



Full wwPDB EM Validation Report ⓘ

Jun 17, 2024 – 09:09 am BST

PDB ID : 8Q1Y
EMDB ID : EMD-18068
Title : Outward-facing, open2 proteoliposome complex I at 2.6 Å, after deactivation treatment. Initially purified in LMNG.
Authors : Grba, D.N.; Hirst, J.
Deposited on : 2023-08-01
Resolution : 2.60 Å (reported)
Based on initial model : 7QSN

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:

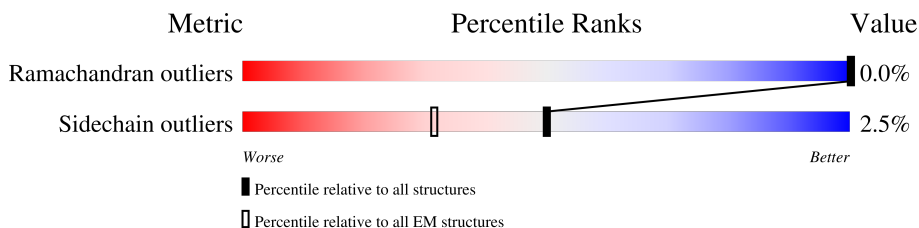
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

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 2.60 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.



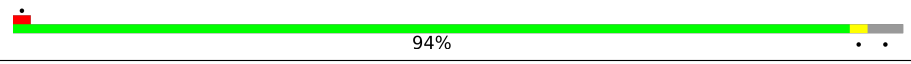
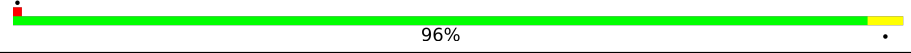
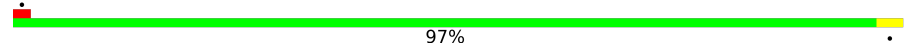
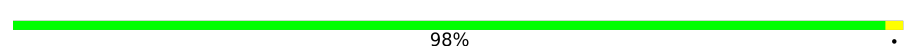
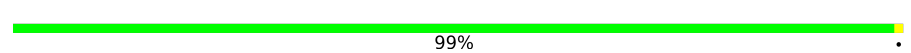
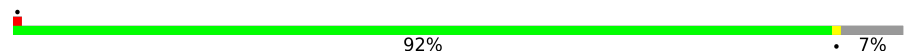

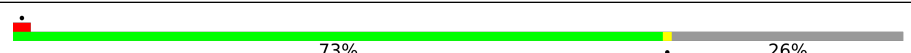
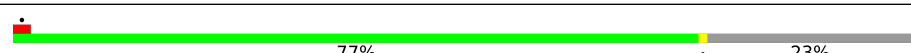
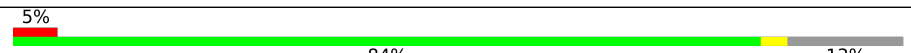
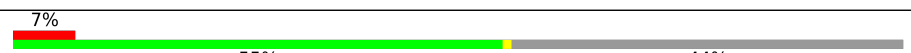
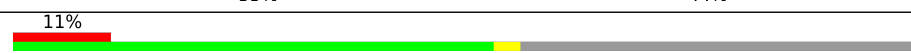

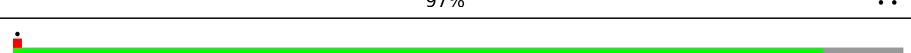
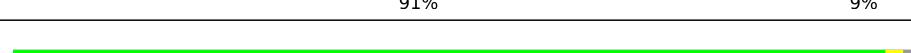
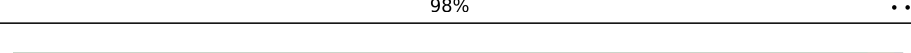
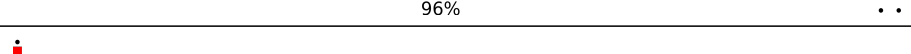
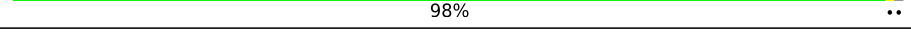
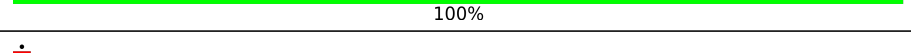
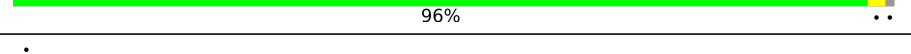

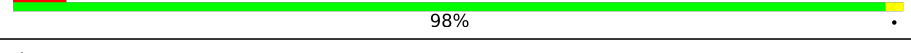
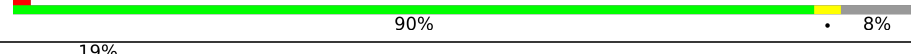
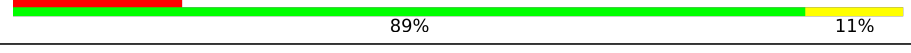
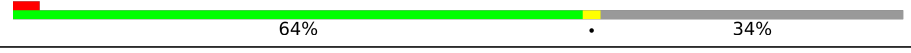
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 $\leq 5\%$. 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	115	85% 12%
2	B	216	69% 28%
3	C	266	77% 22%
4	D	463	89% 10%
5	E	249	82% 14%
6	F	464	91% 7%
7	G	727	93% 5%
8	H	318	96%
9	I	212	82% 17%

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Mol	Chain	Length	Quality of chain
10	J	175	 94%
11	K	98	 96%
12	L	606	 97%
13	M	459	 98%
14	N	347	 99%
15	O	343	 92% 7%
16	P	380	 86% 12%
17	Q	175	 73% 26%
18	R	124	 77% 23%
19	S	99	 84% 13% 5%
20	T	156	 55% 44% 7%
20	U	156	 54% 44% 11%
21	V	116	 97%
22	W	128	 91% 9%
23	X	172	 98%
24	Y	141	 96%
25	Z	144	 98%
26	a	70	 100%
27	b	84	 96%
28	c	76	 63% 36%
29	d	120	 98% 6%
30	e	106	 90% 8%
31	f	57	 89% 11% 19%
32	g	154	 64% 34%
33	h	189	 73% 27%

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Mol	Chain	Length	Quality of chain
34	i	128	
35	j	108	
36	k	98	
37	l	186	
38	m	129	
39	n	179	
40	o	137	
41	p	176	
42	q	145	
43	r	113	
44	s	109	

2 Entry composition i

There are 59 unique types of molecules in this entry. The entry contains 69324 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 NADH-ubiquinone oxidoreductase chain 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	101	815	555	116	139	5	0	0

- Molecule 2 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	156	1247	795	225	213	14	0	0

- Molecule 3 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	207	1721	1111	296	311	3	0	0

- Molecule 4 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	417	3364	2151	577	611	25	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	129	ARG	GLN	variant	UNP P17694

- Molecule 5 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	214	1659	1059	278	312	10	0	0

- Molecule 6 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	432	3326	2096	594	616	20	0	0

- Molecule 7 is a protein called NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	691	5298	3318	925	1016	39	0	0

- Molecule 8 is a protein called NADH-ubiquinone oxidoreductase chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	316	2496	1673	383	417	23	0	0

- Molecule 9 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	176	1414	889	243	270	12	0	0

- Molecule 10 is a protein called NADH-ubiquinone oxidoreductase chain 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	168	1281	861	183	225	12	0	0

- Molecule 11 is a protein called NADH-ubiquinone oxidoreductase chain 4L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	98	745	486	112	131	16	0	0

- Molecule 12 is a protein called NADH-ubiquinone oxidoreductase chain 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	606	4802	3195	737	827	43	0	0

- Molecule 13 is a protein called NADH-ubiquinone oxidoreductase chain 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	M	459	3654	2436	570	609	39	0	0

- Molecule 14 is a protein called NADH-ubiquinone oxidoreductase chain 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	N	347	2733	1817	416	457	43	0	0

- Molecule 15 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	O	320	2589	1662	429	488	10	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	255	LYS	ASN	variant	UNP P34942

- Molecule 16 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	P	335	2689	1739	476	469	5	0	0

- Molecule 17 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	Q	129	1049	659	188	199	3	0	0

- Molecule 18 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	R	96	740	454	140	143	3	0	0

- Molecule 19 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	S	86	691	434	129	126	2	0	0

- Molecule 20 is a protein called Acyl carrier protein, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	T	88	707	454	104	144	5	0	0
20	U	88	707	454	104	144	5	0	0

- Molecule 21 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	V	114	923	597	156	167	3	0	0

- Molecule 22 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	W	116	982	628	182	168	4	0	0

- Molecule 23 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	X	171	1402	887	253	252	10	0	0

- Molecule 24 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	Y	140	1030	657	176	191	6	0	0

- Molecule 25 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	Z	142	1157	743	202	203	9	0	0

- Molecule 26 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	a	70	569	365	104	95	5	0	0

- Molecule 27 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	b	83	654	427	109	116	2	0	0

- Molecule 28 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
28	c	49	414	273	70	71	0	0

- Molecule 29 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	d	120	999	650	172	172	5	0	0

- Molecule 30 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	e	98	825	521	157	141	6	0	0

- Molecule 31 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	f	57	492	322	86	82	2	0	0

- Molecule 32 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	g	101	846	544	140	158	4	0	0

- Molecule 33 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	h	138	1154	759	196	197	2	0	0

- Molecule 34 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	i	127	1097	722	191	183	1	0	0

- Molecule 35 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	j	71	597	390	99	107	1	0	0

- Molecule 36 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	k	81	653	427	110	114	2	0	0

- Molecule 37 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	l	156	1314	850	216	240	8	0	0

- Molecule 38 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	m	128	1070	686	188	196		0	0

- Molecule 39 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	n	171	1487	952	272	256	7	0	0

- Molecule 40 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	o	122	1048	653	201	185	9	0	0

- Molecule 41 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	p	174	1458	913	269	268	8	0	0

- Molecule 42 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	q	145	1212	780	216	211	5	0	0

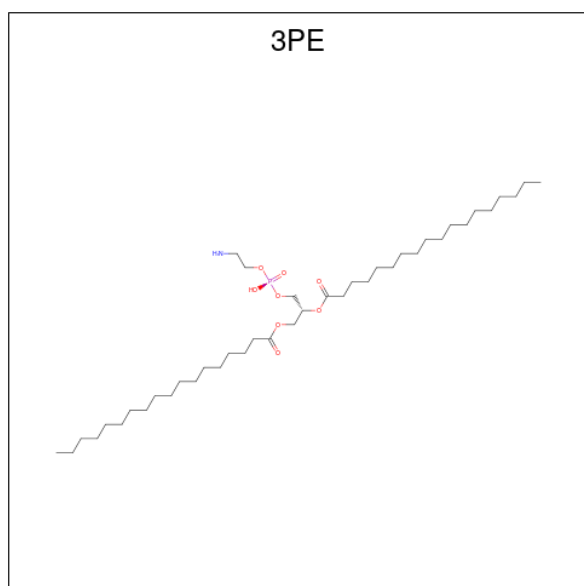
- Molecule 43 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	r	95	776	490	144	139	3	0	0

- Molecule 44 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	s	44	371	233	66	71	1	0	0

- Molecule 45 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (three-letter code: 3PE) (formula: C₄₁H₈₂NO₈P).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	A	1	43	33	1	8	1	0
45	H	1	36	26	1	8	1	0
45	I	1	37	27	1	8	1	0
45	J	1	31	21	1	8	1	0
45	J	1	36	26	1	8	1	0
45	K	1	44	34	1	8	1	0
45	L	1	45	35	1	8	1	0

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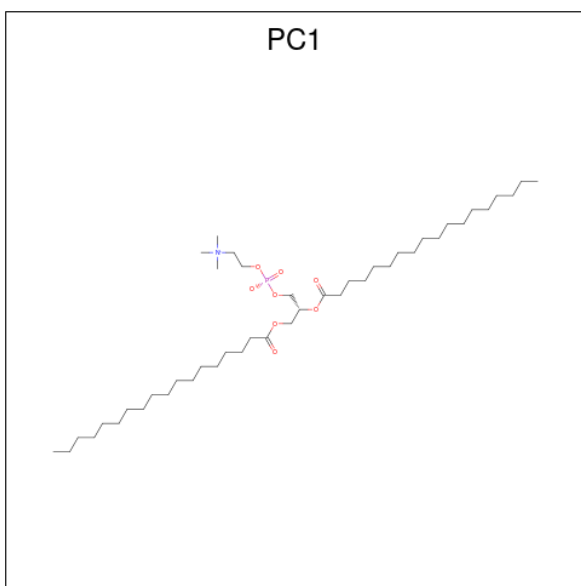
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	M	1	Total 30	C 20	N 1	O 8	P 1	0
45	M	1	Total 50	C 40	N 1	O 8	P 1	0
45	M	1	Total 34	C 24	N 1	O 8	P 1	0
45	M	1	Total 45	C 35	N 1	O 8	P 1	0
45	N	1	Total 45	C 35	N 1	O 8	P 1	0
45	N	1	Total 40	C 30	N 1	O 8	P 1	0
45	N	1	Total 49	C 39	N 1	O 8	P 1	0
45	Y	1	Total 27	C 17	N 1	O 8	P 1	0
45	Y	1	Total 51	C 41	N 1	O 8	P 1	0
45	Y	1	Total 51	C 41	N 1	O 8	P 1	0
45	Y	1	Total 51	C 41	N 1	O 8	P 1	0
45	Y	1	Total 46	C 36	N 1	O 8	P 1	0
45	Y	1	Total 34	C 24	N 1	O 8	P 1	0
45	Y	1	Total 51	C 41	N 1	O 8	P 1	0
45	Z	1	Total 37	C 27	N 1	O 8	P 1	0
45	Z	1	Total 51	C 41	N 1	O 8	P 1	0
45	b	1	Total 47	C 37	N 1	O 8	P 1	0
45	b	1	Total 51	C 41	N 1	O 8	P 1	0
45	d	1	Total 49	C 39	N 1	O 8	P 1	0
45	f	1	Total 51	C 41	N 1	O 8	P 1	0
45	h	1	Total 32	C 22	N 1	O 8	P 1	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	m	1	Total 41	C 31	N 1	O 8	P 1	0
45	m	1	Total 30	C 20	N 1	O 8	P 1	0
45	q	1	Total 51	C 41	N 1	O 8	P 1	0
45	r	1	Total 28	C 18	N 1	O 8	P 1	0

- Molecule 46 is 1,2-DIACYL-SN-GLYCERO-3-PHOSPHOCHOLINE (three-letter code: PC1) (formula: $C_{44}H_{88}NO_8P$).



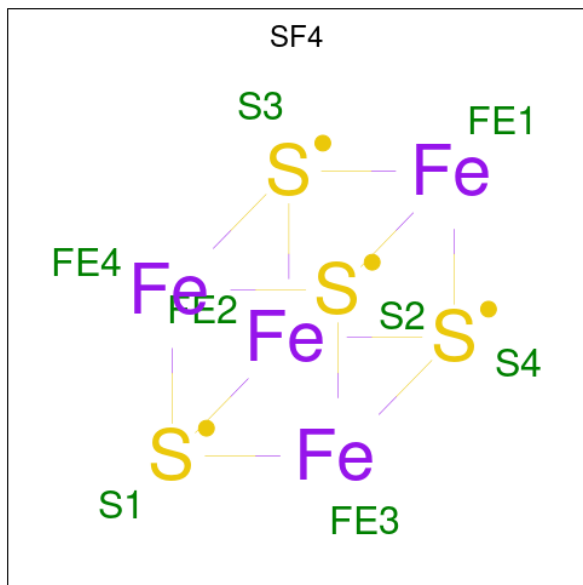
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
46	A	1	Total 35	C 25	N 1	O 8	P 1	0
46	A	1	Total 41	C 31	N 1	O 8	P 1	0
46	B	1	Total 48	C 38	N 1	O 8	P 1	0
46	H	1	Total 48	C 38	N 1	O 8	P 1	0
46	H	1	Total 39	C 29	N 1	O 8	P 1	0
46	I	1	Total 54	C 44	N 1	O 8	P 1	0
46	L	1	Total 54	C 44	N 1	O 8	P 1	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
46	M	1	Total 35	C 25	N 1	O 8	P 1	0
46	Z	1	Total 44	C 34	N 1	O 8	P 1	0
46	d	1	Total 39	C 29	N 1	O 8	P 1	0
46	g	1	Total 44	C 34	N 1	O 8	P 1	0
46	h	1	Total 40	C 30	N 1	O 8	P 1	0
46	m	1	Total 40	C 30	N 1	O 8	P 1	0
46	q	1	Total 23	C 13	N 1	O 8	P 1	0

- Molecule 47 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).



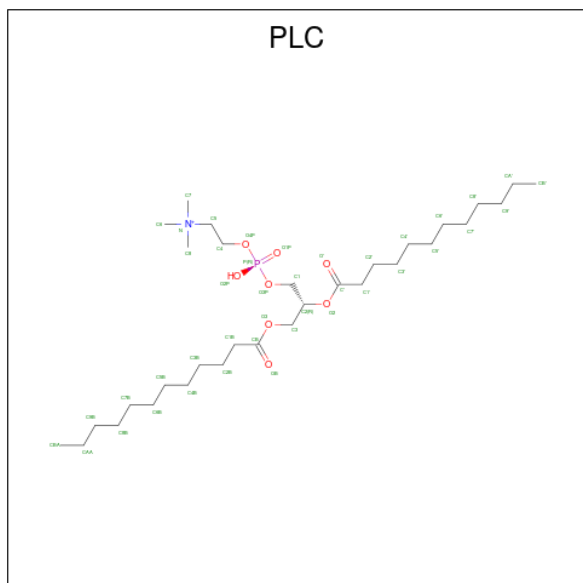
Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
47	B	1	Total 8	Fe 4	S 4	0
47	F	1	Total 8	Fe 4	S 4	0
47	G	1	Total 8	Fe 4	S 4	0
47	G	1	Total 8	Fe 4	S 4	0

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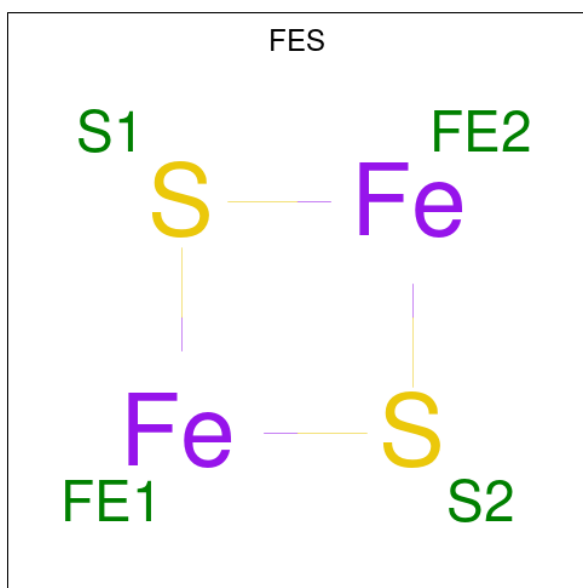
Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
47	I	1	8	4	4	0
47	I	1	8	4	4	0

- Molecule 48 is DIUNDECYL PHOSPHATIDYL CHOLINE (three-letter code: PLC) (formula: $C_{32}H_{65}NO_8P$).



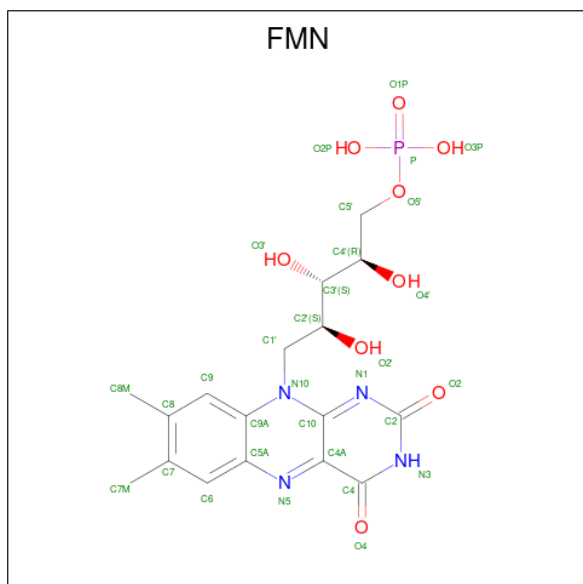
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
48	B	1	28	18	1	8	1	0
48	J	1	35	25	1	8	1	0
48	L	1	42	32	1	8	1	0
48	O	1	42	32	1	8	1	0
48	Y	1	37	27	1	8	1	0
48	Z	1	34	24	1	8	1	0
48	b	1	38	28	1	8	1	0
48	d	1	32	22	1	8	1	0
48	g	1	28	18	1	8	1	0

- Molecule 49 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe₂S₂).



Mol	Chain	Residues	Atoms			AltConf
49	E	1	Total	Fe	S	0
			4	2	2	
49	G	1	Total	Fe	S	0
			4	2	2	

- Molecule 50 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: C₁₇H₂₁N₄O₉P).



Mol	Chain	Residues	Atoms					AltConf
50	F	1	Total	C	N	O	P	0
			31	17	4	9	1	

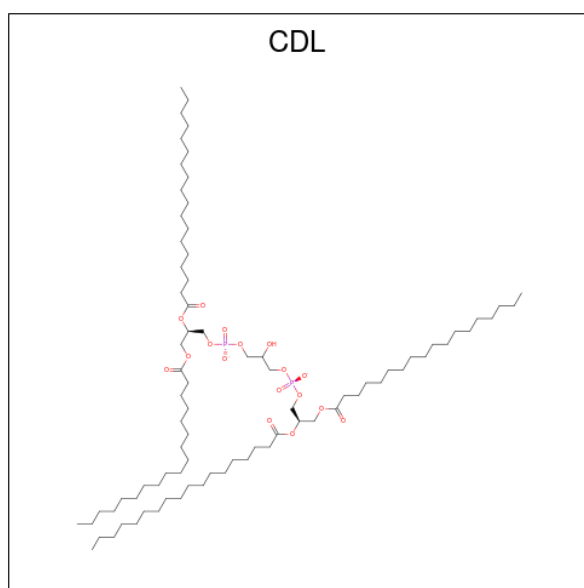
- Molecule 51 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
51	G	1	Total K 1 1	0

- Molecule 52 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
52	M	1	Total Zn 1 1	0
52	R	1	Total Zn 1 1	0

- Molecule 53 is CARDIOLIPIN (three-letter code: CDL) (formula: C₈₁H₁₅₆O₁₇P₂).



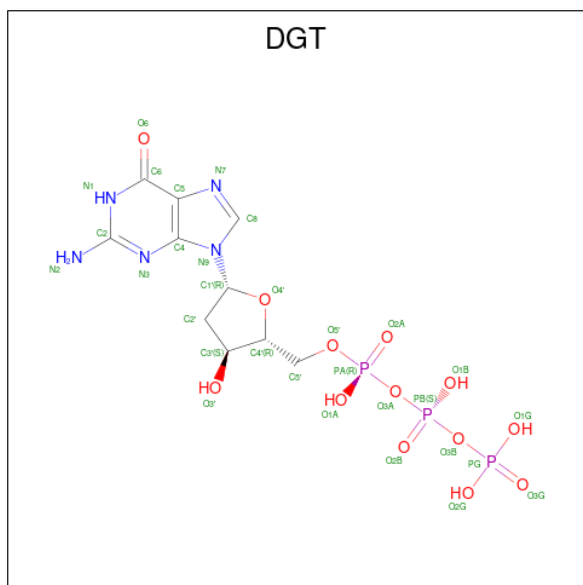
Mol	Chain	Residues	Atoms	AltConf
53	M	1	Total C O P 100 81 17 2	0
53	N	1	Total C O P 84 65 17 2	0
53	X	1	Total C O P 86 67 17 2	0
53	d	1	Total C O P 65 46 17 2	0
53	h	1	Total C O P 70 51 17 2	0
53	i	1	Total C O P 72 53 17 2	0

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Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
53	r	1	58	39	17	2	0

- Molecule 54 is 2'-DEOXYGUANOSINE-5'-TRIPHOSPHATE (three-letter code: DGT) (formula: C₁₀H₁₆N₅O₁₃P₃).

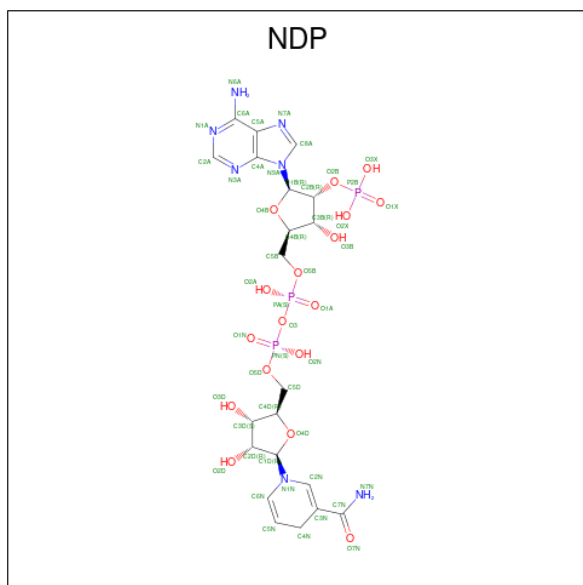


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
54	O	1	31	10	5	13	3	0

- Molecule 55 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

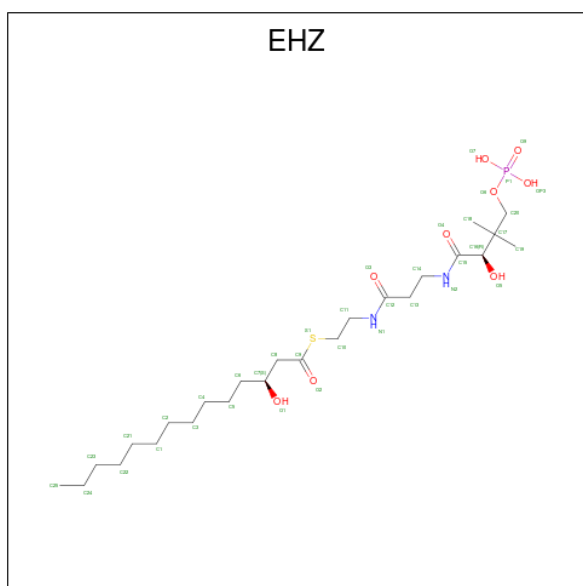
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
55	O	1	1	1	0

- Molecule 56 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: C₂₁H₃₀N₇O₁₇P₃).

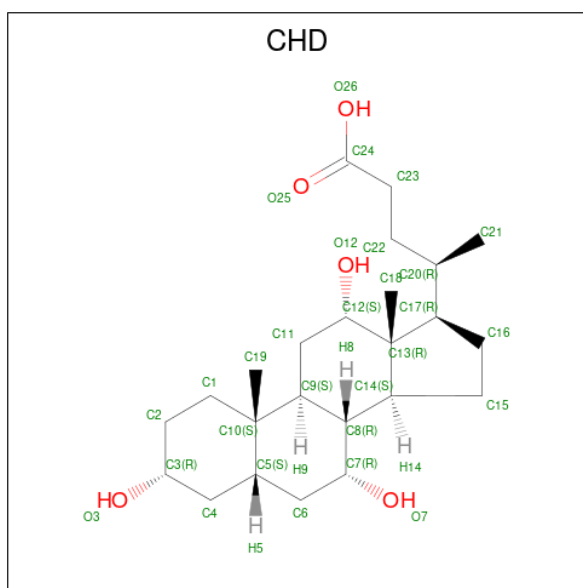


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
56	P	1	48	21	7	17	3	0

- Molecule 57 is {S}-[2-[3-[(2 {R})-3,3-dimethyl-2-oxidanyl-4-phosphonoxy-butanoyl]amino]propanoylamino]ethyl] (3 {S})-3-oxidanyltetradecanethioate (three-letter code: EHZ) (formula: C₂₅H₄₉N₂O₉PS).

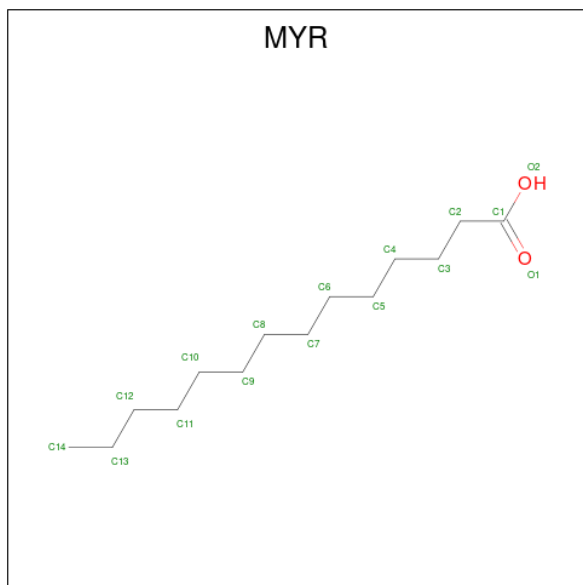


- Molecule 58 is CHOLIC ACID (three-letter code: CHD) (formula: $C_{24}H_{40}O_5$).



Mol	Chain	Residues	Atoms		AltConf	
58	i	1	Total	C	O	0
			29	24	5	

- Molecule 59 is MYRISTIC ACID (three-letter code: MYR) (formula: $C_{14}H_{28}O_2$).




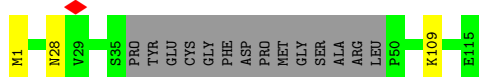
Mol	Chain	Residues	Atoms		AltConf	
59	o	1	Total	C	O	0
			15	14	1	

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.

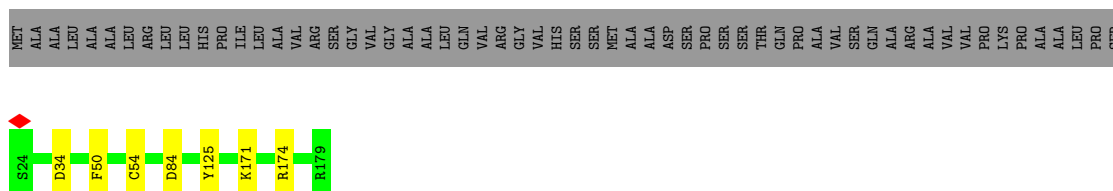
- Molecule 1: NADH-ubiquinone oxidoreductase chain 3

Chain A:  85% 12%




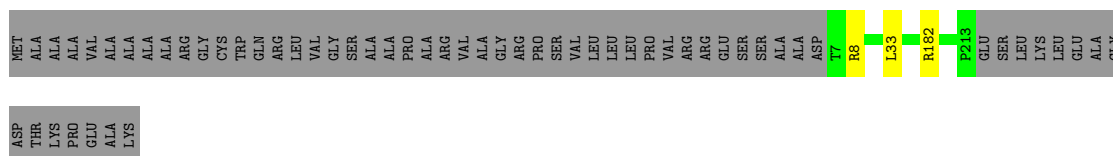
- Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

Chain B:  69% 28%




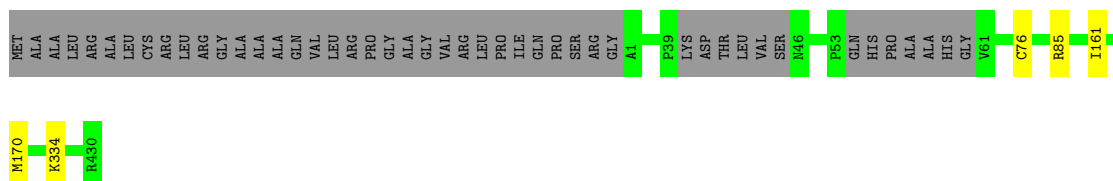
- Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial

Chain C:  77% 22%



- Molecule 4: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial

Chain D:  89% 10%

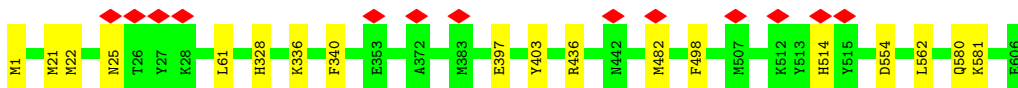


Chain K:  96%



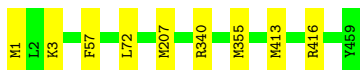
- Molecule 12: NADH-ubiquinone oxidoreductase chain 5

Chain L:  97%



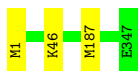
- Molecule 13: NADH-ubiquinone oxidoreductase chain 4

Chain M:  98%




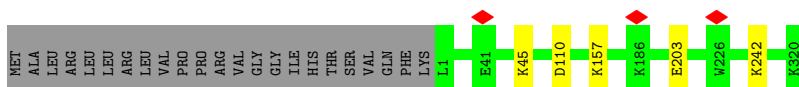
- Molecule 14: NADH-ubiquinone oxidoreductase chain 2

Chain N:  99%




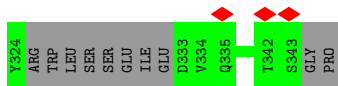
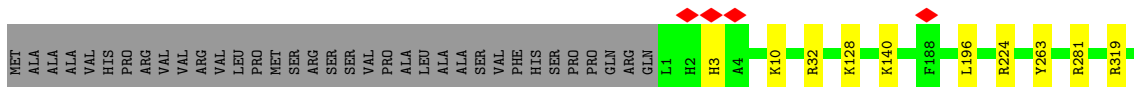
- Molecule 15: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

Chain O:  92% 7%




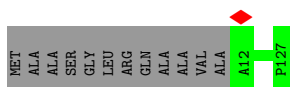
- Molecule 16: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial

Chain P:  86% 12%



- Molecule 17: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial

Chain W:  91% 9%



- Molecule 23: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

Chain X:  98% ..



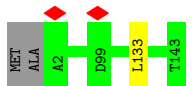
- Molecule 24: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

Chain Y:  96% ..



- Molecule 25: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13

Chain Z:  98% ..



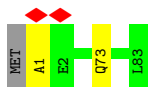
- Molecule 26: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1

Chain a:  100%

There are no outlier residues recorded for this chain.

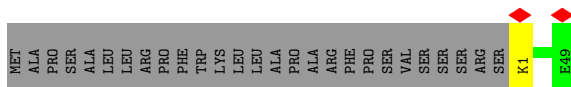
- Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

Chain b:  96% ..

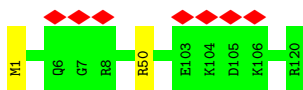


- Molecule 28: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial

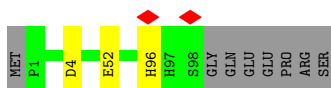
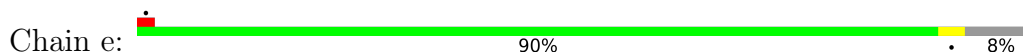
Chain c:  63% 36%



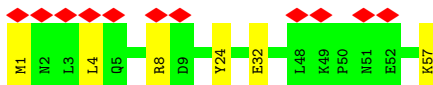
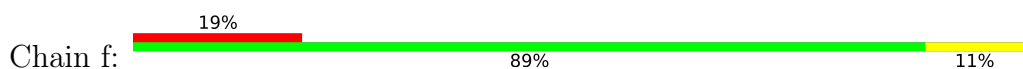
- Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C2



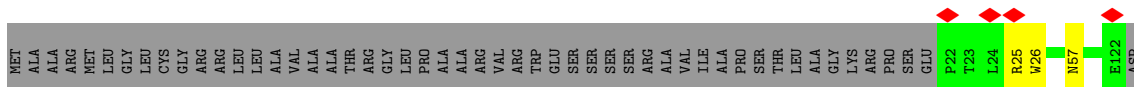
- Molecule 30: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



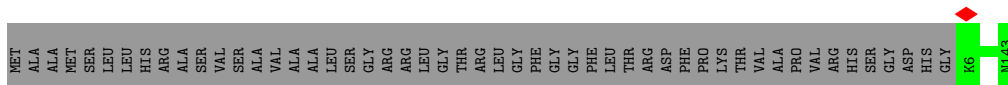
- Molecule 31: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1



- Molecule 32: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial



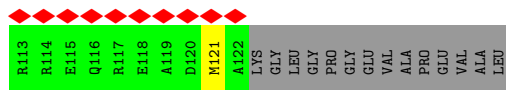
- Molecule 33: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial



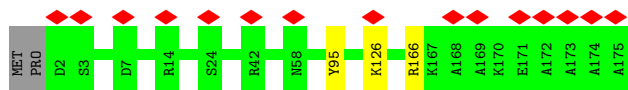
- Molecule 34: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6



- Molecule 35: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial



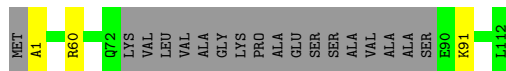
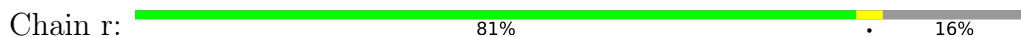
- Molecule 41: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10



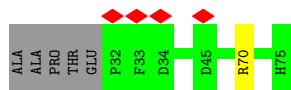
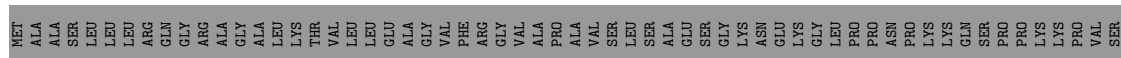
- Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12



- Molecule 43: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7



- Molecule 44: NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	93255	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 ($e^-/\text{\AA}^2$)	40, 40	Depositor
Minimum defocus (nm)	900	Depositor
Maximum defocus (nm)	2300	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k), GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.355	Depositor
Minimum map value	-0.005	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.022	Depositor
Map size (\AA)	514.56, 514.56, 514.56	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.072, 1.072, 1.072	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: FES, K, SAC, FMN, AME, CDL, MG, DGT, MYR, CHD, ZN, AYA, NDP, PLC, 3PE, SF4, FME, EHZ, 2MR, PC1

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	0.23	0/825	0.37	0/1128
2	B	0.28	0/1278	0.52	0/1728
3	C	0.27	0/1772	0.51	0/2413
4	D	0.27	0/3437	0.49	0/4654
5	E	0.26	0/1699	0.46	0/2312
6	F	0.25	0/3401	0.50	0/4595
7	G	0.25	0/5387	0.50	0/7301
8	H	0.25	0/2557	0.44	0/3492
9	I	0.28	0/1445	0.52	0/1956
10	J	0.26	0/1301	0.40	0/1761
11	K	0.24	0/745	0.42	0/1008
12	L	0.24	0/4920	0.41	0/6694
13	M	0.24	0/3738	0.42	0/5097
14	N	0.24	0/2792	0.42	0/3800
15	O	0.25	0/2651	0.42	0/3587
16	P	0.25	0/2763	0.50	0/3747
17	Q	0.24	0/1072	0.51	0/1449
18	R	0.26	0/753	0.50	0/1014
19	S	0.23	0/702	0.51	0/945
20	T	0.24	0/719	0.39	0/971
20	U	0.24	0/719	0.41	0/971
21	V	0.23	0/943	0.40	0/1277
22	W	0.24	0/1006	0.50	0/1352
23	X	0.24	0/1439	0.47	0/1942
24	Y	0.23	0/1042	0.45	0/1414
25	Z	0.25	0/1186	0.50	0/1599
26	a	0.26	0/584	0.51	0/786
27	b	0.24	0/667	0.44	0/916
28	c	0.25	0/427	0.39	0/579
29	d	0.26	0/1018	0.48	0/1375
30	e	0.24	0/846	0.49	0/1131

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
31	f	0.25	0/505	0.45	0/681
32	g	0.24	0/873	0.46	0/1186
33	h	0.24	0/1188	0.47	0/1607
34	i	0.24	0/1127	0.46	0/1534
35	j	0.24	0/624	0.43	0/855
36	k	0.24	0/672	0.45	0/906
37	l	0.24	0/1369	0.44	0/1873
38	m	0.25	0/1088	0.51	0/1472
39	n	0.24	0/1540	0.48	0/2085
40	o	0.24	0/1073	0.52	0/1437
41	p	0.24	0/1491	0.48	0/2011
42	q	0.26	0/1242	0.49	0/1688
43	r	0.26	0/789	0.50	0/1068
44	s	0.24	0/383	0.48	0/518
All	All	0.25	0/67798	0.47	0/91915

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	97/115 (84%)	94 (97%)	3 (3%)	0	100	100
2	B	154/216 (71%)	151 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	C	205/266 (77%)	200 (98%)	5 (2%)	0	100	100
4	D	410/463 (89%)	399 (97%)	11 (3%)	0	100	100
5	E	212/249 (85%)	205 (97%)	7 (3%)	0	100	100
6	F	430/464 (93%)	419 (97%)	11 (3%)	0	100	100
7	G	689/727 (95%)	664 (96%)	25 (4%)	0	100	100
8	H	312/318 (98%)	300 (96%)	12 (4%)	0	100	100
9	I	174/212 (82%)	170 (98%)	4 (2%)	0	100	100
10	J	164/175 (94%)	156 (95%)	8 (5%)	0	100	100
11	K	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
12	L	604/606 (100%)	585 (97%)	18 (3%)	1 (0%)	47	71
13	M	457/459 (100%)	451 (99%)	6 (1%)	0	100	100
14	N	345/347 (99%)	336 (97%)	9 (3%)	0	100	100
15	O	318/343 (93%)	310 (98%)	8 (2%)	0	100	100
16	P	331/380 (87%)	322 (97%)	9 (3%)	0	100	100
17	Q	127/175 (73%)	124 (98%)	3 (2%)	0	100	100
18	R	94/124 (76%)	93 (99%)	1 (1%)	0	100	100
19	S	84/99 (85%)	81 (96%)	3 (4%)	0	100	100
20	T	86/156 (55%)	83 (96%)	3 (4%)	0	100	100
20	U	86/156 (55%)	82 (95%)	4 (5%)	0	100	100
21	V	112/116 (97%)	111 (99%)	1 (1%)	0	100	100
22	W	114/128 (89%)	111 (97%)	3 (3%)	0	100	100
23	X	169/172 (98%)	167 (99%)	2 (1%)	0	100	100
24	Y	138/141 (98%)	136 (99%)	2 (1%)	0	100	100
25	Z	140/144 (97%)	137 (98%)	3 (2%)	0	100	100
26	a	68/70 (97%)	67 (98%)	1 (2%)	0	100	100
27	b	81/84 (96%)	78 (96%)	3 (4%)	0	100	100
28	c	47/76 (62%)	47 (100%)	0	0	100	100
29	d	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
30	e	96/106 (91%)	94 (98%)	2 (2%)	0	100	100
31	f	55/57 (96%)	53 (96%)	2 (4%)	0	100	100
32	g	99/154 (64%)	91 (92%)	8 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	h	136/189 (72%)	135 (99%)	1 (1%)	0	100	100
34	i	125/128 (98%)	120 (96%)	5 (4%)	0	100	100
35	j	69/108 (64%)	64 (93%)	5 (7%)	0	100	100
36	k	79/98 (81%)	75 (95%)	4 (5%)	0	100	100
37	l	154/186 (83%)	141 (92%)	13 (8%)	0	100	100
38	m	126/129 (98%)	123 (98%)	3 (2%)	0	100	100
39	n	169/179 (94%)	160 (95%)	9 (5%)	0	100	100
40	o	120/137 (88%)	108 (90%)	12 (10%)	0	100	100
41	p	172/176 (98%)	171 (99%)	1 (1%)	0	100	100
42	q	143/145 (99%)	143 (100%)	0	0	100	100
43	r	91/113 (80%)	88 (97%)	3 (3%)	0	100	100
44	s	42/109 (38%)	41 (98%)	1 (2%)	0	100	100
All	All	8138/9213 (88%)	7896 (97%)	241 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	L	562	LEU

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	89/100 (89%)	87 (98%)	2 (2%)	52	76
2	B	132/175 (75%)	125 (95%)	7 (5%)	22	45
3	C	188/228 (82%)	185 (98%)	3 (2%)	62	82
4	D	360/392 (92%)	356 (99%)	4 (1%)	73	88
5	E	183/205 (89%)	173 (94%)	10 (6%)	21	43
6	F	346/368 (94%)	337 (97%)	9 (3%)	46	72

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	G	579/608 (95%)	565 (98%)	14 (2%)	49	74
8	H	272/274 (99%)	263 (97%)	9 (3%)	38	64
9	I	151/175 (86%)	149 (99%)	2 (1%)	69	86
10	J	134/141 (95%)	131 (98%)	3 (2%)	52	76
11	K	85/85 (100%)	82 (96%)	3 (4%)	36	62
12	L	533/533 (100%)	517 (97%)	16 (3%)	41	67
13	M	412/412 (100%)	404 (98%)	8 (2%)	57	79
14	N	315/315 (100%)	313 (99%)	2 (1%)	86	95
15	O	283/303 (93%)	278 (98%)	5 (2%)	59	80
16	P	289/327 (88%)	279 (96%)	10 (4%)	36	62
17	Q	116/153 (76%)	114 (98%)	2 (2%)	60	81
18	R	79/97 (81%)	78 (99%)	1 (1%)	69	86
19	S	76/82 (93%)	73 (96%)	3 (4%)	32	58
20	T	81/135 (60%)	79 (98%)	2 (2%)	47	73
20	U	81/135 (60%)	77 (95%)	4 (5%)	25	48
21	V	101/102 (99%)	100 (99%)	1 (1%)	76	90
22	W	108/114 (95%)	108 (100%)	0	100	100
23	X	154/155 (99%)	151 (98%)	3 (2%)	57	79
24	Y	101/102 (99%)	98 (97%)	3 (3%)	41	67
25	Z	120/121 (99%)	119 (99%)	1 (1%)	81	92
26	a	59/59 (100%)	59 (100%)	0	100	100
27	b	71/72 (99%)	70 (99%)	1 (1%)	67	85
28	c	45/68 (66%)	44 (98%)	1 (2%)	52	76
29	d	105/105 (100%)	104 (99%)	1 (1%)	76	90
30	e	89/96 (93%)	86 (97%)	3 (3%)	37	63
31	f	54/54 (100%)	48 (89%)	6 (11%)	6	11
32	g	92/131 (70%)	89 (97%)	3 (3%)	38	64
33	h	121/158 (77%)	121 (100%)	0	100	100
34	i	120/121 (99%)	116 (97%)	4 (3%)	38	64
35	j	61/84 (73%)	60 (98%)	1 (2%)	62	82
36	k	63/76 (83%)	58 (92%)	5 (8%)	12	24

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	l	140/159 (88%)	137 (98%)	3 (2%)	53	77
38	m	113/114 (99%)	110 (97%)	3 (3%)	44	71
39	n	156/161 (97%)	153 (98%)	3 (2%)	57	79
40	o	110/120 (92%)	100 (91%)	10 (9%)	9	18
41	p	155/157 (99%)	152 (98%)	3 (2%)	57	79
42	q	130/130 (100%)	125 (96%)	5 (4%)	33	59
43	r	85/97 (88%)	83 (98%)	2 (2%)	49	74
44	s	43/92 (47%)	42 (98%)	1 (2%)	50	75
All	All	7180/7891 (91%)	6998 (98%)	182 (2%)	50	73

All (182) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	28	ASN
1	A	109	LYS
2	B	34	ASP
2	B	50	PHE
2	B	54	CYS
2	B	84	ASP
2	B	125	TYR
2	B	171	LYS
2	B	174	ARG
3	C	8	ARG
3	C	33	LEU
3	C	182	ARG
4	D	76	CYS
4	D	161	ILE
4	D	170	MET
4	D	334	LYS
5	E	10	ARG
5	E	36	LYS
5	E	63	ILE
5	E	99	HIS
5	E	118	GLU
5	E	123	LYS
5	E	127	LYS
5	E	136	LEU
5	E	169	ILE
5	E	181	ILE

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Mol	Chain	Res	Type
6	F	9	LYS
6	F	108	ARG
6	F	114	ASP
6	F	249	ARG
6	F	251	SER
6	F	359	CYS
6	F	365	CYS
6	F	405	CYS
6	F	436	GLN
7	G	35	MET
7	G	39	ARG
7	G	121	MET
7	G	224	LYS
7	G	288	LYS
7	G	329	ILE
7	G	375	ASP
7	G	447	LYS
7	G	448	LYS
7	G	540	ASP
7	G	581	GLN
7	G	636	VAL
7	G	659	ASP
7	G	689	LYS
8	H	5	ASN
8	H	8	MET
8	H	59	GLU
8	H	62	ARG
8	H	73	LEU
8	H	222	LEU
8	H	237	PHE
8	H	254	LEU
8	H	274	ARG
9	I	14	MET
9	I	144	HIS
10	J	76	THR
10	J	114	GLU
10	J	135	PHE
11	K	34	GLU
11	K	37	MET
11	K	53	PHE
12	L	21	MET
12	L	22	MET

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Mol	Chain	Res	Type
12	L	25	ASN
12	L	61	LEU
12	L	328	HIS
12	L	336	LYS
12	L	340	PHE
12	L	397	GLU
12	L	403	TYR
12	L	436	ARG
12	L	482	MET
12	L	498	PHE
12	L	514	HIS
12	L	554	ASP
12	L	580	GLN
12	L	581	LYS
13	M	3	LYS
13	M	57	PHE
13	M	72	LEU
13	M	207	MET
13	M	340	ARG
13	M	355	MET
13	M	413	MET
13	M	416	ARG
14	N	46	LYS
14	N	187	MET
15	O	45	LYS
15	O	110	ASP
15	O	157	LYS
15	O	203	GLU
15	O	242	LYS
16	P	3	HIS
16	P	10	LYS
16	P	32	ARG
16	P	128	LYS
16	P	140	LYS
16	P	196	LEU
16	P	224	ARG
16	P	263	TYR
16	P	281	ARG
16	P	319	ARG
17	Q	31	LYS
17	Q	44	ASN
18	R	3	ARG

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Mol	Chain	Res	Type
19	S	30	GLN
19	S	39	ARG
19	S	97	LYS
20	T	12	LYS
20	T	16	LEU
20	U	38	LYS
20	U	42	LEU
20	U	61	GLU
20	U	71	MET
21	V	65	LYS
23	X	25	LYS
23	X	47	TRP
23	X	76	HIS
24	Y	49	LEU
24	Y	114	CYS
24	Y	119	LEU
25	Z	133	LEU
27	b	73	GLN
28	c	1	LYS
29	d	50	ARG
30	e	4	ASP
30	e	52	GLU
30	e	96	HIS
31	f	1	MET
31	f	4	LEU
31	f	8	ARG
31	f	24	TYR
31	f	32	GLU
31	f	57	LYS
32	g	25	ARG
32	g	26	TRP
32	g	57	ASN
34	i	12	GLN
34	i	38	ARG
34	i	48	LYS
34	i	66	HIS
35	j	40	PHE
36	k	23	ILE
36	k	33	GLU
36	k	74	PHE
36	k	86	TYR
36	k	91	LYS

