



wwPDB X-ray Structure Validation Summary Report ⓘ

Sep 20, 2023 – 09:00 PM EDT

PDB ID : 5KAI
Title : NH3-bound RT XFEL structure of Photosystem II 500 ms after the 2nd illumination (2F) at 2.8 Å resolution
Authors : Young, I.D.; Ibrahim, M.; Chatterjee, R.; Gul, S.; Koroidov, S.; Brewster, A.S.; Tran, R.; Alonso-Mori, R.; Fuller, F.; Kroll, T.; Michels-Clark, T.; Laksmono, H.; Sierra, R.G.; Stan, C.A.; Saracini, C.; Bean, M.A.; Seuffert, I.; Sokaras, D.; Weng, T.-C.; Hunter, M.S.; Aquila, A.; Koglin, J.E.; Robinson, J.; Liang, M.; Boutet, S.; Lyubimov, A.Y.; Uervirojnangkoorn, M.; Moriarty, N.W.; Liebschner, D.; Afonine, P.V.; Waterman, D.G.; Evans, G.; Dobbek, H.; Weis, W.I.; Brunger, A.T.; Zwart, P.H.; Adams, P.D.; Zouni, A.; Messinger, J.; Bergmann, U.; Sauter, N.K.; Kern, J.; Yachandra, V.K.; Yano, J.
Deposited on : 2016-06-01
Resolution : 2.80 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

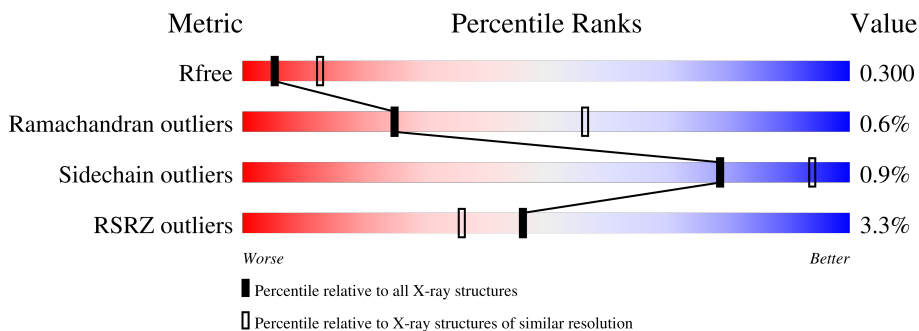
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

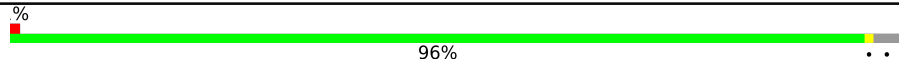
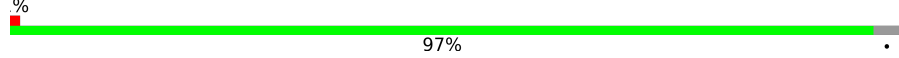
The reported resolution of this entry is 2.80 Å.

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	3140 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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	344	 96%
1	a	344	 97%

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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

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Mol	Chain	Length	Quality of chain
2	B	510	2% 98%
2	b	510	5% 98%
3	C	461	% 97%
3	c	461	% 97%
4	D	352	% 96%
4	d	352	% 96%
5	E	84	10% 96%
5	e	84	14% 96%
6	F	45	76% 24%
6	f	45	76% 24%
7	H	63	3% 97%
7	h	63	98%
8	I	38	5% 95% 5%
8	i	38	8% 89% 5% 5%
9	J	40	5% 88% 10%
9	j	40	5% 88% 10%
10	K	46	9% 78% 20%
10	k	46	78% 20%
11	L	37	100%
11	l	37	3% 100%
12	M	36	3% 89% 8%
12	m	36	3% 89% 8%
13	O	272	4% 89% 10%
13	o	272	3% 86% 10%
14	T	32	3% 94% 6%

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Mol	Chain	Length	Quality of chain
14	t	32	
15	U	134	
15	u	134	
16	V	163	
16	v	163	
17	Y	46	
17	y	46	
18	X	41	
18	x	41	
19	Z	62	
19	z	62	
20	R	41	
20	r	41	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	A	606	X	-	-	-
25	CLA	A	607	X	-	-	-
25	CLA	A	609	X	-	-	-
25	CLA	B	602	X	-	-	-
25	CLA	B	604	X	-	-	-
25	CLA	B	605	X	-	-	-
25	CLA	B	606	X	-	-	-
25	CLA	B	607	X	-	-	-
25	CLA	B	608	X	-	-	-
25	CLA	B	609	X	-	-	-
25	CLA	B	611	X	-	-	-
25	CLA	B	612	X	-	-	-
25	CLA	B	613	X	-	-	-
25	CLA	B	614	X	-	-	-
25	CLA	B	615	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	CLA	B	616	X	-	-	-
25	CLA	B	617	X	-	-	-
25	CLA	C	502	X	-	-	-
25	CLA	C	503	X	-	-	-
25	CLA	C	504	X	-	-	-
25	CLA	C	505	X	-	-	-
25	CLA	C	508	X	-	-	-
25	CLA	C	509	X	-	-	-
25	CLA	C	510	X	-	-	-
25	CLA	C	511	X	-	-	-
25	CLA	C	512	X	-	-	-
25	CLA	C	513	X	-	-	-
25	CLA	C	514	X	-	-	-
25	CLA	a	707	X	-	-	-
25	CLA	a	708	X	-	-	-
25	CLA	a	711	X	-	-	-
25	CLA	a	719	X	-	-	-
25	CLA	b	607	X	-	-	-
25	CLA	b	608	X	-	-	-
25	CLA	b	609	X	-	-	-
25	CLA	b	610	X	-	-	-
25	CLA	b	612	X	-	-	-
25	CLA	b	613	X	-	-	-
25	CLA	b	614	X	-	-	-
25	CLA	b	616	X	-	-	-
25	CLA	b	617	X	-	-	-
25	CLA	b	618	X	-	-	-
25	CLA	b	619	X	-	-	-
25	CLA	b	620	X	-	-	-
25	CLA	b	621	X	-	-	-
25	CLA	b	622	X	-	-	-
25	CLA	c	501	X	-	-	-
25	CLA	c	502	X	-	-	-
25	CLA	c	503	X	-	-	-
25	CLA	c	504	X	-	-	-
25	CLA	c	507	X	-	-	-
25	CLA	c	509	X	-	-	-
25	CLA	c	510	X	-	-	-
25	CLA	c	511	X	-	-	-
25	CLA	c	512	X	-	-	-
25	CLA	c	513	X	-	-	-
29	SQD	I	102	-	-	-	X

2 Entry composition [i](#)

There are 36 unique types of molecules in this entry. The entry contains 50284 atoms, of which 0 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 II protein D1 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	334	2622	1717	431	459	15	0	0	0
1	a	334	2622	1717	431	459	15	0	0	0

- Molecule 2 is a protein called Photosystem II CP47 reaction center protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	504	3969	2605	661	690	13	0	0	0
2	b	504	3968	2605	661	689	13	0	1	0

- Molecule 3 is a protein called Photosystem II CP43 reaction center protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	451	3486	2281	584	608	13	0	0	0
3	c	451	3486	2281	584	608	13	0	0	0

- Molecule 4 is a protein called Photosystem II D2 protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	341	2716	1800	444	460	12	0	0	0
4	d	341	2716	1800	444	460	12	0	0	0

- Molecule 5 is a protein called Cytochrome b559 subunit alpha.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	E	81	Total	C	N	O	0	0	0
			661	432	107	122			
5	e	82	Total	C	N	O	0	0	0
			665	434	108	123			

- Molecule 6 is a protein called Cytochrome b559 subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	34	Total	C	N	O	S	0	0	0
			275	187	45	42	1			
6	f	34	Total	C	N	O	S	0	0	0
			275	187	45	42	1			

- Molecule 7 is a protein called Photosystem II reaction center protein H.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	H	63	Total	C	N	O	S	0	0	0
			498	333	80	83	2			
7	h	63	Total	C	N	O	S	0	0	0
			498	333	80	83	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	I	36	Total	C	N	O	S	0	0	0
			296	200	46	49	1			
8	i	36	Total	C	N	O	S	0	0	0
			296	200	46	49	1			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	1	FME	-	expression tag	UNP Q8DJZ6
i	1	FME	-	expression tag	UNP Q8DJZ6

- Molecule 9 is a protein called Photosystem II reaction center protein J.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
9	J	36	Total	C	N	O	S	0	0	0
			257	174	40	42	1			
9	j	36	Total	C	N	O	S	0	0	0
			257	174	40	42	1			

- Molecule 10 is a protein called Photosystem II reaction center protein K.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
10	K	37	293	204	43	46	0	0	0
10	k	37	293	204	43	46	0	0	0

- Molecule 11 is a protein called Photosystem II reaction center protein L.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	L	37	304	202	48	53	1	0	0	0
11	l	37	304	202	48	53	1	0	0	0

- Molecule 12 is a protein called Photosystem II reaction center protein M.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	M	33	260	173	38	48	1	0	0	0
12	m	33	260	173	38	48	1	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	1	FME	-	expression tag	UNP Q8DHA7
m	1	FME	-	expression tag	UNP Q8DHA7

- Molecule 13 is a protein called Photosystem II manganese-stabilizing polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	O	244	1874	1170	317	383	4	0	0	0
13	o	244	1874	1170	317	383	4	0	0	0

- Molecule 14 is a protein called Photosystem II reaction center protein T.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	T	30	258	181	36	39	2	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	t	30	Total	C	N	O	S	0	0	0
			258	181	36	39	2			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	1	FME	-	expression tag	UNP Q8DIQ0
t	1	FME	-	expression tag	UNP Q8DIQ0

- Molecule 15 is a protein called Photosystem II 12 kDa extrinsic protein.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
15	U	97	Total	C	N	O	0	0	0
			774	491	129	154			
15	u	97	Total	C	N	O	0	0	0
			774	491	129	154			

- Molecule 16 is a protein called Cytochrome c-550.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	V	137	Total	C	N	O	S	0	0	0
			1064	675	177	208	4			
16	v	137	Total	C	N	O	S	0	0	0
			1064	675	177	208	4			

- Molecule 17 is a protein called Photosystem II reaction center protein Ycf12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	Y	27	Total	C	N	O	S	0	0	0
			200	131	35	31	3			
17	y	30	Total	C	N	O	S	0	0	0
			224	147	38	36	3			

- Molecule 18 is a protein called Photosystem II reaction center X protein.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	X	38	Total	C	N	O	0	0	0
			281	188	45	48			
18	x	38	Total	C	N	O	0	0	0
			279	187	45	47			

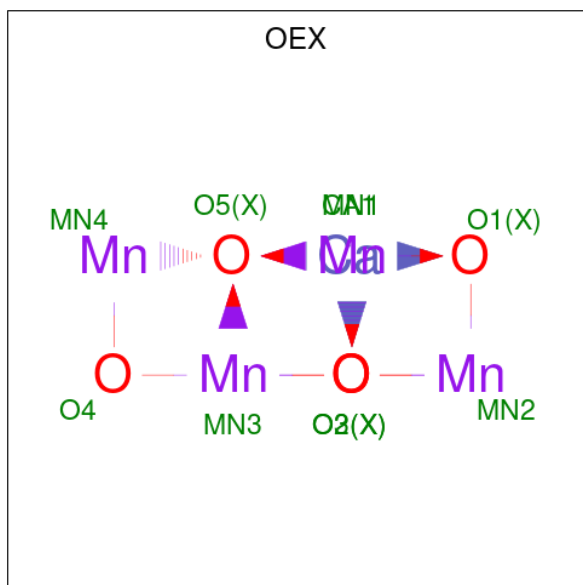
- Molecule 19 is a protein called Photosystem II reaction center protein Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	Z	62	Total	C	N	O	S	0	0	0
			479	328	72	77	2			
19	z	62	Total	C	N	O	S	0	0	0
			478	328	72	76	2			

- Molecule 20 is a protein called Photosystem II protein Y.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
20	R	34	Total	C	N	O	0	0	0
			273	186	47	40			
20	r	34	Total	C	N	O	0	0	0
			270	183	47	40			

- Molecule 21 is CA-MN4-O5 CLUSTER (three-letter code: OEX) (formula: CaMn_4O_5).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
21	A	1	Total	Ca	Mn	O	0	0
			10	1	4	5		
21	a	1	Total	Ca	Mn	O	0	0
			10	1	4	5		

- Molecule 22 is FE (II) ION (three-letter code: FE2) (formula: Fe).

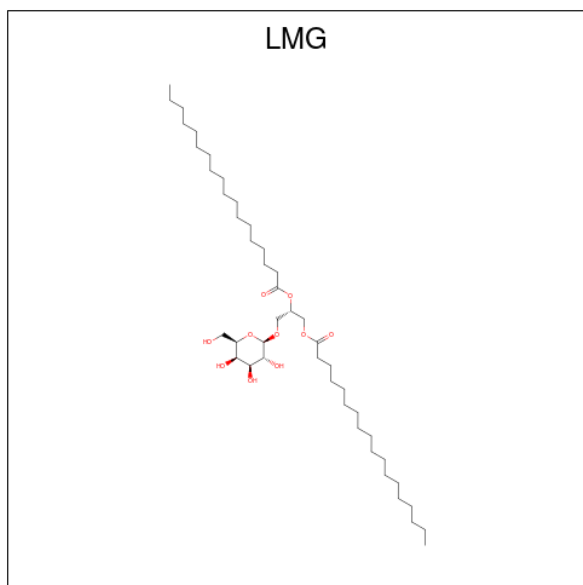
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
22	A	1	Total	Fe	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Fe		
22	a	1	1	1	0	0

- Molecule 23 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: C₄₅H₈₆O₁₀).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
23	A	1	51	41	10	0	0
23	B	1	51	41	10	0	0
23	C	1	51	41	10	0	0
23	C	1	51	41	10	0	0
23	C	1	51	41	10	0	0
23	D	1	51	41	10	0	0
23	M	1	51	41	10	0	0
23	a	1	51	41	10	0	0
23	a	1	51	41	10	0	0
23	b	1	51	41	10	0	0

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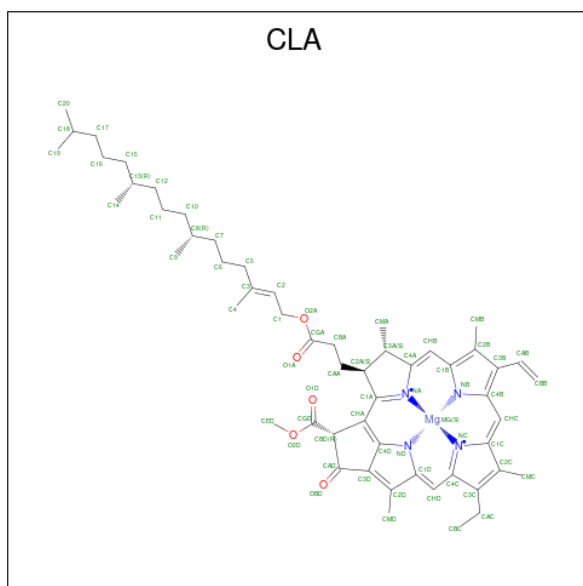
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
23	b	1	Total	C	O	0	0
			51	41	10		
23	b	1	Total	C		0	0
			9	9			
23	c	1	Total	C	O	0	0
			51	41	10		
23	c	1	Total	C	O	0	0
			51	41	10		
23	d	1	Total	C	O	0	0
			40	35	5		
23	f	1	Total	C	O	0	0
			51	41	10		

- Molecule 24 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
24	A	2	Total	Cl	0	0
			2	2		
24	a	2	Total	Cl	0	0
			2	2		

- Molecule 25 is CHLOROPHYLL A (three-letter code: CLA) (formula: C₅₅H₇₂MgN₄O₅).



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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
25	A	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	A	1	Total	C	Mg	N	O	0	0
			54	44	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	B	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	C	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	D	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	D	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	D	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	a	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	a	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	a	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	a	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		

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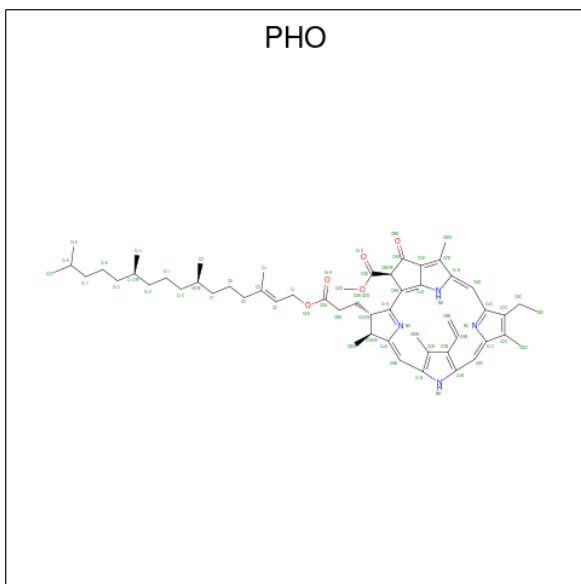
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	b	1	Total	C	Mg	N	O	0	0
			47	37	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			58	48	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		

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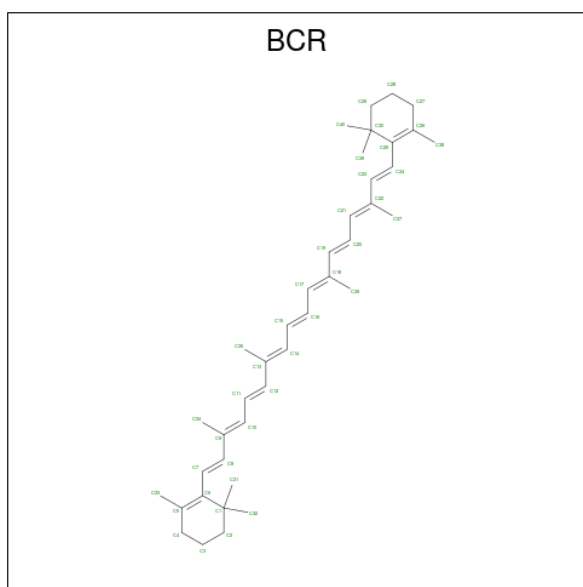
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	c	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	d	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		
25	d	1	Total	C	Mg	N	O	0	0
			65	55	1	4	5		

- Molecule 26 is PHEOPHYTIN A (three-letter code: PHO) (formula: $C_{55}H_{74}N_4O_5$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
26	A	1	Total	C	N	O	0	0
			64	55	4	5		
26	D	1	Total	C	N	O	0	0
			64	55	4	5		
26	a	1	Total	C	N	O	0	0
			64	55	4	5		
26	a	1	Total	C	N	O	0	0
			64	55	4	5		

- Molecule 27 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$).



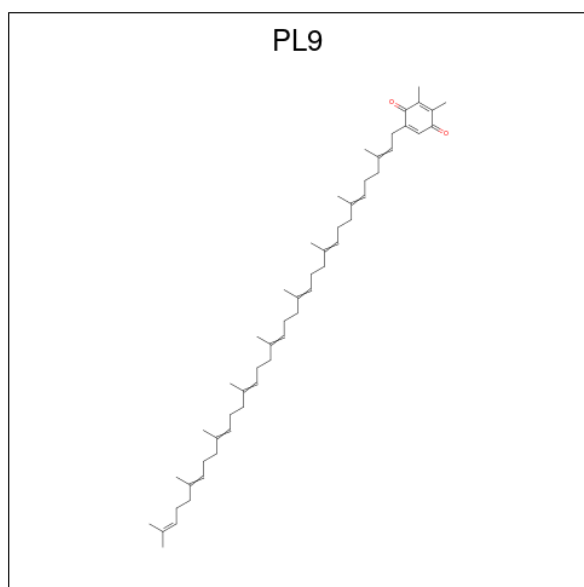
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	A	1	Total C 40 40	0	0
27	B	1	Total C 40 40	0	0
27	B	1	Total C 40 40	0	0
27	B	1	Total C 40 40	0	0
27	C	1	Total C 40 40	0	0
27	C	1	Total C 40 40	0	0
27	D	1	Total C 40 40	0	0
27	H	1	Total C 40 40	0	0
27	K	1	Total C 40 40	0	0
27	Y	1	Total C 40 40	0	0
27	a	1	Total C 40 40	0	0
27	b	1	Total C 40 40	0	0
27	b	1	Total C 40 40	0	0
27	b	1	Total C 40 40	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	b	1	Total C 40 40	0	0
27	c	1	Total C 40 40	0	0
27	c	1	Total C 40 40	0	0
27	d	1	Total C 40 40	0	0
27	h	1	Total C 40 40	0	0
27	k	1	Total C 40 40	0	0
27	k	1	Total C 40 40	0	0
27	t	1	Total C 40 40	0	0

- Molecule 28 is 2,3-DIMETHYL-5-(3,7,11,15,19,23,27,31,35-NONAMETHYL-2,6,10,14,18,22,26,30,34-HEXATRIACONTANONAENYL-2,5-CYCLOHEXADIENE-1,4-DIONE-2,3-DIMETHYL-5-SOLANESYL-1,4-BENZOQUINONE (three-letter code: PL9) (formula: $C_{53}H_{80}O_2$).



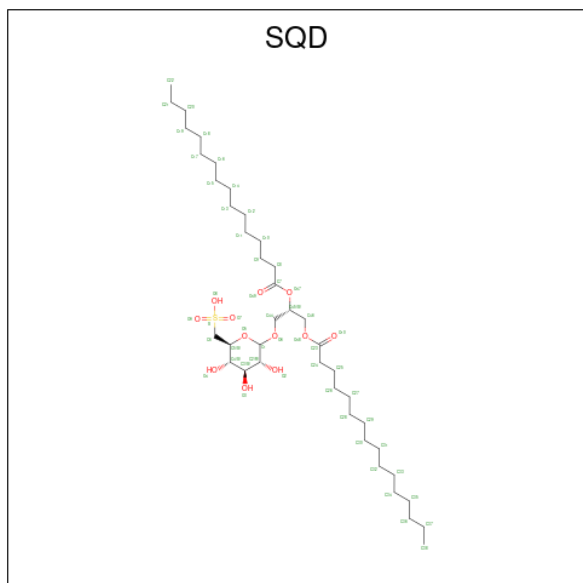
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
28	A	1	Total C O 55 53 2	0	0
28	D	1	Total C O 55 53 2	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
28	a	1	Total	C	O	0	0
			55	53	2		
28	d	1	Total	C	O	0	0
			55	53	2		

- Molecule 29 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: $C_{41}H_{78}O_{12}S$).

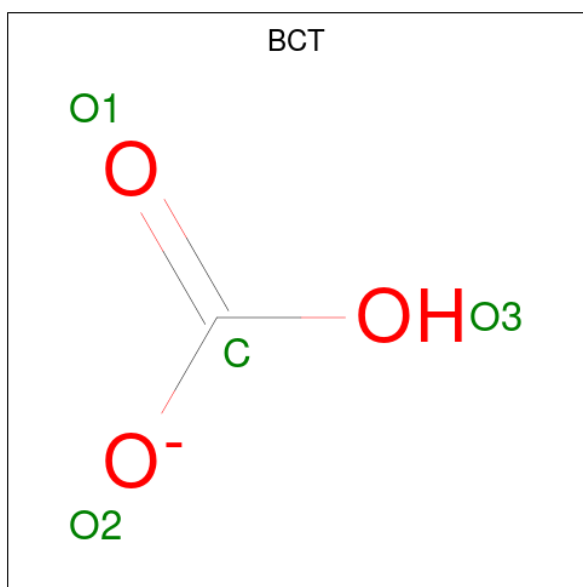


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
29	A	1	Total	C	O	S	0	0
			52	39	12	1		
29	A	1	Total	C	O		0	0
			40	35	5			
29	B	1	Total	C	O	S	0	0
			47	34	12	1		
29	B	1	Total	C	O	S	0	0
			54	41	12	1		
29	D	1	Total	C	O	S	0	0
			43	30	12	1		
29	I	1	Total	C	O		0	0
			40	35	5			
29	a	1	Total	C	O	S	0	0
			54	41	12	1		
29	b	1	Total	C	O	S	0	0
			54	41	12	1		
29	f	1	Total	C	O	S	0	0
			41	28	12	1		

- Molecule 30 is UNKNOWN LIGAND (three-letter code: UNL) (formula:).

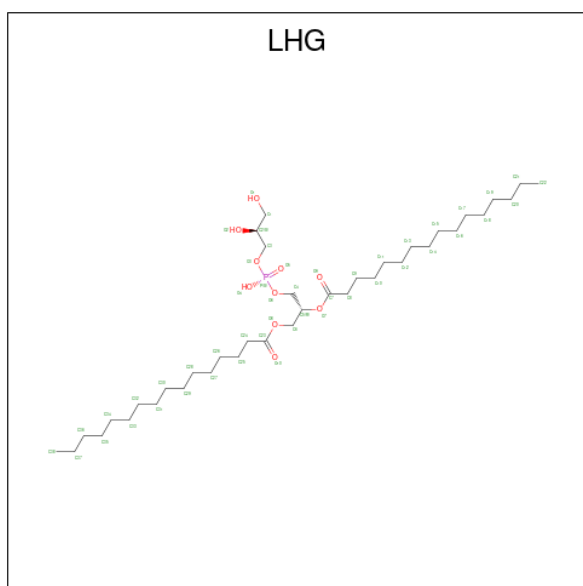
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
30	A	1	Total C 7 7	0	0
30	B	3	Total C 29 29	0	0
30	H	1	Total C 8 8	0	0
30	I	1	Total C 9 9	0	0
30	M	2	Total C 22 22	0	0
30	a	3	Total C 24 24	0	0
30	b	4	Total C 48 48	0	0
30	d	1	Total C 22 22	0	0
30	i	1	Total C 22 22	0	0
30	j	1	Total C 9 9	0	0
30	m	2	Total C 17 17	0	0
30	t	2	Total C 15 15	0	0
30	z	1	Total C 11 11	0	0

- Molecule 31 is BICARBONATE ION (three-letter code: BCT) (formula: CHO_3).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
31	A	1	Total	C	O	0	0
			4	1	3		
31	a	1	Total	C	O	0	0
			4	1	3		

- Molecule 32 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: C₃₈H₇₅O₁₀P).



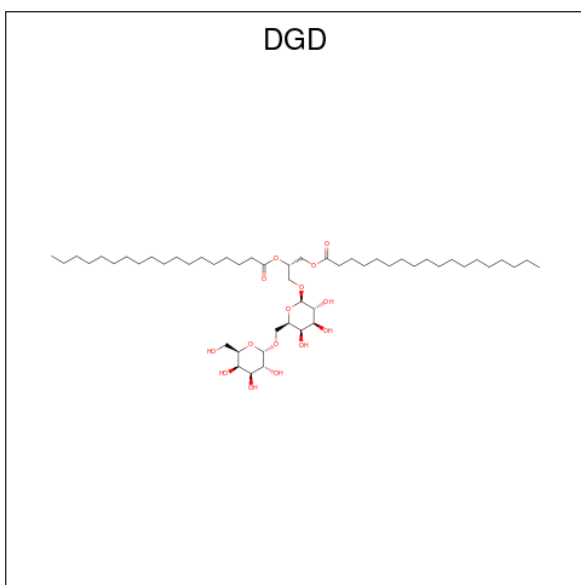
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
32	B	1	Total	C	O	P	0	0
			49	38	10	1		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	O	P		
32	D	1	Total 49	C 38	O 10	P 1	0	0
32	D	1	Total 49	C 38	O 10	P 1	0	0
32	E	1	Total 49	C 38	O 10	P 1	0	0
32	L	1	Total 49	C 38	O 10	P 1	0	0
32	a	1	Total 39	C 28	O 10	P 1	0	0
32	b	1	Total 49	C 38	O 10	P 1	0	0
32	d	1	Total 49	C 38	O 10	P 1	0	0
32	d	1	Total 49	C 38	O 10	P 1	0	0
32	e	1	Total 42	C 31	O 10	P 1	0	0

- Molecule 33 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD) (formula: $C_{51}H_{96}O_{15}$).



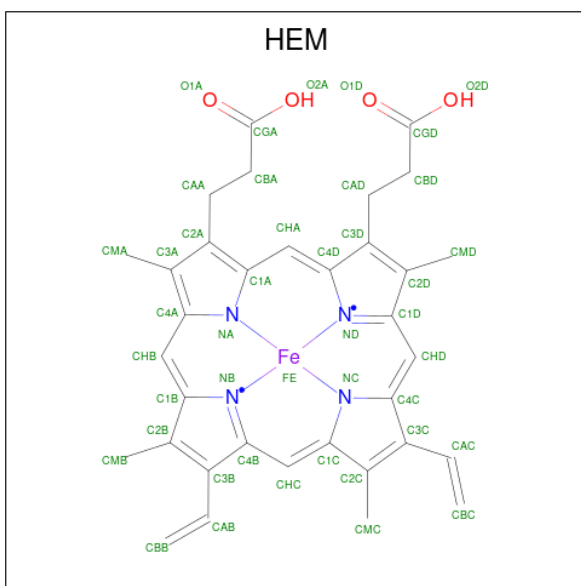
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
33	C	1	Total 62	C 47	O 15	0	0
33	C	1	Total 62	C 47	O 15	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
33	C	1	Total	C	O	0	0
			62	47	15		
33	H	1	Total	C	O	0	0
			62	47	15		
33	c	1	Total	C	O	0	0
			62	47	15		
33	c	1	Total	C	O	0	0
			62	47	15		
33	c	1	Total	C	O	0	0
			62	47	15		
33	h	1	Total	C	O	0	0
			62	47	15		

- Molecule 34 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
34	E	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
34	e	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 35 is HEME C (three-letter code: HEC) (formula: $C_{34}H_{34}FeN_4O_4$).

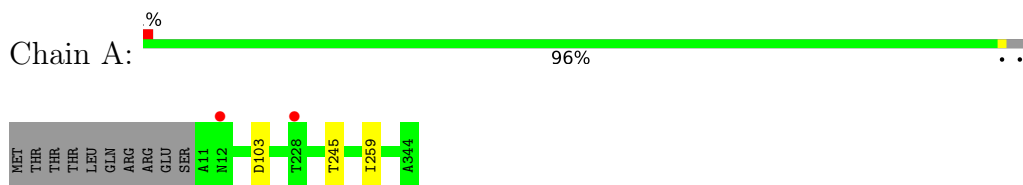
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
36	V	6	Total O 6 6	0	0
36	a	13	Total O 13 13	0	0
36	b	12	Total O 12 12	0	0
36	c	8	Total O 8 8	0	0
36	d	11	Total O 11 11	0	0
36	e	1	Total O 1 1	0	0
36	h	1	Total O 1 1	0	0
36	l	1	Total O 1 1	0	0
36	o	5	Total O 5 5	0	0
36	u	5	Total O 5 5	0	0
36	v	3	Total O 3 3	0	0
36	z	1	Total O 1 1	0	0

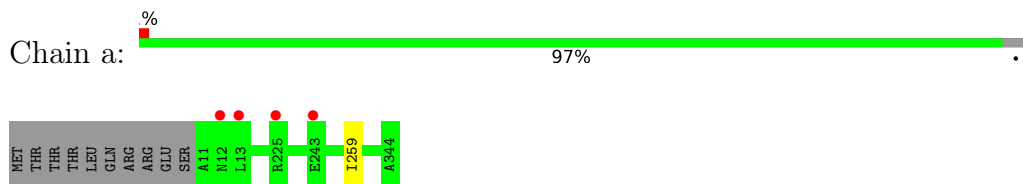
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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.

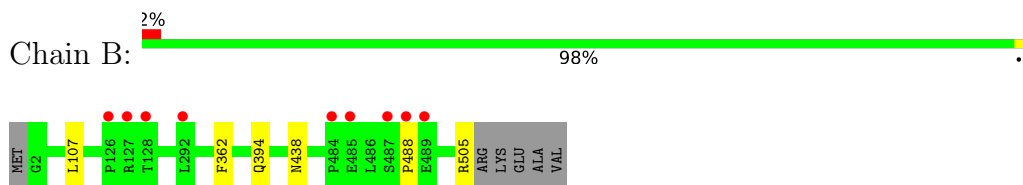
- Molecule 1: Photosystem II protein D1 1



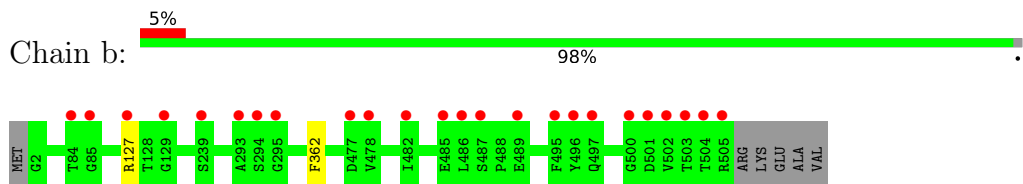
- Molecule 1: Photosystem II protein D1 1



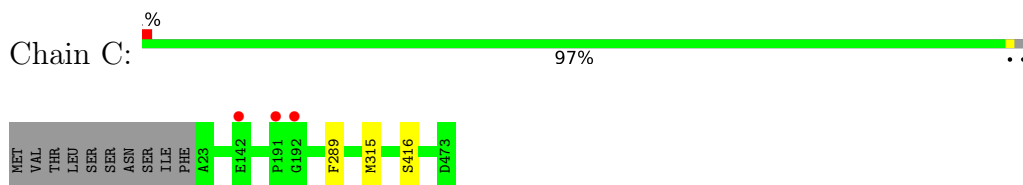
- Molecule 2: Photosystem II CP47 reaction center protein



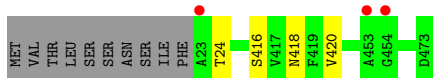
- Molecule 2: Photosystem II CP47 reaction center protein



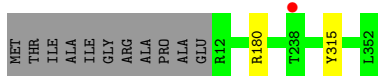
- Molecule 3: Photosystem II CP43 reaction center protein



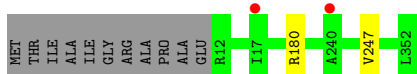
- Molecule 3: Photosystem II CP43 reaction center protein



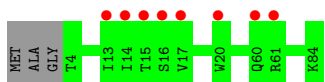
- Molecule 4: Photosystem II D2 protein



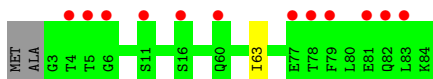
- Molecule 4: Photosystem II D2 protein



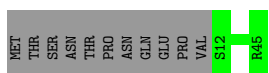
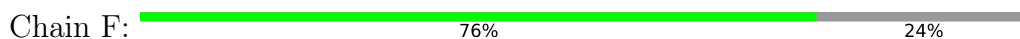
- Molecule 5: Cytochrome b559 subunit alpha



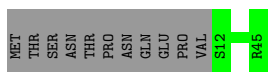
- Molecule 5: Cytochrome b559 subunit alpha



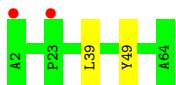
- Molecule 6: Cytochrome b559 subunit beta



- Molecule 6: Cytochrome b559 subunit beta



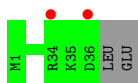
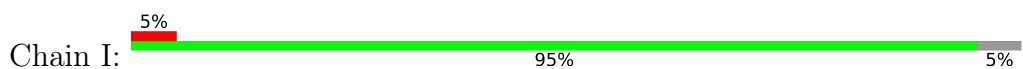
- Molecule 7: Photosystem II reaction center protein H



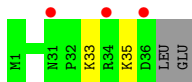
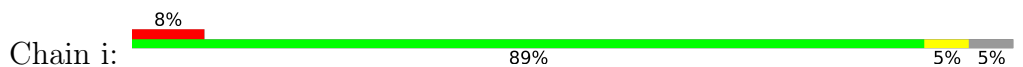
- Molecule 7: Photosystem II reaction center protein H



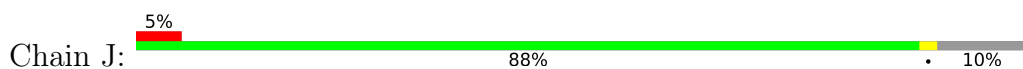
- Molecule 8: Photosystem II reaction center protein I



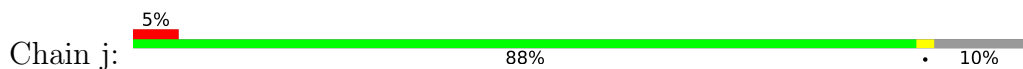
- Molecule 8: Photosystem II reaction center protein I



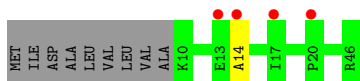
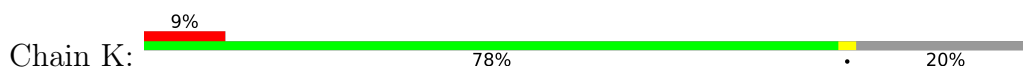
- Molecule 9: Photosystem II reaction center protein J




- Molecule 9: Photosystem II reaction center protein J

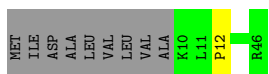


- Molecule 10: Photosystem II reaction center protein K



- Molecule 10: Photosystem II reaction center protein K

Chain k:  78% 20%



- Molecule 11: Photosystem II reaction center protein L

Chain L:  100%

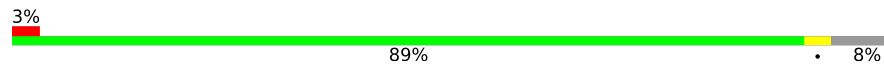
There are no outlier residues recorded for this chain.

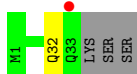
- Molecule 11: Photosystem II reaction center protein L

Chain l:  3% 100%

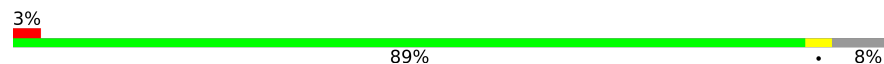


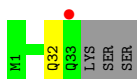
- Molecule 12: Photosystem II reaction center protein M

Chain M:  3% 89% 8%

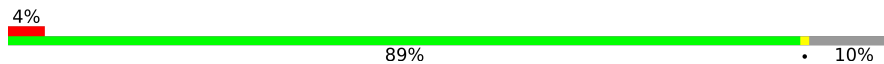


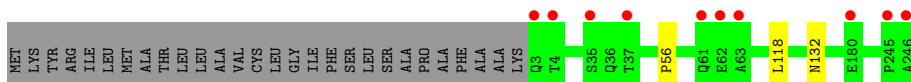
- Molecule 12: Photosystem II reaction center protein M

Chain m:  3% 89% 8%




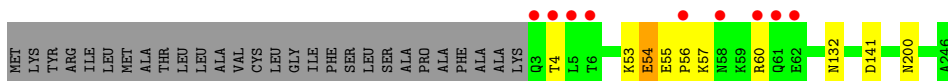
- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain O:  4% 89% 10%



- Molecule 13: Photosystem II manganese-stabilizing polypeptide

Chain o:  3% 86% 10%



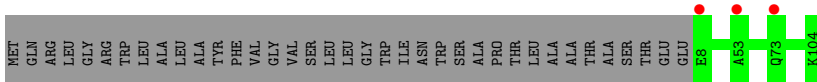
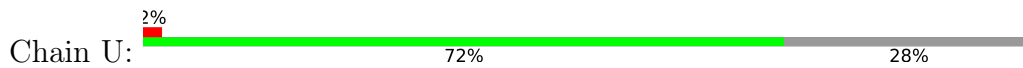
- Molecule 14: Photosystem II reaction center protein T



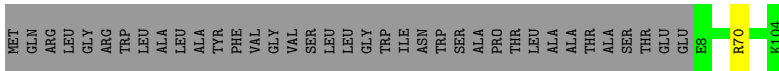
- Molecule 14: Photosystem II reaction center protein T



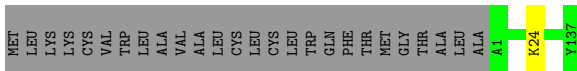
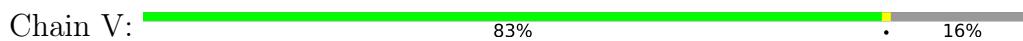
- Molecule 15: Photosystem II 12 kDa extrinsic protein



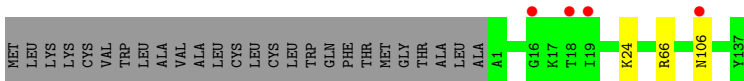
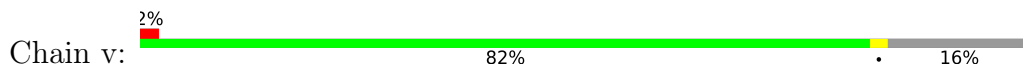
- Molecule 15: Photosystem II 12 kDa extrinsic protein



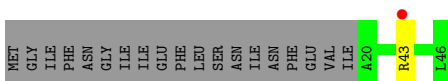
- Molecule 16: Cytochrome c-550



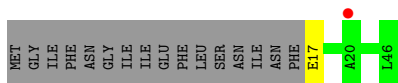
- Molecule 16: Cytochrome c-550



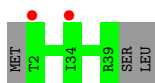
- Molecule 17: Photosystem II reaction center protein Ycf12



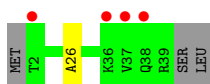
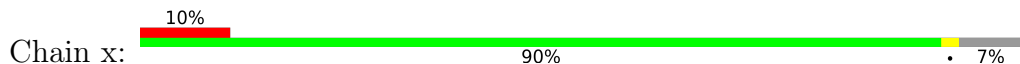
- Molecule 17: Photosystem II reaction center protein Ycf12



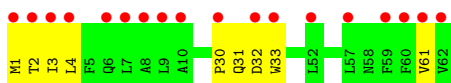
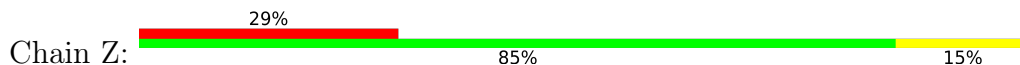
- Molecule 18: Photosystem II reaction center X protein



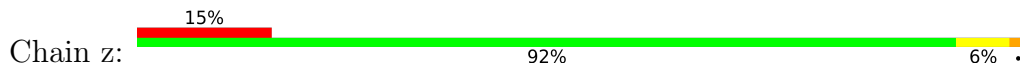
- Molecule 18: Photosystem II reaction center X protein



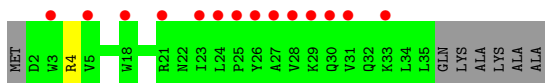
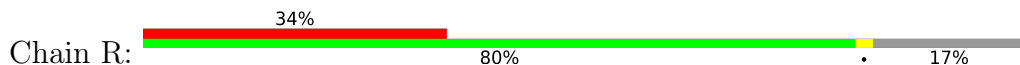
- Molecule 19: Photosystem II reaction center protein Z



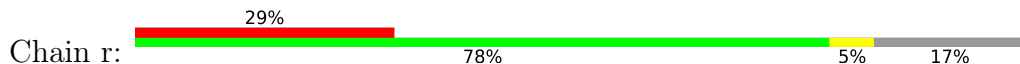
- Molecule 19: Photosystem II reaction center protein Z

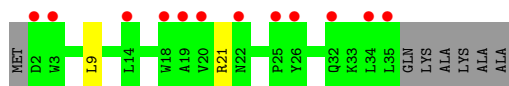


- Molecule 20: Photosystem II protein Y



- Molecule 20: Photosystem II protein Y





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	117.91Å 224.27Å 331.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.57 – 2.80 43.57 – 2.80	Depositor EDS
% Data completeness (in resolution range)	98.0 (43.57-2.80) 87.7 (43.57-2.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.11 (at 2.81Å)	Xtrriage
Refinement program	PHENIX dev_2411	Depositor
R, R_{free}	0.250 , 0.300 0.250 , 0.300	Depositor DCC
R_{free} test set	1792 reflections (0.84%)	wwPDB-VP
Wilson B-factor (Å ²)	48.9	Xtrriage
Anisotropy	0.225	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 50.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	50284	wwPDB-VP
Average B, all atoms (Å ²)	56.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.11% 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: BCT, DGD, CL, CLA, FME, LHG, PL9, SQD, FE2, UNL, OEX, PHO, HEC, BCR, LMG, HEM

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	0.26	0/2707	0.42	0/3692
1	a	0.25	0/2707	0.40	0/3692
2	B	0.26	0/4109	0.41	0/5600
2	b	0.25	0/4111	0.41	0/5603
3	C	0.25	0/3599	0.40	0/4900
3	c	0.26	0/3599	0.43	0/4900
4	D	0.25	0/2811	0.40	0/3830
4	d	0.25	0/2811	0.40	0/3830
5	E	0.26	0/680	0.42	0/928
5	e	0.32	1/684 (0.1%)	0.40	0/933
6	F	0.25	0/284	0.40	0/387
6	f	0.24	0/284	0.36	0/387
7	H	0.27	0/511	0.44	0/697
7	h	0.24	0/511	0.41	0/697
8	I	0.26	0/293	0.40	0/396
8	i	0.56	1/293 (0.3%)	0.54	0/396
9	J	0.24	0/263	0.38	0/356
9	j	0.24	0/263	0.38	0/356
10	K	0.30	0/303	0.50	0/416
10	k	0.43	0/303	0.45	0/416
11	L	0.27	0/311	0.43	0/422
11	l	0.24	0/311	0.38	0/422
12	M	0.24	0/253	0.35	0/346
12	m	0.24	0/253	0.33	0/346
13	O	0.26	0/1905	0.46	0/2583
13	o	0.27	0/1905	0.52	1/2583 (0.0%)
14	T	0.27	0/257	0.36	0/349
14	t	0.26	0/257	0.36	0/349
15	U	0.24	0/785	0.43	0/1064
15	u	0.26	0/785	0.48	0/1064
16	V	0.23	0/1085	0.43	0/1473
16	v	0.23	0/1085	0.44	0/1473

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
17	Y	0.23	0/201	0.41	0/268
17	y	0.35	0/225	0.45	0/301
18	X	0.25	0/284	0.42	0/384
18	x	0.24	0/282	0.39	0/381
19	Z	0.30	0/490	0.51	0/669
19	z	0.35	0/489	0.52	0/669
20	R	0.27	0/279	0.52	0/383
20	r	0.25	0/276	0.51	0/379
All	All	0.26	2/42844 (0.0%)	0.42	1/58320 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
13	o	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	i	33	LYS	CB-CG	-6.06	1.36	1.52
5	e	63	ILE	C-N	5.53	1.44	1.34

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	o	54	GLU	C-N-CA	5.75	136.08	121.70

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
13	o	4	THR	Peptide

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

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

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	332/344 (96%)	324 (98%)	7 (2%)	1 (0%)	41	72
1	a	332/344 (96%)	325 (98%)	6 (2%)	1 (0%)	41	72
2	B	502/510 (98%)	482 (96%)	19 (4%)	1 (0%)	47	78
2	b	503/510 (99%)	484 (96%)	19 (4%)	0	100	100
3	C	449/461 (97%)	431 (96%)	17 (4%)	1 (0%)	47	78
3	c	449/461 (97%)	430 (96%)	17 (4%)	2 (0%)	34	66
4	D	339/352 (96%)	325 (96%)	14 (4%)	0	100	100
4	d	339/352 (96%)	323 (95%)	16 (5%)	0	100	100
5	E	79/84 (94%)	76 (96%)	3 (4%)	0	100	100
5	e	80/84 (95%)	77 (96%)	3 (4%)	0	100	100
6	F	32/45 (71%)	31 (97%)	1 (3%)	0	100	100
6	f	32/45 (71%)	32 (100%)	0	0	100	100
7	H	61/63 (97%)	54 (88%)	7 (12%)	0	100	100
7	h	61/63 (97%)	56 (92%)	5 (8%)	0	100	100
8	I	34/38 (90%)	29 (85%)	5 (15%)	0	100	100
8	i	34/38 (90%)	31 (91%)	3 (9%)	0	100	100
9	J	34/40 (85%)	32 (94%)	2 (6%)	0	100	100
9	j	34/40 (85%)	32 (94%)	1 (3%)	1 (3%)	4	15
10	K	35/46 (76%)	33 (94%)	1 (3%)	1 (3%)	4	15
10	k	35/46 (76%)	32 (91%)	2 (6%)	1 (3%)	4	15
11	L	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
11	l	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
12	M	31/36 (86%)	29 (94%)	1 (3%)	1 (3%)	4	13
12	m	31/36 (86%)	29 (94%)	1 (3%)	1 (3%)	4	13
13	O	242/272 (89%)	230 (95%)	10 (4%)	2 (1%)	19	49

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	o	242/272 (89%)	223 (92%)	15 (6%)	4 (2%)	9	29
14	T	28/32 (88%)	28 (100%)	0	0	100	100
14	t	28/32 (88%)	28 (100%)	0	0	100	100
15	U	95/134 (71%)	91 (96%)	4 (4%)	0	100	100
15	u	95/134 (71%)	88 (93%)	7 (7%)	0	100	100
16	V	135/163 (83%)	129 (96%)	6 (4%)	0	100	100
16	v	135/163 (83%)	125 (93%)	10 (7%)	0	100	100
17	Y	25/46 (54%)	23 (92%)	2 (8%)	0	100	100
17	y	28/46 (61%)	28 (100%)	0	0	100	100
18	X	36/41 (88%)	34 (94%)	2 (6%)	0	100	100
18	x	36/41 (88%)	32 (89%)	3 (8%)	1 (3%)	5	17
19	Z	60/62 (97%)	51 (85%)	1 (2%)	8 (13%)	0	0
19	z	60/62 (97%)	53 (88%)	4 (7%)	3 (5%)	2	6
20	R	32/41 (78%)	29 (91%)	3 (9%)	0	100	100
20	r	32/41 (78%)	30 (94%)	1 (3%)	1 (3%)	4	14
All	All	5237/5694 (92%)	4987 (95%)	220 (4%)	30 (1%)	25	56

5 of 30 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	Z	30	PRO
19	Z	31	GLN
19	Z	33	TRP
19	Z	61	VAL
3	c	24	THR

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	270/280 (96%)	268 (99%)	2 (1%)	84	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	a	270/280 (96%)	270 (100%)	0	100	100
2	B	402/407 (99%)	397 (99%)	5 (1%)	71	92
2	b	402/407 (99%)	400 (100%)	2 (0%)	88	96
3	C	352/362 (97%)	350 (99%)	2 (1%)	86	96
3	c	352/362 (97%)	350 (99%)	2 (1%)	86	96
4	D	276/283 (98%)	274 (99%)	2 (1%)	84	95
4	d	276/283 (98%)	274 (99%)	2 (1%)	84	95
5	E	72/73 (99%)	72 (100%)	0	100	100
5	e	72/73 (99%)	72 (100%)	0	100	100
6	F	28/39 (72%)	28 (100%)	0	100	100
6	f	28/39 (72%)	28 (100%)	0	100	100
7	H	53/53 (100%)	51 (96%)	2 (4%)	33	67
7	h	53/53 (100%)	52 (98%)	1 (2%)	57	85
8	I	32/34 (94%)	32 (100%)	0	100	100
8	i	32/34 (94%)	31 (97%)	1 (3%)	40	74
9	J	24/28 (86%)	23 (96%)	1 (4%)	30	63
9	j	24/28 (86%)	24 (100%)	0	100	100
10	K	30/37 (81%)	30 (100%)	0	100	100
10	k	30/37 (81%)	30 (100%)	0	100	100
11	L	35/35 (100%)	35 (100%)	0	100	100
11	l	35/35 (100%)	35 (100%)	0	100	100
12	M	29/32 (91%)	29 (100%)	0	100	100
12	m	29/32 (91%)	29 (100%)	0	100	100
13	O	207/228 (91%)	206 (100%)	1 (0%)	88	96
13	o	207/228 (91%)	202 (98%)	5 (2%)	49	81
14	T	26/28 (93%)	26 (100%)	0	100	100
14	t	26/28 (93%)	26 (100%)	0	100	100
15	U	84/112 (75%)	84 (100%)	0	100	100
15	u	84/112 (75%)	83 (99%)	1 (1%)	71	92
16	V	117/138 (85%)	116 (99%)	1 (1%)	78	94
16	v	117/138 (85%)	114 (97%)	3 (3%)	46	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	Y	20/37 (54%)	19 (95%)	1 (5%)	24	56
17	y	23/37 (62%)	22 (96%)	1 (4%)	29	62
18	X	31/34 (91%)	31 (100%)	0	100	100
18	x	30/34 (88%)	30 (100%)	0	100	100
19	Z	52/52 (100%)	51 (98%)	1 (2%)	57	85
19	z	52/52 (100%)	49 (94%)	3 (6%)	20	50
20	R	29/33 (88%)	28 (97%)	1 (3%)	37	71
20	r	28/33 (85%)	27 (96%)	1 (4%)	35	69
All	All	4339/4650 (93%)	4298 (99%)	41 (1%)	78	94

5 of 41 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
13	o	60	ARG
16	v	106	ASN
13	o	132	ASN
15	u	70	ARG
19	z	27	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 29 such sidechains are listed below:

Mol	Chain	Res	Type
16	V	106	ASN
13	o	236	GLN
1	a	335	ASN
13	o	46	GLN
1	a	261	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

6 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
8	FME	I	1	8	8,9,10	0.95	0	7,9,11	1.08	0
12	FME	m	1	12	8,9,10	0.94	0	7,9,11	0.89	0
8	FME	i	1	8	8,9,10	0.94	0	7,9,11	0.92	0
12	FME	M	1	12	8,9,10	0.90	0	7,9,11	0.86	0
14	FME	T	1	14	8,9,10	0.95	0	7,9,11	0.92	0
14	FME	t	1	14	8,9,10	0.94	0	7,9,11	0.86	0

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
8	FME	I	1	8	-	1/7/9/11	-
12	FME	m	1	12	-	2/7/9/11	-
8	FME	i	1	8	-	2/7/9/11	-
12	FME	M	1	12	-	3/7/9/11	-
14	FME	T	1	14	-	3/7/9/11	-
14	FME	t	1	14	-	2/7/9/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 13 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
12	M	1	FME	CB-CA-N-CN
14	T	1	FME	O-C-CA-CB
8	i	1	FME	O-C-CA-CB
12	M	1	FME	N-CA-CB-CG
14	T	1	FME	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 180 ligands modelled in this entry, 6 are monoatomic and 23 are unknown - leaving 151 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
23	LMG	A	603	-	51,51,55	0.95	2 (3%)	59,59,63	1.40	7 (11%)
25	CLA	B	602	36	65,73,73	1.48	5 (7%)	76,113,113	1.33	8 (10%)
32	LHG	L	101	-	48,48,48	0.62	1 (2%)	51,54,54	1.26	6 (11%)
33	DGD	c	518	-	63,63,67	0.86	2 (3%)	77,77,81	1.41	11 (14%)
33	DGD	C	518	-	63,63,67	0.92	4 (6%)	77,77,81	1.44	9 (11%)
32	LHG	d	407	-	48,48,48	0.61	1 (2%)	51,54,54	1.25	6 (11%)
29	SQD	A	614	-	39,39,54	0.88	2 (5%)	41,41,65	1.19	3 (7%)
25	CLA	A	606	-	65,73,73	1.47	6 (9%)	76,113,113	1.25	9 (11%)
25	CLA	C	503	-	65,73,73	1.47	5 (7%)	76,113,113	1.33	8 (10%)
25	CLA	b	610	-	65,73,73	1.47	5 (7%)	76,113,113	1.45	10 (13%)
23	LMG	c	519	-	51,51,55	0.71	0	59,59,63	1.32	5 (8%)
25	CLA	A	609	-	54,62,73	1.63	5 (9%)	62,99,113	1.40	8 (12%)
25	CLA	B	603	-	65,73,73	1.49	5 (7%)	76,113,113	1.29	8 (10%)
25	CLA	B	609	-	65,73,73	1.47	6 (9%)	76,113,113	1.27	8 (10%)
32	LHG	D	407	-	48,48,48	0.61	1 (2%)	51,54,54	1.25	6 (11%)
25	CLA	C	512	3	65,73,73	1.47	5 (7%)	76,113,113	1.38	8 (10%)
23	LMG	b	627	-	51,51,55	0.78	0	59,59,63	1.27	4 (6%)
25	CLA	A	607	36	65,73,73	1.48	5 (7%)	76,113,113	1.30	9 (11%)
32	LHG	e	101	-	41,41,48	0.68	1 (2%)	44,47,54	1.32	7 (15%)
25	CLA	c	511	3	65,73,73	1.46	6 (9%)	76,113,113	1.36	8 (10%)
27	BCR	a	712	-	41,41,41	1.10	2 (4%)	56,56,56	1.18	6 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
25	CLA	d	403	-	65,73,73	1.46	5 (7%)	76,113,113	1.34	8 (10%)
23	LMG	f	101	-	51,51,55	0.71	0	59,59,63	1.35	7 (11%)
26	PHO	a	709	-	51,69,69	1.00	3 (5%)	47,99,99	1.12	6 (12%)
25	CLA	c	502	-	65,73,73	1.46	5 (7%)	76,113,113	1.32	8 (10%)
29	SQD	A	612	-	51,52,54	0.96	5 (9%)	60,63,65	1.67	12 (20%)
29	SQD	f	102	-	40,41,54	1.09	5 (12%)	49,52,65	1.60	9 (18%)
32	LHG	B	625	-	48,48,48	0.62	2 (4%)	51,54,54	1.27	6 (11%)
27	BCR	B	619	-	41,41,41	1.09	2 (4%)	56,56,56	1.17	5 (8%)
25	CLA	B	617	-	65,73,73	1.47	6 (9%)	76,113,113	1.37	8 (10%)
23	LMG	a	701	-	51,51,55	0.80	0	59,59,63	1.32	7 (11%)
29	SQD	I	102	-	39,39,54	0.86	2 (5%)	41,41,65	1.22	2 (4%)
27	BCR	t	103	-	41,41,41	1.09	2 (4%)	56,56,56	1.24	6 (10%)
27	BCR	H	102	-	41,41,41	1.07	2 (4%)	56,56,56	1.31	7 (12%)
28	PL9	d	405	-	55,55,55	0.94	3 (5%)	68,69,69	1.51	11 (16%)
25	CLA	D	403	-	65,73,73	1.50	6 (9%)	76,113,113	1.26	7 (9%)
23	LMG	M	101	-	51,51,55	0.74	0	59,59,63	1.32	5 (8%)
25	CLA	B	613	-	65,73,73	1.45	5 (7%)	76,113,113	1.38	8 (10%)
25	CLA	C	508	36	65,73,73	1.48	5 (7%)	76,113,113	1.37	7 (9%)
25	CLA	C	504	-	65,73,73	1.47	6 (9%)	76,113,113	1.36	8 (10%)
34	HEM	e	102	5,6	41,50,50	1.52	5 (12%)	45,82,82	1.48	7 (15%)
25	CLA	b	611	-	65,73,73	1.49	6 (9%)	76,113,113	1.29	8 (10%)
33	DGD	C	519	-	63,63,67	0.88	1 (1%)	77,77,81	1.41	9 (11%)
25	CLA	c	504	36	58,66,73	1.54	5 (8%)	67,104,113	1.41	8 (11%)
29	SQD	b	601	-	53,54,54	0.94	3 (5%)	62,65,65	1.72	10 (16%)
25	CLA	c	507	36	65,73,73	1.48	5 (7%)	76,113,113	1.37	7 (9%)
28	PL9	A	611	-	55,55,55	1.04	4 (7%)	68,69,69	1.51	11 (16%)
33	DGD	c	517	-	63,63,67	0.95	4 (6%)	77,77,81	1.41	9 (11%)
23	LMG	D	409	-	51,51,55	0.72	0	59,59,63	1.30	5 (8%)
27	BCR	B	618	-	41,41,41	1.10	2 (4%)	56,56,56	1.26	8 (14%)
25	CLA	B	607	-	65,73,73	1.49	5 (7%)	76,113,113	1.31	7 (9%)
23	LMG	C	521	-	51,51,55	0.79	1 (1%)	59,59,63	1.37	6 (10%)
25	CLA	B	604	-	65,73,73	1.47	6 (9%)	76,113,113	1.31	8 (10%)
27	BCR	K	101	-	41,41,41	1.09	2 (4%)	56,56,56	1.20	6 (10%)
25	CLA	c	505	-	65,73,73	1.50	6 (9%)	76,113,113	1.26	7 (9%)
27	BCR	A	610	-	41,41,41	1.08	2 (4%)	56,56,56	1.18	5 (8%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
27	BCR	c	514	-	41,41,41	1.13	2 (4%)	56,56,56	1.23	7 (12%)
27	BCR	b	624	-	41,41,41	1.10	2 (4%)	56,56,56	1.19	5 (8%)
32	LHG	d	406	-	48,48,48	0.61	0	51,54,54	1.28	6 (11%)
27	BCR	b	602	-	41,41,41	1.10	2 (4%)	56,56,56	1.22	6 (10%)
29	SQD	B	626	-	53,54,54	0.95	5 (9%)	62,65,65	1.71	10 (16%)
27	BCR	b	625	-	41,41,41	1.11	2 (4%)	56,56,56	1.21	8 (14%)
32	LHG	D	408	-	48,48,48	0.60	0	51,54,54	1.24	6 (11%)
27	BCR	B	620	-	41,41,41	1.11	2 (4%)	56,56,56	1.19	4 (7%)
25	CLA	C	509	-	65,73,73	1.47	5 (7%)	76,113,113	1.36	8 (10%)
21	OEX	A	601	36,3,1	0,15,15	-	-	-	-	-
25	CLA	D	404	-	65,73,73	1.49	5 (7%)	76,113,113	1.31	8 (10%)
29	SQD	D	410	-	42,43,54	1.06	5 (11%)	51,54,65	1.63	10 (19%)
25	CLA	a	711	-	65,73,73	1.49	5 (7%)	76,113,113	1.30	8 (10%)
25	CLA	B	616	-	65,73,73	1.50	5 (7%)	76,113,113	1.34	7 (9%)
26	PHO	D	401	-	51,69,69	0.99	3 (5%)	47,99,99	1.15	5 (10%)
23	LMG	C	501	-	51,51,55	0.73	0	59,59,63	1.31	5 (8%)
25	CLA	B	608	36	65,73,73	1.47	5 (7%)	76,113,113	1.26	8 (10%)
25	CLA	c	503	-	65,73,73	1.47	6 (9%)	76,113,113	1.37	8 (10%)
25	CLA	C	511	-	65,73,73	1.46	5 (7%)	76,113,113	1.35	9 (11%)
33	DGD	h	102	-	63,63,67	0.89	0	77,77,81	1.29	7 (9%)
33	DGD	H	103	-	63,63,67	0.87	1 (1%)	77,77,81	1.34	7 (9%)
27	BCR	Y	101	-	41,41,41	1.11	2 (4%)	56,56,56	1.16	5 (8%)
33	DGD	C	517	-	63,63,67	0.84	2 (3%)	77,77,81	1.41	9 (11%)
25	CLA	C	505	36	65,73,73	1.46	5 (7%)	76,113,113	1.29	8 (10%)
25	CLA	b	613	36	65,73,73	1.47	5 (7%)	76,113,113	1.25	8 (10%)
31	BCT	A	615	22	2,3,3	1.25	0	2,3,3	2.64	2 (100%)
25	CLA	b	608	-	65,73,73	1.49	5 (7%)	76,113,113	1.24	7 (9%)
25	CLA	b	618	-	65,73,73	1.47	6 (9%)	76,113,113	1.33	8 (10%)
25	CLA	C	510	-	65,73,73	1.47	5 (7%)	76,113,113	1.32	7 (9%)
21	OEX	a	702	36,3,1	0,15,15	-	-	-	-	-
25	CLA	B	615	-	65,73,73	1.49	5 (7%)	76,113,113	1.31	8 (10%)
35	HEC	V	201	16	32,50,50	2.15	5 (15%)	24,82,82	1.55	4 (16%)
27	BCR	c	515	-	41,41,41	1.11	2 (4%)	56,56,56	1.21	5 (8%)
25	CLA	D	402	36	65,73,73	1.46	5 (7%)	76,113,113	1.32	8 (10%)
31	BCT	a	706	22	2,3,3	1.25	0	2,3,3	2.70	2 (100%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
25	CLA	b	612	-	65,73,73	1.48	5 (7%)	76,113,113	1.31	8 (10%)
25	CLA	c	512	-	65,73,73	1.45	6 (9%)	76,113,113	1.38	7 (9%)
23	LMG	a	715	-	51,51,55	0.75	0	59,59,63	1.32	6 (10%)
25	CLA	c	508	-	65,73,73	1.48	5 (7%)	76,113,113	1.31	9 (11%)
23	LMG	C	520	-	51,51,55	0.75	1 (1%)	59,59,63	1.31	5 (8%)
25	CLA	a	707	-	65,73,73	1.47	6 (9%)	76,113,113	1.29	8 (10%)
35	HEC	v	201	16	32,50,50	2.13	5 (15%)	24,82,82	1.53	4 (16%)
25	CLA	B	606	-	65,73,73	1.49	5 (7%)	76,113,113	1.27	7 (9%)
25	CLA	C	514	-	65,73,73	1.44	5 (7%)	76,113,113	1.38	8 (10%)
25	CLA	c	506	-	65,73,73	1.48	5 (7%)	76,113,113	1.29	8 (10%)
25	CLA	a	708	36	65,73,73	1.46	5 (7%)	76,113,113	1.29	7 (9%)
28	PL9	a	713	-	55,55,55	0.98	3 (5%)	68,69,69	1.51	12 (17%)
25	CLA	C	506	-	65,73,73	1.49	6 (9%)	76,113,113	1.33	7 (9%)
27	BCR	k	102	-	41,41,41	1.09	2 (4%)	56,56,56	1.19	6 (10%)
25	CLA	b	622	-	47,55,73	1.70	5 (10%)	54,91,113	1.55	8 (14%)
27	BCR	k	101	-	41,41,41	1.11	2 (4%)	56,56,56	1.13	2 (3%)
33	DGD	c	516	-	63,63,67	0.87	2 (3%)	77,77,81	1.41	9 (11%)
32	LHG	E	101	-	48,48,48	0.67	1 (2%)	51,54,54	1.22	6 (11%)
25	CLA	c	501	-	65,73,73	1.46	5 (7%)	76,113,113	1.31	8 (10%)
25	CLA	B	610	-	65,73,73	1.52	5 (7%)	76,113,113	1.31	8 (10%)
23	LMG	d	408	-	39,39,55	0.53	1 (2%)	41,41,63	1.29	4 (9%)
25	CLA	b	607	36	65,73,73	1.47	5 (7%)	76,113,113	1.36	9 (11%)
26	PHO	a	710	-	51,69,69	0.98	3 (5%)	47,99,99	1.17	4 (8%)
32	LHG	a	720	-	38,38,48	0.68	0	41,44,54	1.17	3 (7%)
25	CLA	b	619	-	65,73,73	1.45	5 (7%)	76,113,113	1.39	9 (11%)
34	HEM	E	102	5,6	41,50,50	1.52	6 (14%)	45,82,82	1.31	4 (8%)
25	CLA	C	502	-	65,73,73	1.47	5 (7%)	76,113,113	1.32	7 (9%)
27	BCR	h	101	-	41,41,41	1.06	2 (4%)	56,56,56	1.24	6 (10%)
27	BCR	C	516	-	41,41,41	1.12	2 (4%)	56,56,56	1.21	5 (8%)
25	CLA	B	605	-	65,73,73	1.47	5 (7%)	76,113,113	1.44	10 (13%)
25	CLA	c	513	-	65,73,73	1.44	5 (7%)	76,113,113	1.37	8 (10%)
25	CLA	c	510	-	65,73,73	1.44	6 (9%)	76,113,113	1.34	7 (9%)
25	CLA	C	513	-	65,73,73	1.47	5 (7%)	76,113,113	1.41	7 (9%)
32	LHG	b	629	-	48,48,48	0.62	1 (2%)	51,54,54	1.24	6 (11%)
25	CLA	a	719	36	65,73,73	1.48	5 (7%)	76,113,113	1.28	8 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
25	CLA	B	614	-	65,73,73	1.47	5 (7%)	76,113,113	1.34	8 (10%)
25	CLA	C	507	-	65,73,73	1.51	5 (7%)	76,113,113	1.27	8 (10%)
25	CLA	b	620	-	65,73,73	1.48	5 (7%)	76,113,113	1.26	8 (10%)
29	SQD	B	623	-	46,47,54	1.01	3 (6%)	55,58,65	1.82	12 (21%)
28	PL9	D	406	-	55,55,55	0.98	3 (5%)	68,69,69	1.53	13 (19%)
27	BCR	b	623	-	41,41,41	1.14	2 (4%)	56,56,56	1.23	7 (12%)
25	CLA	b	615	-	65,73,73	1.50	5 (7%)	76,113,113	1.32	9 (11%)
25	CLA	d	402	-	65,73,73	1.49	6 (9%)	76,113,113	1.28	8 (10%)
25	CLA	b	614	-	65,73,73	1.47	5 (7%)	76,113,113	1.30	8 (10%)
25	CLA	c	509	-	65,73,73	1.47	5 (7%)	76,113,113	1.37	8 (10%)
26	PHO	A	608	-	51,69,69	0.99	2 (3%)	47,99,99	1.11	5 (10%)
23	LMG	B	621	-	51,51,55	0.73	0	59,59,63	1.37	7 (11%)
25	CLA	b	616	36	65,73,73	1.47	5 (7%)	76,113,113	1.27	7 (9%)
27	BCR	C	515	-	41,41,41	1.10	2 (4%)	56,56,56	1.22	8 (14%)
29	SQD	a	714	-	53,54,54	0.95	5 (9%)	62,65,65	1.63	12 (19%)
23	LMG	b	626	-	51,51,55	0.81	2 (3%)	59,59,63	1.53	9 (15%)
25	CLA	b	609	-	65,73,73	1.49	6 (9%)	76,113,113	1.25	7 (9%)
27	BCR	D	405	-	41,41,41	1.17	2 (4%)	56,56,56	1.23	7 (12%)
25	CLA	b	617	-	65,73,73	1.44	5 (7%)	76,113,113	1.39	9 (11%)
25	CLA	b	621	-	65,73,73	1.47	5 (7%)	76,113,113	1.35	9 (11%)
27	BCR	d	404	-	41,41,41	1.13	2 (4%)	56,56,56	1.22	8 (14%)
25	CLA	B	611	36	65,73,73	1.47	5 (7%)	76,113,113	1.30	9 (11%)
23	LMG	b	628	-	8,8,55	0.15	0	7,7,63	0.92	0
25	CLA	B	612	-	65,73,73	1.45	5 (7%)	76,113,113	1.37	9 (11%)
23	LMG	c	520	-	51,51,55	0.82	1 (1%)	59,59,63	1.36	6 (10%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
23	LMG	A	603	-	-	24/46/66/70	0/1/1/1
25	CLA	B	602	36	1/1/15/20	15/37/115/115	-
32	LHG	L	101	-	-	18/53/53/53	-
33	DGD	c	518	-	-	11/51/91/95	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
33	DGD	C	518	-	-	24/51/91/95	0/2/2/2
32	LHG	d	407	-	-	14/53/53/53	-
29	SQD	A	614	-	-	21/41/41/69	-
25	CLA	A	606	-	1/1/15/20	2/37/115/115	-
25	CLA	C	503	-	1/1/15/20	17/37/115/115	-
25	CLA	b	610	-	1/1/15/20	11/37/115/115	-
23	LMG	c	519	-	-	23/46/66/70	0/1/1/1
25	CLA	A	609	-	1/1/12/20	0/24/102/115	-
25	CLA	B	603	-	-	8/37/115/115	-
25	CLA	B	609	-	1/1/15/20	12/37/115/115	-
32	LHG	D	407	-	-	18/53/53/53	-
25	CLA	C	512	3	1/1/15/20	14/37/115/115	-
25	CLA	A	607	36	1/1/15/20	7/37/115/115	-
23	LMG	b	627	-	-	18/46/66/70	0/1/1/1
32	LHG	e	101	-	-	22/46/46/53	-
25	CLA	c	511	3	1/1/15/20	10/37/115/115	-
27	BCR	a	712	-	-	5/29/63/63	0/2/2/2
25	CLA	d	403	-	-	9/37/115/115	-
23	LMG	f	101	-	-	16/46/66/70	0/1/1/1
26	PHO	a	709	-	-	5/37/103/103	0/5/6/6
25	CLA	c	502	-	1/1/15/20	13/37/115/115	-
29	SQD	A	612	-	-	18/47/67/69	0/1/1/1
29	SQD	f	102	-	-	11/36/56/69	0/1/1/1
32	LHG	B	625	-	-	19/53/53/53	-
27	BCR	B	619	-	-	5/29/63/63	0/2/2/2
25	CLA	B	617	-	1/1/15/20	11/37/115/115	-
23	LMG	a	701	-	-	26/46/66/70	0/1/1/1
29	SQD	I	102	-	-	25/41/41/69	-
27	BCR	t	103	-	-	8/29/63/63	0/2/2/2
27	BCR	H	102	-	-	7/29/63/63	0/2/2/2
28	PL9	d	405	-	-	8/53/73/73	0/1/1/1
25	CLA	D	403	-	-	10/37/115/115	-
25	CLA	B	613	-	1/1/15/20	10/37/115/115	-
23	LMG	M	101	-	-	13/46/66/70	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	C	508	36	1/1/15/20	9/37/115/115	-
25	CLA	C	504	-	1/1/15/20	13/37/115/115	-
34	HEM	e	102	5,6	-	6/12/54/54	-
25	CLA	b	611	-	-	11/37/115/115	-
33	DGD	C	519	-	-	16/51/91/95	0/2/2/2
25	CLA	c	504	36	1/1/13/20	5/29/107/115	-
29	SQD	b	601	-	-	25/49/69/69	0/1/1/1
25	CLA	c	507	36	1/1/15/20	8/37/115/115	-
28	PL9	A	611	-	-	8/53/73/73	0/1/1/1
33	DGD	c	517	-	-	19/51/91/95	0/2/2/2
23	LMG	D	409	-	-	19/46/66/70	0/1/1/1
27	BCR	B	618	-	-	4/29/63/63	0/2/2/2
25	CLA	B	607	-	1/1/15/20	16/37/115/115	-
25	CLA	B	604	-	1/1/15/20	18/37/115/115	-
23	LMG	C	521	-	-	18/46/66/70	0/1/1/1
27	BCR	K	101	-	-	4/29/63/63	0/2/2/2
25	CLA	c	505	-	-	7/37/115/115	-
27	BCR	A	610	-	-	4/29/63/63	0/2/2/2
27	BCR	c	514	-	-	6/29/63/63	0/2/2/2
27	BCR	b	624	-	-	7/29/63/63	0/2/2/2
32	LHG	d	406	-	-	16/53/53/53	-
27	BCR	b	602	-	-	6/29/63/63	0/2/2/2
29	SQD	B	626	-	-	23/49/69/69	0/1/1/1
27	BCR	b	625	-	-	7/29/63/63	0/2/2/2
32	LHG	D	408	-	-	25/53/53/53	-
27	BCR	B	620	-	-	6/29/63/63	0/2/2/2
25	CLA	C	509	-	1/1/15/20	7/37/115/115	-
25	CLA	D	404	-	-	17/37/115/115	-
29	SQD	D	410	-	-	16/38/58/69	0/1/1/1
25	CLA	a	711	-	1/1/15/20	11/37/115/115	-
25	CLA	B	616	-	1/1/15/20	11/37/115/115	-
26	PHO	D	401	-	-	6/37/103/103	0/5/6/6
25	CLA	c	503	-	1/1/15/20	9/37/115/115	-
25	CLA	B	608	36	1/1/15/20	11/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
23	LMG	C	501	-	-	22/46/66/70	0/1/1/1
25	CLA	C	511	-	1/1/15/20	11/37/115/115	-
33	DGD	h	102	-	-	16/51/91/95	0/2/2/2
33	DGD	H	103	-	-	10/51/91/95	0/2/2/2
27	BCR	Y	101	-	-	6/29/63/63	0/2/2/2
33	DGD	C	517	-	-	17/51/91/95	0/2/2/2
25	CLA	C	505	36	1/1/15/20	11/37/115/115	-
25	CLA	b	613	36	1/1/15/20	9/37/115/115	-
25	CLA	b	608	-	1/1/15/20	9/37/115/115	-
25	CLA	b	618	-	1/1/15/20	12/37/115/115	-
25	CLA	C	510	-	1/1/15/20	17/37/115/115	-
25	CLA	B	615	-	1/1/15/20	16/37/115/115	-
35	HEC	V	201	16	-	1/10/54/54	-
27	BCR	c	515	-	-	6/29/63/63	0/2/2/2
25	CLA	D	402	36	-	6/37/115/115	-
25	CLA	b	612	-	1/1/15/20	12/37/115/115	-
25	CLA	c	512	-	1/1/15/20	15/37/115/115	-
23	LMG	a	715	-	-	25/46/66/70	0/1/1/1
25	CLA	c	508	-	-	14/37/115/115	-
23	LMG	C	520	-	-	25/46/66/70	0/1/1/1
25	CLA	a	707	-	1/1/15/20	6/37/115/115	-
35	HEC	v	201	16	-	0/10/54/54	-
25	CLA	B	606	-	1/1/15/20	15/37/115/115	-
25	CLA	C	514	-	1/1/15/20	7/37/115/115	-
25	CLA	c	506	-	-	14/37/115/115	-
25	CLA	a	708	36	1/1/15/20	8/37/115/115	-
28	PL9	a	713	-	-	13/53/73/73	0/1/1/1
25	CLA	C	506	-	-	7/37/115/115	-
27	BCR	k	102	-	-	4/29/63/63	0/2/2/2
25	CLA	b	622	-	1/1/11/20	2/16/94/115	-
27	BCR	k	101	-	-	8/29/63/63	0/2/2/2
33	DGD	c	516	-	-	15/51/91/95	0/2/2/2
32	LHG	E	101	-	-	28/53/53/53	-
25	CLA	c	501	-	1/1/15/20	8/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	B	610	-	-	11/37/115/115	-
23	LMG	d	408	-	-	19/41/41/70	-
25	CLA	b	607	36	1/1/15/20	16/37/115/115	-
26	PHO	a	710	-	-	7/37/103/103	0/5/6/6
32	LHG	a	720	-	-	18/43/43/53	-
25	CLA	b	619	-	1/1/15/20	10/37/115/115	-
34	HEM	E	102	5,6	-	3/12/54/54	-
25	CLA	C	502	-	1/1/15/20	8/37/115/115	-
27	BCR	h	101	-	-	6/29/63/63	0/2/2/2
27	BCR	C	516	-	-	6/29/63/63	0/2/2/2
25	CLA	B	605	-	1/1/15/20	10/37/115/115	-
25	CLA	c	513	-	1/1/15/20	17/37/115/115	-
25	CLA	c	510	-	1/1/15/20	16/37/115/115	-
25	CLA	C	513	-	1/1/15/20	12/37/115/115	-
32	LHG	b	629	-	-	20/53/53/53	-
25	CLA	a	719	36	1/1/15/20	9/37/115/115	-
25	CLA	B	614	-	1/1/15/20	9/37/115/115	-
25	CLA	C	507	-	-	14/37/115/115	-
25	CLA	b	620	-	1/1/15/20	12/37/115/115	-
29	SQD	B	623	-	-	23/42/62/69	0/1/1/1
28	PL9	D	406	-	-	9/53/73/73	0/1/1/1
27	BCR	b	623	-	-	3/29/63/63	0/2/2/2
25	CLA	b	615	-	-	11/37/115/115	-
25	CLA	d	402	-	-	9/37/115/115	-
25	CLA	b	614	-	1/1/15/20	3/37/115/115	-
25	CLA	c	509	-	1/1/15/20	5/37/115/115	-
26	PHO	A	608	-	-	9/37/103/103	0/5/6/6
23	LMG	B	621	-	-	19/46/66/70	0/1/1/1
25	CLA	b	616	36	1/1/15/20	5/37/115/115	-
27	BCR	C	515	-	-	4/29/63/63	0/2/2/2
29	SQD	a	714	-	-	16/49/69/69	0/1/1/1
23	LMG	b	626	-	-	16/46/66/70	0/1/1/1
25	CLA	b	609	-	1/1/15/20	17/37/115/115	-
27	BCR	D	405	-	-	8/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	CLA	b	617	-	1/1/15/20	16/37/115/115	-
25	CLA	b	621	-	1/1/15/20	9/37/115/115	-
27	BCR	d	404	-	-	7/29/63/63	0/2/2/2
25	CLA	B	611	36	1/1/15/20	10/37/115/115	-
23	LMG	b	628	-	-	3/6/6/70	-
25	CLA	B	612	-	1/1/15/20	5/37/115/115	-
23	LMG	c	520	-	-	16/46/66/70	0/1/1/1

