wwPDB EM Validation Summary Report ⓘ

Jul 24, 2025 – 01:42 pm BST

PDB ID	:	9G6F / pdb_00009g6f
EMDB ID	:	EMD-51100
Title	:	Inactive PSII dimer from native Peak4 PSII dimers
Authors	:	Zhao, Z.; Vercellino, I.; Nixon, P.J.; Sazanov, L.A.
Deposited on	:	2024-07-18
Resolution	:	2.20 Å(reported)
Based on initial models	:	3KZI, 7NHO

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

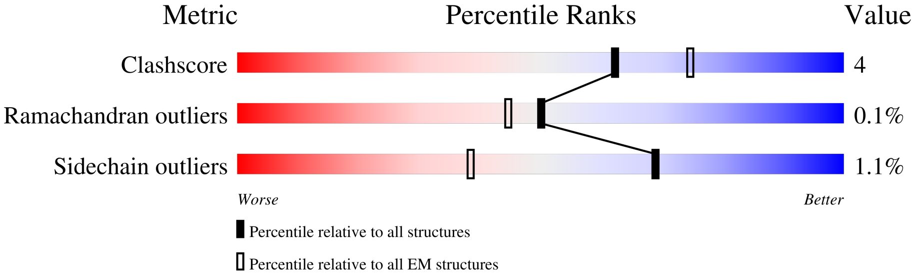
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	360	79% 11% 10%
1	a	360	78% 11% 10%
2	B	510	5% 91% 8% •
2	b	510	• 90% 9% •
3	C	461	• 86% 8% 5%
3	c	461	5% 87% 8% 5%
4	D	352	87% 10% •
4	d	352	88% 9% •

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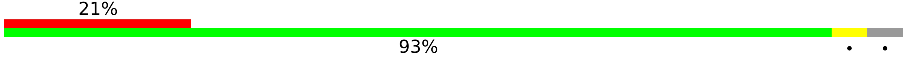
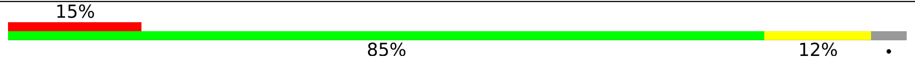
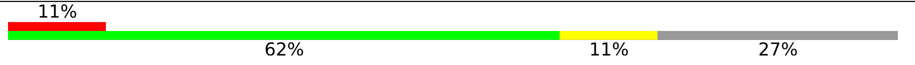
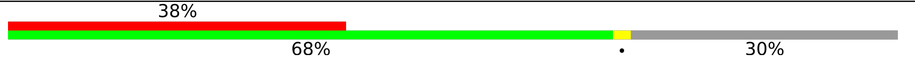
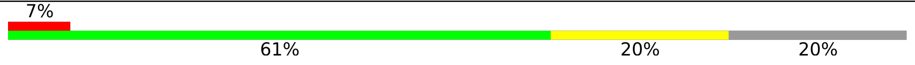
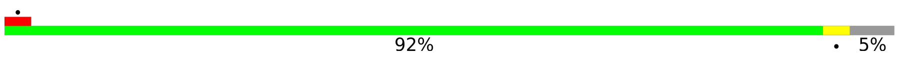
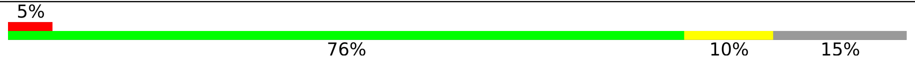
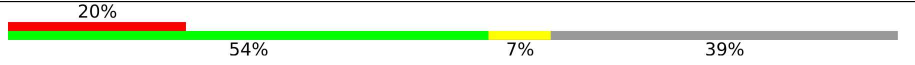
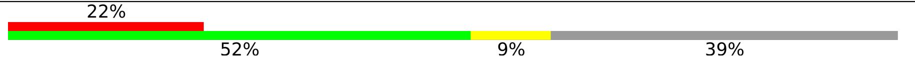
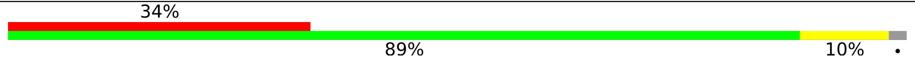
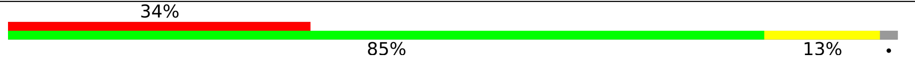
Mol	Chain	Length	Quality of chain
5	E	84	
5	e	84	
6	F	45	
6	f	45	
7	H	66	
7	h	66	
8	I	38	
8	i	38	
9	J	40	
9	j	40	
10	K	46	
10	k	46	
11	L	37	
11	l	37	
12	M	36	
12	m	36	
13	T	32	
13	t	32	
14	X	41	
14	x	41	
15	Y	46	
15	y	46	
16	Z	62	
16	z	62	

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
19	CLA	A	403	X	-	-	-
19	CLA	A	404	X	-	-	-
19	CLA	A	405	X	-	-	-
19	CLA	A	407	X	-	-	-
19	CLA	B	601	X	-	-	-
19	CLA	B	602	X	-	-	-
19	CLA	B	603	X	-	-	-
19	CLA	B	604	X	-	-	-
19	CLA	B	605	X	-	-	-
19	CLA	B	606	X	-	-	-
19	CLA	B	607	X	-	-	-
19	CLA	B	608	X	-	-	-
19	CLA	B	609	X	-	-	-
19	CLA	B	610	X	-	-	-
19	CLA	B	611	X	-	-	-
19	CLA	B	612	X	-	-	-
19	CLA	B	613	X	-	-	-
19	CLA	B	614	X	-	-	-
19	CLA	B	615	X	-	-	-
19	CLA	B	616	X	-	-	-
19	CLA	C	503	X	-	-	-
19	CLA	C	504	X	-	-	-
19	CLA	C	505	X	-	-	-
19	CLA	C	506	X	-	-	-
19	CLA	C	507	X	-	-	-
19	CLA	C	508	X	-	-	-
19	CLA	C	509	X	-	-	-
19	CLA	C	510	X	-	-	-
19	CLA	C	511	X	-	-	-
19	CLA	C	512	X	-	-	-
19	CLA	C	513	X	-	-	-
19	CLA	C	514	X	-	-	-
19	CLA	C	515	X	-	-	-
19	CLA	D	408	X	-	-	-
19	CLA	D	409	X	-	-	-
19	CLA	a	404	X	-	-	-
19	CLA	a	405	X	-	-	-
19	CLA	a	406	X	-	-	-
19	CLA	a	408	X	-	-	-
19	CLA	b	603	X	-	-	-
19	CLA	b	604	X	-	-	-
19	CLA	b	605	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
19	CLA	b	606	X	-	-	-
19	CLA	b	607	X	-	-	-
19	CLA	b	608	X	-	-	-
19	CLA	b	609	X	-	-	-
19	CLA	b	610	X	-	-	-
19	CLA	b	611	X	-	-	-
19	CLA	b	612	X	-	-	-
19	CLA	b	613	X	-	-	-
19	CLA	b	614	X	-	-	-
19	CLA	b	615	X	-	-	-
19	CLA	b	616	X	-	-	-
19	CLA	b	617	X	-	-	-
19	CLA	b	618	X	-	-	-
19	CLA	c	502	X	-	-	-
19	CLA	c	503	X	-	-	-
19	CLA	c	504	X	-	-	-
19	CLA	c	505	X	-	-	-
19	CLA	c	506	X	-	-	-
19	CLA	c	507	X	-	-	-
19	CLA	c	508	X	-	-	-
19	CLA	c	509	X	-	-	-
19	CLA	c	510	X	-	-	-
19	CLA	c	511	X	-	-	-
19	CLA	c	512	X	-	-	-
19	CLA	c	513	X	-	-	-
19	CLA	c	514	X	-	-	-
19	CLA	d	404	X	-	-	-
19	CLA	d	405	X	-	-	-

2 Entry composition ⓘ

There are 33 unique types of molecules in this entry. The entry contains 42670 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Photosystem II protein D1 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	324	Total 2544	C 1667	N 417	O 445	S 15	0	0
1	a	324	Total 2544	C 1667	N 417	O 445	S 15	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	504	Total 3961	C 2601	N 661	O 686	S 13	0	0
2	b	505	Total 3968	C 2605	N 664	O 686	S 13	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	436	Total 3377	C 2214	N 565	O 585	S 13	0	0
3	c	436	Total 3377	C 2214	N 565	O 585	S 13	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	341	Total 2712	C 1798	N 444	O 458	S 12	0	0
4	d	341	Total 2712	C 1798	N 444	O 458	S 12	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
5	E	81	Total 657	C 430	N 107	O 120	0	0
5	e	81	Total 650	C 427	N 106	O 117	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	33	Total 265	C 182	N 43	O 39	S 1	0	0
6	f	33	Total 269	C 184	N 44	O 40	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	64	Total 506	C 339	N 81	O 84	S 2	0	0
7	h	64	Total 506	C 339	N 81	O 84	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	35	Total 288	C 196	N 45	O 46	S 1	0	0
8	i	35	Total 288	C 196	N 45	O 46	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	28	Total 206	C 145	N 29	O 31	S 1	0	0
9	j	28	Total 206	C 145	N 29	O 31	S 1	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
10	K	37	Total 285	C 199	N 42	O 44	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
10	k	37	Total C N O 285 199 42 44	0	0

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

Mol	Chain	Residues	Atoms	AltConf	Trace
11	L	35	Total C N O 287 192 46 49	0	0
11	l	35	Total C N O 287 192 46 49	0	0

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

Mol	Chain	Residues	Atoms	AltConf	Trace
12	M	33	Total C N O S 258 172 38 47 1	0	0
12	m	33	Total C N O S 258 172 38 47 1	0	0

- Molecule 13 is a protein called Photosystem II reaction center protein T.

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

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

Mol	Chain	Residues	Atoms	AltConf	Trace
14	X	35	Total C N O 254 172 38 44	0	0
14	x	35	Total C N O 254 172 38 44	0	0

- Molecule 15 is a protein called Photosystem II reaction center protein Ycf12.

Mol	Chain	Residues	Atoms	AltConf	Trace
15	Y	28	Total C N O S 205 134 36 32 3	0	0
15	y	28	Total C N O S 196 131 30 32 3	0	0

- Molecule 16 is a protein called Photosystem II reaction center protein Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	Z	61	467	321	70	74	2	0	0
			Total	C	N	O	S		
16	z	61	458	317	67	72	2	0	0

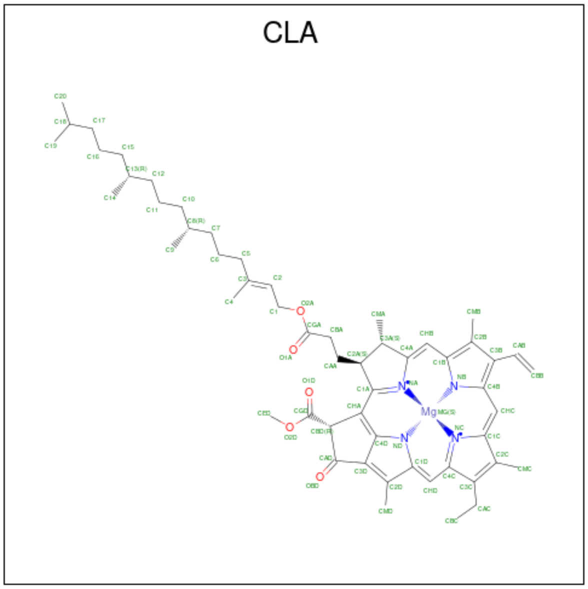
- Molecule 17 is FE (II) ION (CCD ID: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms		AltConf
			Total	Fe	
17	A	1	1	1	0
			Total	Fe	
17	a	1	1	1	0

- Molecule 18 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		AltConf
			Total	Cl	
18	A	1	1	1	0
			Total	Cl	
18	a	1	1	1	0

- Molecule 19 is CHLOROPHYLL A (CCD ID: CLA) (formula: $C_{55}H_{72}MgN_4O_5$).



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

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

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Mol	Chain	Residues	Atoms	AltConf
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	b	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0
19	c	1	Total C Mg N O 65 55 1 4 5	0

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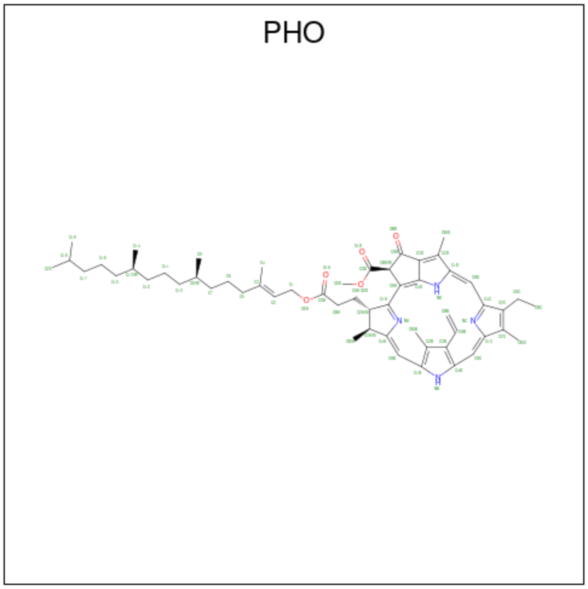
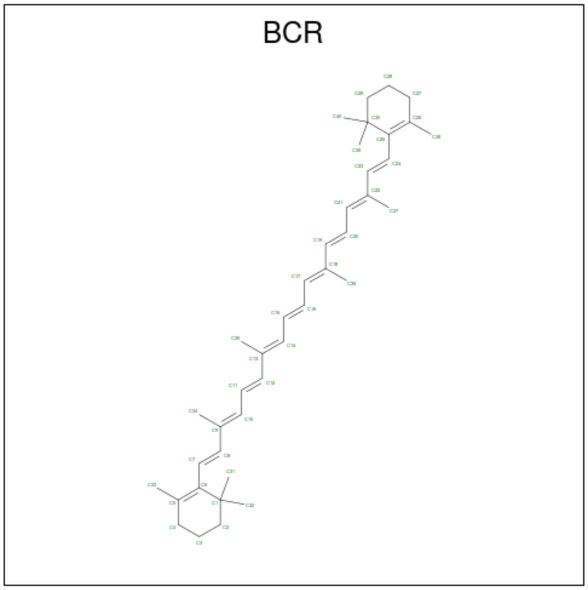
Mol	Chain	Residues	Atoms					AltConf
19	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
19	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
19	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
19	c	1	Total 65	C 55	Mg 1	N 4	O 5	0
19	d	1	Total 65	C 55	Mg 1	N 4	O 5	0
19	d	1	Total 65	C 55	Mg 1	N 4	O 5	0

- Molecule 20 is PHEOPHYTIN A (CCD ID: PHO) (formula: $C_{55}H_{74}N_4O_5$).



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

- Molecule 21 is BETA-CAROTENE (CCD ID: BCR) (formula: $C_{40}H_{56}$).



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

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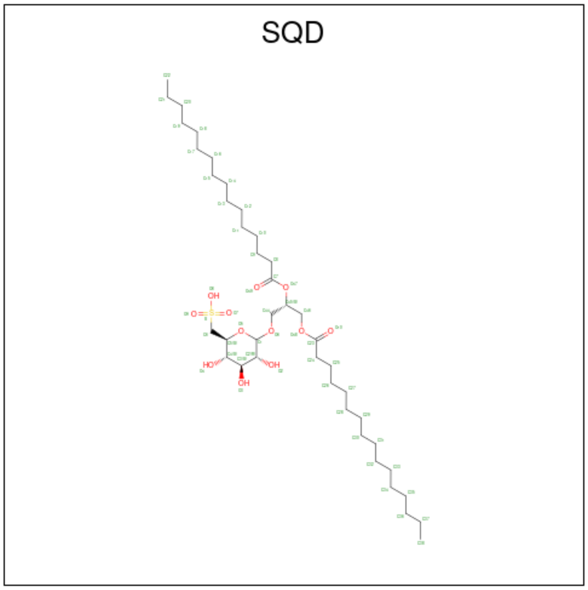
Mol	Chain	Residues	Atoms	AltConf
21	b	1	Total C 40 40	0
21	c	1	Total C 40 40	0
21	c	1	Total C 40 40	0
21	d	1	Total C 40 40	0
21	k	1	Total C 40 40	0
21	y	1	Total C 40 40	0

- Molecule 22 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (CCD ID: SQD) (formula: $C_{41}H_{78}O_{12}S$).



Mol	Chain	Residues	Atoms	AltConf
22	A	1	Total C O S 50 37 12 1	0
22	A	1	Total C O S 54 41 12 1	0
22	F	1	Total C O S 33 23 9 1	0
22	L	1	Total C O S 54 41 12 1	0
22	a	1	Total C O S 54 41 12 1	0

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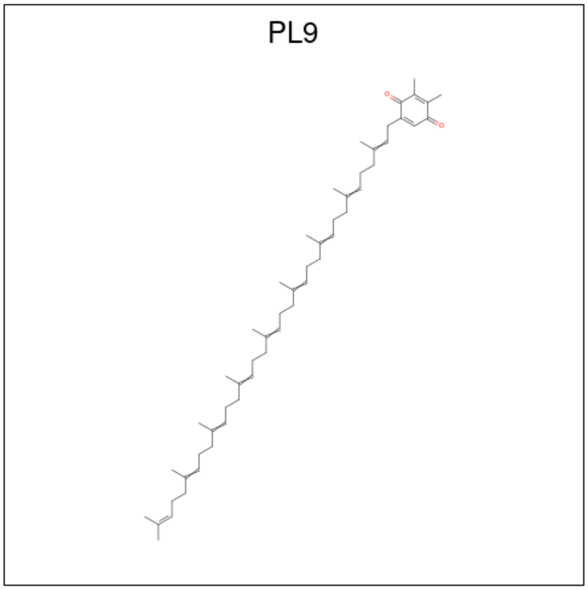
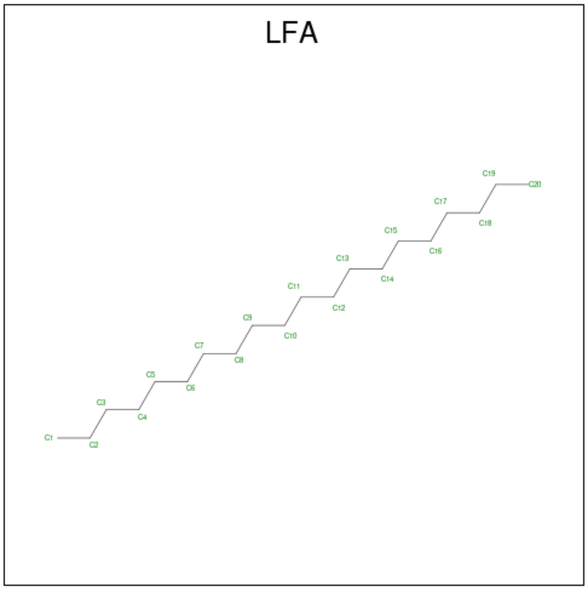
Mol	Chain	Residues	Atoms				AltConf
22	a	1	Total 43	C 30	O 12	S 1	0
22	f	1	Total 45	C 32	O 12	S 1	0
22	l	1	Total 54	C 41	O 12	S 1	0

- Molecule 23 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 (CCD ID: PL9) (formula: $C_{53}H_{80}O_2$).



Mol	Chain	Residues	Atoms			AltConf
23	A	1	Total 55	C 53	O 2	0
23	D	1	Total 55	C 53	O 2	0
23	a	1	Total 55	C 53	O 2	0
23	d	1	Total 55	C 53	O 2	0

- Molecule 24 is EICOSANE (CCD ID: LFA) (formula: $C_{20}H_{42}$).



Mol	Chain	Residues	Atoms	AltConf
24	A	1	Total C 15 15	0
24	A	1	Total C 13 13	0
24	B	1	Total C 13 13	0
24	B	1	Total C 7 7	0
24	B	1	Total C 11 11	0
24	B	1	Total C 7 7	0
24	C	1	Total C 7 7	0
24	D	1	Total C 16 16	0
24	D	1	Total C 13 13	0
24	D	1	Total C 9 9	0
24	H	1	Total C 14 14	0
24	H	1	Total C 6 6	0
24	I	1	Total C 7 7	0
24	J	1	Total C 17 17	0

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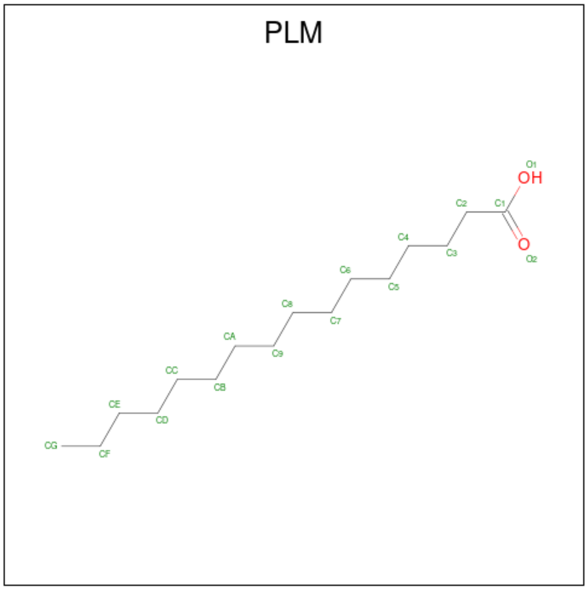
Mol	Chain	Residues	Atoms	AltConf
24	K	1	Total C 7 7	0
24	M	1	Total C 10 10	0
24	X	1	Total C 13 13	0
24	Z	1	Total C 8 8	0
24	a	1	Total C 11 11	0
24	b	1	Total C 12 12	0
24	b	1	Total C 11 11	0
24	b	1	Total C 9 9	0
24	b	1	Total C 9 9	0
24	b	1	Total C 7 7	0
24	d	1	Total C 15 15	0
24	d	1	Total C 8 8	0
24	h	1	Total C 8 8	0
24	h	1	Total C 6 6	0
24	h	1	Total C 7 7	0
24	i	1	Total C 11 11	0
24	k	1	Total C 7 7	0
24	m	1	Total C 9 9	0
24	x	1	Total C 13 13	0

- Molecule 25 is PALMITIC ACID (CCD ID: PLM) (formula: $C_{16}H_{32}O_2$).



Mol	Chain	Residues	Atoms	AltConf
25	A	1	Total C O 18 16 2	0
25	A	1	Total C O 11 9 2	0
25	B	1	Total C O 8 6 2	0
25	B	1	Total C O 12 10 2	0
25	B	1	Total C O 13 11 2	0
25	B	1	Total C O 16 14 2	0
25	C	1	Total C O 9 7 2	0
25	D	1	Total C O 18 16 2	0
25	E	1	Total C O 18 16 2	0
25	H	1	Total C O 10 8 2	0
25	I	1	Total C O 16 14 2	0
25	I	1	Total C O 18 16 2	0
25	I	1	Total C O 11 9 2	0
25	a	1	Total C O 17 15 2	0

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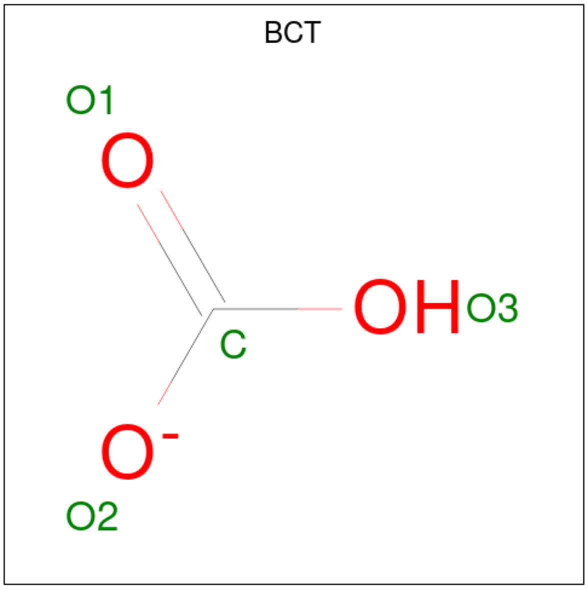
Mol	Chain	Residues	Atoms	AltConf
25	a	1	Total C O 12 10 2	0
25	b	1	Total C O 18 16 2	0
25	b	1	Total C O 9 7 2	0
25	b	1	Total C O 14 12 2	0
25	b	1	Total C O 13 11 2	0
25	b	1	Total C O 16 14 2	0
25	e	1	Total C O 18 16 2	0
25	i	1	Total C O 16 14 2	0
25	i	1	Total C O 13 11 2	0
25	i	1	Total C O 13 11 2	0

- Molecule 26 is BICARBONATE ION (CCD ID: BCT) (formula: CHO_3).



Mol	Chain	Residues	Atoms	AltConf
26	A	1	Total C O 4 1 3	0

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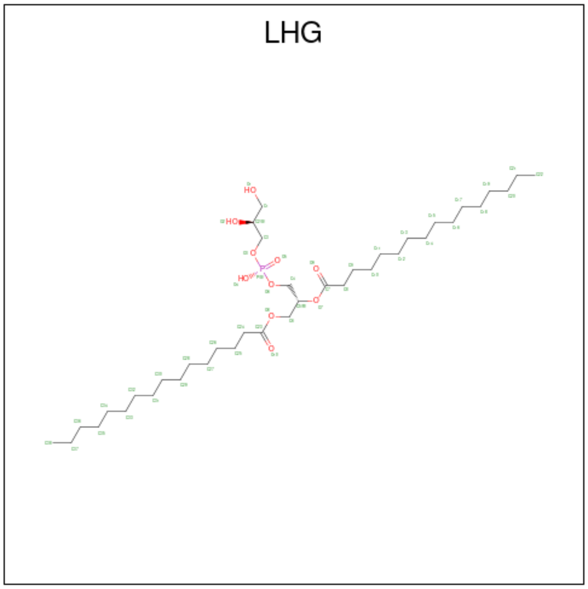
Mol	Chain	Residues	Atoms			AltConf
26	d	1	Total 4	C 1	O 3	0

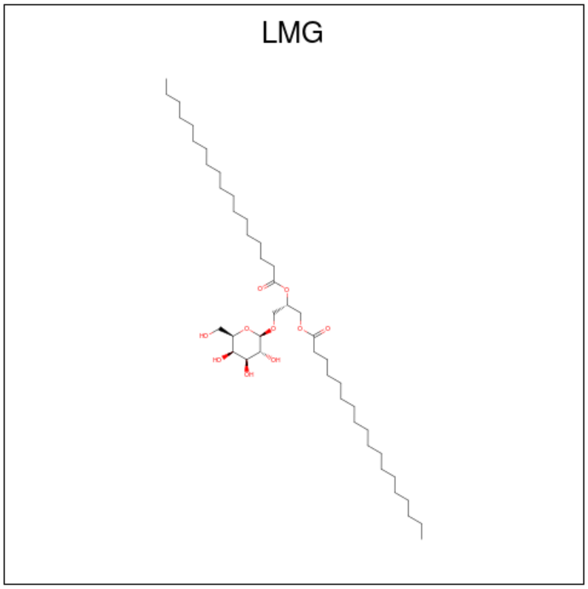
- Molecule 27 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (CCD ID: LHG) (formula: $C_{38}H_{75}O_{10}P$).



Mol	Chain	Residues	Atoms				AltConf
27	A	1	Total 46	C 35	O 10	P 1	0
27	D	1	Total 49	C 38	O 10	P 1	0
27	D	1	Total 49	C 38	O 10	P 1	0
27	L	1	Total 49	C 38	O 10	P 1	0
27	a	1	Total 46	C 35	O 10	P 1	0
27	a	1	Total 49	C 38	O 10	P 1	0
27	d	1	Total 49	C 38	O 10	P 1	0
27	d	1	Total 49	C 38	O 10	P 1	0
27	l	1	Total 49	C 38	O 10	P 1	0

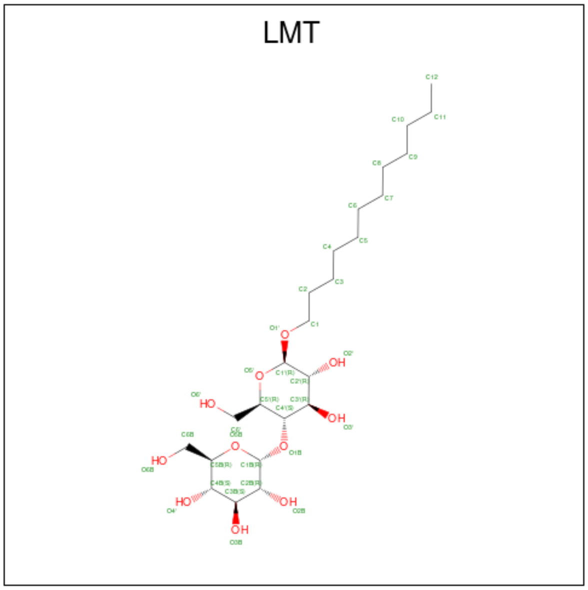
- Molecule 28 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (CCD ID:

LMG) (formula: $C_{45}H_{86}O_{10}$).



Mol	Chain	Residues	Atoms	AltConf
28	B	1	Total C O 51 41 10	0
28	C	1	Total C O 51 41 10	0
28	C	1	Total C O 42 32 10	0
28	D	1	Total C O 48 38 10	0
28	b	1	Total C O 51 41 10	0
28	c	1	Total C O 51 41 10	0
28	c	1	Total C O 51 41 10	0
28	d	1	Total C O 51 41 10	0

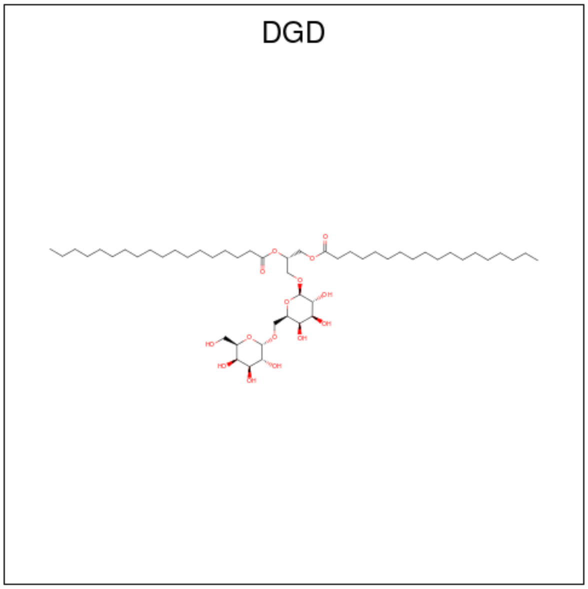
- Molecule 29 is DODECYL-BETA-D-MALTOSIDE (CCD ID: LMT) (formula: $C_{24}H_{46}O_{11}$).



Mol	Chain	Residues	Atoms	AltConf
29	C	1	Total C O 30 19 11	0
29	D	1	Total C O 35 24 11	0
29	D	1	Total C O 24 18 6	0
29	M	1	Total C O 35 24 11	0
29	M	1	Total C O 35 24 11	0
29	b	1	Total C O 20 14 6	0
29	d	1	Total C O 34 23 11	0
29	d	1	Total C O 24 18 6	0
29	i	1	Total C O 35 24 11	0
29	m	1	Total C O 35 24 11	0
29	m	1	Total C O 35 24 11	0
29	t	1	Total C O 24 18 6	0
29	z	1	Total C O 35 24 11	0

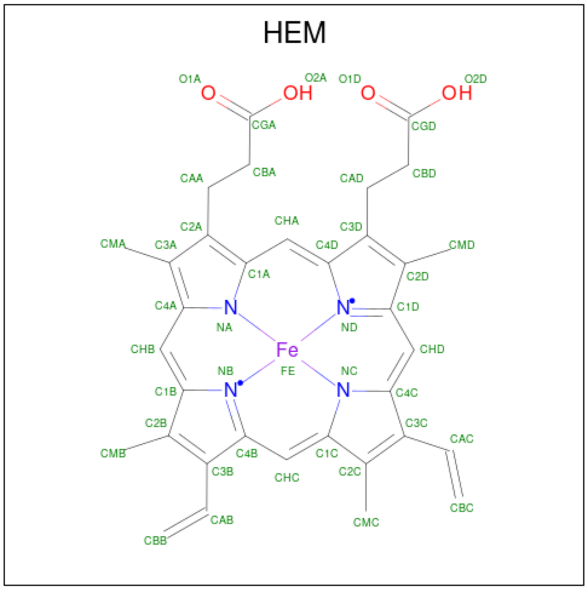
- Molecule 30 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula:

$C_{51}H_{96}O_{15}$).



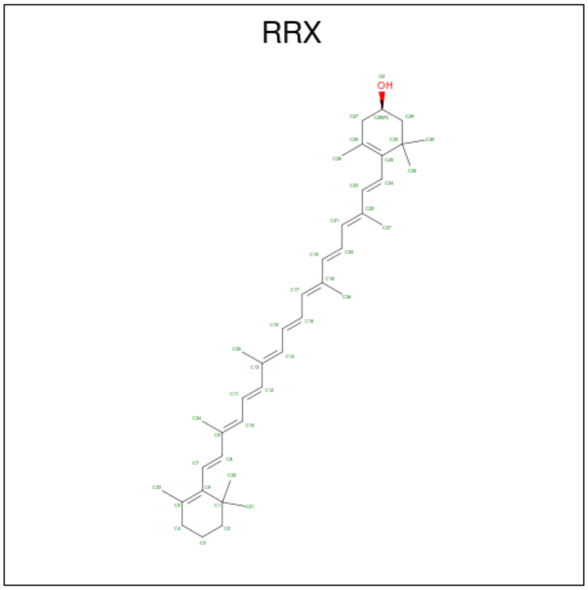
Mol	Chain	Residues	Atoms	AltConf
30	C	1	Total C O 62 47 15	0
30	D	1	Total C O 44 35 9	0
30	H	1	Total C O 62 47 15	0
30	J	1	Total C O 54 39 15	0
30	c	1	Total C O 62 47 15	0
30	c	1	Total C O 62 47 15	0
30	c	1	Total C O 62 47 15	0
30	d	1	Total C O 47 36 11	0
30	h	1	Total C O 62 47 15	0

- Molecule 31 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



Mol	Chain	Residues	Atoms	AltConf
31	F	1	Total C Fe N O 43 34 1 4 4	0
31	f	1	Total C Fe N O 43 34 1 4 4	0

- Molecule 32 is (3R)-beta,beta-caroten-3-ol (CCD ID: RRX) (formula: $C_{40}H_{56}O$).



Mol	Chain	Residues	Atoms	AltConf
32	H	1	Total C O 41 40 1	0
32	x	1	Total C O 41 40 1	0

- Molecule 33 is water.

Mol	Chain	Residues	Atoms	AltConf
33	A	72	Total O 72 72	1
33	B	137	Total O 137 137	1
33	C	59	Total O 59 59	0
33	D	87	Total O 87 87	0
33	E	8	Total O 8 8	0
33	H	22	Total O 22 22	0
33	K	2	Total O 2 2	0
33	L	5	Total O 5 5	0
33	M	2	Total O 2 2	0
33	T	4	Total O 4 4	0
33	X	3	Total O 3 3	0
33	a	70	Total O 70 70	1
33	b	146	Total O 146 146	1
33	c	61	Total O 61 61	0
33	d	86	Total O 86 86	0
33	e	7	Total O 7 7	0
33	f	1	Total O 1 1	0
33	h	19	Total O 19 19	0
33	k	1	Total O 1 1	0
33	l	7	Total O 7 7	0
33	m	2	Total O 2 2	0

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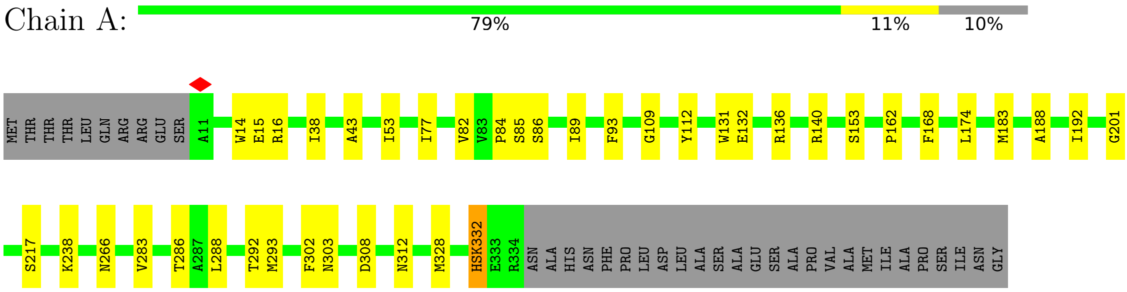
Mol	Chain	Residues	Atoms	AltConf
33	t	3	Total O 3 3	0
33	x	5	Total O 5 5	0

3 Residue-property plots ⓘ

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

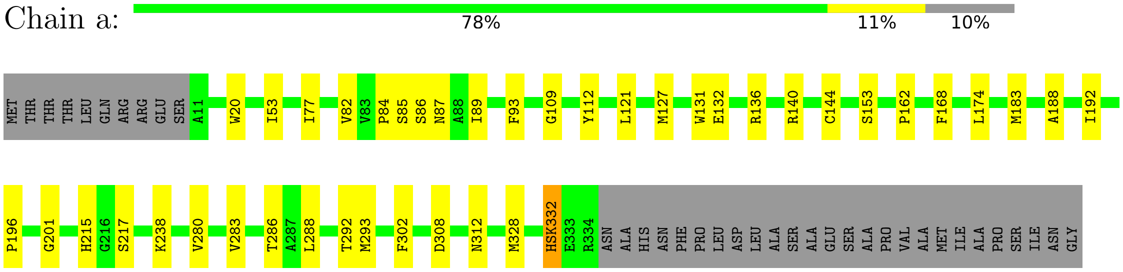
- Molecule 1: Photosystem II protein D1 1

Chain A:



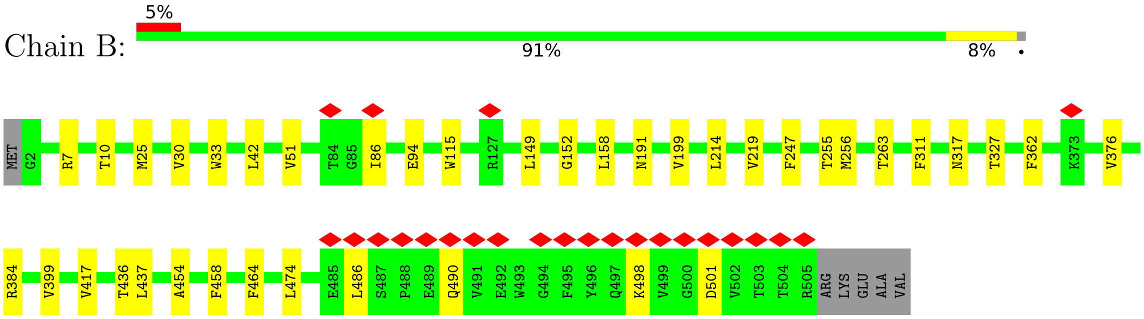
- Molecule 1: Photosystem II protein D1 1

Chain a:



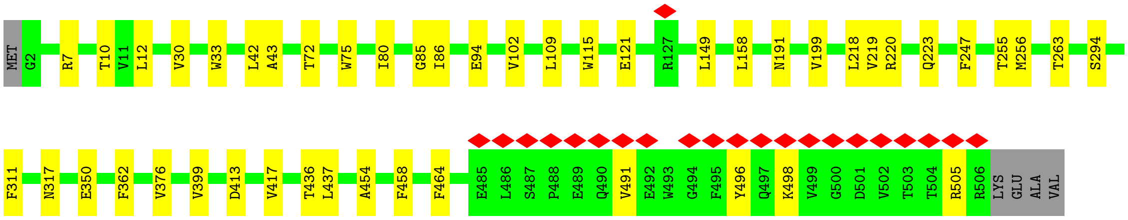
- Molecule 2: Photosystem II CP47 reaction center protein

Chain B:

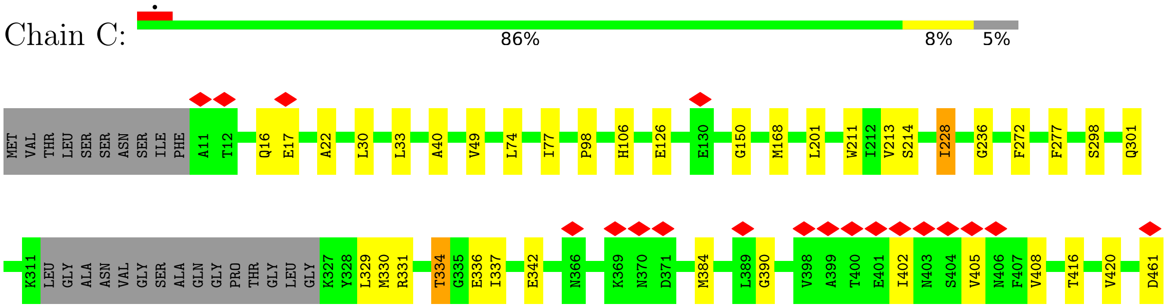


- Molecule 2: Photosystem II CP47 reaction center protein

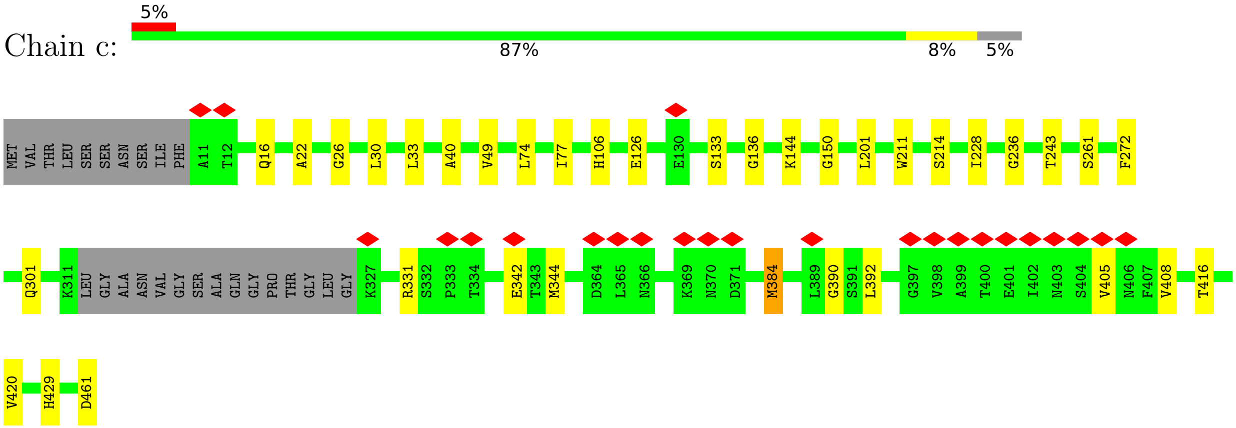
Chain b:



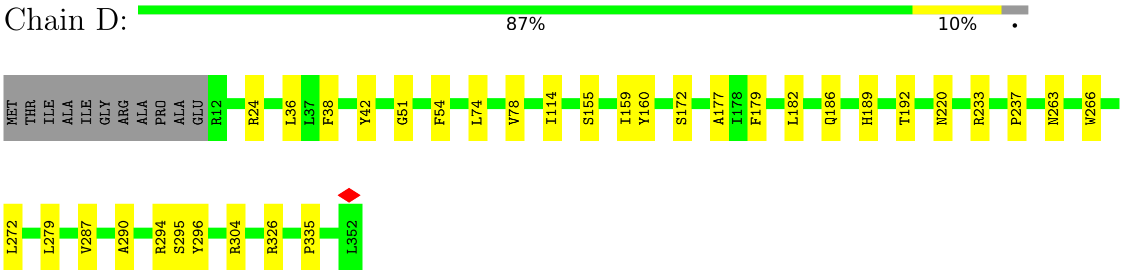
- Molecule 3: Photosystem II CP43 reaction center protein



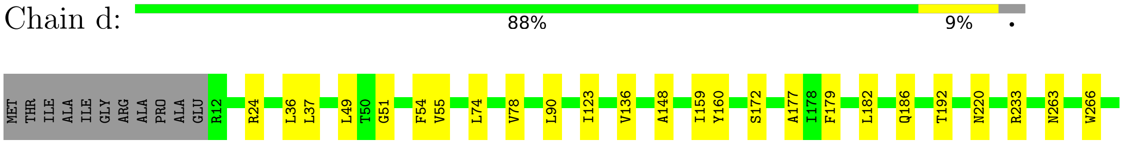
- Molecule 3: Photosystem II CP43 reaction center protein

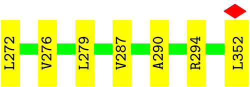


- Molecule 4: Photosystem II D2 protein



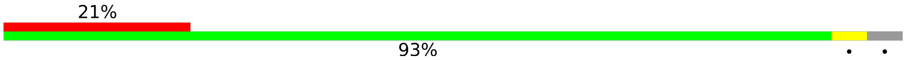
- Molecule 4: Photosystem II D2 protein

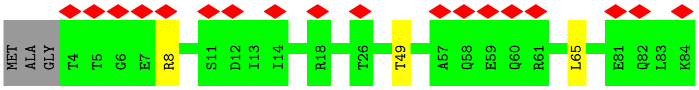




- Molecule 5: Cytochrome b559 subunit alpha

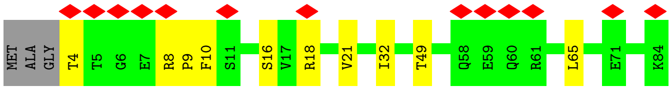
Chain E:





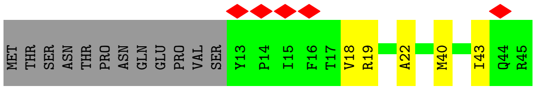
- Molecule 5: Cytochrome b559 subunit alpha

Chain e:



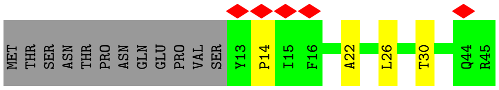
- Molecule 6: Cytochrome b559 subunit beta

Chain F:



- Molecule 6: Cytochrome b559 subunit beta

Chain f:

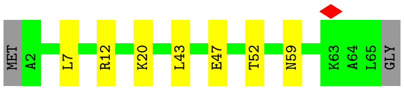


- Molecule 7: Photosystem II reaction center protein H

Chain H:

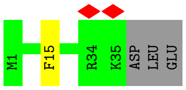
- Molecule 7: Photosystem II reaction center protein H

Chain h:



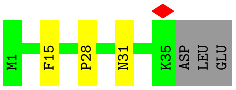
- Molecule 8: Photosystem II reaction center protein I

Chain I:



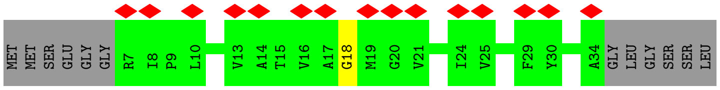
- Molecule 8: Photosystem II reaction center protein I

Chain i:



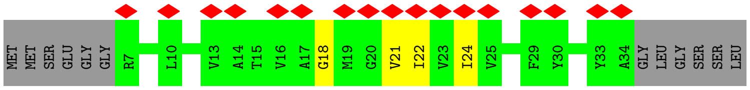
- Molecule 9: Photosystem II reaction center protein J

Chain J:



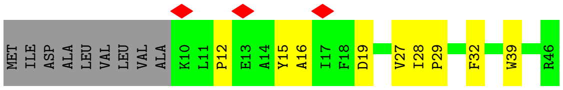
- Molecule 9: Photosystem II reaction center protein J

Chain j:



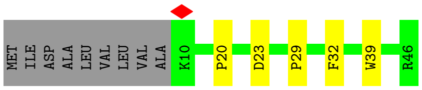
- Molecule 10: Photosystem II reaction center protein K

Chain K:



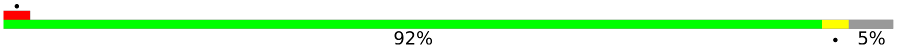
- Molecule 10: Photosystem II reaction center protein K

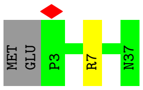
Chain k:



- Molecule 11: Photosystem II reaction center protein L

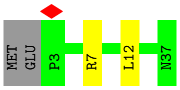
Chain L:





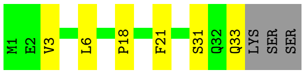
- Molecule 11: Photosystem II reaction center protein L

Chain l:



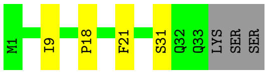
- Molecule 12: Photosystem II reaction center protein M

Chain M:



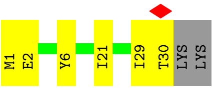
- Molecule 12: Photosystem II reaction center protein M

Chain m:



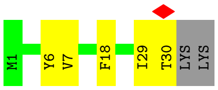
- Molecule 13: Photosystem II reaction center protein T

Chain T:



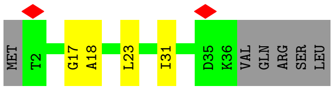
- Molecule 13: Photosystem II reaction center protein T

Chain t:



- Molecule 14: Photosystem II reaction center X protein

Chain X:

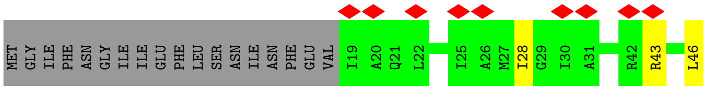


- Molecule 14: Photosystem II reaction center X protein

Chain x:

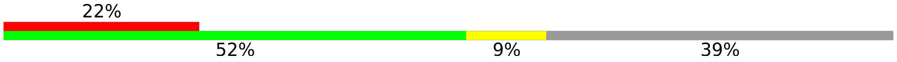
- Molecule 15: Photosystem II reaction center protein Ycf12

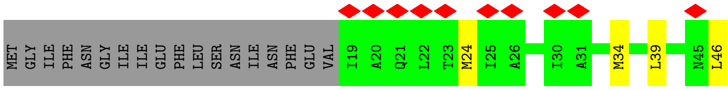
Chain Y:



- Molecule 15: Photosystem II reaction center protein Ycf12

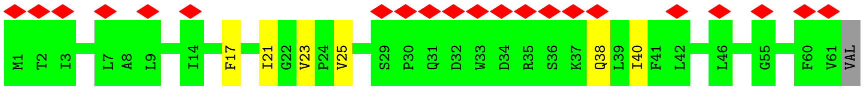
Chain y:





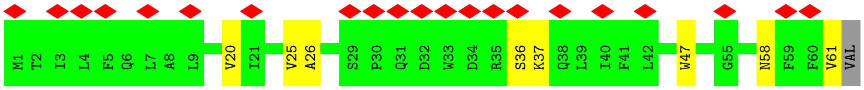
- Molecule 16: Photosystem II reaction center protein Z

Chain Z:



- Molecule 16: Photosystem II reaction center protein Z

Chain z:



4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	417537	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	80	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.387	Depositor
Minimum map value	-0.150	Depositor
Average map value	0.004	Depositor
Map value standard deviation	0.026	Depositor
Recommended contour level	0.037	Depositor
Map size (Å)	137.5, 208.5, 104.5	wwPDB
Map dimensions	209, 417, 275	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.5, 0.5, 0.5	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: LMT, PLM, DGD, LMG, LFA, RRX, CL, SQD, BCR, HEM, PHO, BCT, FME, PL9, CLA, LHG, HSK, FE2

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	0.22	0/2613	0.45	0/3562
1	a	0.22	0/2613	0.44	0/3562
2	B	0.21	0/4101	0.42	0/5590
2	b	0.20	0/4108	0.43	2/5599 (0.0%)
3	C	0.21	0/3487	0.42	0/4750
3	c	0.20	0/3487	0.40	0/4750
4	D	0.22	0/2807	0.42	0/3827
4	d	0.23	0/2807	0.42	0/3827
5	E	0.21	0/676	0.46	0/923
5	e	0.19	0/669	0.43	0/914
6	F	0.27	0/274	0.58	0/374
6	f	0.26	0/278	0.57	0/379
7	H	0.21	0/519	0.46	0/708
7	h	0.21	0/519	0.47	0/708
8	I	0.21	0/285	0.50	0/385
8	i	0.20	0/285	0.47	0/385
9	J	0.18	0/212	0.36	0/291
9	j	0.18	0/212	0.38	0/291
10	K	0.30	0/295	0.72	2/407 (0.5%)
10	k	0.28	0/295	0.51	0/407
11	L	0.15	0/294	0.32	0/399
11	l	0.15	0/294	0.31	0/399
12	M	0.34	0/261	0.59	0/356
12	m	0.34	0/261	0.61	0/356
13	T	0.21	0/257	0.40	0/349
13	t	0.20	0/257	0.38	0/349
14	X	0.19	0/257	0.38	0/348
14	x	0.18	0/257	0.37	0/348
15	Y	0.19	0/206	0.50	0/275
15	y	0.23	0/197	0.58	0/265
16	Z	0.19	0/478	0.41	0/654

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
16	z	0.19	0/469	0.34	0/643
All	All	0.21	0/34030	0.44	4/46380 (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
1	A	0	1
1	a	0	1
All	All	0	2

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	K	27	VAL	CA-C-N	7.20	124.77	120.24
10	K	27	VAL	C-N-CA	7.20	124.77	120.24
2	b	85	GLY	CA-C-N	5.41	131.72	121.97
2	b	85	GLY	C-N-CA	5.41	131.72	121.97

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	332	HSK	Mainchain
1	a	332	HSK	Mainchain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2544	0	2447	33	0
1	a	2544	0	2447	32	0
2	B	3961	0	3820	26	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	b	3968	0	3827	34	0
3	C	3377	0	3286	26	0
3	c	3377	0	3286	24	0
4	D	2712	0	2617	27	0
4	d	2712	0	2617	23	0
5	E	657	0	644	3	0
5	e	650	0	636	6	0
6	F	265	0	271	5	0
6	f	269	0	277	4	0
7	H	506	0	529	4	0
7	h	506	0	529	6	0
8	I	288	0	307	1	0
8	i	288	0	307	2	0
9	J	206	0	213	1	0
9	j	206	0	213	2	0
10	K	285	0	290	5	0
10	k	285	0	290	3	0
11	L	287	0	299	2	0
11	l	287	0	299	2	0
12	M	258	0	276	5	0
12	m	258	0	276	2	0
13	T	258	0	261	4	0
13	t	258	0	261	4	0
14	X	254	0	282	2	0
14	x	254	0	282	2	0
15	Y	205	0	228	3	0
15	y	196	0	215	3	0
16	Z	467	0	501	2	0
16	z	458	0	488	5	0
17	A	1	0	0	0	0
17	a	1	0	0	0	0
18	A	1	0	0	0	0
18	a	1	0	0	0	0
19	A	260	0	288	6	0
19	B	1040	0	1152	21	0
19	C	845	0	936	17	0
19	D	130	0	144	5	0
19	a	260	0	288	6	0
19	b	1040	0	1152	25	0
19	c	845	0	936	17	0
19	d	130	0	144	5	0
20	A	64	0	74	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
20	D	64	0	74	3	0
20	a	64	0	74	0	0
20	d	64	0	74	2	0
21	A	40	0	56	1	0
21	B	160	0	224	5	0
21	C	80	0	112	2	0
21	D	40	0	56	0	0
21	K	40	0	56	2	0
21	Y	40	0	56	2	0
21	a	40	0	56	2	0
21	b	160	0	224	8	0
21	c	80	0	112	1	0
21	d	40	0	56	0	0
21	k	40	0	56	0	0
21	y	40	0	56	1	0
22	A	104	0	145	3	0
22	F	33	0	39	3	0
22	L	54	0	78	2	0
22	a	97	0	128	2	0
22	f	45	0	57	2	0
22	l	54	0	78	1	0
23	A	55	0	80	3	0
23	D	55	0	80	0	0
23	a	55	0	80	5	0
23	d	55	0	80	1	0
24	A	28	0	51	0	0
24	B	38	0	63	2	0
24	C	7	0	10	0	0
24	D	38	0	70	3	0
24	H	20	0	32	0	0
24	I	7	0	10	0	0
24	J	17	0	33	0	0
24	K	7	0	10	0	0
24	M	10	0	16	0	0
24	X	13	0	22	1	0
24	Z	8	0	12	0	0
24	a	11	0	18	0	0
24	b	48	0	76	1	0
24	d	23	0	41	1	0
24	h	21	0	30	0	0
24	i	11	0	18	0	0
24	k	7	0	10	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	m	9	0	14	0	0
24	x	13	0	25	0	0
25	A	29	0	45	1	0
25	B	49	0	66	0	0
25	C	9	0	10	1	0
25	D	18	0	31	2	0
25	E	18	0	31	0	0
25	H	10	0	12	0	0
25	I	45	0	69	0	0
25	a	29	0	42	2	0
25	b	70	0	103	1	0
25	e	18	0	31	0	0
25	i	42	0	60	0	0
26	A	4	0	0	0	0
26	d	4	0	0	0	0
27	A	46	0	65	1	0
27	D	98	0	148	1	0
27	L	49	0	74	2	0
27	a	95	0	139	4	0
27	d	98	0	148	0	0
27	l	49	0	74	1	0
28	B	51	0	72	2	0
28	C	93	0	126	3	0
28	D	48	0	66	1	0
28	b	51	0	72	4	0
28	c	102	0	144	1	0
28	d	51	0	72	3	0
29	C	30	0	33	2	0
29	D	59	0	81	3	0
29	M	70	0	92	1	0
29	b	20	0	24	1	0
29	d	58	0	76	1	0
29	i	35	0	46	0	0
29	m	70	0	92	1	0
29	t	24	0	35	1	0
29	z	35	0	46	3	0
30	C	62	0	82	1	0
30	D	44	0	57	1	0
30	H	62	0	82	0	0
30	J	54	0	66	4	0
30	c	186	0	246	4	0
30	d	47	0	59	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	h	62	0	82	2	0
31	F	43	0	30	1	0
31	f	43	0	30	0	0
32	H	41	0	56	0	0
32	x	41	0	56	0	0
33	A	72	0	0	0	0
33	B	137	0	0	0	0
33	C	59	0	0	0	0
33	D	87	0	0	1	0
33	E	8	0	0	0	0
33	H	22	0	0	0	0
33	K	2	0	0	0	0
33	L	5	0	0	1	0
33	M	2	0	0	0	0
33	T	4	0	0	0	0
33	X	3	0	0	0	0
33	a	70	0	0	0	0
33	b	146	0	0	0	0
33	c	61	0	0	0	0
33	d	86	0	0	0	0
33	e	7	0	0	0	0
33	f	1	0	0	0	0
33	h	19	0	0	0	0
33	k	1	0	0	0	0
33	l	7	0	0	1	0
33	m	2	0	0	0	0
33	t	3	0	0	0	0
33	x	5	0	0	0	0
All	All	42670	0	43454	350	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

The worst 5 of 350 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:c:30:LEU:HD21	19:c:512:CLA:H2A	1.74	0.68
3:C:30:LEU:HD21	19:C:513:CLA:H2A	1.75	0.68
23:A:410:PL9:H33	4:D:42:TYR:HB2	1.76	0.68
27:a:416:LHG:HC32	5:e:9:PRO:HA	1.77	0.66
1:A:192:ILE:HG13	1:A:293:MET:HE1	1.80	0.64

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	321/360 (89%)	315 (98%)	6 (2%)	0	100	100
1	a	321/360 (89%)	316 (98%)	5 (2%)	0	100	100
2	B	502/510 (98%)	495 (99%)	5 (1%)	2 (0%)	30	34
2	b	503/510 (99%)	495 (98%)	7 (1%)	1 (0%)	44	52
3	C	432/461 (94%)	423 (98%)	9 (2%)	0	100	100
3	c	432/461 (94%)	425 (98%)	7 (2%)	0	100	100
4	D	339/352 (96%)	334 (98%)	5 (2%)	0	100	100
4	d	339/352 (96%)	333 (98%)	6 (2%)	0	100	100
5	E	79/84 (94%)	78 (99%)	1 (1%)	0	100	100
5	e	79/84 (94%)	78 (99%)	1 (1%)	0	100	100
6	F	31/45 (69%)	30 (97%)	1 (3%)	0	100	100
6	f	31/45 (69%)	30 (97%)	1 (3%)	0	100	100
7	H	62/66 (94%)	62 (100%)	0	0	100	100
7	h	62/66 (94%)	61 (98%)	1 (2%)	0	100	100
8	I	33/38 (87%)	32 (97%)	1 (3%)	0	100	100
8	i	33/38 (87%)	32 (97%)	1 (3%)	0	100	100
9	J	26/40 (65%)	26 (100%)	0	0	100	100
9	j	26/40 (65%)	26 (100%)	0	0	100	100
10	K	35/46 (76%)	35 (100%)	0	0	100	100
10	k	35/46 (76%)	35 (100%)	0	0	100	100
11	L	33/37 (89%)	33 (100%)	0	0	100	100
11	l	33/37 (89%)	33 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	M	31/36 (86%)	30 (97%)	1 (3%)	0	100	100
12	m	31/36 (86%)	31 (100%)	0	0	100	100
13	T	28/32 (88%)	28 (100%)	0	0	100	100
13	t	28/32 (88%)	28 (100%)	0	0	100	100
14	X	33/41 (80%)	33 (100%)	0	0	100	100
14	x	33/41 (80%)	33 (100%)	0	0	100	100
15	Y	26/46 (56%)	26 (100%)	0	0	100	100
15	y	26/46 (56%)	26 (100%)	0	0	100	100
16	Z	59/62 (95%)	59 (100%)	0	0	100	100
16	z	59/62 (95%)	58 (98%)	1 (2%)	0	100	100
All	All	4141/4512 (92%)	4079 (98%)	59 (1%)	3 (0%)	50	57

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	86	ILE
2	b	86	ILE
2	B	384	ARG

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	261/290 (90%)	261 (100%)	0	100	100
1	a	261/290 (90%)	261 (100%)	0	100	100
2	B	400/407 (98%)	396 (99%)	4 (1%)	73	84
2	b	400/407 (98%)	395 (99%)	5 (1%)	65	78
3	C	340/362 (94%)	336 (99%)	4 (1%)	67	80
3	c	340/362 (94%)	336 (99%)	4 (1%)	67	80
4	D	275/283 (97%)	274 (100%)	1 (0%)	89	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	d	275/283 (97%)	272 (99%)	3 (1%)	70	82
5	E	71/73 (97%)	71 (100%)	0	100	100
5	e	69/73 (94%)	67 (97%)	2 (3%)	37	50
6	F	26/39 (67%)	26 (100%)	0	100	100
6	f	27/39 (69%)	27 (100%)	0	100	100
7	H	54/55 (98%)	54 (100%)	0	100	100
7	h	54/55 (98%)	54 (100%)	0	100	100
8	I	31/34 (91%)	31 (100%)	0	100	100
8	i	31/34 (91%)	31 (100%)	0	100	100
9	J	19/28 (68%)	19 (100%)	0	100	100
9	j	19/28 (68%)	17 (90%)	2 (10%)	5	5
10	K	28/37 (76%)	28 (100%)	0	100	100
10	k	28/37 (76%)	28 (100%)	0	100	100
11	L	33/35 (94%)	33 (100%)	0	100	100
11	l	33/35 (94%)	32 (97%)	1 (3%)	36	48
12	M	30/33 (91%)	30 (100%)	0	100	100
12	m	30/33 (91%)	29 (97%)	1 (3%)	33	44
13	T	26/28 (93%)	26 (100%)	0	100	100
13	t	26/28 (93%)	26 (100%)	0	100	100
14	X	28/34 (82%)	26 (93%)	2 (7%)	12	13
14	x	28/34 (82%)	25 (89%)	3 (11%)	5	5
15	Y	20/37 (54%)	19 (95%)	1 (5%)	20	26
15	y	19/37 (51%)	18 (95%)	1 (5%)	19	24
16	Z	50/52 (96%)	48 (96%)	2 (4%)	27	35
16	z	48/52 (92%)	47 (98%)	1 (2%)	48	63
All	All	3380/3654 (92%)	3343 (99%)	37 (1%)	69	82

5 of 37 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
9	j	21	VAL
15	y	34	MET
9	j	22	ILE

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Mol	Chain	Res	Type
14	x	12	ILE
16	Z	25	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 43 such sidechains are listed below:

Mol	Chain	Res	Type
2	b	289	GLN
4	d	250	ASN
2	b	374	ASN
3	c	361	ASN
10	k	40	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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	$\#\|Z\| > 2$
13	FME	t	1	13	8,9,10	0.36	0	7,9,11	0.92	0
1	HSK	a	332	1	7,11,12	1.31	1 (14%)	3,14,16	0.91	0
8	FME	i	1	8	8,9,10	0.36	0	7,9,11	0.73	0
1	HSK	A	332	1	7,11,12	1.33	1 (14%)	3,14,16	0.89	0
8	FME	I	1	8	8,9,10	0.36	0	7,9,11	0.76	0
13	FME	T	1	13	8,9,10	0.38	0	7,9,11	1.38	1 (14%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
13	FME	t	1	13	-	4/7/9/11	-
1	HSK	a	332	1	-	2/5/6/8	0/1/1/1
8	FME	i	1	8	-	2/7/9/11	-
1	HSK	A	332	1	-	2/5/6/8	0/1/1/1
8	FME	I	1	8	-	3/7/9/11	-
13	FME	T	1	13	-	3/7/9/11	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	332	HSK	CE1-ND1	-2.18	1.34	1.36
1	a	332	HSK	CE1-ND1	-2.17	1.34	1.36

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	T	1	FME	CA-N-CN	2.89	127.26	122.82

There are no chirality outliers.

5 of 16 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	332	HSK	C-CA-CB-CG
1	A	332	HSK	N-CA-CB-CG
8	I	1	FME	C-CA-CB-CG
1	a	332	HSK	C-CA-CB-CG
1	a	332	HSK	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 212 ligands modelled in this entry, 4 are monoatomic - leaving 208 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	$\#\|Z\| > 2$
31	HEM	f	101	6,5	41,50,50	1.47	4 (9%)	45,82,82	1.40	5 (11%)
24	LFA	B	624	-	6,6,19	0.26	0	5,5,18	0.17	0
19	CLA	B	604	-	65,73,73	1.48	6 (9%)	76,113,113	1.56	11 (14%)
30	DGD	d	414	-	47,47,67	0.52	0	54,55,81	0.66	0
19	CLA	B	613	-	65,73,73	1.42	7 (10%)	76,113,113	1.46	7 (9%)
19	CLA	B	603	-	65,73,73	1.43	6 (9%)	76,113,113	1.40	9 (11%)
21	BCR	B	618	-	41,41,41	0.37	0	56,56,56	0.78	0
19	CLA	c	511	-	65,73,73	1.45	7 (10%)	76,113,113	1.37	6 (7%)
21	BCR	C	521	-	41,41,41	0.37	0	56,56,56	1.11	5 (8%)
29	LMT	d	412	-	24,24,36	0.52	0	29,29,47	0.69	0
28	LMG	C	501	-	51,51,55	0.51	0	59,59,63	0.62	0
29	LMT	t	101	-	24,24,36	0.53	0	29,29,47	1.09	3 (10%)
25	PLM	i	102	-	12,12,17	0.77	0	12,12,17	0.70	0
19	CLA	b	608	-	65,73,73	1.44	7 (10%)	76,113,113	1.54	8 (10%)
19	CLA	c	503	-	65,73,73	1.43	7 (10%)	76,113,113	1.46	6 (7%)
24	LFA	D	407	-	8,8,19	0.25	0	7,7,18	0.21	0
24	LFA	Z	101	-	7,7,19	0.25	0	6,6,18	0.20	0
25	PLM	i	101	-	15,15,17	0.67	0	15,15,17	0.67	0
28	LMG	B	620	-	51,51,55	0.51	0	59,59,63	0.61	0
19	CLA	b	613	-	65,73,73	1.43	7 (10%)	76,113,113	1.50	9 (11%)
25	PLM	C	520	-	8,8,17	0.91	0	8,8,17	0.89	0
21	BCR	B	619	-	41,41,41	0.32	0	56,56,56	0.75	0
24	LFA	M	103	-	9,9,19	0.23	0	8,8,18	0.21	0
24	LFA	A	412	-	14,14,19	0.24	0	13,13,18	0.20	0
24	LFA	b	624	-	11,11,19	0.21	0	10,10,18	0.23	0
31	HEM	F	101	6,5	41,50,50	1.47	5 (12%)	45,82,82	1.40	6 (13%)
19	CLA	c	508	33	65,73,73	1.42	6 (9%)	76,113,113	1.49	8 (10%)
24	LFA	a	413	-	10,10,19	0.23	0	9,9,18	0.21	0
19	CLA	c	514	-	65,73,73	1.40	7 (10%)	76,113,113	1.50	7 (9%)
29	LMT	d	401	-	35,35,36	0.53	0	46,46,47	0.74	0
27	LHG	a	415	-	45,45,48	0.53	0	48,51,54	0.52	0
19	CLA	b	617	-	65,73,73	1.42	7 (10%)	76,113,113	1.41	6 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	LFA	D	406	-	12,12,19	0.23	0	11,11,18	0.28	0
24	LFA	K	102	-	6,6,19	0.25	0	5,5,18	0.20	0
19	CLA	B	607	33	65,73,73	1.44	5 (7%)	76,113,113	1.51	7 (9%)
24	LFA	B	621	-	12,12,19	0.22	0	11,11,18	0.19	0
19	CLA	D	409	-	65,73,73	1.43	7 (10%)	76,113,113	1.43	6 (7%)
25	PLM	a	414	-	11,11,17	0.78	0	11,11,17	0.75	0
24	LFA	J	102	-	16,16,19	0.24	0	15,15,18	0.20	0
19	CLA	b	603	33	65,73,73	1.48	5 (7%)	76,113,113	1.38	6 (7%)
21	BCR	b	601	-	41,41,41	0.31	0	56,56,56	1.44	9 (16%)
21	BCR	B	629	-	41,41,41	0.34	0	56,56,56	0.88	2 (3%)
19	CLA	B	605	-	65,73,73	1.46	7 (10%)	76,113,113	1.45	7 (9%)
27	LHG	A	417	-	45,45,48	0.54	0	48,51,54	0.50	0
24	LFA	b	629	-	8,8,19	0.23	0	7,7,18	0.21	0
27	LHG	D	413	-	48,48,48	0.51	0	51,54,54	0.49	0
28	LMG	b	622	-	51,51,55	0.50	0	59,59,63	0.61	0
25	PLM	A	413	-	17,17,17	0.65	0	17,17,17	0.62	0
19	CLA	d	404	-	65,73,73	1.44	7 (10%)	76,113,113	1.38	6 (7%)
30	DGD	c	517	-	63,63,67	0.55	0	77,77,81	0.78	2 (2%)
20	PHO	D	401	-	51,69,69	0.63	0	47,99,99	1.04	3 (6%)
19	CLA	D	408	-	65,73,73	1.44	7 (10%)	76,113,113	1.38	6 (7%)
19	CLA	a	408	-	65,73,73	1.43	7 (10%)	76,113,113	1.48	9 (11%)
19	CLA	d	405	-	65,73,73	1.44	7 (10%)	76,113,113	1.42	6 (7%)
21	BCR	D	410	-	41,41,41	0.34	0	56,56,56	0.71	0
25	PLM	b	628	-	13,13,17	0.73	0	13,13,17	0.69	0
27	LHG	d	408	-	48,48,48	0.52	0	51,54,54	0.51	0
29	LMT	D	403	-	24,24,36	0.49	0	29,29,47	0.68	0
24	LFA	i	105	-	10,10,19	0.24	0	9,9,18	0.19	0
19	CLA	B	601	33	65,73,73	1.49	5 (7%)	76,113,113	1.38	6 (7%)
22	SQD	a	410	-	53,54,54	1.49	6 (11%)	62,65,65	1.51	7 (11%)
19	CLA	B	609	-	65,73,73	1.49	7 (10%)	76,113,113	1.37	7 (9%)
25	PLM	I	104	-	10,10,17	0.84	0	10,10,17	0.81	0
19	CLA	A	403	-	65,73,73	1.42	6 (9%)	76,113,113	1.50	8 (10%)
19	CLA	C	514	-	65,73,73	1.43	6 (9%)	76,113,113	1.48	6 (7%)
19	CLA	b	618	-	65,73,73	1.41	7 (10%)	76,113,113	1.52	6 (7%)
30	DGD	D	415	-	44,44,67	0.55	0	52,52,81	0.68	1 (1%)
28	LMG	c	518	-	51,51,55	0.48	0	59,59,63	0.58	0
19	CLA	B	608	-	65,73,73	1.43	7 (10%)	76,113,113	1.45	8 (10%)
19	CLA	C	506	33	65,73,73	1.44	7 (10%)	76,113,113	1.50	7 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
24	LFA	H	101	-	13,13,19	0.21	0	12,12,18	0.27	0
25	PLM	A	415	-	10,10,17	0.83	0	10,10,17	0.77	0
25	PLM	a	401	-	16,16,17	0.68	0	16,16,17	0.60	0
19	CLA	c	506	-	65,73,73	1.45	7 (10%)	76,113,113	1.46	8 (10%)
22	SQD	L	102	-	53,54,54	1.52	9 (16%)	62,65,65	1.53	9 (14%)
19	CLA	c	510	-	65,73,73	1.41	6 (9%)	76,113,113	1.50	6 (7%)
25	PLM	b	625	-	8,8,17	0.93	0	8,8,17	0.82	0
19	CLA	B	612	-	65,73,73	1.41	7 (10%)	76,113,113	1.54	7 (9%)
19	CLA	C	503	-	65,73,73	1.47	6 (9%)	76,113,113	1.39	9 (11%)
28	LMG	c	501	-	51,51,55	0.50	0	59,59,63	0.63	0
19	CLA	A	405	33	65,73,73	1.40	6 (9%)	76,113,113	1.51	10 (13%)
19	CLA	b	605	-	65,73,73	1.43	6 (9%)	76,113,113	1.40	8 (10%)
25	PLM	B	626	-	12,12,17	0.76	0	12,12,17	0.71	0
22	SQD	A	409	-	49,50,54	1.53	6 (12%)	58,61,65	1.54	7 (12%)
19	CLA	b	610	-	65,73,73	1.43	7 (10%)	76,113,113	1.48	8 (10%)
19	CLA	B	602	-	65,73,73	1.43	6 (9%)	76,113,113	1.47	9 (11%)
22	SQD	a	412	-	42,43,54	1.67	7 (16%)	51,54,65	1.43	6 (11%)
22	SQD	A	411	-	53,54,54	1.54	7 (13%)	62,65,65	1.32	6 (9%)
25	PLM	b	631	-	15,15,17	0.69	0	15,15,17	0.63	0
19	CLA	B	614	-	65,73,73	1.43	7 (10%)	76,113,113	1.45	8 (10%)
20	PHO	a	407	-	51,69,69	0.69	0	47,99,99	0.91	3 (6%)
19	CLA	b	609	33	65,73,73	1.43	5 (7%)	76,113,113	1.49	7 (9%)
24	LFA	I	103	-	6,6,19	0.26	0	5,5,18	0.18	0
30	DGD	J	101	-	55,55,67	0.54	0	69,69,81	0.86	2 (2%)
24	LFA	x	101	-	12,12,19	0.22	0	11,11,18	0.24	0
21	BCR	c	515	-	41,41,41	0.32	0	56,56,56	0.68	0
25	PLM	D	405	-	17,17,17	0.64	0	17,17,17	0.62	0
27	LHG	D	412	-	48,48,48	0.52	0	51,54,54	0.51	0
27	LHG	a	416	-	48,48,48	0.51	0	51,54,54	0.49	0
32	RRX	H	102	-	42,42,42	0.20	0	57,58,58	0.39	0
21	BCR	a	409	-	41,41,41	0.32	0	56,56,56	0.71	0
21	BCR	y	101	-	41,41,41	0.34	0	56,56,56	1.06	4 (7%)
29	LMT	m	102	-	36,36,36	0.55	0	47,47,47	0.69	0
19	CLA	b	612	33	65,73,73	1.48	6 (9%)	76,113,113	1.37	7 (9%)
23	PL9	D	411	-	55,55,55	1.30	6 (10%)	68,69,69	1.51	14 (20%)
29	LMT	i	103	-	36,36,36	0.52	0	47,47,47	1.02	2 (4%)
24	LFA	X	101	-	12,12,19	0.22	0	11,11,18	0.25	0
22	SQD	f	102	-	44,45,54	1.63	9 (20%)	53,56,65	1.56	8 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\lvert Z\rvert > 2$	Counts	RMSZ	$\#\lvert Z\rvert > 2$
30	DGD	H	103	-	63,63,67	0.59	0	77,77,81	0.75	0
19	CLA	c	504	-	65,73,73	1.46	6 (9%)	76,113,113	1.37	7 (9%)
25	PLM	B	623	-	11,11,17	0.79	0	11,11,17	0.74	0
26	BCT	A	416	17	2,3,3	0.89	0	2,3,3	3.22	2 (100%)
19	CLA	c	502	-	65,73,73	1.48	6 (9%)	76,113,113	1.38	8 (10%)
19	CLA	C	512	-	65,73,73	1.46	6 (9%)	76,113,113	1.37	6 (7%)
21	BCR	b	619	-	41,41,41	0.32	0	56,56,56	0.85	2 (3%)
21	BCR	C	516	-	41,41,41	0.33	0	56,56,56	0.69	0
19	CLA	b	607	-	65,73,73	1.45	7 (10%)	76,113,113	1.47	7 (9%)
19	CLA	b	614	-	65,73,73	1.39	7 (10%)	76,113,113	1.54	7 (9%)
24	LFA	B	628	-	6,6,19	0.26	0	5,5,18	0.15	0
24	LFA	d	413	-	7,7,19	0.25	0	6,6,18	0.20	0
20	PHO	d	402	-	51,69,69	0.63	0	47,99,99	1.02	2 (4%)
21	BCR	b	620	-	41,41,41	0.36	0	56,56,56	0.92	3 (5%)
30	DGD	c	516	-	63,63,67	0.58	0	77,77,81	0.75	2 (2%)
19	CLA	C	509	33	65,73,73	1.43	6 (9%)	76,113,113	1.49	8 (10%)
30	DGD	c	519	-	63,63,67	0.55	0	77,77,81	0.71	1 (1%)
21	BCR	B	617	-	41,41,41	0.33	0	56,56,56	0.78	1 (1%)
25	PLM	B	622	-	7,7,17	1.00	0	7,7,17	0.93	0
21	BCR	k	101	-	41,41,41	0.32	0	56,56,56	0.56	0
22	SQD	F	102	-	31,32,54	2.37	8 (25%)	34,36,65	1.67	6 (17%)
24	LFA	d	411	-	14,14,19	0.20	0	13,13,18	0.25	0
19	CLA	C	511	-	65,73,73	1.41	6 (9%)	76,113,113	1.49	6 (7%)
19	CLA	C	515	-	65,73,73	1.43	6 (9%)	76,113,113	1.47	8 (10%)
19	CLA	a	406	33	65,73,73	1.40	6 (9%)	76,113,113	1.52	10 (13%)
24	LFA	A	414	-	12,12,19	0.23	0	11,11,18	0.21	0
29	LMT	m	101	-	36,36,36	0.53	0	47,47,47	0.75	0
19	CLA	c	513	-	65,73,73	1.43	6 (9%)	76,113,113	1.48	6 (7%)
19	CLA	B	616	-	65,73,73	1.42	7 (10%)	76,113,113	1.53	6 (7%)
24	LFA	C	519	-	6,6,19	0.27	0	5,5,18	0.16	0
19	CLA	C	508	-	65,73,73	1.46	6 (9%)	76,113,113	1.47	8 (10%)
19	CLA	C	510	-	65,73,73	1.43	6 (9%)	76,113,113	1.51	8 (10%)
21	BCR	c	520	-	41,41,41	0.37	0	56,56,56	1.16	5 (8%)
24	LFA	h	101	-	7,7,19	0.26	0	6,6,18	0.18	0
25	PLM	b	623	-	17,17,17	0.64	0	17,17,17	0.66	0
28	LMG	D	414	-	48,48,55	0.53	0	56,56,63	0.62	0
24	LFA	b	626	-	10,10,19	0.24	0	9,9,18	0.21	0
25	PLM	H	105	-	9,9,17	0.90	0	9,9,17	0.79	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
19	CLA	b	604	-	65,73,73	1.43	7 (10%)	76,113,113	1.46	9 (11%)
25	PLM	I	102	-	17,17,17	0.66	0	17,17,17	0.65	0
24	LFA	H	104	-	5,5,19	0.27	0	4,4,18	0.16	0
19	CLA	b	606	-	65,73,73	1.48	6 (9%)	76,113,113	1.54	10 (13%)
21	BCR	K	101	-	41,41,41	0.32	0	56,56,56	0.59	0
24	LFA	m	103	-	8,8,19	0.24	0	7,7,18	0.19	0
24	LFA	D	404	-	15,15,19	0.17	0	14,14,18	0.37	0
25	PLM	E	101	-	17,17,17	0.64	0	17,17,17	0.58	0
25	PLM	b	630	-	12,12,17	0.74	0	12,12,17	0.74	0
19	CLA	c	509	-	65,73,73	1.42	7 (10%)	76,113,113	1.51	9 (11%)
29	LMT	C	502	-	31,31,36	0.64	0	42,42,47	0.85	1 (2%)
24	LFA	k	102	-	6,6,19	0.25	0	5,5,18	0.21	0
19	CLA	a	405	33	65,73,73	1.41	6 (9%)	76,113,113	1.55	9 (11%)
19	CLA	B	611	-	65,73,73	1.43	7 (10%)	76,113,113	1.49	9 (11%)
19	CLA	B	615	-	65,73,73	1.43	7 (10%)	76,113,113	1.41	7 (9%)
19	CLA	C	505	-	65,73,73	1.47	6 (9%)	76,113,113	1.39	7 (9%)
21	BCR	Y	101	-	41,41,41	0.35	0	56,56,56	1.00	2 (3%)
19	CLA	b	615	-	65,73,73	1.43	7 (10%)	76,113,113	1.45	7 (9%)
28	LMG	d	410	-	51,51,55	0.53	0	59,59,63	0.59	0
29	LMT	M	101	-	36,36,36	0.52	0	47,47,47	0.79	0
25	PLM	B	627	-	15,15,17	0.70	0	15,15,17	0.61	0
20	PHO	A	406	-	51,69,69	0.69	1 (1%)	47,99,99	0.90	3 (6%)
19	CLA	c	505	33	65,73,73	1.44	7 (10%)	76,113,113	1.51	7 (9%)
19	CLA	C	507	-	65,73,73	1.45	7 (10%)	76,113,113	1.45	8 (10%)
23	PL9	a	411	-	55,55,55	1.08	3 (5%)	68,69,69	1.56	13 (19%)
21	BCR	d	406	-	41,41,41	0.34	0	56,56,56	0.71	0
24	LFA	B	625	-	10,10,19	0.24	0	9,9,18	0.18	0
24	LFA	h	103	-	5,5,19	0.26	0	4,4,18	0.16	0
29	LMT	D	402	-	36,36,36	0.53	0	47,47,47	0.72	0
29	LMT	z	101	-	36,36,36	0.52	0	47,47,47	0.97	4 (8%)
24	LFA	b	632	-	6,6,19	0.27	0	5,5,18	0.18	0
19	CLA	C	504	-	65,73,73	1.43	7 (10%)	76,113,113	1.46	6 (7%)
32	RRX	x	102	-	42,42,42	0.20	0	57,58,58	0.40	0
30	DGD	h	102	-	63,63,67	0.59	0	77,77,81	0.75	1 (1%)
19	CLA	c	507	-	65,73,73	1.46	6 (9%)	76,113,113	1.48	8 (10%)
21	BCR	b	621	-	41,41,41	0.32	0	56,56,56	0.75	0
23	PL9	A	410	-	55,55,55	1.07	3 (5%)	68,69,69	1.48	12 (17%)
24	LFA	h	104	-	6,6,19	0.25	0	5,5,18	0.19	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
25	PLM	i	104	-	12,12,17	0.76	0	12,12,17	0.69	0
25	PLM	I	101	-	15,15,17	0.68	0	15,15,17	0.64	0
19	CLA	B	610	33	65,73,73	1.47	6 (9%)	76,113,113	1.36	7 (9%)
19	CLA	C	513	3	65,73,73	1.45	7 (10%)	76,113,113	1.50	7 (9%)
27	LHG	L	101	-	48,48,48	0.51	0	51,54,54	0.54	0
28	LMG	C	518	-	42,42,55	0.53	0	50,50,63	0.70	0
19	CLA	A	407	-	65,73,73	1.45	7 (10%)	76,113,113	1.45	9 (11%)
19	CLA	c	512	3	65,73,73	1.44	7 (10%)	76,113,113	1.51	8 (10%)
19	CLA	b	611	-	65,73,73	1.49	7 (10%)	76,113,113	1.37	7 (9%)
24	LFA	b	627	-	8,8,19	0.25	0	7,7,18	0.18	0
27	LHG	l	101	-	48,48,48	0.51	0	51,54,54	0.53	0
29	LMT	M	102	-	36,36,36	0.55	0	47,47,47	0.73	0
25	PLM	e	101	-	17,17,17	0.64	0	17,17,17	0.61	0
19	CLA	a	404	-	65,73,73	1.43	6 (9%)	76,113,113	1.51	8 (10%)
19	CLA	B	606	-	65,73,73	1.43	7 (10%)	76,113,113	1.53	8 (10%)
19	CLA	A	404	33	65,73,73	1.41	6 (9%)	76,113,113	1.55	9 (11%)
30	DGD	C	517	-	63,63,67	0.59	0	77,77,81	0.74	2 (2%)
22	SQD	l	102	-	53,54,54	1.52	9 (16%)	62,65,65	1.51	8 (12%)
29	LMT	b	602	-	20,20,36	0.50	0	25,25,47	0.86	1 (4%)
23	PL9	d	407	-	55,55,55	1.31	6 (10%)	68,69,69	1.51	13 (19%)
19	CLA	b	616	-	65,73,73	1.42	7 (10%)	76,113,113	1.45	8 (10%)
27	LHG	d	409	-	48,48,48	0.51	0	51,54,54	0.49	0
21	BCR	A	408	-	41,41,41	0.32	0	56,56,56	0.73	0
26	BCT	d	403	17	2,3,3	0.88	0	2,3,3	3.21	2 (100%)

