



Full wwPDB EM Validation Report ⓘ

Nov 28, 2022 – 11:16 PM JST

PDB ID : 7VWL
EMDB ID : EMD-32155
Title : Membrane arm of deactive state CI from rotenone-NADH dataset
Authors : Gu, J.K.; Yang, M.J.
Deposited on : 2021-11-11
Resolution : 2.70 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:

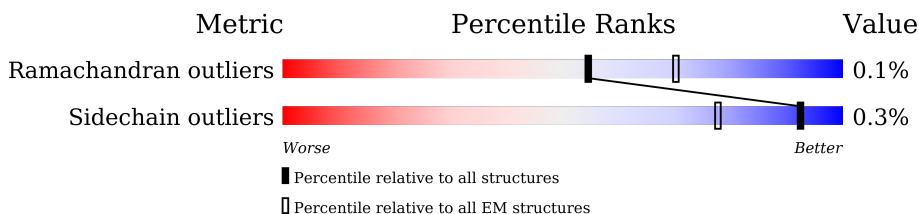
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (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 2.70 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	40	22% 100%
2	S	70	100%
3	U	83	6% 100%
4	V	140	21% 99%
5	W	113	100%
6	X	88	7% 100%
7	Y	70	19% 100%
8	Z	84	21% 100%
9	a	140	100%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
10	b	126	11% 80% 18%
11	c	156	5% 100%
12	d	175	6% 100%
13	e	107	12% 100%
14	f	42	12% 100%
15	g	121	• 100%
16	h	105	• 100%
17	i	347	• 100%
18	j	113	17% 88% 12%
19	k	98	5% 100%
20	l	603	• 100%
21	m	175	8% 74% 26%
22	n	56	18% 98% •
23	o	128	5% 100%
24	p	178	• 99% •
25	r	459	• 100%
26	s	318	• 95% • 5%
27	u	171	• 100%
28	v	131	15% 92% • 5%
29	w	320	9% 100%

2 Entry composition [i](#)

There are 36 unique types of molecules in this entry. The entry contains 39049 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	40	333	217	56	59	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	567	364	104	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, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	X	88	702	452	103	142	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	Y	70	600	393	98	108	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	Z	84	674	437	116	120	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	a	140	1165	762	199	201	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	b	103	879	573	158	147	1	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	e	107	Total	C	N	O	S	0	0
			890	568	145	173	4		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
14	f	42	Total	C	N	O	0	0
			343	225	58	60		

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	j	99	Total	C	N	O	S	0	0
			800	545	118	132	5		

- 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	603	4773	3164	740	819	50	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	129	951	637	138	168	8	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	448	291	81	75	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	303	2394	1607	369	397	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	1032	644	195	184	9	0	0

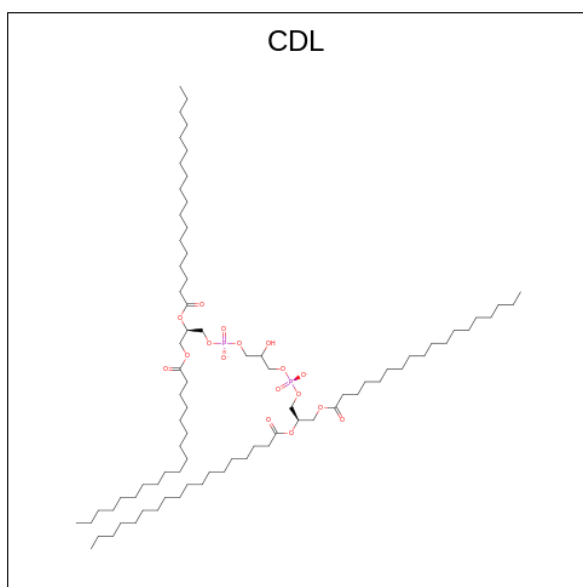
There is a discrepancy between the modelled and reference sequences:

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.

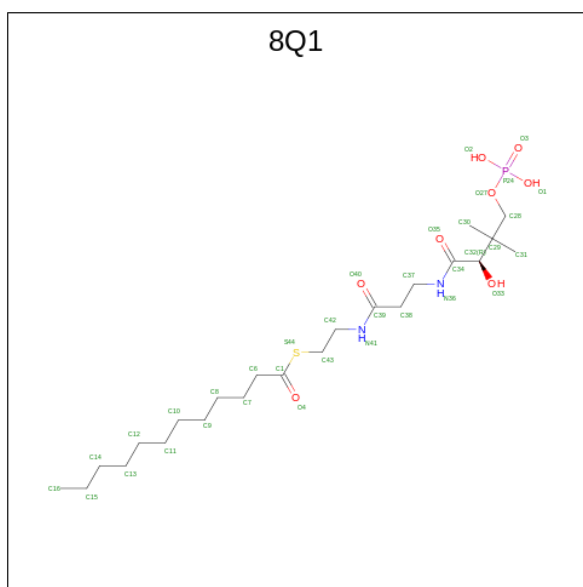
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	w	320	2576	1640	435	491	10	0	0

- Molecule 30 is CARDIOLIPIN (three-letter code: CDL) (formula: C₈₁H₁₅₆O₁₇P₂) (labeled as "Ligand of Interest" by depositor).



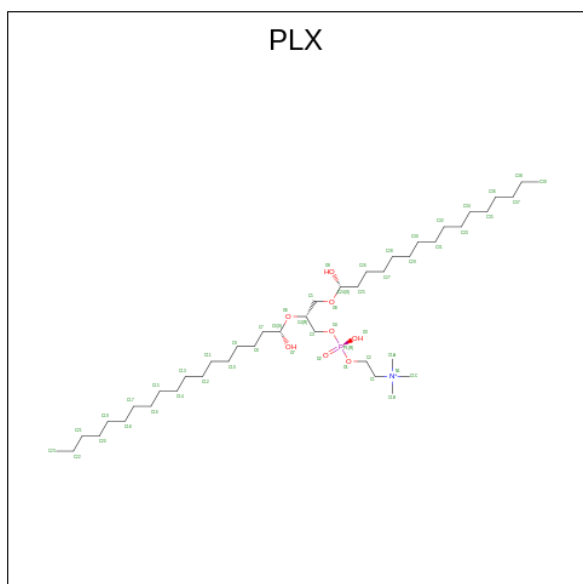
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
30	V	1	Total 71	C 52	O 17	P 2	0
30	a	1	Total 91	C 72	O 17	P 2	0
30	i	1	Total 66	C 47	O 17	P 2	0
30	l	1	Total 65	C 46	O 17	P 2	0
30	r	1	Total 199	C 161	O 34	P 4	0
30	r	1	Total 199	C 161	O 34	P 4	0
30	u	1	Total 63	C 44	O 17	P 2	0

- Molecule 31 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
31	X	1	35	23	2	8	1	1	0

- Molecule 32 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-TRIOL (three-letter code: PLX) (formula: C₄₂H₈₉NO₈P) (labeled as "Ligand of Interest" by depositor).



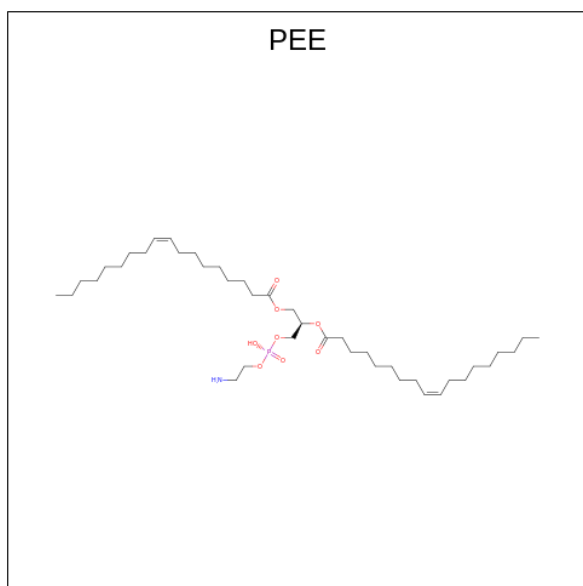
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
32	a	1	52	42	1	8	1	0

Continued on next page...

