Full wwPDB EM Validation Report ⓘ

Mar 13, 2023 – 04:49 PM JST

PDB ID	:	7XNV
EMDB ID	:	EMD-33327
Title	:	Structurally hetero-junctional human Cx36/GJD2 gap junction channel in soybean lipids (C6 symmetry)
Authors	:	Lee, S.N.; Cho, H.J.; Jeong, H.; Ryu, B.; Lee, H.J.; Lee, H.H.; Woo, J.S.
Deposited on	:	2022-04-29
Resolution	:	3.40 Å(reported)

This is a Full wwPDB EM Validation 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 ⓘ symbol.

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

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

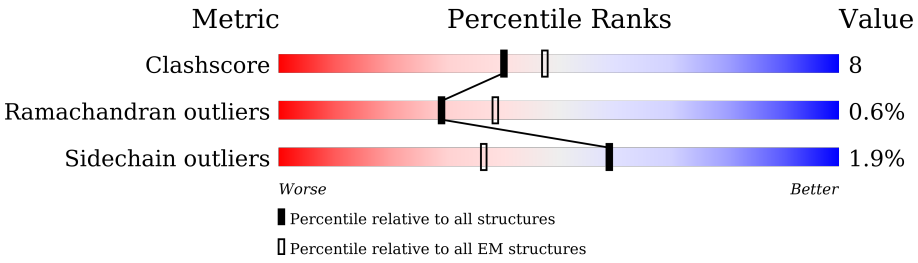
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.32.1

1 Overall quality at a glance

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

The reported resolution of this entry is 3.40 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	A	332	40% 10% • 50%
1	B	332	41% 9% • 50%
1	C	332	42% 8% • 50%
1	D	332	39% 10% • 50%
1	E	332	40% 9% • 50%
1	F	332	41% 8% • 50%
1	G	332	44% 11% 45%
1	H	332	44% 10% 45%

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Mol	Chain	Length	Quality of chain
1	I	332	45% 9% 45%
1	J	332	46% 8% 45%
1	K	332	45% 9% 45%
1	L	332	45% 10% 45%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 18378 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 Gap junction delta-2 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	G	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	H	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	I	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	J	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	K	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	L	181	Total	C	N	O	S	0	0
			1458	957	235	253	13		
1	A	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		
1	B	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		
1	C	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		
1	D	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		
1	E	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		
1	F	167	Total	C	N	O	S	0	0
			1349	890	217	229	13		

There are 132 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	322	SER	-	expression tag	UNP Q9UKL4
G	323	ARG	-	expression tag	UNP Q9UKL4
G	324	GLY	-	expression tag	UNP Q9UKL4
G	325	ASP	-	expression tag	UNP Q9UKL4
G	326	MET	-	expression tag	UNP Q9UKL4
G	327	LEU	-	expression tag	UNP Q9UKL4

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Chain	Residue	Modelled	Actual	Comment	Reference
G	328	GLU	-	expression tag	UNP Q9UKL4
G	329	VAL	-	expression tag	UNP Q9UKL4
G	330	LEU	-	expression tag	UNP Q9UKL4
G	331	PHE	-	expression tag	UNP Q9UKL4
G	332	GLN	-	expression tag	UNP Q9UKL4
H	322	SER	-	expression tag	UNP Q9UKL4
H	323	ARG	-	expression tag	UNP Q9UKL4
H	324	GLY	-	expression tag	UNP Q9UKL4
H	325	ASP	-	expression tag	UNP Q9UKL4
H	326	MET	-	expression tag	UNP Q9UKL4
H	327	LEU	-	expression tag	UNP Q9UKL4
H	328	GLU	-	expression tag	UNP Q9UKL4
H	329	VAL	-	expression tag	UNP Q9UKL4
H	330	LEU	-	expression tag	UNP Q9UKL4
H	331	PHE	-	expression tag	UNP Q9UKL4
H	332	GLN	-	expression tag	UNP Q9UKL4
I	322	SER	-	expression tag	UNP Q9UKL4
I	323	ARG	-	expression tag	UNP Q9UKL4
I	324	GLY	-	expression tag	UNP Q9UKL4
I	325	ASP	-	expression tag	UNP Q9UKL4
I	326	MET	-	expression tag	UNP Q9UKL4
I	327	LEU	-	expression tag	UNP Q9UKL4
I	328	GLU	-	expression tag	UNP Q9UKL4
I	329	VAL	-	expression tag	UNP Q9UKL4
I	330	LEU	-	expression tag	UNP Q9UKL4
I	331	PHE	-	expression tag	UNP Q9UKL4
I	332	GLN	-	expression tag	UNP Q9UKL4
J	322	SER	-	expression tag	UNP Q9UKL4
J	323	ARG	-	expression tag	UNP Q9UKL4
J	324	GLY	-	expression tag	UNP Q9UKL4
J	325	ASP	-	expression tag	UNP Q9UKL4
J	326	MET	-	expression tag	UNP Q9UKL4
J	327	LEU	-	expression tag	UNP Q9UKL4
J	328	GLU	-	expression tag	UNP Q9UKL4
J	329	VAL	-	expression tag	UNP Q9UKL4
J	330	LEU	-	expression tag	UNP Q9UKL4
J	331	PHE	-	expression tag	UNP Q9UKL4
J	332	GLN	-	expression tag	UNP Q9UKL4
K	322	SER	-	expression tag	UNP Q9UKL4
K	323	ARG	-	expression tag	UNP Q9UKL4
K	324	GLY	-	expression tag	UNP Q9UKL4
K	325	ASP	-	expression tag	UNP Q9UKL4

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Chain	Residue	Modelled	Actual	Comment	Reference
K	326	MET	-	expression tag	UNP Q9UKL4
K	327	LEU	-	expression tag	UNP Q9UKL4
K	328	GLU	-	expression tag	UNP Q9UKL4
K	329	VAL	-	expression tag	UNP Q9UKL4
K	330	LEU	-	expression tag	UNP Q9UKL4
K	331	PHE	-	expression tag	UNP Q9UKL4
K	332	GLN	-	expression tag	UNP Q9UKL4
L	322	SER	-	expression tag	UNP Q9UKL4
L	323	ARG	-	expression tag	UNP Q9UKL4
L	324	GLY	-	expression tag	UNP Q9UKL4
L	325	ASP	-	expression tag	UNP Q9UKL4
L	326	MET	-	expression tag	UNP Q9UKL4
L	327	LEU	-	expression tag	UNP Q9UKL4
L	328	GLU	-	expression tag	UNP Q9UKL4
L	329	VAL	-	expression tag	UNP Q9UKL4
L	330	LEU	-	expression tag	UNP Q9UKL4
L	331	PHE	-	expression tag	UNP Q9UKL4
L	332	GLN	-	expression tag	UNP Q9UKL4
A	322	SER	-	expression tag	UNP Q9UKL4
A	323	ARG	-	expression tag	UNP Q9UKL4
A	324	GLY	-	expression tag	UNP Q9UKL4
A	325	ASP	-	expression tag	UNP Q9UKL4
A	326	MET	-	expression tag	UNP Q9UKL4
A	327	LEU	-	expression tag	UNP Q9UKL4
A	328	GLU	-	expression tag	UNP Q9UKL4
A	329	VAL	-	expression tag	UNP Q9UKL4
A	330	LEU	-	expression tag	UNP Q9UKL4
A	331	PHE	-	expression tag	UNP Q9UKL4
A	332	GLN	-	expression tag	UNP Q9UKL4
B	322	SER	-	expression tag	UNP Q9UKL4
B	323	ARG	-	expression tag	UNP Q9UKL4
B	324	GLY	-	expression tag	UNP Q9UKL4
B	325	ASP	-	expression tag	UNP Q9UKL4
B	326	MET	-	expression tag	UNP Q9UKL4
B	327	LEU	-	expression tag	UNP Q9UKL4
B	328	GLU	-	expression tag	UNP Q9UKL4
B	329	VAL	-	expression tag	UNP Q9UKL4
B	330	LEU	-	expression tag	UNP Q9UKL4
B	331	PHE	-	expression tag	UNP Q9UKL4
B	332	GLN	-	expression tag	UNP Q9UKL4
C	322	SER	-	expression tag	UNP Q9UKL4
C	323	ARG	-	expression tag	UNP Q9UKL4

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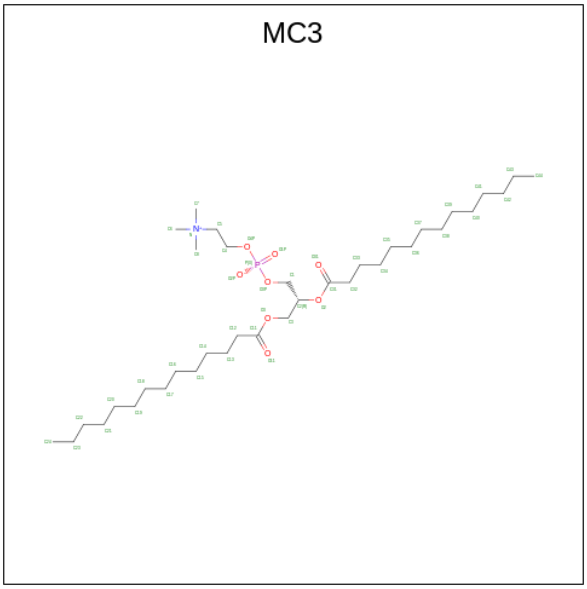
Chain	Residue	Modelled	Actual	Comment	Reference
C	324	GLY	-	expression tag	UNP Q9UKL4
C	325	ASP	-	expression tag	UNP Q9UKL4
C	326	MET	-	expression tag	UNP Q9UKL4
C	327	LEU	-	expression tag	UNP Q9UKL4
C	328	GLU	-	expression tag	UNP Q9UKL4
C	329	VAL	-	expression tag	UNP Q9UKL4
C	330	LEU	-	expression tag	UNP Q9UKL4
C	331	PHE	-	expression tag	UNP Q9UKL4
C	332	GLN	-	expression tag	UNP Q9UKL4
D	322	SER	-	expression tag	UNP Q9UKL4
D	323	ARG	-	expression tag	UNP Q9UKL4
D	324	GLY	-	expression tag	UNP Q9UKL4
D	325	ASP	-	expression tag	UNP Q9UKL4
D	326	MET	-	expression tag	UNP Q9UKL4
D	327	LEU	-	expression tag	UNP Q9UKL4
D	328	GLU	-	expression tag	UNP Q9UKL4
D	329	VAL	-	expression tag	UNP Q9UKL4
D	330	LEU	-	expression tag	UNP Q9UKL4
D	331	PHE	-	expression tag	UNP Q9UKL4
D	332	GLN	-	expression tag	UNP Q9UKL4
E	322	SER	-	expression tag	UNP Q9UKL4
E	323	ARG	-	expression tag	UNP Q9UKL4
E	324	GLY	-	expression tag	UNP Q9UKL4
E	325	ASP	-	expression tag	UNP Q9UKL4
E	326	MET	-	expression tag	UNP Q9UKL4
E	327	LEU	-	expression tag	UNP Q9UKL4
E	328	GLU	-	expression tag	UNP Q9UKL4
E	329	VAL	-	expression tag	UNP Q9UKL4
E	330	LEU	-	expression tag	UNP Q9UKL4
E	331	PHE	-	expression tag	UNP Q9UKL4
E	332	GLN	-	expression tag	UNP Q9UKL4
F	322	SER	-	expression tag	UNP Q9UKL4
F	323	ARG	-	expression tag	UNP Q9UKL4
F	324	GLY	-	expression tag	UNP Q9UKL4
F	325	ASP	-	expression tag	UNP Q9UKL4
F	326	MET	-	expression tag	UNP Q9UKL4
F	327	LEU	-	expression tag	UNP Q9UKL4
F	328	GLU	-	expression tag	UNP Q9UKL4
F	329	VAL	-	expression tag	UNP Q9UKL4
F	330	LEU	-	expression tag	UNP Q9UKL4
F	331	PHE	-	expression tag	UNP Q9UKL4
F	332	GLN	-	expression tag	UNP Q9UKL4

- Molecule 2 is 1,2-DIMYRISTOYL-RAC-GLYCERO-3-PHOSPHOCHOLINE (three-letter code: MC3) (formula: $C_{36}H_{72}NO_8P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 10 10	0
2	G	1	Total C 10 10	0
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 14 14	0
2	G	1	Total C 12 12	0
2	H	1	Total C 14 14	0

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Mol	Chain	Residues	Atoms	AltConf
2	H	1	Total C 14 14	0
2	H	1	Total C 14 14	0
2	H	1	Total C 10 10	0
2	H	1	Total C 10 10	0
2	H	1	Total C 14 14	0
2	H	1	Total C 14 14	0
2	H	1	Total C 14 14	0
2	H	1	Total C 14 14	0
2	H	1	Total C 14 14	0
2	H	1	Total C 12 12	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 10 10	0
2	I	1	Total C 10 10	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 14 14	0
2	I	1	Total C 12 12	0

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Mol	Chain	Residues	Atoms	AltConf
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 10 10	0
2	J	1	Total C 10 10	0
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 14 14	0
2	J	1	Total C 12 12	0
2	K	1	Total C 14 14	0
2	K	1	Total C 14 14	0
2	K	1	Total C 14 14	0
2	K	1	Total C 10 10	0
2	K	1	Total C 10 10	0
2	K	1	Total C 14 14	0
2	K	1	Total C 14 14	0
2	K	1	Total C 14 14	0
2	K	1	Total C 14 14	0

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Mol	Chain	Residues	Atoms	AltConf
2	K	1	Total C 12 12	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 12 12	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 14 14	0
2	L	1	Total C 10 10	0
2	L	1	Total C 10 10	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	A	1	Total C 14 14	0
2	B	1	Total C 14 14	0

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Mol	Chain	Residues	Atoms	AltConf
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	B	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	C	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0

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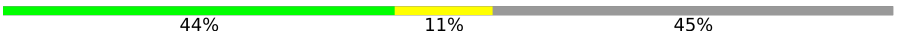
Mol	Chain	Residues	Atoms	AltConf
2	D	1	Total C 14 14	0
2	D	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	E	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0
2	F	1	Total C 14 14	0

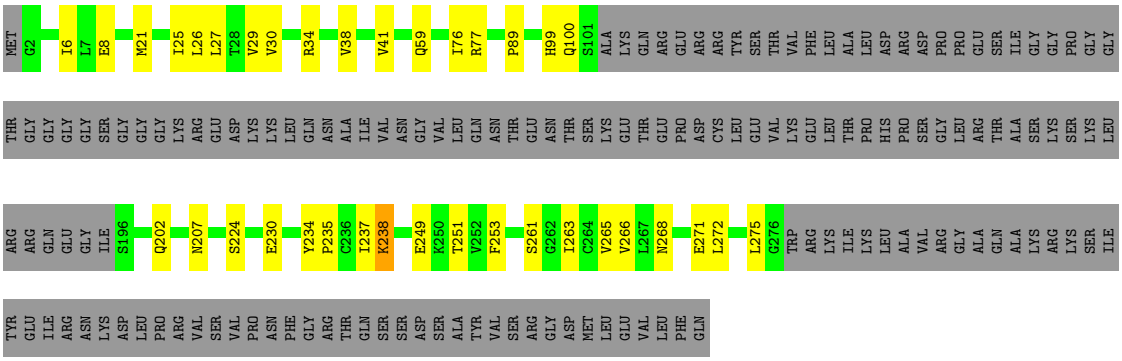
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and 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: Gap junction delta-2 protein

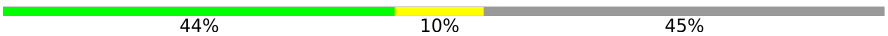
Chain G:

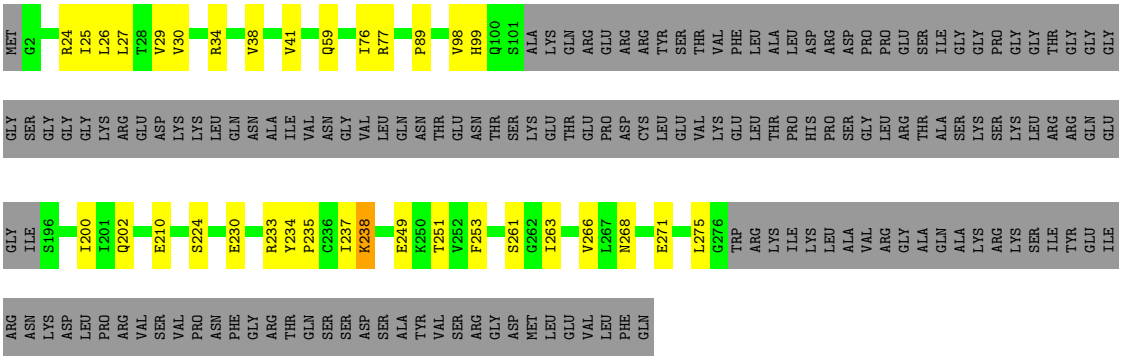




• Molecule 1: Gap junction delta-2 protein

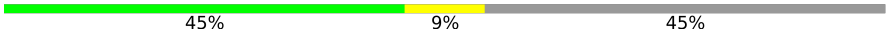
Chain H:

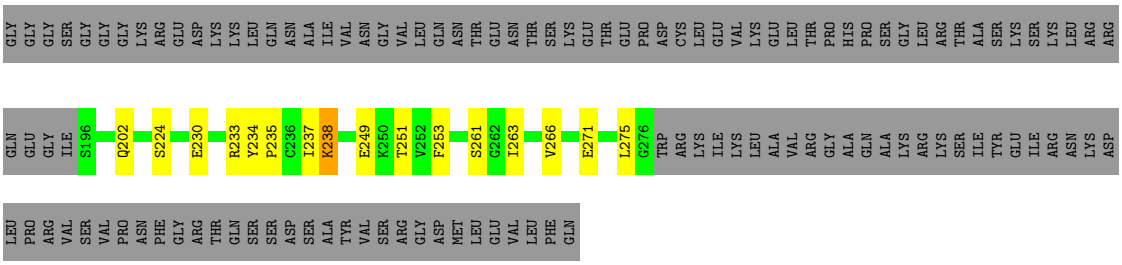




• Molecule 1: Gap junction delta-2 protein

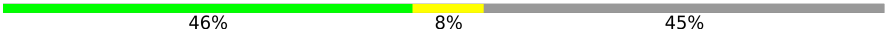
Chain I:

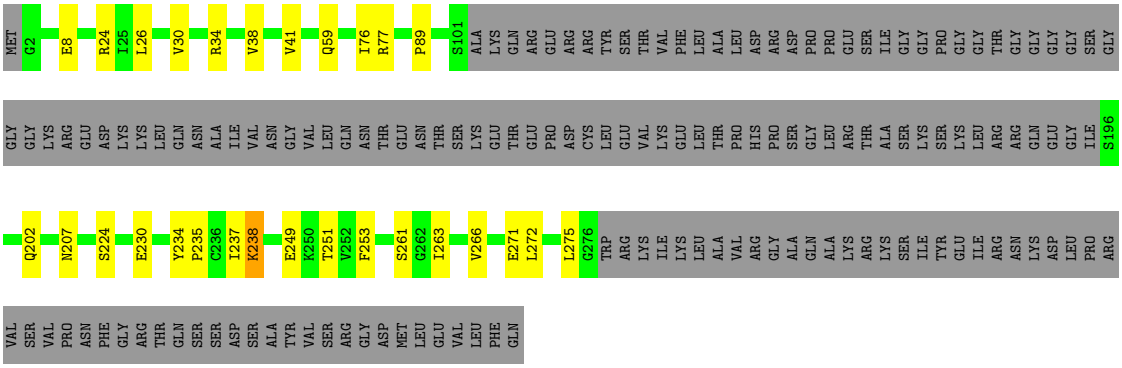




• Molecule 1: Gap junction delta-2 protein

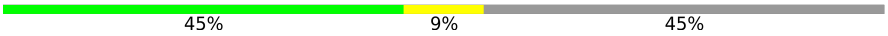
Chain J:

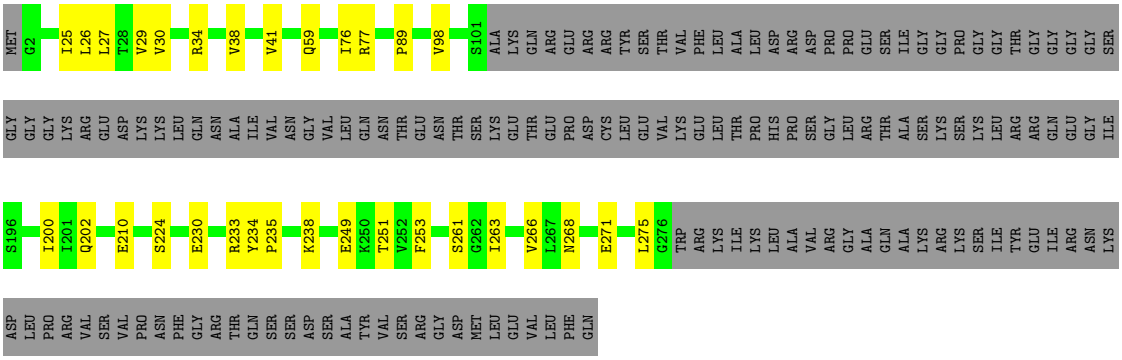




• Molecule 1: Gap junction delta-2 protein

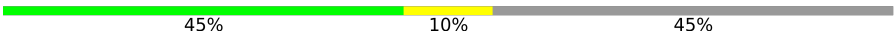
Chain K:

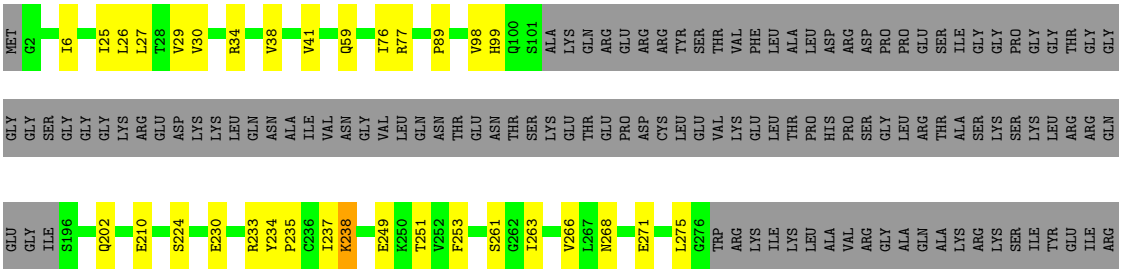




• Molecule 1: Gap junction delta-2 protein

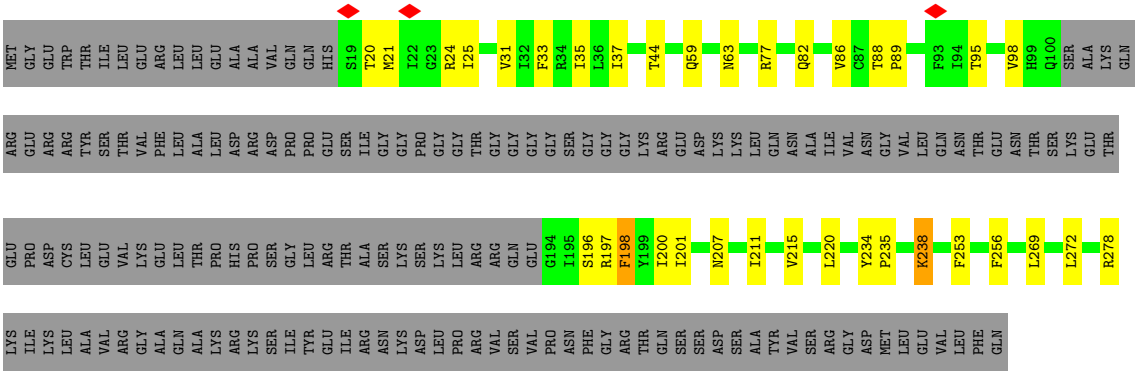
Chain L:





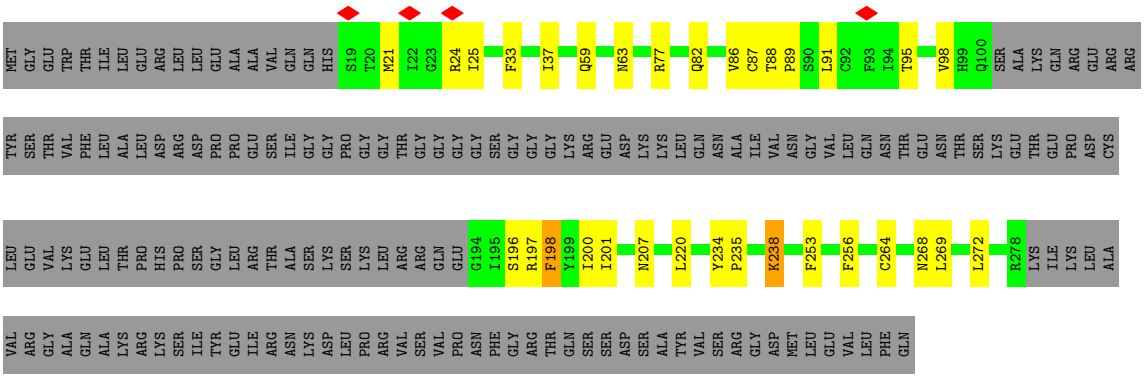
• Molecule 1: Gap junction delta-2 protein

Chain A:



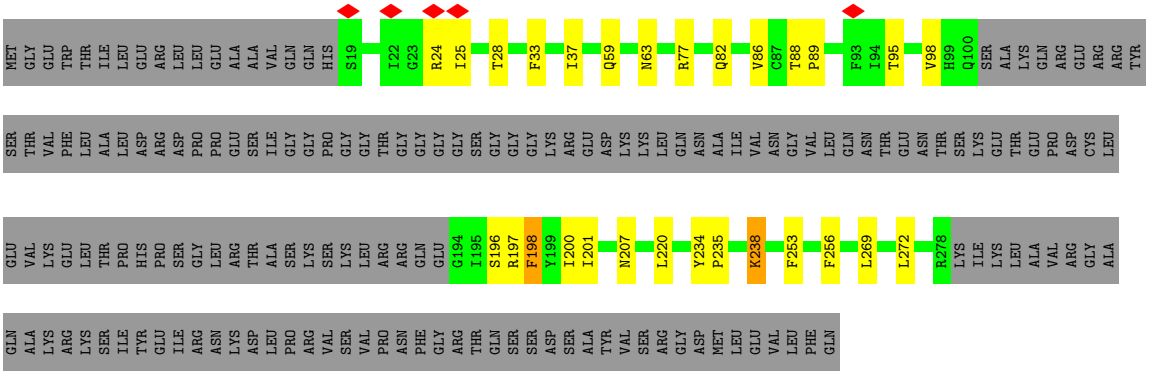
• Molecule 1: Gap junction delta-2 protein

Chain B:



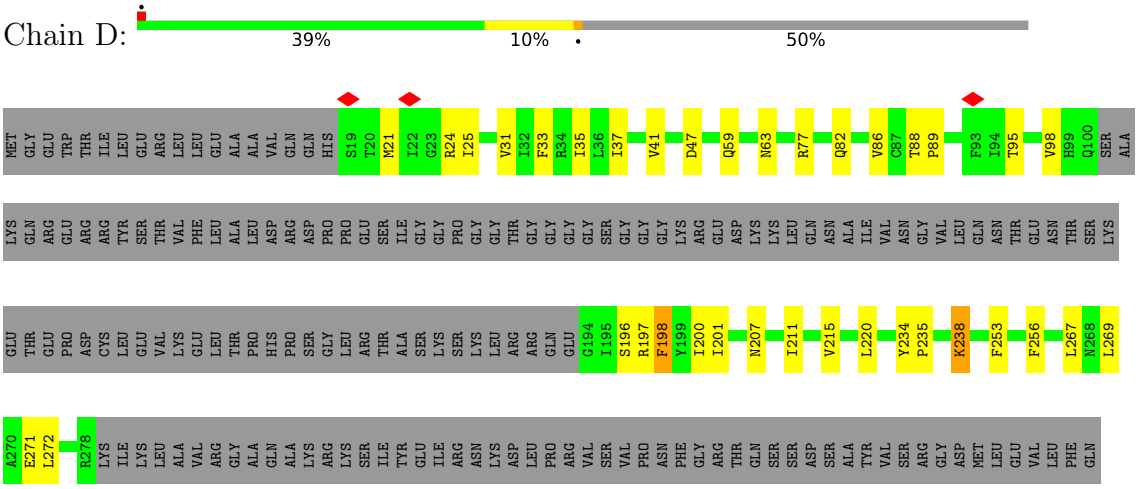
• Molecule 1: Gap junction delta-2 protein

Chain C:



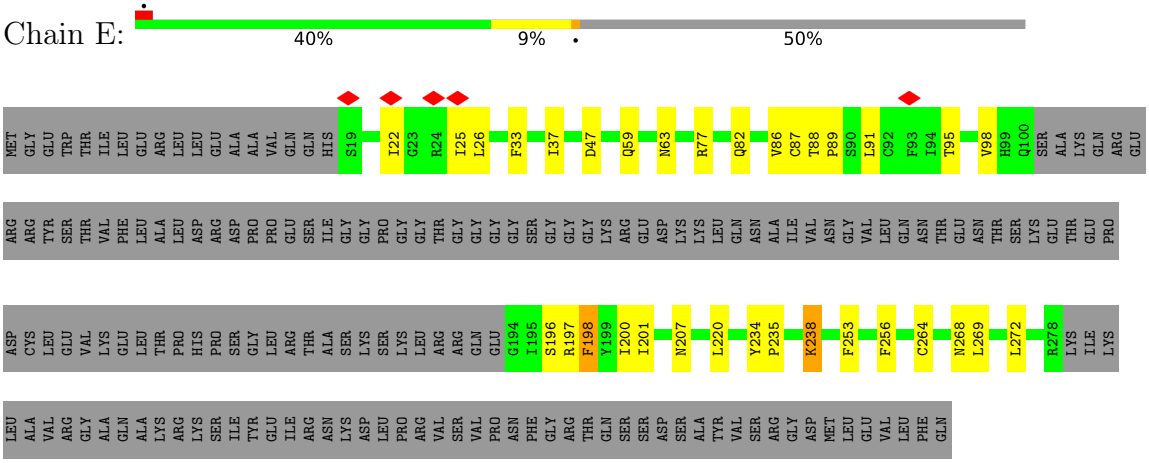
• Molecule 1: Gap junction delta-2 protein

Chain D:



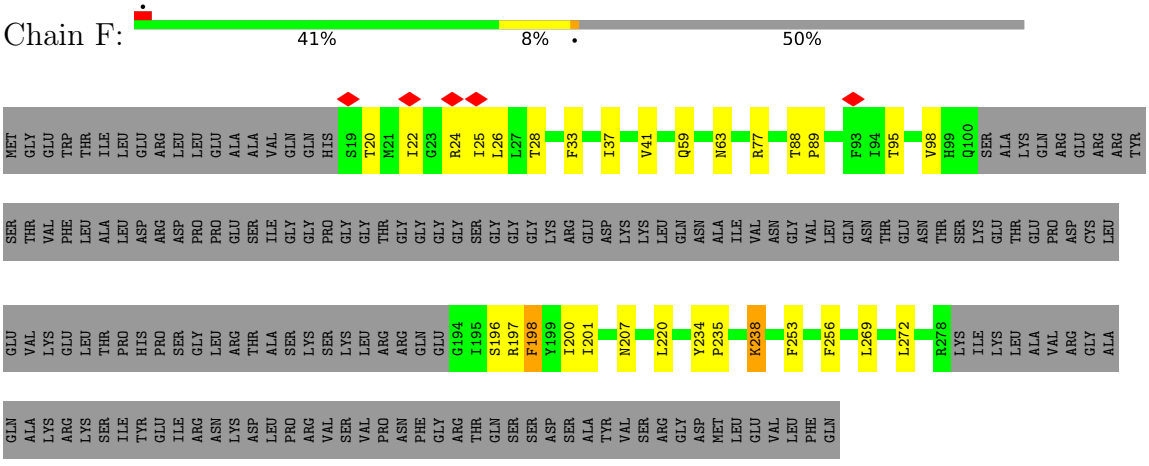
• Molecule 1: Gap junction delta-2 protein

Chain E:



• Molecule 1: Gap junction delta-2 protein

Chain F:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	14155	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 ($e^-/Å^2$)	49	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2750	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.069	Depositor
Minimum map value	-0.042	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.006	Depositor
Map size (Å)	263.2, 263.2, 263.2	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.65800005, 0.65800005, 0.65800005	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MC3

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.32	0/1383	0.46	0/1881
1	B	0.31	0/1383	0.45	0/1881
1	C	0.31	0/1383	0.45	0/1881
1	D	0.32	0/1383	0.45	0/1881
1	E	0.32	0/1383	0.47	0/1881
1	F	0.32	0/1383	0.47	0/1881
1	G	0.33	0/1493	0.44	0/2031
1	H	0.33	0/1493	0.44	0/2031
1	I	0.33	0/1493	0.44	0/2031
1	J	0.33	0/1493	0.44	0/2031
1	K	0.33	0/1493	0.44	0/2031
1	L	0.33	0/1493	0.44	0/2031
All	All	0.32	0/17256	0.45	0/23472

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1349	0	1351	28	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	1349	0	1351	25	0
1	C	1349	0	1351	23	0
1	D	1349	0	1351	28	0
1	E	1349	0	1351	27	0
1	F	1349	0	1351	23	0
1	G	1458	0	1456	29	0
1	H	1458	0	1456	25	0
1	I	1458	0	1456	25	0
1	J	1458	0	1456	20	0
1	K	1458	0	1456	22	0
1	L	1458	0	1456	25	0
2	A	112	0	216	4	0
2	B	112	0	216	5	0
2	C	112	0	216	4	0
2	D	112	0	216	4	0
2	E	112	0	216	5	0
2	F	112	0	216	4	0
2	G	144	0	271	5	0
2	H	144	0	271	5	0
2	I	144	0	271	3	0
2	J	144	0	271	6	0
2	K	144	0	271	4	0
2	L	144	0	271	4	0
All	All	18378	0	19764	289	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 8.