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
31	HEM	f	101	6,5	-	5/12/54/54	-
24	LFA	B	624	-	-	0/4/4/17	-
19	CLA	B	604	-	1/1/15/20	12/37/115/115	-
30	DGD	d	414	-	-	13/41/62/95	0/1/1/2
19	CLA	B	613	-	1/1/15/20	8/37/115/115	-
19	CLA	B	603	-	1/1/15/20	12/37/115/115	-
21	BCR	B	618	-	-	0/29/63/63	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
19	CLA	c	511	-	1/1/15/20	7/37/115/115	-
21	BCR	C	521	-	-	5/29/63/63	0/2/2/2
29	LMT	d	412	-	-	1/15/35/61	0/1/1/2
28	LMG	C	501	-	-	22/46/66/70	0/1/1/1
29	LMT	t	101	-	-	7/15/35/61	0/1/1/2
25	PLM	i	102	-	-	3/10/10/15	-
19	CLA	b	608	-	1/1/15/20	3/37/115/115	-
19	CLA	c	503	-	1/1/15/20	10/37/115/115	-
24	LFA	D	407	-	-	0/6/6/17	-
24	LFA	Z	101	-	-	1/5/5/17	-
25	PLM	i	101	-	-	3/13/13/15	-
28	LMG	B	620	-	-	18/46/66/70	0/1/1/1
19	CLA	b	613	-	1/1/15/20	3/37/115/115	-
25	PLM	C	520	-	-	0/6/6/15	-
21	BCR	B	619	-	-	3/29/63/63	0/2/2/2
24	LFA	M	103	-	-	1/7/7/17	-
24	LFA	A	412	-	-	2/12/12/17	-
24	LFA	b	624	-	-	1/9/9/17	-
31	HEM	F	101	6,5	-	2/12/54/54	-
19	CLA	c	508	33	1/1/15/20	6/37/115/115	-
24	LFA	a	413	-	-	1/8/8/17	-
19	CLA	c	514	-	1/1/15/20	4/37/115/115	-
29	LMT	d	401	-	-	2/20/60/61	0/2/2/2
27	LHG	a	415	-	-	15/50/50/53	-
19	CLA	b	617	-	1/1/15/20	7/37/115/115	-
24	LFA	D	406	-	-	3/10/10/17	-
24	LFA	K	102	-	-	0/4/4/17	-
19	CLA	B	607	33	1/1/15/20	4/37/115/115	-
24	LFA	B	621	-	-	4/10/10/17	-
19	CLA	D	409	-	1/1/15/20	11/37/115/115	-
25	PLM	a	414	-	-	6/9/9/15	-
24	LFA	J	102	-	-	2/14/14/17	-
19	CLA	b	603	33	1/1/15/20	15/37/115/115	-
21	BCR	b	601	-	-	9/29/63/63	0/2/2/2
21	BCR	B	629	-	-	10/29/63/63	0/2/2/2
19	CLA	B	605	-	1/1/15/20	8/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	LHG	A	417	-	-	16/50/50/53	-
24	LFA	b	629	-	-	1/6/6/17	-
27	LHG	D	413	-	-	14/53/53/53	-
28	LMG	b	622	-	-	23/46/66/70	0/1/1/1
25	PLM	A	413	-	-	4/15/15/15	-
19	CLA	d	404	-	1/1/15/20	4/37/115/115	-
30	DGD	c	517	-	-	18/51/91/95	0/2/2/2
20	PHO	D	401	-	-	4/37/103/103	0/5/6/6
19	CLA	D	408	-	1/1/15/20	4/37/115/115	-
19	CLA	a	408	-	1/1/15/20	10/37/115/115	-
19	CLA	d	405	-	1/1/15/20	9/37/115/115	-
21	BCR	D	410	-	-	8/29/63/63	0/2/2/2
25	PLM	b	628	-	-	2/11/11/15	-
27	LHG	d	408	-	-	8/53/53/53	-
29	LMT	D	403	-	-	7/15/35/61	0/1/1/2
24	LFA	i	105	-	-	0/8/8/17	-
19	CLA	B	601	33	1/1/15/20	15/37/115/115	-
22	SQD	a	410	-	-	21/49/69/69	0/1/1/1
19	CLA	B	609	-	1/1/15/20	4/37/115/115	-
25	PLM	I	104	-	-	5/8/8/15	-
19	CLA	A	403	-	1/1/15/20	7/37/115/115	-
19	CLA	C	514	-	1/1/15/20	8/37/115/115	-
19	CLA	b	618	-	1/1/15/20	14/37/115/115	-
30	DGD	D	415	-	-	16/38/58/95	0/1/1/2
28	LMG	c	518	-	-	15/46/66/70	0/1/1/1
19	CLA	B	608	-	1/1/15/20	8/37/115/115	-
19	CLA	C	506	33	1/1/15/20	8/37/115/115	-
24	LFA	H	101	-	-	5/11/11/17	-
25	PLM	A	415	-	-	5/8/8/15	-
25	PLM	a	401	-	-	5/14/14/15	-
19	CLA	c	506	-	1/1/15/20	7/37/115/115	-
22	SQD	L	102	-	-	25/49/69/69	0/1/1/1
19	CLA	c	510	-	1/1/15/20	7/37/115/115	-
25	PLM	b	625	-	-	3/6/6/15	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
19	CLA	B	612	-	1/1/15/20	6/37/115/115	-
19	CLA	C	503	-	1/1/15/20	6/37/115/115	-
28	LMG	c	501	-	-	18/46/66/70	0/1/1/1
19	CLA	A	405	33	1/1/15/20	12/37/115/115	-
19	CLA	b	605	-	1/1/15/20	12/37/115/115	-
25	PLM	B	626	-	-	3/10/10/15	-
22	SQD	A	409	-	-	22/45/65/69	0/1/1/1
19	CLA	b	610	-	1/1/15/20	7/37/115/115	-
19	CLA	B	602	-	1/1/15/20	1/37/115/115	-
22	SQD	a	412	-	-	17/38/58/69	0/1/1/1
22	SQD	A	411	-	-	22/49/69/69	0/1/1/1
25	PLM	b	631	-	-	5/13/13/15	-
19	CLA	B	614	-	1/1/15/20	16/37/115/115	-
20	PHO	a	407	-	-	5/37/103/103	0/5/6/6
19	CLA	b	609	33	1/1/15/20	4/37/115/115	-
24	LFA	I	103	-	-	1/4/4/17	-
30	DGD	J	101	-	-	18/43/83/95	0/2/2/2
24	LFA	x	101	-	-	0/10/10/17	-
21	BCR	c	515	-	-	6/29/63/63	0/2/2/2
25	PLM	D	405	-	-	3/15/15/15	-
27	LHG	D	412	-	-	8/53/53/53	-
27	LHG	a	416	-	-	21/53/53/53	-
32	RRX	H	102	-	-	2/29/65/65	0/2/2/2
21	BCR	a	409	-	-	3/29/63/63	0/2/2/2
21	BCR	y	101	-	-	8/29/63/63	0/2/2/2
29	LMT	m	102	-	-	4/21/61/61	0/2/2/2
19	CLA	b	612	33	1/1/15/20	7/37/115/115	-
23	PL9	D	411	-	-	11/53/73/73	0/1/1/1
29	LMT	i	103	-	-	7/21/61/61	0/2/2/2
24	LFA	X	101	-	-	3/10/10/17	-
22	SQD	f	102	-	-	18/40/60/69	0/1/1/1
30	DGD	H	103	-	-	12/51/91/95	0/2/2/2
19	CLA	c	504	-	1/1/15/20	7/37/115/115	-
25	PLM	B	623	-	-	0/9/9/15	-
19	CLA	c	502	-	1/1/15/20	6/37/115/115	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
19	CLA	C	512	-	1/1/15/20	7/37/115/115	-
21	BCR	b	619	-	-	5/29/63/63	0/2/2/2
21	BCR	C	516	-	-	6/29/63/63	0/2/2/2
19	CLA	b	607	-	1/1/15/20	8/37/115/115	-
19	CLA	b	614	-	1/1/15/20	6/37/115/115	-
24	LFA	B	628	-	-	2/4/4/17	-
24	LFA	d	413	-	-	0/5/5/17	-
20	PHO	d	402	-	-	4/37/103/103	0/5/6/6
21	BCR	b	620	-	-	1/29/63/63	0/2/2/2
30	DGD	c	516	-	-	21/51/91/95	0/2/2/2
19	CLA	C	509	33	1/1/15/20	12/37/115/115	-
30	DGD	c	519	-	-	11/51/91/95	0/2/2/2
21	BCR	B	617	-	-	5/29/63/63	0/2/2/2
25	PLM	B	622	-	-	2/5/5/15	-
21	BCR	k	101	-	-	7/29/63/63	0/2/2/2
22	SQD	F	102	-	-	20/33/33/69	-
24	LFA	d	411	-	-	0/12/12/17	-
19	CLA	C	511	-	1/1/15/20	8/37/115/115	-
19	CLA	C	515	-	1/1/15/20	4/37/115/115	-
19	CLA	a	406	33	1/1/15/20	11/37/115/115	-
24	LFA	A	414	-	-	2/10/10/17	-
29	LMT	m	101	-	-	11/21/61/61	0/2/2/2
19	CLA	c	513	-	1/1/15/20	8/37/115/115	-
19	CLA	B	616	-	1/1/15/20	14/37/115/115	-
24	LFA	C	519	-	-	0/4/4/17	-
19	CLA	C	508	-	1/1/15/20	18/37/115/115	-
19	CLA	C	510	-	1/1/15/20	5/37/115/115	-
21	BCR	c	520	-	-	5/29/63/63	0/2/2/2
24	LFA	h	101	-	-	0/5/5/17	-
25	PLM	b	623	-	-	3/15/15/15	-
28	LMG	D	414	-	-	12/43/63/70	0/1/1/1
24	LFA	b	626	-	-	2/8/8/17	-
25	PLM	H	105	-	-	2/7/7/15	-
19	CLA	b	604	-	1/1/15/20	6/37/115/115	-
25	PLM	I	102	-	-	4/15/15/15	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	LFA	H	104	-	-	0/3/3/17	-
19	CLA	b	606	-	1/1/15/20	5/37/115/115	-
21	BCR	K	101	-	-	7/29/63/63	0/2/2/2
24	LFA	m	103	-	-	1/6/6/17	-
24	LFA	D	404	-	-	4/13/13/17	-
25	PLM	E	101	-	-	7/15/15/15	-
25	PLM	b	630	-	-	2/10/10/15	-
19	CLA	c	509	-	1/1/15/20	6/37/115/115	-
29	LMT	C	502	-	-	4/16/56/61	0/2/2/2
24	LFA	k	102	-	-	0/4/4/17	-
19	CLA	a	405	33	1/1/15/20	3/37/115/115	-
19	CLA	B	611	-	1/1/15/20	3/37/115/115	-
19	CLA	B	615	-	1/1/15/20	6/37/115/115	-
19	CLA	C	505	-	1/1/15/20	6/37/115/115	-
21	BCR	Y	101	-	-	7/29/63/63	0/2/2/2
19	CLA	b	615	-	1/1/15/20	8/37/115/115	-
28	LMG	d	410	-	-	14/46/66/70	0/1/1/1
29	LMT	M	101	-	-	7/21/61/61	0/2/2/2
25	PLM	B	627	-	-	3/13/13/15	-
20	PHO	A	406	-	-	4/37/103/103	0/5/6/6
19	CLA	c	505	33	1/1/15/20	8/37/115/115	-
19	CLA	C	507	-	1/1/15/20	7/37/115/115	-
23	PL9	a	411	-	-	30/53/73/73	0/1/1/1
21	BCR	d	406	-	-	8/29/63/63	0/2/2/2
24	LFA	B	625	-	-	3/8/8/17	-
24	LFA	h	103	-	-	0/3/3/17	-
29	LMT	D	402	-	-	6/21/61/61	0/2/2/2
29	LMT	z	101	-	-	5/21/61/61	0/2/2/2
24	LFA	b	632	-	-	2/4/4/17	-
19	CLA	C	504	-	1/1/15/20	10/37/115/115	-
32	RRX	x	102	-	-	2/29/65/65	0/2/2/2
30	DGD	h	102	-	-	13/51/91/95	0/2/2/2
19	CLA	c	507	-	1/1/15/20	18/37/115/115	-
21	BCR	b	621	-	-	3/29/63/63	0/2/2/2
23	PL9	A	410	-	-	21/53/73/73	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	LFA	h	104	-	-	1/4/4/17	-
25	PLM	i	104	-	-	5/10/10/15	-
25	PLM	I	101	-	-	6/13/13/15	-
19	CLA	B	610	33	1/1/15/20	7/37/115/115	-
19	CLA	C	513	3	1/1/15/20	6/37/115/115	-
27	LHG	L	101	-	-	18/53/53/53	-
28	LMG	C	518	-	-	19/37/57/70	0/1/1/1
19	CLA	A	407	-	1/1/15/20	10/37/115/115	-
19	CLA	c	512	3	1/1/15/20	6/37/115/115	-
19	CLA	b	611	-	1/1/15/20	4/37/115/115	-
24	LFA	b	627	-	-	0/6/6/17	-
27	LHG	l	101	-	-	25/53/53/53	-
29	LMT	M	102	-	-	4/21/61/61	0/2/2/2
25	PLM	e	101	-	-	3/15/15/15	-
19	CLA	a	404	-	1/1/15/20	7/37/115/115	-
19	CLA	B	606	-	1/1/15/20	3/37/115/115	-
19	CLA	A	404	33	1/1/15/20	3/37/115/115	-
30	DGD	C	517	-	-	22/51/91/95	0/2/2/2
22	SQD	l	102	-	-	26/49/69/69	0/1/1/1
29	LMT	b	602	-	-	8/11/31/61	0/1/1/2
23	PL9	d	407	-	-	6/53/73/73	0/1/1/1
19	CLA	b	616	-	1/1/15/20	14/37/115/115	-
27	LHG	d	409	-	-	14/53/53/53	-
21	BCR	A	408	-	-	3/29/63/63	0/2/2/2

The worst 5 of 543 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
19	B	601	CLA	C4B-NB	7.42	1.41	1.35
19	b	612	CLA	C4B-NB	7.36	1.41	1.35
19	B	610	CLA	C4B-NB	7.35	1.41	1.35
19	B	609	CLA	C4B-NB	7.34	1.41	1.35
19	b	611	CLA	C4B-NB	7.34	1.41	1.35

The worst 5 of 717 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	b	606	CLA	C4A-NA-C1A	8.07	110.33	106.71
19	B	604	CLA	C4A-NA-C1A	8.06	110.33	106.71
19	B	612	CLA	C4A-NA-C1A	8.04	110.32	106.71
19	B	607	CLA	C4A-NA-C1A	7.94	110.28	106.71
19	b	614	CLA	C4A-NA-C1A	7.93	110.27	106.71

5 of 70 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
19	A	403	CLA	ND
19	A	404	CLA	ND
19	A	405	CLA	ND
19	A	407	CLA	ND
19	B	601	CLA	ND

5 of 1545 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
19	A	403	CLA	CBD-CGD-O2D-CED
19	A	404	CLA	CHA-CBD-CGD-O1D
19	A	404	CLA	CHA-CBD-CGD-O2D
19	B	601	CLA	CHA-CBD-CGD-O1D
19	B	601	CLA	CHA-CBD-CGD-O2D

There are no ring outliers.

119 monomers are involved in 191 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	B	604	CLA	3	0
19	B	613	CLA	2	0
19	B	603	CLA	1	0
21	B	618	BCR	1	0
28	C	501	LMG	1	0
29	t	101	LMT	1	0
19	b	608	CLA	1	0
19	c	503	CLA	2	0
28	B	620	LMG	2	0
19	b	613	CLA	2	0
25	C	520	PLM	1	0
31	F	101	HEM	1	0
19	c	514	CLA	1	0
29	d	401	LMT	1	0
27	a	415	LHG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	b	617	CLA	5	0
24	D	406	LFA	1	0
19	B	607	CLA	2	0
19	D	409	CLA	2	0
25	a	414	PLM	1	0
21	b	601	BCR	3	0
21	B	629	BCR	4	0
19	B	605	CLA	1	0
27	A	417	LHG	1	0
27	D	413	LHG	1	0
28	b	622	LMG	4	0
25	A	413	PLM	1	0
19	d	404	CLA	3	0
30	c	517	DGD	2	0
20	D	401	PHO	3	0
19	D	408	CLA	3	0
19	a	408	CLA	3	0
19	d	405	CLA	2	0
29	D	403	LMT	1	0
19	B	609	CLA	1	0
19	A	403	CLA	3	0
19	C	514	CLA	1	0
19	b	618	CLA	4	0
30	D	415	DGD	1	0
28	c	518	LMG	1	0
19	B	608	CLA	1	0
25	a	401	PLM	1	0
19	c	506	CLA	3	0
22	L	102	SQD	2	0
19	B	612	CLA	2	0
19	C	503	CLA	1	0
19	b	605	CLA	1	0
22	A	409	SQD	1	0
19	b	610	CLA	1	0
19	B	602	CLA	3	0
22	a	412	SQD	2	0
22	A	411	SQD	2	0
25	b	631	PLM	1	0
19	b	609	CLA	1	0
30	J	101	DGD	4	0
21	c	515	BCR	1	0
25	D	405	PLM	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
27	a	416	LHG	3	0
21	a	409	BCR	2	0
21	y	101	BCR	1	0
24	X	101	LFA	1	0
22	f	102	SQD	2	0
19	c	504	CLA	1	0
19	c	502	CLA	1	0
21	b	619	BCR	3	0
21	C	516	BCR	2	0
19	b	607	CLA	4	0
19	b	614	CLA	3	0
20	d	402	PHO	2	0
21	b	620	BCR	2	0
30	c	516	DGD	1	0
19	C	509	CLA	2	0
30	c	519	DGD	1	0
21	B	617	BCR	1	0
22	F	102	SQD	3	0
24	d	411	LFA	1	0
19	C	515	CLA	3	0
29	m	101	LMT	1	0
19	c	513	CLA	1	0
19	B	616	CLA	4	0
19	C	508	CLA	4	0
19	C	510	CLA	1	0
28	D	414	LMG	1	0
24	b	626	LFA	1	0
19	b	604	CLA	2	0
19	b	606	CLA	5	0
21	K	101	BCR	2	0
24	D	404	LFA	2	0
29	C	502	LMT	2	0
19	B	611	CLA	2	0
19	B	615	CLA	4	0
19	C	505	CLA	1	0
21	Y	101	BCR	2	0
19	b	615	CLA	2	0
28	d	410	LMG	3	0
29	M	101	LMT	1	0
19	c	505	CLA	2	0
19	C	507	CLA	2	0
23	a	411	PL9	5	0

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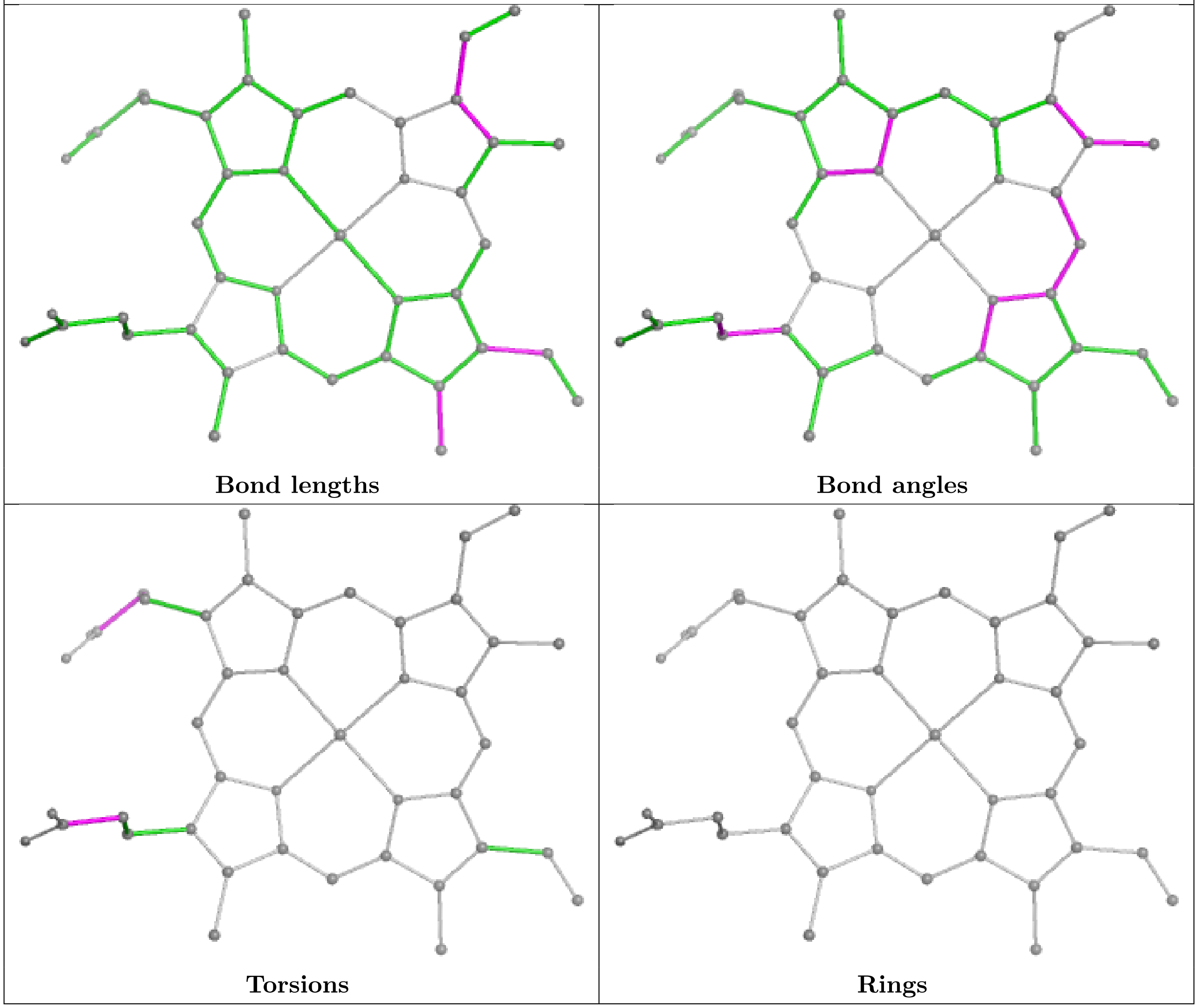
Mol	Chain	Res	Type	Clashes	Symm-Clashes
24	B	625	LFA	2	0
29	D	402	LMT	2	0
29	z	101	LMT	3	0
19	C	504	CLA	2	0
30	h	102	DGD	2	0
19	c	507	CLA	4	0
23	A	410	PL9	3	0
19	C	513	CLA	2	0
27	L	101	LHG	2	0
28	C	518	LMG	2	0
19	A	407	CLA	3	0
19	c	512	CLA	4	0
27	l	101	LHG	1	0
19	a	404	CLA	3	0
19	B	606	CLA	1	0
30	C	517	DGD	1	0
22	l	102	SQD	1	0
29	b	602	LMT	1	0
23	d	407	PL9	1	0
21	A	408	BCR	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 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 HEM f 101



