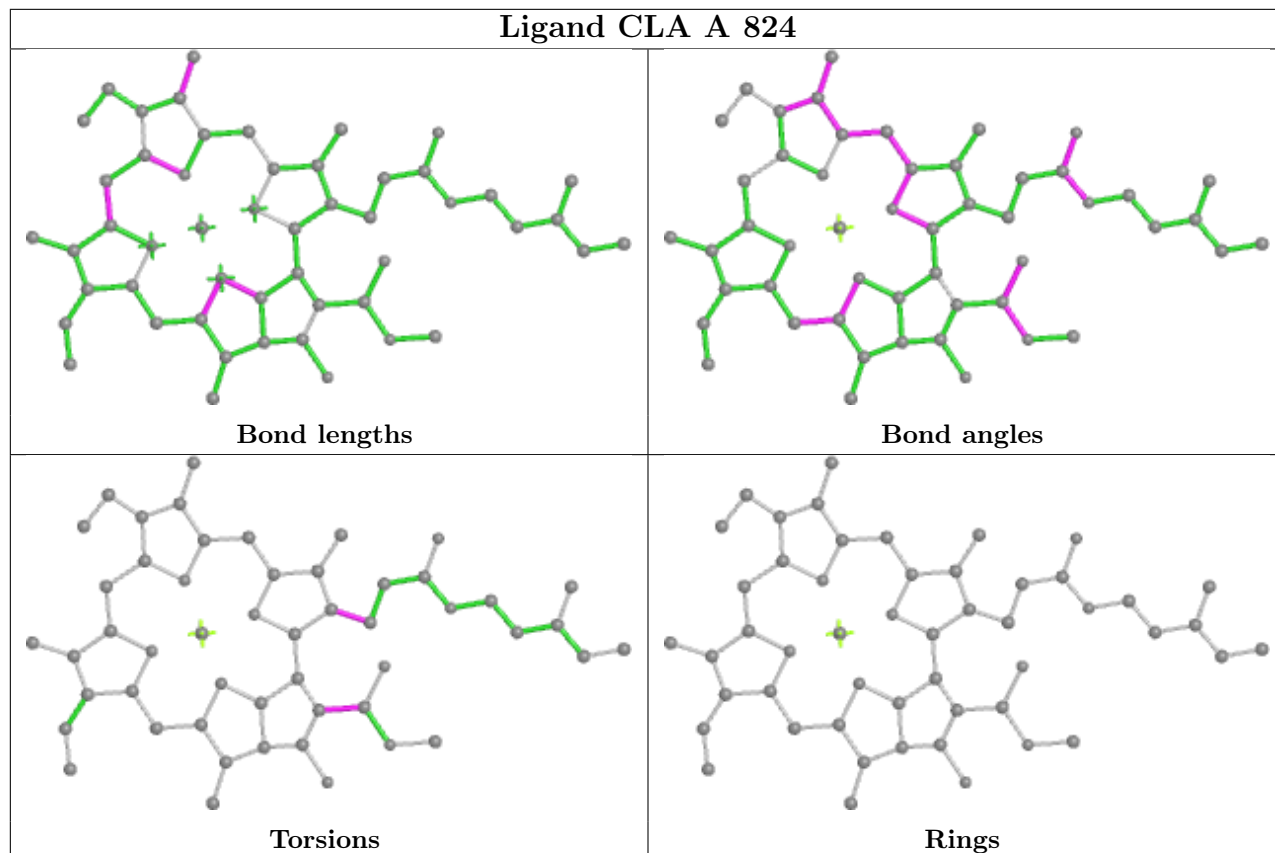
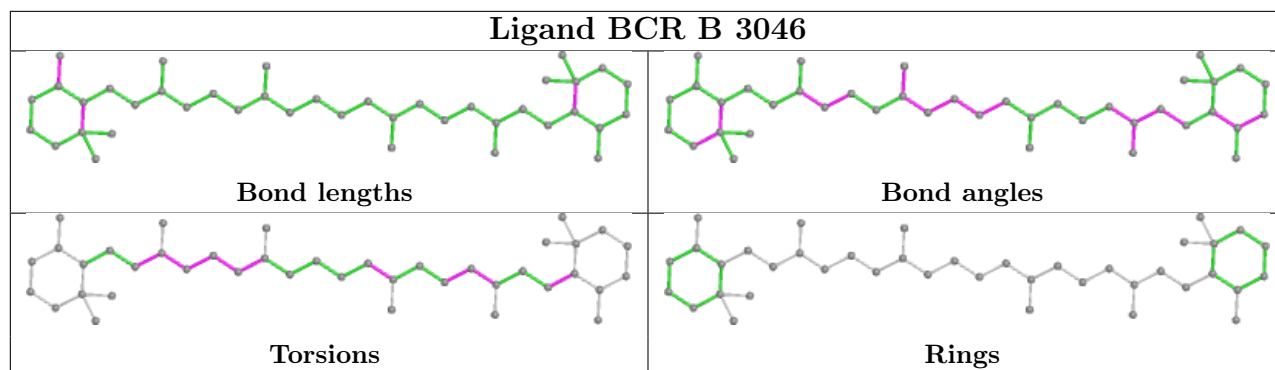


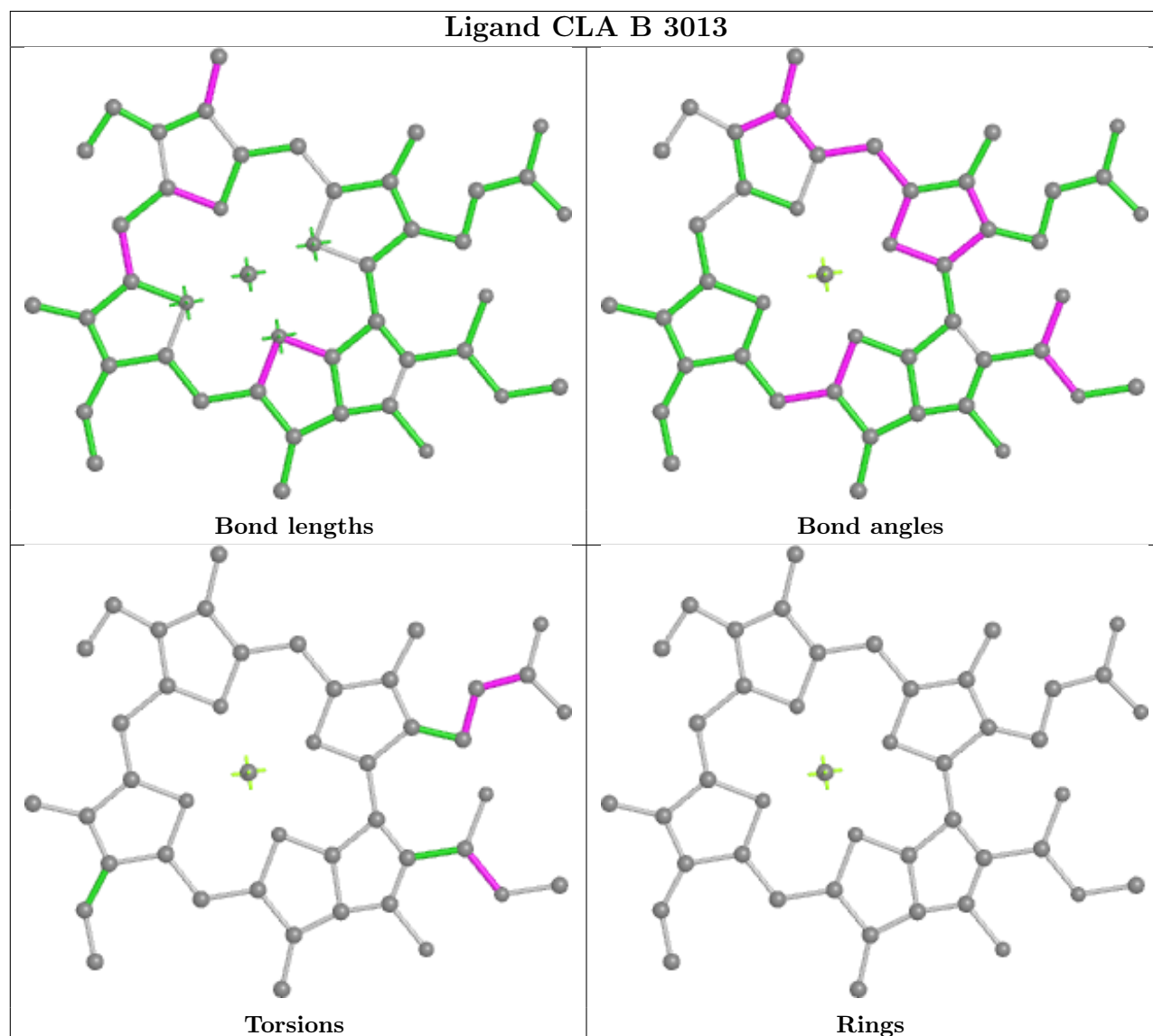
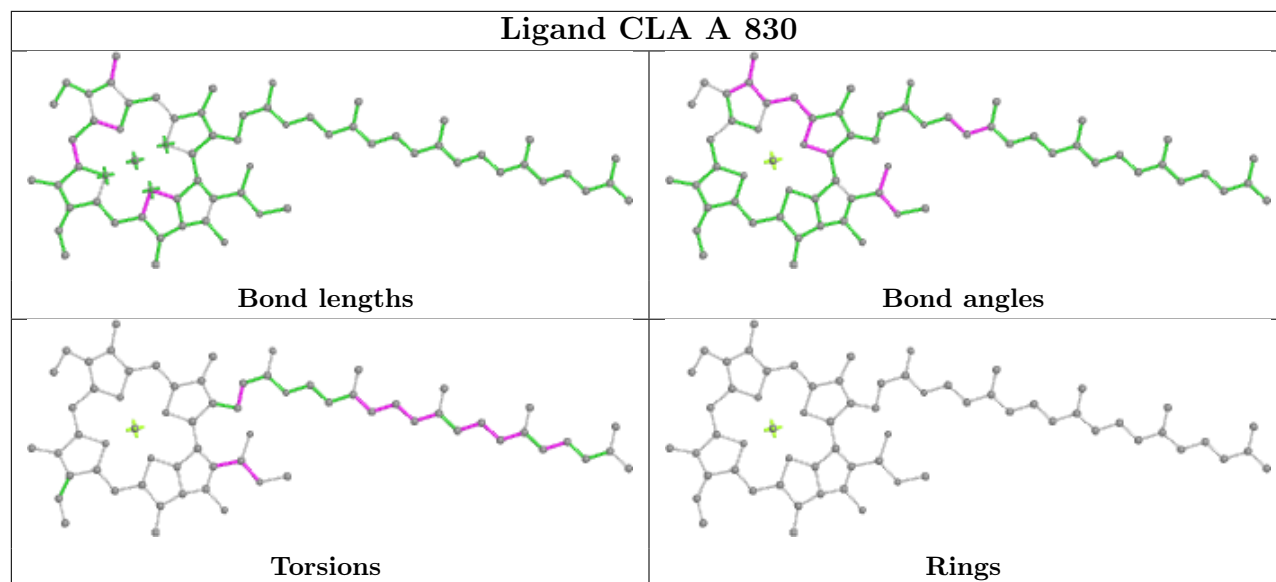


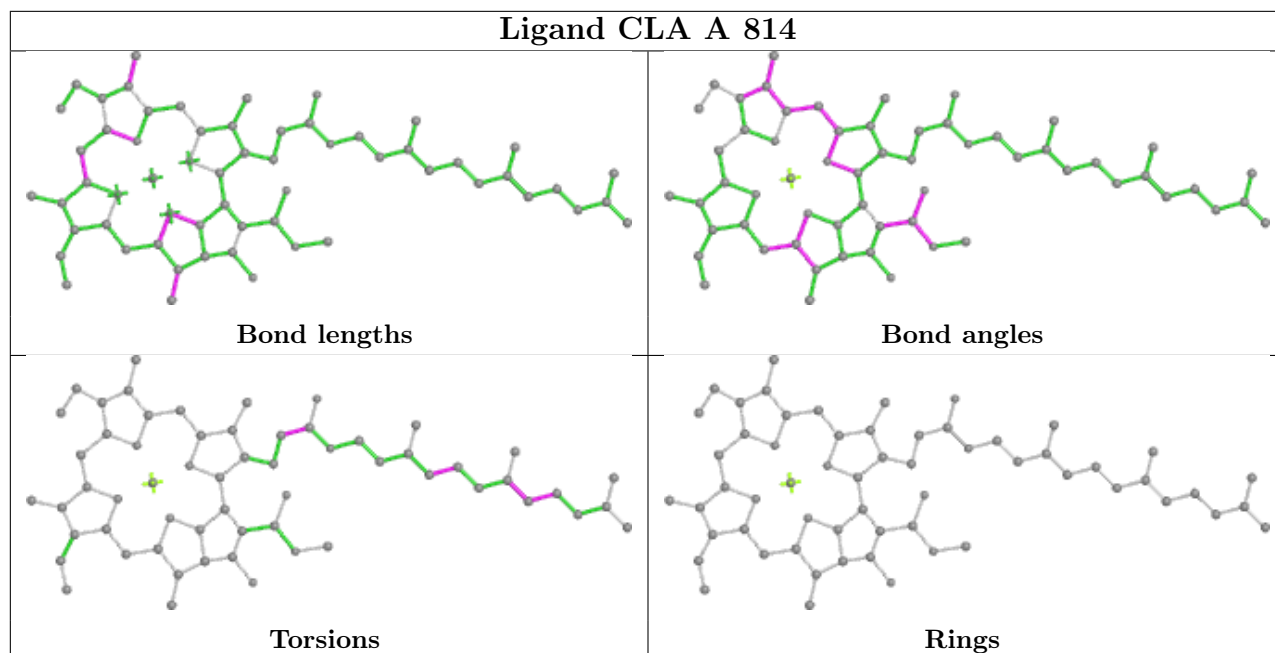
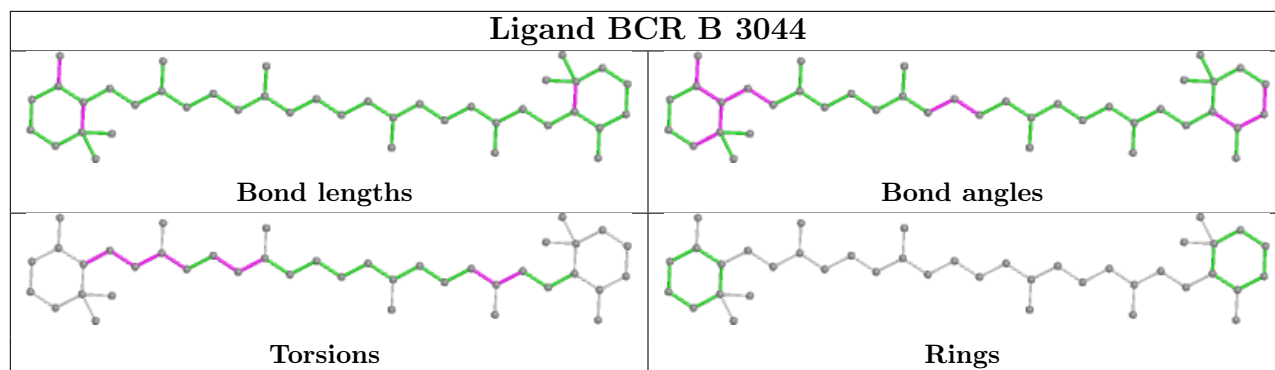


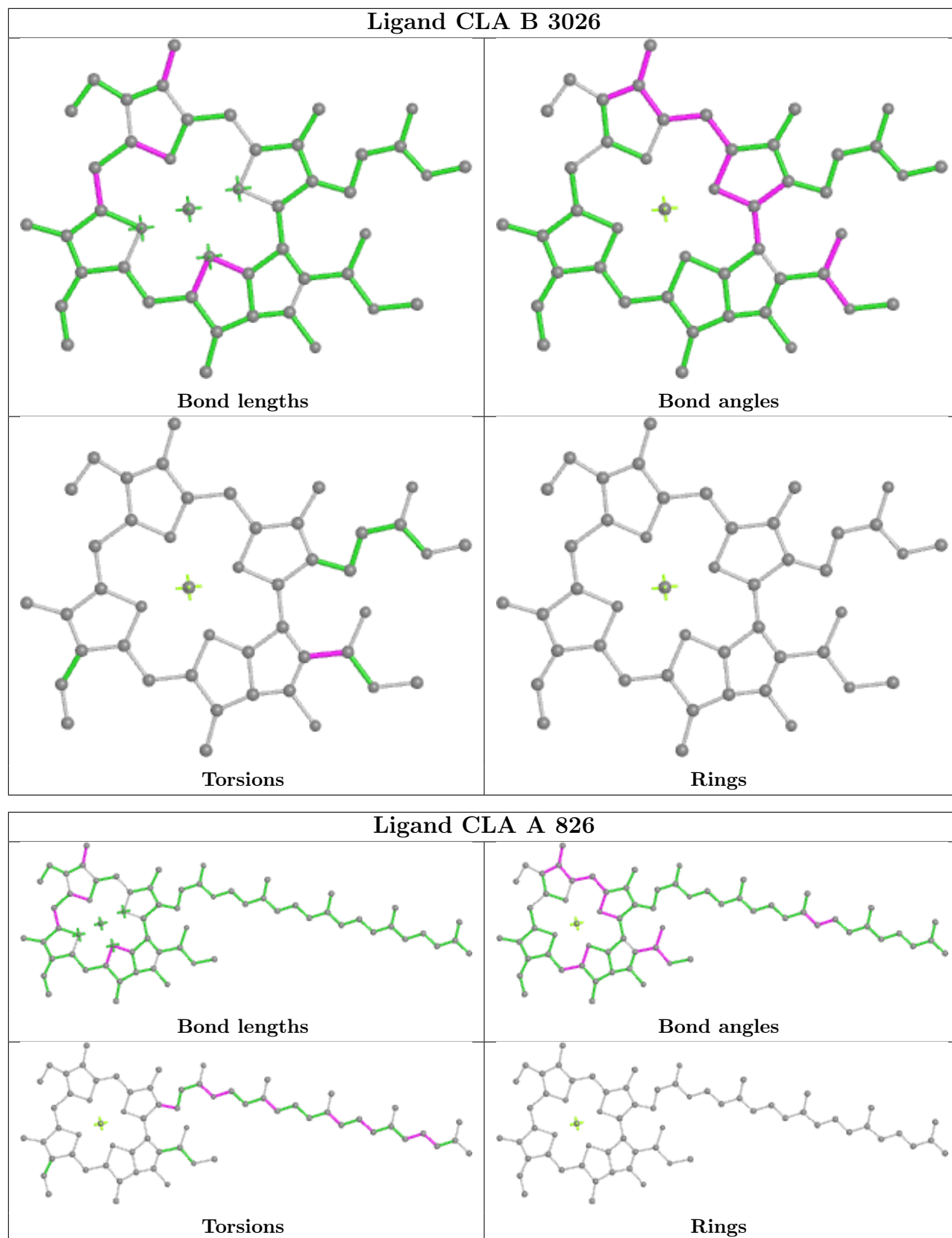


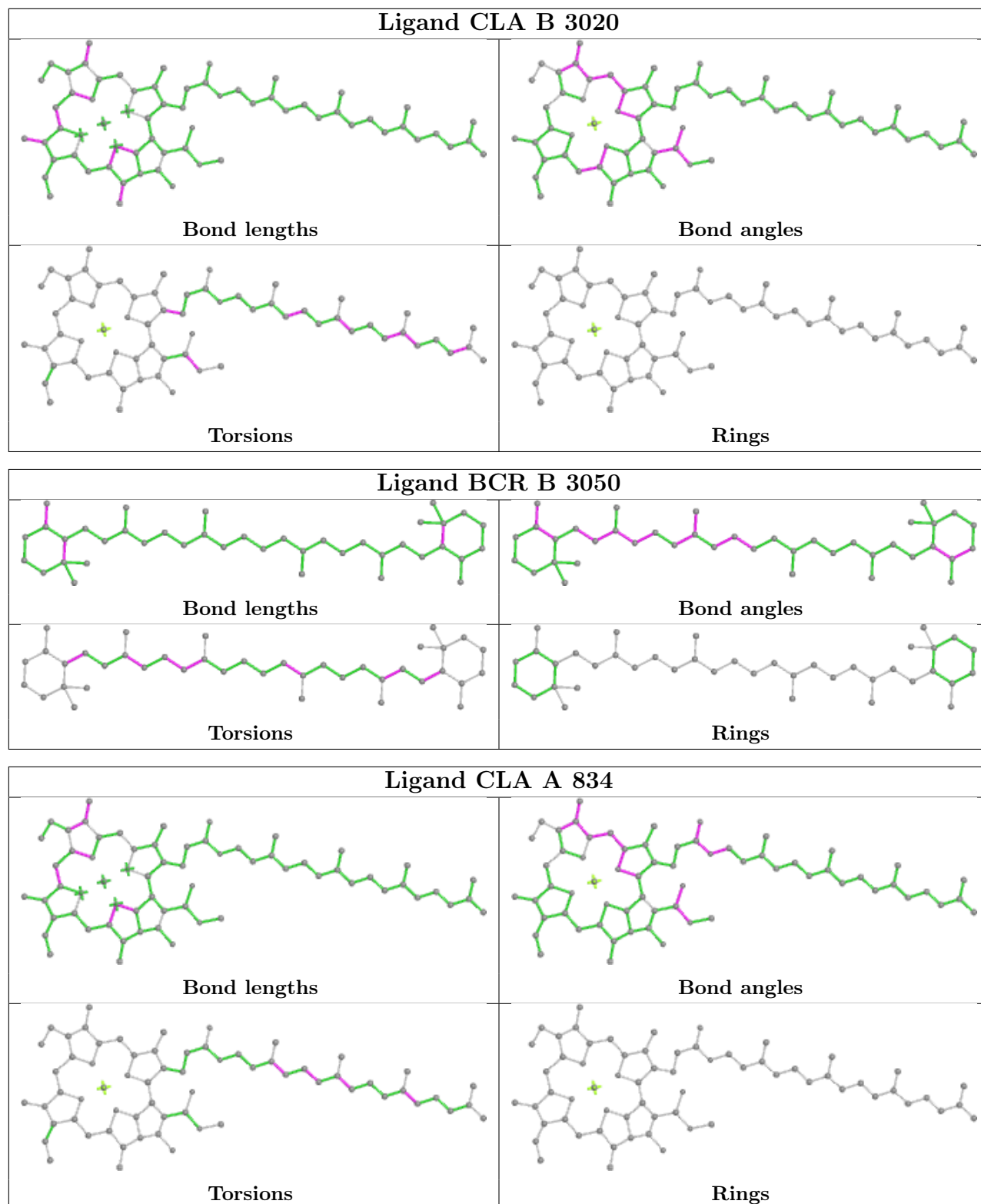


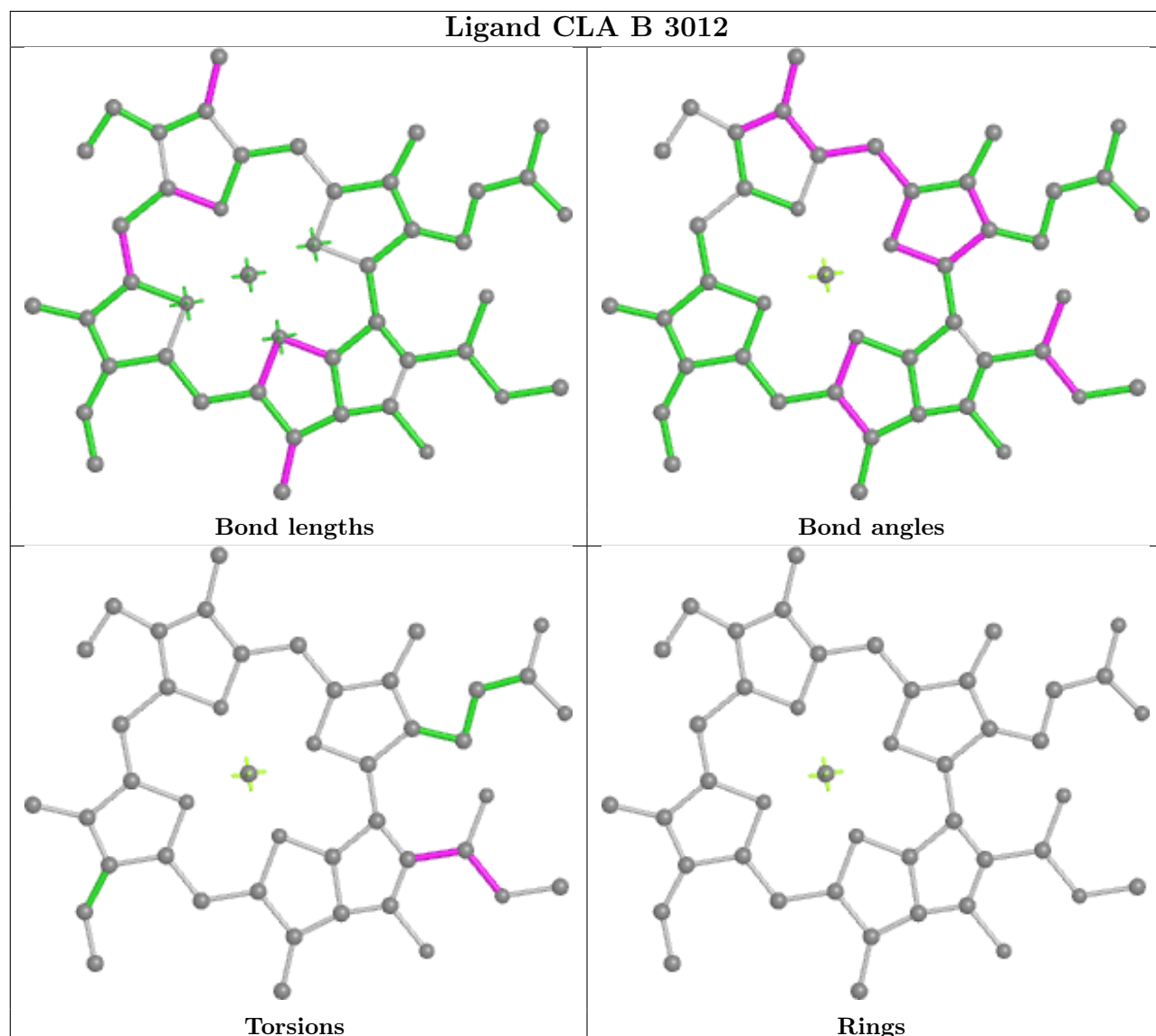
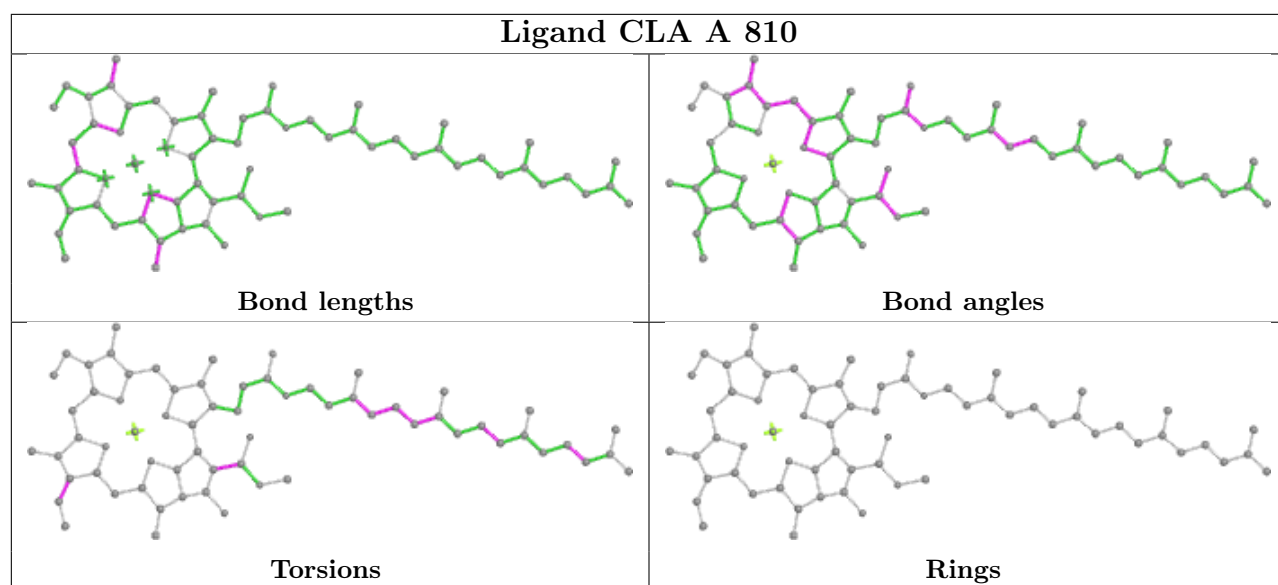


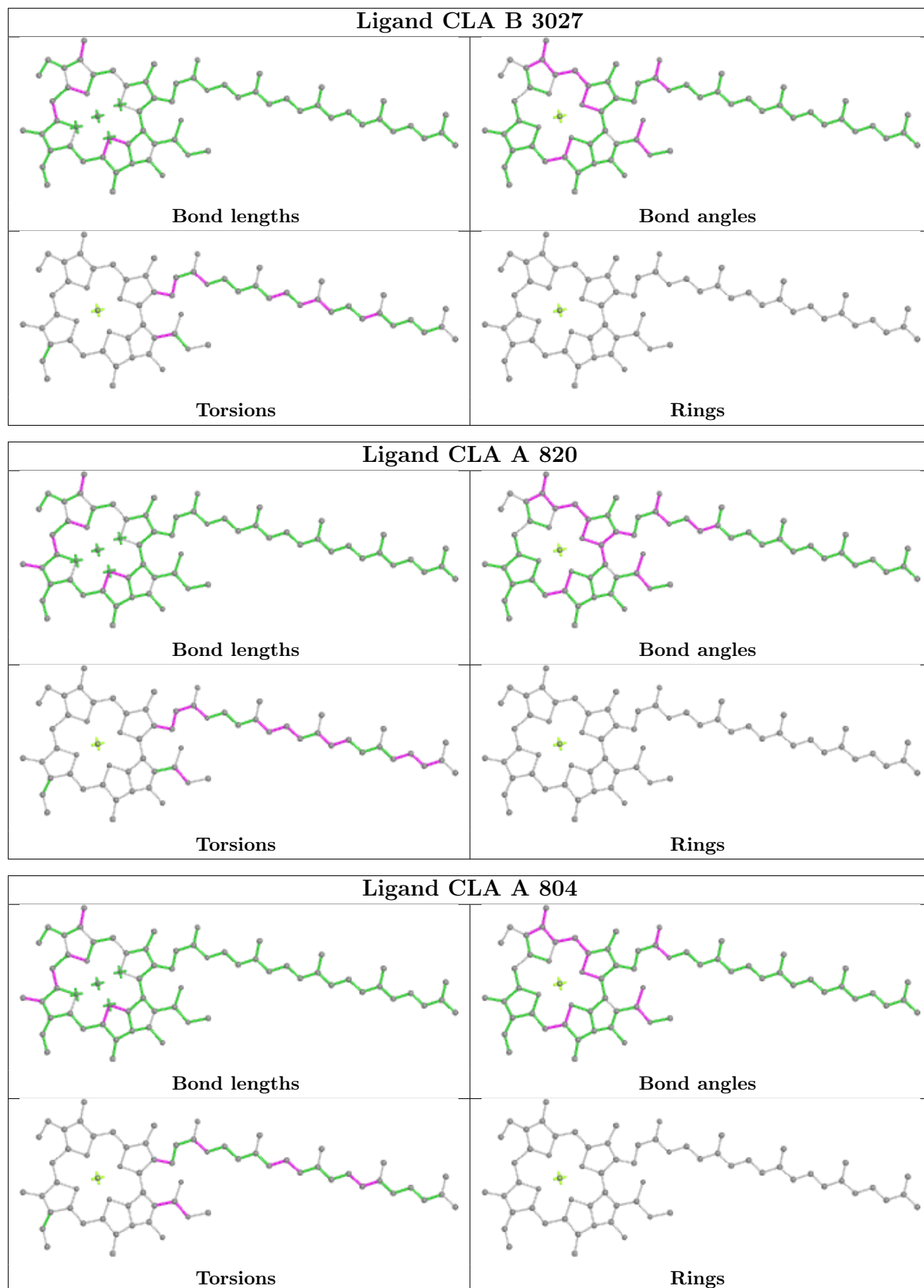


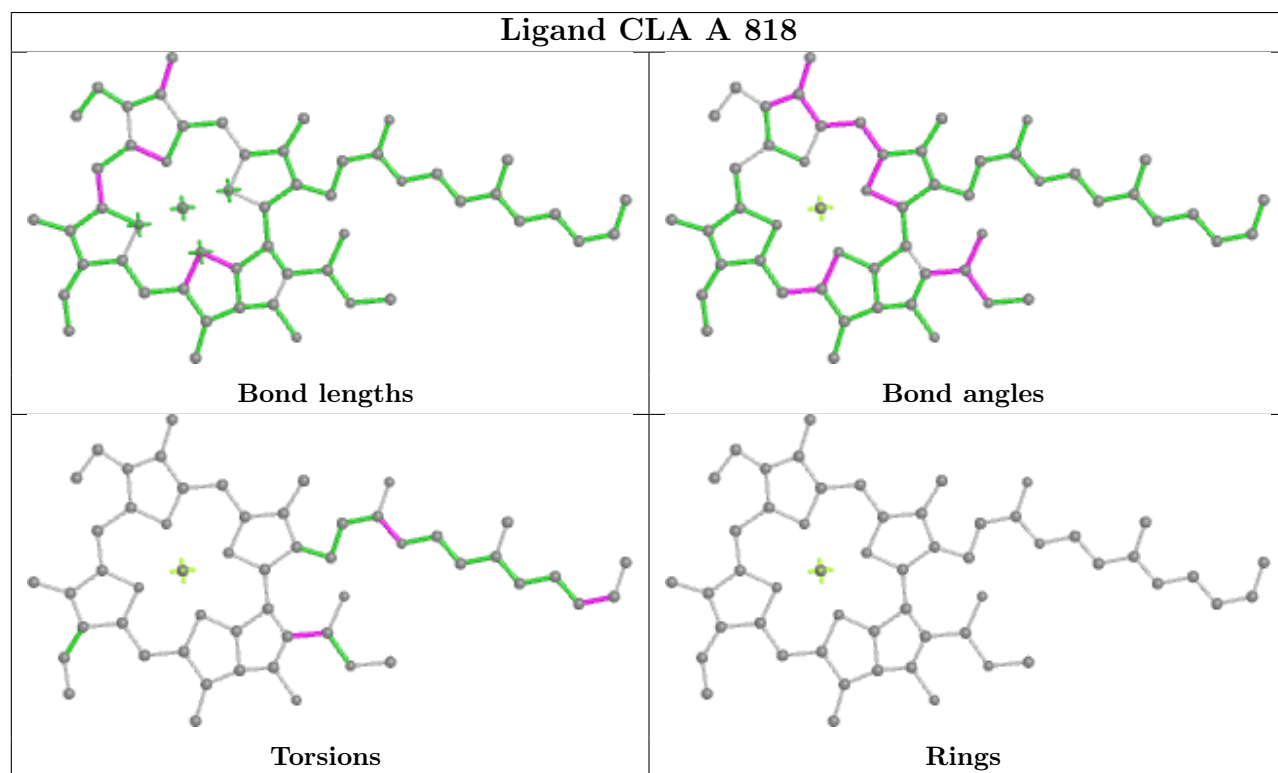
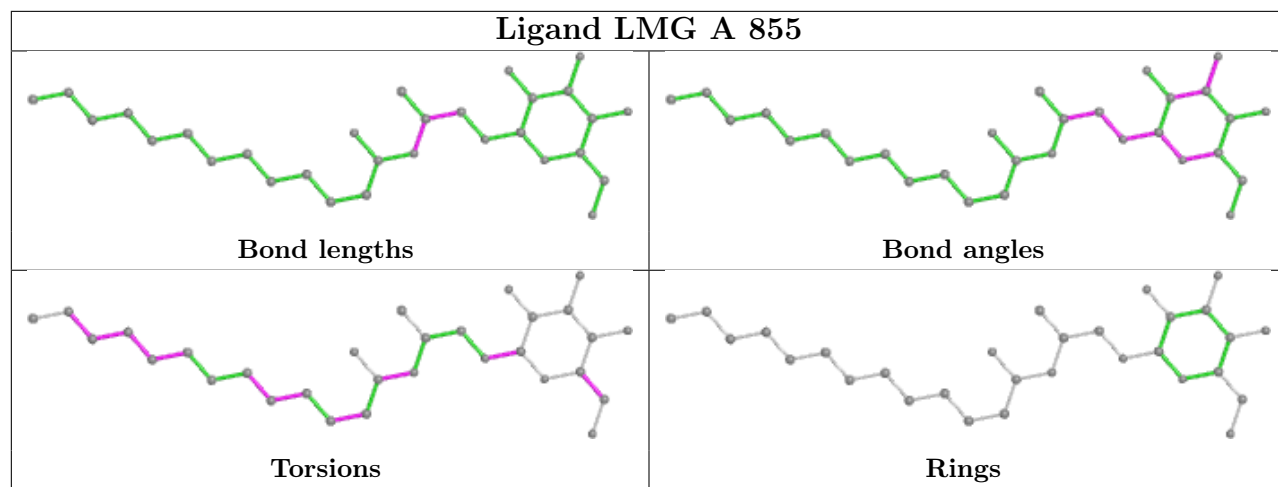


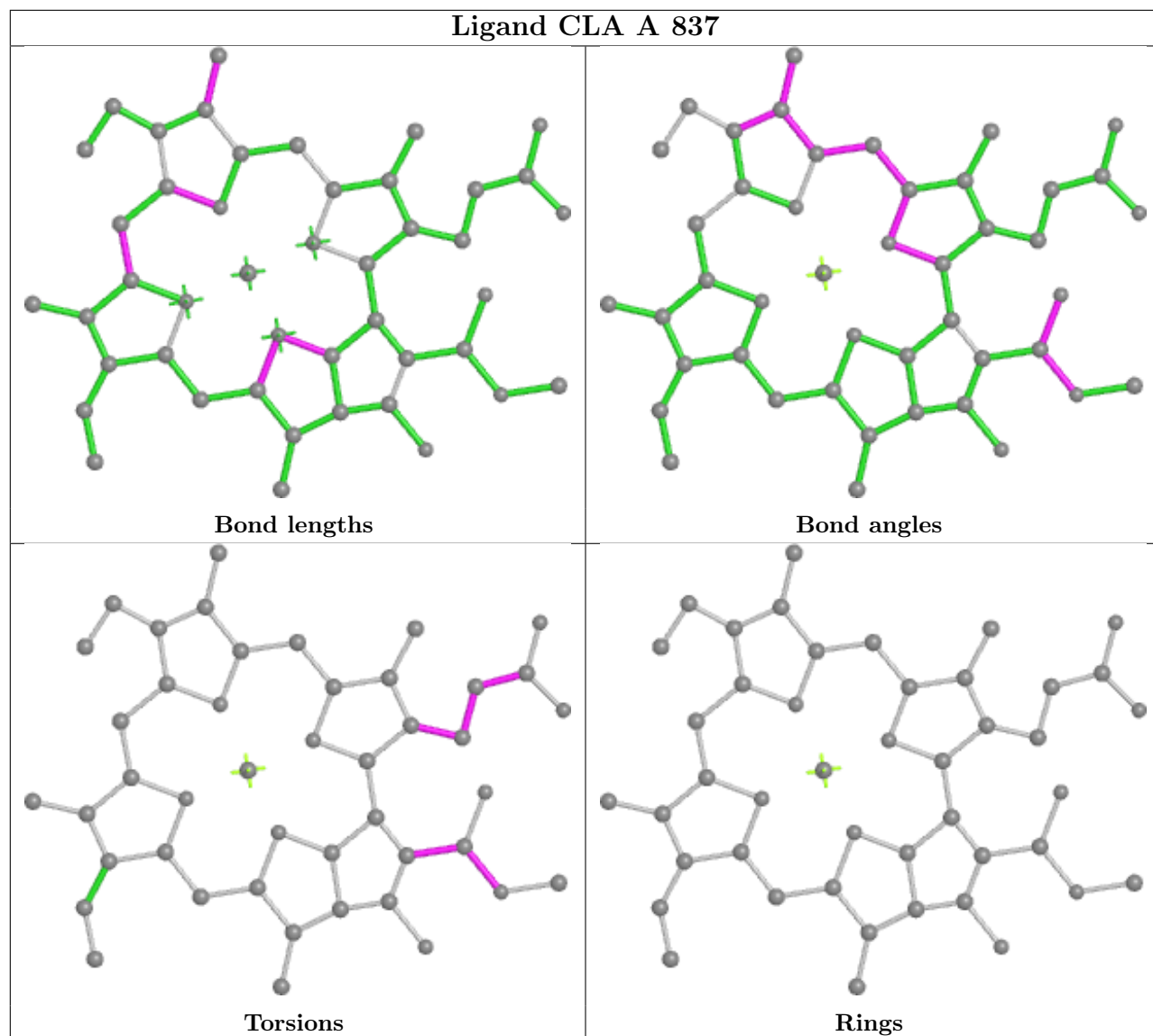


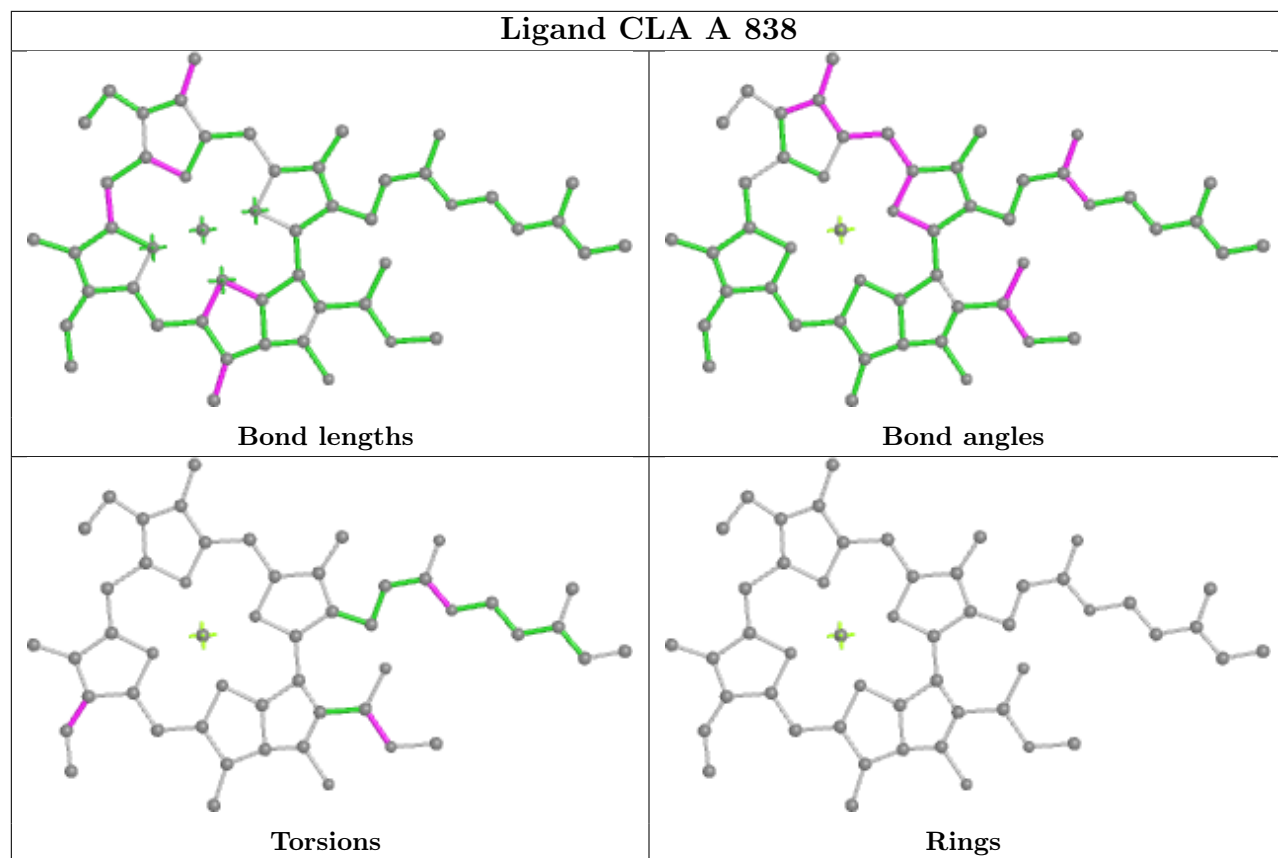


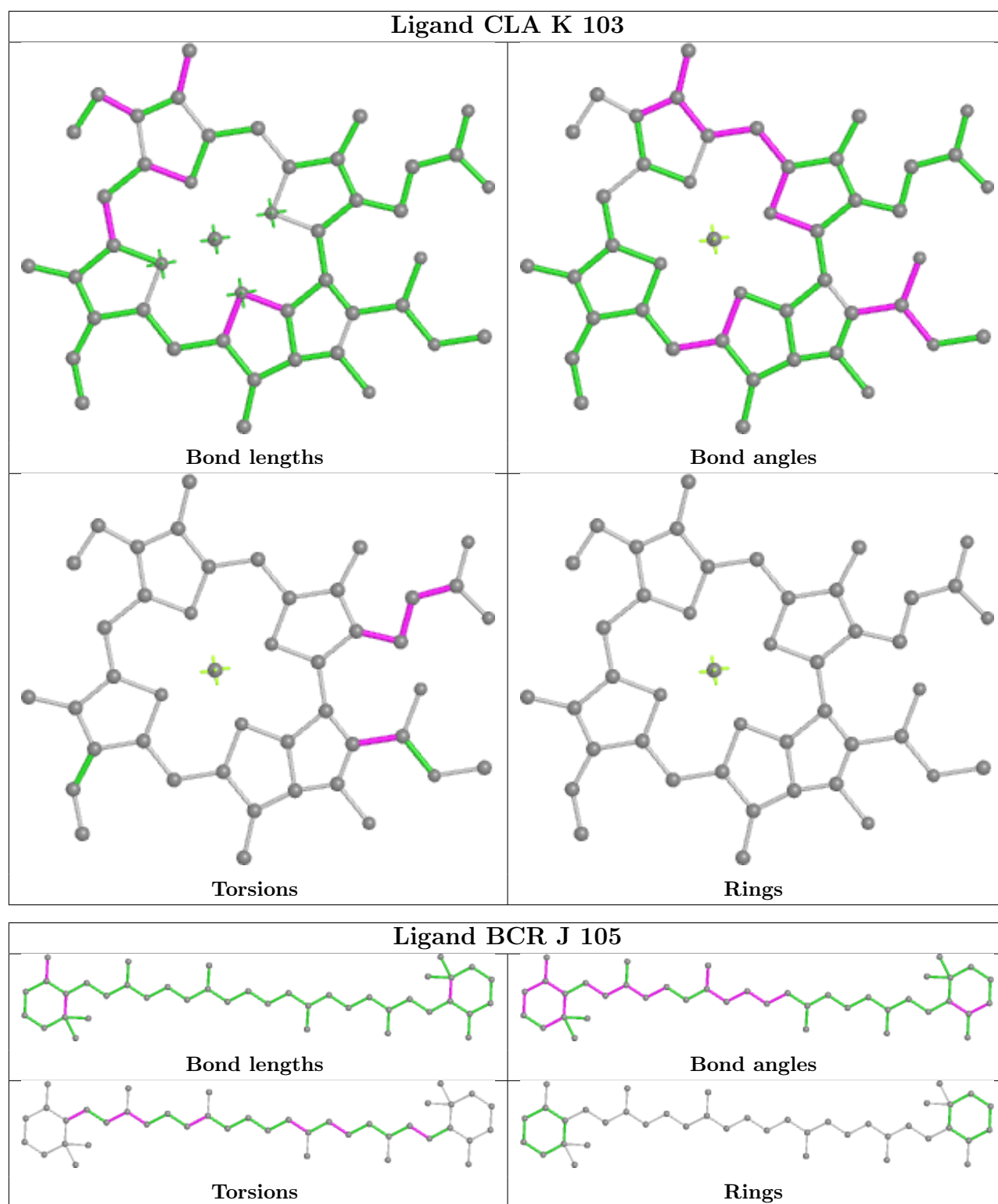


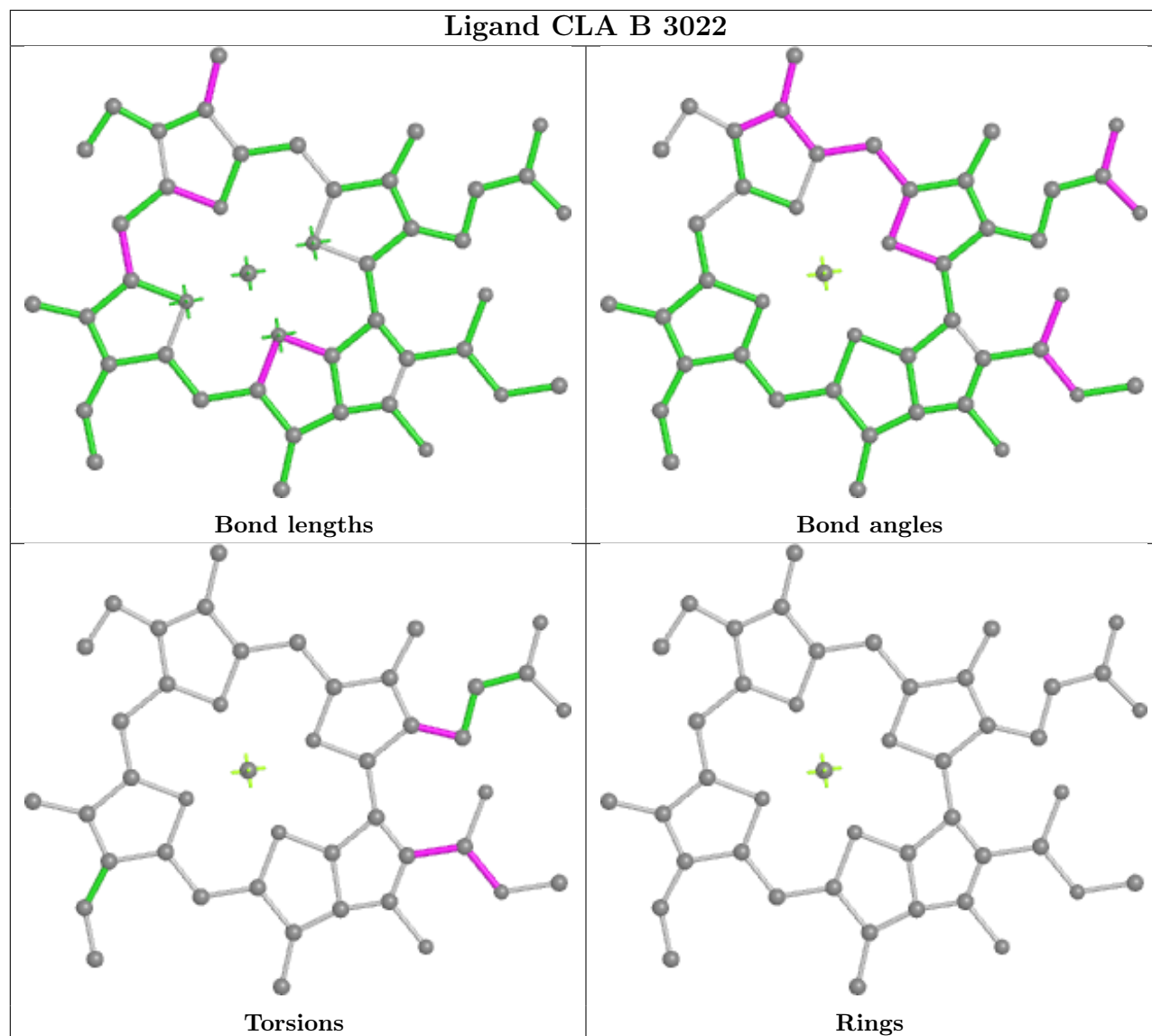


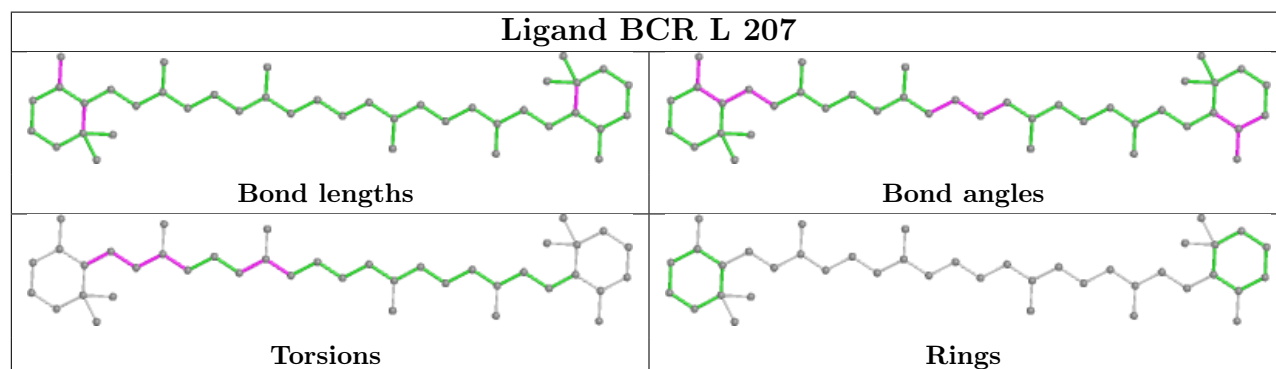
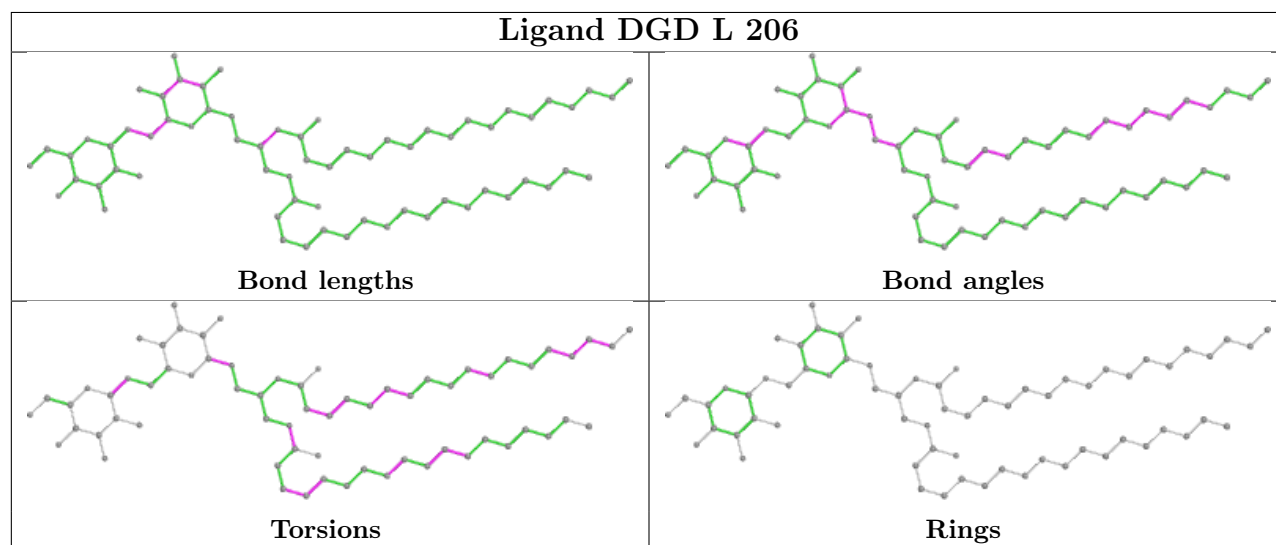
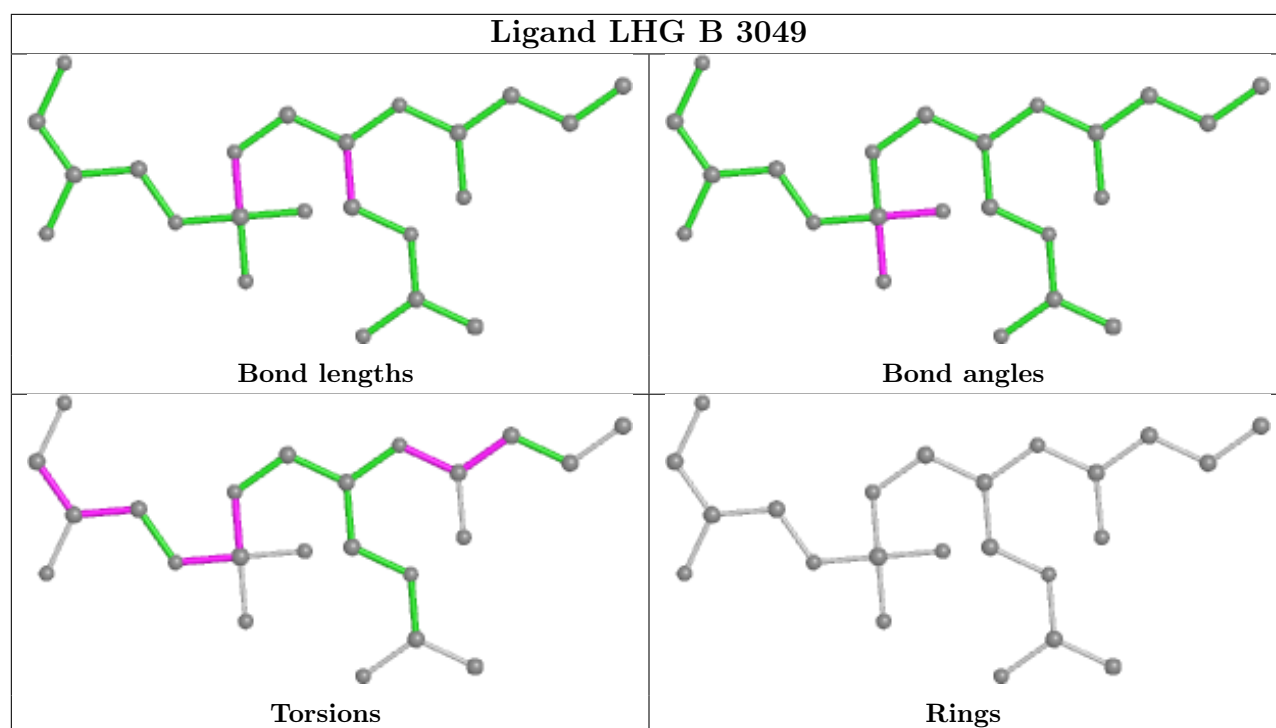


