wwPDB X-ray Structure Validation Summary Report (i)

Jan 27, 2024 – 03:29 PM EST

PDB ID	:	1AIJ
Title	:	PHOTOSYNTHETIC REACTION CENTER FROM RHODOBACTER SPHAEROIDES IN THE CHARGE-NEUTRAL DQAQB STATE
Authors	:	Stowell, M.H.B.; Mcphillips, T.M.; Soltis, S.M.; Rees, D.C.; Abresch, E.; Feher, G.
Deposited on	:	1997-04-18
Resolution	:	2.20 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (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 (1)) were used in the production of this report:

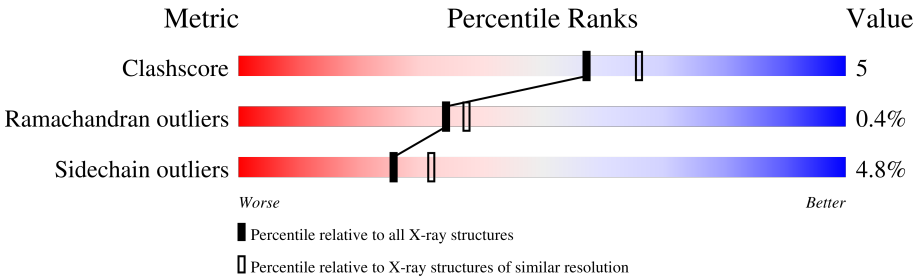
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.20 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	L	281	84% 14% •
1	R	281	82% 16% •
2	M	307	79% 17% • •
2	S	307	77% 18% • •
3	H	260	84% 10% 5%
3	T	260	77% 16% • 5%

2 Entry composition (i)

There are 9 unique types of molecules in this entry. The entry contains 14393 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called PHOTOSYNTHETIC REACTION CENTER (L SUBUNIT).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	281	Total	C	N	O	S	0	0	0
			2232	1507	355	362	8			
1	R	281	Total	C	N	O	S	4	0	0
			2232	1507	355	362	8			

- Molecule 2 is a protein called PHOTOSYNTHETIC REACTION CENTER (M SUBUNIT).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	M	301	Total	C	N	O	S	0	0	0
			2404	1605	393	396	10			
2	S	299	Total	C	N	O	S	0	0	0
			2390	1597	391	392	10			

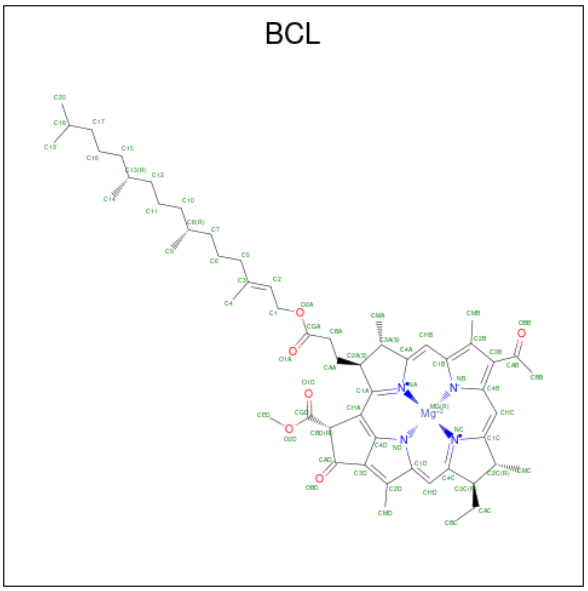
- Molecule 3 is a protein called PHOTOSYNTHETIC REACTION CENTER (H SUBUNIT).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	H	246	Total	C	N	O	S	4	0	0
			1869	1196	320	343	10			
3	T	246	Total	C	N	O	S	0	0	0
			1869	1196	320	343	10			

There are 2 discrepancies between the modelled and reference sequences:

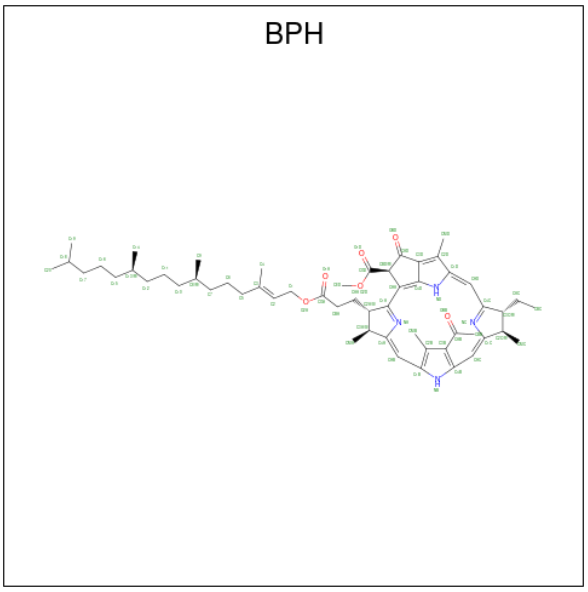
Chain	Residue	Modelled	Actual	Comment	Reference
H	8	GLN	GLY	conflict	UNP P11846
T	8	GLN	GLY	conflict	UNP P11846

- Molecule 4 is BACTERIOCHLOROPHYLL A (three-letter code: BCL) (formula: $C_{55}H_{74}MgN_4O_6$).



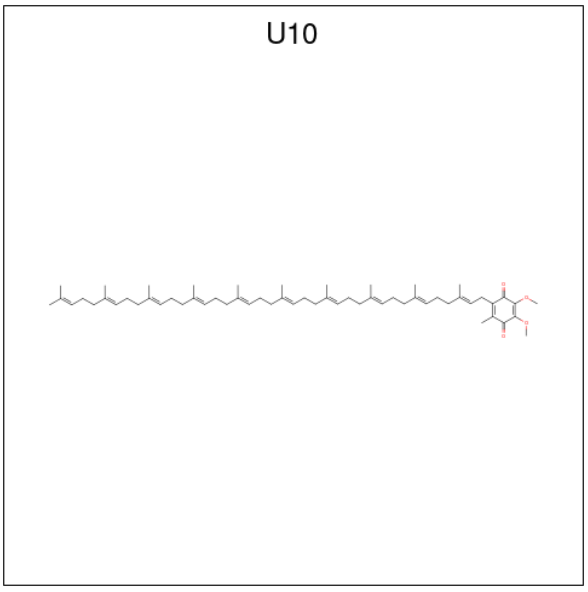
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	L	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		
4	L	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		
4	M	1	Total	C	Mg	N	O	0	0
			51	40	1	4	6		
4	M	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		
4	R	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		
4	R	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		
4	S	1	Total	C	Mg	N	O	0	0
			51	40	1	4	6		
4	S	1	Total	C	Mg	N	O	0	0
			66	55	1	4	6		

- Molecule 5 is BACTERIOPHEOPHYTIN A (three-letter code: BPH) (formula: $C_{55}H_{76}N_4O_6$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	L	1	Total C N O 51 41 4 6	0	0
5	L	1	Total C N O 65 55 4 6	0	0
5	R	1	Total C N O 65 55 4 6	0	0
5	S	1	Total C N O 52 42 4 6	0	0

- Molecule 6 is UBIQUINONE-10 (three-letter code: U10) (formula: $C_{59}H_{90}O_4$).

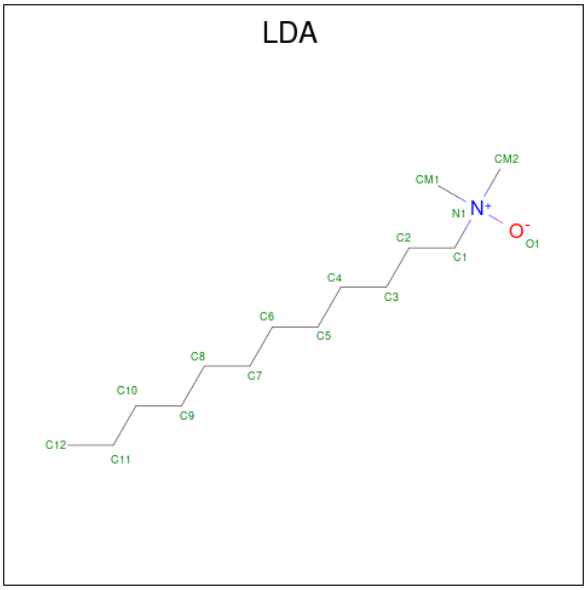


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	L	1	Total C O 44 40 4	0	0
6	M	1	Total C O 38 34 4	0	0
6	R	1	Total C O 18 14 4	0	0
6	S	1	Total C O 32 28 4	0	0

- Molecule 7 is FE (II) ION (three-letter code: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	M	1	Total Fe 1 1	0	0
7	S	1	Total Fe 1 1	0	0