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Mol	Chain	Res	Type
37	l	6	LYS
37	l	8	MET
37	l	126	GLN
38	m	30	LYS
38	m	79	PHE
38	m	110	ARG
39	n	84	SER
39	n	104	ASP
39	n	153	LEU
40	o	7	ARG
40	o	17	ASP
40	o	19	LEU
40	o	21	MET
40	o	28	TYR
40	o	30	PHE
40	o	52	LEU
40	o	60	HIS
40	o	103	ARG
40	o	121	MET
41	p	95	TYR
41	p	126	LYS
41	p	166	ARG
42	q	3	LEU
42	q	4	LEU
42	q	59	HIS
42	q	115	PHE
42	q	144	TYR
43	r	60	ARG
43	r	91	LYS
44	s	70	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
13	M	338	HIS
34	i	82	HIS
40	o	60	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
29	AME	d	1	29	9,10,11	1.45	1 (11%)	9,11,13	1.55	2 (22%)
13	FME	M	1	13	8,9,10	1.49	1 (12%)	7,9,11	1.67	1 (14%)
14	FME	N	1	14	8,9,10	1.50	1 (12%)	7,9,11	1.66	2 (28%)
11	FME	K	1	11	8,9,10	1.51	1 (12%)	7,9,11	1.67	1 (14%)
27	AYA	b	1	27	6,7,8	1.81	1 (16%)	5,8,10	1.26	1 (20%)
4	2MR	D	85	4	10,12,13	2.38	2 (20%)	5,13,15	1.37	1 (20%)
43	AYA	r	1	43	6,7,8	1.79	2 (33%)	5,8,10	1.35	1 (20%)
34	SAC	i	1	34	7,8,9	1.68	1 (14%)	8,9,11	1.50	1 (12%)
1	FME	A	1	1	8,9,10	1.51	1 (12%)	7,9,11	1.65	2 (28%)
12	FME	L	1	12	8,9,10	1.51	1 (12%)	7,9,11	1.74	3 (42%)
8	FME	H	1	8	8,9,10	1.50	1 (12%)	7,9,11	1.76	3 (42%)
10	FME	J	1	10	8,9,10	1.51	1 (12%)	7,9,11	1.67	2 (28%)
24	AYA	Y	1	24	6,7,8	1.81	2 (33%)	5,8,10	1.50	1 (20%)
42	AME	q	1	42	9,10,11	1.47	1 (11%)	9,11,13	1.98	3 (33%)
38	SAC	m	1	38	7,8,9	1.66	1 (14%)	8,9,11	1.25	1 (12%)

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
29	AME	d	1	29	-	0/9/10/12	-
13	FME	M	1	13	-	2/7/9/11	-
14	FME	N	1	14	-	2/7/9/11	-
11	FME	K	1	11	-	2/7/9/11	-
27	AYA	b	1	27	-	0/4/6/8	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	2MR	D	85	4	-	0/10/13/15	-
43	AYA	r	1	43	-	0/4/6/8	-
34	SAC	i	1	34	-	2/7/8/10	-
1	FME	A	1	1	-	2/7/9/11	-
12	FME	L	1	12	-	2/7/9/11	-
8	FME	H	1	8	-	1/7/9/11	-
10	FME	J	1	10	-	2/7/9/11	-
24	AYA	Y	1	24	-	0/4/6/8	-
42	AME	q	1	42	-	4/9/10/12	-
38	SAC	m	1	38	-	0/7/8/10	-

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	85	2MR	CZ-NH2	5.21	1.45	1.33
4	D	85	2MR	CZ-NE	5.05	1.45	1.34
11	K	1	FME	CN-N	3.69	1.45	1.33
12	L	1	FME	CN-N	3.66	1.45	1.33
10	J	1	FME	CN-N	3.65	1.45	1.33
1	A	1	FME	CN-N	3.65	1.45	1.33
14	N	1	FME	CN-N	3.64	1.45	1.33
8	H	1	FME	CN-N	3.62	1.45	1.33
13	M	1	FME	CN-N	3.61	1.45	1.33
34	i	1	SAC	C1A-N	3.39	1.46	1.34
27	b	1	AYA	CT-N	3.31	1.45	1.34
38	m	1	SAC	C1A-N	3.31	1.45	1.34
42	q	1	AME	CT1-N	3.27	1.45	1.34
29	d	1	AME	CT1-N	3.26	1.45	1.34
43	r	1	AYA	CT-N	3.21	1.45	1.34
24	Y	1	AYA	CT-N	3.16	1.45	1.34
24	Y	1	AYA	OT-CT	-2.06	1.18	1.23
43	r	1	AYA	OT-CT	-2.04	1.18	1.23

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	q	1	AME	CE-SD-CG	3.98	114.08	100.40
34	i	1	SAC	C2A-C1A-N	3.16	121.45	116.10
8	H	1	FME	CE-SD-CG	2.83	110.13	100.40
11	K	1	FME	CE-SD-CG	2.75	109.84	100.40
13	M	1	FME	CE-SD-CG	2.74	109.81	100.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1	FME	CE-SD-CG	2.73	109.77	100.40
10	J	1	FME	CE-SD-CG	2.70	109.67	100.40
12	L	1	FME	CE-SD-CG	2.69	109.63	100.40
14	N	1	FME	CE-SD-CG	2.63	109.43	100.40
42	q	1	AME	CT2-CT1-N	2.63	120.55	116.10
29	d	1	AME	CE-SD-CG	2.59	109.30	100.40
24	Y	1	AYA	CM-CT-N	2.48	120.31	116.10
43	r	1	AYA	CM-CT-N	2.43	120.21	116.10
29	d	1	AME	CT2-CT1-N	2.36	120.10	116.10
38	m	1	SAC	C2A-C1A-N	2.20	119.83	116.10
27	b	1	AYA	CM-CT-N	2.16	119.76	116.10
12	L	1	FME	CA-N-CN	-2.13	119.55	122.82
12	L	1	FME	O1-CN-N	-2.11	119.71	125.27
4	D	85	2MR	CD-NE-CZ	-2.11	119.46	123.41
8	H	1	FME	CA-N-CN	-2.11	119.58	122.82
8	H	1	FME	O1-CN-N	-2.07	119.82	125.27
42	q	1	AME	CA-N-CT1	-2.06	119.34	123.15
10	J	1	FME	O1-CN-N	-2.04	119.89	125.27
1	A	1	FME	O1-CN-N	-2.02	119.95	125.27
14	N	1	FME	O1-CN-N	-2.01	119.99	125.27

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1	FME	C-CA-CB-CG
11	K	1	FME	O1-CN-N-CA
13	M	1	FME	C-CA-CB-CG
14	N	1	FME	O1-CN-N-CA
42	q	1	AME	N-CA-CB-CG
12	L	1	FME	CA-CB-CG-SD
42	q	1	AME	CA-CB-CG-SD
42	q	1	AME	CB-CG-SD-CE
34	i	1	SAC	C2A-C1A-N-CA
34	i	1	SAC	OAC-C1A-N-CA
10	J	1	FME	N-CA-CB-CG
13	M	1	FME	N-CA-CB-CG
14	N	1	FME	N-CA-CB-CG
12	L	1	FME	CB-CA-N-CN
42	q	1	AME	C-CA-CB-CG
11	K	1	FME	C-CA-CB-CG
8	H	1	FME	CB-CA-N-CN

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Mol	Chain	Res	Type	Atoms
10	J	1	FME	CB-CA-N-CN
1	A	1	FME	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 81 ligands modelled in this entry, 4 are monoatomic - leaving 77 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
45	3PE	f	101	-	50,50,50	0.87	4 (8%)	53,55,55	1.06	2 (3%)
46	PC1	h	202	-	39,39,53	1.07	4 (10%)	45,47,61	1.07	2 (4%)
47	SF4	F	501	6	0,12,12	-	-	-	-	-
45	3PE	b	102	-	50,50,50	0.87	4 (8%)	53,55,55	1.09	2 (3%)
53	CDL	N	404	-	83,83,99	0.95	8 (9%)	89,95,111	1.06	4 (4%)
53	CDL	X	201	-	85,85,99	0.94	8 (9%)	91,97,111	1.09	4 (4%)
48	PLC	Y	208	-	36,36,41	0.53	0	42,44,49	0.57	0
45	3PE	m	202	-	29,29,50	1.11	4 (13%)	32,34,55	1.17	2 (6%)
46	PC1	d	202	-	38,38,53	1.10	4 (10%)	44,46,61	0.98	2 (4%)
47	SF4	G	802	7	0,12,12	-	-	-	-	-
45	3PE	Y	206	-	33,33,50	1.04	4 (12%)	36,38,55	1.13	2 (5%)
48	PLC	d	203	-	31,31,41	0.57	0	37,39,49	0.59	0
53	CDL	i	202	-	71,71,99	1.02	8 (11%)	77,83,111	1.13	4 (5%)
46	PC1	A	203	-	40,40,53	1.07	4 (10%)	46,48,61	1.04	2 (4%)
49	FES	G	803	7	0,4,4	-	-	-	-	-

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	3PE	d	201	-	48,48,50	0.88	4 (8%)	51,53,55	1.05	2 (3%)
48	PLC	L	703	-	41,41,41	0.51	0	47,49,49	0.51	0
46	PC1	m	203	-	39,39,53	1.07	4 (10%)	45,47,61	1.07	2 (4%)
53	CDL	h	203	-	69,69,99	1.03	8 (11%)	75,81,111	1.08	4 (5%)
57	EHZ	U	101	20	29,36,37	1.70	5 (17%)	35,44,47	1.56	6 (17%)
54	DGT	O	401	55	26,33,33	2.66	8 (30%)	32,52,52	1.68	10 (31%)
46	PC1	L	701	-	53,53,53	0.94	4 (7%)	59,61,61	0.95	2 (3%)
46	PC1	H	403	-	38,38,53	1.09	4 (10%)	44,46,61	1.01	2 (4%)
45	3PE	M	602	-	29,29,50	1.10	4 (13%)	32,34,55	1.05	2 (6%)
50	FMN	F	502	-	33,33,33	2.77	10 (30%)	48,50,50	1.76	15 (31%)
46	PC1	H	402	-	47,47,53	1.01	4 (8%)	53,55,61	1.01	2 (3%)
46	PC1	A	202	-	34,34,53	1.16	4 (11%)	40,42,61	1.08	2 (5%)
47	SF4	I	201	9	0,12,12	-	-	-	-	-
45	3PE	q	201	-	50,50,50	0.86	4 (8%)	53,55,55	1.07	2 (3%)
45	3PE	N	401	-	44,44,50	0.92	4 (9%)	47,49,55	1.08	2 (4%)
46	PC1	q	202	-	22,22,53	1.33	3 (13%)	28,30,61	0.88	1 (3%)
48	PLC	O	403	-	41,41,41	0.51	0	47,49,49	0.55	0
58	CHD	i	201	-	32,32,32	3.22	10 (31%)	51,51,51	2.42	19 (37%)
45	3PE	b	101	-	46,46,50	0.89	4 (8%)	49,51,55	1.01	2 (4%)
45	3PE	h	201	-	31,31,50	1.08	4 (12%)	34,36,55	1.16	2 (5%)
45	3PE	N	402	-	39,39,50	0.96	4 (10%)	42,44,55	1.12	2 (4%)
47	SF4	I	202	9	0,12,12	-	-	-	-	-
45	3PE	Y	202	-	50,50,50	0.86	4 (8%)	53,55,55	1.08	2 (3%)
45	3PE	J	201	-	30,30,50	1.09	4 (13%)	33,35,55	1.14	2 (6%)
46	PC1	M	606	-	34,34,53	1.15	4 (11%)	40,42,61	1.08	2 (5%)
48	PLC	g	202	-	27,27,41	0.60	0	33,35,49	0.65	1 (3%)
45	3PE	M	603	-	49,49,50	0.87	4 (8%)	52,54,55	1.03	2 (3%)
47	SF4	B	201	2	0,12,12	-	-	-	-	-
45	3PE	L	702	-	44,44,50	0.91	4 (9%)	47,49,55	1.06	2 (4%)
45	3PE	Z	201	-	36,36,50	1.00	4 (11%)	39,41,55	1.03	2 (5%)
49	FES	E	301	5	0,4,4	-	-	-	-	-
45	3PE	I	203	-	36,36,50	1.01	4 (11%)	39,41,55	1.13	2 (5%)
46	PC1	I	204	-	53,53,53	0.93	4 (7%)	59,61,61	1.05	2 (3%)
45	3PE	K	101	-	43,43,50	0.93	4 (9%)	46,48,55	1.03	2 (4%)
45	3PE	J	202	-	35,35,50	1.01	4 (11%)	38,40,55	1.16	2 (5%)
45	3PE	Y	205	-	45,45,50	0.91	4 (8%)	48,50,55	1.09	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	PC1	B	202	-	47,47,53	1.00	4 (8%)	53,55,61	1.09	2 (3%)
46	PC1	g	201	-	43,43,53	1.03	4 (9%)	49,51,61	1.01	2 (4%)
47	SF4	G	801	7	0,12,12	-	-	-	-	-
45	3PE	Y	207	-	50,50,50	0.87	4 (8%)	53,55,55	1.04	2 (3%)
45	3PE	Y	204	-	50,50,50	0.86	4 (8%)	53,55,55	1.05	2 (3%)
45	3PE	Y	203	-	50,50,50	0.87	4 (8%)	53,55,55	1.08	2 (3%)
45	3PE	M	605	-	44,44,50	0.90	4 (9%)	47,49,55	1.14	2 (4%)
48	PLC	b	103	-	37,37,41	0.52	0	43,45,49	0.54	0
46	PC1	Z	203	-	43,43,53	1.03	4 (9%)	49,51,61	1.02	2 (4%)
56	NDP	P	501	-	45,52,52	4.27	24 (53%)	53,80,80	2.08	5 (9%)
45	3PE	m	201	-	40,40,50	0.97	4 (10%)	43,45,55	1.11	2 (4%)
53	CDL	M	607	-	99,99,99	0.88	8 (8%)	105,111,111	1.09	4 (3%)
45	3PE	r	201	-	27,27,50	1.15	4 (14%)	30,32,55	1.18	2 (6%)
45	3PE	N	403	-	48,48,50	0.88	4 (8%)	51,53,55	1.06	2 (3%)
48	PLC	B	203	-	27,27,41	0.61	0	33,35,49	0.59	0
45	3PE	Z	202	-	50,50,50	0.87	4 (8%)	53,55,55	1.02	2 (3%)
53	CDL	d	204	-	64,64,99	1.06	8 (12%)	70,76,111	1.14	4 (5%)
45	3PE	H	401	-	35,35,50	1.01	4 (11%)	38,40,55	1.05	2 (5%)
53	CDL	r	202	-	57,57,99	1.13	8 (14%)	63,69,111	1.11	4 (6%)
59	MYR	o	201	40	14,14,15	0.45	0	13,13,15	0.93	0
57	EHZ	T	101	20	29,36,37	1.72	5 (17%)	35,44,47	1.65	5 (14%)
48	PLC	J	203	-	34,34,41	0.55	0	40,42,49	0.52	0
45	3PE	M	604	-	33,33,50	1.05	4 (12%)	36,38,55	1.15	2 (5%)
45	3PE	A	201	-	42,42,50	0.94	4 (9%)	45,47,55	1.06	2 (4%)
48	PLC	Z	204	-	33,33,41	0.56	0	39,41,49	0.58	0
45	3PE	Y	201	-	26,26,50	1.17	4 (15%)	29,31,55	1.12	2 (6%)

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
45	3PE	f	101	-	-	23/54/54/54	-
46	PC1	h	202	-	-	15/43/43/57	-
47	SF4	F	501	6	-	-	0/6/5/5
45	3PE	b	102	-	-	22/54/54/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
53	CDL	N	404	-	-	45/94/94/110	-
53	CDL	X	201	-	-	48/96/96/110	-
48	PLC	Y	208	-	-	14/40/40/45	-
45	3PE	m	202	-	-	17/33/33/54	-
46	PC1	d	202	-	-	18/42/42/57	-
47	SF4	G	802	7	-	-	0/6/5/5
45	3PE	Y	206	-	-	13/37/37/54	-
48	PLC	d	203	-	-	9/34/34/45	-
53	CDL	i	202	-	-	34/82/82/110	-
46	PC1	A	203	-	-	15/44/44/57	-
49	FES	G	803	7	-	-	0/1/1/1
45	3PE	d	201	-	-	23/52/52/54	-
48	PLC	L	703	-	-	18/45/45/45	-
46	PC1	m	203	-	-	17/43/43/57	-
53	CDL	h	203	-	-	30/80/80/110	-
57	EHZ	U	101	20	-	20/42/44/45	-
54	DGT	O	401	55	-	5/18/34/34	0/3/3/3
46	PC1	L	701	-	-	23/57/57/57	-
46	PC1	H	403	-	-	17/42/42/57	-
45	3PE	M	602	-	-	14/33/33/54	-
50	FMN	F	502	-	-	2/18/18/18	0/3/3/3
46	PC1	H	402	-	-	23/51/51/57	-
46	PC1	A	202	-	-	18/38/38/57	-
47	SF4	I	201	9	-	-	0/6/5/5
45	3PE	q	201	-	-	23/54/54/54	-
45	3PE	N	401	-	-	21/48/48/54	-
46	PC1	q	202	-	-	12/25/25/57	-
48	PLC	O	403	-	-	15/45/45/45	-
58	CHD	i	201	-	-	3/9/74/74	1/4/4/4
45	3PE	b	101	-	-	26/50/50/54	-
45	3PE	h	201	-	-	17/35/35/54	-
45	3PE	N	402	-	-	22/43/43/54	-
47	SF4	I	202	9	-	-	0/6/5/5
45	3PE	Y	202	-	-	19/54/54/54	-
45	3PE	J	201	-	-	19/34/34/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	PC1	M	606	-	-	15/38/38/57	-
48	PLC	g	202	-	-	8/30/30/45	-
45	3PE	M	603	-	-	24/53/53/54	-
47	SF4	B	201	2	-	-	0/6/5/5
45	3PE	L	702	-	-	22/48/48/54	-
45	3PE	Z	201	-	-	19/40/40/54	-
49	FES	E	301	5	-	-	0/1/1/1
45	3PE	I	203	-	-	16/40/40/54	-
46	PC1	I	204	-	-	23/57/57/57	-
45	3PE	K	101	-	-	21/47/47/54	-
45	3PE	J	202	-	-	14/39/39/54	-
45	3PE	Y	205	-	-	25/49/49/54	-
46	PC1	B	202	-	-	22/51/51/57	-
46	PC1	g	201	-	-	17/47/47/57	-
47	SF4	G	801	7	-	-	0/6/5/5
45	3PE	Y	207	-	-	25/54/54/54	-
45	3PE	Y	204	-	-	26/54/54/54	-
45	3PE	Y	203	-	-	29/54/54/54	-
45	3PE	M	605	-	-	13/48/48/54	-
48	PLC	b	103	-	-	16/41/41/45	-
46	PC1	Z	203	-	-	18/47/47/57	-
56	NDP	P	501	-	-	12/30/77/77	0/5/5/5
45	3PE	m	201	-	-	21/44/44/54	-
53	CDL	M	607	-	-	52/110/110/110	-
45	3PE	r	201	-	-	14/31/31/54	-
45	3PE	N	403	-	-	24/52/52/54	-
48	PLC	B	203	-	-	10/31/31/45	-
45	3PE	Z	202	-	-	25/54/54/54	-
53	CDL	d	204	-	-	29/75/75/110	-
45	3PE	H	401	-	-	16/39/39/54	-
53	CDL	r	202	-	-	23/68/68/110	-
59	MYR	o	201	40	-	5/11/12/13	-
57	EHZ	T	101	20	-	13/42/44/45	-
48	PLC	J	203	-	-	13/38/38/45	-
45	3PE	M	604	-	-	13/37/37/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	3PE	A	201	-	-	23/46/46/54	-
48	PLC	Z	204	-	-	12/37/37/45	-
45	3PE	Y	201	-	-	14/30/30/54	-

All (301) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	P	501	NDP	O4B-C1B	14.95	1.61	1.41
56	P	501	NDP	C6N-C5N	12.24	1.55	1.33
58	i	201	CHD	C11-C12	8.78	1.68	1.53
54	O	401	DGT	O6-C6	8.38	1.40	1.23
56	P	501	NDP	C7N-N7N	8.30	1.55	1.33
56	P	501	NDP	O4D-C1D	8.06	1.61	1.42
50	F	502	FMN	C4A-N5	7.24	1.44	1.30
58	i	201	CHD	C16-C15	7.19	1.73	1.54
56	P	501	NDP	C2D-C1D	-7.13	1.30	1.53
50	F	502	FMN	C10-N1	6.52	1.46	1.33
56	P	501	NDP	O4D-C4D	-6.46	1.30	1.45
58	i	201	CHD	C20-C17	-6.07	1.43	1.54
57	U	101	EHZ	C15-N2	5.45	1.45	1.33
57	T	101	EHZ	C12-N1	5.42	1.45	1.33
56	P	501	NDP	P2B-O2B	5.42	1.69	1.59
57	T	101	EHZ	C15-N2	5.36	1.45	1.33
57	U	101	EHZ	C12-N1	5.36	1.45	1.33
58	i	201	CHD	C13-C17	5.23	1.64	1.55
58	i	201	CHD	C8-C9	5.23	1.64	1.53
50	F	502	FMN	C5A-N5	5.17	1.49	1.39
58	i	201	CHD	O12-C12	-5.14	1.35	1.43
56	P	501	NDP	O4B-C4B	-5.02	1.33	1.45
50	F	502	FMN	C9A-N10	5.01	1.50	1.41
54	O	401	DGT	C2-N2	4.77	1.45	1.34
50	F	502	FMN	C2-N1	4.75	1.48	1.36
54	O	401	DGT	C2-N1	4.69	1.49	1.37
56	P	501	NDP	C2N-C3N	4.58	1.47	1.34
58	i	201	CHD	C6-C5	4.53	1.61	1.53
54	O	401	DGT	C2-N3	4.33	1.43	1.33
50	F	502	FMN	C2-N3	4.28	1.49	1.39
58	i	201	CHD	C15-C14	4.14	1.63	1.54
56	P	501	NDP	O7N-C7N	-4.06	1.14	1.24
56	P	501	NDP	O2D-C2D	3.99	1.52	1.43
58	i	201	CHD	C6-C7	3.85	1.59	1.52
50	F	502	FMN	C4-N3	3.80	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	P	501	NDP	C6A-N6A	3.80	1.47	1.34
50	F	502	FMN	C10-N10	3.78	1.45	1.37
56	P	501	NDP	C5A-C4A	-3.54	1.31	1.40
56	P	501	NDP	C4N-C3N	3.15	1.56	1.49
50	F	502	FMN	O2-C2	-3.01	1.18	1.24
56	P	501	NDP	C4N-C5N	2.81	1.56	1.48
56	P	501	NDP	C2A-N3A	2.76	1.36	1.32
54	O	401	DGT	C5-C6	-2.76	1.41	1.47
53	r	202	CDL	OB6-CB4	-2.62	1.40	1.46
53	M	607	CDL	OB6-CB4	-2.61	1.40	1.46
53	r	202	CDL	OA6-CA4	-2.60	1.40	1.46
54	O	401	DGT	C1 ¹ -N9	-2.60	1.41	1.49
45	Z	201	3PE	O21-C2	-2.60	1.40	1.46
53	X	201	CDL	OB6-CB4	-2.59	1.40	1.46
50	F	502	FMN	O4-C4	-2.58	1.18	1.23
45	J	202	3PE	O21-C2	-2.58	1.40	1.46
53	d	204	CDL	OA6-CA4	-2.58	1.40	1.46
53	N	404	CDL	OB6-CB4	-2.57	1.40	1.46
53	d	204	CDL	OB6-CB4	-2.57	1.40	1.46
46	H	402	PC1	O21-C2	-2.56	1.40	1.46
45	q	201	3PE	O21-C2	-2.56	1.40	1.46
46	A	203	PC1	O21-C2	-2.56	1.40	1.46
45	N	403	3PE	O21-C2	-2.55	1.40	1.46
46	L	701	PC1	O21-C2	-2.55	1.40	1.46
45	h	201	3PE	O21-C2	-2.54	1.40	1.46
45	K	101	3PE	O21-C2	-2.54	1.40	1.46
45	r	201	3PE	O21-C2	-2.53	1.40	1.46
56	P	501	NDP	O3D-C3D	-2.53	1.37	1.43
53	i	202	CDL	OA6-CA4	-2.53	1.40	1.46
56	P	501	NDP	C6N-N1N	2.53	1.43	1.37
46	M	606	PC1	O21-C2	-2.52	1.40	1.46
56	P	501	NDP	O3B-C3B	-2.52	1.37	1.43
45	d	201	3PE	O21-C2	-2.51	1.40	1.46
53	h	203	CDL	OA6-CA4	-2.51	1.40	1.46
45	Z	202	3PE	O21-C2	-2.51	1.40	1.46
46	I	204	PC1	O21-C2	-2.51	1.40	1.46
53	i	202	CDL	OB6-CB4	-2.51	1.40	1.46
45	m	201	3PE	O21-C2	-2.51	1.40	1.46
46	Z	203	PC1	O21-C2	-2.50	1.40	1.46
46	q	202	PC1	O21-C2	-2.50	1.40	1.46
46	A	202	PC1	O21-C2	-2.50	1.40	1.46
45	N	402	3PE	O21-C2	-2.49	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	d	202	PC1	O21-C2	-2.49	1.40	1.46
45	M	604	3PE	O21-C2	-2.49	1.40	1.46
45	Y	203	3PE	O21-C2	-2.49	1.40	1.46
53	M	607	CDL	OA6-CA4	-2.49	1.40	1.46
45	b	101	3PE	O21-C2	-2.48	1.40	1.46
45	I	203	3PE	O21-C2	-2.48	1.40	1.46
53	h	203	CDL	OB8-CB7	2.48	1.40	1.33
53	i	202	CDL	OB8-CB7	2.48	1.40	1.33
57	T	101	EHZ	C9-S1	2.48	1.82	1.76
45	H	401	3PE	O21-C2	-2.48	1.40	1.46
53	h	203	CDL	OB6-CB4	-2.47	1.40	1.46
45	Y	207	3PE	O21-C2	-2.47	1.40	1.46
46	g	201	PC1	O31-C31	2.47	1.40	1.33
45	Y	201	3PE	O21-C2	-2.47	1.40	1.46
45	N	401	3PE	O31-C31	2.46	1.40	1.33
53	r	202	CDL	OA8-CA7	2.46	1.40	1.33
45	Y	205	3PE	O21-C2	-2.46	1.40	1.46
45	m	202	3PE	O21-C2	-2.46	1.40	1.46
45	Y	204	3PE	O21-C2	-2.46	1.40	1.46
45	Y	206	3PE	O21-C2	-2.45	1.40	1.46
46	H	403	PC1	O21-C2	-2.45	1.40	1.46
45	A	201	3PE	O21-C2	-2.45	1.40	1.46
46	B	202	PC1	O21-C2	-2.45	1.40	1.46
46	m	203	PC1	O21-C2	-2.44	1.40	1.46
45	M	602	3PE	O21-C2	-2.43	1.40	1.46
46	g	201	PC1	O21-C2	-2.43	1.40	1.46
45	M	603	3PE	O21-C2	-2.43	1.40	1.46
45	b	102	3PE	O21-C2	-2.43	1.40	1.46
46	h	202	PC1	O21-C2	-2.43	1.40	1.46
53	r	202	CDL	OB8-CB7	2.43	1.40	1.33
45	J	201	3PE	O21-C2	-2.43	1.40	1.46
53	M	607	CDL	OA8-CA7	2.42	1.40	1.33
45	f	101	3PE	O21-C2	-2.42	1.40	1.46
53	N	404	CDL	OB8-CB7	2.41	1.40	1.33
53	X	201	CDL	OA8-CA7	2.41	1.40	1.33
46	H	402	PC1	O31-C31	2.41	1.40	1.33
46	A	203	PC1	O31-C31	2.41	1.40	1.33
53	d	204	CDL	OB8-CB7	2.41	1.40	1.33
45	M	605	3PE	O21-C2	-2.41	1.40	1.46
53	N	404	CDL	OA6-CA4	-2.41	1.40	1.46
45	J	202	3PE	O31-C31	2.41	1.40	1.33
45	N	402	3PE	O31-C31	2.41	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	I	203	3PE	O31-C31	2.40	1.40	1.33
45	m	201	3PE	O31-C31	2.40	1.40	1.33
46	h	202	PC1	O31-C31	2.40	1.40	1.33
46	M	606	PC1	O31-C31	2.40	1.40	1.33
53	N	404	CDL	OA8-CA7	2.40	1.40	1.33
53	X	201	CDL	OB8-CB7	2.39	1.40	1.33
45	Y	207	3PE	O31-C31	2.39	1.40	1.33
45	d	201	3PE	O31-C31	2.39	1.40	1.33
45	M	604	3PE	O31-C31	2.38	1.40	1.33
46	d	202	PC1	O31-C31	2.38	1.40	1.33
45	K	101	3PE	O31-C31	2.38	1.40	1.33
45	Y	202	3PE	O31-C31	2.38	1.40	1.33
45	Y	201	3PE	O31-C31	2.38	1.40	1.33
53	M	607	CDL	OB8-CB7	2.38	1.40	1.33
46	H	403	PC1	O31-C31	2.38	1.40	1.33
57	T	101	EHZ	O3-C12	-2.37	1.18	1.23
45	r	201	3PE	O31-C31	2.37	1.40	1.33
46	A	202	PC1	O31-C31	2.37	1.40	1.33
45	Y	204	3PE	O31-C31	2.36	1.40	1.33
45	Z	201	3PE	O31-C31	2.36	1.40	1.33
45	H	401	3PE	O31-C31	2.36	1.40	1.33
45	f	101	3PE	O31-C31	2.36	1.40	1.33
45	h	201	3PE	O31-C31	2.36	1.40	1.33
57	U	101	EHZ	C9-S1	2.36	1.81	1.76
45	J	201	3PE	O31-C31	2.36	1.40	1.33
45	A	201	3PE	O31-C31	2.35	1.40	1.33
46	m	203	PC1	O31-C31	2.35	1.40	1.33
45	Y	202	3PE	O21-C2	-2.35	1.40	1.46
58	i	201	CHD	C13-C12	-2.35	1.50	1.54
53	d	204	CDL	OA8-CA6	-2.35	1.39	1.45
45	Y	205	3PE	O31-C31	2.34	1.40	1.33
45	m	202	3PE	O31-C31	2.34	1.40	1.33
45	Y	206	3PE	O31-C31	2.34	1.40	1.33
45	M	602	3PE	O31-C31	2.34	1.40	1.33
46	I	204	PC1	O31-C31	2.34	1.40	1.33
45	M	603	3PE	O31-C31	2.34	1.40	1.33
46	L	701	PC1	O31-C31	2.33	1.40	1.33
45	L	702	3PE	O31-C31	2.33	1.40	1.33
53	i	202	CDL	OA8-CA7	2.33	1.40	1.33
56	P	501	NDP	PA-O5B	2.33	1.68	1.59
45	N	403	3PE	O31-C31	2.33	1.40	1.33
45	b	101	3PE	O31-C31	2.33	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	B	202	PC1	O31-C3	-2.33	1.39	1.45
46	Z	203	PC1	O31-C31	2.32	1.40	1.33
45	b	102	3PE	O31-C31	2.32	1.40	1.33
45	Z	202	3PE	O31-C31	2.32	1.40	1.33
53	X	201	CDL	OA6-CA4	-2.31	1.40	1.46
53	h	203	CDL	OA8-CA7	2.31	1.40	1.33
56	P	501	NDP	C7N-C3N	2.30	1.53	1.48
45	Y	203	3PE	O31-C31	2.30	1.40	1.33
45	N	401	3PE	O21-C2	-2.30	1.40	1.46
45	M	605	3PE	O31-C31	2.30	1.40	1.33
57	T	101	EHZ	O4-C15	-2.29	1.18	1.23
46	B	202	PC1	O31-C31	2.29	1.40	1.33
45	q	201	3PE	O31-C31	2.27	1.40	1.33
45	L	702	3PE	O21-C2	-2.27	1.40	1.46
57	U	101	EHZ	O3-C12	-2.26	1.18	1.23
53	d	204	CDL	OA8-CA7	2.26	1.39	1.33
57	U	101	EHZ	O4-C15	-2.25	1.18	1.23
45	N	401	3PE	O21-C21	2.25	1.40	1.34
45	K	101	3PE	O31-C3	-2.24	1.40	1.45
45	m	201	3PE	O31-C3	-2.23	1.40	1.45
46	B	202	PC1	O21-C21	2.23	1.40	1.34
56	P	501	NDP	P2B-O1X	2.22	1.57	1.50
45	b	102	3PE	O31-C3	-2.22	1.40	1.45
45	M	603	3PE	O31-C3	-2.21	1.40	1.45
45	b	101	3PE	O31-C3	-2.21	1.40	1.45
46	d	202	PC1	O21-C21	2.21	1.40	1.34
45	m	202	3PE	O31-C3	-2.20	1.40	1.45
46	Z	203	PC1	O31-C3	-2.20	1.40	1.45
45	h	201	3PE	O31-C3	-2.20	1.40	1.45
46	L	701	PC1	O31-C3	-2.20	1.40	1.45
45	Y	204	3PE	O31-C3	-2.19	1.40	1.45
45	f	101	3PE	O31-C3	-2.19	1.40	1.45
46	A	203	PC1	O31-C3	-2.19	1.40	1.45
45	q	201	3PE	O31-C3	-2.19	1.40	1.45
53	X	201	CDL	OB8-CB6	-2.19	1.40	1.45
45	H	401	3PE	O31-C3	-2.19	1.40	1.45
45	Y	203	3PE	O21-C21	2.19	1.40	1.34
45	Y	203	3PE	O31-C3	-2.19	1.40	1.45
45	f	101	3PE	O21-C21	2.18	1.40	1.34
46	h	202	PC1	O21-C21	2.18	1.40	1.34
45	b	102	3PE	O21-C21	2.18	1.40	1.34
46	A	202	PC1	O21-C21	2.18	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	M	602	3PE	O21-C21	2.18	1.40	1.34
45	I	203	3PE	O31-C3	-2.18	1.40	1.45
53	N	404	CDL	OA6-CA5	2.18	1.40	1.34
45	M	602	3PE	O31-C3	-2.17	1.40	1.45
45	A	201	3PE	O31-C3	-2.17	1.40	1.45
46	H	403	PC1	O31-C3	-2.17	1.40	1.45
45	b	101	3PE	O21-C21	2.17	1.40	1.34
45	L	702	3PE	O31-C3	-2.17	1.40	1.45
45	N	403	3PE	O31-C3	-2.17	1.40	1.45
46	m	203	PC1	O21-C21	2.17	1.40	1.34
46	L	701	PC1	O21-C21	2.17	1.40	1.34
45	Y	205	3PE	O31-C3	-2.17	1.40	1.45
46	H	402	PC1	O21-C21	2.16	1.40	1.34
45	A	201	3PE	O21-C21	2.16	1.40	1.34
45	Y	206	3PE	O31-C3	-2.16	1.40	1.45
54	O	401	DGT	PG-O2G	-2.16	1.46	1.54
45	Y	205	3PE	O21-C21	2.16	1.40	1.34
45	Z	202	3PE	O21-C21	2.16	1.40	1.34
53	h	203	CDL	OB6-CB5	2.16	1.40	1.34
53	i	202	CDL	OA8-CA6	-2.16	1.40	1.45
45	J	201	3PE	O21-C21	2.16	1.40	1.34
53	h	203	CDL	OA8-CA6	-2.15	1.40	1.45
46	H	403	PC1	O21-C21	2.15	1.40	1.34
54	O	401	DGT	PG-O1G	-2.15	1.46	1.54
53	h	203	CDL	OA6-CA5	2.15	1.40	1.34
46	d	202	PC1	O31-C3	-2.15	1.40	1.45
45	m	202	3PE	O21-C21	2.15	1.40	1.34
45	M	604	3PE	O31-C3	-2.15	1.40	1.45
46	Z	203	PC1	O21-C21	2.15	1.40	1.34
53	X	201	CDL	OA6-CA5	2.15	1.40	1.34
45	L	702	3PE	O21-C21	2.15	1.40	1.34
53	i	202	CDL	OB6-CB5	2.15	1.40	1.34
45	Z	202	3PE	O31-C3	-2.14	1.40	1.45
45	r	201	3PE	O31-C3	-2.14	1.40	1.45
56	P	501	NDP	C5B-C4B	2.14	1.58	1.51
53	M	607	CDL	OA6-CA5	2.14	1.40	1.34
46	g	201	PC1	O21-C21	2.14	1.40	1.34
45	Y	207	3PE	O21-C21	2.14	1.40	1.34
45	N	401	3PE	O31-C3	-2.14	1.40	1.45
45	M	603	3PE	O21-C21	2.14	1.40	1.34
45	Y	202	3PE	O21-C21	2.14	1.40	1.34
45	Z	201	3PE	O31-C3	-2.13	1.40	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	M	607	CDL	OB8-CB6	-2.13	1.40	1.45
45	I	203	3PE	O21-C21	2.13	1.40	1.34
45	M	604	3PE	O21-C21	2.13	1.40	1.34
46	M	606	PC1	O31-C3	-2.13	1.40	1.45
53	r	202	CDL	OB8-CB6	-2.13	1.40	1.45
53	d	204	CDL	OB6-CB5	2.12	1.40	1.34
45	Y	201	3PE	O21-C21	2.12	1.40	1.34
46	A	202	PC1	O31-C3	-2.12	1.40	1.45
53	i	202	CDL	OB8-CB6	-2.12	1.40	1.45
45	Y	207	3PE	O31-C3	-2.12	1.40	1.45
46	M	606	PC1	O21-C21	2.12	1.40	1.34
45	M	605	3PE	O31-C3	-2.11	1.40	1.45
53	i	202	CDL	OA6-CA5	2.11	1.40	1.34
53	M	607	CDL	OA8-CA6	-2.11	1.40	1.45
45	K	101	3PE	O21-C21	2.11	1.40	1.34
46	h	202	PC1	O31-C3	-2.11	1.40	1.45
45	H	401	3PE	O21-C21	2.11	1.40	1.34
45	Y	204	3PE	O21-C21	2.11	1.40	1.34
53	N	404	CDL	OB8-CB6	-2.11	1.40	1.45
53	d	204	CDL	OB8-CB6	-2.11	1.40	1.45
45	d	201	3PE	O31-C3	-2.10	1.40	1.45
46	q	202	PC1	O21-C21	2.10	1.40	1.34
53	X	201	CDL	OB6-CB5	2.10	1.40	1.34
45	r	201	3PE	O21-C21	2.09	1.40	1.34
45	Y	206	3PE	O21-C21	2.09	1.40	1.34
53	h	203	CDL	OB8-CB6	-2.09	1.40	1.45
45	J	202	3PE	O21-C21	2.09	1.40	1.34
45	N	402	3PE	O21-C21	2.09	1.40	1.34
45	J	202	3PE	O31-C3	-2.09	1.40	1.45
46	m	203	PC1	O31-C3	-2.09	1.40	1.45
45	m	201	3PE	O21-C21	2.08	1.40	1.34
45	M	605	3PE	O21-C21	2.08	1.40	1.34
46	q	202	PC1	O31-C3	-2.08	1.40	1.45
46	I	204	PC1	O31-C3	-2.08	1.40	1.45
53	M	607	CDL	OB6-CB5	2.08	1.40	1.34
53	r	202	CDL	OA8-CA6	-2.08	1.40	1.45
53	N	404	CDL	OA8-CA6	-2.07	1.40	1.45
46	A	203	PC1	O21-C21	2.07	1.40	1.34
45	h	201	3PE	O21-C21	2.07	1.40	1.34
45	Y	202	3PE	O31-C3	-2.07	1.40	1.45
45	Z	201	3PE	O21-C21	2.07	1.40	1.34
46	H	402	PC1	O31-C3	-2.07	1.40	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	N	404	CDL	OB6-CB5	2.07	1.40	1.34
53	d	204	CDL	OA6-CA5	2.06	1.40	1.34
45	d	201	3PE	O21-C21	2.06	1.40	1.34
46	g	201	PC1	O31-C3	-2.06	1.40	1.45
45	Y	201	3PE	O31-C3	-2.06	1.40	1.45
45	J	201	3PE	O31-C3	-2.06	1.40	1.45
46	I	204	PC1	O21-C21	2.05	1.40	1.34
45	N	403	3PE	O21-C21	2.05	1.40	1.34
56	P	501	NDP	C5D-C4D	2.04	1.58	1.51
45	q	201	3PE	O21-C21	2.04	1.40	1.34
53	r	202	CDL	OA6-CA5	2.03	1.40	1.34
53	r	202	CDL	OB6-CB5	2.03	1.40	1.34
45	N	402	3PE	O31-C3	-2.03	1.40	1.45
53	X	201	CDL	OA8-CA6	-2.02	1.40	1.45

All (180) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
56	P	501	NDP	C5A-C6A-N6A	8.86	133.82	120.35
58	i	201	CHD	C13-C17-C20	-7.51	110.53	119.50
56	P	501	NDP	C1B-N9A-C4A	-7.14	114.09	126.64
56	P	501	NDP	N6A-C6A-N1A	-6.22	105.66	118.57
58	i	201	CHD	C14-C13-C12	6.07	113.06	107.40
57	T	101	EHZ	C8-C9-S1	5.90	120.92	113.63
56	P	501	NDP	N3A-C2A-N1A	-5.47	120.12	128.68
58	i	201	CHD	C17-C13-C14	5.41	105.54	100.09
57	U	101	EHZ	C8-C9-S1	4.96	119.77	113.63
50	F	502	FMN	C9-C8-C7	4.85	126.62	119.67
45	M	605	3PE	O21-C21-C22	4.55	121.31	111.50
50	F	502	FMN	C7M-C7-C6	4.54	127.89	119.49
46	B	202	PC1	O21-C21-C22	4.40	120.99	111.50
45	m	201	3PE	O21-C21-C22	4.30	120.77	111.50
53	M	607	CDL	OA6-CA5-C11	4.29	120.75	111.50
46	h	202	PC1	O21-C21-C22	4.27	120.70	111.50
45	b	102	3PE	O21-C21-C22	4.22	120.61	111.50
46	H	402	PC1	O21-C21-C22	4.22	120.61	111.50
45	f	101	3PE	O21-C21-C22	4.22	120.60	111.50
58	i	201	CHD	C18-C13-C12	-4.22	104.77	109.07
45	N	402	3PE	O21-C21-C22	4.18	120.50	111.50
45	J	201	3PE	O21-C21-C22	4.17	120.49	111.50
58	i	201	CHD	C17-C13-C12	4.16	121.46	117.67
46	I	204	PC1	O21-C21-C22	4.14	120.43	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	m	203	PC1	O21-C21-C22	4.11	120.36	111.50
45	M	604	3PE	O21-C21-C22	4.10	120.35	111.50
45	m	202	3PE	O21-C21-C22	4.10	120.33	111.50
53	M	607	CDL	OB6-CB5-C51	4.09	120.32	111.50
45	N	403	3PE	O21-C21-C22	4.09	120.31	111.50
53	X	201	CDL	OB6-CB5-C51	4.09	120.31	111.50
53	i	202	CDL	OA6-CA5-C11	4.08	120.29	111.50
45	Y	205	3PE	O21-C21-C22	4.07	120.27	111.50
45	q	201	3PE	O21-C21-C22	4.06	120.25	111.50
45	Y	206	3PE	O21-C21-C22	4.04	120.21	111.50
45	I	203	3PE	O21-C21-C22	4.02	120.16	111.50
45	h	201	3PE	O21-C21-C22	4.00	120.12	111.50
45	Y	207	3PE	O21-C21-C22	4.00	120.11	111.50
45	Y	204	3PE	O21-C21-C22	3.97	120.05	111.50
45	N	401	3PE	O21-C21-C22	3.96	120.03	111.50
46	Z	203	PC1	O21-C21-C22	3.95	120.02	111.50
45	Y	203	3PE	O21-C21-C22	3.95	120.01	111.50
53	h	203	CDL	OB6-CB5-C51	3.95	120.01	111.50
46	g	201	PC1	O21-C21-C22	3.95	120.00	111.50
46	A	202	PC1	O21-C21-C22	3.94	120.00	111.50
46	M	606	PC1	O21-C21-C22	3.94	119.98	111.50
53	d	204	CDL	OA6-CA5-C11	3.92	119.95	111.50
53	r	202	CDL	OA6-CA5-C11	3.92	119.94	111.50
45	r	201	3PE	O21-C21-C22	3.92	119.94	111.50
46	A	203	PC1	O21-C21-C22	3.90	119.91	111.50
53	N	404	CDL	OB6-CB5-C51	3.89	119.89	111.50
45	J	202	3PE	O21-C21-C22	3.89	119.89	111.50
53	i	202	CDL	OB6-CB5-C51	3.89	119.88	111.50
45	M	603	3PE	O21-C21-C22	3.87	119.84	111.50
45	A	201	3PE	O21-C21-C22	3.86	119.82	111.50
58	i	201	CHD	C18-C13-C17	-3.85	105.19	111.21
45	Z	202	3PE	O21-C21-C22	3.84	119.77	111.50
45	Y	201	3PE	O21-C21-C22	3.81	119.71	111.50
45	L	702	3PE	O21-C21-C22	3.80	119.70	111.50
45	Y	202	3PE	O21-C21-C22	3.80	119.70	111.50
45	d	201	3PE	O21-C21-C22	3.80	119.68	111.50
45	K	101	3PE	O21-C21-C22	3.77	119.63	111.50
53	X	201	CDL	OA6-CA5-C11	3.72	119.52	111.50
46	d	202	PC1	O21-C21-C22	3.72	119.51	111.50
53	N	404	CDL	OA6-CA5-C11	3.68	119.42	111.50
53	h	203	CDL	OA6-CA5-C11	3.67	119.41	111.50
58	i	201	CHD	C18-C13-C14	-3.64	105.52	111.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	r	202	CDL	OB6-CB5-C51	3.60	119.27	111.50
45	b	101	3PE	O21-C21-C22	3.59	119.23	111.50
53	d	204	CDL	OB6-CB5-C51	3.52	120.62	110.80
57	T	101	EHZ	C13-C12-N1	3.47	122.25	116.42
46	L	701	PC1	O21-C21-C22	3.46	118.95	111.50
45	Z	201	3PE	O21-C21-C22	3.44	118.91	111.50
45	H	401	3PE	O21-C21-C22	3.34	120.12	110.80
50	F	502	FMN	C8M-C8-C7	-3.32	113.93	120.74
45	J	202	3PE	O31-C31-C32	3.28	119.98	111.38
50	F	502	FMN	C4-N3-C2	-3.25	119.64	125.64
45	M	602	3PE	O21-C21-C22	3.23	119.81	110.80
46	H	403	PC1	O21-C21-C22	3.19	119.68	110.80
54	O	401	DGT	C5-C6-N1	3.18	119.57	113.95
54	O	401	DGT	C2-N1-C6	-3.14	119.32	125.10
46	q	202	PC1	O21-C21-C22	3.06	119.35	110.80
53	X	201	CDL	OB8-CB7-C71	3.03	121.41	111.91
58	i	201	CHD	C1-C10-C5	3.03	112.25	107.77
58	i	201	CHD	C15-C14-C8	3.02	122.56	118.33
54	O	401	DGT	PB-O3B-PG	-3.01	122.50	132.83
54	O	401	DGT	O2G-PG-O3B	2.97	114.60	104.64
45	Y	202	3PE	O31-C31-C32	2.93	121.11	111.91
45	N	401	3PE	O31-C31-C32	2.89	120.97	111.91
46	I	204	PC1	O31-C31-C32	2.85	120.84	111.91
50	F	502	FMN	C6-C7-C8	-2.82	115.63	119.67
46	A	203	PC1	O31-C31-C32	2.77	120.61	111.91
54	O	401	DGT	PA-O3A-PB	-2.76	123.36	132.83
58	i	201	CHD	C6-C5-C4	-2.75	108.02	111.19
46	B	202	PC1	O31-C31-C32	2.74	120.52	111.91
54	O	401	DGT	O1G-PG-O3B	2.73	113.78	104.64
46	H	403	PC1	O31-C31-C32	2.72	120.44	111.91
46	A	202	PC1	O31-C31-C32	2.72	120.44	111.91
45	r	201	3PE	O31-C31-C32	2.72	120.44	111.91
53	M	607	CDL	OB8-CB7-C71	2.71	120.43	111.91
45	m	201	3PE	O31-C31-C32	2.71	120.43	111.91
46	m	203	PC1	O31-C31-C32	2.70	120.37	111.91
57	U	101	EHZ	C10-S1-C9	2.69	110.26	101.87
57	T	101	EHZ	C10-S1-C9	2.69	110.25	101.87
45	I	203	3PE	O31-C31-C32	2.69	120.33	111.91
53	M	607	CDL	OA8-CA7-C31	2.68	120.31	111.91
45	Y	203	3PE	O31-C31-C32	2.67	120.30	111.91
45	N	402	3PE	O31-C31-C32	2.67	120.28	111.91
58	i	201	CHD	C9-C10-C5	2.67	112.33	108.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	i	202	CDL	OA8-CA7-C31	2.66	120.27	111.91
45	M	602	3PE	O31-C31-C32	2.66	120.24	111.91
46	M	606	PC1	O31-C31-C32	2.66	120.24	111.91
46	H	402	PC1	O31-C31-C32	2.65	120.24	111.91
45	Y	204	3PE	O31-C31-C32	2.65	120.21	111.91
46	h	202	PC1	O31-C31-C32	2.64	120.21	111.91
53	d	204	CDL	OB8-CB7-C71	2.64	120.20	111.91
50	F	502	FMN	C4A-C10-N10	2.63	120.33	116.48
45	H	401	3PE	O31-C31-C32	2.63	120.16	111.91
53	h	203	CDL	OA8-CA7-C31	2.63	120.16	111.91
53	N	404	CDL	OA8-CA7-C31	2.63	120.15	111.91
45	h	201	3PE	O31-C31-C32	2.62	120.14	111.91
45	f	101	3PE	O31-C31-C32	2.62	120.12	111.91
53	i	202	CDL	OB8-CB7-C71	2.61	120.09	111.91
45	Y	205	3PE	O31-C31-C32	2.61	120.09	111.91
45	b	102	3PE	O31-C31-C32	2.61	120.08	111.91
46	g	201	PC1	O31-C31-C32	2.60	120.07	111.91
45	Y	206	3PE	O31-C31-C32	2.59	120.03	111.91
45	q	201	3PE	O31-C31-C32	2.59	120.03	111.91
45	A	201	3PE	O31-C31-C32	2.59	120.02	111.91
45	N	403	3PE	O31-C31-C32	2.58	120.02	111.91
45	M	605	3PE	O31-C31-C32	2.58	119.99	111.91
45	Y	207	3PE	O31-C31-C32	2.58	119.99	111.91
53	d	204	CDL	OA8-CA7-C31	2.57	119.98	111.91
46	L	701	PC1	O31-C31-C32	2.57	119.97	111.91
45	L	702	3PE	O31-C31-C32	2.57	119.96	111.91
45	Y	201	3PE	O31-C31-C32	2.56	119.95	111.91
45	Z	201	3PE	O31-C31-C32	2.56	119.93	111.91
45	M	604	3PE	O31-C31-C32	2.55	119.90	111.91
45	m	202	3PE	O31-C31-C32	2.54	119.89	111.91
53	X	201	CDL	OA8-CA7-C31	2.53	119.86	111.91
50	F	502	FMN	C4A-C4-N3	2.51	119.58	113.19
45	d	201	3PE	O31-C31-C32	2.50	119.76	111.91
46	d	202	PC1	O31-C31-C32	2.50	119.75	111.91
53	N	404	CDL	OB8-CB7-C71	2.49	119.74	111.91
53	r	202	CDL	OB8-CB7-C71	2.49	119.73	111.91
45	J	201	3PE	O31-C31-C32	2.49	119.73	111.91
45	K	101	3PE	O31-C31-C32	2.49	119.72	111.91
45	Z	202	3PE	O31-C31-C32	2.48	119.69	111.91
53	h	203	CDL	OB8-CB7-C71	2.48	119.69	111.91
50	F	502	FMN	O4-C4-C4A	-2.46	120.08	126.60
46	Z	203	PC1	O31-C31-C32	2.46	119.61	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	U	101	EHZ	C13-C12-N1	2.43	120.50	116.42
45	b	101	3PE	O31-C31-C32	2.42	119.51	111.91
57	T	101	EHZ	O2-C9-S1	-2.41	119.48	122.61
50	F	502	FMN	C9A-C5A-N5	-2.41	119.81	122.43
45	M	603	3PE	O31-C31-C32	2.40	119.44	111.91
58	i	201	CHD	C1-C2-C3	2.39	113.54	110.47
53	r	202	CDL	OA8-CA7-C31	2.38	119.37	111.91
50	F	502	FMN	C6-C5A-C9A	2.36	122.28	118.94
50	F	502	FMN	C5A-C9A-N10	2.35	120.38	117.95
58	i	201	CHD	C19-C10-C9	-2.35	107.95	111.18
56	P	501	NDP	PN-O3-PA	-2.33	124.84	132.83
54	O	401	DGT	C2'-C3'-C4'	2.28	107.51	102.76
58	i	201	CHD	C5-C6-C7	-2.21	112.02	114.46
54	O	401	DGT	O1A-PA-O2A	-2.20	101.35	112.24
58	i	201	CHD	C1-C10-C9	-2.19	107.91	111.35
57	T	101	EHZ	O3-C12-N1	-2.16	118.94	123.01
54	O	401	DGT	O1B-PB-O2B	-2.16	101.59	112.24
58	i	201	CHD	C13-C14-C8	-2.15	112.00	114.74
50	F	502	FMN	C10-C4A-N5	-2.14	120.31	124.86
58	i	201	CHD	C11-C9-C10	-2.11	111.55	113.73
50	F	502	FMN	C4-C4A-C10	2.11	120.34	116.79
57	U	101	EHZ	C16-C15-N2	2.10	120.76	116.58
54	O	401	DGT	O6-C6-C5	-2.10	120.28	124.37
57	U	101	EHZ	C14-N2-C15	-2.08	118.87	122.59
50	F	502	FMN	C7M-C7-C8	-2.08	116.48	120.74
48	g	202	PLC	C3-C2-C1	2.07	116.69	111.79
58	i	201	CHD	C23-C22-C20	-2.05	110.77	114.52
50	F	502	FMN	C4A-C10-N1	-2.05	119.98	124.73
58	i	201	CHD	C4-C3-C2	2.03	112.98	110.55
57	U	101	EHZ	O2-C9-S1	-2.02	119.99	122.61

There are no chirality outliers.