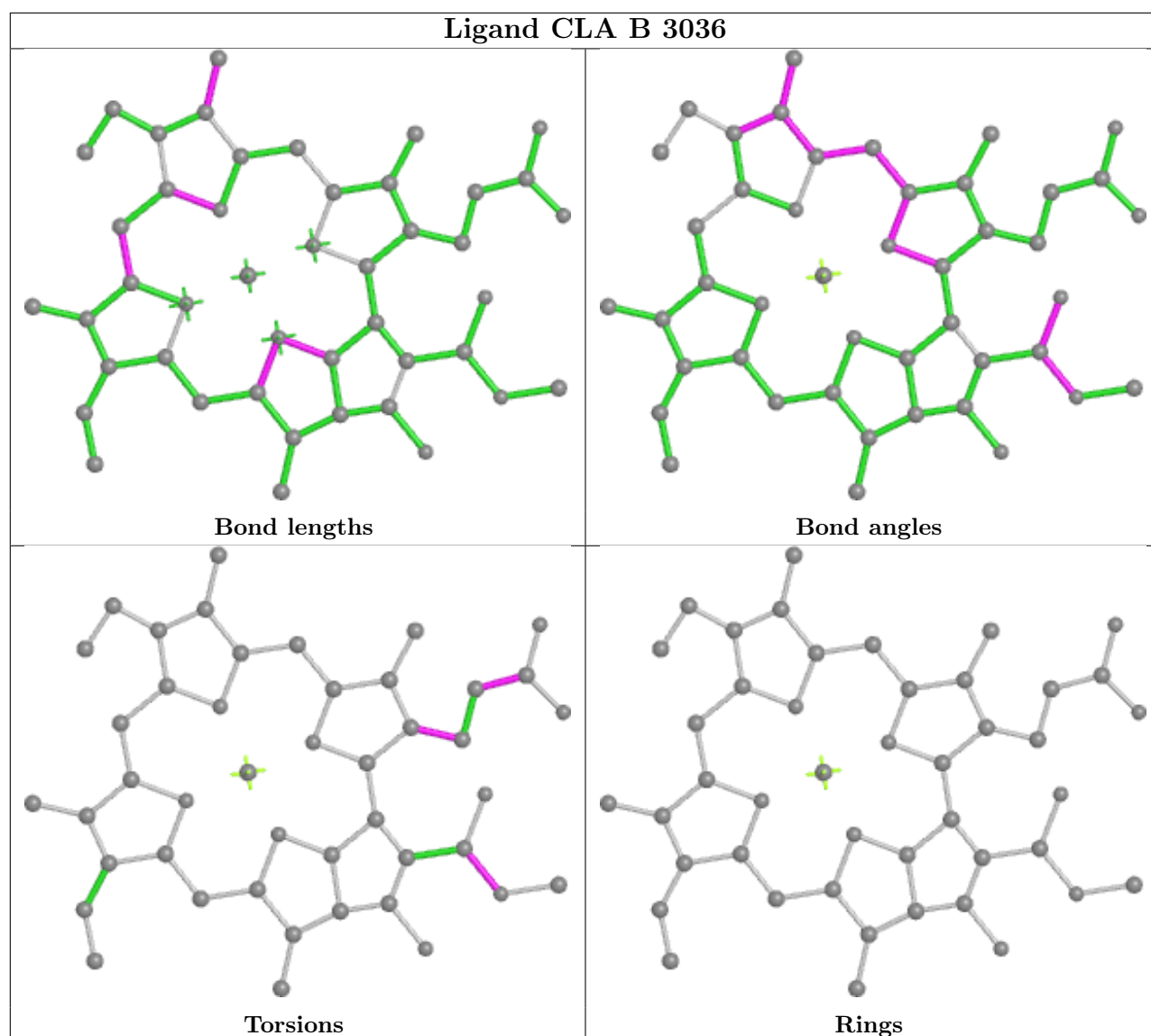


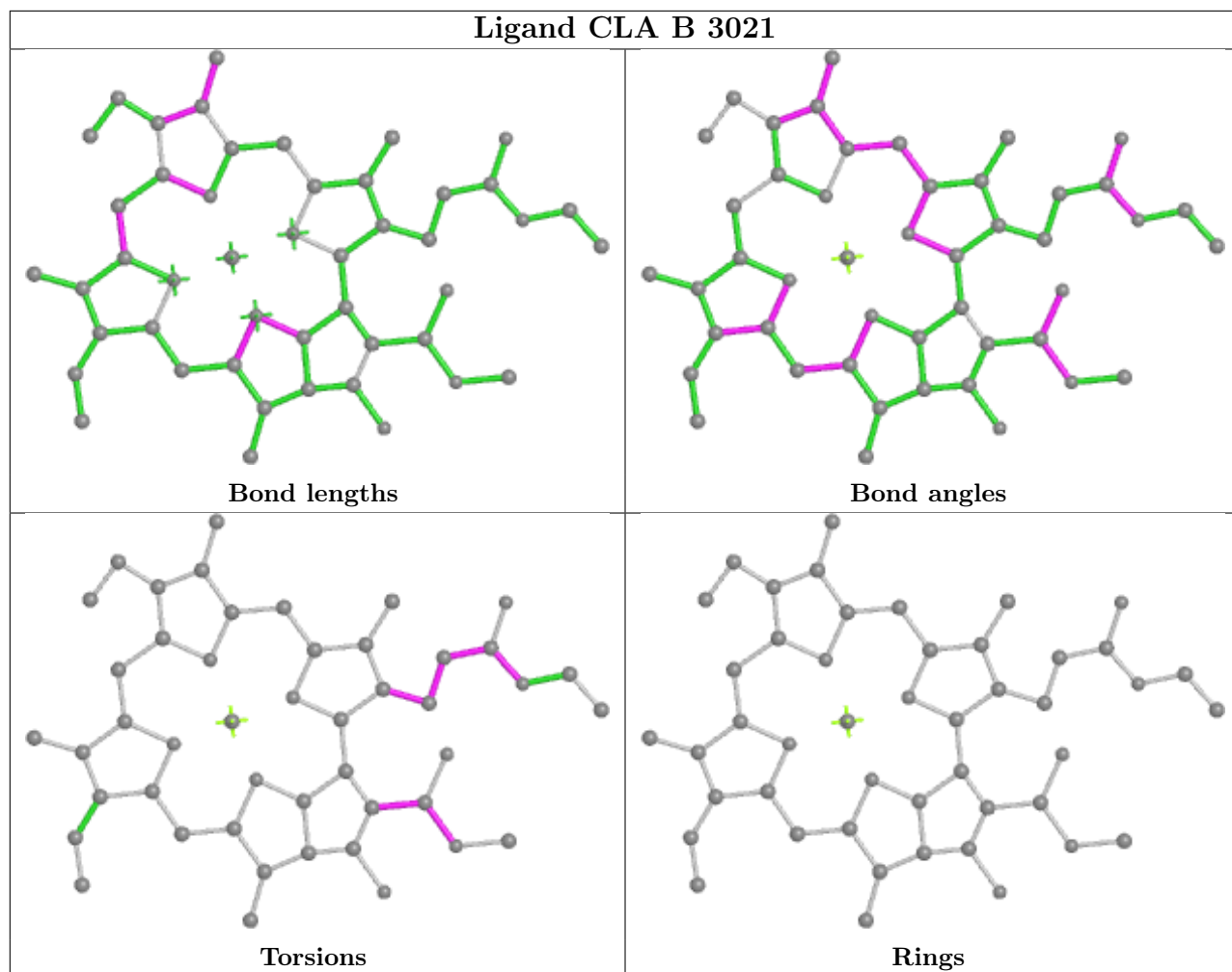


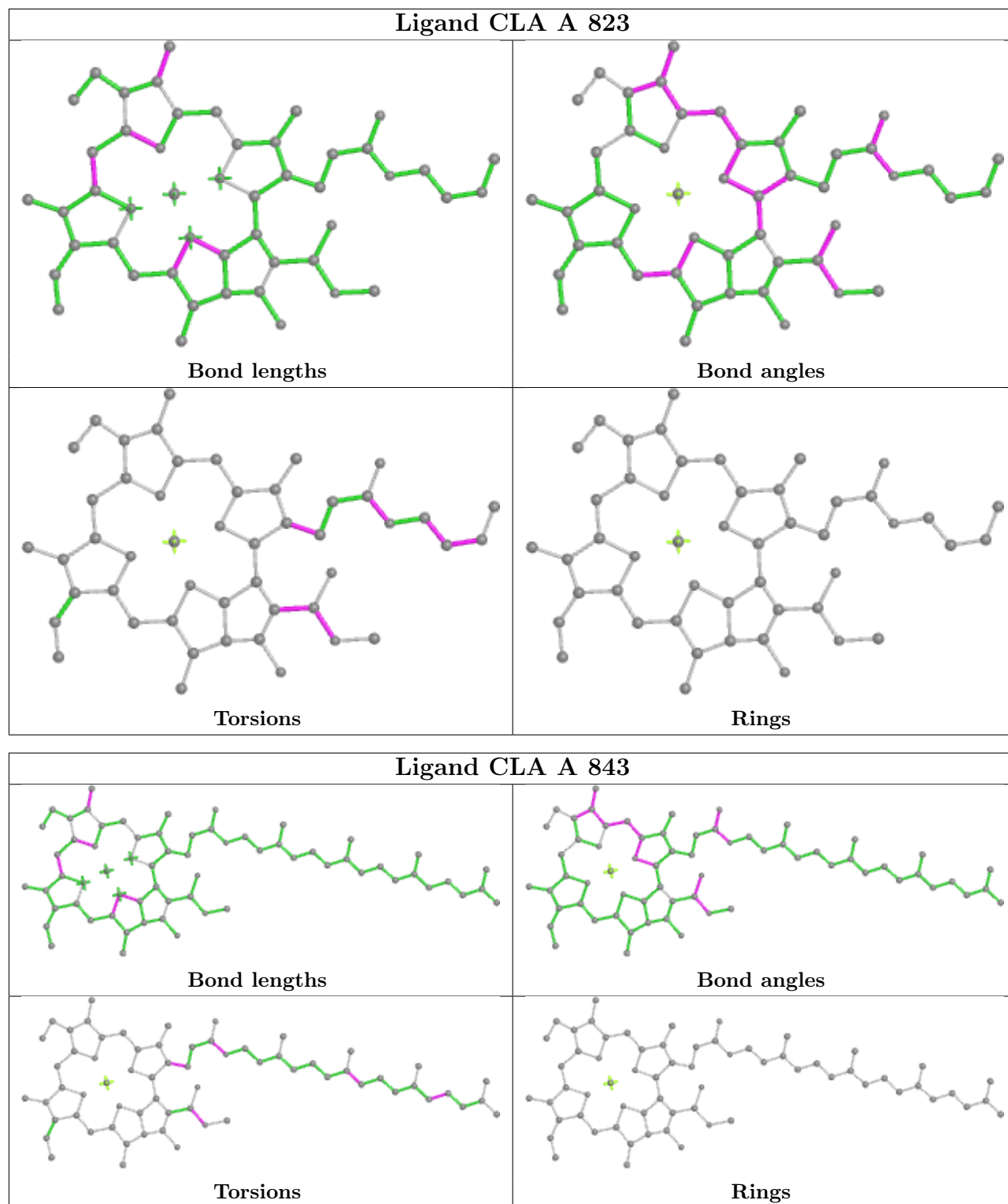


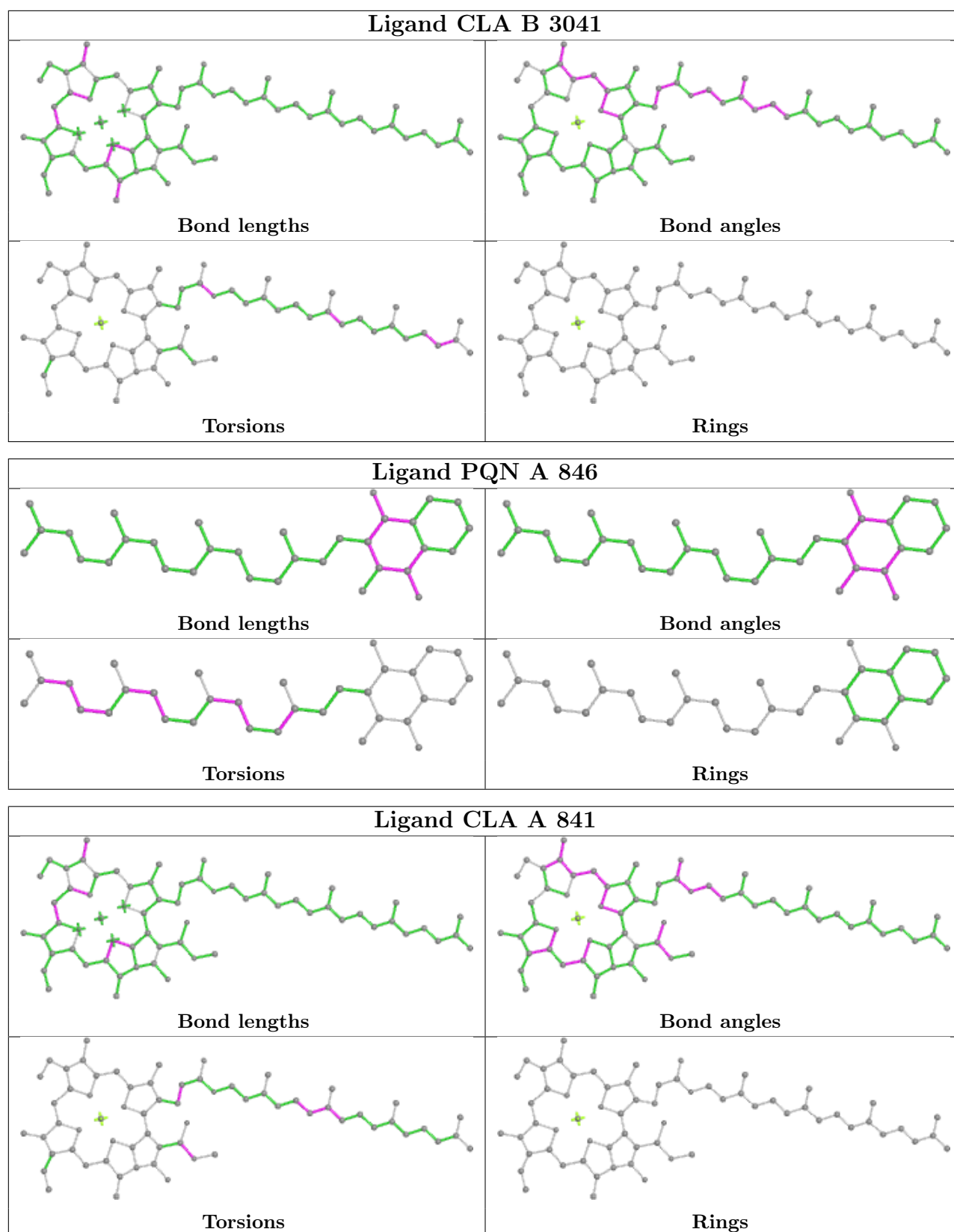


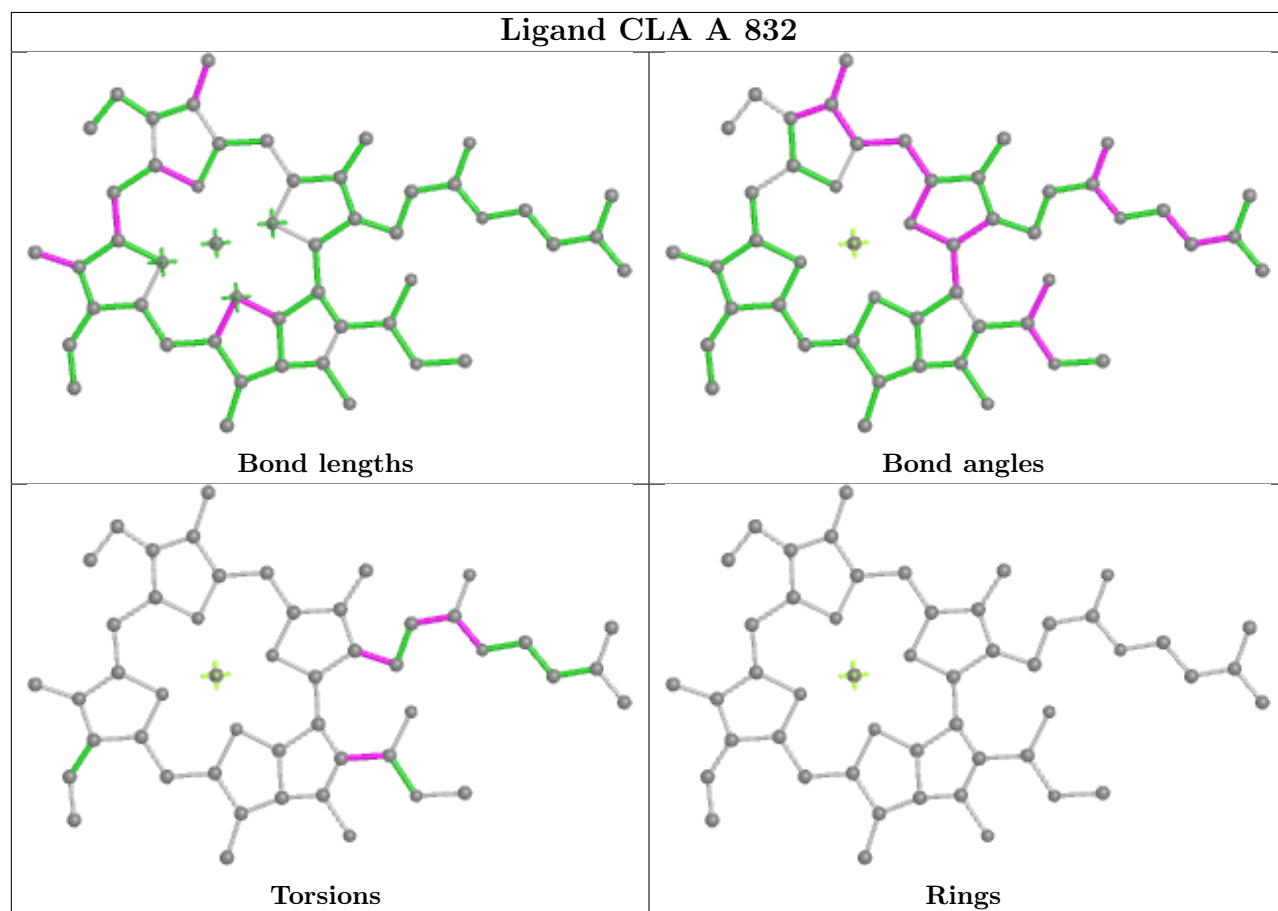
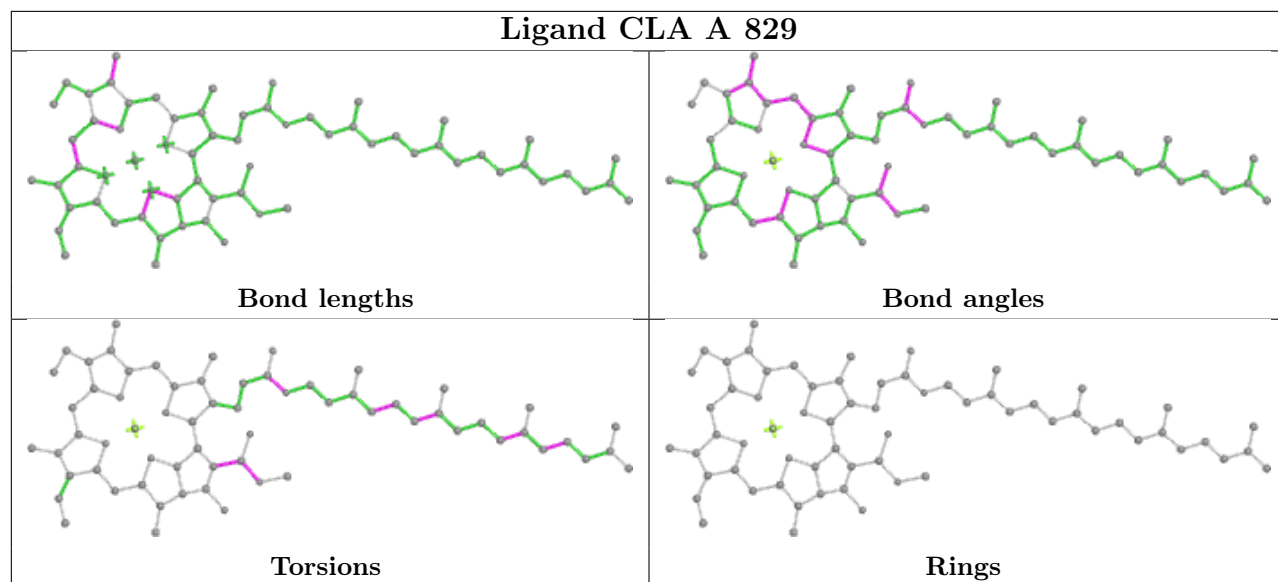


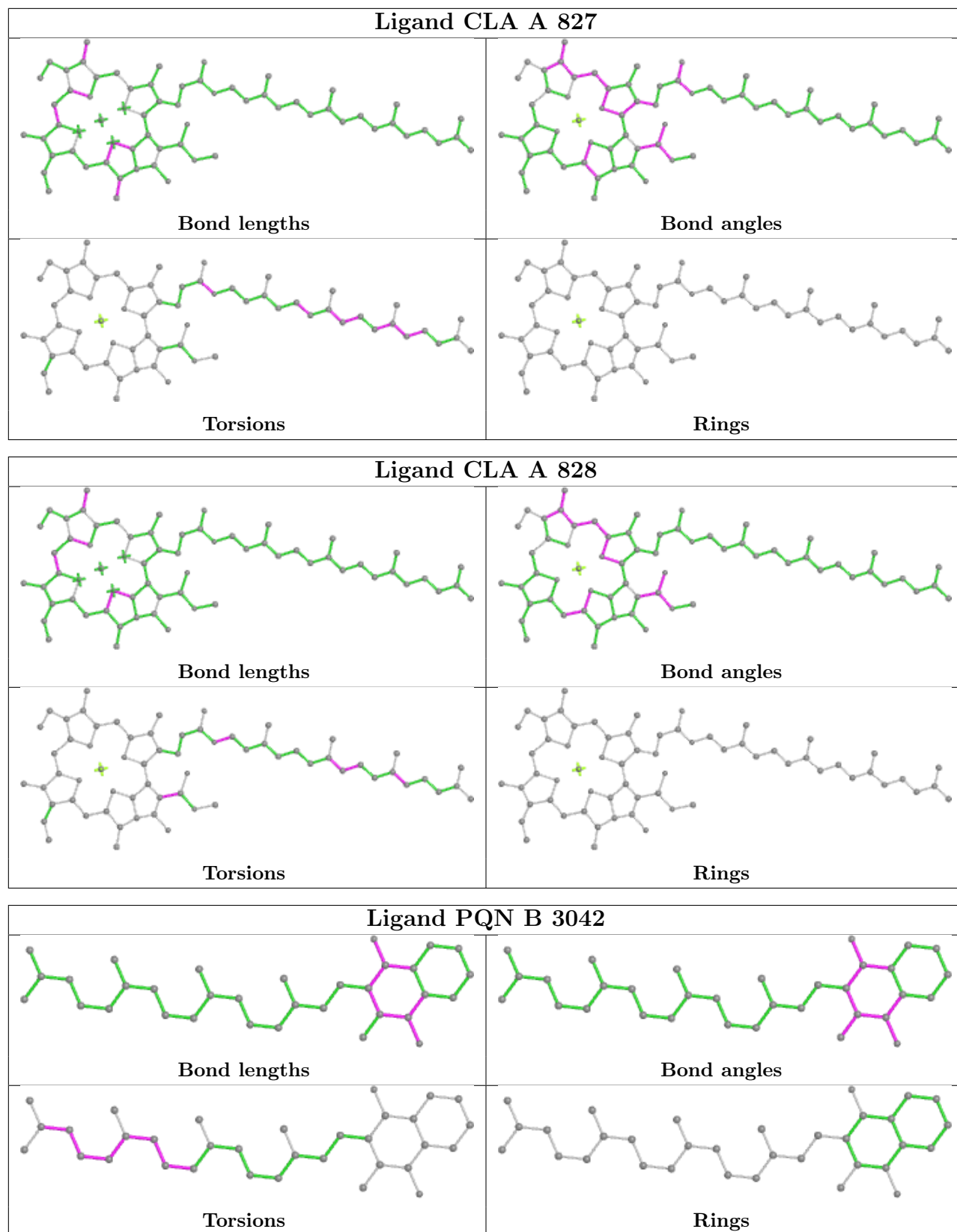


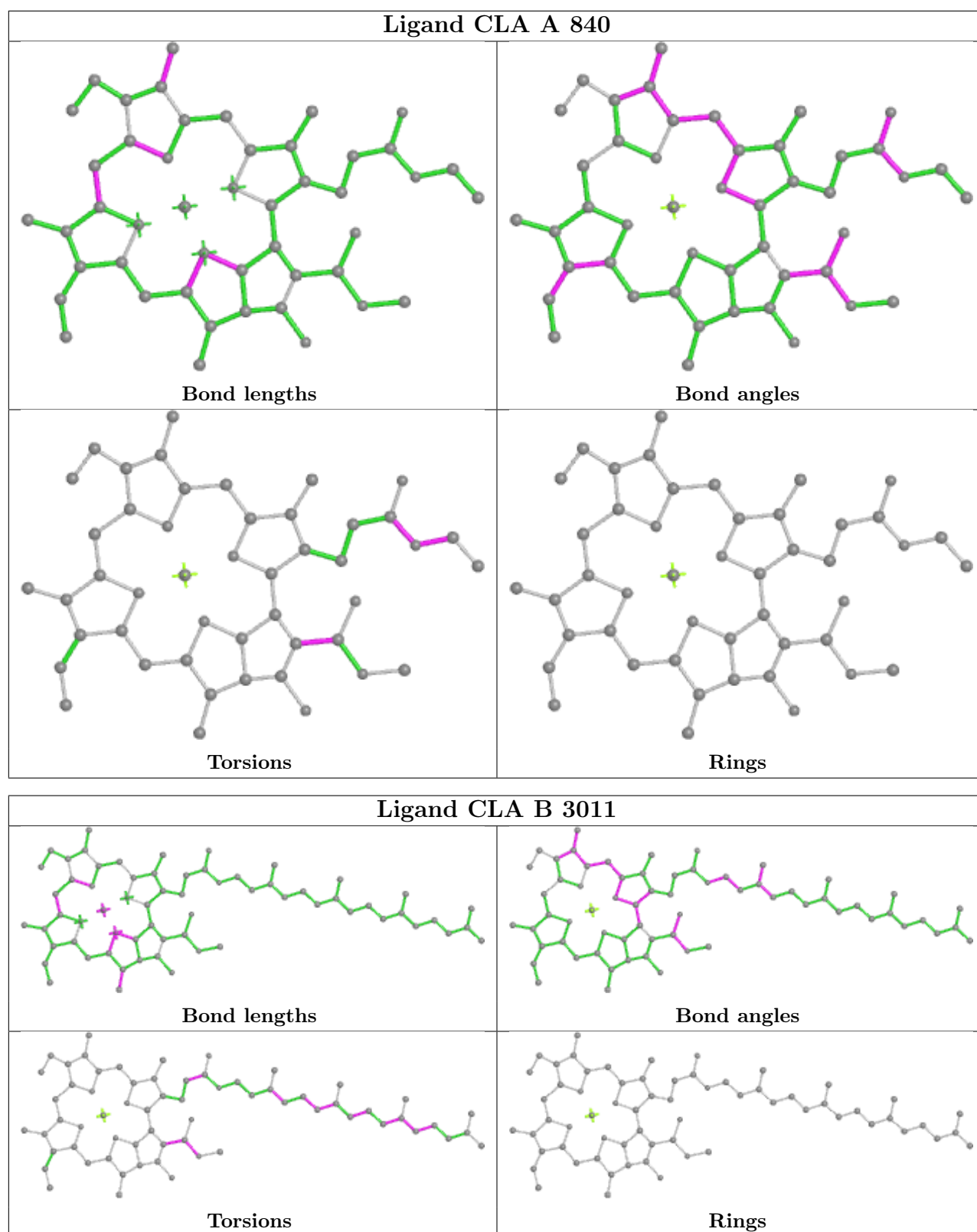


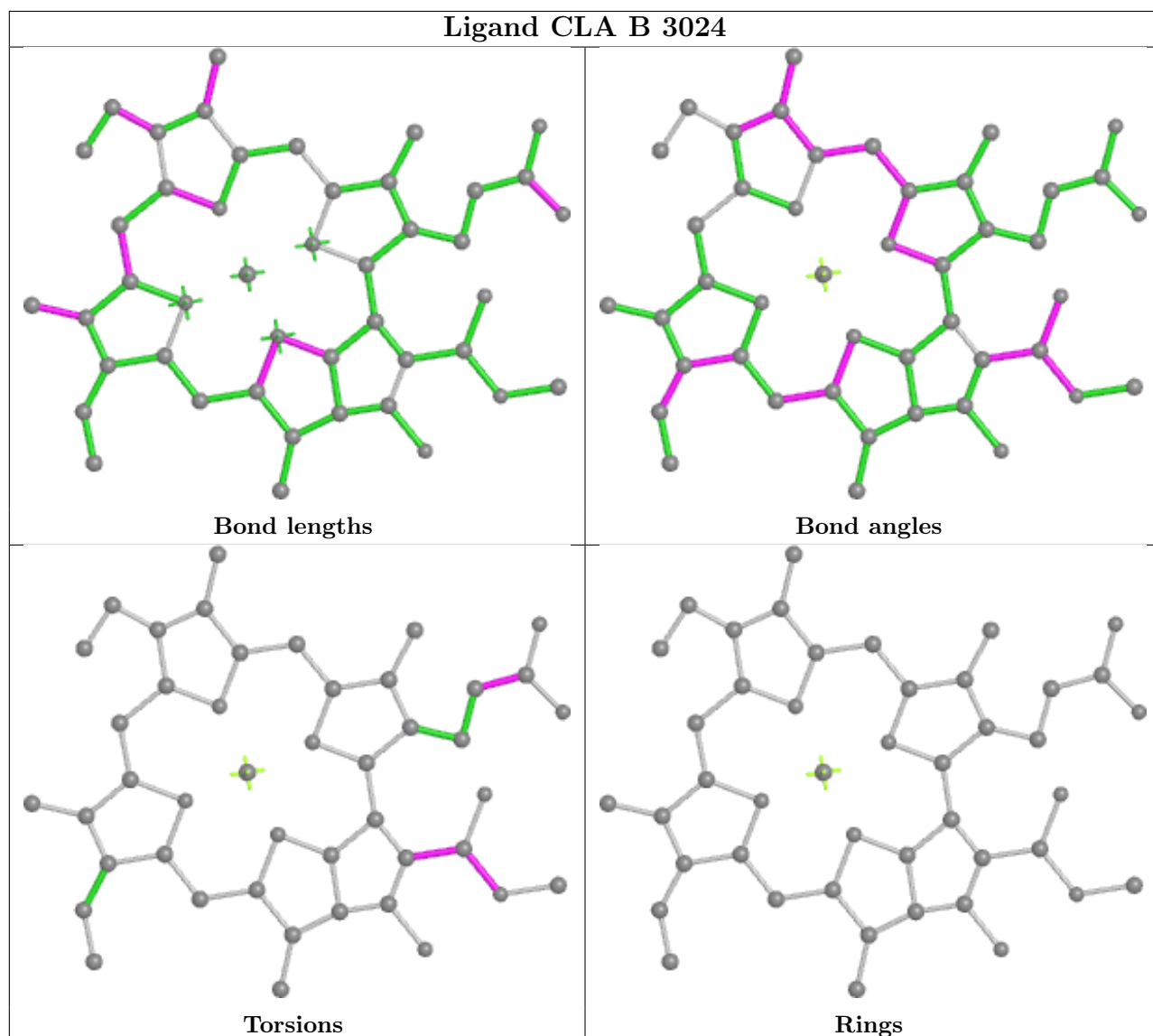
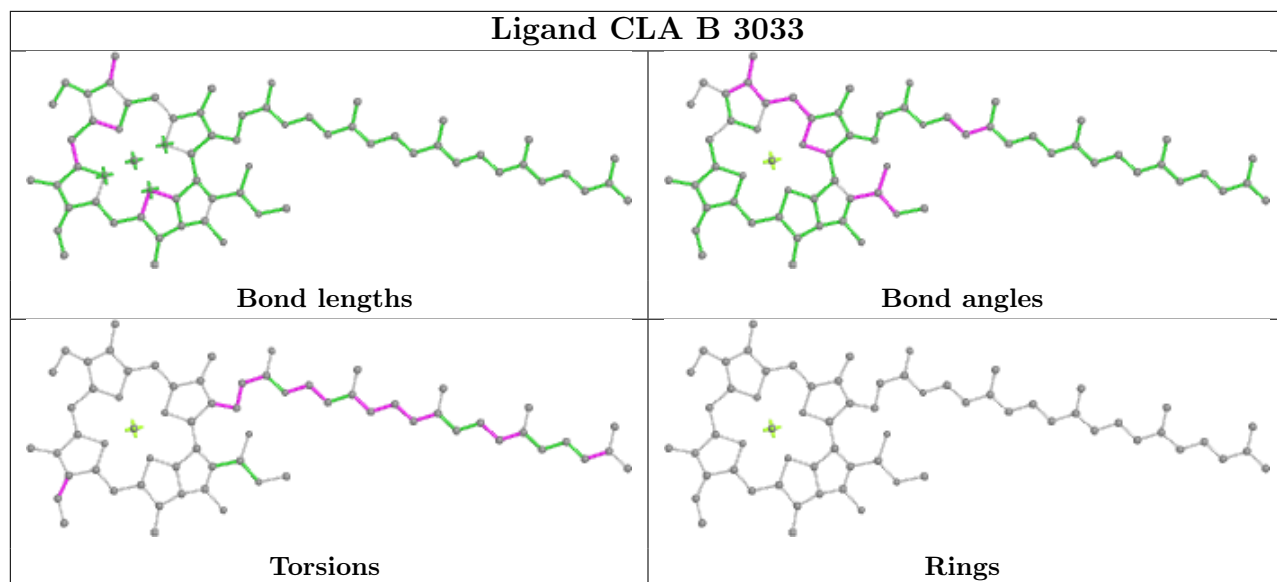


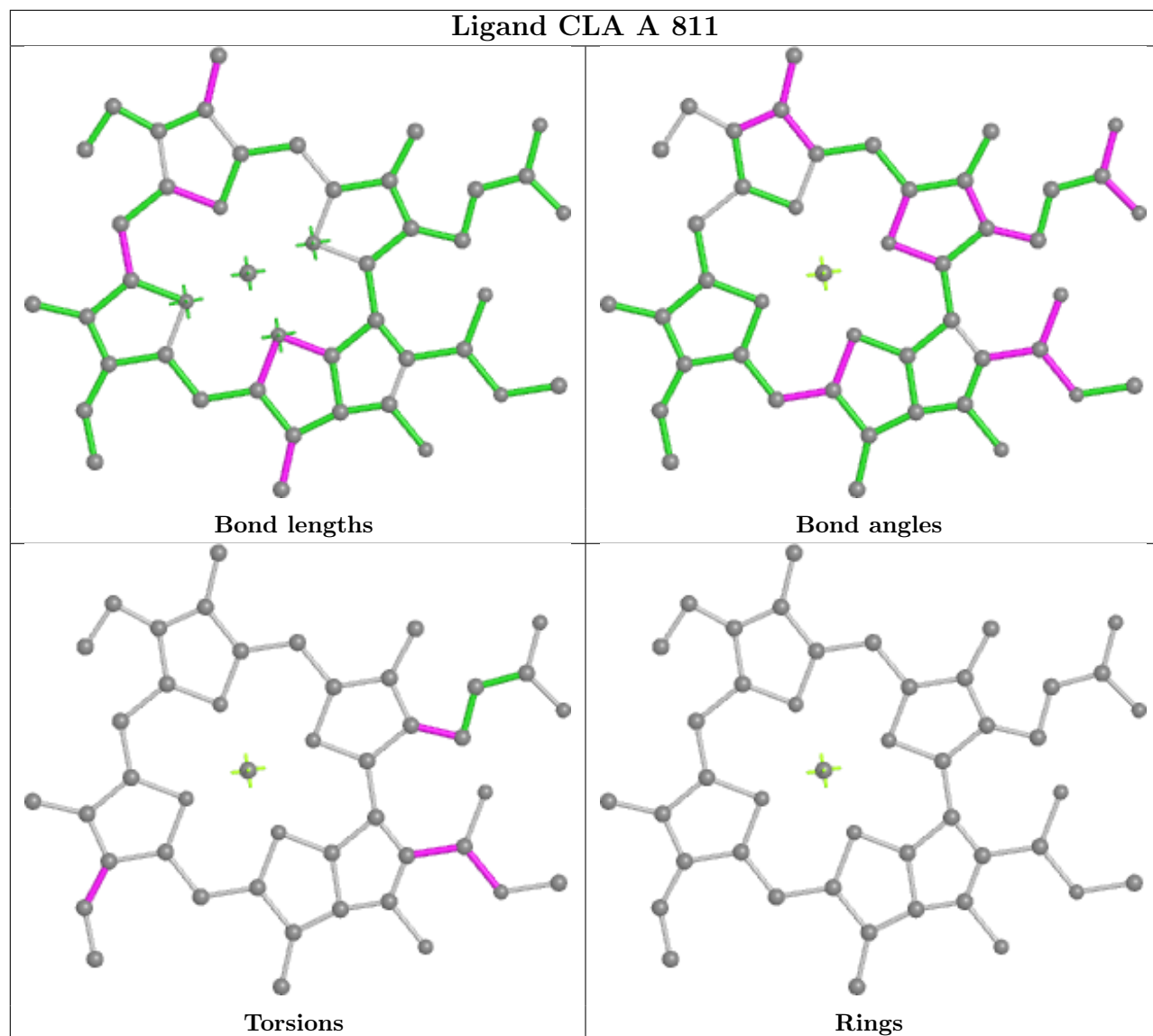


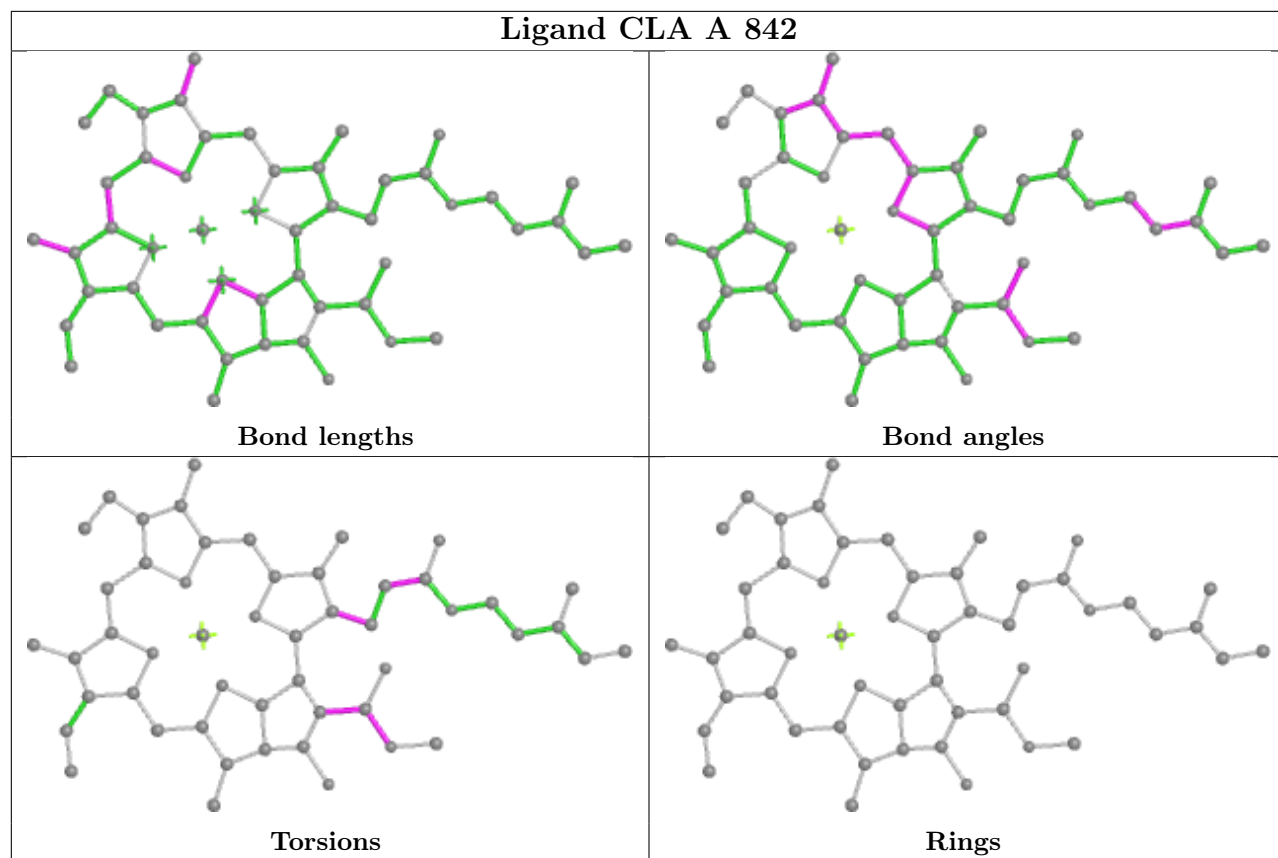


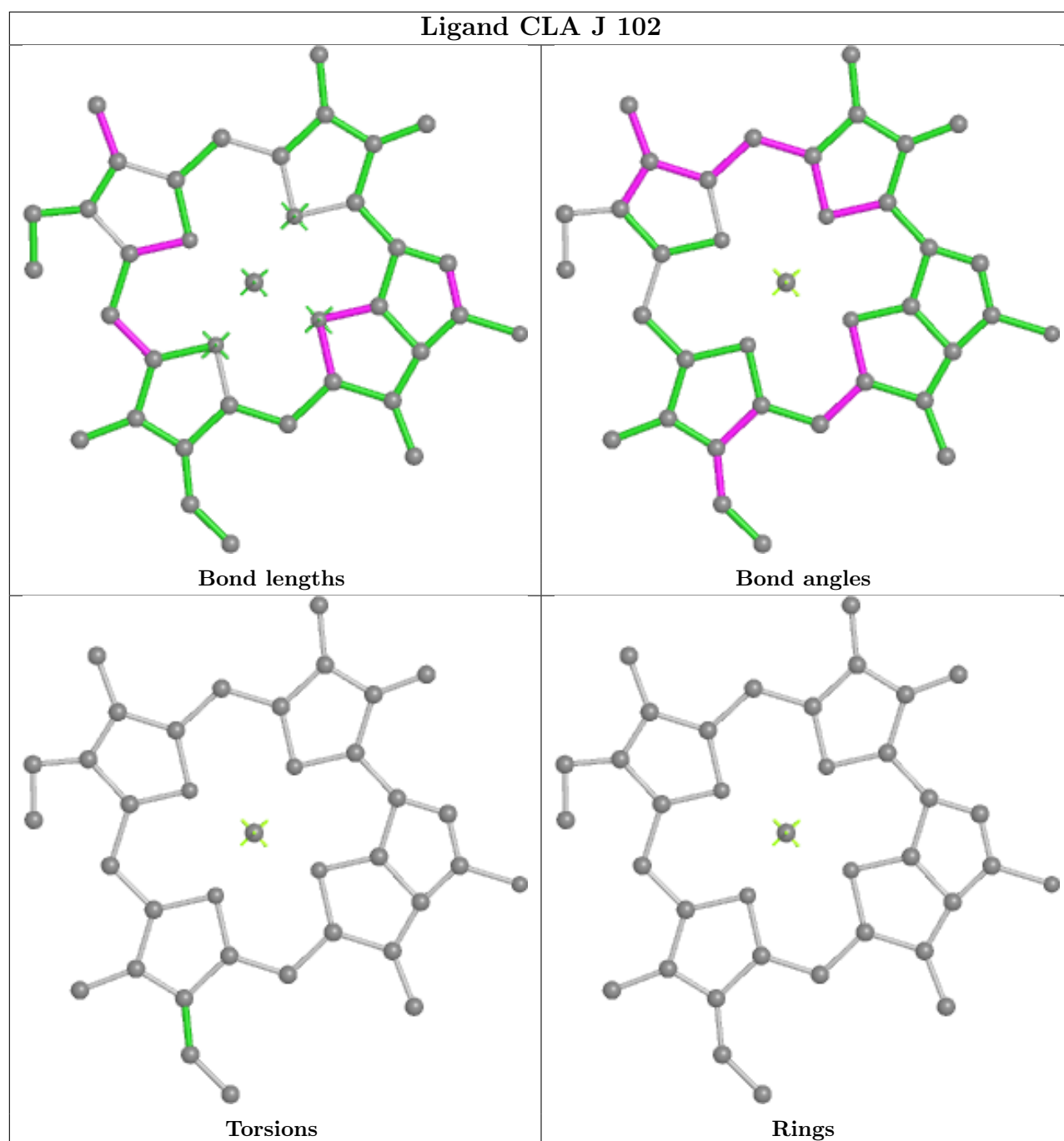












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ > 2	OWAB(Å ²)	Q < 0.9
1	A	740/755 (98%)	0.85	140 (18%) 1 1	27, 87, 134, 171	0
2	B	739/740 (99%)	0.56	84 (11%) 5 5	21, 62, 104, 139	0
3	C	80/80 (100%)	0.37	4 (5%) 28 35	22, 57, 80, 86	0
4	D	138/138 (100%)	0.44	13 (9%) 8 10	34, 67, 91, 137	0
5	E	69/75 (92%)	0.26	3 (4%) 35 42	58, 81, 102, 116	0
6	F	141/164 (85%)	0.63	21 (14%) 2 2	56, 105, 121, 128	0
7	I	38/38 (100%)	0.37	2 (5%) 26 31	24, 38, 65, 89	0
8	J	41/41 (100%)	0.34	4 (9%) 7 8	98, 115, 127, 142	0
9	K	47/83 (56%)	2.38	29 (61%) 0 0	123, 159, 175, 190	0
10	L	151/154 (98%)	0.10	2 (1%) 77 84	19, 37, 71, 121	0
11	M	31/31 (100%)	0.05	0 100 100	36, 52, 74, 102	0
12	X	29/35 (82%)	0.83	8 (27%) 0 0	62, 88, 114, 128	0
All	All	2244/2334 (96%)	0.63	310 (13%) 2 3	19, 71, 128, 190	0

