wwPDB EM Validation Summary Report

Dec 19, 2022 – 10:41 am GMT

PDB ID	:	6Z5R
EMDB ID	:	EMD-11080
Title	:	RC-LH1(16) complex from Rhodopseudomonas palustris
Authors	:	Swainsbury, D.J.K.; Qian, P.; Hitchcock, A.; Hunter, C.N.
Deposited on	:	2020-05-27
Resolution	:	2.80 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

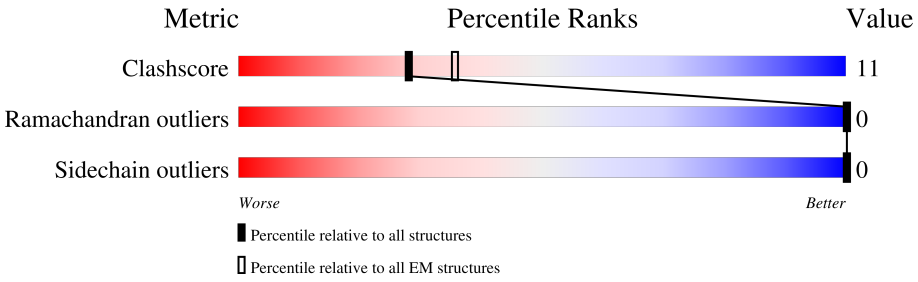
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.80 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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	1	48	83% 12%
1	3	48	75% 21%
1	5	48	69% 27%
1	7	48	81% 15%
1	9	48	8% 50% 46%
1	A	48	83% 12%
1	C	48	73% 23%
1	E	48	75% 21%

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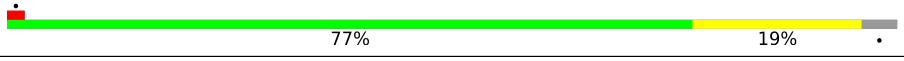
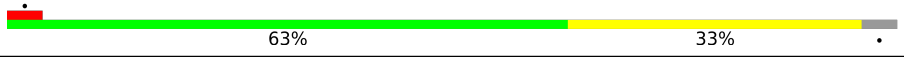
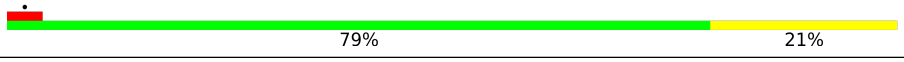
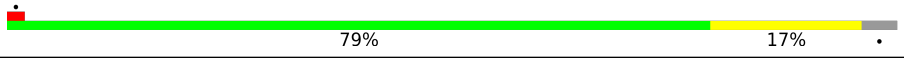
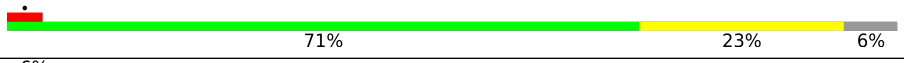
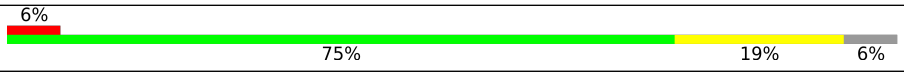
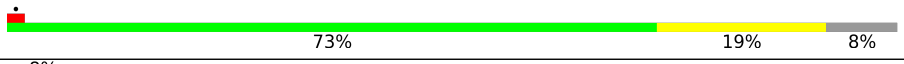
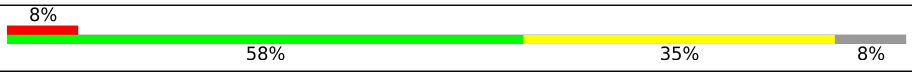
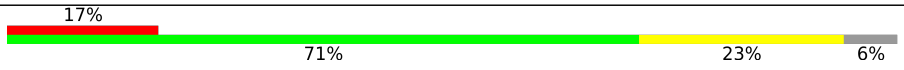
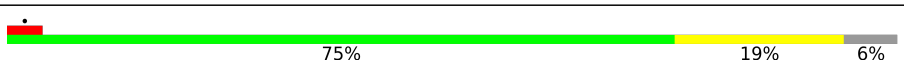
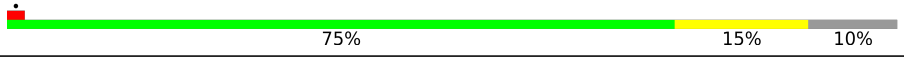
Mol	Chain	Length	Quality of chain
1	G	48	
1	J	48	
1	N	48	
1	P	48	
1	R	48	
1	T	48	
1	V	48	
1	Y	48	
2	0	52	
2	2	52	
2	4	52	
2	6	52	
2	8	52	
2	B	52	
2	D	52	
2	F	52	
2	I	52	
2	K	52	
2	O	52	
2	Q	52	
2	S	52	
2	U	52	
2	X	52	
2	Z	52	
3	H	255	

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Mol	Chain	Length	Quality of chain
4	L	277	92% 8%
5	M	307	89% 11%

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
11	BPH	L	302	X	-	-	-
11	BPH	M	405	X	-	-	-
14	QAK	M	407	X	-	-	-

2 Entry composition (i)

There are 16 unique types of molecules in this entry. The entry contains 25048 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 Light-harvesting complex 1 alpha chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	E	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	G	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	J	45	Total	C	N	O	S	0	0
			392	271	66	54	1		
1	N	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	R	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	T	48	Total	C	N	O	S	0	0
			411	283	70	57	1		
1	V	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	P	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	Y	45	Total	C	N	O		0	0
			387	268	66	53			
1	A	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	1	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	3	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	5	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	7	46	Total	C	N	O	S	0	0
			397	274	67	55	1		
1	9	46	Total	C	N	O	S	0	0
			397	274	67	55	1		

- Molecule 2 is a protein called Light-harvesting complex 1 beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	49	Total	C	N	O	S	1	0
			403	276	62	64	1		
2	F	49	Total	C	N	O	S	1	0
			403	276	62	64	1		
2	I	47	Total	C	N	O	S	0	0
			382	262	59	60	1		
2	K	47	Total	C	N	O	S	1	0
			393	271	60	61	1		
2	O	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	S	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	U	47	Total	C	N	O	S	1	0
			393	271	60	61	1		
2	X	47	Total	C	N	O	S	0	0
			382	262	59	60	1		
2	Q	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	Z	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	B	49	Total	C	N	O	S	1	0
			403	276	62	64	1		
2	2	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	4	48	Total	C	N	O	S	1	0
			399	274	61	63	1		
2	6	50	Total	C	N	O	S	1	0
			411	280	63	67	1		
2	8	49	Total	C	N	O	S	1	0
			403	276	62	64	1		
2	0	49	Total	C	N	O	S	1	0
			403	276	62	64	1		

- Molecule 3 is a protein called H subunit of photosynthetic reaction center complex.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	H	247	Total	C	N	O	S	0	0
			1862	1201	314	342	5		

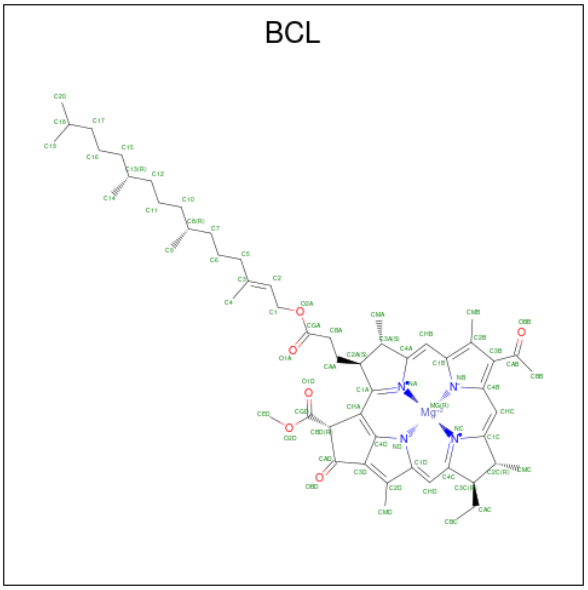
- Molecule 4 is a protein called Reaction center protein L chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L	276	Total	C	N	O	S	0	0
			2185	1467	350	359	9		

- Molecule 5 is a protein called Reaction center protein M chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	M	306	Total	C	N	O	S	0	0
			2433	1615	400	406	12		

- Molecule 6 is BACTERIOCHLOROPHYLL A (three-letter code: BCL) (formula: $C_{55}H_{74}MgN_4O_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
6	C	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	C	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	E	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	F	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	G	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	G	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	J	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	J	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	N	1	Total	C	Mg	N	O	0
			132	110	2	8	12	

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Mol	Chain	Residues	Atoms					AltConf
6	N	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	L	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	L	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	M	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	M	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	R	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	R	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	T	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	U	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	V	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	V	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	P	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	Q	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	Y	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	Y	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	A	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	B	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	1	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	1	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	3	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	4	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

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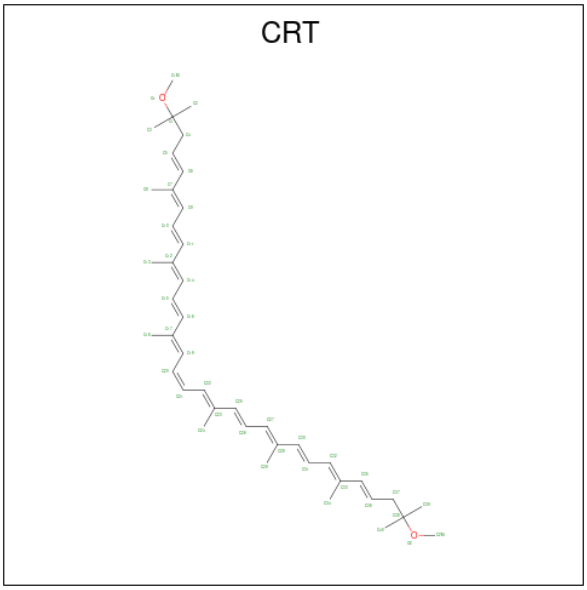
Mol	Chain	Residues	Atoms					AltConf
6	5	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	5	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	7	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	7	1	Total	C	Mg	N	O	0
			132	110	2	8	12	
6	9	1	Total	C	Mg	N	O	0
			66	55	1	4	6	
6	0	1	Total	C	Mg	N	O	0
			66	55	1	4	6	

- Molecule 7 is SPIRILLOXANTHIN (three-letter code: CRT) (formula: $C_{42}H_{60}O_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
7	D	1	Total	C	O	0
			44	42	2	
7	G	1	Total	C	O	0
			44	42	2	
7	I	1	Total	C	O	0
			44	42	2	
7	K	1	Total	C	O	0
			44	42	2	
7	O	1	Total	C	O	0
			44	42	2	

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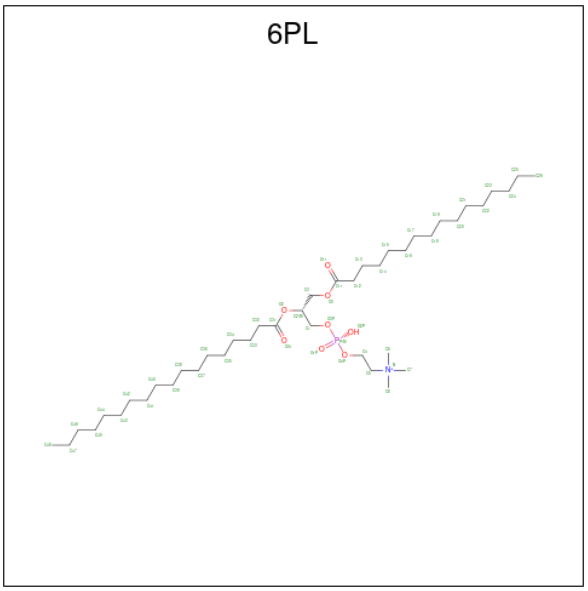
Mol	Chain	Residues	Atoms	AltConf
7	S	1	Total C O 44 42 2	0
7	U	1	Total C O 44 42 2	0
7	X	1	Total C O 44 42 2	0
7	Q	1	Total C O 44 42 2	0
7	Z	1	Total C O 44 42 2	0
7	B	1	Total C O 44 42 2	0
7	2	1	Total C O 44 42 2	0
7	4	1	Total C O 44 42 2	0
7	7	1	Total C O 44 42 2	0
7	8	1	Total C O 44 42 2	0
7	0	1	Total C O 44 42 2	0

- Molecule 8 is (4S,7R)-4-HYDROXY-N,N,N-TRIMETHYL-9-OXO-7-[(PALMITOYLOXY) METHYL]-3,5,8-TRIOXA-4-PHOSPHAHEXACOSAN-1-AMINIUM 4-OXIDE (three-letter code: 6PL) (formula: $C_{42}H_{85}NO_8P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
8	D	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	E	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	F	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	I	1	Total	C	N	O	P	0
			104	84	2	16	2	
8	I	1	Total	C	N	O	P	0
			104	84	2	16	2	
8	K	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	O	1	Total	C	N	O	P	0
			47	37	1	8	1	
8	H	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	L	1	Total	C	N	O	P	0
			104	84	2	16	2	
8	L	1	Total	C	N	O	P	0
			104	84	2	16	2	
8	M	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	S	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	U	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	X	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	P	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	Q	1	Total	C	N	O	P	0
			48	38	1	8	1	
8	Z	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	B	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	2	1	Total	C	N	O	P	0
			47	37	1	8	1	
8	4	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	5	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	6	1	Total	C	N	O	P	0
			52	42	1	8	1	

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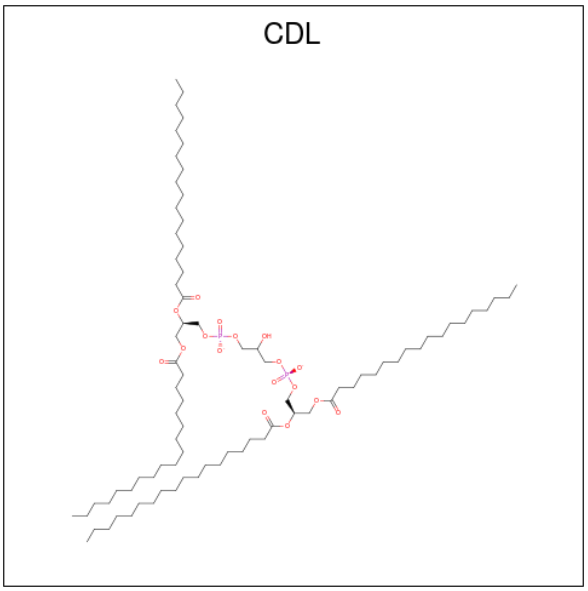
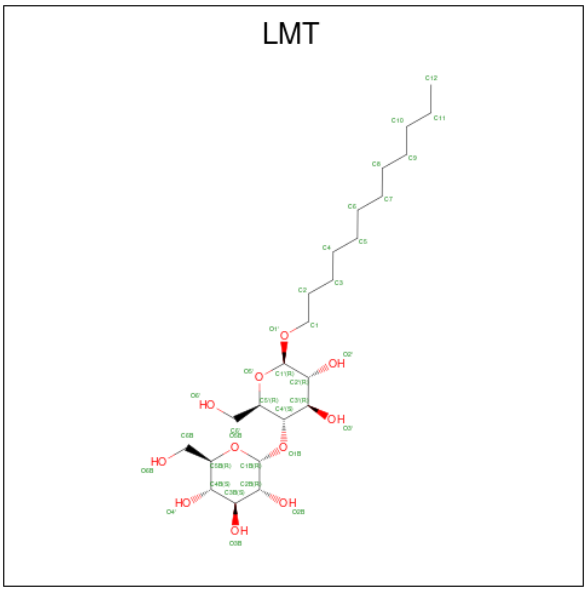
Mol	Chain	Residues	Atoms					AltConf
8	8	1	Total	C	N	O	P	0
			52	42	1	8	1	
8	0	1	Total	C	N	O	P	0
			52	42	1	8	1	

- Molecule 9 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$) (labeled as "Ligand of Interest" by depositor).



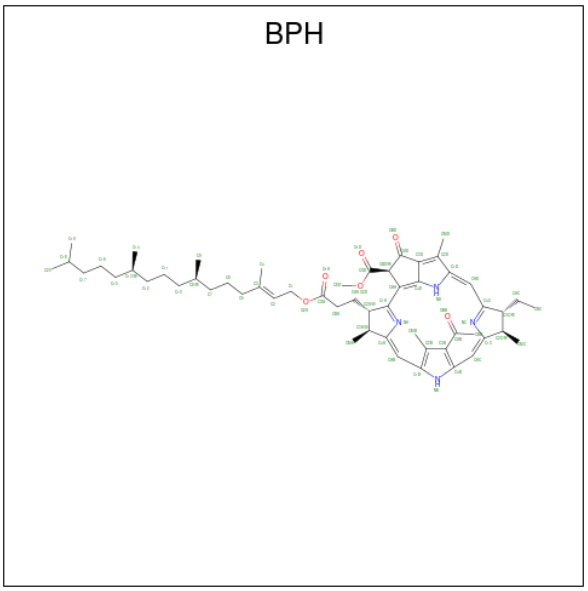
Mol	Chain	Residues	Atoms				AltConf
9	E	1	Total	C	O	P	0
			87	68	17	2	
9	G	1	Total	C	O	P	0
			190	152	34	4	
9	G	1	Total	C	O	P	0
			190	152	34	4	
9	L	1	Total	C	O	P	0
			100	81	17	2	
9	M	1	Total	C	O	P	0
			174	136	34	4	
9	M	1	Total	C	O	P	0
			174	136	34	4	

- Molecule 10 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$) (labeled as "Ligand of Interest" by depositor).



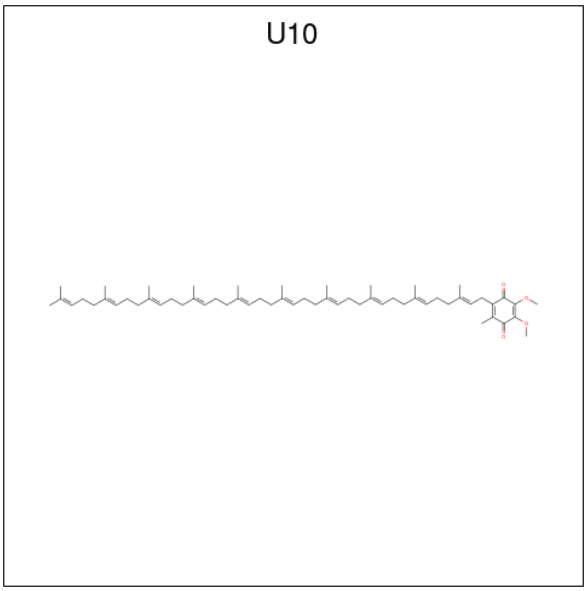
Mol	Chain	Residues	Atoms			AltConf
10	F	1	Total	C	O	0
			35	24	11	
10	J	1	Total	C	O	0
			35	24	11	
10	O	1	Total	C	O	0
			35	24	11	
10	H	1	Total	C	O	0
			35	24	11	
10	L	1	Total	C	O	0
			35	24	11	
10	R	1	Total	C	O	0
			35	24	11	
10	P	1	Total	C	O	0
			35	24	11	
10	Z	1	Total	C	O	0
			35	24	11	
10	B	1	Total	C	O	0
			35	24	11	
10	2	1	Total	C	O	0
			35	24	11	
10	4	1	Total	C	O	0
			35	24	11	
10	6	1	Total	C	O	0
			35	24	11	

- Molecule 11 is BACTERIOPHEOPHYTIN A (three-letter code: BPH) (formula: $C_{55}H_{76}N_4O_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
11	L	1	Total	C	N	O	0
			65	55	4	6	
11	M	1	Total	C	N	O	0
			65	55	4	6	

- Molecule 12 is UBIQUINONE-10 (three-letter code: U10) (formula: $C_{59}H_{90}O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
12	L	1	Total	C	O	0
			174	162	12	

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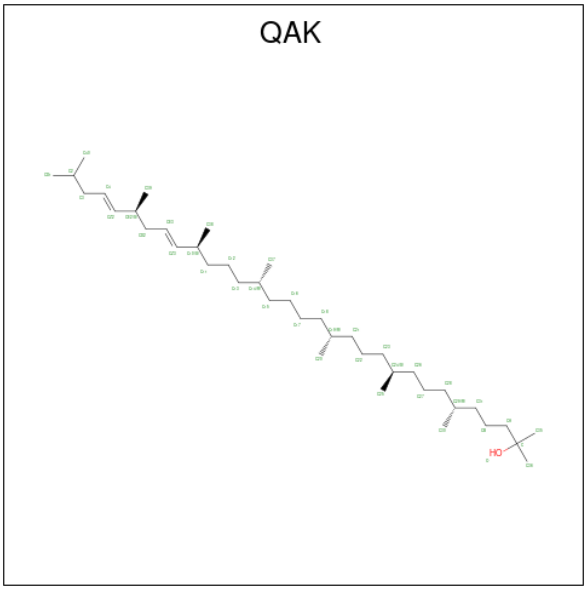
Mol	Chain	Residues	Atoms			AltConf
12	L	1	Total 174	C 162	O 12	0
12	L	1	Total 174	C 162	O 12	0
12	M	1	Total 111	C 103	O 8	0
12	M	1	Total 111	C 103	O 8	0

- Molecule 13 is FE (III) ION (three-letter code: FE) (formula: Fe) (labeled as "Ligand of Interest" by depositor).

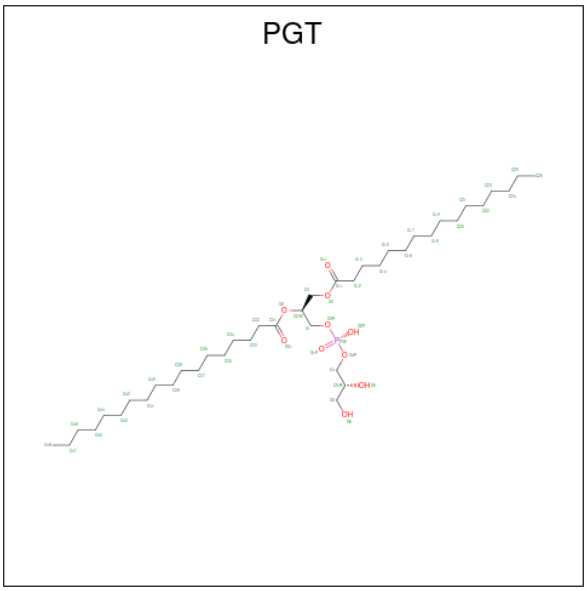
Mol	Chain	Residues	Atoms		AltConf
13	M	1	Total 1	Fe 1	0

- Molecule 14 is (6 {R},10 {S},14 {R},19 {R},23 {S},24 {E},27 {S},28 {E})-2,6,10,14,19,23,27,31-octamethyldotriaconta-24,28-dien-2-ol (three-letter code: QAK) (formula: $C_{40}H_{78}O$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
14	M	1	Total 41	C 40	O 1	0

- Molecule 15 is (1S)-2-{[{[(2R)-2,3-DIHYDROXYPROPYL]OXY}(HYDROXY)PHOSPHORYL]OXY}-1-[(PALMITOYLOXY)METHYL]ETHYL STEARATE (three-letter code: PGT) (formula: $C_{40}H_{79}O_{10}P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
15	7	1	Total	C	O	P	0
			51	40	10	1	
15	9	1	Total	C	O	P	0
			51	40	10	1	

- Molecule 16 is water.

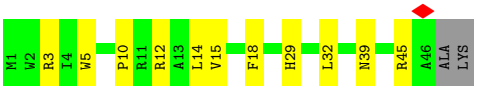
Mol	Chain	Residues	Atoms		AltConf
16	L	1	Total	O	0
			1	1	
16	M	2	Total	O	0
			2	2	

3 Residue-property plots (i)

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

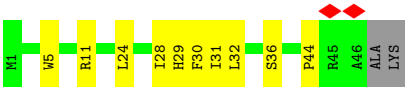
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain C:



• Molecule 1: Light-harvesting complex 1 alpha chain

Chain E:

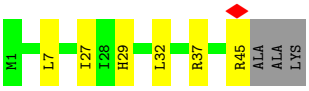


• Molecule 1: Light-harvesting complex 1 alpha chain

Chain G:

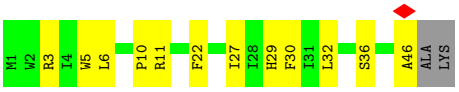
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain J:



• Molecule 1: Light-harvesting complex 1 alpha chain

Chain N:

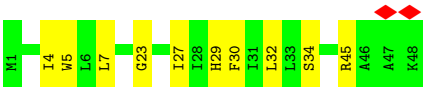


• Molecule 1: Light-harvesting complex 1 alpha chain

Chain R:

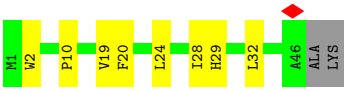
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain T:



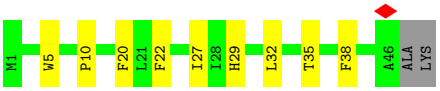
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain V:



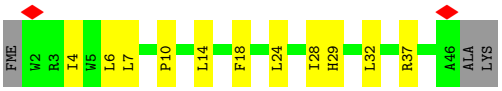
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain P:



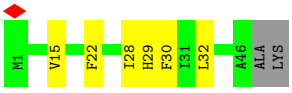
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain Y:



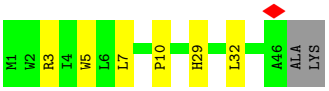
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain A:



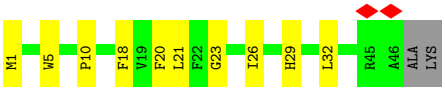
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain 1:



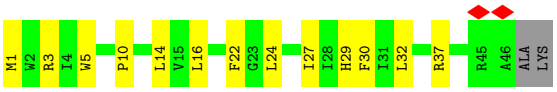
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain 3:



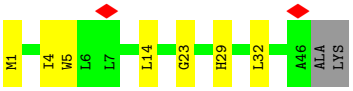
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain 5:



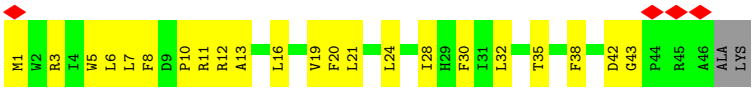
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain 7:



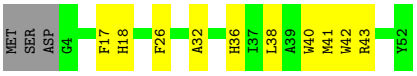
• Molecule 1: Light-harvesting complex 1 alpha chain

Chain 9:



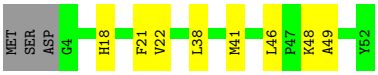
• Molecule 2: Light-harvesting complex 1 beta chain

Chain D:



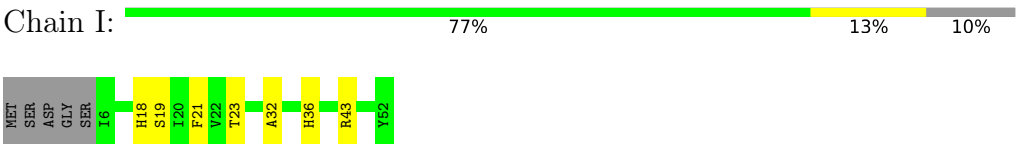
• Molecule 2: Light-harvesting complex 1 beta chain

Chain F:



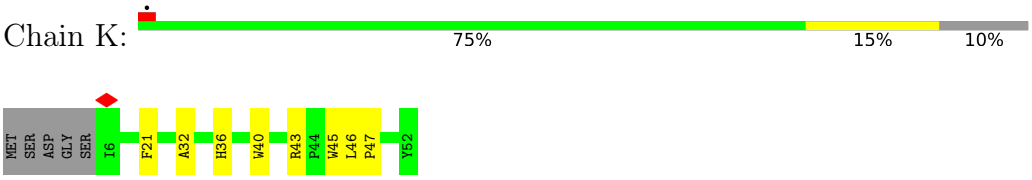
• Molecule 2: Light-harvesting complex 1 beta chain

Chain I:



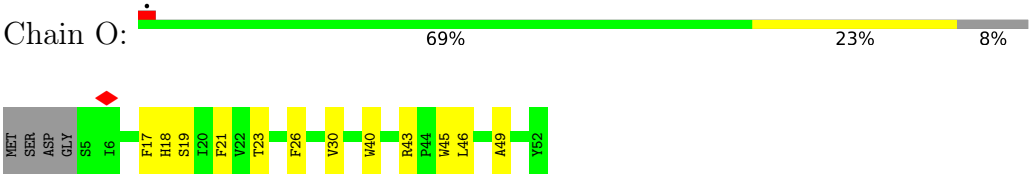
• Molecule 2: Light-harvesting complex 1 beta chain

Chain K:



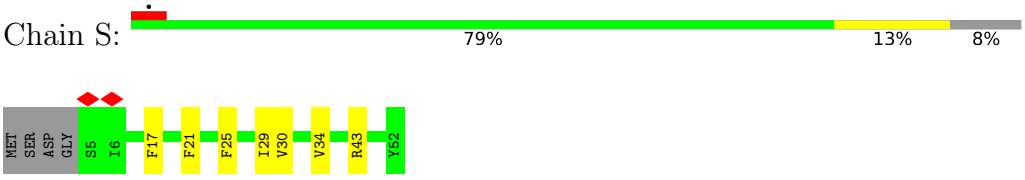
• Molecule 2: Light-harvesting complex 1 beta chain

Chain O:



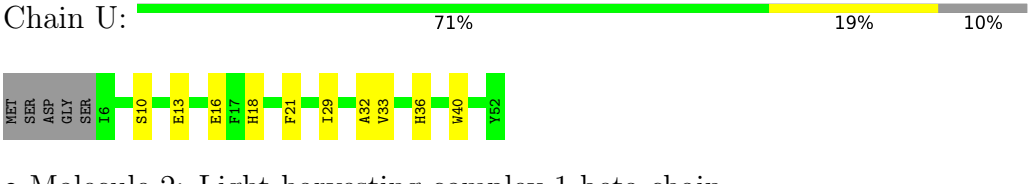
• Molecule 2: Light-harvesting complex 1 beta chain

Chain S:



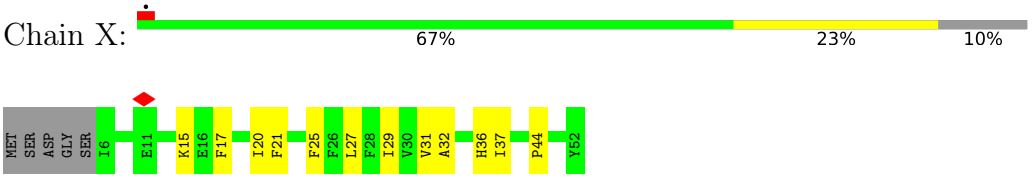
• Molecule 2: Light-harvesting complex 1 beta chain

Chain U:



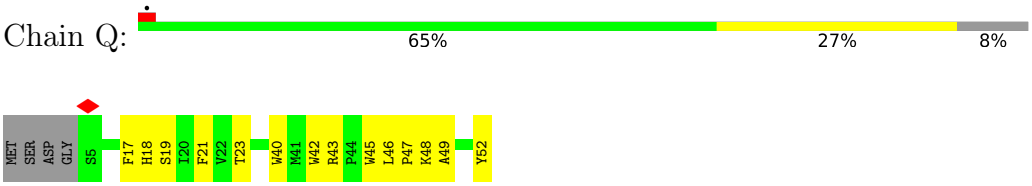
• Molecule 2: Light-harvesting complex 1 beta chain

Chain X:



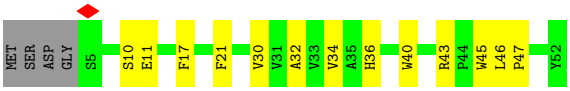
• Molecule 2: Light-harvesting complex 1 beta chain

Chain Q:



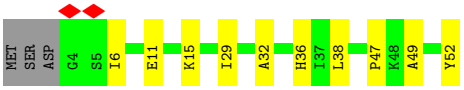
• Molecule 2: Light-harvesting complex 1 beta chain

Chain Z:



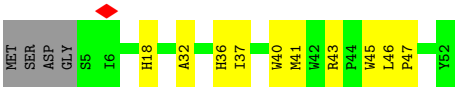
• Molecule 2: Light-harvesting complex 1 beta chain

Chain B:



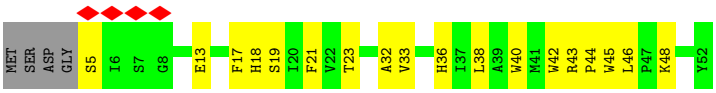
• Molecule 2: Light-harvesting complex 1 beta chain

Chain 2:



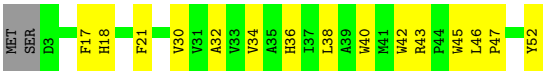
• Molecule 2: Light-harvesting complex 1 beta chain

Chain 4:



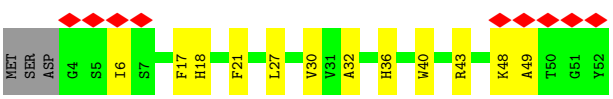
• Molecule 2: Light-harvesting complex 1 beta chain

Chain 6:



• Molecule 2: Light-harvesting complex 1 beta chain

Chain 8:

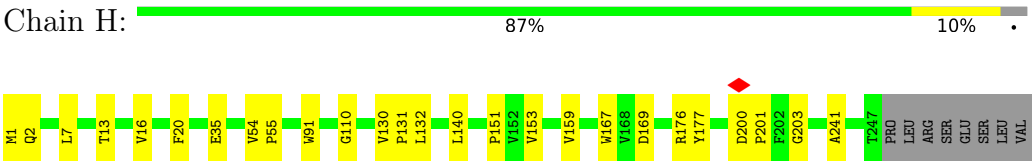


• Molecule 2: Light-harvesting complex 1 beta chain

Chain 0:

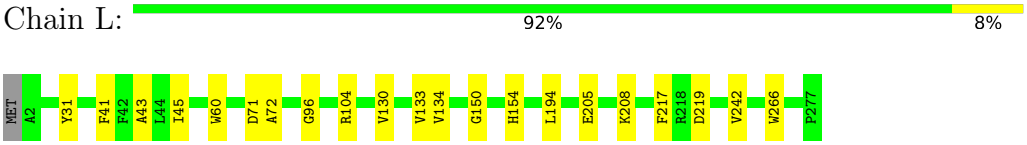
• Molecule 3: H subunit of photosynthetic reaction center complex

Chain H:



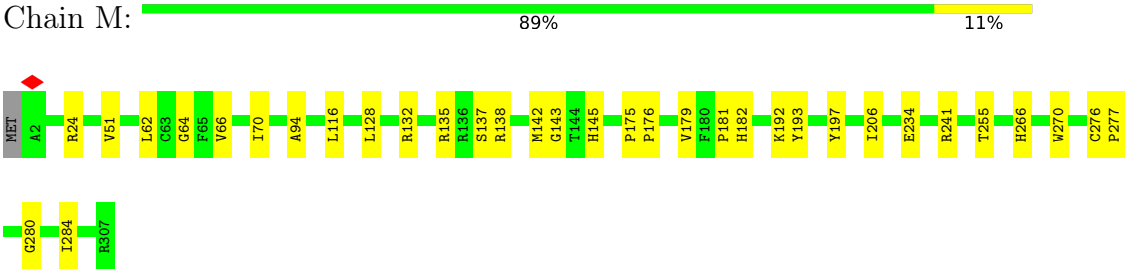
• Molecule 4: Reaction center protein L chain

Chain L:



• Molecule 5: Reaction center protein M chain

Chain M:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	260752	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	55.2	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.901	Depositor
Minimum map value	-0.248	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.18	Depositor
Map size (Å)	426.00003, 426.00003, 426.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.065, 1.065, 1.065	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: QAK, CRT, BCL, CDL, U10, BPH, PGT, FE, LMT, FME, 6PL

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	1	0.26	0/401	0.37	0/546
1	3	0.26	0/401	0.37	0/546
1	5	0.26	0/401	0.40	0/546
1	7	0.26	0/401	0.35	0/546
1	9	0.26	0/401	0.38	0/546
1	A	0.28	0/401	0.39	0/546
1	C	0.27	0/401	0.37	0/546
1	E	0.28	0/401	0.40	0/546
1	G	0.28	0/401	0.37	0/546
1	J	0.27	0/396	0.39	0/539
1	N	0.27	0/401	0.36	0/546
1	P	0.26	0/401	0.36	0/546
1	R	0.27	0/401	0.40	0/546
1	T	0.28	0/415	0.38	0/564
1	V	0.27	0/401	0.38	0/546
1	Y	0.28	0/401	0.39	0/546
2	0	0.29	0/419	0.40	0/571
2	2	0.29	0/415	0.38	0/566
2	4	0.28	0/415	0.38	0/566
2	6	0.29	0/427	0.37	0/582
2	8	0.29	0/419	0.38	0/571
2	B	0.30	0/419	0.40	0/571
2	D	0.30	0/419	0.38	0/571
2	F	0.31	0/419	0.42	0/571
2	I	0.30	0/397	0.38	0/542
2	K	0.29	0/409	0.36	0/558
2	O	0.29	0/415	0.40	0/566
2	Q	0.29	0/415	0.38	0/566
2	S	0.30	0/415	0.38	0/566
2	U	0.30	0/409	0.41	0/558
2	X	0.28	0/397	0.41	0/542
2	Z	0.30	0/415	0.39	0/566

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
3	H	0.29	0/1913	0.47	0/2618
4	L	0.30	0/2271	0.42	0/3109
5	M	0.29	0/2524	0.41	0/3454
All	All	0.29	0/19757	0.40	0/26961

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	397	0	415	7	0
1	3	397	0	415	10	0
1	5	397	0	415	11	0
1	7	397	0	415	6	0
1	9	397	0	415	27	0
1	A	397	0	415	7	0
1	C	397	0	415	9	0
1	E	397	0	415	9	0
1	G	397	0	415	11	0
1	J	392	0	410	8	0
1	N	397	0	415	14	0
1	P	397	0	415	11	0
1	R	397	0	415	14	0
1	T	411	0	433	11	0
1	V	397	0	415	9	0
1	Y	387	0	404	13	0
2	0	403	0	396	11	0
2	2	399	0	393	7	0
2	4	399	0	393	21	0
2	6	411	0	400	14	0
2	8	403	0	396	16	0
2	B	403	0	396	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	403	0	396	11	0
2	F	403	0	396	9	0
2	I	382	0	380	9	0
2	K	393	0	388	7	0
2	O	399	0	393	11	0
2	Q	399	0	393	12	0
2	S	399	0	393	6	0
2	U	393	0	388	10	0
2	X	382	0	380	16	0
2	Z	399	0	393	12	0
3	H	1862	0	1873	20	0
4	L	2185	0	2130	16	0
5	M	2433	0	2379	29	0
6	0	66	0	74	4	0
6	1	132	0	148	12	0
6	3	66	0	74	2	0
6	4	66	0	74	6	0
6	5	132	0	148	11	0
6	7	132	0	148	7	0
6	9	66	0	74	2	0
6	A	66	0	74	9	0
6	B	66	0	74	6	0
6	C	132	0	148	8	0
6	E	66	0	74	1	0
6	F	66	0	74	5	0
6	G	132	0	148	9	0
6	J	132	0	148	8	0
6	L	132	0	148	5	0
6	M	132	0	148	7	0
6	N	132	0	148	6	0
6	P	66	0	74	4	0
6	Q	66	0	74	6	0
6	R	132	0	148	10	0
6	T	66	0	74	4	0
6	U	66	0	74	5	0
6	V	132	0	148	7	0
6	Y	132	0	148	14	0
7	0	44	0	60	6	0
7	2	44	0	60	5	0
7	4	44	0	60	10	0
7	7	44	0	60	3	0
7	8	44	0	60	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	B	44	0	60	5	0
7	D	44	0	60	5	0
7	G	44	0	60	4	0
7	I	44	0	60	3	0
7	K	44	0	60	3	0
7	O	44	0	60	4	0
7	Q	44	0	60	5	0
7	S	44	0	60	3	0
7	U	44	0	60	5	0
7	X	44	0	60	15	0
7	Z	44	0	60	8	0
8	0	52	0	84	3	0
8	2	47	0	71	7	0
8	4	52	0	84	5	0
8	5	52	0	84	2	0
8	6	52	0	84	4	0
8	8	52	0	84	4	0
8	B	52	0	84	4	0
8	D	52	0	84	5	0
8	E	52	0	84	6	0
8	F	52	0	84	3	0
8	H	52	0	84	0	0
8	I	104	0	168	10	0
8	K	52	0	84	3	0
8	L	104	0	168	10	0
8	M	52	0	84	5	0
8	O	47	0	71	4	0
8	P	52	0	84	4	0
8	Q	48	0	73	6	0
8	S	52	0	84	5	0
8	U	52	0	84	4	0
8	X	52	0	84	3	0
8	Z	52	0	84	4	0
9	E	87	0	127	7	0
9	G	190	0	289	21	0
9	L	100	0	156	8	0
9	M	174	0	251	10	0
10	2	35	0	45	3	0
10	4	35	0	45	3	0
10	6	35	0	46	4	0
10	B	35	0	45	2	0
10	F	35	0	45	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	H	35	0	45	5	0
10	J	35	0	45	7	0
10	L	35	0	45	0	0
10	O	35	0	45	1	0
10	P	35	0	44	2	0
10	R	35	0	45	3	0
10	Z	35	0	45	1	0
11	L	65	0	76	5	0
11	M	65	0	76	6	0
12	L	174	0	243	13	0
12	M	111	0	153	9	0
13	M	1	0	0	0	0
14	M	41	0	0	0	0
15	7	51	0	78	4	0
15	9	51	0	78	3	0
16	L	1	0	0	0	0
16	M	2	0	0	0	0
All	All	25048	0	26968	553	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 11.