All (1332) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	A	201	3PE	C11-O13-P-O11
45	A	201	3PE	C11-O13-P-O12
45	A	201	3PE	C11-O13-P-O14
45	H	401	3PE	C11-O13-P-O11
45	H	401	3PE	C11-O13-P-O12
45	H	401	3PE	C22-C21-O21-C2
45	I	203	3PE	C11-O13-P-O14

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Mol	Chain	Res	Type	Atoms
45	I	203	3PE	O13-C11-C12-N
45	I	203	3PE	O22-C21-O21-C2
45	I	203	3PE	C22-C21-O21-C2
45	J	201	3PE	C11-O13-P-O14
45	J	201	3PE	C12-C11-O13-P
45	J	201	3PE	O22-C21-O21-C2
45	K	101	3PE	C11-O13-P-O12
45	K	101	3PE	O11-C1-C2-O21
45	L	702	3PE	C11-O13-P-O11
45	L	702	3PE	C11-O13-P-O12
45	L	702	3PE	C11-O13-P-O14
45	L	702	3PE	C22-C21-O21-C2
45	M	602	3PE	C11-O13-P-O14
45	M	602	3PE	C12-C11-O13-P
45	M	603	3PE	C1-O11-P-O14
45	M	603	3PE	C12-C11-O13-P
45	M	604	3PE	O22-C21-O21-C2
45	M	604	3PE	C22-C21-O21-C2
45	M	605	3PE	C1-O11-P-O14
45	N	401	3PE	C11-O13-P-O14
45	N	401	3PE	C12-C11-O13-P
45	N	402	3PE	C11-O13-P-O12
45	N	402	3PE	C11-O13-P-O14
45	N	402	3PE	O22-C21-O21-C2
45	Y	201	3PE	C1-O11-P-O13
45	Y	201	3PE	C1-O11-P-O14
45	Y	201	3PE	O13-C11-C12-N
45	Y	202	3PE	C1-O11-P-O14
45	Y	202	3PE	C11-O13-P-O14
45	Y	202	3PE	C22-C21-O21-C2
45	Y	203	3PE	C1-O11-P-O12
45	Y	203	3PE	C1-O11-P-O13
45	Y	203	3PE	C1-O11-P-O14
45	Y	203	3PE	C11-O13-P-O12
45	Y	203	3PE	C11-O13-P-O14
45	Y	203	3PE	C22-C21-O21-C2
45	Y	204	3PE	C1-O11-P-O13
45	Y	204	3PE	C1-O11-P-O14
45	Y	204	3PE	C11-O13-P-O14
45	Y	204	3PE	C22-C21-O21-C2
45	Y	205	3PE	C11-O13-P-O12
45	Y	205	3PE	C11-O13-P-O14

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Mol	Chain	Res	Type	Atoms
45	Y	206	3PE	C11-O13-P-O12
45	Y	206	3PE	C11-O13-P-O14
45	Y	206	3PE	O22-C21-O21-C2
45	Y	207	3PE	C1-O11-P-O12
45	Y	207	3PE	C11-O13-P-O12
45	Y	207	3PE	O22-C21-O21-C2
45	Y	207	3PE	C22-C21-O21-C2
45	Z	201	3PE	C1-O11-P-O12
45	Z	201	3PE	C1-O11-P-O14
45	Z	201	3PE	C11-O13-P-O14
45	Z	201	3PE	O13-C11-C12-N
45	Z	202	3PE	C1-O11-P-O12
45	Z	202	3PE	C1-O11-P-O14
45	b	101	3PE	C1-O11-P-O14
45	b	102	3PE	C1-O11-P-O12
45	b	102	3PE	C12-C11-O13-P
45	b	102	3PE	O22-C21-O21-C2
45	d	201	3PE	C11-O13-P-O11
45	d	201	3PE	C11-O13-P-O12
45	d	201	3PE	C11-O13-P-O14
45	d	201	3PE	C22-C21-O21-C2
45	f	101	3PE	C22-C21-O21-C2
45	h	201	3PE	C1-O11-P-O13
45	h	201	3PE	C1-O11-P-O14
45	h	201	3PE	C11-O13-P-O11
45	h	201	3PE	C11-O13-P-O12
45	h	201	3PE	C11-O13-P-O14
45	h	201	3PE	O11-C1-C2-O21
45	h	201	3PE	C22-C21-O21-C2
45	m	201	3PE	C11-O13-P-O12
45	m	201	3PE	O13-C11-C12-N
45	m	201	3PE	O32-C31-O31-C3
45	m	201	3PE	C32-C31-O31-C3
45	m	201	3PE	O22-C21-O21-C2
45	m	202	3PE	C1-O11-P-O13
45	m	202	3PE	C11-O13-P-O12
45	m	202	3PE	C11-O13-P-O14
45	m	202	3PE	O13-C11-C12-N
45	m	202	3PE	O22-C21-O21-C2
45	q	201	3PE	C11-O13-P-O12
45	q	201	3PE	C11-O13-P-O14
45	q	201	3PE	O22-C21-O21-C2

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Mol	Chain	Res	Type	Atoms
45	r	201	3PE	C1-O11-P-O12
45	r	201	3PE	C1-O11-P-O13
45	r	201	3PE	C1-O11-P-O14
45	r	201	3PE	C11-O13-P-O12
45	r	201	3PE	C11-O13-P-O14
45	r	201	3PE	O32-C31-O31-C3
45	r	201	3PE	C22-C21-O21-C2
46	A	202	PC1	O13-C11-C12-N
46	A	203	PC1	C11-O13-P-O14
46	A	203	PC1	C22-C21-O21-C2
46	B	202	PC1	C11-O13-P-O14
46	B	202	PC1	C1-O11-P-O12
46	B	202	PC1	C1-O11-P-O14
46	B	202	PC1	C2-C1-O11-P
46	B	202	PC1	O22-C21-O21-C2
46	H	402	PC1	C1-O11-P-O12
46	H	402	PC1	C1-O11-P-O14
46	H	402	PC1	O13-C11-C12-N
46	H	403	PC1	C1-O11-P-O13
46	H	403	PC1	O13-C11-C12-N
46	I	204	PC1	C1-O11-P-O12
46	I	204	PC1	C1-O11-P-O14
46	I	204	PC1	C1-O11-P-O13
46	I	204	PC1	O13-C11-C12-N
46	L	701	PC1	C11-O13-P-O12
46	L	701	PC1	C11-O13-P-O14
46	L	701	PC1	C11-O13-P-O11
46	L	701	PC1	O21-C2-C3-O31
46	L	701	PC1	O32-C31-O31-C3
46	M	606	PC1	C1-O11-P-O14
46	M	606	PC1	C1-O11-P-O13
46	Z	203	PC1	C11-O13-P-O14
46	Z	203	PC1	C11-O13-P-O11
46	Z	203	PC1	C1-O11-P-O12
46	d	202	PC1	C11-O13-P-O12
46	d	202	PC1	C1-O11-P-O12
46	d	202	PC1	C1-O11-P-O14
46	d	202	PC1	C1-O11-P-O13
46	d	202	PC1	O32-C31-O31-C3
46	g	201	PC1	C11-O13-P-O12
46	g	201	PC1	C1-O11-P-O12
46	g	201	PC1	C1-O11-P-O14

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Mol	Chain	Res	Type	Atoms
46	g	201	PC1	C1-O11-P-O13
46	g	201	PC1	O13-C11-C12-N
46	h	202	PC1	C11-O13-P-O12
46	h	202	PC1	C11-O13-P-O14
46	h	202	PC1	C11-O13-P-O11
46	m	203	PC1	C11-O13-P-O12
46	m	203	PC1	C11-O13-P-O14
46	m	203	PC1	C11-O13-P-O11
46	m	203	PC1	C1-O11-P-O14
46	m	203	PC1	C22-C21-O21-C2
46	q	202	PC1	C11-O13-P-O14
46	q	202	PC1	O11-C1-C2-O21
48	B	203	PLC	C4-O4P-P-O1P
48	J	203	PLC	C4-O4P-P-O1P
48	J	203	PLC	C4-O4P-P-O2P
48	J	203	PLC	C4-O4P-P-O3P
48	L	703	PLC	C2-C1-O3P-P
48	L	703	PLC	C1-O3P-P-O1P
48	L	703	PLC	C1-O3P-P-O2P
48	Y	208	PLC	C1-O3P-P-O4P
48	Y	208	PLC	C4-O4P-P-O1P
48	Z	204	PLC	C1'-C'-O2-C2
48	Z	204	PLC	C1-O3P-P-O1P
48	Z	204	PLC	C1-O3P-P-O4P
48	b	103	PLC	C1-O3P-P-O2P
48	b	103	PLC	C4-O4P-P-O1P
48	b	103	PLC	C4-O4P-P-O3P
48	d	203	PLC	C1-O3P-P-O2P
48	g	202	PLC	C1-O3P-P-O4P
50	F	502	FMN	N10-C1'-C2'-O2'
53	M	607	CDL	CA2-OA2-PA1-OA3
53	M	607	CDL	CA2-OA2-PA1-OA4
53	M	607	CDL	CA3-OA5-PA1-OA2
53	M	607	CDL	CA3-OA5-PA1-OA3
53	M	607	CDL	CA3-OA5-PA1-OA4
53	M	607	CDL	CB3-OB5-PB2-OB2
53	M	607	CDL	OB7-CB5-OB6-CB4
53	N	404	CDL	CB2-OB2-PB2-OB3
53	N	404	CDL	C51-CB5-OB6-CB4
53	X	201	CDL	C1-CA2-OA2-PA1
53	X	201	CDL	CB3-OB5-PB2-OB2
53	X	201	CDL	CB3-OB5-PB2-OB3

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Mol	Chain	Res	Type	Atoms
53	X	201	CDL	CB3-OB5-PB2-OB4
53	X	201	CDL	C51-CB5-OB6-CB4
53	d	204	CDL	CB2-OB2-PB2-OB3
53	d	204	CDL	CB2-OB2-PB2-OB5
53	d	204	CDL	CB3-OB5-PB2-OB3
53	d	204	CDL	OB7-CB5-OB6-CB4
53	h	203	CDL	CA2-OA2-PA1-OA5
53	i	202	CDL	CB2-OB2-PB2-OB3
53	i	202	CDL	CB2-OB2-PB2-OB4
53	i	202	CDL	CB2-OB2-PB2-OB5
53	r	202	CDL	CA3-OA5-PA1-OA2
53	r	202	CDL	CA3-OA5-PA1-OA3
53	r	202	CDL	C11-CA5-OA6-CA4
53	r	202	CDL	OB5-CB3-CB4-OB6
54	O	401	DGT	C5'-O5'-PA-O2A
56	P	501	NDP	C5B-O5B-PA-O1A
56	P	501	NDP	C5B-O5B-PA-O2A
56	P	501	NDP	C5D-O5D-PN-O3
57	T	101	EHZ	C6-C7-C8-C9
57	T	101	EHZ	C16-C17-C20-O6
57	U	101	EHZ	O1-C7-C8-C9
57	U	101	EHZ	S1-C10-C11-N1
57	U	101	EHZ	C11-C10-S1-C9
57	U	101	EHZ	C15-C16-C17-C19
57	U	101	EHZ	C15-C16-C17-C20
57	U	101	EHZ	C16-C17-C20-O6
57	U	101	EHZ	O2-C9-S1-C10
57	U	101	EHZ	C8-C9-S1-C10
45	A	201	3PE	O32-C31-O31-C3
45	N	403	3PE	O32-C31-O31-C3
45	Y	204	3PE	O32-C31-O31-C3
53	X	201	CDL	OA9-CA7-OA8-CA6
53	X	201	CDL	OB9-CB7-OB8-CB6
53	d	204	CDL	OB9-CB7-OB8-CB6
45	N	403	3PE	C32-C31-O31-C3
45	Y	204	3PE	C32-C31-O31-C3
46	L	701	PC1	C32-C31-O31-C3
53	X	201	CDL	C31-CA7-OA8-CA6
53	X	201	CDL	C71-CB7-OB8-CB6
53	d	204	CDL	C71-CB7-OB8-CB6
45	H	401	3PE	O32-C31-O31-C3
45	I	203	3PE	O32-C31-O31-C3

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Mol	Chain	Res	Type	Atoms
45	J	201	3PE	O32-C31-O31-C3
45	M	604	3PE	O32-C31-O31-C3
45	N	401	3PE	O32-C31-O31-C3
45	Y	203	3PE	O32-C31-O31-C3
45	Y	205	3PE	O32-C31-O31-C3
45	Y	206	3PE	O32-C31-O31-C3
45	h	201	3PE	O32-C31-O31-C3
46	A	203	PC1	O32-C31-O31-C3
46	B	202	PC1	O32-C31-O31-C3
46	H	403	PC1	O32-C31-O31-C3
46	h	202	PC1	O32-C31-O31-C3
53	M	607	CDL	OA9-CA7-OA8-CA6
53	M	607	CDL	OB9-CB7-OB8-CB6
53	h	203	CDL	OA9-CA7-OA8-CA6
53	h	203	CDL	OB9-CB7-OB8-CB6
45	H	401	3PE	O22-C21-O21-C2
45	L	702	3PE	O22-C21-O21-C2
45	Y	204	3PE	O22-C21-O21-C2
45	d	201	3PE	O22-C21-O21-C2
45	f	101	3PE	O22-C21-O21-C2
45	h	201	3PE	O22-C21-O21-C2
45	r	201	3PE	O22-C21-O21-C2
46	A	203	PC1	O22-C21-O21-C2
46	I	204	PC1	O22-C21-O21-C2
46	m	203	PC1	O22-C21-O21-C2
53	N	404	CDL	OB7-CB5-OB6-CB4
53	X	201	CDL	OB7-CB5-OB6-CB4
45	A	201	3PE	C32-C31-O31-C3
45	H	401	3PE	C32-C31-O31-C3
45	J	201	3PE	C32-C31-O31-C3
45	M	604	3PE	C32-C31-O31-C3
45	N	401	3PE	C32-C31-O31-C3
45	Y	203	3PE	C32-C31-O31-C3
45	Y	205	3PE	C32-C31-O31-C3
45	Y	206	3PE	C32-C31-O31-C3
45	b	102	3PE	C32-C31-O31-C3
45	h	201	3PE	C32-C31-O31-C3
45	r	201	3PE	C32-C31-O31-C3
46	A	203	PC1	C32-C31-O31-C3
46	B	202	PC1	C32-C31-O31-C3
46	H	403	PC1	C32-C31-O31-C3
46	M	606	PC1	C32-C31-O31-C3

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Mol	Chain	Res	Type	Atoms
46	d	202	PC1	C32-C31-O31-C3
46	h	202	PC1	C32-C31-O31-C3
53	M	607	CDL	C31-CA7-OA8-CA6
53	M	607	CDL	C71-CB7-OB8-CB6
53	h	203	CDL	C31-CA7-OA8-CA6
45	J	201	3PE	C22-C21-O21-C2
45	N	402	3PE	C22-C21-O21-C2
45	Y	206	3PE	C22-C21-O21-C2
45	b	102	3PE	C22-C21-O21-C2
45	m	201	3PE	C22-C21-O21-C2
45	m	202	3PE	C22-C21-O21-C2
45	q	201	3PE	C22-C21-O21-C2
46	B	202	PC1	C22-C21-O21-C2
46	I	204	PC1	C22-C21-O21-C2
53	M	607	CDL	C51-CB5-OB6-CB4
53	d	204	CDL	C51-CB5-OB6-CB4
46	m	203	PC1	O32-C31-O31-C3
53	d	204	CDL	OA9-CA7-OA8-CA6
46	q	202	PC1	O32-C31-O31-C3
45	d	201	3PE	O32-C31-O31-C3
45	I	203	3PE	C32-C31-O31-C3
45	d	201	3PE	C32-C31-O31-C3
46	m	203	PC1	C32-C31-O31-C3
53	N	404	CDL	C71-CB7-OB8-CB6
53	h	203	CDL	C71-CB7-OB8-CB6
46	q	202	PC1	C32-C31-O31-C3
45	Y	202	3PE	O22-C21-O21-C2
45	Y	203	3PE	O22-C21-O21-C2
48	Z	204	PLC	O'-C'-O2-C2
53	r	202	CDL	OA7-CA5-OA6-CA4
46	M	606	PC1	O32-C31-O31-C3
53	i	202	CDL	OA9-CA7-OA8-CA6
53	M	607	CDL	O1-C1-CA2-OA2
53	N	404	CDL	O1-C1-CA2-OA2
53	d	204	CDL	O1-C1-CA2-OA2
46	A	202	PC1	C32-C31-O31-C3
53	d	204	CDL	C31-CA7-OA8-CA6
45	b	102	3PE	O32-C31-O31-C3
46	A	202	PC1	O32-C31-O31-C3
53	N	404	CDL	OB9-CB7-OB8-CB6
46	M	606	PC1	C22-C21-O21-C2
46	h	202	PC1	C22-C21-O21-C2

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Mol	Chain	Res	Type	Atoms
53	X	201	CDL	C11-CA5-OA6-CA4
53	i	202	CDL	C31-CA7-OA8-CA6
53	X	201	CDL	OA7-CA5-OA6-CA4
45	Y	207	3PE	C32-C31-O31-C3
53	i	202	CDL	C71-CB7-OB8-CB6
45	Y	207	3PE	O32-C31-O31-C3
53	i	202	CDL	OB9-CB7-OB8-CB6
46	H	403	PC1	C22-C21-O21-C2
46	h	202	PC1	O22-C21-O21-C2
48	O	403	PLC	C4-C5-N-C8
45	Z	201	3PE	C32-C31-O31-C3
45	f	101	3PE	C32-C31-O31-C3
45	m	202	3PE	C32-C31-O31-C3
46	Z	203	PC1	C32-C31-O31-C3
53	N	404	CDL	C31-CA7-OA8-CA6
53	M	607	CDL	OB5-CB3-CB4-OB6
53	d	204	CDL	CB7-C71-C72-C73
46	M	606	PC1	O21-C2-C3-O31
48	O	403	PLC	O2-C2-C3-O3
45	m	202	3PE	O32-C31-O31-C3
53	N	404	CDL	OA9-CA7-OA8-CA6
45	Y	204	3PE	C21-C22-C23-C24
46	B	202	PC1	C21-C22-C23-C24
48	O	403	PLC	CB-C1B-C2B-C3B
53	M	607	CDL	CB7-C71-C72-C73
53	r	202	CDL	CB5-C51-C52-C53
45	f	101	3PE	O32-C31-O31-C3
45	N	401	3PE	C31-C32-C33-C34
46	H	402	PC1	C21-C22-C23-C24
46	Z	203	PC1	C31-C32-C33-C34
45	J	202	3PE	C21-C22-C23-C24
45	Z	201	3PE	C21-C22-C23-C24
45	b	102	3PE	C21-C22-C23-C24
45	d	201	3PE	C31-C32-C33-C34
46	A	202	PC1	C21-C22-C23-C24
46	d	202	PC1	C31-C32-C33-C34
46	M	606	PC1	O22-C21-O21-C2
45	A	201	3PE	C31-C32-C33-C34
45	Y	203	3PE	C21-C22-C23-C24
45	f	101	3PE	C21-C22-C23-C24
53	M	607	CDL	CB5-C51-C52-C53
53	r	202	CDL	CA5-C11-C12-C13

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Mol	Chain	Res	Type	Atoms
45	Z	201	3PE	O32-C31-O31-C3
46	Z	203	PC1	O32-C31-O31-C3
46	H	403	PC1	O22-C21-O21-C2
45	Y	201	3PE	C32-C31-O31-C3
48	b	103	PLC	C1B-CB-O3-C3
45	I	203	3PE	C11-O13-P-O11
45	J	201	3PE	C11-O13-P-O11
45	J	202	3PE	C11-O13-P-O11
45	K	101	3PE	C1-O11-P-O13
45	K	101	3PE	C11-O13-P-O11
45	L	702	3PE	C1-O11-P-O13
45	M	602	3PE	C11-O13-P-O11
45	M	603	3PE	C1-O11-P-O13
45	N	402	3PE	C1-O11-P-O13
45	N	402	3PE	C11-O13-P-O11
45	Y	203	3PE	C11-O13-P-O11
45	Y	204	3PE	C11-O13-P-O11
45	Y	205	3PE	C11-O13-P-O11
45	Y	206	3PE	C11-O13-P-O11
45	Y	207	3PE	C1-O11-P-O13
45	Y	207	3PE	C11-O13-P-O11
45	Z	201	3PE	C1-O11-P-O13
45	Z	202	3PE	C1-O11-P-O13
45	b	101	3PE	C1-O11-P-O13
45	b	102	3PE	C1-O11-P-O13
45	f	101	3PE	C1-O11-P-O13
45	f	101	3PE	C11-O13-P-O11
45	m	201	3PE	C11-O13-P-O11
45	m	202	3PE	C11-O13-P-O11
45	q	201	3PE	C11-O13-P-O11
45	r	201	3PE	C11-O13-P-O11
46	A	202	PC1	C11-O13-P-O11
46	B	202	PC1	C11-O13-P-O11
46	B	202	PC1	C1-O11-P-O13
46	H	402	PC1	C1-O11-P-O13
46	I	204	PC1	C11-O13-P-O11
46	Z	203	PC1	C1-O11-P-O13
46	d	202	PC1	C11-O13-P-O11
46	g	201	PC1	C11-O13-P-O11
46	m	203	PC1	C1-O11-P-O13
46	q	202	PC1	C11-O13-P-O11
48	L	703	PLC	C1-O3P-P-O4P

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Mol	Chain	Res	Type	Atoms
48	b	103	PLC	C1-O3P-P-O4P
48	d	203	PLC	C4-O4P-P-O3P
53	M	607	CDL	CA2-OA2-PA1-OA5
53	M	607	CDL	CB2-OB2-PB2-OB5
53	N	404	CDL	CB3-OB5-PB2-OB2
53	X	201	CDL	CA2-OA2-PA1-OA5
46	I	204	PC1	C21-C22-C23-C24
45	Z	202	3PE	C32-C31-O31-C3
45	Z	202	3PE	C31-C32-C33-C34
46	d	202	PC1	C21-C22-C23-C24
53	N	404	CDL	CB2-C1-CA2-OA2
48	O	403	PLC	C4-C5-N-C7
45	Z	202	3PE	C38-C39-C3A-C3B
53	M	607	CDL	C37-C38-C39-C40
53	M	607	CDL	C11-CA5-OA6-CA4
53	d	204	CDL	C11-CA5-OA6-CA4
45	K	101	3PE	C35-C36-C37-C38
45	M	605	3PE	C35-C36-C37-C38
45	Y	202	3PE	C2C-C2D-C2E-C2F
45	Y	203	3PE	C26-C27-C28-C29
45	Y	204	3PE	C39-C3A-C3B-C3C
45	Y	205	3PE	C2A-C2B-C2C-C2D
45	Y	206	3PE	C36-C37-C38-C39
45	Y	207	3PE	C3B-C3C-C3D-C3E
45	b	102	3PE	C28-C29-C2A-C2B
45	f	101	3PE	C24-C25-C26-C27
45	h	201	3PE	C33-C34-C35-C36
46	H	403	PC1	C36-C37-C38-C39
46	L	701	PC1	C29-C2A-C2B-C2C
46	L	701	PC1	C32-C33-C34-C35
46	L	701	PC1	C3B-C3C-C3D-C3E
53	M	607	CDL	C13-C14-C15-C16
53	M	607	CDL	C18-C19-C20-C21
53	X	201	CDL	C35-C36-C37-C38
53	d	204	CDL	C72-C73-C74-C75
57	U	101	EHZ	C19-C17-C20-O6
46	g	201	PC1	C32-C31-O31-C3
45	K	101	3PE	C22-C23-C24-C25
45	M	605	3PE	C33-C34-C35-C36
45	Y	204	3PE	C25-C26-C27-C28
45	Y	207	3PE	C2C-C2D-C2E-C2F
45	Z	202	3PE	C35-C36-C37-C38

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Mol	Chain	Res	Type	Atoms
45	Z	202	3PE	C2B-C2C-C2D-C2E
53	X	201	CDL	C37-C38-C39-C40
53	X	201	CDL	C82-C83-C84-C85
53	h	203	CDL	C60-C61-C62-C63
59	o	201	MYR	C2-C3-C4-C5
53	M	607	CDL	OA7-CA5-OA6-CA4
53	d	204	CDL	OA7-CA5-OA6-CA4
46	M	606	PC1	C31-C32-C33-C34
45	L	702	3PE	C3A-C3B-C3C-C3D
45	N	403	3PE	C24-C25-C26-C27
45	Y	204	3PE	C33-C34-C35-C36
45	Y	206	3PE	C33-C34-C35-C36
45	M	603	3PE	C2-C1-O11-P
45	A	201	3PE	C24-C25-C26-C27
45	M	603	3PE	C2D-C2E-C2F-C2G
45	Z	202	3PE	C29-C2A-C2B-C2C
45	q	201	3PE	C27-C28-C29-C2A
46	I	204	PC1	C36-C37-C38-C39
46	d	202	PC1	C36-C37-C38-C39
48	L	703	PLC	C3'-C4'-C5'-C6'
53	N	404	CDL	C78-C79-C80-C81
53	i	202	CDL	C16-C17-C18-C19
57	T	101	EHZ	C2-C3-C4-C5
45	H	401	3PE	C3E-C3F-C3G-C3H
45	J	202	3PE	C27-C28-C29-C2A
45	N	402	3PE	C2C-C2D-C2E-C2F
45	Y	202	3PE	C2B-C2C-C2D-C2E
45	q	201	3PE	C25-C26-C27-C28
46	B	202	PC1	C38-C39-C3A-C3B
53	M	607	CDL	C32-C33-C34-C35
53	M	607	CDL	C57-C58-C59-C60
53	N	404	CDL	C22-C23-C24-C25
45	N	401	3PE	C24-C25-C26-C27
45	N	403	3PE	C2A-C2B-C2C-C2D
45	b	101	3PE	C26-C27-C28-C29
46	I	204	PC1	C35-C36-C37-C38
48	b	103	PLC	C4'-C5'-C6'-C7'
53	N	404	CDL	C17-C18-C19-C20
53	X	201	CDL	C61-C62-C63-C64
45	A	201	3PE	C3C-C3D-C3E-C3F
45	A	201	3PE	C3E-C3F-C3G-C3H
53	h	203	CDL	C34-C35-C36-C37

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Mol	Chain	Res	Type	Atoms
45	q	201	3PE	C21-C22-C23-C24
48	b	103	PLC	C'-C1'-C2'-C3'
45	N	401	3PE	C2B-C2C-C2D-C2E
45	Y	205	3PE	C25-C26-C27-C28
45	Y	207	3PE	C33-C34-C35-C36
45	f	101	3PE	C34-C35-C36-C37
45	q	201	3PE	C3B-C3C-C3D-C3E
46	H	402	PC1	C24-C25-C26-C27
46	H	402	PC1	C34-C35-C36-C37
48	O	403	PLC	C2'-C3'-C4'-C5'
53	N	404	CDL	C12-C13-C14-C15
53	N	404	CDL	C51-C52-C53-C54
53	X	201	CDL	C58-C59-C60-C61
53	i	202	CDL	C12-C13-C14-C15
45	Y	201	3PE	O32-C31-O31-C3
45	M	603	3PE	C3A-C3B-C3C-C3D
45	Y	205	3PE	C33-C34-C35-C36
45	Y	207	3PE	C39-C3A-C3B-C3C
53	M	607	CDL	C83-C84-C85-C86
53	i	202	CDL	C32-C33-C34-C35
57	T	101	EHZ	C1-C2-C3-C4
45	K	101	3PE	C22-C21-O21-C2
45	M	603	3PE	C22-C21-O21-C2
45	M	605	3PE	C22-C21-O21-C2
45	N	401	3PE	C22-C21-O21-C2
53	i	202	CDL	C11-CA5-OA6-CA4
45	A	201	3PE	C36-C37-C38-C39
45	b	101	3PE	C34-C35-C36-C37
46	A	202	PC1	C23-C24-C25-C26
46	H	403	PC1	C3A-C3B-C3C-C3D
53	X	201	CDL	C77-C78-C79-C80
45	N	403	3PE	C31-C32-C33-C34
45	Y	207	3PE	C21-C22-C23-C24
45	J	202	3PE	C29-C2A-C2B-C2C
45	M	602	3PE	C33-C34-C35-C36
45	M	603	3PE	C35-C36-C37-C38
45	N	401	3PE	C27-C28-C29-C2A
45	N	402	3PE	C26-C27-C28-C29
45	Y	207	3PE	C35-C36-C37-C38
45	b	102	3PE	C23-C24-C25-C26
46	L	701	PC1	C39-C3A-C3B-C3C
46	g	201	PC1	C26-C27-C28-C29

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Mol	Chain	Res	Type	Atoms
53	M	607	CDL	C23-C24-C25-C26
53	d	204	CDL	C35-C36-C37-C38
48	O	403	PLC	C4-C5-N-C6
45	M	604	3PE	C35-C36-C37-C38
45	M	605	3PE	C2A-C2B-C2C-C2D
46	m	203	PC1	C24-C25-C26-C27
53	X	201	CDL	C51-C52-C53-C54
45	J	201	3PE	O13-C11-C12-N
45	L	702	3PE	O13-C11-C12-N
45	Y	207	3PE	O13-C11-C12-N
45	b	102	3PE	O13-C11-C12-N
45	N	403	3PE	C28-C29-C2A-C2B
45	N	403	3PE	C2D-C2E-C2F-C2G
45	Y	201	3PE	C22-C23-C24-C25
45	m	202	3PE	C35-C36-C37-C38
45	q	201	3PE	C32-C33-C34-C35
45	q	201	3PE	C35-C36-C37-C38
53	M	607	CDL	C14-C15-C16-C17
53	h	203	CDL	C72-C73-C74-C75
53	N	404	CDL	CA5-C11-C12-C13
53	N	404	CDL	CB7-C71-C72-C73
46	H	402	PC1	C28-C29-C2A-C2B
45	A	201	3PE	C3A-C3B-C3C-C3D
45	Y	205	3PE	C38-C39-C3A-C3B
45	m	202	3PE	C33-C34-C35-C36
46	H	402	PC1	C33-C34-C35-C36
46	L	701	PC1	C35-C36-C37-C38
45	A	201	3PE	C34-C35-C36-C37
45	f	101	3PE	C32-C33-C34-C35
46	A	203	PC1	C3C-C3D-C3E-C3F
45	Z	202	3PE	C21-C22-C23-C24
45	Z	202	3PE	O32-C31-O31-C3
48	b	103	PLC	OB-CB-O3-C3
45	K	101	3PE	C32-C33-C34-C35
46	M	606	PC1	C25-C26-C27-C28
46	d	202	PC1	C33-C34-C35-C36
45	K	101	3PE	O22-C21-O21-C2
45	M	605	3PE	O22-C21-O21-C2
45	Y	207	3PE	C38-C39-C3A-C3B
45	N	401	3PE	C2E-C2F-C2G-C2H
45	J	202	3PE	C22-C21-O21-C2
53	r	202	CDL	C51-CB5-OB6-CB4

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Mol	Chain	Res	Type	Atoms
46	H	402	PC1	C29-C2A-C2B-C2C
45	K	101	3PE	C3A-C3B-C3C-C3D
45	N	401	3PE	C32-C33-C34-C35
46	A	203	PC1	C34-C35-C36-C37
45	Y	203	3PE	C29-C2A-C2B-C2C
45	Y	203	3PE	C2D-C2E-C2F-C2G
45	r	201	3PE	C31-C32-C33-C34
53	M	607	CDL	CA5-C11-C12-C13
46	H	403	PC1	C3E-C3F-C3G-C3H
46	h	202	PC1	C29-C2A-C2B-C2C
45	J	202	3PE	O22-C21-O21-C2
45	M	603	3PE	O22-C21-O21-C2
45	N	401	3PE	O22-C21-O21-C2
53	i	202	CDL	OA7-CA5-OA6-CA4
53	r	202	CDL	OB7-CB5-OB6-CB4
45	Y	206	3PE	C38-C39-C3A-C3B
48	L	703	PLC	C7'-C8'-C9'-CA'
45	N	402	3PE	C33-C34-C35-C36
48	L	703	PLC	C5B-C6B-C7B-C8B
53	d	204	CDL	C74-C75-C76-C77
46	H	402	PC1	C32-C33-C34-C35
53	r	202	CDL	C71-C72-C73-C74
45	b	102	3PE	C33-C34-C35-C36
45	d	201	3PE	C28-C29-C2A-C2B
46	g	201	PC1	O32-C31-O31-C3
45	Y	203	3PE	C31-C32-C33-C34
45	Y	204	3PE	C29-C2A-C2B-C2C
53	M	607	CDL	C73-C74-C75-C76
45	b	102	3PE	C2D-C2E-C2F-C2G
45	Z	201	3PE	O22-C21-O21-C2
45	M	602	3PE	C31-C32-C33-C34
45	M	603	3PE	C31-C32-C33-C34
45	M	602	3PE	C32-C31-O31-C3
45	Y	203	3PE	C3B-C3C-C3D-C3E
53	N	404	CDL	C55-C56-C57-C58
57	U	101	EHZ	C5-C6-C7-C8
45	L	702	3PE	C35-C36-C37-C38
53	i	202	CDL	CA5-C11-C12-C13
45	M	605	3PE	C27-C28-C29-C2A
48	g	202	PLC	C1'-C2'-C3'-C4'
46	Z	203	PC1	C37-C38-C39-C3A
57	T	101	EHZ	C12-C13-C14-N2

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Mol	Chain	Res	Type	Atoms
45	N	402	3PE	C32-C31-O31-C3
45	N	401	3PE	C22-C23-C24-C25
45	Y	204	3PE	C34-C35-C36-C37
45	M	602	3PE	C22-C21-O21-C2
45	Z	201	3PE	C22-C21-O21-C2
45	H	401	3PE	O11-C1-C2-O21
45	N	403	3PE	O11-C1-C2-O21
53	N	404	CDL	OA5-CA3-CA4-OA6
45	Y	203	3PE	C38-C39-C3A-C3B
48	J	203	PLC	C2B-C3B-C4B-C5B
53	h	203	CDL	C33-C34-C35-C36
46	I	204	PC1	C25-C26-C27-C28
46	H	402	PC1	O21-C2-C3-O31
46	m	203	PC1	O21-C2-C3-O31
45	N	403	3PE	C34-C35-C36-C37
53	h	203	CDL	CA5-C11-C12-C13
56	P	501	NDP	O4B-C4B-C5B-O5B
56	P	501	NDP	C3B-C4B-C5B-O5B
45	M	603	3PE	C2A-C2B-C2C-C2D
53	N	404	CDL	C71-C72-C73-C74
45	f	101	3PE	C2E-C2F-C2G-C2H
53	N	404	CDL	C72-C73-C74-C75
45	A	201	3PE	C38-C39-C3A-C3B
45	Z	202	3PE	C3B-C3C-C3D-C3E
45	m	201	3PE	C22-C23-C24-C25
46	d	202	PC1	C34-C35-C36-C37
46	Z	203	PC1	C22-C21-O21-C2
45	I	203	3PE	C24-C25-C26-C27
45	Y	203	3PE	C34-C35-C36-C37
45	N	401	3PE	C11-O13-P-O11
45	Y	202	3PE	C11-O13-P-O11
46	A	203	PC1	C11-O13-P-O11
53	N	404	CDL	CB2-OB2-PB2-OB5
53	d	204	CDL	CB3-OB5-PB2-OB2
56	P	501	NDP	O4D-C1D-N1N-C6N
48	Z	204	PLC	CB-C1B-C2B-C3B
45	Z	202	3PE	C2-C1-O11-P
45	K	101	3PE	O11-C1-C2-C3
45	N	403	3PE	O11-C1-C2-C3
45	Y	202	3PE	O11-C1-C2-C3
45	Y	204	3PE	O11-C1-C2-C3
45	h	201	3PE	O11-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
45	r	201	3PE	O11-C1-C2-C3
53	M	607	CDL	OB5-CB3-CB4-CB6
53	N	404	CDL	OA5-CA3-CA4-CA6
53	X	201	CDL	OA5-CA3-CA4-CA6
53	i	202	CDL	OB5-CB3-CB4-CB6
45	N	401	3PE	C34-C35-C36-C37
46	L	701	PC1	C27-C28-C29-C2A
45	M	602	3PE	C35-C36-C37-C38
45	N	401	3PE	C28-C29-C2A-C2B
57	U	101	EHZ	C22-C23-C24-C25
45	I	203	3PE	C22-C23-C24-C25
45	M	603	3PE	C23-C24-C25-C26
46	L	701	PC1	C3E-C3F-C3G-C3H
48	g	202	PLC	C'-C1'-C2'-C3'
45	Y	202	3PE	C35-C36-C37-C38
57	T	101	EHZ	C22-C23-C24-C25
53	X	201	CDL	C71-C72-C73-C74
45	N	403	3PE	C23-C24-C25-C26
46	H	403	PC1	C3B-C3C-C3D-C3E
53	h	203	CDL	C35-C36-C37-C38
45	M	603	3PE	C3C-C3D-C3E-C3F
45	M	605	3PE	C23-C24-C25-C26
45	q	201	3PE	C1-C2-C3-O31
46	H	402	PC1	C1-C2-C3-O31
46	M	606	PC1	C1-C2-C3-O31
46	Z	203	PC1	C26-C27-C28-C29
46	h	202	PC1	C1-C2-C3-O31
48	O	403	PLC	C1-C2-C3-O3
48	Z	204	PLC	C1-C2-C3-O3
53	M	607	CDL	C42-C43-C44-C45
53	h	203	CDL	CB3-CB4-CB6-OB8
45	b	101	3PE	C38-C39-C3A-C3B
45	b	102	3PE	C35-C36-C37-C38
53	i	202	CDL	C39-C40-C41-C42
45	q	201	3PE	C2F-C2G-C2H-C2I
48	J	203	PLC	C6B-C7B-C8B-C9B
53	N	404	CDL	C35-C36-C37-C38
45	M	602	3PE	O32-C31-O31-C3
45	Y	207	3PE	C28-C29-C2A-C2B
45	Z	201	3PE	C25-C26-C27-C28
53	h	203	CDL	C38-C39-C40-C41
45	J	202	3PE	C2F-C2G-C2H-C2I

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Mol	Chain	Res	Type	Atoms
46	B	202	PC1	C33-C34-C35-C36
46	H	402	PC1	C2F-C2G-C2H-C2I
48	b	103	PLC	C4B-C5B-C6B-C7B
53	N	404	CDL	C60-C61-C62-C63
48	B	203	PLC	C'-C1'-C2'-C3'
45	Y	205	3PE	C26-C27-C28-C29
48	B	203	PLC	C1'-C'-O2-C2
53	X	201	CDL	C44-C45-C46-C47
57	U	101	EHZ	C5-C6-C7-O1
46	g	201	PC1	C2F-C2G-C2H-C2I
53	i	202	CDL	C72-C73-C74-C75
57	U	101	EHZ	C18-C17-C20-O6
46	m	203	PC1	C21-C22-C23-C24
45	Y	204	3PE	C3-C2-O21-C21
58	i	201	CHD	C20-C22-C23-C24
45	K	101	3PE	C25-C26-C27-C28
45	Y	205	3PE	C3A-C3B-C3C-C3D
53	i	202	CDL	C41-C42-C43-C44
45	Z	201	3PE	C24-C25-C26-C27
48	L	703	PLC	O3P-C1-C2-O2
48	d	203	PLC	O3P-C1-C2-O2
45	N	402	3PE	C21-C22-C23-C24
45	N	402	3PE	O32-C31-O31-C3
45	Y	207	3PE	C3E-C3F-C3G-C3H
46	M	606	PC1	C23-C24-C25-C26
45	N	403	3PE	O21-C21-C22-C23
45	A	201	3PE	O21-C2-C3-O31
45	q	201	3PE	O21-C2-C3-O31
46	d	202	PC1	O21-C2-C3-O31
53	r	202	CDL	OA6-CA4-CA6-OA8
45	M	602	3PE	O22-C21-O21-C2
57	U	101	EHZ	O5-C16-C17-C18
57	U	101	EHZ	O5-C16-C17-C19
45	Y	203	3PE	C24-C25-C26-C27
45	b	101	3PE	C29-C2A-C2B-C2C
53	r	202	CDL	C16-C17-C18-C19
56	P	501	NDP	PN-O3-PA-O1A
45	L	702	3PE	C32-C33-C34-C35
48	J	203	PLC	C5B-C6B-C7B-C8B
45	K	101	3PE	C23-C24-C25-C26
45	Y	207	3PE	C2E-C2F-C2G-C2H
45	q	201	3PE	C3D-C3E-C3F-C3G

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Mol	Chain	Res	Type	Atoms
53	M	607	CDL	CB2-C1-CA2-OA2
53	N	404	CDL	C11-CA5-OA6-CA4
45	Z	201	3PE	C27-C28-C29-C2A
46	B	202	PC1	C39-C3A-C3B-C3C
48	Z	204	PLC	C1B-CB-O3-C3
45	H	401	3PE	C33-C34-C35-C36
45	b	102	3PE	C37-C38-C39-C3A
45	m	201	3PE	C29-C2A-C2B-C2C
53	i	202	CDL	C36-C37-C38-C39
46	h	202	PC1	C31-C32-C33-C34
45	M	603	3PE	C39-C3A-C3B-C3C
45	Y	203	3PE	C2C-C2D-C2E-C2F
45	H	401	3PE	O11-C1-C2-C3
45	Z	201	3PE	O11-C1-C2-C3
45	b	101	3PE	O11-C1-C2-C3
46	B	202	PC1	O11-C1-C2-C3
46	L	701	PC1	O11-C1-C2-C3
48	O	403	PLC	O3P-C1-C2-C3
53	d	204	CDL	OA5-CA3-CA4-CA6
53	r	202	CDL	OB5-CB3-CB4-CB6
45	b	101	3PE	C36-C37-C38-C39
53	h	203	CDL	C31-C32-C33-C34
45	M	604	3PE	O13-C11-C12-N
45	Z	202	3PE	O13-C11-C12-N
45	Y	205	3PE	C28-C29-C2A-C2B
53	N	404	CDL	C20-C21-C22-C23
53	i	202	CDL	CA7-C31-C32-C33
45	Y	202	3PE	C33-C34-C35-C36
45	q	201	3PE	C3F-C3G-C3H-C3I
53	N	404	CDL	C31-C32-C33-C34
46	A	203	PC1	C32-C33-C34-C35
48	O	403	PLC	C6B-C7B-C8B-C9B
53	X	201	CDL	C41-C42-C43-C44
53	i	202	CDL	C51-CB5-OB6-CB4
53	r	202	CDL	C1-CB2-OB2-PB2
57	T	101	EHZ	S1-C10-C11-N1
45	d	201	3PE	C39-C3A-C3B-C3C
45	K	101	3PE	C37-C38-C39-C3A
45	L	702	3PE	C38-C39-C3A-C3B
45	Y	202	3PE	C3A-C3B-C3C-C3D
45	Y	203	3PE	C28-C29-C2A-C2B
46	H	403	PC1	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
46	L	701	PC1	C23-C24-C25-C26
45	J	201	3PE	C32-C33-C34-C35
45	J	202	3PE	C1-C2-C3-O31
45	L	702	3PE	C1-C2-C3-O31
45	M	603	3PE	C1-C2-C3-O31
45	N	402	3PE	C1-C2-C3-O31
45	Z	202	3PE	C1-C2-C3-O31
45	b	102	3PE	C1-C2-C3-O31
46	A	202	PC1	C1-C2-C3-O31
46	m	203	PC1	C1-C2-C3-O31
48	L	703	PLC	C1-C2-C3-O3
53	M	607	CDL	CA3-CA4-CA6-OA8
53	i	202	CDL	CA3-CA4-CA6-OA8
45	J	201	3PE	C35-C36-C37-C38
45	b	101	3PE	C2A-C2B-C2C-C2D
45	H	401	3PE	C36-C37-C38-C39
45	J	201	3PE	C36-C37-C38-C39
53	M	607	CDL	C75-C76-C77-C78
46	L	701	PC1	C26-C27-C28-C29
45	b	101	3PE	C37-C38-C39-C3A
48	L	703	PLC	C6B-C7B-C8B-C9B
48	B	203	PLC	C4-O4P-P-O3P
53	M	607	CDL	C78-C79-C80-C81
46	M	606	PC1	C32-C33-C34-C35
45	I	203	3PE	O11-C1-C2-O21
45	Y	202	3PE	O11-C1-C2-O21
45	Y	204	3PE	O11-C1-C2-O21
45	d	201	3PE	O11-C1-C2-O21
48	O	403	PLC	O3P-C1-C2-O2
53	i	202	CDL	OB5-CB3-CB4-OB6
45	d	201	3PE	C22-C23-C24-C25
45	Y	203	3PE	C3F-C3G-C3H-C3I
54	O	401	DGT	O4'-C4'-C5'-O5'
45	Z	201	3PE	C2F-C2G-C2H-C2I
48	J	203	PLC	C1B-C2B-C3B-C4B
53	M	607	CDL	C35-C36-C37-C38
53	M	607	CDL	C62-C63-C64-C65
45	M	603	3PE	O21-C2-C3-O31
45	N	403	3PE	O21-C2-C3-O31
45	Z	202	3PE	O21-C2-C3-O31
45	b	102	3PE	O21-C2-C3-O31
46	A	202	PC1	O21-C2-C3-O31

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Mol	Chain	Res	Type	Atoms
48	Z	204	PLC	O2-C2-C3-O3
48	g	202	PLC	O2-C2-C3-O3
53	M	607	CDL	OA6-CA4-CA6-OA8
45	b	101	3PE	O21-C21-C22-C23
45	Y	204	3PE	C36-C37-C38-C39
46	H	403	PC1	C3D-C3E-C3F-C3G
53	d	204	CDL	C11-C12-C13-C14
53	d	204	CDL	CB2-C1-CA2-OA2
46	Z	203	PC1	O22-C21-O21-C2
48	B	203	PLC	O'-C'-O2-C2
53	N	404	CDL	OA7-CA5-OA6-CA4
45	Y	204	3PE	C28-C29-C2A-C2B
45	b	101	3PE	C2C-C2D-C2E-C2F
46	m	203	PC1	C39-C3A-C3B-C3C
45	N	402	3PE	C23-C24-C25-C26
46	Z	203	PC1	C34-C35-C36-C37
45	I	203	3PE	C2-C1-O11-P
45	J	201	3PE	C2-C1-O11-P
45	N	401	3PE	C2-C1-O11-P
50	F	502	FMN	C4'-C5'-O5'-P
45	I	203	3PE	C28-C29-C2A-C2B
53	d	204	CDL	C76-C77-C78-C79
53	i	202	CDL	CB7-C71-C72-C73
53	i	202	CDL	OB7-CB5-OB6-CB4
45	M	603	3PE	C36-C37-C38-C39
46	g	201	PC1	C2C-C2D-C2E-C2F
53	M	607	CDL	C17-C18-C19-C20
48	L	703	PLC	C2B-C3B-C4B-C5B
56	P	501	NDP	PN-O3-PA-O5B
45	N	403	3PE	C2B-C2C-C2D-C2E
45	Y	201	3PE	O11-C1-C2-C3
45	Y	205	3PE	O11-C1-C2-C3
45	d	201	3PE	O11-C1-C2-C3
46	q	202	PC1	O11-C1-C2-C3
48	B	203	PLC	O3P-C1-C2-C3
48	J	203	PLC	O3P-C1-C2-C3
48	L	703	PLC	O3P-C1-C2-C3
48	d	203	PLC	O3P-C1-C2-C3
53	h	203	CDL	OA5-CA3-CA4-CA6
53	N	404	CDL	C74-C75-C76-C77
45	b	101	3PE	C27-C28-C29-C2A
53	r	202	CDL	CA7-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
46	H	402	PC1	C32-C31-O31-C3
45	Y	206	3PE	C22-C23-C24-C25
45	b	102	3PE	C34-C35-C36-C37
45	N	401	3PE	C3-C2-O21-C21
53	N	404	CDL	CA6-CA4-OA6-CA5
45	b	102	3PE	C3C-C3D-C3E-C3F
46	H	402	PC1	C2D-C2E-C2F-C2G
45	Z	202	3PE	C26-C27-C28-C29
53	r	202	CDL	C12-C13-C14-C15
45	J	201	3PE	C33-C34-C35-C36
45	b	101	3PE	C1-C2-C3-O31
45	m	202	3PE	C1-C2-C3-O31
46	H	403	PC1	C2-C1-O11-P
48	b	103	PLC	C1-C2-C3-O3
48	d	203	PLC	C2-C1-O3P-P
48	g	202	PLC	C1-C2-C3-O3
48	Z	204	PLC	OB-CB-O3-C3
45	Y	201	3PE	O11-C1-C2-O21
45	Y	205	3PE	O11-C1-C2-O21
45	Z	201	3PE	O11-C1-C2-O21
45	b	101	3PE	O11-C1-C2-O21
45	f	101	3PE	O11-C1-C2-O21
45	r	201	3PE	O11-C1-C2-O21
46	I	204	PC1	O11-C1-C2-O21
48	Y	208	PLC	O3P-C1-C2-O2
53	r	202	CDL	CB7-C71-C72-C73
57	T	101	EHZ	O1-C7-C8-C9
45	L	702	3PE	O21-C2-C3-O31
45	Y	207	3PE	O21-C2-C3-O31
45	b	101	3PE	O21-C2-C3-O31
45	m	202	3PE	O21-C2-C3-O31
48	L	703	PLC	O2-C2-C3-O3
45	N	402	3PE	C32-C33-C34-C35
46	g	201	PC1	C22-C23-C24-C25
59	o	201	MYR	C4-C5-C6-C7
54	O	401	DGT	C5'-O5'-PA-O3A
53	N	404	CDL	C56-C57-C58-C59
53	X	201	CDL	CA5-C11-C12-C13
45	m	201	3PE	C26-C27-C28-C29
45	Y	204	3PE	C2B-C2C-C2D-C2E
45	J	201	3PE	C2-C3-O31-C31
45	N	403	3PE	C38-C39-C3A-C3B

