



Full wwPDB EM Validation Report ⓘ

Dec 6, 2022 – 08:20 PM JST

PDB ID : 7VY9
EMDB ID : EMD-32197
Title : Membrane arm of active state CI from Q10-NADH dataset
Authors : Gu, J.K.; Yang, M.J.
Deposited on : 2021-11-13
Resolution : 2.90 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

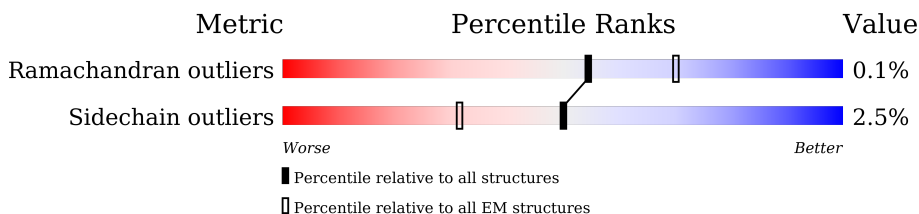
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

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 2.90 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	Q	44	
2	S	70	
3	U	83	
4	V	140	
5	W	113	
6	X	88	
7	Y	67	
8	Z	80	
9	a	138	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
10	b	126	 6% 77% 22%
11	c	156	 99%
12	d	175	 7% 97%
13	e	104	 10% 98%
14	f	49	 29% 96%
15	g	121	 100%
16	h	105	 7% 98%
17	i	347	 99%
18	j	115	 97%
19	k	98	 98%
20	l	606	 98%
21	m	175	 16% 96%
22	n	56	 20% 93% 7%
23	o	128	 100%
24	p	178	 97%
25	r	459	 99%
26	s	318	 98%
27	u	171	 96%
28	v	125	 12% 95%
29	w	320	 98%

2 Entry composition [i](#)

There are 35 unique types of molecules in this entry. The entry contains 39717 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 dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	Q	44	363	236	60	66	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	S	70	566	364	103	94	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	U	83	643	417	110	115	1	0	0

- Molecule 4 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	V	140	1021	651	174	190	6	0	0

- Molecule 5 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	W	113	949	614	160	167	8	0	0

- Molecule 6 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	X	88	Total	C	N	O	S	0	0
			704	454	104	141	5		

- Molecule 7 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Y	67	Total	C	N	O	S	0	0
			584	385	95	103	1		

- Molecule 8 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Z	80	Total	C	N	O	S	0	0
			641	418	108	114	1		

- Molecule 9 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	a	138	Total	C	N	O	S	0	0
			1151	754	195	199	3		

- Molecule 10 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	b	98	Total	C	N	O	S	0	0
			819	537	144	137	1		

- Molecule 11 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	c	156	Total	C	N	O	S	0	0
			1315	853	213	241	8		

- Molecule 12 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	d	175	1461	916	265	272	8	0	0

- Molecule 13 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	e	104	867	553	142	168	4	0	0

- Molecule 14 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	f	49	378	246	65	67	0	0

- Molecule 15 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	g	121	1000	650	173	171	6	0	0

- Molecule 16 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	h	105	867	550	161	150	6	0	0

- Molecule 17 is a protein called NADH-ubiquinone oxidoreductase chain 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	i	347	2710	1782	420	462	46	0	0

- Molecule 18 is a protein called NADH-ubiquinone oxidoreductase chain 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	j	115	914	615	134	158	7	0	0

- Molecule 19 is a protein called NADH-ubiquinone oxidoreductase chain 4L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	k	98	748	493	113	128	14	0	0

- Molecule 20 is a protein called NADH-ubiquinone oxidoreductase chain 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	l	606	4800	3182	744	823	51	0	0

- Molecule 21 is a protein called NADH-ubiquinone oxidoreductase chain 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	m	175	1295	864	188	230	13	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	n	56	479	311	88	79	1	0	0

- Molecule 23 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
23	o	128	1062	691	182	189	0	0

- Molecule 24 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	p	178	1534	982	279	265	8	0	0

- Molecule 25 is a protein called NADH-ubiquinone oxidoreductase chain 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	r	459	3631	2412	572	609	38	0	0

- Molecule 26 is a protein called NADH-ubiquinone oxidoreductase chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	s	318	2508	1678	385	424	21	0	0

- Molecule 27 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	u	171	1398	887	250	251	10	0	0

- Molecule 28 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	v	124	1059	658	202	189	10	0	0

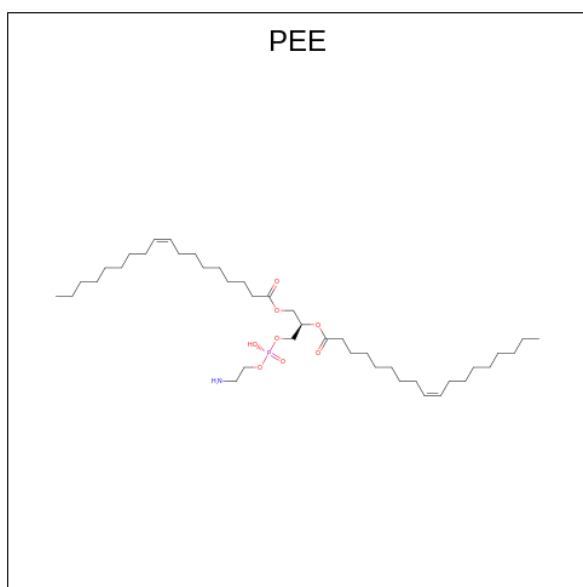
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
v	1	MYR	-	acetylation	UNP F1SCH1

- Molecule 29 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial.

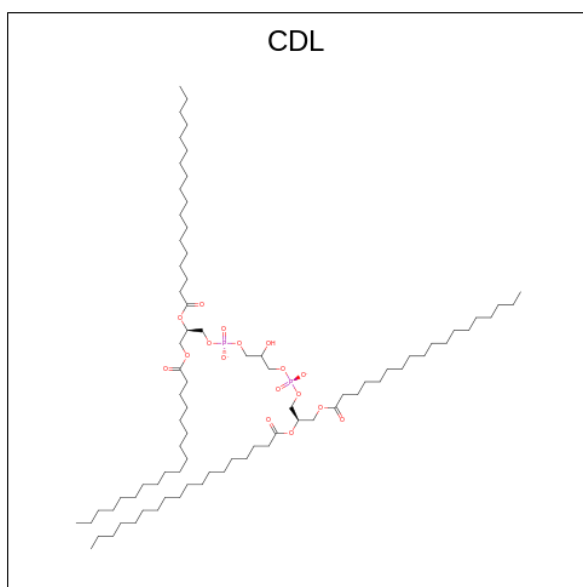
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	w	320	2582	1643	438	491	10	0	0

- Molecule 30 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: C₄₁H₇₈NO₈P) (labeled as "Ligand of Interest" by depositor).



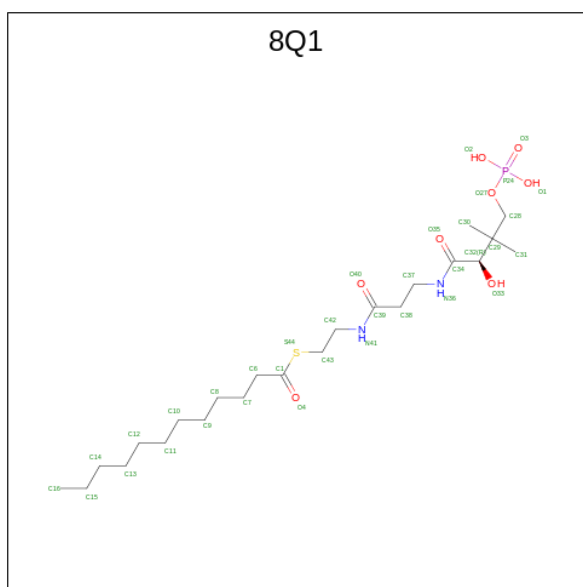
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
30	Q	1	Total 47	37	1	8	1	0
30	W	1	Total 41	31	1	8	1	0
30	j	1	Total 51	41	1	8	1	0
30	l	1	Total 137	107	3	24	3	0
30	l	1	Total 137	107	3	24	3	0
30	l	1	Total 137	107	3	24	3	0
30	r	1	Total 51	41	1	8	1	0
30	s	1	Total 92	72	2	16	2	0
30	s	1	Total 92	72	2	16	2	0

- Molecule 31 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$) (labeled as "Ligand of Interest" by depositor).



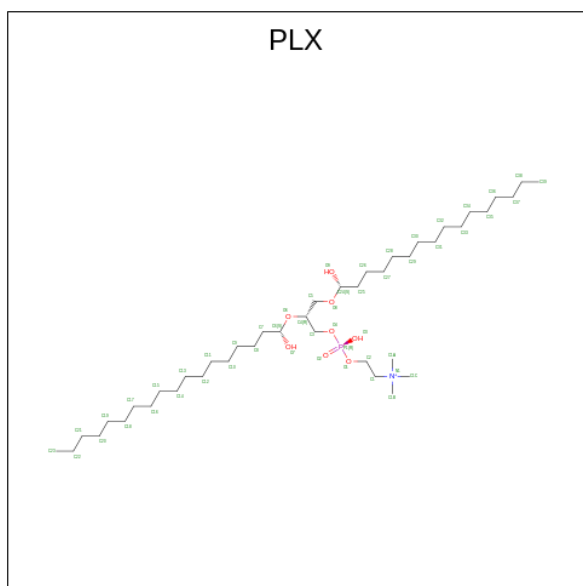
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
31	V	1	Total 194	C 156	O 34	P 4	0
31	V	1	Total 194	C 156	O 34	P 4	0
31	a	1	Total 100	C 81	O 17	P 2	0
31	g	1	Total 100	C 81	O 17	P 2	0
31	k	1	Total 100	C 81	O 17	P 2	0
31	l	1	Total 199	C 161	O 34	P 4	0
31	l	1	Total 199	C 161	O 34	P 4	0
31	n	1	Total 55	C 36	O 17	P 2	0
31	s	1	Total 89	C 70	O 17	P 2	0

- Molecule 32 is S-[2-({N-[(2R)-2-hydroxy-3,3-dimethyl-4-(phosphonoxy)butanoyl]-beta-alanyl}amino)ethyl] dodecanethioate (three-letter code: 8Q1) (formula: C₂₃H₄₅N₂O₈PS) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
32	X	1	35	23	2	8	1	1	0

- Molecule 33 is (9R,11S)-9-({[(1S)-1-HYDROXYHEXADECYL]OXY}METHYL)-2,2-DIMETHYL-5,7,10-TRIOXA-2LAMBDA 5 -AZA-6LAMBDA 5 -PHOSPHAOCTACOSANE-6,6,11-TRIOX (three-letter code: PLX) (formula: C₄₂H₈₉NO₈P) (labeled as "Ligand of Interest" by depositor).



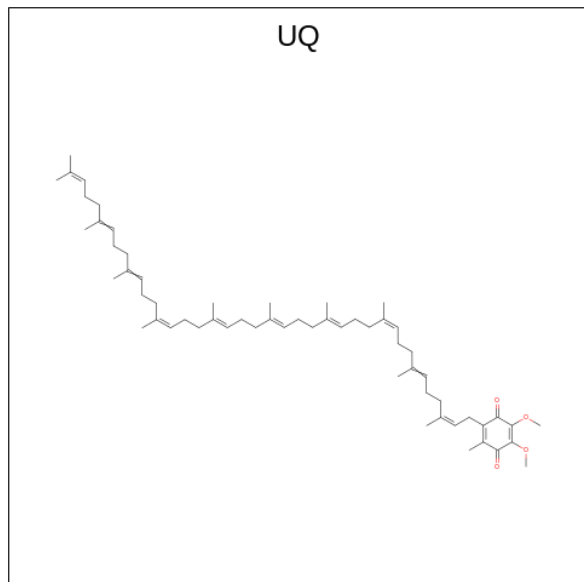
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
33	a	1	52	42	1	8	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
33	g	1	Total 52	C 42	N 1	O 8	P 1	0
33	j	1	Total 104	C 84	N 2	O 16	P 2	0
33	j	1	Total 104	C 84	N 2	O 16	P 2	0
33	r	1	Total 104	C 84	N 2	O 16	P 2	0
33	r	1	Total 104	C 84	N 2	O 16	P 2	0

- Molecule 34 is Coenzyme Q10, (2Z,6E,10Z,14E,18E,22E,26Z)-isomer (three-letter code: UQ) (formula: $C_{59}H_{90}O_4$) (labeled as "Ligand of Interest" by depositor).



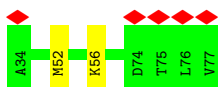
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
34	s	1	Total 38	C 34	O 4	0

- Molecule 35 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).

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.

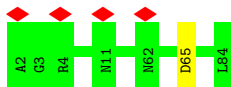
- Molecule 1: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial



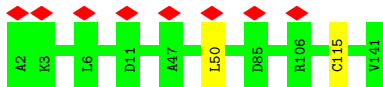
- Molecule 2: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1



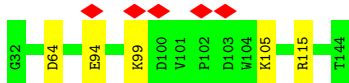
- Molecule 3: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

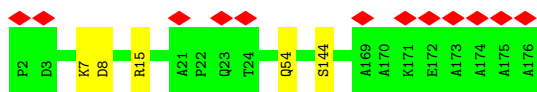


- Molecule 4: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

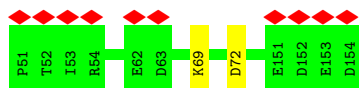


- Molecule 5: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13





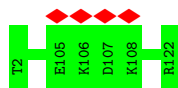
- Molecule 13: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial



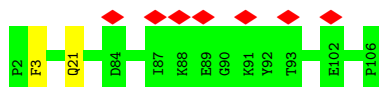
- Molecule 14: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial



- Molecule 15: NADH dehydrogenase [ubiquinone] 1 subunit C2



- Molecule 16: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



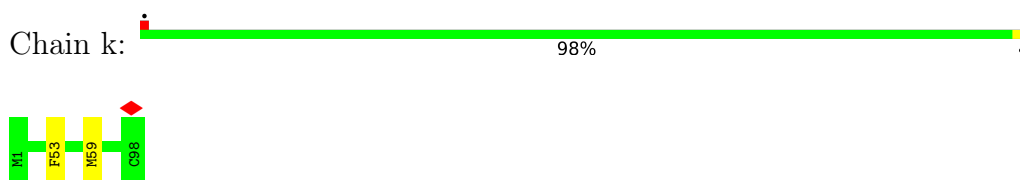
- Molecule 17: NADH-ubiquinone oxidoreductase chain 2



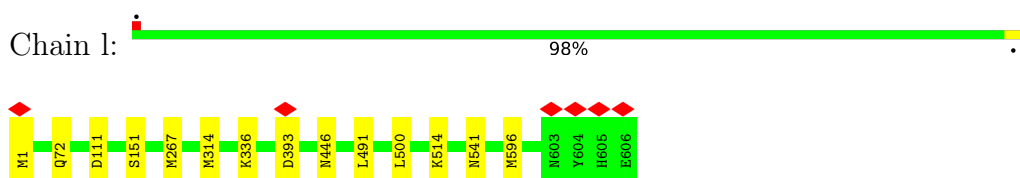
- Molecule 18: NADH-ubiquinone oxidoreductase chain 3



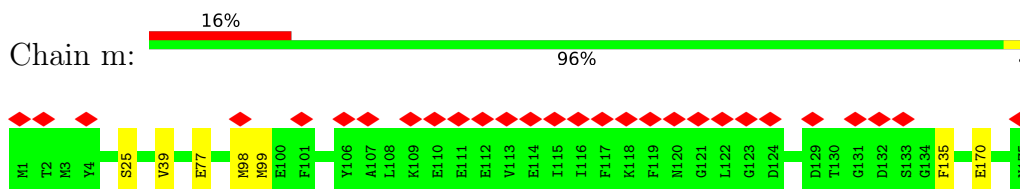
- Molecule 19: NADH-ubiquinone oxidoreductase chain 4L



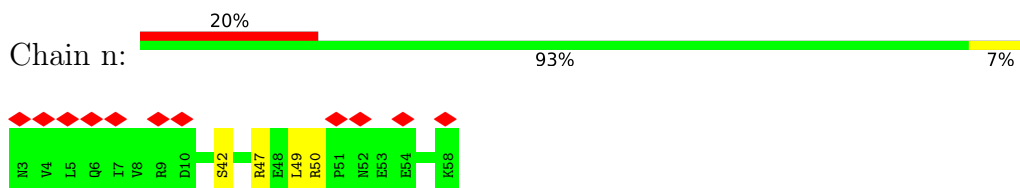
- Molecule 20: NADH-ubiquinone oxidoreductase chain 5



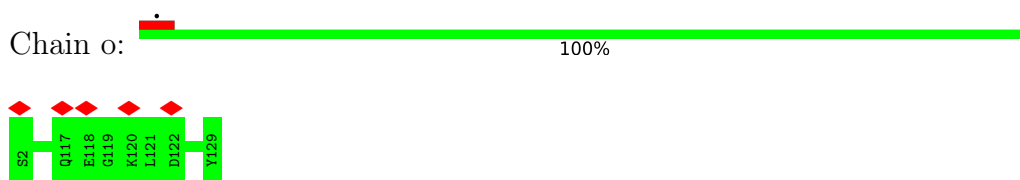
- Molecule 21: NADH-ubiquinone oxidoreductase chain 6



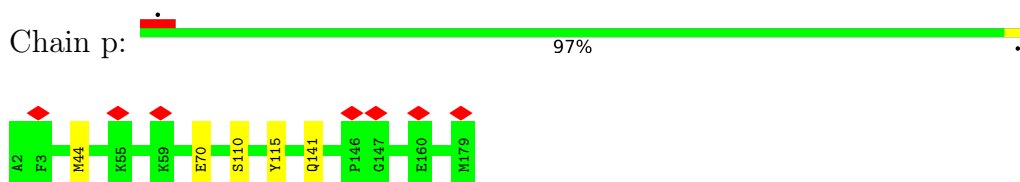
- Molecule 22: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1



- Molecule 23: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4

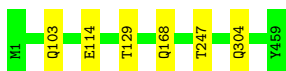


- Molecule 24: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9



- Molecule 25: NADH-ubiquinone oxidoreductase chain 4





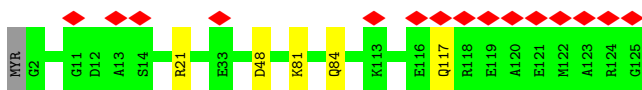
- Molecule 26: NADH-ubiquinone oxidoreductase chain 1



- Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8



- Molecule 28: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7



- Molecule 29: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	152604	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1300	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.155	Depositor
Minimum map value	-0.081	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0301	Depositor
Map size (Å)	333.002, 333.002, 333.002	wwPDB
Map dimensions	310, 310, 310	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0742, 1.0742, 1.0742	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: PEE, PLX, CDL, 8Q1, ADP, UQ

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	Q	0.23	0/380	0.40	0/525
2	S	0.24	0/581	0.50	0/781
3	U	0.25	0/664	0.44	0/912
4	V	0.24	0/1042	0.45	0/1411
5	W	0.26	0/973	0.49	0/1312
6	X	0.25	0/716	0.40	0/968
7	Y	0.26	0/610	0.46	0/836
8	Z	0.25	0/660	0.43	0/892
9	a	0.25	0/1184	0.47	0/1603
10	b	0.26	0/844	0.52	0/1149
11	c	0.26	0/1371	0.48	0/1875
12	d	0.26	0/1494	0.53	0/2015
13	e	0.24	0/891	0.50	0/1210
14	f	0.26	0/386	0.51	0/523
15	g	0.26	0/1031	0.47	0/1394
16	h	0.25	0/889	0.49	0/1190
17	i	0.25	0/2773	0.43	0/3768
18	j	0.25	0/938	0.42	0/1281
19	k	0.25	0/759	0.44	0/1029
20	l	0.25	0/4929	0.43	0/6704
21	m	0.26	0/1328	0.42	0/1804
22	n	0.23	0/491	0.50	0/663
23	o	0.26	0/1092	0.49	0/1481
24	p	0.25	0/1590	0.49	0/2155
25	r	0.25	0/3723	0.45	0/5078
26	s	0.26	0/2581	0.45	0/3529
27	u	0.25	0/1436	0.49	0/1938
28	v	0.25	0/1083	0.55	0/1448
29	w	0.25	0/2642	0.47	0/3580
All	All	0.25	0/39081	0.46	0/53054