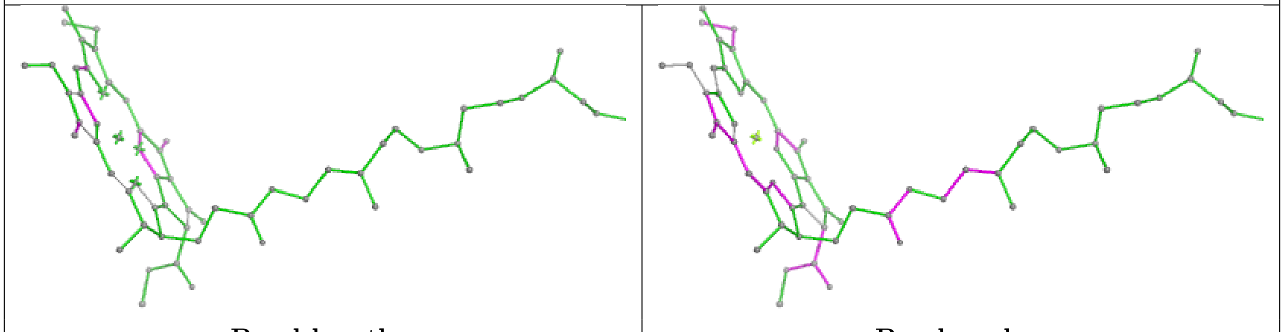
Bond lengths

Bond angles

Torsions

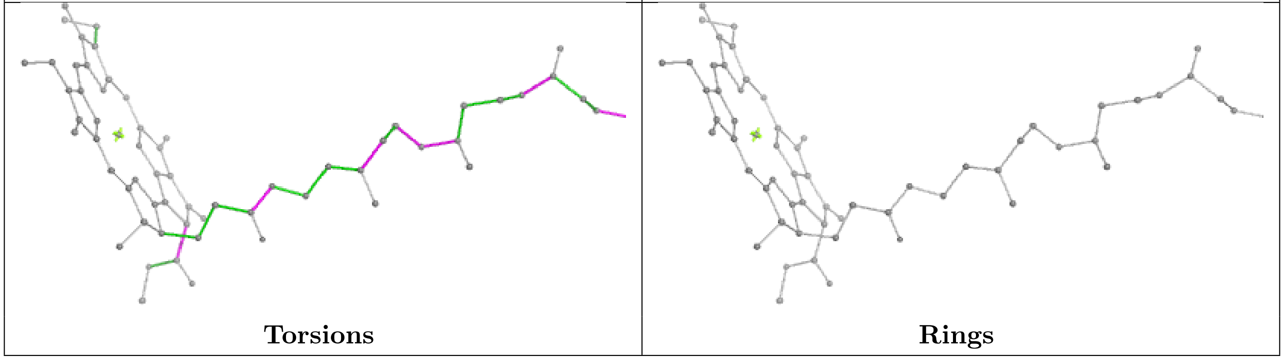
Rings

Ligand CLA B 604



Bond lengths

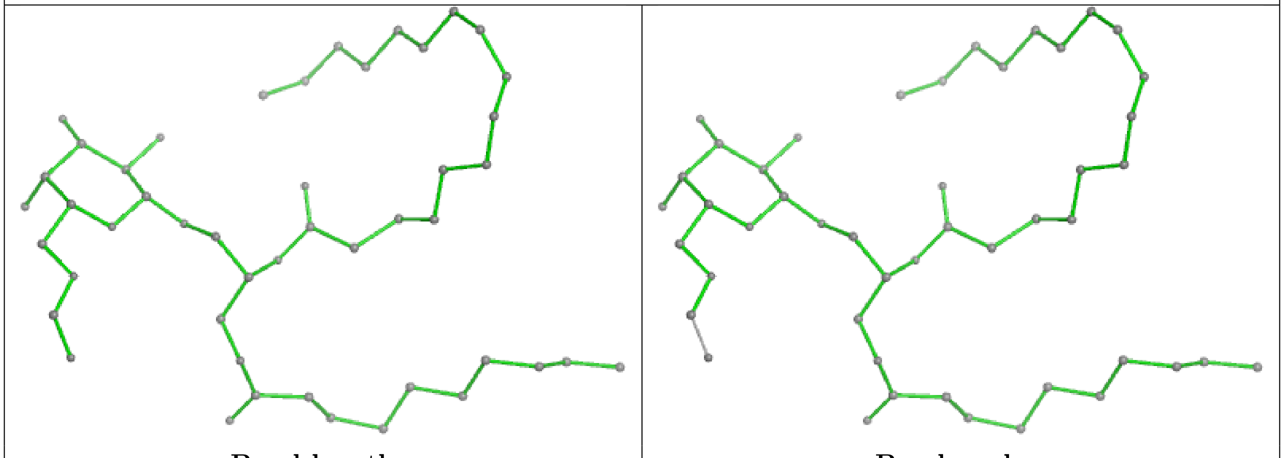
Bond angles



Torsions

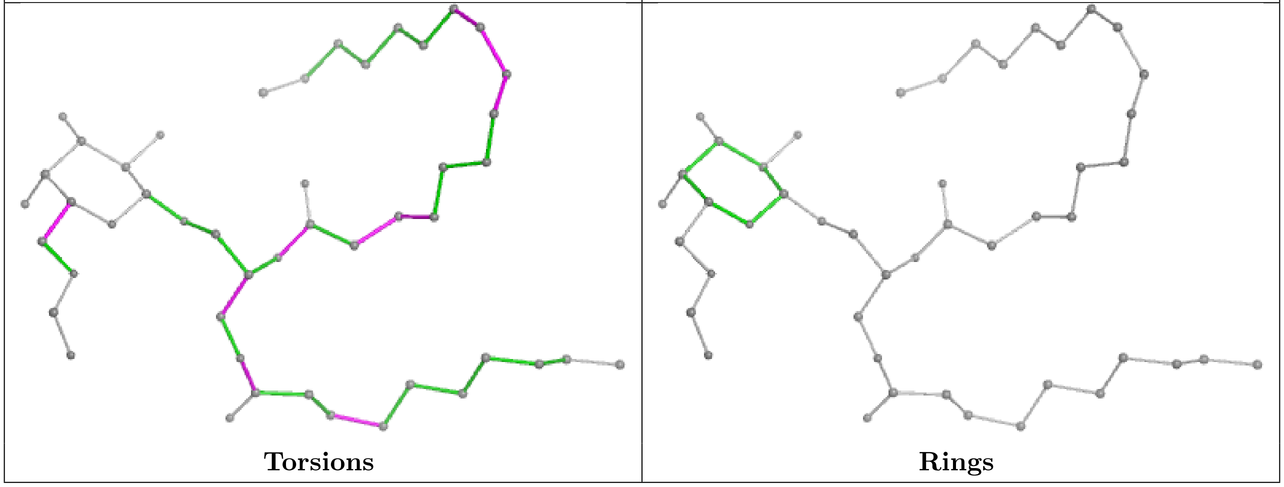
Rings

Ligand DGD d 414



Bond lengths

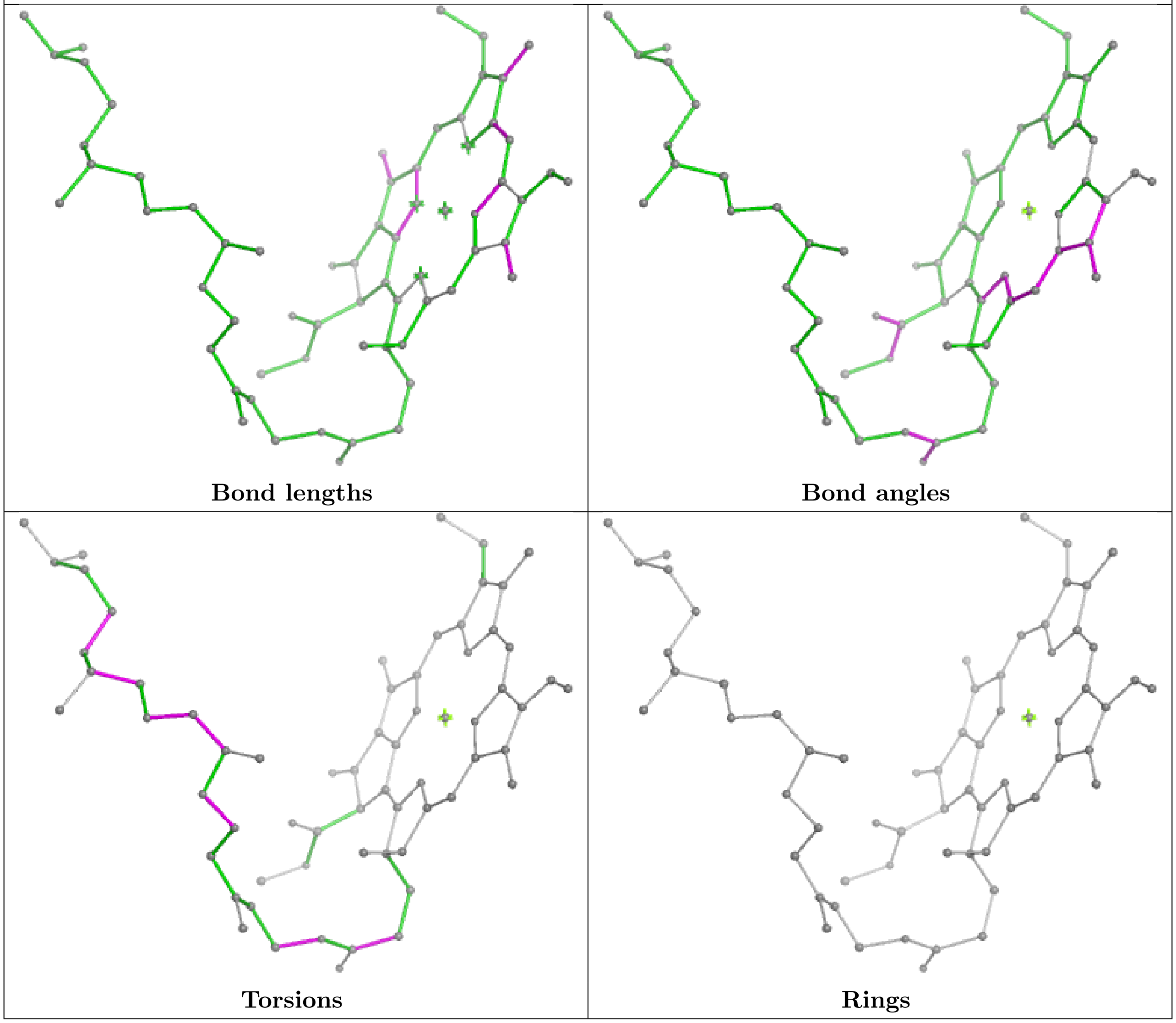
Bond angles



Torsions

Rings

Ligand CLA B 613



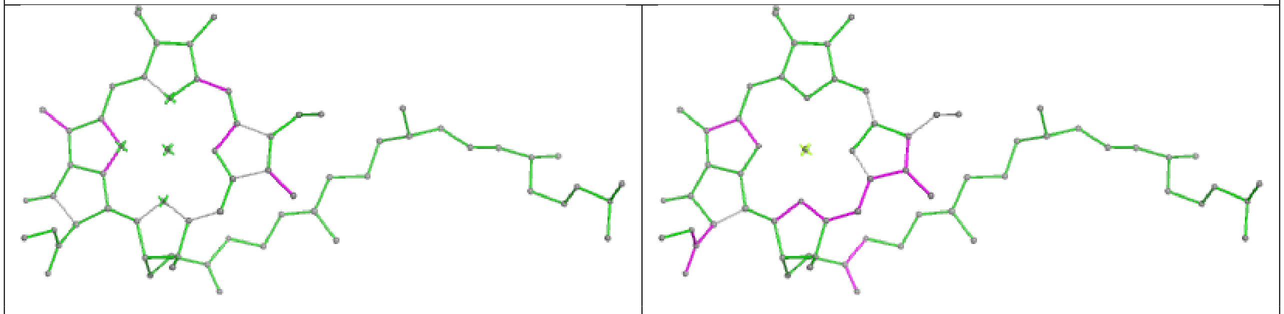
Bond lengths

Bond angles

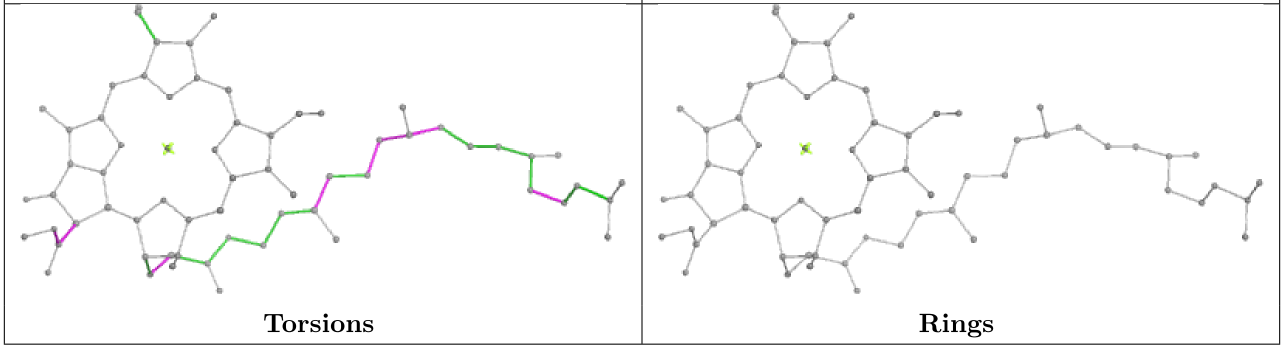
Torsions

Rings

Ligand CLA B 603

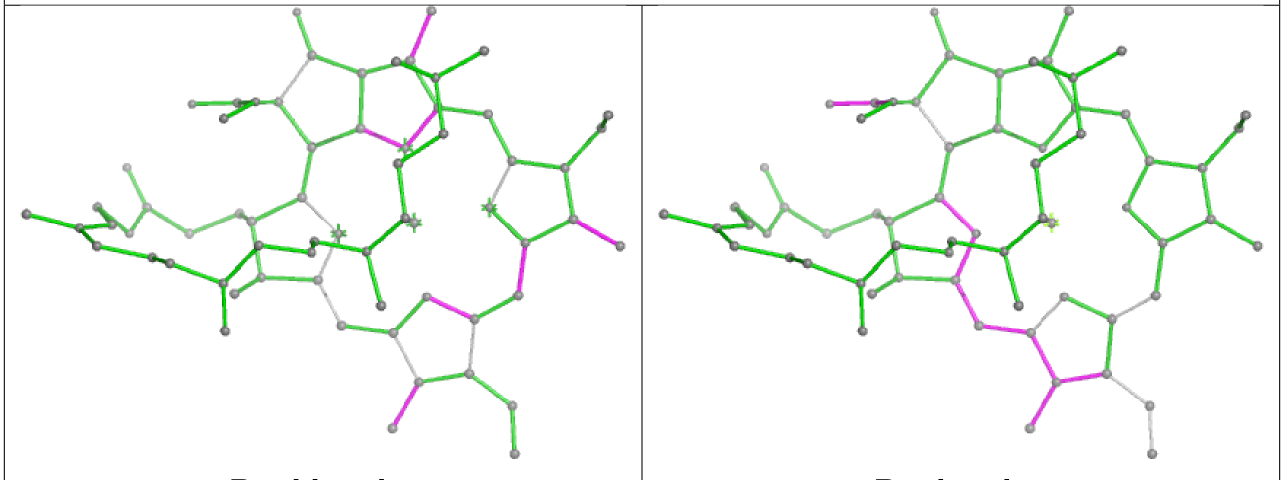


Bond lengths **Bond angles**

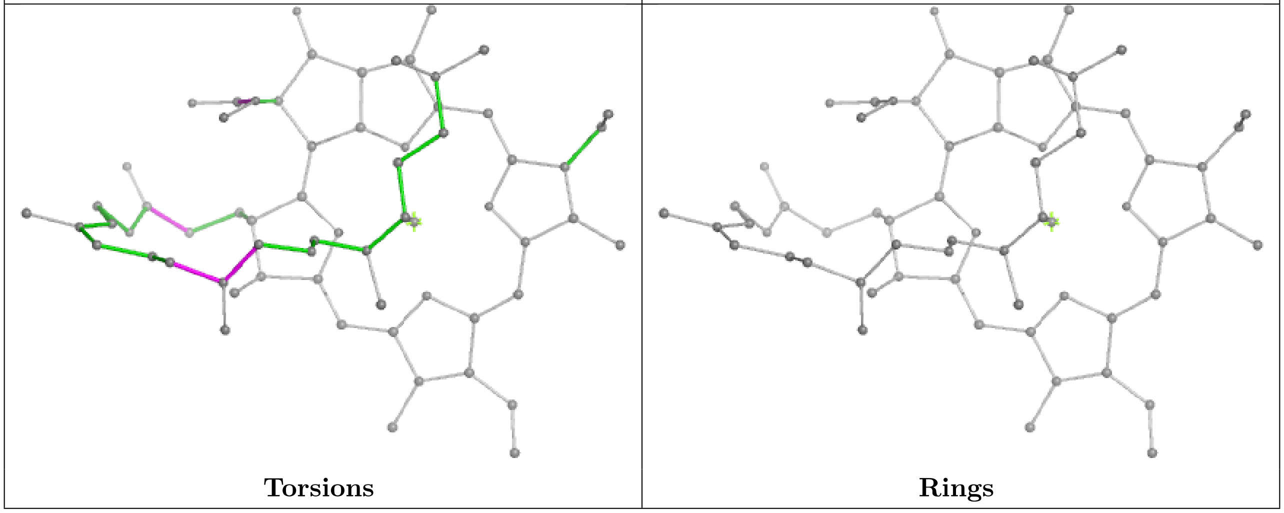


Torsions **Rings**

Ligand CLA c 511

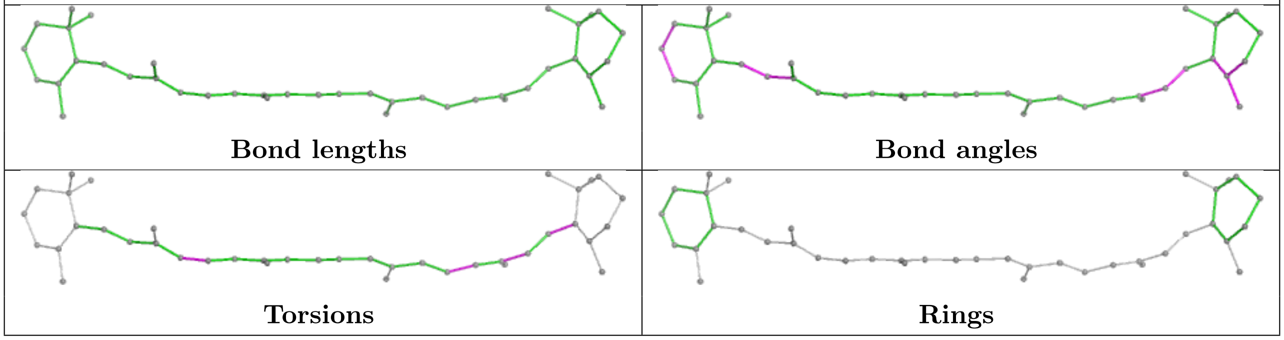


Bond lengths **Bond angles**



Torsions **Rings**

Ligand BCR C 521



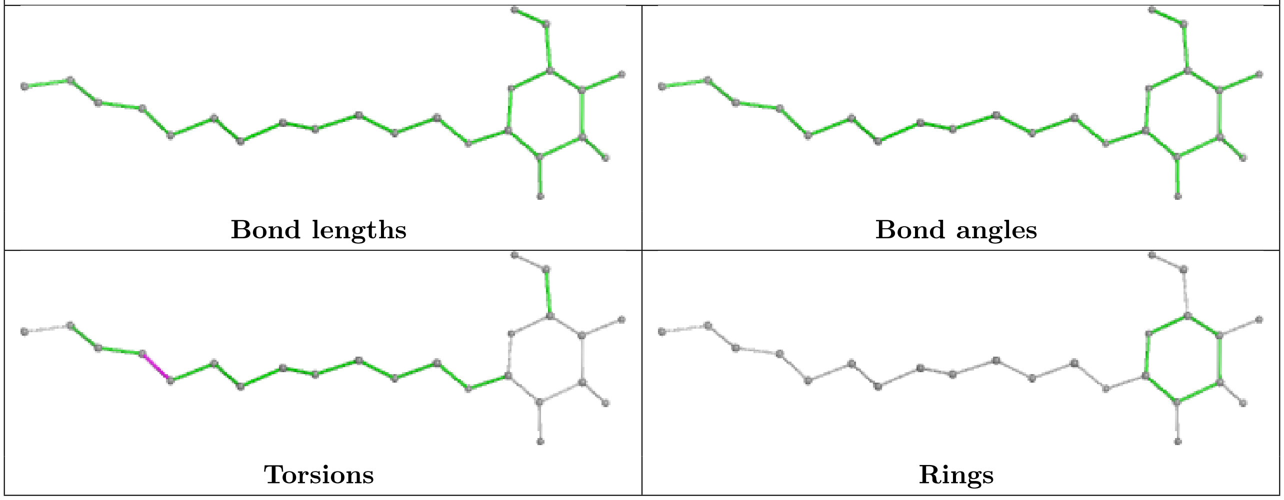
Bond lengths

Bond angles

Torsions

Rings

Ligand LMT d 412



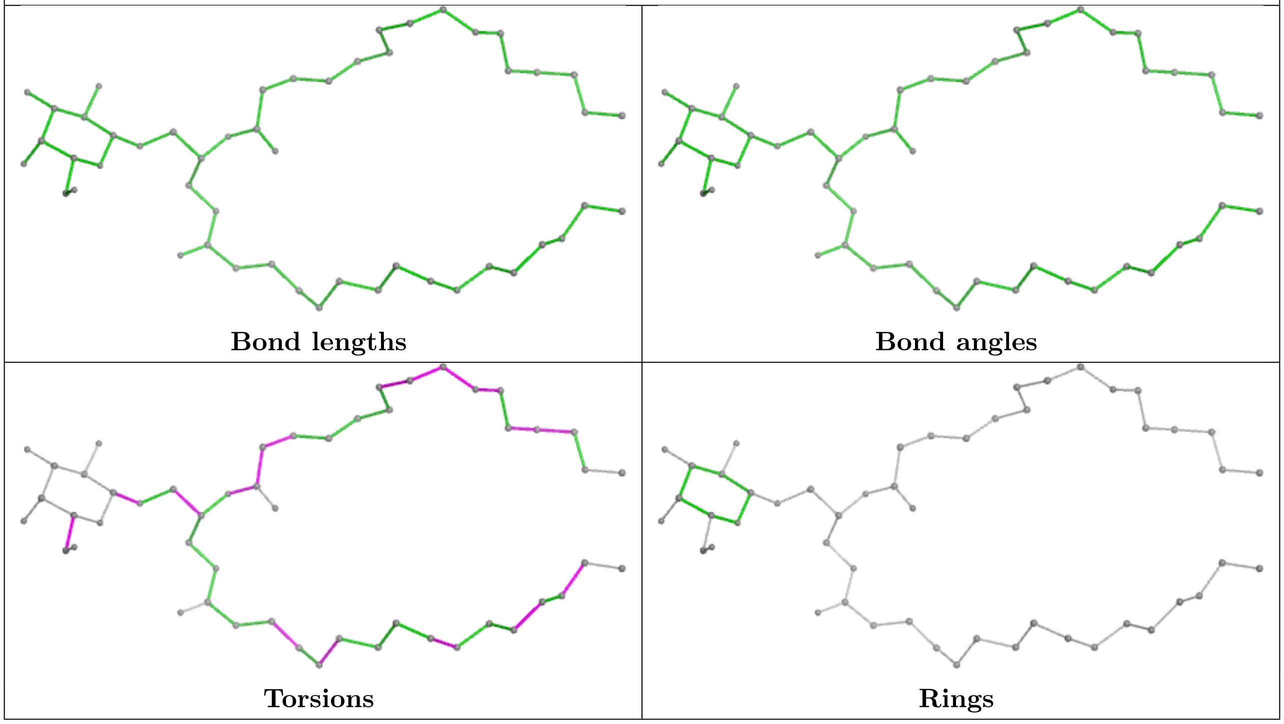
Bond lengths

Bond angles

Torsions

Rings

Ligand LMG C 501



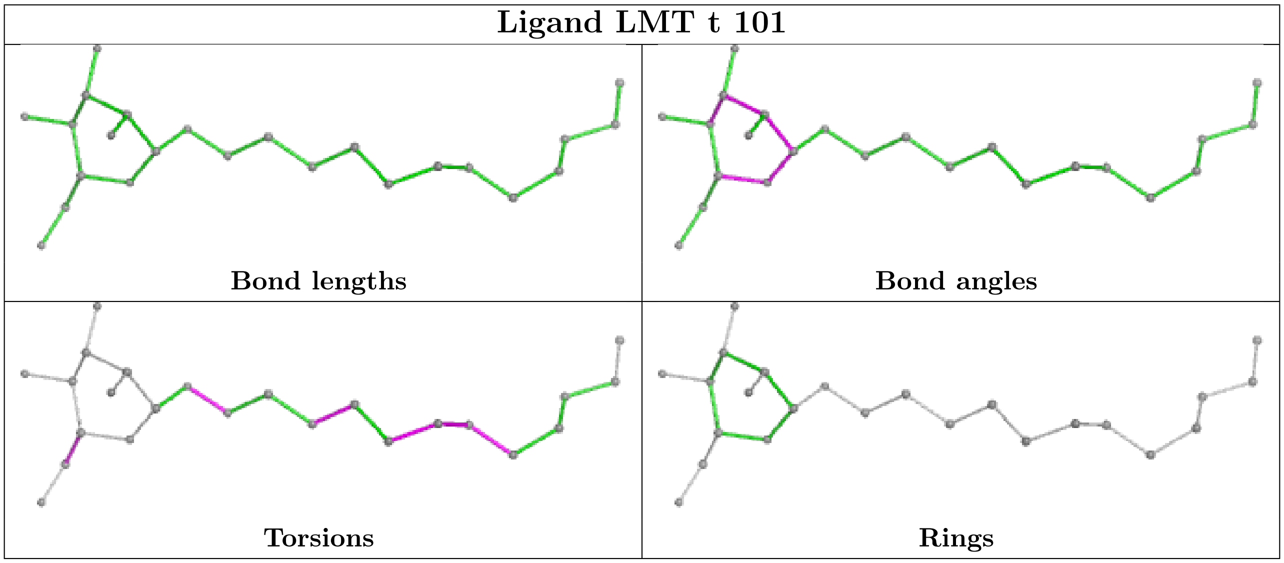
Bond lengths

Bond angles

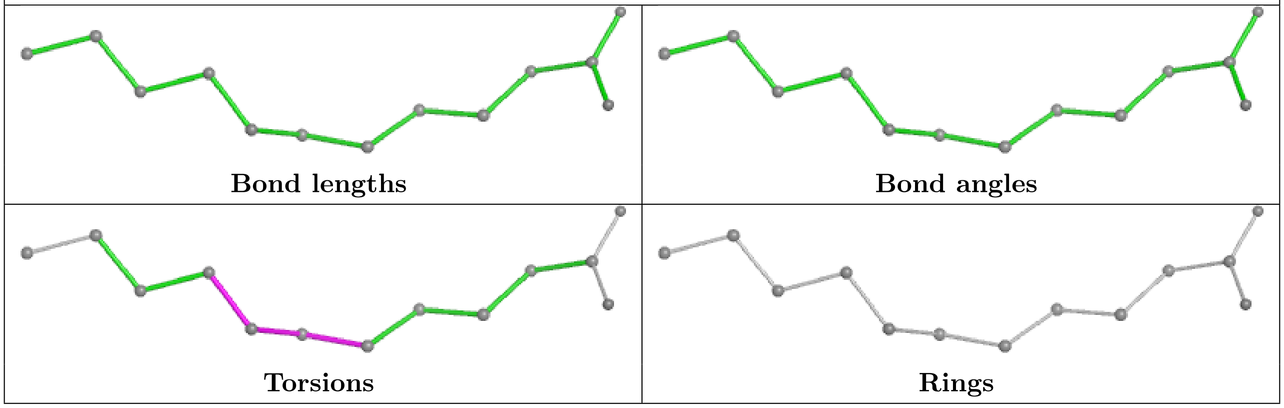
Torsions

Rings

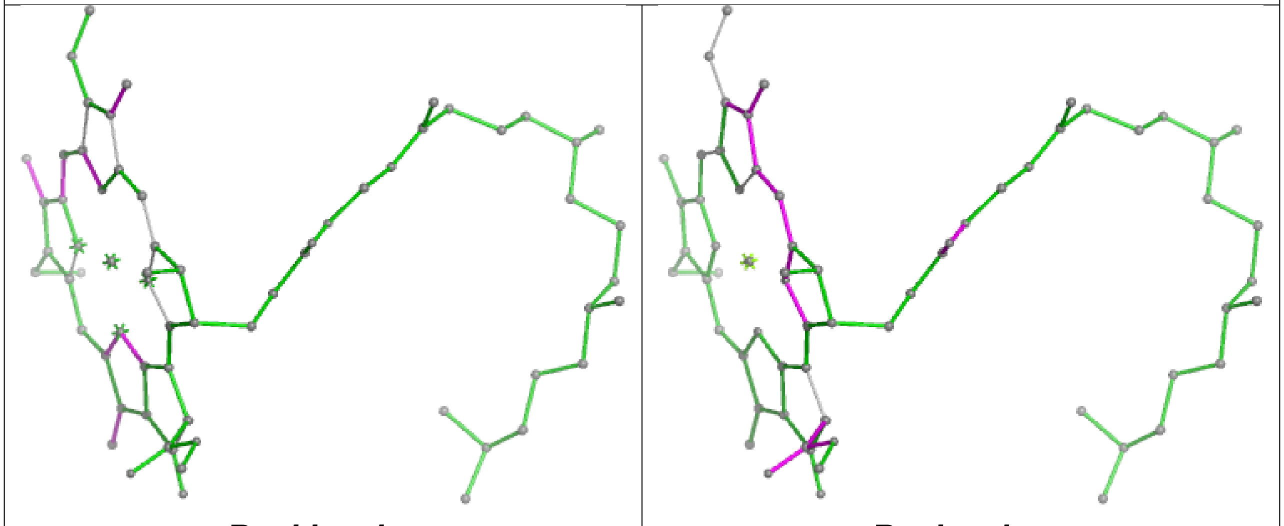
Ligand LMT t 101



Ligand PLM i 102

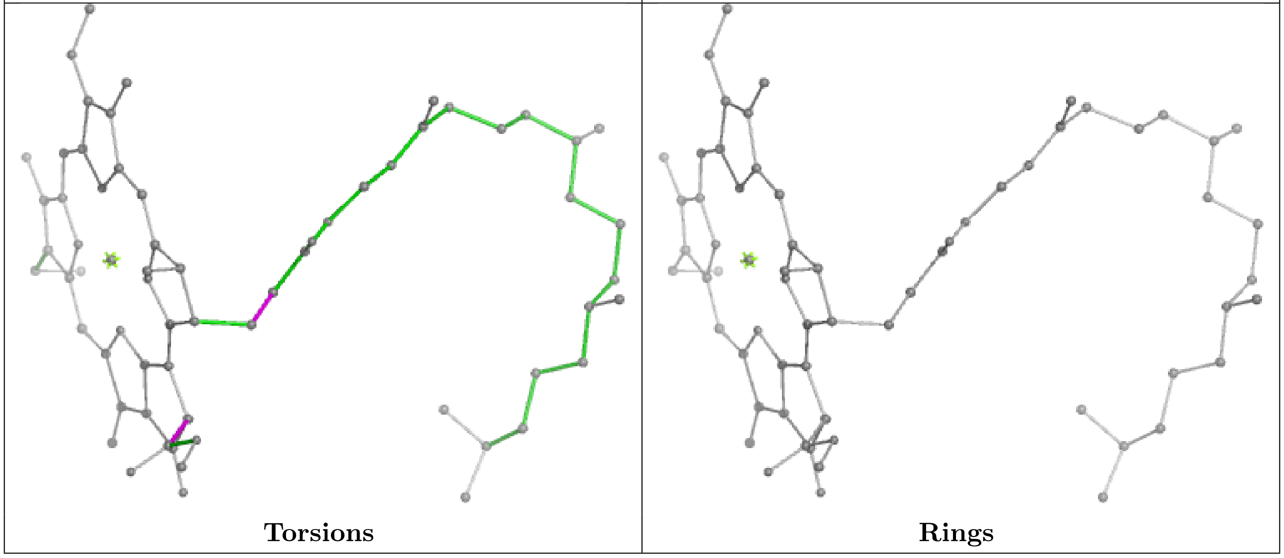


Ligand CLA b 608



Bond lengths

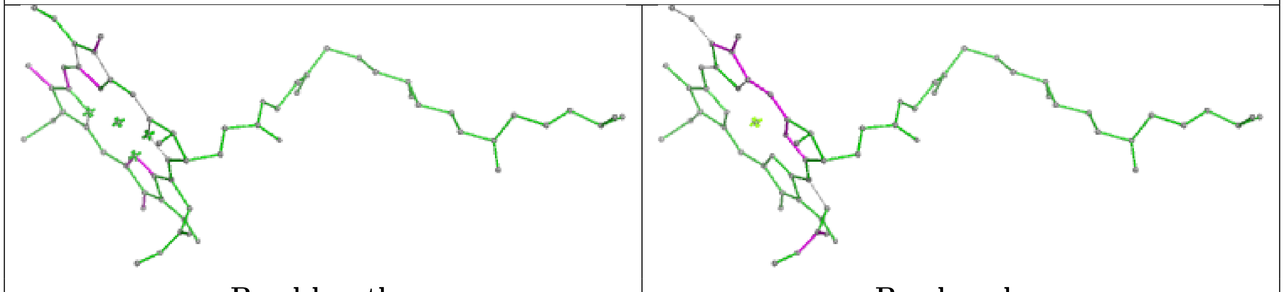
Bond angles



Torsions

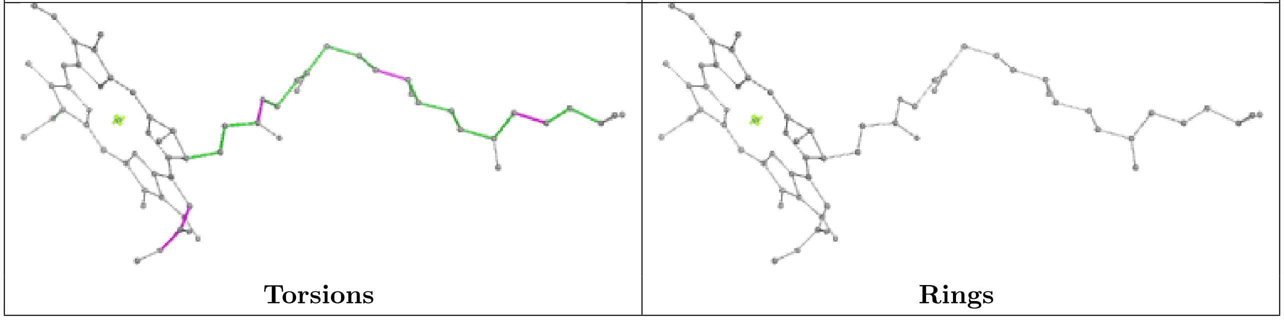
Rings

Ligand CLA c 503



Bond lengths

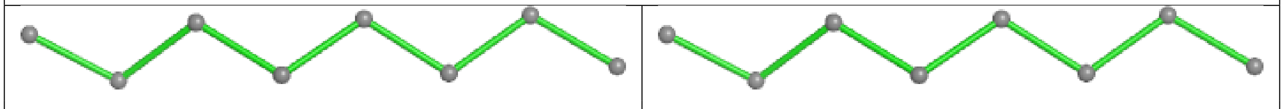
Bond angles



Torsions

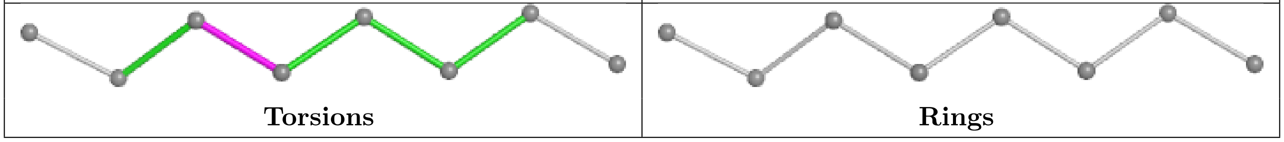
Rings

Ligand LFA Z 101



Bond lengths

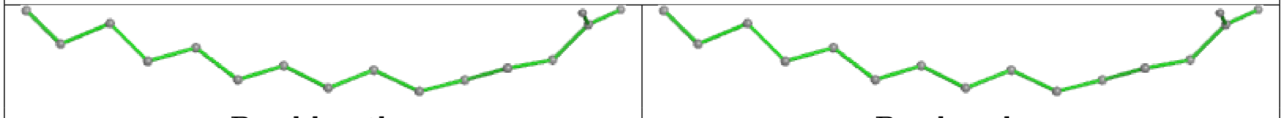
Bond angles



Torsions

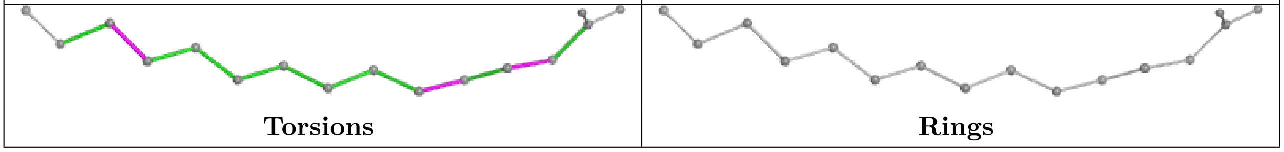
Rings

Ligand PLM i 101



Bond lengths

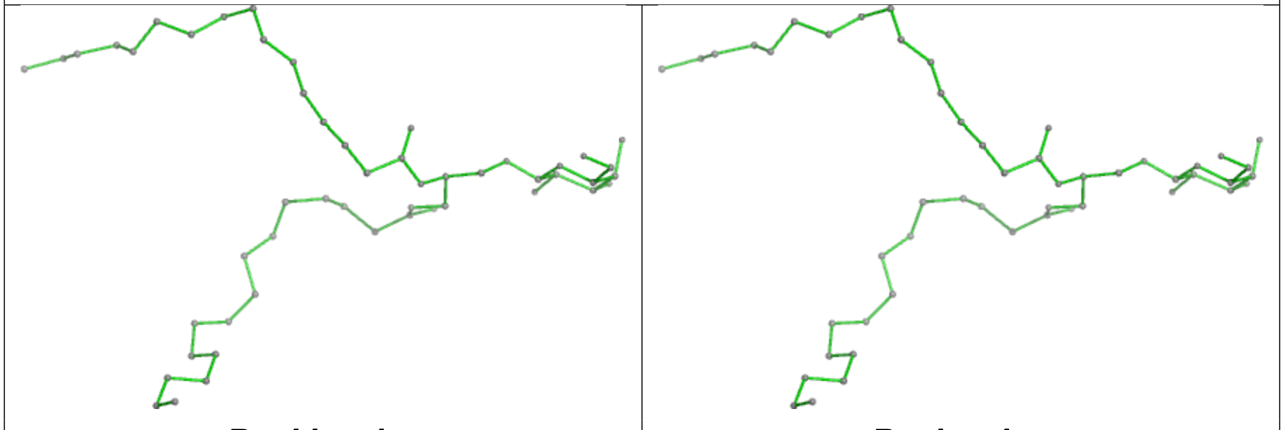
Bond angles



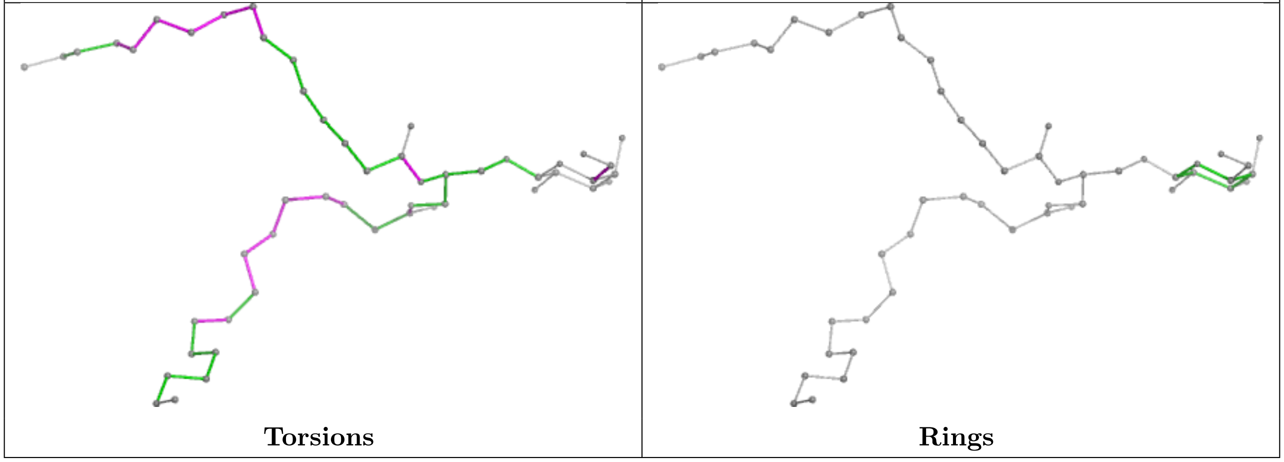
Torsions

Rings

Ligand LMG B 620

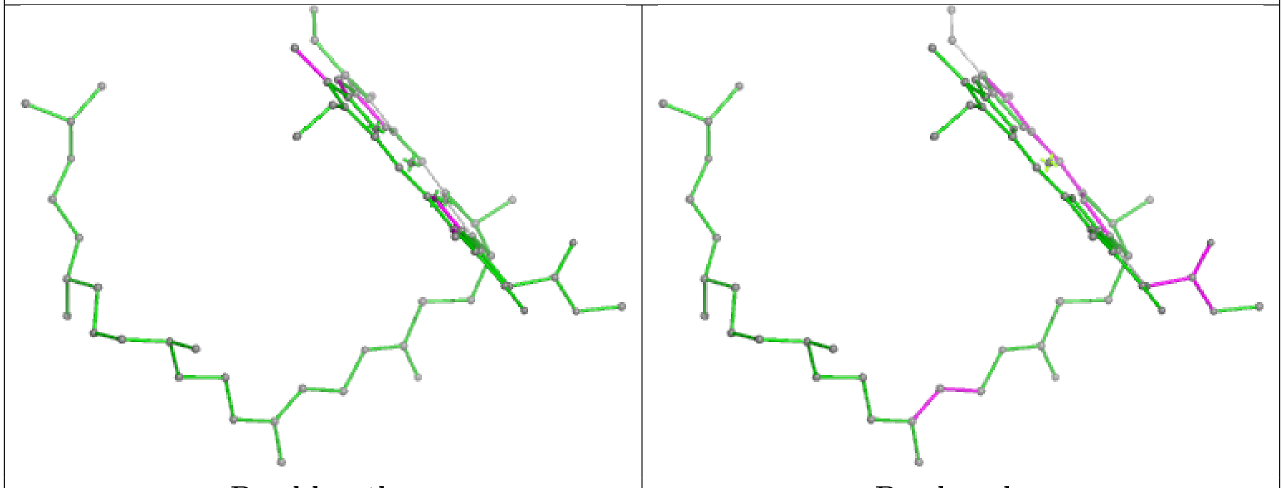


Bond lengths Bond angles

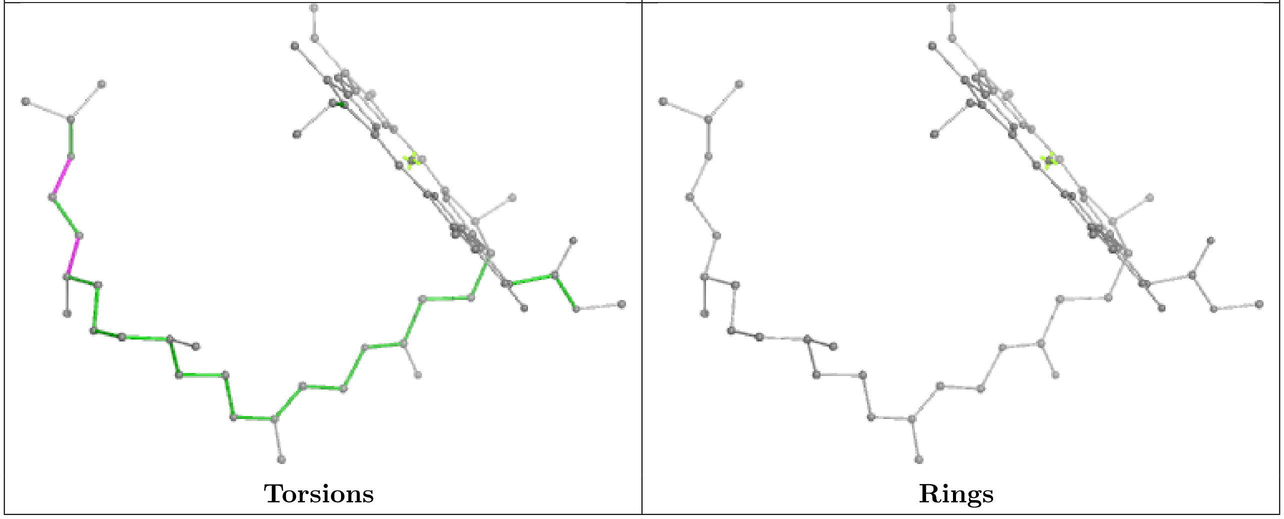


Torsions Rings

Ligand CLA b 613

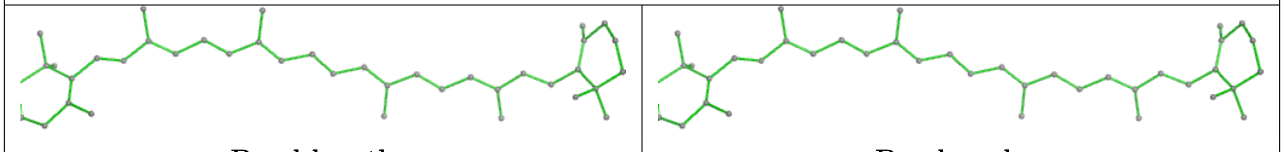


Bond lengths Bond angles

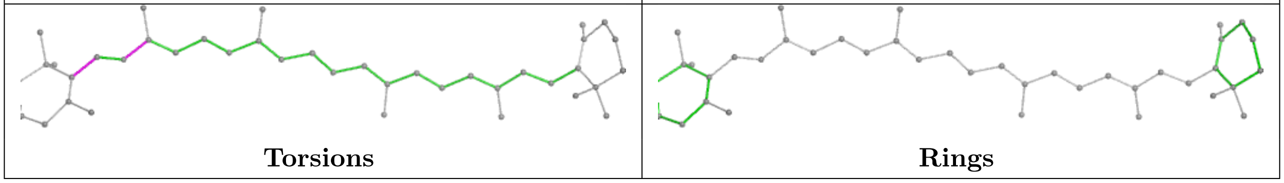


Torsions Rings

Ligand BCR B 619

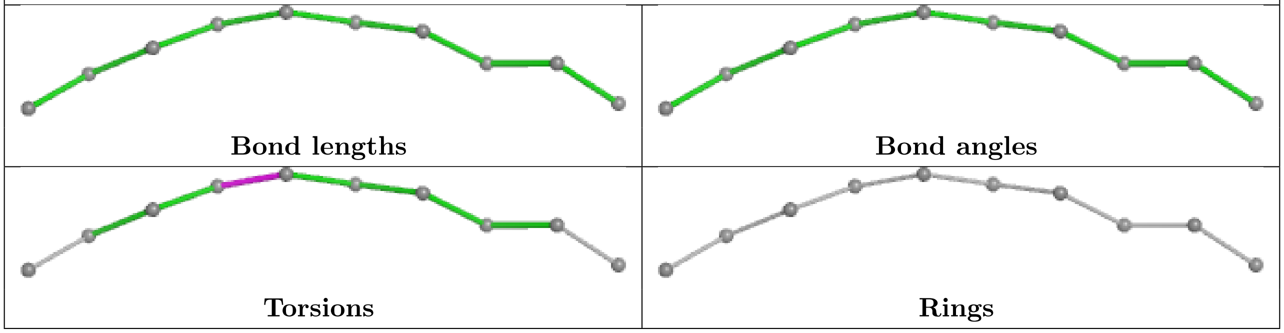


Bond lengths Bond angles

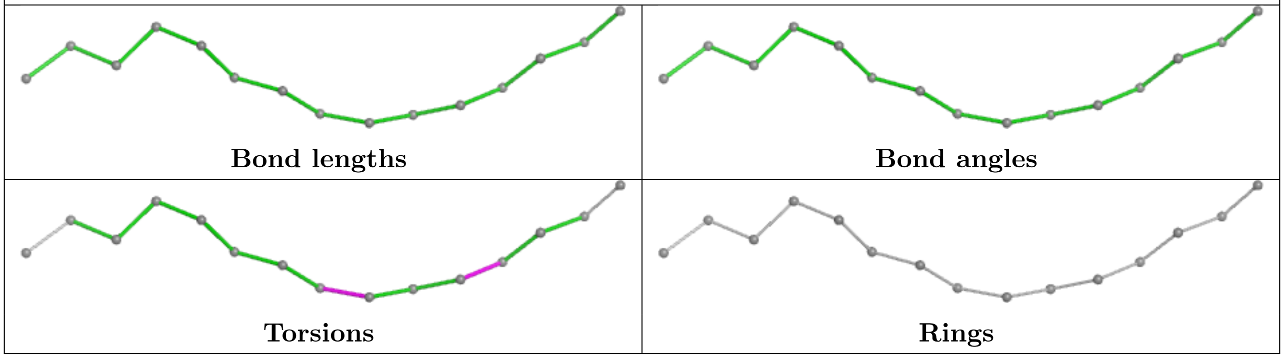


Torsions Rings

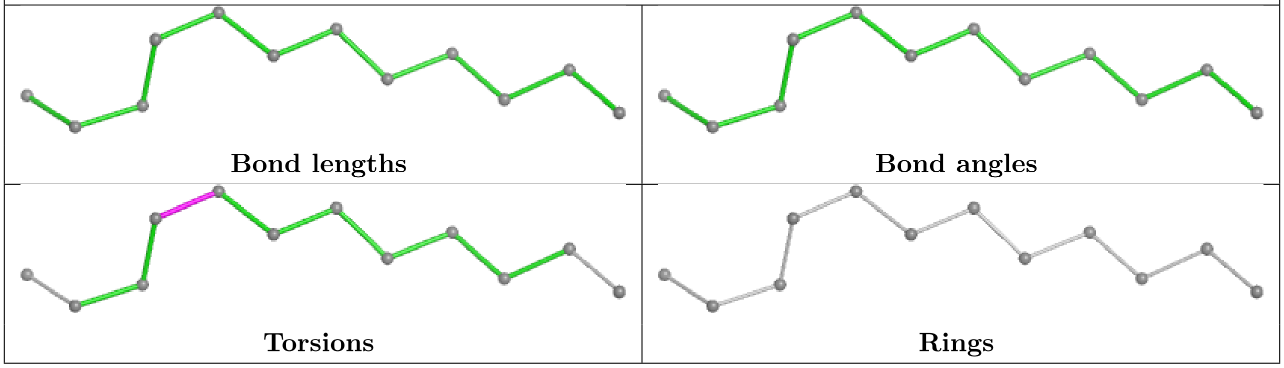
Ligand LFA M 103



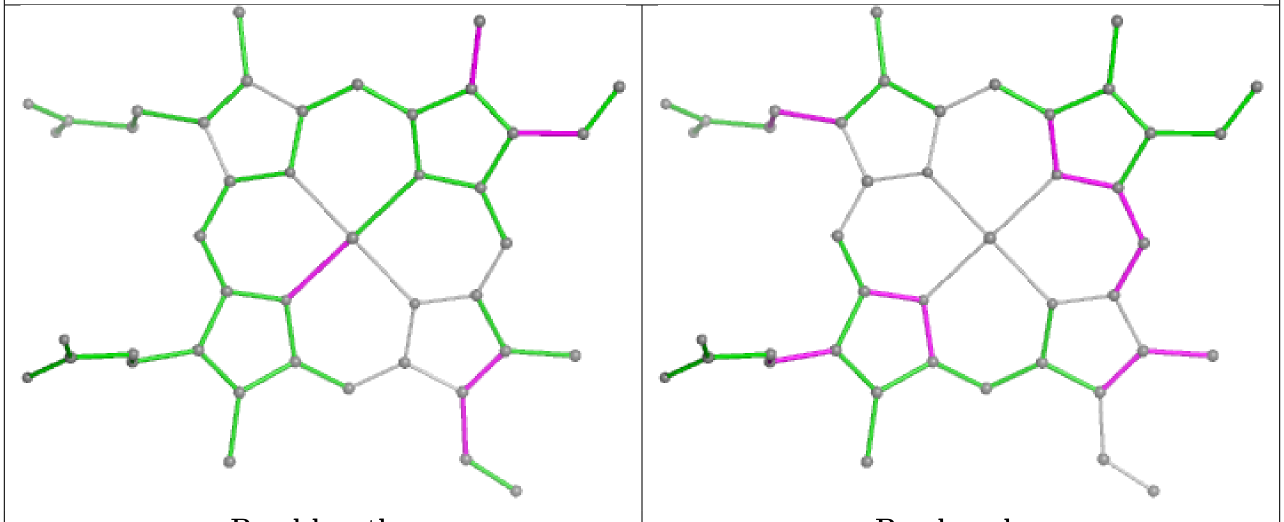
Ligand LFA A 412



Ligand LFA b 624

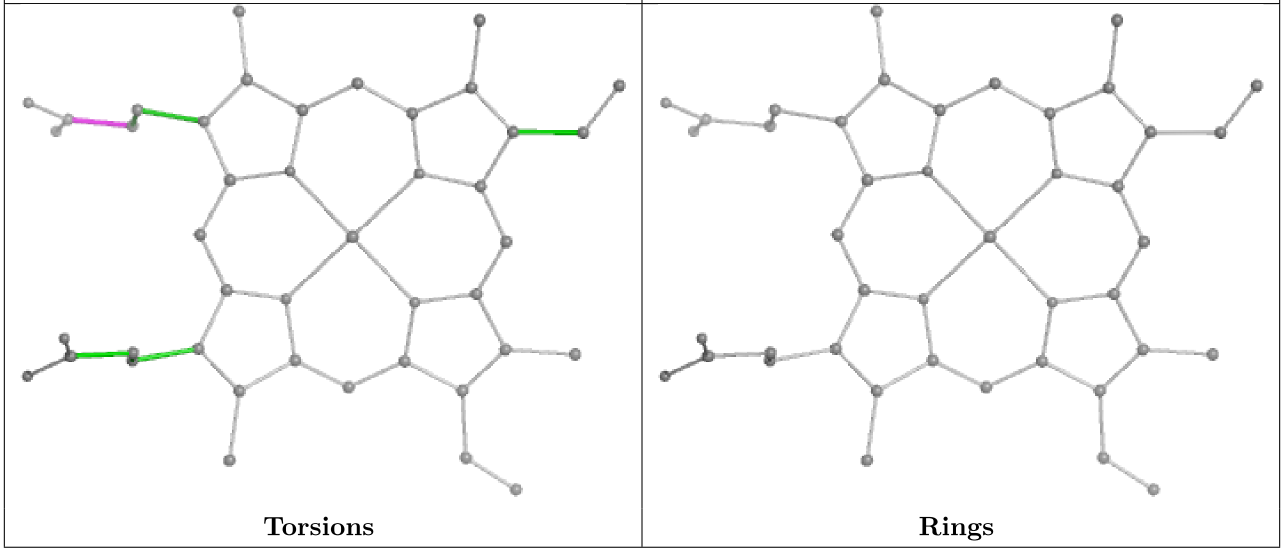


Ligand HEM F 101



Bond lengths

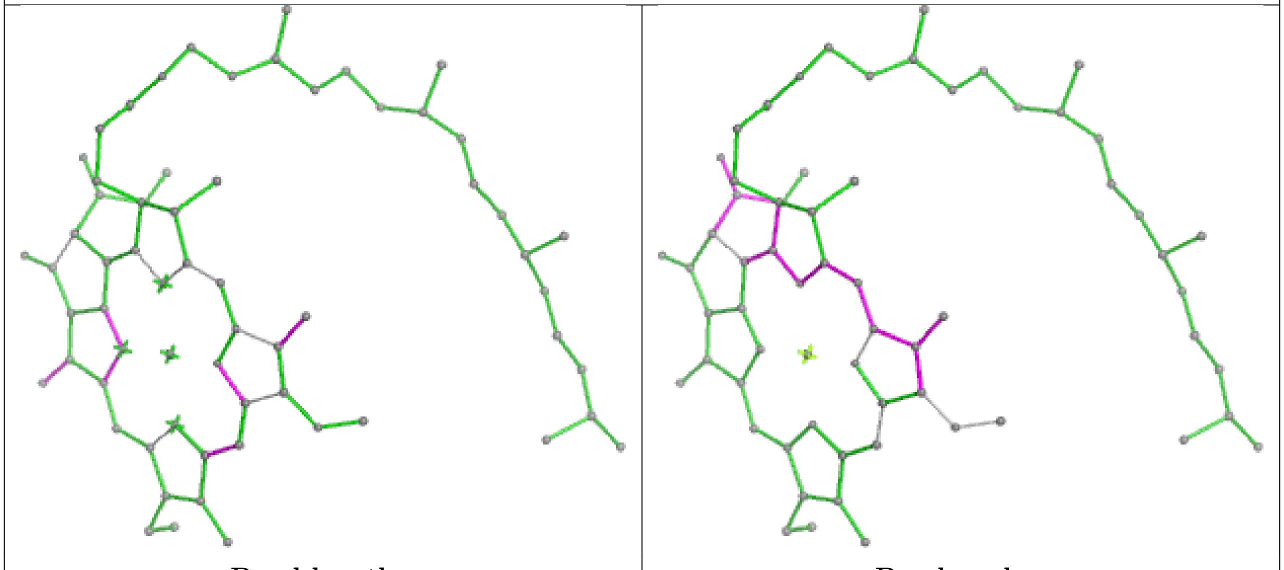
Bond angles



Torsions

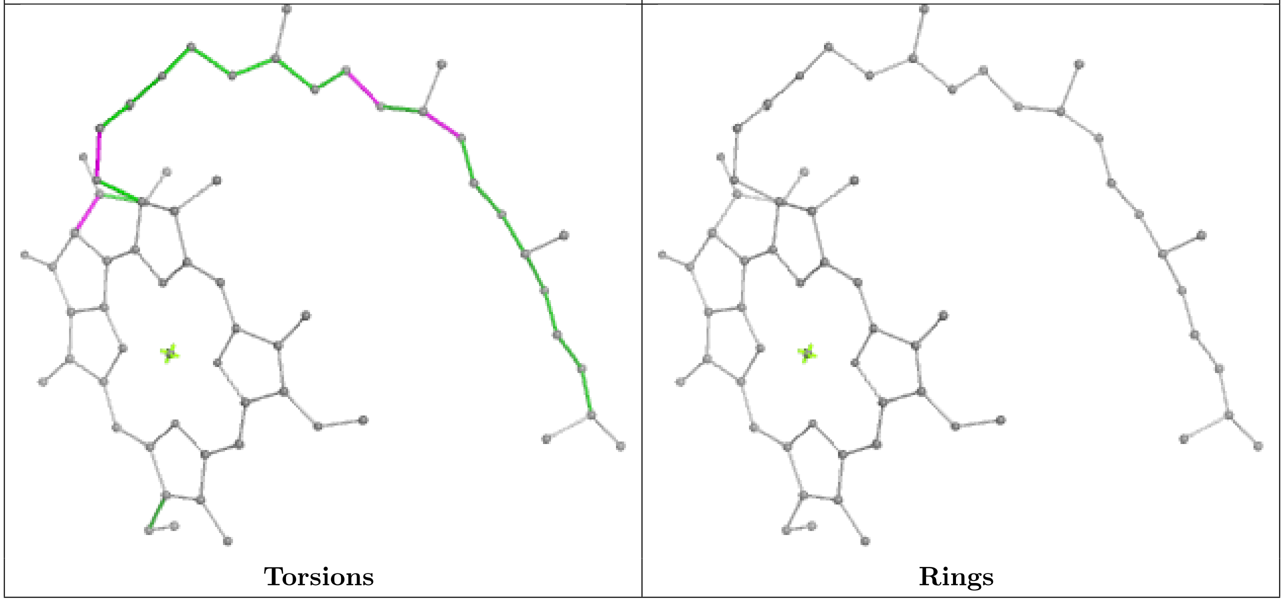
Rings

Ligand CLA c 508



Bond lengths

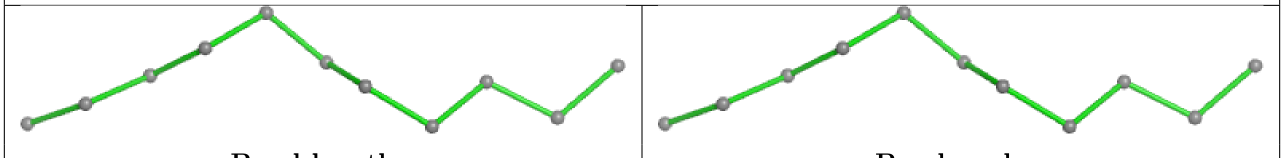
Bond angles



Torsions

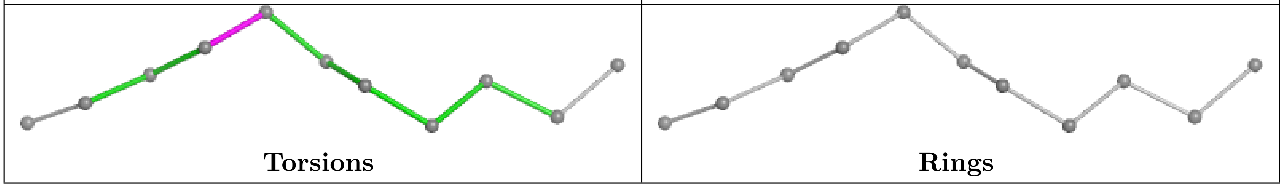
Rings

Ligand LFA a 413



Bond lengths

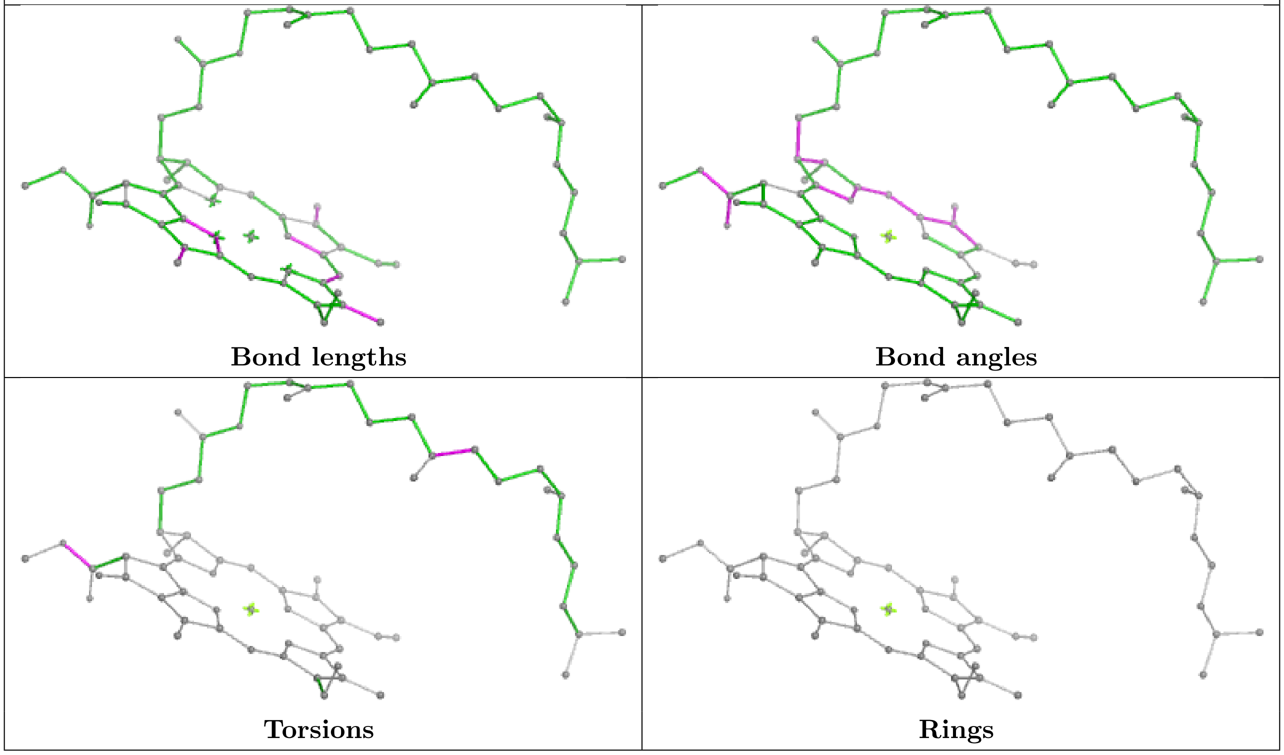
Bond angles



Torsions

Rings

Ligand CLA c 514



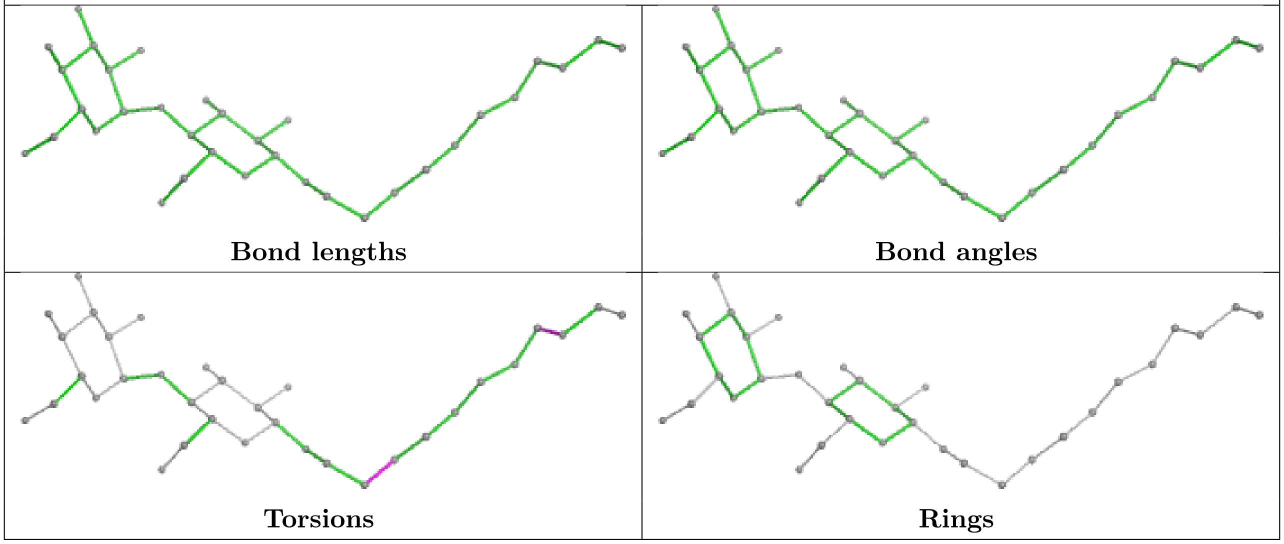
Bond lengths

Bond angles

Torsions

Rings

Ligand LMT d 401



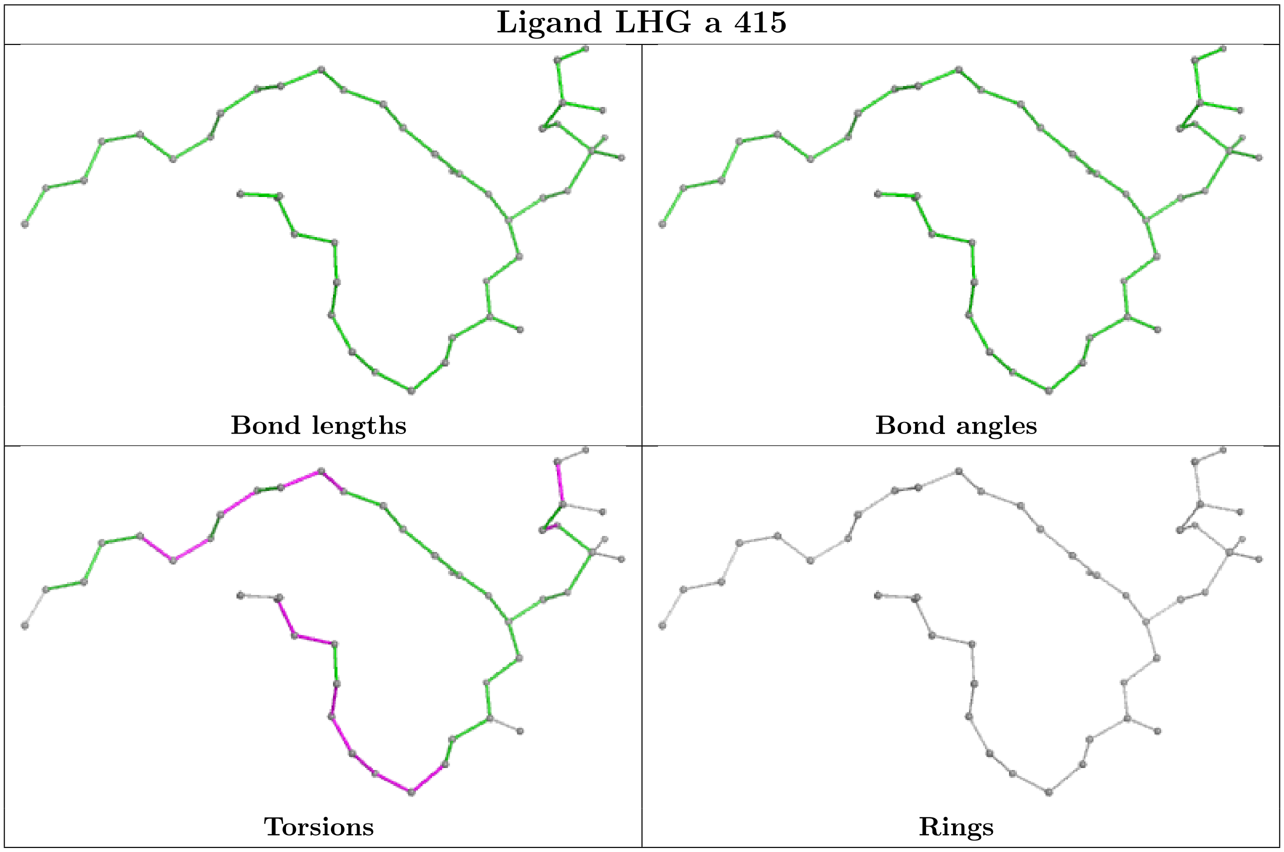
Bond lengths

Bond angles

Torsions

Rings

Ligand LHG a 415



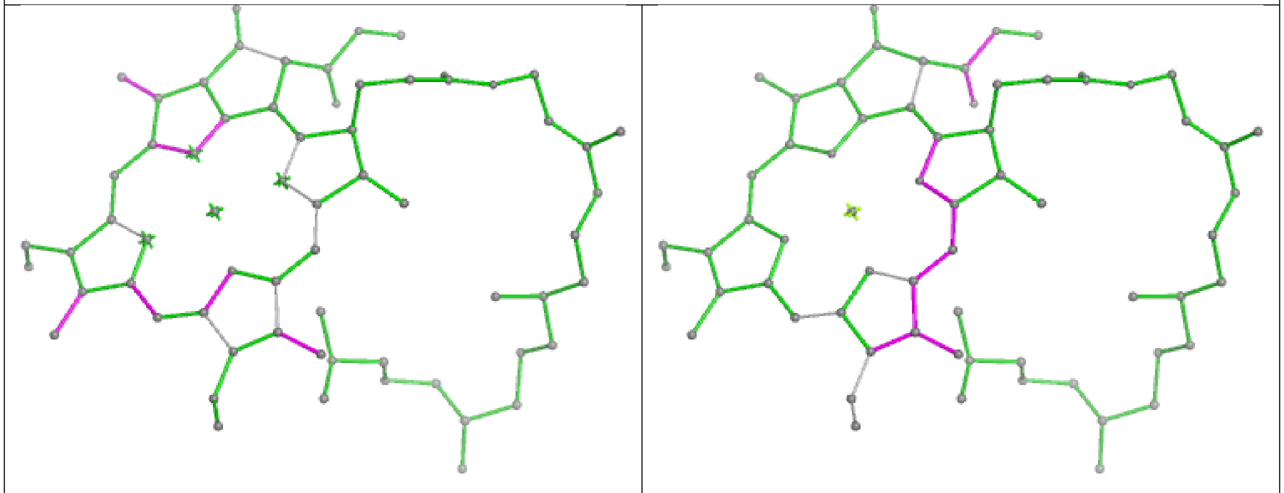
Bond lengths

Bond angles

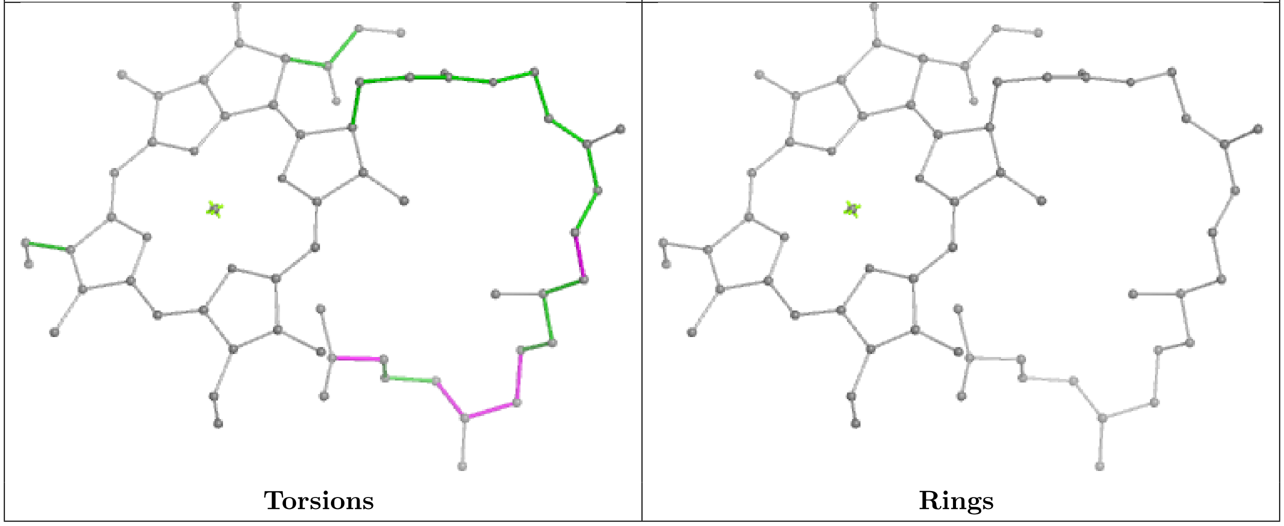
Torsions

Rings

Ligand CLA b 617

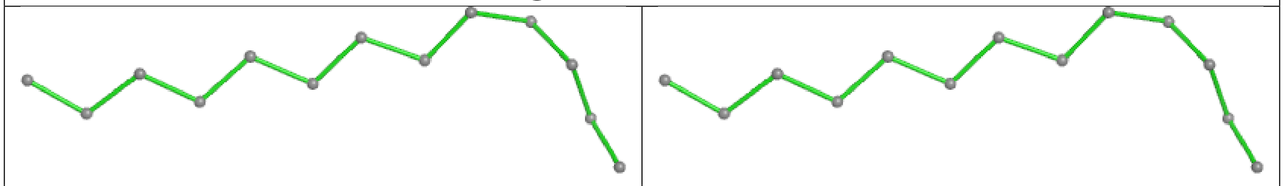


Bond lengths **Bond angles**

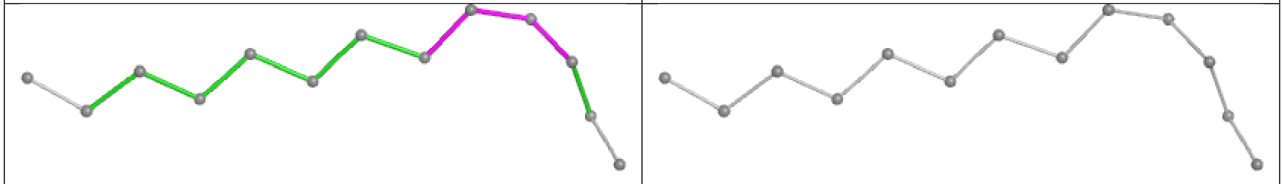


Torsions **Rings**

Ligand LFA D 406

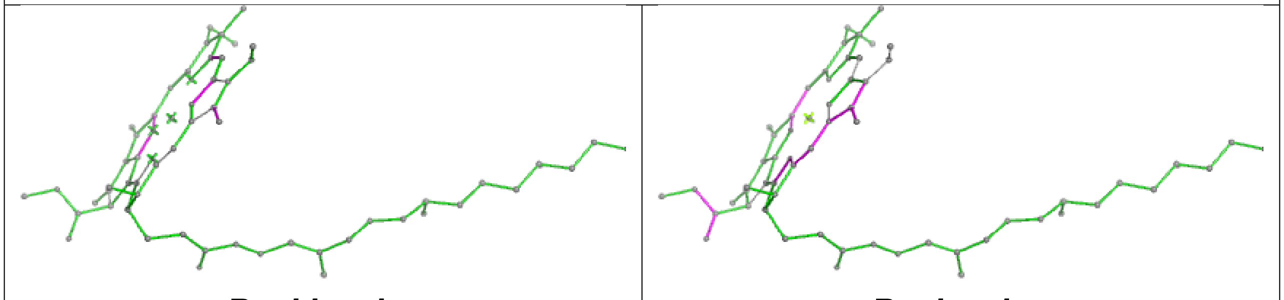


Bond lengths **Bond angles**



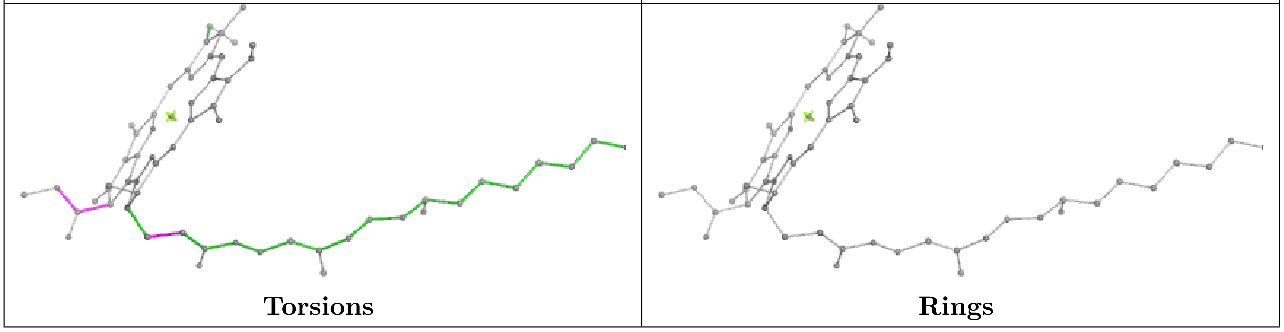
Torsions **Rings**

Ligand CLA B 607



Bond lengths

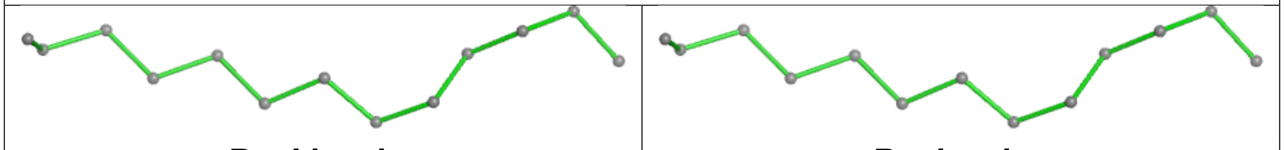
Bond angles



Torsions

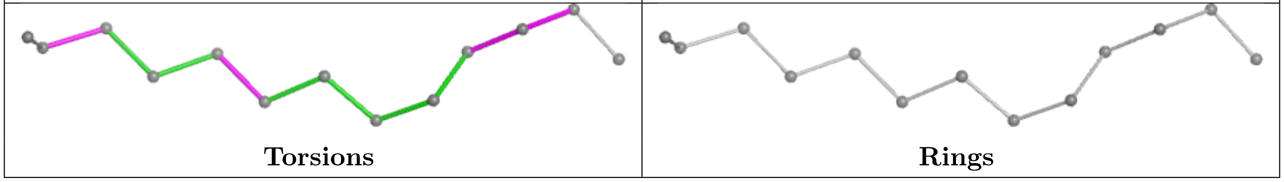
Rings

Ligand LFA B 621



Bond lengths

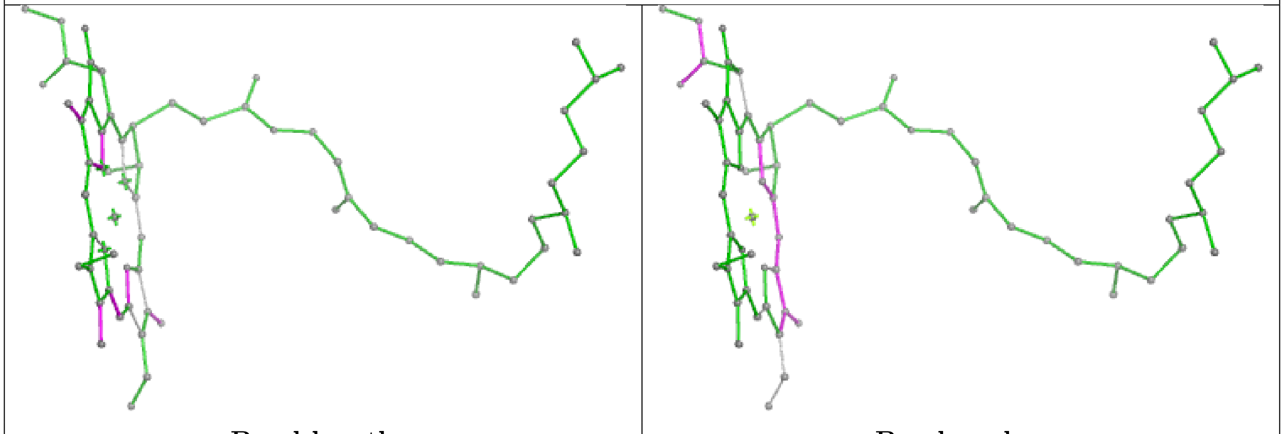
Bond angles



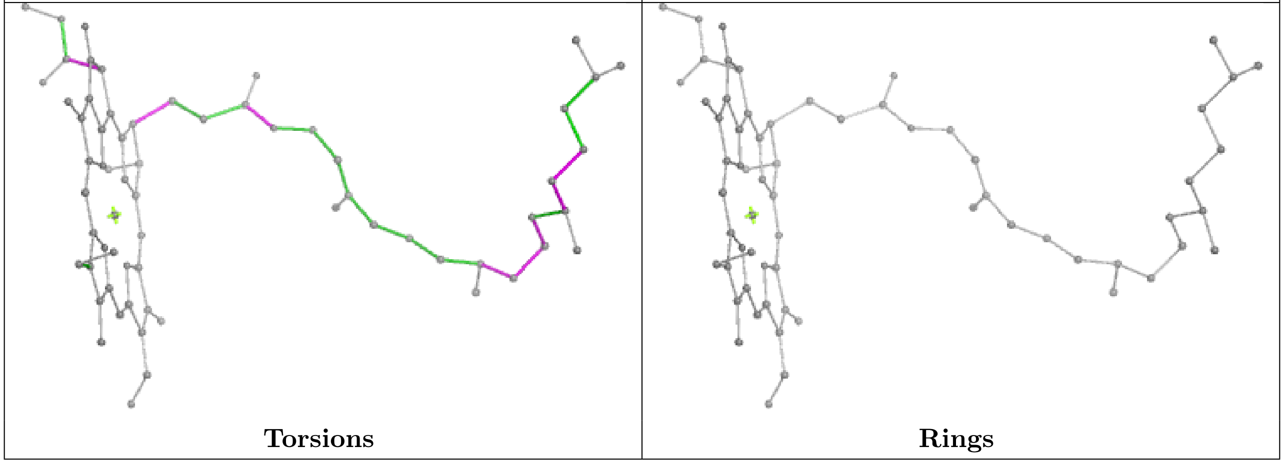
Torsions

Rings

Ligand CLA D 409

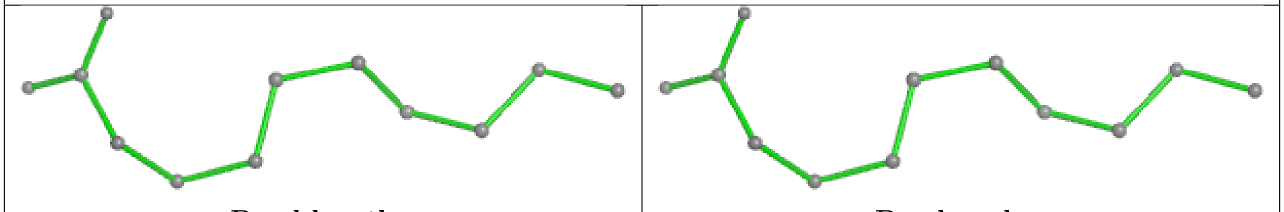


Bond lengths Bond angles

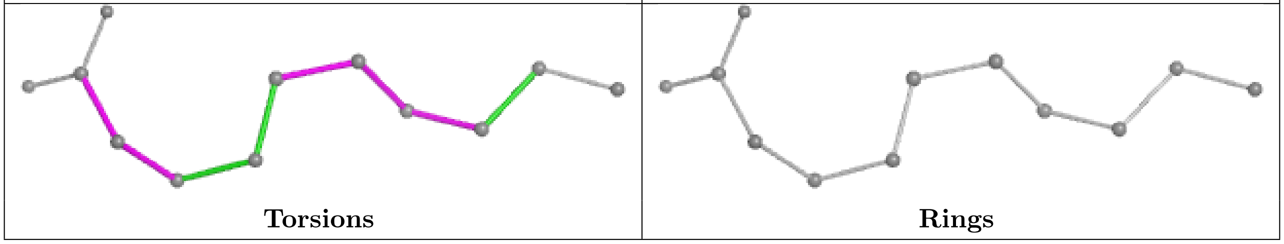


Torsions Rings

Ligand PLM a 414

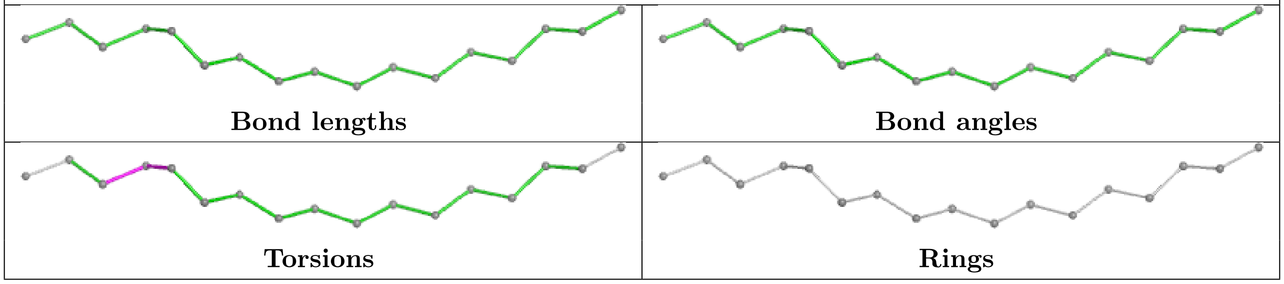


Bond lengths Bond angles



Torsions Rings

Ligand LFA J 102



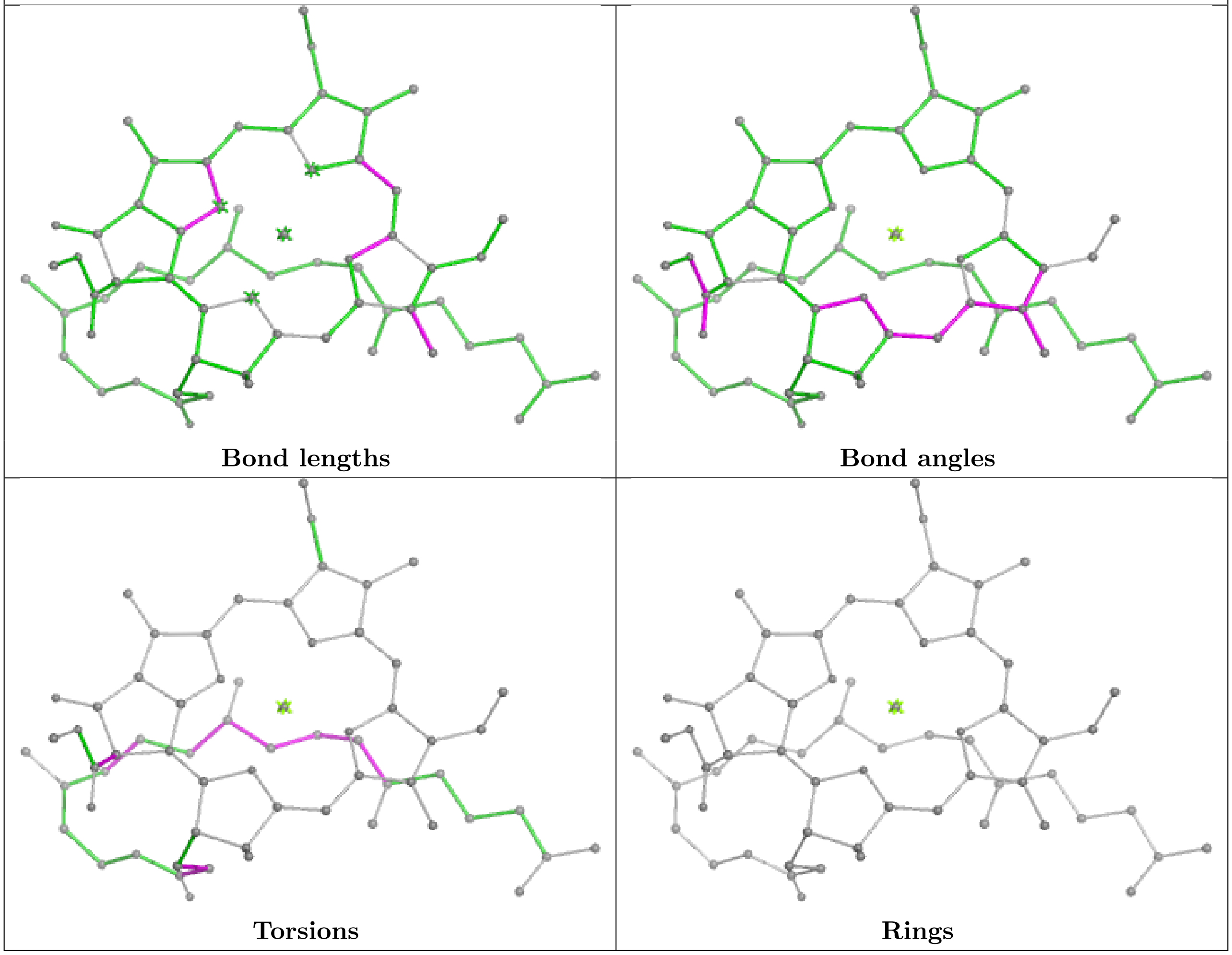
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA b 603



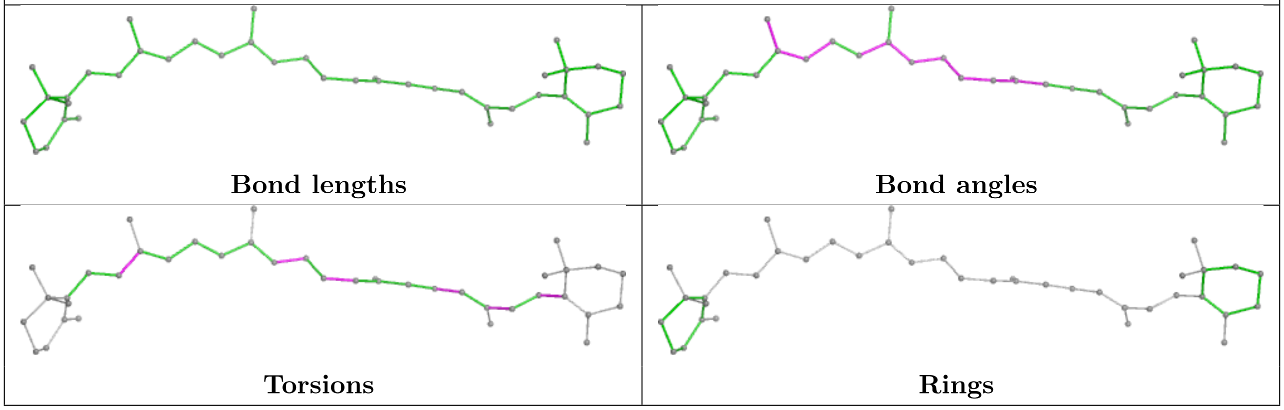
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR b 601



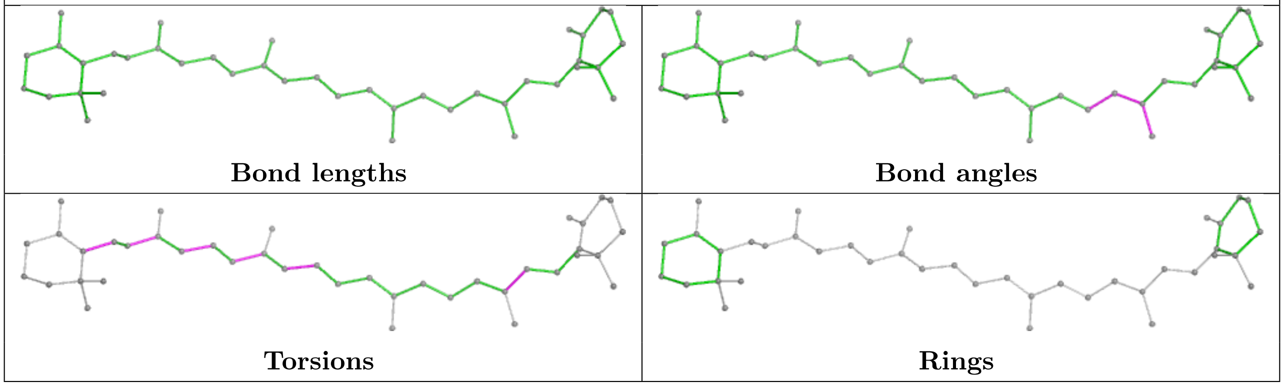
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR B 629



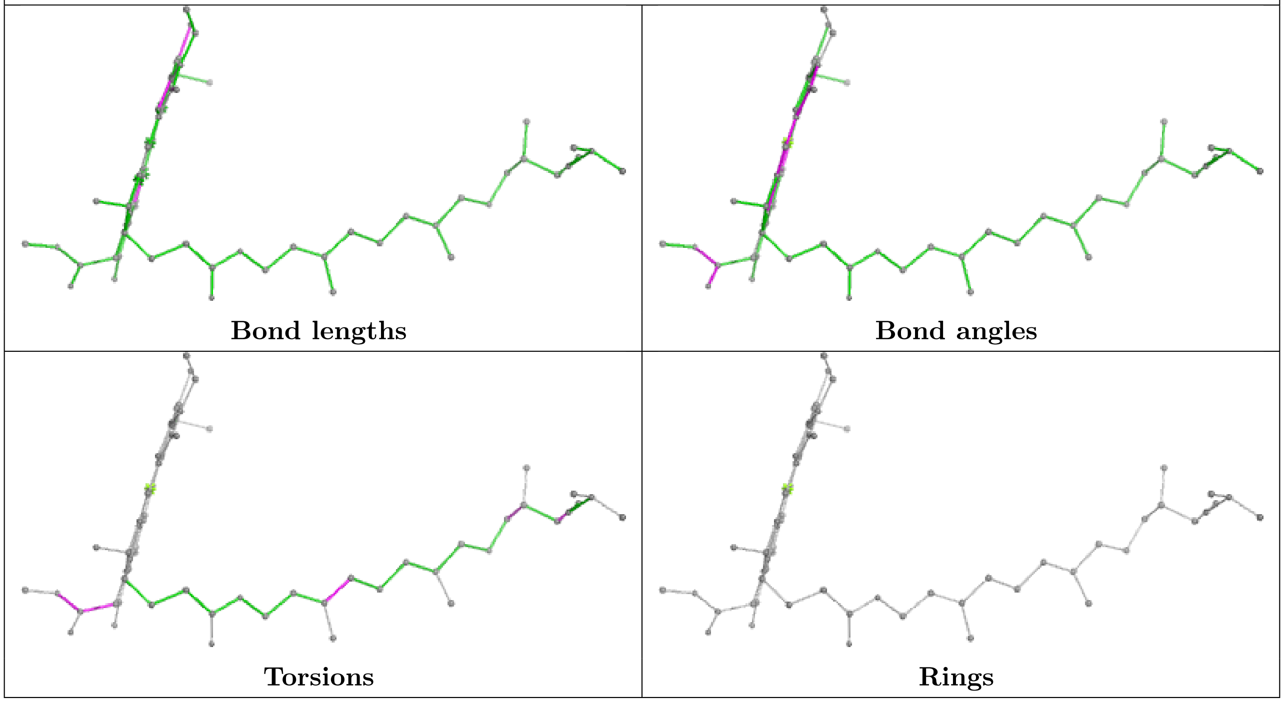
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA B 605