The worst 5 of 553 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)
1:1:32:LEU:HD11	6:1:102:BCL:HHD	1.61	0.82
7:4:103:CRT:H35	6:5:101:BCL:HMB2	1.64	0.78
1:5:3:ARG:HB3	7:8:101:CRT:H23	1.65	0.77
2:8:17:PHE:HA	7:8:101:CRT:H6	1.67	0.75
9:L:310:CDL:H781	1:9:16:LEU:HD22	1.68	0.75

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	44/48 (92%)	44 (100%)	0	0	100	100
1	3	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	5	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	7	44/48 (92%)	42 (96%)	2 (4%)	0	100	100
1	9	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	A	44/48 (92%)	44 (100%)	0	0	100	100
1	C	44/48 (92%)	44 (100%)	0	0	100	100
1	E	44/48 (92%)	42 (96%)	2 (4%)	0	100	100
1	G	44/48 (92%)	42 (96%)	2 (4%)	0	100	100
1	J	43/48 (90%)	42 (98%)	1 (2%)	0	100	100
1	N	44/48 (92%)	42 (96%)	2 (4%)	0	100	100
1	P	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	R	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	T	46/48 (96%)	45 (98%)	1 (2%)	0	100	100
1	V	44/48 (92%)	43 (98%)	1 (2%)	0	100	100
1	Y	43/48 (90%)	41 (95%)	2 (5%)	0	100	100
2	0	48/52 (92%)	45 (94%)	3 (6%)	0	100	100
2	2	47/52 (90%)	44 (94%)	3 (6%)	0	100	100
2	4	47/52 (90%)	45 (96%)	2 (4%)	0	100	100
2	6	49/52 (94%)	46 (94%)	3 (6%)	0	100	100
2	8	48/52 (92%)	44 (92%)	4 (8%)	0	100	100
2	B	48/52 (92%)	45 (94%)	3 (6%)	0	100	100
2	D	48/52 (92%)	45 (94%)	3 (6%)	0	100	100
2	F	48/52 (92%)	46 (96%)	2 (4%)	0	100	100
2	I	45/52 (86%)	42 (93%)	3 (7%)	0	100	100
2	K	46/52 (88%)	44 (96%)	2 (4%)	0	100	100
2	O	47/52 (90%)	44 (94%)	3 (6%)	0	100	100
2	Q	47/52 (90%)	45 (96%)	2 (4%)	0	100	100
2	S	47/52 (90%)	44 (94%)	3 (6%)	0	100	100
2	U	46/52 (88%)	43 (94%)	3 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	X	45/52 (86%)	42 (93%)	3 (7%)	0	100	100
2	Z	47/52 (90%)	44 (94%)	3 (6%)	0	100	100
3	H	245/255 (96%)	235 (96%)	10 (4%)	0	100	100
4	L	274/277 (99%)	270 (98%)	4 (2%)	0	100	100
5	M	304/307 (99%)	298 (98%)	6 (2%)	0	100	100
All	All	2280/2439 (94%)	2197 (96%)	83 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1	40/41 (98%)	40 (100%)	0	100	100
1	3	40/41 (98%)	40 (100%)	0	100	100
1	5	40/41 (98%)	40 (100%)	0	100	100
1	7	40/41 (98%)	40 (100%)	0	100	100
1	9	40/41 (98%)	40 (100%)	0	100	100
1	A	40/41 (98%)	40 (100%)	0	100	100
1	C	40/41 (98%)	40 (100%)	0	100	100
1	E	40/41 (98%)	40 (100%)	0	100	100
1	G	40/41 (98%)	40 (100%)	0	100	100
1	J	40/41 (98%)	40 (100%)	0	100	100
1	N	40/41 (98%)	40 (100%)	0	100	100
1	P	40/41 (98%)	40 (100%)	0	100	100
1	R	40/41 (98%)	40 (100%)	0	100	100
1	T	41/41 (100%)	41 (100%)	0	100	100
1	V	40/41 (98%)	40 (100%)	0	100	100
1	Y	40/41 (98%)	40 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	0	41/43 (95%)	41 (100%)	0	100	100
2	2	41/43 (95%)	41 (100%)	0	100	100
2	4	41/43 (95%)	41 (100%)	0	100	100
2	6	42/43 (98%)	42 (100%)	0	100	100
2	8	41/43 (95%)	41 (100%)	0	100	100
2	B	41/43 (95%)	41 (100%)	0	100	100
2	D	41/43 (95%)	41 (100%)	0	100	100
2	F	41/43 (95%)	41 (100%)	0	100	100
2	I	39/43 (91%)	39 (100%)	0	100	100
2	K	40/43 (93%)	40 (100%)	0	100	100
2	O	41/43 (95%)	41 (100%)	0	100	100
2	Q	41/43 (95%)	41 (100%)	0	100	100
2	S	41/43 (95%)	41 (100%)	0	100	100
2	U	40/43 (93%)	40 (100%)	0	100	100
2	X	39/43 (91%)	39 (100%)	0	100	100
2	Z	41/43 (95%)	41 (100%)	0	100	100
3	H	195/203 (96%)	195 (100%)	0	100	100
4	L	222/223 (100%)	222 (100%)	0	100	100
5	M	246/247 (100%)	246 (100%)	0	100	100
All	All	1955/2017 (97%)	1955 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 18 such sidechains are listed below:

Mol	Chain	Res	Type
2	2	18	HIS
2	0	18	HIS
2	6	18	HIS
4	L	271	ASN
2	B	18	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

15 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	$\#\|Z\| > 2$
1	FME	V	1	1	8,9,10	0.95	0	7,9,11	0.92	0
1	FME	7	1	1	8,9,10	0.89	0	7,9,11	1.37	1 (14%)
1	FME	9	1	1	8,9,10	0.92	0	7,9,11	0.93	0
1	FME	R	1	1	8,9,10	0.94	0	7,9,11	0.88	0
1	FME	G	1	1	8,9,10	0.93	0	7,9,11	0.85	0
1	FME	N	1	1	8,9,10	0.96	0	7,9,11	0.93	0
1	FME	E	1	1	8,9,10	0.93	0	7,9,11	0.80	0
1	FME	T	1	1	8,9,10	0.92	0	7,9,11	0.87	0
1	FME	A	1	1	8,9,10	0.94	0	7,9,11	0.85	0
1	FME	P	1	1	8,9,10	0.97	0	7,9,11	0.65	0
1	FME	1	1	1	8,9,10	0.93	0	7,9,11	0.91	0
1	FME	J	1	1	8,9,10	0.95	0	7,9,11	0.94	0
1	FME	5	1	1	8,9,10	0.91	0	7,9,11	1.19	1 (14%)
1	FME	C	1	1	8,9,10	0.94	0	7,9,11	0.88	0
1	FME	3	1	1	8,9,10	0.92	0	7,9,11	0.99	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
1	FME	V	1	1	-	1/7/9/11	-
1	FME	7	1	1	-	3/7/9/11	-
1	FME	9	1	1	-	3/7/9/11	-
1	FME	R	1	1	-	6/7/9/11	-
1	FME	G	1	1	-	1/7/9/11	-
1	FME	N	1	1	-	2/7/9/11	-
1	FME	E	1	1	-	3/7/9/11	-
1	FME	T	1	1	-	1/7/9/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	FME	A	1	1	-	3/7/9/11	-
1	FME	P	1	1	-	0/7/9/11	-
1	FME	1	1	1	-	6/7/9/11	-
1	FME	J	1	1	-	2/7/9/11	-
1	FME	5	1	1	-	3/7/9/11	-
1	FME	C	1	1	-	3/7/9/11	-
1	FME	3	1	1	-	1/7/9/11	-

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	7	1	FME	C-CA-N	2.76	114.71	109.73
1	5	1	FME	C-CA-N	2.30	113.88	109.73
1	3	1	FME	C-CA-N	2.04	113.42	109.73

There are no chirality outliers.

5 of 38 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	E	1	FME	CB-CA-N-CN
1	N	1	FME	N-CA-CB-CG
1	N	1	FME	C-CA-CB-CG
1	R	1	FME	CB-CA-N-CN
1	R	1	FME	C-CA-CB-CG

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	9	1	FME	3	0
1	R	1	FME	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 105 ligands modelled in this entry, 1 is monoatomic - leaving 104 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	$\#\|Z\| > 2$
11	BPH	M	405	-	51,70,70	0.53	1 (1%)	52,101,101	0.68	1 (1%)
6	BCL	A	100	-	58,74,74	1.64	9 (15%)	69,115,115	1.74	13 (18%)
10	LMT	B	101	-	36,36,36	1.17	5 (13%)	47,47,47	0.98	1 (2%)
7	CRT	7	101	-	41,43,43	1.96	12 (29%)	50,54,54	1.68	15 (30%)
12	U10	M	410	-	63,63,63	2.66	17 (26%)	76,79,79	1.77	22 (28%)
6	BCL	N	101	-	58,74,74	1.65	10 (17%)	69,115,115	1.71	15 (21%)
6	BCL	5	103	-	58,74,74	1.67	10 (17%)	69,115,115	1.64	13 (18%)
12	U10	L	307	-	63,63,63	2.69	17 (26%)	76,79,79	1.74	19 (25%)
6	BCL	V	101	-	58,74,74	1.63	10 (17%)	69,115,115	1.69	12 (17%)
8	6PL	S	102	-	51,51,51	0.28	0	57,59,59	0.39	0
10	LMT	6	101	-	36,36,36	1.20	5 (13%)	47,47,47	1.04	1 (2%)
6	BCL	0	100	-	58,74,74	1.66	9 (15%)	69,115,115	1.66	14 (20%)
8	6PL	K	102	-	51,51,51	0.26	0	57,59,59	0.33	0
6	BCL	N	102	-	58,74,74	1.67	10 (17%)	69,115,115	1.66	13 (18%)
12	U10	M	406	-	48,48,63	2.69	14 (29%)	58,61,79	1.61	13 (22%)
6	BCL	Y	102	-	58,74,74	1.66	10 (17%)	69,115,115	1.61	12 (17%)
7	CRT	0	101	-	41,43,43	1.96	12 (29%)	50,54,54	1.68	14 (28%)
7	CRT	G	102	-	41,43,43	1.97	12 (29%)	50,54,54	1.69	16 (32%)
15	PGT	9	101	-	50,50,50	0.26	0	53,56,56	0.35	0
9	CDL	M	409	-	83,83,99	0.28	0	89,95,111	0.37	0
6	BCL	1	102	-	58,74,74	1.66	10 (17%)	69,115,115	1.63	13 (18%)
9	CDL	M	408	-	89,89,99	0.29	0	95,101,111	0.36	0
10	LMT	R	102	-	36,36,36	1.18	6 (16%)	47,47,47	1.11	3 (6%)
6	BCL	E	101	-	58,74,74	1.65	9 (15%)	69,115,115	1.68	12 (17%)
10	LMT	O	101	-	36,36,36	1.21	6 (16%)	47,47,47	1.07	2 (4%)
10	LMT	2	101	-	36,36,36	1.18	4 (11%)	47,47,47	1.04	2 (4%)
8	6PL	2	103	-	46,46,51	0.29	0	52,54,59	0.31	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
6	BCL	7	104	-	58,74,74	1.66	9 (15%)	69,115,115	1.67	13 (18%)
8	6PL	4	104	-	51,51,51	0.27	0	57,59,59	0.35	0
9	CDL	L	310	-	99,99,99	0.26	0	105,111,111	0.31	0
7	CRT	O	102	-	41,43,43	1.93	12 (29%)	50,54,54	1.67	13 (26%)
6	BCL	T	100	-	58,74,74	1.65	10 (17%)	69,115,115	1.73	15 (21%)
7	CRT	2	102	-	41,43,43	2.03	12 (29%)	50,54,54	1.80	16 (32%)
6	BCL	3	100	-	58,74,74	1.65	11 (18%)	69,115,115	1.68	14 (20%)
6	BCL	U	100	-	58,74,74	1.66	10 (17%)	69,115,115	1.65	14 (20%)
6	BCL	F	102	-	58,74,74	1.67	10 (17%)	69,115,115	1.64	13 (18%)
6	BCL	J	101	-	58,74,74	1.65	10 (17%)	69,115,115	1.70	12 (17%)
8	6PL	I	103	-	51,51,51	0.27	0	57,59,59	0.36	0
6	BCL	G	103	-	58,74,74	1.64	9 (15%)	69,115,115	1.77	14 (20%)
8	6PL	L	304	-	51,51,51	0.27	0	57,59,59	0.36	0
8	6PL	5	102	-	51,51,51	0.26	0	57,59,59	0.31	0
7	CRT	Q	101	-	41,43,43	1.95	12 (29%)	50,54,54	1.67	15 (30%)
6	BCL	4	102	-	58,74,74	1.68	10 (17%)	69,115,115	1.63	13 (18%)
7	CRT	S	101	-	41,43,43	1.95	12 (29%)	50,54,54	1.68	14 (28%)
8	6PL	H	301	-	51,51,51	0.27	0	57,59,59	0.41	0
6	BCL	P	102	-	58,74,74	1.65	9 (15%)	69,115,115	1.67	13 (18%)
6	BCL	R	101	-	58,74,74	1.63	10 (17%)	69,115,115	1.68	13 (18%)
6	BCL	5	101	-	58,74,74	1.65	11 (18%)	69,115,115	1.66	14 (20%)
8	6PL	I	101	-	51,51,51	0.27	0	57,59,59	0.37	0
7	CRT	B	103	-	41,43,43	1.94	12 (29%)	50,54,54	1.63	14 (28%)
6	BCL	J	103	-	58,74,74	1.66	9 (15%)	69,115,115	1.66	12 (17%)
11	BPH	L	302	-	51,70,70	0.53	0	52,101,101	0.69	1 (1%)
7	CRT	8	101	-	41,43,43	2.07	12 (29%)	50,54,54	1.89	15 (30%)
10	LMT	P	101	-	36,36,36	1.18	5 (13%)	47,47,47	0.97	2 (4%)
8	6PL	U	102	-	51,51,51	0.26	0	57,59,59	0.31	0
7	CRT	U	101	-	41,43,43	1.97	12 (29%)	50,54,54	1.70	15 (30%)
9	CDL	G	101	-	99,99,99	0.27	0	105,111,111	0.35	0
10	LMT	H	302	-	36,36,36	1.15	5 (13%)	47,47,47	1.06	3 (6%)
6	BCL	L	308	-	58,74,74	1.70	11 (18%)	69,115,115	1.68	12 (17%)
8	6PL	8	102	-	51,51,51	0.27	0	57,59,59	0.31	0
8	6PL	F	103	-	51,51,51	0.26	0	57,59,59	0.41	0
8	6PL	O	103	-	46,46,51	0.29	0	52,54,59	0.33	0
8	6PL	P	103	-	51,51,51	0.28	0	57,59,59	0.37	0
6	BCL	M	404	-	58,74,74	1.68	10 (17%)	69,115,115	1.69	13 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
8	6PL	D	102	-	51,51,51	0.27	0	57,59,59	0.30	0
8	6PL	E	102	-	51,51,51	0.28	0	57,59,59	0.28	0
8	6PL	0	102	-	51,51,51	0.27	0	57,59,59	0.40	0
6	BCL	Y	101	-	58,74,74	1.63	10 (17%)	69,115,115	1.74	13 (18%)
8	6PL	Q	102	-	47,47,51	0.28	0	53,55,59	0.31	0
6	BCL	C	102	-	58,74,74	1.66	10 (17%)	69,115,115	1.64	13 (18%)
9	CDL	G	105	-	89,89,99	0.29	0	95,101,111	0.44	0
12	U10	L	303	-	48,48,63	2.69	14 (29%)	58,61,79	1.71	14 (24%)
7	CRT	I	102	-	41,43,43	1.95	12 (29%)	50,54,54	1.70	14 (28%)
6	BCL	1	101	-	58,74,74	1.65	9 (15%)	69,115,115	1.74	14 (20%)
8	6PL	B	104	-	51,51,51	0.28	0	57,59,59	0.37	0
10	LMT	L	306	-	36,36,36	1.15	5 (13%)	47,47,47	1.01	2 (4%)
10	LMT	4	101	-	36,36,36	1.17	6 (16%)	47,47,47	1.16	5 (10%)
7	CRT	4	103	-	41,43,43	1.99	12 (29%)	50,54,54	1.74	14 (28%)
8	6PL	6	102	-	51,51,51	0.27	0	57,59,59	0.34	0
9	CDL	E	103	-	86,86,99	0.29	0	92,98,111	0.37	0
6	BCL	G	104	-	58,74,74	1.66	10 (17%)	69,115,115	1.64	13 (18%)
7	CRT	D	101	-	41,43,43	1.97	12 (29%)	50,54,54	1.69	16 (32%)
7	CRT	Z	102	-	41,43,43	1.96	12 (29%)	50,54,54	1.64	14 (28%)
6	BCL	Q	100	-	58,74,74	1.66	10 (17%)	69,115,115	1.63	13 (18%)
6	BCL	L	301	-	58,74,74	1.65	10 (17%)	69,115,115	1.66	14 (20%)
6	BCL	V	102	-	58,74,74	1.66	10 (17%)	69,115,115	1.64	13 (18%)
6	BCL	R	103	-	58,74,74	1.66	9 (15%)	69,115,115	1.61	13 (18%)
6	BCL	M	402	-	58,74,74	1.64	10 (17%)	69,115,115	1.69	15 (21%)
8	6PL	M	401	-	51,51,51	0.27	0	57,59,59	0.33	0
7	CRT	X	101	-	41,43,43	2.01	12 (29%)	50,54,54	1.76	14 (28%)
6	BCL	7	102	-	58,74,74	1.65	11 (18%)	69,115,115	1.68	13 (18%)
10	LMT	F	101	-	36,36,36	1.21	5 (13%)	47,47,47	1.01	1 (2%)
14	QAK	M	407	-	40,40,40	1.38	2 (5%)	45,49,49	0.87	2 (4%)
10	LMT	Z	101	-	36,36,36	1.17	5 (13%)	47,47,47	1.03	2 (4%)
6	BCL	9	102	-	58,74,74	1.64	9 (15%)	69,115,115	1.77	14 (20%)
12	U10	L	309	-	63,63,63	2.71	17 (26%)	76,79,79	1.75	22 (28%)
8	6PL	Z	103	-	51,51,51	0.28	0	57,59,59	0.30	0
15	PGT	7	103	-	50,50,50	0.25	0	53,56,56	0.33	0
6	BCL	B	102	-	58,74,74	1.65	10 (17%)	69,115,115	1.64	13 (18%)
6	BCL	C	101	-	58,74,74	1.65	9 (15%)	69,115,115	1.68	13 (18%)
10	LMT	J	102	-	36,36,36	1.15	5 (13%)	47,47,47	1.11	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
8	6PL	X	102	-	51,51,51	0.28	0	57,59,59	0.34	0
8	6PL	L	305	-	51,51,51	0.30	0	57,59,59	0.33	0
7	CRT	K	101	-	41,43,43	1.95	12 (29%)	50,54,54	1.68	13 (26%)

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
11	BPH	M	405	-	2/2/18/22	7/37/105/105	0/5/6/6
6	BCL	A	100	-	-	20/37/137/137	-
10	LMT	B	101	-	-	9/21/61/61	0/2/2/2
7	CRT	7	101	-	-	1/51/51/51	-
12	U10	M	410	-	-	22/63/87/87	0/1/1/1
6	BCL	N	101	-	-	16/37/137/137	-
6	BCL	5	103	-	-	8/37/137/137	-
12	U10	L	307	-	-	27/63/87/87	0/1/1/1
6	BCL	V	101	-	-	22/37/137/137	-
8	6PL	S	102	-	-	8/55/55/55	-
10	LMT	6	101	-	-	7/21/61/61	0/2/2/2
6	BCL	0	100	-	-	13/37/137/137	-
8	6PL	K	102	-	-	11/55/55/55	-
6	BCL	N	102	-	-	8/37/137/137	-
12	U10	M	406	-	-	10/45/69/87	0/1/1/1
6	BCL	Y	102	-	-	16/37/137/137	-
7	CRT	0	101	-	-	0/51/51/51	-
7	CRT	G	102	-	-	0/51/51/51	-
15	PGT	9	101	-	-	7/55/55/55	-
9	CDL	M	409	-	-	7/94/94/110	-
6	BCL	1	102	-	-	10/37/137/137	-
9	CDL	M	408	-	-	8/100/100/110	-
10	LMT	R	102	-	-	15/21/61/61	0/2/2/2
6	BCL	E	101	-	-	21/37/137/137	-
10	LMT	O	101	-	-	9/21/61/61	0/2/2/2
10	LMT	2	101	-	-	13/21/61/61	0/2/2/2
8	6PL	2	103	-	-	12/50/50/55	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	BCL	7	104	-	-	15/37/137/137	-
8	6PL	4	104	-	-	9/55/55/55	-
9	CDL	L	310	-	-	20/110/110/110	-
7	CRT	O	102	-	-	1/51/51/51	-
6	BCL	T	100	-	-	18/37/137/137	-
7	CRT	2	102	-	-	2/51/51/51	-
6	BCL	3	100	-	-	19/37/137/137	-
6	BCL	U	100	-	-	16/37/137/137	-
6	BCL	F	102	-	-	17/37/137/137	-
6	BCL	J	101	-	-	14/37/137/137	-
8	6PL	I	103	-	-	7/55/55/55	-
6	BCL	G	103	-	-	15/37/137/137	-
8	6PL	L	304	-	-	8/55/55/55	-
8	6PL	5	102	-	-	12/55/55/55	-
7	CRT	Q	101	-	-	1/51/51/51	-
6	BCL	4	102	-	-	9/37/137/137	-
7	CRT	S	101	-	-	0/51/51/51	-
8	6PL	H	301	-	-	6/55/55/55	-
6	BCL	P	102	-	-	16/37/137/137	-
6	BCL	R	101	-	-	16/37/137/137	-
6	BCL	5	101	-	-	18/37/137/137	-
8	6PL	I	101	-	-	11/55/55/55	-
7	CRT	B	103	-	-	0/51/51/51	-
6	BCL	J	103	-	-	11/37/137/137	-
11	BPH	L	302	-	2/2/18/22	8/37/105/105	0/5/6/6
7	CRT	8	101	-	-	1/51/51/51	-
10	LMT	P	101	-	-	6/21/61/61	0/2/2/2
8	6PL	U	102	-	-	6/55/55/55	-
7	CRT	U	101	-	-	0/51/51/51	-
9	CDL	G	101	-	-	12/110/110/110	-
10	LMT	H	302	-	-	10/21/61/61	0/2/2/2
6	BCL	L	308	-	-	14/37/137/137	-
8	6PL	8	102	-	-	8/55/55/55	-
8	6PL	F	103	-	-	8/55/55/55	-
8	6PL	O	103	-	-	13/50/50/55	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	6PL	P	103	-	-	12/55/55/55	-
6	BCL	M	404	-	-	12/37/137/137	-
8	6PL	D	102	-	-	6/55/55/55	-
8	6PL	E	102	-	-	11/55/55/55	-
8	6PL	0	102	-	-	9/55/55/55	-
6	BCL	Y	101	-	-	11/37/137/137	-
8	6PL	Q	102	-	-	8/51/51/55	-
6	BCL	C	102	-	-	12/37/137/137	-
9	CDL	G	105	-	-	16/100/100/110	-
12	U10	L	303	-	-	18/45/69/87	0/1/1/1
7	CRT	I	102	-	-	0/51/51/51	-
6	BCL	1	101	-	-	15/37/137/137	-
8	6PL	B	104	-	-	8/55/55/55	-
10	LMT	L	306	-	-	12/21/61/61	0/2/2/2
10	LMT	4	101	-	-	10/21/61/61	0/2/2/2
7	CRT	4	103	-	-	0/51/51/51	-
8	6PL	6	102	-	-	6/55/55/55	-
9	CDL	E	103	-	-	10/97/97/110	-
6	BCL	G	104	-	-	12/37/137/137	-
7	CRT	D	101	-	-	0/51/51/51	-
7	CRT	Z	102	-	-	0/51/51/51	-
6	BCL	Q	100	-	-	10/37/137/137	-
6	BCL	L	301	-	-	14/37/137/137	-
6	BCL	V	102	-	-	12/37/137/137	-
6	BCL	R	103	-	-	9/37/137/137	-
6	BCL	M	402	-	-	11/37/137/137	-
8	6PL	M	401	-	-	9/55/55/55	-
7	CRT	X	101	-	-	1/51/51/51	-
14	QAK	M	407	-	3/3/8/12	22/44/44/44	-
6	BCL	7	102	-	-	22/37/137/137	-
10	LMT	F	101	-	-	10/21/61/61	0/2/2/2
10	LMT	Z	101	-	-	11/21/61/61	0/2/2/2
6	BCL	9	102	-	-	12/37/137/137	-
12	U10	L	309	-	-	23/63/87/87	0/1/1/1
8	6PL	Z	103	-	-	11/55/55/55	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
15	PGT	7	103	-	-	7/55/55/55	-
6	BCL	B	102	-	-	16/37/137/137	-
6	BCL	C	101	-	-	15/37/137/137	-
10	LMT	J	102	-	-	6/21/61/61	0/2/2/2
8	6PL	X	102	-	-	6/55/55/55	-
8	6PL	L	305	-	-	10/55/55/55	-
7	CRT	K	101	-	-	0/51/51/51	-

The worst 5 of 689 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	M	410	U10	C38-C39	6.12	1.47	1.33
12	L	303	U10	C23-C24	6.12	1.47	1.33
12	L	309	U10	C38-C39	6.10	1.47	1.33
12	L	307	U10	C23-C24	6.09	1.47	1.33
12	M	410	U10	C43-C44	6.08	1.47	1.33

The worst 5 of 828 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	L	308	BCL	O2D-CGD-CBD	5.83	121.63	111.27
6	M	402	BCL	O2D-CGD-CBD	5.62	121.25	111.27
6	9	102	BCL	O2D-CGD-CBD	5.38	120.83	111.27
6	1	101	BCL	O2D-CGD-CBD	5.08	120.30	111.27
6	G	103	BCL	O2D-CGD-CBD	5.01	120.16	111.27

5 of 7 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
11	L	302	BPH	C8
11	L	302	BPH	C13
11	M	405	BPH	C8
11	M	405	BPH	C13
14	M	407	QAK	C24

5 of 1079 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	C	101	BCL	C2C-C3C-CAC-CBC
6	C	101	BCL	C4C-C3C-CAC-CBC

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Mol	Chain	Res	Type	Atoms
6	C	101	BCL	C2-C3-C5-C6
6	C	101	BCL	C4-C3-C5-C6
6	C	102	BCL	C1A-C2A-CAA-CBA

There are no ring outliers.

100 monomers are involved in 382 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	M	405	BPH	6	0
6	A	100	BCL	9	0
10	B	101	LMT	2	0
7	7	101	CRT	3	0
12	M	410	U10	6	0
6	N	101	BCL	3	0
6	5	103	BCL	6	0
12	L	307	U10	8	0
6	V	101	BCL	2	0
8	S	102	6PL	5	0
10	6	101	LMT	4	0
6	0	100	BCL	4	0
8	K	102	6PL	3	0
6	N	102	BCL	3	0
12	M	406	U10	3	0
6	Y	102	BCL	9	0
7	0	101	CRT	6	0
7	G	102	CRT	4	0
15	9	101	PGT	3	0
9	M	409	CDL	3	0
6	1	102	BCL	8	0
9	M	408	CDL	7	0
10	R	102	LMT	3	0
6	E	101	BCL	1	0
10	O	101	LMT	1	0
10	2	101	LMT	3	0
8	2	103	6PL	7	0
6	7	104	BCL	5	0
8	4	104	6PL	5	0
9	L	310	CDL	8	0
7	O	102	CRT	4	0
6	T	100	BCL	4	0
7	2	102	CRT	5	0
6	3	100	BCL	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	U	100	BCL	5	0
6	F	102	BCL	5	0
6	J	101	BCL	3	0
8	I	103	6PL	5	0
6	G	103	BCL	3	0
8	L	304	6PL	4	0
8	5	102	6PL	2	0
7	Q	101	CRT	5	0
6	4	102	BCL	6	0
7	S	101	CRT	3	0
6	P	102	BCL	4	0
6	R	101	BCL	5	0
6	5	101	BCL	5	0
8	I	101	6PL	5	0
7	B	103	CRT	5	0
6	J	103	BCL	5	0
11	L	302	BPH	5	0
7	8	101	CRT	5	0
10	P	101	LMT	2	0
8	U	102	6PL	4	0
7	U	101	CRT	5	0
9	G	101	CDL	12	0
10	H	302	LMT	5	0
6	L	308	BCL	5	0
8	8	102	6PL	4	0
8	F	103	6PL	3	0
8	O	103	6PL	4	0
8	P	103	6PL	4	0
6	M	404	BCL	4	0
8	D	102	6PL	5	0
8	E	102	6PL	6	0
8	0	102	6PL	3	0
6	Y	101	BCL	5	0
8	Q	102	6PL	6	0
6	C	102	BCL	5	0
9	G	105	CDL	9	0
12	L	303	U10	1	0
7	I	102	CRT	3	0
6	1	101	BCL	4	0
8	B	104	6PL	4	0
10	4	101	LMT	3	0
7	4	103	CRT	10	0

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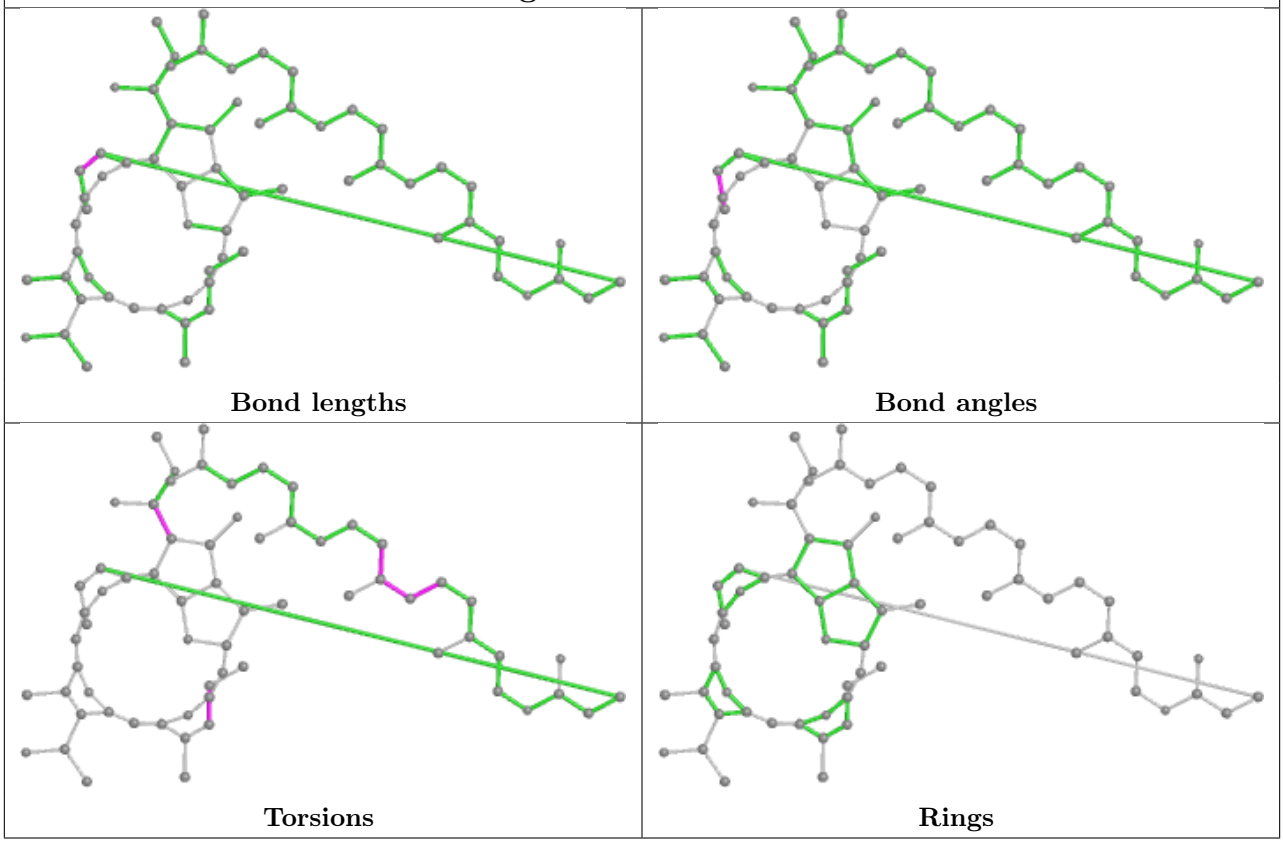
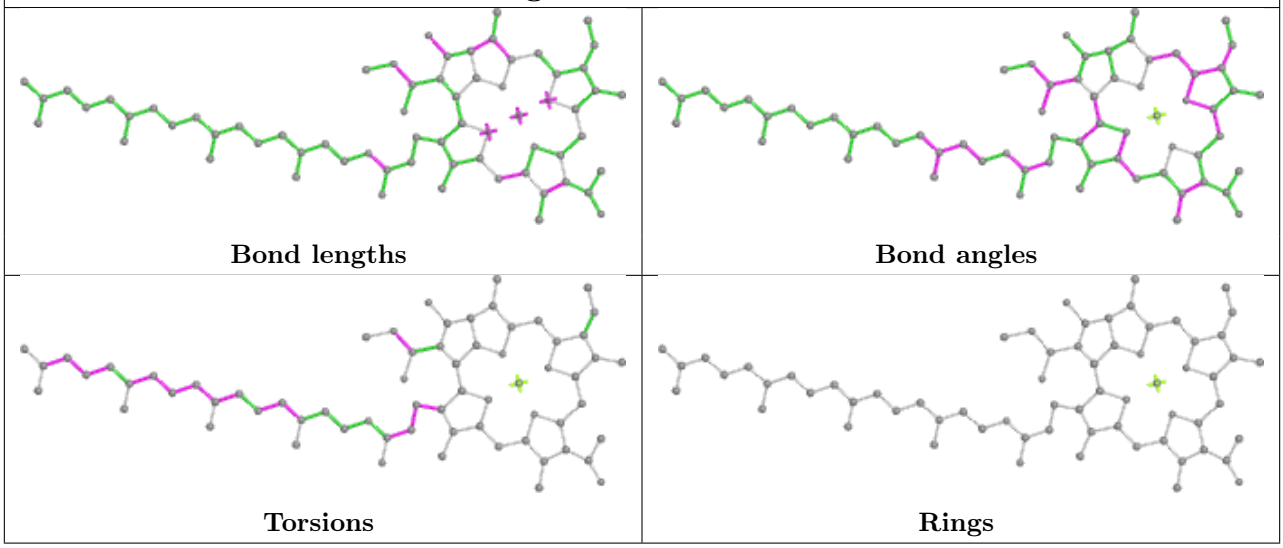
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	6	102	6PL	4	0
9	E	103	CDL	7	0
6	G	104	BCL	6	0
7	D	101	CRT	5	0
7	Z	102	CRT	8	0
6	Q	100	BCL	6	0
6	V	102	BCL	5	0
6	R	103	BCL	5	0
6	M	402	BCL	3	0
8	M	401	6PL	5	0
7	X	101	CRT	15	0
6	7	102	BCL	2	0
10	F	101	LMT	4	0
10	Z	101	LMT	1	0
6	9	102	BCL	2	0
12	L	309	U10	4	0
8	Z	103	6PL	4	0
15	7	103	PGT	4	0
6	B	102	BCL	6	0
6	C	101	BCL	3	0
10	J	102	LMT	7	0
8	X	102	6PL	3	0
8	L	305	6PL	7	0
7	K	101	CRT	3	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.