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	Q	42/44 (96%)	40 (95%)	2 (5%)	0	100	100
2	S	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
3	U	81/83 (98%)	81 (100%)	0	0	100	100
4	V	138/140 (99%)	135 (98%)	3 (2%)	0	100	100
5	W	111/113 (98%)	110 (99%)	1 (1%)	0	100	100
6	X	86/88 (98%)	84 (98%)	2 (2%)	0	100	100
7	Y	65/67 (97%)	63 (97%)	2 (3%)	0	100	100
8	Z	78/80 (98%)	75 (96%)	3 (4%)	0	100	100
9	a	136/138 (99%)	131 (96%)	5 (4%)	0	100	100
10	b	94/126 (75%)	89 (95%)	5 (5%)	0	100	100
11	c	154/156 (99%)	144 (94%)	10 (6%)	0	100	100
12	d	173/175 (99%)	170 (98%)	3 (2%)	0	100	100
13	e	102/104 (98%)	95 (93%)	7 (7%)	0	100	100
14	f	47/49 (96%)	43 (92%)	4 (8%)	0	100	100
15	g	119/121 (98%)	114 (96%)	5 (4%)	0	100	100
16	h	103/105 (98%)	99 (96%)	4 (4%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	i	345/347 (99%)	331 (96%)	14 (4%)	0	100	100
18	j	113/115 (98%)	109 (96%)	4 (4%)	0	100	100
19	k	96/98 (98%)	92 (96%)	4 (4%)	0	100	100
20	l	604/606 (100%)	580 (96%)	24 (4%)	0	100	100
21	m	173/175 (99%)	165 (95%)	7 (4%)	1 (1%)	25	58
22	n	54/56 (96%)	54 (100%)	0	0	100	100
23	o	126/128 (98%)	124 (98%)	2 (2%)	0	100	100
24	p	176/178 (99%)	168 (96%)	8 (4%)	0	100	100
25	r	457/459 (100%)	449 (98%)	8 (2%)	0	100	100
26	s	316/318 (99%)	305 (96%)	10 (3%)	1 (0%)	41	71
27	u	169/171 (99%)	164 (97%)	4 (2%)	1 (1%)	25	58
28	v	122/125 (98%)	118 (97%)	4 (3%)	0	100	100
29	w	318/320 (99%)	308 (97%)	10 (3%)	0	100	100
All	All	4666/4755 (98%)	4505 (96%)	158 (3%)	3 (0%)	54	82

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
27	u	168	PHE
26	s	208	VAL
21	m	25	SER

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	Q	38/38 (100%)	36 (95%)	2 (5%)	22	54
2	S	57/58 (98%)	57 (100%)	0	100	100
3	U	69/69 (100%)	68 (99%)	1 (1%)	67	89
4	V	101/101 (100%)	99 (98%)	2 (2%)	55	82

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	W	99/99 (100%)	94 (95%)	5 (5%)	24	56
6	X	79/81 (98%)	74 (94%)	5 (6%)	18	46
7	Y	62/62 (100%)	60 (97%)	2 (3%)	39	73
8	Z	62/62 (100%)	59 (95%)	3 (5%)	25	58
9	a	121/121 (100%)	119 (98%)	2 (2%)	60	86
10	b	90/119 (76%)	89 (99%)	1 (1%)	73	92
11	c	141/141 (100%)	140 (99%)	1 (1%)	84	95
12	d	155/155 (100%)	150 (97%)	5 (3%)	39	73
13	e	96/96 (100%)	94 (98%)	2 (2%)	53	81
14	f	36/45 (80%)	34 (94%)	2 (6%)	21	52
15	g	108/108 (100%)	108 (100%)	0	100	100
16	h	93/93 (100%)	91 (98%)	2 (2%)	52	81
17	i	311/311 (100%)	306 (98%)	5 (2%)	62	86
18	j	100/100 (100%)	96 (96%)	4 (4%)	31	65
19	k	85/85 (100%)	83 (98%)	2 (2%)	49	79
20	l	537/540 (99%)	523 (97%)	14 (3%)	46	77
21	m	130/141 (92%)	124 (95%)	6 (5%)	27	60
22	n	53/53 (100%)	49 (92%)	4 (8%)	13	37
23	o	113/113 (100%)	113 (100%)	0	100	100
24	p	159/159 (100%)	154 (97%)	5 (3%)	40	74
25	r	410/410 (100%)	404 (98%)	6 (2%)	65	87
26	s	275/275 (100%)	271 (98%)	4 (2%)	65	87
27	u	153/153 (100%)	147 (96%)	6 (4%)	32	66
28	v	111/111 (100%)	106 (96%)	5 (4%)	27	61
29	w	281/283 (99%)	274 (98%)	7 (2%)	47	78
All	All	4125/4182 (99%)	4022 (98%)	103 (2%)	50	78

All (103) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	Q	52	MET
1	Q	56	LYS
3	U	65	ASP

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	V	50	LEU
4	V	115	CYS
5	W	64	ASP
5	W	94	GLU
5	W	99	LYS
5	W	105	LYS
5	W	115	ARG
6	X	99	SER
6	X	101	ASN
6	X	122	MET
6	X	151	LYS
6	X	152	LYS
7	Y	90	SER
7	Y	94	ASP
8	Z	14	MET
8	Z	18	ASP
8	Z	21	GLN
9	a	52	LYS
9	a	76	LEU
10	b	108	ASP
11	c	165	ASP
12	d	7	LYS
12	d	8	ASP
12	d	15	ARG
12	d	54	GLN
12	d	144	SER
13	e	69	LYS
13	e	72	ASP
14	f	58	LEU
14	f	65	ASP
16	h	3	PHE
16	h	21	GLN
17	i	89	MET
17	i	104	MET
17	i	171	ASN
17	i	244	MET
17	i	323	MET
18	j	31	SER
18	j	44	MET
18	j	87	MET
18	j	109	LYS
19	k	53	PHE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	k	59	MET
20	l	1	MET
20	l	72	GLN
20	l	111	ASP
20	l	151	SER
20	l	267	MET
20	l	314	MET
20	l	336	LYS
20	l	393	ASP
20	l	446	ASN
20	l	491	LEU
20	l	500	LEU
20	l	514	LYS
20	l	541	ASN
20	l	596	MET
21	m	39	VAL
21	m	77	GLU
21	m	98	MET
21	m	99	MET
21	m	135	PHE
21	m	170	GLU
22	n	42	SER
22	n	47	ARG
22	n	49	LEU
22	n	50	ARG
24	p	44	MET
24	p	70	GLU
24	p	110	SER
24	p	115	TYR
24	p	141	GLN
25	r	103	GLN
25	r	114	GLU
25	r	129	THR
25	r	168	GLN
25	r	247	THR
25	r	304	GLN
26	s	8	SER
26	s	156	MET
26	s	202	GLU
26	s	289	LEU
27	u	44	MET
27	u	77	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
27	u	98	ARG
27	u	155	GLU
27	u	162	LYS
27	u	172	MET
28	v	21	ARG
28	v	48	ASP
28	v	81	LYS
28	v	84	GLN
28	v	117	GLN
29	w	55	GLU
29	w	63	ASP
29	w	95	ASP
29	w	107	GLN
29	w	216	SER
29	w	227	MET
29	w	241	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
8	Z	60	ASN
16	h	45	HIS
20	l	59	GLN
23	o	79	ASN
24	p	53	ASN
29	w	132	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry

27 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
33	PLX	j	203	-	51,51,51	1.15	4 (7%)	55,59,59	0.61	1 (1%)
30	PEE	s	401	-	40,40,50	1.15	5 (12%)	43,45,55	1.04	3 (6%)
31	CDL	l	702	-	98,98,99	1.10	8 (8%)	104,110,111	0.88	4 (3%)
34	UQ	s	404	-	38,38,63	3.54	10 (26%)	46,49,79	2.87	16 (34%)
30	PEE	l	704	-	50,50,50	1.16	6 (12%)	53,55,55	0.93	2 (3%)
31	CDL	g	202	-	99,99,99	1.08	8 (8%)	105,111,111	0.87	4 (3%)
33	PLX	a	202	-	51,51,51	1.15	4 (7%)	55,59,59	0.58	1 (1%)
32	8Q1	X	201	-	31,34,34	1.69	6 (19%)	40,43,43	1.66	6 (15%)
33	PLX	r	503	-	51,51,51	1.14	4 (7%)	55,59,59	0.60	1 (1%)
30	PEE	s	403	-	50,50,50	1.16	6 (12%)	53,55,55	0.99	2 (3%)
30	PEE	j	201	-	50,50,50	1.15	6 (12%)	53,55,55	0.95	2 (3%)
33	PLX	j	202	-	51,51,51	1.14	4 (7%)	55,59,59	0.59	1 (1%)
31	CDL	l	703	-	99,99,99	1.09	8 (8%)	105,111,111	0.87	4 (3%)
30	PEE	Q	101	-	46,46,50	1.20	6 (13%)	49,51,55	1.00	2 (4%)
33	PLX	g	201	-	51,51,51	1.14	3 (5%)	55,59,59	0.63	1 (1%)
31	CDL	V	201	-	93,93,99	1.11	9 (9%)	99,105,111	0.86	4 (4%)
31	CDL	a	201	-	99,99,99	1.09	8 (8%)	105,111,111	0.85	4 (3%)
31	CDL	n	101	-	54,54,99	1.36	8 (14%)	60,66,111	1.10	4 (6%)
30	PEE	W	201	-	40,40,50	1.15	5 (12%)	43,45,55	0.96	2 (4%)
33	PLX	r	502	-	51,51,51	1.16	5 (9%)	55,59,59	0.59	1 (1%)
30	PEE	l	701	-	39,39,50	1.31	6 (15%)	41,44,55	1.03	2 (4%)
35	ADP	w	401	-	24,29,29	3.12	6 (25%)	29,45,45	1.45	5 (17%)
31	CDL	k	101	-	99,99,99	1.09	8 (8%)	105,111,111	0.85	4 (3%)
31	CDL	s	402	-	88,88,99	1.14	8 (9%)	94,100,111	0.92	4 (4%)
31	CDL	V	202	-	99,99,99	1.09	8 (8%)	105,111,111	0.86	4 (3%)
30	PEE	r	501	-	50,50,50	1.16	6 (12%)	53,55,55	0.97	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
30	PEE	l	705	-	45,45,50	1.22	5 (11%)	48,50,55	0.99	2 (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
33	PLX	j	203	-	-	24/55/55/55	-
30	PEE	s	401	-	-	22/44/44/54	-
31	CDL	l	702	-	-	58/109/109/110	-
34	UQ	s	404	-	-	10/33/57/87	0/1/1/1
30	PEE	l	704	-	-	30/54/54/54	-
31	CDL	g	202	-	-	66/110/110/110	-
33	PLX	a	202	-	-	30/55/55/55	-
32	8Q1	X	201	-	-	14/41/41/41	-
33	PLX	r	503	-	-	27/55/55/55	-
30	PEE	s	403	-	-	26/54/54/54	-
30	PEE	j	201	-	-	29/54/54/54	-
33	PLX	j	202	-	-	28/55/55/55	-
31	CDL	l	703	-	-	56/110/110/110	-
30	PEE	Q	101	-	-	21/50/50/54	-
33	PLX	g	201	-	-	30/55/55/55	-
31	CDL	V	201	-	-	52/104/104/110	-
31	CDL	a	201	-	-	56/110/110/110	-
31	CDL	n	101	-	-	35/65/65/110	-
30	PEE	W	201	-	-	22/44/44/54	-
33	PLX	r	502	-	-	33/55/55/55	-
30	PEE	l	701	-	-	26/43/43/54	-
35	ADP	w	401	-	-	4/12/32/32	0/3/3/3
31	CDL	k	101	-	-	61/110/110/110	-
31	CDL	s	402	-	-	50/99/99/110	-
31	CDL	V	202	-	-	62/110/110/110	-
30	PEE	r	501	-	-	28/54/54/54	-
30	PEE	l	705	-	-	27/49/49/54	-

All (170) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	s	404	UQ	C18-C19	9.64	1.56	1.33
34	s	404	UQ	C13-C14	9.25	1.55	1.33
34	s	404	UQ	C23-C24	9.10	1.54	1.33
34	s	404	UQ	C8-C9	8.96	1.54	1.33
35	w	401	ADP	C3'-C4'	-8.91	1.30	1.53
35	w	401	ADP	O4'-C4'	7.67	1.62	1.45
34	s	404	UQ	C28-C29	7.64	1.54	1.32
35	w	401	ADP	O4'-C1'	-6.91	1.31	1.41
32	X	201	8Q1	C34-N36	5.34	1.45	1.33
32	X	201	8Q1	C39-N41	5.28	1.45	1.33
35	w	401	ADP	C6-N6	3.84	1.48	1.34
30	r	501	PEE	C18-C19	3.74	1.53	1.31
30	l	701	PEE	C18-C19	3.73	1.53	1.31
30	l	705	PEE	C18-C19	3.72	1.53	1.31
30	j	201	PEE	C18-C19	3.72	1.53	1.31
30	l	704	PEE	C18-C19	3.72	1.53	1.31
30	s	403	PEE	C18-C19	3.71	1.53	1.31
30	W	201	PEE	C18-C19	3.71	1.53	1.31
30	s	401	PEE	C18-C19	3.71	1.53	1.31
30	Q	101	PEE	C18-C19	3.70	1.53	1.31
30	r	501	PEE	C39-C38	3.67	1.53	1.31
30	s	403	PEE	C39-C38	3.65	1.52	1.31
30	l	701	PEE	C39-C38	3.65	1.52	1.31
30	l	704	PEE	C39-C38	3.65	1.52	1.31
30	j	201	PEE	C39-C38	3.64	1.52	1.31
30	l	705	PEE	C39-C38	3.64	1.52	1.31
30	Q	101	PEE	C39-C38	3.64	1.52	1.31
31	l	702	CDL	OA8-CA7	3.53	1.43	1.33
31	l	703	CDL	OA8-CA7	3.49	1.43	1.33
31	s	402	CDL	OA8-CA7	3.48	1.43	1.33
31	V	202	CDL	OA8-CA7	3.46	1.43	1.33
31	a	201	CDL	OA8-CA7	3.45	1.43	1.33
31	n	101	CDL	OA8-CA7	3.43	1.43	1.33
31	g	202	CDL	OA8-CA7	3.43	1.43	1.33
31	k	101	CDL	OA8-CA7	3.42	1.43	1.33
31	V	201	CDL	OA8-CA7	3.41	1.43	1.33
35	w	401	ADP	O2'-C2'	-3.33	1.35	1.43
35	w	401	ADP	O3'-C3'	3.13	1.50	1.43
31	k	101	CDL	OA6-CA5	3.13	1.43	1.34
31	V	201	CDL	OA6-CA5	3.12	1.43	1.34
31	V	202	CDL	OB6-CB5	3.07	1.43	1.34
31	a	201	CDL	OB6-CB5	3.07	1.43	1.34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	g	202	CDL	OB6-CB5	3.04	1.42	1.34
31	k	101	CDL	OB6-CB5	3.04	1.42	1.34
31	l	702	CDL	OB6-CB5	3.03	1.42	1.34
31	l	703	CDL	OB6-CB5	3.02	1.42	1.34
31	s	402	CDL	OB6-CB5	3.00	1.42	1.34
31	V	202	CDL	OB8-CB7	3.00	1.42	1.33
31	l	703	CDL	OB8-CB7	3.00	1.42	1.33
31	n	101	CDL	OB8-CB7	3.00	1.42	1.33
31	k	101	CDL	OB8-CB7	2.99	1.42	1.33
31	l	702	CDL	OB8-CB7	2.99	1.42	1.33
31	a	201	CDL	OB8-CB7	2.99	1.42	1.33
31	V	201	CDL	OB6-CB5	2.99	1.42	1.34
31	n	101	CDL	OA6-CA5	2.98	1.42	1.34
31	n	101	CDL	OB6-CB5	2.97	1.42	1.34
31	g	202	CDL	OB8-CB7	2.97	1.42	1.33
31	s	402	CDL	OA6-CA5	2.97	1.42	1.34
31	V	202	CDL	OA6-CA5	2.95	1.42	1.34
31	l	703	CDL	OA6-CA5	2.94	1.42	1.34
31	g	202	CDL	OA6-CA5	2.93	1.42	1.34
31	V	201	CDL	OB8-CB7	2.93	1.41	1.33
31	a	201	CDL	OA6-CA5	2.92	1.42	1.34
31	s	402	CDL	OB8-CB7	2.90	1.41	1.33
31	l	702	CDL	OA6-CA5	2.89	1.42	1.34
33	a	202	PLX	O6-C4	-2.77	1.40	1.44
33	g	201	PLX	O6-C4	-2.73	1.41	1.44
34	s	404	UQ	C6-C1	2.69	1.54	1.46
33	r	503	PLX	O6-C4	-2.66	1.41	1.44
33	r	502	PLX	O6-C4	-2.64	1.41	1.44
33	j	203	PLX	O6-C4	-2.60	1.41	1.44
30	l	705	PEE	O3-C30	2.52	1.40	1.33
30	s	401	PEE	O3-C30	2.51	1.40	1.33
30	s	403	PEE	O3-C30	2.50	1.40	1.33
30	l	701	PEE	O3-C30	2.49	1.40	1.33
30	l	704	PEE	O3-C30	2.47	1.40	1.33
33	j	203	PLX	C7-C6	2.46	1.56	1.50
30	r	501	PEE	O3-C30	2.46	1.40	1.33
31	l	702	CDL	OA6-CA4	-2.46	1.40	1.46
30	W	201	PEE	O3-C30	2.44	1.40	1.33
30	j	201	PEE	O3-C30	2.44	1.40	1.33
31	g	202	CDL	OA6-CA4	-2.43	1.40	1.46
30	Q	101	PEE	O2-C2	-2.43	1.40	1.46
30	j	201	PEE	O2-C2	-2.43	1.40	1.46

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	s	401	PEE	O2-C2	-2.42	1.40	1.46
31	a	201	CDL	OA6-CA4	-2.42	1.40	1.46
30	Q	101	PEE	O3-C30	2.41	1.40	1.33
30	W	201	PEE	O2-C2	-2.41	1.40	1.46
31	V	202	CDL	OA6-CA4	-2.40	1.40	1.46
34	s	404	UQ	C7-C8	2.39	1.54	1.50
30	s	403	PEE	O2-C2	-2.39	1.40	1.46
33	r	502	PLX	C7-C6	2.39	1.55	1.50
32	X	201	8Q1	C1-S44	2.39	1.81	1.76
31	n	101	CDL	OA6-CA4	-2.38	1.40	1.46
30	l	704	PEE	O2-C2	-2.38	1.40	1.46
33	j	202	PLX	C7-C6	2.37	1.55	1.50
31	s	402	CDL	OA6-CA4	-2.36	1.40	1.46
30	r	501	PEE	O2-C2	-2.36	1.40	1.46
33	a	202	PLX	C7-C6	2.35	1.55	1.50
30	l	701	PEE	O2-C2	-2.35	1.40	1.46
30	l	705	PEE	O2-C2	-2.35	1.40	1.46
32	X	201	8Q1	O35-C34	-2.34	1.18	1.23
30	l	701	PEE	O2-C10	2.34	1.40	1.34
30	l	704	PEE	O2-C10	2.33	1.40	1.34
31	l	703	CDL	OA6-CA4	-2.32	1.40	1.46
32	X	201	8Q1	O40-C39	-2.31	1.18	1.23
33	r	503	PLX	C7-C6	2.31	1.55	1.50
33	g	201	PLX	C7-C6	2.31	1.55	1.50
30	s	403	PEE	O2-C10	2.29	1.40	1.34
33	j	202	PLX	O6-C4	-2.29	1.41	1.44
30	l	705	PEE	O2-C10	2.28	1.40	1.34
30	W	201	PEE	O2-C10	2.27	1.40	1.34
30	r	501	PEE	O2-C10	2.23	1.40	1.34
30	j	201	PEE	O2-C10	2.23	1.40	1.34
31	V	202	CDL	PB2-OB2	2.23	1.68	1.59
31	l	703	CDL	OB6-CB4	-2.22	1.41	1.46
31	V	201	CDL	PB2-OB2	2.22	1.68	1.59
31	l	703	CDL	PB2-OB2	2.22	1.68	1.59
30	Q	101	PEE	O2-C10	2.21	1.40	1.34
31	V	201	CDL	OB6-CB4	-2.21	1.41	1.46
31	s	402	CDL	PB2-OB2	2.21	1.68	1.59
31	g	202	CDL	PB2-OB2	2.20	1.68	1.59
31	n	101	CDL	PB2-OB2	2.20	1.68	1.59
31	a	201	CDL	PB2-OB2	2.20	1.68	1.59
31	k	101	CDL	OB6-CB4	-2.20	1.41	1.46
31	l	702	CDL	PB2-OB5	2.19	1.68	1.59