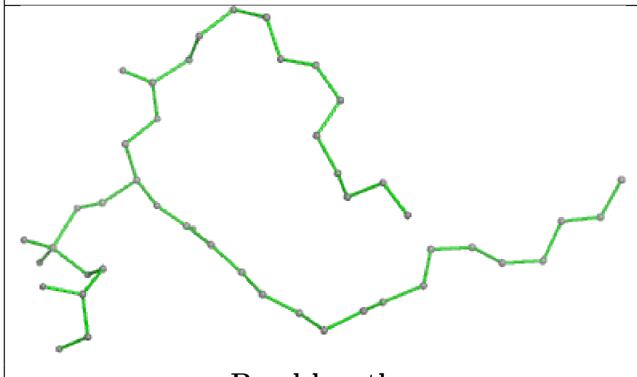
Bond lengths

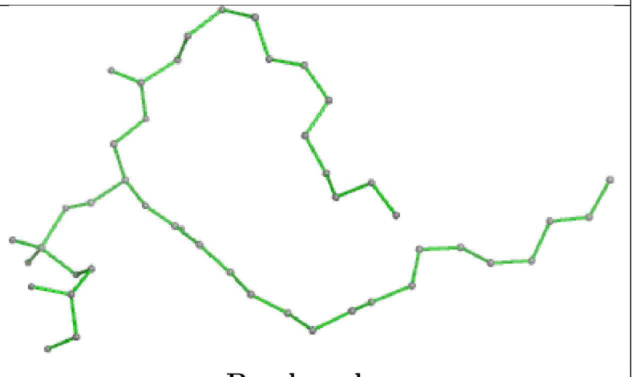
Bond angles

Torsions

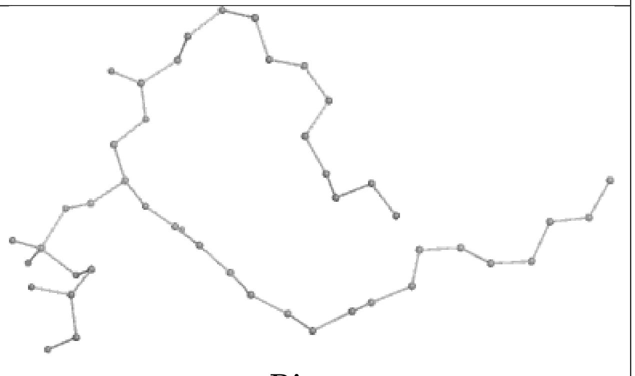
Rings

Ligand LHG A 417

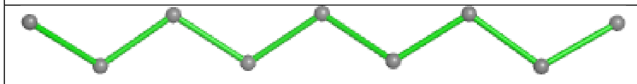

Bond lengths

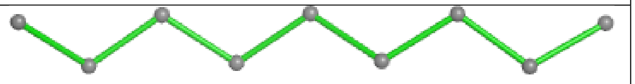

Bond angles

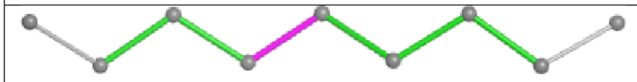

Torsions

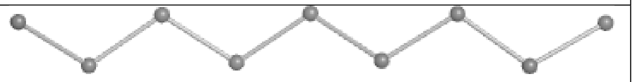

Rings

Ligand LFA b 629

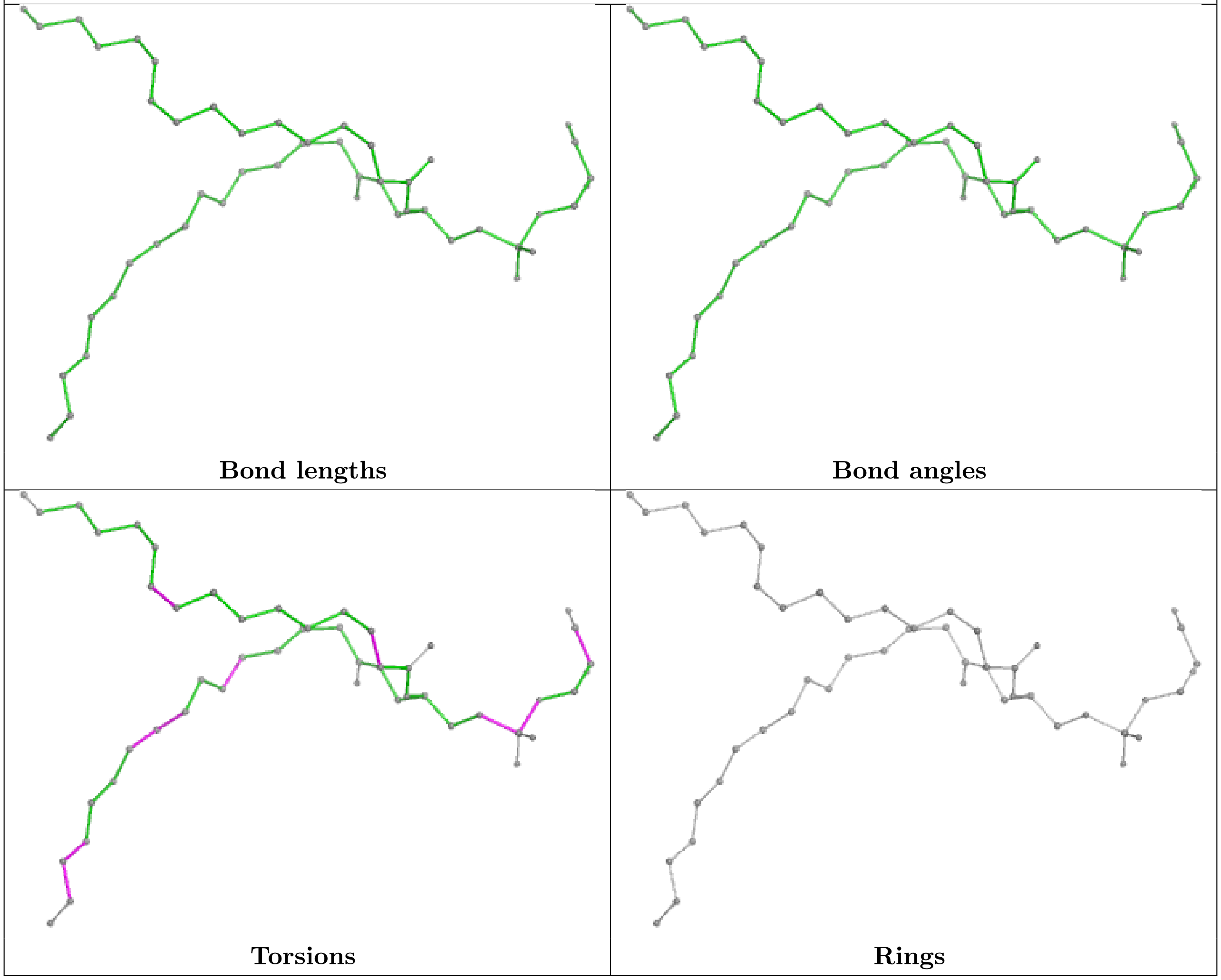

Bond lengths


Bond angles


Torsions


Rings

Ligand LHG D 413



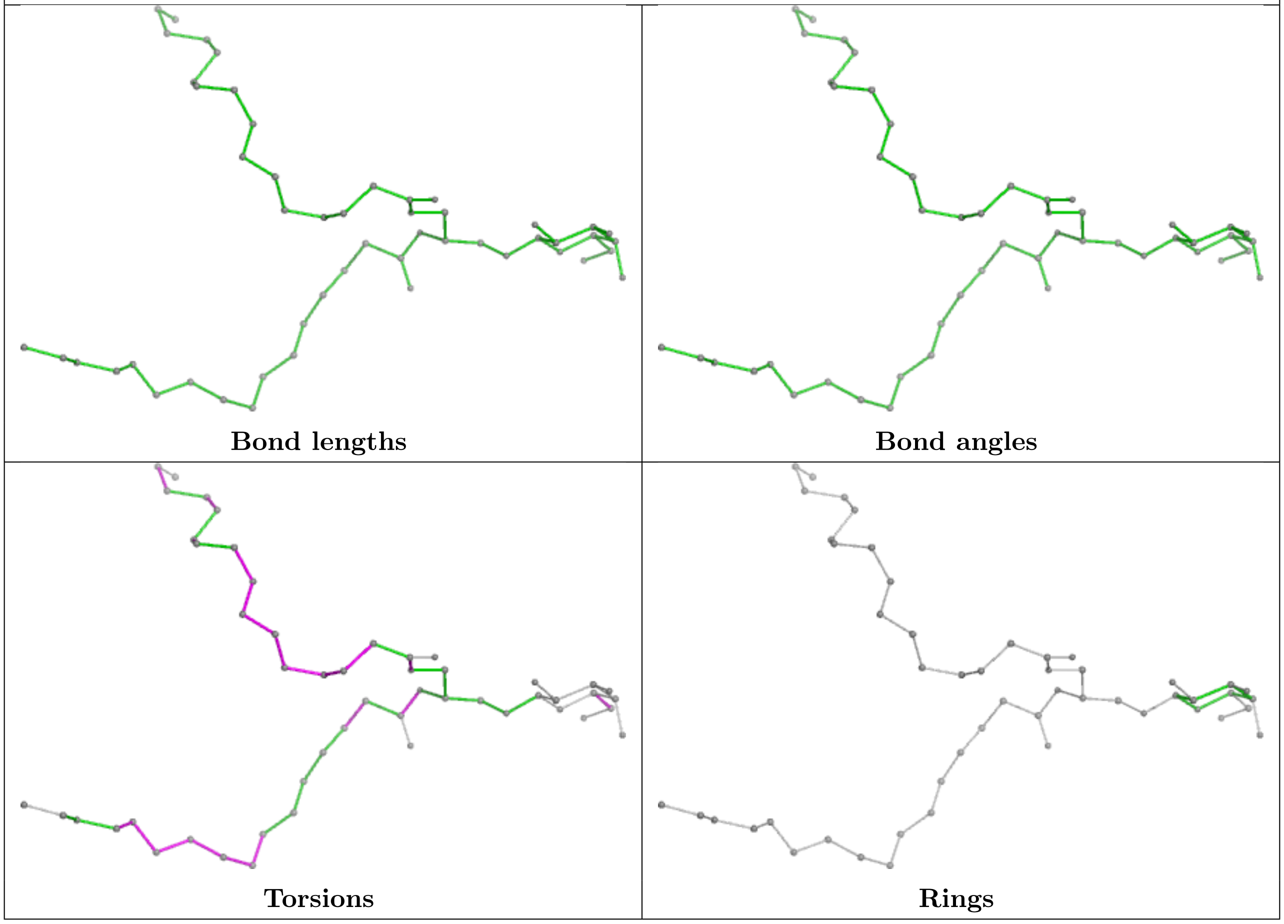
Bond lengths

Bond angles

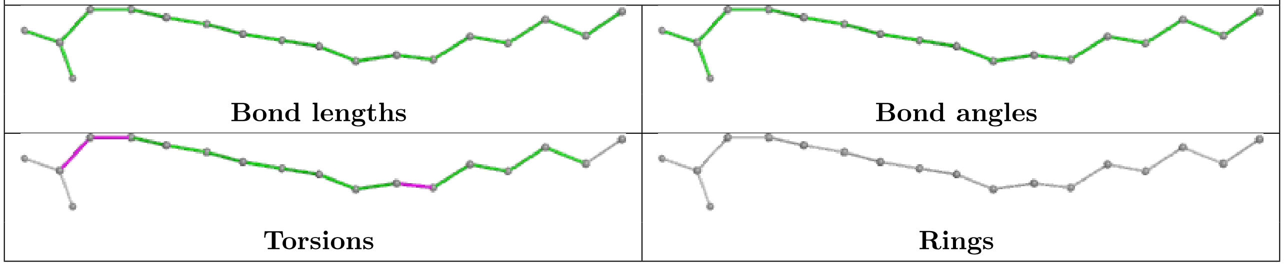
Torsions

Rings

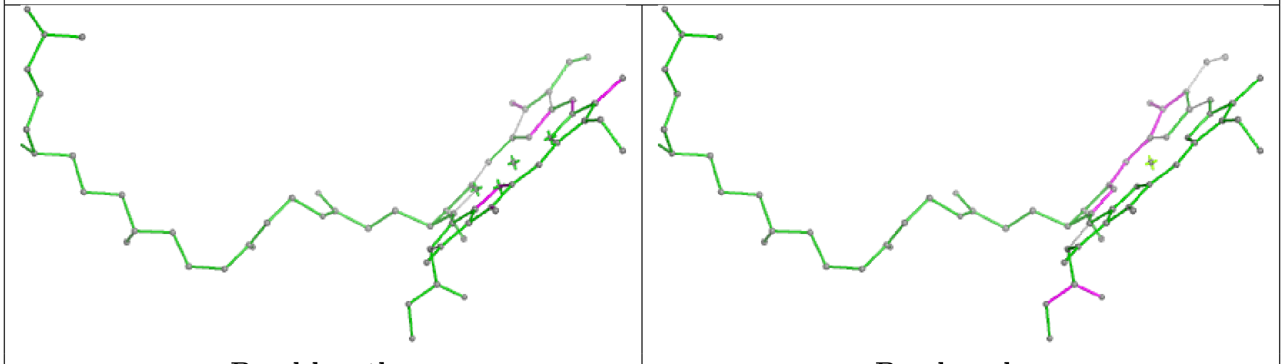
Ligand LMG b 622



Ligand PLM A 413

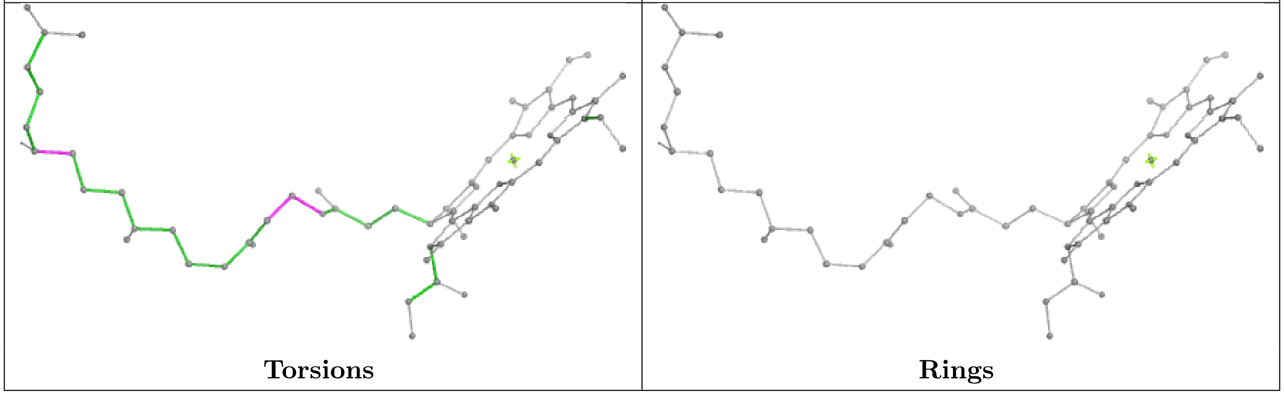


Ligand CLA d 404



Bond lengths

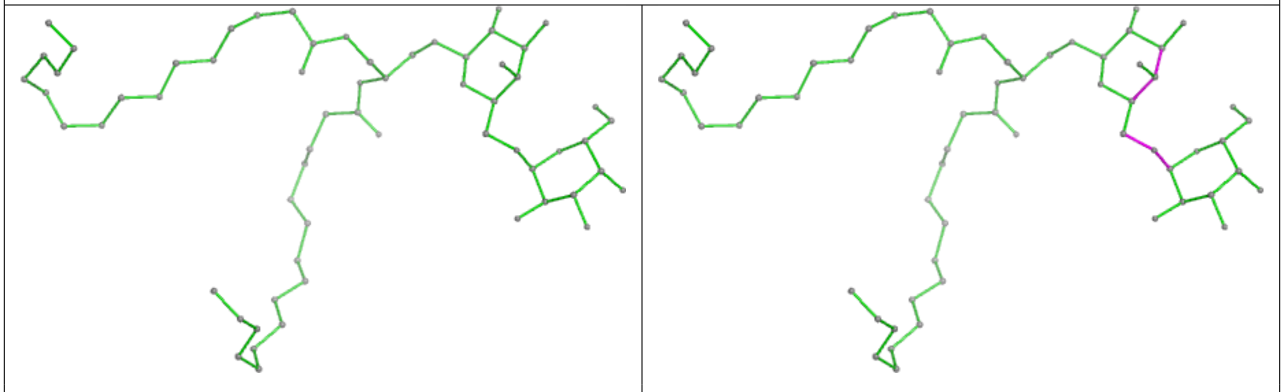
Bond angles



Torsions

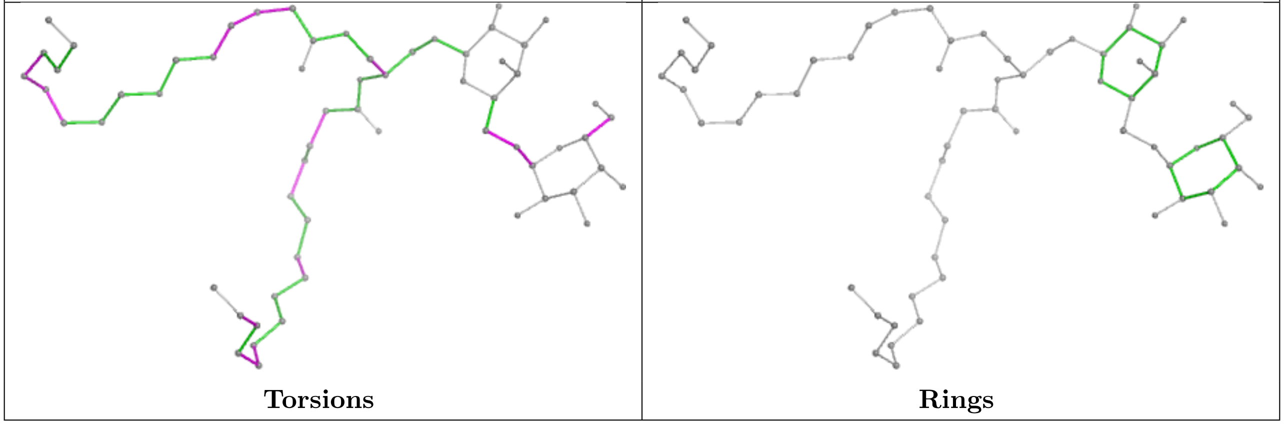
Rings

Ligand DGD c 517



Bond lengths

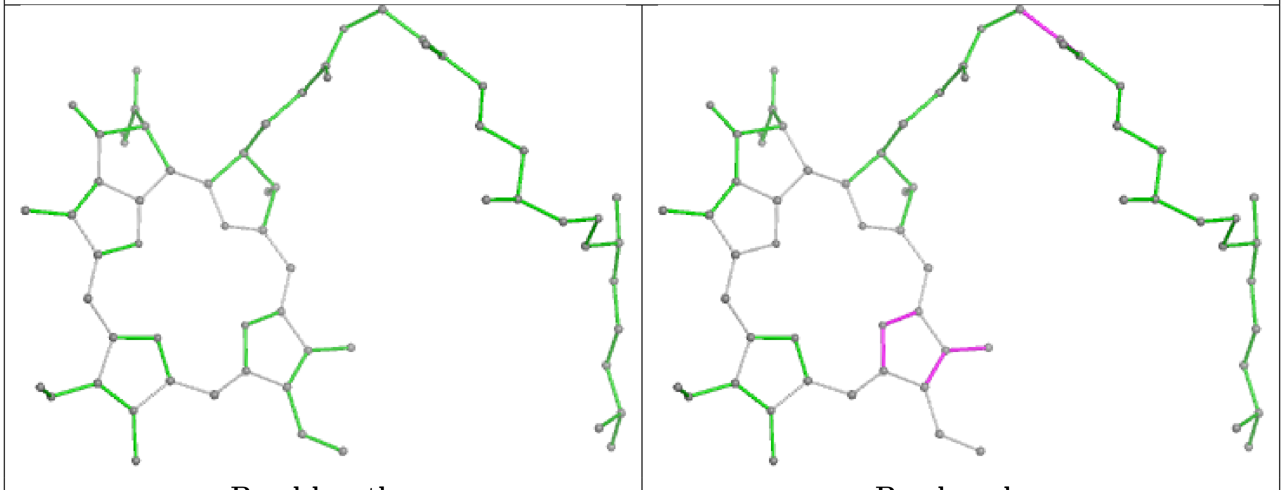
Bond angles



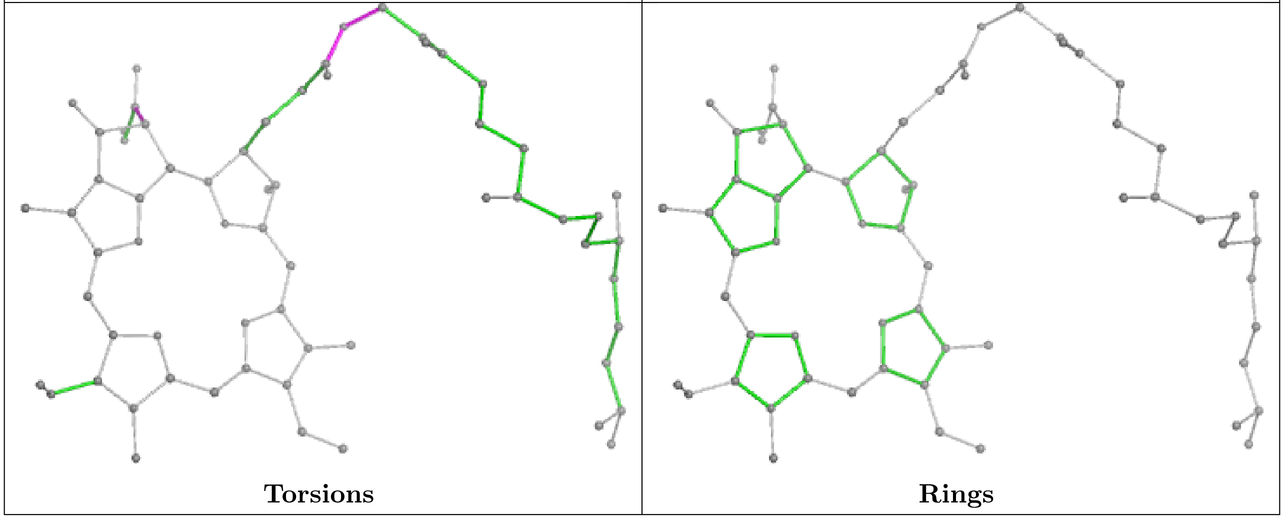
Torsions

Rings

Ligand PHO D 401

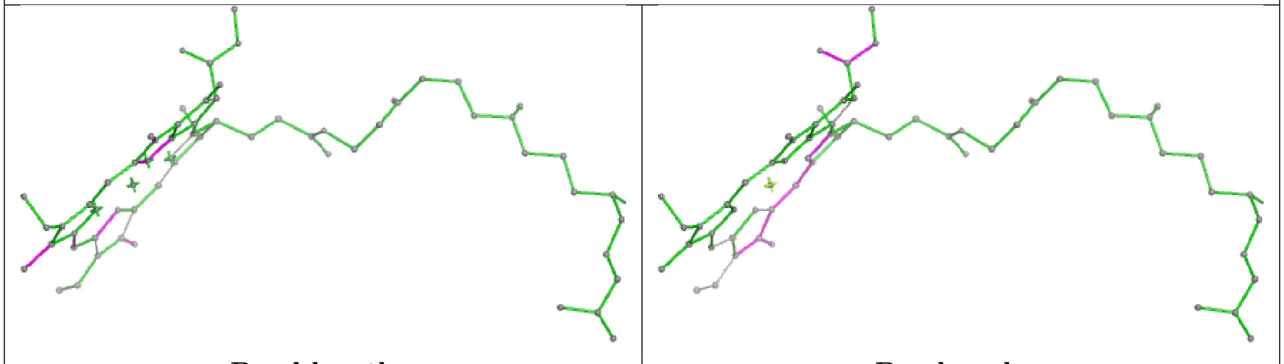


Bond lengths **Bond angles**



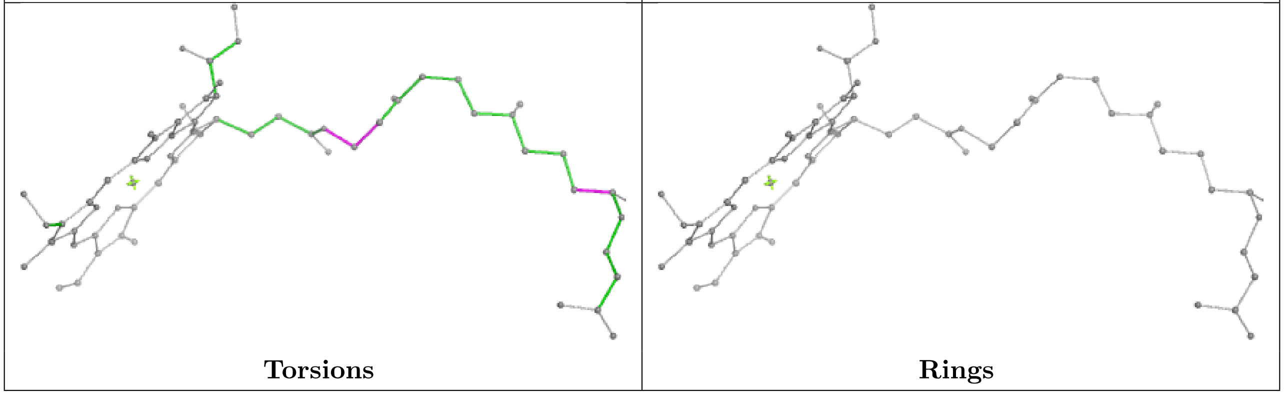
Torsions **Rings**

Ligand CLA D 408



Bond lengths

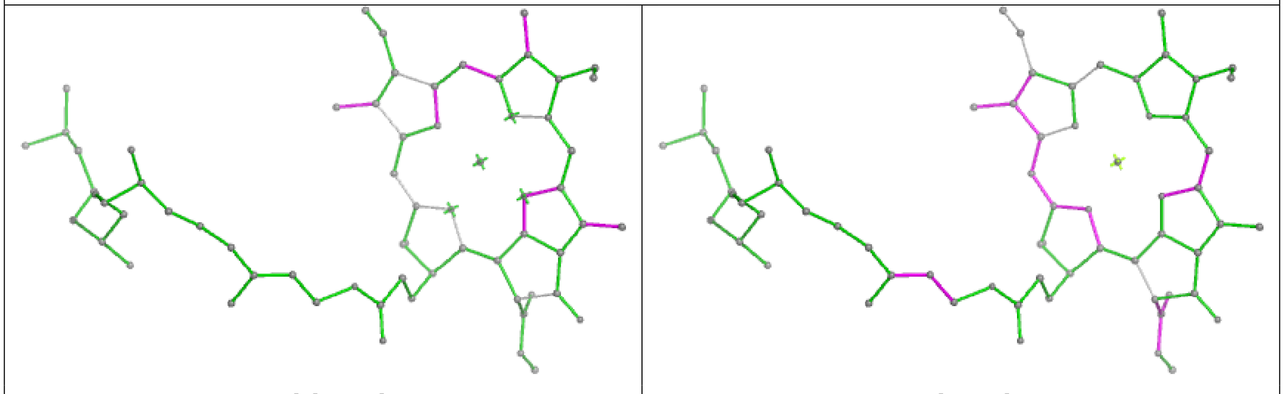
Bond angles



Torsions

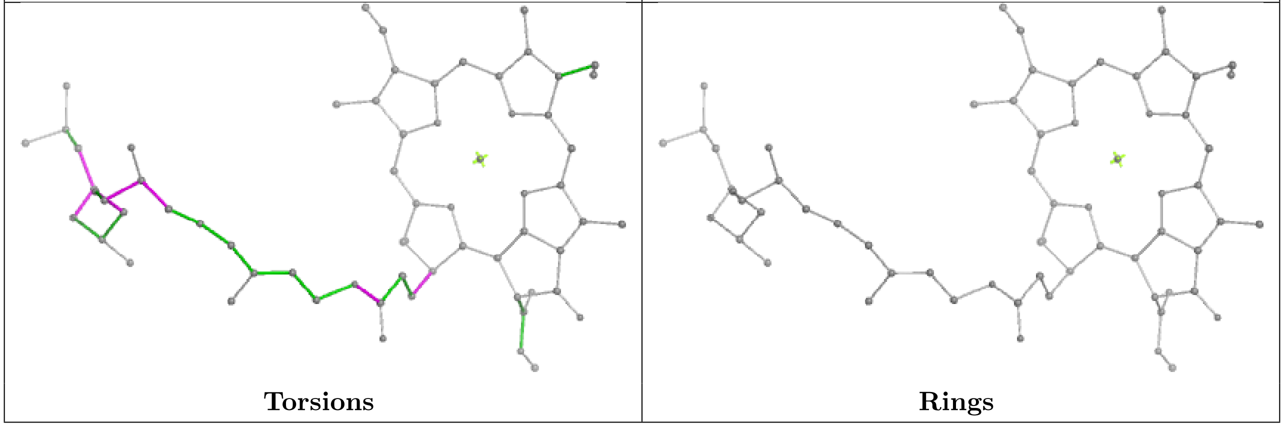
Rings

Ligand CLA a 408



Bond lengths

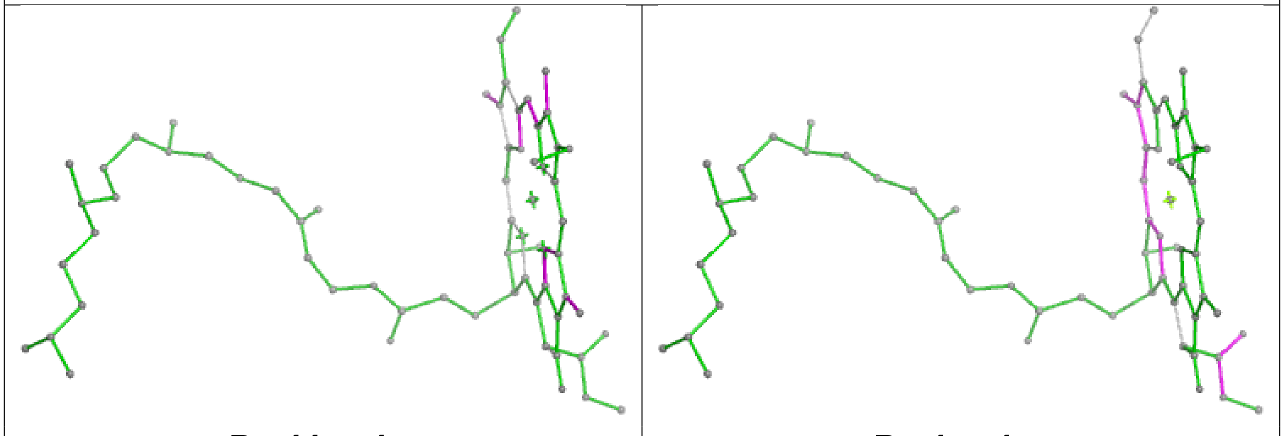
Bond angles



Torsions

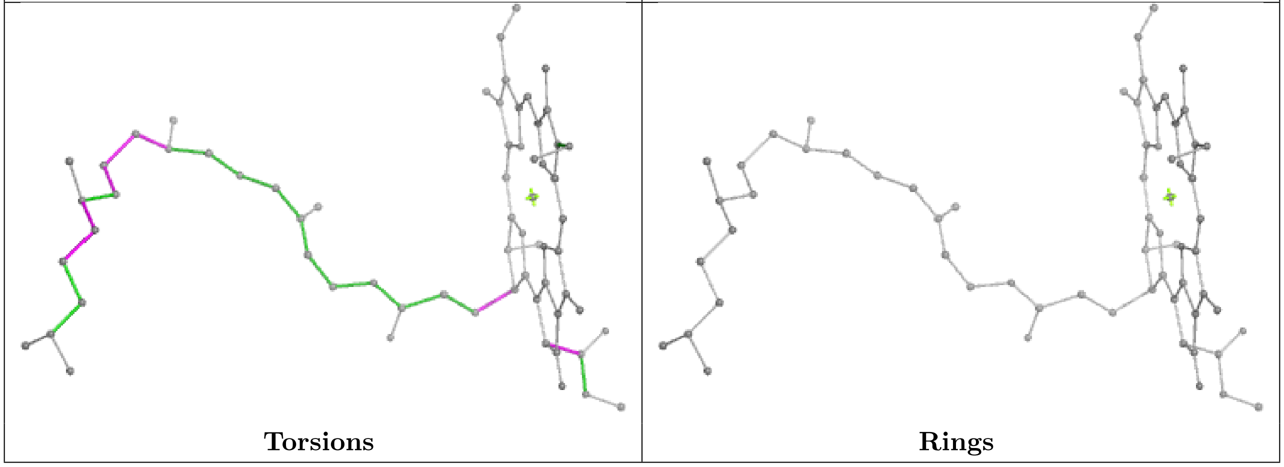
Rings

Ligand CLA d 405



Bond lengths

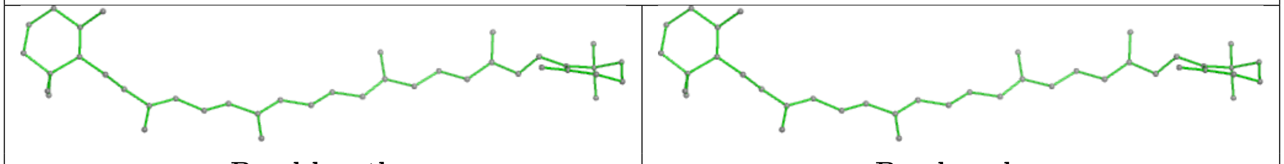
Bond angles



Torsions

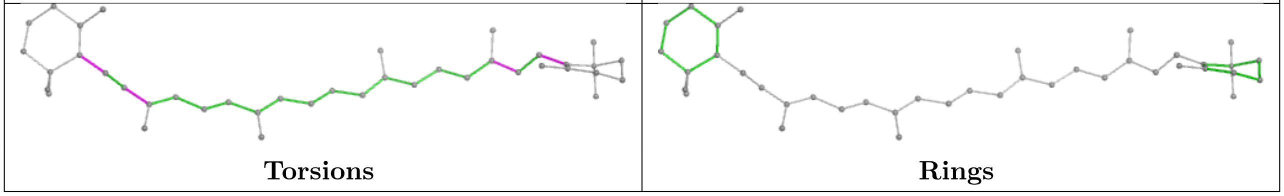
Rings

Ligand BCR D 410



Bond lengths

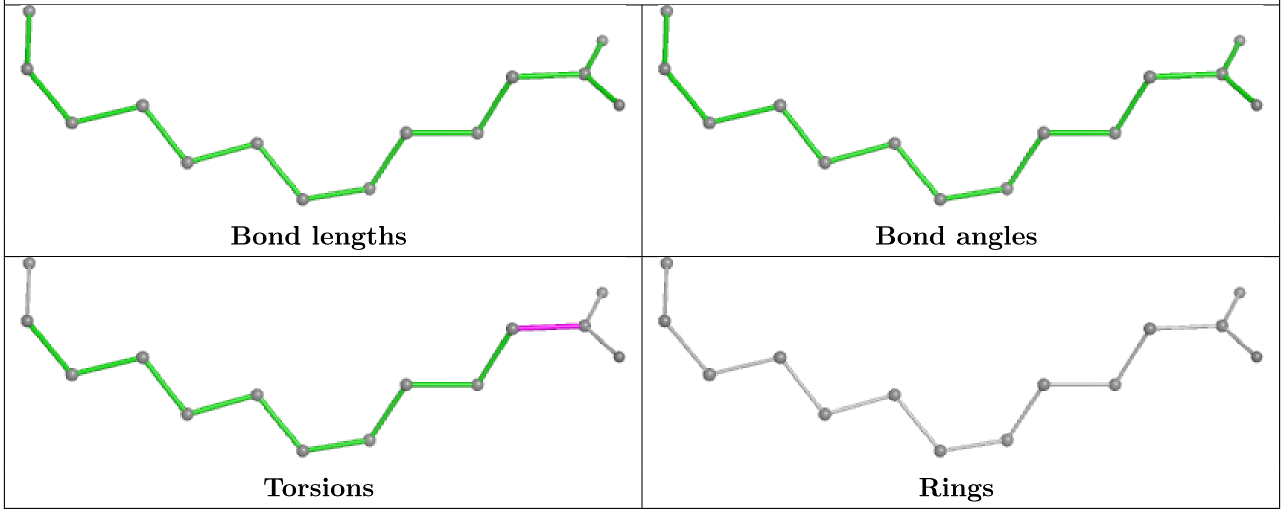
Bond angles



Torsions

Rings

Ligand PLM b 628



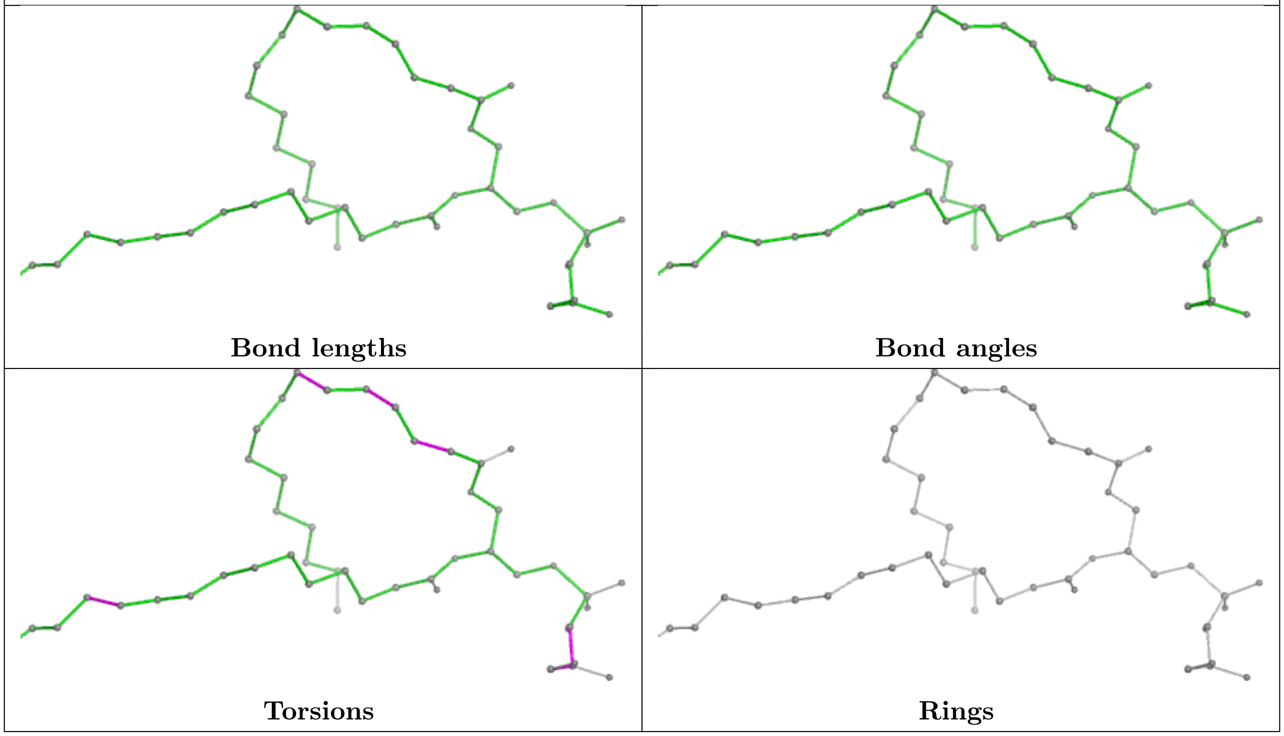
Bond lengths

Bond angles

Torsions

Rings

Ligand LHG d 408



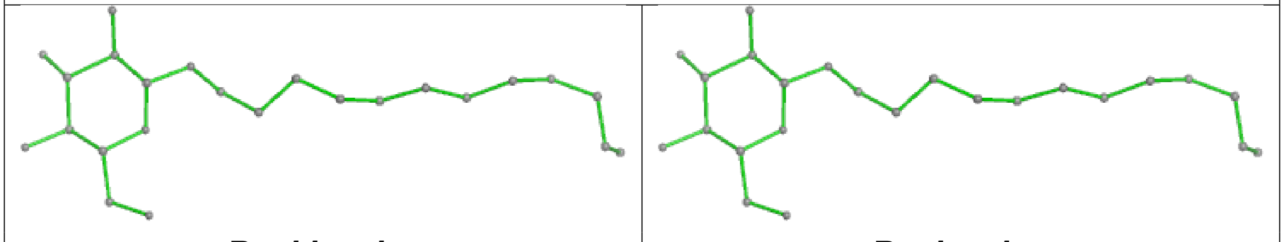
Bond lengths

Bond angles

Torsions

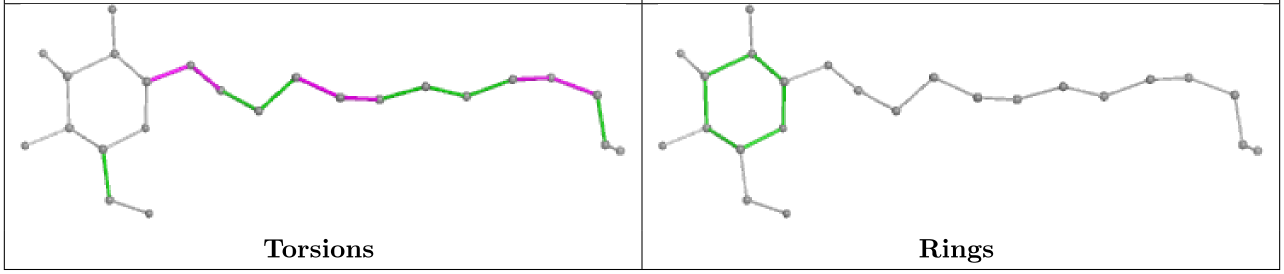
Rings

Ligand LMT D 403



Bond lengths

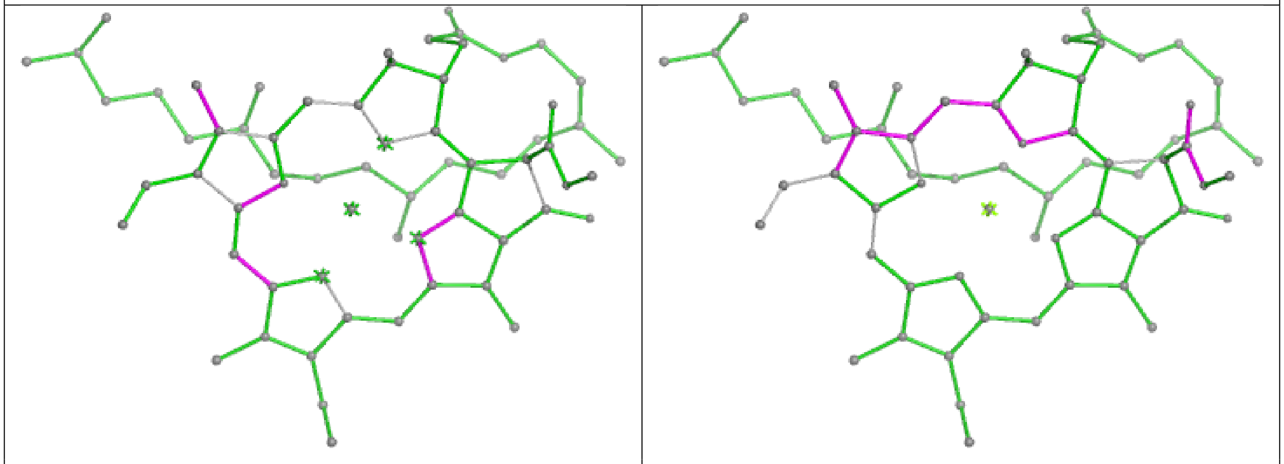
Bond angles



Torsions

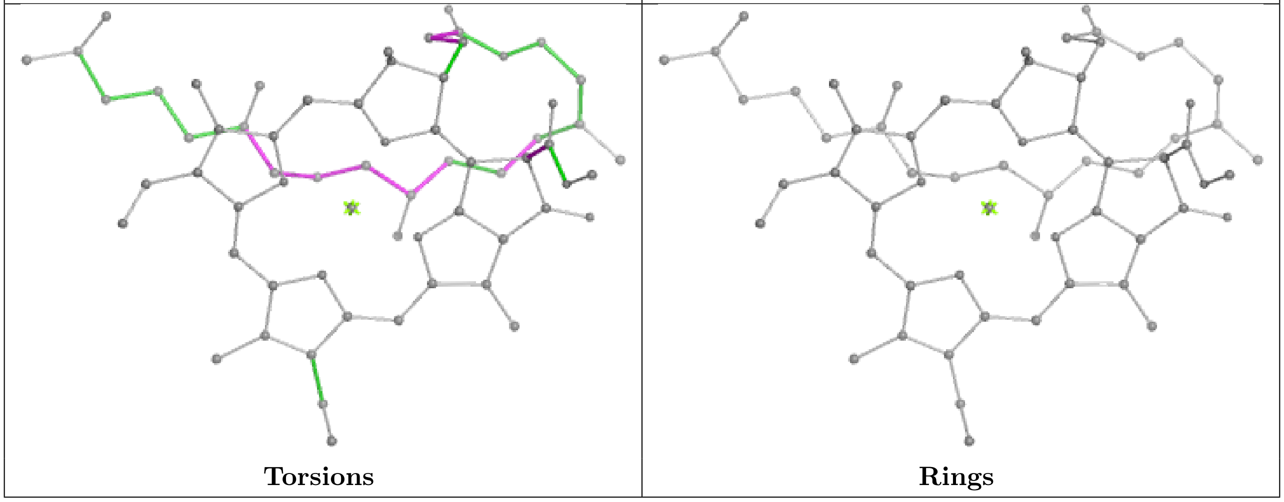
Rings

Ligand CLA B 601



Bond lengths

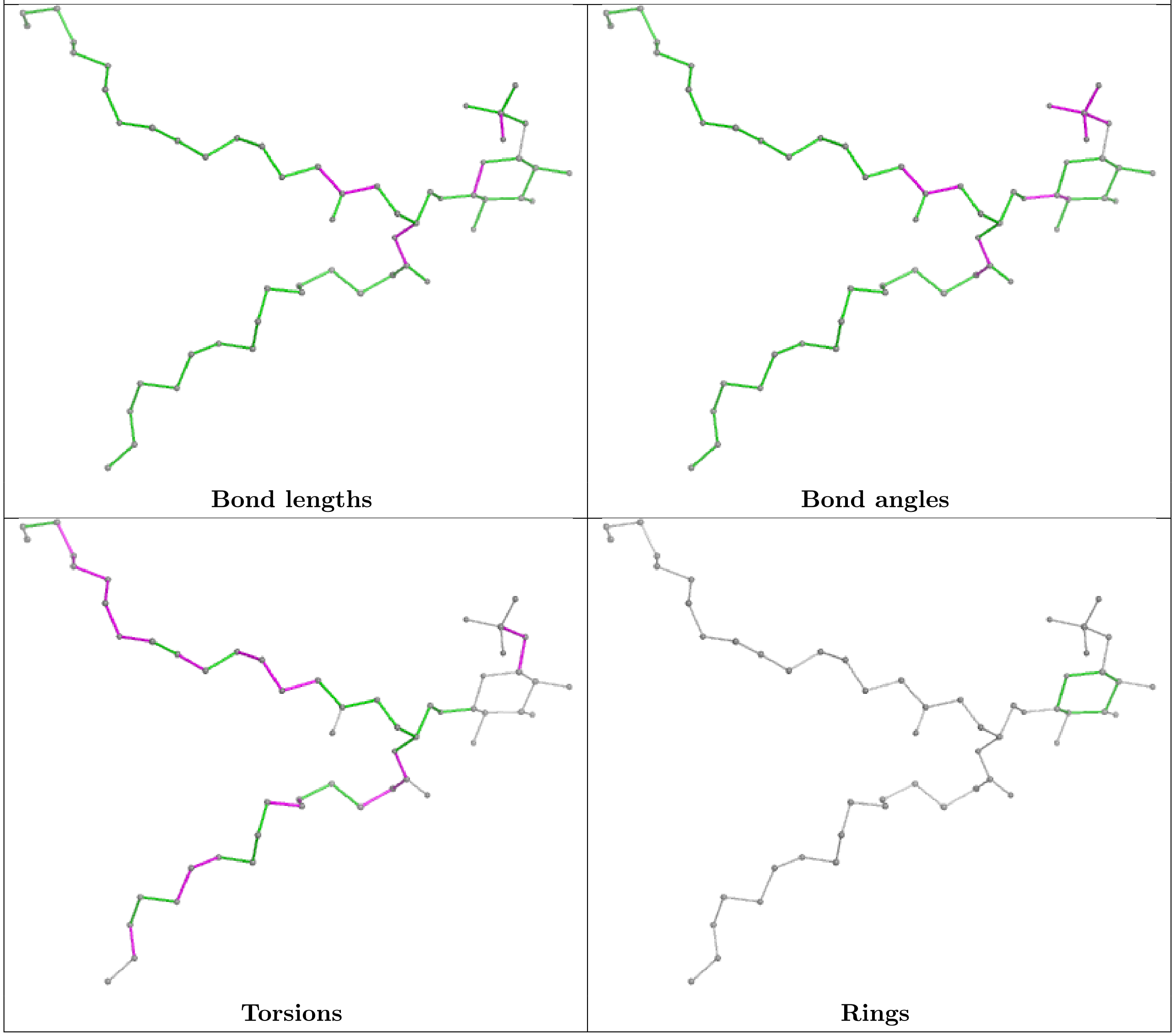
Bond angles



Torsions

Rings

Ligand SQD a 410



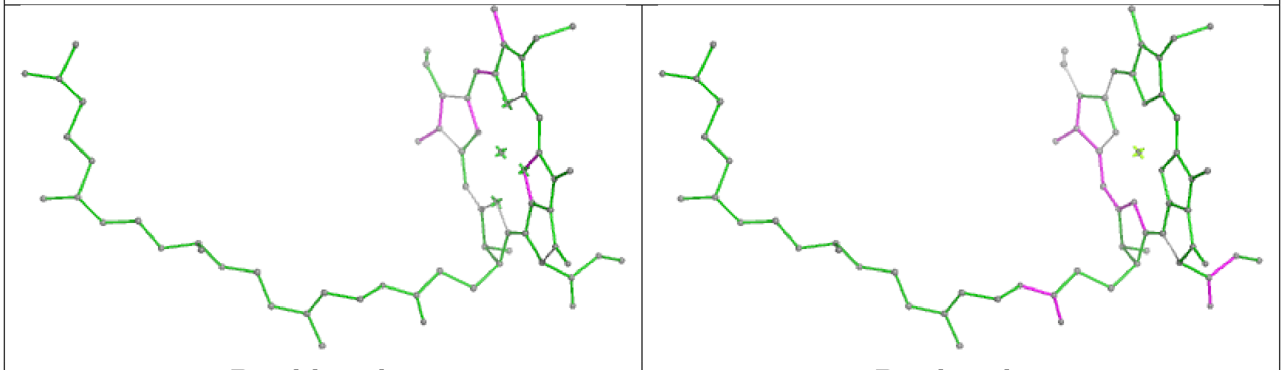
Bond lengths

Bond angles

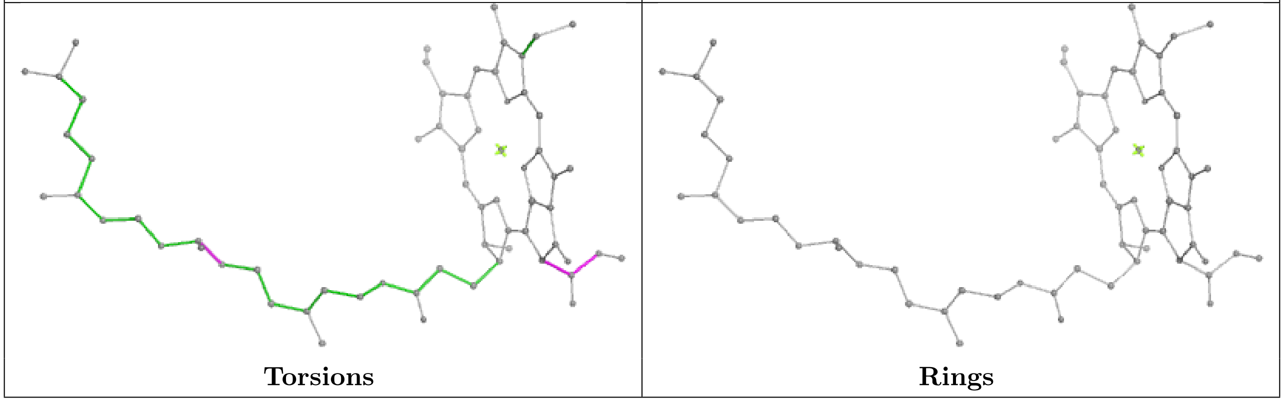
Torsions

Rings

Ligand CLA B 609

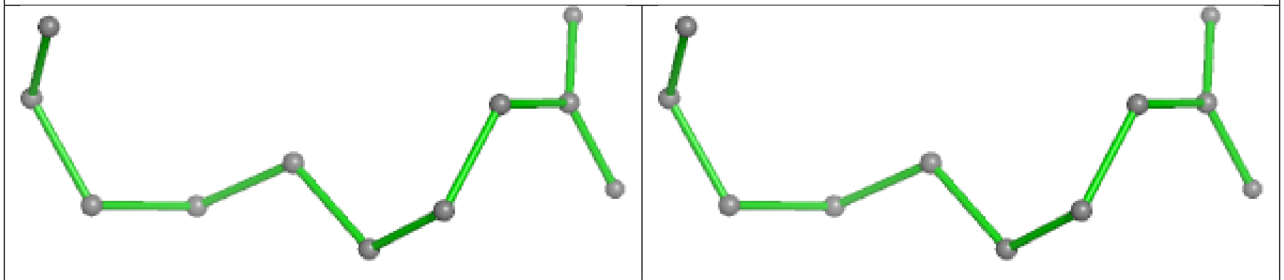


Bond lengths Bond angles

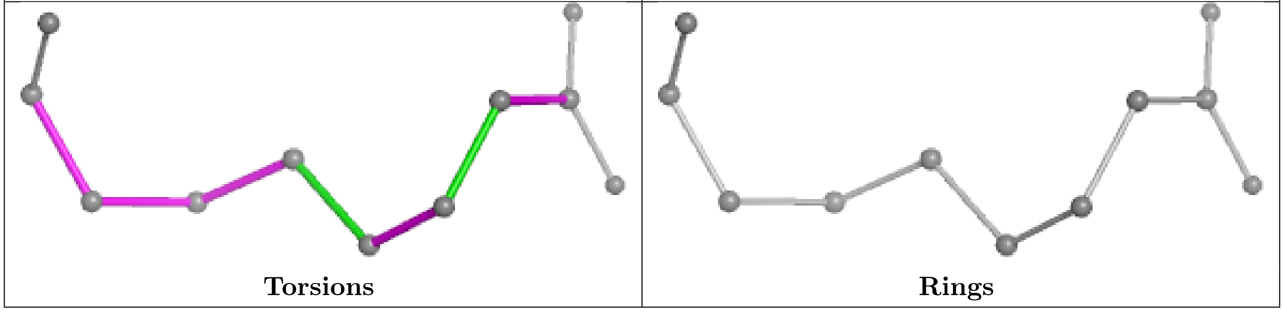


Torsions Rings

Ligand PLM I 104

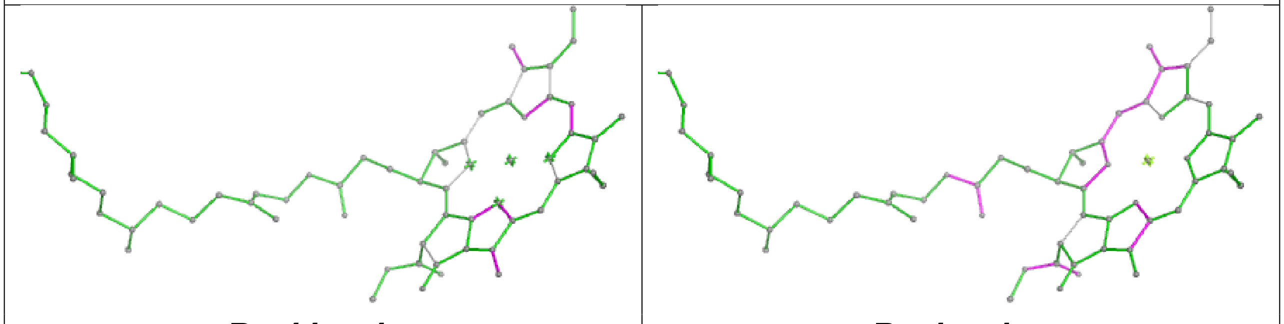


Bond lengths Bond angles



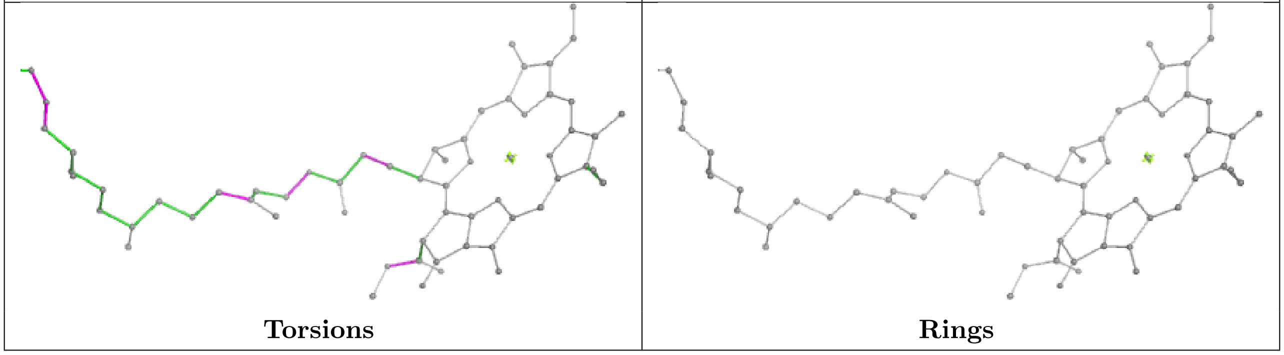
Torsions Rings

Ligand CLA A 403



Bond lengths

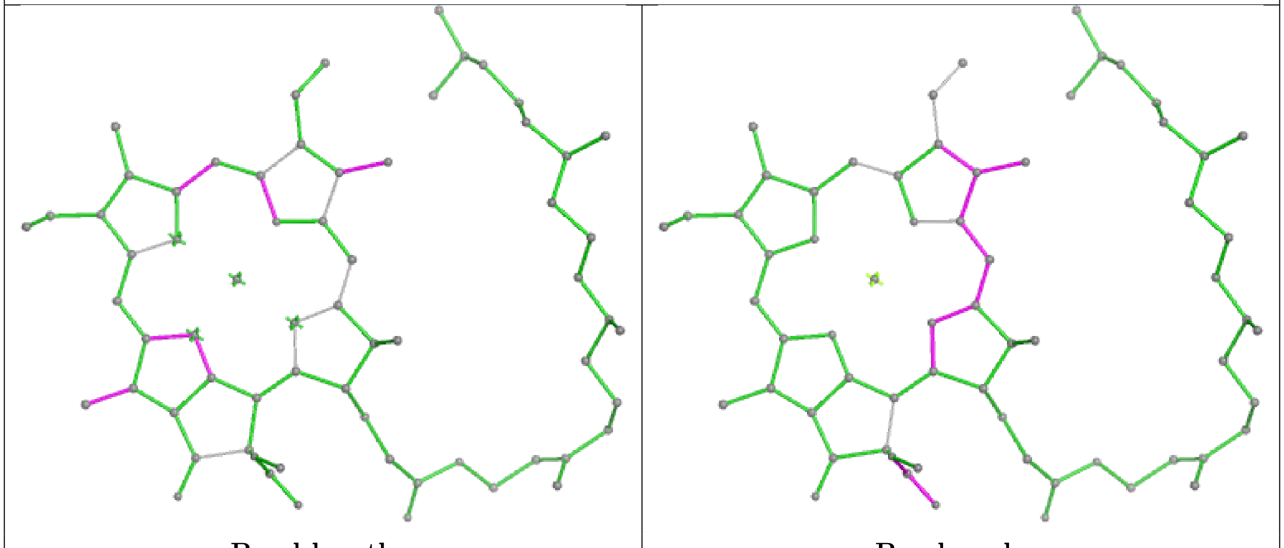
Bond angles



Torsions

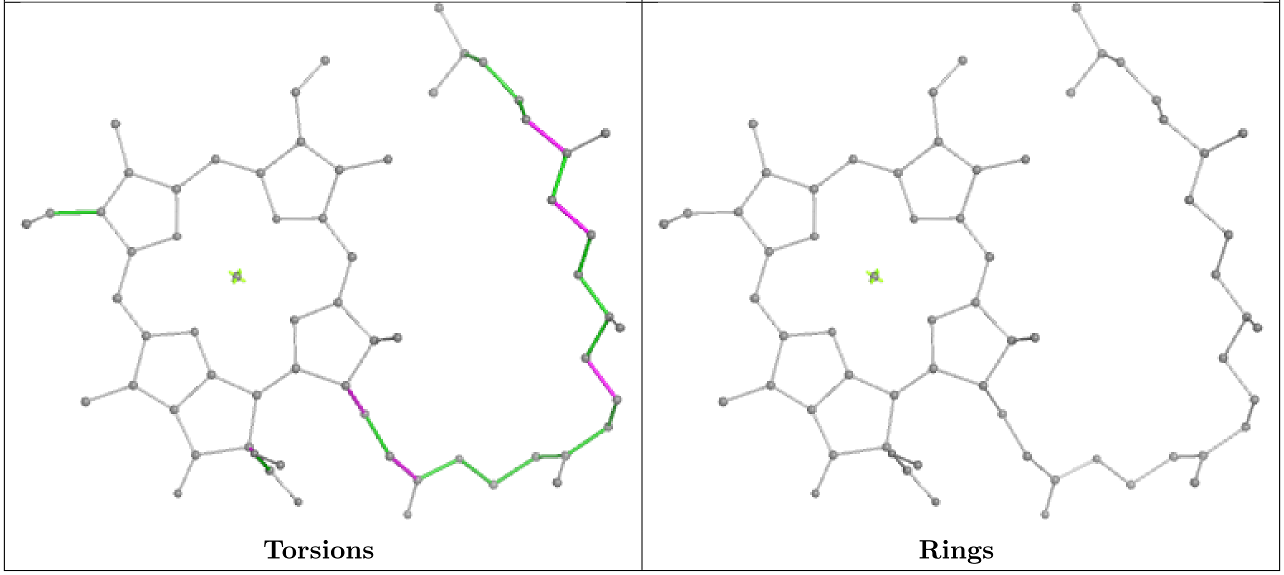
Rings

Ligand CLA C 514



Bond lengths

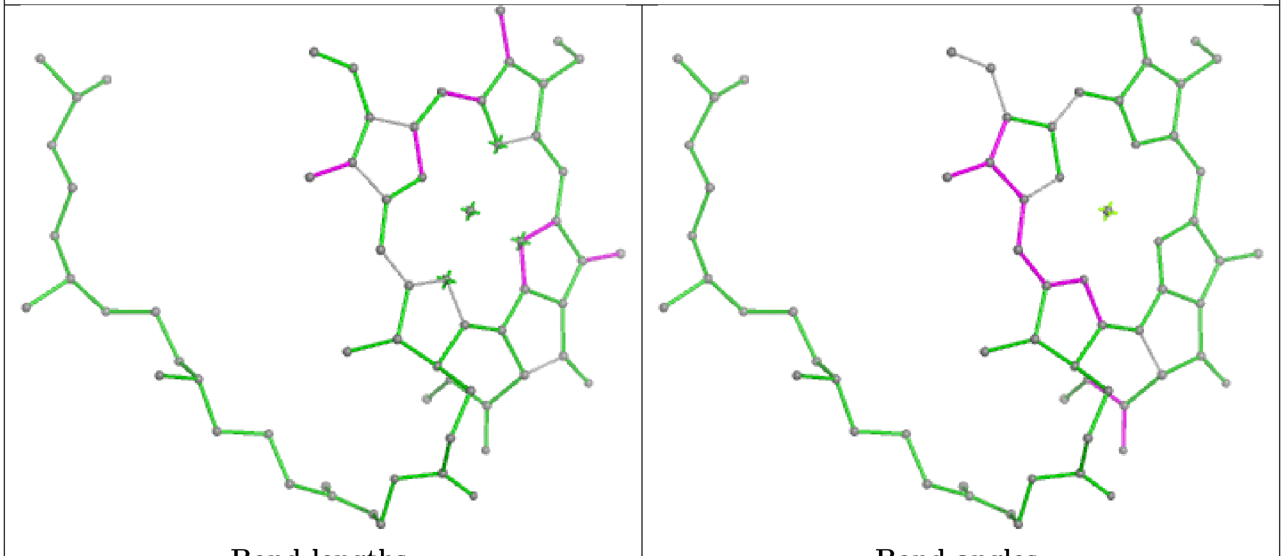
Bond angles



Torsions

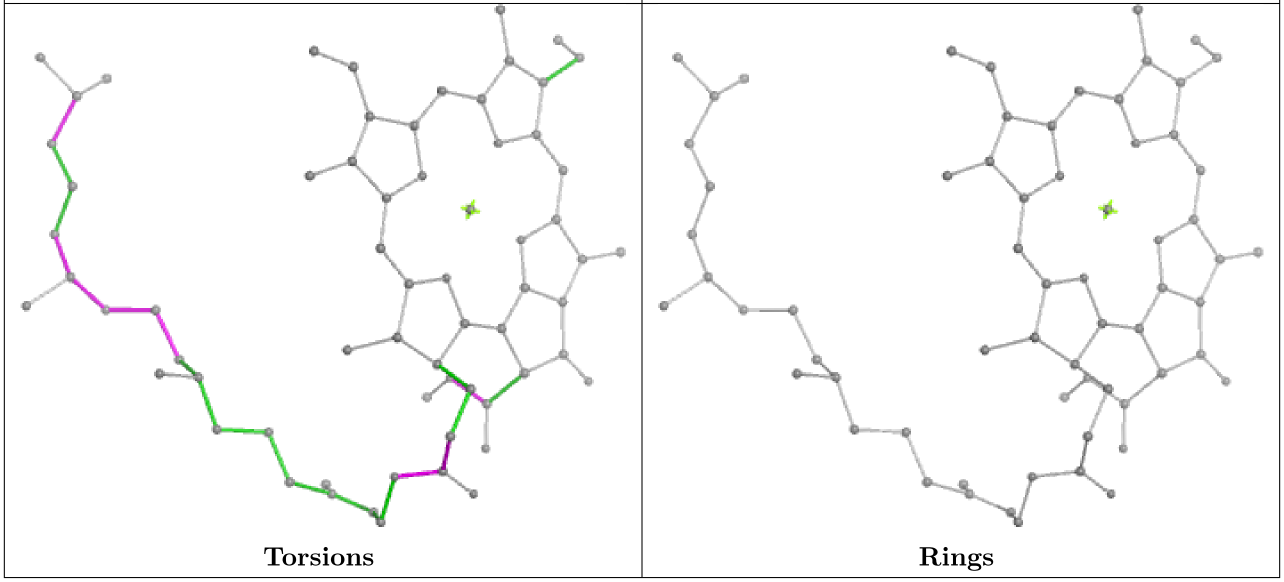
Rings

Ligand CLA b 618



Bond lengths

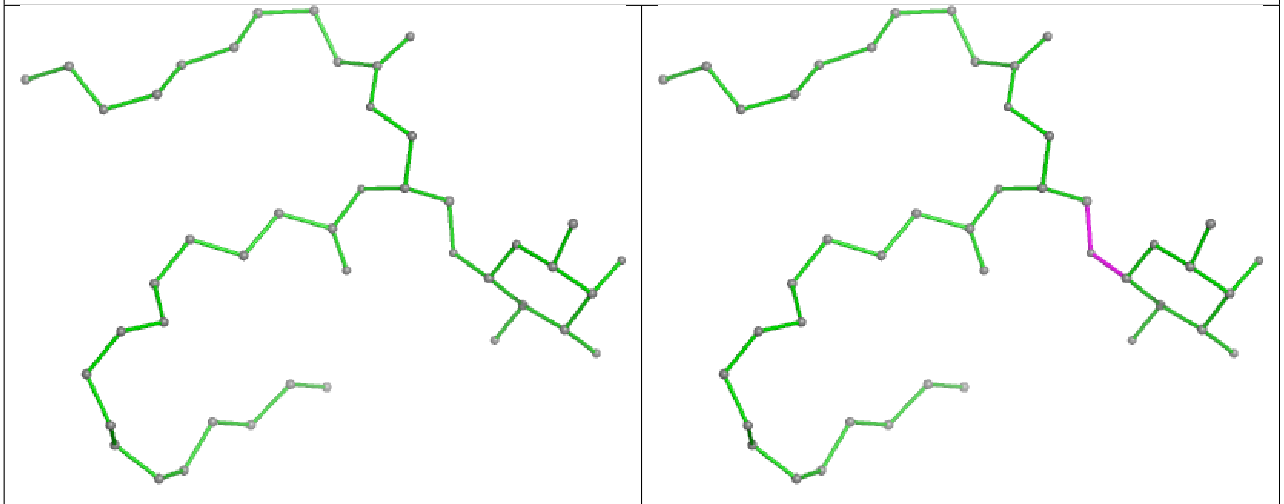
Bond angles



Torsions

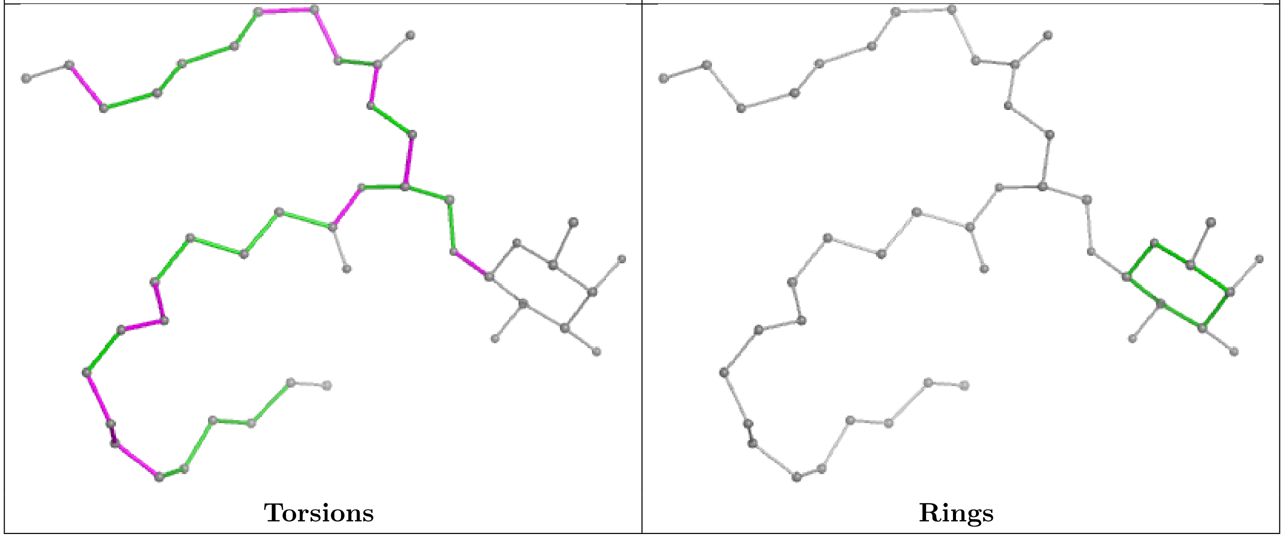
Rings

Ligand DGD D 415



Bond lengths

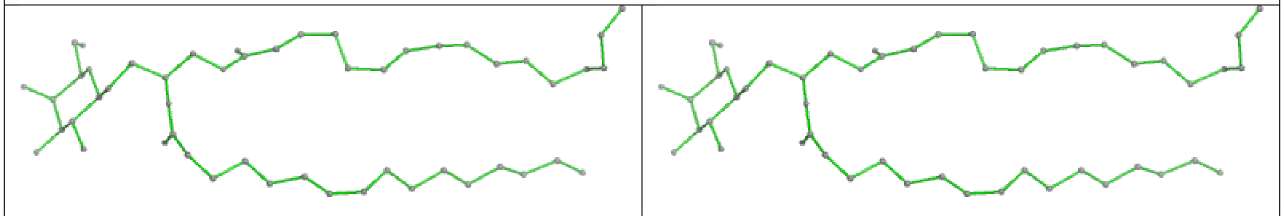
Bond angles



Torsions

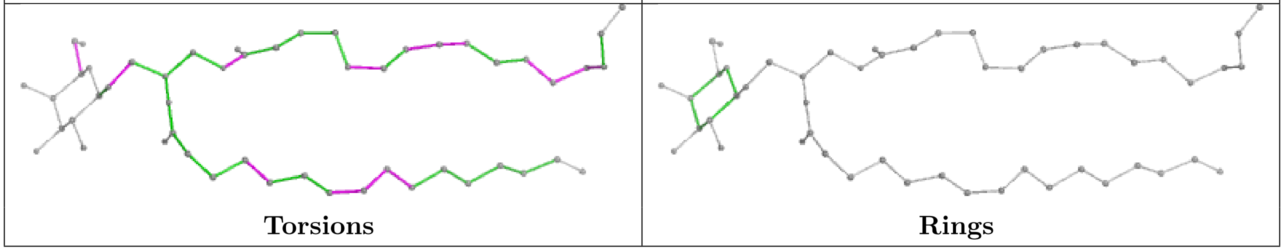
Rings

Ligand LMG c 518



Bond lengths

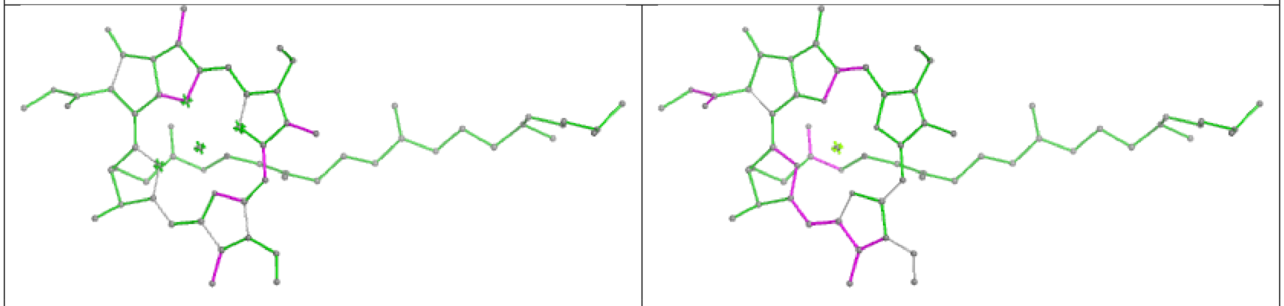
Bond angles



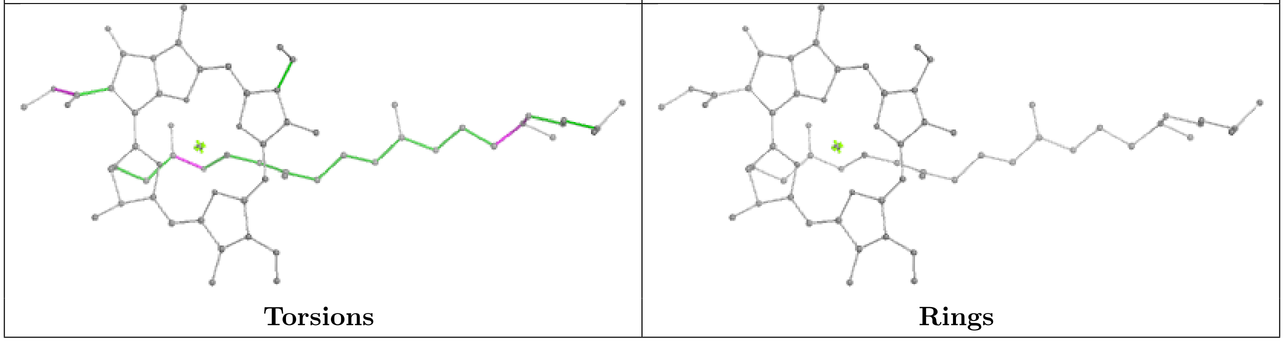
Torsions

Rings

Ligand CLA B 608

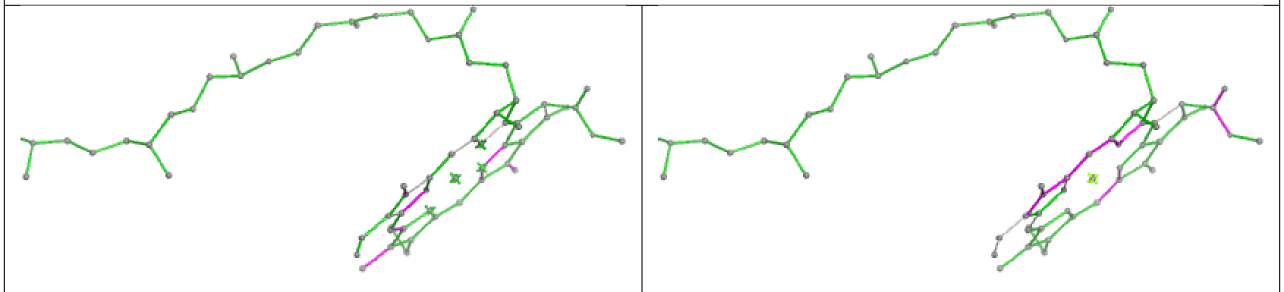


Bond lengths Bond angles

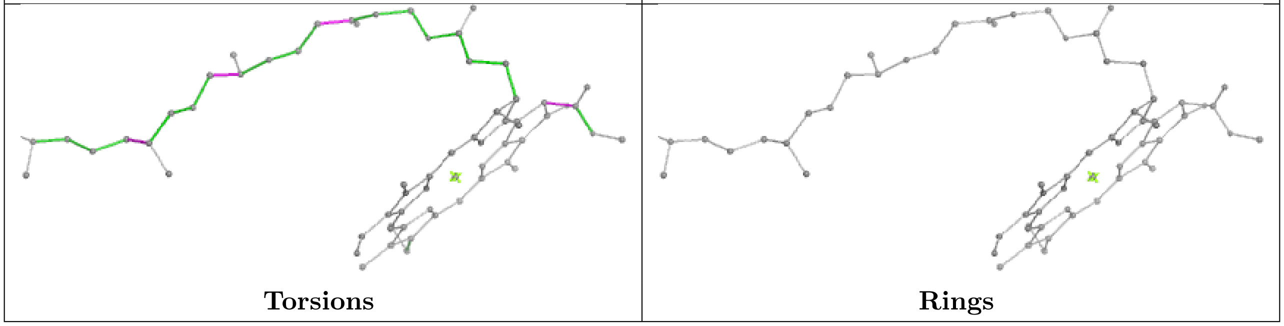


Torsions Rings

Ligand CLA C 506

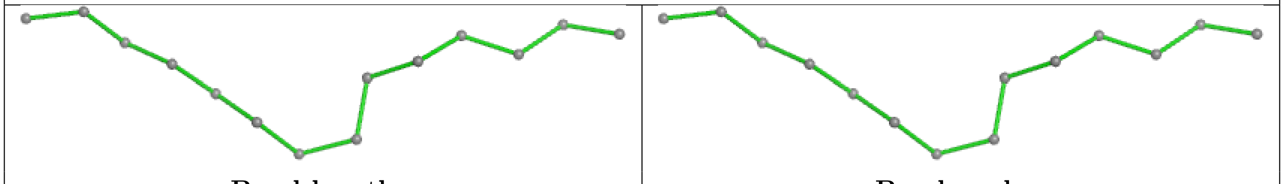


Bond lengths Bond angles



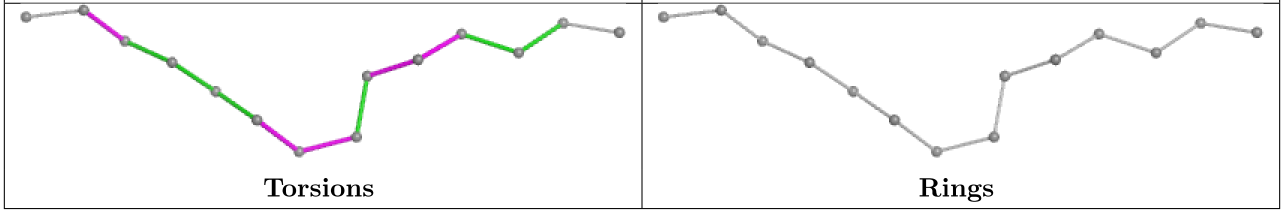
Torsions Rings

Ligand LFA H 101



Bond lengths

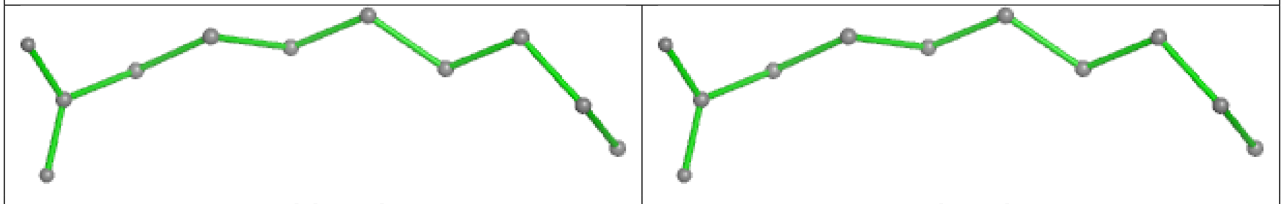
Bond angles



Torsions

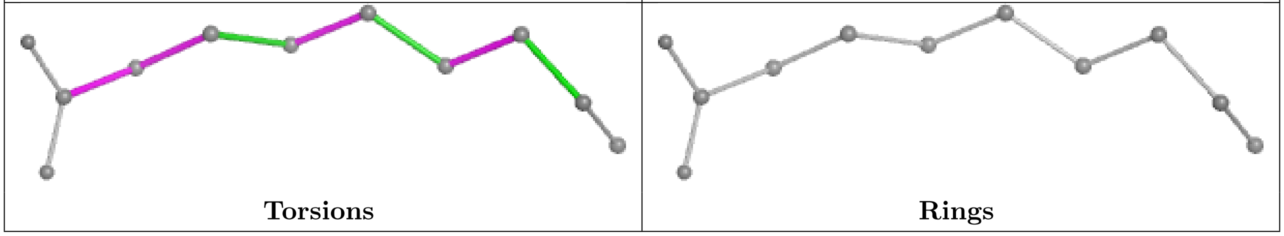
Rings

Ligand PLM A 415



Bond lengths

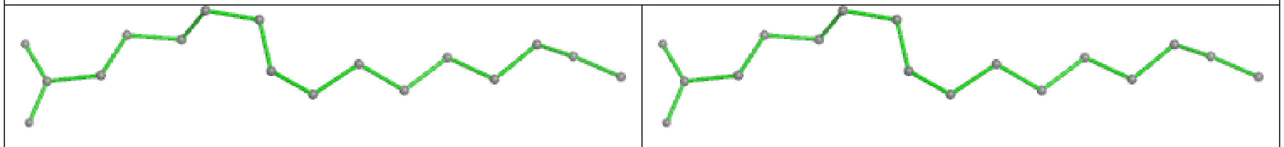
Bond angles



Torsions

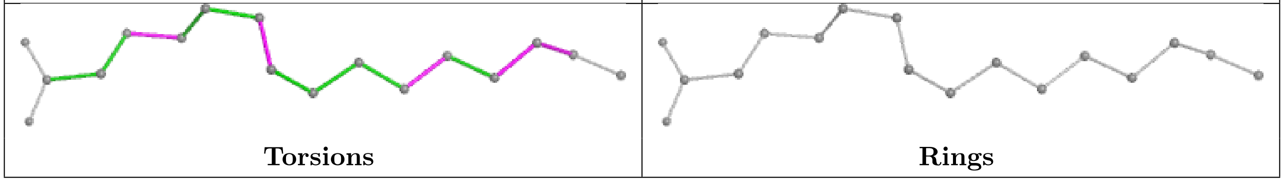
Rings

Ligand PLM a 401



Bond lengths

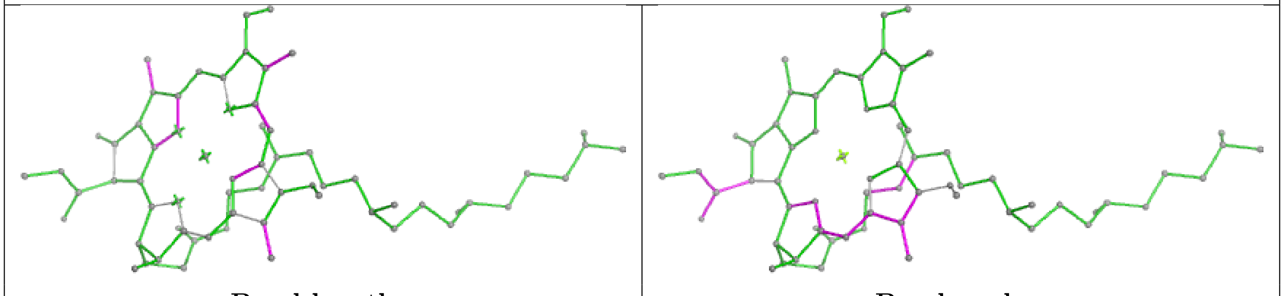
Bond angles



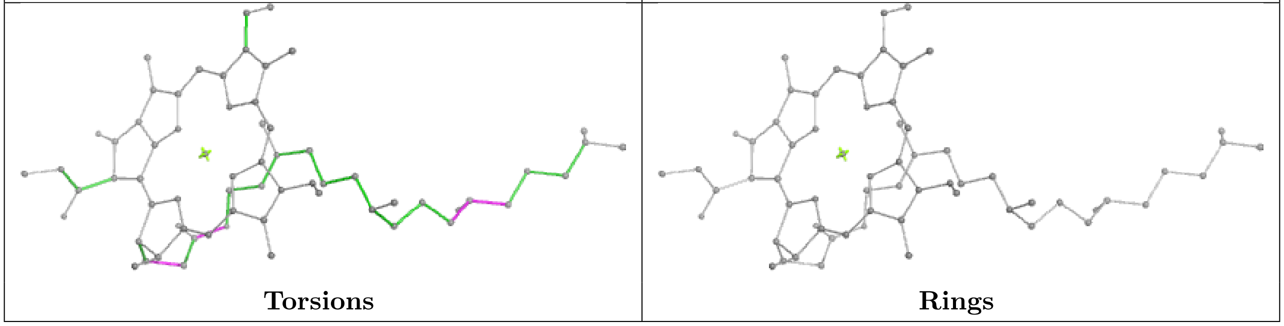
Torsions

Rings

Ligand CLA c 506

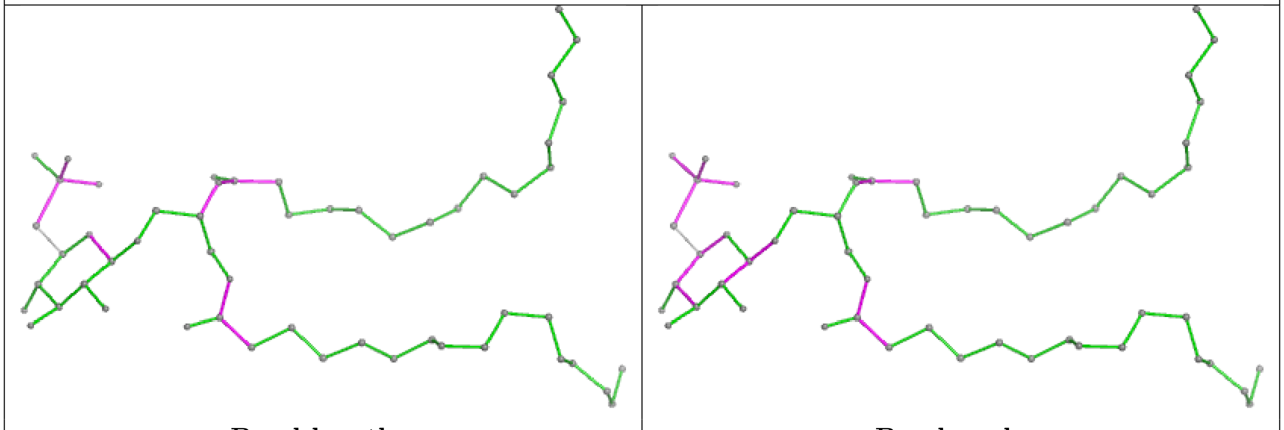


Bond lengths Bond angles

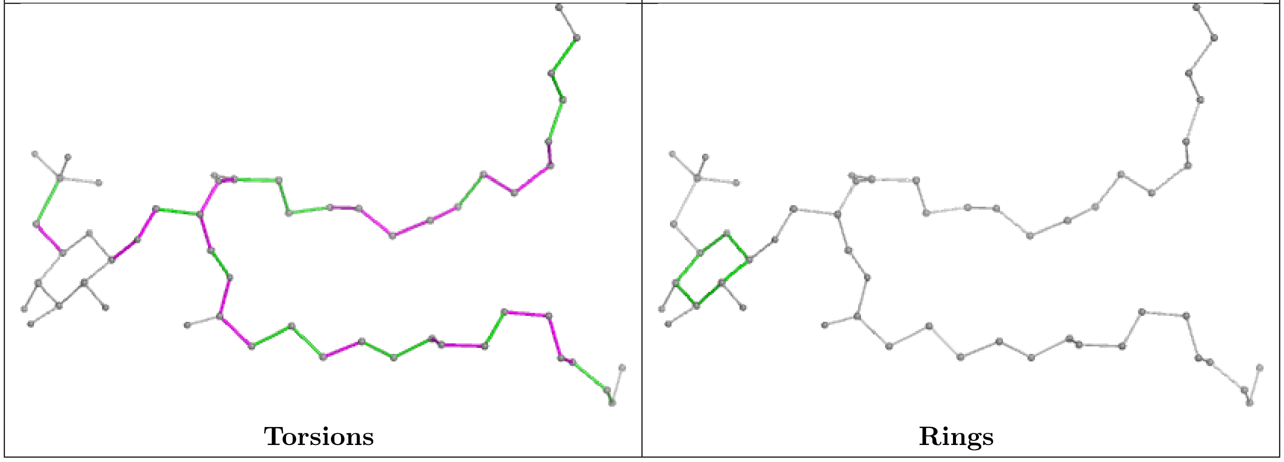


Torsions Rings

Ligand SQD L 102

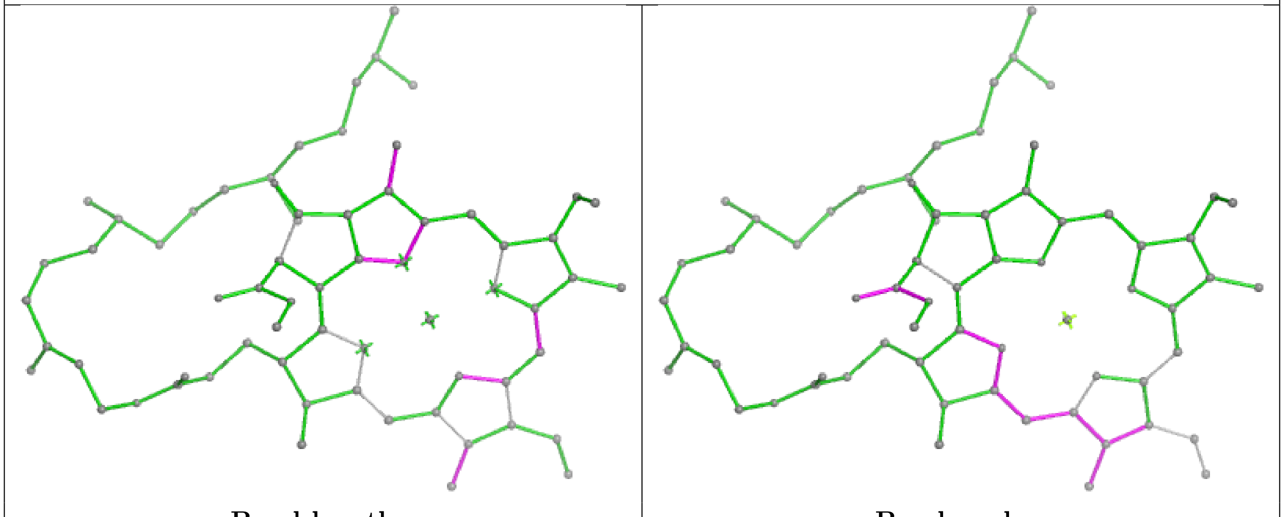


Bond lengths Bond angles

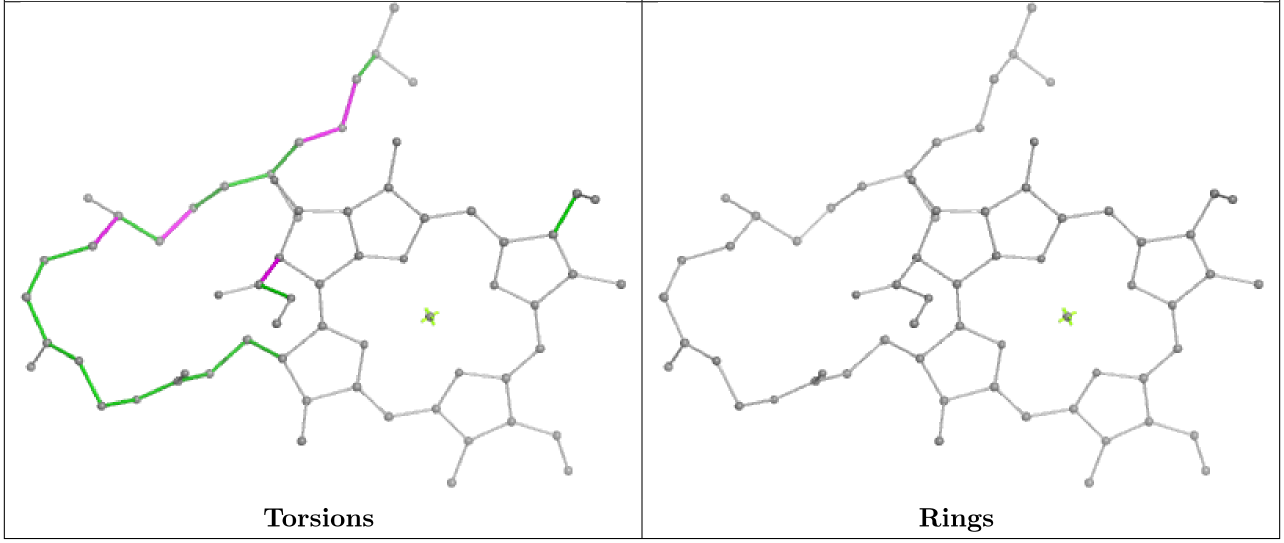


Torsions Rings

Ligand CLA c 510

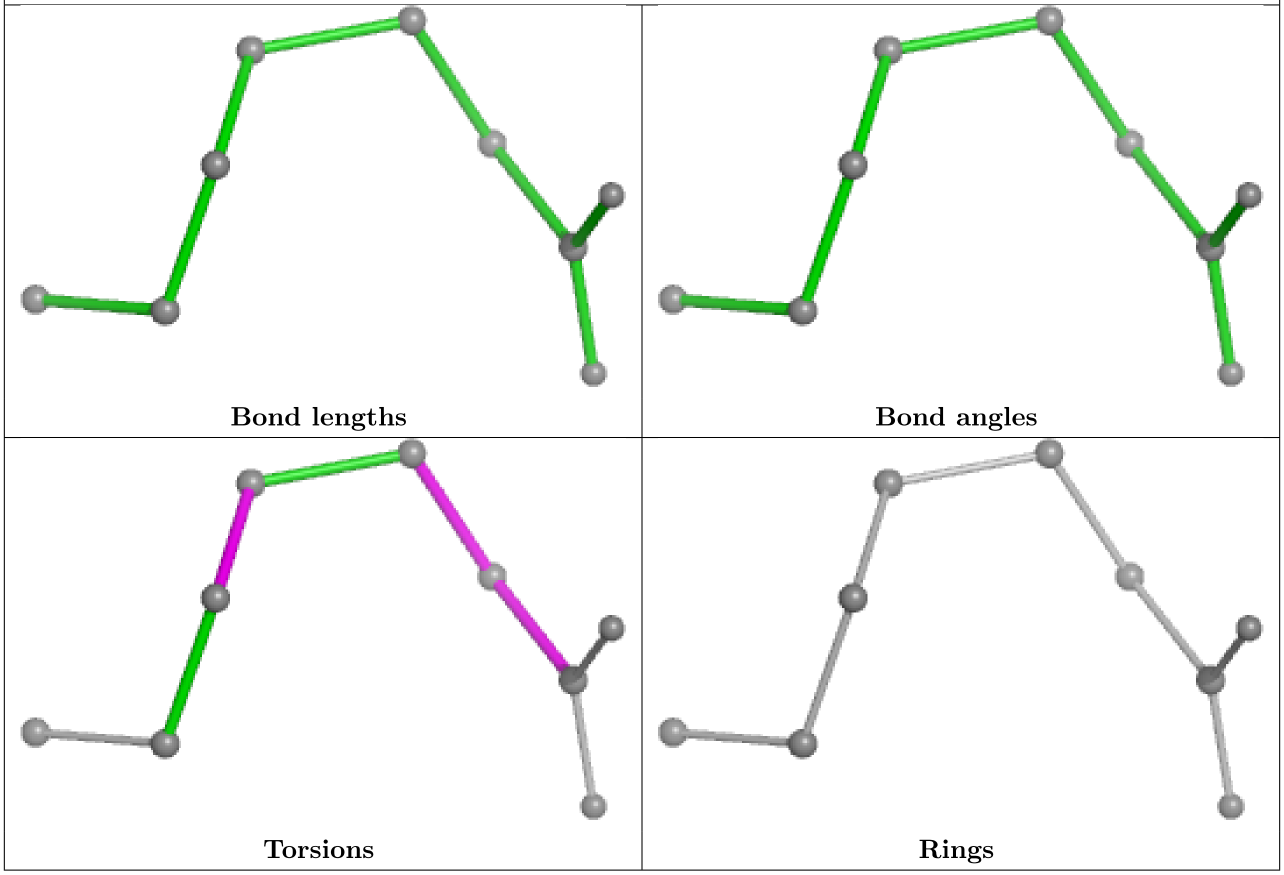


Bond lengths **Bond angles**



Torsions **Rings**

Ligand PLM b 625



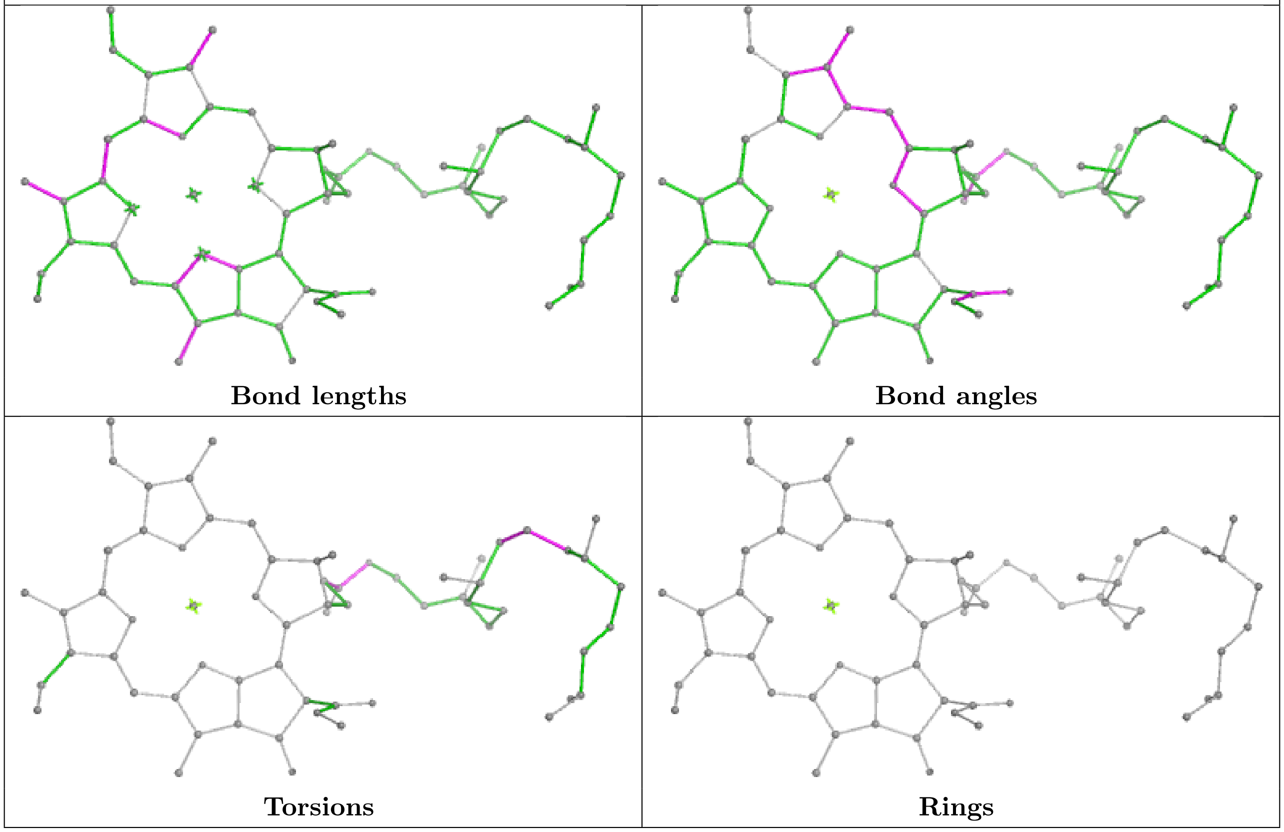
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA B 612



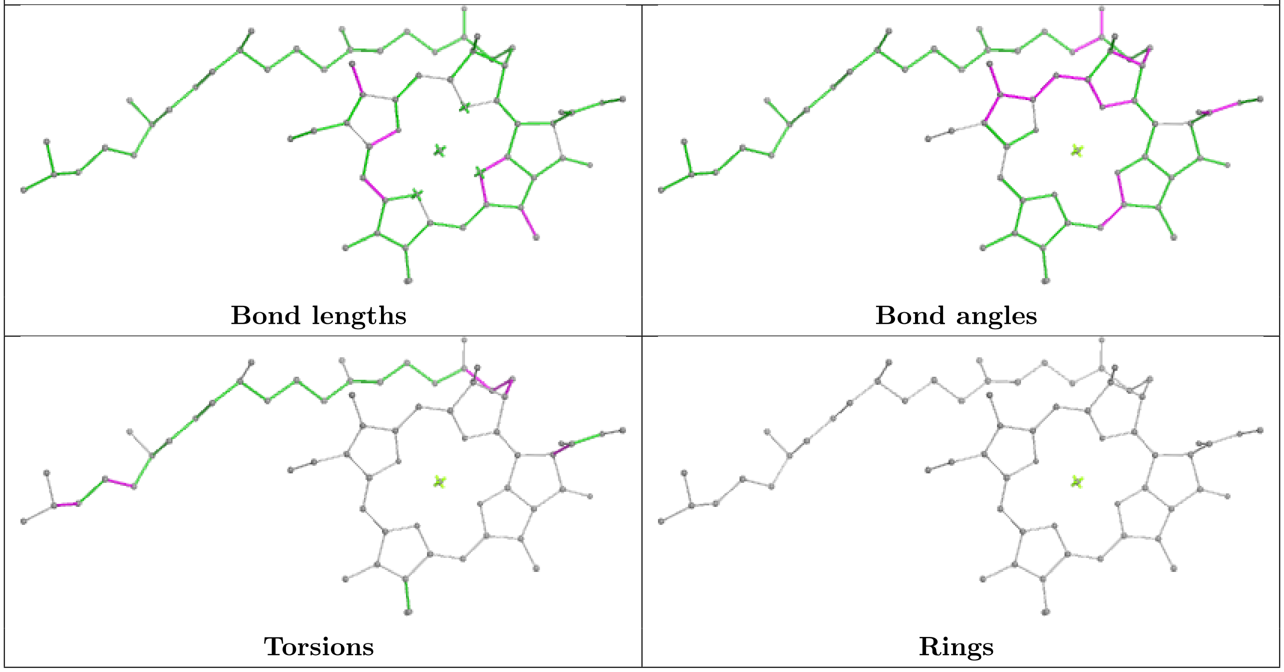
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA C 503