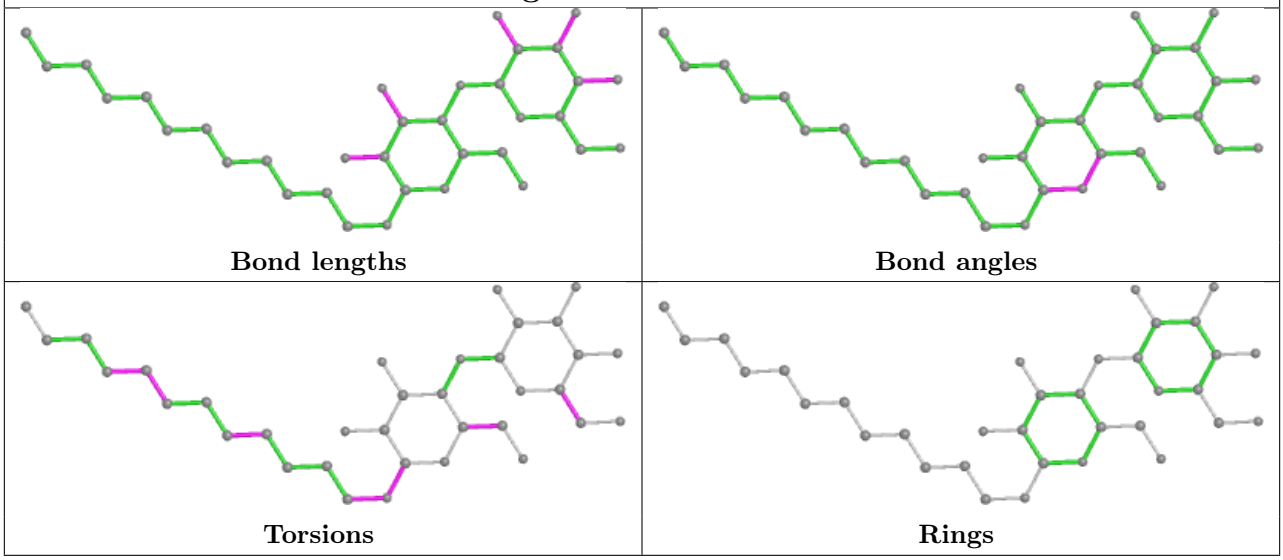
Ligand BPH M 405



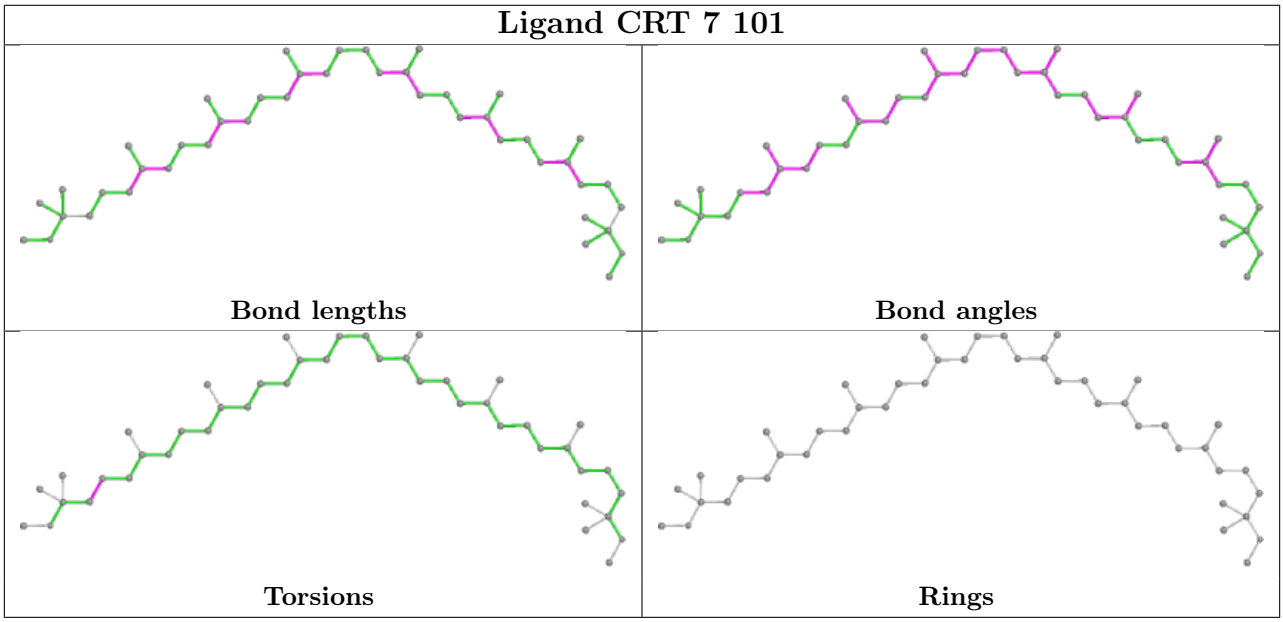
Ligand BCL A 100



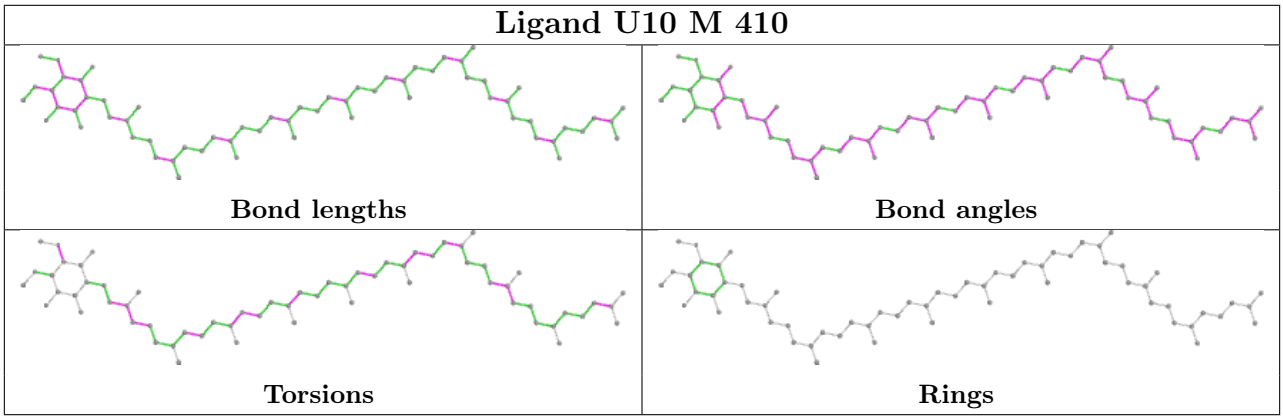
Ligand LMT B 101



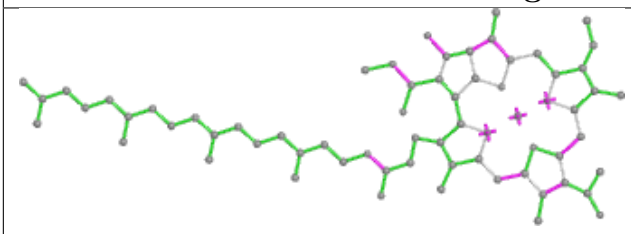
Ligand CRT 7 101



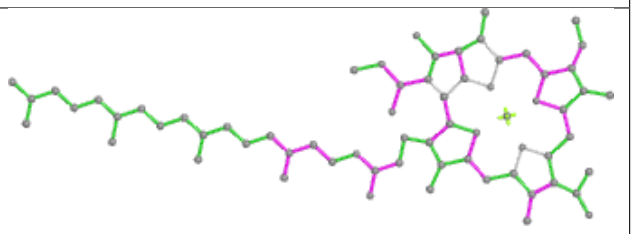
Ligand U10 M 410



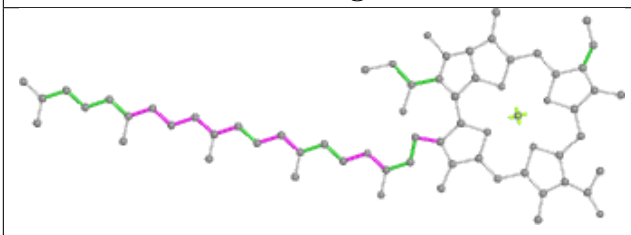
Ligand BCL N 101



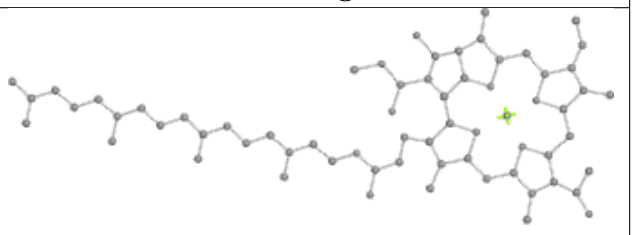
Bond lengths



Bond angles

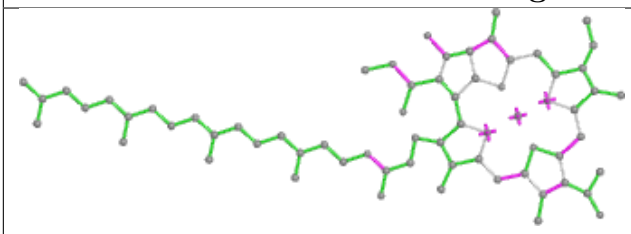


Torsions

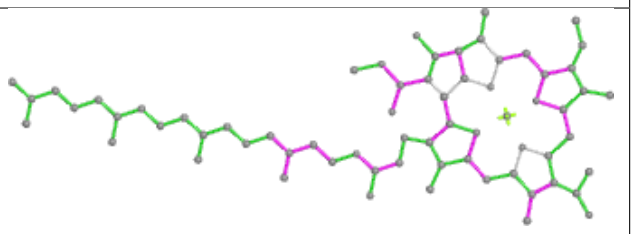


Rings

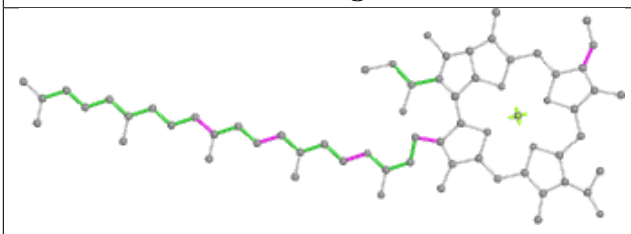
Ligand BCL 5 103



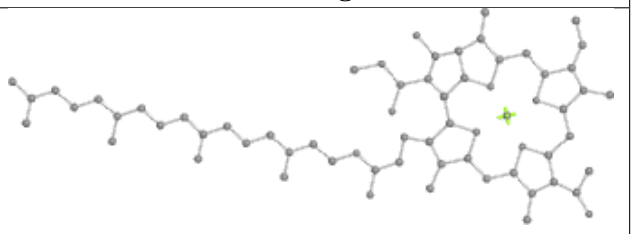
Bond lengths



Bond angles

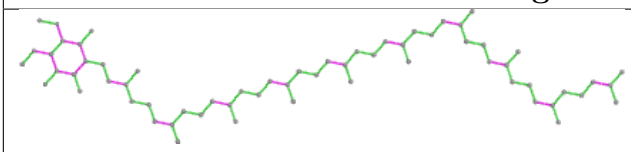


Torsions

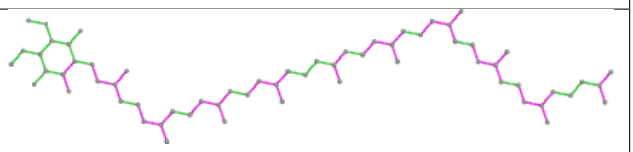


Rings

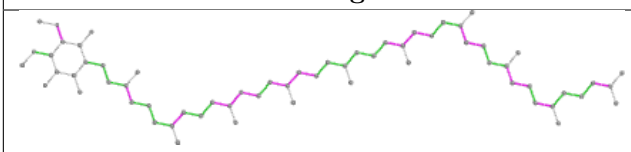
Ligand U10 L 307



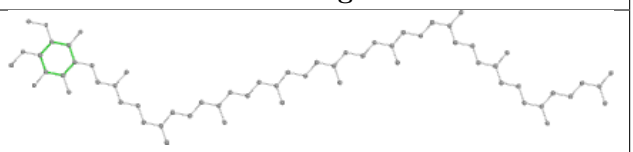
Bond lengths



Bond angles

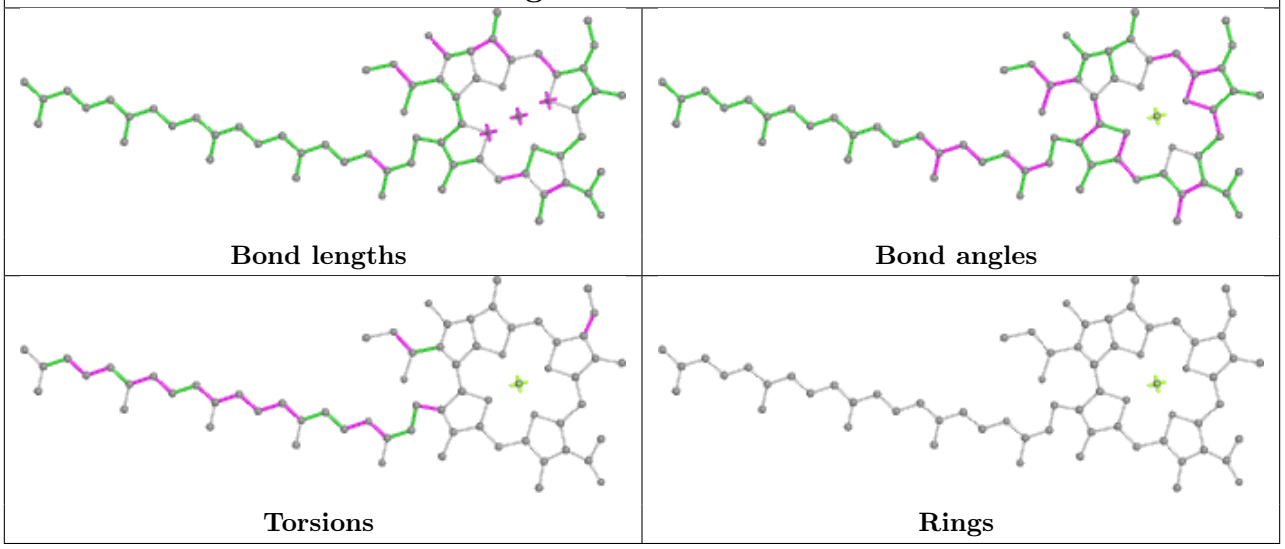


Torsions

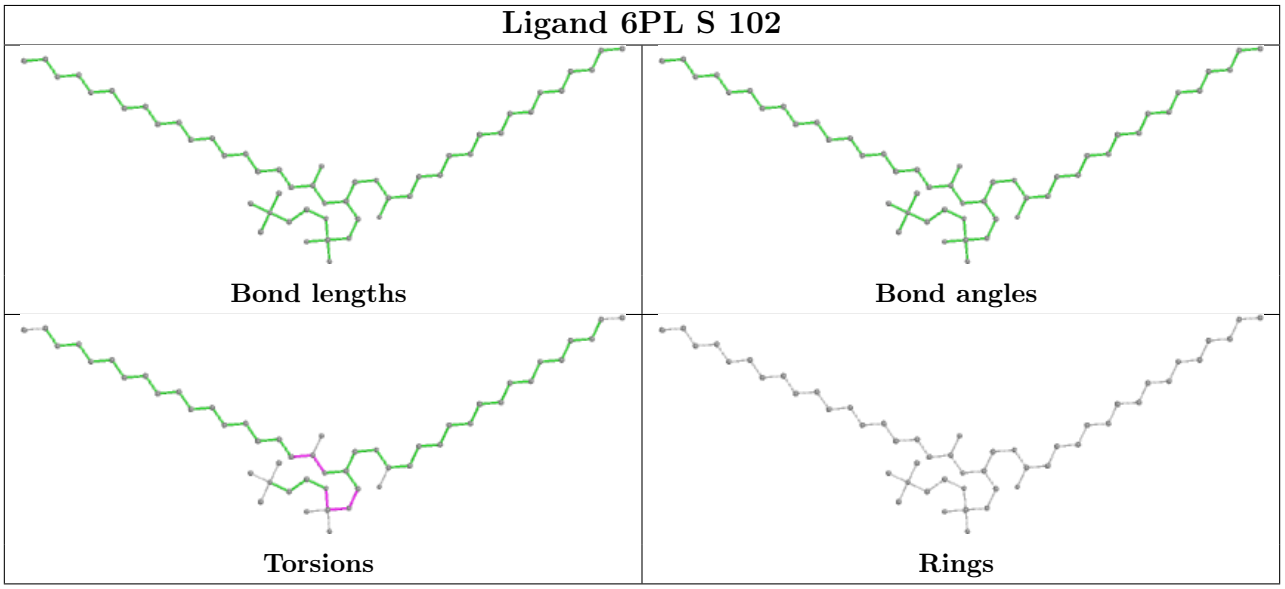


Rings

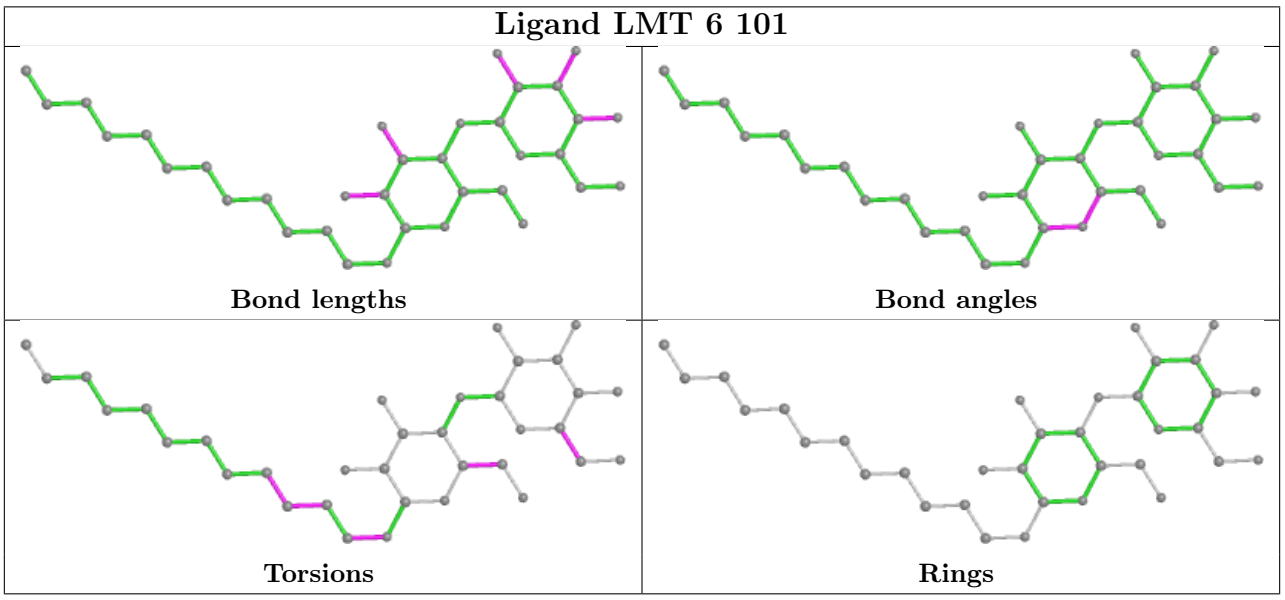
Ligand BCL V 101



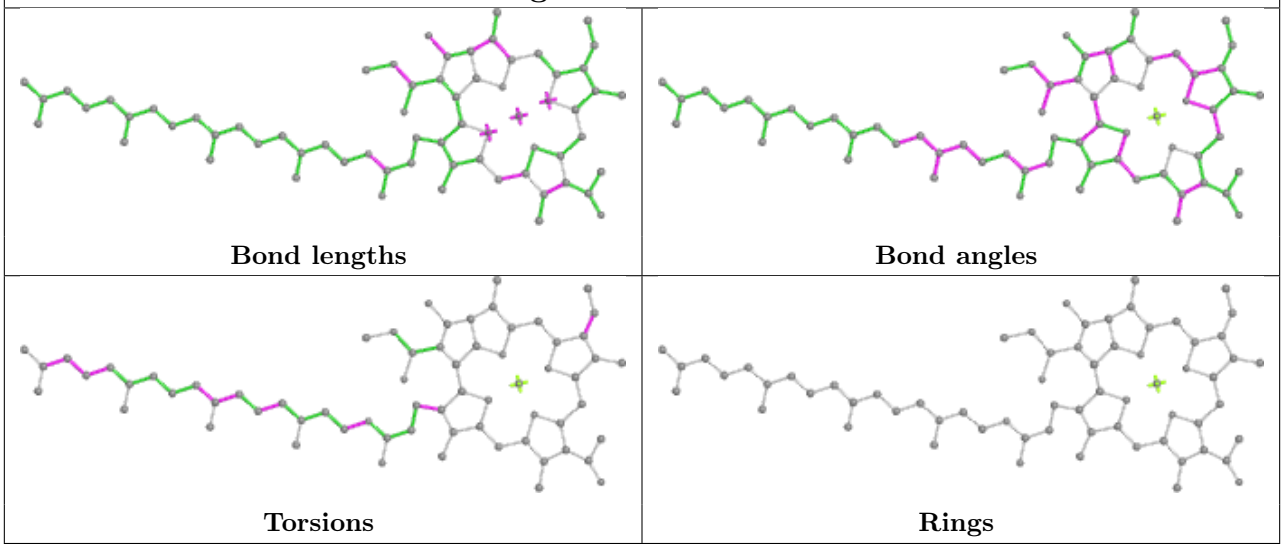
Ligand 6PL S 102



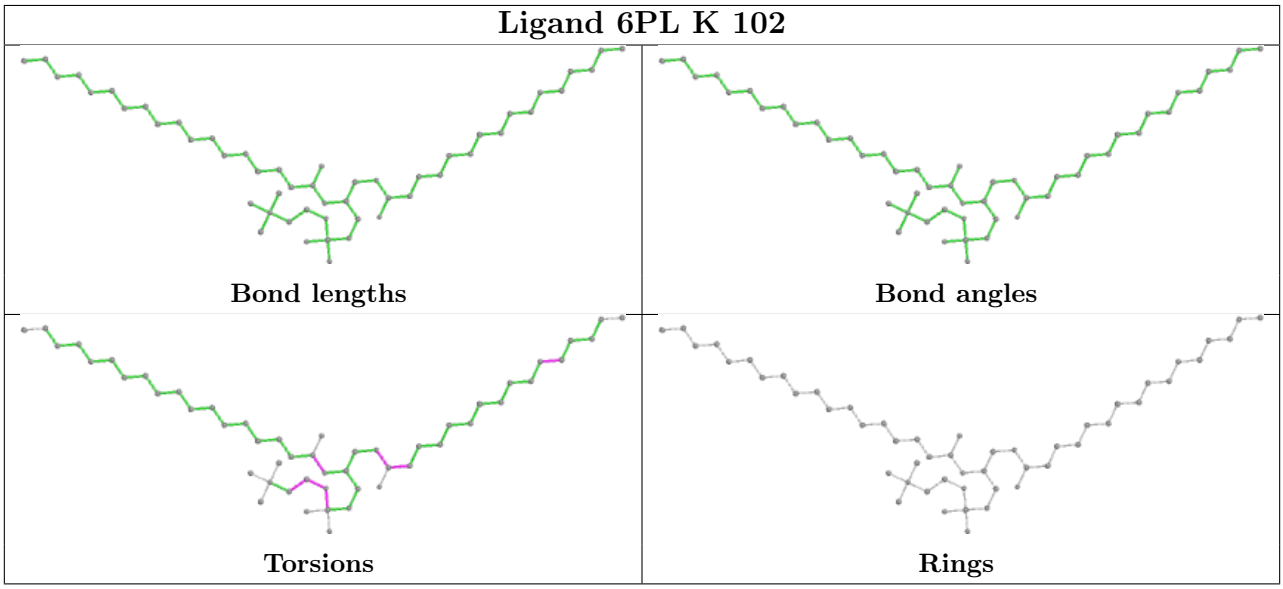
Ligand LMT 6 101



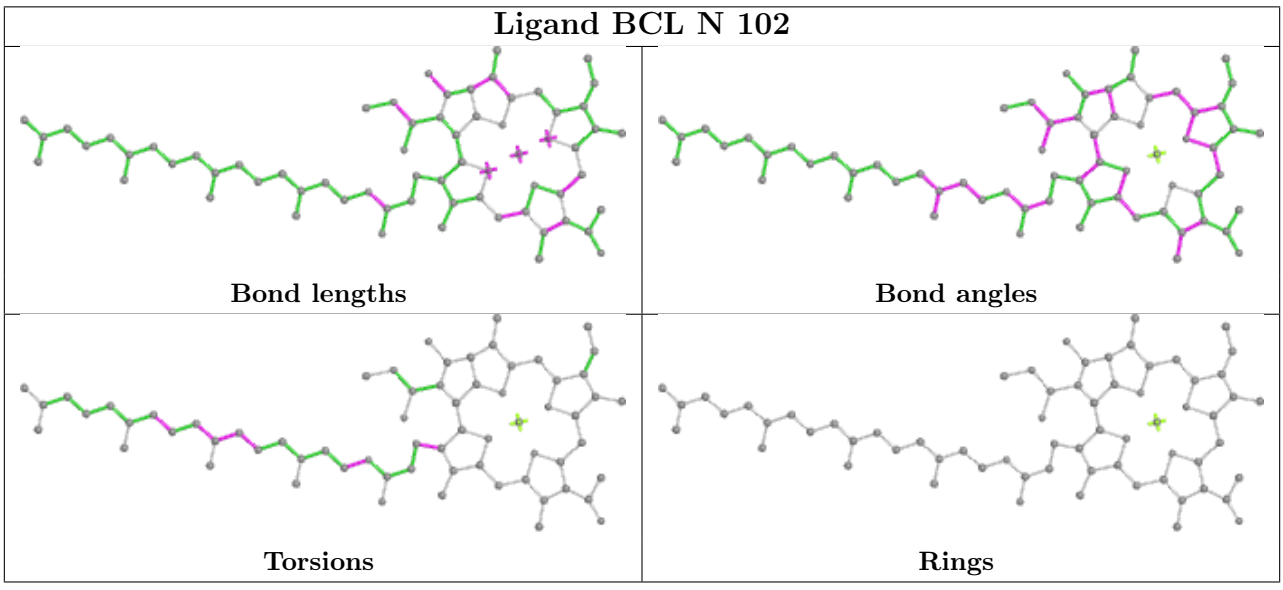
Ligand BCL 0 100



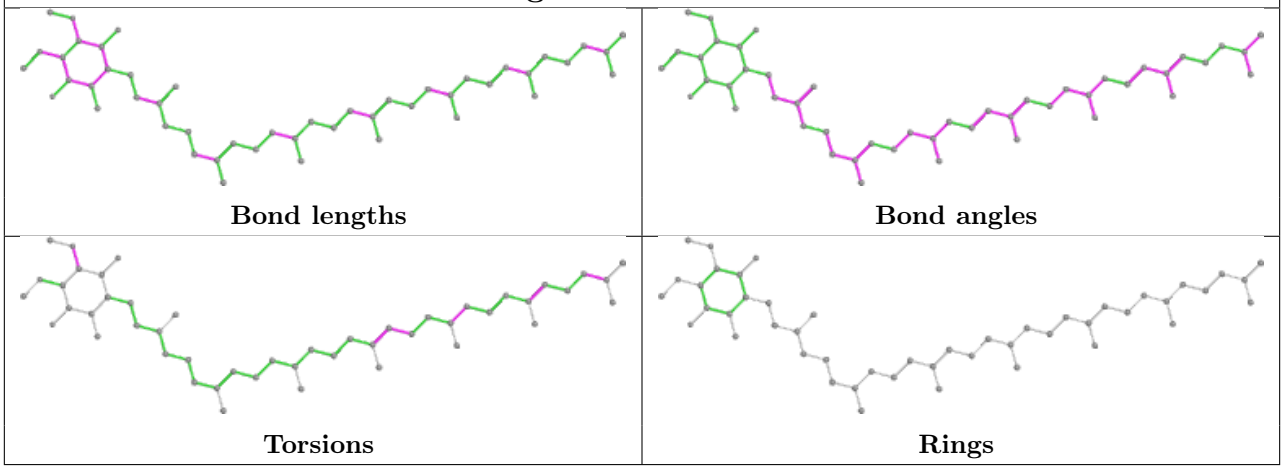
Ligand 6PL K 102



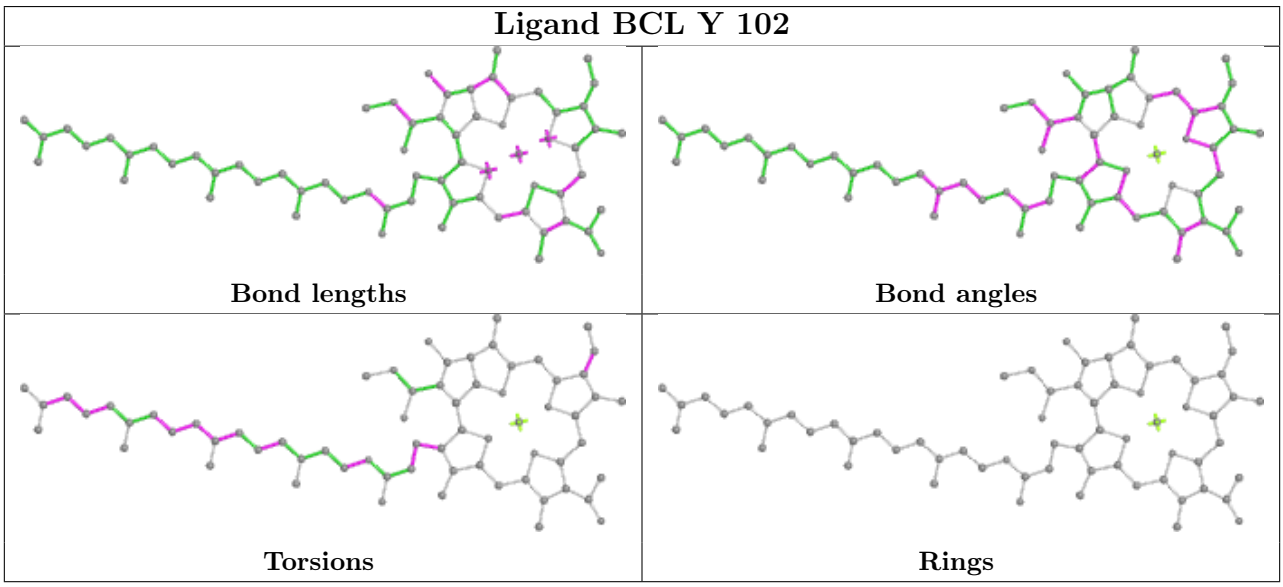
Ligand BCL N 102



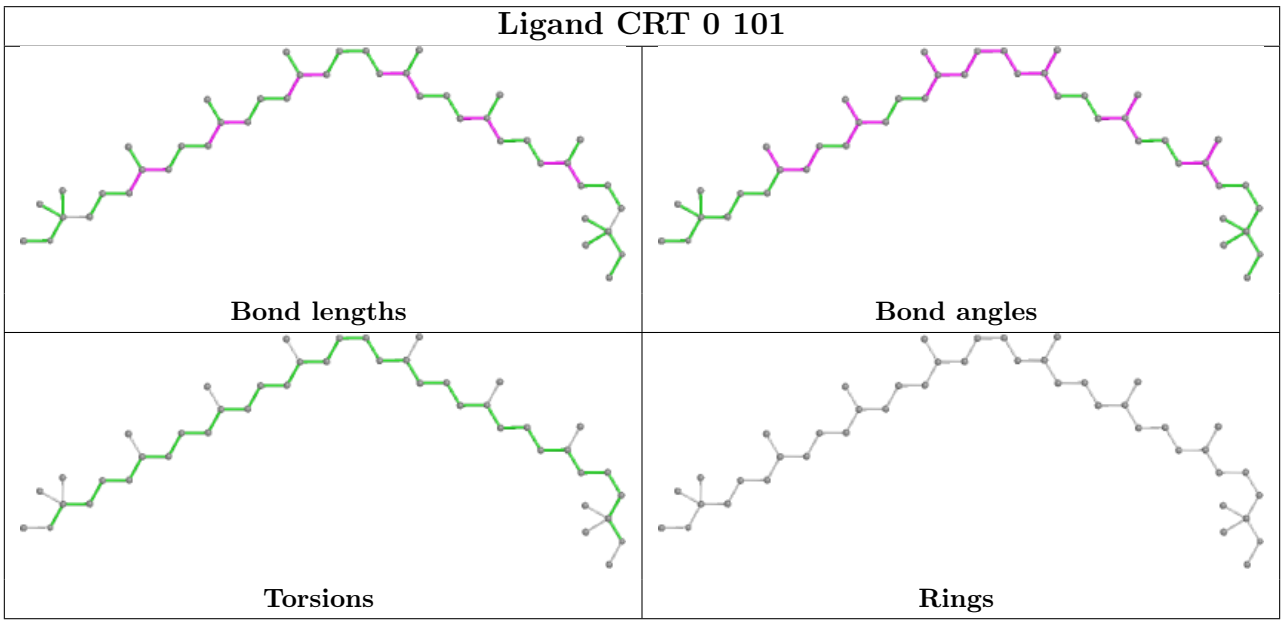
Ligand U10 M 406



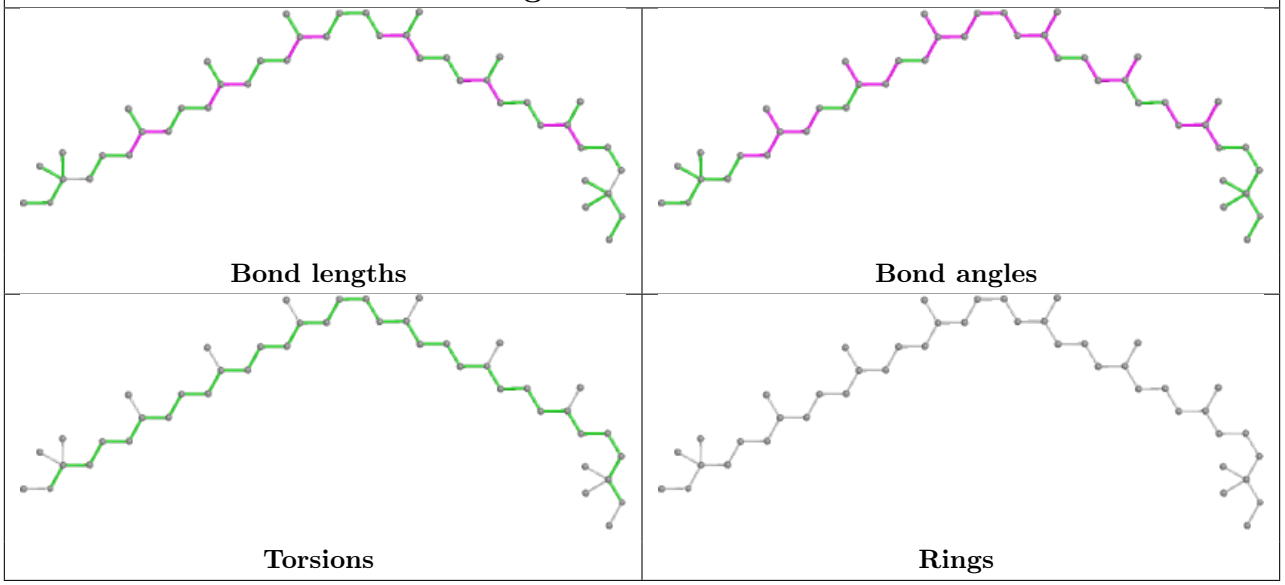
Ligand BCL Y 102



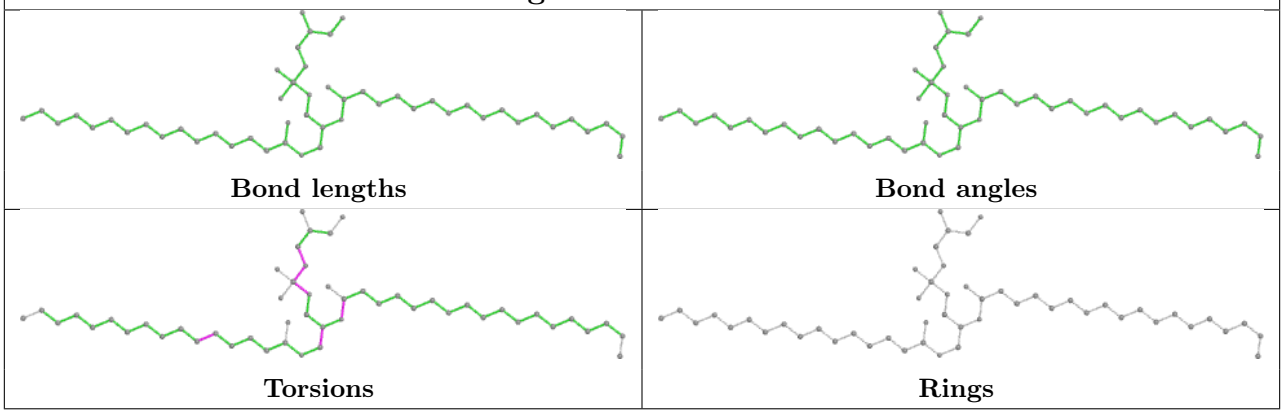
Ligand CRT 0 101



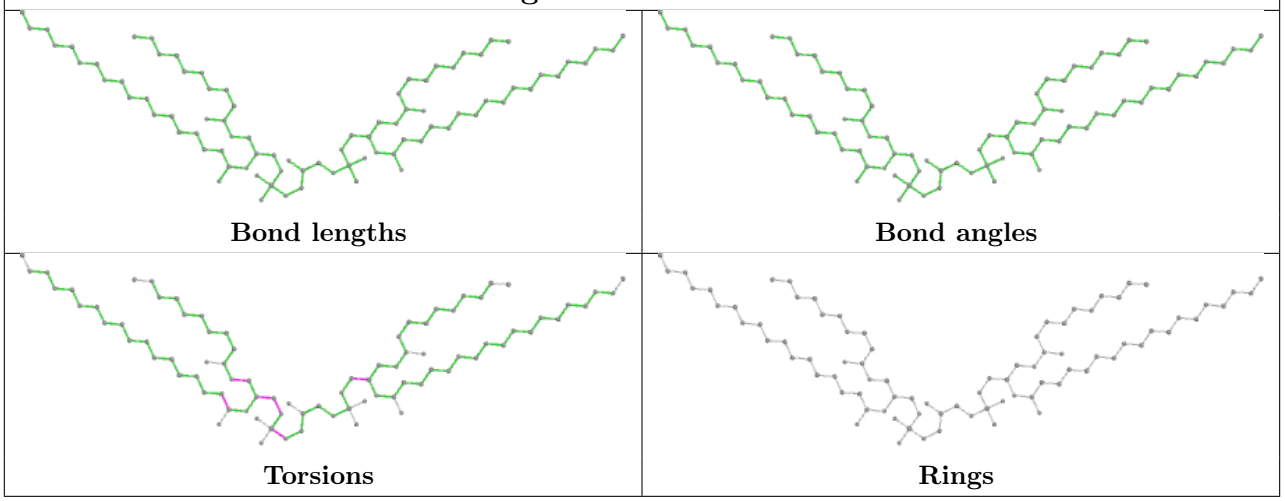
Ligand CRT G 102



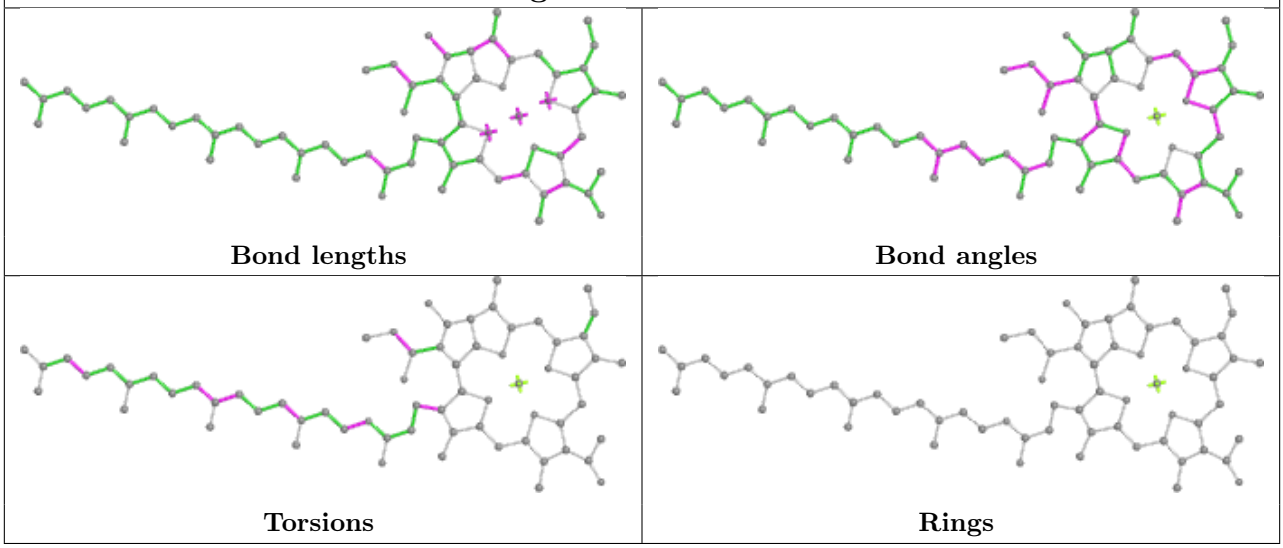
Ligand PGT 9 101



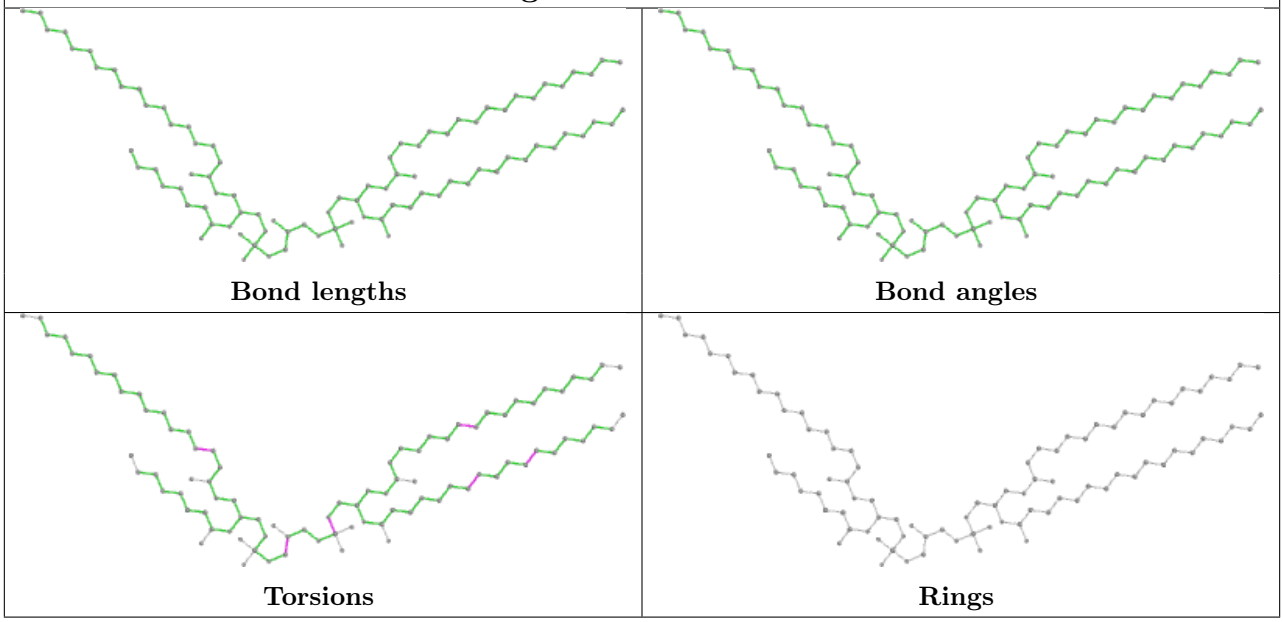
Ligand CDL M 409



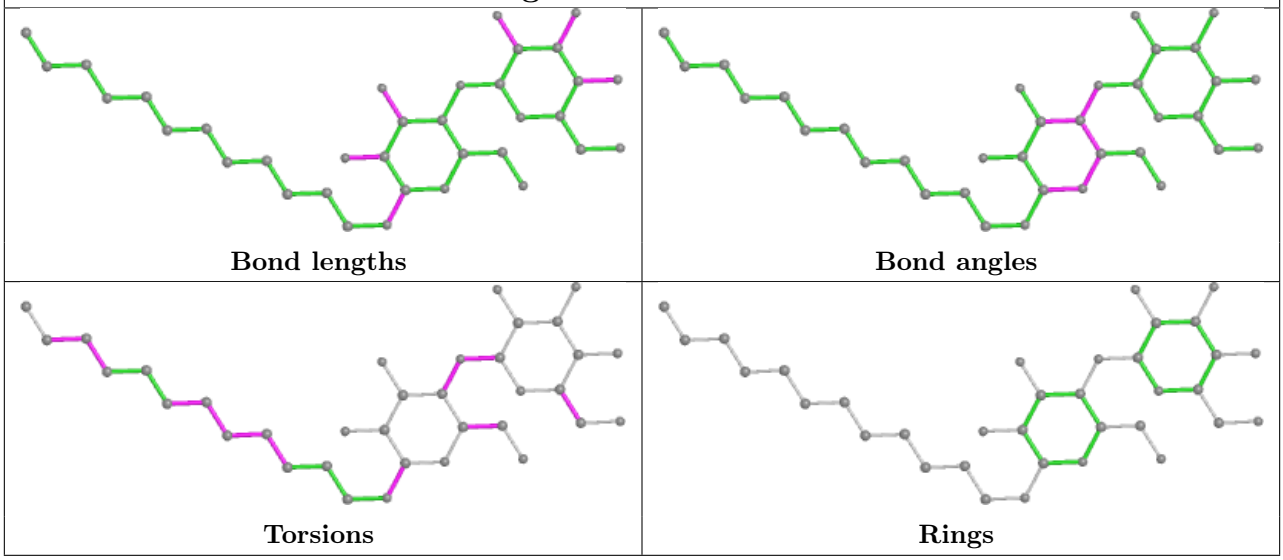
Ligand BCL 1 102



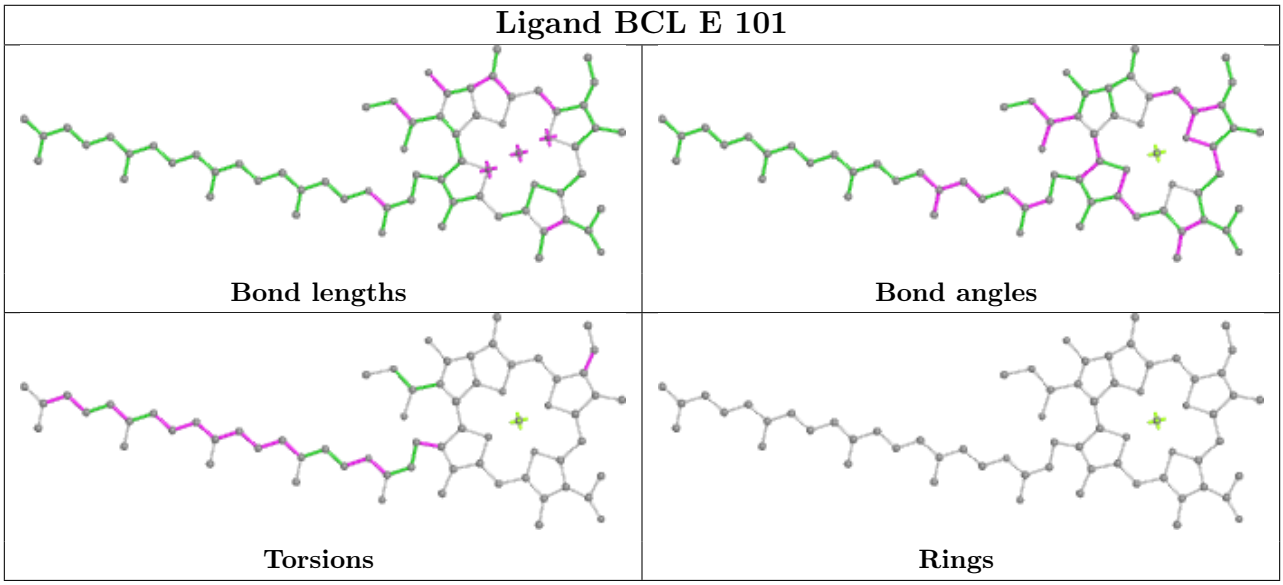
Ligand CDL M 408



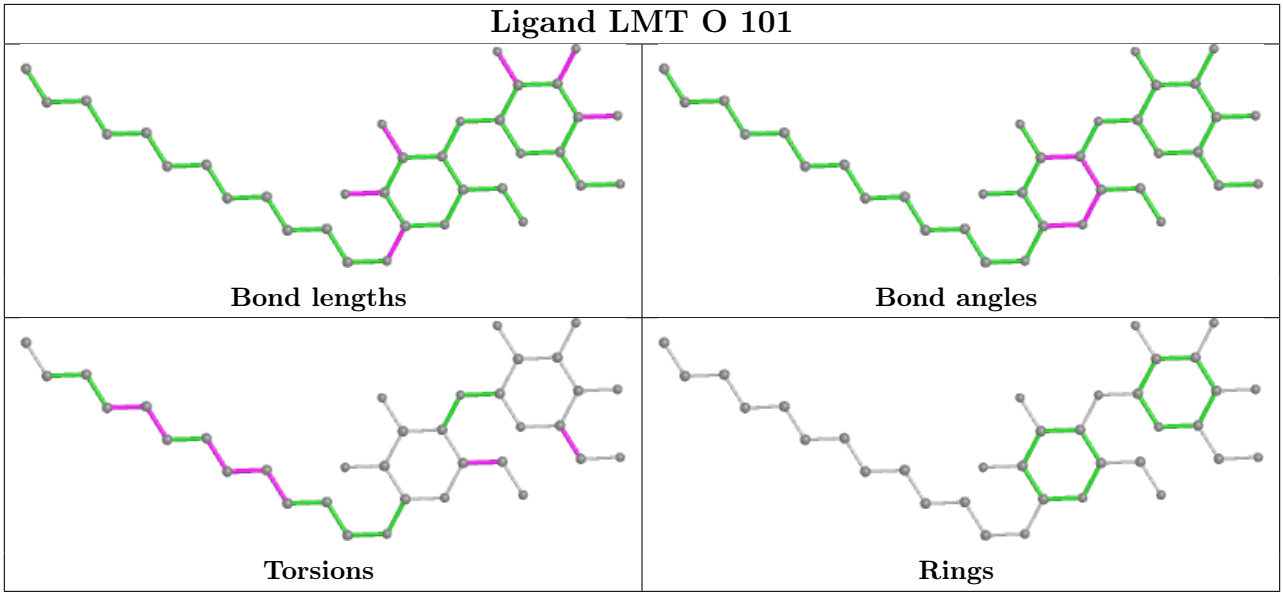
Ligand LMT R 102



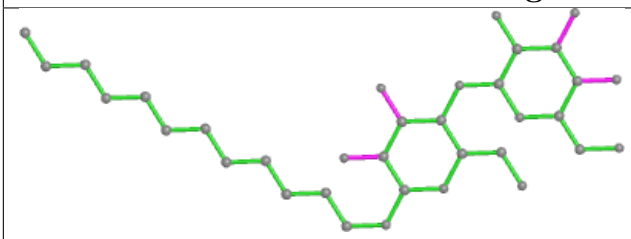