Continued from previous page...

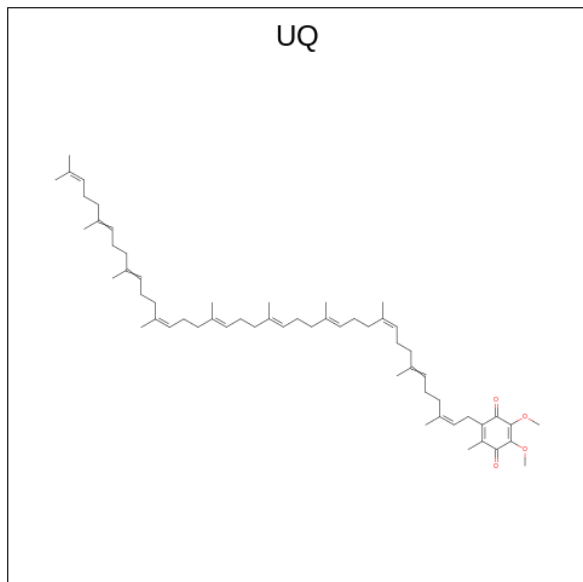
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
32	e	1	Total 52	C 42	N 1	O 8	P 1	0
32	i	1	Total 52	C 42	N 1	O 8	P 1	0
32	j	1	Total 52	C 42	N 1	O 8	P 1	0
32	r	1	Total 52	C 42	N 1	O 8	P 1	0

- Molecule 33 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: $C_{41}H_{78}NO_8P$) (labeled as "Ligand of Interest" by depositor).



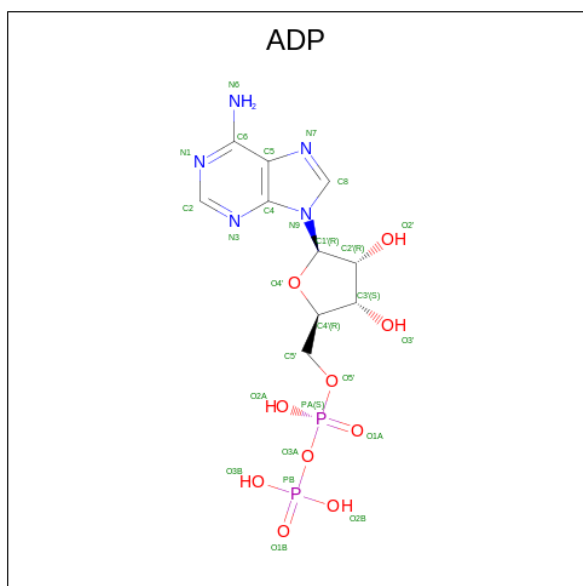
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
33	i	1	Total 47	C 37	N 1	O 8	P 1	0
33	j	1	Total 51	C 41	N 1	O 8	P 1	0
33	l	1	Total 92	C 72	N 2	O 16	P 2	0
33	l	1	Total 92	C 72	N 2	O 16	P 2	0
33	m	1	Total 41	C 31	N 1	O 8	P 1	0
33	r	1	Total 51	C 41	N 1	O 8	P 1	0
33	s	1	Total 51	C 41	N 1	O 8	P 1	0

- 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	28	24	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).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
35	w	1	27	10	5	10	2	0

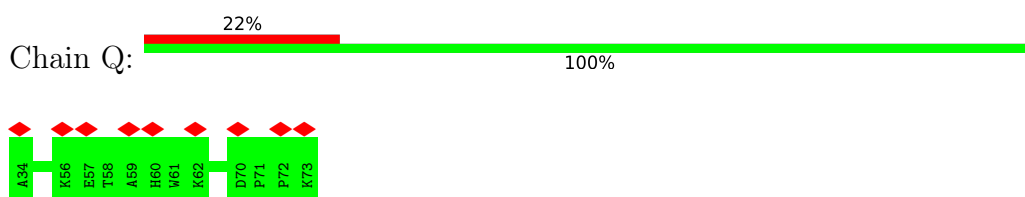
- Molecule 36 is water.

Mol	Chain	Residues	Atoms	AltConf
36	Q	6	Total O 6 6	0
36	S	1	Total O 1 1	0
36	U	3	Total O 3 3	0
36	V	2	Total O 2 2	0
36	a	4	Total O 4 4	0
36	b	1	Total O 1 1	0
36	c	5	Total O 5 5	0
36	d	2	Total O 2 2	0
36	e	2	Total O 2 2	0
36	h	4	Total O 4 4	0
36	i	62	Total O 62 62	0
36	j	14	Total O 14 14	0
36	k	15	Total O 15 15	0
36	l	53	Total O 53 53	0
36	m	14	Total O 14 14	0
36	n	2	Total O 2 2	0
36	p	2	Total O 2 2	0
36	r	84	Total O 84 84	0
36	s	65	Total O 65 65	0
36	u	1	Total O 1 1	0
36	w	3	Total O 3 3	0

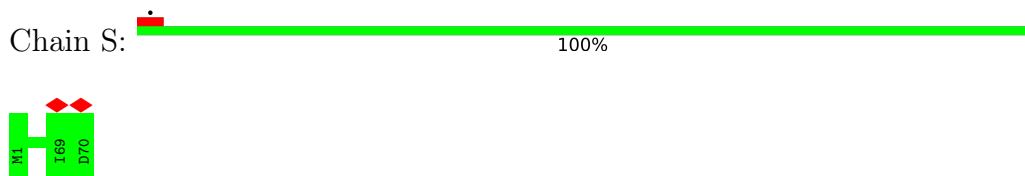
3 Residue-property plots

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.

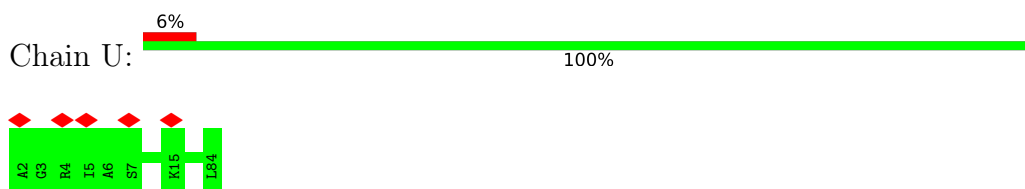
- Molecule 1: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial



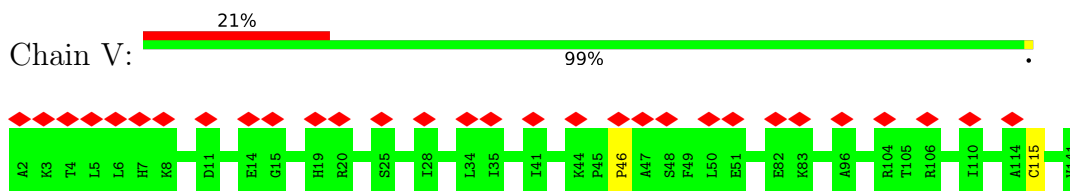
- Molecule 2: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1



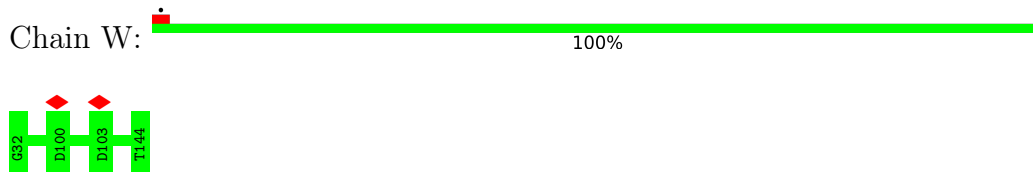
- Molecule 3: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

