



Full wwPDB EM Validation Report ⓘ

Oct 6, 2024 – 02:59 pm BST

PDB ID : 7ZMH
EMDB ID : EMD-14798
Title : CryoEM structure of mitochondrial complex I from *Chaetomium thermophilum* (state 1) - membrane arm
Authors : Laube, E.; Kuehlbrandt, W.
Deposited on : 2022-04-19
Resolution : 2.47 Å (reported)
Based on initial models : 6RFQ, 6RFR

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:

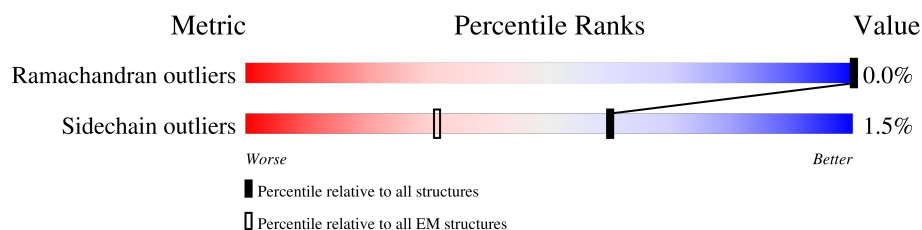
EMDB validation analysis : 0.0.1.dev113
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

1 Overall quality at a glance

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


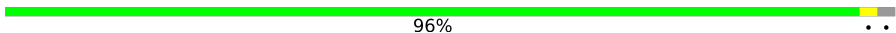


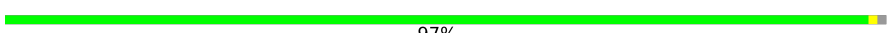




The reported resolution of this entry is 2.47 Å.

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.



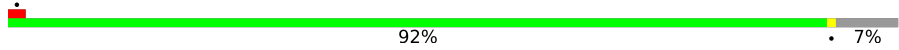
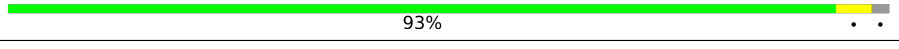
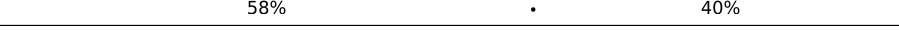

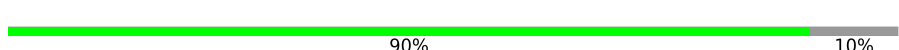

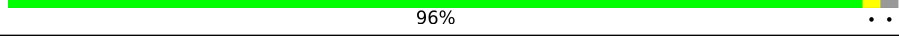
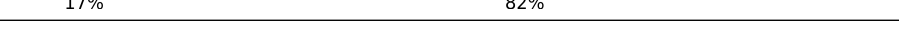

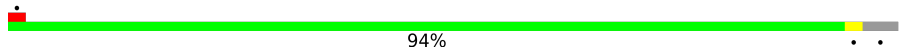

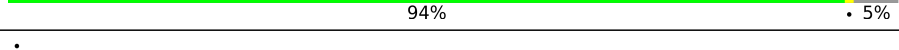

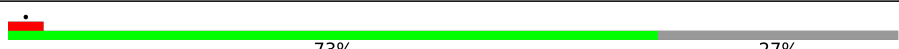



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	1	378	
2	2	571	
3	3	146	
4	4	542	
5	5	679	
6	6	224	
7	8	86	
8	9	785	
9	D	86	

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Mol	Chain	Length	Quality of chain
10	J	199	
11	L	89	
12	Q	141	
13	R	99	
14	S	143	
15	U	186	
16	W	121	
17	X	191	
18	a	815	
19	b	94	
20	c	93	
21	d	105	
22	e	46	
23	g	82	
24	i	93	
25	j	75	
26	n	184	

2 Entry composition

There are 32 unique types of molecules in this entry. The entry contains 37605 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 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	334	Total	C	N	O	S	0	0
			2566	1722	388	445	11		

- Molecule 2 is a protein called NADH dehydrogenase subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	558	Total	C	N	O	S	0	0
			4459	2994	672	782	11		

- Molecule 3 is a protein called NADH-ubiquinone oxidoreductase chain 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	101	Total	C	N	O	S	0	0
			788	541	113	132	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	494	Total	C	N	O	S	0	0
			3904	2650	572	670	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	670	Total	C	N	O	S	0	0
			5273	3551	792	905	25		

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
5	445	ARG	-	insertion	UNP G1DJA3
5	446	LEU	-	insertion	UNP G1DJA3
5	447	ALA	-	insertion	UNP G1DJA3

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Chain	Residue	Modelled	Actual	Comment	Reference
5	448	ILE	-	insertion	UNP G1DJA3
5	449	ASP	-	insertion	UNP G1DJA3
5	450	ASN	-	insertion	UNP G1DJA3
5	451	PHE	-	insertion	UNP G1DJA3
5	452	PHE	-	insertion	UNP G1DJA3
5	453	SER	-	insertion	UNP G1DJA3
5	454	ALA	-	insertion	UNP G1DJA3
5	455	GLN	-	insertion	UNP G1DJA3
5	456	ALA	-	insertion	UNP G1DJA3
5	457	ILE	-	insertion	UNP G1DJA3
5	458	LYS	-	insertion	UNP G1DJA3

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	190	Total	C	N	O	S	0	0
			1468	988	221	253	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	8	78	Total	C	N	O	S	0	0
			663	411	127	119	6		

- Molecule 8 is a protein called Subunit NDUF5 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
8	9	103	Total	C	N	O	S	0	0
			807	500	147	154	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
9	100	VAL	-	insertion	UNP G0SG48

- Molecule 9 is a protein called Subunit NDUF1 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	85	Total	C	N	O	S	0	0
			678	432	127	115	4		

- Molecule 10 is a protein called NADH-ubiquinone oxidoreductase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	186	Total	C	N	O	S	0	0
			1388	877	259	250	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	87	Total	C	N	O	S	0	0
			673	453	102	115	3		

- Molecule 12 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Q	85	Total	C	N	O	S	0	0
			673	422	109	141	1		

- Molecule 13 is a protein called Complex I-B22.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	R	98	Total	C	N	O	S	0	0
			807	520	149	137	1		

- Molecule 14 is a protein called Complex I-ESSS.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	S	74	Total	C	N	O	0	0
			612	402	98	112		

- Molecule 15 is a protein called NADH-ubiquinone oxidoreductase.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	U	167	Total	C	N	O	S	0	0
			1357	854	253	241	9		

- Molecule 16 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	W	99	Total	C	N	O	S	0	0
			816	521	154	139	2		

- Molecule 17 is a protein called NADH-ubiquinone oxidoreductase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	X	187	Total	C	N	O	S	0	0
			1484	943	268	265	8		

- Molecule 18 is a protein called NADH dehydrogenase (Ubiquinone)-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	a	144	Total	C	N	O	S	0	0
			1172	753	196	218	5		

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	166	VAL	ALA	conflict	UNP G0RXU4
a	168	ALA	MET	conflict	UNP G0RXU4
a	?	-	GLU	deletion	UNP G0RXU4
a	?	-	GLY	deletion	UNP G0RXU4
a	?	-	ASP	deletion	UNP G0RXU4
a	?	-	PRO	deletion	UNP G0RXU4
a	?	-	ASP	deletion	UNP G0RXU4
a	?	-	PRO	deletion	UNP G0RXU4

- Molecule 19 is a protein called Subunit NDUFC2 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
19	b	81	Total	C	N	O	S	0	0
			683	445	125	110	3		

- Molecule 20 is a protein called Subunit NDUF3 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
20	c	61	Total	C	N	O	S	0	0
			505	329	91	83	2		

- Molecule 21 is a protein called Subunit NDUF10 of NADH-ubiquinone oxidoreductase

(Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
21	d	101	Total	C	N	O	S	0	0
			843	535	149	155	4		

- Molecule 22 is a protein called Subunit NDUF2 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
22	e	38	Total	C	N	O	S	0	0
			317	215	55	46	1		

- Molecule 23 is a protein called Subunit NDUF3 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
23	g	78	Total	C	N	O	S	0	0
			610	399	105	105	1		

- Molecule 24 is a protein called Subunit NDUF6 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
24	i	81	Total	C	N	O	S	0	0
			682	450	118	112	2		

- Molecule 25 is a protein called Subunit NDUF4 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
25	j	75	Total	C	N	O	S	0	0
			616	399	110	103	4		

- Molecule 26 is a protein called Subunit NDUF5 of NADH-ubiquinone oxidoreductase (Complex I).

Mol	Chain	Residues	Atoms					AltConf	Trace
26	n	135	Total	C	N	O	S	0	0
			1061	680	186	194	1		

There are 52 discrepancies between the modelled and reference sequences:

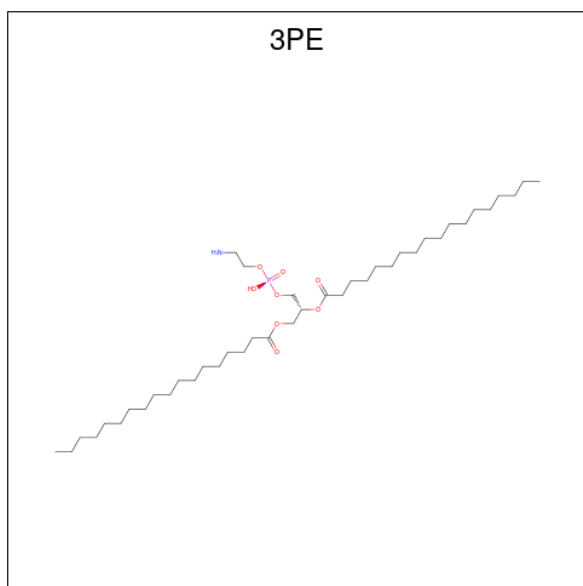
Chain	Residue	Modelled	Actual	Comment	Reference
n	1	MET	-	initiating methionine	UNP G0S086
n	2	LEU	-	insertion	UNP G0S086
n	3	ALA	-	insertion	UNP G0S086
n	4	LEU	-	insertion	UNP G0S086
n	5	ARG	-	insertion	UNP G0S086
n	6	GLN	-	insertion	UNP G0S086
n	7	ARG	-	insertion	UNP G0S086
n	8	ALA	-	insertion	UNP G0S086
n	9	ALA	-	insertion	UNP G0S086
n	10	LEU	-	insertion	UNP G0S086
n	11	LEU	-	insertion	UNP G0S086
n	12	ALA	-	insertion	UNP G0S086
n	13	ARG	-	insertion	UNP G0S086
n	14	ARG	-	insertion	UNP G0S086
n	15	VAL	-	insertion	UNP G0S086
n	16	ARG	-	insertion	UNP G0S086
n	17	PRO	-	insertion	UNP G0S086
n	18	THR	-	insertion	UNP G0S086
n	19	VAL	-	insertion	UNP G0S086
n	20	VAL	-	insertion	UNP G0S086
n	21	VAL	-	insertion	UNP G0S086
n	22	PRO	-	insertion	UNP G0S086
n	23	ARG	-	insertion	UNP G0S086
n	24	ASN	-	insertion	UNP G0S086
n	25	ALA	-	insertion	UNP G0S086
n	26	ARG	-	insertion	UNP G0S086
n	27	THR	-	insertion	UNP G0S086
n	28	TYR	-	insertion	UNP G0S086
n	29	ALA	-	insertion	UNP G0S086
n	30	SER	-	insertion	UNP G0S086
n	31	SER	-	insertion	UNP G0S086
n	32	HIS	-	insertion	UNP G0S086
n	33	ASP	-	insertion	UNP G0S086
n	34	HIS	-	insertion	UNP G0S086
n	35	ASP	-	insertion	UNP G0S086
n	36	HIS	-	insertion	UNP G0S086
n	37	HIS	-	insertion	UNP G0S086
n	38	ASP	-	insertion	UNP G0S086
n	39	HIS	-	insertion	UNP G0S086
n	40	HIS	-	insertion	UNP G0S086
n	41	HIS	-	insertion	UNP G0S086
n	42	ASP	-	insertion	UNP G0S086
n	43	HIS	-	insertion	UNP G0S086

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Chain	Residue	Modelled	Actual	Comment	Reference
n	44	GLY	-	insertion	UNP G0S086
n	45	HIS	-	insertion	UNP G0S086
n	46	ASN	-	insertion	UNP G0S086
n	47	VAL	-	insertion	UNP G0S086
n	48	GLU	-	insertion	UNP G0S086
n	49	GLU	-	insertion	UNP G0S086
n	50	PRO	-	insertion	UNP G0S086
n	51	LEU	-	insertion	UNP G0S086
n	52	GLY	-	insertion	UNP G0S086

- Molecule 27 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (three-letter code: 3PE) (formula: $C_{41}H_{82}NO_8P$).



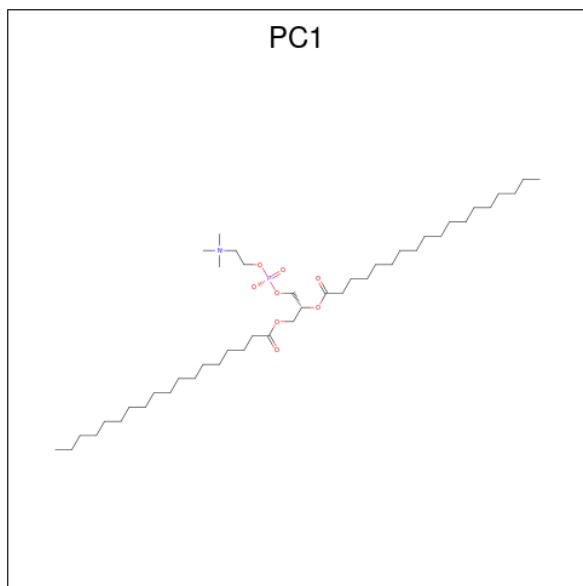
Mol	Chain	Residues	Atoms					AltConf
27	1	1	Total	C	N	O	P	0
			45	35	1	8	1	
27	4	1	Total	C	N	O	P	0
			45	35	1	8	1	
27	4	1	Total	C	N	O	P	0
			34	24	1	8	1	
27	5	1	Total	C	N	O	P	0
			35	25	1	8	1	
27	5	1	Total	C	N	O	P	0
			33	23	1	8	1	
27	5	1	Total	C	N	O	P	0
			35	25	1	8	1	

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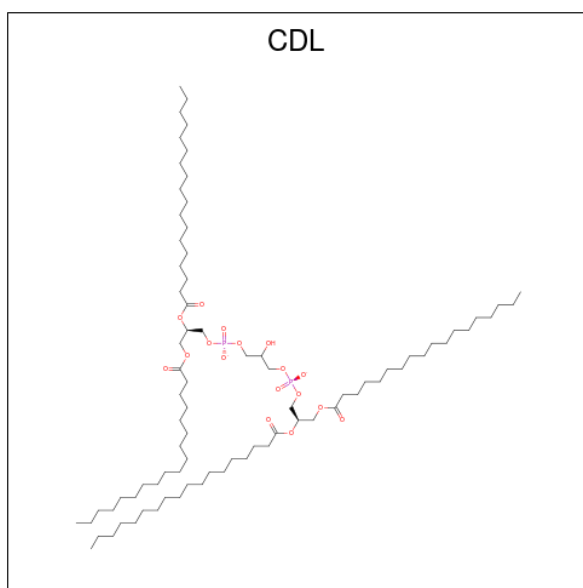
Mol	Chain	Residues	Atoms					AltConf
27	5	1	Total	C	N	O	P	0
			43	33	1	8	1	
27	5	1	Total	C	N	O	P	0
			33	23	1	8	1	
27	6	1	Total	C	N	O	P	0
			36	26	1	8	1	
27	J	1	Total	C	N	O	P	0
			30	20	1	8	1	
27	W	1	Total	C	N	O	P	0
			38	28	1	8	1	
27	W	1	Total	C	N	O	P	0
			39	29	1	8	1	
27	g	1	Total	C	N	O	P	0
			36	26	1	8	1	
27	g	1	Total	C	N	O	P	0
			44	34	1	8	1	
27	i	1	Total	C	N	O	P	0
			41	31	1	8	1	
27	n	1	Total	C	N	O	P	0
			51	41	1	8	1	
27	n	1	Total	C	N	O	P	0
			39	29	1	8	1	

- Molecule 28 is 1,2-DIACYL-SN-GLYCERO-3-PHOSPHOCHOLINE (three-letter code: PC1) (formula: $C_{44}H_{88}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
28	1	1	Total	C	N	O	P	0
			42	32	1	8	1	
28	3	1	Total	C	N	O	P	0
			43	33	1	8	1	
28	4	1	Total	C	N	O	P	0
			50	40	1	8	1	
28	5	1	Total	C	N	O	P	0
			54	44	1	8	1	
28	5	1	Total	C	N	O	P	0
			43	33	1	8	1	
28	S	1	Total	C	N	O	P	0
			52	42	1	8	1	
28	X	1	Total	C	N	O	P	0
			39	29	1	8	1	
28	X	1	Total	C	N	O	P	0
			32	22	1	8	1	

- Molecule 29 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$).



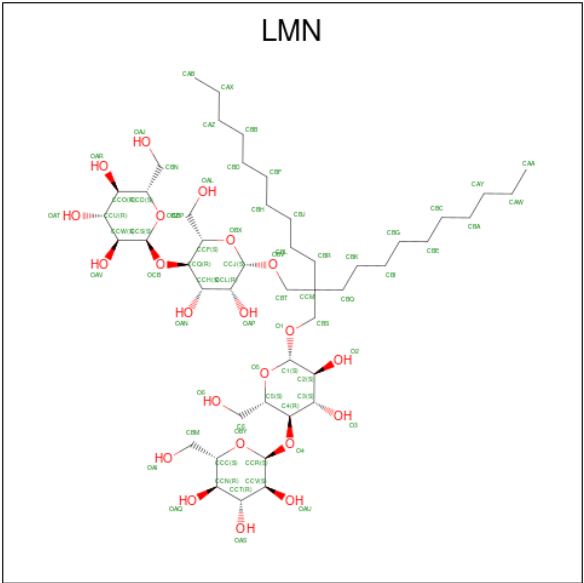
Mol	Chain	Residues	Atoms				AltConf
29	2	1	Total	C	O	P	0
			74	55	17	2	
29	D	1	Total	C	O	P	0
			65	46	17	2	
29	S	1	Total	C	O	P	0
			79	60	17	2	
29	X	1	Total	C	O	P	0
			70	51	17	2	

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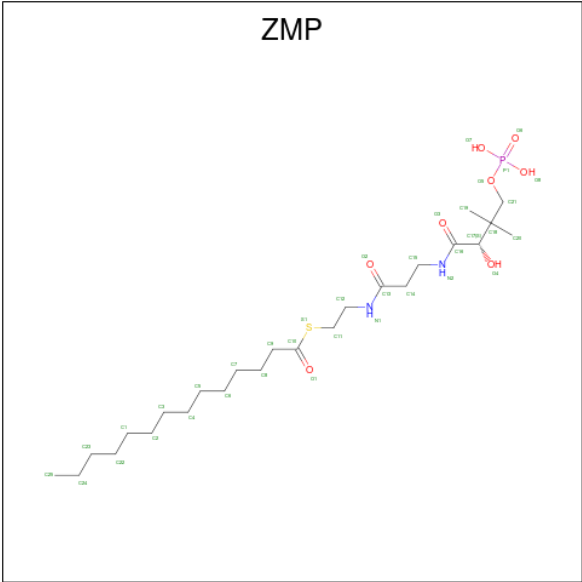
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
29	X	1	79	60	17	2	0

- Molecule 30 is Lauryl Maltose Neopentyl Glycol (three-letter code: LMN) (formula: C₄₇H₈₈O₂₂).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O		
30	2	1	58	41	17		0
30	4	1	47	35	12		0
30	j	1	69	47	22		0

- Molecule 31 is S-[2-({N-[(2S)-2-hydroxy-3,3-dimethyl-4-(phosphonooxy)butanoyl]-beta-alanyl}amino)ethyl] tetradecanethioate (three-letter code: ZMP) (formula: C₂₅H₄₉N₂O₈PS).



Mol	Chain	Residues	Atoms					AltConf	
31	Q	1	Total	C	N	O	P	S	0
			36	25	2	7	1	1	

- Molecule 32 is water.

Mol	Chain	Residues	Atoms		AltConf
32	1	110	Total	O	0
			110	110	
32	2	224	Total	O	0
			224	224	
32	3	25	Total	O	0
			25	25	
32	4	181	Total	O	0
			181	181	
32	5	100	Total	O	0
			100	100	
32	6	52	Total	O	0
			52	52	
32	9	23	Total	O	0
			23	23	
32	D	36	Total	O	0
			36	36	
32	J	1	Total	O	0
			1	1	
32	L	23	Total	O	0
			23	23	
32	Q	1	Total	O	0
			1	1	

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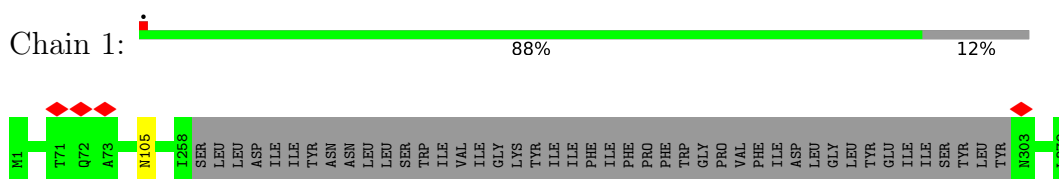
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Mol	Chain	Residues	Atoms		AltConf
32	R	15	Total 15	O 15	0
32	S	6	Total 6	O 6	0
32	U	60	Total 60	O 60	0
32	W	43	Total 43	O 43	0
32	X	71	Total 71	O 71	0
32	a	23	Total 23	O 23	0
32	b	13	Total 13	O 13	0
32	d	18	Total 18	O 18	0
32	g	15	Total 15	O 15	0
32	i	11	Total 11	O 11	0
32	j	18	Total 18	O 18	0
32	n	42	Total 42	O 42	0

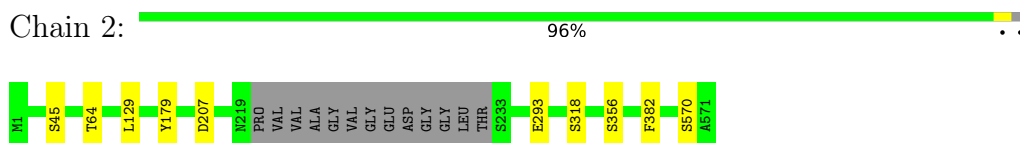
3 Residue-property plots

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

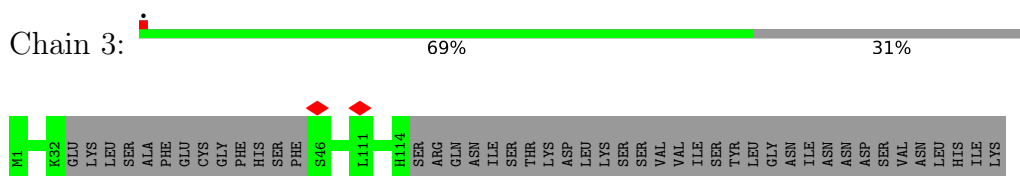
- Molecule 1: NADH-ubiquinone oxidoreductase chain 1



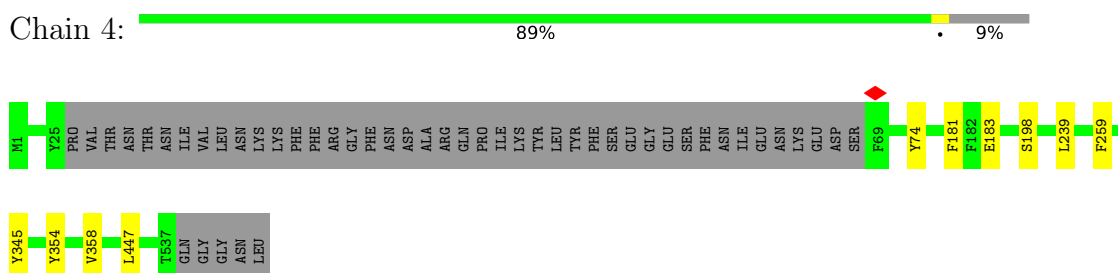
- Molecule 2: NADH dehydrogenase subunit 2



- Molecule 3: NADH-ubiquinone oxidoreductase chain 3



- Molecule 4: NADH-ubiquinone oxidoreductase chain 4

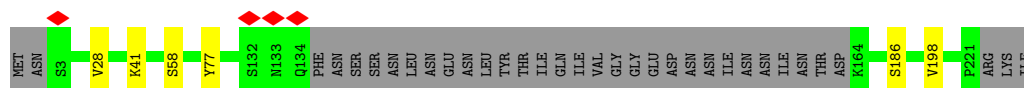
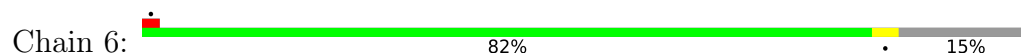


- Molecule 5: NADH-ubiquinone oxidoreductase chain 5

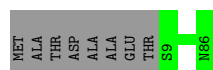




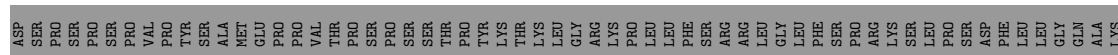
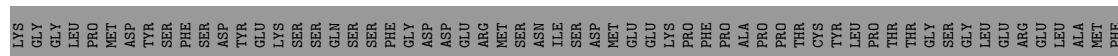
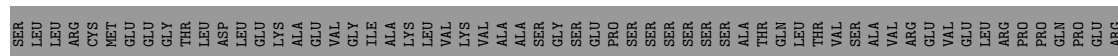
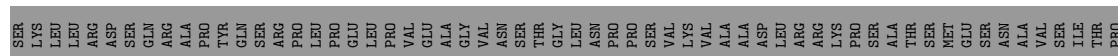
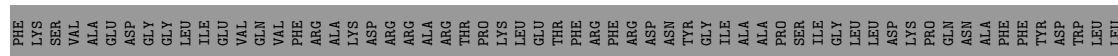
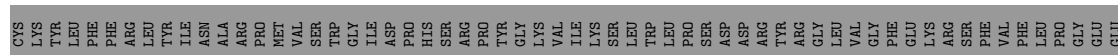
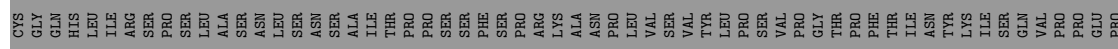
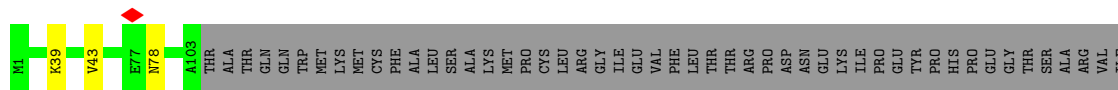
- Molecule 6: NADH-ubiquinone oxidoreductase chain 6



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



- Molecule 8: Subunit NDUF5 of NADH-ubiquinone oxidoreductase (Complex I)




SER
LEU
ARG
ARG
ILE
ALA
SER
SER
ALA
PRO
ARG
ARG
LYS
LEU
ALA
GLY
ARG
VAL
LEU
SER
MET
ASP
LEU
GLY
LYS
LYS
GLY
GLY
GLU
LYS
GLU
GLY

- Molecule 9: Subunit NDUFA1 of NADH-ubiquinone oxidoreductase (Complex I)

Chain D:  99%

MET
P2
X86

- Molecule 10: NADH-ubiquinone oxidoreductase-like protein

Chain J:  92% 7%

MET
ALA
PRO
ILE
GLU
GLU
HIS
HIS
HIS
TYR
HIS
P13
F112
G132
V133
R136
E157
Q198
ALA

- Molecule 11: NADH-ubiquinone oxidoreductase chain 4L

Chain L:  93%

MET
P2
S35
F38
I51
E66
Y88
LYS

- Molecule 12: Acyl carrier protein

Chain Q:  58% 40%

MET
PHE
ARG
SER
ALA
VAL
LEU
ARG
SER
ALA
ALA
ALA
THR
THR
ARG
THR
ILE
ARG
SER
ILE
PRO
PRO
ALA
ALA
ALA
LYS
LYS
PHE
ALA
VAL
VAL
PRO
VAL
VAL
SER
ARG
VAL
THR
SER
PHE
ILE
PRO
LYS
THR
ALA
SER
TRP
GLN
VAL
ILE
ARG
CYS
TYR
ALA
SER
ASN
E57
S98

E111
Q137
H141

- Molecule 13: Complex I-B22

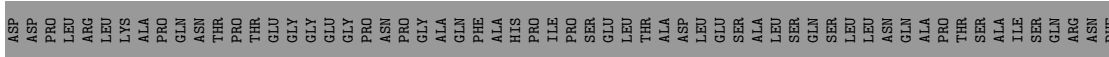
Chain R:  96%

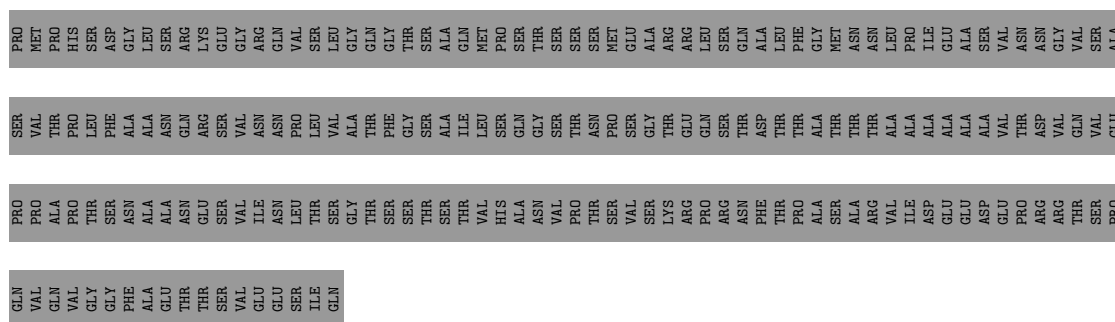
MET
S2
L61
L91
E92
F99

- Molecule 14: Complex I-ESSS

Chain S:  51% 48%

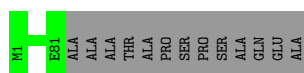
MET
ASP
GLY
GLY
PRO
PRO
THR
PHE
ALA
PHE
ARG
PRO
THR
ALA
GLN
ALA
PRO
GLY
LYS
LEU
SER
SER
ALA
PRO
VAL
THR
THR
ARG
LEU
ALA
ALA
ALA
LEU
SER
SER
ARG
ALA
SER
THR
VAL
SER
SER
LYS
ALA
LEU
THR
PRO
ALA
ARG
PHE
PHE
PHE
SER
THR
THR
GLN
ARG
ARG