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	s	401	PEE	O2-C10	2.18	1.40	1.34
31	l	702	CDL	PB2-OB2	2.18	1.68	1.59
34	s	404	UQ	O4-C4	-2.18	1.18	1.23
31	l	702	CDL	OB6-CB4	-2.18	1.41	1.46
31	n	101	CDL	OB6-CB4	-2.17	1.41	1.46
31	n	101	CDL	PB2-OB5	2.17	1.68	1.59
31	a	201	CDL	PB2-OB5	2.17	1.68	1.59
31	V	202	CDL	PB2-OB5	2.16	1.68	1.59
31	l	703	CDL	PB2-OB5	2.16	1.68	1.59
31	k	101	CDL	PB2-OB2	2.16	1.68	1.59
31	g	202	CDL	PB2-OB5	2.16	1.68	1.59
31	s	402	CDL	OB6-CB4	-2.15	1.41	1.46
31	V	201	CDL	PB2-OB5	2.15	1.68	1.59
31	k	101	CDL	PB2-OB5	2.15	1.68	1.59
32	X	201	8Q1	C6-C1	2.14	1.53	1.50
33	j	202	PLX	P1-O4	2.14	1.68	1.59
33	j	203	PLX	P1-O4	2.14	1.67	1.59
31	k	101	CDL	OA6-CA4	-2.13	1.41	1.46
33	r	502	PLX	P1-O4	2.13	1.67	1.59
33	a	202	PLX	P1-O4	2.13	1.67	1.59
33	g	201	PLX	P1-O4	2.13	1.67	1.59
33	r	503	PLX	P1-O4	2.12	1.67	1.59
31	a	201	CDL	OB6-CB4	-2.12	1.41	1.46
31	s	402	CDL	PB2-OB5	2.12	1.67	1.59
30	l	704	PEE	O3-C3	-2.10	1.40	1.45
30	r	501	PEE	O3-C3	-2.10	1.40	1.45
31	V	202	CDL	OB6-CB4	-2.08	1.41	1.46
30	W	201	PEE	O3-C3	-2.08	1.40	1.45
31	V	201	CDL	C11-CA5	2.08	1.56	1.50
31	g	202	CDL	OB6-CB4	-2.08	1.41	1.46
30	j	201	PEE	O3-C3	-2.07	1.40	1.45
30	Q	101	PEE	O3-C3	-2.07	1.40	1.45
30	s	401	PEE	O3-C3	-2.06	1.40	1.45
33	a	202	PLX	P1-O1	2.05	1.67	1.59
33	r	502	PLX	C25-C24	2.05	1.55	1.50
34	s	404	UQ	O1-C1	-2.05	1.18	1.23
31	V	201	CDL	OA6-CA4	-2.05	1.41	1.46
33	r	502	PLX	P1-O1	2.05	1.67	1.59
33	j	202	PLX	P1-O1	2.04	1.67	1.59
30	l	701	PEE	O3-C3	-2.03	1.40	1.45
30	s	403	PEE	O3-C3	-2.03	1.40	1.45
33	r	503	PLX	P1-O1	2.03	1.67	1.59

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
33	j	203	PLX	P1-O1	2.02	1.67	1.59
34	s	404	UQ	O3-CM3	-2.00	1.40	1.45

All (88) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	s	404	UQ	C7-C8-C9	-8.28	113.02	126.79
32	X	201	8Q1	C6-C1-S44	5.95	120.38	113.46
34	s	404	UQ	C17-C18-C19	-5.94	113.35	127.66
34	s	404	UQ	C22-C23-C24	-5.94	113.35	127.66
34	s	404	UQ	C12-C13-C14	-5.80	113.69	127.66
35	w	401	ADP	N3-C2-N1	-4.45	121.72	128.68
34	s	404	UQ	C10-C9-C8	-4.42	112.34	123.68
34	s	404	UQ	C27-C28-C29	-4.37	112.83	127.75
30	s	401	PEE	O2-C10-C11	4.24	120.64	111.50
34	s	404	UQ	C25-C24-C23	-4.23	112.83	123.68
34	s	404	UQ	C11-C9-C8	-4.13	112.77	121.12
31	V	201	CDL	OA6-CA5-C11	4.12	120.39	111.50
30	r	501	PEE	O2-C10-C11	4.11	120.36	111.50
34	s	404	UQ	C21-C19-C18	-4.11	112.80	121.12
31	V	202	CDL	OB6-CB5-C51	4.08	120.30	111.50
31	s	402	CDL	OA6-CA5-C11	4.07	120.27	111.50
31	s	402	CDL	OB6-CB5-C51	4.06	120.26	111.50
34	s	404	UQ	C20-C19-C18	-4.05	113.29	123.68
31	l	703	CDL	OB6-CB5-C51	4.05	120.22	111.50
30	s	403	PEE	O2-C10-C11	4.05	120.22	111.50
31	k	101	CDL	OB6-CB5-C51	4.04	120.20	111.50
31	l	702	CDL	OA6-CA5-C11	4.02	120.17	111.50
30	l	705	PEE	O2-C10-C11	4.02	120.17	111.50
30	l	701	PEE	O2-C10-C11	4.00	120.13	111.50
31	n	101	CDL	OA6-CA5-C11	3.99	120.09	111.50
31	g	202	CDL	OB6-CB5-C51	3.97	120.06	111.50
31	a	201	CDL	OB6-CB5-C51	3.96	120.03	111.50
34	s	404	UQ	C26-C24-C23	-3.96	113.11	121.12
34	s	404	UQ	C16-C14-C13	-3.95	113.12	121.12
31	l	702	CDL	OB6-CB5-C51	3.93	119.98	111.50
31	l	703	CDL	OA6-CA5-C11	3.93	119.98	111.50
32	X	201	8Q1	O4-C1-C6	-3.92	119.36	123.99
31	n	101	CDL	OB6-CB5-C51	3.91	119.92	111.50
31	a	201	CDL	OA6-CA5-C11	3.90	119.90	111.50
31	g	202	CDL	OA6-CA5-C11	3.89	119.89	111.50
30	W	201	PEE	O2-C10-C11	3.85	119.79	111.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	j	201	PEE	O2-C10-C11	3.84	119.77	111.50
31	V	201	CDL	OB6-CB5-C51	3.82	119.73	111.50
30	l	704	PEE	O2-C10-C11	3.81	119.72	111.50
34	s	404	UQ	C15-C14-C13	-3.81	113.91	123.68
31	V	202	CDL	OA6-CA5-C11	3.79	119.66	111.50
30	Q	101	PEE	O2-C10-C11	3.75	119.58	111.50
31	k	101	CDL	OA6-CA5-C11	3.58	119.21	111.50
34	s	404	UQ	C30-C29-C28	-3.34	112.98	122.65
34	s	404	UQ	C31-C29-C28	-3.31	113.09	122.65
31	n	101	CDL	OA8-CA7-C31	3.18	119.71	111.38
32	X	201	8Q1	C43-S44-C1	3.15	111.69	101.87
32	X	201	8Q1	C37-C38-C39	3.05	117.44	112.36
31	l	702	CDL	OA8-CA7-C31	2.84	120.83	111.91
31	k	101	CDL	OB8-CB7-C71	2.84	120.81	111.91
30	s	403	PEE	O3-C30-C31	2.84	120.81	111.91
30	Q	101	PEE	O3-C30-C31	2.74	120.52	111.91
35	w	401	ADP	PA-O3A-PB	-2.71	123.52	132.83
30	l	704	PEE	O3-C30-C31	2.70	120.37	111.91
31	a	201	CDL	OB8-CB7-C71	2.69	120.34	111.91
31	g	202	CDL	OB8-CB7-C71	2.67	120.30	111.91
31	k	101	CDL	OA8-CA7-C31	2.66	120.25	111.91
31	V	201	CDL	OB8-CB7-C71	2.65	120.22	111.91
30	r	501	PEE	O3-C30-C31	2.64	120.19	111.91
31	s	402	CDL	OA8-CA7-C31	2.64	120.18	111.91
31	l	703	CDL	OB8-CB7-C71	2.62	120.13	111.91
30	l	705	PEE	O3-C30-C31	2.61	120.08	111.91
31	l	703	CDL	OA8-CA7-C31	2.60	120.08	111.91
31	l	702	CDL	OB8-CB7-C71	2.60	120.07	111.91
31	V	202	CDL	OA8-CA7-C31	2.60	120.06	111.91
30	s	401	PEE	O3-C30-C31	2.59	120.04	111.91
31	a	201	CDL	OA8-CA7-C31	2.56	119.94	111.91
31	g	202	CDL	OA8-CA7-C31	2.56	119.94	111.91
33	g	201	PLX	C1A-N1-C1	2.56	120.37	109.92
31	n	101	CDL	OB8-CB7-C71	2.56	119.93	111.91
30	j	201	PEE	O3-C30-C31	2.55	119.92	111.91
31	V	202	CDL	OB8-CB7-C71	2.55	119.91	111.91
30	l	701	PEE	O3-C30-C31	2.54	119.88	111.91
31	s	402	CDL	OB8-CB7-C71	2.54	119.88	111.91
30	W	201	PEE	O3-C30-C31	2.51	119.80	111.91
33	r	503	PLX	C1A-N1-C1	2.44	119.91	109.92
33	j	203	PLX	C1A-N1-C1	2.43	119.85	109.92
34	s	404	UQ	CM5-C5-C6	-2.41	120.47	124.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	r	502	PLX	C1A-N1-C1	2.39	119.70	109.92
31	V	201	CDL	OA8-CA7-C31	2.38	119.36	111.91
32	X	201	8Q1	C38-C39-N41	2.36	120.40	116.42
33	a	202	PLX	C1A-N1-C1	2.32	119.42	109.92
33	j	202	PLX	C1A-N1-C1	2.25	119.14	109.92
32	X	201	8Q1	C31-C29-C28	2.24	111.89	108.23
35	w	401	ADP	C4-C5-N7	-2.16	107.15	109.40
30	s	401	PEE	C2-O2-C10	-2.13	112.54	117.79
35	w	401	ADP	O4'-C1'-C2'	-2.13	103.81	106.93
35	w	401	ADP	C2'-C3'-C4'	2.04	106.61	102.64

There are no chirality outliers.

All (927) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
30	Q	101	PEE	C11-C10-O2-C2
30	Q	101	PEE	C1-O3P-P-O2P
30	W	201	PEE	C17-C18-C19-C20
30	W	201	PEE	C1-O3P-P-O2P
30	W	201	PEE	C1-O3P-P-O1P
30	W	201	PEE	C1-O3P-P-O4P
30	W	201	PEE	O4P-C4-C5-N
30	j	201	PEE	C1-O3P-P-O1P
30	j	201	PEE	C4-O4P-P-O2P
30	l	701	PEE	C11-C10-O2-C2
30	l	701	PEE	C1-O3P-P-O2P
30	l	701	PEE	C1-O3P-P-O1P
30	l	701	PEE	C1-O3P-P-O4P
30	l	704	PEE	C4-O4P-P-O3P
30	l	704	PEE	C4-O4P-P-O2P
30	l	704	PEE	C4-O4P-P-O1P
30	l	705	PEE	O4P-C4-C5-N
30	l	705	PEE	C37-C38-C39-C40
30	r	501	PEE	C4-O4P-P-O1P
30	s	401	PEE	C4-O4P-P-O2P
31	V	201	CDL	CB2-C1-CA2-OA2
31	V	201	CDL	CA2-C1-CB2-OB2
31	V	201	CDL	CA2-OA2-PA1-OA3
31	V	201	CDL	CA2-OA2-PA1-OA4
31	V	201	CDL	CA2-OA2-PA1-OA5
31	V	201	CDL	C11-CA5-OA6-CA4
31	V	201	CDL	CB2-OB2-PB2-OB3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	V	201	CDL	CB3-OB5-PB2-OB3
31	V	201	CDL	CB3-OB5-PB2-OB4
31	V	202	CDL	CB2-C1-CA2-OA2
31	V	202	CDL	CA2-C1-CB2-OB2
31	V	202	CDL	CB2-OB2-PB2-OB3
31	a	201	CDL	CA2-C1-CB2-OB2
31	a	201	CDL	CB2-OB2-PB2-OB3
31	a	201	CDL	CB3-OB5-PB2-OB3
31	a	201	CDL	CB3-OB5-PB2-OB4
31	g	202	CDL	O1-C1-CA2-OA2
31	g	202	CDL	CA2-OA2-PA1-OA3
31	g	202	CDL	CB2-OB2-PB2-OB3
31	g	202	CDL	CB2-OB2-PB2-OB4
31	g	202	CDL	CB2-OB2-PB2-OB5
31	g	202	CDL	CB3-OB5-PB2-OB2
31	g	202	CDL	CB3-OB5-PB2-OB3
31	g	202	CDL	CB3-OB5-PB2-OB4
31	k	101	CDL	CA2-OA2-PA1-OA3
31	k	101	CDL	OA5-CA3-CA4-OA6
31	k	101	CDL	CB2-OB2-PB2-OB3
31	k	101	CDL	CB3-OB5-PB2-OB2
31	k	101	CDL	CB3-OB5-PB2-OB3
31	k	101	CDL	CB3-OB5-PB2-OB4
31	l	702	CDL	O1-C1-CA2-OA2
31	l	702	CDL	CA2-C1-CB2-OB2
31	l	702	CDL	OA9-CA7-OA8-CA6
31	l	702	CDL	C31-CA7-OA8-CA6
31	l	702	CDL	CB2-OB2-PB2-OB3
31	l	702	CDL	CB2-OB2-PB2-OB4
31	l	702	CDL	CB2-OB2-PB2-OB5
31	l	703	CDL	O1-C1-CA2-OA2
31	l	703	CDL	CB2-C1-CA2-OA2
31	l	703	CDL	CA2-OA2-PA1-OA5
31	l	703	CDL	CA3-OA5-PA1-OA3
31	l	703	CDL	CA3-OA5-PA1-OA4
31	n	101	CDL	CB2-C1-CA2-OA2
31	n	101	CDL	OA5-CA3-CA4-OA6
31	n	101	CDL	CB2-OB2-PB2-OB3
31	n	101	CDL	CB3-OB5-PB2-OB3
31	n	101	CDL	CB3-OB5-PB2-OB4
31	s	402	CDL	O1-C1-CB2-OB2
31	s	402	CDL	CA2-OA2-PA1-OA3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	s	402	CDL	CA2-OA2-PA1-OA4
31	s	402	CDL	CA2-OA2-PA1-OA5
31	s	402	CDL	OA5-CA3-CA4-OA6
32	X	201	8Q1	O4-C1-S44-C43
32	X	201	8Q1	C6-C1-S44-C43
32	X	201	8Q1	O27-C28-C29-C30
32	X	201	8Q1	O27-C28-C29-C31
32	X	201	8Q1	O27-C28-C29-C32
32	X	201	8Q1	O33-C32-C34-N36
32	X	201	8Q1	C28-O27-P24-O3
32	X	201	8Q1	C28-O27-P24-O2
32	X	201	8Q1	C28-O27-P24-O1
33	a	202	PLX	O7-C6-O6-C4
33	a	202	PLX	C3-O4-P1-O2
33	a	202	PLX	C2-O1-P1-O2
33	a	202	PLX	C25-C24-O8-C5
33	a	202	PLX	O9-C24-C25-C26
33	g	201	PLX	O7-C6-C7-C8
33	j	202	PLX	O7-C6-O6-C4
33	j	202	PLX	C25-C24-O8-C5
33	j	203	PLX	O7-C6-C7-C8
33	j	203	PLX	O9-C24-O8-C5
33	j	203	PLX	O9-C24-C25-C26
33	r	502	PLX	O7-C6-C7-C8
33	r	502	PLX	O7-C6-O6-C4
33	r	502	PLX	C3-O4-P1-O2
33	r	502	PLX	C2-O1-P1-O2
33	r	502	PLX	C25-C24-O8-C5
33	r	502	PLX	O9-C24-C25-C26
33	r	503	PLX	O7-C6-O6-C4
34	s	404	UQ	C7-C8-C9-C10
34	s	404	UQ	C7-C8-C9-C11
34	s	404	UQ	C22-C23-C24-C26
35	w	401	ADP	C5'-O5'-PA-O1A
35	w	401	ADP	C5'-O5'-PA-O2A
35	w	401	ADP	C5'-O5'-PA-O3A
31	s	402	CDL	OA9-CA7-OA8-CA6
31	s	402	CDL	C31-CA7-OA8-CA6
30	Q	101	PEE	O5-C30-O3-C3
30	Q	101	PEE	O4-C10-O2-C2
30	l	701	PEE	O4-C10-O2-C2
30	l	704	PEE	O4-C10-O2-C2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	V	201	CDL	OA7-CA5-OA6-CA4
31	a	201	CDL	OB7-CB5-OB6-CB4
30	Q	101	PEE	C31-C30-O3-C3
30	l	704	PEE	C11-C10-O2-C2
31	a	201	CDL	C51-CB5-OB6-CB4
34	s	404	UQ	C23-C24-C26-C27
30	l	704	PEE	C31-C30-O3-C3
31	l	703	CDL	C71-CB7-OB8-CB6
30	j	201	PEE	C17-C18-C19-C20
31	n	101	CDL	C55-C56-C57-C58
34	s	404	UQ	C17-C18-C19-C21
31	V	201	CDL	O1-C1-CA2-OA2
31	V	202	CDL	O1-C1-CA2-OA2
31	a	201	CDL	O1-C1-CA2-OA2
31	n	101	CDL	O1-C1-CA2-OA2
31	s	402	CDL	O1-C1-CA2-OA2
30	l	704	PEE	O5-C30-O3-C3
30	s	401	PEE	C11-C10-O2-C2
30	s	403	PEE	C11-C10-O2-C2
31	V	202	CDL	C51-CB5-OB6-CB4
31	g	202	CDL	C51-CB5-OB6-CB4
33	g	201	PLX	C9-C10-C11-C12
30	j	201	PEE	C30-C31-C32-C33
34	s	404	UQ	C27-C28-C29-C31
31	V	202	CDL	C32-C33-C34-C35
31	k	101	CDL	C73-C74-C75-C76
31	s	402	CDL	C37-C38-C39-C40
33	g	201	PLX	C7-C8-C9-C10
31	l	702	CDL	C55-C56-C57-C58
31	l	703	CDL	OB9-CB7-OB8-CB6
31	V	201	CDL	C59-C60-C61-C62
31	g	202	CDL	C74-C75-C76-C77
31	V	201	CDL	C62-C63-C64-C65
30	j	201	PEE	C31-C30-O3-C3
31	g	202	CDL	C60-C61-C62-C63
33	r	502	PLX	C9-C10-C11-C12
31	k	101	CDL	CB5-C51-C52-C53
30	j	201	PEE	C11-C10-O2-C2
30	l	705	PEE	C11-C10-O2-C2
31	l	703	CDL	C35-C36-C37-C38
31	a	201	CDL	CB2-C1-CA2-OA2
31	g	202	CDL	CB2-C1-CA2-OA2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	n	101	CDL	CA2-C1-CB2-OB2
31	s	402	CDL	CA2-C1-CB2-OB2
30	s	401	PEE	O4-C10-O2-C2
31	V	202	CDL	OB7-CB5-OB6-CB4
31	g	202	CDL	OB7-CB5-OB6-CB4
33	r	502	PLX	C7-C8-C9-C10
33	g	201	PLX	C2-C1-N1-C1A
30	l	701	PEE	C31-C30-O3-C3
30	s	401	PEE	C31-C30-O3-C3
31	V	201	CDL	C71-CB7-OB8-CB6
31	l	702	CDL	C71-CB7-OB8-CB6
31	s	402	CDL	C71-CB7-OB8-CB6
31	a	201	CDL	C36-C37-C38-C39
33	g	201	PLX	C17-C18-C19-C20
33	j	203	PLX	C13-C14-C15-C16
31	l	702	CDL	OA5-CA3-CA4-OA6
31	k	101	CDL	C60-C61-C62-C63
31	n	101	CDL	C74-C75-C76-C77
31	V	202	CDL	O1-C1-CB2-OB2
31	n	101	CDL	O1-C1-CB2-OB2
31	V	202	CDL	OA6-CA4-CA6-OA8
31	l	703	CDL	OA6-CA4-CA6-OA8
33	g	201	PLX	O6-C4-C5-O8
31	l	702	CDL	C58-C59-C60-C61
31	k	101	CDL	C11-CA5-OA6-CA4
31	k	101	CDL	CA7-C31-C32-C33
30	s	401	PEE	O5-C30-O3-C3
31	V	201	CDL	OB9-CB7-OB8-CB6
30	W	201	PEE	C10-C11-C12-C13
31	a	201	CDL	CB5-C51-C52-C53
31	l	703	CDL	CA7-C31-C32-C33
31	s	402	CDL	C33-C34-C35-C36
33	j	202	PLX	C11-C10-C9-C8
31	s	402	CDL	C14-C15-C16-C17
31	l	702	CDL	OB9-CB7-OB8-CB6
30	l	701	PEE	C10-C11-C12-C13
30	r	501	PEE	C10-C11-C12-C13
31	l	702	CDL	CA7-C31-C32-C33
31	l	702	CDL	CB5-C51-C52-C53
30	l	705	PEE	C31-C30-O3-C3
31	l	703	CDL	C11-C12-C13-C14
30	s	403	PEE	O4-C10-O2-C2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	k	101	CDL	C40-C41-C42-C43
33	g	201	PLX	C2-C1-N1-C1B
31	l	702	CDL	CB7-C71-C72-C73
31	n	101	CDL	CB5-C51-C52-C53
30	j	201	PEE	O5-C30-O3-C3
30	l	701	PEE	O5-C30-O3-C3
31	s	402	CDL	OB9-CB7-OB8-CB6
31	V	201	CDL	C32-C33-C34-C35
31	n	101	CDL	CB7-C71-C72-C73
31	V	201	CDL	O1-C1-CB2-OB2
31	a	201	CDL	O1-C1-CB2-OB2
31	l	702	CDL	O1-C1-CB2-OB2
30	j	201	PEE	O4-C10-O2-C2
30	l	705	PEE	O4-C10-O2-C2
31	V	202	CDL	C71-CB7-OB8-CB6
31	a	201	CDL	C71-CB7-OB8-CB6
30	l	701	PEE	C11-C12-C13-C14
31	k	101	CDL	C58-C59-C60-C61
30	l	705	PEE	O5-C30-O3-C3
31	k	101	CDL	C36-C37-C38-C39
30	j	201	PEE	C4-O4P-P-O3P
30	l	701	PEE	C4-O4P-P-O3P
30	l	705	PEE	C1-O3P-P-O4P
30	r	501	PEE	C1-O3P-P-O4P
30	s	401	PEE	C4-O4P-P-O3P
31	V	201	CDL	CB2-OB2-PB2-OB5
31	V	201	CDL	CB3-OB5-PB2-OB2
31	V	202	CDL	CA2-OA2-PA1-OA5
31	V	202	CDL	CA3-OA5-PA1-OA2
31	V	202	CDL	CB2-OB2-PB2-OB5
31	V	202	CDL	CB3-OB5-PB2-OB2
31	a	201	CDL	CB3-OB5-PB2-OB2
31	g	202	CDL	CA2-OA2-PA1-OA5
31	k	101	CDL	CA3-OA5-PA1-OA2
31	l	703	CDL	CA3-OA5-PA1-OA2
31	n	101	CDL	CA2-OA2-PA1-OA5
31	n	101	CDL	CA3-OA5-PA1-OA2
31	n	101	CDL	CB2-OB2-PB2-OB5
31	n	101	CDL	CB3-OB5-PB2-OB2
33	a	202	PLX	C3-O4-P1-O1
33	a	202	PLX	C2-O1-P1-O4
33	g	201	PLX	C2-O1-P1-O4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	Q	101	PEE	C11-C12-C13-C14
31	l	702	CDL	CB2-C1-CA2-OA2
31	s	402	CDL	CB2-C1-CA2-OA2
31	k	101	CDL	OA7-CA5-OA6-CA4
33	r	502	PLX	O6-C6-C7-C8
31	V	201	CDL	C34-C35-C36-C37
31	V	202	CDL	C59-C60-C61-C62
31	l	702	CDL	C52-C53-C54-C55
31	n	101	CDL	C71-C72-C73-C74
33	j	203	PLX	C31-C32-C33-C34
30	W	201	PEE	C21-C22-C23-C24
30	j	201	PEE	C21-C22-C23-C24
30	l	701	PEE	C32-C33-C34-C35
30	l	704	PEE	C34-C35-C36-C37
31	V	202	CDL	C37-C38-C39-C40
31	l	702	CDL	C56-C57-C58-C59
31	l	702	CDL	C71-C72-C73-C74
33	j	203	PLX	C14-C15-C16-C17
30	l	705	PEE	C33-C34-C35-C36
30	s	403	PEE	C23-C24-C25-C26
31	V	201	CDL	C52-C53-C54-C55
31	l	702	CDL	C62-C63-C64-C65
31	l	703	CDL	C34-C35-C36-C37
31	n	101	CDL	C52-C53-C54-C55
31	s	402	CDL	C75-C76-C77-C78
33	a	202	PLX	C13-C14-C15-C16
33	j	202	PLX	C25-C26-C27-C28
31	l	703	CDL	CB7-C71-C72-C73
30	l	705	PEE	C22-C23-C24-C25
33	j	202	PLX	C14-C15-C16-C17
33	j	202	PLX	C7-C8-C9-C10
33	r	502	PLX	C34-C35-C36-C37
30	r	501	PEE	C17-C18-C19-C20
30	j	201	PEE	C14-C15-C16-C17
31	g	202	CDL	C75-C76-C77-C78
31	n	101	CDL	C73-C74-C75-C76
31	s	402	CDL	C11-C12-C13-C14
31	s	402	CDL	C52-C53-C54-C55
33	j	203	PLX	C34-C35-C36-C37
31	k	101	CDL	O1-C1-CB2-OB2
31	l	702	CDL	C75-C76-C77-C78
33	g	201	PLX	C28-C29-C30-C31