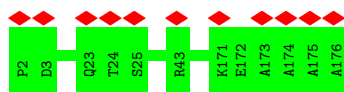


- Molecule 4: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

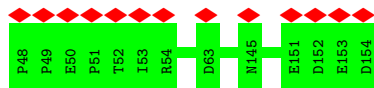


- Molecule 5: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13

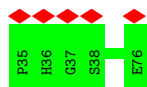




- Molecule 13: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial



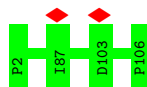
- Molecule 14: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial



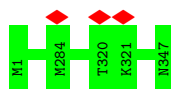
- Molecule 15: NADH dehydrogenase [ubiquinone] 1 subunit C2



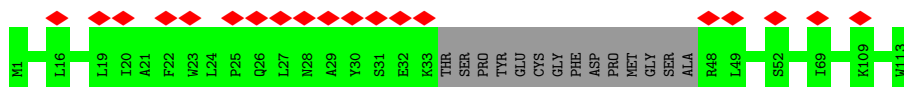
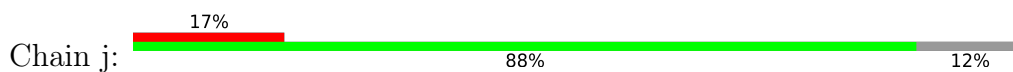
- Molecule 16: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



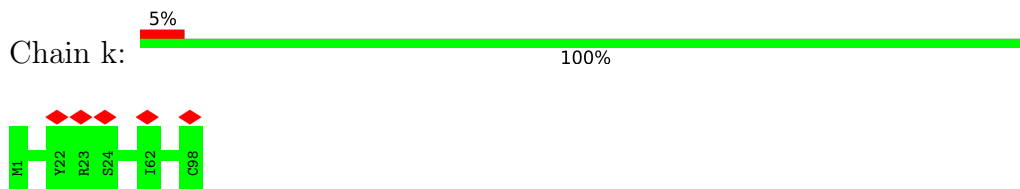
- Molecule 17: NADH-ubiquinone oxidoreductase chain 2



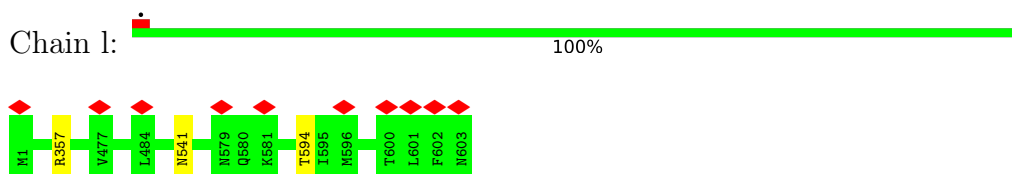
- Molecule 18: NADH-ubiquinone oxidoreductase chain 3



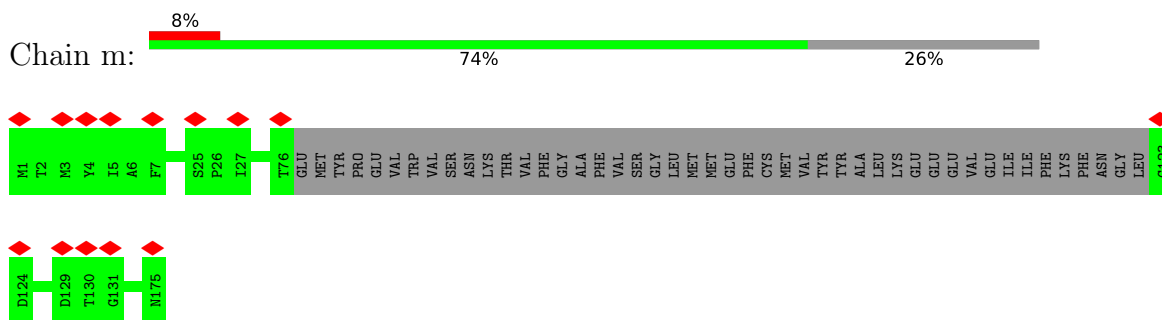
- Molecule 19: NADH-ubiquinone oxidoreductase chain 4L



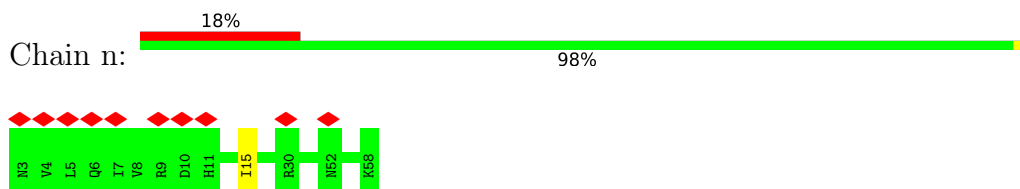
- Molecule 20: NADH-ubiquinone oxidoreductase chain 5



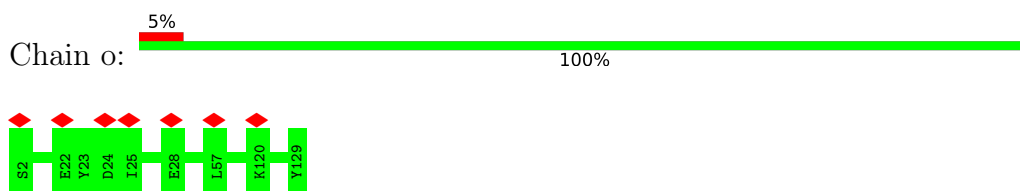
- Molecule 21: NADH-ubiquinone oxidoreductase chain 6



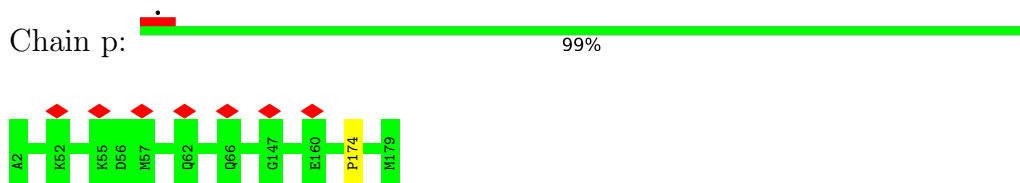
- Molecule 22: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1



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



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



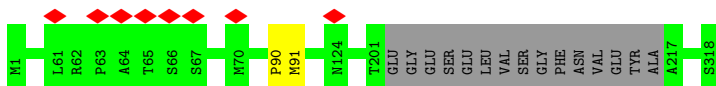
- Molecule 25: NADH-ubiquinone oxidoreductase chain 4

Chain r:  100%



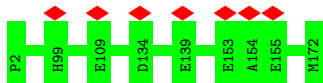
- Molecule 26: NADH-ubiquinone oxidoreductase chain 1

Chain s:  95% • 5%

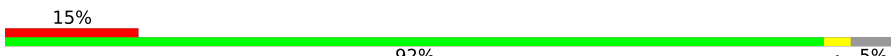


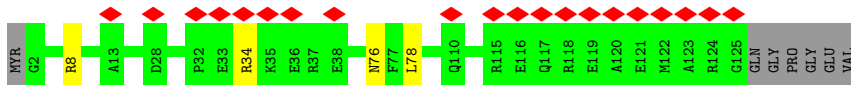
- Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

Chain u:  100%



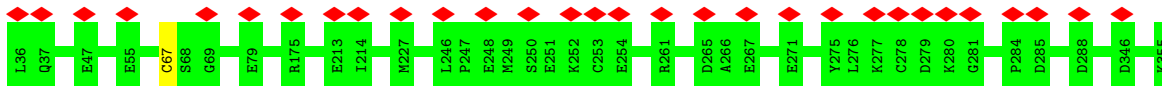
- Molecule 28: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7