Ligand BCL E 101



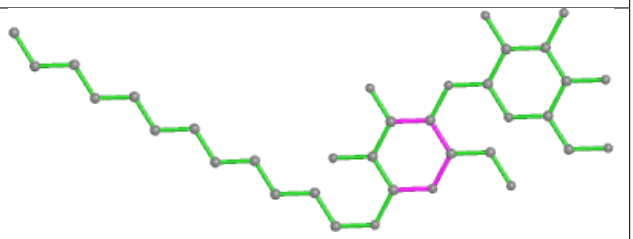
Ligand LMT O 101



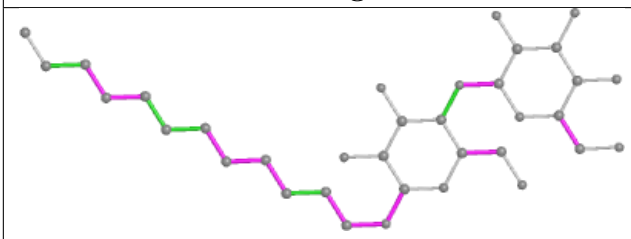
Ligand LMT 2 101



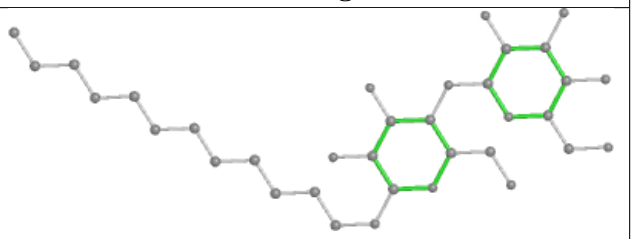
Bond lengths



Bond angles

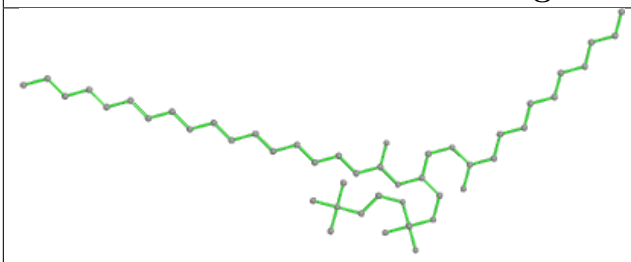


Torsions

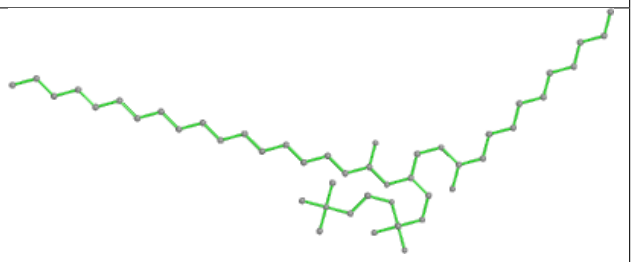


Rings

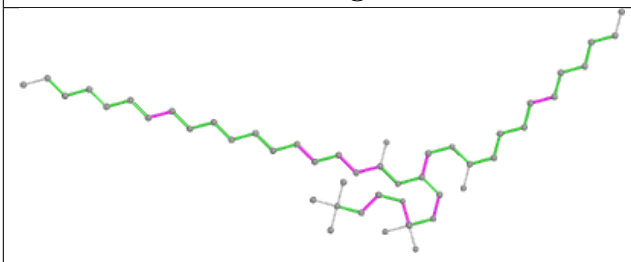
Ligand 6PL 2 103



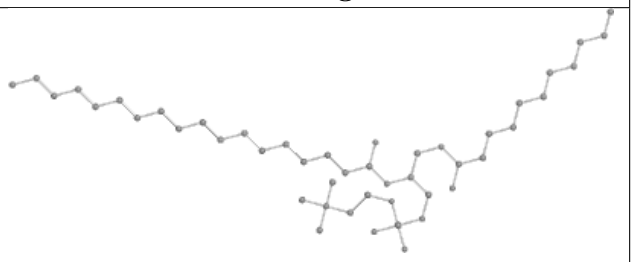
Bond lengths



Bond angles

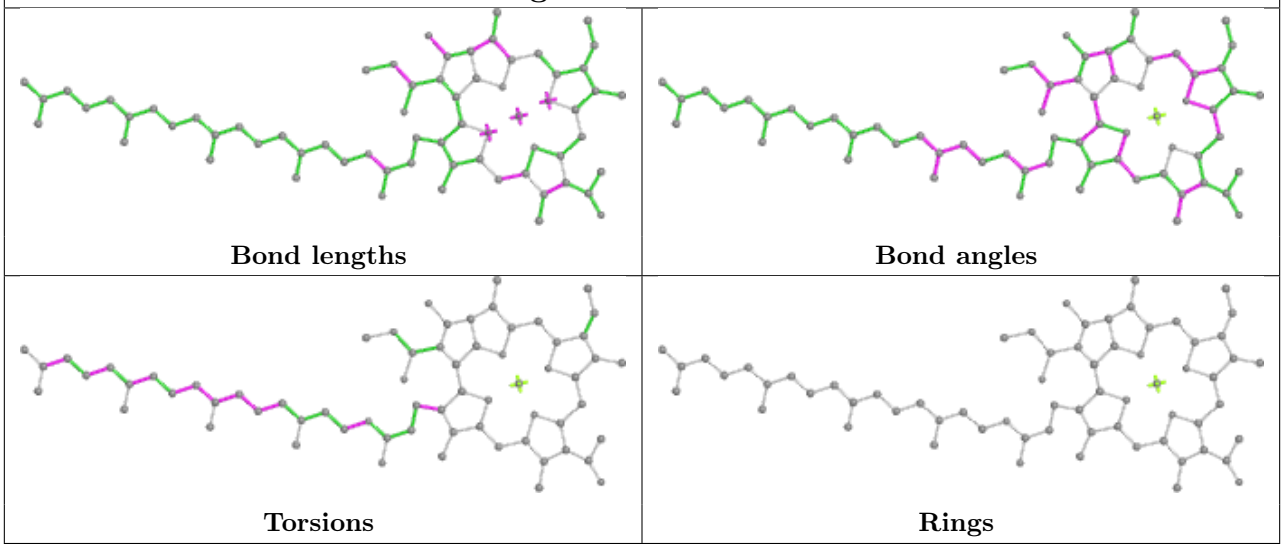


Torsions

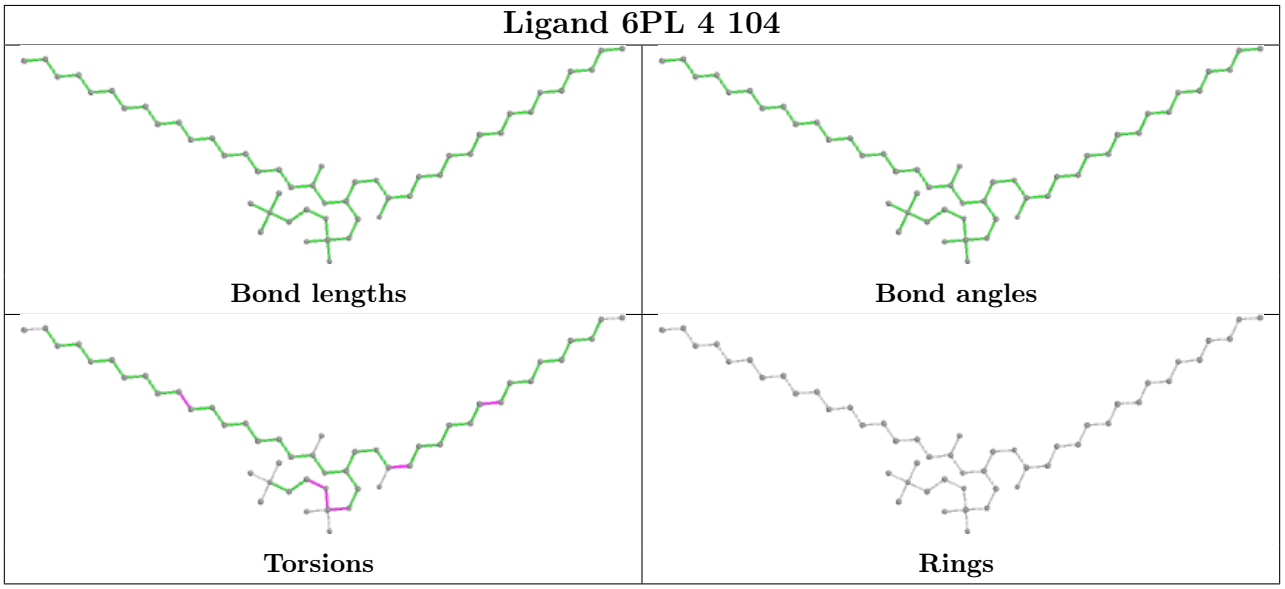


Rings

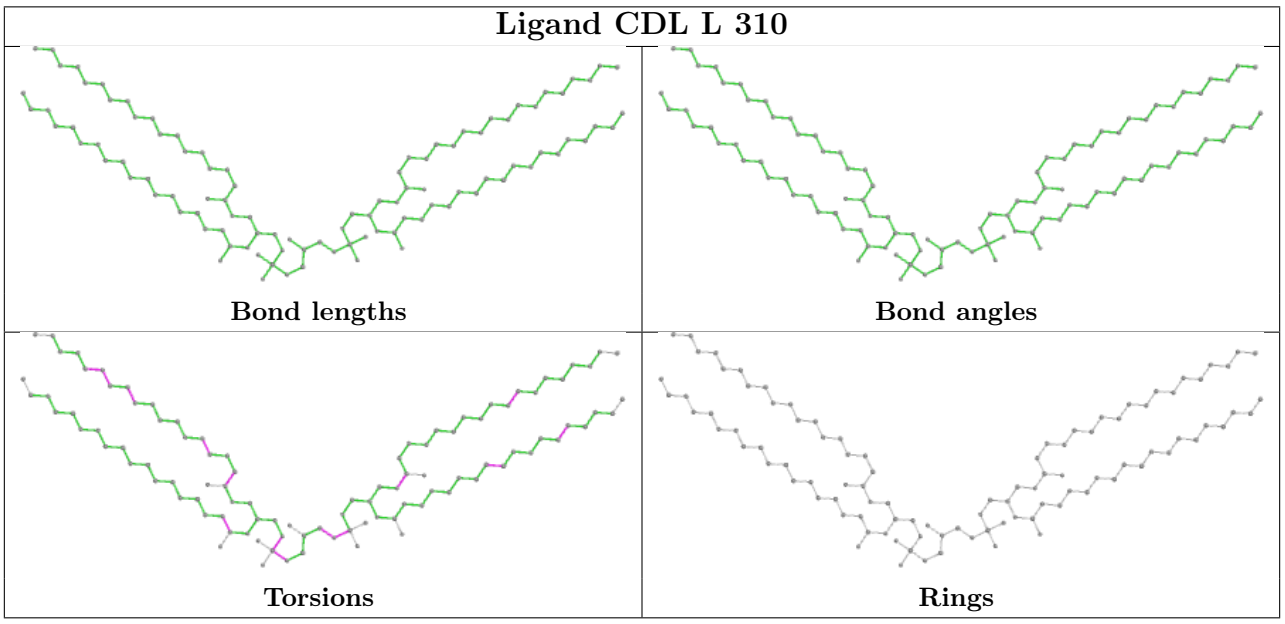
Ligand BCL 7 104



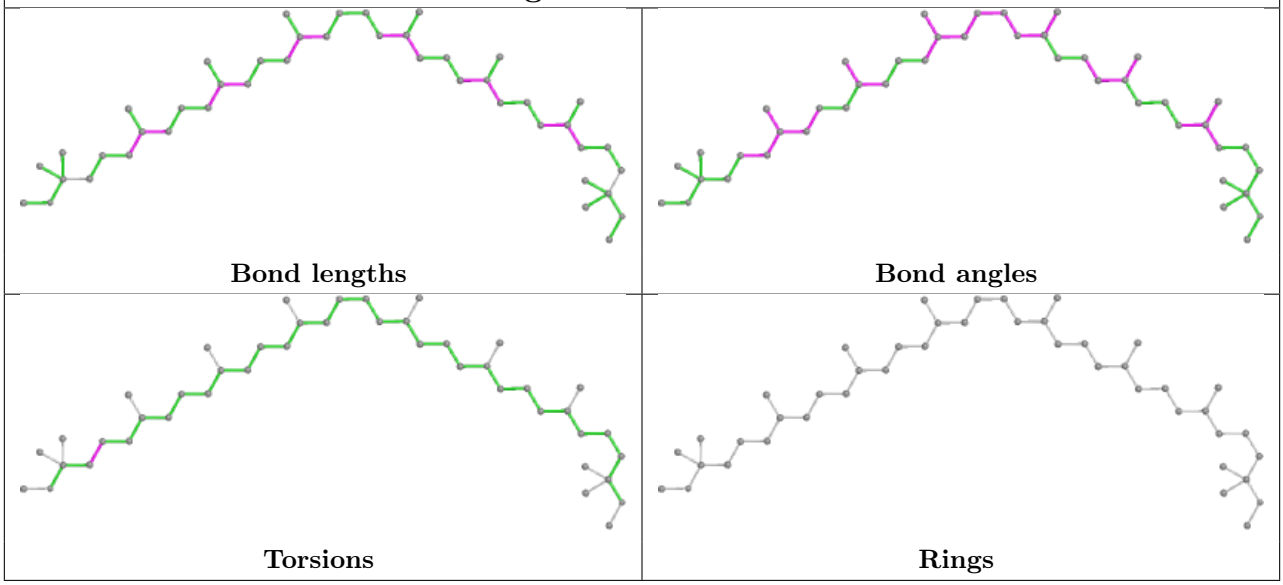
Ligand 6PL 4 104



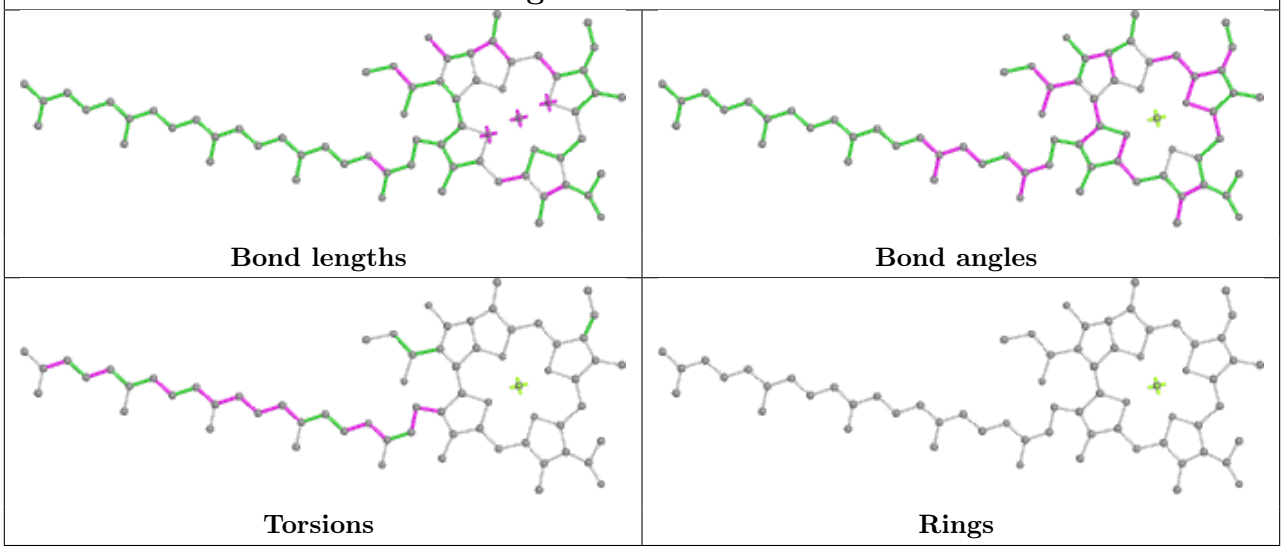
Ligand CDL L 310



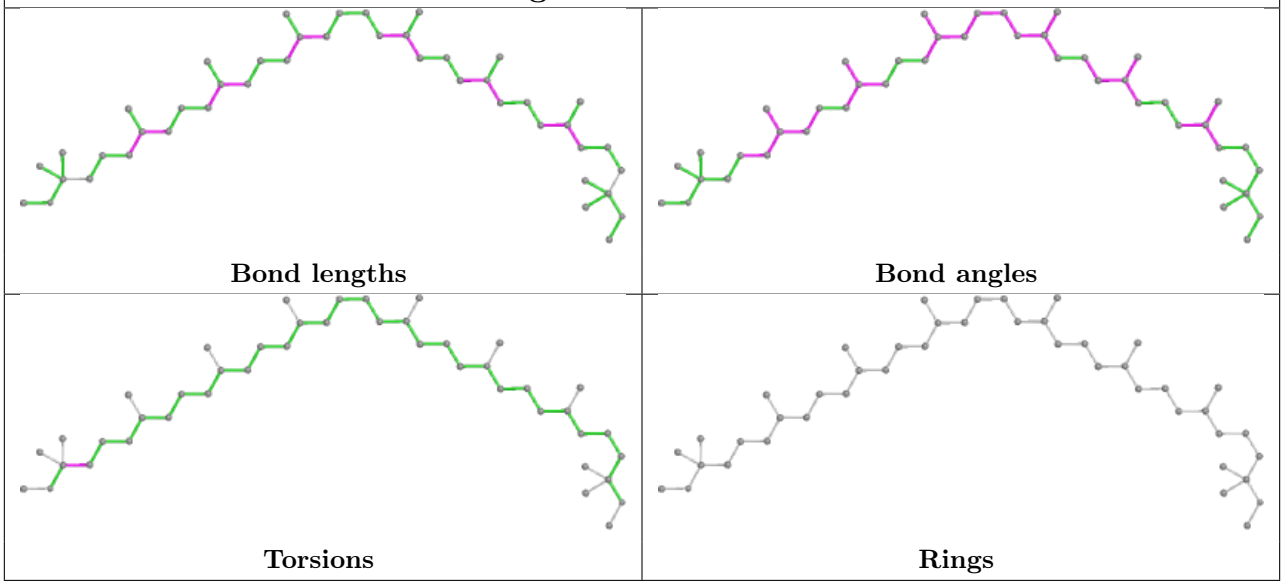
Ligand CRT O 102



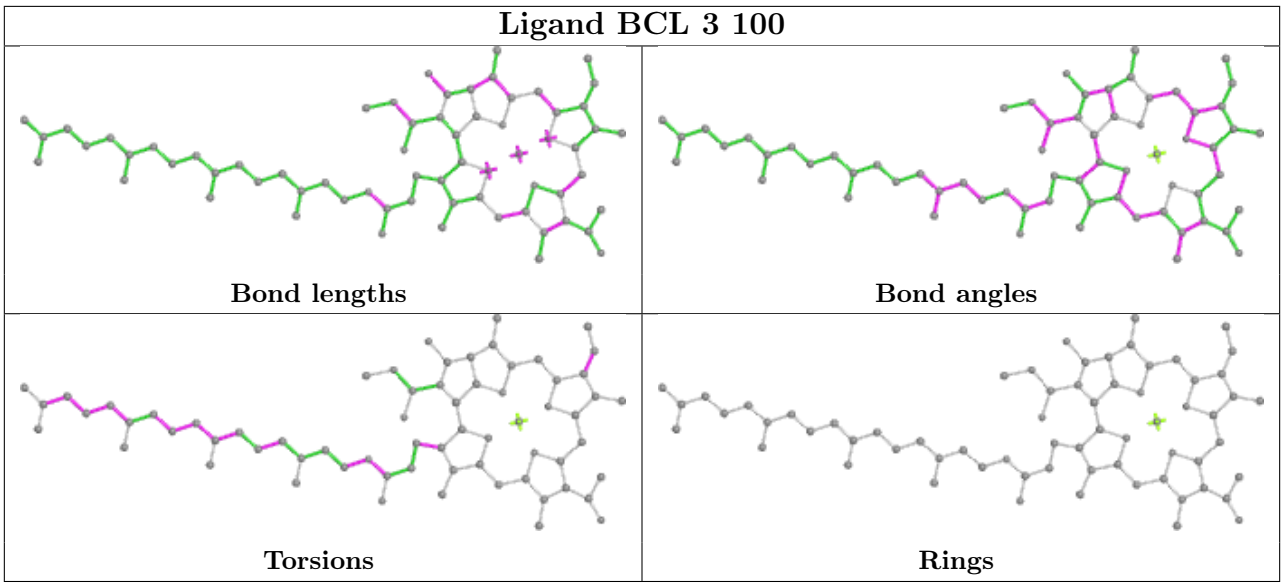
Ligand BCL T 100



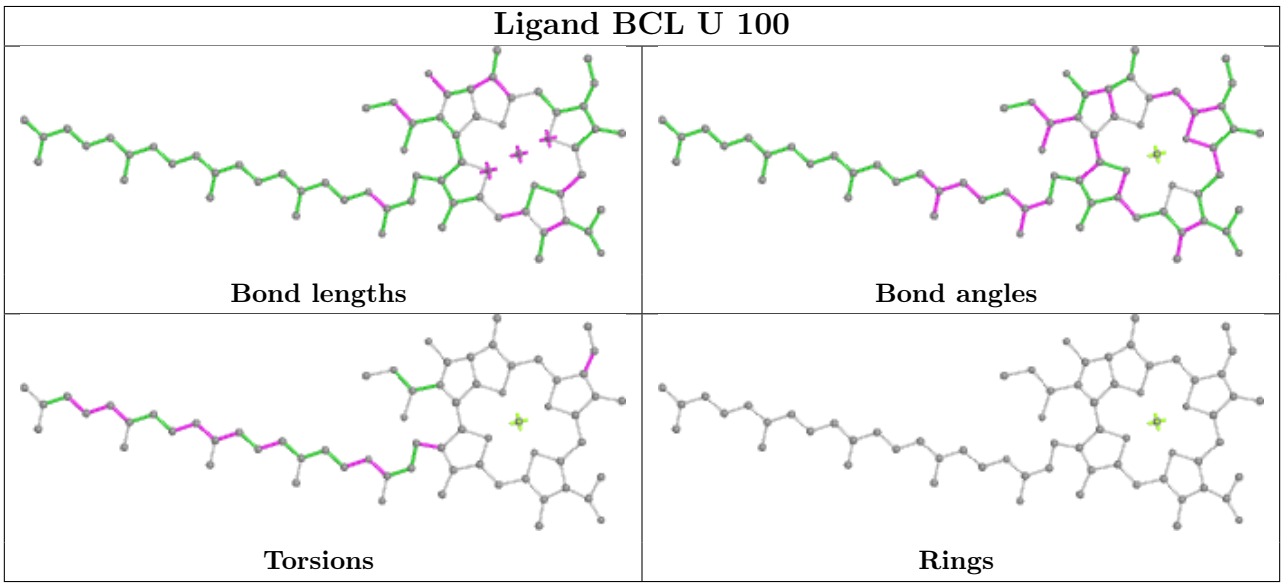
Ligand CRT 2 102



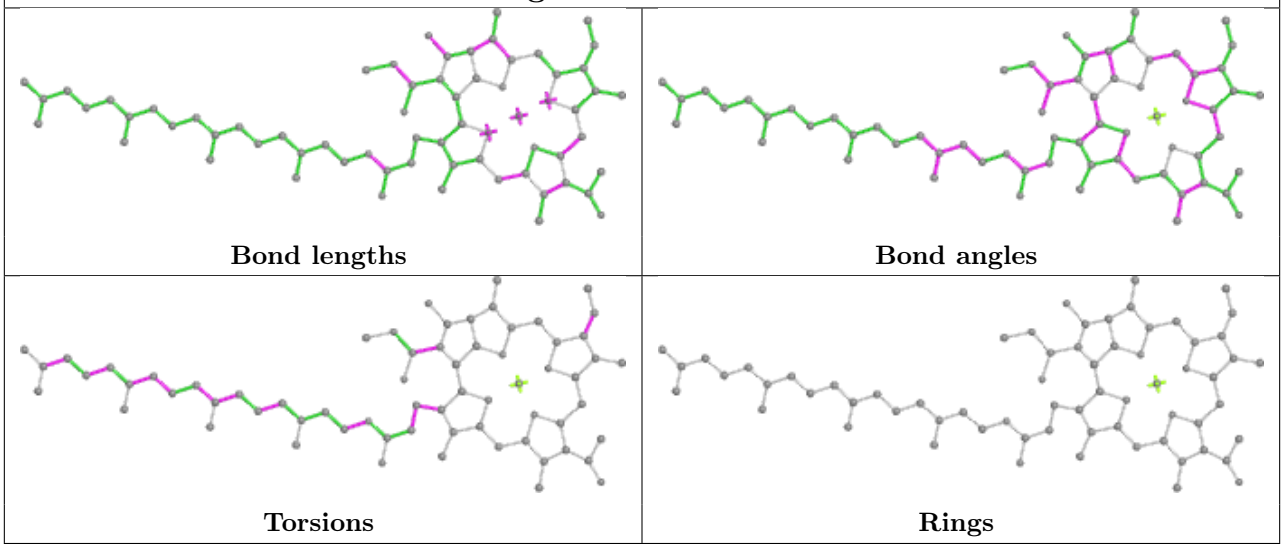
Ligand BCL 3 100



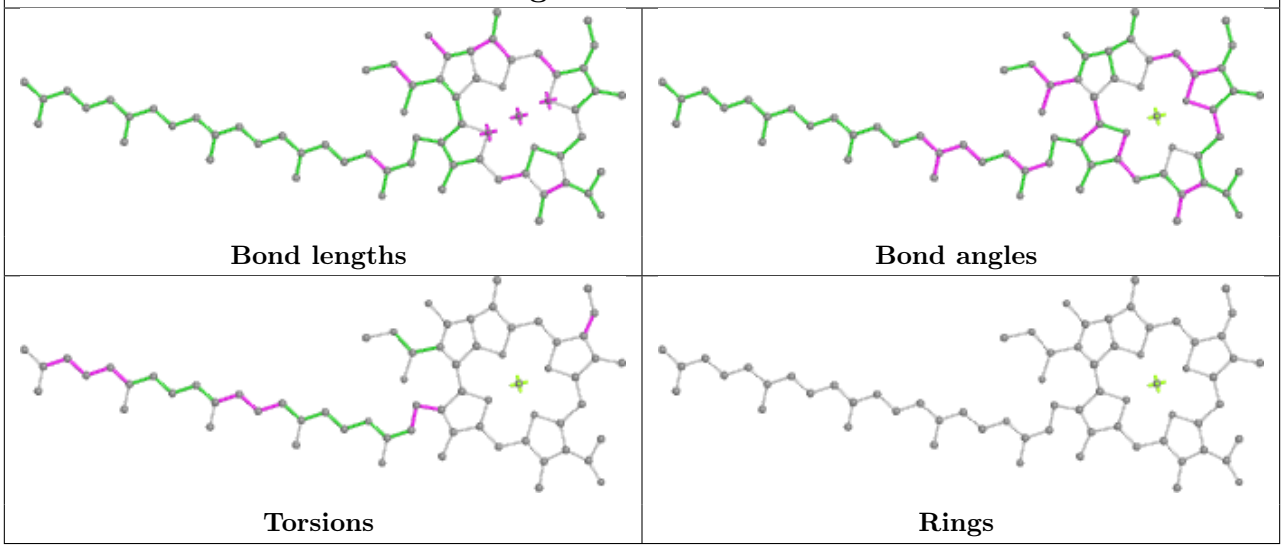
Ligand BCL U 100



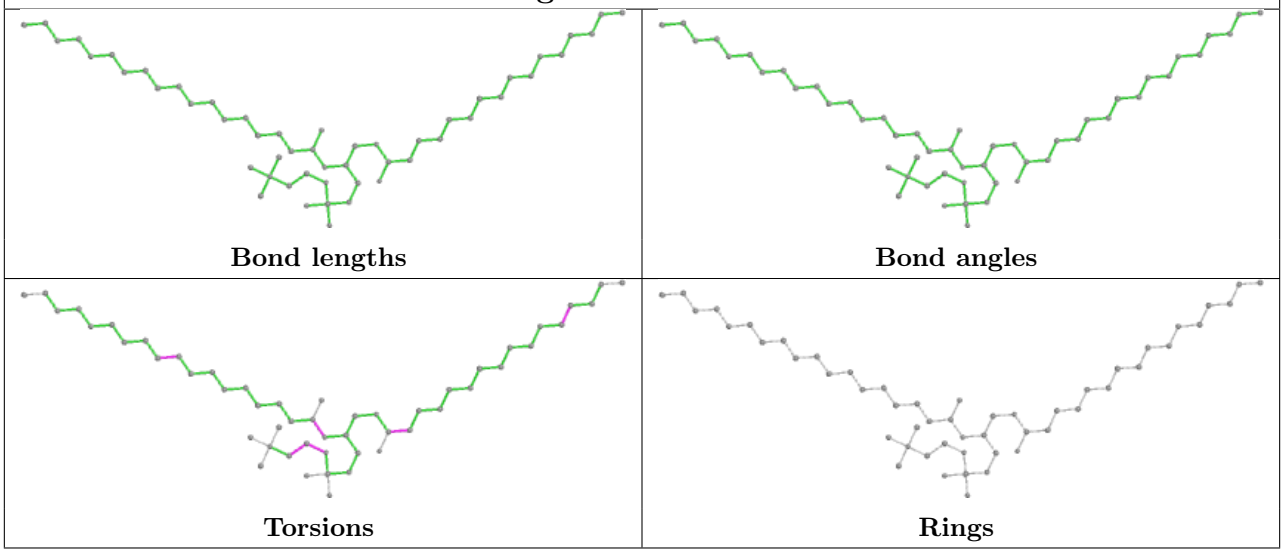
Ligand BCL F 102



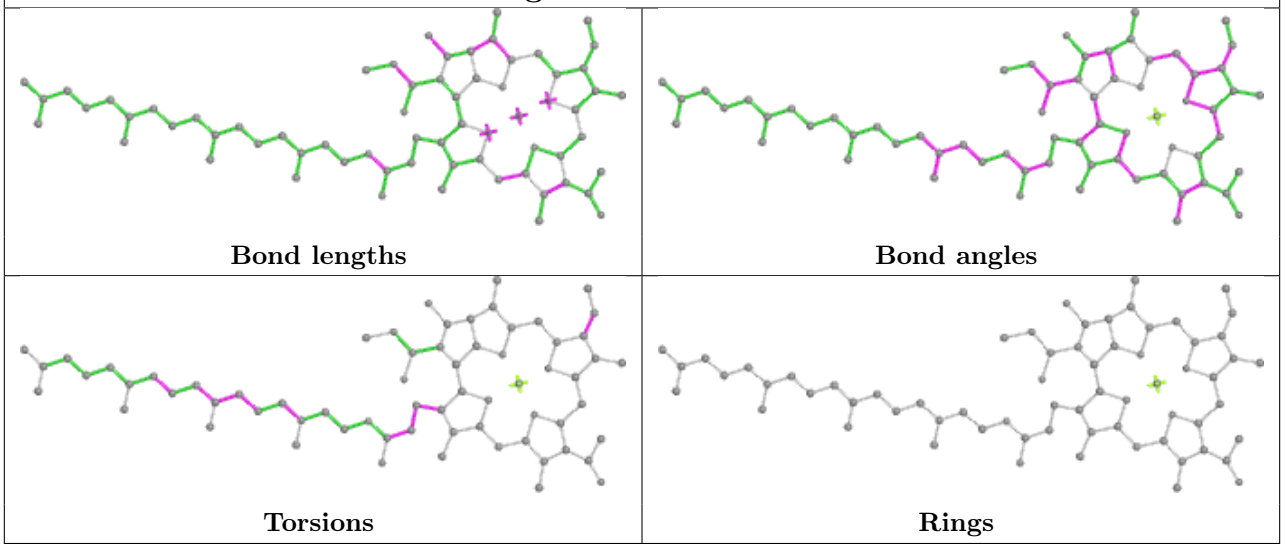
Ligand BCL J 101



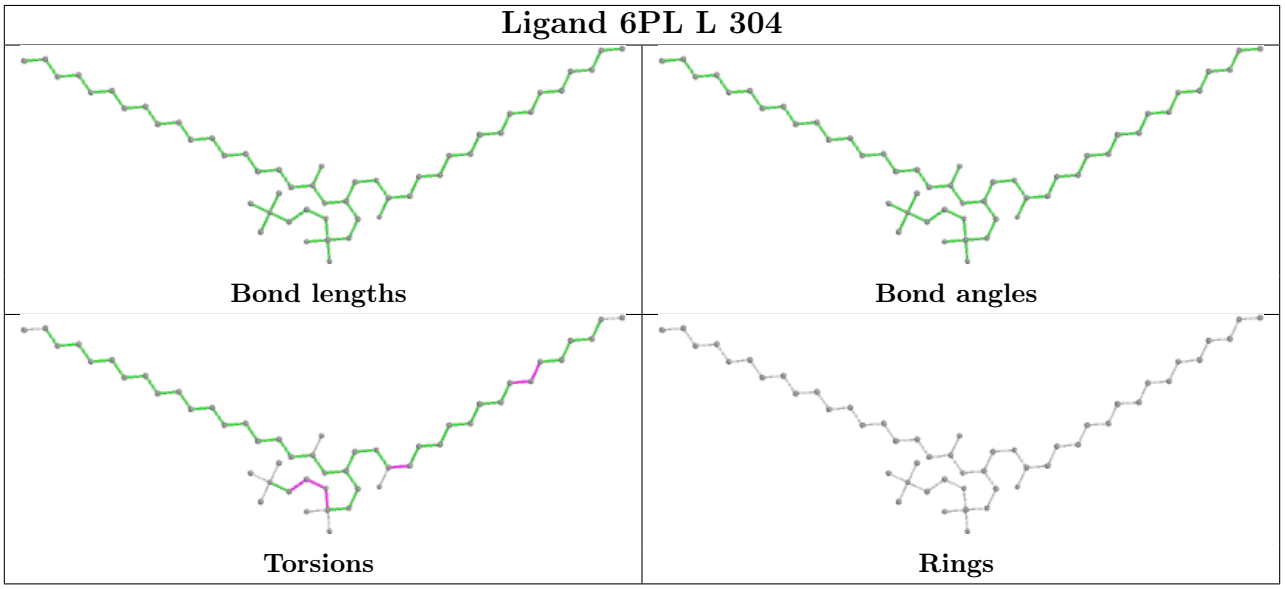
Ligand 6PL I 103



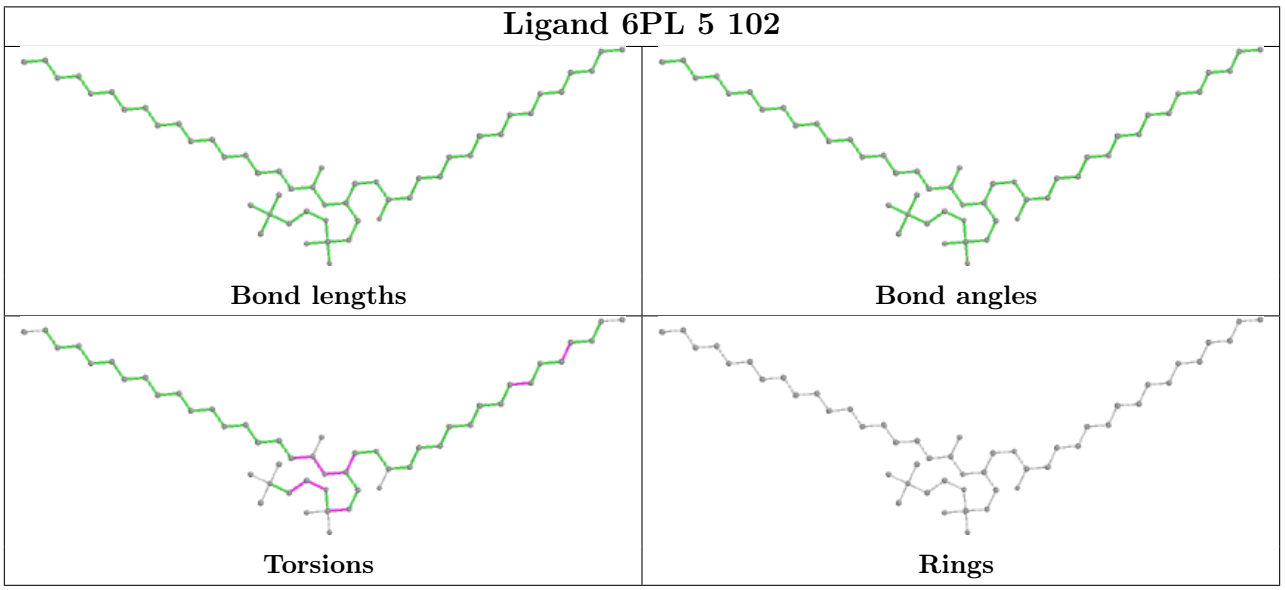
Ligand BCL G 103



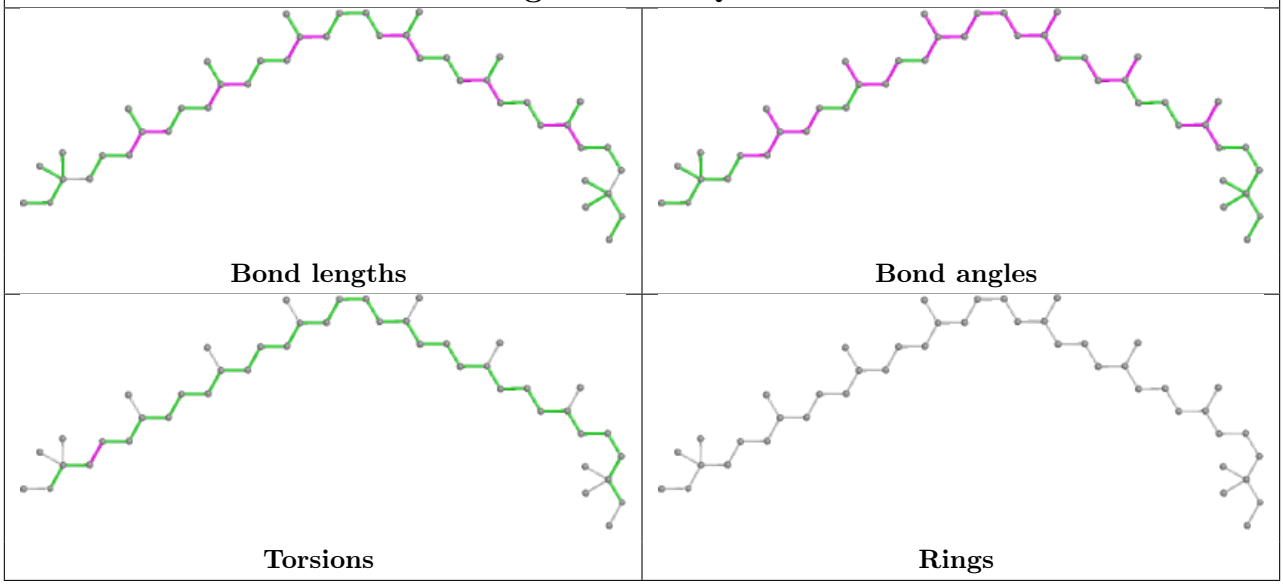
Ligand 6PL L 304



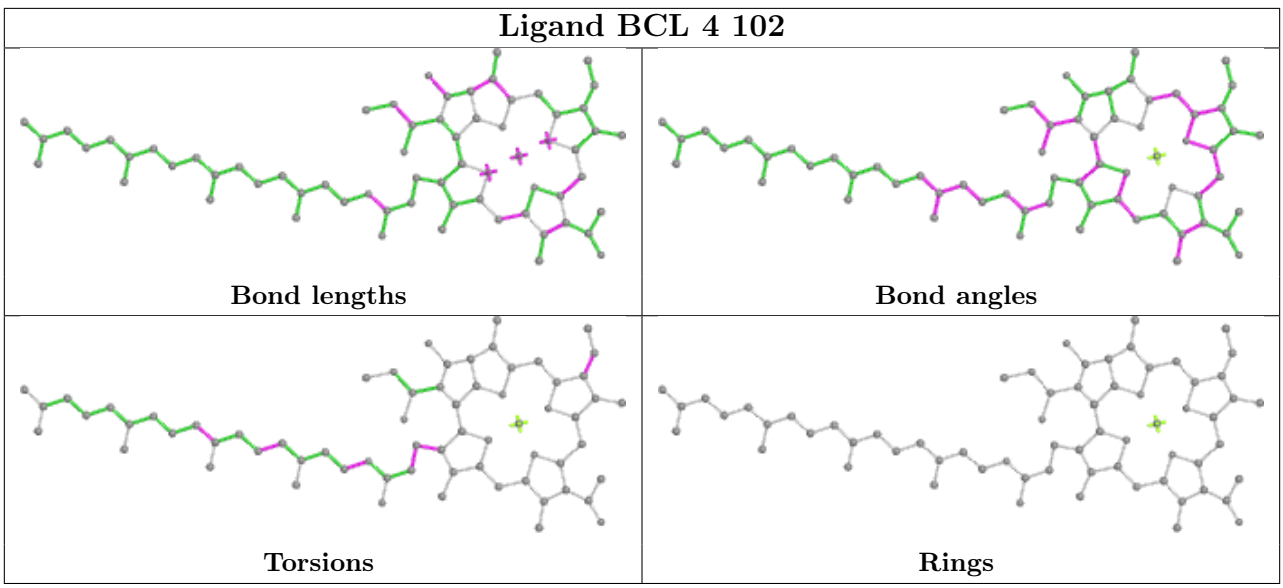
Ligand 6PL 5 102



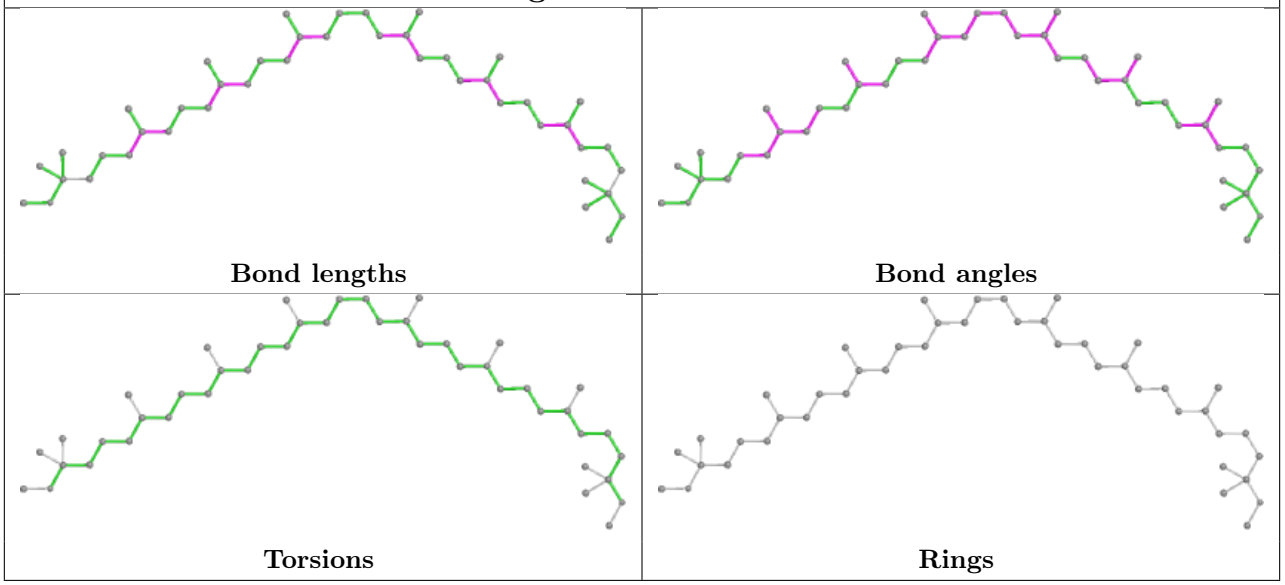
Ligand CRT Q 101



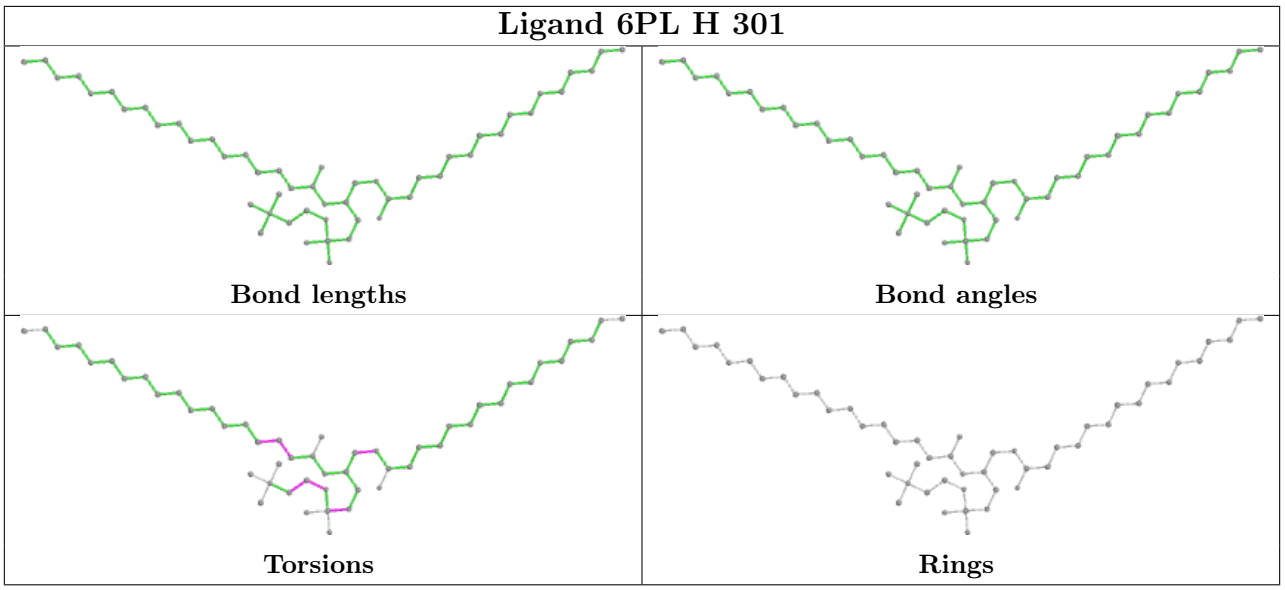
Ligand BCL 4 102



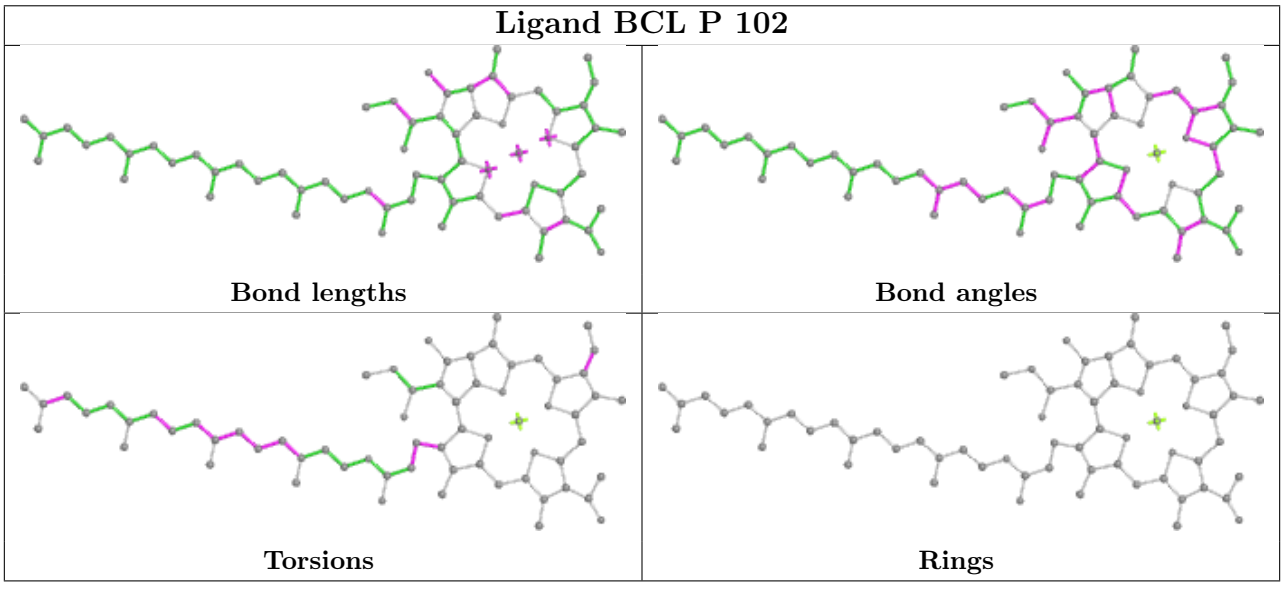
Ligand CRT S 101



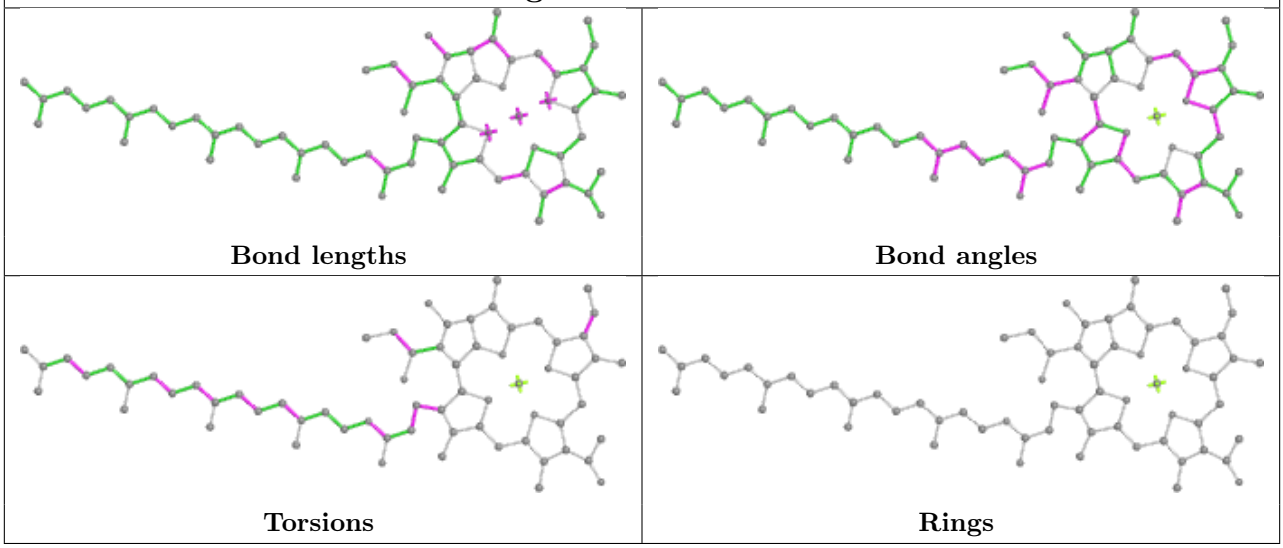
Ligand 6PL H 301



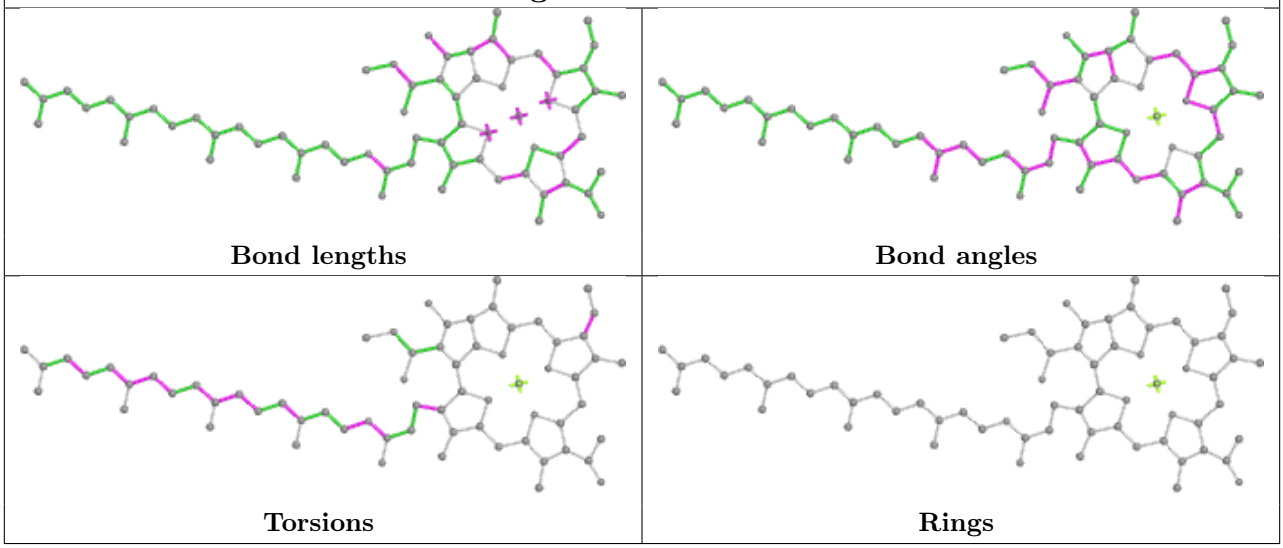
Ligand BCL P 102



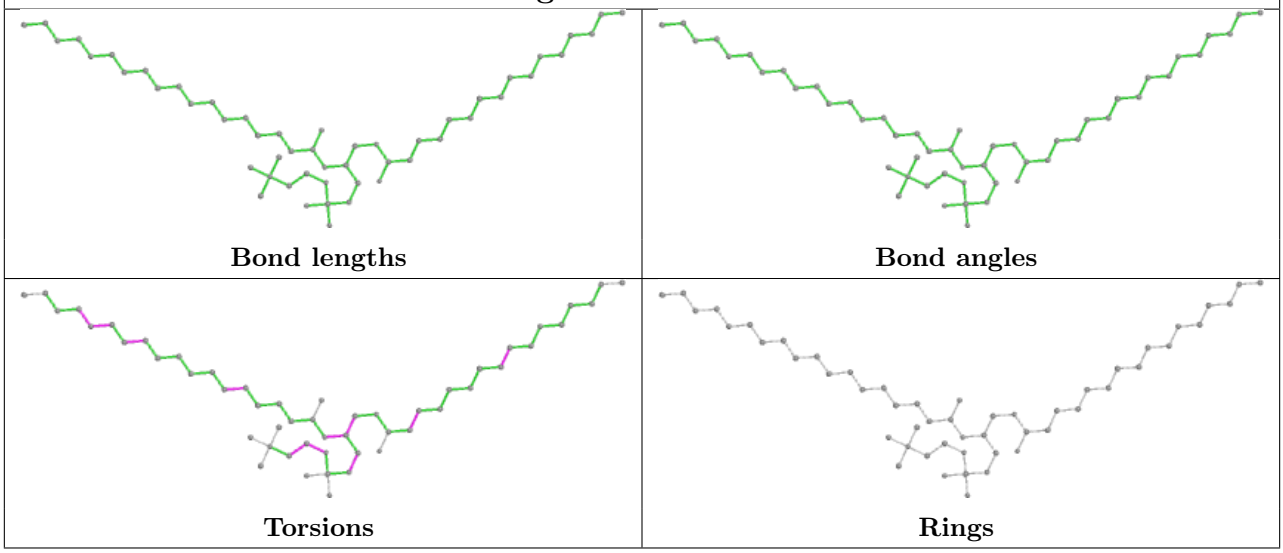
Ligand BCL R 101



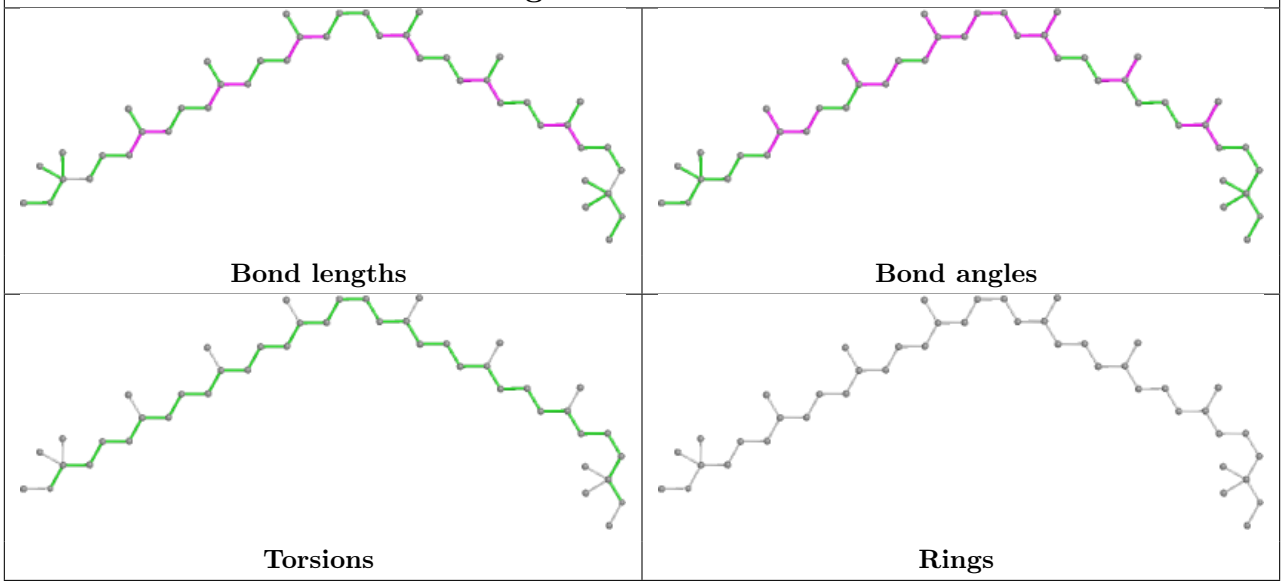
Ligand BCL 5 101



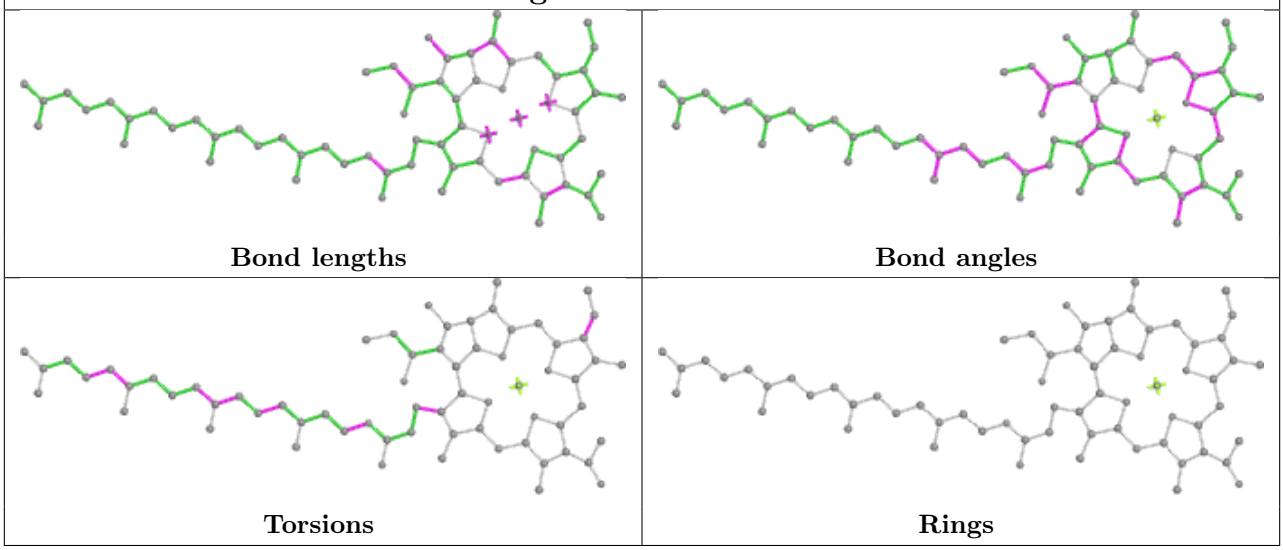
Ligand 6PL I 101



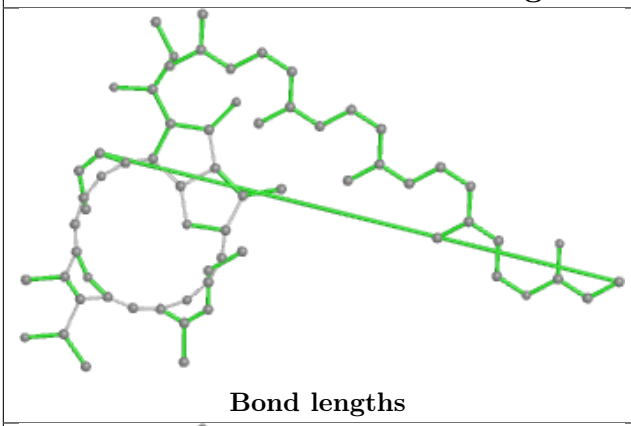
Ligand CRT B 103