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	r	503	PLX	C25-C26-C27-C28
31	V	202	CDL	CB7-C71-C72-C73
30	j	201	PEE	C42-C43-C44-C45
31	V	201	CDL	C55-C56-C57-C58
31	V	202	CDL	C13-C14-C15-C16
31	a	201	CDL	C35-C36-C37-C38
31	k	101	CDL	C21-C22-C23-C24
31	l	702	CDL	C36-C37-C38-C39
31	s	402	CDL	C51-C52-C53-C54
31	s	402	CDL	C73-C74-C75-C76
33	a	202	PLX	C14-C15-C16-C17
33	a	202	PLX	C25-C26-C27-C28
33	g	201	PLX	C18-C19-C20-C21
33	j	202	PLX	C13-C14-C15-C16
33	r	503	PLX	C12-C13-C14-C15
31	V	202	CDL	C60-C61-C62-C63
31	l	703	CDL	C59-C60-C61-C62
34	s	404	UQ	C18-C19-C21-C22
30	r	501	PEE	C13-C14-C15-C16
31	V	201	CDL	C35-C36-C37-C38
31	V	201	CDL	C37-C38-C39-C40
31	V	202	CDL	C55-C56-C57-C58
31	l	702	CDL	C59-C60-C61-C62
31	l	703	CDL	C71-C72-C73-C74
31	s	402	CDL	C71-C72-C73-C74
33	g	201	PLX	C13-C14-C15-C16
33	j	203	PLX	C7-C8-C9-C10
31	a	201	CDL	OB9-CB7-OB8-CB6
30	l	704	PEE	C32-C33-C34-C35
31	g	202	CDL	C62-C63-C64-C65
31	k	101	CDL	C55-C56-C57-C58
33	g	201	PLX	C30-C31-C32-C33
33	j	202	PLX	C27-C28-C29-C30
33	j	203	PLX	C29-C30-C31-C32
30	l	704	PEE	C30-C31-C32-C33
31	s	402	CDL	CB7-C71-C72-C73
30	W	201	PEE	C12-C13-C14-C15
30	l	704	PEE	C21-C22-C23-C24
30	r	501	PEE	C21-C22-C23-C24
31	V	201	CDL	C58-C59-C60-C61
31	V	202	CDL	C52-C53-C54-C55
31	a	201	CDL	C73-C74-C75-C76

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	g	202	CDL	C71-C72-C73-C74
31	g	202	CDL	C83-C84-C85-C86
31	k	101	CDL	C71-C72-C73-C74
31	l	702	CDL	C74-C75-C76-C77
33	g	201	PLX	C10-C11-C12-C13
33	g	201	PLX	C32-C33-C34-C35
33	j	203	PLX	C33-C34-C35-C36
33	r	502	PLX	C30-C31-C32-C33
33	r	503	PLX	C10-C11-C12-C13
33	g	201	PLX	C2-C1-N1-C1C
34	s	404	UQ	C14-C16-C17-C18
30	s	401	PEE	C14-C15-C16-C17
31	a	201	CDL	C60-C61-C62-C63
31	g	202	CDL	C32-C33-C34-C35
31	l	702	CDL	C73-C74-C75-C76
33	j	203	PLX	C16-C17-C18-C19
33	r	502	PLX	C33-C34-C35-C36
33	r	503	PLX	C35-C36-C37-C38
31	V	202	CDL	C33-C34-C35-C36
31	a	201	CDL	C32-C33-C34-C35
31	k	101	CDL	C56-C57-C58-C59
31	l	702	CDL	C13-C14-C15-C16
33	r	503	PLX	C13-C14-C15-C16
31	l	703	CDL	CB5-C51-C52-C53
30	l	701	PEE	C39-C40-C41-C42
31	a	201	CDL	C62-C63-C64-C65
31	l	703	CDL	C75-C76-C77-C78
33	j	202	PLX	C33-C34-C35-C36
30	l	704	PEE	C31-C32-C33-C34
31	l	703	CDL	C74-C75-C76-C77
33	r	502	PLX	C14-C15-C16-C17
33	r	503	PLX	C28-C29-C30-C31
31	V	201	CDL	C12-C13-C14-C15
31	l	703	CDL	C41-C42-C43-C44
33	r	502	PLX	C27-C28-C29-C30
31	V	202	CDL	OB9-CB7-OB8-CB6
30	l	705	PEE	C31-C32-C33-C34
30	s	401	PEE	C11-C12-C13-C14
31	V	202	CDL	C56-C57-C58-C59
31	g	202	CDL	C43-C44-C45-C46
31	l	702	CDL	C19-C20-C21-C22
31	n	101	CDL	C54-C55-C56-C57

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	s	402	CDL	C17-C18-C19-C20
31	s	402	CDL	C36-C37-C38-C39
30	l	701	PEE	C17-C18-C19-C20
30	l	704	PEE	C37-C38-C39-C40
31	k	101	CDL	C14-C15-C16-C17
31	k	101	CDL	C32-C33-C34-C35
31	l	703	CDL	C55-C56-C57-C58
33	j	202	PLX	C9-C10-C11-C12
33	j	203	PLX	C27-C28-C29-C30
31	V	202	CDL	CA7-C31-C32-C33
30	r	501	PEE	C11-C12-C13-C14
31	l	703	CDL	C51-C52-C53-C54
33	g	201	PLX	C25-C26-C27-C28
30	r	501	PEE	C11-C10-O2-C2
31	a	201	CDL	C37-C38-C39-C40
33	j	202	PLX	C29-C30-C31-C32
33	g	201	PLX	O9-C24-C25-C26
30	l	701	PEE	C33-C34-C35-C36
31	V	201	CDL	C71-C72-C73-C74
31	g	202	CDL	C59-C60-C61-C62
31	l	702	CDL	C51-C52-C53-C54
33	j	202	PLX	C31-C32-C33-C34
33	r	503	PLX	C30-C31-C32-C33
30	Q	101	PEE	C19-C20-C21-C22
30	Q	101	PEE	C35-C36-C37-C38
31	k	101	CDL	C59-C60-C61-C62
31	V	202	CDL	C54-C55-C56-C57
31	k	101	CDL	C62-C63-C64-C65
31	a	201	CDL	C75-C76-C77-C78
31	g	202	CDL	C54-C55-C56-C57
31	l	702	CDL	C37-C38-C39-C40
31	l	703	CDL	C15-C16-C17-C18
31	s	402	CDL	C55-C56-C57-C58
31	s	402	CDL	C59-C60-C61-C62
33	a	202	PLX	C9-C10-C11-C12
31	V	201	CDL	C75-C76-C77-C78
31	g	202	CDL	C31-C32-C33-C34
31	l	702	CDL	C12-C13-C14-C15
33	r	502	PLX	C11-C10-C9-C8
33	r	502	PLX	C28-C29-C30-C31
31	a	201	CDL	C52-C53-C54-C55
31	l	703	CDL	C57-C58-C59-C60

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	g	201	PLX	C27-C28-C29-C30
33	j	203	PLX	C9-C10-C11-C12
30	W	201	PEE	C13-C14-C15-C16
30	s	403	PEE	C42-C43-C44-C45
33	a	202	PLX	C10-C11-C12-C13
30	j	201	PEE	C22-C23-C24-C25
31	k	101	CDL	C52-C53-C54-C55
31	k	101	CDL	C71-CB7-OB8-CB6
30	r	501	PEE	C31-C32-C33-C34
30	r	501	PEE	C41-C42-C43-C44
31	V	202	CDL	C11-C12-C13-C14
31	a	201	CDL	C76-C77-C78-C79
31	g	202	CDL	C41-C42-C43-C44
33	g	201	PLX	C33-C34-C35-C36
31	s	402	CDL	C54-C55-C56-C57
33	a	202	PLX	C30-C31-C32-C33
31	V	202	CDL	C34-C35-C36-C37
31	g	202	CDL	C63-C64-C65-C66
33	r	503	PLX	C31-C32-C33-C34
30	s	403	PEE	C39-C40-C41-C42
30	r	501	PEE	O4-C10-O2-C2
31	l	703	CDL	OB7-CB5-OB6-CB4
31	g	202	CDL	CA7-C31-C32-C33
30	W	201	PEE	C31-C30-O3-C3
31	g	202	CDL	C71-CB7-OB8-CB6
31	V	202	CDL	C75-C76-C77-C78
31	g	202	CDL	C57-C58-C59-C60
33	r	502	PLX	C31-C32-C33-C34
30	W	201	PEE	C24-C25-C26-C27
33	r	503	PLX	C14-C15-C16-C17
33	j	202	PLX	C28-C29-C30-C31
30	s	403	PEE	C10-C11-C12-C13
31	s	402	CDL	CB5-C51-C52-C53
31	l	702	CDL	C32-C33-C34-C35
31	l	703	CDL	C32-C33-C34-C35
30	j	201	PEE	C13-C14-C15-C16
31	a	201	CDL	C74-C75-C76-C77
31	l	703	CDL	C43-C44-C45-C46
31	l	703	CDL	C52-C53-C54-C55
31	V	201	CDL	C51-CB5-OB6-CB4
31	l	702	CDL	C11-CA5-OA6-CA4
31	l	703	CDL	C51-CB5-OB6-CB4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	l	704	PEE	O3P-C1-C2-O2
31	k	101	CDL	OB5-CB3-CB4-OB6
31	a	201	CDL	C22-C23-C24-C25
30	s	403	PEE	C36-C37-C38-C39
30	s	403	PEE	C38-C39-C40-C41
30	s	403	PEE	C20-C21-C22-C23
31	g	202	CDL	C11-C12-C13-C14
31	k	101	CDL	C39-C40-C41-C42
31	k	101	CDL	C74-C75-C76-C77
31	l	703	CDL	C62-C63-C64-C65
31	n	101	CDL	C72-C73-C74-C75
30	W	201	PEE	C11-C12-C13-C14
33	r	503	PLX	C27-C28-C29-C30
31	l	702	CDL	OA6-CA4-CA6-OA8
31	s	402	CDL	OB6-CB4-CB6-OB8
31	a	201	CDL	C54-C55-C56-C57
31	l	702	CDL	C17-C18-C19-C20
31	s	402	CDL	C31-C32-C33-C34
30	r	501	PEE	C15-C16-C17-C18
30	s	401	PEE	C19-C20-C21-C22
30	s	403	PEE	C35-C36-C37-C38
31	V	201	CDL	CA5-C11-C12-C13
31	k	101	CDL	OB9-CB7-OB8-CB6
30	l	701	PEE	C31-C32-C33-C34
31	s	402	CDL	C16-C17-C18-C19
31	V	201	CDL	C72-C73-C74-C75
33	a	202	PLX	C16-C17-C18-C19
31	l	702	CDL	OA7-CA5-OA6-CA4
31	V	202	CDL	C35-C36-C37-C38
30	j	201	PEE	C36-C37-C38-C39
30	Q	101	PEE	C1-O3P-P-O4P
30	j	201	PEE	C1-O3P-P-O4P
30	r	501	PEE	C4-O4P-P-O3P
31	k	101	CDL	CA2-OA2-PA1-OA5
31	k	101	CDL	CB2-OB2-PB2-OB5
33	r	502	PLX	C2-O1-P1-O4
31	V	202	CDL	C62-C63-C64-C65
33	r	503	PLX	C7-C8-C9-C10
30	s	401	PEE	C12-C13-C14-C15
31	s	402	CDL	C35-C36-C37-C38
33	a	202	PLX	C28-C29-C30-C31
31	a	201	CDL	OA5-CA3-CA4-CA6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	l	702	CDL	OA5-CA3-CA4-CA6
31	n	101	CDL	OA5-CA3-CA4-CA6
31	V	202	CDL	C73-C74-C75-C76
31	V	202	CDL	C12-C13-C14-C15
33	a	202	PLX	C35-C36-C37-C38
31	k	101	CDL	C37-C38-C39-C40
30	l	704	PEE	C11-C12-C13-C14
31	V	201	CDL	OB7-CB5-OB6-CB4
30	Q	101	PEE	C14-C15-C16-C17
31	a	201	CDL	C71-C72-C73-C74
31	g	202	CDL	C52-C53-C54-C55
33	r	503	PLX	C16-C17-C18-C19
31	V	201	CDL	CB7-C71-C72-C73
31	g	202	CDL	C23-C24-C25-C26
30	l	701	PEE	C1-C2-C3-O3
30	s	401	PEE	C1-C2-C3-O3
31	V	202	CDL	CA3-CA4-CA6-OA8
31	l	703	CDL	CA3-CA4-CA6-OA8
33	g	201	PLX	C3-C4-C5-O8
30	s	403	PEE	C34-C35-C36-C37
31	g	202	CDL	C17-C18-C19-C20
31	g	202	CDL	C55-C56-C57-C58
31	k	101	CDL	C16-C17-C18-C19
33	j	203	PLX	C11-C12-C13-C14
30	W	201	PEE	O5-C30-O3-C3
31	a	201	CDL	C84-C85-C86-C87
33	j	202	PLX	C36-C37-C38-C39
33	r	502	PLX	C12-C13-C14-C15
30	l	704	PEE	C10-C11-C12-C13
31	k	101	CDL	C20-C21-C22-C23
32	X	201	8Q1	O33-C32-C34-O35
30	j	201	PEE	C34-C35-C36-C37
31	l	703	CDL	C64-C65-C66-C67
30	r	501	PEE	C36-C37-C38-C39
30	Q	101	PEE	C23-C24-C25-C26
30	s	401	PEE	C15-C16-C17-C18
31	g	202	CDL	OB9-CB7-OB8-CB6
31	a	201	CDL	CA5-C11-C12-C13
33	r	502	PLX	C10-C11-C12-C13
31	k	101	CDL	C15-C16-C17-C18
33	r	503	PLX	C15-C16-C17-C18
31	g	202	CDL	CB5-C51-C52-C53

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	V	202	CDL	C17-C18-C19-C20
31	n	101	CDL	C75-C76-C77-C78
31	V	202	CDL	C42-C43-C44-C45
31	V	202	CDL	C82-C83-C84-C85
31	k	101	CDL	CA6-CA4-OA6-CA5
31	V	201	CDL	C73-C74-C75-C76
31	a	201	CDL	OB5-CB3-CB4-OB6
30	s	403	PEE	C17-C18-C19-C20
30	s	403	PEE	C22-C23-C24-C25
30	Q	101	PEE	C21-C22-C23-C24
30	l	705	PEE	C13-C14-C15-C16
30	l	704	PEE	C42-C43-C44-C45
30	s	401	PEE	C23-C24-C25-C26
31	k	101	CDL	C11-C12-C13-C14
30	l	705	PEE	O2-C2-C3-O3
31	k	101	CDL	OB6-CB4-CB6-OB8
33	g	201	PLX	C16-C17-C18-C19
31	a	201	CDL	C11-C12-C13-C14
30	j	201	PEE	C38-C39-C40-C41
31	g	202	CDL	C84-C85-C86-C87
31	l	703	CDL	C14-C15-C16-C17
31	l	703	CDL	C33-C34-C35-C36
31	s	402	CDL	C12-C13-C14-C15
31	V	201	CDL	C64-C65-C66-C67
33	a	202	PLX	C7-C8-C9-C10
30	j	201	PEE	C19-C20-C21-C22
30	l	705	PEE	C10-C11-C12-C13
31	V	201	CDL	C74-C75-C76-C77
33	a	202	PLX	C33-C34-C35-C36
30	l	704	PEE	O3P-C1-C2-C3
31	k	101	CDL	OA5-CA3-CA4-CA6
31	k	101	CDL	C41-C42-C43-C44
31	V	201	CDL	C43-C44-C45-C46
31	V	202	CDL	C76-C77-C78-C79
30	j	201	PEE	C32-C33-C34-C35
31	s	402	CDL	C40-C41-C42-C43
30	r	501	PEE	C31-C30-O3-C3
32	X	201	8Q1	N41-C42-C43-S44
31	V	202	CDL	C74-C75-C76-C77
30	s	403	PEE	C13-C14-C15-C16
31	g	202	CDL	C14-C15-C16-C17
31	n	101	CDL	C51-C52-C53-C54