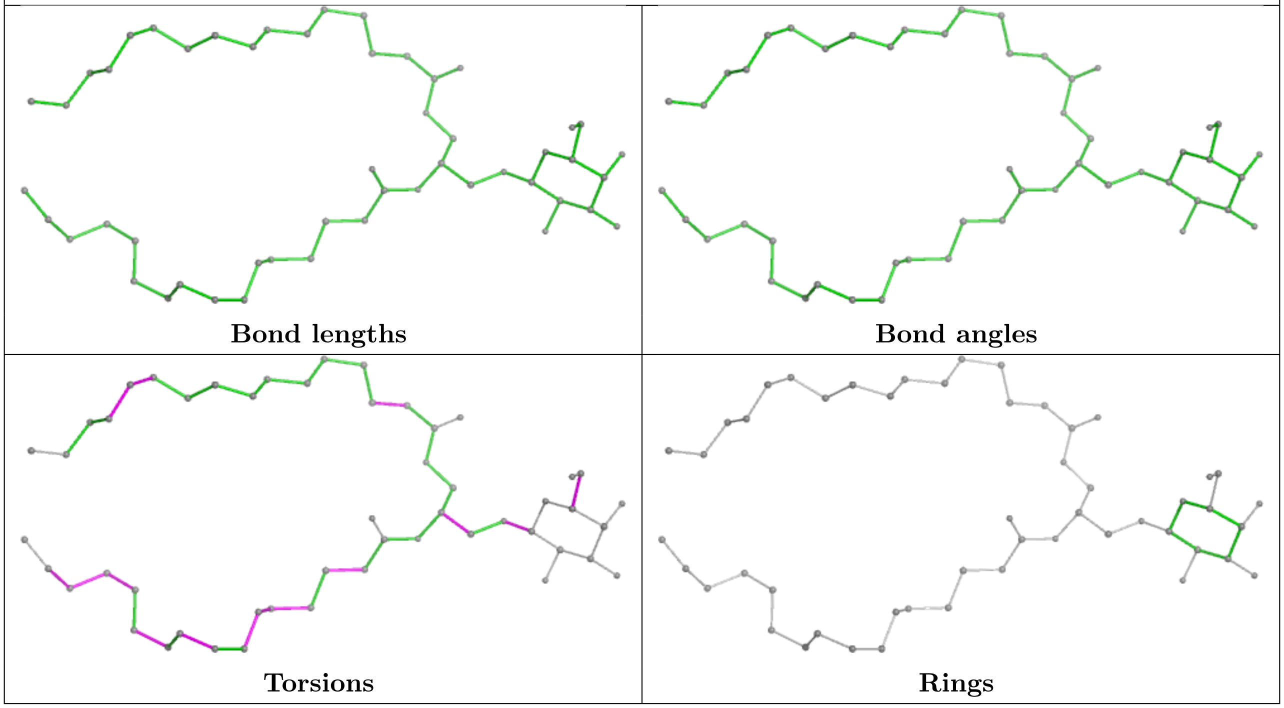
Bond lengths

Bond angles

Torsions

Rings

Ligand LMG c 501



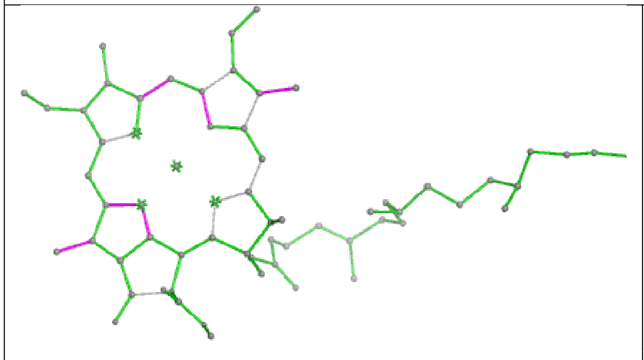
Bond lengths

Bond angles

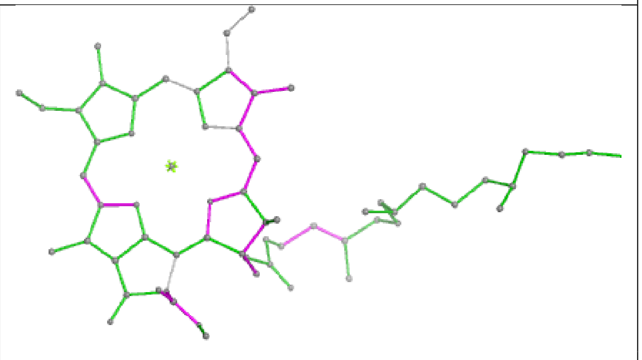
Torsions

Rings

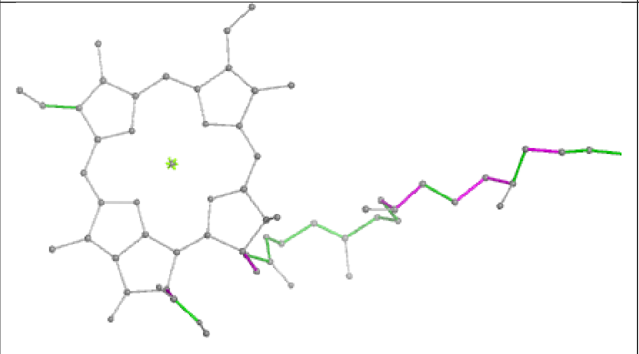
Ligand CLA A 405



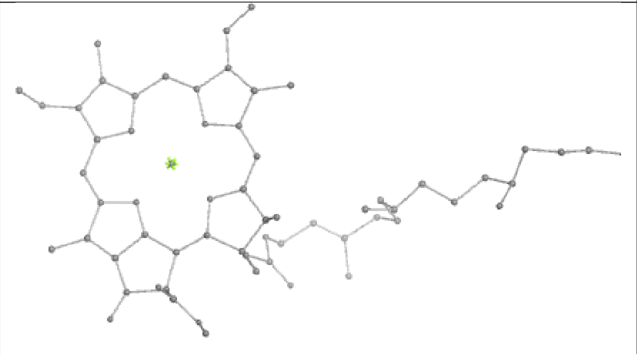
Bond lengths



Bond angles

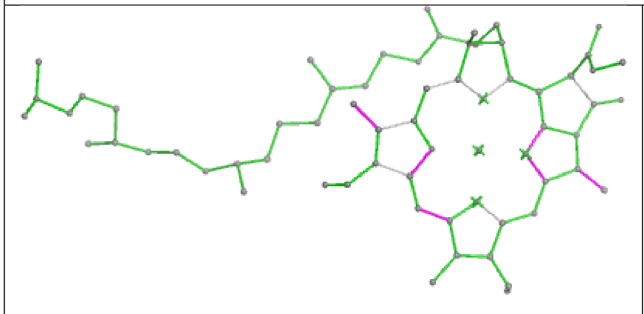


Torsions

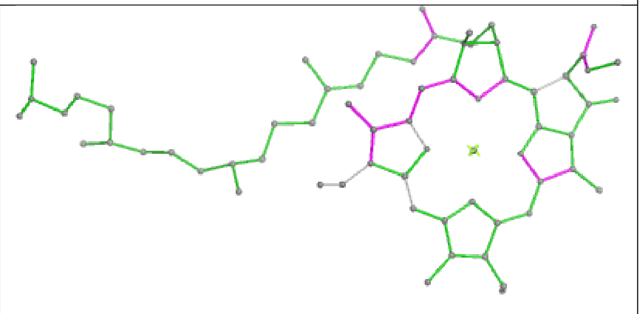


Rings

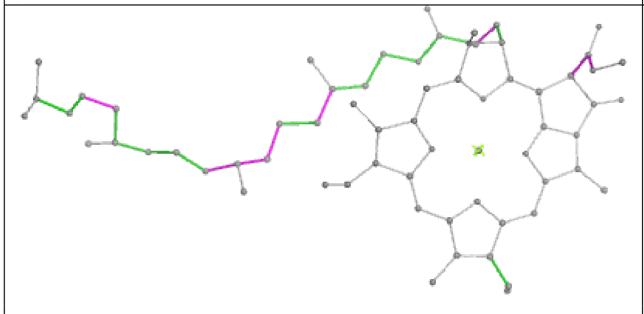
Ligand CLA b 605



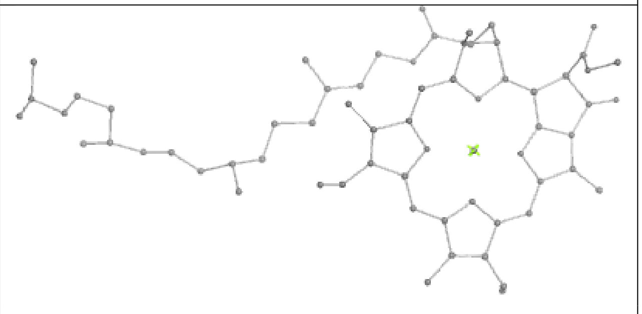
Bond lengths



Bond angles

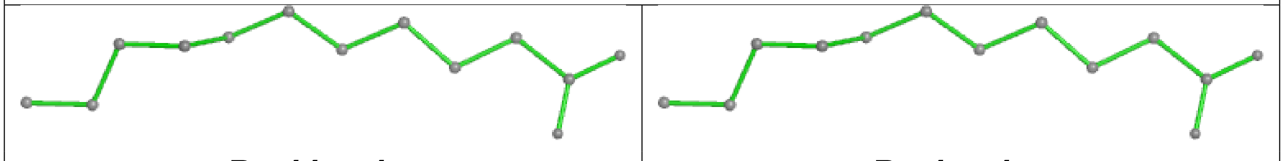


Torsions



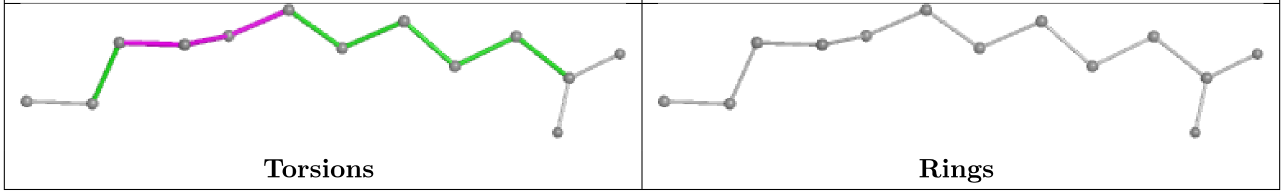
Rings

Ligand PLM B 626



Bond lengths

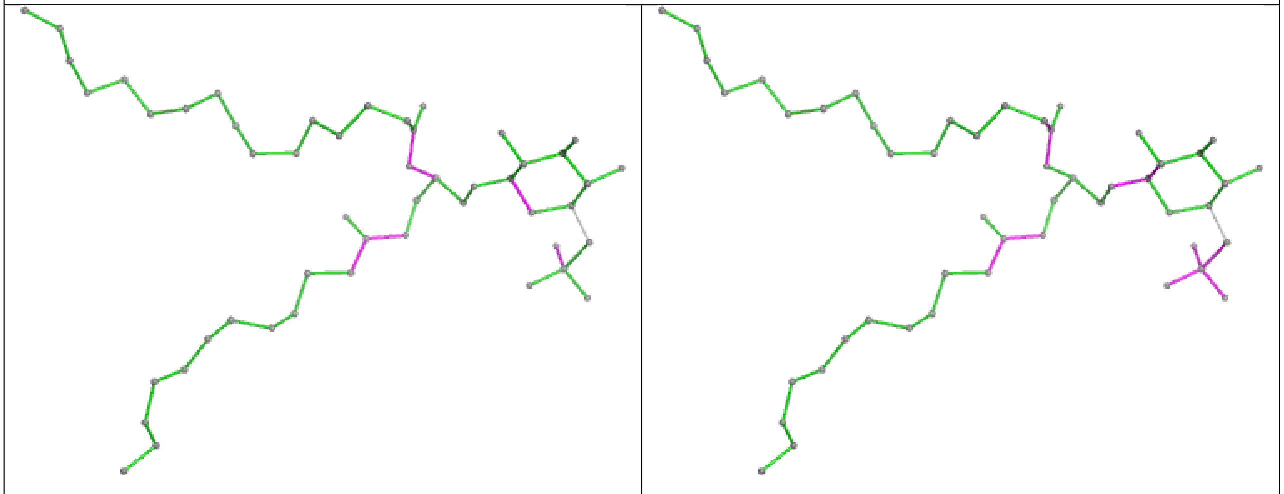
Bond angles



Torsions

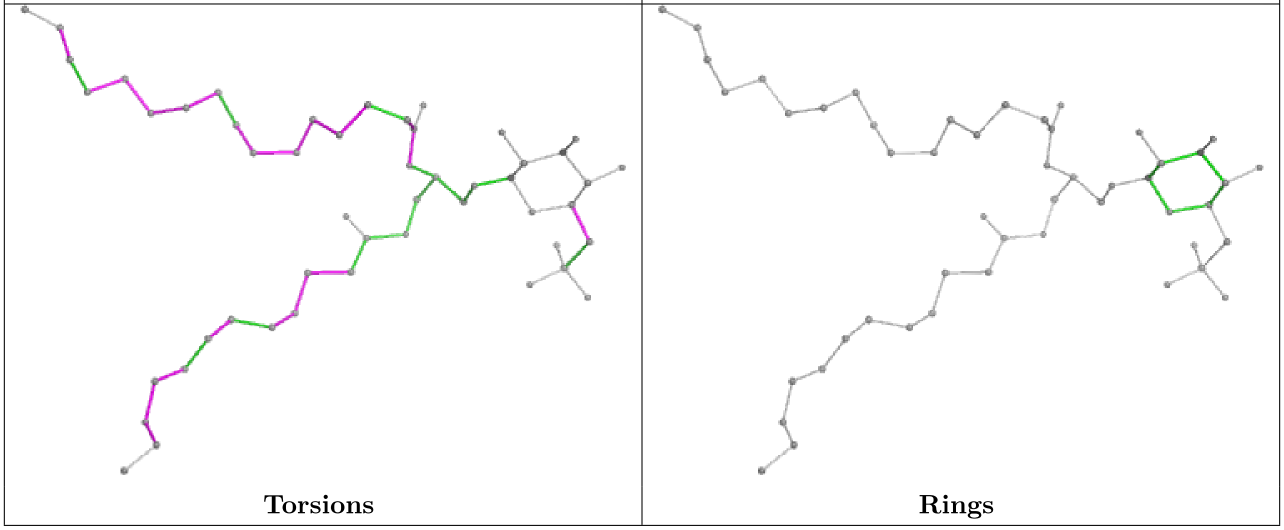
Rings

Ligand SQD A 409



Bond lengths

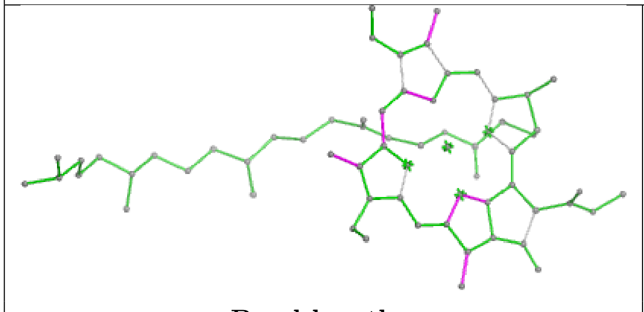
Bond angles

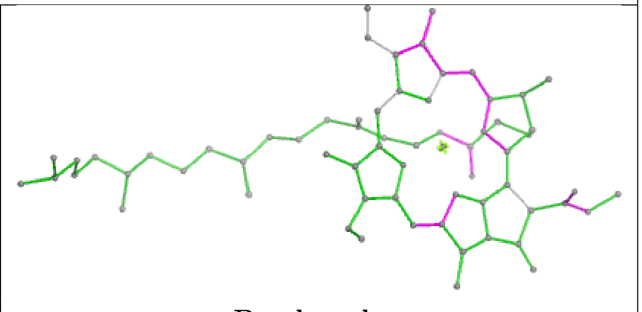


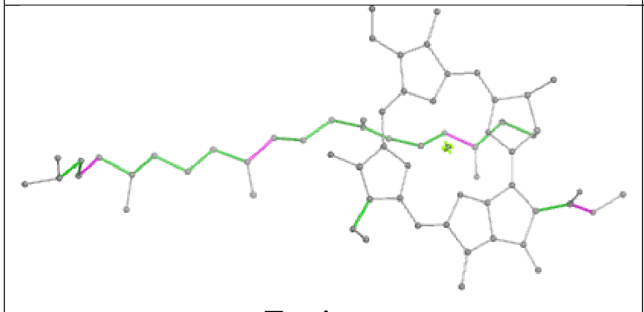
Torsions

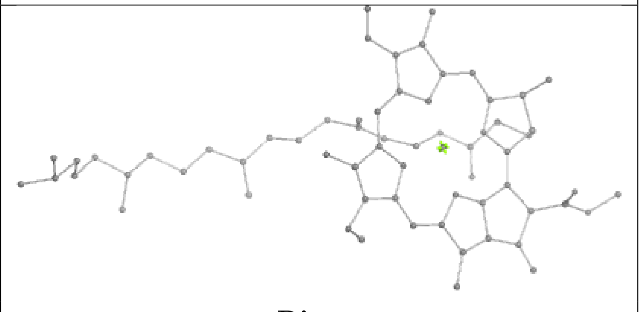
Rings

Ligand CLA b 610

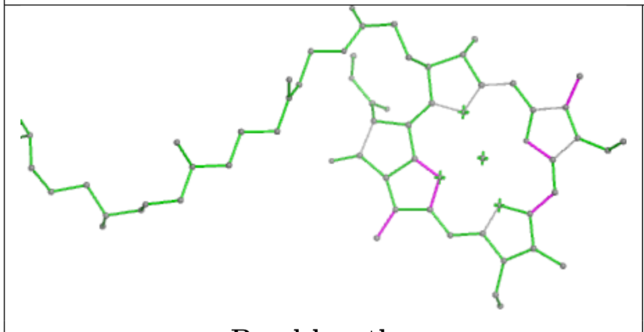

Bond lengths

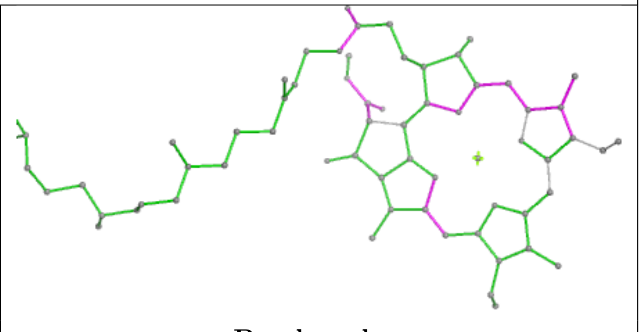

Bond angles

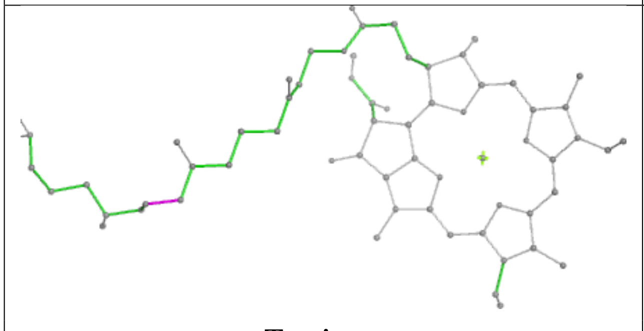

Torsions

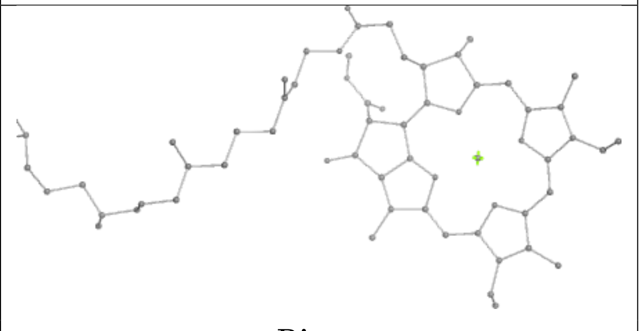

Rings

Ligand CLA B 602

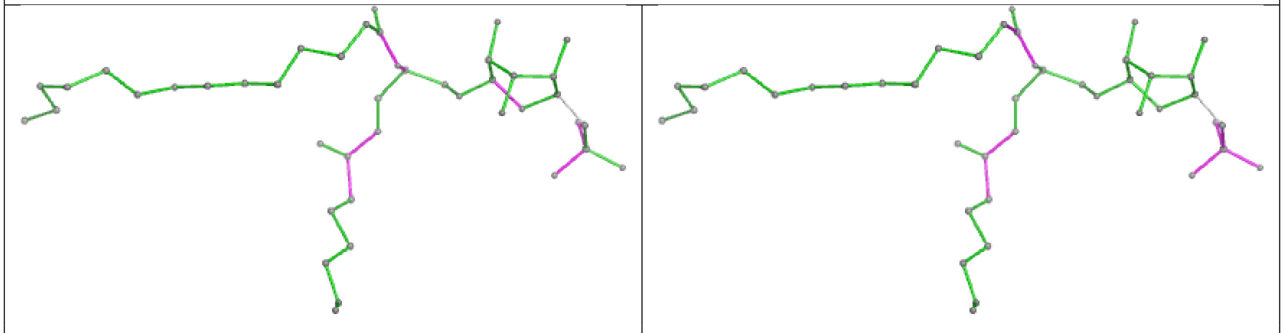

Bond lengths


Bond angles


Torsions

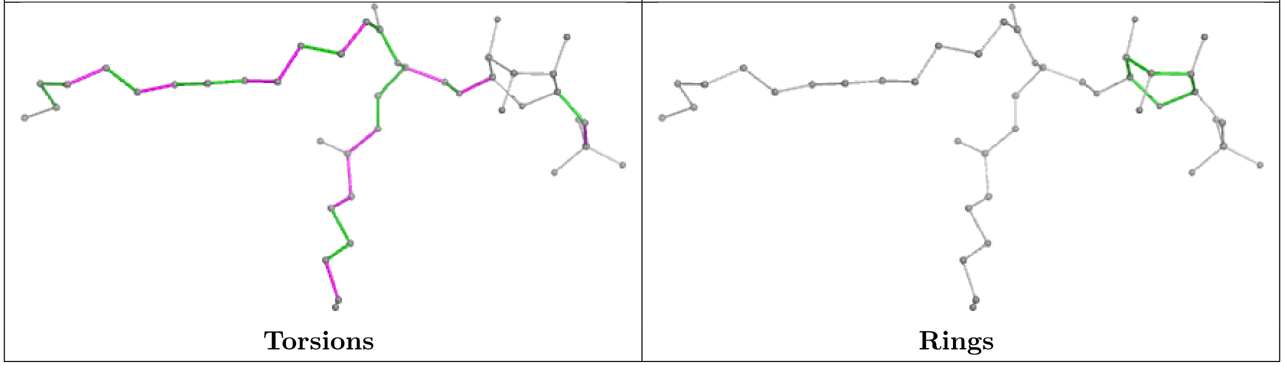

Rings

Ligand SQD a 412



Bond lengths

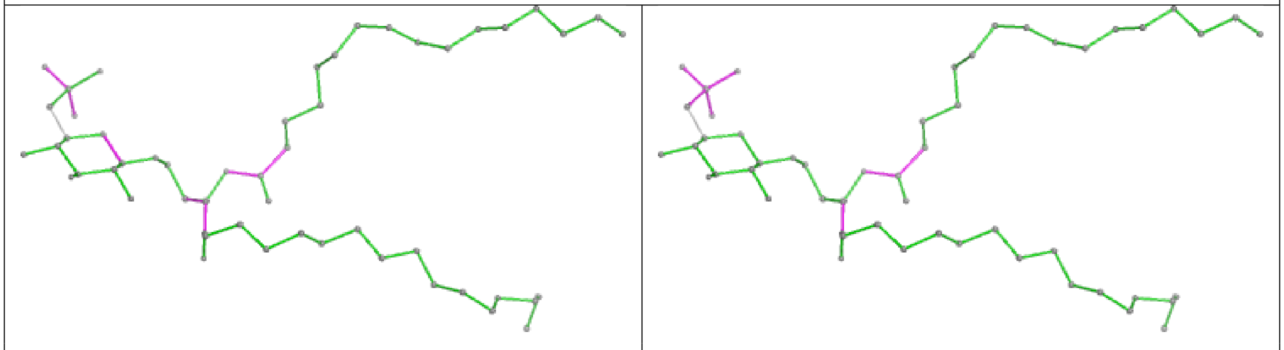
Bond angles



Torsions

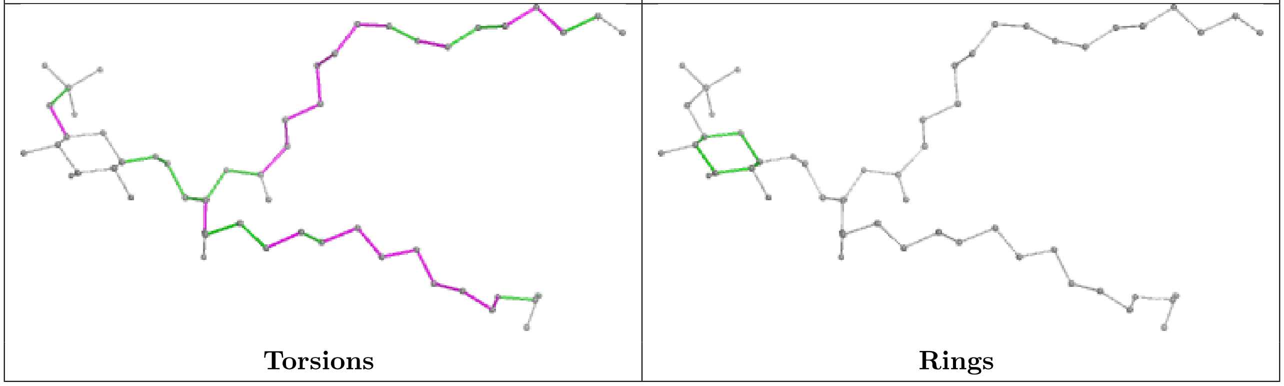
Rings

Ligand SQD A 411



Bond lengths

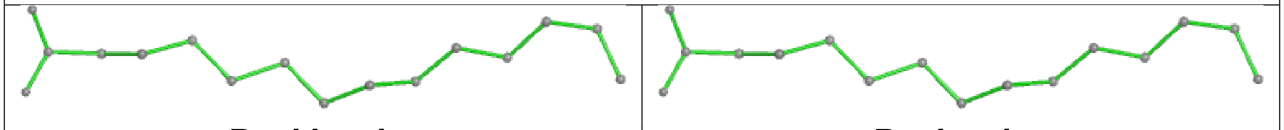
Bond angles



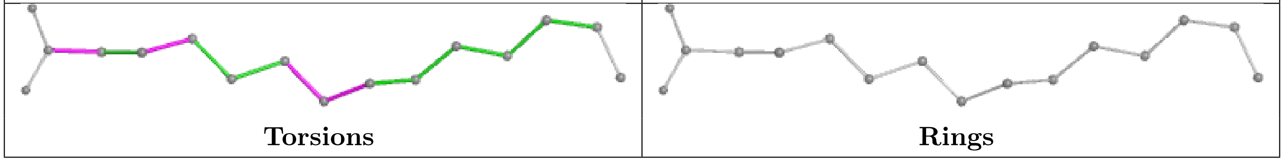
Torsions

Rings

Ligand PLM b 631

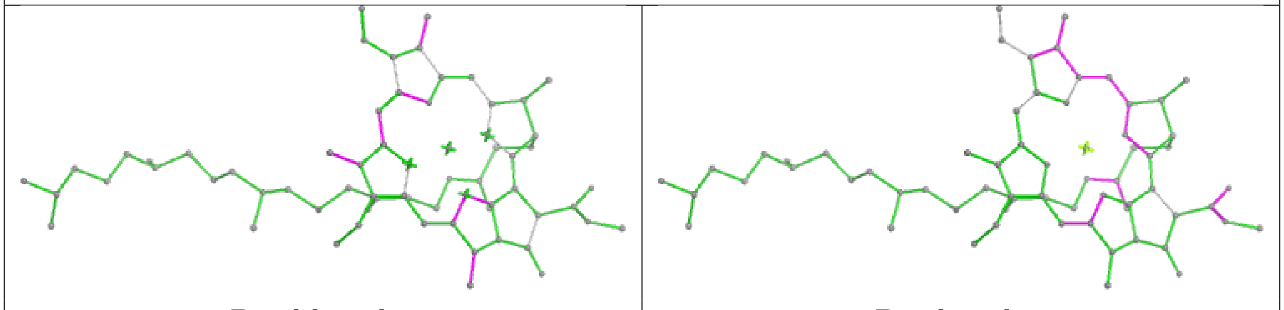


Bond lengths Bond angles

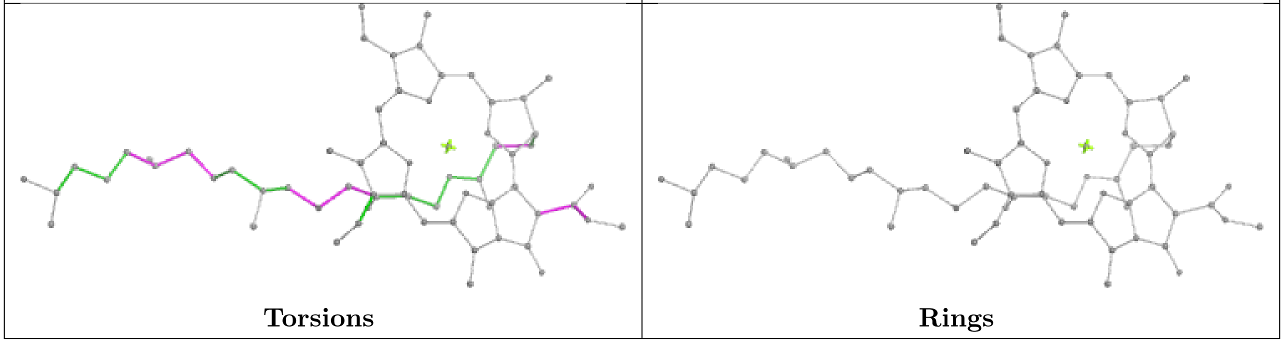


Torsions Rings

Ligand CLA B 614

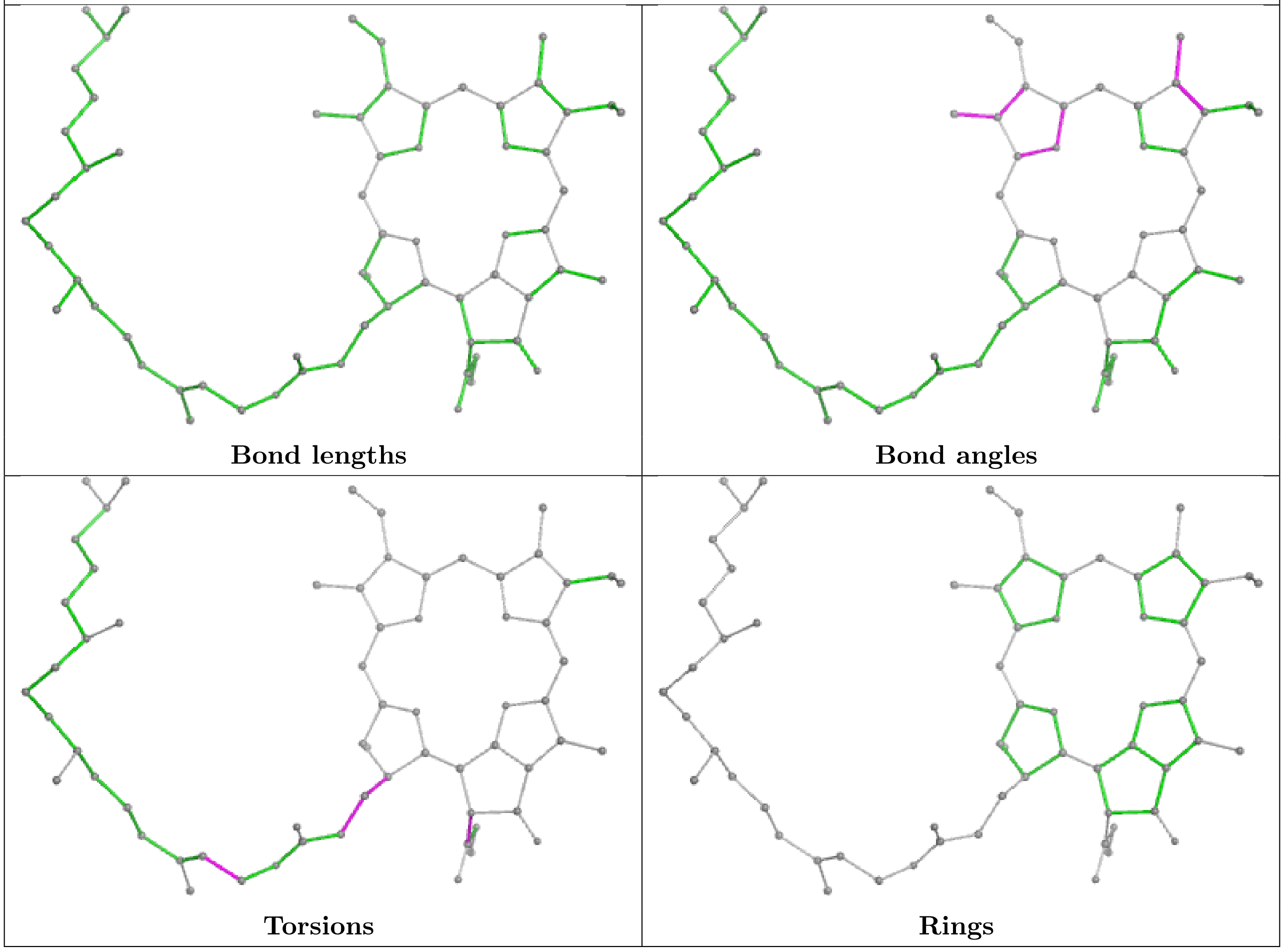


Bond lengths Bond angles



Torsions Rings

Ligand PHO a 407



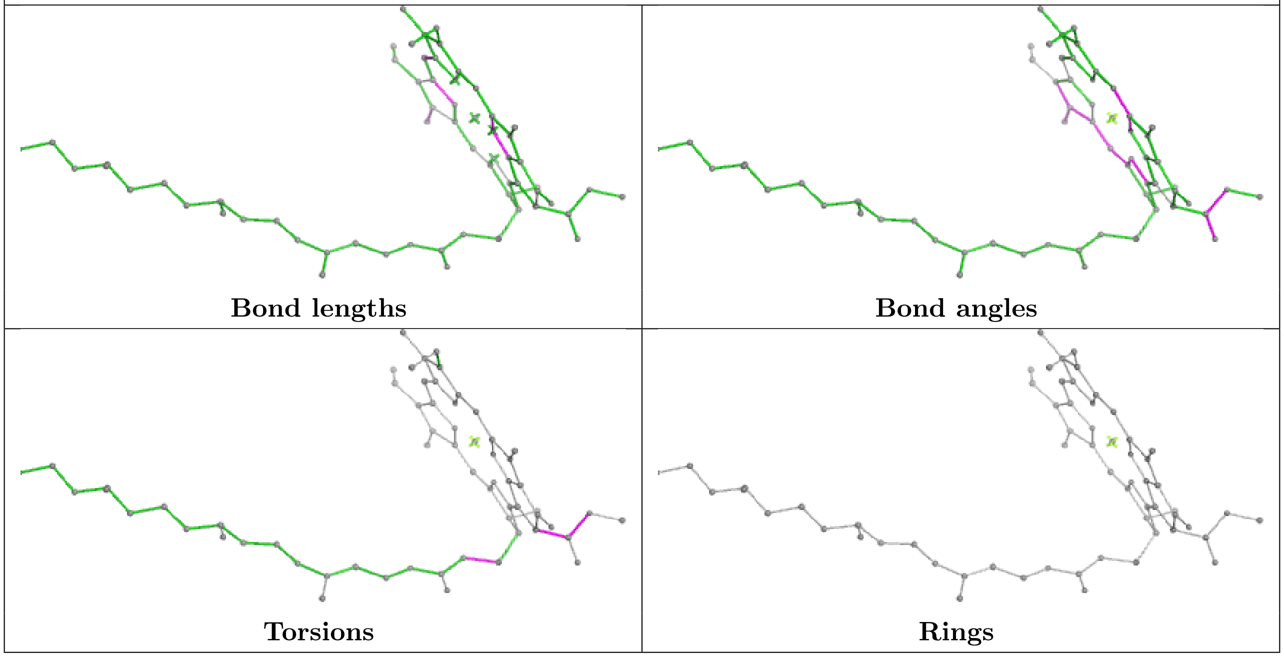
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA b 609



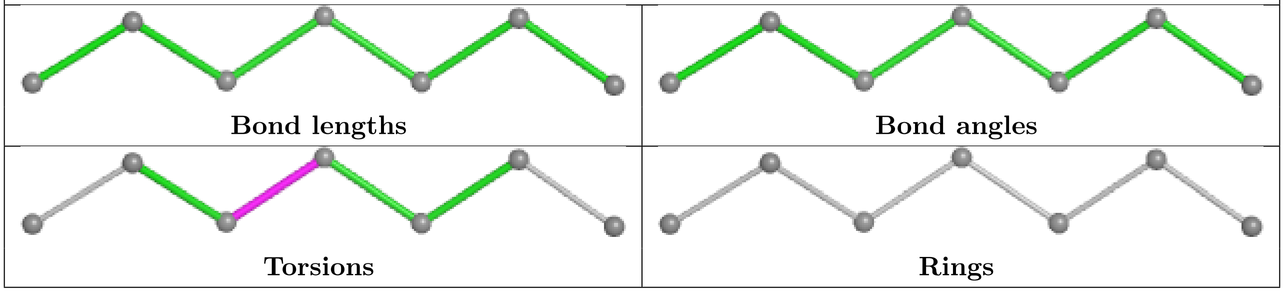
Bond lengths

Bond angles

Torsions

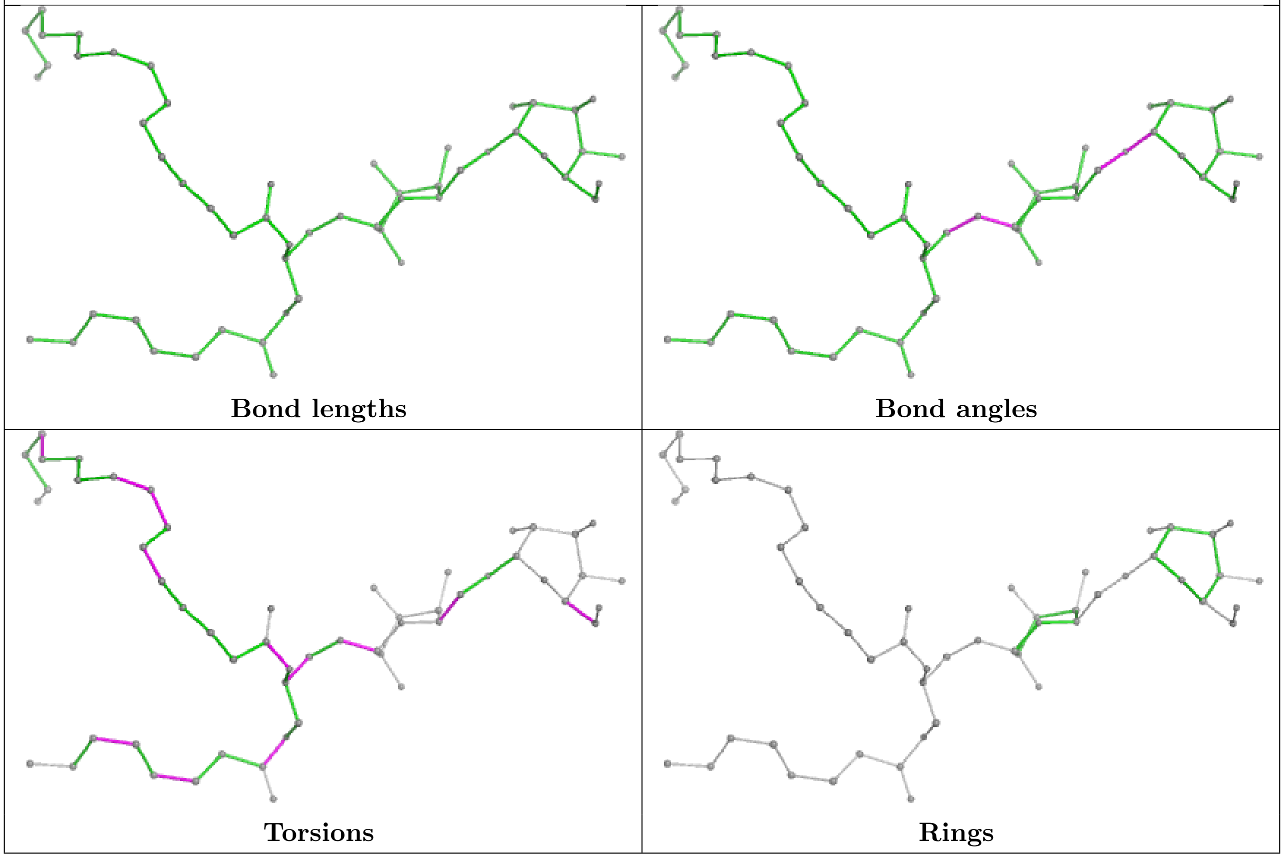
Rings

Ligand LFA I 103


Bond lengths Bond angles

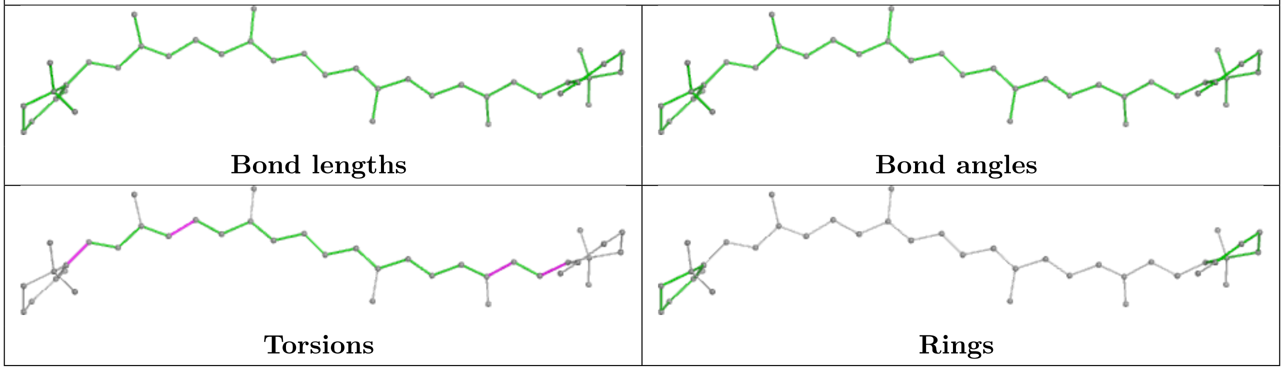
Torsions Rings

Ligand DGD J 101


Bond lengths Bond angles

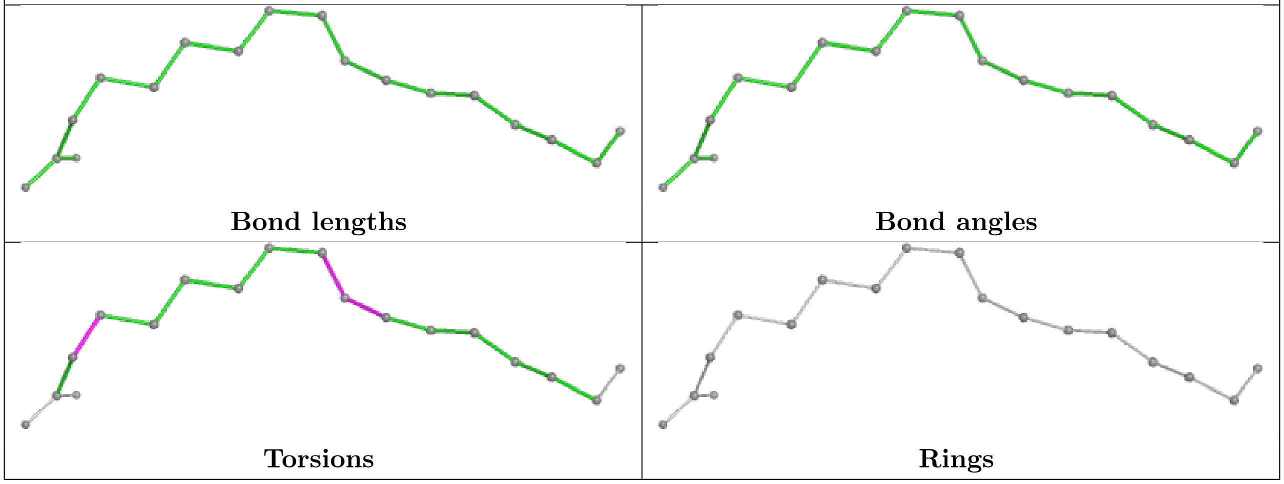
Torsions Rings

Ligand BCR c 515


Bond lengths Bond angles

Torsions Rings

Ligand PLM D 405



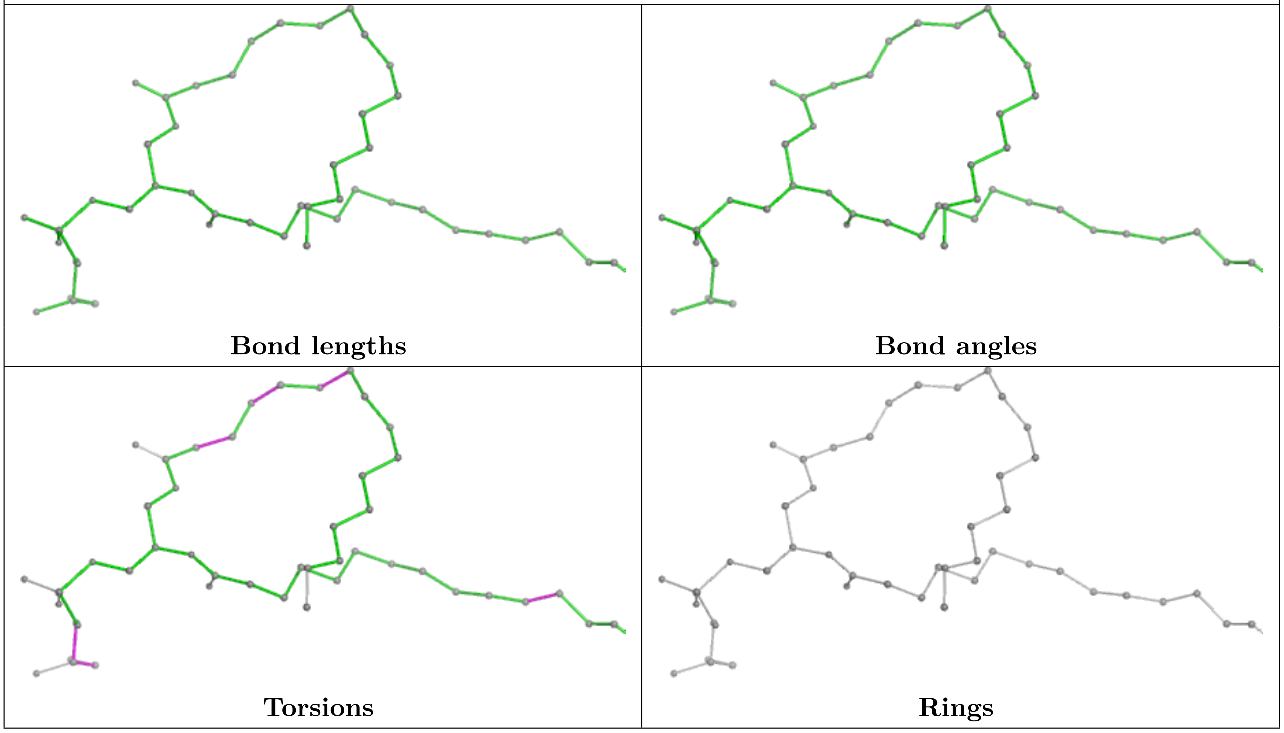
Bond lengths

Bond angles

Torsions

Rings

Ligand LHG D 412



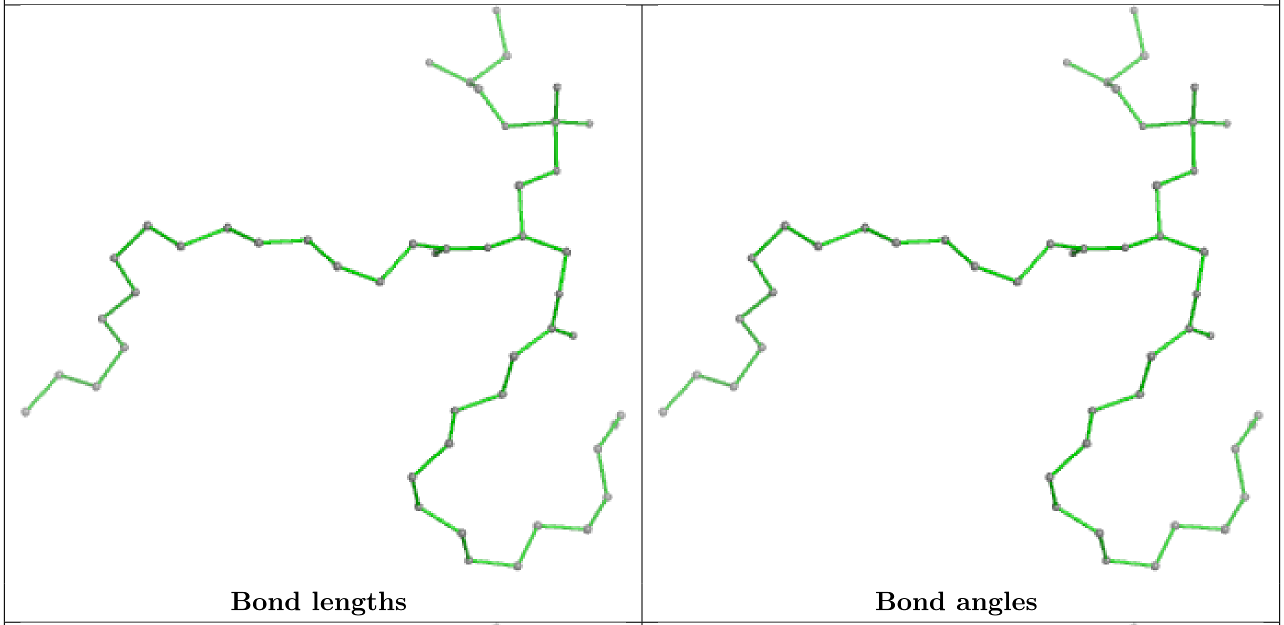
Bond lengths

Bond angles

Torsions

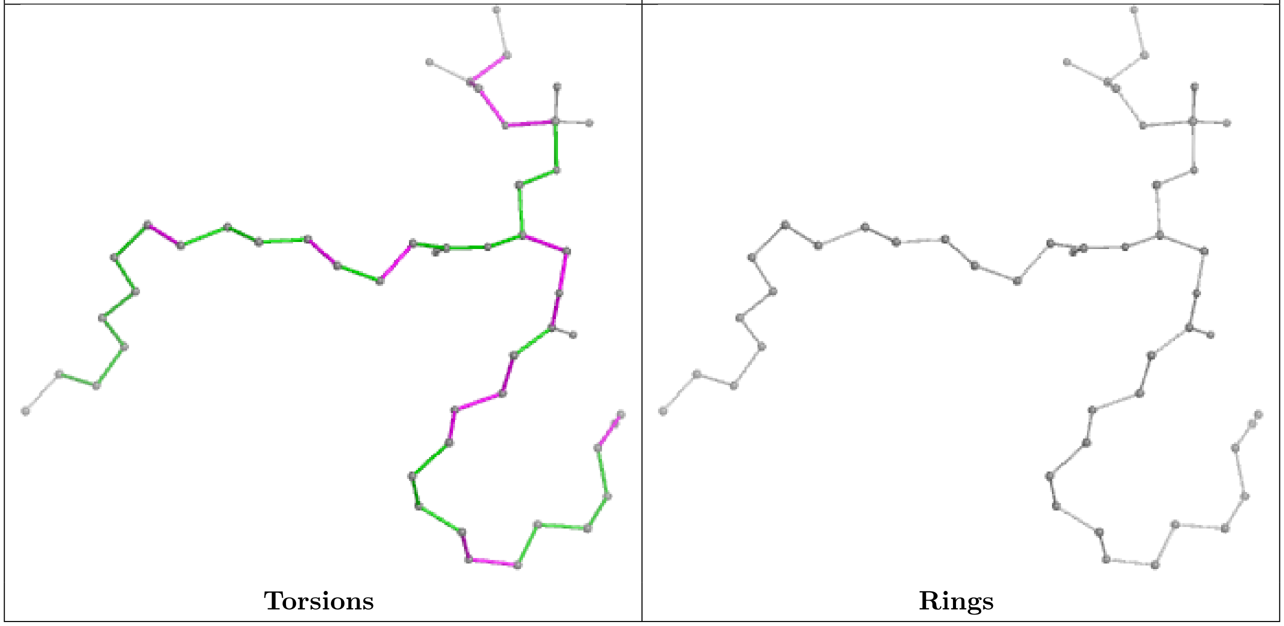
Rings

Ligand LHG a 416



Bond lengths

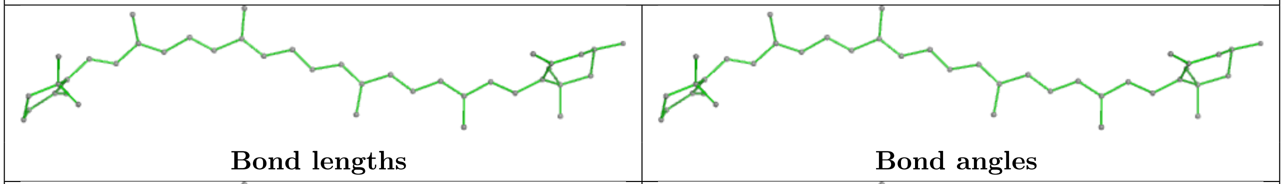
Bond angles



Torsions

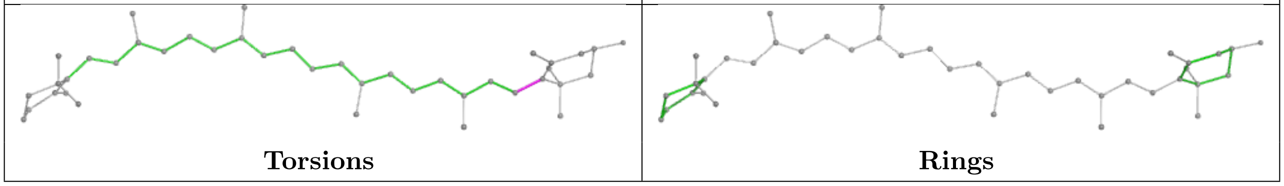
Rings

Ligand RRX H 102



Bond lengths

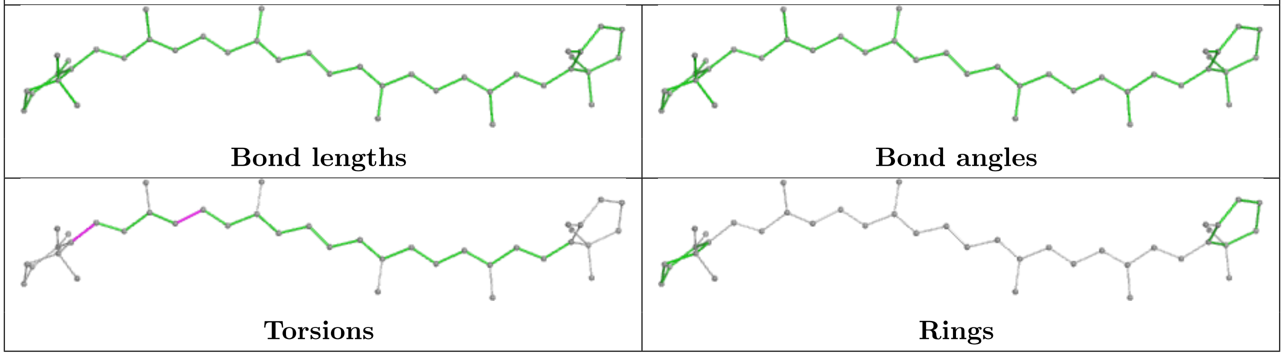
Bond angles



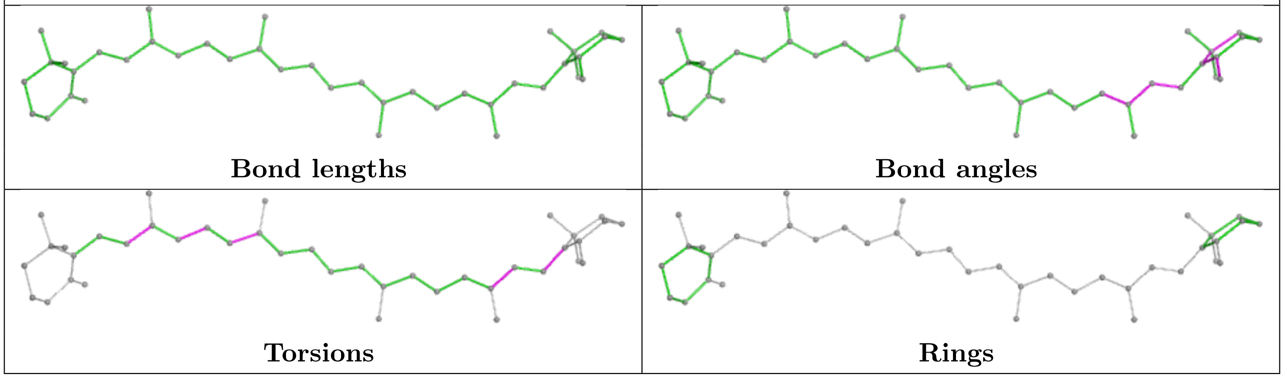
Torsions

Rings

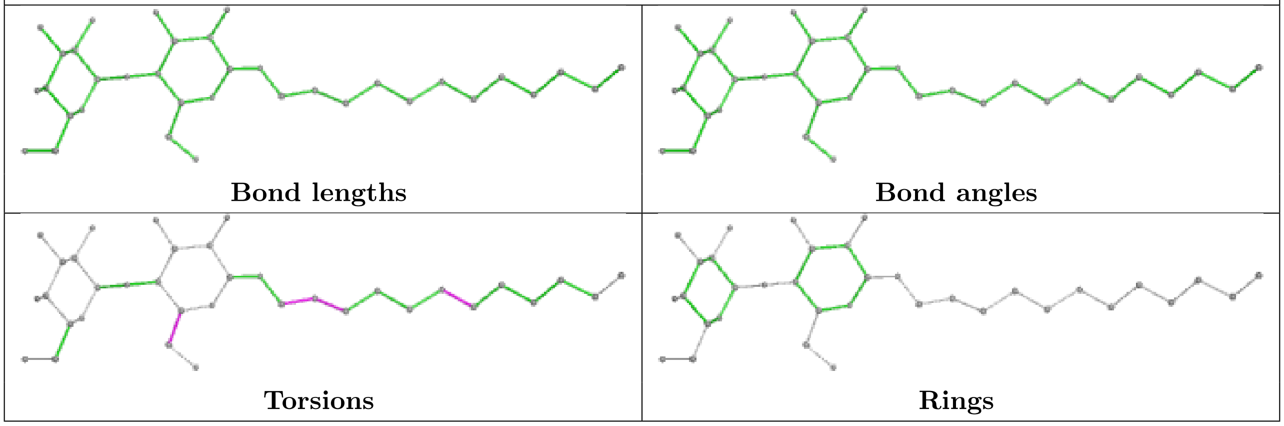
Ligand BCR a 409



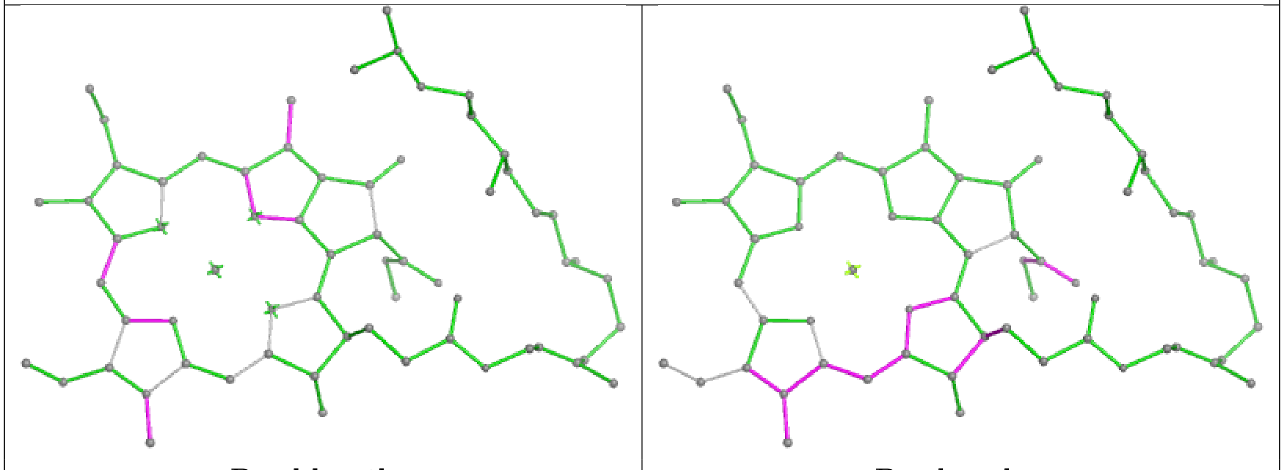
Ligand BCR y 101



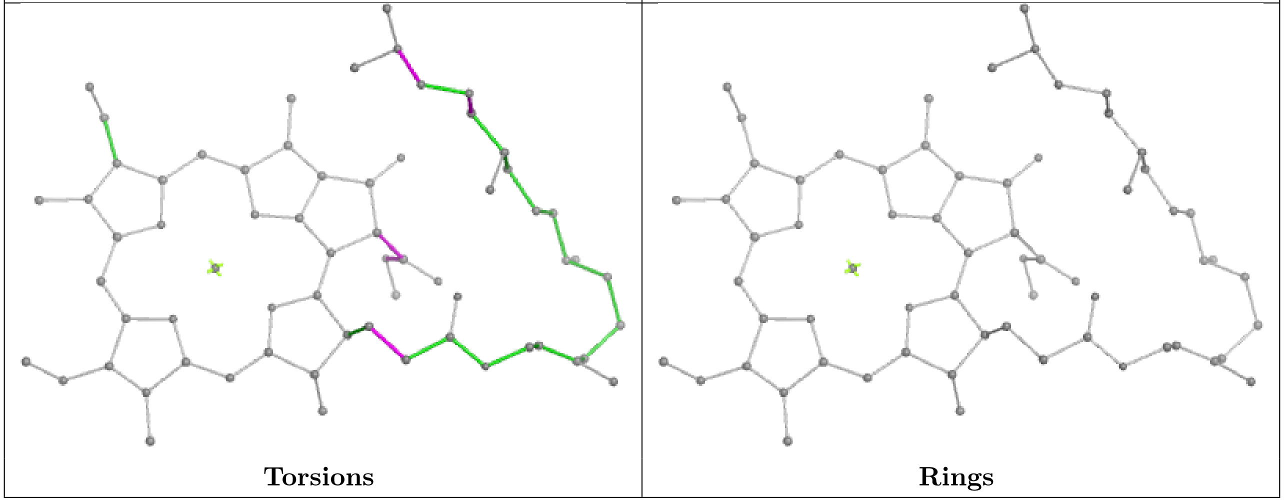
Ligand LMT m 102



Ligand CLA b 612

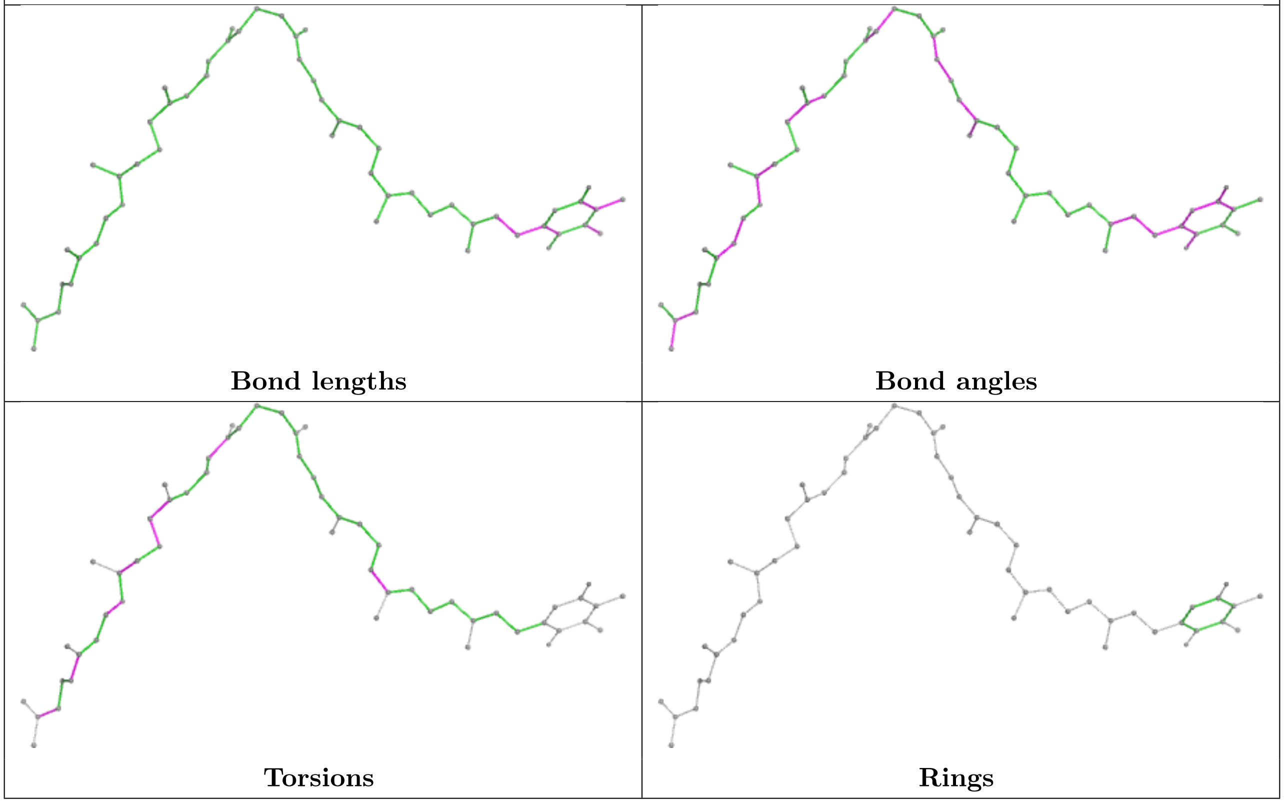


Bond lengths **Bond angles**

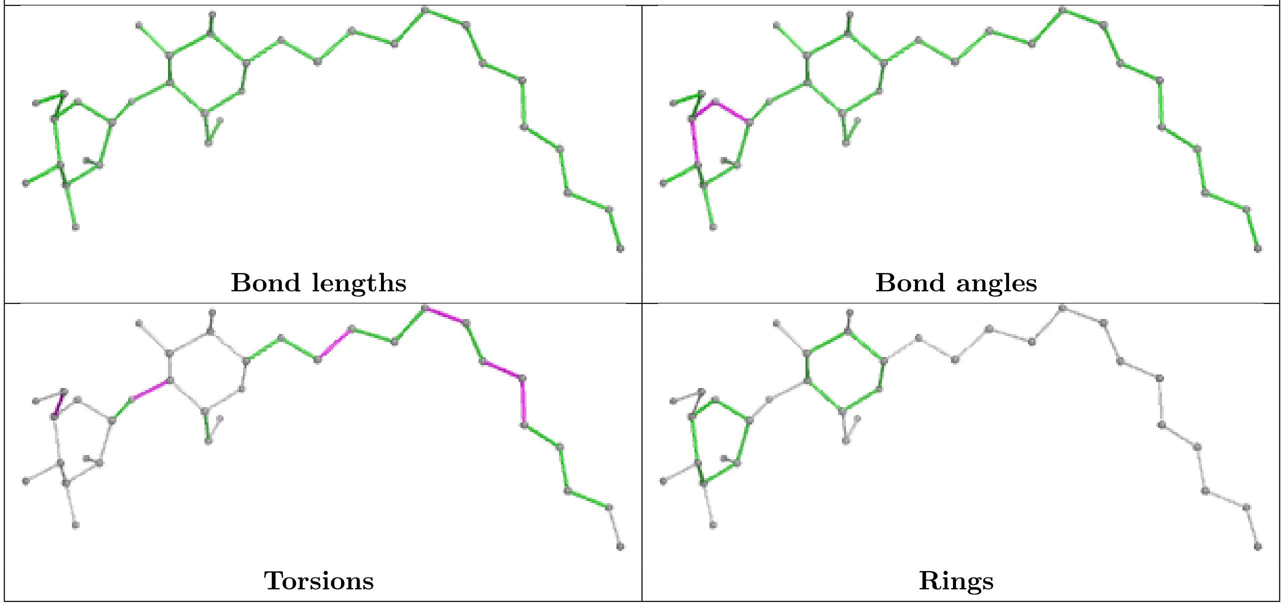


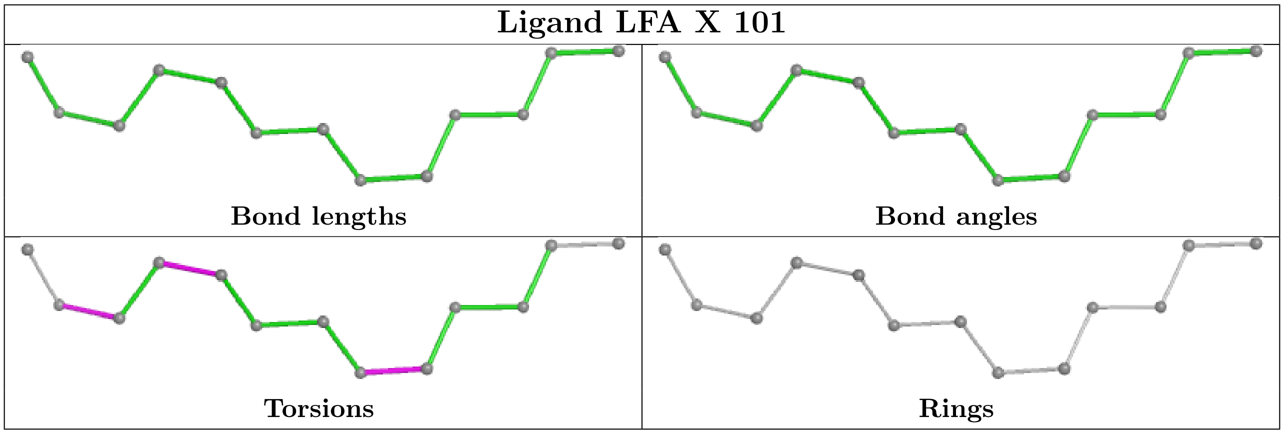
Torsions **Rings**

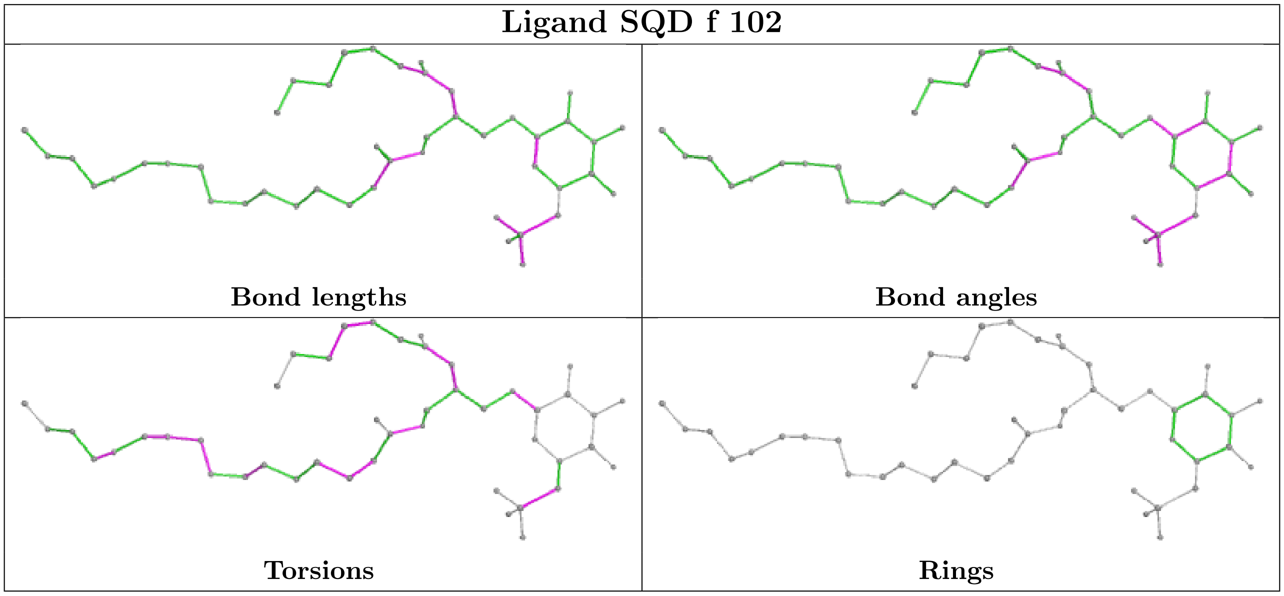
Ligand PL9 D 411

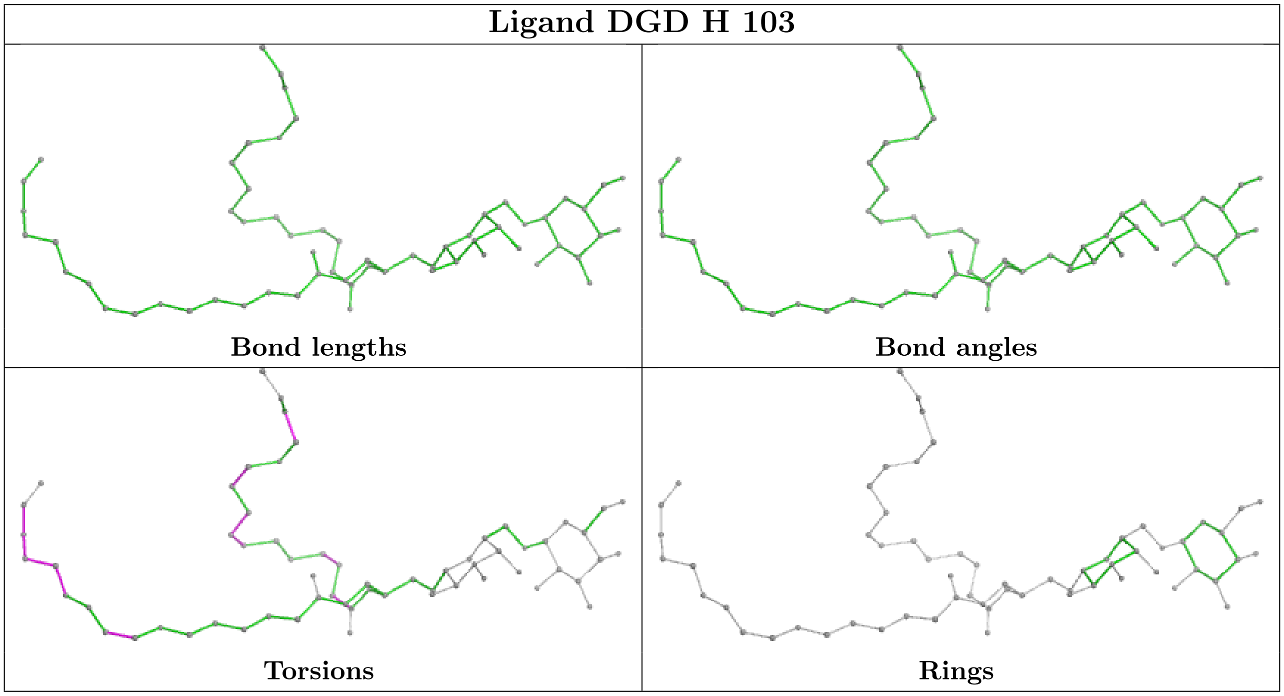


Ligand LMT i 103

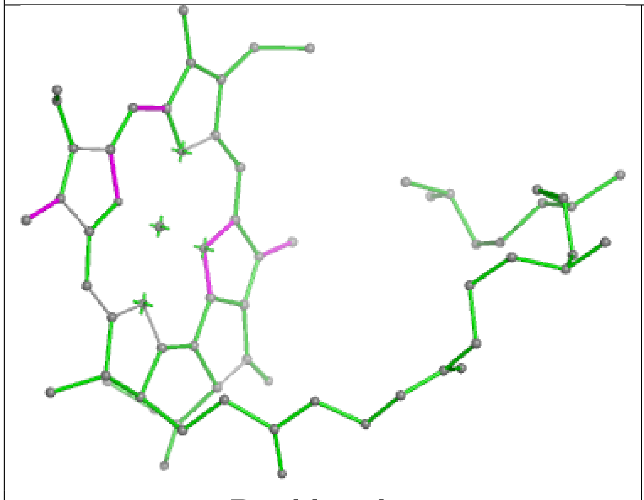



Ligand LFA X 101
Bond lengths
Bond angles
Torsions
Rings

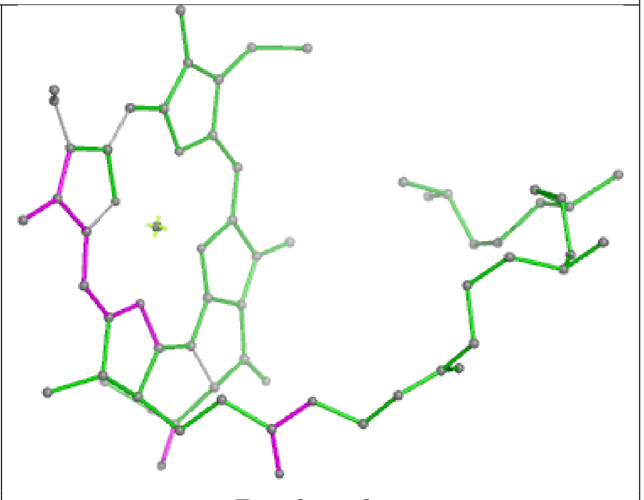

Ligand SQD f 102
Bond lengths
Bond angles
Torsions
Rings


Ligand DGD H 103
Bond lengths
Bond angles
Torsions
Rings

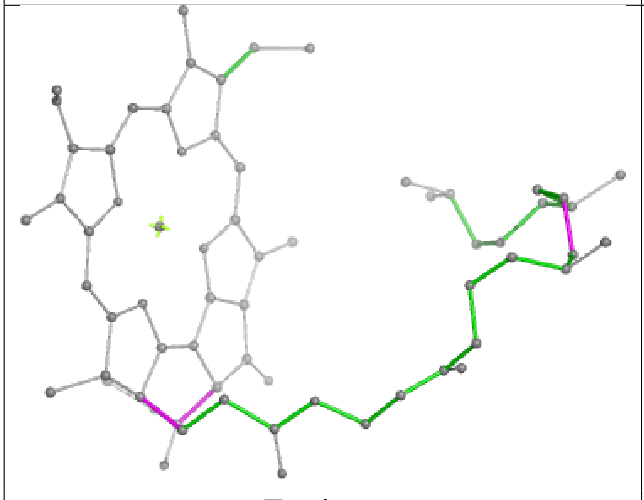
Ligand CLA c 504



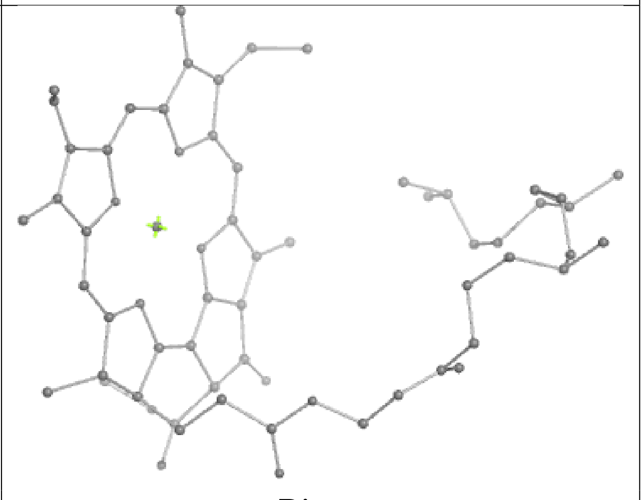
Bond lengths



Bond angles

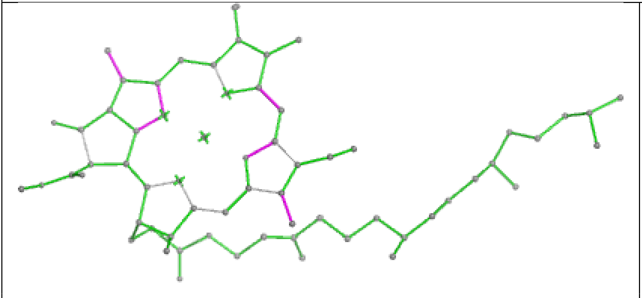


Torsions

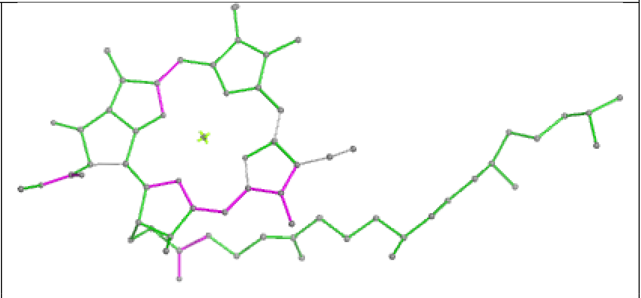


Rings

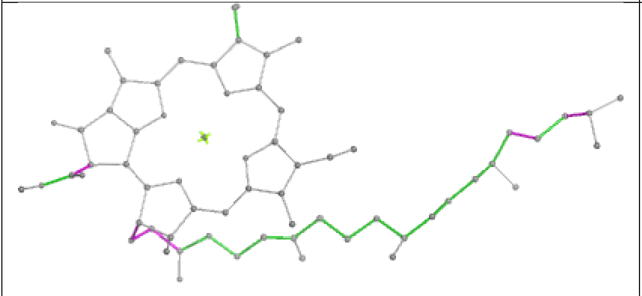
Ligand CLA c 502



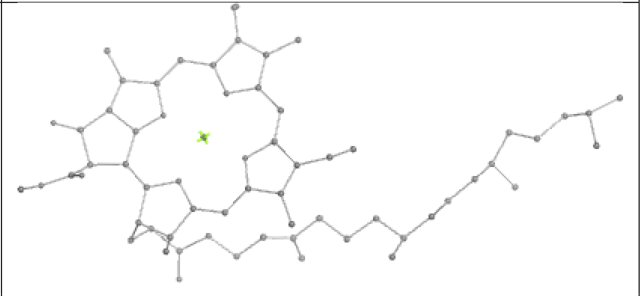
Bond lengths



Bond angles

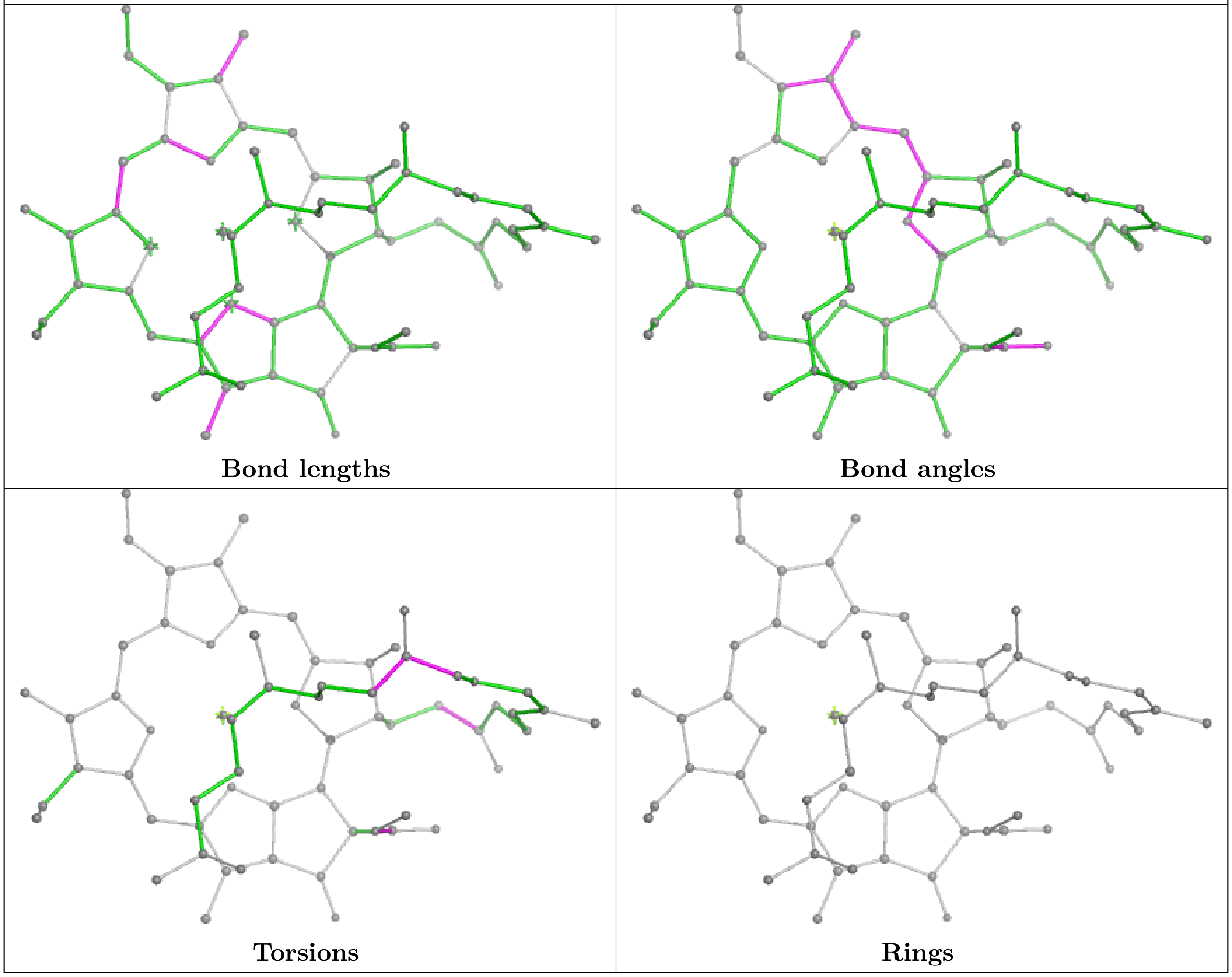


Torsions



Rings

Ligand CLA C 512



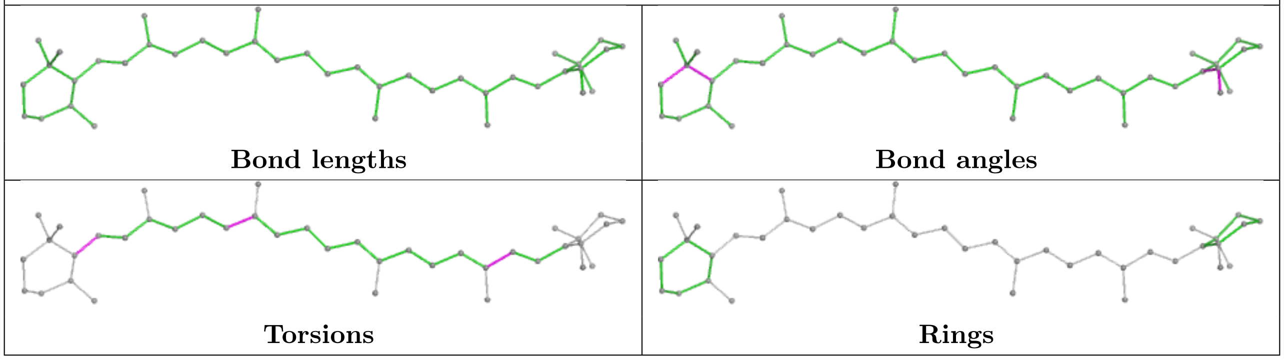
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR b 619



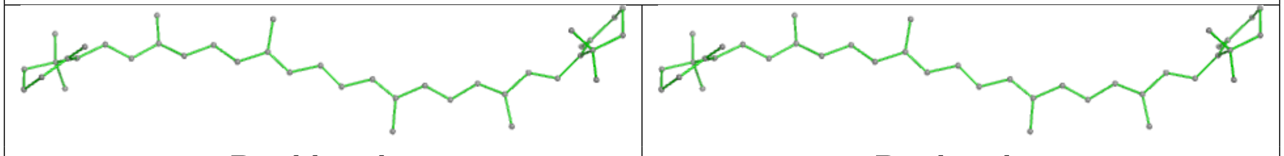
Bond lengths

Bond angles

Torsions

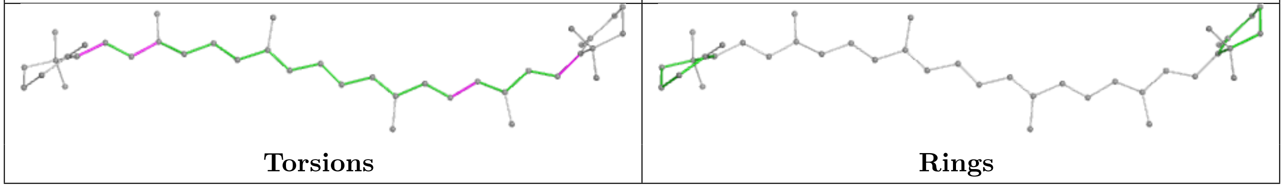
Rings

Ligand BCR C 516



Bond lengths

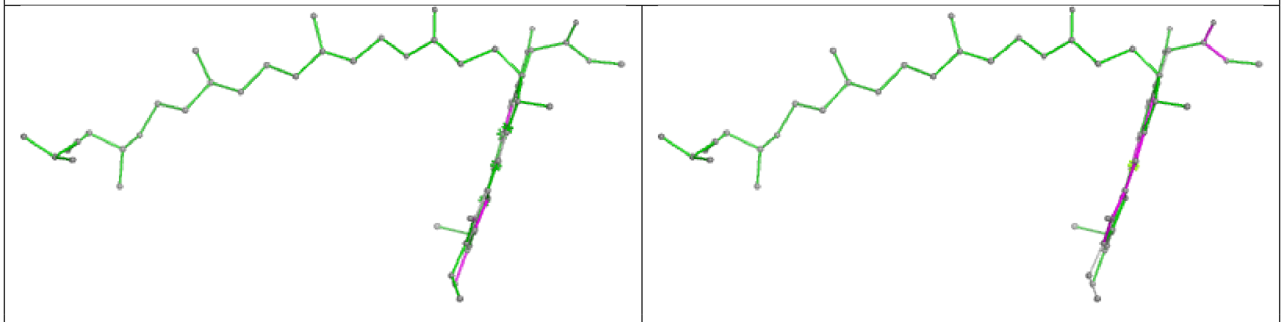
Bond angles



Torsions

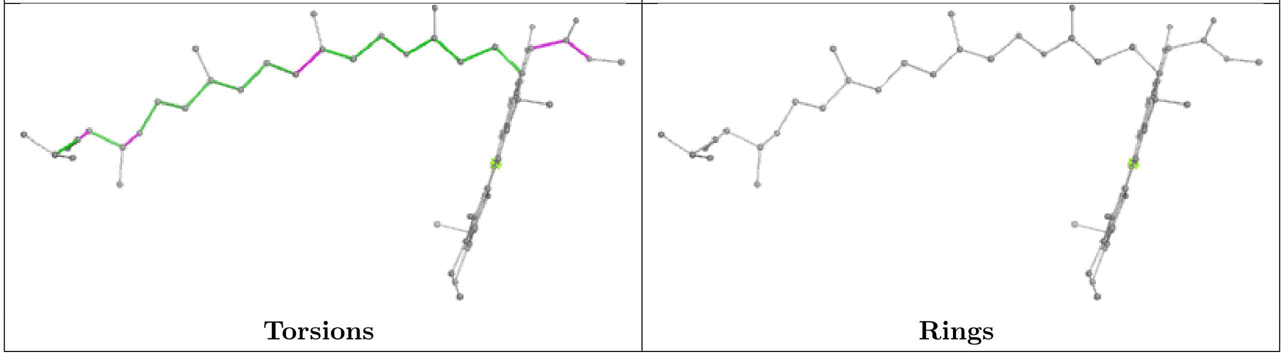
Rings

Ligand CLA b 607



Bond lengths

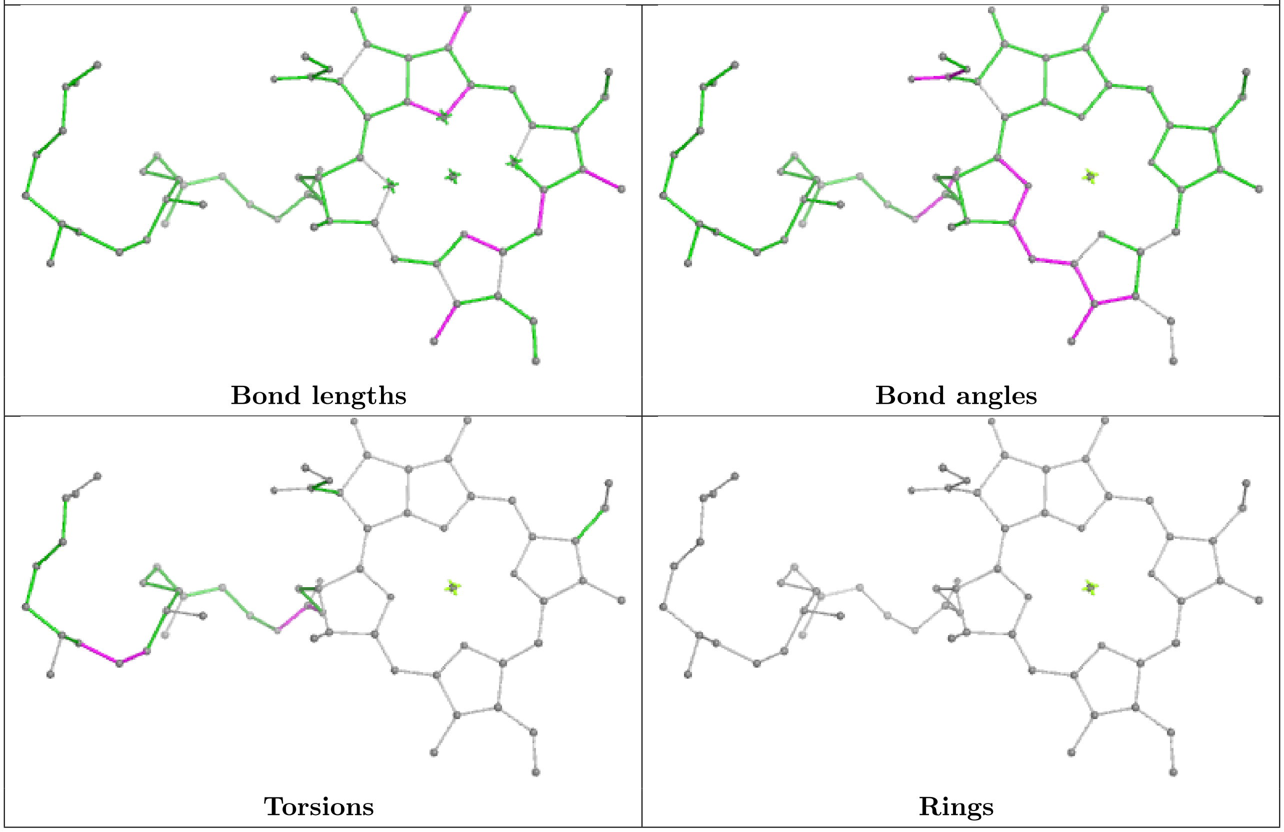
Bond angles



Torsions

Rings

Ligand CLA b 614



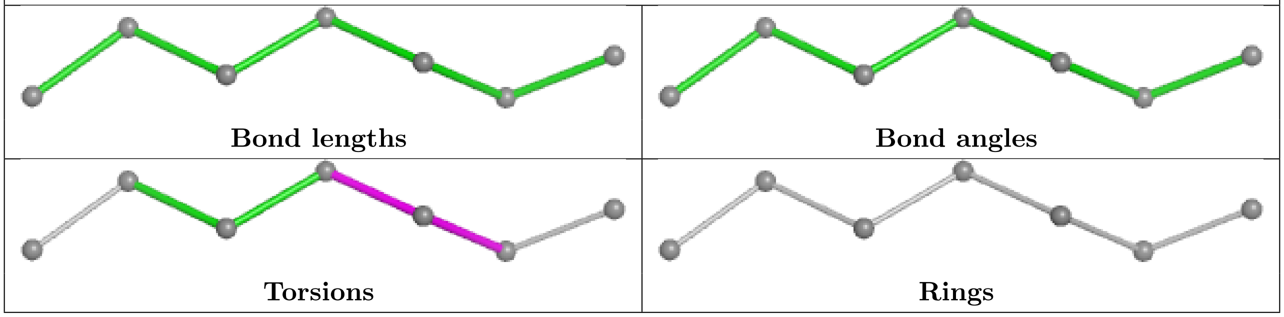
Bond lengths

Bond angles

Torsions

Rings

Ligand LFA B 628



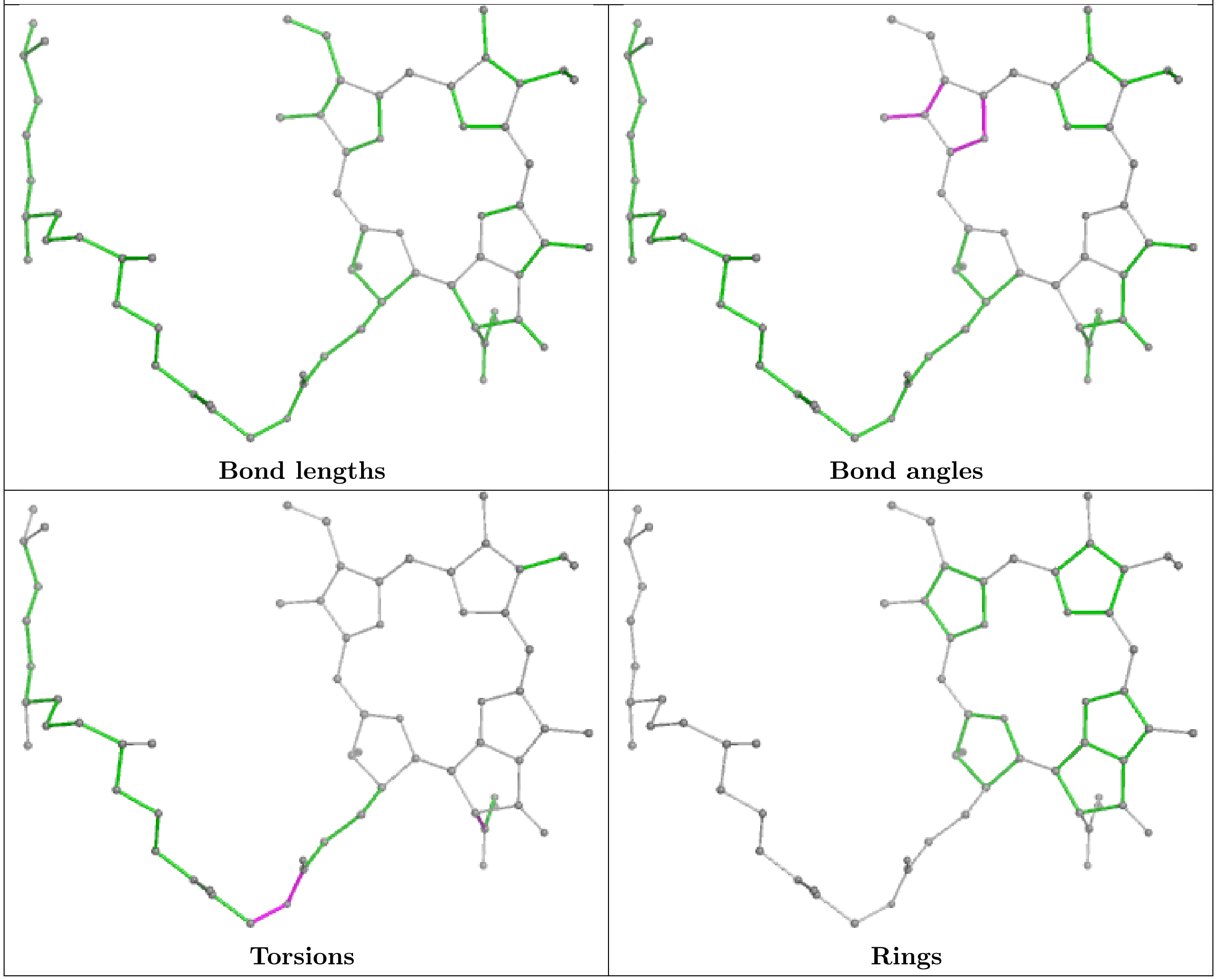
Bond lengths

Bond angles

Torsions

Rings

Ligand PHO d 402



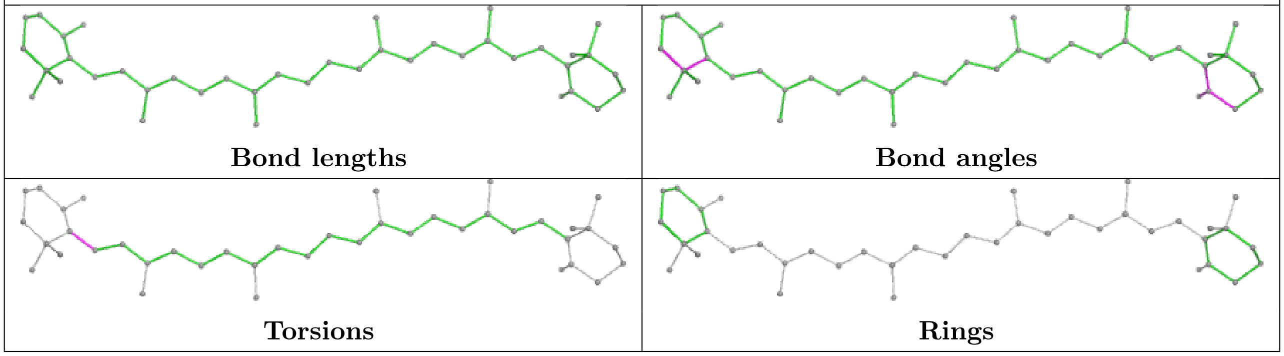
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR b 620