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Mol	Chain	Res	Type	Atoms
46	H	402	PC1	O21-C21-C22-C23
53	h	203	CDL	C37-C38-C39-C40
48	Z	204	PLC	C8B-C9B-CAA-CBA
45	b	101	3PE	C31-C32-C33-C34
48	Y	208	PLC	C'-C1'-C2'-C3'
45	Y	203	3PE	C35-C36-C37-C38
45	H	401	3PE	C1-O11-P-O13
45	Z	201	3PE	C11-O13-P-O11
45	b	101	3PE	C11-O13-P-O11
46	A	202	PC1	C1-O11-P-O13
45	h	201	3PE	C26-C27-C28-C29
46	g	201	PC1	C32-C33-C34-C35
48	O	403	PLC	C2-C1-O3P-P
48	g	202	PLC	C2-C1-O3P-P
53	d	204	CDL	C1-CB2-OB2-PB2
46	H	402	PC1	C26-C27-C28-C29
46	Z	203	PC1	C23-C24-C25-C26
46	H	402	PC1	O32-C31-O31-C3
45	H	401	3PE	C11-O13-P-O14
45	I	203	3PE	C11-O13-P-O12
45	J	201	3PE	C1-O11-P-O14
45	J	202	3PE	C11-O13-P-O12
45	K	101	3PE	C1-O11-P-O12
45	K	101	3PE	C11-O13-P-O14
45	L	702	3PE	C1-O11-P-O12
45	N	402	3PE	C1-O11-P-O12
45	N	402	3PE	C1-O11-P-O14
45	Y	202	3PE	C11-O13-P-O12
45	Y	204	3PE	C1-O11-P-O12
45	Y	207	3PE	C1-O11-P-O14
45	Y	207	3PE	C11-O13-P-O14
45	b	101	3PE	C1-O11-P-O12
45	f	101	3PE	C1-O11-P-O14
45	f	101	3PE	C11-O13-P-O12
45	m	201	3PE	C11-O13-P-O14
45	m	202	3PE	C1-O11-P-O12
46	A	202	PC1	C11-O13-P-O12
46	A	202	PC1	C1-O11-P-O14
46	B	202	PC1	C11-O13-P-O12
46	H	403	PC1	C1-O11-P-O12
46	I	204	PC1	C11-O13-P-O12
46	I	204	PC1	C11-O13-P-O14

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Mol	Chain	Res	Type	Atoms
46	Z	203	PC1	C1-O11-P-O14
46	d	202	PC1	C11-O13-P-O14
46	g	201	PC1	C11-O13-P-O14
46	m	203	PC1	C1-O11-P-O12
48	B	203	PLC	C4-O4P-P-O2P
48	Y	208	PLC	C1-O3P-P-O2P
48	d	203	PLC	C4-O4P-P-O1P
48	g	202	PLC	C1-O3P-P-O2P
53	M	607	CDL	CB2-OB2-PB2-OB4
53	N	404	CDL	CB2-OB2-PB2-OB4
53	N	404	CDL	CB3-OB5-PB2-OB3
53	N	404	CDL	CB3-OB5-PB2-OB4
53	X	201	CDL	CA2-OA2-PA1-OA3
53	d	204	CDL	CB3-OB5-PB2-OB4
56	P	501	NDP	C5D-O5D-PN-O2N
57	U	101	EHZ	C6-C7-C8-C9
46	H	403	PC1	C31-C32-C33-C34
48	b	103	PLC	C1'-C2'-C3'-C4'
45	J	201	3PE	O11-C1-C2-C3
45	f	101	3PE	O11-C1-C2-C3
46	I	204	PC1	O11-C1-C2-C3
48	Y	208	PLC	O3P-C1-C2-C3
53	M	607	CDL	C44-C45-C46-C47
46	h	202	PC1	C2B-C2C-C2D-C2E
53	i	202	CDL	C54-C55-C56-C57
46	I	204	PC1	C22-C23-C24-C25
53	X	201	CDL	C63-C64-C65-C66
45	K	101	3PE	C12-C11-O13-P
45	N	402	3PE	C12-C11-O13-P
45	Y	202	3PE	C12-C11-O13-P
45	Y	204	3PE	C12-C11-O13-P
45	Y	205	3PE	C12-C11-O13-P
45	Y	206	3PE	C12-C11-O13-P
45	h	201	3PE	C12-C11-O13-P
45	m	201	3PE	C12-C11-O13-P
45	m	202	3PE	C12-C11-O13-P
48	Y	208	PLC	C5-C4-O4P-P
46	H	402	PC1	C35-C36-C37-C38
45	q	201	3PE	C23-C24-C25-C26
45	J	201	3PE	O11-C1-C2-O21
45	m	201	3PE	O11-C1-C2-O21
46	B	202	PC1	O11-C1-C2-O21

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Mol	Chain	Res	Type	Atoms
46	L	701	PC1	O11-C1-C2-O21
48	B	203	PLC	O3P-C1-C2-O2
53	X	201	CDL	OA5-CA3-CA4-OA6
53	d	204	CDL	OA5-CA3-CA4-OA6
53	h	203	CDL	OA5-CA3-CA4-OA6
54	O	401	DGT	C3'-C4'-C5'-O5'
45	I	203	3PE	C2F-C2G-C2H-C2I
46	h	202	PC1	C22-C23-C24-C25
53	X	201	CDL	C31-C32-C33-C34
46	I	204	PC1	C28-C29-C2A-C2B
46	A	203	PC1	C11-C12-N-C15
46	Z	203	PC1	C29-C2A-C2B-C2C
48	L	703	PLC	CB-C1B-C2B-C3B
45	A	201	3PE	C1-C2-C3-O31
45	N	401	3PE	C38-C39-C3A-C3B
45	Y	207	3PE	C1-C2-C3-O31
46	L	701	PC1	C1-C2-C3-O31
46	d	202	PC1	C1-C2-C3-O31
48	Y	208	PLC	O4P-C4-C5-N
48	b	103	PLC	O4P-C4-C5-N
53	r	202	CDL	CA3-CA4-CA6-OA8
57	U	101	EHZ	O5-C16-C17-C20
45	J	202	3PE	O21-C2-C3-O31
48	b	103	PLC	O2-C2-C3-O3
53	h	203	CDL	OB6-CB4-CB6-OB8
53	i	202	CDL	OA6-CA4-CA6-OA8
45	Y	203	3PE	C22-C23-C24-C25
45	b	102	3PE	C2B-C2C-C2D-C2E
45	f	101	3PE	C23-C24-C25-C26
45	N	403	3PE	C22-C23-C24-C25
45	d	201	3PE	C34-C35-C36-C37
45	M	602	3PE	C34-C35-C36-C37
53	i	202	CDL	C52-C53-C54-C55
45	Y	203	3PE	C23-C24-C25-C26
48	L	703	PLC	C1B-C2B-C3B-C4B
45	Y	202	3PE	C22-C23-C24-C25
53	h	203	CDL	C58-C59-C60-C61
46	g	201	PC1	C25-C26-C27-C28
57	T	101	EHZ	C5-C6-C7-O1
48	J	203	PLC	C1'-C2'-C3'-C4'
57	T	101	EHZ	C19-C17-C20-O6
45	Y	202	3PE	C3-C2-O21-C21

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Mol	Chain	Res	Type	Atoms
45	d	201	3PE	C1-C2-O21-C21
45	m	201	3PE	O11-C1-C2-C3
53	X	201	CDL	CB2-C1-CA2-OA2
45	I	203	3PE	C27-C28-C29-C2A
46	L	701	PC1	C36-C37-C38-C39
59	o	201	MYR	C10-C11-C12-C13
53	M	607	CDL	C59-C60-C61-C62
46	A	203	PC1	O11-C1-C2-O21
45	Z	202	3PE	C24-C25-C26-C27
48	L	703	PLC	C4B-C5B-C6B-C7B
45	r	201	3PE	C36-C37-C38-C39
45	A	201	3PE	C23-C24-C25-C26
53	d	204	CDL	C31-C32-C33-C34
45	N	402	3PE	O21-C2-C3-O31
46	h	202	PC1	O21-C2-C3-O31
46	q	202	PC1	O21-C2-C3-O31
53	d	204	CDL	OB6-CB4-CB6-OB8
45	Y	204	3PE	C3D-C3E-C3F-C3G
45	b	101	3PE	C2B-C2C-C2D-C2E
45	M	603	3PE	C11-O13-P-O11
45	M	605	3PE	C11-O13-P-O11
45	Y	201	3PE	C11-O13-P-O11
45	Z	202	3PE	C11-O13-P-O11
45	d	201	3PE	C1-O11-P-O13
46	q	202	PC1	C1-O11-P-O13
48	Y	208	PLC	C4-O4P-P-O3P
48	Z	204	PLC	C4-O4P-P-O3P
48	d	203	PLC	C1-O3P-P-O4P
53	X	201	CDL	CB2-OB2-PB2-OB5
53	h	203	CDL	C32-C33-C34-C35
45	h	201	3PE	C23-C24-C25-C26
46	q	202	PC1	O21-C21-C22-C23
46	H	402	PC1	C11-C12-N-C13
53	N	404	CDL	C14-C15-C16-C17
53	r	202	CDL	C18-C19-C20-C21
53	M	607	CDL	C34-C35-C36-C37
54	O	401	DGT	PA-O3A-PB-O1B
45	M	605	3PE	O21-C21-C22-C23
46	d	202	PC1	C23-C24-C25-C26
53	M	607	CDL	C74-C75-C76-C77
59	o	201	MYR	C9-C10-C11-C12
53	r	202	CDL	C17-C18-C19-C20

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Mol	Chain	Res	Type	Atoms
45	L	702	3PE	C3F-C3G-C3H-C3I
45	Z	201	3PE	C2A-C2B-C2C-C2D
45	q	201	3PE	C2A-C2B-C2C-C2D
46	I	204	PC1	C26-C27-C28-C29
46	A	203	PC1	C11-C12-N-C13
46	B	202	PC1	C3D-C3E-C3F-C3G
45	M	603	3PE	O13-C11-C12-N
45	b	101	3PE	O13-C11-C12-N
45	h	201	3PE	C32-C33-C34-C35
46	d	202	PC1	C3B-C3C-C3D-C3E
48	L	703	PLC	C3B-C4B-C5B-C6B
45	m	202	3PE	C2-C1-O11-P
45	A	201	3PE	C22-C23-C24-C25
45	N	403	3PE	C35-C36-C37-C38
53	M	607	CDL	C40-C41-C42-C43
45	Y	205	3PE	C2C-C2D-C2E-C2F
46	I	204	PC1	C33-C34-C35-C36
45	M	602	3PE	C37-C38-C39-C3A
45	b	101	3PE	C3A-C3B-C3C-C3D
46	g	201	PC1	C34-C35-C36-C37
56	P	501	NDP	C3D-C4D-C5D-O5D
46	M	606	PC1	C34-C35-C36-C37
57	U	101	EHZ	O3-C12-C13-C14
45	N	403	3PE	C26-C27-C28-C29
48	b	103	PLC	C2-C3-O3-CB
57	T	101	EHZ	C18-C17-C20-O6
45	Z	202	3PE	C27-C28-C29-C2A
53	N	404	CDL	C24-C25-C26-C27
45	h	201	3PE	C22-C23-C24-C25
45	d	201	3PE	C3-C2-O21-C21
46	H	403	PC1	C3-C2-O21-C21
53	X	201	CDL	CA3-CA4-OA6-CA5
48	O	403	PLC	C1B-CB-O3-C3
45	N	401	3PE	C37-C38-C39-C3A
46	A	203	PC1	C11-C12-N-C14
46	H	402	PC1	C11-C12-N-C15
45	M	604	3PE	C31-C32-C33-C34
45	L	702	3PE	C36-C37-C38-C39
45	b	101	3PE	C39-C3A-C3B-C3C
53	h	203	CDL	C56-C57-C58-C59
46	B	202	PC1	C3B-C3C-C3D-C3E
45	Y	205	3PE	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
46	L	701	PC1	O22-C21-O21-C2
45	d	201	3PE	C2F-C2G-C2H-C2I
53	X	201	CDL	C36-C37-C38-C39
46	A	203	PC1	O11-C1-C2-C3
53	X	201	CDL	C62-C63-C64-C65
45	K	101	3PE	C36-C37-C38-C39
46	L	701	PC1	C37-C38-C39-C3A
56	P	501	NDP	O4D-C4D-C5D-O5D
48	O	403	PLC	OB-CB-O3-C3
46	B	202	PC1	C28-C29-C2A-C2B
57	T	101	EHZ	C11-C10-S1-C9
45	M	604	3PE	O21-C2-C3-O31
45	d	201	3PE	C3A-C3B-C3C-C3D
45	Y	203	3PE	C39-C3A-C3B-C3C
46	Z	203	PC1	C3B-C3C-C3D-C3E
45	N	401	3PE	C33-C34-C35-C36
46	I	204	PC1	C2B-C2C-C2D-C2E
45	N	403	3PE	O22-C21-C22-C23
45	d	201	3PE	C26-C27-C28-C29
53	N	404	CDL	C57-C58-C59-C60
45	K	101	3PE	C38-C39-C3A-C3B
46	H	402	PC1	C11-C12-N-C14
48	Y	208	PLC	C7'-C8'-C9'-CA'
53	N	404	CDL	C75-C76-C77-C78
53	h	203	CDL	C63-C64-C65-C66
48	b	103	PLC	C2B-C3B-C4B-C5B
45	Z	202	3PE	C33-C34-C35-C36
45	f	101	3PE	C2D-C2E-C2F-C2G
58	i	201	CHD	C22-C23-C24-O26
45	A	201	3PE	O11-C1-C2-O21
45	Y	206	3PE	O11-C1-C2-O21
46	Z	203	PC1	C27-C28-C29-C2A
58	i	201	CHD	C22-C23-C24-O25
45	K	101	3PE	C3D-C3E-C3F-C3G
45	L	702	3PE	C34-C35-C36-C37
48	J	203	PLC	C4-C5-N-C8
53	i	202	CDL	C56-C57-C58-C59
45	I	203	3PE	O11-C1-C2-C3
48	d	203	PLC	C2B-C1B-CB-O3
46	M	606	PC1	C24-C25-C26-C27
53	N	404	CDL	C34-C35-C36-C37
46	g	201	PC1	C27-C28-C29-C2A

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Mol	Chain	Res	Type	Atoms
45	N	402	3PE	O31-C31-C32-C33
53	M	607	CDL	C12-C11-CA5-OA6
45	M	605	3PE	C2-C1-O11-P
45	Y	202	3PE	C2-C1-O11-P
45	Y	202	3PE	C3E-C3F-C3G-C3H
45	f	101	3PE	C26-C27-C28-C29
45	N	402	3PE	O21-C21-C22-C23
53	i	202	CDL	C35-C36-C37-C38
45	q	201	3PE	C2B-C2C-C2D-C2E
46	M	606	PC1	C33-C34-C35-C36
45	N	403	3PE	C21-C22-C23-C24
53	X	201	CDL	C72-C71-CB7-OB8
45	q	201	3PE	C39-C3A-C3B-C3C
48	Y	208	PLC	C2'-C3'-C4'-C5'
53	h	203	CDL	OB7-CB5-OB6-CB4
45	m	201	3PE	C28-C29-C2A-C2B
46	q	202	PC1	O22-C21-C22-C23
57	U	101	EHZ	N1-C12-C13-C14
53	i	202	CDL	C12-C11-CA5-OA6
53	M	607	CDL	C24-C25-C26-C27
45	m	201	3PE	C2B-C2C-C2D-C2E
45	L	702	3PE	C1-C2-O21-C21
45	L	702	3PE	C3-C2-O21-C21
46	H	403	PC1	C1-C2-O21-C21
48	O	403	PLC	O'-C'-O2-C2
53	h	203	CDL	C52-C51-CB5-OB6
45	Y	207	3PE	C2F-C2G-C2H-C2I
45	L	702	3PE	O21-C21-C22-C23
45	Y	201	3PE	O31-C31-C32-C33
45	f	101	3PE	O21-C21-C22-C23
45	H	401	3PE	C38-C39-C3A-C3B
48	B	203	PLC	OB-CB-O3-C3
48	Y	208	PLC	C1-C2-C3-O3
53	M	607	CDL	C16-C17-C18-C19
45	M	604	3PE	O11-C1-C2-O21
53	h	203	CDL	OB5-CB3-CB4-OB6
45	b	101	3PE	O31-C31-C32-C33
46	A	202	PC1	C11-C12-N-C14
46	I	204	PC1	C11-C12-N-C13
46	I	204	PC1	C11-C12-N-C14
53	N	404	CDL	C18-C19-C20-C21
45	f	101	3PE	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
46	h	202	PC1	C23-C24-C25-C26
53	M	607	CDL	C15-C16-C17-C18
48	B	203	PLC	C1B-CB-O3-C3
53	X	201	CDL	CA7-C31-C32-C33
53	d	204	CDL	C72-C71-CB7-OB8
45	Y	204	3PE	C2A-C2B-C2C-C2D
45	q	201	3PE	C2C-C2D-C2E-C2F
53	N	404	CDL	C36-C37-C38-C39
53	h	203	CDL	C54-C55-C56-C57
57	U	101	EHZ	C15-C16-C17-C18
53	X	201	CDL	C84-C85-C86-C87
45	q	201	3PE	C37-C38-C39-C3A
45	A	201	3PE	O11-C1-C2-C3
45	m	201	3PE	O21-C21-C22-C23
48	Y	208	PLC	O2-C'-C1'-C2'
53	X	201	CDL	C52-C51-CB5-OB6
53	N	404	CDL	OA6-CA4-CA6-OA8
53	X	201	CDL	OA6-CA4-CA6-OA8
53	i	202	CDL	OB6-CB4-CB6-OB8
53	r	202	CDL	OB6-CB4-CB6-OB8
45	m	201	3PE	C2A-C2B-C2C-C2D
45	A	201	3PE	O31-C31-C32-C33
45	Y	201	3PE	O21-C21-C22-C23
45	Y	205	3PE	O31-C31-C32-C33
45	b	101	3PE	O22-C21-C22-C23
46	A	202	PC1	C11-C12-N-C13
56	P	501	NDP	C5B-O5B-PA-O3
45	Y	205	3PE	C27-C28-C29-C2A
46	L	701	PC1	C22-C21-O21-C2
45	Y	205	3PE	C2-C1-O11-P
53	h	203	CDL	C1-CB2-OB2-PB2
45	b	102	3PE	C36-C37-C38-C39
53	X	201	CDL	C60-C61-C62-C63
45	Y	205	3PE	C36-C37-C38-C39
45	f	101	3PE	C2A-C2B-C2C-C2D
45	Y	205	3PE	C2B-C2C-C2D-C2E
45	Y	207	3PE	C3F-C3G-C3H-C3I
45	J	202	3PE	C23-C24-C25-C26
53	h	203	CDL	C52-C51-CB5-OB7
53	i	202	CDL	C11-C12-C13-C14
45	Y	202	3PE	C32-C33-C34-C35
48	J	203	PLC	C3B-C4B-C5B-C6B

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Mol	Chain	Res	Type	Atoms
45	f	101	3PE	O22-C21-C22-C23
53	X	201	CDL	C72-C71-CB7-OB9
57	T	101	EHZ	C5-C6-C7-C8
46	A	202	PC1	O21-C21-C22-C23
48	J	203	PLC	O2-C'-C1'-C2'
45	N	402	3PE	C29-C2A-C2B-C2C
53	X	201	CDL	C74-C75-C76-C77
45	b	101	3PE	O32-C31-C32-C33
46	h	202	PC1	C27-C28-C29-C2A
45	L	702	3PE	O22-C21-C22-C23
45	Y	201	3PE	O32-C31-C32-C33
53	h	203	CDL	C51-CB5-OB6-CB4
53	d	204	CDL	C72-C71-CB7-OB9
45	N	403	3PE	C1-C2-C3-O31
46	m	203	PC1	C23-C24-C25-C26
48	g	202	PLC	C2'-C3'-C4'-C5'
45	M	603	3PE	C22-C23-C24-C25
53	M	607	CDL	C41-C42-C43-C44
53	X	201	CDL	C73-C74-C75-C76
46	A	202	PC1	O22-C21-O21-C2
53	N	404	CDL	CB4-CB3-OB5-PB2
45	Y	205	3PE	O32-C31-C32-C33
45	m	201	3PE	O22-C21-C22-C23
45	M	603	3PE	C27-C28-C29-C2A
45	Y	204	3PE	C3B-C3C-C3D-C3E
45	f	101	3PE	C35-C36-C37-C38
45	M	602	3PE	C1-O11-P-O12
45	M	603	3PE	C11-O13-P-O14
45	M	604	3PE	C11-O13-P-O14
45	m	201	3PE	C1-O11-P-O14
46	A	202	PC1	C11-O13-P-O14
46	A	203	PC1	C1-O11-P-O14
46	q	202	PC1	C1-O11-P-O14
48	d	203	PLC	C1-O3P-P-O1P
53	N	404	CDL	CA3-OA5-PA1-OA3
53	X	201	CDL	CA2-OA2-PA1-OA4
53	X	201	CDL	CB2-OB2-PB2-OB3
53	d	204	CDL	CA3-OA5-PA1-OA3
53	i	202	CDL	CA3-OA5-PA1-OA3
53	r	202	CDL	CB2-OB2-PB2-OB3
46	L	701	PC1	C3A-C3B-C3C-C3D
53	i	202	CDL	C12-C11-CA5-OA7

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Mol	Chain	Res	Type	Atoms
45	J	202	3PE	O13-C11-C12-N
53	X	201	CDL	C75-C76-C77-C78
45	Y	203	3PE	C2B-C2C-C2D-C2E
45	m	201	3PE	C21-C22-C23-C24
53	X	201	CDL	C52-C51-CB5-OB7
45	H	401	3PE	C3C-C3D-C3E-C3F
45	M	605	3PE	C12-C11-O13-P
45	N	403	3PE	C12-C11-O13-P
45	Y	201	3PE	C12-C11-O13-P
45	Z	202	3PE	C12-C11-O13-P
46	q	202	PC1	C12-C11-O13-P
45	d	201	3PE	C21-C22-C23-C24
45	N	403	3PE	C32-C33-C34-C35
45	Y	205	3PE	C39-C3A-C3B-C3C
46	m	203	PC1	O21-C21-C22-C23
45	M	605	3PE	C2D-C2E-C2F-C2G
45	A	201	3PE	O32-C31-C32-C33
46	I	204	PC1	C11-C12-N-C15
45	J	201	3PE	O21-C21-C22-C23
45	M	602	3PE	O31-C31-C32-C33
45	Z	202	3PE	O31-C31-C32-C33
45	q	201	3PE	C3E-C3F-C3G-C3H
45	J	202	3PE	C2B-C2C-C2D-C2E
45	Y	205	3PE	C24-C25-C26-C27
48	b	103	PLC	C7'-C8'-C9'-CA'
48	L	703	PLC	C8'-C9'-CA'-CB'
53	r	202	CDL	C72-C73-C74-C75
45	A	201	3PE	O21-C21-C22-C23
45	M	603	3PE	O21-C21-C22-C23
45	Y	203	3PE	O31-C31-C32-C33
48	Z	204	PLC	C2B-C1B-CB-O3
45	Y	201	3PE	O22-C21-C22-C23
46	d	202	PC1	C38-C39-C3A-C3B
45	m	202	3PE	O11-C1-C2-O21
45	A	201	3PE	O22-C21-C22-C23
46	A	202	PC1	O22-C21-C22-C23
45	M	604	3PE	O21-C21-C22-C23
45	N	403	3PE	O31-C31-C32-C33
45	Z	201	3PE	O21-C21-C22-C23
45	d	201	3PE	O21-C21-C22-C23
46	B	202	PC1	O21-C21-C22-C23
53	X	201	CDL	C56-C57-C58-C59

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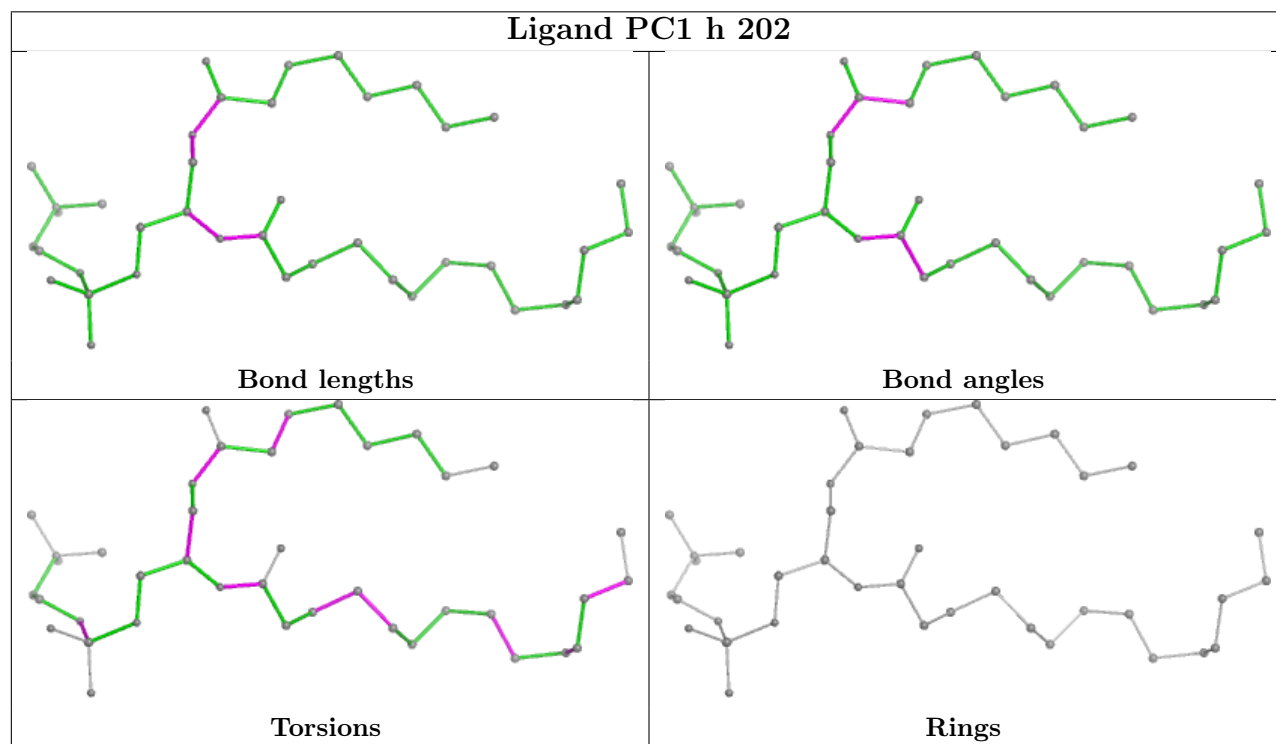
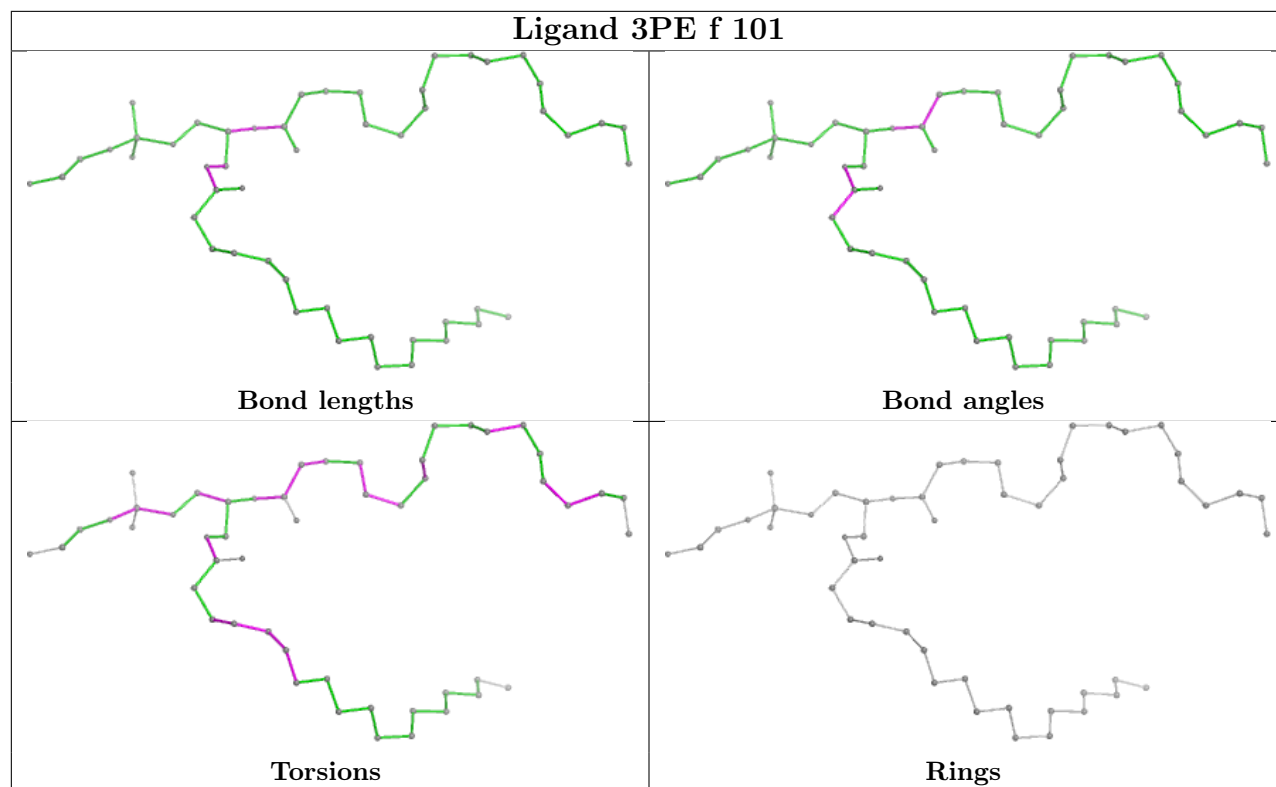
Mol	Chain	Res	Type	Atoms
53	h	203	CDL	C55-C56-C57-C58
45	J	202	3PE	O31-C31-C32-C33
45	M	603	3PE	O22-C21-C22-C23
45	M	604	3PE	O22-C21-C22-C23
45	Y	203	3PE	O32-C31-C32-C33
45	Z	202	3PE	O32-C31-C32-C33
48	Y	208	PLC	O'-C'-C1'-C2'
45	M	604	3PE	C34-C35-C36-C37
45	L	702	3PE	O31-C31-C32-C33
45	Z	202	3PE	C37-C38-C39-C3A
45	J	201	3PE	O22-C21-C22-C23
46	B	202	PC1	O22-C21-C22-C23
48	J	203	PLC	O'-C'-C1'-C2'
48	O	403	PLC	C1'-C'-O2-C2
45	d	201	3PE	C23-C24-C25-C26
45	H	401	3PE	C39-C3A-C3B-C3C
45	b	102	3PE	O31-C31-C32-C33
53	M	607	CDL	C52-C51-CB5-OB6
46	A	202	PC1	C11-C12-N-C15
59	o	201	MYR	C11-C10-C9-C8
45	Y	204	3PE	C26-C27-C28-C29
45	K	101	3PE	O21-C21-C22-C23
46	Z	203	PC1	O31-C31-C32-C33

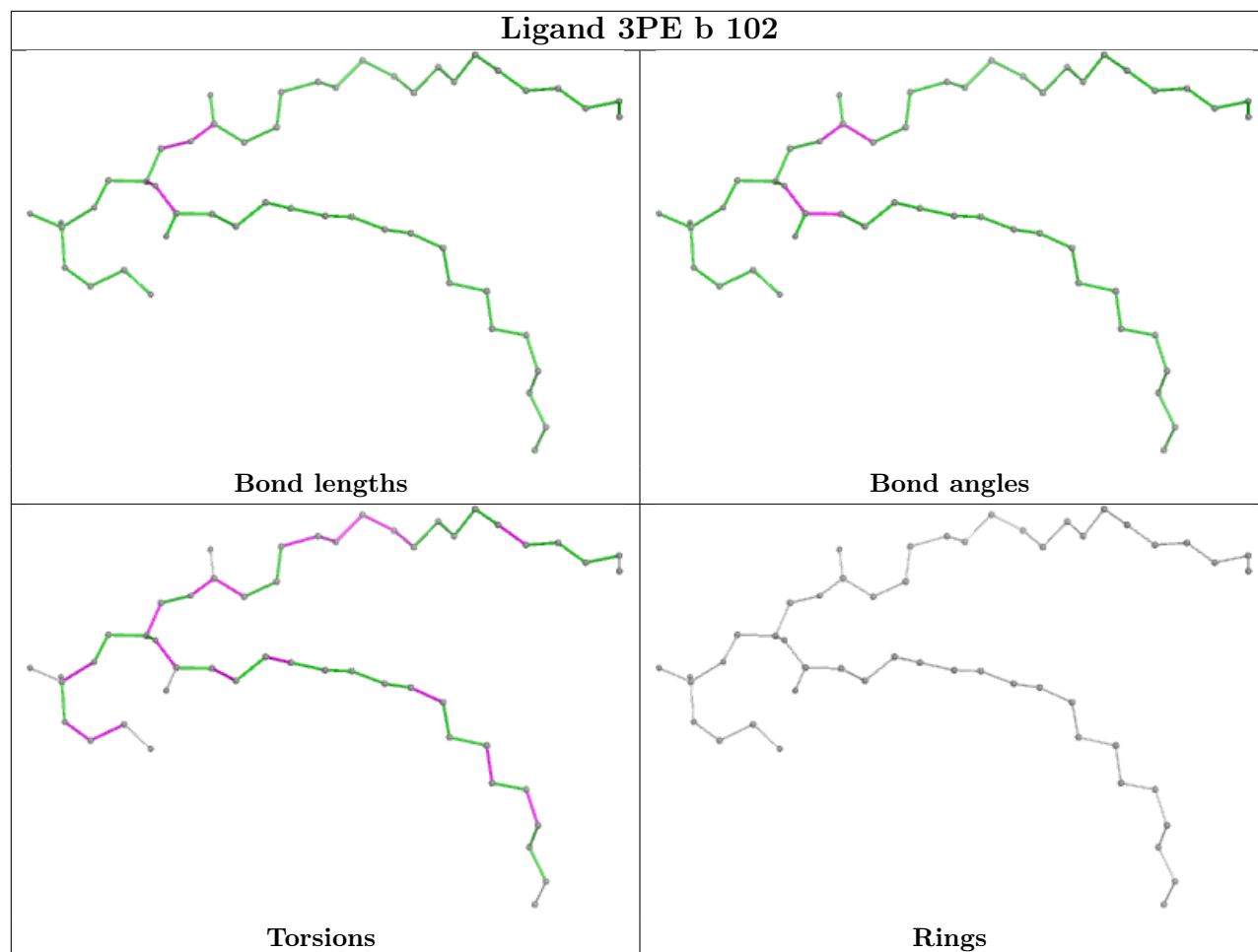
All (1) ring outliers are listed below:

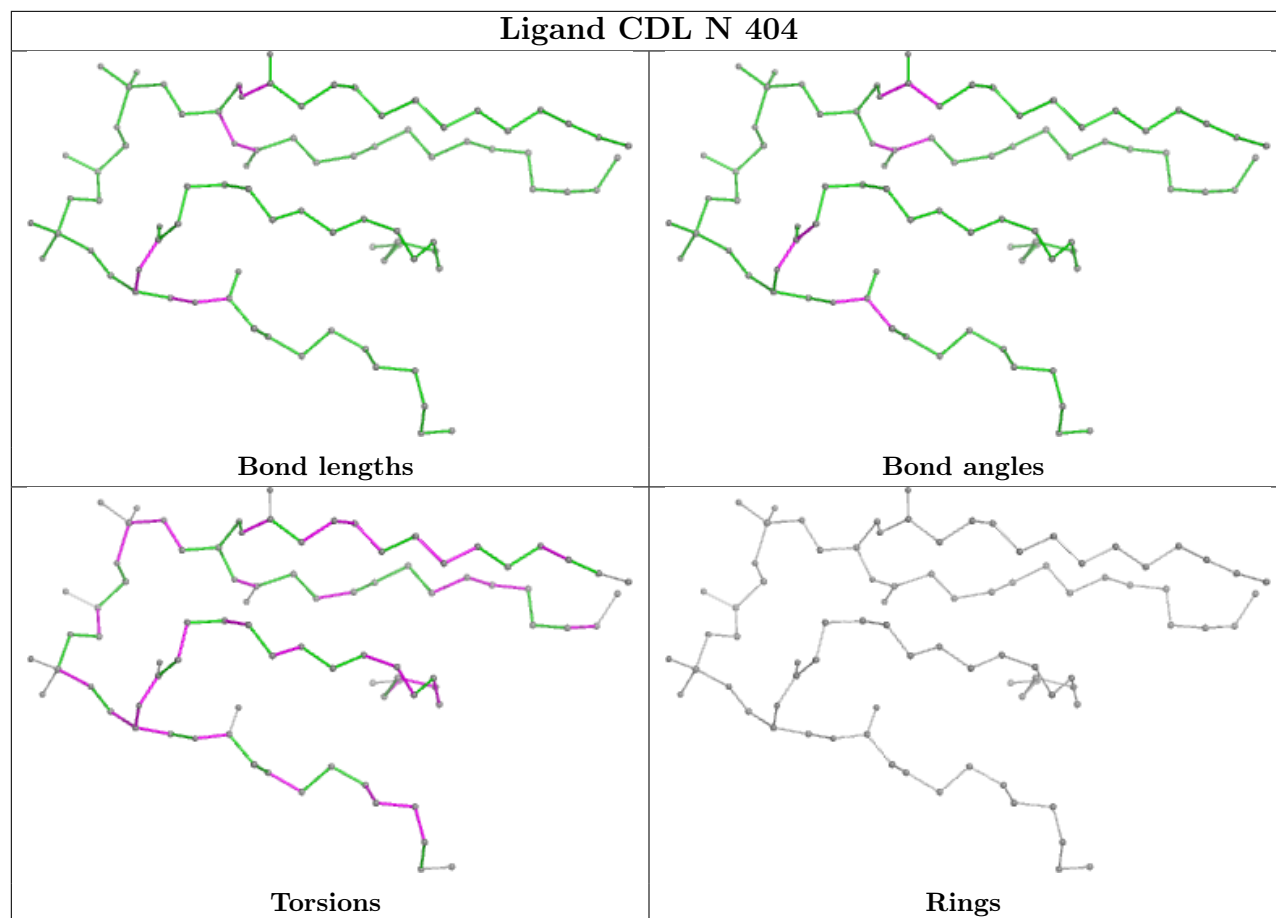
Mol	Chain	Res	Type	Atoms
58	i	201	CHD	C1-C10-C2-C3-C4-C5

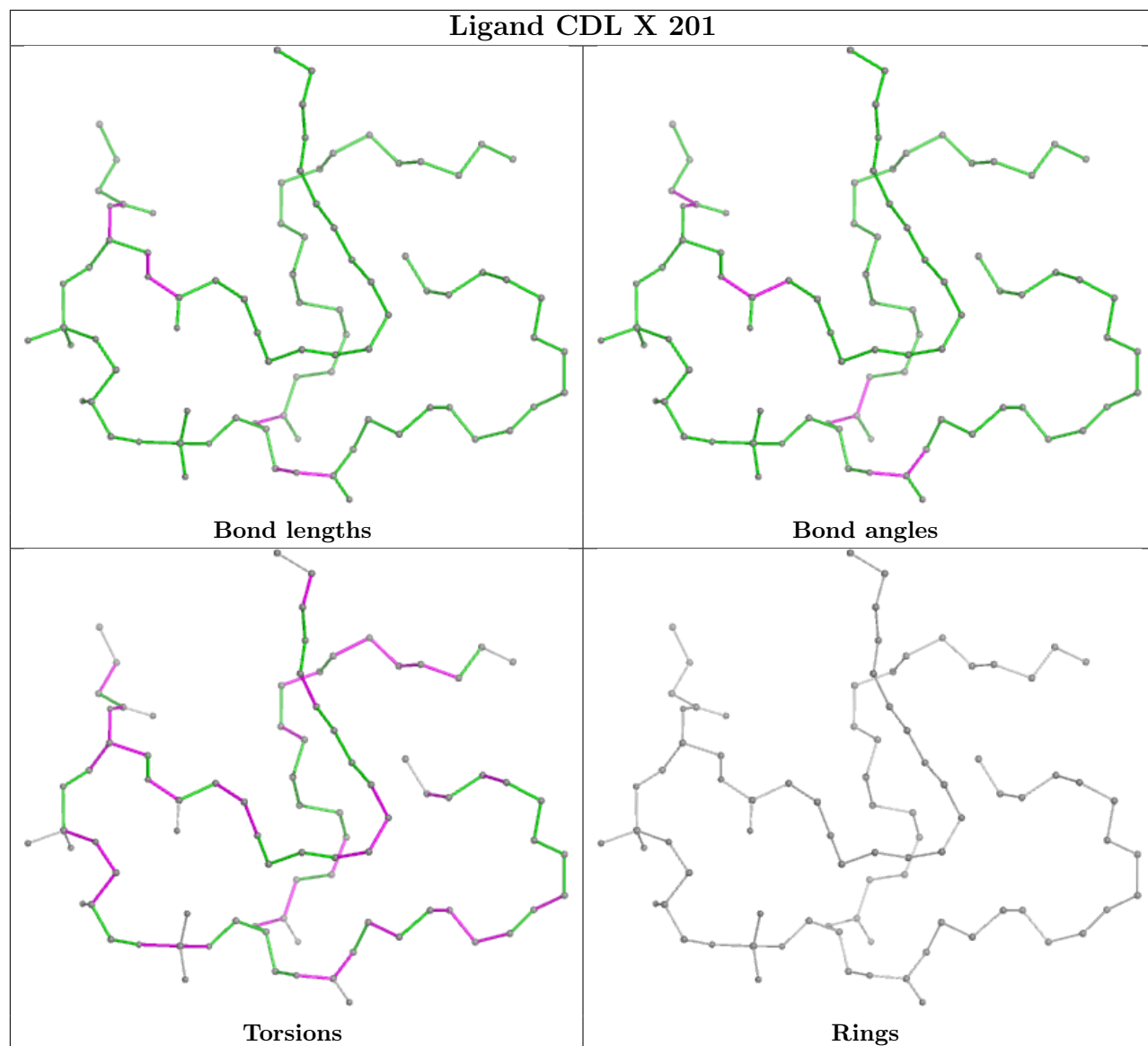
No monomer is involved in short contacts.