All (289) 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:D:207:ASN:HD22	1:D:272:LEU:HD22	1.51	0.75
1:B:207:ASN:HD22	1:B:272:LEU:HD13	1.54	0.73
1:H:230:GLU:OE1	1:E:238:LYS:NZ	2.21	0.72
1:E:207:ASN:HD22	1:E:272:LEU:HD13	1.54	0.72
1:A:207:ASN:HD22	1:A:272:LEU:HD22	1.55	0.72
1:G:230:GLU:OE1	1:D:238:LYS:NZ	2.21	0.72
1:K:230:GLU:OE1	1:B:238:LYS:NZ	2.22	0.72
1:I:230:GLU:OE1	1:F:238:LYS:NZ	2.23	0.71
1:L:230:GLU:OE1	1:C:238:LYS:NZ	2.24	0.71
1:J:230:GLU:OE1	1:A:238:LYS:NZ	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:100:GLN:N	1:G:100:GLN:OE1	2.27	0.68
1:C:207:ASN:HD22	1:C:272:LEU:HD13	1.59	0.67
1:E:22:ILE:HD12	1:E:22:ILE:H	1.64	0.63
1:F:207:ASN:HD22	1:F:272:LEU:HD13	1.66	0.60
2:K:401:MC3:H362	2:K:403:MC3:H321	1.85	0.58
2:H:401:MC3:H362	2:H:403:MC3:H321	1.85	0.57
1:I:6:ILE:HD13	1:J:8:GLU:HG3	1.86	0.57
1:B:21:MET:HA	1:B:24:ARG:HH22	1.67	0.57
1:G:8:GLU:HG3	1:L:6:ILE:HD13	1.87	0.57
1:A:37:ILE:HD13	1:A:256:PHE:CZ	2.40	0.57
1:I:59:GLN:HE22	1:A:59:GLN:HE22	1.52	0.56
1:B:256:PHE:HB2	2:B:407:MC3:H442	1.88	0.56
1:C:37:ILE:HD13	1:C:256:PHE:CZ	2.41	0.56
1:B:37:ILE:HD13	1:B:256:PHE:CZ	2.41	0.56
1:J:59:GLN:HE22	1:B:59:GLN:NE2	2.05	0.55
1:D:37:ILE:HD13	1:D:256:PHE:CZ	2.41	0.55
1:E:37:ILE:HD13	1:E:256:PHE:CZ	2.41	0.55
1:K:59:GLN:HE22	1:C:59:GLN:NE2	2.04	0.55
1:H:59:GLN:HE22	1:F:59:GLN:HE22	1.55	0.55
1:L:59:GLN:HE22	1:D:59:GLN:HE22	1.53	0.55
1:A:256:PHE:HB2	2:A:402:MC3:H442	1.88	0.55
1:F:37:ILE:HD13	1:F:256:PHE:CZ	2.41	0.55
1:G:59:GLN:HE22	1:E:59:GLN:HE22	1.55	0.55
1:E:264:CYS:O	1:E:268:ASN:ND2	2.40	0.55
1:A:21:MET:HA	1:A:24:ARG:HH22	1.73	0.54
1:D:256:PHE:HB2	2:D:402:MC3:H442	1.88	0.54
1:L:59:GLN:HE22	1:D:59:GLN:NE2	2.04	0.54
1:F:33:PHE:CE1	1:F:37:ILE:HD11	2.42	0.54
1:K:59:GLN:HE22	1:C:59:GLN:HE22	1.53	0.54
1:I:59:GLN:HE22	1:A:59:GLN:NE2	2.04	0.54
1:C:33:PHE:CE1	1:C:37:ILE:HD11	2.42	0.54
1:E:256:PHE:HB2	2:E:402:MC3:H442	1.88	0.54
1:G:59:GLN:HE22	1:E:59:GLN:NE2	2.05	0.54
1:H:59:GLN:HE22	1:F:59:GLN:NE2	2.04	0.54
1:C:256:PHE:HB2	2:C:402:MC3:H442	1.90	0.54
2:G:401:MC3:H362	2:G:403:MC3:H321	1.90	0.54
1:G:77:ARG:NE	1:H:249:GLU:OE2	2.41	0.53
2:J:401:MC3:H362	2:J:403:MC3:H321	1.91	0.53
1:J:34:ARG:HH21	1:J:261:SER:HA	1.73	0.53
1:J:59:GLN:HE22	1:B:59:GLN:HE22	1.55	0.53
1:G:34:ARG:HH21	1:G:261:SER:HA	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:197:ARG:O	1:F:201:ILE:HG12	2.09	0.53
1:H:200:ILE:HD13	1:H:275:LEU:HD23	1.91	0.53
1:K:34:ARG:HH21	1:K:261:SER:HA	1.73	0.53
1:H:34:ARG:HH21	1:H:261:SER:HA	1.73	0.53
1:B:197:ARG:O	1:B:201:ILE:HG12	2.09	0.53
1:G:207:ASN:HD21	1:G:272:LEU:HB2	1.75	0.52
1:E:197:ARG:O	1:E:201:ILE:HG12	2.09	0.52
1:F:256:PHE:HB2	2:F:402:MC3:H442	1.89	0.52
2:L:407:MC3:H362	2:L:409:MC3:H321	1.91	0.52
1:A:95:THR:HB	1:F:25:ILE:HG23	1.92	0.52
1:G:207:ASN:HD22	1:G:272:LEU:HD22	1.75	0.52
1:I:224:SER:HA	1:I:251:THR:HG23	1.92	0.52
1:L:34:ARG:HH21	1:L:261:SER:HA	1.74	0.52
1:A:37:ILE:HD13	1:A:256:PHE:HZ	1.74	0.52
1:K:200:ILE:HD13	1:K:275:LEU:HD23	1.91	0.52
1:B:264:CYS:O	1:B:268:ASN:ND2	2.43	0.52
1:C:197:ARG:O	1:C:201:ILE:HG12	2.09	0.52
1:E:22:ILE:O	1:E:26:LEU:HD13	2.10	0.52
1:A:197:ARG:O	1:A:201:ILE:HG12	2.10	0.52
1:H:98:VAL:HG21	2:I:405:MC3:H381	1.92	0.52
1:I:34:ARG:HH21	1:I:261:SER:HA	1.74	0.51
1:C:25:ILE:HG23	1:D:95:THR:HB	1.93	0.51
2:I:401:MC3:H362	2:I:403:MC3:H321	1.91	0.51
1:D:197:ARG:O	1:D:201:ILE:HG12	2.10	0.51
1:E:33:PHE:CE1	1:E:37:ILE:HD11	2.45	0.51
1:B:33:PHE:CE1	1:B:37:ILE:HD11	2.45	0.51
1:L:224:SER:HA	1:L:251:THR:HG23	1.92	0.51
1:I:98:VAL:HG21	2:J:405:MC3:H381	1.92	0.51
1:E:37:ILE:HD13	1:E:256:PHE:HZ	1.75	0.51
1:H:77:ARG:NE	1:I:249:GLU:OE2	2.43	0.50
1:I:26:LEU:O	1:I:30:VAL:HG13	2.11	0.50
1:A:33:PHE:CE1	1:A:37:ILE:HD11	2.46	0.50
1:H:224:SER:HA	1:H:251:THR:HG23	1.92	0.50
1:D:33:PHE:CE1	1:D:37:ILE:HD11	2.46	0.50
1:D:37:ILE:HD13	1:D:256:PHE:HZ	1.75	0.50
2:G:405:MC3:H381	1:L:98:VAL:HG21	1.93	0.50
1:G:26:LEU:O	1:G:30:VAL:HG13	2.11	0.50
1:J:224:SER:HA	1:J:251:THR:HG23	1.94	0.50
1:K:26:LEU:O	1:K:30:VAL:HG13	2.12	0.50
1:H:26:LEU:O	1:H:30:VAL:HG13	2.11	0.50
1:A:21:MET:HA	1:A:24:ARG:HH12	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:26:LEU:O	1:L:30:VAL:HG13	2.11	0.50
1:B:95:THR:HA	1:B:98:VAL:HG12	1.93	0.50
1:J:77:ARG:NE	1:K:249:GLU:OE2	2.41	0.50
1:K:224:SER:HA	1:K:251:THR:HG23	1.92	0.49
1:A:25:ILE:HG23	1:B:95:THR:HB	1.93	0.49
1:G:224:SER:HA	1:G:251:THR:HG23	1.94	0.49
1:C:201:ILE:HD12	2:C:404:MC3:H372	1.94	0.49
1:I:77:ARG:NE	1:J:249:GLU:OE2	2.43	0.49
1:B:234:TYR:CD1	1:B:235:PRO:HA	2.48	0.49
1:F:95:THR:HA	1:F:98:VAL:HG12	1.94	0.49
1:D:21:MET:HA	1:D:24:ARG:HH22	1.76	0.49
1:F:201:ILE:HD12	2:F:404:MC3:H372	1.95	0.49
1:D:234:TYR:CD1	1:D:235:PRO:HA	2.48	0.49
1:F:234:TYR:CD1	1:F:235:PRO:HA	2.48	0.49
1:I:89:PRO:O	1:I:202:GLN:NE2	2.45	0.49
1:D:21:MET:HA	1:D:24:ARG:HH12	1.78	0.49
1:C:37:ILE:HD13	1:C:256:PHE:HZ	1.76	0.48
1:E:95:THR:HA	1:E:98:VAL:HG12	1.93	0.48
1:E:196:SER:O	1:E:200:ILE:HG12	2.13	0.48
1:D:196:SER:O	1:D:200:ILE:HG12	2.14	0.48
1:E:22:ILE:HG22	1:E:26:LEU:HD13	1.95	0.48
1:E:234:TYR:CD1	1:E:235:PRO:HA	2.48	0.48
1:A:201:ILE:HD12	2:A:404:MC3:H372	1.95	0.48
1:A:234:TYR:CD1	1:A:235:PRO:HA	2.49	0.48
1:C:95:THR:HA	1:C:98:VAL:HG12	1.94	0.48
1:D:207:ASN:HD21	1:D:269:LEU:HD23	1.78	0.48
1:D:267:LEU:O	1:D:271:GLU:HG2	2.14	0.48
1:F:24:ARG:O	1:F:28:THR:HG22	2.14	0.48
1:B:37:ILE:HD13	1:B:256:PHE:HZ	1.77	0.48
1:F:37:ILE:HD13	1:F:256:PHE:HZ	1.79	0.48
2:B:403:MC3:H202	2:B:403:MC3:H231	1.66	0.48
1:C:234:TYR:CD1	1:C:235:PRO:HA	2.49	0.48
1:A:95:THR:HA	1:A:98:VAL:HG12	1.95	0.48
1:E:201:ILE:HD12	2:E:404:MC3:H372	1.96	0.47
1:A:207:ASN:HD21	1:A:269:LEU:HD23	1.79	0.47
1:D:95:THR:HA	1:D:98:VAL:HG12	1.94	0.47
1:C:196:SER:O	1:C:200:ILE:HG12	2.14	0.47
1:D:31:VAL:O	1:D:35:ILE:HG12	2.14	0.47
1:E:22:ILE:HG22	1:E:26:LEU:CD1	2.45	0.47
1:A:196:SER:O	1:A:200:ILE:HG12	2.14	0.47
1:D:37:ILE:O	1:D:41:VAL:HG12	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:406:MC3:H202	2:E:406:MC3:H231	1.67	0.47
1:F:88:THR:OG1	1:F:89:PRO:HD3	2.15	0.47
1:A:31:VAL:O	1:A:35:ILE:HG12	2.15	0.47
1:D:25:ILE:HG23	1:E:95:THR:HB	1.97	0.47
1:B:196:SER:O	1:B:200:ILE:HG12	2.14	0.47
1:D:88:THR:OG1	1:D:89:PRO:HD3	2.15	0.47
1:J:26:LEU:O	1:J:30:VAL:HG23	2.15	0.47
2:L:409:MC3:H342	2:L:409:MC3:H371	1.55	0.47
1:C:207:ASN:HD21	1:C:269:LEU:HD23	1.80	0.47
1:B:88:THR:OG1	1:B:89:PRO:HD3	2.15	0.46
1:B:220:LEU:HG	2:B:403:MC3:H181	1.97	0.46
1:D:201:ILE:HD12	2:D:404:MC3:H372	1.96	0.46
1:E:207:ASN:HD21	1:E:269:LEU:HD23	1.80	0.46
2:H:403:MC3:H371	2:H:403:MC3:H342	1.56	0.46
1:K:77:ARG:NE	1:L:249:GLU:OE2	2.44	0.46
1:E:88:THR:OG1	1:E:89:PRO:HD3	2.15	0.46
1:G:99:HIS:CE1	1:H:24:ARG:HH21	2.33	0.46
1:B:33:PHE:CZ	1:B:37:ILE:HD11	2.51	0.46
2:H:401:MC3:H422	2:H:403:MC3:H412	1.98	0.46
1:A:220:LEU:HG	2:A:406:MC3:H181	1.98	0.46
1:B:201:ILE:HD12	2:B:401:MC3:H372	1.96	0.46
1:C:88:THR:OG1	1:C:89:PRO:HD3	2.14	0.46
1:F:196:SER:O	1:F:200:ILE:HG12	2.15	0.46
1:A:33:PHE:CZ	1:A:37:ILE:HD11	2.50	0.46
1:A:88:THR:OG1	1:A:89:PRO:HD3	2.15	0.46
1:H:27:LEU:HA	1:H:30:VAL:HG22	1.98	0.46
1:E:33:PHE:CZ	1:E:37:ILE:HD11	2.51	0.46
1:F:220:LEU:HG	2:F:406:MC3:H181	1.98	0.46
2:J:403:MC3:H351	2:J:403:MC3:H322	1.71	0.46
2:K:403:MC3:H342	2:K:403:MC3:H371	1.56	0.46
1:F:22:ILE:O	1:F:26:LEU:HD13	2.15	0.46
1:G:27:LEU:HA	1:G:30:VAL:HG22	1.98	0.45
1:I:27:LEU:HA	1:I:30:VAL:HG22	1.98	0.45
2:K:401:MC3:H422	2:K:403:MC3:H412	1.97	0.45
1:H:99:HIS:CE1	1:I:24:ARG:HH21	2.34	0.45
1:C:220:LEU:HG	2:C:406:MC3:H181	1.98	0.45
1:B:207:ASN:HD21	1:B:269:LEU:HD23	1.81	0.45
1:E:220:LEU:HG	2:E:406:MC3:H181	1.97	0.45
1:H:263:ILE:O	1:H:266:VAL:HG12	2.16	0.45
1:I:99:HIS:CE1	1:J:24:ARG:HH21	2.33	0.45
1:E:87:CYS:O	1:E:91:LEU:HD13	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:263:ILE:O	1:J:266:VAL:HG12	2.17	0.45
1:L:27:LEU:HA	1:L:30:VAL:HG22	1.98	0.45
1:B:87:CYS:O	1:B:91:LEU:HD13	2.17	0.45
1:D:33:PHE:CZ	1:D:37:ILE:HD11	2.51	0.45
1:G:41:VAL:HG13	1:L:77:ARG:HG2	1.98	0.45
2:C:406:MC3:H231	2:C:406:MC3:H202	1.66	0.45
2:K:403:MC3:H322	2:K:403:MC3:H351	1.71	0.44
1:D:220:LEU:HG	2:D:406:MC3:H181	1.98	0.44
1:B:25:ILE:HG23	1:C:95:THR:HB	1.99	0.44
1:F:207:ASN:HD21	1:F:269:LEU:HD23	1.81	0.44
1:I:25:ILE:O	1:I:29:VAL:HG23	2.17	0.44
1:K:263:ILE:O	1:K:266:VAL:HG12	2.16	0.44
1:L:25:ILE:O	1:L:29:VAL:HG23	2.18	0.44
1:C:33:PHE:CZ	1:C:37:ILE:HD11	2.52	0.44
1:L:89:PRO:O	1:L:202:GLN:NE2	2.51	0.44
2:D:406:MC3:H231	2:D:406:MC3:H202	1.66	0.44
1:K:27:LEU:HA	1:K:30:VAL:HG22	1.99	0.44
1:L:263:ILE:O	1:L:266:VAL:HG12	2.17	0.44
1:G:234:TYR:CD1	1:G:235:PRO:HA	2.52	0.44
1:G:263:ILE:O	1:G:266:VAL:HG12	2.17	0.44
2:H:403:MC3:H351	2:H:403:MC3:H322	1.71	0.44
1:J:234:TYR:CD1	1:J:235:PRO:HA	2.53	0.44
1:B:24:ARG:HB2	1:B:24:ARG:HH21	1.83	0.44
2:I:403:MC3:H351	2:I:403:MC3:H322	1.71	0.43
2:F:406:MC3:H202	2:F:406:MC3:H231	1.67	0.43
1:G:249:GLU:OE2	1:L:77:ARG:NE	2.44	0.43
1:H:89:PRO:O	1:H:202:GLN:NE2	2.51	0.43
1:I:263:ILE:O	1:I:266:VAL:HG12	2.17	0.43
1:G:6:ILE:H	1:G:6:ILE:HG13	1.64	0.43
1:I:77:ARG:HG2	1:J:41:VAL:HG13	1.99	0.43
1:K:77:ARG:HG2	1:L:41:VAL:HG13	1.99	0.43
1:L:233:ARG:HG2	1:L:234:TYR:H	1.83	0.43
1:D:198:PHE:HA	1:D:201:ILE:HG12	2.01	0.43
1:H:77:ARG:HG2	1:I:41:VAL:HG13	1.99	0.43
1:F:33:PHE:CZ	1:F:37:ILE:HD11	2.54	0.43
1:G:89:PRO:O	1:G:202:GLN:NE2	2.52	0.43
1:K:210:GLU:HG3	1:K:268:ASN:OD1	2.19	0.43
1:K:234:TYR:CD1	1:K:235:PRO:HA	2.54	0.43
1:C:198:PHE:HA	1:C:201:ILE:HG12	2.01	0.43
1:G:25:ILE:O	1:G:29:VAL:HG23	2.19	0.43
1:I:233:ARG:HG2	1:I:234:TYR:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:77:ARG:HG2	1:K:41:VAL:HG13	2.00	0.43
1:L:271:GLU:O	1:L:275:LEU:HD13	2.19	0.43
1:A:198:PHE:HA	1:A:201:ILE:HG12	2.01	0.43
1:C:25:ILE:HD12	1:C:25:ILE:H	1.83	0.43
1:G:77:ARG:HG2	1:H:41:VAL:HG13	2.01	0.42
2:G:410:MC3:H322	2:G:410:MC3:H351	1.85	0.42
2:A:406:MC3:H202	2:A:406:MC3:H231	1.66	0.42
1:E:82:GLN:O	1:E:86:VAL:HG23	2.19	0.42
1:B:82:GLN:O	1:B:86:VAL:HG23	2.19	0.42
1:G:207:ASN:OD1	1:G:268:ASN:HB3	2.19	0.42
2:L:409:MC3:H351	2:L:409:MC3:H322	1.71	0.42
2:G:403:MC3:H322	2:G:403:MC3:H351	1.71	0.42
2:H:410:MC3:H322	2:H:410:MC3:H351	1.85	0.42
2:J:403:MC3:H371	2:J:403:MC3:H342	1.55	0.42
1:K:271:GLU:O	1:K:275:LEU:HD13	2.20	0.42
1:G:234:TYR:CG	1:G:235:PRO:HA	2.55	0.42
1:H:234:TYR:CD1	1:H:235:PRO:HA	2.54	0.42
1:J:271:GLU:O	1:J:275:LEU:HD13	2.20	0.42
1:H:237:ILE:HG22	1:H:238:LYS:HE2	2.02	0.42
1:I:234:TYR:CD1	1:I:235:PRO:HA	2.55	0.42
1:D:211:ILE:O	1:D:215:VAL:HG23	2.20	0.42
1:E:25:ILE:HG23	1:F:95:THR:HB	2.01	0.42
1:G:38:VAL:HG13	1:G:76:ILE:HD11	2.02	0.42
1:G:237:ILE:HG22	1:G:238:LYS:HE2	2.02	0.42
1:I:271:GLU:O	1:I:275:LEU:HD13	2.19	0.42
1:L:234:TYR:CD1	1:L:235:PRO:HA	2.55	0.42
1:L:237:ILE:HG22	1:L:238:LYS:HE2	2.00	0.42
1:C:24:ARG:O	1:C:28:THR:HG22	2.20	0.42
1:G:237:ILE:O	1:G:238:LYS:C	2.58	0.41
2:G:411:MC3:H431	2:G:411:MC3:H402	1.89	0.41
1:L:234:TYR:CG	1:L:235:PRO:HA	2.55	0.41
1:D:82:GLN:O	1:D:86:VAL:HG23	2.20	0.41
1:F:198:PHE:HA	1:F:201:ILE:HG12	2.01	0.41
1:H:25:ILE:O	1:H:29:VAL:HG23	2.20	0.41
1:I:237:ILE:HG22	1:I:238:LYS:HE2	2.00	0.41
1:J:89:PRO:O	1:J:202:GLN:NE2	2.53	0.41
1:A:82:GLN:O	1:A:86:VAL:HG23	2.20	0.41
2:B:402:MC3:H321	2:B:403:MC3:H241	2.03	0.41
1:J:38:VAL:HG13	1:J:76:ILE:HD11	2.02	0.41
1:J:207:ASN:HD21	1:J:272:LEU:HB2	1.85	0.41
1:J:234:TYR:CG	1:J:235:PRO:HA	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:210:GLU:HG3	1:H:268:ASN:OD1	2.20	0.41
1:A:211:ILE:O	1:A:215:VAL:HG23	2.20	0.41
1:E:198:PHE:HA	1:E:201:ILE:HG12	2.03	0.41
1:A:25:ILE:H	1:A:25:ILE:HD12	1.84	0.41
1:H:38:VAL:HG13	1:H:76:ILE:HD11	2.03	0.41
1:K:98:VAL:HG21	2:L:411:MC3:H381	2.03	0.41
1:A:24:ARG:HH21	1:A:24:ARG:HB2	1.85	0.41
1:G:271:GLU:O	1:G:275:LEU:HD13	2.21	0.41
1:H:233:ARG:HG2	1:H:234:TYR:H	1.86	0.41
1:K:38:VAL:HG13	1:K:76:ILE:HD11	2.03	0.41
1:L:210:GLU:HG3	1:L:268:ASN:OD1	2.21	0.41
2:J:406:MC3:H391	2:J:406:MC3:H422	1.95	0.41
1:K:234:TYR:CG	1:K:235:PRO:HA	2.55	0.41
1:A:278:ARG:HA	1:A:278:ARG:HD2	1.93	0.41
1:B:198:PHE:HA	1:B:201:ILE:HG12	2.02	0.41
2:E:405:MC3:H321	2:E:406:MC3:H241	2.03	0.41
1:F:37:ILE:O	1:F:41:VAL:HG12	2.21	0.41
1:H:271:GLU:O	1:H:275:LEU:HD13	2.21	0.41
1:K:25:ILE:O	1:K:29:VAL:HG23	2.20	0.41
1:L:38:VAL:HG13	1:L:76:ILE:HD11	2.03	0.41
1:C:82:GLN:O	1:C:86:VAL:HG23	2.21	0.41
1:G:21:MET:HB2	1:L:99:HIS:HE1	1.86	0.40
1:H:234:TYR:CG	1:H:235:PRO:HA	2.56	0.40
1:I:234:TYR:CG	1:I:235:PRO:HA	2.56	0.40
1:I:237:ILE:O	1:I:238:LYS:C	2.59	0.40
1:J:237:ILE:O	1:J:238:LYS:C	2.60	0.40
1:K:89:PRO:O	1:K:202:GLN:NE2	2.55	0.40
1:K:233:ARG:HG2	1:K:234:TYR:H	1.86	0.40
1:D:24:ARG:HB2	1:D:24:ARG:HH21	1.85	0.40
2:J:411:MC3:H431	2:J:411:MC3:H402	1.84	0.40
1:G:261:SER:O	1:G:265:VAL:HG23	2.22	0.40
1:I:38:VAL:HG13	1:I:76:ILE:HD11	2.03	0.40
1:L:237:ILE:O	1:L:238:LYS:C	2.59	0.40

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	A	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	B	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	C	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	D	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	E	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	F	163/332 (49%)	162 (99%)	0	1 (1%)	25	57
1	G	177/332 (53%)	172 (97%)	4 (2%)	1 (1%)	25	57
1	H	177/332 (53%)	172 (97%)	4 (2%)	1 (1%)	25	57
1	I	177/332 (53%)	172 (97%)	4 (2%)	1 (1%)	25	57
1	J	177/332 (53%)	173 (98%)	3 (2%)	1 (1%)	25	57
1	K	177/332 (53%)	173 (98%)	3 (2%)	1 (1%)	25	57
1	L	177/332 (53%)	173 (98%)	3 (2%)	1 (1%)	25	57
All	All	2040/3984 (51%)	2007 (98%)	21 (1%)	12 (1%)	29	57

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H	238	LYS
1	I	238	LYS
1	J	238	LYS
1	K	238	LYS
1	L	238	LYS
1	G	238	LYS
1	B	238	LYS
1	D	238	LYS
1	E	238	LYS
1	A	238	LYS
1	C	238	LYS
1	F	238	LYS

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	A	151/289 (52%)	145 (96%)	6 (4%)	31	60
1	B	151/289 (52%)	147 (97%)	4 (3%)	46	72
1	C	151/289 (52%)	147 (97%)	4 (3%)	46	72
1	D	151/289 (52%)	146 (97%)	5 (3%)	38	66
1	E	151/289 (52%)	146 (97%)	5 (3%)	38	66
1	F	151/289 (52%)	146 (97%)	5 (3%)	38	66
1	G	163/289 (56%)	162 (99%)	1 (1%)	86	94
1	H	163/289 (56%)	162 (99%)	1 (1%)	86	94
1	I	163/289 (56%)	162 (99%)	1 (1%)	86	94
1	J	163/289 (56%)	162 (99%)	1 (1%)	86	94
1	K	163/289 (56%)	162 (99%)	1 (1%)	86	94
1	L	163/289 (56%)	162 (99%)	1 (1%)	86	94
All	All	1884/3468 (54%)	1849 (98%)	35 (2%)	59	78

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	253	PHE
1	H	253	PHE
1	I	253	PHE
1	J	253	PHE
1	K	253	PHE
1	L	253	PHE
1	A	20	THR
1	A	44	THR
1	A	63	ASN
1	A	77	ARG
1	A	198	PHE
1	A	253	PHE
1	B	63	ASN
1	B	77	ARG

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Mol	Chain	Res	Type
1	B	198	PHE
1	B	253	PHE
1	C	63	ASN
1	C	77	ARG
1	C	198	PHE
1	C	253	PHE
1	D	47	ASP
1	D	63	ASN
1	D	77	ARG
1	D	198	PHE
1	D	253	PHE
1	E	47	ASP
1	E	63	ASN
1	E	77	ARG
1	E	198	PHE
1	E	253	PHE
1	F	20	THR
1	F	63	ASN
1	F	77	ARG
1	F	198	PHE
1	F	253	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	G	50	GLN
1	G	207	ASN
1	H	50	GLN
1	I	50	GLN
1	J	50	GLN
1	K	50	GLN
1	L	50	GLN
1	A	59	GLN
1	A	99	HIS
1	A	207	ASN
1	B	59	GLN
1	B	99	HIS
1	B	207	ASN
1	B	268	ASN
1	C	59	GLN
1	C	99	HIS
1	C	207	ASN

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Mol	Chain	Res	Type
1	D	59	GLN
1	D	99	HIS
1	D	207	ASN
1	E	59	GLN
1	E	99	HIS
1	E	207	ASN
1	E	268	ASN
1	F	59	GLN
1	F	99	HIS
1	F	207	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)

114 ligands 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	$\#\|Z\| > 2$
2	MC3	G	402	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	C	401	-	13,13,45	0.27	0	12,12,53	0.86	0
2	MC3	L	402	-	13,13,45	0.26	0	12,12,53	0.93	0
2	MC3	I	405	-	9,9,45	0.29	0	8,8,53	0.79	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	MC3	B	403	-	13,13,45	0.27	0	12,12,53	0.92	0
2	MC3	L	407	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	K	402	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	G	403	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	C	403	-	13,13,45	0.28	0	12,12,53	0.93	0
2	MC3	G	405	-	9,9,45	0.29	0	8,8,53	0.80	0
2	MC3	D	402	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	L	404	-	13,13,45	0.28	0	12,12,53	0.88	0
2	MC3	H	403	-	13,13,45	0.29	0	12,12,53	0.82	0
2	MC3	A	403	-	13,13,45	0.28	0	12,12,53	0.92	0
2	MC3	H	405	-	9,9,45	0.29	0	8,8,53	0.79	0
2	MC3	H	407	-	13,13,45	0.26	0	12,12,53	0.94	0
2	MC3	B	401	-	13,13,45	0.29	0	12,12,53	0.89	0
2	MC3	K	406	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	D	406	-	13,13,45	0.27	0	12,12,53	0.92	0
2	MC3	K	401	-	13,13,45	0.30	0	12,12,53	0.81	0
2	MC3	D	408	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	E	406	-	13,13,45	0.27	0	12,12,53	0.92	0
2	MC3	G	408	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	D	404	-	13,13,45	0.29	0	12,12,53	0.90	0
2	MC3	G	401	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	C	408	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	G	404	-	9,9,45	0.28	0	8,8,53	0.81	0
2	MC3	C	404	-	13,13,45	0.29	0	12,12,53	0.90	0
2	MC3	C	402	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	H	409	-	13,13,45	0.28	0	12,12,53	0.88	0
2	MC3	I	410	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	H	404	-	9,9,45	0.28	0	8,8,53	0.81	0
2	MC3	A	408	-	13,13,45	0.28	0	12,12,53	0.89	0
2	MC3	A	401	-	13,13,45	0.27	0	12,12,53	0.86	0
2	MC3	J	402	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	L	408	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	H	406	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	G	409	-	13,13,45	0.28	0	12,12,53	0.89	0
2	MC3	E	407	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	F	404	-	13,13,45	0.29	0	12,12,53	0.92	0
2	MC3	J	405	-	9,9,45	0.29	0	8,8,53	0.79	0
2	MC3	D	403	-	13,13,45	0.28	0	12,12,53	0.93	0
2	MC3	H	410	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	B	402	-	13,13,45	0.28	0	12,12,53	0.86	0
2	MC3	F	406	-	13,13,45	0.27	0	12,12,53	0.93	0
2	MC3	F	401	-	13,13,45	0.27	0	12,12,53	0.86	0
2	MC3	L	406	-	11,11,45	0.29	0	10,10,53	0.81	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	MC3	L	403	-	13,13,45	0.27	0	12,12,53	0.91	0
2	MC3	I	411	-	11,11,45	0.29	0	10,10,53	0.81	0
2	MC3	K	405	-	9,9,45	0.29	0	8,8,53	0.79	0
2	MC3	A	405	-	13,13,45	0.28	0	12,12,53	0.86	0
2	MC3	B	407	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	G	411	-	11,11,45	0.28	0	10,10,53	0.82	0
2	MC3	J	411	-	11,11,45	0.29	0	10,10,53	0.82	0
2	MC3	D	405	-	13,13,45	0.28	0	12,12,53	0.86	0
2	MC3	F	403	-	13,13,45	0.28	0	12,12,53	0.94	0
2	MC3	D	407	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	G	406	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	J	404	-	9,9,45	0.28	0	8,8,53	0.81	0
2	MC3	I	402	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	J	401	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	A	402	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	K	409	-	13,13,45	0.28	0	12,12,53	0.88	0
2	MC3	C	405	-	13,13,45	0.28	0	12,12,53	0.85	0
2	MC3	J	410	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	F	405	-	13,13,45	0.28	0	12,12,53	0.85	0
2	MC3	L	405	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	H	402	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	F	407	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	L	409	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	A	406	-	13,13,45	0.27	0	12,12,53	0.92	0
2	MC3	K	410	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	F	408	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	K	403	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	I	407	-	13,13,45	0.26	0	12,12,53	0.93	0
2	MC3	L	411	-	9,9,45	0.29	0	8,8,53	0.79	0
2	MC3	B	406	-	13,13,45	0.27	0	12,12,53	0.86	0
2	MC3	G	407	-	13,13,45	0.26	0	12,12,53	0.93	0
2	MC3	I	403	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	I	404	-	9,9,45	0.28	0	8,8,53	0.81	0
2	MC3	J	403	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	E	402	-	13,13,45	0.27	0	12,12,53	0.89	0
2	MC3	K	407	-	13,13,45	0.26	0	12,12,53	0.94	0
2	MC3	J	406	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	B	405	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	E	403	-	13,13,45	0.28	0	12,12,53	0.92	0
2	MC3	K	411	-	11,11,45	0.29	0	10,10,53	0.82	0
2	MC3	A	407	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	K	408	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	E	405	-	13,13,45	0.28	0	12,12,53	0.86	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	MC3	E	408	-	13,13,45	0.28	0	12,12,53	0.87	0
2	MC3	K	404	-	9,9,45	0.28	0	8,8,53	0.80	0
2	MC3	A	404	-	13,13,45	0.30	0	12,12,53	0.91	0
2	MC3	H	411	-	11,11,45	0.29	0	10,10,53	0.81	0
2	MC3	I	408	-	13,13,45	0.27	0	12,12,53	0.91	0
2	MC3	I	401	-	13,13,45	0.29	0	12,12,53	0.83	0
2	MC3	J	408	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	E	401	-	13,13,45	0.27	0	12,12,53	0.86	0
2	MC3	F	402	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	G	410	-	13,13,45	0.28	0	12,12,53	0.91	0
2	MC3	L	410	-	9,9,45	0.29	0	8,8,53	0.79	0
2	MC3	B	404	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	H	408	-	13,13,45	0.27	0	12,12,53	0.90	0
2	MC3	B	408	-	13,13,45	0.28	0	12,12,53	0.92	0
2	MC3	H	401	-	13,13,45	0.30	0	12,12,53	0.81	0
2	MC3	C	406	-	13,13,45	0.27	0	12,12,53	0.93	0
2	MC3	C	407	-	13,13,45	0.30	0	12,12,53	0.82	0
2	MC3	J	407	-	13,13,45	0.26	0	12,12,53	0.93	0
2	MC3	L	401	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	E	404	-	13,13,45	0.29	0	12,12,53	0.90	0
2	MC3	I	409	-	13,13,45	0.28	0	12,12,53	0.88	0
2	MC3	I	406	-	13,13,45	0.28	0	12,12,53	0.84	0
2	MC3	J	409	-	13,13,45	0.28	0	12,12,53	0.88	0
2	MC3	D	401	-	13,13,45	0.28	0	12,12,53	0.86	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	G	402	-	-	3/11/11/49	-
2	MC3	C	401	-	-	8/11/11/49	-
2	MC3	L	402	-	-	4/11/11/49	-
2	MC3	I	405	-	-	2/7/7/49	-
2	MC3	B	403	-	-	2/11/11/49	-
2	MC3	L	407	-	-	4/11/11/49	-
2	MC3	K	402	-	-	3/11/11/49	-
2	MC3	G	403	-	-	3/11/11/49	-
2	MC3	C	403	-	-	5/11/11/49	-
2	MC3	G	405	-	-	1/7/7/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	D	402	-	-	6/11/11/49	-
2	MC3	L	404	-	-	2/11/11/49	-
2	MC3	H	403	-	-	3/11/11/49	-
2	MC3	A	403	-	-	5/11/11/49	-
2	MC3	H	405	-	-	1/7/7/49	-
2	MC3	H	407	-	-	4/11/11/49	-
2	MC3	B	401	-	-	4/11/11/49	-
2	MC3	K	406	-	-	3/11/11/49	-
2	MC3	D	406	-	-	2/11/11/49	-
2	MC3	K	401	-	-	3/11/11/49	-
2	MC3	D	408	-	-	5/11/11/49	-
2	MC3	E	406	-	-	2/11/11/49	-
2	MC3	G	408	-	-	3/11/11/49	-
2	MC3	D	404	-	-	4/11/11/49	-
2	MC3	G	401	-	-	4/11/11/49	-
2	MC3	C	408	-	-	5/11/11/49	-
2	MC3	G	404	-	-	2/7/7/49	-
2	MC3	C	404	-	-	4/11/11/49	-
2	MC3	C	402	-	-	6/11/11/49	-
2	MC3	H	409	-	-	2/11/11/49	-
2	MC3	I	410	-	-	3/11/11/49	-
2	MC3	H	404	-	-	3/7/7/49	-
2	MC3	A	408	-	-	5/11/11/49	-
2	MC3	A	401	-	-	8/11/11/49	-
2	MC3	J	402	-	-	3/11/11/49	-
2	MC3	L	408	-	-	3/11/11/49	-
2	MC3	H	406	-	-	3/11/11/49	-
2	MC3	G	409	-	-	2/11/11/49	-
2	MC3	E	407	-	-	5/11/11/49	-
2	MC3	F	404	-	-	4/11/11/49	-
2	MC3	J	405	-	-	2/7/7/49	-
2	MC3	D	403	-	-	5/11/11/49	-
2	MC3	H	410	-	-	3/11/11/49	-
2	MC3	B	402	-	-	8/11/11/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	F	406	-	-	2/11/11/49	-
2	MC3	F	401	-	-	8/11/11/49	-
2	MC3	L	406	-	-	2/9/9/49	-
2	MC3	L	403	-	-	3/11/11/49	-
2	MC3	I	411	-	-	2/9/9/49	-
2	MC3	K	405	-	-	1/7/7/49	-
2	MC3	A	405	-	-	8/11/11/49	-
2	MC3	B	407	-	-	6/11/11/49	-
2	MC3	G	411	-	-	1/9/9/49	-
2	MC3	J	411	-	-	1/9/9/49	-
2	MC3	D	405	-	-	8/11/11/49	-
2	MC3	F	403	-	-	5/11/11/49	-
2	MC3	D	407	-	-	5/11/11/49	-
2	MC3	G	406	-	-	3/11/11/49	-
2	MC3	J	404	-	-	2/7/7/49	-
2	MC3	I	402	-	-	3/11/11/49	-
2	MC3	J	401	-	-	4/11/11/49	-
2	MC3	A	402	-	-	6/11/11/49	-
2	MC3	K	409	-	-	2/11/11/49	-
2	MC3	C	405	-	-	8/11/11/49	-
2	MC3	J	410	-	-	3/11/11/49	-
2	MC3	F	405	-	-	8/11/11/49	-
2	MC3	L	405	-	-	3/11/11/49	-
2	MC3	H	402	-	-	3/11/11/49	-
2	MC3	F	407	-	-	5/11/11/49	-
2	MC3	L	409	-	-	3/11/11/49	-
2	MC3	A	406	-	-	2/11/11/49	-
2	MC3	K	410	-	-	3/11/11/49	-
2	MC3	F	408	-	-	5/11/11/49	-
2	MC3	K	403	-	-	3/11/11/49	-
2	MC3	I	407	-	-	4/11/11/49	-
2	MC3	L	411	-	-	2/7/7/49	-
2	MC3	B	406	-	-	8/11/11/49	-
2	MC3	G	407	-	-	4/11/11/49	-
2	MC3	I	403	-	-	3/11/11/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	I	404	-	-	3/7/7/49	-
2	MC3	J	403	-	-	3/11/11/49	-
2	MC3	E	402	-	-	6/11/11/49	-
2	MC3	K	407	-	-	4/11/11/49	-
2	MC3	J	406	-	-	3/11/11/49	-
2	MC3	B	405	-	-	5/11/11/49	-
2	MC3	E	403	-	-	5/11/11/49	-
2	MC3	K	411	-	-	1/9/9/49	-
2	MC3	A	407	-	-	5/11/11/49	-
2	MC3	K	408	-	-	3/11/11/49	-
2	MC3	E	405	-	-	8/11/11/49	-
2	MC3	E	408	-	-	5/11/11/49	-
2	MC3	K	404	-	-	3/7/7/49	-
2	MC3	A	404	-	-	4/11/11/49	-
2	MC3	H	411	-	-	1/9/9/49	-
2	MC3	I	408	-	-	3/11/11/49	-
2	MC3	I	401	-	-	4/11/11/49	-
2	MC3	J	408	-	-	3/11/11/49	-
2	MC3	E	401	-	-	8/11/11/49	-
2	MC3	F	402	-	-	6/11/11/49	-
2	MC3	G	410	-	-	3/11/11/49	-
2	MC3	L	410	-	-	3/7/7/49	-
2	MC3	B	404	-	-	5/11/11/49	-
2	MC3	H	408	-	-	3/11/11/49	-
2	MC3	B	408	-	-	5/11/11/49	-
2	MC3	H	401	-	-	3/11/11/49	-
2	MC3	C	406	-	-	2/11/11/49	-
2	MC3	C	407	-	-	5/11/11/49	-
2	MC3	J	407	-	-	4/11/11/49	-
2	MC3	L	401	-	-	3/11/11/49	-
2	MC3	E	404	-	-	4/11/11/49	-
2	MC3	I	409	-	-	2/11/11/49	-
2	MC3	I	406	-	-	3/11/11/49	-
2	MC3	J	409	-	-	2/11/11/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	D	401	-	-	8/11/11/49	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (439) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	407	MC3	C16-C17-C18-C19
2	G	401	MC3	C34-C35-C36-C37
2	I	401	MC3	C32-C33-C34-C35
2	B	404	MC3	C16-C17-C18-C19
2	C	407	MC3	C16-C17-C18-C19
2	D	407	MC3	C16-C17-C18-C19
2	E	407	MC3	C16-C17-C18-C19
2	F	407	MC3	C16-C17-C18-C19
2	L	407	MC3	C32-C33-C34-C35
2	I	401	MC3	C34-C35-C36-C37
2	L	407	MC3	C34-C35-C36-C37
2	A	405	MC3	C40-C41-C42-C43
2	A	408	MC3	C34-C35-C36-C37
2	B	402	MC3	C40-C41-C42-C43
2	C	405	MC3	C40-C41-C42-C43
2	D	405	MC3	C40-C41-C42-C43
2	E	405	MC3	C40-C41-C42-C43
2	F	405	MC3	C40-C41-C42-C43
2	J	401	MC3	C34-C35-C36-C37
2	A	402	MC3	C33-C34-C35-C36
2	B	407	MC3	C33-C34-C35-C36
2	C	402	MC3	C33-C34-C35-C36
2	C	408	MC3	C34-C35-C36-C37
2	D	408	MC3	C34-C35-C36-C37
2	E	402	MC3	C33-C34-C35-C36
2	E	408	MC3	C34-C35-C36-C37
2	F	402	MC3	C33-C34-C35-C36
2	A	404	MC3	C32-C33-C34-C35
2	B	401	MC3	C32-C33-C34-C35
2	B	405	MC3	C34-C35-C36-C37
2	C	404	MC3	C32-C33-C34-C35
2	D	402	MC3	C33-C34-C35-C36
2	E	404	MC3	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
2	F	404	MC3	C32-C33-C34-C35
2	F	408	MC3	C34-C35-C36-C37
2	B	404	MC3	C14-C15-C16-C17
2	D	404	MC3	C32-C33-C34-C35
2	I	403	MC3	C34-C35-C36-C37
2	A	407	MC3	C14-C15-C16-C17
2	C	407	MC3	C14-C15-C16-C17
2	D	407	MC3	C14-C15-C16-C17
2	E	407	MC3	C14-C15-C16-C17
2	F	407	MC3	C14-C15-C16-C17
2	G	403	MC3	C34-C35-C36-C37
2	G	408	MC3	C34-C35-C36-C37
2	H	408	MC3	C34-C35-C36-C37
2	I	408	MC3	C34-C35-C36-C37
2	J	403	MC3	C34-C35-C36-C37
2	J	408	MC3	C34-C35-C36-C37
2	K	403	MC3	C34-C35-C36-C37
2	L	403	MC3	C34-C35-C36-C37
2	A	405	MC3	C35-C36-C37-C38
2	B	402	MC3	C35-C36-C37-C38
2	D	405	MC3	C35-C36-C37-C38
2	D	406	MC3	C12-C13-C14-C15
2	E	405	MC3	C35-C36-C37-C38
2	F	406	MC3	C12-C13-C14-C15
2	H	403	MC3	C34-C35-C36-C37
2	K	408	MC3	C34-C35-C36-C37
2	L	409	MC3	C34-C35-C36-C37
2	A	406	MC3	C12-C13-C14-C15
2	B	403	MC3	C12-C13-C14-C15
2	C	405	MC3	C35-C36-C37-C38
2	C	406	MC3	C12-C13-C14-C15
2	E	406	MC3	C12-C13-C14-C15
2	F	405	MC3	C35-C36-C37-C38
2	G	401	MC3	C32-C33-C34-C35
2	G	408	MC3	C38-C39-C40-C41
2	H	408	MC3	C38-C39-C40-C41
2	I	408	MC3	C38-C39-C40-C41
2	J	408	MC3	C38-C39-C40-C41
2	K	408	MC3	C38-C39-C40-C41
2	L	403	MC3	C38-C39-C40-C41
2	A	403	MC3	C32-C33-C34-C35
2	B	408	MC3	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
2	D	403	MC3	C32-C33-C34-C35
2	E	403	MC3	C32-C33-C34-C35
2	C	403	MC3	C32-C33-C34-C35
2	F	403	MC3	C32-C33-C34-C35
2	B	406	MC3	C36-C37-C38-C39
2	C	401	MC3	C36-C37-C38-C39
2	E	401	MC3	C36-C37-C38-C39
2	A	401	MC3	C36-C37-C38-C39
2	D	401	MC3	C36-C37-C38-C39
2	F	401	MC3	C36-C37-C38-C39
2	L	410	MC3	C32-C33-C34-C35
2	I	401	MC3	C39-C40-C41-C42
2	B	401	MC3	C40-C41-C42-C43
2	C	404	MC3	C40-C41-C42-C43
2	D	404	MC3	C40-C41-C42-C43
2	E	404	MC3	C40-C41-C42-C43
2	A	404	MC3	C40-C41-C42-C43
2	F	404	MC3	C40-C41-C42-C43
2	G	407	MC3	C40-C41-C42-C43
2	H	407	MC3	C40-C41-C42-C43
2	J	407	MC3	C40-C41-C42-C43
2	K	407	MC3	C40-C41-C42-C43
2	L	402	MC3	C40-C41-C42-C43
2	L	407	MC3	C39-C40-C41-C42
2	I	407	MC3	C40-C41-C42-C43
2	J	401	MC3	C39-C40-C41-C42
2	H	402	MC3	C36-C37-C38-C39
2	I	403	MC3	C35-C36-C37-C38
2	K	402	MC3	C36-C37-C38-C39
2	K	403	MC3	C35-C36-C37-C38
2	G	403	MC3	C35-C36-C37-C38
2	H	403	MC3	C35-C36-C37-C38
2	H	410	MC3	C33-C34-C35-C36
2	I	402	MC3	C36-C37-C38-C39
2	L	408	MC3	C36-C37-C38-C39
2	L	409	MC3	C35-C36-C37-C38
2	J	403	MC3	C35-C36-C37-C38
2	K	410	MC3	C33-C34-C35-C36
2	G	402	MC3	C36-C37-C38-C39
2	J	402	MC3	C36-C37-C38-C39
2	J	410	MC3	C33-C34-C35-C36
2	L	405	MC3	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
2	G	410	MC3	C33-C34-C35-C36
2	I	410	MC3	C33-C34-C35-C36
2	A	405	MC3	C37-C38-C39-C40
2	C	405	MC3	C37-C38-C39-C40
2	G	401	MC3	C39-C40-C41-C42
2	B	402	MC3	C37-C38-C39-C40
2	D	405	MC3	C37-C38-C39-C40
2	E	405	MC3	C37-C38-C39-C40
2	F	405	MC3	C37-C38-C39-C40
2	G	409	MC3	C34-C35-C36-C37
2	H	409	MC3	C34-C35-C36-C37
2	J	409	MC3	C34-C35-C36-C37
2	K	409	MC3	C34-C35-C36-C37
2	I	409	MC3	C34-C35-C36-C37
2	I	410	MC3	C39-C40-C41-C42
2	H	410	MC3	C39-C40-C41-C42
2	K	410	MC3	C39-C40-C41-C42
2	L	404	MC3	C34-C35-C36-C37
2	L	405	MC3	C39-C40-C41-C42
2	J	410	MC3	C39-C40-C41-C42
2	G	410	MC3	C39-C40-C41-C42
2	J	401	MC3	C32-C33-C34-C35
2	C	402	MC3	C35-C36-C37-C38
2	G	403	MC3	C36-C37-C38-C39
2	H	403	MC3	C36-C37-C38-C39
2	J	403	MC3	C36-C37-C38-C39
2	K	403	MC3	C36-C37-C38-C39
2	I	403	MC3	C36-C37-C38-C39
2	A	402	MC3	C35-C36-C37-C38
2	D	402	MC3	C35-C36-C37-C38
2	L	409	MC3	C36-C37-C38-C39
2	B	407	MC3	C35-C36-C37-C38
2	F	402	MC3	C35-C36-C37-C38
2	C	401	MC3	C33-C34-C35-C36
2	E	402	MC3	C35-C36-C37-C38
2	F	401	MC3	C33-C34-C35-C36
2	A	401	MC3	C33-C34-C35-C36
2	B	406	MC3	C33-C34-C35-C36
2	D	401	MC3	C33-C34-C35-C36
2	E	401	MC3	C33-C34-C35-C36
2	B	405	MC3	C31-C32-C33-C34
2	B	407	MC3	C36-C37-C38-C39