The worst 5 of 310 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	274	ALA	16.9
1	A	278	PHE	13.3
9	K	57	PRO	8.9
4	D	1	THR	7.7
1	A	279	LEU	7.2

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
14	CLA	M	102	45/65	0.62	0.46	93,141,177,190	0
16	BCR	A	848	40/40	0.63	0.71	88,129,181,187	0
16	BCR	A	847	40/40	0.66	0.61	106,141,172,186	0
17	LMG	I	104	40/55	0.67	0.59	59,95,131,154	0
16	BCR	J	104	40/40	0.70	0.38	88,126,155,160	0
16	BCR	J	105	40/40	0.70	0.60	77,124,164,171	0
16	BCR	F	201	40/40	0.70	0.45	55,101,134,142	0
16	BCR	K	102	40/40	0.72	0.79	117,157,176,186	0
18	LHG	M	101	49/49	0.72	0.51	57,99,174,191	0
16	BCR	B	3043	40/40	0.74	1.04	85,120,154,171	0
18	LHG	B	3049	23/49	0.75	0.31	83,121,149,155	0
16	BCR	F	203	40/40	0.76	0.34	53,104,137,157	0
21	LMT	L	201	35/35	0.78	0.55	84,152,189,202	0
22	DGD	L	206	66/66	0.78	0.34	55,109,166,179	0
14	CLA	B	3034	58/65	0.79	0.36	73,108,147,151	0
16	BCR	J	103	40/40	0.79	0.34	71,112,135,139	0
14	CLA	K	103	45/65	0.80	0.23	111,142,174,176	0
17	LMG	A	852	48/55	0.81	0.43	66,123,163,170	0
17	LMG	A	855	30/55	0.82	0.29	42,93,155,172	0
16	BCR	B	3050	40/40	0.84	0.31	56,94,138,144	0
14	CLA	A	828	65/65	0.84	0.26	69,103,138,145	0
14	CLA	A	817	49/65	0.84	0.32	73,138,169,170	0
14	CLA	J	102	37/65	0.84	0.35	112,135,160,173	0
16	BCR	A	849	40/40	0.84	0.29	71,101,165,167	0
14	CLA	A	826	65/65	0.84	0.31	81,111,141,144	0
16	BCR	B	3044	40/40	0.84	0.26	58,84,124,133	0
14	CLA	F	202	45/65	0.85	0.38	96,125,156,161	0
14	CLA	A	818	54/65	0.85	0.49	106,134,161,172	0
14	CLA	K	101	41/65	0.85	0.39	122,159,195,204	0
14	CLA	A	856	65/65	0.85	0.39	48,75,101,112	0
14	CLA	A	816	45/65	0.85	0.48	116,153,179,189	0
14	CLA	B	3038	60/65	0.85	0.30	51,91,123,132	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
14	CLA	J	101	45/65	0.86	0.45	128,147,182,186	0
14	CLA	A	805	59/65	0.86	0.26	85,108,135,151	0
14	CLA	A	845	52/65	0.86	0.20	54,94,121,130	0
16	BCR	A	850	40/40	0.86	0.25	51,84,118,135	0
14	CLA	B	3039	65/65	0.86	0.30	52,98,138,154	0
14	CLA	A	815	45/65	0.86	0.21	96,124,160,166	0
16	BCR	B	3046	40/40	0.86	0.28	64,90,110,116	0
14	CLA	A	841	65/65	0.87	0.29	42,79,133,142	0
14	CLA	A	804	65/65	0.87	0.27	69,108,135,142	0
14	CLA	A	821	43/65	0.87	0.45	82,140,180,186	0
14	CLA	B	3015	65/65	0.87	0.28	56,87,122,127	0
14	CLA	B	3020	65/65	0.87	0.26	58,101,131,143	0
13	CL0	A	801	65/65	0.87	0.30	11,56,81,84	0
14	CLA	A	811	45/65	0.87	0.20	102,135,162,170	0
14	CLA	A	823	49/65	0.88	0.19	88,126,156,168	0
14	CLA	A	814	60/65	0.88	0.35	83,125,150,151	0
14	CLA	A	827	65/65	0.88	0.30	40,78,156,177	0
16	BCR	A	851	40/40	0.88	0.30	30,73,100,103	0
14	CLA	B	3018	59/65	0.88	0.29	57,91,119,127	0
14	CLA	A	803	65/65	0.88	0.42	52,77,98,118	0
14	CLA	B	3025	54/65	0.88	0.24	58,75,97,98	0
16	BCR	B	3047	40/40	0.88	0.23	25,44,71,71	0
14	CLA	A	836	54/65	0.88	0.28	57,97,138,146	0
15	PQN	A	846	33/33	0.88	0.35	61,89,118,121	0
14	CLA	A	812	65/65	0.88	0.26	91,124,154,157	0
14	CLA	A	802	65/65	0.89	0.28	30,49,65,85	0
14	CLA	A	813	54/65	0.89	0.29	84,111,138,146	0
14	CLA	B	3040	47/65	0.89	0.33	59,84,103,115	0
14	CLA	B	3003	65/65	0.89	0.30	26,59,80,87	0
14	CLA	B	3021	47/65	0.89	0.29	79,108,139,145	0
14	CLA	B	3010	65/65	0.89	0.19	16,48,76,100	0
14	CLA	B	3029	65/65	0.89	0.26	37,71,89,107	0
16	BCR	B	3045	40/40	0.89	0.38	53,86,141,153	0
14	CLA	B	3033	65/65	0.89	0.29	66,96,122,131	0
14	CLA	B	3013	45/65	0.89	0.17	67,99,126,129	0
14	CLA	X	1701	45/65	0.89	0.19	85,114,144,150	0
14	CLA	B	3037	45/65	0.89	0.21	74,99,130,131	0
14	CLA	A	809	65/65	0.90	0.27	48,94,134,139	0
14	CLA	A	834	65/65	0.90	0.21	20,47,75,81	0
14	CLA	B	3027	65/65	0.90	0.25	48,75,102,107	0
14	CLA	B	3004	65/65	0.90	0.26	20,43,63,75	0
14	CLA	L	204	65/65	0.90	0.21	18,55,127,140	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
14	CLA	L	205	65/65	0.90	0.23	31,56,85,95	0
16	BCR	I	105	40/40	0.90	0.21	13,38,58,75	0
14	CLA	B	3030	65/65	0.90	0.27	30,57,90,108	0
14	CLA	B	3006	65/65	0.90	0.24	37,66,100,111	0
14	CLA	B	3008	65/65	0.90	0.21	20,45,77,99	0
15	PQN	B	3042	33/33	0.90	0.25	27,47,66,70	0
14	CLA	B	3035	45/65	0.90	0.22	65,83,105,108	0
14	CLA	B	3036	45/65	0.90	0.23	54,90,117,121	0
14	CLA	A	824	51/65	0.90	0.18	77,111,142,148	0
18	LHG	A	853	49/49	0.90	0.32	48,94,118,128	0
14	CLA	A	837	45/65	0.90	0.19	90,114,137,148	0
14	CLA	A	819	54/65	0.90	0.22	71,104,126,142	0
14	CLA	A	842	51/65	0.90	0.30	46,85,134,153	0
14	CLA	A	806	65/65	0.90	0.34	77,111,146,152	0
14	CLA	A	838	51/65	0.91	0.23	46,69,90,112	0
16	BCR	I	103	40/40	0.91	0.20	12,44,69,71	0
14	CLA	A	840	47/65	0.91	0.22	32,65,86,103	0
14	CLA	B	3041	65/65	0.91	0.27	14,39,62,65	0
14	CLA	B	3028	65/65	0.91	0.28	25,58,110,112	0
14	CLA	I	101	65/65	0.91	0.22	2,28,62,68	0
14	CLA	A	808	51/65	0.91	0.22	91,113,140,144	0
16	BCR	L	207	40/40	0.91	0.18	7,48,96,108	0
16	BCR	M	103	40/40	0.91	0.20	31,58,86,92	0
14	CLA	B	3011	65/65	0.91	0.20	4,34,70,79	0
14	CLA	A	829	65/65	0.91	0.33	69,96,120,127	0
14	CLA	A	820	65/65	0.91	0.24	76,110,135,144	0
14	CLA	L	203	65/65	0.91	0.23	21,51,82,104	0
14	CLA	A	835	65/65	0.91	0.18	11,42,72,100	0
14	CLA	B	3019	60/65	0.91	0.25	60,81,110,117	0
20	CA	B	3002	1/1	0.91	0.11	80,80,80,80	0
14	CLA	A	807	65/65	0.91	0.28	66,94,120,127	0
14	CLA	A	822	65/65	0.91	0.23	61,97,131,137	0
14	CLA	B	3009	65/65	0.92	0.18	20,49,82,86	0
14	CLA	B	3022	45/65	0.92	0.23	77,103,130,130	0
14	CLA	B	3023	55/65	0.92	0.25	79,105,132,133	0
14	CLA	A	810	65/65	0.92	0.25	54,109,158,171	0
14	CLA	B	3026	46/65	0.92	0.38	46,74,99,100	0
14	CLA	A	830	65/65	0.92	0.27	65,98,128,131	0
14	CLA	B	3012	45/65	0.92	0.15	55,77,98,121	0
14	CLA	A	831	65/65	0.92	0.33	66,97,120,129	0
14	CLA	B	3014	65/65	0.92	0.21	52,82,109,112	0
17	LMG	B	3048	55/55	0.92	0.21	30,68,94,97	0

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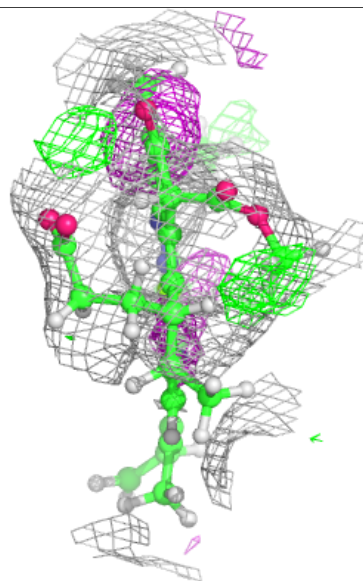
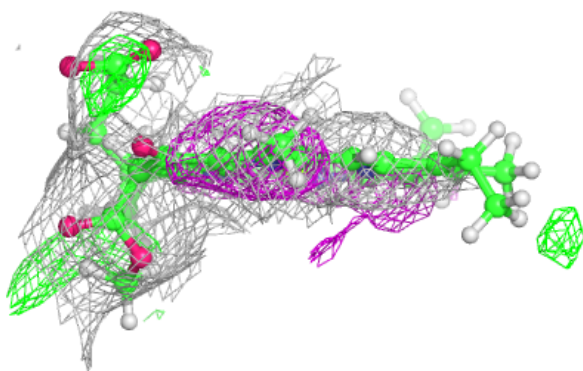
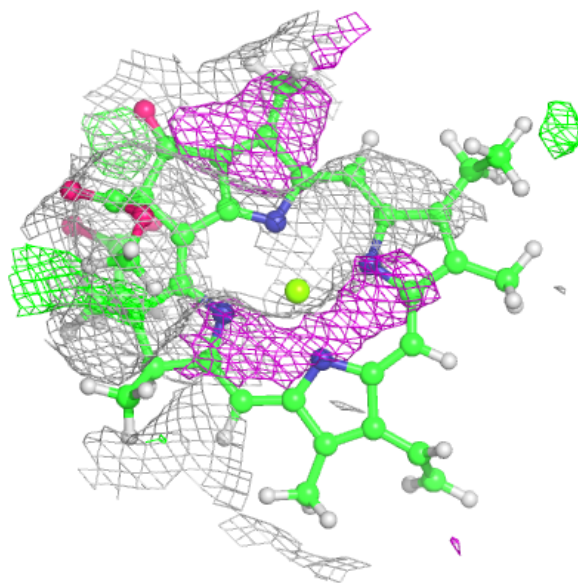
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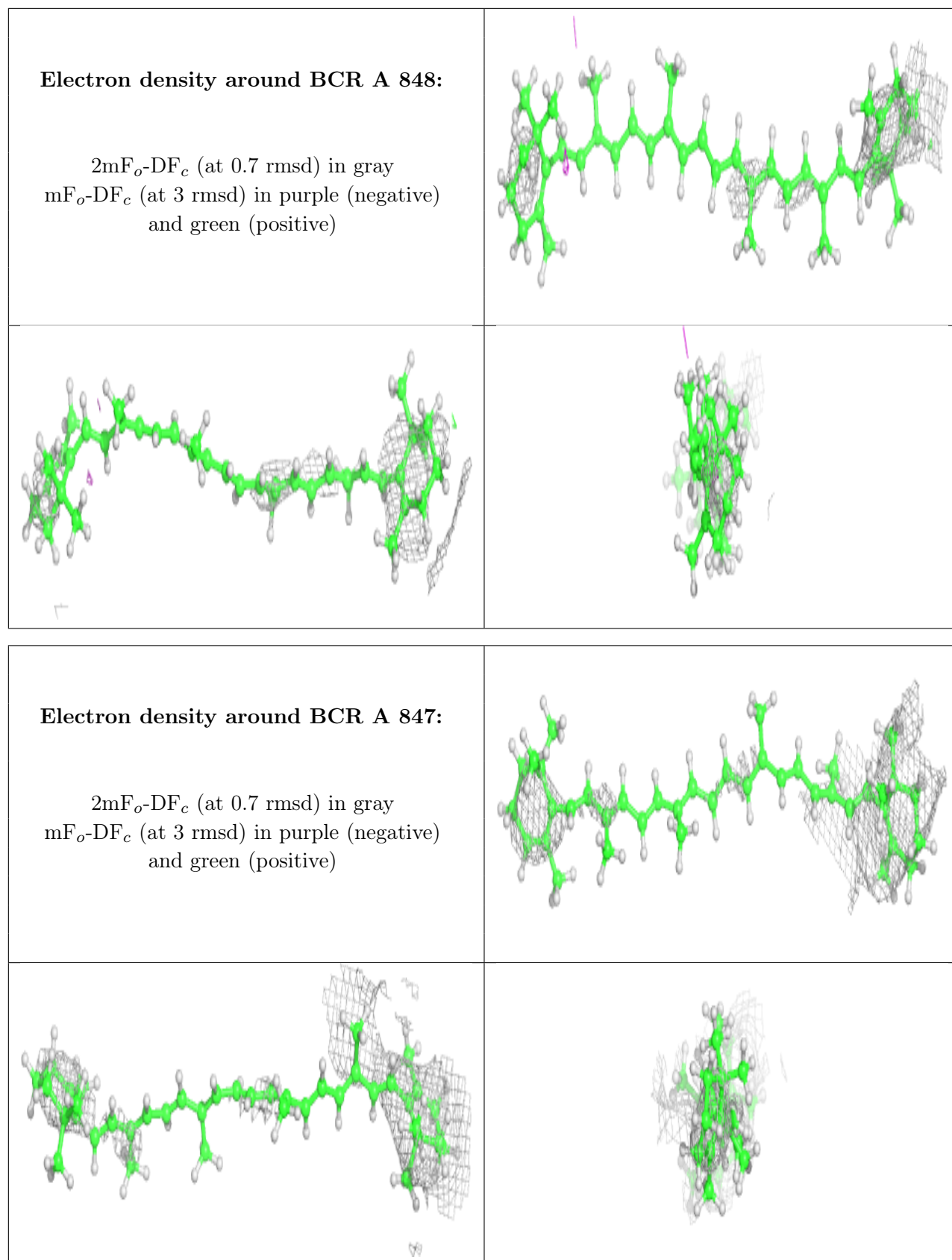
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
14	CLA	A	832	50/65	0.92	0.20	43,71,101,127	0
14	CLA	B	3016	45/65	0.92	0.27	71,92,125,128	0
14	CLA	B	3017	55/65	0.92	0.37	71,107,143,176	0
14	CLA	B	3005	54/65	0.92	0.22	33,58,77,85	0
14	CLA	A	843	65/65	0.92	0.39	47,83,127,146	0
16	BCR	I	102	40/40	0.92	0.22	8,39,60,78	0
14	CLA	A	844	65/65	0.92	0.20	2,28,60,69	0
14	CLA	A	825	59/65	0.93	0.27	60,93,133,145	0
18	LHG	A	854	27/49	0.93	0.18	56,89,126,128	0
14	CLA	B	3007	65/65	0.93	0.27	32,61,87,100	0
14	CLA	A	839	65/65	0.93	0.19	31,69,107,130	0
14	CLA	A	833	65/65	0.93	0.26	34,73,145,150	0
14	CLA	B	3031	45/65	0.93	0.16	56,83,106,123	0
14	CLA	B	3032	49/65	0.93	0.20	44,79,107,132	0
20	CA	L	202	1/1	0.94	0.07	37,37,37,37	0
19	SF4	B	3001	8/8	0.94	0.30	40,56,98,128	0
14	CLA	B	3024	45/65	0.94	0.19	40,71,104,116	0
19	SF4	C	101	8/8	0.95	0.21	33,61,68,81	0
19	SF4	C	102	8/8	0.98	0.13	48,55,72,74	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around CLA M 102:

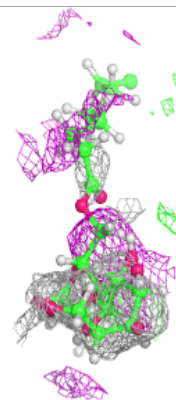
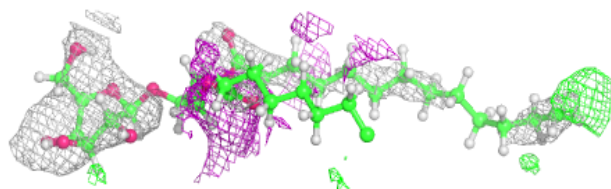
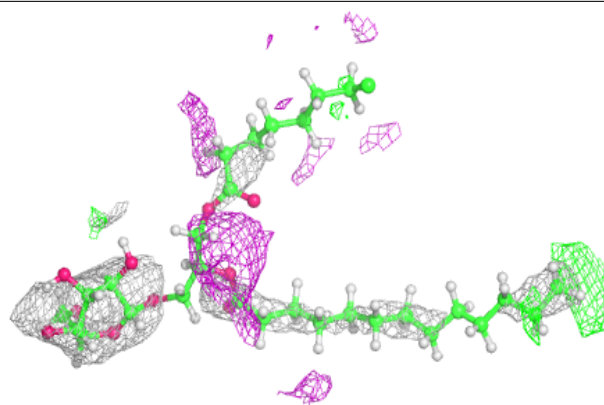
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



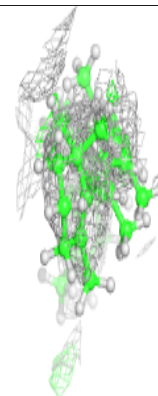
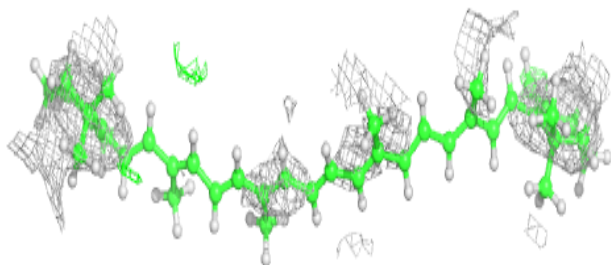
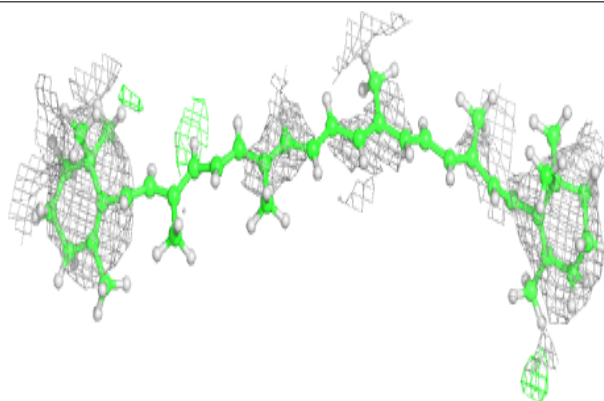


Electron density around LMG I 104:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

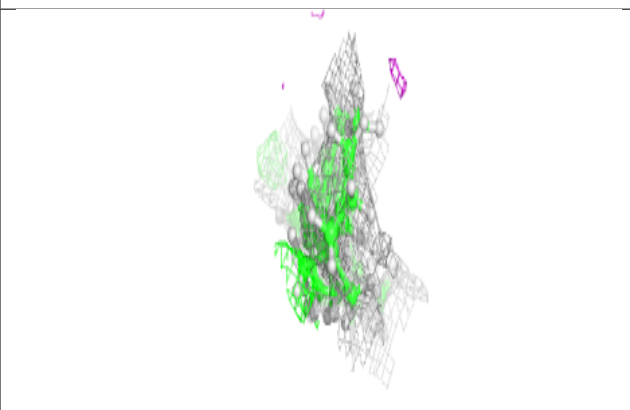
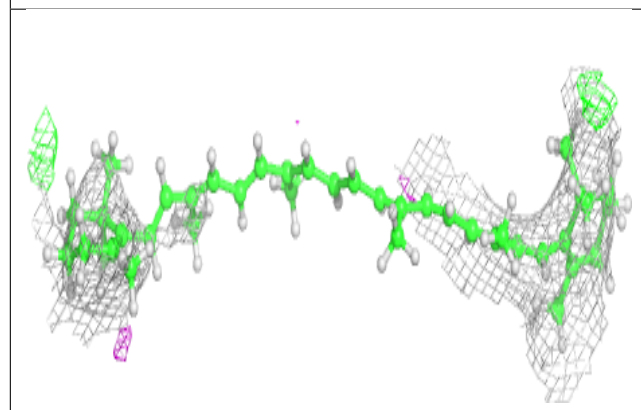
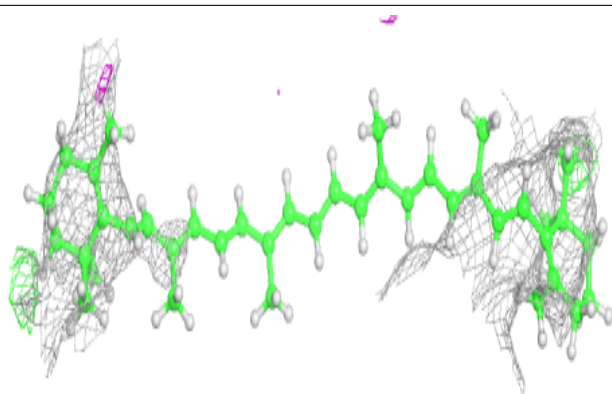
**Electron density around BCR J 104:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

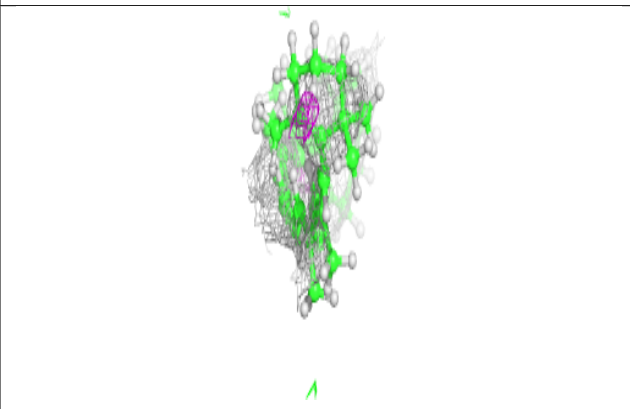
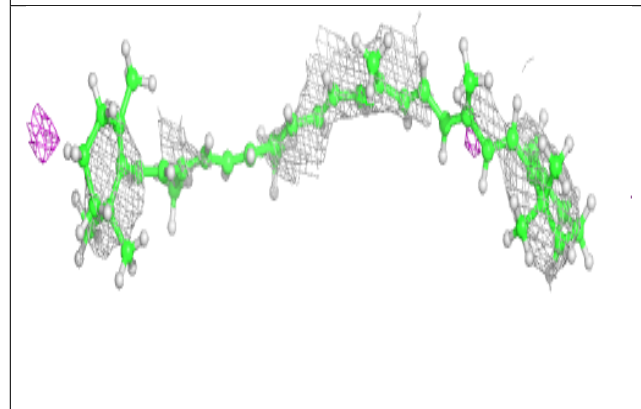
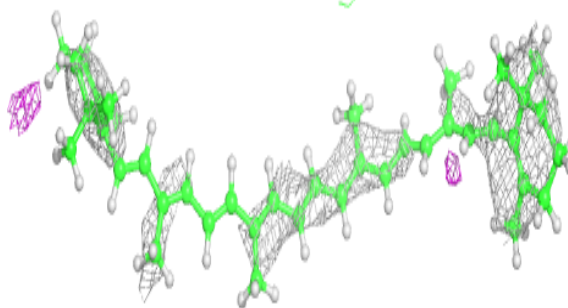


Electron density around BCR J 105:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

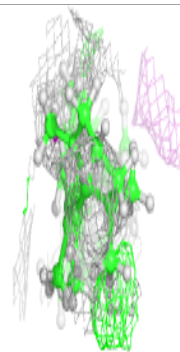
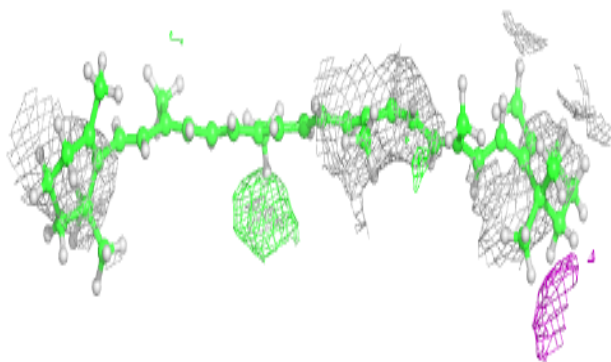
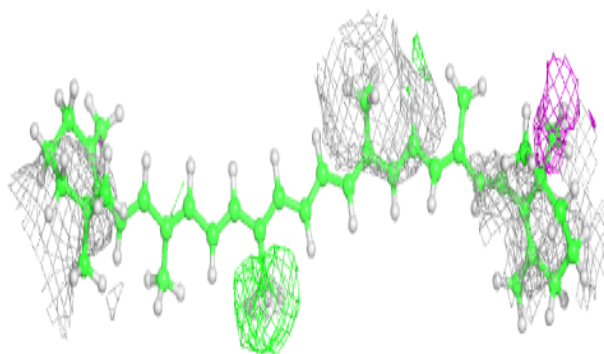
**Electron density around BCR F 201:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

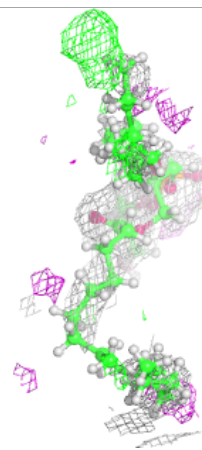
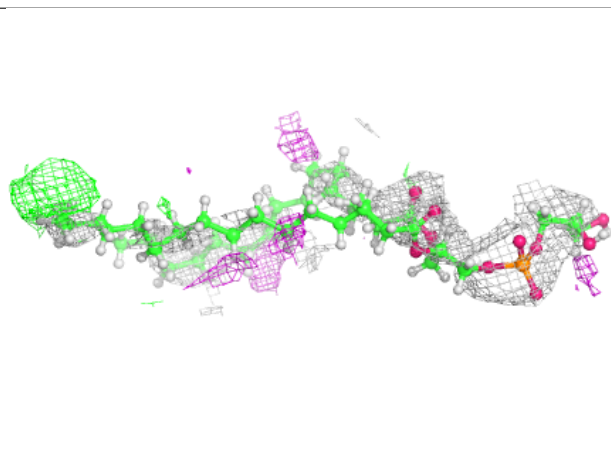
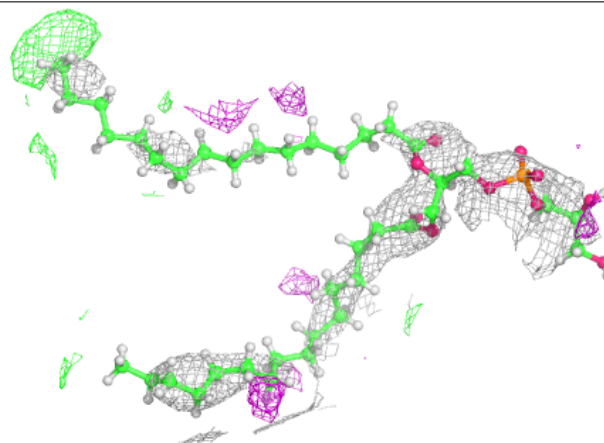


Electron density around BCR K 102:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

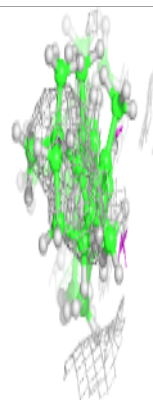
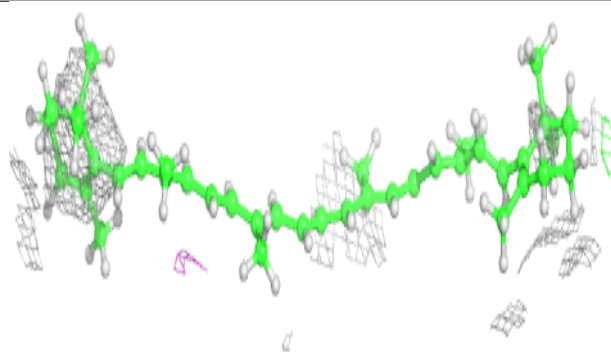
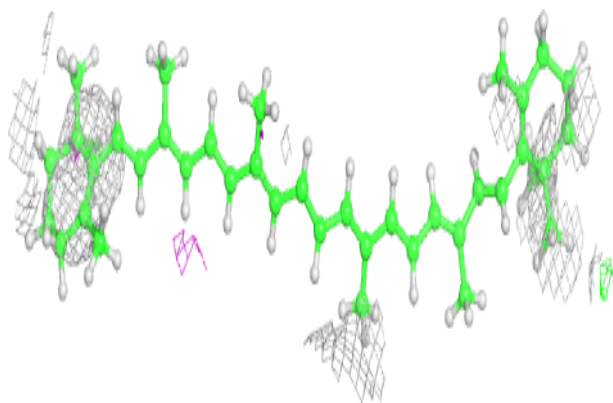
**Electron density around LHG M 101:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

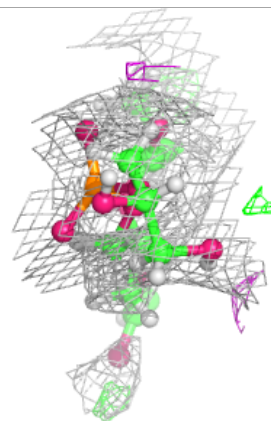
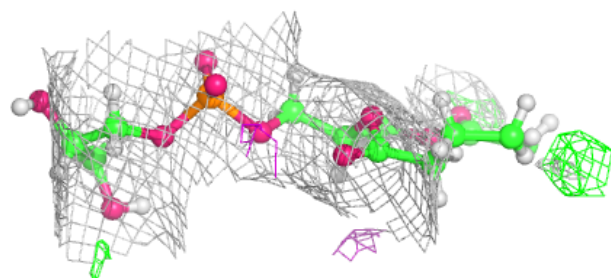
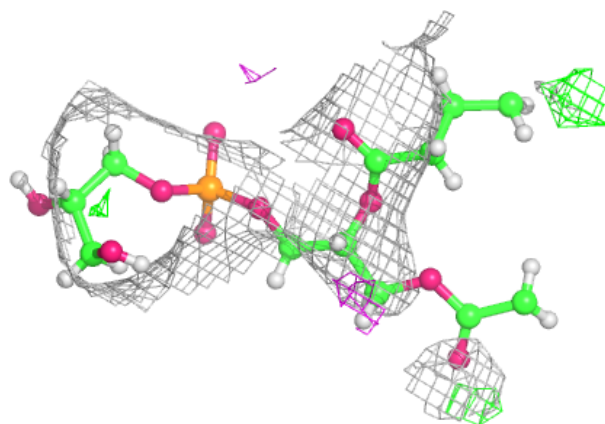


Electron density around BCR B 3043:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

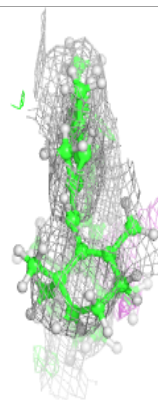
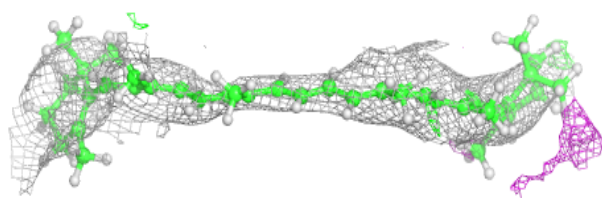
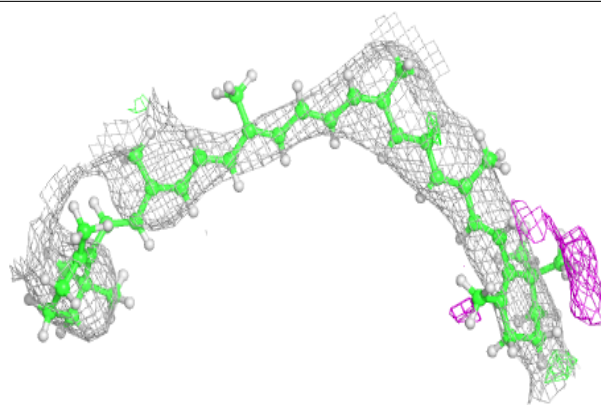
**Electron density around LHG B 3049:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

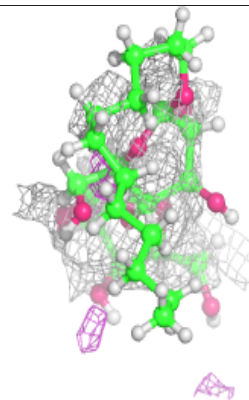
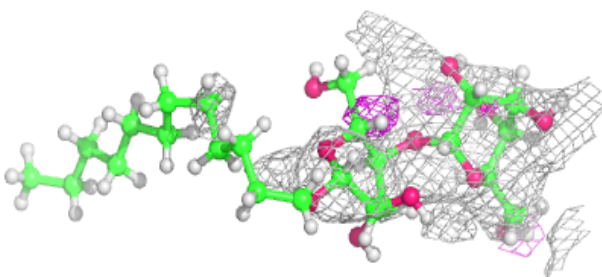
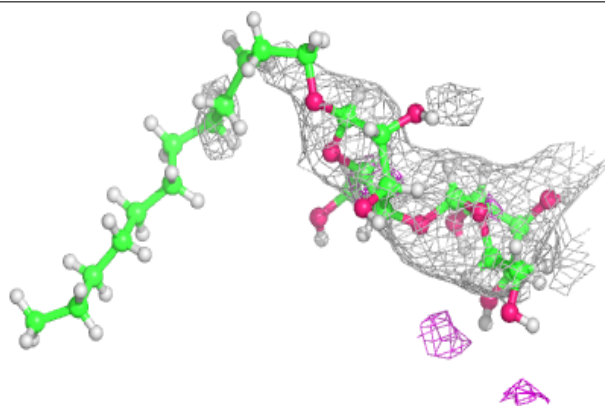


Electron density around BCR F 203:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

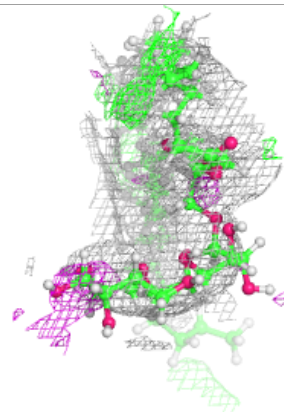
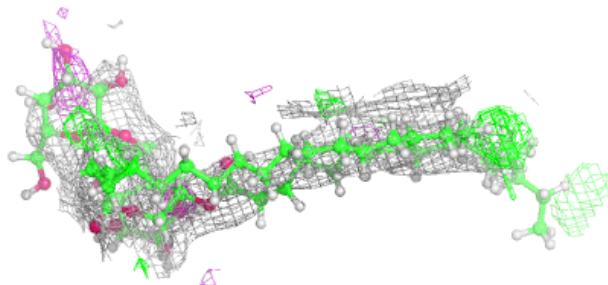
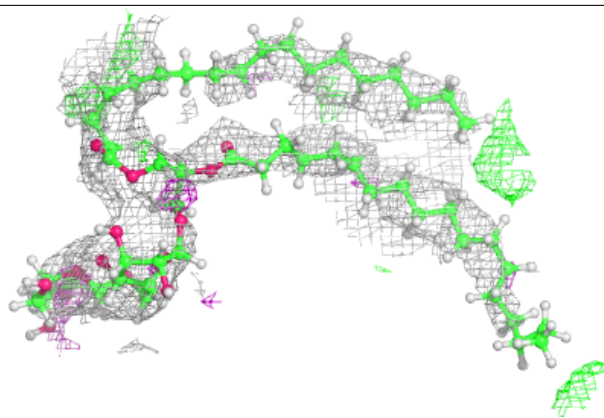
**Electron density around LMT L 201:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

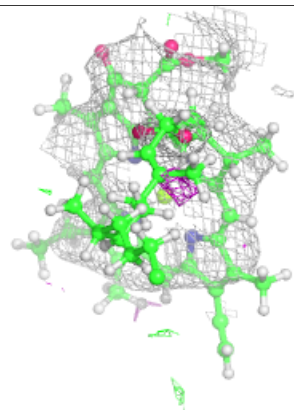
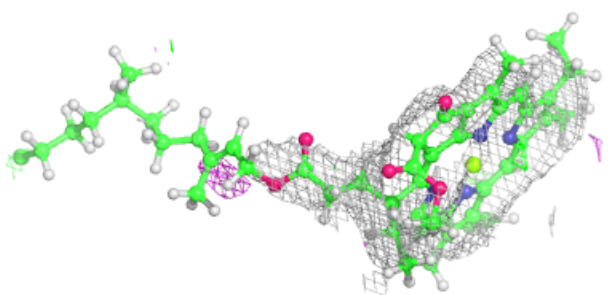
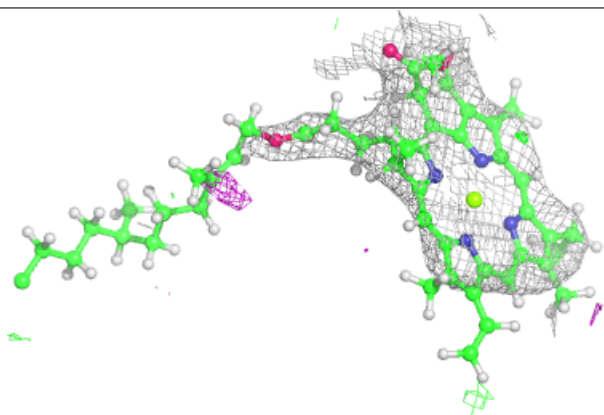


Electron density around DGD L 206:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

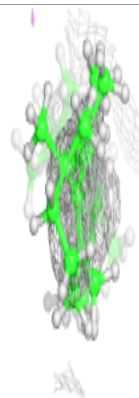
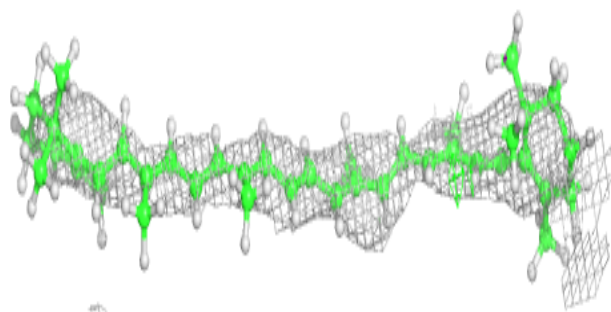
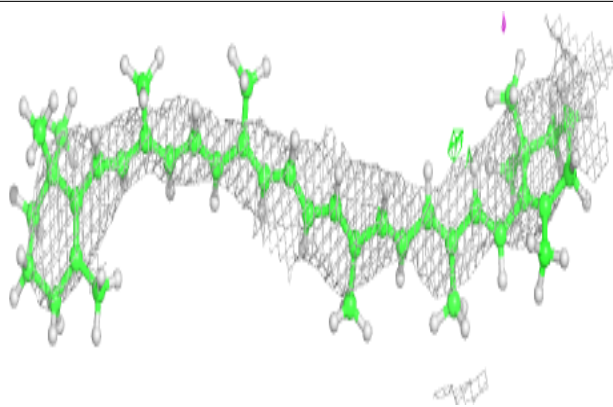
**Electron density around CLA B 3034:**

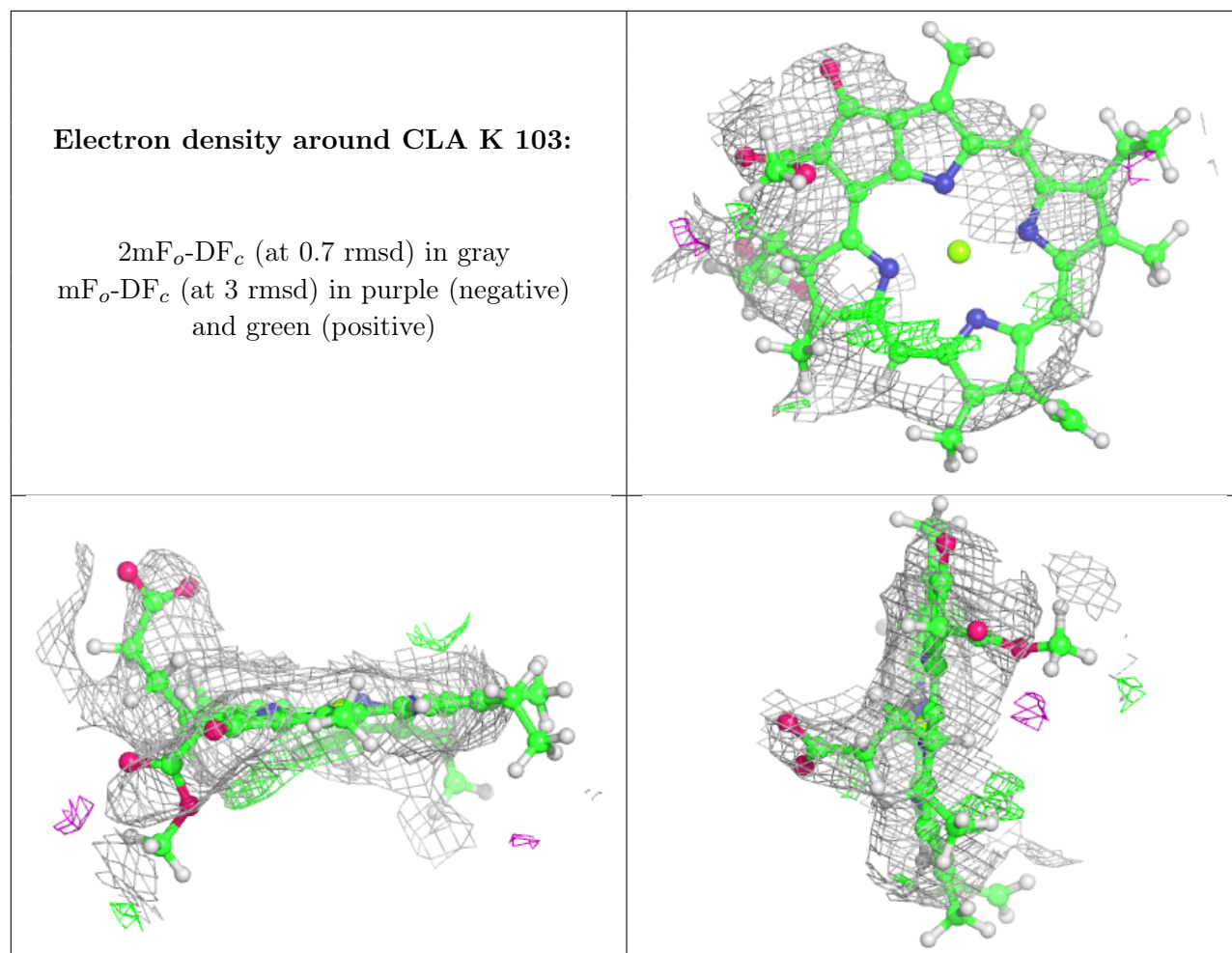
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around BCR J 103:

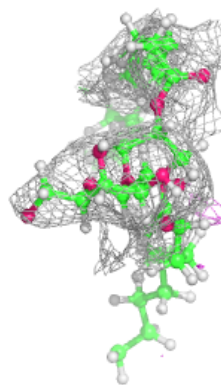
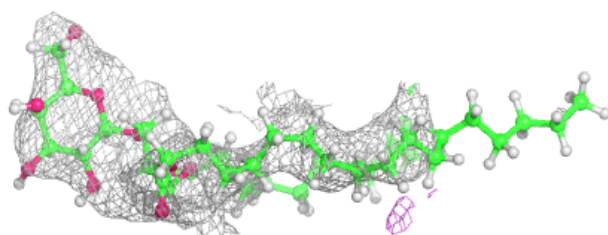
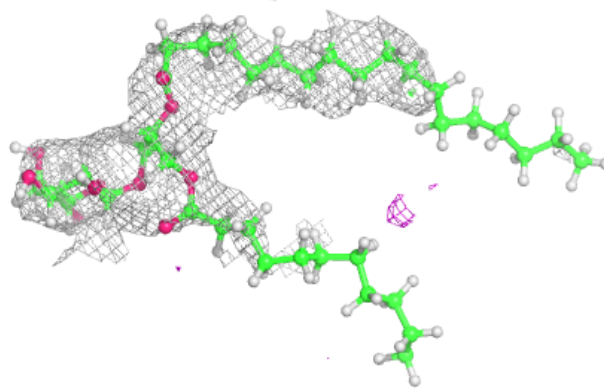
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



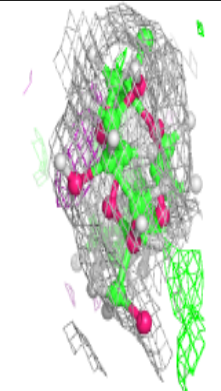
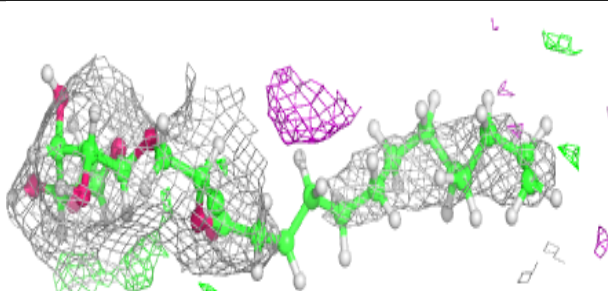
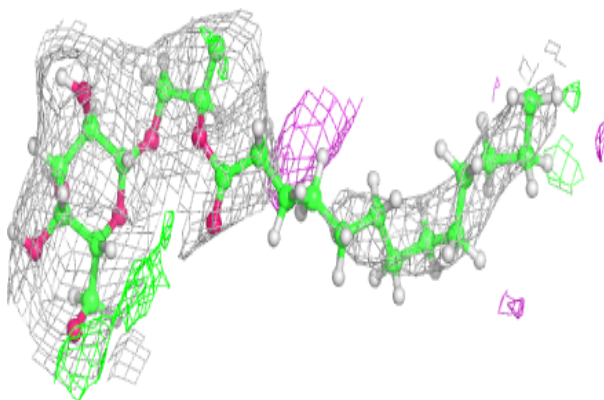


Electron density around LMG A 852:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

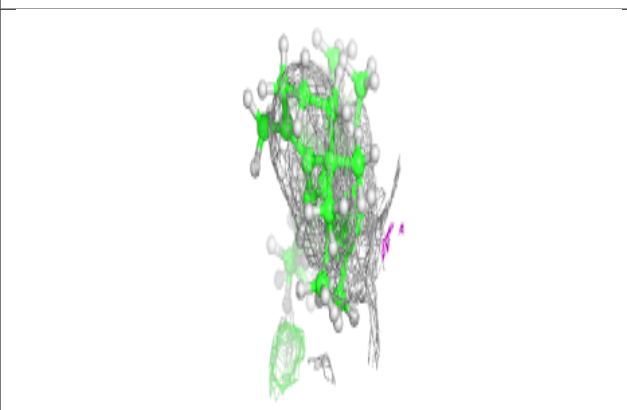
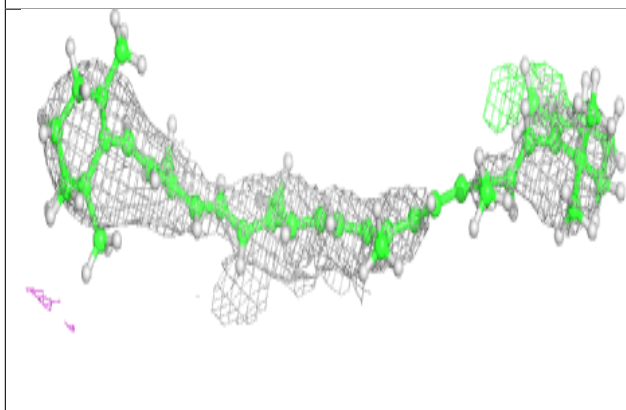
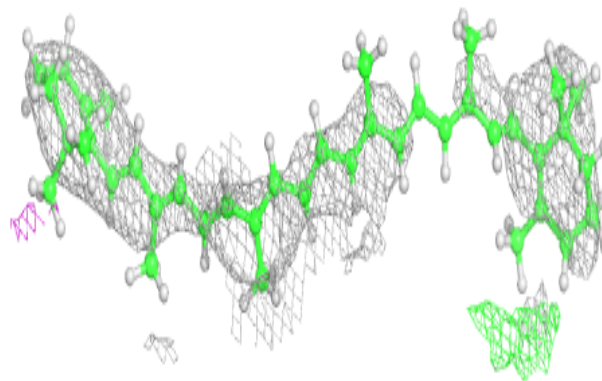
**Electron density around LMG A 855:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

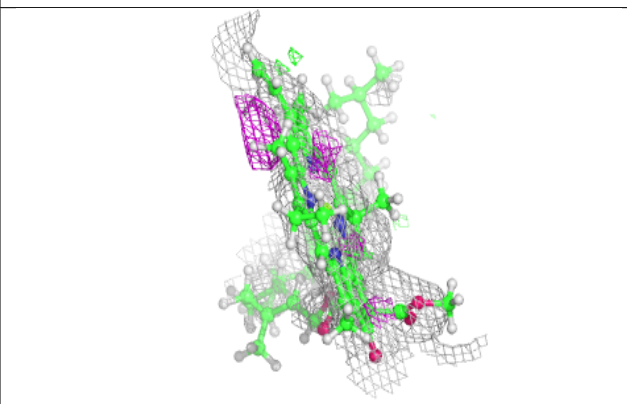
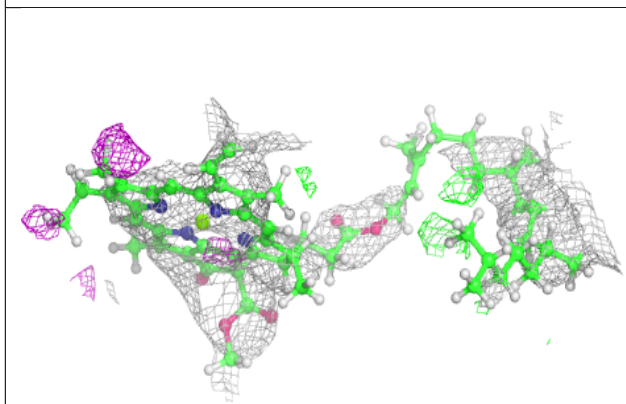
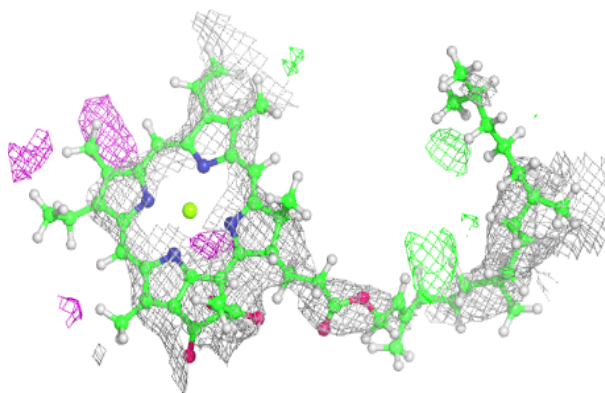


Electron density around BCR B 3050:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