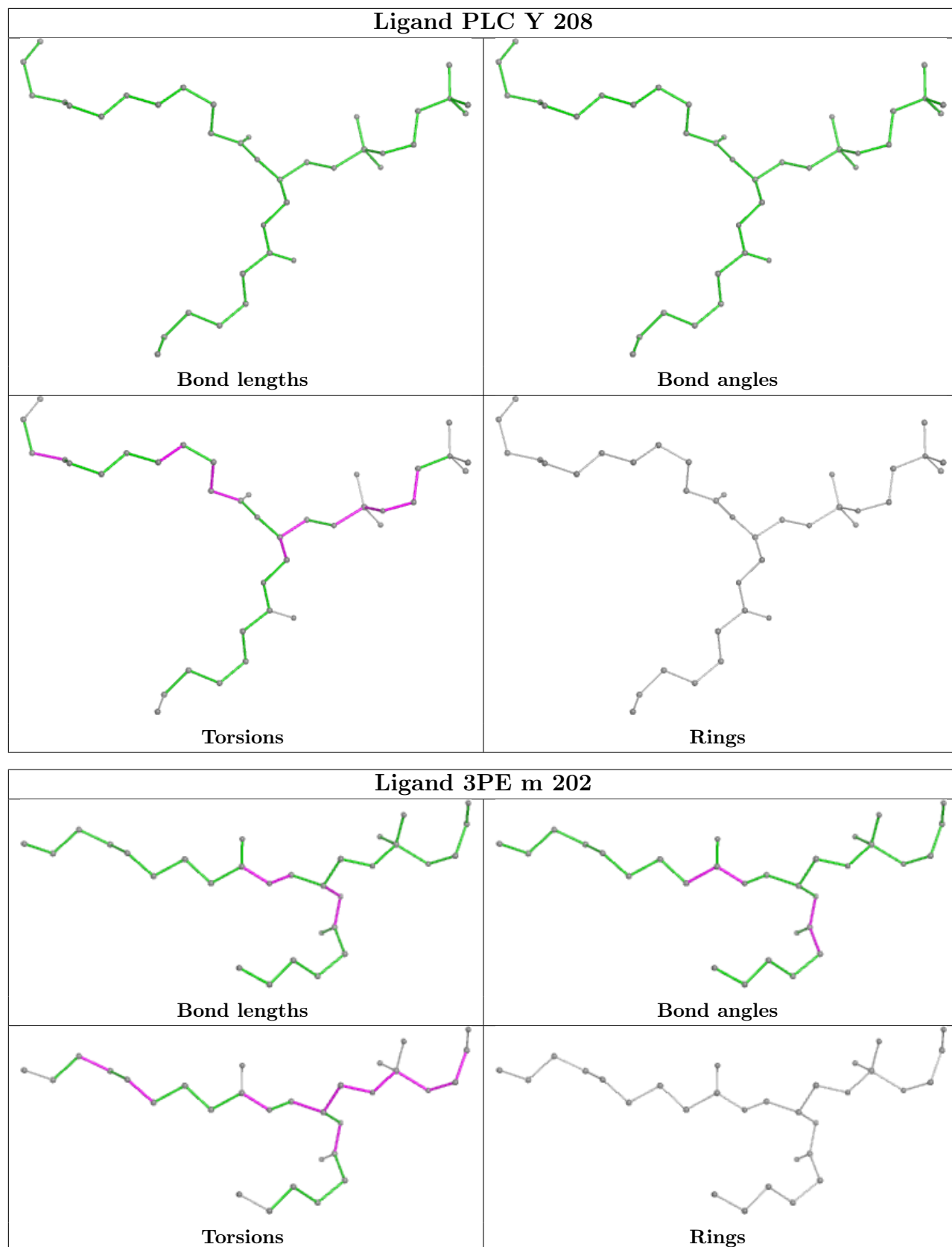
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

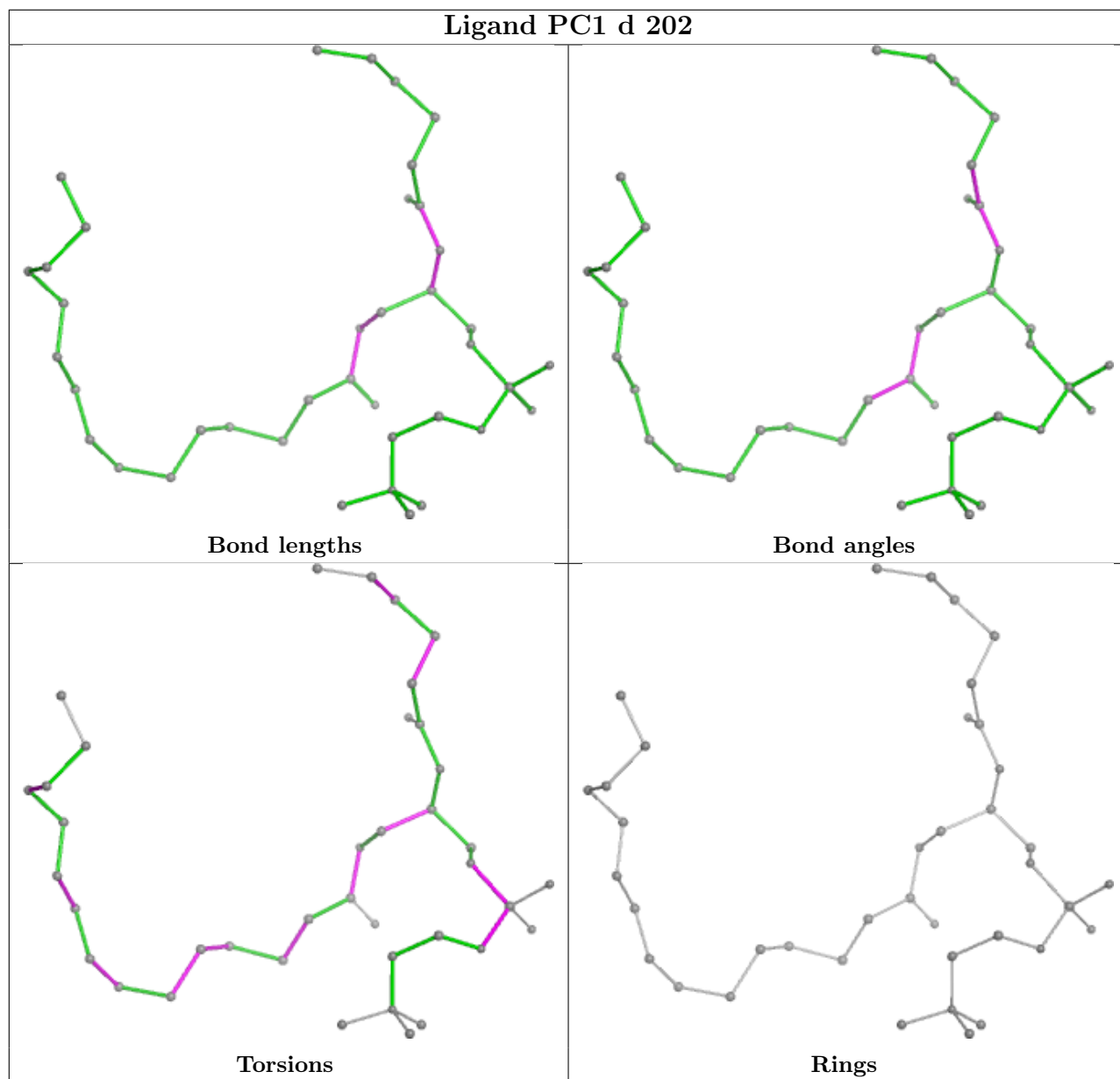


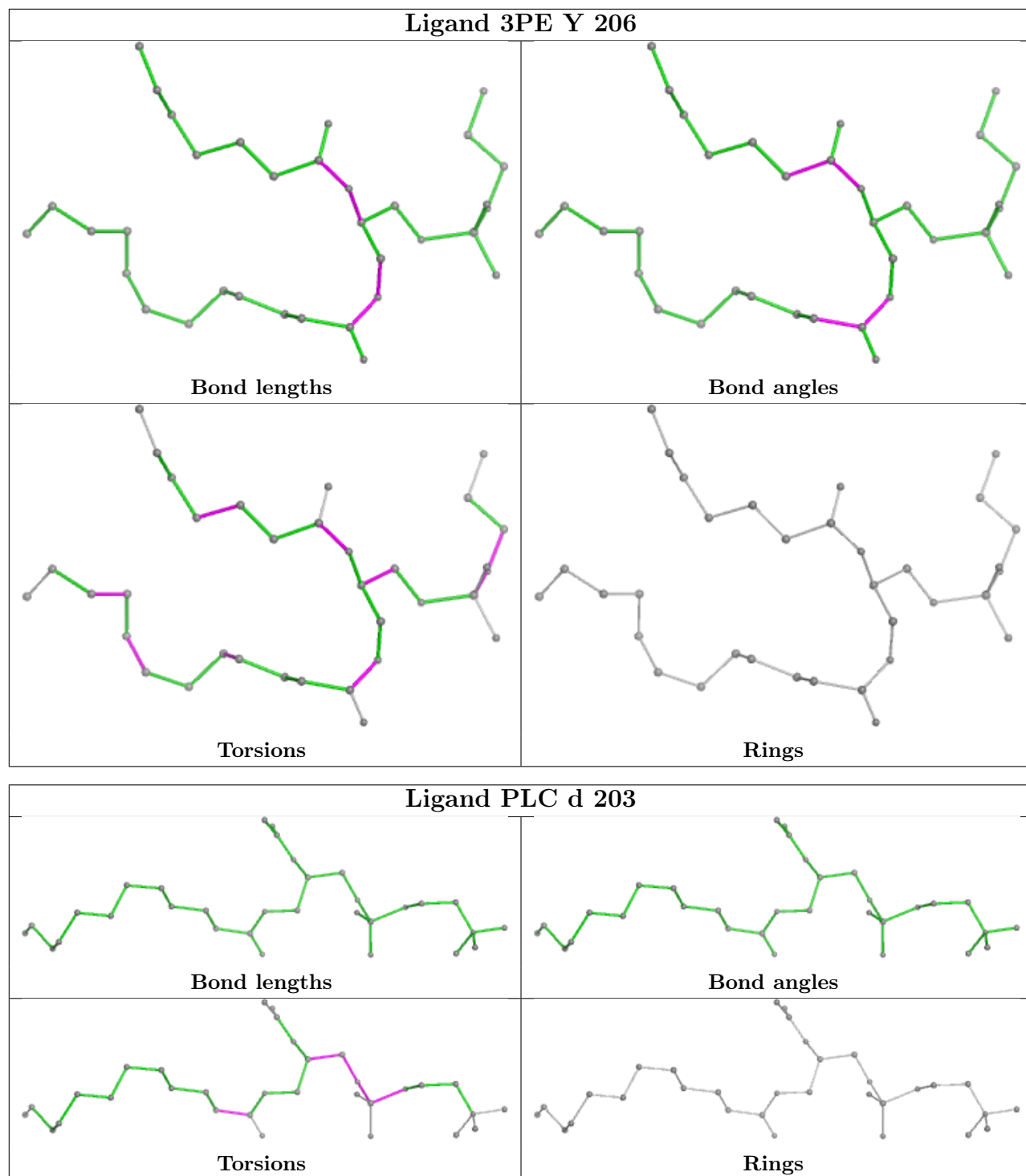


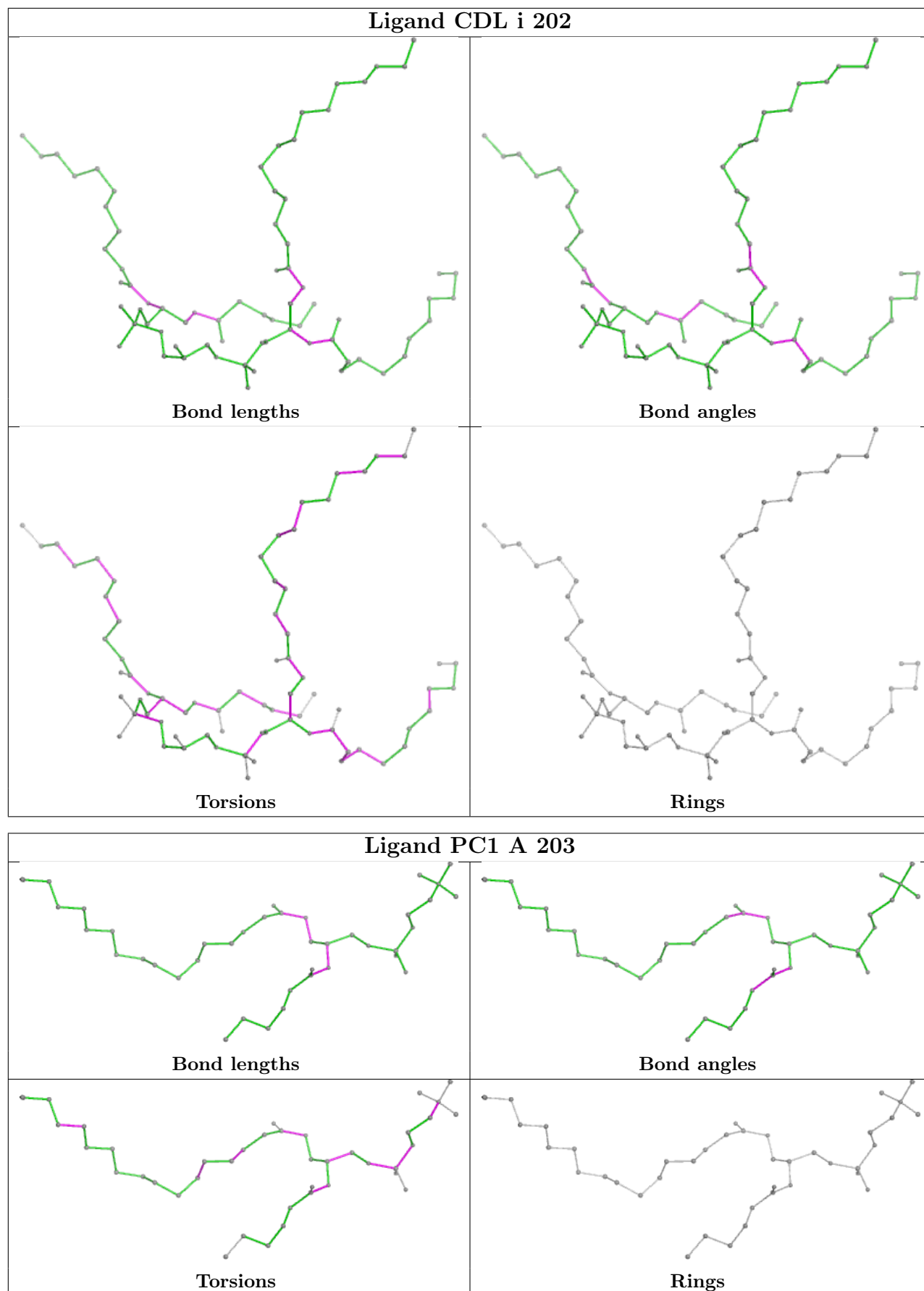


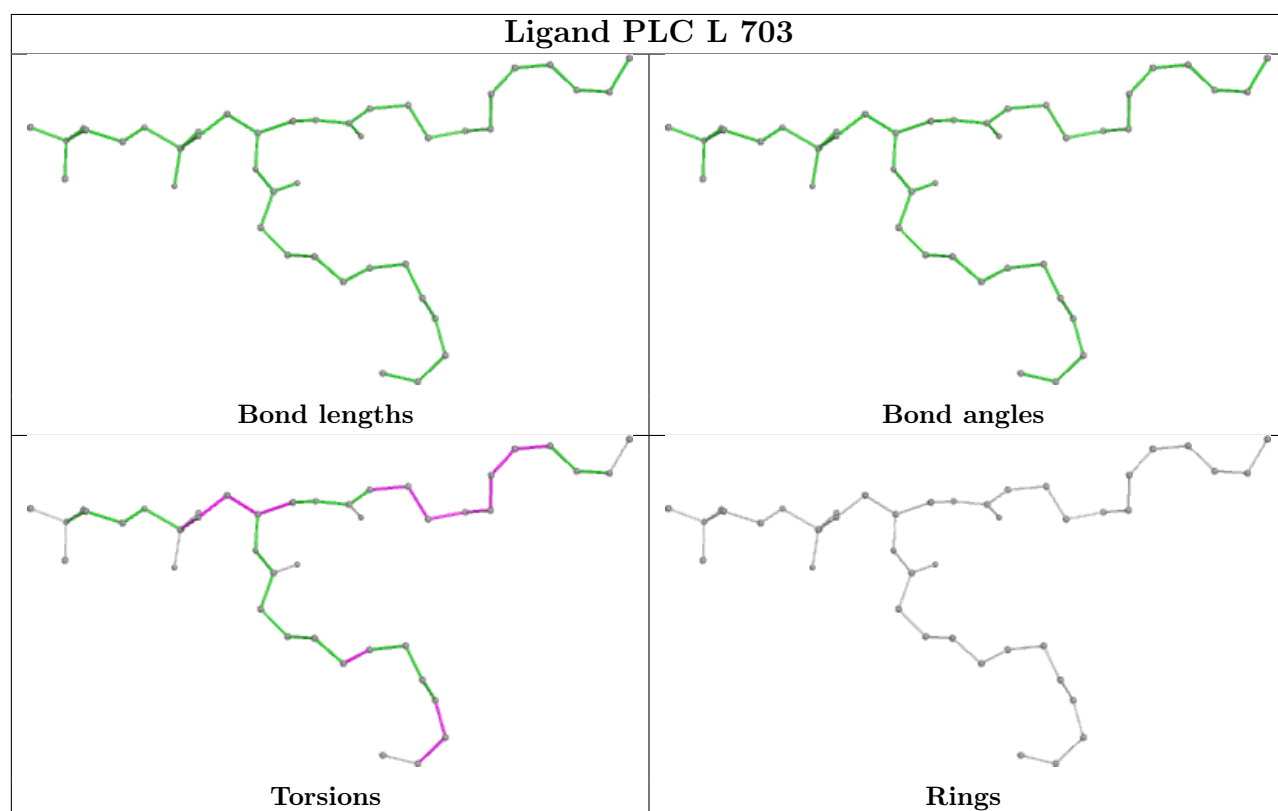
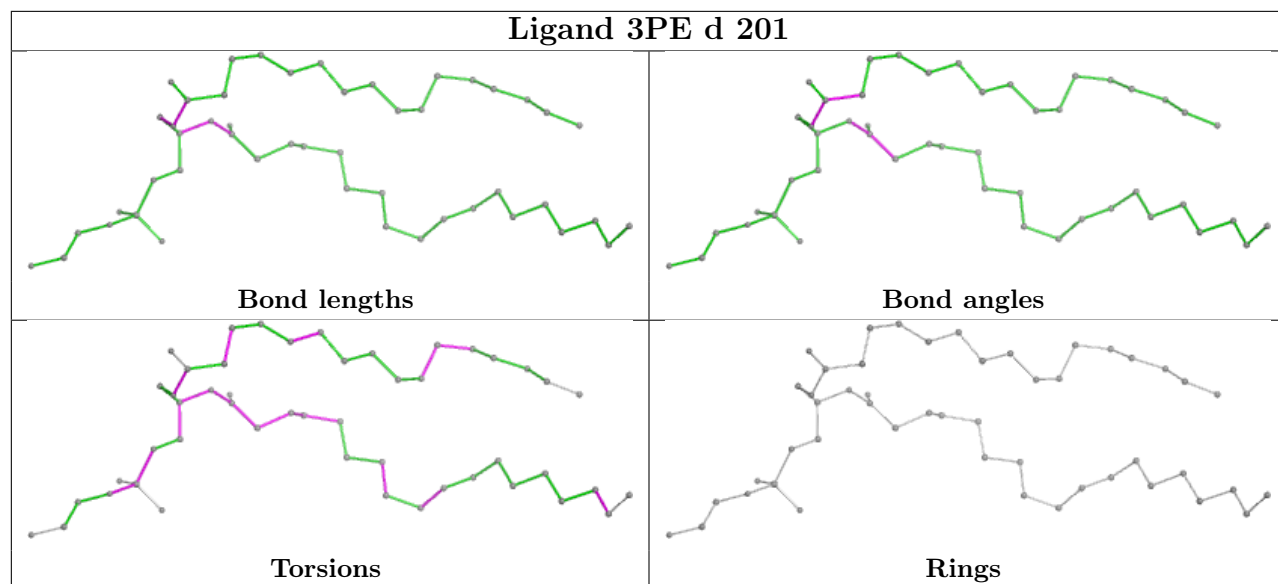


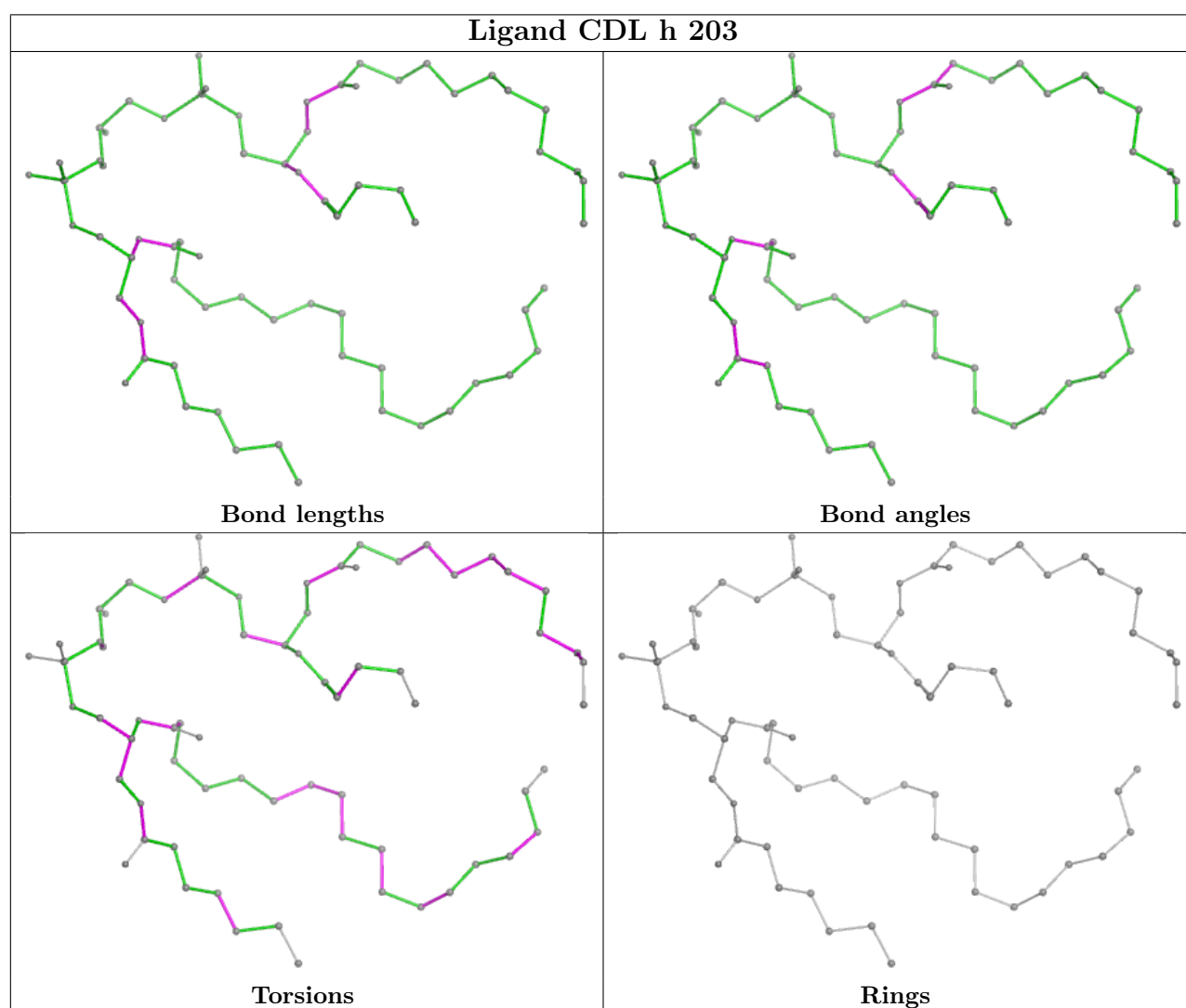
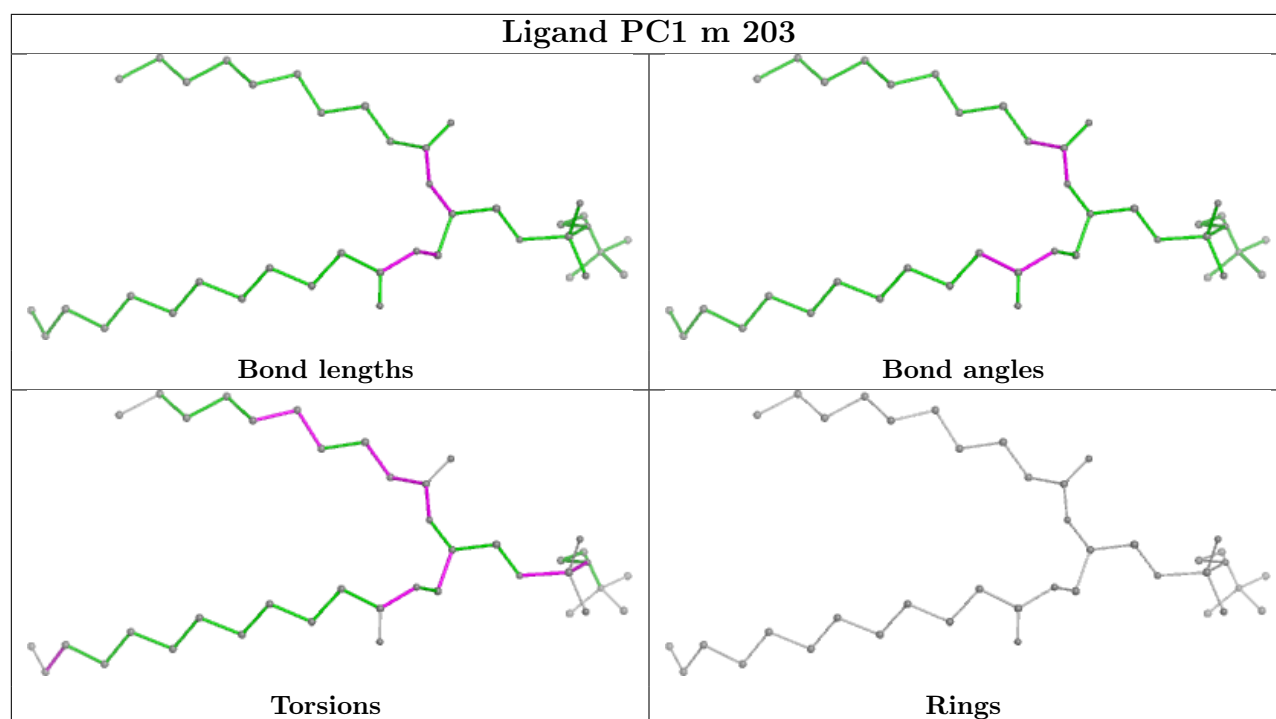


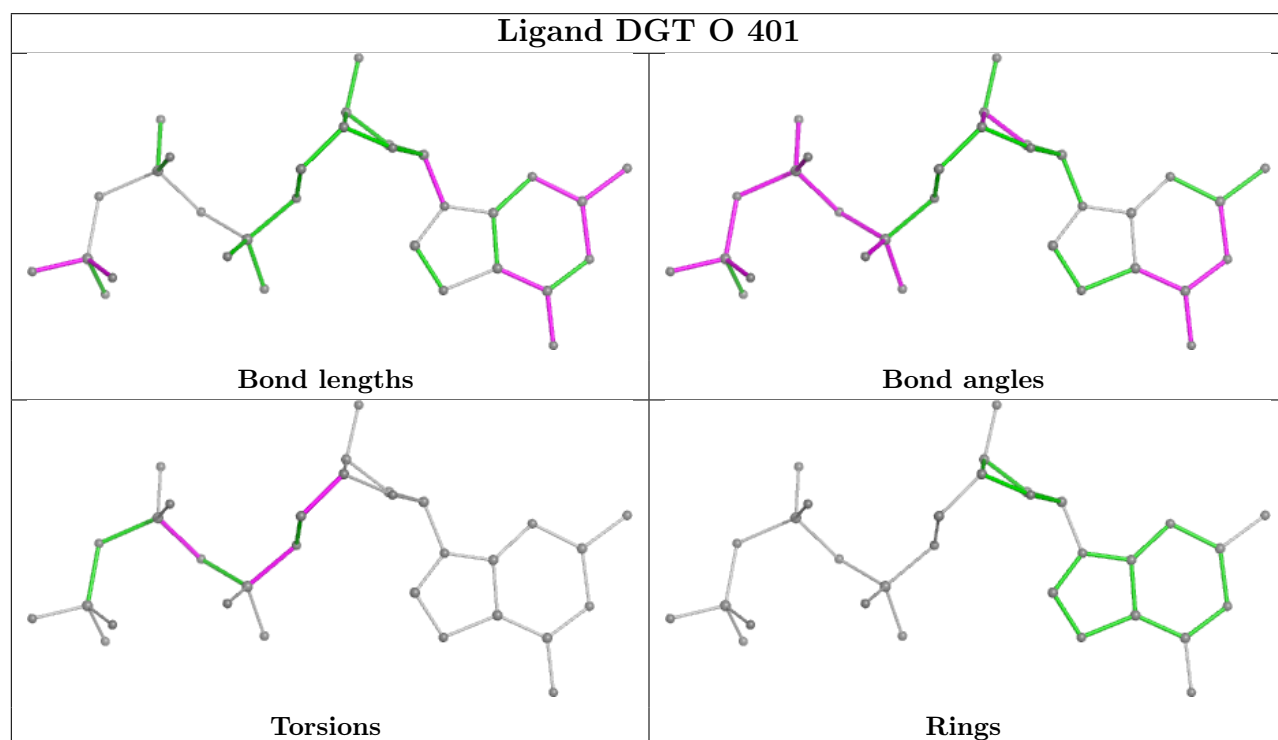
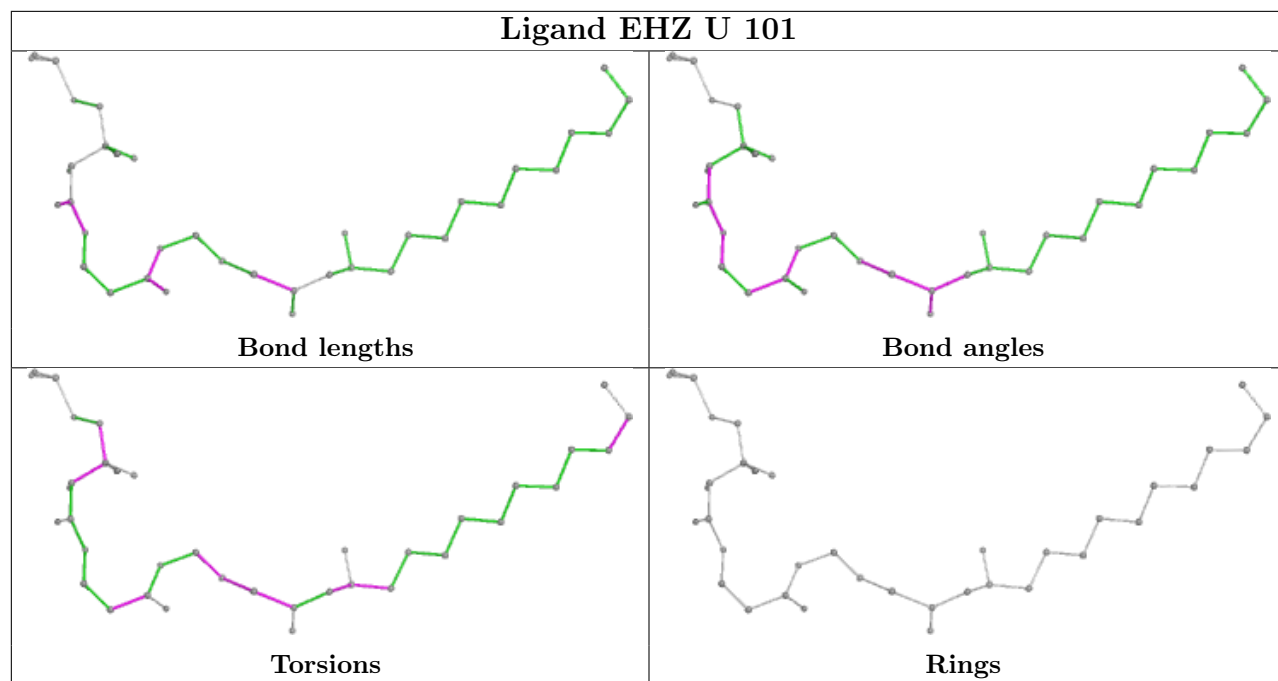


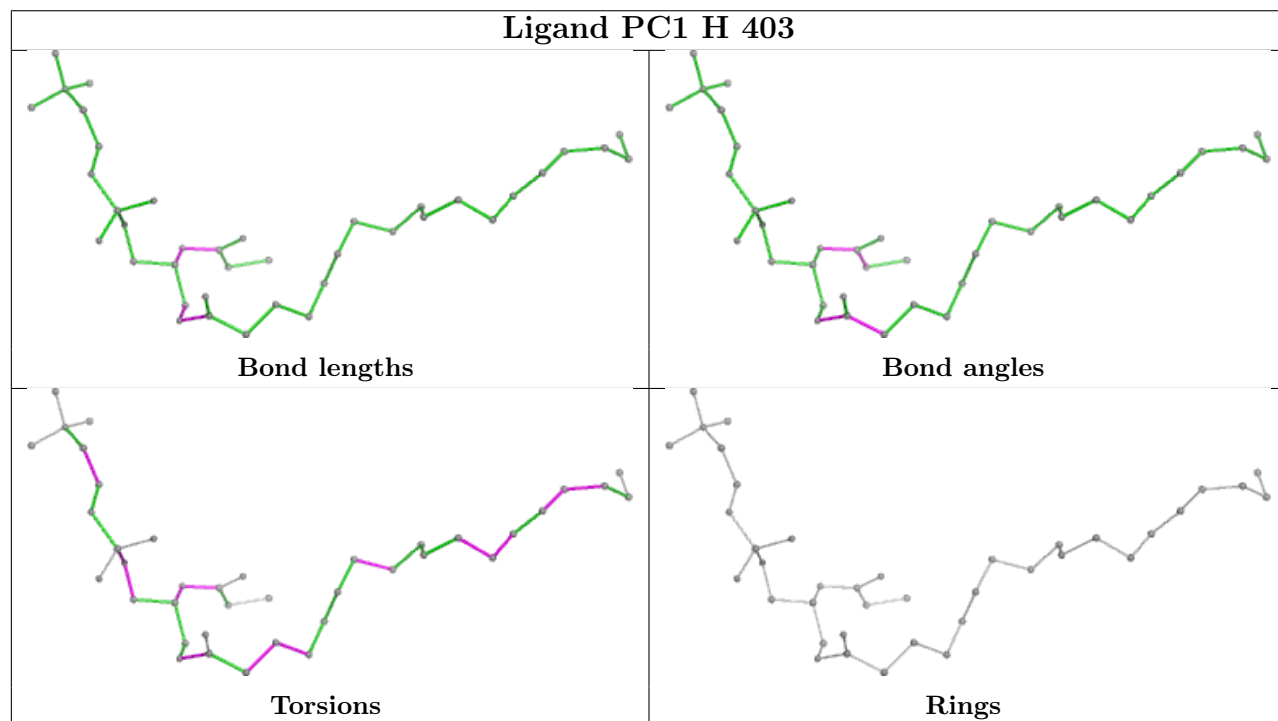
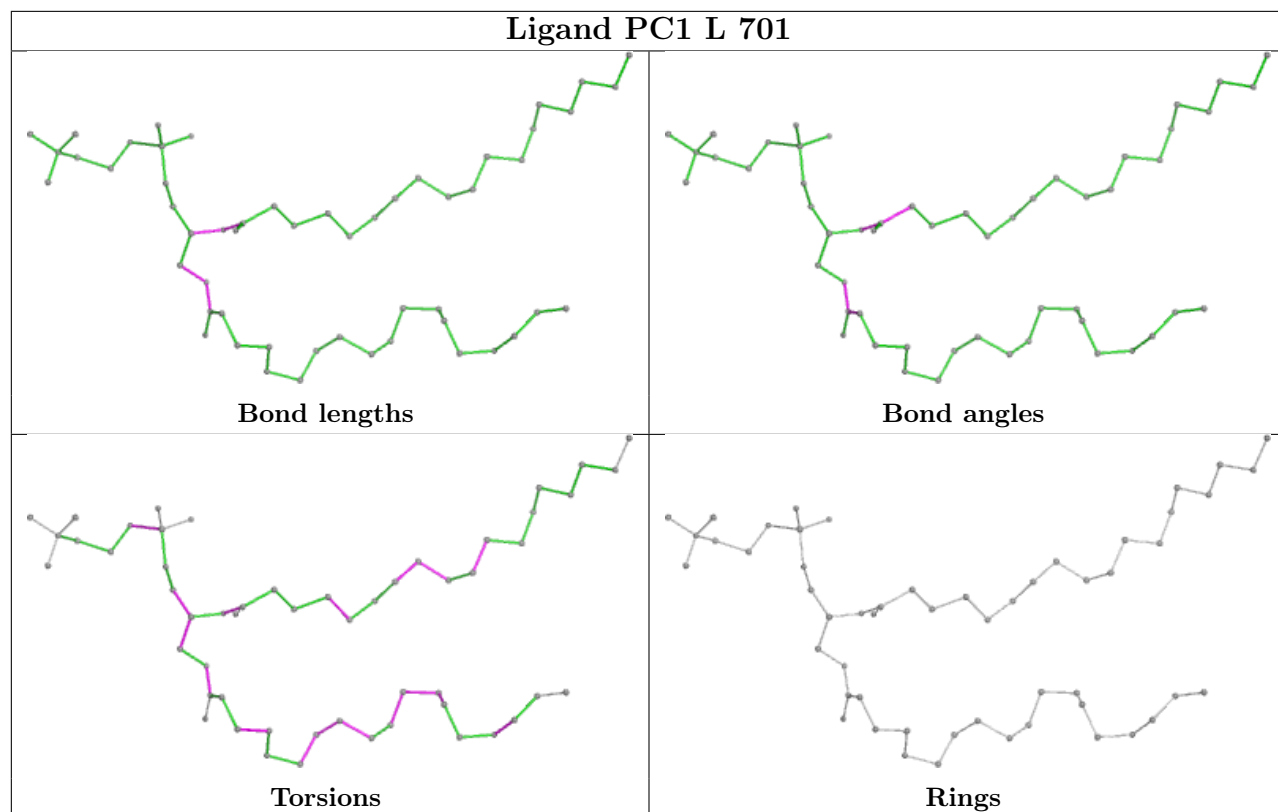


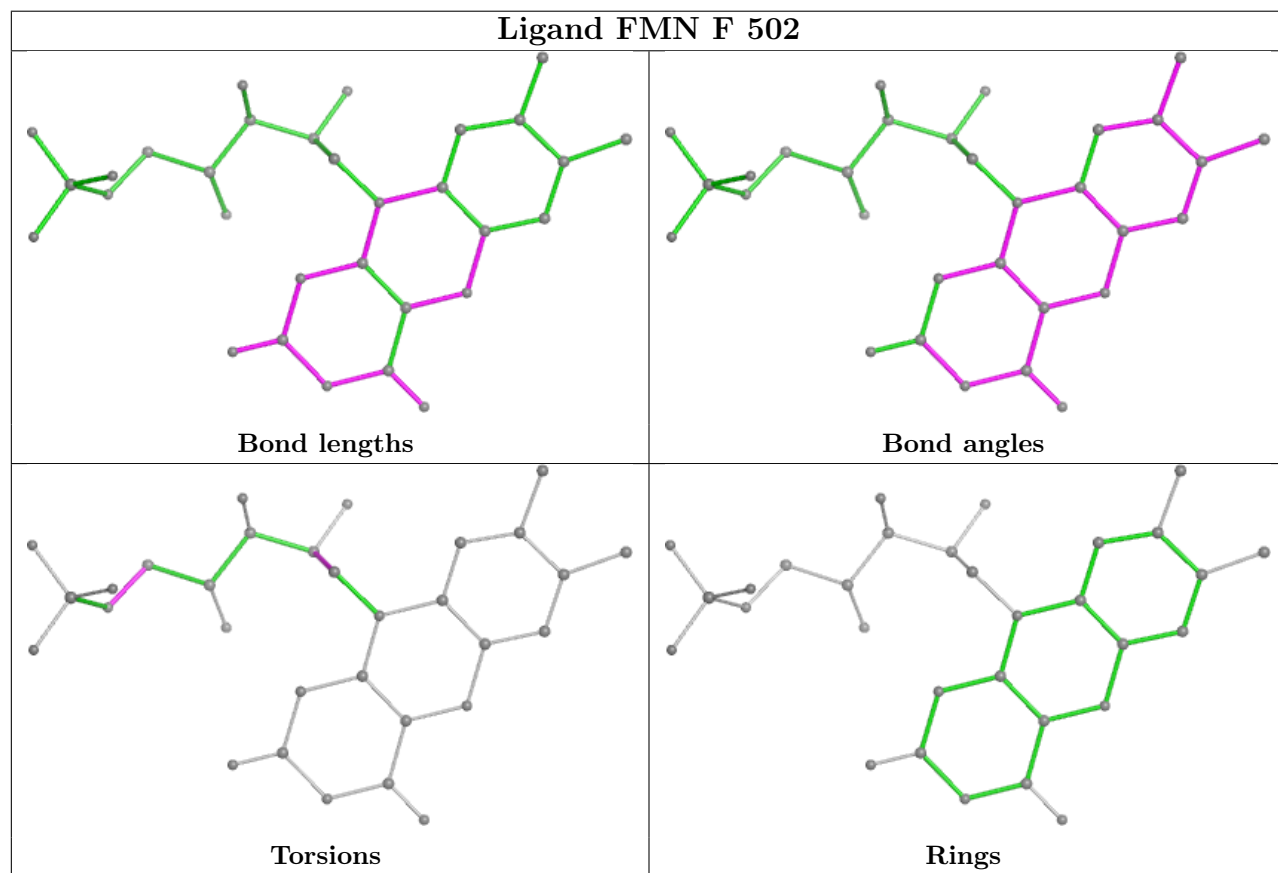
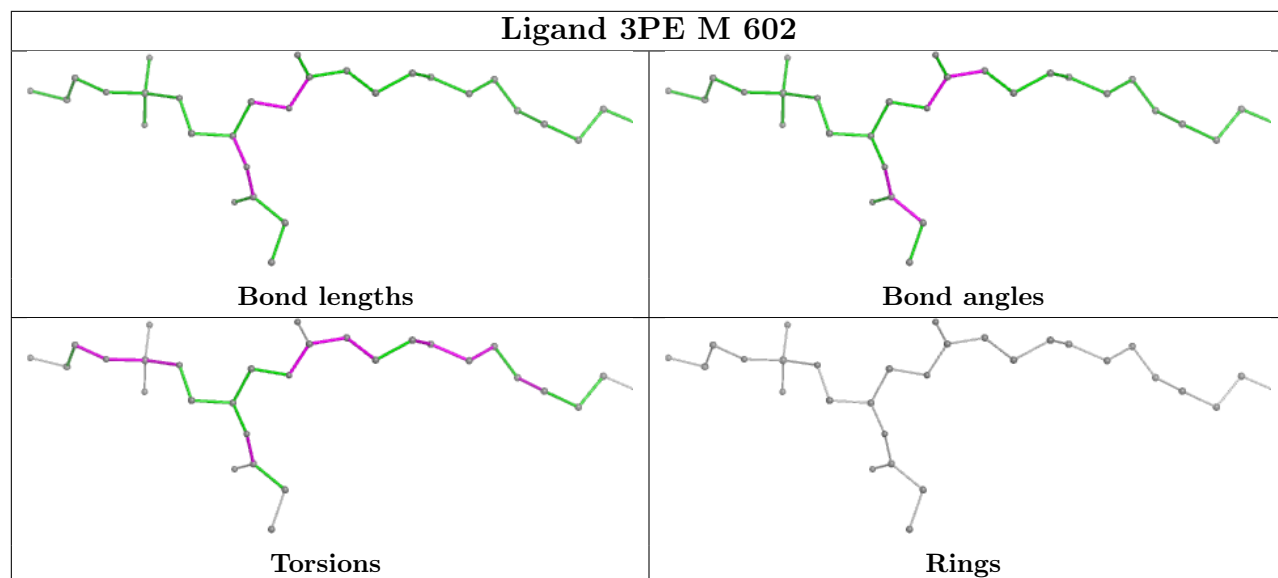


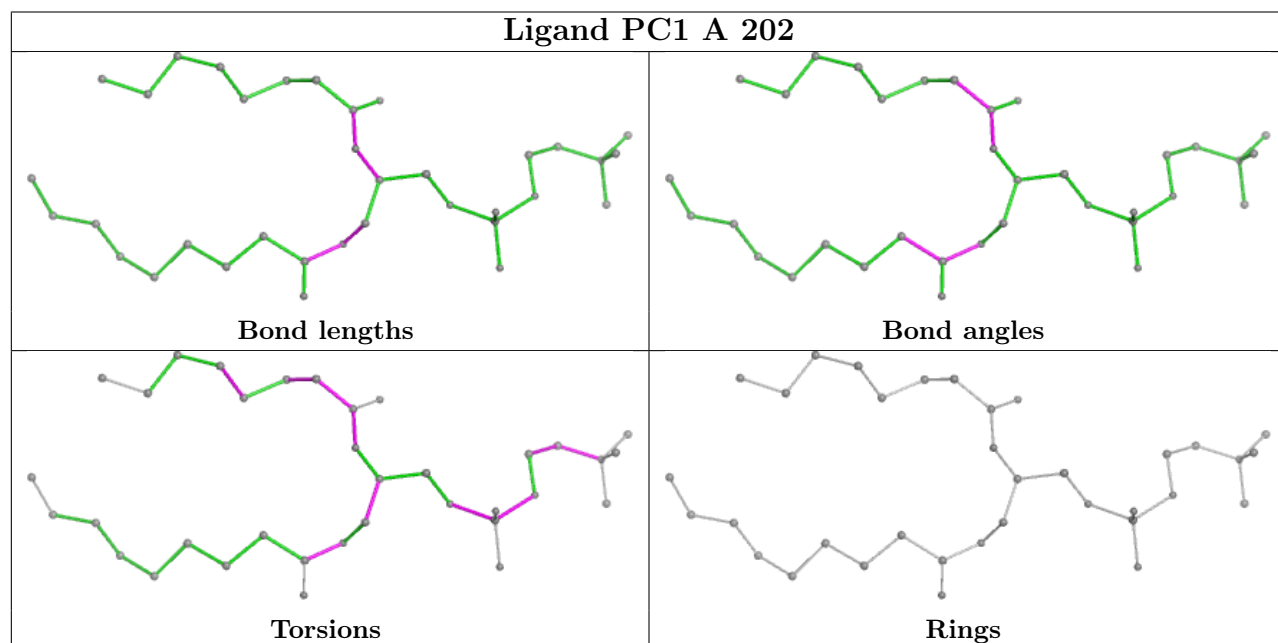
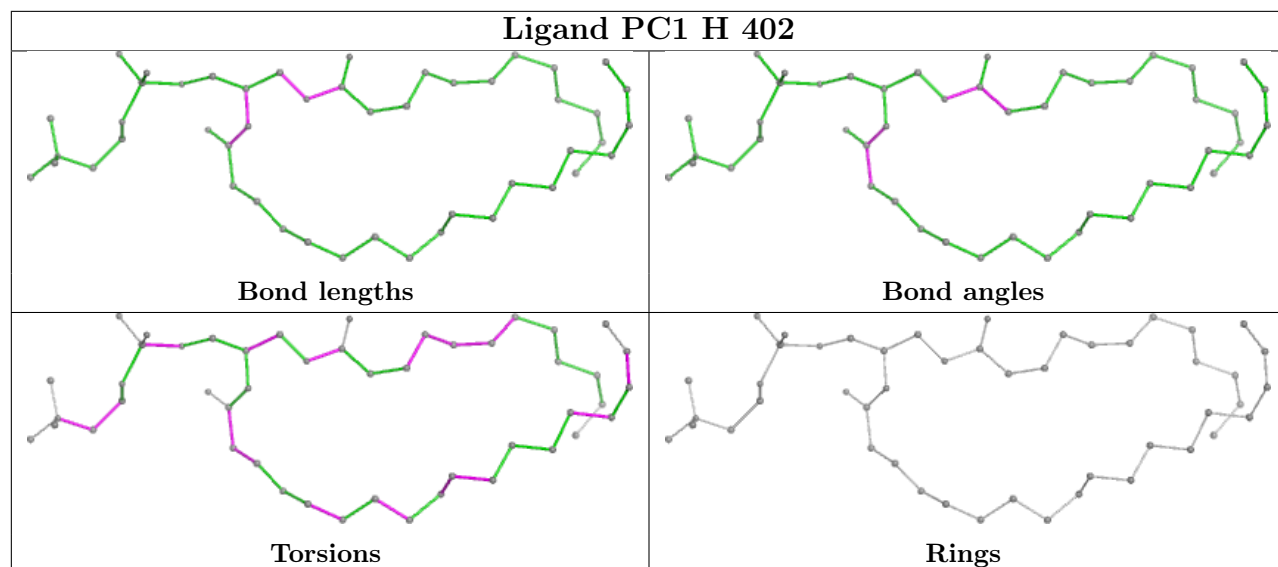