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Mol	Chain	Res	Type	Atoms
2	D	408	MC3	C31-C32-C33-C34
2	E	408	MC3	C31-C32-C33-C34
2	C	408	MC3	C31-C32-C33-C34
2	E	402	MC3	C36-C37-C38-C39
2	F	408	MC3	C31-C32-C33-C34
2	J	402	MC3	C37-C38-C39-C40
2	C	402	MC3	C36-C37-C38-C39
2	G	402	MC3	C37-C38-C39-C40
2	A	408	MC3	C31-C32-C33-C34
2	A	402	MC3	C36-C37-C38-C39
2	D	402	MC3	C36-C37-C38-C39
2	F	402	MC3	C36-C37-C38-C39
2	H	402	MC3	C37-C38-C39-C40
2	I	402	MC3	C37-C38-C39-C40
2	L	408	MC3	C37-C38-C39-C40
2	K	402	MC3	C37-C38-C39-C40
2	C	405	MC3	C31-C32-C33-C34
2	D	403	MC3	C39-C40-C41-C42
2	E	405	MC3	C31-C32-C33-C34
2	A	405	MC3	C31-C32-C33-C34
2	B	402	MC3	C31-C32-C33-C34
2	B	408	MC3	C39-C40-C41-C42
2	D	405	MC3	C31-C32-C33-C34
2	E	403	MC3	C39-C40-C41-C42
2	F	403	MC3	C39-C40-C41-C42
2	F	405	MC3	C31-C32-C33-C34
2	A	403	MC3	C39-C40-C41-C42
2	C	403	MC3	C39-C40-C41-C42
2	A	405	MC3	C41-C42-C43-C44
2	B	402	MC3	C41-C42-C43-C44
2	C	405	MC3	C41-C42-C43-C44
2	E	405	MC3	C41-C42-C43-C44
2	I	411	MC3	C36-C37-C38-C39
2	D	405	MC3	C41-C42-C43-C44
2	F	405	MC3	C41-C42-C43-C44
2	A	406	MC3	C13-C14-C15-C16
2	D	406	MC3	C13-C14-C15-C16
2	L	406	MC3	C36-C37-C38-C39
2	B	403	MC3	C13-C14-C15-C16
2	C	406	MC3	C13-C14-C15-C16
2	E	406	MC3	C13-C14-C15-C16
2	F	406	MC3	C13-C14-C15-C16

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Mol	Chain	Res	Type	Atoms
2	H	411	MC3	C36-C37-C38-C39
2	K	411	MC3	C36-C37-C38-C39
2	I	404	MC3	C34-C35-C36-C37
2	F	401	MC3	C32-C33-C34-C35
2	J	407	MC3	C34-C35-C36-C37
2	J	411	MC3	C36-C37-C38-C39
2	G	411	MC3	C36-C37-C38-C39
2	H	407	MC3	C34-C35-C36-C37
2	I	407	MC3	C34-C35-C36-C37
2	K	407	MC3	C34-C35-C36-C37
2	L	402	MC3	C34-C35-C36-C37
2	A	401	MC3	C32-C33-C34-C35
2	B	406	MC3	C32-C33-C34-C35
2	C	405	MC3	C38-C39-C40-C41
2	E	401	MC3	C32-C33-C34-C35
2	F	405	MC3	C38-C39-C40-C41
2	G	407	MC3	C34-C35-C36-C37
2	A	405	MC3	C38-C39-C40-C41
2	D	405	MC3	C38-C39-C40-C41
2	E	405	MC3	C38-C39-C40-C41
2	B	402	MC3	C38-C39-C40-C41
2	C	401	MC3	C32-C33-C34-C35
2	D	401	MC3	C32-C33-C34-C35
2	G	409	MC3	C31-C32-C33-C34
2	J	409	MC3	C31-C32-C33-C34
2	K	409	MC3	C31-C32-C33-C34
2	G	404	MC3	C31-C32-C33-C34
2	H	409	MC3	C31-C32-C33-C34
2	I	409	MC3	C31-C32-C33-C34
2	L	404	MC3	C31-C32-C33-C34
2	G	406	MC3	C31-C32-C33-C34
2	J	406	MC3	C31-C32-C33-C34
2	L	401	MC3	C31-C32-C33-C34
2	I	406	MC3	C31-C32-C33-C34
2	B	406	MC3	C31-C32-C33-C34
2	A	401	MC3	C31-C32-C33-C34
2	C	401	MC3	C31-C32-C33-C34
2	D	401	MC3	C31-C32-C33-C34
2	E	401	MC3	C31-C32-C33-C34
2	F	401	MC3	C31-C32-C33-C34
2	I	404	MC3	C33-C34-C35-C36
2	H	401	MC3	C39-C40-C41-C42

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Mol	Chain	Res	Type	Atoms
2	H	406	MC3	C31-C32-C33-C34
2	J	404	MC3	C31-C32-C33-C34
2	K	401	MC3	C39-C40-C41-C42
2	K	406	MC3	C31-C32-C33-C34
2	A	402	MC3	C39-C40-C41-C42
2	C	402	MC3	C39-C40-C41-C42
2	D	402	MC3	C39-C40-C41-C42
2	B	407	MC3	C39-C40-C41-C42
2	E	402	MC3	C39-C40-C41-C42
2	F	402	MC3	C39-C40-C41-C42
2	A	401	MC3	C38-C39-C40-C41
2	E	401	MC3	C38-C39-C40-C41
2	B	406	MC3	C38-C39-C40-C41
2	D	401	MC3	C38-C39-C40-C41
2	A	401	MC3	C41-C42-C43-C44
2	C	401	MC3	C38-C39-C40-C41
2	D	401	MC3	C41-C42-C43-C44
2	F	401	MC3	C38-C39-C40-C41
2	C	401	MC3	C41-C42-C43-C44
2	B	406	MC3	C41-C42-C43-C44
2	F	401	MC3	C41-C42-C43-C44
2	E	401	MC3	C41-C42-C43-C44
2	H	406	MC3	C35-C36-C37-C38
2	I	402	MC3	C38-C39-C40-C41
2	F	407	MC3	C13-C14-C15-C16
2	H	402	MC3	C38-C39-C40-C41
2	I	406	MC3	C35-C36-C37-C38
2	J	402	MC3	C38-C39-C40-C41
2	A	407	MC3	C13-C14-C15-C16
2	B	404	MC3	C13-C14-C15-C16
2	C	407	MC3	C13-C14-C15-C16
2	D	407	MC3	C13-C14-C15-C16
2	E	407	MC3	C13-C14-C15-C16
2	G	402	MC3	C38-C39-C40-C41
2	K	402	MC3	C38-C39-C40-C41
2	K	406	MC3	C35-C36-C37-C38
2	L	401	MC3	C35-C36-C37-C38
2	L	408	MC3	C38-C39-C40-C41
2	L	410	MC3	C31-C32-C33-C34
2	G	407	MC3	C39-C40-C41-C42
2	H	407	MC3	C39-C40-C41-C42
2	I	407	MC3	C39-C40-C41-C42

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Mol	Chain	Res	Type	Atoms
2	F	401	MC3	C39-C40-C41-C42
2	K	407	MC3	C39-C40-C41-C42
2	B	406	MC3	C39-C40-C41-C42
2	J	407	MC3	C39-C40-C41-C42
2	L	402	MC3	C39-C40-C41-C42
2	C	401	MC3	C39-C40-C41-C42
2	E	402	MC3	C41-C42-C43-C44
2	A	402	MC3	C41-C42-C43-C44
2	E	401	MC3	C39-C40-C41-C42
2	C	402	MC3	C41-C42-C43-C44
2	A	401	MC3	C39-C40-C41-C42
2	D	402	MC3	C41-C42-C43-C44
2	F	402	MC3	C41-C42-C43-C44
2	B	407	MC3	C41-C42-C43-C44
2	D	401	MC3	C39-C40-C41-C42
2	I	408	MC3	C31-C32-C33-C34
2	E	403	MC3	C38-C39-C40-C41
2	L	403	MC3	C31-C32-C33-C34
2	C	403	MC3	C38-C39-C40-C41
2	D	403	MC3	C38-C39-C40-C41
2	G	408	MC3	C31-C32-C33-C34
2	H	408	MC3	C31-C32-C33-C34
2	J	408	MC3	C31-C32-C33-C34
2	K	408	MC3	C31-C32-C33-C34
2	B	408	MC3	C38-C39-C40-C41
2	A	403	MC3	C38-C39-C40-C41
2	F	403	MC3	C38-C39-C40-C41
2	B	401	MC3	C39-C40-C41-C42
2	E	404	MC3	C39-C40-C41-C42
2	E	407	MC3	C11-C12-C13-C14
2	B	404	MC3	C11-C12-C13-C14
2	C	404	MC3	C39-C40-C41-C42
2	C	408	MC3	C39-C40-C41-C42
2	B	405	MC3	C39-C40-C41-C42
2	D	408	MC3	C39-C40-C41-C42
2	E	408	MC3	C39-C40-C41-C42
2	F	407	MC3	C11-C12-C13-C14
2	A	407	MC3	C11-C12-C13-C14
2	C	407	MC3	C11-C12-C13-C14
2	D	404	MC3	C39-C40-C41-C42
2	D	407	MC3	C11-C12-C13-C14
2	A	404	MC3	C39-C40-C41-C42

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Mol	Chain	Res	Type	Atoms
2	B	402	MC3	C39-C40-C41-C42
2	F	408	MC3	C39-C40-C41-C42
2	F	404	MC3	C39-C40-C41-C42
2	D	405	MC3	C39-C40-C41-C42
2	E	405	MC3	C39-C40-C41-C42
2	F	405	MC3	C39-C40-C41-C42
2	A	405	MC3	C36-C37-C38-C39
2	C	405	MC3	C39-C40-C41-C42
2	E	405	MC3	C36-C37-C38-C39
2	A	405	MC3	C39-C40-C41-C42
2	A	408	MC3	C39-C40-C41-C42
2	B	402	MC3	C36-C37-C38-C39
2	D	405	MC3	C36-C37-C38-C39
2	H	401	MC3	C32-C33-C34-C35
2	L	411	MC3	C36-C37-C38-C39
2	C	405	MC3	C36-C37-C38-C39
2	F	405	MC3	C36-C37-C38-C39
2	K	401	MC3	C32-C33-C34-C35
2	J	405	MC3	C36-C37-C38-C39
2	G	404	MC3	C36-C37-C38-C39
2	G	405	MC3	C35-C36-C37-C38
2	G	406	MC3	C34-C35-C36-C37
2	I	405	MC3	C35-C36-C37-C38
2	L	401	MC3	C34-C35-C36-C37
2	J	406	MC3	C34-C35-C36-C37
2	J	406	MC3	C35-C36-C37-C38
2	G	406	MC3	C35-C36-C37-C38
2	H	404	MC3	C34-C35-C36-C37
2	J	404	MC3	C36-C37-C38-C39
2	I	405	MC3	C36-C37-C38-C39
2	H	401	MC3	C34-C35-C36-C37
2	K	404	MC3	C34-C35-C36-C37
2	D	408	MC3	C33-C34-C35-C36
2	F	408	MC3	C33-C34-C35-C36
2	B	405	MC3	C33-C34-C35-C36
2	I	406	MC3	C34-C35-C36-C37
2	C	408	MC3	C33-C34-C35-C36
2	H	406	MC3	C34-C35-C36-C37
2	H	404	MC3	C33-C34-C35-C36
2	E	408	MC3	C33-C34-C35-C36
2	K	401	MC3	C34-C35-C36-C37
2	K	404	MC3	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
2	K	406	MC3	C34-C35-C36-C37
2	A	408	MC3	C32-C33-C34-C35
2	B	407	MC3	C31-C32-C33-C34
2	D	402	MC3	C31-C32-C33-C34
2	E	402	MC3	C31-C32-C33-C34
2	A	402	MC3	C31-C32-C33-C34
2	L	410	MC3	C34-C35-C36-C37
2	F	402	MC3	C31-C32-C33-C34
2	B	406	MC3	C35-C36-C37-C38
2	C	402	MC3	C31-C32-C33-C34
2	E	401	MC3	C35-C36-C37-C38
2	C	401	MC3	C35-C36-C37-C38
2	F	408	MC3	C32-C33-C34-C35
2	B	405	MC3	C32-C33-C34-C35
2	D	408	MC3	C32-C33-C34-C35
2	E	408	MC3	C32-C33-C34-C35
2	F	401	MC3	C35-C36-C37-C38
2	A	401	MC3	C35-C36-C37-C38
2	D	401	MC3	C35-C36-C37-C38
2	A	408	MC3	C33-C34-C35-C36
2	C	408	MC3	C32-C33-C34-C35
2	G	407	MC3	C32-C33-C34-C35
2	K	407	MC3	C32-C33-C34-C35
2	I	411	MC3	C35-C36-C37-C38
2	L	406	MC3	C35-C36-C37-C38
2	H	407	MC3	C32-C33-C34-C35
2	J	407	MC3	C32-C33-C34-C35
2	L	402	MC3	C32-C33-C34-C35
2	I	407	MC3	C32-C33-C34-C35
2	J	401	MC3	C38-C39-C40-C41
2	K	405	MC3	C36-C37-C38-C39
2	L	405	MC3	C35-C36-C37-C38
2	I	410	MC3	C35-C36-C37-C38
2	G	410	MC3	C35-C36-C37-C38
2	K	410	MC3	C35-C36-C37-C38
2	H	410	MC3	C35-C36-C37-C38
2	J	410	MC3	C35-C36-C37-C38
2	F	404	MC3	C38-C39-C40-C41
2	H	405	MC3	C36-C37-C38-C39
2	C	403	MC3	C41-C42-C43-C44
2	F	403	MC3	C41-C42-C43-C44
2	J	405	MC3	C35-C36-C37-C38

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Mol	Chain	Res	Type	Atoms
2	B	408	MC3	C41-C42-C43-C44
2	D	403	MC3	C41-C42-C43-C44
2	C	404	MC3	C38-C39-C40-C41
2	A	403	MC3	C41-C42-C43-C44
2	A	404	MC3	C38-C39-C40-C41
2	D	404	MC3	C38-C39-C40-C41
2	E	404	MC3	C38-C39-C40-C41
2	I	401	MC3	C38-C39-C40-C41
2	C	407	MC3	C17-C18-C19-C20
2	B	401	MC3	C38-C39-C40-C41
2	D	407	MC3	C17-C18-C19-C20
2	E	403	MC3	C41-C42-C43-C44
2	A	407	MC3	C17-C18-C19-C20
2	B	404	MC3	C17-C18-C19-C20
2	F	407	MC3	C17-C18-C19-C20
2	E	407	MC3	C17-C18-C19-C20
2	F	403	MC3	C35-C36-C37-C38
2	G	401	MC3	C38-C39-C40-C41
2	L	407	MC3	C38-C39-C40-C41
2	C	403	MC3	C35-C36-C37-C38
2	D	403	MC3	C35-C36-C37-C38
2	E	403	MC3	C35-C36-C37-C38
2	H	404	MC3	C32-C33-C34-C35
2	I	404	MC3	C37-C38-C39-C40
2	K	404	MC3	C32-C33-C34-C35
2	A	403	MC3	C35-C36-C37-C38
2	B	408	MC3	C35-C36-C37-C38
2	L	411	MC3	C35-C36-C37-C38

There are no ring outliers.

41 monomers are involved in 53 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	I	405	MC3	1	0
2	B	403	MC3	3	0
2	L	407	MC3	1	0
2	G	403	MC3	2	0
2	G	405	MC3	1	0
2	D	402	MC3	1	0
2	H	403	MC3	4	0
2	B	401	MC3	1	0
2	D	406	MC3	2	0

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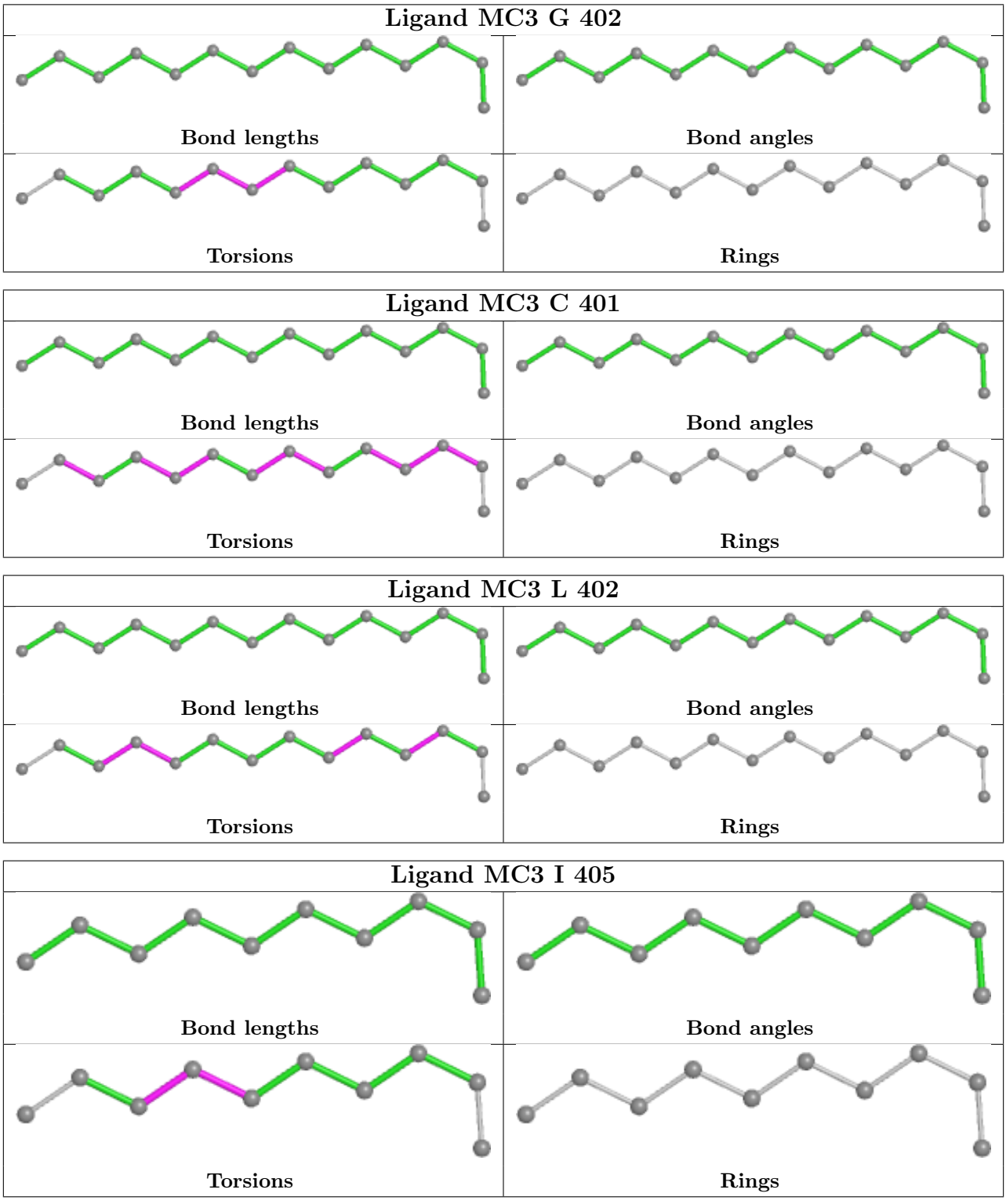
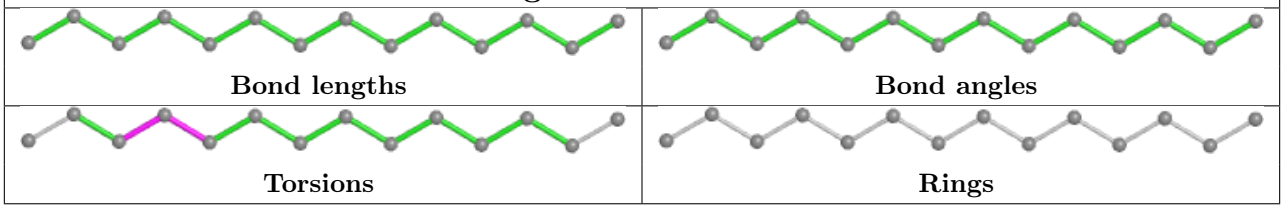
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	K	401	MC3	2	0
2	E	406	MC3	3	0
2	D	404	MC3	1	0
2	G	401	MC3	1	0
2	C	404	MC3	1	0
2	C	402	MC3	1	0
2	F	404	MC3	1	0
2	J	405	MC3	1	0
2	H	410	MC3	1	0
2	B	402	MC3	1	0
2	F	406	MC3	2	0
2	B	407	MC3	1	0
2	G	411	MC3	1	0
2	J	411	MC3	1	0
2	J	401	MC3	1	0
2	A	402	MC3	1	0
2	L	409	MC3	3	0
2	A	406	MC3	2	0
2	K	403	MC3	4	0
2	L	411	MC3	1	0
2	I	403	MC3	2	0
2	J	403	MC3	3	0
2	E	402	MC3	1	0
2	J	406	MC3	1	0
2	E	405	MC3	1	0
2	A	404	MC3	1	0
2	I	401	MC3	1	0
2	F	402	MC3	1	0
2	G	410	MC3	1	0
2	H	401	MC3	2	0
2	C	406	MC3	2	0
2	E	404	MC3	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier.