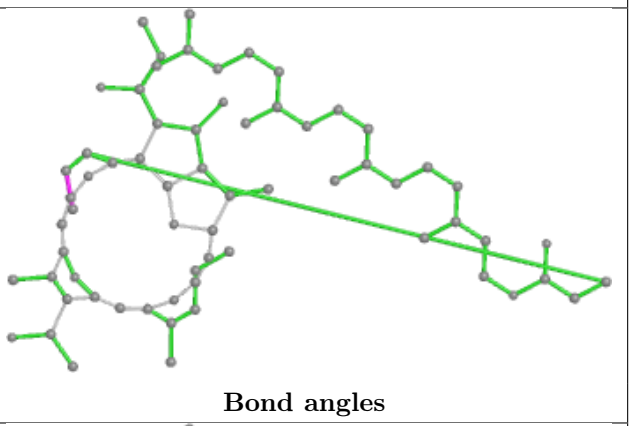
Ligand BCL J 103



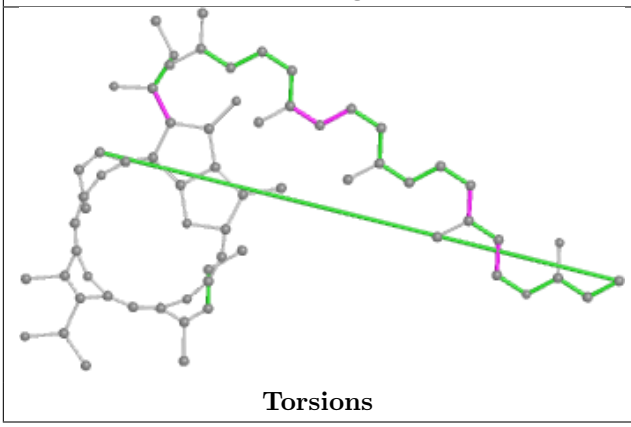
Ligand BPH L 302



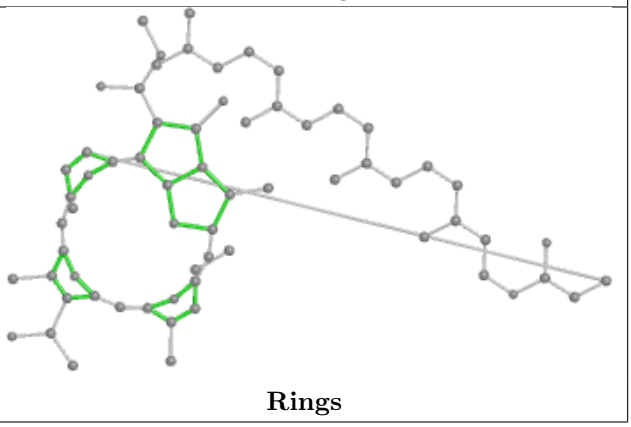
Bond lengths



Bond angles

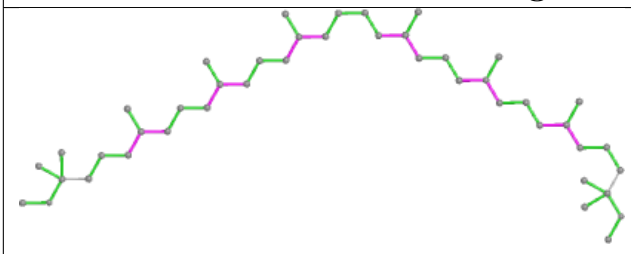


Torsions

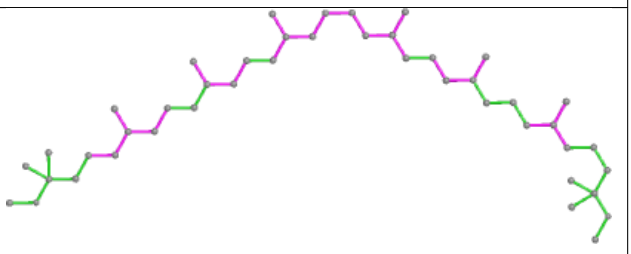


Rings

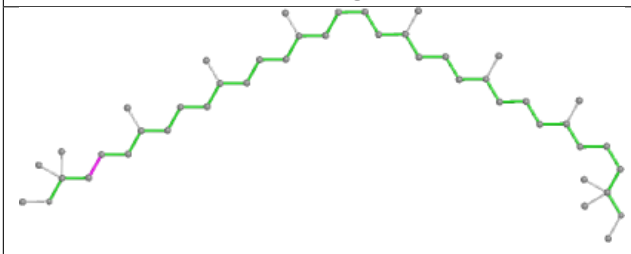
Ligand CRT 8 101



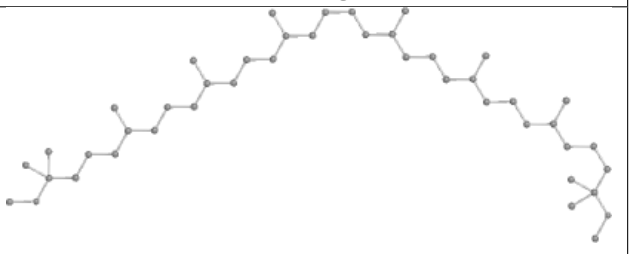
Bond lengths



Bond angles

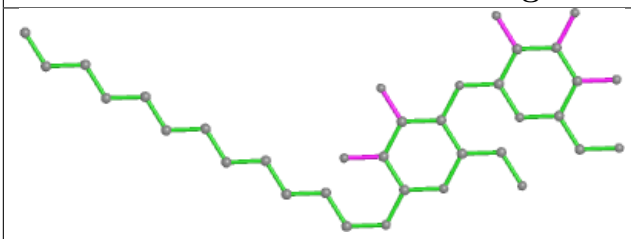


Torsions

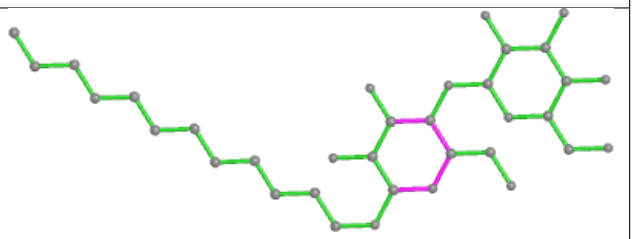


Rings

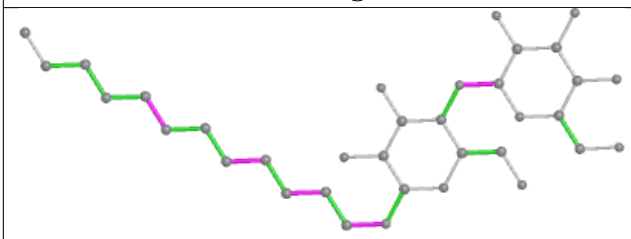
Ligand LMT P 101



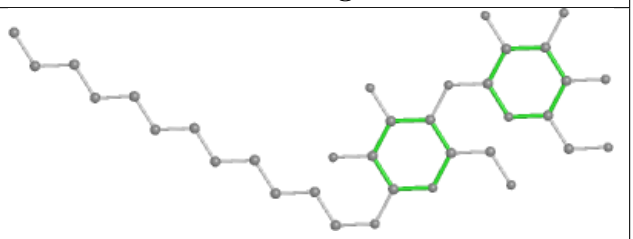
Bond lengths



Bond angles

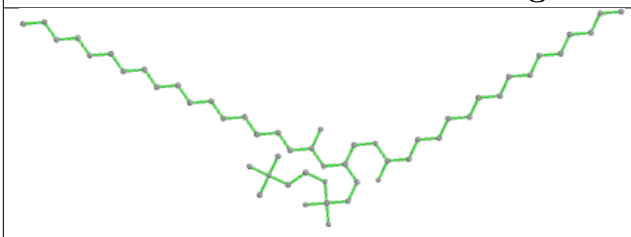


Torsions

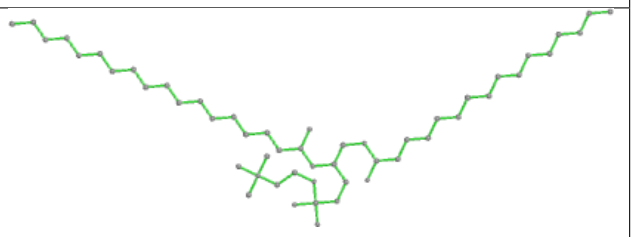


Rings

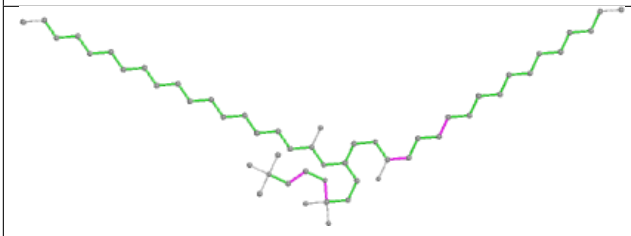
Ligand 6PL U 102



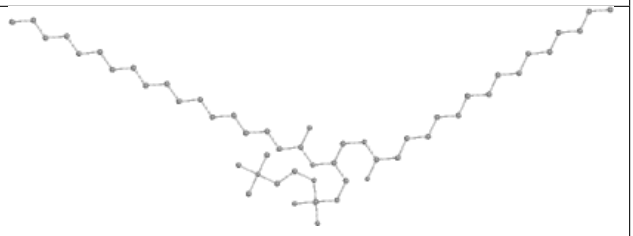
Bond lengths



Bond angles

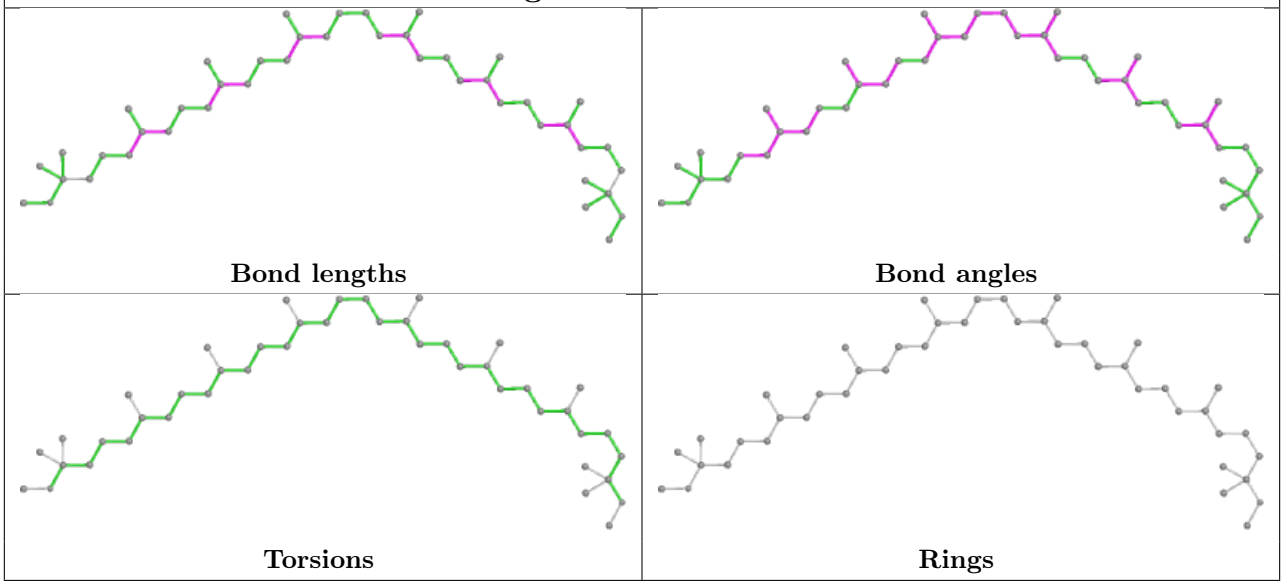


Torsions

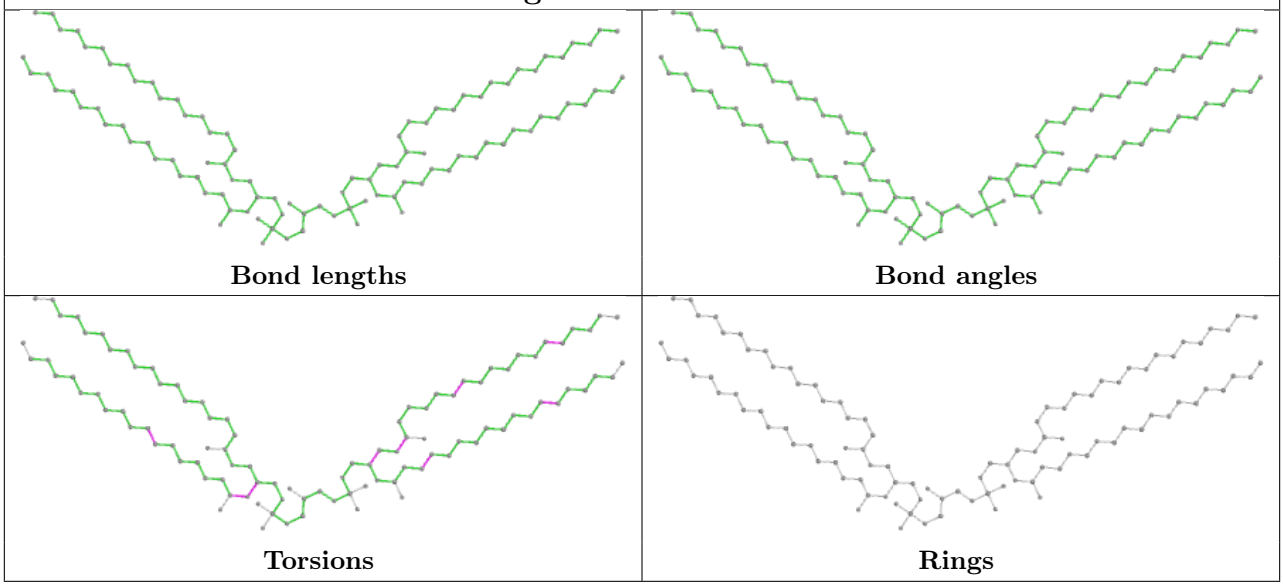


Rings

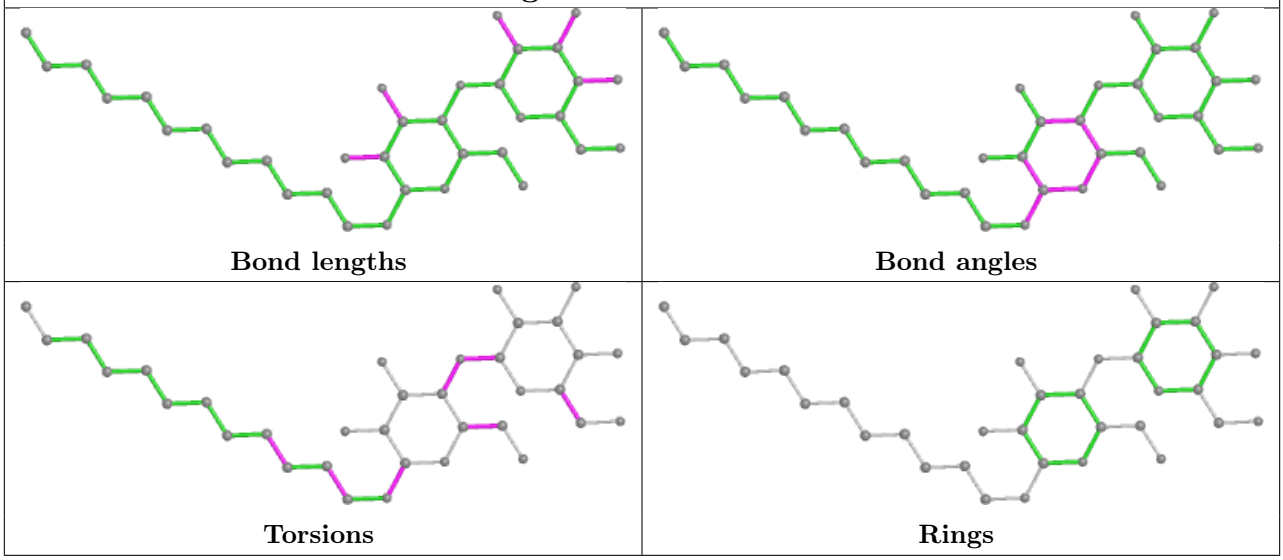
Ligand CRT U 101



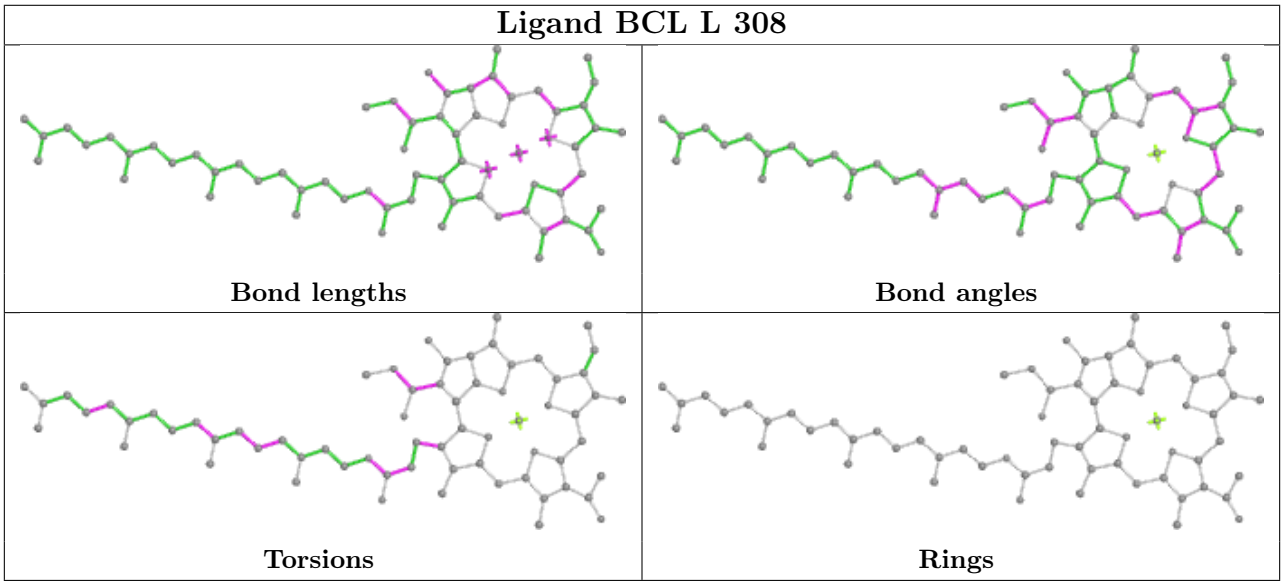
Ligand CDL G 101



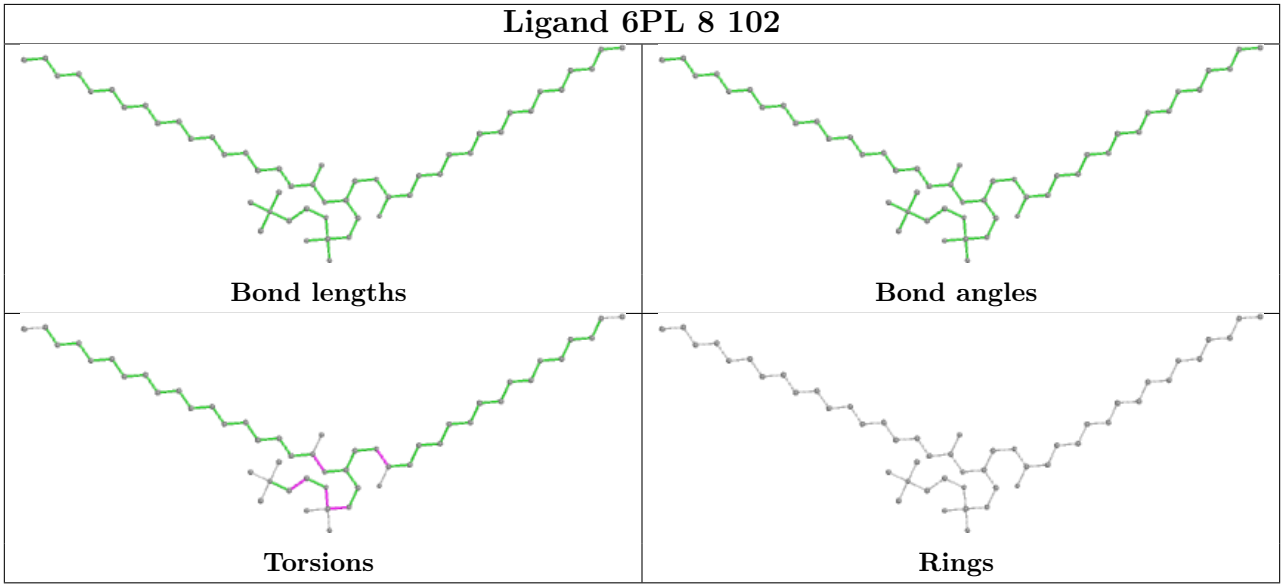
Ligand LMT H 302



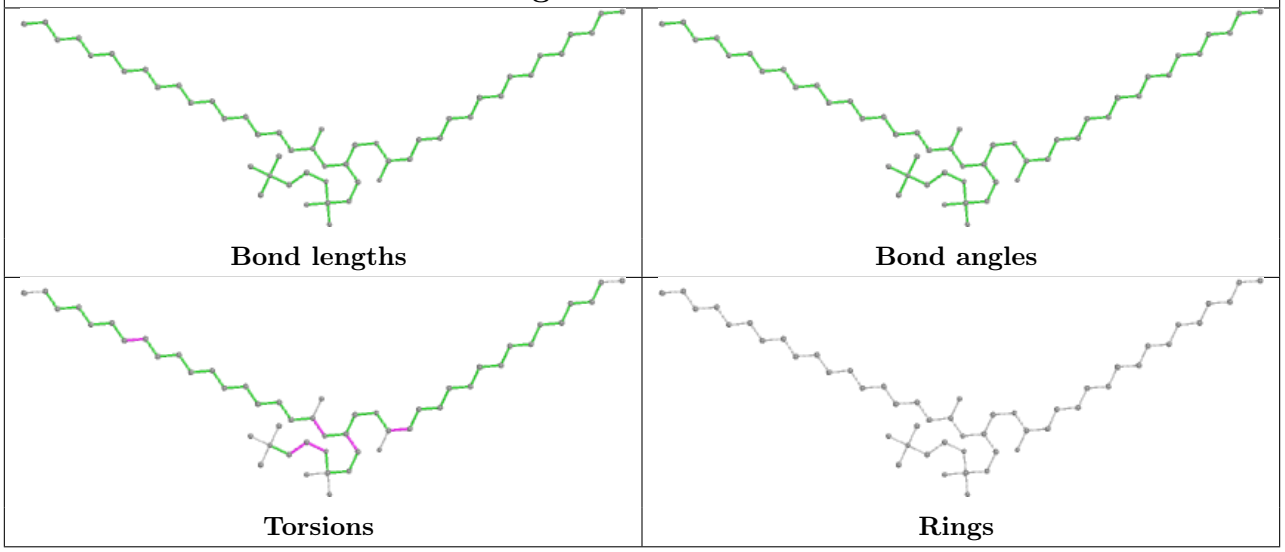
Ligand BCL L 308



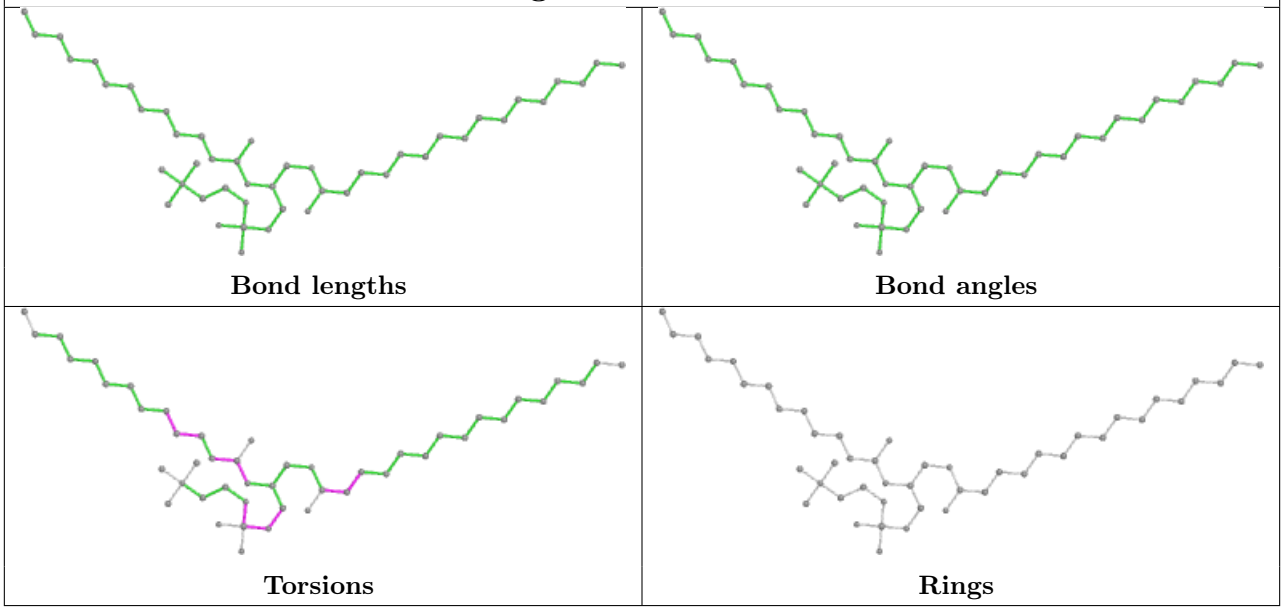
Ligand 6PL 8 102



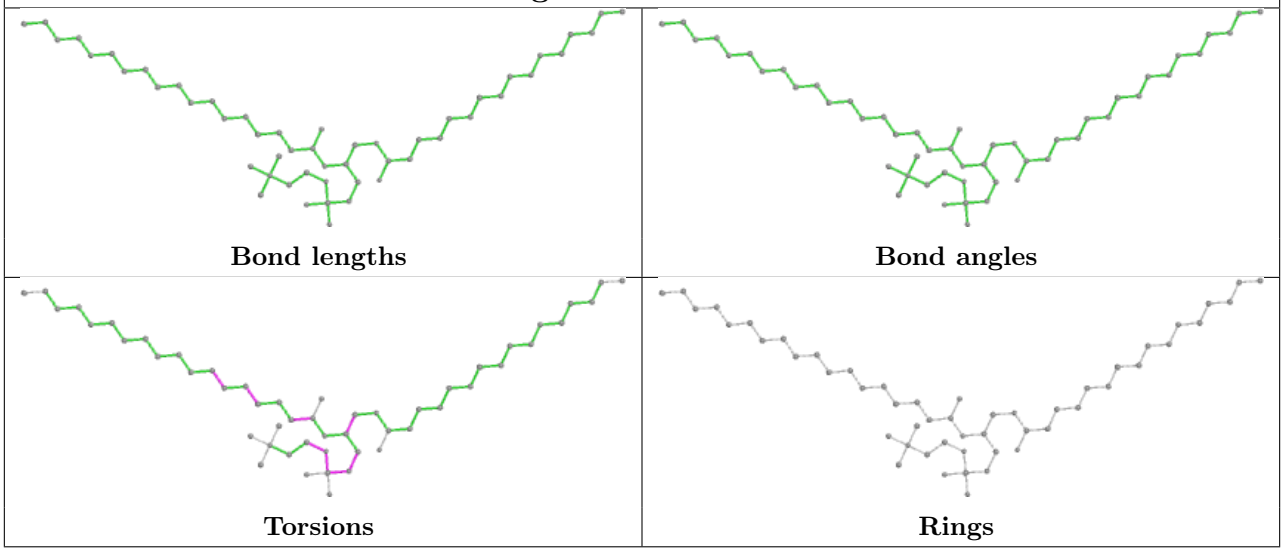
Ligand 6PL F 103



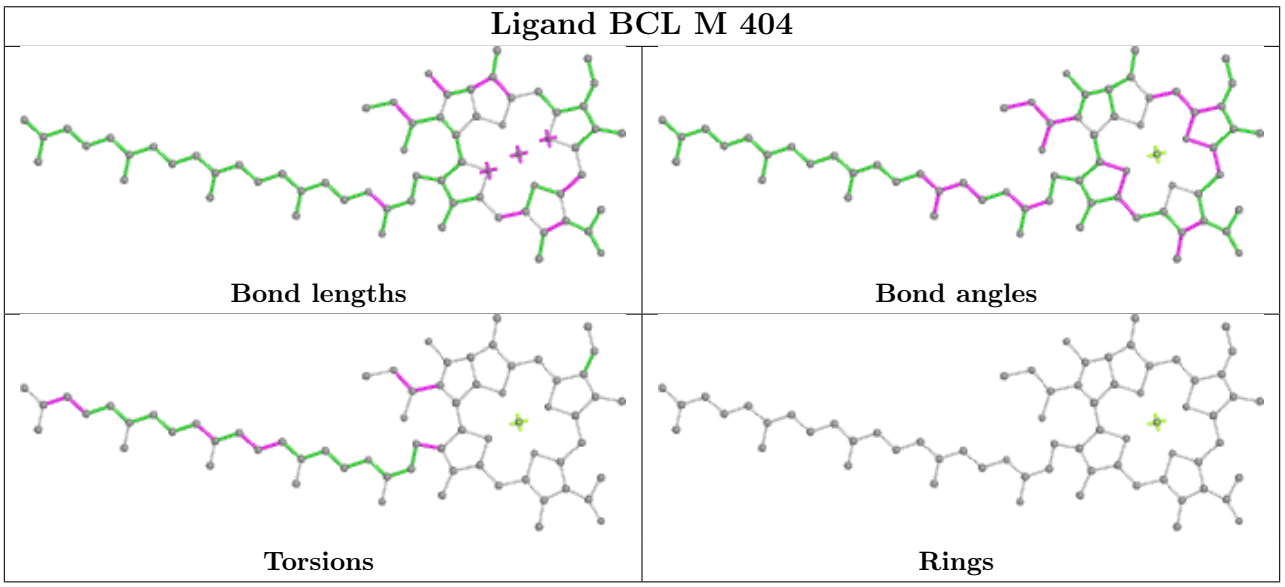
Ligand 6PL O 103



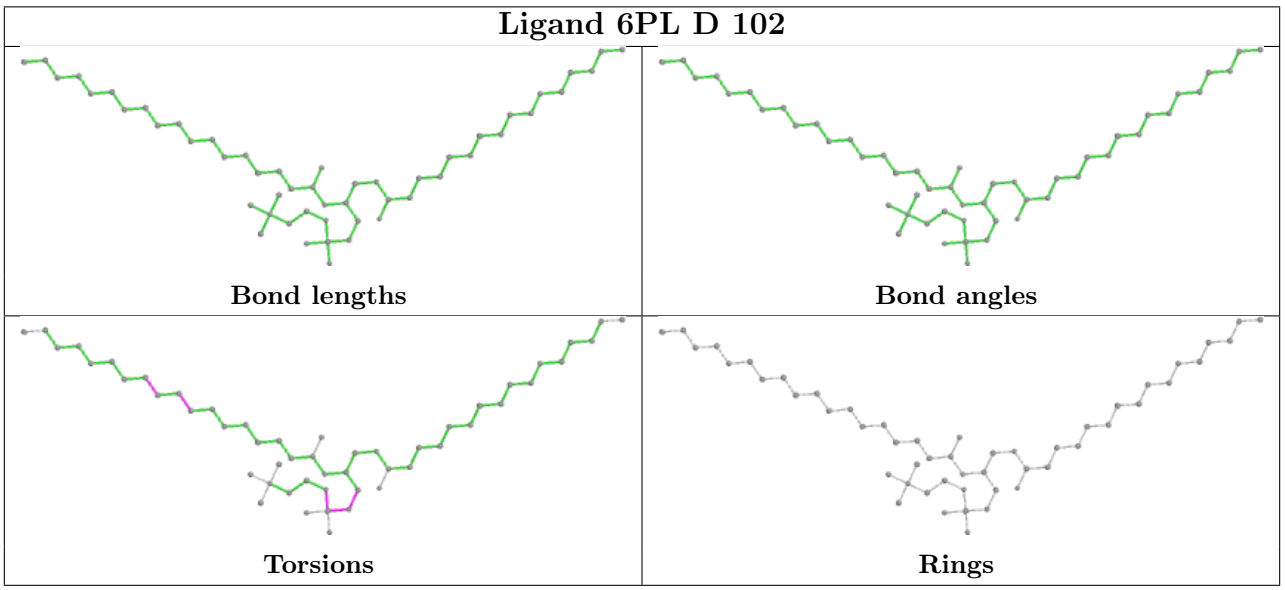
Ligand 6PL P 103



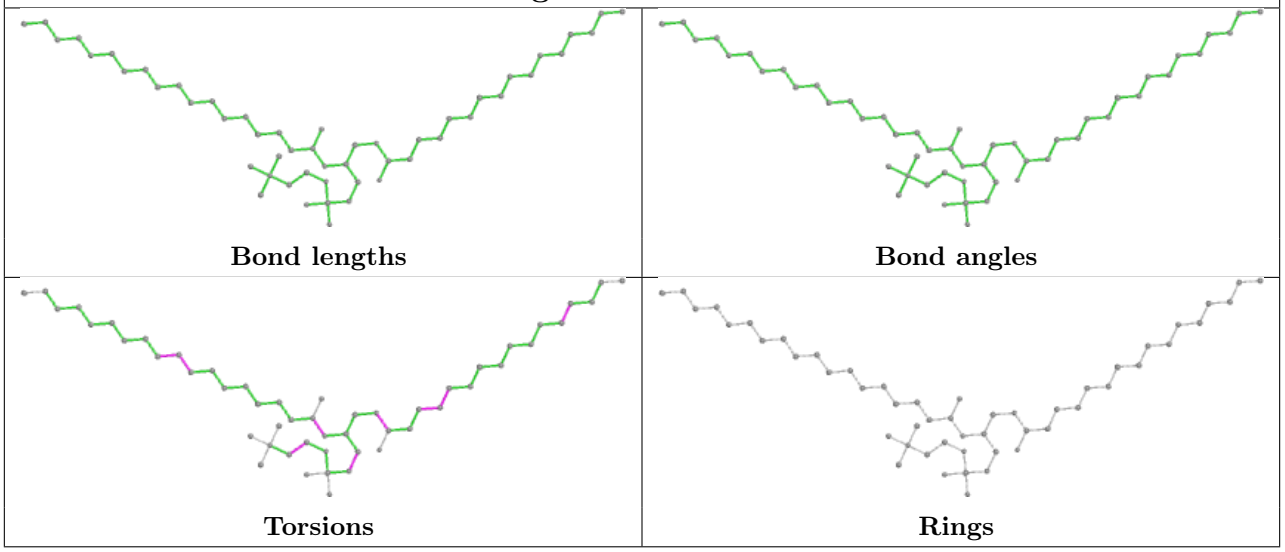
Ligand BCL M 404



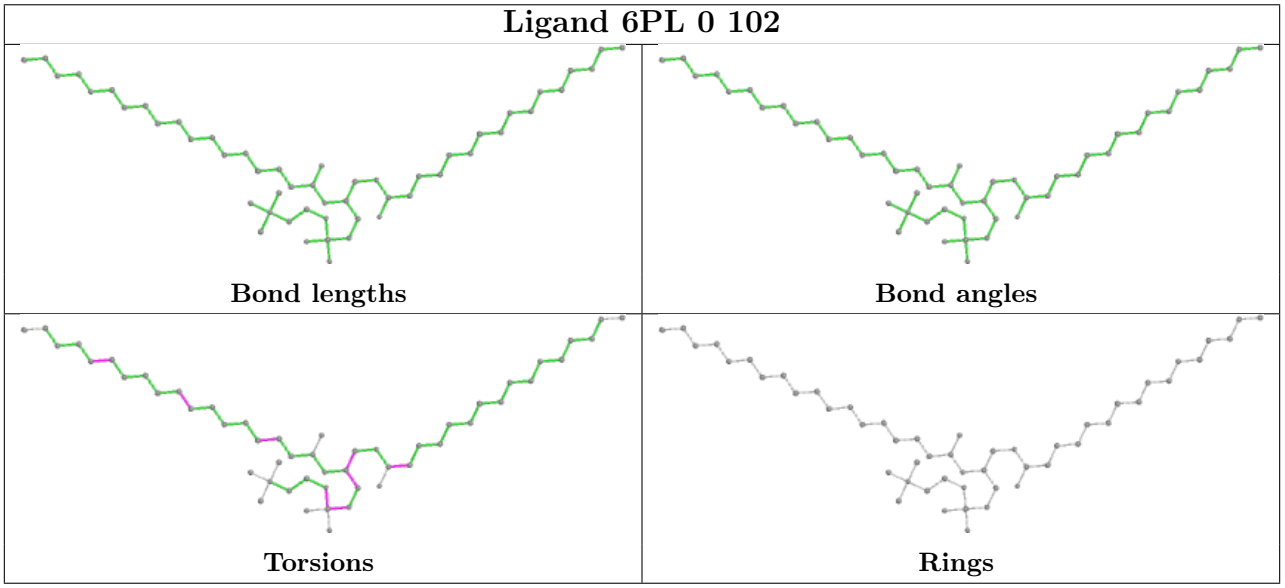
Ligand 6PL D 102



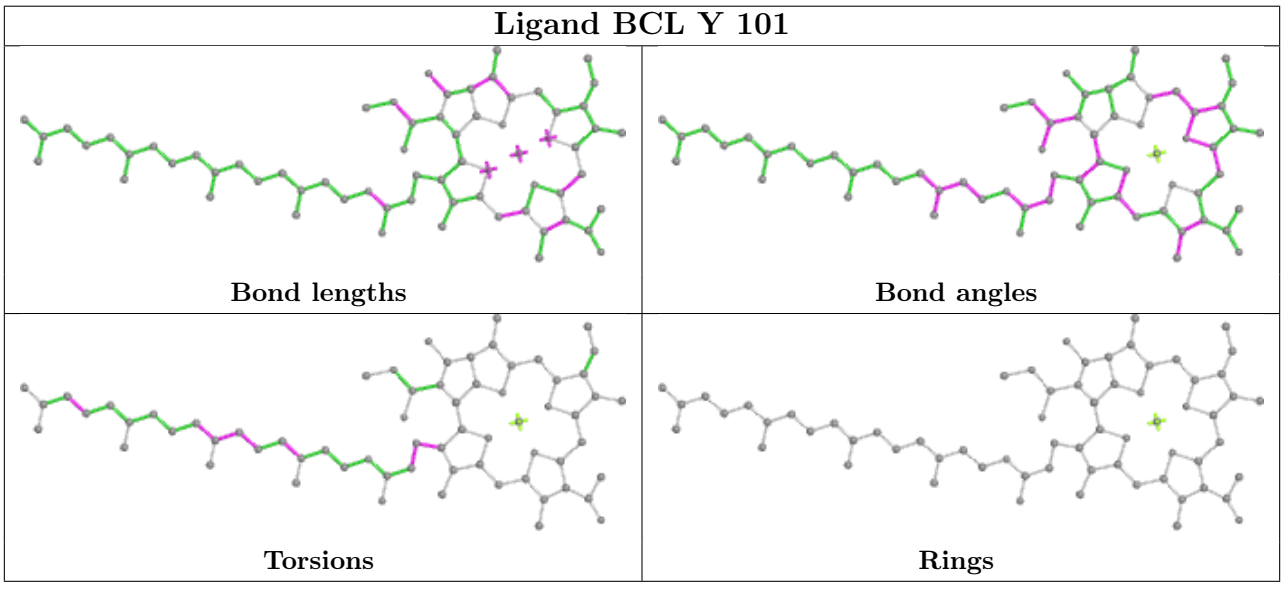
Ligand 6PL E 102



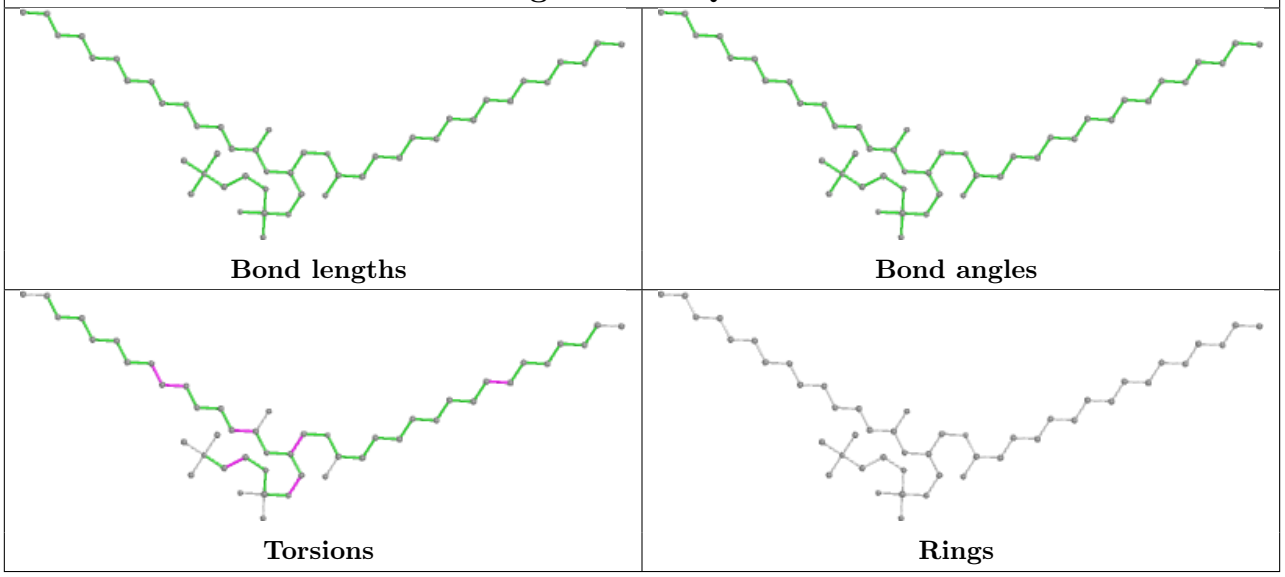
Ligand 6PL 0 102



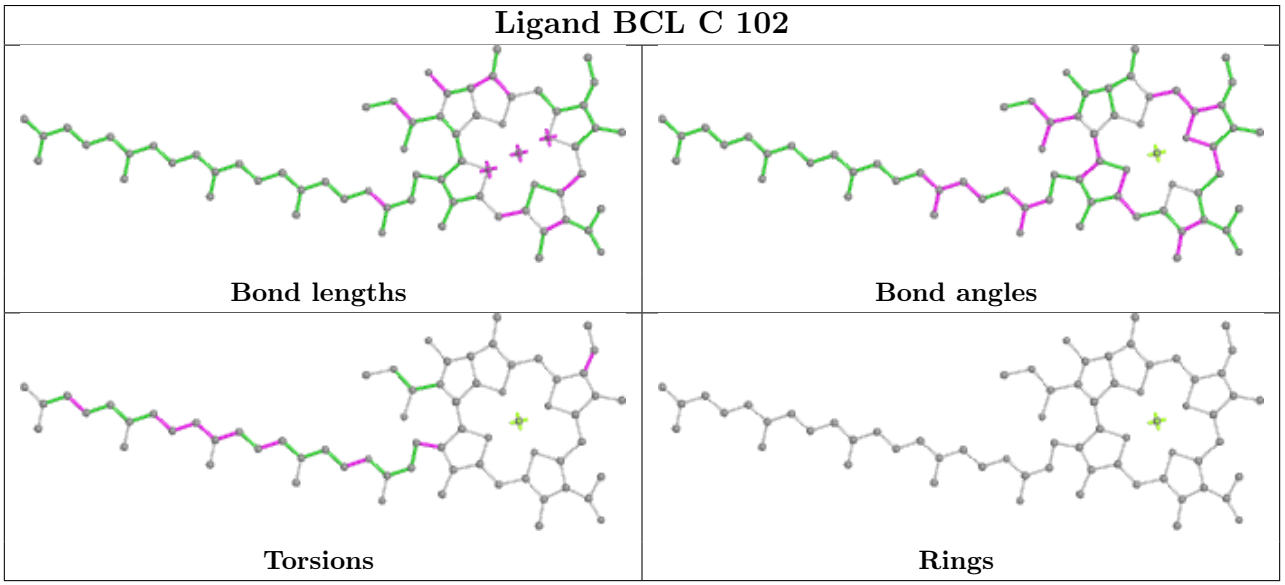
Ligand BCL Y 101



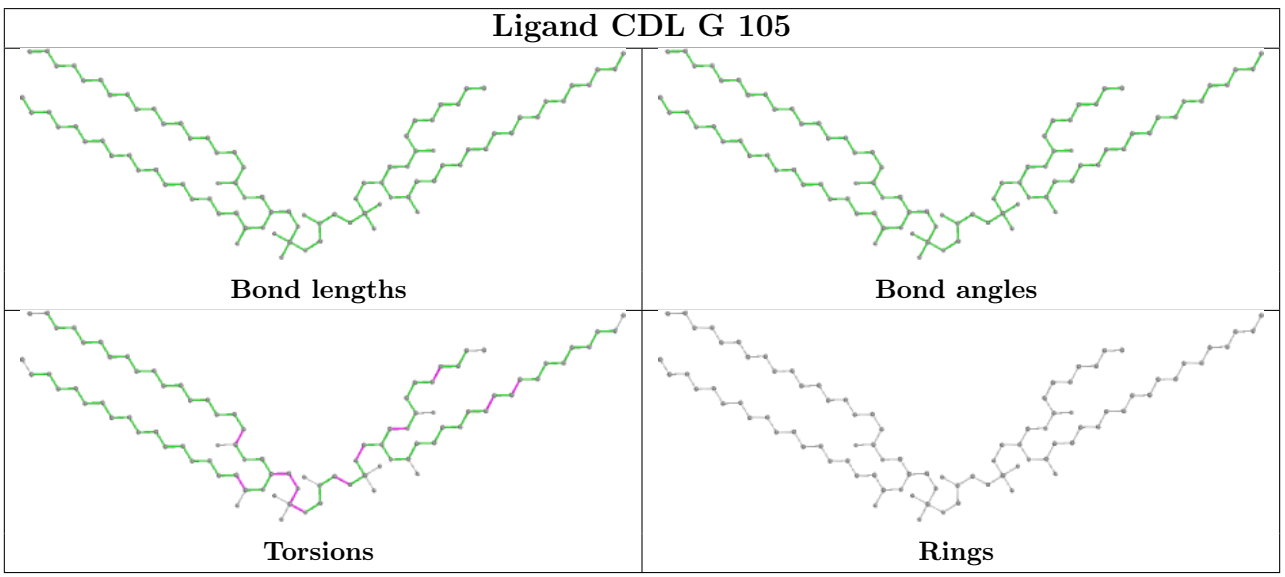
Ligand 6PL Q 102



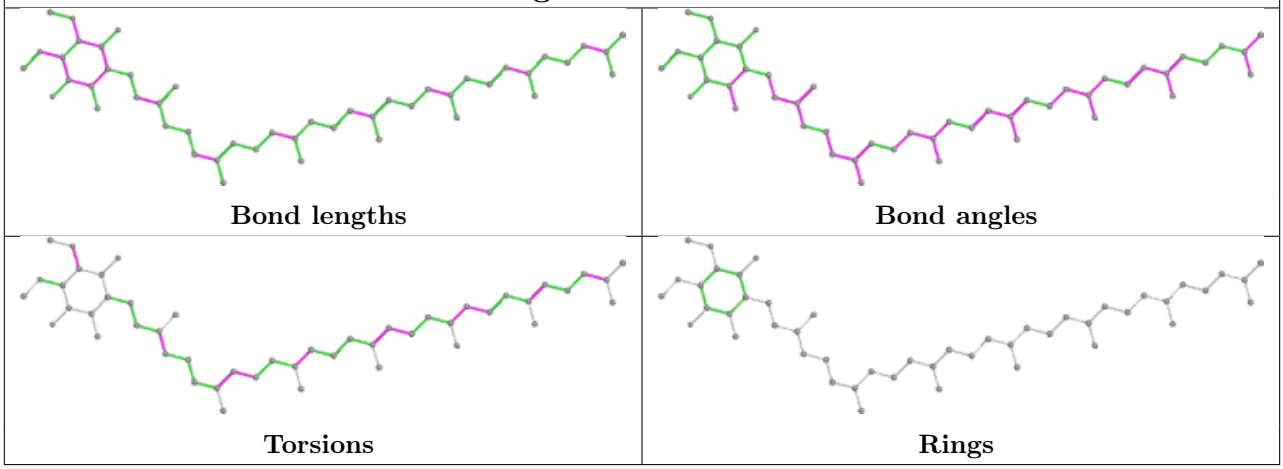
Ligand BCL C 102



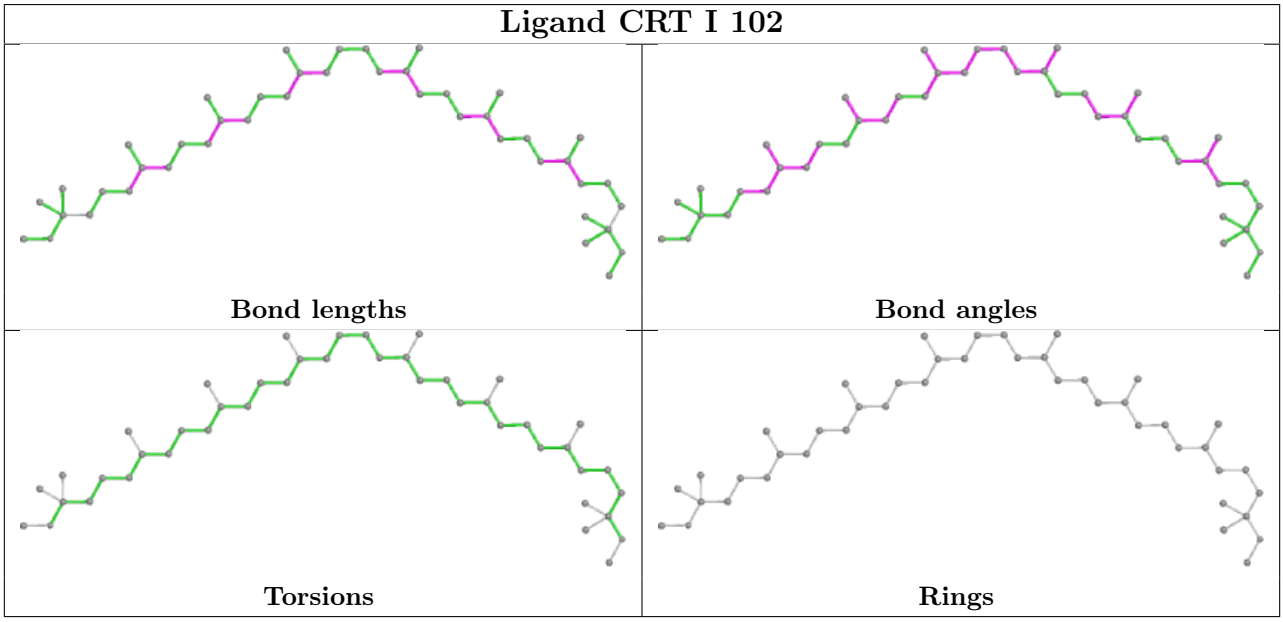
Ligand CDL G 105