- Molecule 8 is LAURYL DIMETHYLAMINE-N-OXIDE (three-letter code: LDA) (formula: $C_{14}H_{31}NO$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	M	1	Total C N O 16 14 1 1	0	0
8	M	1	Total C N O 16 14 1 1	0	0
8	M	1	Total C N O 16 14 1 1	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	M	1	Total	C	N	O	0	0
			16	14	1	1		

- Molecule 9 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	L	67	Total	O	0	0
			67	67		
9	M	91	Total	O	0	0
			91	91		
9	H	105	Total	O	0	0
			105	105		
9	R	56	Total	O	0	0
			56	56		
9	S	85	Total	O	0	0
			85	85		
9	T	64	Total	O	0	0
			64	64		

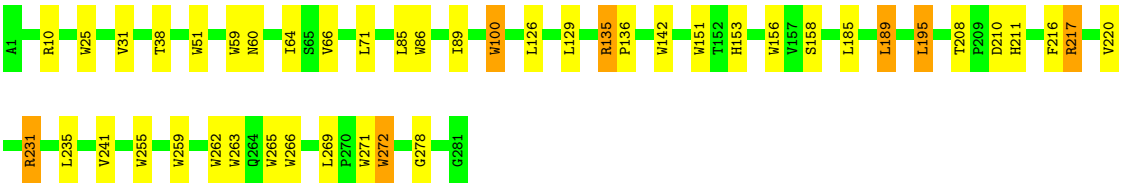
3 Residue-property plots (i)

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. 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. 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.

Note EDS was not executed.

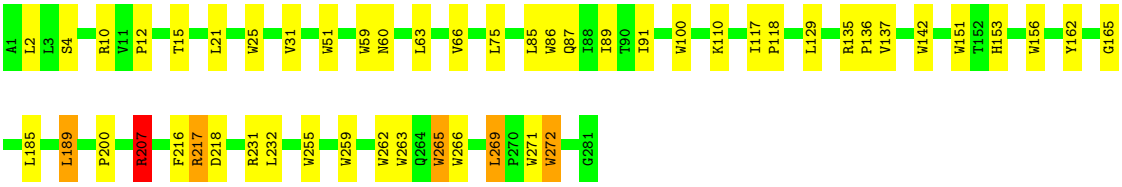
• Molecule 1: PHOTOSYNTHETIC REACTION CENTER (L SUBUNIT)

Chain L:



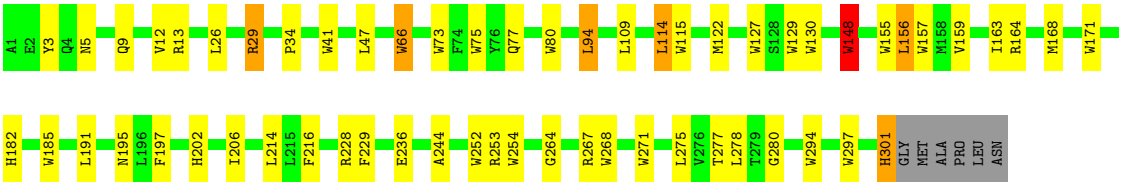
• Molecule 1: PHOTOSYNTHETIC REACTION CENTER (L SUBUNIT)

Chain R:



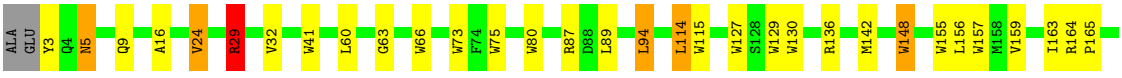
• Molecule 2: PHOTOSYNTHETIC REACTION CENTER (M SUBUNIT)

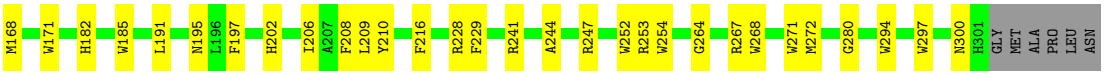
Chain M:



• Molecule 2: PHOTOSYNTHETIC REACTION CENTER (M SUBUNIT)

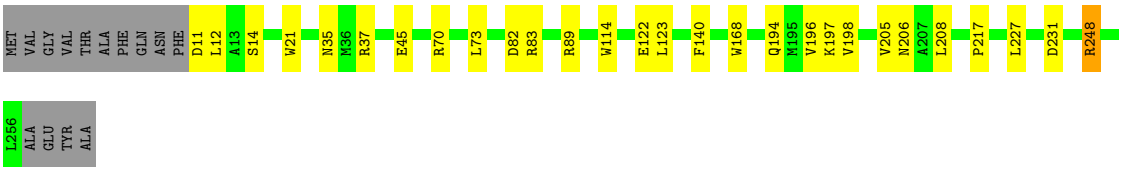
Chain S:





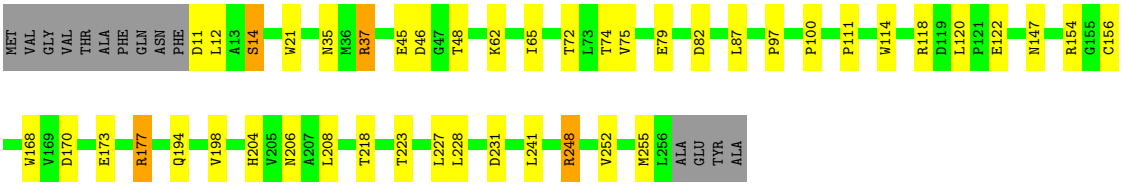
• Molecule 3: PHOTOSYNTHETIC REACTION CENTER (H SUBUNIT)

Chain H:



• Molecule 3: PHOTOSYNTHETIC REACTION CENTER (H SUBUNIT)

Chain T:



4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	140.08Å 140.08Å 271.63Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 2.20	Depositor
% Data completeness (in resolution range)	(Not available) (30.00-2.20)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
Refinement program	X-PLOR 3.1	Depositor
R, R_{free}	0.216 , 0.270	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	14393	wwPDB-VP
Average B, all atoms (Å^2)	34.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: LDA, BCL, BPH, U10, FE2

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	L	0.78	0/2320	1.48	59/3175 (1.9%)
1	R	0.78	0/2320	1.45	53/3175 (1.7%)
2	M	0.79	0/2496	1.51	67/3408 (2.0%)
2	S	0.80	0/2482	1.54	74/3389 (2.2%)
3	H	0.66	0/1917	1.21	13/2608 (0.5%)
3	T	0.66	0/1917	1.20	13/2608 (0.5%)
All	All	0.75	0/13452	1.42	279/18363 (1.5%)

There are no bond length outliers.

The worst 5 of 279 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	L	231	ARG	NE-CZ-NH1	9.91	125.26	120.30
3	H	248	ARG	NE-CZ-NH1	9.33	124.96	120.30
1	L	10	ARG	NE-CZ-NH1	9.18	124.89	120.30
2	S	41	TRP	CD1-CG-CD2	9.09	113.57	106.30
3	T	248	ARG	NE-CZ-NH1	8.90	124.75	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L	2232	0	2187	13	0
1	R	2232	0	2187	20	0
2	M	2404	0	2318	27	0
2	S	2390	0	2304	22	0
3	H	1869	0	1884	11	0
3	T	1869	0	1884	25	0
4	L	132	0	148	10	0
4	M	117	0	115	11	0
4	R	132	0	148	9	0
4	S	117	0	115	11	0
5	L	116	0	121	5	0
5	R	65	0	76	4	0
5	S	52	0	47	2	0
6	L	44	0	57	1	0
6	M	38	0	47	1	0
6	R	18	0	15	2	0
6	S	32	0	39	0	0
7	M	1	0	0	0	0
7	S	1	0	0	0	0
8	M	64	0	124	4	0
9	H	105	0	0	0	0
9	L	67	0	0	0	0
9	M	91	0	0	2	0
9	R	56	0	0	0	0
9	S	85	0	0	1	0
9	T	64	0	0	1	0
All	All	14393	0	13816	135	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 5.