The worst 5 of 523 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	B	610	CLA	C4B-NB	7.76	1.42	1.35
25	C	507	CLA	C4B-NB	7.73	1.42	1.35
25	c	505	CLA	C4B-NB	7.72	1.42	1.35
25	D	403	CLA	C4B-NB	7.70	1.42	1.35
25	b	615	CLA	C4B-NB	7.68	1.42	1.35

The worst 5 of 1076 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	B	605	CLA	C4A-NA-C1A	6.61	109.68	106.71
25	b	610	CLA	C4A-NA-C1A	6.40	109.58	106.71
25	C	508	CLA	C4A-NA-C1A	6.36	109.57	106.71
25	C	513	CLA	C4A-NA-C1A	6.29	109.53	106.71
25	b	619	CLA	C4A-NA-C1A	6.21	109.50	106.71

5 of 56 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
25	A	606	CLA	ND
25	A	607	CLA	ND
25	A	609	CLA	ND
25	B	602	CLA	ND
25	B	604	CLA	ND

5 of 1743 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
23	B	621	LMG	C2-C1-O1-C7
23	B	621	LMG	O6-C1-O1-C7

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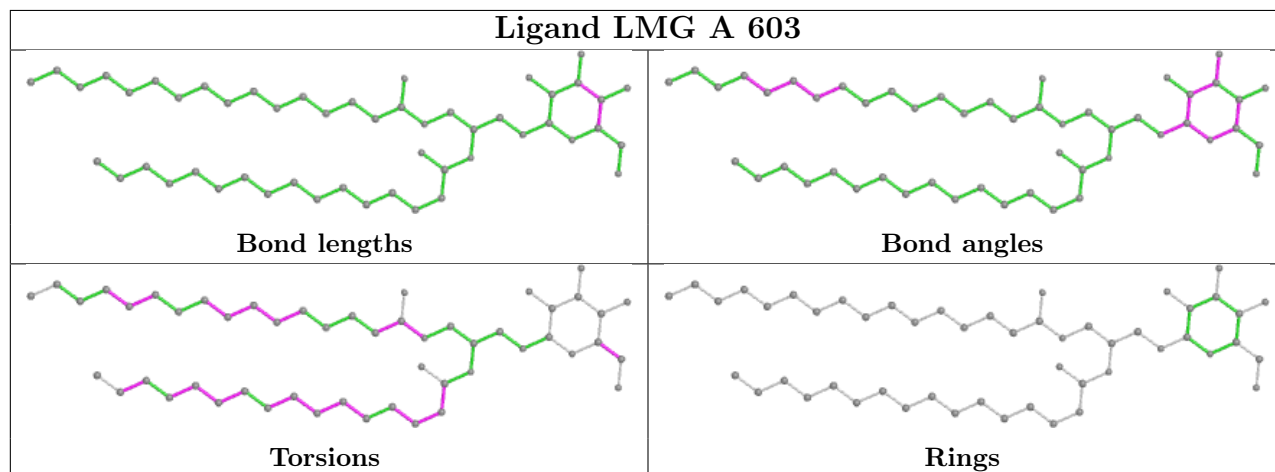
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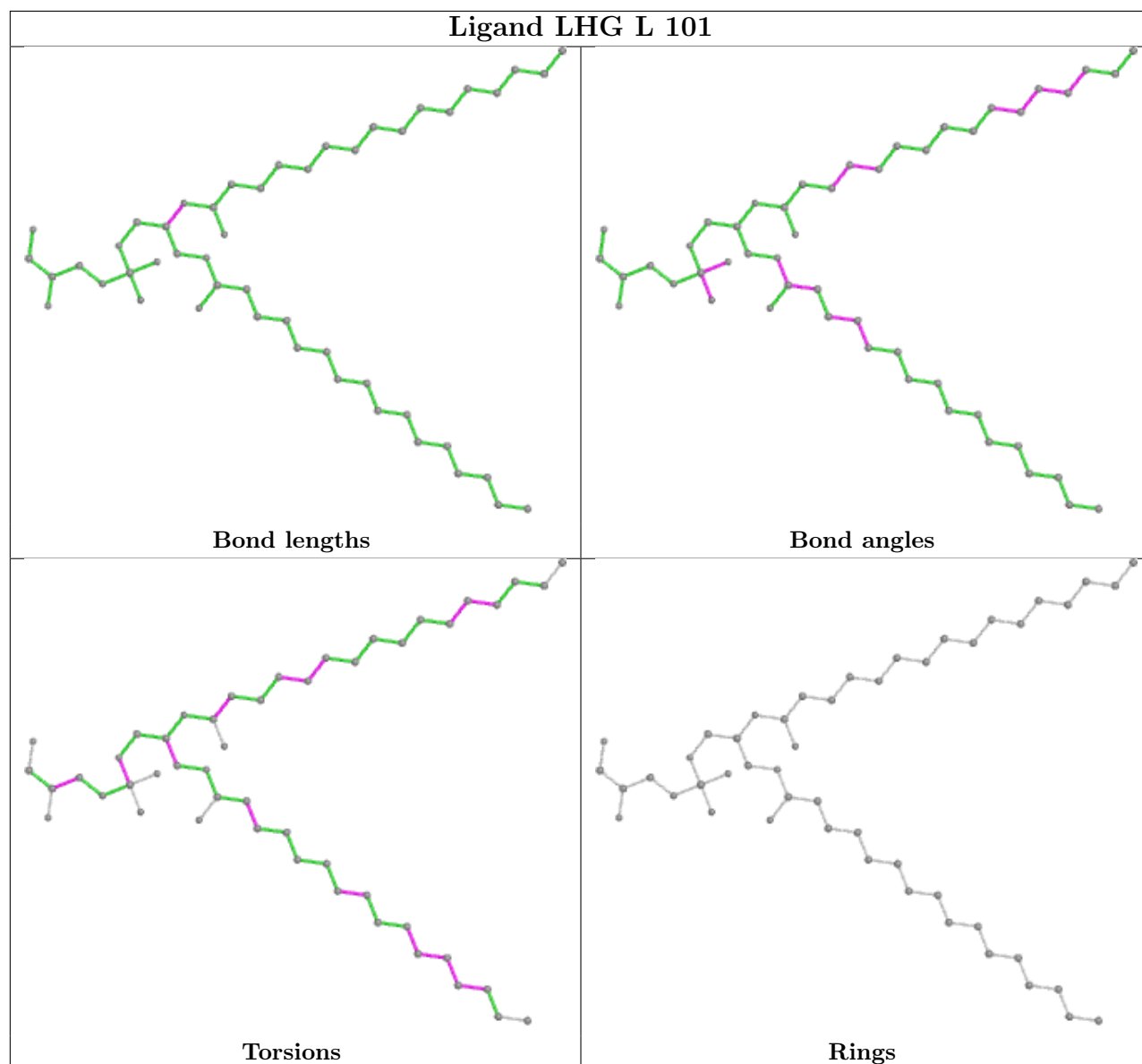
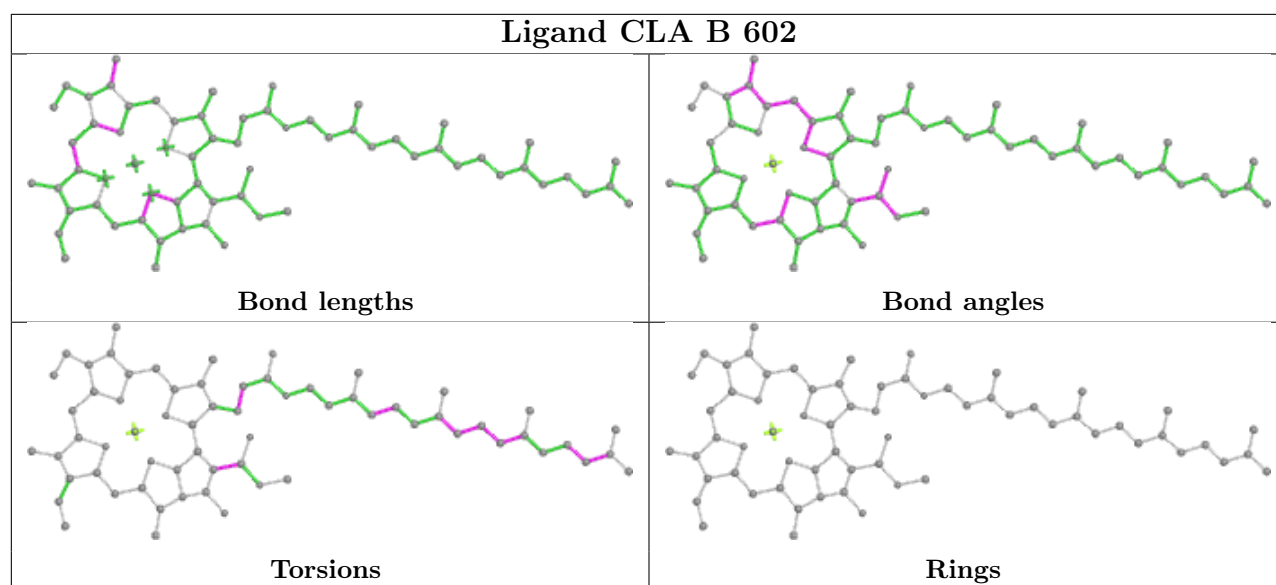
Mol	Chain	Res	Type	Atoms
23	C	501	LMG	C2-C1-O1-C7
23	C	501	LMG	O6-C1-O1-C7
23	C	521	LMG	O6-C1-O1-C7

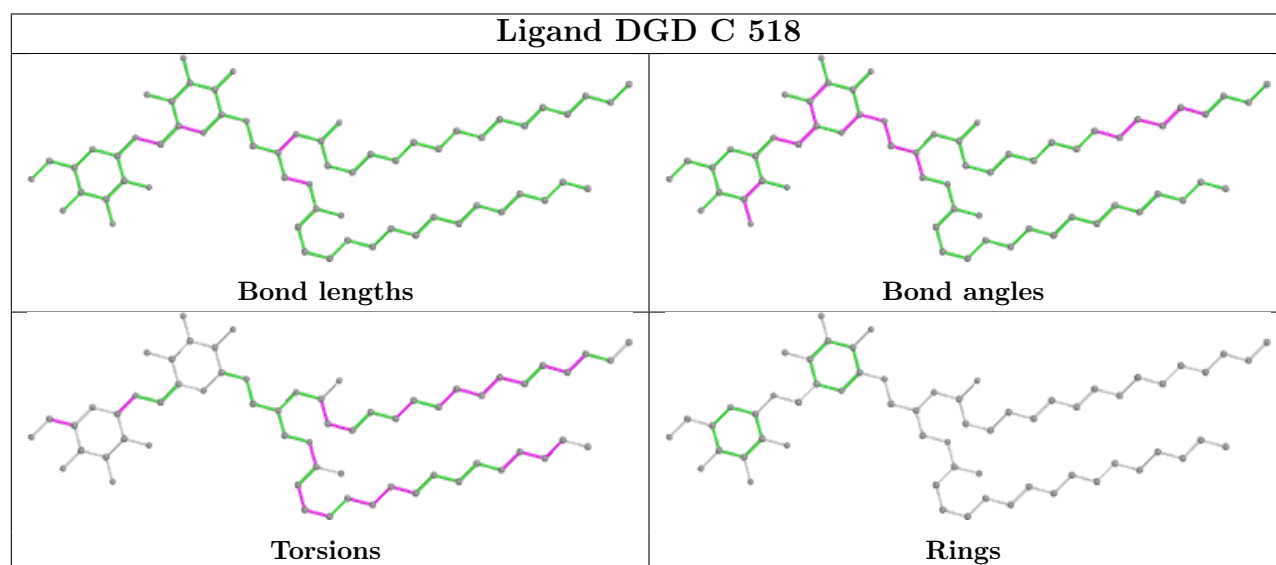
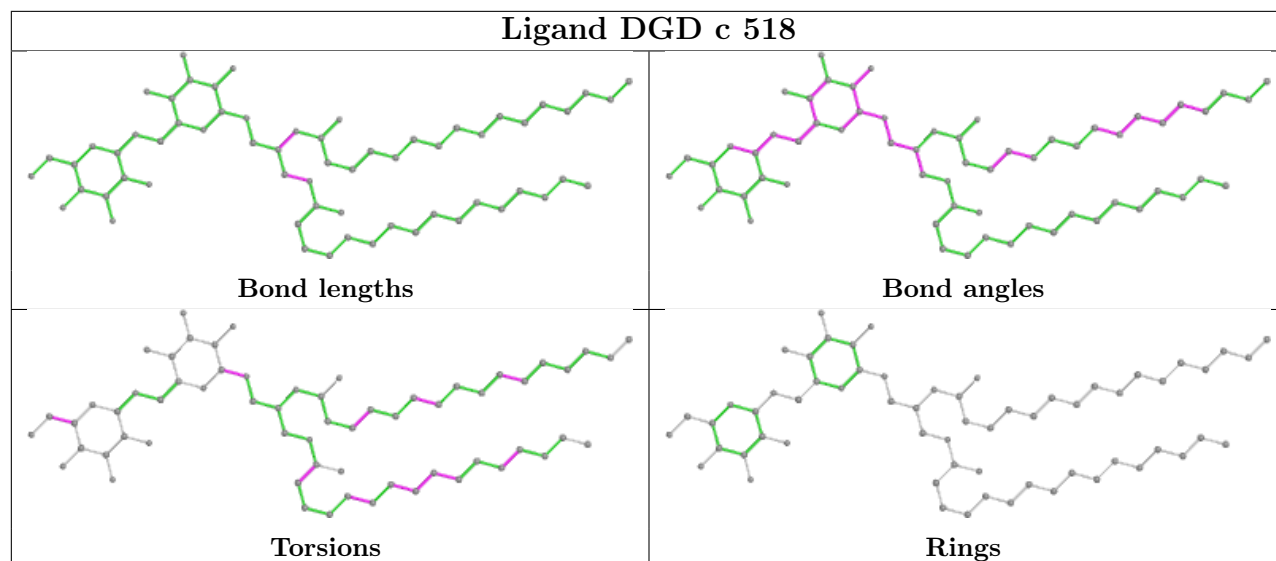
There are no ring outliers.

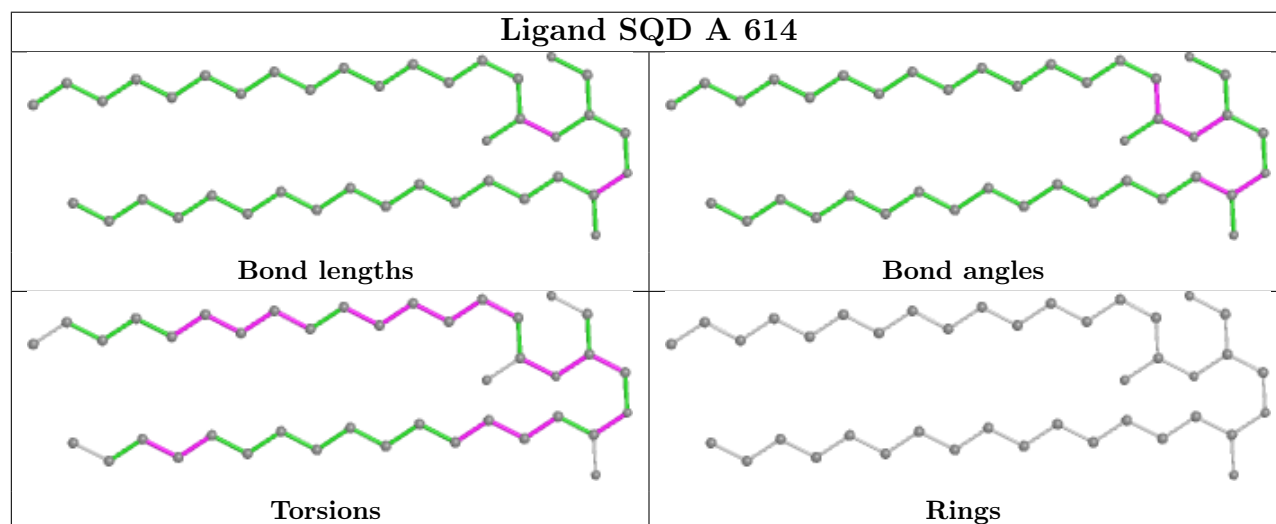
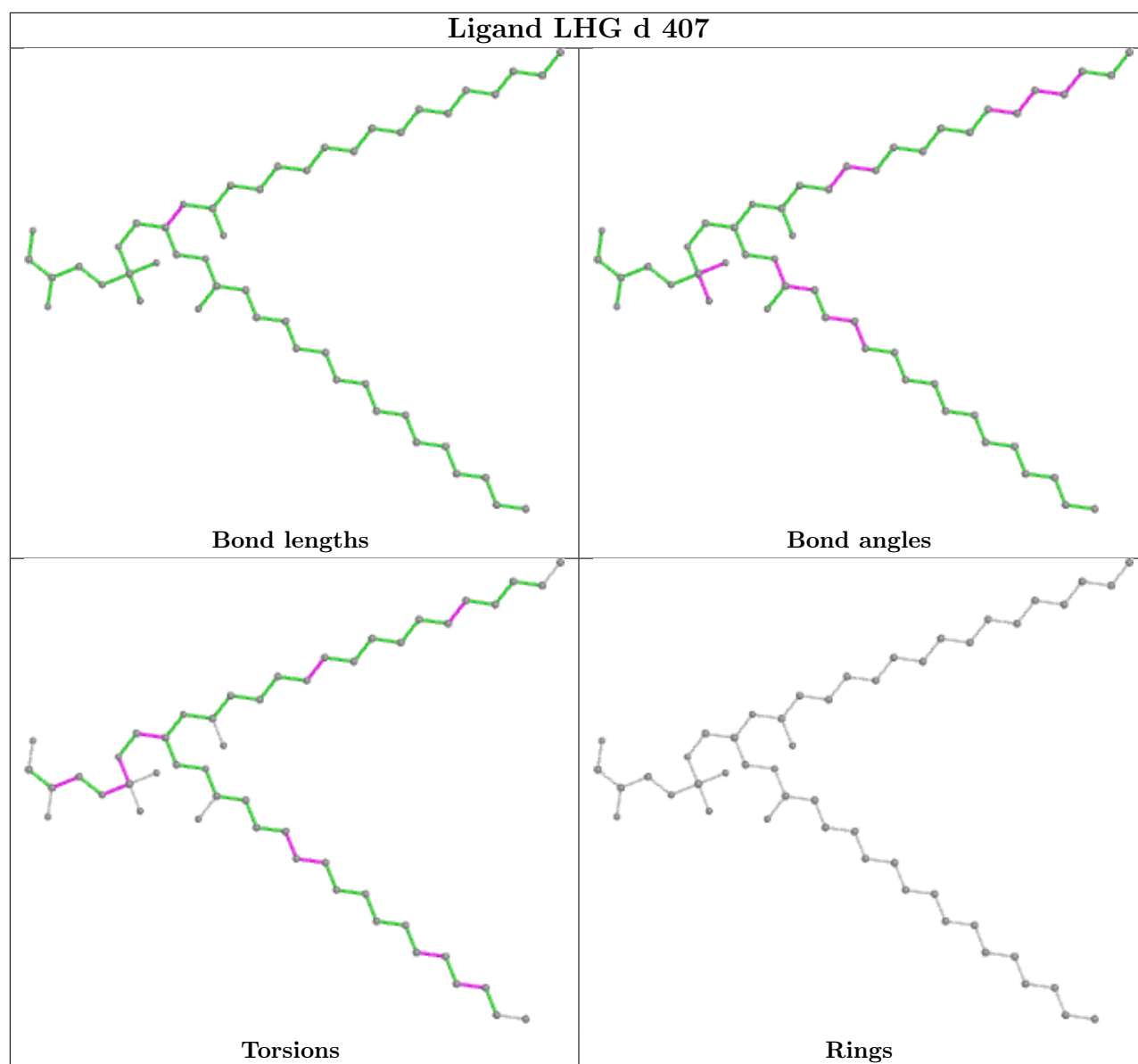
No monomer is involved in short contacts.

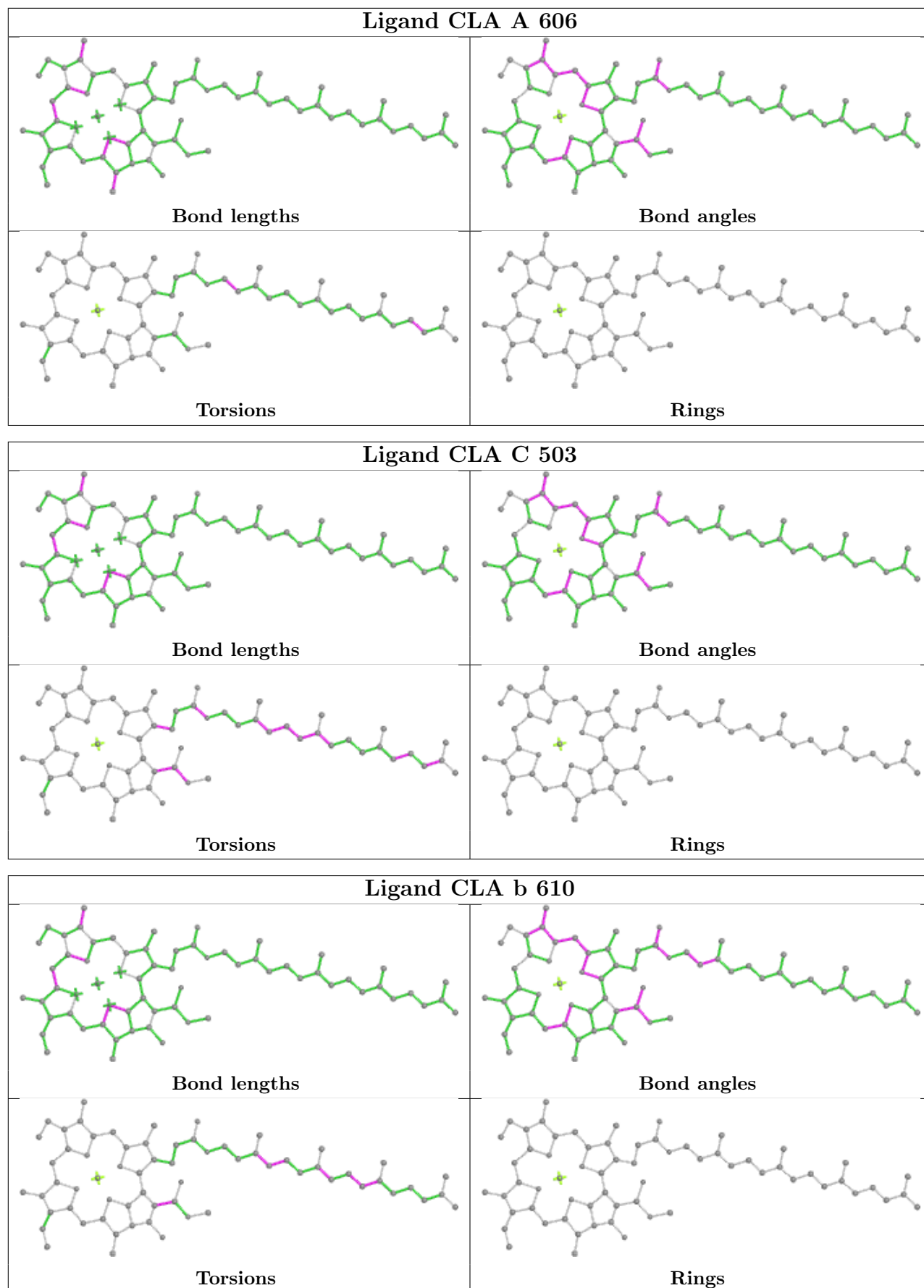
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

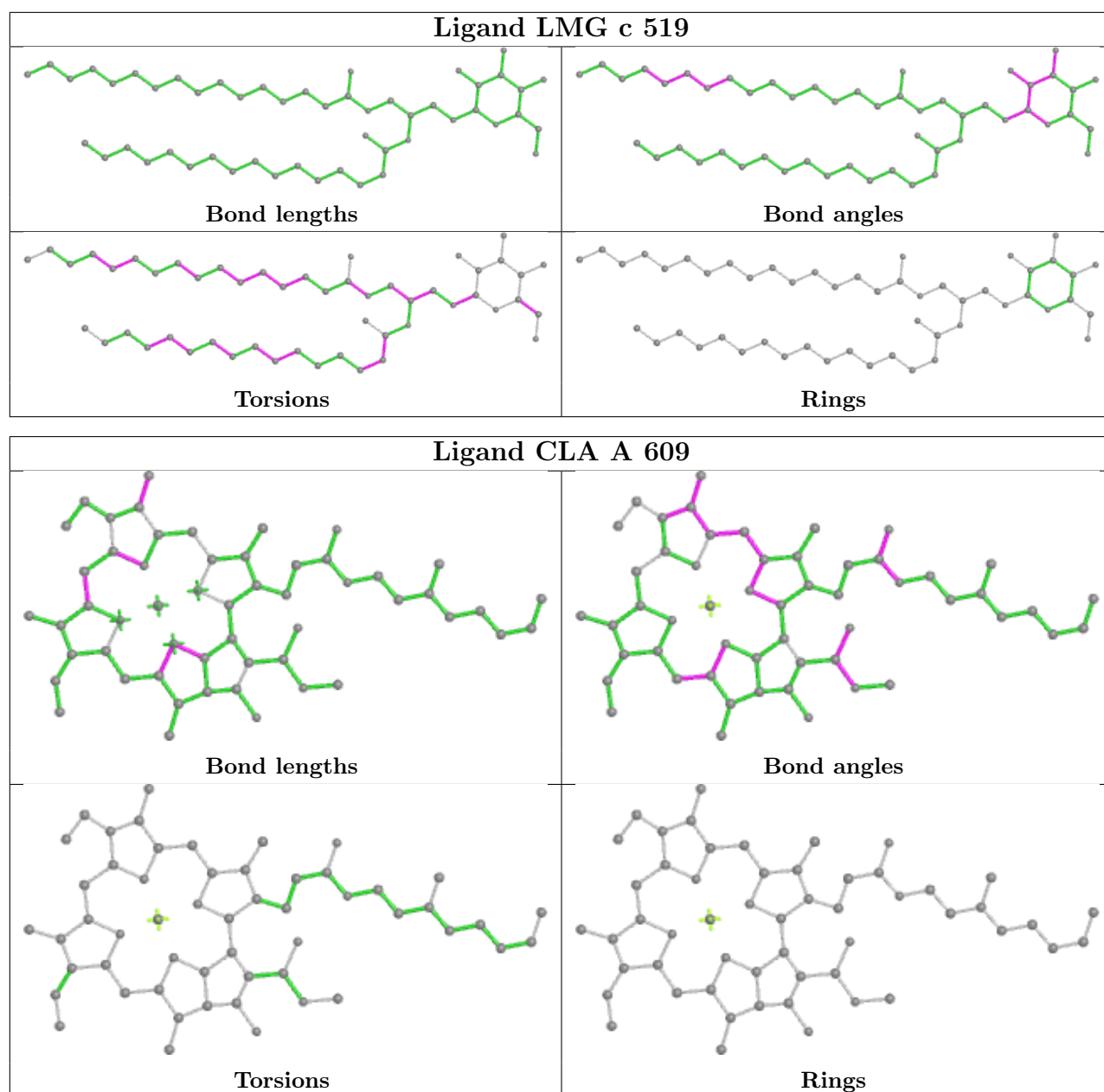


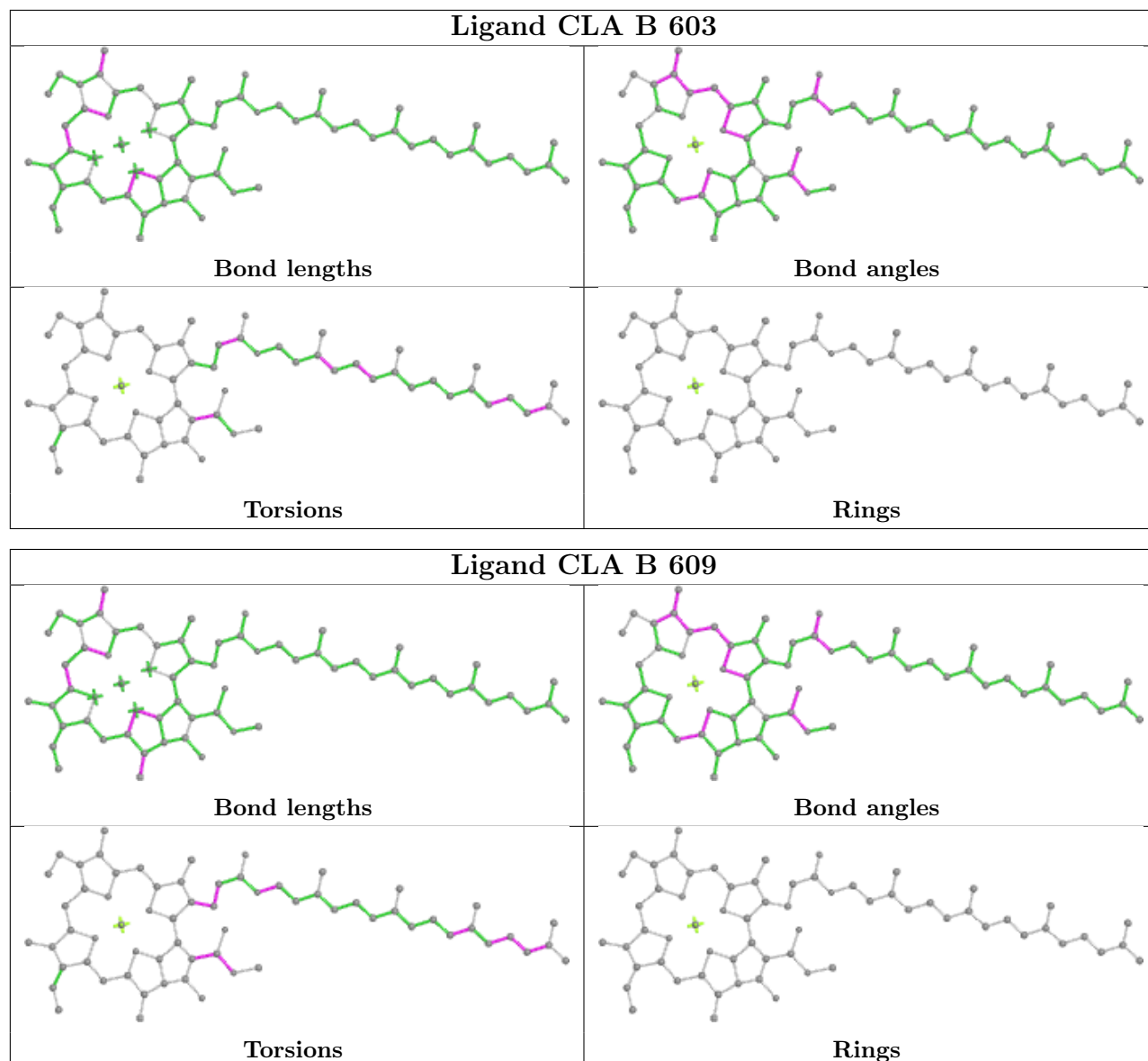


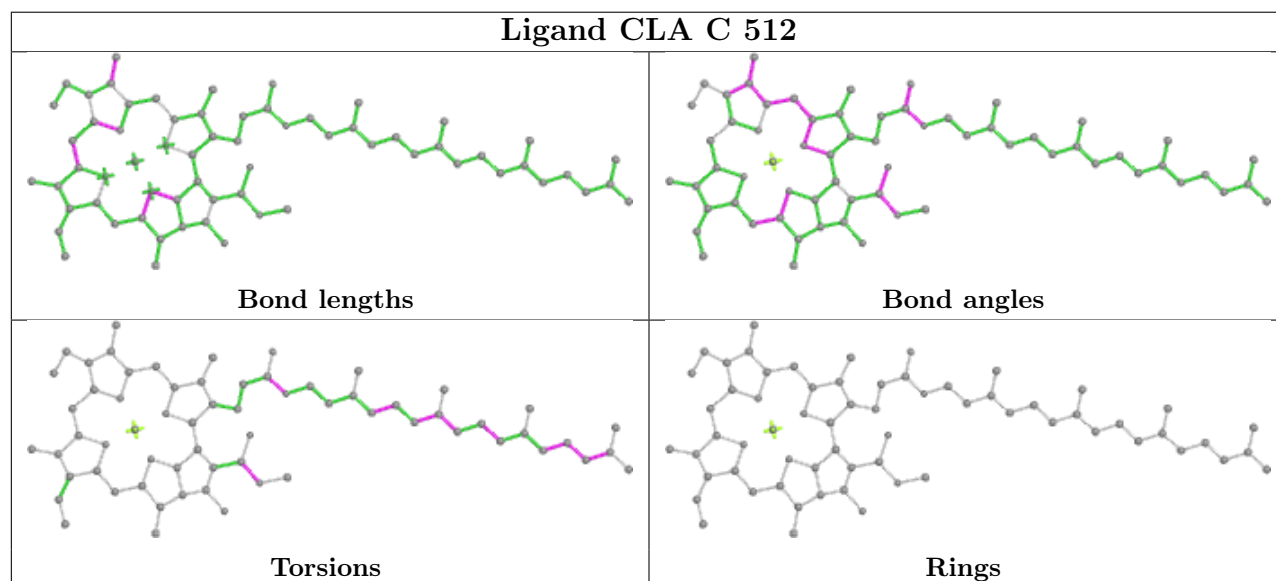
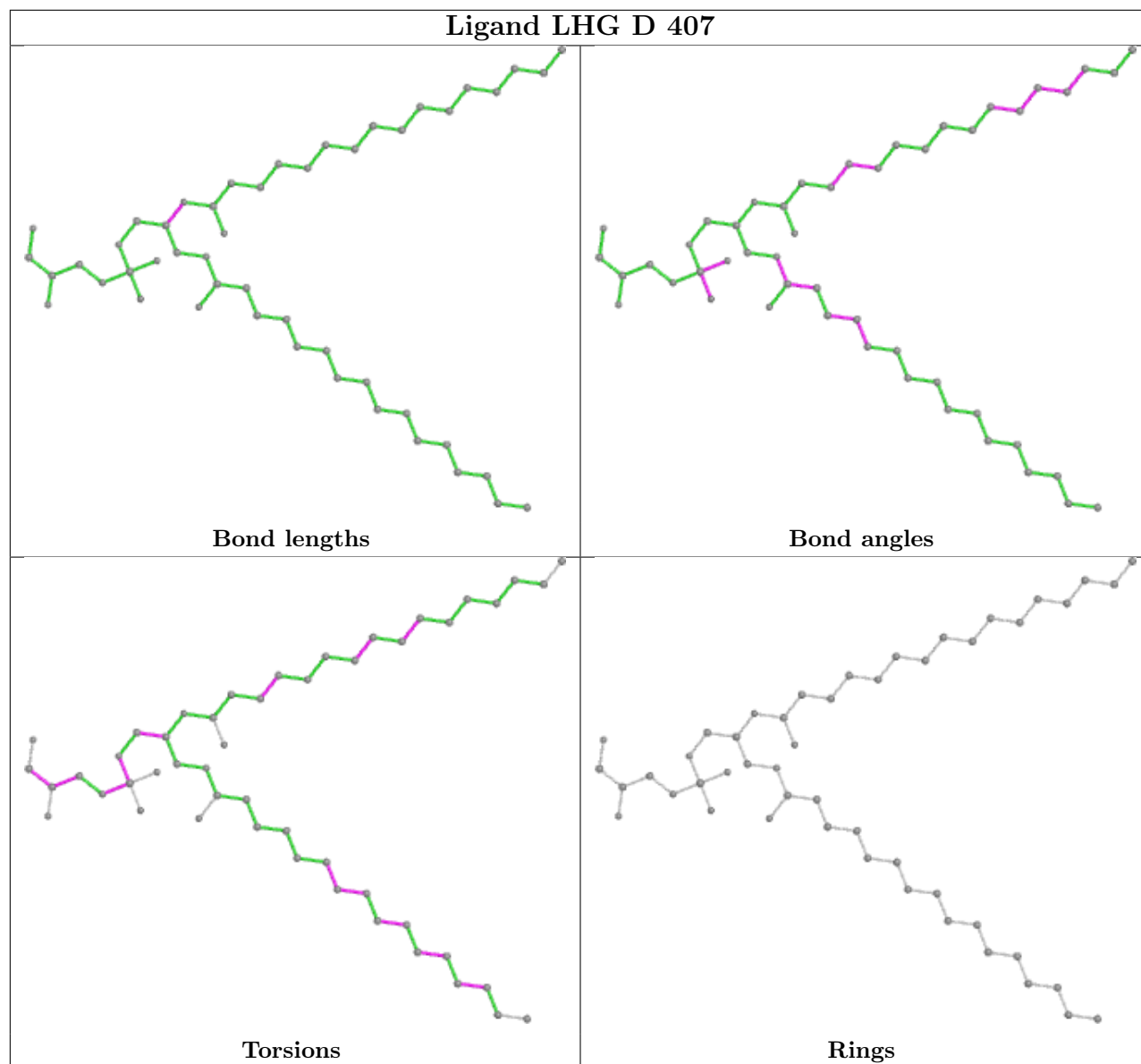


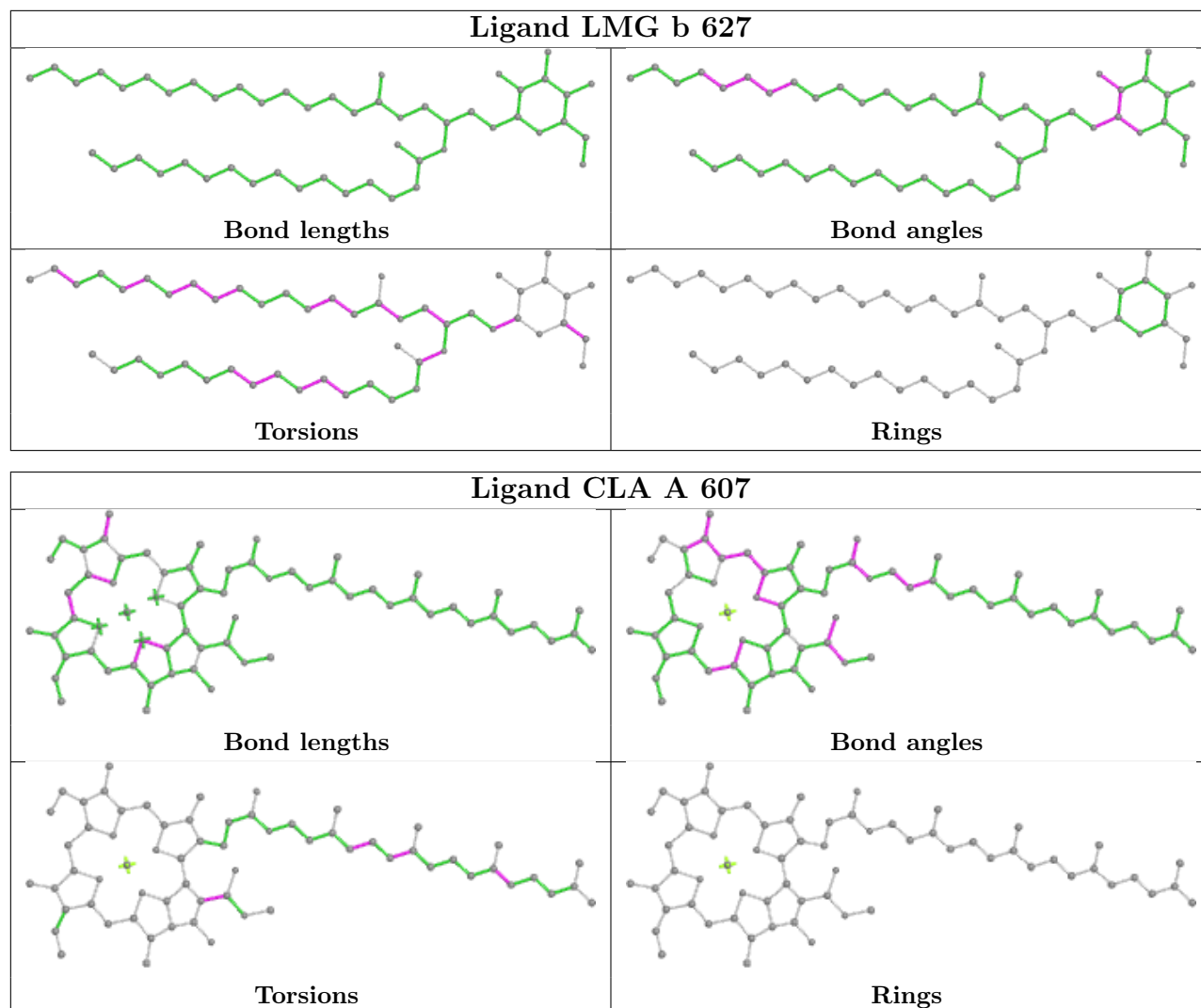


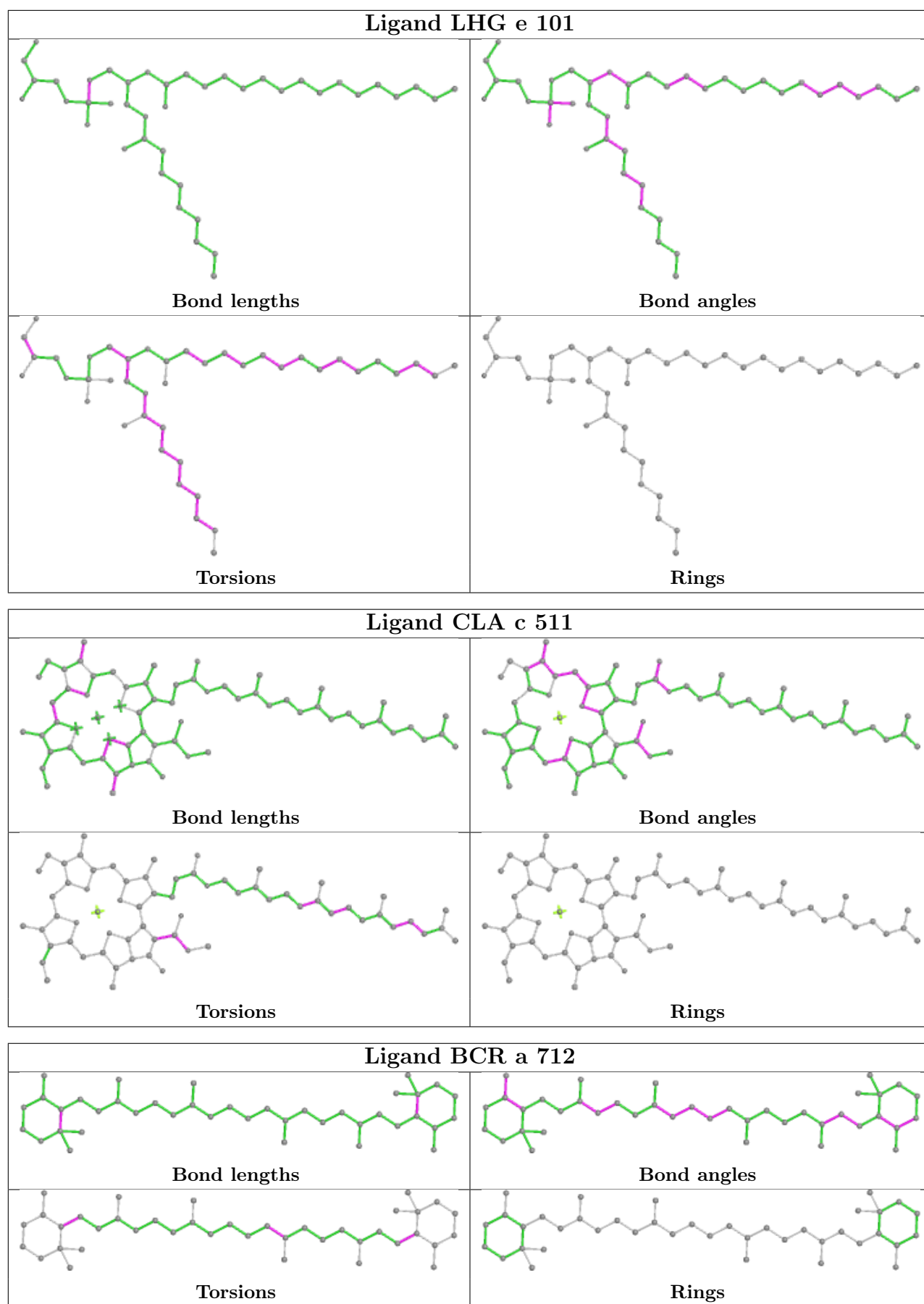


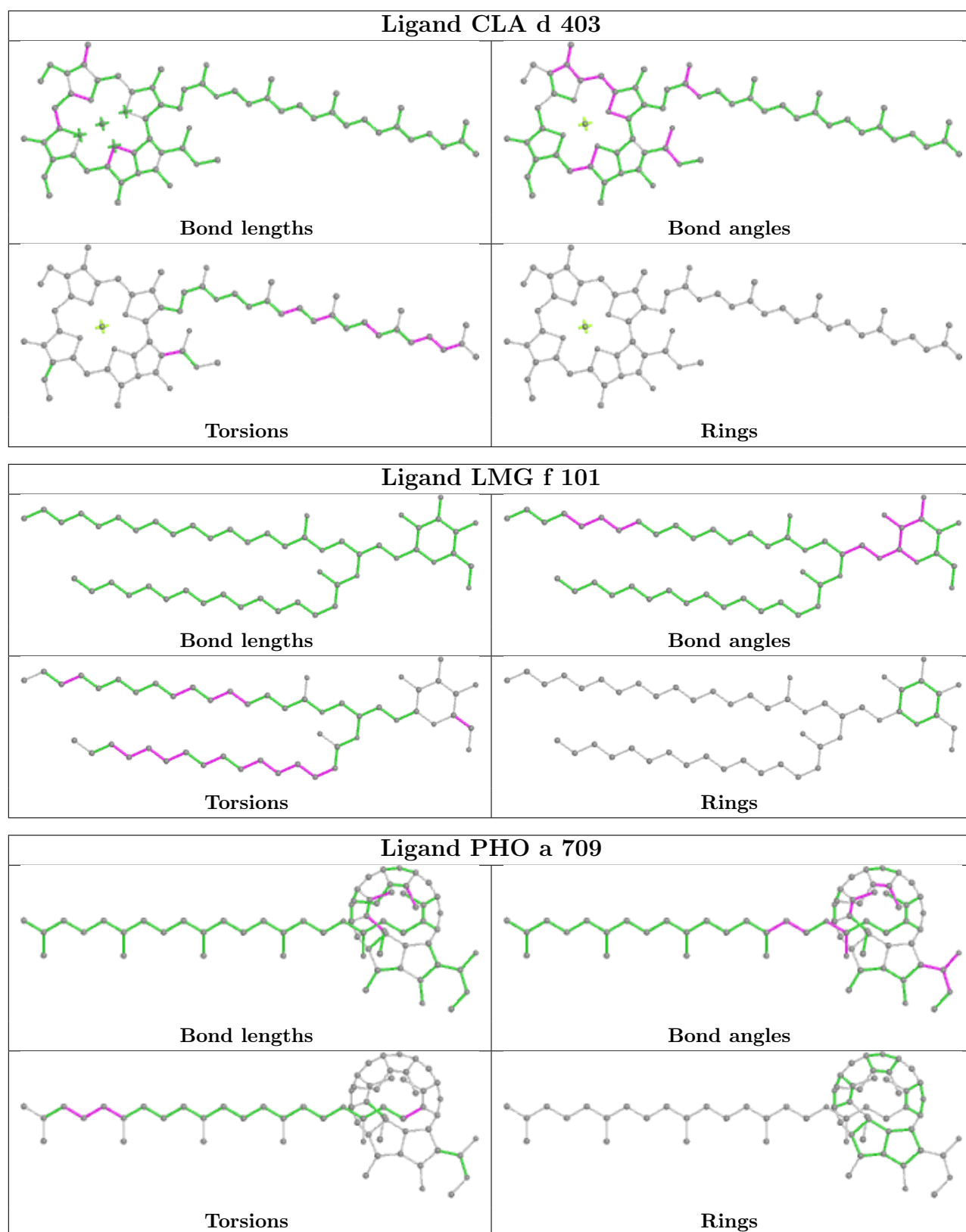


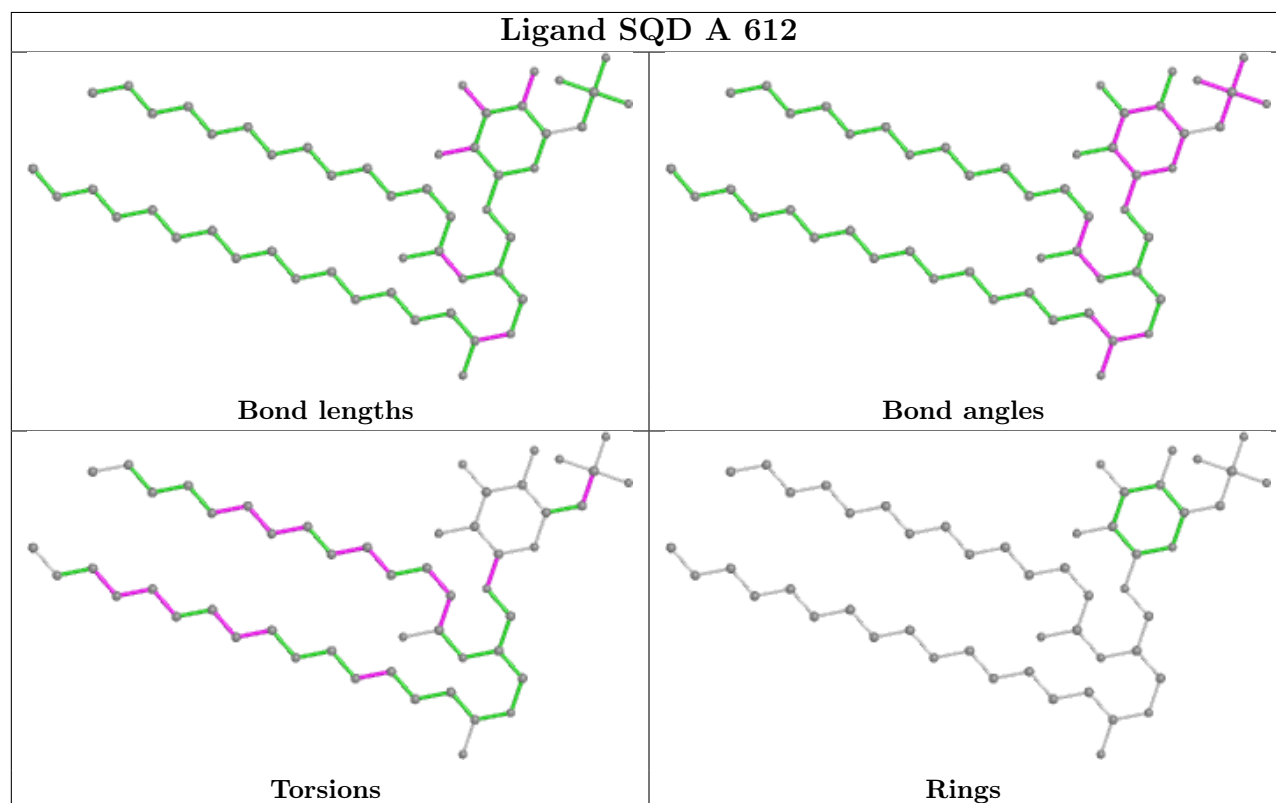
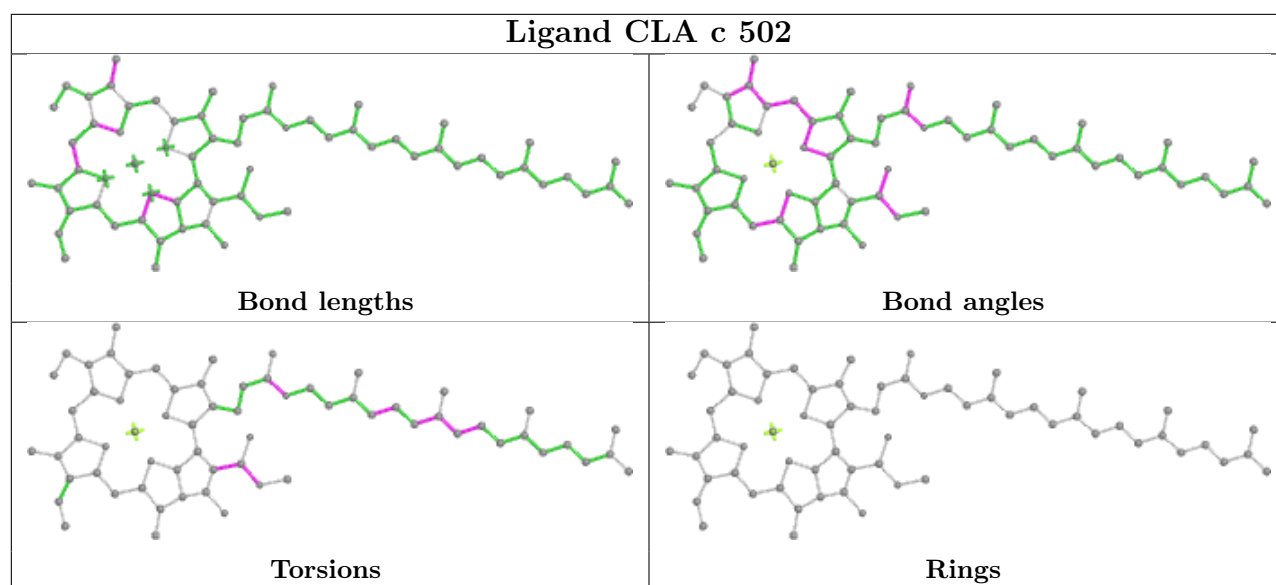


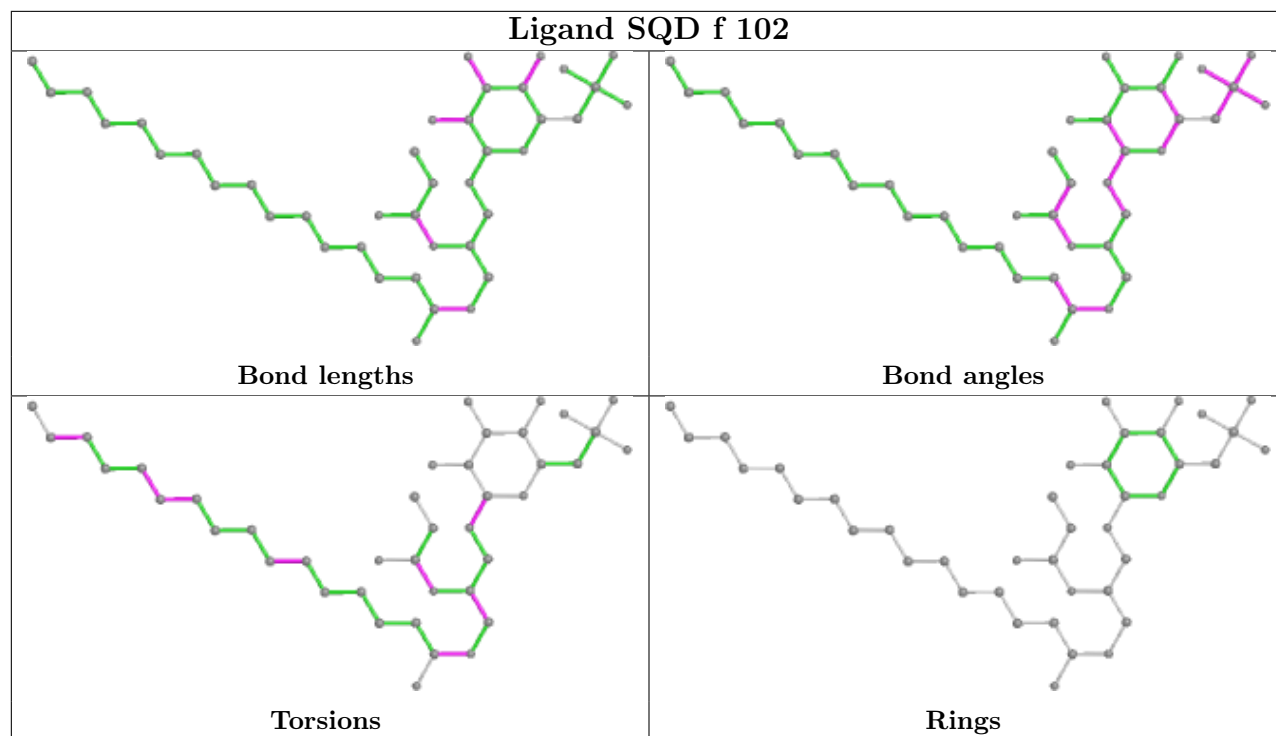


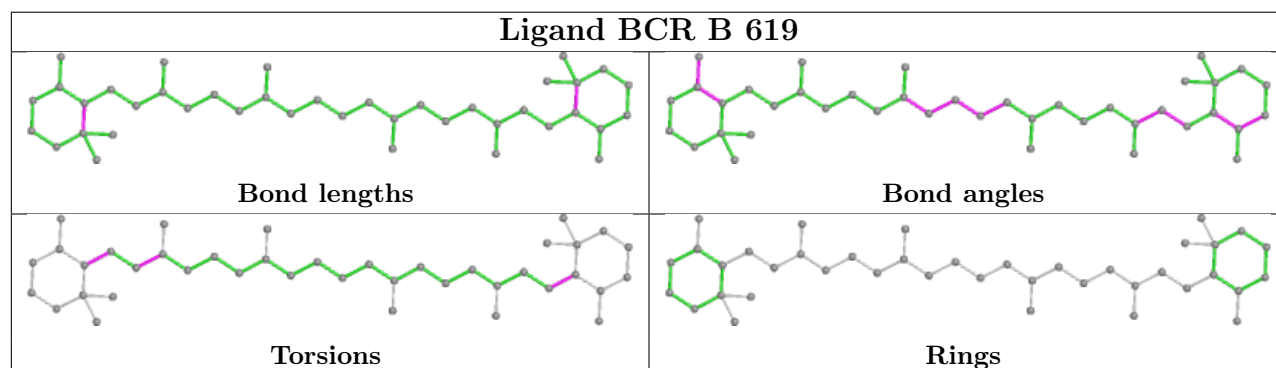
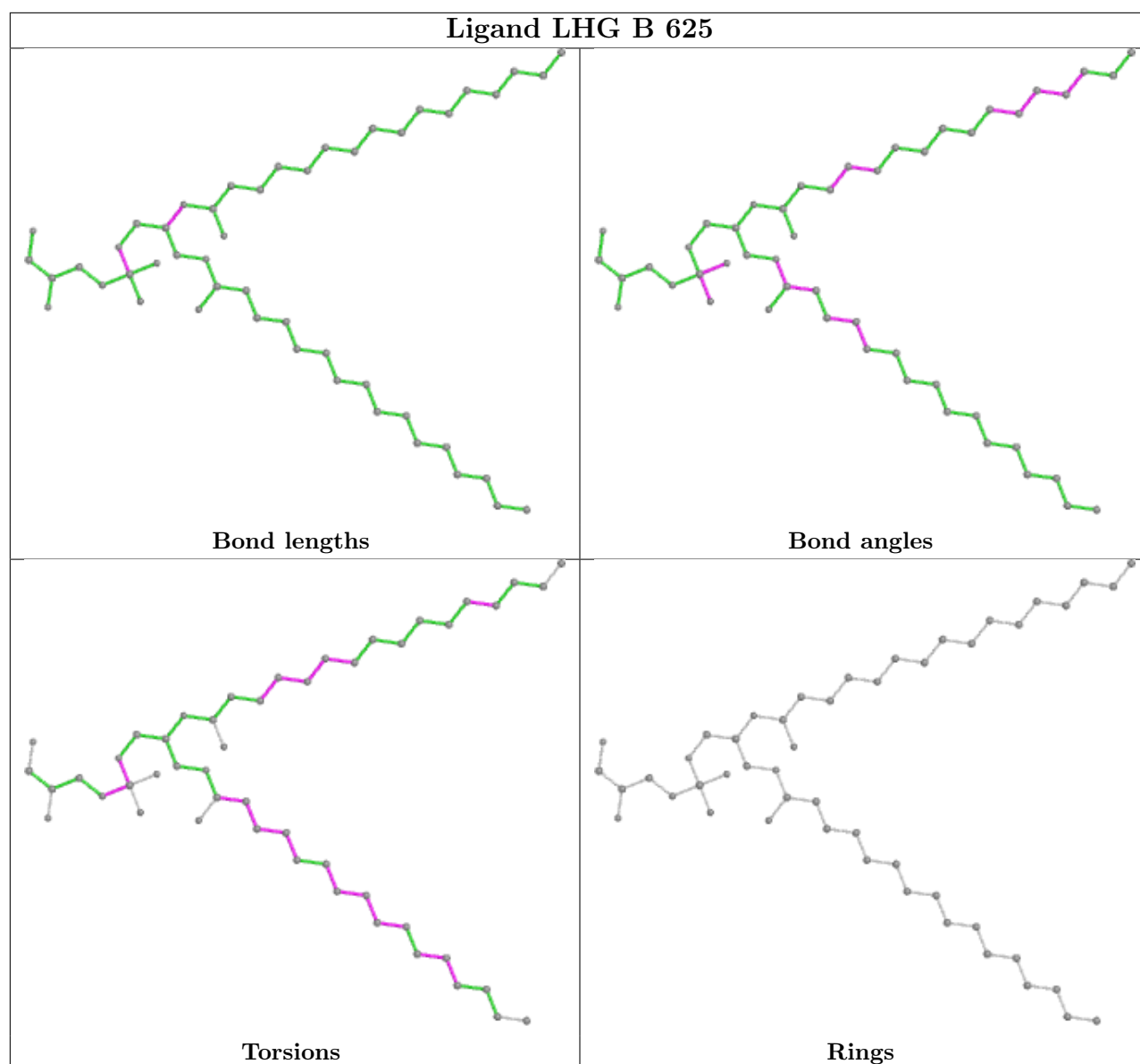


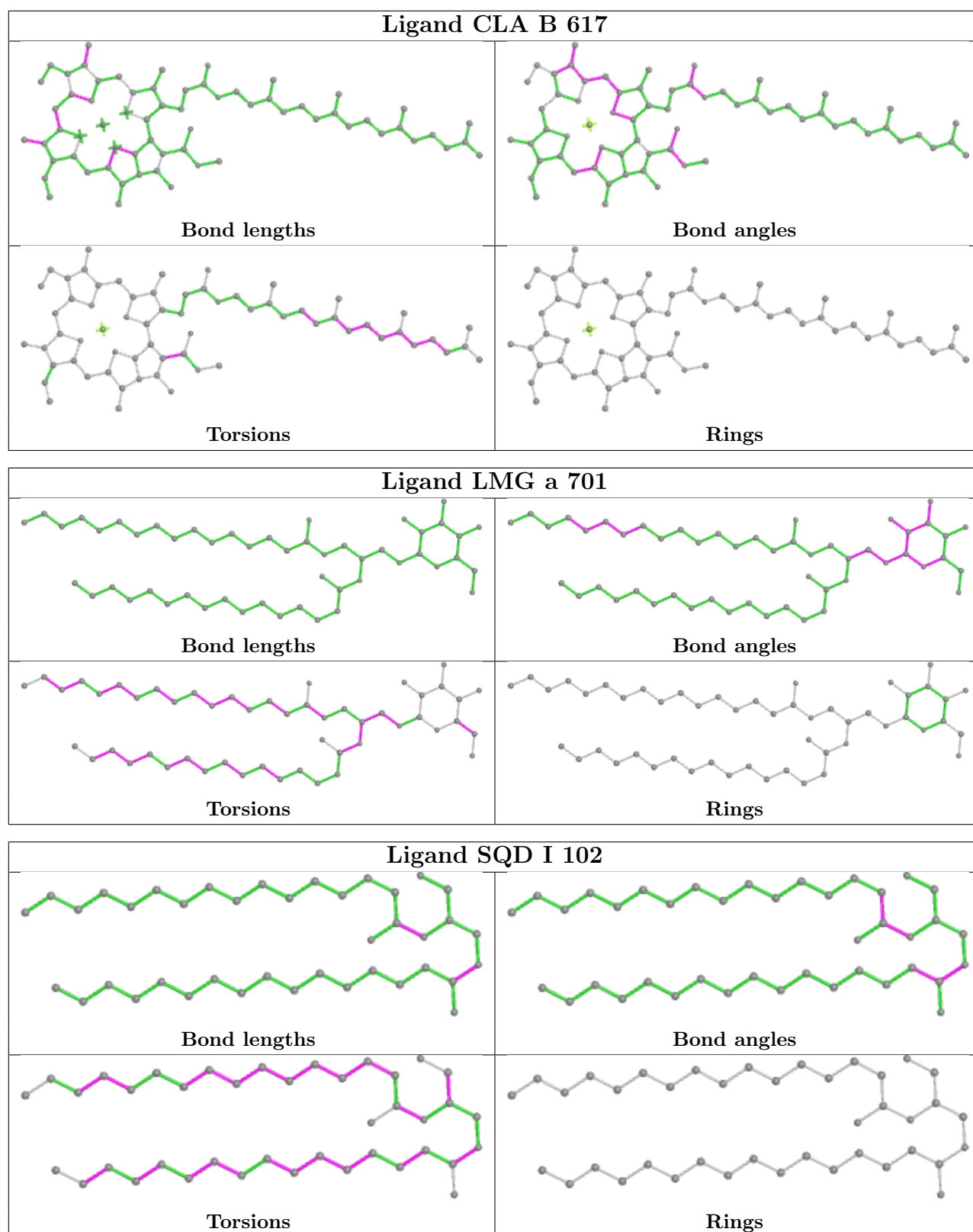


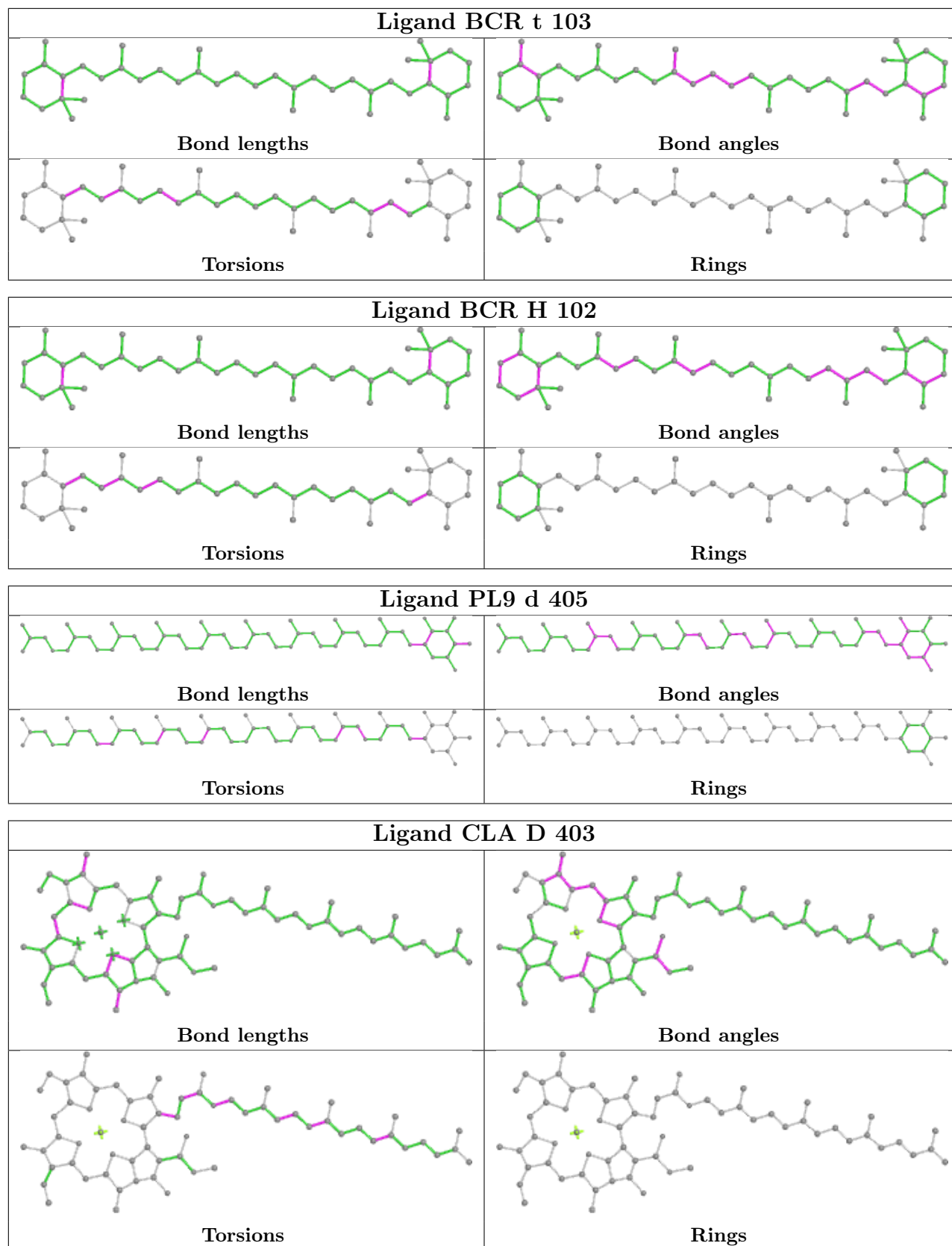


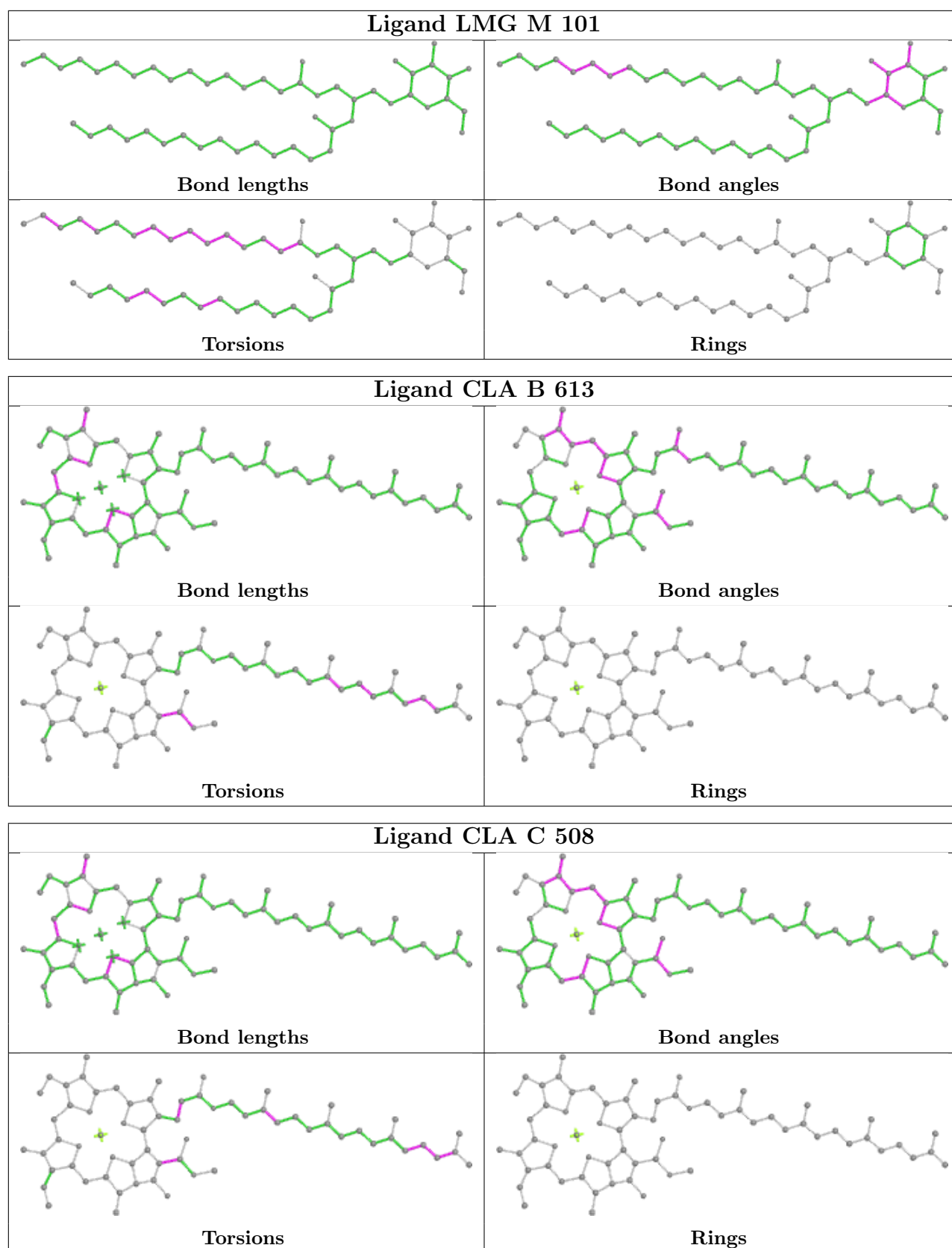


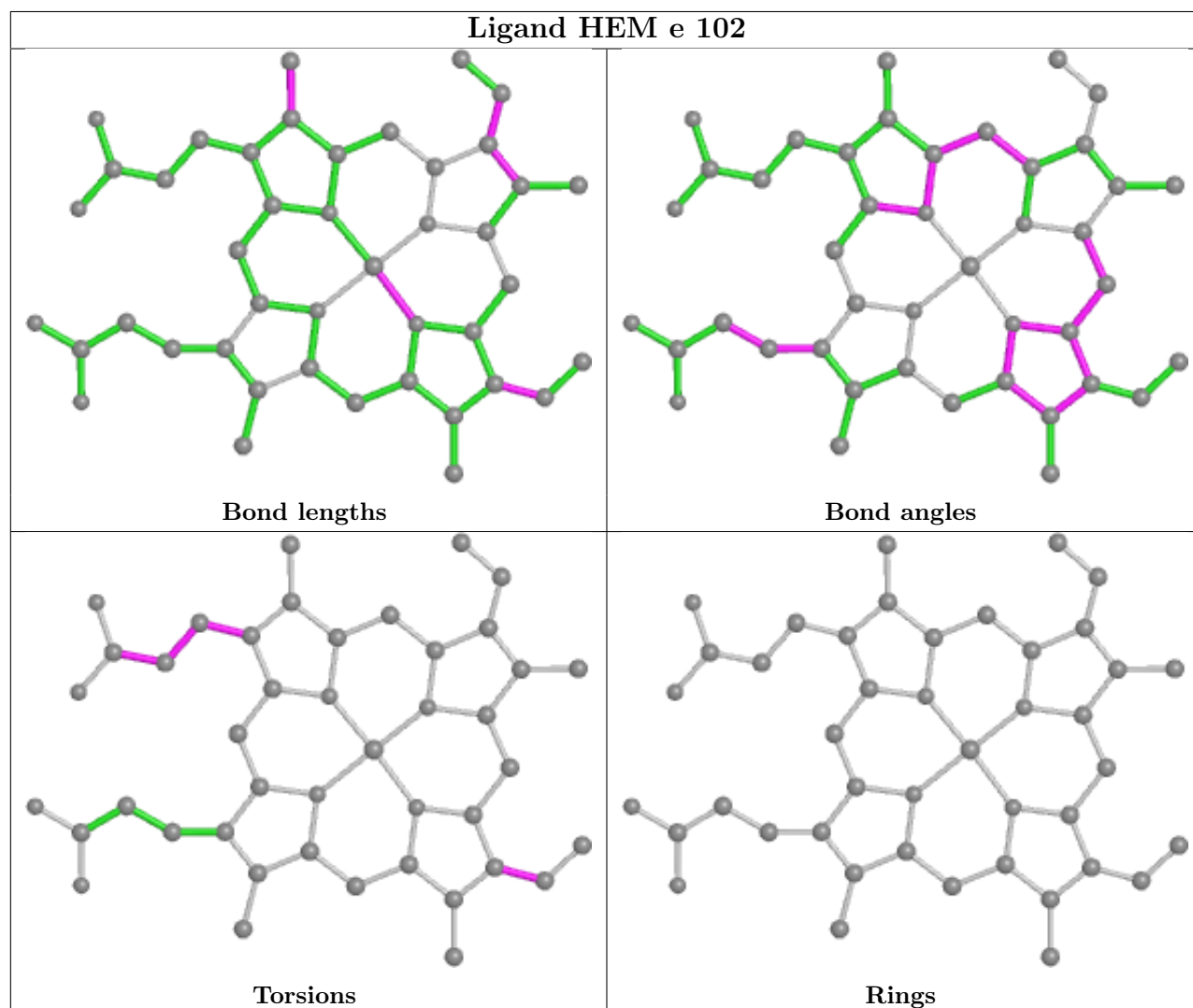
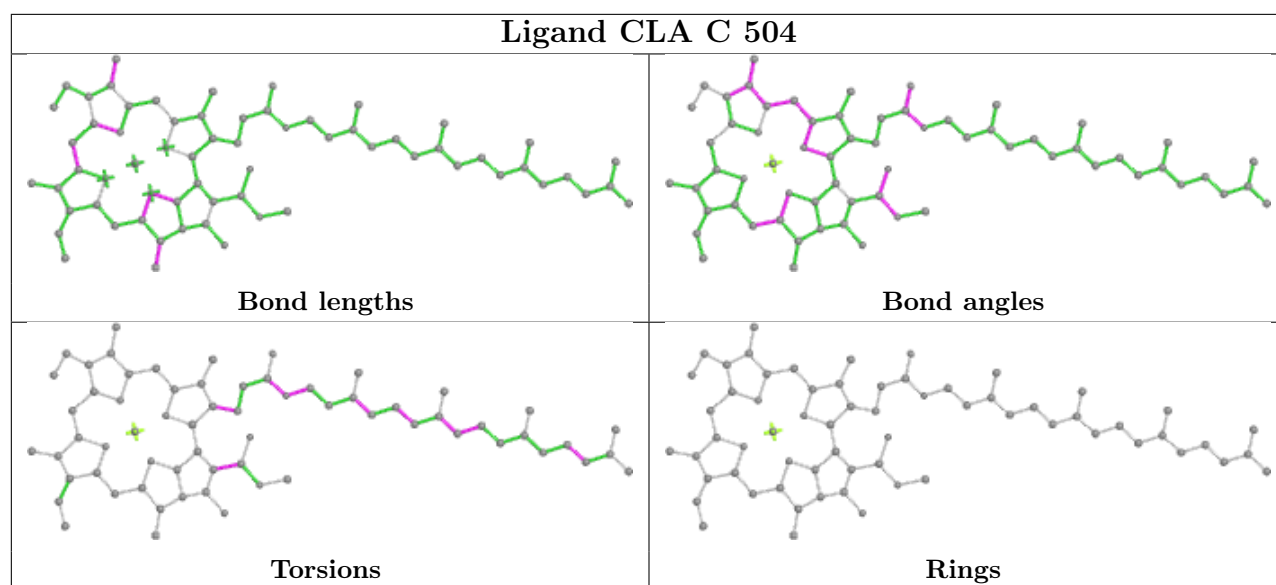