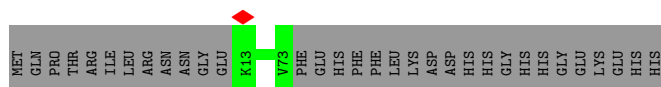
- Molecule 19: Subunit NDUFC2 of NADH-ubiquinone oxidoreductase (Complex I)

Chain b: 86% 14%



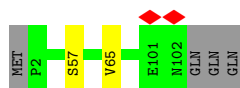
- Molecule 20: Subunit NDUF3 of NADH-ubiquinone oxidoreductase (Complex I)

Chain c: 66% 34%



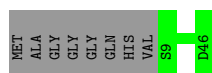
- Molecule 21: Subunit NDUF10 of NADH-ubiquinone oxidoreductase (Complex I)

Chain d: 94%



- Molecule 22: Subunit NDUF2 of NADH-ubiquinone oxidoreductase (Complex I)

Chain e: 83% 17%



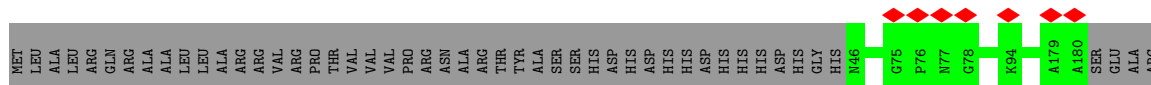
- Molecule 23: Subunit NDUF3 of NADH-ubiquinone oxidoreductase (Complex I)

Chain g: 94% 5%



- Molecule 24: Subunit NDUF6 of NADH-ubiquinone oxidoreductase (Complex I)

Chain i: 85% 13%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	153568	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	3.221	Depositor
Minimum map value	-2.124	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.168	Depositor
Recommended contour level	0.12	Depositor
Map size (\AA)	143.964, 218.457, 227.664	wwPDB
Map dimensions	272, 261, 172	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.837, 0.837, 0.837	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: CDL, ZMP, 3PE, LMN, 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	1	0.42	0/2625	0.53	0/3582
2	2	0.42	0/4565	0.55	0/6209
3	3	0.42	0/809	0.56	0/1102
4	4	0.44	0/4002	0.60	3/5454 (0.1%)
5	5	0.41	0/5415	0.55	2/7372 (0.0%)
6	6	0.39	0/1495	0.52	0/2038
7	8	0.45	0/676	0.48	0/903
8	9	0.38	0/824	0.52	0/1112
9	D	0.38	0/674	0.53	0/911
10	J	0.36	0/1413	0.50	0/1908
11	L	0.36	0/680	0.56	0/921
12	Q	0.47	0/683	0.60	0/926
13	R	0.37	0/832	0.47	0/1133
14	S	0.45	0/637	0.54	0/872
15	U	0.36	0/1394	0.52	0/1890
16	W	0.39	0/834	0.58	0/1125
17	X	0.41	0/1523	0.55	1/2058 (0.0%)
18	a	0.38	0/1209	0.52	0/1639
19	b	0.36	0/701	0.42	0/939
20	c	0.31	0/524	0.50	0/710
21	d	0.53	1/861 (0.1%)	0.54	2/1157 (0.2%)
22	e	0.28	0/332	0.36	0/451
23	g	0.37	0/631	0.47	0/868
24	i	0.36	0/711	0.45	0/967
25	j	0.42	0/630	0.55	0/847
26	n	0.32	0/1092	0.40	0/1481
All	All	0.41	1/35772 (0.0%)	0.53	8/48575 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	d	65	VAL	C-N	10.83	1.58	1.34

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	X	144	ARG	CG-CD-NE	7.30	127.13	111.80
21	d	65	VAL	O-C-N	7.02	133.93	122.70
5	5	278	LEU	CA-CB-CG	5.63	128.24	115.30
21	d	65	VAL	CA-C-N	-5.62	104.83	117.20
4	4	259	PHE	CB-CA-C	5.33	121.07	110.40
4	4	181	PHE	CB-CA-C	5.33	121.06	110.40
4	4	354	TYR	CB-CA-C	5.26	120.93	110.40
5	5	636	LEU	CA-CB-CG	5.20	127.26	115.30

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	1	330/378 (87%)	317 (96%)	13 (4%)	0	100	100
2	2	554/571 (97%)	545 (98%)	8 (1%)	1 (0%)	44	62
3	3	97/146 (66%)	93 (96%)	4 (4%)	0	100	100
4	4	490/542 (90%)	479 (98%)	11 (2%)	0	100	100
5	5	668/679 (98%)	636 (95%)	31 (5%)	1 (0%)	48	67
6	6	186/224 (83%)	183 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	8	76/86 (88%)	71 (93%)	5 (7%)	0	100	100
8	9	101/785 (13%)	101 (100%)	0	0	100	100
9	D	79/86 (92%)	78 (99%)	1 (1%)	0	100	100
10	J	184/199 (92%)	178 (97%)	6 (3%)	0	100	100
11	L	85/89 (96%)	85 (100%)	0	0	100	100
12	Q	83/141 (59%)	82 (99%)	1 (1%)	0	100	100
13	R	96/99 (97%)	94 (98%)	2 (2%)	0	100	100
14	S	72/143 (50%)	72 (100%)	0	0	100	100
15	U	165/186 (89%)	163 (99%)	2 (1%)	0	100	100
16	W	97/121 (80%)	97 (100%)	0	0	100	100
17	X	185/191 (97%)	182 (98%)	3 (2%)	0	100	100
18	a	142/815 (17%)	136 (96%)	6 (4%)	0	100	100
19	b	79/94 (84%)	77 (98%)	2 (2%)	0	100	100
20	c	59/93 (63%)	55 (93%)	4 (7%)	0	100	100
21	d	99/105 (94%)	97 (98%)	2 (2%)	0	100	100
22	e	36/46 (78%)	35 (97%)	1 (3%)	0	100	100
23	g	76/82 (93%)	73 (96%)	3 (4%)	0	100	100
24	i	79/93 (85%)	76 (96%)	3 (4%)	0	100	100
25	j	73/75 (97%)	72 (99%)	1 (1%)	0	100	100
26	n	133/184 (72%)	129 (97%)	4 (3%)	0	100	100
All	All	4324/6253 (69%)	4206 (97%)	116 (3%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	5	68	GLU
2	2	570	SER

5.3.2 Protein sidechains ⓘ

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1	283/326 (87%)	282 (100%)	1 (0%)	89	95
2	2	510/518 (98%)	501 (98%)	9 (2%)	54	76
3	3	82/128 (64%)	82 (100%)	0	100	100
4	4	431/477 (90%)	424 (98%)	7 (2%)	58	79
5	5	580/596 (97%)	574 (99%)	6 (1%)	73	87
6	6	168/203 (83%)	162 (96%)	6 (4%)	30	53
7	8	69/75 (92%)	69 (100%)	0	100	100
8	9	84/687 (12%)	81 (96%)	3 (4%)	30	53
9	D	68/69 (99%)	68 (100%)	0	100	100
10	J	129/146 (88%)	127 (98%)	2 (2%)	58	79
11	L	74/76 (97%)	70 (95%)	4 (5%)	18	35
12	Q	75/119 (63%)	72 (96%)	3 (4%)	27	48
13	R	87/89 (98%)	84 (97%)	3 (3%)	32	55
14	S	60/111 (54%)	59 (98%)	1 (2%)	56	77
15	U	149/167 (89%)	149 (100%)	0	100	100
16	W	83/102 (81%)	82 (99%)	1 (1%)	67	84
17	X	146/152 (96%)	144 (99%)	2 (1%)	62	81
18	a	123/697 (18%)	121 (98%)	2 (2%)	58	79
19	b	67/74 (90%)	67 (100%)	0	100	100
20	c	49/80 (61%)	49 (100%)	0	100	100
21	d	90/94 (96%)	89 (99%)	1 (1%)	70	86
22	e	30/35 (86%)	30 (100%)	0	100	100
23	g	65/69 (94%)	64 (98%)	1 (2%)	60	80
24	i	68/78 (87%)	66 (97%)	2 (3%)	37	61
25	j	64/64 (100%)	62 (97%)	2 (3%)	35	59
26	n	106/150 (71%)	106 (100%)	0	100	100
All	All	3740/5382 (70%)	3684 (98%)	56 (2%)	60	80

All (56) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	105	ASN

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Mol	Chain	Res	Type
2	2	45	SER
2	2	64	THR
2	2	129	LEU
2	2	179	TYR
2	2	207	ASP
2	2	293	GLU
2	2	318	SER
2	2	356	SER
2	2	382	PHE
4	4	74	TYR
4	4	183	GLU
4	4	198	SER
4	4	239	LEU
4	4	345	TYR
4	4	358	VAL
4	4	447	LEU
5	5	102	SER
5	5	223	LYS
5	5	285	THR
5	5	289	SER
5	5	597	ASP
5	5	624	SER
6	6	28	VAL
6	6	41	LYS
6	6	58	SER
6	6	77	TYR
6	6	186	SER
6	6	198	VAL
8	9	39	LYS
8	9	43	VAL
8	9	78	ASN
10	J	112	PHE
10	J	157	GLU
11	L	35	SER
11	L	38	PHE
11	L	51	ILE
11	L	66	GLU
12	Q	98	SER
12	Q	111	GLU
12	Q	137	GLN
13	R	61	LEU
13	R	91	LEU

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Mol	Chain	Res	Type
13	R	92	GLU
14	S	117	GLN
16	W	68	ILE
17	X	111	ASP
17	X	129	SER
18	a	44	ASP
18	a	97	VAL
21	d	57	SER
23	g	5	THR
24	i	15	SER
24	i	67	SER
25	j	8	LYS
25	j	56	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
2	2	119	HIS
2	2	377	ASN
2	2	409	ASN
5	5	29	GLN
11	L	2	ASN
11	L	18	ASN
13	R	3	ASN
13	R	42	ASN
13	R	51	GLN
14	S	117	GLN
15	U	104	ASN
16	W	66	HIS
16	W	102	ASN
18	a	101	HIS
26	n	161	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

34 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
27	3PE	W	202	-	38,38,50	0.97	4 (10%)	41,43,55	1.10	2 (4%)
27	3PE	J	201	-	29,29,50	1.11	4 (13%)	32,34,55	1.16	2 (6%)
28	PC1	5	701	-	53,53,53	0.98	5 (9%)	59,61,61	1.25	4 (6%)
28	PC1	3	201	-	42,42,53	1.05	4 (9%)	48,50,61	1.10	2 (4%)
28	PC1	1	402	-	41,41,53	1.07	4 (9%)	47,49,61	1.07	2 (4%)
27	3PE	g	102	-	43,43,50	0.92	4 (9%)	46,48,55	1.09	2 (4%)
27	3PE	5	702	-	34,34,50	1.03	4 (11%)	37,39,55	1.13	2 (5%)
29	CDL	D	101	-	64,64,99	1.08	8 (12%)	70,76,111	1.14	4 (5%)
27	3PE	5	703	-	32,32,50	1.06	4 (12%)	35,37,55	1.12	2 (5%)
28	PC1	S	202	-	51,51,53	0.96	4 (7%)	57,59,61	1.08	2 (3%)
30	LMN	4	602	-	48,48,72	1.85	13 (27%)	60,62,98	1.01	1 (1%)
29	CDL	X	202	-	78,78,99	0.97	7 (8%)	84,90,111	1.18	5 (5%)
29	CDL	2	601	-	73,73,99	0.34	0	79,85,111	0.50	0
27	3PE	i	101	-	40,40,50	0.96	4 (10%)	43,45,55	1.15	2 (4%)
27	3PE	4	604	-	33,33,50	1.04	4 (12%)	36,38,55	1.15	2 (5%)
30	LMN	2	602	-	60,60,72	1.72	10 (16%)	78,80,98	1.08	3 (3%)
30	LMN	j	101	-	72,72,72	1.63	14 (19%)	96,98,98	1.04	6 (6%)
27	3PE	W	201	-	37,37,50	0.99	4 (10%)	40,42,55	1.12	2 (5%)
27	3PE	n	201	-	50,50,50	0.86	4 (8%)	53,55,55	1.12	2 (3%)
27	3PE	5	705	-	42,42,50	0.94	4 (9%)	45,47,55	1.14	2 (4%)
28	PC1	X	203	-	38,38,53	1.10	4 (10%)	44,46,61	1.07	2 (4%)
27	3PE	5	704	-	34,34,50	1.04	4 (11%)	37,39,55	1.20	2 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
27	3PE	n	202	-	38,38,50	1.00	4 (10%)	41,43,55	1.13	2 (4%)
28	PC1	4	603	-	49,49,53	0.98	4 (8%)	55,57,61	1.15	2 (3%)
27	3PE	5	707	-	32,32,50	1.06	4 (12%)	35,37,55	1.17	2 (5%)
27	3PE	g	101	-	35,35,50	1.00	4 (11%)	38,40,55	1.17	2 (5%)
27	3PE	1	401	-	44,44,50	0.92	4 (9%)	47,49,55	1.20	4 (8%)
31	ZMP	Q	201	12	29,35,36	0.21	0	34,42,45	0.43	0
27	3PE	6	301	-	35,35,50	1.03	4 (11%)	38,40,55	1.20	2 (5%)
28	PC1	X	204	-	31,31,53	1.21	4 (12%)	37,39,61	1.10	2 (5%)
28	PC1	5	706	-	42,42,53	1.08	4 (9%)	48,50,61	1.15	2 (4%)
29	CDL	X	201	-	69,69,99	1.03	7 (10%)	75,81,111	1.17	5 (6%)
27	3PE	4	601	-	44,44,50	0.90	4 (9%)	47,49,55	1.10	2 (4%)
29	CDL	S	201	-	78,78,99	0.97	8 (10%)	84,90,111	1.14	4 (4%)

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
27	3PE	W	202	-	-	15/42/42/54	-
27	3PE	J	201	-	-	16/33/33/54	-
28	PC1	5	701	-	-	26/57/57/57	-
28	PC1	3	201	-	-	14/46/46/57	-
28	PC1	1	402	-	-	23/45/45/57	-
27	3PE	g	102	-	-	20/47/47/54	-
27	3PE	5	702	-	-	15/38/38/54	-
29	CDL	D	101	-	-	27/75/75/110	-
27	3PE	5	703	-	-	17/36/36/54	-
28	PC1	S	202	-	-	18/55/55/57	-
30	LMN	4	602	-	-	24/38/78/130	0/2/2/4
29	CDL	X	202	-	-	44/89/89/110	-
29	CDL	2	601	-	-	26/84/84/110	-
27	3PE	i	101	-	-	18/44/44/54	-
27	3PE	4	604	-	-	14/37/37/54	-
30	LMN	2	602	-	-	25/44/104/130	0/3/3/4
30	LMN	j	101	-	-	23/50/130/130	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	3PE	W	201	-	-	15/41/41/54	-
27	3PE	n	201	-	-	21/54/54/54	-
27	3PE	5	705	-	-	17/46/46/54	-
28	PC1	X	203	-	-	19/42/42/57	-
27	3PE	5	704	-	-	12/38/38/54	-
27	3PE	n	202	-	-	22/42/42/54	-
28	PC1	4	603	-	-	27/53/53/57	-
27	3PE	5	707	-	-	11/36/36/54	-
27	3PE	g	101	-	-	15/39/39/54	-
27	3PE	1	401	-	-	21/48/48/54	-
31	ZMP	Q	201	12	-	10/40/42/43	-
27	3PE	6	301	-	-	20/39/39/54	-
28	PC1	X	204	-	-	15/35/35/57	-
28	PC1	5	706	-	-	23/46/46/57	-
29	CDL	X	201	-	-	27/80/80/110	-
27	3PE	4	601	-	-	14/48/48/54	-
29	CDL	S	201	-	-	36/89/89/110	-

All (168) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	j	101	LMN	O5-C1	4.70	1.53	1.41
30	4	602	LMN	O5-C1	4.70	1.53	1.41
30	2	602	LMN	O5-C1	4.66	1.53	1.41
30	j	101	LMN	CBS-CCM	4.24	1.63	1.53
30	4	602	LMN	CBS-CCM	4.20	1.63	1.53
30	2	602	LMN	CBS-CCM	4.18	1.63	1.53
30	4	602	LMN	CBT-CCM	4.05	1.62	1.53
30	2	602	LMN	CBR-CCM	3.92	1.61	1.54
30	j	101	LMN	CBT-CCM	3.91	1.62	1.53
30	2	602	LMN	CBT-CCM	3.77	1.62	1.53
30	j	101	LMN	O1-C1	-3.63	1.34	1.40
30	2	602	LMN	O1-C1	-3.55	1.34	1.40
30	4	602	LMN	O1-C1	-3.50	1.34	1.40
30	4	602	LMN	CBR-CCM	3.50	1.60	1.54
30	j	101	LMN	CBR-CCM	3.47	1.60	1.54
30	4	602	LMN	O4-C4	3.46	1.51	1.43
30	2	602	LMN	O4-C4	3.38	1.50	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	X	201	CDL	OB6-CB4	-3.00	1.39	1.46
30	2	602	LMN	OBZ-CCS	2.97	1.49	1.41
30	j	101	LMN	OBY-CCR	2.92	1.49	1.41
29	X	202	CDL	OA6-CA4	-2.86	1.39	1.46
30	j	101	LMN	OBZ-CCS	2.84	1.49	1.41
30	j	101	LMN	O4-C4	2.82	1.51	1.43
29	D	101	CDL	OB6-CB4	-2.82	1.39	1.46
27	6	301	3PE	O21-C2	-2.67	1.39	1.46
27	4	601	3PE	O21-C2	-2.61	1.40	1.46
27	5	703	3PE	O21-C2	-2.59	1.40	1.46
28	5	701	PC1	O21-C2	-2.59	1.40	1.46
28	X	203	PC1	O21-C2	-2.58	1.40	1.46
28	4	603	PC1	O21-C2	-2.58	1.40	1.46
28	X	204	PC1	O21-C2	-2.57	1.40	1.46
27	n	201	3PE	O21-C2	-2.56	1.40	1.46
27	i	101	3PE	O21-C2	-2.56	1.40	1.46
28	1	402	PC1	O21-C2	-2.56	1.40	1.46
29	S	201	CDL	OA8-CA7	2.55	1.40	1.33
27	W	201	3PE	O21-C2	-2.55	1.40	1.46
27	J	201	3PE	O21-C2	-2.54	1.40	1.46
27	W	202	3PE	O21-C2	-2.54	1.40	1.46
27	n	202	3PE	O21-C2	-2.53	1.40	1.46
27	n	202	3PE	O31-C31	2.53	1.40	1.33
27	4	604	3PE	O21-C2	-2.53	1.40	1.46
28	5	706	PC1	O21-C2	-2.53	1.40	1.46
27	5	702	3PE	O21-C2	-2.53	1.40	1.46
27	5	705	3PE	O21-C2	-2.53	1.40	1.46
28	3	201	PC1	O21-C2	-2.53	1.40	1.46
28	S	202	PC1	O21-C2	-2.52	1.40	1.46
29	D	101	CDL	OA6-CA4	-2.51	1.40	1.46
27	5	704	3PE	O21-C2	-2.50	1.40	1.46
29	D	101	CDL	OA8-CA7	2.48	1.40	1.33
29	X	202	CDL	OB8-CB7	2.47	1.40	1.33
28	5	706	PC1	O31-C31	2.47	1.40	1.33
28	X	203	PC1	O31-C31	2.46	1.40	1.33
28	5	701	PC1	O31-C3	-2.46	1.39	1.45
27	1	401	3PE	O21-C2	-2.45	1.40	1.46
30	4	602	LMN	OCB-CCQ	2.45	1.48	1.43
27	W	201	3PE	O31-C31	2.45	1.40	1.33
29	S	201	CDL	OA6-CA4	-2.44	1.40	1.46
27	5	707	3PE	O31-C31	2.43	1.40	1.33
28	X	204	PC1	O31-C31	2.43	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	5	707	3PE	O21-C2	-2.42	1.40	1.46
27	g	101	3PE	O21-C2	-2.41	1.40	1.46
28	1	402	PC1	O31-C31	2.41	1.40	1.33
27	g	102	3PE	O21-C2	-2.40	1.40	1.46
27	5	705	3PE	O31-C31	2.39	1.40	1.33
30	4	602	LMN	OBX-CCF	2.39	1.50	1.44
27	6	301	3PE	O31-C31	2.39	1.40	1.33
27	5	702	3PE	O31-C31	2.39	1.40	1.33
27	4	604	3PE	O31-C31	2.38	1.40	1.33
27	5	703	3PE	O31-C31	2.38	1.40	1.33
30	j	101	LMN	OBX-CCF	2.38	1.50	1.44
27	J	201	3PE	O31-C31	2.38	1.40	1.33
29	X	201	CDL	OB8-CB7	2.37	1.40	1.33
27	i	101	3PE	O31-C31	2.36	1.40	1.33
30	2	602	LMN	C4-C3	-2.36	1.46	1.52
27	W	202	3PE	O31-C31	2.34	1.40	1.33
27	n	201	3PE	O31-C31	2.34	1.40	1.33
27	g	102	3PE	O31-C31	2.34	1.40	1.33
30	2	602	LMN	OBX-CCF	2.33	1.50	1.44
30	4	602	LMN	C4-C3	-2.33	1.46	1.52
29	S	201	CDL	OB8-CB6	-2.33	1.39	1.45
27	g	101	3PE	O31-C3	-2.33	1.39	1.45
28	4	603	PC1	O31-C31	2.31	1.40	1.33
28	S	202	PC1	O31-C31	2.30	1.40	1.33
30	4	602	LMN	CBQ-CCM	2.30	1.58	1.54
27	4	601	3PE	O31-C31	2.29	1.40	1.33
27	1	401	3PE	O31-C31	2.28	1.40	1.33
29	S	201	CDL	OB6-CB4	-2.28	1.40	1.46
29	X	202	CDL	OA8-CA6	-2.27	1.40	1.45
27	5	707	3PE	O21-C21	2.26	1.40	1.34
29	X	201	CDL	OA6-CA4	-2.26	1.40	1.46
28	3	201	PC1	O31-C31	2.26	1.39	1.33
30	4	602	LMN	OBX-CCJ	2.26	1.47	1.41
27	5	704	3PE	O31-C31	2.25	1.39	1.33
28	S	202	PC1	O31-C3	-2.25	1.40	1.45
29	S	201	CDL	OB8-CB7	2.25	1.39	1.33
29	S	201	CDL	OA6-CA5	2.24	1.40	1.34
28	5	706	PC1	O31-C3	-2.24	1.40	1.45
29	X	201	CDL	OA6-CA5	2.24	1.40	1.34
29	X	202	CDL	OB6-CB5	2.24	1.40	1.34
29	X	202	CDL	OB6-CB4	-2.24	1.41	1.46
27	4	601	3PE	O31-C3	-2.23	1.40	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	5	704	3PE	O21-C21	2.23	1.40	1.34
27	6	301	3PE	O31-C3	-2.21	1.40	1.45
29	X	201	CDL	OA8-CA7	2.21	1.39	1.33
27	1	401	3PE	O31-C3	-2.20	1.40	1.45
27	g	101	3PE	O21-C21	2.20	1.40	1.34
29	X	201	CDL	OA8-CA6	-2.20	1.40	1.45
27	g	102	3PE	O21-C21	2.19	1.40	1.34
27	n	201	3PE	O21-C21	2.19	1.40	1.34
29	D	101	CDL	OA8-CA6	-2.18	1.40	1.45
28	5	701	PC1	C12-N	-2.18	1.44	1.51
28	5	701	PC1	C14-N	-2.18	1.43	1.50
27	n	201	3PE	O31-C3	-2.18	1.40	1.45
30	4	602	LMN	O5-C5	2.17	1.49	1.44
27	n	202	3PE	O21-C21	2.17	1.40	1.34
28	3	201	PC1	O31-C3	-2.17	1.40	1.45
28	S	202	PC1	O21-C21	2.16	1.40	1.34
27	5	704	3PE	O31-C3	-2.16	1.40	1.45
29	D	101	CDL	OA6-CA5	2.16	1.40	1.34
28	1	402	PC1	O31-C3	-2.16	1.40	1.45
29	X	202	CDL	OA8-CA7	2.15	1.39	1.33
30	j	101	LMN	C3-C4	-2.15	1.46	1.52
28	4	603	PC1	O21-C21	2.15	1.40	1.34
28	X	204	PC1	O21-C21	2.15	1.40	1.34
30	2	602	LMN	CBQ-CCM	2.15	1.58	1.54
28	1	402	PC1	O21-C21	2.14	1.40	1.34
29	S	201	CDL	OB6-CB5	2.14	1.40	1.34
29	D	101	CDL	OB8-CB6	-2.13	1.40	1.45
27	W	202	3PE	O31-C3	-2.13	1.40	1.45
27	g	102	3PE	O31-C3	-2.13	1.40	1.45
28	X	203	PC1	O21-C21	2.13	1.40	1.34
27	5	702	3PE	O31-C3	-2.12	1.40	1.45
27	J	201	3PE	O21-C21	2.12	1.40	1.34
27	5	705	3PE	O31-C3	-2.12	1.40	1.45
27	i	101	3PE	O21-C21	2.12	1.40	1.34
27	J	201	3PE	O31-C3	-2.11	1.40	1.45
27	5	703	3PE	O31-C3	-2.11	1.40	1.45
28	4	603	PC1	O31-C3	-2.11	1.40	1.45
27	5	702	3PE	O21-C21	2.10	1.40	1.34
27	4	604	3PE	O21-C21	2.10	1.40	1.34
27	g	101	3PE	O31-C31	2.09	1.39	1.33
27	i	101	3PE	O31-C3	-2.09	1.40	1.45
28	3	201	PC1	O21-C21	2.09	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	5	703	3PE	O21-C21	2.08	1.40	1.34
27	6	301	3PE	O21-C21	2.08	1.40	1.34
27	5	707	3PE	O31-C3	-2.08	1.40	1.45
27	W	201	3PE	O31-C3	-2.08	1.40	1.45
27	W	202	3PE	O21-C21	2.07	1.40	1.34
29	D	101	CDL	OB8-CB7	2.07	1.39	1.33
27	n	202	3PE	O31-C3	-2.07	1.40	1.45
27	4	604	3PE	O31-C3	-2.07	1.40	1.45
29	D	101	CDL	OB6-CB5	2.07	1.40	1.34
27	5	705	3PE	O21-C21	2.07	1.40	1.34
27	W	201	3PE	O21-C21	2.07	1.40	1.34
28	5	706	PC1	O21-C21	2.06	1.40	1.34
28	X	204	PC1	O31-C3	-2.05	1.40	1.45
29	X	201	CDL	OB8-CB6	-2.05	1.40	1.45
30	j	101	LMN	O5-C5	2.04	1.49	1.44
29	X	202	CDL	OB8-CB6	-2.04	1.40	1.45
30	j	101	LMN	CBQ-CBK	2.04	1.59	1.52
30	4	602	LMN	CBQ-CBK	2.04	1.59	1.52
28	5	701	PC1	O31-C31	2.03	1.39	1.33
30	j	101	LMN	OCB-CCQ	2.02	1.49	1.43
30	j	101	LMN	CBQ-CCM	2.02	1.58	1.54
28	X	203	PC1	O31-C3	-2.02	1.40	1.45
27	4	601	3PE	O21-C21	2.01	1.40	1.34
27	1	401	3PE	O21-C21	2.00	1.40	1.34
29	S	201	CDL	OA8-CA6	-2.00	1.40	1.45

All (82) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	4	603	PC1	O21-C21-C22	4.95	122.17	111.50
28	5	701	PC1	O21-C21-C22	4.93	122.12	111.50
28	5	706	PC1	O21-C21-C22	4.64	121.50	111.50
27	1	401	3PE	O21-C21-C22	4.55	121.30	111.50
27	5	704	3PE	O21-C21-C22	4.39	120.96	111.50
27	6	301	3PE	O21-C21-C22	4.33	120.83	111.50
29	X	202	CDL	OB6-CB5-C51	4.27	120.71	111.50
27	n	201	3PE	O21-C21-C22	4.27	120.70	111.50
29	S	201	CDL	OA6-CA5-C11	4.22	120.60	111.50
29	X	202	CDL	OA6-CA5-C11	4.20	120.54	111.50
27	i	101	3PE	O21-C21-C22	4.19	120.54	111.50
27	5	705	3PE	O21-C21-C22	4.18	120.50	111.50
27	n	202	3PE	O21-C21-C22	4.14	120.43	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	S	202	PC1	O21-C21-C22	4.11	120.37	111.50
27	5	707	3PE	O21-C21-C22	4.11	120.35	111.50
29	X	201	CDL	OB6-CB5-C51	4.09	120.31	111.50
27	g	101	3PE	O21-C21-C22	4.07	120.27	111.50
27	4	604	3PE	O21-C21-C22	4.03	120.18	111.50
28	3	201	PC1	O21-C21-C22	4.00	120.13	111.50
28	1	402	PC1	O21-C21-C22	3.98	120.08	111.50
27	J	201	3PE	O21-C21-C22	3.97	120.07	111.50
28	X	204	PC1	O21-C21-C22	3.96	120.03	111.50
29	D	101	CDL	OB6-CB5-C51	3.92	119.94	111.50
29	D	101	CDL	OA6-CA5-C11	3.91	119.92	111.50
27	W	201	3PE	O21-C21-C22	3.87	119.84	111.50
27	5	702	3PE	O21-C21-C22	3.86	119.82	111.50
27	g	102	3PE	O21-C21-C22	3.86	119.81	111.50
27	4	601	3PE	O21-C21-C22	3.82	119.74	111.50
30	2	602	LMN	O1-C1-C2	3.81	114.26	108.30
28	X	203	PC1	O21-C21-C22	3.77	119.63	111.50
27	W	202	3PE	O21-C21-C22	3.74	119.55	111.50
27	5	703	3PE	O21-C21-C22	3.70	119.48	111.50
29	S	201	CDL	OB6-CB5-C51	3.69	119.46	111.50
28	5	701	PC1	C2-O21-C21	-3.47	109.24	117.79
30	j	101	LMN	CCS-OCB-CCQ	-3.13	110.21	117.96
29	X	201	CDL	OA6-CA5-C11	3.12	118.22	111.50
30	j	101	LMN	CCR-O4-C4	-2.91	110.77	117.96
27	1	401	3PE	O31-C31-C32	2.85	120.86	111.91
29	X	201	CDL	OA8-CA7-C31	2.84	120.83	111.91
29	D	101	CDL	OB8-CB7-C71	2.82	120.75	111.91
27	6	301	3PE	O31-C31-C32	2.77	120.61	111.91
27	5	704	3PE	O31-C31-C32	2.72	120.45	111.91
29	S	201	CDL	OB8-CB7-C71	2.72	120.45	111.91
28	1	402	PC1	O31-C31-C32	2.71	120.41	111.91
28	3	201	PC1	O31-C31-C32	2.70	120.37	111.91
28	X	203	PC1	O31-C31-C32	2.69	120.36	111.91
27	n	202	3PE	O31-C31-C32	2.68	120.33	111.91
29	X	201	CDL	OB8-CB7-C71	2.68	120.31	111.91
27	J	201	3PE	O31-C31-C32	2.67	120.30	111.91
28	X	204	PC1	O31-C31-C32	2.66	120.25	111.91
27	i	101	3PE	O31-C31-C32	2.65	120.24	111.91
29	X	202	CDL	OA8-CA7-C31	2.65	120.23	111.91
29	X	202	CDL	OB8-CB7-C71	2.64	120.19	111.91
27	g	102	3PE	O31-C31-C32	2.64	120.19	111.91
28	4	603	PC1	O31-C31-C32	2.63	120.17	111.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
27	5	703	3PE	O31-C31-C32	2.63	120.17	111.91
27	4	601	3PE	O31-C31-C32	2.63	120.17	111.91
27	5	705	3PE	O31-C31-C32	2.63	120.16	111.91
27	W	201	3PE	O31-C31-C32	2.62	120.12	111.91
27	g	101	3PE	O31-C31-C32	2.62	120.12	111.91
29	S	201	CDL	OA8-CA7-C31	2.61	120.11	111.91
27	5	702	3PE	O31-C31-C32	2.61	120.09	111.91
29	D	101	CDL	OA8-CA7-C31	2.60	120.08	111.91
28	S	202	PC1	O31-C31-C32	2.60	120.07	111.91
27	4	604	3PE	O31-C31-C32	2.60	120.07	111.91
28	5	701	PC1	O31-C31-C32	2.60	120.06	111.91
28	5	706	PC1	O31-C31-C32	2.60	120.05	111.91
27	W	202	3PE	O31-C31-C32	2.55	119.91	111.91
27	5	707	3PE	O31-C31-C32	2.52	119.82	111.91
27	n	201	3PE	O31-C31-C32	2.49	119.74	111.91
29	X	201	CDL	CB4-OB6-CB5	-2.39	111.92	117.79
30	j	101	LMN	CBL-CBR-CCM	-2.37	109.54	117.16
30	4	602	LMN	O1-C1-C2	2.30	111.89	108.30
30	j	101	LMN	OBZ-CCD-CCO	2.27	113.82	109.69
27	1	401	3PE	C2-O21-C21	-2.26	112.22	117.79
30	2	602	LMN	CCS-OCB-CCQ	-2.23	112.44	117.96
28	5	701	PC1	O21-C21-O22	-2.13	118.55	123.70
27	1	401	3PE	O21-C21-O22	-2.11	118.59	123.70
30	j	101	LMN	C2-C3-C4	2.09	114.46	109.68
30	2	602	LMN	CCJ-OBX-CCF	-2.09	109.59	113.69
29	X	202	CDL	CA4-OA6-CA5	-2.06	112.72	117.79
30	j	101	LMN	CCU-CCO-CCD	2.02	113.84	110.24

There are no chirality outliers.