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	l	702	CDL	C15-C16-C17-C18
30	l	705	PEE	C1-C2-C3-O3
30	r	501	PEE	C1-C2-C3-O3
31	k	101	CDL	CB3-CB4-CB6-OB8
31	l	702	CDL	CA3-CA4-CA6-OA8
31	s	402	CDL	CB3-CB4-CB6-OB8
33	a	202	PLX	C3-C4-C5-O8
33	r	502	PLX	C3-C4-C5-O8
33	r	503	PLX	C3-C4-C5-O8
31	a	201	CDL	C18-C19-C20-C21
31	g	202	CDL	C19-C20-C21-C22
33	r	502	PLX	C16-C17-C18-C19
30	l	704	PEE	C24-C25-C26-C27
31	l	703	CDL	C54-C55-C56-C57
32	X	201	8Q1	C11-C12-C13-C14
31	a	201	CDL	C11-CA5-OA6-CA4
31	l	703	CDL	C38-C39-C40-C41
30	s	401	PEE	C1-O3P-P-O4P
33	a	202	PLX	C5-C4-O6-C6
33	j	202	PLX	C3-C4-O6-C6
33	r	503	PLX	C5-C4-O6-C6
30	Q	101	PEE	C24-C25-C26-C27
31	l	703	CDL	C31-C32-C33-C34
33	j	203	PLX	C26-C27-C28-C29
30	W	201	PEE	O3P-C1-C2-O2
31	V	201	CDL	OB5-CB3-CB4-OB6
31	l	702	CDL	OB5-CB3-CB4-OB6
33	j	202	PLX	O4-C3-C4-O6
33	r	503	PLX	O4-C3-C4-O6
30	s	403	PEE	C12-C13-C14-C15
31	l	703	CDL	C58-C59-C60-C61
31	a	201	CDL	C38-C39-C40-C41
30	l	701	PEE	O2-C2-C3-O3
30	r	501	PEE	O2-C2-C3-O3
31	V	202	CDL	OB6-CB4-CB6-OB8
31	g	202	CDL	OA6-CA4-CA6-OA8
31	n	101	CDL	OA6-CA4-CA6-OA8
30	Q	101	PEE	C18-C19-C20-C21
30	s	403	PEE	C31-C30-O3-C3
31	a	201	CDL	C31-C32-C33-C34
31	g	202	CDL	C15-C16-C17-C18
31	V	202	CDL	C84-C85-C86-C87

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	l	703	CDL	C84-C85-C86-C87
31	V	201	CDL	C54-C55-C56-C57
31	l	703	CDL	C82-C83-C84-C85
31	V	201	CDL	CB4-CB3-OB5-PB2
31	k	101	CDL	CA4-CA3-OA5-PA1
31	g	202	CDL	C64-C65-C66-C67
31	l	703	CDL	C78-C79-C80-C81
31	l	702	CDL	C80-C81-C82-C83
30	l	701	PEE	C18-C19-C20-C21
33	a	202	PLX	C11-C12-C13-C14
33	j	202	PLX	C10-C11-C12-C13
33	j	203	PLX	O6-C6-C7-C8
30	l	701	PEE	O3P-C1-C2-C3
30	s	403	PEE	O3P-C1-C2-C3
31	V	201	CDL	OA5-CA3-CA4-CA6
31	V	201	CDL	OB5-CB3-CB4-CB6
31	k	101	CDL	OB5-CB3-CB4-CB6
31	s	402	CDL	OA5-CA3-CA4-CA6
33	j	202	PLX	O4-C3-C4-C5
30	l	704	PEE	C13-C14-C15-C16
33	j	203	PLX	C25-C26-C27-C28
30	r	501	PEE	C38-C39-C40-C41
31	g	202	CDL	C36-C37-C38-C39
33	g	201	PLX	C12-C13-C14-C15
31	g	202	CDL	CA5-C11-C12-C13
31	a	201	CDL	C12-C13-C14-C15
31	k	101	CDL	C33-C34-C35-C36
30	j	201	PEE	C44-C45-C46-C47
31	V	202	CDL	C71-C72-C73-C74
33	j	203	PLX	C12-C13-C14-C15
30	s	403	PEE	C21-C22-C23-C24
30	l	701	PEE	C35-C36-C37-C38
31	k	101	CDL	C79-C80-C81-C82
31	V	202	CDL	CB3-CB4-CB6-OB8
31	n	101	CDL	CA3-CA4-CA6-OA8
33	j	202	PLX	C3-C4-C5-O8
30	s	403	PEE	O5-C30-O3-C3
30	s	403	PEE	C14-C15-C16-C17
30	s	403	PEE	O3P-C1-C2-O2
31	V	202	CDL	OA5-CA3-CA4-OA6
31	l	703	CDL	OA5-CA3-CA4-OA6
33	r	502	PLX	O4-C3-C4-O6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	l	703	CDL	C12-C11-CA5-OA6
31	a	201	CDL	C55-C56-C57-C58
31	a	201	CDL	C20-C21-C22-C23
31	a	201	CDL	OA7-CA5-OA6-CA4
31	l	703	CDL	OB6-CB4-CB6-OB8
30	r	501	PEE	O5-C30-O3-C3
30	r	501	PEE	C14-C15-C16-C17
31	V	201	CDL	C44-C45-C46-C47
31	k	101	CDL	C84-C85-C86-C87
30	l	705	PEE	C15-C16-C17-C18
31	l	703	CDL	C77-C78-C79-C80
33	j	202	PLX	C30-C31-C32-C33
33	r	502	PLX	C6-C7-C8-C9
33	j	203	PLX	C10-C11-C12-C13
35	w	401	ADP	PB-O3A-PA-O1A
31	V	202	CDL	C64-C65-C66-C67
33	r	503	PLX	C32-C33-C34-C35
30	W	201	PEE	C15-C16-C17-C18
31	a	201	CDL	CB2-OB2-PB2-OB5
31	l	702	CDL	CA2-OA2-PA1-OA5
33	r	503	PLX	C2-O1-P1-O4
31	a	201	CDL	C21-C22-C23-C24
30	l	701	PEE	C2-C1-O3P-P
31	g	202	CDL	C1-CB2-OB2-PB2
31	l	703	CDL	C60-C61-C62-C63
30	Q	101	PEE	C1-O3P-P-O1P
30	Q	101	PEE	C4-O4P-P-O2P
30	j	201	PEE	C1-O3P-P-O2P
30	j	201	PEE	C4-O4P-P-O1P
30	l	701	PEE	C4-O4P-P-O1P
30	l	705	PEE	C1-O3P-P-O2P
30	l	705	PEE	C1-O3P-P-O1P
30	r	501	PEE	C1-O3P-P-O2P
30	r	501	PEE	C1-O3P-P-O1P
30	r	501	PEE	C4-O4P-P-O2P
30	s	401	PEE	C4-O4P-P-O1P
31	V	201	CDL	CB2-OB2-PB2-OB4
31	V	202	CDL	CA2-OA2-PA1-OA4
31	V	202	CDL	CA3-OA5-PA1-OA3
31	V	202	CDL	CA3-OA5-PA1-OA4
31	V	202	CDL	CB2-OB2-PB2-OB4
31	V	202	CDL	CB3-OB5-PB2-OB3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
31	V	202	CDL	CB3-OB5-PB2-OB4
31	a	201	CDL	CB2-OB2-PB2-OB4
31	g	202	CDL	CA2-OA2-PA1-OA4
31	k	101	CDL	CA3-OA5-PA1-OA4
31	k	101	CDL	CB2-OB2-PB2-OB4
31	l	702	CDL	CB3-OB5-PB2-OB4
31	n	101	CDL	CA2-OA2-PA1-OA4
31	n	101	CDL	CB2-OB2-PB2-OB4
33	a	202	PLX	C2-O1-P1-O3
33	g	201	PLX	C2-O1-P1-O3
33	j	202	PLX	C2-O1-P1-O3
33	r	502	PLX	C2-O1-P1-O3
33	r	503	PLX	C2-O1-P1-O2
33	r	503	PLX	C2-O1-P1-O3
30	Q	101	PEE	C10-C11-C12-C13
30	l	705	PEE	O3P-C1-C2-C3
31	V	202	CDL	OA5-CA3-CA4-CA6
31	a	201	CDL	OB5-CB3-CB4-CB6
31	l	703	CDL	OA5-CA3-CA4-CA6
33	r	502	PLX	O4-C3-C4-C5
33	r	503	PLX	O4-C3-C4-C5
31	g	202	CDL	C37-C38-C39-C40
30	s	401	PEE	C24-C25-C26-C27
33	g	201	PLX	C11-C10-C9-C8
33	g	201	PLX	C25-C24-O8-C5
33	j	202	PLX	C24-C25-C26-C27
31	g	202	CDL	C39-C40-C41-C42
31	l	702	CDL	C54-C55-C56-C57
30	l	701	PEE	O3P-C1-C2-O2
30	l	705	PEE	O3P-C1-C2-O2
31	V	201	CDL	OA5-CA3-CA4-OA6
30	r	501	PEE	C44-C45-C46-C47
31	s	402	CDL	C32-C33-C34-C35
31	V	202	CDL	C32-C31-CA7-OA8
31	l	703	CDL	CB3-CB4-CB6-OB8
33	j	202	PLX	N1-C1-C2-O1
33	a	202	PLX	O6-C4-C5-O8
33	j	202	PLX	O6-C4-C5-O8
33	r	502	PLX	O6-C4-C5-O8
33	r	503	PLX	O6-C4-C5-O8
31	V	201	CDL	C14-C15-C16-C17
33	a	202	PLX	C18-C19-C20-C21

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	r	502	PLX	C4-C5-O8-C24
31	k	101	CDL	C64-C65-C66-C67
31	a	201	CDL	C14-C15-C16-C17
31	l	702	CDL	C35-C36-C37-C38
31	V	202	CDL	C36-C37-C38-C39
33	a	202	PLX	C27-C28-C29-C30
33	g	201	PLX	O6-C6-C7-C8
33	j	203	PLX	O8-C24-C25-C26
31	a	201	CDL	C82-C83-C84-C85
33	r	503	PLX	C11-C12-C13-C14
31	g	202	CDL	C77-C78-C79-C80
31	V	202	CDL	C83-C84-C85-C86
31	l	703	CDL	C39-C40-C41-C42
30	W	201	PEE	O4-C10-O2-C2
31	g	202	CDL	C44-C45-C46-C47
33	j	202	PLX	C16-C17-C18-C19
33	j	202	PLX	C11-C12-C13-C14
31	g	202	CDL	C73-C74-C75-C76
30	l	704	PEE	C3-C2-O2-C10
31	V	201	CDL	CA6-CA4-OA6-CA5
30	W	201	PEE	O3P-C1-C2-C3
31	g	202	CDL	C72-C71-CB7-OB8
31	l	703	CDL	C21-C22-C23-C24
31	V	201	CDL	CA4-CA3-OA5-PA1
31	a	201	CDL	OA5-CA3-CA4-OA6
31	s	402	CDL	OA7-CA5-OA6-CA4
31	l	702	CDL	C82-C83-C84-C85
31	s	402	CDL	C34-C35-C36-C37
30	W	201	PEE	C11-C10-O2-C2
31	s	402	CDL	C11-CA5-OA6-CA4
30	r	501	PEE	C18-C19-C20-C21
30	s	401	PEE	O2-C2-C3-O3
31	V	201	CDL	C38-C39-C40-C41
31	g	202	CDL	CA3-OA5-PA1-OA2
31	l	702	CDL	CB3-OB5-PB2-OB2
31	s	402	CDL	CB3-OB5-PB2-OB2
34	s	404	UQ	C12-C13-C14-C16
31	g	202	CDL	CA3-CA4-CA6-OA8
31	k	101	CDL	C34-C35-C36-C37
33	j	202	PLX	C12-C13-C14-C15
31	n	101	CDL	C71-CB7-OB8-CB6
31	l	702	CDL	CB4-CB3-OB5-PB2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	W	201	PEE	C16-C17-C18-C19
30	l	705	PEE	C16-C17-C18-C19
31	k	101	CDL	C78-C79-C80-C81
31	a	201	CDL	C64-C65-C66-C67
31	n	101	CDL	C57-C58-C59-C60
31	l	702	CDL	C12-C11-CA5-OA6
30	r	501	PEE	C40-C41-C42-C43
31	s	402	CDL	C74-C75-C76-C77
33	a	202	PLX	C34-C35-C36-C37
31	n	101	CDL	OB9-CB7-OB8-CB6
30	l	705	PEE	C18-C19-C20-C21
31	V	202	CDL	C57-C58-C59-C60
30	l	704	PEE	C39-C40-C41-C42
30	l	704	PEE	C44-C45-C46-C47
33	r	502	PLX	C13-C14-C15-C16
31	g	202	CDL	OB6-CB4-CB6-OB8
31	s	402	CDL	C18-C19-C20-C21
30	j	201	PEE	C40-C41-C42-C43
31	g	202	CDL	C56-C57-C58-C59
30	r	501	PEE	C16-C17-C18-C19
31	l	703	CDL	C32-C31-CA7-OA8
33	r	503	PLX	C18-C19-C20-C21
30	l	705	PEE	C23-C24-C25-C26
32	X	201	8Q1	C11-C10-C9-C8
31	l	702	CDL	C24-C25-C26-C27
31	k	101	CDL	C82-C83-C84-C85
31	a	201	CDL	C39-C40-C41-C42
31	V	202	CDL	C19-C20-C21-C22
31	l	702	CDL	C20-C21-C22-C23
33	g	201	PLX	C11-C12-C13-C14
30	l	701	PEE	C13-C14-C15-C16
31	s	402	CDL	C72-C71-CB7-OB8
34	s	404	UQ	C6-C7-C8-C9
31	g	202	CDL	C42-C43-C44-C45
31	s	402	CDL	C15-C16-C17-C18
30	s	401	PEE	C13-C14-C15-C16
31	g	202	CDL	OA7-CA5-OA6-CA4
31	g	202	CDL	C12-C13-C14-C15
32	X	201	8Q1	C42-C43-S44-C1
31	s	402	CDL	C38-C39-C40-C41
30	j	201	PEE	C2-C3-O3-C30
31	k	101	CDL	C75-C76-C77-C78

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	Q	101	PEE	C20-C21-C22-C23
33	a	202	PLX	C19-C20-C21-C22
30	j	201	PEE	C15-C16-C17-C18
30	Q	101	PEE	C16-C17-C18-C19
31	V	202	CDL	C39-C40-C41-C42
31	a	201	CDL	C61-C62-C63-C64
31	l	703	CDL	C12-C13-C14-C15
30	l	704	PEE	C15-C16-C17-C18
30	Q	101	PEE	C36-C37-C38-C39
30	s	403	PEE	C16-C17-C18-C19
30	j	201	PEE	O3P-C1-C2-O2
33	j	203	PLX	C36-C37-C38-C39
31	a	201	CDL	C44-C45-C46-C47
33	a	202	PLX	O8-C24-C25-C26
33	r	502	PLX	O8-C24-C25-C26
30	l	704	PEE	C33-C34-C35-C36
31	l	702	CDL	OB5-CB3-CB4-CB6
31	g	202	CDL	C11-CA5-OA6-CA4
30	s	403	PEE	O4P-C4-C5-N
31	k	101	CDL	C1-CB2-OB2-PB2
31	k	101	CDL	CA2-C1-CB2-OB2
33	a	202	PLX	C12-C13-C14-C15
31	l	703	CDL	C72-C71-CB7-OB8
31	V	202	CDL	C63-C64-C65-C66
31	g	202	CDL	C52-C51-CB5-OB6
31	s	402	CDL	C12-C11-CA5-OA6
31	g	202	CDL	C35-C36-C37-C38
33	r	502	PLX	C3-O4-P1-O1
33	r	502	PLX	C18-C19-C20-C21
30	l	704	PEE	C19-C20-C21-C22
31	l	702	CDL	C76-C77-C78-C79
30	l	705	PEE	C20-C21-C22-C23
33	g	201	PLX	C14-C15-C16-C17
33	j	203	PLX	C18-C19-C20-C21
30	s	401	PEE	C16-C17-C18-C19
31	l	702	CDL	OB7-CB5-OB6-CB4
31	k	101	CDL	C52-C51-CB5-OB6
31	n	101	CDL	C72-C71-CB7-OB8
30	W	201	PEE	C18-C19-C20-C21
33	j	203	PLX	C7-C6-O6-C4
31	n	101	CDL	C52-C51-CB5-OB6
30	Q	101	PEE	C38-C39-C40-C41

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	j	201	PEE	C16-C17-C18-C19
30	l	701	PEE	C16-C17-C18-C19
30	l	701	PEE	C38-C39-C40-C41
30	l	704	PEE	C16-C17-C18-C19
30	l	705	PEE	C38-C39-C40-C41
30	s	401	PEE	C18-C19-C20-C21
30	W	201	PEE	C22-C23-C24-C25
31	s	402	CDL	C77-C78-C79-C80
33	a	202	PLX	C15-C16-C17-C18
31	a	201	CDL	C32-C31-CA7-OA8
33	r	502	PLX	C19-C20-C21-C22
30	j	201	PEE	O3P-C1-C2-C3
33	j	203	PLX	C28-C29-C30-C31
33	j	202	PLX	O9-C24-C25-C26
30	l	704	PEE	C36-C37-C38-C39
31	a	201	CDL	C12-C11-CA5-OA6
31	V	202	CDL	C52-C51-CB5-OB6
31	l	702	CDL	C72-C71-CB7-OB8
31	n	101	CDL	C72-C71-CB7-OB9
31	s	402	CDL	C57-C58-C59-C60
31	l	702	CDL	C51-CB5-OB6-CB4
31	V	202	CDL	C44-C45-C46-C47
31	g	202	CDL	C52-C51-CB5-OB7
31	a	201	CDL	C34-C35-C36-C37
31	s	402	CDL	C12-C11-CA5-OA7
31	a	201	CDL	C12-C11-CA5-OA7
31	a	201	CDL	C32-C31-CA7-OA9
31	k	101	CDL	C52-C51-CB5-OB7
31	l	703	CDL	C72-C71-CB7-OB9
30	l	704	PEE	C1-C2-C3-O3
30	l	704	PEE	C43-C44-C45-C46
31	l	703	CDL	C17-C18-C19-C20
30	W	201	PEE	C4-O4P-P-O2P
31	g	202	CDL	CA3-OA5-PA1-OA3
31	l	703	CDL	CB3-OB5-PB2-OB3
33	g	201	PLX	C3-O4-P1-O2
31	n	101	CDL	C52-C51-CB5-OB7
31	V	201	CDL	C31-C32-C33-C34
33	r	503	PLX	C9-C10-C11-C12
31	V	201	CDL	C12-C11-CA5-OA6
30	l	705	PEE	C11-C12-C13-C14
31	l	702	CDL	C44-C45-C46-C47

Continued on next page...

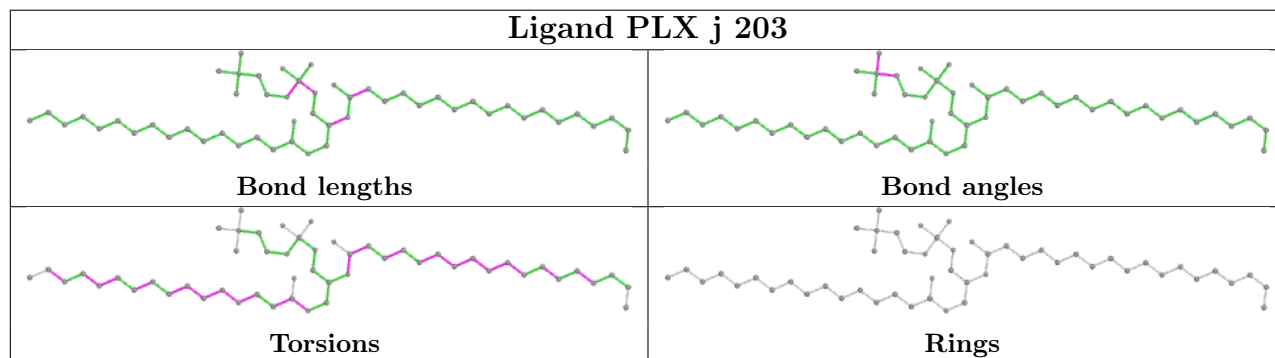
Continued from previous page...