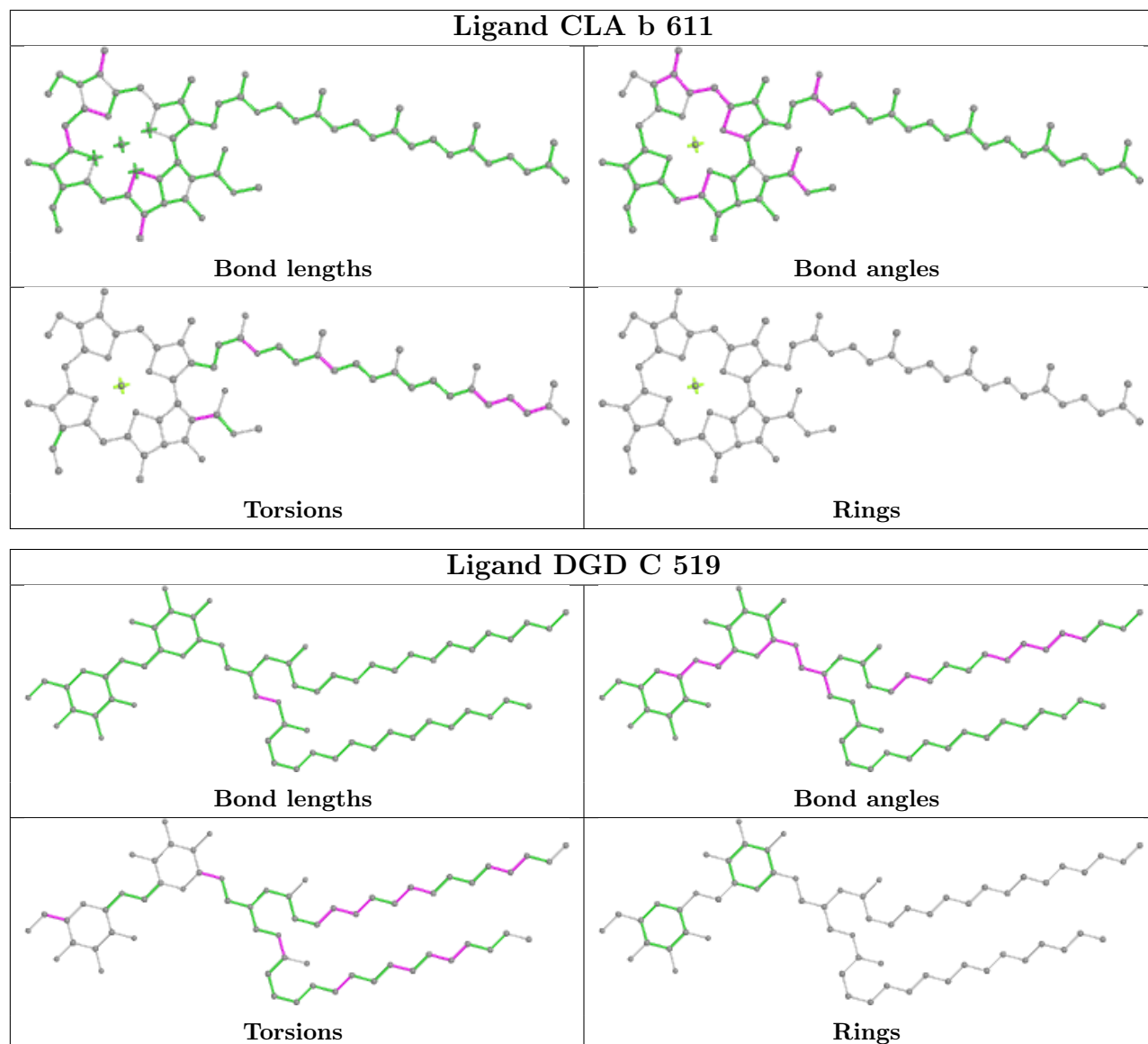


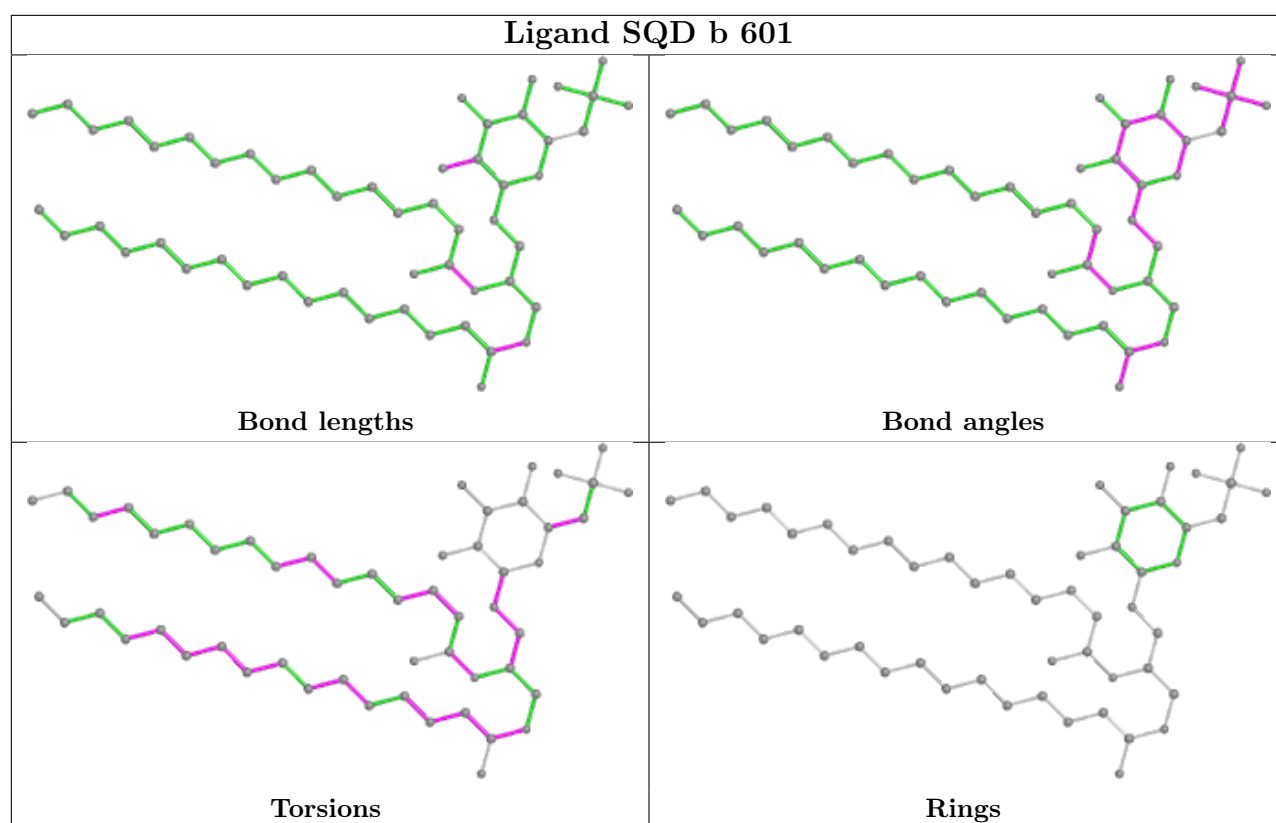
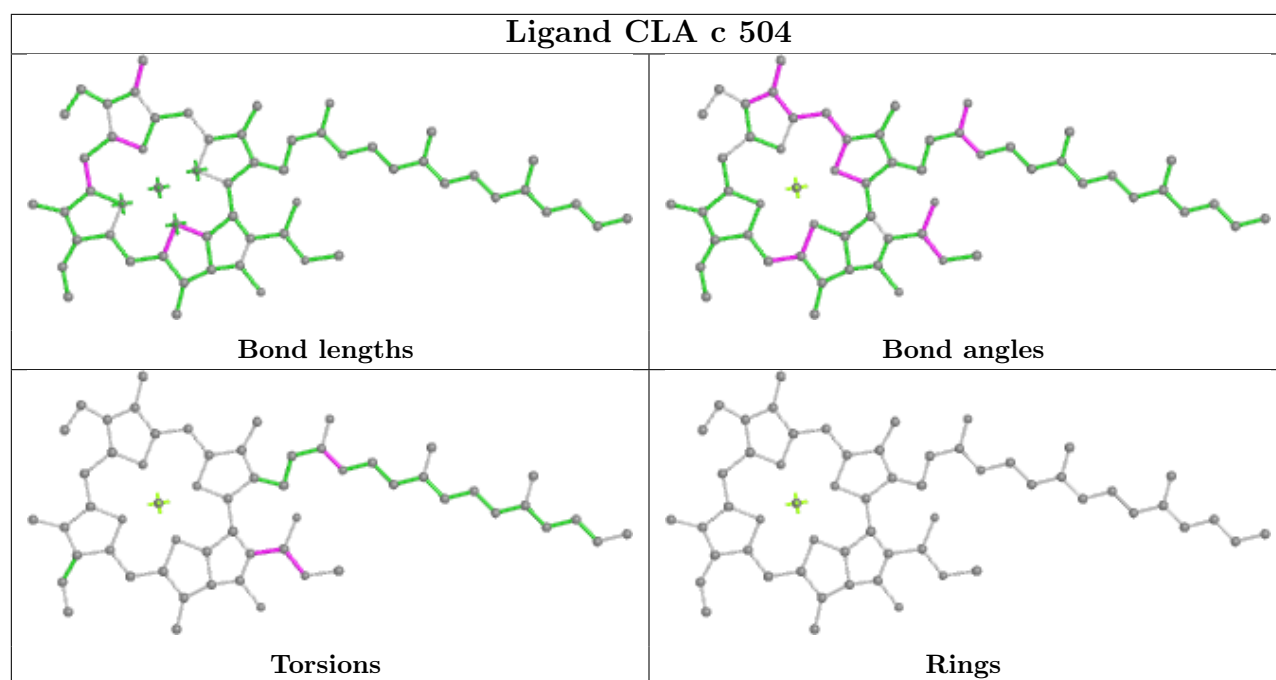


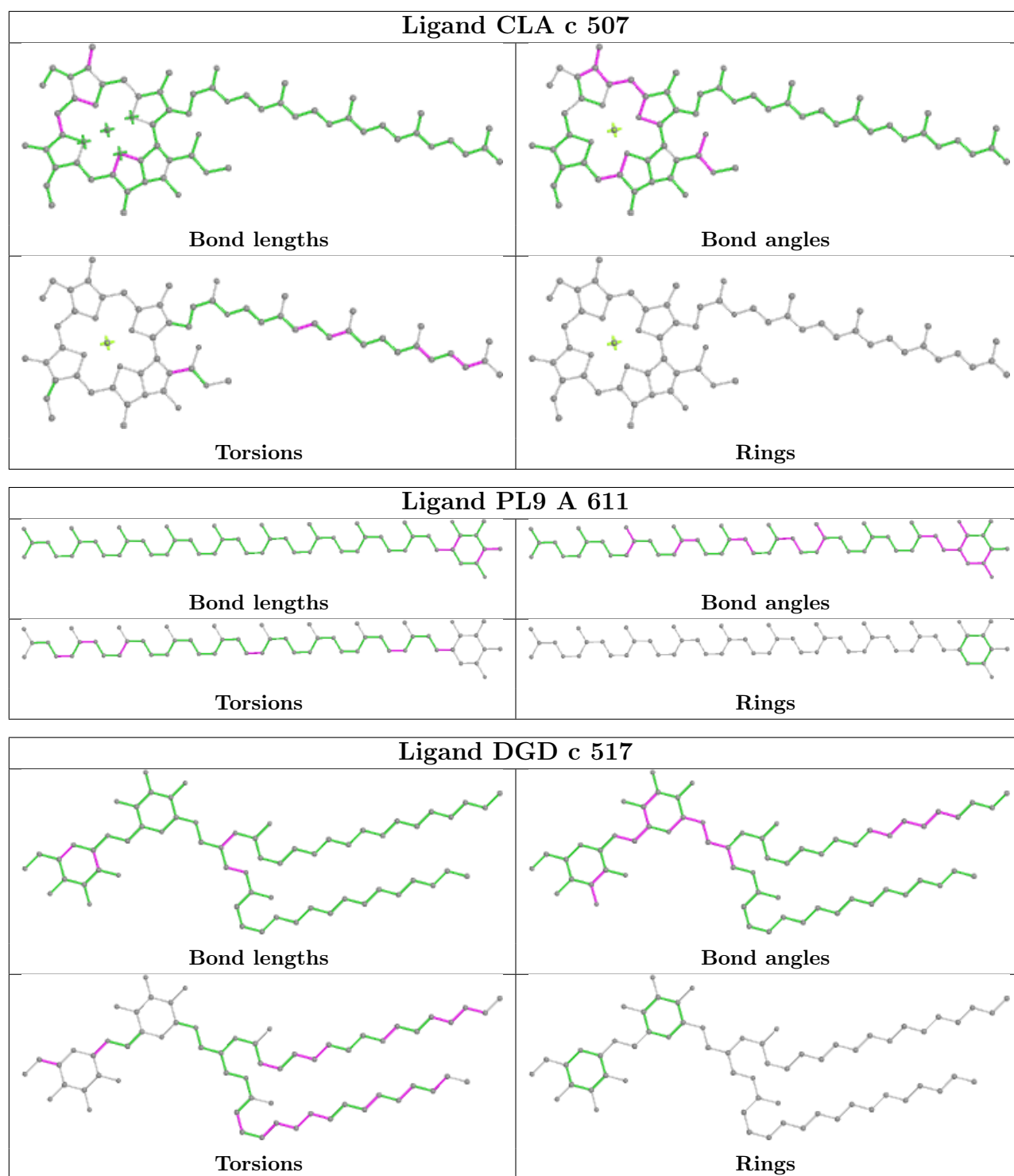


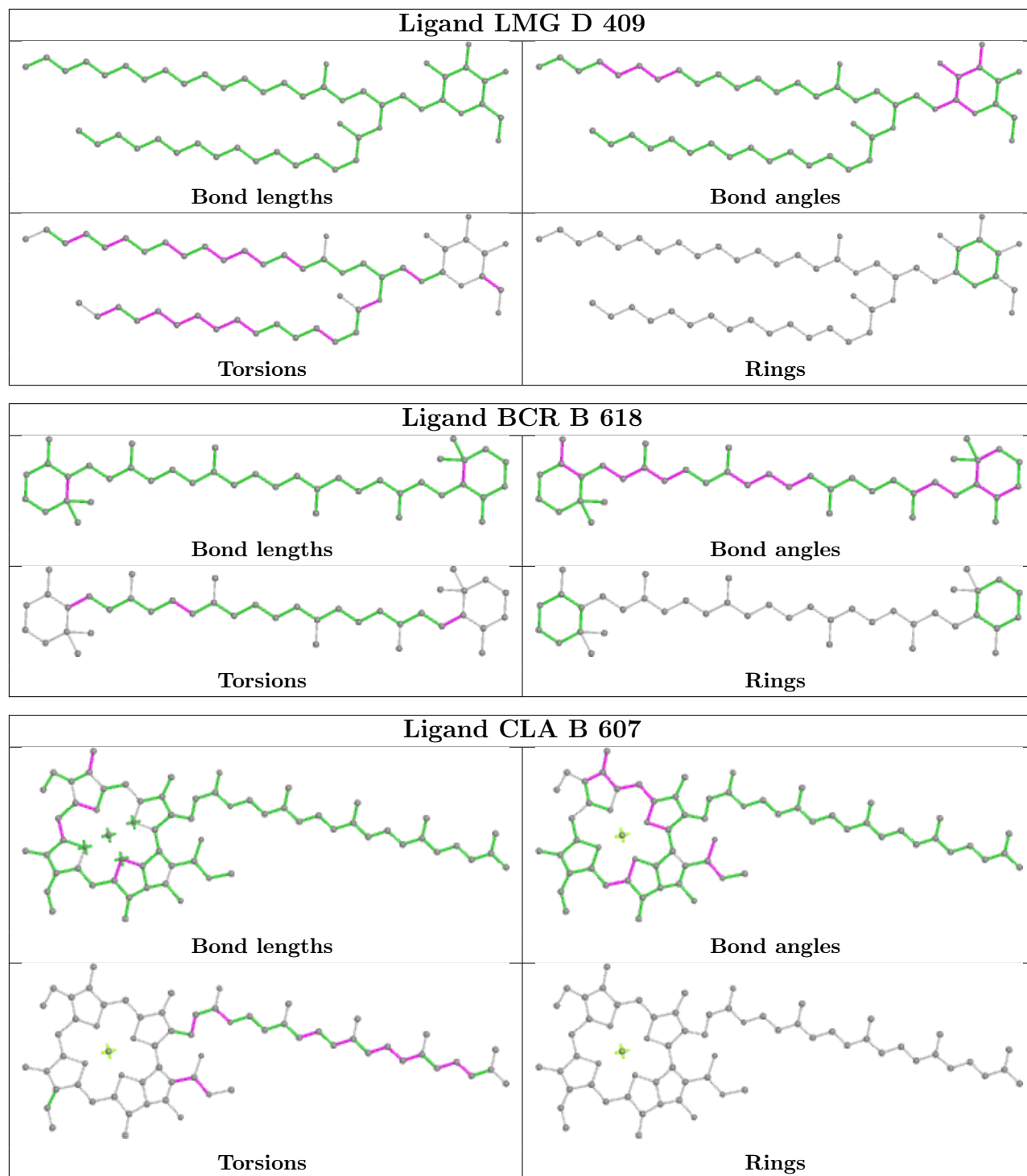


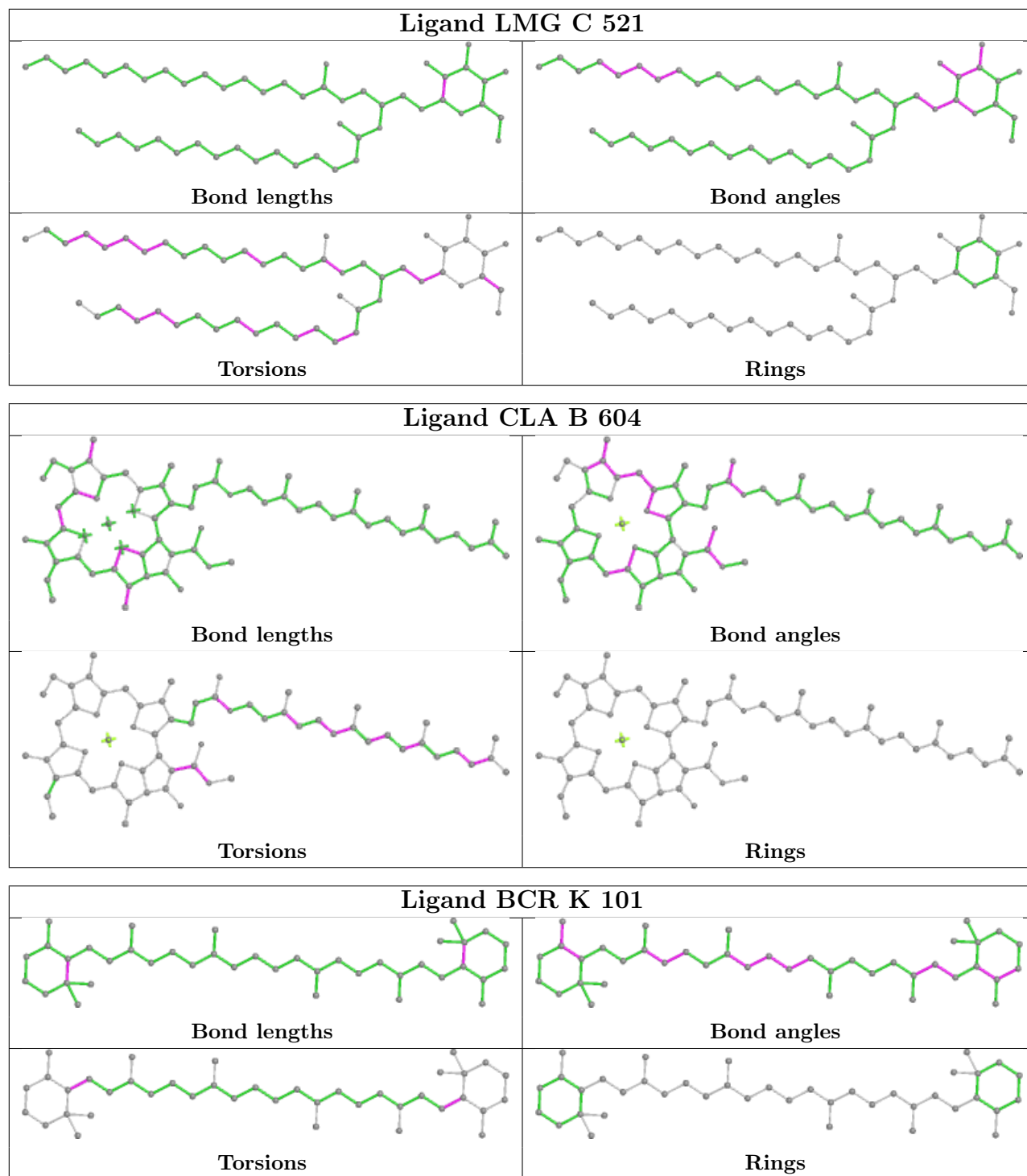


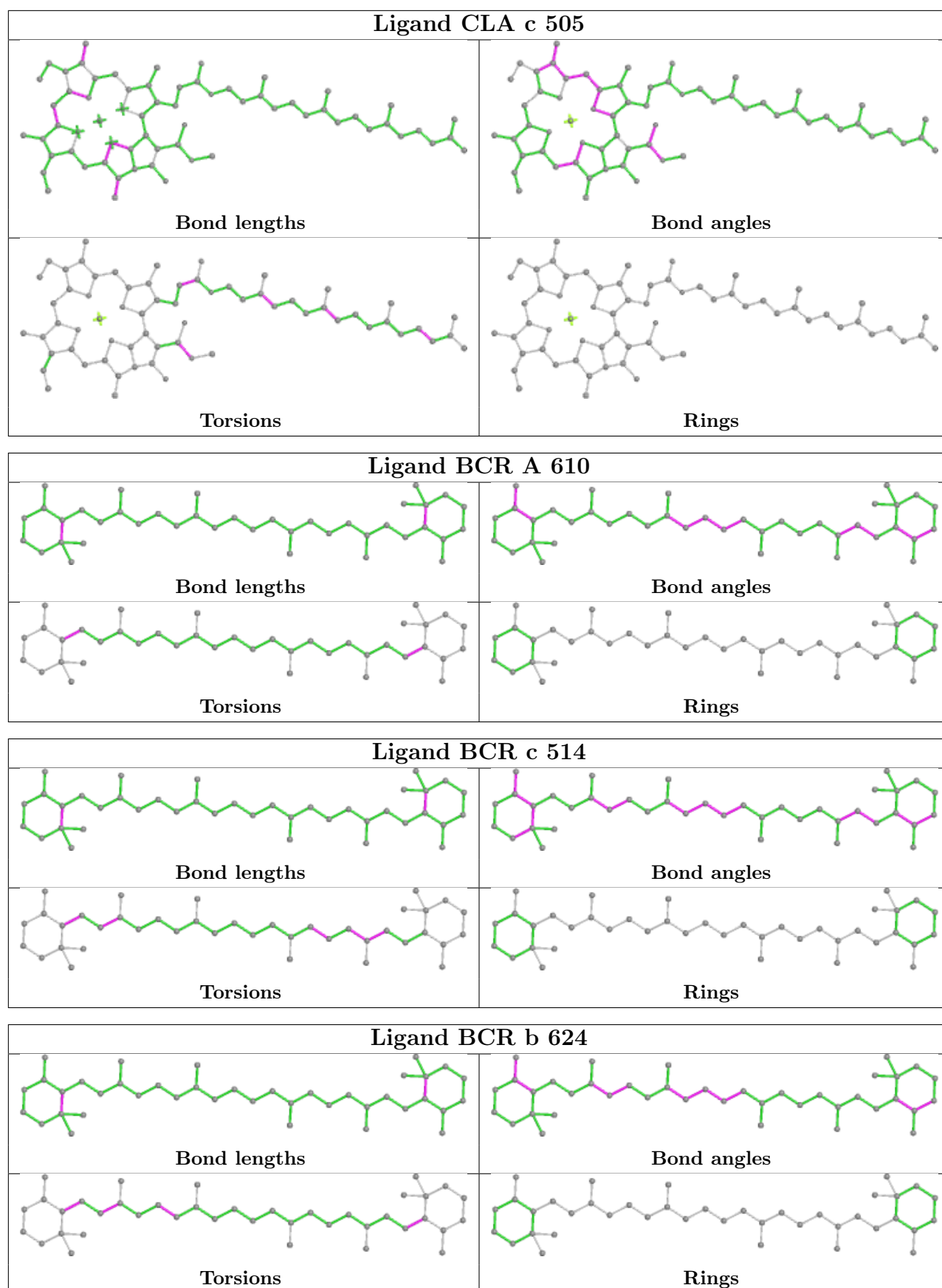


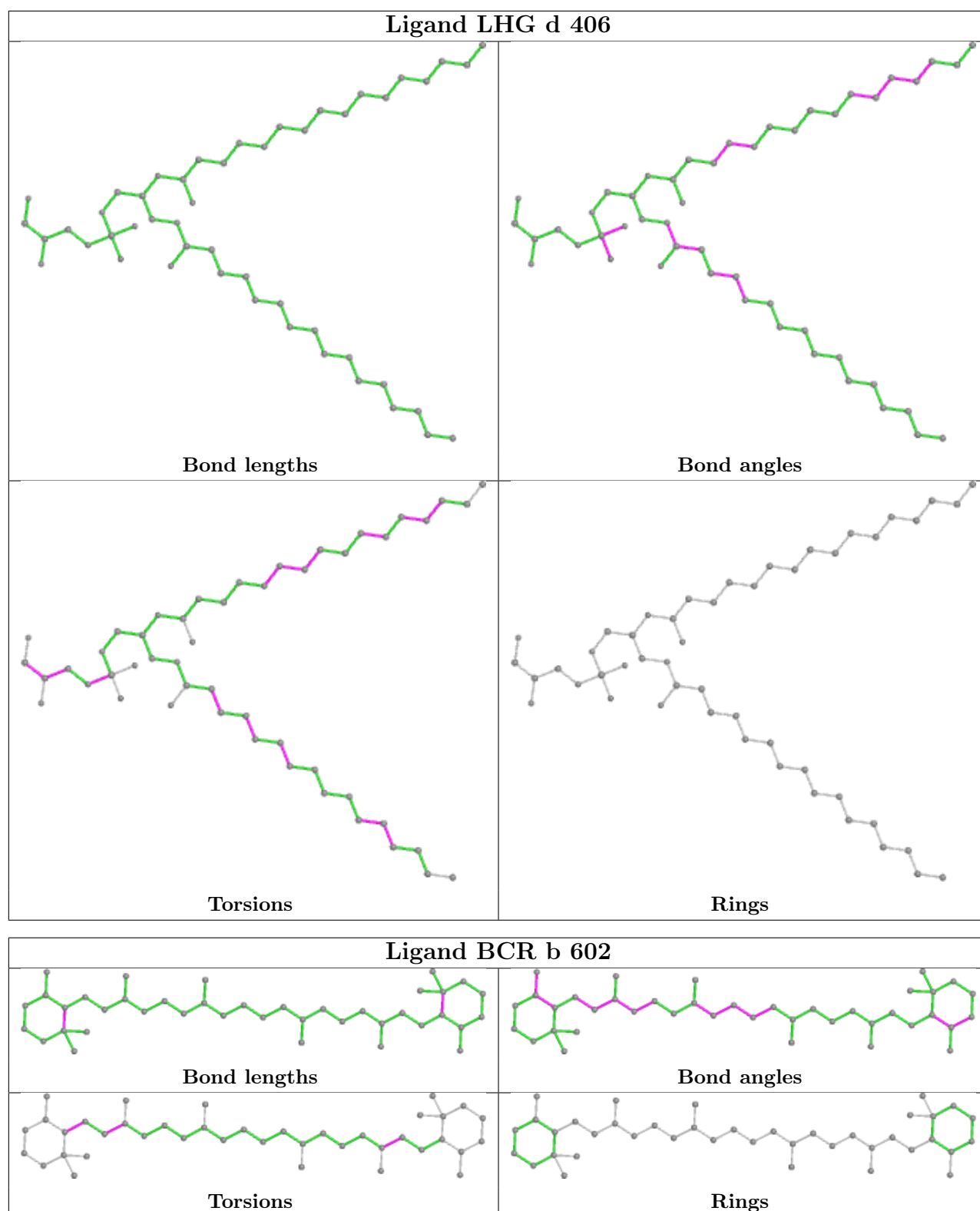


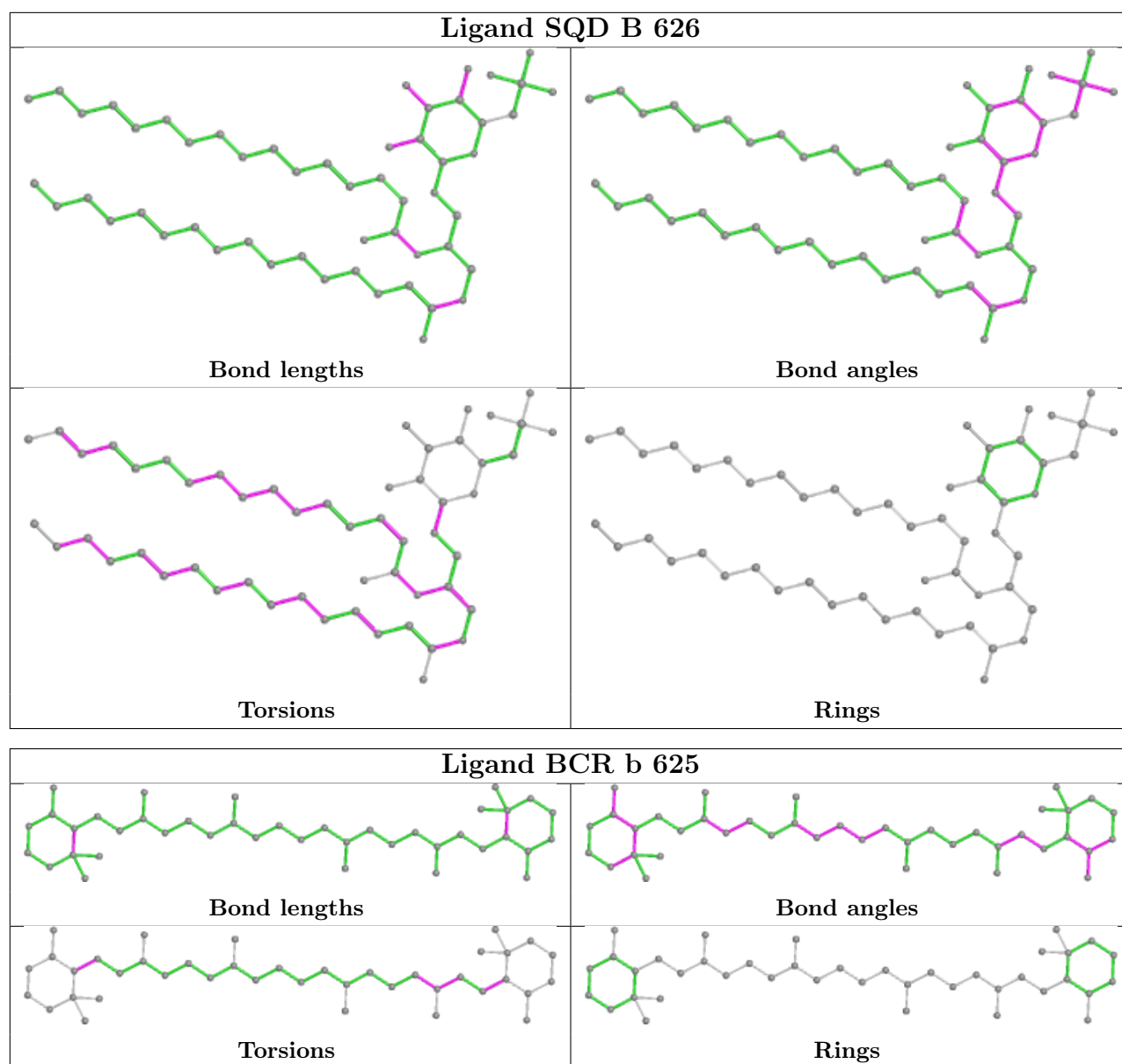


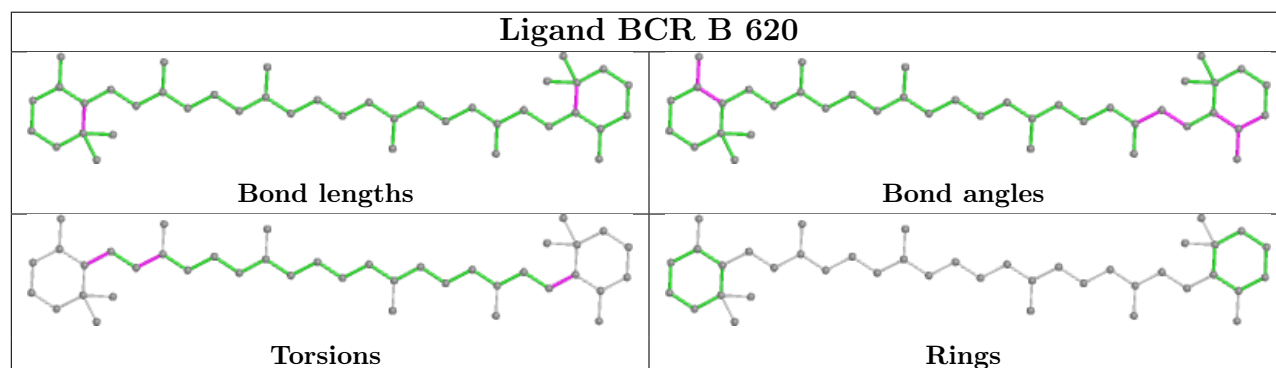
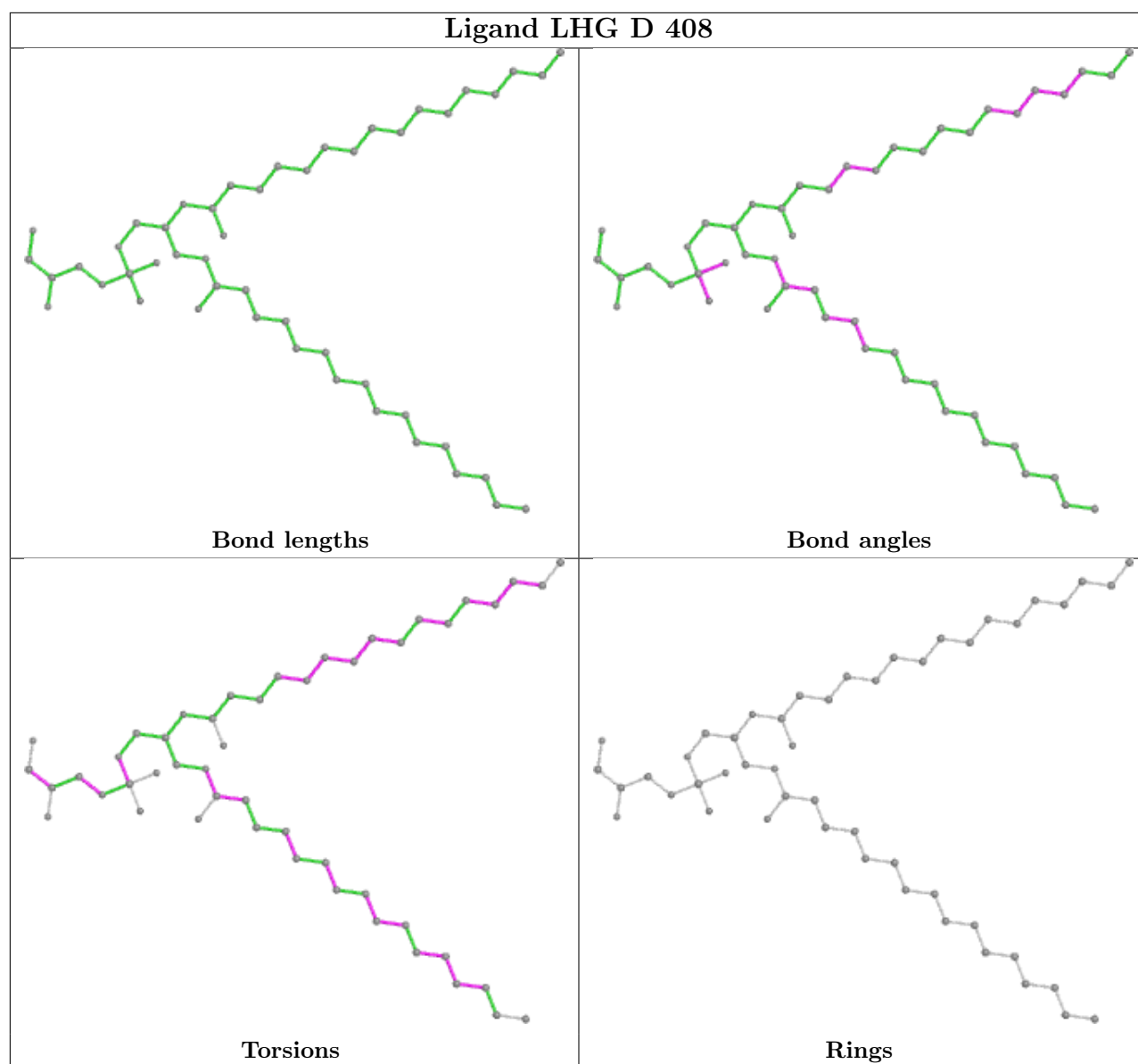


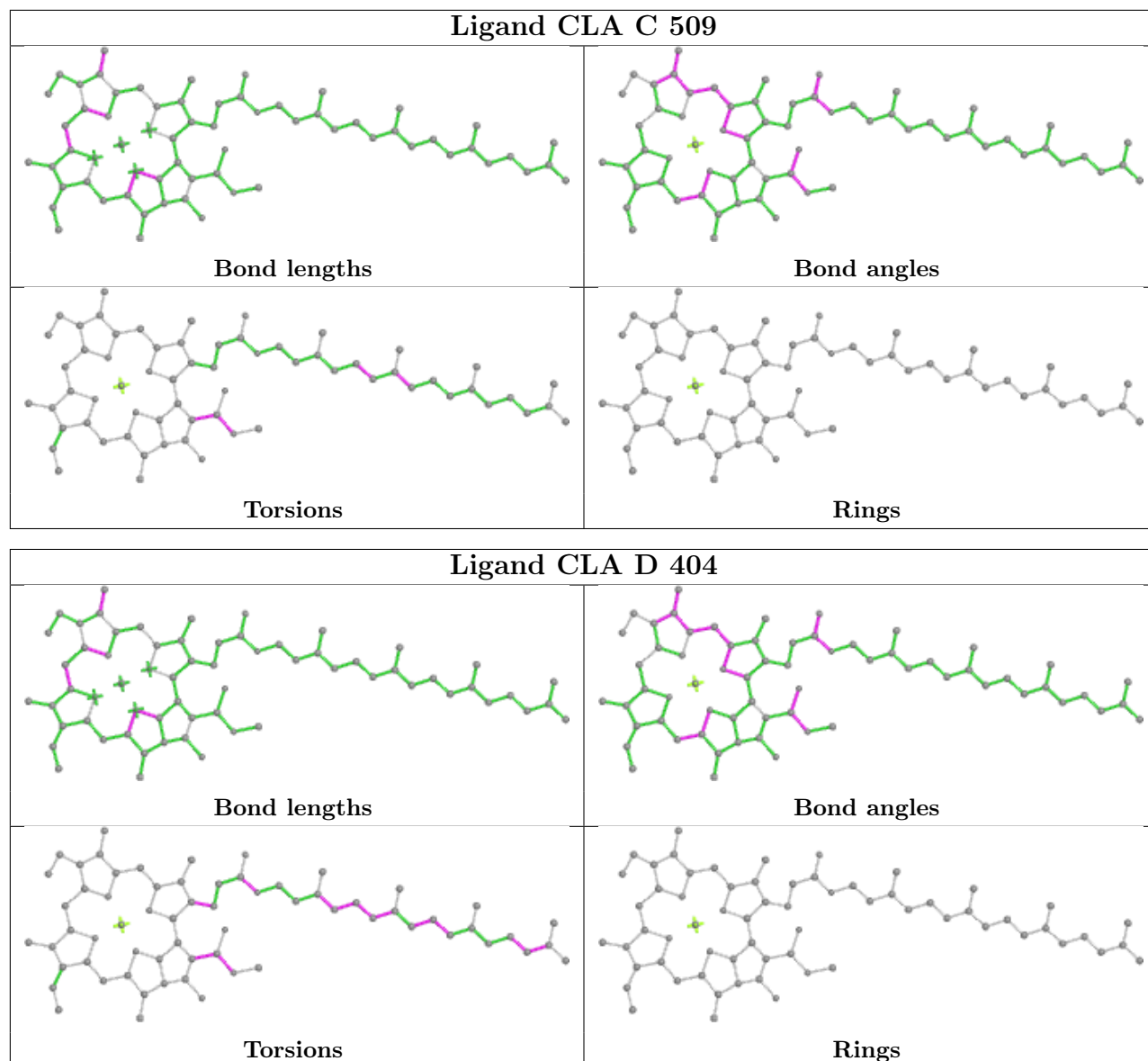


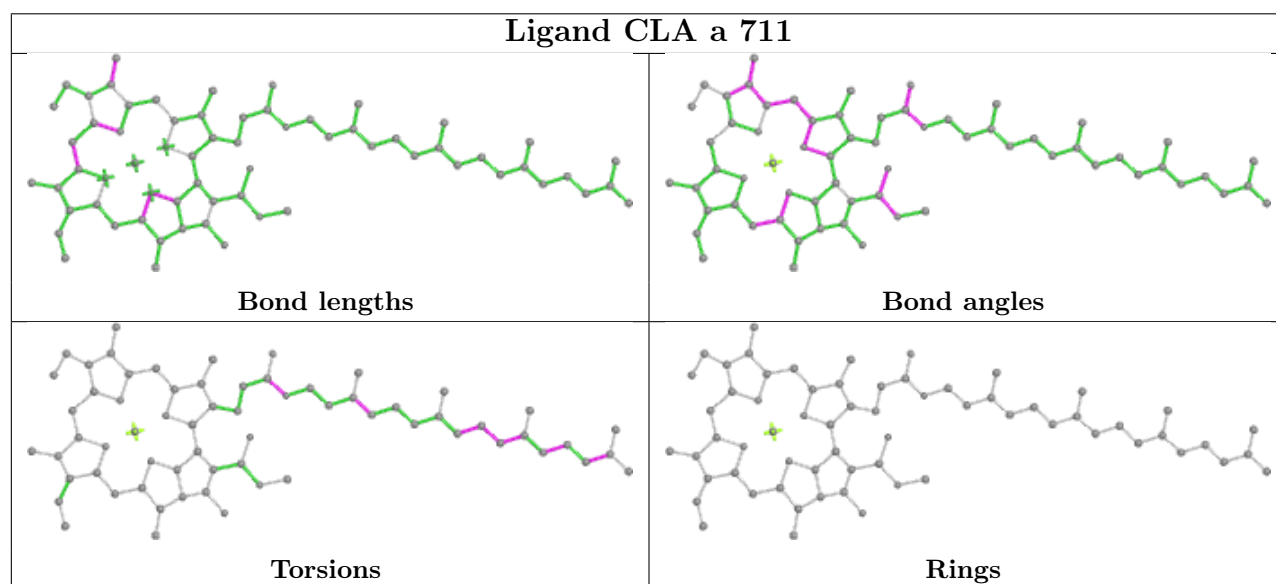
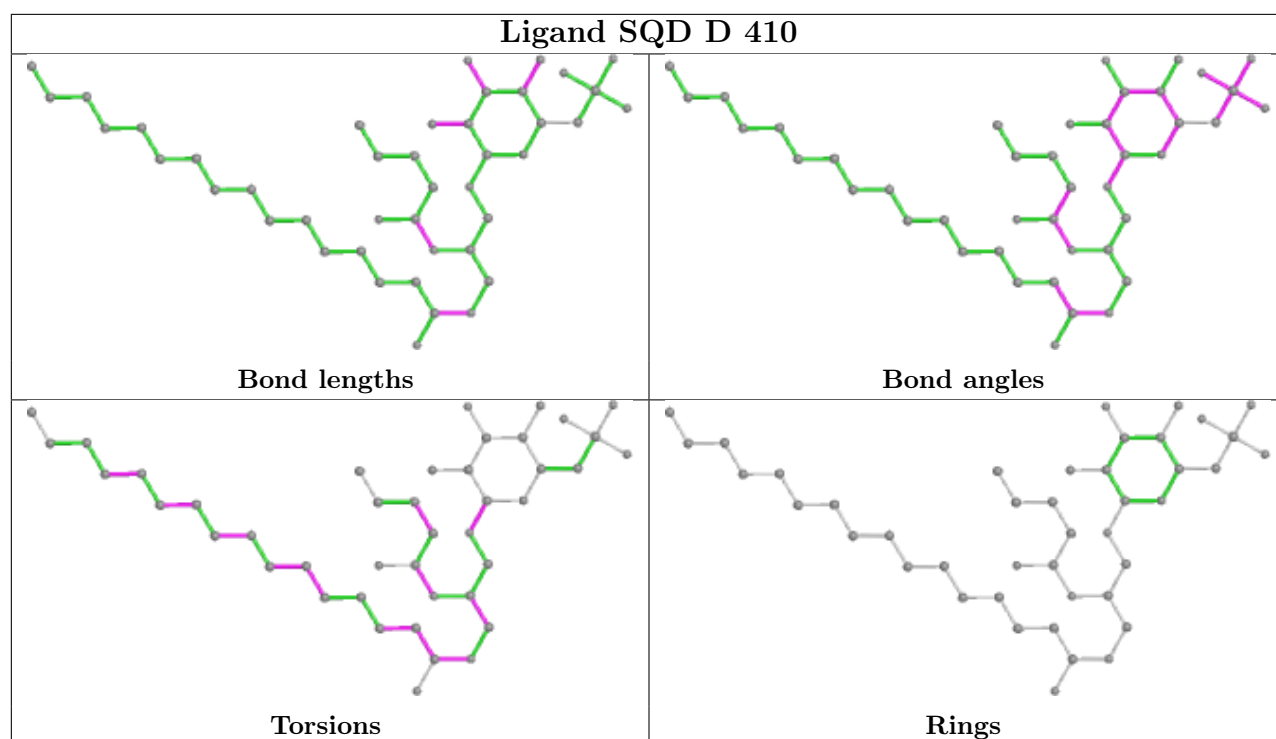


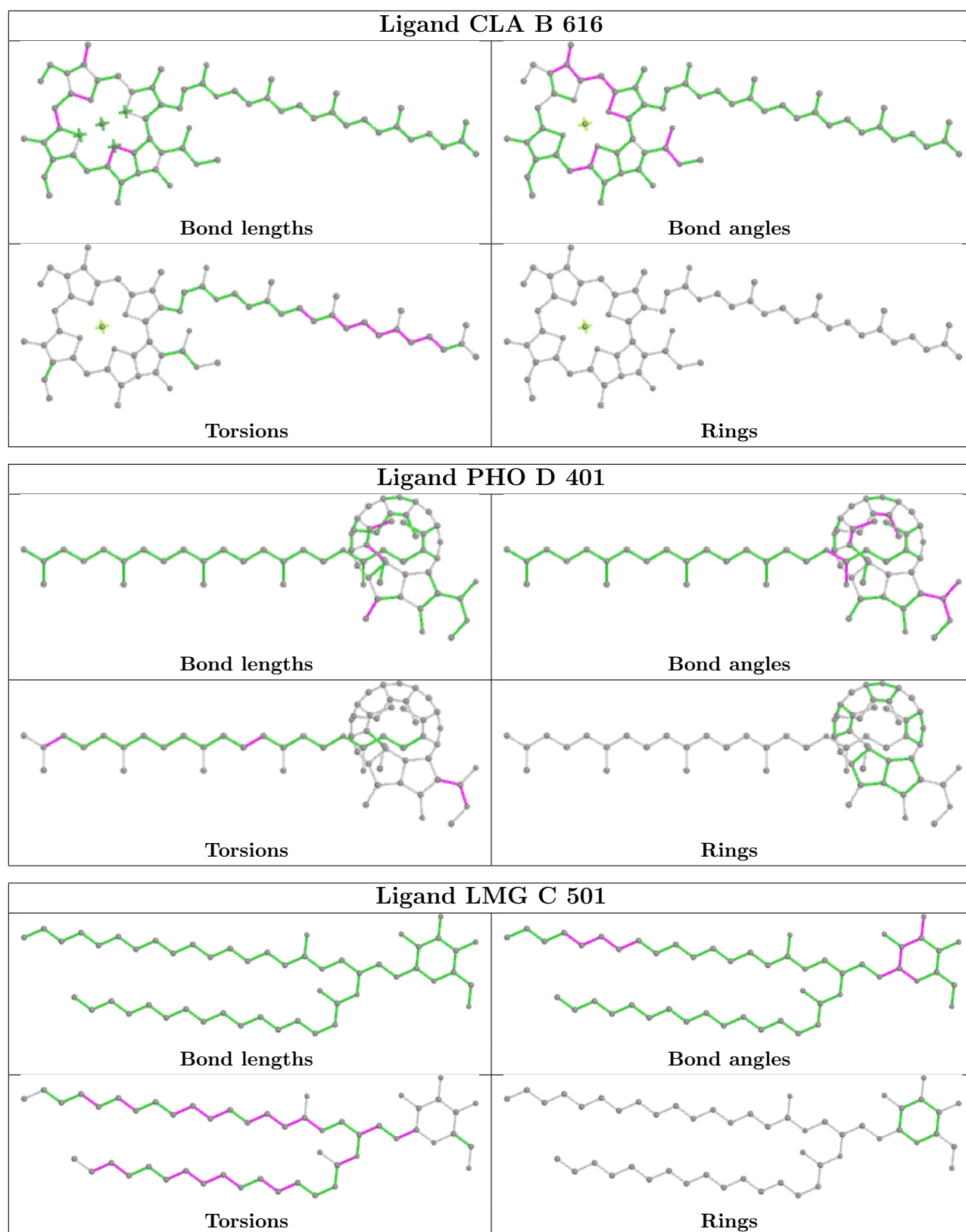


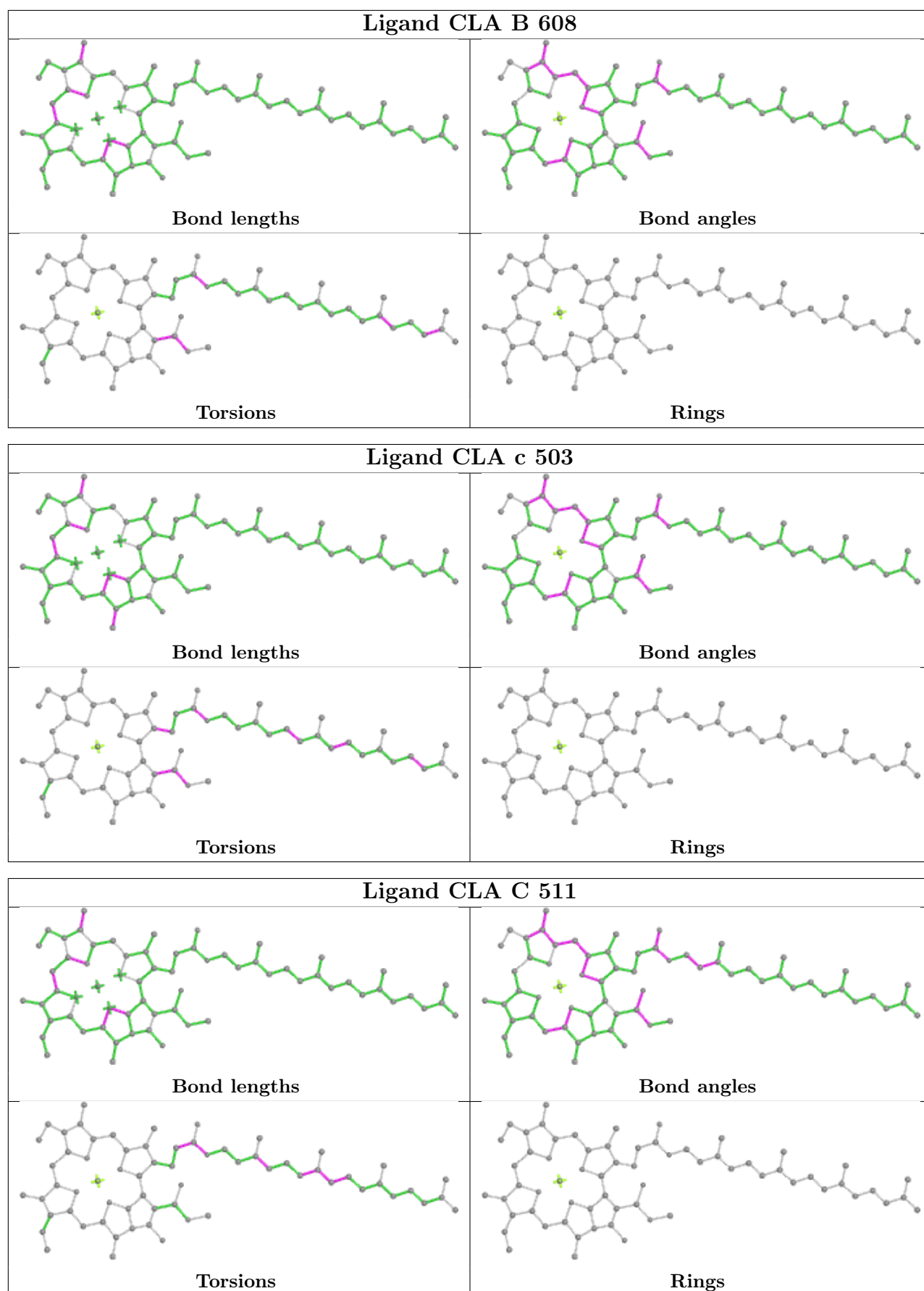


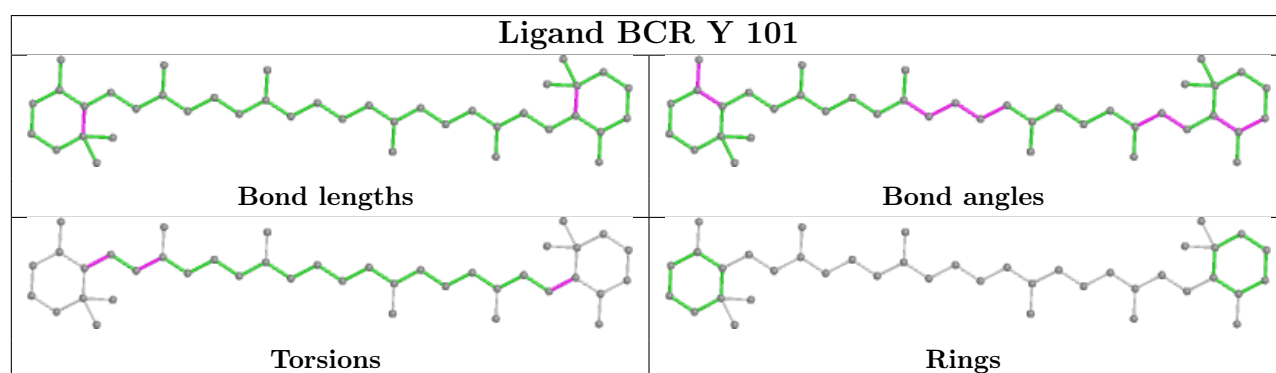
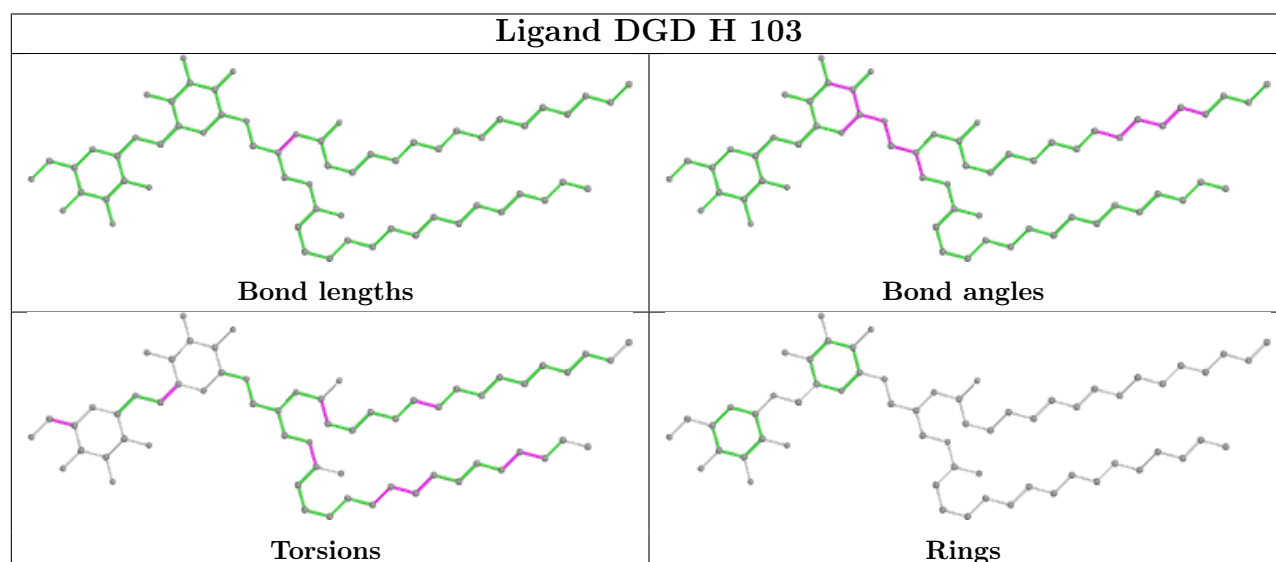
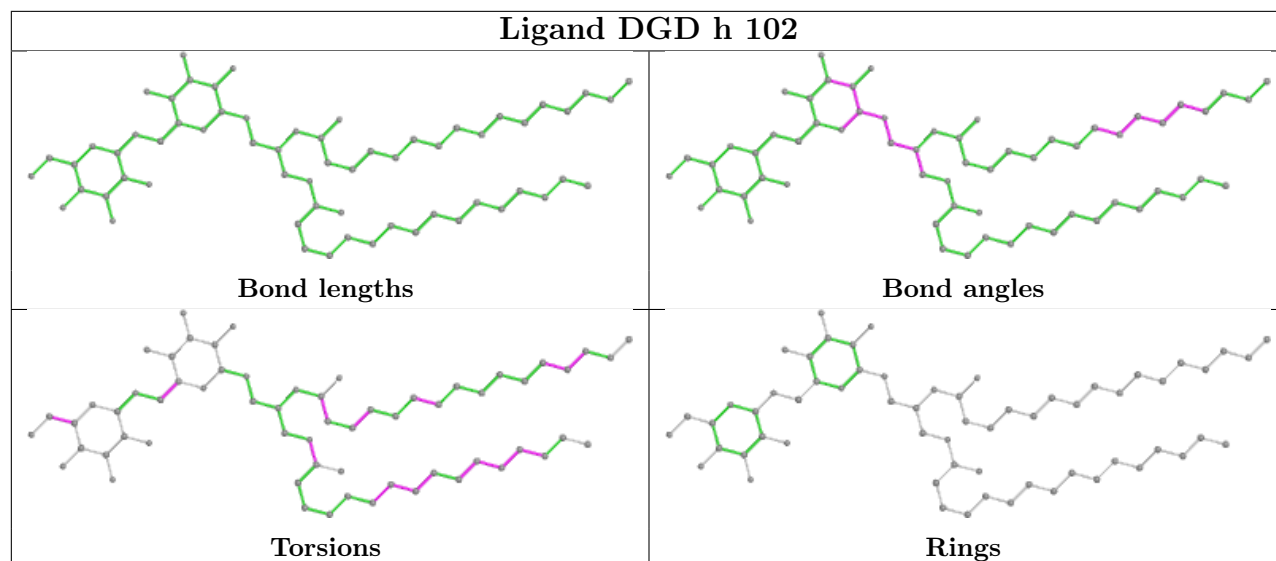


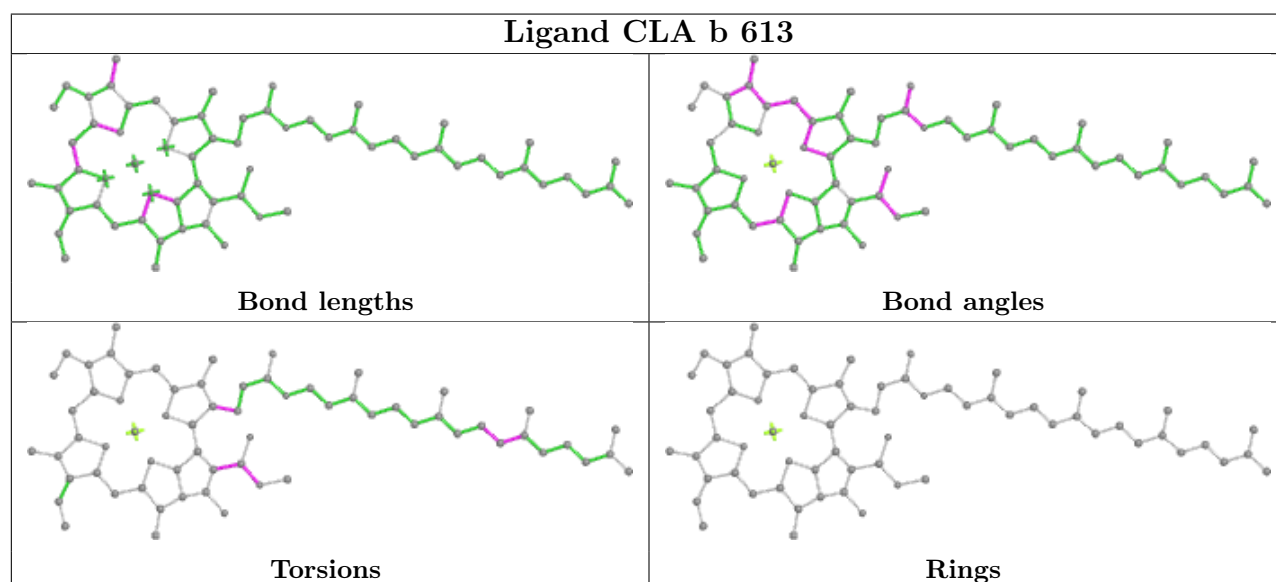
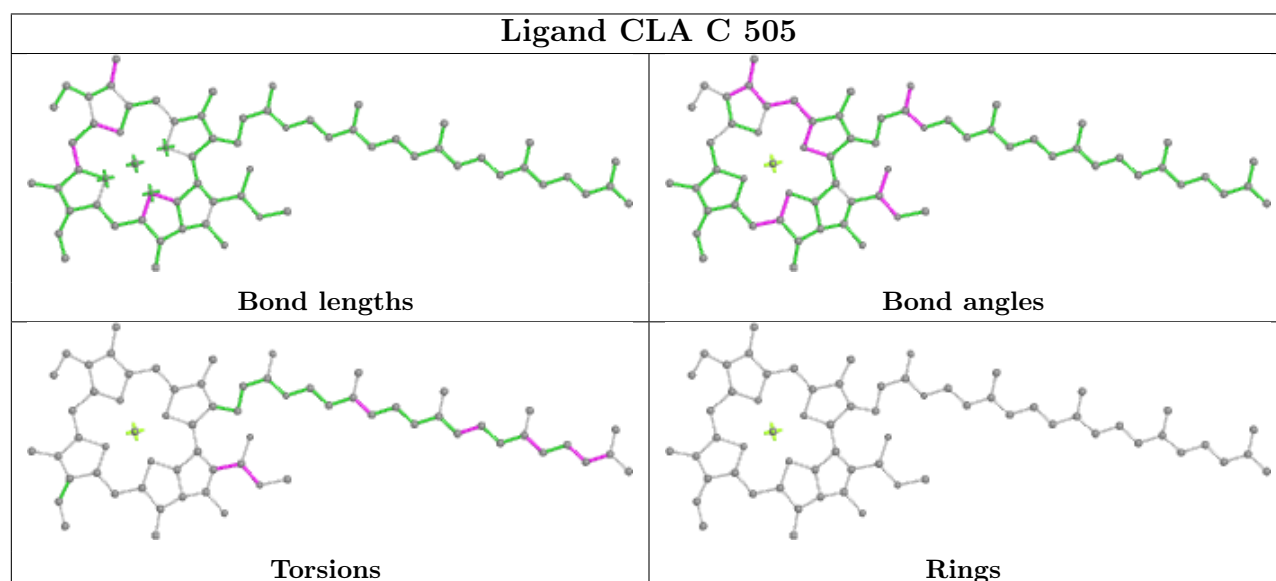
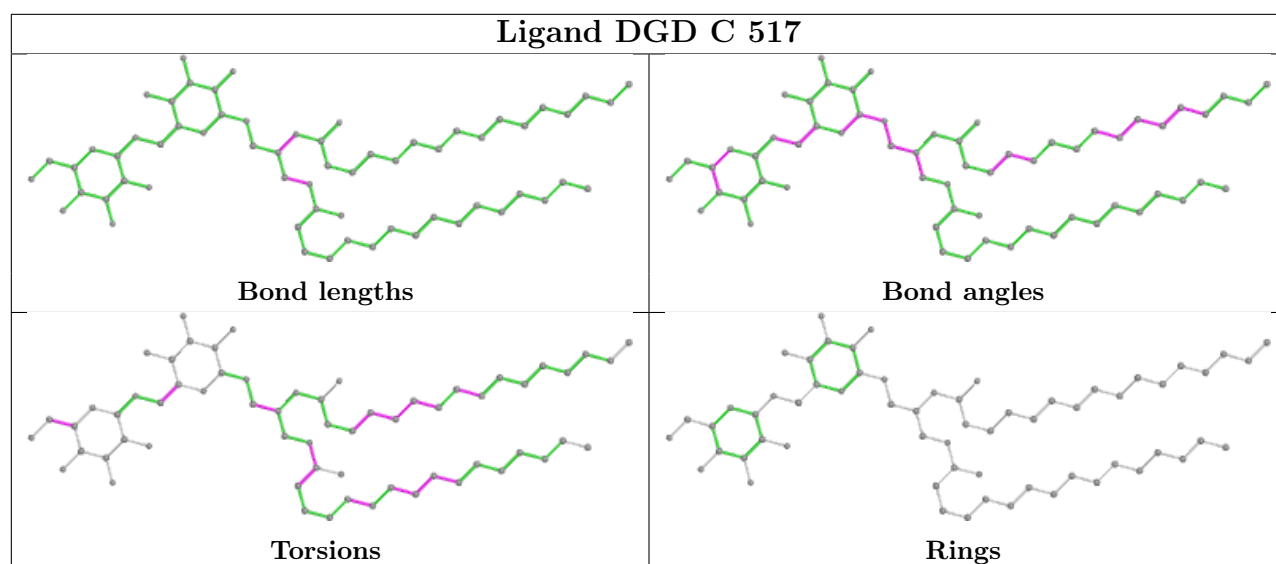


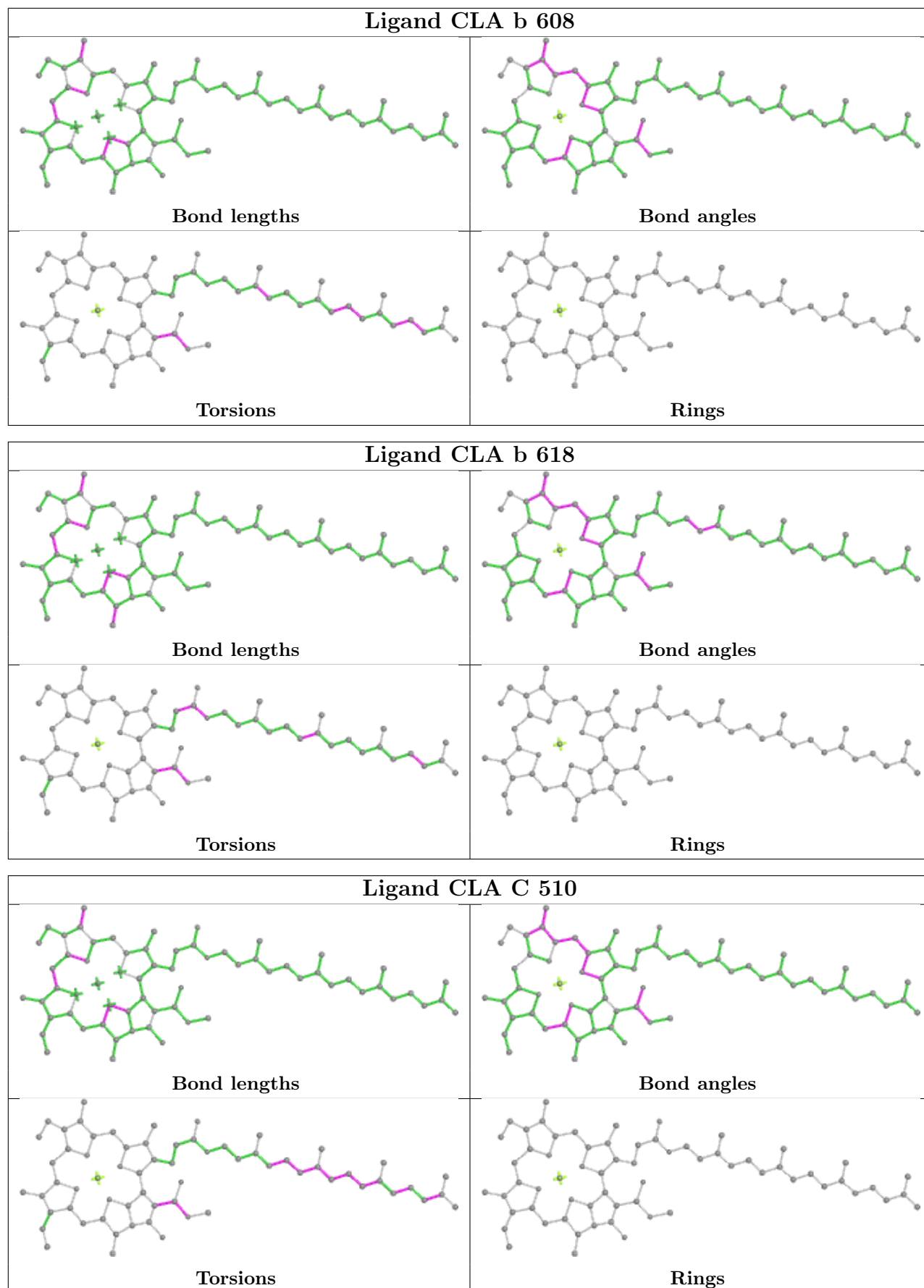


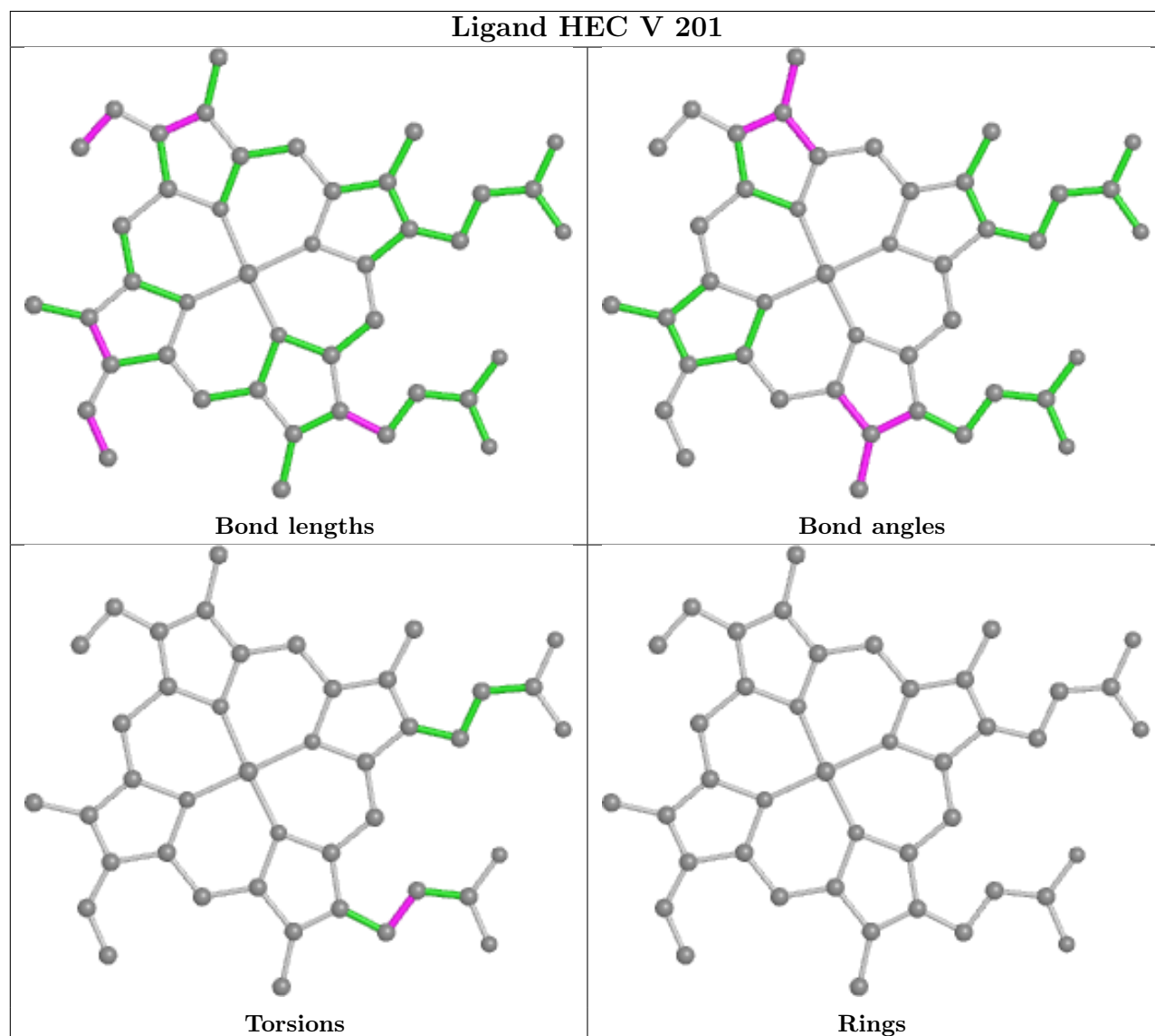
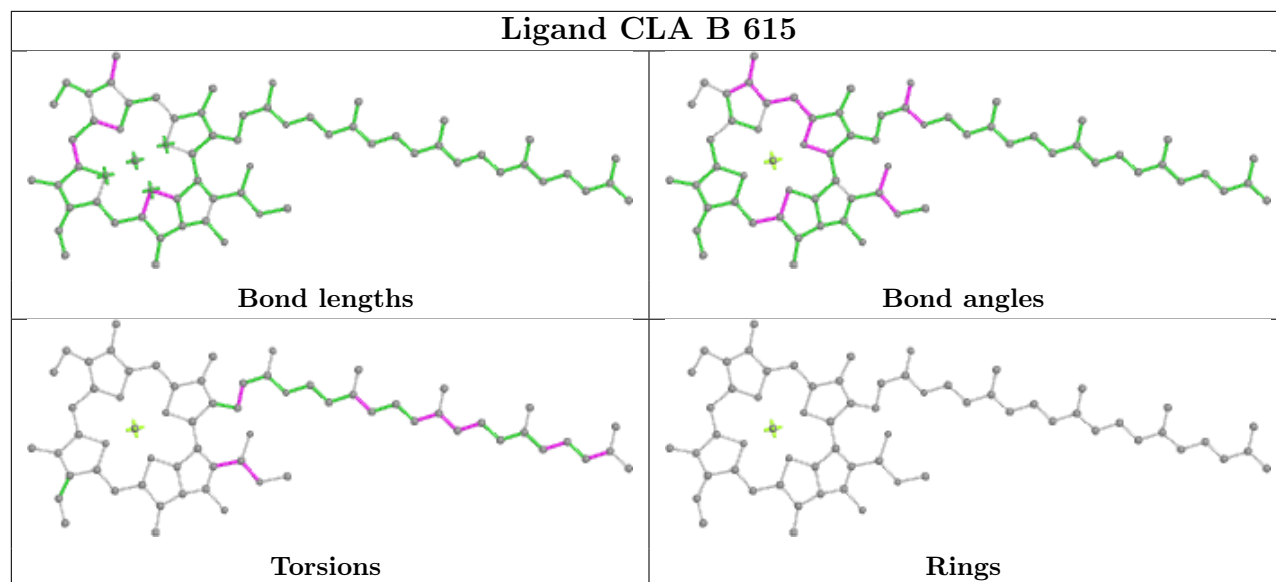