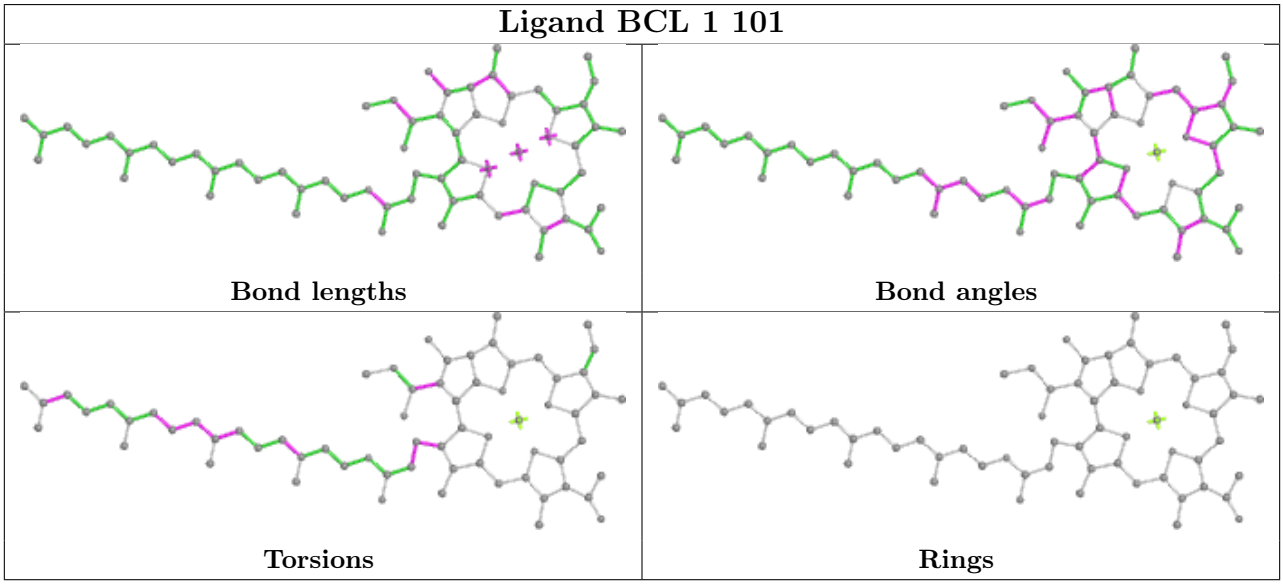
Ligand U10 L 303



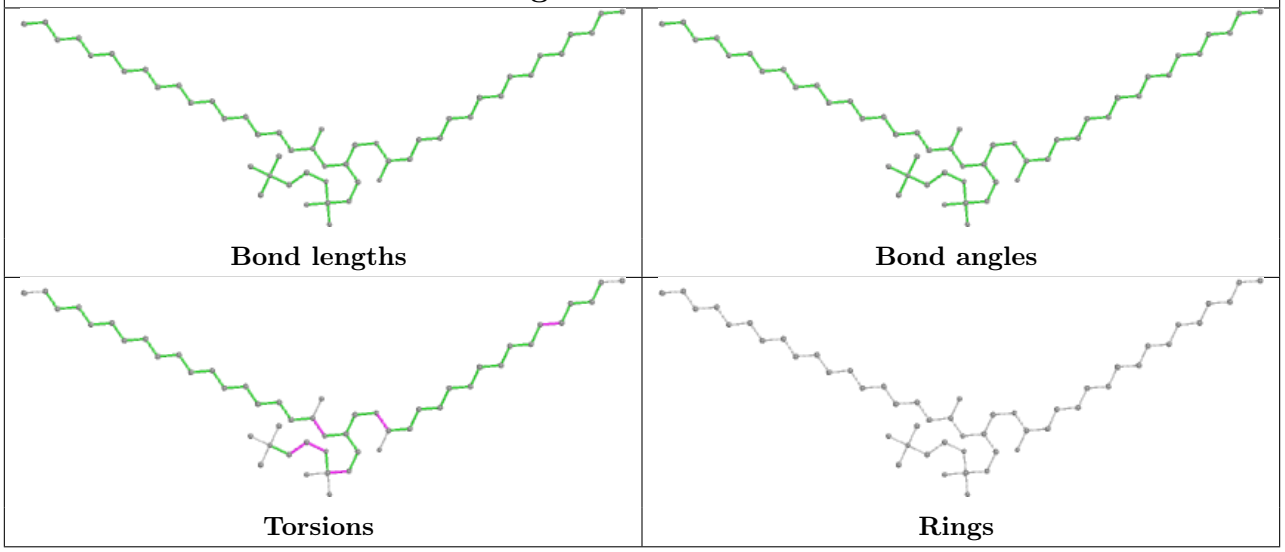
Ligand CRT I 102



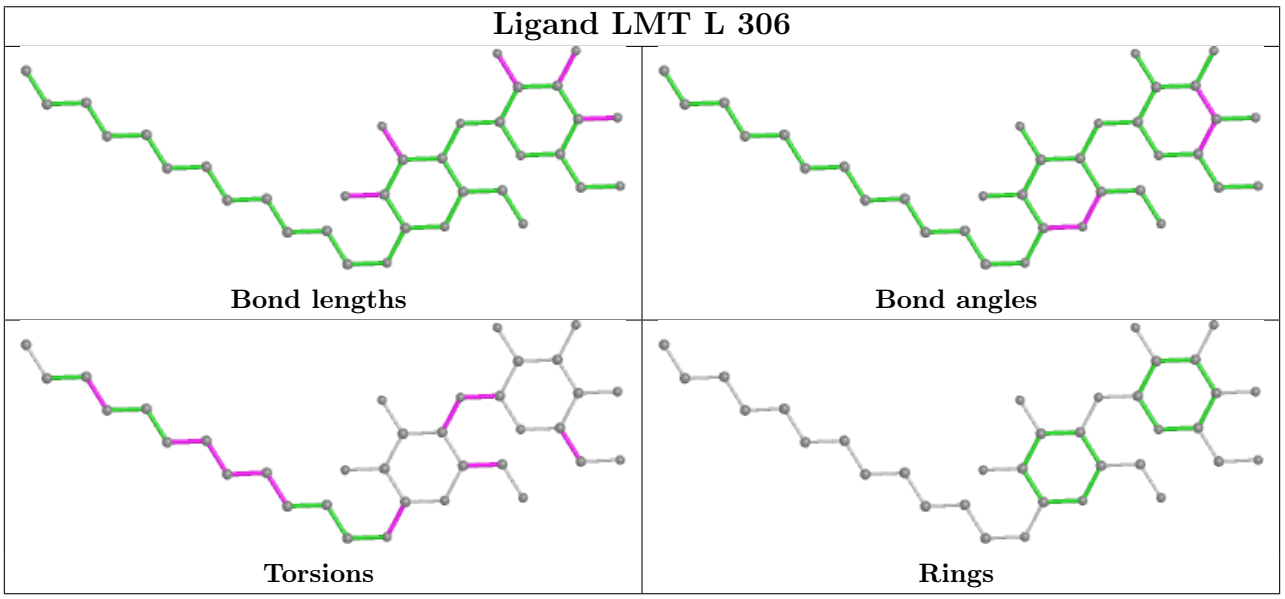
Ligand BCL 1 101



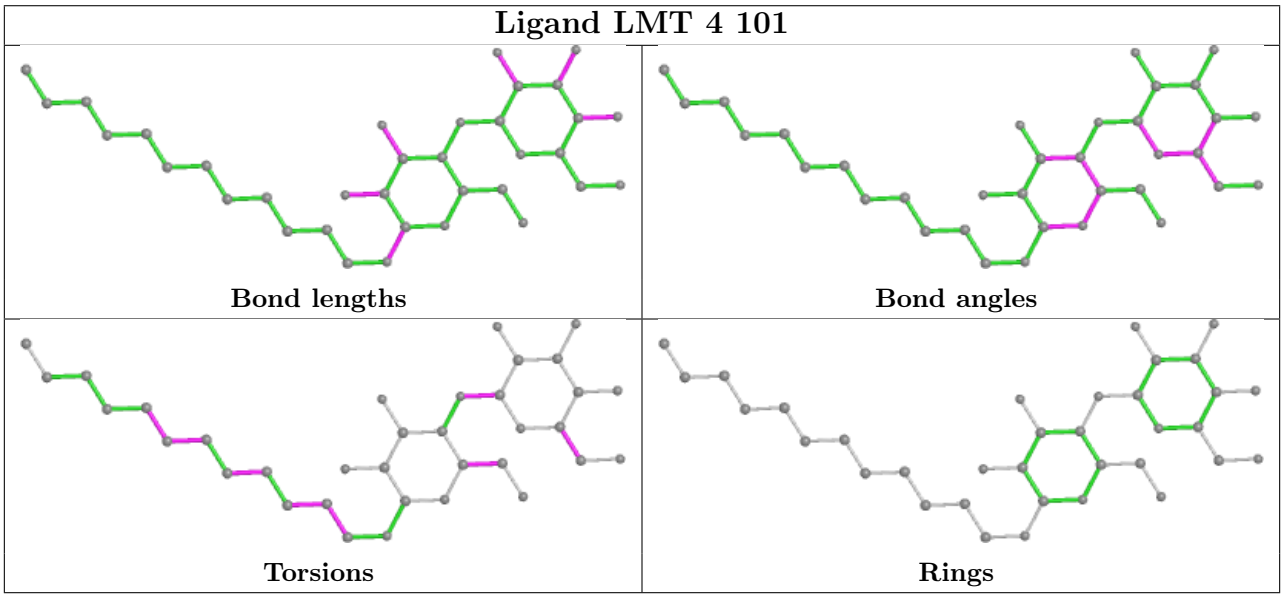
Ligand 6PL B 104



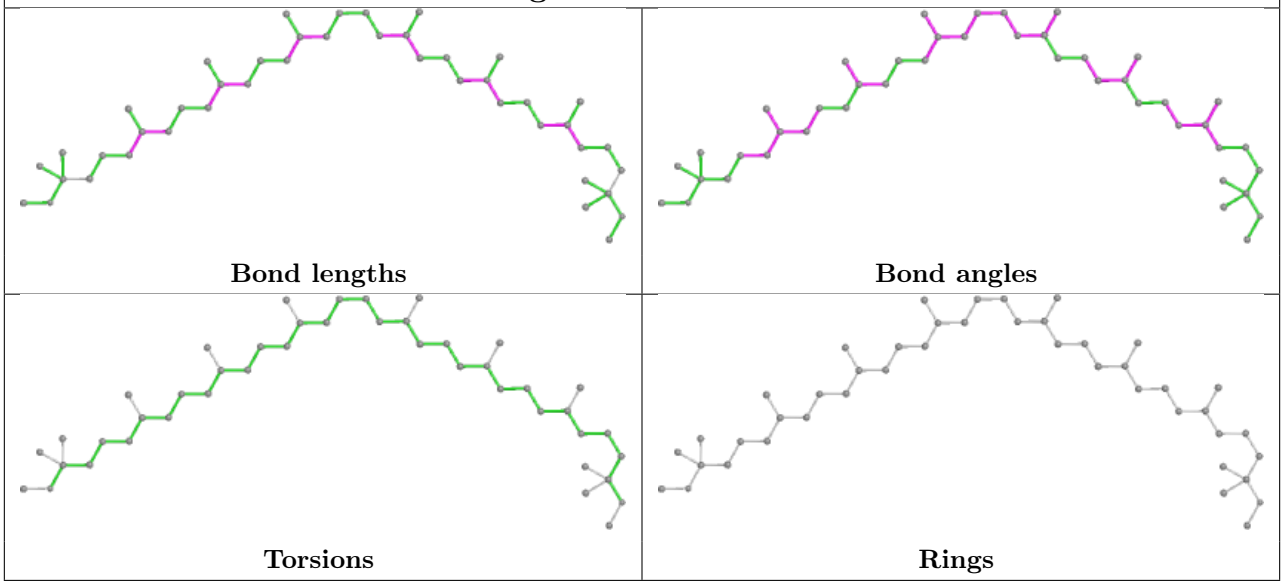
Ligand LMT L 306



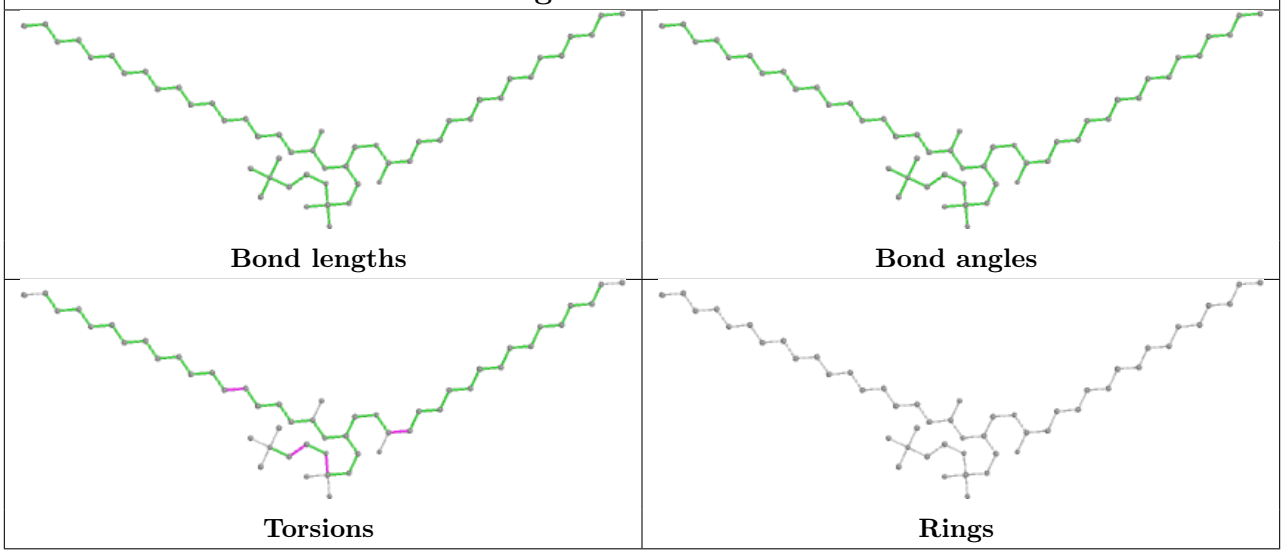
Ligand LMT 4 101



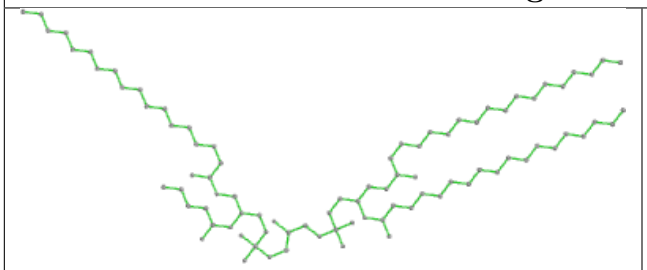
Ligand CRT 4 103



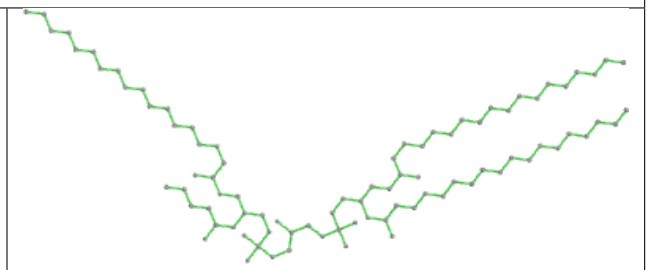
Ligand 6PL 6 102



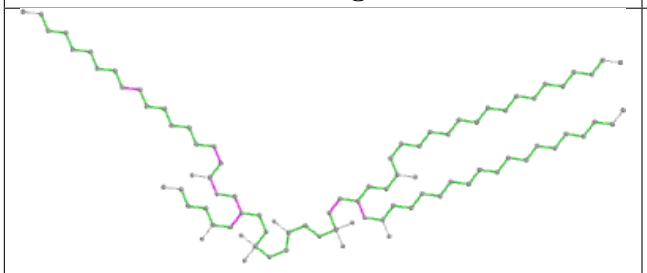
Ligand CDL E 103



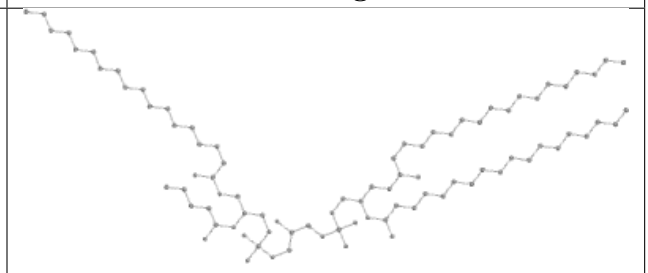
Bond lengths



Bond angles

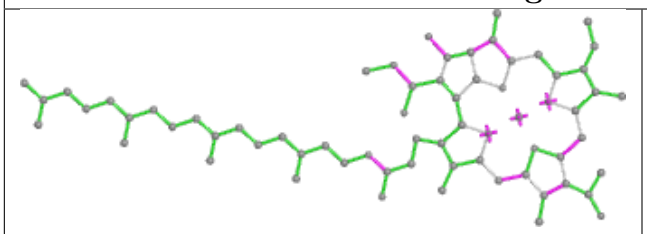


Torsions

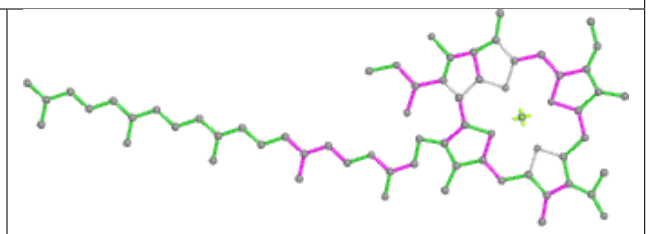


Rings

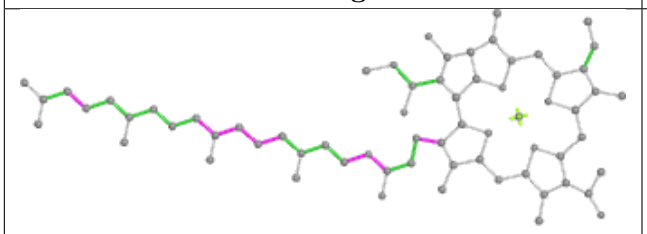
Ligand BCL G 104



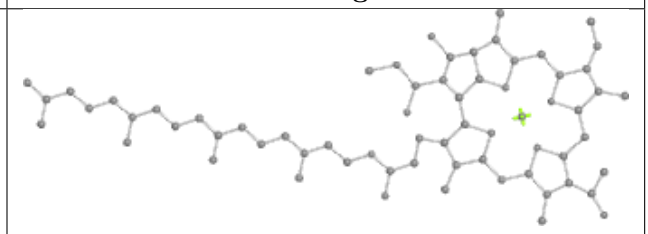
Bond lengths



Bond angles

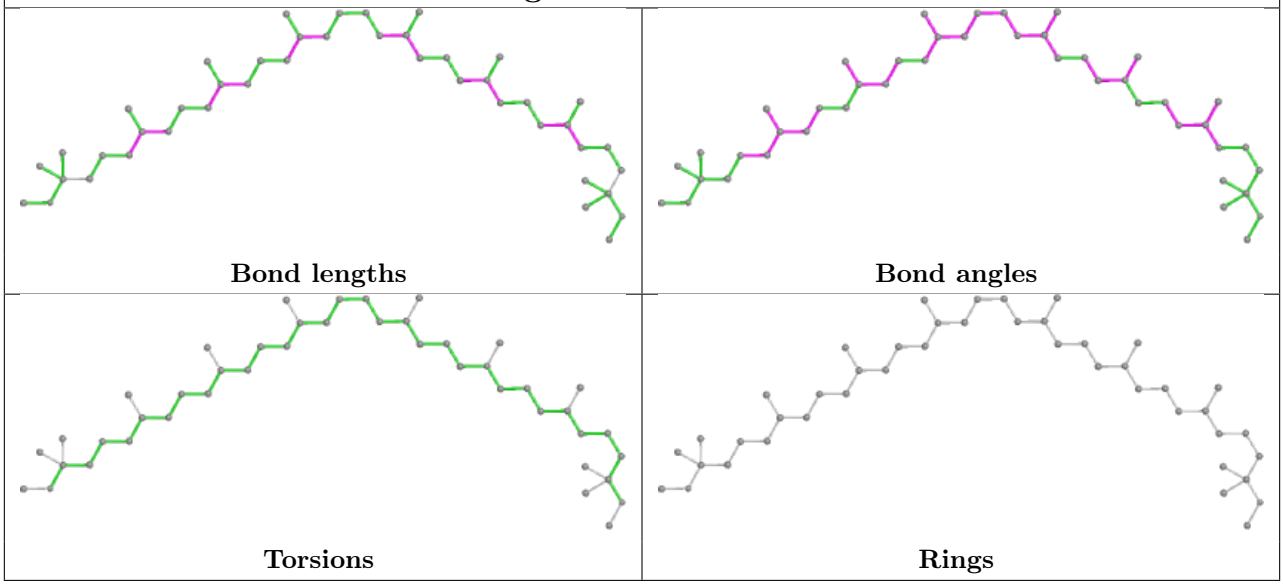


Torsions

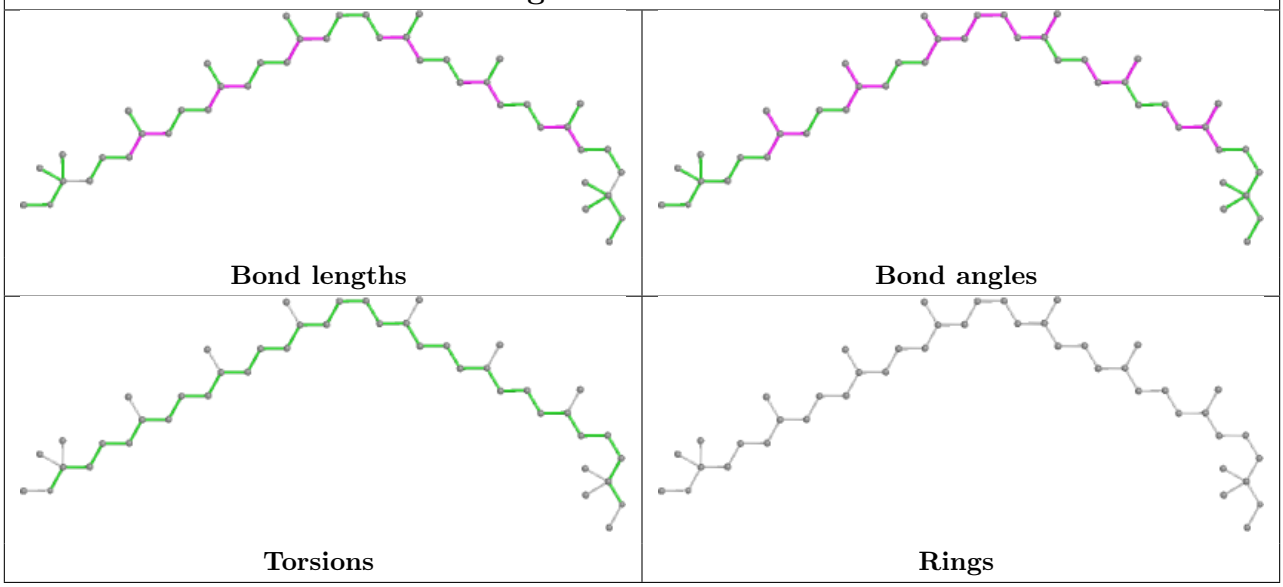


Rings

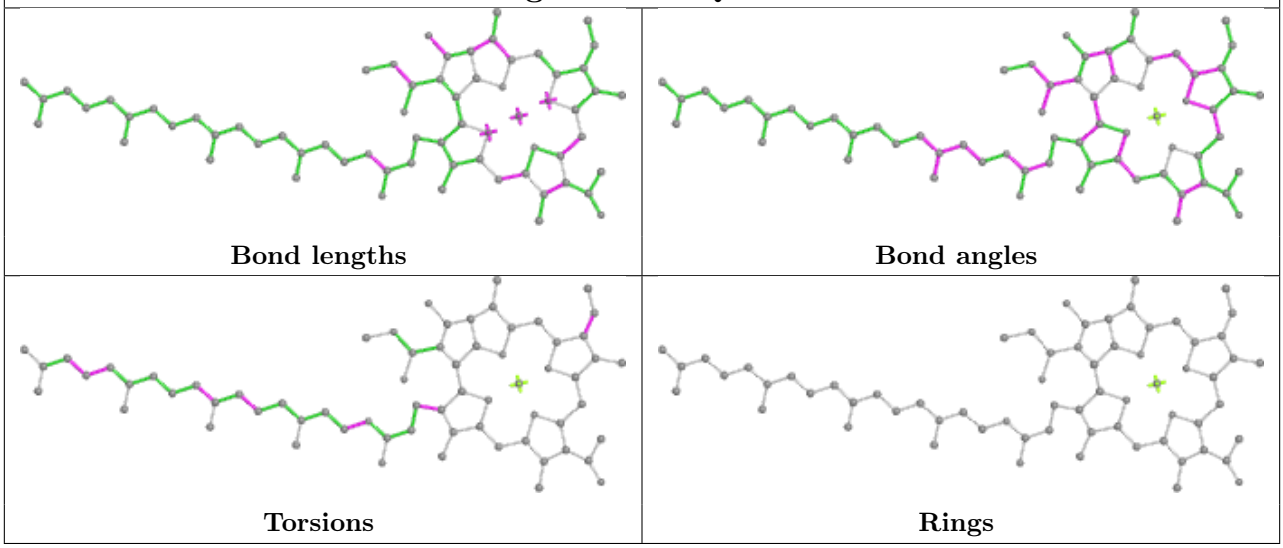
Ligand CRT D 101



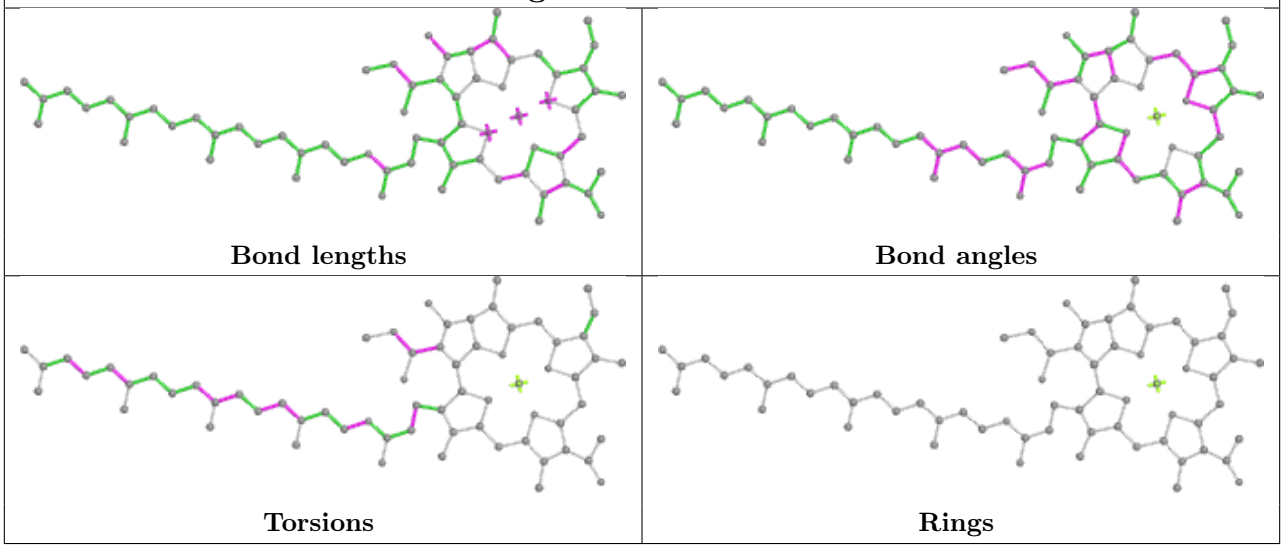
Ligand CRT Z 102



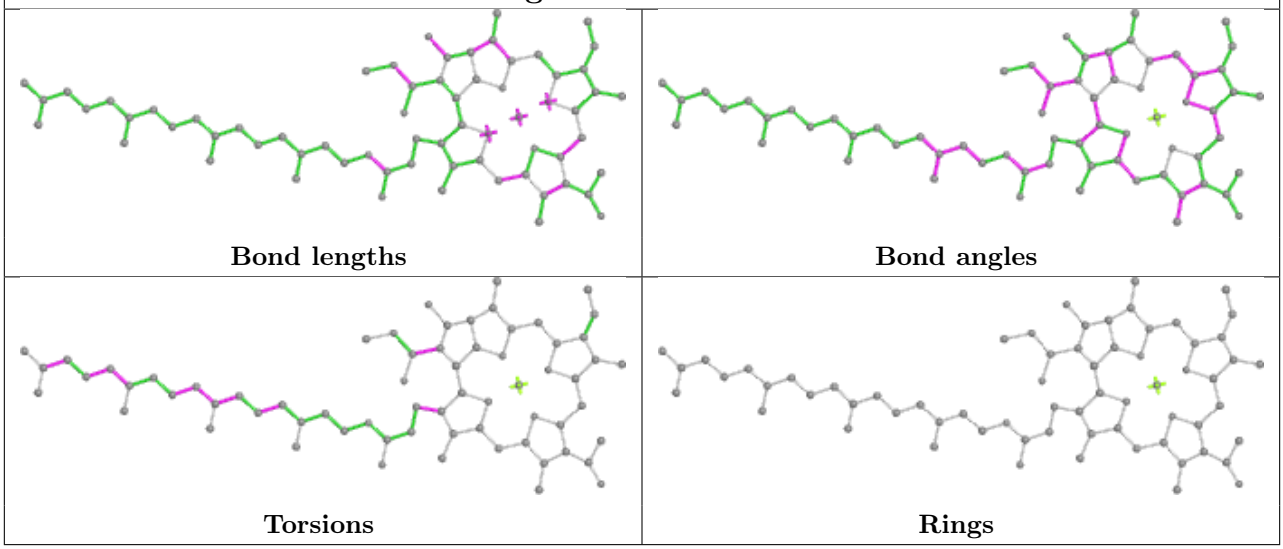
Ligand BCL Q 100



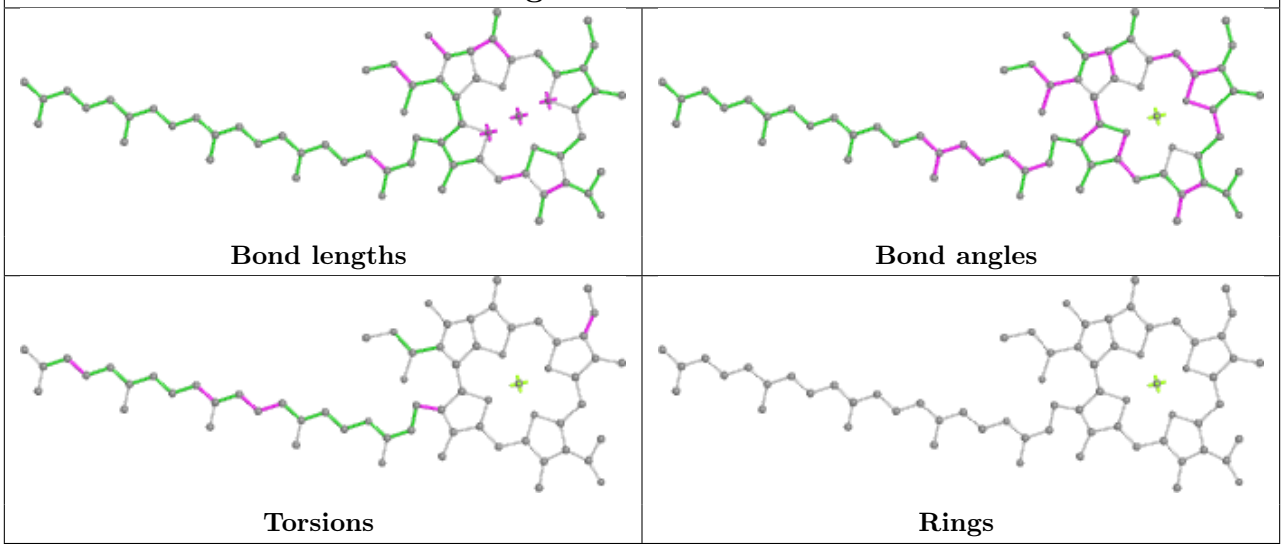
Ligand BCL L 301



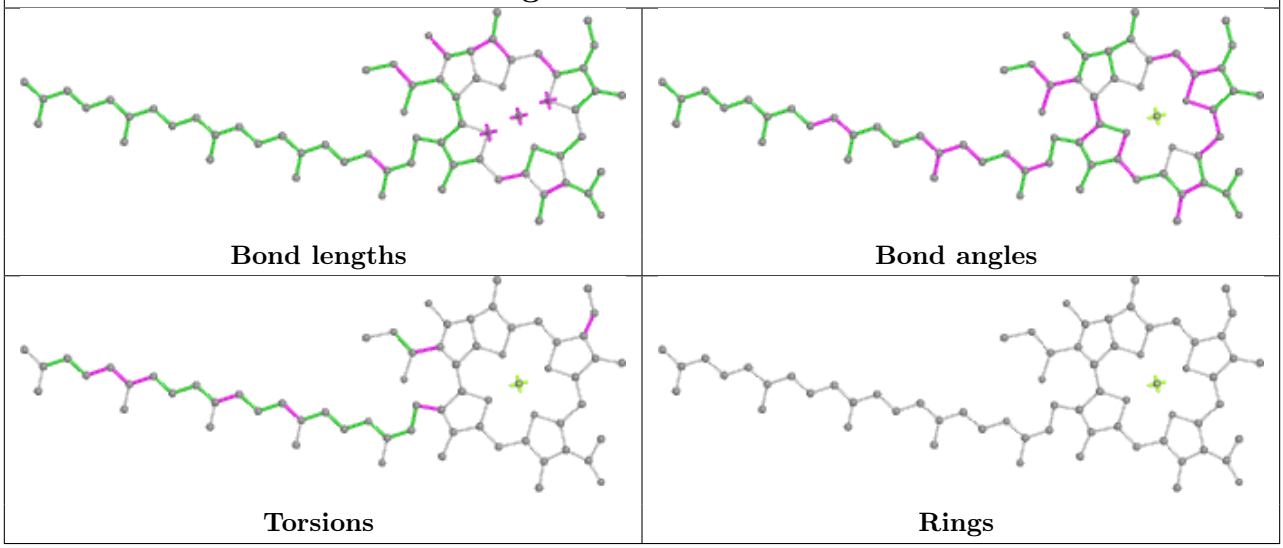
Ligand BCL V 102



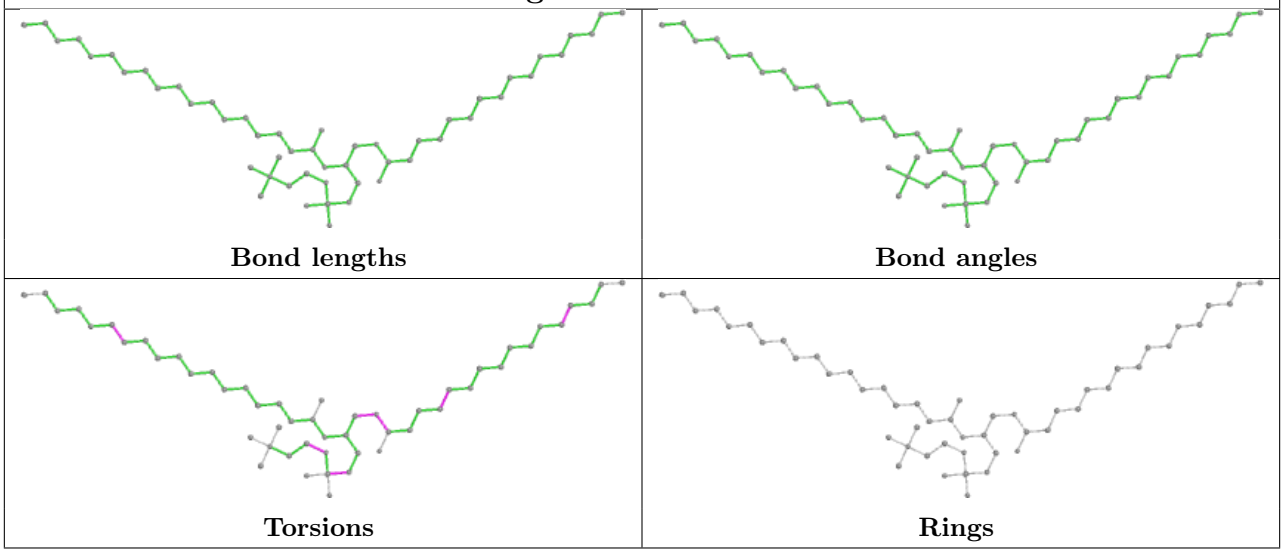
Ligand BCL R 103



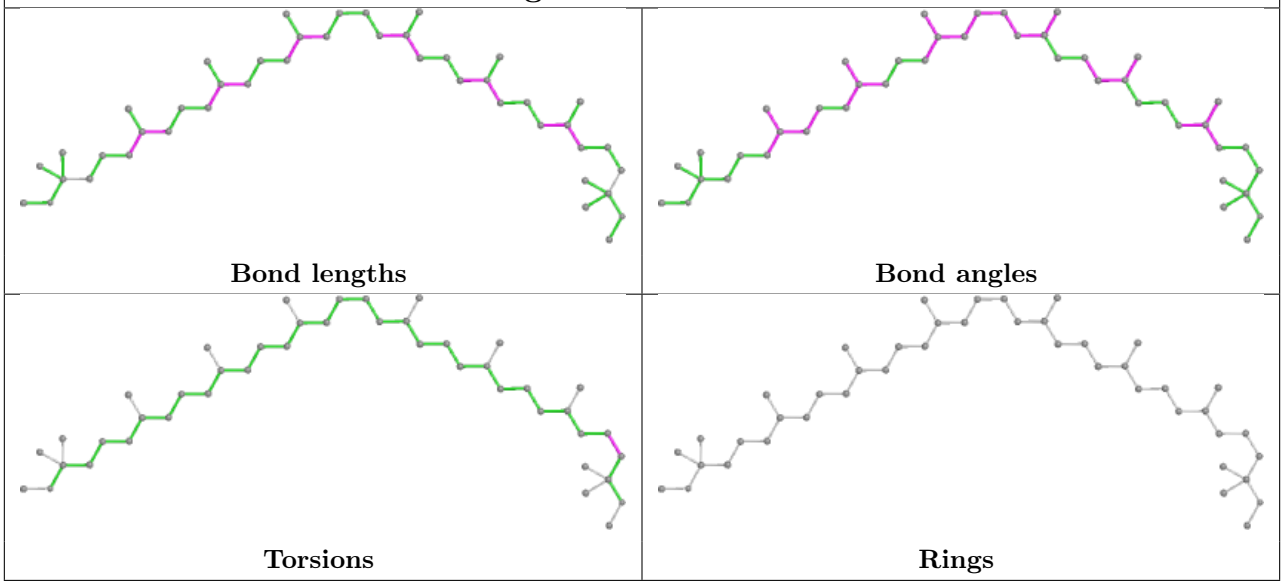
Ligand BCL M 402



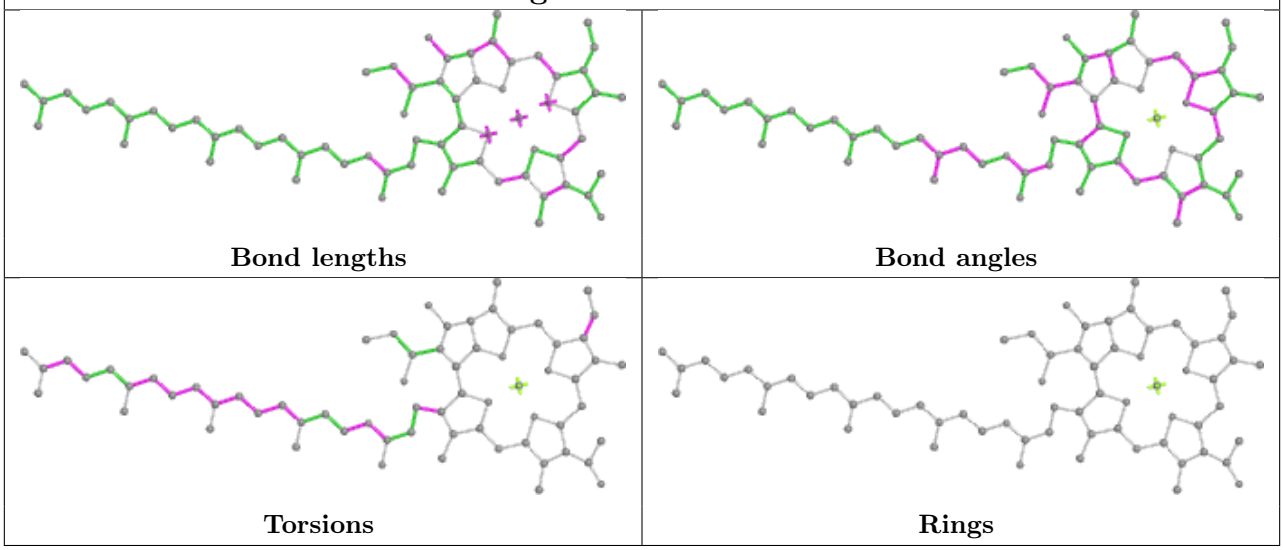
Ligand 6PL M 401



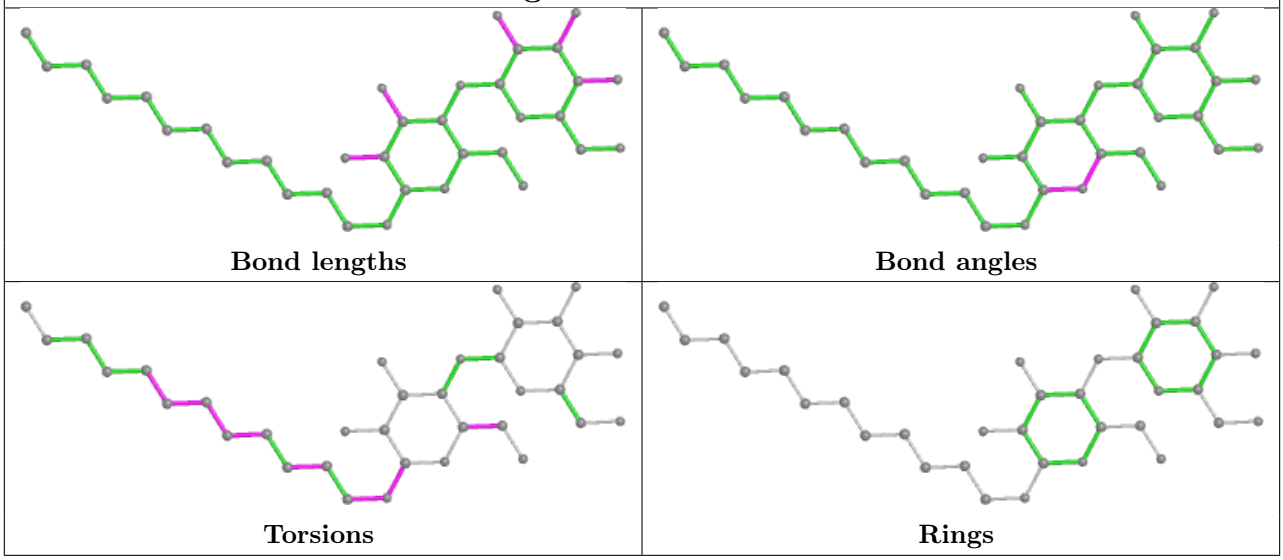
Ligand CRT X 101



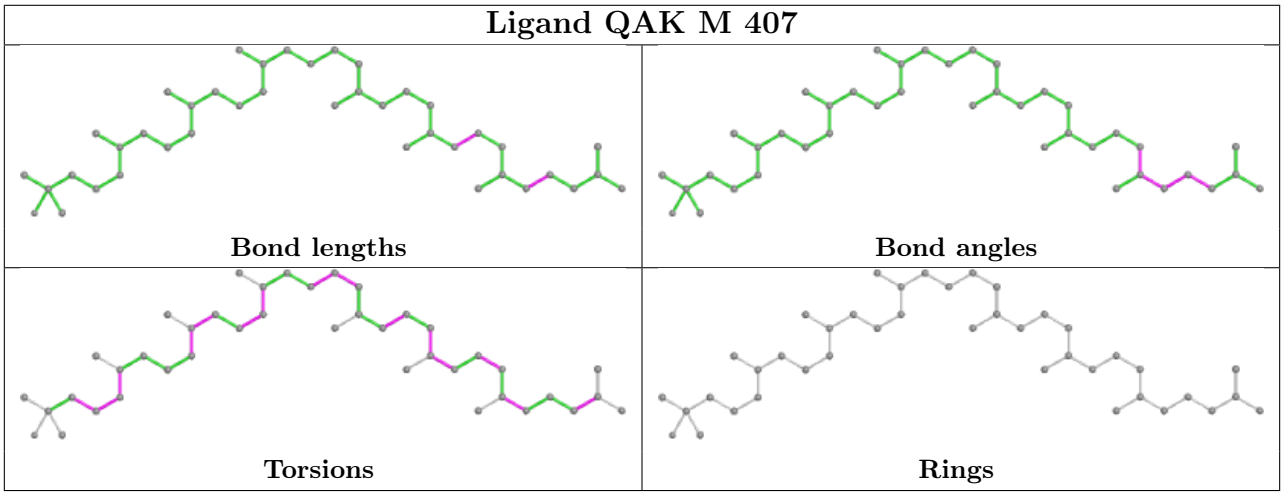
Ligand BCL 7 102



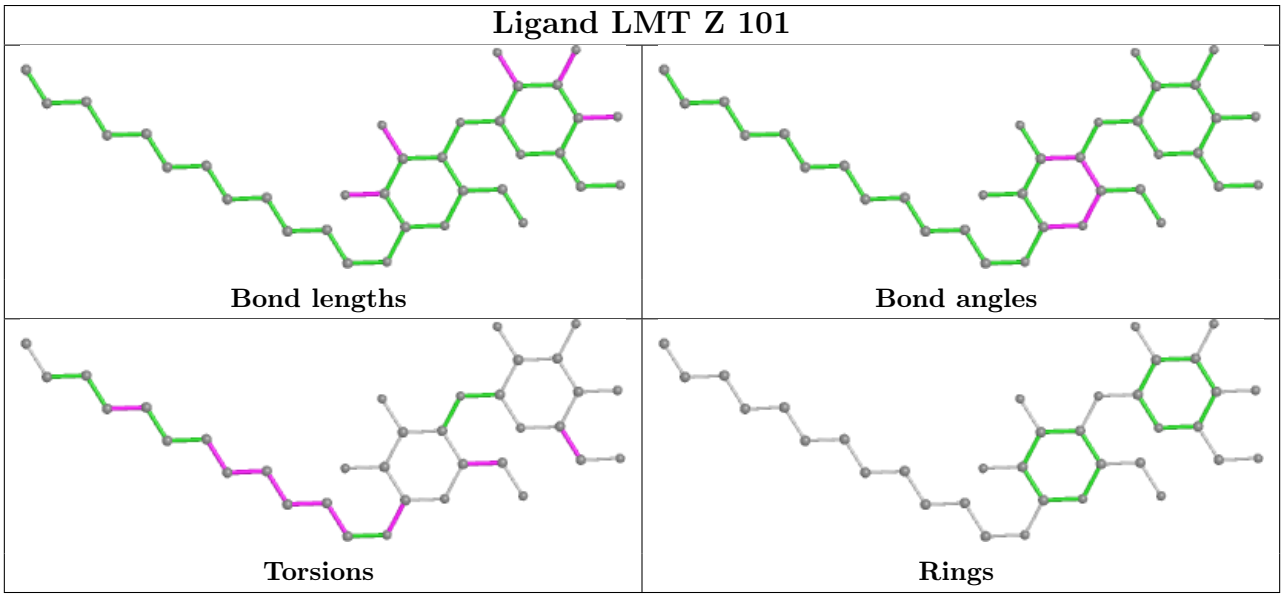
Ligand LMT F 101



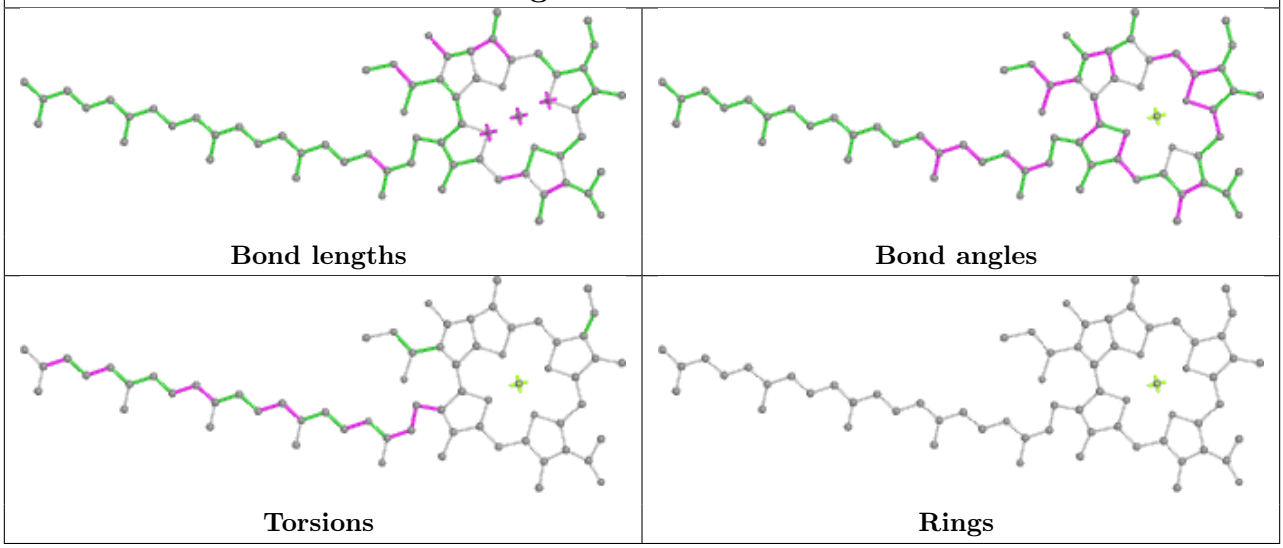
Ligand QAK M 407



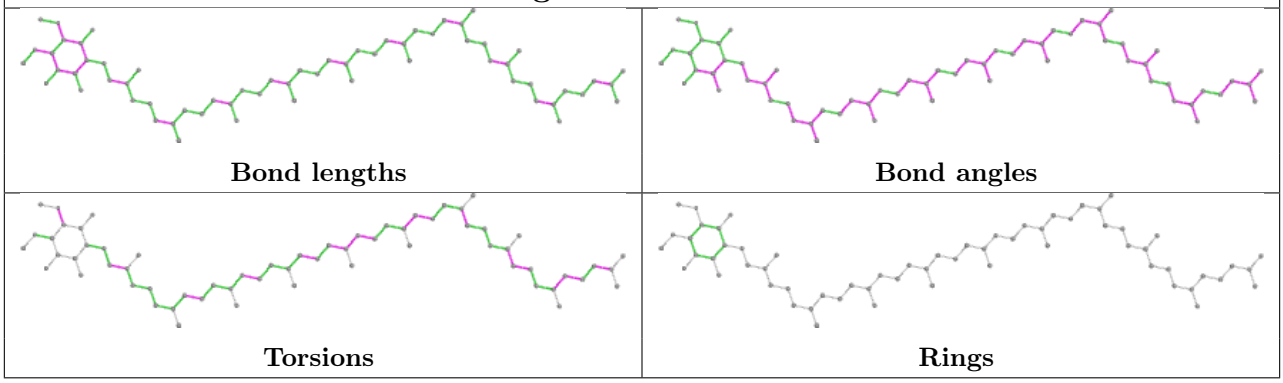
Ligand LMT Z 101



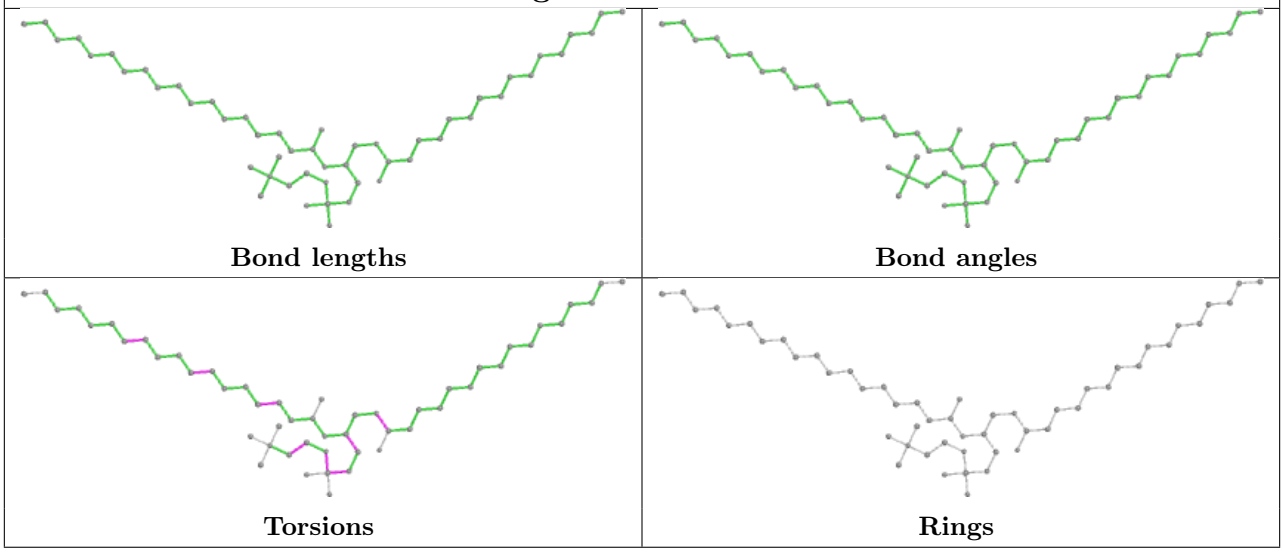
Ligand BCL 9 102



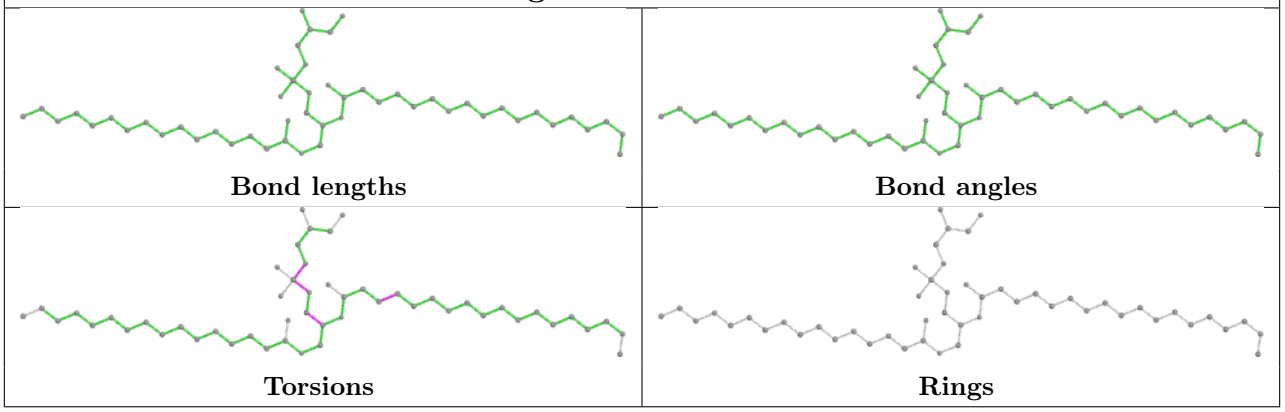
Ligand U10 L 309



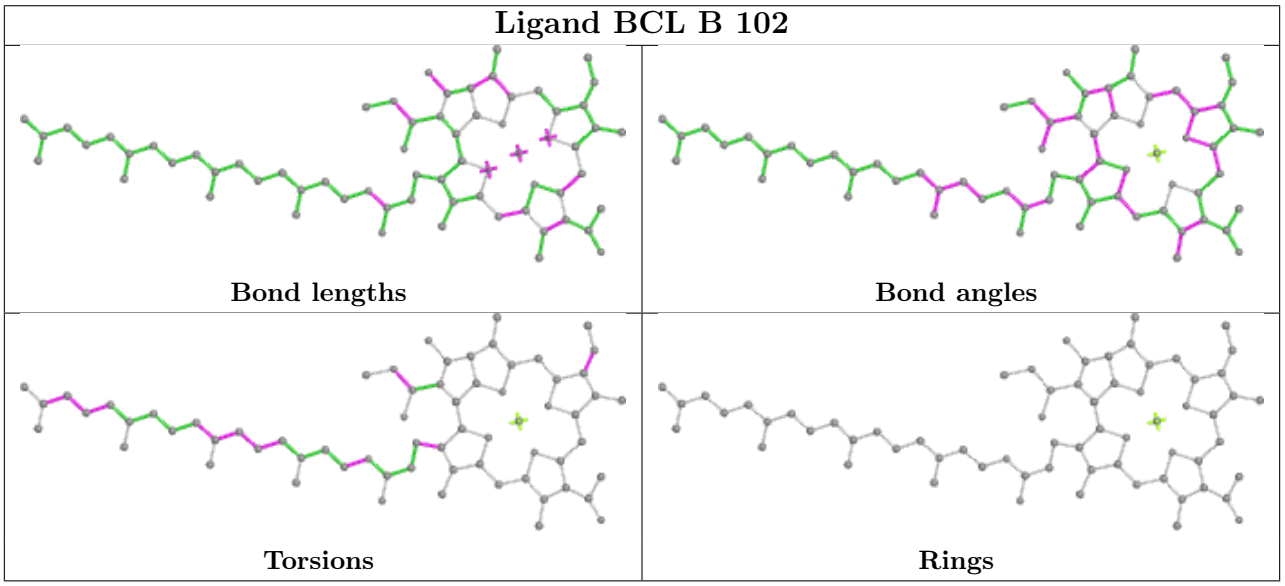
Ligand 6PL Z 103



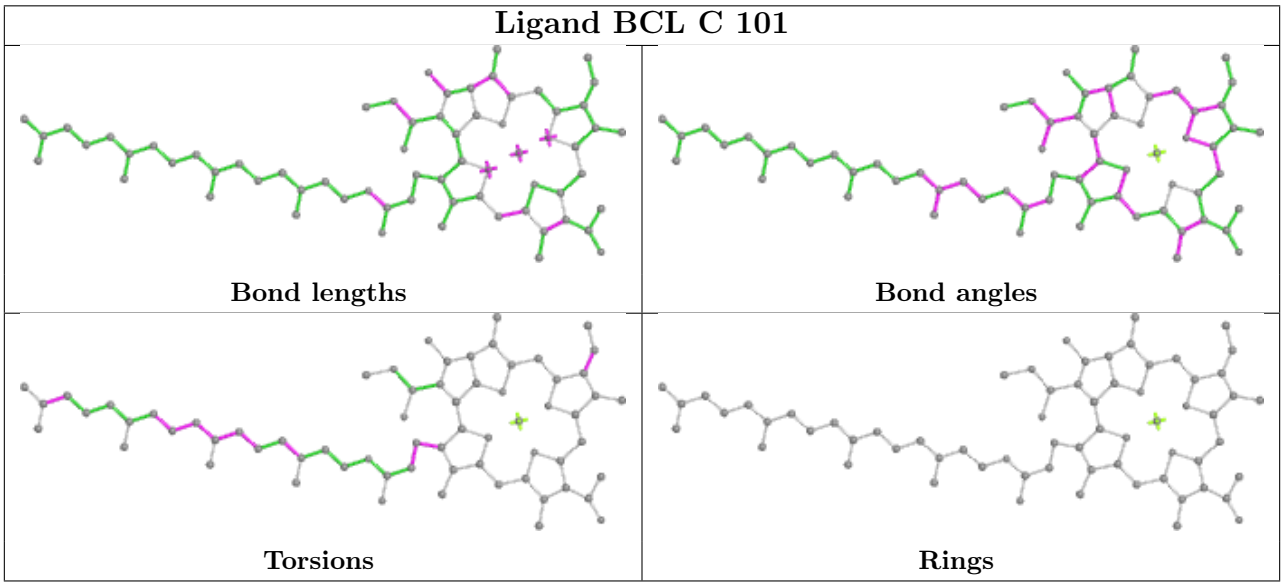