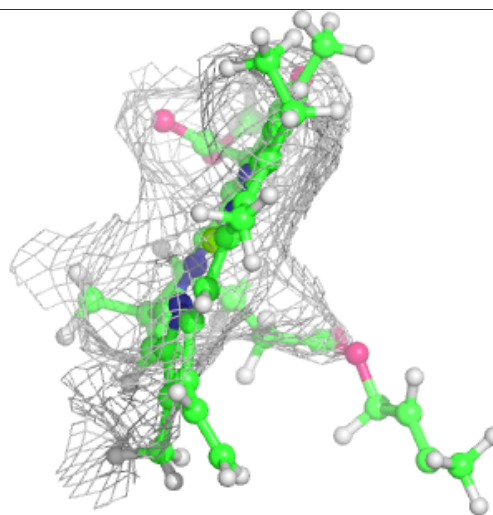
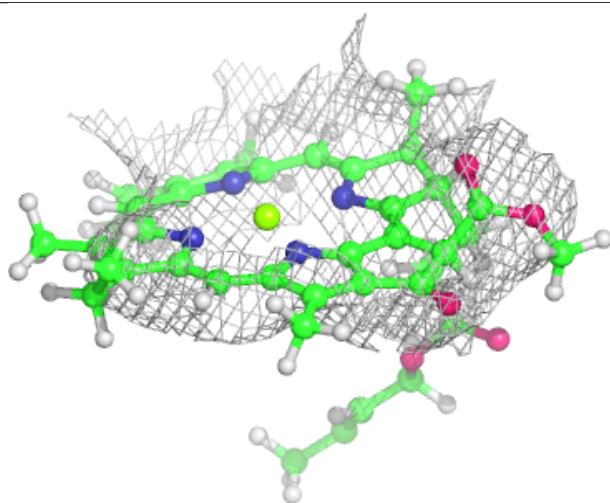
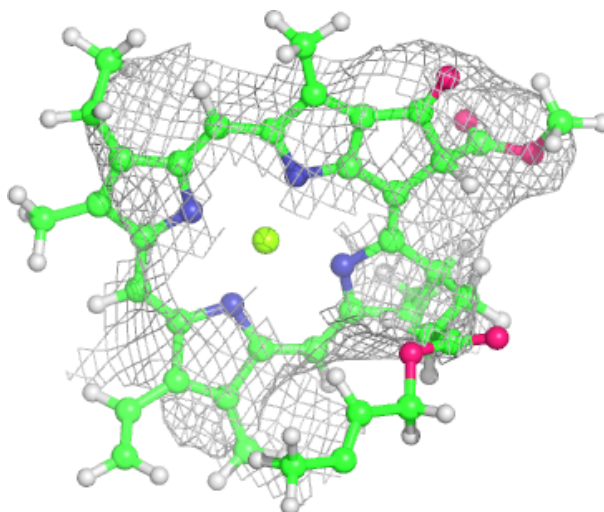
**Electron density around CLA A 828:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



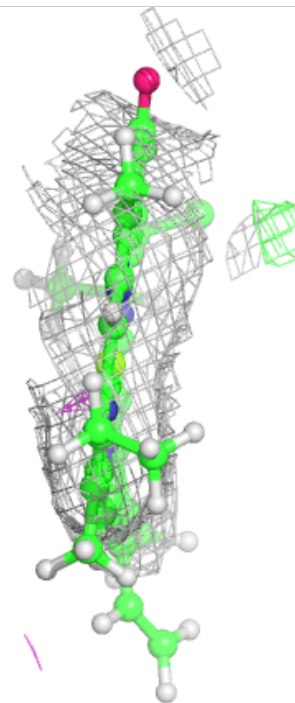
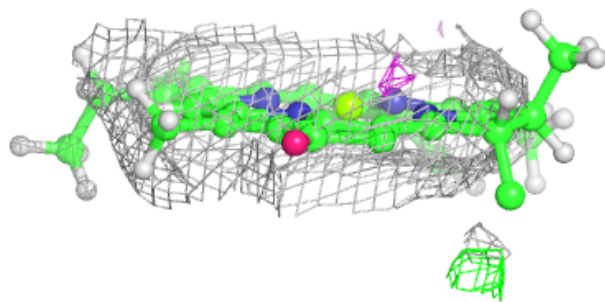
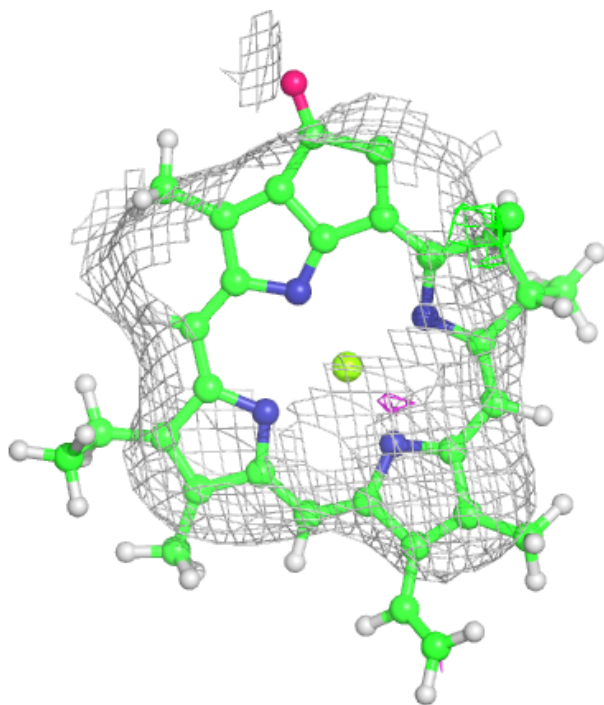
Electron density around CLA A 817:

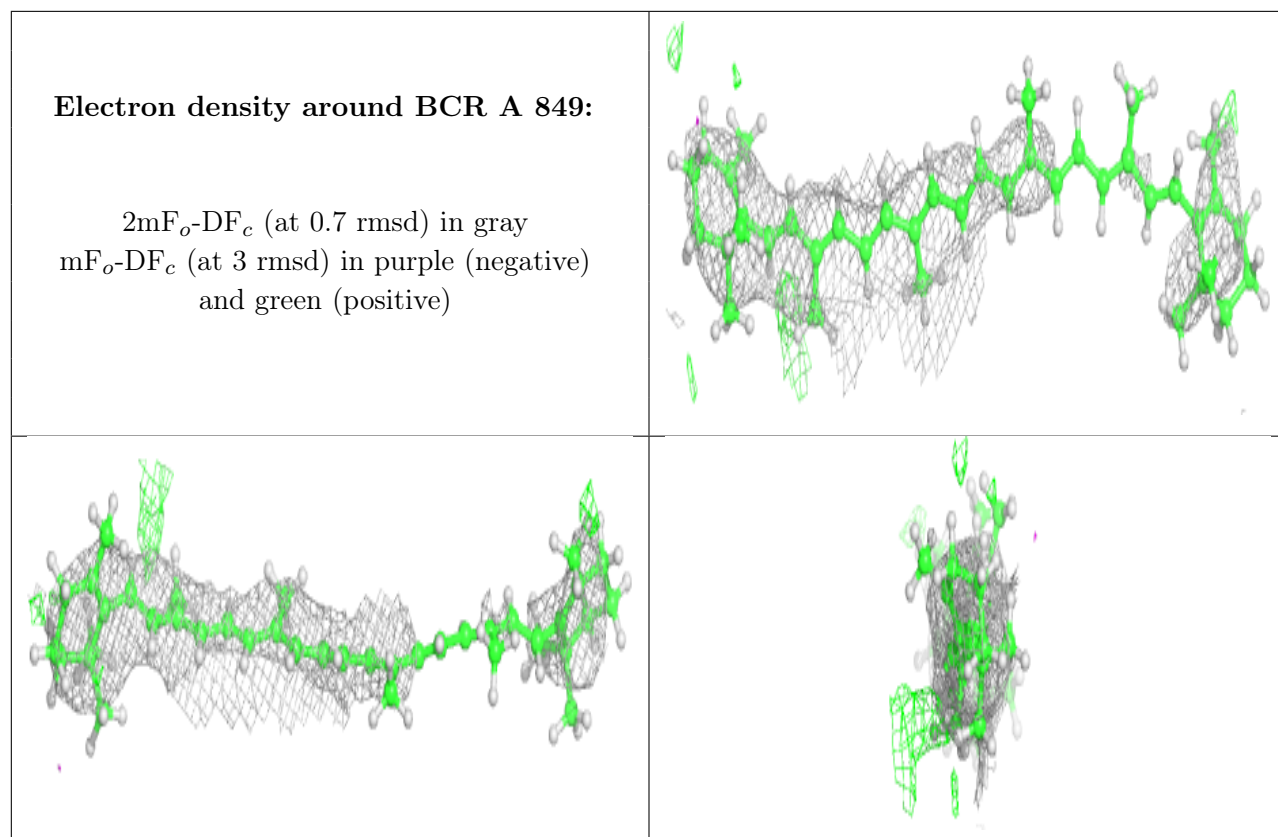
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA J 102:

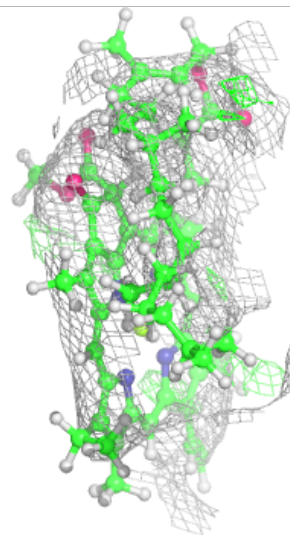
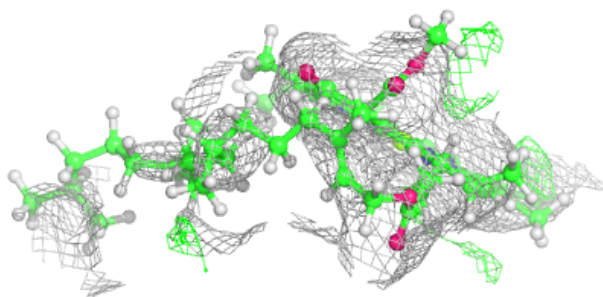
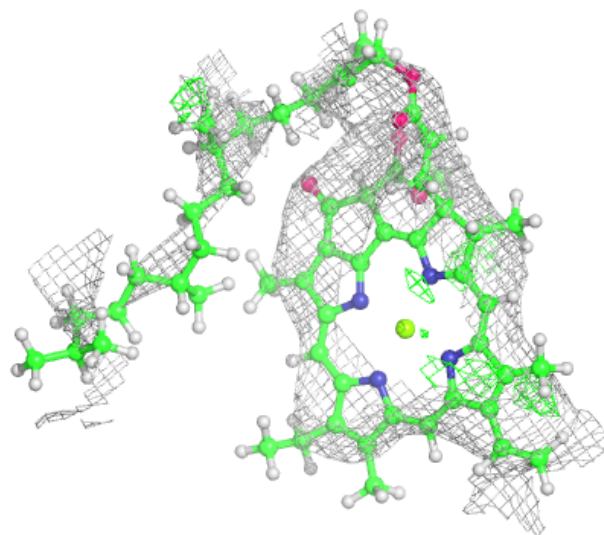
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

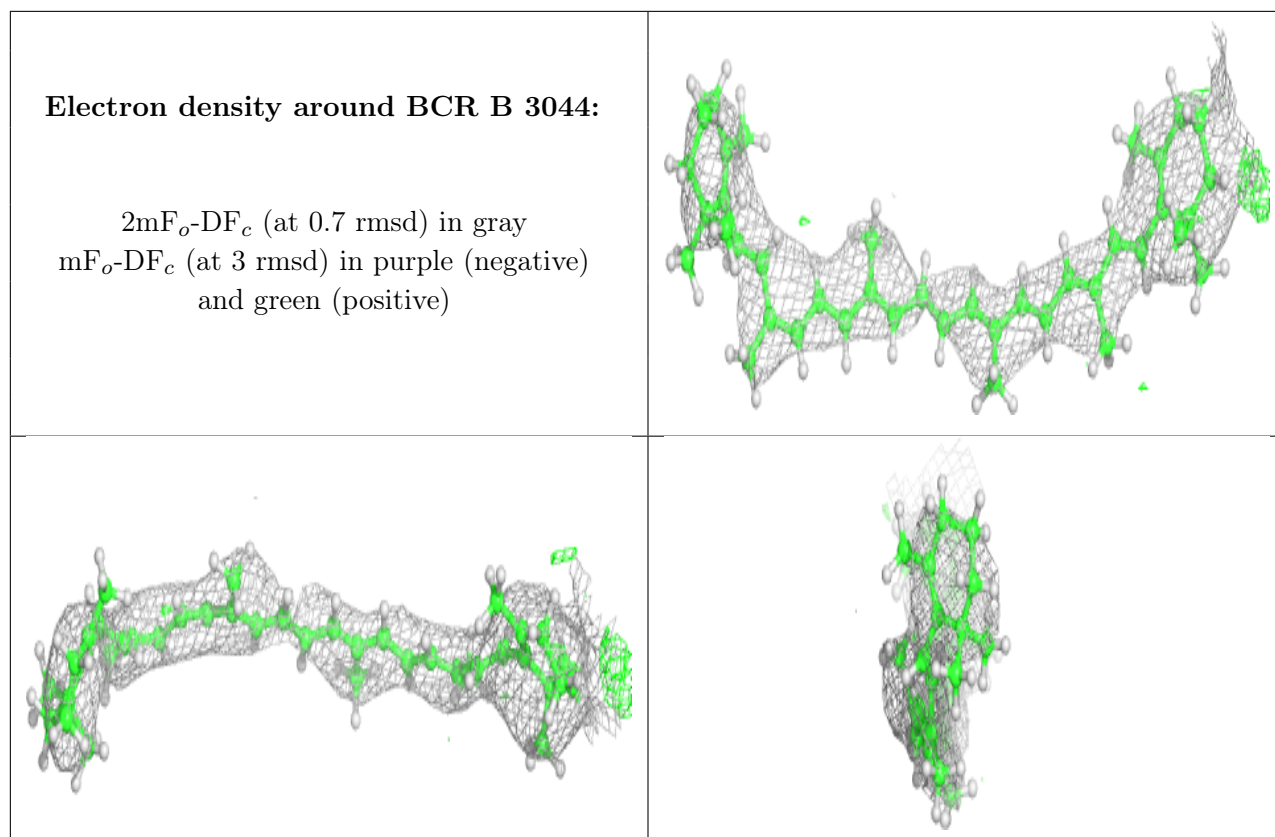




Electron density around CLA A 826:

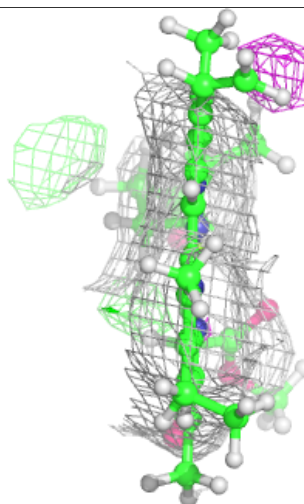
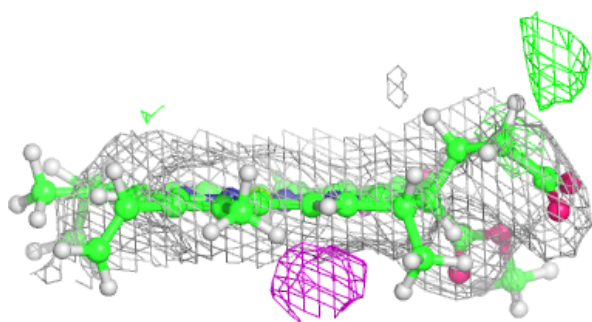
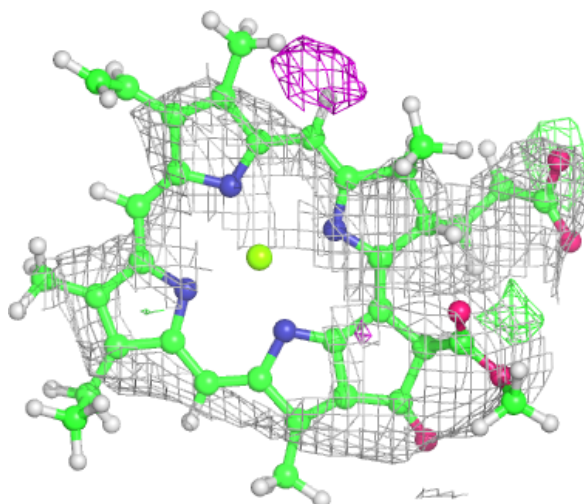
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





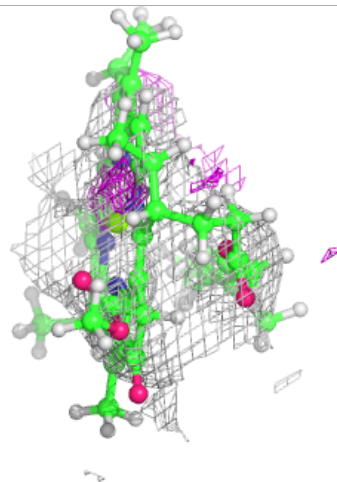
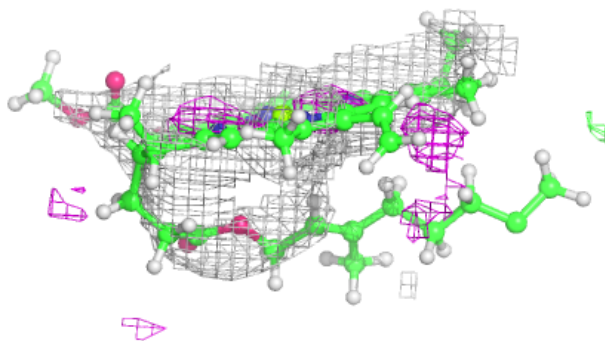
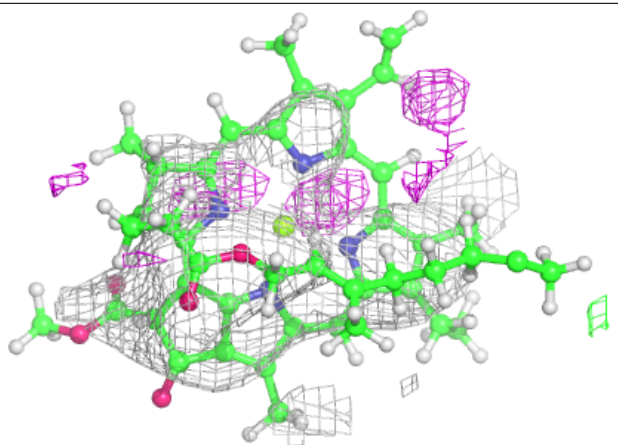
Electron density around CLA F 202:

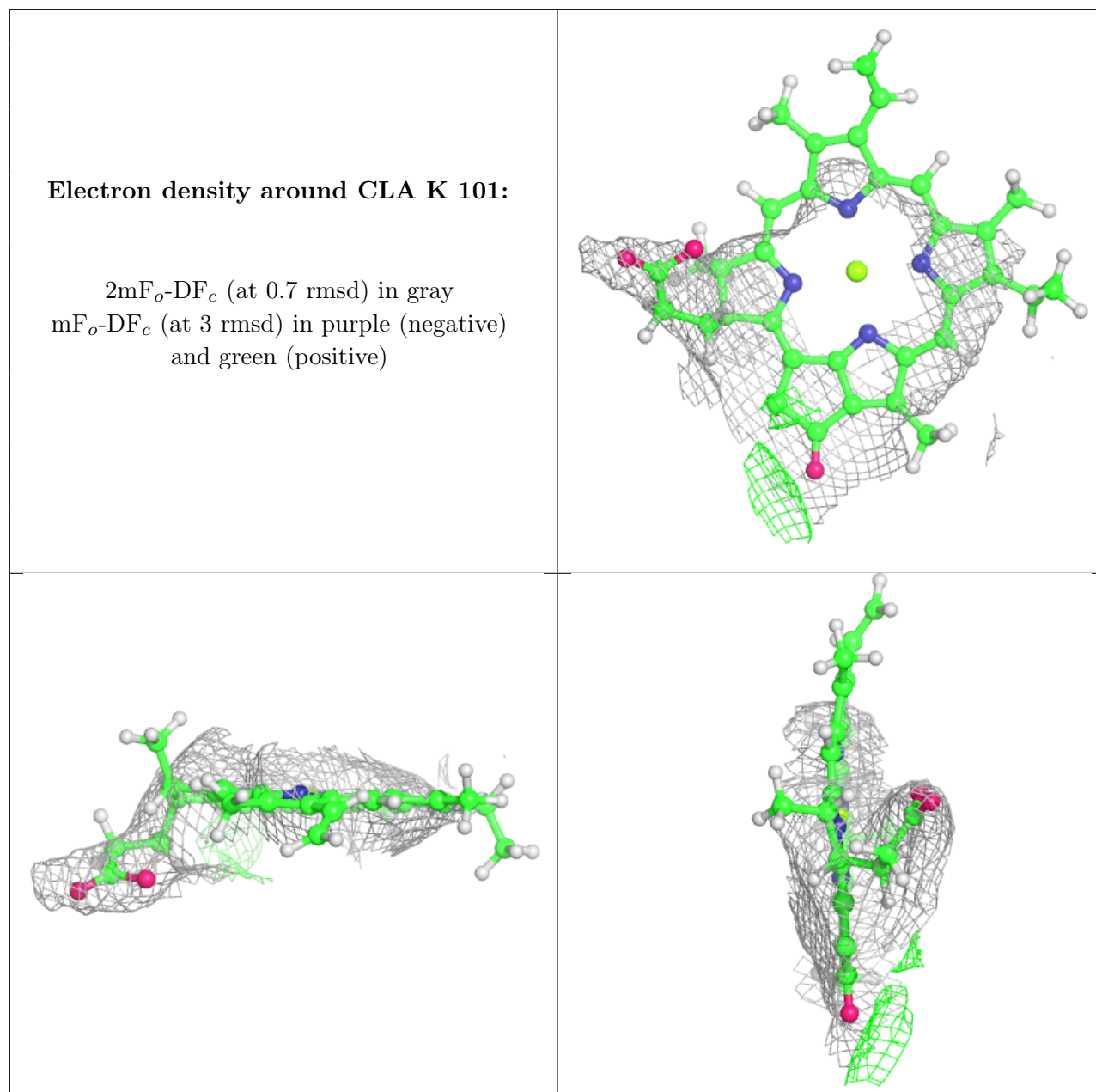
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

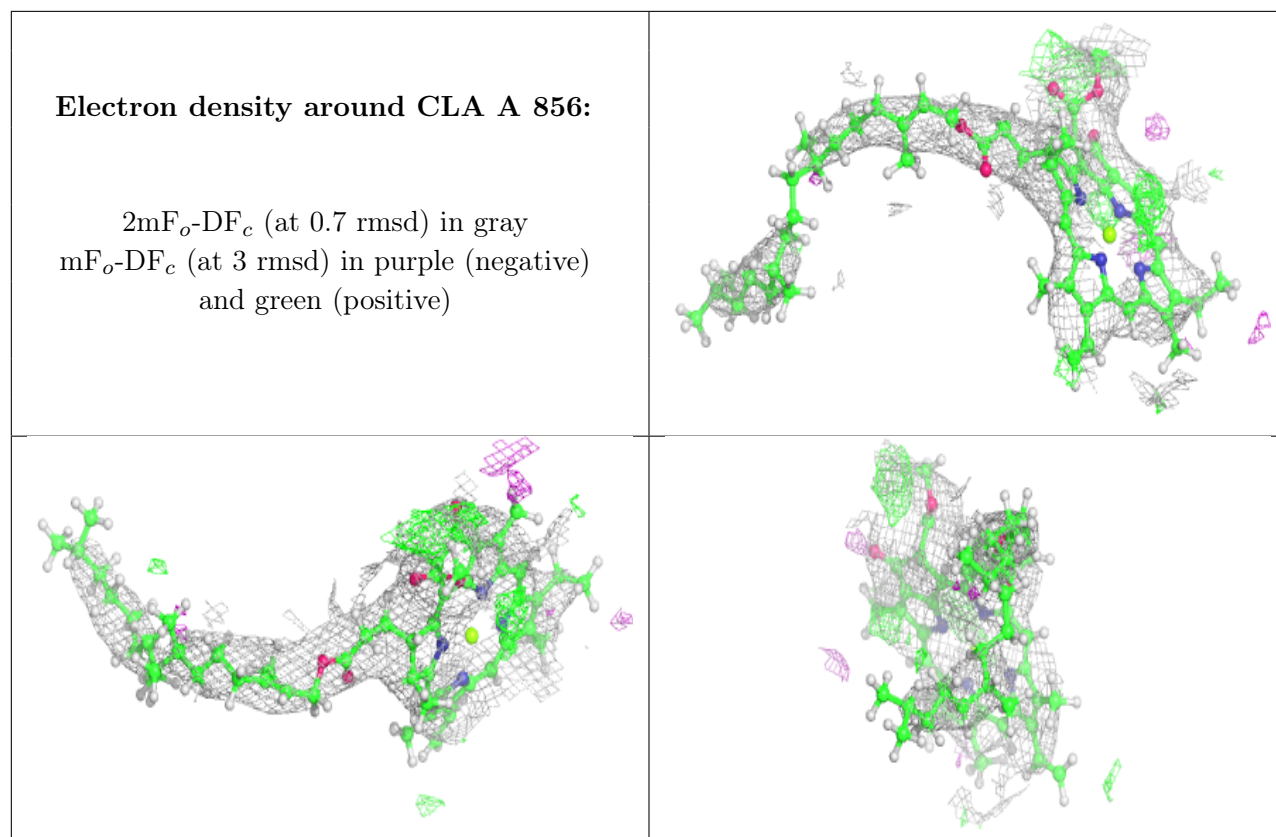


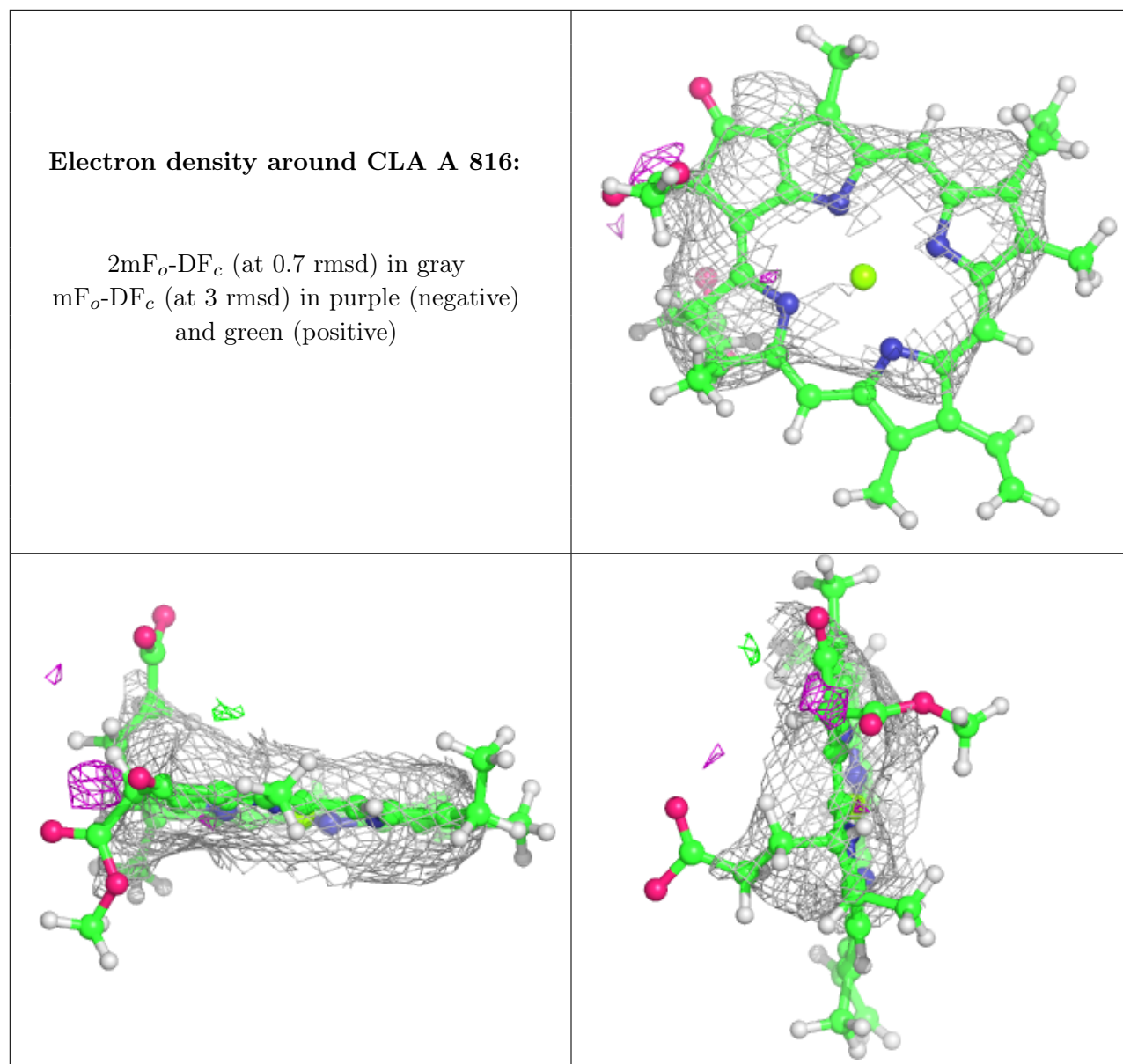
Electron density around CLA A 818:

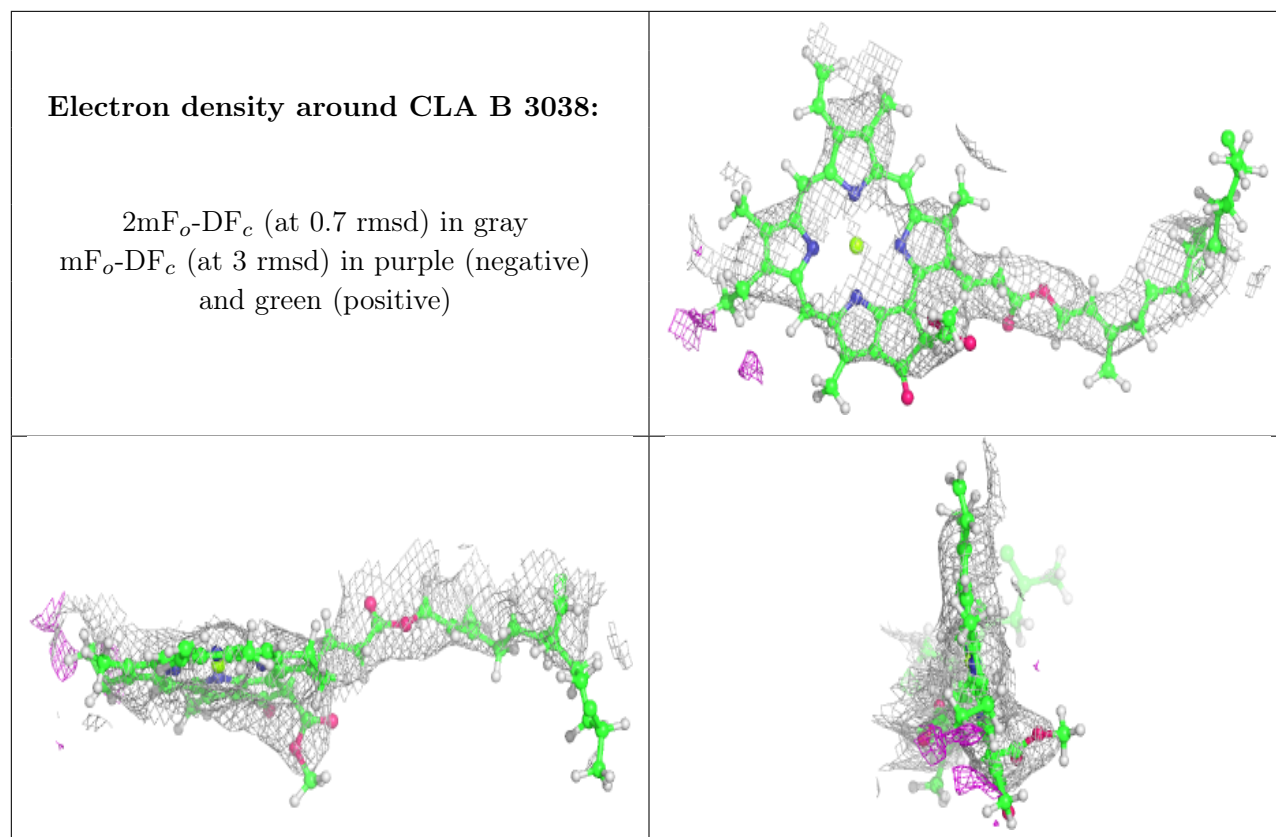
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





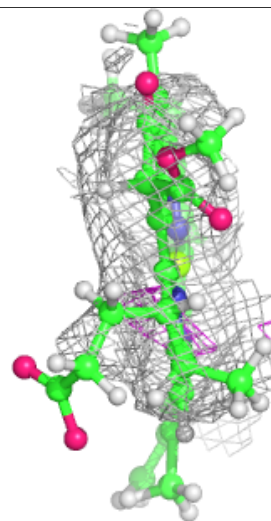
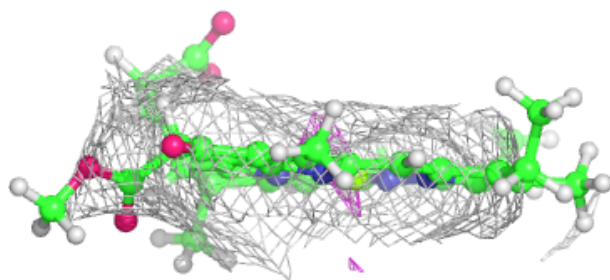
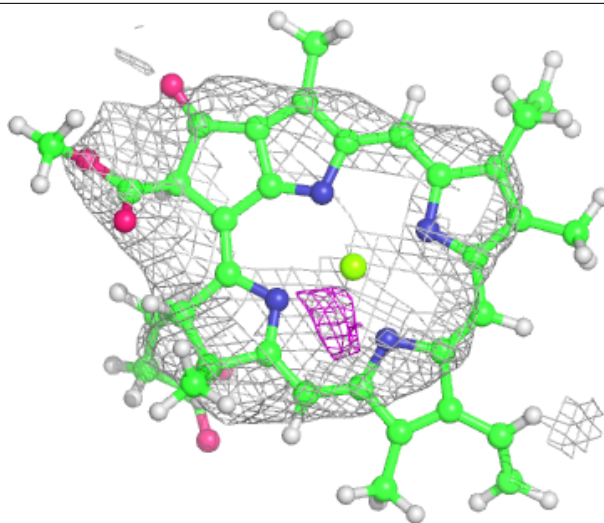


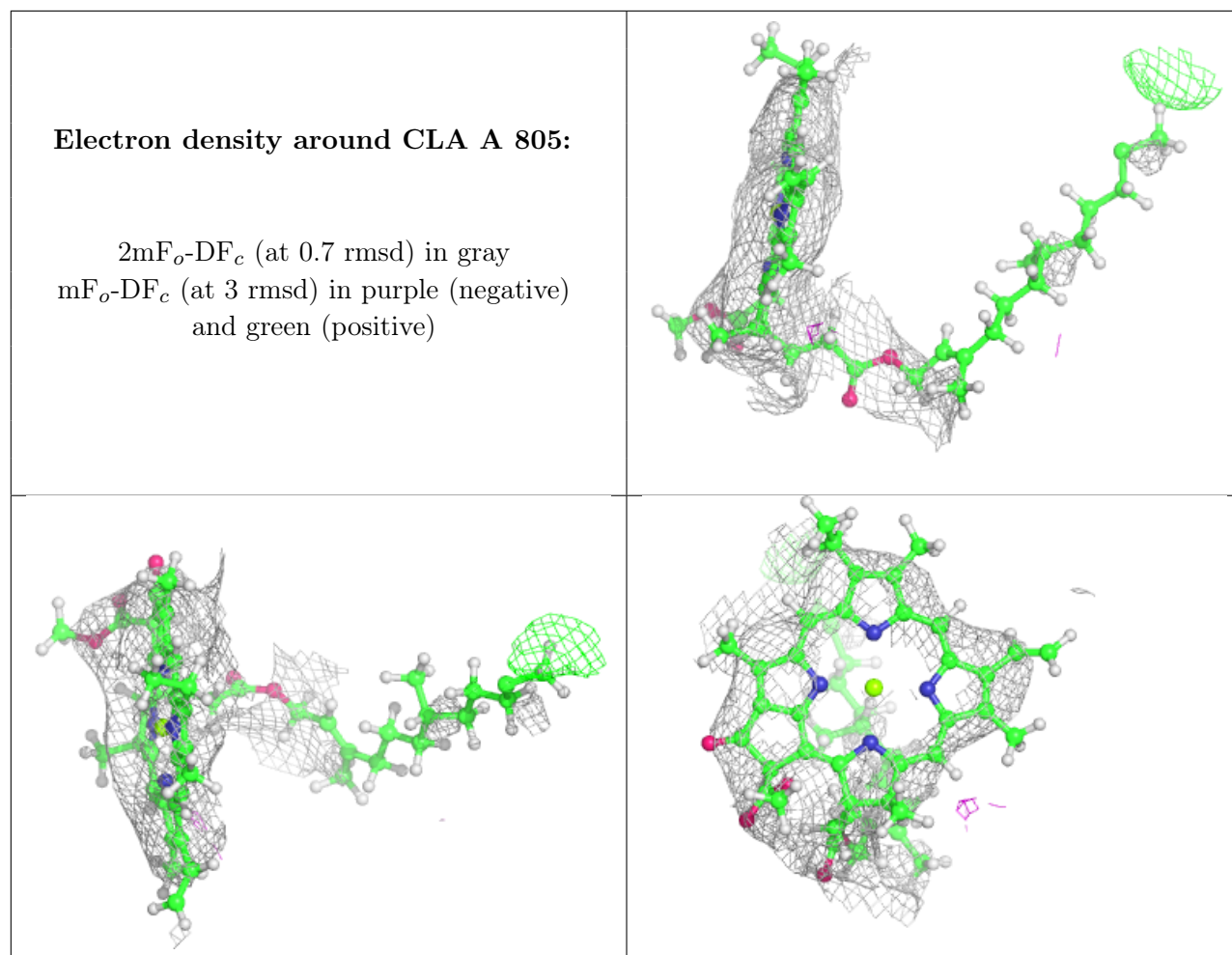




Electron density around CLA J 101:

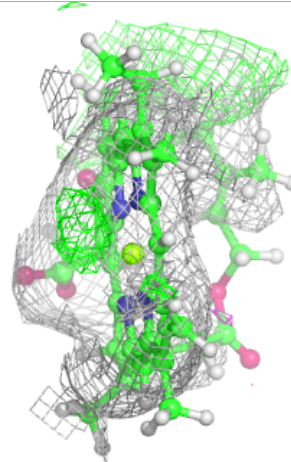
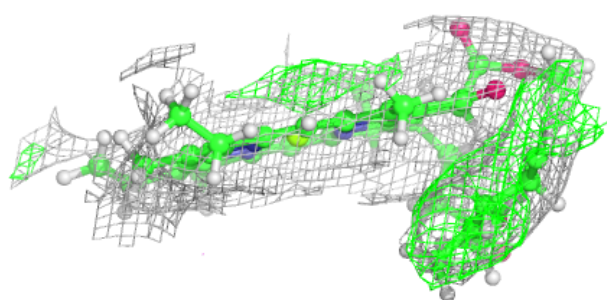
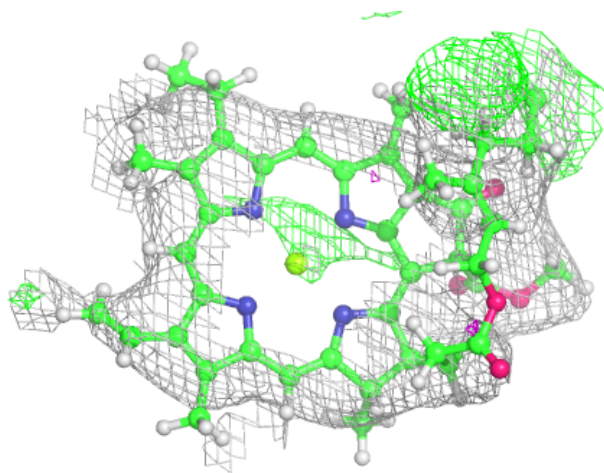
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

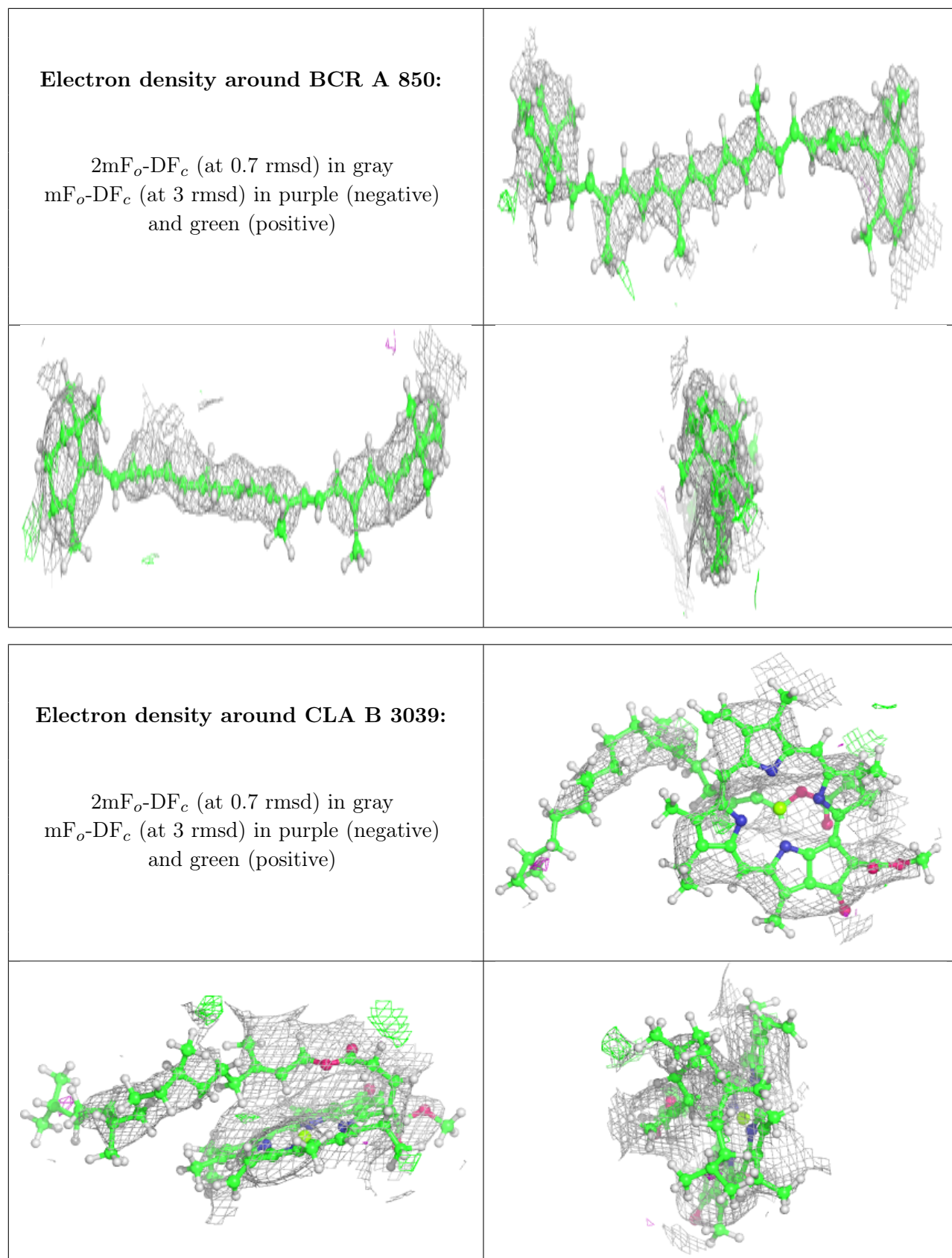




Electron density around CLA A 845:

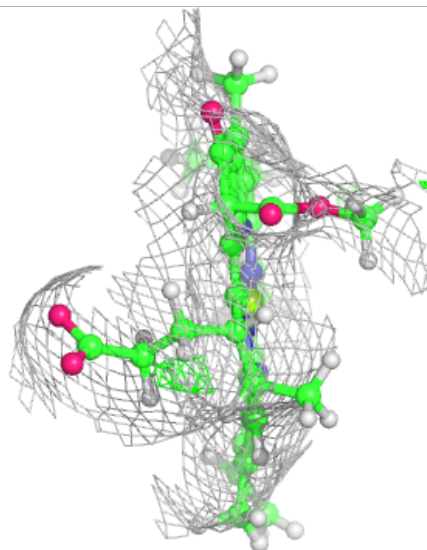
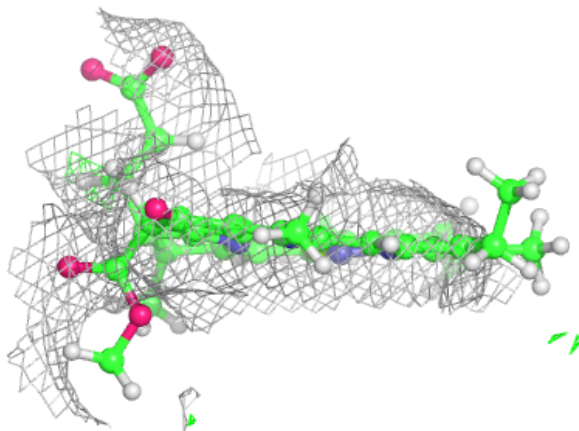
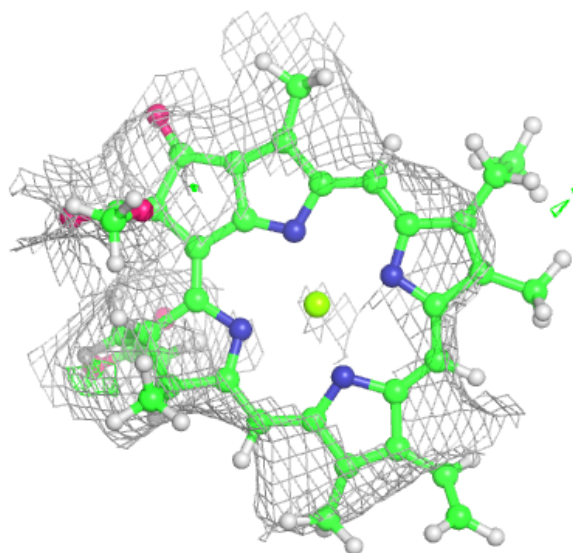
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





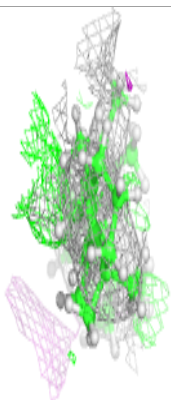
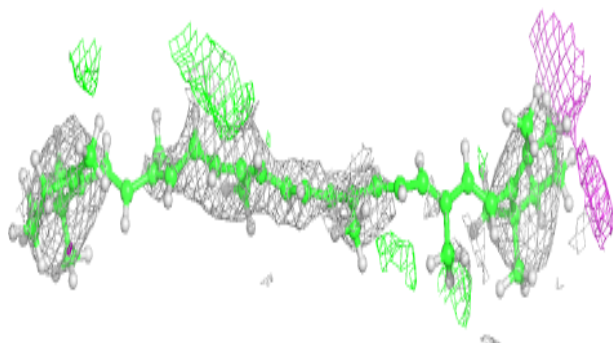
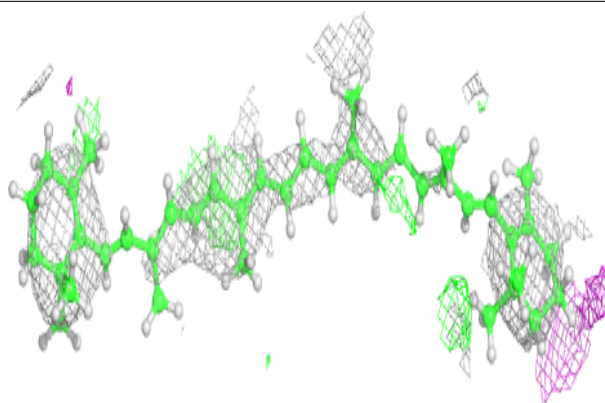
Electron density around CLA A 815:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

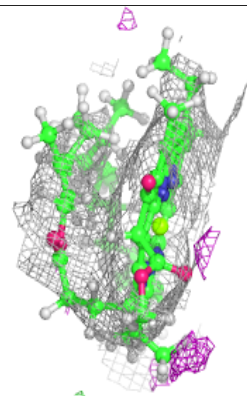
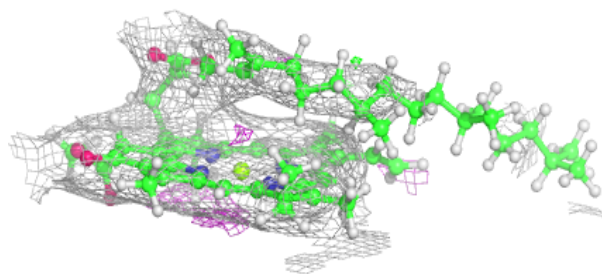
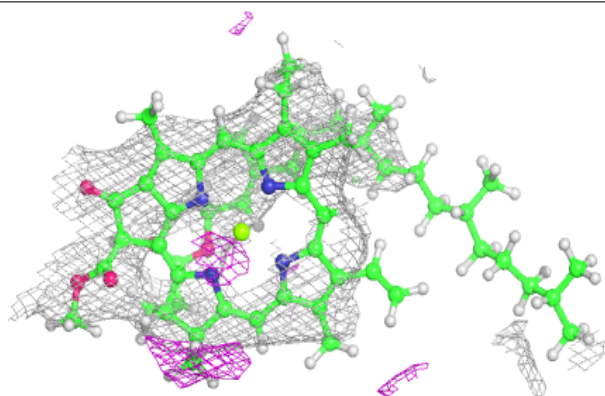


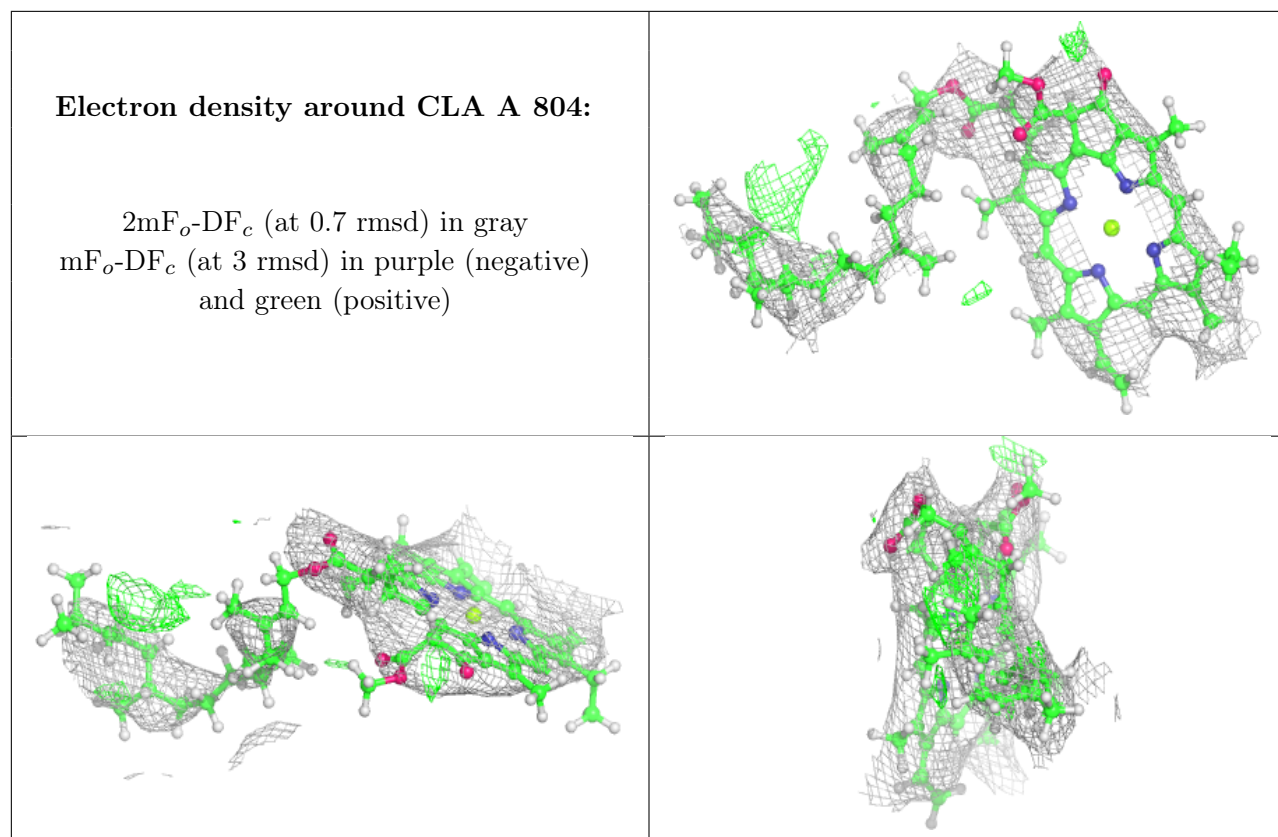
Electron density around BCR B 3046:

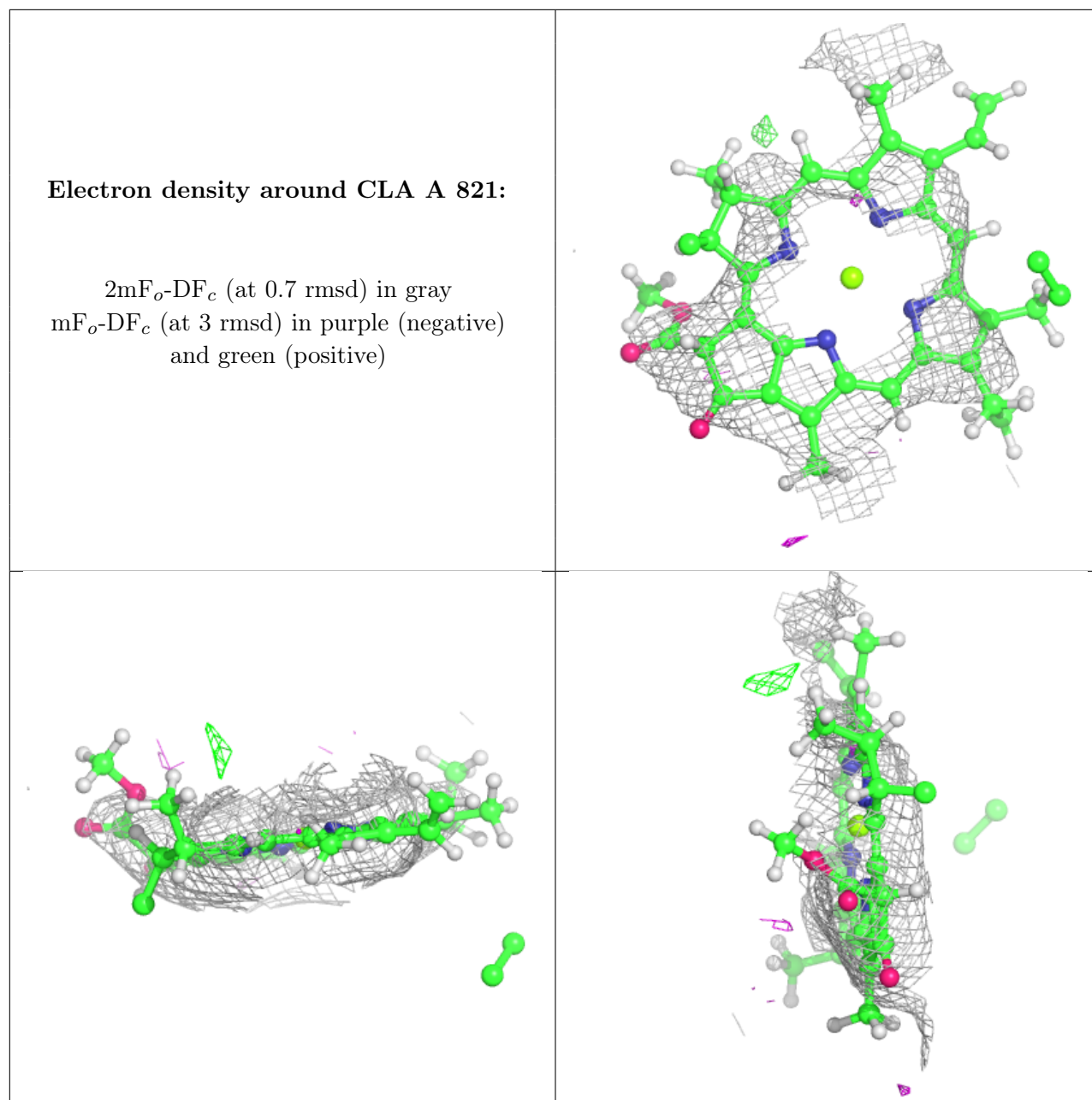
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around CLA A 841:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

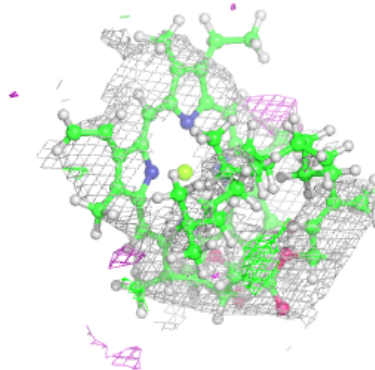
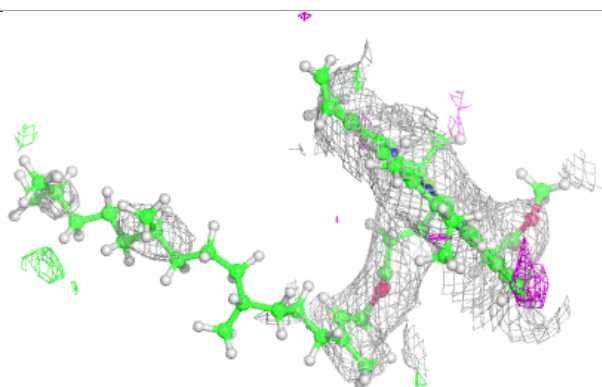
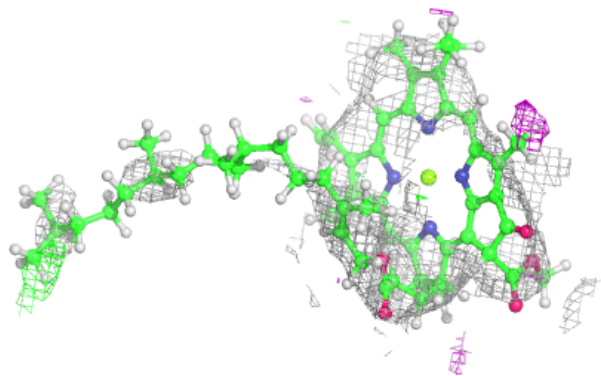




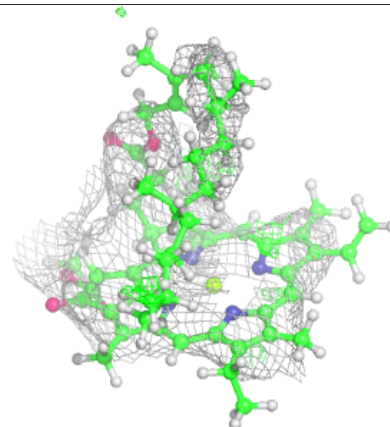
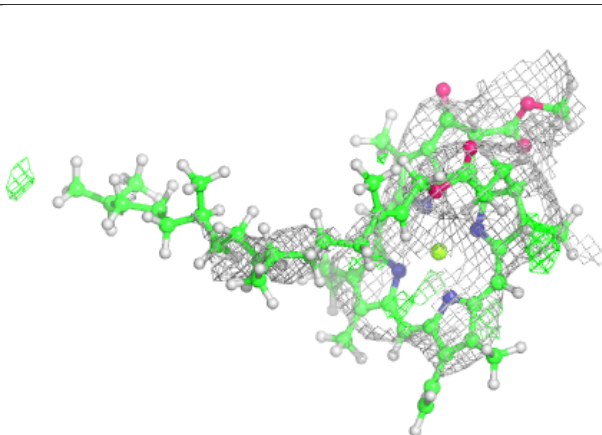
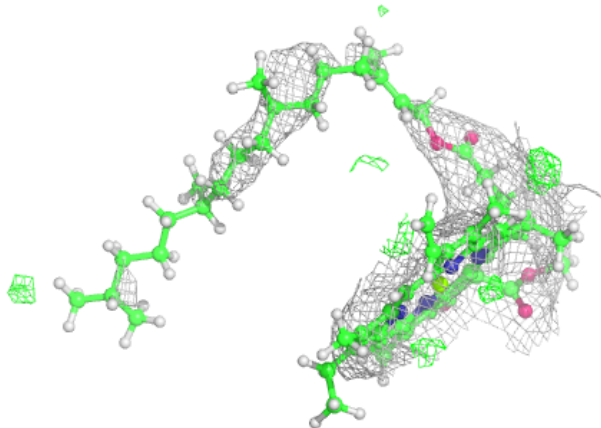


Electron density around CLA B 3015:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

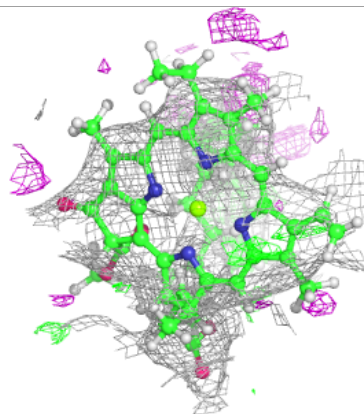
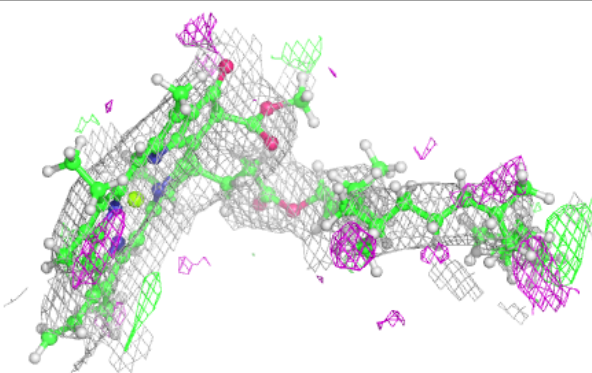
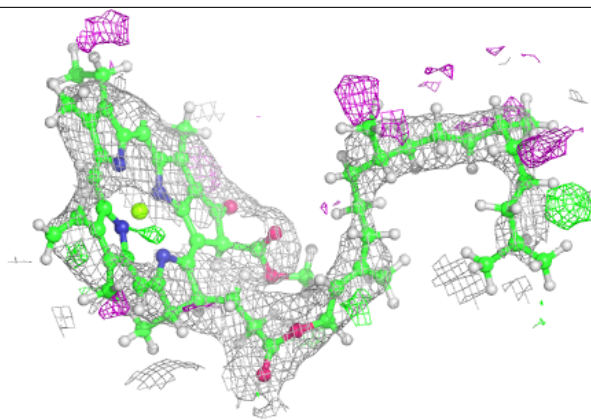
**Electron density around CLA B 3020:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



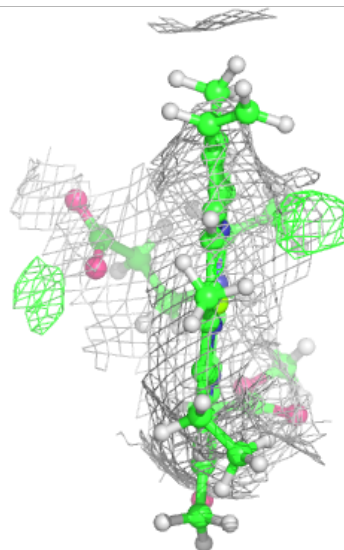
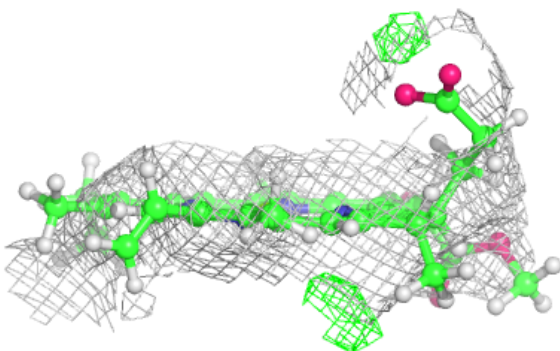
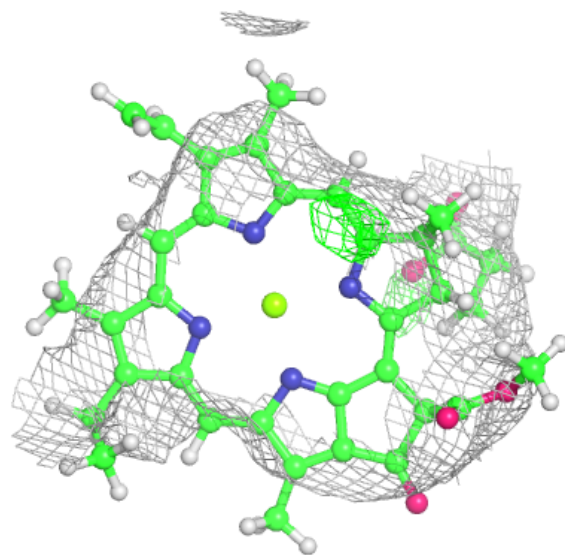
Electron density around CL0 A 801:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



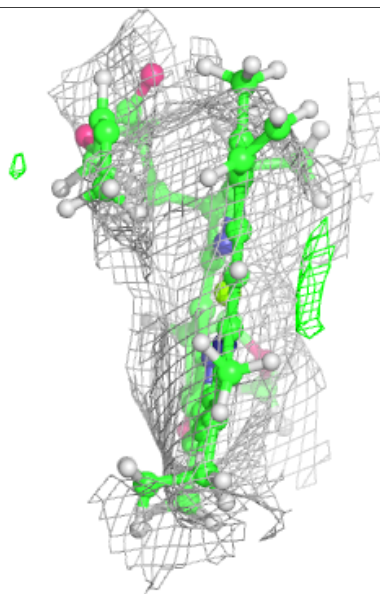
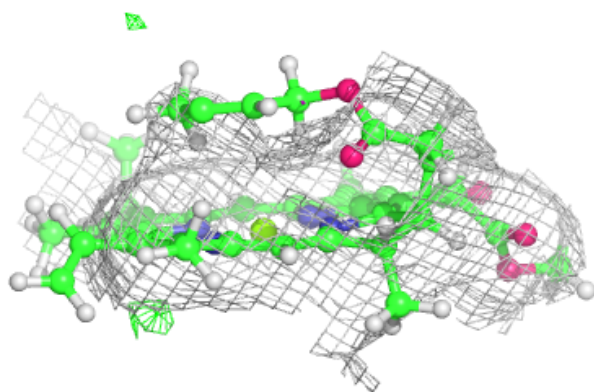
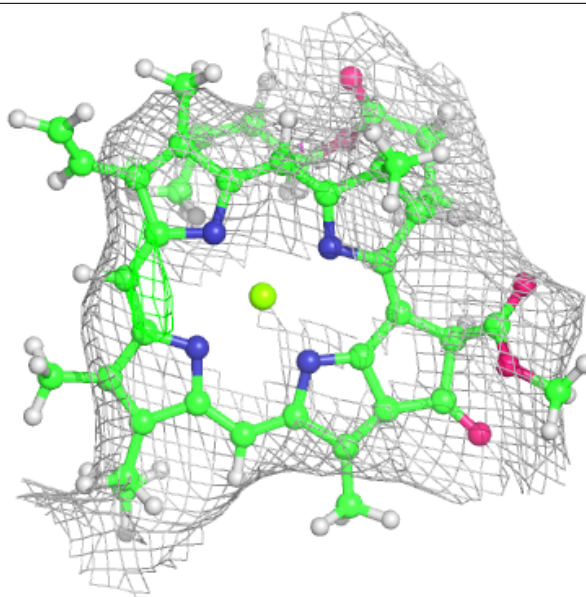
Electron density around CLA A 811:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



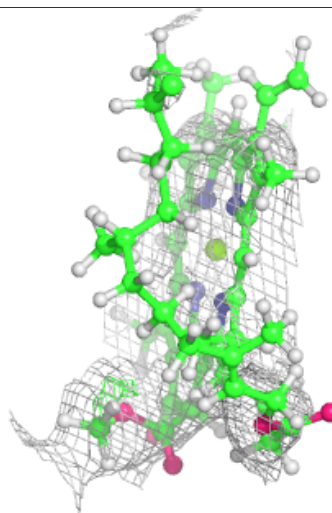
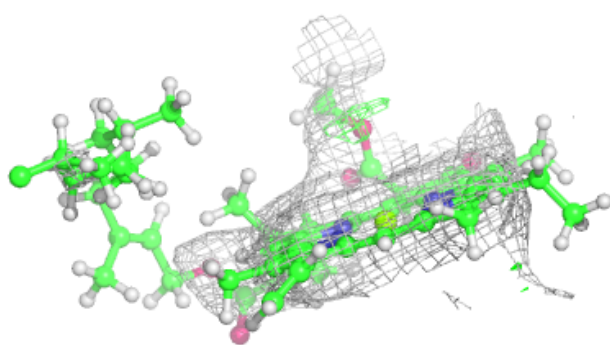
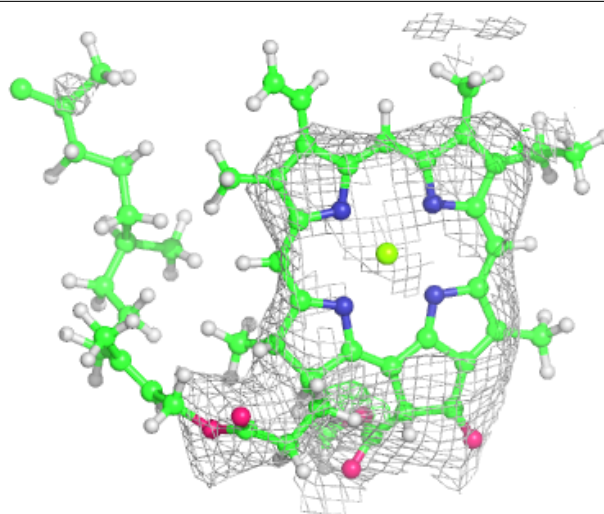
Electron density around CLA A 823:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



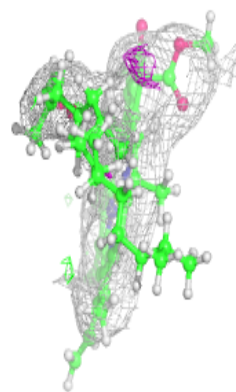
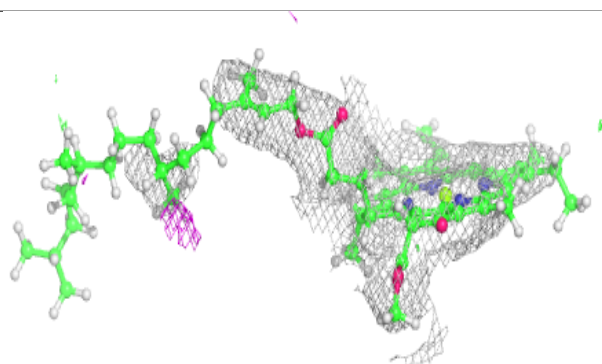
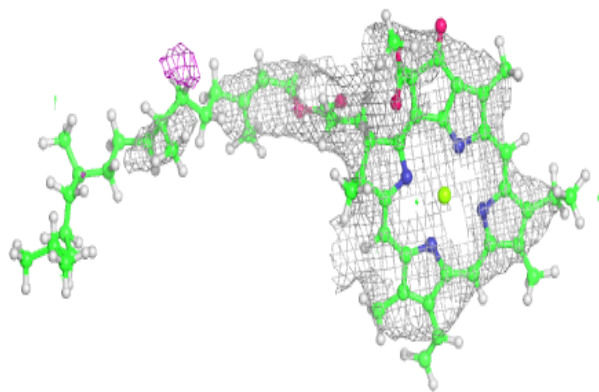
Electron density around CLA A 814:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

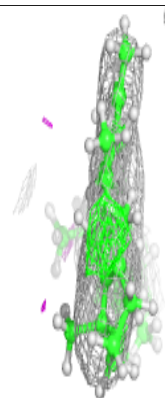
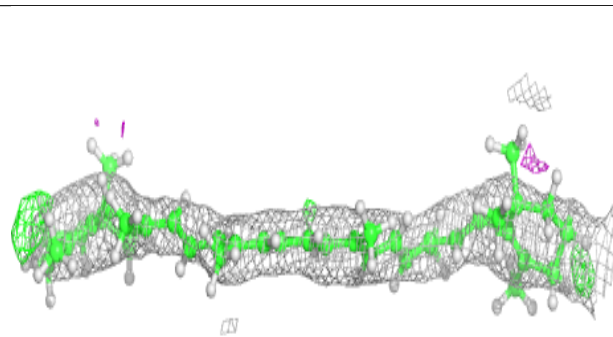
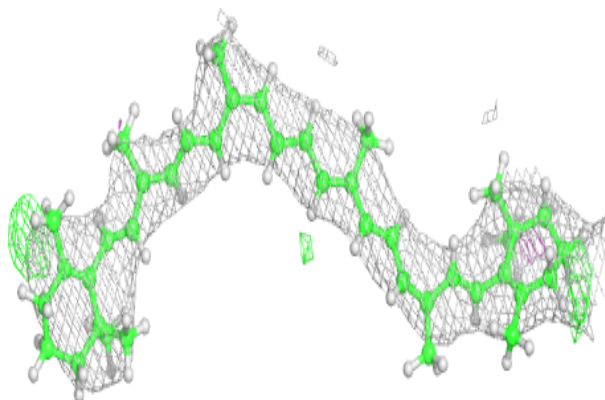


Electron density around CLA A 827:

$2mF_o-DF_c$ (at 0.7 rnsd) in gray
 mF_o-DF_c (at 3 rnsd) in purple (negative)
and green (positive)

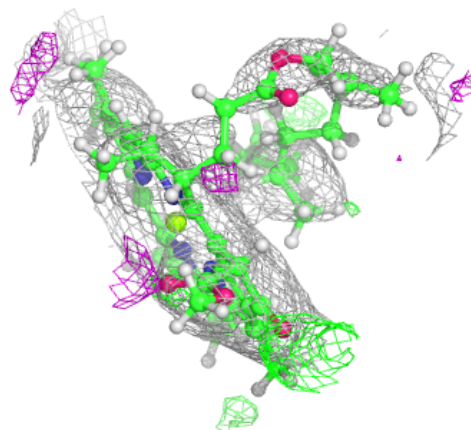
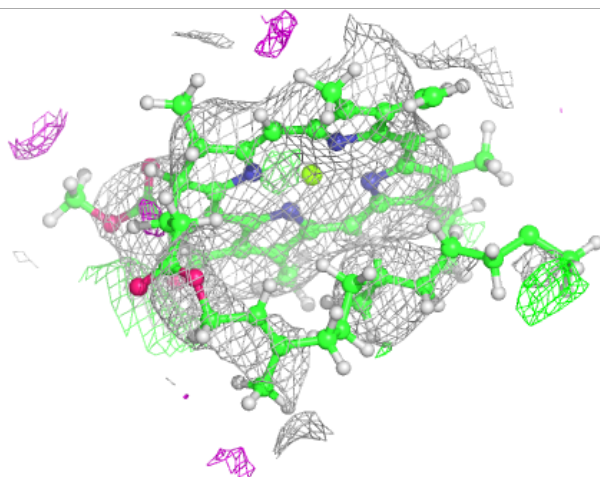
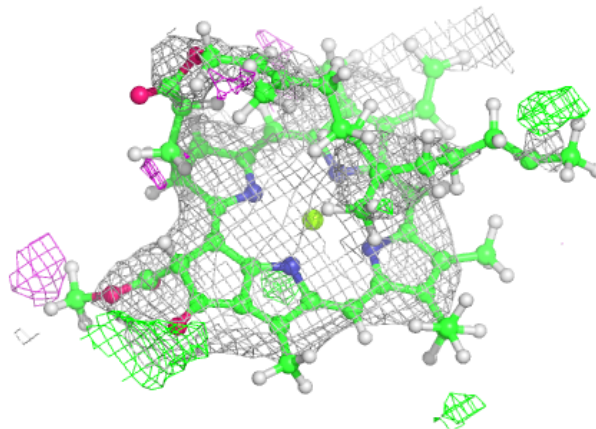
**Electron density around BCR A 851:**

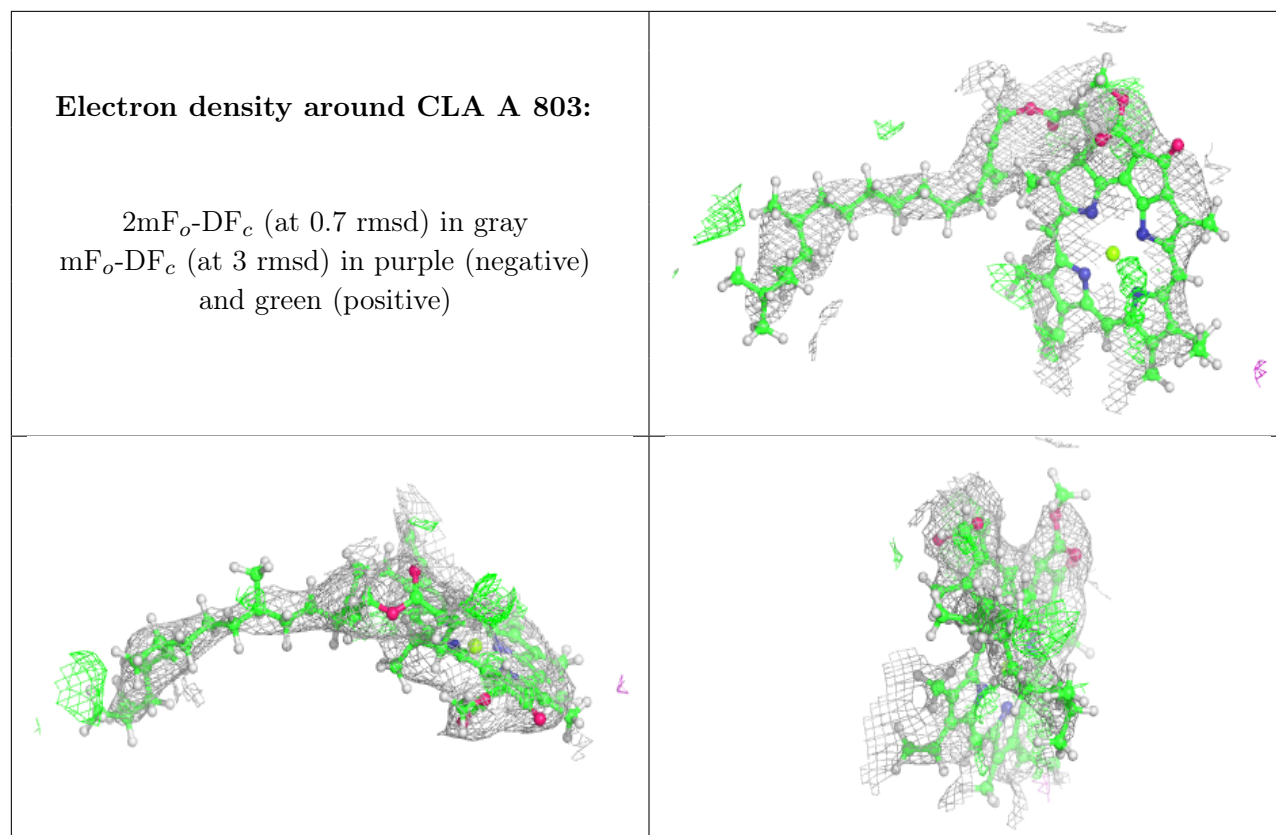
$2mF_o-DF_c$ (at 0.7 rnsd) in gray
 mF_o-DF_c (at 3 rnsd) in purple (negative)
and green (positive)



Electron density around CLA B 3018:

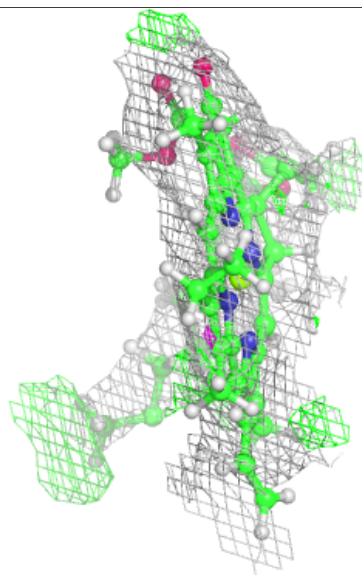
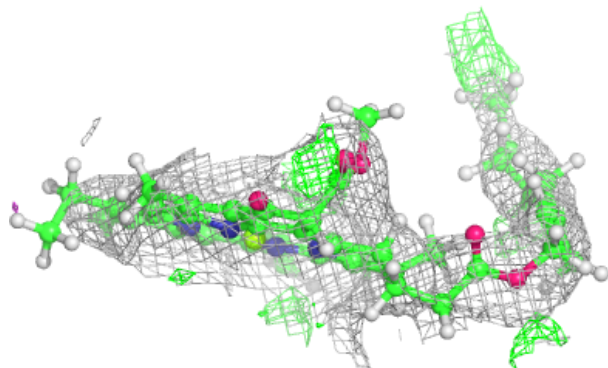
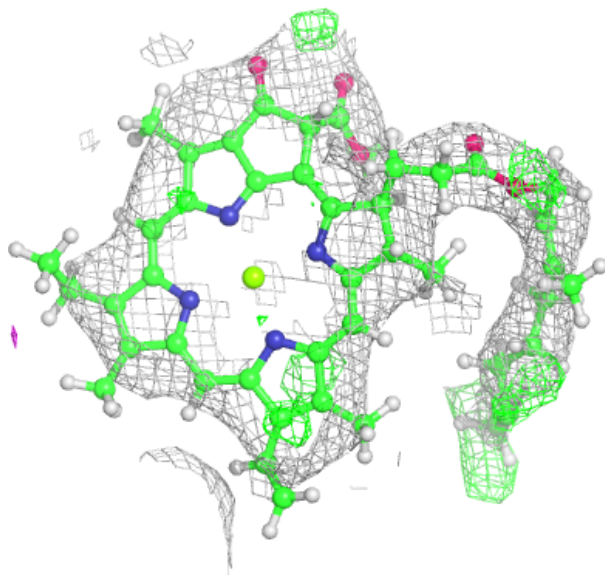
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

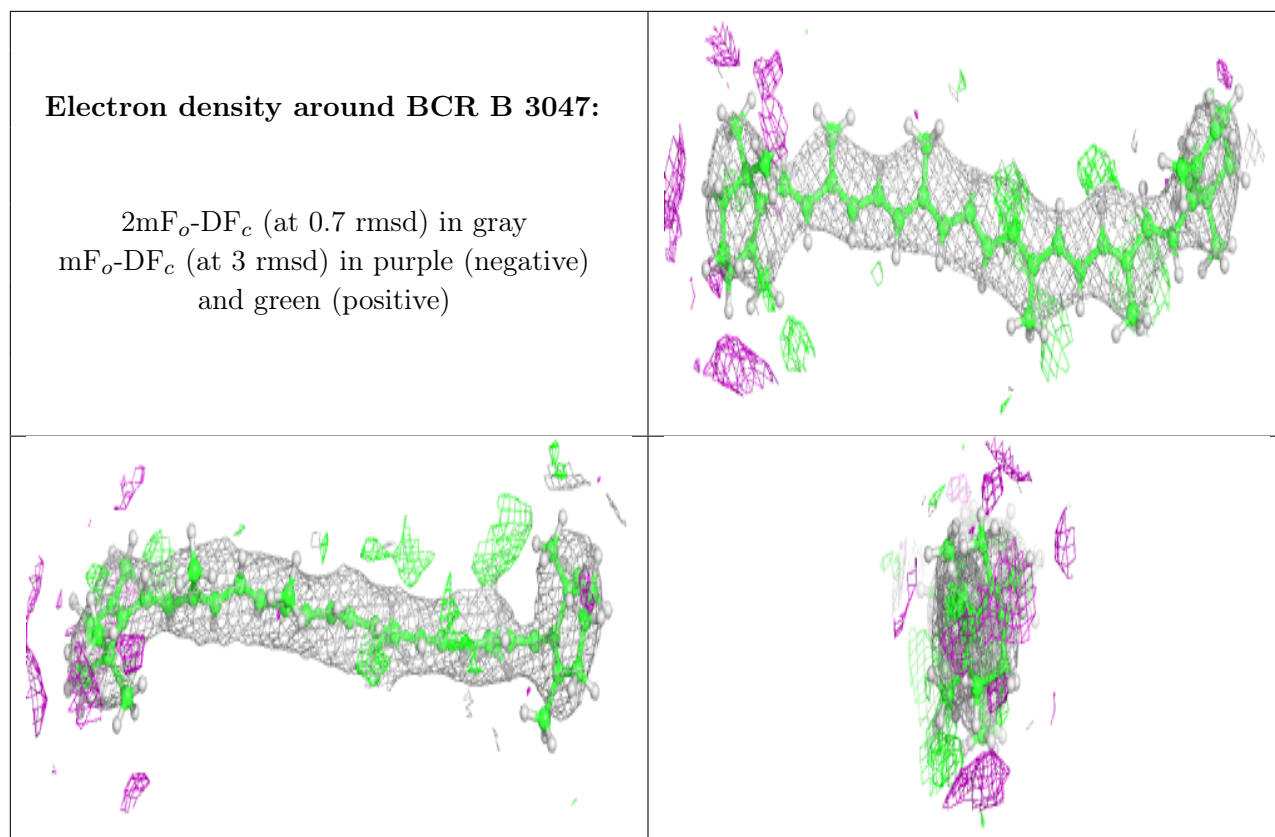


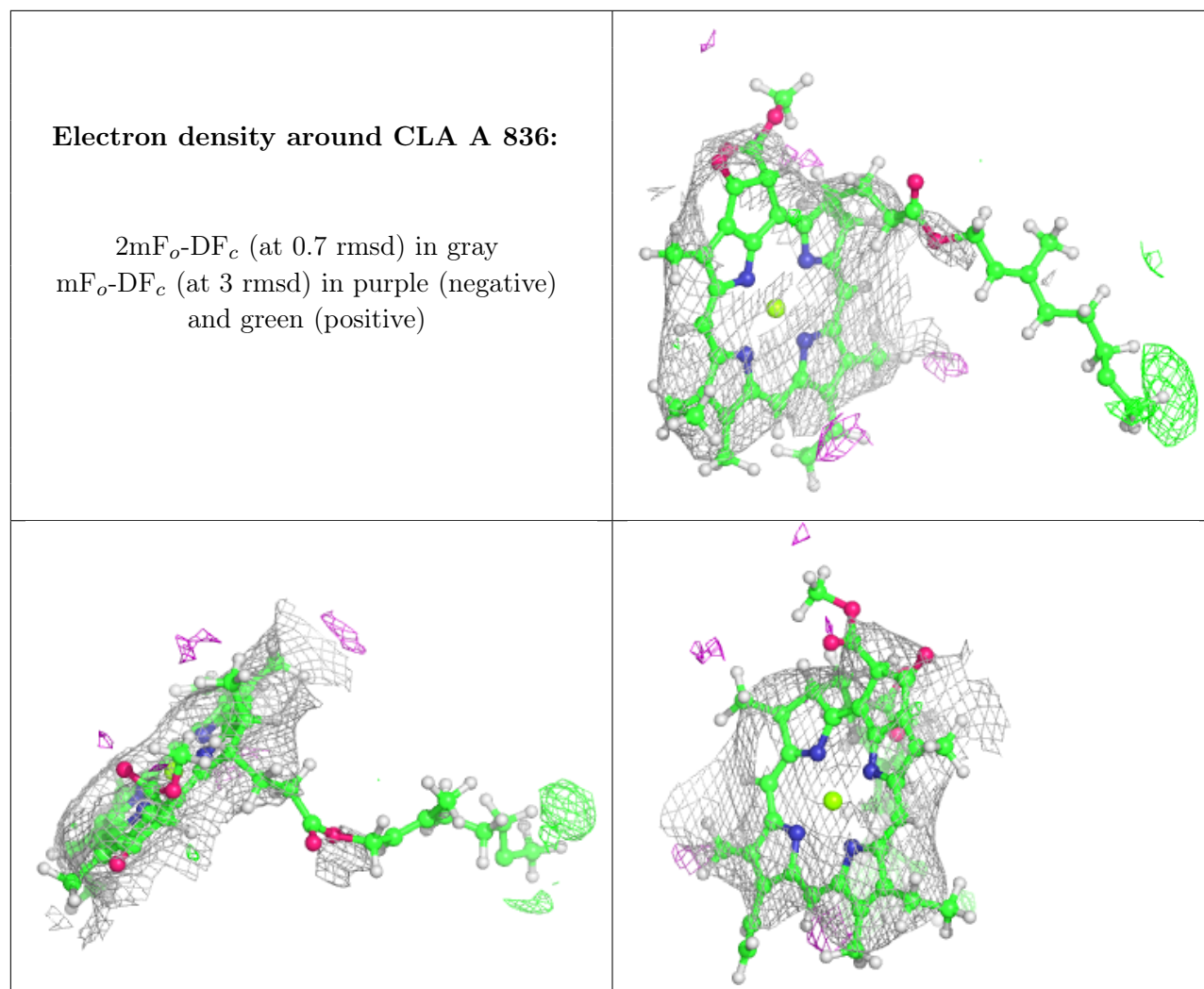


Electron density around CLA B 3025:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

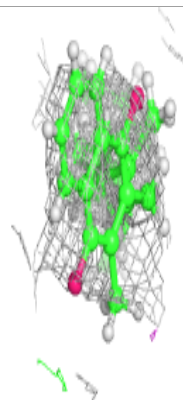
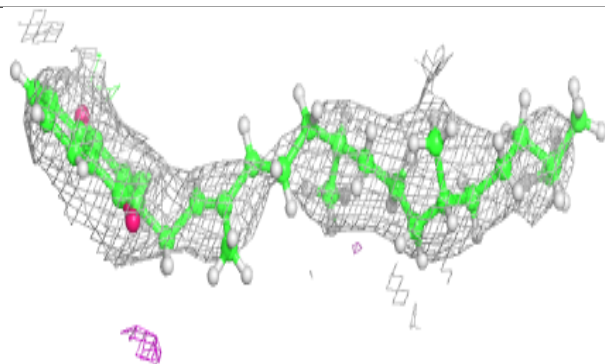
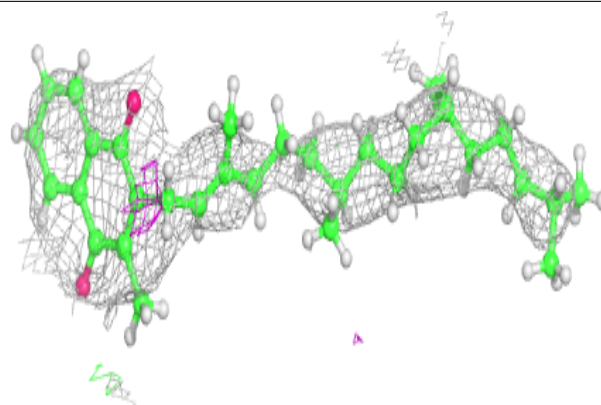




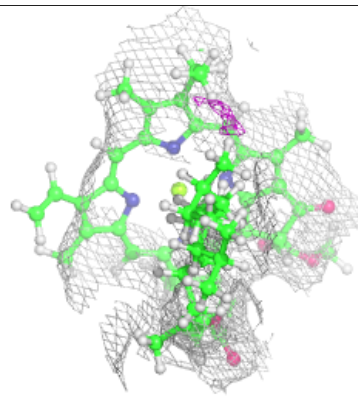
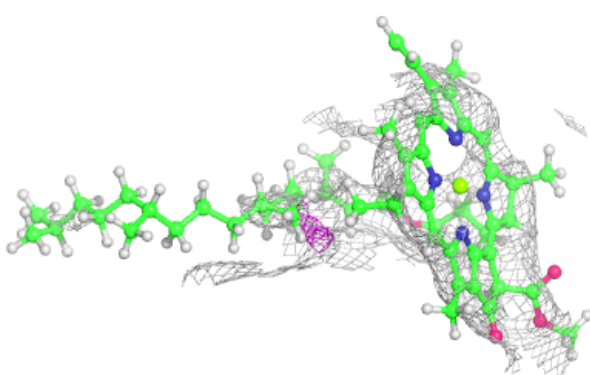
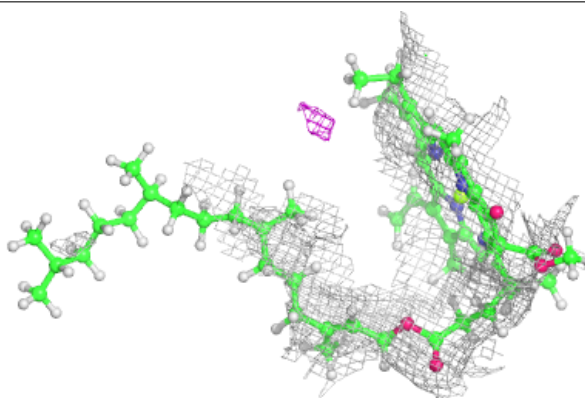


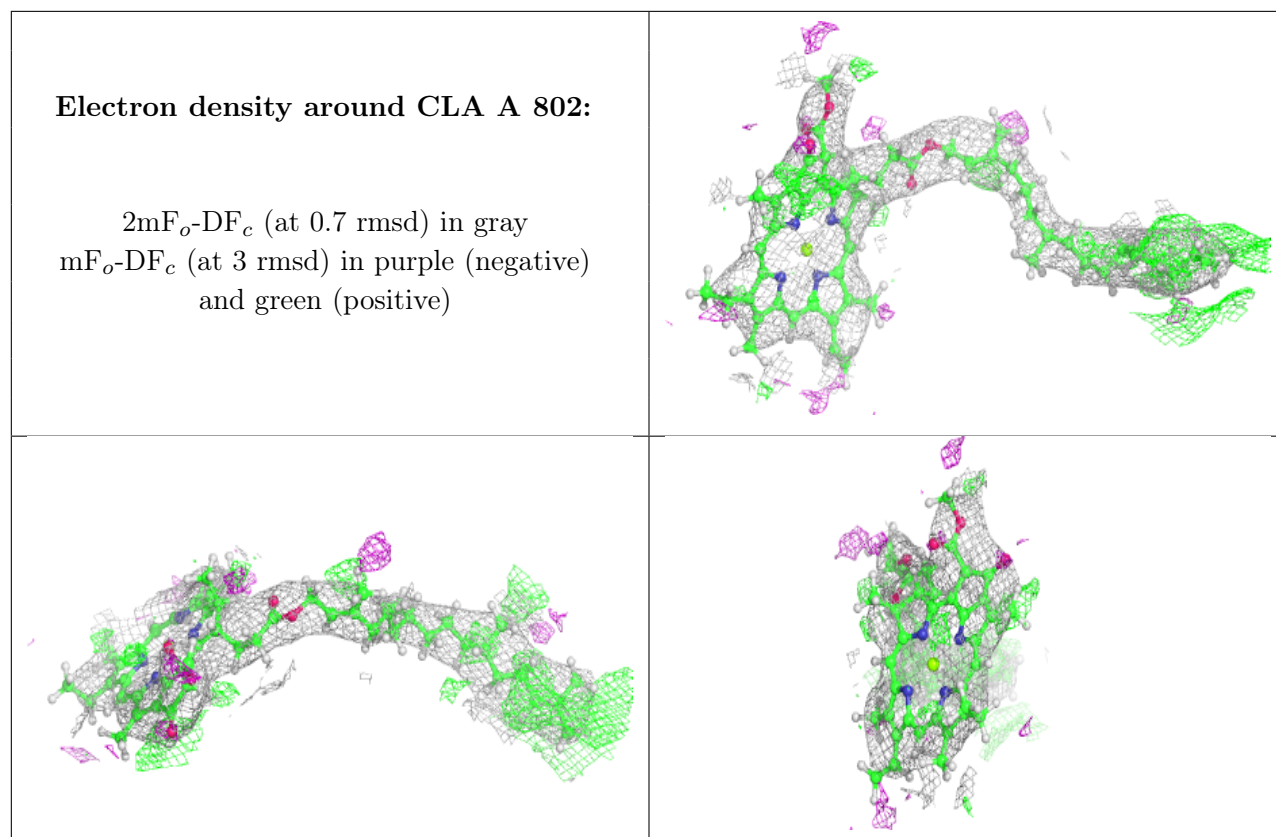
Electron density around PQN A 846:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around CLA A 812:**

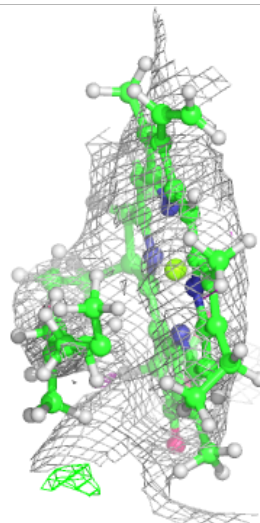
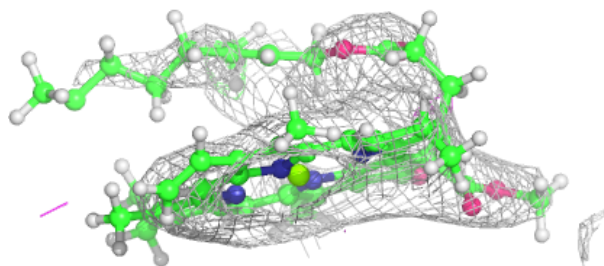
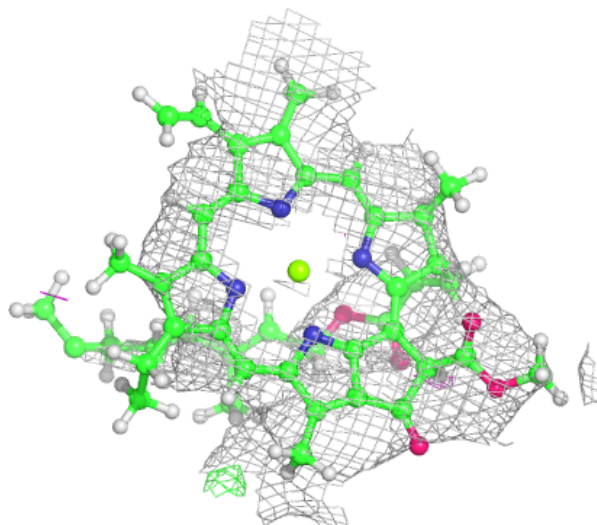
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





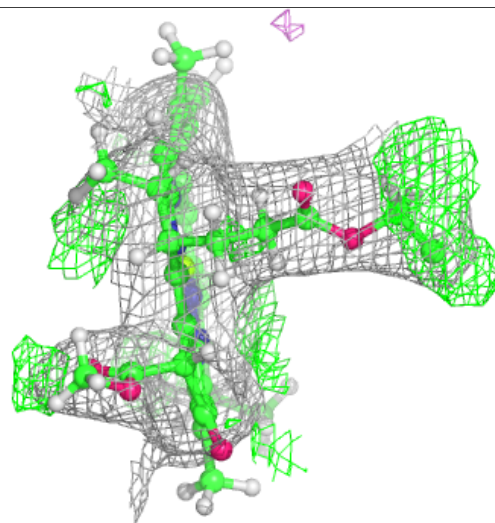
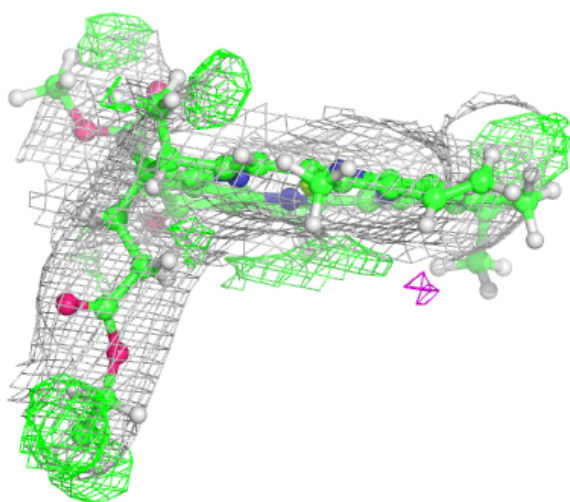
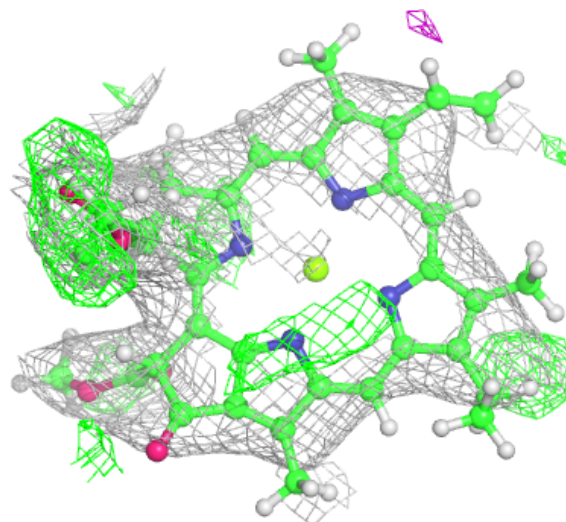
Electron density around CLA A 813:

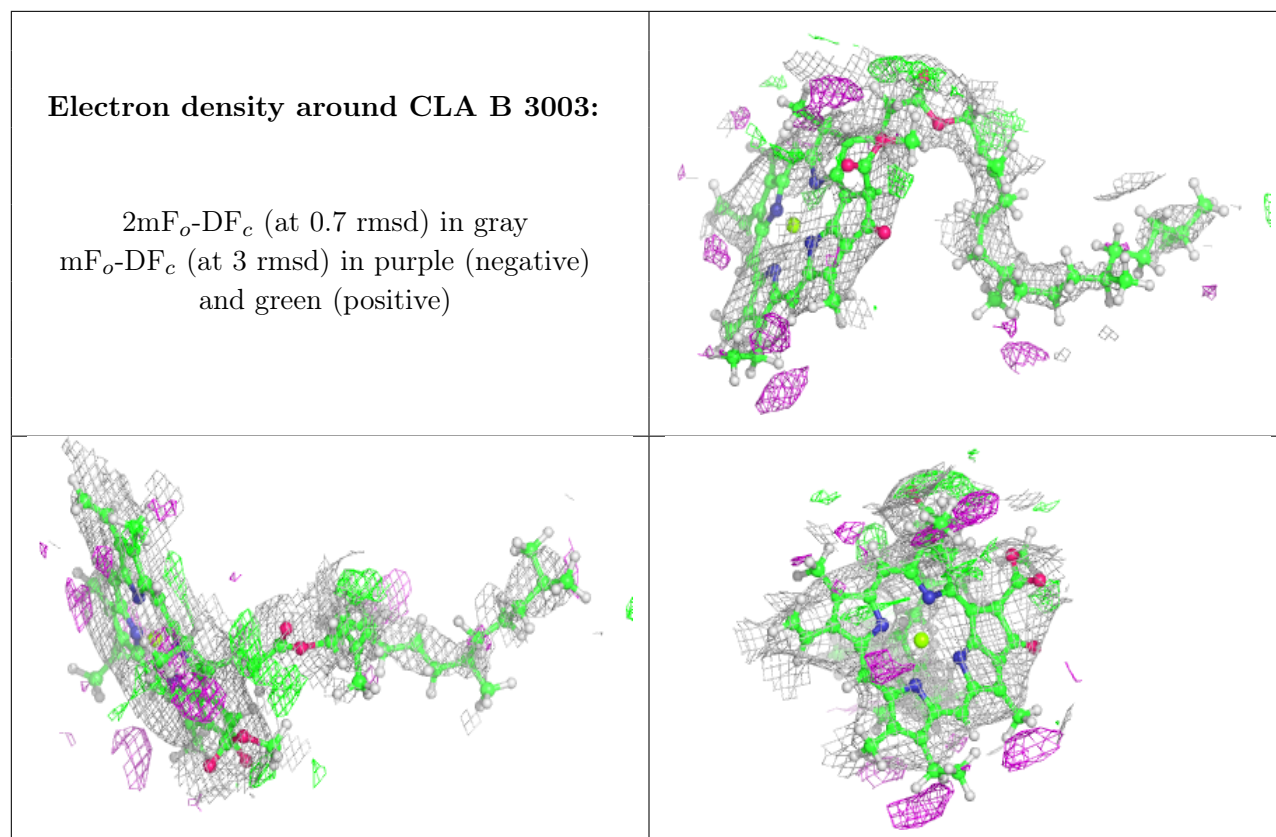
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA B 3040:

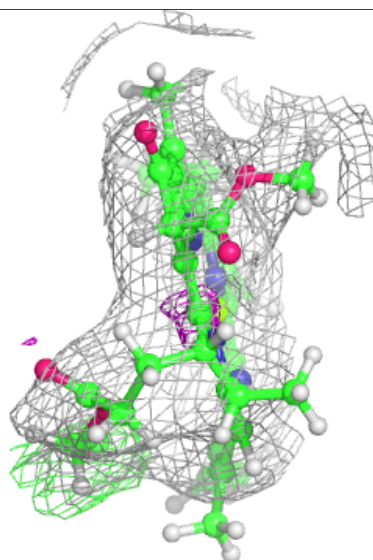
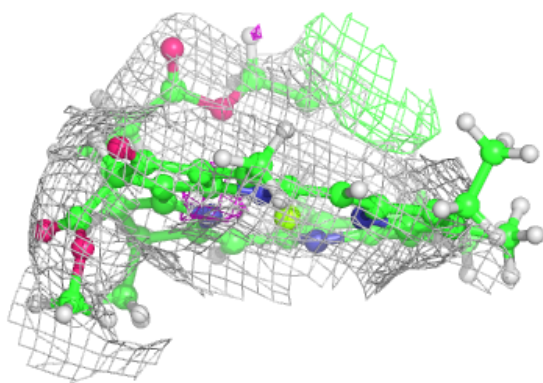
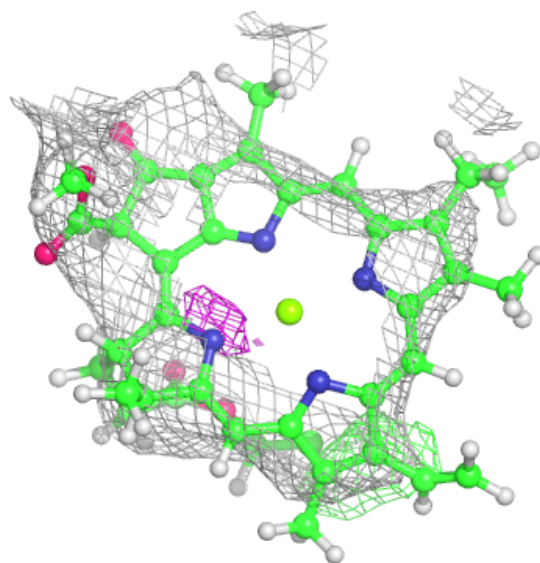
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





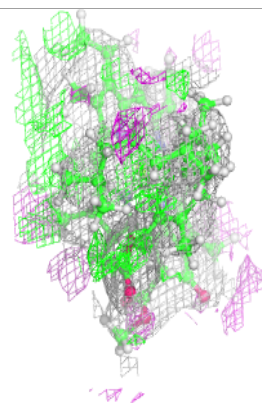
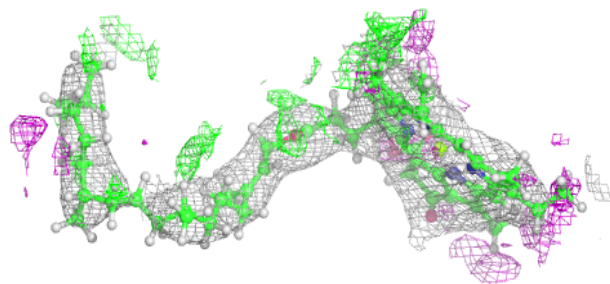
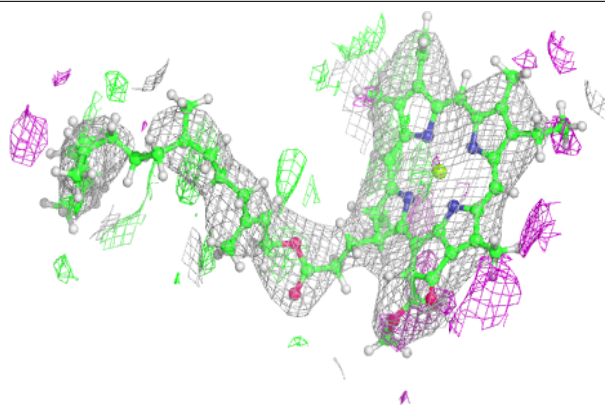
Electron density around CLA B 3021:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

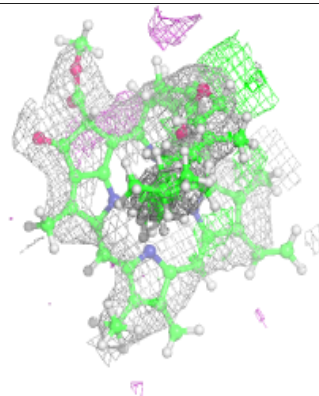
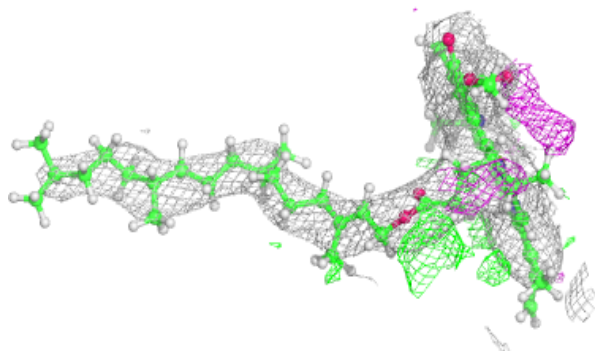
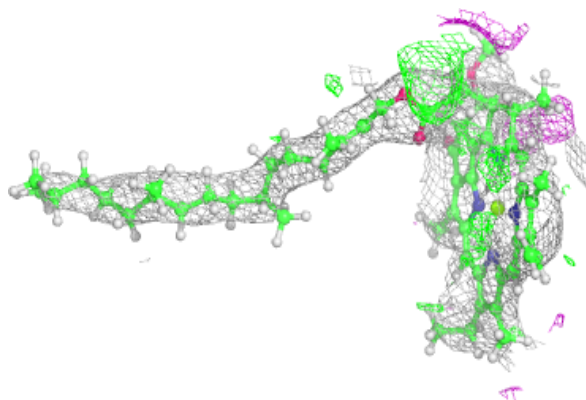


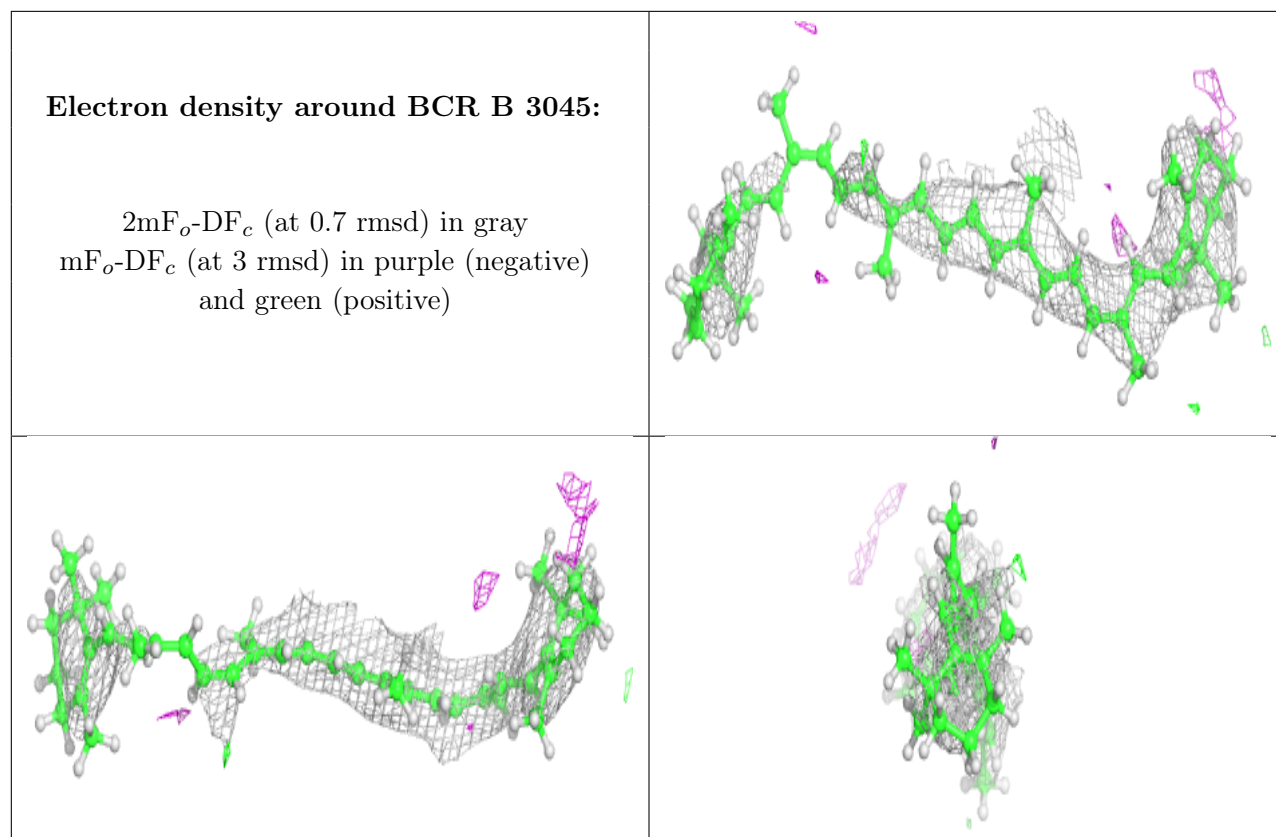
Electron density around CLA B 3010:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around CLA B 3029:**

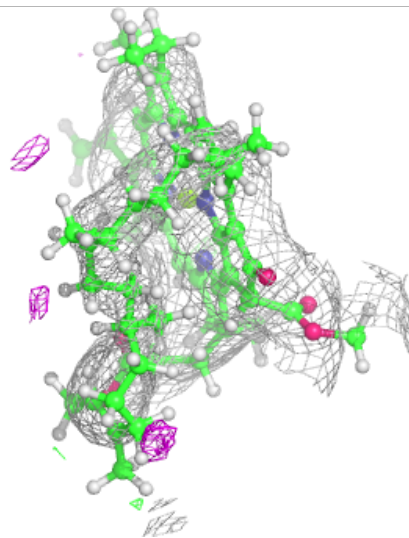
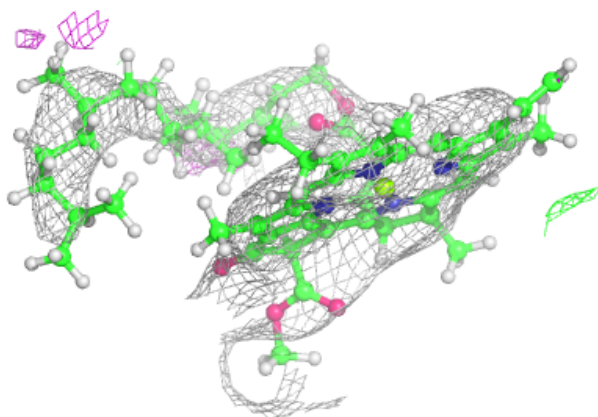
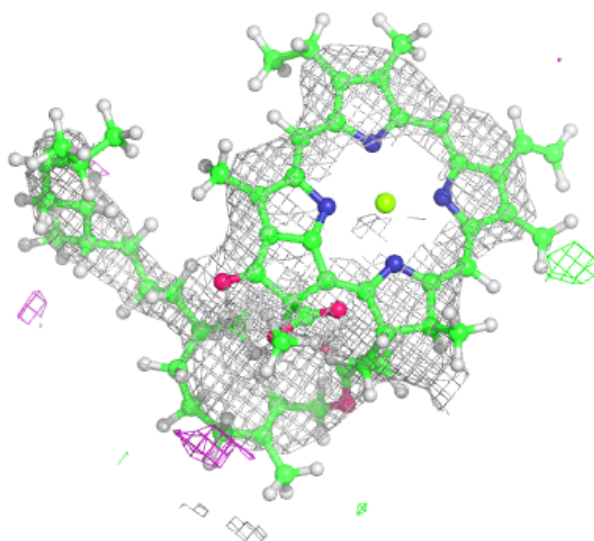
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





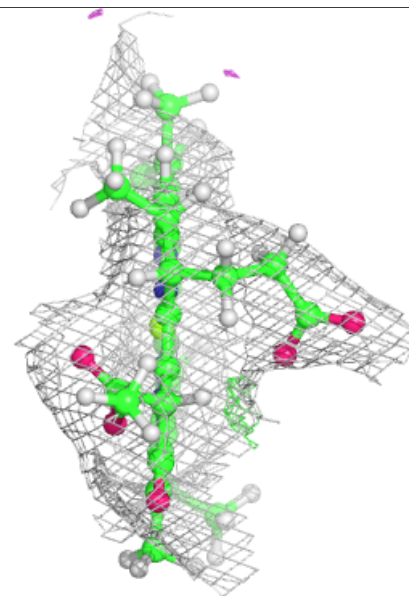
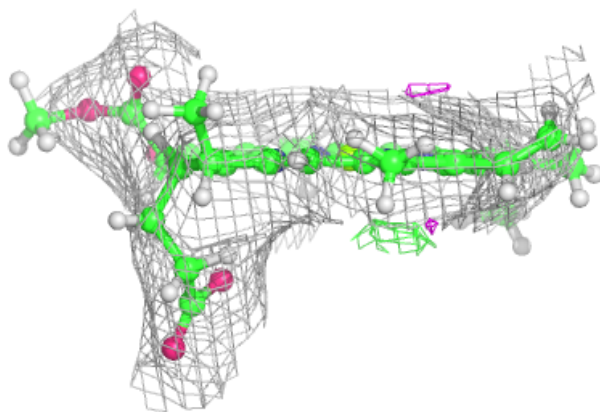
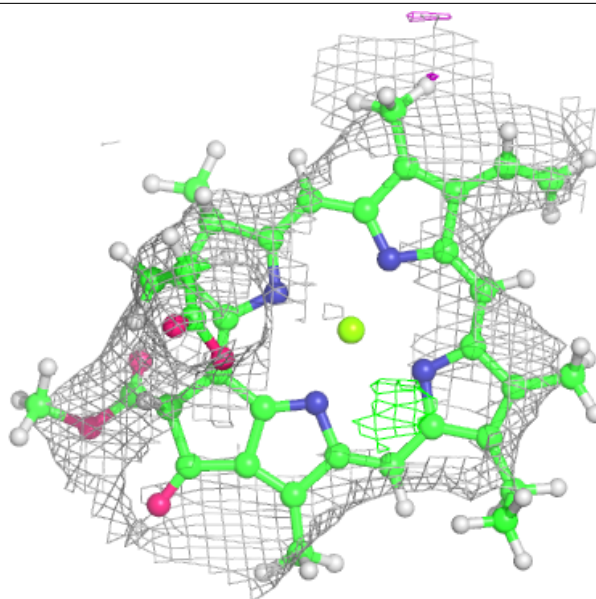
Electron density around CLA B 3033:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



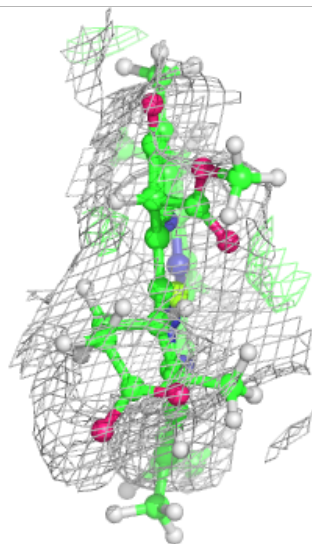
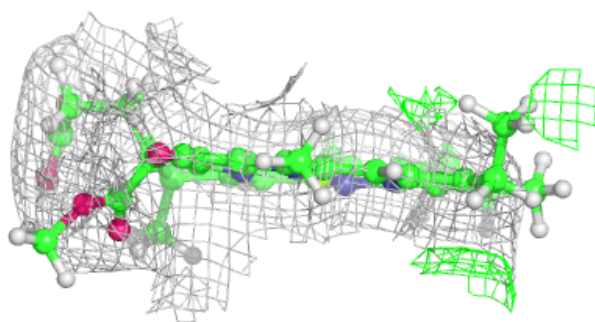
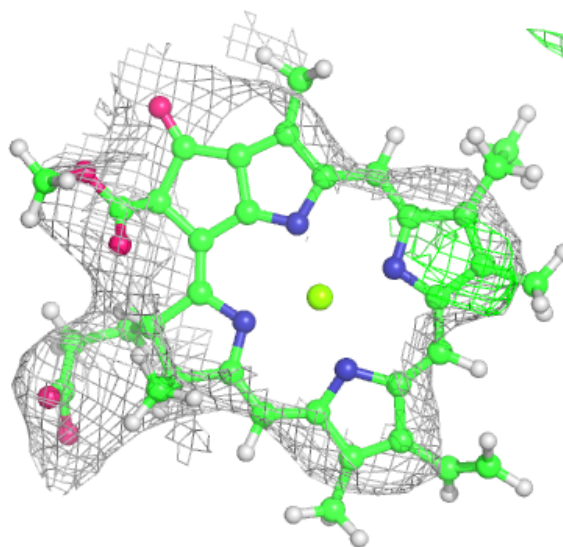
Electron density around CLA B 3013:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



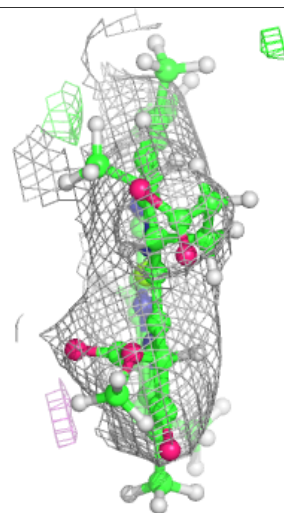
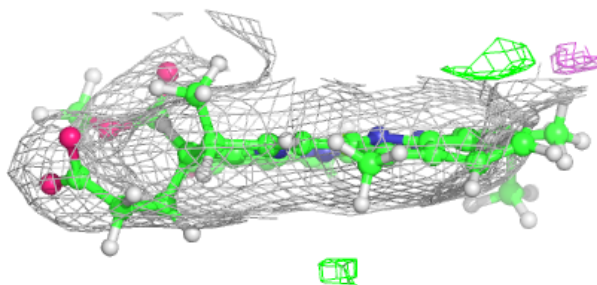
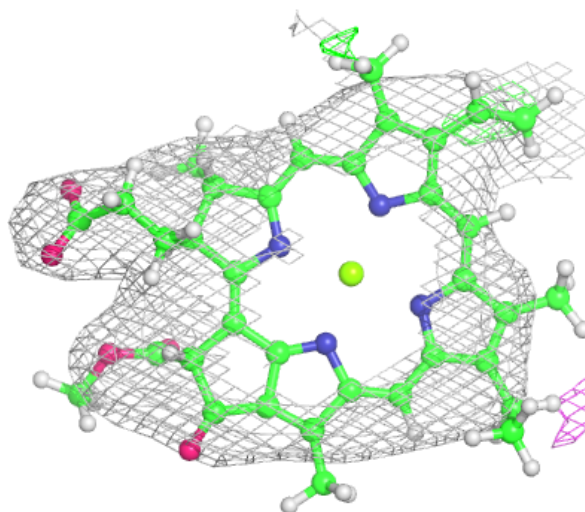
Electron density around CLA X 1701:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



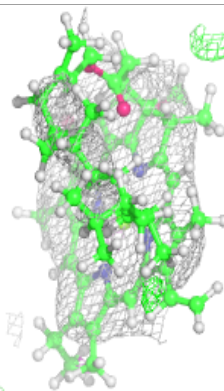
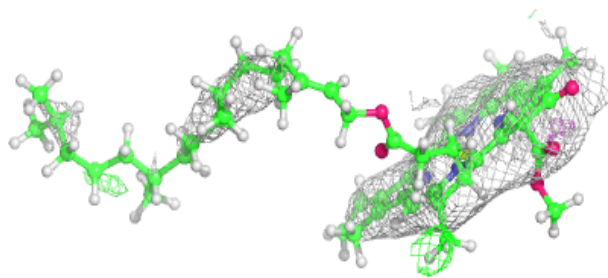
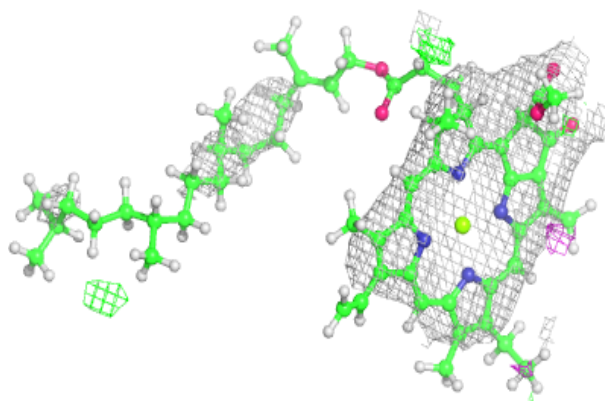
Electron density around CLA B 3037:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

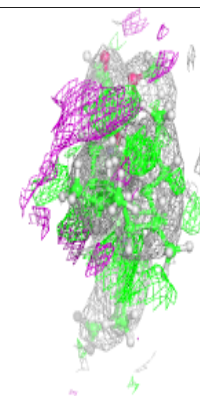
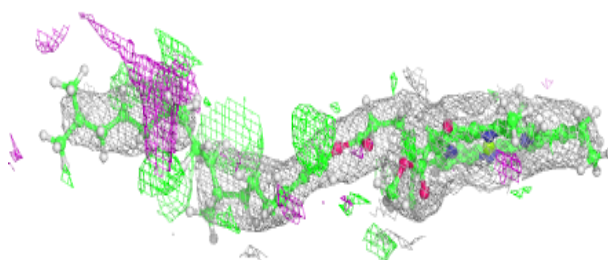
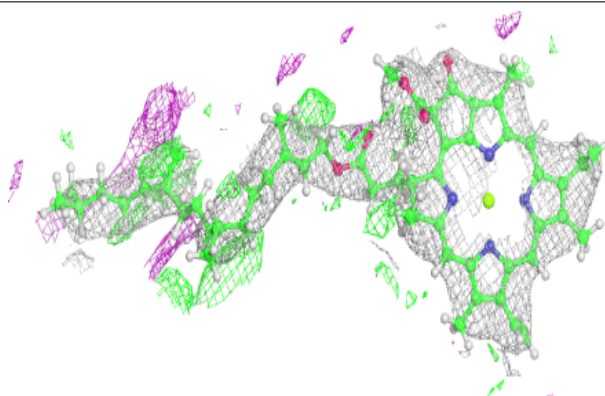


Electron density around CLA A 809:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

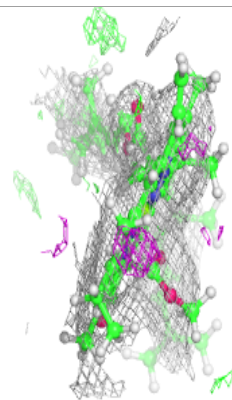
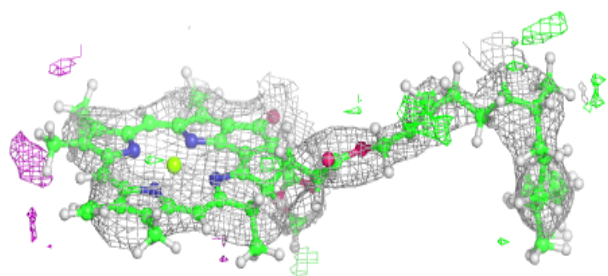
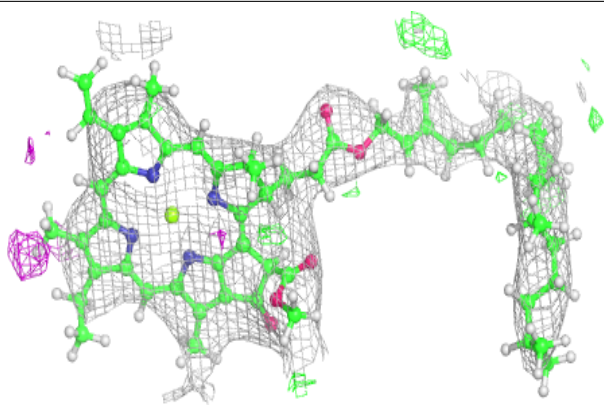
**Electron density around CLA A 834:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

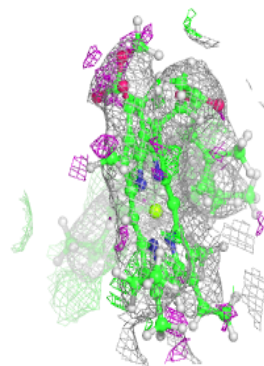
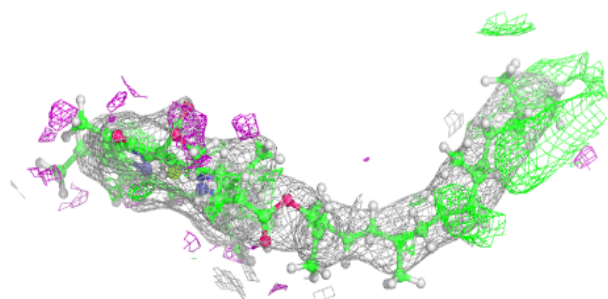
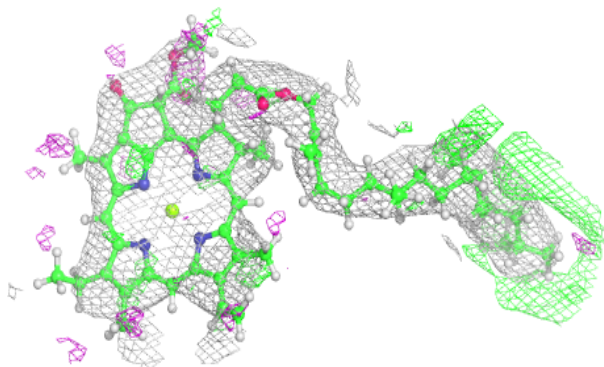


Electron density around CLA B 3027:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

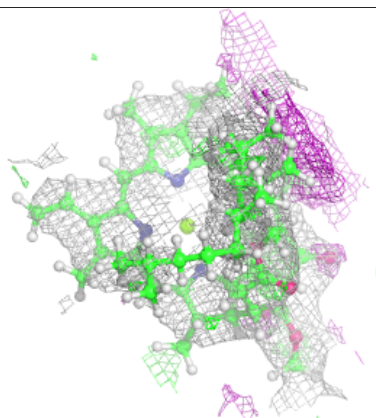
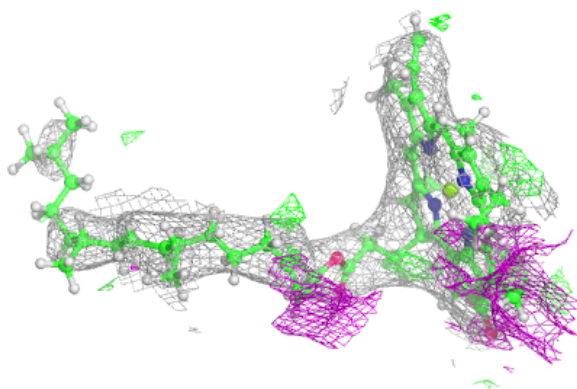
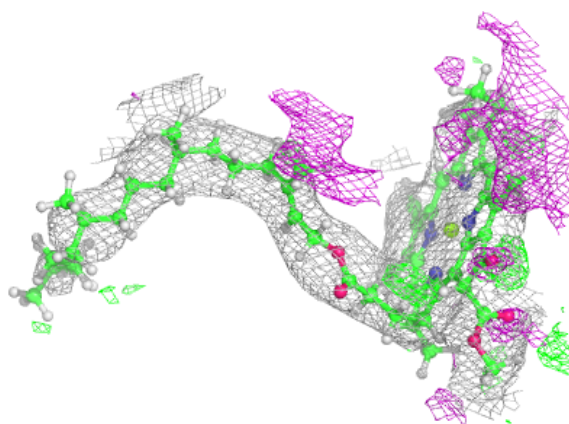
**Electron density around CLA B 3004:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

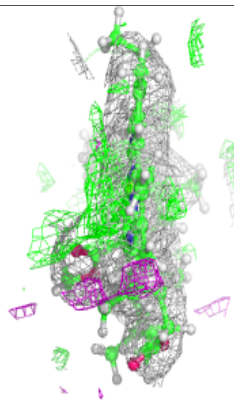
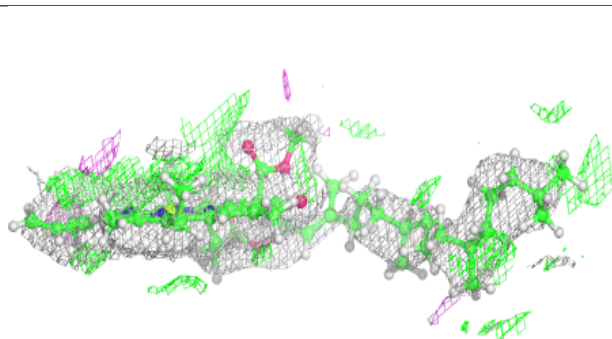
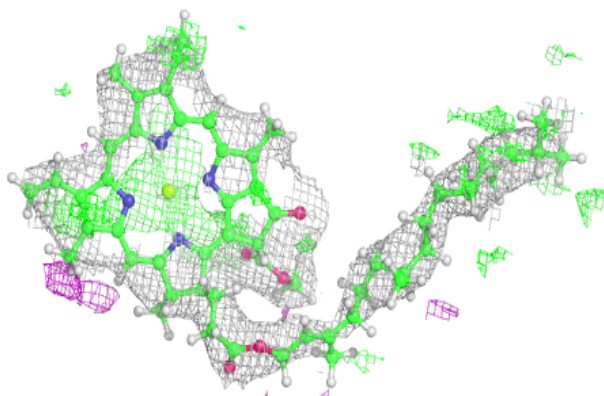


Electron density around CLA L 204:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

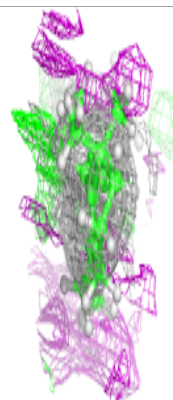
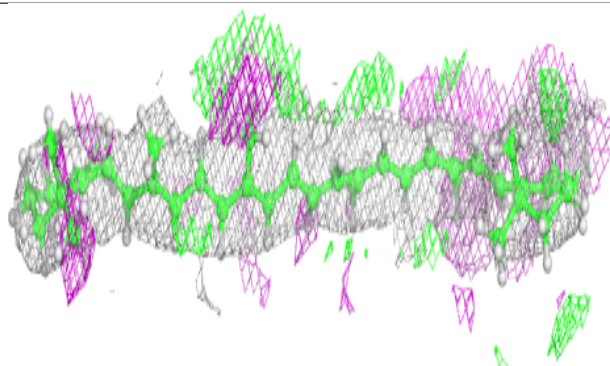
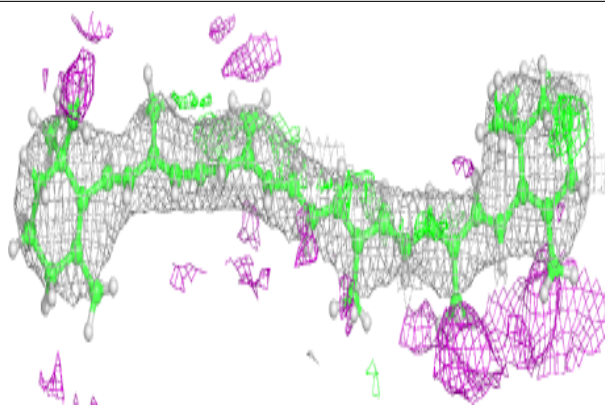
**Electron density around CLA L 205:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

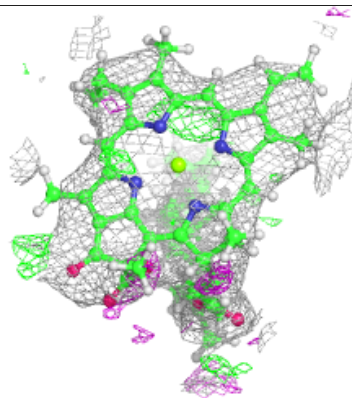
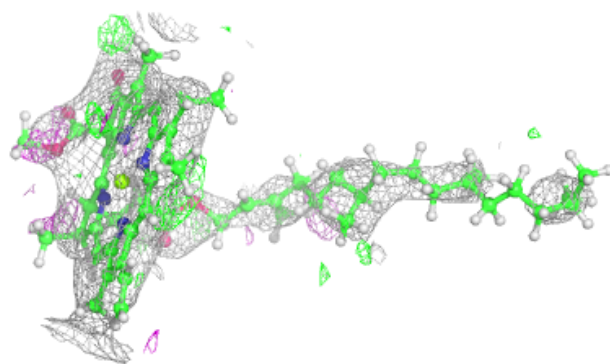
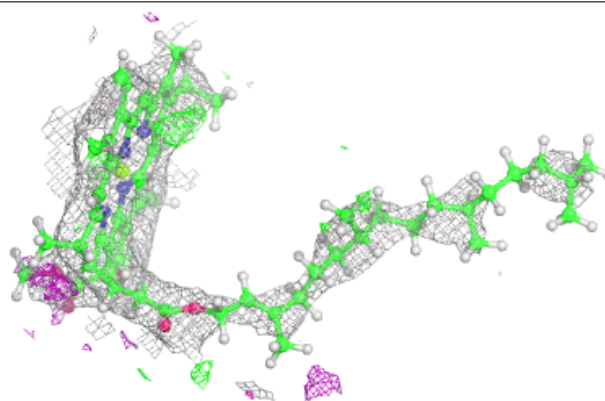


Electron density around BCR I 105:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

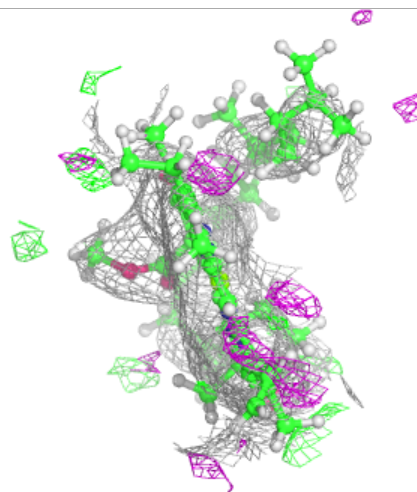
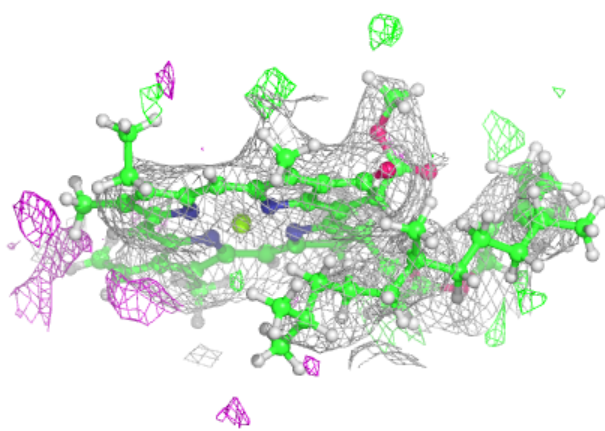
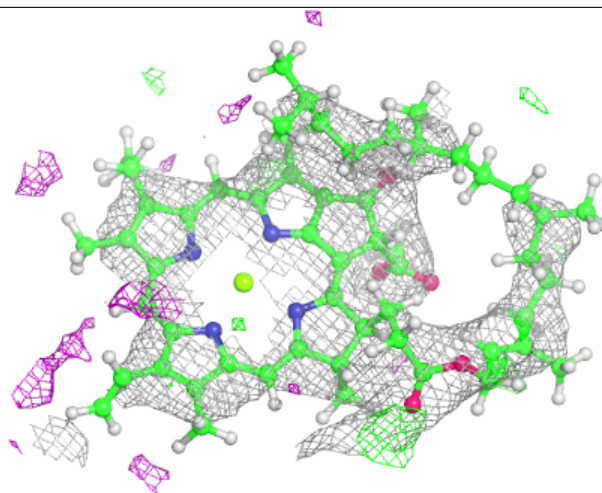
**Electron density around CLA B 3030:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



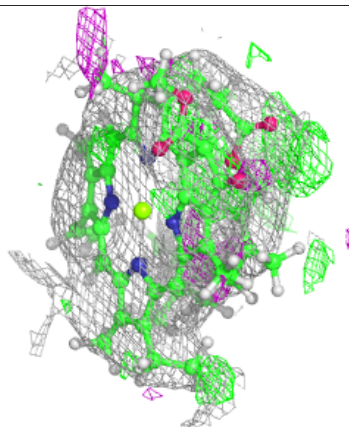
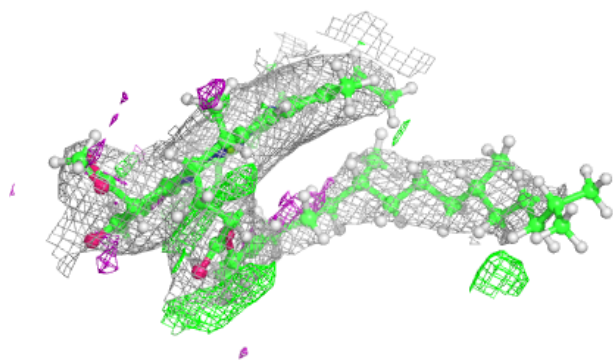
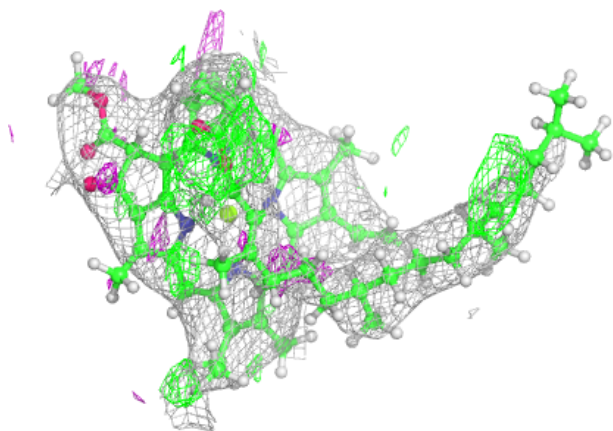
Electron density around CLA B 3006:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

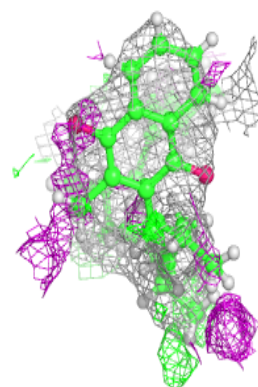
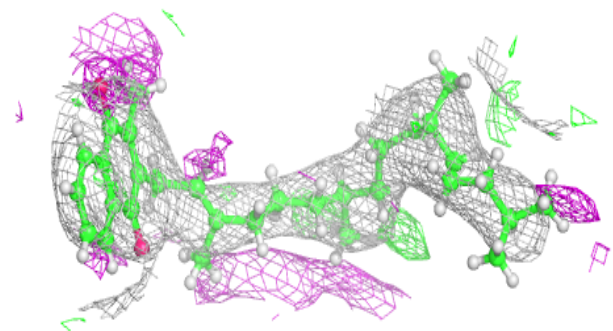
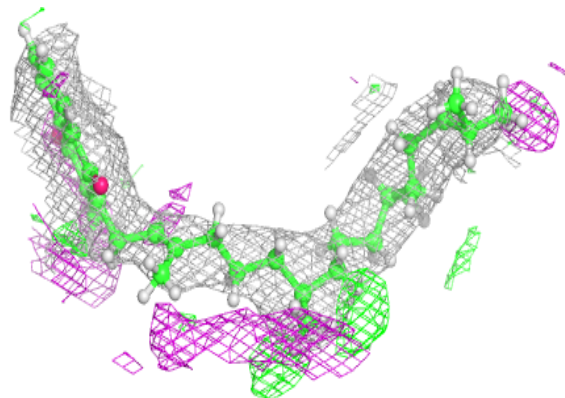


Electron density around CLA B 3008:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

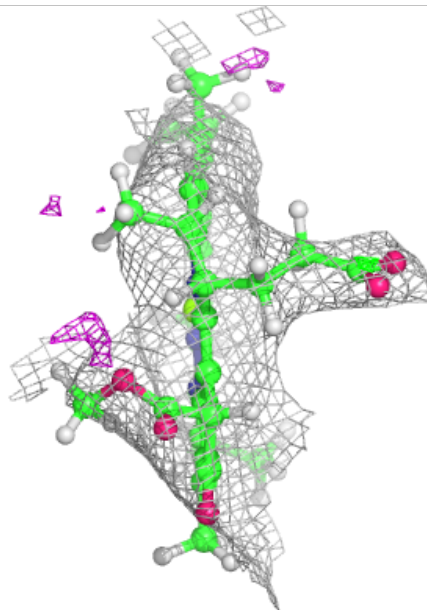
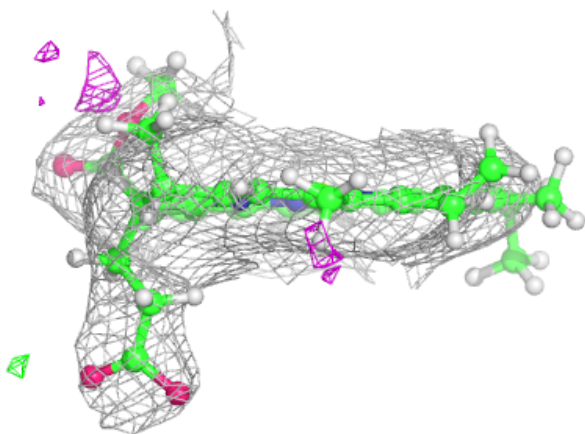
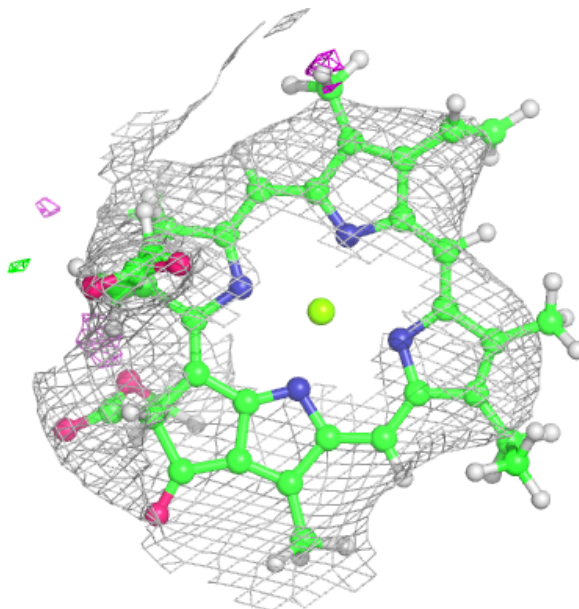
**Electron density around PQN B 3042:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



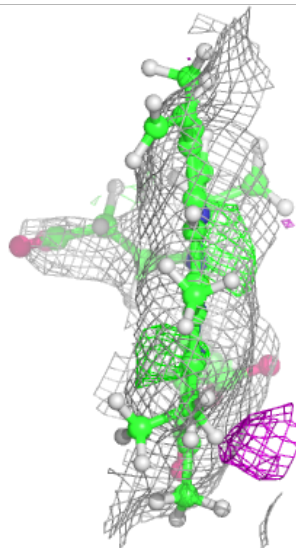
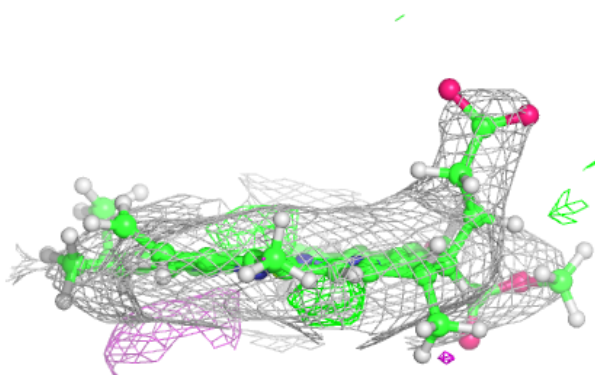
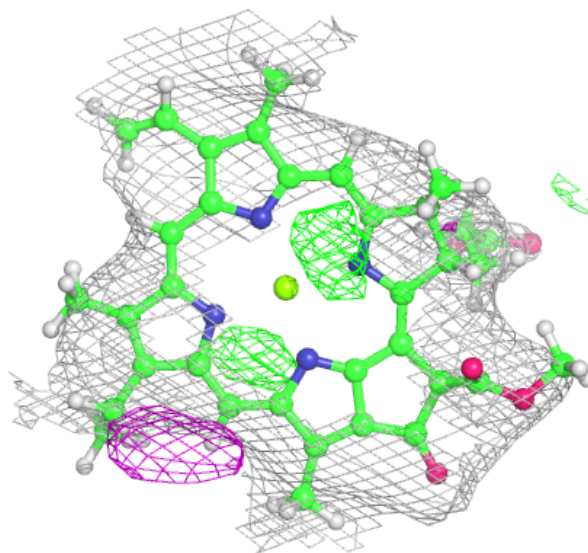
Electron density around CLA B 3035:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



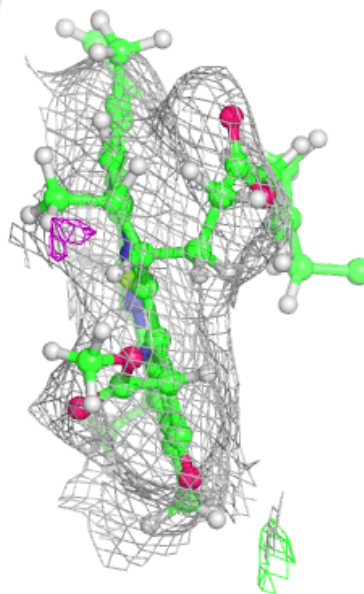
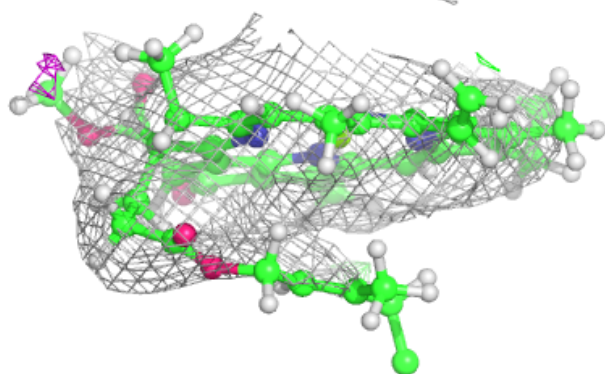
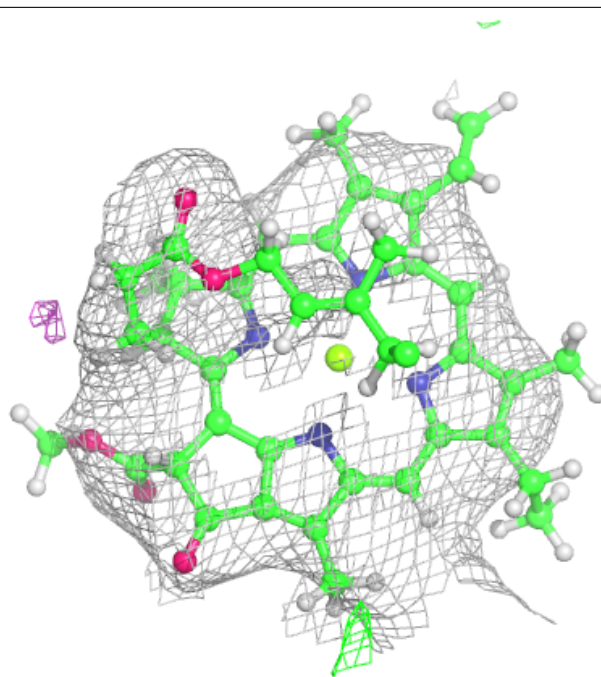
Electron density around CLA B 3036:

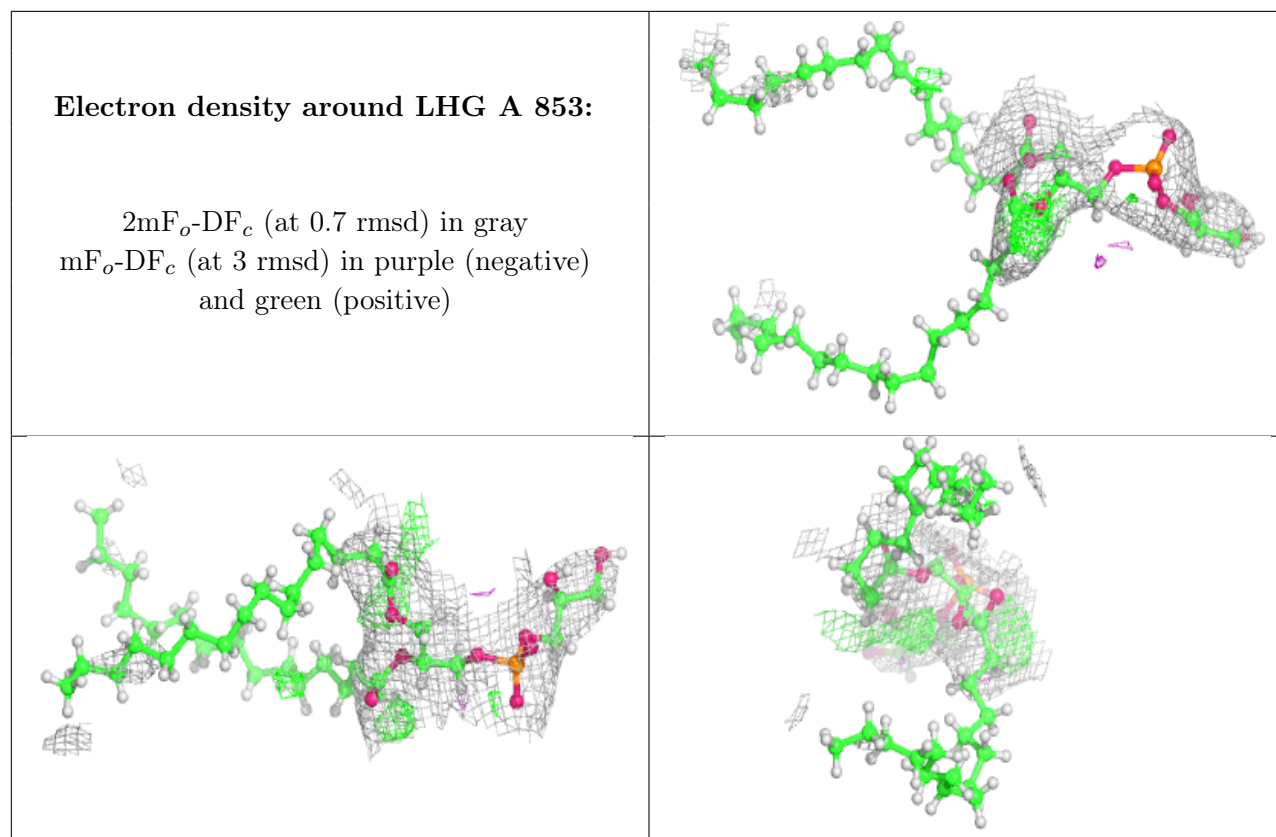
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