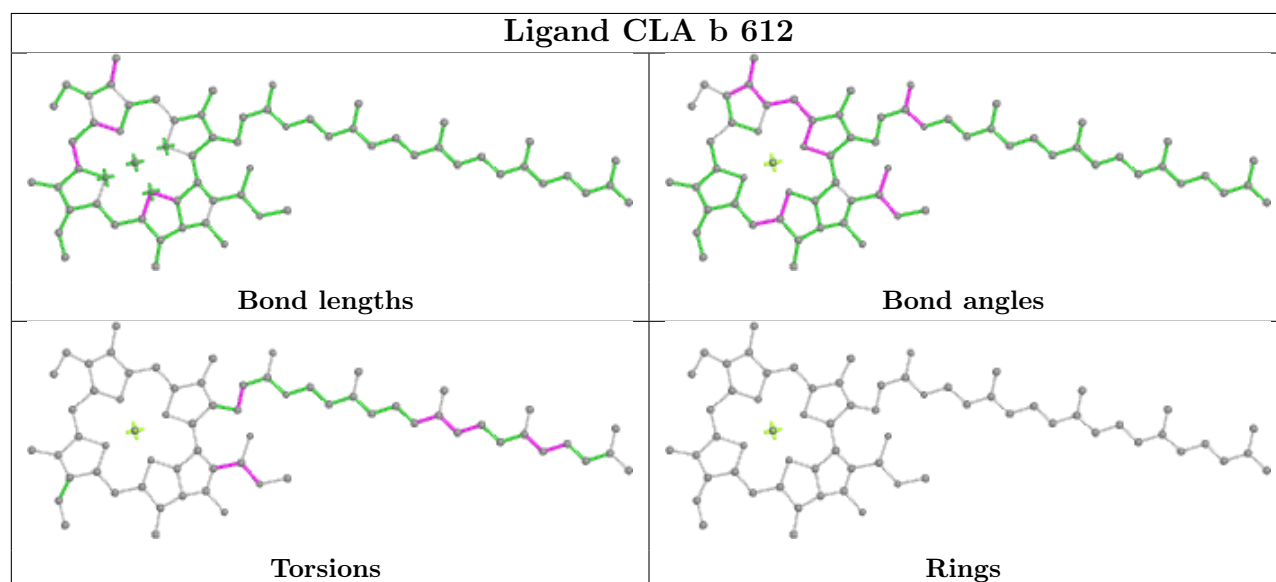
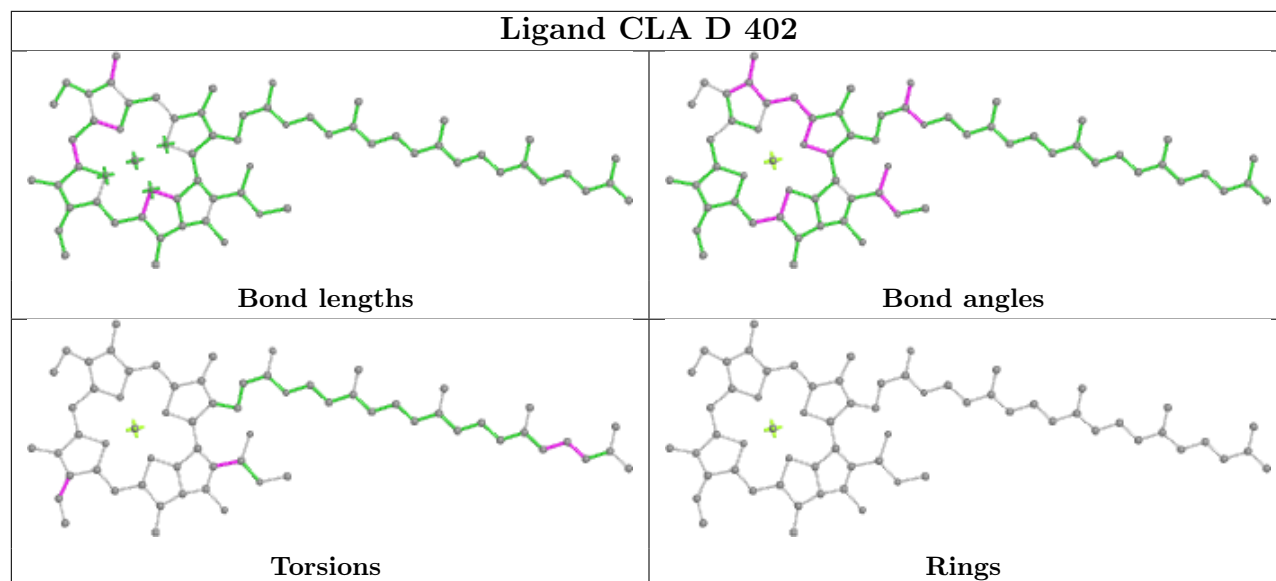
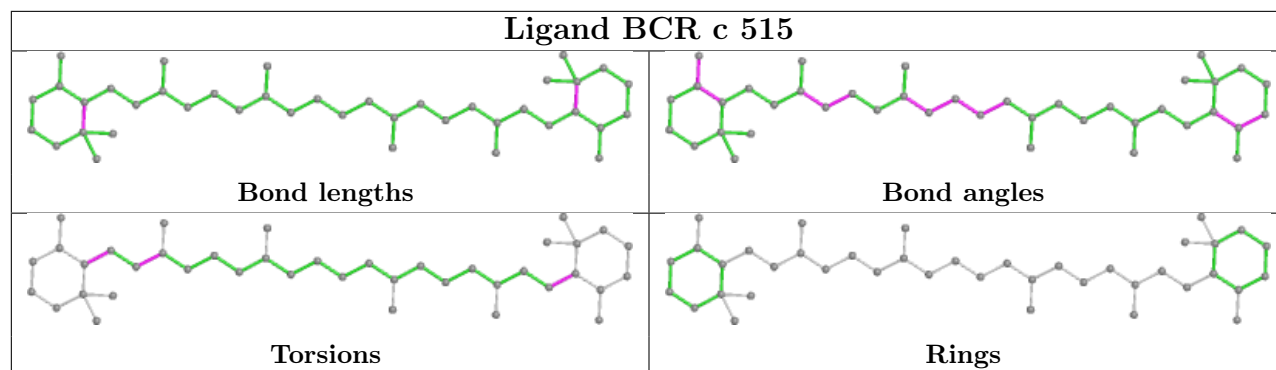


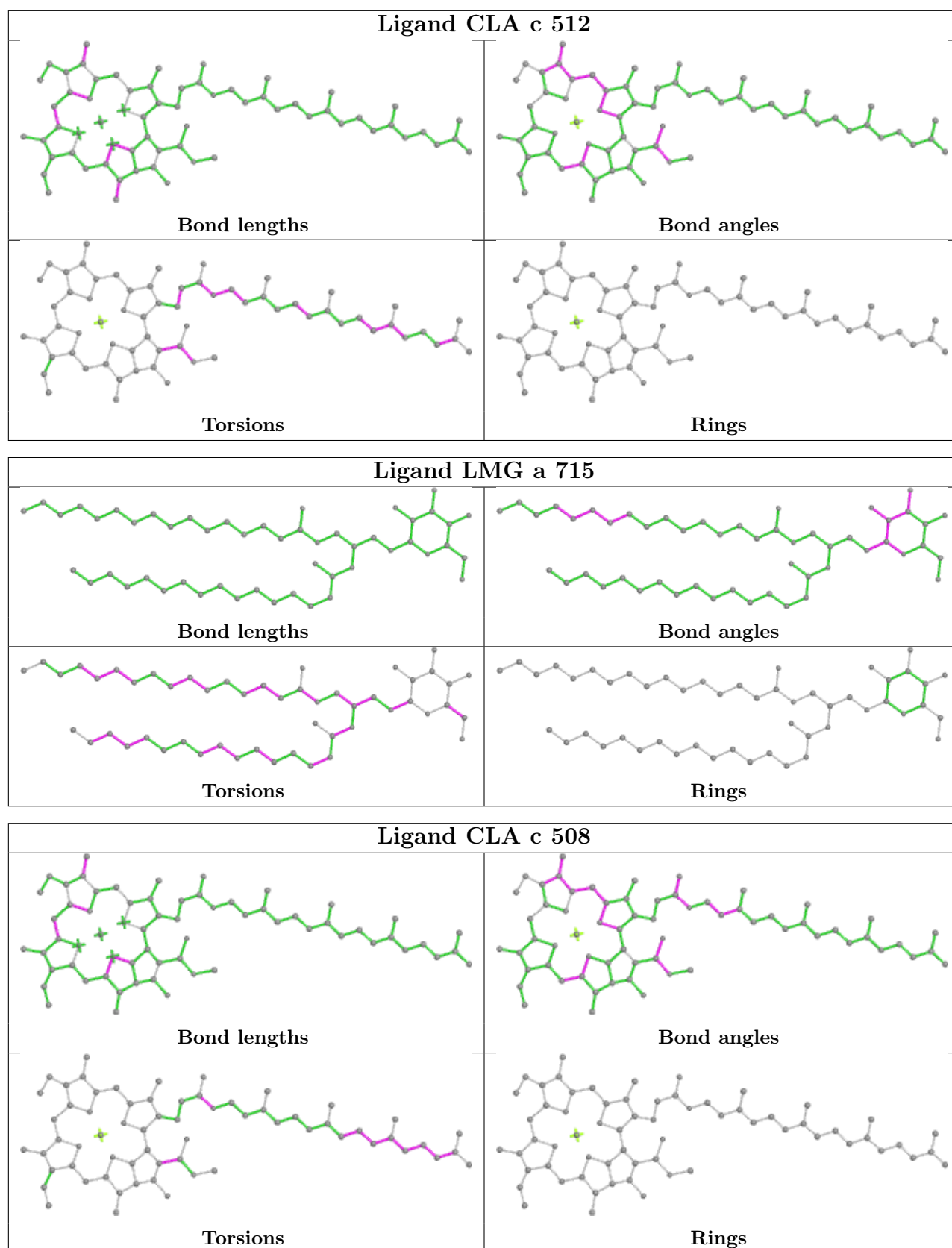


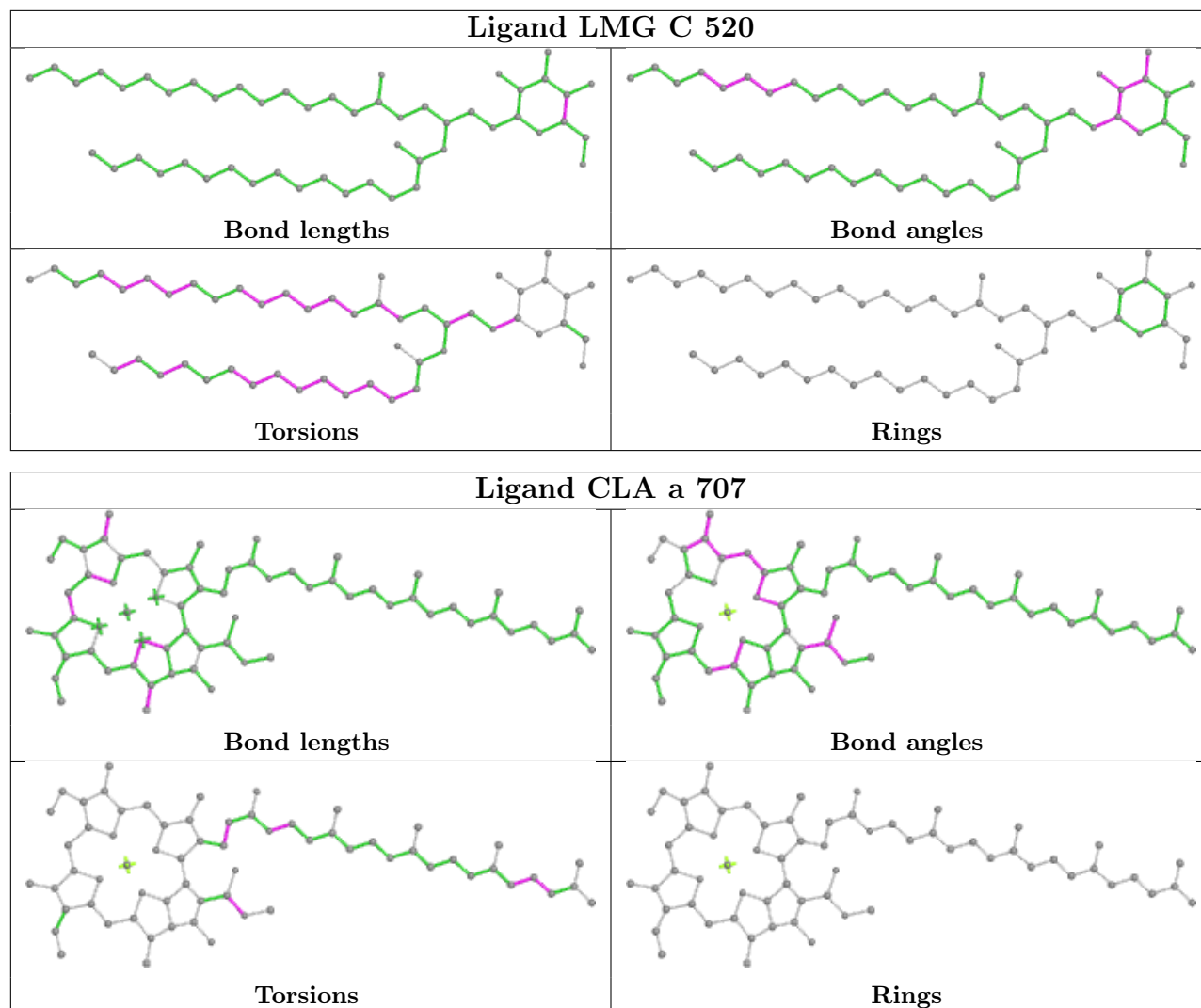


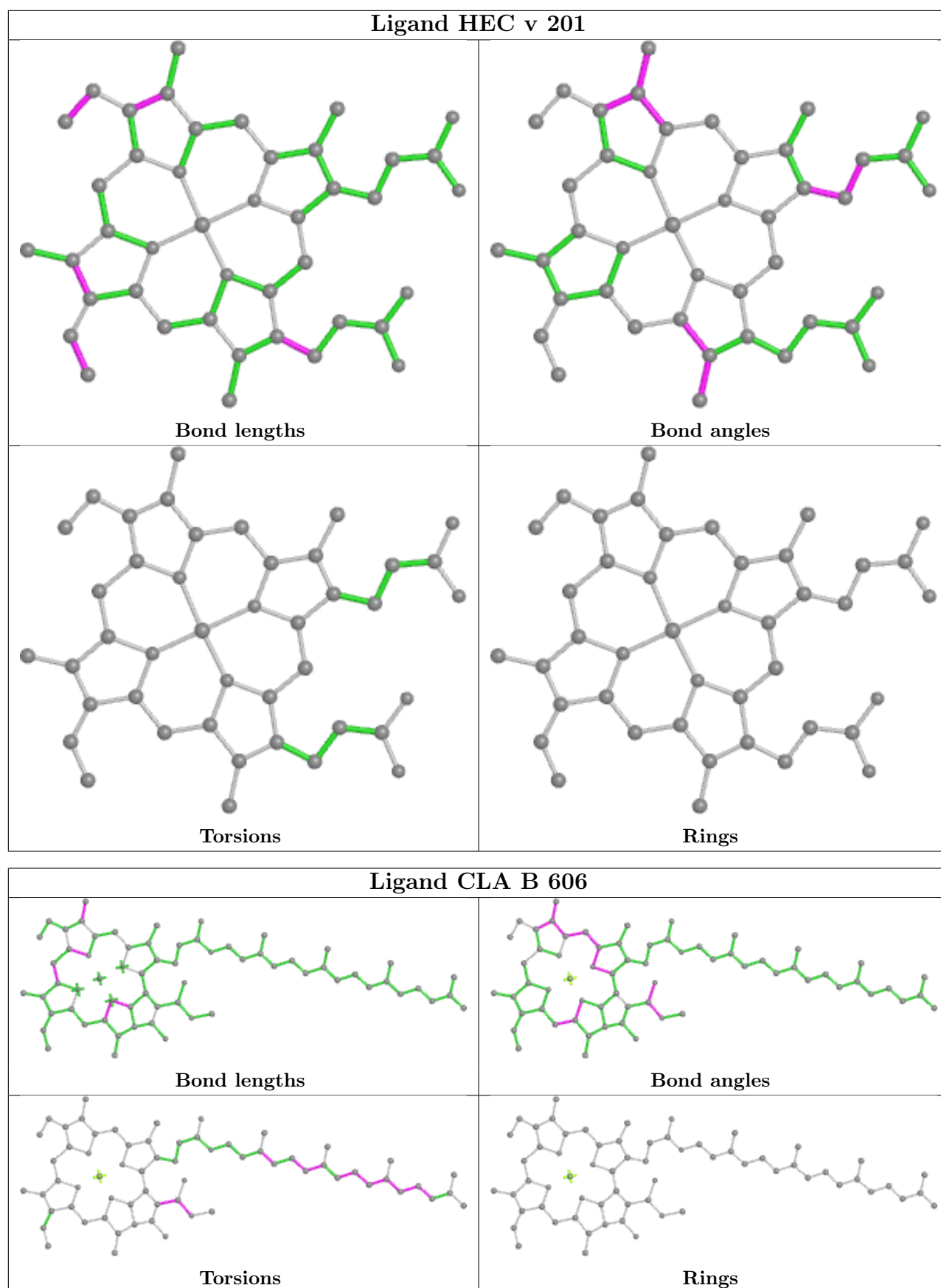


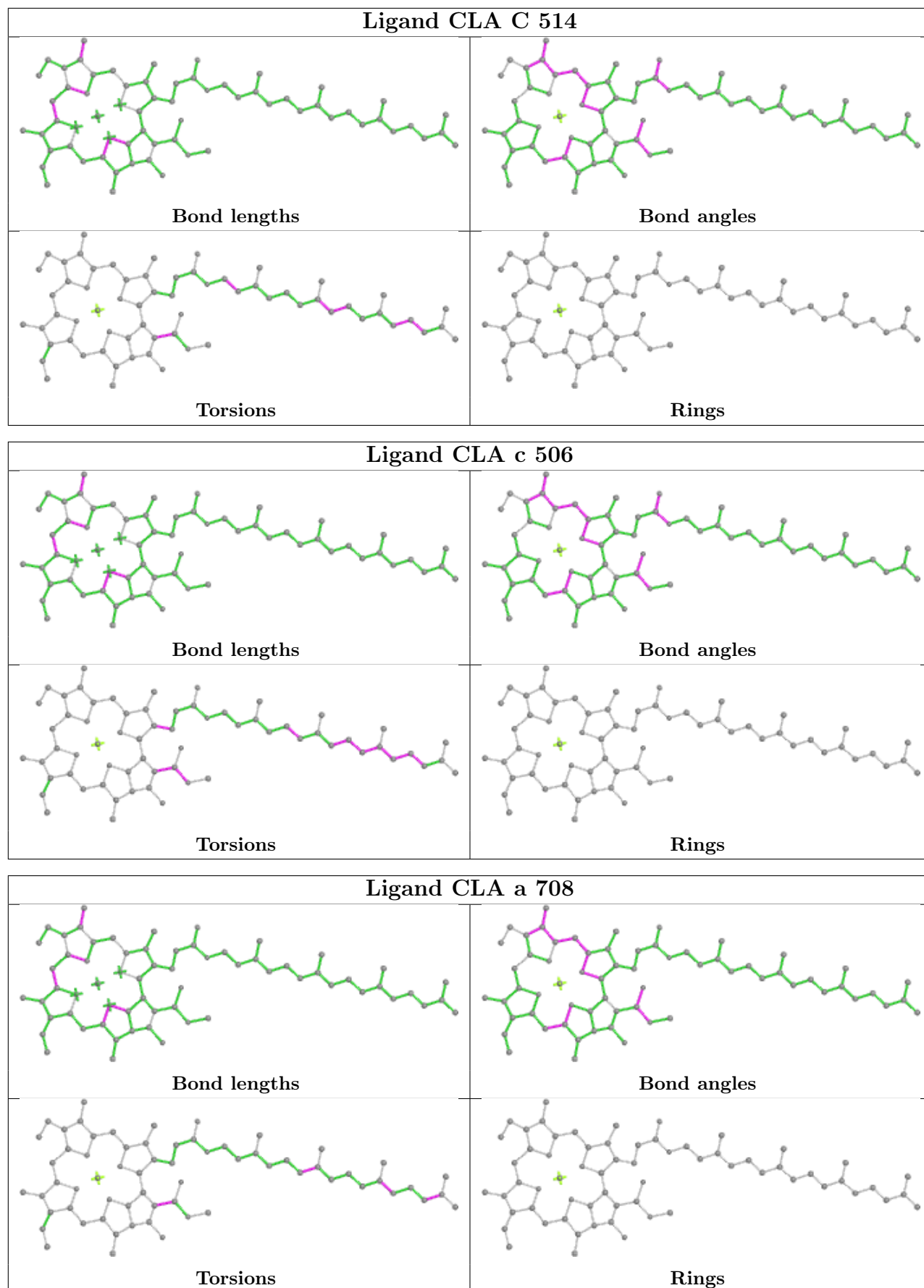


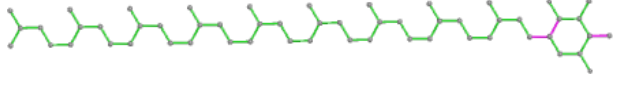
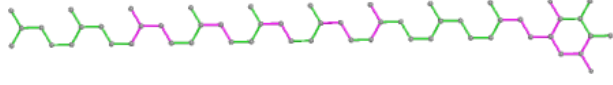
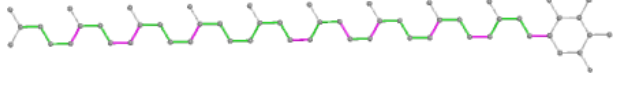
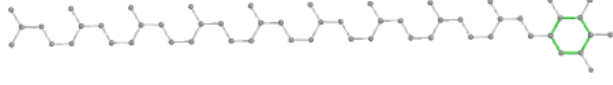
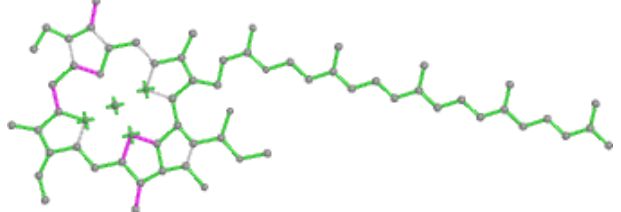
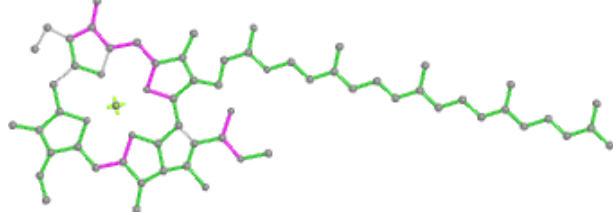
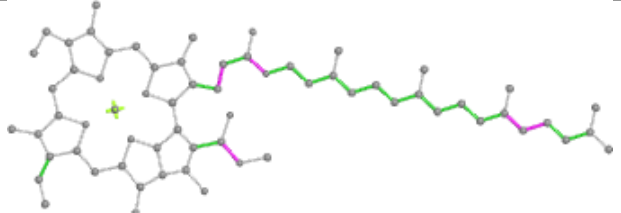
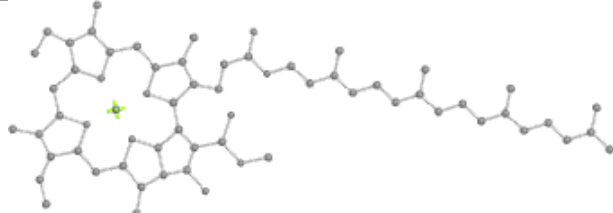
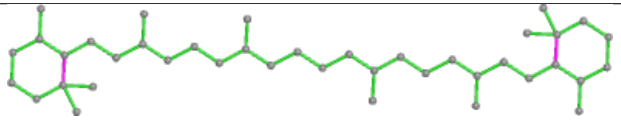
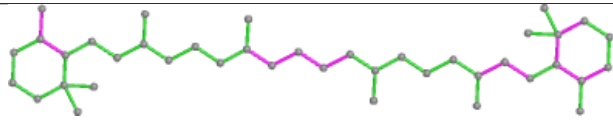
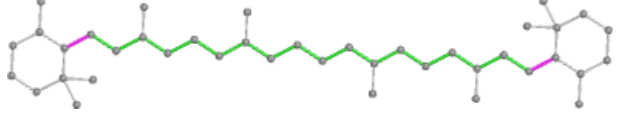
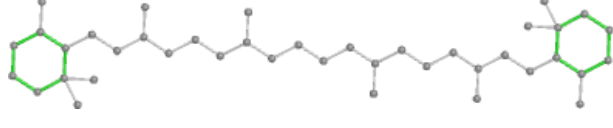


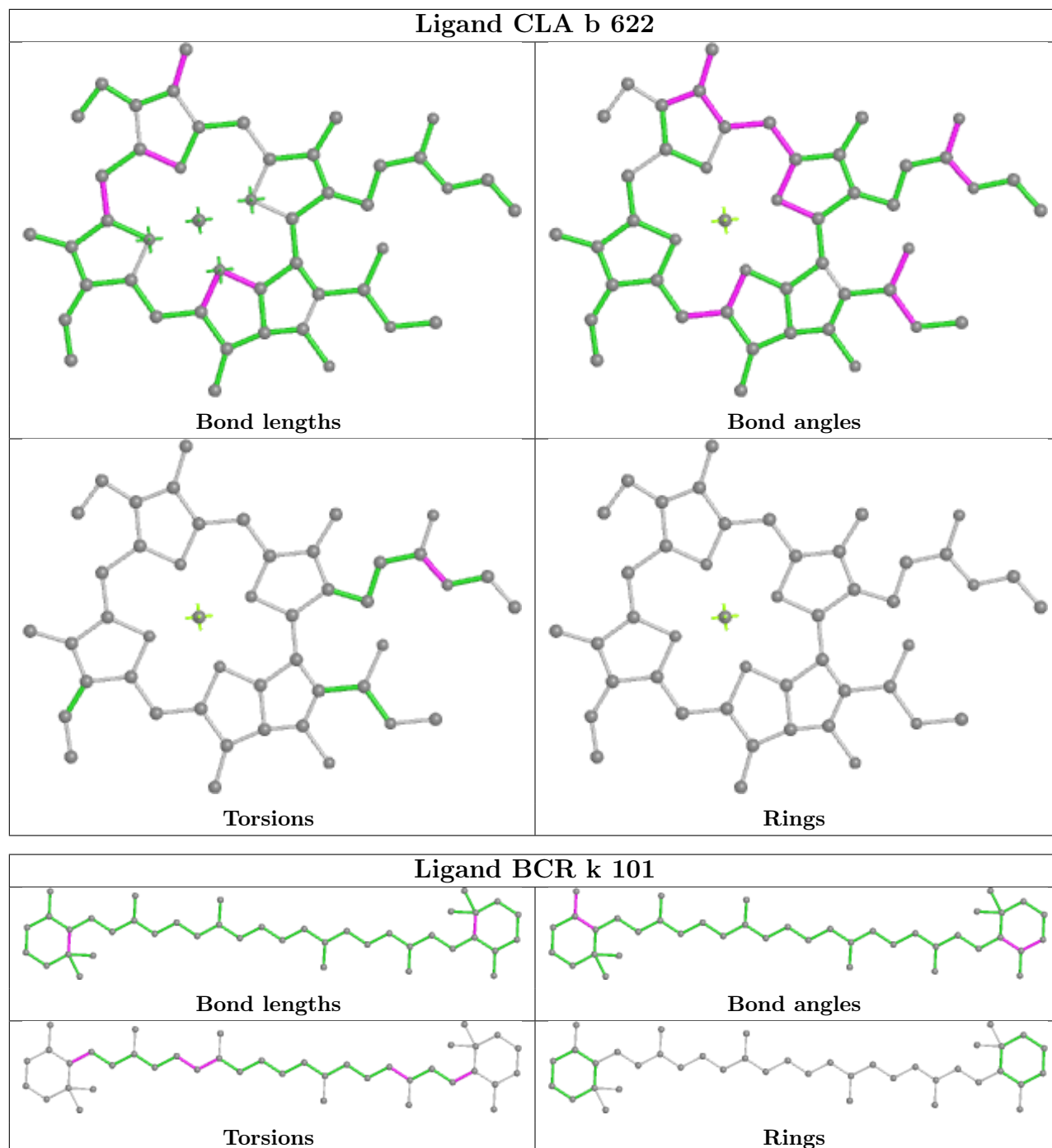


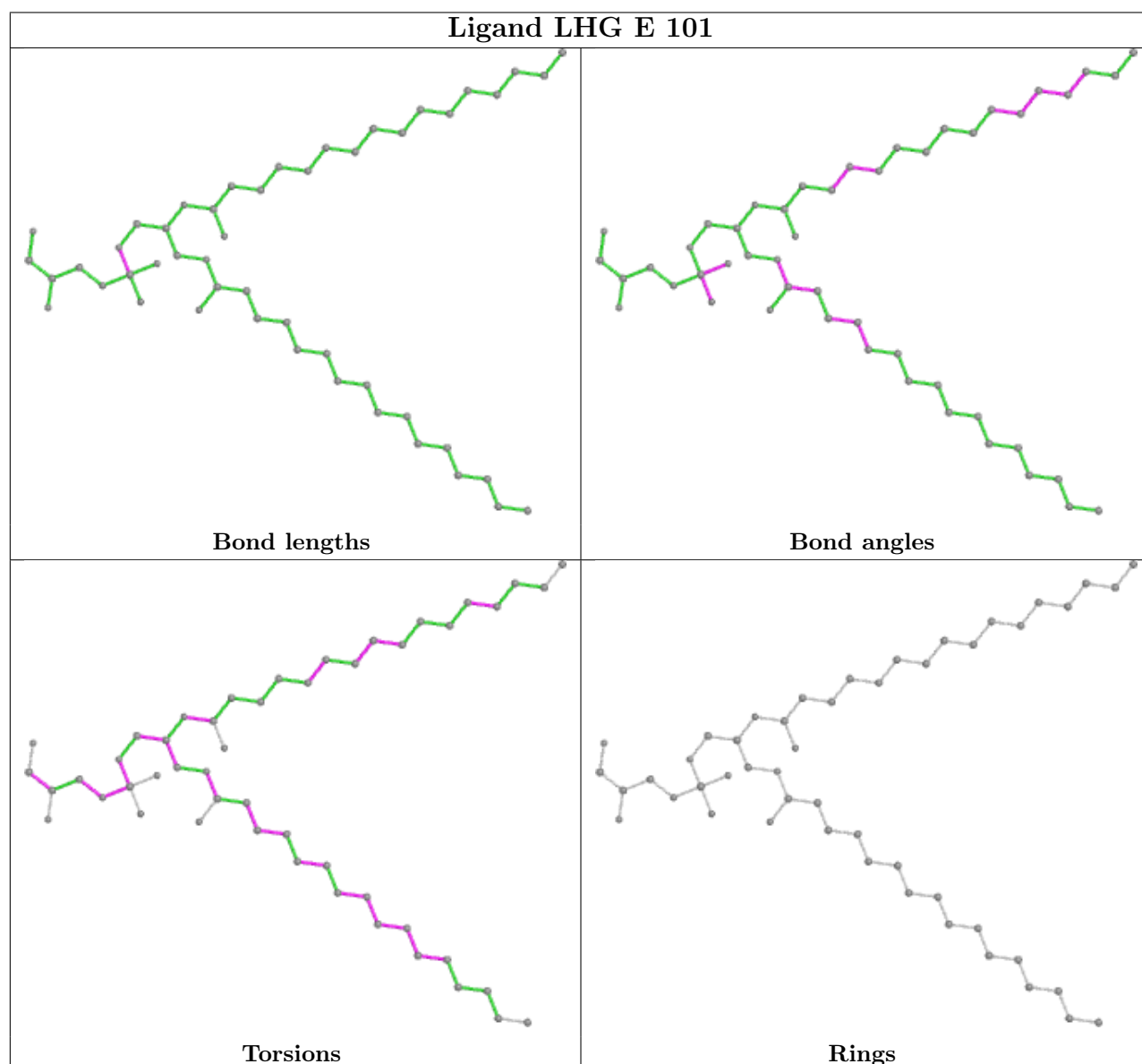
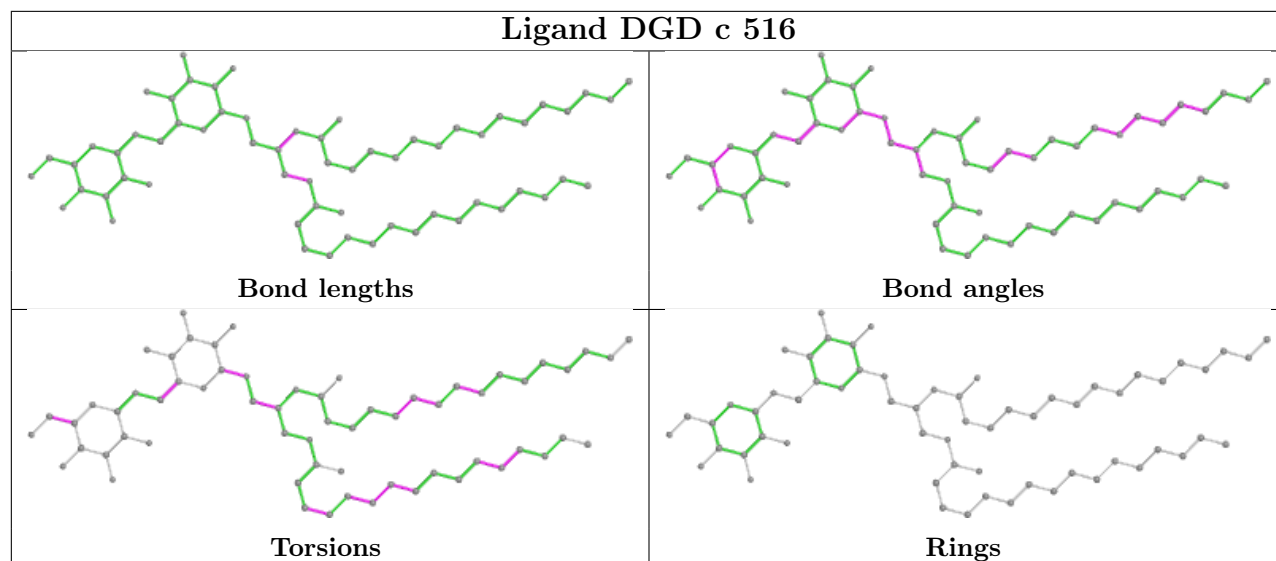


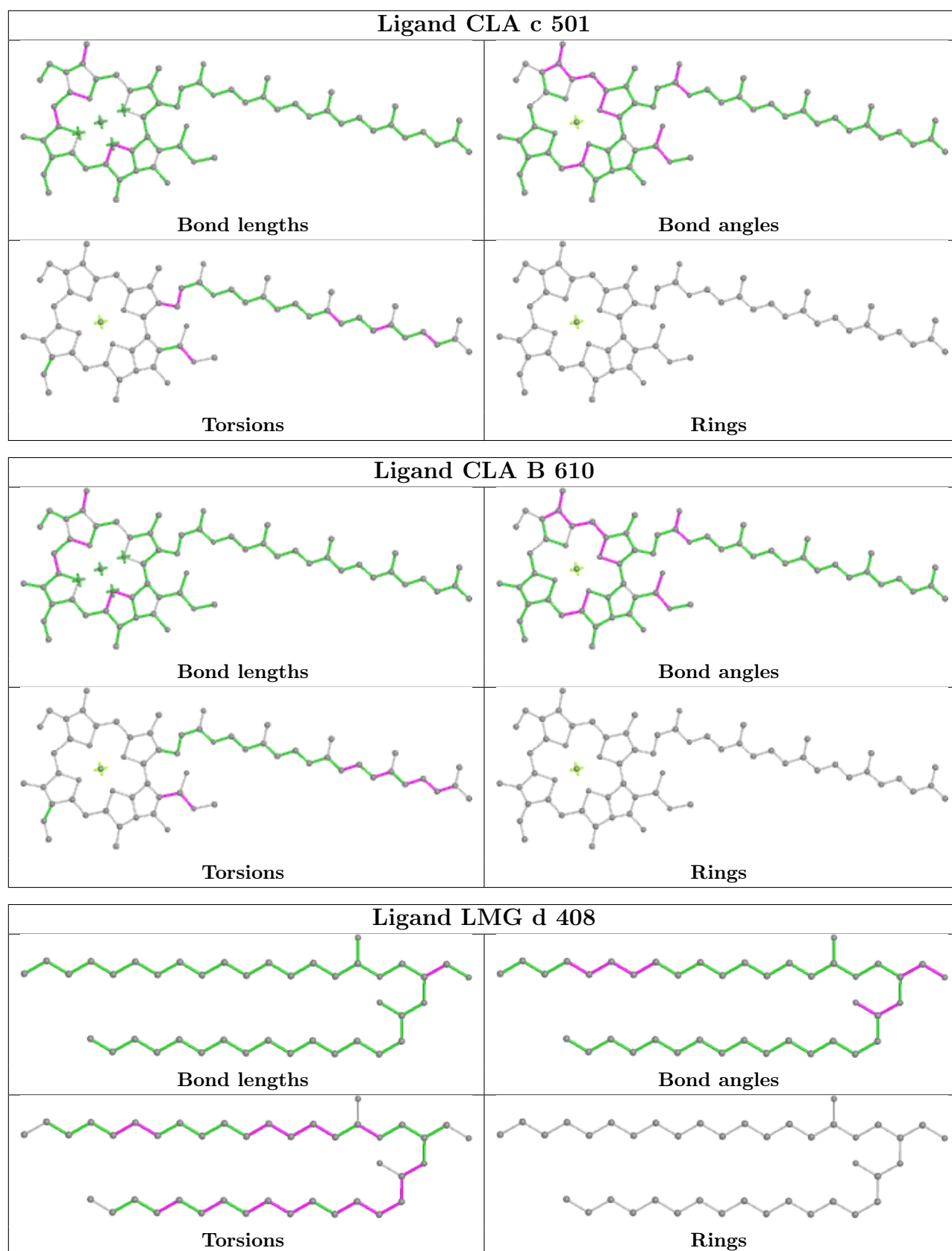


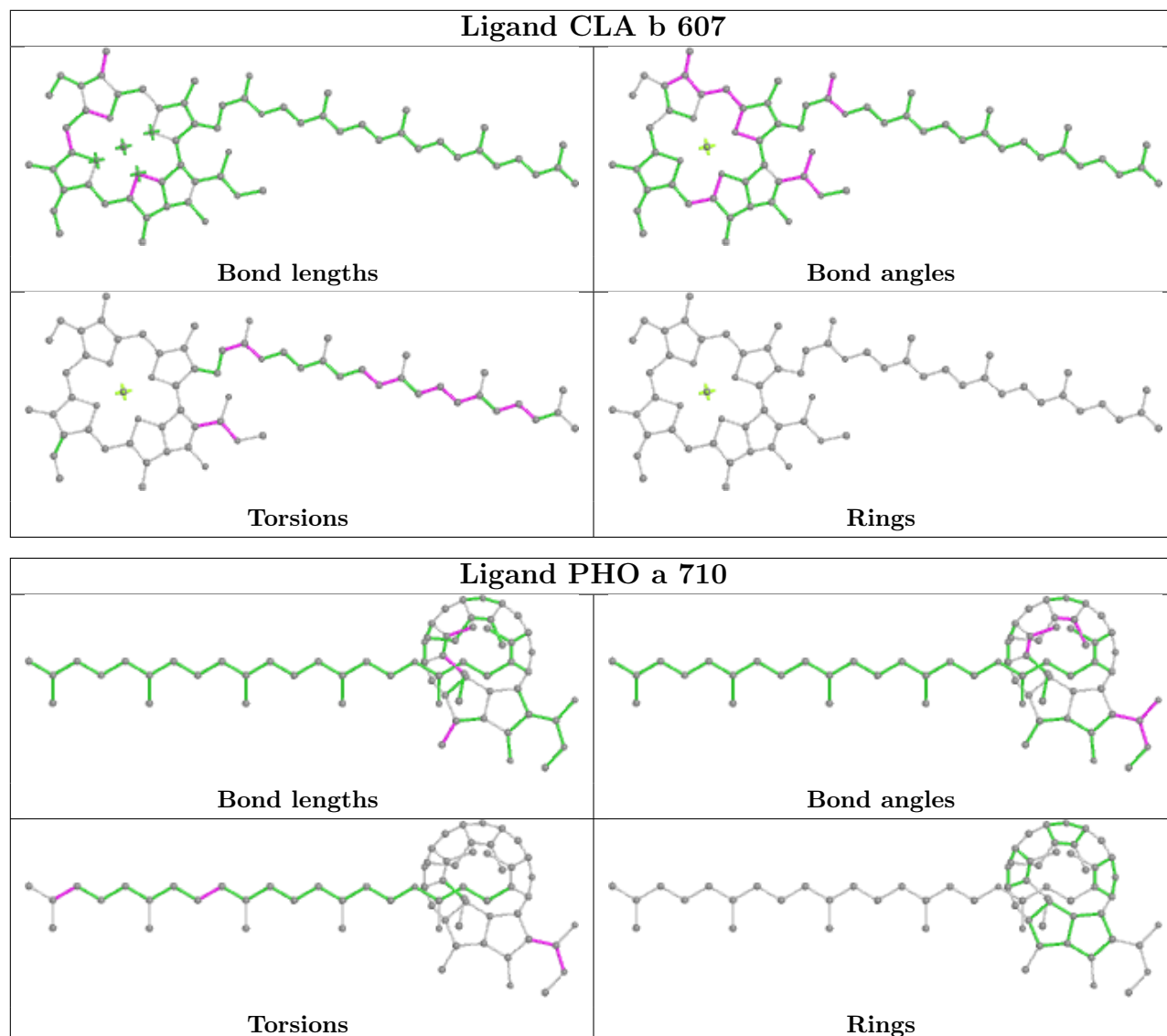


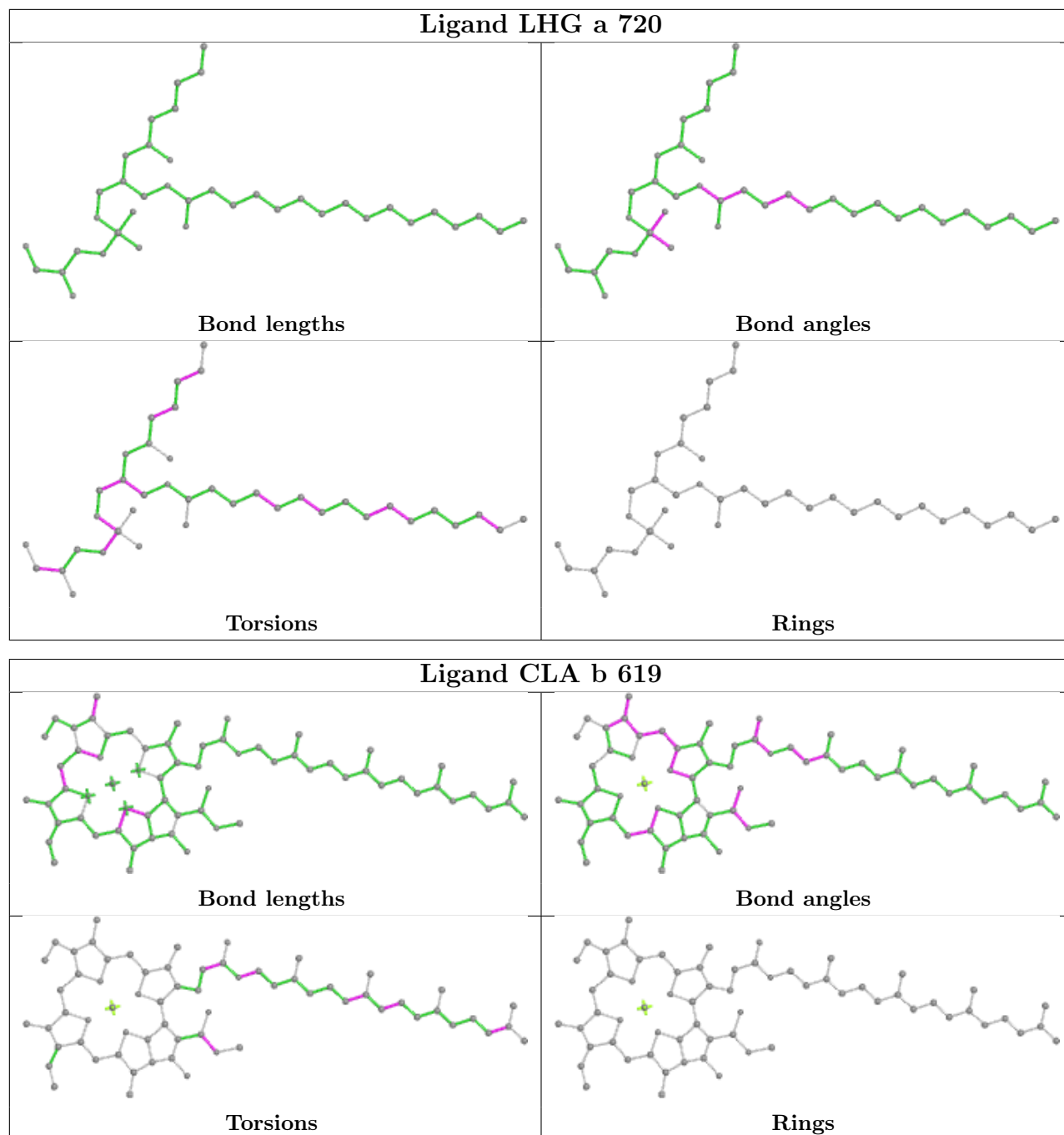
Ligand PL9 a 713	
 <p>Bond lengths</p>	 <p>Bond angles</p>
 <p>Torsions</p>	 <p>Rings</p>
Ligand CLA C 506	
 <p>Bond lengths</p>	 <p>Bond angles</p>
 <p>Torsions</p>	 <p>Rings</p>
Ligand BCR k 102	
 <p>Bond lengths</p>	 <p>Bond angles</p>
 <p>Torsions</p>	 <p>Rings</p>

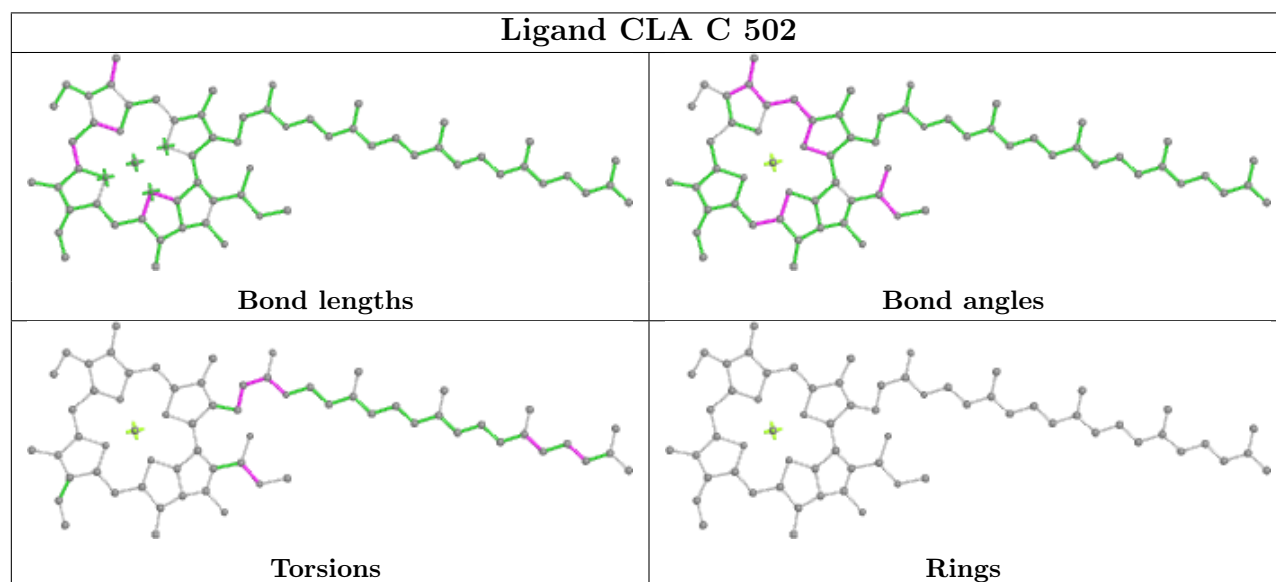
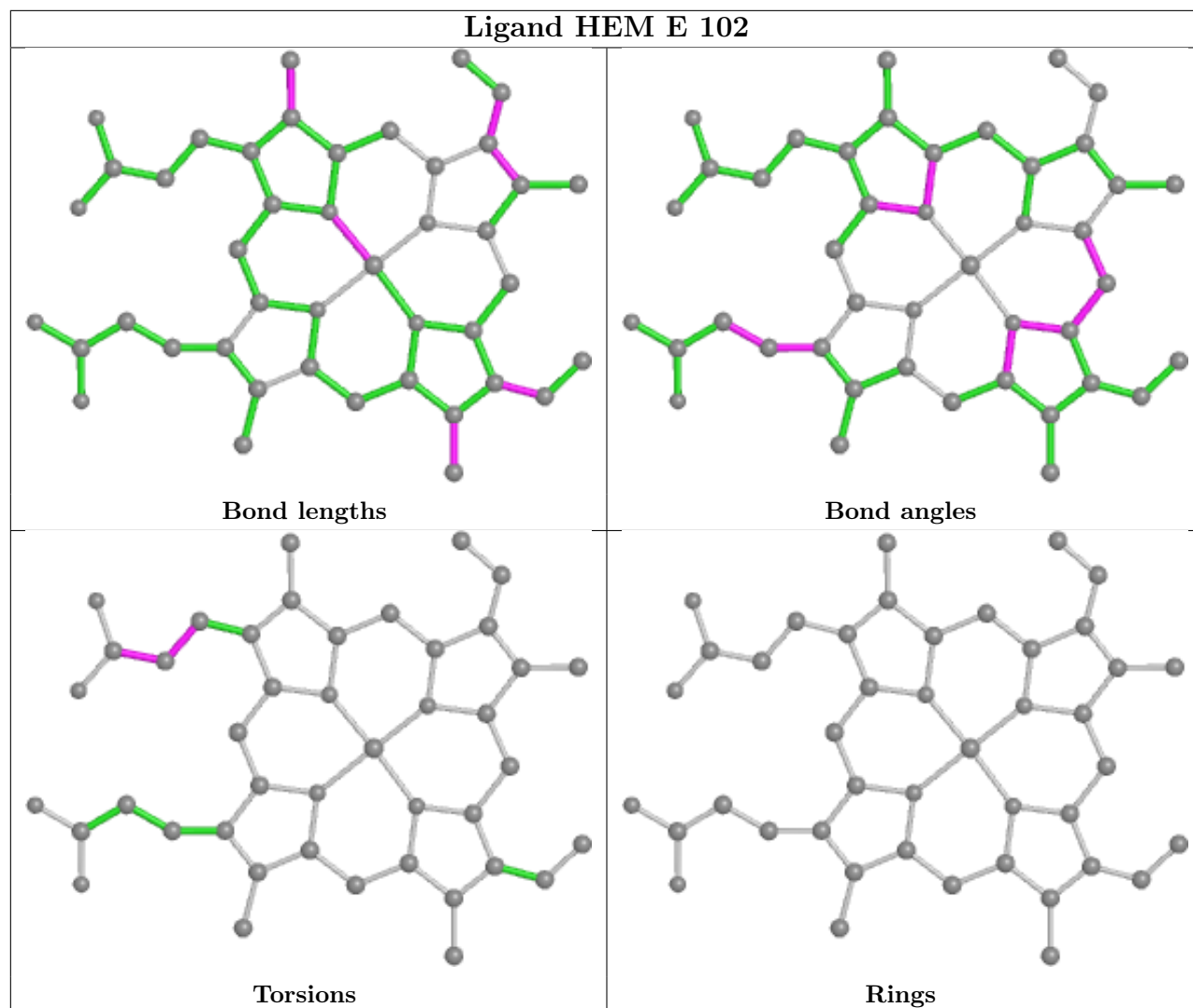


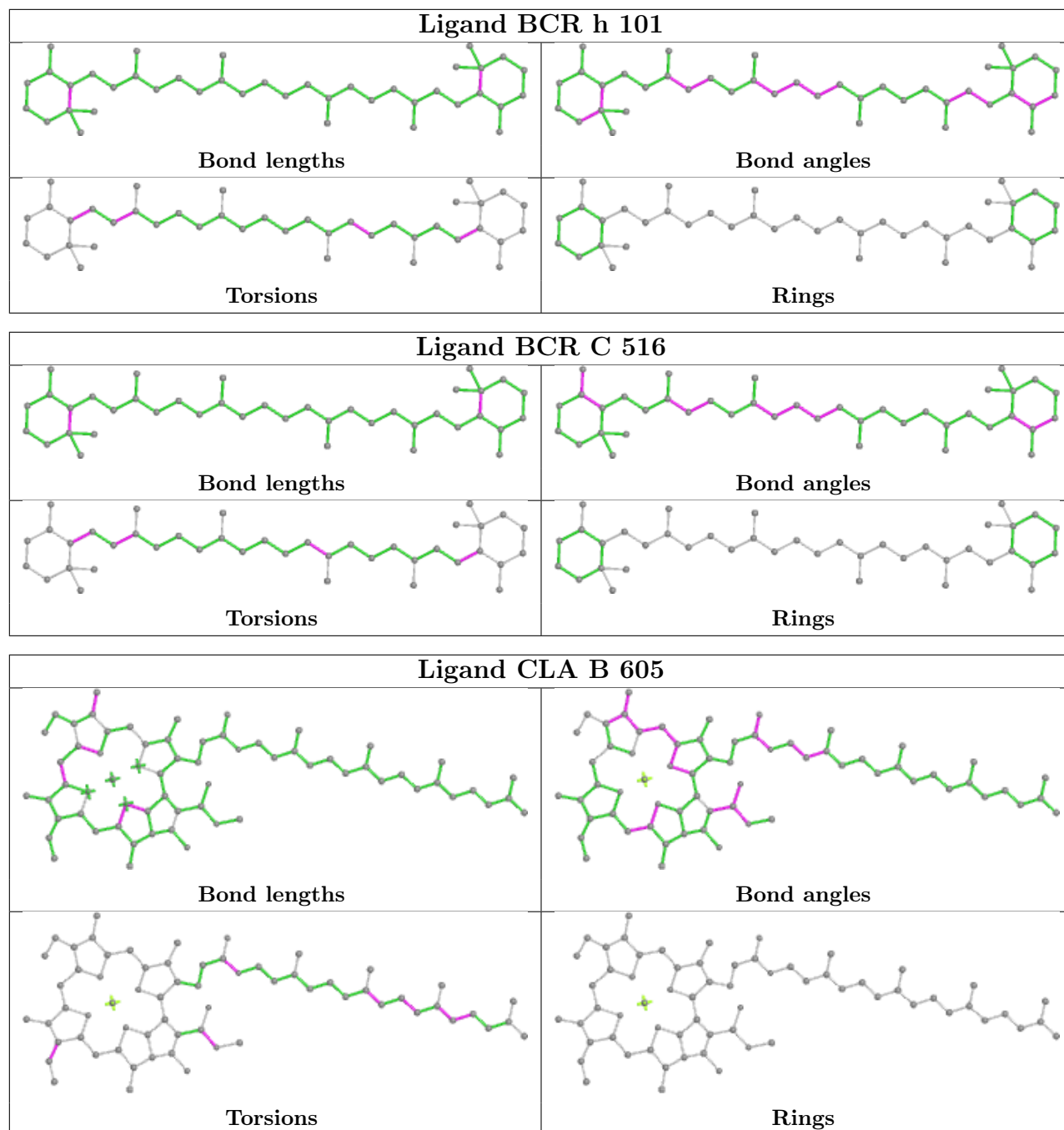


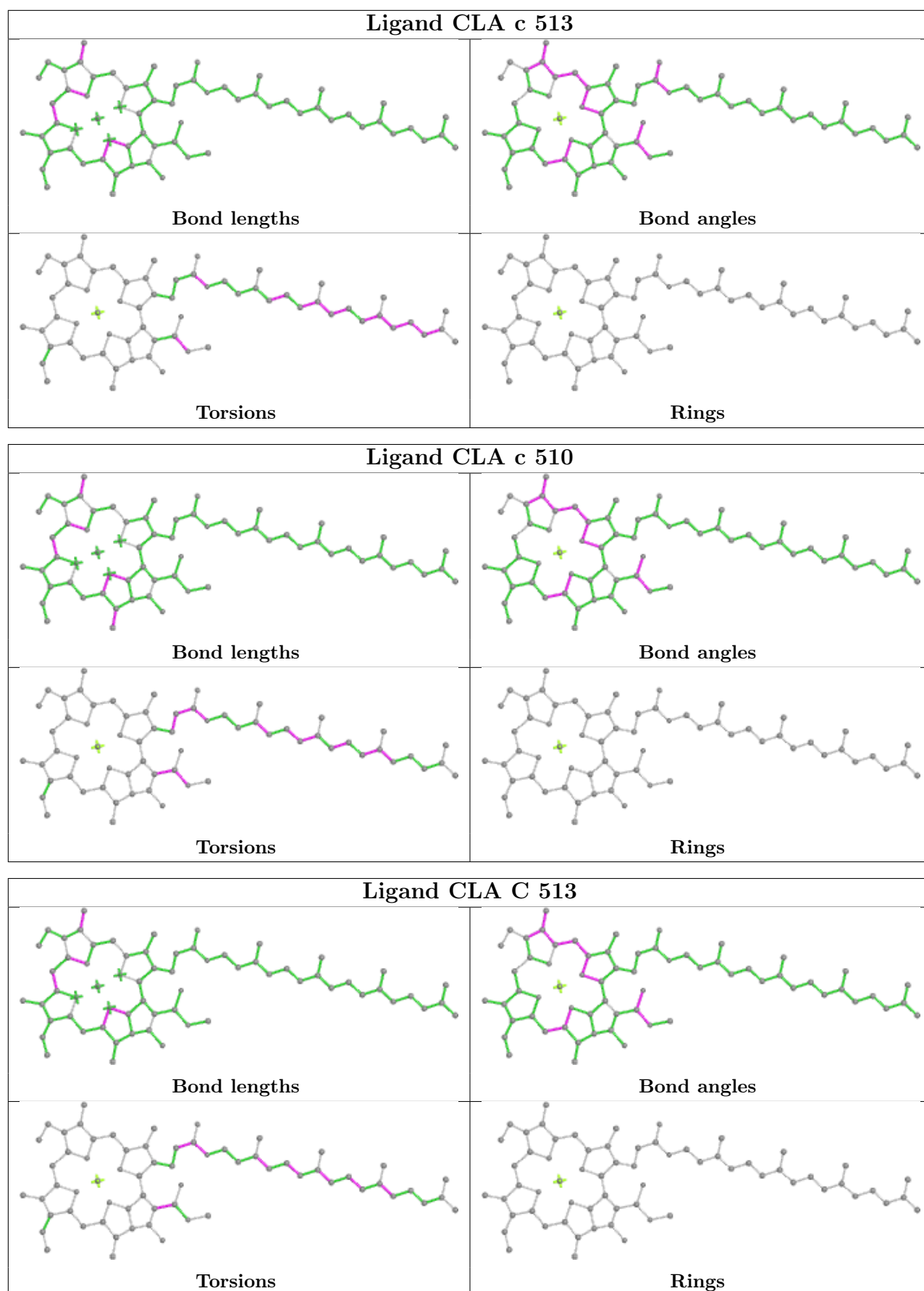


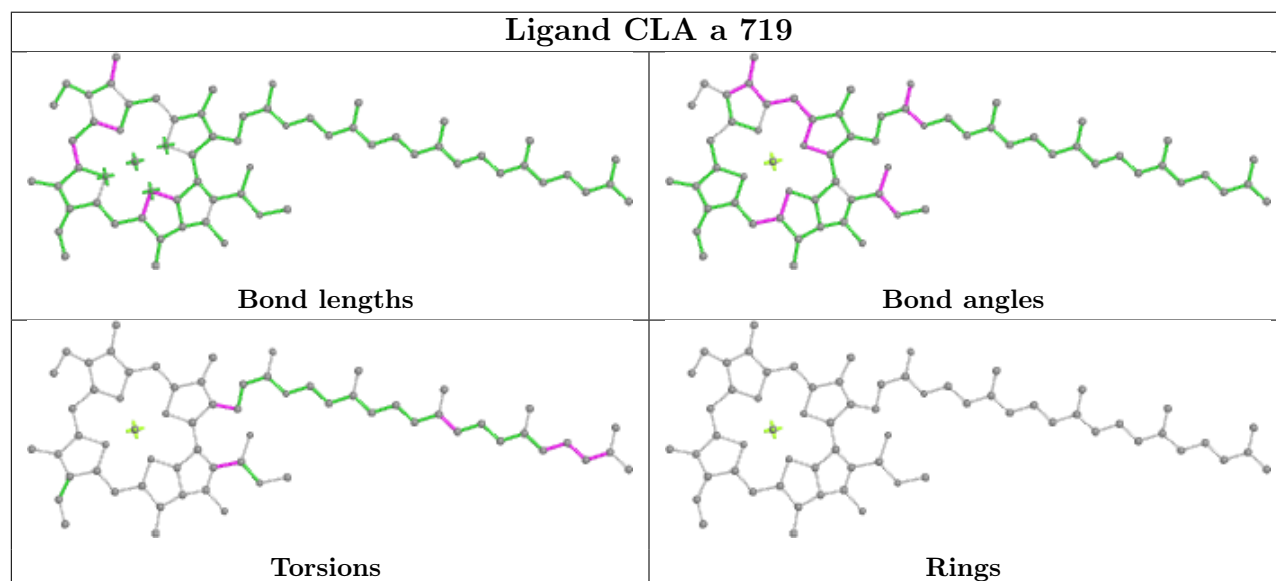
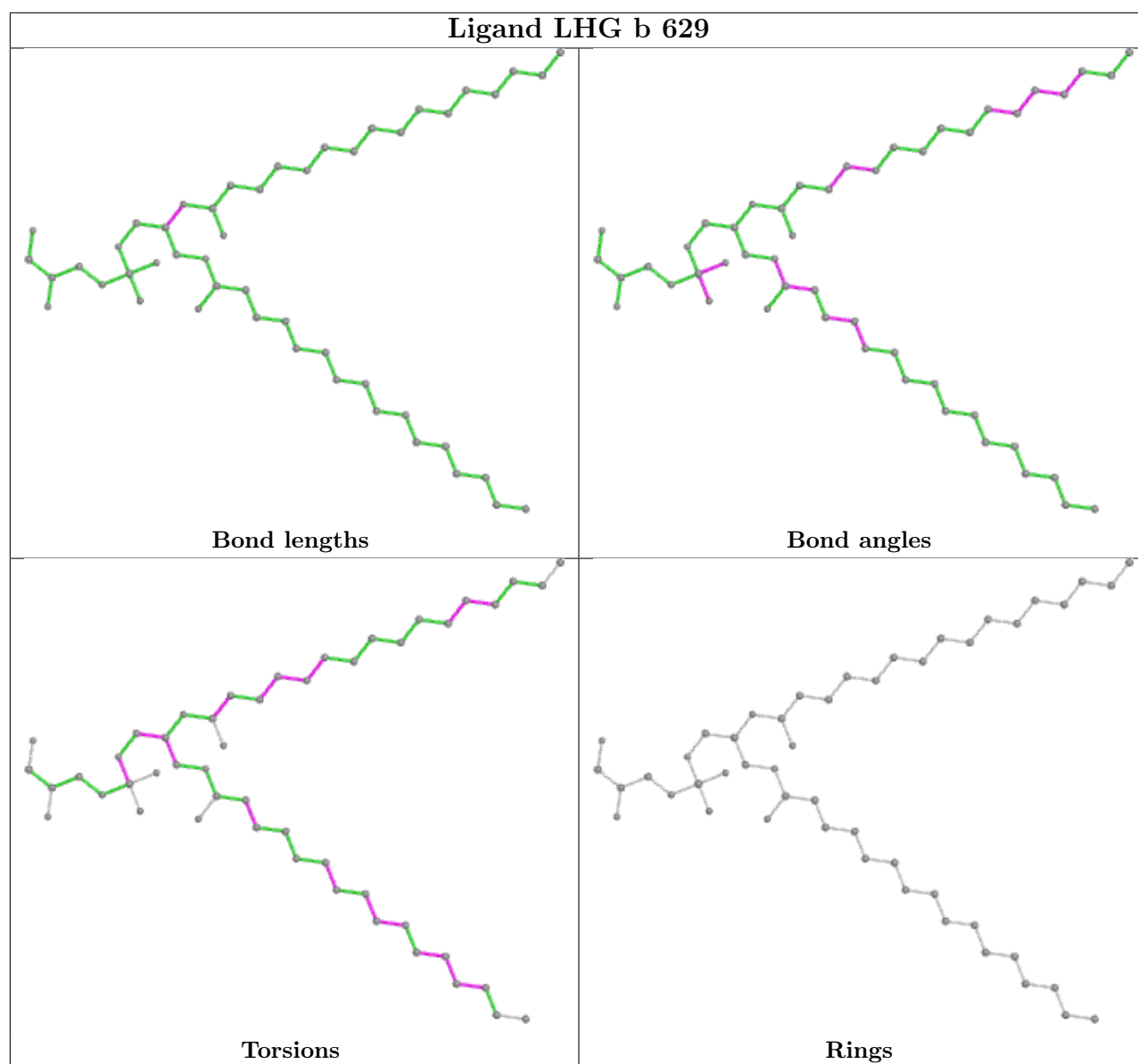


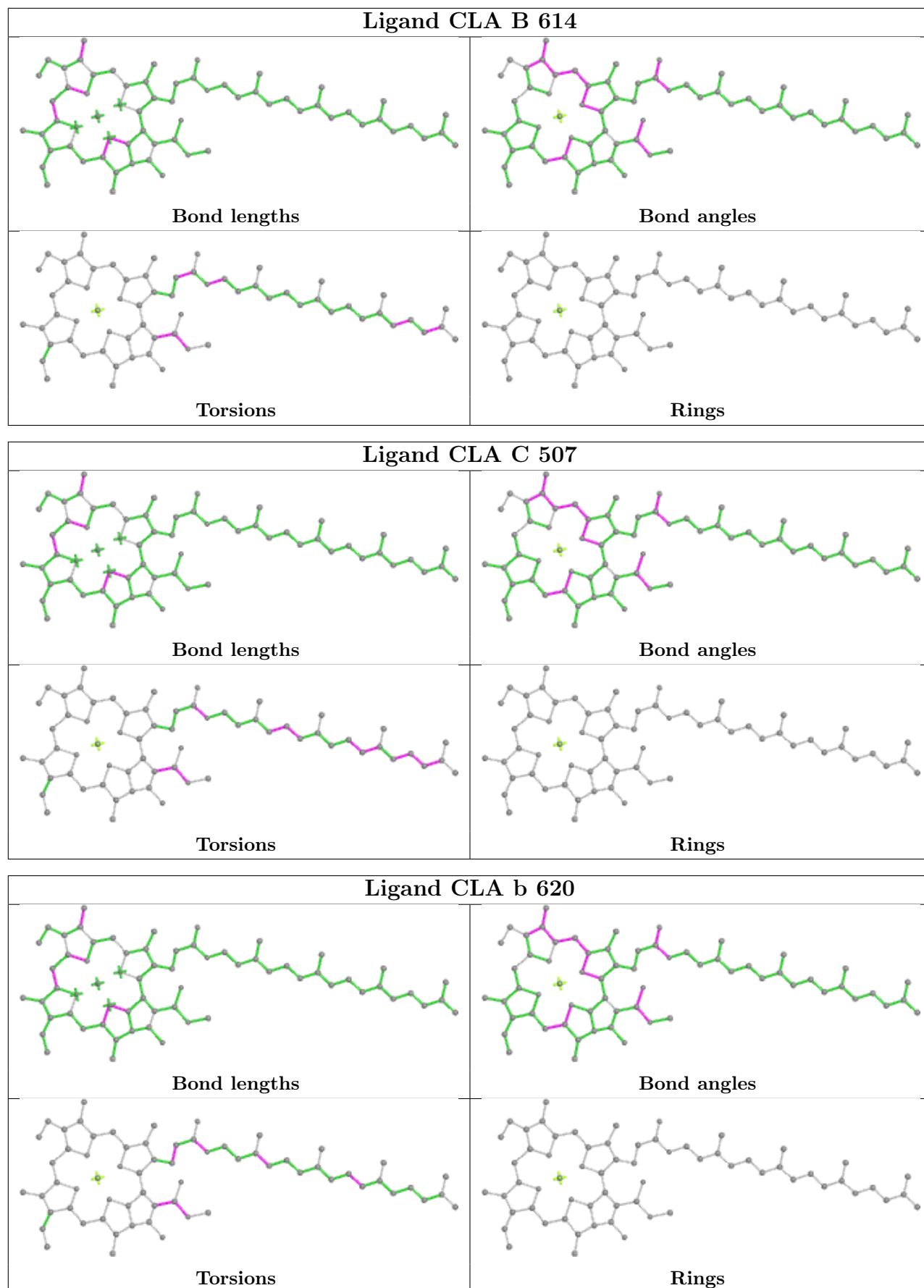


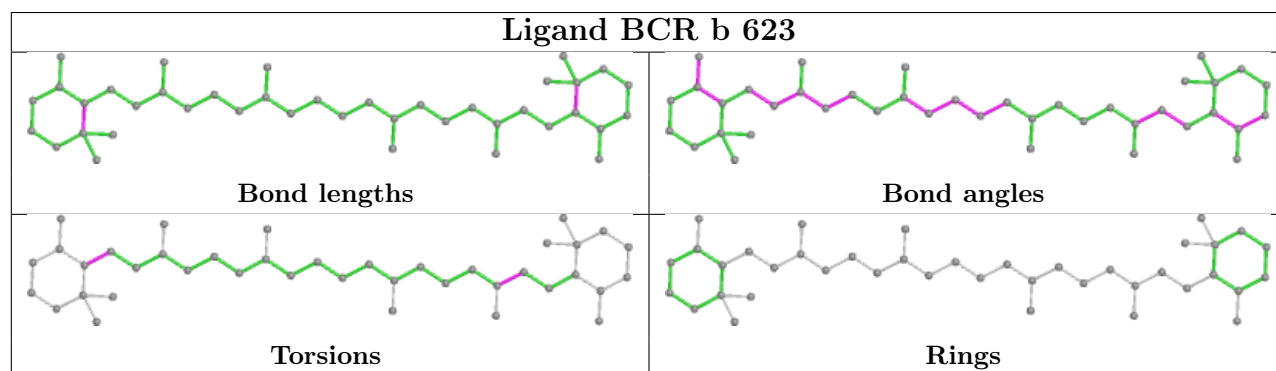
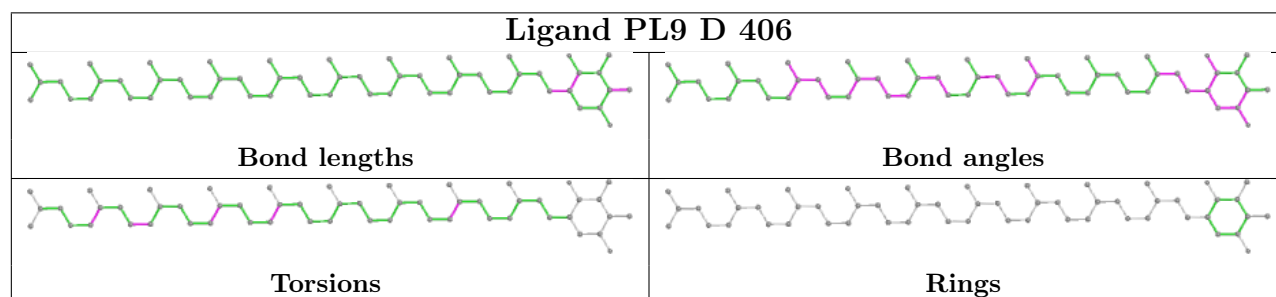
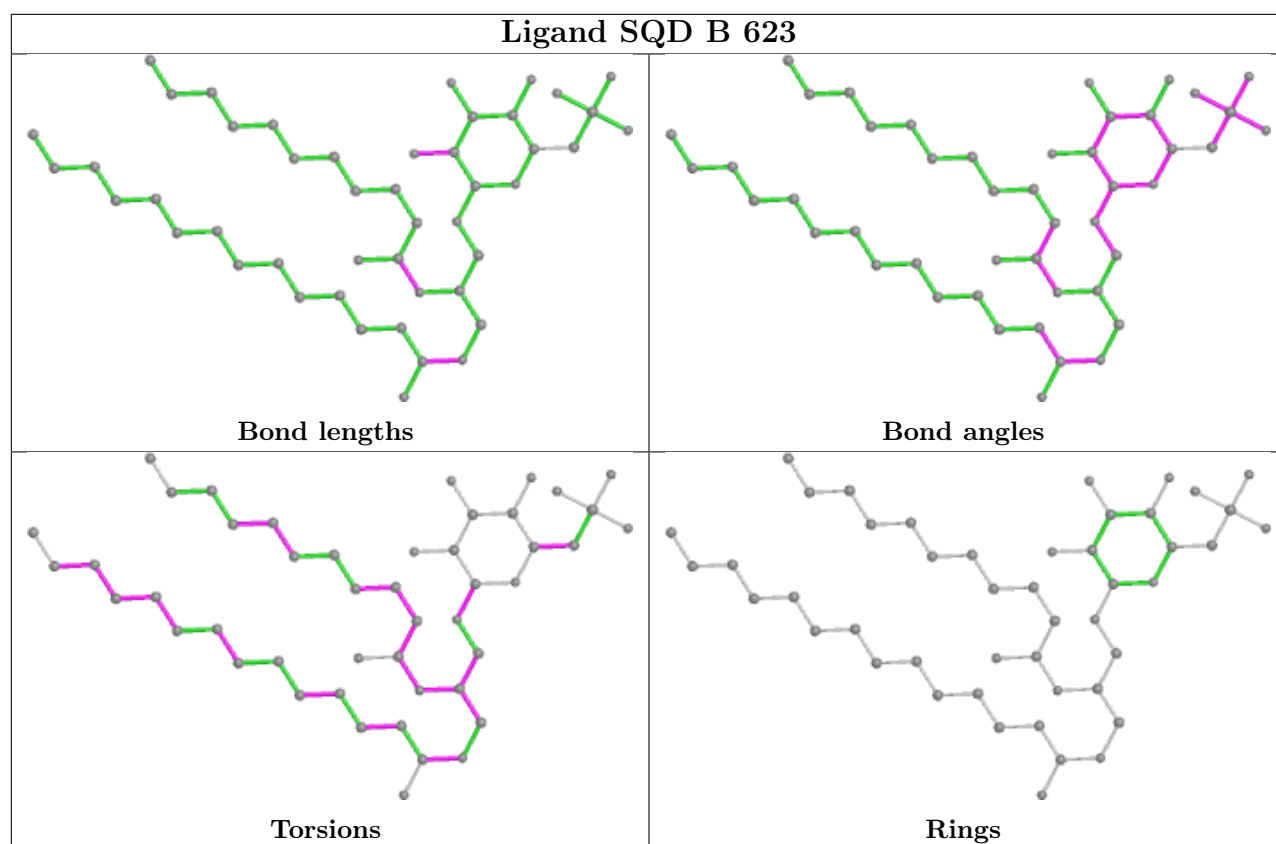