Ligand PGT 7 103



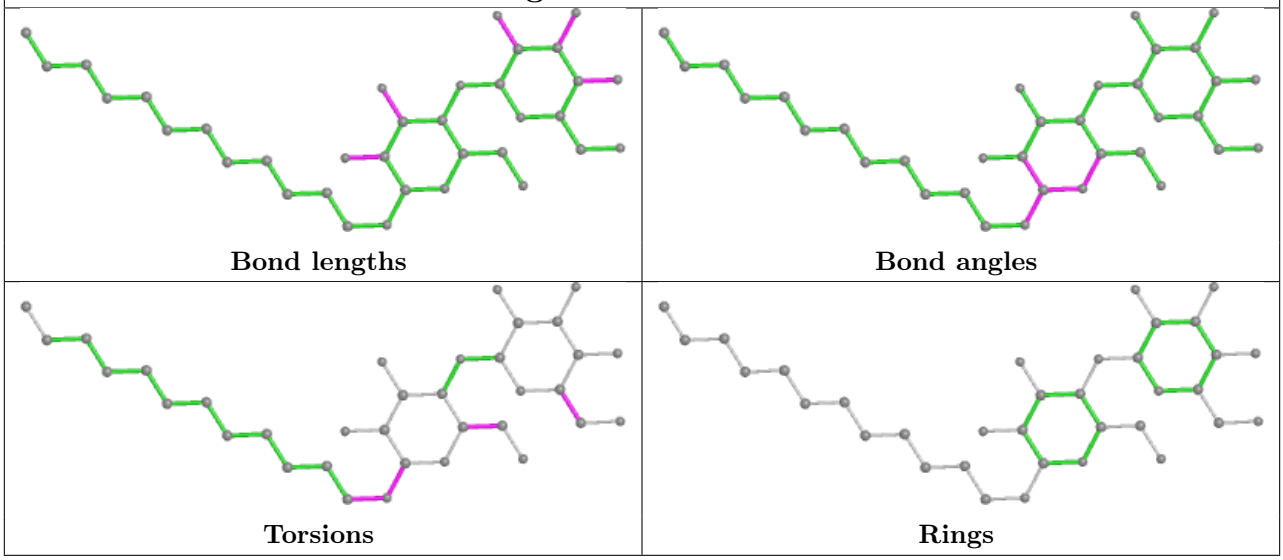
Ligand BCL B 102



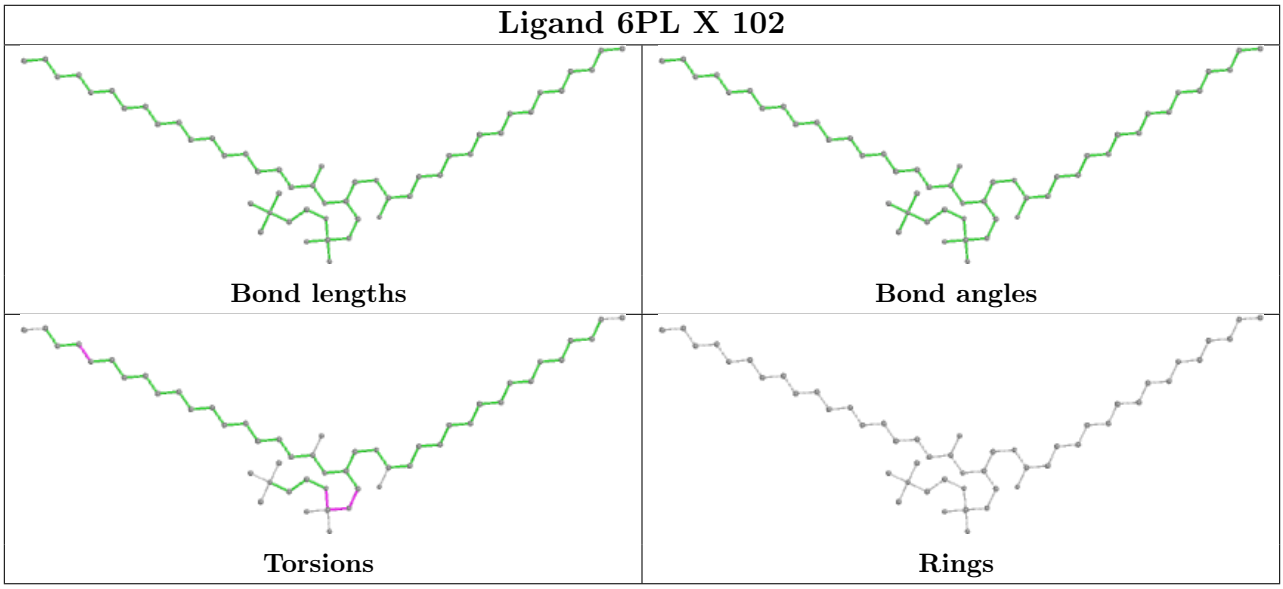
Ligand BCL C 101



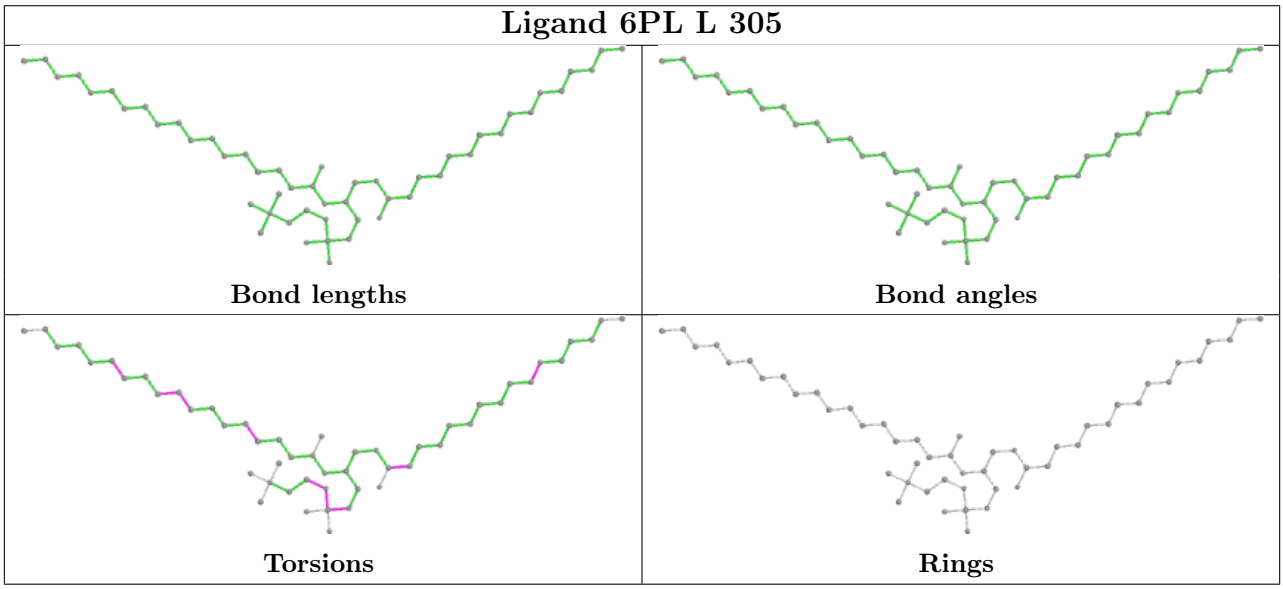
Ligand LMT J 102



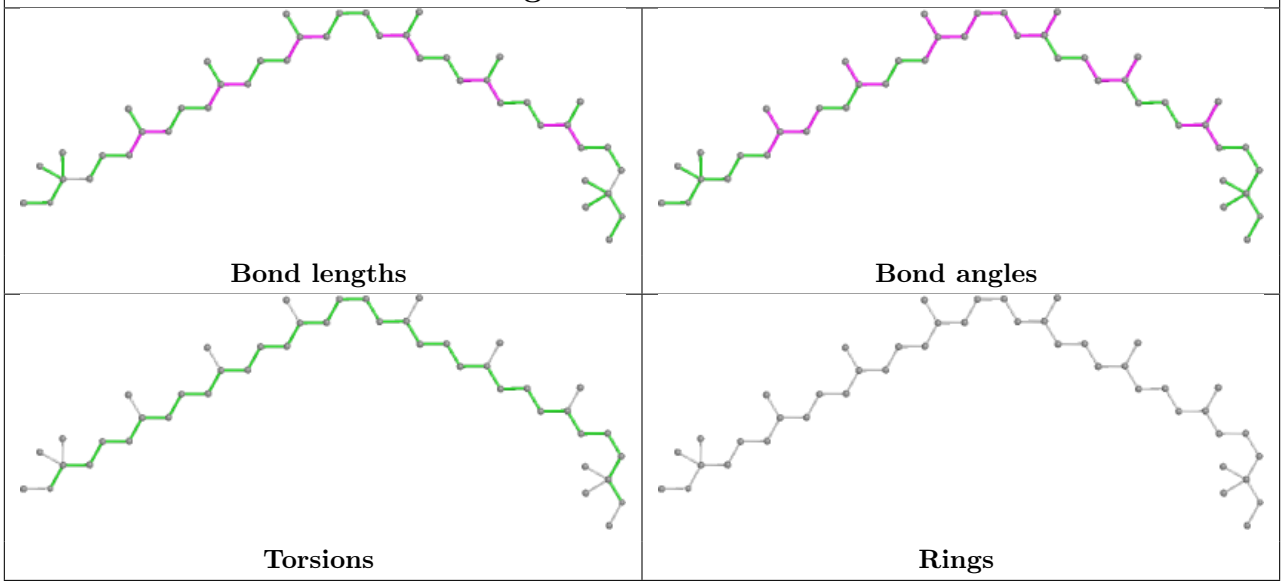
Ligand 6PL X 102



Ligand 6PL L 305



Ligand CRT K 101



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

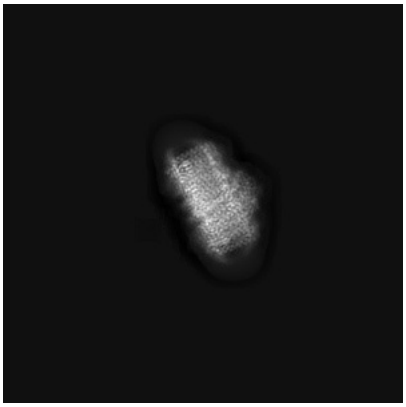
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-11080. These allow visual inspection of the internal detail of the map and identification of artifacts.

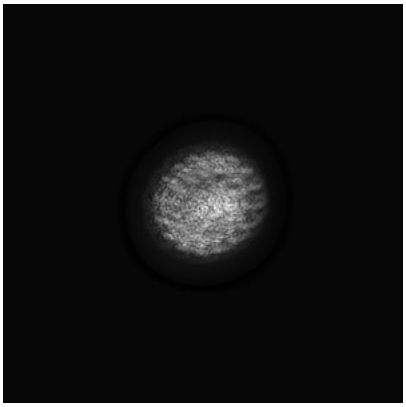
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

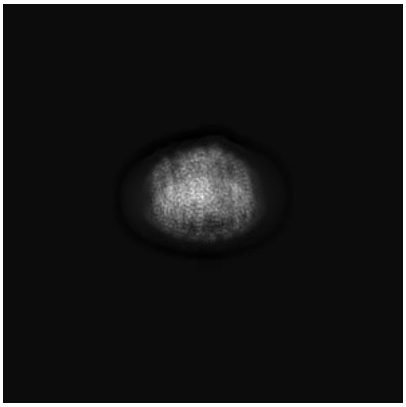
6.1.1 Primary map



X



Y

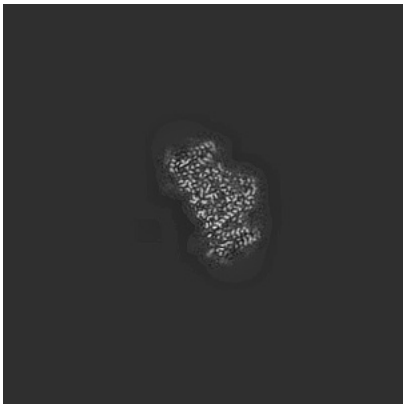


Z

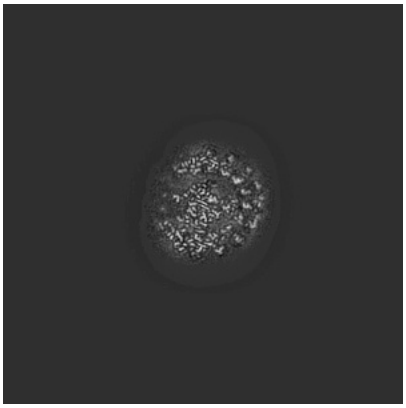
The images above show the map projected in three orthogonal directions.

6.2 Central slices

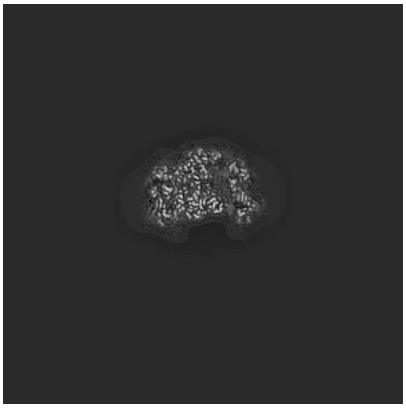
6.2.1 Primary map



X Index: 200



Y Index: 200

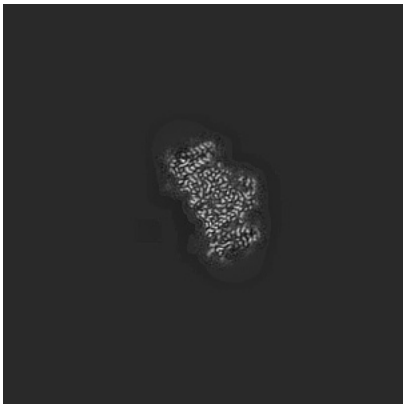


Z Index: 200

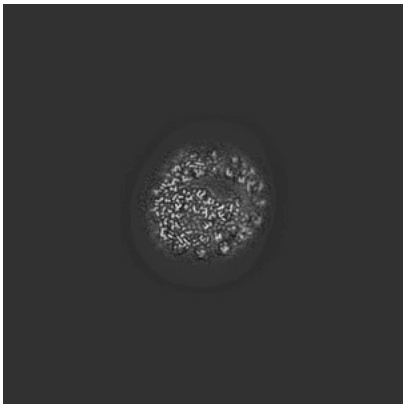
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

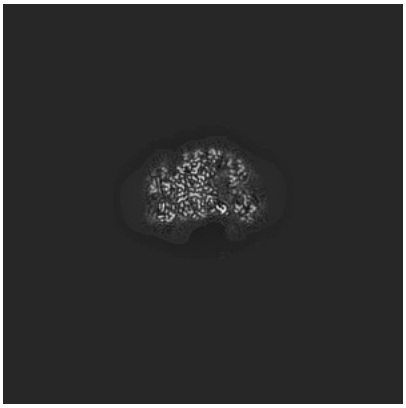
6.3.1 Primary map



X Index: 199



Y Index: 209

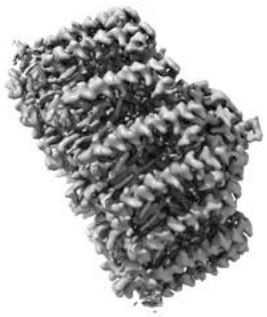


Z Index: 203

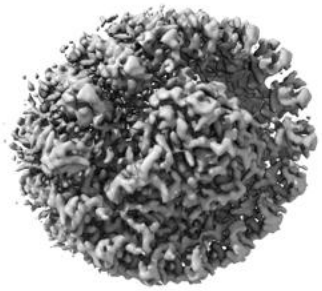
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

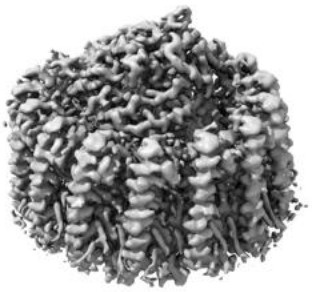
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.18. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

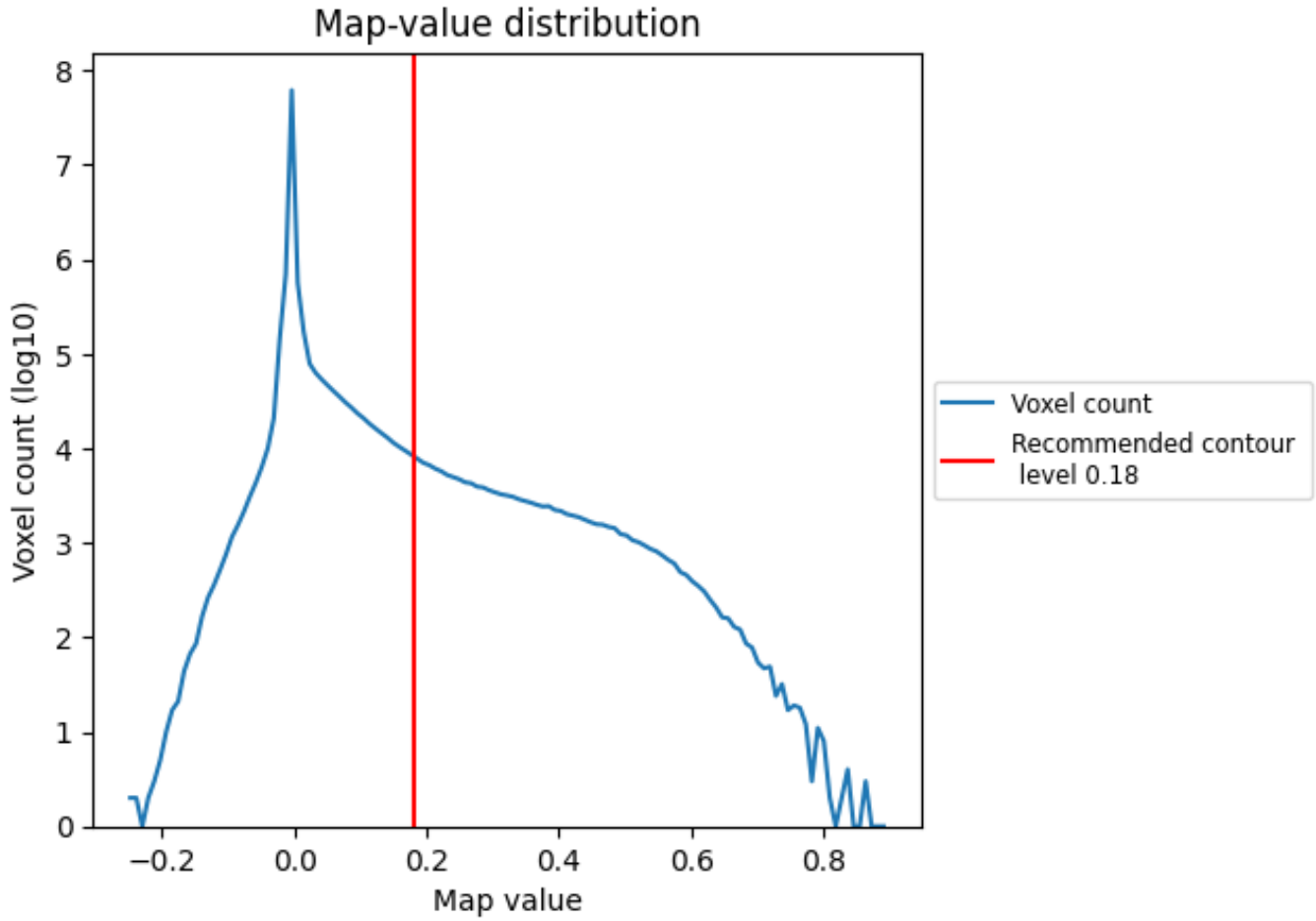
6.5 Mask visualisation (i)

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

7 Map analysis

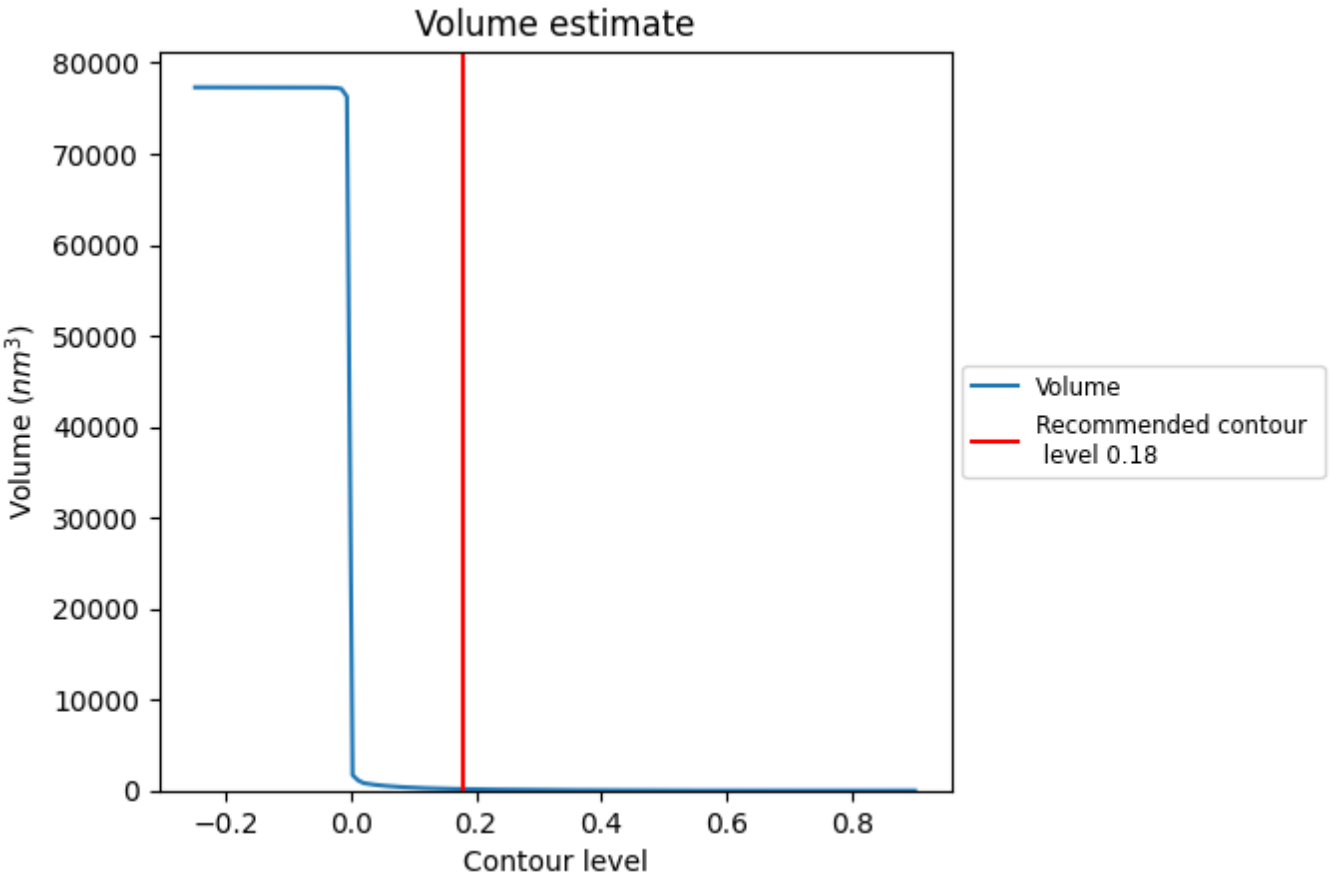
This section contains the results of statistical analysis of the map.

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.

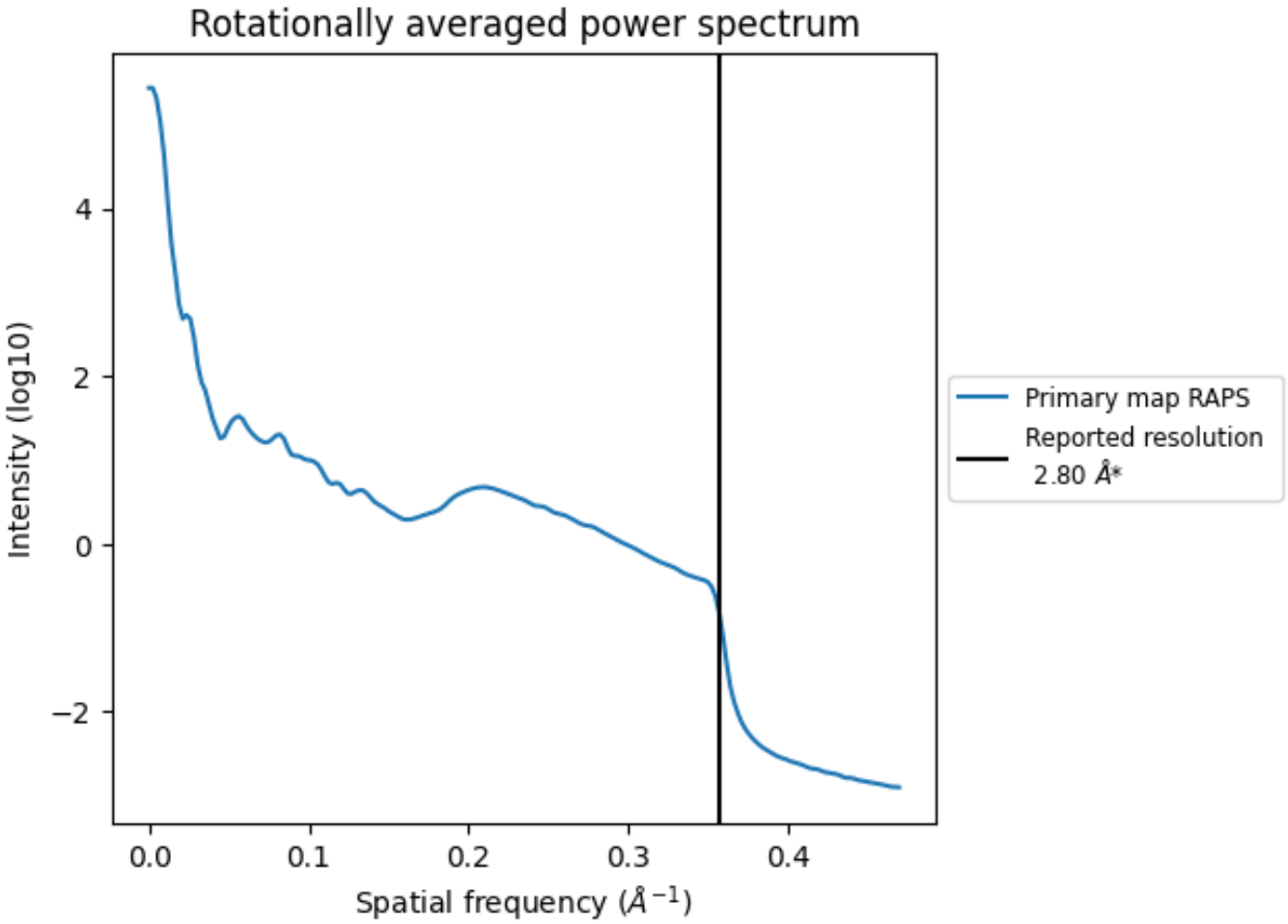
7.2 Volume estimate (i)