All (690) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
27	1	401	3PE	C1-O11-P-O12
27	1	401	3PE	C1-O11-P-O14
27	4	604	3PE	O22-C21-O21-C2
27	5	702	3PE	C1-O11-P-O12
27	5	702	3PE	C1-O11-P-O13
27	5	702	3PE	C1-O11-P-O14
27	5	703	3PE	O13-C11-C12-N
27	5	703	3PE	C22-C21-O21-C2
27	5	704	3PE	C11-O13-P-O12
27	5	704	3PE	C11-O13-P-O14

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Mol	Chain	Res	Type	Atoms
27	5	704	3PE	C22-C21-O21-C2
27	6	301	3PE	C1-O11-P-O12
27	J	201	3PE	C1-O11-P-O12
27	J	201	3PE	C1-O11-P-O13
27	J	201	3PE	C1-O11-P-O14
27	J	201	3PE	C11-O13-P-O11
27	J	201	3PE	O32-C31-O31-C3
27	W	201	3PE	C11-O13-P-O12
27	W	201	3PE	C22-C21-O21-C2
27	W	202	3PE	C1-O11-P-O14
27	W	202	3PE	C11-O13-P-O14
27	W	202	3PE	O13-C11-C12-N
27	g	101	3PE	C11-O13-P-O12
27	g	101	3PE	C11-O13-P-O14
27	i	101	3PE	C11-O13-P-O11
27	i	101	3PE	C11-O13-P-O14
27	i	101	3PE	O22-C21-O21-C2
27	i	101	3PE	C22-C21-O21-C2
27	n	201	3PE	C11-O13-P-O11
27	n	201	3PE	C11-O13-P-O12
27	n	201	3PE	O21-C2-C3-O31
27	n	201	3PE	O22-C21-O21-C2
27	n	201	3PE	C22-C21-O21-C2
27	n	202	3PE	C1-O11-P-O14
27	n	202	3PE	C11-O13-P-O12
27	n	202	3PE	O22-C21-O21-C2
28	1	402	PC1	C11-O13-P-O12
28	1	402	PC1	C11-O13-P-O14
28	1	402	PC1	C11-O13-P-O11
28	1	402	PC1	C1-O11-P-O12
28	1	402	PC1	C1-O11-P-O14
28	1	402	PC1	O22-C21-O21-C2
28	3	201	PC1	C11-O13-P-O14
28	4	603	PC1	C11-O13-P-O14
28	4	603	PC1	C1-O11-P-O14
28	4	603	PC1	O13-C11-C12-N
28	4	603	PC1	O22-C21-O21-C2
28	4	603	PC1	C22-C21-O21-C2
28	5	701	PC1	C12-C11-O13-P
28	5	701	PC1	C22-C21-O21-C2
28	5	706	PC1	C1-O11-P-O12
28	5	706	PC1	C1-O11-P-O14

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Mol	Chain	Res	Type	Atoms
28	5	706	PC1	C1-O11-P-O13
28	S	202	PC1	C1-O11-P-O12
28	S	202	PC1	C1-O11-P-O14
28	X	203	PC1	C1-O11-P-O12
28	X	203	PC1	C1-O11-P-O14
28	X	203	PC1	C12-C11-O13-P
28	X	203	PC1	O13-C11-C12-N
28	X	204	PC1	C1-O11-P-O12
28	X	204	PC1	C1-O11-P-O13
28	X	204	PC1	C12-C11-O13-P
29	2	601	CDL	C51-CB5-OB6-CB4
29	D	101	CDL	CA3-OA5-PA1-OA3
29	D	101	CDL	CB2-OB2-PB2-OB3
29	D	101	CDL	CB3-OB5-PB2-OB3
29	S	201	CDL	C11-CA5-OA6-CA4
29	S	201	CDL	C51-CB5-OB6-CB4
29	X	201	CDL	OB7-CB5-OB6-CB4
29	X	202	CDL	O1-C1-CB2-OB2
29	X	202	CDL	CA3-OA5-PA1-OA3
29	X	202	CDL	CB2-OB2-PB2-OB3
29	X	202	CDL	CB3-OB5-PB2-OB2
30	2	602	LMN	CBK-CBQ-CCM-CBR
30	2	602	LMN	CBK-CBQ-CCM-CBS
30	2	602	LMN	CBK-CBQ-CCM-CBT
30	2	602	LMN	CBL-CBR-CCM-CBQ
30	2	602	LMN	CBL-CBR-CCM-CBS
30	2	602	LMN	CBL-CBR-CCM-CBT
30	2	602	LMN	O1-CBS-CCM-CBQ
30	2	602	LMN	O1-CBS-CCM-CBR
30	2	602	LMN	OBX-CCJ-OBV-CBT
30	2	602	LMN	CCL-CCJ-OBV-CBT
30	2	602	LMN	OBZ-CCS-OCB-CCQ
30	4	602	LMN	CBK-CBQ-CCM-CBR
30	4	602	LMN	CBK-CBQ-CCM-CBS
30	4	602	LMN	CBL-CBR-CCM-CBQ
30	4	602	LMN	CBL-CBR-CCM-CBS
30	4	602	LMN	CBL-CBR-CCM-CBT
30	4	602	LMN	OBV-CBT-CCM-CBQ
30	4	602	LMN	OBV-CBT-CCM-CBR
30	j	101	LMN	OBY-CCR-O4-C4
30	j	101	LMN	CBK-CBQ-CCM-CBR
30	j	101	LMN	CBK-CBQ-CCM-CBS

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Mol	Chain	Res	Type	Atoms
30	j	101	LMN	CBK-CBQ-CCM-CBT
30	j	101	LMN	O1-CBS-CCM-CBQ
30	j	101	LMN	O1-CBS-CCM-CBR
30	j	101	LMN	OBX-CCJ-OBV-CBT
30	j	101	LMN	CCL-CCJ-OBV-CBT
31	Q	201	ZMP	C17-C16-N2-C15
31	Q	201	ZMP	O3-C16-N2-C15
31	Q	201	ZMP	O1-C10-S1-C11
31	Q	201	ZMP	C9-C10-S1-C11
27	6	301	3PE	O32-C31-O31-C3
29	2	601	CDL	OA9-CA7-OA8-CA6
29	2	601	CDL	C31-CA7-OA8-CA6
27	5	705	3PE	O32-C31-O31-C3
28	4	603	PC1	O32-C31-O31-C3
29	X	202	CDL	OB9-CB7-OB8-CB6
27	5	703	3PE	O22-C21-O21-C2
27	5	704	3PE	O22-C21-O21-C2
27	5	705	3PE	O22-C21-O21-C2
27	W	201	3PE	O22-C21-O21-C2
28	5	701	PC1	O22-C21-O21-C2
29	2	601	CDL	OB7-CB5-OB6-CB4
29	S	201	CDL	OA7-CA5-OA6-CA4
29	S	201	CDL	OB7-CB5-OB6-CB4
29	X	202	CDL	OB7-CB5-OB6-CB4
30	j	101	LMN	O1-CBS-CCM-CBT
27	5	705	3PE	C32-C31-O31-C3
27	6	301	3PE	C32-C31-O31-C3
27	J	201	3PE	C32-C31-O31-C3
28	4	603	PC1	C32-C31-O31-C3
29	X	202	CDL	C71-CB7-OB8-CB6
27	4	604	3PE	C22-C21-O21-C2
27	n	202	3PE	C22-C21-O21-C2
28	1	402	PC1	C22-C21-O21-C2
29	X	201	CDL	C51-CB5-OB6-CB4
29	X	202	CDL	C51-CB5-OB6-CB4
27	1	401	3PE	C32-C31-O31-C3
27	4	604	3PE	C32-C31-O31-C3
27	4	604	3PE	O32-C31-O31-C3
30	2	602	LMN	O5-C5-C6-O6
30	j	101	LMN	OAJ-CBN-CCD-OBZ
29	S	201	CDL	O1-C1-CA2-OA2
29	X	201	CDL	O1-C1-CB2-OB2

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Mol	Chain	Res	Type	Atoms
30	2	602	LMN	CBB-CBD-CBF-CBH
27	5	705	3PE	C22-C21-O21-C2
30	2	602	LMN	OAL-CBP-CCF-OBX
27	1	401	3PE	O32-C31-O31-C3
30	2	602	LMN	O1-CBS-CCM-CBT
30	2	602	LMN	C4-C5-C6-O6
30	j	101	LMN	OAJ-CBN-CCD-CCO
27	5	702	3PE	C32-C31-O31-C3
28	1	402	PC1	C32-C31-O31-C3
28	X	203	PC1	C32-C31-O31-C3
30	2	602	LMN	OAL-CBP-CCF-CCQ
27	J	201	3PE	O21-C2-C3-O31
27	n	202	3PE	C34-C35-C36-C37
30	j	101	LMN	CBA-CBC-CBE-CBG
28	X	204	PC1	C22-C21-O21-C2
27	J	201	3PE	C31-C32-C33-C34
28	1	402	PC1	O32-C31-O31-C3
28	S	202	PC1	C31-C32-C33-C34
27	5	707	3PE	C21-C22-C23-C24
27	6	301	3PE	C21-C22-C23-C24
27	n	202	3PE	C31-C32-C33-C34
28	4	603	PC1	C21-C22-C23-C24
29	D	101	CDL	CA5-C11-C12-C13
29	X	202	CDL	CA5-C11-C12-C13
30	4	602	LMN	OBV-CBT-CCM-CBS
28	X	203	PC1	C2-C1-O11-P
27	5	703	3PE	C31-C32-C33-C34
27	5	705	3PE	C21-C22-C23-C24
28	3	201	PC1	C21-C22-C23-C24
29	2	601	CDL	C11-CA5-OA6-CA4
27	5	702	3PE	O32-C31-O31-C3
29	S	201	CDL	CA5-C11-C12-C13
28	X	203	PC1	O32-C31-O31-C3
29	D	101	CDL	O1-C1-CB2-OB2
28	X	204	PC1	O22-C21-O21-C2
27	1	401	3PE	C1-O11-P-O13
27	4	604	3PE	C11-O13-P-O11
27	5	703	3PE	C1-O11-P-O13
27	5	703	3PE	C11-O13-P-O11
27	5	704	3PE	C11-O13-P-O11
27	W	201	3PE	C11-O13-P-O11
27	g	101	3PE	C11-O13-P-O11

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Mol	Chain	Res	Type	Atoms
27	n	201	3PE	C1-O11-P-O13
28	1	402	PC1	C1-O11-P-O13
28	3	201	PC1	C11-O13-P-O11
28	3	201	PC1	C1-O11-P-O13
28	4	603	PC1	C1-O11-P-O13
28	S	202	PC1	C11-O13-P-O11
28	S	202	PC1	C1-O11-P-O13
28	X	204	PC1	C11-O13-P-O11
29	D	101	CDL	CB3-OB5-PB2-OB2
29	X	202	CDL	CA3-OA5-PA1-OA2
30	4	602	LMN	CAW-CAY-CBA-CBC
30	4	602	LMN	OAL-CBP-CCF-OBX
29	D	101	CDL	CA2-C1-CB2-OB2
29	X	202	CDL	CA2-C1-CB2-OB2
29	2	601	CDL	OA7-CA5-OA6-CA4
28	5	706	PC1	C21-C22-C23-C24
27	W	202	3PE	C22-C21-O21-C2
27	4	601	3PE	C38-C39-C3A-C3B
29	X	202	CDL	C11-C12-C13-C14
30	2	602	LMN	CAX-CAZ-CBB-CBD
27	5	704	3PE	C27-C28-C29-C2A
27	6	301	3PE	C33-C34-C35-C36
27	g	102	3PE	C32-C33-C34-C35
27	n	201	3PE	C24-C25-C26-C27
28	5	701	PC1	C25-C26-C27-C28
28	5	706	PC1	C26-C27-C28-C29
29	S	201	CDL	CA3-CA4-OA6-CA5
29	S	201	CDL	CB3-CB4-OB6-CB5
27	W	202	3PE	O22-C21-O21-C2
28	4	603	PC1	C31-C32-C33-C34
27	4	601	3PE	C23-C24-C25-C26
28	S	202	PC1	C32-C33-C34-C35
29	D	101	CDL	C11-C12-C13-C14
29	X	202	CDL	C74-C75-C76-C77
27	4	601	3PE	C32-C33-C34-C35
27	5	702	3PE	C23-C24-C25-C26
30	4	602	LMN	CCL-CCJ-OBV-CBT
29	D	101	CDL	C52-C53-C54-C55
29	X	201	CDL	C11-C12-C13-C14
30	4	602	LMN	CAX-CAZ-CBB-CBD
27	n	201	3PE	C36-C37-C38-C39
28	5	706	PC1	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
29	D	101	CDL	C13-C14-C15-C16
29	X	201	CDL	C51-C52-C53-C54
27	6	301	3PE	C32-C33-C34-C35
27	g	101	3PE	C32-C33-C34-C35
27	g	101	3PE	C2A-C2B-C2C-C2D
29	X	202	CDL	C12-C13-C14-C15
28	5	701	PC1	C32-C33-C34-C35
29	D	101	CDL	C19-C20-C21-C22
29	X	201	CDL	CB7-C71-C72-C73
27	1	401	3PE	C24-C25-C26-C27
27	1	401	3PE	C27-C28-C29-C2A
27	n	201	3PE	C3A-C3B-C3C-C3D
28	X	203	PC1	C33-C34-C35-C36
29	S	201	CDL	C74-C75-C76-C77
29	X	201	CDL	C52-C53-C54-C55
30	2	602	LMN	CBA-CBC-CBE-CBG
30	4	602	LMN	CBC-CBE-CBG-CBI
27	4	601	3PE	C2C-C2D-C2E-C2F
27	W	201	3PE	C2B-C2C-C2D-C2E
27	g	102	3PE	C38-C39-C3A-C3B
29	X	201	CDL	C72-C73-C74-C75
27	6	301	3PE	C25-C26-C27-C28
28	S	202	PC1	C28-C29-C2A-C2B
30	4	602	LMN	CBH-CBJ-CBL-CBR
28	1	402	PC1	C31-C32-C33-C34
29	X	202	CDL	C13-C14-C15-C16
29	X	202	CDL	C17-C18-C19-C20
27	4	601	3PE	C33-C34-C35-C36
29	2	601	CDL	C53-C54-C55-C56
27	5	705	3PE	C25-C26-C27-C28
27	W	201	3PE	C2A-C2B-C2C-C2D
27	g	102	3PE	C26-C27-C28-C29
27	n	201	3PE	C3C-C3D-C3E-C3F
28	5	701	PC1	C2E-C2F-C2G-C2H
28	S	202	PC1	C29-C2A-C2B-C2C
30	j	101	LMN	CBH-CBJ-CBL-CBR
27	i	101	3PE	C36-C37-C38-C39
28	5	701	PC1	C33-C34-C35-C36
30	j	101	LMN	CAY-CBA-CBC-CBE
29	X	202	CDL	C36-C37-C38-C39
27	i	101	3PE	C3A-C3B-C3C-C3D
27	i	101	3PE	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
28	4	603	PC1	C23-C24-C25-C26
27	5	703	3PE	C32-C31-O31-C3
27	J	201	3PE	C22-C21-O21-C2
29	X	201	CDL	C11-CA5-OA6-CA4
28	5	701	PC1	C2D-C2E-C2F-C2G
30	4	602	LMN	CAY-CBA-CBC-CBE
27	5	702	3PE	C32-C33-C34-C35
27	6	301	3PE	C31-C32-C33-C34
29	D	101	CDL	CA7-C31-C32-C33
27	5	705	3PE	C2B-C2C-C2D-C2E
28	5	701	PC1	C24-C25-C26-C27
27	5	707	3PE	C32-C33-C34-C35
29	2	601	CDL	OA5-CA3-CA4-OA6
27	6	301	3PE	C28-C29-C2A-C2B
27	g	102	3PE	C33-C34-C35-C36
29	X	201	CDL	OA7-CA5-OA6-CA4
28	X	204	PC1	O21-C2-C3-O31
27	1	401	3PE	C3B-C3C-C3D-C3E
29	S	201	CDL	C31-C32-C33-C34
28	5	701	PC1	C11-C12-N-C13
28	5	701	PC1	C29-C2A-C2B-C2C
29	D	101	CDL	C72-C73-C74-C75
27	n	202	3PE	C38-C39-C3A-C3B
27	W	201	3PE	C27-C28-C29-C2A
30	j	101	LMN	CAW-CAY-CBA-CBC
27	J	201	3PE	O22-C21-O21-C2
27	6	301	3PE	C1-O11-P-O13
27	n	202	3PE	C1-O11-P-O13
27	n	202	3PE	C11-O13-P-O11
28	4	603	PC1	C11-O13-P-O11
28	X	203	PC1	C1-O11-P-O13
29	D	101	CDL	CA3-OA5-PA1-OA2
29	X	202	CDL	CB2-OB2-PB2-OB5
29	2	601	CDL	C76-C77-C78-C79
27	6	301	3PE	C22-C23-C24-C25
27	g	102	3PE	C39-C3A-C3B-C3C
28	5	701	PC1	C2C-C2D-C2E-C2F
28	4	603	PC1	O11-C1-C2-C3
28	4	603	PC1	C27-C28-C29-C2A
27	6	301	3PE	C26-C27-C28-C29
27	5	703	3PE	O32-C31-O31-C3
28	4	603	PC1	C3A-C3B-C3C-C3D

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Mol	Chain	Res	Type	Atoms
29	X	201	CDL	CA2-C1-CB2-OB2
28	X	203	PC1	C23-C24-C25-C26
29	D	101	CDL	C51-C52-C53-C54
28	X	203	PC1	C22-C21-O21-C2
28	5	706	PC1	C37-C38-C39-C3A
27	5	702	3PE	C1-C2-C3-O31
27	5	703	3PE	C1-C2-C3-O31
27	5	705	3PE	C1-C2-C3-O31
27	6	301	3PE	C1-C2-C3-O31
27	J	201	3PE	C1-C2-C3-O31
27	n	201	3PE	C1-C2-C3-O31
27	n	202	3PE	C1-C2-C3-O31
28	5	701	PC1	C1-C2-C3-O31
28	X	204	PC1	C1-C2-C3-O31
29	X	202	CDL	CA3-CA4-CA6-OA8
28	5	701	PC1	C2F-C2G-C2H-C2I
28	X	203	PC1	C26-C27-C28-C29
29	X	201	CDL	C17-C18-C19-C20
27	g	101	3PE	C29-C2A-C2B-C2C
28	4	603	PC1	C39-C3A-C3B-C3C
29	X	202	CDL	C11-CA5-OA6-CA4
28	3	201	PC1	C34-C35-C36-C37
28	5	701	PC1	C21-C22-C23-C24
27	g	102	3PE	C32-C31-O31-C3
27	g	102	3PE	C23-C24-C25-C26
29	2	601	CDL	CB3-CB4-OB6-CB5
27	1	401	3PE	C33-C34-C35-C36
27	W	202	3PE	C35-C36-C37-C38
28	5	701	PC1	C32-C31-O31-C3
29	2	601	CDL	C71-CB7-OB8-CB6
28	5	706	PC1	O11-C1-C2-O21
27	4	604	3PE	C28-C29-C2A-C2B
30	2	602	LMN	CAA-CAW-CAY-CBA
29	X	202	CDL	C23-C24-C25-C26
27	5	704	3PE	C34-C35-C36-C37
29	X	201	CDL	OA6-CA4-CA6-OA8
27	5	702	3PE	C33-C34-C35-C36
27	W	201	3PE	C28-C29-C2A-C2B
29	D	101	CDL	CB5-C51-C52-C53
27	5	705	3PE	C24-C25-C26-C27
30	j	101	LMN	O5-C5-C6-O6
27	n	202	3PE	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
27	J	201	3PE	O11-C1-C2-C3
28	5	701	PC1	O11-C1-C2-C3
29	2	601	CDL	OA5-CA3-CA4-CA6
29	2	601	CDL	OB5-CB3-CB4-CB6
30	2	602	LMN	CBD-CBF-CBH-CBJ
28	5	706	PC1	C32-C31-O31-C3
27	5	705	3PE	C35-C36-C37-C38
27	g	102	3PE	C3B-C3C-C3D-C3E
28	1	402	PC1	C2-C1-O11-P
27	i	101	3PE	C35-C36-C37-C38
29	X	202	CDL	C72-C73-C74-C75
27	1	401	3PE	C1-C2-C3-O31
28	1	402	PC1	C1-C2-C3-O31
29	2	601	CDL	CB3-CB4-CB6-OB8
27	4	604	3PE	C32-C33-C34-C35
27	5	702	3PE	C31-C32-C33-C34
29	X	202	CDL	C53-C54-C55-C56
27	g	102	3PE	C3A-C3B-C3C-C3D
30	4	602	LMN	CBD-CBF-CBH-CBJ
28	1	402	PC1	C32-C33-C34-C35
28	5	701	PC1	C11-C12-N-C14
27	5	704	3PE	C26-C27-C28-C29
28	1	402	PC1	C36-C37-C38-C39
28	4	603	PC1	C36-C37-C38-C39
27	g	102	3PE	O32-C31-O31-C3
27	n	201	3PE	C22-C23-C24-C25
27	i	101	3PE	O11-C1-C2-O21
27	n	202	3PE	O11-C1-C2-O21
28	5	701	PC1	O11-C1-C2-O21
29	X	201	CDL	OB5-CB3-CB4-OB6
29	X	202	CDL	OA5-CA3-CA4-OA6
28	5	701	PC1	O32-C31-O31-C3
27	5	704	3PE	C33-C34-C35-C36
28	5	701	PC1	C2A-C2B-C2C-C2D
27	6	301	3PE	O21-C2-C3-O31
28	5	706	PC1	O21-C2-C3-O31
29	X	202	CDL	OA6-CA4-CA6-OA8
30	4	602	LMN	OBX-CCJ-OBV-CBT
29	S	201	CDL	CB2-C1-CA2-OA2
27	4	601	3PE	C36-C37-C38-C39
28	X	203	PC1	O22-C21-O21-C2
29	X	202	CDL	OA7-CA5-OA6-CA4

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Mol	Chain	Res	Type	Atoms
27	g	101	3PE	C33-C34-C35-C36
27	5	702	3PE	C2-C1-O11-P
27	5	703	3PE	C2-C1-O11-P
29	2	601	CDL	C1-CB2-OB2-PB2
28	5	701	PC1	C11-C12-N-C15
28	5	706	PC1	C22-C21-O21-C2
30	2	602	LMN	CBF-CBH-CBJ-CBL
28	5	706	PC1	O32-C31-O31-C3
30	4	602	LMN	CBA-CBC-CBE-CBG
31	Q	201	ZMP	O1-C10-C9-C8
28	4	603	PC1	C2A-C2B-C2C-C2D
27	W	202	3PE	C22-C23-C24-C25
28	1	402	PC1	O11-C1-C2-C3
29	S	201	CDL	OA5-CA3-CA4-CA6
29	X	201	CDL	OB5-CB3-CB4-CB6
29	X	202	CDL	OA5-CA3-CA4-CA6
28	5	706	PC1	O31-C31-C32-C33
27	i	101	3PE	C38-C39-C3A-C3B
29	X	201	CDL	C76-C77-C78-C79
28	4	603	PC1	C24-C25-C26-C27
28	5	706	PC1	C39-C3A-C3B-C3C
27	1	401	3PE	C2A-C2B-C2C-C2D
28	4	603	PC1	C29-C2A-C2B-C2C
29	X	202	CDL	C31-C32-C33-C34
27	n	202	3PE	C37-C38-C39-C3A
29	X	202	CDL	C32-C33-C34-C35
29	X	202	CDL	CB6-CB4-OB6-CB5
27	i	101	3PE	C33-C34-C35-C36
27	W	202	3PE	C39-C3A-C3B-C3C
28	X	204	PC1	C32-C31-O31-C3
30	2	602	LMN	O5-C1-O1-CBS
29	D	101	CDL	CB4-CB3-OB5-PB2
29	S	201	CDL	CB3-CB4-CB6-OB8
29	X	201	CDL	CA3-CA4-CA6-OA8
29	X	202	CDL	C1-CB2-OB2-PB2
27	J	201	3PE	O11-C1-C2-O21
28	1	402	PC1	O11-C1-C2-O21
28	4	603	PC1	O11-C1-C2-O21
29	S	201	CDL	OA5-CA3-CA4-OA6
30	2	602	LMN	CAZ-CBB-CBD-CBF
27	g	101	3PE	C2B-C2C-C2D-C2E
29	2	601	CDL	OB9-CB7-OB8-CB6