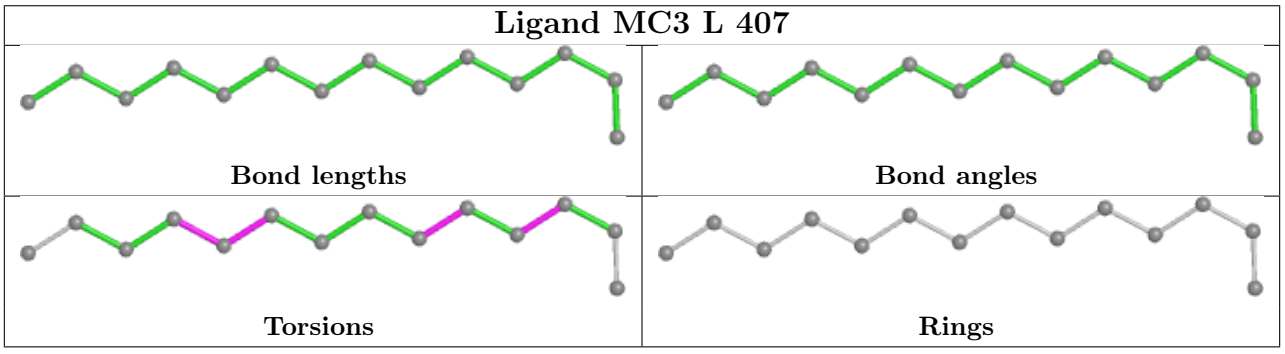
The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



Ligand MC3 B 403



Ligand MC3 L 407



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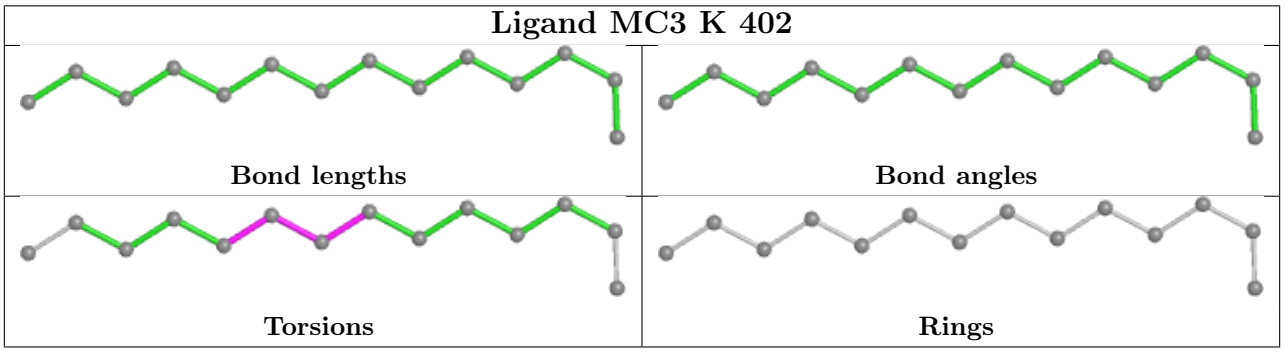

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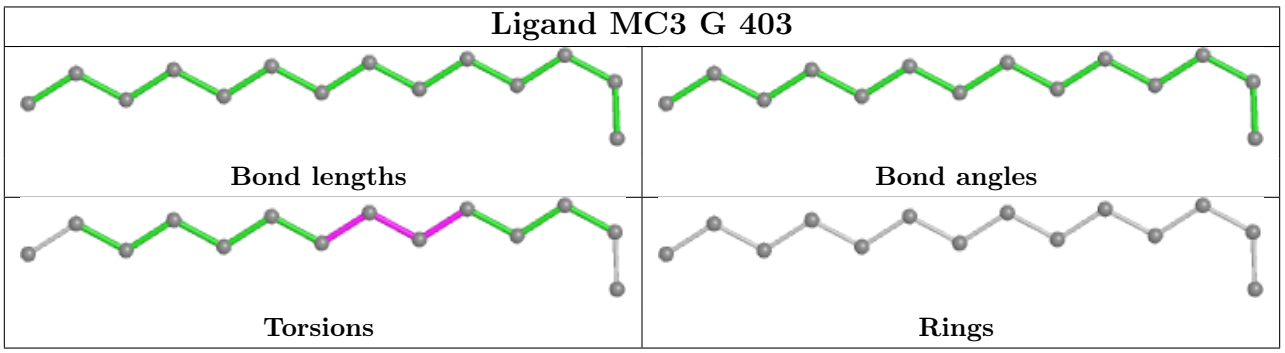

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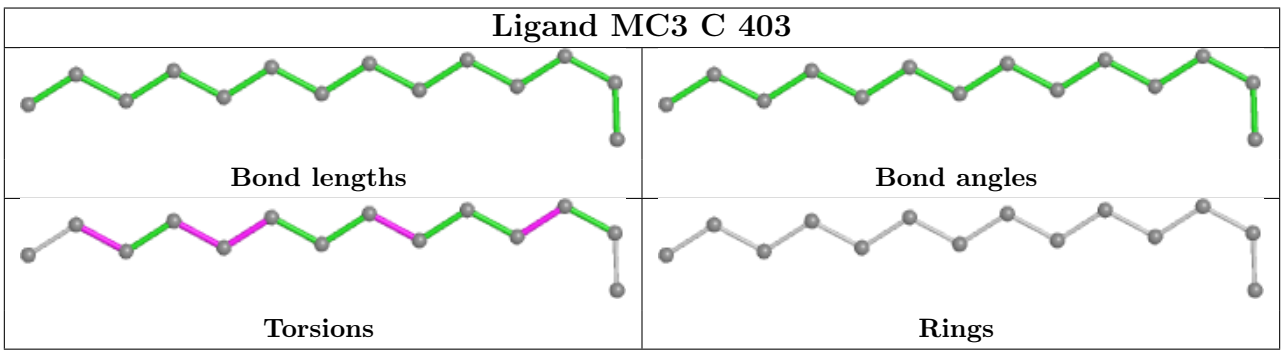

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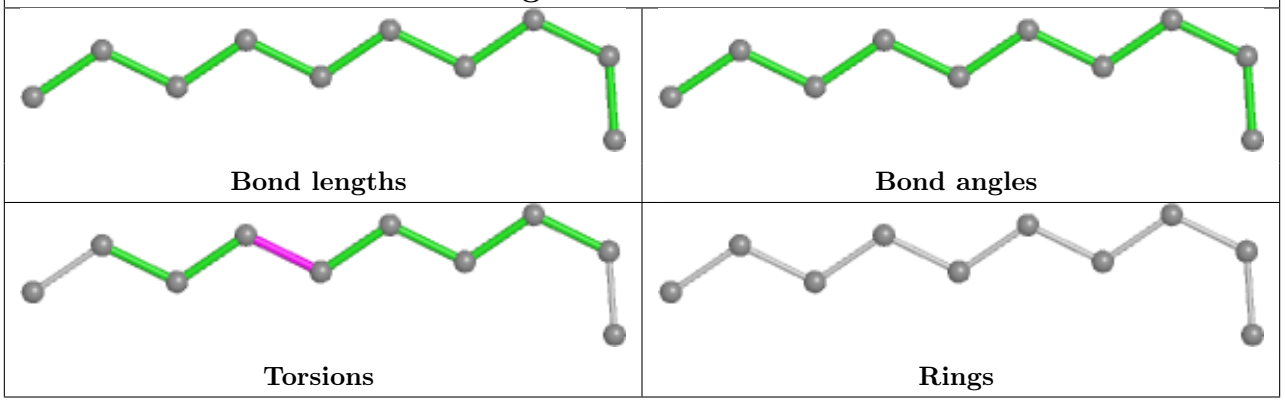

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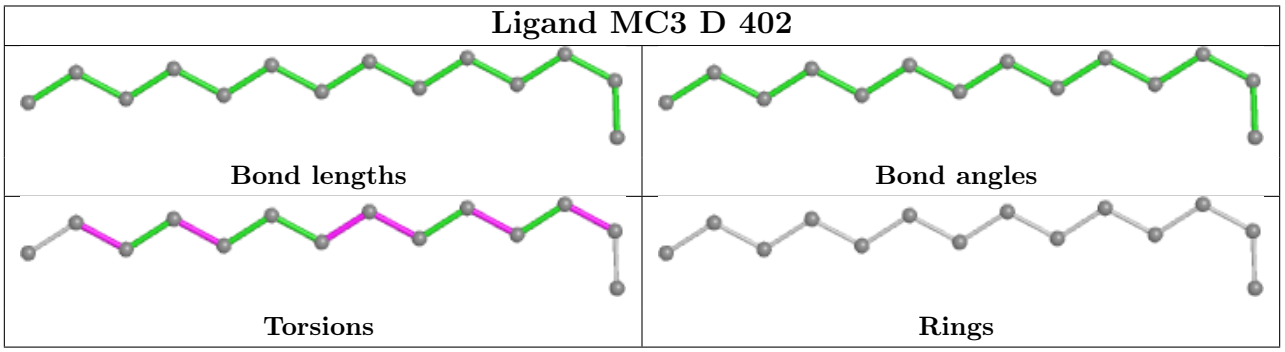

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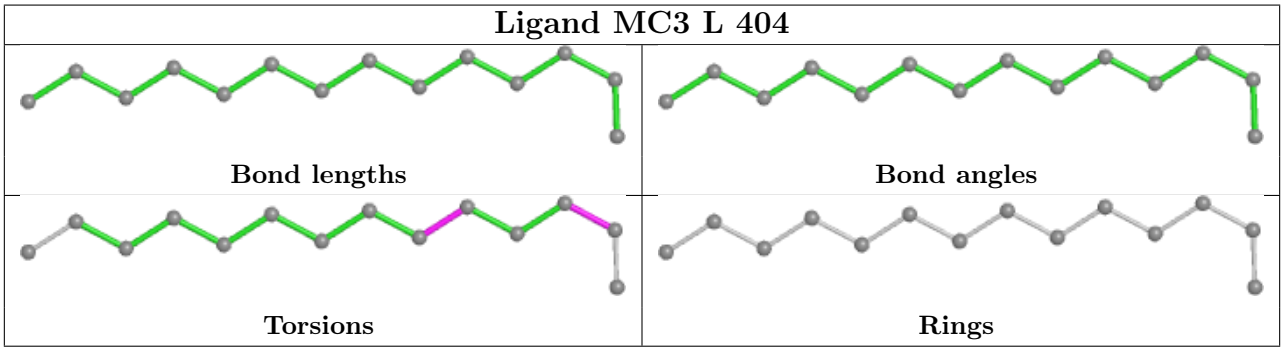

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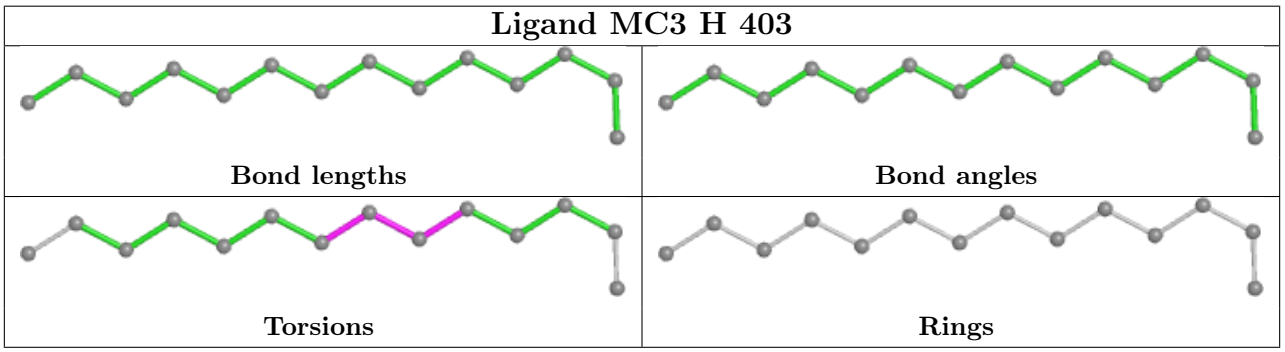

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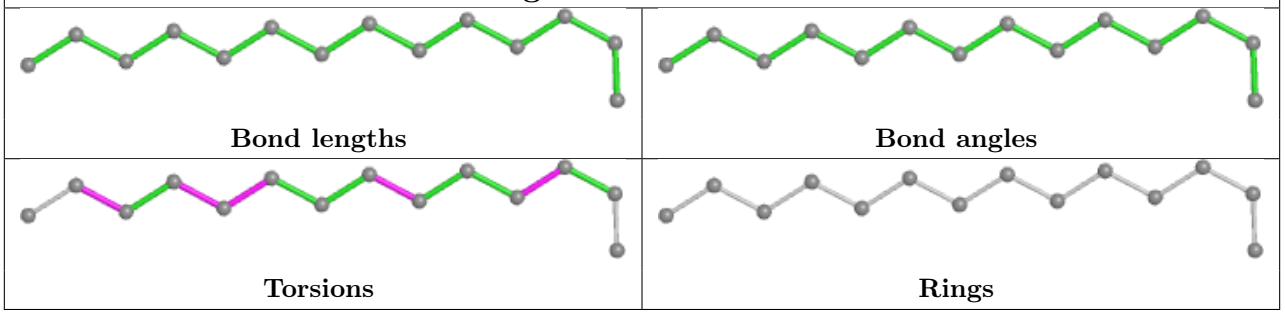

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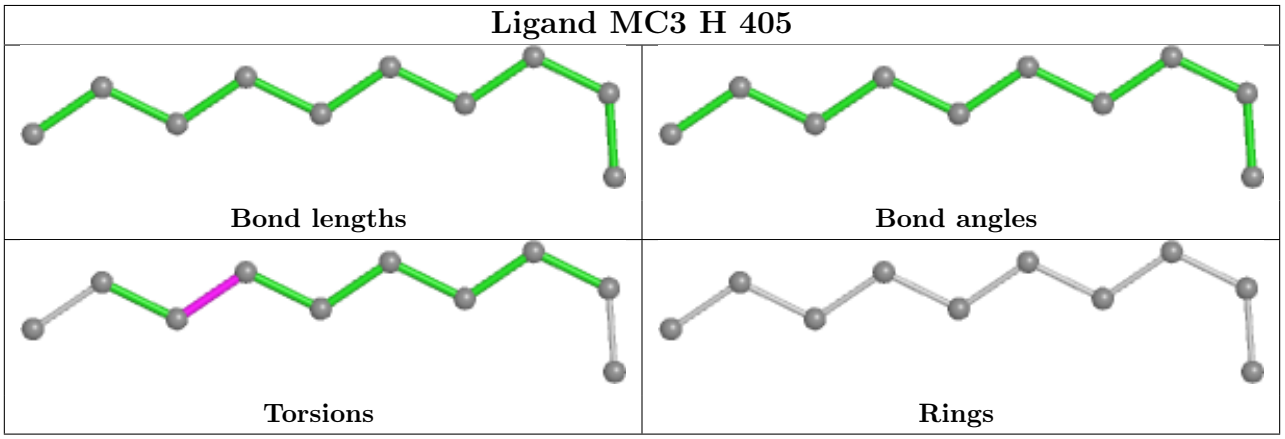

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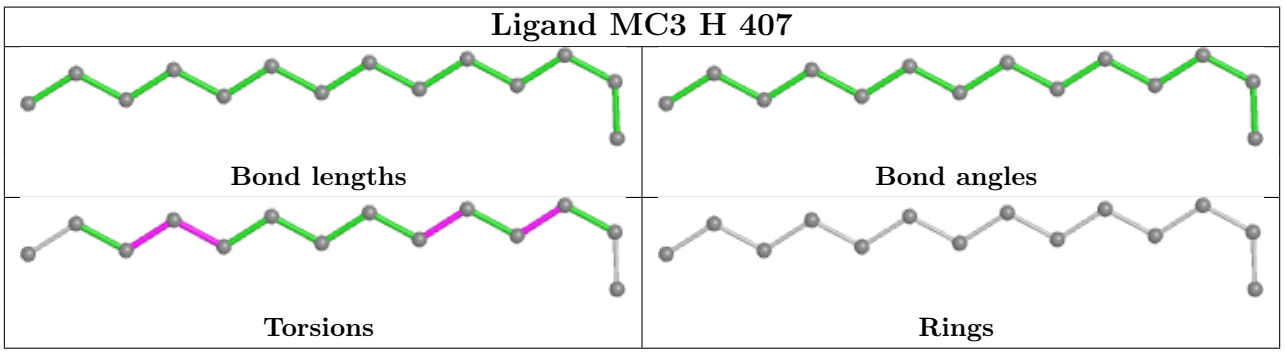

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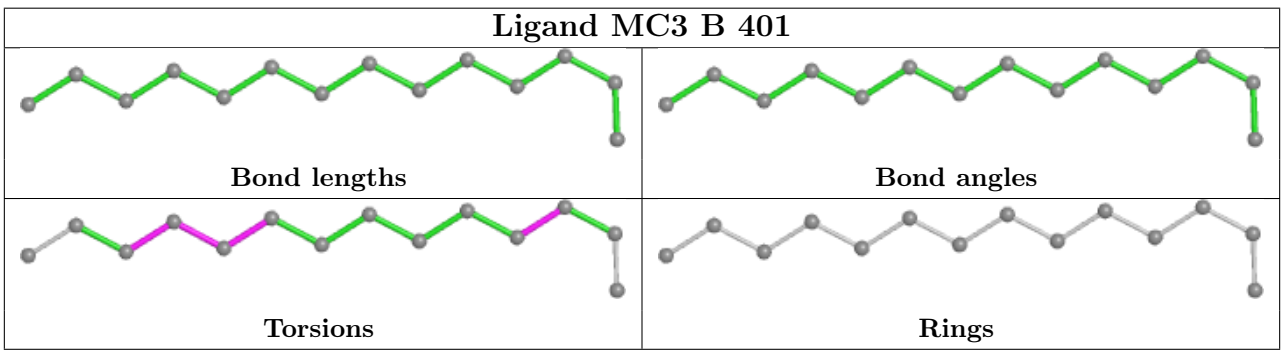

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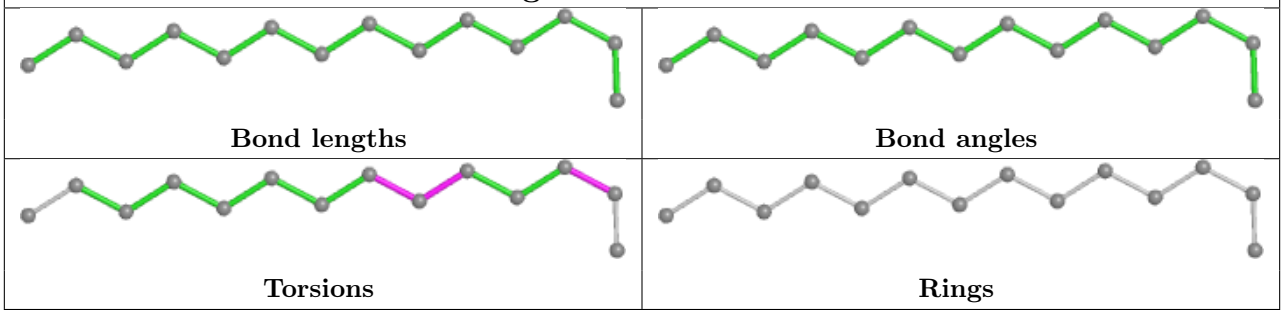

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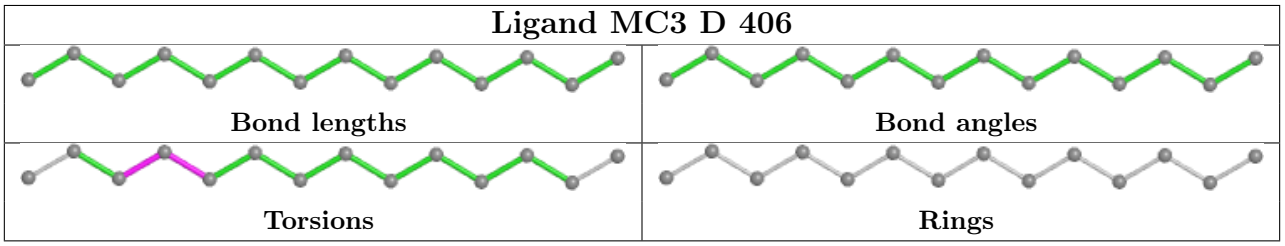

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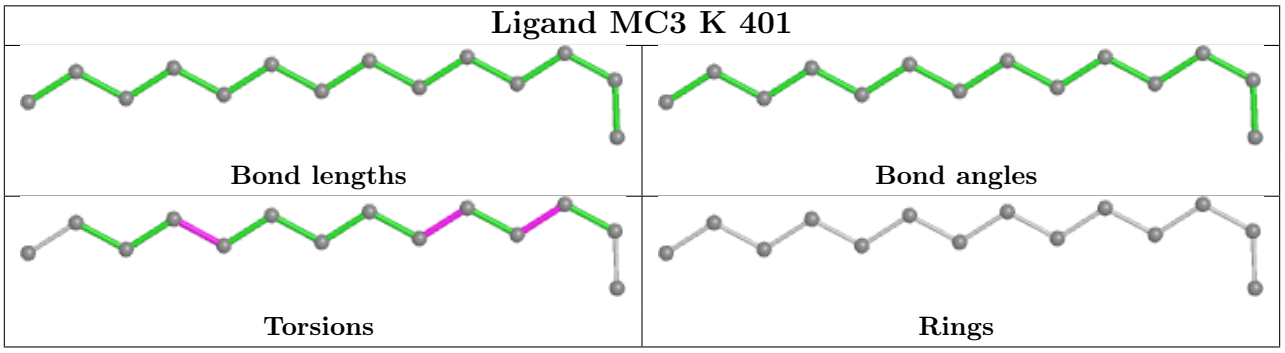

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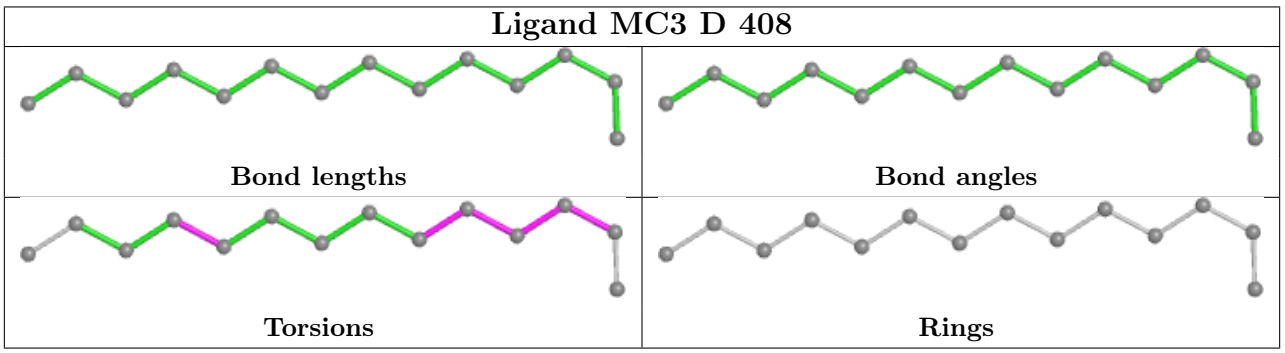

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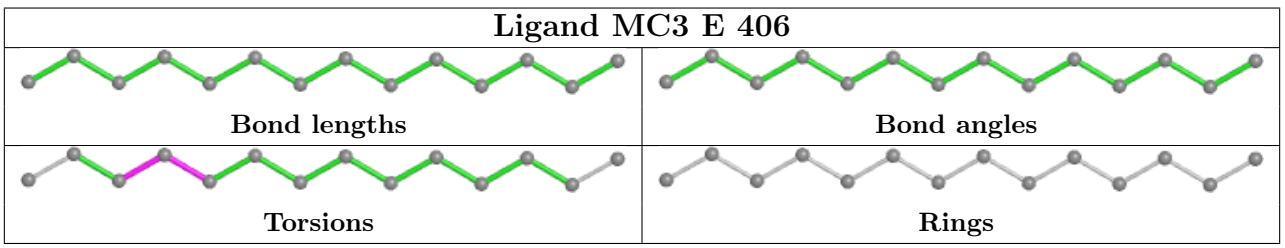

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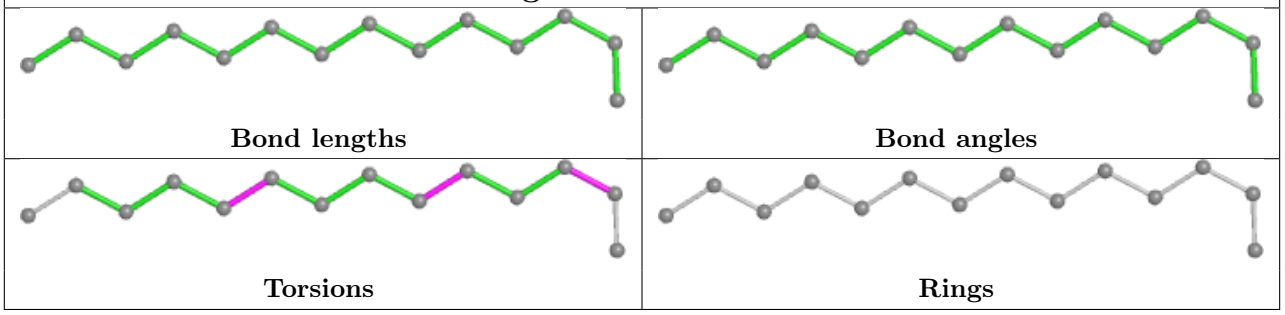

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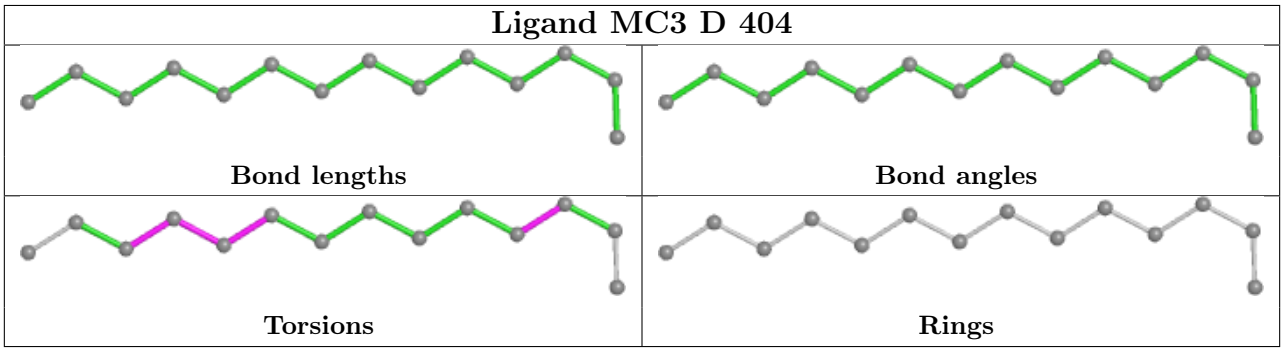

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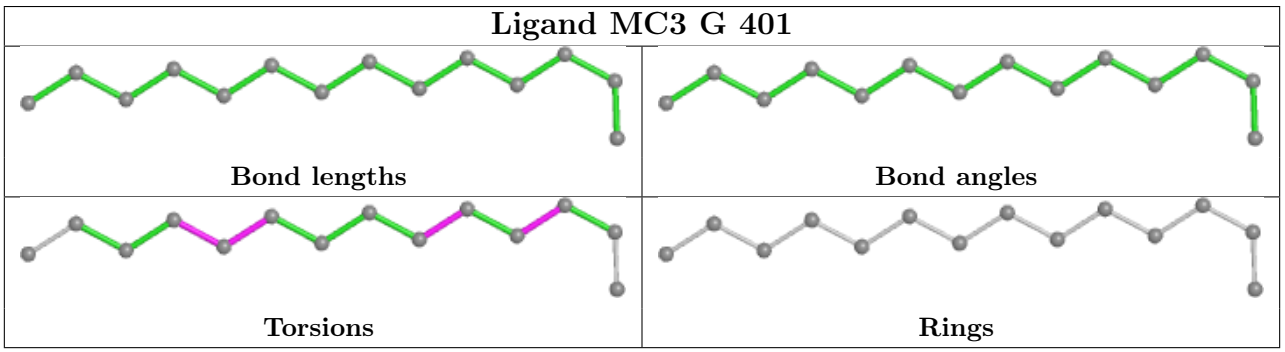

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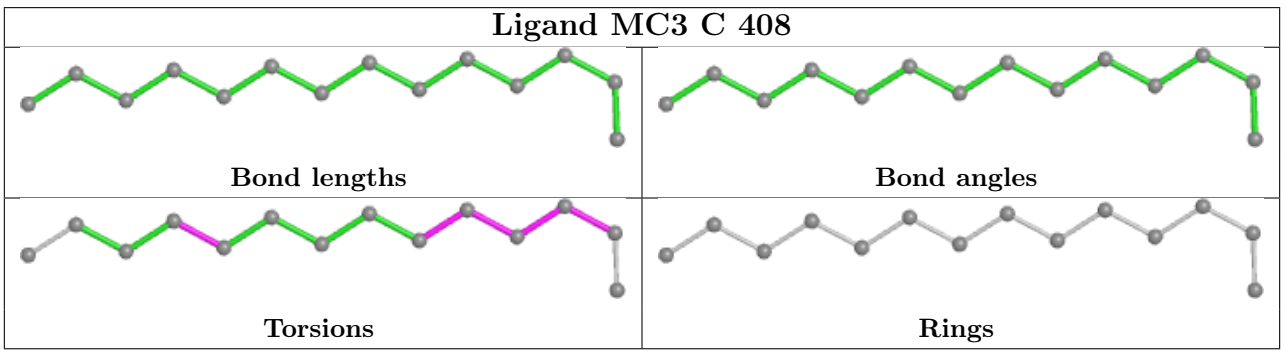

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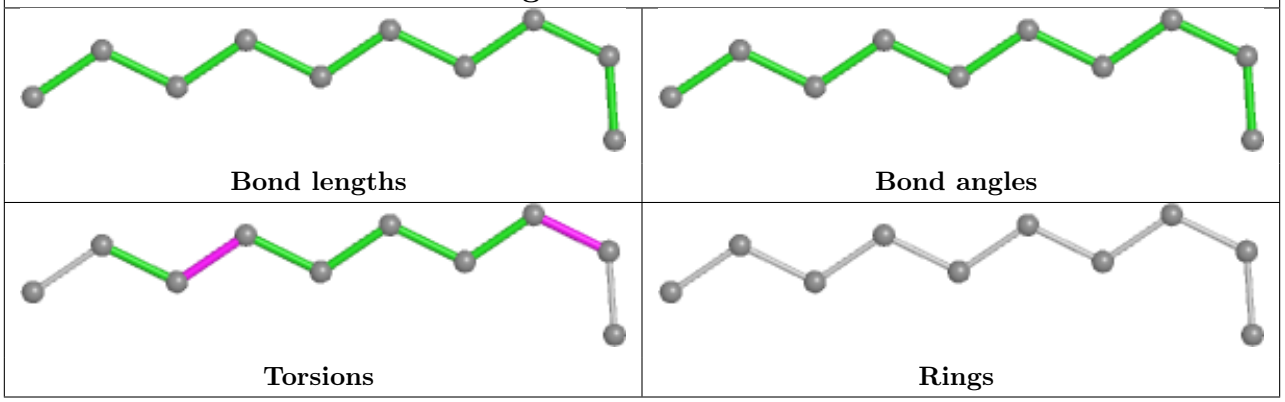

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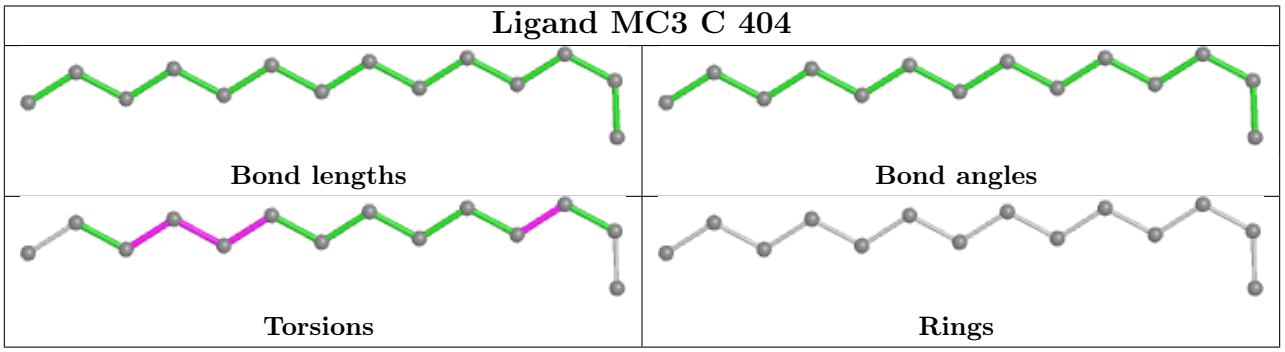

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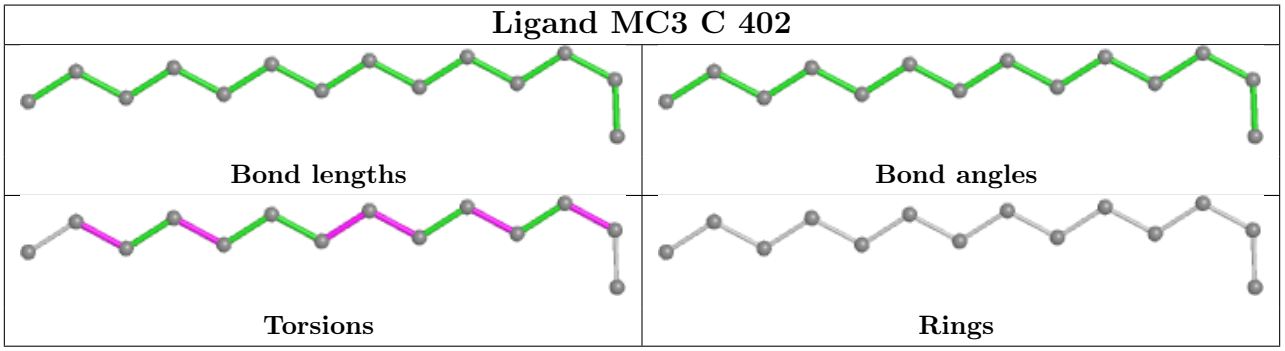

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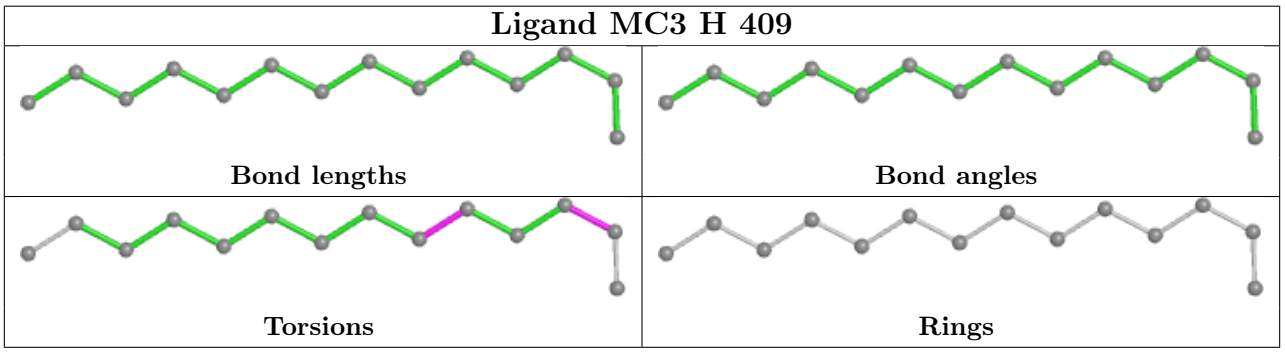

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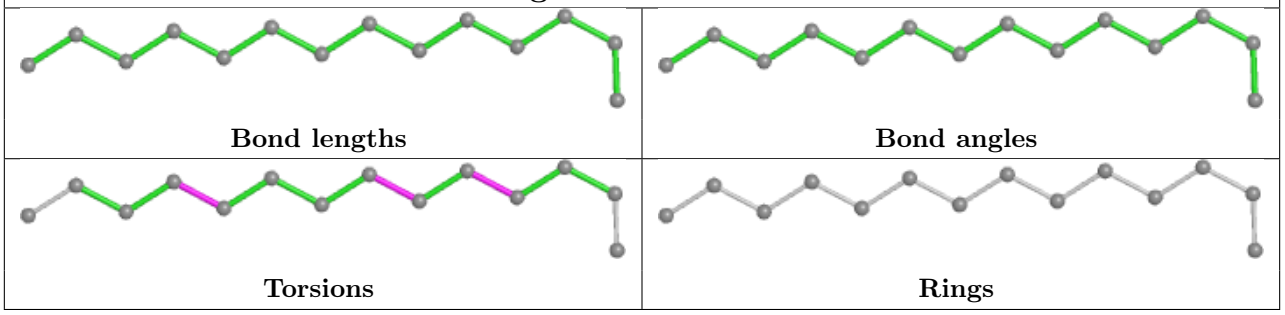

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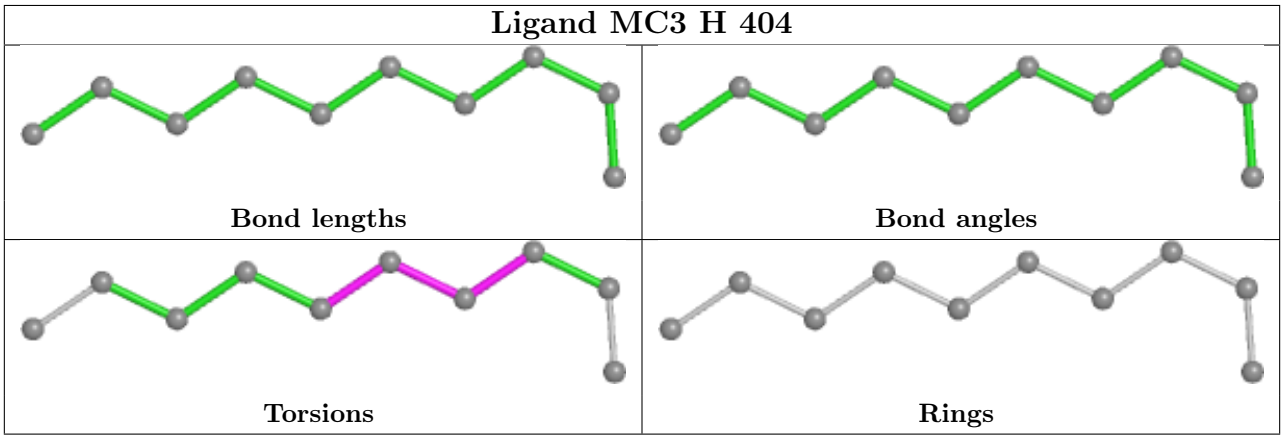

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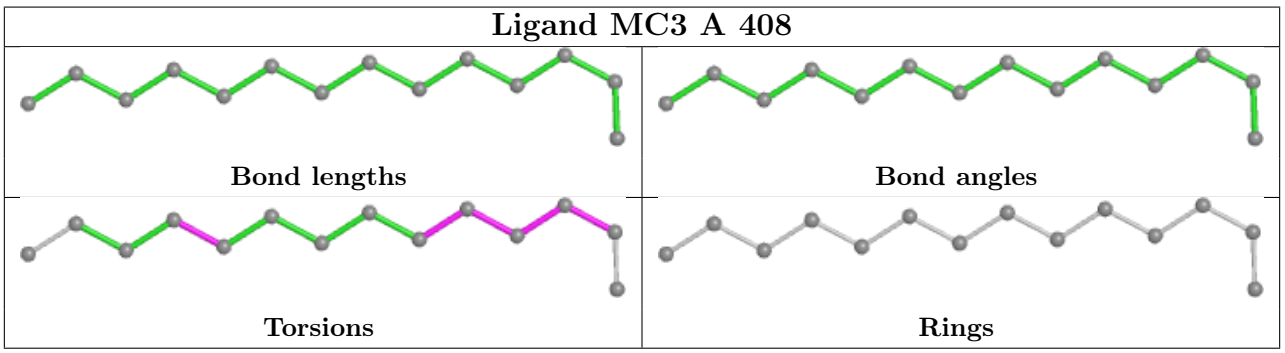