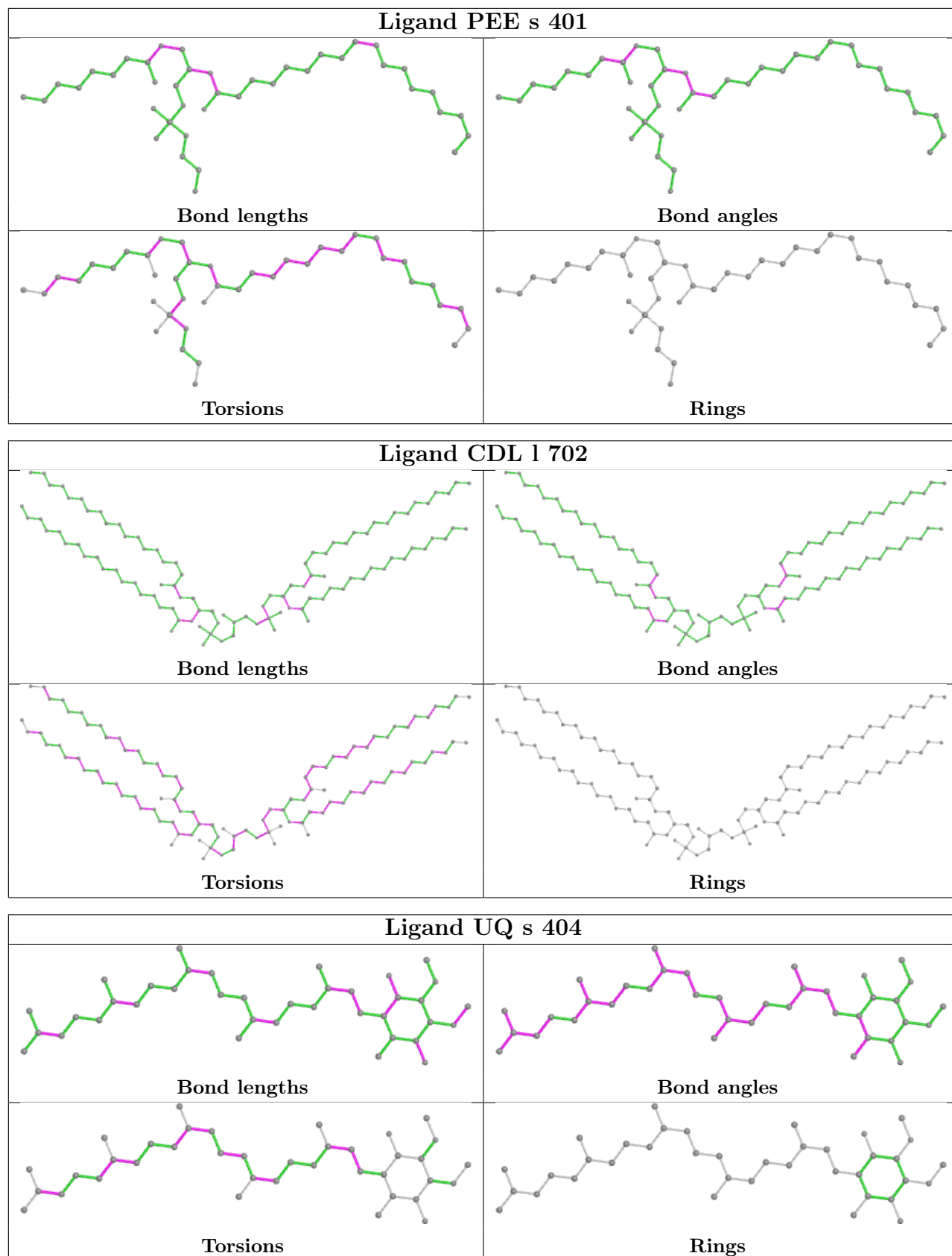
Mol	Chain	Res	Type	Atoms
30	r	501	PEE	C5-C4-O4P-P
31	k	101	CDL	C51-C52-C53-C54
30	l	705	PEE	C21-C22-C23-C24
31	k	101	CDL	C44-C45-C46-C47
30	l	705	PEE	O3-C30-C31-C32
30	s	403	PEE	O2-C10-C11-C12
31	g	202	CDL	CB4-CB3-OB5-PB2
33	g	201	PLX	C6-C7-C8-C9
31	l	702	CDL	C72-C71-CB7-OB9
30	s	401	PEE	C34-C35-C36-C37
30	s	403	PEE	C18-C19-C20-C21
30	s	403	PEE	O4-C10-C11-C12
31	g	202	CDL	C51-C52-C53-C54
33	r	503	PLX	C19-C20-C21-C22
31	g	202	CDL	C12-C11-CA5-OA6
31	V	201	CDL	C12-C11-CA5-OA7
31	V	202	CDL	C52-C51-CB5-OB7
30	s	401	PEE	C33-C34-C35-C36

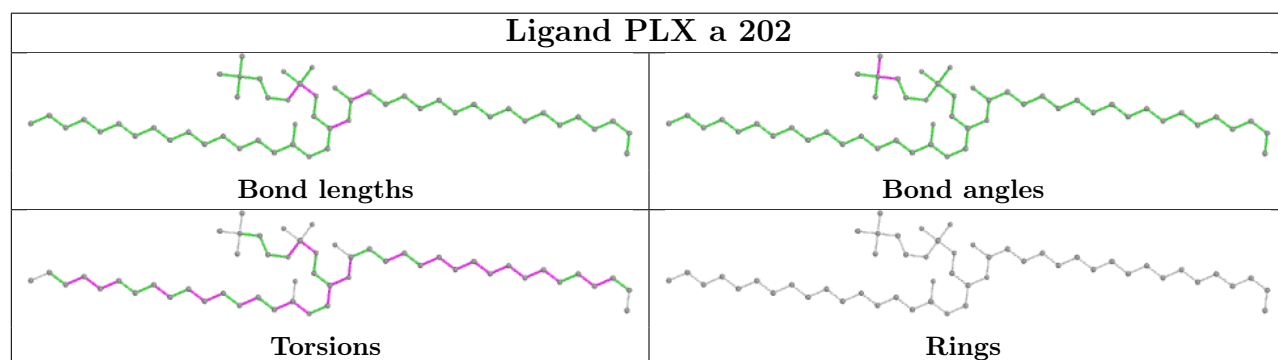
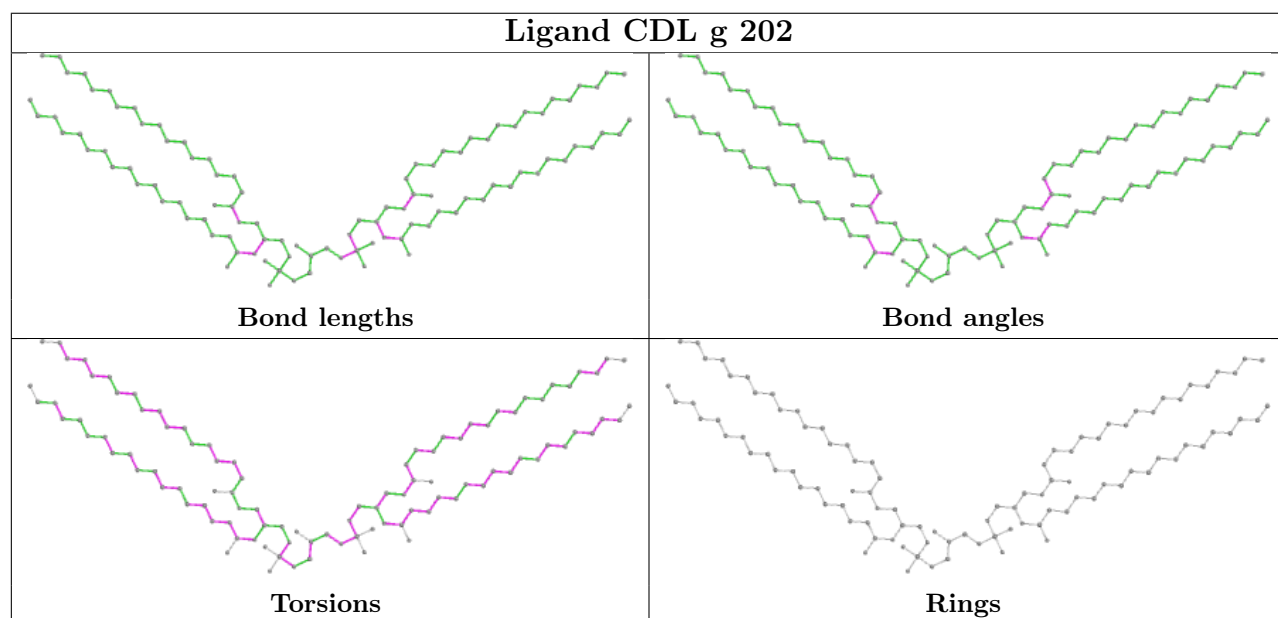
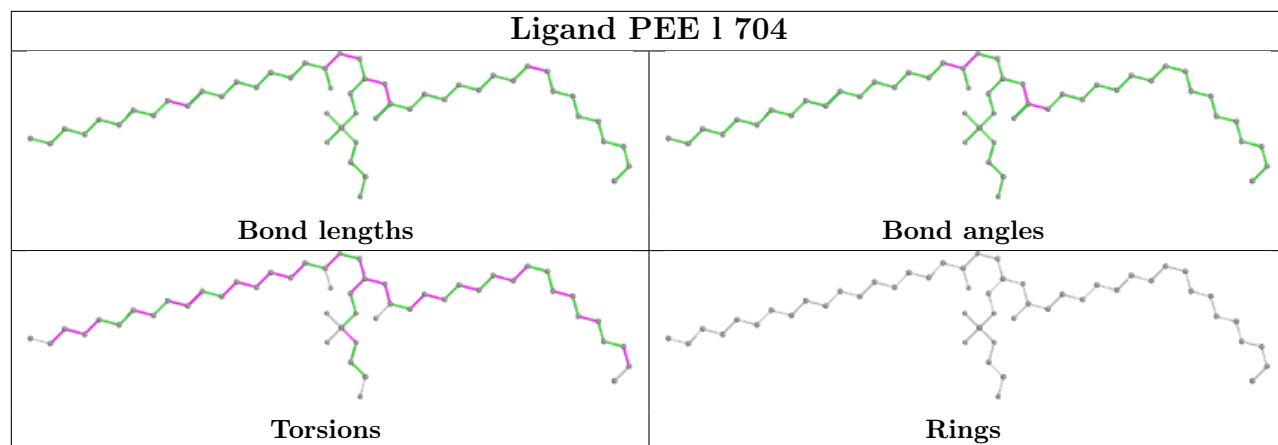
There are no ring outliers.

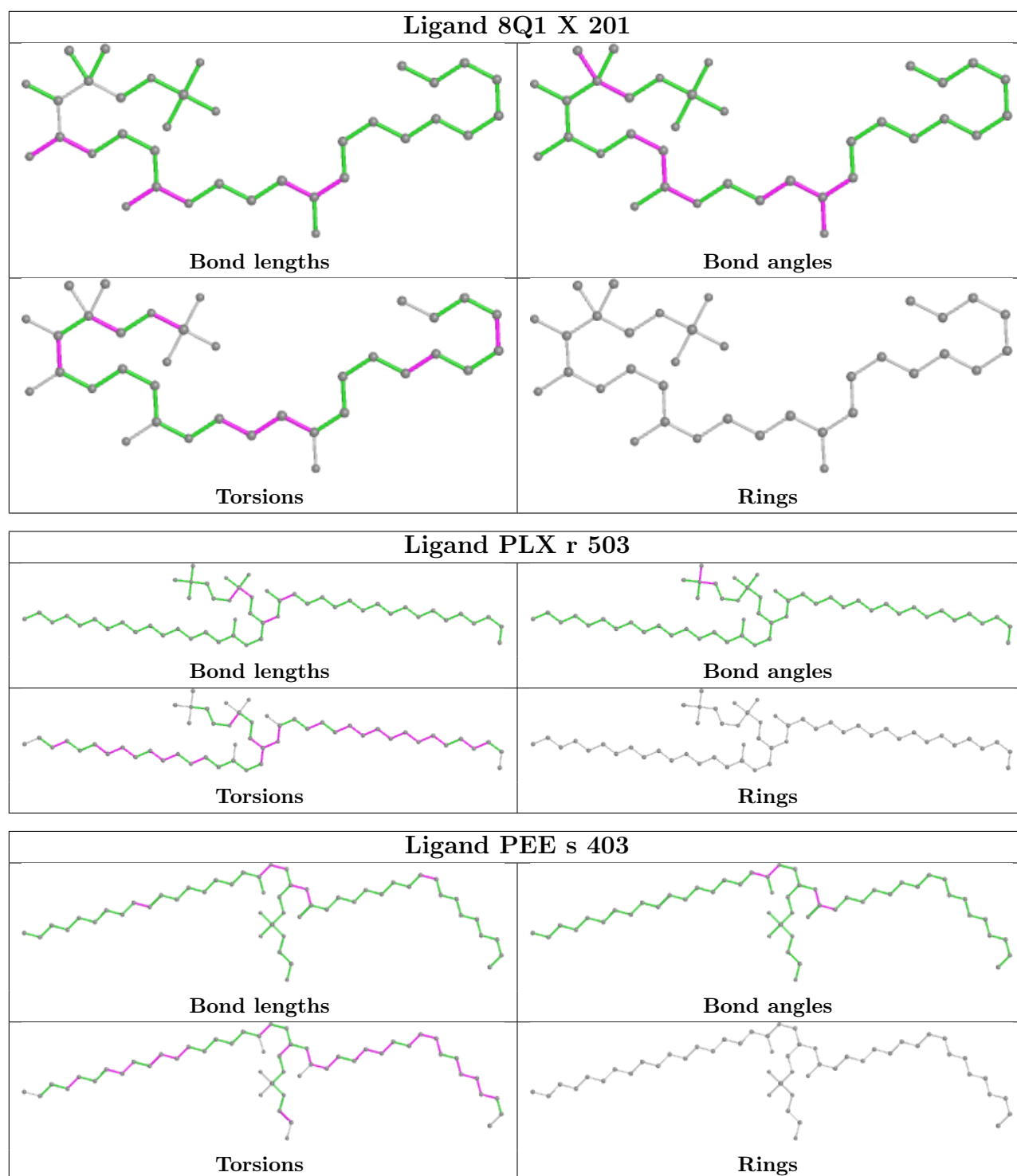
No monomer is involved in short contacts.

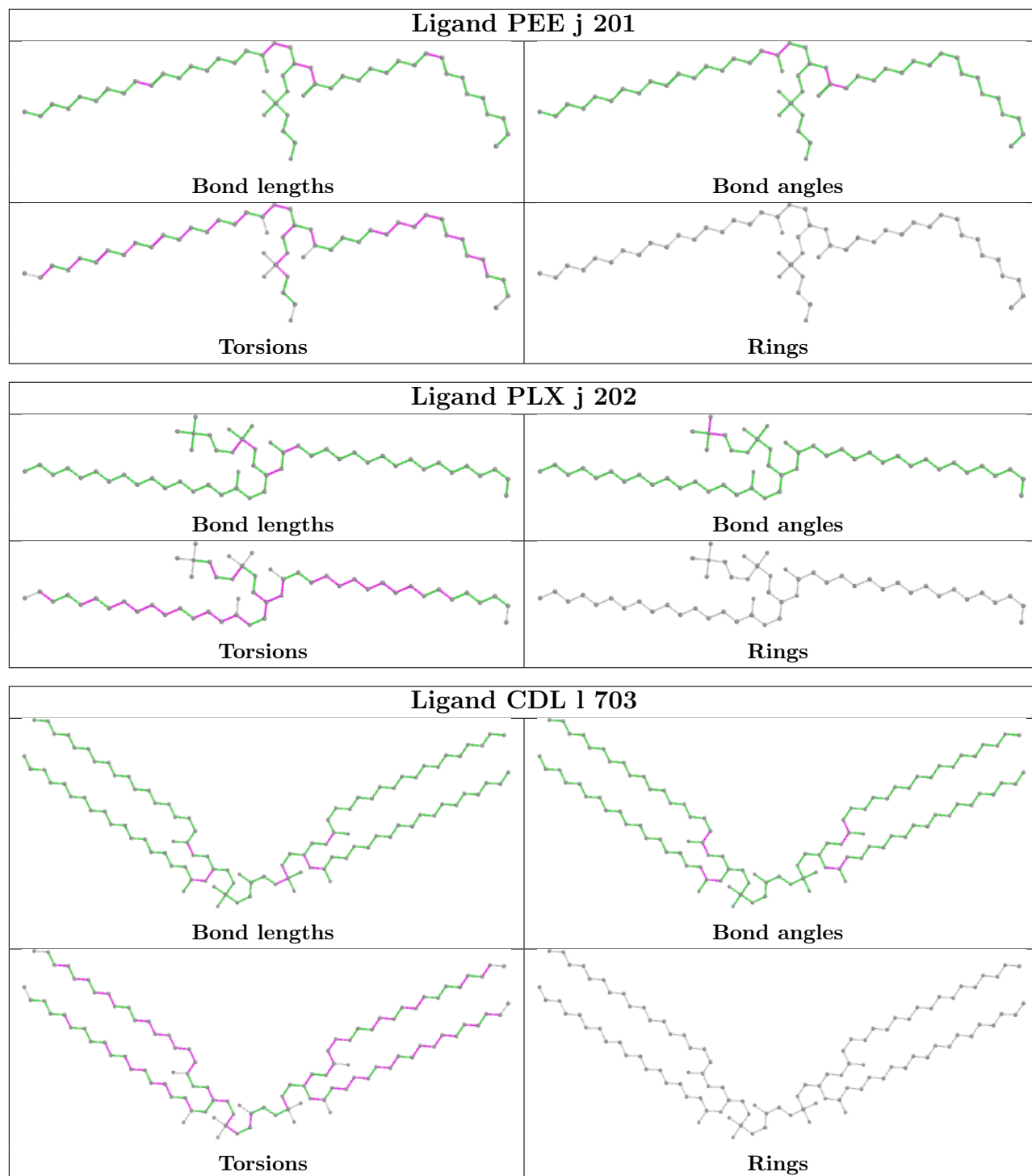
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