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Mol	Chain	Res	Type	Atoms
27	5	702	3PE	O21-C2-C3-O31
27	5	703	3PE	O21-C2-C3-O31
27	n	202	3PE	O21-C2-C3-O31
29	2	601	CDL	OB6-CB4-CB6-OB8
29	S	201	CDL	OA6-CA4-CA6-OA8
29	X	202	CDL	OB6-CB4-CB6-OB8
30	j	101	LMN	OBV-CBT-CCM-CBQ
30	j	101	LMN	OBV-CBT-CCM-CBR
29	X	202	CDL	C52-C53-C54-C55
27	1	401	3PE	C31-C32-C33-C34
28	4	603	PC1	C2C-C2D-C2E-C2F
27	g	101	3PE	O22-C21-O21-C2
28	5	706	PC1	O22-C21-O21-C2
27	W	201	3PE	C32-C33-C34-C35
29	D	101	CDL	C18-C19-C20-C21
31	Q	201	ZMP	O2-C13-N1-C12
29	D	101	CDL	C16-C17-C18-C19
27	W	202	3PE	C1-O11-P-O13
27	W	202	3PE	C11-O13-P-O11
29	2	601	CDL	CA2-OA2-PA1-OA5
27	5	702	3PE	C22-C23-C24-C25
27	6	301	3PE	C2-C1-O11-P
29	S	201	CDL	CA4-CA3-OA5-PA1
27	4	604	3PE	C11-O13-P-O14
27	5	703	3PE	C1-O11-P-O14
27	5	703	3PE	C11-O13-P-O12
27	5	703	3PE	C11-O13-P-O14
27	6	301	3PE	C1-O11-P-O14
27	J	201	3PE	C11-O13-P-O12
27	n	201	3PE	C1-O11-P-O14
27	n	201	3PE	C11-O13-P-O14
27	n	202	3PE	C1-O11-P-O12
27	n	202	3PE	C11-O13-P-O14
28	3	201	PC1	C1-O11-P-O14
28	4	603	PC1	C1-O11-P-O12
28	5	701	PC1	C11-O13-P-O14
28	S	202	PC1	C11-O13-P-O12
28	S	202	PC1	C11-O13-P-O14
28	X	204	PC1	C11-O13-P-O14
28	X	204	PC1	C1-O11-P-O14
29	D	101	CDL	CA3-OA5-PA1-OA4
29	S	201	CDL	CB2-OB2-PB2-OB3

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Mol	Chain	Res	Type	Atoms
29	X	202	CDL	CA3-OA5-PA1-OA4
29	X	202	CDL	CB2-OB2-PB2-OB4
27	6	301	3PE	O11-C1-C2-C3
27	W	202	3PE	O11-C1-C2-C3
28	5	706	PC1	O11-C1-C2-C3
28	X	203	PC1	O11-C1-C2-C3
27	5	703	3PE	C34-C35-C36-C37
28	X	204	PC1	O32-C31-O31-C3
27	W	201	3PE	C12-C11-O13-P
27	i	101	3PE	C12-C11-O13-P
27	4	601	3PE	C34-C35-C36-C37
27	1	401	3PE	C3C-C3D-C3E-C3F
27	g	102	3PE	C37-C38-C39-C3A
27	g	102	3PE	C36-C37-C38-C39
27	W	202	3PE	O11-C1-C2-O21
29	2	601	CDL	OB5-CB3-CB4-OB6
30	4	602	LMN	CBJ-CBL-CBR-CCM
27	g	101	3PE	C22-C21-O21-C2
30	4	602	LMN	CBK-CBQ-CCM-CBT
27	4	604	3PE	C22-C23-C24-C25
29	S	201	CDL	C76-C77-C78-C79
29	X	202	CDL	C76-C77-C78-C79
27	W	201	3PE	C31-C32-C33-C34
28	1	402	PC1	O13-C11-C12-N
28	3	201	PC1	O13-C11-C12-N
28	5	706	PC1	O13-C11-C12-N
28	X	203	PC1	C1-C2-C3-O31
28	X	204	PC1	O13-C11-C12-N
27	1	401	3PE	O21-C2-C3-O31
27	5	705	3PE	O21-C2-C3-O31
28	5	701	PC1	O21-C2-C3-O31
28	X	203	PC1	O21-C2-C3-O31
29	S	201	CDL	OB6-CB4-CB6-OB8
28	X	203	PC1	C35-C36-C37-C38
27	1	401	3PE	C38-C39-C3A-C3B
27	n	201	3PE	C34-C35-C36-C37
30	4	602	LMN	CBB-CBD-CBF-CBH
29	S	201	CDL	C1-CB2-OB2-PB2
27	5	707	3PE	C24-C25-C26-C27
27	n	202	3PE	C32-C33-C34-C35
30	j	101	LMN	CBG-CBI-CBK-CBQ
27	5	705	3PE	O21-C21-C22-C23

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Mol	Chain	Res	Type	Atoms
27	n	201	3PE	C32-C33-C34-C35
28	S	202	PC1	C35-C36-C37-C38
31	Q	201	ZMP	C14-C13-N1-C12
29	D	101	CDL	C15-C16-C17-C18
29	S	201	CDL	C72-C73-C74-C75
27	i	101	3PE	C24-C25-C26-C27
27	n	202	3PE	C33-C34-C35-C36
29	X	201	CDL	CA3-CA4-OA6-CA5
27	4	601	3PE	O11-C1-C2-C3
29	X	201	CDL	C74-C75-C76-C77
30	4	602	LMN	CBF-CBH-CBJ-CBL
27	4	601	3PE	O11-C1-C2-O21
27	6	301	3PE	O11-C1-C2-O21
27	n	201	3PE	C25-C26-C27-C28
28	S	202	PC1	C2B-C2C-C2D-C2E
29	S	201	CDL	C73-C74-C75-C76
29	S	201	CDL	C57-C58-C59-C60
27	1	401	3PE	C32-C33-C34-C35
27	4	601	3PE	C11-O13-P-O11
27	5	704	3PE	C1-O11-P-O13
27	5	707	3PE	C11-O13-P-O11
27	W	201	3PE	C1-O11-P-O13
27	g	102	3PE	C11-O13-P-O11
28	5	706	PC1	C11-O13-P-O11
29	S	201	CDL	CA2-OA2-PA1-OA5
29	S	201	CDL	CA3-OA5-PA1-OA2
29	X	201	CDL	CA2-OA2-PA1-OA5
29	X	201	CDL	CB2-OB2-PB2-OB5
28	5	706	PC1	C32-C33-C34-C35
29	X	202	CDL	CB3-CB4-CB6-OB8
27	i	101	3PE	C37-C38-C39-C3A
28	5	706	PC1	C27-C28-C29-C2A
28	3	201	PC1	C32-C33-C34-C35
27	4	604	3PE	C2-C1-O11-P
30	2	602	LMN	OAJ-CBN-CCD-OBZ
27	n	202	3PE	C39-C3A-C3B-C3C
27	g	102	3PE	C34-C35-C36-C37
30	j	101	LMN	OBV-CBT-CCM-CBS
27	W	201	3PE	O13-C11-C12-N
27	g	101	3PE	O13-C11-C12-N
29	S	201	CDL	OB5-CB3-CB4-OB6
29	S	201	CDL	C14-C15-C16-C17

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Mol	Chain	Res	Type	Atoms
27	J	201	3PE	C21-C22-C23-C24
27	4	601	3PE	C2-C1-O11-P
27	g	101	3PE	C27-C28-C29-C2A
31	Q	201	ZMP	C11-C12-N1-C13
27	5	707	3PE	C25-C26-C27-C28
28	1	402	PC1	C35-C36-C37-C38
28	S	202	PC1	C38-C39-C3A-C3B
28	5	706	PC1	C1-C2-C3-O31
29	X	201	CDL	O1-C1-CA2-OA2
28	3	201	PC1	C32-C31-O31-C3
29	2	601	CDL	C51-C52-C53-C54
29	2	601	CDL	CA6-CA4-OA6-CA5
28	5	701	PC1	C23-C24-C25-C26
28	5	701	PC1	C11-O13-P-O11
27	i	101	3PE	C32-C33-C34-C35
27	n	201	3PE	C3B-C3C-C3D-C3E
30	j	101	LMN	CCW-CCS-OCB-CCQ
28	S	202	PC1	C3A-C3B-C3C-C3D
29	S	201	CDL	CA7-C31-C32-C33
27	5	707	3PE	O22-C21-O21-C2
28	1	402	PC1	O21-C2-C3-O31
29	X	201	CDL	C72-C71-CB7-OB8
28	3	201	PC1	O32-C31-O31-C3
30	4	602	LMN	CAA-CAW-CAY-CBA
27	g	102	3PE	O31-C31-C32-C33
27	4	604	3PE	C24-C25-C26-C27
28	S	202	PC1	C23-C24-C25-C26
29	2	601	CDL	C11-C12-C13-C14
29	X	201	CDL	C53-C54-C55-C56
29	D	101	CDL	C56-C57-C58-C59
29	S	201	CDL	C59-C60-C61-C62
28	1	402	PC1	C38-C39-C3A-C3B
31	Q	201	ZMP	S1-C10-C9-C8
27	i	101	3PE	O11-C1-C2-C3
29	S	201	CDL	OB5-CB3-CB4-CB6
27	5	707	3PE	C28-C29-C2A-C2B
27	W	201	3PE	C22-C23-C24-C25
29	X	202	CDL	C32-C31-CA7-OA8
29	S	201	CDL	C60-C61-C62-C63
28	1	402	PC1	C21-C22-C23-C24
29	2	601	CDL	CA3-CA4-OA6-CA5
27	W	202	3PE	O31-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
27	g	101	3PE	O21-C21-C22-C23
29	D	101	CDL	C52-C51-CB5-OB6
29	S	201	CDL	C78-C79-C80-C81
29	X	202	CDL	OB5-CB3-CB4-OB6
27	6	301	3PE	O21-C21-C22-C23
29	X	202	CDL	C39-C40-C41-C42
27	4	601	3PE	O31-C31-C32-C33
29	S	201	CDL	C16-C17-C18-C19
27	n	202	3PE	O11-C1-C2-C3
27	n	201	3PE	C28-C29-C2A-C2B
27	5	703	3PE	O31-C31-C32-C33
28	3	201	PC1	O21-C21-C22-C23
28	X	204	PC1	O21-C21-C22-C23
27	g	102	3PE	O21-C2-C3-O31
27	i	101	3PE	O21-C2-C3-O31
29	D	101	CDL	OA6-CA4-CA6-OA8
29	D	101	CDL	C20-C21-C22-C23
31	Q	201	ZMP	O4-C17-C18-C19
27	n	202	3PE	C26-C27-C28-C29
30	j	101	LMN	OBZ-CCS-OCB-CCQ
28	3	201	PC1	C38-C39-C3A-C3B
27	g	102	3PE	O21-C21-C22-C23
27	4	601	3PE	C25-C26-C27-C28
29	2	601	CDL	CB5-C51-C52-C53
28	5	706	PC1	O32-C31-C32-C33
27	5	707	3PE	C22-C21-O21-C2
27	g	101	3PE	O22-C21-C22-C23
27	W	201	3PE	C2D-C2E-C2F-C2G
27	5	704	3PE	O31-C31-C32-C33
27	W	202	3PE	O32-C31-C32-C33
30	j	101	LMN	CBF-CBH-CBJ-CBL
29	D	101	CDL	C52-C51-CB5-OB7
29	2	601	CDL	CB2-C1-CA2-OA2
29	S	201	CDL	C77-C78-C79-C80
29	X	202	CDL	C32-C31-CA7-OA9
27	6	301	3PE	O22-C21-C22-C23
27	1	401	3PE	C26-C27-C28-C29
27	5	705	3PE	C27-C28-C29-C2A
29	D	101	CDL	C14-C15-C16-C17
27	5	702	3PE	O31-C31-C32-C33
28	4	603	PC1	O21-C21-C22-C23
27	W	202	3PE	C2-C1-O11-P

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Mol	Chain	Res	Type	Atoms
27	n	202	3PE	C24-C25-C26-C27
27	5	705	3PE	C11-O13-P-O14
27	5	707	3PE	C11-O13-P-O14
27	g	101	3PE	C1-O11-P-O14
27	g	102	3PE	C1-O11-P-O14
27	g	102	3PE	C11-O13-P-O14
27	n	201	3PE	C1-O11-P-O12
28	3	201	PC1	C1-O11-P-O12
28	X	203	PC1	C11-O13-P-O12
27	5	703	3PE	O32-C31-C32-C33
28	3	201	PC1	O22-C21-C22-C23
27	5	705	3PE	O13-C11-C12-N
27	4	604	3PE	C34-C35-C36-C37
29	X	201	CDL	C31-C32-C33-C34
29	X	201	CDL	C12-C11-CA5-OA6
28	S	202	PC1	C24-C25-C26-C27
28	5	706	PC1	C24-C25-C26-C27
27	1	401	3PE	C12-C11-O13-P
27	4	604	3PE	C12-C11-O13-P
27	5	704	3PE	C12-C11-O13-P
27	5	705	3PE	C12-C11-O13-P
27	n	201	3PE	C12-C11-O13-P
27	i	101	3PE	C23-C24-C25-C26
28	4	603	PC1	C3B-C3C-C3D-C3E
30	4	602	LMN	CAB-CAX-CAZ-CBB
27	5	707	3PE	O31-C31-C32-C33
28	4	603	PC1	C3E-C3F-C3G-C3H
28	S	202	PC1	O32-C31-O31-C3
27	1	401	3PE	C25-C26-C27-C28
29	X	202	CDL	C37-C38-C39-C40
29	2	601	CDL	C52-C51-CB5-OB6
27	5	707	3PE	O32-C31-C32-C33
29	S	201	CDL	C84-C85-C86-C87
27	5	705	3PE	O11-C1-C2-O21
28	4	603	PC1	O22-C21-C22-C23
29	X	202	CDL	C19-C20-C21-C22
27	4	604	3PE	O31-C31-C32-C33
29	X	202	CDL	C12-C11-CA5-OA6
27	5	702	3PE	O32-C31-C32-C33
27	g	102	3PE	O22-C21-C22-C23
29	X	201	CDL	C12-C11-CA5-OA7
28	X	203	PC1	C36-C37-C38-C39

Continued on next page...

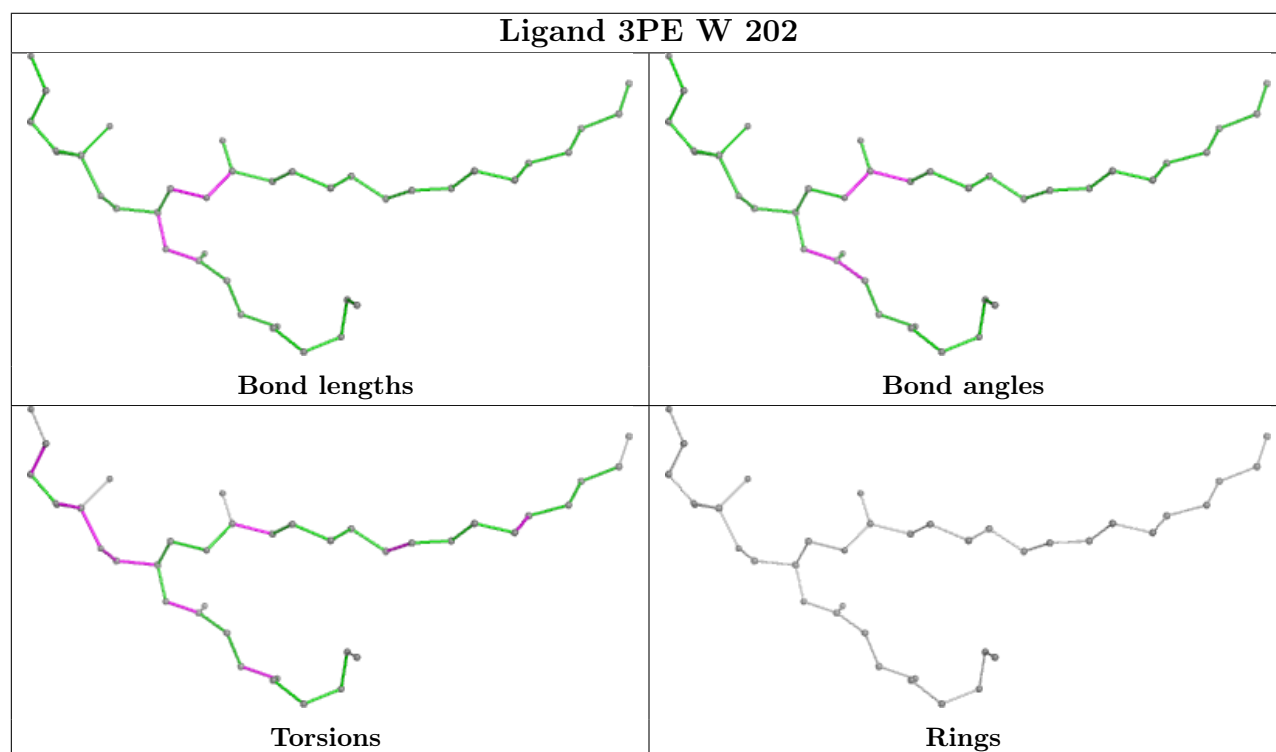
Continued from previous page...

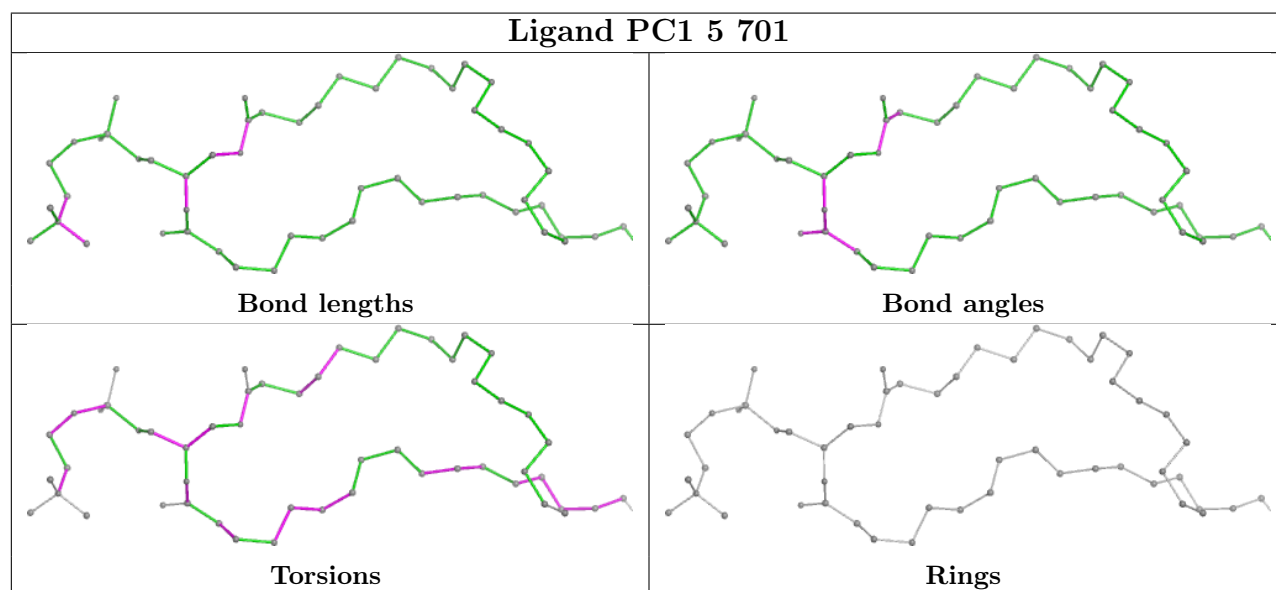
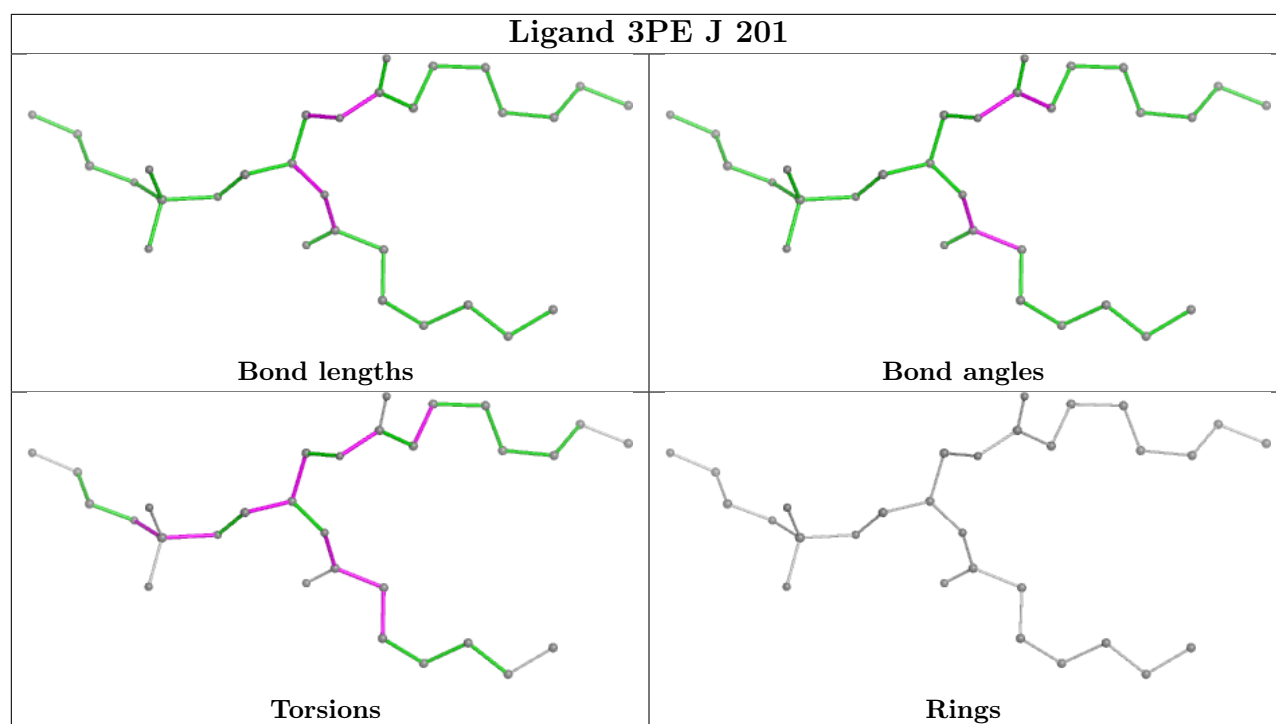
Mol	Chain	Res	Type	Atoms
29	S	201	CDL	C55-C56-C57-C58
28	X	204	PC1	O22-C21-C22-C23
28	S	202	PC1	C32-C31-O31-C3
27	J	201	3PE	O21-C21-C22-C23
27	1	401	3PE	C34-C35-C36-C37
27	1	401	3PE	C29-C2A-C2B-C2C
27	4	601	3PE	C26-C27-C28-C29
28	1	402	PC1	O31-C31-C32-C33

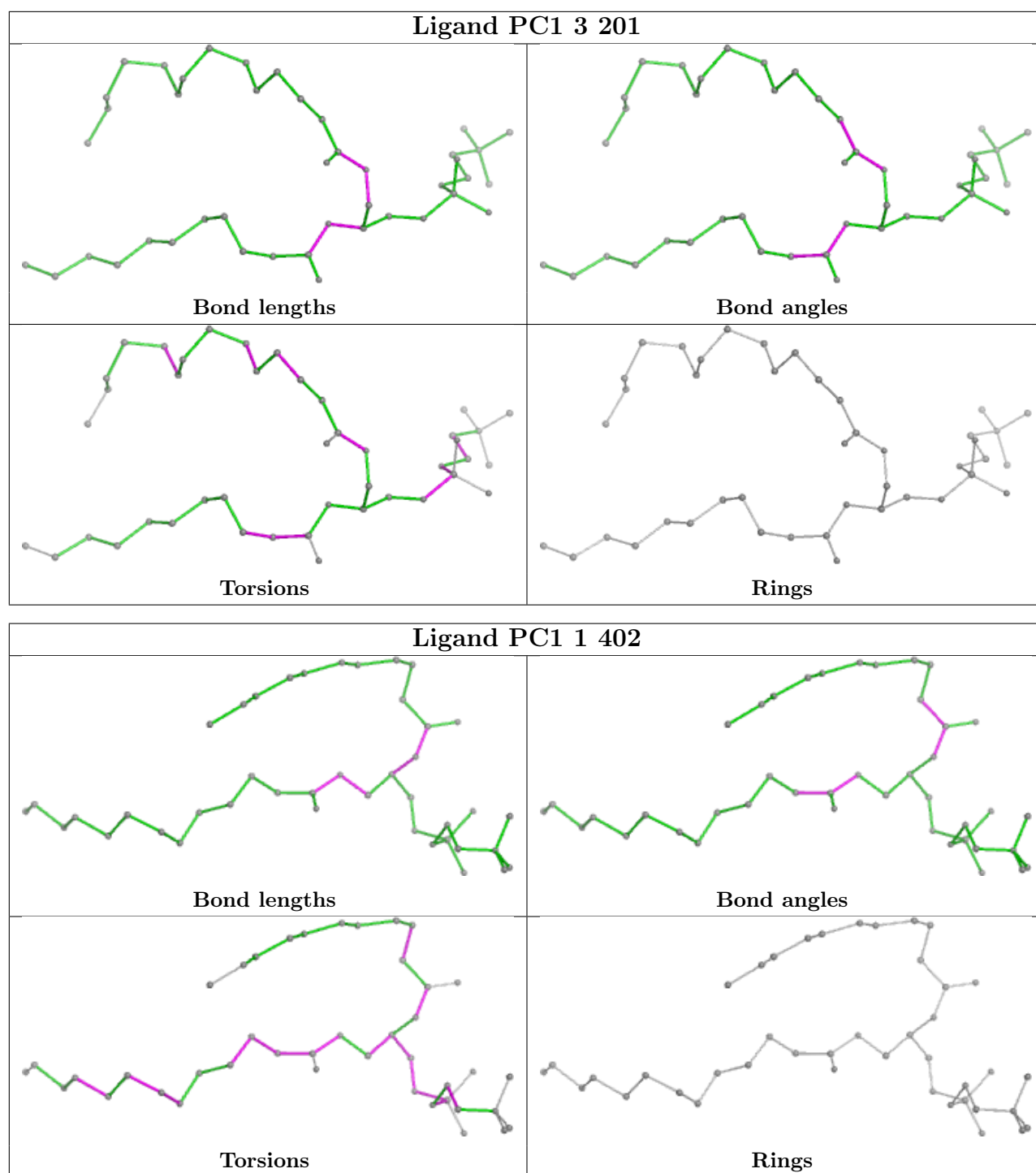
There are no ring outliers.

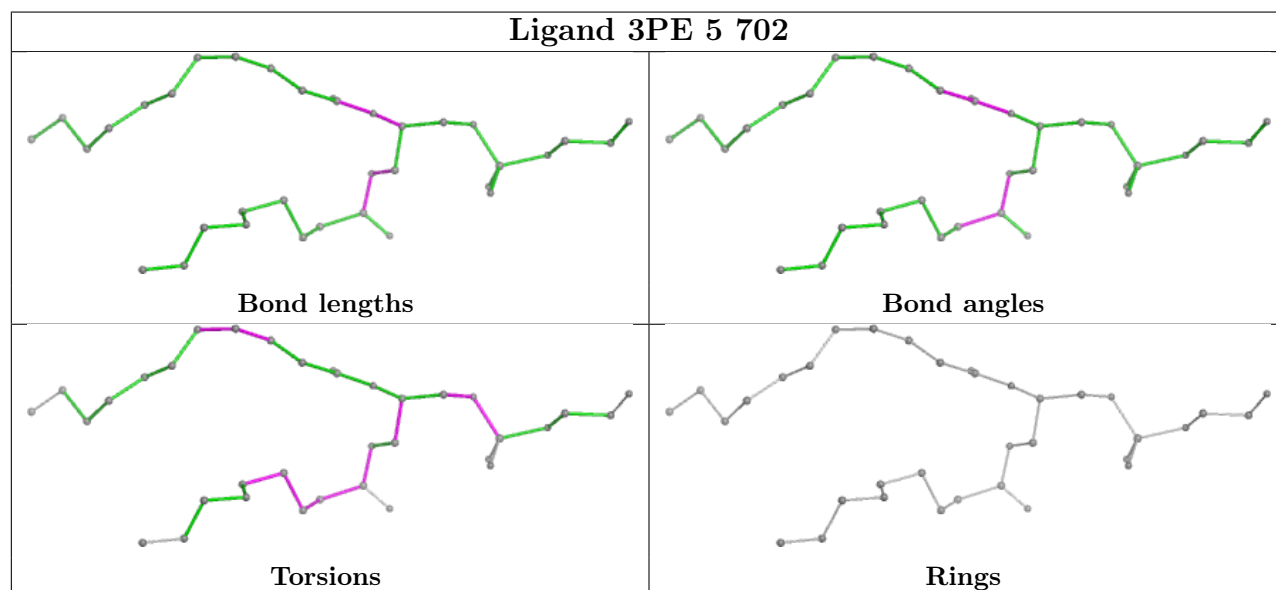
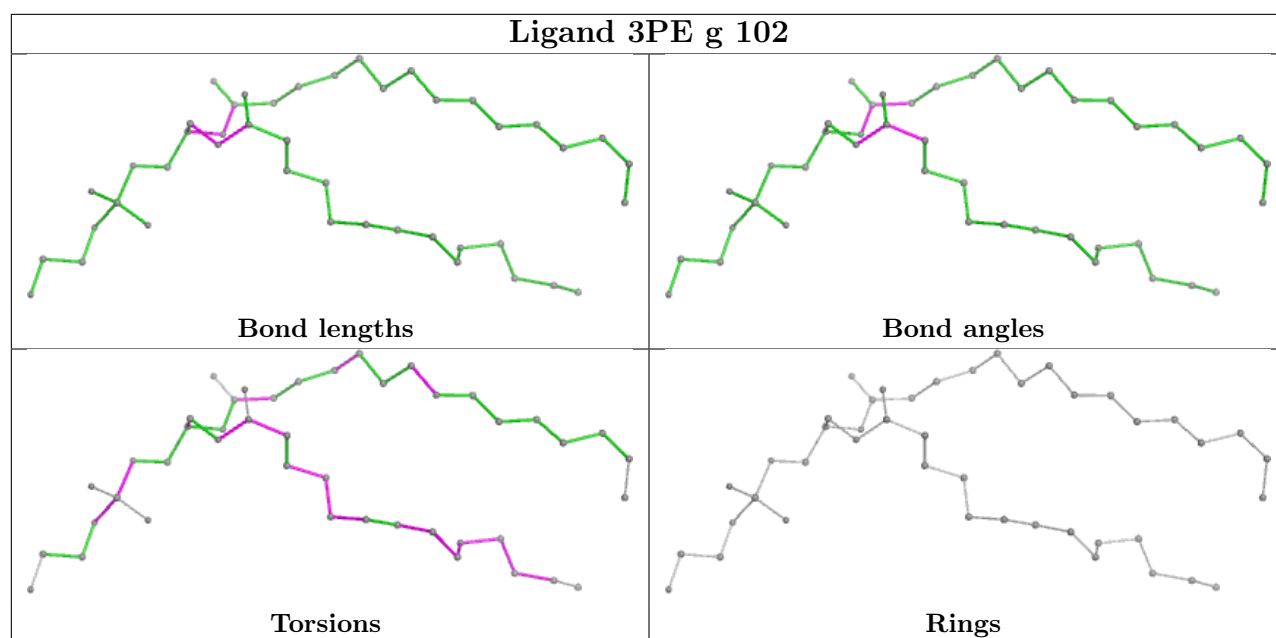
No monomer is involved in short contacts.