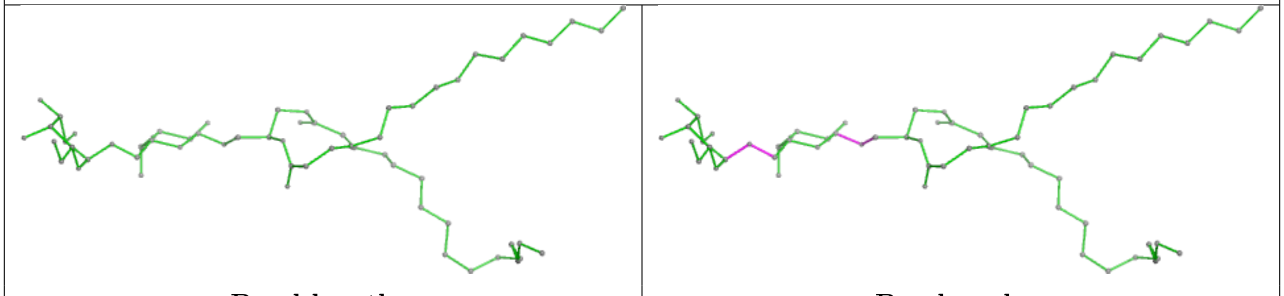
Bond lengths

Bond angles

Torsions

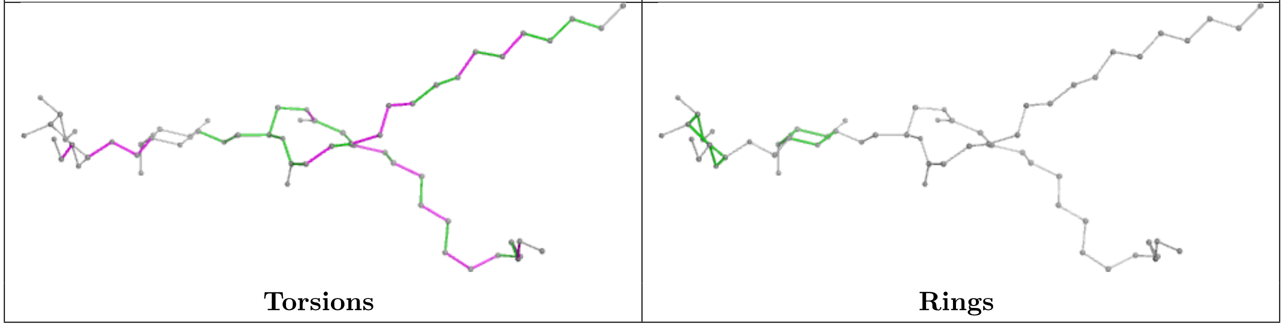
Rings

Ligand DGD c 516



Bond lengths

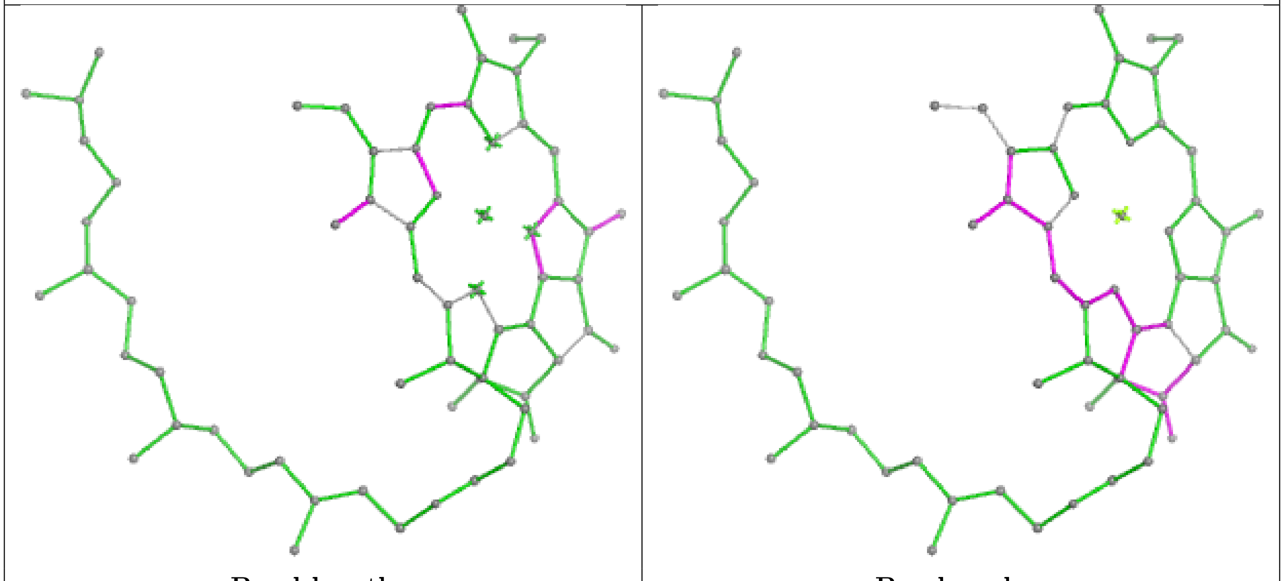
Bond angles



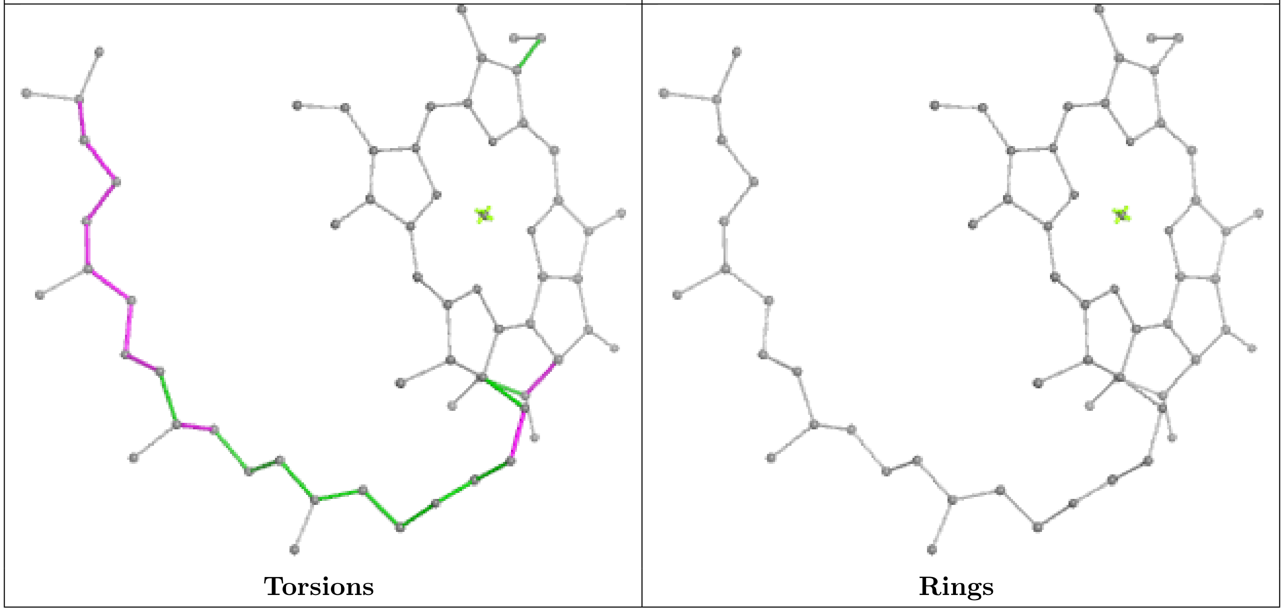
Torsions

Rings

Ligand CLA C 509

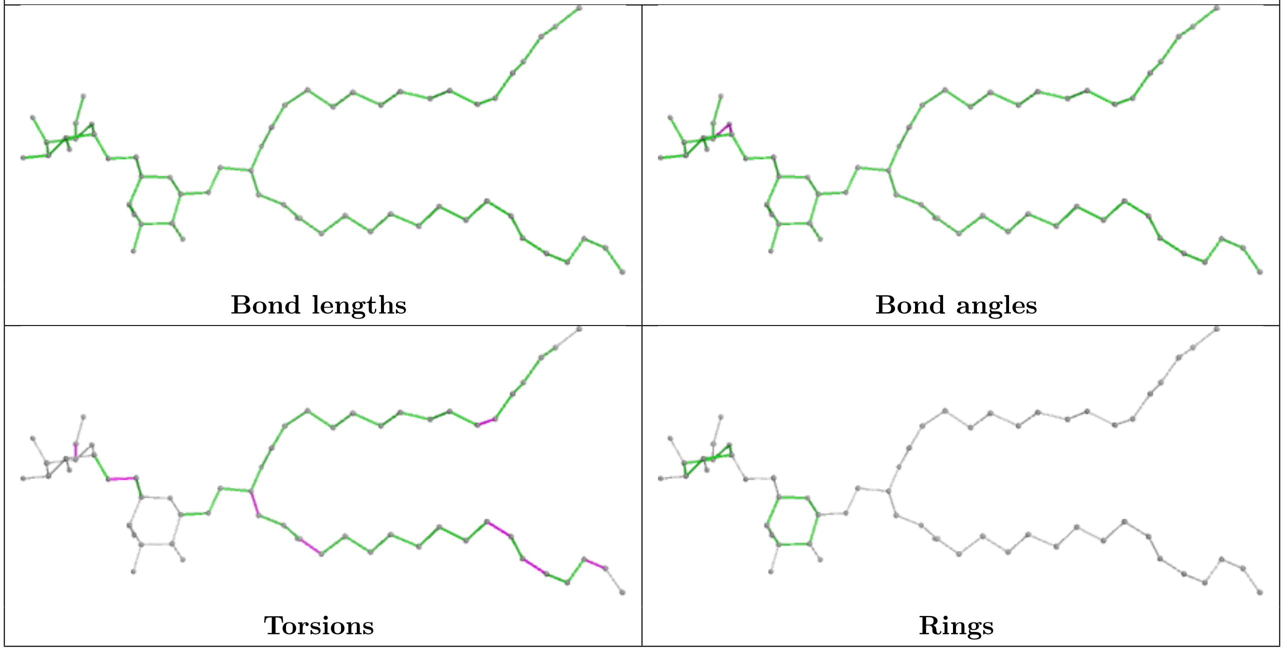


Bond lengths Bond angles



Torsions Rings

Ligand DGD c 519



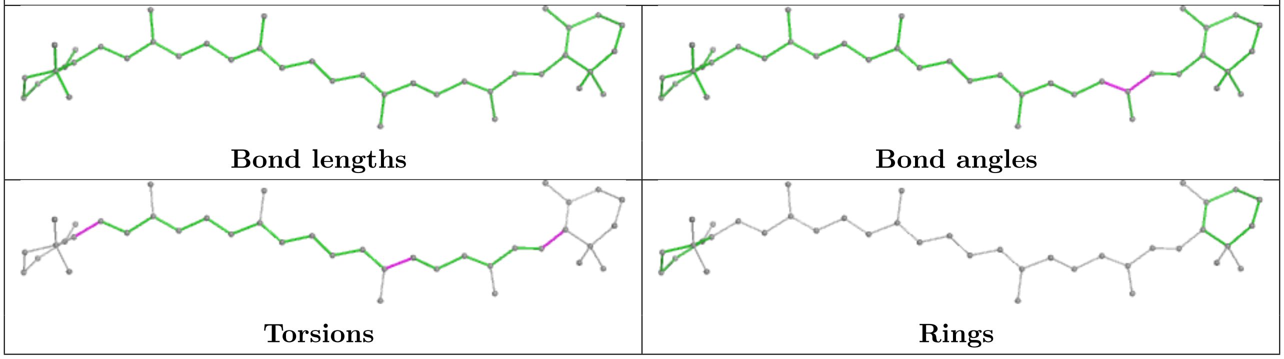
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR B 617



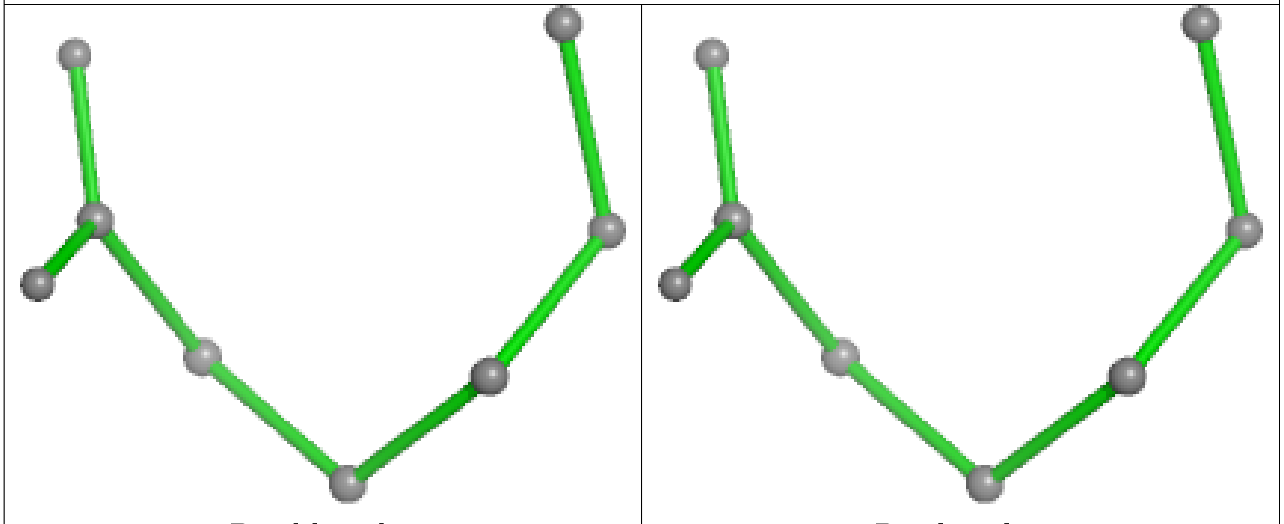
Bond lengths

Bond angles

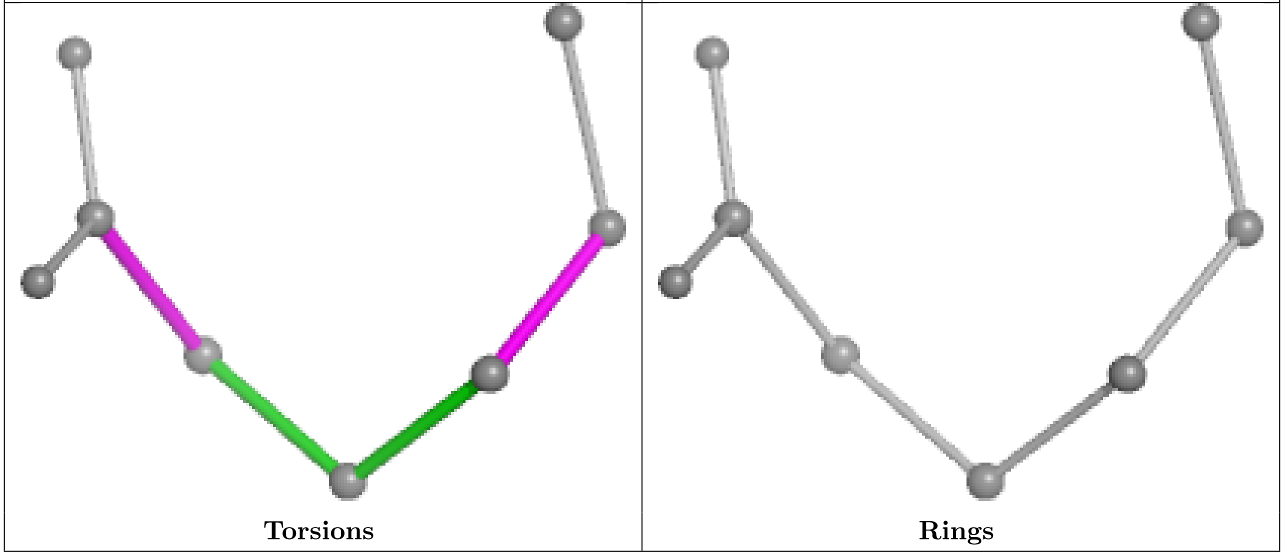
Torsions

Rings

Ligand PLM B 622

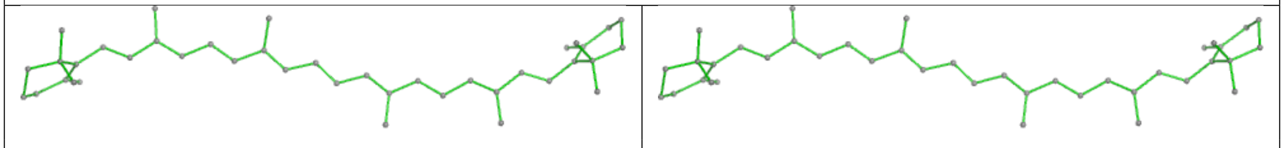


Bond lengths Bond angles

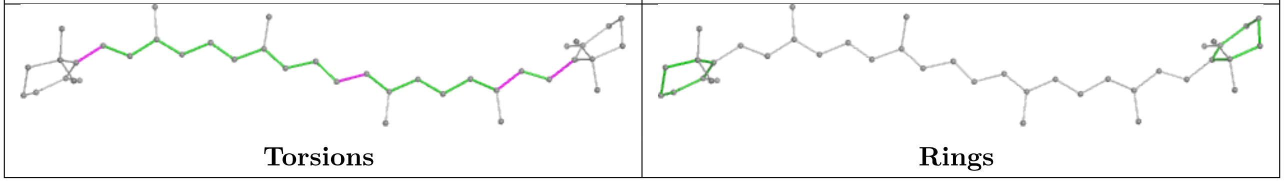


Torsions Rings

Ligand BCR k 101

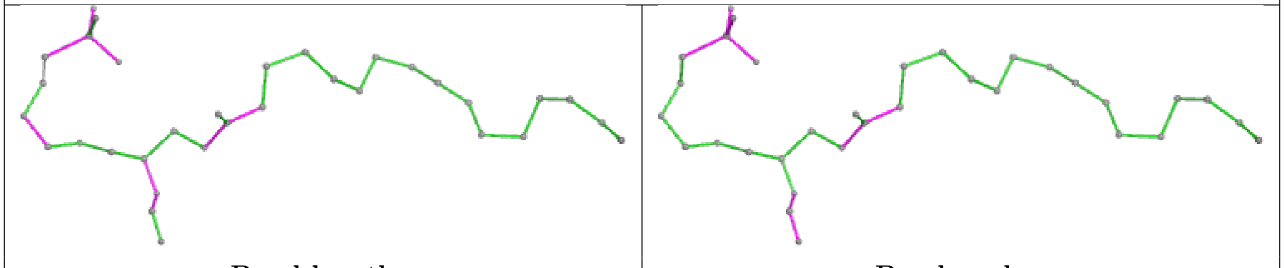


Bond lengths Bond angles



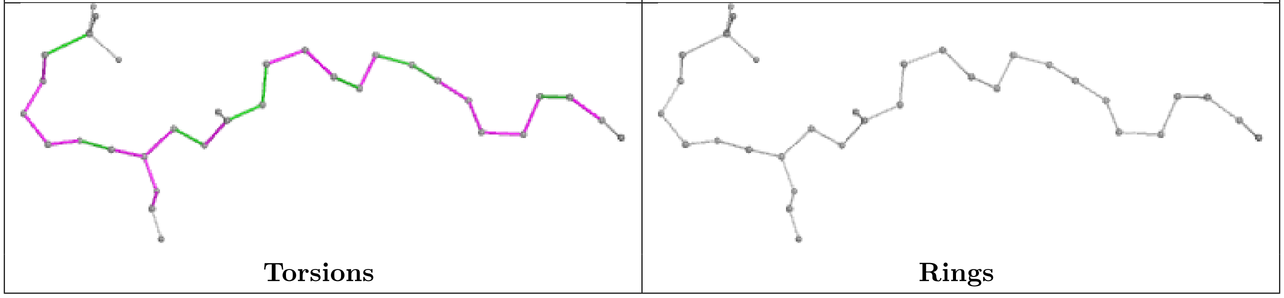
Torsions Rings

Ligand SQD F 102



Bond lengths

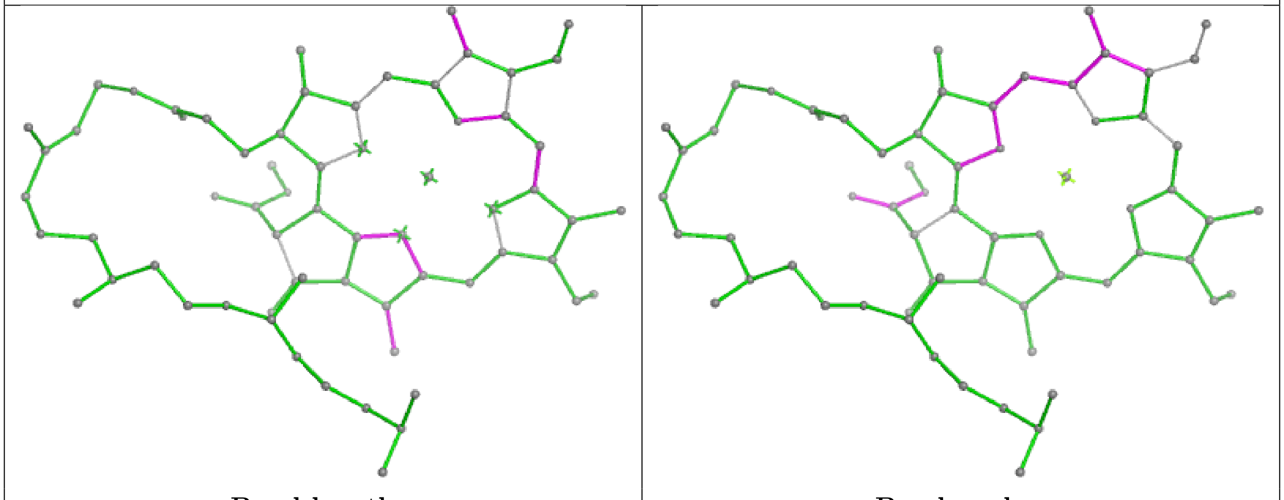
Bond angles



Torsions

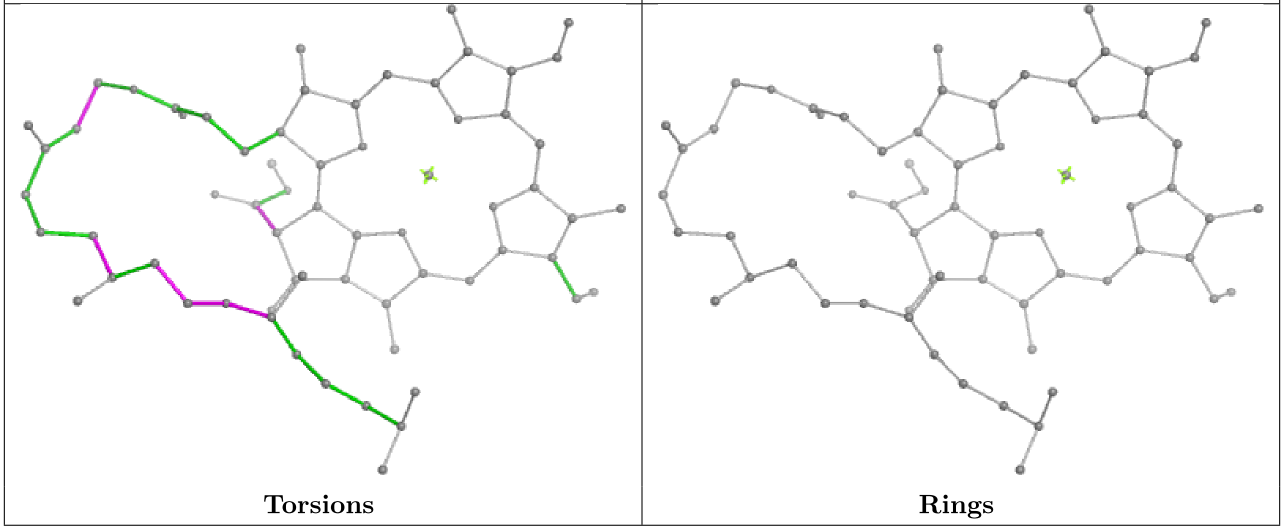
Rings

Ligand CLA C 511



Bond lengths

Bond angles



Torsions

Rings

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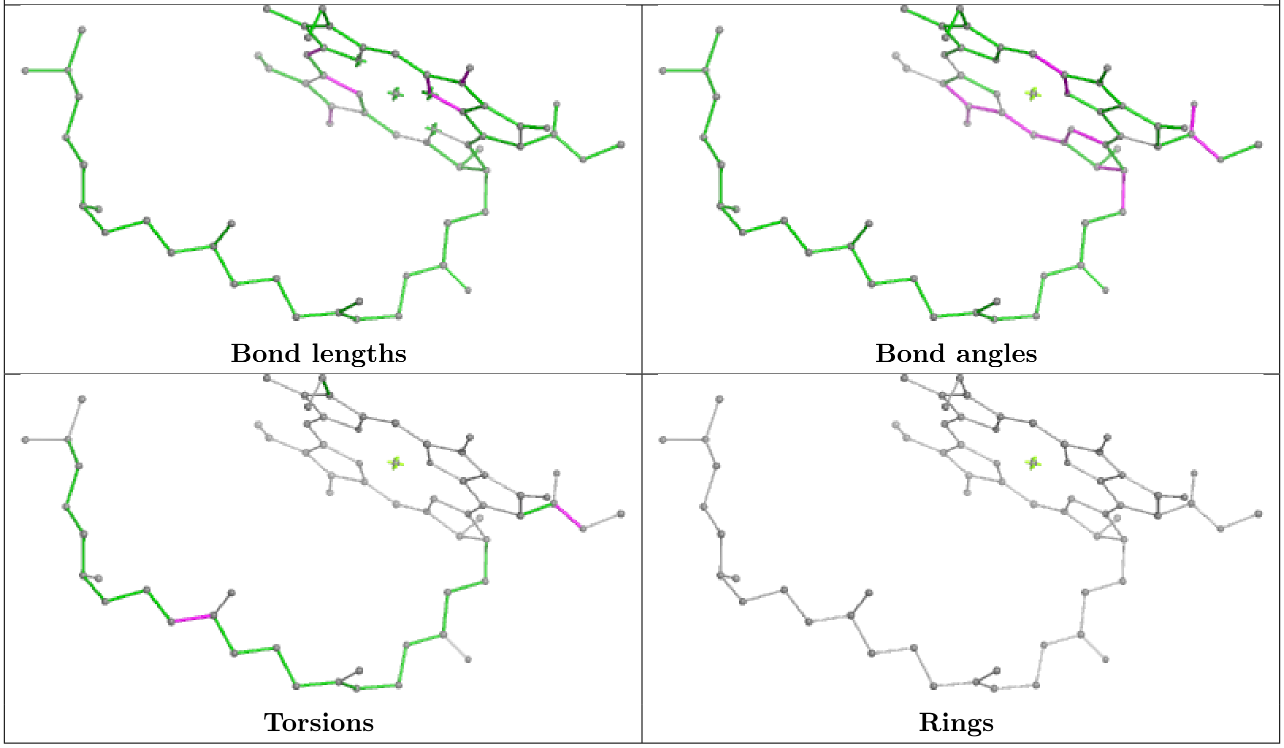


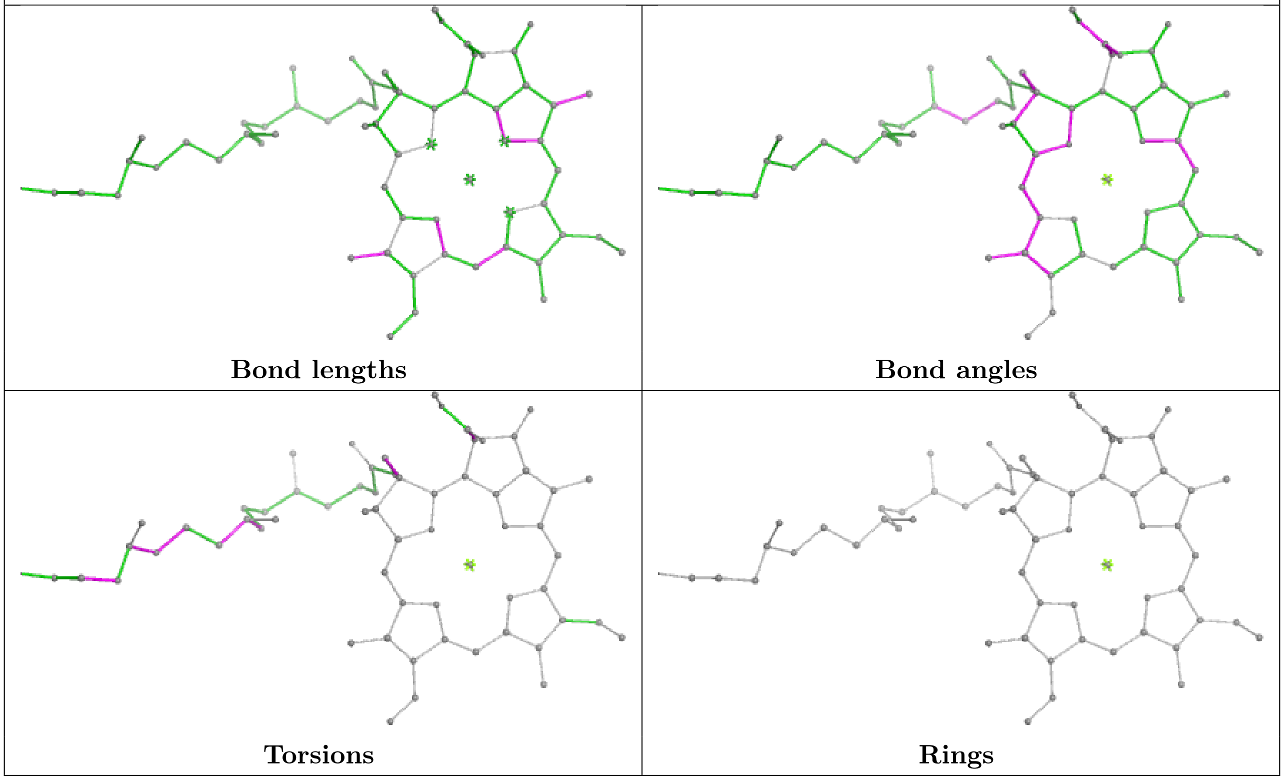
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA a 406



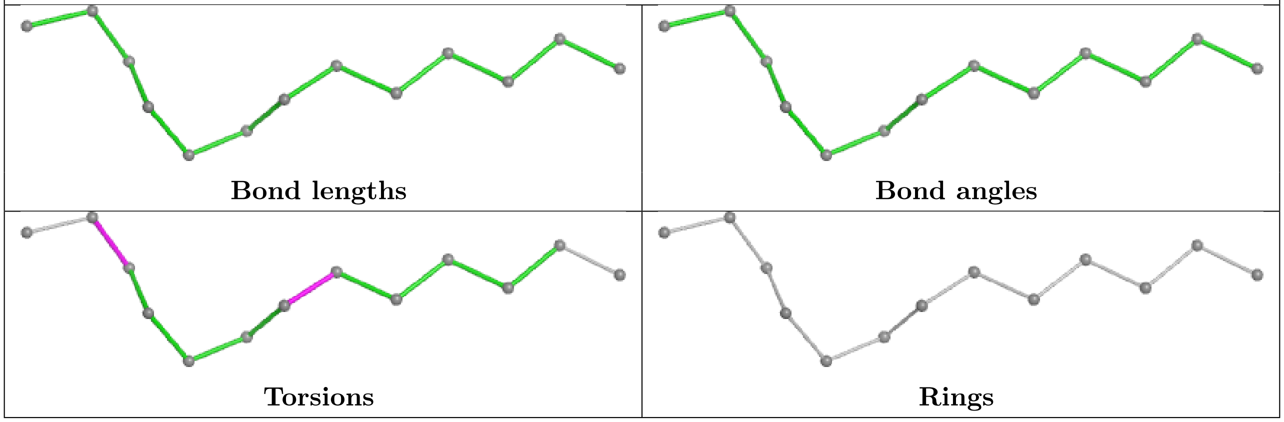
Bond lengths

Bond angles

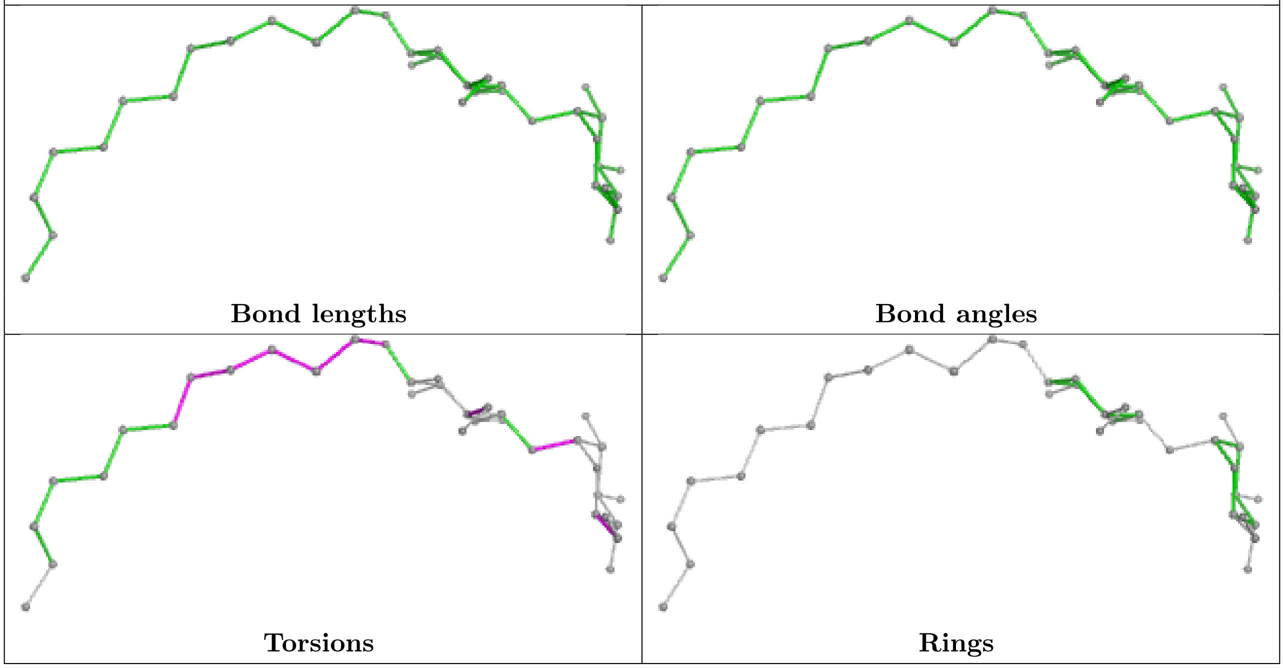
Torsions

Rings

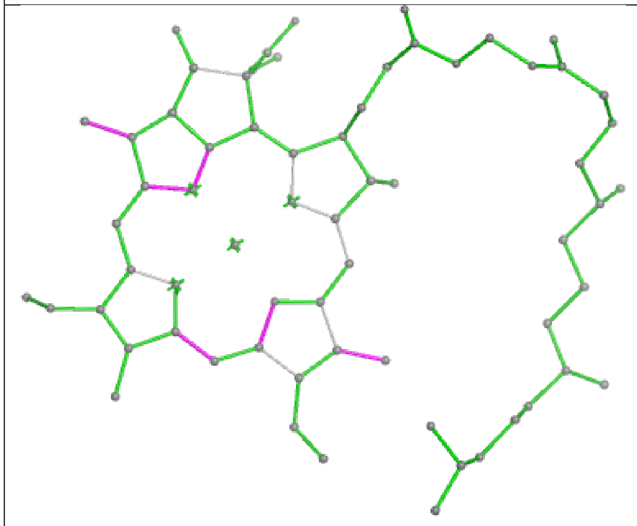
Ligand LFA A 414



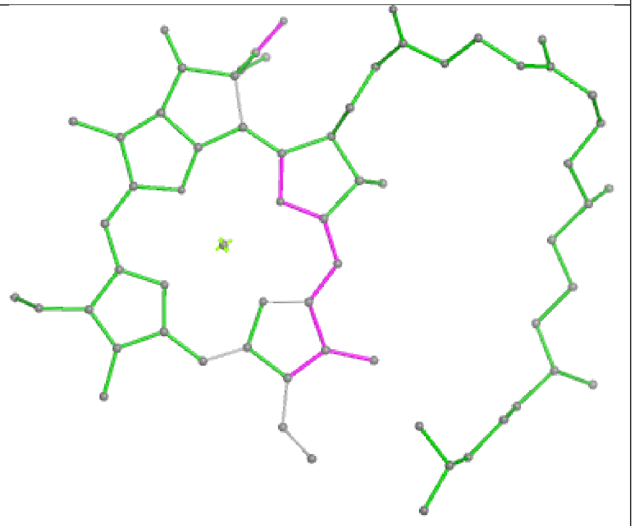
Ligand LMT m 101



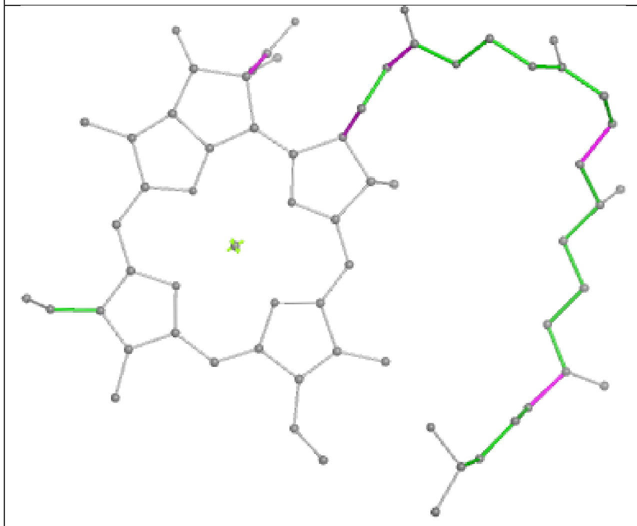
Ligand CLA c 513



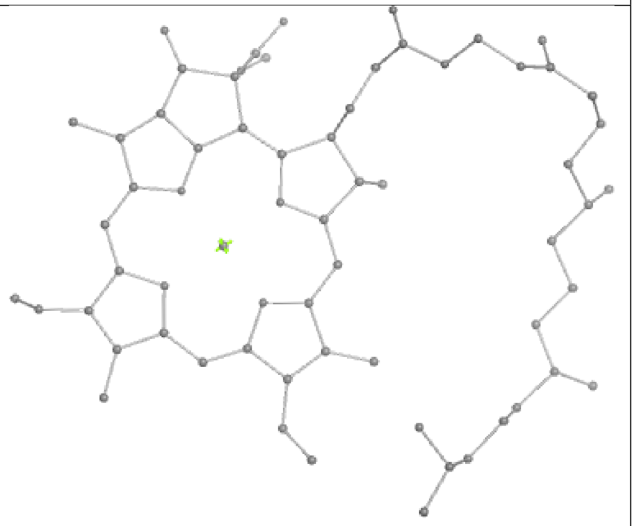
Bond lengths



Bond angles

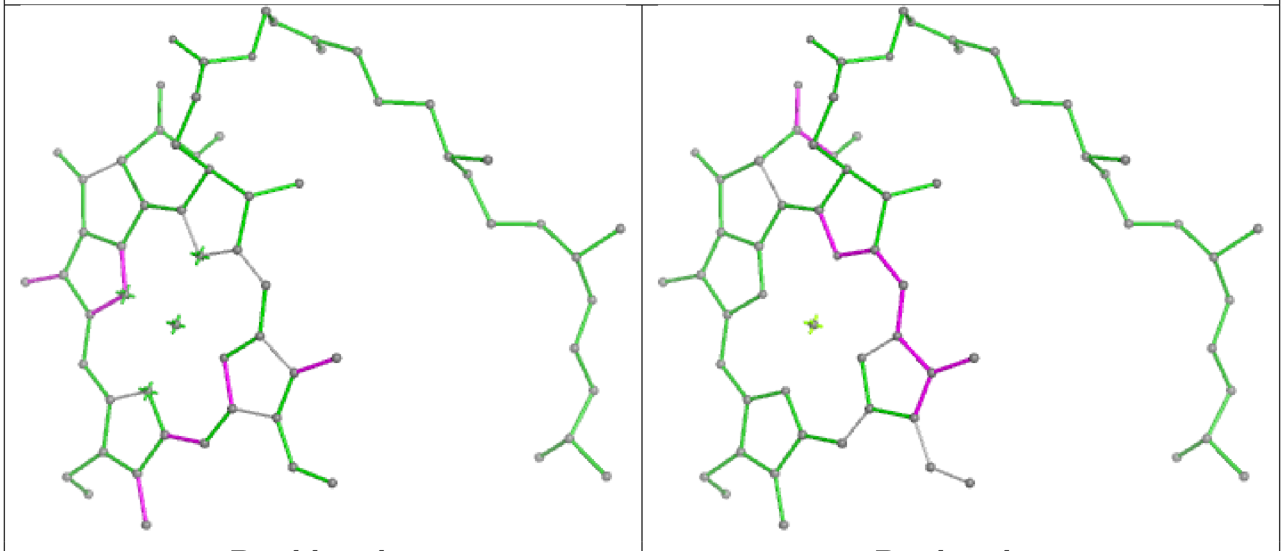


Torsions

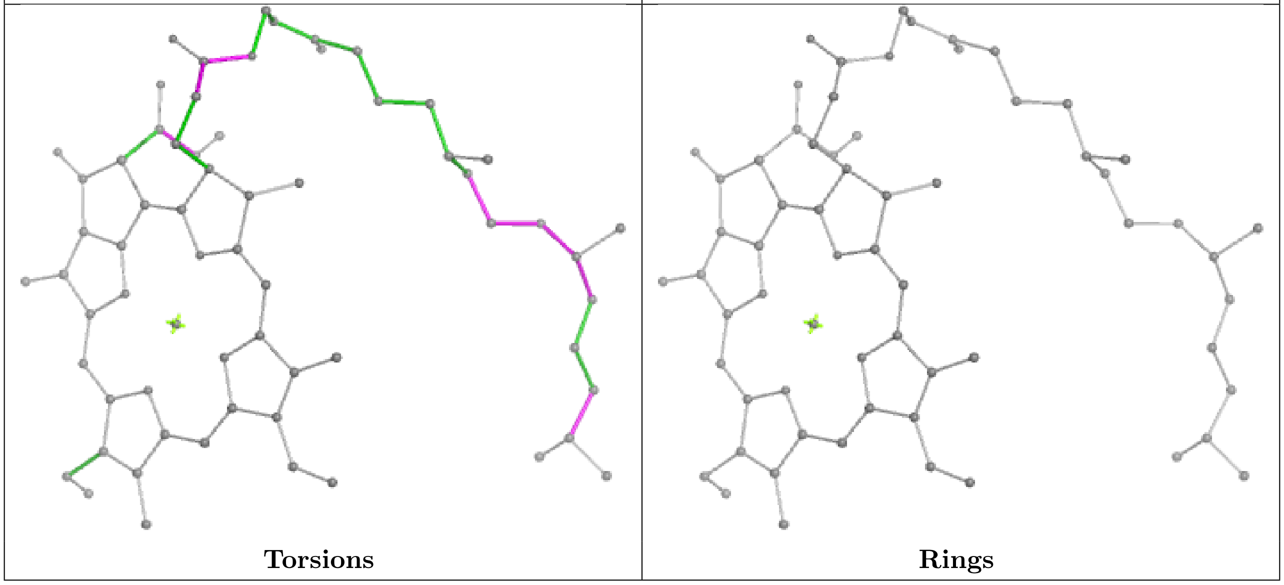


Rings

Ligand CLA B 616

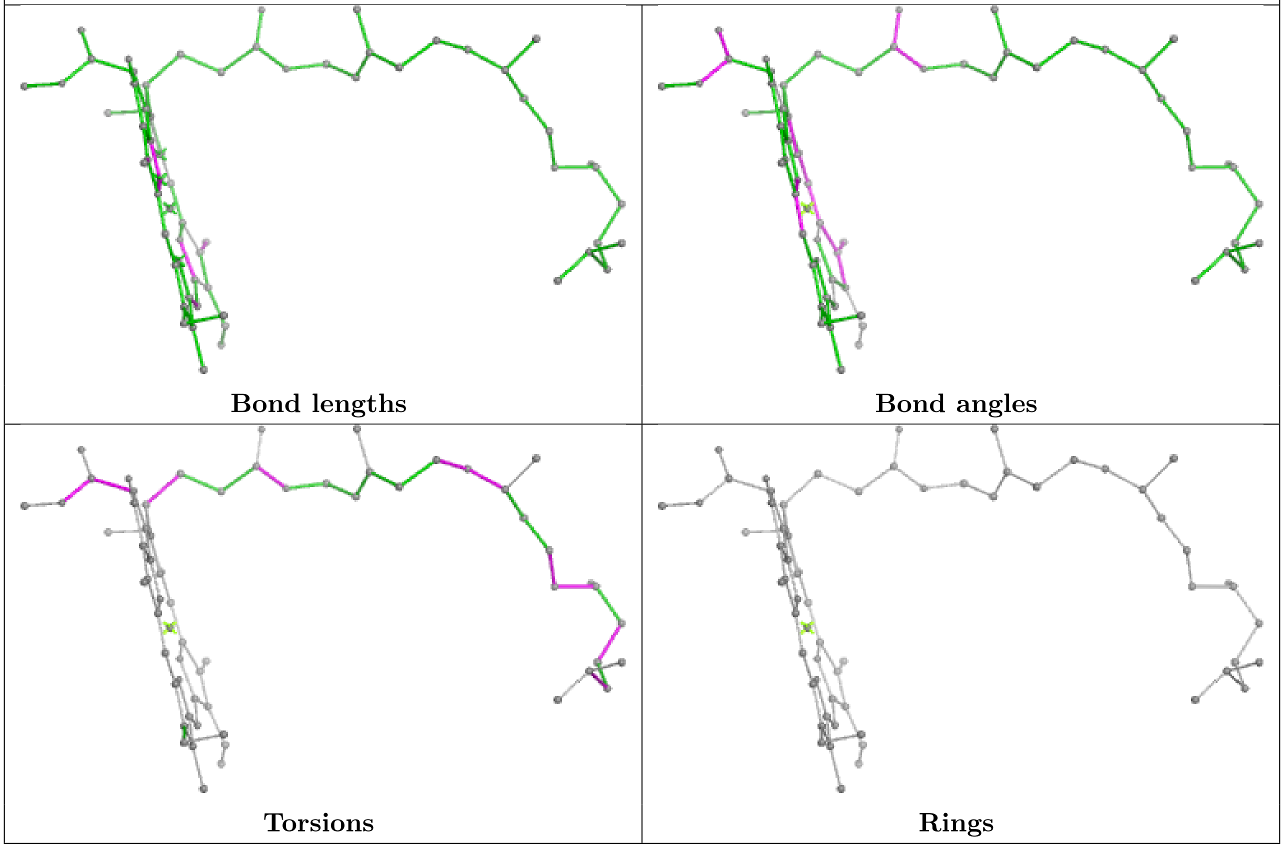


Bond lengths **Bond angles**



Torsions **Rings**

Ligand CLA C 508



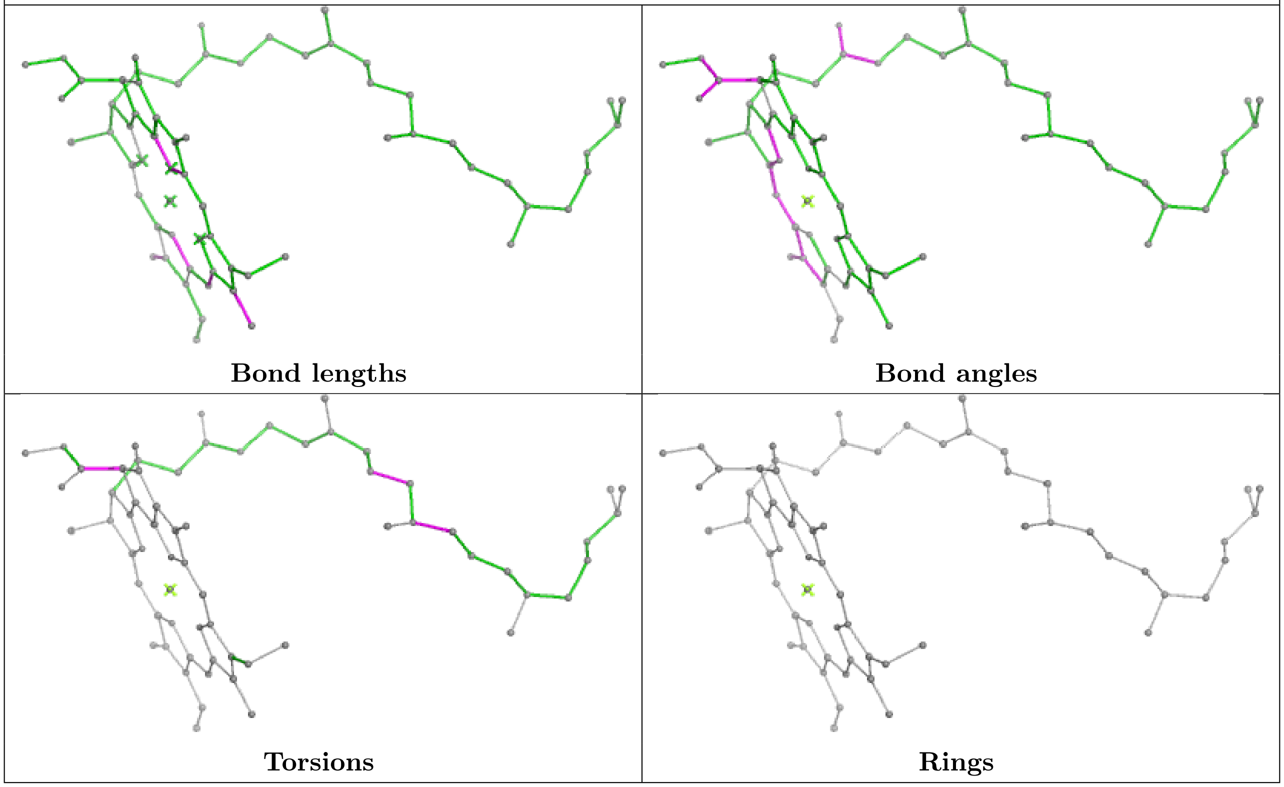
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA C 510



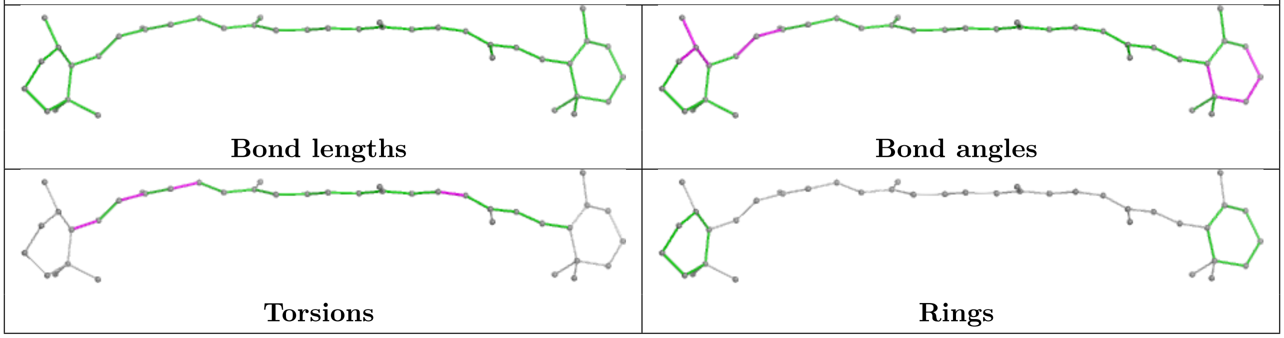
Bond lengths

Bond angles

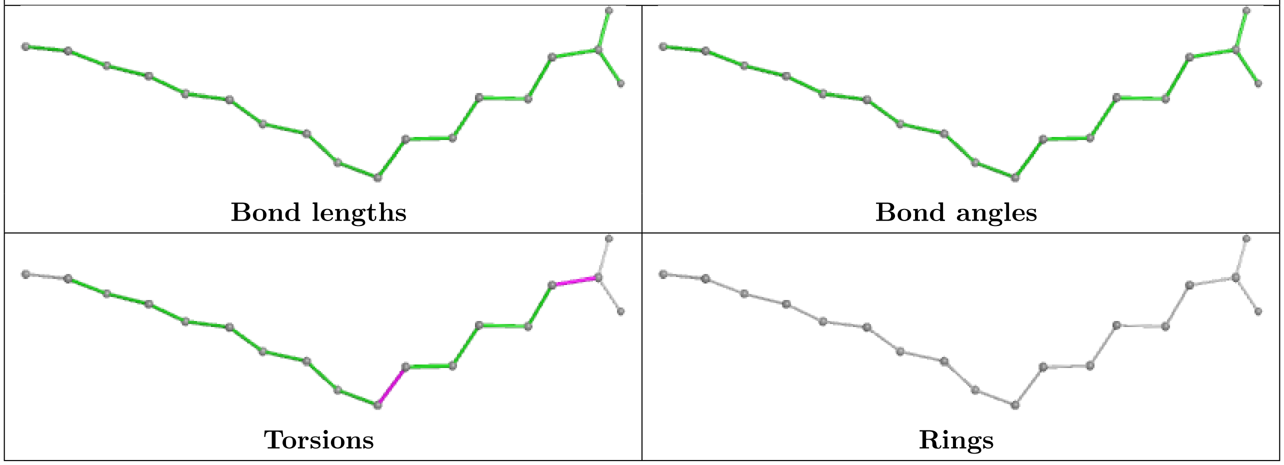
Torsions

Rings

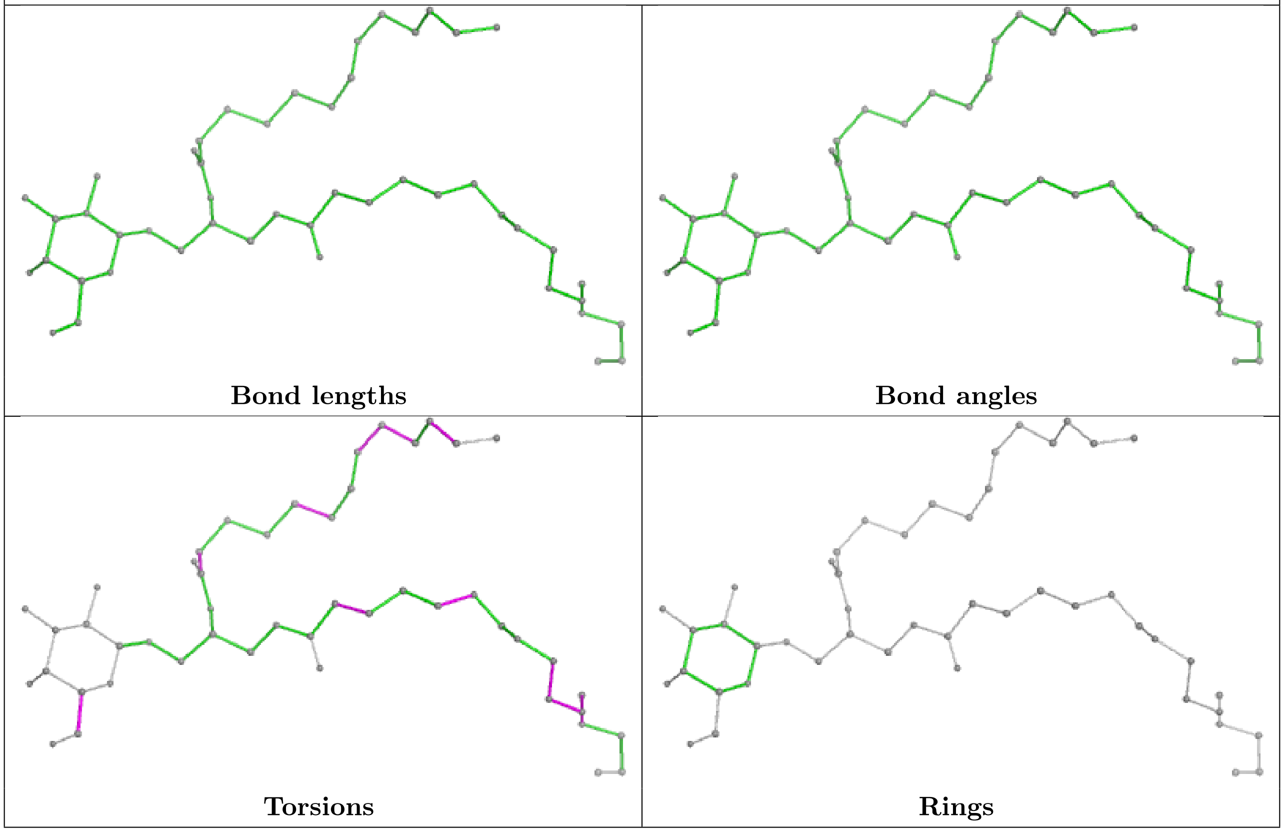
Ligand BCR c 520


Bond lengths
Bond angles
Torsions
Rings

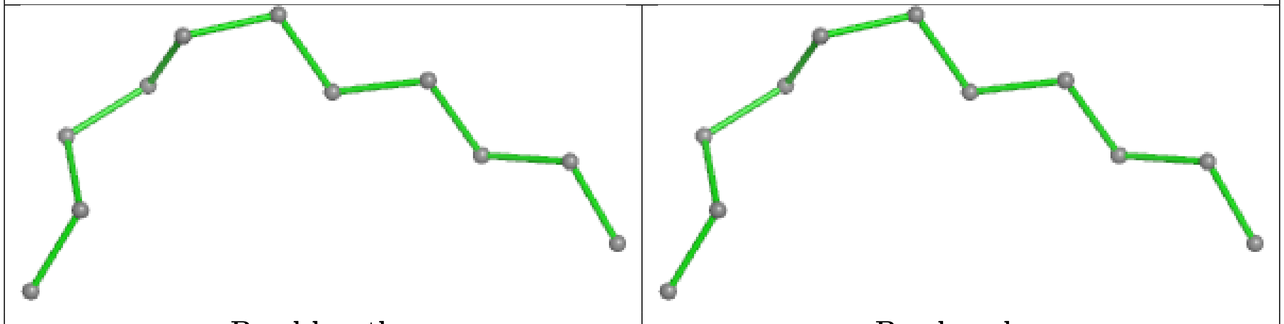
Ligand PLM b 623


Bond lengths
Bond angles
Torsions
Rings

Ligand LMG D 414

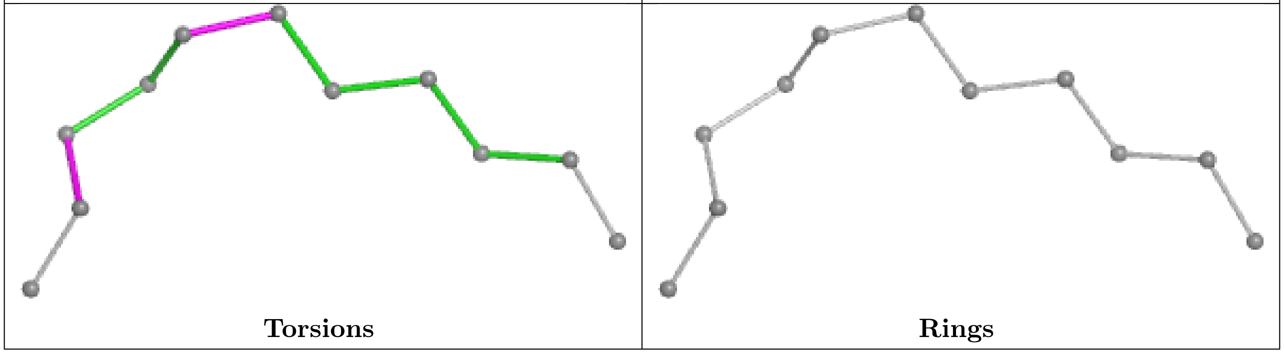

Bond lengths
Bond angles
Torsions
Rings

Ligand LFA b 626



Bond lengths

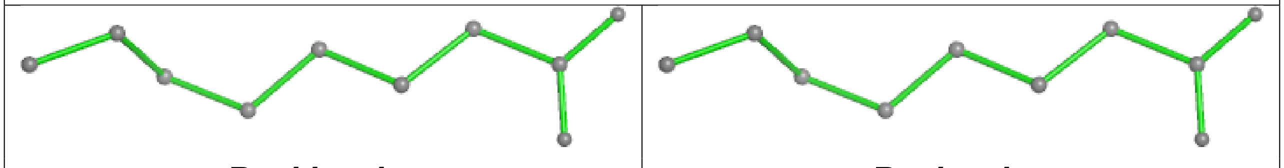
Bond angles



Torsions

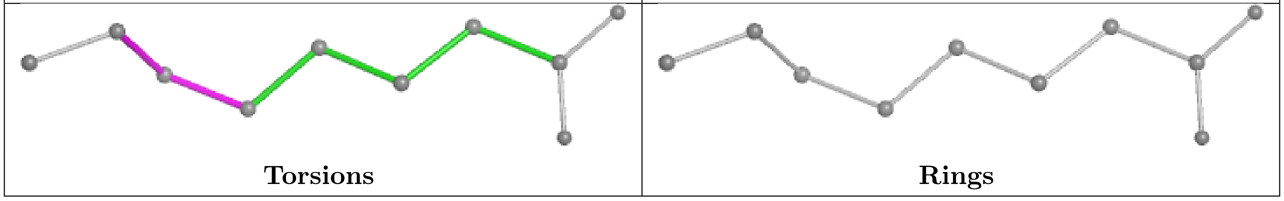
Rings

Ligand PLM H 105



Bond lengths

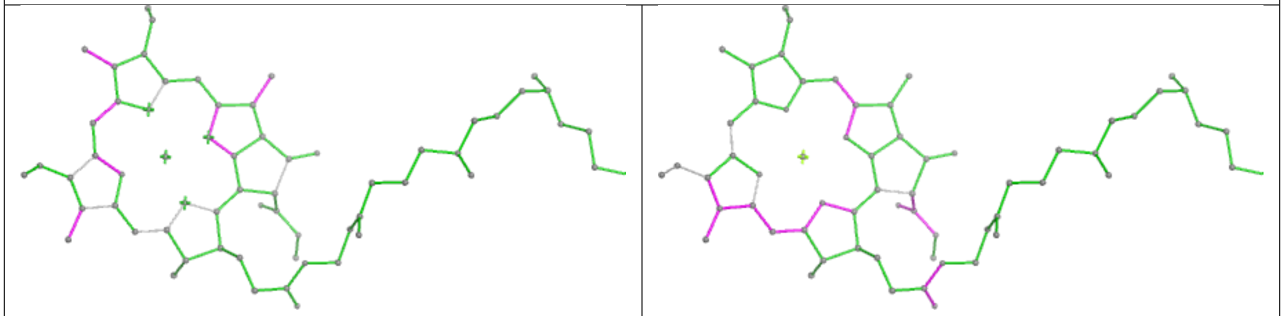
Bond angles



Torsions

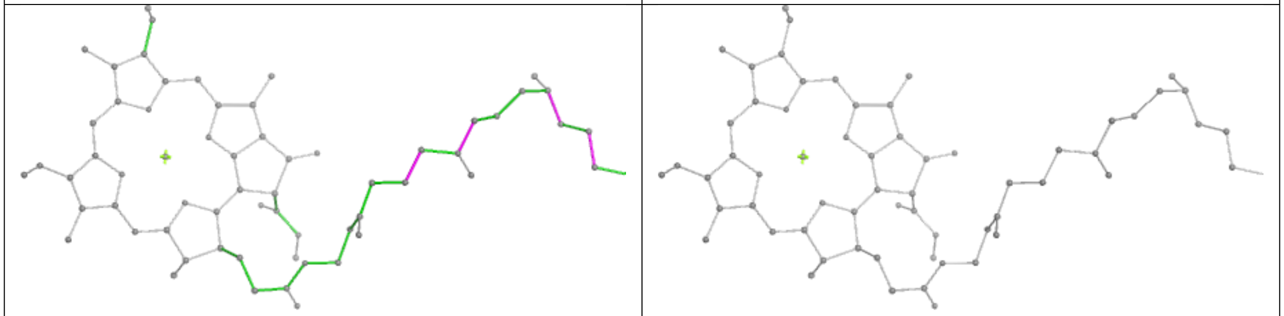
Rings

Ligand CLA b 604



Bond lengths

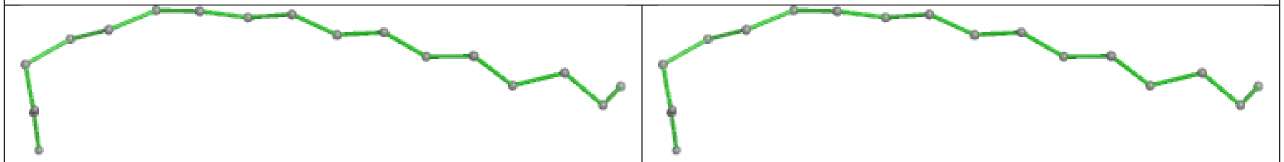
Bond angles



Torsions

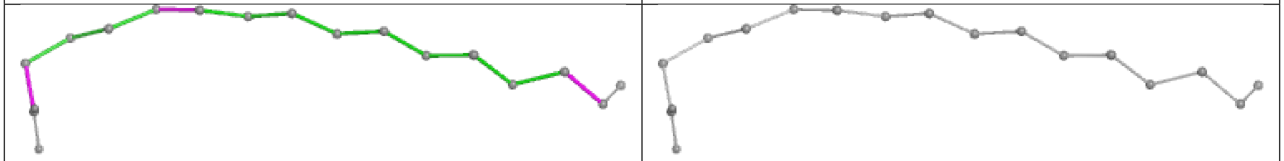
Rings

Ligand PLM I 102



Bond lengths

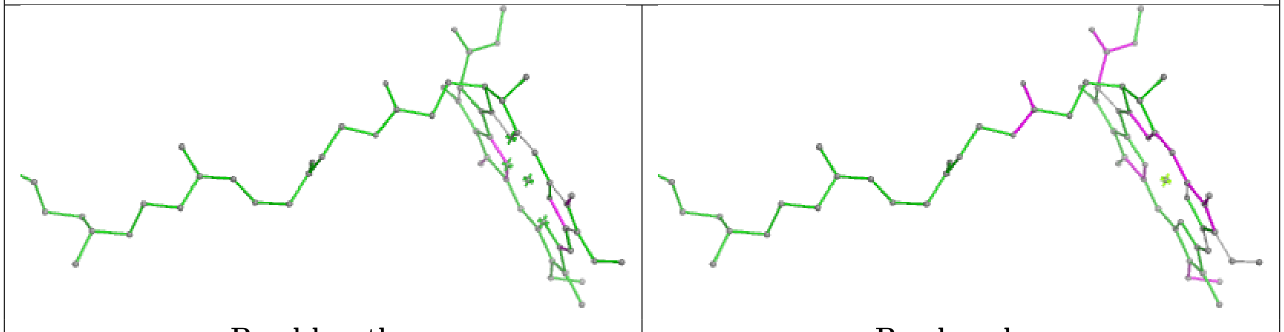
Bond angles

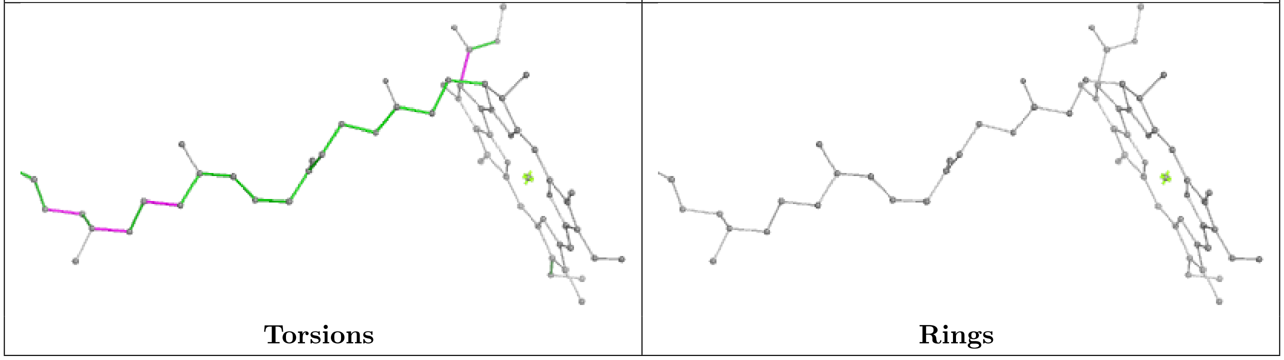


Torsions

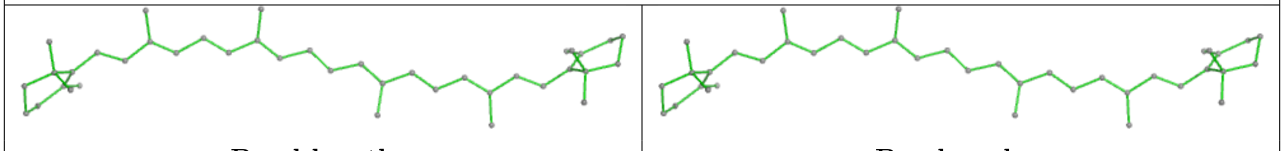
Rings

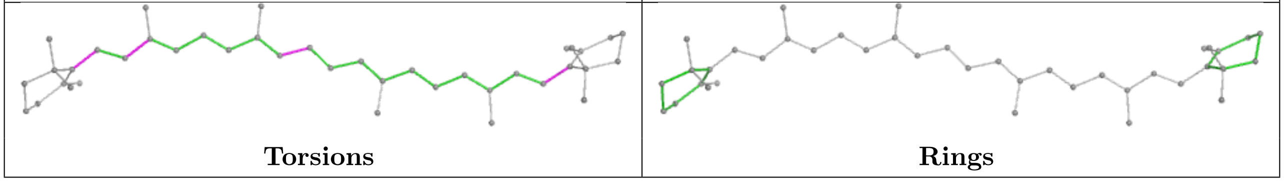
Ligand CLA b 606


Bond lengths Bond angles

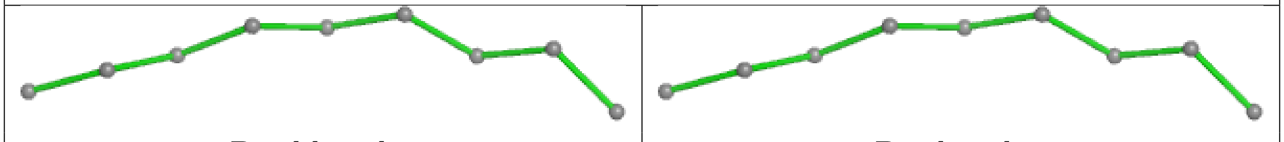

Torsions Rings

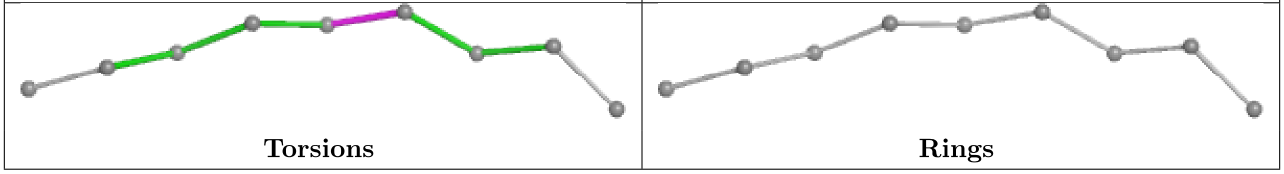
Ligand BCR K 101


Bond lengths Bond angles

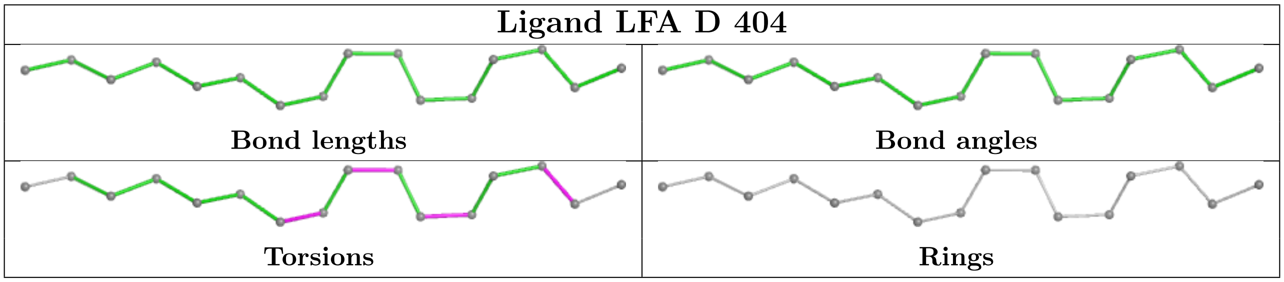

Torsions Rings

Ligand LFA m 103

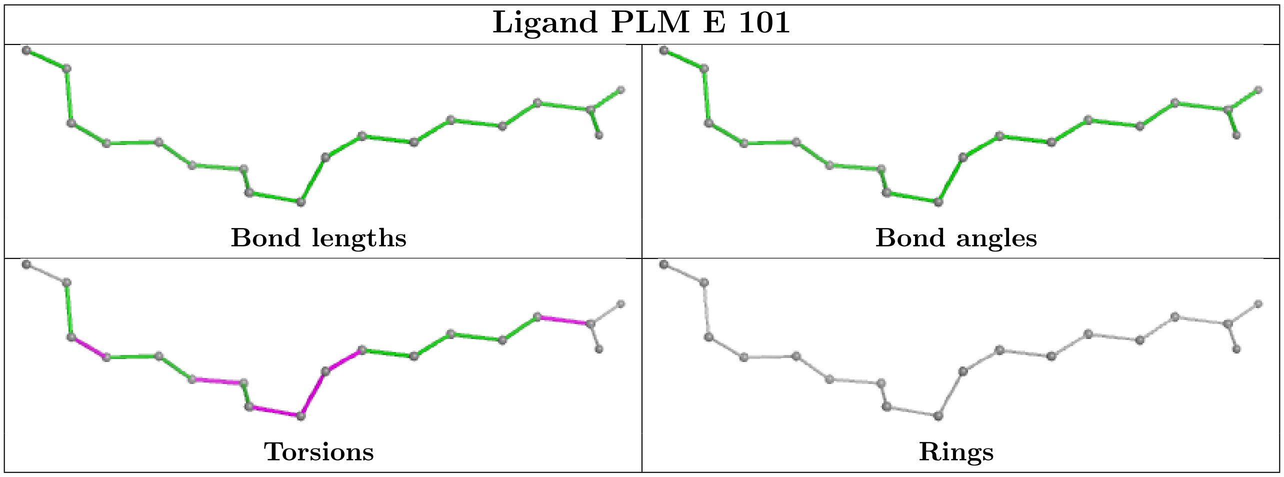

Bond lengths Bond angles


Torsions Rings

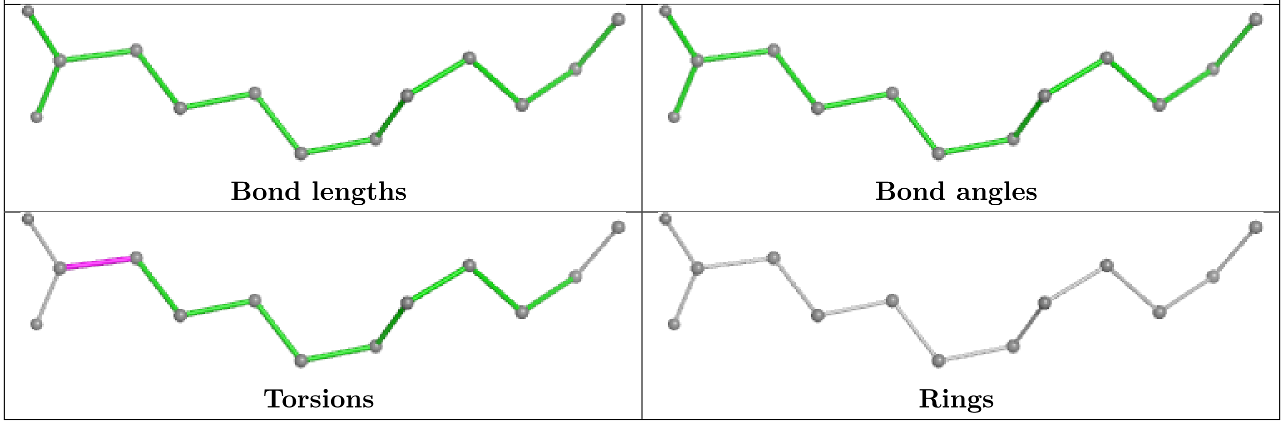
Ligand LFA D 404



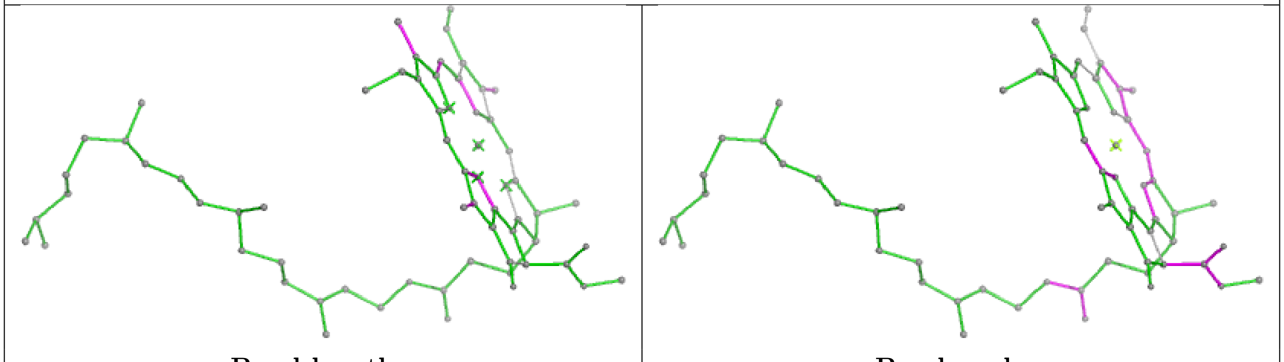
Ligand PLM E 101



Ligand PLM b 630

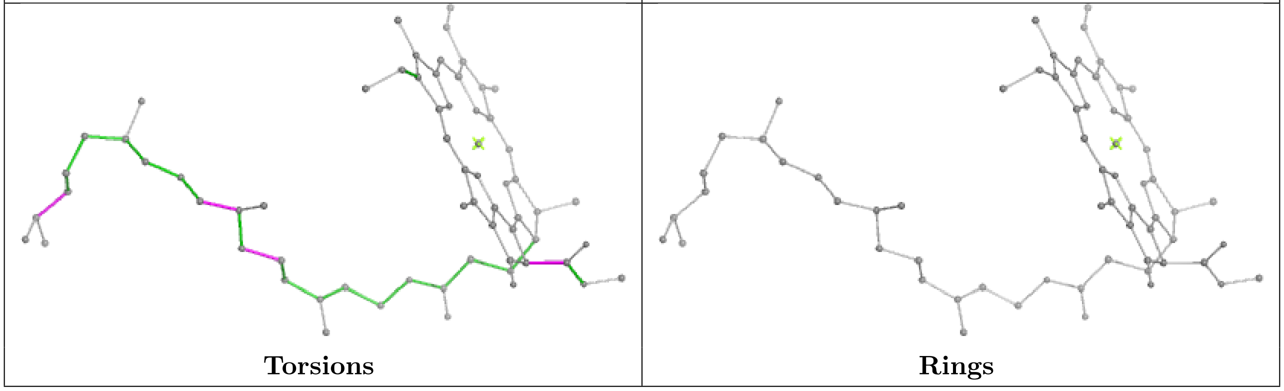


Ligand CLA c 509



Bond lengths

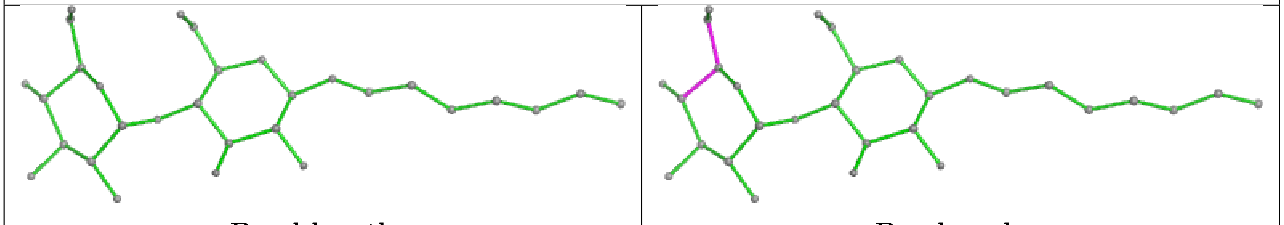
Bond angles



Torsions

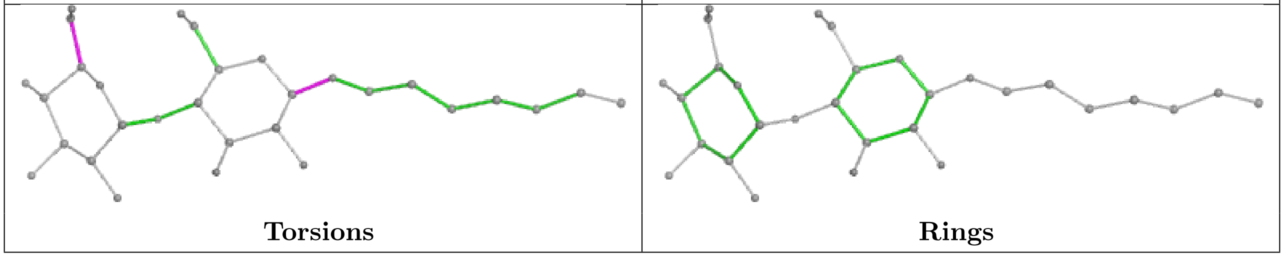
Rings

Ligand LMT C 502



Bond lengths

Bond angles



Torsions

Rings

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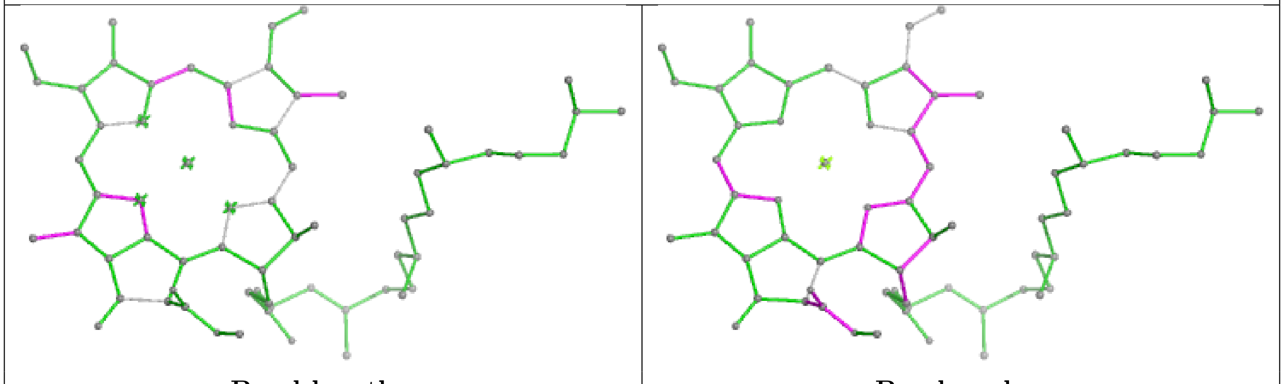
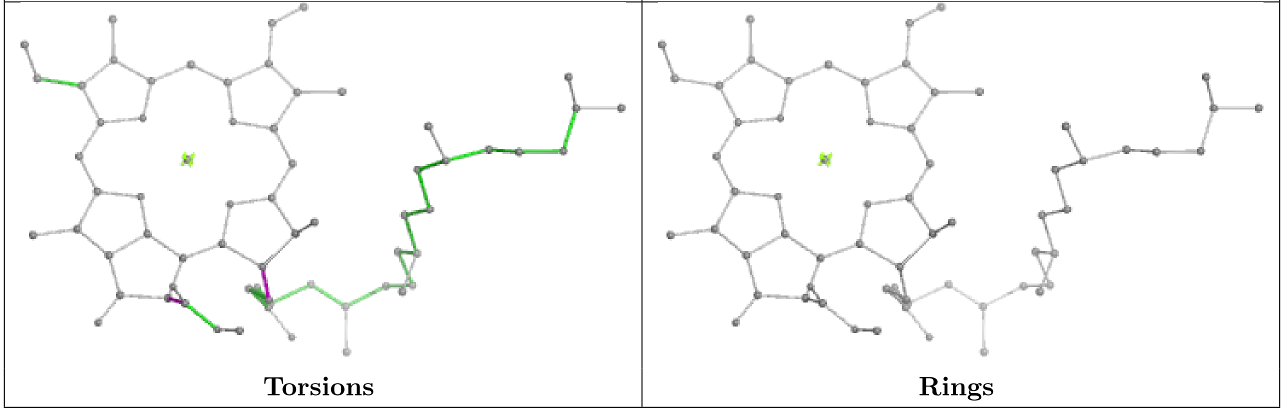