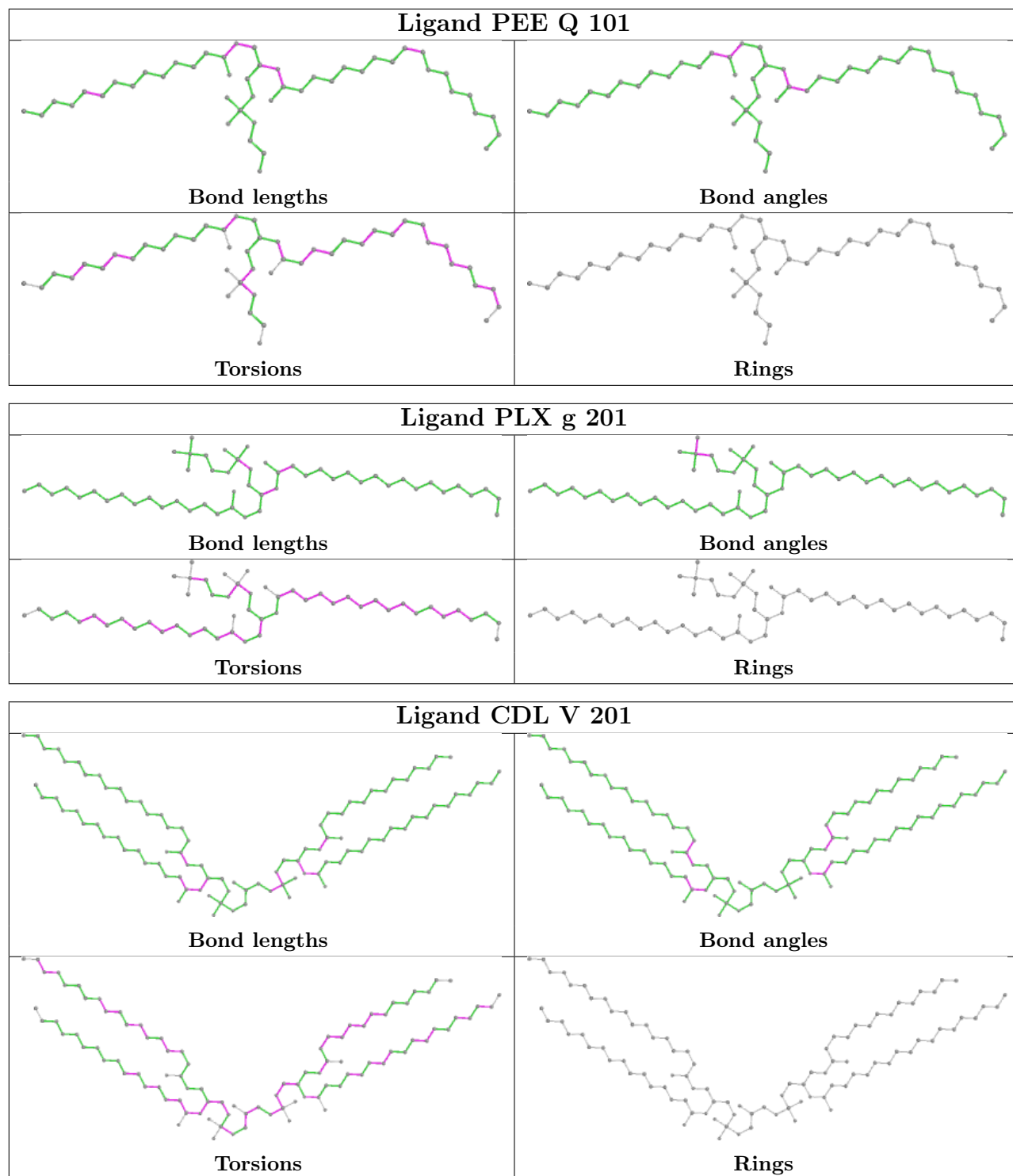


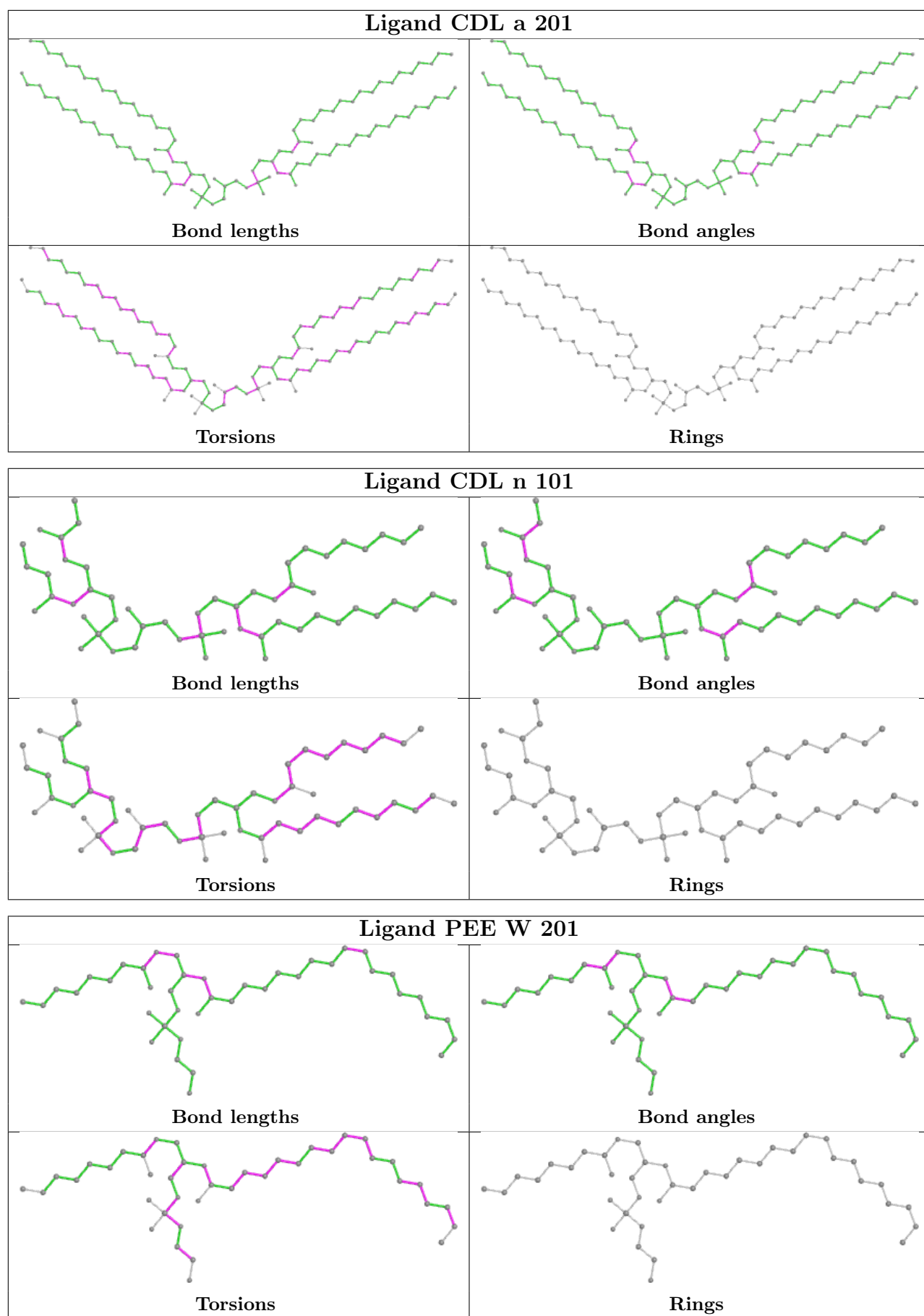


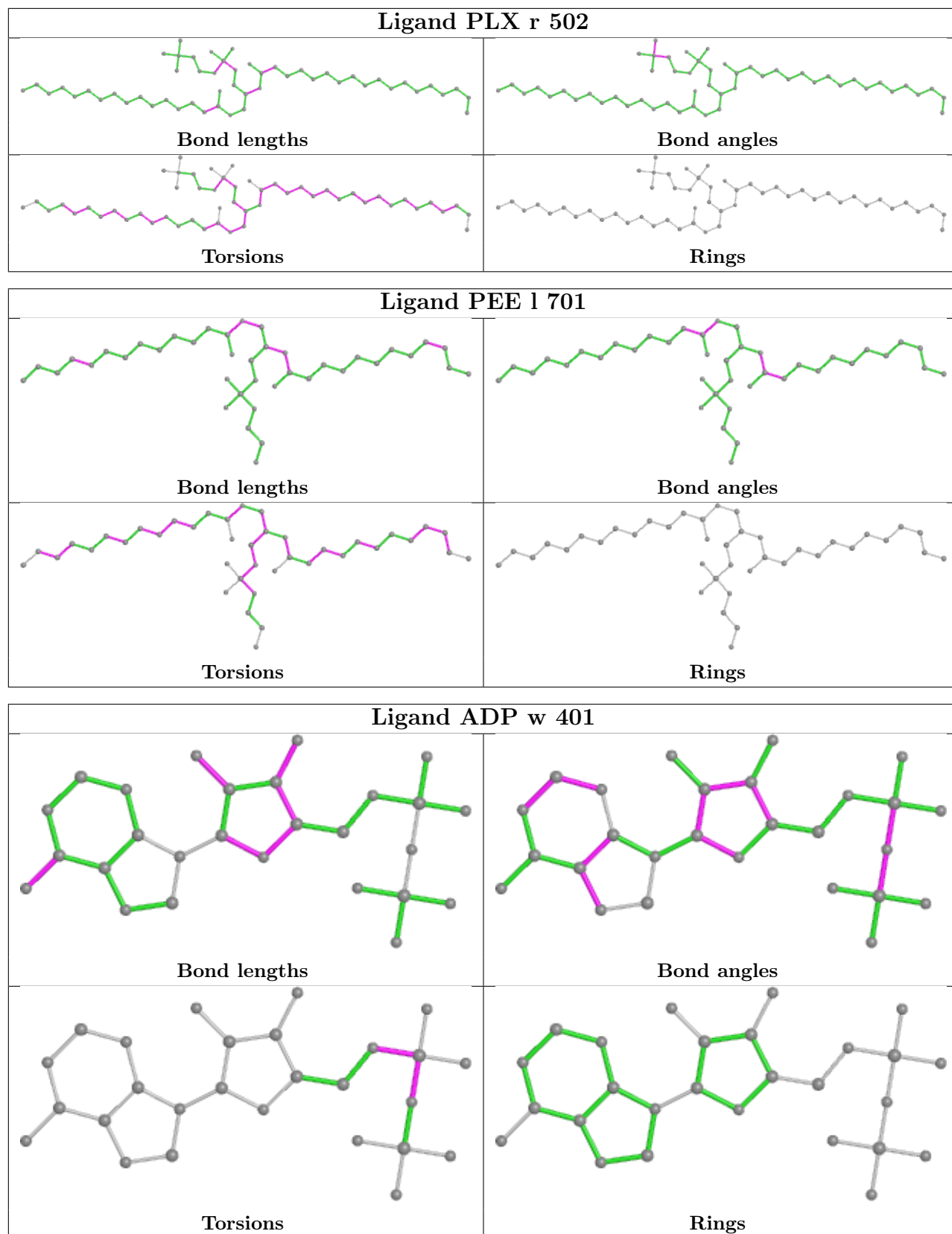


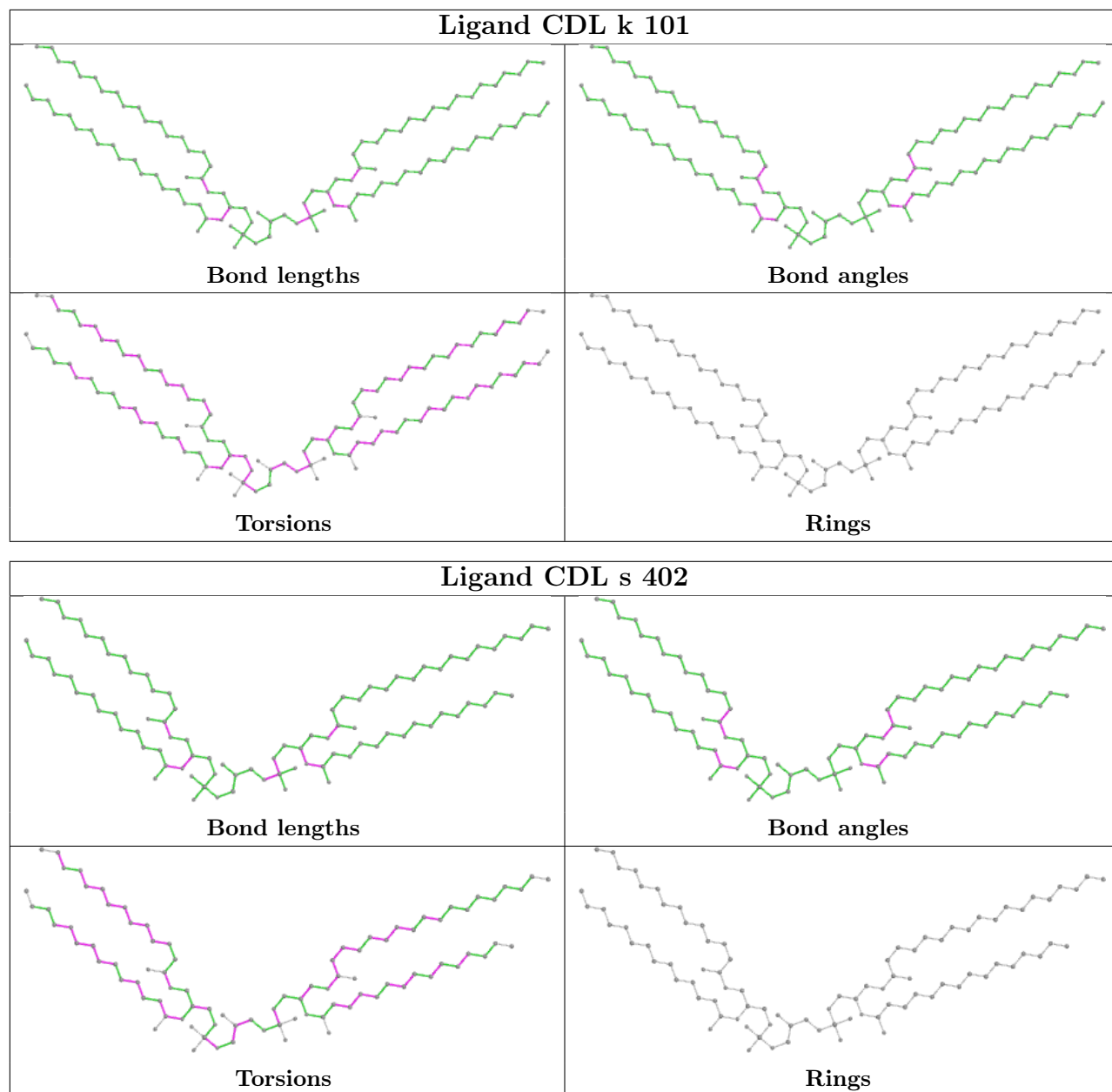


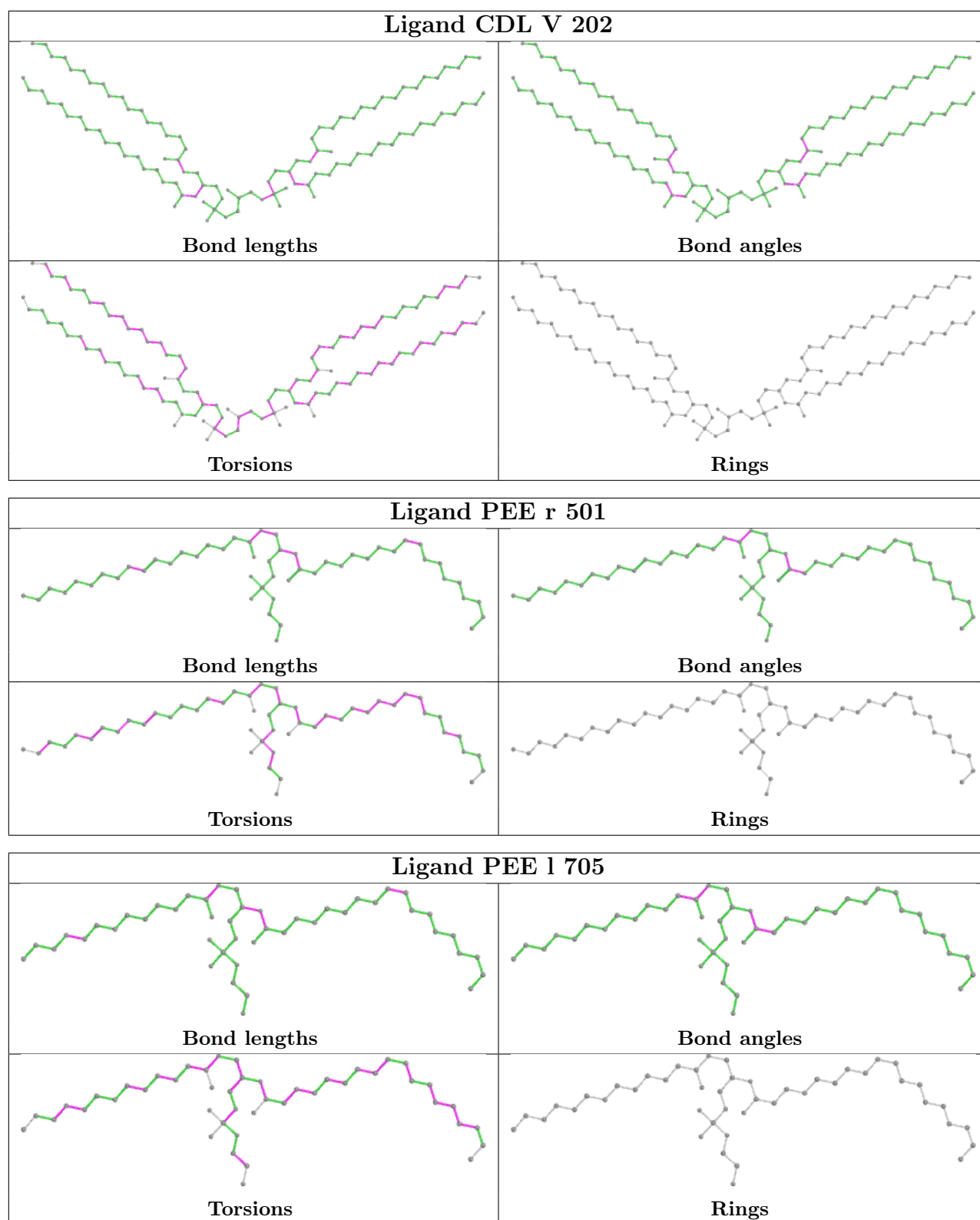












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

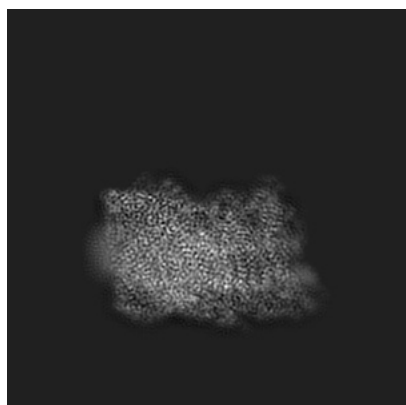
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32197. These allow visual inspection of the internal detail of the map and identification of artifacts.

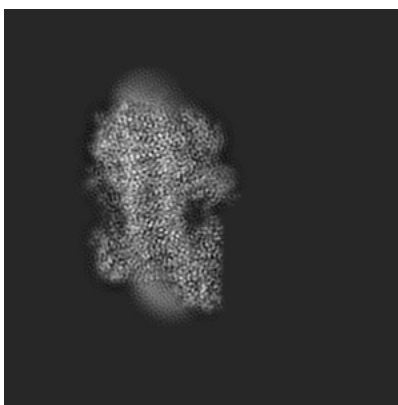
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

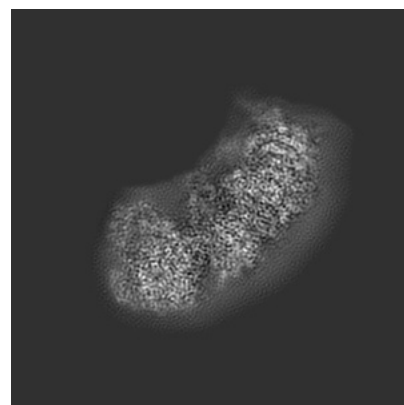
6.1.1 Primary map



X



Y

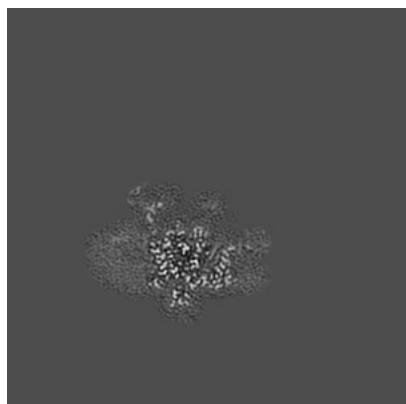


Z

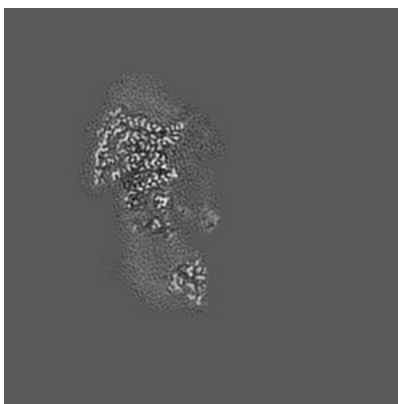
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

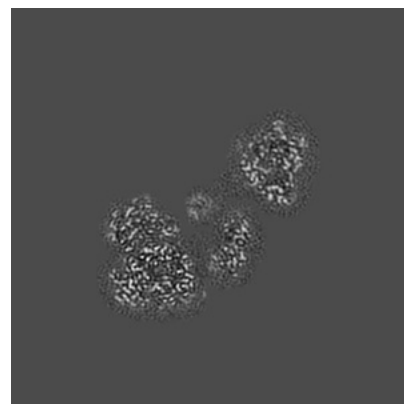
6.2.1 Primary map



X Index: 155



Y Index: 155

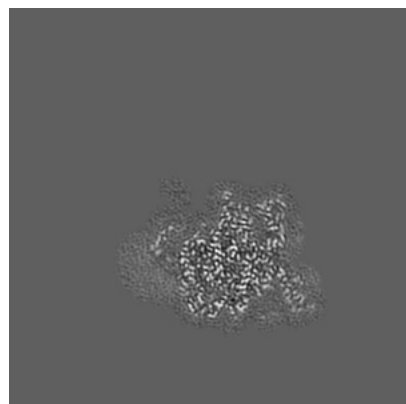


Z Index: 155

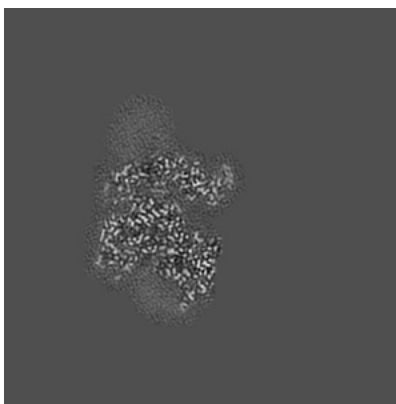
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

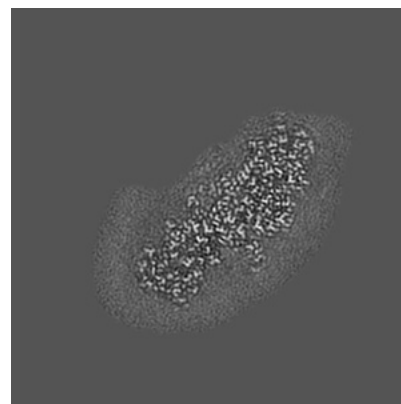
6.3.1 Primary map



X Index: 195



Y Index: 123



Z Index: 122

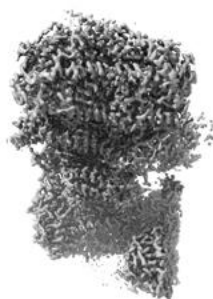
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0301. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