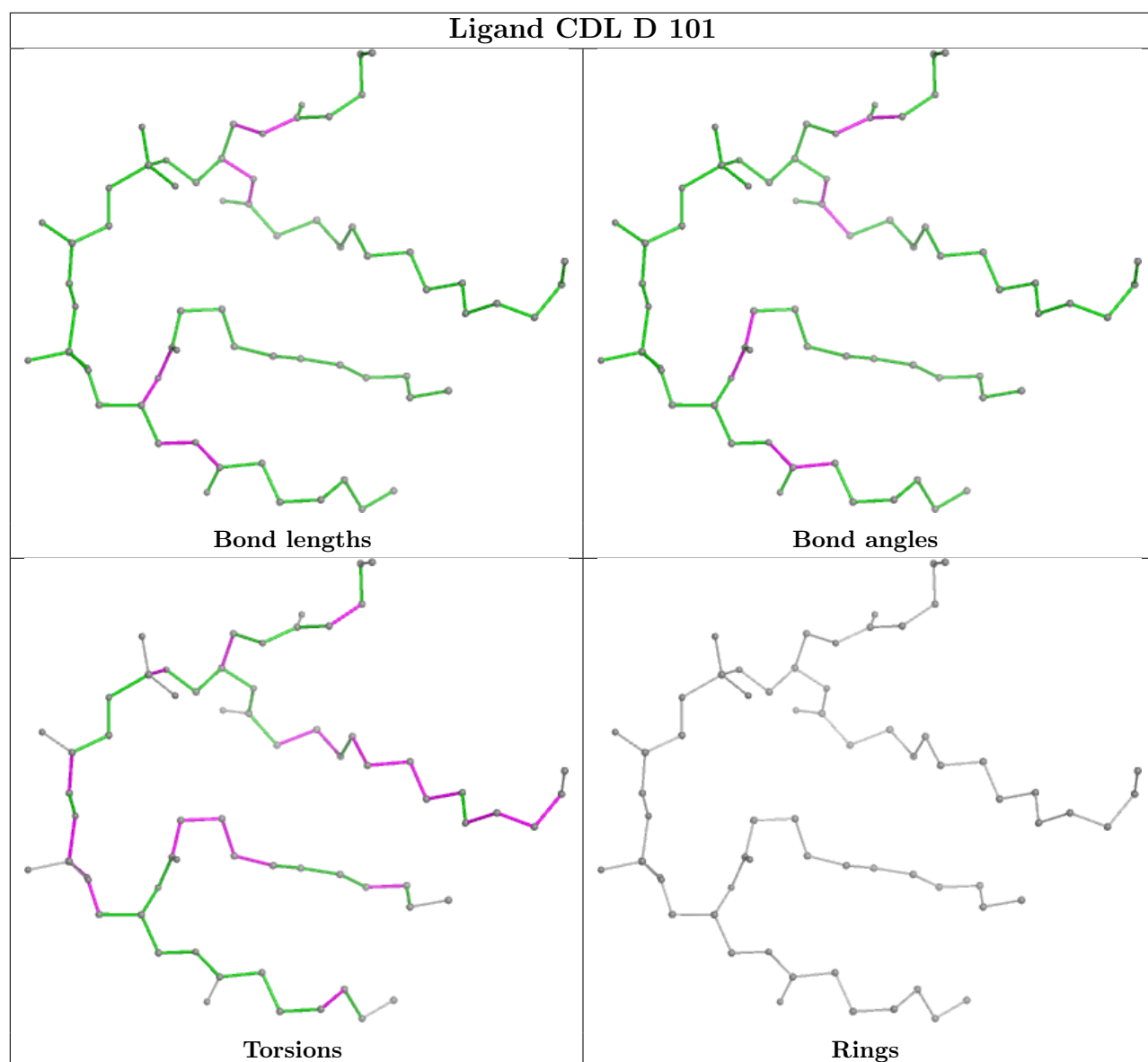
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

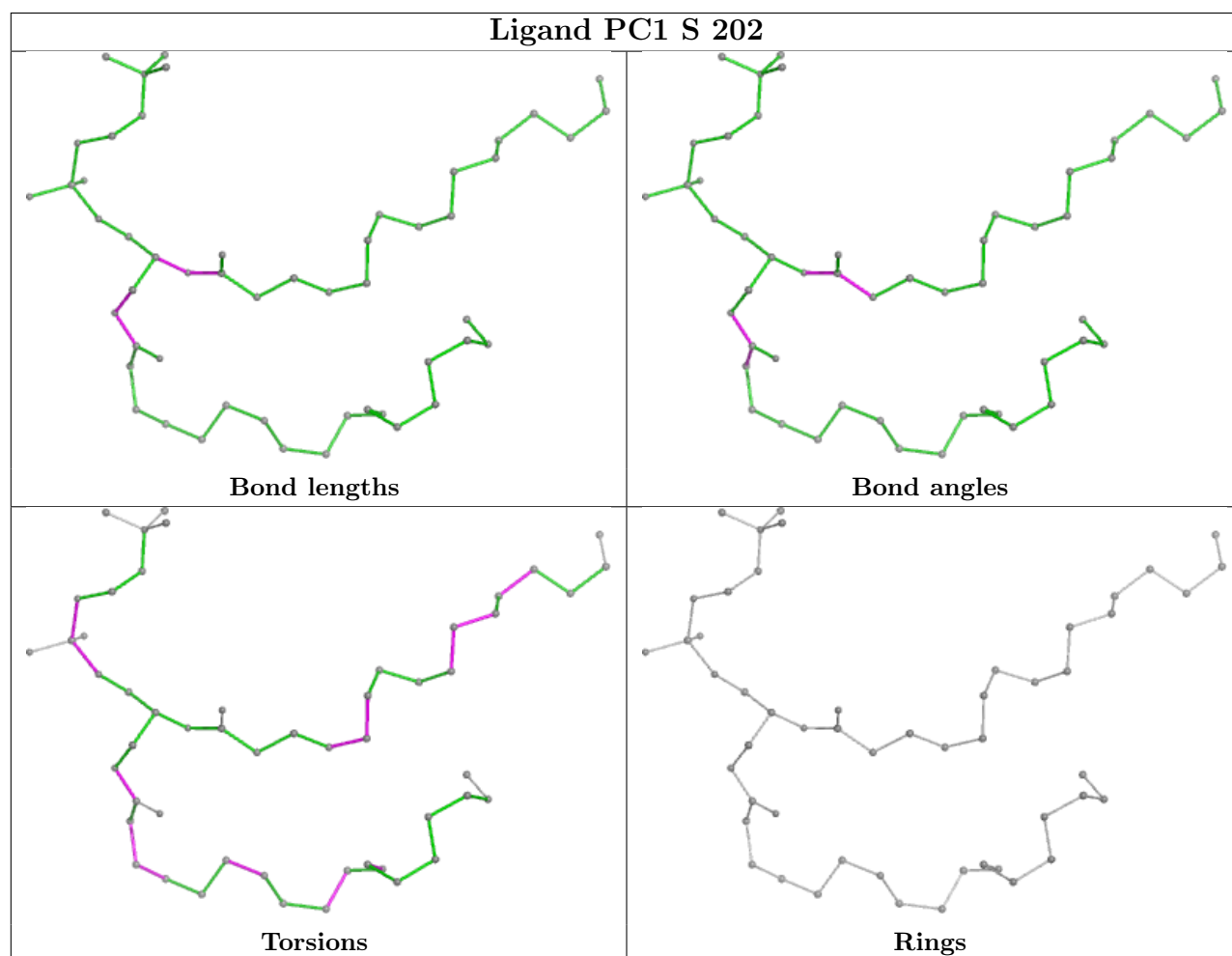
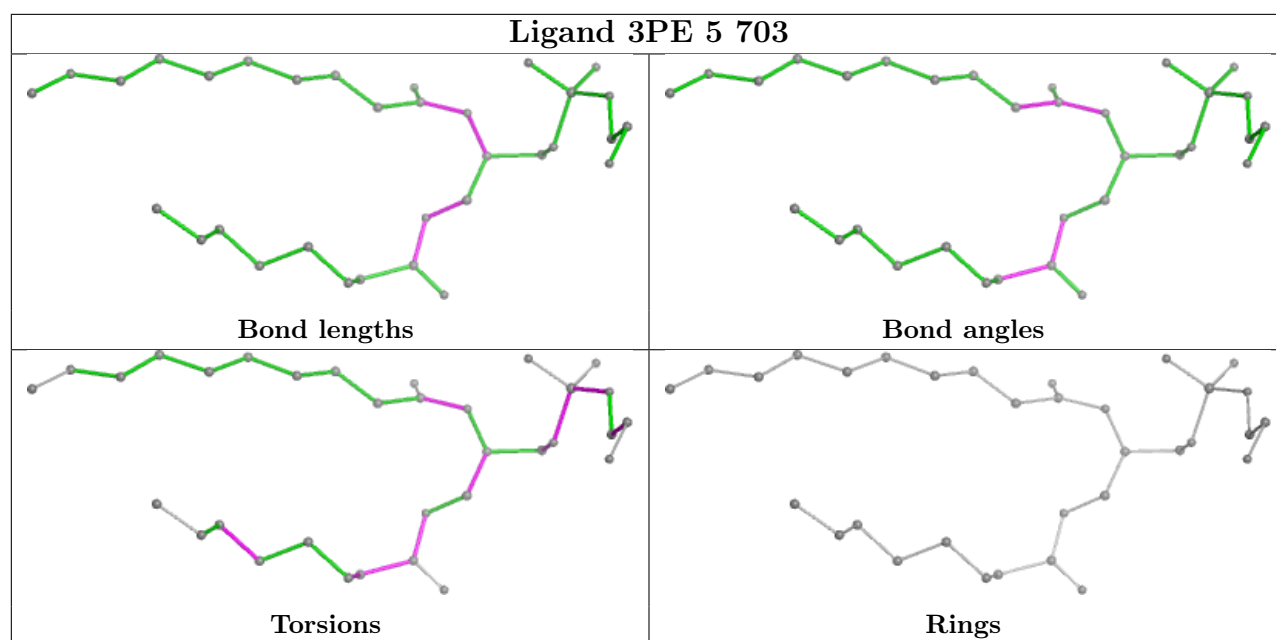


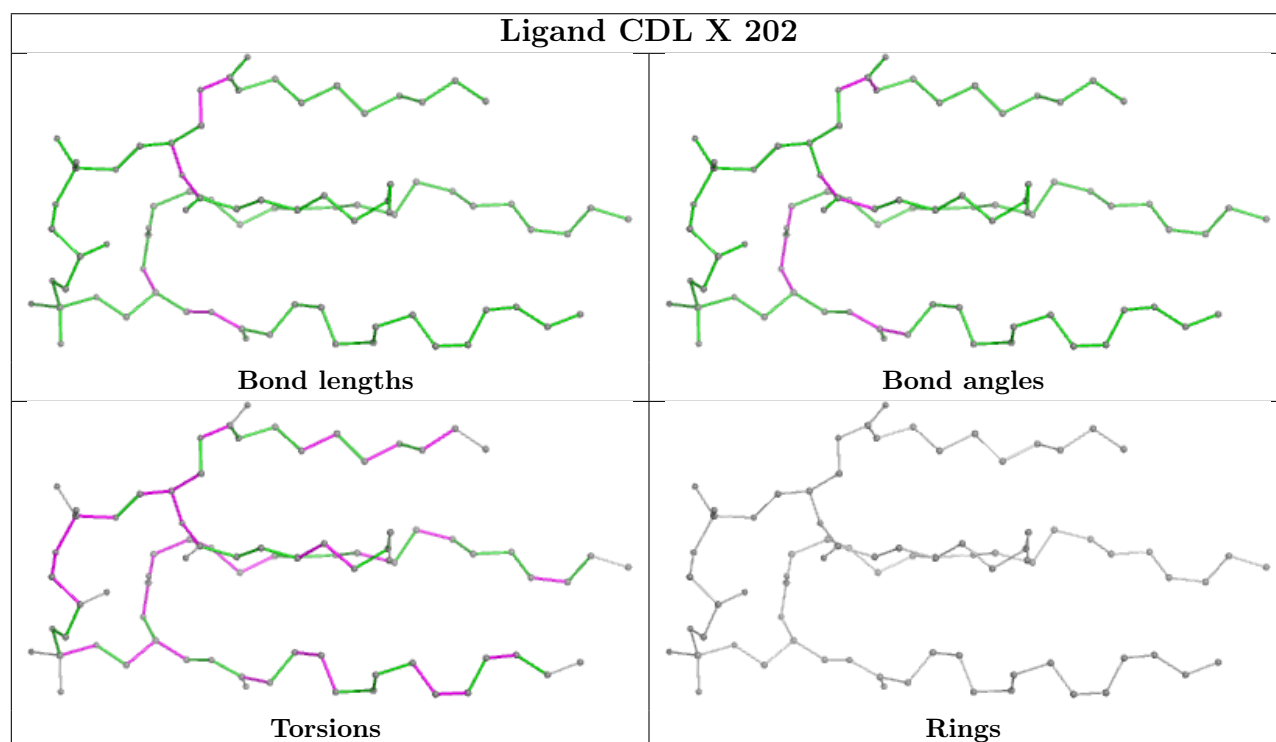
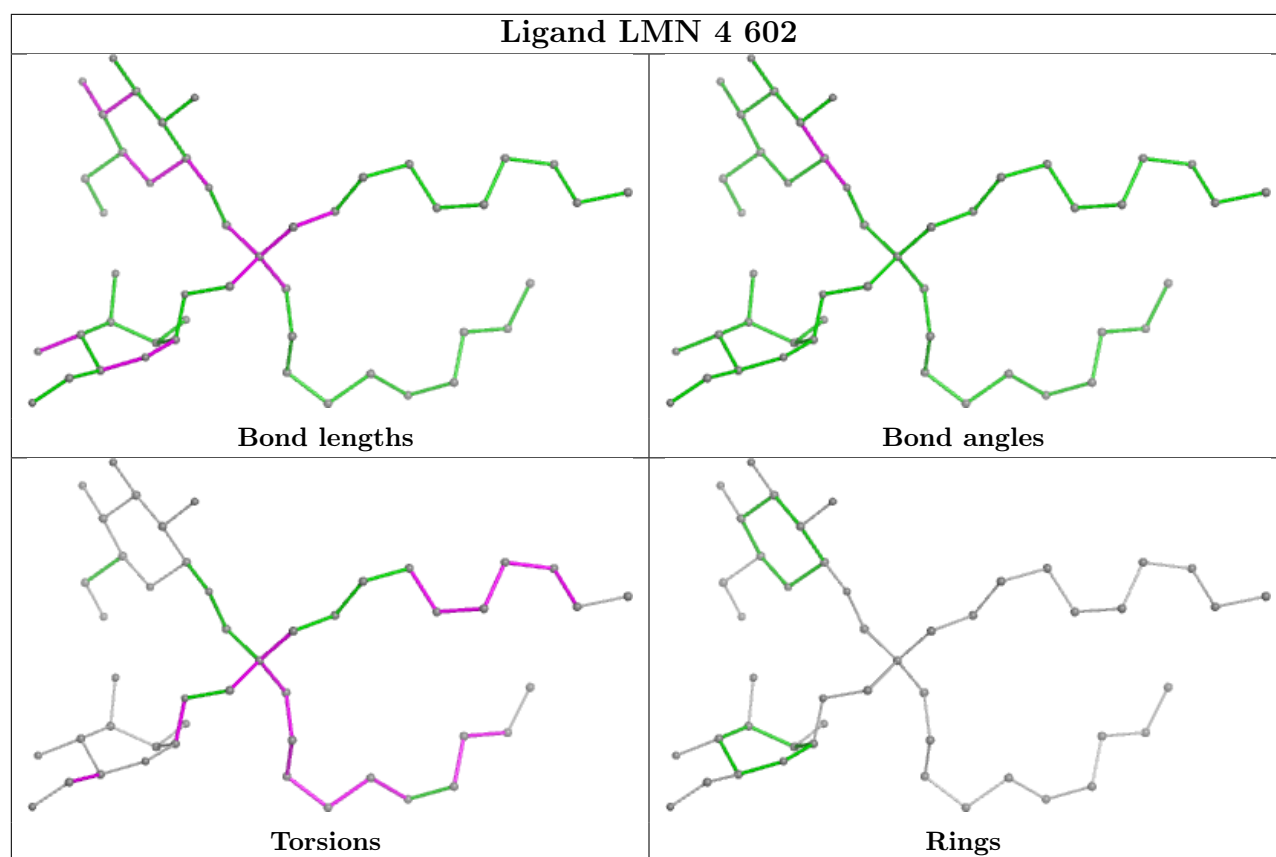


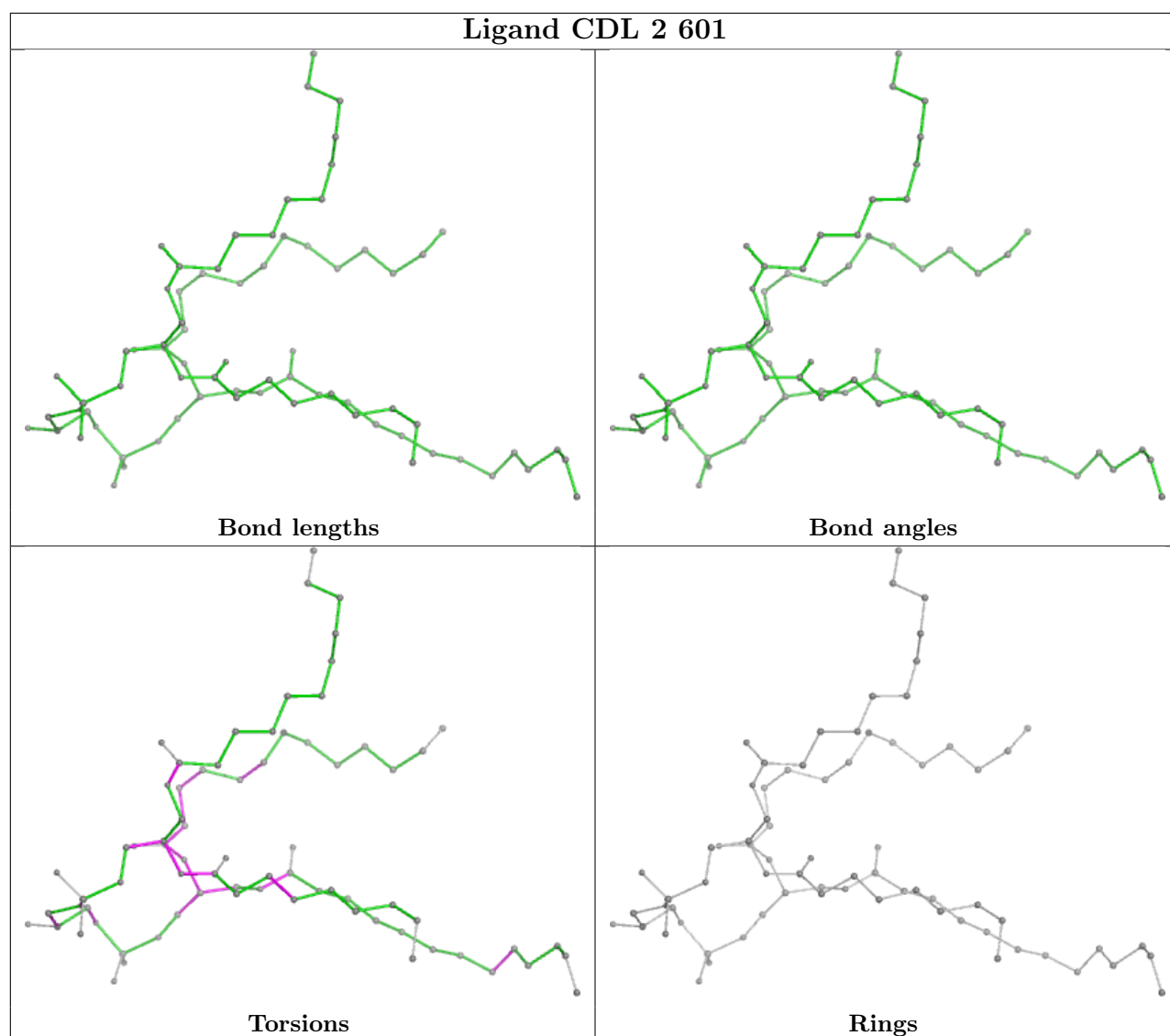


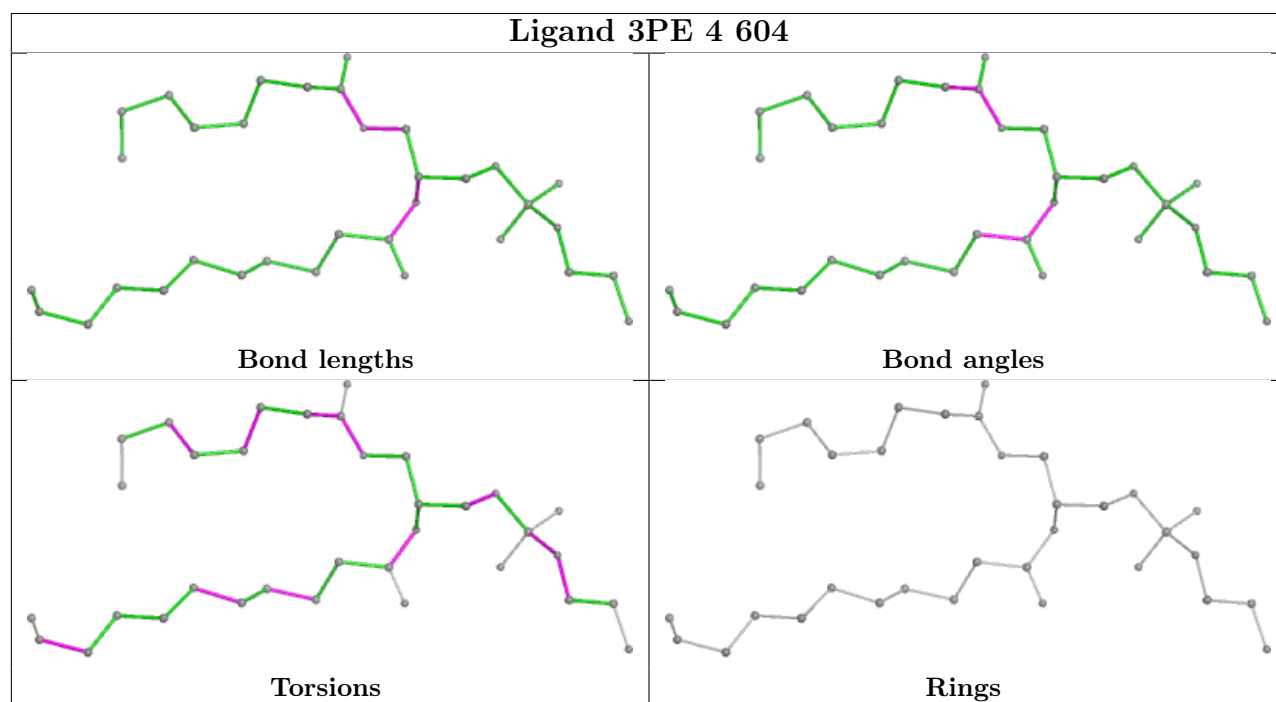
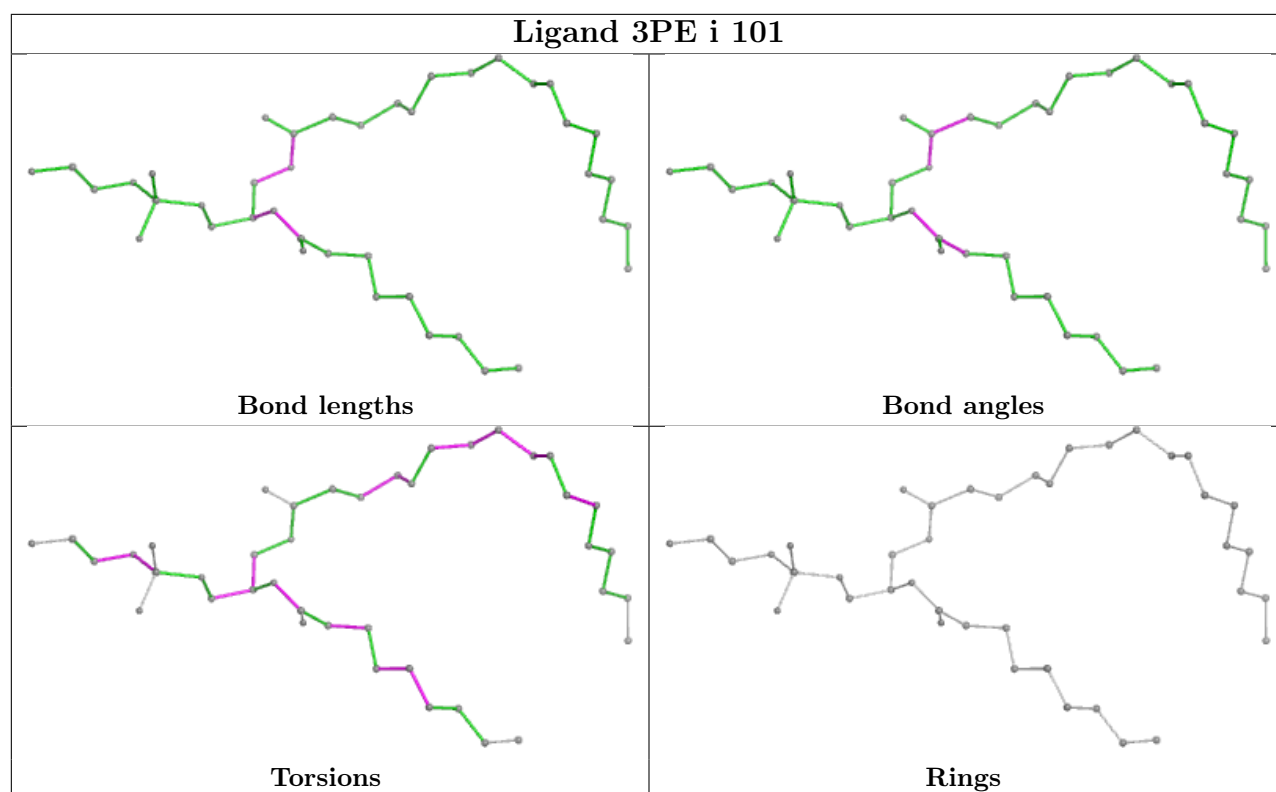