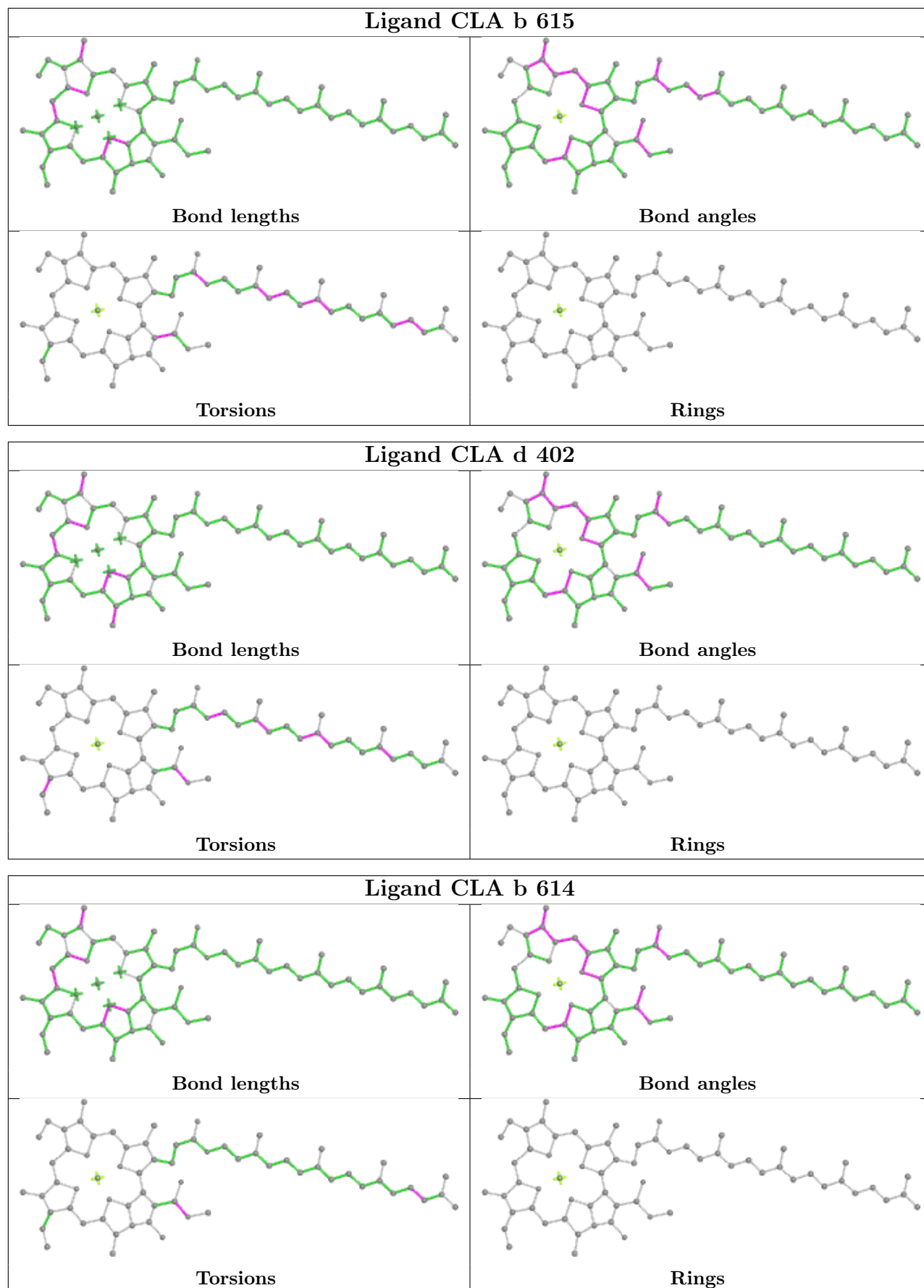


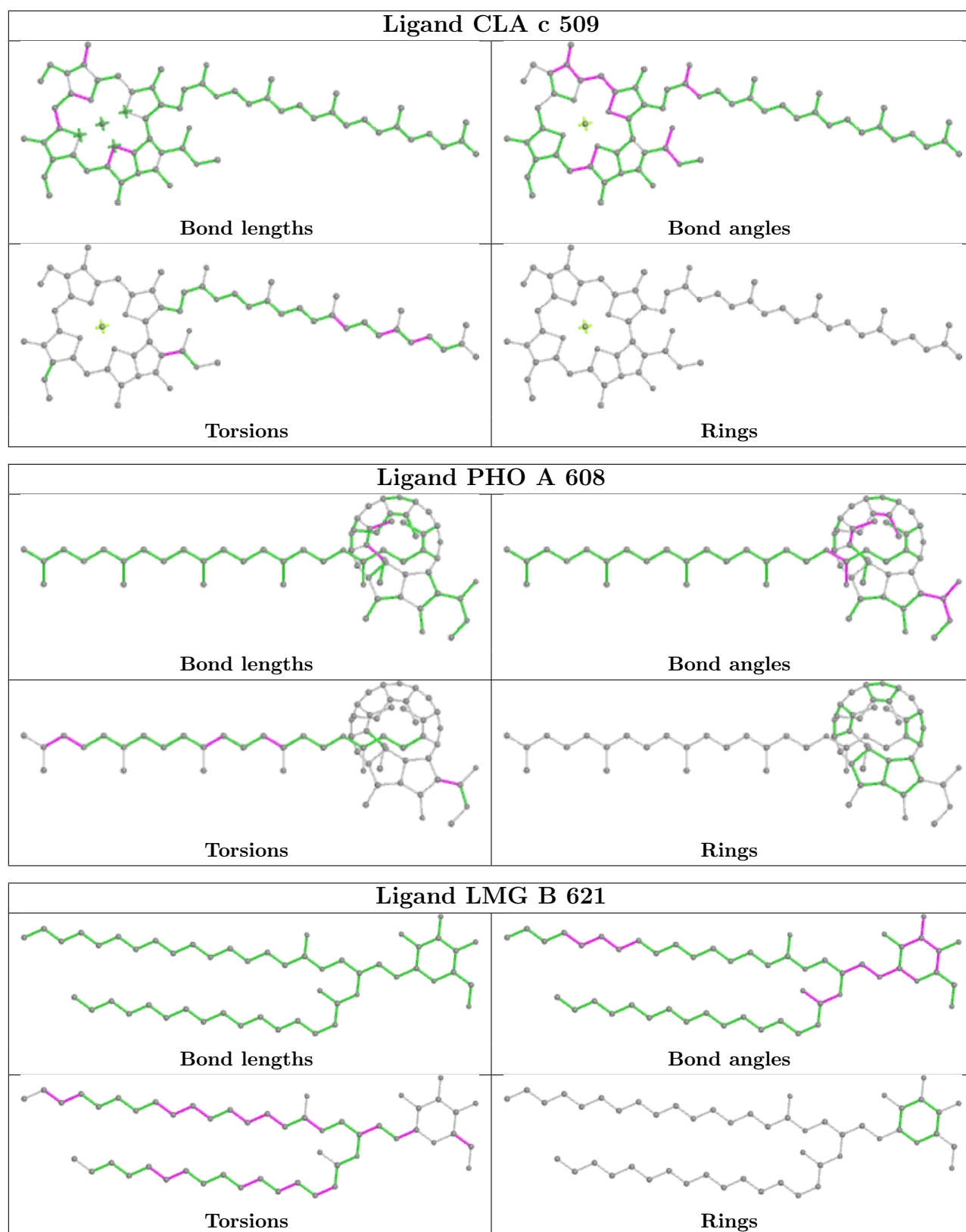


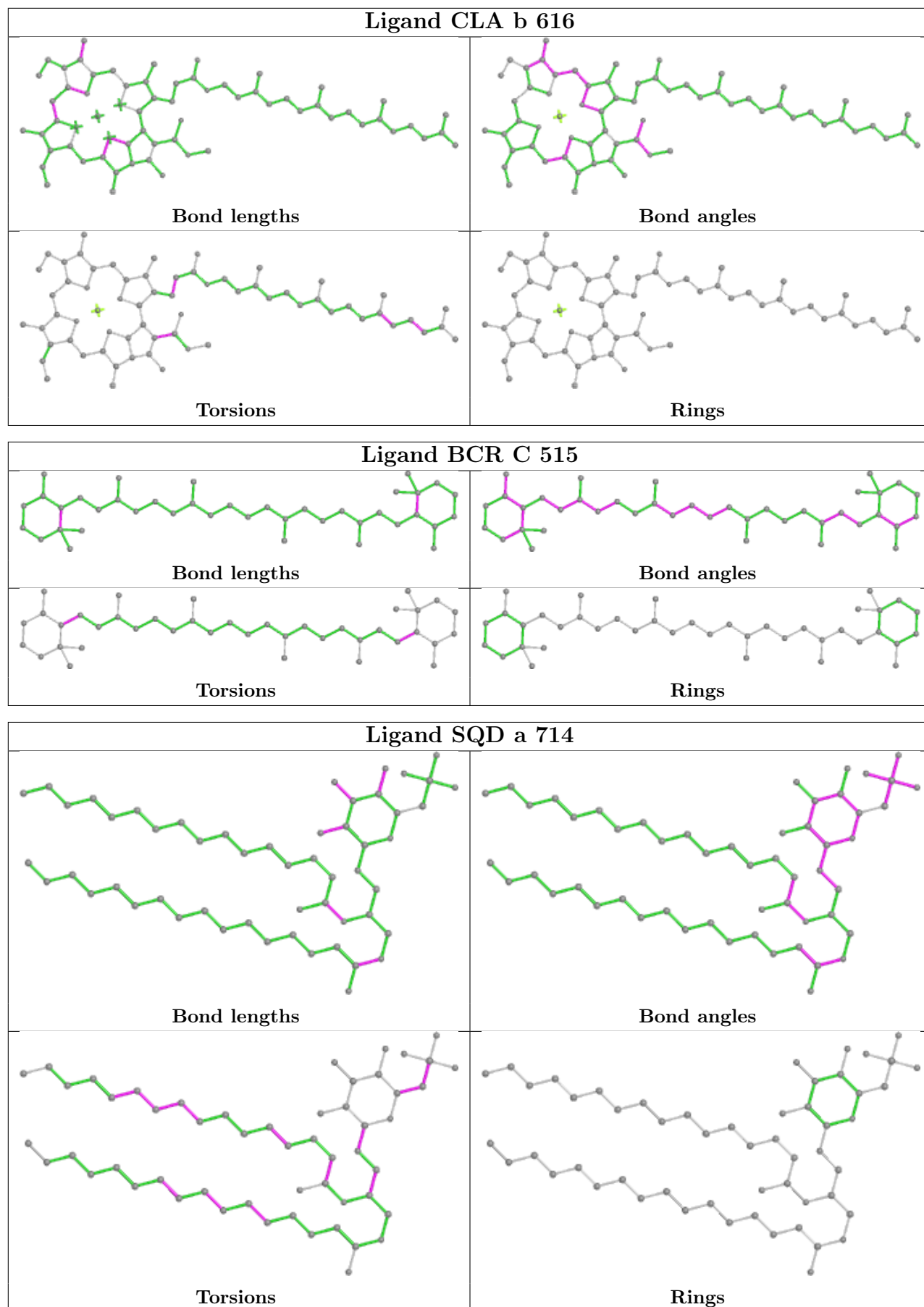


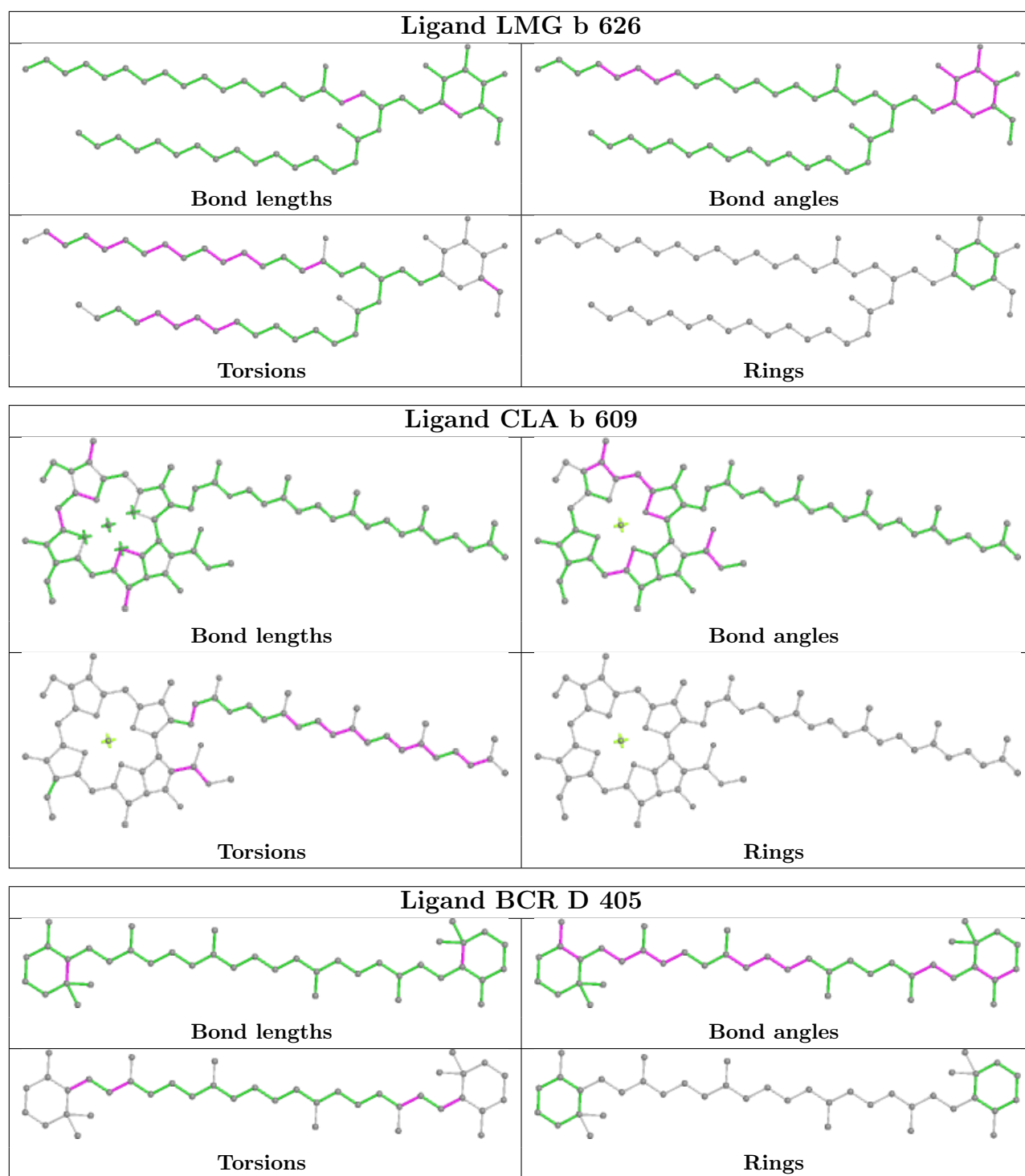


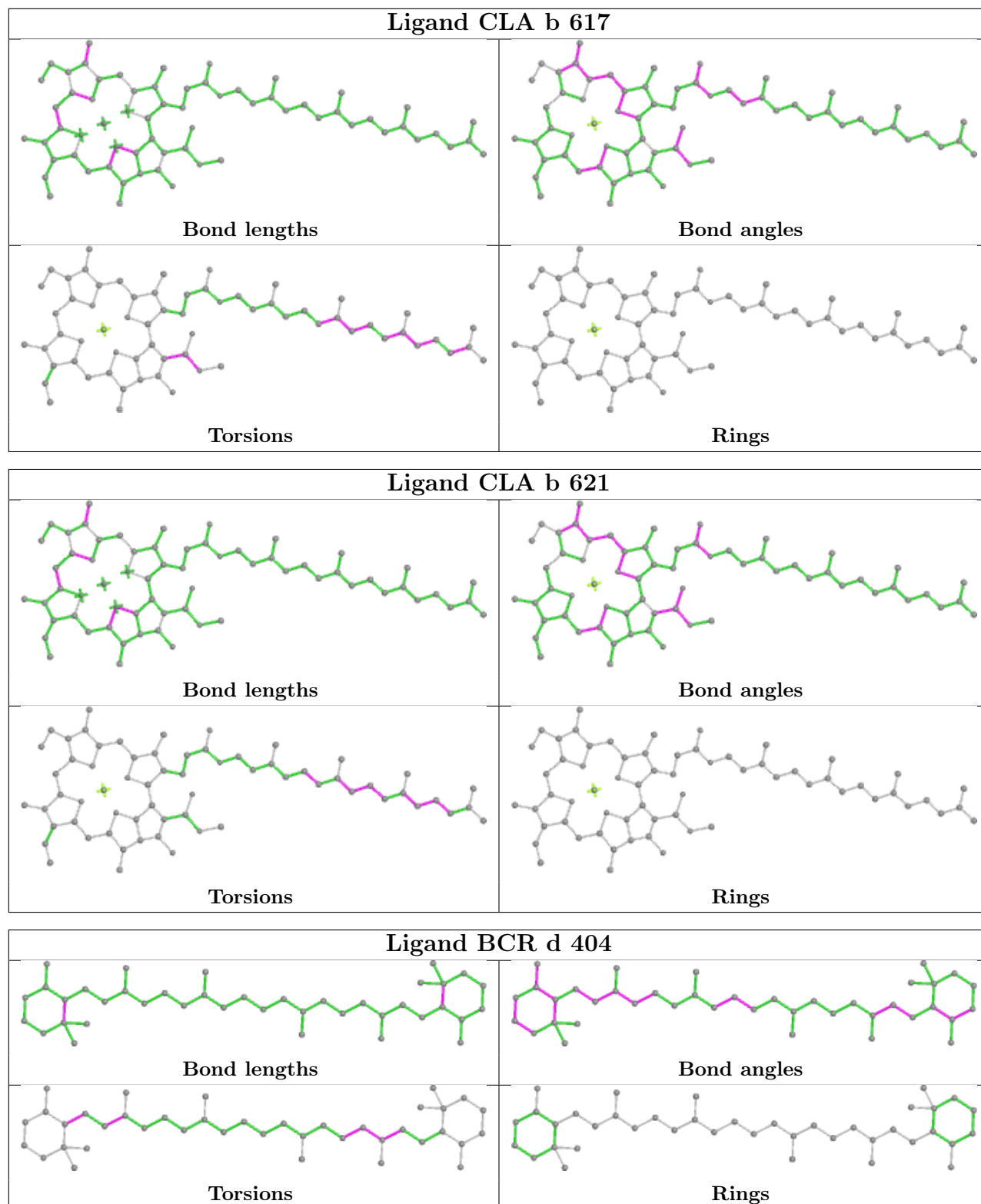


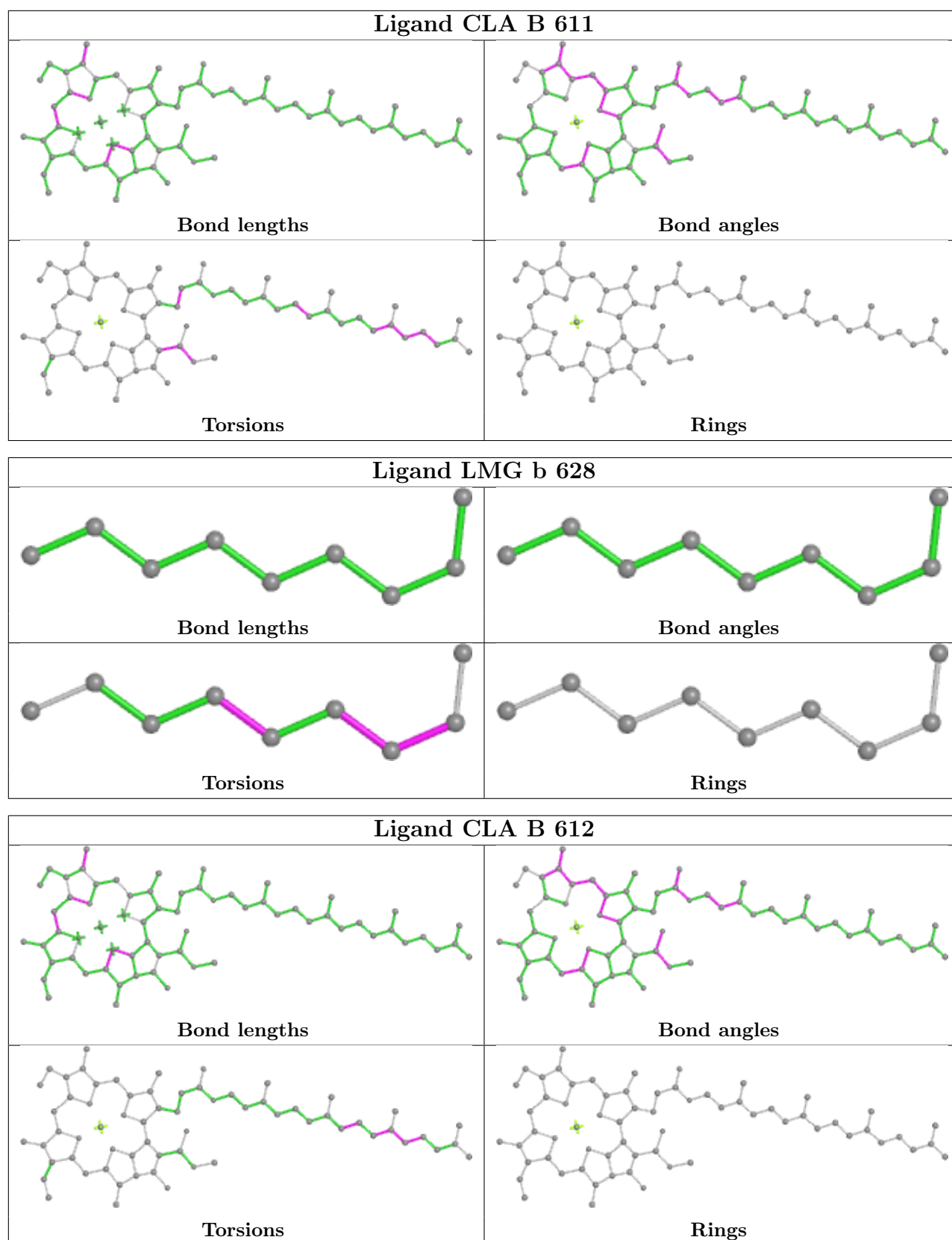


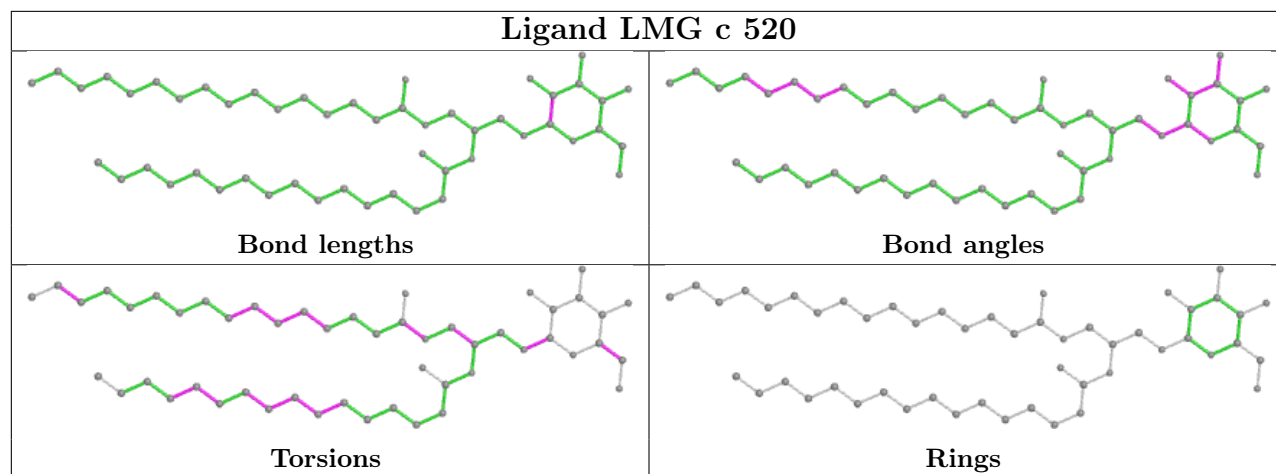












5.7 Other polymers [\(i\)](#)

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	334/344 (97%)	-0.32	2 (0%) 89 86	38, 46, 69, 82	0
1	a	334/344 (97%)	-0.21	4 (1%) 79 73	35, 48, 71, 82	0
2	B	504/510 (98%)	-0.11	9 (1%) 68 61	38, 50, 74, 98	0
2	b	504/510 (98%)	-0.11	24 (4%) 30 21	38, 50, 76, 94	0
3	C	451/461 (97%)	-0.14	3 (0%) 87 84	41, 54, 71, 90	0
3	c	451/461 (97%)	-0.10	3 (0%) 87 84	39, 55, 74, 90	0
4	D	341/352 (96%)	-0.35	1 (0%) 94 93	37, 48, 63, 82	0
4	d	341/352 (96%)	-0.21	2 (0%) 89 86	40, 50, 67, 85	0
5	E	81/84 (96%)	0.29	8 (9%) 7 4	47, 67, 79, 85	0
5	e	82/84 (97%)	0.71	12 (14%) 2 1	52, 70, 85, 87	0
6	F	34/45 (75%)	-0.17	0 100 100	54, 64, 78, 84	0
6	f	34/45 (75%)	-0.35	0 100 100	56, 63, 77, 80	0
7	H	63/63 (100%)	0.13	2 (3%) 47 37	43, 55, 68, 73	0
7	h	63/63 (100%)	0.02	0 100 100	48, 56, 64, 68	0
8	I	35/38 (92%)	0.14	2 (5%) 23 15	43, 53, 83, 94	0
8	i	35/38 (92%)	0.13	3 (8%) 10 5	44, 51, 82, 89	0
9	J	36/40 (90%)	-0.01	2 (5%) 24 16	56, 64, 86, 99	0
9	j	36/40 (90%)	0.12	2 (5%) 24 16	55, 66, 85, 89	0
10	K	37/46 (80%)	0.34	4 (10%) 5 3	62, 68, 83, 89	0
10	k	37/46 (80%)	0.19	0 100 100	60, 70, 84, 89	0
11	L	37/37 (100%)	-0.32	0 100 100	34, 45, 82, 93	0
11	l	37/37 (100%)	-0.43	1 (2%) 54 44	36, 47, 81, 90	0
12	M	32/36 (88%)	-0.40	1 (3%) 49 39	38, 47, 71, 83	0
12	m	32/36 (88%)	-0.31	1 (3%) 49 39	36, 47, 71, 77	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
13	O	244/272 (89%)	-0.03	10 (4%) 37 27	42, 57, 87, 106	0
13	o	244/272 (89%)	-0.06	9 (3%) 41 31	43, 56, 89, 116	0
14	T	29/32 (90%)	-0.08	1 (3%) 45 35	37, 46, 69, 87	0
14	t	29/32 (90%)	-0.52	0 100 100	38, 48, 70, 79	0
15	U	97/134 (72%)	0.04	3 (3%) 49 39	45, 58, 75, 86	0
15	u	97/134 (72%)	-0.20	0 100 100	47, 55, 69, 84	0
16	V	137/163 (84%)	-0.13	0 100 100	45, 55, 67, 85	0
16	v	137/163 (84%)	0.17	4 (2%) 51 41	49, 63, 79, 100	0
17	Y	27/46 (58%)	0.34	1 (3%) 41 31	68, 75, 87, 95	0
17	y	30/46 (65%)	0.39	1 (3%) 46 36	69, 79, 89, 90	0
18	X	38/41 (92%)	0.25	2 (5%) 26 17	52, 60, 82, 93	0
18	x	38/41 (92%)	0.25	4 (10%) 6 3	54, 63, 80, 92	0
19	Z	62/62 (100%)	0.87	18 (29%) 0 0	62, 76, 100, 113	0
19	z	62/62 (100%)	0.64	9 (14%) 2 1	67, 82, 101, 112	0
20	R	34/41 (82%)	1.69	14 (41%) 0 0	70, 82, 94, 95	0
20	r	34/41 (82%)	1.58	12 (35%) 0 0	70, 84, 94, 101	0
All	All	5310/5694 (93%)	-0.06	174 (3%) 46 36	34, 53, 81, 116	0

The worst 5 of 174 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
20	R	28	VAL	5.5
13	o	56	PRO	5.4
14	T	30	THR	5.3
16	v	18	THR	5.3
3	C	142	GLU	5.1

6.2 Non-standard residues in protein, DNA, RNA chains [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
8	FME	I	1	10/11	0.90	0.28	50,60,70,76	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
8	FME	i	1	10/11	0.90	0.34	49,61,69,69	0
14	FME	T	1	10/11	0.92	0.15	51,58,70,77	0
12	FME	M	1	10/11	0.92	0.29	54,63,77,87	0
12	FME	m	1	10/11	0.94	0.12	52,59,74,79	0
14	FME	t	1	10/11	0.94	0.12	42,56,71,77	0

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
29	SQD	I	102	40/54	0.65	0.48	44,69,94,102	0
29	SQD	B	623	47/54	0.74	0.27	44,61,109,124	0
32	LHG	e	101	42/49	0.76	0.31	57,76,98,101	0
23	LMG	C	501	51/55	0.77	0.31	46,67,81,88	0
23	LMG	C	520	51/55	0.78	0.28	43,74,86,89	0
23	LMG	d	408	40/55	0.79	0.25	47,61,84,89	0
23	LMG	B	621	51/55	0.80	0.24	52,70,78,88	0
30	UNL	b	606	13/-	0.80	0.24	45,51,57,59	0
32	LHG	E	101	49/49	0.80	0.28	48,77,92,95	0
23	LMG	b	626	51/55	0.80	0.30	38,56,72,77	0
30	UNL	d	401	22/-	0.81	0.23	39,54,63,66	0
30	UNL	z	101	11/-	0.81	0.29	48,65,72,72	0
23	LMG	C	521	51/55	0.81	0.34	49,71,81,91	0
23	LMG	A	603	51/55	0.81	0.26	40,62,77,83	0
30	UNL	b	603	11/-	0.82	0.24	44,54,62,62	0
23	LMG	a	715	51/55	0.82	0.24	47,65,85,91	0
28	PL9	A	611	55/55	0.82	0.29	46,68,78,83	0
23	LMG	c	519	51/55	0.82	0.30	42,75,90,91	0
23	LMG	c	520	51/55	0.82	0.40	61,75,95,100	0
30	UNL	a	716	4/-	0.82	0.31	31,46,50,51	0
29	SQD	b	601	54/54	0.83	0.24	45,66,94,105	0
27	BCR	H	102	40/40	0.84	0.25	41,54,62,62	0
27	BCR	k	101	40/40	0.84	0.24	53,69,78,78	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
23	LMG	b	627	51/55	0.84	0.31	51,70,80,82	0
30	UNL	I	101	9/-	0.84	0.20	44,52,61,61	0
29	SQD	A	614	40/54	0.84	0.22	47,59,68,72	0
30	UNL	a	717	7/-	0.84	0.26	48,53,61,67	0
30	UNL	B	601	12/-	0.85	0.18	31,49,56,56	0
30	UNL	B	622	6/-	0.85	0.26	40,51,56,56	0
30	UNL	i	101	22/-	0.85	0.22	36,50,58,62	0
30	UNL	j	101	9/-	0.85	0.24	52,61,65,65	0
30	UNL	a	718	13/-	0.85	0.21	45,54,61,62	0
23	LMG	a	701	51/55	0.85	0.23	42,64,87,90	0
30	UNL	b	604	11/-	0.85	0.26	38,48,57,59	0
28	PL9	a	713	55/55	0.86	0.25	57,68,77,84	0
25	CLA	C	514	65/65	0.86	0.24	44,73,81,89	0
25	CLA	b	607	65/65	0.86	0.26	48,63,81,91	0
27	BCR	k	102	40/40	0.86	0.26	53,65,81,84	0
25	CLA	c	513	65/65	0.86	0.24	57,68,82,96	0
27	BCR	D	405	40/40	0.87	0.24	48,61,77,81	0
25	CLA	B	602	65/65	0.87	0.22	44,62,75,80	0
29	SQD	f	102	41/54	0.87	0.30	54,73,85,89	0
25	CLA	c	512	65/65	0.87	0.26	60,67,89,91	0
30	UNL	m	101	5/-	0.87	0.24	36,39,42,45	0
23	LMG	b	628	9/55	0.87	0.22	36,50,54,54	0
30	UNL	H	101	8/-	0.87	0.18	43,53,58,64	0
30	UNL	b	605	13/-	0.87	0.21	42,54,62,62	0
27	BCR	C	515	40/40	0.88	0.23	53,63,72,76	0
27	BCR	t	103	40/40	0.88	0.23	36,47,60,63	0
23	LMG	M	101	51/55	0.88	0.20	34,58,74,77	0
25	CLA	C	513	65/65	0.88	0.23	52,66,80,86	0
27	BCR	b	602	40/40	0.88	0.22	45,53,70,76	0
27	BCR	h	101	40/40	0.88	0.22	40,54,68,71	0
30	UNL	M	102	6/-	0.88	0.31	45,51,51,53	0
30	UNL	M	103	16/-	0.88	0.21	41,51,57,58	0
29	SQD	B	626	54/54	0.88	0.25	46,67,90,99	0
29	SQD	D	410	43/54	0.88	0.29	56,75,87,96	0
25	CLA	d	403	65/65	0.88	0.20	45,54,65,66	0
30	UNL	A	613	7/-	0.89	0.18	34,49,53,55	0
25	CLA	D	404	65/65	0.89	0.22	34,44,80,84	0
25	CLA	C	508	65/65	0.89	0.20	41,50,57,66	0
25	CLA	C	511	65/65	0.89	0.24	44,57,64,70	0
25	CLA	B	617	65/65	0.89	0.20	39,52,80,84	0
27	BCR	c	514	40/40	0.89	0.25	61,67,74,75	0
25	CLA	C	505	65/65	0.89	0.22	48,63,71,79	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
33	DGD	c	517	62/66	0.89	0.22	54,61,81,92	0
25	CLA	c	511	65/65	0.90	0.18	50,62,71,74	0
27	BCR	K	101	40/40	0.90	0.20	51,60,70,75	0
25	CLA	B	610	65/65	0.90	0.19	36,51,58,63	0
23	LMG	f	101	51/55	0.90	0.20	48,58,84,93	0
27	BCR	d	404	40/40	0.90	0.23	45,59,70,77	0
25	CLA	B	607	65/65	0.90	0.20	41,50,64,75	0
25	CLA	c	503	65/65	0.90	0.21	48,61,68,73	0
25	CLA	c	504	58/65	0.90	0.19	52,59,66,67	0
33	DGD	h	102	62/66	0.90	0.23	41,55,63,66	0
25	CLA	b	612	65/65	0.91	0.17	32,46,56,69	0
23	LMG	D	409	51/55	0.91	0.20	39,61,82,88	0
27	BCR	Y	101	40/40	0.91	0.20	46,66,71,72	0
25	CLA	C	512	65/65	0.91	0.19	52,60,69,71	0
27	BCR	b	624	40/40	0.91	0.20	38,49,58,59	0
25	CLA	c	506	65/65	0.91	0.21	47,57,79,92	0
27	BCR	c	515	40/40	0.91	0.18	38,53,64,72	0
25	CLA	C	506	65/65	0.91	0.19	41,51,57,60	0
25	CLA	C	507	65/65	0.91	0.19	44,55,75,88	0
25	CLA	A	606	65/65	0.91	0.19	29,43,48,53	0
30	UNL	m	102	12/-	0.91	0.19	41,47,50,52	0
25	CLA	a	707	65/65	0.91	0.18	33,47,51,53	0
25	CLA	C	509	65/65	0.91	0.21	46,55,91,100	0
27	BCR	C	516	40/40	0.91	0.20	42,51,58,58	0
33	DGD	C	518	62/66	0.91	0.19	51,62,81,88	0
33	DGD	H	103	62/66	0.91	0.21	39,49,59,62	0
28	PL9	D	406	55/55	0.91	0.21	31,43,52,55	0
25	CLA	b	610	65/65	0.91	0.22	37,47,59,62	0
25	CLA	b	616	65/65	0.92	0.20	34,42,50,56	0
25	CLA	b	621	65/65	0.92	0.17	38,49,55,60	0
29	SQD	A	612	52/54	0.92	0.21	45,67,80,92	0
25	CLA	D	402	65/65	0.92	0.18	31,41,47,51	0
25	CLA	C	510	65/65	0.92	0.20	45,57,64,68	0
25	CLA	c	505	65/65	0.92	0.19	41,52,60,69	0
27	BCR	b	623	40/40	0.92	0.19	42,53,60,61	0
25	CLA	B	616	65/65	0.92	0.16	42,51,60,64	0
29	SQD	a	714	54/54	0.92	0.22	48,68,83,90	0
27	BCR	b	625	40/40	0.92	0.16	36,49,55,58	0
25	CLA	c	510	65/65	0.92	0.21	43,54,63,68	0
25	CLA	a	711	65/65	0.92	0.19	34,46,79,87	0
30	UNL	t	101	10/-	0.92	0.17	26,44,49,50	0
25	CLA	B	605	65/65	0.92	0.22	35,47,62,73	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
32	LHG	D	408	49/49	0.92	0.21	42,59,72,84	0
25	CLA	C	503	65/65	0.92	0.23	43,56,62,68	0
32	LHG	a	720	39/49	0.92	0.20	41,54,65,66	0
30	UNL	B	624	11/-	0.92	0.20	34,49,52,53	0
33	DGD	C	517	62/66	0.92	0.20	36,46,65,71	0
25	CLA	B	615	65/65	0.92	0.17	38,48,67,73	0
27	BCR	B	620	40/40	0.92	0.18	39,48,56,71	0
33	DGD	c	516	62/66	0.92	0.20	34,50,68,76	0
25	CLA	b	613	65/65	0.92	0.19	37,44,55,58	0
33	DGD	c	518	62/66	0.92	0.19	44,57,76,81	0
25	CLA	b	615	65/65	0.92	0.17	42,50,55,60	0
25	CLA	B	608	65/65	0.93	0.17	30,42,52,56	0
25	CLA	B	609	65/65	0.93	0.25	32,45,51,59	0
25	CLA	b	608	65/65	0.93	0.19	39,49,60,64	0
24	CL	a	704	1/1	0.93	0.12	59,59,59,59	0
25	CLA	d	402	65/65	0.93	0.16	35,45,51,55	0
25	CLA	B	612	65/65	0.93	0.19	32,42,49,54	0
26	PHO	a	710	64/64	0.93	0.22	38,46,55,62	0
28	PL9	d	405	55/55	0.93	0.20	32,41,53,56	0
27	BCR	B	618	40/40	0.93	0.18	37,52,60,63	0
27	BCR	B	619	40/40	0.93	0.20	35,47,51,52	0
25	CLA	B	614	65/65	0.93	0.20	34,43,57,69	0
25	CLA	B	603	65/65	0.93	0.21	42,52,59,62	0
25	CLA	B	604	65/65	0.93	0.20	33,44,54,57	0
30	UNL	t	102	5/-	0.93	0.20	32,38,43,47	0
25	CLA	b	620	65/65	0.93	0.17	35,52,61,64	0
32	LHG	B	625	49/49	0.93	0.20	41,51,58,61	0
24	CL	A	605	1/1	0.93	0.14	51,51,51,51	0
25	CLA	b	622	47/65	0.93	0.16	40,48,58,64	0
25	CLA	c	502	65/65	0.93	0.21	45,55,67,81	0
27	BCR	a	712	40/40	0.93	0.17	26,44,53,54	0
25	CLA	C	502	65/65	0.93	0.21	38,50,57,64	0
25	CLA	B	606	65/65	0.93	0.18	37,45,52,53	0
33	DGD	C	519	62/66	0.93	0.17	43,56,67,76	0
25	CLA	C	504	65/65	0.93	0.20	43,57,62,68	0
25	CLA	A	607	65/65	0.93	0.19	31,46,91,99	0
25	CLA	c	507	65/65	0.93	0.17	41,50,61,67	0
25	CLA	c	508	65/65	0.93	0.19	46,57,72,82	0
25	CLA	c	509	65/65	0.93	0.19	49,57,70,73	0
34	HEM	E	102	43/43	0.93	0.22	52,66,76,80	0
34	HEM	e	102	43/43	0.93	0.20	60,71,81,91	0
27	BCR	A	610	40/40	0.94	0.15	31,44,52,56	0

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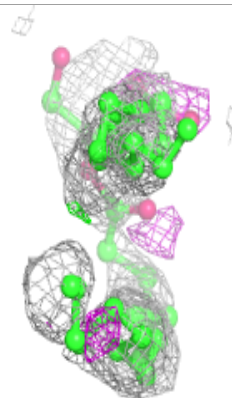
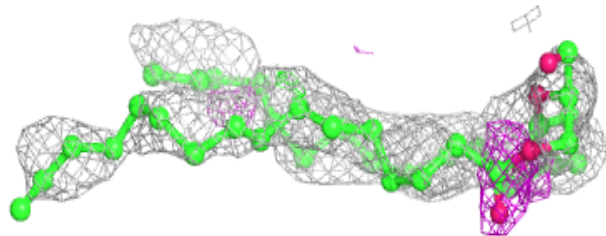
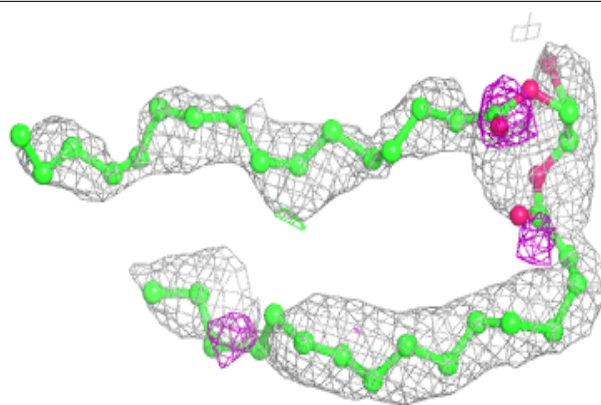
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
32	LHG	L	101	49/49	0.94	0.17	39,50,57,64	0
25	CLA	b	619	65/65	0.94	0.20	31,42,59,67	0
32	LHG	b	629	49/49	0.94	0.16	36,50,57,64	0
32	LHG	d	406	49/49	0.94	0.19	32,53,61,65	0
32	LHG	d	407	49/49	0.94	0.18	36,46,54,61	0
25	CLA	b	609	65/65	0.94	0.19	34,45,55,61	0
25	CLA	A	609	54/65	0.94	0.16	34,43,60,71	0
25	CLA	B	613	65/65	0.94	0.19	36,43,55,59	0
25	CLA	c	501	65/65	0.94	0.19	37,49,55,59	0
25	CLA	a	719	65/65	0.94	0.16	32,43,49,54	0
25	CLA	b	614	65/65	0.94	0.22	39,48,58,60	0
25	CLA	D	403	65/65	0.94	0.16	33,42,54,61	0
25	CLA	B	611	65/65	0.94	0.20	40,47,55,60	0
26	PHO	D	401	64/64	0.94	0.20	37,46,55,59	0
32	LHG	D	407	49/49	0.94	0.23	34,49,59,60	0
25	CLA	b	617	65/65	0.94	0.19	36,45,50,57	0
25	CLA	a	708	65/65	0.95	0.16	37,47,89,101	0
25	CLA	b	611	65/65	0.95	0.16	30,46,52,56	0
26	PHO	A	608	64/64	0.95	0.18	32,40,46,50	0
25	CLA	b	618	65/65	0.95	0.20	32,43,50,52	0
26	PHO	a	709	64/64	0.95	0.19	26,41,47,50	0
22	FE2	a	703	1/1	0.95	0.03	60,60,60,60	0
35	HEC	V	201	43/43	0.95	0.16	41,51,57,63	0
35	HEC	v	201	43/43	0.95	0.15	46,58,64,72	0
24	CL	a	705	1/1	0.97	0.12	50,50,50,50	0
31	BCT	A	615	4/4	0.97	0.10	46,49,51,54	0
22	FE2	A	602	1/1	0.97	0.03	60,60,60,60	0
21	OEX	a	702	10/10	0.97	0.11	44,52,59,60	0
21	OEX	A	601	10/10	0.98	0.11	42,54,59,60	0
31	BCT	a	706	4/4	0.98	0.09	50,56,56,59	0
24	CL	A	604	1/1	0.99	0.06	39,39,39,39	0

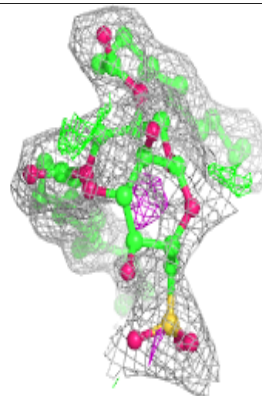
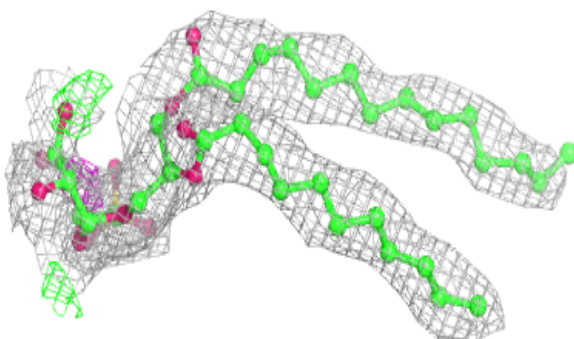
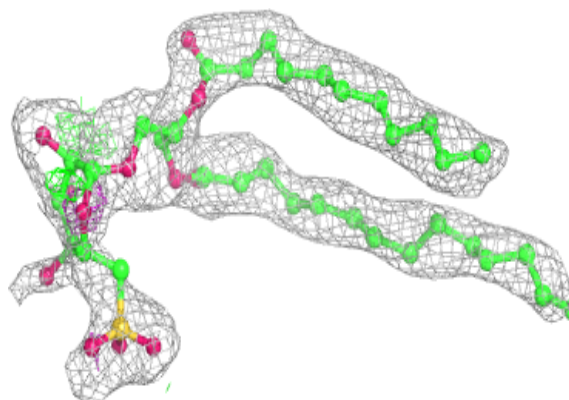
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around SQD 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)

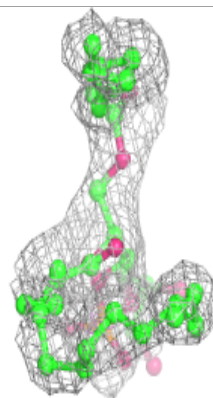
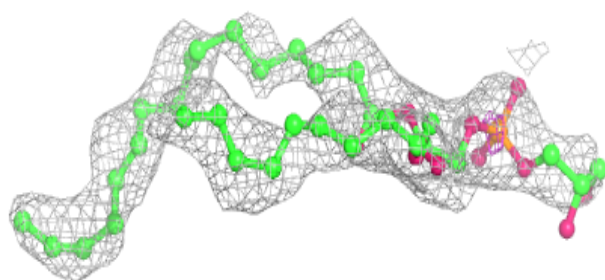
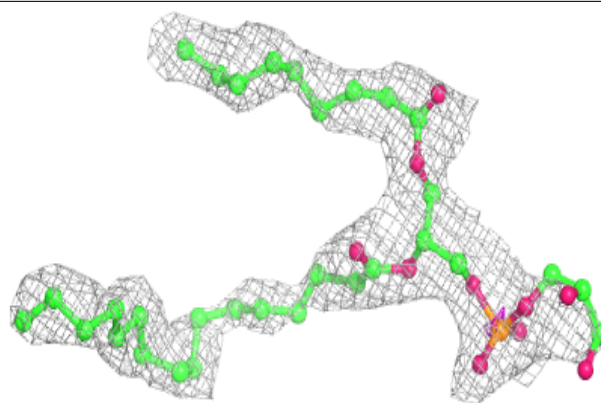
**Electron density around SQD B 623:**

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

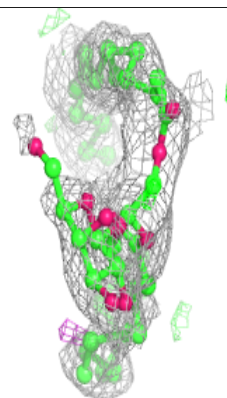
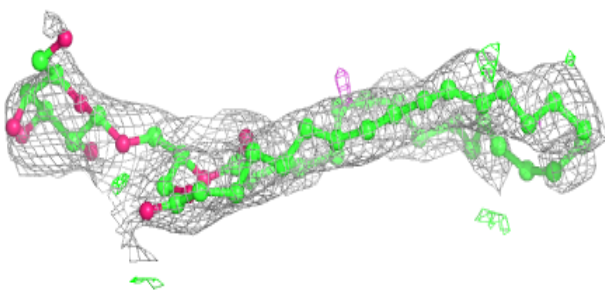
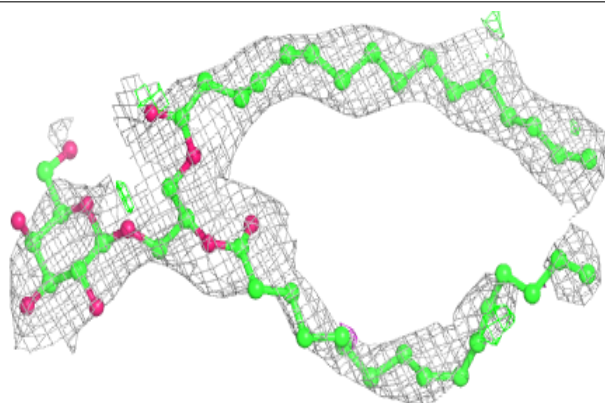


Electron density around LHG e 101:

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

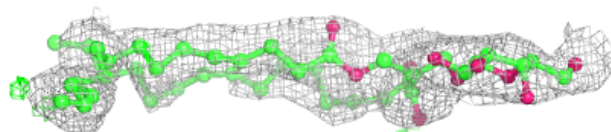
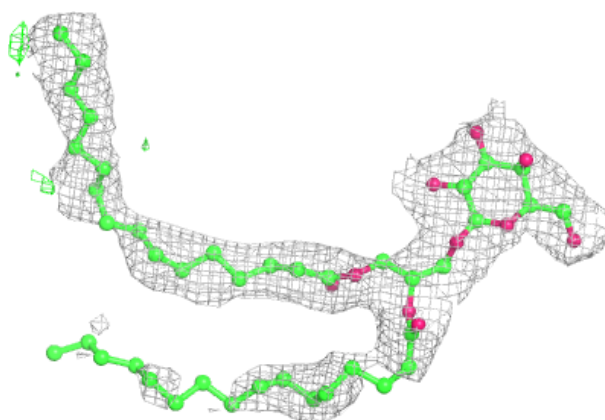
**Electron density around LMG C 501:**

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

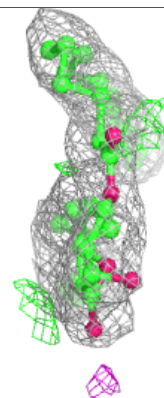
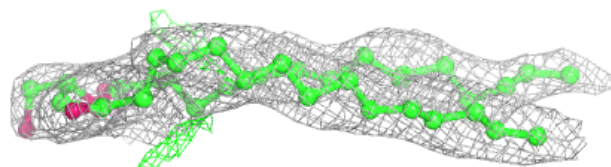
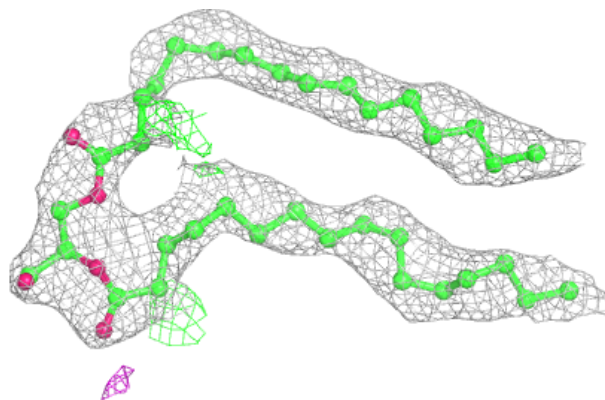


Electron density around LMG C 520:

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

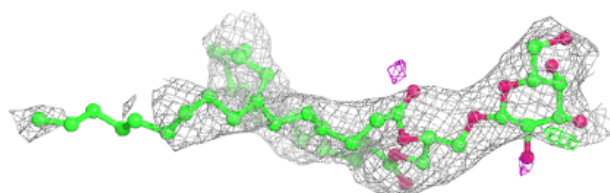
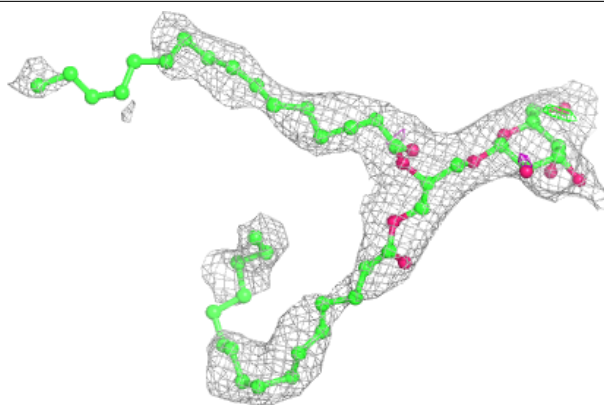
**Electron density around LMG d 408:**

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

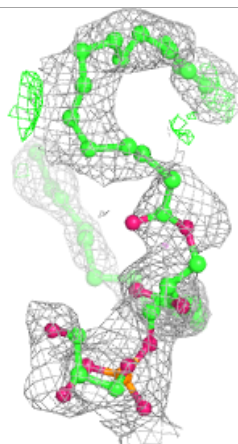
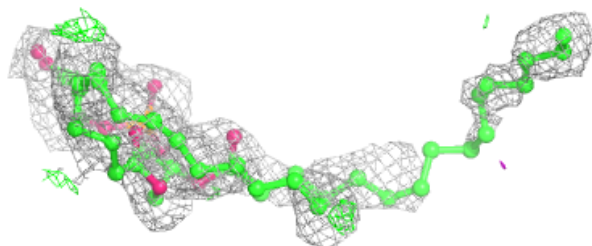
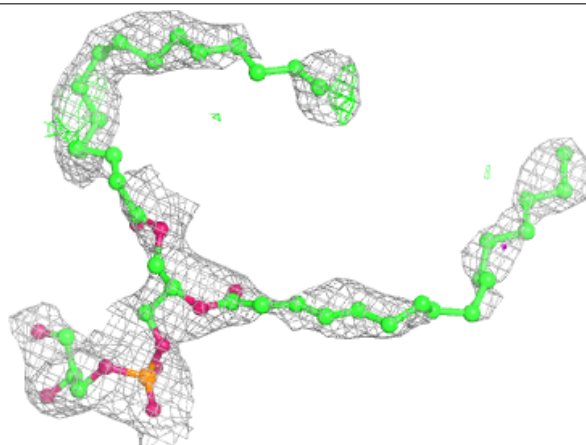


Electron density around LMG B 621:

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

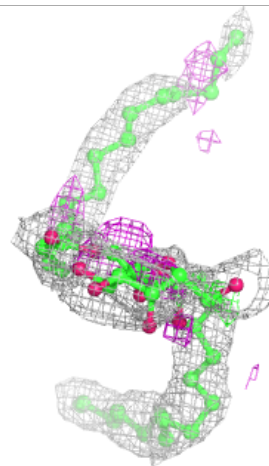
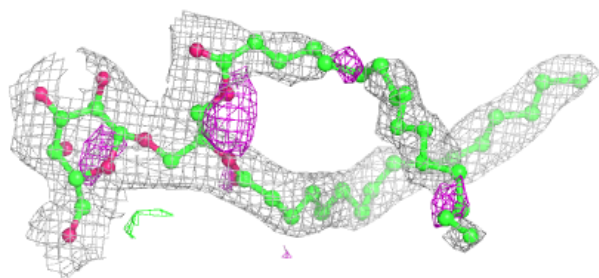
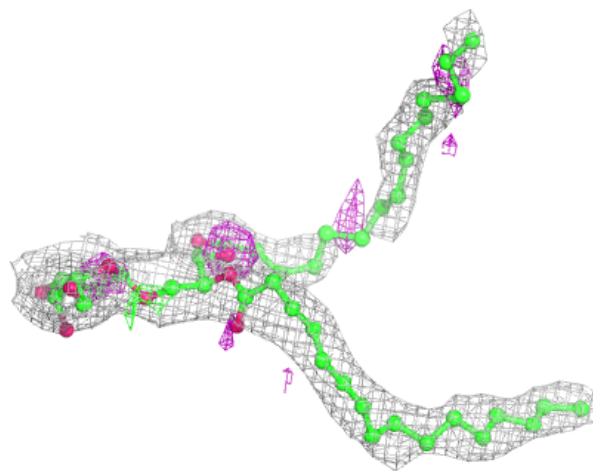
**Electron density around LHG E 101:**

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



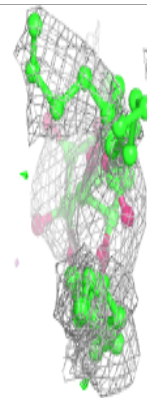
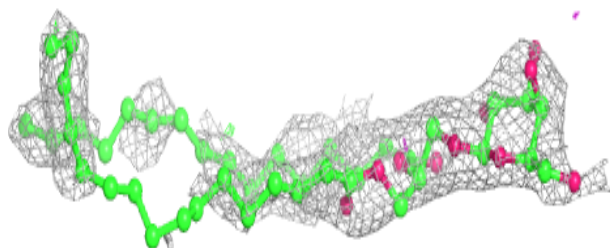
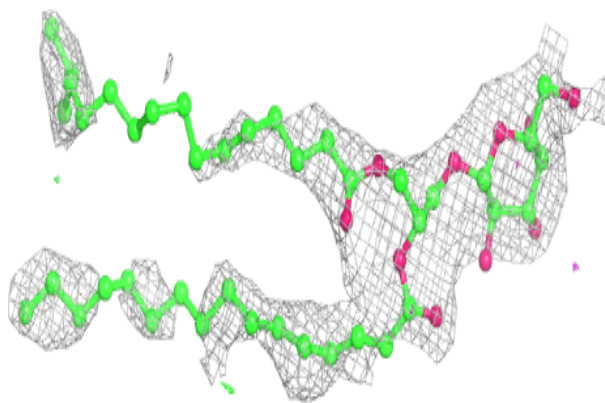
Electron density around LMG b 626:

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

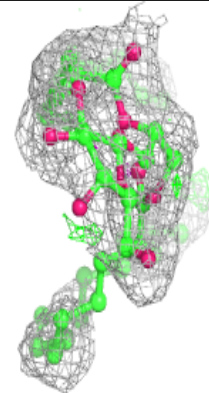
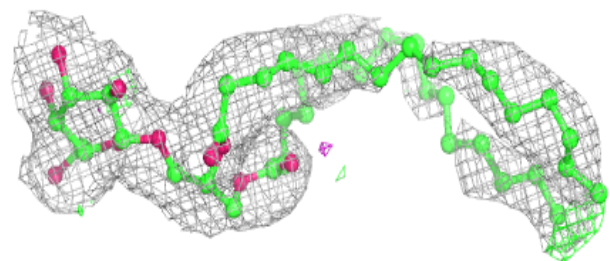
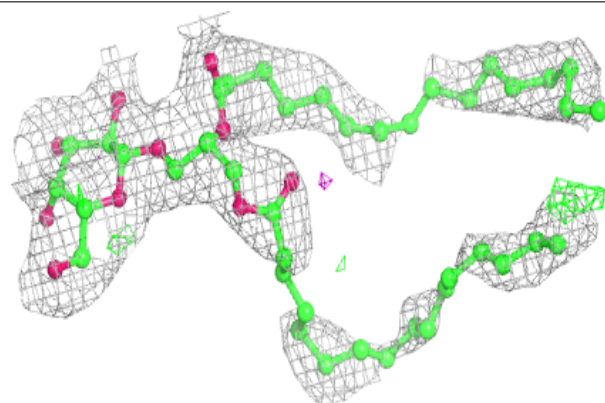


Electron density around LMG C 521:

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

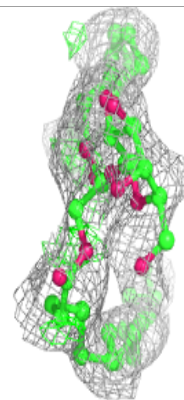
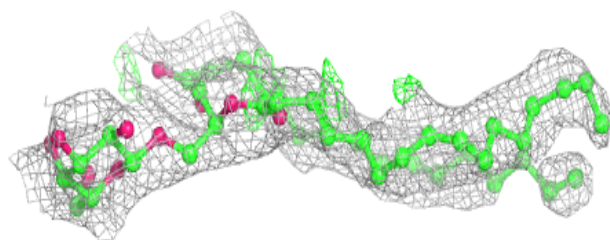
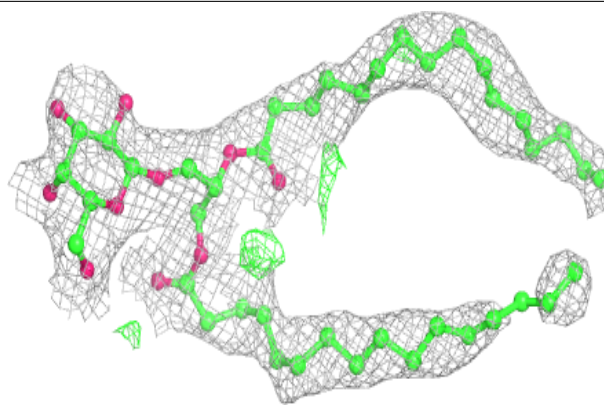
**Electron density around LMG A 603:**

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

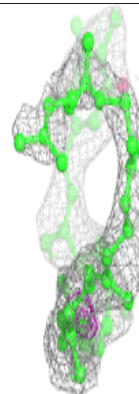
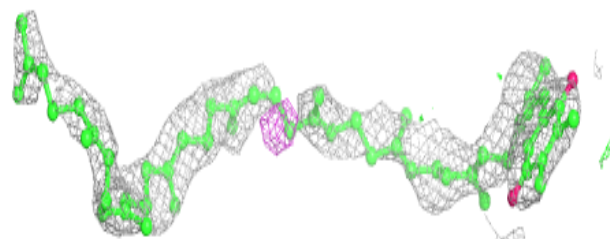
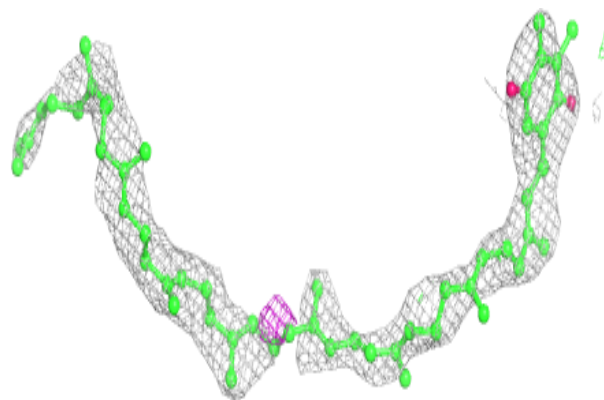


Electron density around LMG a 715:

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

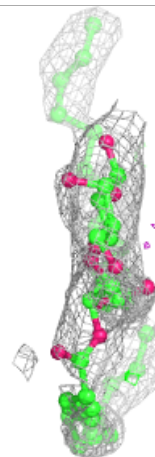
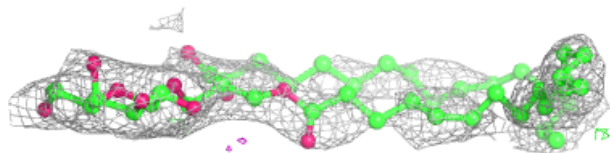
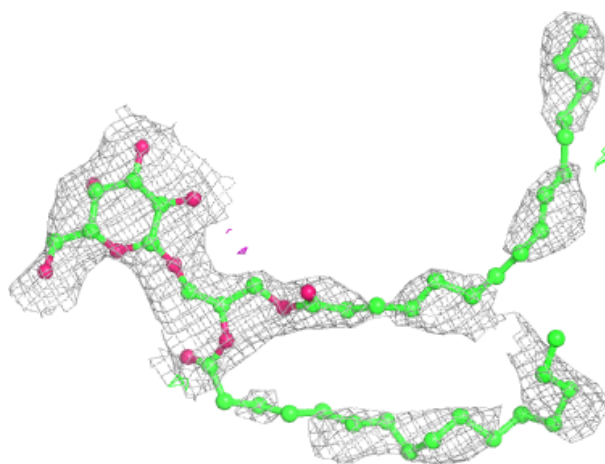
**Electron density around PL9 A 611:**

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



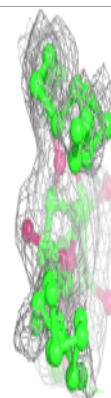
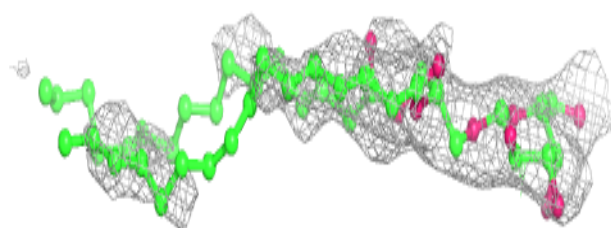
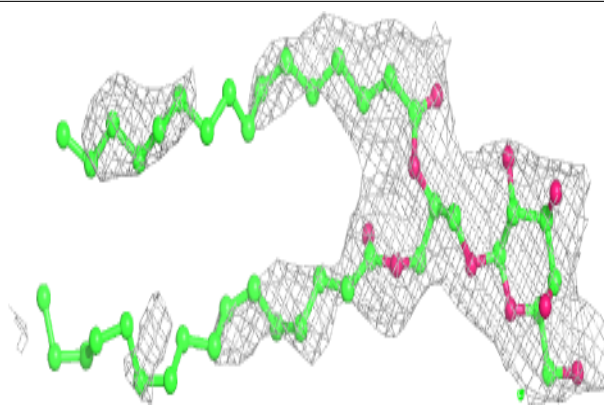
Electron density around LMG c 519:

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

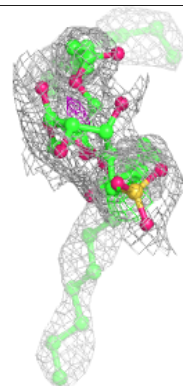
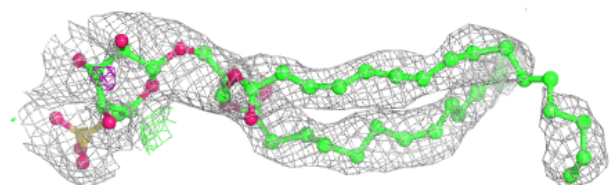
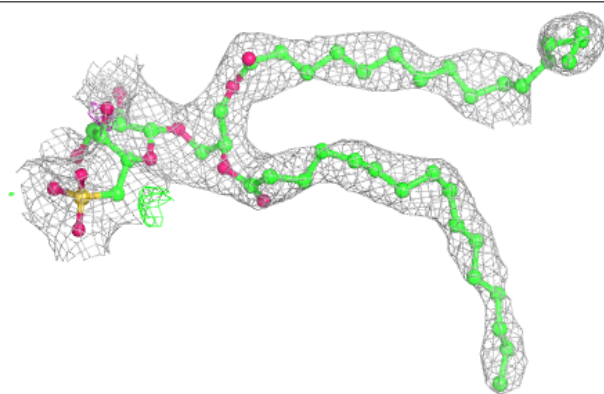


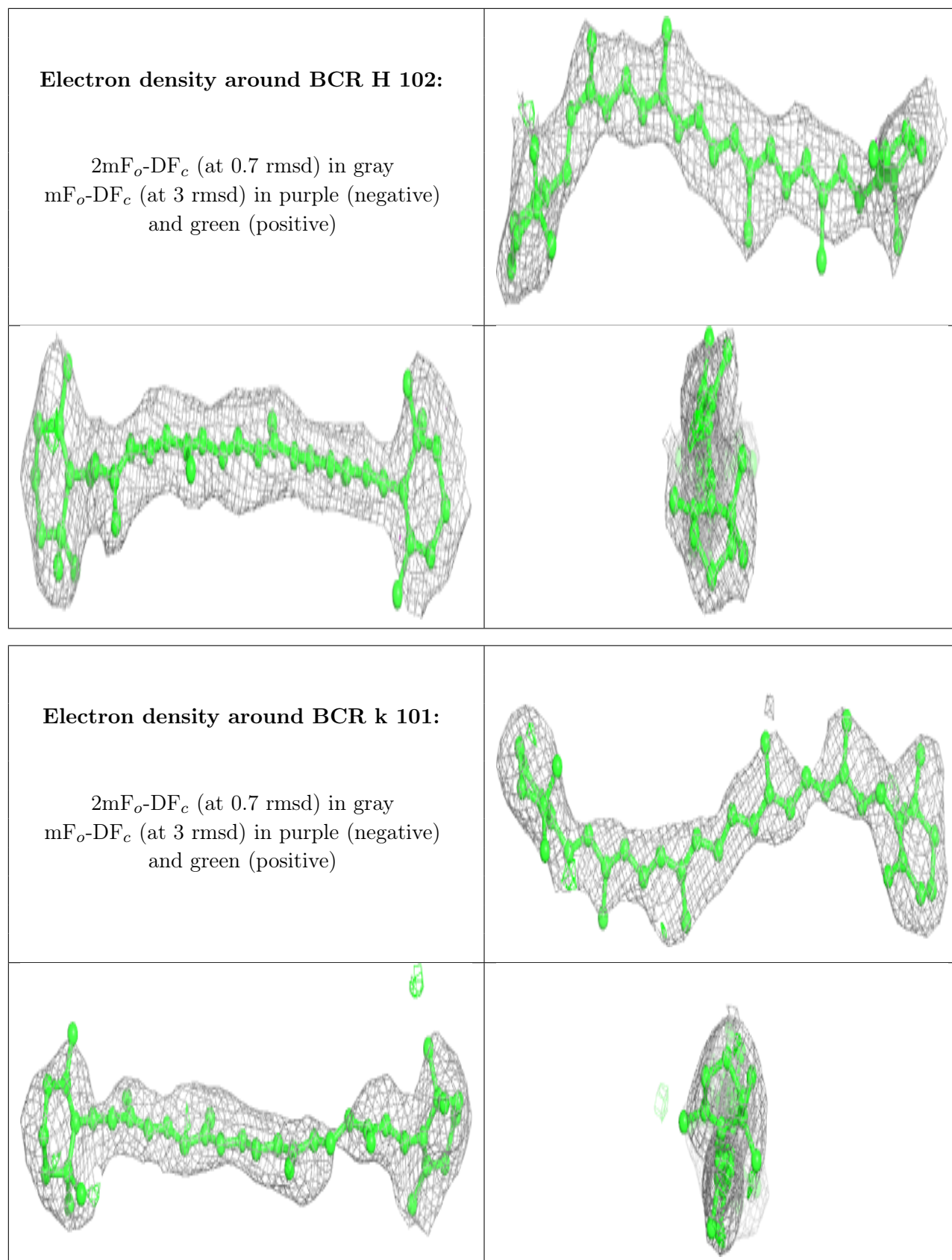
Electron density around LMG c 520:

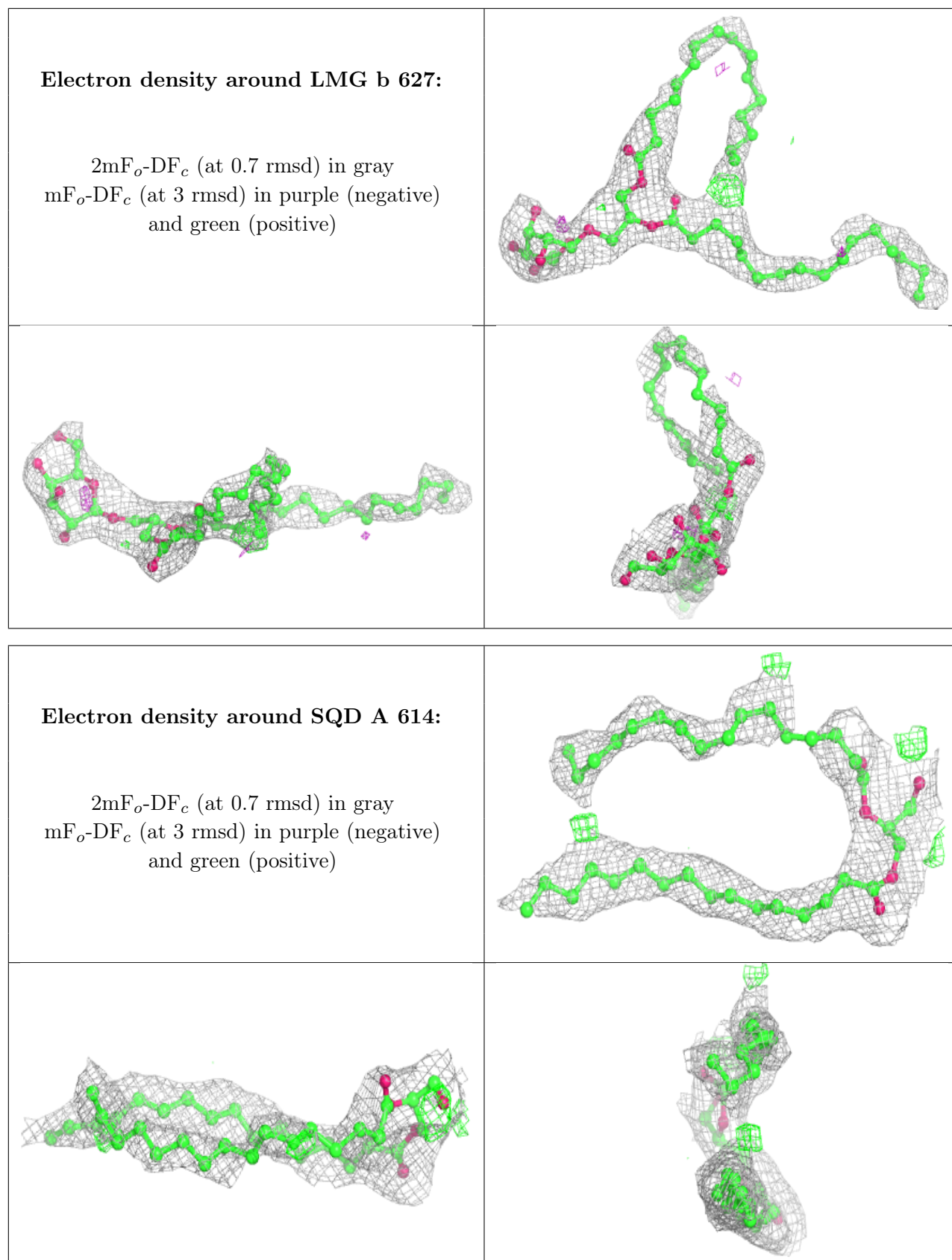
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around SQD b 601:**

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

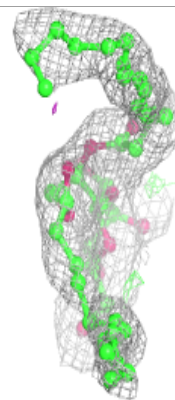
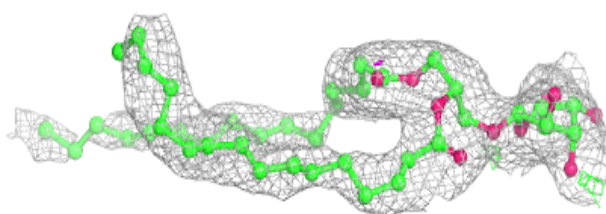
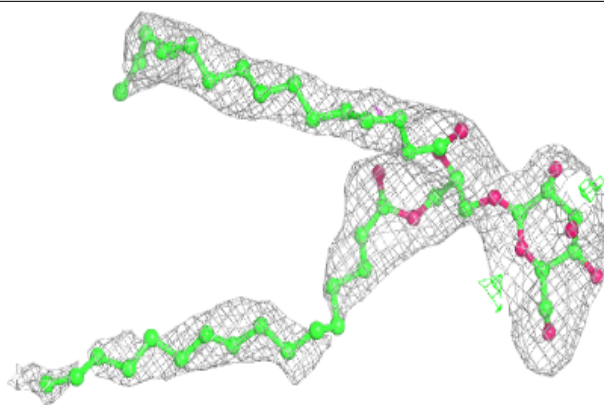




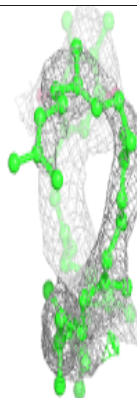
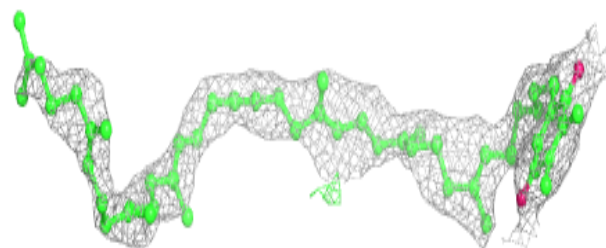
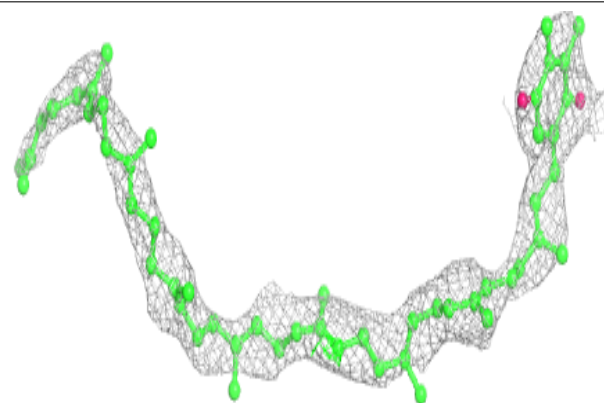


Electron density around LMG a 701:

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

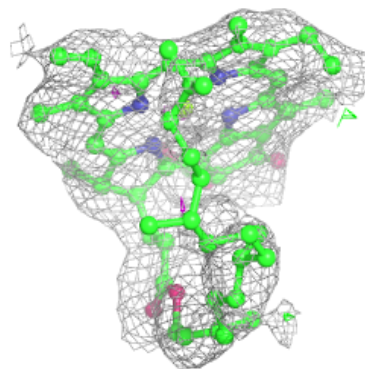
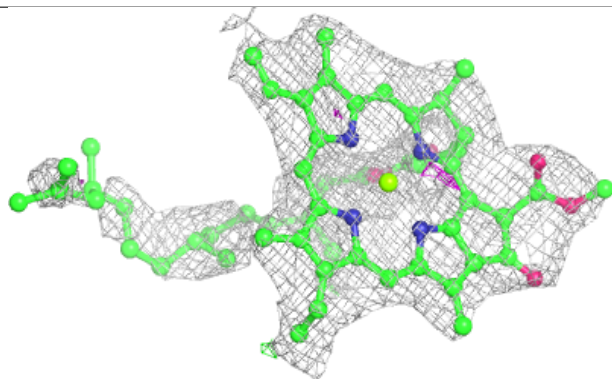
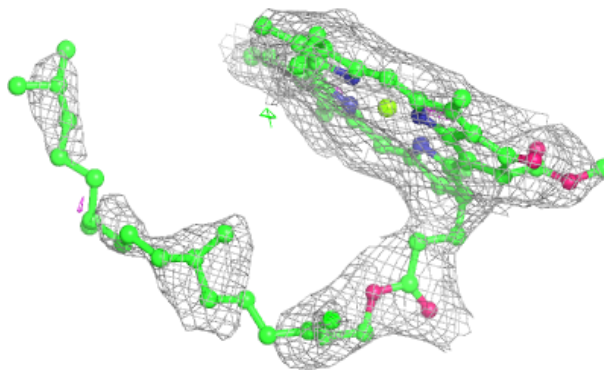
**Electron density around PL9 a 713:**

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



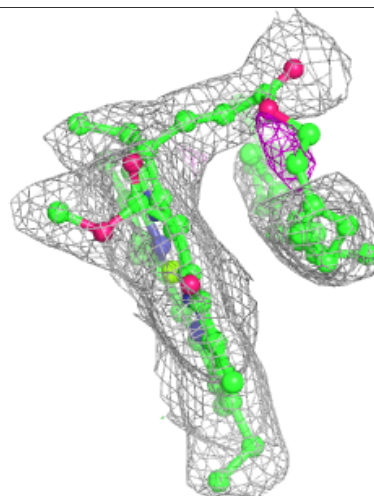
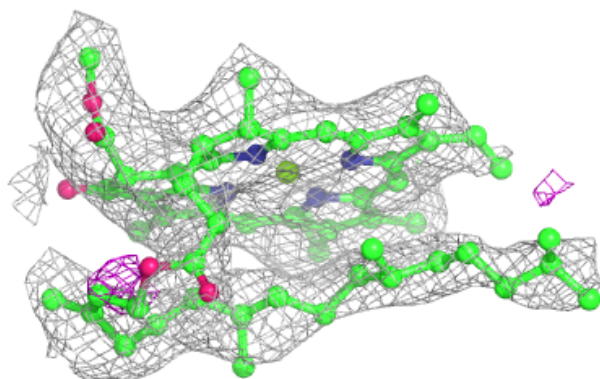
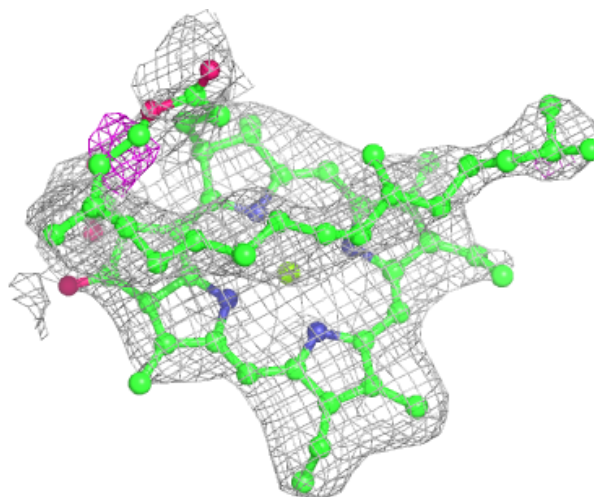
Electron density around CLA C 514:

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



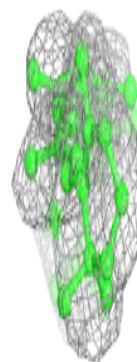
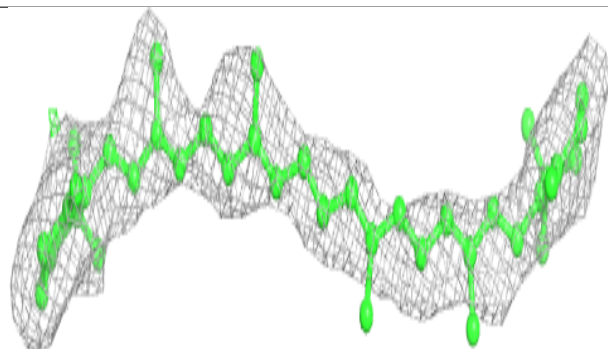
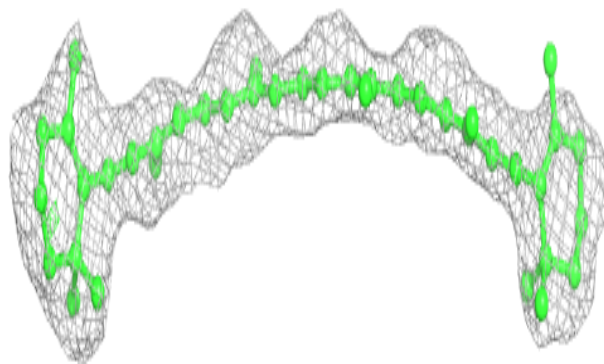
Electron density around CLA b 607:

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

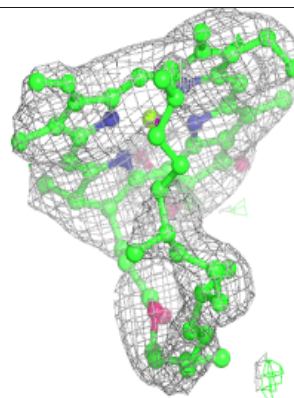
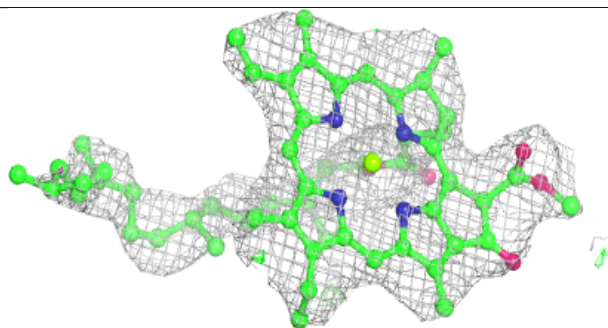
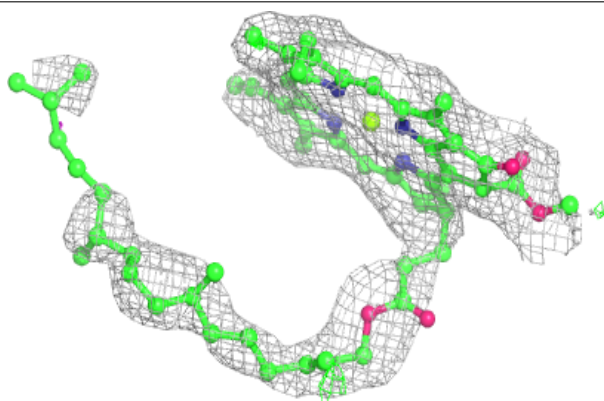