The worst 5 of 135 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:M:309:BCL:HBB3	4:M:310:BCL:H41	1.46	0.96
4:S:309:BCL:HBB3	4:S:310:BCL:H41	1.69	0.74
2:S:208:PHE:HD1	2:S:272:MET:HE3	1.52	0.74
5:R:284:BPH:HHC	5:R:284:BPH:HBB3	1.70	0.73
2:S:63:GLY:HA3	5:S:311:BPH:H5C2	1.70	0.73

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	L	279/281 (99%)	271 (97%)	6 (2%)	2 (1%)	22	22
1	R	279/281 (99%)	271 (97%)	6 (2%)	2 (1%)	22	22
2	M	299/307 (97%)	290 (97%)	9 (3%)	0	100	100
2	S	297/307 (97%)	287 (97%)	9 (3%)	1 (0%)	41	46
3	H	244/260 (94%)	239 (98%)	4 (2%)	1 (0%)	34	37
3	T	244/260 (94%)	234 (96%)	9 (4%)	1 (0%)	34	37
All	All	1642/1696 (97%)	1592 (97%)	43 (3%)	7 (0%)	34	37

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	L	71	LEU
3	H	45	GLU
3	T	45	GLU
1	R	2	LEU
2	S	195	ASN

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	L	220/220 (100%)	208 (94%)	12 (6%)	21	26
1	R	220/220 (100%)	212 (96%)	8 (4%)	35	45
2	M	236/240 (98%)	224 (95%)	12 (5%)	24	29

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	S	235/240 (98%)	223 (95%)	12 (5%)	24 29
3	H	199/209 (95%)	192 (96%)	7 (4%)	36 46
3	T	199/209 (95%)	187 (94%)	12 (6%)	19 22
All	All	1309/1338 (98%)	1246 (95%)	63 (5%)	25 32

5 of 63 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	H	208	LEU
3	T	75	VAL
1	R	207	ARG
3	T	48	THR
3	T	218	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 11 such sidechains are listed below:

Mol	Chain	Res	Type
2	S	9	GLN
3	T	147	ASN
3	T	206	ASN
3	T	204	HIS
3	H	206	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 22 ligands modelled in this entry, 2 are monoatomic - leaving 20 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	$\#\|Z\| > 2$
8	LDA	M	313	-	12,15,15	2.54	1 (8%)	14,17,17	1.40	4 (28%)
5	BPH	R	284	-	51,70,70	1.16	5 (9%)	52,101,101	1.82	11 (21%)
5	BPH	S	311	-	38,57,70	1.30	5 (13%)	36,85,101	2.11	10 (27%)
8	LDA	M	314	-	12,15,15	2.48	1 (8%)	14,17,17	1.41	4 (28%)
8	LDA	M	312	-	12,15,15	2.46	1 (8%)	14,17,17	1.39	2 (14%)
4	BCL	S	309	-	49,59,74	1.28	6 (12%)	60,97,115	2.13	19 (31%)
4	BCL	L	283	-	64,74,74	1.12	6 (9%)	78,115,115	2.05	20 (25%)
8	LDA	M	315	-	12,15,15	2.47	1 (8%)	14,17,17	1.42	4 (28%)
4	BCL	L	282	-	64,74,74	1.15	6 (9%)	78,115,115	1.80	20 (25%)
6	U10	L	286	-	44,44,63	1.65	10 (22%)	53,56,79	1.30	5 (9%)
5	BPH	L	285	-	51,70,70	1.24	4 (7%)	52,101,101	2.08	12 (23%)
4	BCL	M	310	-	64,74,74	1.10	6 (9%)	78,115,115	1.84	21 (26%)
6	U10	M	311	-	38,38,63	1.64	10 (26%)	46,49,79	1.10	3 (6%)
4	BCL	R	283	-	64,74,74	1.13	6 (9%)	78,115,115	2.00	19 (24%)
6	U10	R	285	-	18,18,63	1.93	5 (27%)	22,25,79	1.03	0
4	BCL	M	309	-	49,59,74	1.34	5 (10%)	60,97,115	2.03	20 (33%)
5	BPH	L	284	-	37,56,70	1.50	5 (13%)	35,84,101	2.14	11 (31%)
4	BCL	S	310	-	64,74,74	1.14	6 (9%)	78,115,115	1.81	19 (24%)
4	BCL	R	282	-	64,74,74	1.10	6 (9%)	78,115,115	1.87	21 (26%)
6	U10	S	312	-	32,32,63	1.66	8 (25%)	38,41,79	1.05	2 (5%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	LDA	M	313	-	-	6/13/13/13	-
5	BPH	R	284	-	-	11/37/105/105	0/5/6/6
5	BPH	S	311	-	-	6/22/90/105	0/5/6/6
8	LDA	M	314	-	-	6/13/13/13	-
8	LDA	M	312	-	-	4/13/13/13	-
4	BCL	S	309	-	-	3/19/119/137	-
4	BCL	L	283	-	-	3/37/137/137	-
8	LDA	M	315	-	-	6/13/13/13	-
4	BCL	L	282	-	-	3/37/137/137	-
6	U10	L	286	-	-	15/41/65/87	0/1/1/1
5	BPH	L	285	-	-	8/37/105/105	0/5/6/6
4	BCL	M	310	-	-	5/37/137/137	-
6	U10	M	311	-	-	2/33/57/87	0/1/1/1
4	BCL	R	283	-	-	2/37/137/137	-
6	U10	R	285	-	-	2/9/33/87	0/1/1/1
4	BCL	M	309	-	-	3/19/119/137	-
5	BPH	L	284	-	-	5/21/89/105	0/5/6/6
4	BCL	S	310	-	-	8/37/137/137	-
4	BCL	R	282	-	-	7/37/137/137	-
6	U10	S	312	-	-	4/26/50/87	0/1/1/1

The worst 5 of 103 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	M	313	LDA	O1-N1	-8.62	1.22	1.42
8	M	314	LDA	O1-N1	-8.42	1.22	1.42
8	M	315	LDA	O1-N1	-8.39	1.22	1.42
8	M	312	LDA	O1-N1	-8.34	1.22	1.42
5	L	285	BPH	C3A-C2A	-5.24	1.49	1.54

The worst 5 of 227 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	R	283	BCL	C1C-NC-C4C	7.14	109.91	106.71
4	L	283	BCL	C1C-NC-C4C	7.09	109.89	106.71
5	S	311	BPH	O2D-CGD-CBD	6.60	119.36	111.00
5	R	284	BPH	O2D-CGD-CBD	6.49	119.22	111.00
4	S	309	BCL	C1C-NC-C4C	6.45	109.61	106.71

There are no chirality outliers.

5 of 109 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	M	310	BCL	CBD-CGD-O2D-CED
4	R	282	BCL	C2C-C3C-CAC-CBC
4	R	282	BCL	C4C-C3C-CAC-CBC
4	S	310	BCL	CBD-CGD-O2D-CED
5	L	284	BPH	C4C-C3C-CAC-CBC

There are no ring outliers.

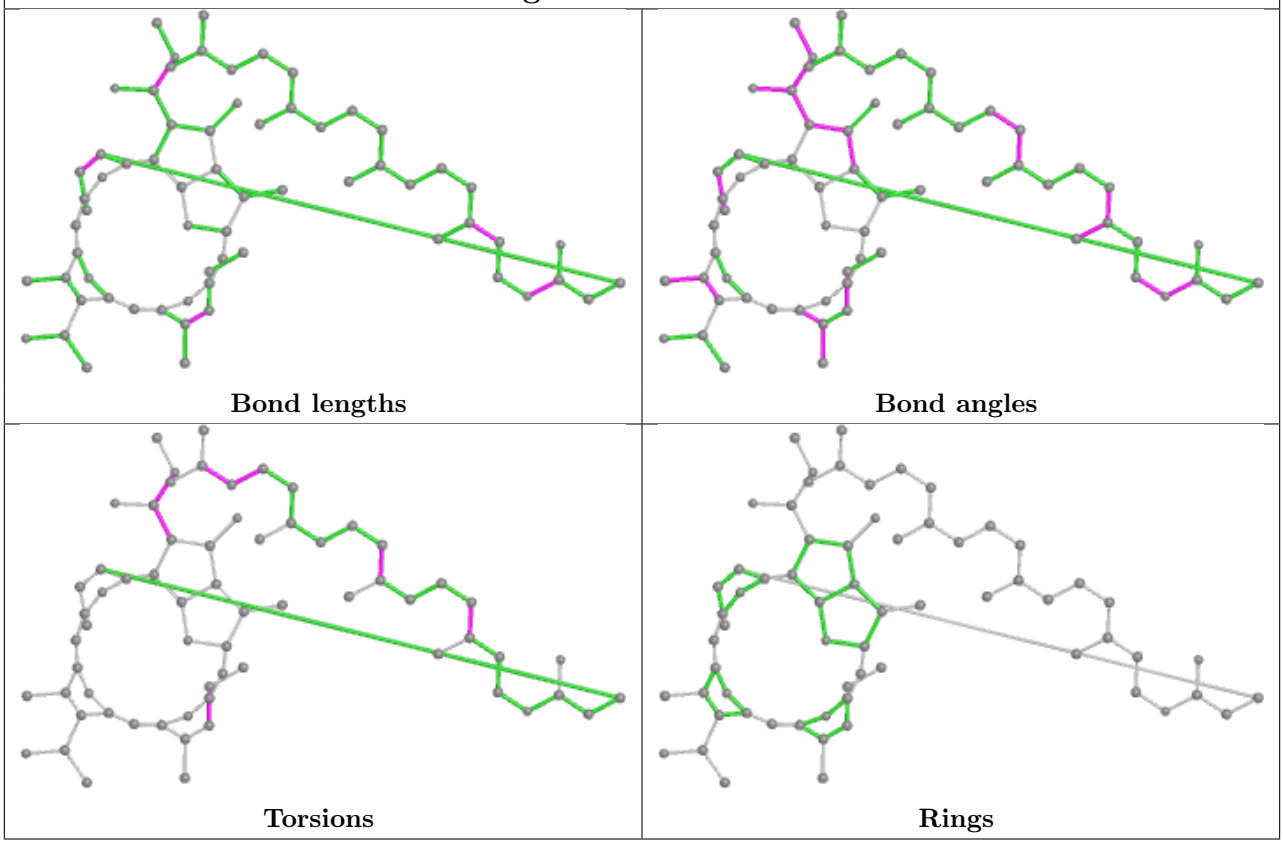
18 monomers are involved in 56 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	R	284	BPH	4	0
5	S	311	BPH	2	0
8	M	314	LDA	1	0
8	M	312	LDA	2	0
4	S	309	BCL	5	0
4	L	283	BCL	6	0
8	M	315	LDA	1	0
4	L	282	BCL	7	0
6	L	286	U10	1	0
5	L	285	BPH	4	0
4	M	310	BCL	7	0
6	M	311	U10	1	0
4	R	283	BCL	6	0
6	R	285	U10	2	0
4	M	309	BCL	5	0
5	L	284	BPH	1	0
4	S	310	BCL	8	0
4	R	282	BCL	7	0