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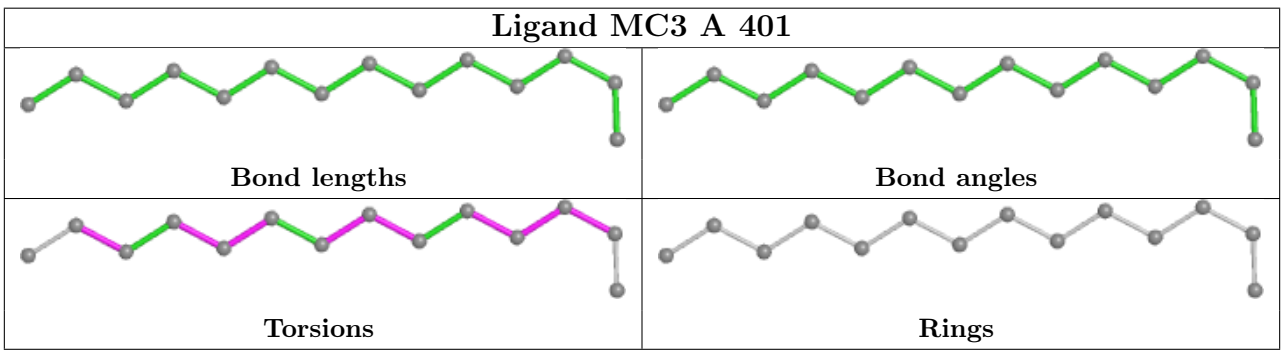

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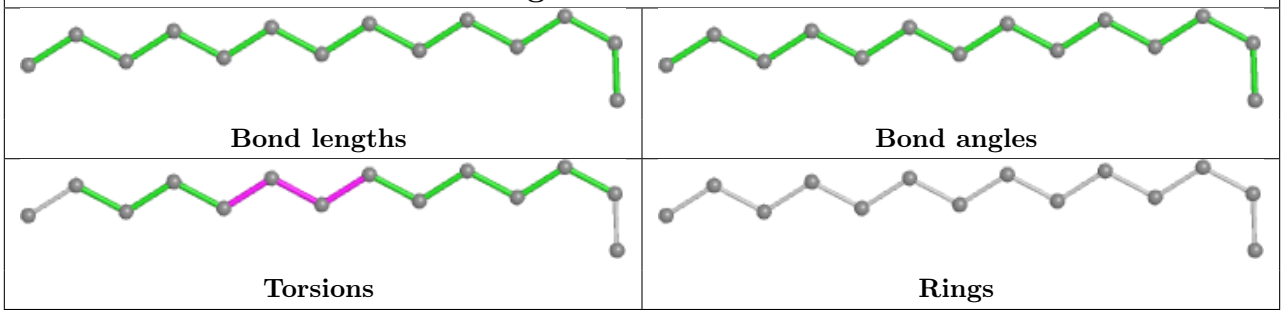

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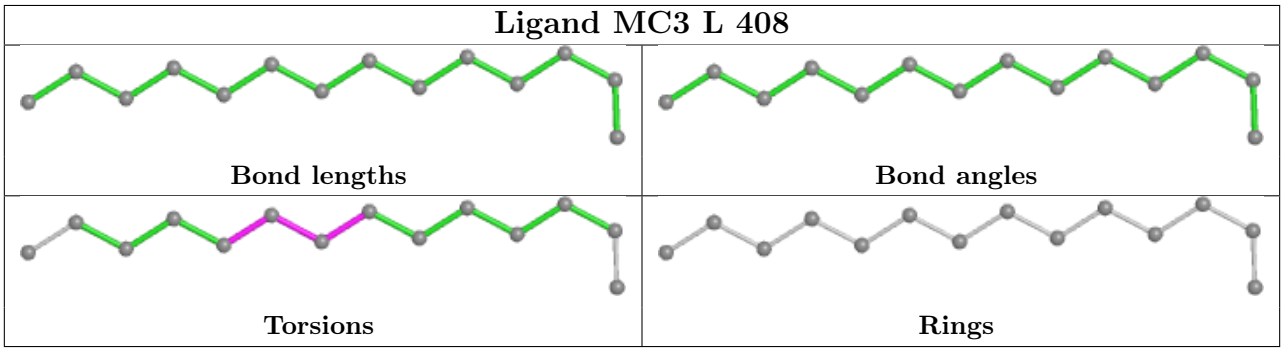

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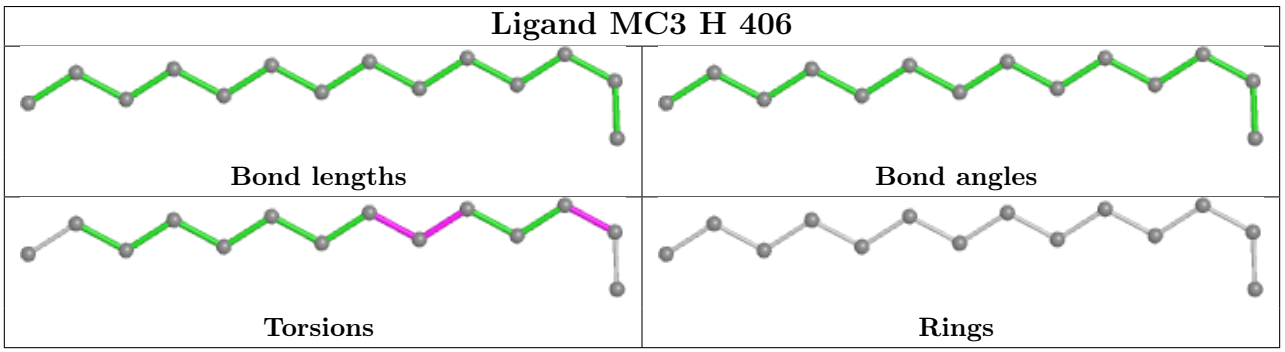

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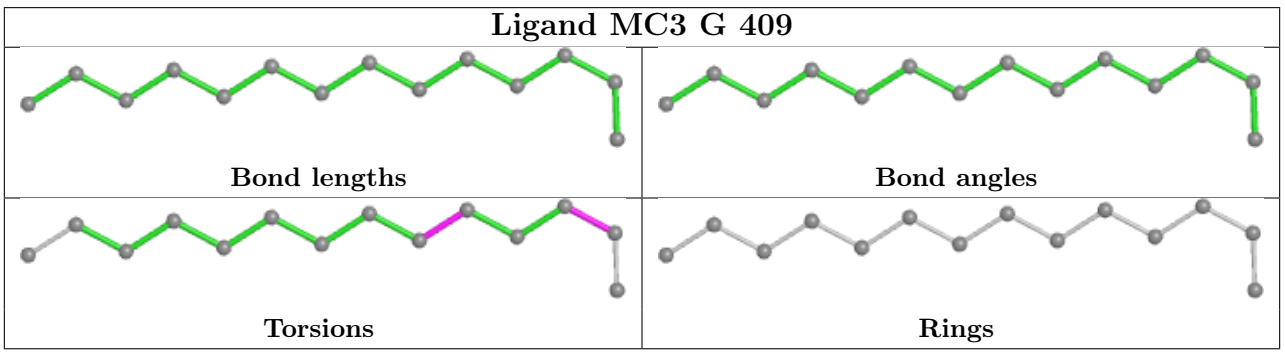

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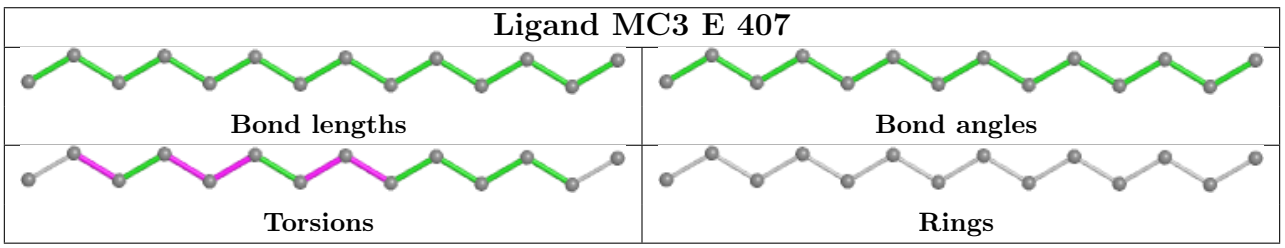

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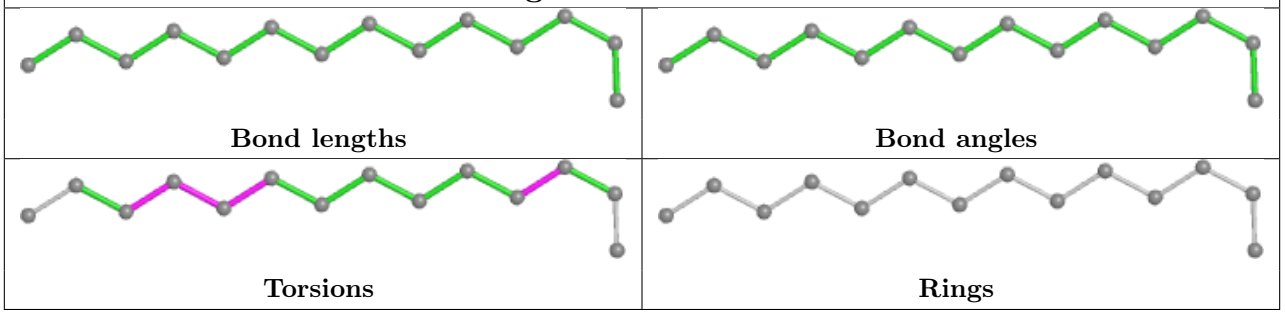

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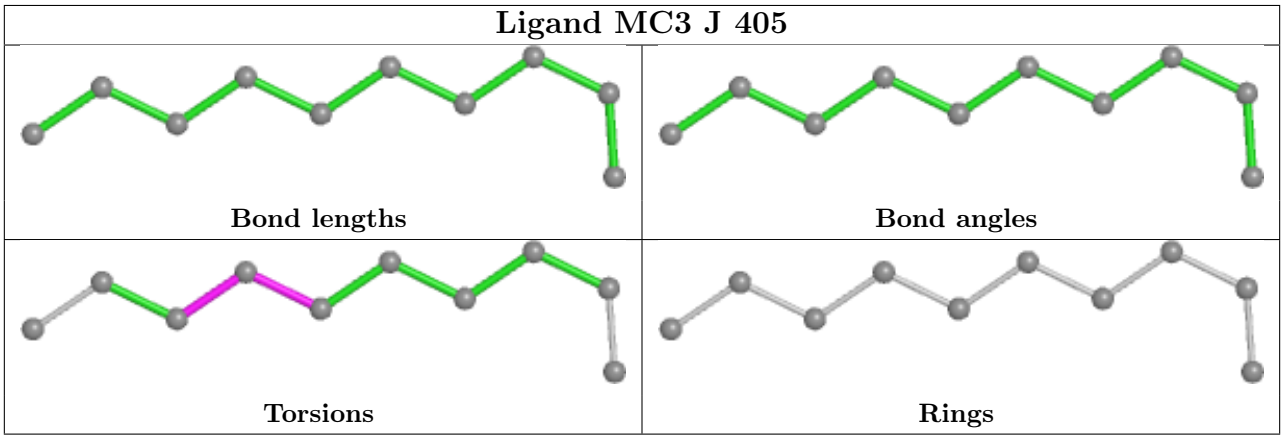

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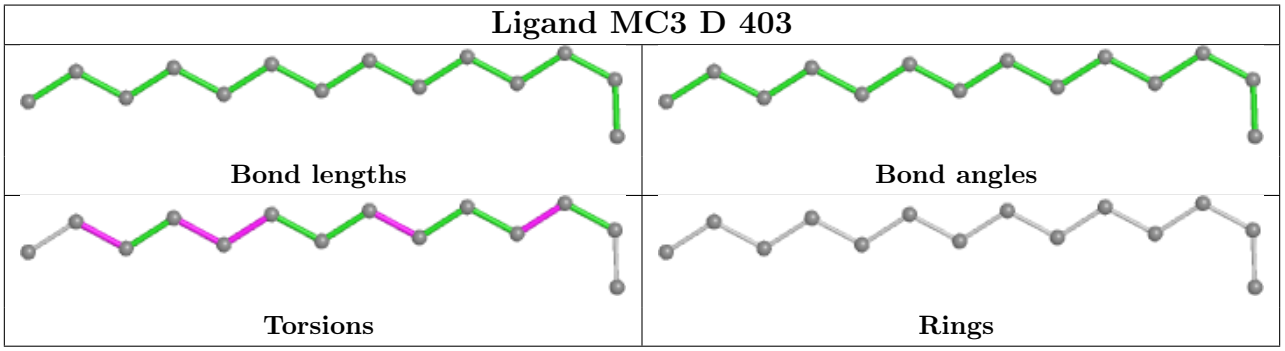

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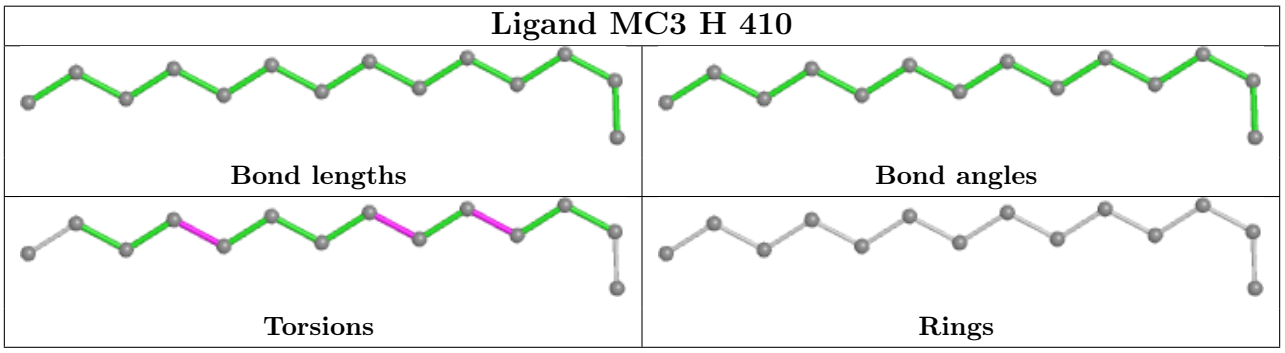

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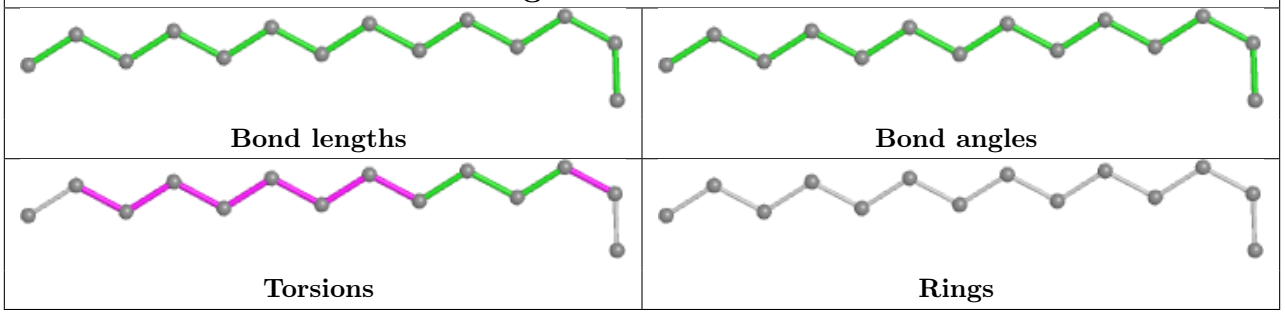

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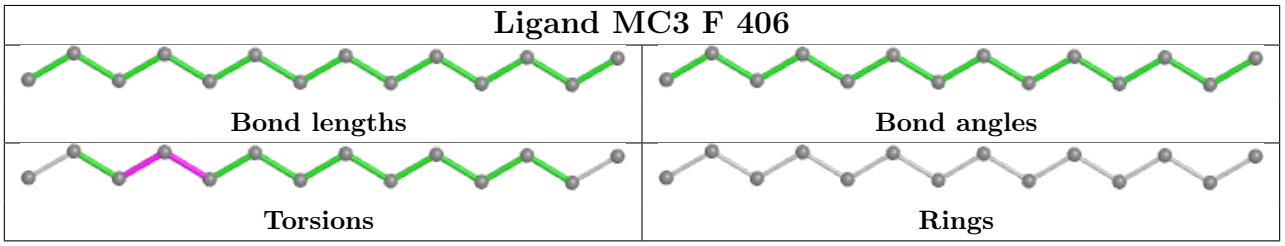

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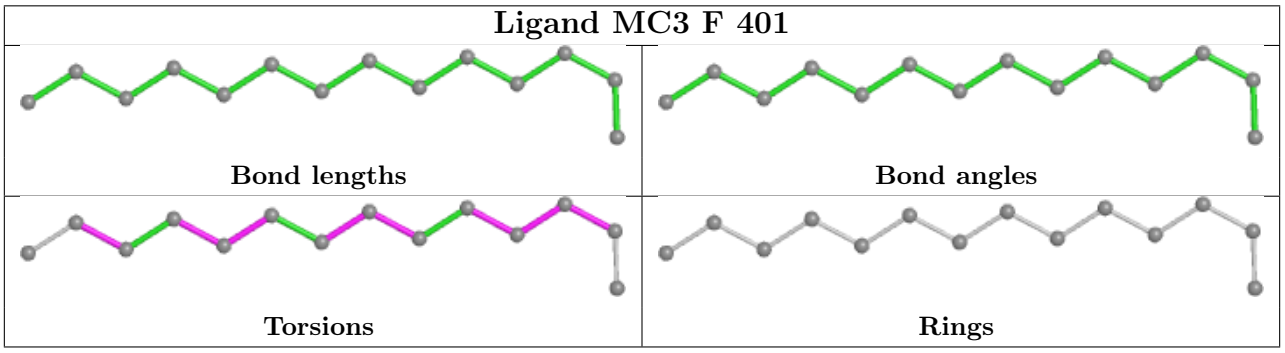

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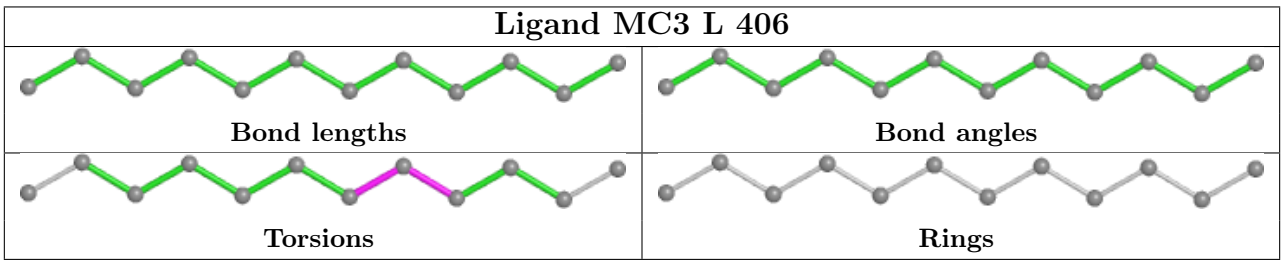

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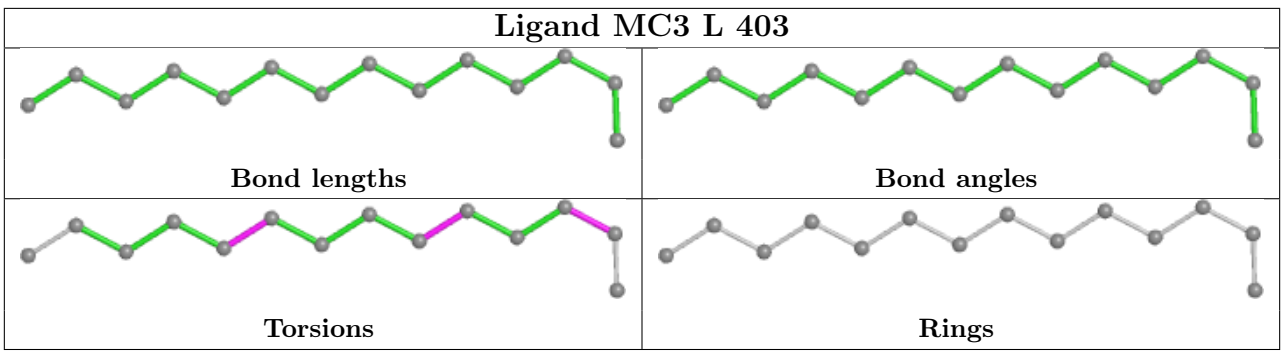

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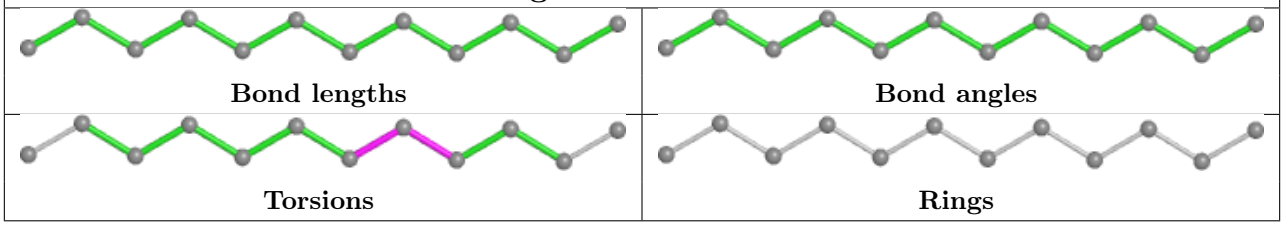

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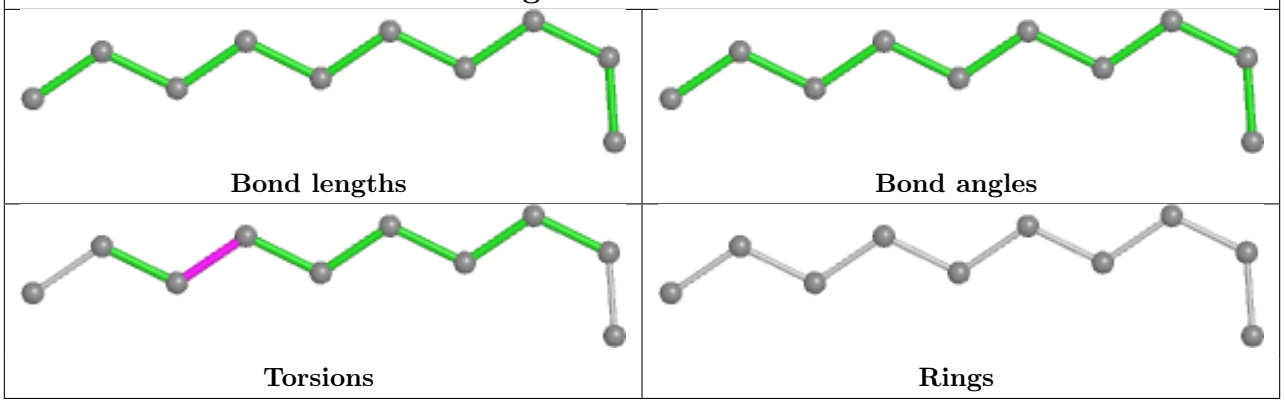

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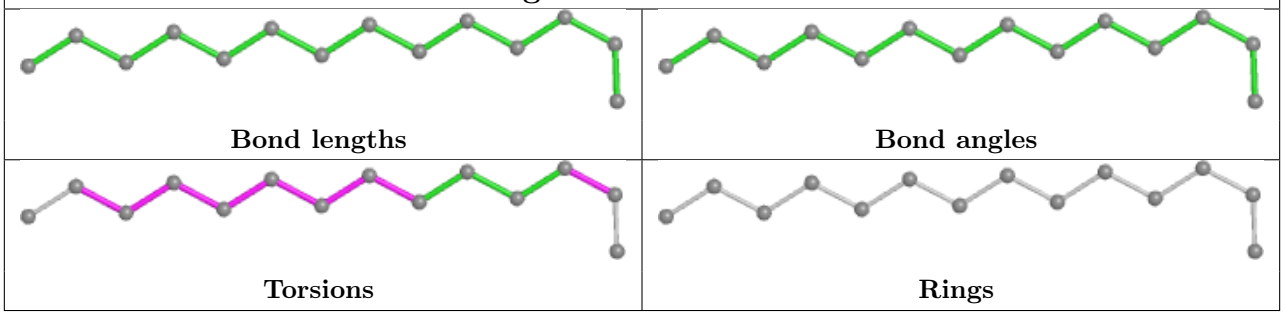

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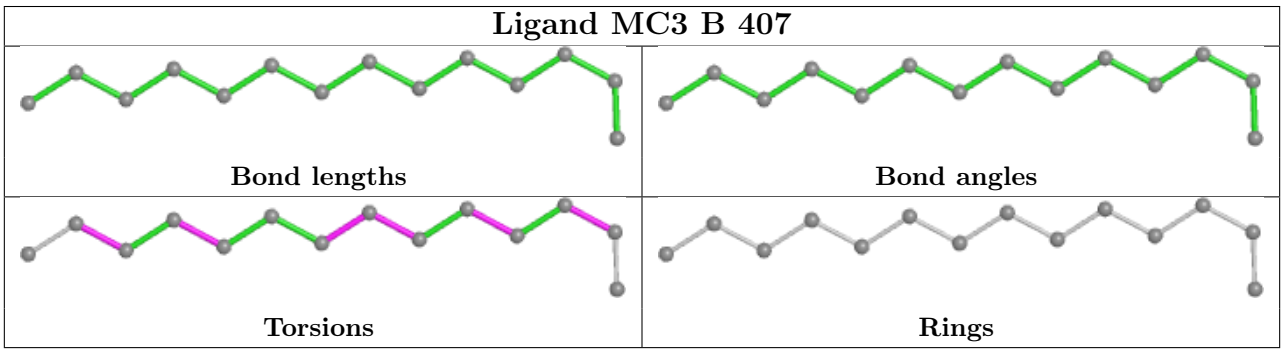

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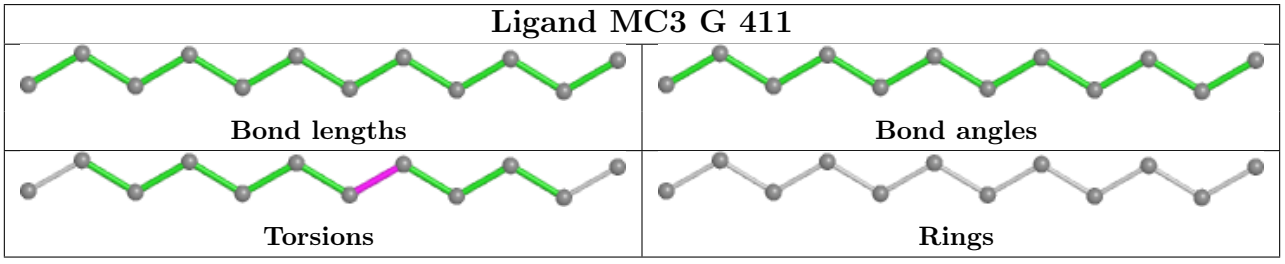

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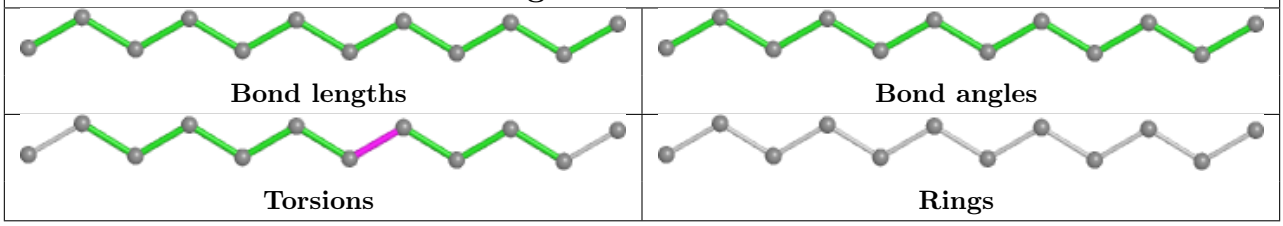

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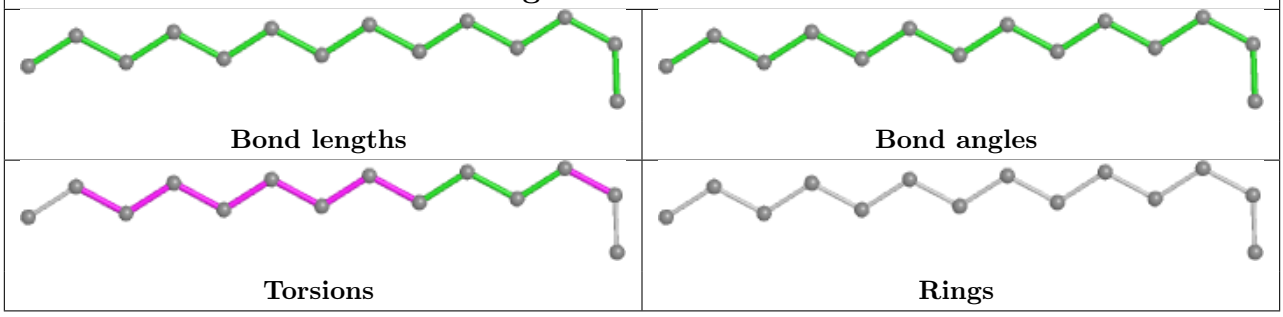

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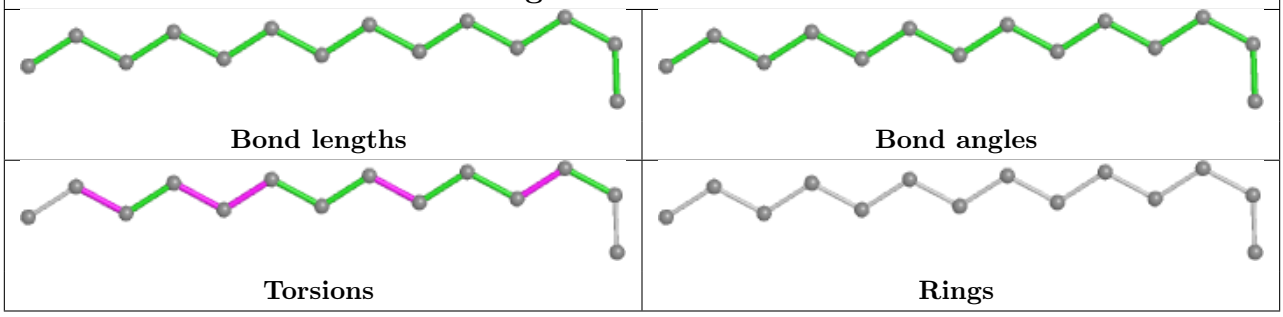

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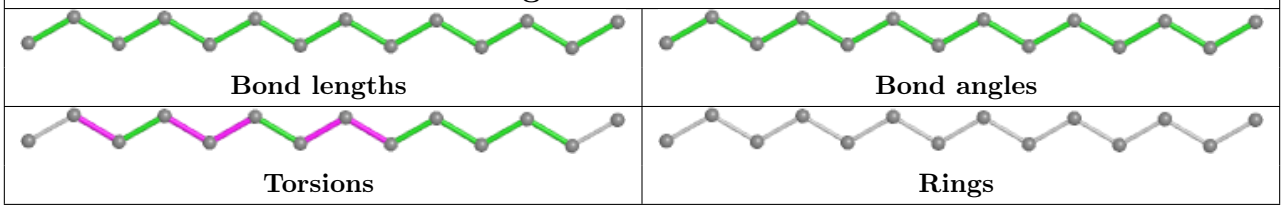

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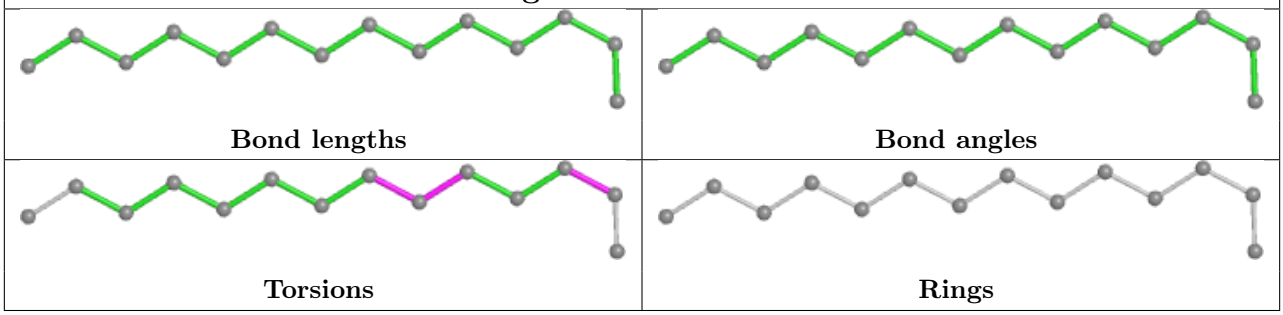

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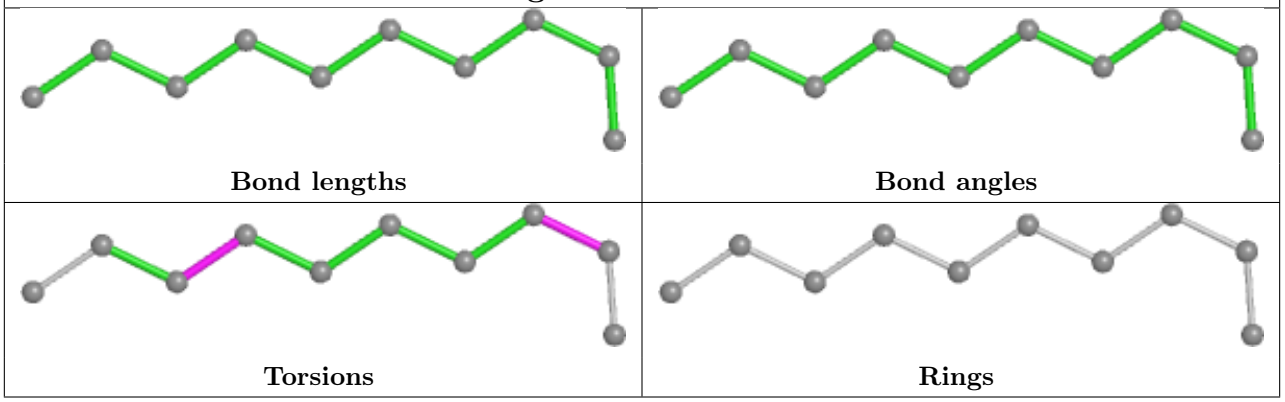

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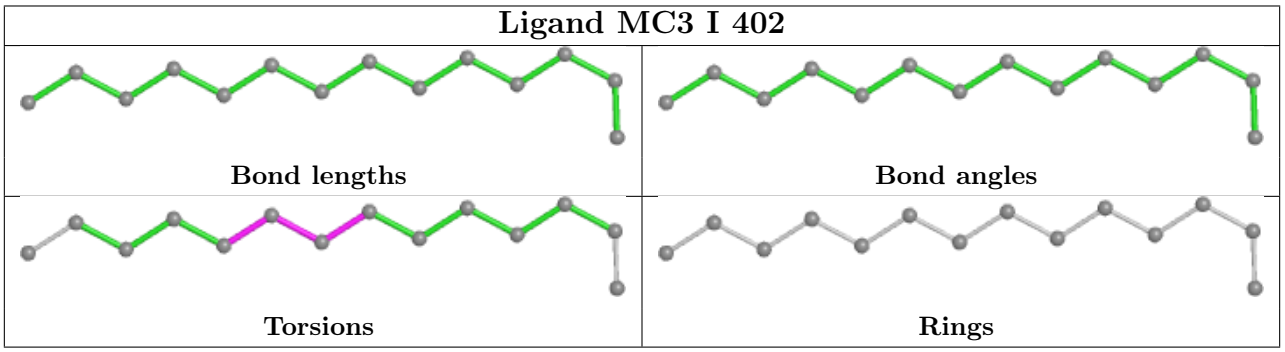

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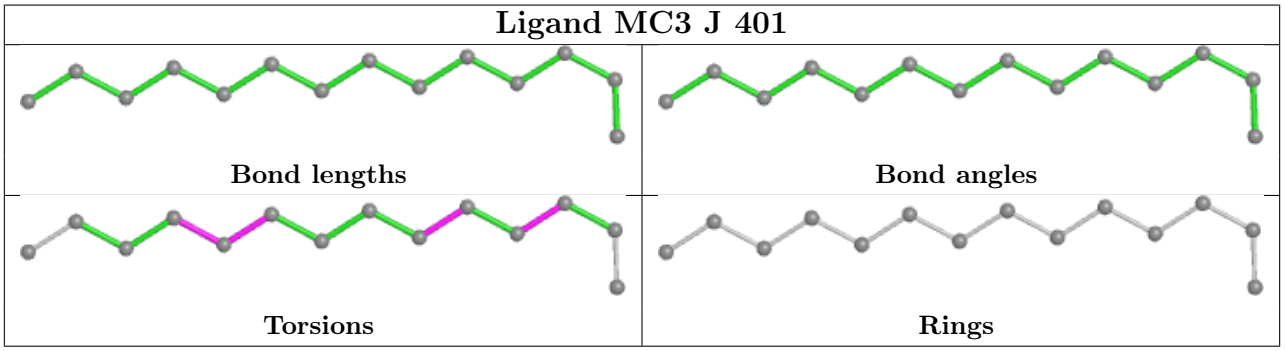