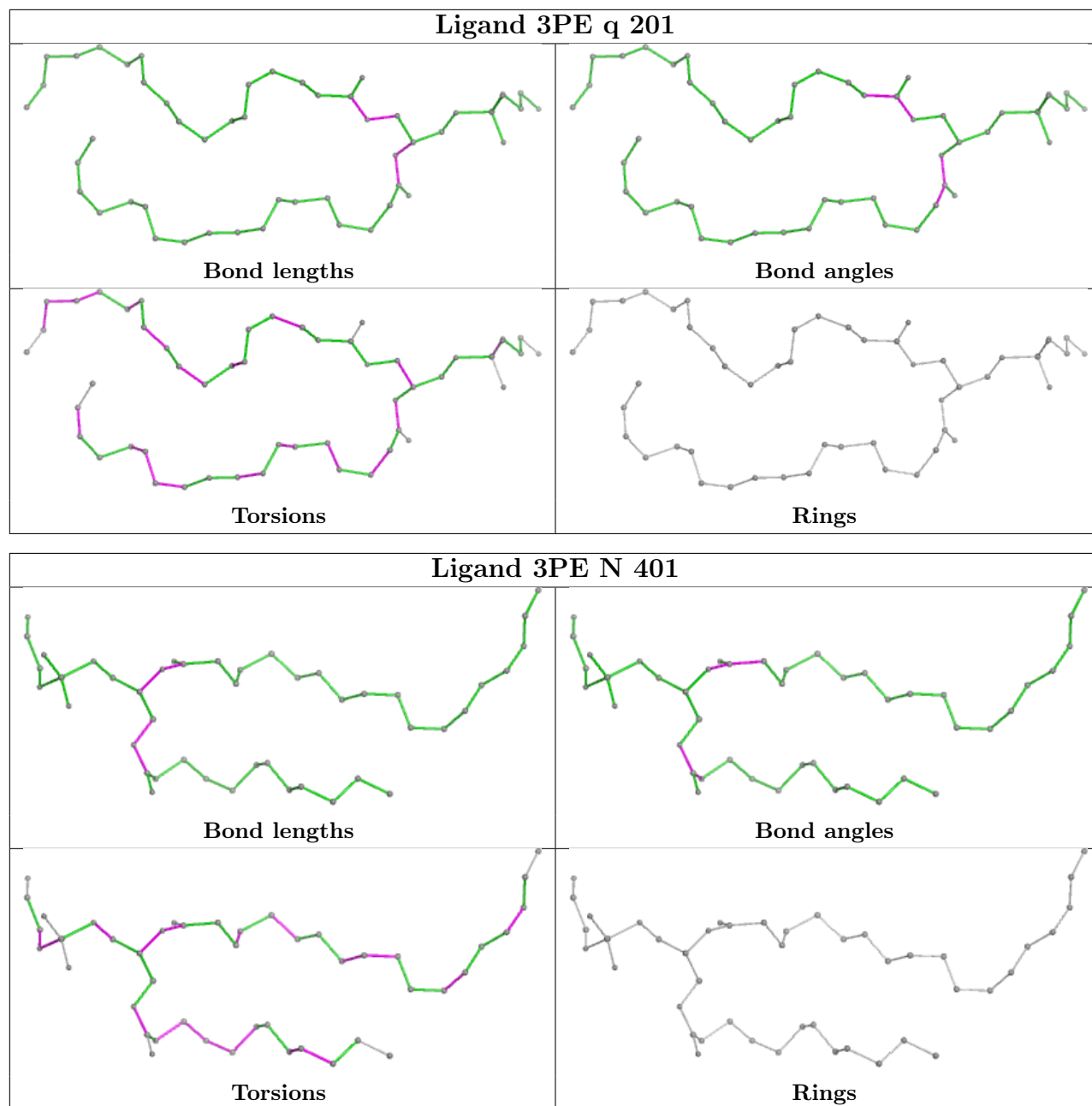


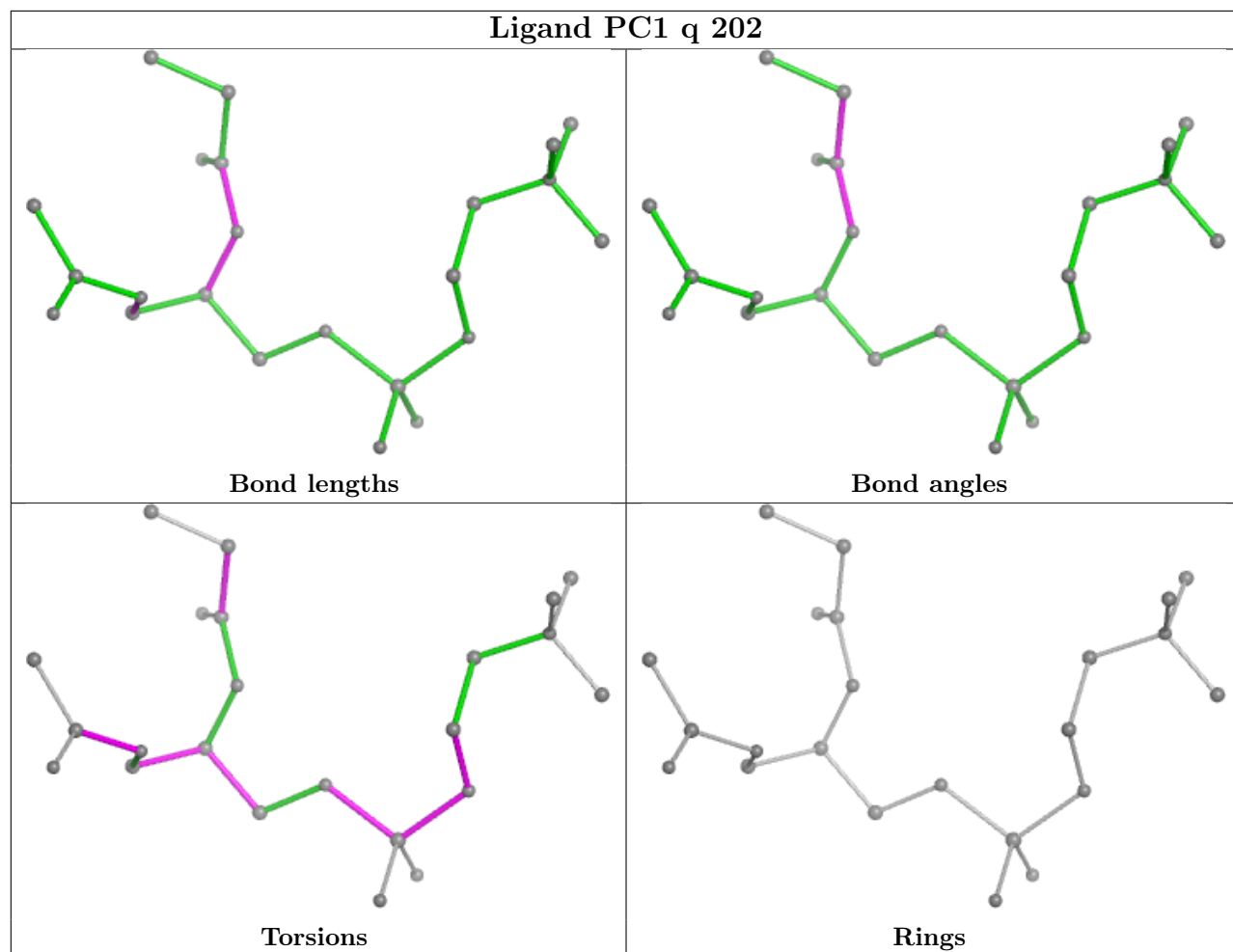


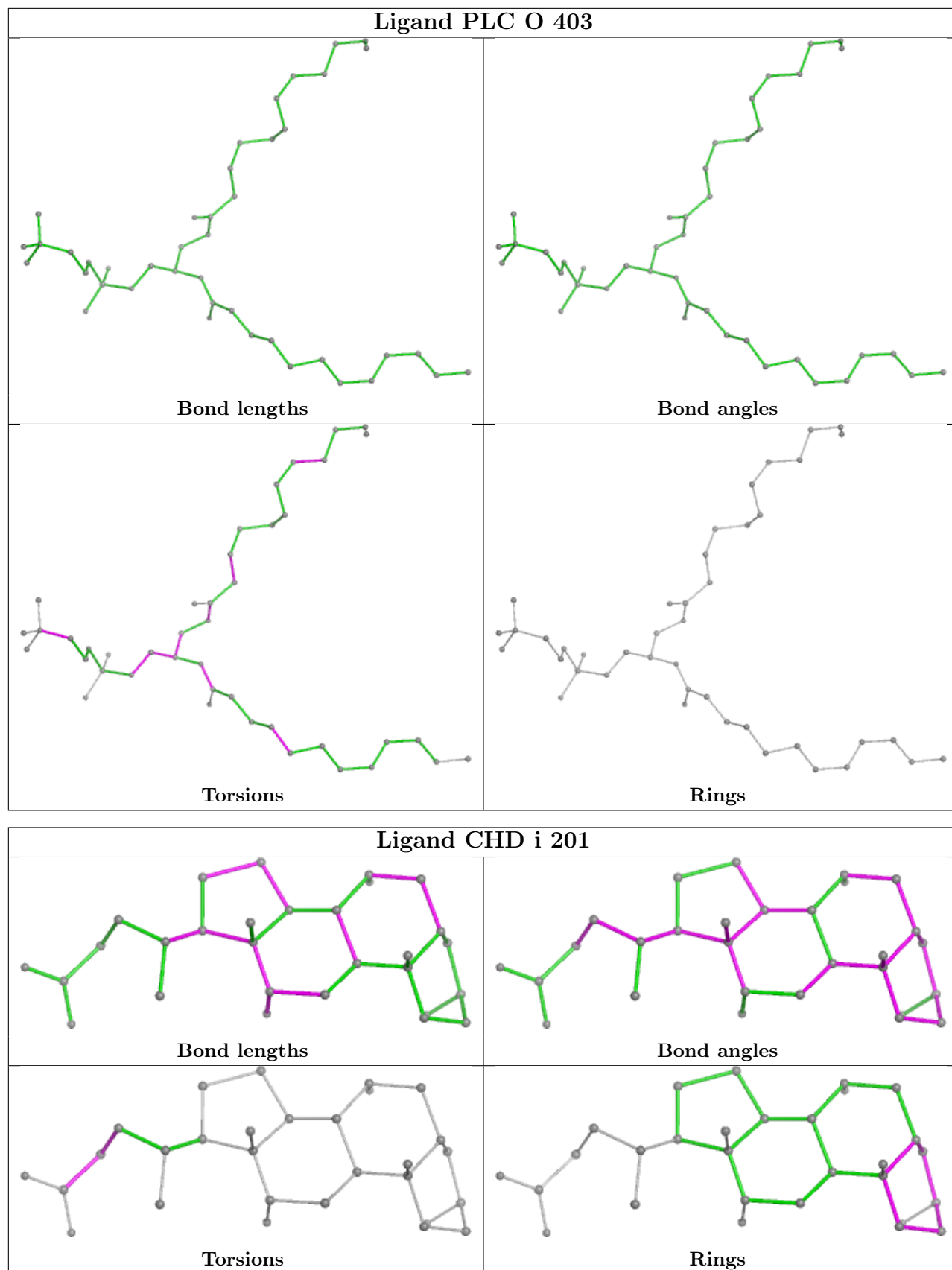


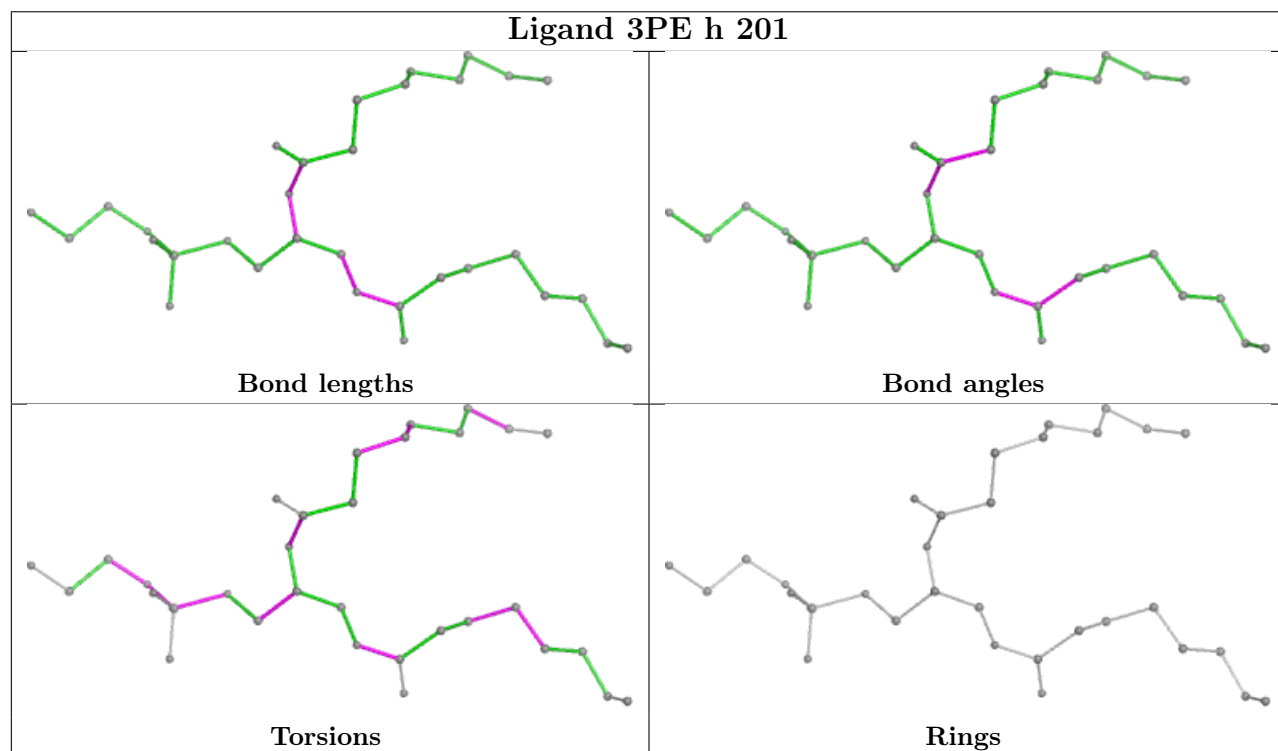
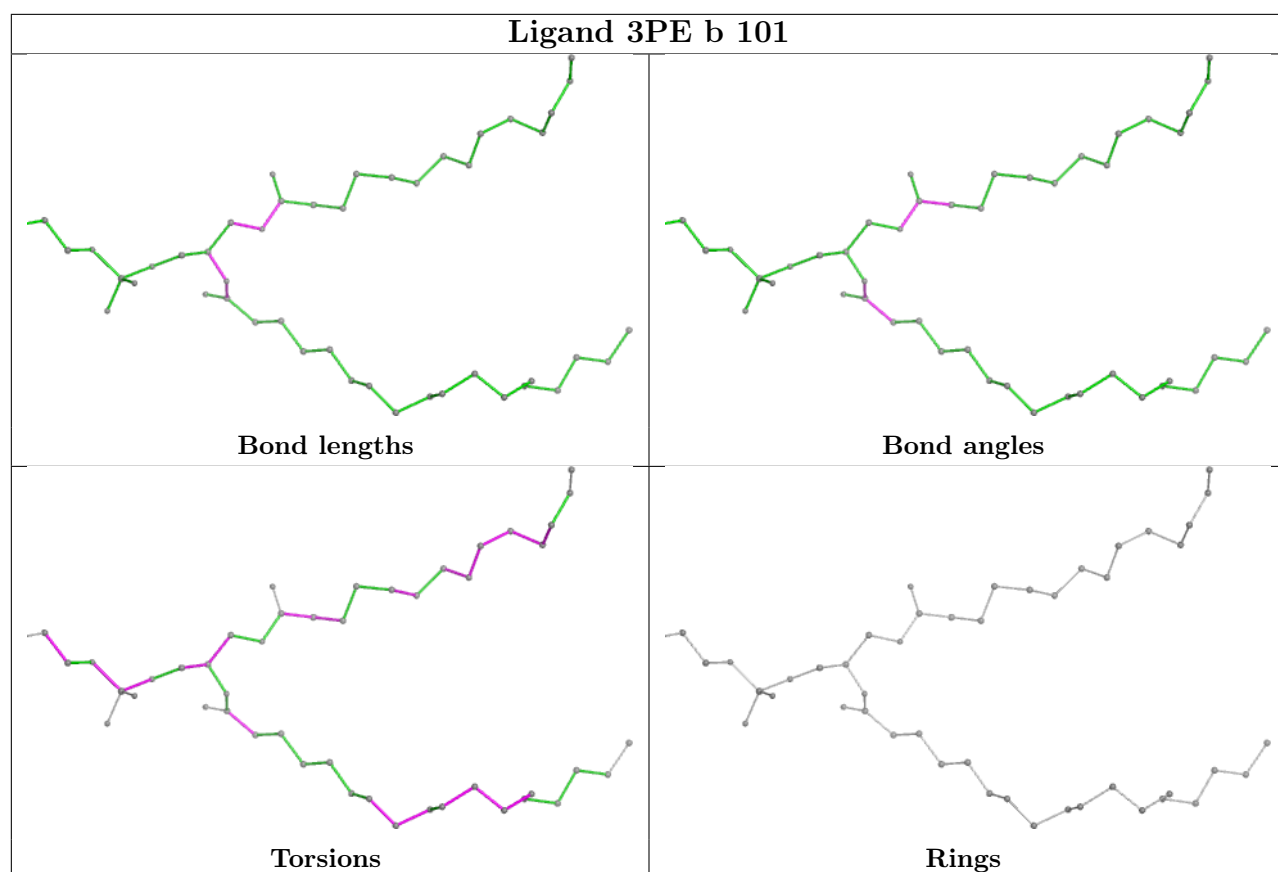


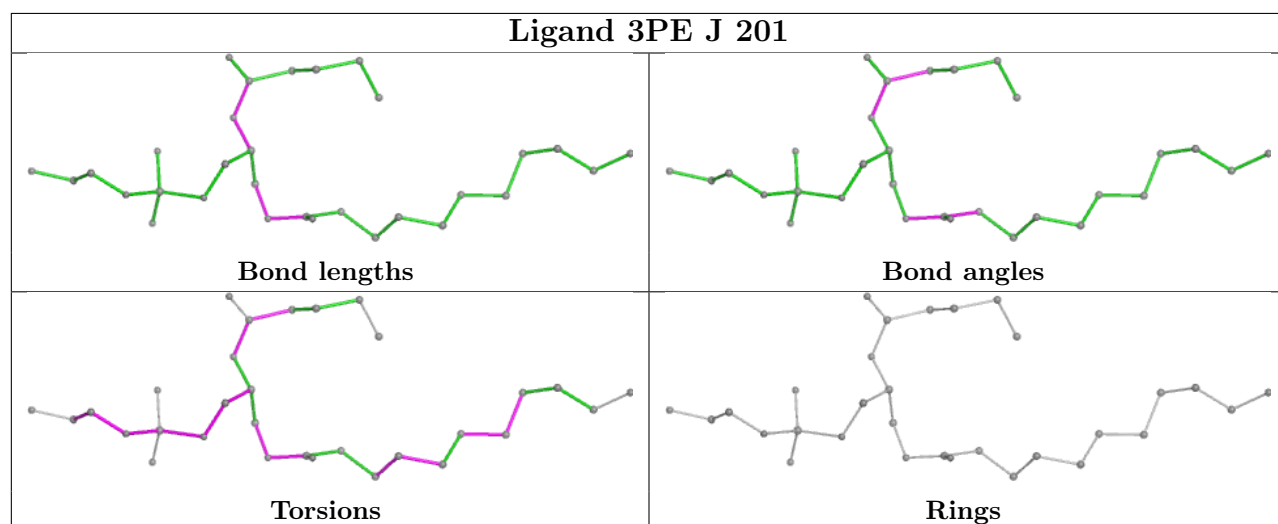
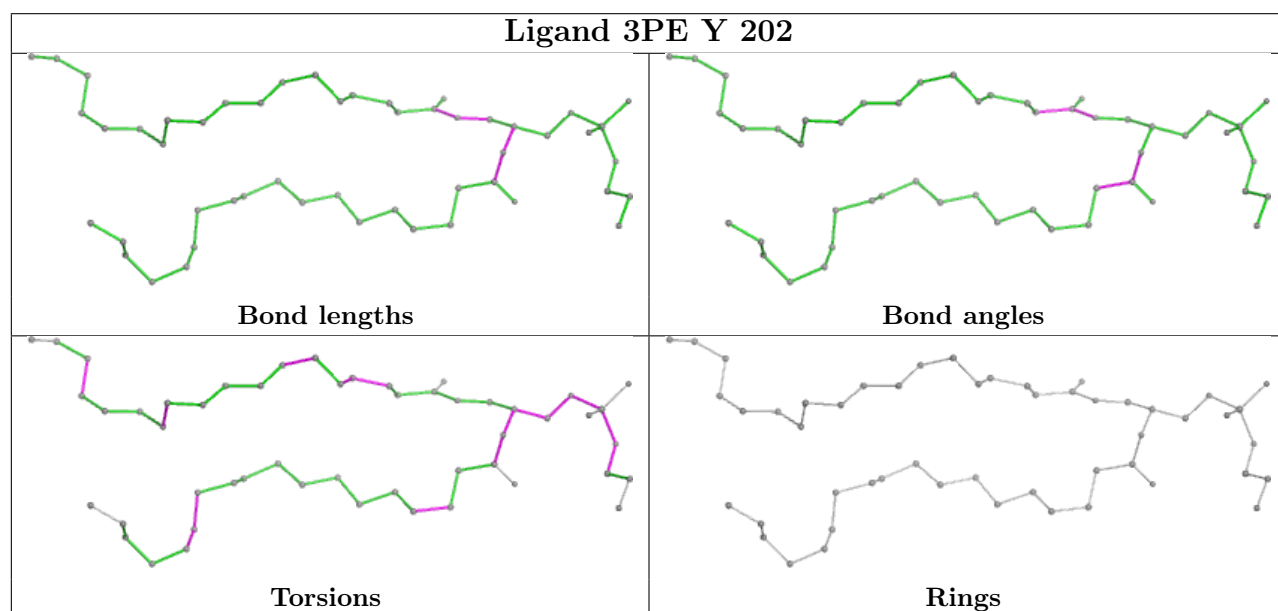
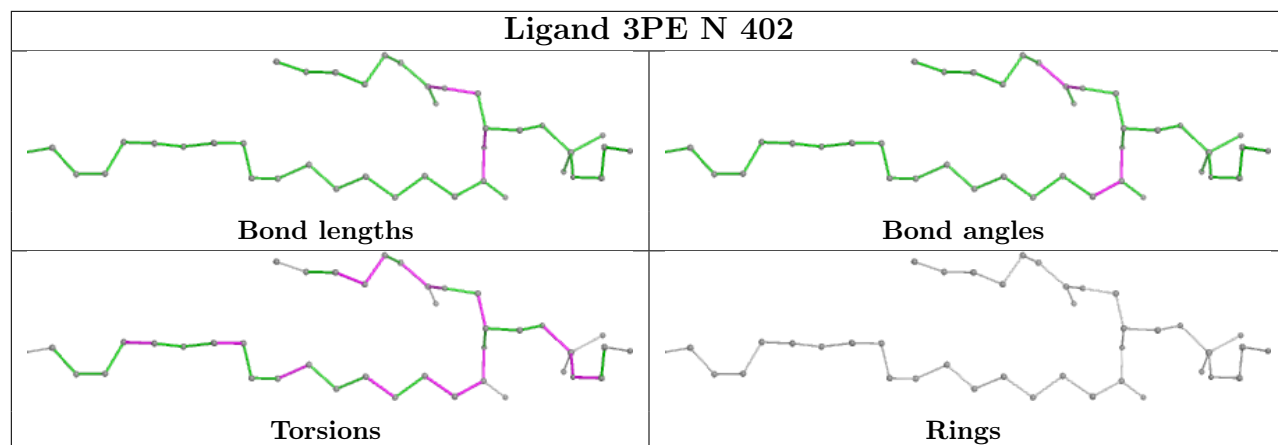


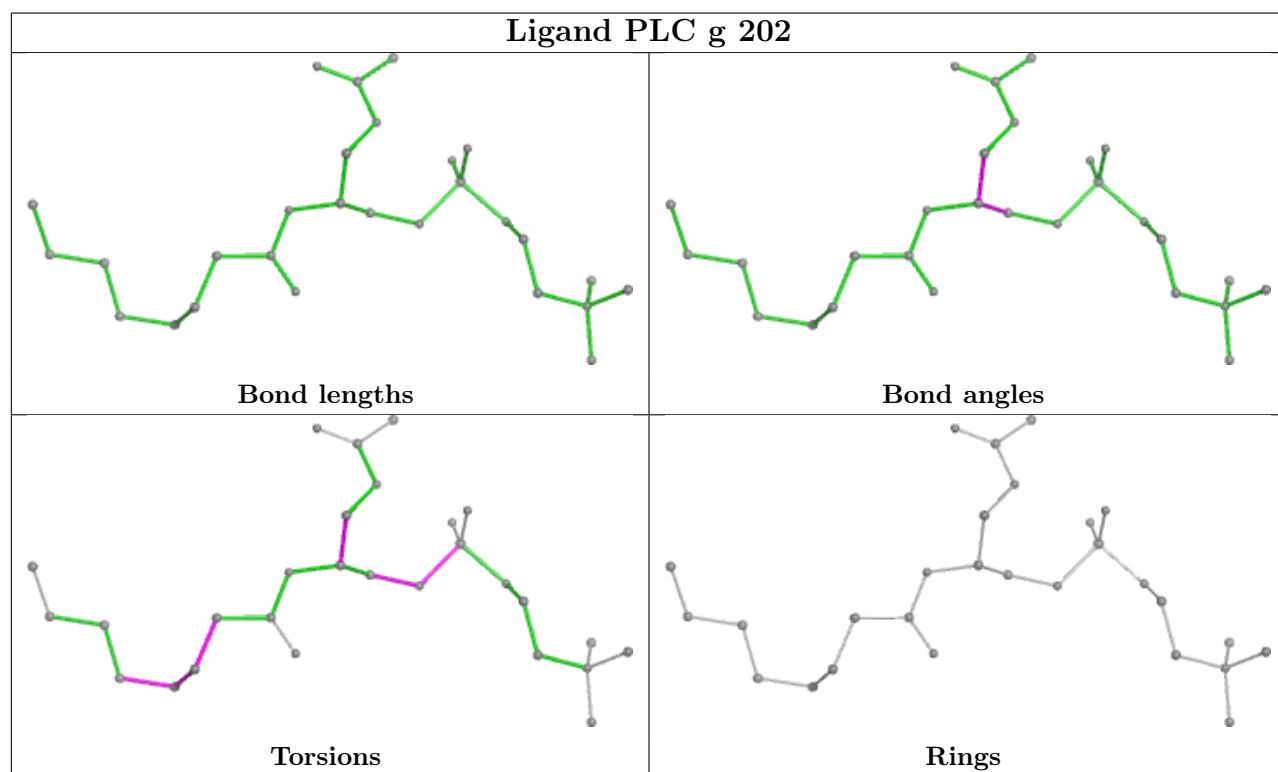
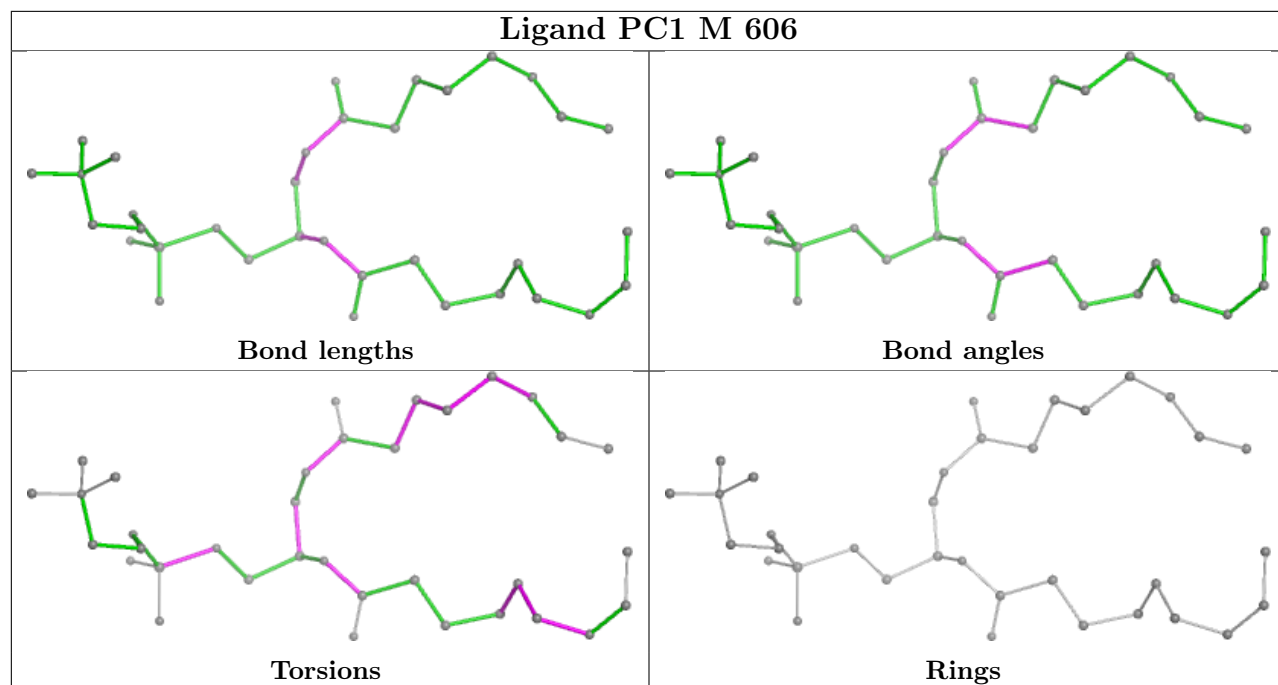


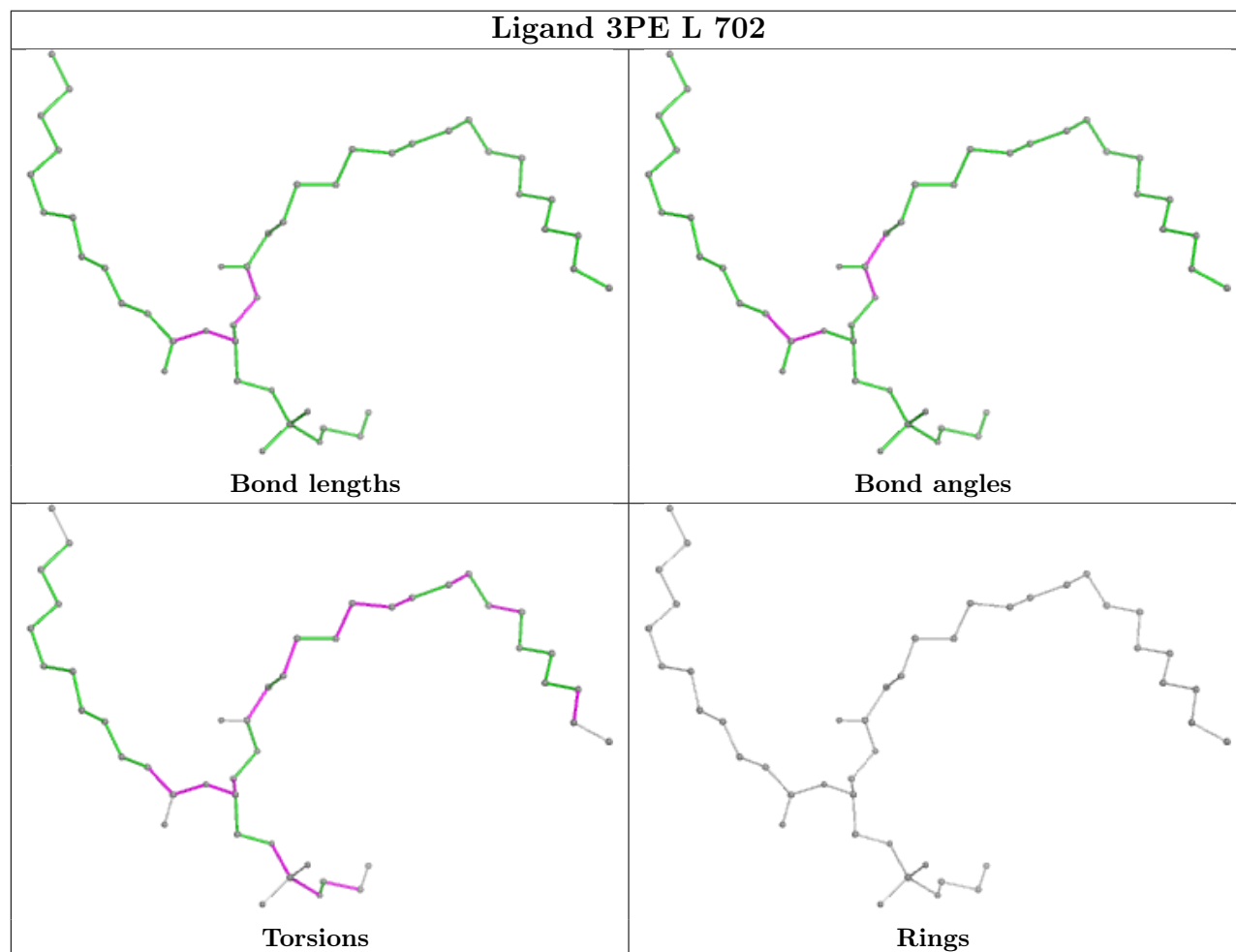
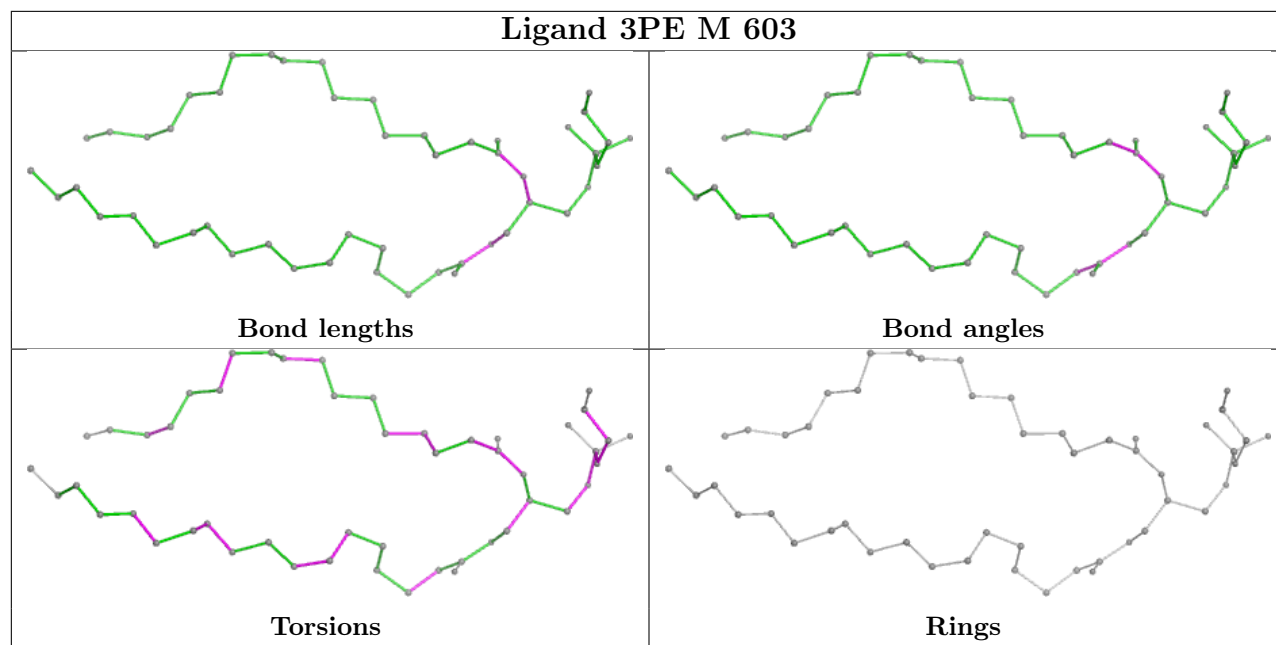


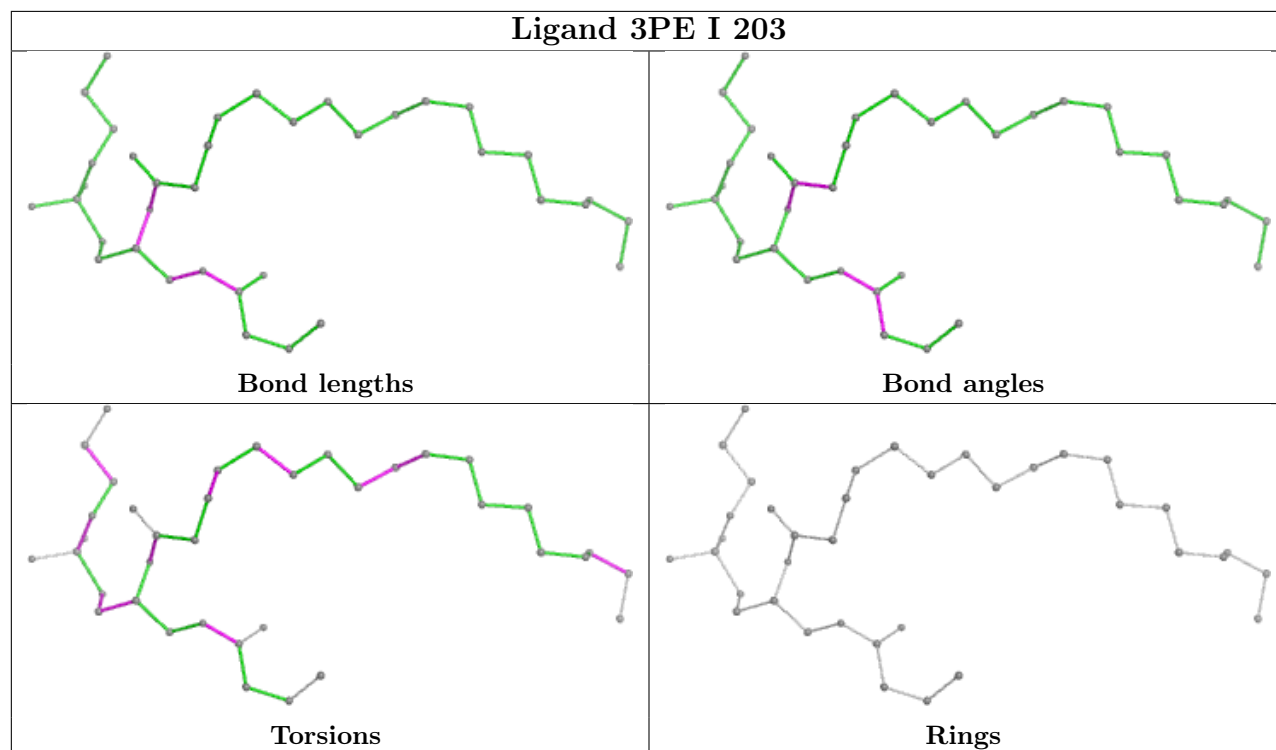
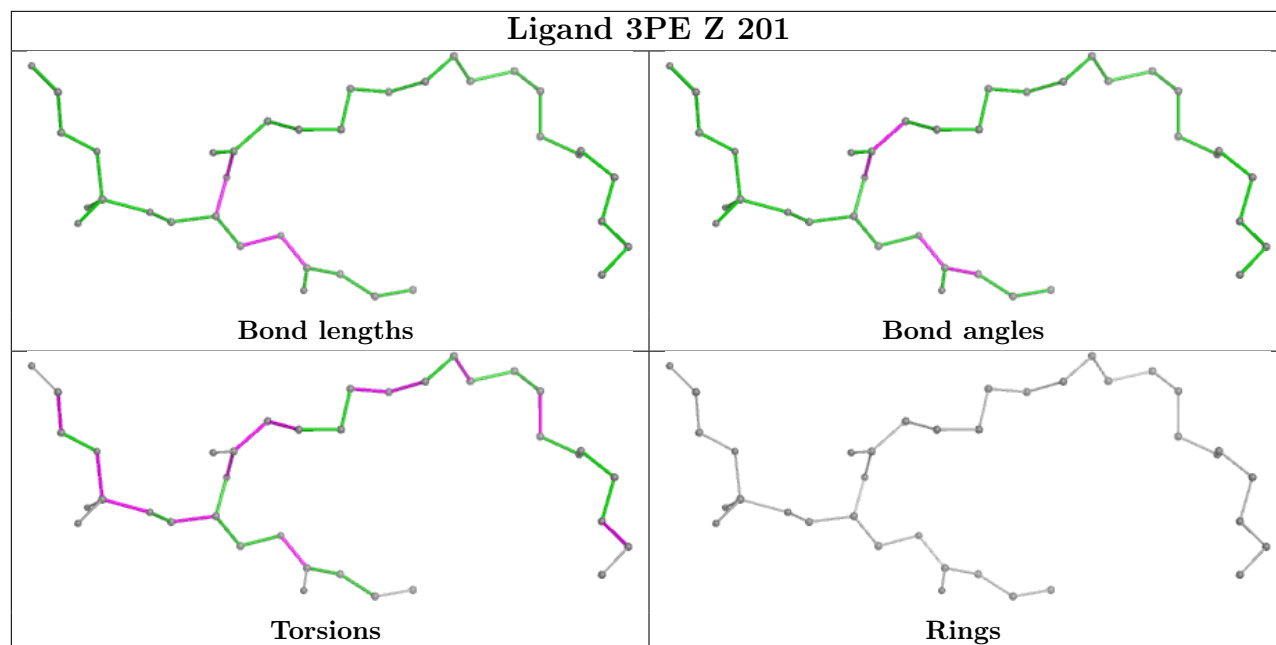


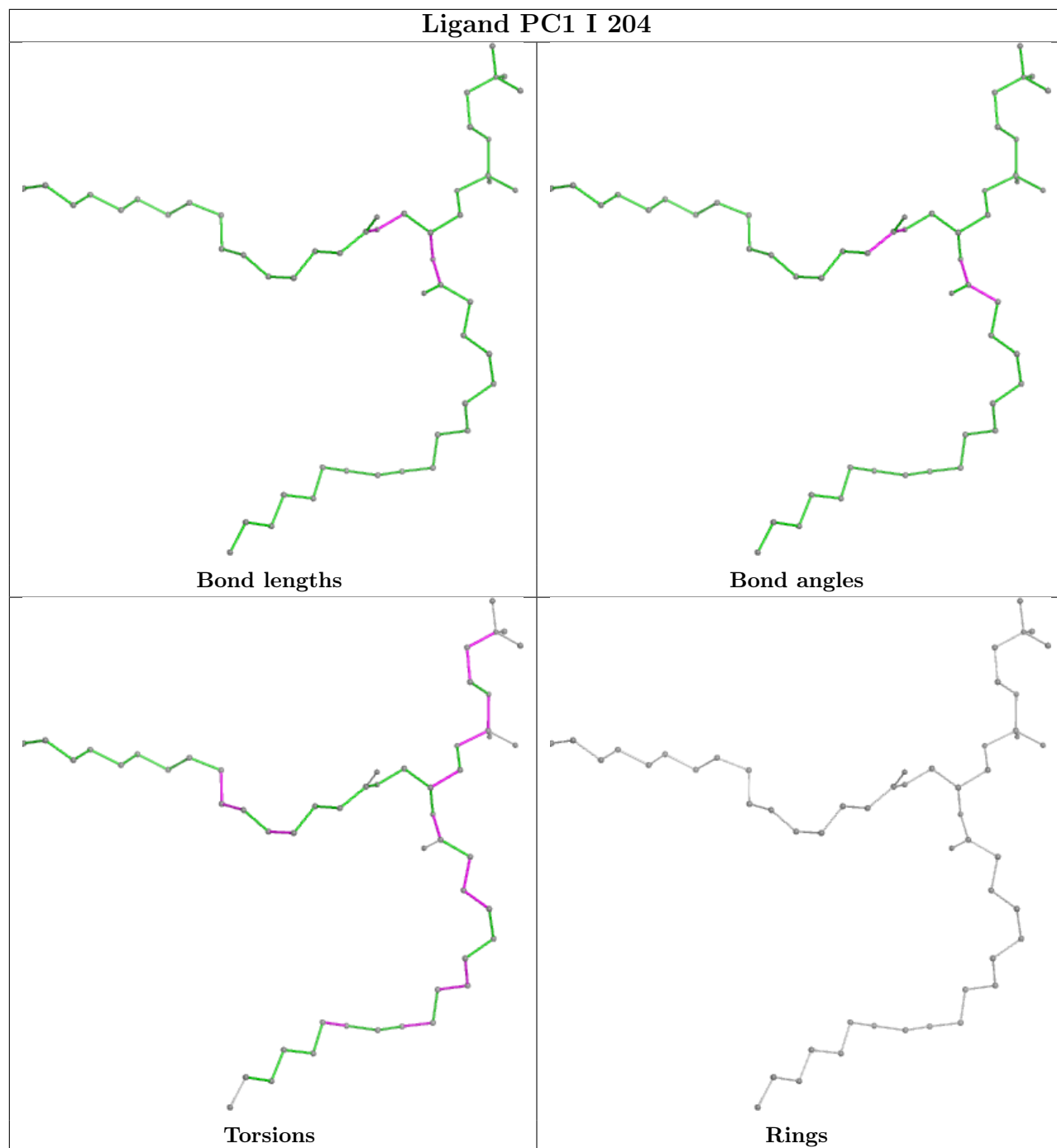


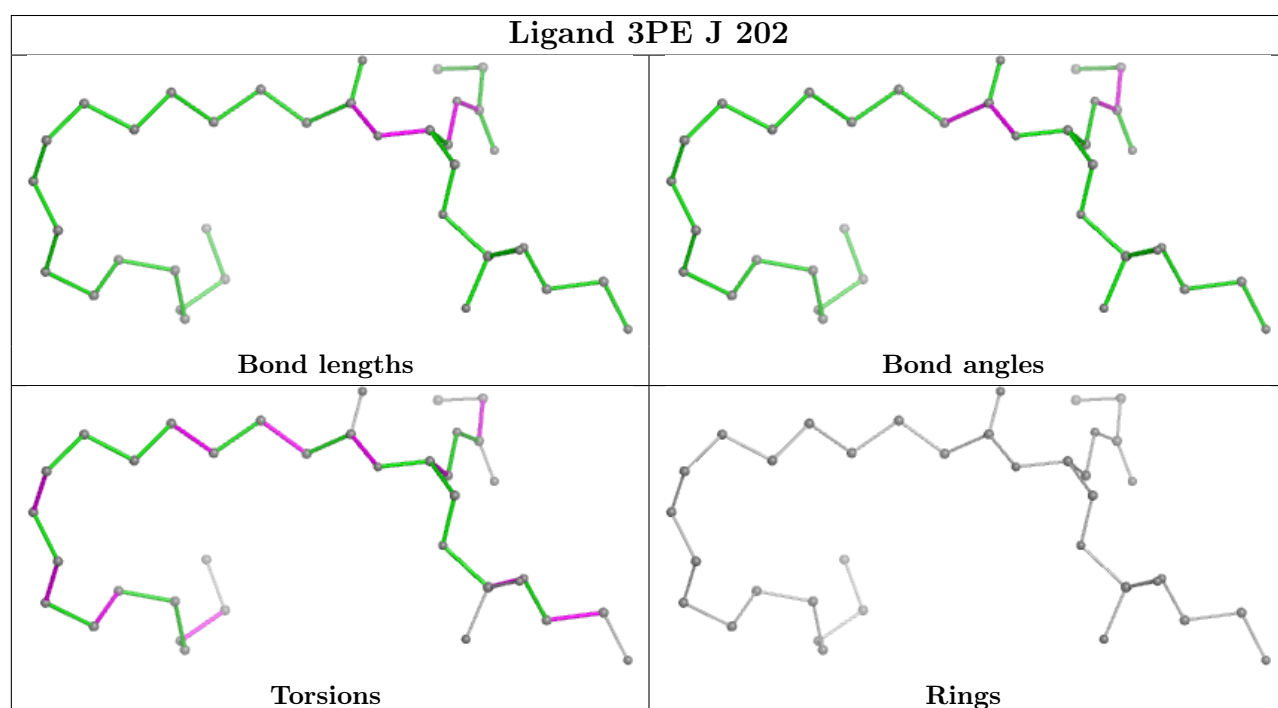
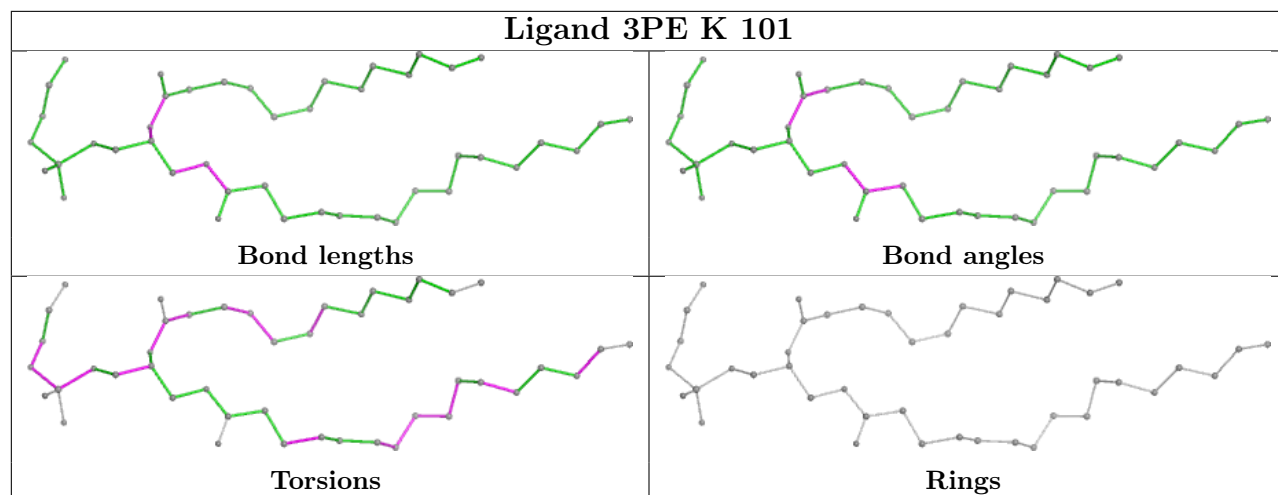


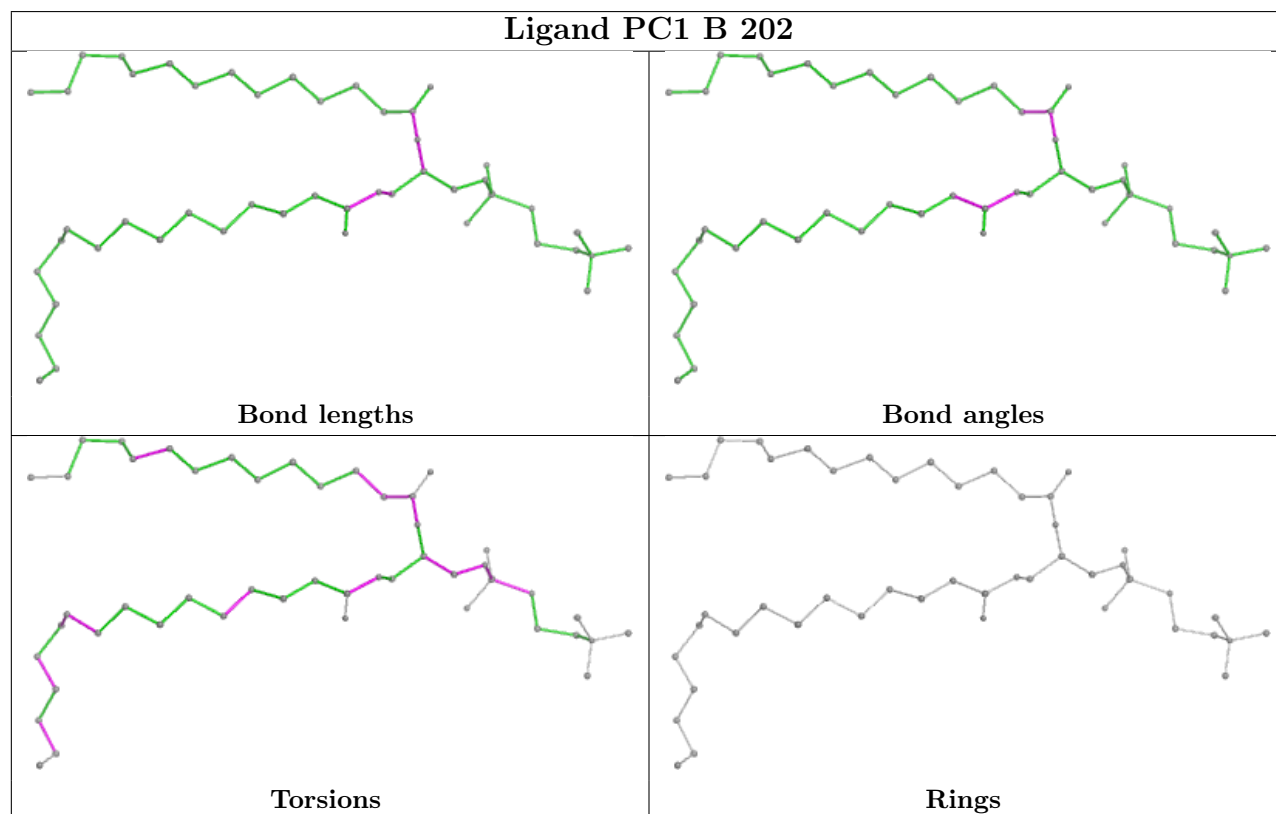
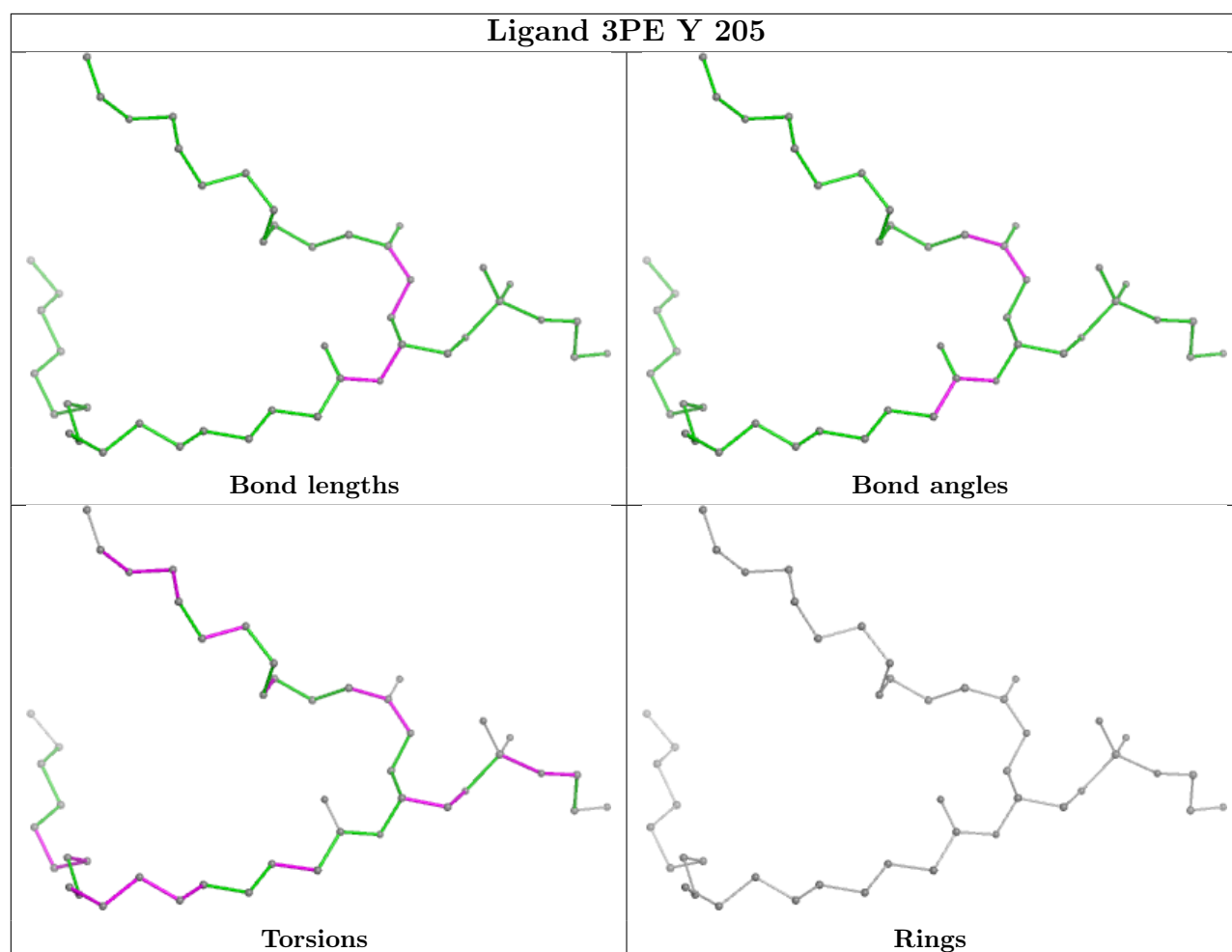