Chain v:  15% 92% • 5%



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

Chain w:  9% 100%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	169835	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	0.070	Depositor
Minimum map value	-0.042	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.012	Depositor
Map size (Å)	257.808, 257.808, 257.808	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.5371, 0.5371, 0.5371	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: UQ, PLX, PEE, ADP, CDL, 8Q1

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	0.25	0/350	0.45	0/483
2	S	0.27	0/582	0.48	0/783
3	U	0.26	0/664	0.44	0/912
4	V	0.26	0/1042	0.45	0/1411
5	W	0.28	0/973	0.49	0/1312
6	X	0.27	0/714	0.45	0/967
7	Y	0.26	0/626	0.47	0/857
8	Z	0.25	0/695	0.44	0/939
9	a	0.28	0/1199	0.49	0/1623
10	b	0.27	0/906	0.54	0/1232
11	c	0.27	0/1371	0.46	0/1875
12	d	0.26	0/1494	0.50	0/2015
13	e	0.27	0/916	0.50	0/1246
14	f	0.29	0/351	0.46	0/474
15	g	0.29	0/1031	0.50	0/1394
16	h	0.25	0/889	0.49	0/1190
17	i	0.26	0/2773	0.46	0/3768
18	j	0.26	0/819	0.47	0/1117
19	k	0.31	0/759	0.51	0/1029
20	l	0.27	0/4901	0.47	0/6667
21	m	0.30	0/973	0.50	0/1320
22	n	0.24	0/459	0.54	0/621
23	o	0.27	0/1092	0.53	0/1481
24	p	0.27	0/1590	0.51	0/2155
25	r	0.27	0/3723	0.47	0/5078
26	s	0.27	0/2464	0.48	0/3369
27	u	0.25	0/1436	0.49	0/1938
28	v	0.25	0/1056	0.55	0/1416
29	w	0.27	0/2636	0.50	0/3573
All	All	0.27	0/38484	0.48	0/52245

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
26	s	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
26	s	91	MET	Peptide

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	38/40 (95%)	36 (95%)	2 (5%)	0	100	100
2	S	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
3	U	81/83 (98%)	77 (95%)	4 (5%)	0	100	100
4	V	138/140 (99%)	132 (96%)	5 (4%)	1 (1%)	22	46
5	W	111/113 (98%)	108 (97%)	3 (3%)	0	100	100
6	X	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
7	Y	68/70 (97%)	64 (94%)	4 (6%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	Z	82/84 (98%)	81 (99%)	1 (1%)	0	100	100
9	a	138/140 (99%)	136 (99%)	2 (1%)	0	100	100
10	b	99/126 (79%)	92 (93%)	7 (7%)	0	100	100
11	c	154/156 (99%)	146 (95%)	8 (5%)	0	100	100
12	d	173/175 (99%)	171 (99%)	2 (1%)	0	100	100
13	e	105/107 (98%)	99 (94%)	6 (6%)	0	100	100
14	f	40/42 (95%)	38 (95%)	2 (5%)	0	100	100
15	g	119/121 (98%)	116 (98%)	3 (2%)	0	100	100
16	h	103/105 (98%)	97 (94%)	6 (6%)	0	100	100
17	i	345/347 (99%)	334 (97%)	11 (3%)	0	100	100
18	j	95/113 (84%)	90 (95%)	5 (5%)	0	100	100
19	k	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
20	l	601/603 (100%)	573 (95%)	28 (5%)	0	100	100
21	m	125/175 (71%)	111 (89%)	14 (11%)	0	100	100
22	n	54/56 (96%)	54 (100%)	0	0	100	100
23	o	126/128 (98%)	121 (96%)	5 (4%)	0	100	100
24	p	176/178 (99%)	167 (95%)	8 (4%)	1 (1%)	25	50
25	r	457/459 (100%)	450 (98%)	7 (2%)	0	100	100
26	s	299/318 (94%)	288 (96%)	10 (3%)	1 (0%)	41	66
27	u	169/171 (99%)	163 (96%)	6 (4%)	0	100	100
28	v	122/131 (93%)	115 (94%)	7 (6%)	0	100	100
29	w	318/320 (99%)	303 (95%)	14 (4%)	1 (0%)	41	66
All	All	4586/4757 (96%)	4399 (96%)	183 (4%)	4 (0%)	54	78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
29	w	67	CYS
4	V	46	PRO
26	s	90	PRO
24	p	174	PRO

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	34/34 (100%)	34 (100%)	0	100	100
2	S	58/58 (100%)	58 (100%)	0	100	100
3	U	69/69 (100%)	69 (100%)	0	100	100
4	V	101/101 (100%)	100 (99%)	1 (1%)	76	91
5	W	99/99 (100%)	99 (100%)	0	100	100
6	X	78/81 (96%)	78 (100%)	0	100	100
7	Y	63/63 (100%)	63 (100%)	0	100	100
8	Z	65/65 (100%)	65 (100%)	0	100	100
9	a	122/122 (100%)	122 (100%)	0	100	100
10	b	98/119 (82%)	96 (98%)	2 (2%)	55	81
11	c	141/141 (100%)	141 (100%)	0	100	100
12	d	155/155 (100%)	155 (100%)	0	100	100
13	e	99/99 (100%)	99 (100%)	0	100	100
14	f	36/38 (95%)	36 (100%)	0	100	100
15	g	108/108 (100%)	108 (100%)	0	100	100
16	h	93/93 (100%)	93 (100%)	0	100	100
17	i	311/311 (100%)	311 (100%)	0	100	100
18	j	88/99 (89%)	88 (100%)	0	100	100
19	k	85/85 (100%)	85 (100%)	0	100	100
20	l	534/537 (99%)	531 (99%)	3 (1%)	86	95
21	m	99/141 (70%)	99 (100%)	0	100	100
22	n	44/53 (83%)	43 (98%)	1 (2%)	50	78
23	o	113/113 (100%)	113 (100%)	0	100	100
24	p	159/159 (100%)	159 (100%)	0	100	100
25	r	410/410 (100%)	410 (100%)	0	100	100
26	s	263/275 (96%)	263 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	u	153/153 (100%)	153 (100%)	0	100	100
28	v	105/115 (91%)	101 (96%)	4 (4%)	33	62
29	w	280/283 (99%)	280 (100%)	0	100	100
All	All	4063/4179 (97%)	4052 (100%)	11 (0%)	92	98

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	V	115	CYS
10	b	39	ARG
10	b	66	ARG
20	l	357	ARG
20	l	541	ASN
20	l	594	THR
22	n	15	ILE
28	v	8	ARG
28	v	34	ARG
28	v	76	ASN
28	v	78	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
4	V	129	GLN
16	h	34	HIS
17	i	171	ASN
17	i	268	GLN
22	n	14	HIS
25	r	390	ASN
26	s	194	ASN
27	u	95	GLN
27	u	99	HIS
28	v	4	HIS
28	v	76	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