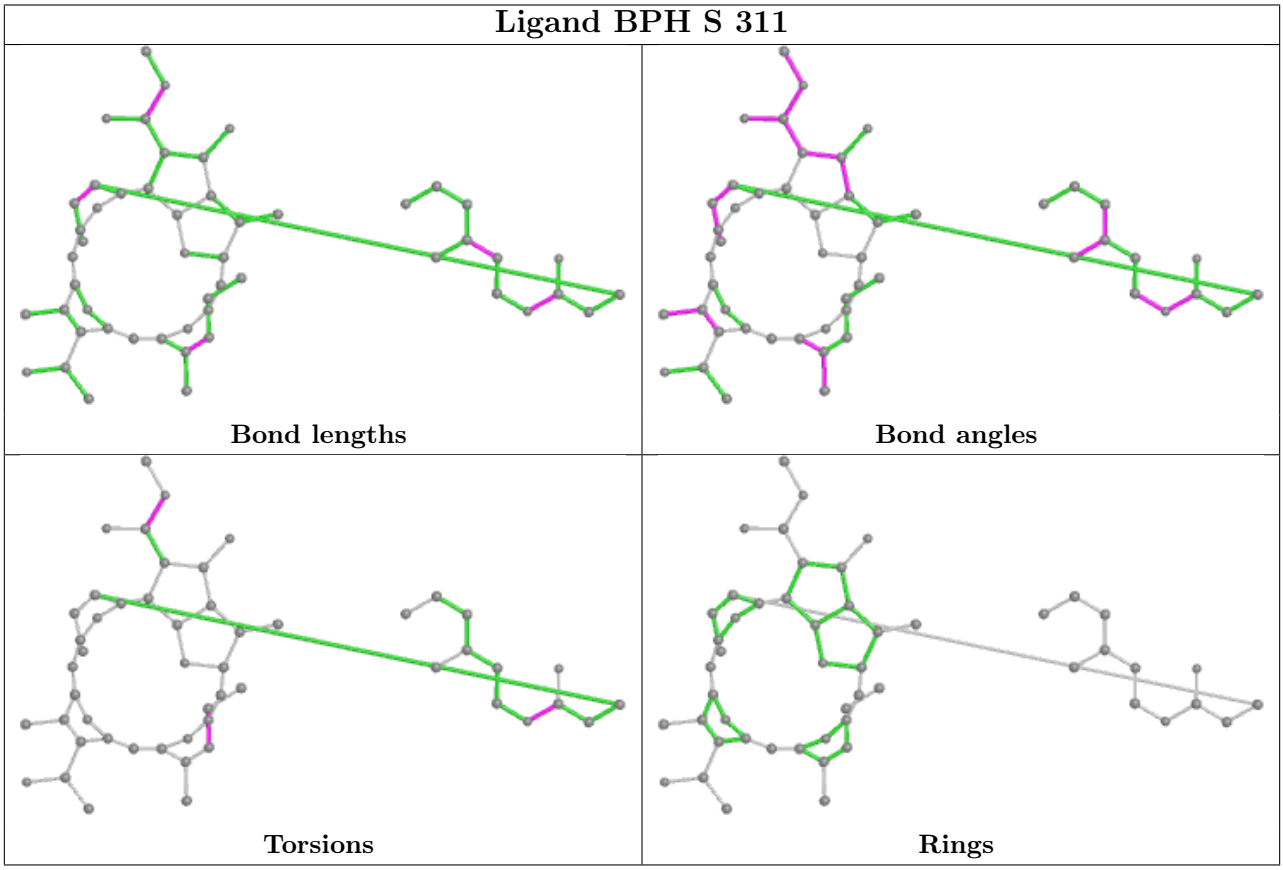
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