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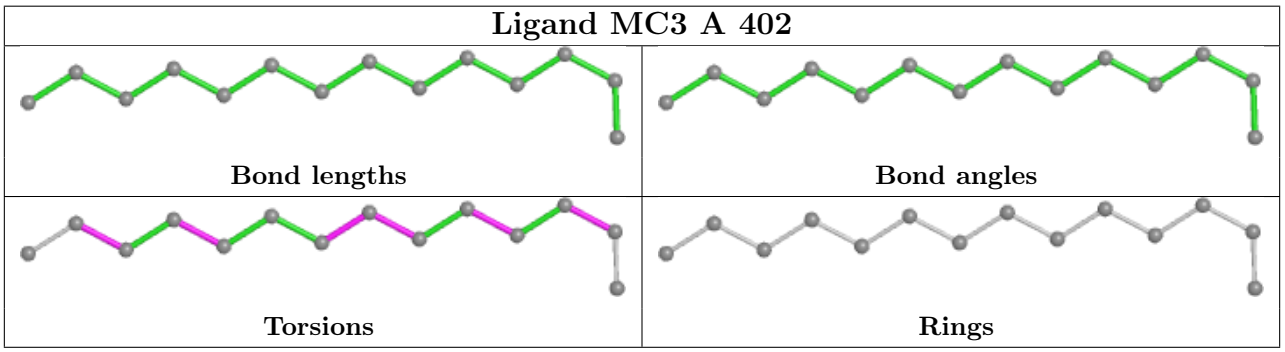

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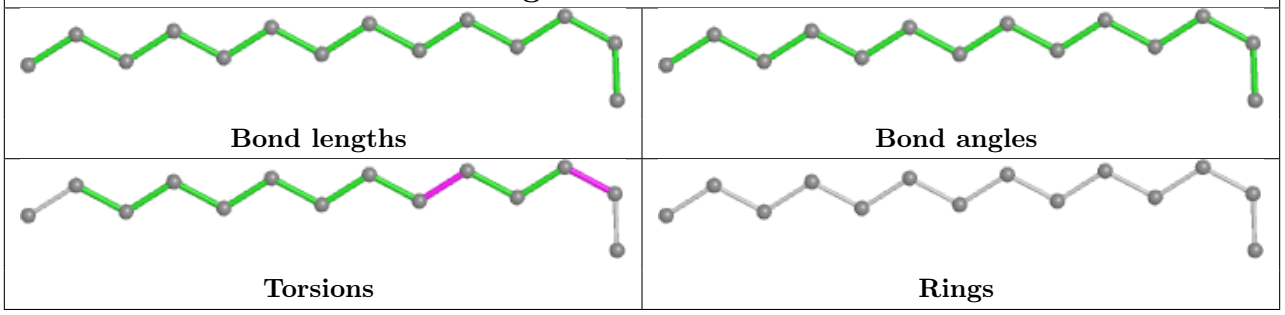

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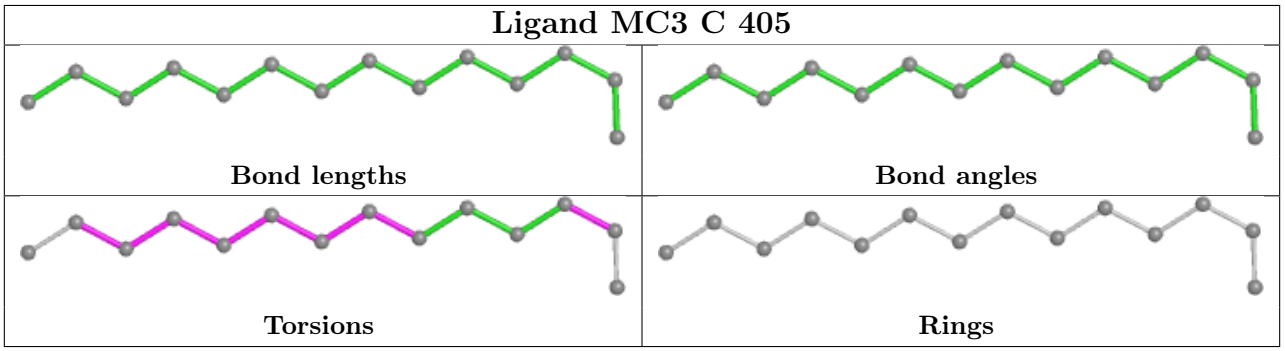

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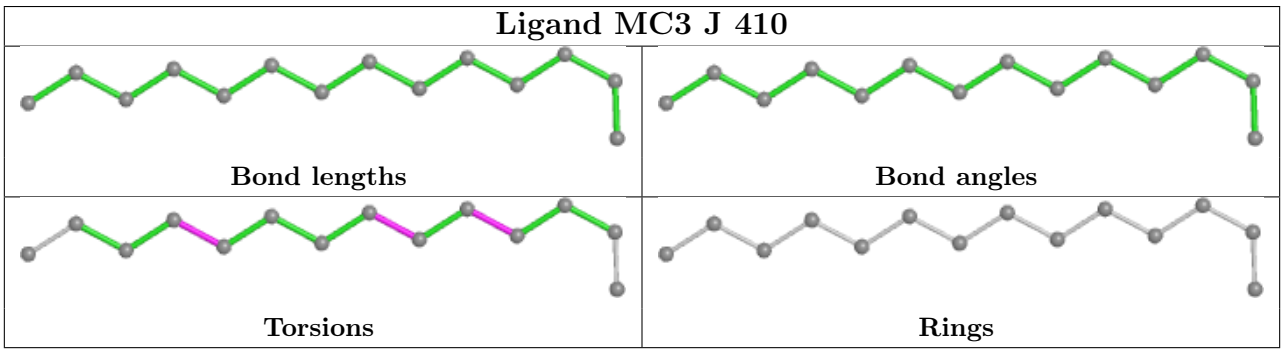

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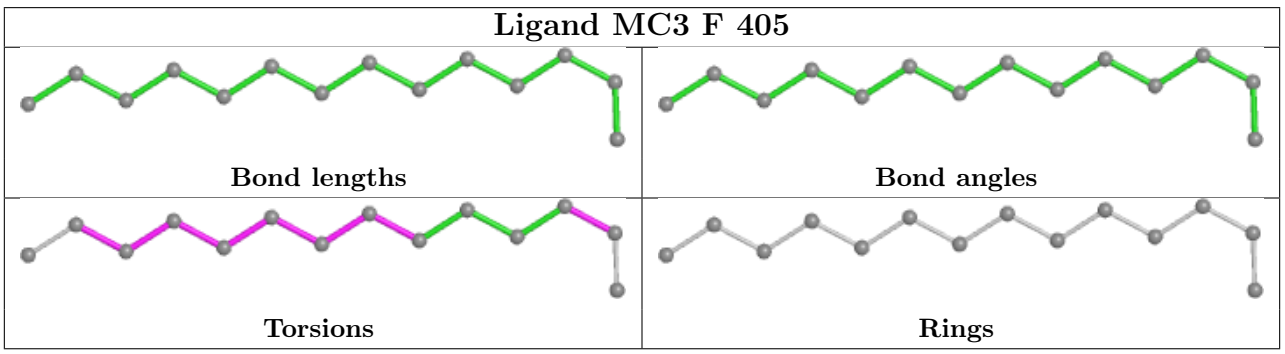

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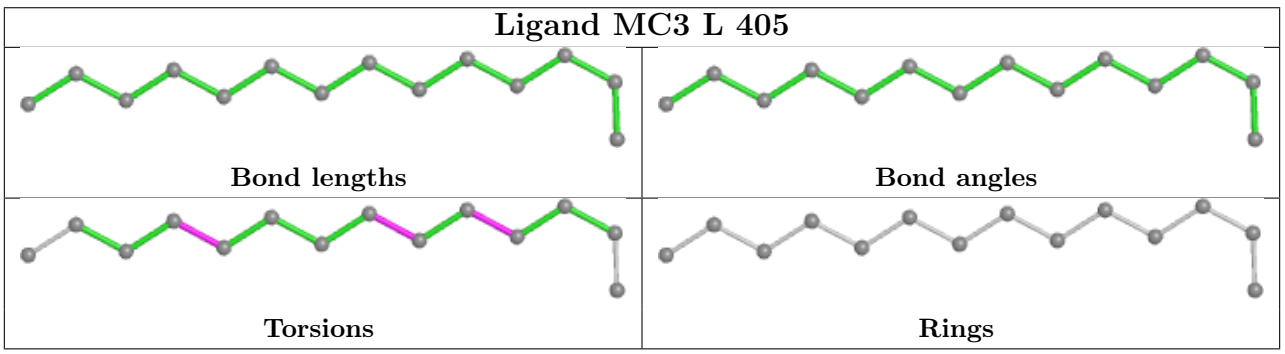

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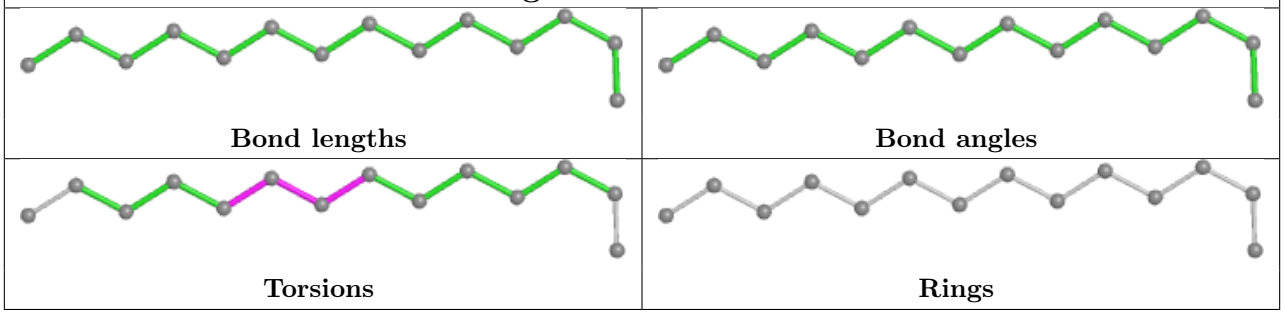

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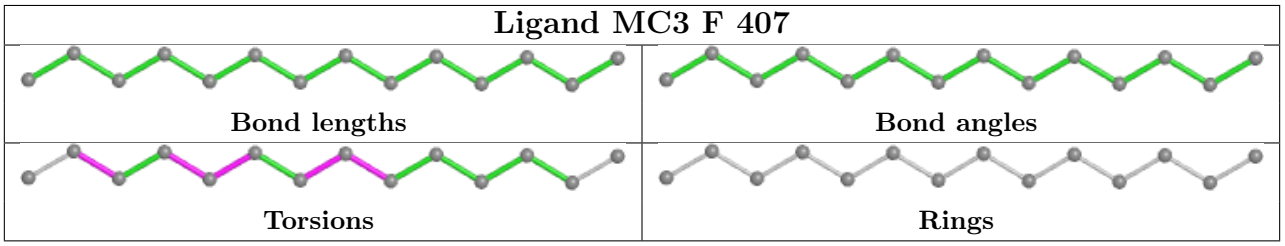

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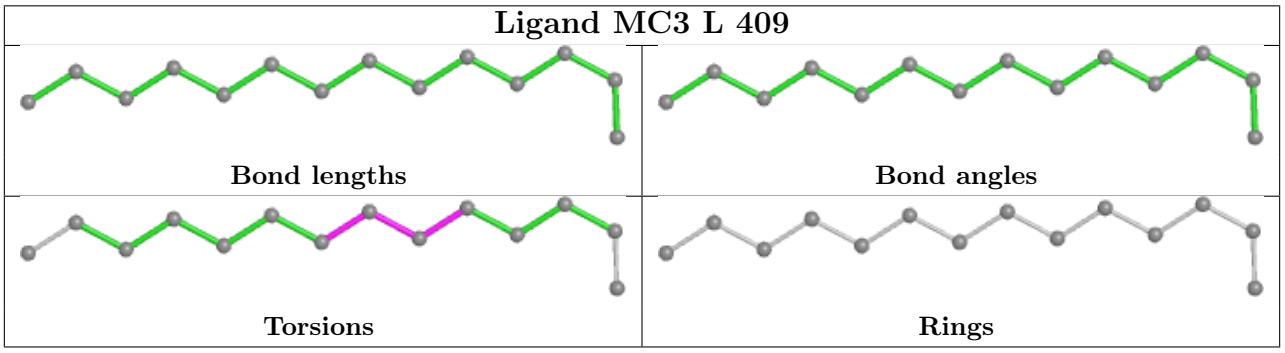

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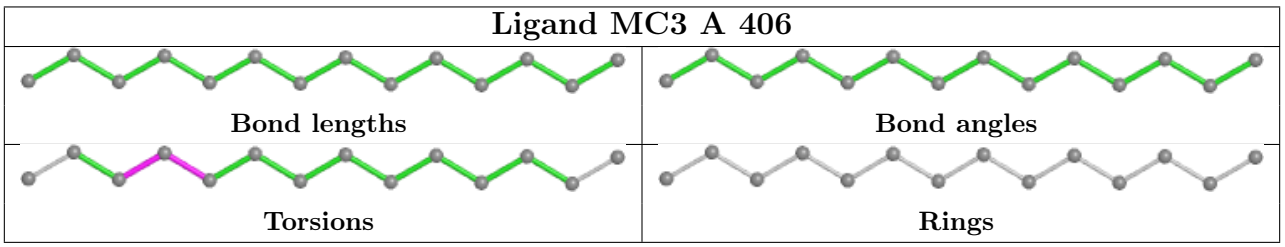

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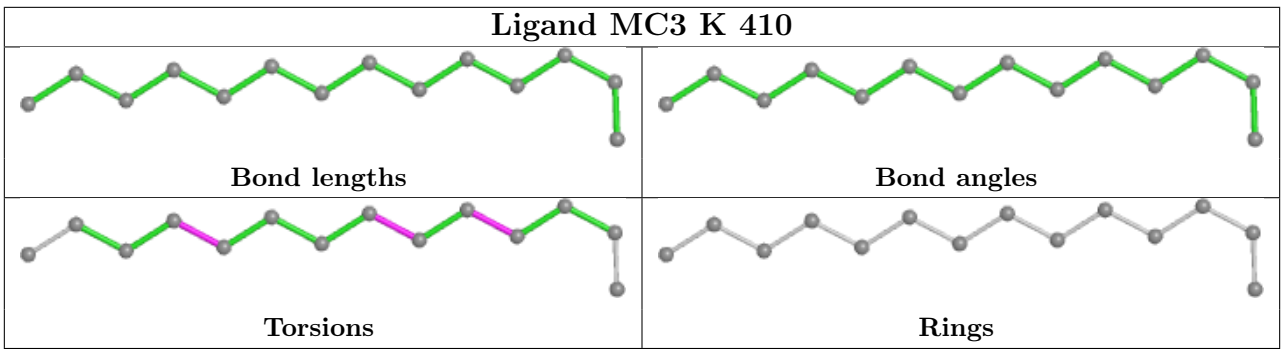

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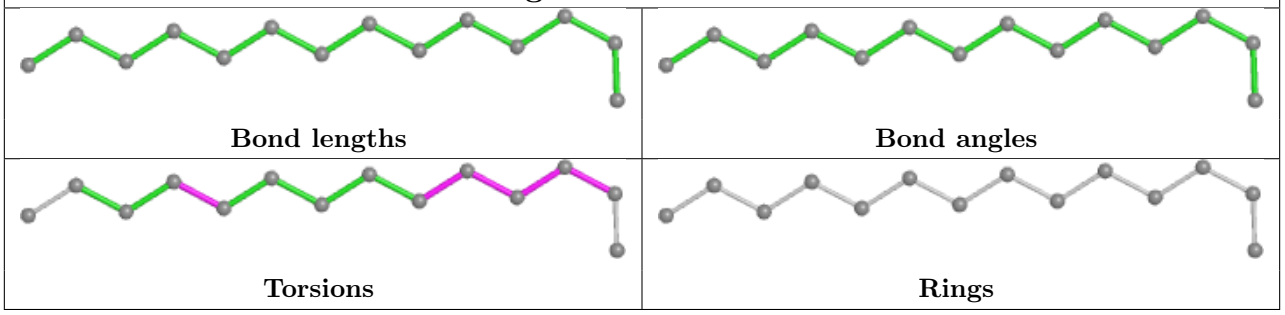

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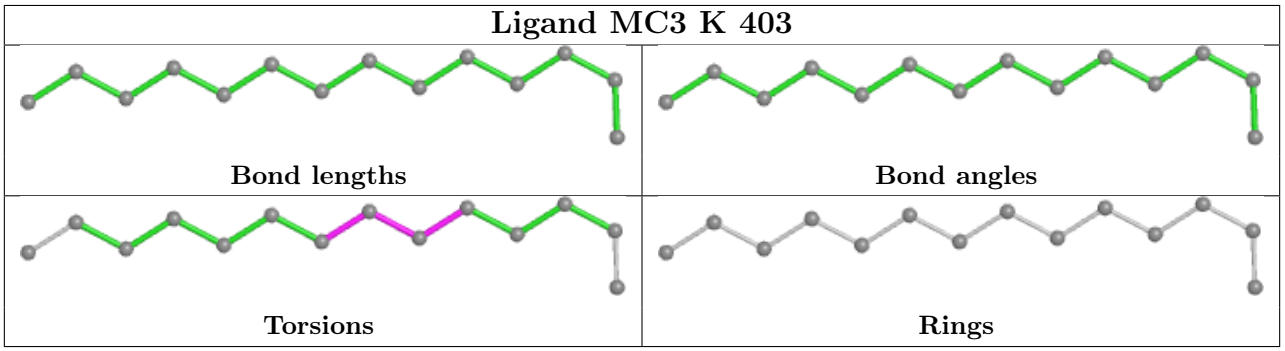

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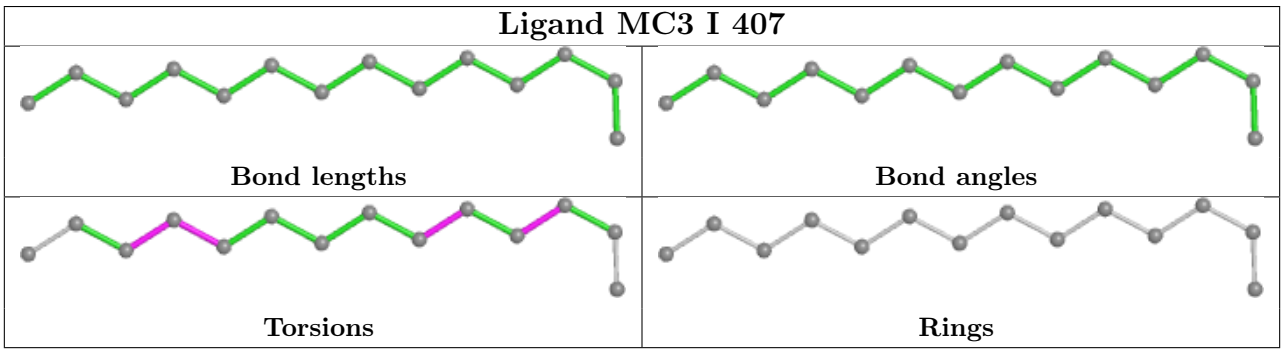

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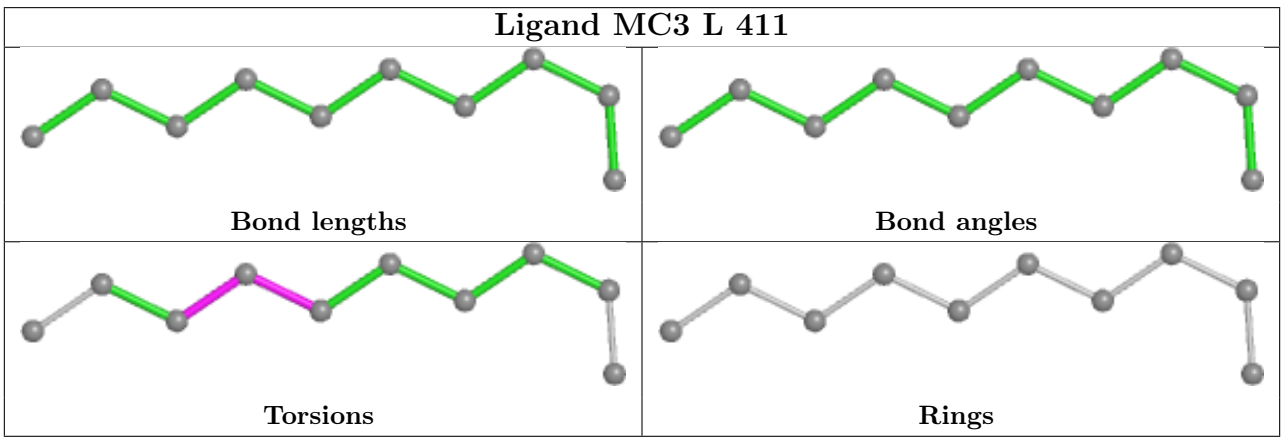

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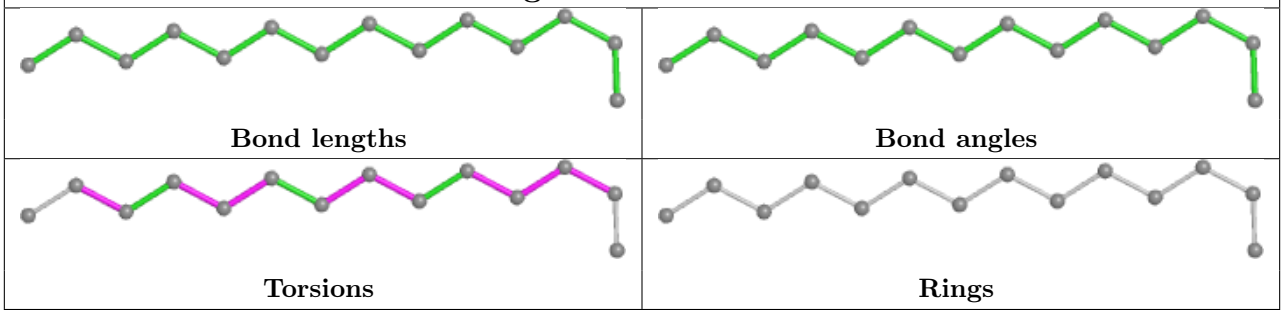

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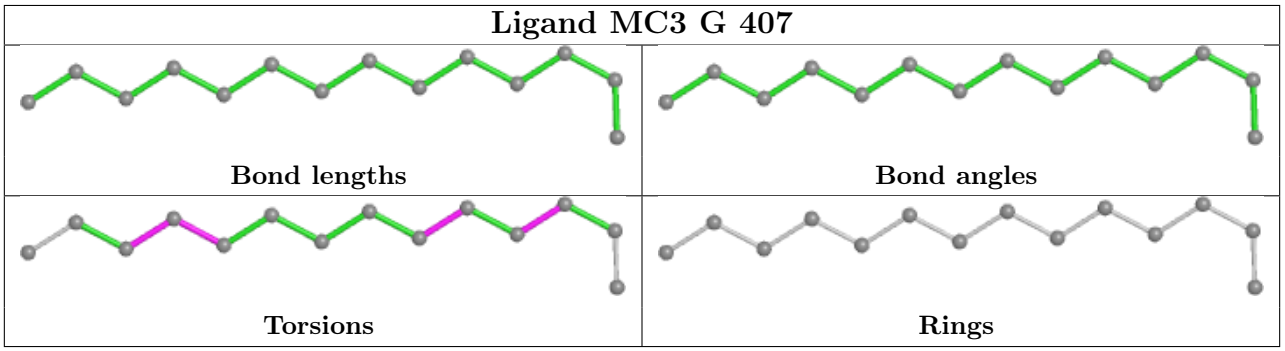

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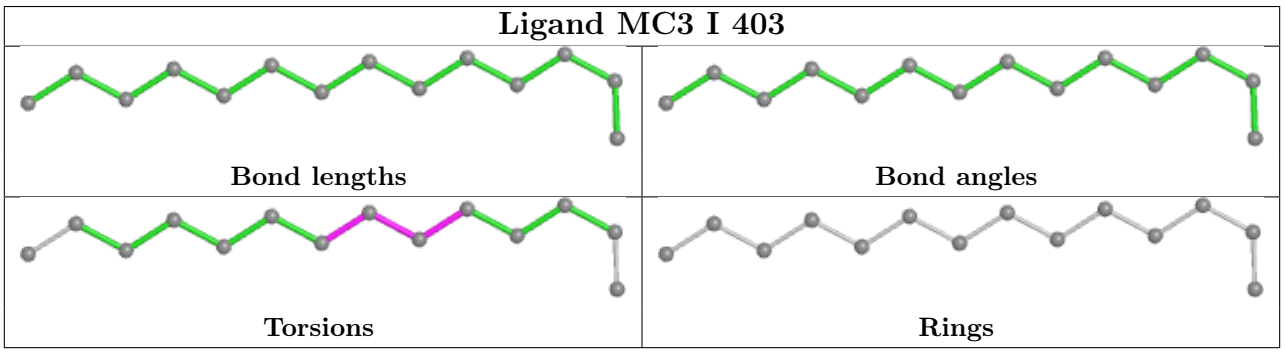

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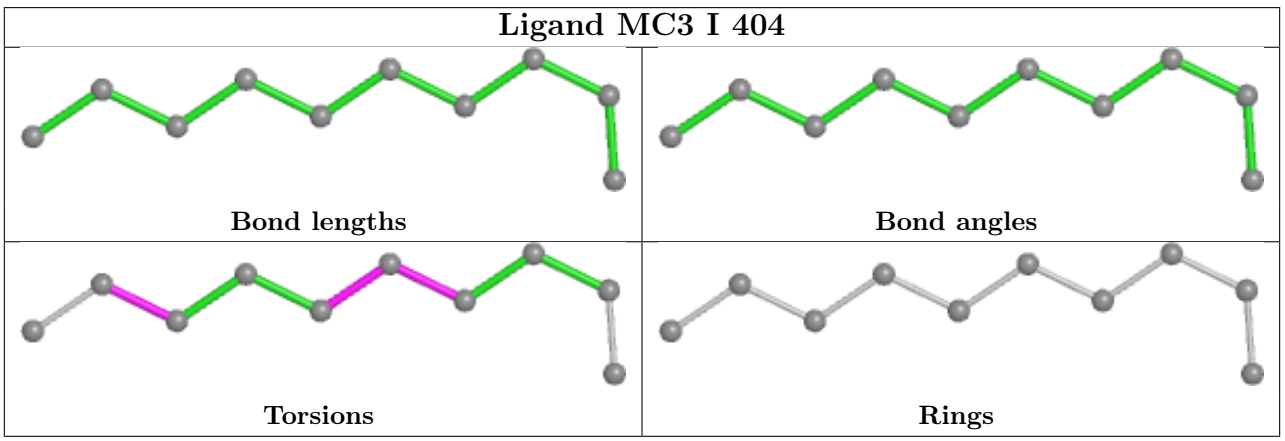

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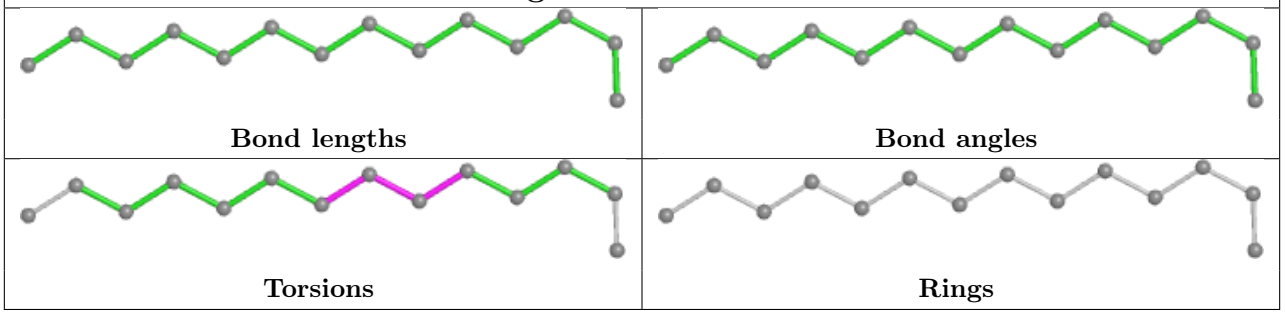

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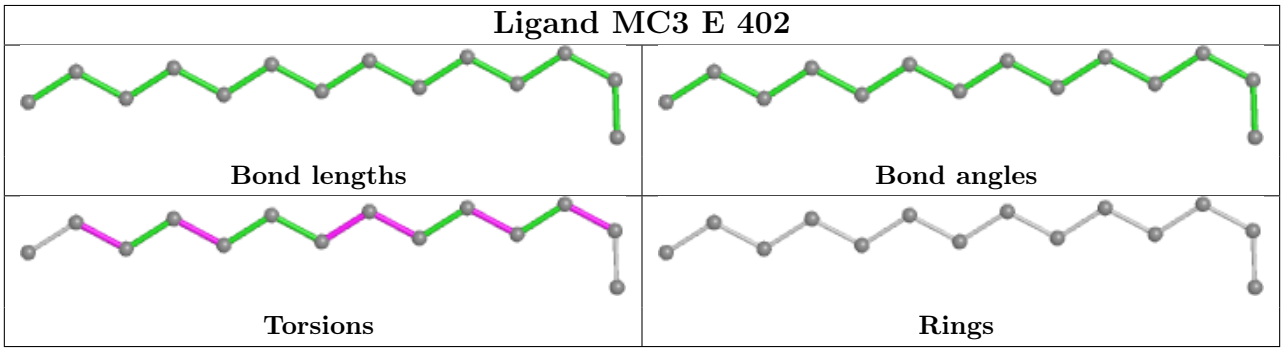

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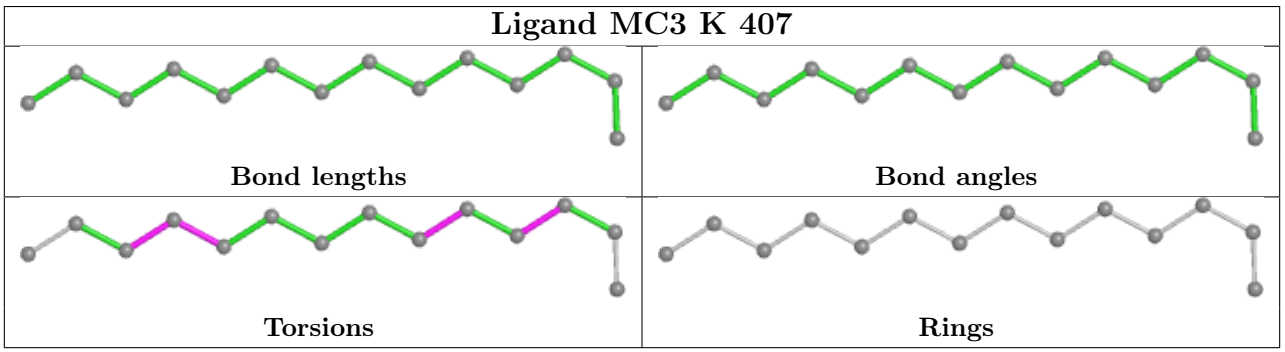

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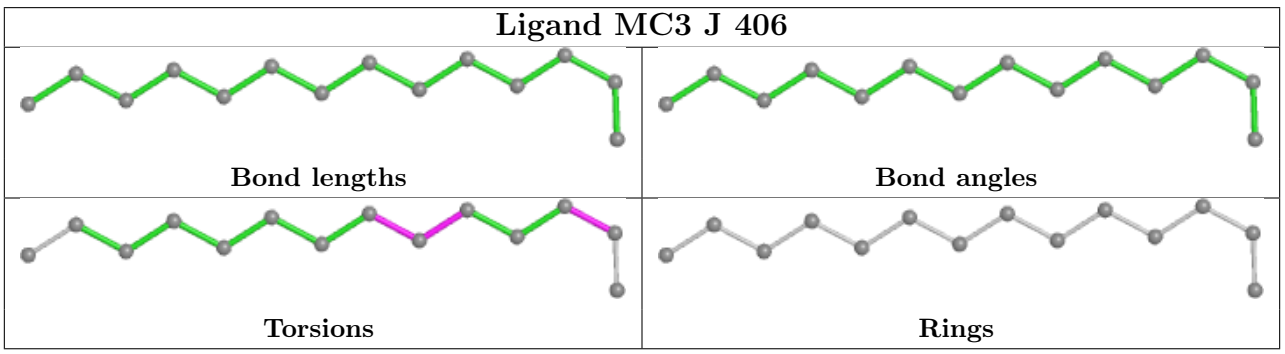

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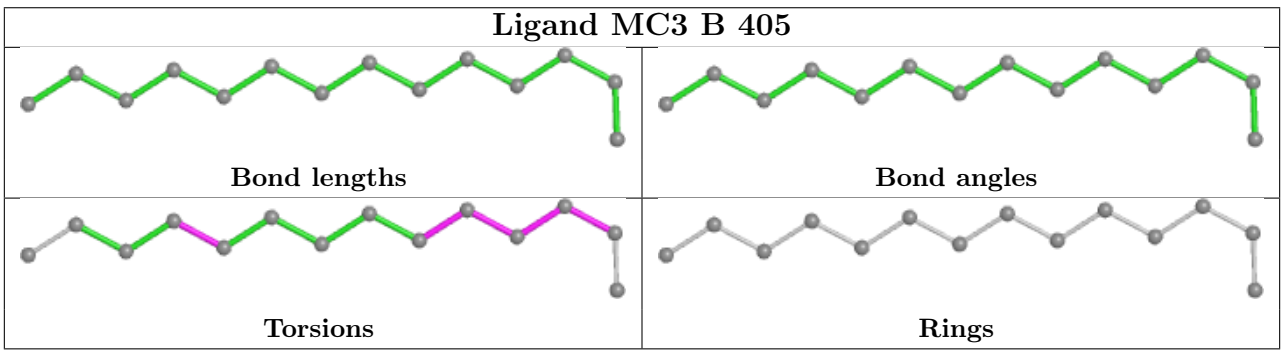

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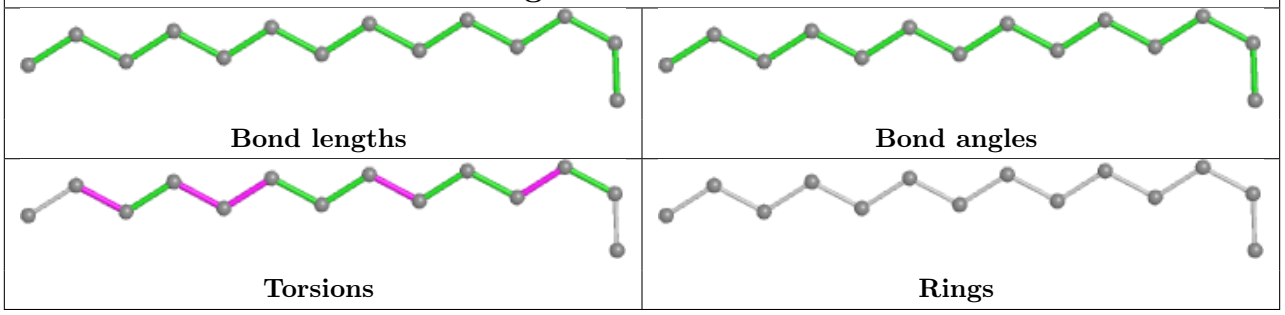

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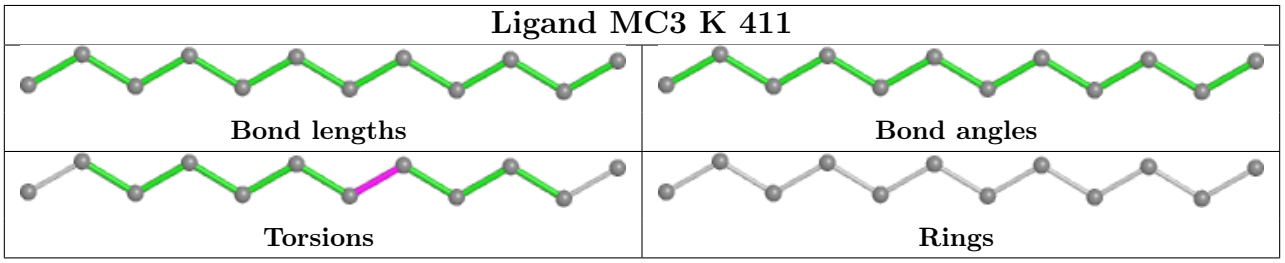