Bond lengths

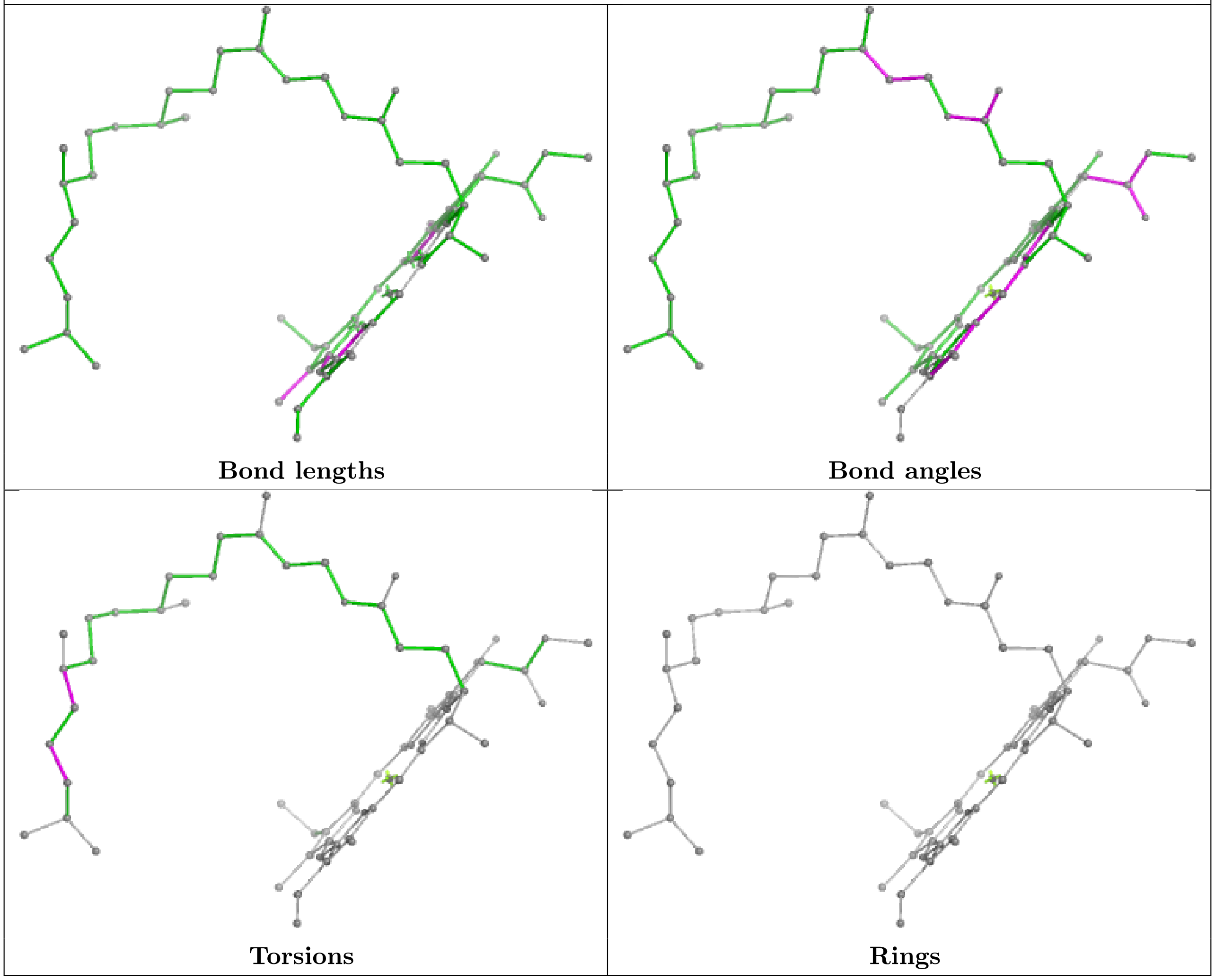
Bond angles



Torsions

Rings

Ligand CLA B 611



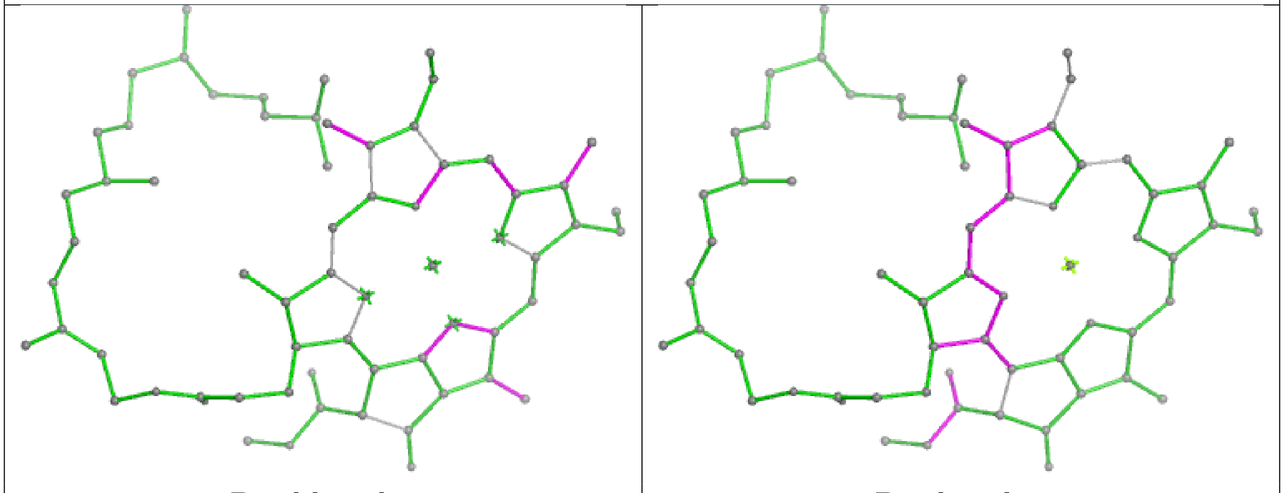
Bond lengths

Bond angles

Torsions

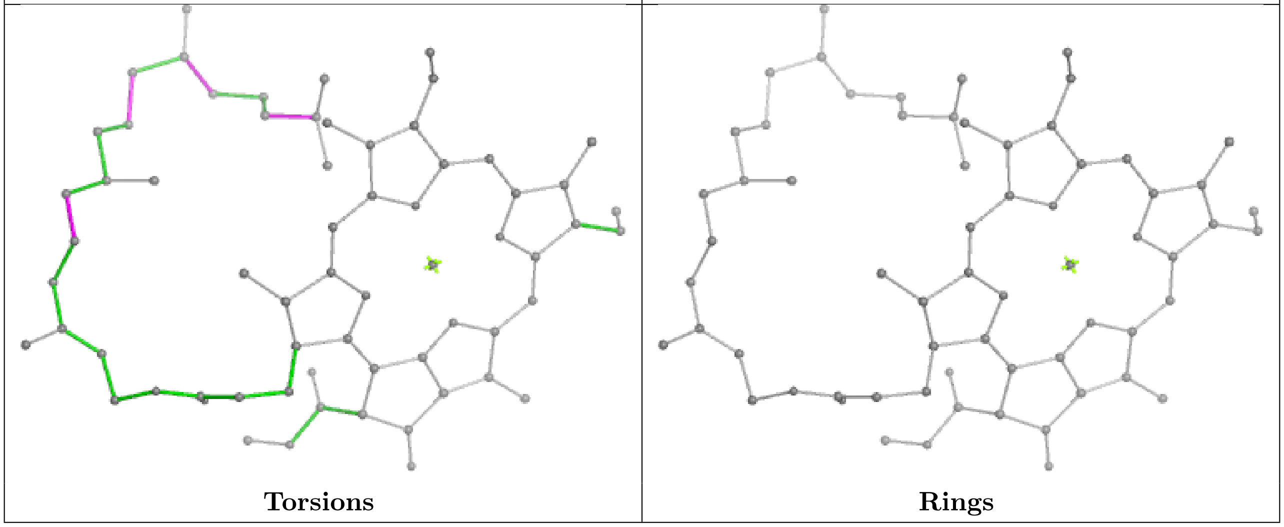
Rings

Ligand CLA B 615



Bond lengths

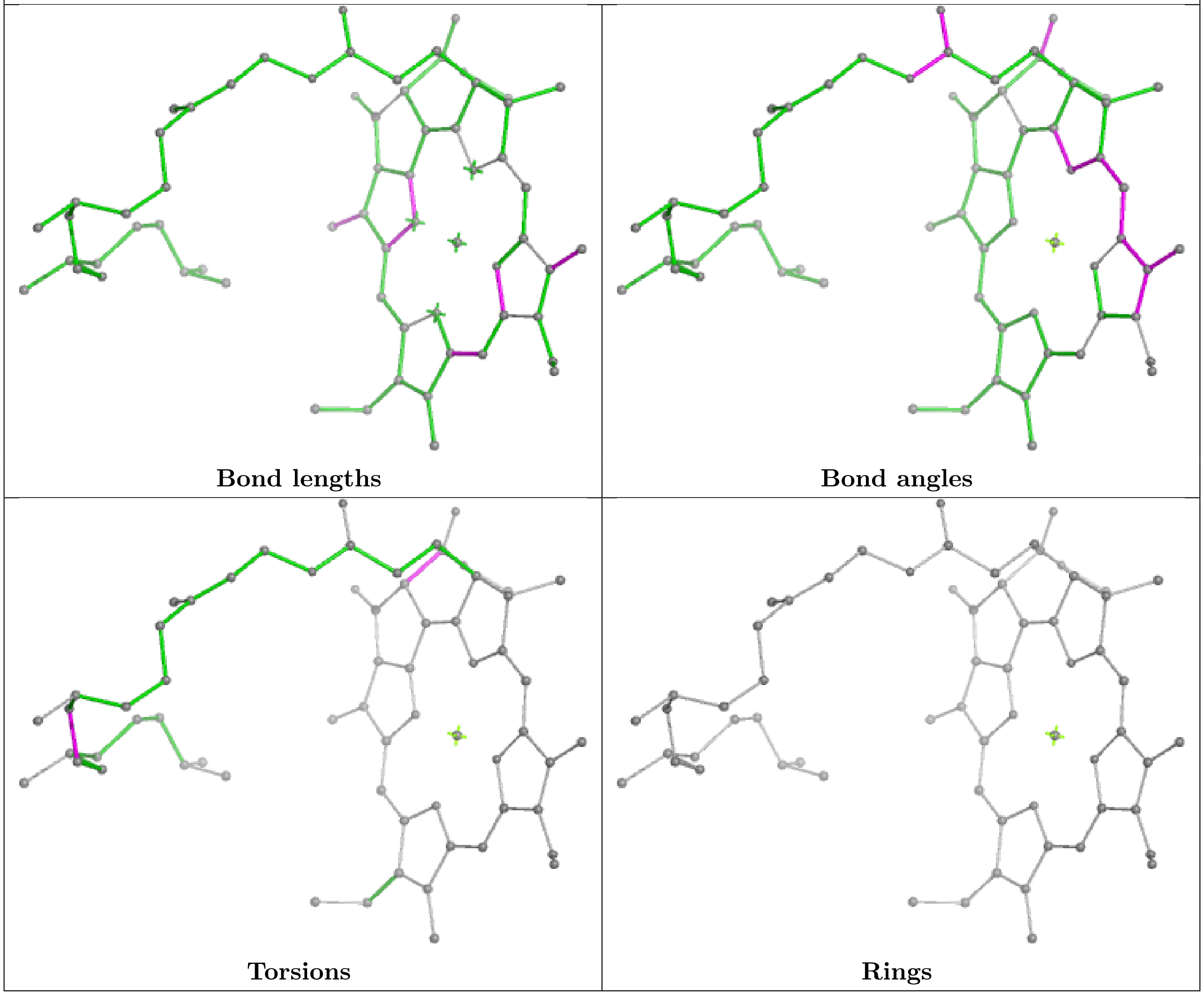
Bond angles



Torsions

Rings

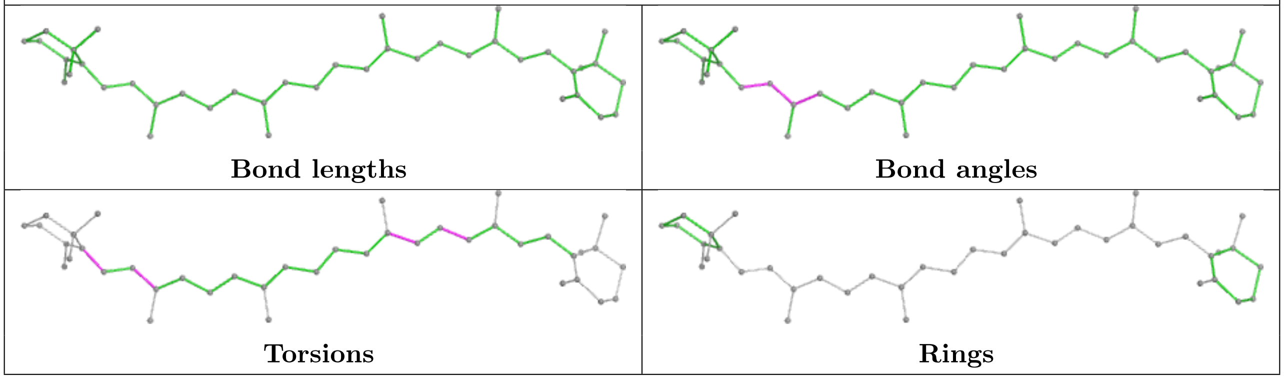
Ligand CLA C 505



Bond lengths Bond angles

Torsions Rings

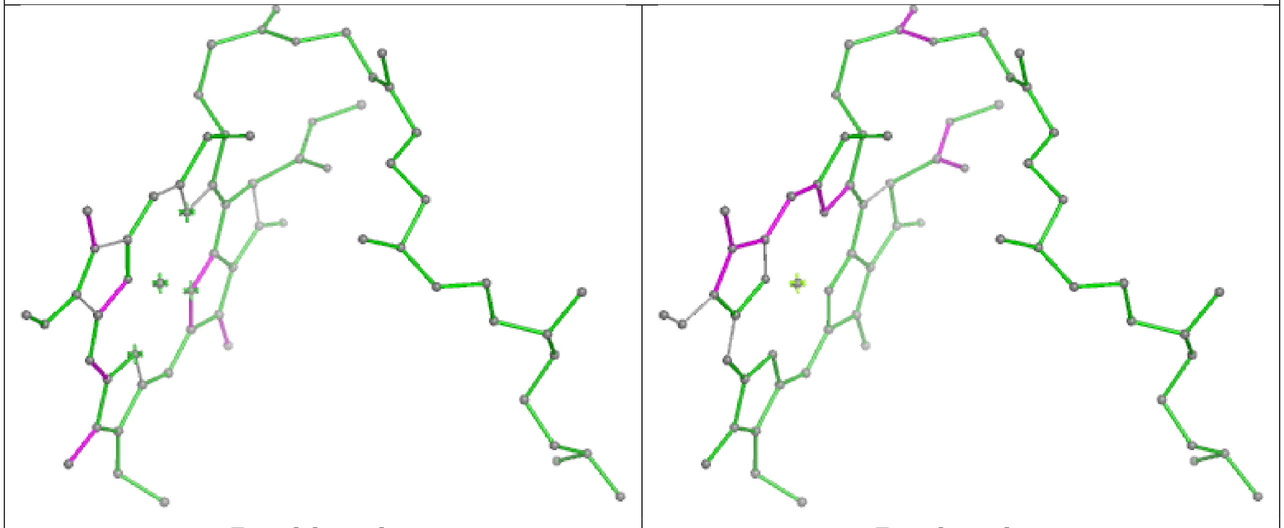
Ligand BCR Y 101



Bond lengths Bond angles

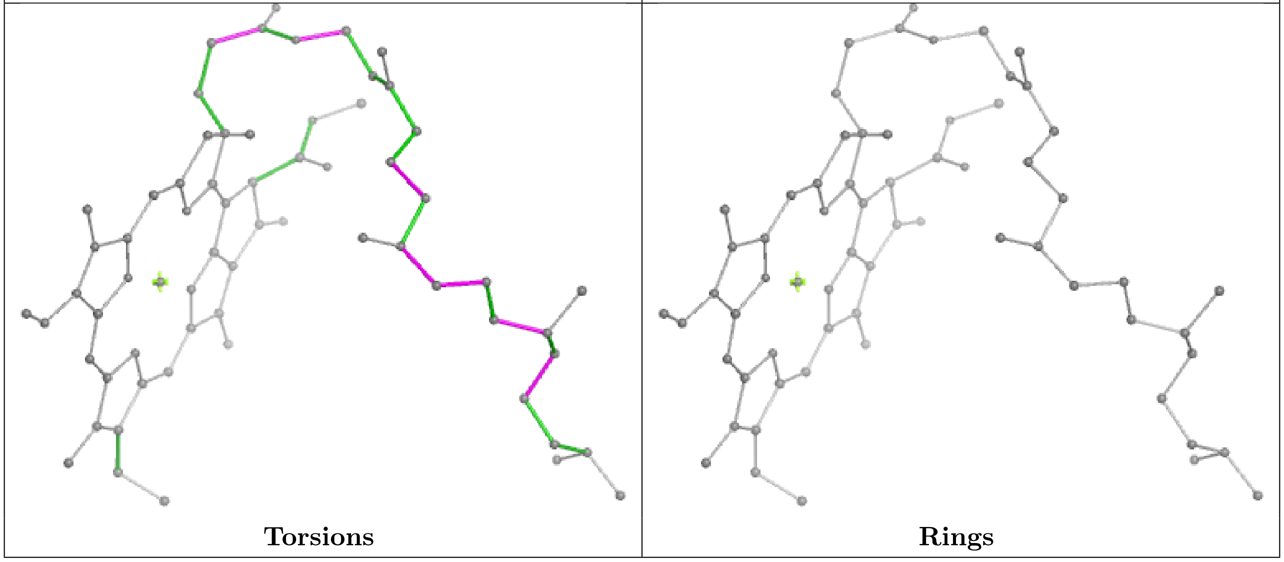
Torsions Rings

Ligand CLA b 615



Bond lengths

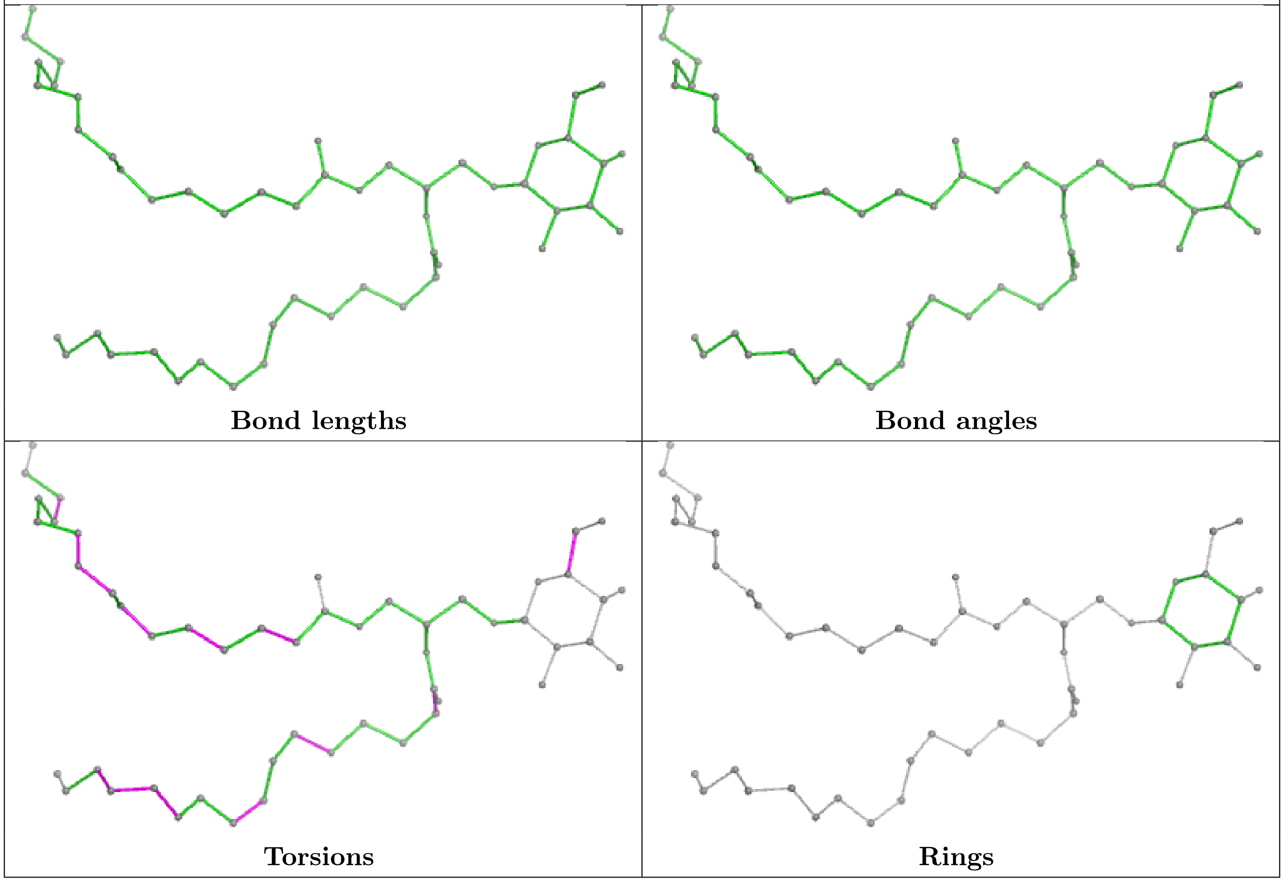
Bond angles



Torsions

Rings

Ligand LMG d 410



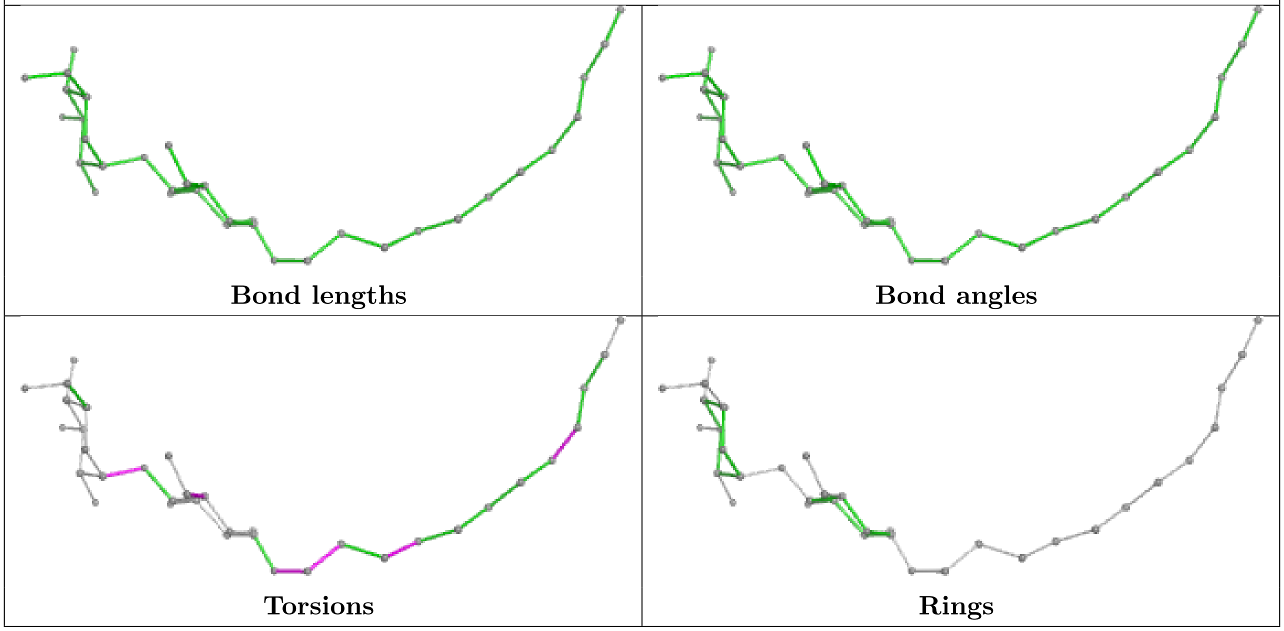
Bond lengths

Bond angles

Torsions

Rings

Ligand LMT M 101



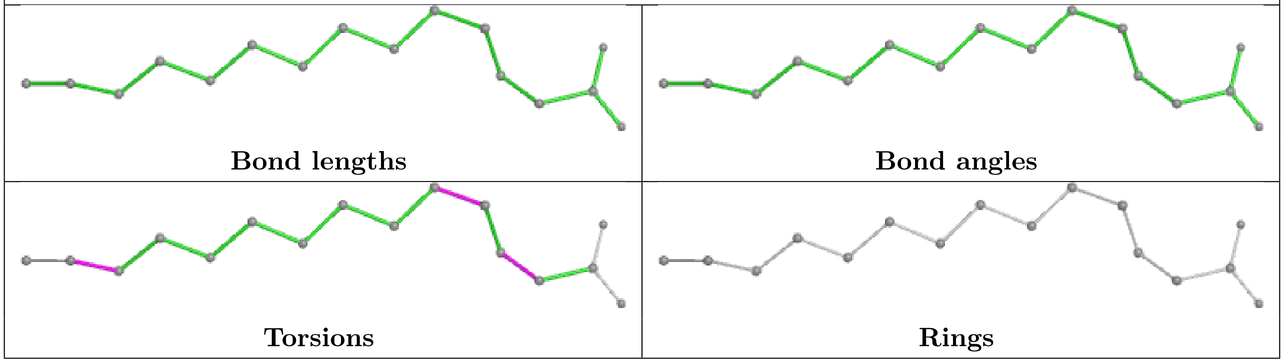
Bond lengths

Bond angles

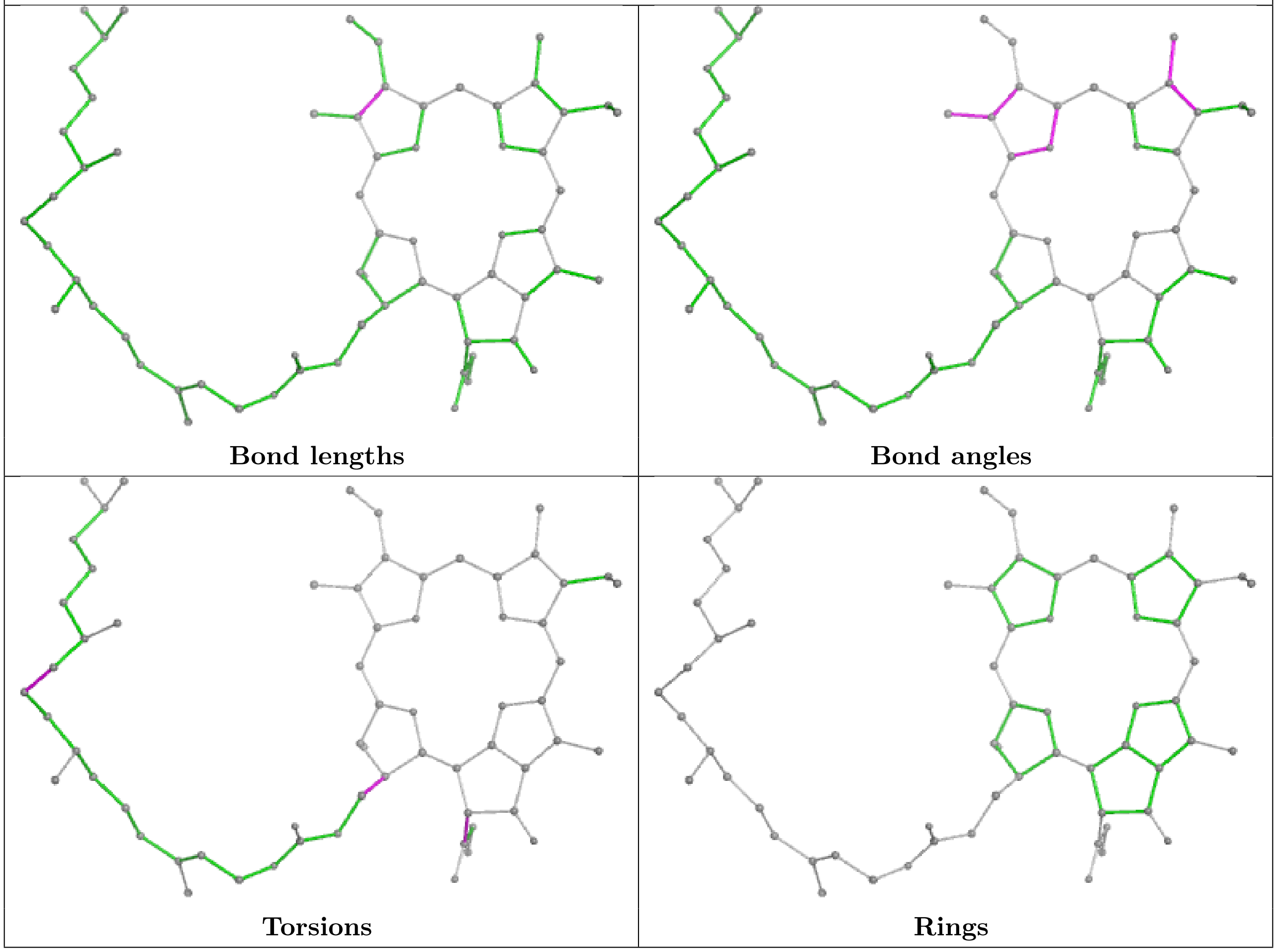
Torsions

Rings

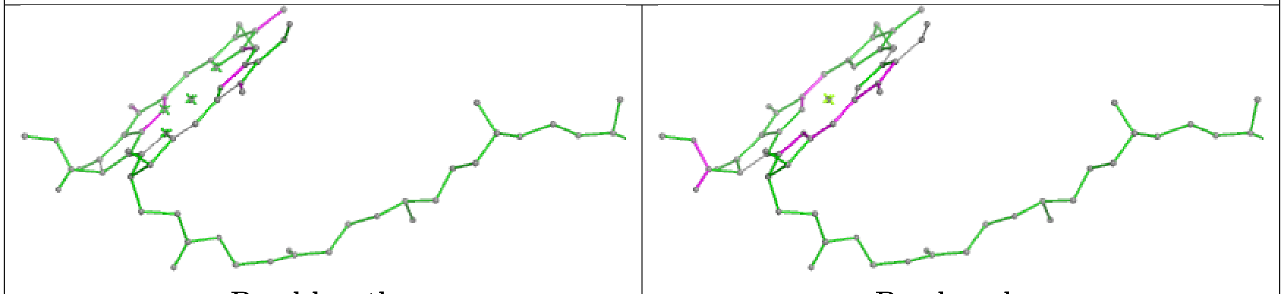
Ligand PLM B 627



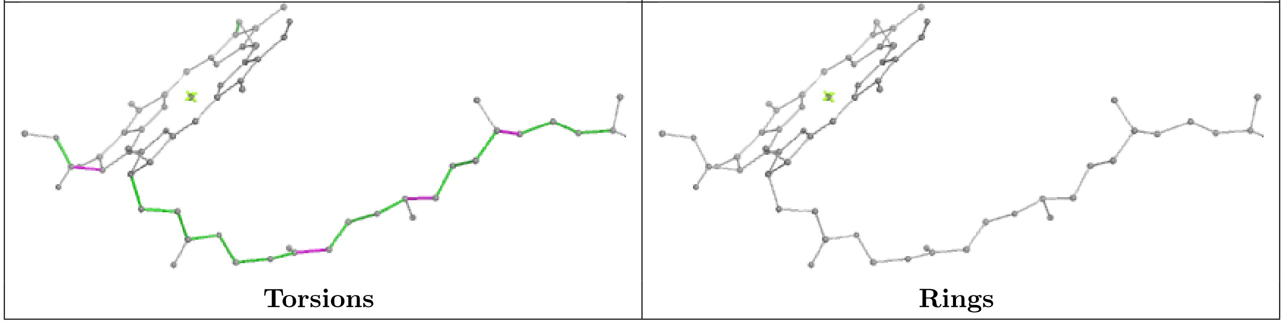
Ligand PHO A 406



Ligand CLA c 505

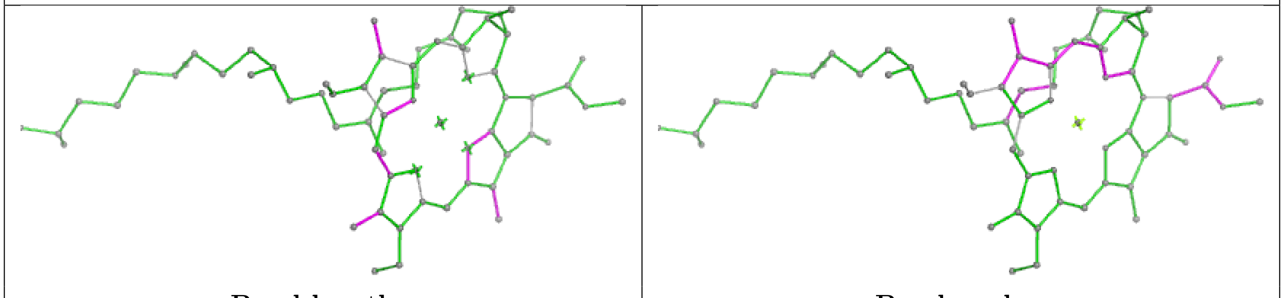


Bond lengths Bond angles

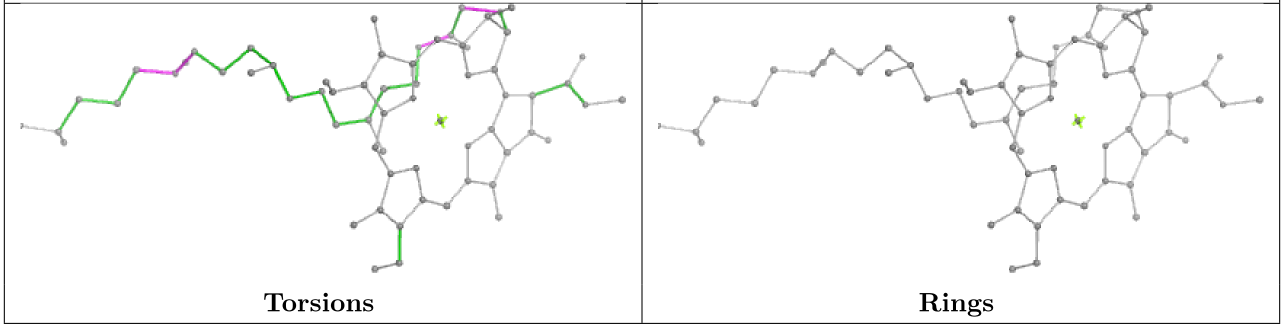


Torsions Rings

Ligand CLA C 507

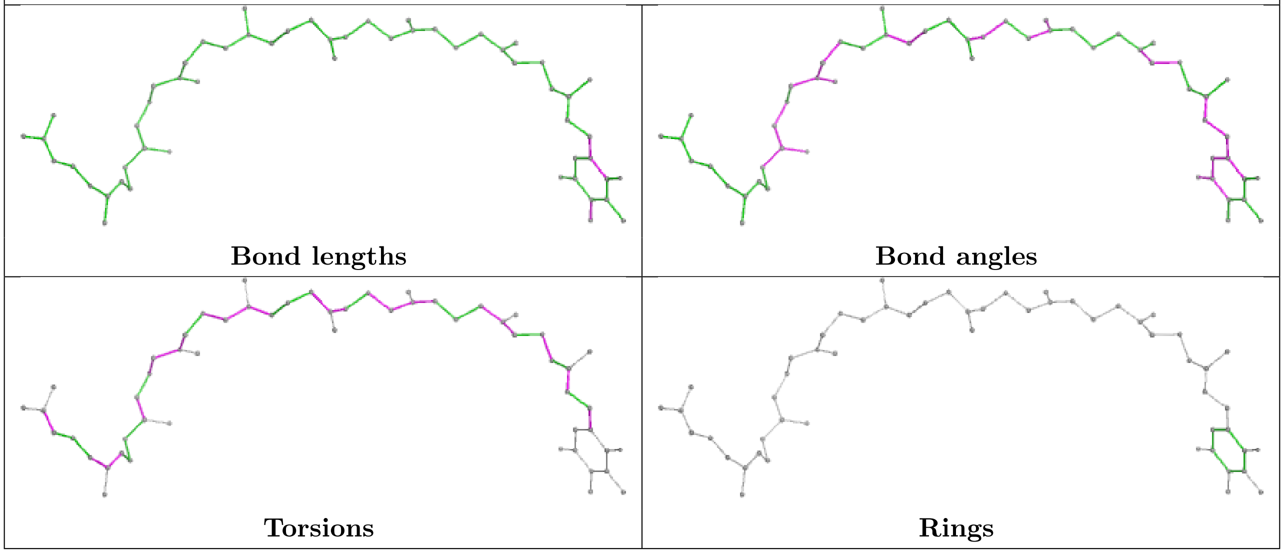


Bond lengths Bond angles



Torsions Rings

Ligand PL9 a 411



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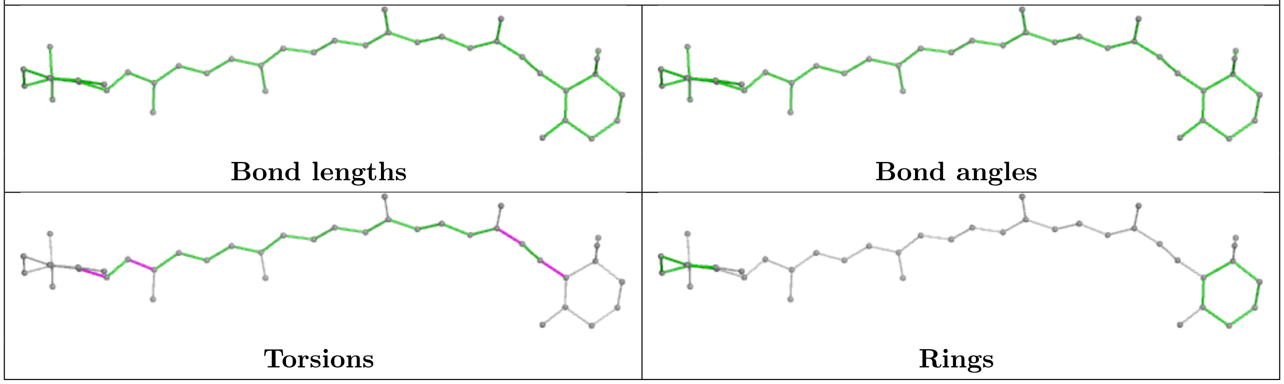
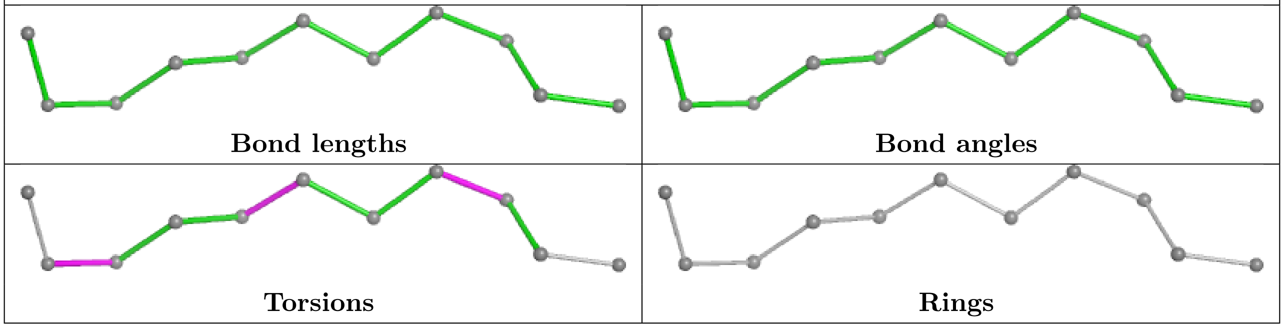
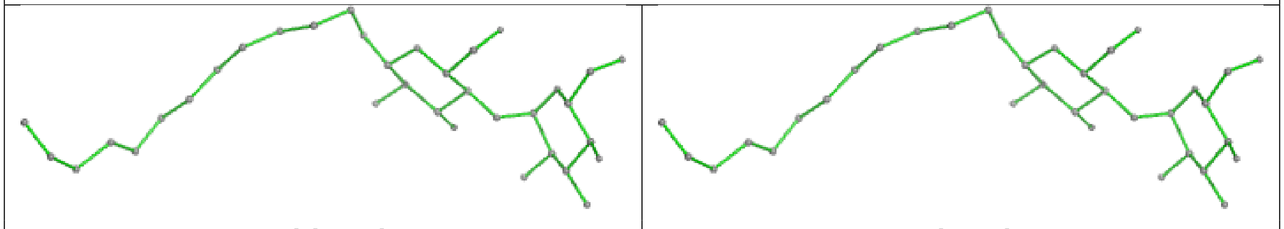