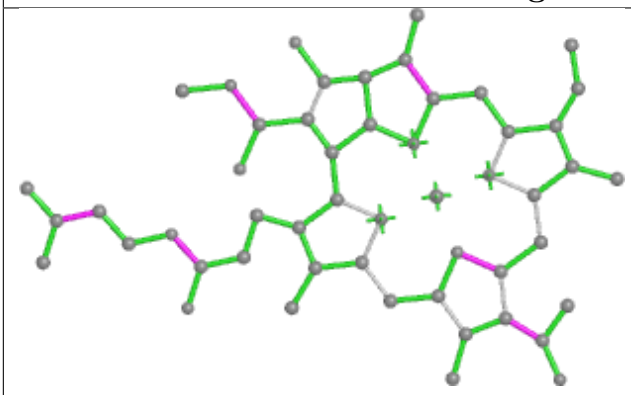
Ligand BPH R 284



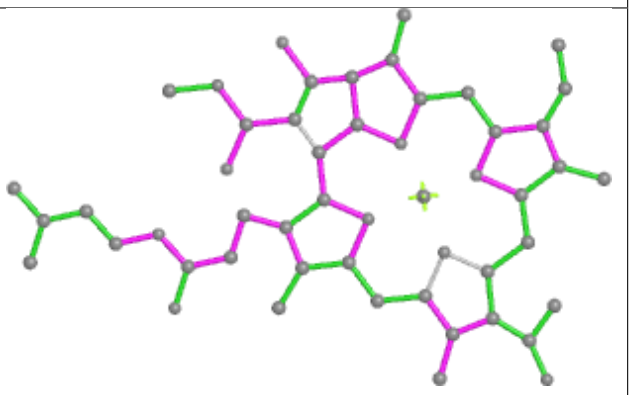
Ligand BPH S 311



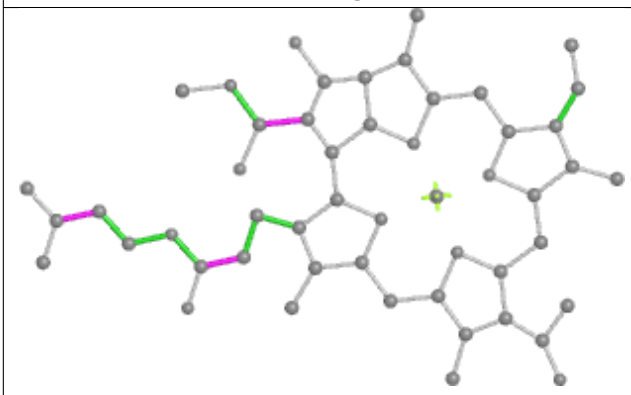
Ligand BCL S 309



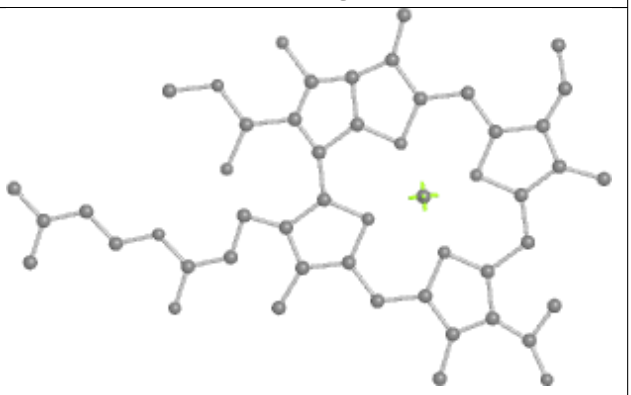
Bond lengths



Bond angles

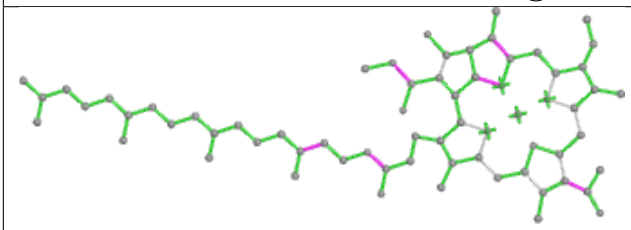


Torsions

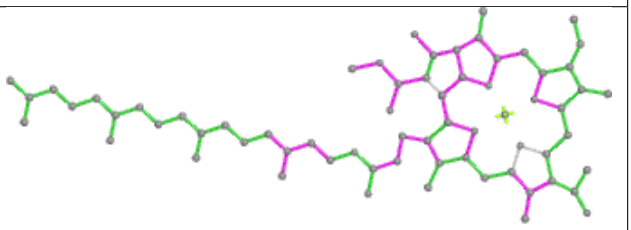


Rings

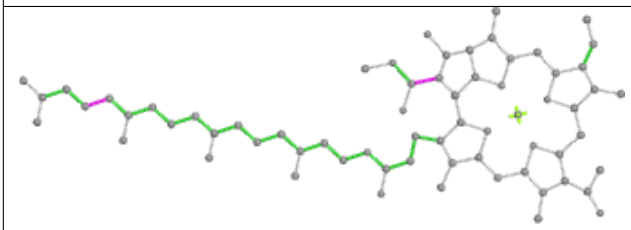
Ligand BCL L 283



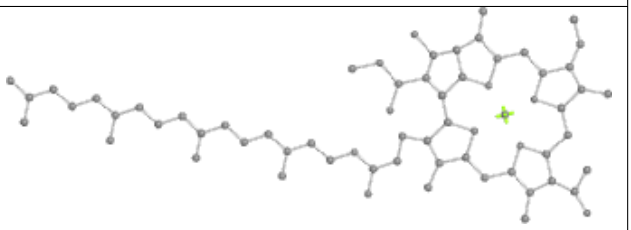
Bond lengths



Bond angles

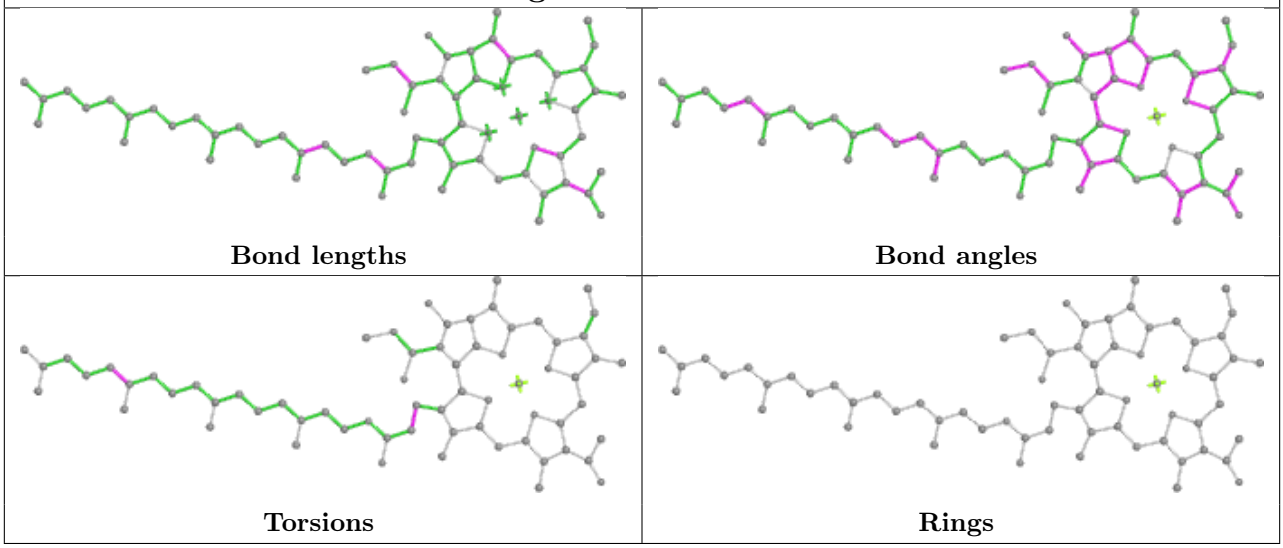


Torsions

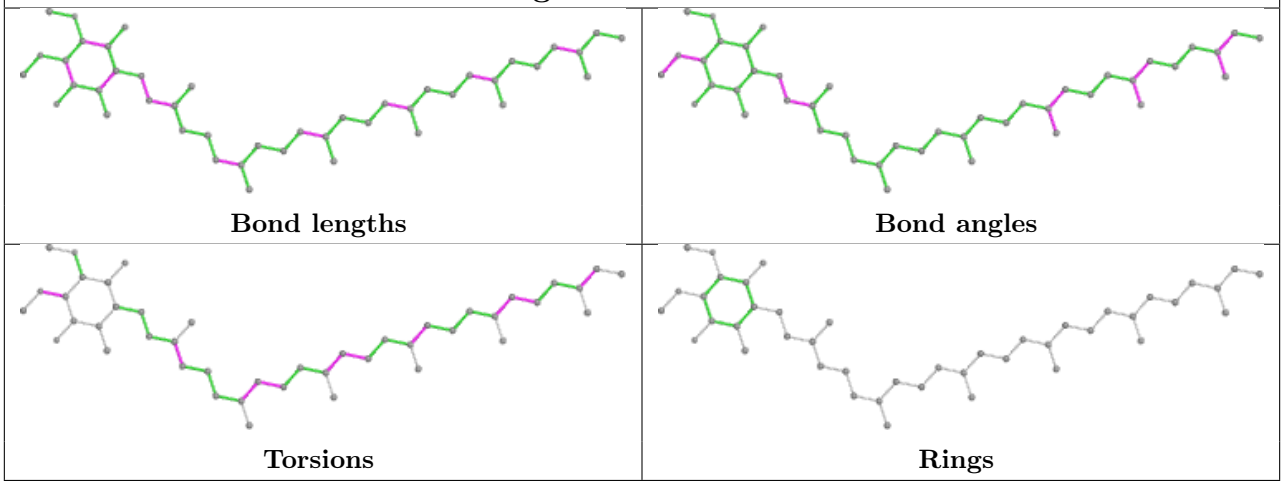


Rings

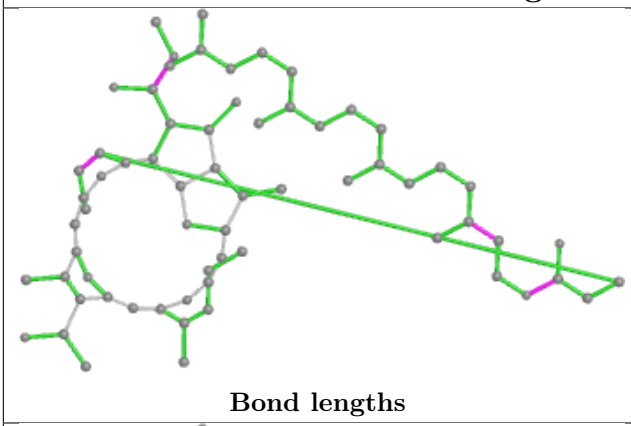
Ligand BCL L 282