Electron density around BCR k 102:

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

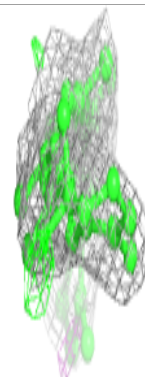
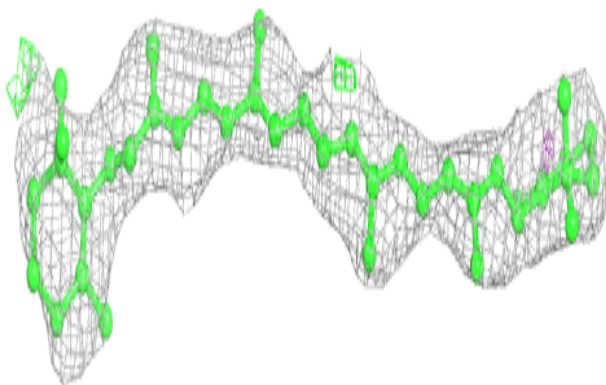
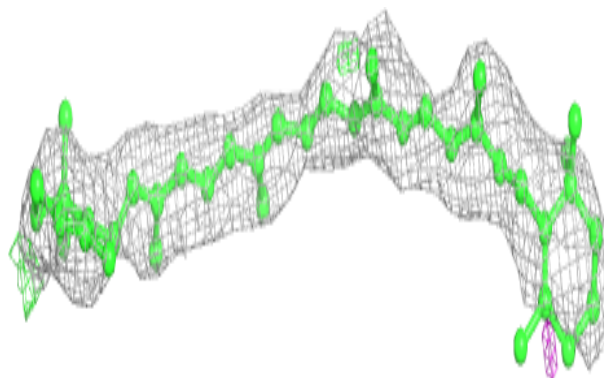
**Electron density around CLA c 513:**

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

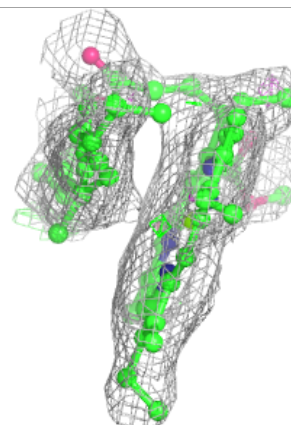
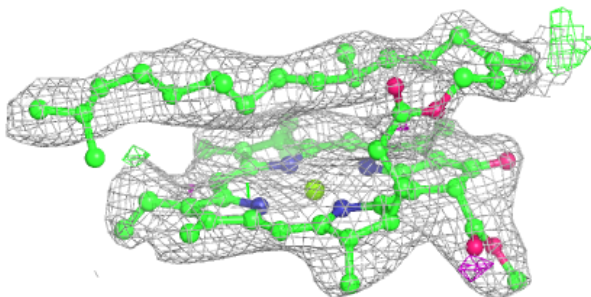
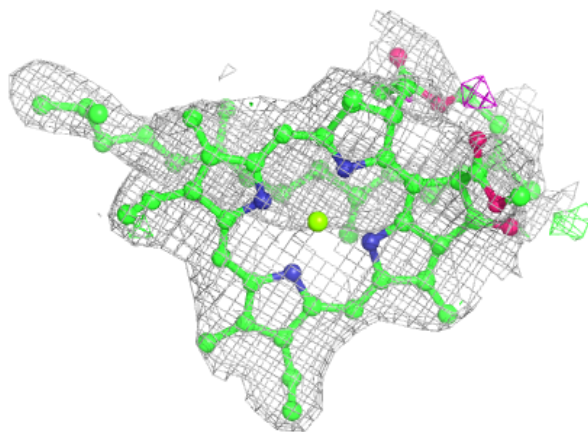


Electron density around BCR D 405:

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

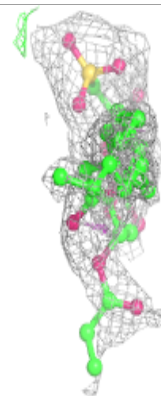
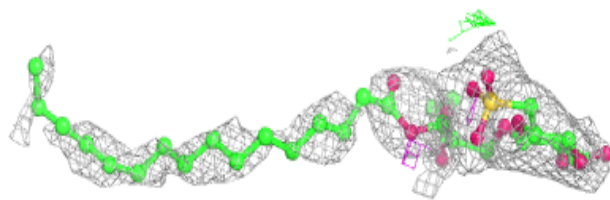
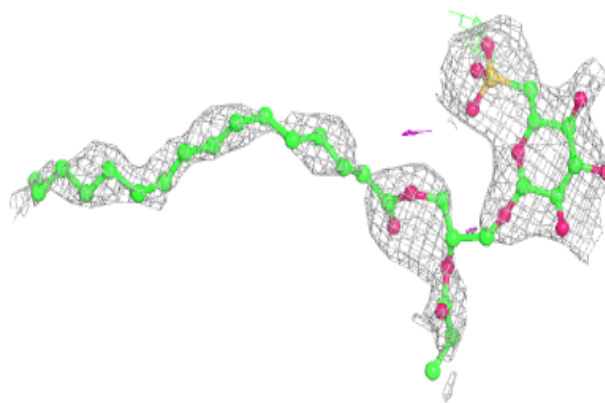
**Electron density around CLA B 602:**

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



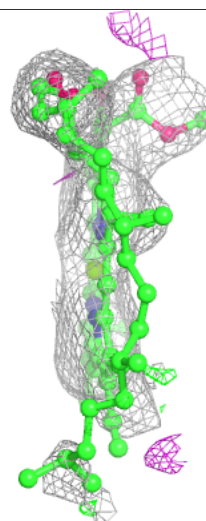
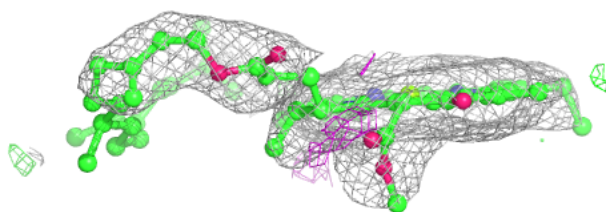
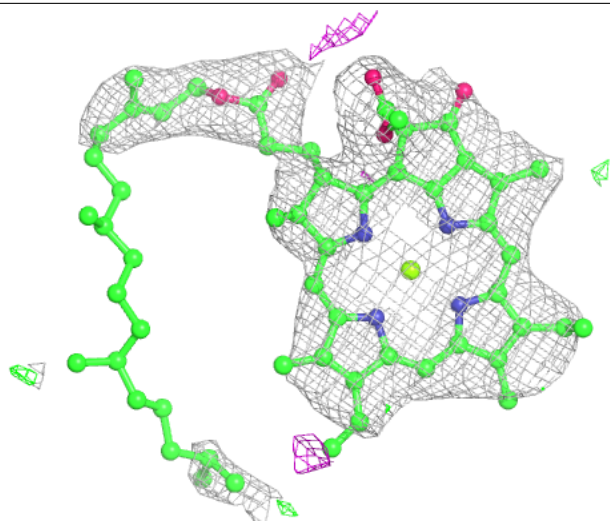
Electron density around SQD f 102:

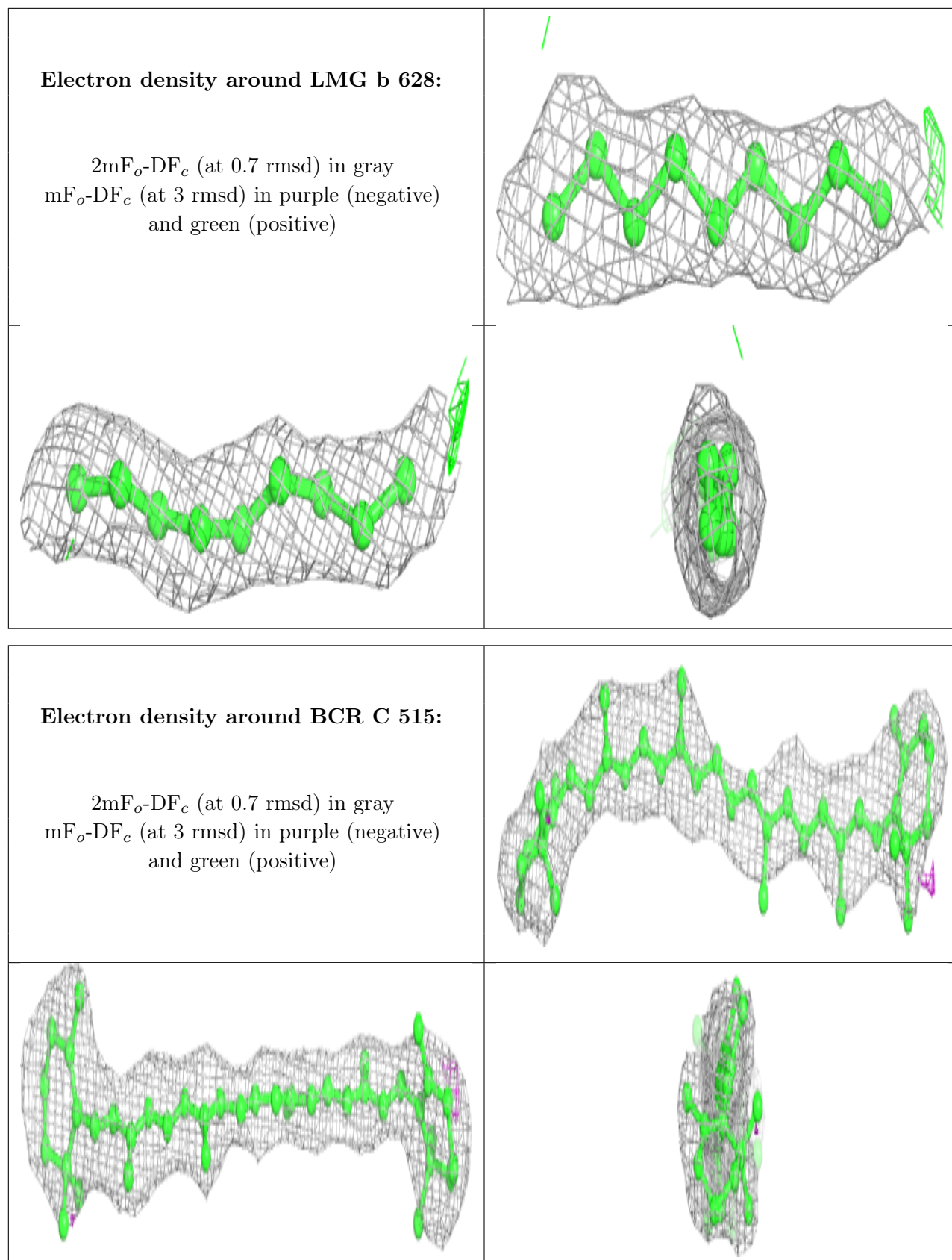
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CLA c 512:

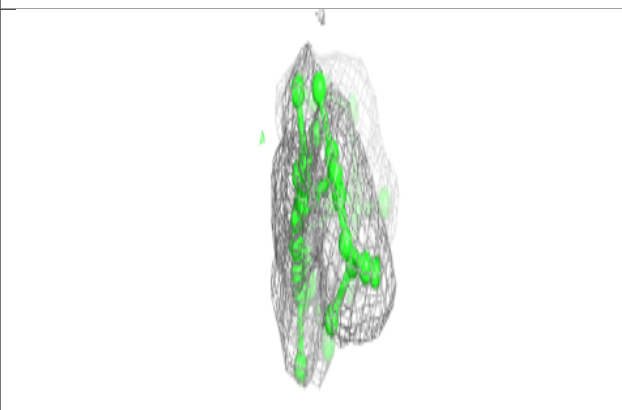
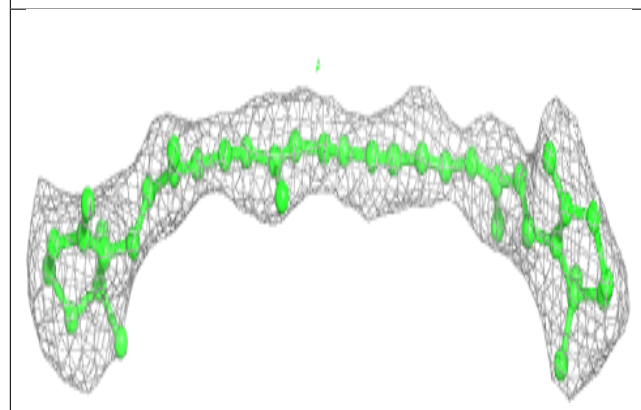
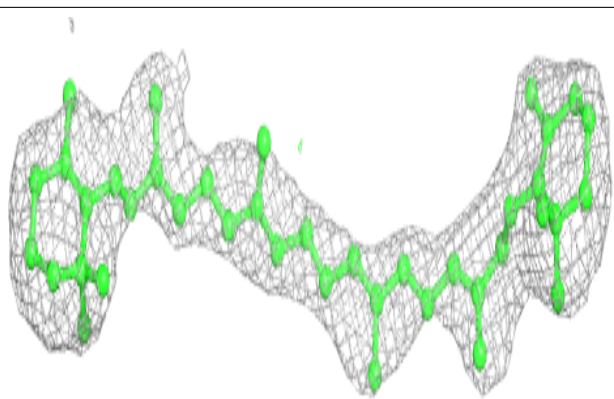
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



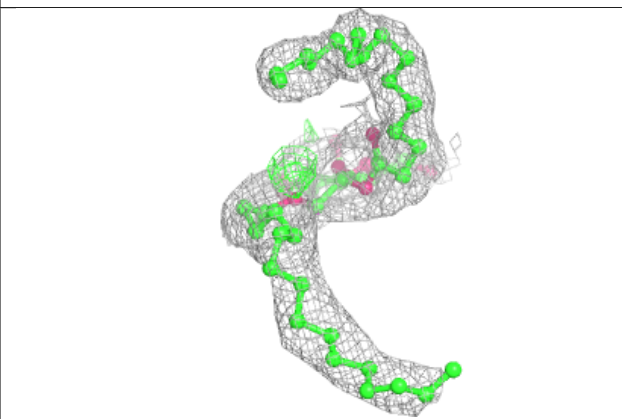
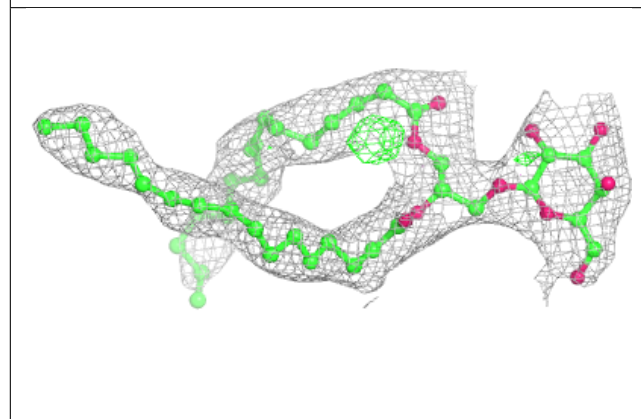
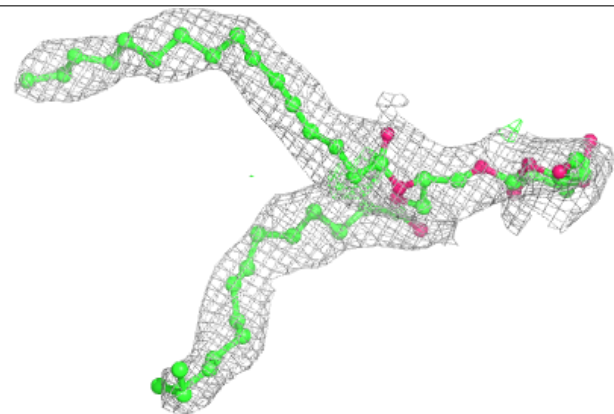


Electron density around BCR t 103:

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

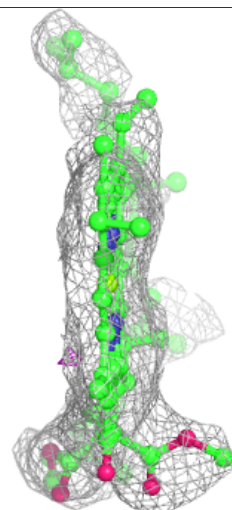
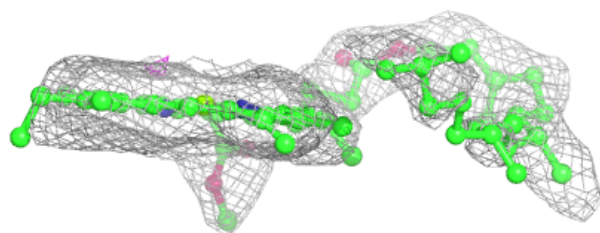
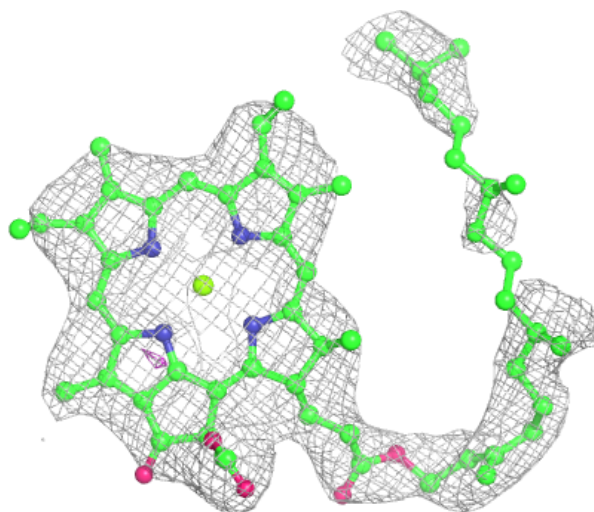
**Electron density around LMG M 101:**

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



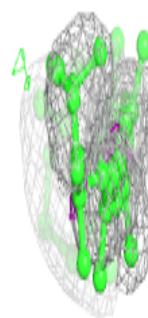
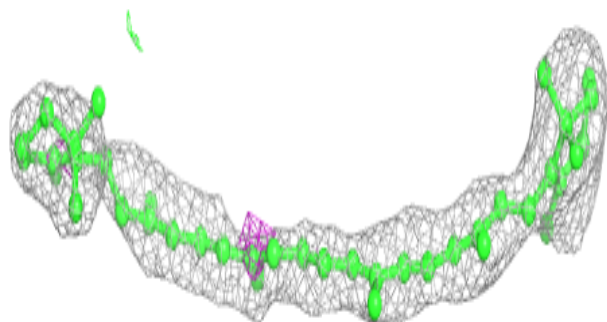
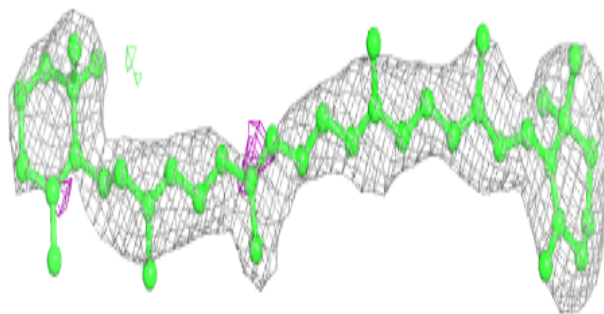
Electron density around CLA C 513:

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

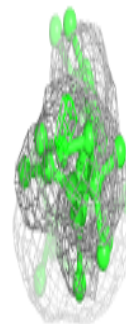
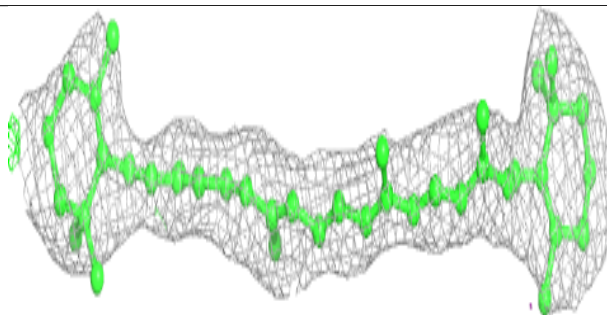
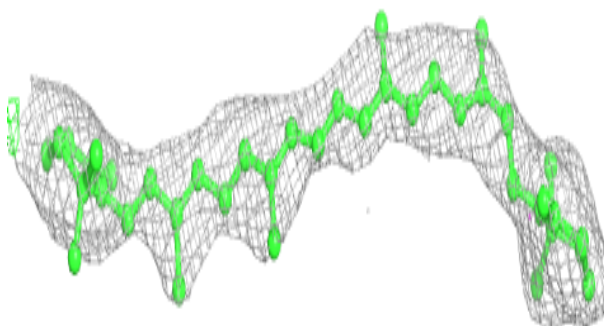


Electron density around BCR b 602:

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

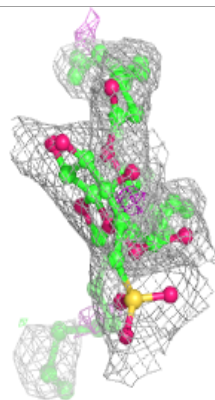
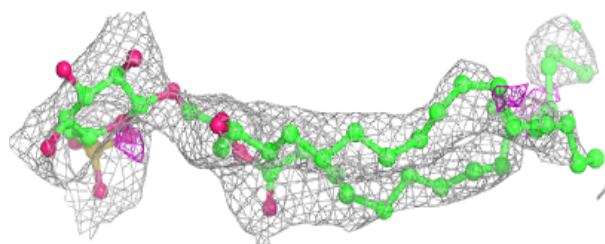
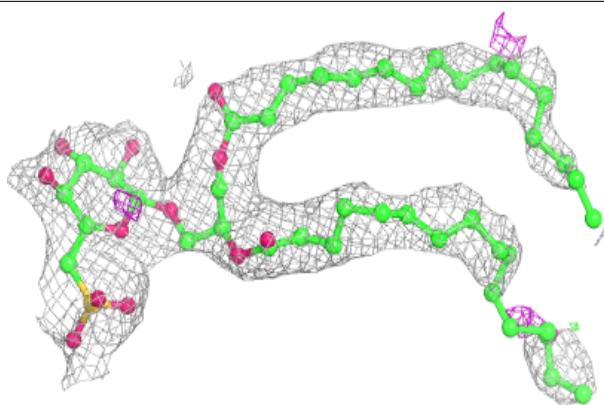
**Electron density around BCR h 101:**

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

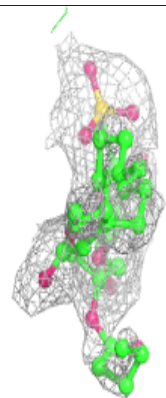
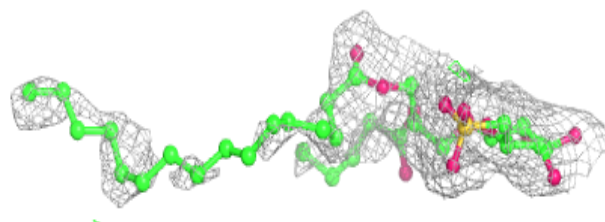
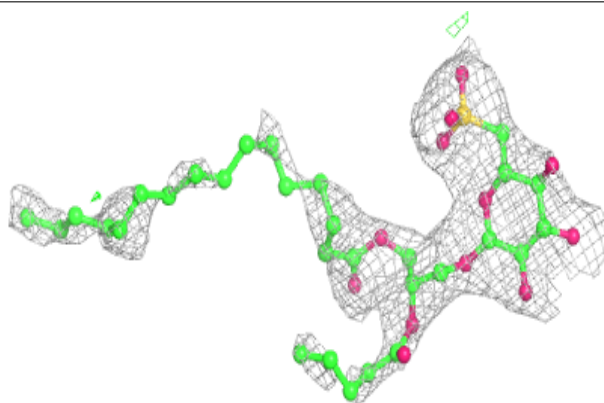


Electron density around SQD B 626:

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

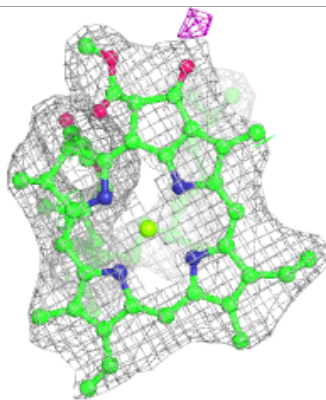
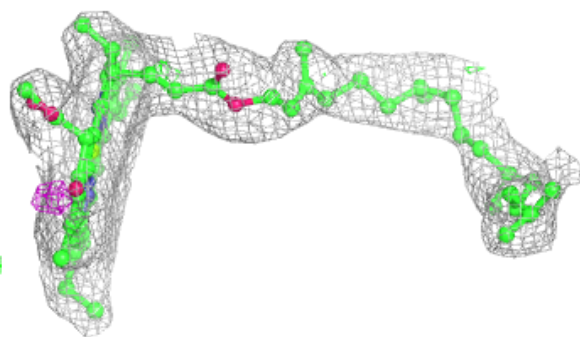
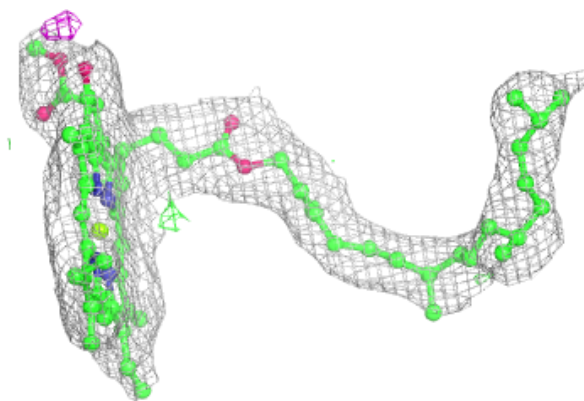
**Electron density around SQD D 410:**

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

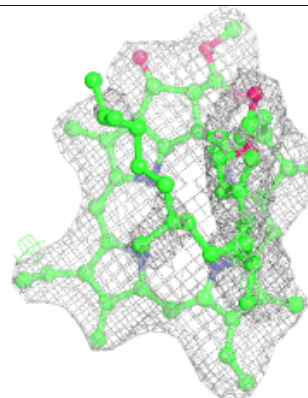
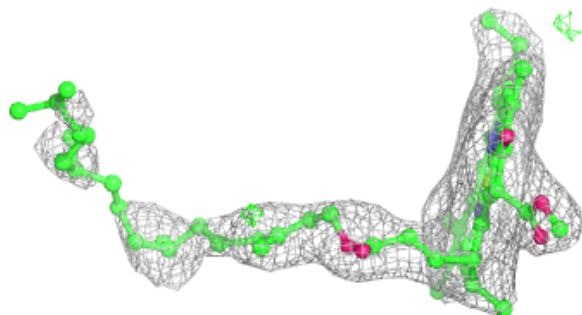
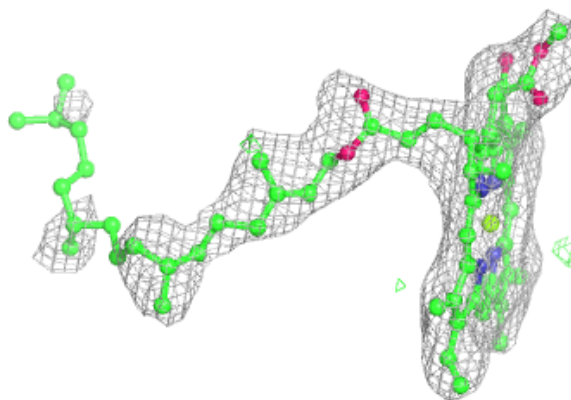


Electron density around CLA d 403:

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

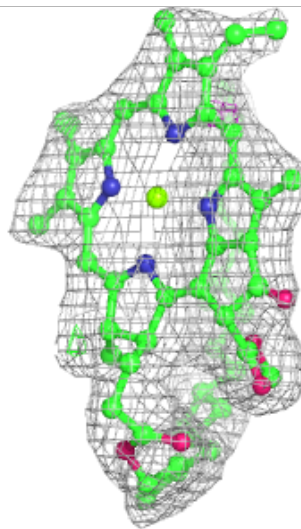
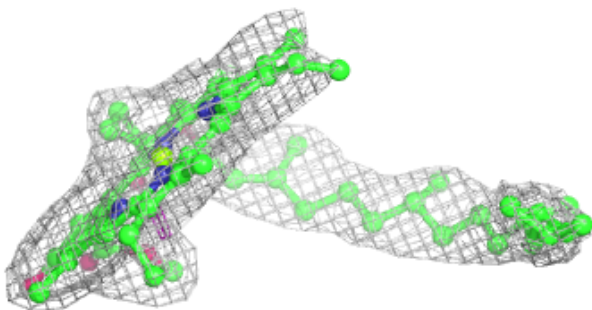
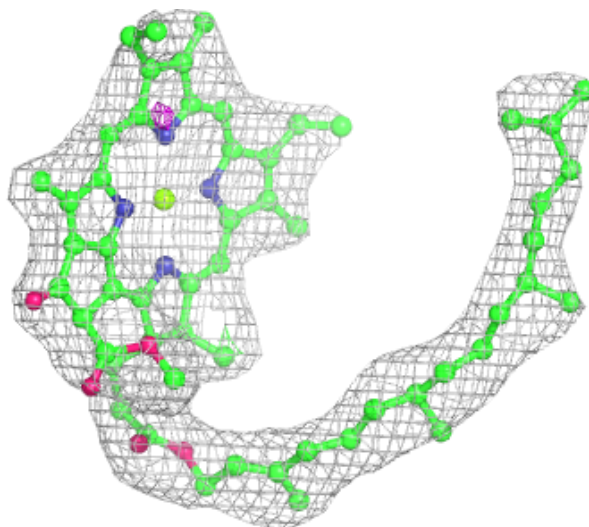
**Electron density around CLA D 404:**

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



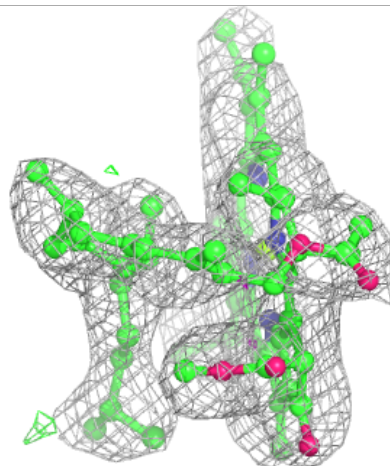
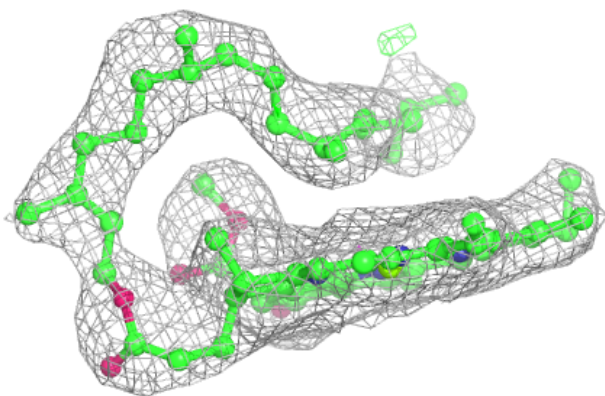
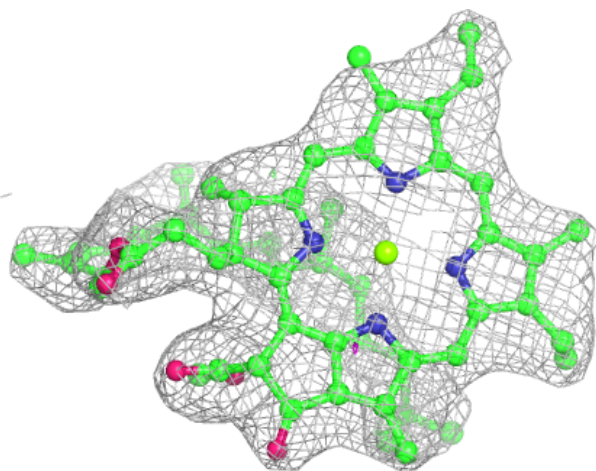
Electron density around CLA C 508:

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



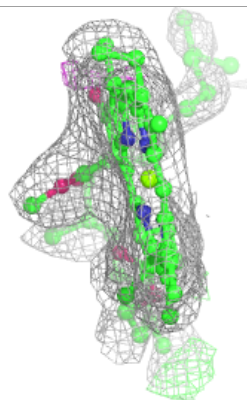
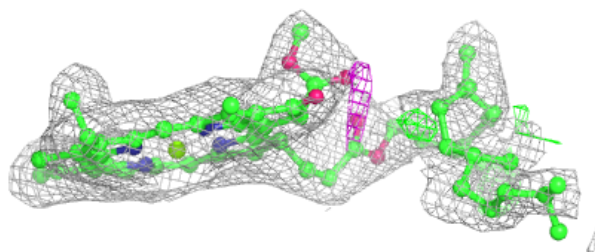
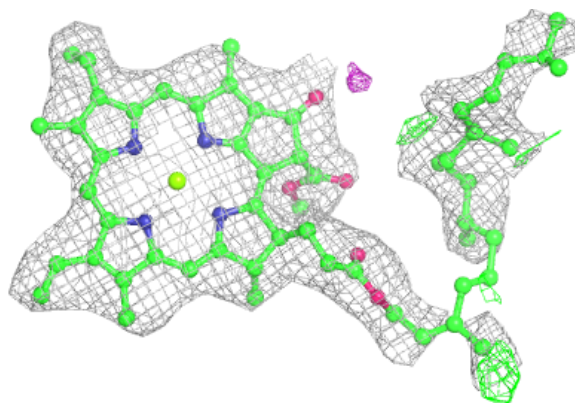
Electron density around CLA C 511:

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

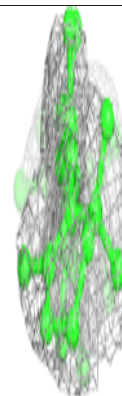
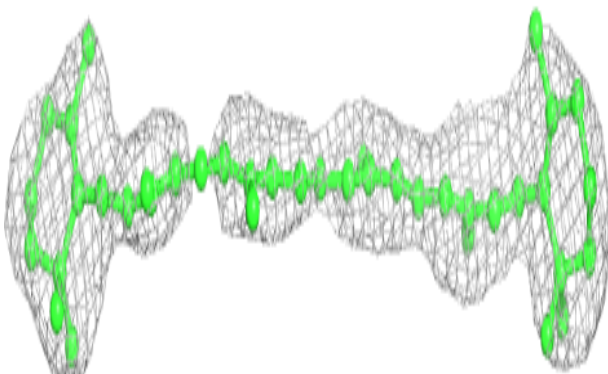
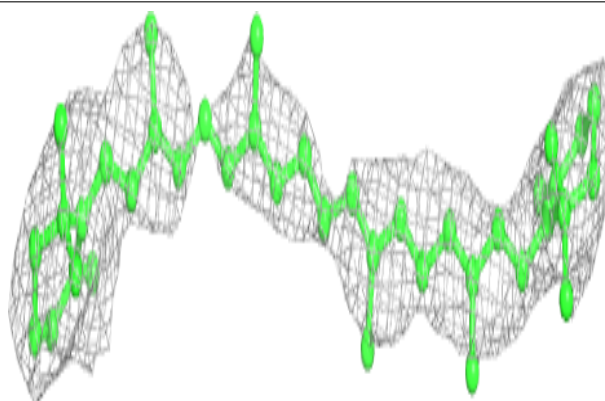


Electron density around CLA B 617:

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

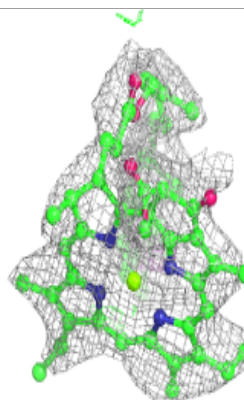
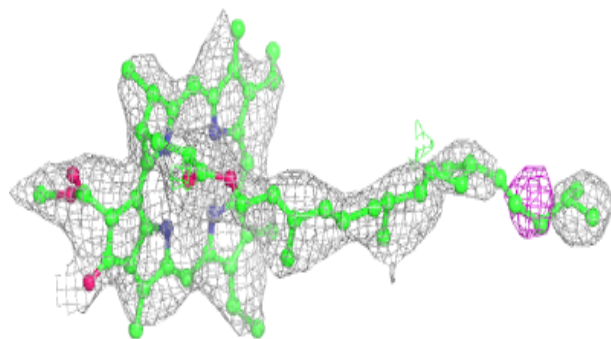
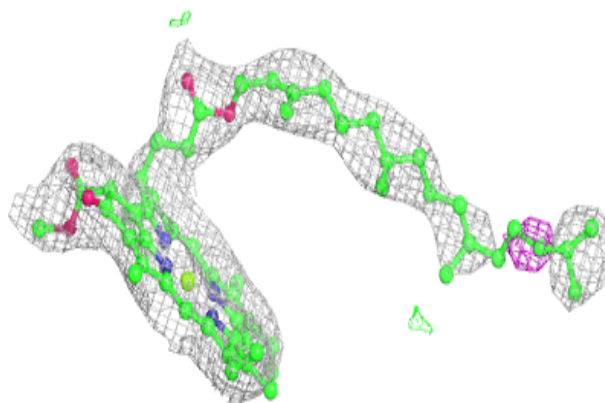
**Electron density around BCR c 514:**

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

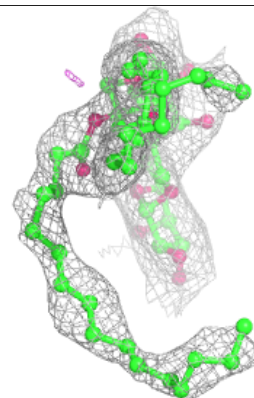
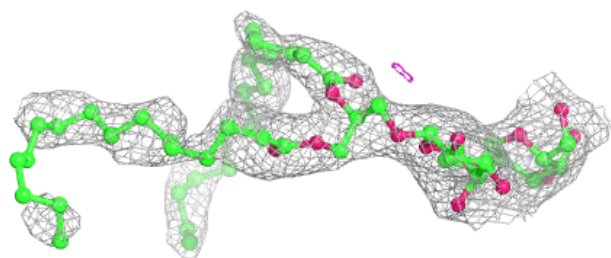
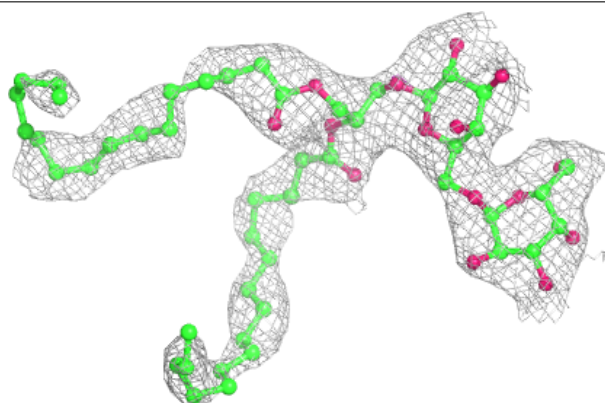


Electron density around CLA C 505:

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

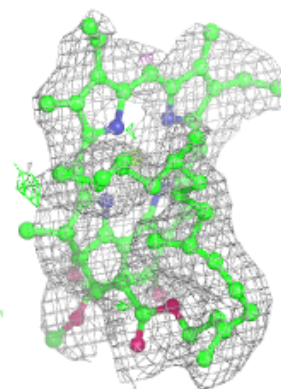
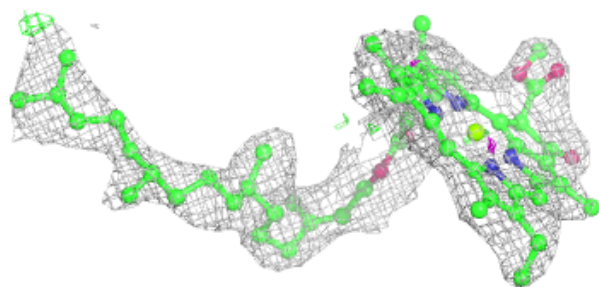
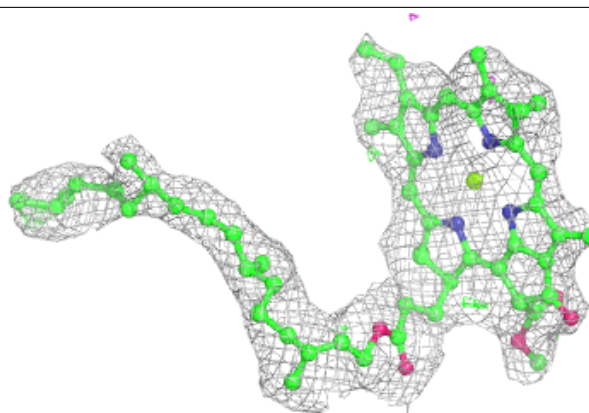
**Electron density around DGD c 517:**

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

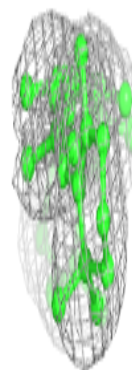
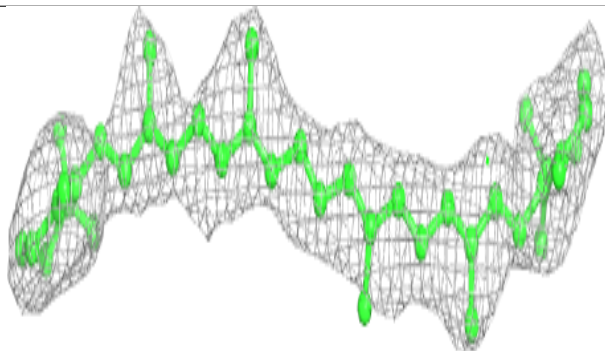
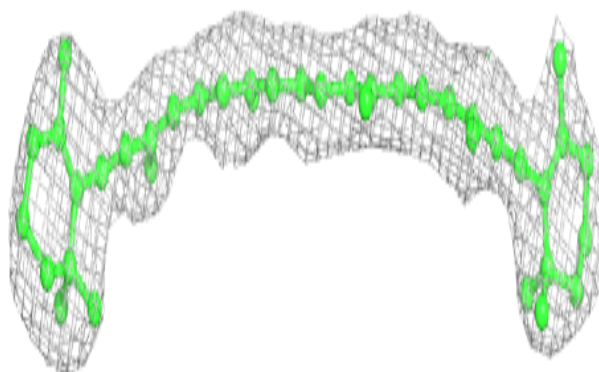


Electron density around CLA c 511:

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

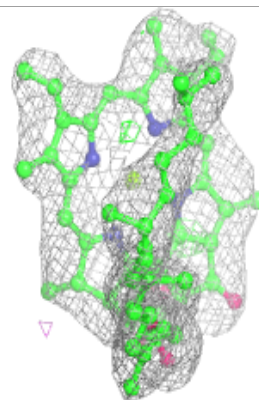
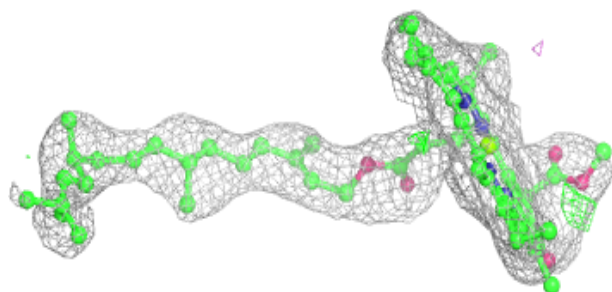
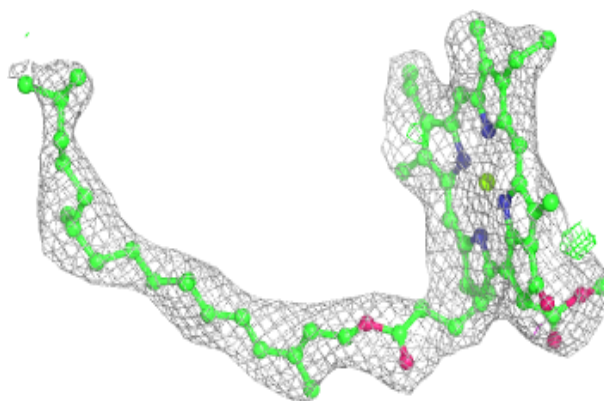
**Electron density around BCR K 101:**

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

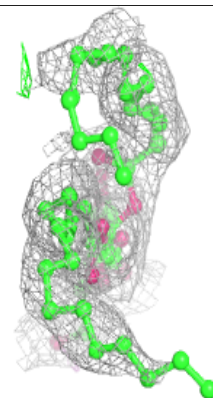
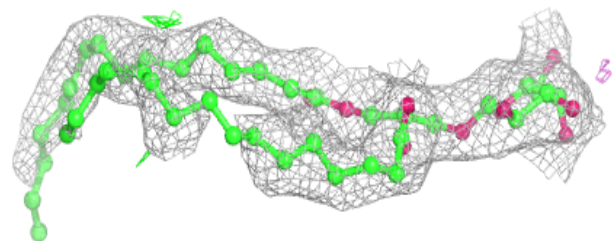
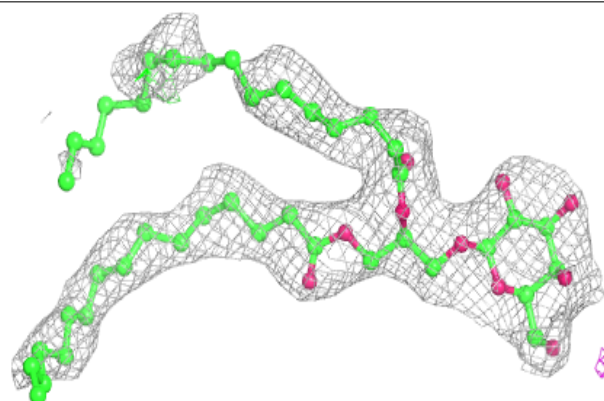


Electron density around CLA B 610:

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

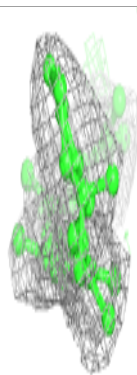
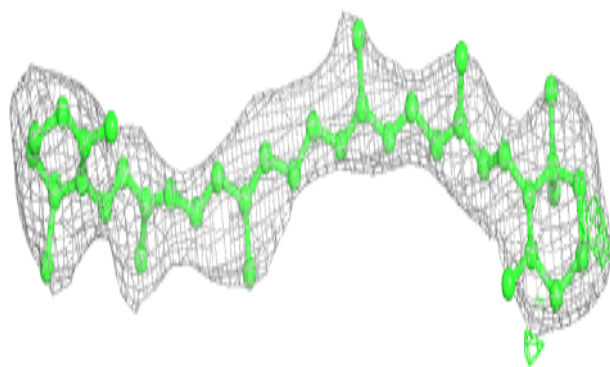
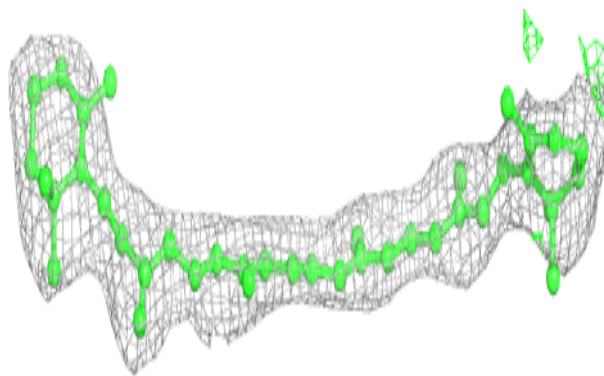
**Electron density around LMG f 101:**

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

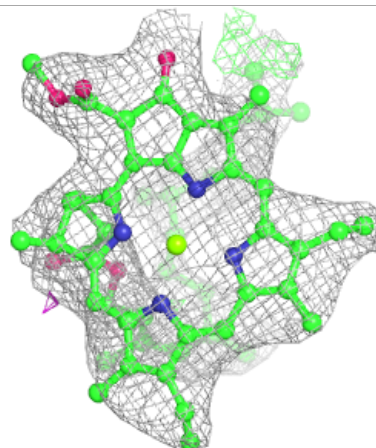
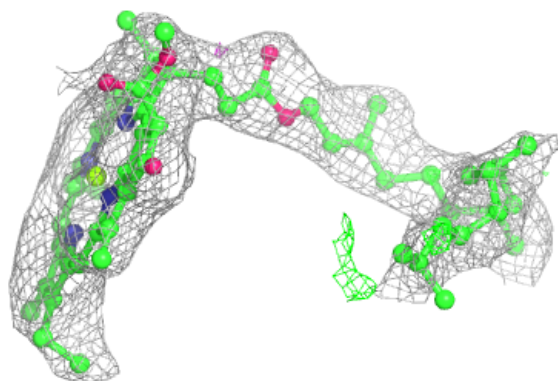
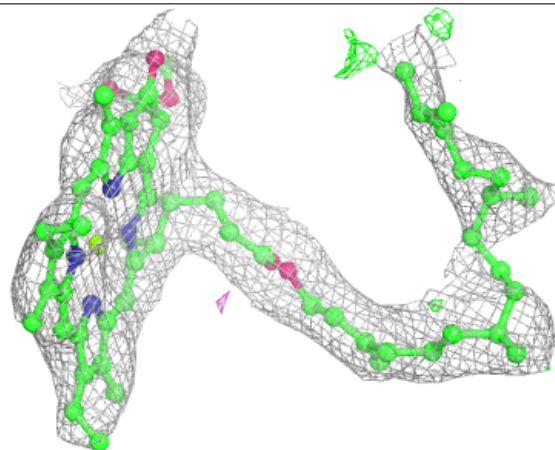


Electron density around BCR d 404:

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

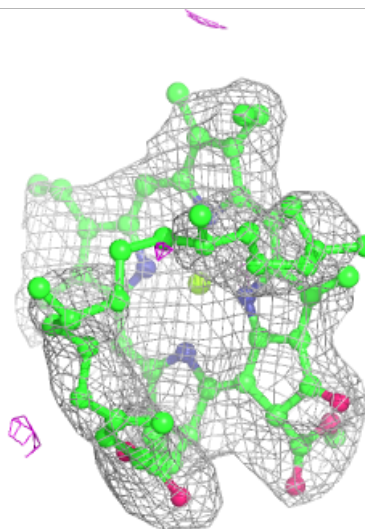
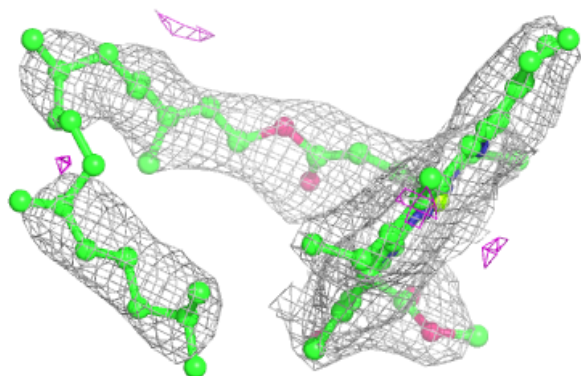
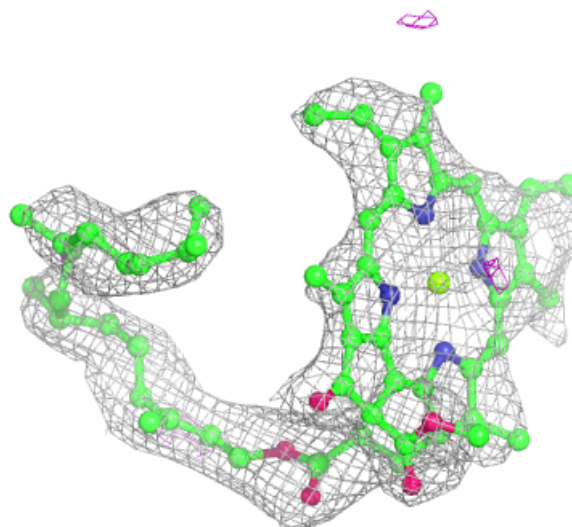
**Electron density around CLA B 607:**

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



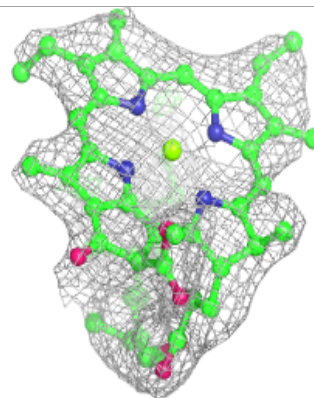
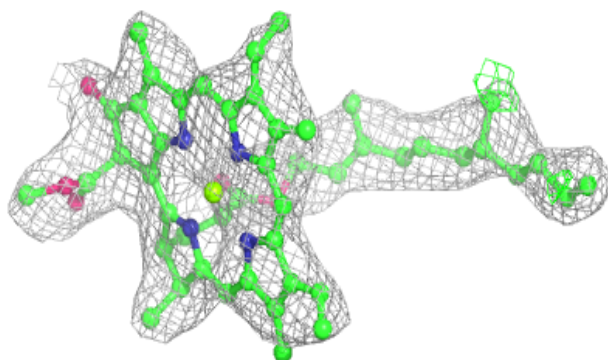
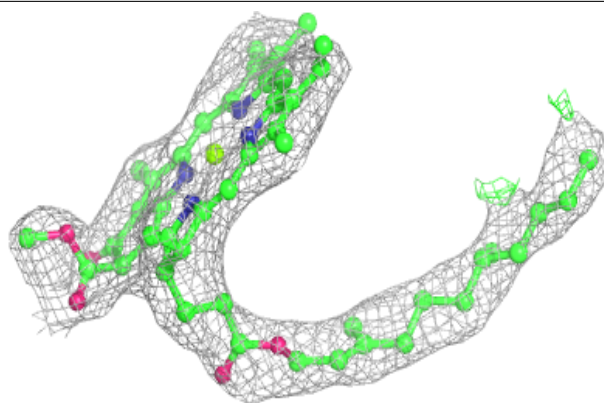
Electron density around CLA c 503:

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

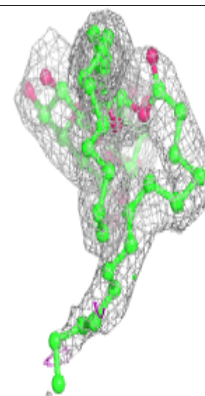
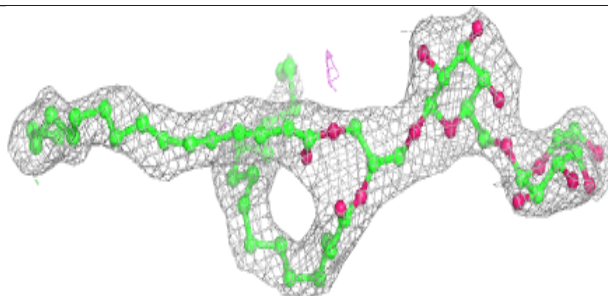
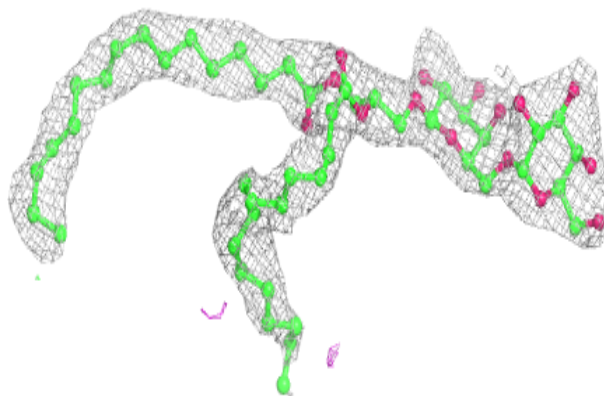


Electron density around CLA c 504:

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

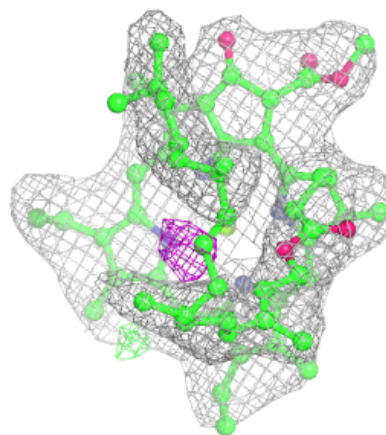
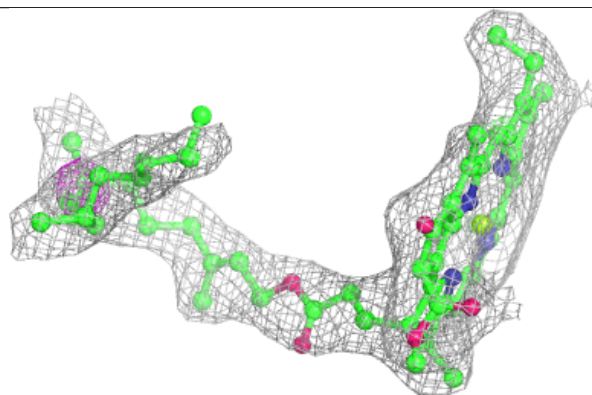
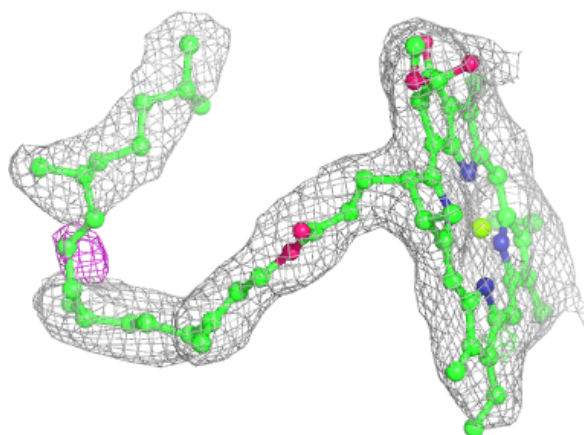
**Electron density around DGD h 102:**

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

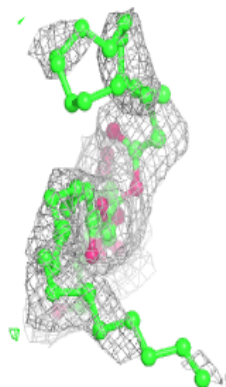
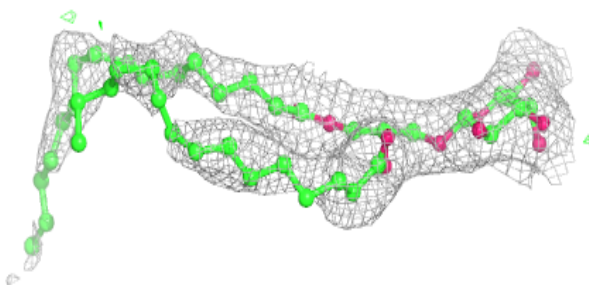
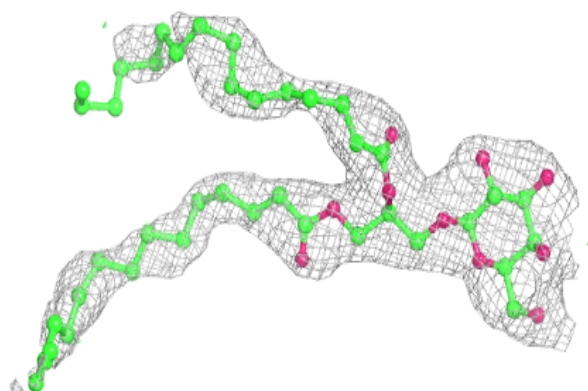


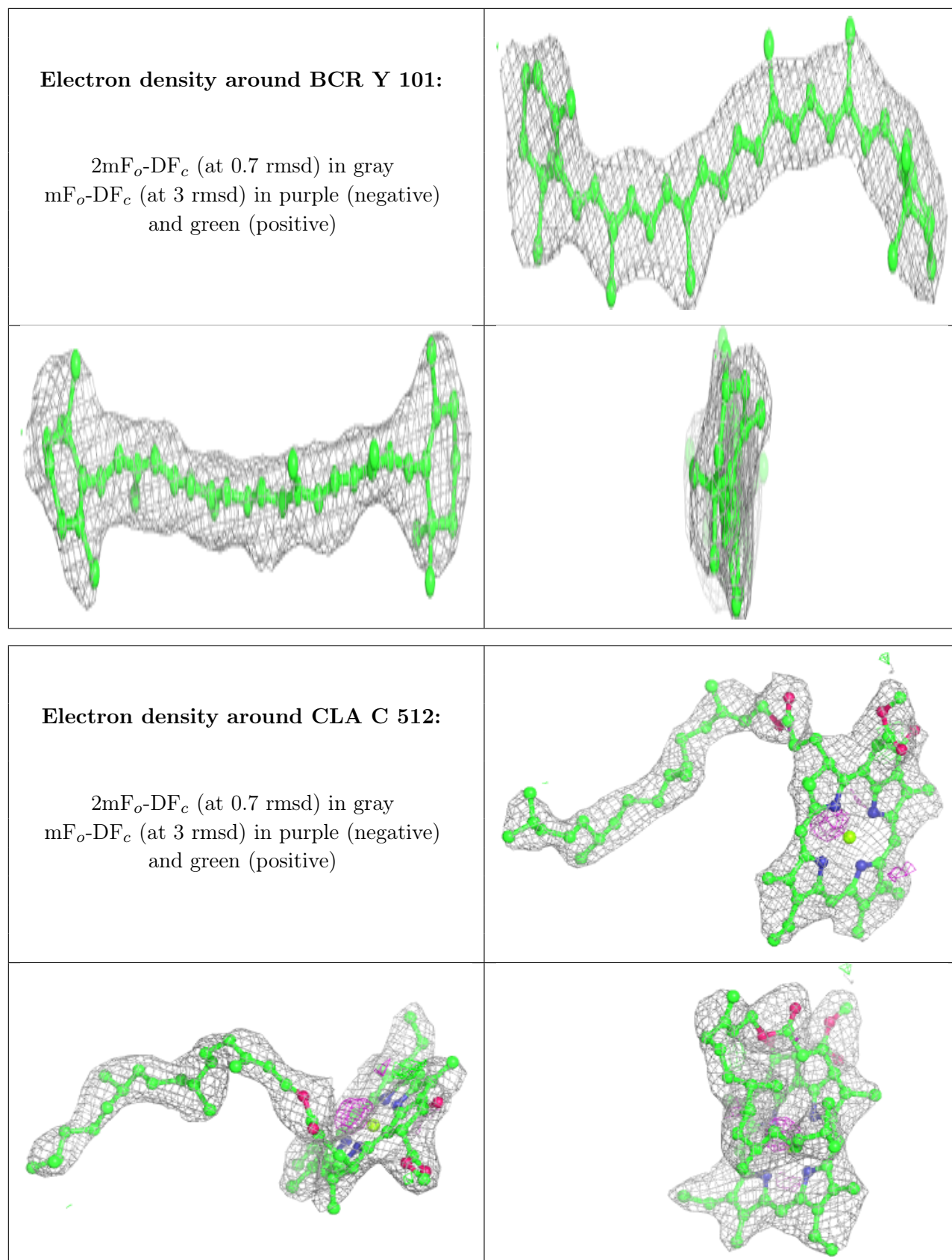
Electron density around CLA b 612:

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

**Electron density around LMG D 409:**

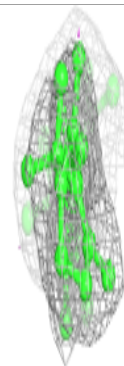
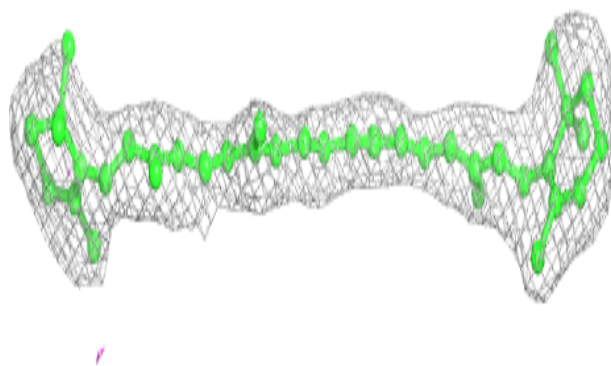
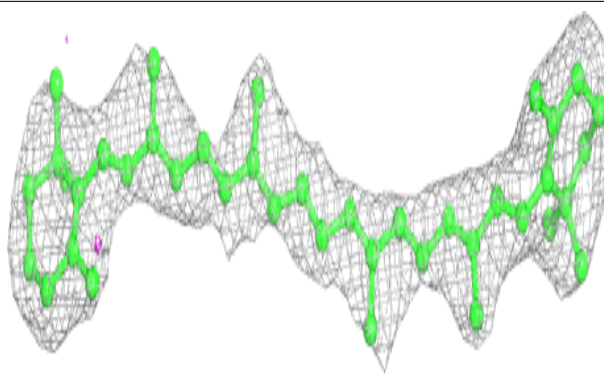
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



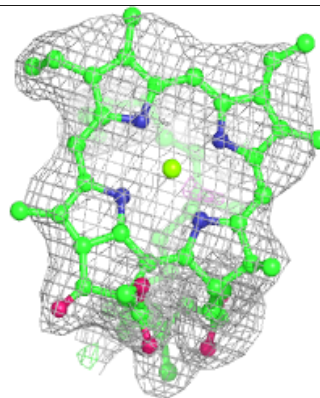
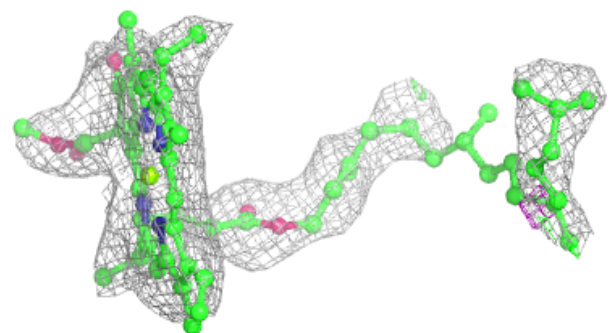
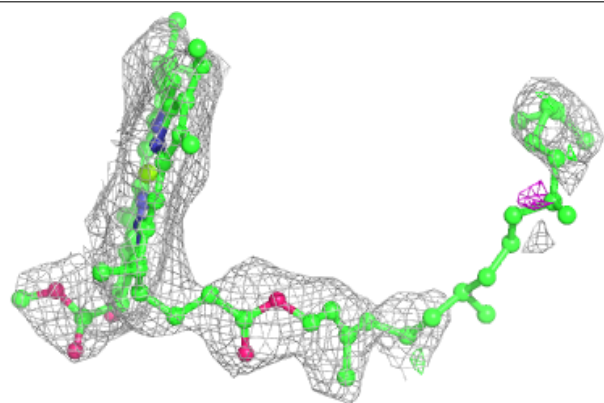


Electron density around BCR b 624:

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

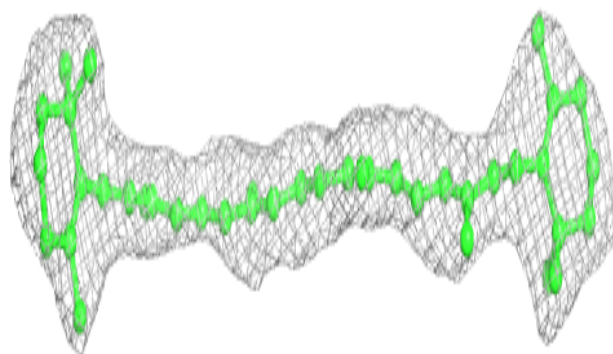
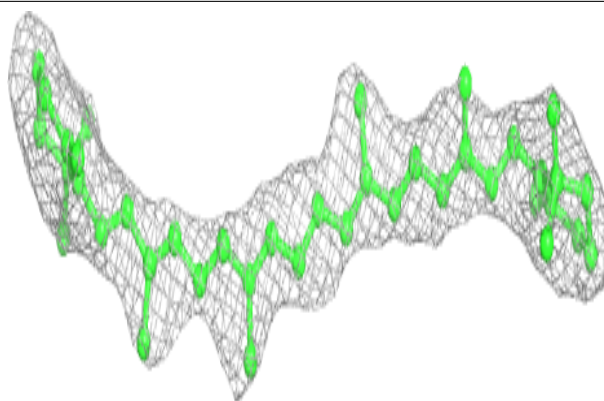
**Electron density around CLA c 506:**

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

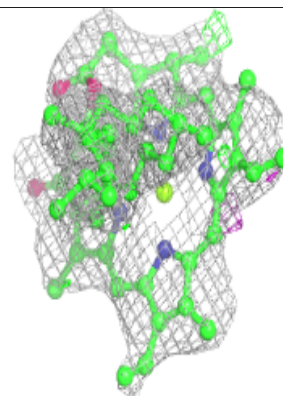
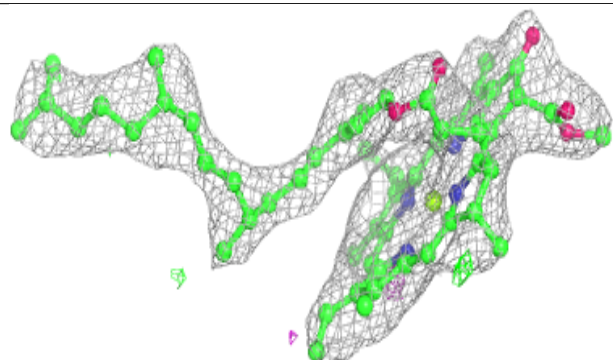
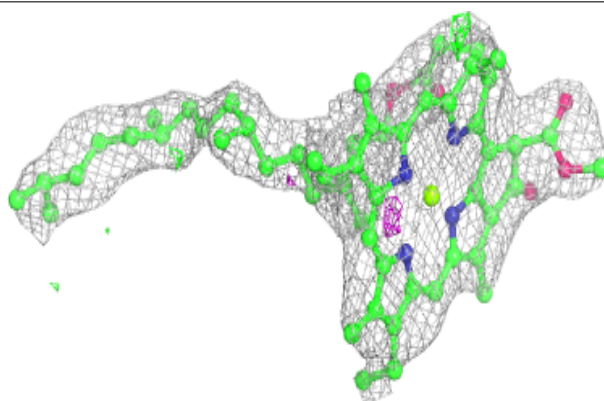


Electron density around BCR c 515:

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

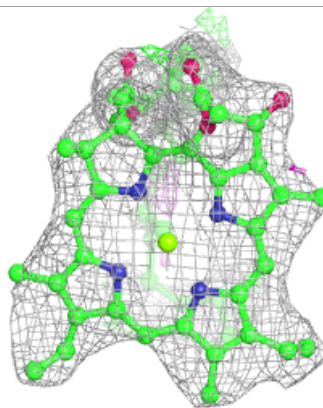
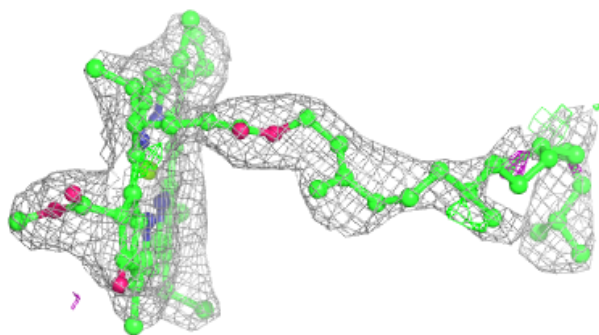
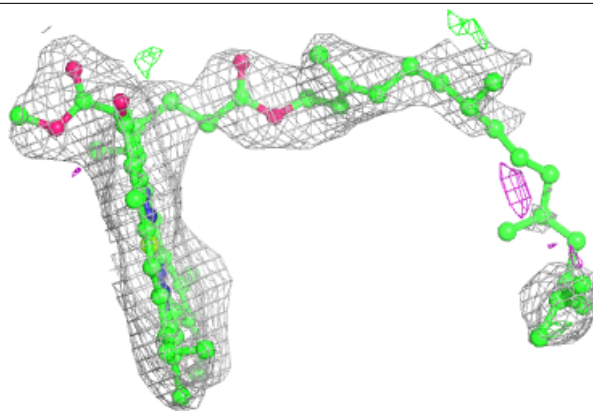
**Electron density around CLA C 506:**

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

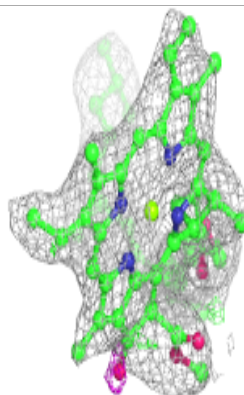
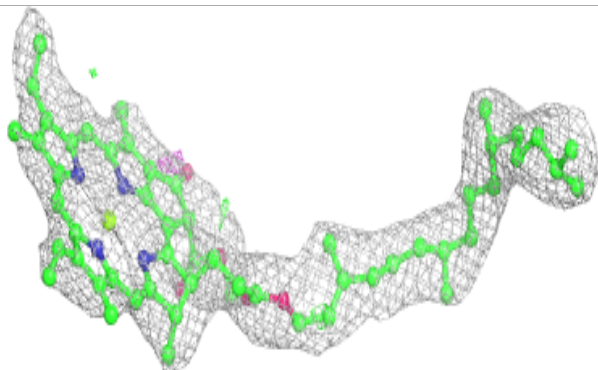
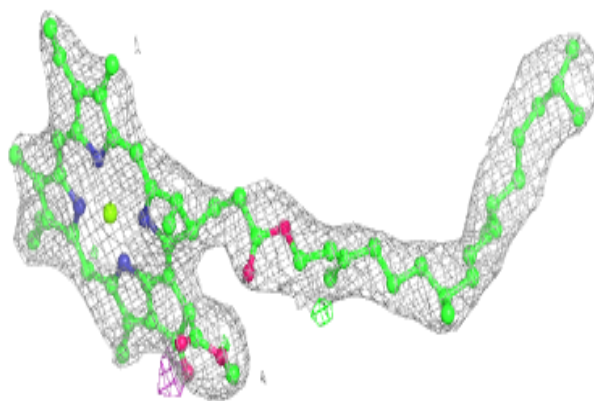


Electron density around CLA C 507:

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

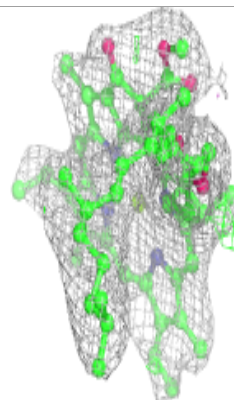
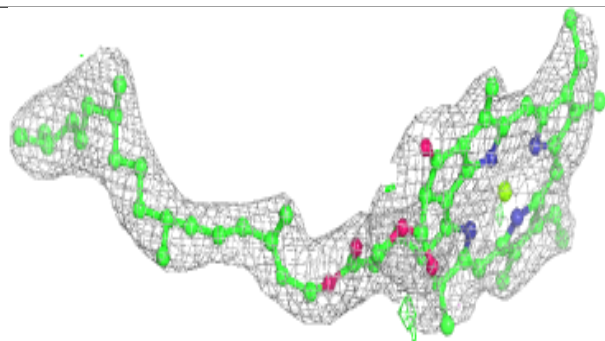
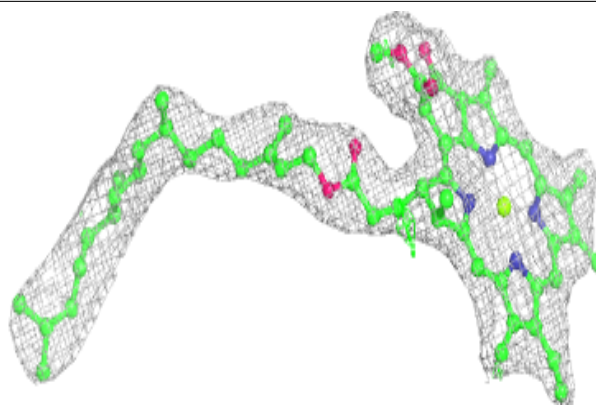
**Electron density around CLA A 606:**

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

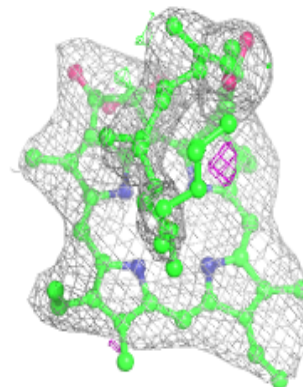
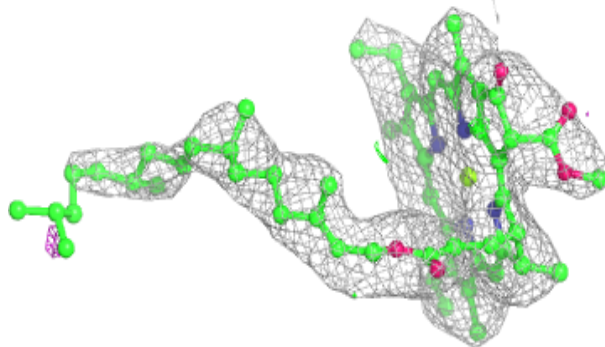
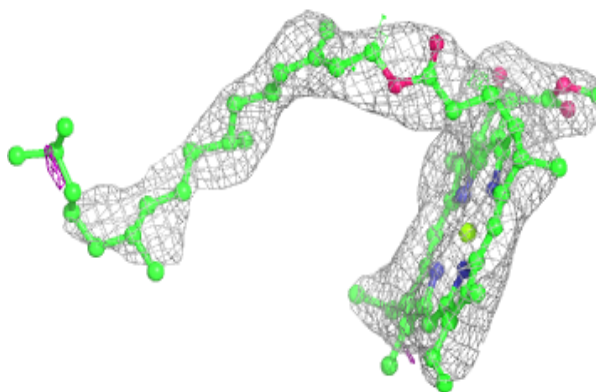