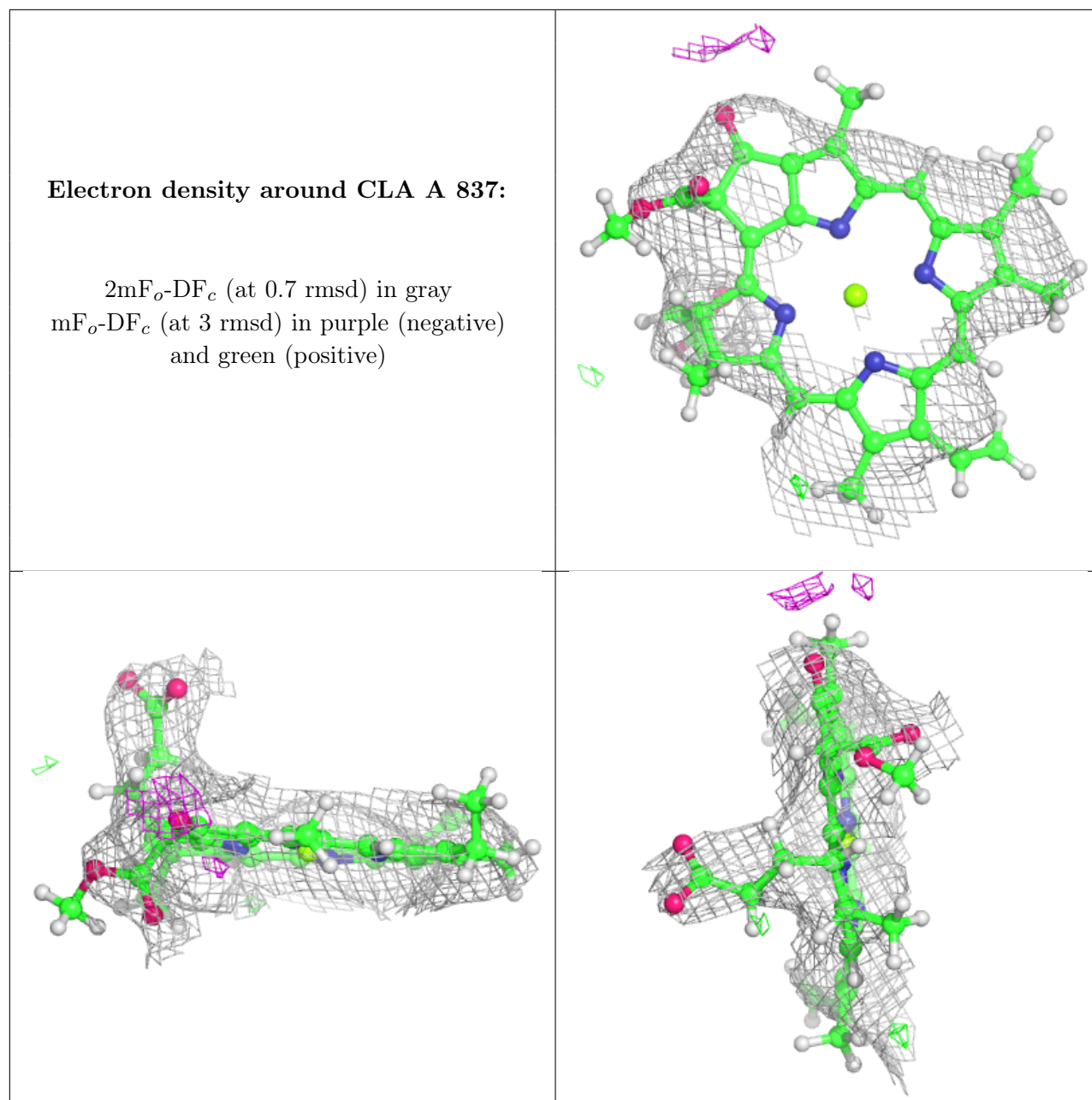


Electron density around CLA A 824:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

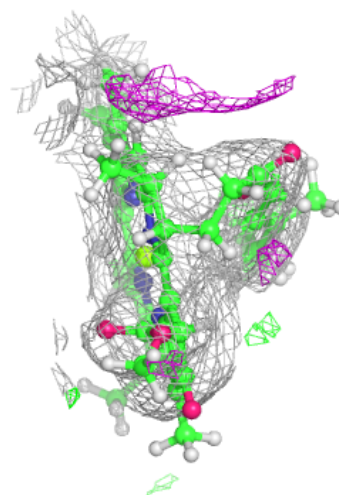
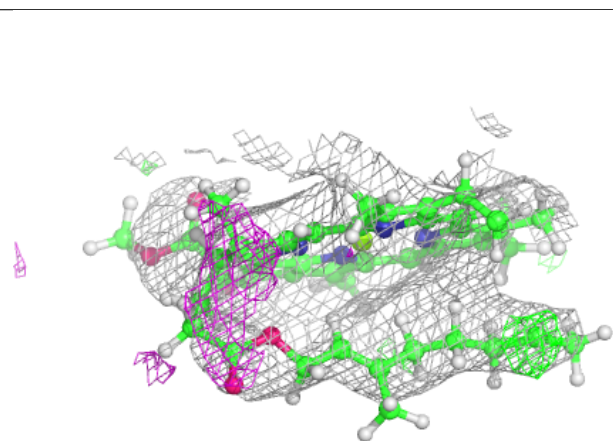
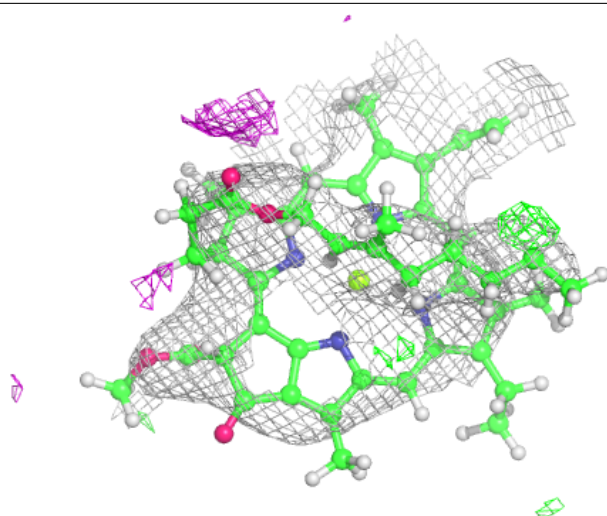






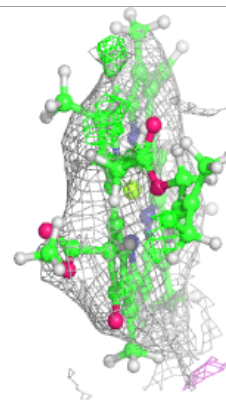
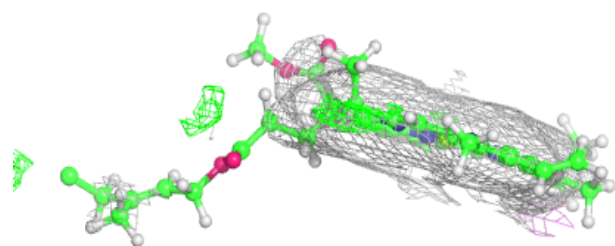
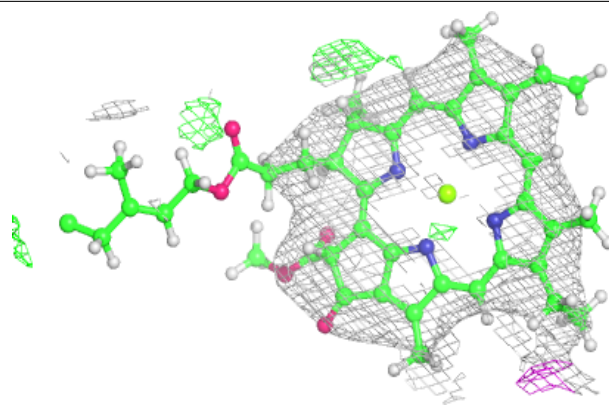
Electron density around CLA A 819:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

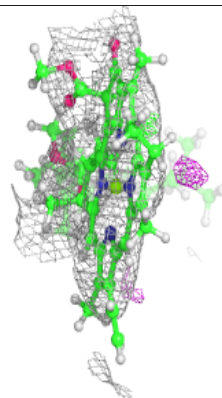
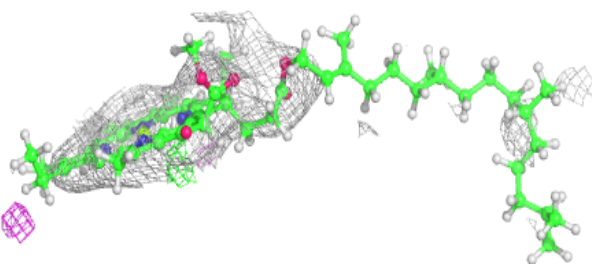
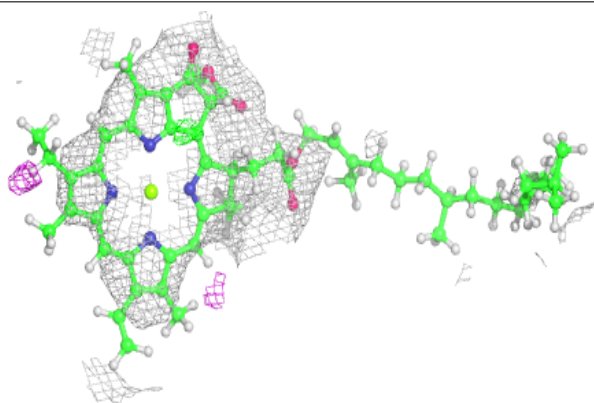


Electron density around CLA A 842:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

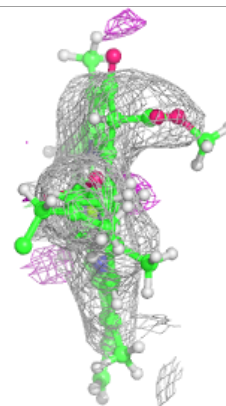
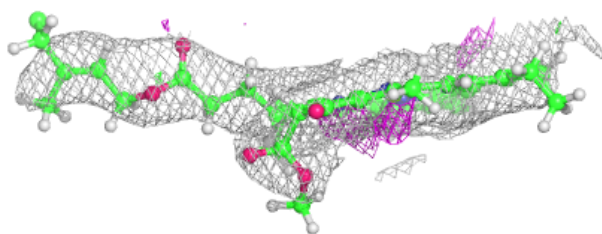
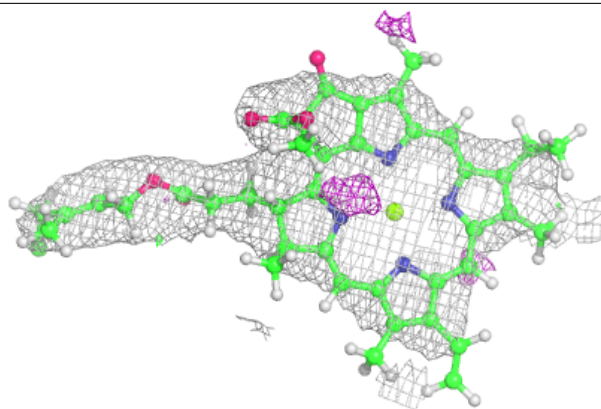
**Electron density around CLA A 806:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

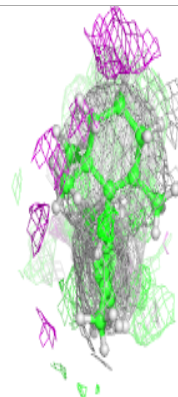
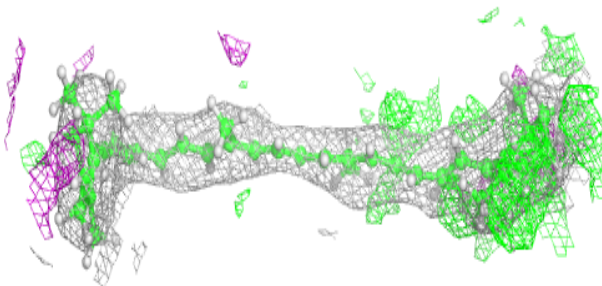
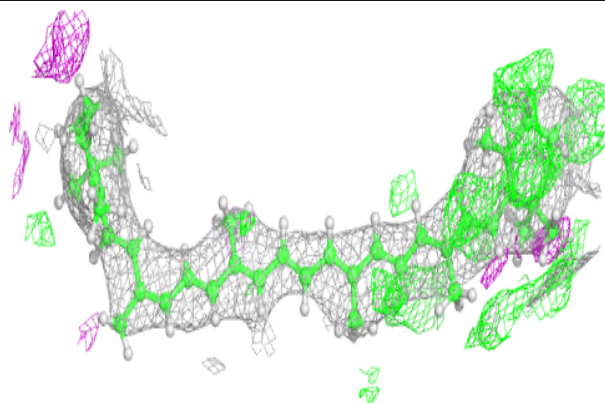


Electron density around CLA A 838:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

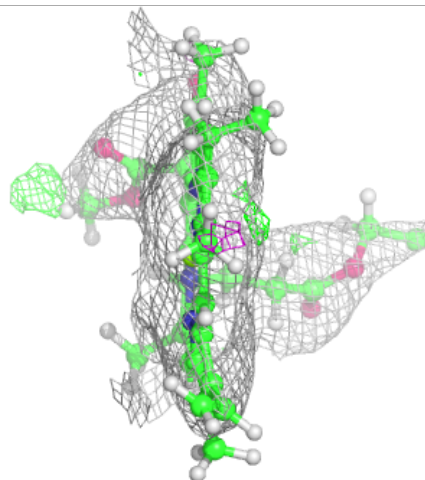
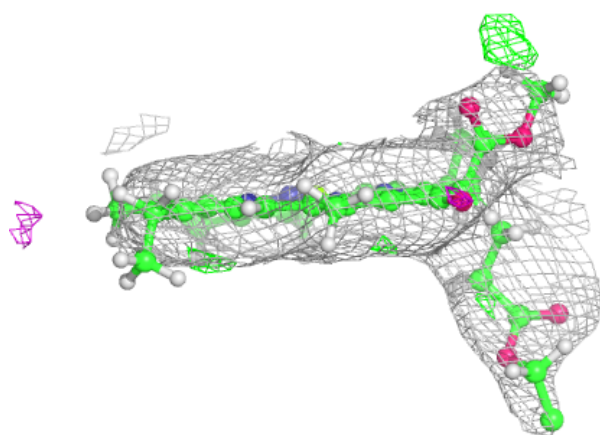
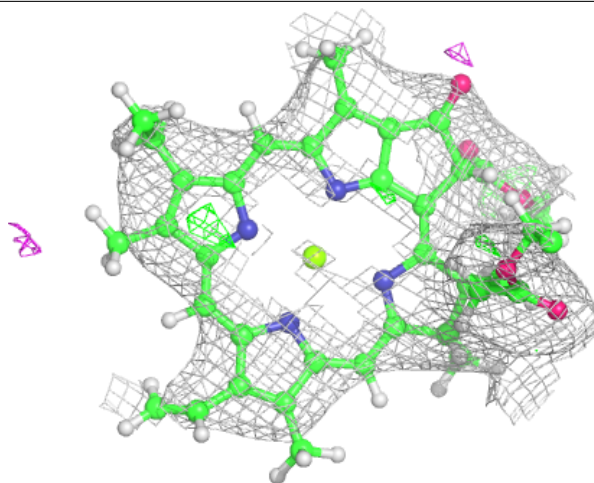
**Electron density around BCR I 103:**

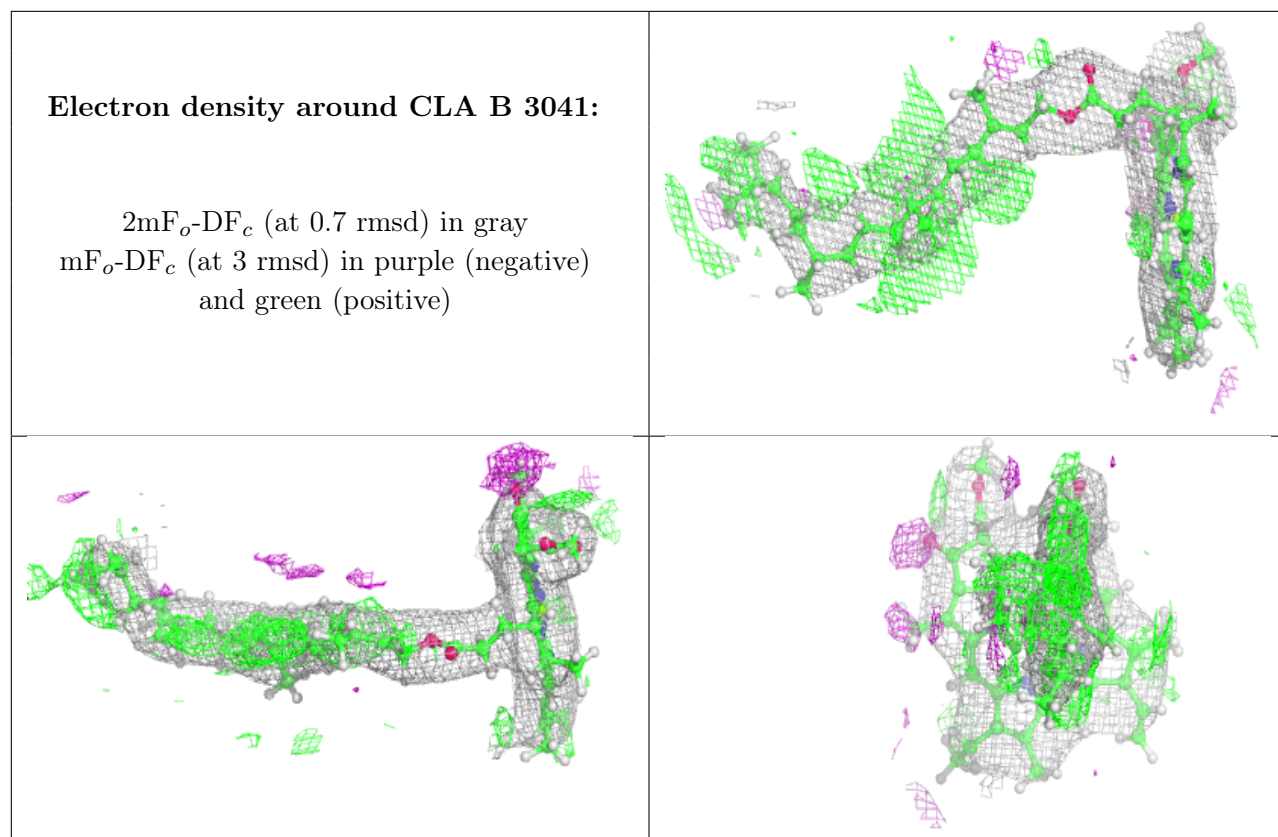
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA A 840:

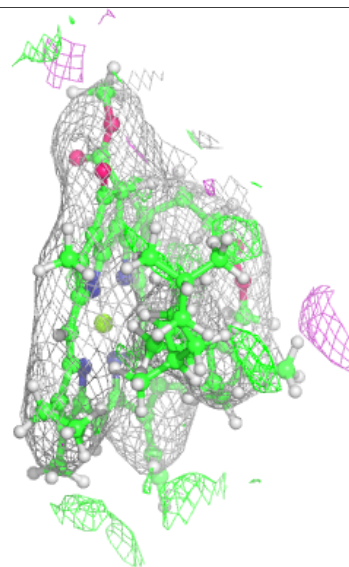
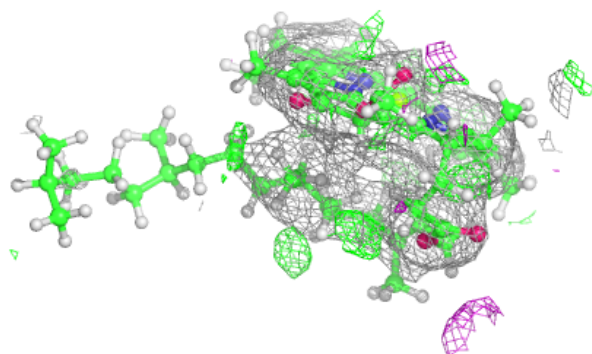
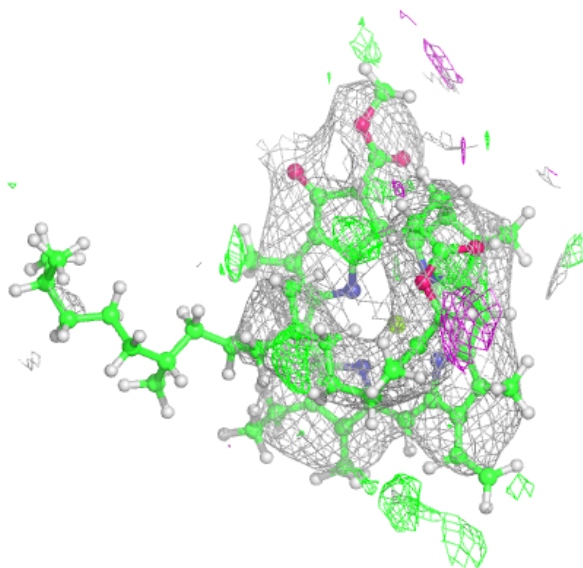
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





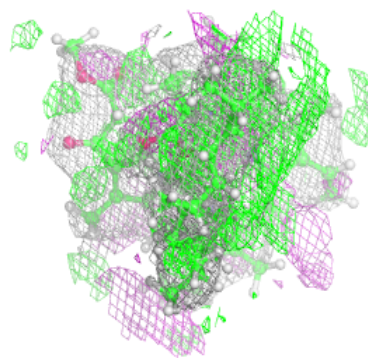
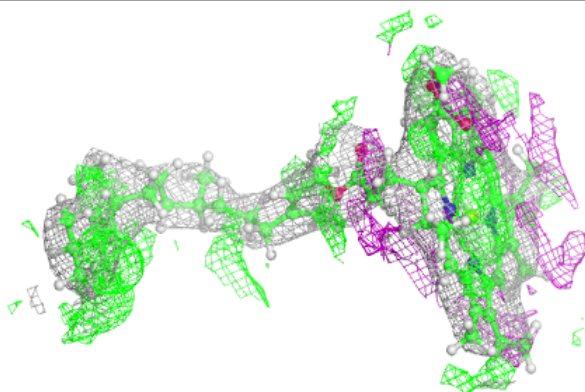
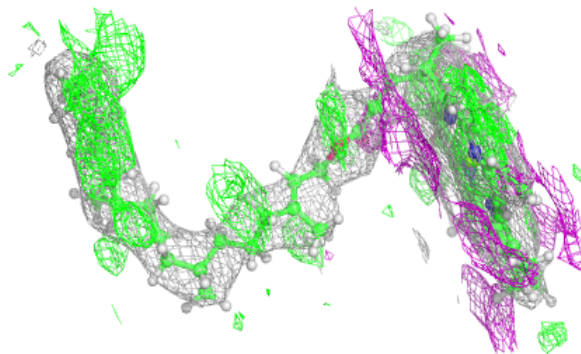
Electron density around CLA B 3028:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



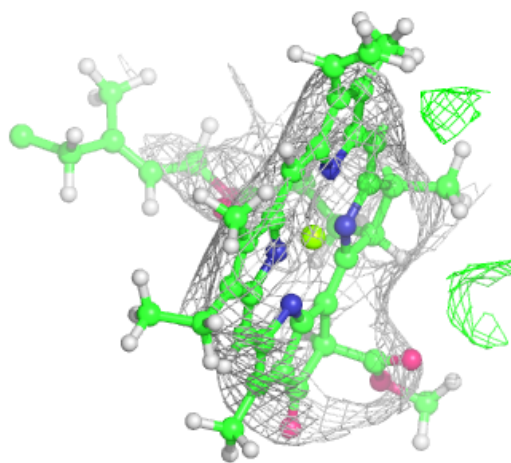
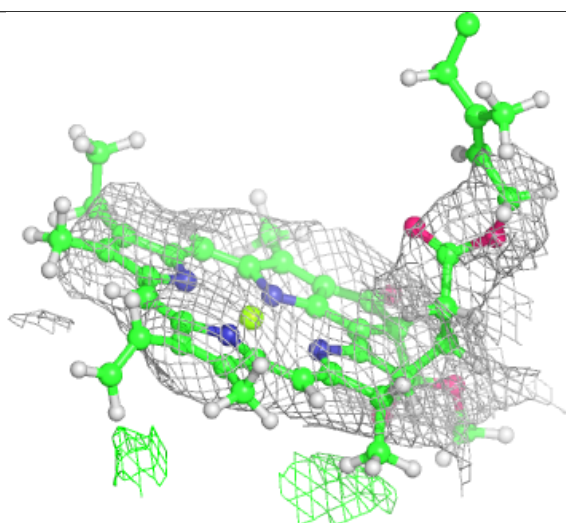
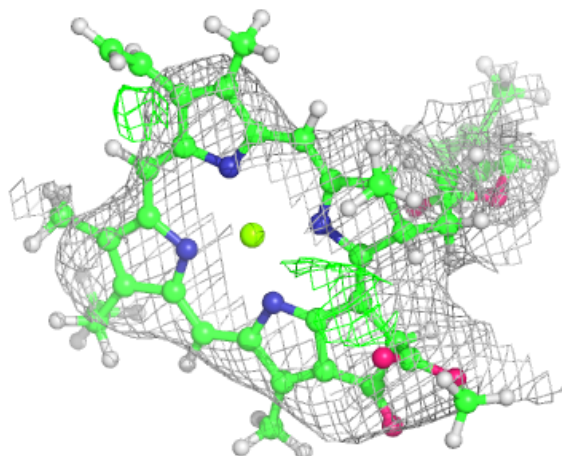
Electron density around CLA I 101:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



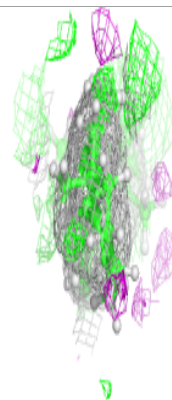
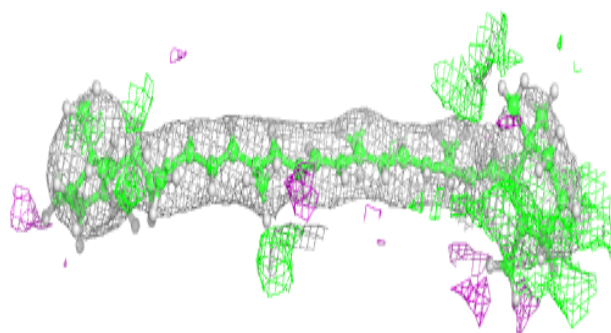
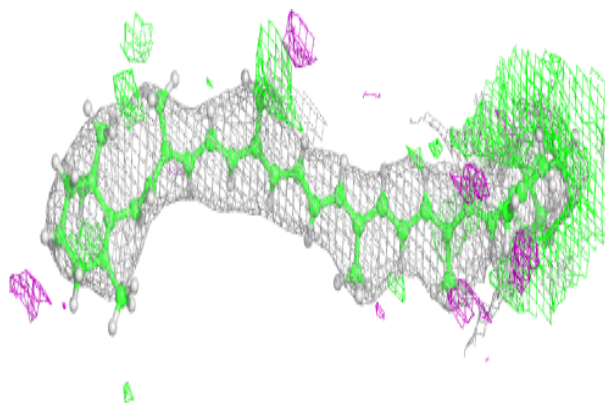
Electron density around CLA A 808:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

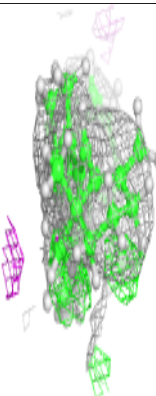
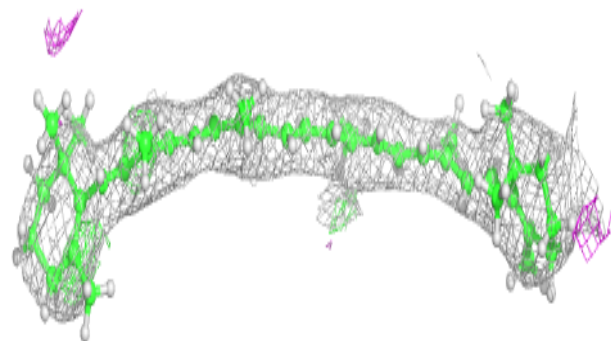
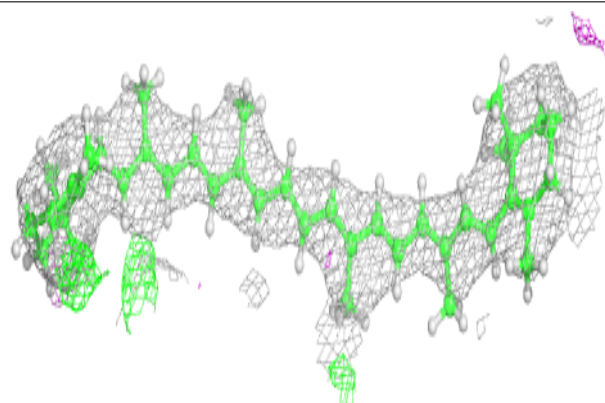


Electron density around BCR L 207:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

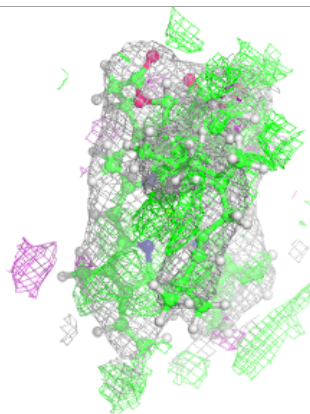
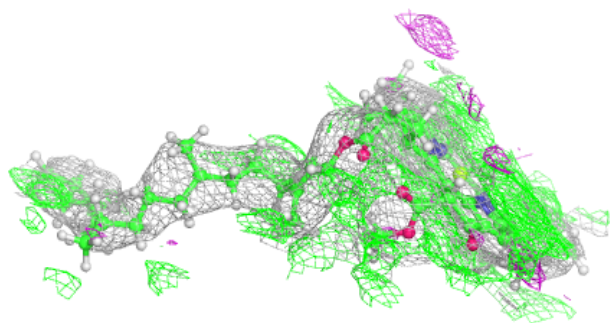
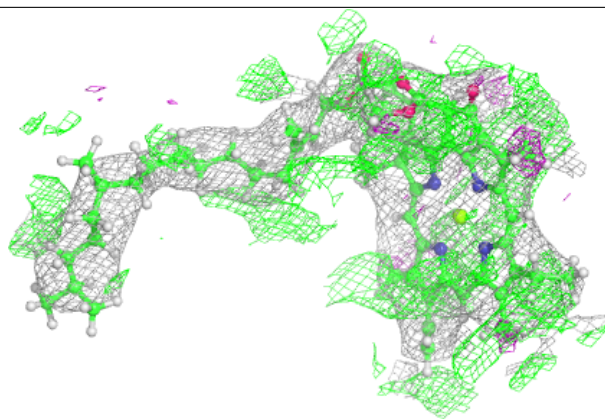
**Electron density around BCR M 103:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

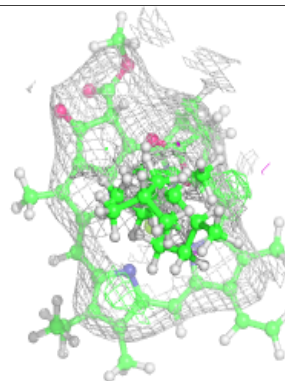
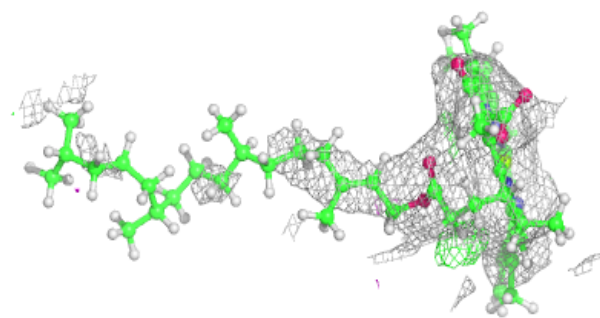
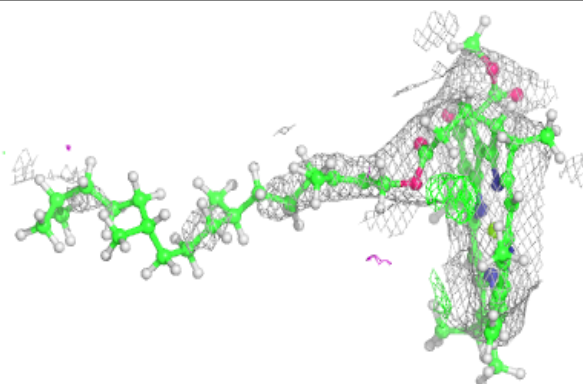


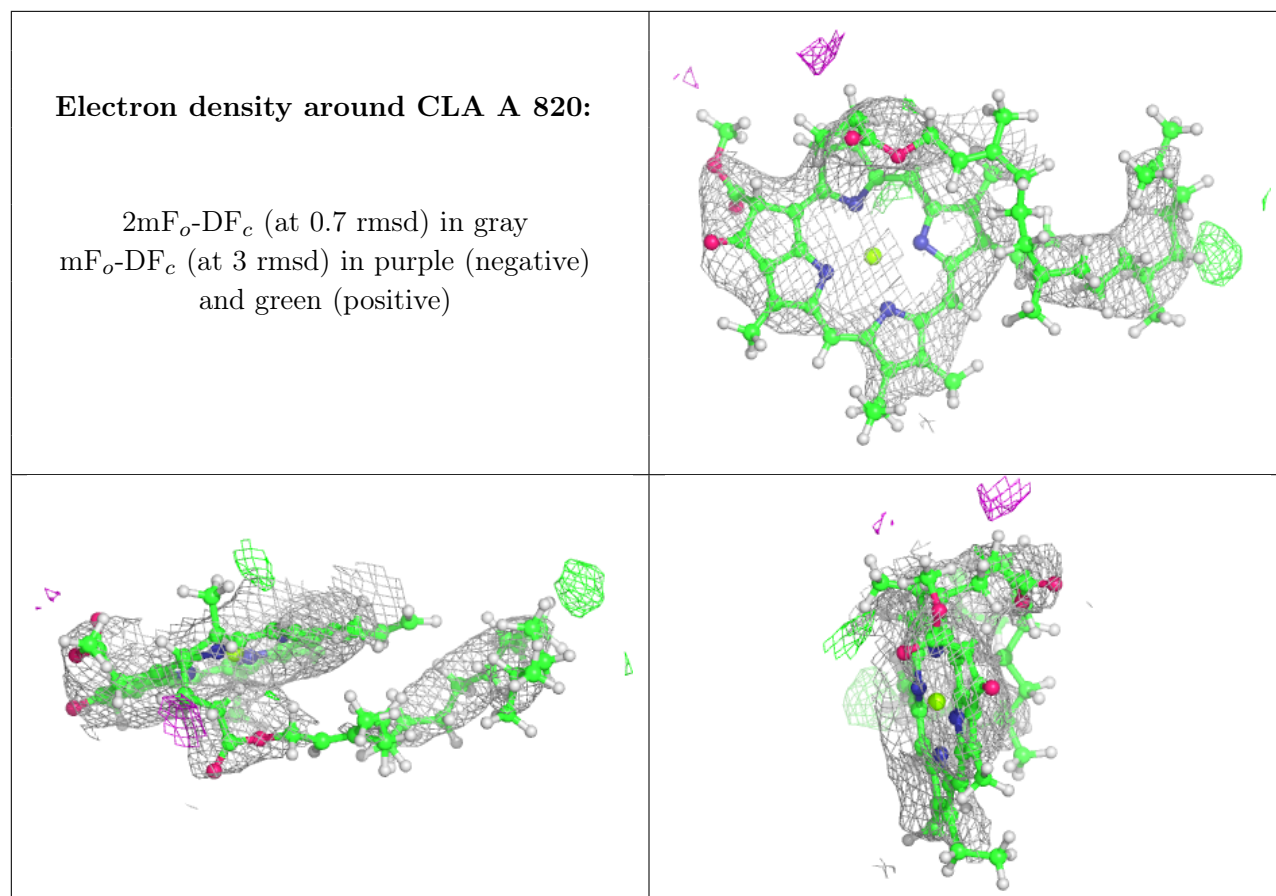
Electron density around CLA B 3011:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around CLA A 829:**

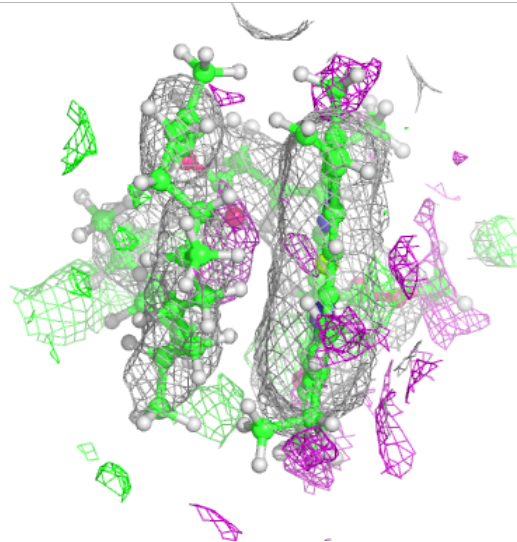
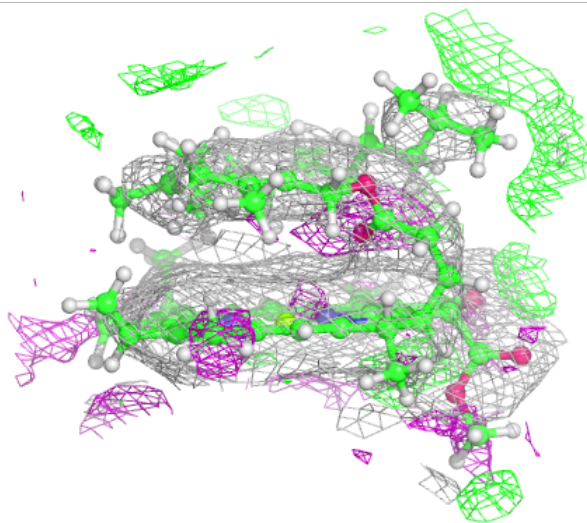
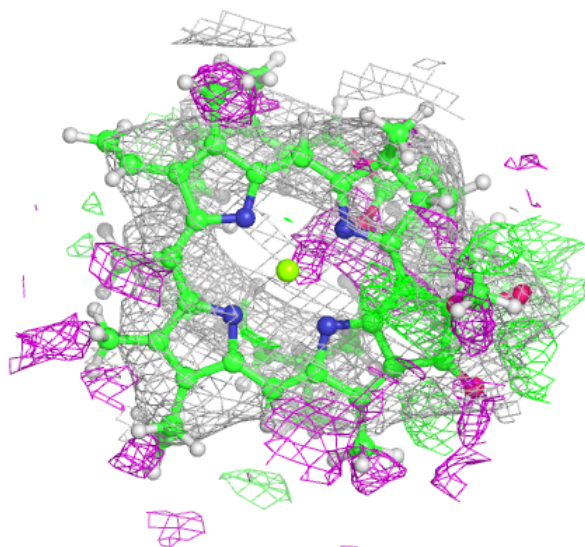
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

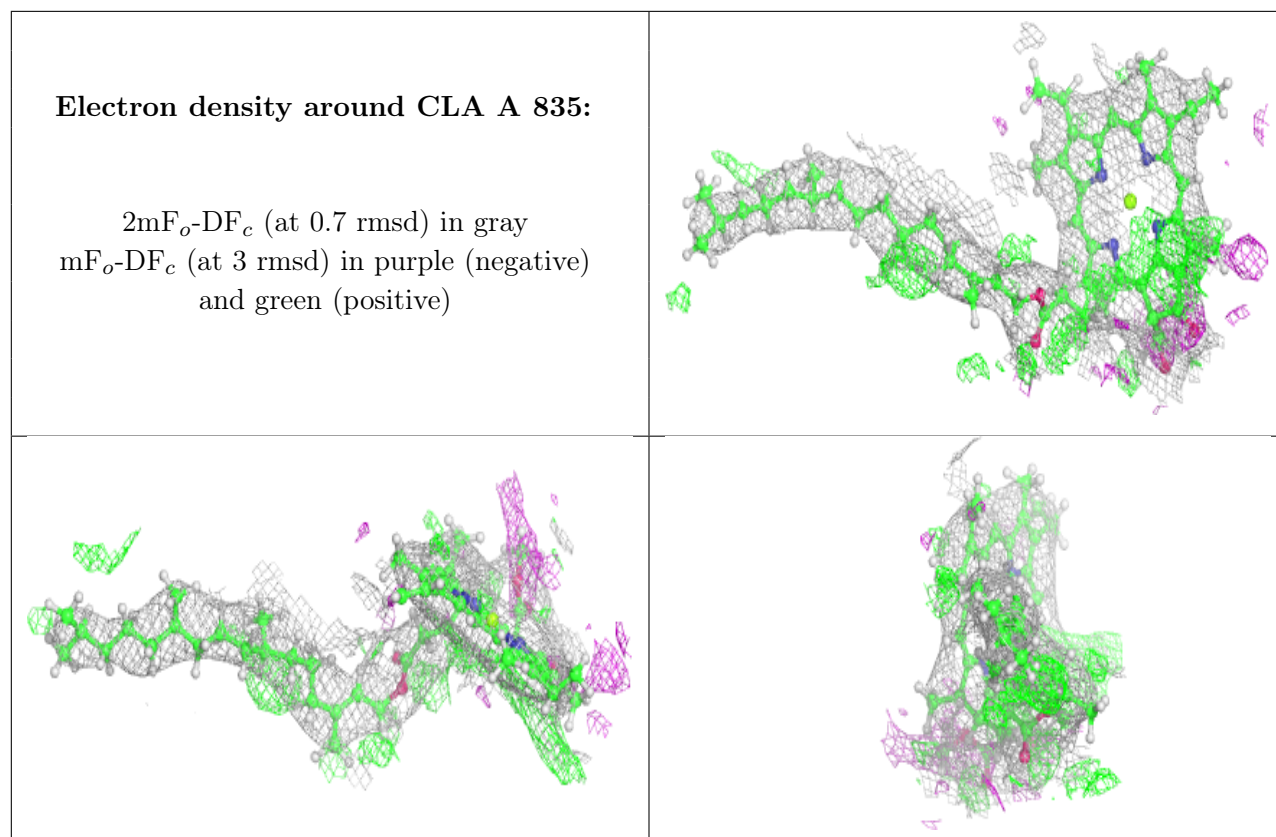




Electron density around CLA L 203:

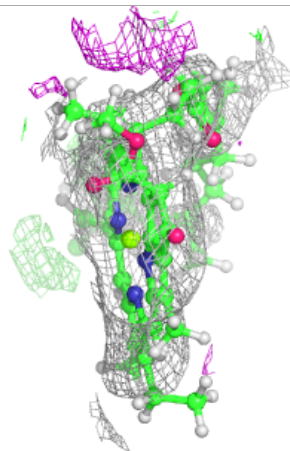
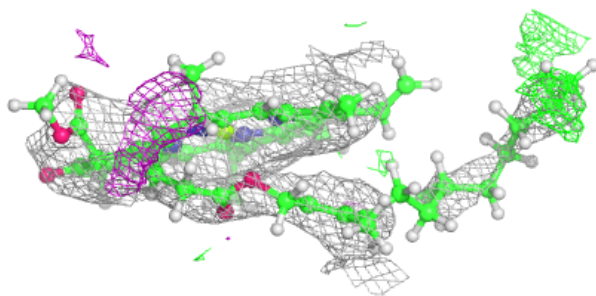
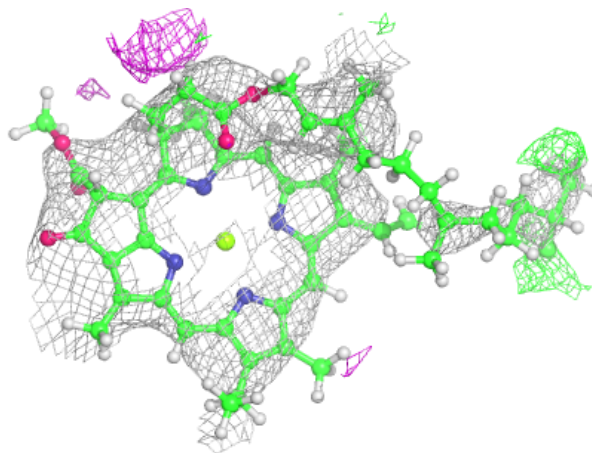
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





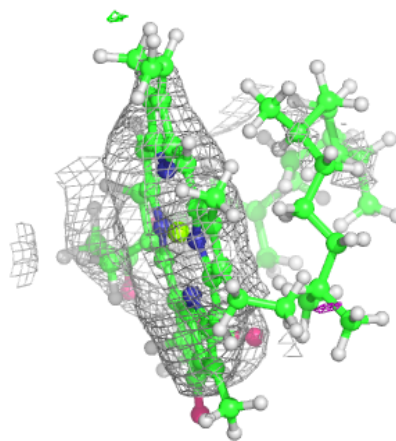
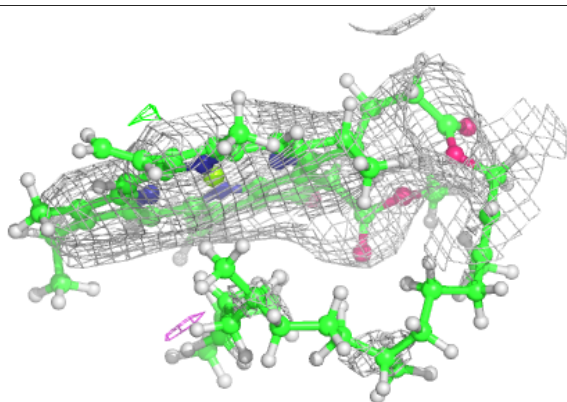
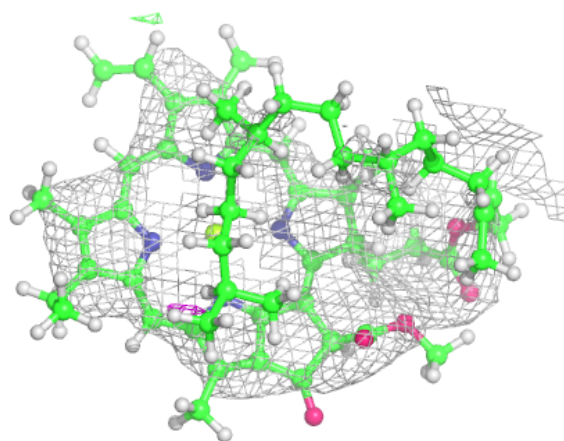
Electron density around CLA B 3019:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

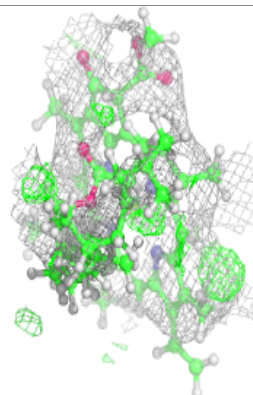
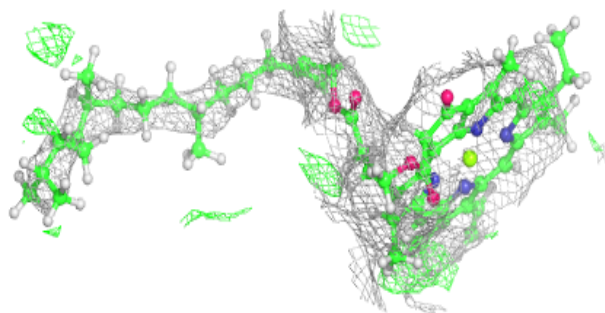
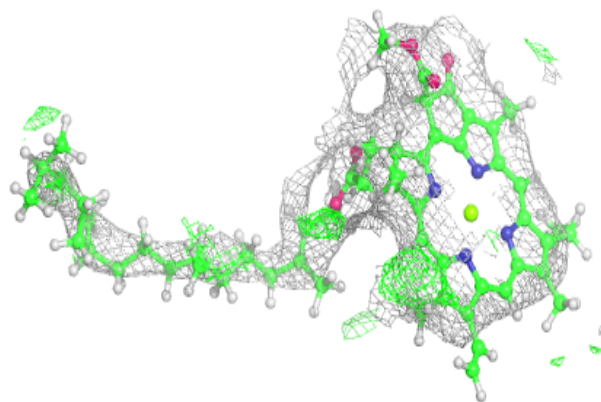


Electron density around CLA A 807:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

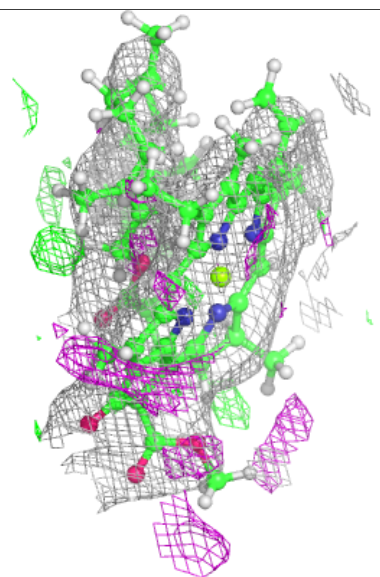
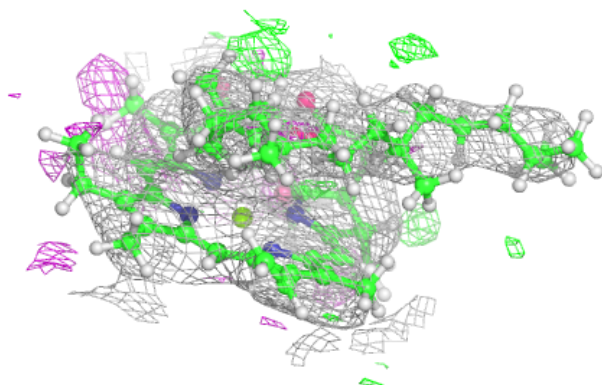
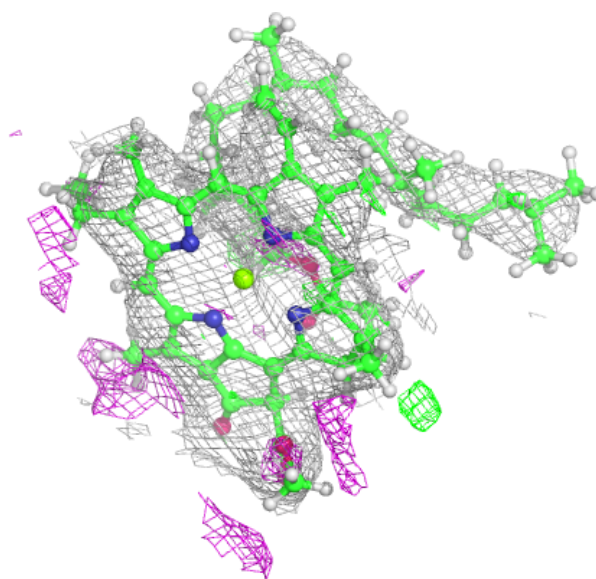
**Electron density around CLA A 822:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



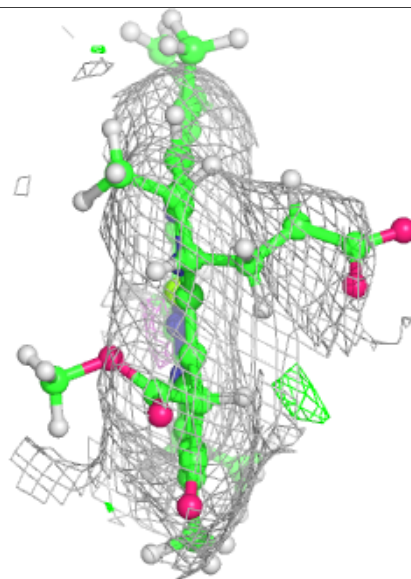
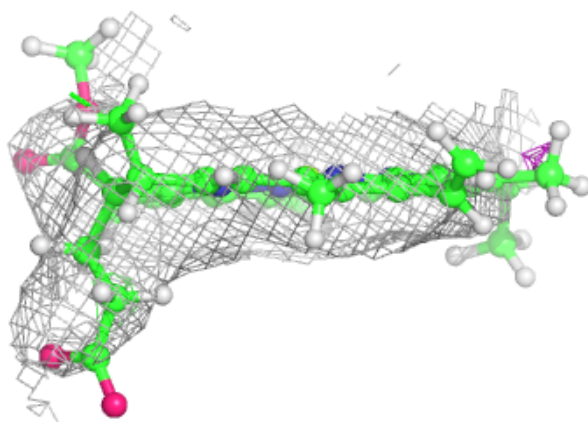
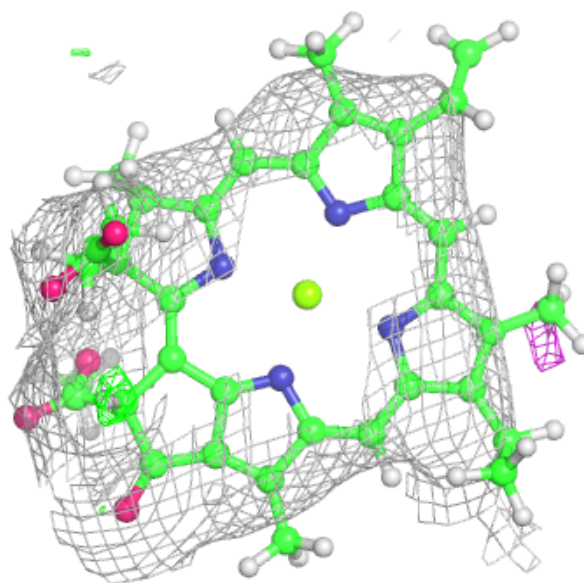
Electron density around CLA B 3009:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