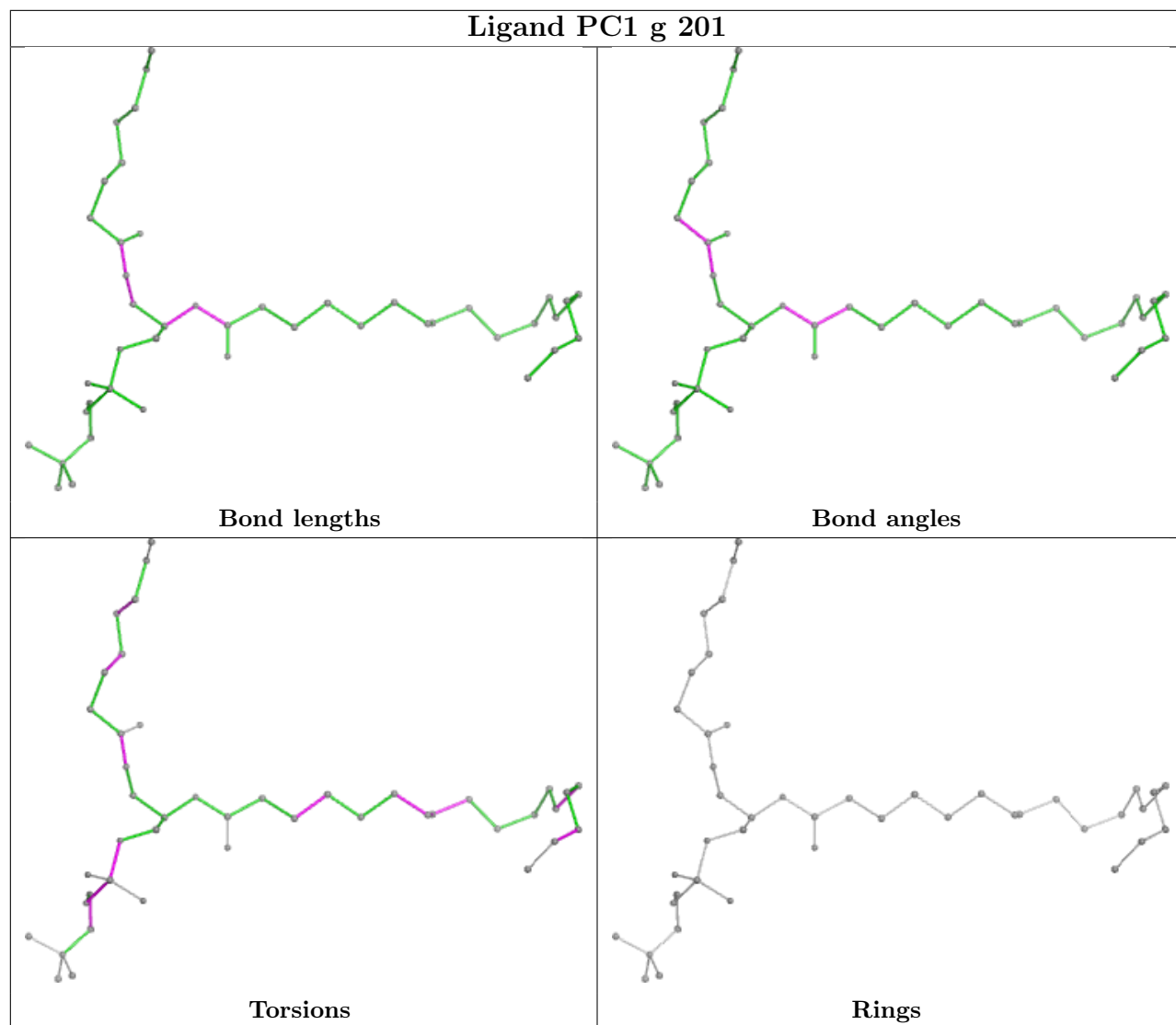


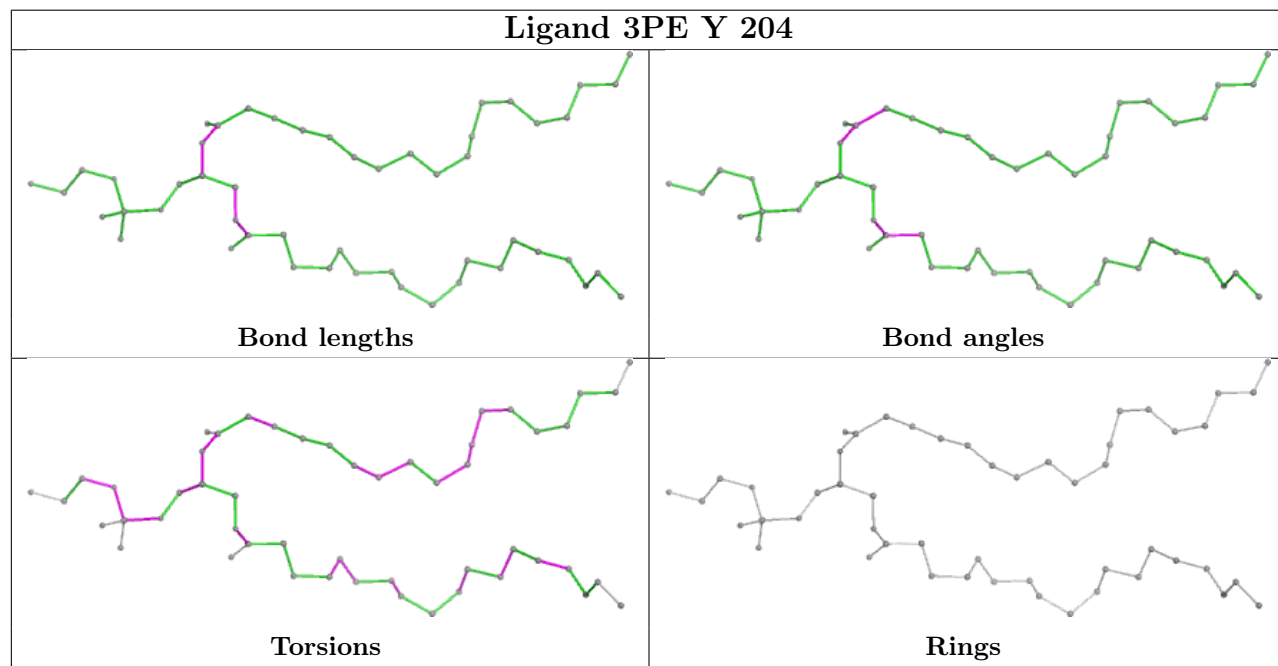
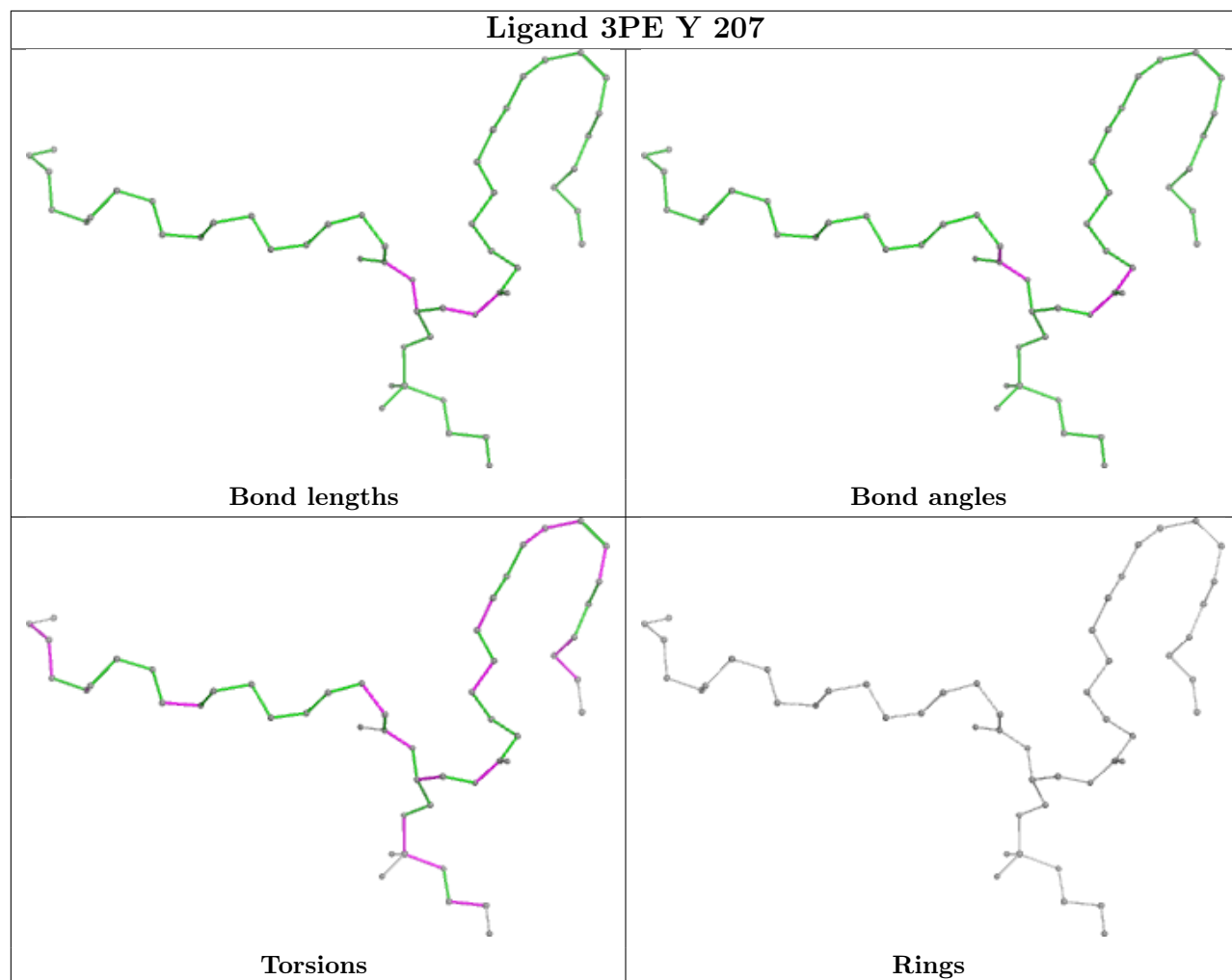


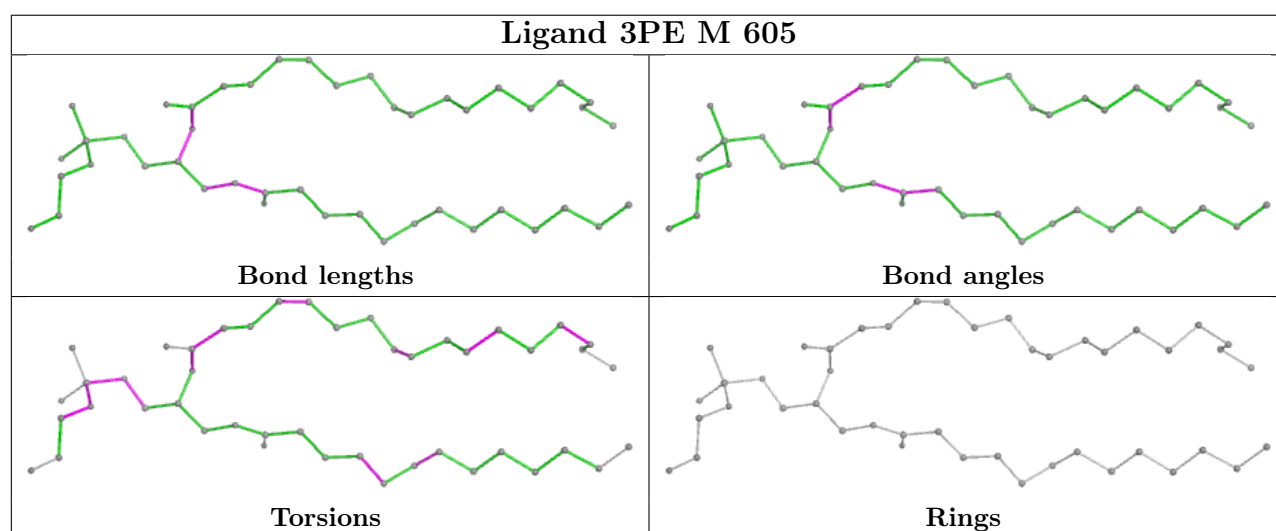
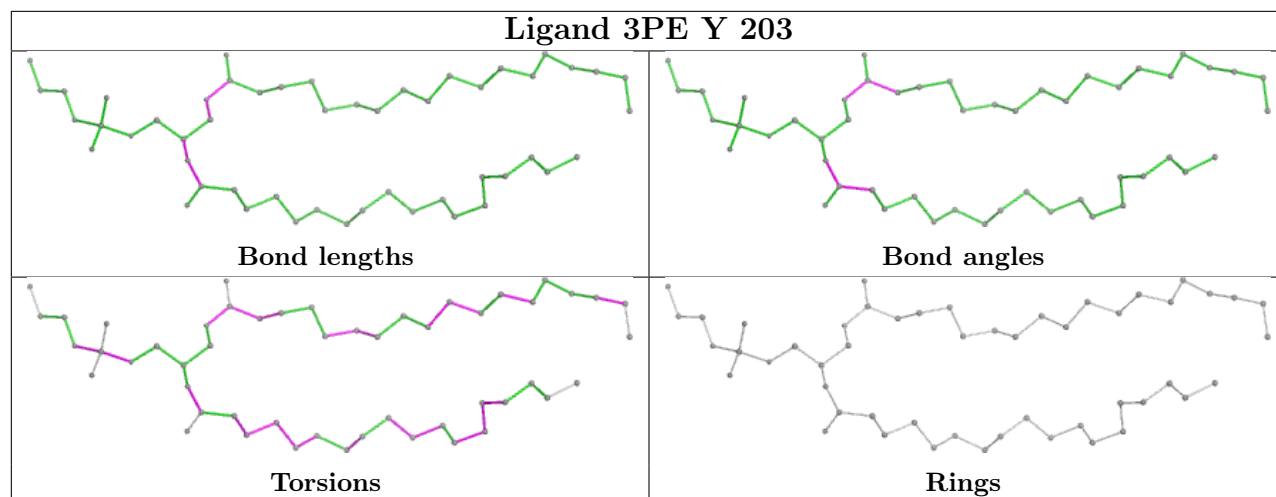


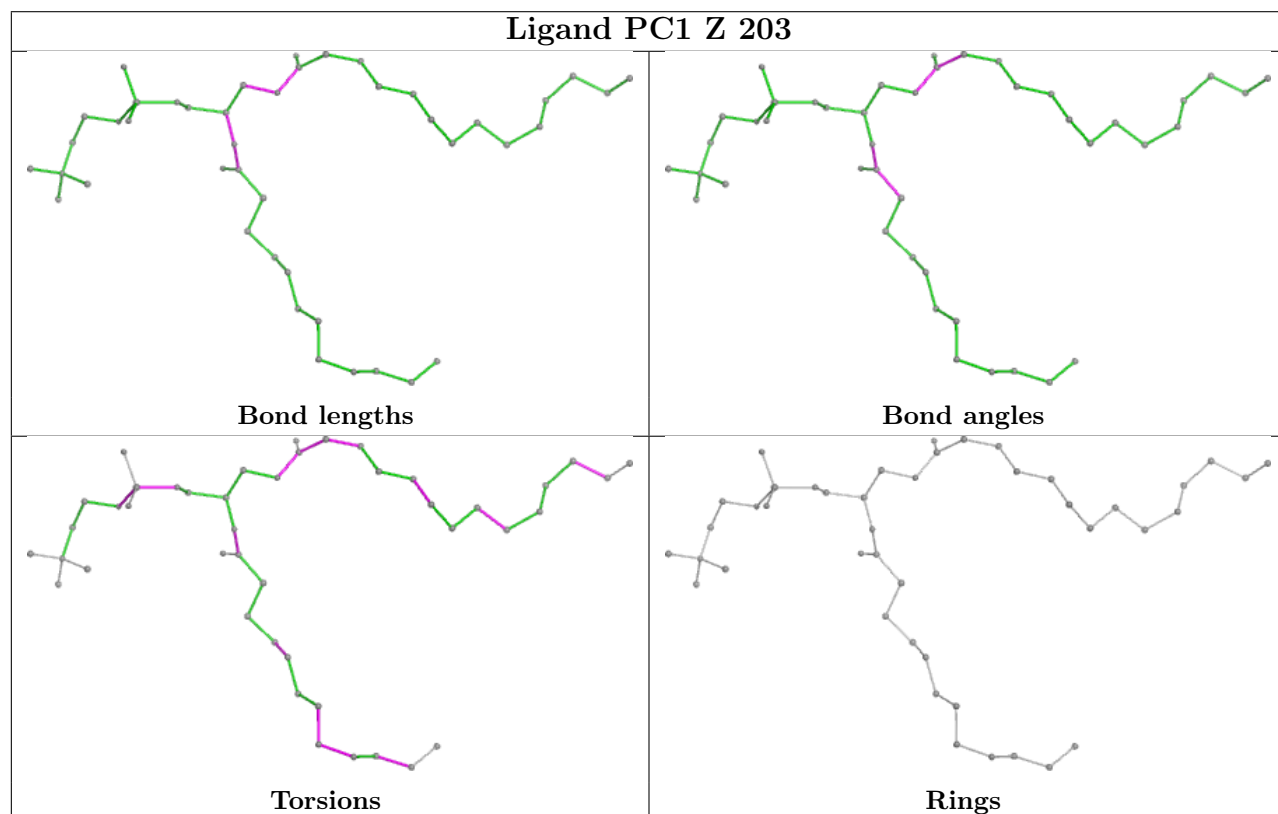
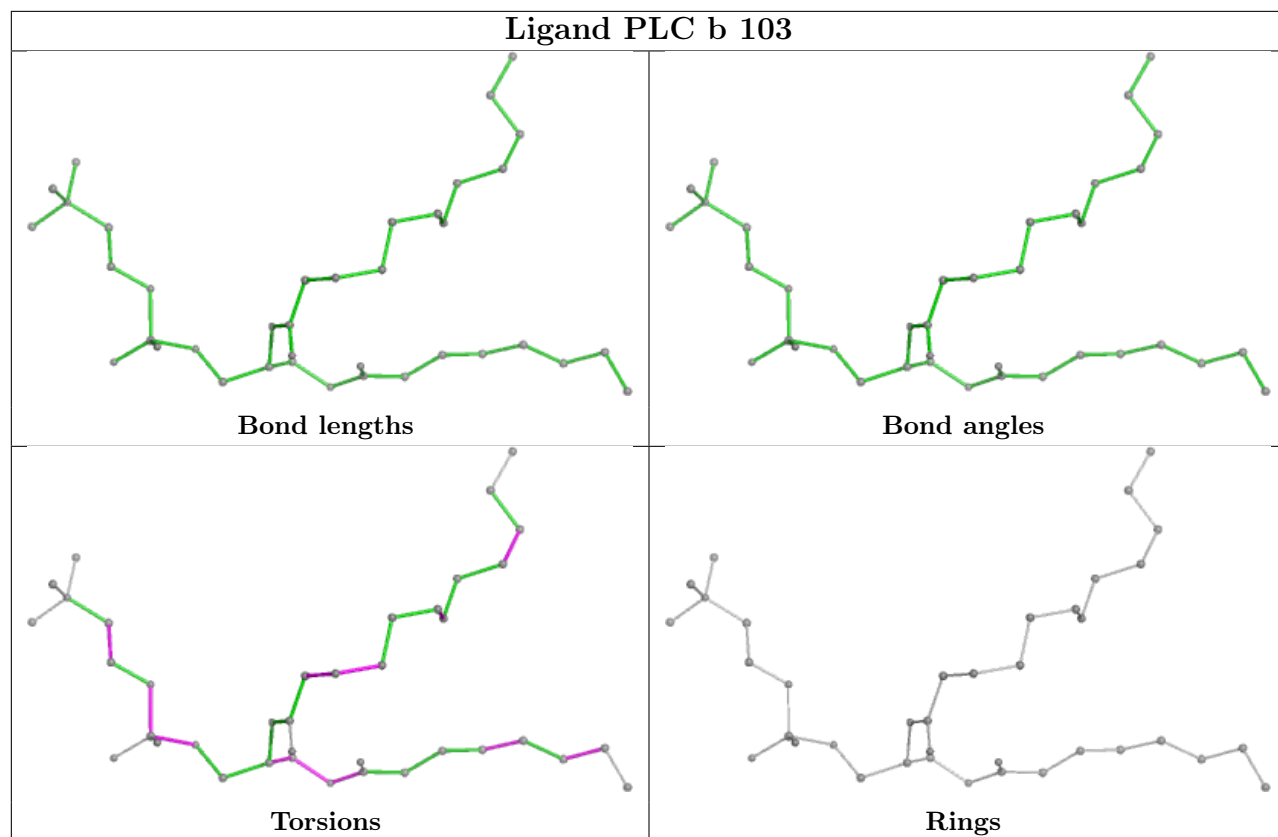


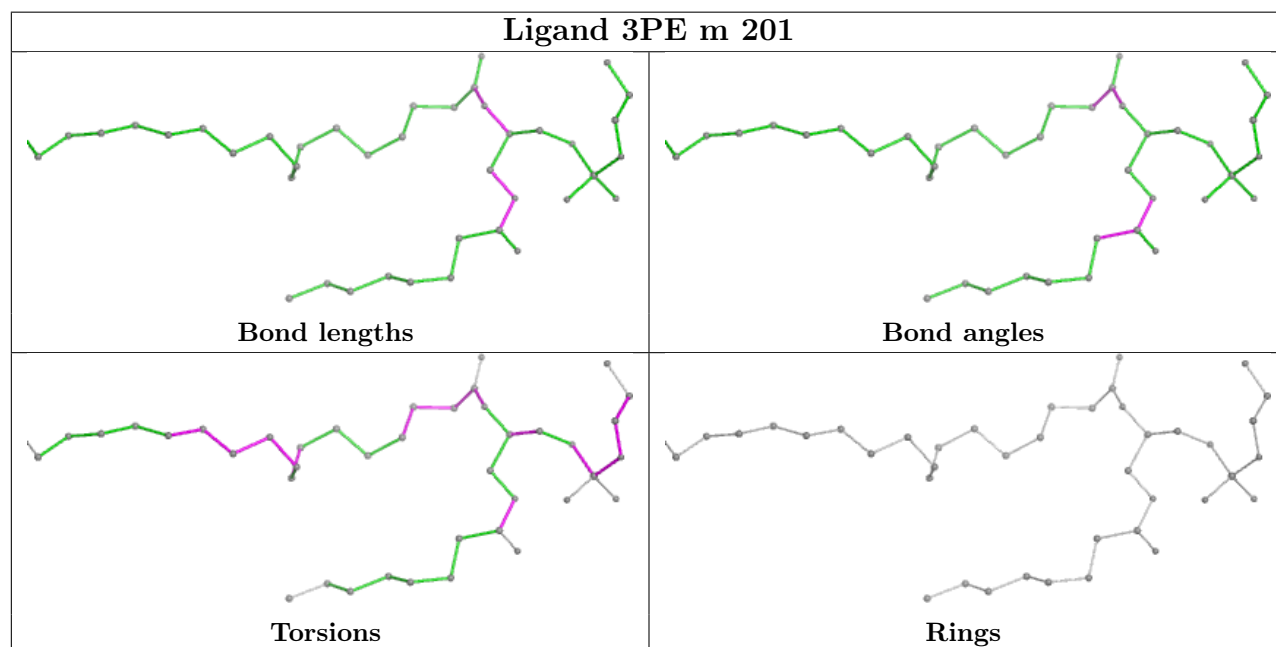
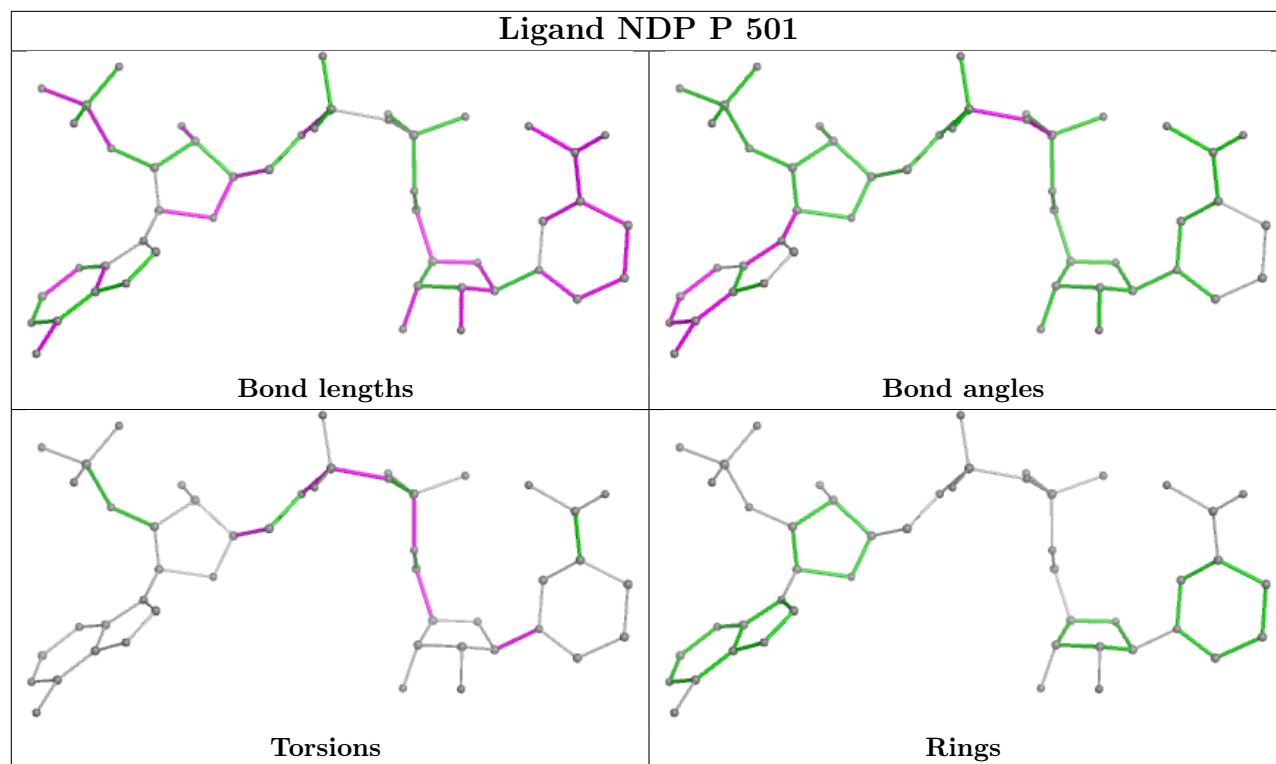


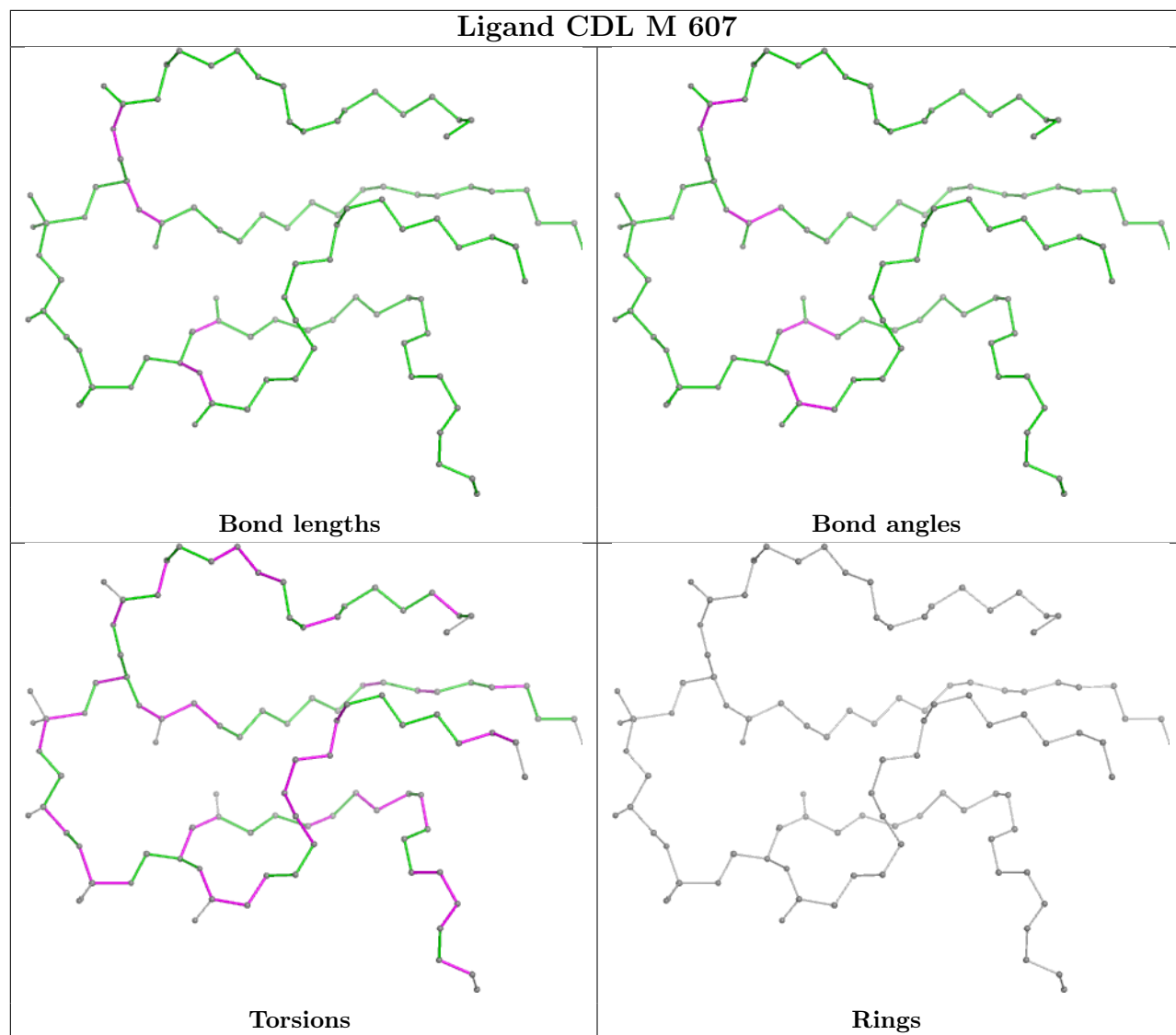


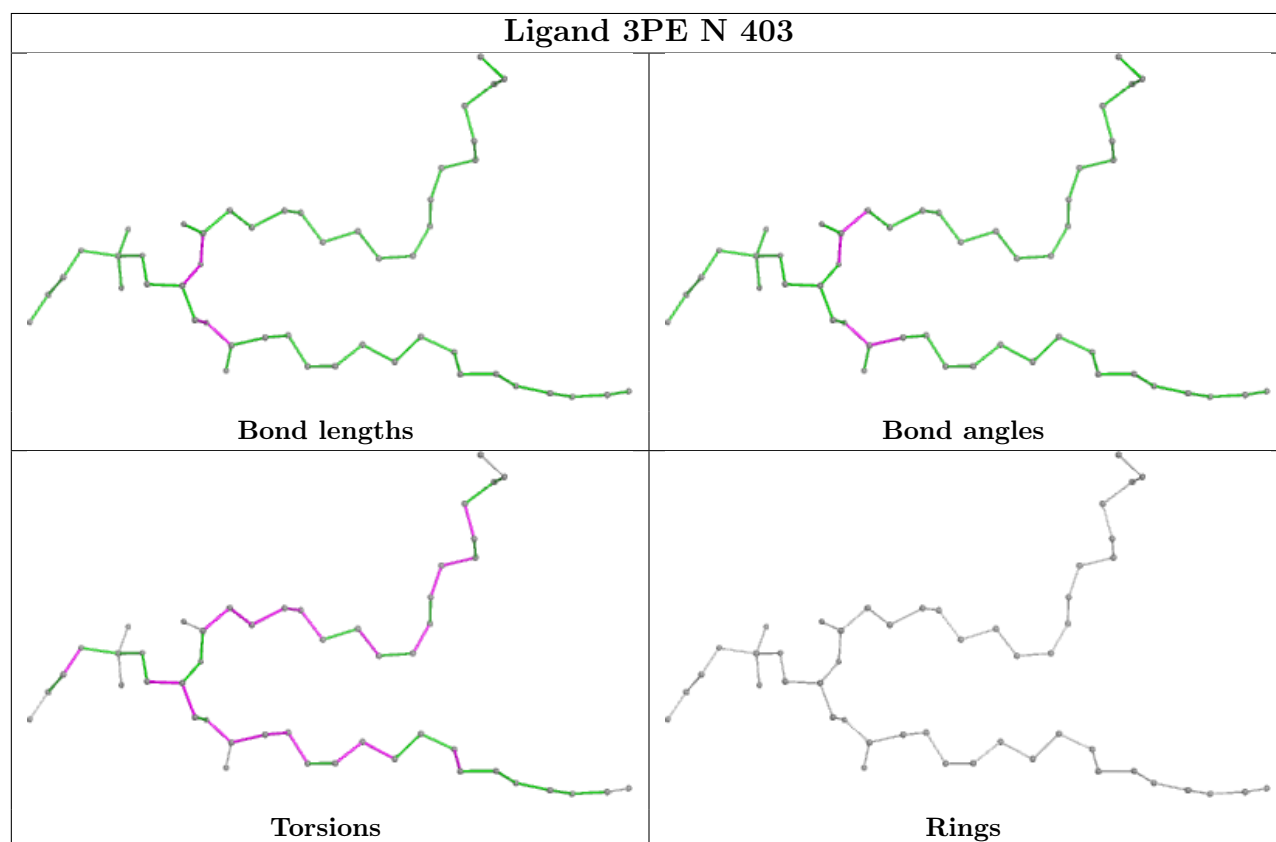
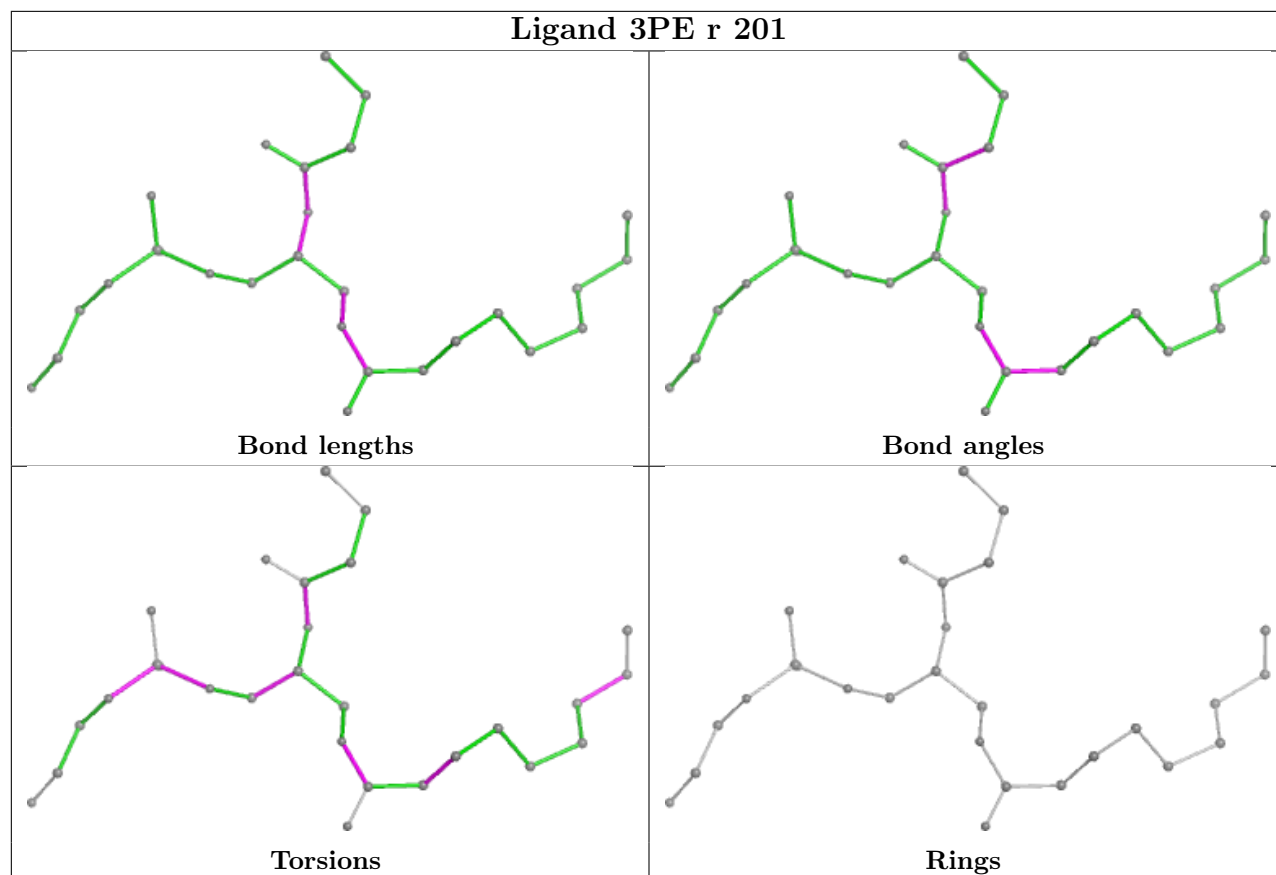


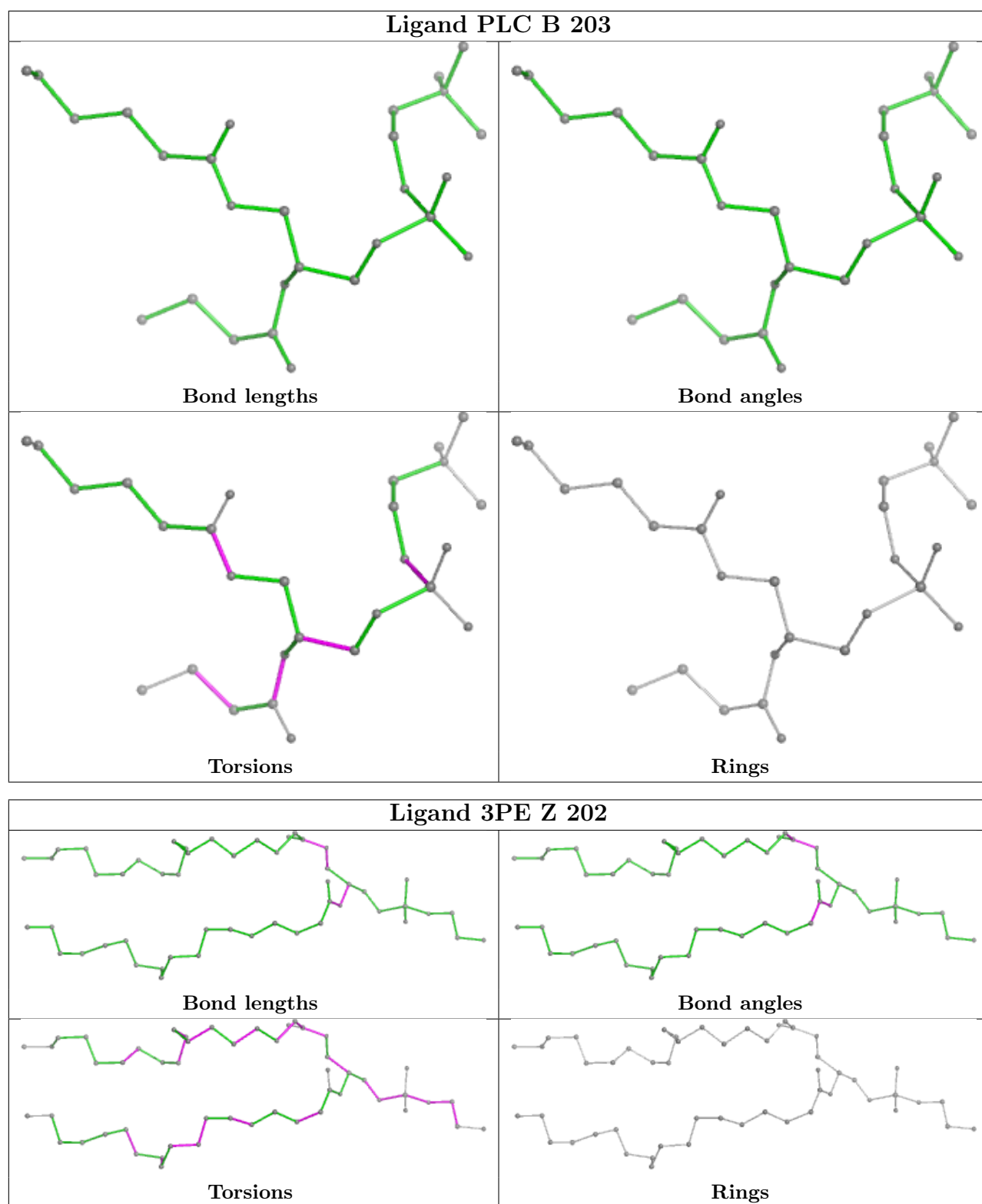


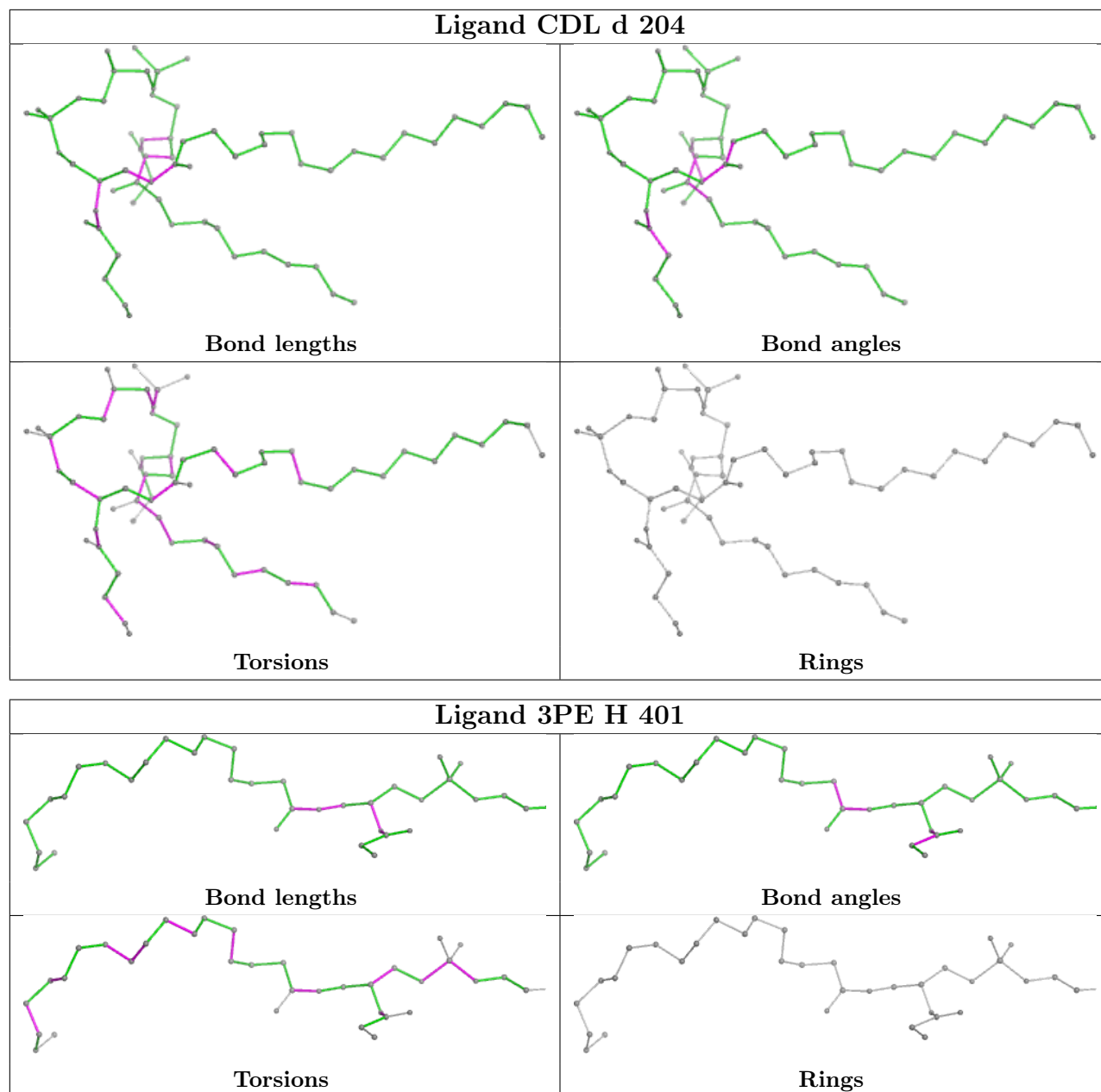


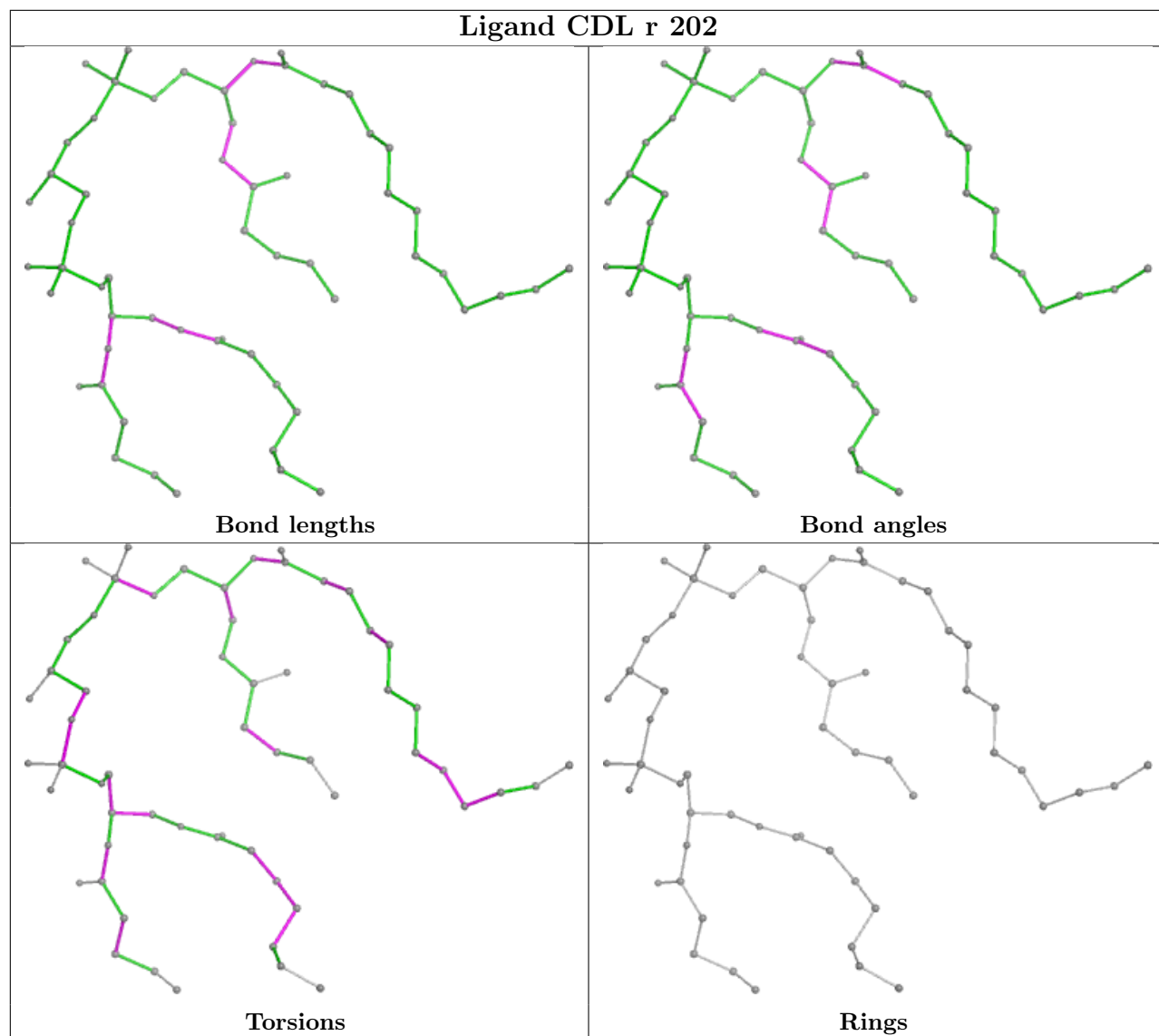


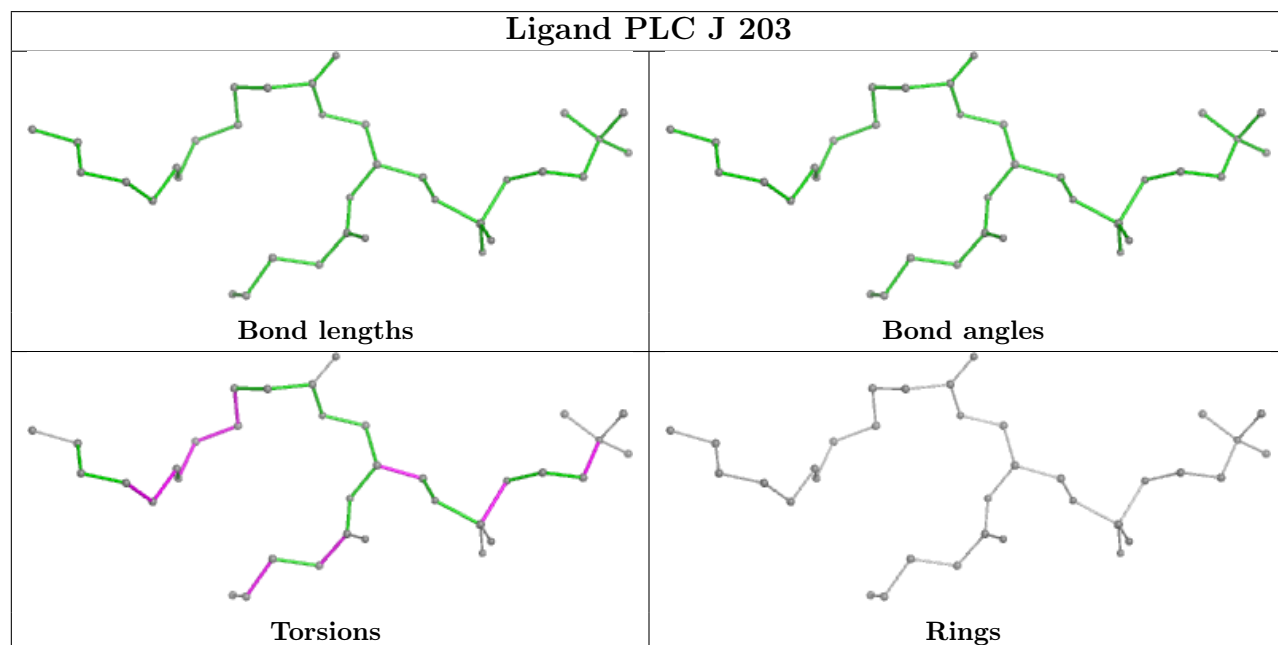
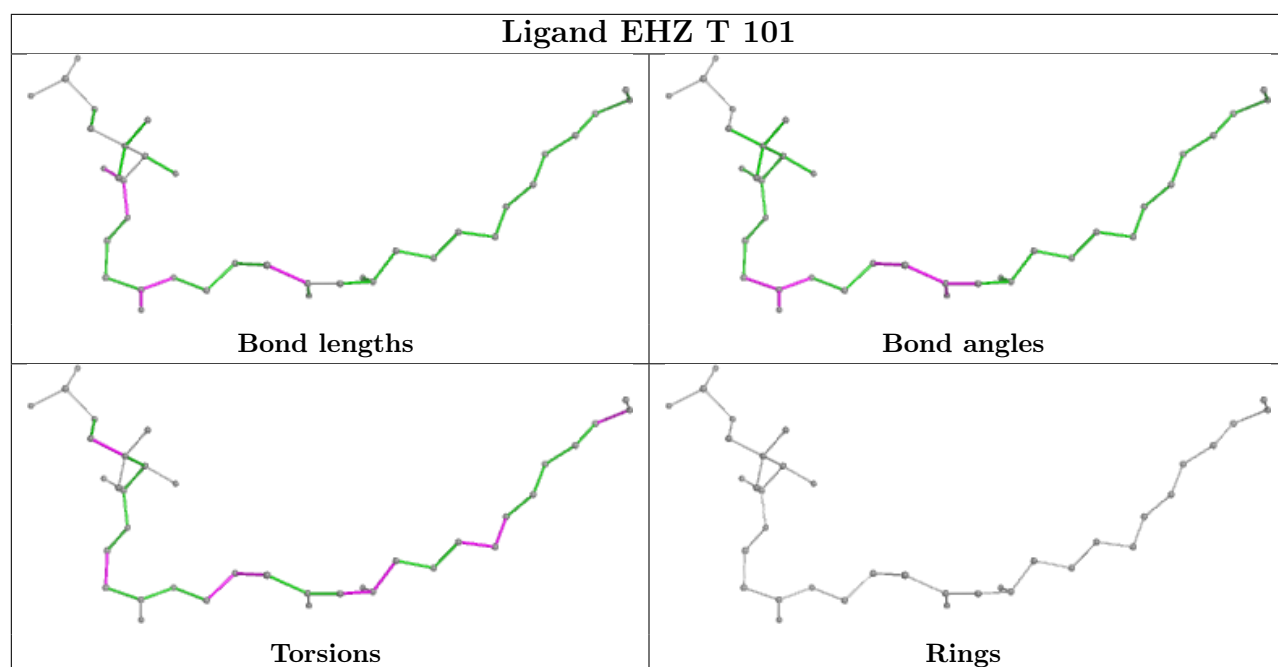