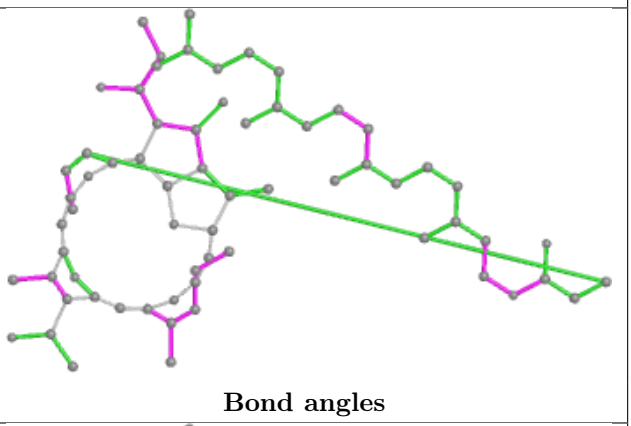
Ligand U10 L 286



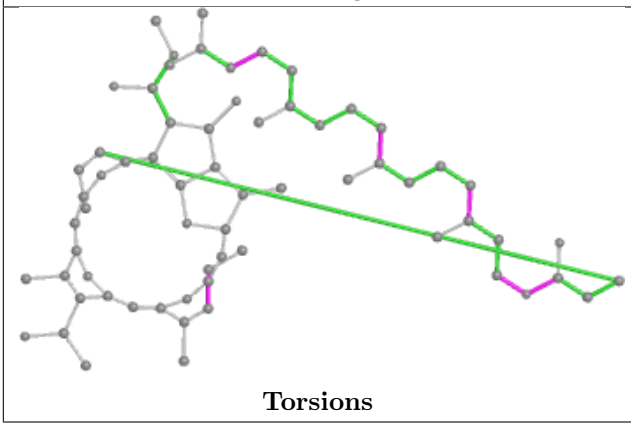
Ligand BPH L 285



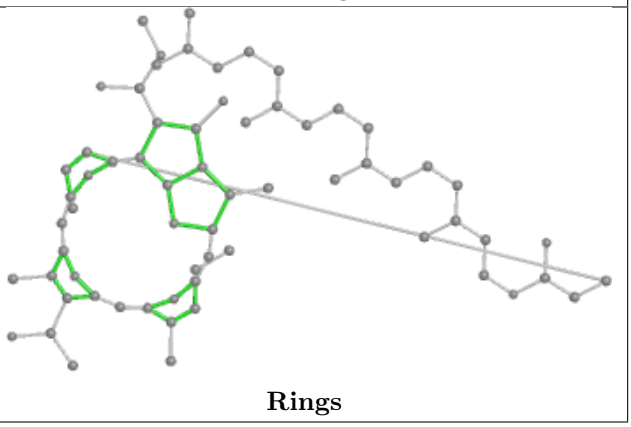
Bond lengths



Bond angles

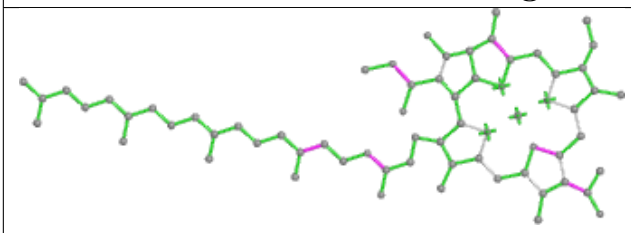


Torsions

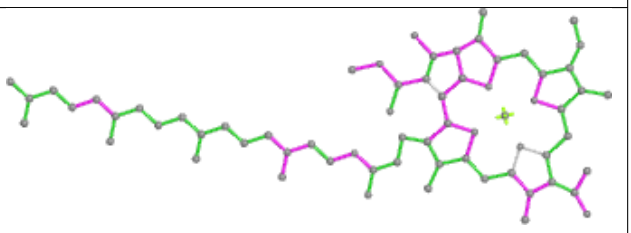


Rings

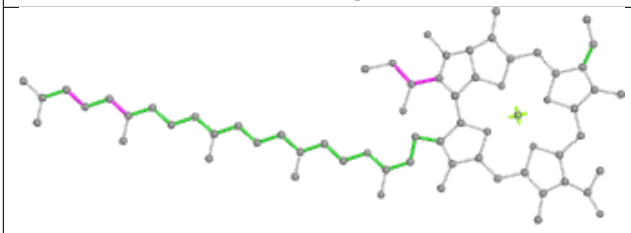
Ligand BCL M 310



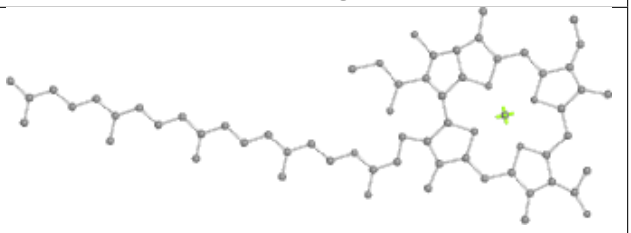
Bond lengths



Bond angles

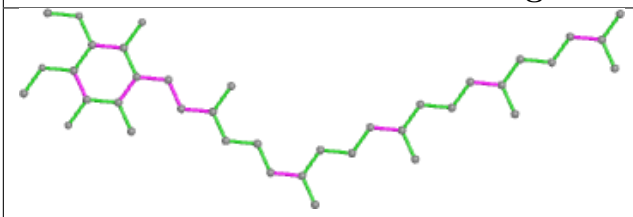


Torsions

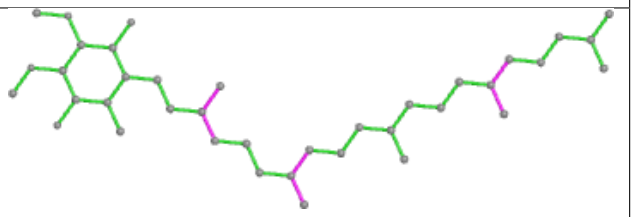


Rings

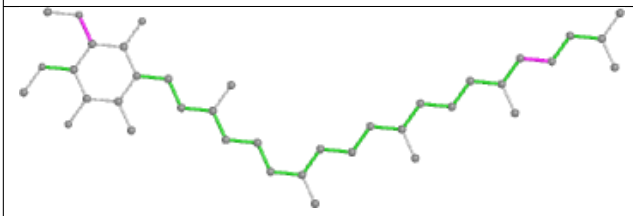
Ligand U10 M 311



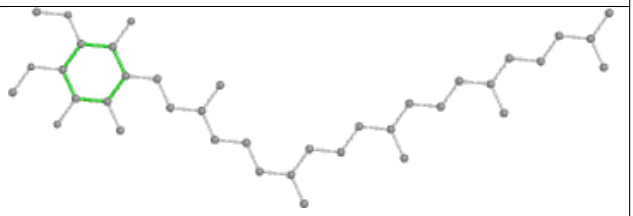
Bond lengths



Bond angles

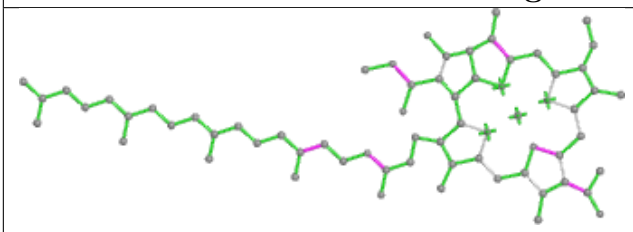