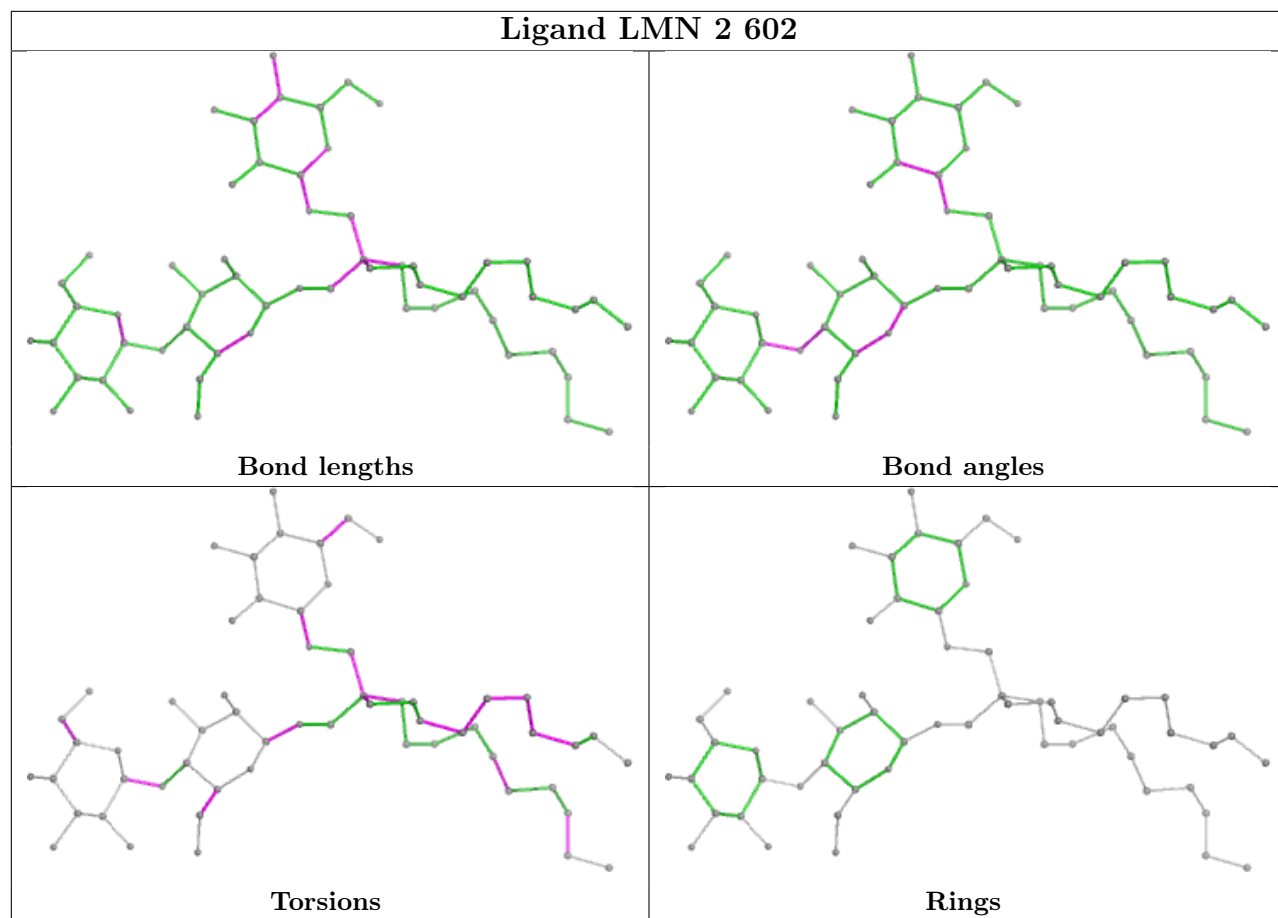




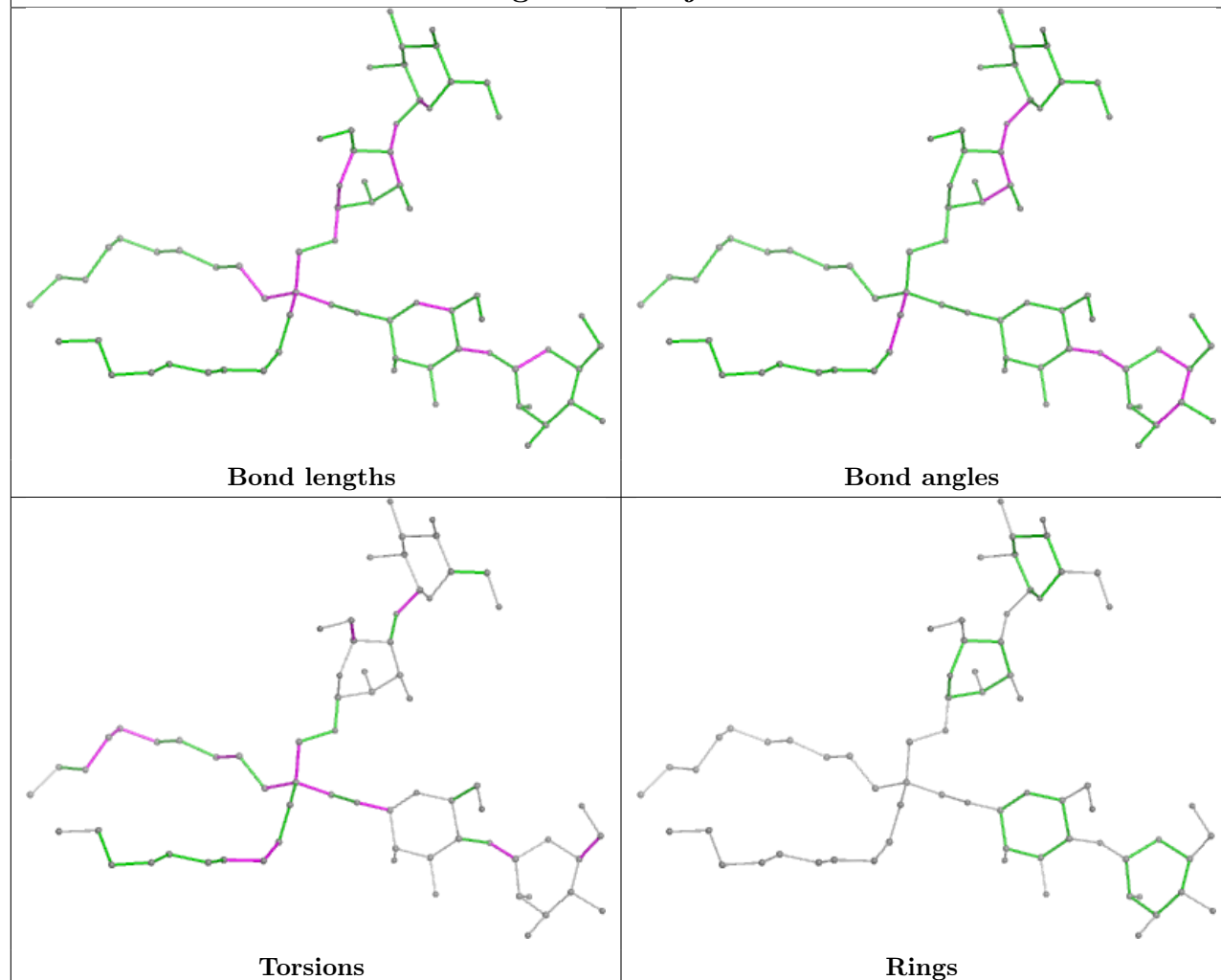




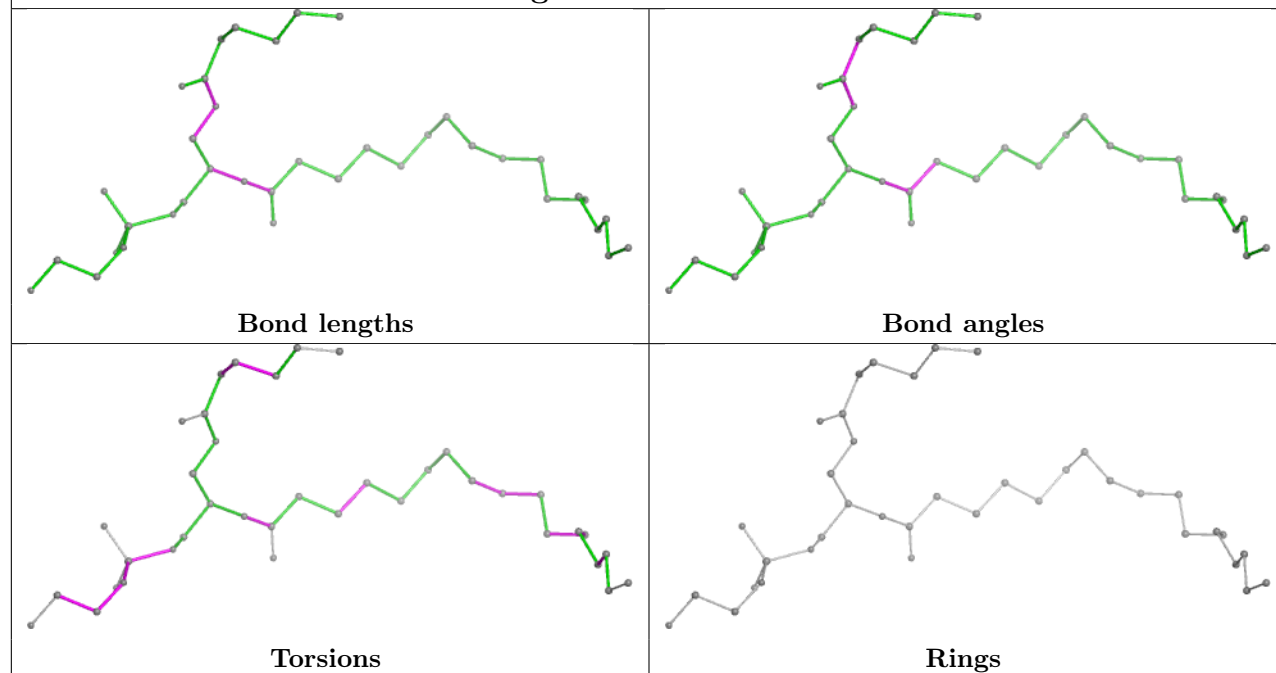


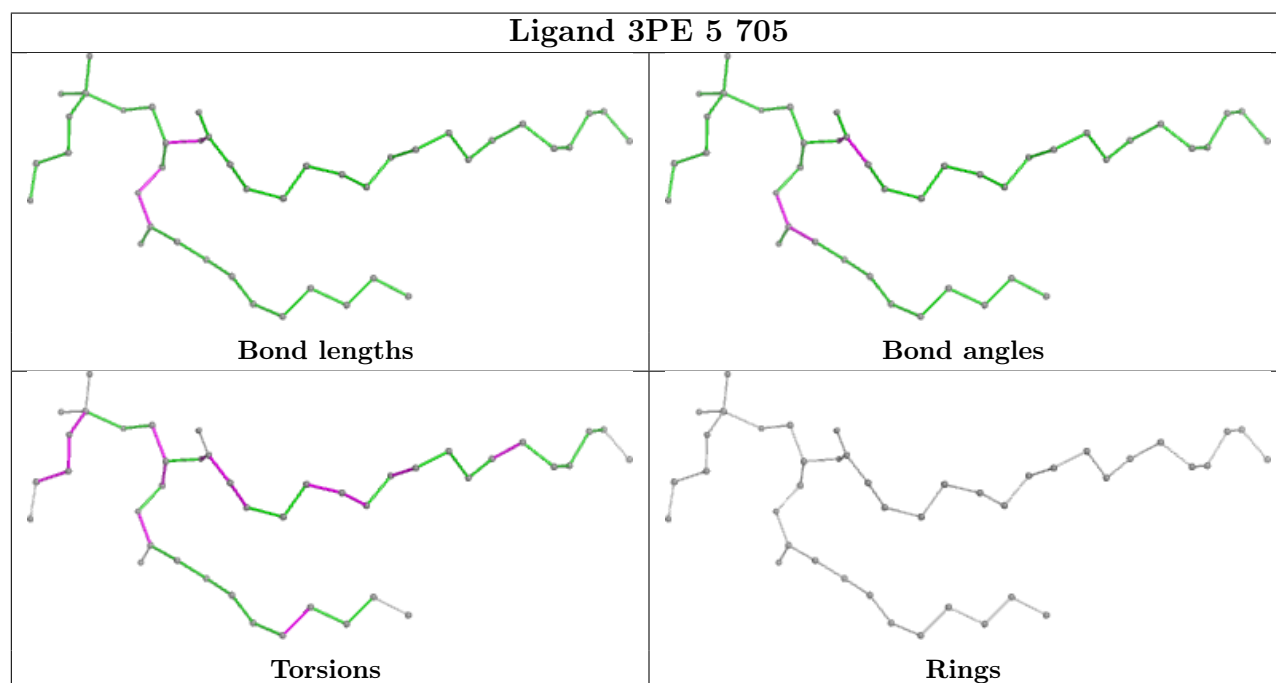
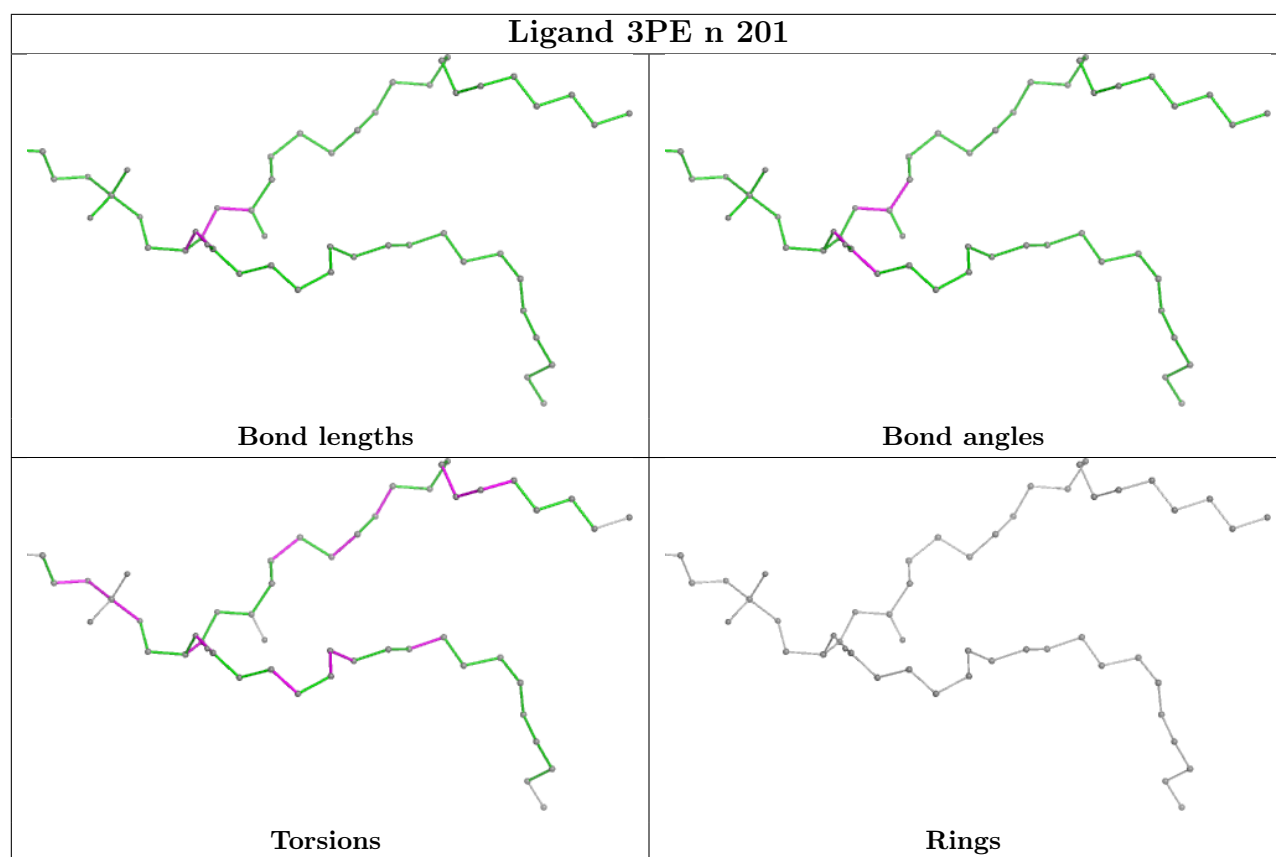


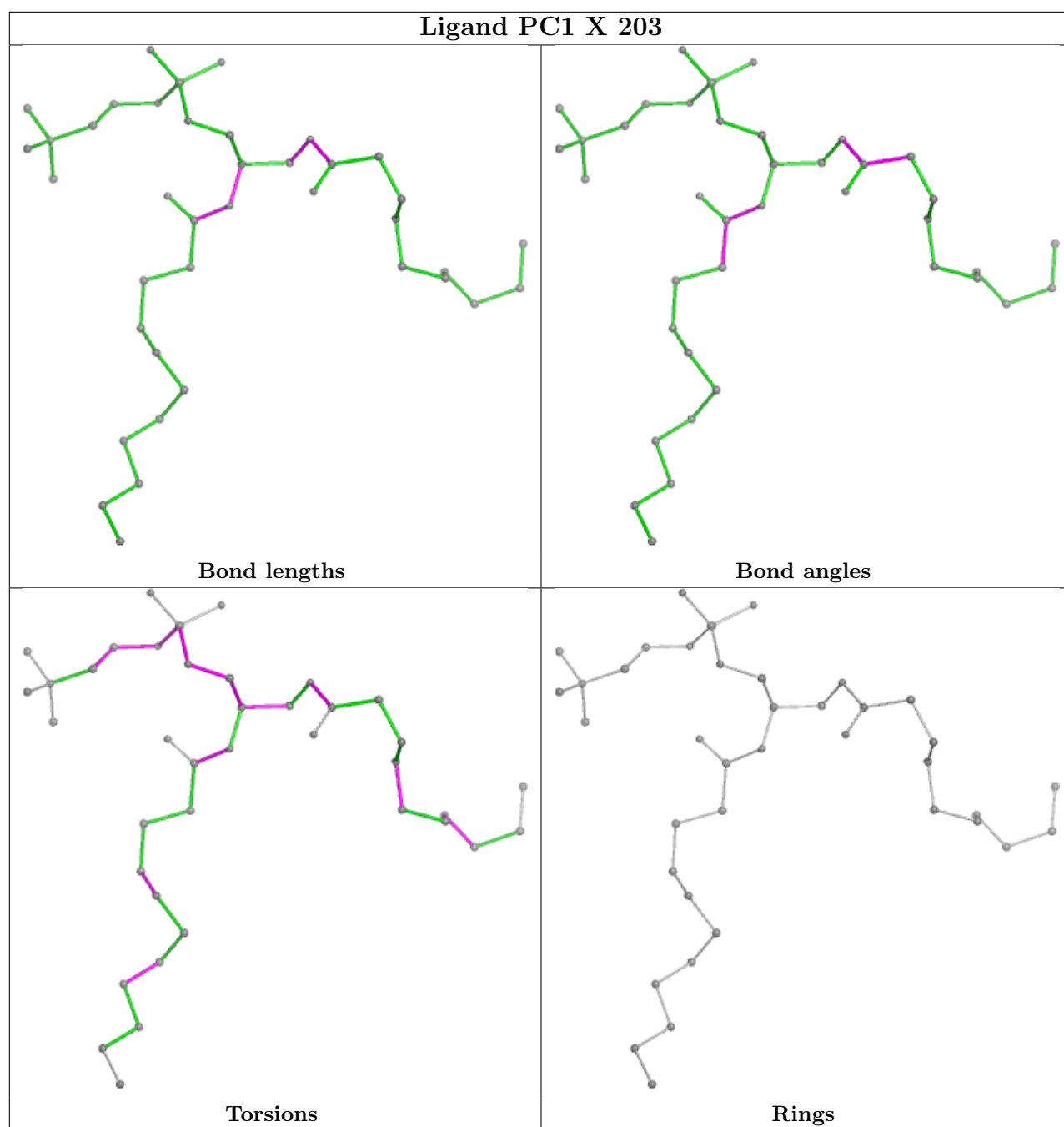
Ligand LMN j 101

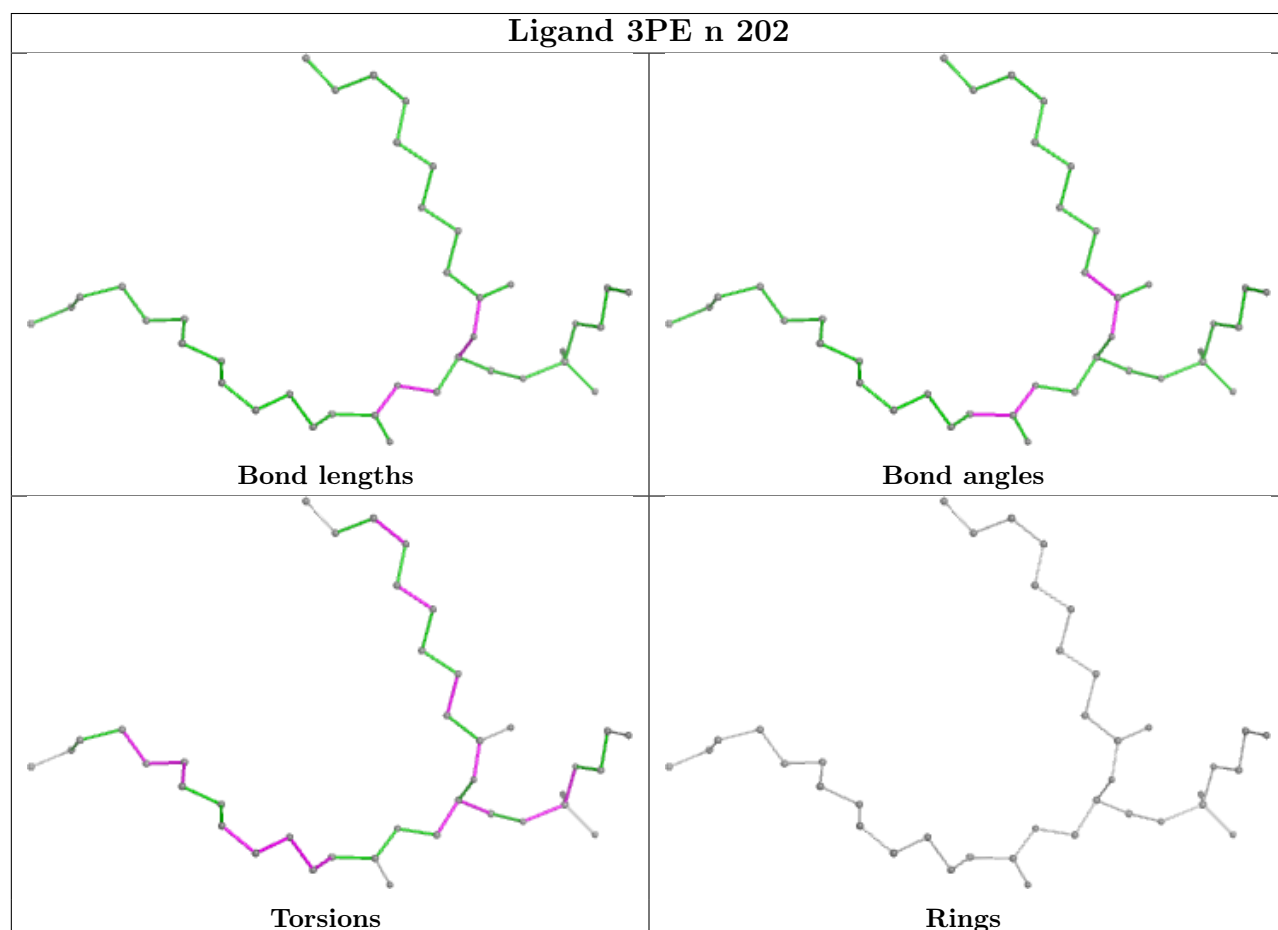
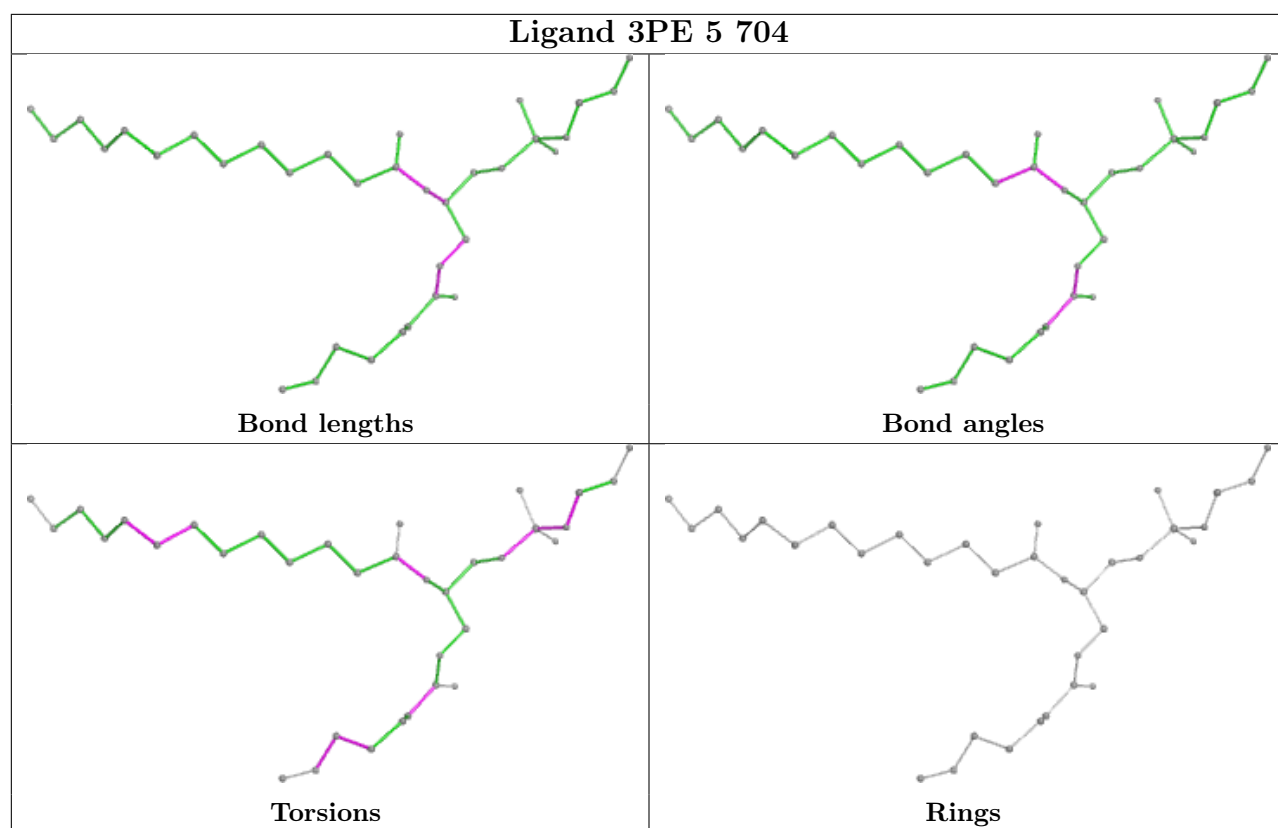


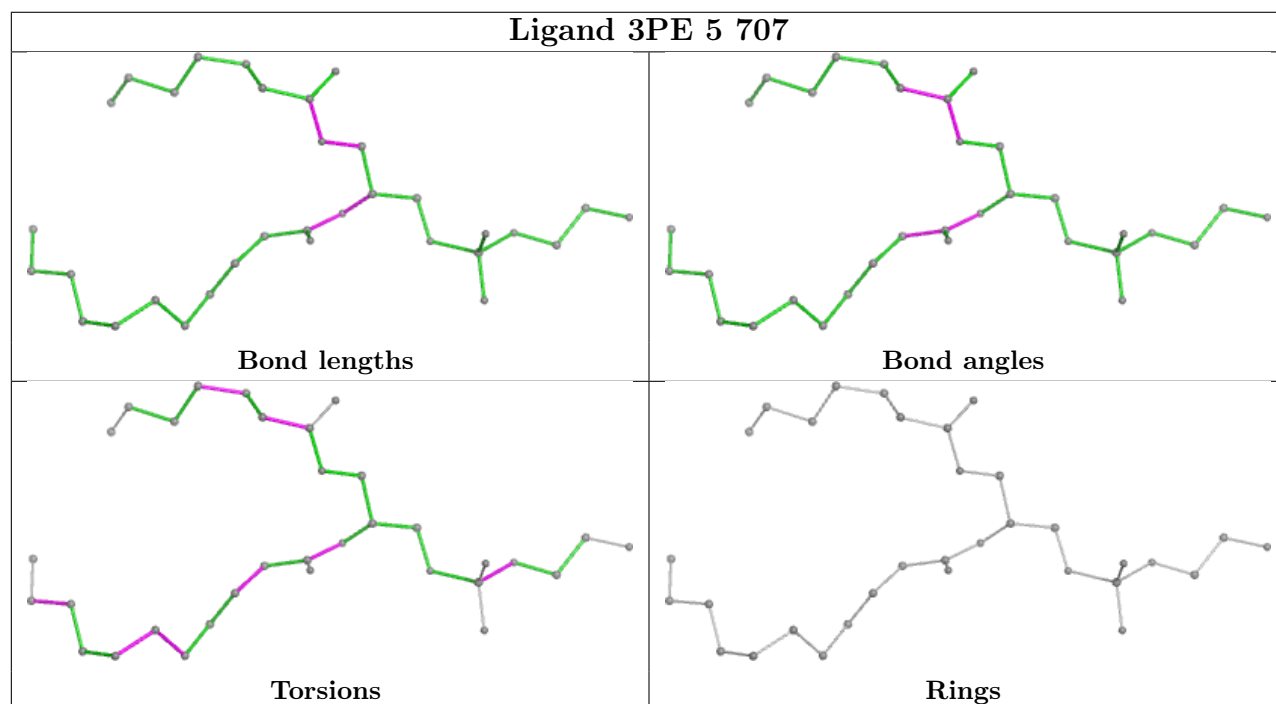
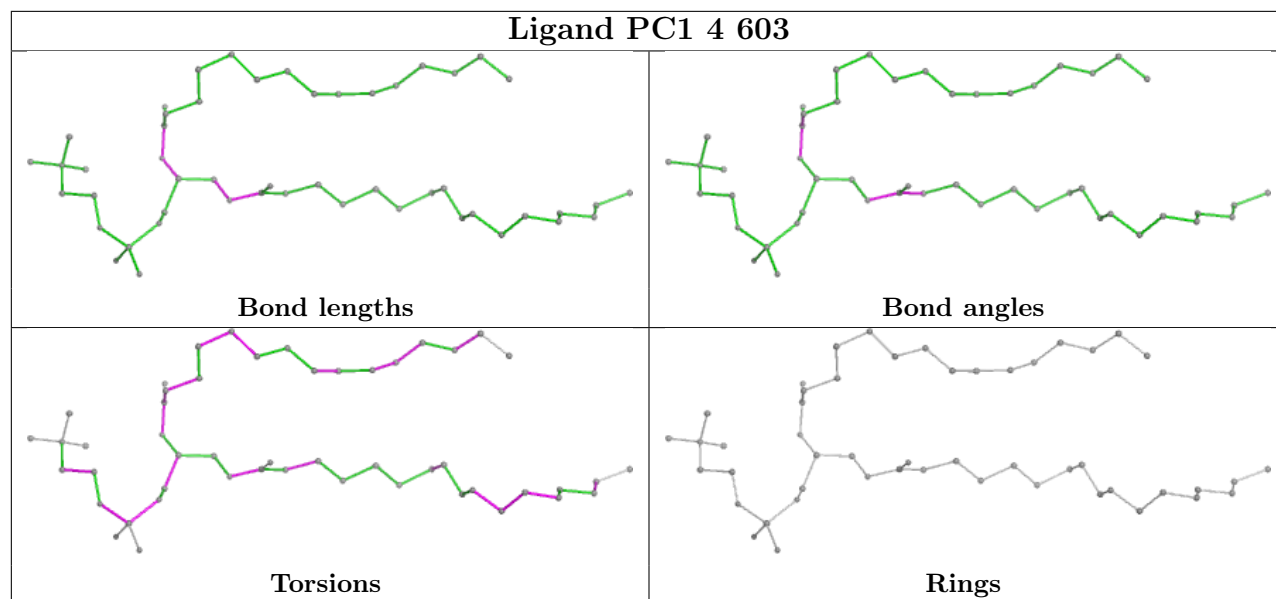
Ligand 3PE W 201