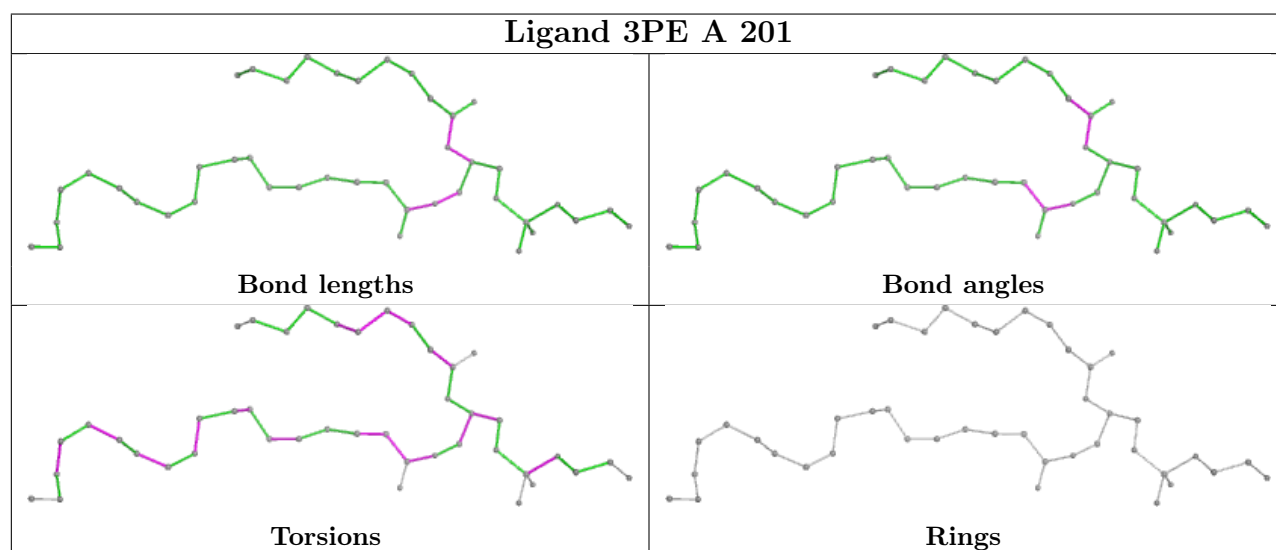
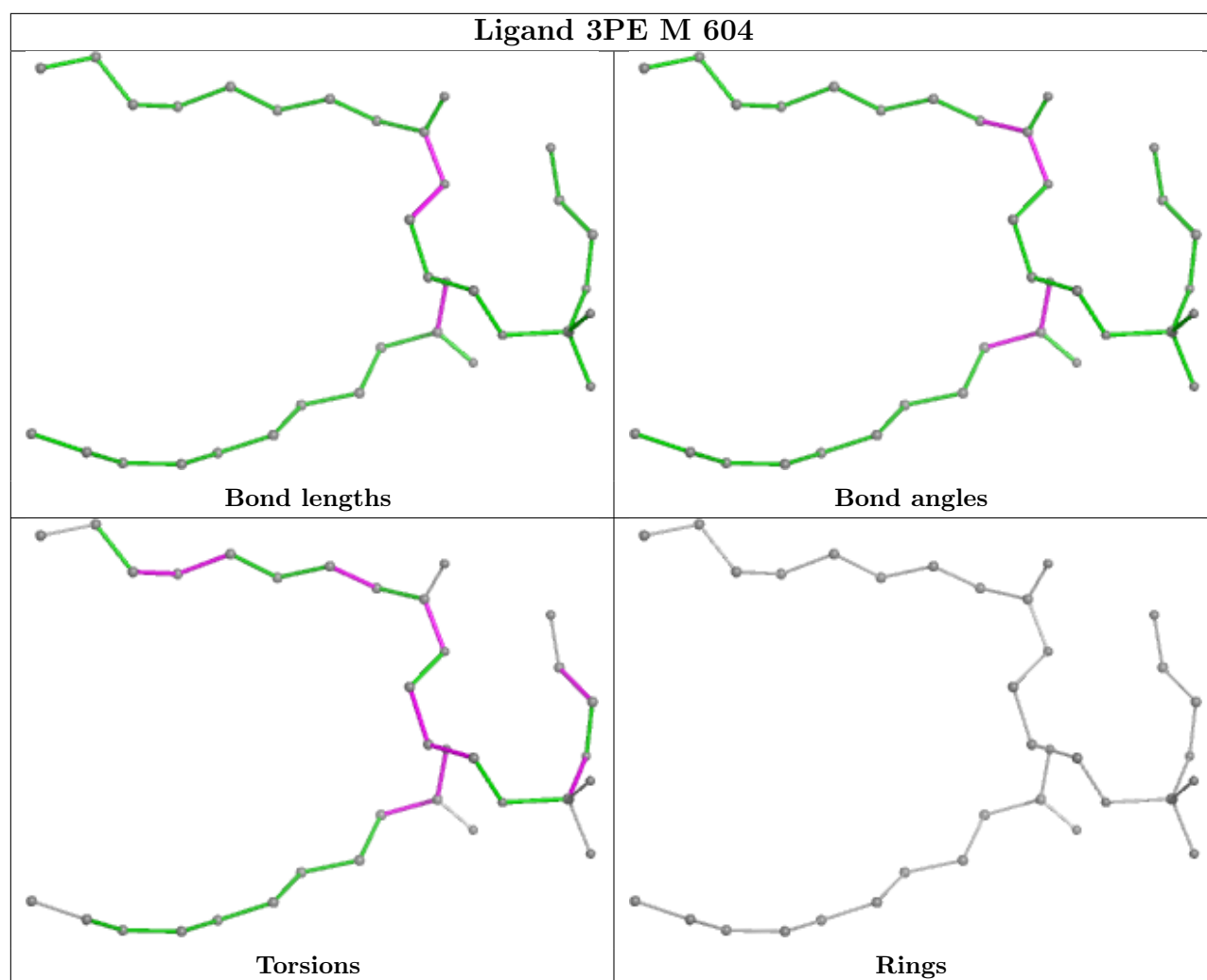


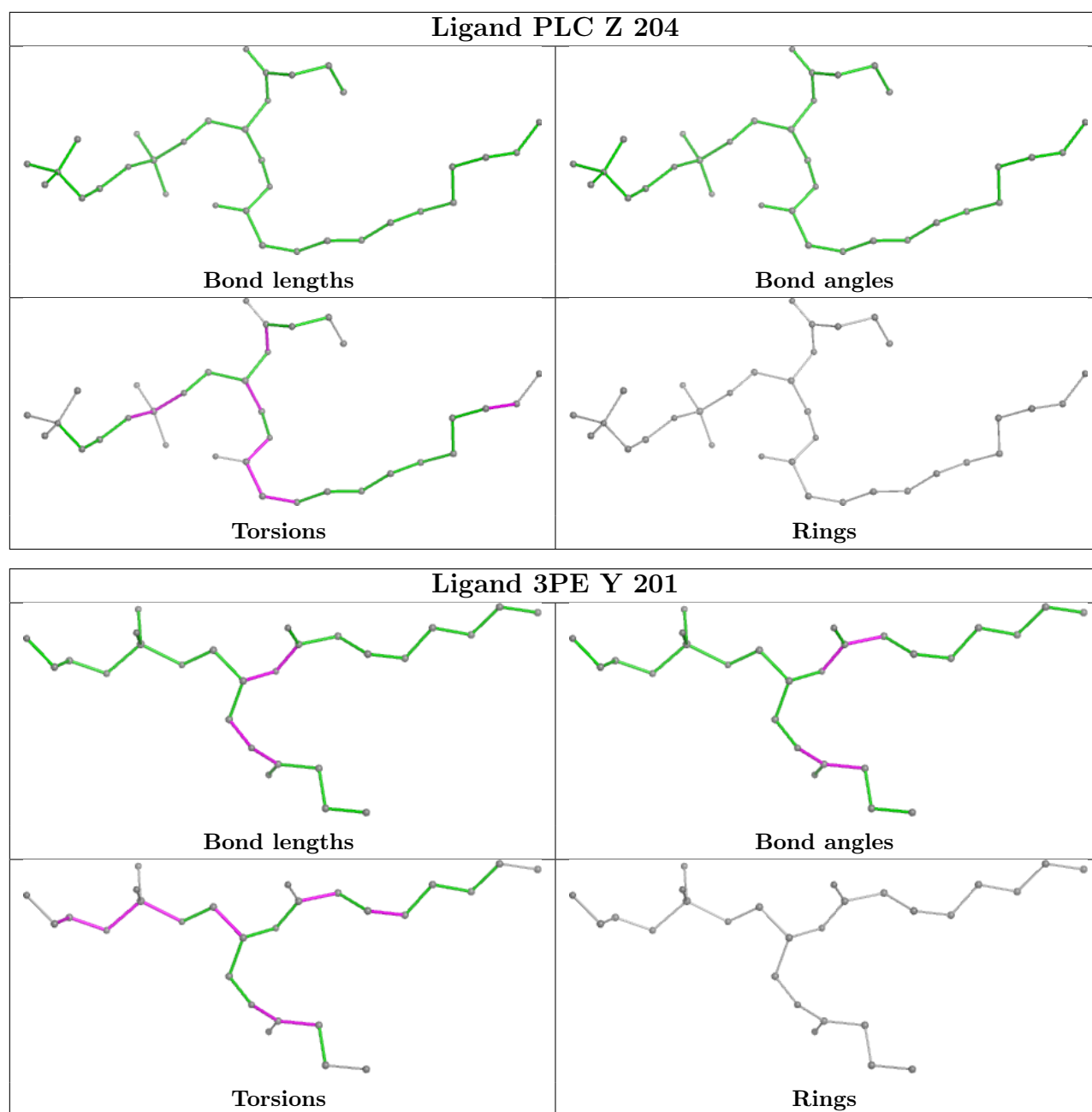












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

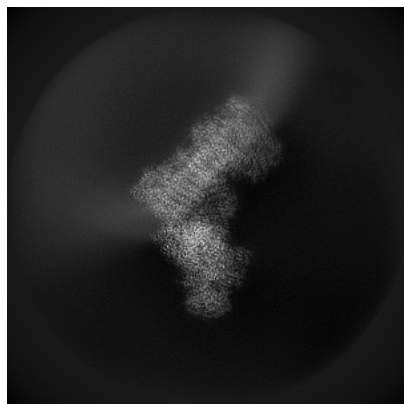
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-18068. These allow visual inspection of the internal detail of the map and identification of artifacts.

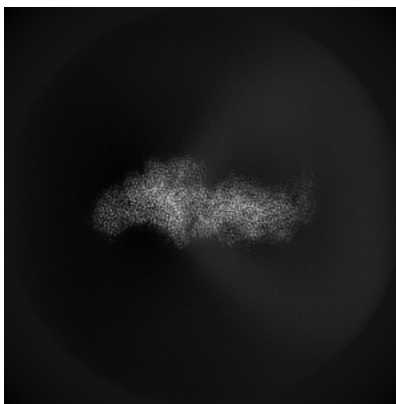
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

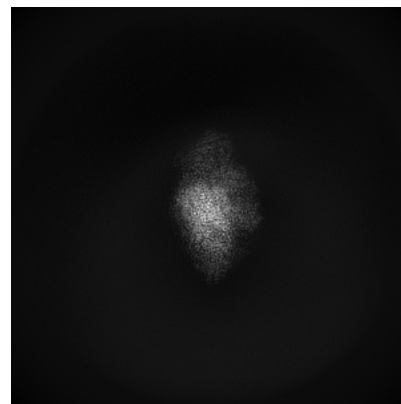
6.1.1 Primary map



X

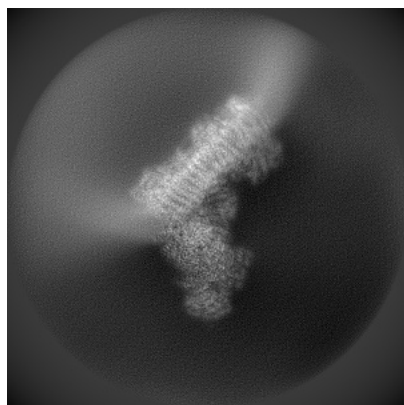


Y

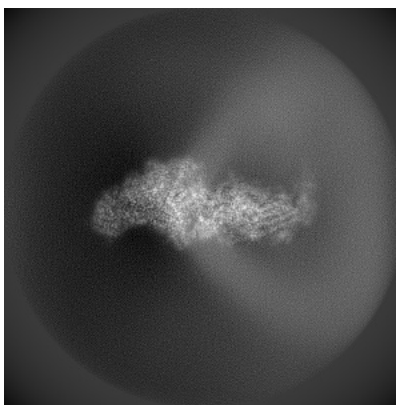


Z

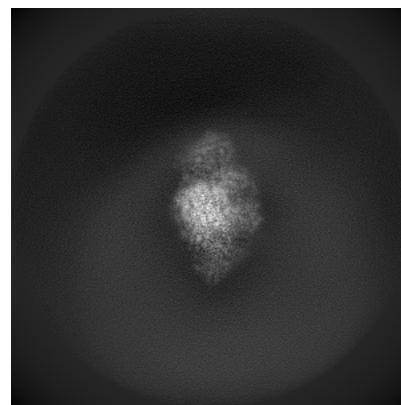
6.1.2 Raw map



X



Y



Z

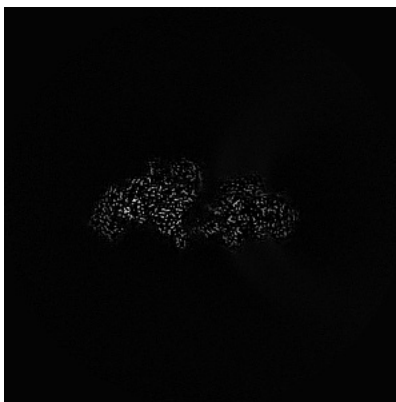
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

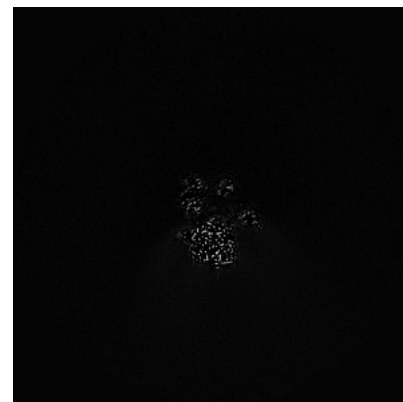
6.2.1 Primary map



X Index: 240

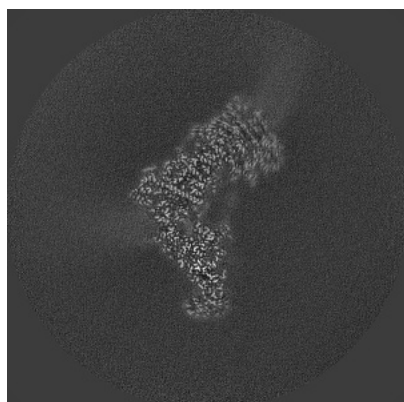


Y Index: 240

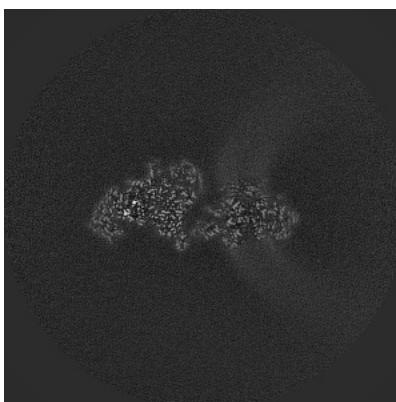


Z Index: 240

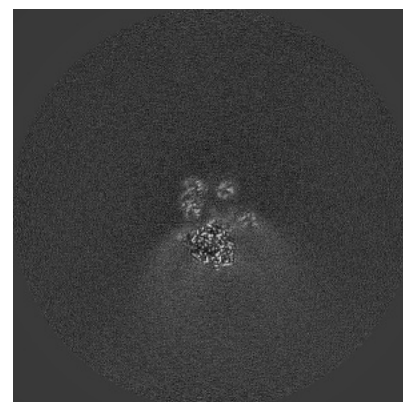
6.2.2 Raw map



X Index: 240



Y Index: 240

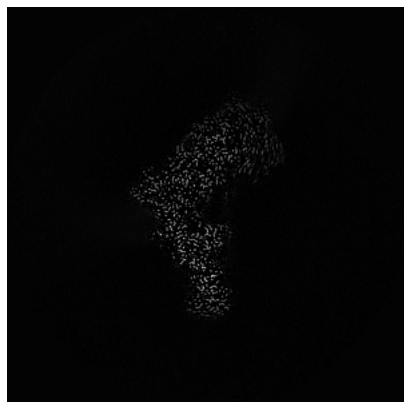


Z Index: 240

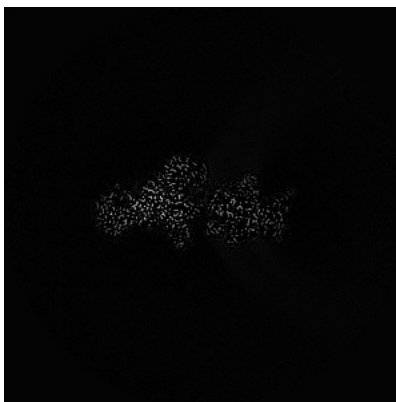
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 236

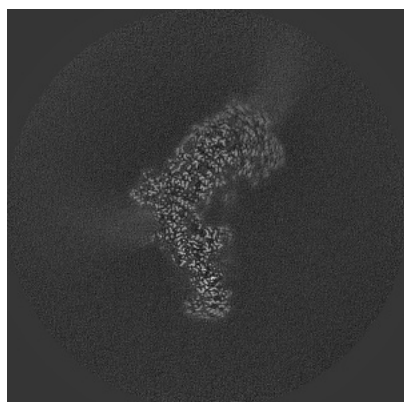


Y Index: 228

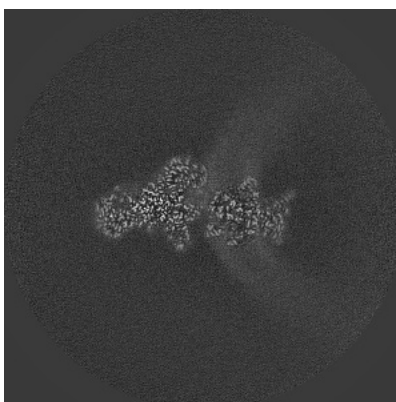


Z Index: 198

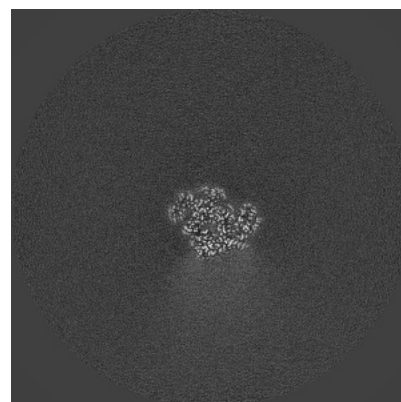
6.3.2 Raw map



X Index: 236



Y Index: 228

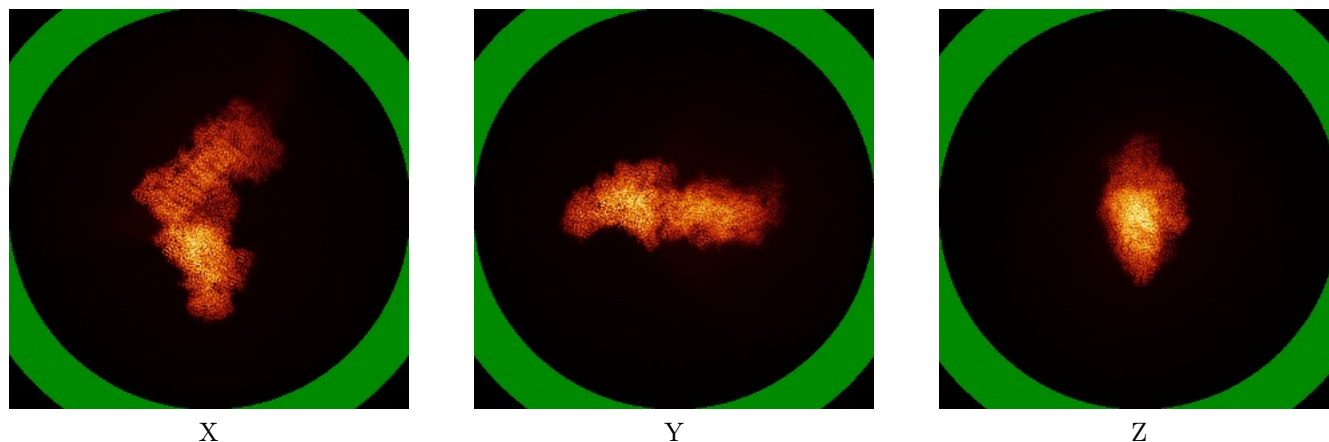


Z Index: 211

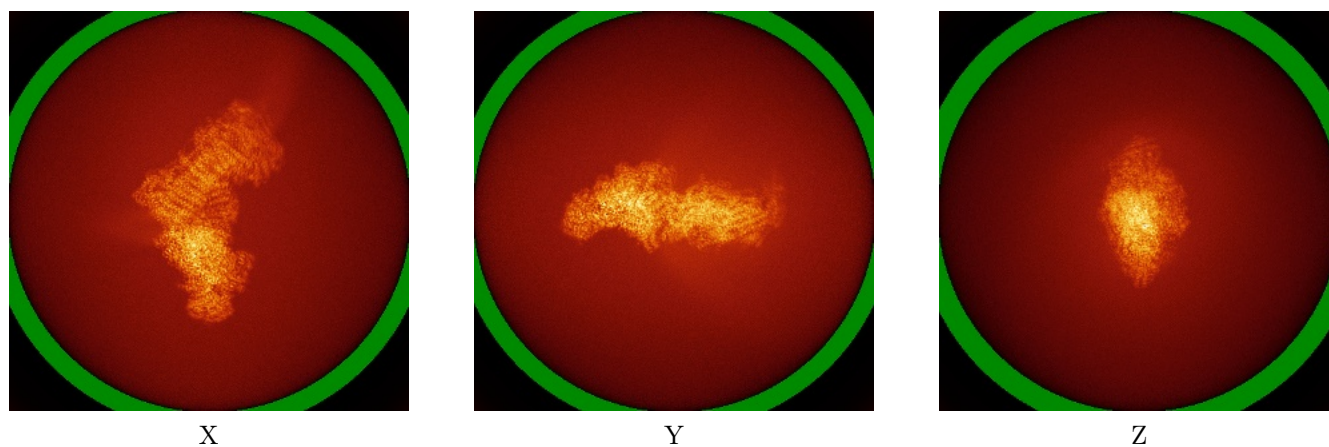
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

6.4.1 Primary map



6.4.2 Raw map



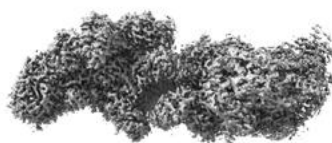
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.022. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y



Z

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

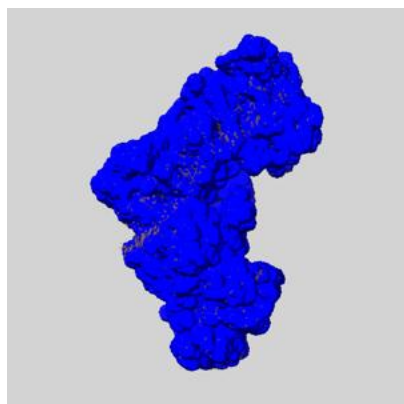
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

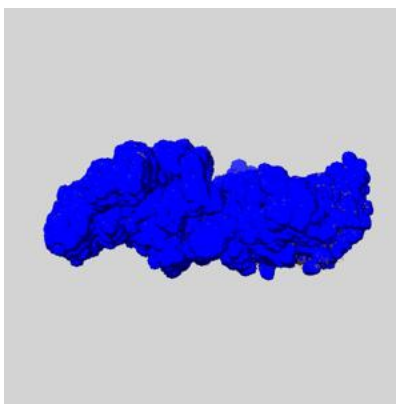
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

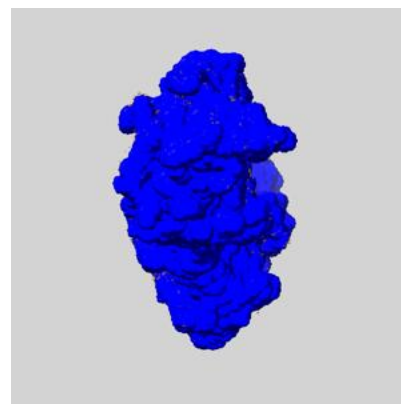
6.6.1 emd_18068_msk_1.map [i](#)



X



Y

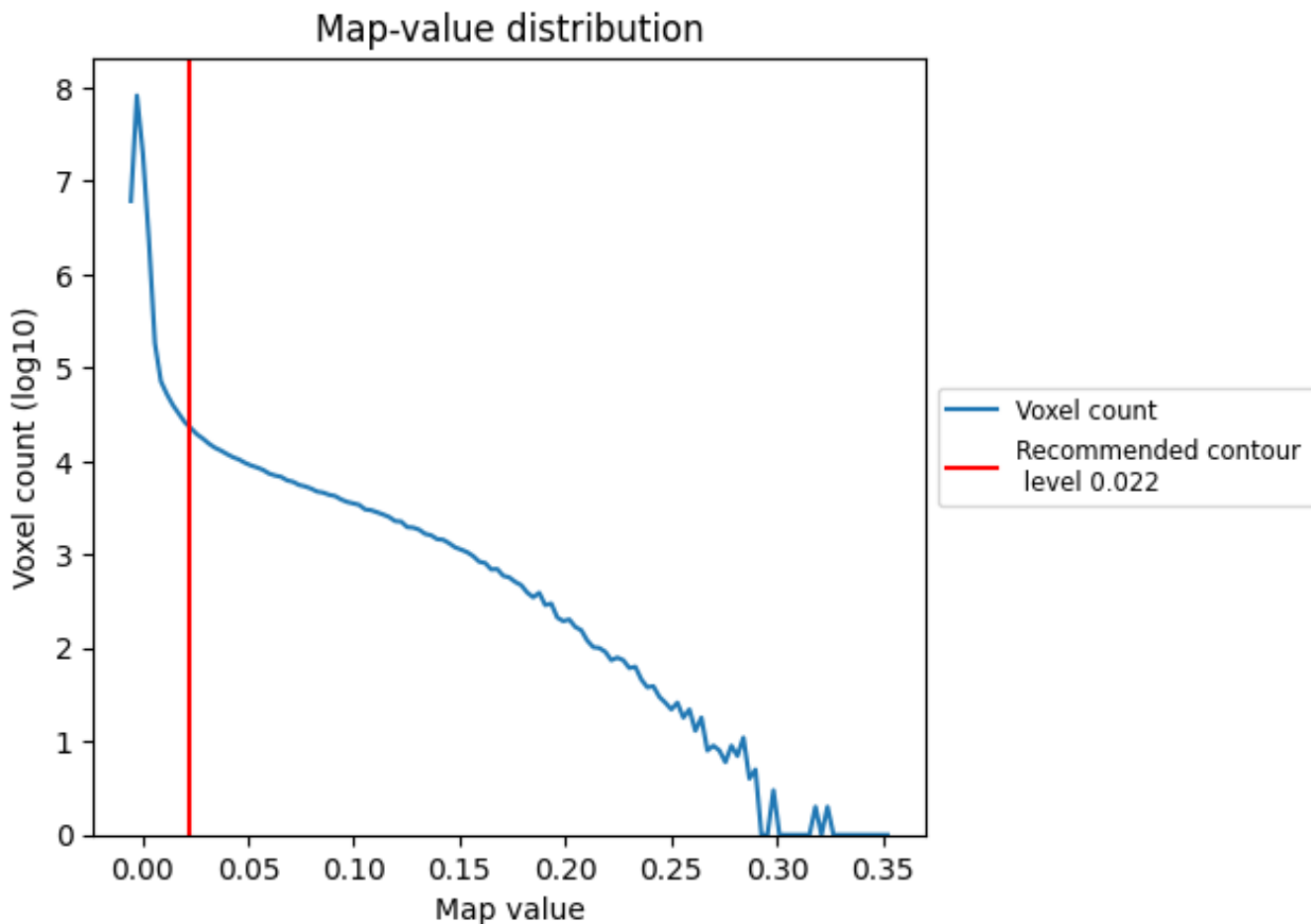


Z

7 Map analysis [i](#)

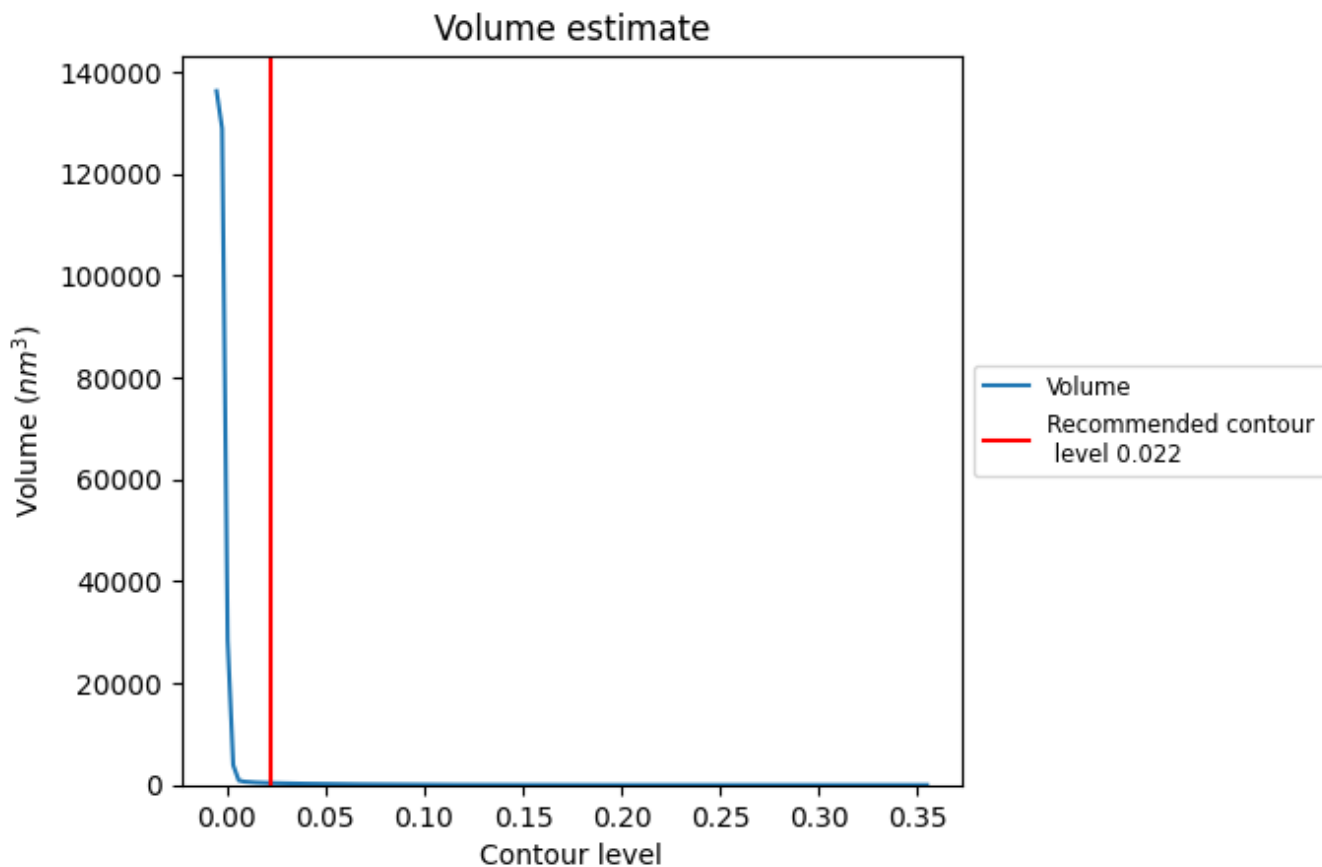
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

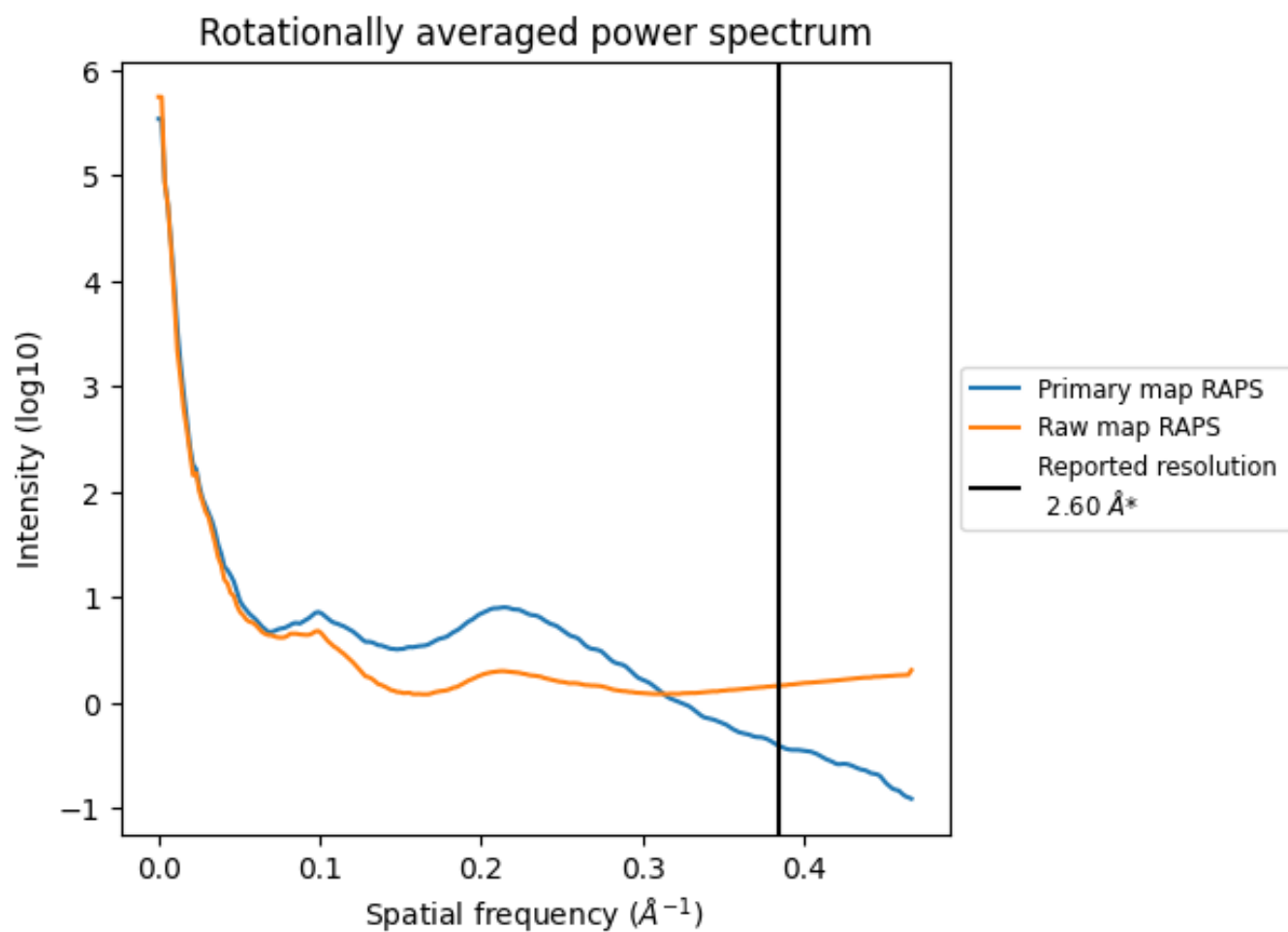
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 378 nm^3 ; this corresponds to an approximate mass of 341 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

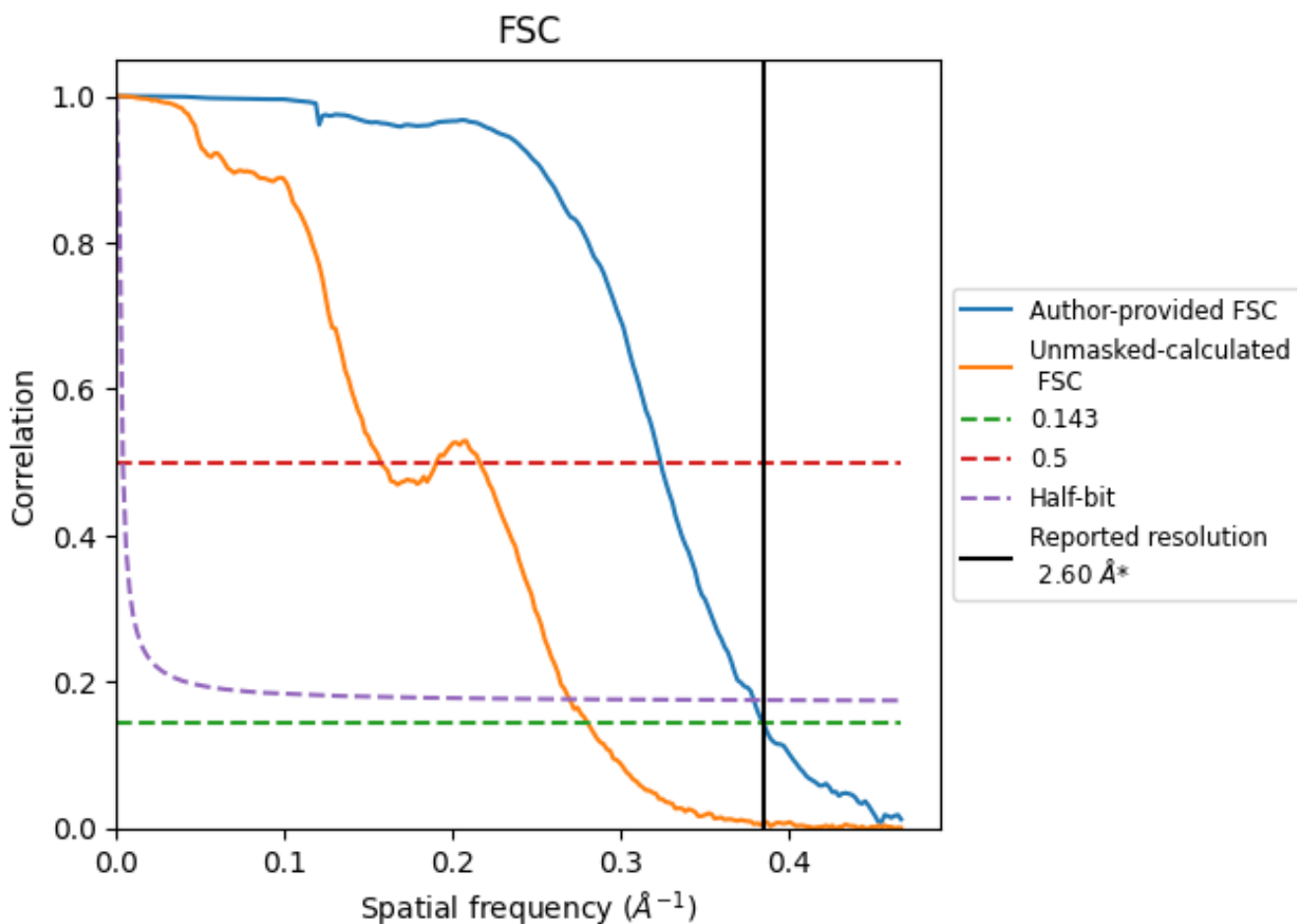


*Reported resolution corresponds to spatial frequency of 0.385 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.385 Å⁻¹

8.2 Resolution estimates [i](#)

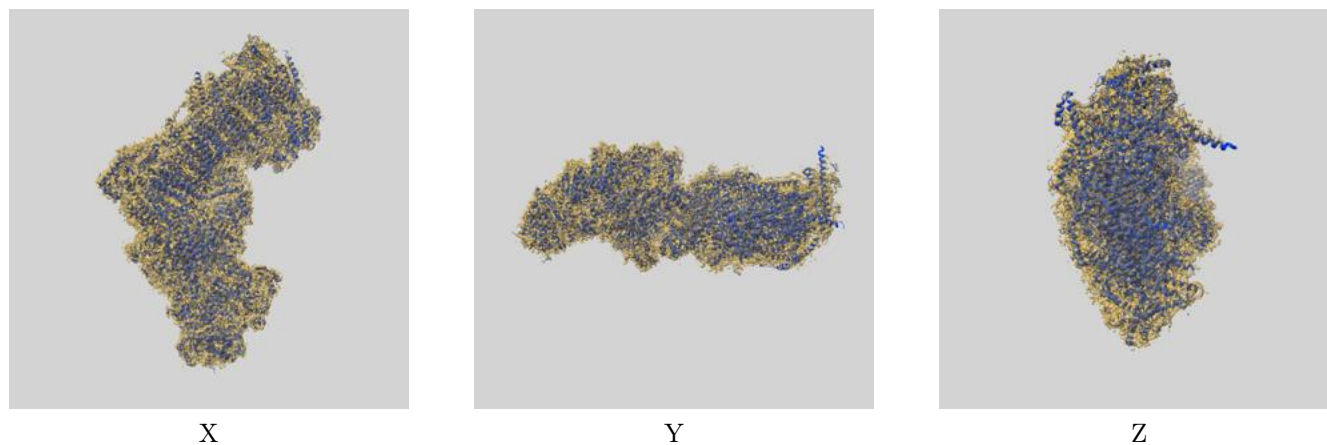
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.60	-	-
Author-provided FSC curve	2.60	3.09	2.64
Unmasked-calculated*	3.57	6.37	3.71

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.57 differs from the reported value 2.6 by more than 10 %

9 Map-model fit [i](#)

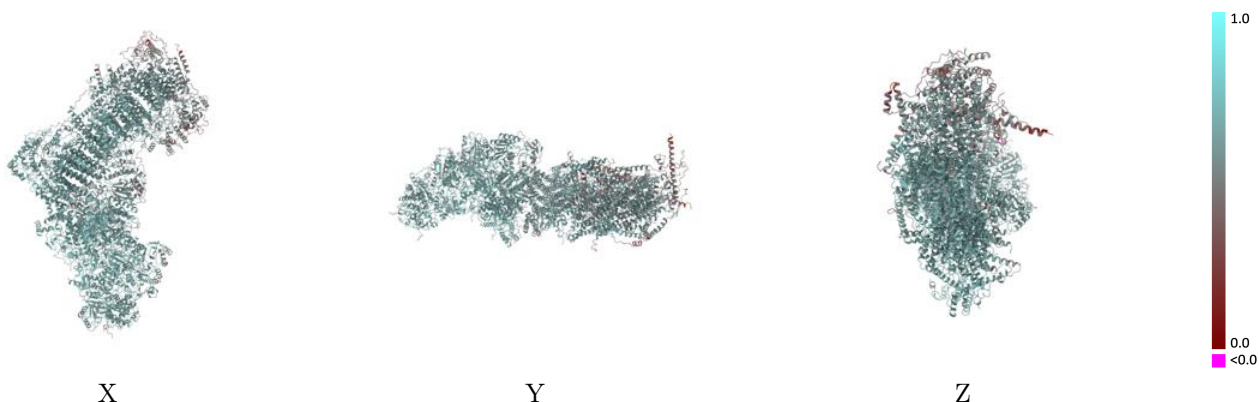
This section contains information regarding the fit between EMDB map EMD-18068 and PDB model 8Q1Y. Per-residue inclusion information can be found in section 3 on page 22.

9.1 Map-model overlay [i](#)



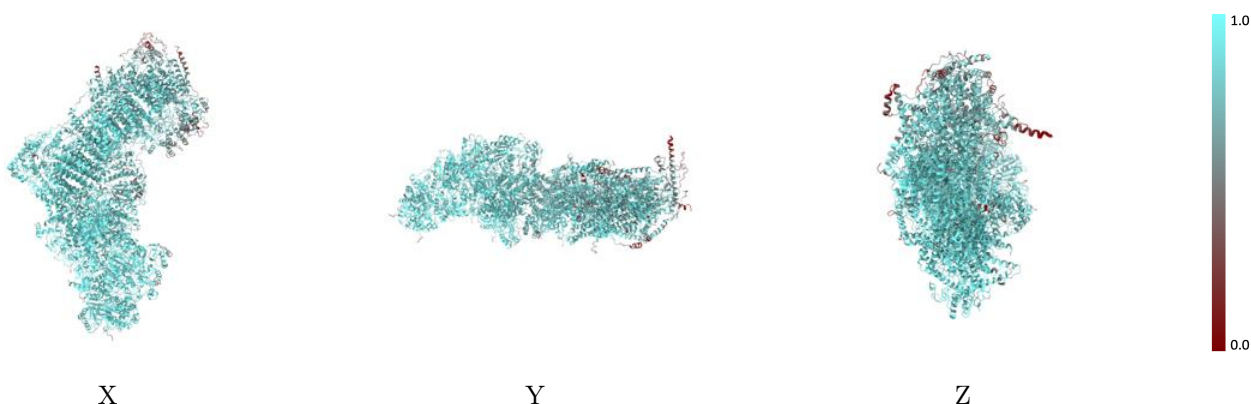
The images above show the 3D surface view of the map at the recommended contour level 0.022 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



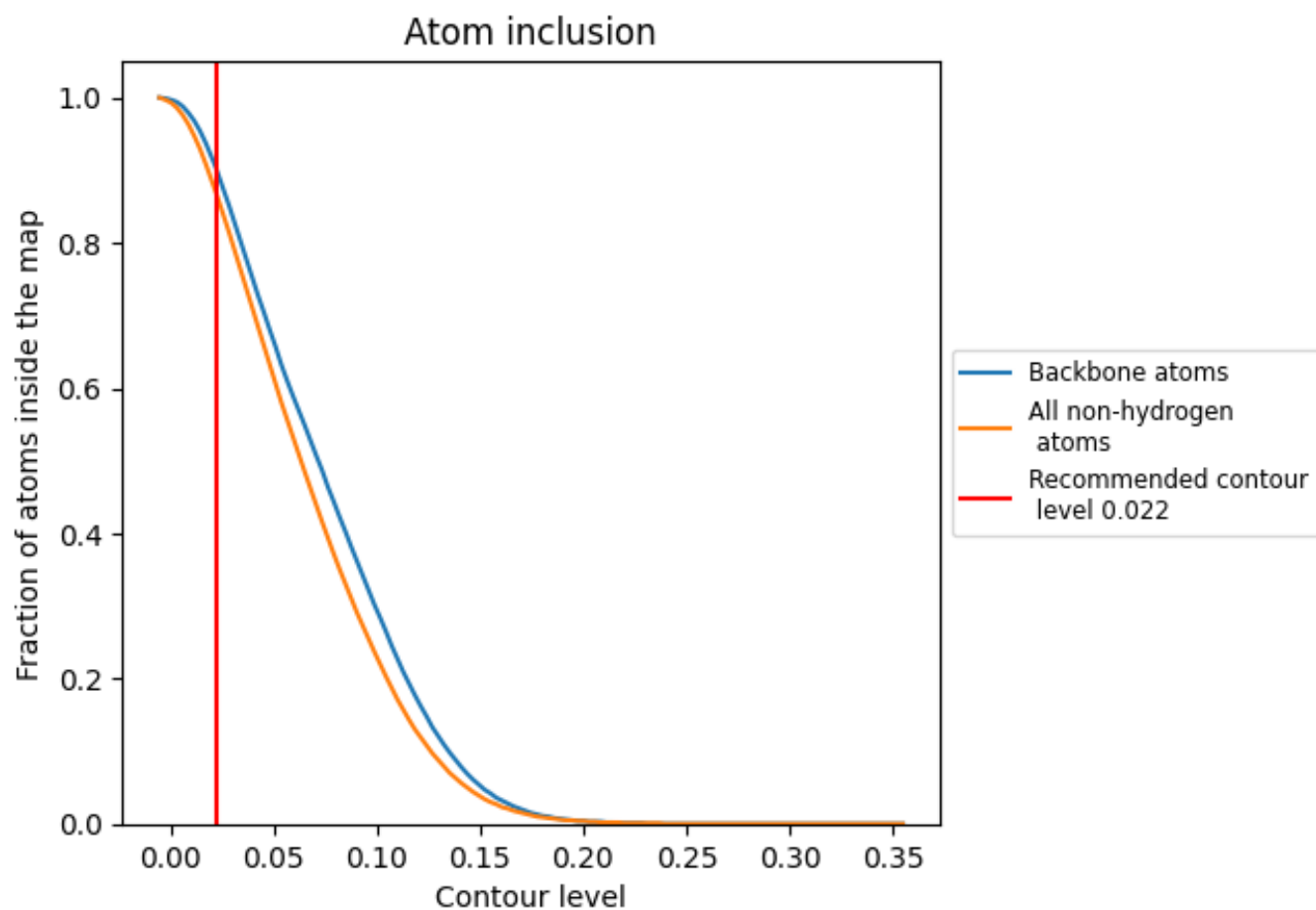
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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 (0.022).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary























The table lists the average atom inclusion at the recommended contour level (0.022) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8700	 0.6140
A	 0.8780	 0.6130
B	 0.9480	 0.6720
C	 0.9660	 0.6810
D	 0.9650	 0.6770
E	 0.8900	 0.6190
F	 0.9150	 0.6310
G	 0.9230	 0.6480
H	 0.9340	 0.6480
I	 0.9730	 0.6840
J	 0.8890	 0.6210
K	 0.9590	 0.6620
L	 0.8520	 0.5900
M	 0.9430	 0.6520
N	 0.9630	 0.6670
O	 0.8380	 0.5960
P	 0.8750	 0.6160
Q	 0.9230	 0.6570
R	 0.9160	 0.6460
S	 0.7960	 0.5780
T	 0.6970	 0.5290
U	 0.5960	 0.4500
V	 0.9050	 0.6380
W	 0.9080	 0.6390
X	 0.8930	 0.6270
Y	 0.8240	 0.5950
Z	 0.8960	 0.6340
a	 0.9490	 0.6540
b	 0.8680	 0.6220
c	 0.8350	 0.5970
d	 0.8810	 0.6220
e	 0.8690	 0.6230
f	 0.6930	 0.5300
g	 0.8010	 0.5790
h	 0.8950	 0.6270



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Chain	Atom inclusion	Q-score
i	 0.6170	 0.4760
j	 0.5810	 0.4600
k	 0.4870	 0.4200
l	 0.7730	 0.5390
m	 0.7820	 0.5620
n	 0.7260	 0.5070
o	 0.5070	 0.4100
p	 0.7670	 0.5590
q	 0.9280	 0.6530
r	 0.9330	 0.6520
s	 0.7960	 0.5740