Torsions

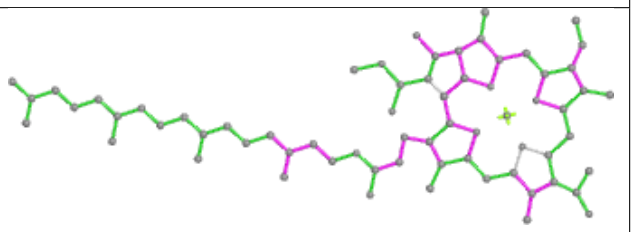


Rings

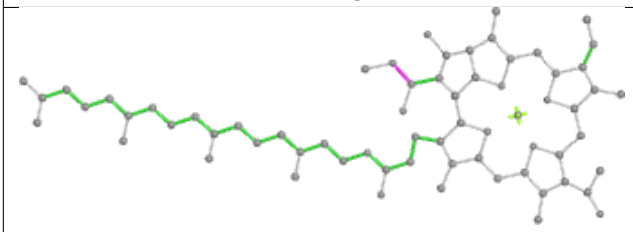
Ligand BCL R 283



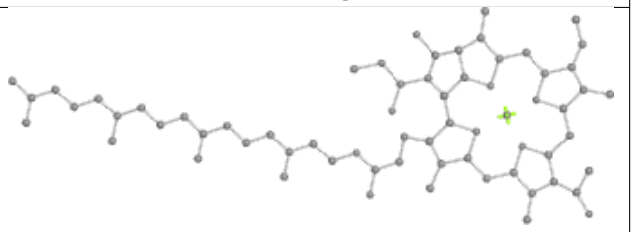
Bond lengths



Bond angles

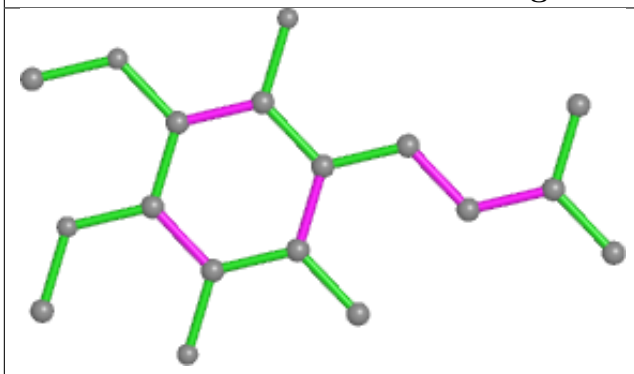


Torsions

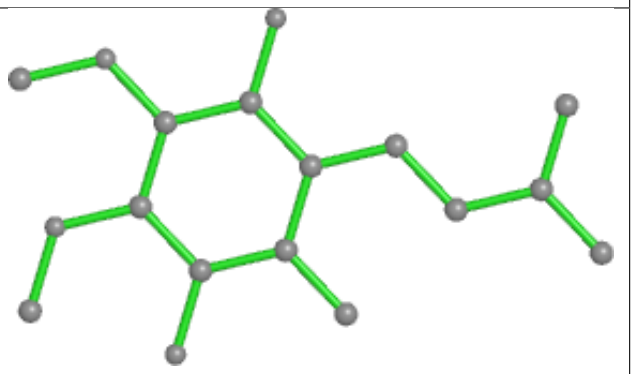


Rings

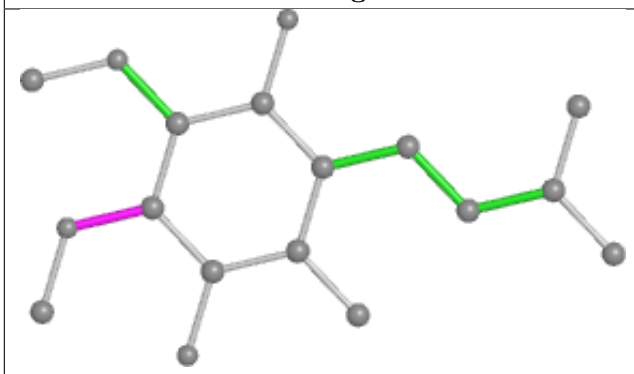
Ligand U10 R 285



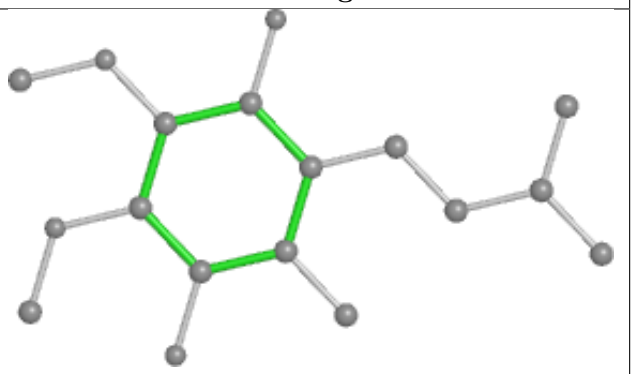
Bond lengths



Bond angles

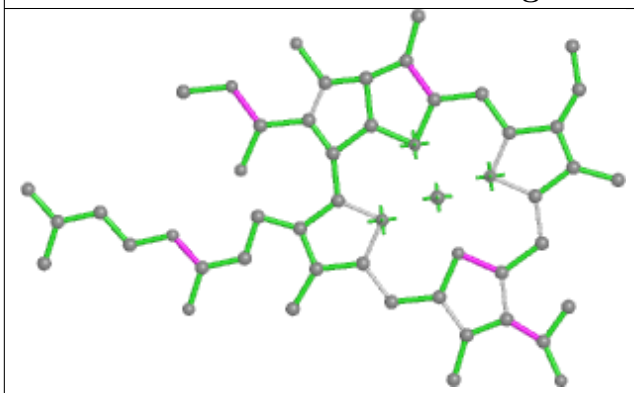


Torsions

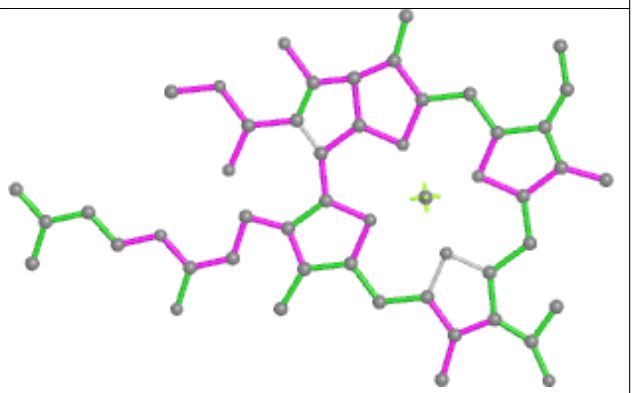


Rings

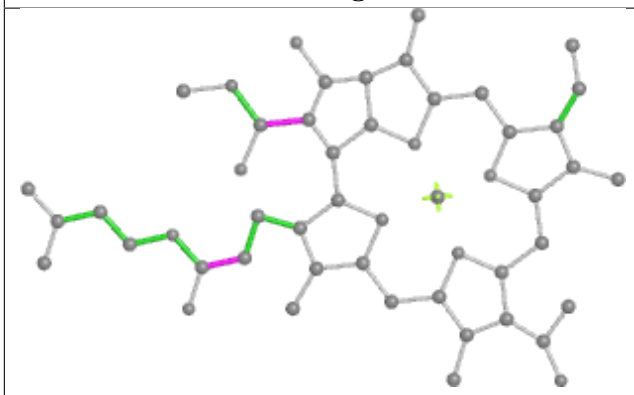
Ligand BCL M 309



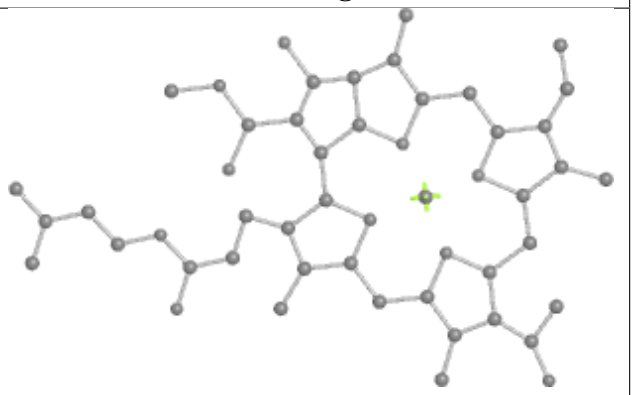
Bond lengths



Bond angles