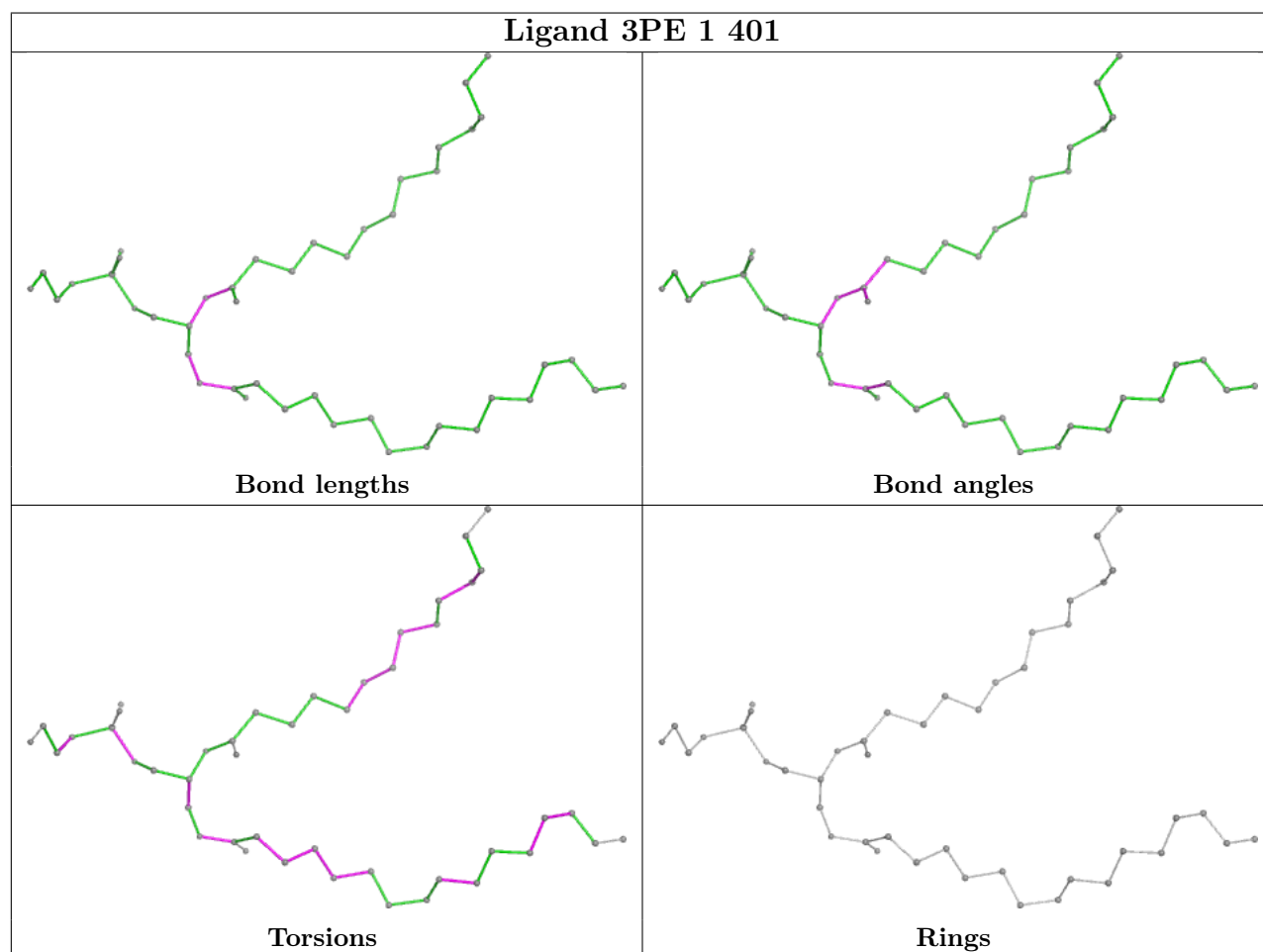
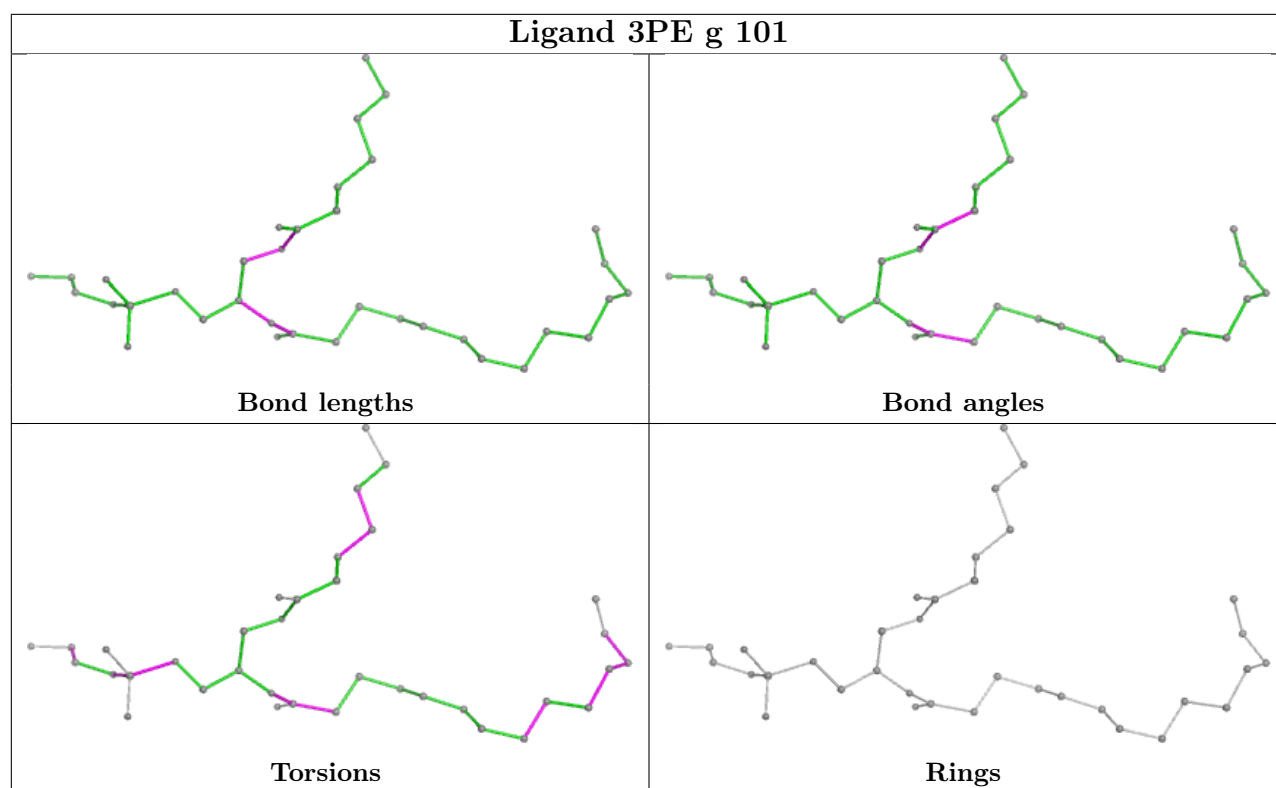


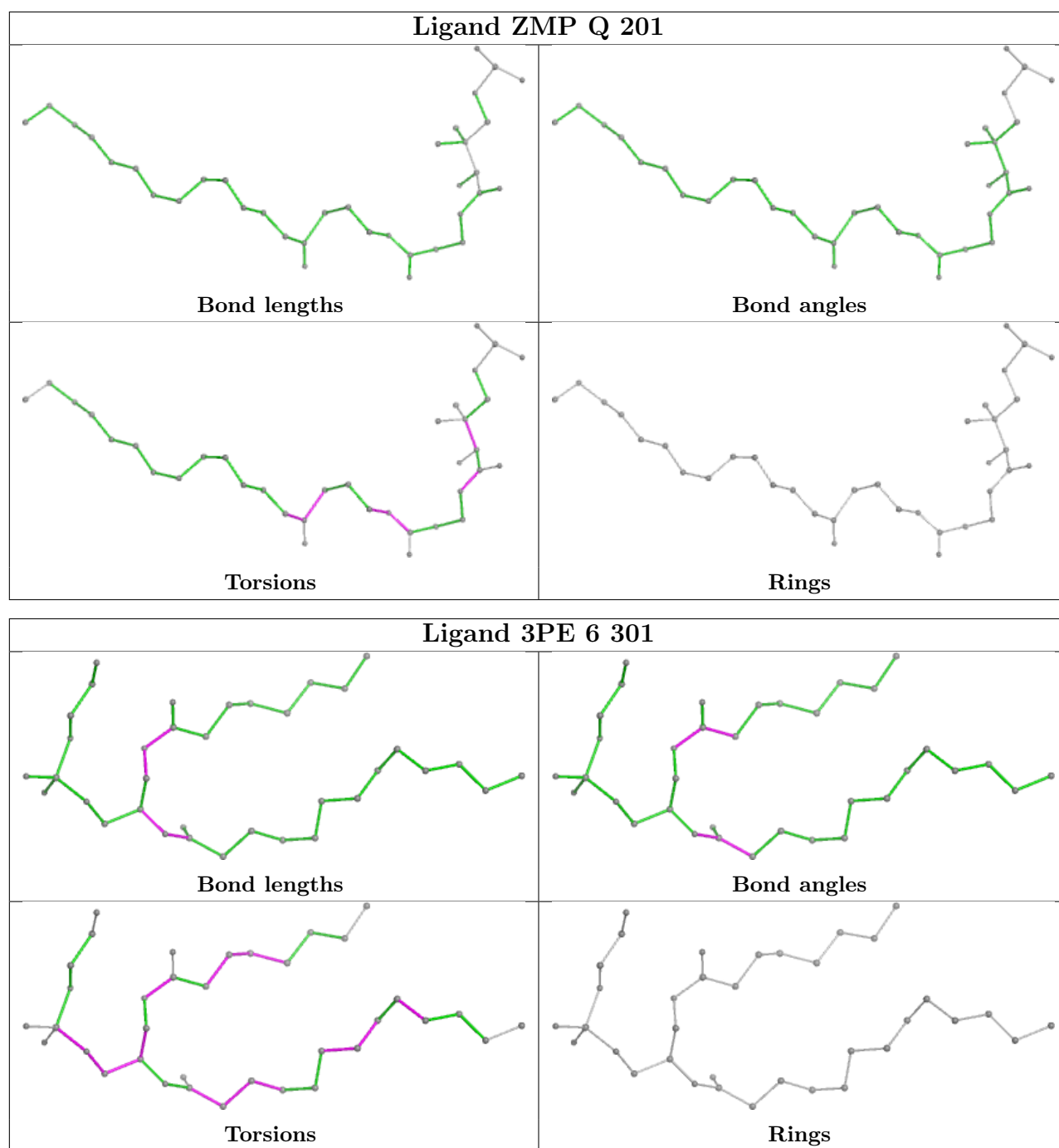


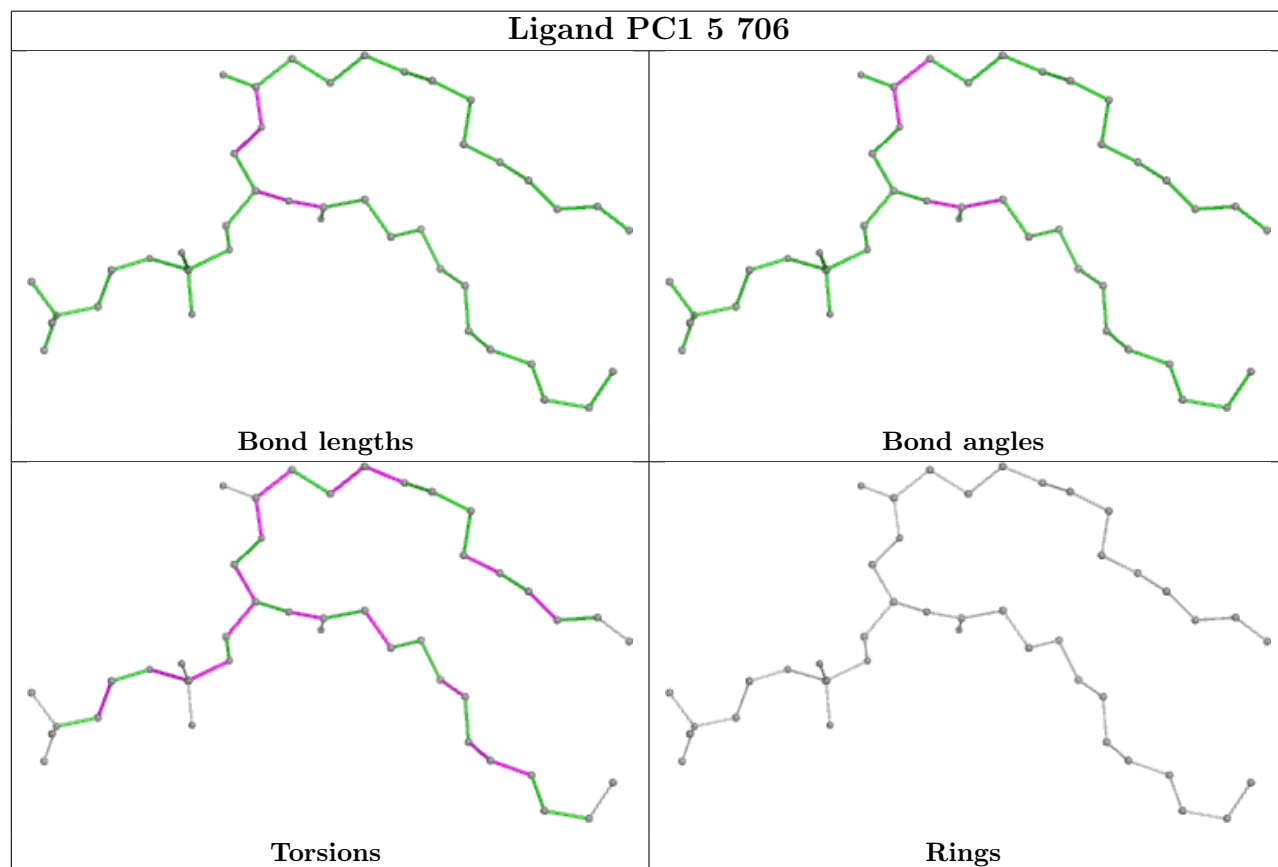
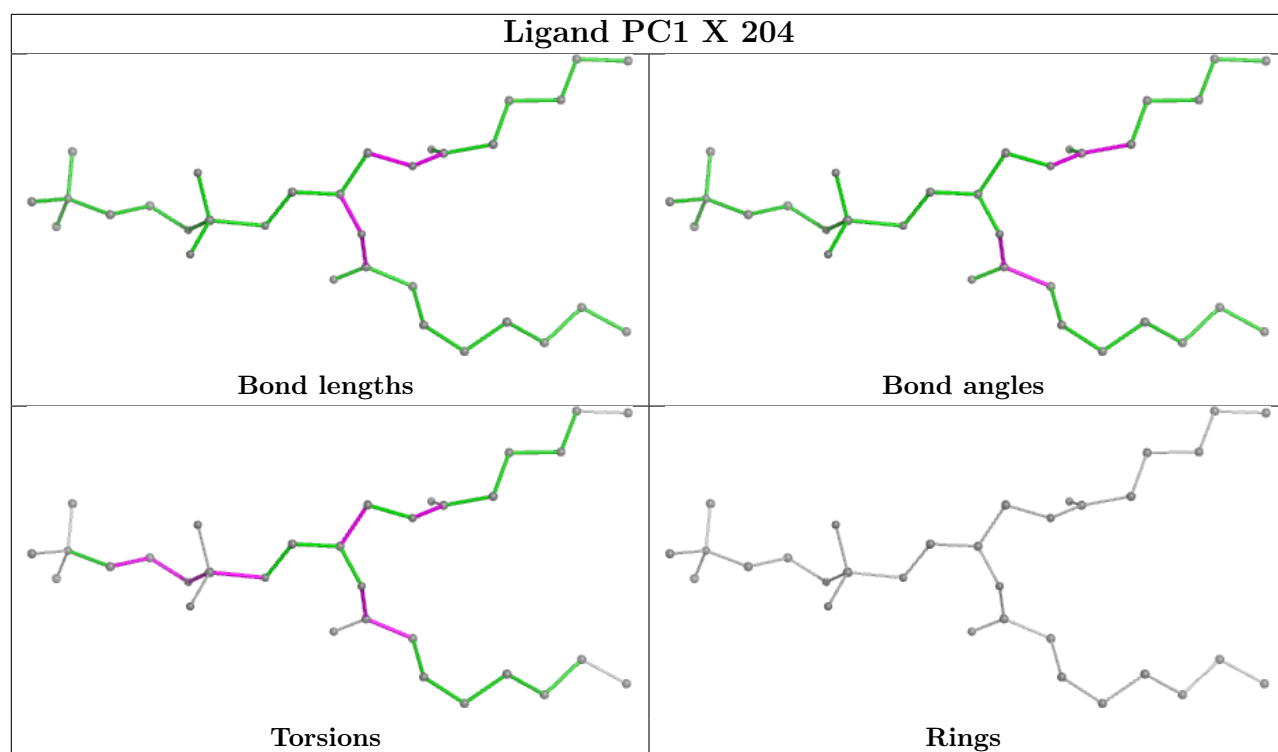


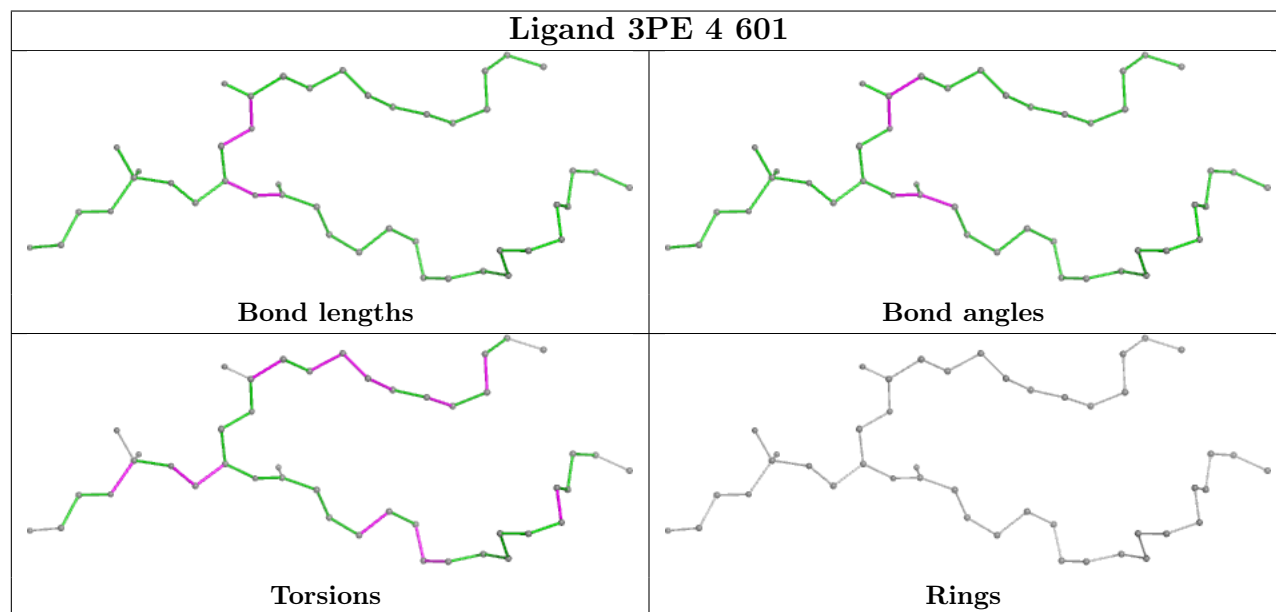
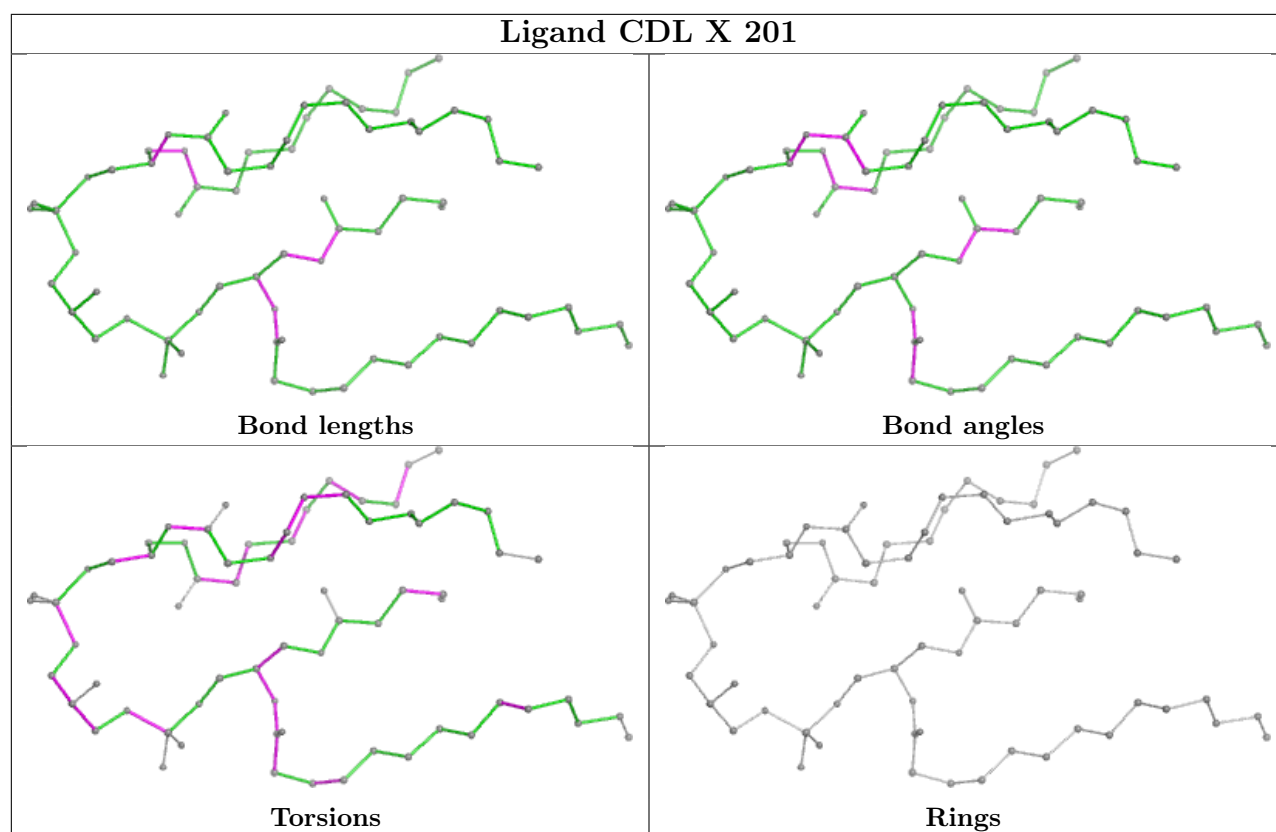


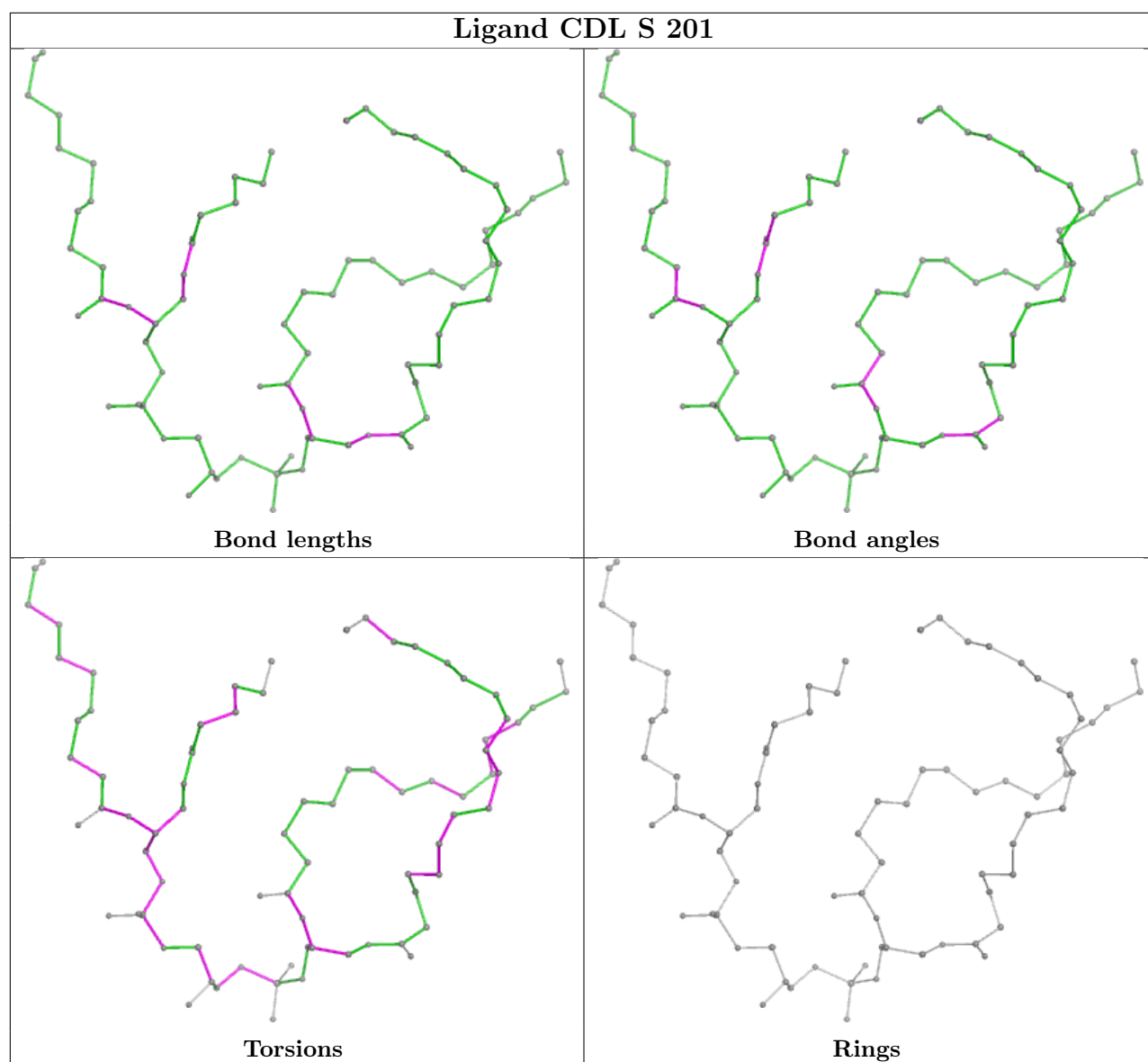












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

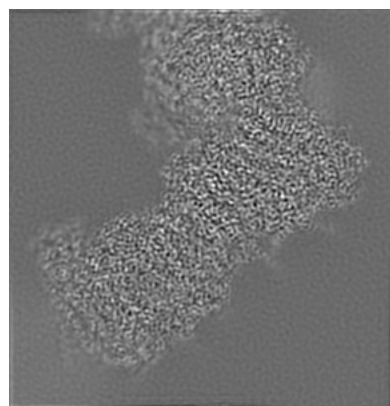
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14798. These allow visual inspection of the internal detail of the map and identification of artifacts.