The volume at the recommended contour level is 163 nm^3; this corresponds to an approximate mass of 147 kDa.

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

7.3 Rotationally averaged power spectrum (i)

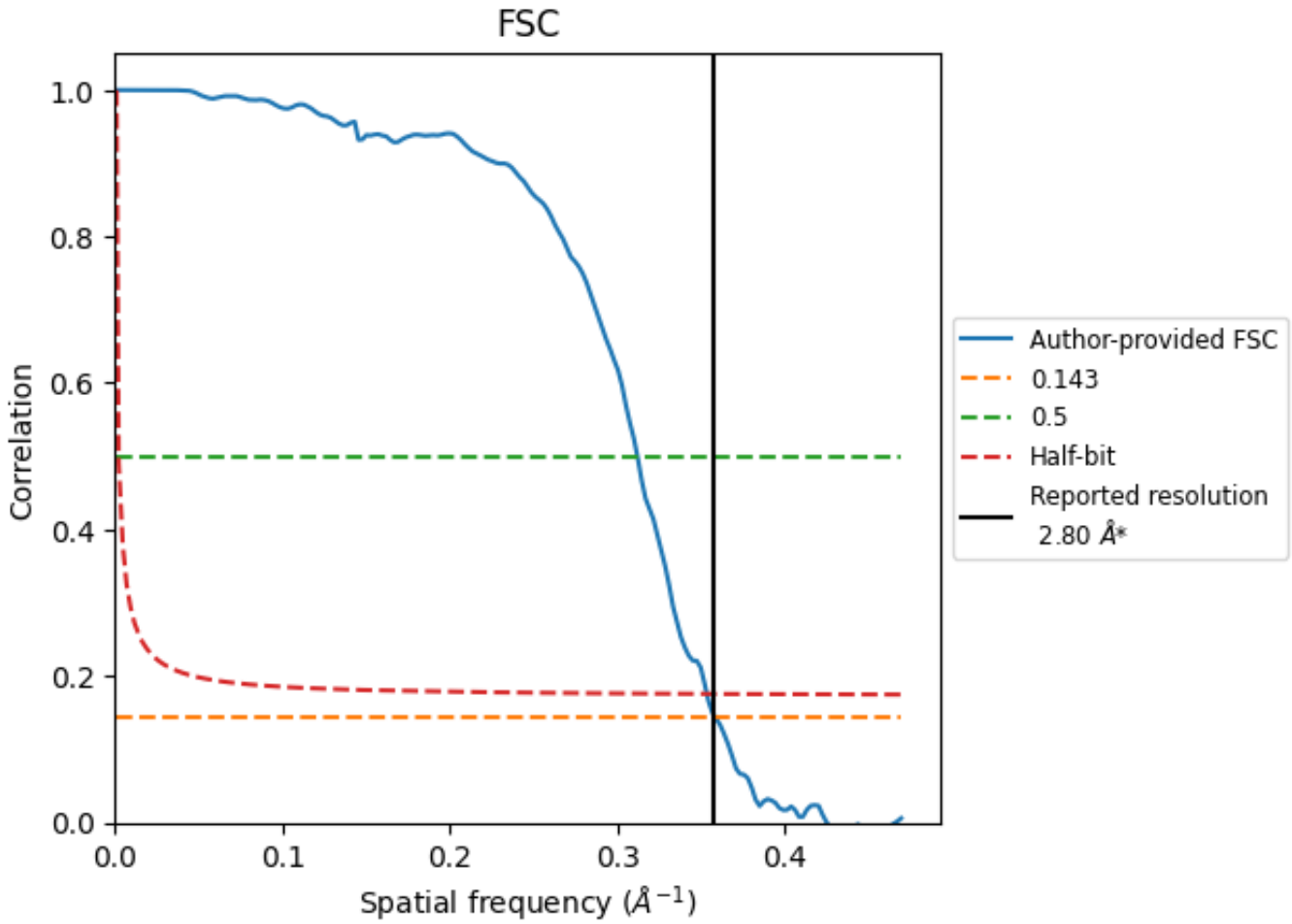


*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

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 0.357 Å^{-1}

8.2 Resolution estimates (i)

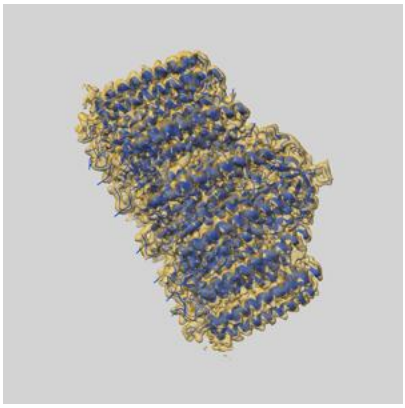
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.79	3.21	2.83
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

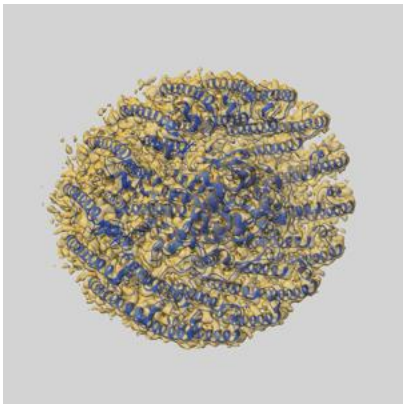
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-11080 and PDB model 6Z5R. Per-residue inclusion information can be found in section 3 on page 17.

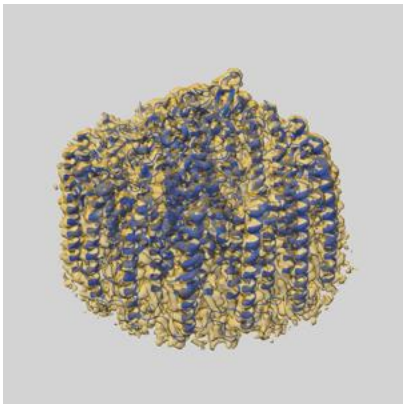
9.1 Map-model overlay



X



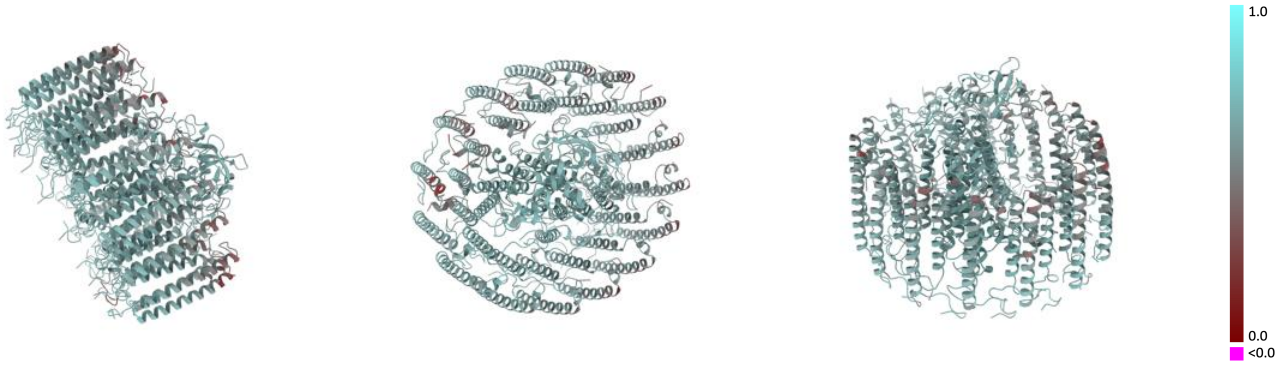
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.18 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

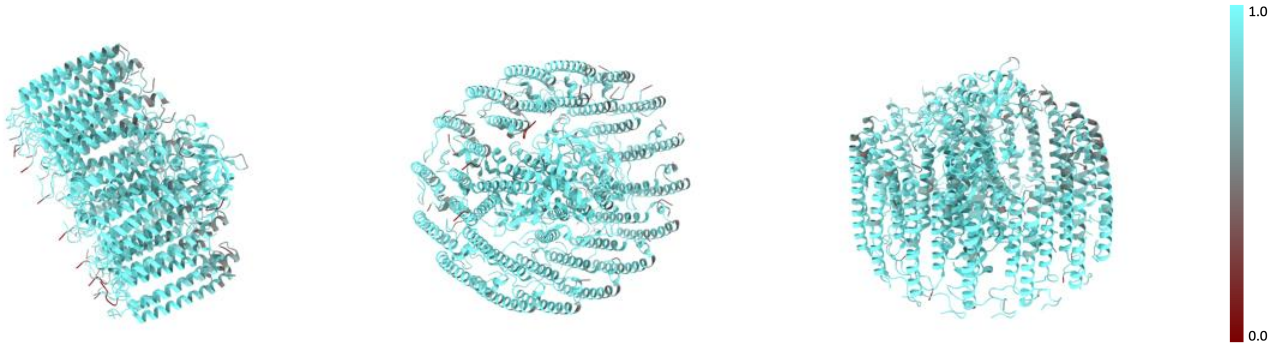
9.2 Q-score mapped to coordinate model (i)



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.

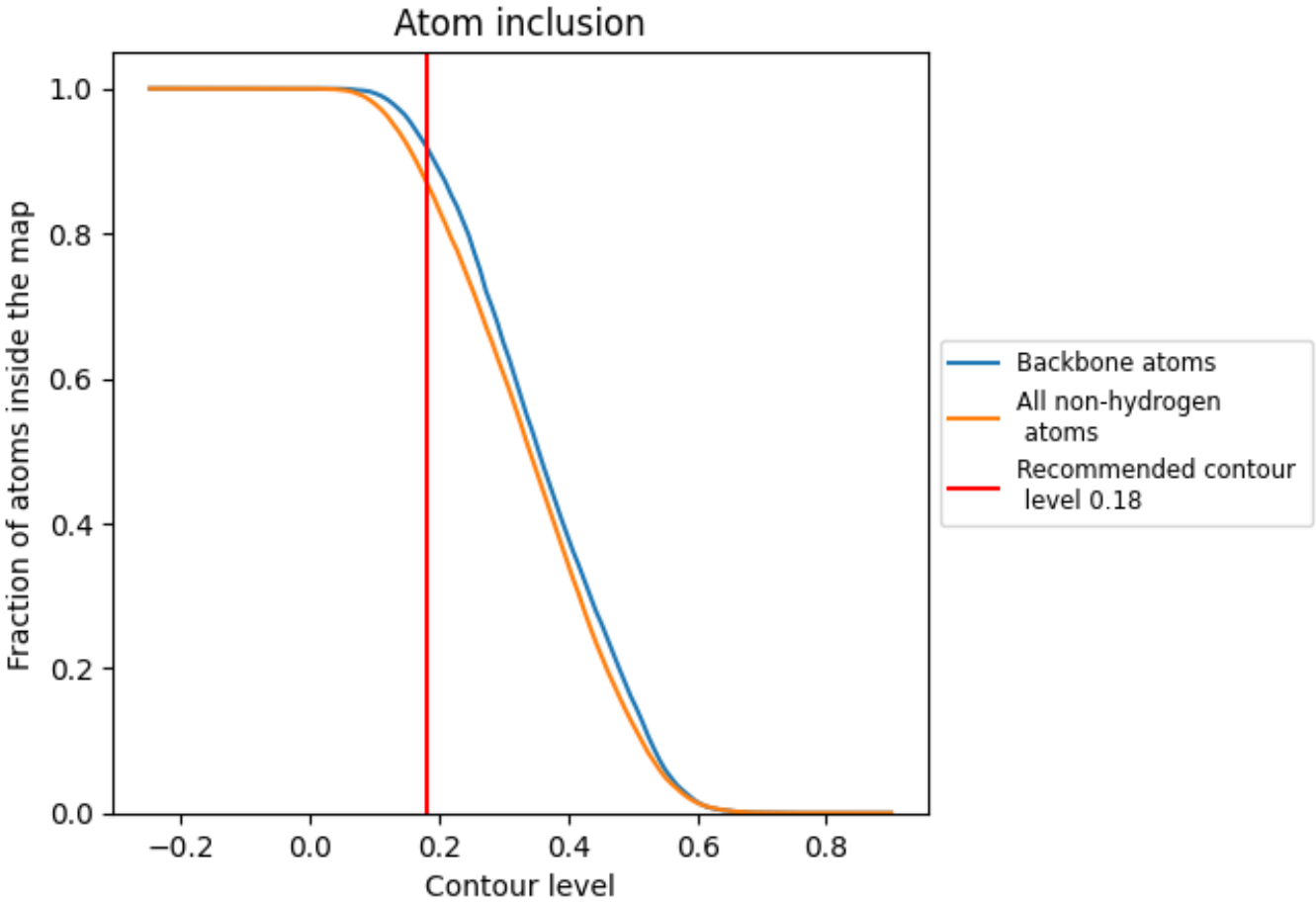
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.18).

9.4 Atom inclusion (i)



At the recommended contour level, 92% 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 (0.18) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8713	0.6030
0	0.7592	0.5480
1	0.8504	0.5920
2	0.7500	0.5560
3	0.8857	0.6020
4	0.7165	0.5620
5	0.8179	0.5910
6	0.7630	0.5700
7	0.8159	0.5870
8	0.6349	0.5160
9	0.8189	0.5520
A	0.9148	0.5990
B	0.7910	0.5660
C	0.9449	0.6400
D	0.8755	0.6140
E	0.9538	0.6230
F	0.8336	0.6030
G	0.9178	0.6210
H	0.9392	0.6210
I	0.8168	0.5910
J	0.9238	0.6190
K	0.8496	0.6010
L	0.9504	0.6380
M	0.9619	0.6410
N	0.9134	0.6170
O	0.8071	0.5720
P	0.9174	0.5970
Q	0.8209	0.5870
R	0.8785	0.6000
S	0.8159	0.5680
T	0.8978	0.5950
U	0.8240	0.5860
V	0.8839	0.6030
X	0.8093	0.5590
Y	0.8474	0.5920
Z	0.7544	0.5670