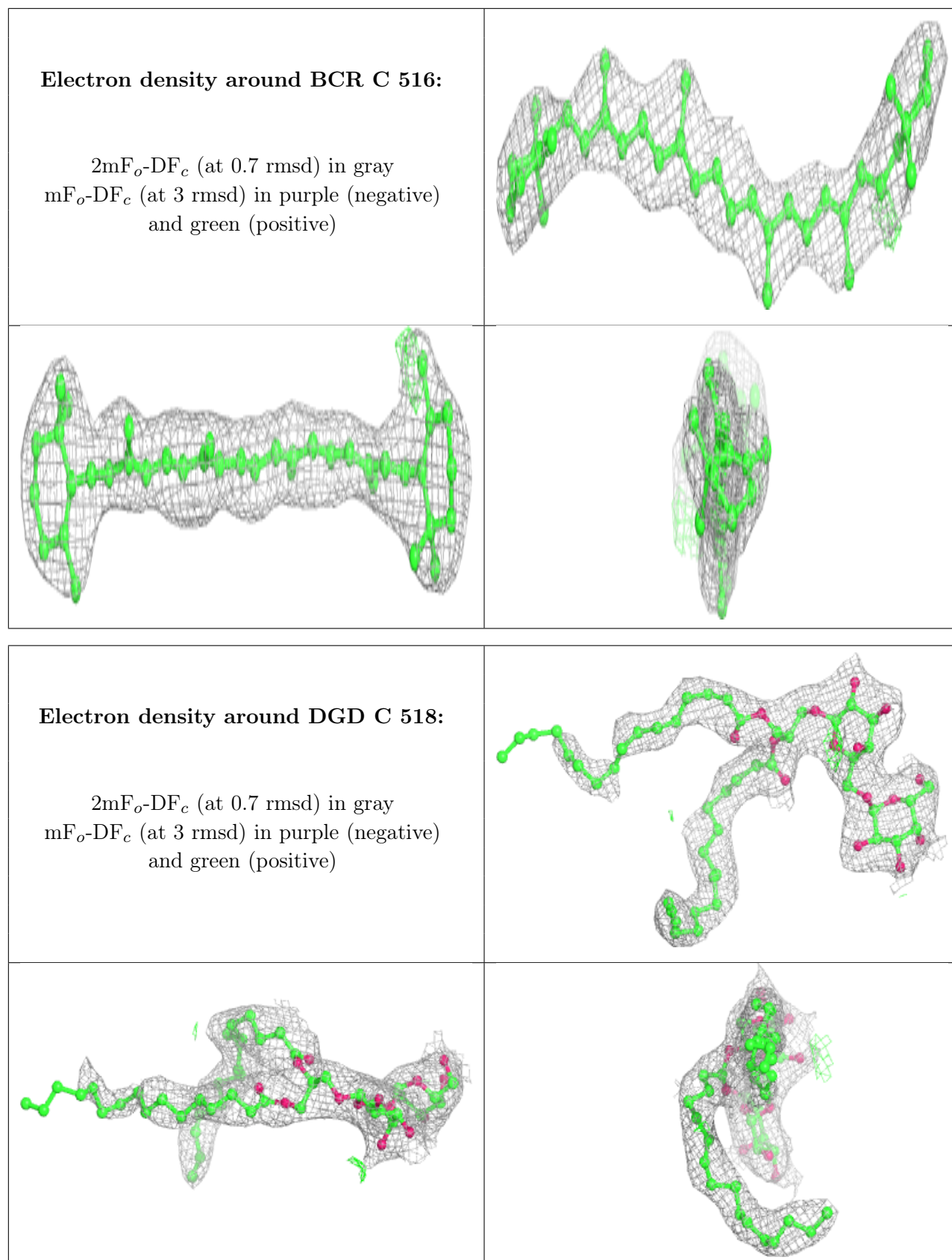
Electron density around CLA a 707:

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

**Electron density around CLA C 509:**

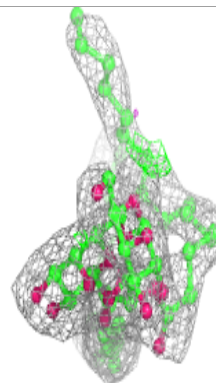
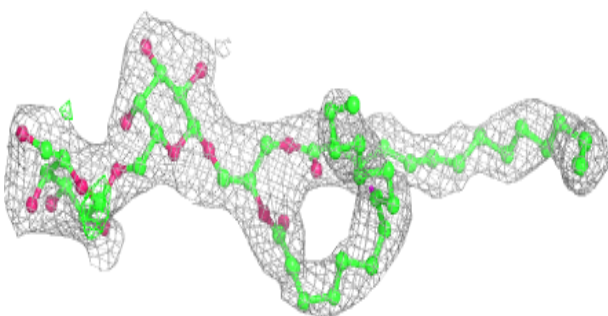
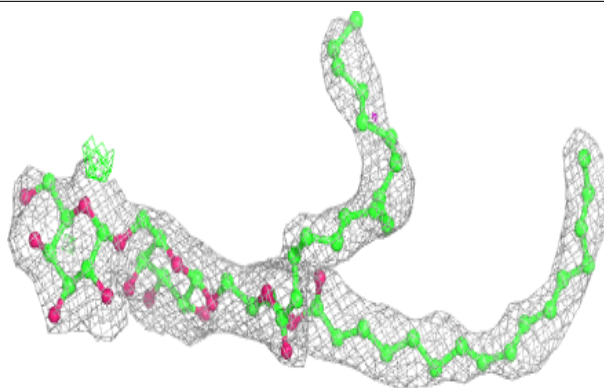
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



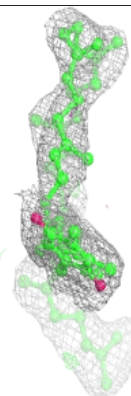
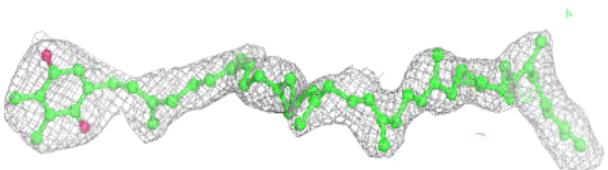
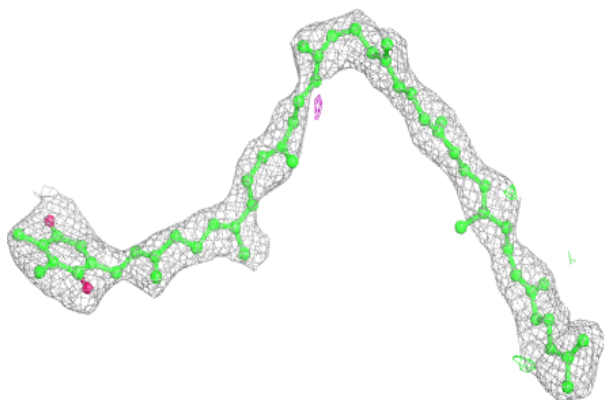


Electron density around DGD H 103:

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

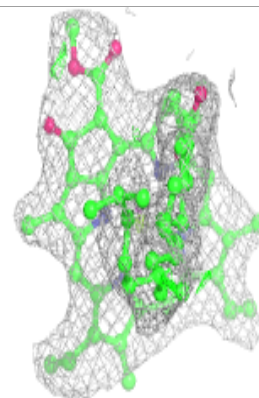
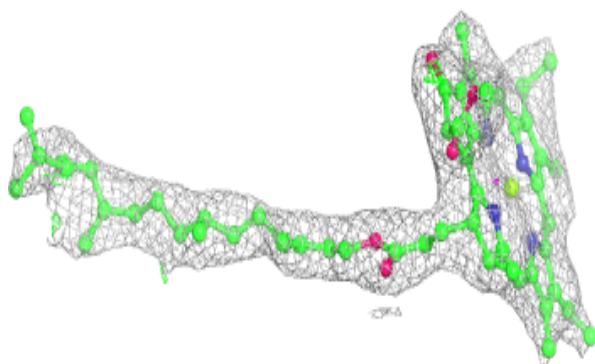
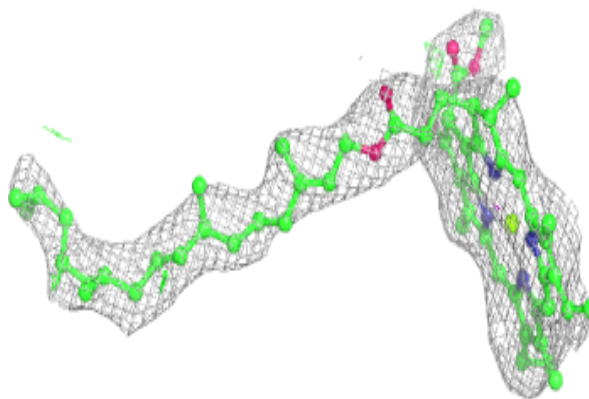
**Electron density around PL9 D 406:**

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

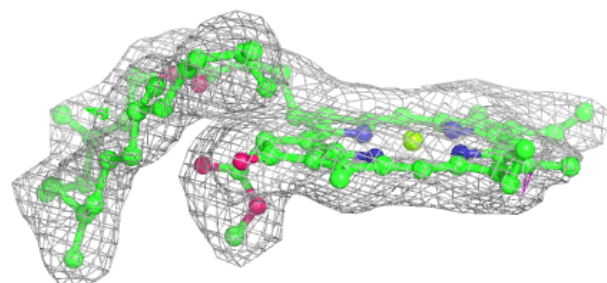
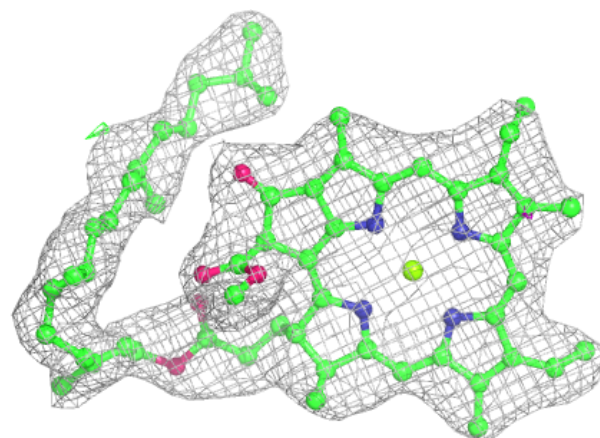


Electron density around CLA b 610:

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

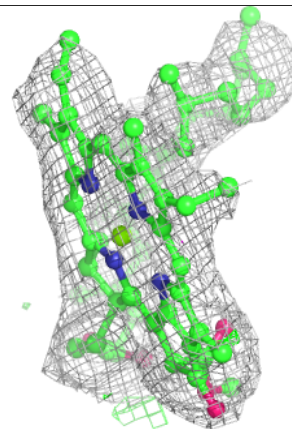
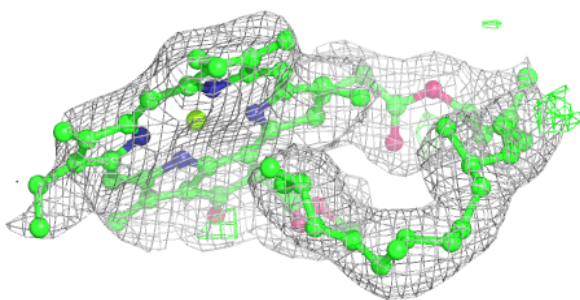
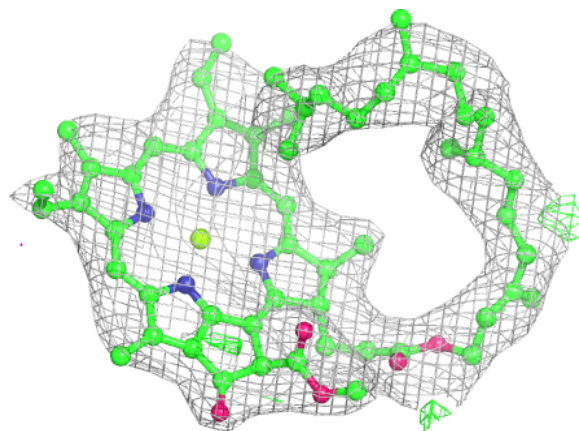
**Electron density around CLA b 616:**

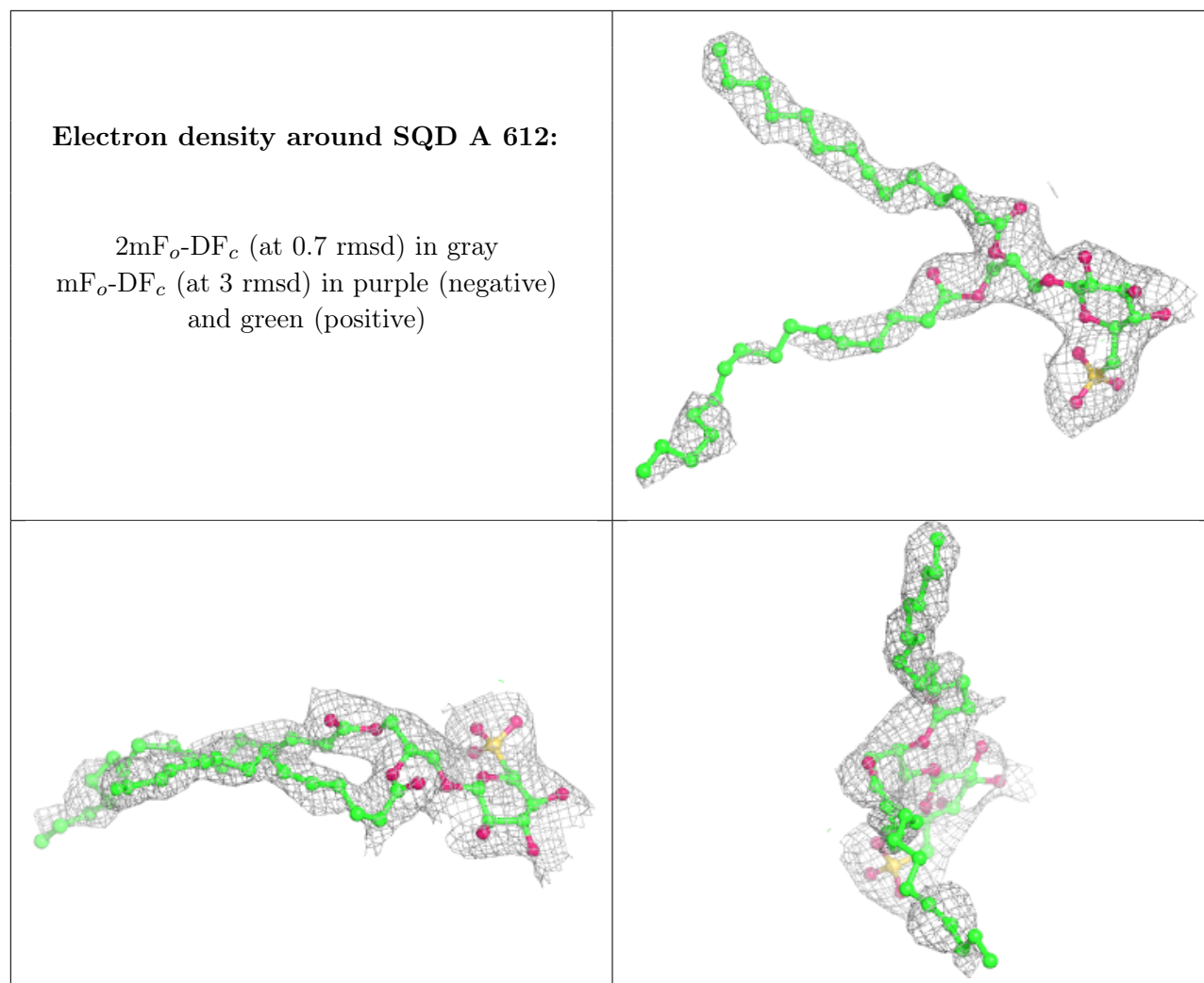
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

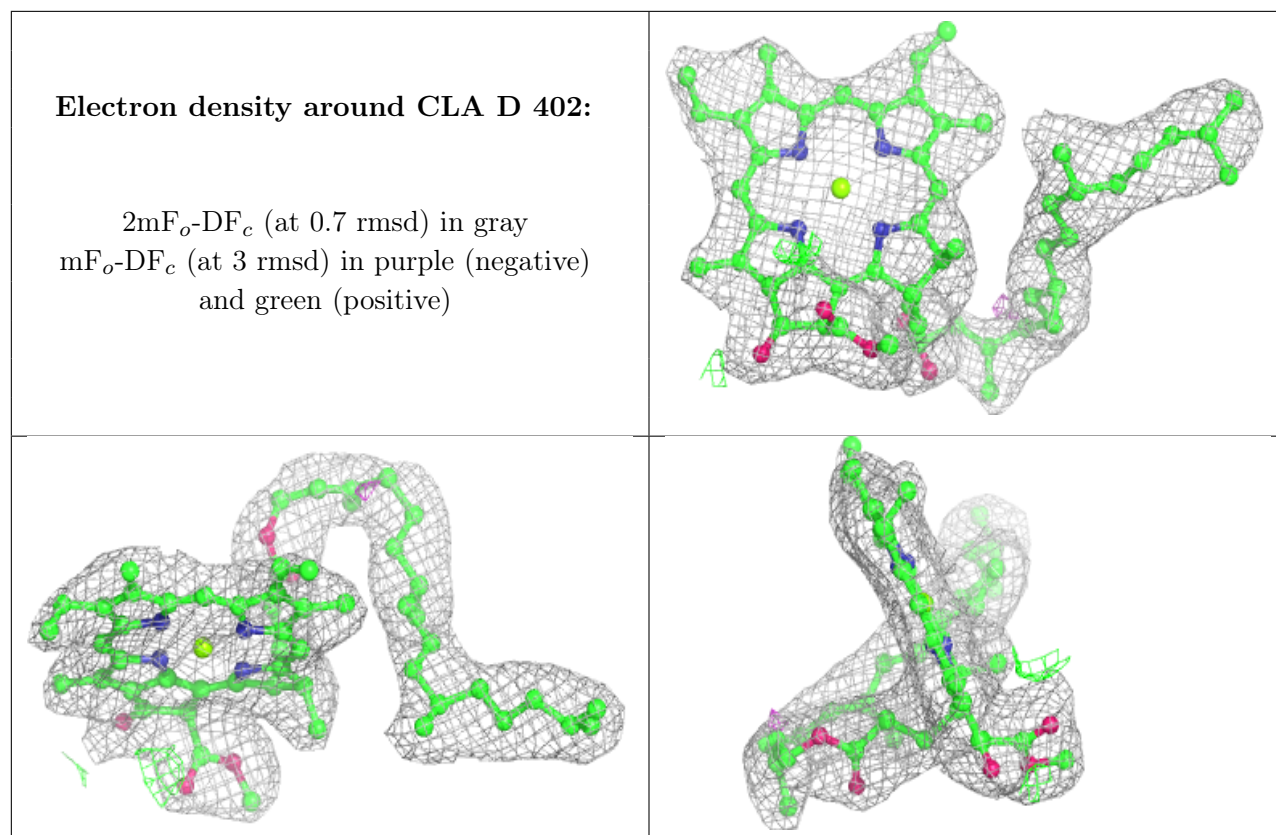


Electron density around CLA b 621:

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

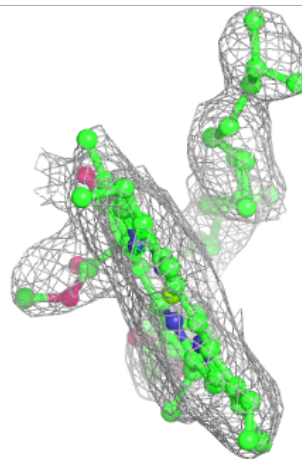
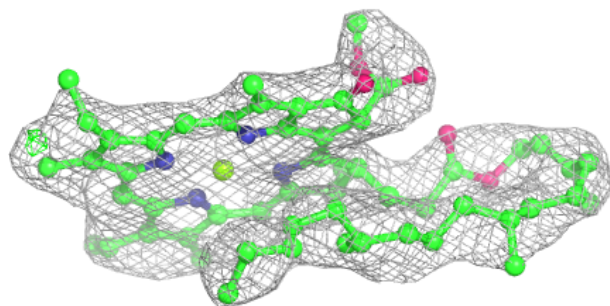
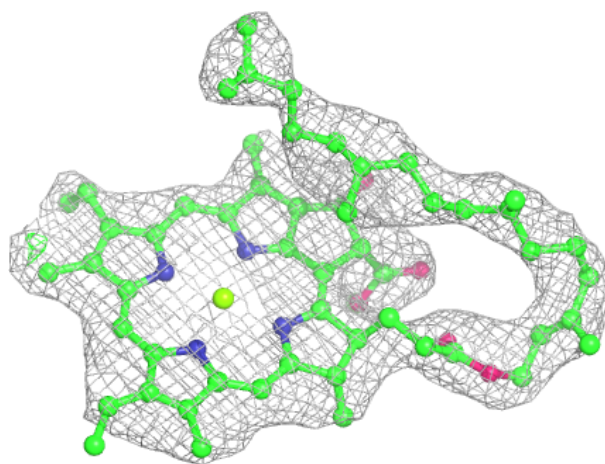






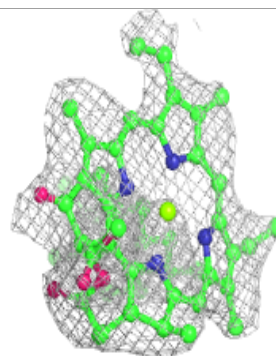
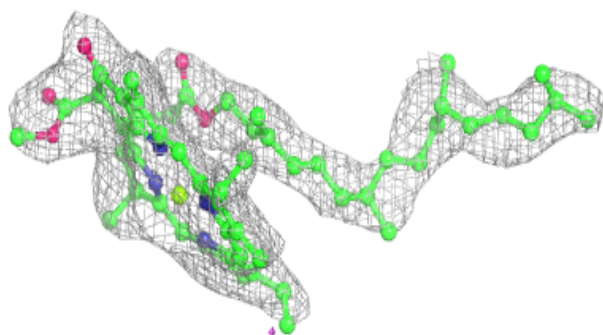
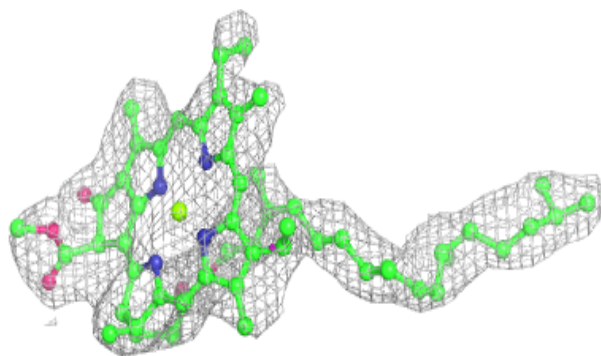
Electron density around CLA C 510:

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

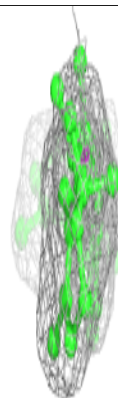
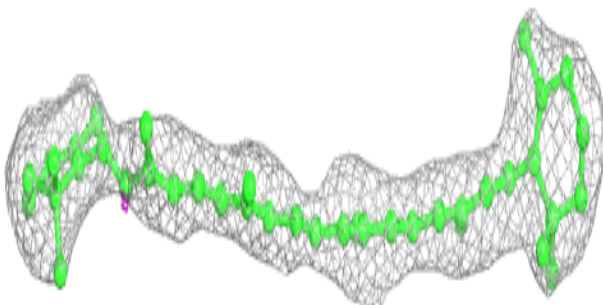
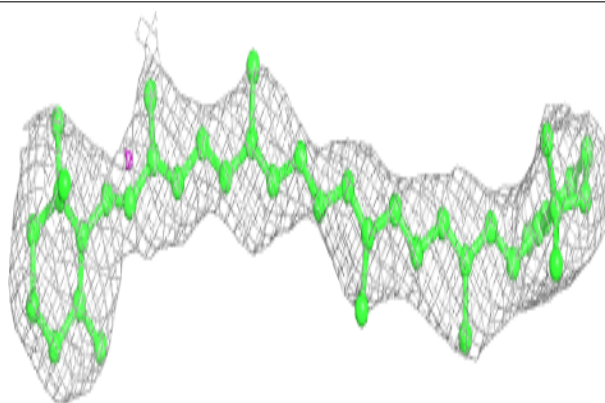


Electron density around CLA c 505:

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

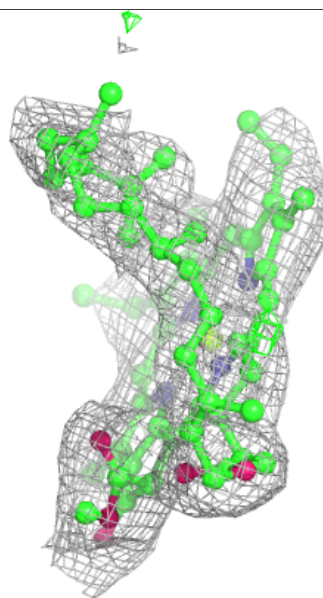
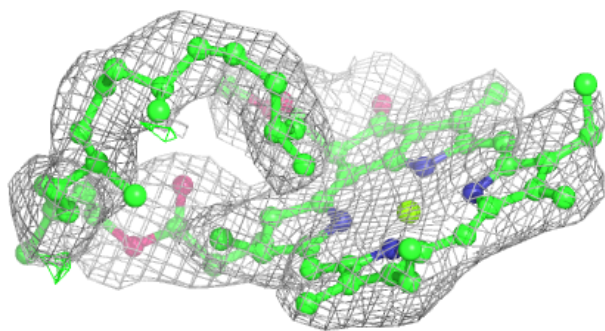
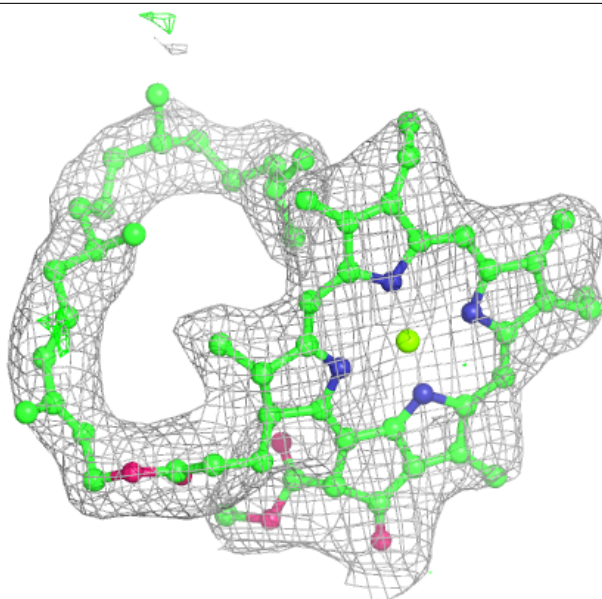
**Electron density around BCR b 623:**

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



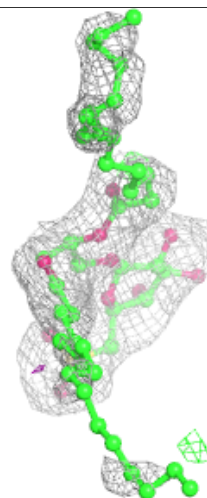
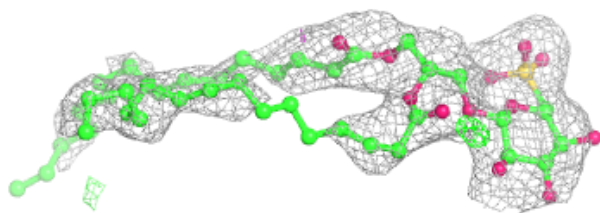
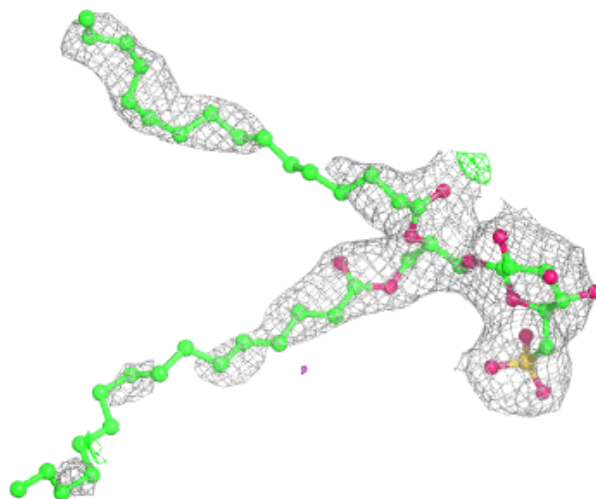
Electron density around CLA B 616:

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



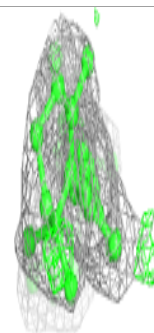
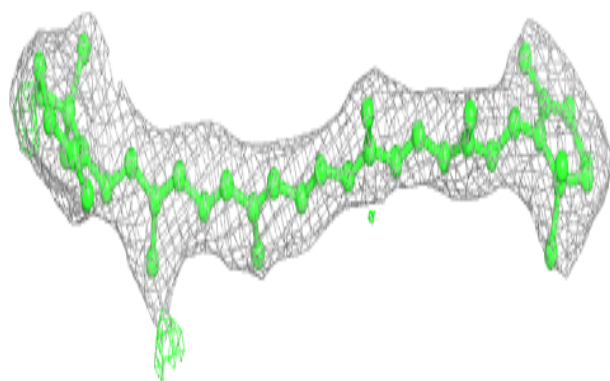
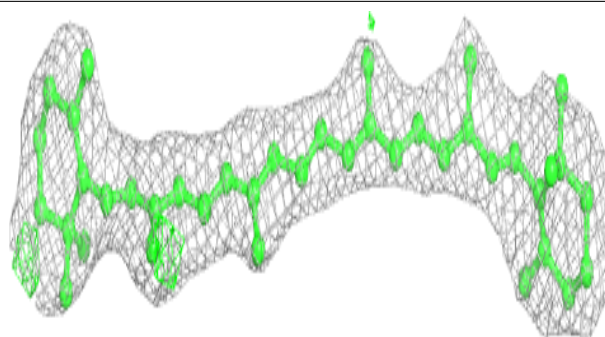
Electron density around SQD a 714:

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

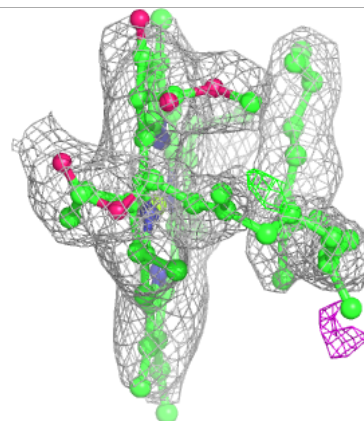
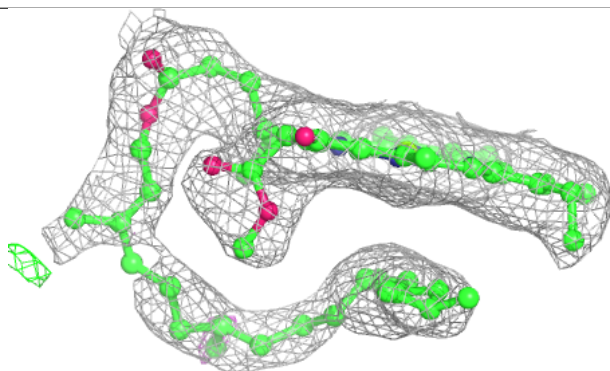
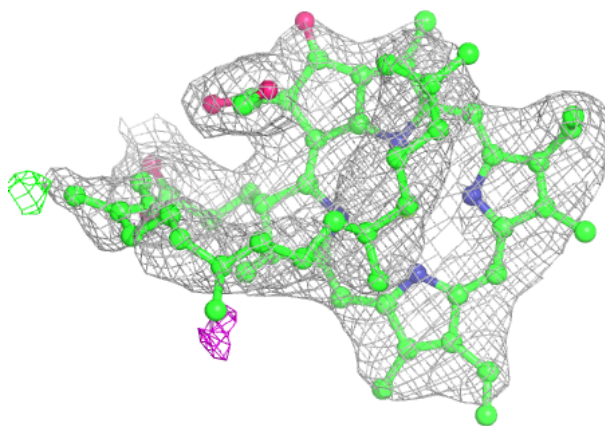


Electron density around BCR b 625:

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

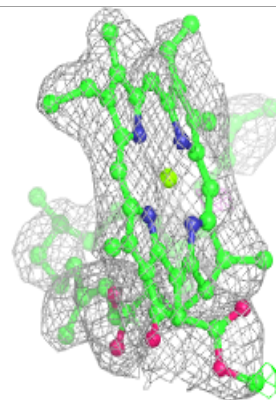
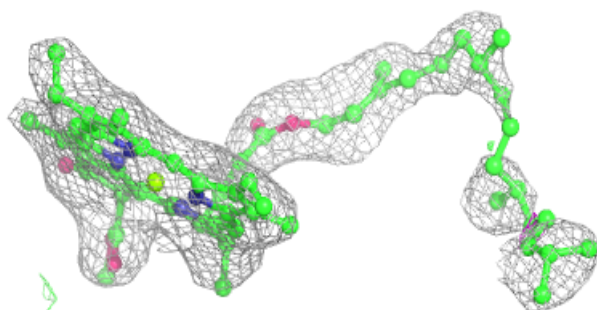
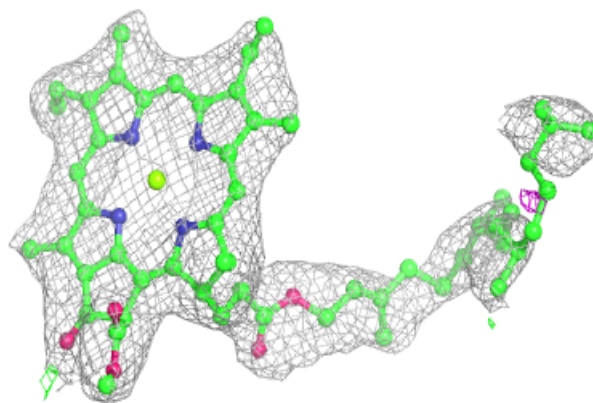
**Electron density around CLA c 510:**

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

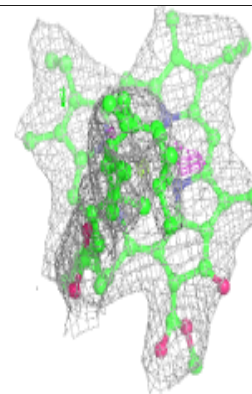
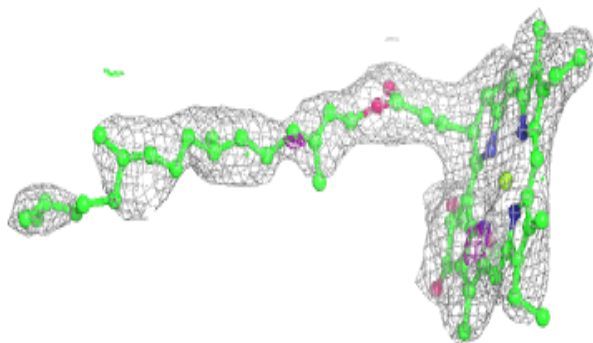
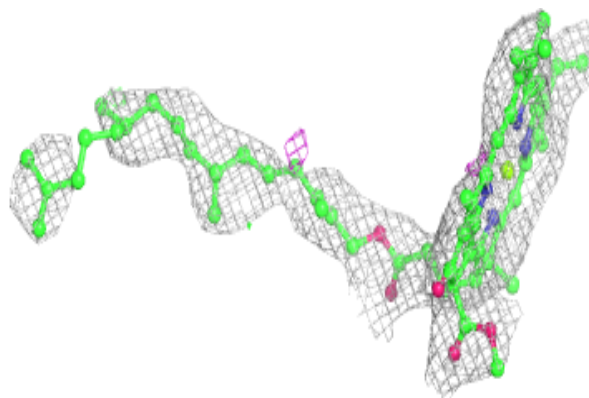


Electron density around CLA a 711:

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

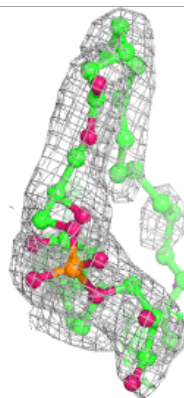
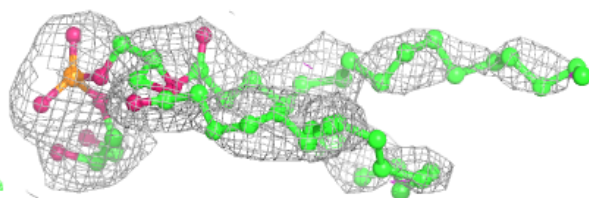
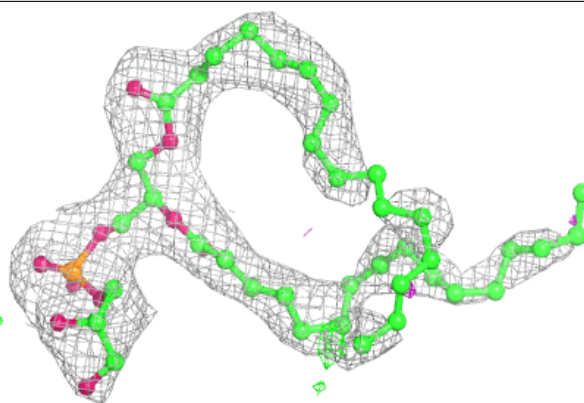
**Electron density around CLA B 605:**

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

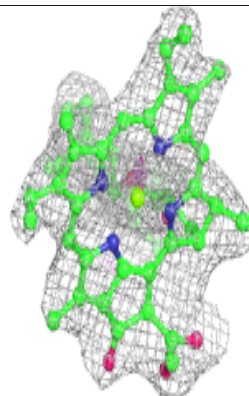
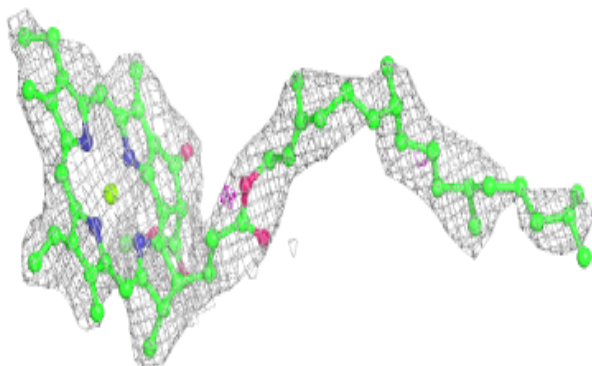
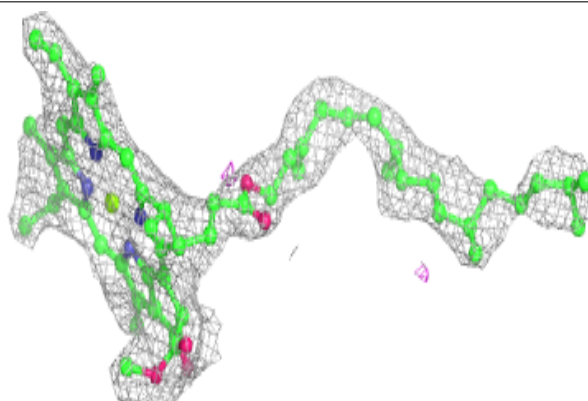


Electron density around LHG D 408:

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

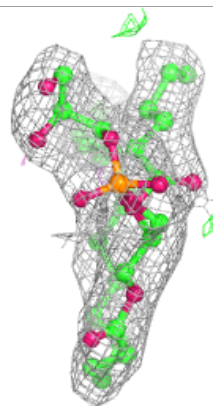
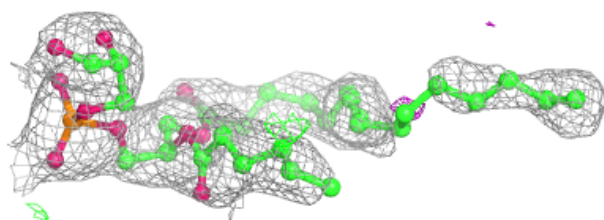
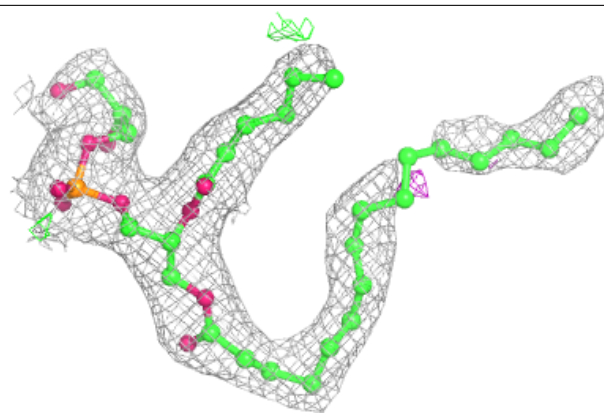
**Electron density around CLA C 503:**

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

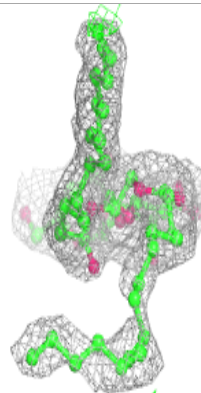
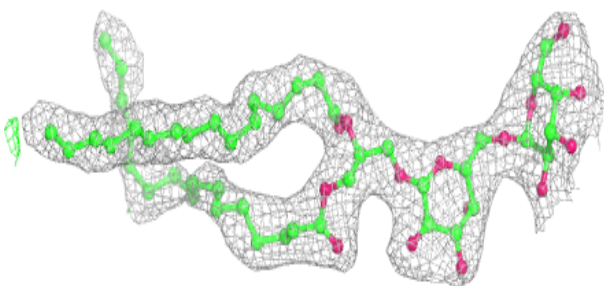
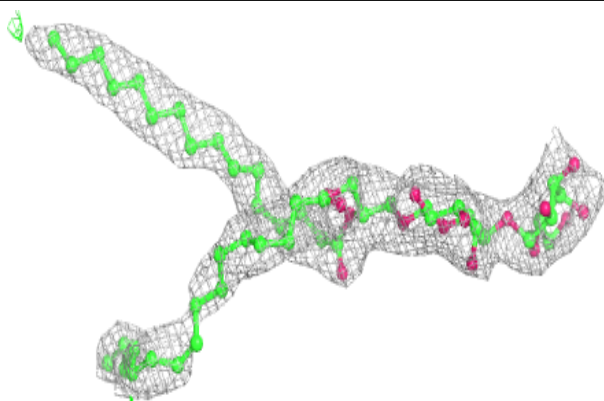


Electron density around LHG a 720:

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

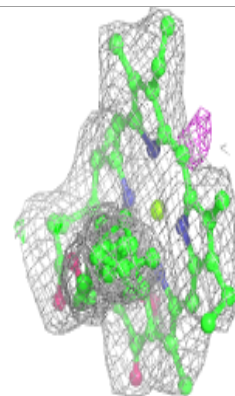
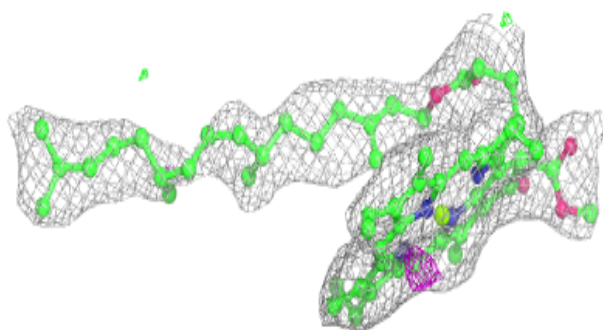
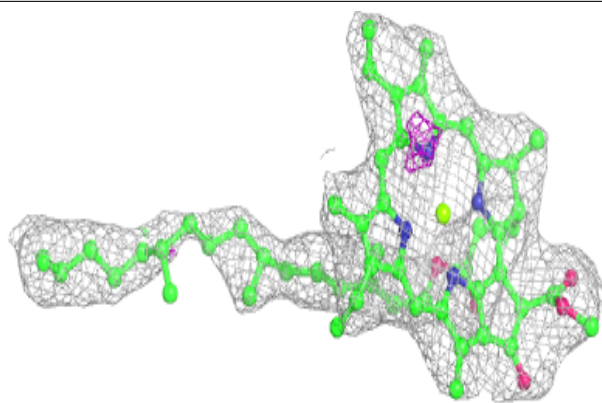
**Electron density around DGD C 517:**

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

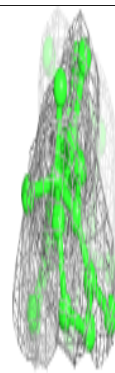
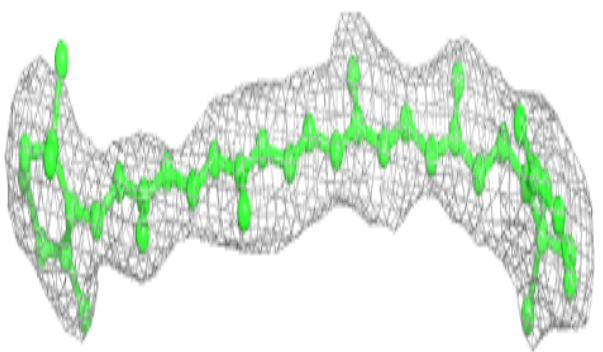
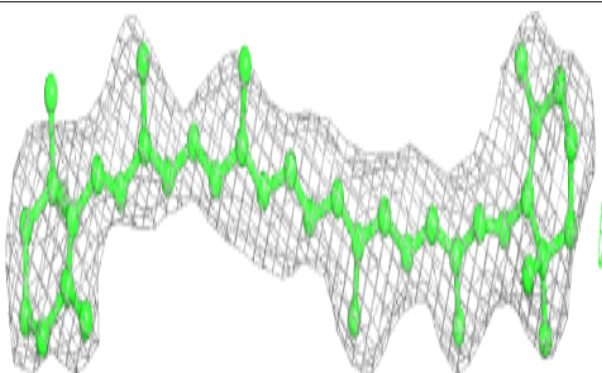


Electron density around CLA B 615:

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

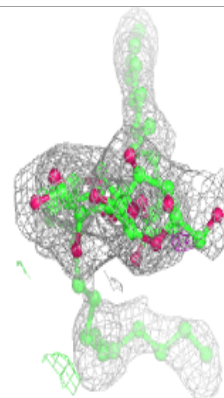
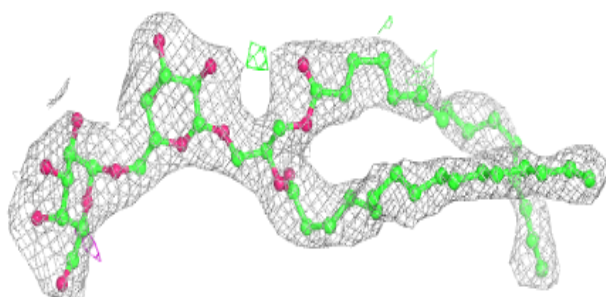
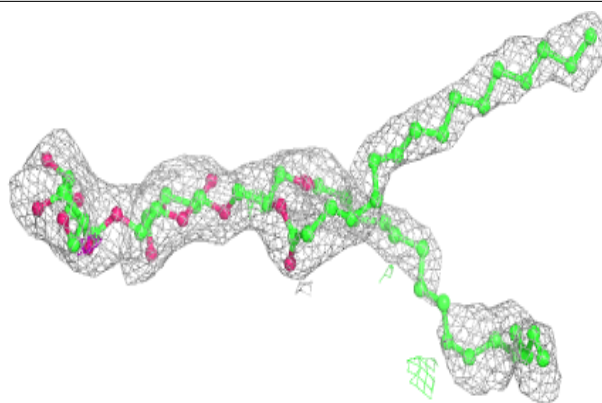
**Electron density around BCR B 620:**

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

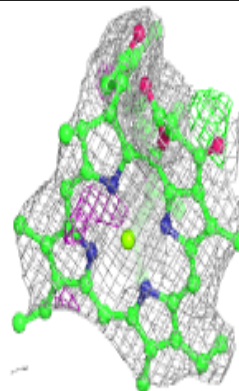
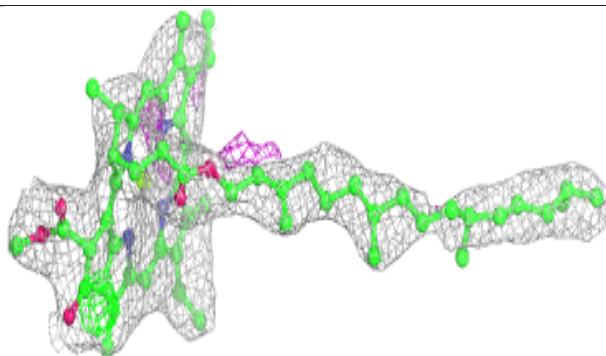
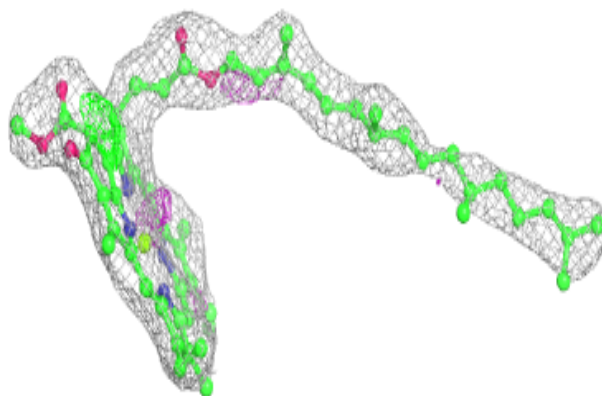


Electron density around DGD c 516:

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

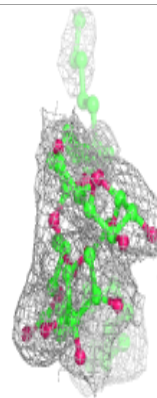
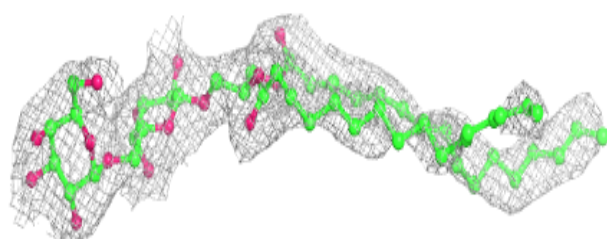
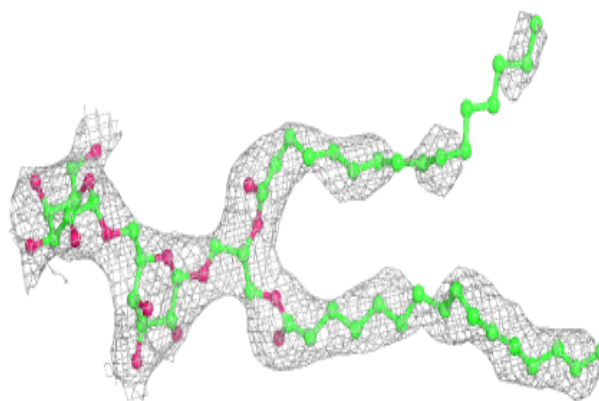
**Electron density around CLA b 613:**

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

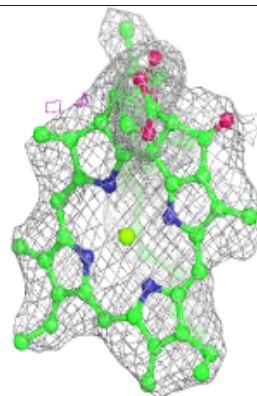
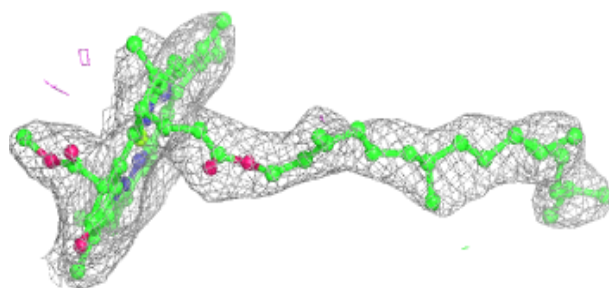
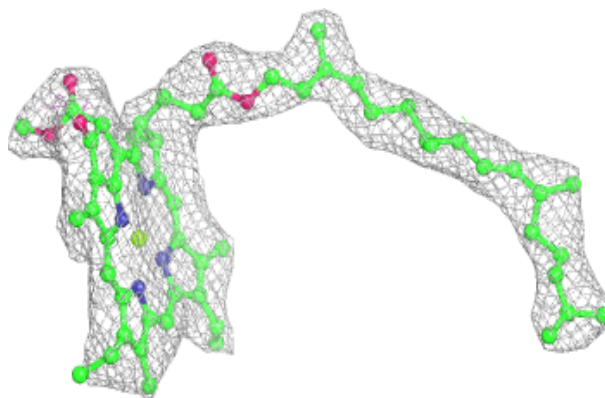


Electron density around DGD c 518:

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

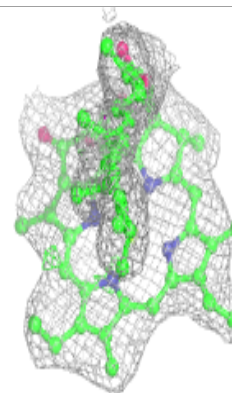
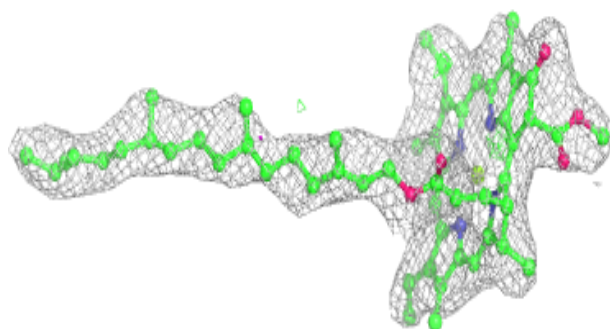
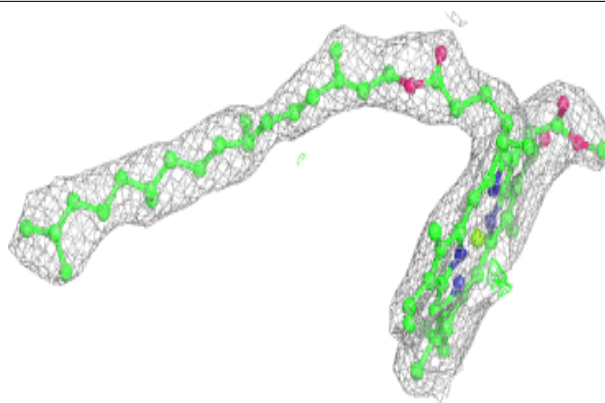
**Electron density around CLA b 615:**

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

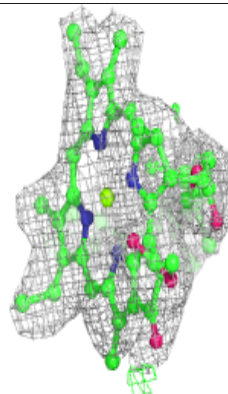
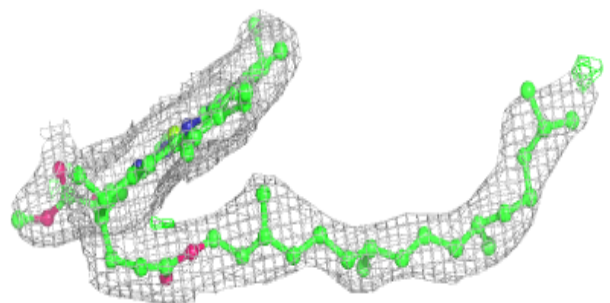
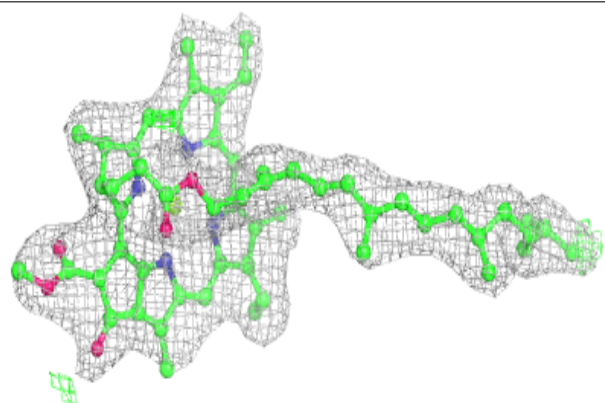


Electron density around CLA B 608:

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

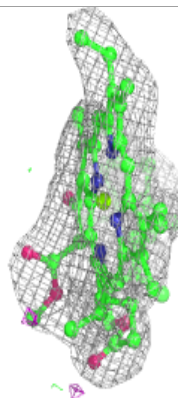
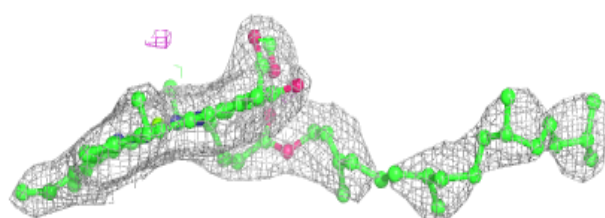
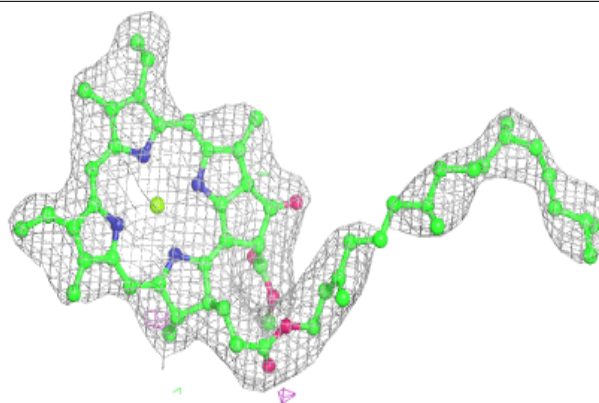
**Electron density around CLA B 609:**

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

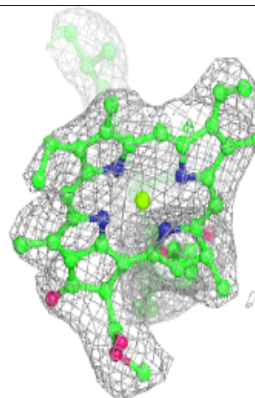
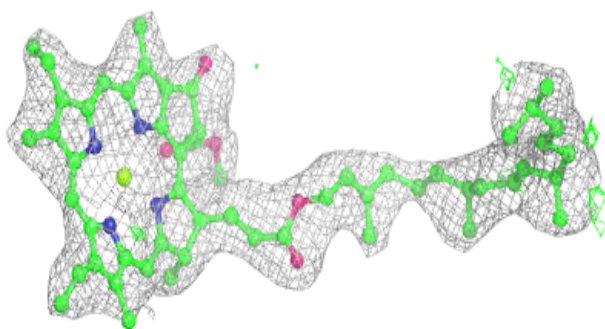
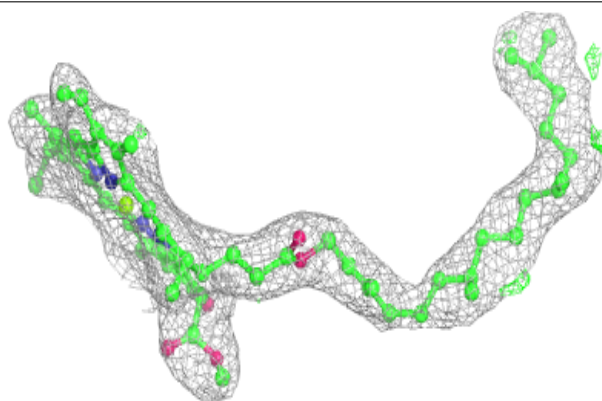


Electron density around CLA b 608:

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

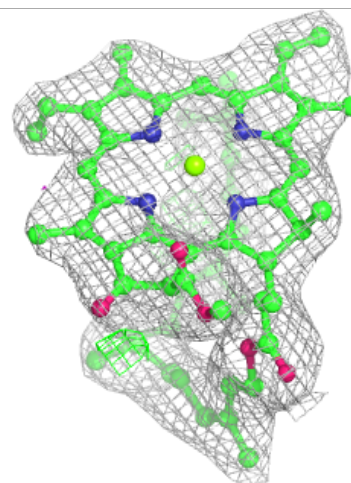
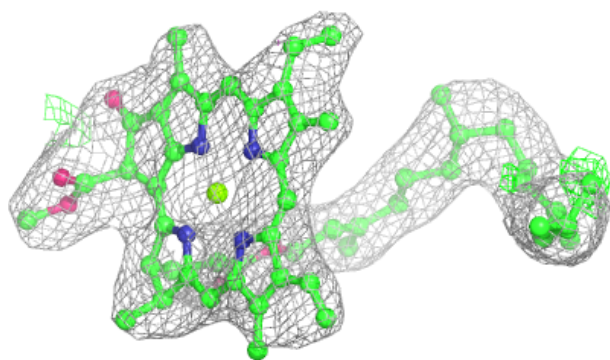
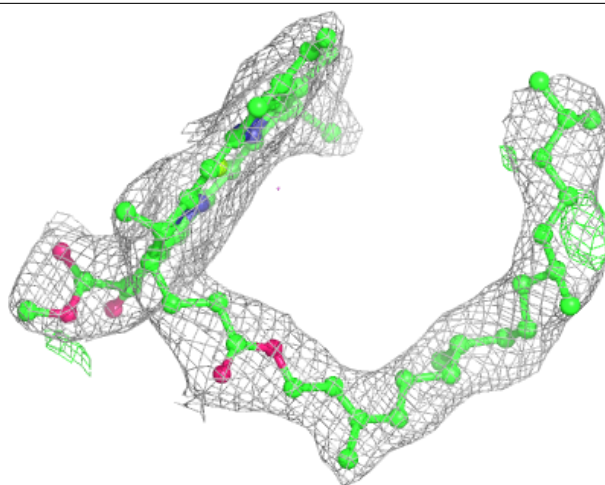
**Electron density around CLA d 402:**

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



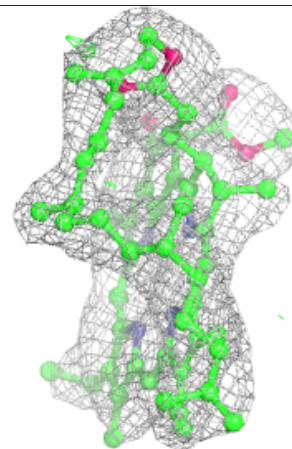
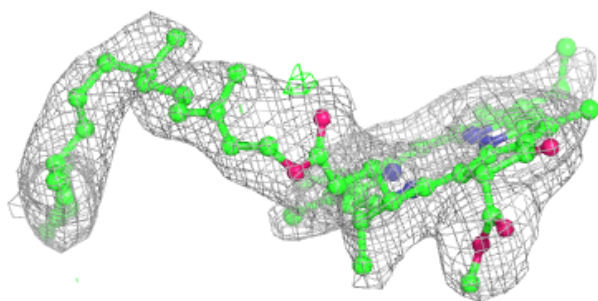
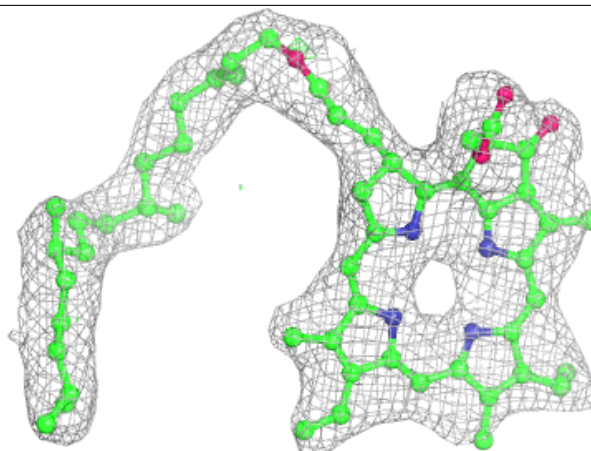
Electron density around CLA B 612:

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

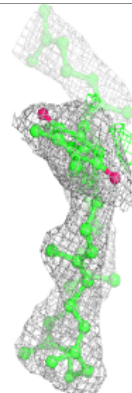
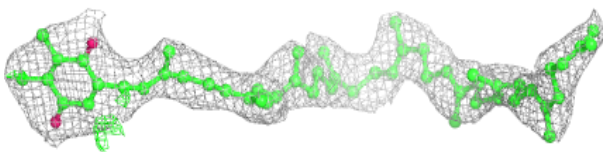
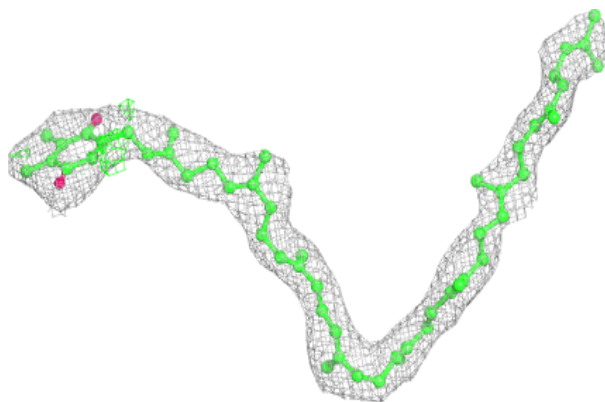


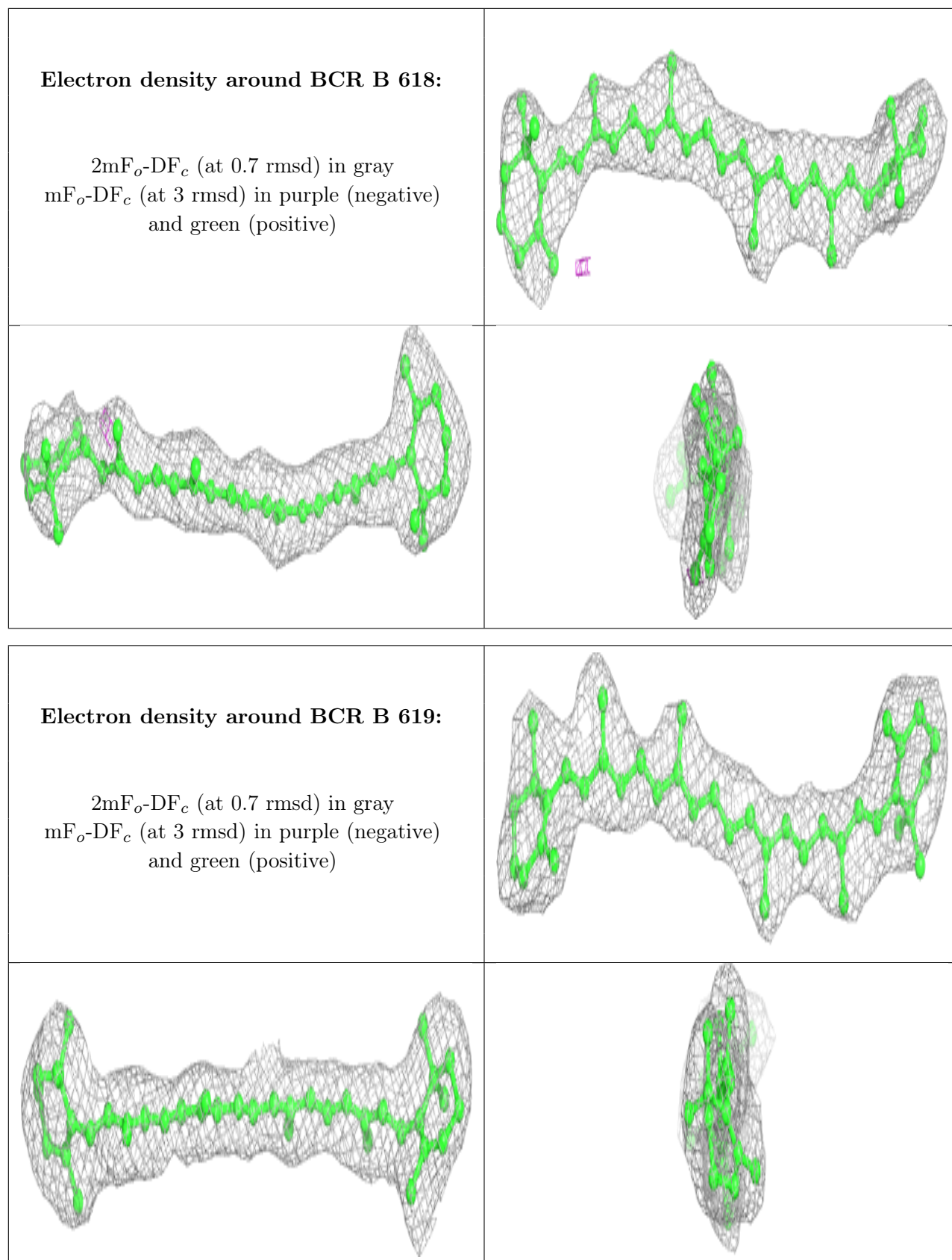
Electron density around PHO a 710:

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

**Electron density around PL9 d 405:**

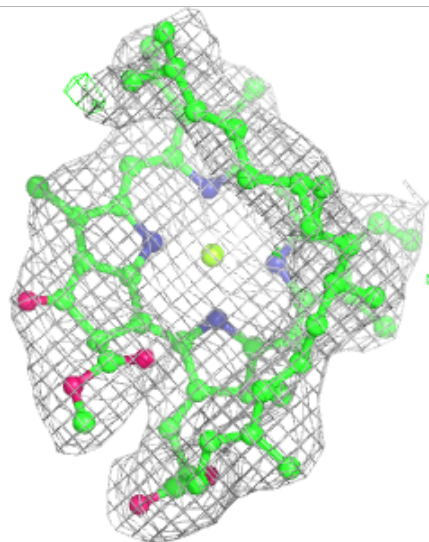
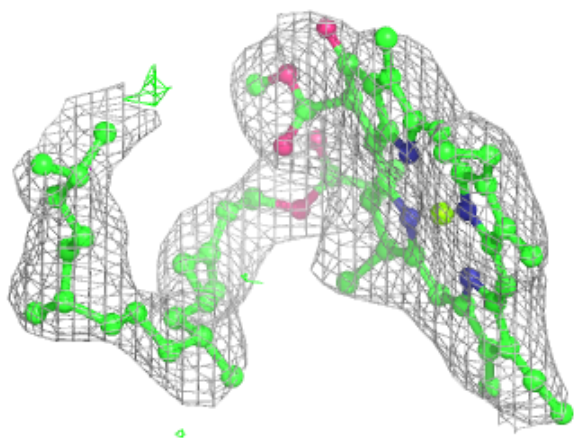
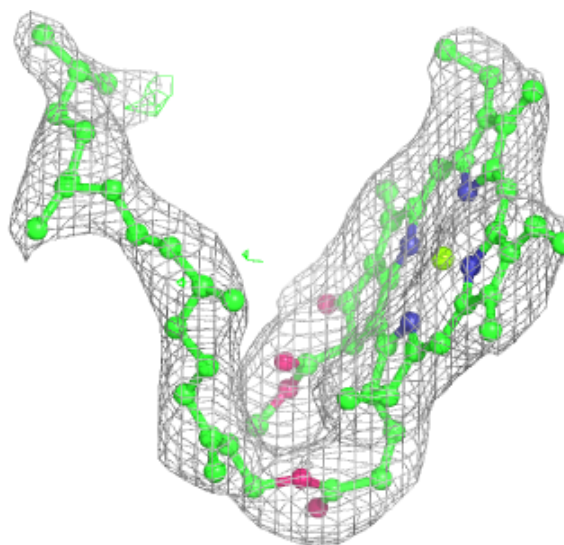
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





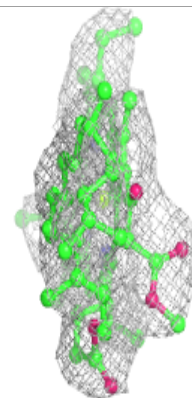
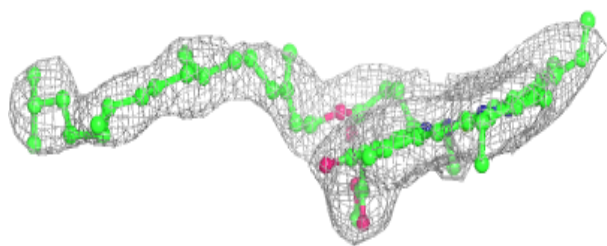
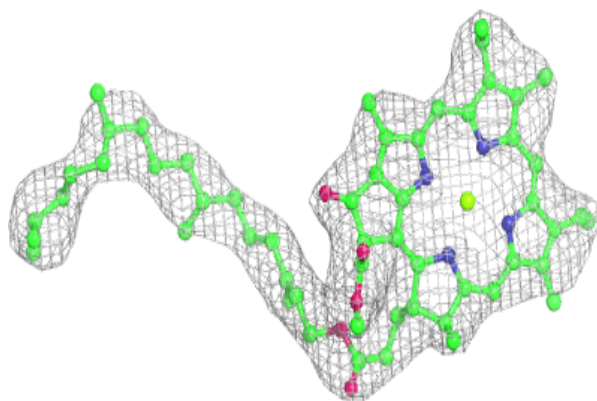
Electron density around CLA B 614:

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

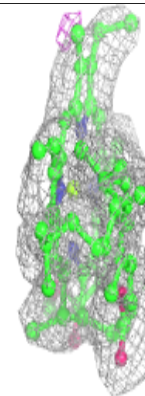
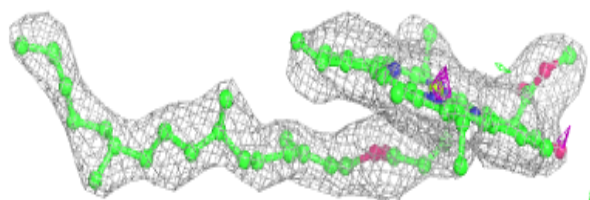
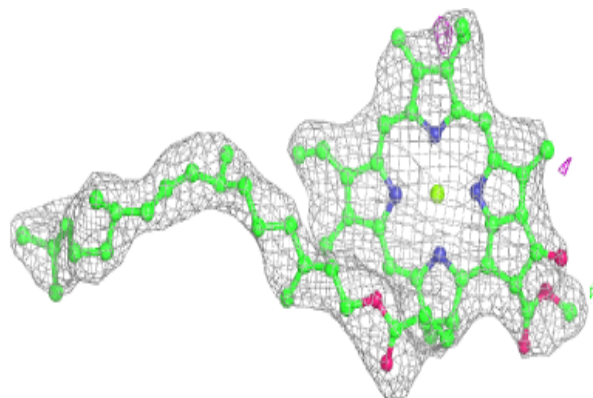


Electron density around CLA B 603:

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

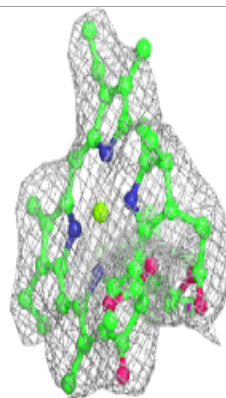
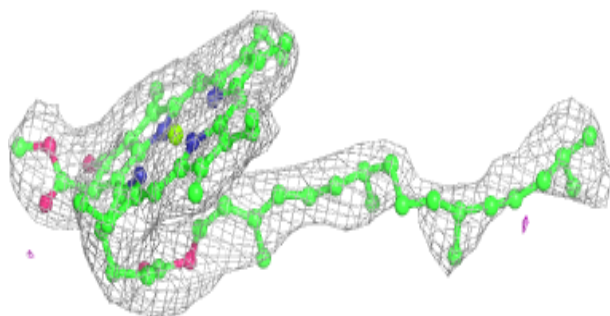
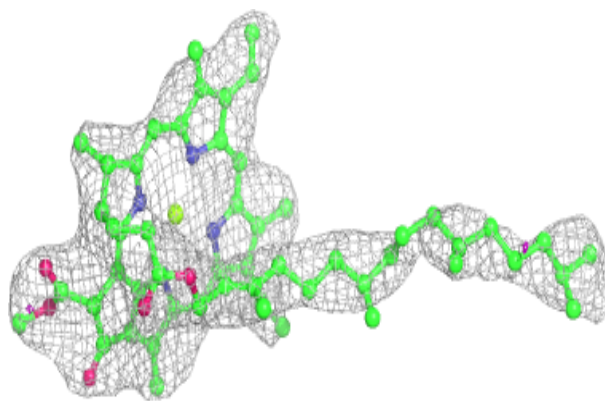
**Electron density around CLA B 604:**

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

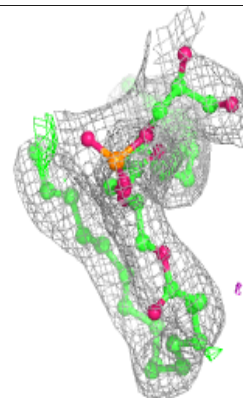
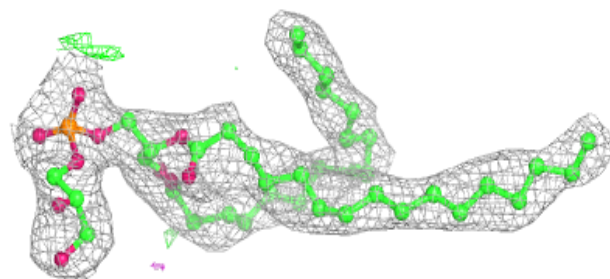
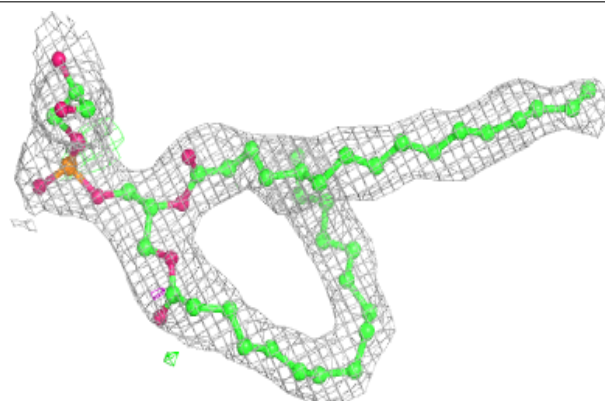


Electron density around CLA b 620:

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

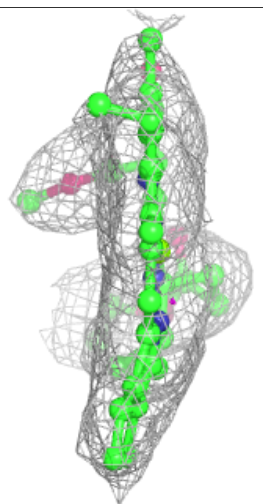
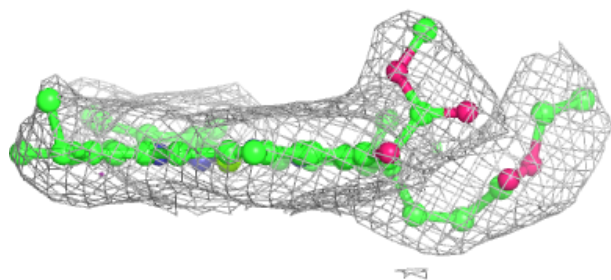
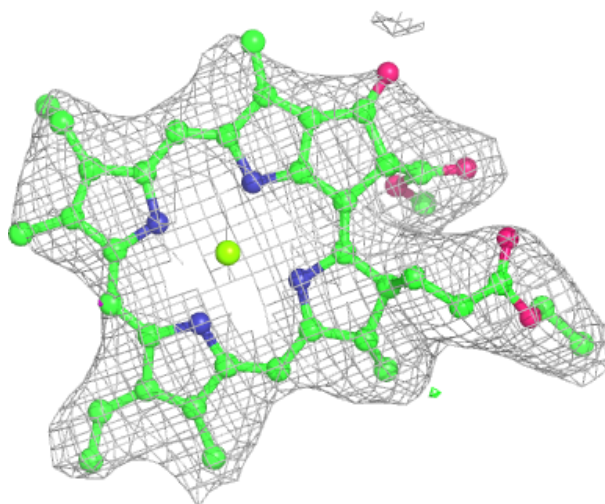
**Electron density around LHG B 625:**