22 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$
34	UQ	s	402	-	28,28,63	3.27	7 (25%)	34,37,79	2.77	11 (32%)
30	CDL	V	201	-	70,70,99	1.08	4 (5%)	76,82,111	1.12	5 (6%)
30	CDL	a	201	-	90,90,99	0.96	4 (4%)	96,102,111	1.10	5 (5%)
32	PLX	e	201	-	51,51,51	1.14	3 (5%)	55,59,59	0.62	1 (1%)
33	PEE	s	401	-	50,50,50	1.16	6 (12%)	53,55,55	0.99	2 (3%)
33	PEE	m	201	-	40,40,50	1.15	5 (12%)	43,45,55	0.99	2 (4%)
33	PEE	l	702	-	45,45,50	1.22	6 (13%)	48,50,55	1.00	2 (4%)
32	PLX	i	402	-	51,51,51	1.15	3 (5%)	55,59,59	0.61	1 (1%)
30	CDL	u	201	-	62,62,99	1.14	4 (6%)	68,74,111	1.17	4 (5%)
32	PLX	j	202	-	51,51,51	1.14	4 (7%)	55,59,59	0.61	1 (1%)
33	PEE	j	201	-	50,50,50	1.16	6 (12%)	53,55,55	0.97	2 (3%)
32	PLX	a	202	-	51,51,51	0.62	0	55,59,59	0.69	0
30	CDL	r	504	-	99,99,99	1.08	8 (8%)	105,111,111	0.85	4 (3%)
30	CDL	l	701	-	64,64,99	1.28	9 (14%)	70,76,111	1.00	4 (5%)
32	PLX	r	502	-	51,51,51	1.14	4 (7%)	55,59,59	0.63	1 (1%)
30	CDL	r	503	-	98,98,99	1.09	9 (9%)	104,110,111	0.89	4 (3%)
33	PEE	i	403	-	46,46,50	1.20	6 (13%)	49,51,55	1.01	2 (4%)
33	PEE	r	501	-	50,50,50	1.15	6 (12%)	53,55,55	0.96	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
33	PEE	l	703	-	45,45,50	1.22	6 (13%)	48,50,55	0.98	2 (4%)
35	ADP	w	401	-	24,29,29	3.12	6 (25%)	29,45,45	1.43	5 (17%)
30	CDL	i	401	-	65,65,99	1.13	4 (6%)	71,77,111	1.22	7 (9%)
31	8Q1	X	201	-	31,34,34	2.06	6 (19%)	40,43,43	1.80	10 (25%)

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
34	UQ	s	402	-	-	9/21/45/87	0/1/1/1
30	CDL	V	201	-	-	29/81/81/110	-
30	CDL	a	201	-	-	28/101/101/110	-
32	PLX	e	201	-	-	32/55/55/55	-
33	PEE	s	401	-	-	26/54/54/54	-
33	PEE	m	201	-	-	17/44/44/54	-
33	PEE	l	702	-	-	19/49/49/54	-
32	PLX	i	402	-	-	28/55/55/55	-
30	CDL	u	201	-	-	21/73/73/110	-
32	PLX	j	202	-	-	30/55/55/55	-
33	PEE	j	201	-	-	22/54/54/54	-
32	PLX	a	202	-	-	13/55/55/55	-
30	CDL	r	504	-	-	67/110/110/110	-
30	CDL	l	701	-	-	38/75/75/110	-
32	PLX	r	502	-	-	21/55/55/55	-
30	CDL	r	503	-	-	56/109/109/110	-
33	PEE	i	403	-	-	21/50/50/54	-
33	PEE	r	501	-	-	23/54/54/54	-
33	PEE	l	703	-	-	24/49/49/54	-
35	ADP	w	401	-	-	3/12/32/32	0/3/3/3
30	CDL	i	401	-	-	30/76/76/110	-
31	8Q1	X	201	-	-	19/41/41/41	-

All (116) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	s	402	UQ	C13-C14	9.32	1.55	1.33
34	s	402	UQ	C8-C9	8.96	1.54	1.33
35	w	401	ADP	C3'-C4'	-8.87	1.30	1.53
34	s	402	UQ	C18-C19	8.24	1.56	1.32
35	w	401	ADP	O4'-C4'	7.72	1.62	1.45
31	X	201	8Q1	P24-O27	7.25	1.83	1.60
35	w	401	ADP	O4'-C1'	-6.83	1.31	1.41
30	i	401	CDL	OB8-CB7	4.28	1.45	1.33
30	a	201	CDL	OB8-CB7	4.23	1.45	1.33
30	a	201	CDL	OA8-CA7	4.20	1.45	1.33
30	u	201	CDL	OA8-CA7	4.19	1.45	1.33
30	i	401	CDL	OA8-CA7	4.19	1.45	1.33
30	V	201	CDL	OA6-CA5	4.17	1.46	1.34
30	u	201	CDL	OA6-CA5	4.15	1.46	1.34
30	a	201	CDL	OA6-CA5	4.15	1.46	1.34
30	V	201	CDL	OA8-CA7	4.14	1.45	1.33
30	V	201	CDL	OB8-CB7	4.13	1.45	1.33
30	u	201	CDL	OB8-CB7	4.13	1.45	1.33
30	i	401	CDL	OB6-CB5	4.11	1.45	1.34
30	V	201	CDL	OB6-CB5	4.08	1.45	1.34
30	a	201	CDL	OB6-CB5	4.07	1.45	1.34
30	i	401	CDL	OA6-CA5	4.04	1.45	1.34
30	u	201	CDL	OB6-CB5	3.94	1.45	1.34
35	w	401	ADP	C6-N6	3.86	1.48	1.34
31	X	201	8Q1	C1-S44	3.76	1.85	1.76
33	m	201	PEE	C18-C19	3.74	1.53	1.31
33	l	702	PEE	C18-C19	3.74	1.53	1.31
33	s	401	PEE	C18-C19	3.73	1.53	1.31
33	l	703	PEE	C18-C19	3.73	1.53	1.31
33	j	201	PEE	C18-C19	3.72	1.53	1.31
33	i	403	PEE	C18-C19	3.71	1.53	1.31
33	r	501	PEE	C18-C19	3.71	1.53	1.31
33	r	501	PEE	C39-C38	3.66	1.53	1.31
33	j	201	PEE	C39-C38	3.65	1.52	1.31
33	l	702	PEE	C39-C38	3.64	1.52	1.31
33	s	401	PEE	C39-C38	3.64	1.52	1.31
33	i	403	PEE	C39-C38	3.64	1.52	1.31
33	l	703	PEE	C39-C38	3.62	1.52	1.31
31	X	201	8Q1	C34-N36	3.54	1.41	1.33
30	l	701	CDL	OA8-CA7	3.49	1.43	1.33
30	r	503	CDL	OA8-CA7	3.41	1.43	1.33
31	X	201	8Q1	O27-C28	-3.40	1.32	1.43
31	X	201	8Q1	C6-C1	3.39	1.54	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	r	504	CDL	OA8-CA7	3.37	1.43	1.33
35	w	401	ADP	O2'-C2'	-3.24	1.35	1.43
35	w	401	ADP	O3'-C3'	3.18	1.50	1.43
30	r	504	CDL	OB6-CB5	3.06	1.42	1.34
30	l	701	CDL	OB6-CB5	3.02	1.42	1.34
30	l	701	CDL	OB8-CB7	3.00	1.42	1.33
30	l	701	CDL	OA6-CA5	3.00	1.42	1.34
31	X	201	8Q1	C39-N41	2.99	1.40	1.33
30	r	504	CDL	OB8-CB7	2.99	1.42	1.33
30	r	503	CDL	OB6-CB5	2.97	1.42	1.34
30	r	503	CDL	OB8-CB7	2.94	1.41	1.33
30	r	503	CDL	OA6-CA5	2.92	1.42	1.34
30	r	504	CDL	OA6-CA5	2.88	1.42	1.34
32	e	201	PLX	O6-C4	-2.85	1.40	1.44
32	i	402	PLX	O6-C4	-2.81	1.40	1.44
34	s	402	UQ	C6-C1	2.60	1.53	1.46
32	j	202	PLX	O6-C4	-2.57	1.41	1.44
33	s	401	PEE	O2-C2	-2.51	1.40	1.46
32	r	502	PLX	C7-C6	2.48	1.56	1.50
33	m	201	PEE	O3-C30	2.46	1.40	1.33
32	j	202	PLX	C7-C6	2.45	1.56	1.50
30	r	504	CDL	OA6-CA4	-2.44	1.40	1.46
33	j	201	PEE	O3-C30	2.43	1.40	1.33
33	s	401	PEE	O3-C30	2.43	1.40	1.33
33	l	703	PEE	O3-C30	2.42	1.40	1.33
33	i	403	PEE	O3-C30	2.42	1.40	1.33
33	l	702	PEE	O3-C30	2.42	1.40	1.33
33	l	702	PEE	O2-C2	-2.40	1.40	1.46
30	r	503	CDL	OA6-CA4	-2.39	1.40	1.46
33	r	501	PEE	O3-C30	2.39	1.40	1.33
33	j	201	PEE	O2-C2	-2.37	1.40	1.46
33	i	403	PEE	O2-C2	-2.37	1.40	1.46
33	l	703	PEE	O2-C2	-2.37	1.40	1.46
33	m	201	PEE	O2-C2	-2.36	1.40	1.46
33	r	501	PEE	O2-C2	-2.36	1.40	1.46
30	l	701	CDL	OA6-CA4	-2.35	1.40	1.46
32	i	402	PLX	C7-C6	2.30	1.55	1.50
33	j	201	PEE	O2-C10	2.29	1.40	1.34
33	l	703	PEE	O2-C10	2.29	1.40	1.34
34	s	402	UQ	C7-C8	2.28	1.54	1.50
33	l	702	PEE	O2-C10	2.28	1.40	1.34
32	e	201	PLX	C7-C6	2.26	1.55	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
33	m	201	PEE	O2-C10	2.25	1.40	1.34
33	i	403	PEE	O2-C10	2.25	1.40	1.34
34	s	402	UQ	O4-C4	-2.25	1.18	1.23
30	l	701	CDL	OB6-CB4	-2.20	1.41	1.46
30	r	504	CDL	PB2-OB2	2.20	1.68	1.59
30	r	504	CDL	PB2-OB5	2.19	1.68	1.59
33	s	401	PEE	O2-C10	2.19	1.40	1.34
33	r	501	PEE	O2-C10	2.18	1.40	1.34
30	l	701	CDL	PB2-OB2	2.17	1.68	1.59
30	r	503	CDL	PB2-OB2	2.17	1.68	1.59
30	r	503	CDL	OB6-CB4	-2.17	1.41	1.46
33	r	501	PEE	O3-C3	-2.16	1.40	1.45
30	l	701	CDL	PB2-OB5	2.16	1.68	1.59
32	r	502	PLX	P1-O4	2.16	1.68	1.59
32	j	202	PLX	P1-O4	2.14	1.67	1.59
33	l	703	PEE	O3-C3	-2.13	1.40	1.45
30	r	503	CDL	PB2-OB5	2.13	1.67	1.59
32	i	402	PLX	P1-O4	2.12	1.67	1.59
33	j	201	PEE	O3-C3	-2.10	1.40	1.45
32	r	502	PLX	O6-C4	-2.10	1.41	1.44
33	i	403	PEE	O3-C3	-2.09	1.40	1.45
33	s	401	PEE	O3-C3	-2.09	1.40	1.45
32	j	202	PLX	P1-O1	2.09	1.67	1.59
33	m	201	PEE	O3-C3	-2.08	1.40	1.45
33	l	702	PEE	O3-C3	-2.08	1.40	1.45
32	e	201	PLX	P1-O4	2.08	1.67	1.59
30	r	504	CDL	OB6-CB4	-2.08	1.41	1.46
30	r	503	CDL	C11-CA5	2.07	1.56	1.50
34	s	402	UQ	O1-C1	-2.06	1.18	1.23
32	r	502	PLX	P1-O1	2.05	1.67	1.59
30	l	701	CDL	C11-CA5	2.01	1.56	1.50