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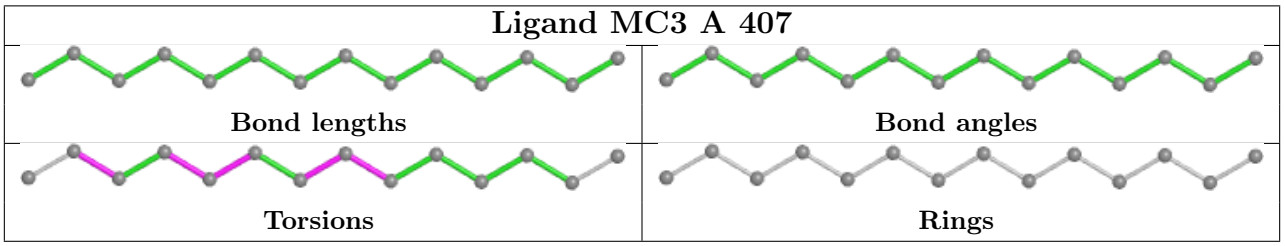

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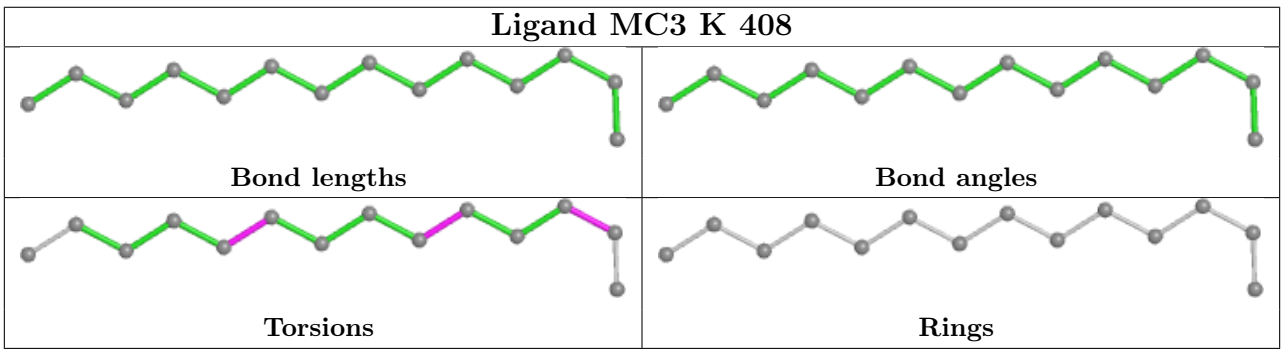

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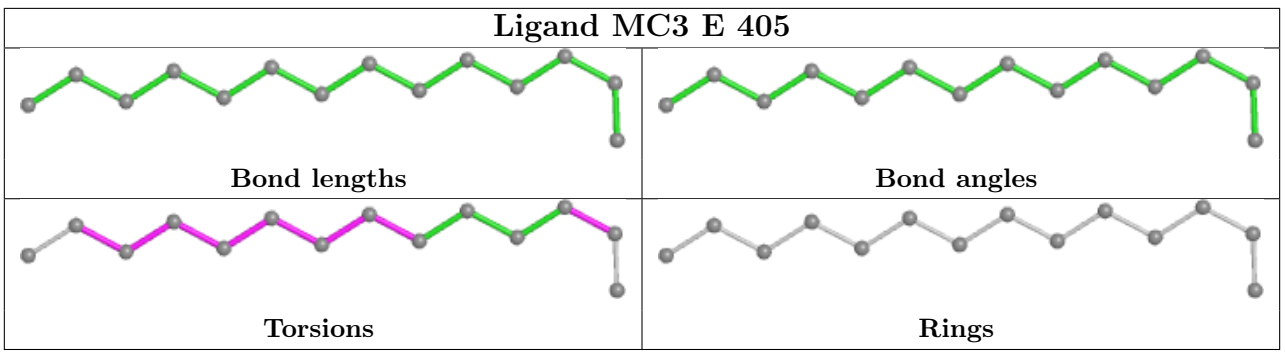

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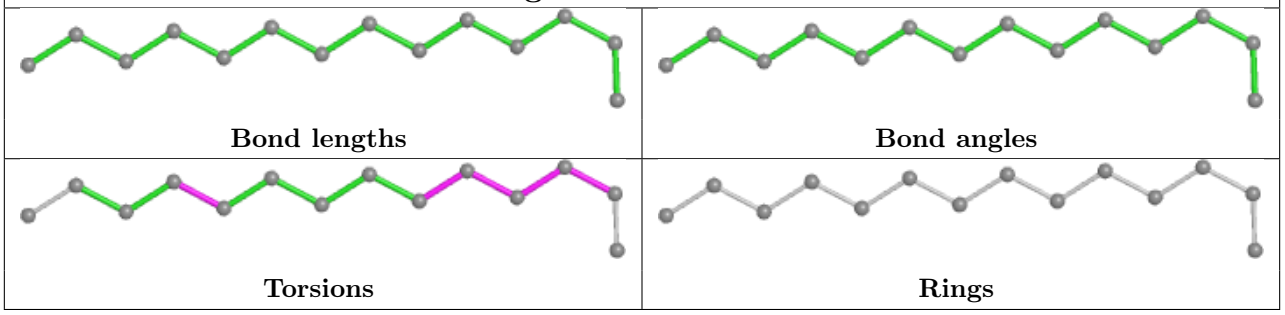

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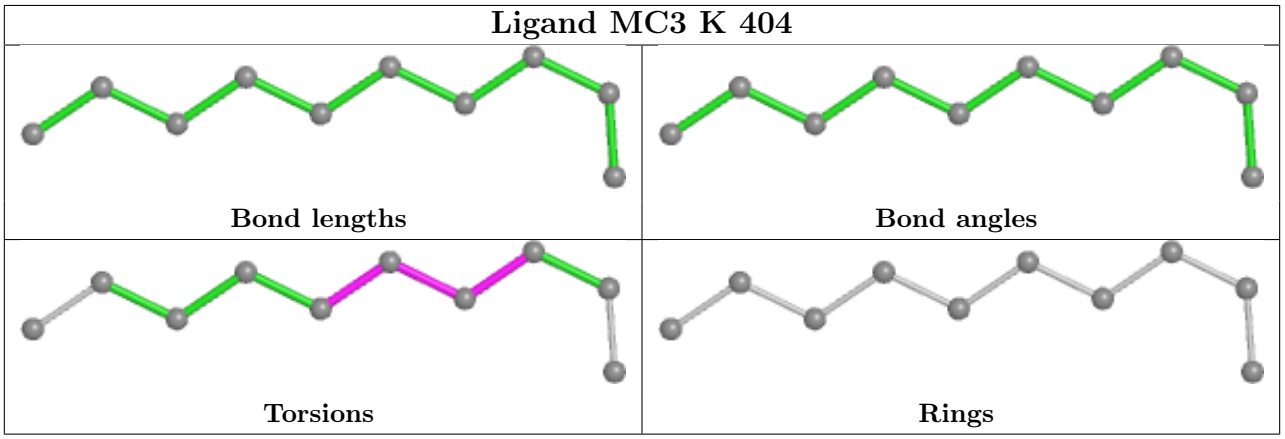

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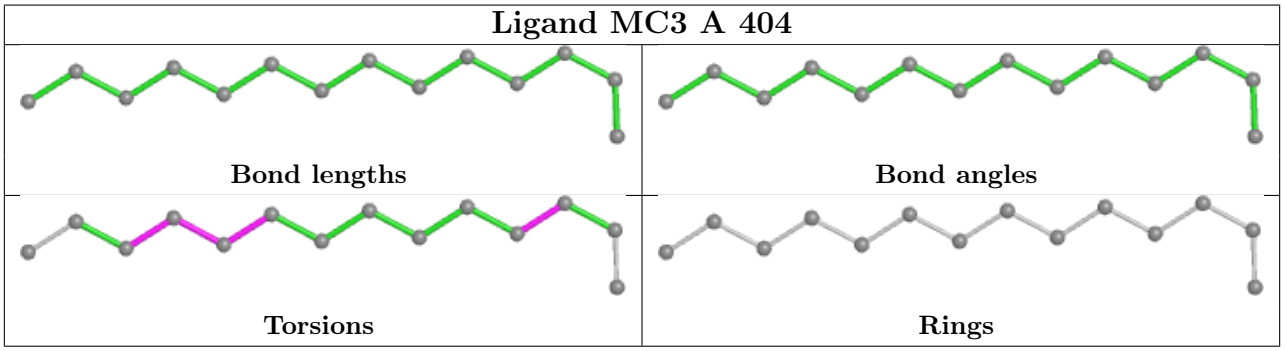

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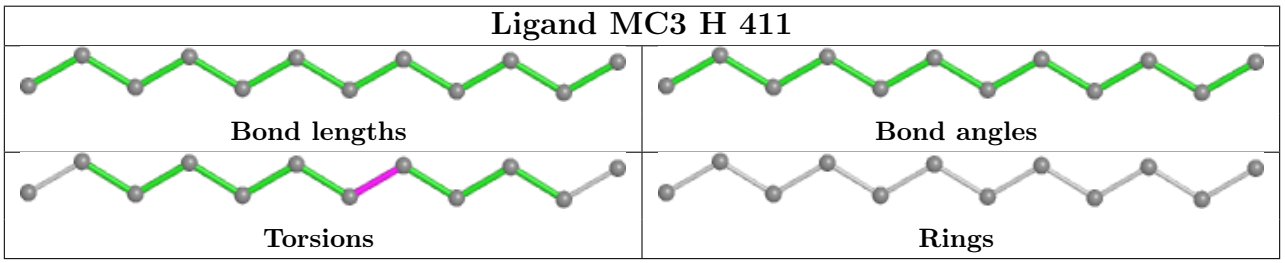

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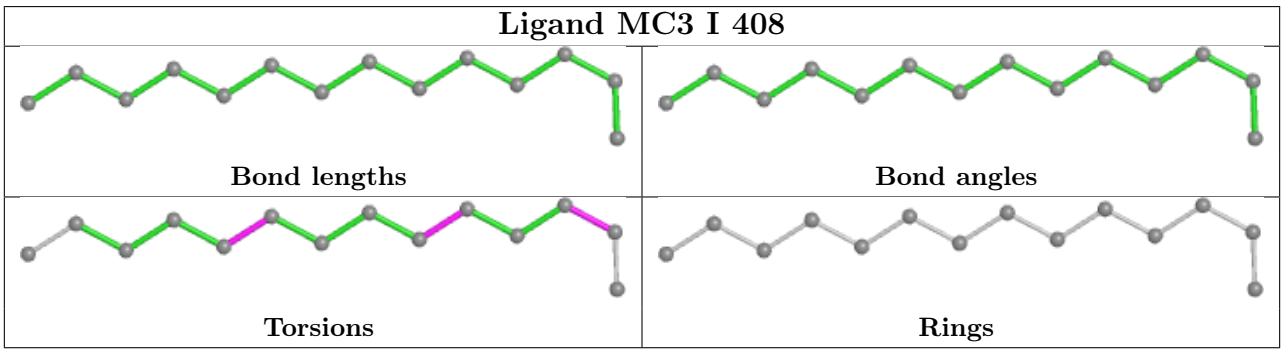

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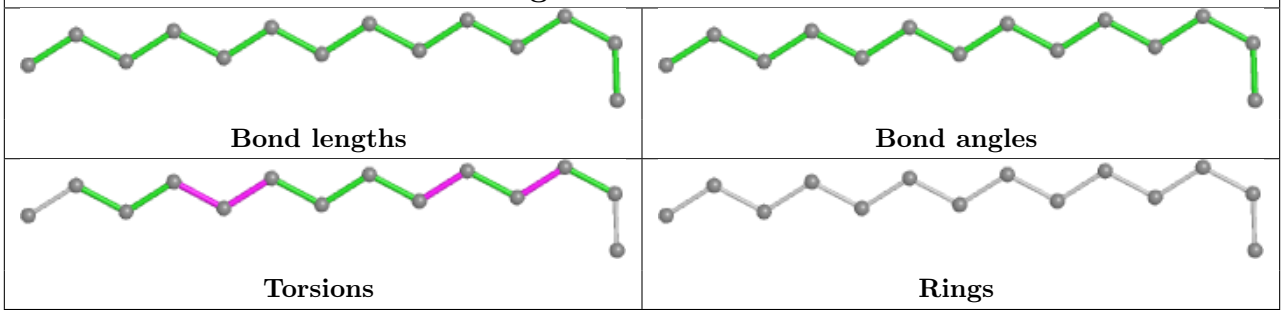

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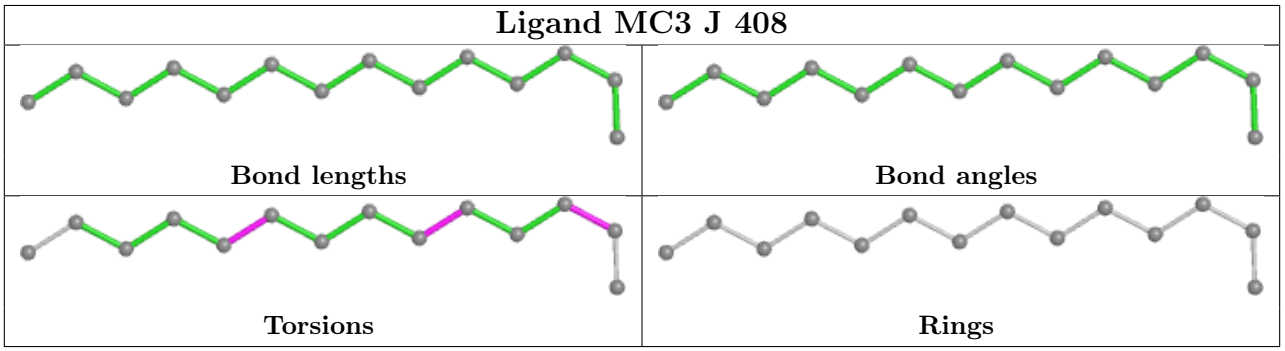

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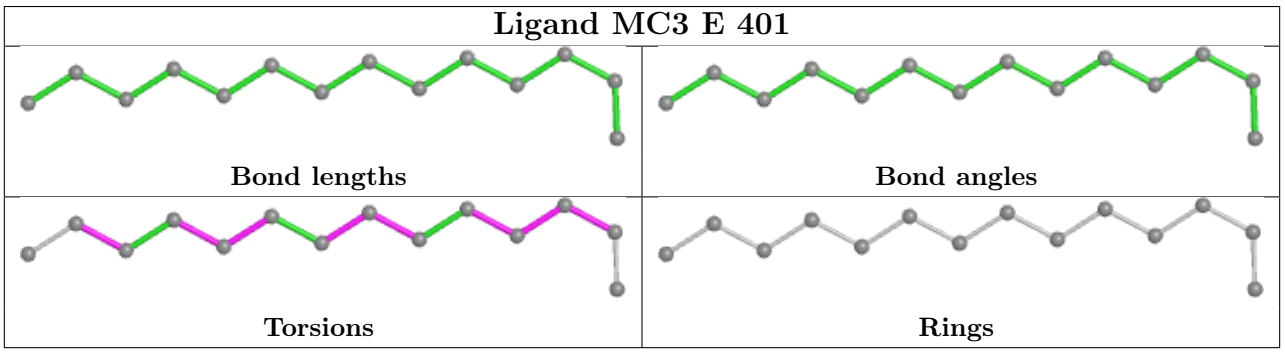

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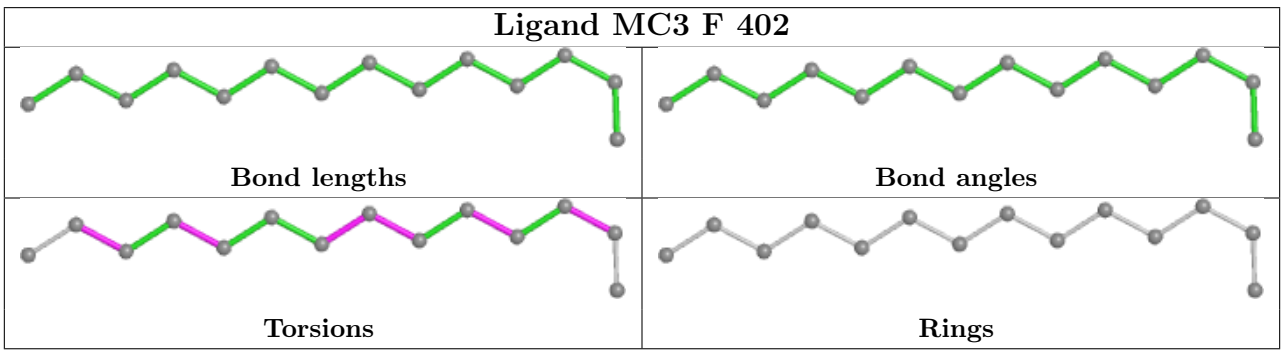

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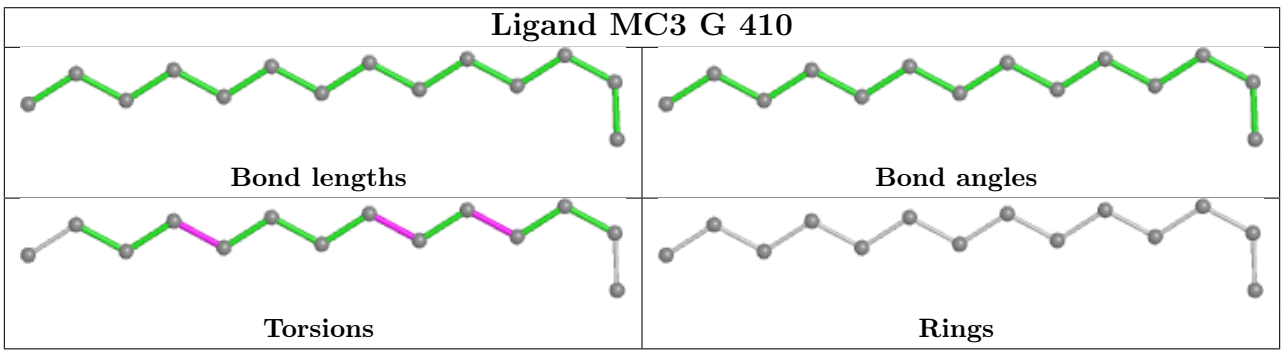
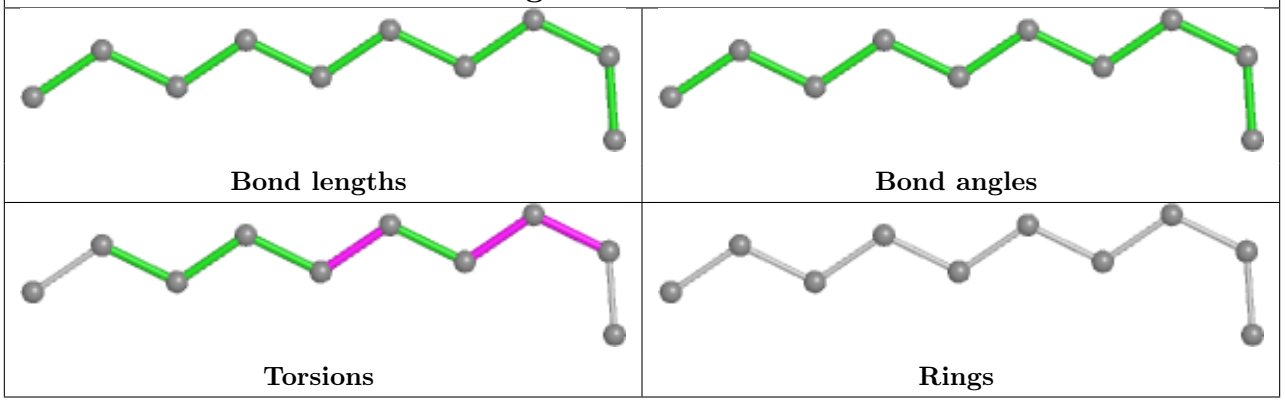
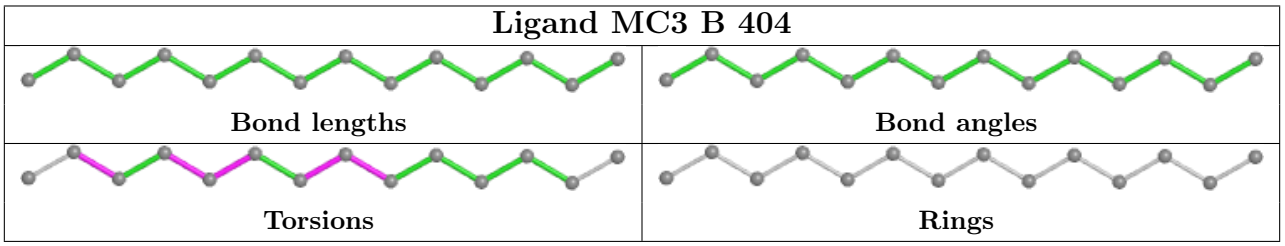


Ligand MC3 L 410



Ligand MC3 B 404



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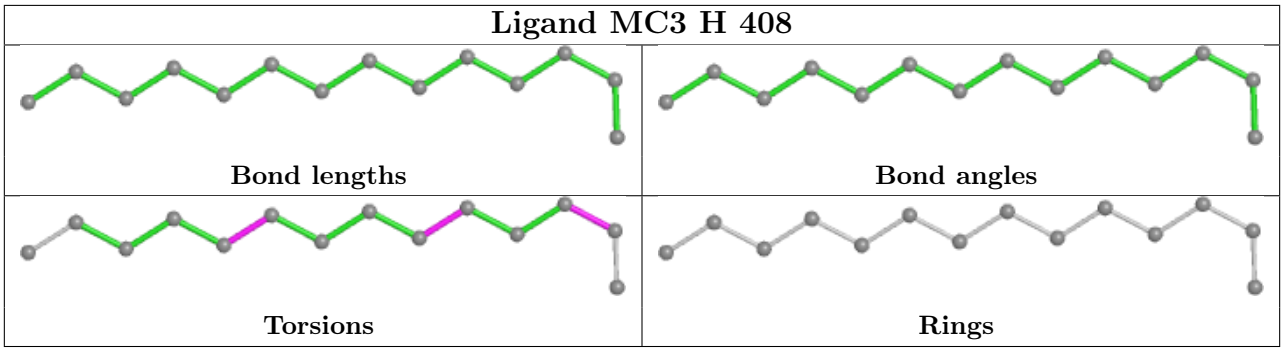

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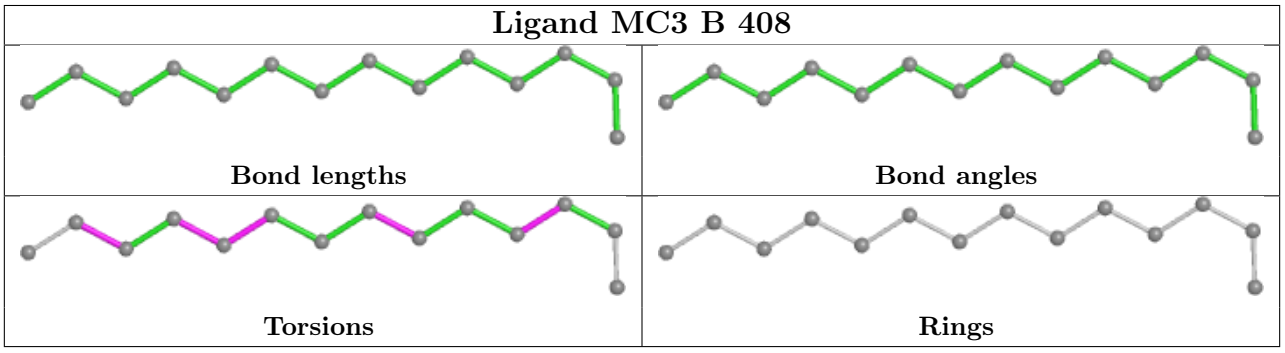

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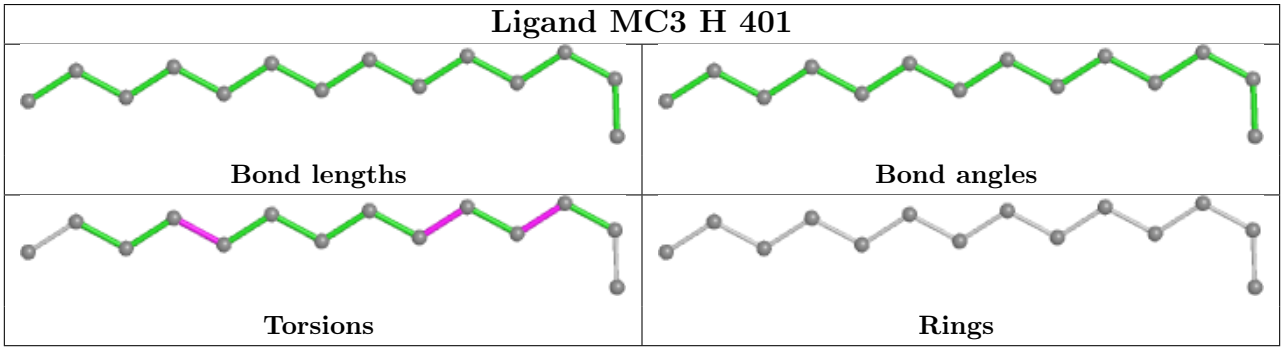

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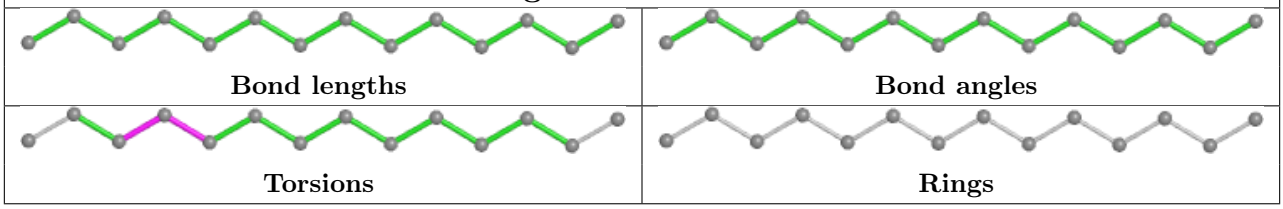

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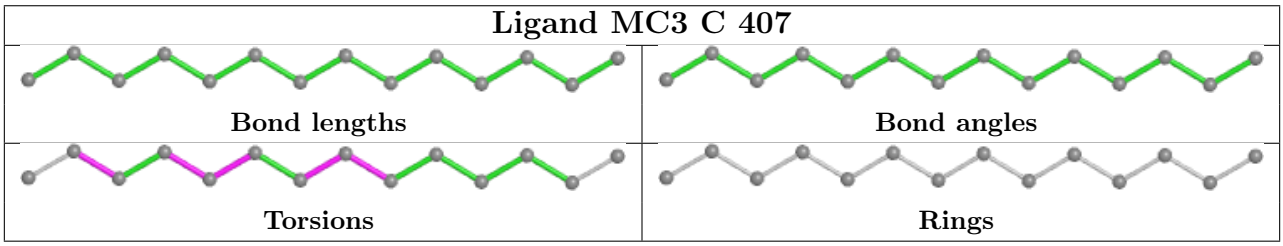

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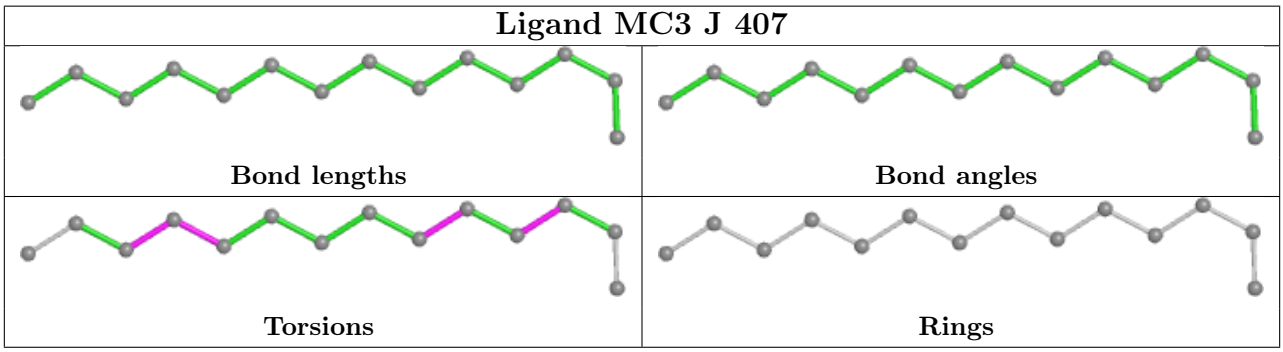

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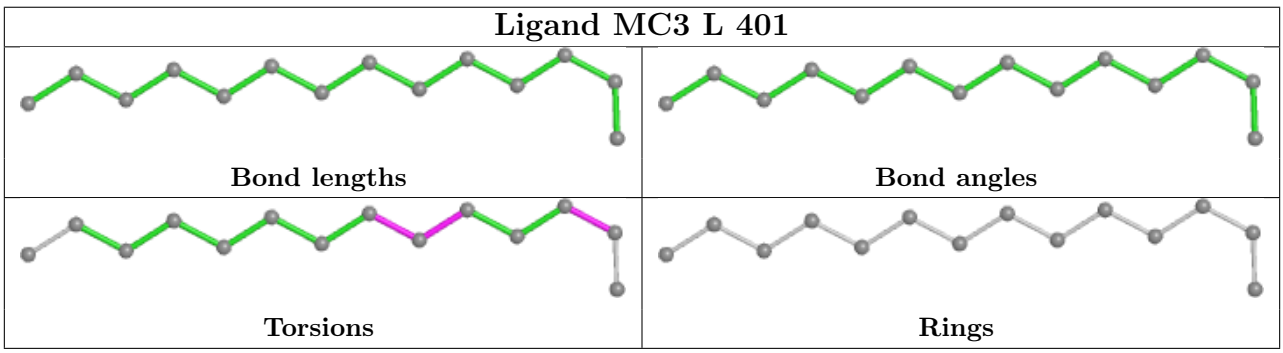
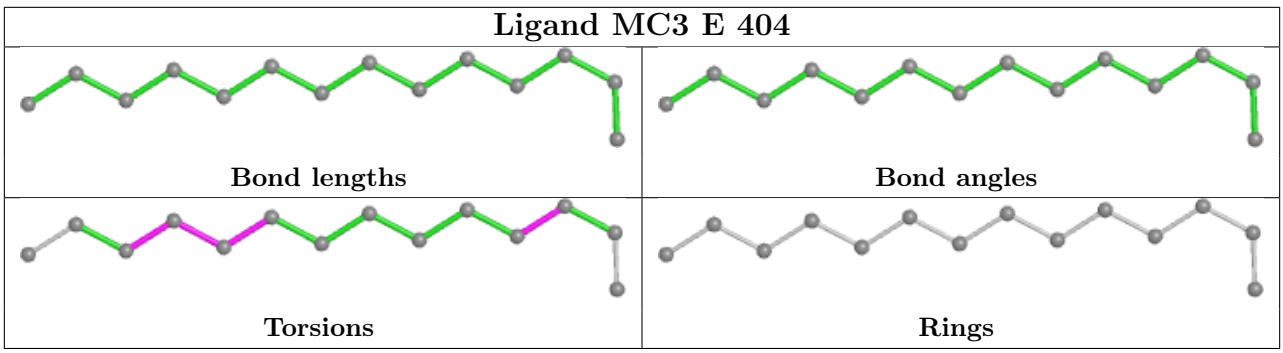
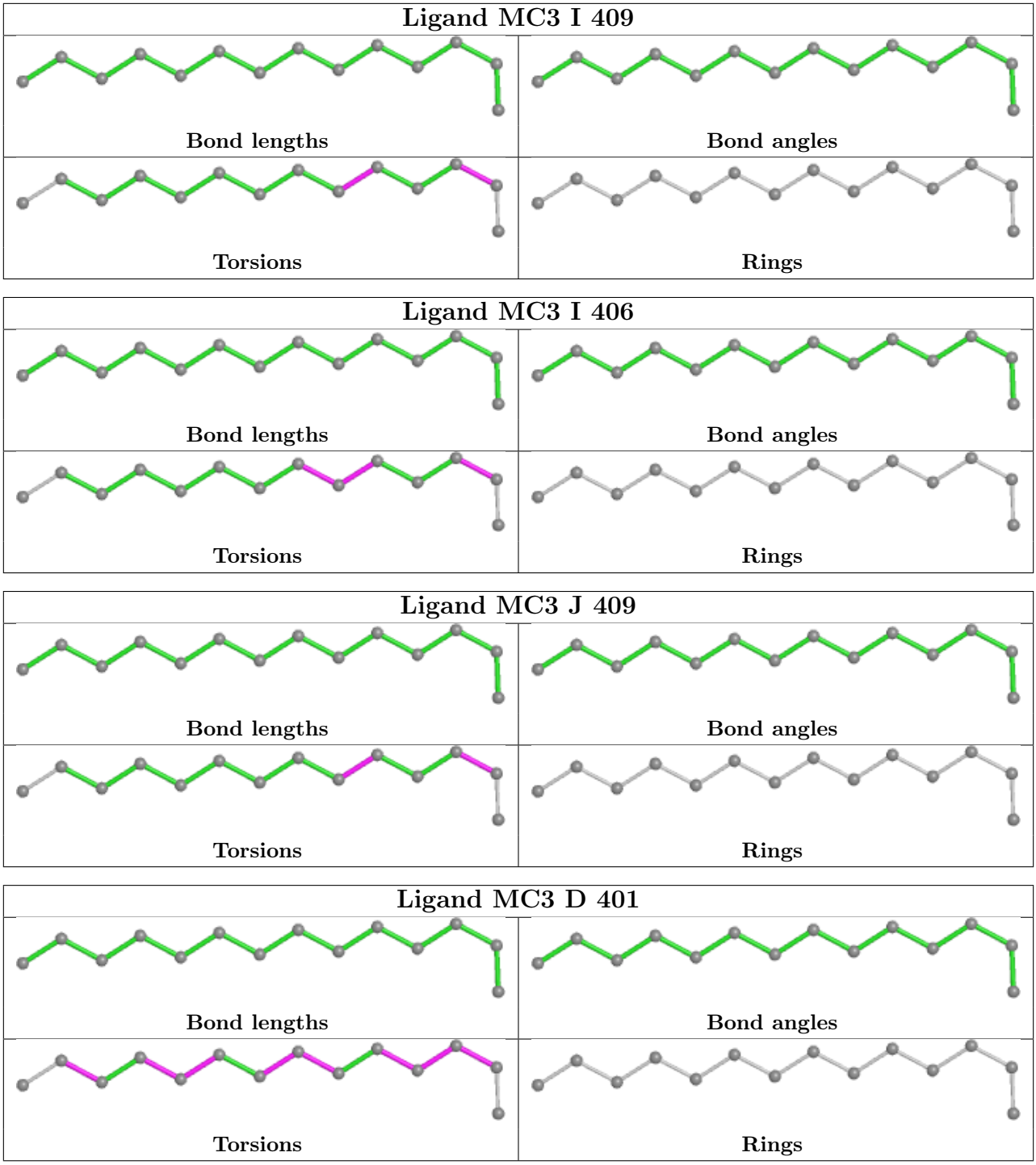


Ligand MC3 E 404





5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

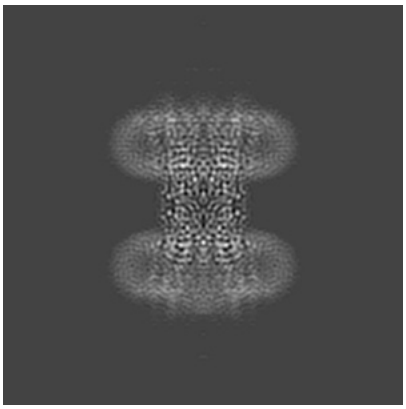
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-33327. These allow visual inspection of the internal detail of the map and identification of artifacts.