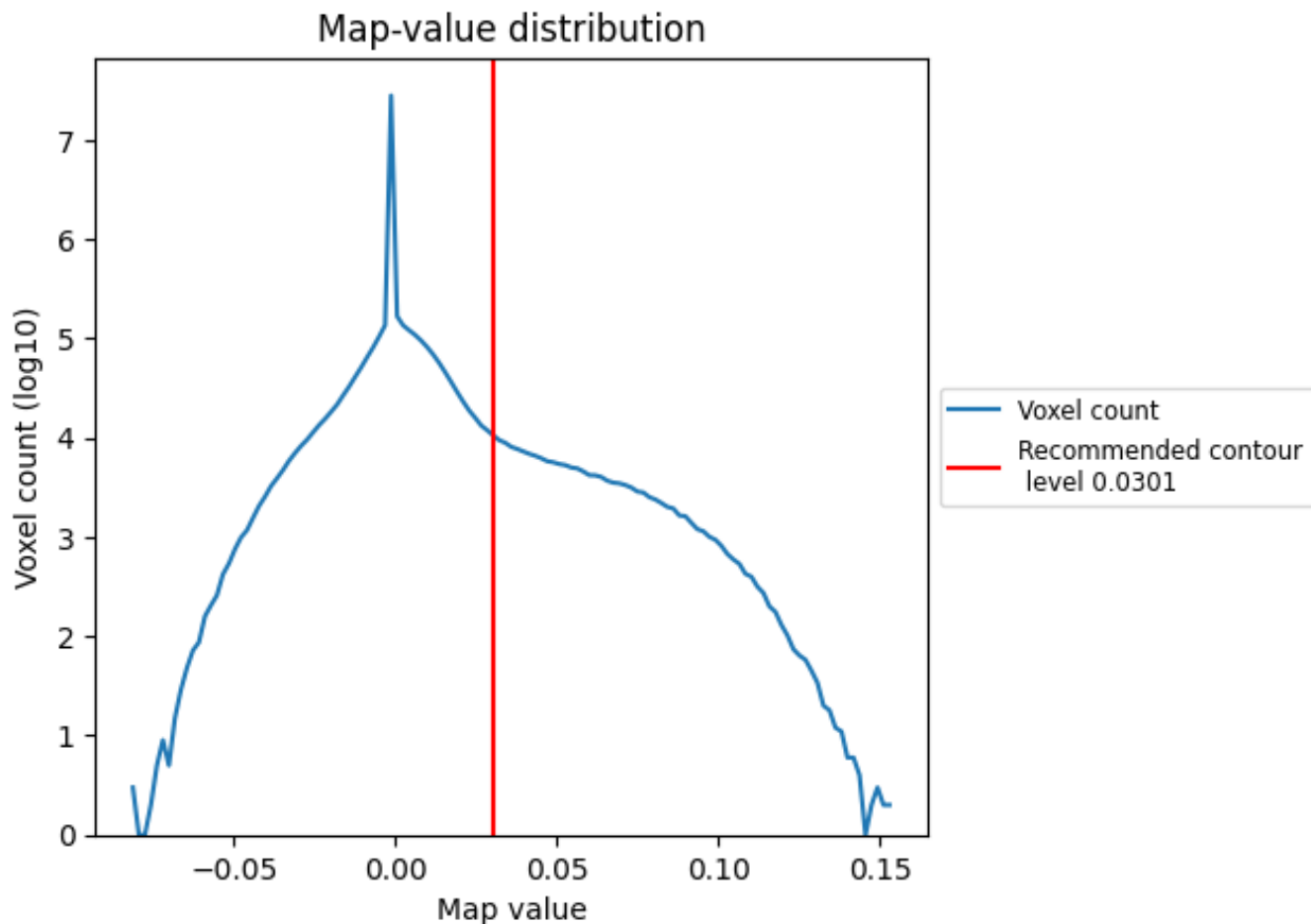
6.5 Mask visualisation

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

7 Map analysis [i](#)

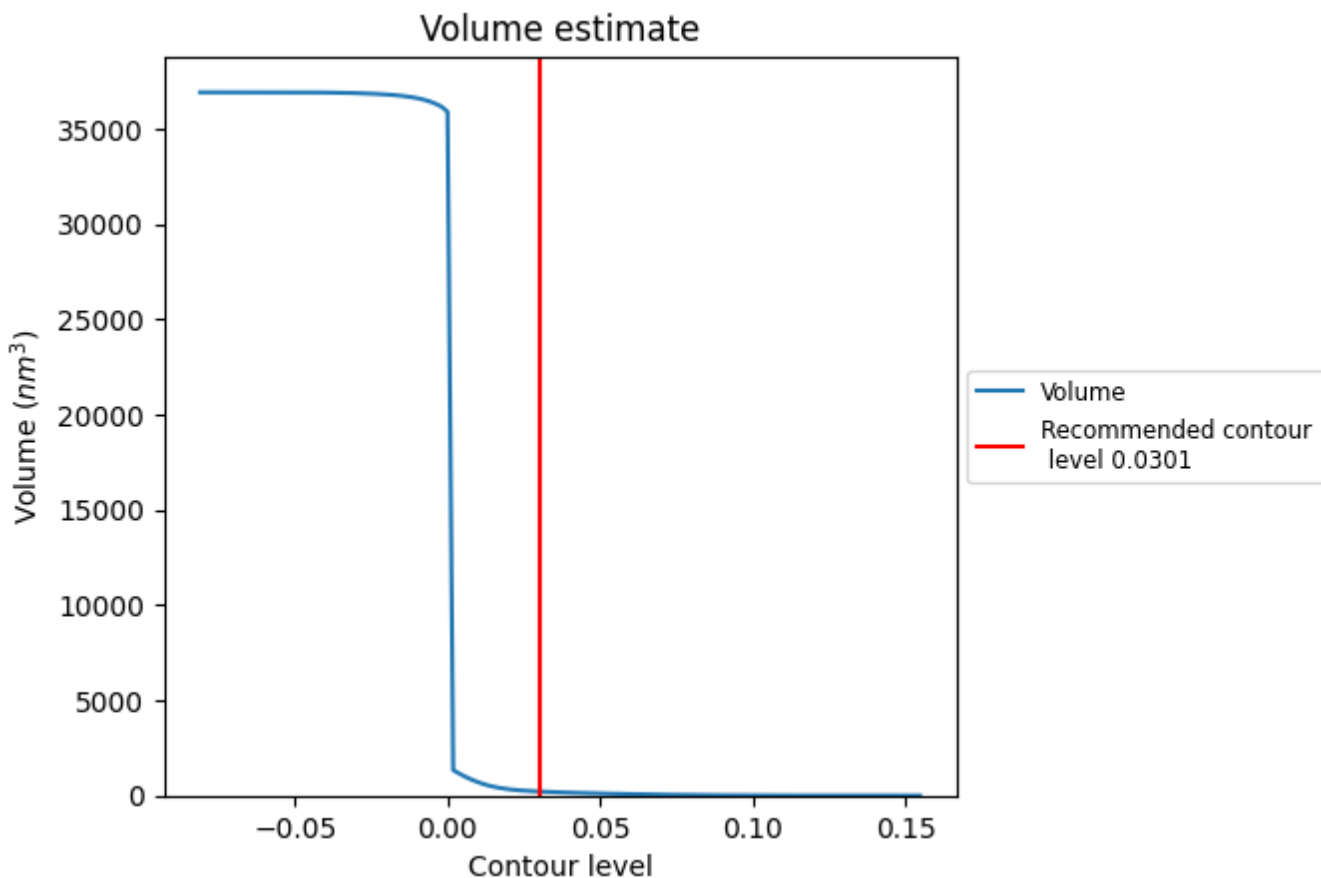
This section contains the results of statistical analysis of the map.

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.

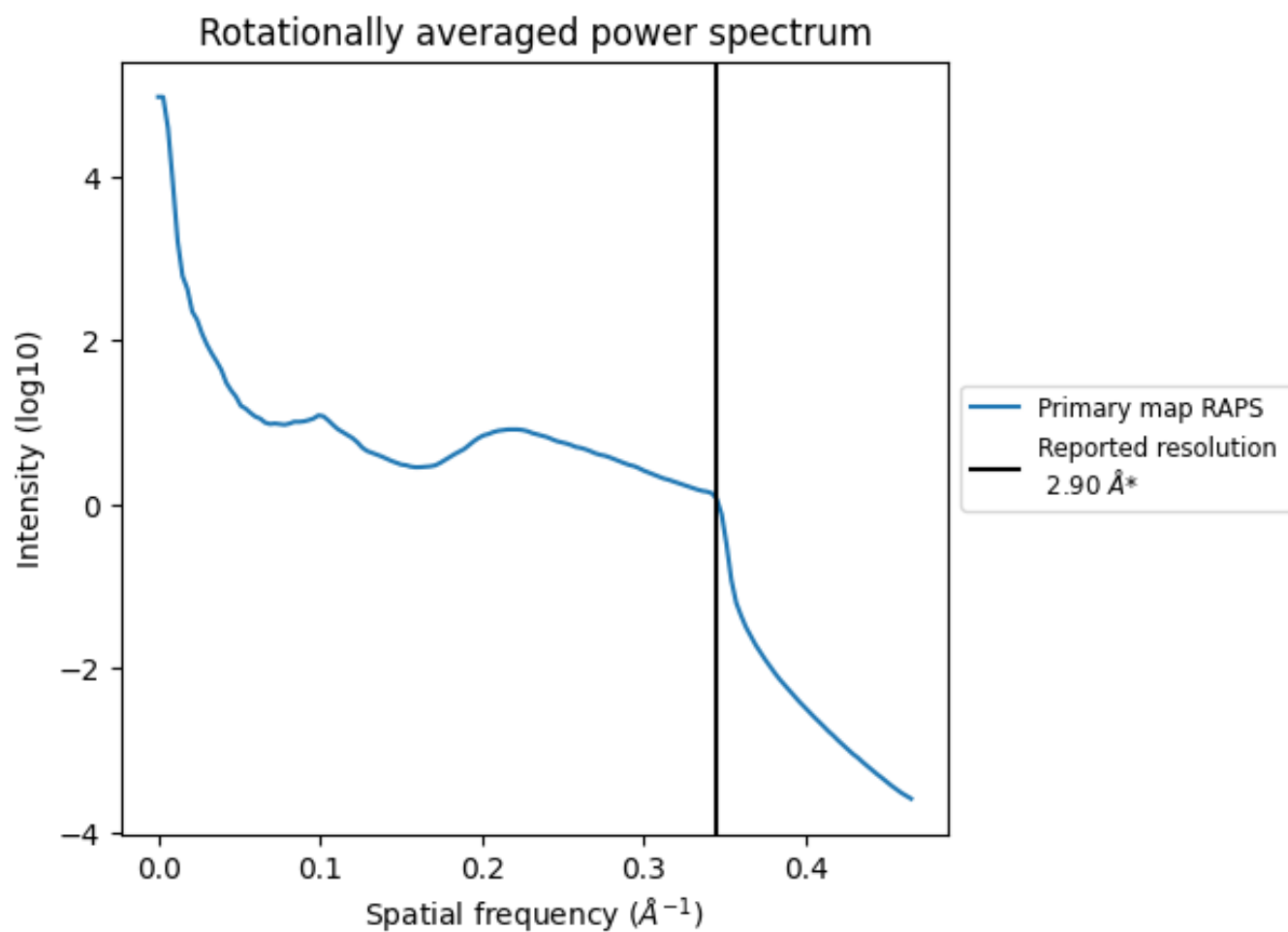
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 211 nm³; this corresponds to an approximate mass of 190 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 0.345\AA^{-1}

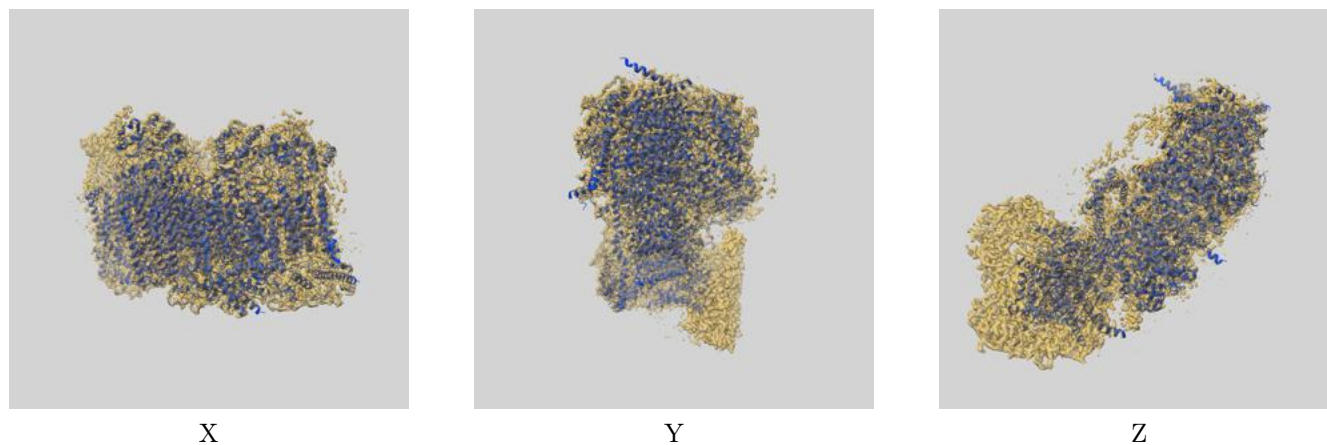
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

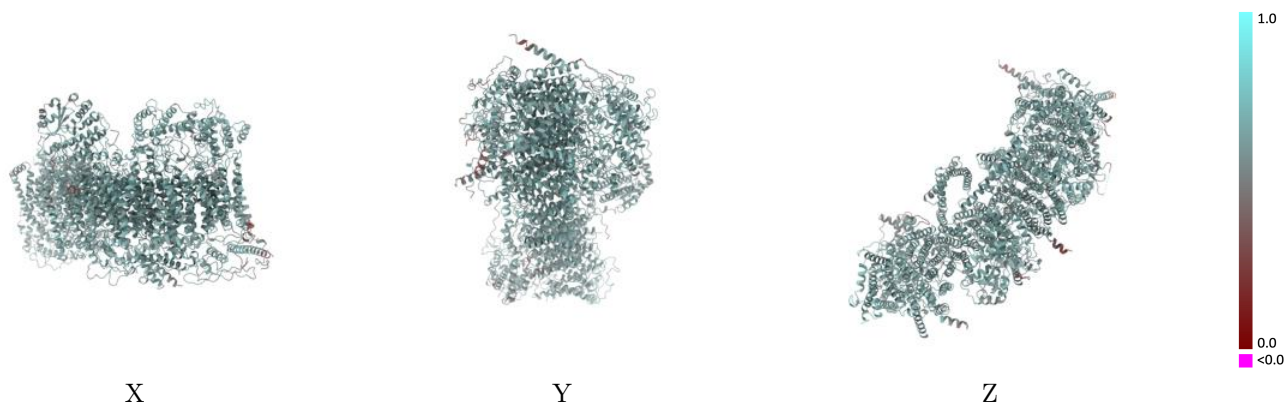
This section contains information regarding the fit between EMDB map EMD-32197 and PDB model 7VY9. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



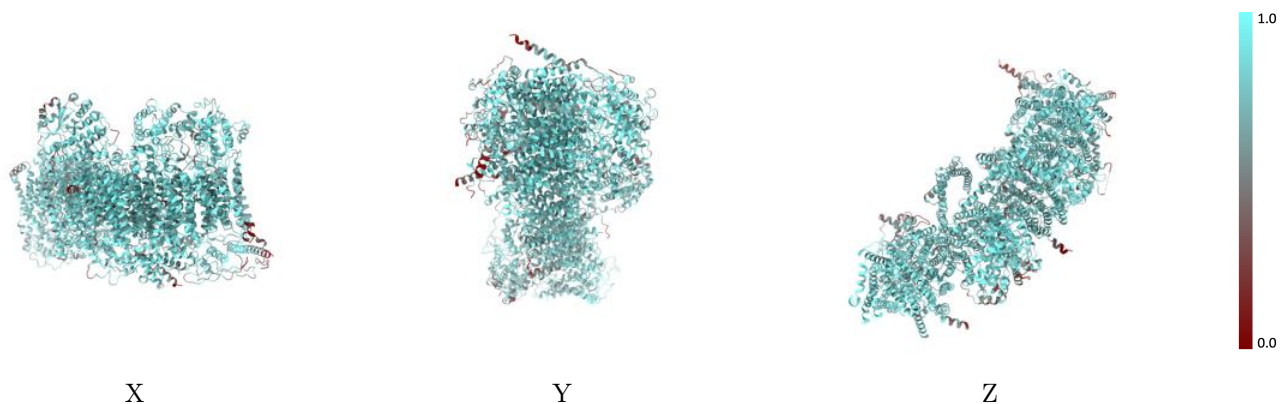
The images above show the 3D surface view of the map at the recommended contour level 0.0301 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



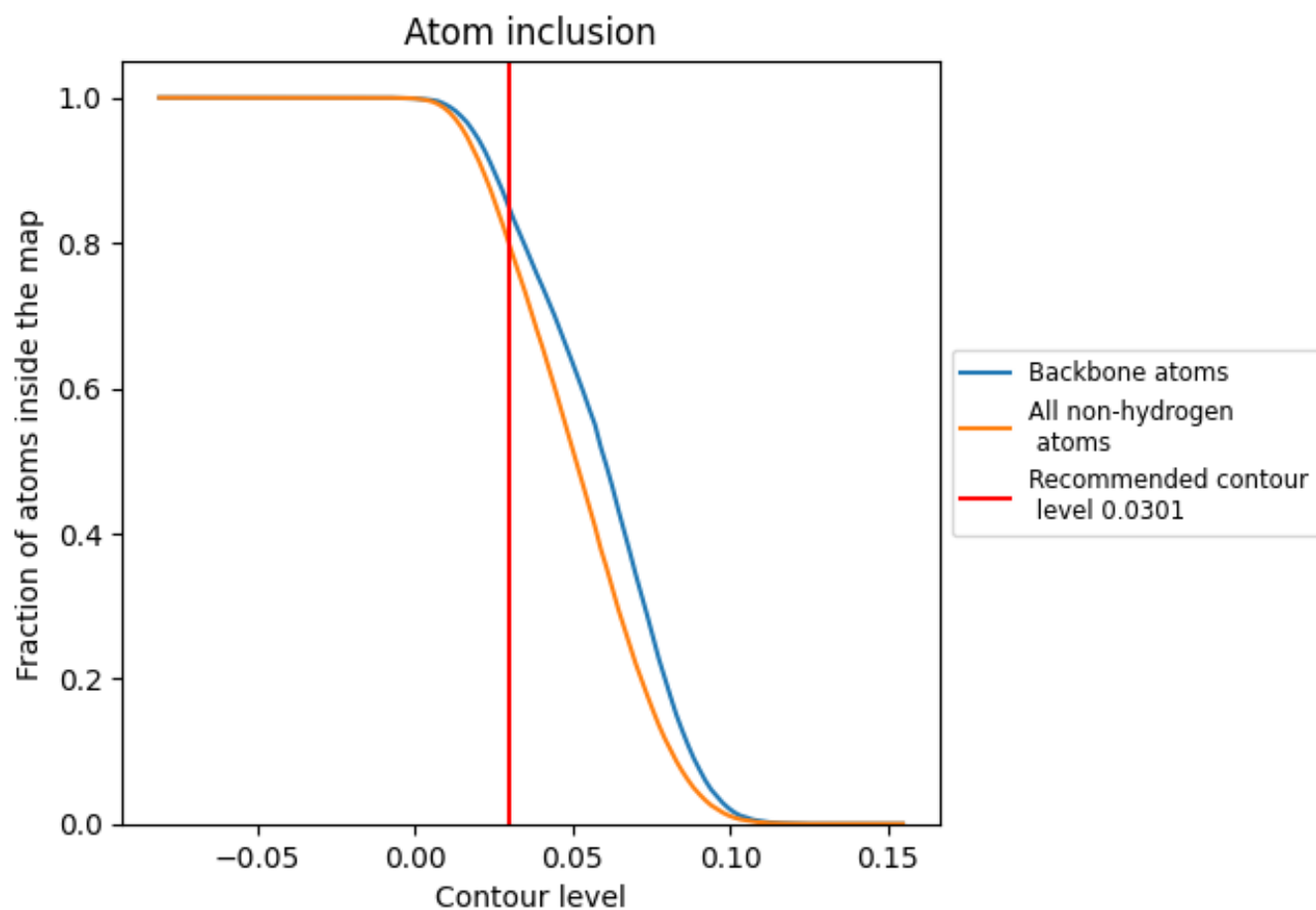
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0301).





























































9.4 Atom inclusion [i](#)



At the recommended contour level, 85% of all backbone atoms, 80% 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 (0.0301) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7952	 0.6040
Q	 0.7097	 0.5880
S	 0.8533	 0.6190
U	 0.7599	 0.5900
V	 0.6695	 0.5860
W	 0.8073	 0.6040
X	 0.7490	 0.5950
Y	 0.6784	 0.5600
Z	 0.6576	 0.5530
a	 0.8110	 0.6180
b	 0.7469	 0.5860
c	 0.8108	 0.6080
d	 0.7611	 0.5960
e	 0.7600	 0.5930
f	 0.6108	 0.5450
g	 0.7904	 0.6090
h	 0.7920	 0.5900
i	 0.8912	 0.6290
j	 0.7642	 0.6030
k	 0.7922	 0.6110
l	 0.8159	 0.6150
m	 0.7381	 0.5790
n	 0.6474	 0.5640
o	 0.8017	 0.6080
p	 0.8097	 0.6090
r	 0.8662	 0.6220
s	 0.8487	 0.6220
u	 0.7804	 0.5930
v	 0.6892	 0.5600
w	 0.8013	 0.6000