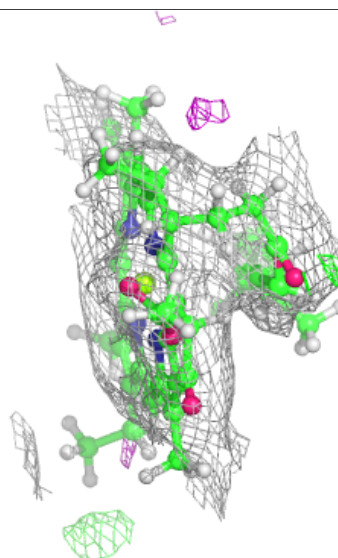
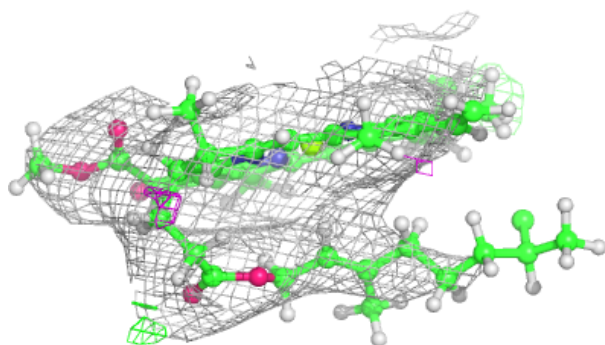
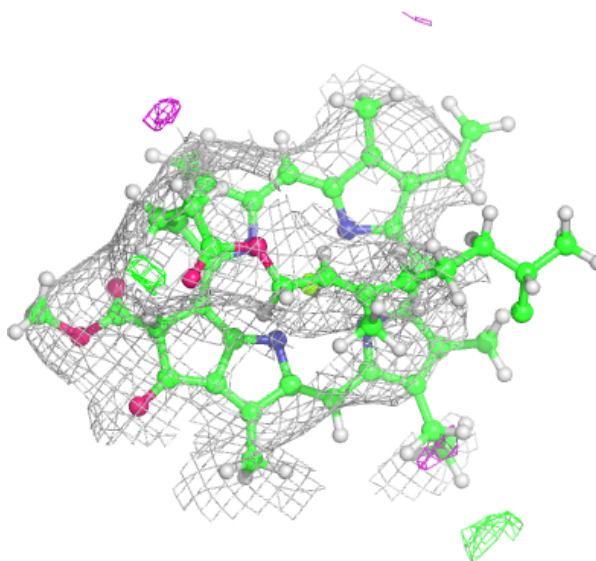
Electron density around CLA B 3022:

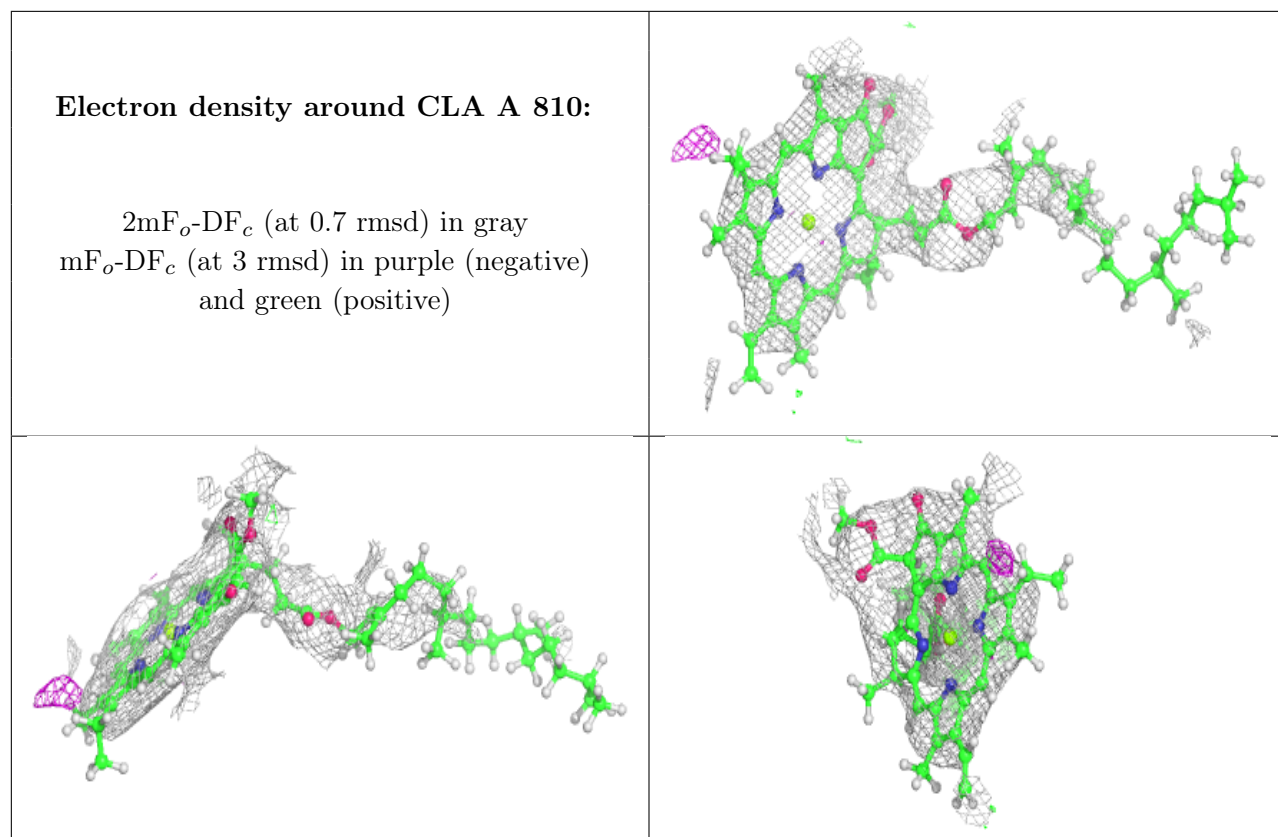
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA B 3023:

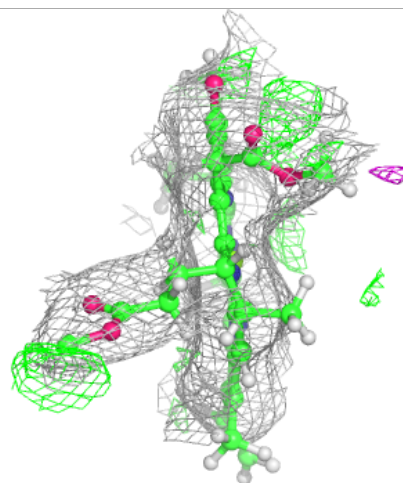
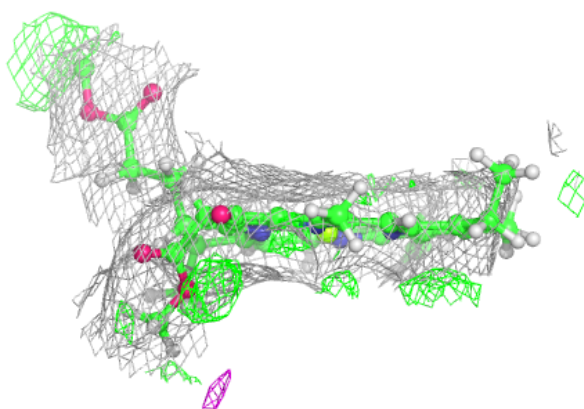
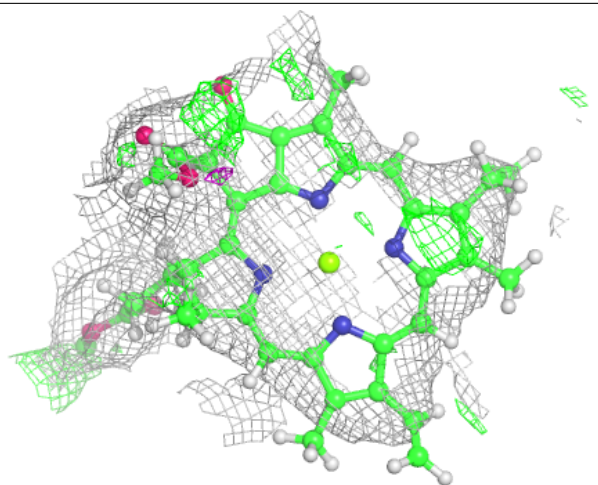
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





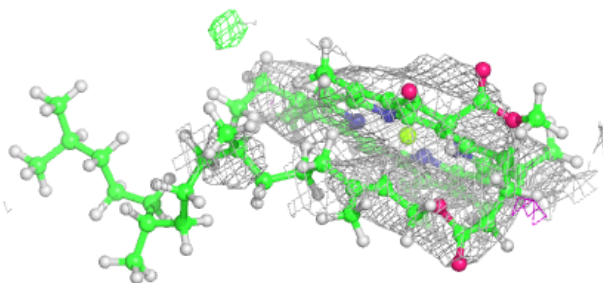
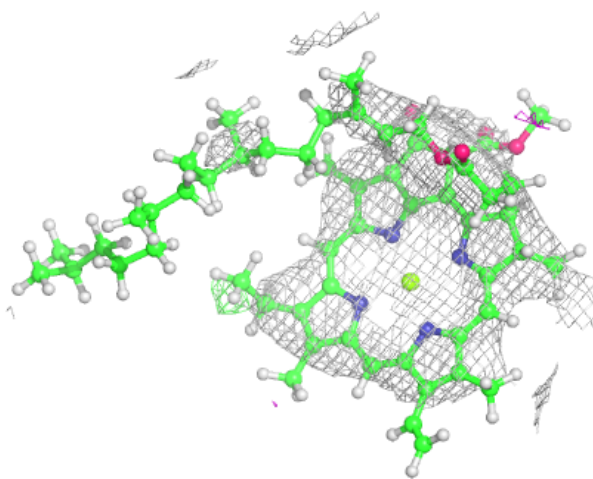
Electron density around CLA B 3026:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



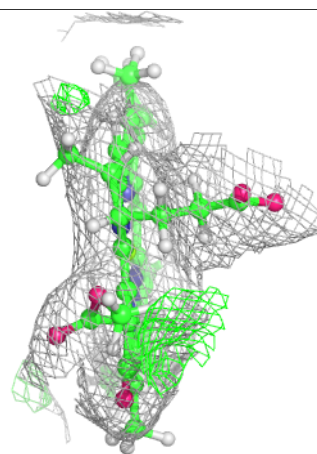
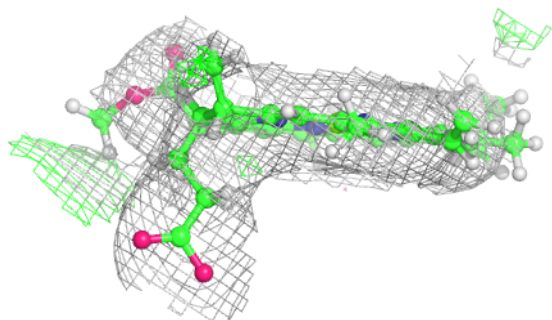
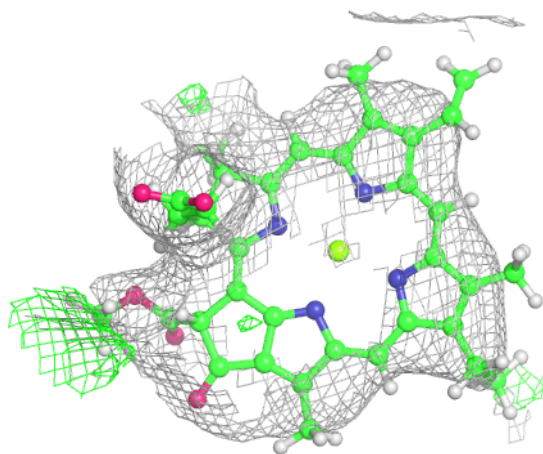
Electron density around CLA A 830:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



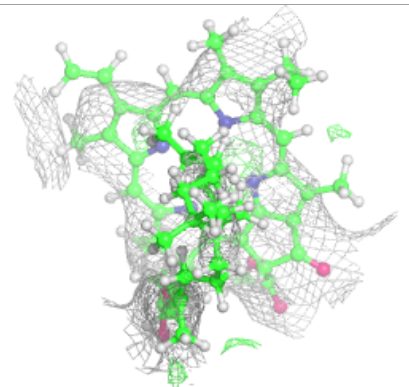
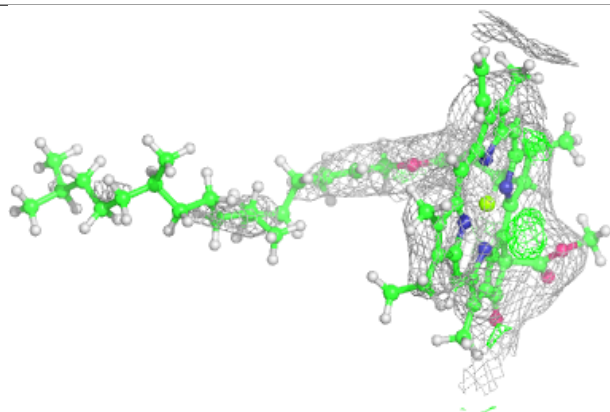
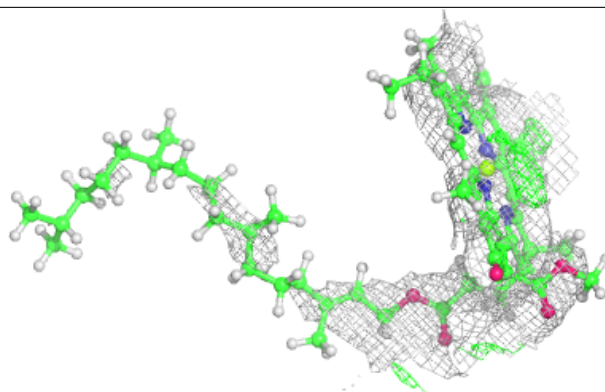
Electron density around CLA B 3012:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

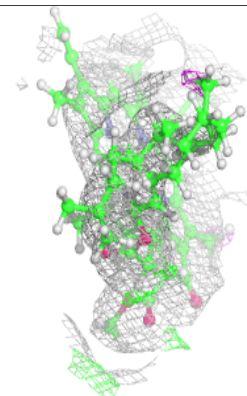
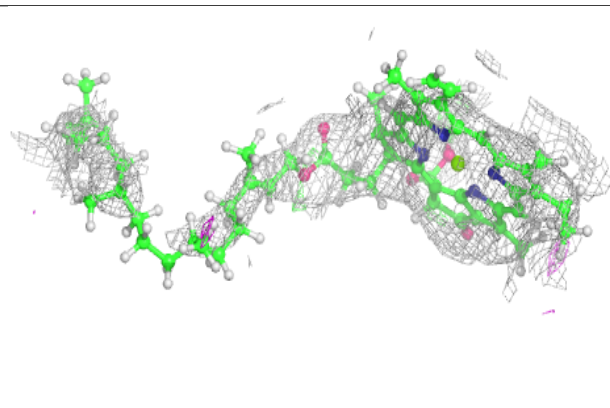
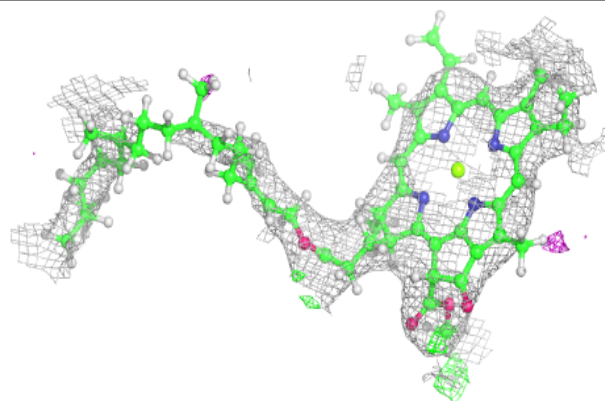


Electron density around CLA A 831:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

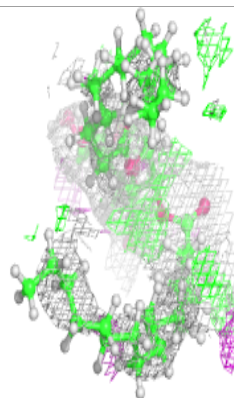
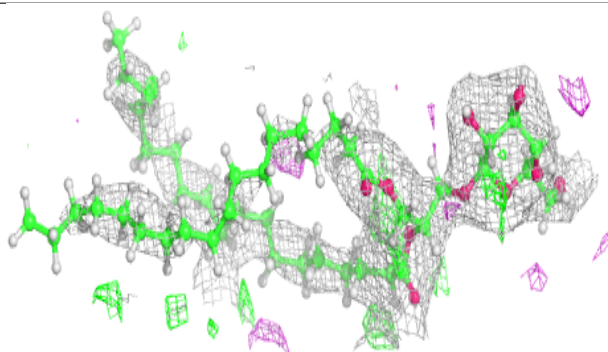
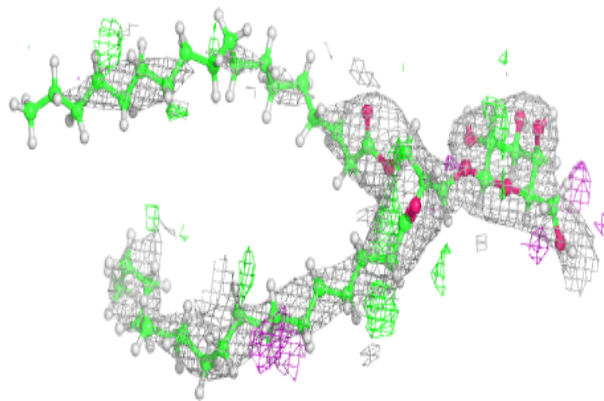
**Electron density around CLA B 3014:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



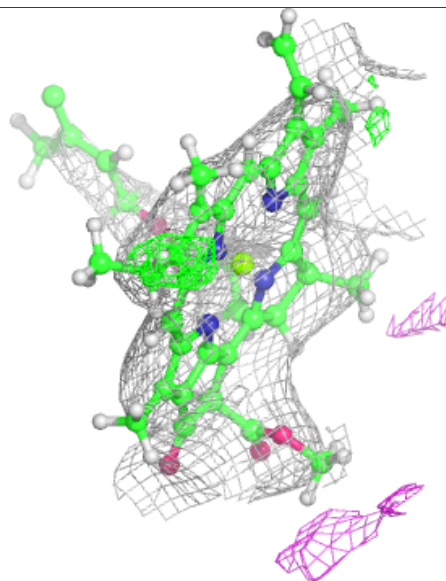
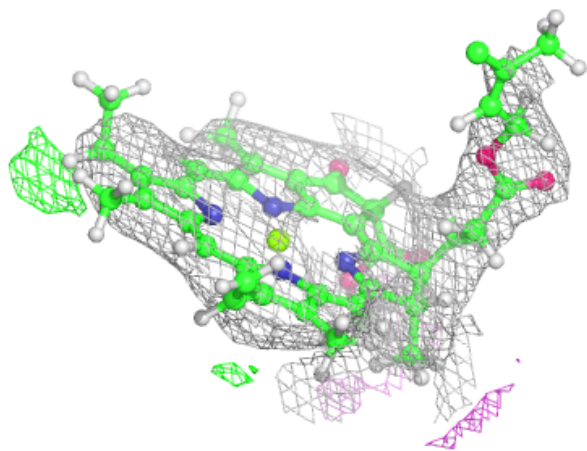
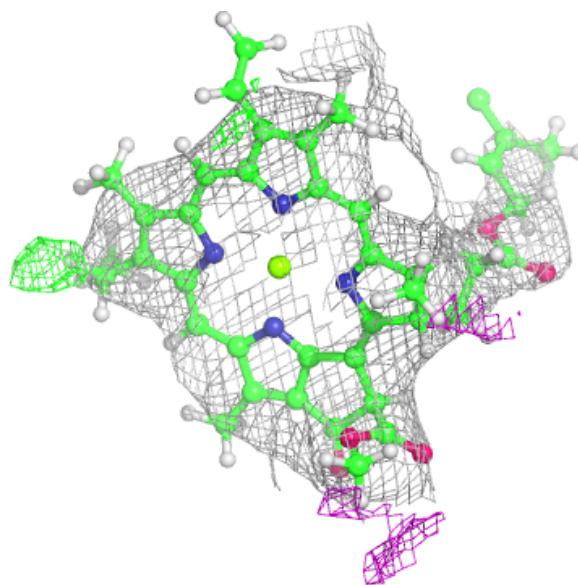
Electron density around LMG B 3048:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



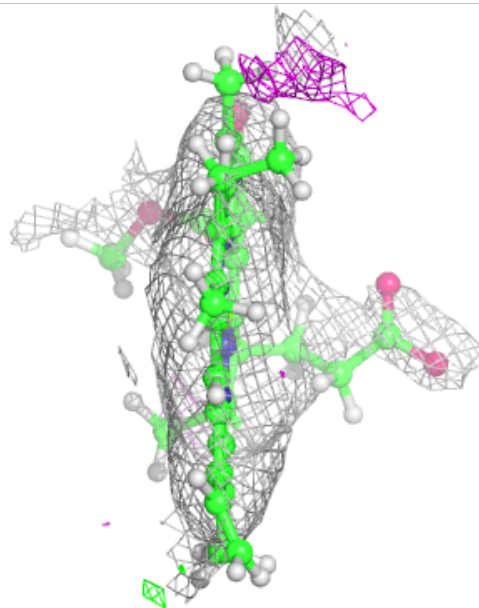
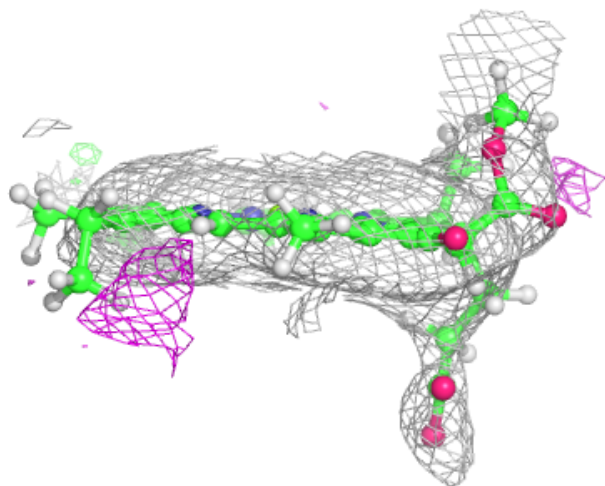
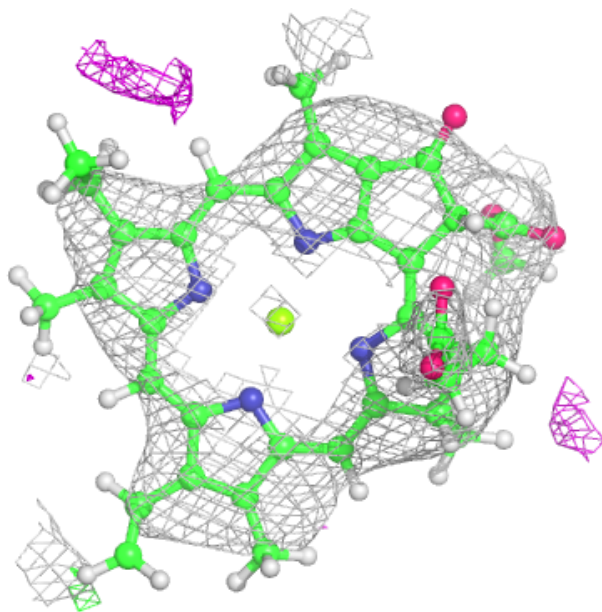
Electron density around CLA A 832:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



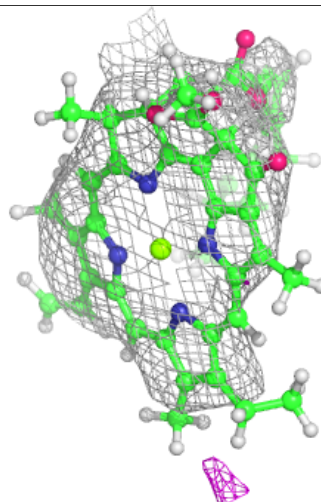
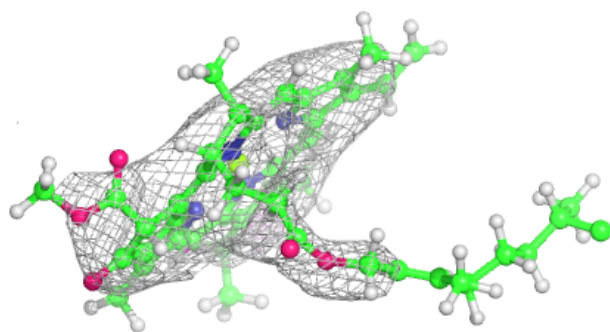
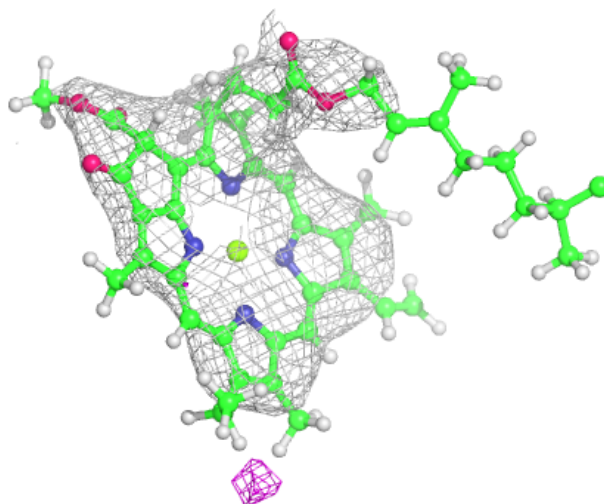
Electron density around CLA B 3016:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



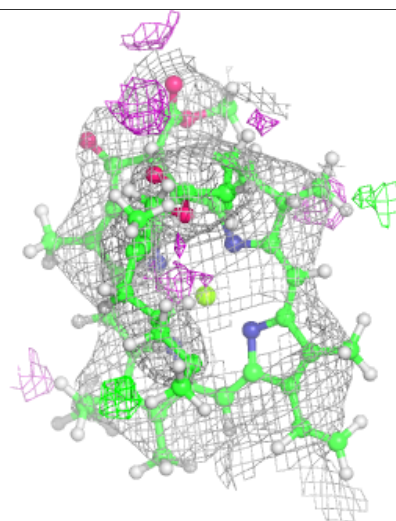
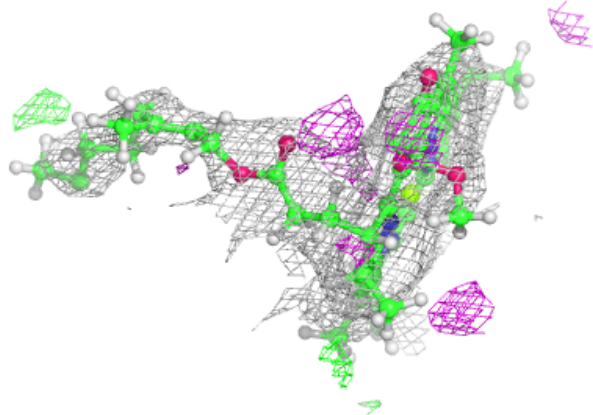
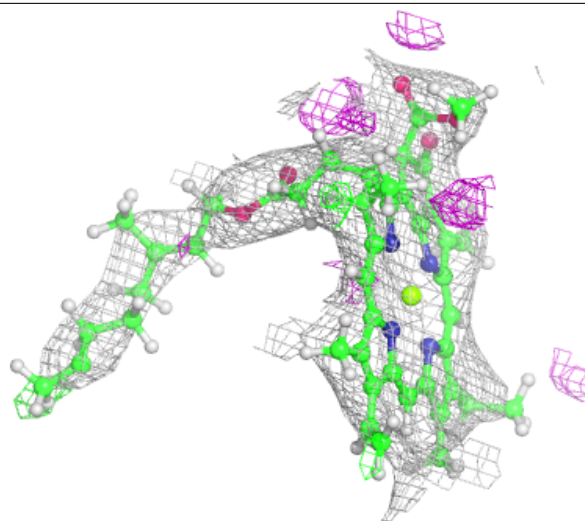
Electron density around CLA B 3017:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



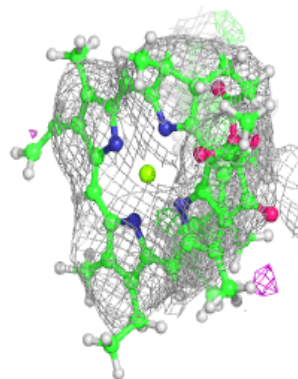
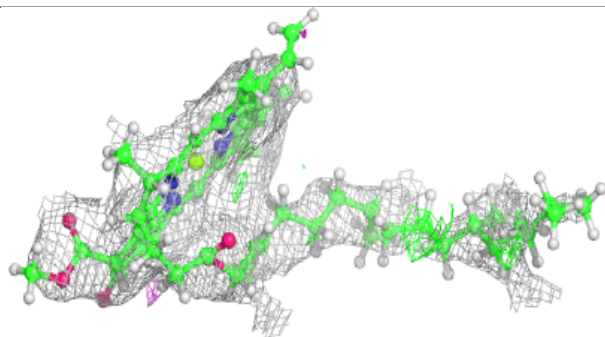
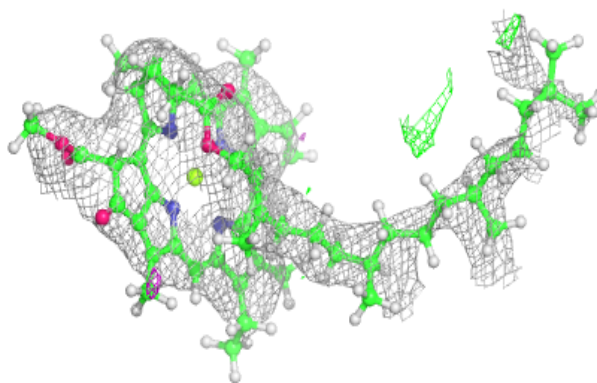
Electron density around CLA B 3005:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

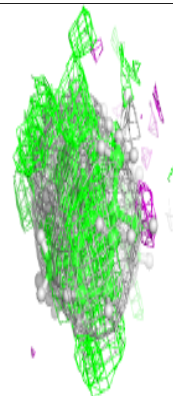
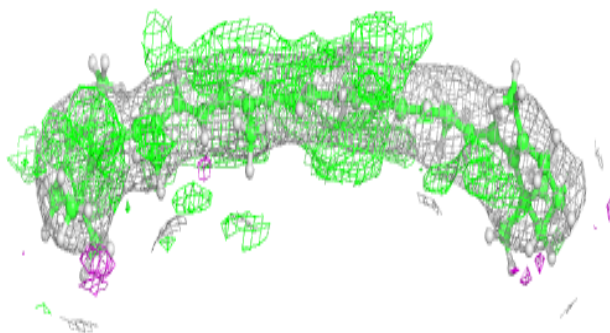
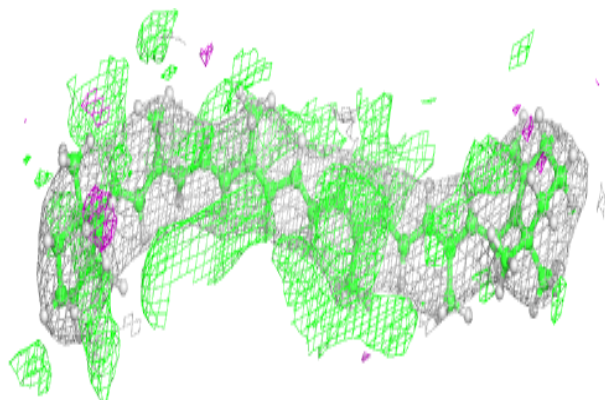


Electron density around CLA A 843:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

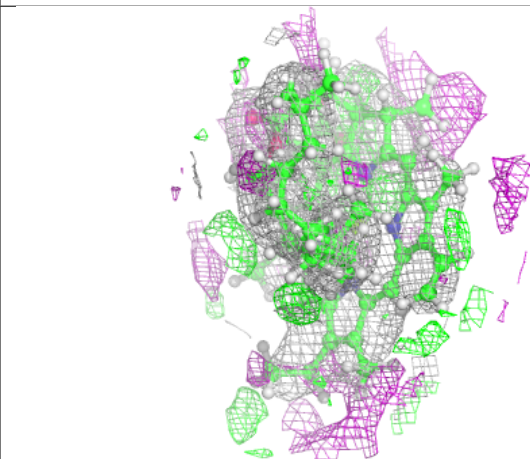
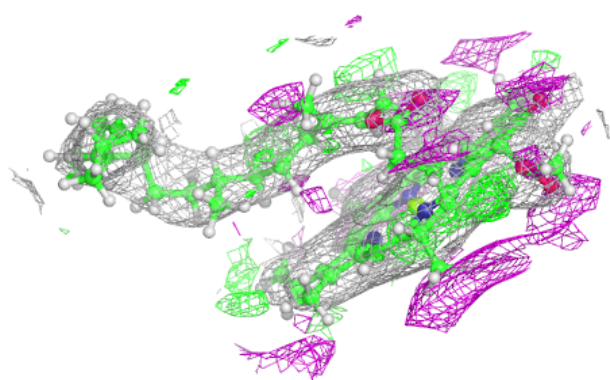
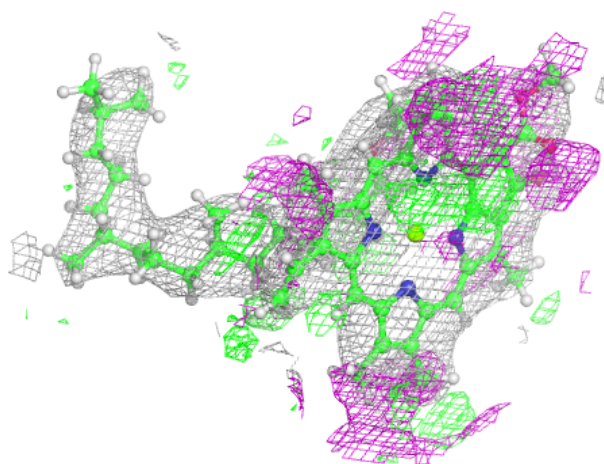
**Electron density around BCR I 102:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



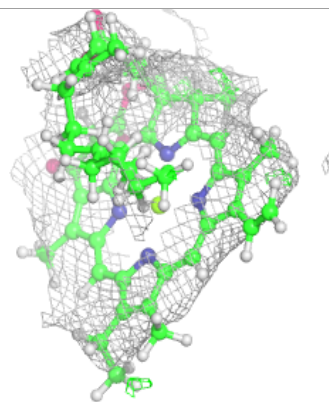
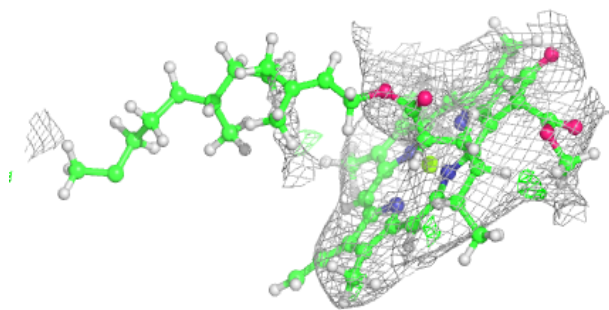
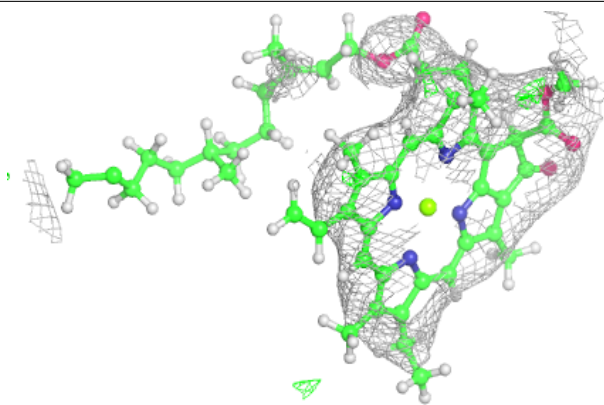
Electron density around CLA A 844:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

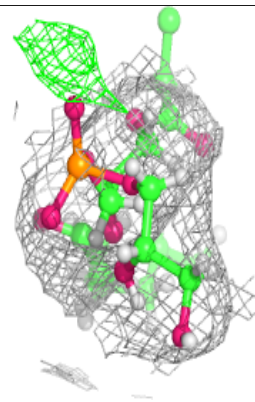
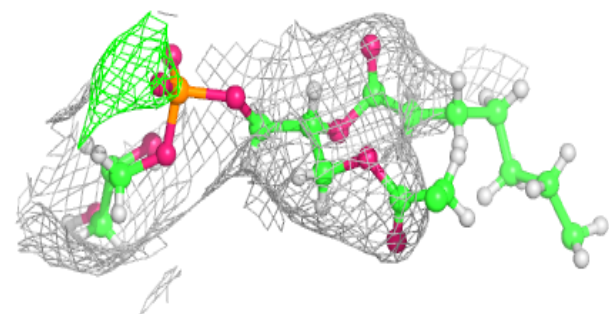
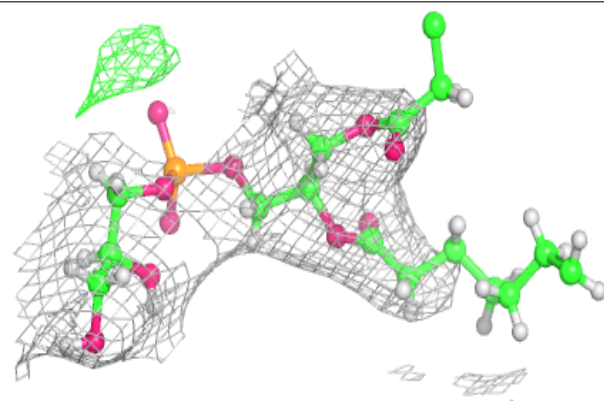


Electron density around CLA A 825:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

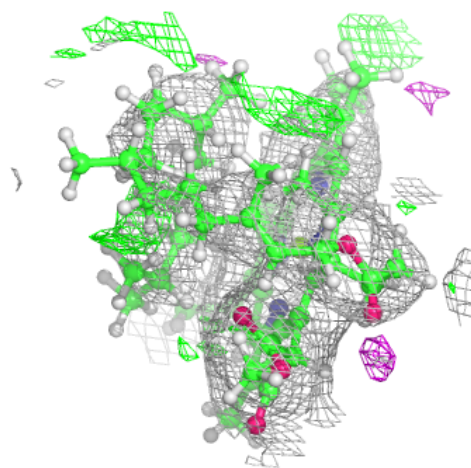
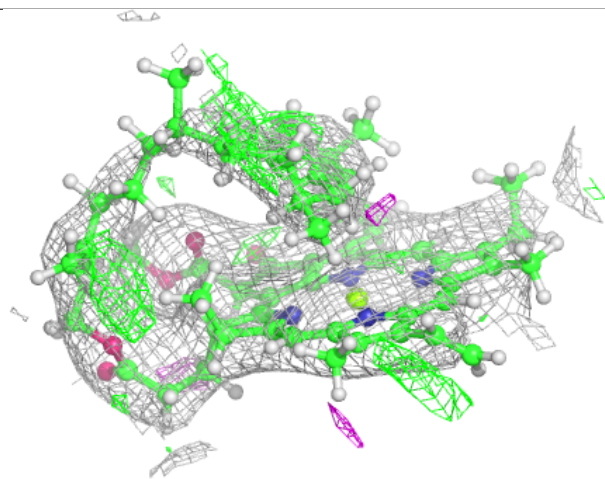
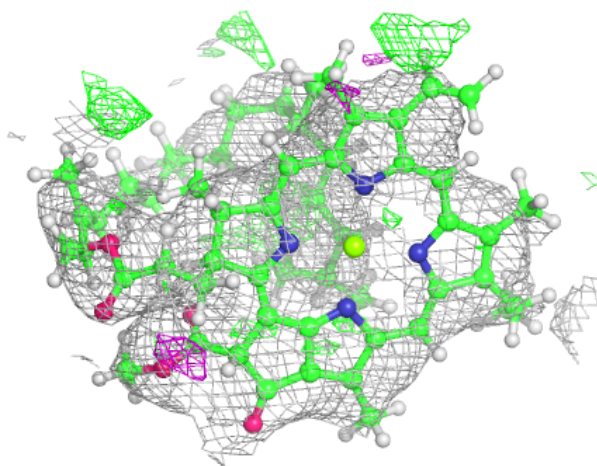
**Electron density around LHG A 854:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



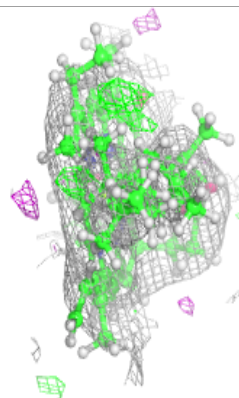
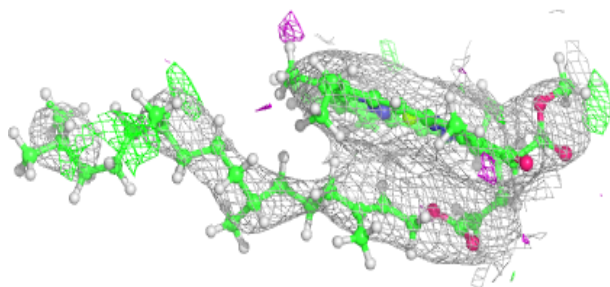
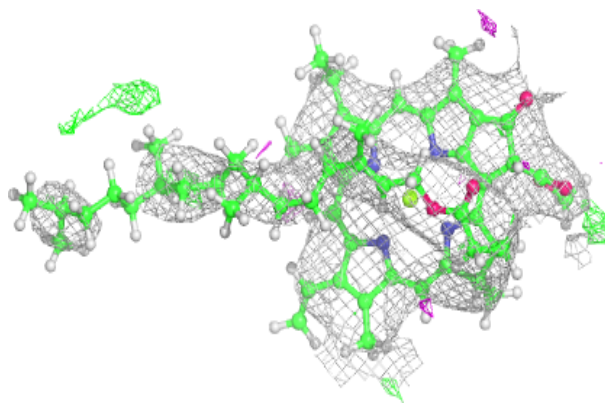
Electron density around CLA B 3007:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

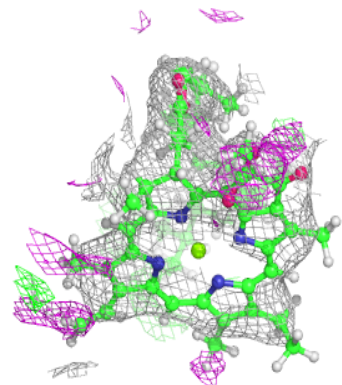
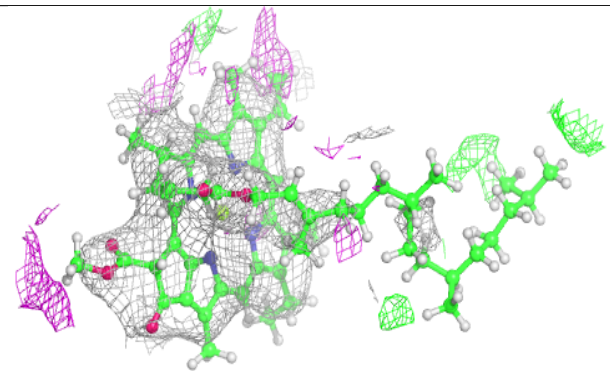
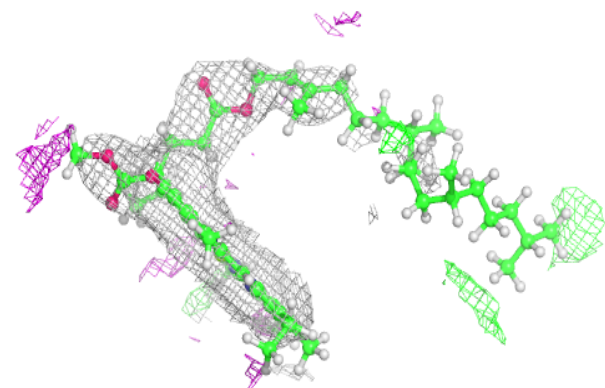


Electron density around CLA A 839:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

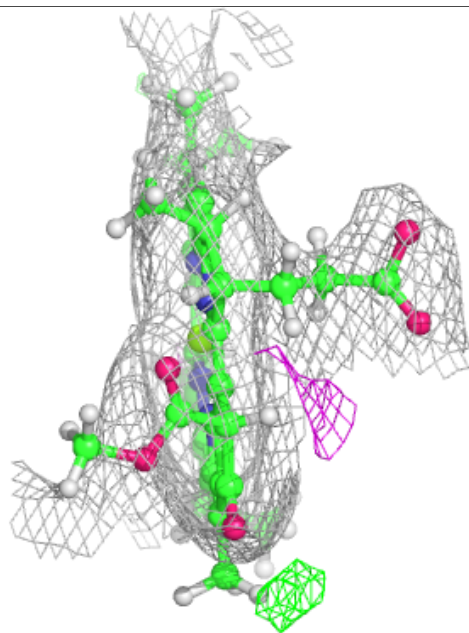
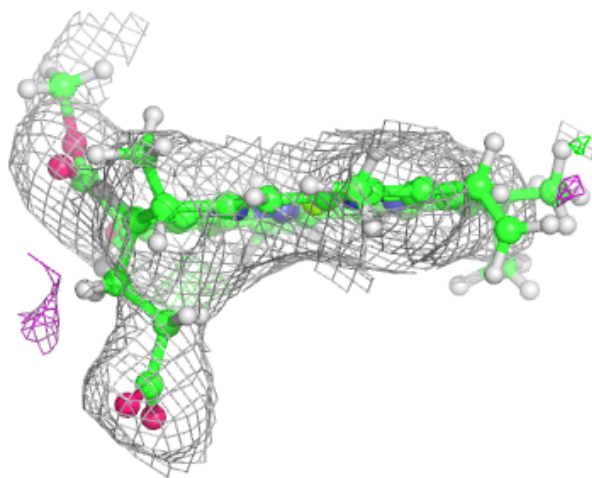
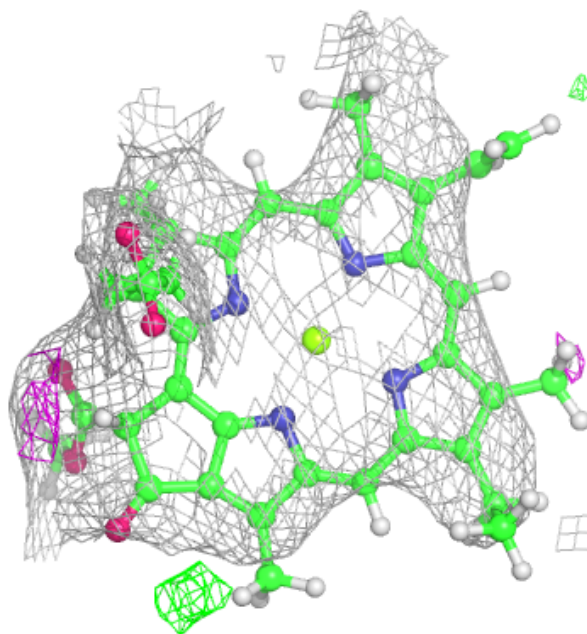
**Electron density around CLA A 833:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



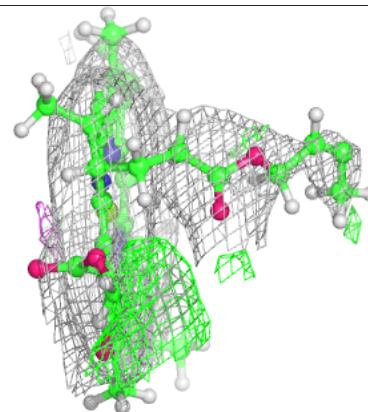
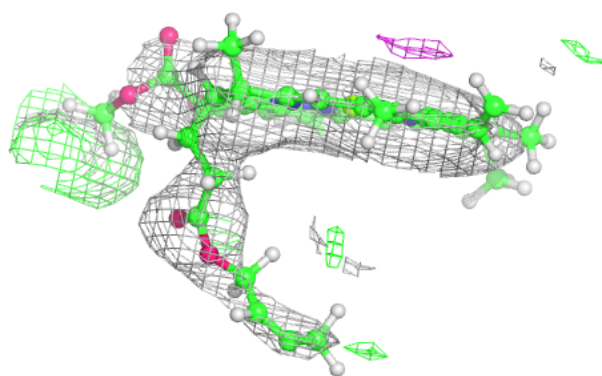
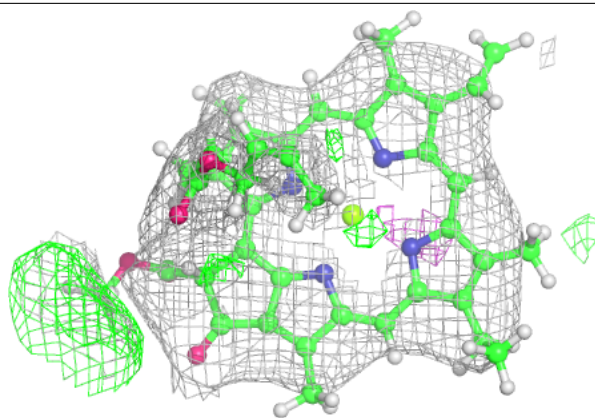
Electron density around CLA B 3031:

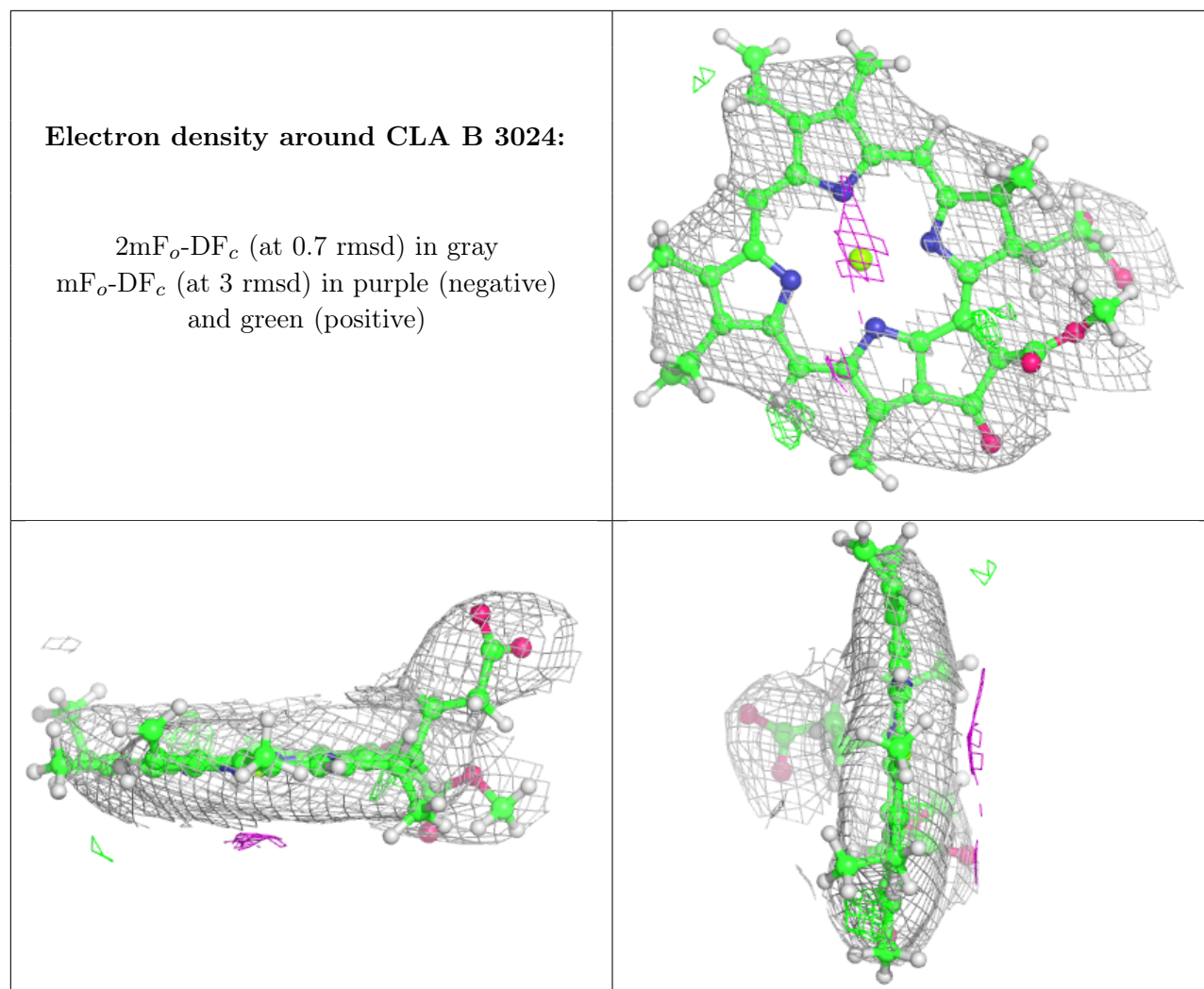
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA B 3032:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





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

There are no such residues in this entry.