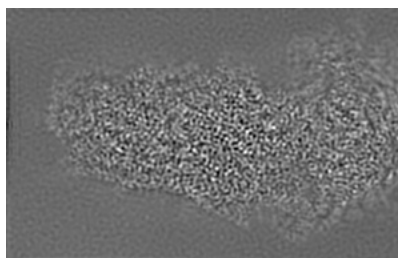
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

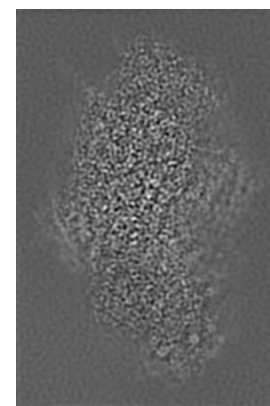
6.1.1 Primary map



X

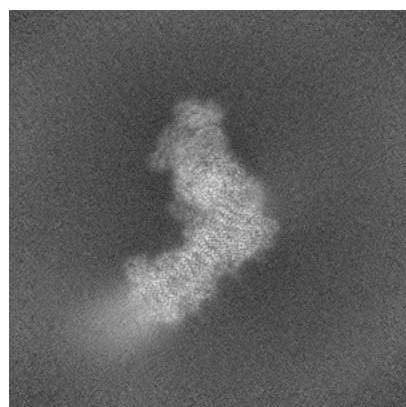


Y

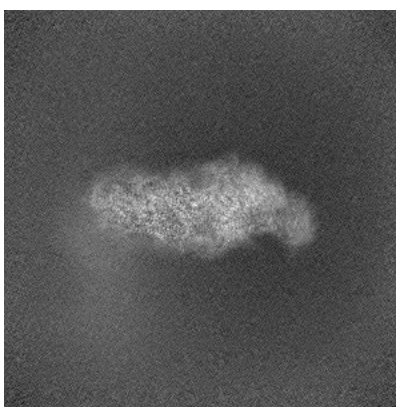


Z

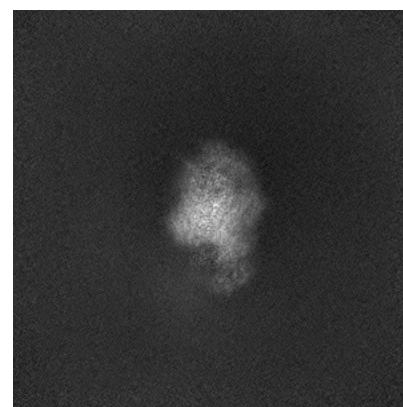
6.1.2 Raw map



X



Y

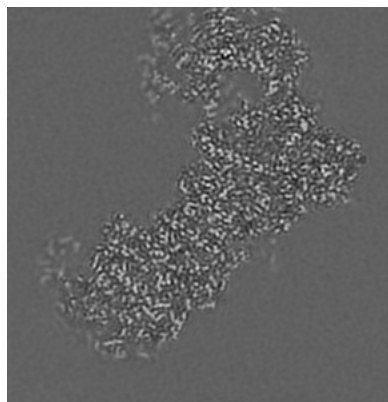


Z

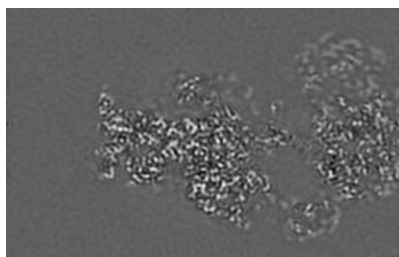
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

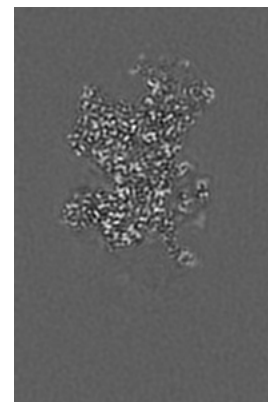
6.2.1 Primary map



X Index: 86

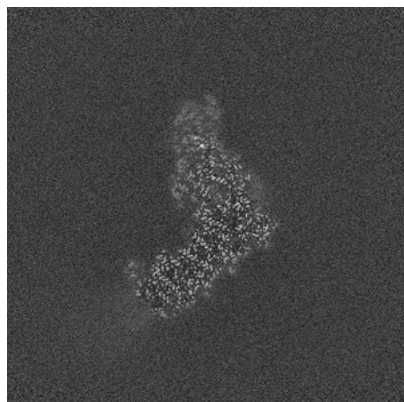


Y Index: 130

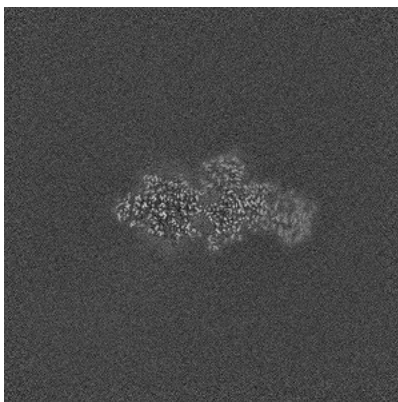


Z Index: 136

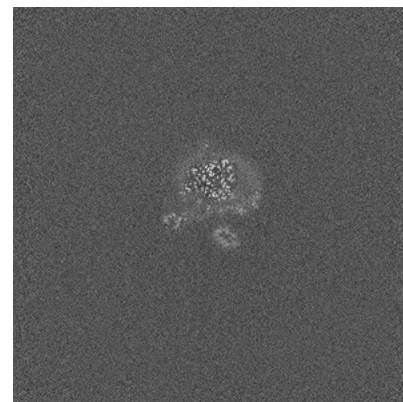
6.2.2 Raw map



X Index: 294



Y Index: 294

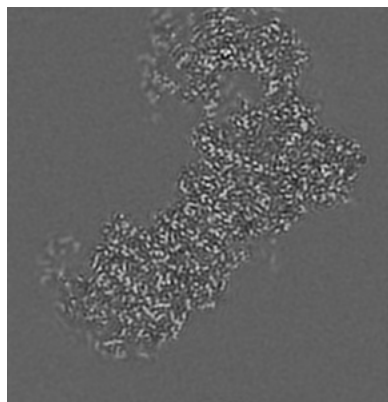


Z Index: 294

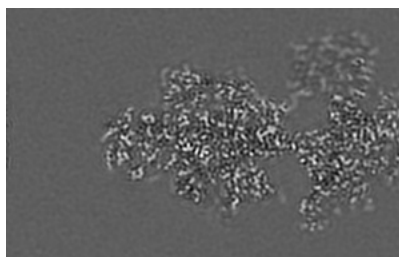
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

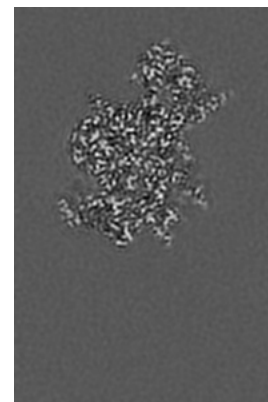
6.3.1 Primary map



X Index: 86

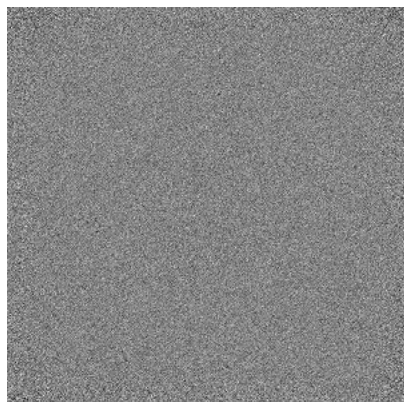


Y Index: 140

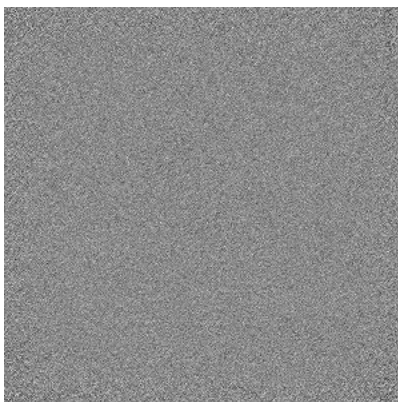


Z Index: 145

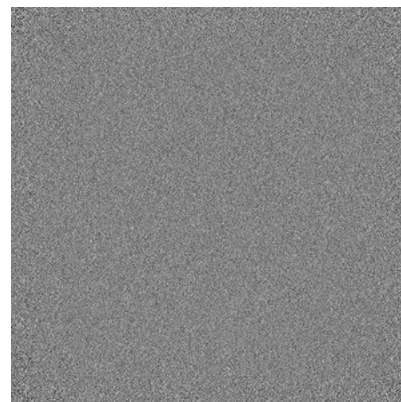
6.3.2 Raw map



X Index: 0



Y Index: 0

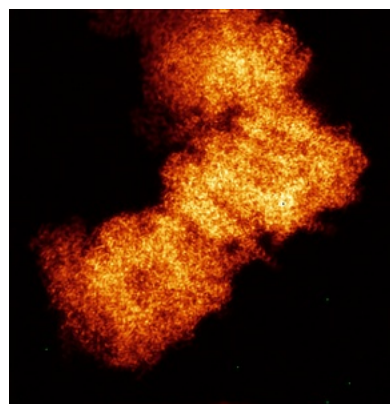


Z Index: 0

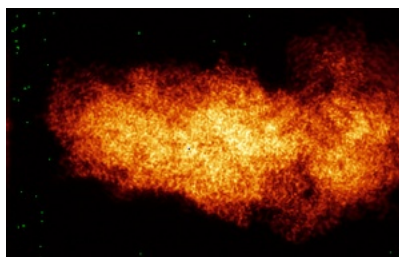
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

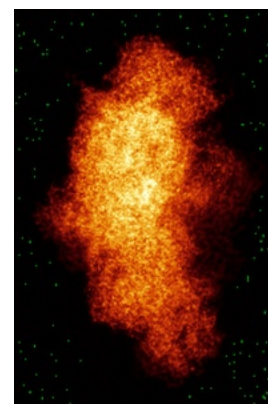
6.4.1 Primary map



X

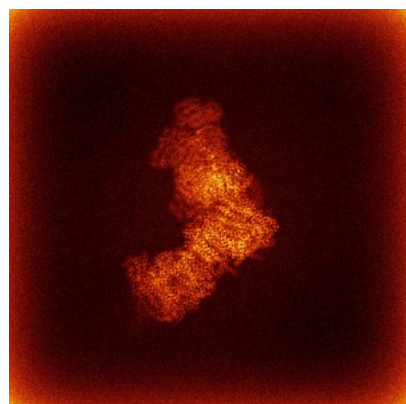


Y

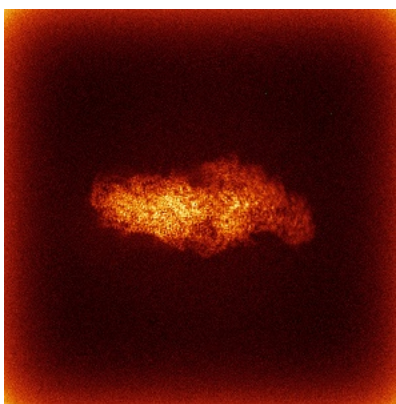


Z

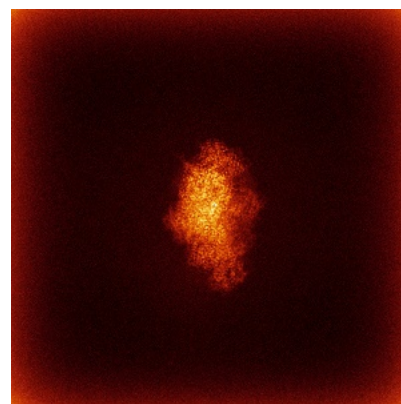
6.4.2 Raw map



X



Y

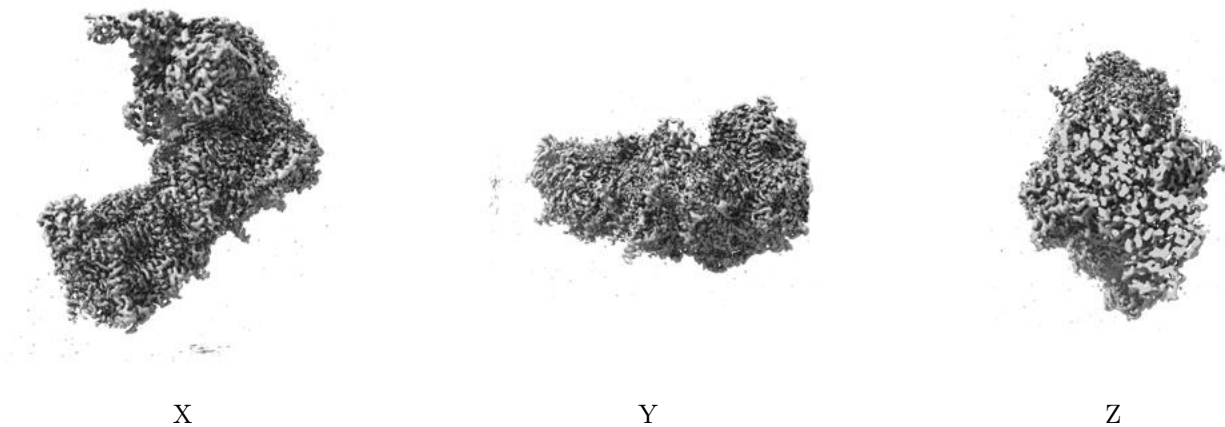


Z

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

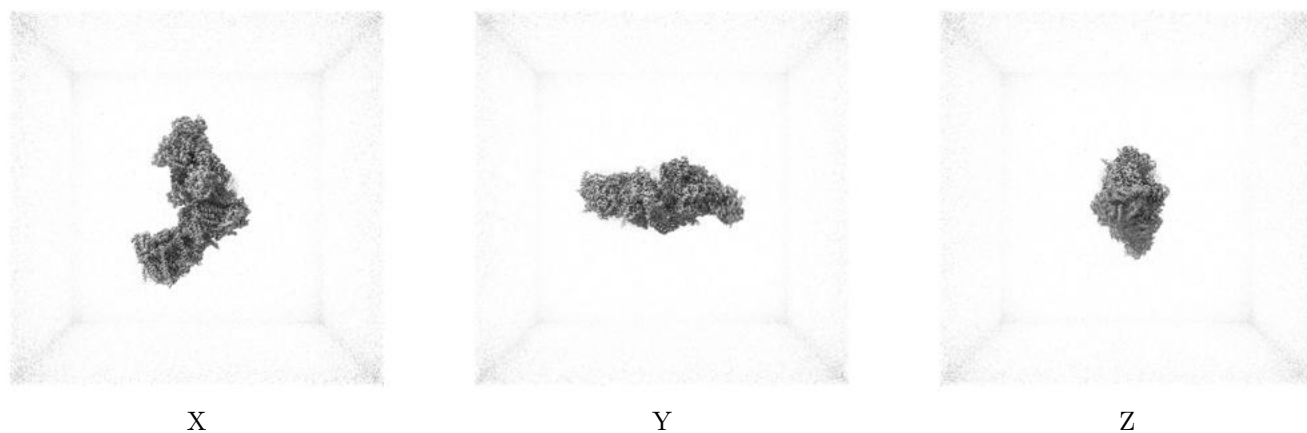
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.12. 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



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.

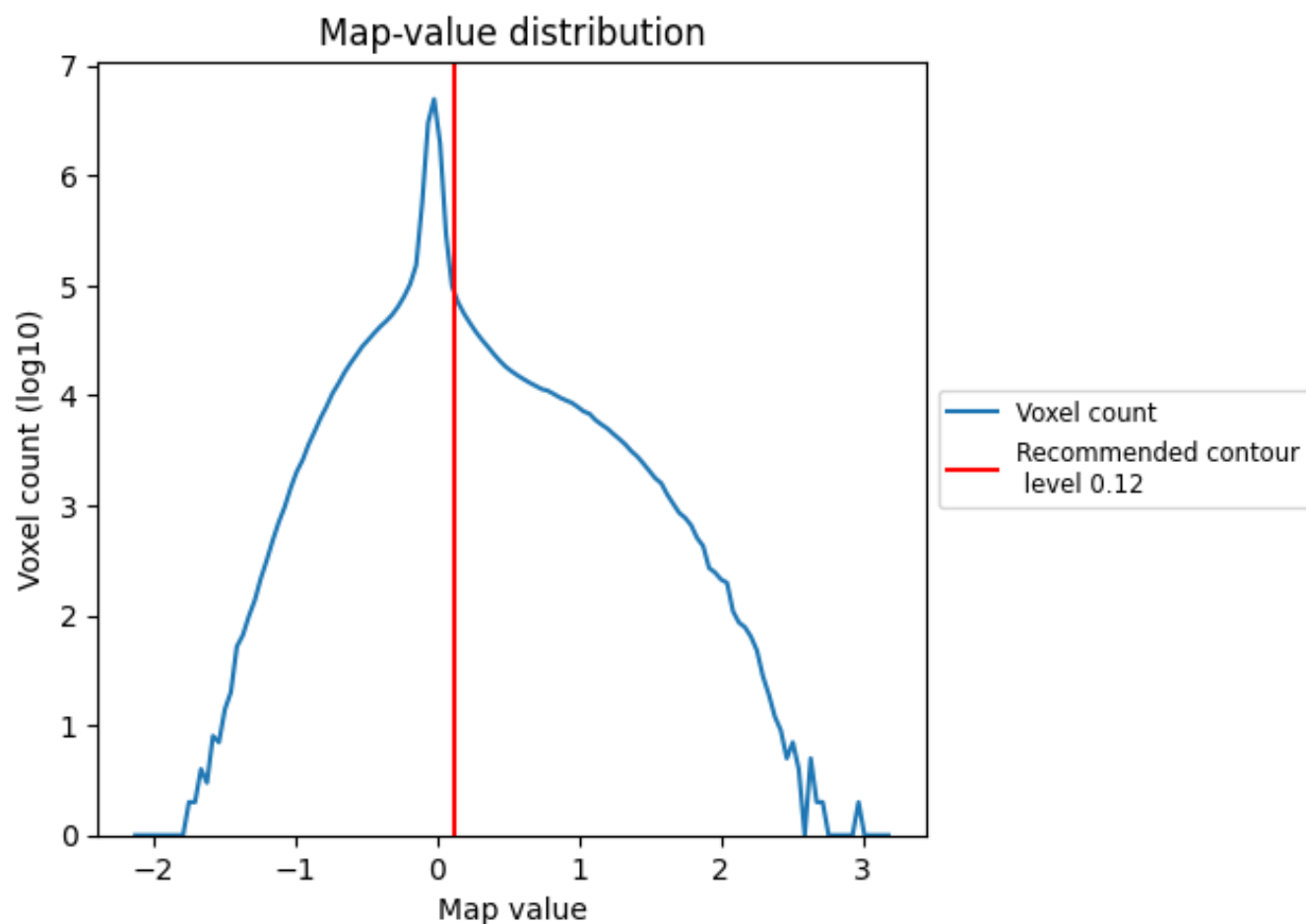
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

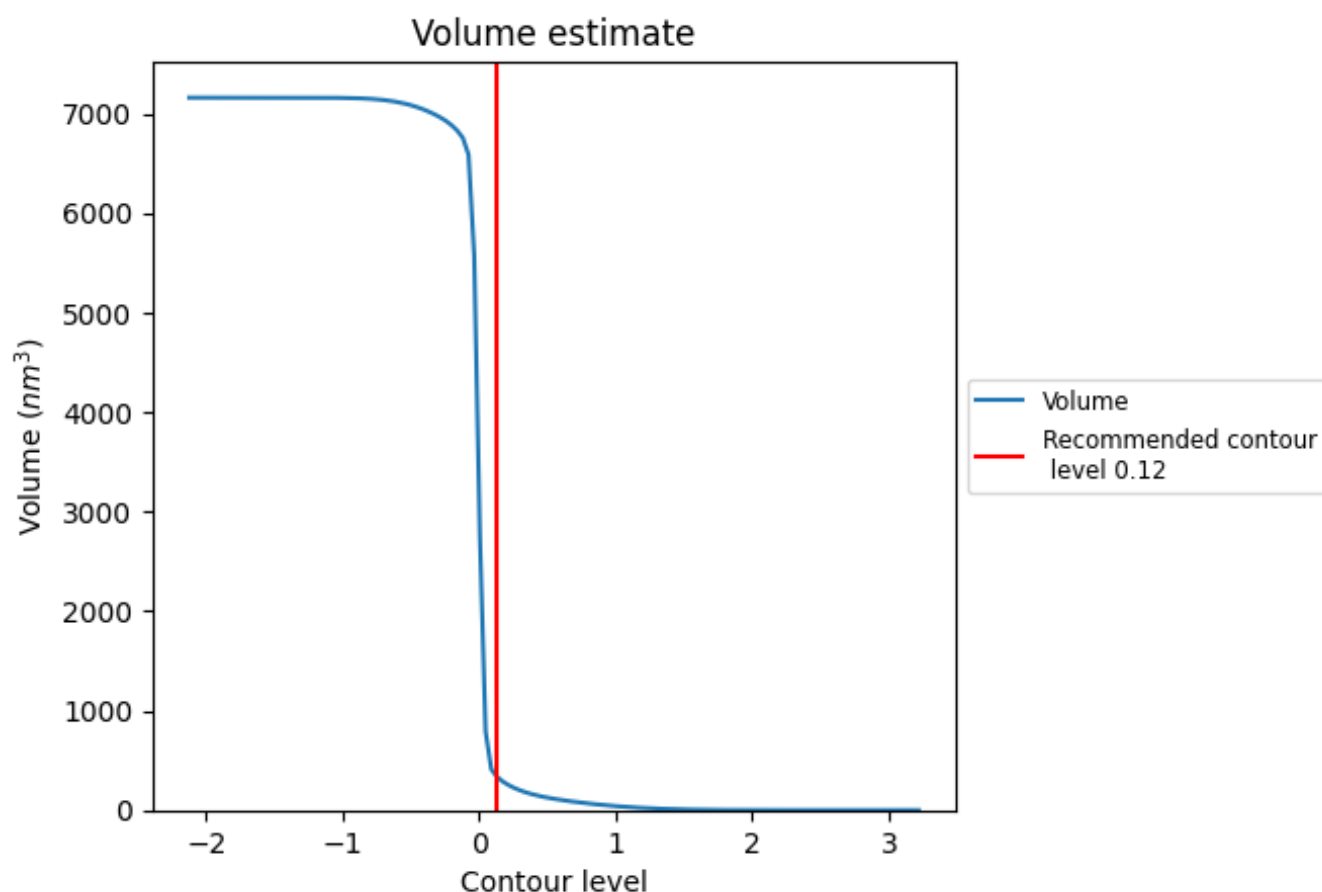
This section contains the results of statistical analysis of the map.

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 354 nm^3 ; this corresponds to an approximate mass of 319 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](#)

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

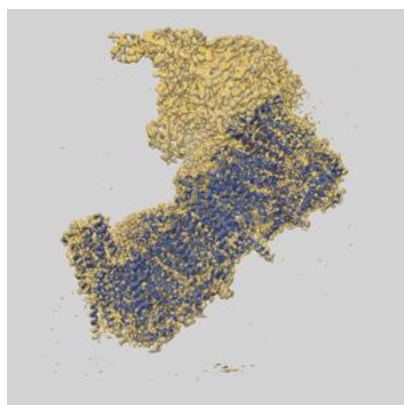
8 Fourier-Shell correlation ⓘ

This section was not generated. No FSC curve or half-maps provided.

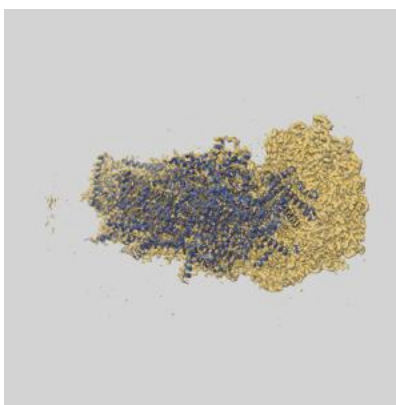
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-14798 and PDB model 7ZMH. Per-residue inclusion information can be found in section [3](#) on page [16](#).

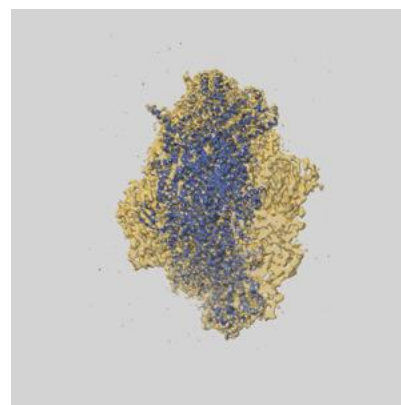
9.1 Map-model overlay [i](#)



X



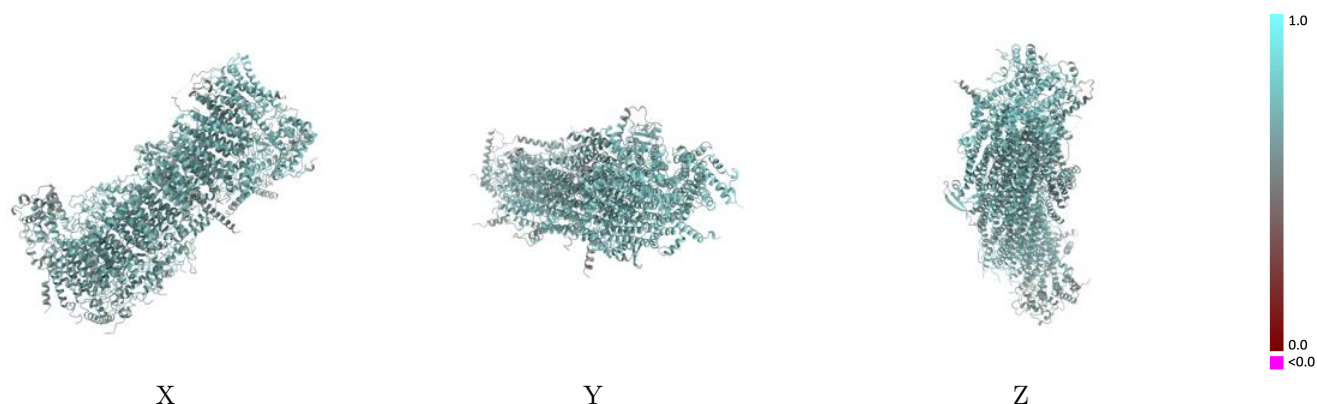
Y



Z

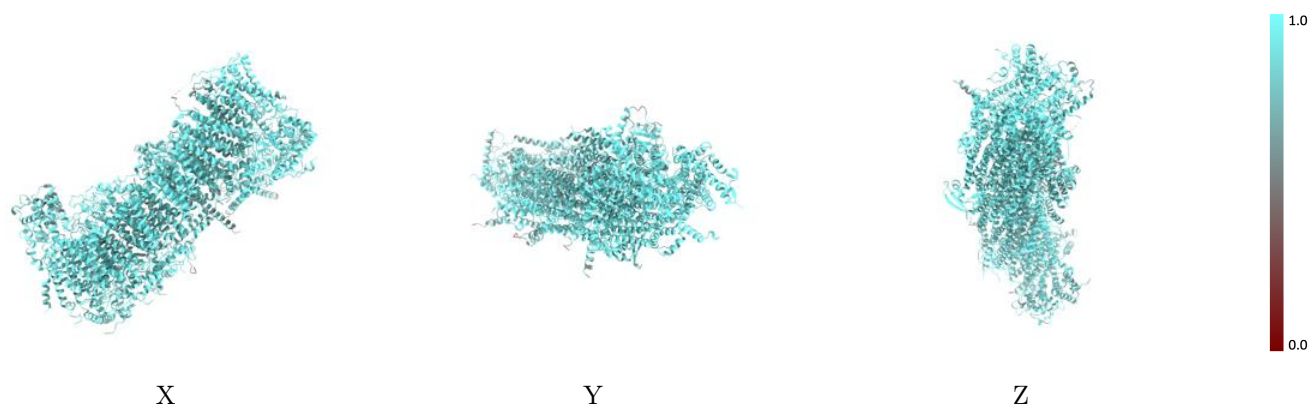
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



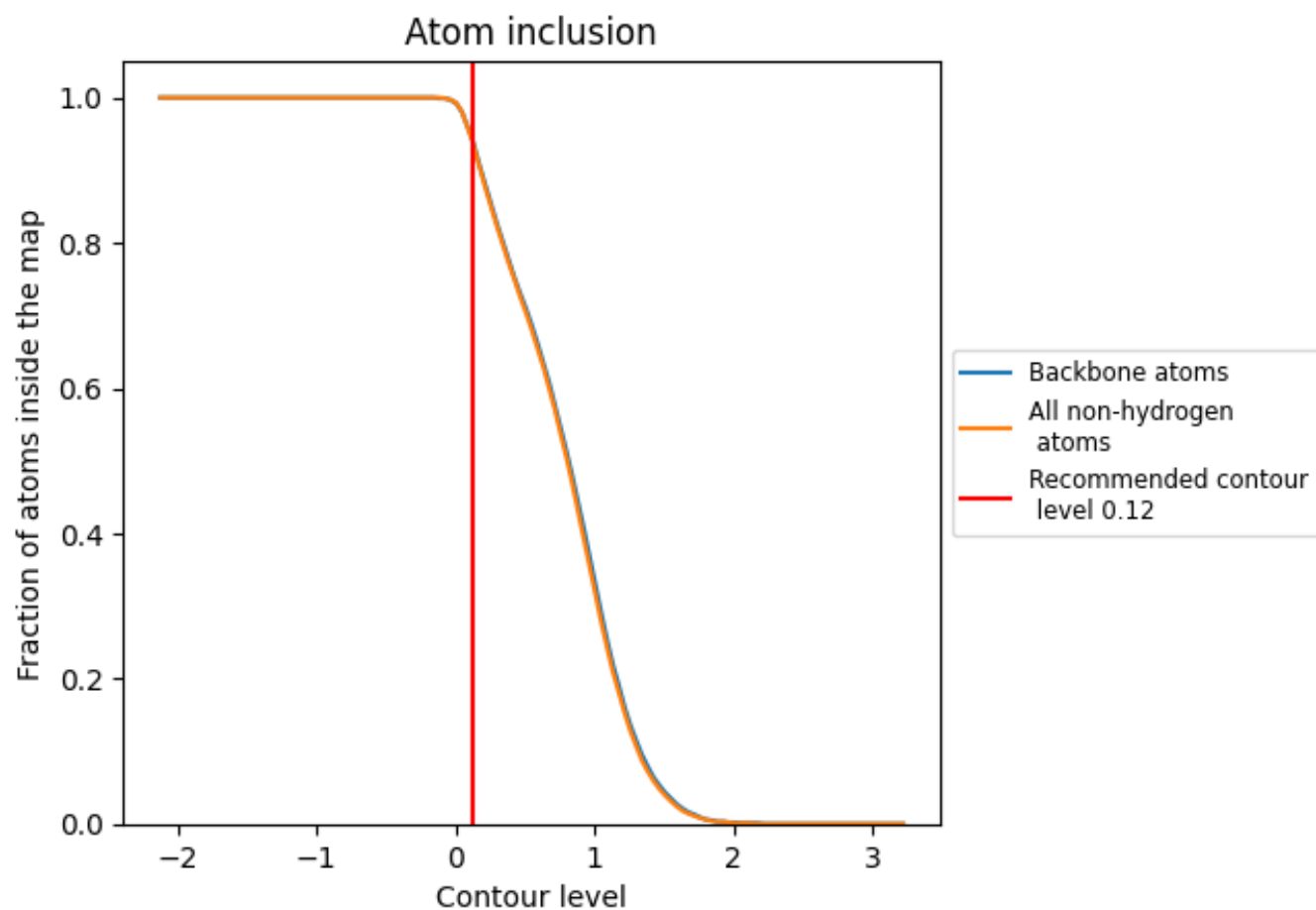
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.12).























































9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 94% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9410	 0.6720
1	 0.9560	 0.6940
2	 0.9720	 0.7080
3	 0.9260	 0.6630
4	 0.9740	 0.7030
5	 0.9660	 0.6790
6	 0.9380	 0.6790
8	 0.8910	 0.5970
9	 0.8910	 0.6450
D	 0.9920	 0.7050
J	 0.8880	 0.6120
L	 0.9760	 0.7070
Q	 0.8060	 0.5640
R	 0.9000	 0.6270
S	 0.9300	 0.6450
U	 0.9660	 0.6880
W	 0.9440	 0.6790
X	 0.9490	 0.6820
a	 0.9150	 0.6300
b	 0.9210	 0.6620
c	 0.8910	 0.5780
d	 0.9420	 0.6730
e	 0.9060	 0.6070
g	 0.9510	 0.6660
i	 0.8990	 0.6460
j	 0.9380	 0.6700
n	 0.8610	 0.6280