Ligand LFA B 625

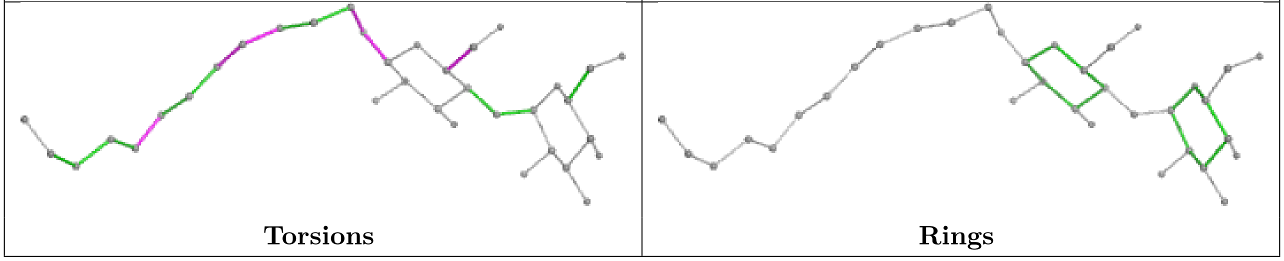


Ligand LMT D 402



Bond lengths

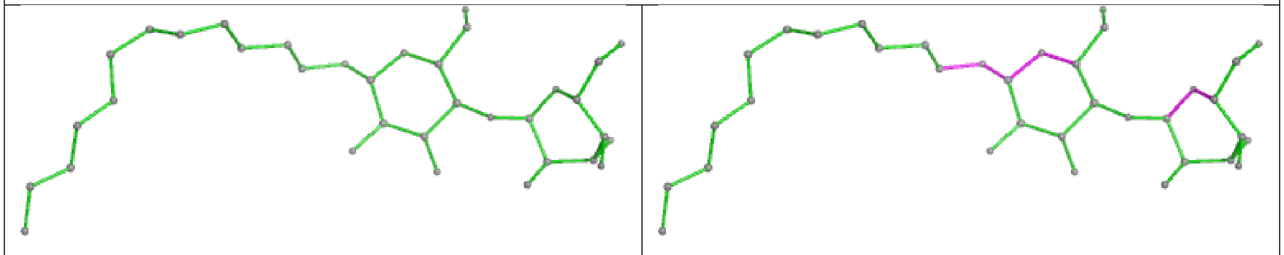
Bond angles



Torsions

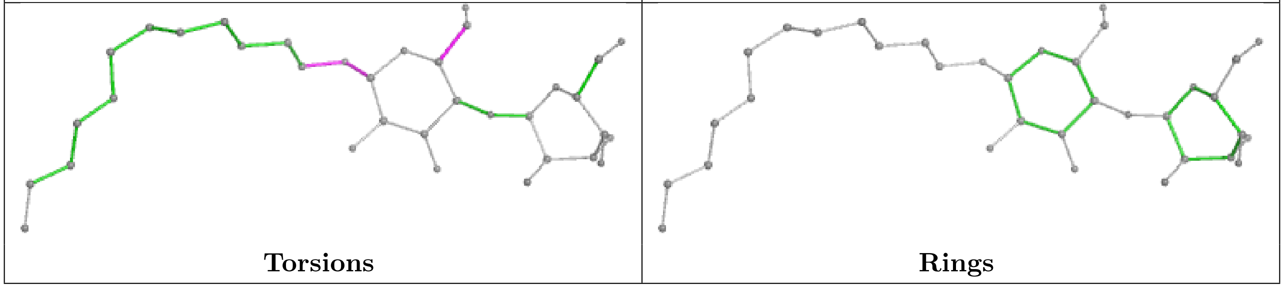
Rings

Ligand LMT z 101



Bond lengths

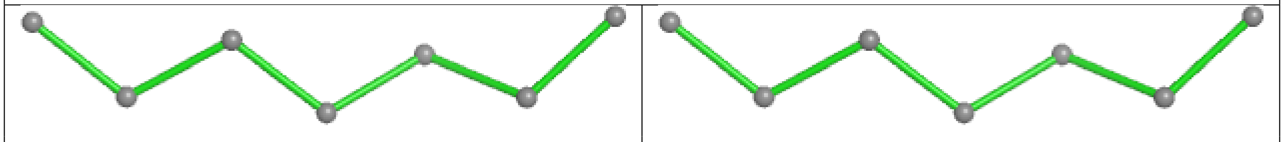
Bond angles



Torsions

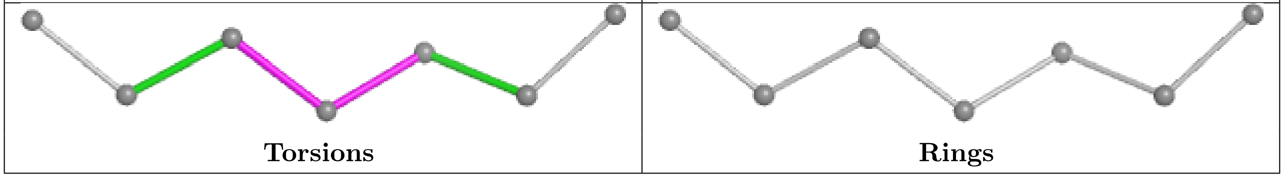
Rings

Ligand LFA b 632



Bond lengths

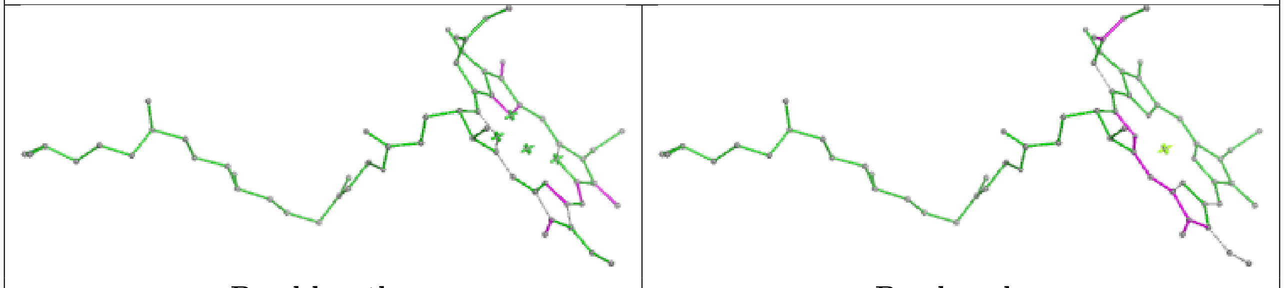
Bond angles



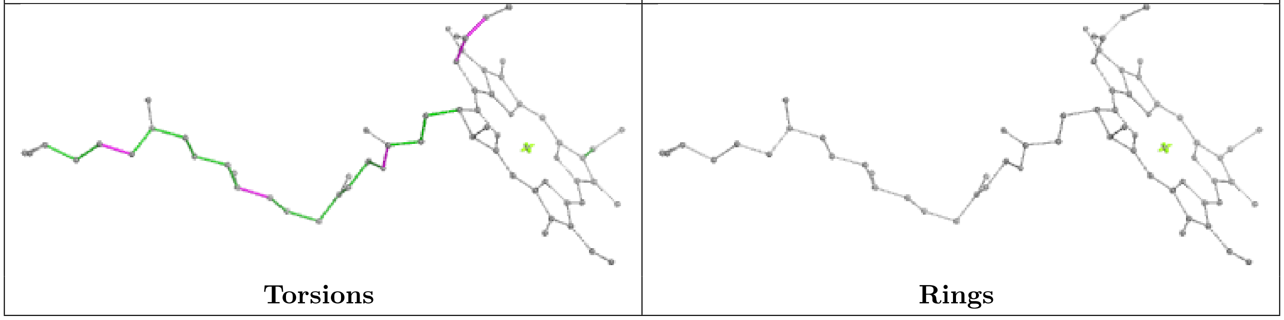
Torsions

Rings

Ligand CLA C 504

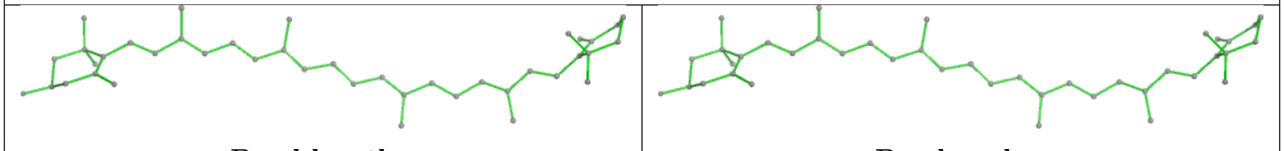


Bond lengths Bond angles

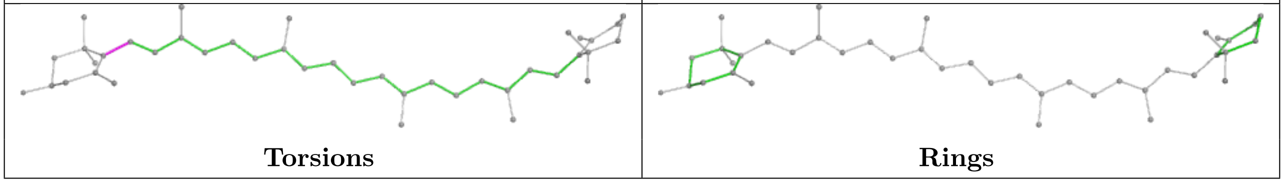


Torsions Rings

Ligand RRX x 102

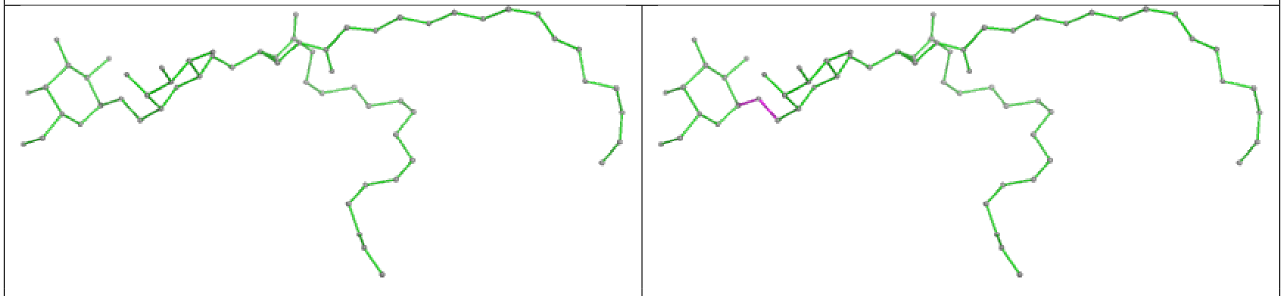


Bond lengths Bond angles

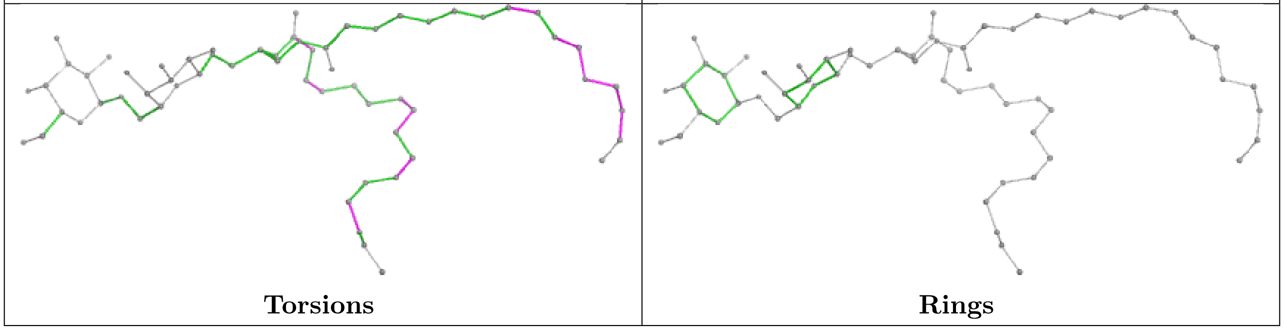


Torsions Rings

Ligand DGD h 102

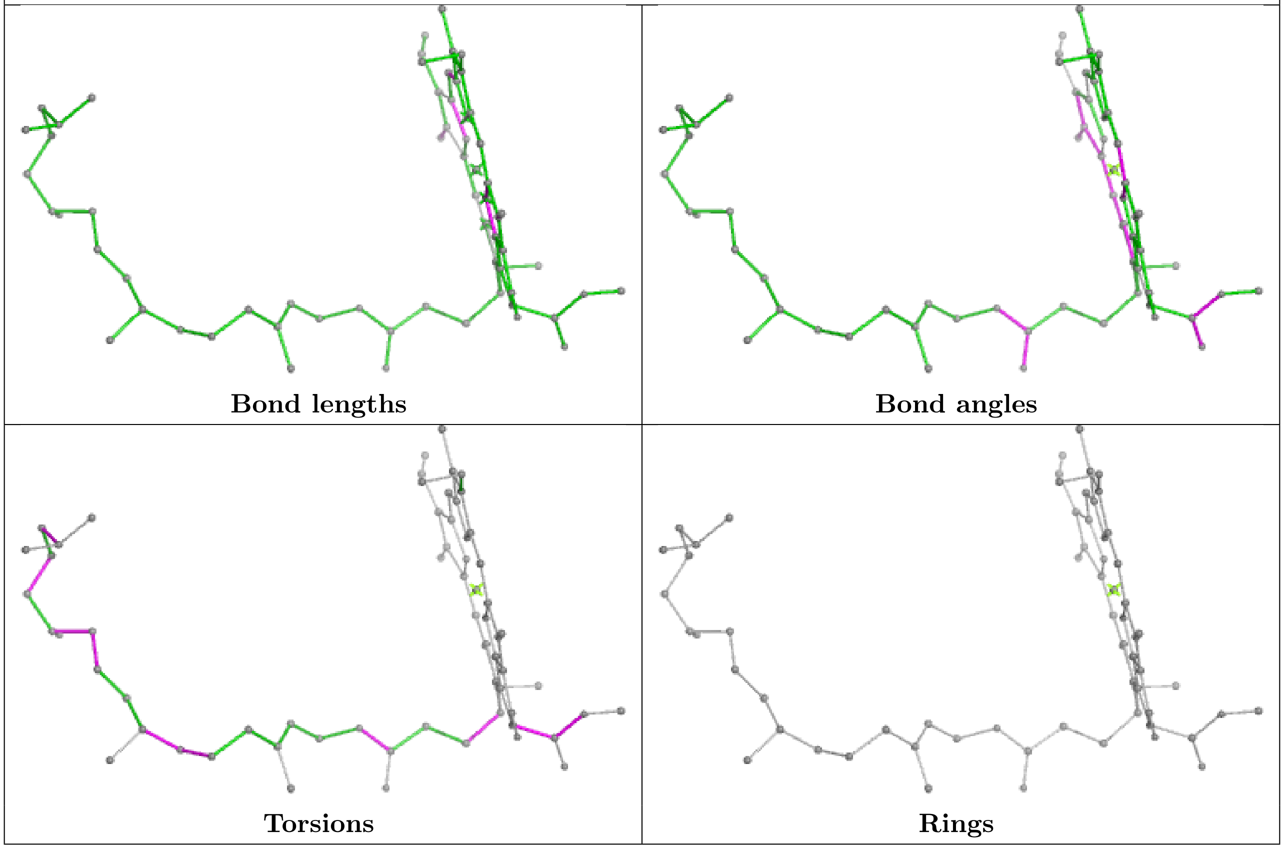


Bond lengths Bond angles



Torsions Rings

Ligand CLA c 507



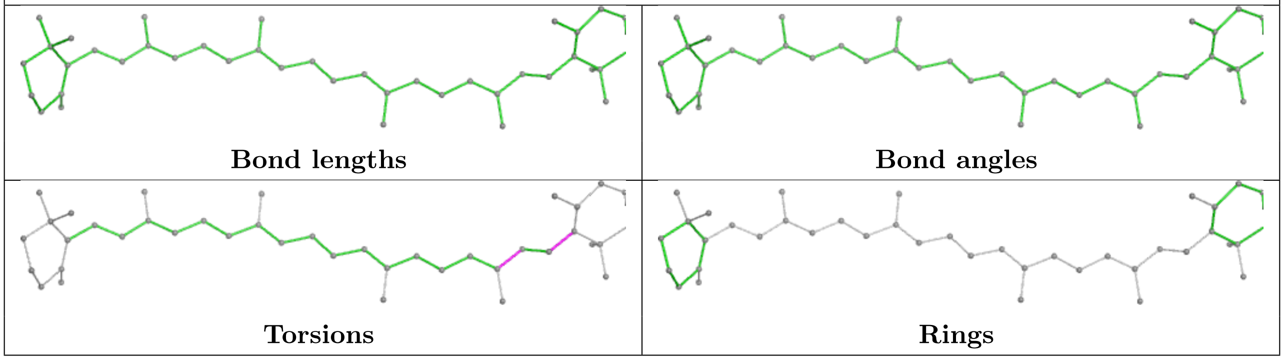
Bond lengths

Bond angles

Torsions

Rings

Ligand BCR b 621



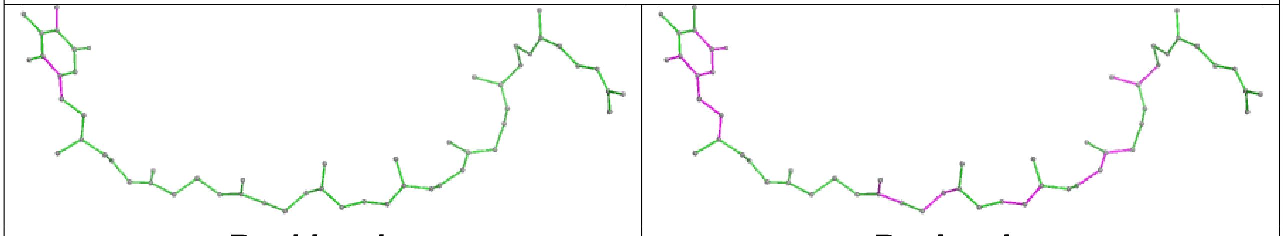
Bond lengths

Bond angles

Torsions

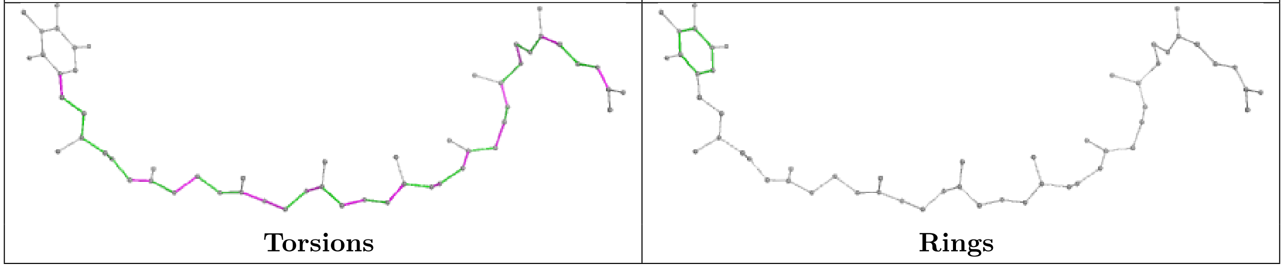
Rings

Ligand PL9 A 410



Bond lengths

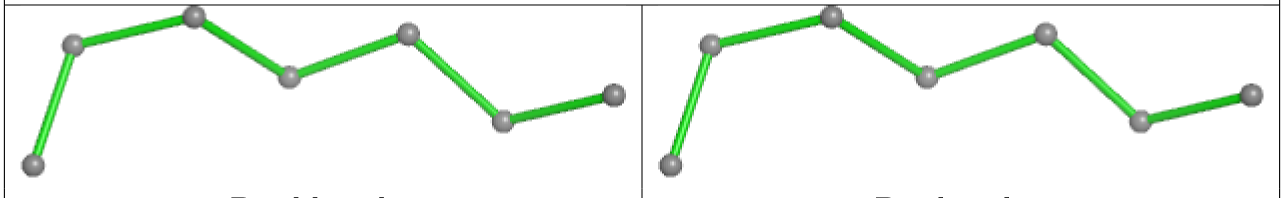
Bond angles



Torsions

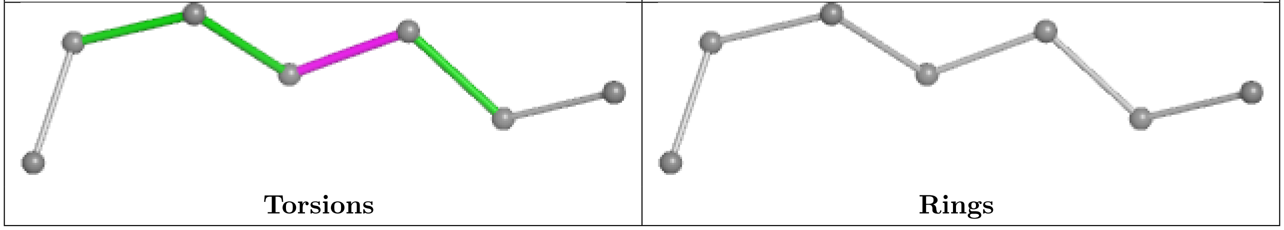
Rings

Ligand LFA h 104



Bond lengths

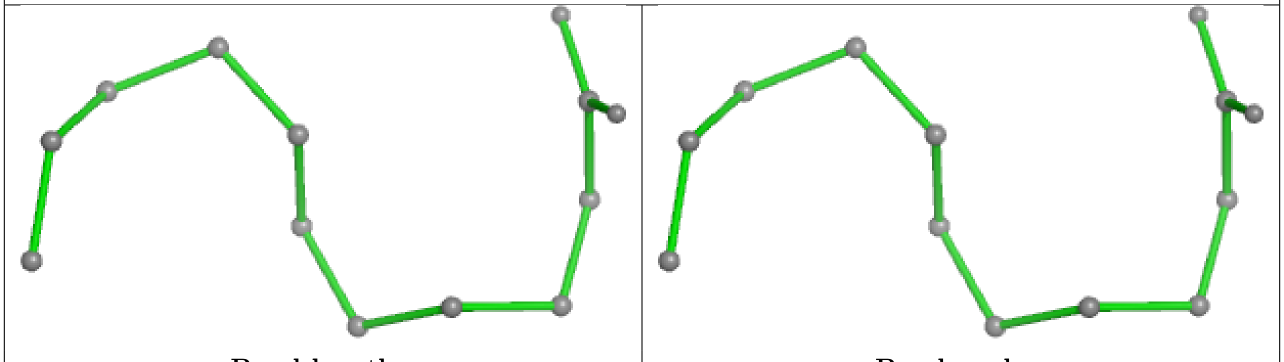
Bond angles



Torsions

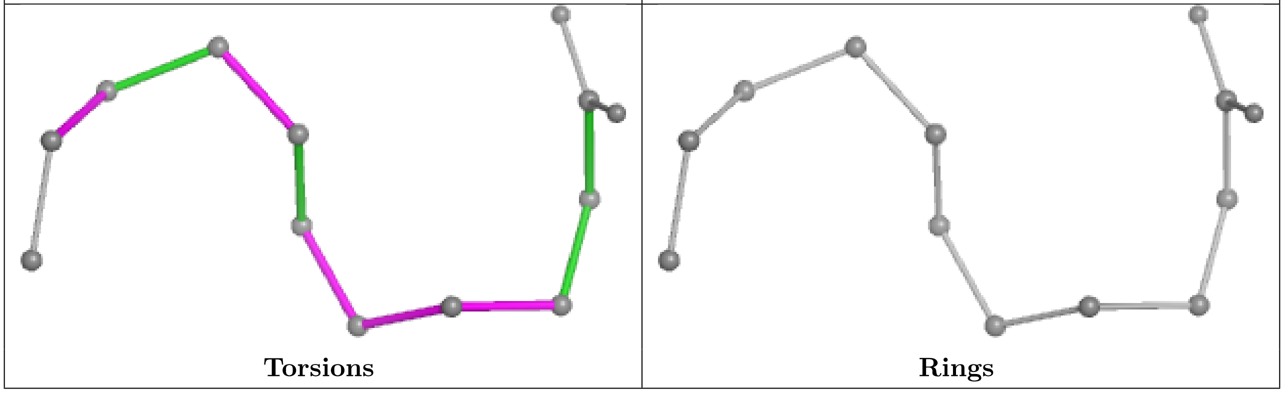
Rings

Ligand PLM i 104



Bond lengths

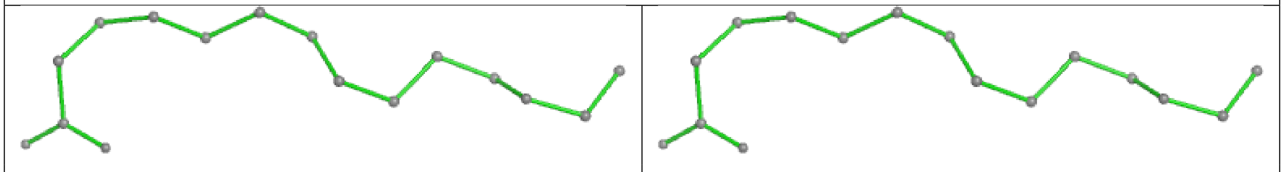
Bond angles



Torsions

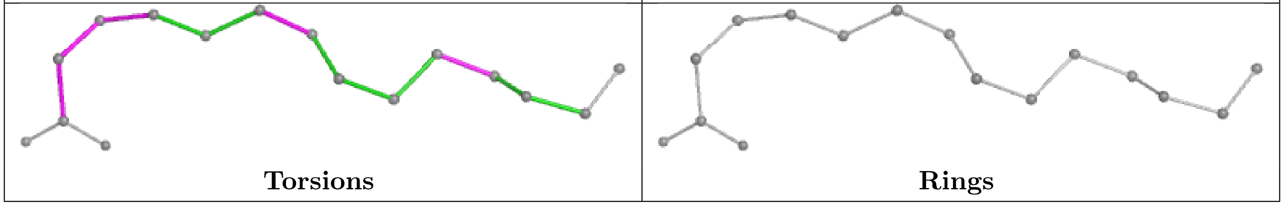
Rings

Ligand PLM I 101



Bond lengths

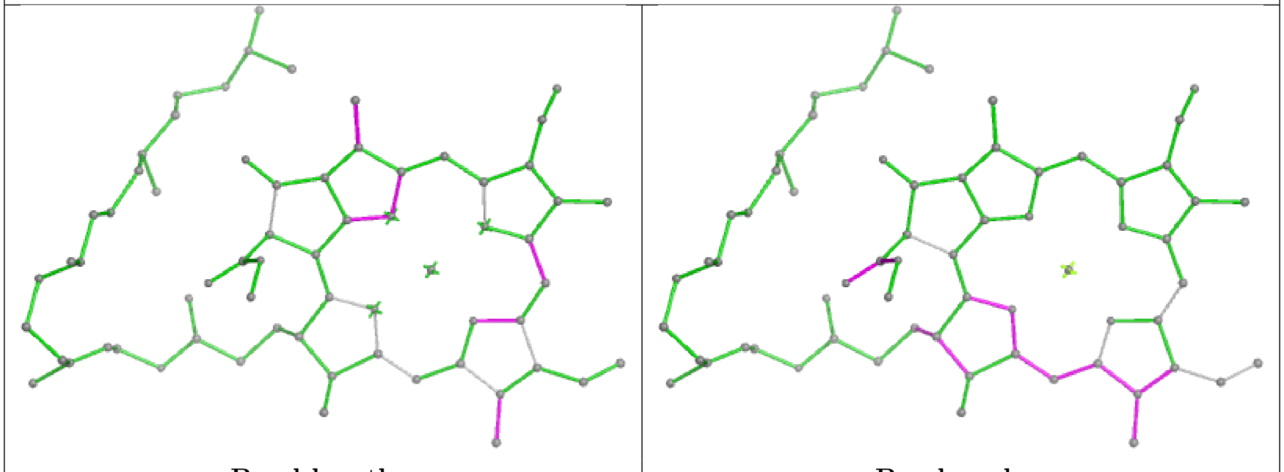
Bond angles



Torsions

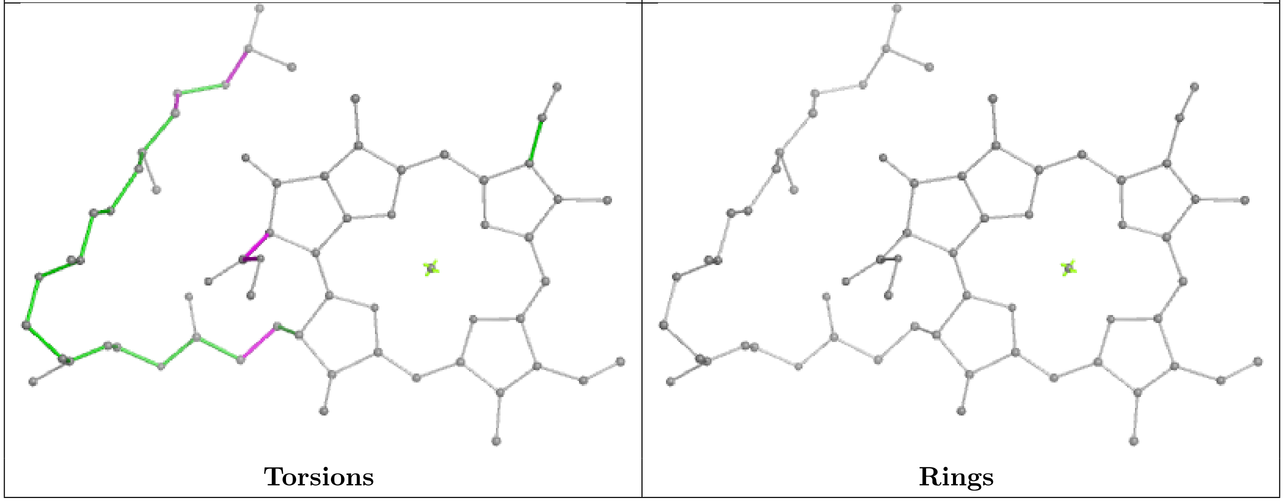
Rings

Ligand CLA B 610



Bond lengths

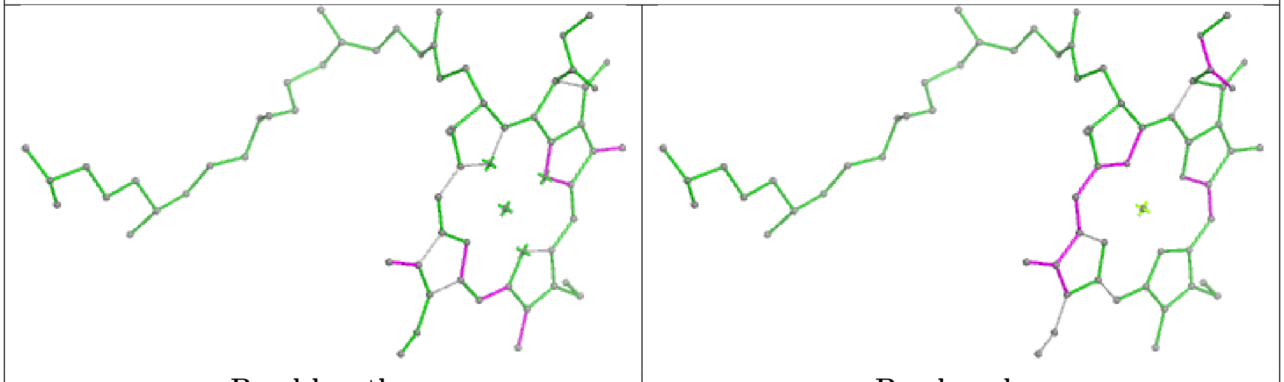
Bond angles



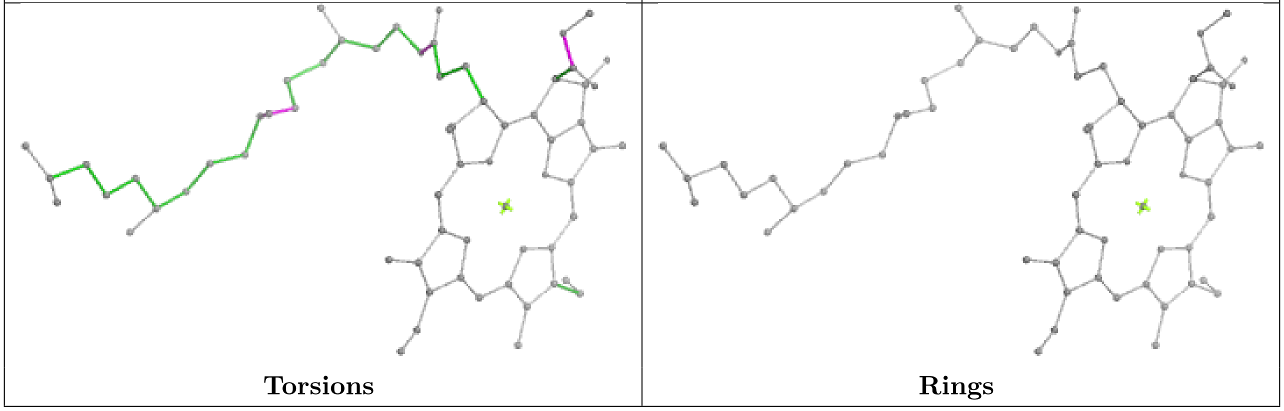
Torsions

Rings

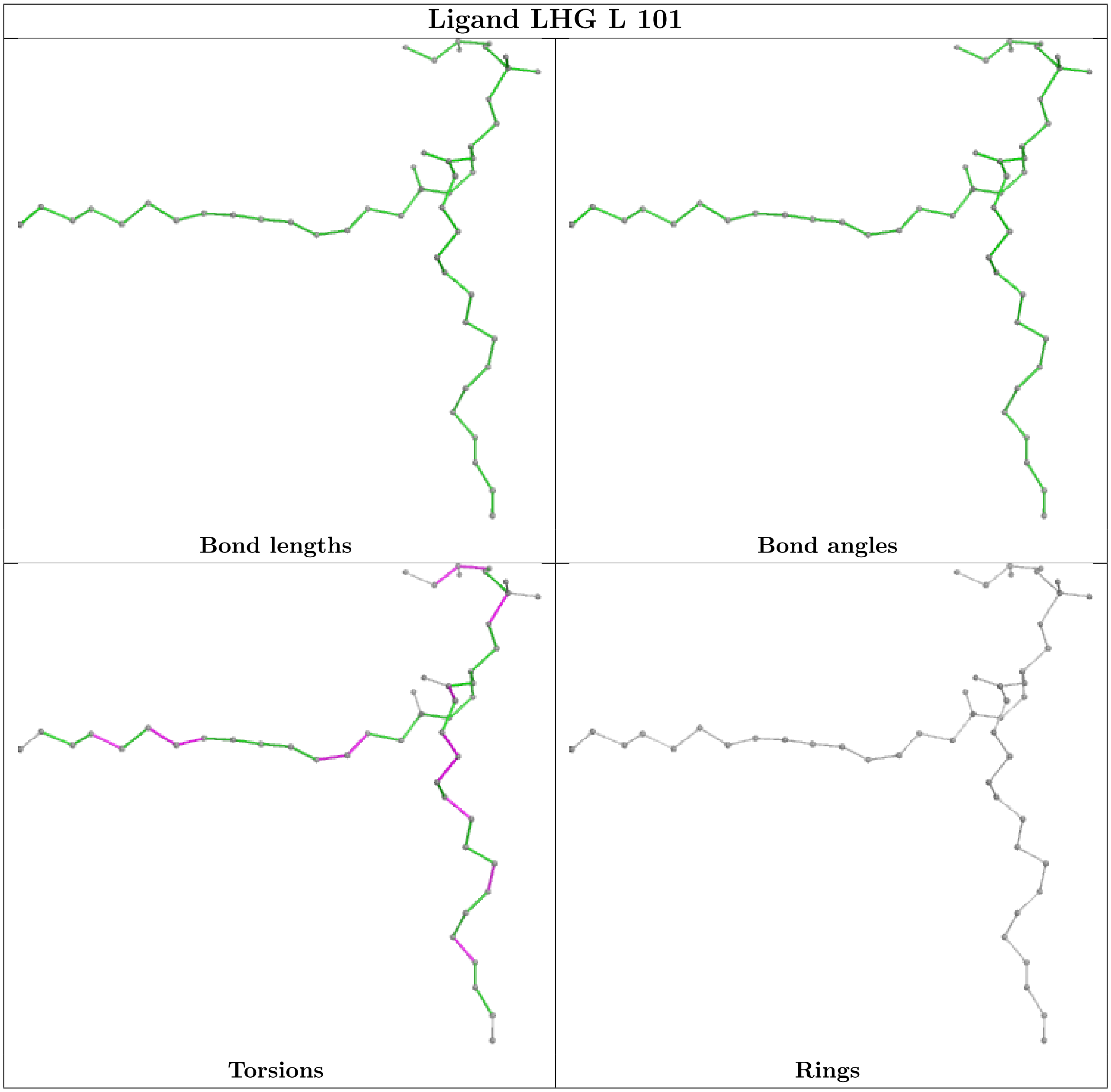
Ligand CLA C 513



Bond lengths Bond angles



Torsions Rings



Ligand LHG L 101

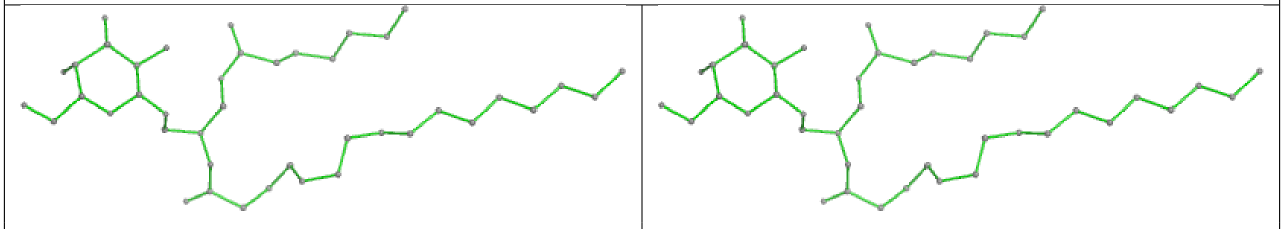
Bond lengths

Bond angles

Torsions

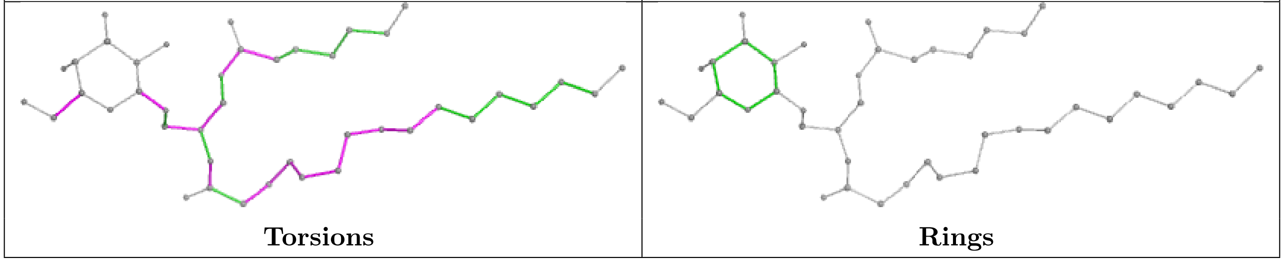
Rings

Ligand LMG C 518



Bond lengths

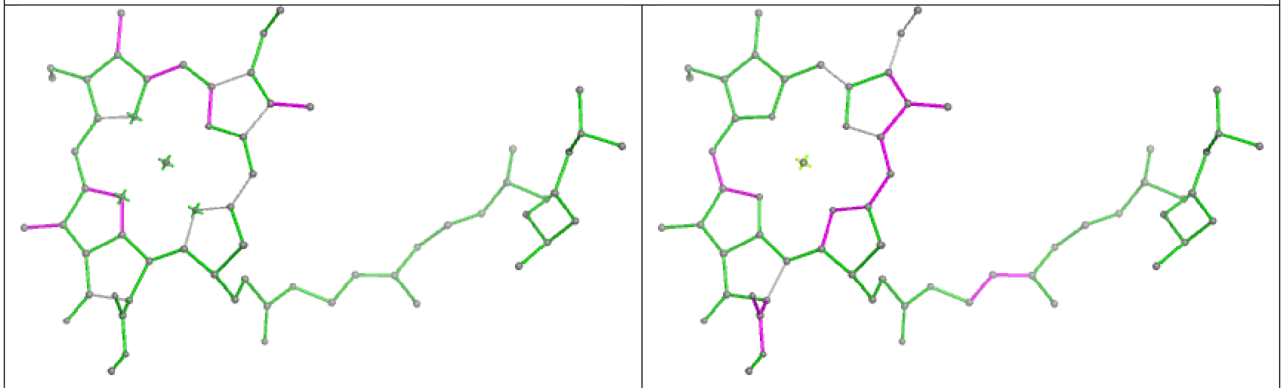
Bond angles



Torsions

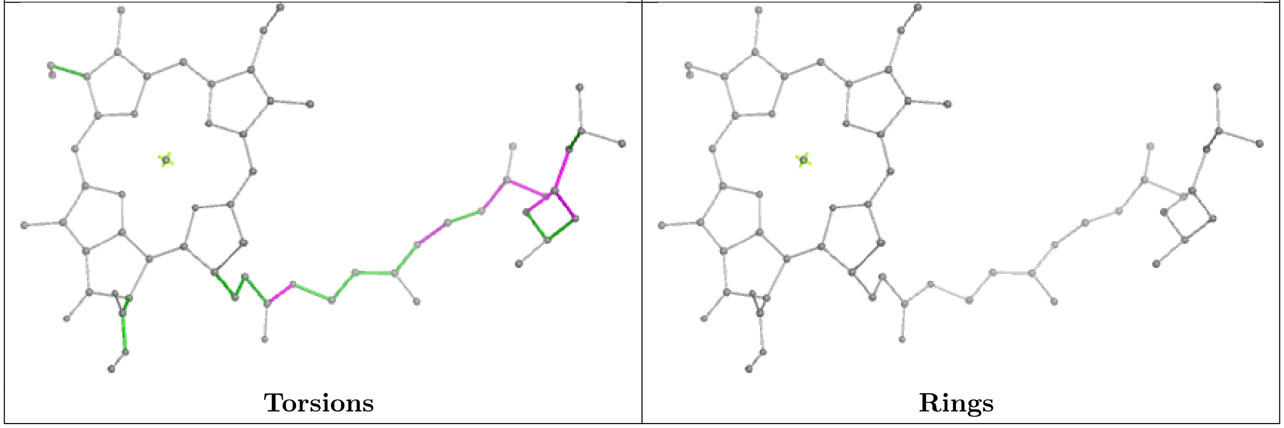
Rings

Ligand CLA A 407



Bond lengths

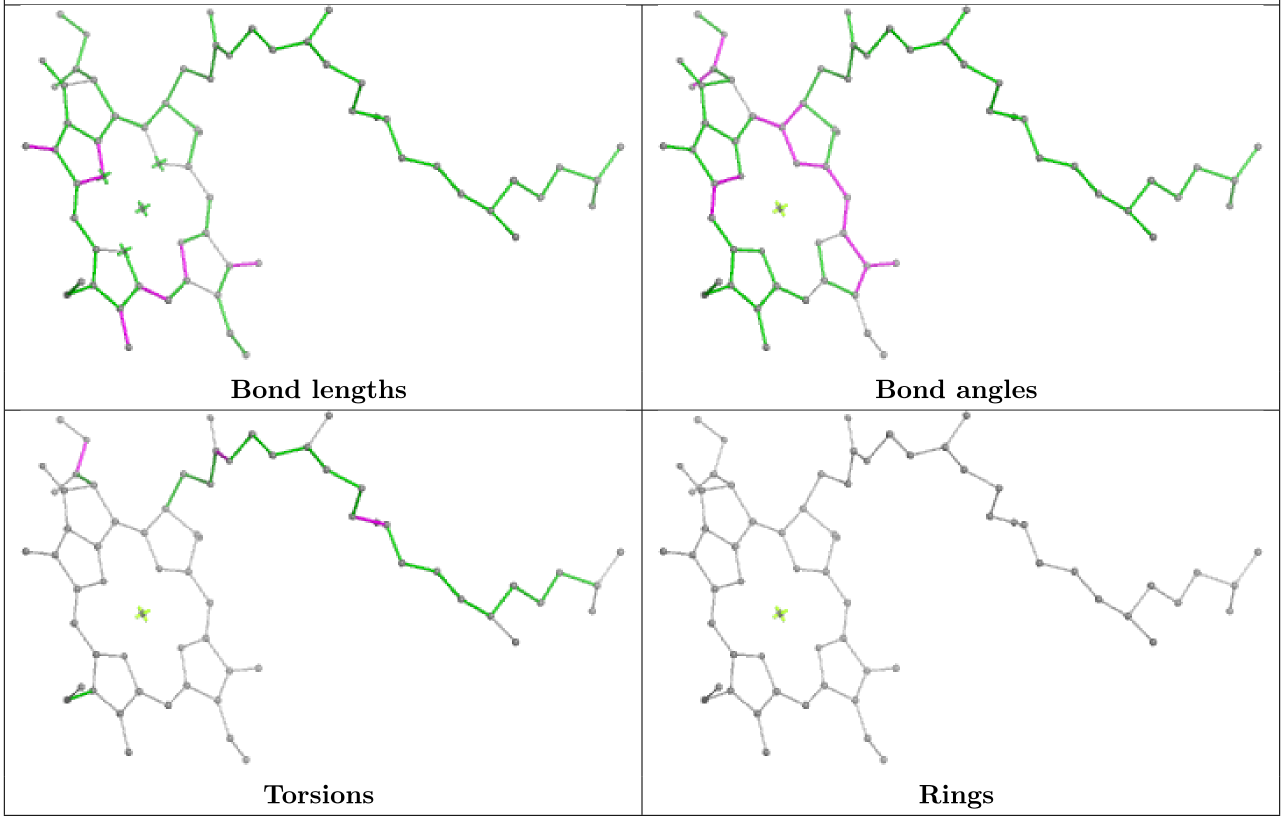
Bond angles



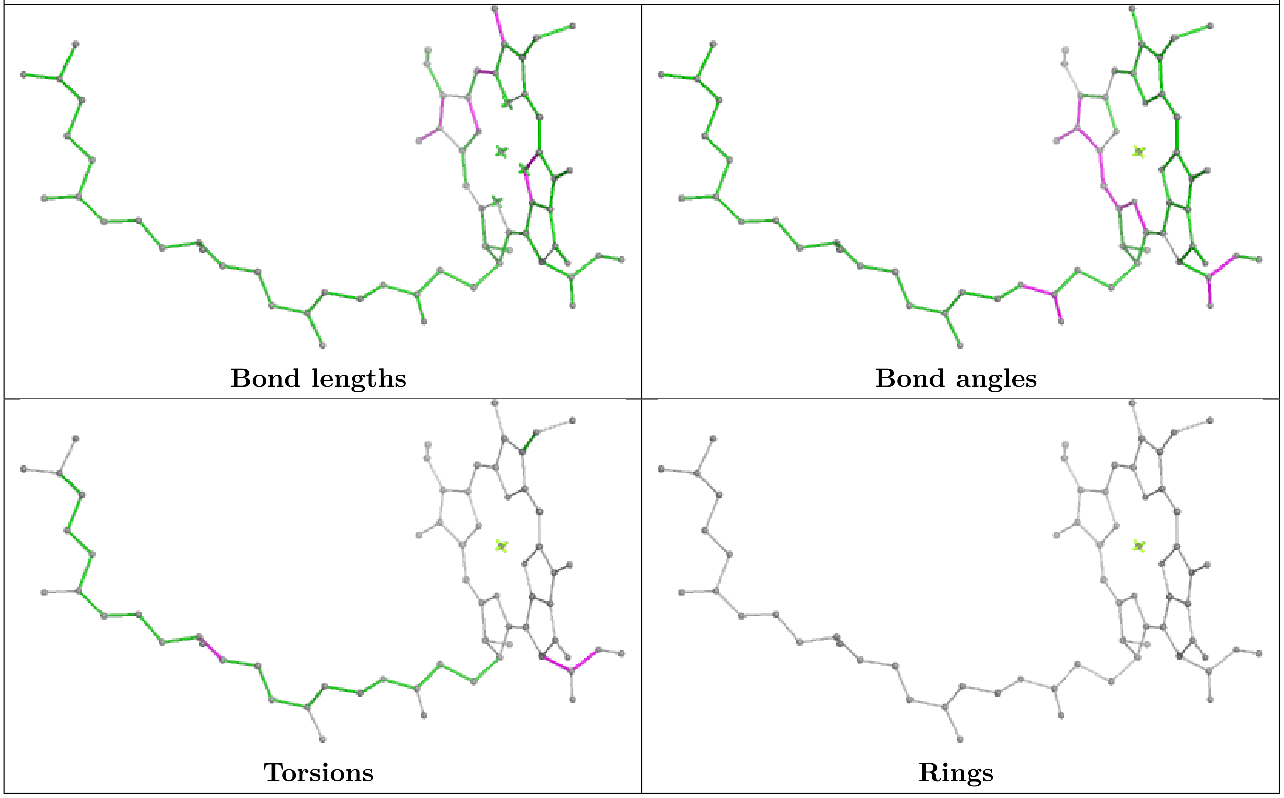
Torsions

Rings

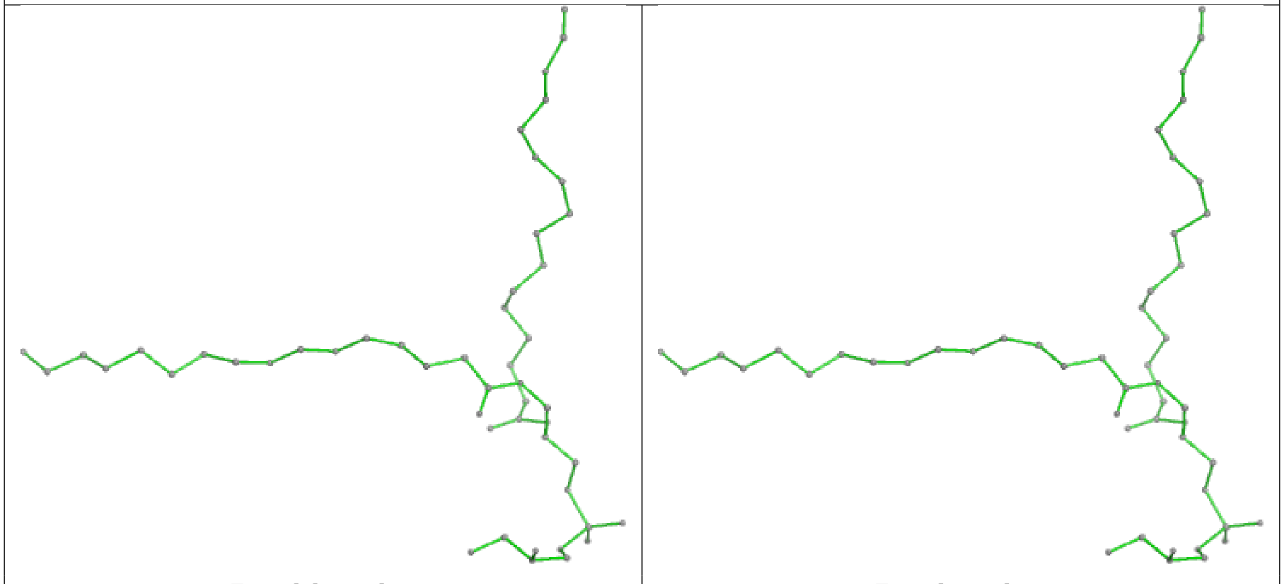
Ligand CLA c 512



Ligand CLA b 611

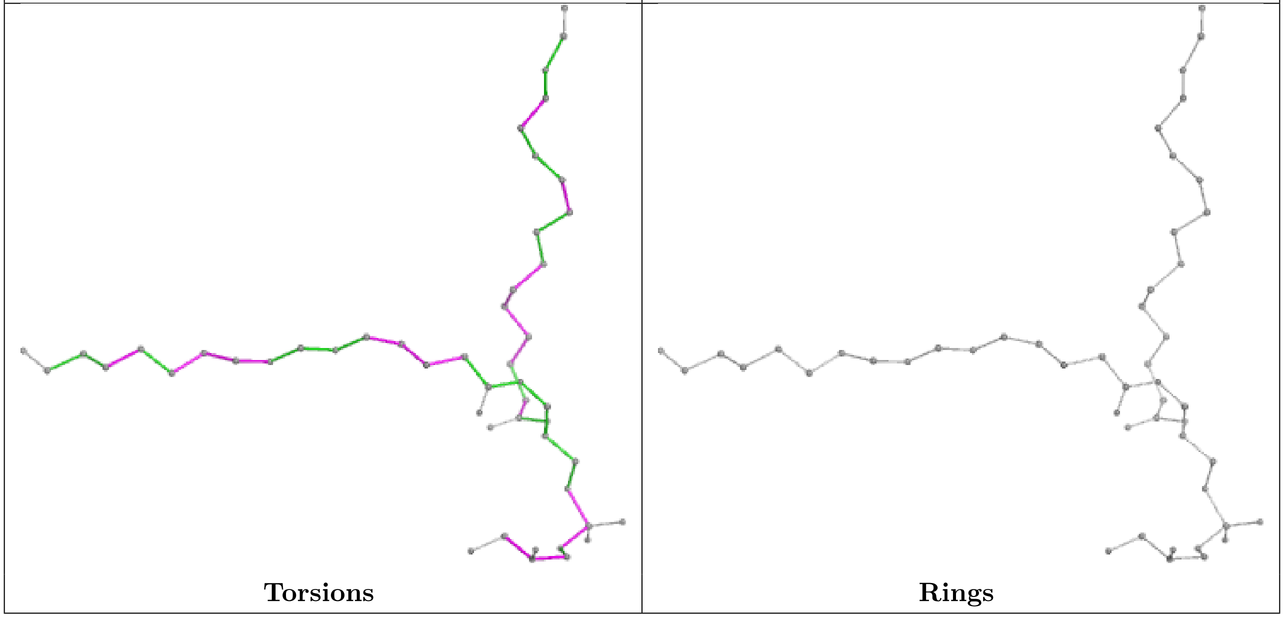


Ligand LHG l 101



Bond lengths

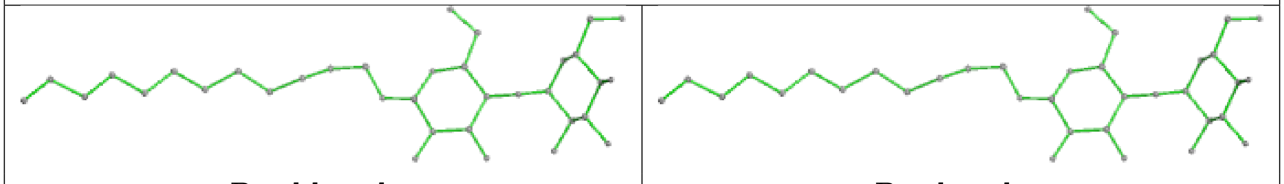
Bond angles



Torsions

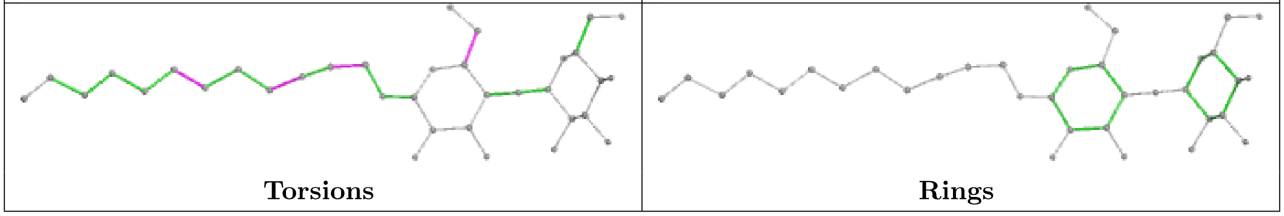
Rings

Ligand LMT M 102



Bond lengths

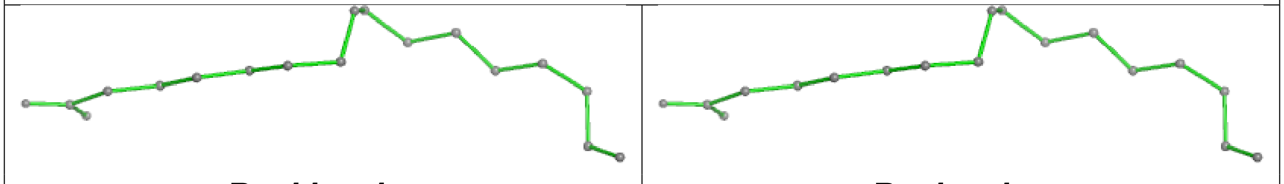
Bond angles



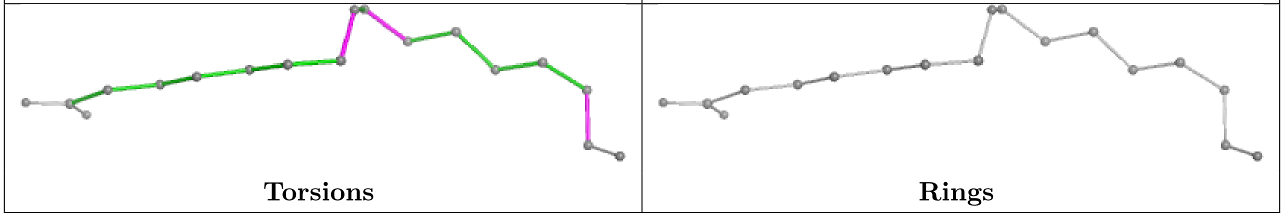
Torsions

Rings

Ligand PLM e 101

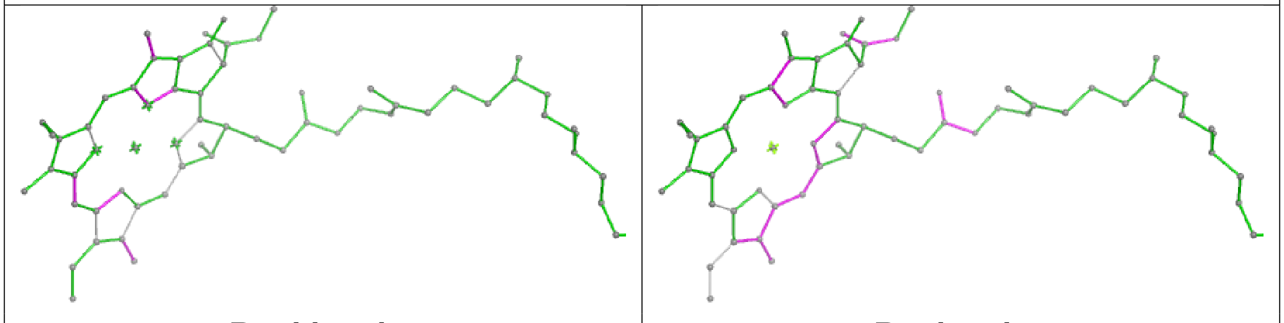


Bond lengths Bond angles

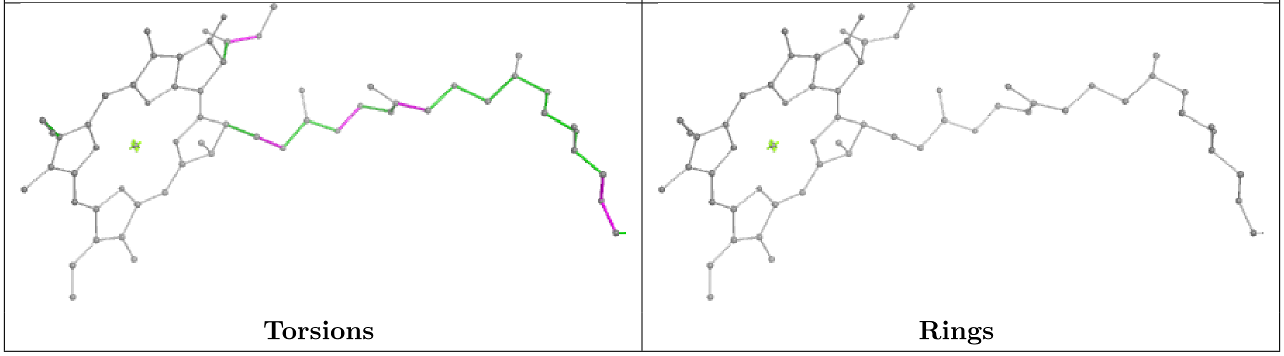


Torsions Rings

Ligand CLA a 404

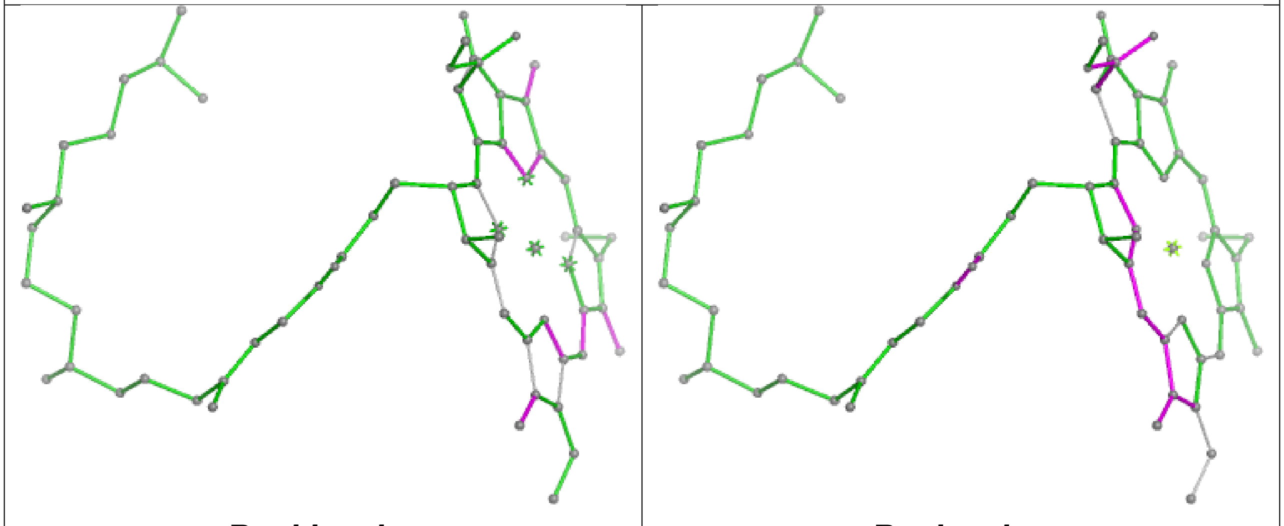


Bond lengths Bond angles



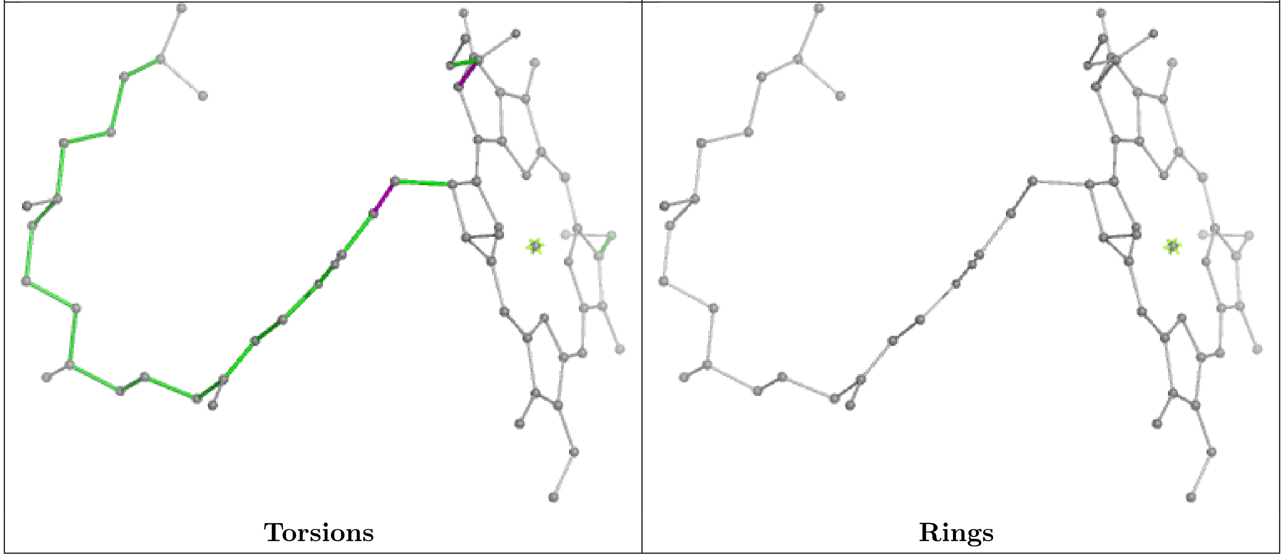
Torsions Rings

Ligand CLA B 606



Bond lengths

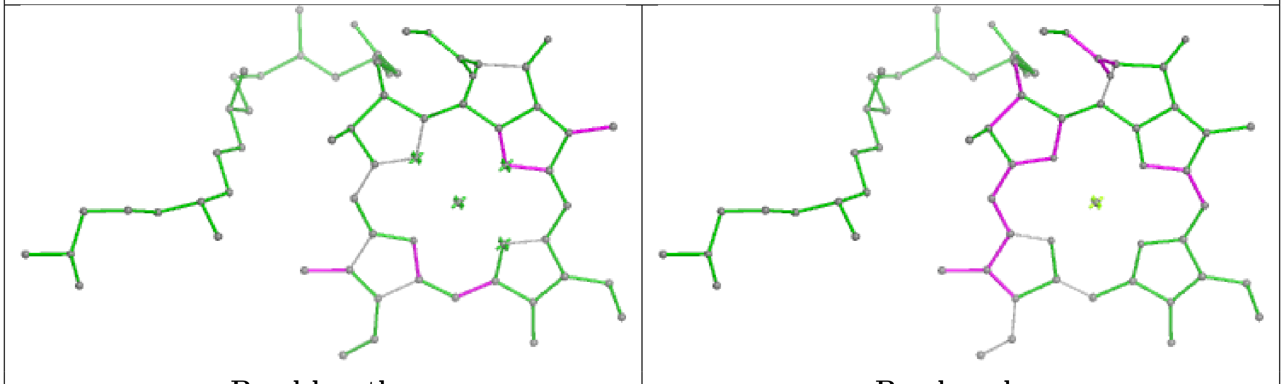
Bond angles



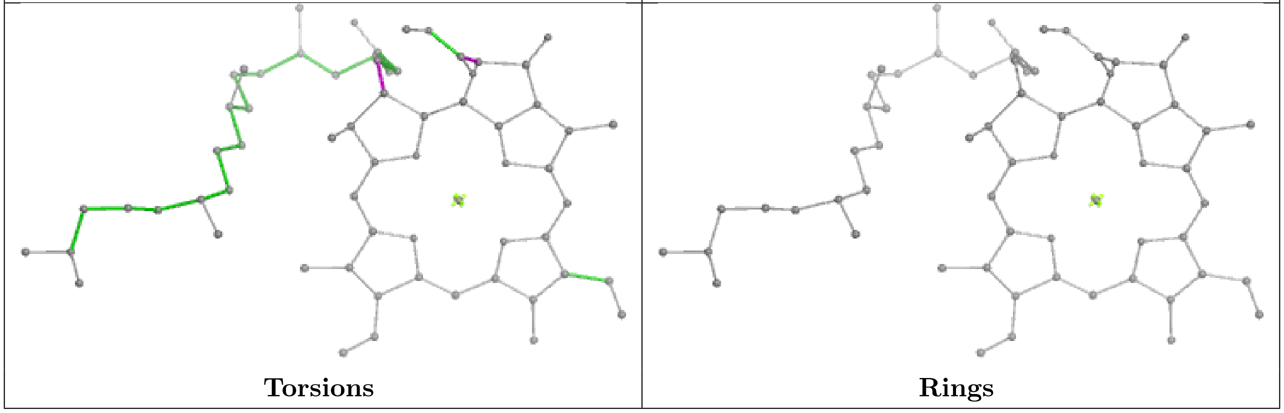
Torsions

Rings

Ligand CLA A 404

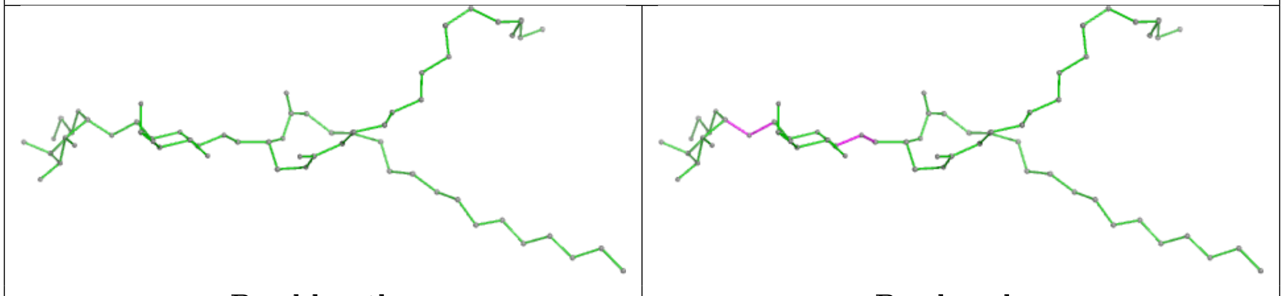


Bond lengths Bond angles

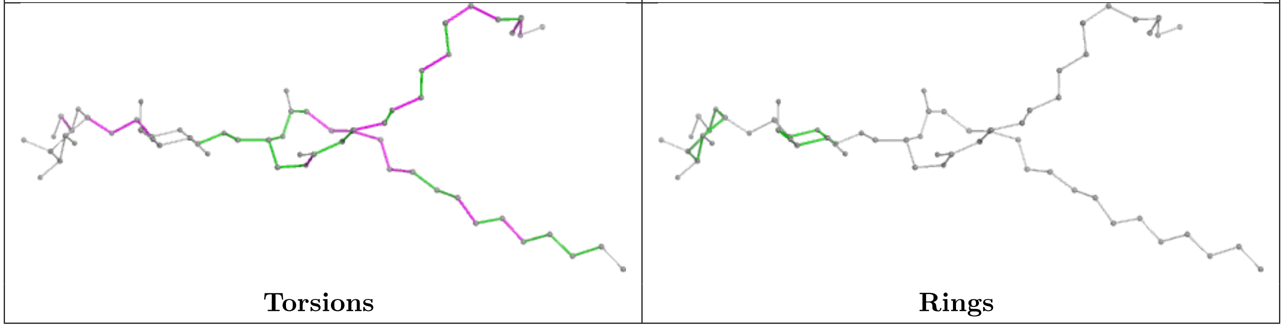


Torsions Rings

Ligand DGD C 517

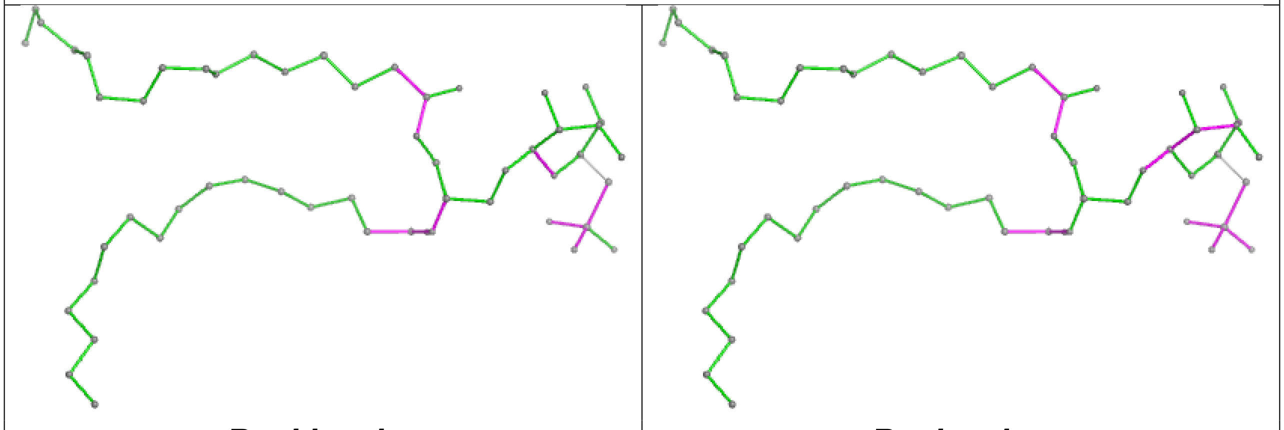


Bond lengths Bond angles



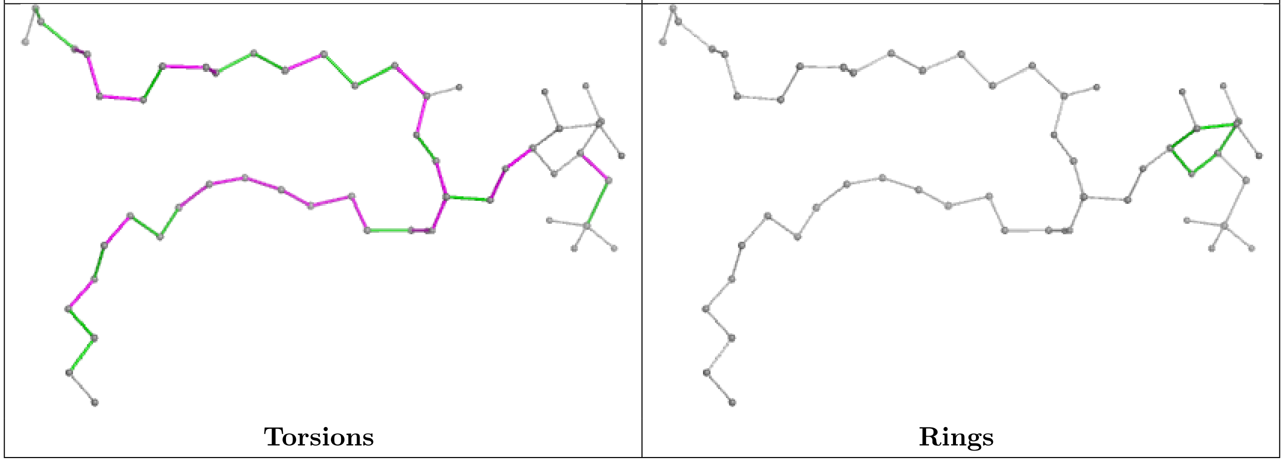
Torsions Rings

Ligand SQD l 102



Bond lengths

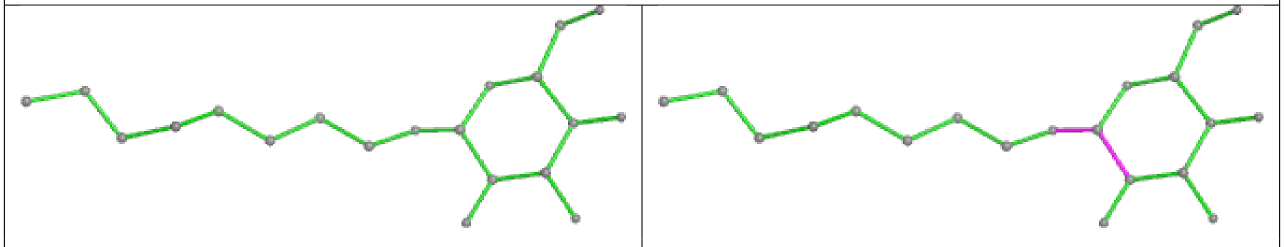
Bond angles



Torsions

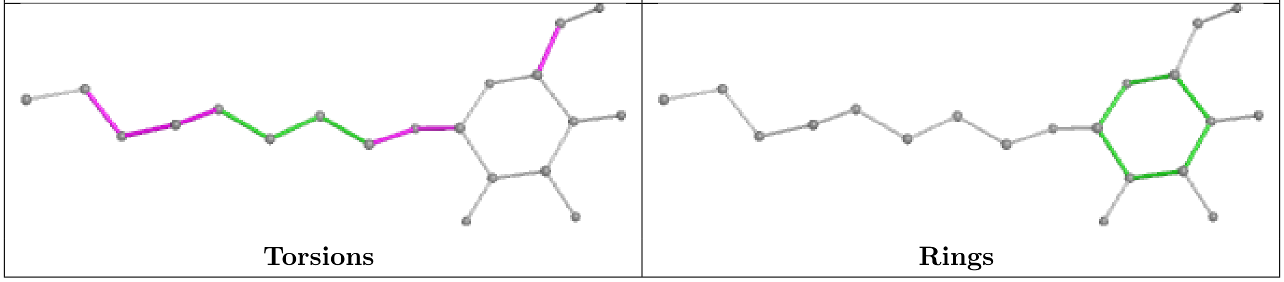
Rings

Ligand LMT b 602



Bond lengths

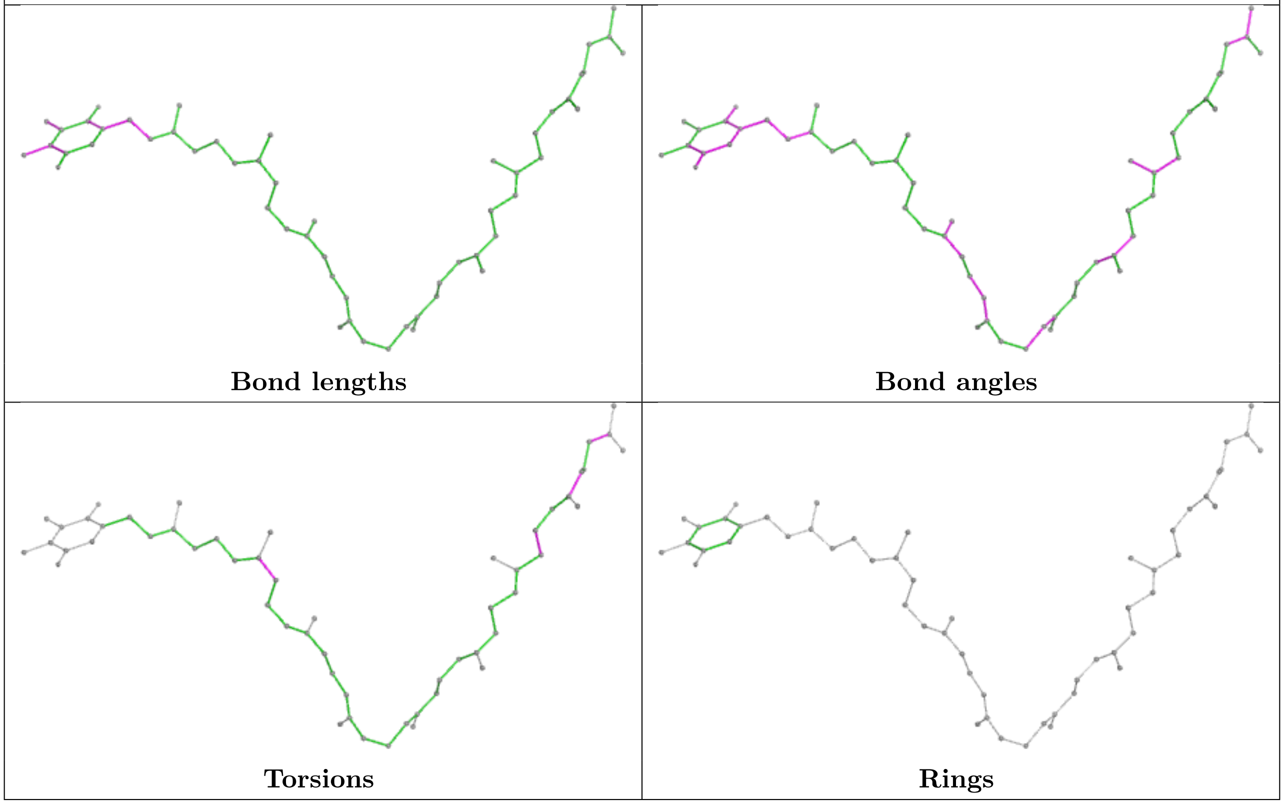
Bond angles



Torsions

Rings

Ligand PL9 d 407



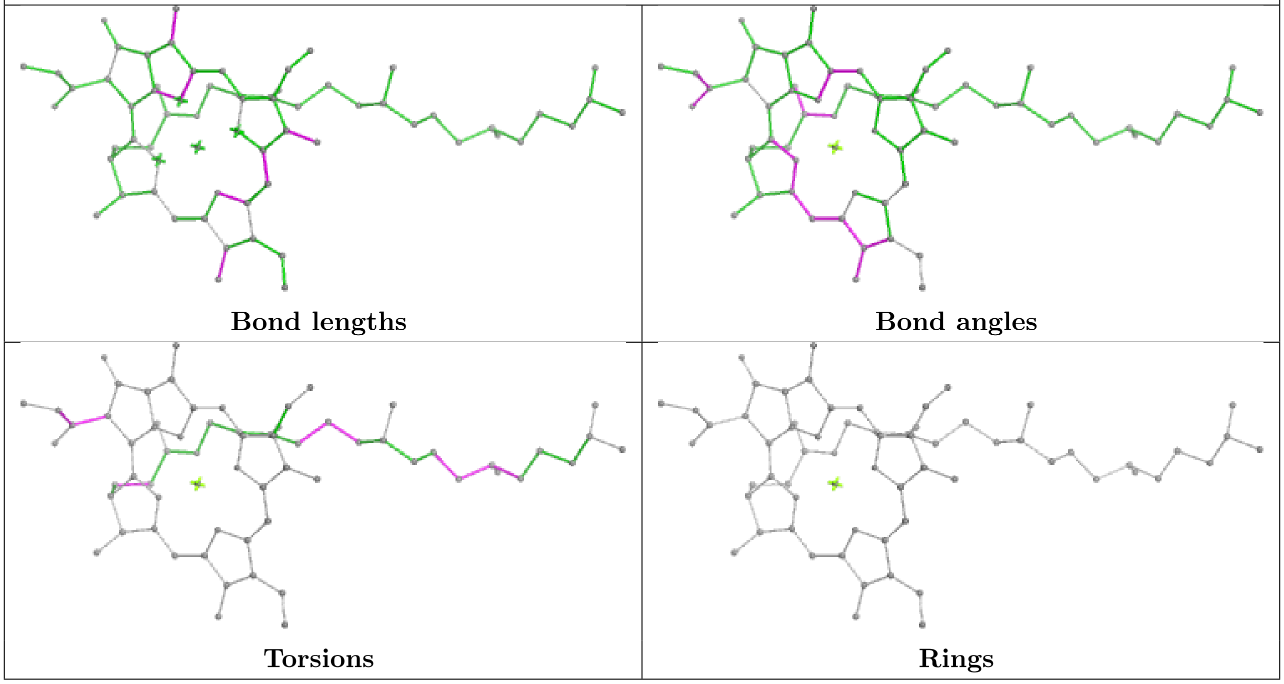
Bond lengths

Bond angles

Torsions

Rings

Ligand CLA b 616

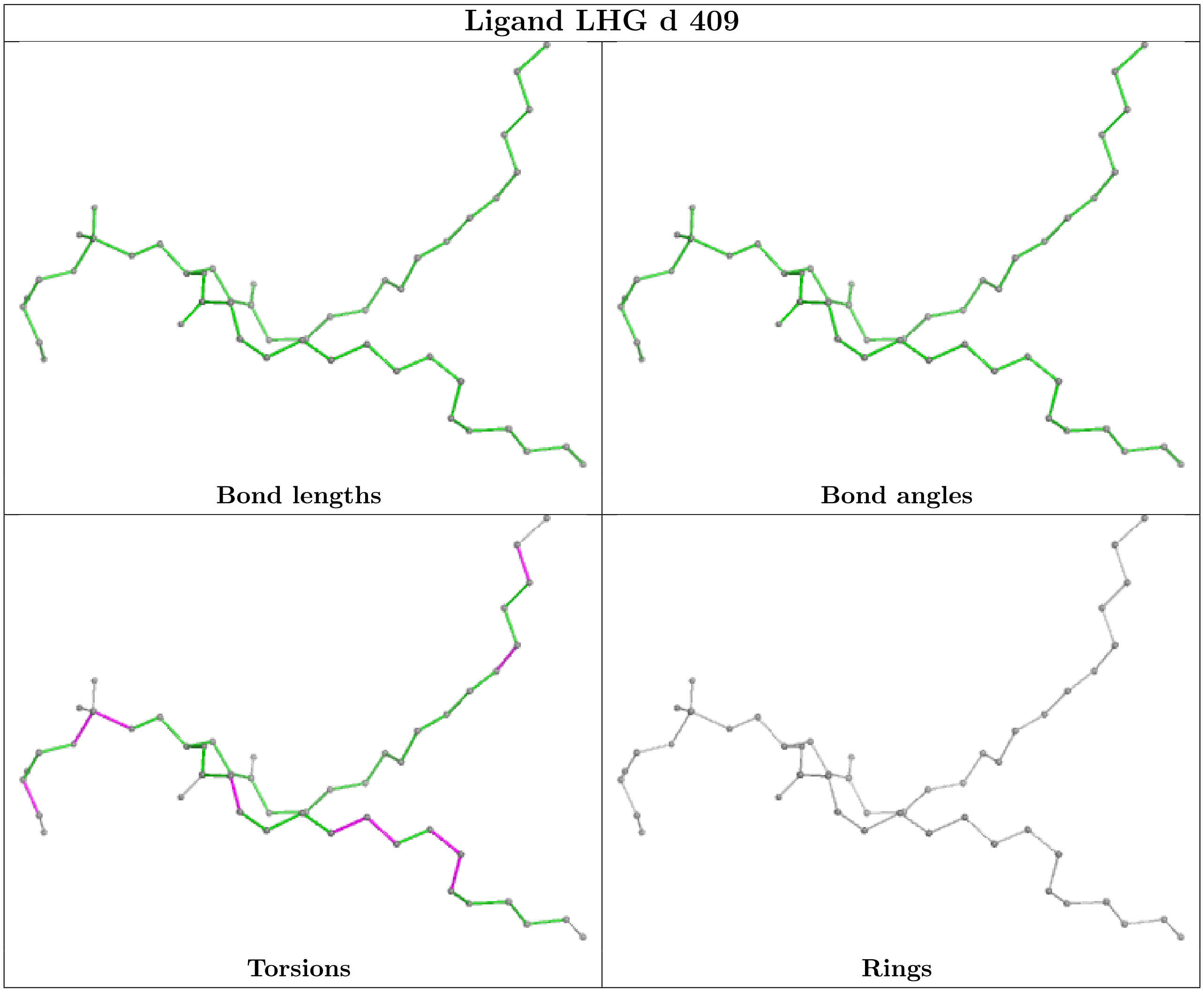


Bond lengths

Bond angles

Torsions

Rings

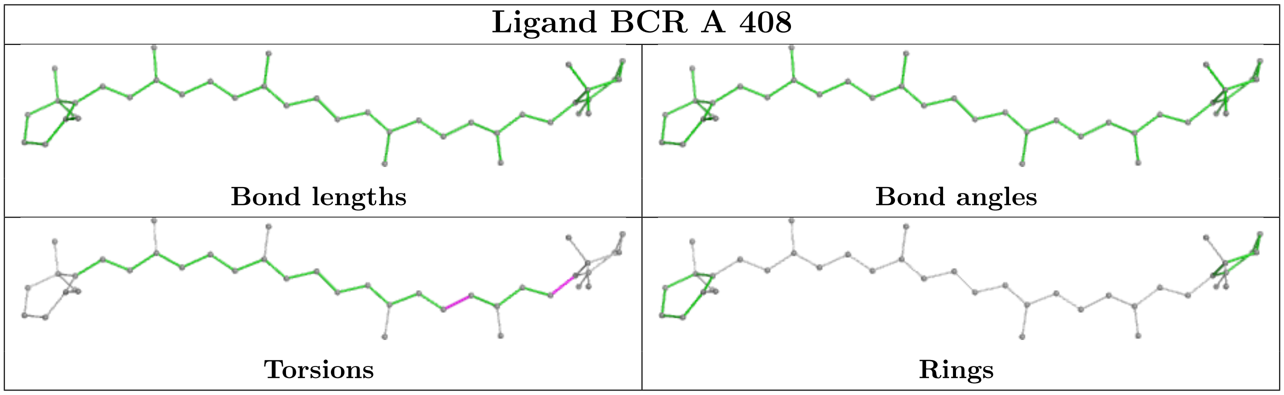

Ligand LHG d 409

Bond lengths

Bond angles

Torsions

Rings


Ligand BCR A 408

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

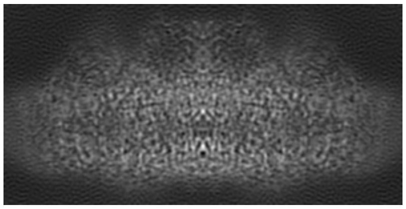
6 Map visualisation ⓘ

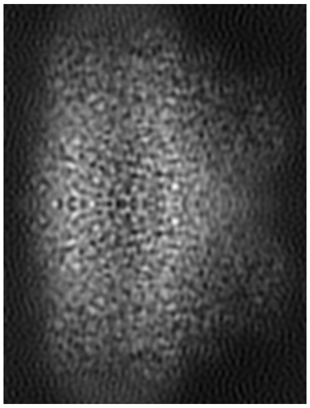
This section contains visualisations of the EMDB entry EMD-51100. These allow visual inspection of the internal detail of the map and identification of artifacts.

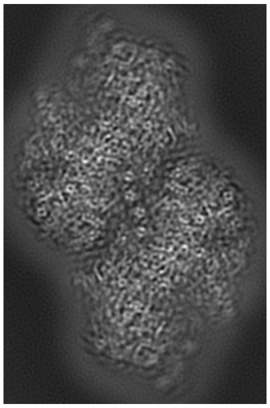
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

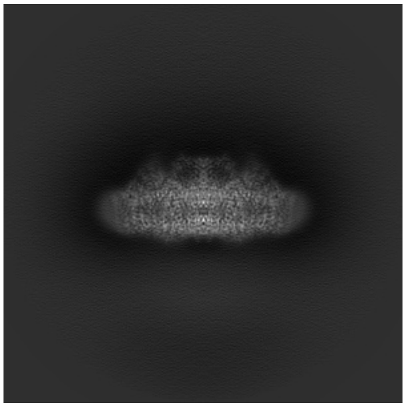
6.1.1 Primary map

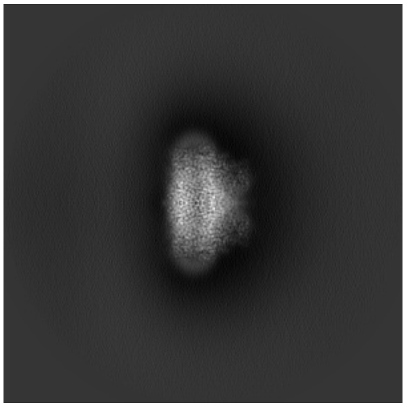

X

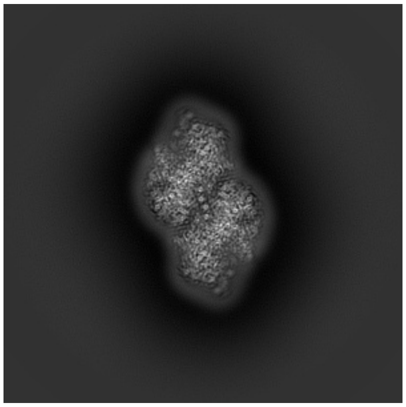

Y


Z

6.1.2 Raw map


X

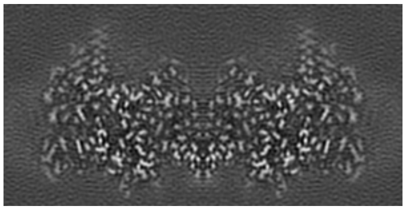

Y


Z

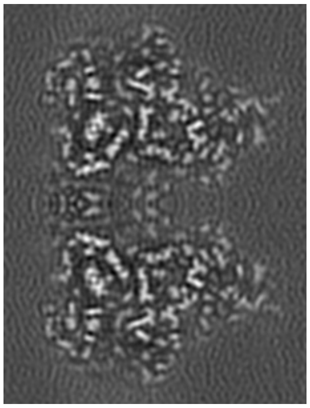
The images above show the map projected in three orthogonal directions.

6.2 Central slices

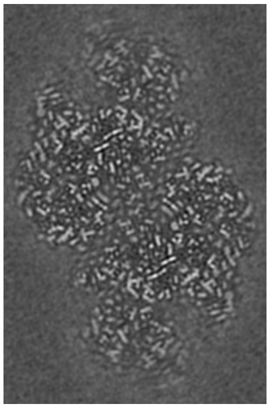
6.2.1 Primary map



X Index: 137

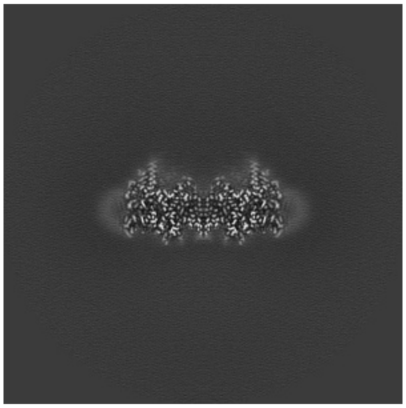


Y Index: 208

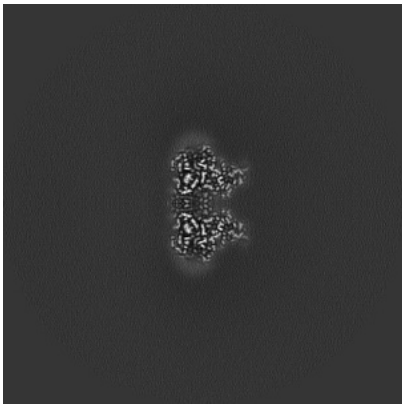


Z Index: 104

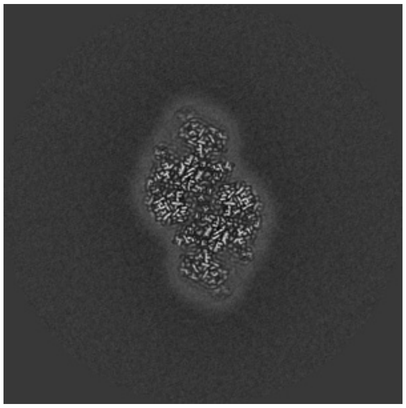
6.2.2 Raw map



X Index: 200



Y Index: 200

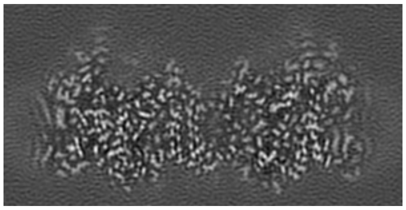


Z Index: 200

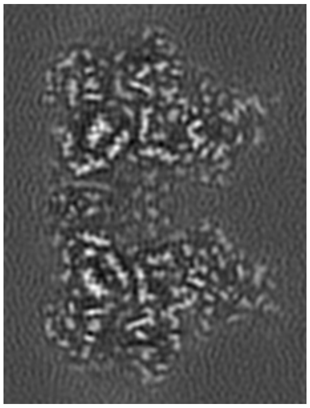
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

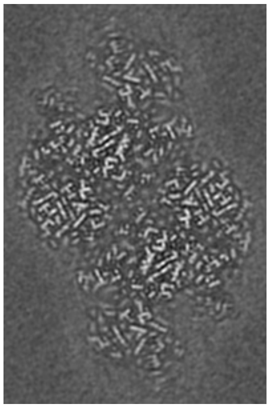
6.3.1 Primary map



X Index: 142

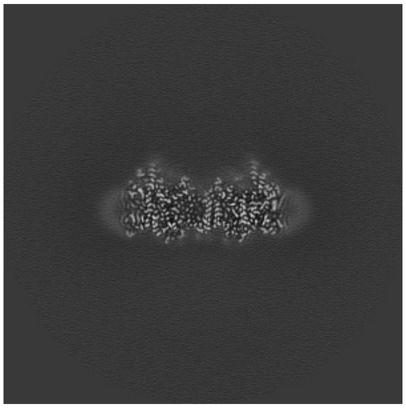


Y Index: 209

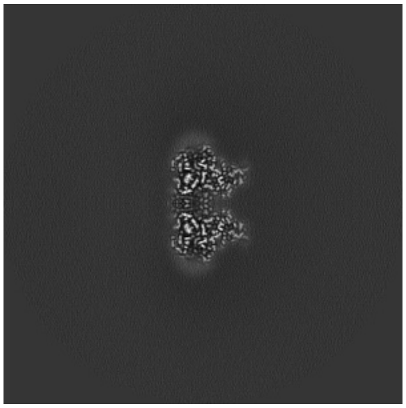


Z Index: 98

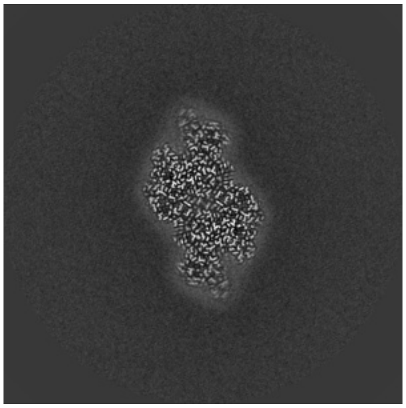
6.3.2 Raw map



X Index: 198



Y Index: 200

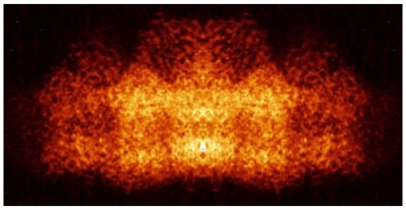


Z Index: 207

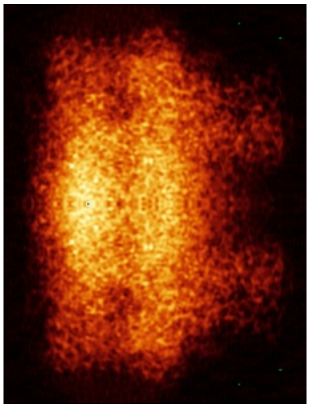
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

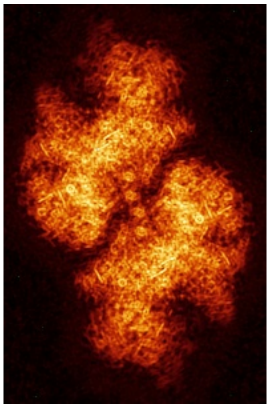
6.4.1 Primary map



X

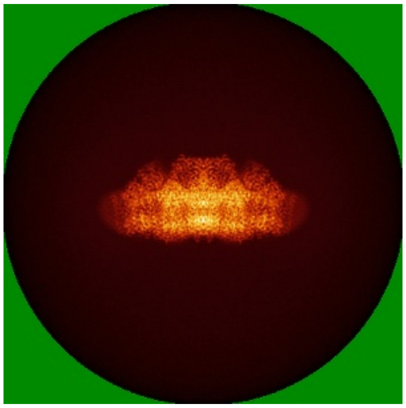


Y

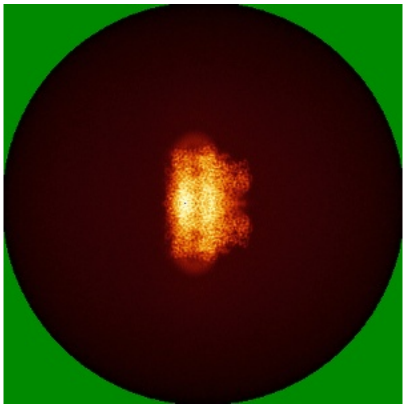


Z

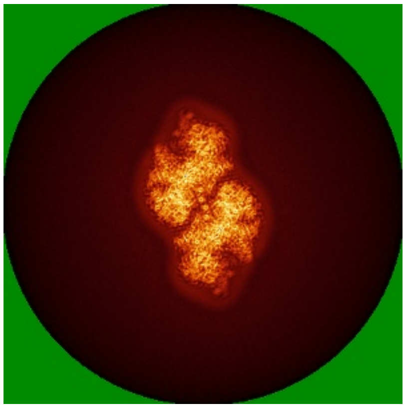
6.4.2 Raw map



X



Y

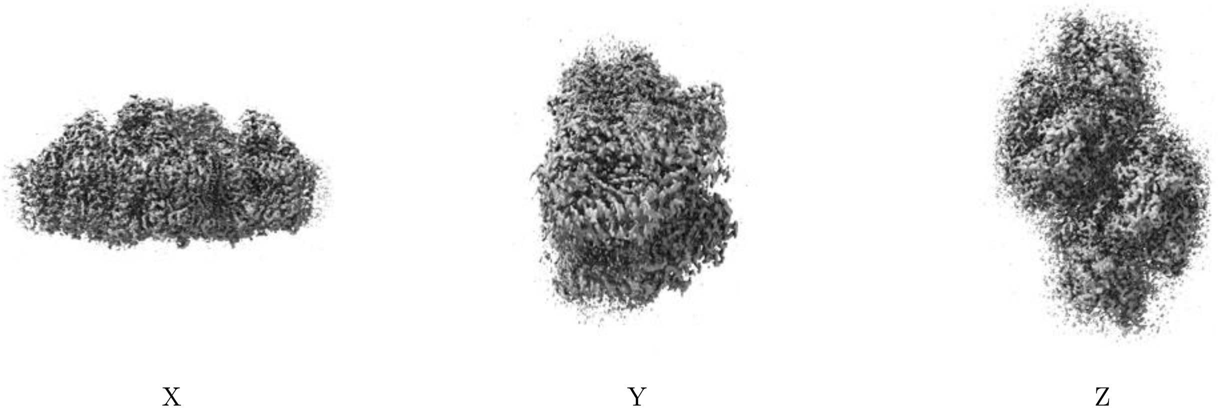


Z

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

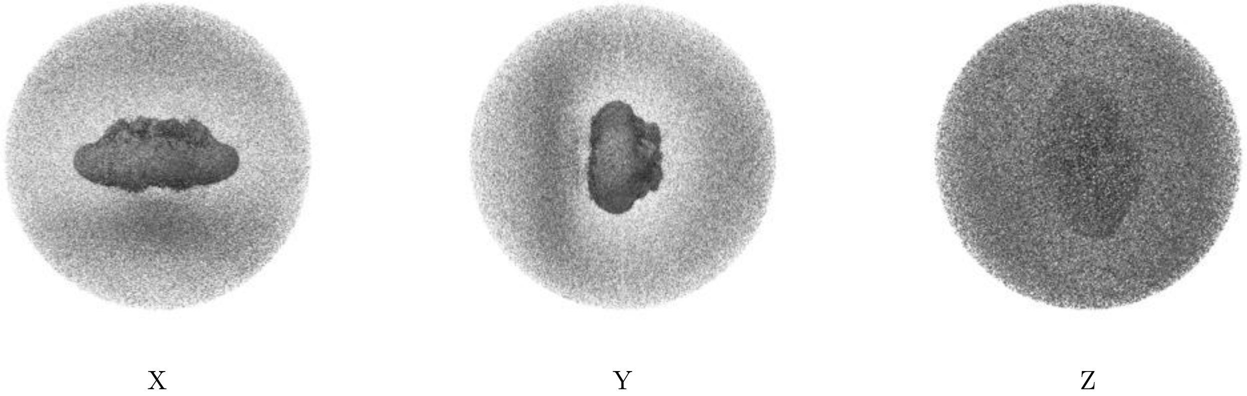
6.5 Orthogonal surface views

6.5.1 Primary map


X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.037. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map


X Y Z

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

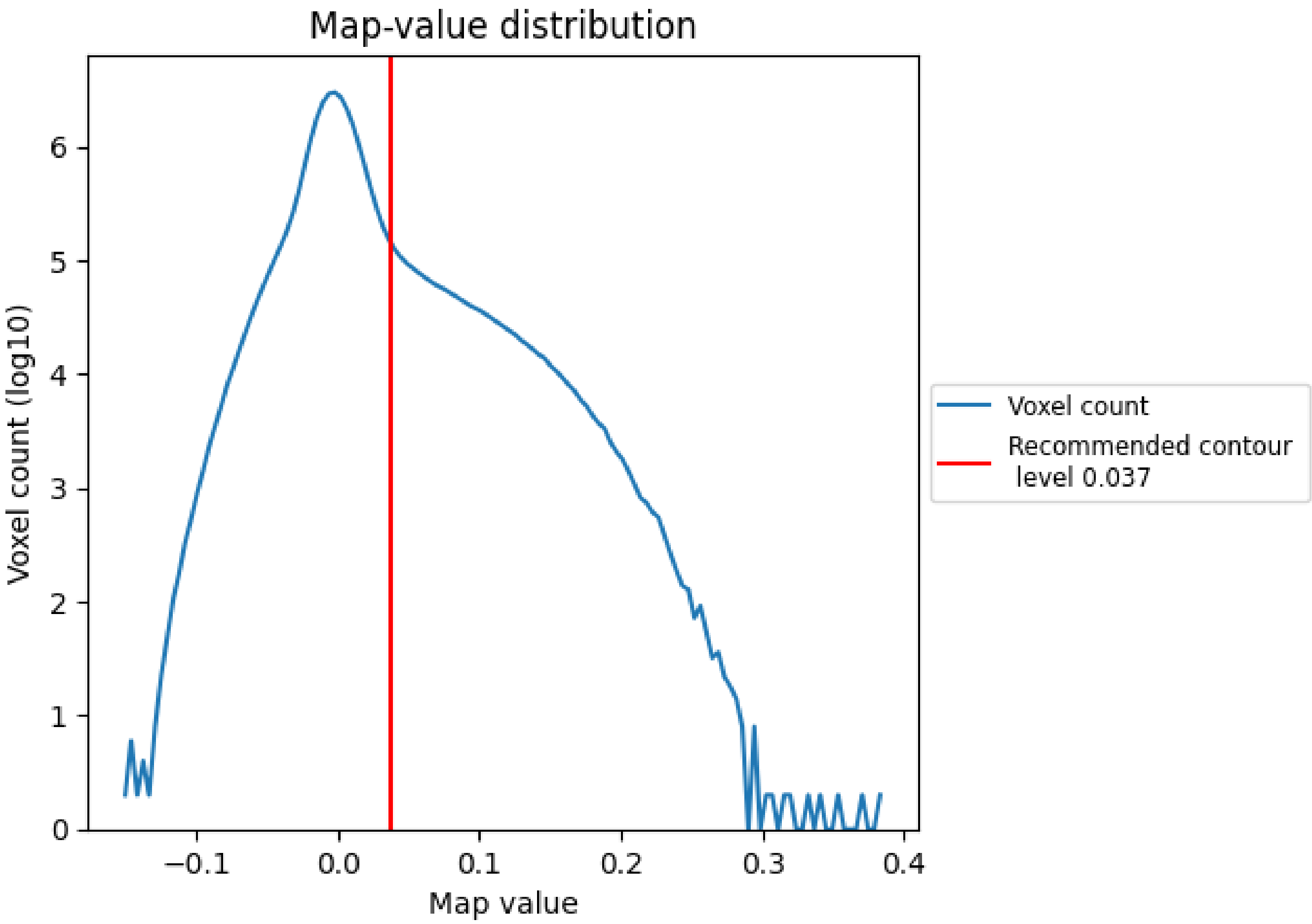
6.6 Mask visualisation

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

7 Map analysis ⓘ

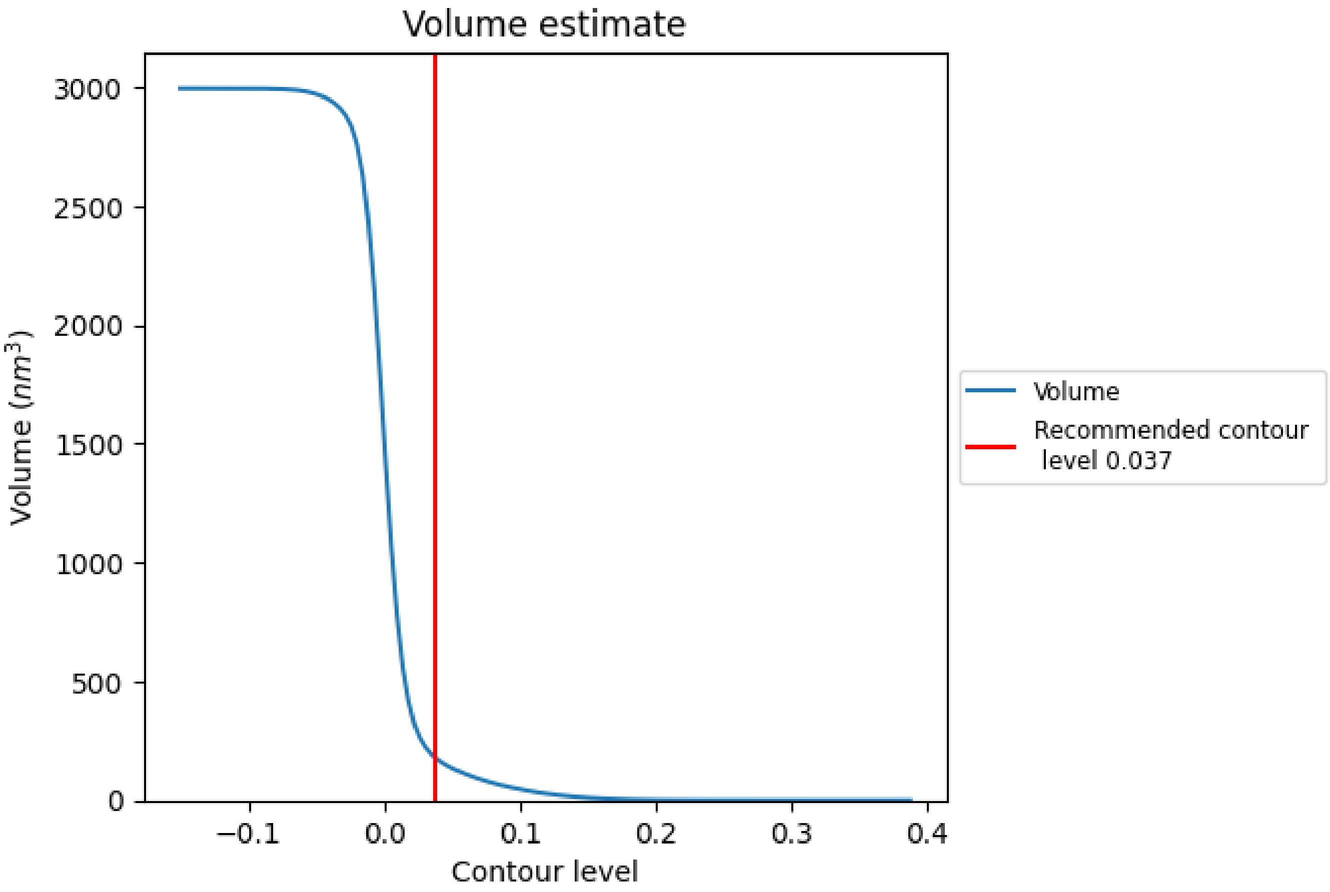
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ



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

7.2 Volume estimate ⓘ



The volume at the recommended contour level is 184 nm^3; this corresponds to an approximate mass of 166 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

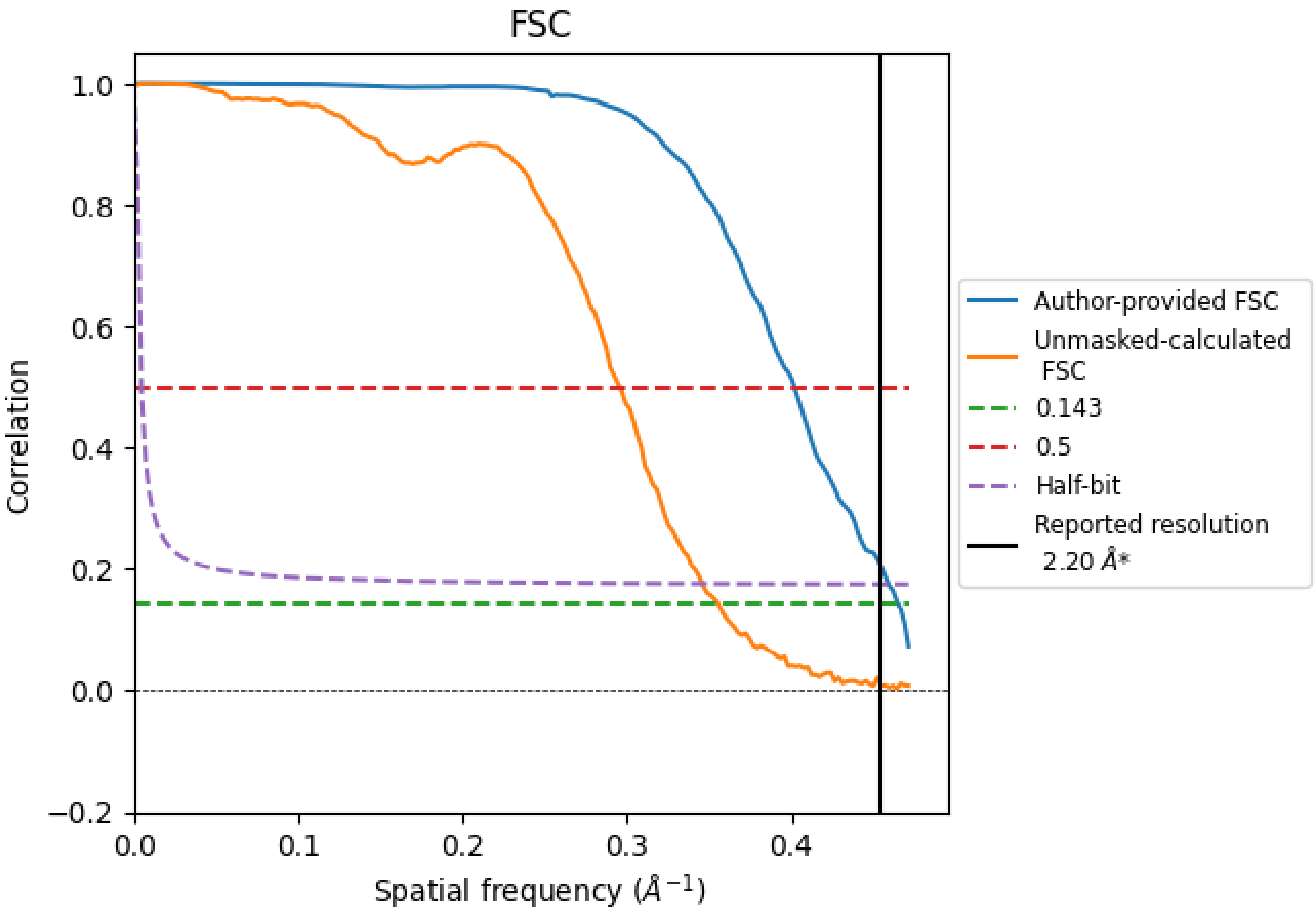
7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

8 Fourier-Shell correlation ⓘ

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

8.1 FSC ⓘ



*Reported resolution corresponds to spatial frequency of 0.455 Å^{-1}

8.2 Resolution estimates ⓘ

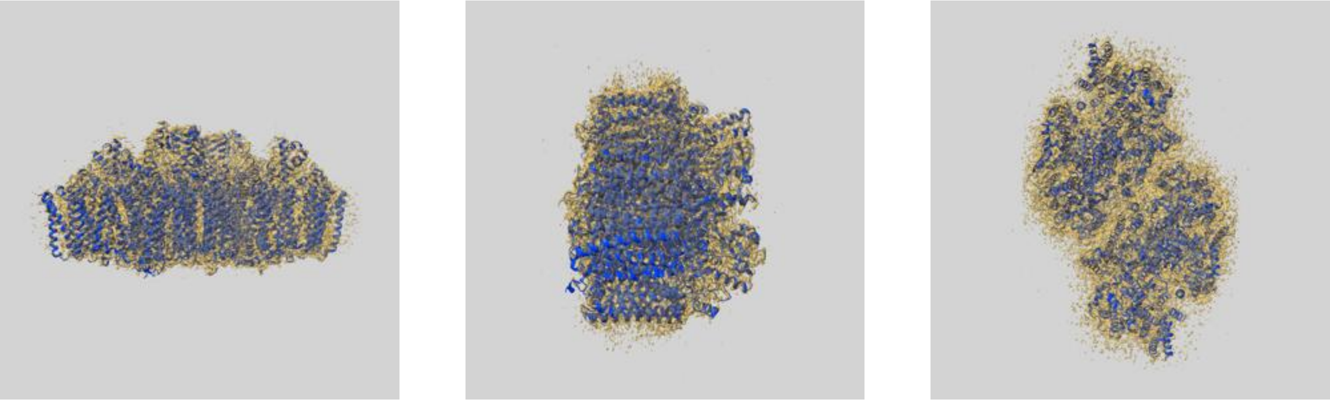
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.20	-	-
Author-provided FSC curve	2.15	2.49	2.18
Unmasked-calculated*	2.81	3.38	2.89

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 2.81 differs from the reported value 2.2 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-51100 and PDB model 9G6F. Per-residue inclusion information can be found in section 3 on page 28.

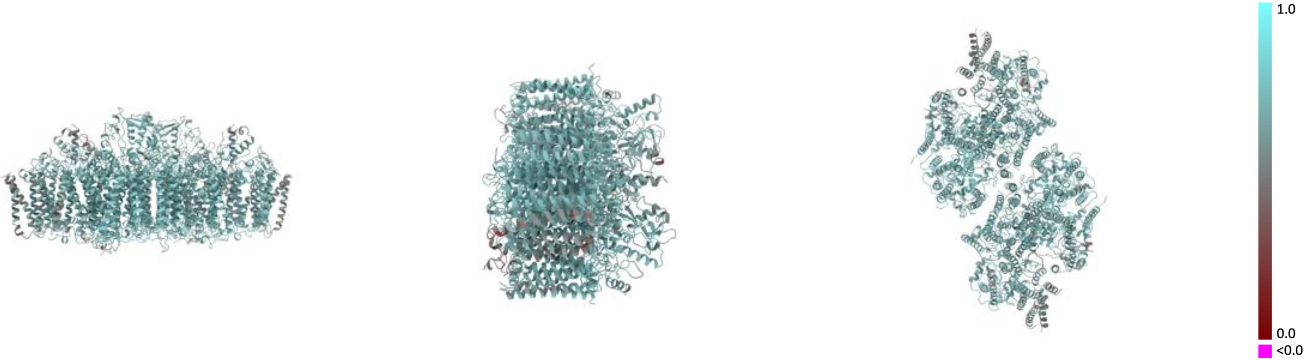
9.1 Map-model overlay ⓘ



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.037 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

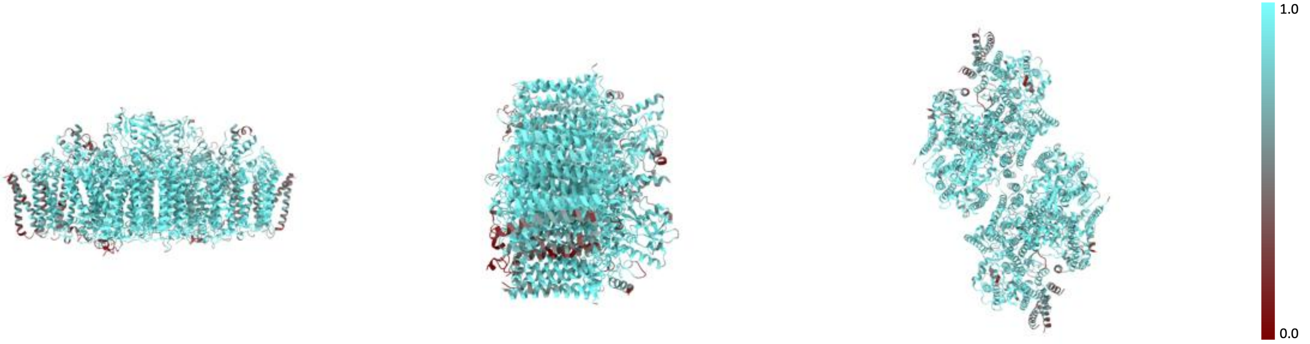
9.2 Q-score mapped to coordinate model ⓘ



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

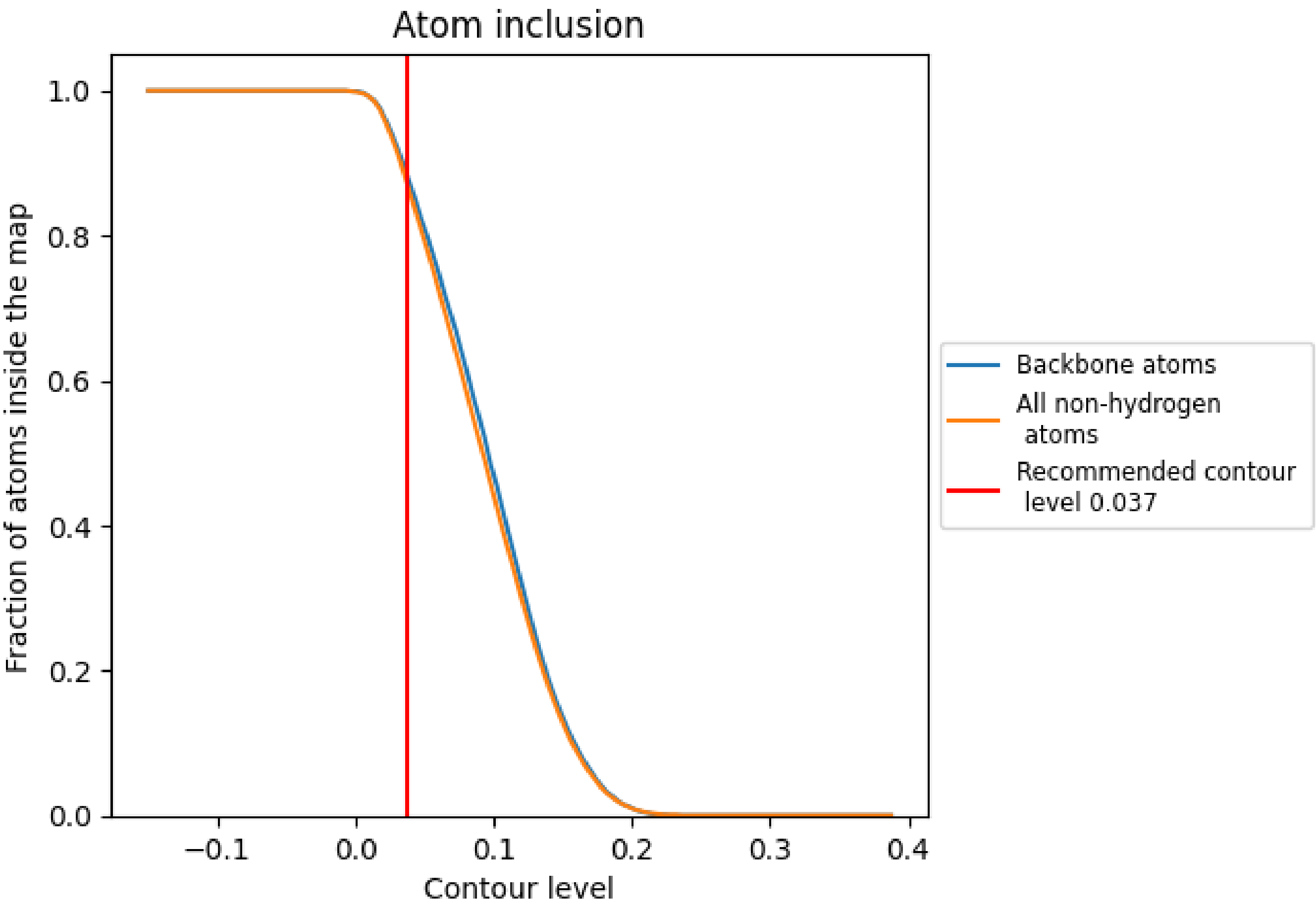
9.3 Atom inclusion mapped to coordinate model ⓘ



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.037).

9.4 Atom inclusion ⓘ



At the recommended contour level, 88% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.037) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8740	0.6690
A	0.9290	0.7000
B	0.9110	0.6820
C	0.8770	0.6630
D	0.9410	0.7010
E	0.6890	0.5760
F	0.7370	0.6100
H	0.9250	0.6760
I	0.8870	0.6710
J	0.4120	0.5200
K	0.8350	0.6350
L	0.9010	0.6850
M	0.8520	0.6610
T	0.9250	0.7070
X	0.8610	0.6600
Y	0.5310	0.5490
Z	0.5040	0.5240
a	0.9150	0.6910
b	0.9120	0.6900
c	0.8530	0.6460
d	0.9430	0.7060
e	0.7130	0.5940
f	0.7000	0.6030
h	0.9460	0.6910
i	0.8380	0.6470
j	0.3790	0.5080
k	0.8510	0.6250
l	0.9040	0.6820
m	0.8600	0.6680
t	0.9020	0.6800
x	0.9120	0.6730
y	0.5590	0.5650
z	0.4920	0.4990