All (77) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	s	402	UQ	C7-C8-C9	-9.19	111.49	126.79
34	s	402	UQ	C12-C13-C14	-5.76	113.80	127.66
31	X	201	8Q1	C6-C1-S44	5.68	120.07	113.46
30	i	401	CDL	OA6-CA5-C11	4.52	121.24	111.50
34	s	402	UQ	C11-C9-C8	-4.49	112.03	121.12
35	w	401	ADP	N3-C2-N1	-4.46	121.70	128.68
34	s	402	UQ	C10-C9-C8	-4.30	112.64	123.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	s	402	UQ	C16-C14-C13	-4.27	112.48	121.12
30	a	201	CDL	OB6-CB5-C51	4.15	120.45	111.50
33	s	401	PEE	O2-C10-C11	4.15	120.45	111.50
34	s	402	UQ	C17-C18-C19	-4.10	113.75	127.75
30	r	503	CDL	OA6-CA5-C11	4.08	120.30	111.50
33	i	403	PEE	O2-C10-C11	4.07	120.28	111.50
30	l	701	CDL	OA6-CA5-C11	4.06	120.25	111.50
30	r	503	CDL	OB6-CB5-C51	4.00	120.11	111.50
33	l	702	PEE	O2-C10-C11	3.99	120.11	111.50
30	r	504	CDL	OB6-CB5-C51	3.99	120.09	111.50
30	V	201	CDL	OB6-CB5-C51	3.97	120.06	111.50
33	m	201	PEE	O2-C10-C11	3.94	120.00	111.50
33	r	501	PEE	O2-C10-C11	3.94	120.00	111.50
30	i	401	CDL	OB6-CB5-C51	3.94	119.99	111.50
30	a	201	CDL	OA6-CA5-C11	3.93	119.97	111.50
33	j	201	PEE	O2-C10-C11	3.89	119.88	111.50
30	r	504	CDL	OA6-CA5-C11	3.87	119.84	111.50
30	u	201	CDL	OB6-CB5-C51	3.85	119.80	111.50
34	s	402	UQ	C15-C14-C13	-3.85	113.81	123.68
30	l	701	CDL	OB6-CB5-C51	3.83	119.76	111.50
33	l	703	PEE	O2-C10-C11	3.80	119.69	111.50
30	u	201	CDL	OA6-CA5-C11	3.77	121.31	110.80
34	s	402	UQ	C21-C19-C18	-3.37	112.90	122.65
30	V	201	CDL	OA6-CA5-C11	3.30	120.01	110.80
31	X	201	8Q1	O35-C34-N36	-3.20	116.11	122.99
34	s	402	UQ	C20-C19-C18	-3.06	113.80	122.65
31	X	201	8Q1	C43-S44-C1	3.05	111.38	101.87
34	s	402	UQ	CM5-C5-C6	-3.02	119.47	124.40
31	X	201	8Q1	O4-C1-S44	-2.97	118.76	122.61
30	a	201	CDL	OB8-CB7-C71	2.90	121.00	111.91
31	X	201	8Q1	O2-P24-O27	-2.87	99.10	106.73
30	i	401	CDL	CA4-OA6-CA5	-2.85	110.77	117.79
33	l	702	PEE	O3-C30-C31	2.77	120.62	111.91
30	u	201	CDL	OA8-CA7-C31	2.76	120.57	111.91
33	m	201	PEE	O3-C30-C31	2.74	120.50	111.91
30	r	503	CDL	OB8-CB7-C71	2.73	120.49	111.91
30	i	401	CDL	OA8-CA7-C31	2.73	120.47	111.91
33	s	401	PEE	O3-C30-C31	2.69	120.34	111.91
30	a	201	CDL	CB4-OB6-CB5	-2.68	111.19	117.79
30	V	201	CDL	OB8-CB7-C71	2.65	120.22	111.91
33	r	501	PEE	O3-C30-C31	2.64	120.20	111.91
32	e	201	PLX	C1A-N1-C1	2.63	120.68	109.92