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



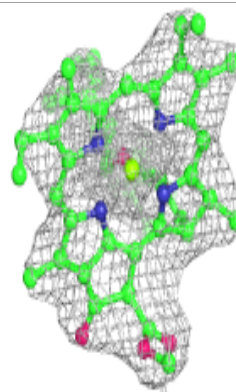
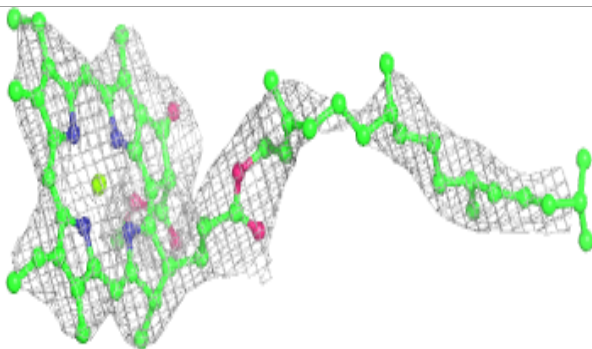
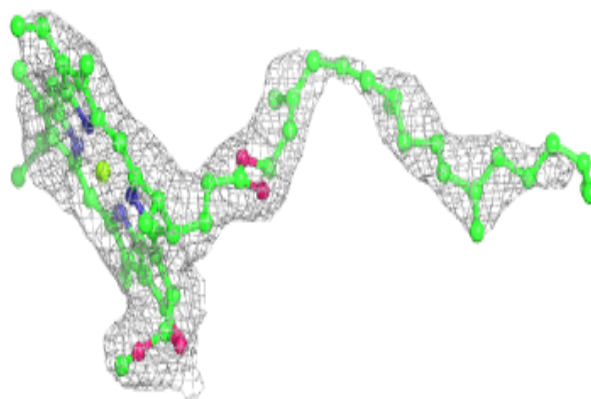
Electron density around CLA b 622:

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

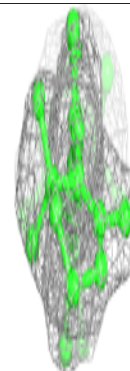
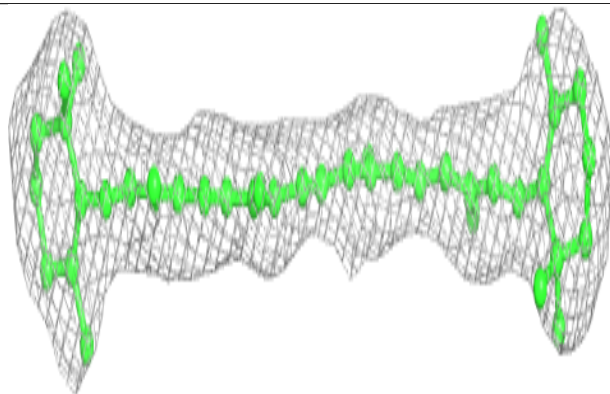
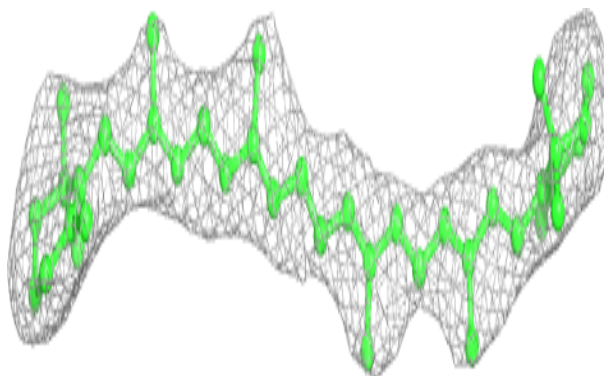


Electron density around CLA c 502:

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

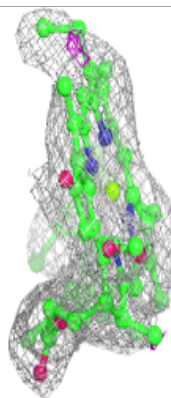
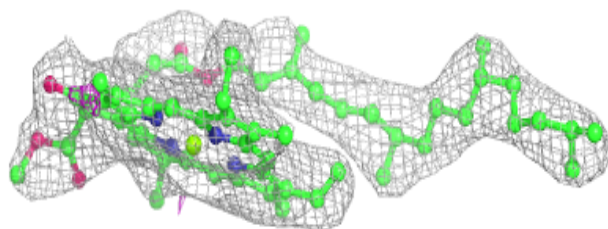
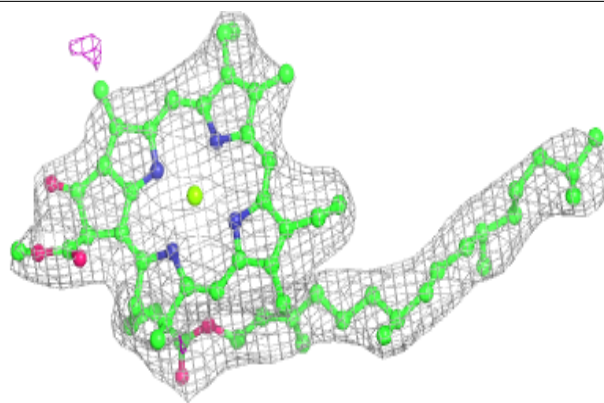
**Electron density around BCR a 712:**

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

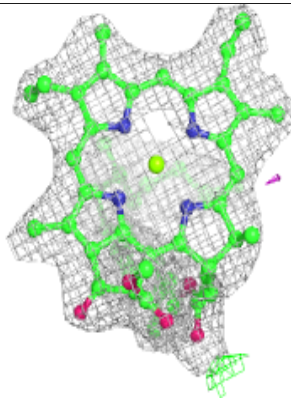
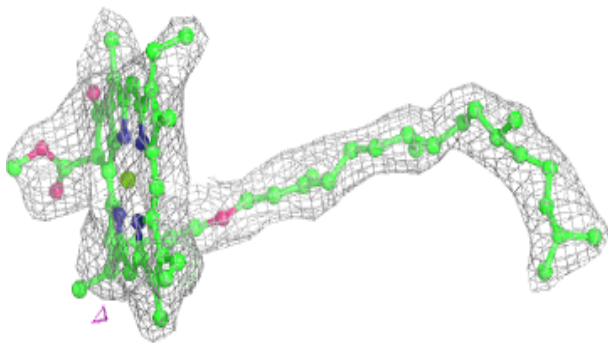
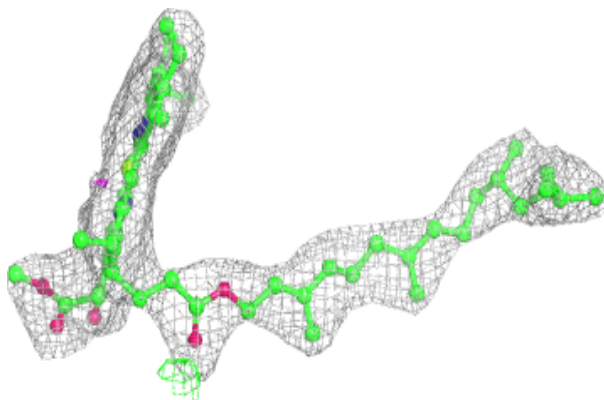


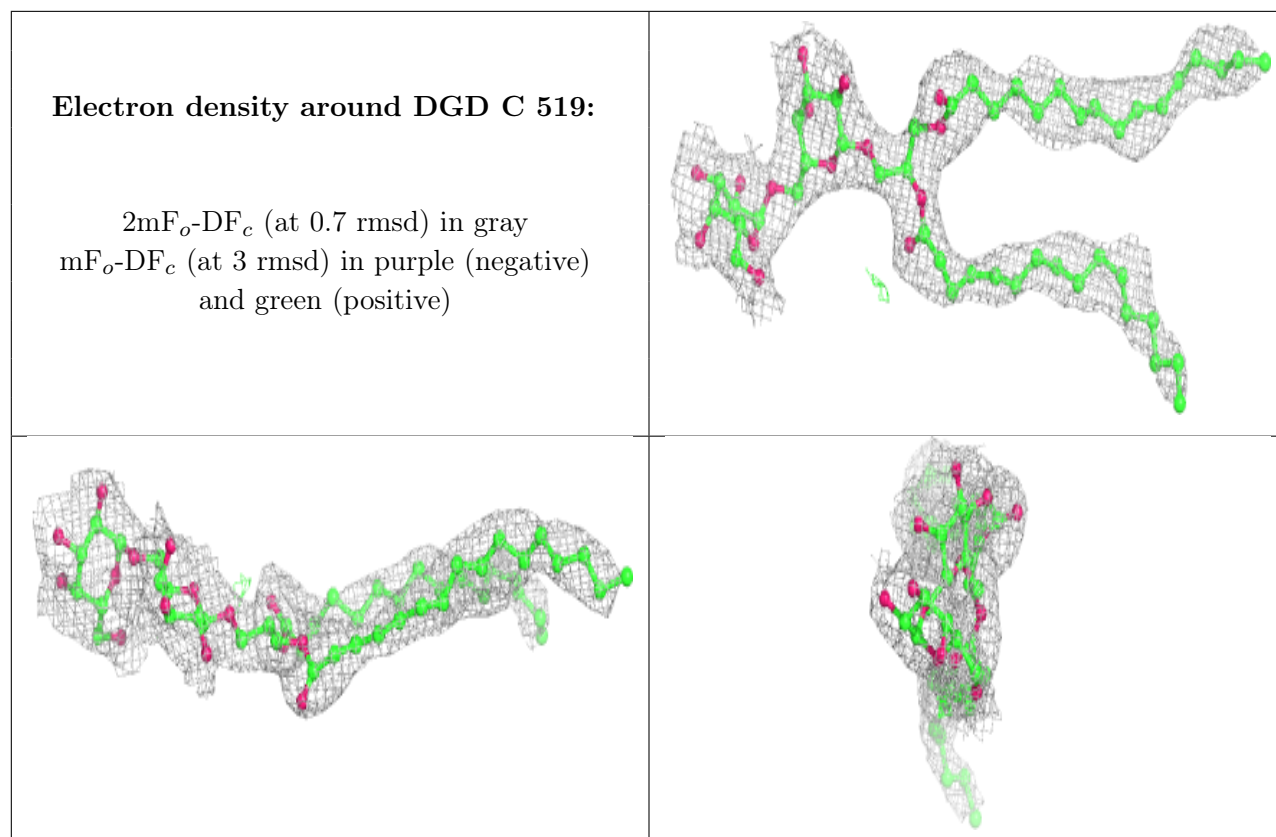
Electron density around CLA C 502:

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

**Electron density around CLA B 606:**

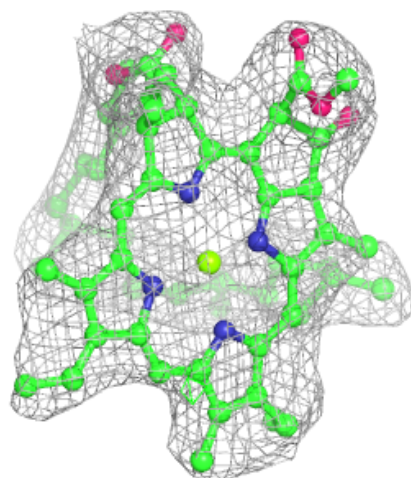
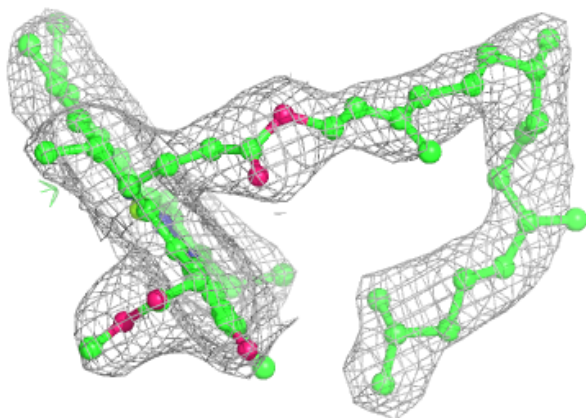
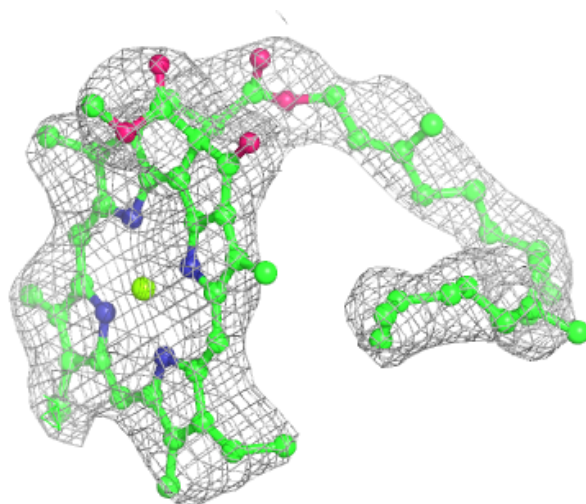
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

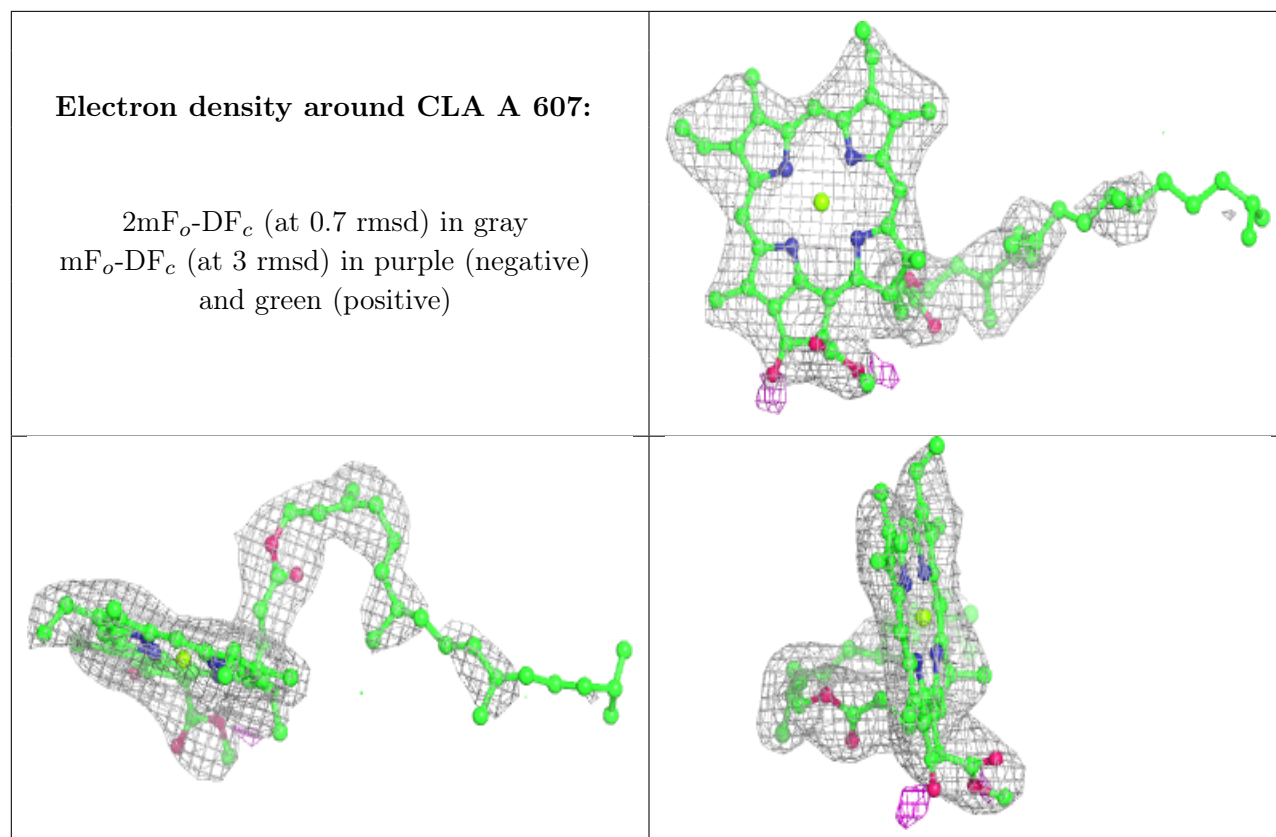




Electron density around CLA C 504:

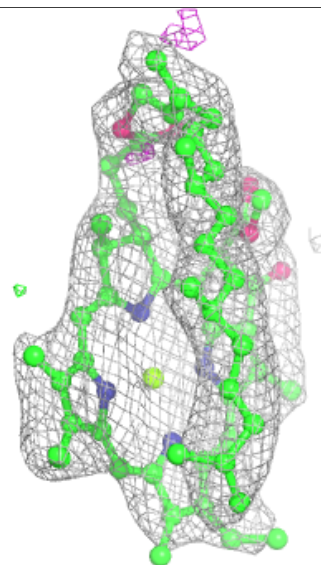
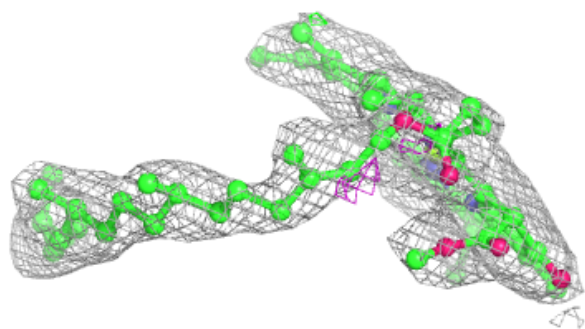
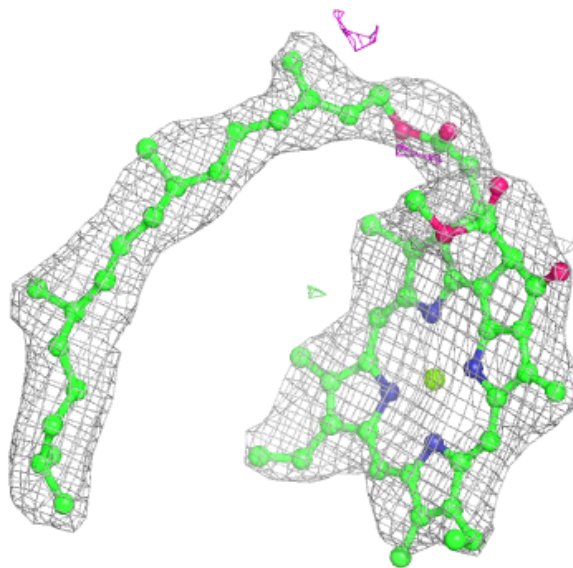
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





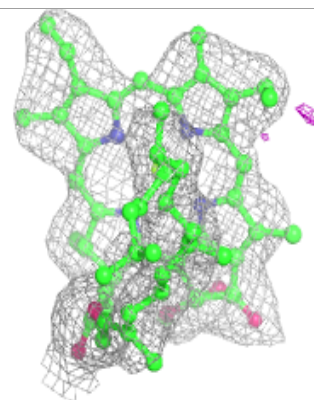
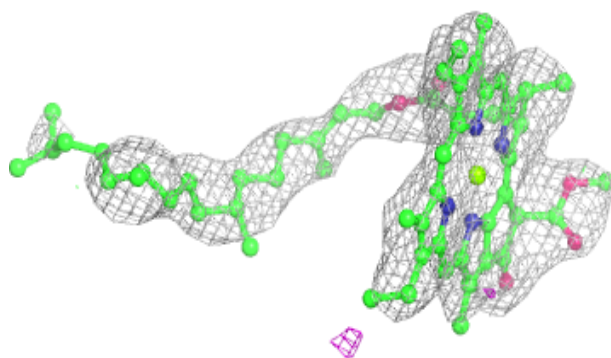
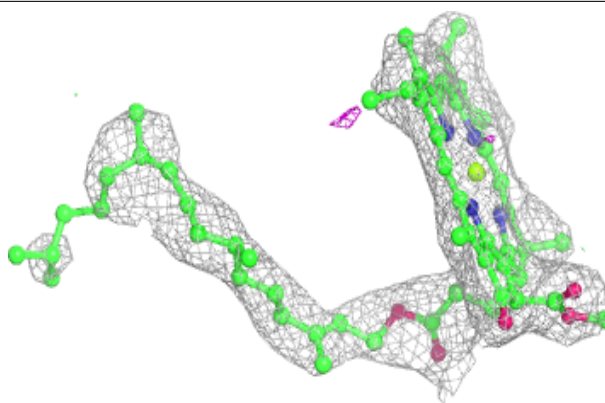
Electron density around CLA c 507:

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



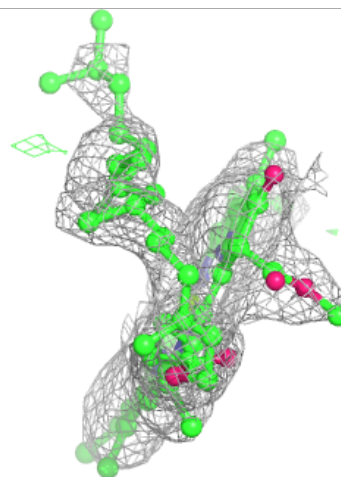
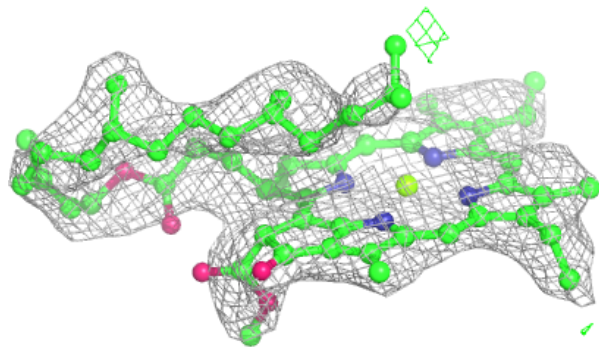
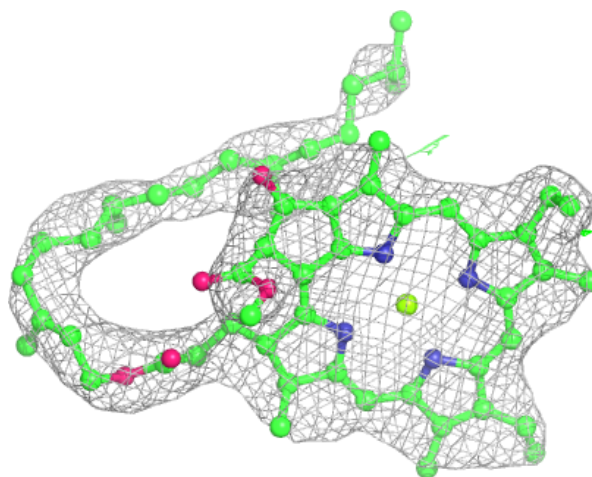
Electron density around CLA c 508:

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



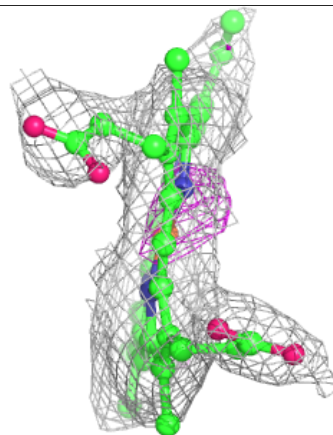
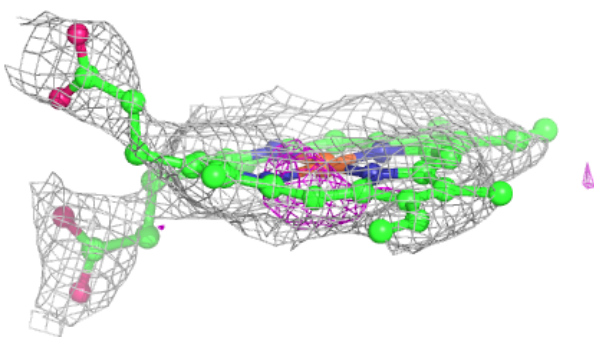
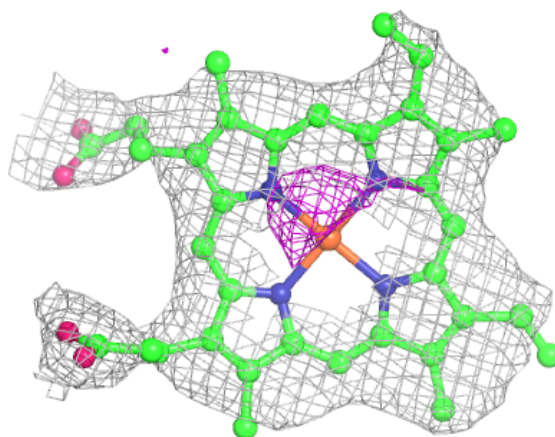
Electron density around CLA c 509:

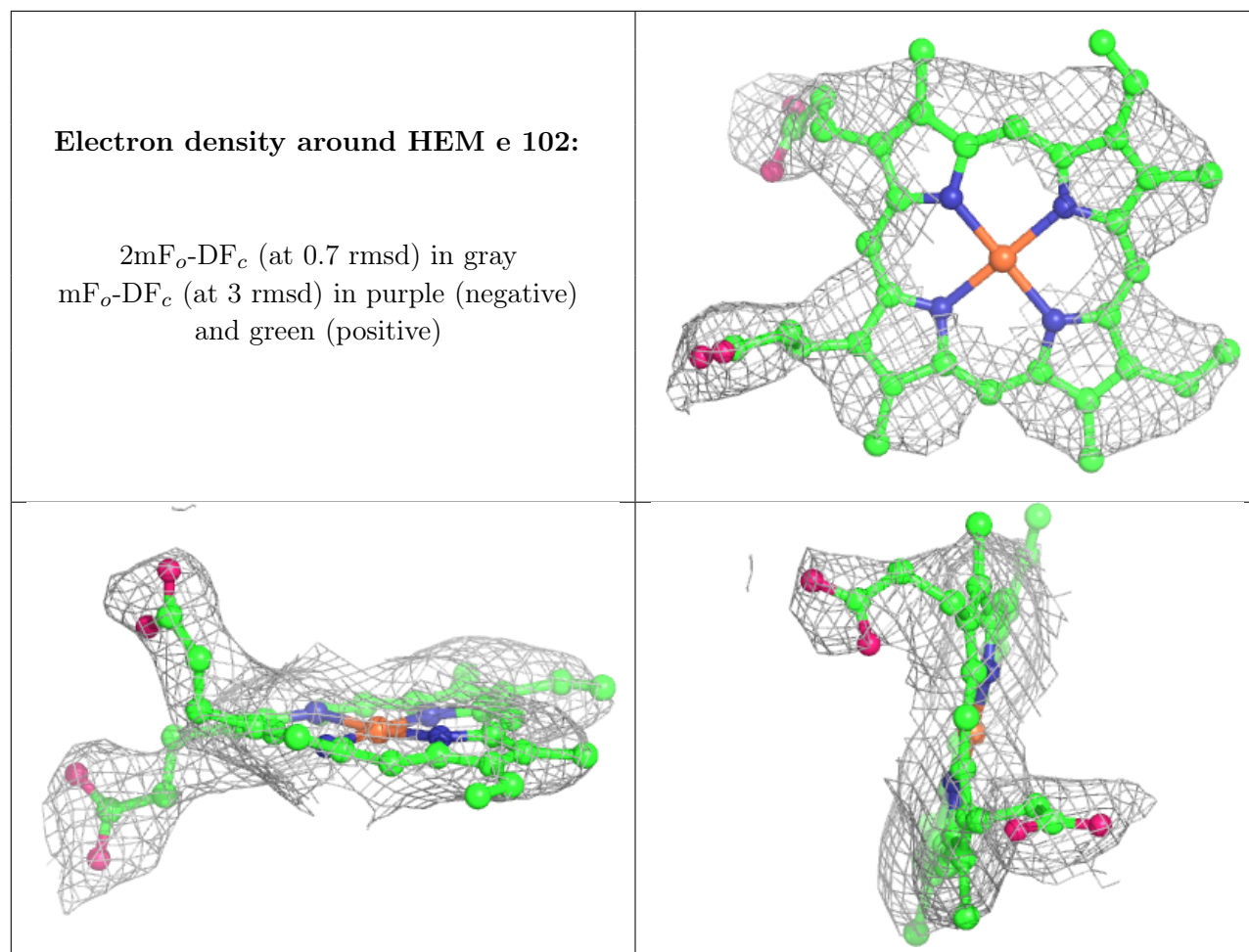
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

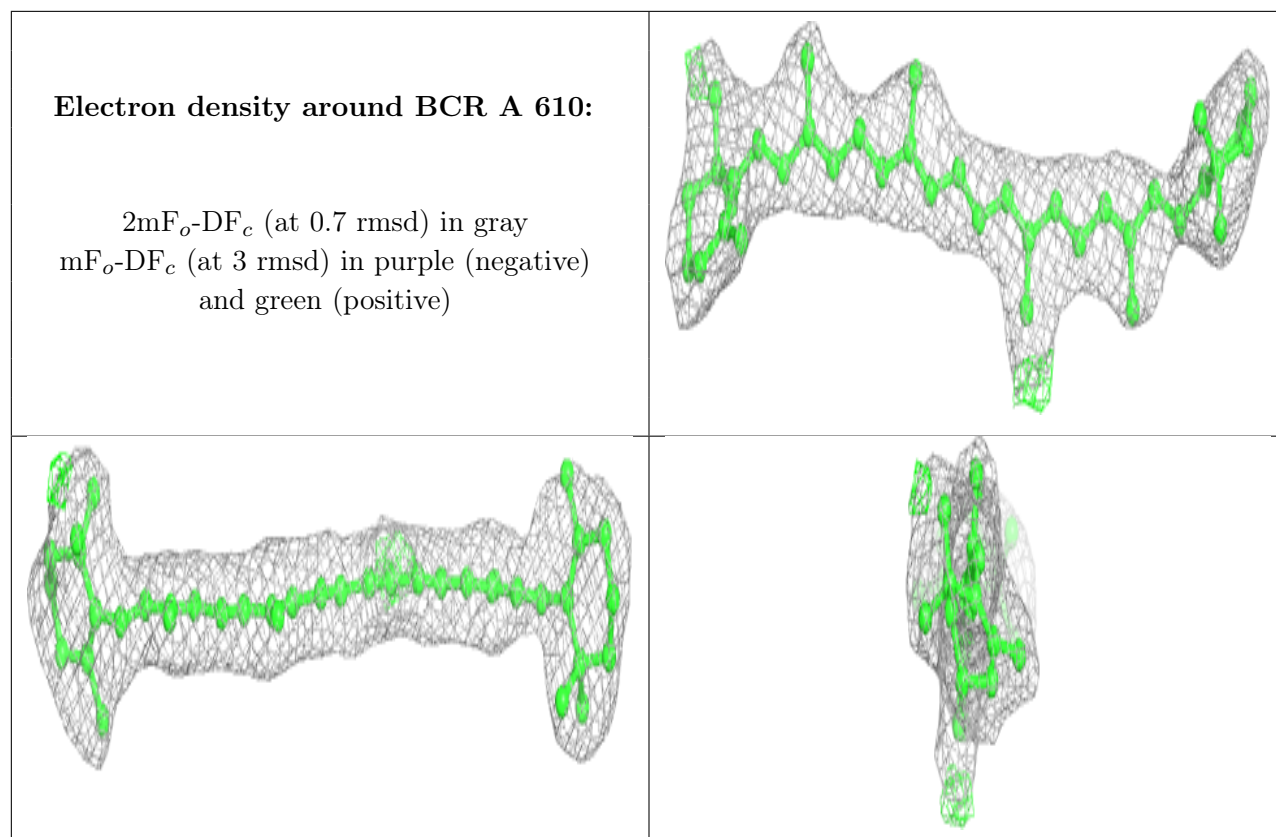


Electron density around HEM E 102:

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

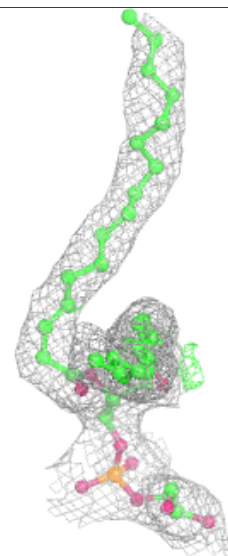
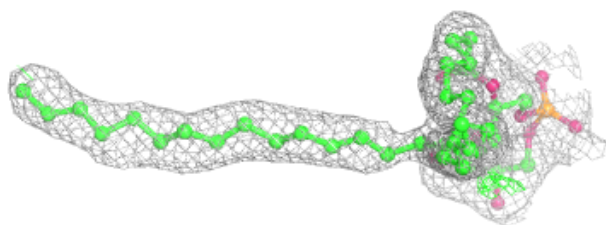
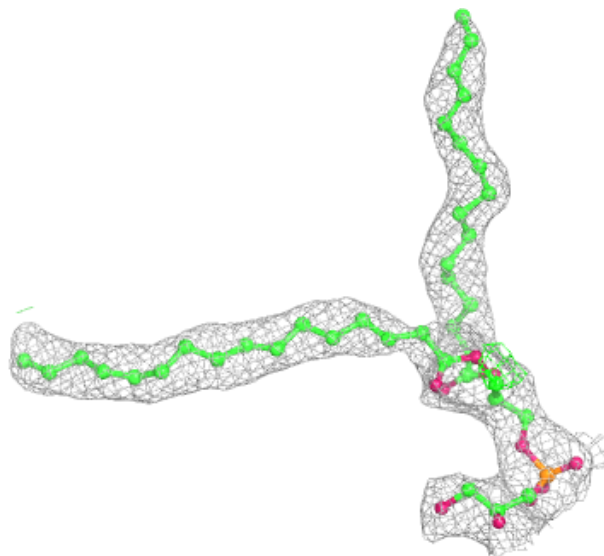






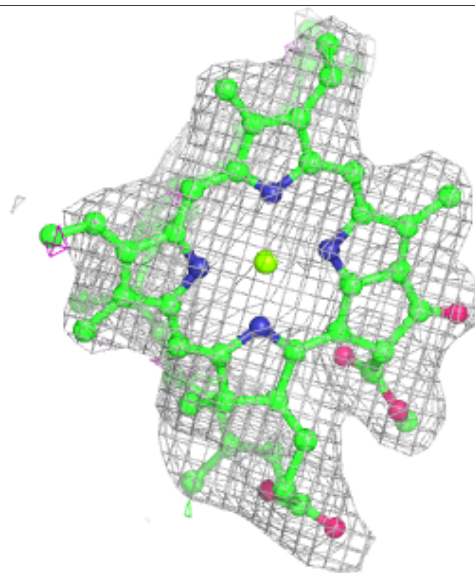
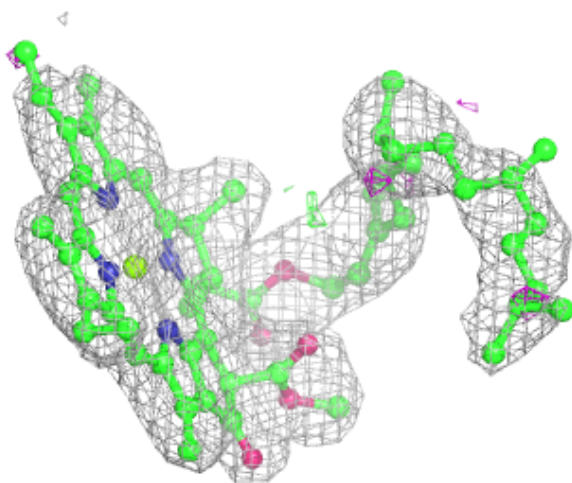
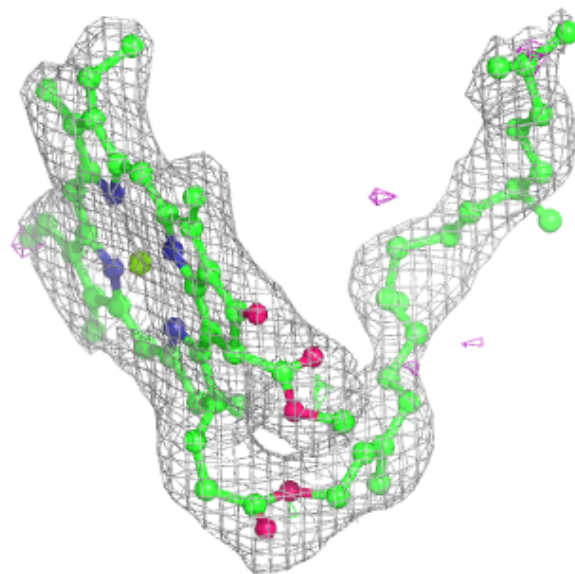
Electron density around LHG L 101:

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



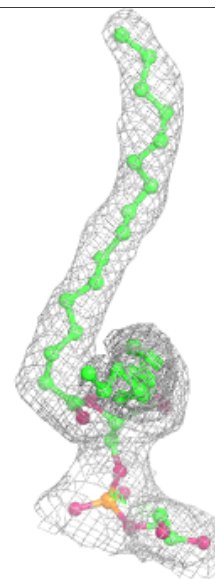
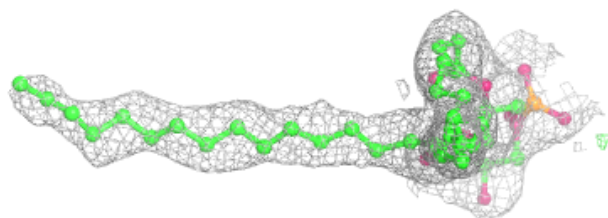
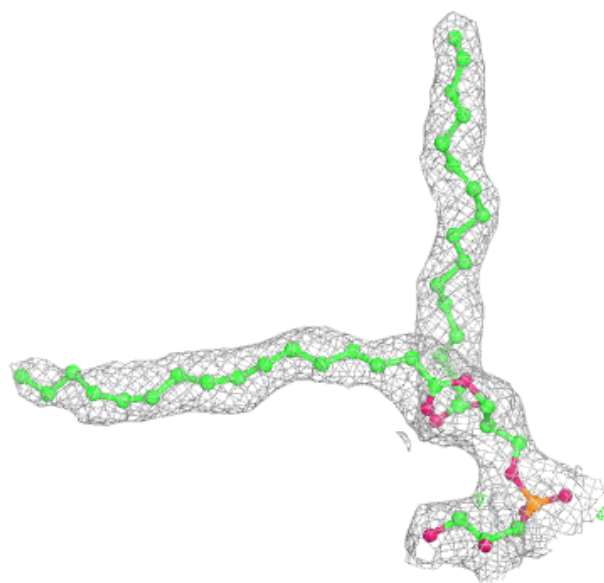
Electron density around CLA b 619:

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



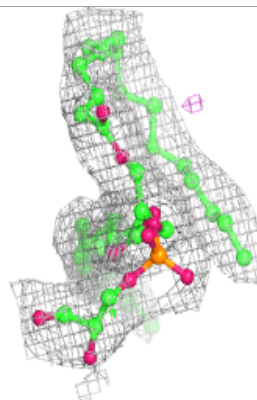
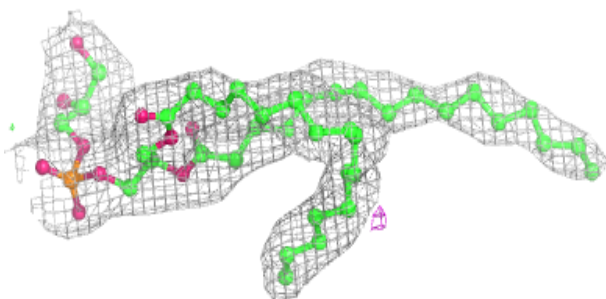
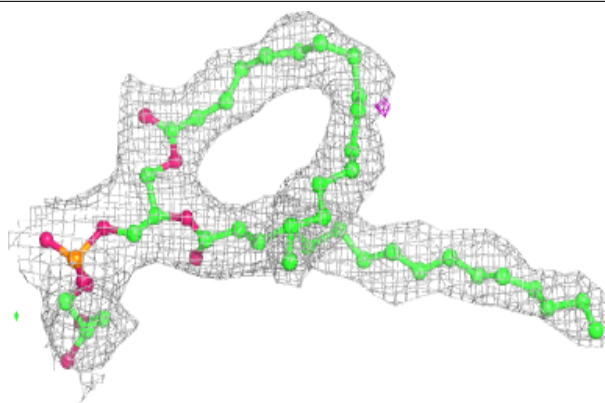
Electron density around LHG b 629:

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

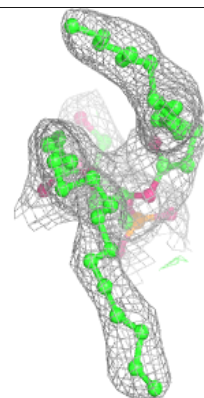
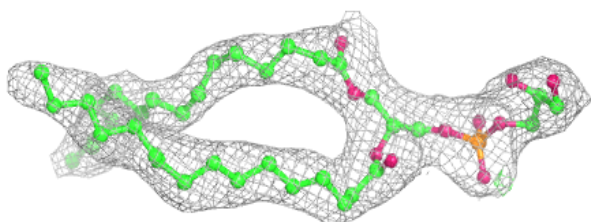
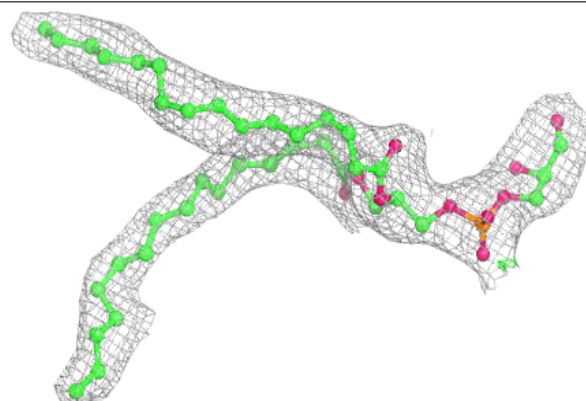


Electron density around LHG d 406:

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

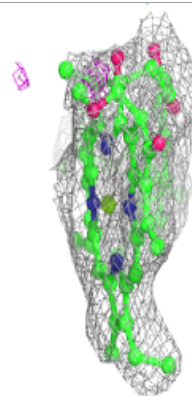
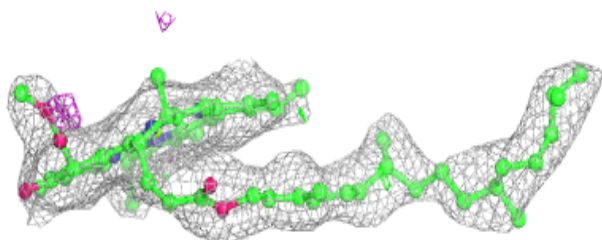
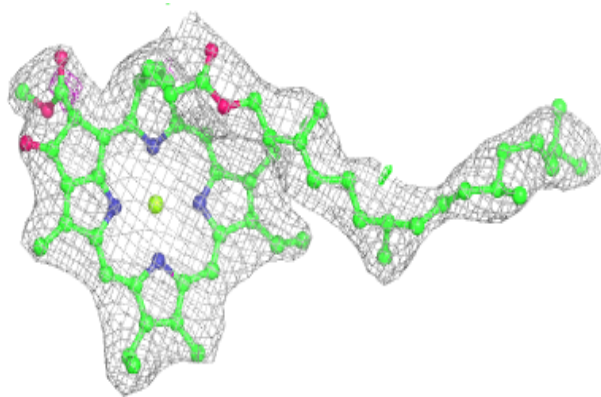
**Electron density around LHG d 407:**

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



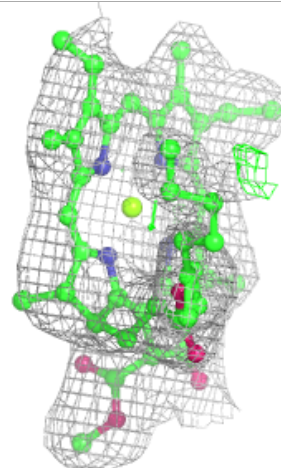
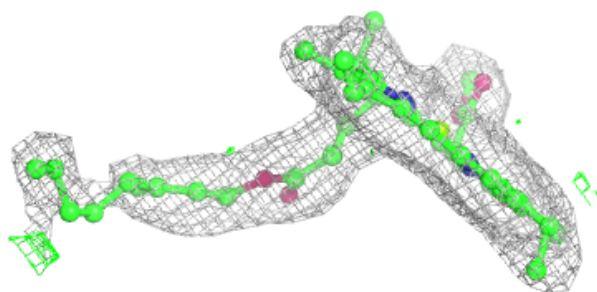
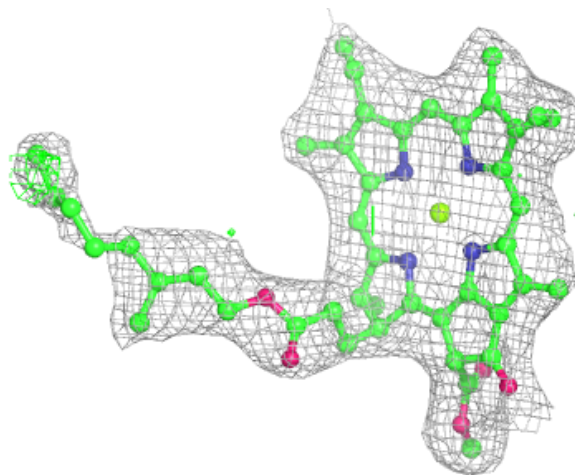
Electron density around CLA b 609:

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



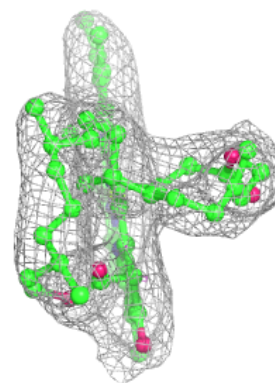
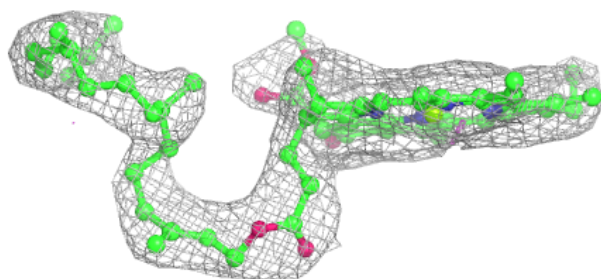
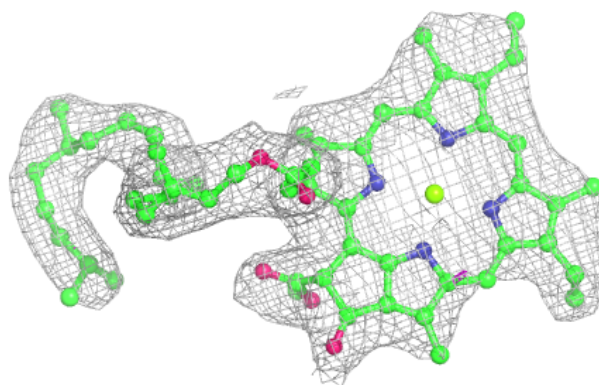
Electron density around CLA A 609:

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

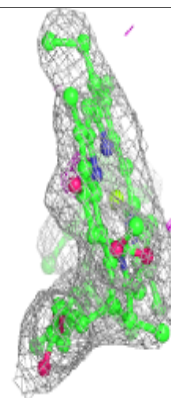
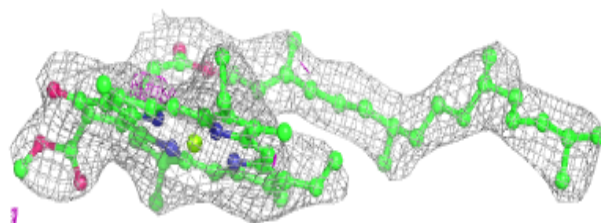
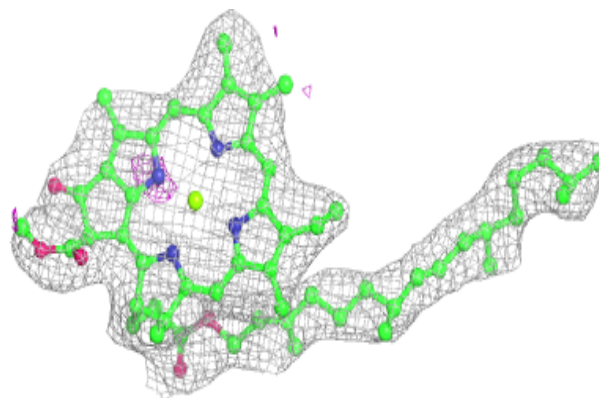


Electron density around CLA B 613:

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

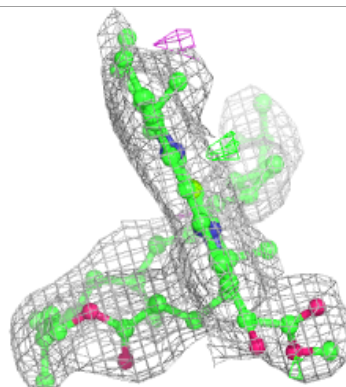
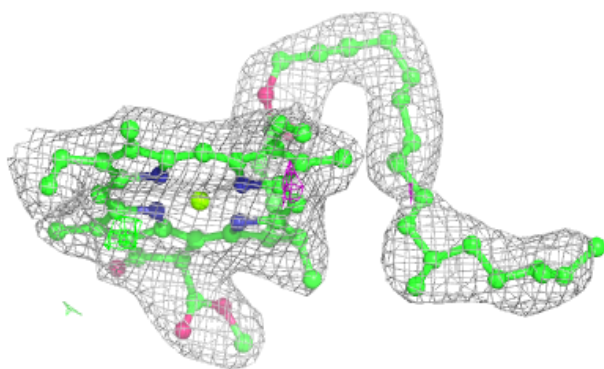
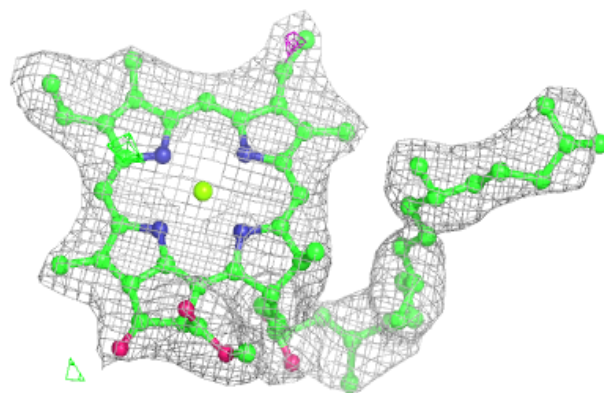
**Electron density around CLA c 501:**

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

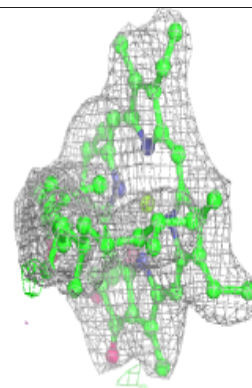
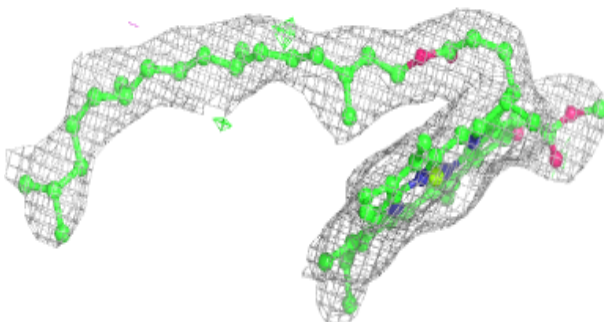
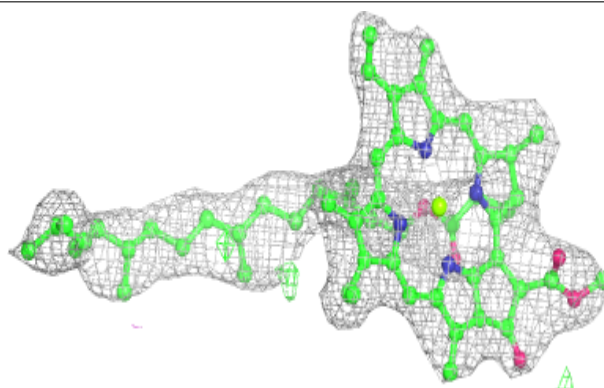


Electron density around CLA a 719:

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

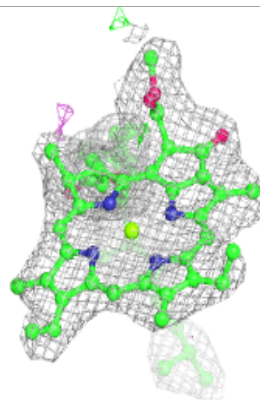
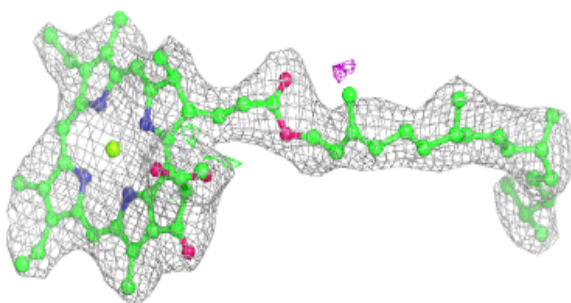
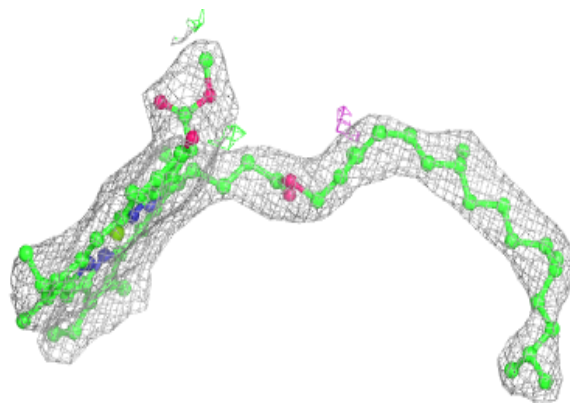
**Electron density around CLA b 614:**

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

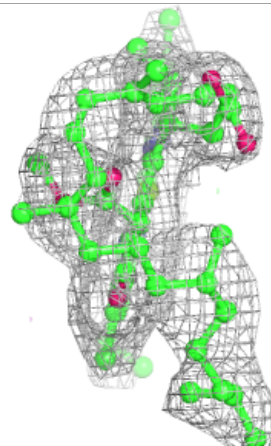
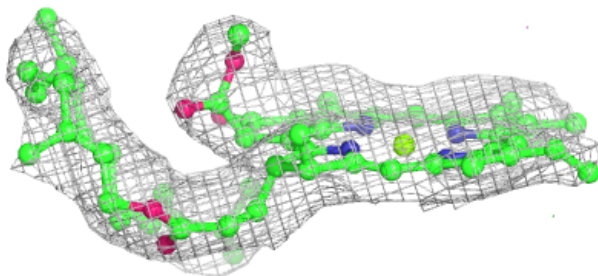
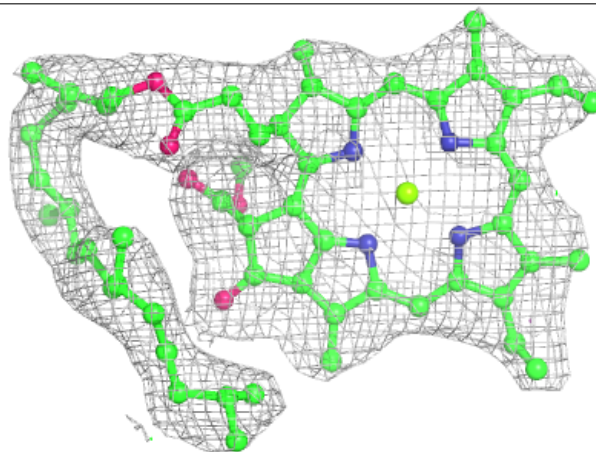


Electron density around CLA D 403:

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

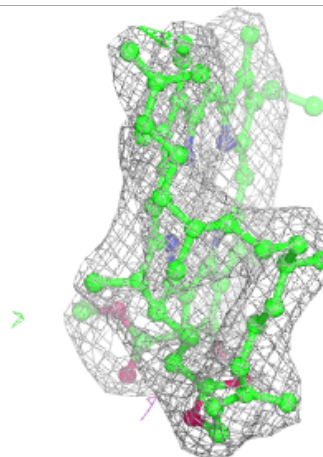
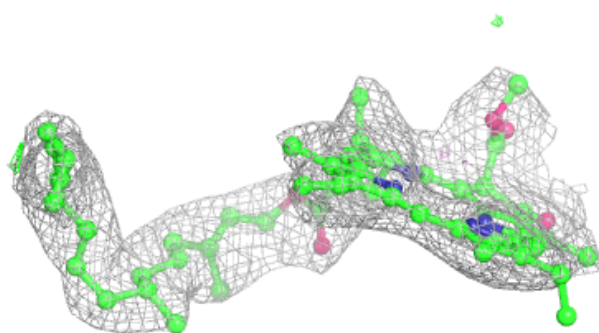
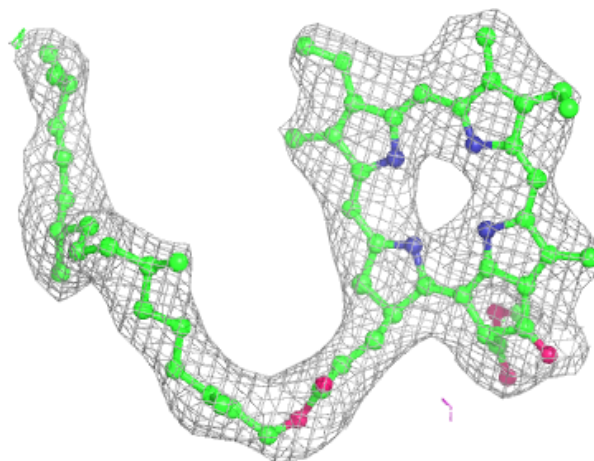
**Electron density around CLA B 611:**

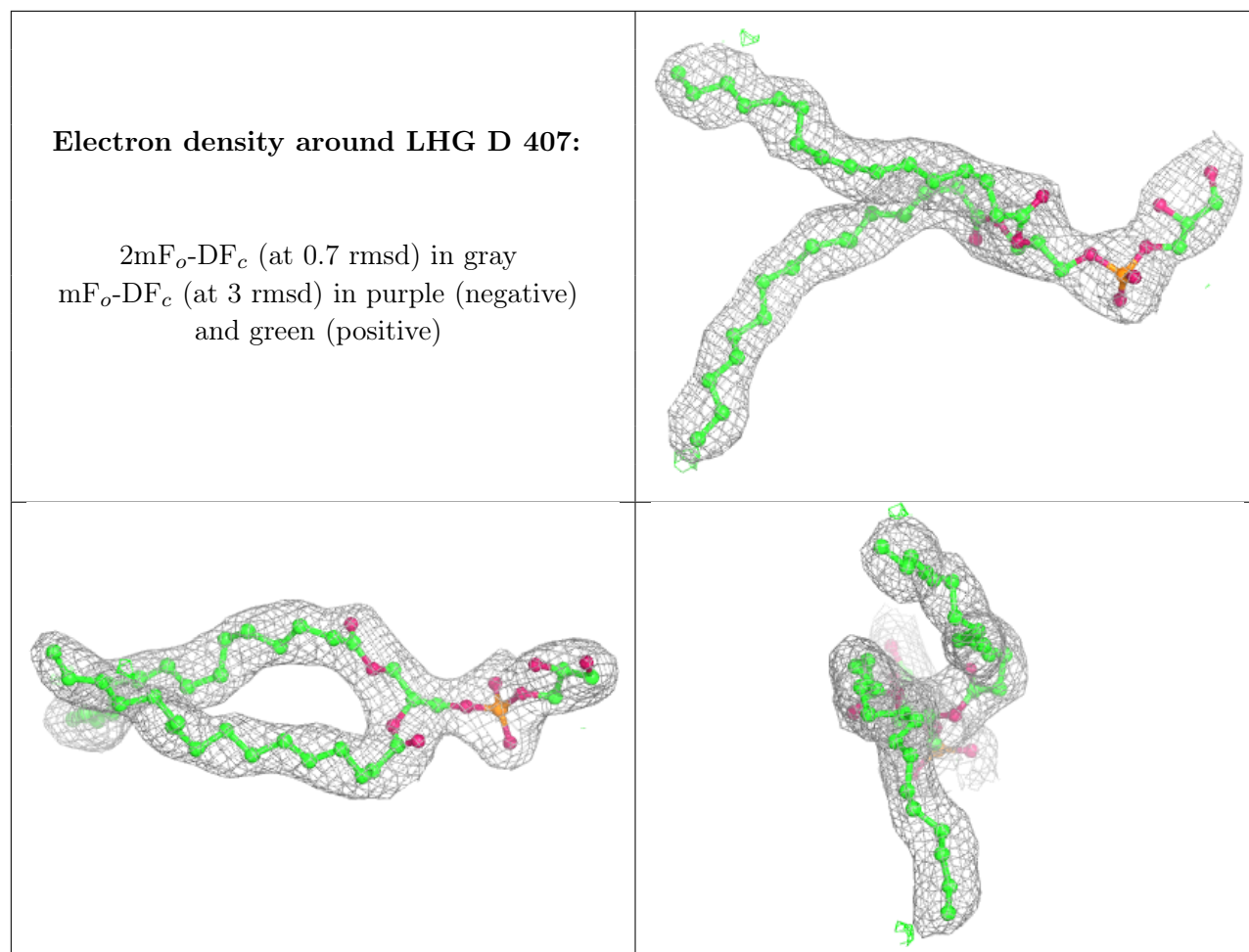
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around PHO D 401:

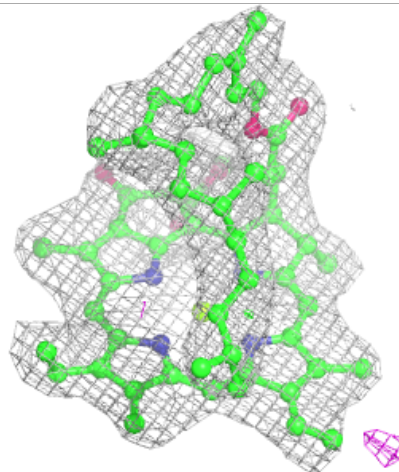
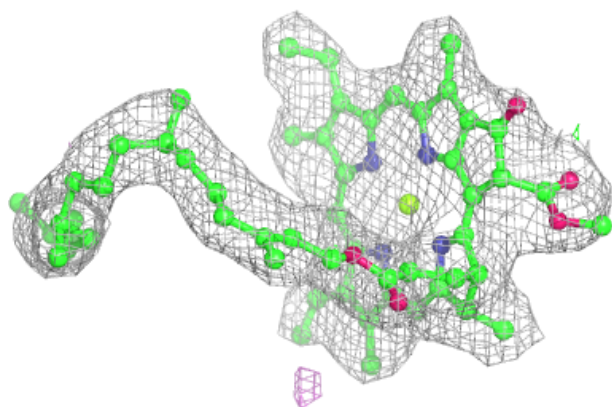
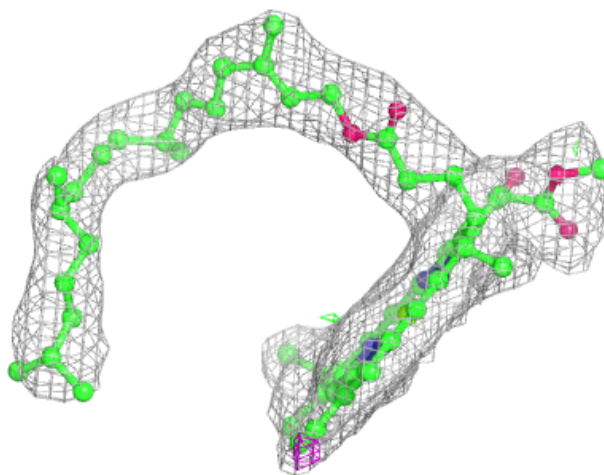
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





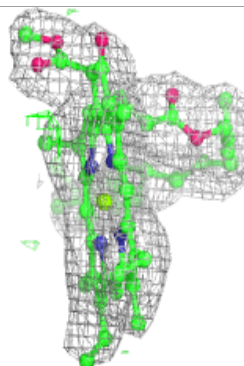
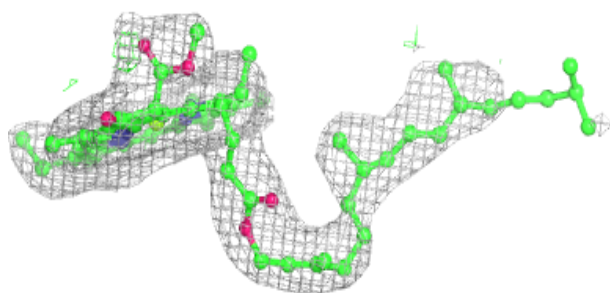
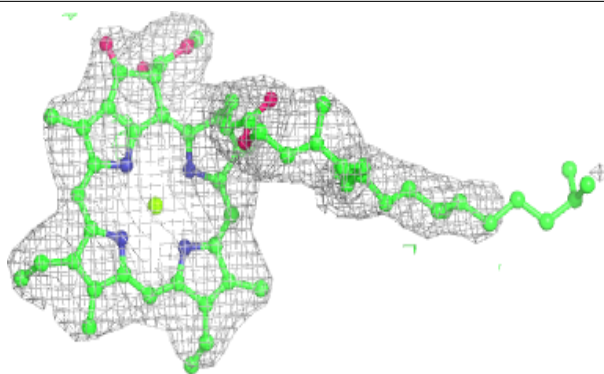
Electron density around CLA b 617:

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

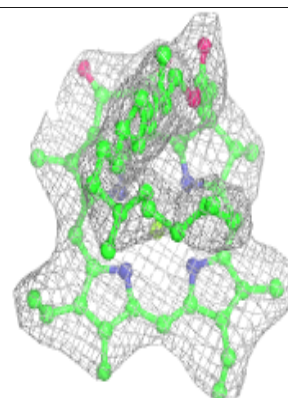
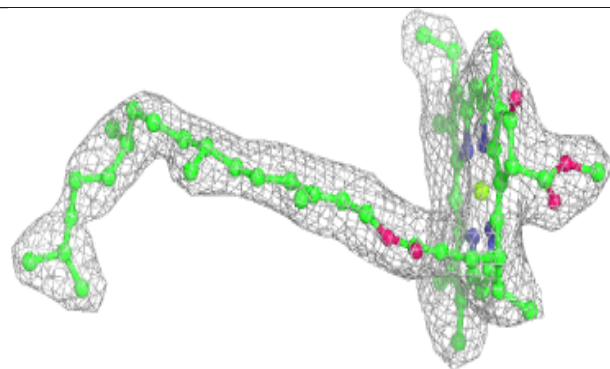
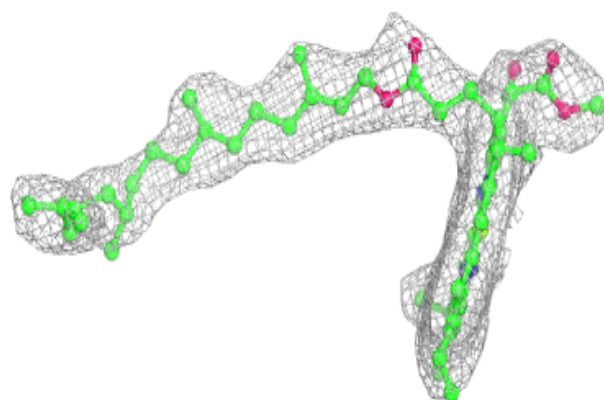


Electron density around CLA a 708:

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

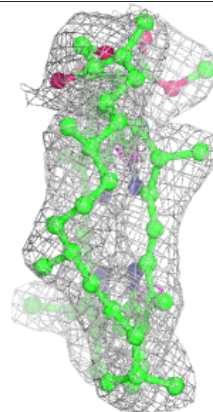
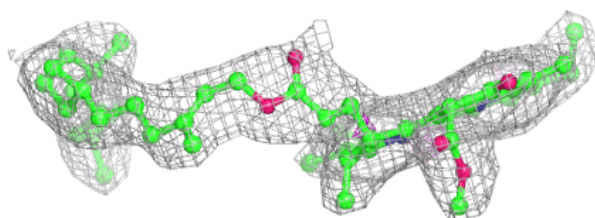
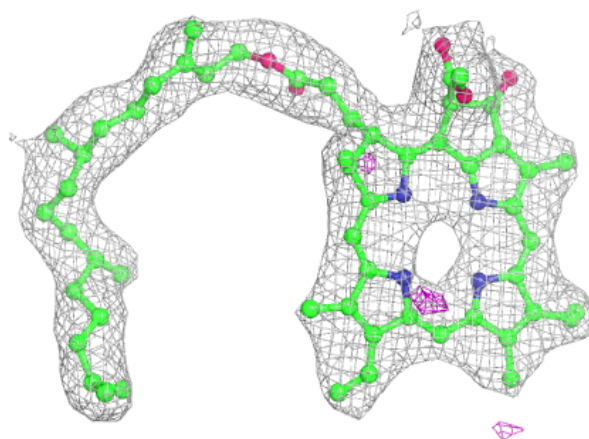
**Electron density around CLA b 611:**

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

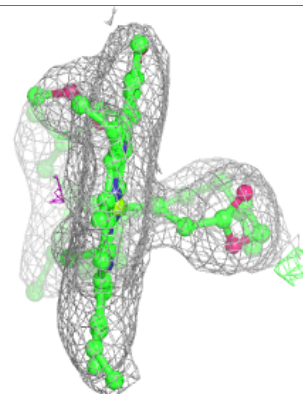
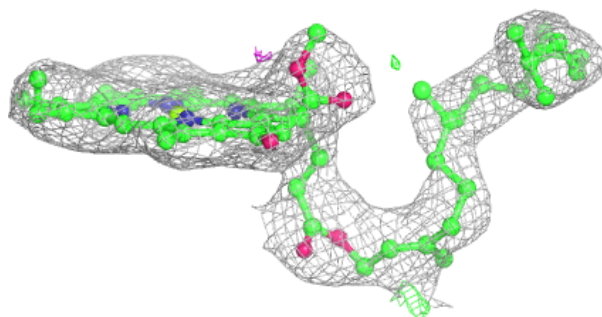
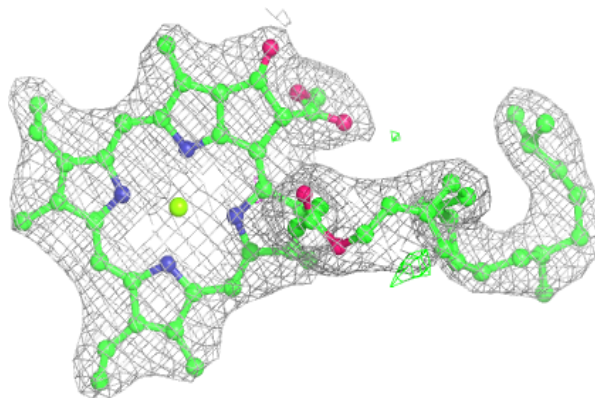


Electron density around PHO A 608:

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

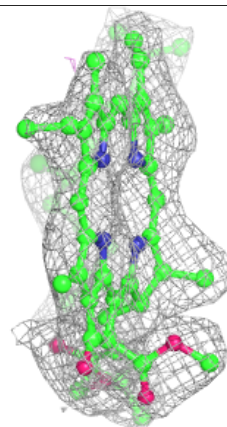
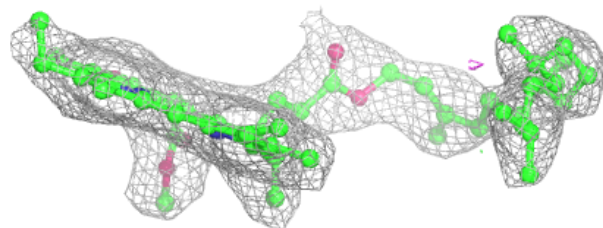
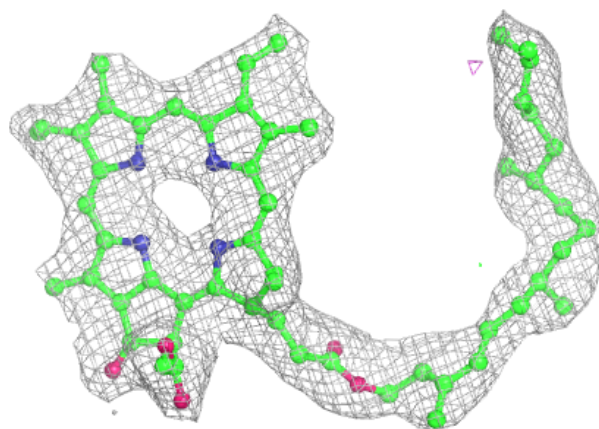
**Electron density around CLA b 618:**

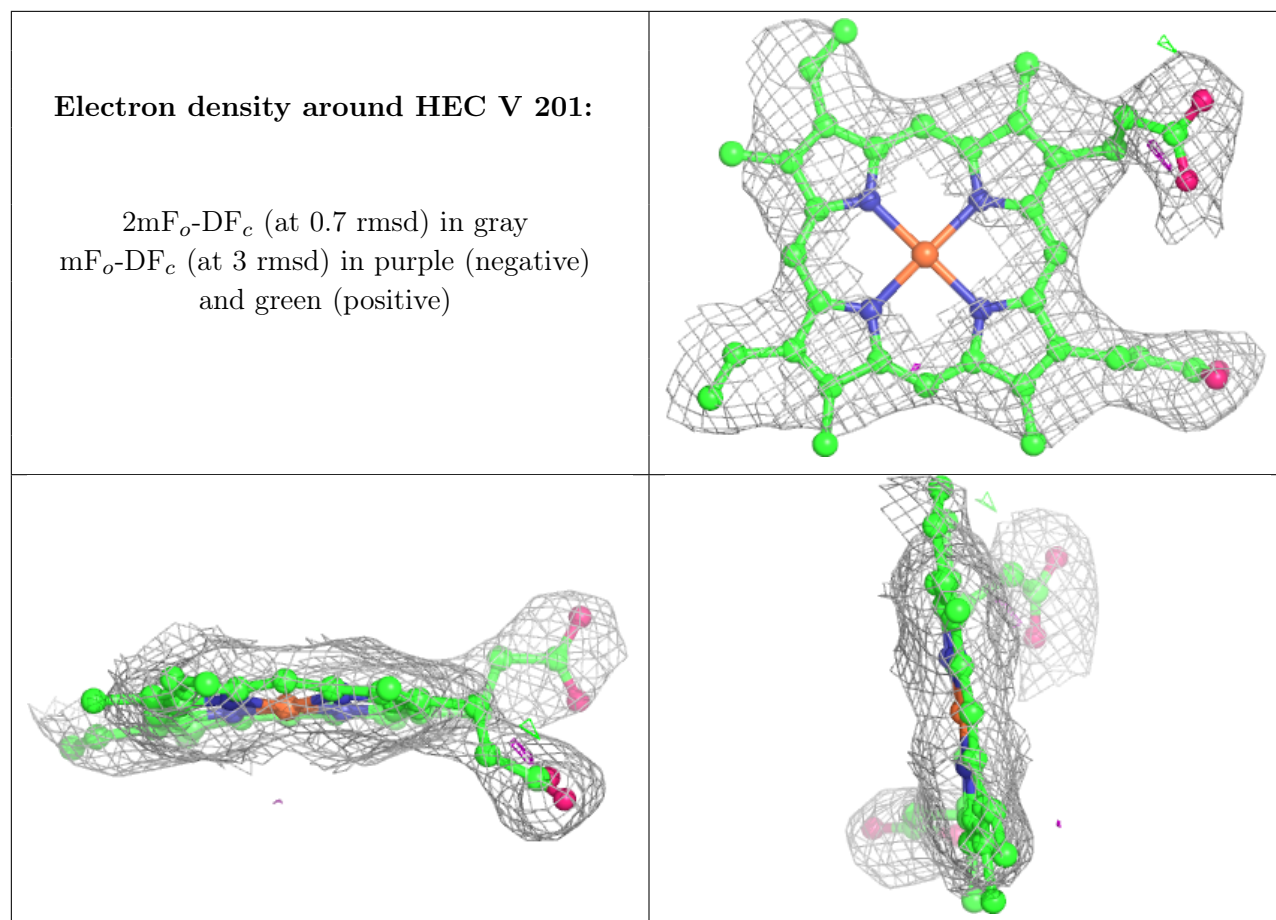
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

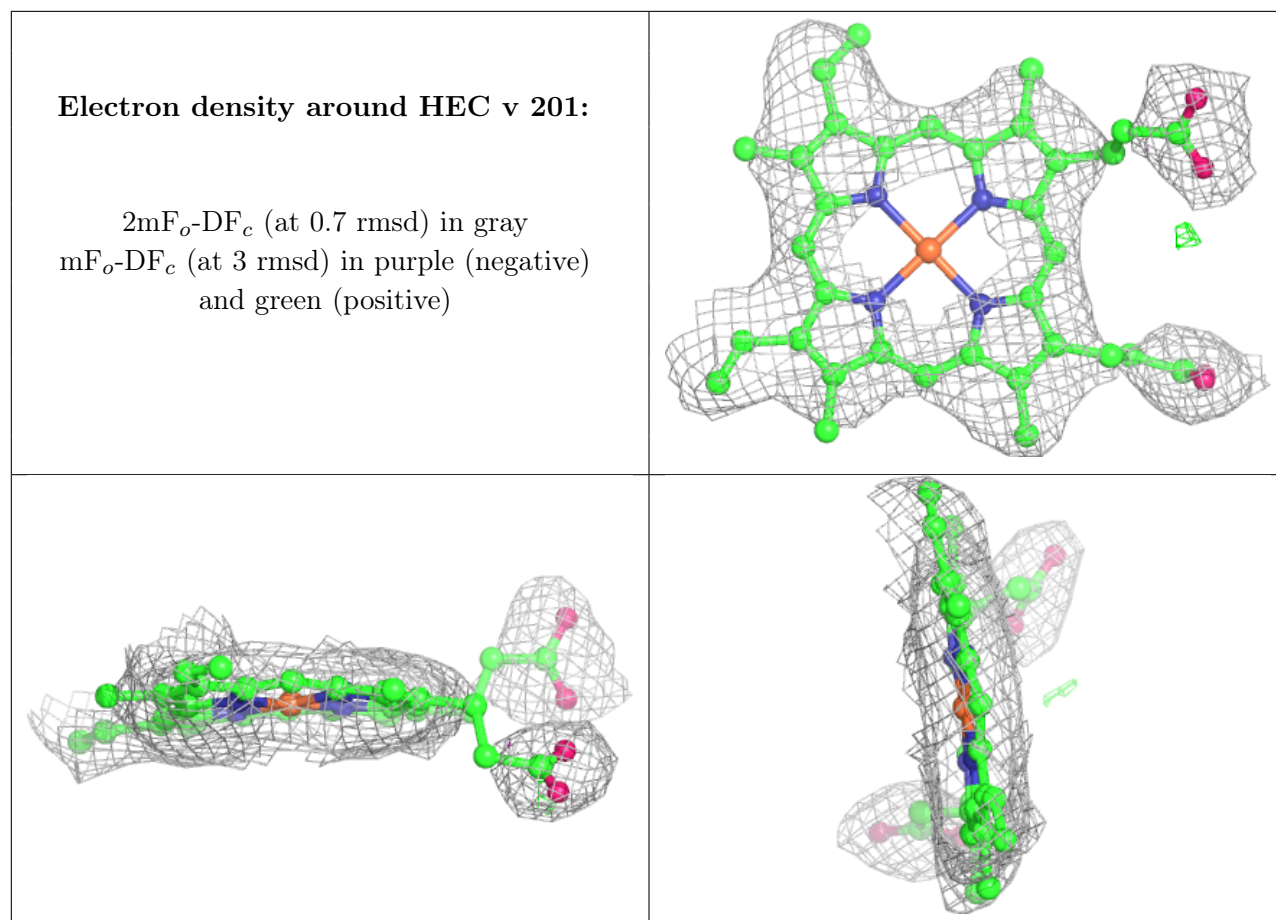


Electron density around PHO a 709:

$2mF_o-DF_c$ (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.