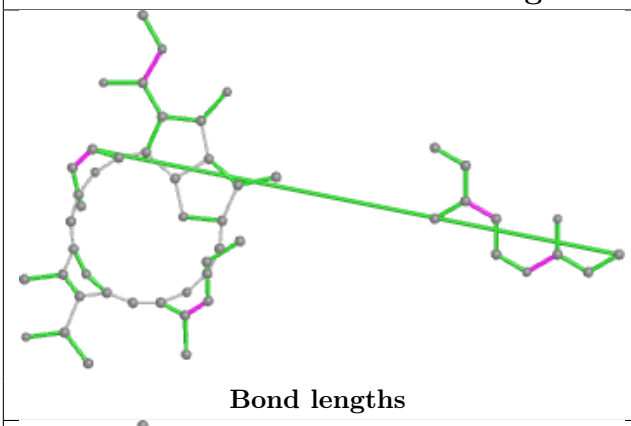


Torsions

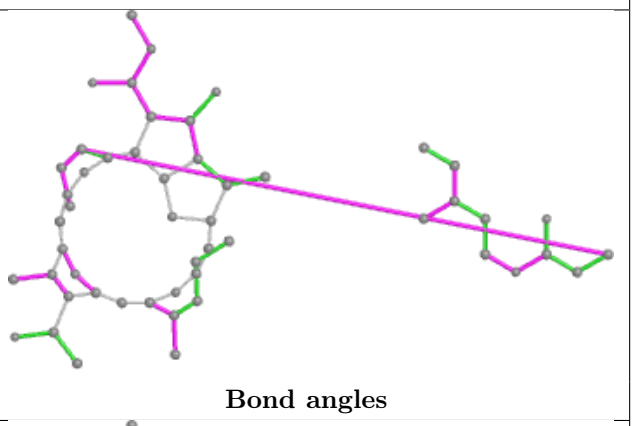


Rings

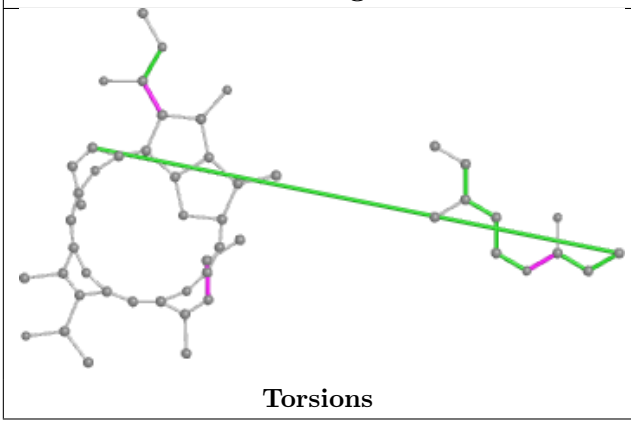
Ligand BPH L 284



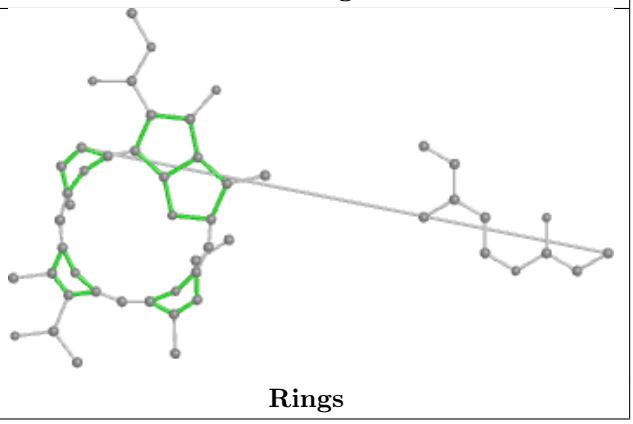
Bond lengths



Bond angles

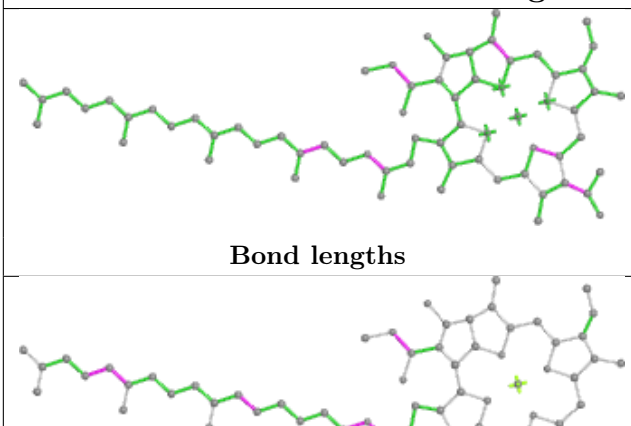


Torsions

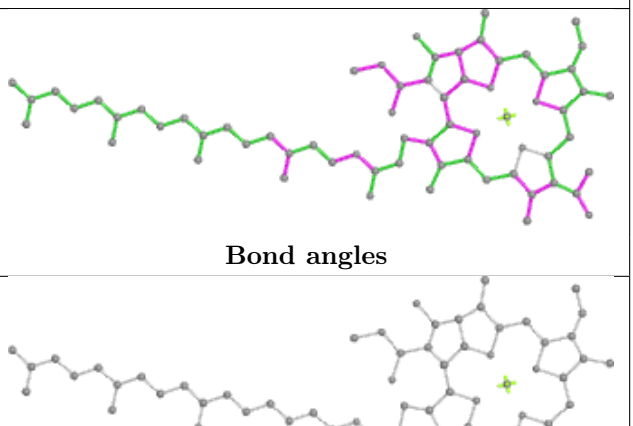


Rings

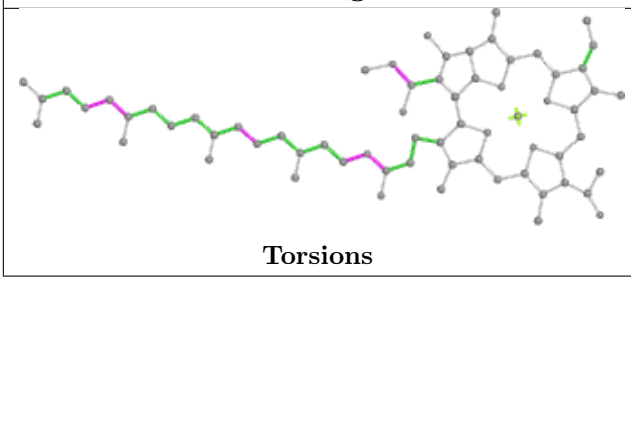
Ligand BCL S 310



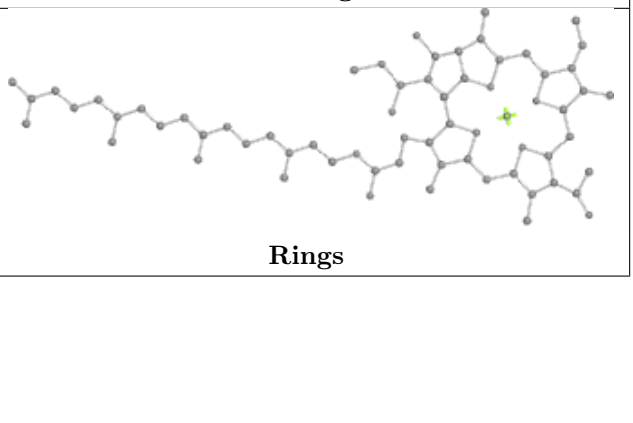
Bond lengths



Bond angles

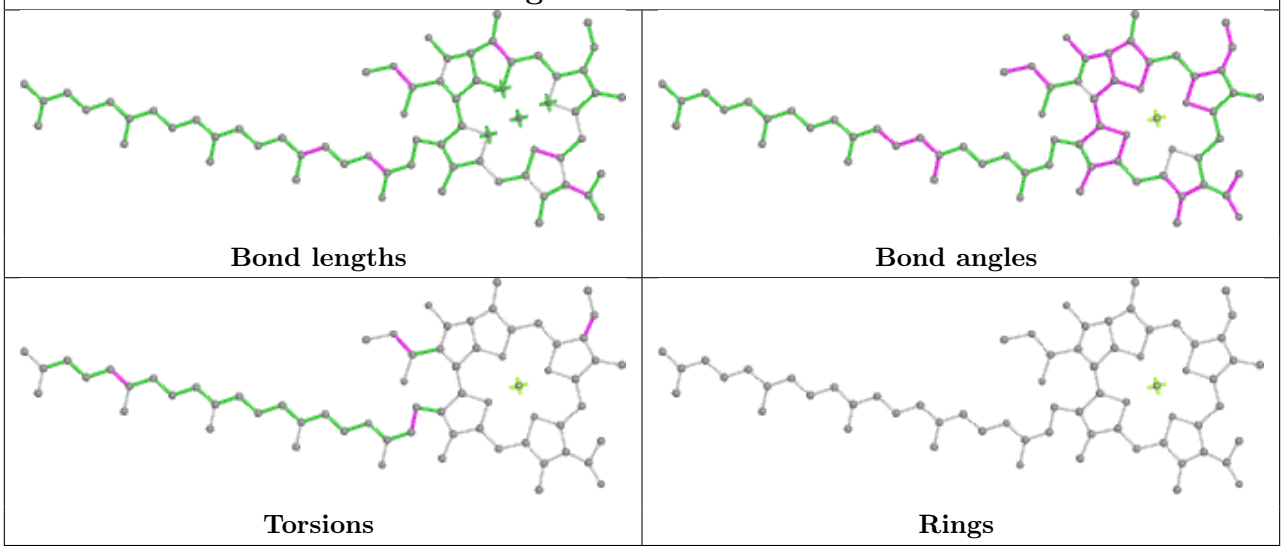


Torsions

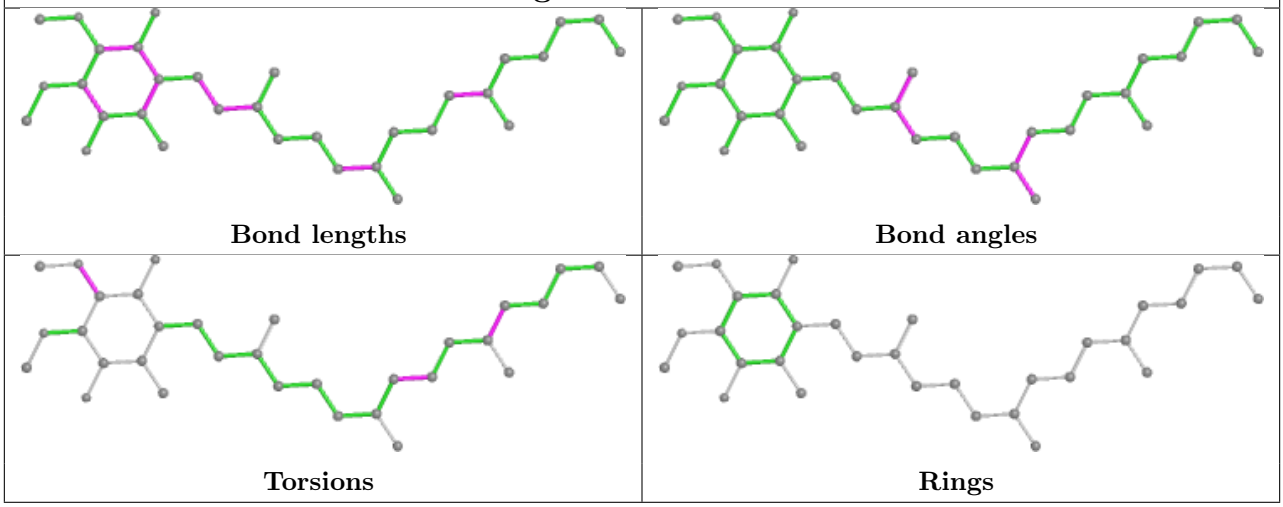


Rings

Ligand BCL R 282



Ligand U10 S 312



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.