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	a	201	CDL	OA8-CA7-C31	2.63	120.15	111.91
35	w	401	ADP	PA-O3A-PB	-2.61	123.86	132.83
33	i	403	PEE	O3-C30-C31	2.60	120.06	111.91
33	j	201	PEE	O3-C30-C31	2.59	120.04	111.91
32	i	402	PLX	C1A-N1-C1	2.57	120.43	109.92
30	r	504	CDL	OA8-CA7-C31	2.57	119.97	111.91
30	r	504	CDL	OB8-CB7-C71	2.57	119.96	111.91
33	l	703	PEE	O3-C30-C31	2.57	119.96	111.91
30	u	201	CDL	OB8-CB7-C71	2.56	119.95	111.91
30	l	701	CDL	OA8-CA7-C31	2.54	119.88	111.91
30	l	701	CDL	OB8-CB7-C71	2.50	119.76	111.91
30	V	201	CDL	OA8-CA7-C31	2.49	119.73	111.91
30	r	503	CDL	OA8-CA7-C31	2.49	119.72	111.91
31	X	201	8Q1	O40-C39-N41	-2.46	118.38	123.01
31	X	201	8Q1	C32-C34-N36	2.46	121.47	116.58
30	i	401	CDL	OB8-CB7-C71	2.44	119.56	111.91
32	r	502	PLX	C1A-N1-C1	2.40	119.74	109.92
31	X	201	8Q1	O4-C1-C6	-2.39	121.17	123.99
31	X	201	8Q1	O1-P24-O2	2.38	116.75	107.64
30	V	201	CDL	CB4-OB6-CB5	-2.37	111.96	117.79
32	j	202	PLX	C1A-N1-C1	2.35	119.53	109.92
35	w	401	ADP	O4'-C1'-C2'	-2.33	103.53	106.93
34	s	402	UQ	C7-C6-C1	2.23	121.16	118.48
35	w	401	ADP	C4-C5-N7	-2.11	107.20	109.40
30	i	401	CDL	OA6-CA5-OA7	-2.10	118.62	123.70
31	X	201	8Q1	C37-C38-C39	2.07	115.80	112.36
35	w	401	ADP	C3'-C2'-C1'	2.05	104.07	100.98
30	i	401	CDL	CB4-OB6-CB5	-2.05	112.75	117.79

There are no chirality outliers.

All (576) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
30	V	201	CDL	CA2-OA2-PA1-OA5
30	V	201	CDL	CB2-OB2-PB2-OB4
30	V	201	CDL	CB3-OB5-PB2-OB4
30	a	201	CDL	CA2-OA2-PA1-OA3
30	i	401	CDL	CA3-OA5-PA1-OA4
30	i	401	CDL	CB2-OB2-PB2-OB4
30	i	401	CDL	CB3-OB5-PB2-OB2
30	l	701	CDL	O1-C1-CA2-OA2
30	l	701	CDL	O1-C1-CB2-OB2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	l	701	CDL	CA2-C1-CB2-OB2
30	l	701	CDL	CB2-OB2-PB2-OB3
30	l	701	CDL	CB2-OB2-PB2-OB4
30	l	701	CDL	OB6-CB4-CB6-OB8
30	r	503	CDL	CA2-OA2-PA1-OA3
30	r	503	CDL	CA2-OA2-PA1-OA4
30	r	503	CDL	CB2-OB2-PB2-OB3
30	r	503	CDL	CB2-OB2-PB2-OB4
30	r	503	CDL	CB3-OB5-PB2-OB3
30	r	503	CDL	CB3-OB5-PB2-OB4
30	r	504	CDL	O1-C1-CB2-OB2
30	r	504	CDL	CA2-C1-CB2-OB2
30	r	504	CDL	CB2-OB2-PB2-OB3
30	r	504	CDL	CB3-OB5-PB2-OB4
30	u	201	CDL	CB2-C1-CA2-OA2
30	u	201	CDL	CA3-OA5-PA1-OA3
30	u	201	CDL	CA3-OA5-PA1-OA4
30	u	201	CDL	CB2-OB2-PB2-OB4
31	X	201	8Q1	C1-C6-C7-C8
31	X	201	8Q1	O4-C1-S44-C43
31	X	201	8Q1	C6-C1-S44-C43
31	X	201	8Q1	C28-C29-C32-C34
31	X	201	8Q1	C28-C29-C32-O33
31	X	201	8Q1	C30-C29-C32-C34
31	X	201	8Q1	C30-C29-C32-O33
31	X	201	8Q1	C31-C29-C32-C34
31	X	201	8Q1	C31-C29-C32-O33
31	X	201	8Q1	N36-C37-C38-C39
31	X	201	8Q1	C42-C43-S44-C1
32	a	202	PLX	O7-C6-O6-C4
32	e	201	PLX	O7-C6-O6-C4
32	e	201	PLX	C3-O4-P1-O3
32	e	201	PLX	C2-O1-P1-O4
32	e	201	PLX	C2-O1-P1-O2
32	e	201	PLX	C2-O1-P1-O3
32	e	201	PLX	C25-C24-O8-C5
32	i	402	PLX	O7-C6-O6-C4
32	i	402	PLX	C3-O4-P1-O2
32	i	402	PLX	C25-C24-O8-C5
32	j	202	PLX	O7-C6-C7-C8
32	j	202	PLX	C3-O4-P1-O2
32	j	202	PLX	O9-C24-O8-C5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
32	j	202	PLX	O9-C24-C25-C26
32	r	502	PLX	O7-C6-O6-C4
32	r	502	PLX	C5-C4-O6-C6
32	r	502	PLX	O9-C24-C25-C26
33	i	403	PEE	C1-O3P-P-O2P
33	i	403	PEE	C1-O3P-P-O1P
33	j	201	PEE	C19-C20-C21-C22
33	l	702	PEE	C11-C10-O2-C2
33	l	702	PEE	C4-O4P-P-O2P
33	l	702	PEE	C4-O4P-P-O1P
33	m	201	PEE	C11-C10-O2-C2
33	m	201	PEE	C4-O4P-P-O1P
33	r	501	PEE	C4-O4P-P-O2P
33	r	501	PEE	C4-O4P-P-O1P
33	s	401	PEE	C4-O4P-P-O2P
33	s	401	PEE	C37-C38-C39-C40
34	s	402	UQ	C7-C8-C9-C10
34	s	402	UQ	C7-C8-C9-C11
34	s	402	UQ	C17-C18-C19-C21
35	w	401	ADP	C5'-O5'-PA-O1A
35	w	401	ADP	C5'-O5'-PA-O2A
35	w	401	ADP	C5'-O5'-PA-O3A
33	m	201	PEE	O5-C30-O3-C3
33	m	201	PEE	C31-C30-O3-C3
30	r	503	CDL	OA9-CA7-OA8-CA6
33	l	702	PEE	O4-C10-O2-C2
33	m	201	PEE	O4-C10-O2-C2
30	r	503	CDL	C31-CA7-OA8-CA6
34	s	402	UQ	C12-C11-C9-C8
30	r	504	CDL	C71-CB7-OB8-CB6
33	j	201	PEE	C17-C18-C19-C20
33	l	703	PEE	C37-C38-C39-C40
30	i	401	CDL	O1-C1-CA2-OA2
30	r	503	CDL	O1-C1-CB2-OB2
30	u	201	CDL	O1-C1-CA2-OA2
30	l	701	CDL	C71-CB7-OB8-CB6
30	r	504	CDL	C51-CB5-OB6-CB4
33	i	403	PEE	C11-C10-O2-C2
32	j	202	PLX	C28-C29-C30-C31
30	l	701	CDL	OB9-CB7-OB8-CB6
30	r	504	CDL	OB9-CB7-OB8-CB6
30	r	503	CDL	C55-C56-C57-C58