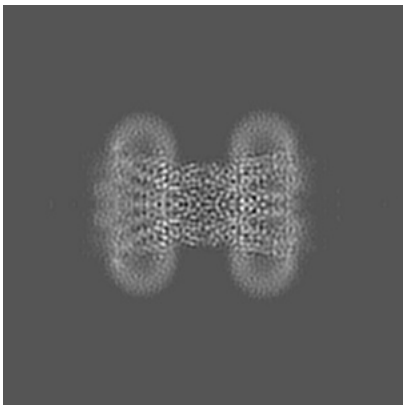
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

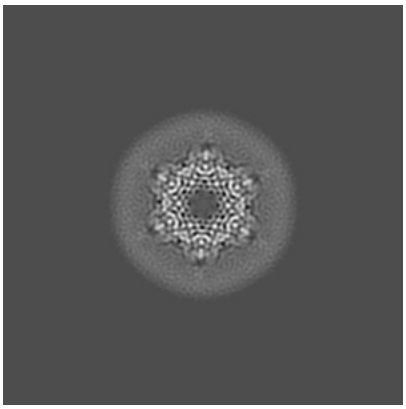
6.1.1 Primary map



X

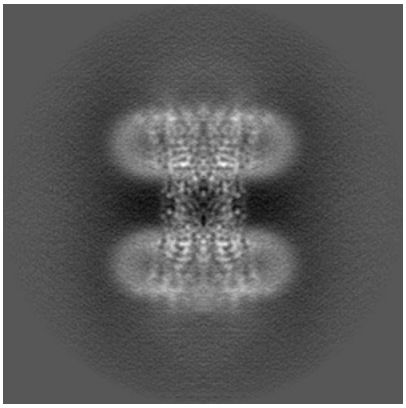


Y

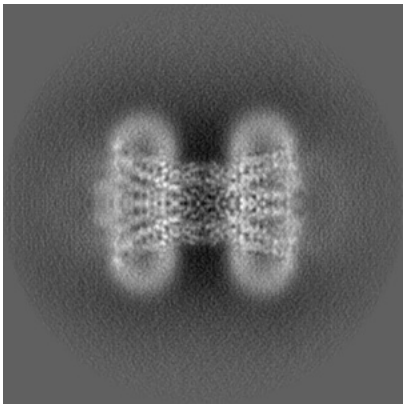


Z

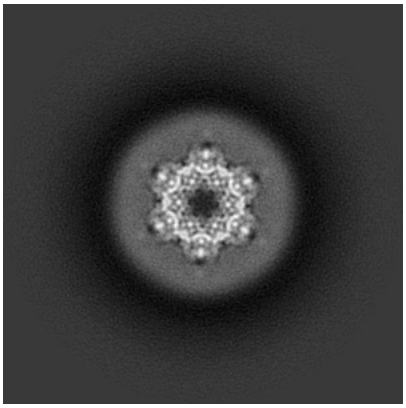
6.1.2 Raw map



X



Y

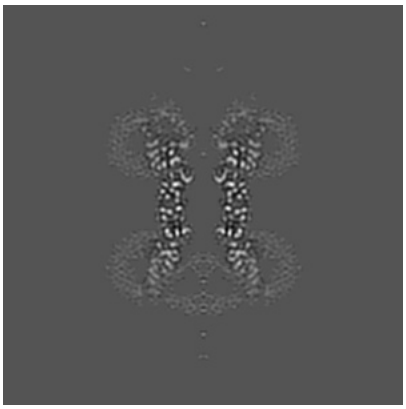


Z

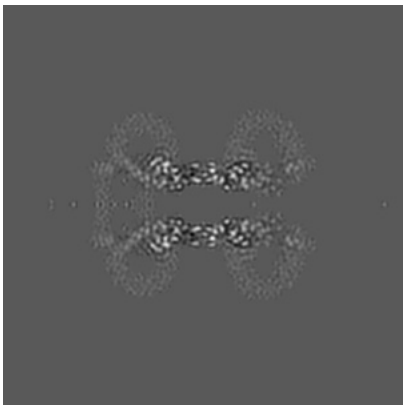
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

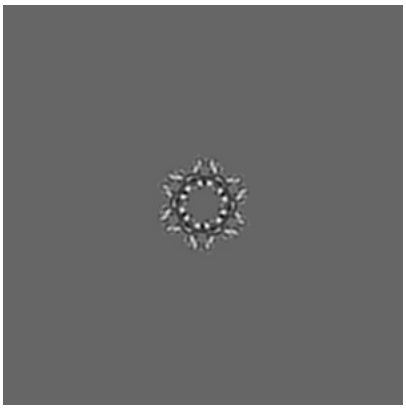
6.2.1 Primary map



X Index: 200

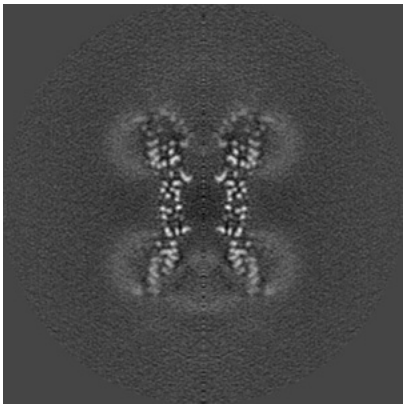


Y Index: 200

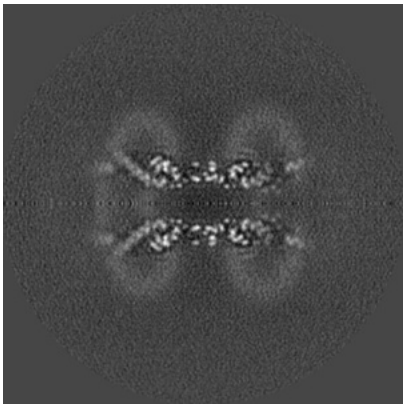


Z Index: 200

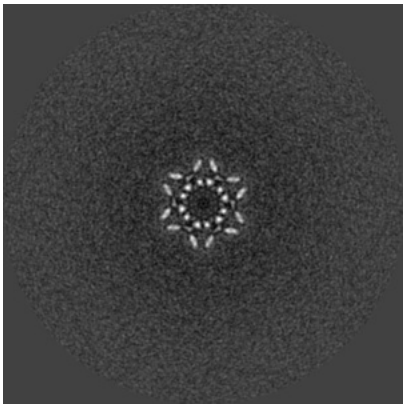
6.2.2 Raw map



X Index: 200



Y Index: 200

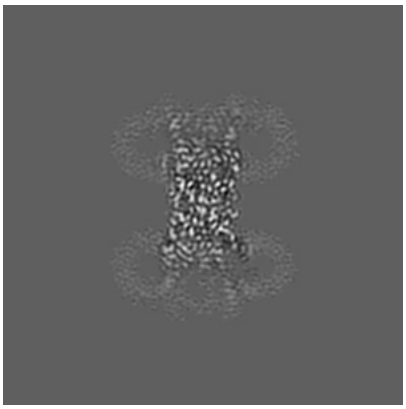


Z Index: 200

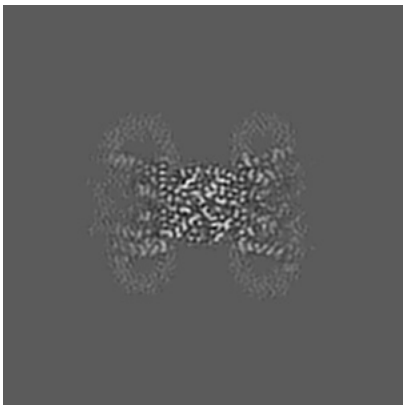
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

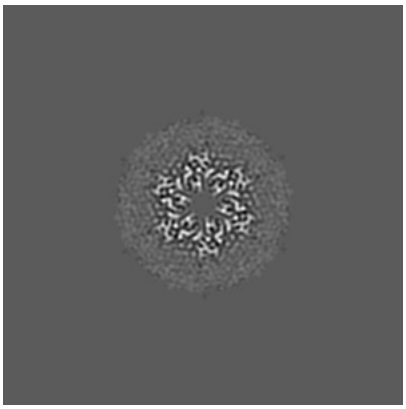
6.3.1 Primary map



X Index: 224

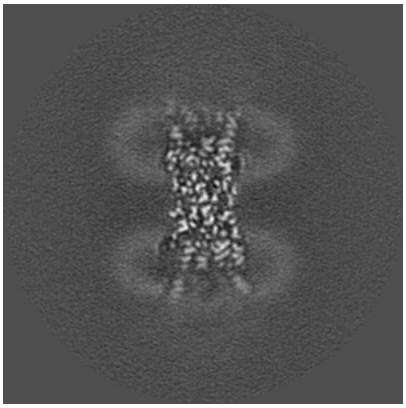


Y Index: 178

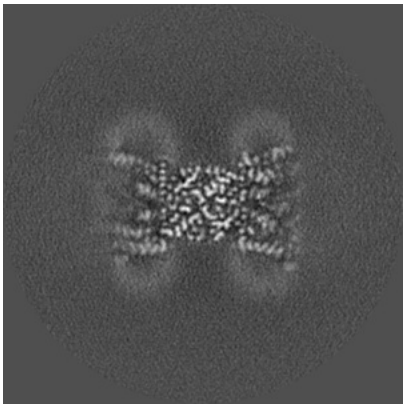


Z Index: 238

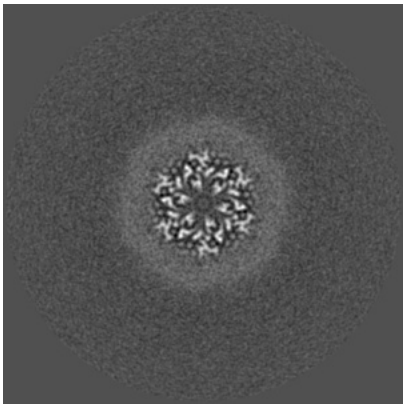
6.3.2 Raw map



X Index: 175



Y Index: 178

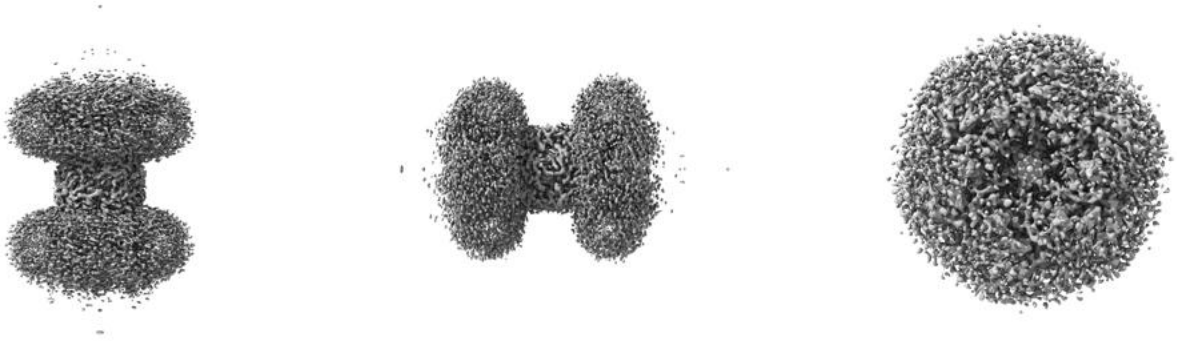


Z Index: 238

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

6.4 Orthogonal surface views (i)

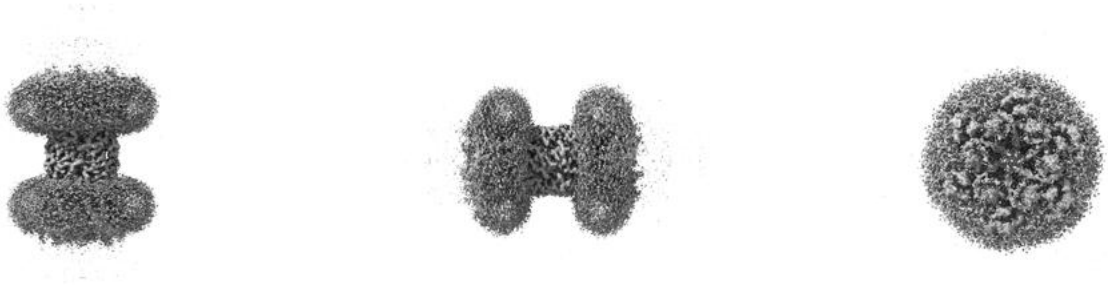
6.4.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.006. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



X Y Z

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

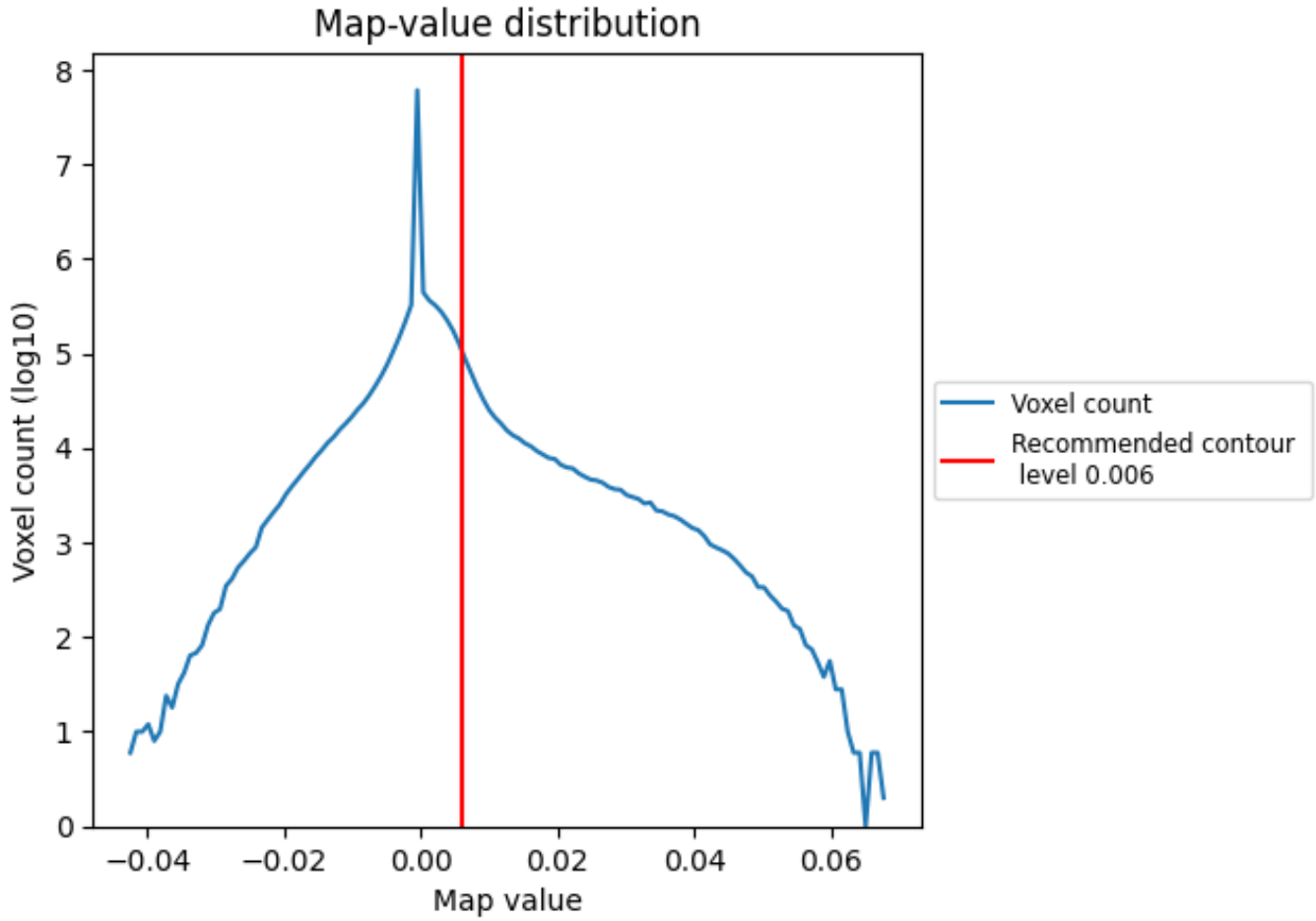
6.5 Mask visualisation (i)

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

7 Map analysis

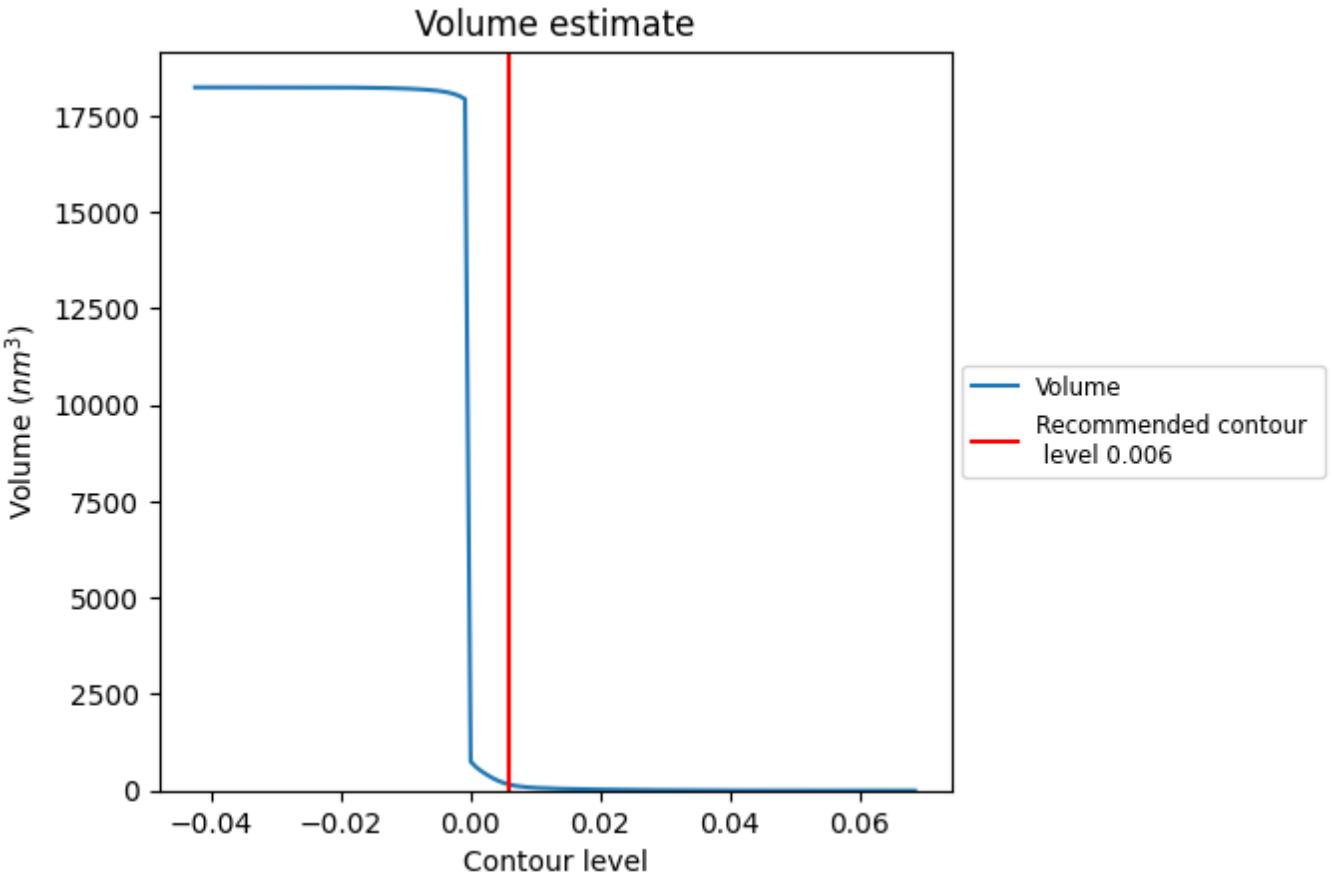
This section contains the results of statistical analysis of the map.

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.

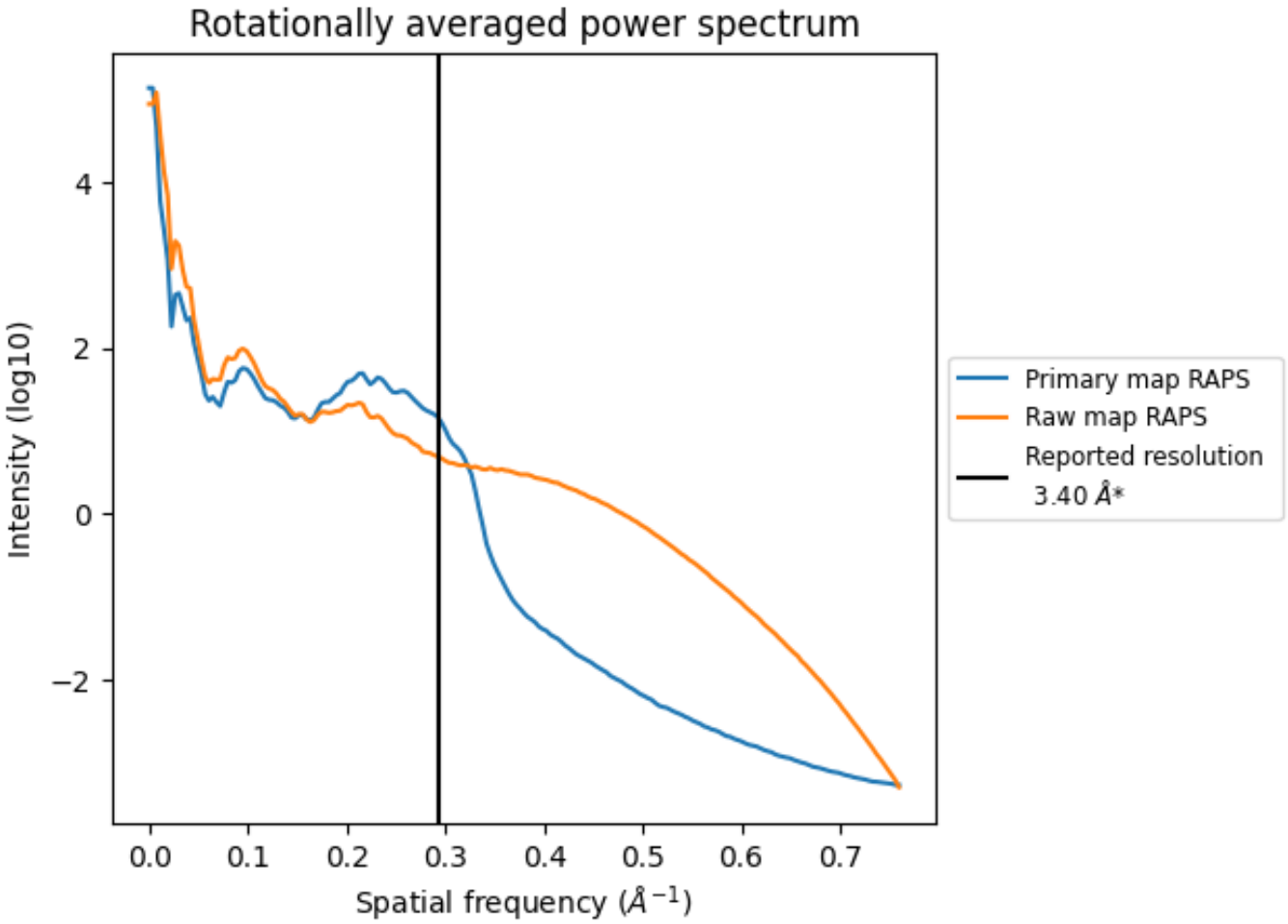
7.2 Volume estimate



The volume at the recommended contour level is 157 nm^3; this corresponds to an approximate mass of 141 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)

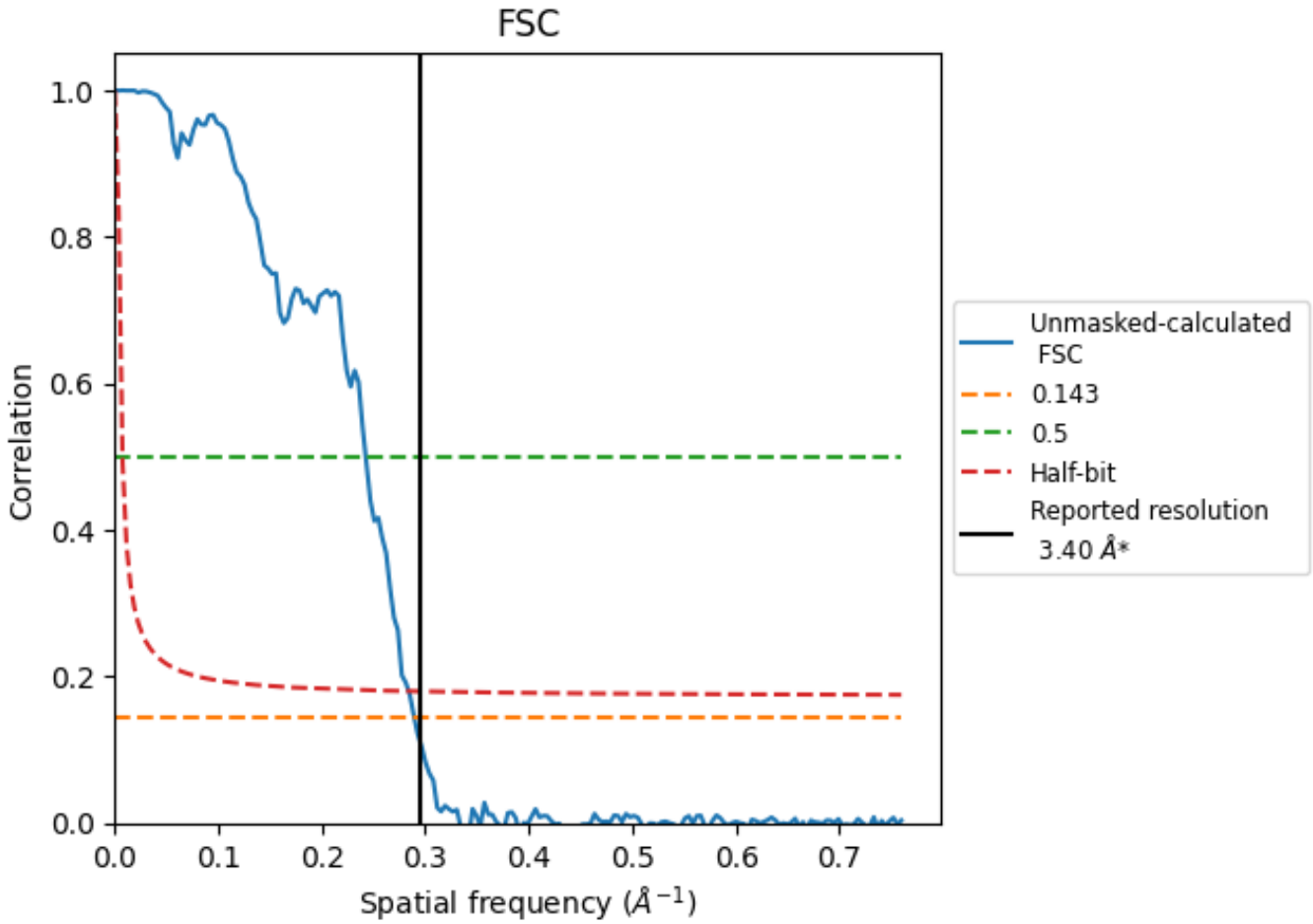


*Reported resolution corresponds to spatial frequency of 0.294 Å^{-1}

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 0.294 Å^{-1}

8.2 Resolution estimates (i)

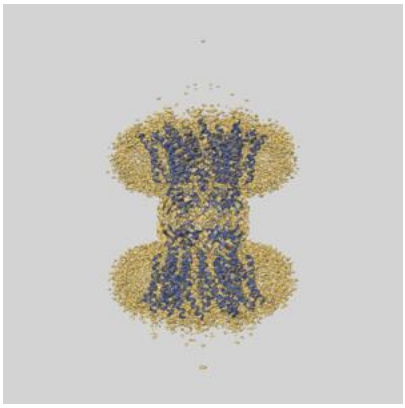
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.46	4.12	3.52

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

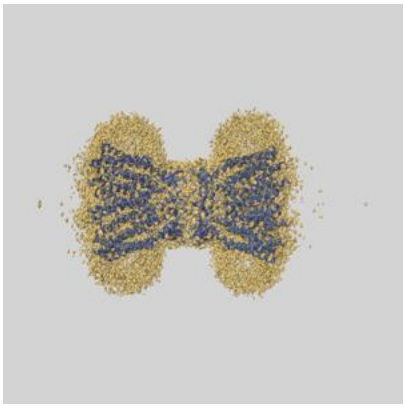
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-33327 and PDB model 7XNV. Per-residue inclusion information can be found in section 3 on page 14.

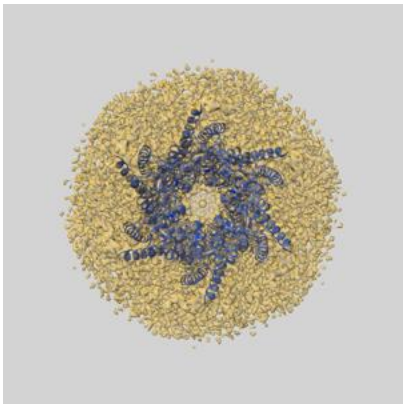
9.1 Map-model overlay



X



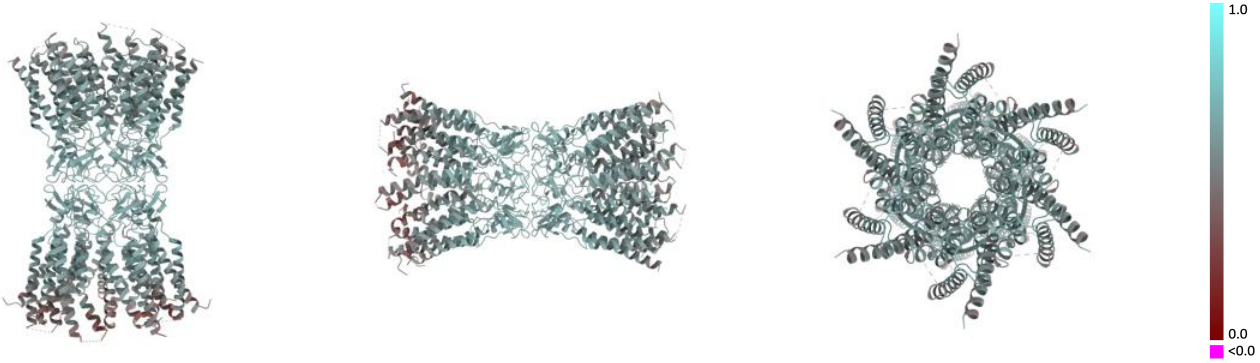
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.006 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.

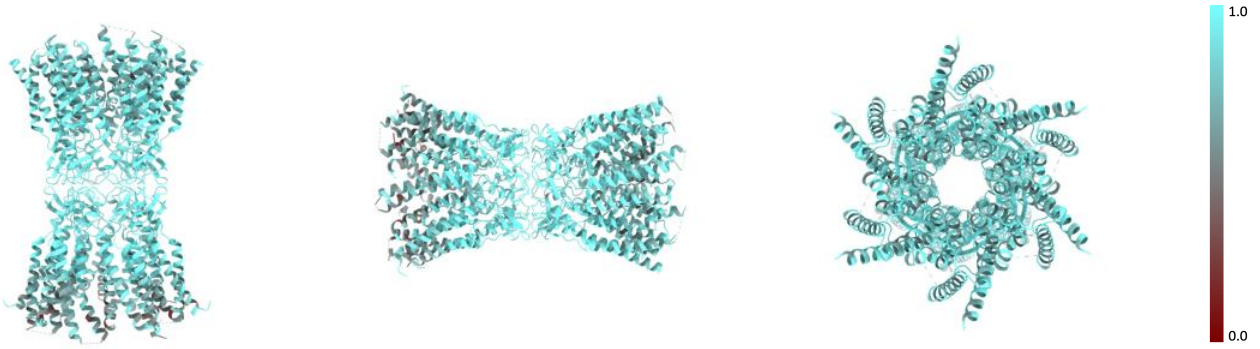
9.2 Q-score mapped to coordinate model (i)



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.

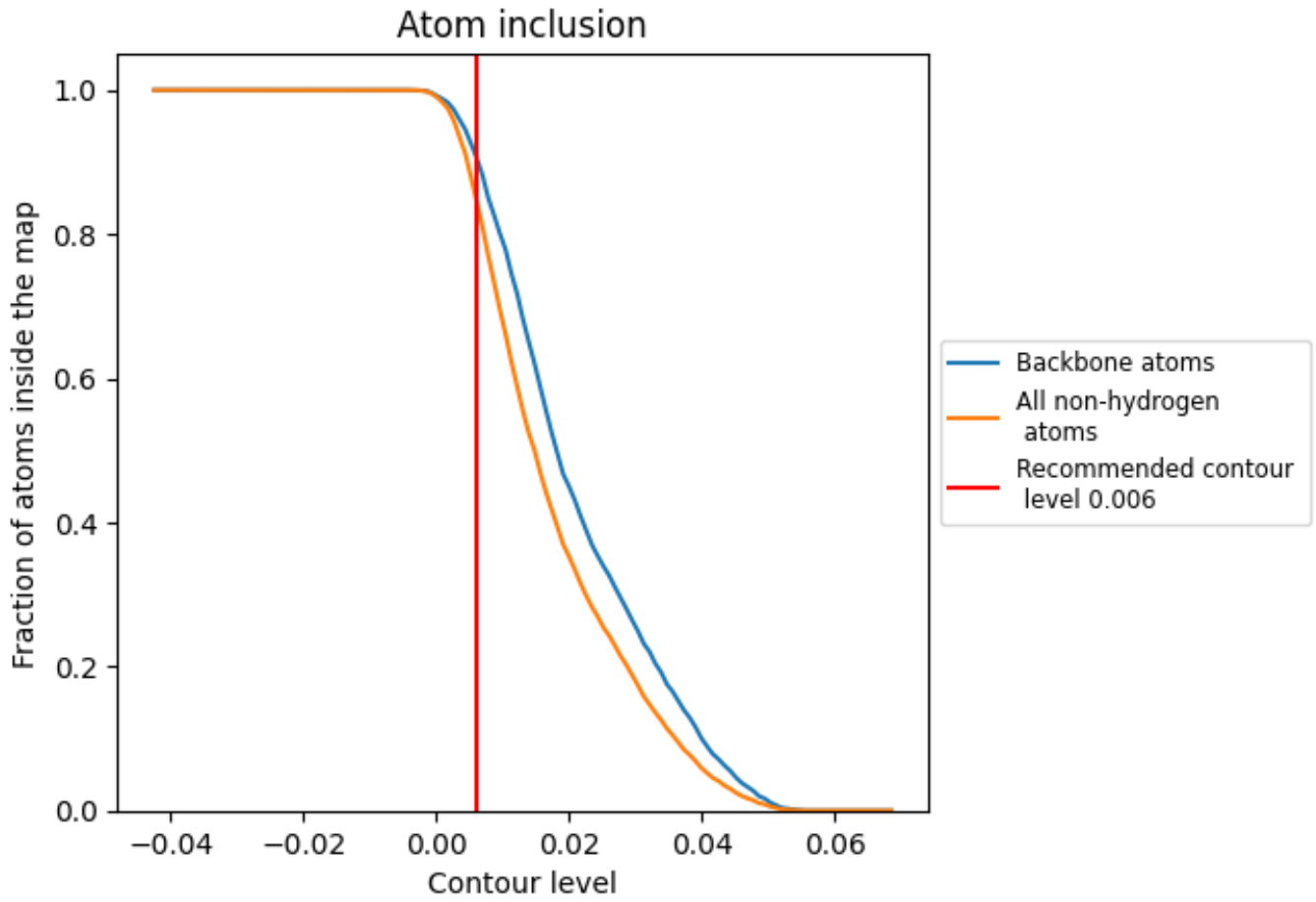
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.006).

9.4 Atom inclusion (i)



At the recommended contour level, 91% of all backbone atoms, 85% 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 (0.006) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8511	0.5580
A	0.8239	0.5410
B	0.8253	0.5410
C	0.8232	0.5410
D	0.8253	0.5400
E	0.8197	0.5390
F	0.8239	0.5400
G	0.8779	0.5740
H	0.8760	0.5740
I	0.8760	0.5750
J	0.8772	0.5750
K	0.8760	0.5750
L	0.8747	0.5750