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
32	r	502	PLX	C9-C10-C11-C12
32	r	502	PLX	C30-C31-C32-C33
32	i	402	PLX	C7-C8-C9-C10
33	l	703	PEE	C31-C30-O3-C3
30	l	701	CDL	C54-C55-C56-C57
33	l	703	PEE	C10-C11-C12-C13
30	i	401	CDL	CB2-C1-CA2-OA2
30	r	503	CDL	CA2-C1-CB2-OB2
30	r	504	CDL	OB7-CB5-OB6-CB4
33	i	403	PEE	O4-C10-O2-C2
33	l	703	PEE	O5-C30-O3-C3
30	r	504	CDL	C76-C77-C78-C79
30	i	401	CDL	C31-CA7-OA8-CA6
30	r	503	CDL	C71-CB7-OB8-CB6
33	j	201	PEE	C31-C30-O3-C3
33	j	201	PEE	C40-C41-C42-C43
32	j	202	PLX	C32-C33-C34-C35
30	l	701	CDL	CB5-C51-C52-C53
30	r	504	CDL	OA6-CA4-CA6-OA8
30	l	701	CDL	C11-C12-C13-C14
33	r	501	PEE	C41-C42-C43-C44
30	r	503	CDL	OB9-CB7-OB8-CB6
33	j	201	PEE	O5-C30-O3-C3
30	r	503	CDL	CB7-C71-C72-C73
30	l	701	CDL	C71-C72-C73-C74
30	l	701	CDL	CB7-C71-C72-C73
33	s	401	PEE	C10-C11-C12-C13
33	r	501	PEE	C17-C18-C19-C20
30	a	201	CDL	CA7-C31-C32-C33
30	r	503	CDL	CB5-C51-C52-C53
33	i	403	PEE	C10-C11-C12-C13
33	r	501	PEE	C10-C11-C12-C13
30	i	401	CDL	C71-CB7-OB8-CB6
30	u	201	CDL	C75-C76-C77-C78
32	e	201	PLX	C2-C1-N1-C1A
30	r	504	CDL	CA7-C31-C32-C33
30	V	201	CDL	C31-CA7-OA8-CA6
33	j	201	PEE	C34-C35-C36-C37
30	i	401	CDL	OA9-CA7-OA8-CA6
30	r	504	CDL	C74-C75-C76-C77
32	r	502	PLX	C11-C12-C13-C14
33	r	501	PEE	C15-C16-C17-C18

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	j	201	PEE	C30-C31-C32-C33
30	V	201	CDL	C60-C61-C62-C63
33	j	201	PEE	C11-C10-O2-C2
33	r	501	PEE	C11-C10-O2-C2
30	V	201	CDL	CB2-OB2-PB2-OB5
30	V	201	CDL	CB3-OB5-PB2-OB2
30	a	201	CDL	CA2-OA2-PA1-OA5
30	a	201	CDL	CB2-OB2-PB2-OB5
30	i	401	CDL	CA3-OA5-PA1-OA2
30	i	401	CDL	CB2-OB2-PB2-OB5
30	l	701	CDL	CA2-OA2-PA1-OA5
30	l	701	CDL	CB2-OB2-PB2-OB5
30	r	503	CDL	CA2-OA2-PA1-OA5
30	r	503	CDL	CB2-OB2-PB2-OB5
30	r	503	CDL	CB3-OB5-PB2-OB2
30	r	504	CDL	CA3-OA5-PA1-OA2
30	r	504	CDL	CB3-OB5-PB2-OB2
30	u	201	CDL	CA3-OA5-PA1-OA2
30	u	201	CDL	CB2-OB2-PB2-OB5
32	a	202	PLX	C3-O4-P1-O1
32	e	201	PLX	C3-O4-P1-O1
32	i	402	PLX	C3-O4-P1-O1
32	j	202	PLX	C3-O4-P1-O1
33	i	403	PEE	C1-O3P-P-O4P
33	l	702	PEE	C4-O4P-P-O3P
33	r	501	PEE	C4-O4P-P-O3P
33	s	401	PEE	C4-O4P-P-O3P
33	r	501	PEE	O4-C10-O2-C2
33	m	201	PEE	C31-C32-C33-C34
32	e	201	PLX	C2-C1-N1-C1C
33	r	501	PEE	C22-C23-C24-C25
32	i	402	PLX	O8-C24-C25-C26
32	j	202	PLX	O8-C24-C25-C26
30	r	503	CDL	C20-C21-C22-C23
32	e	201	PLX	C11-C12-C13-C14
33	m	201	PEE	C13-C14-C15-C16
33	r	501	PEE	C12-C13-C14-C15
30	l	701	CDL	C56-C57-C58-C59
30	r	504	CDL	C17-C18-C19-C20
30	r	504	CDL	C41-C42-C43-C44
31	X	201	8Q1	C7-C8-C9-C10
32	e	201	PLX	C10-C11-C12-C13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	l	703	PEE	C31-C32-C33-C34
30	l	701	CDL	C55-C56-C57-C58
30	r	504	CDL	C32-C33-C34-C35
32	e	201	PLX	C29-C30-C31-C32
32	i	402	PLX	C10-C11-C12-C13
33	j	201	PEE	O4-C10-O2-C2
30	r	504	CDL	C72-C73-C74-C75
30	i	401	CDL	OB9-CB7-OB8-CB6
30	r	503	CDL	C74-C75-C76-C77
32	r	502	PLX	C28-C29-C30-C31
32	e	201	PLX	C28-C29-C30-C31
30	r	504	CDL	CB5-C51-C52-C53
30	r	503	CDL	C52-C53-C54-C55
32	e	201	PLX	C33-C34-C35-C36
32	i	402	PLX	C27-C28-C29-C30
32	j	202	PLX	C7-C8-C9-C10
30	V	201	CDL	OA9-CA7-OA8-CA6
30	r	503	CDL	C73-C74-C75-C76
32	r	502	PLX	C12-C13-C14-C15
30	r	503	CDL	C56-C57-C58-C59
30	r	503	CDL	C62-C63-C64-C65
30	r	503	CDL	C75-C76-C77-C78
32	j	202	PLX	C15-C16-C17-C18
33	s	401	PEE	C23-C24-C25-C26
30	u	201	CDL	C11-CA5-OA6-CA4
30	l	701	CDL	C73-C74-C75-C76
30	r	503	CDL	C35-C36-C37-C38
30	r	504	CDL	C56-C57-C58-C59
31	X	201	8Q1	C11-C12-C13-C14
32	e	201	PLX	C25-C26-C27-C28
33	l	703	PEE	C33-C34-C35-C36
30	r	503	CDL	C14-C15-C16-C17
30	r	503	CDL	C71-C72-C73-C74
32	e	201	PLX	C14-C15-C16-C17
32	e	201	PLX	C9-C10-C11-C12
32	i	402	PLX	C11-C10-C9-C8
32	j	202	PLX	C10-C11-C12-C13
33	l	702	PEE	C31-C32-C33-C34
32	i	402	PLX	C18-C19-C20-C21
32	i	402	PLX	C12-C13-C14-C15
32	i	402	PLX	C28-C29-C30-C31
32	r	502	PLX	C15-C16-C17-C18

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
32	r	502	PLX	C27-C28-C29-C30
30	r	504	CDL	C55-C56-C57-C58
30	r	504	CDL	C62-C63-C64-C65
30	r	504	CDL	C75-C76-C77-C78
33	j	201	PEE	C22-C23-C24-C25
30	r	504	CDL	C14-C15-C16-C17
30	r	504	CDL	C43-C44-C45-C46
30	r	504	CDL	C71-C72-C73-C74
32	j	202	PLX	C25-C26-C27-C28
32	j	202	PLX	C27-C28-C29-C30
30	u	201	CDL	OA7-CA5-OA6-CA4
33	l	703	PEE	C17-C18-C19-C20
32	r	502	PLX	C16-C17-C18-C19
33	s	401	PEE	C30-C31-C32-C33
30	V	201	CDL	C51-CB5-OB6-CB4
32	e	201	PLX	C12-C13-C14-C15
32	i	402	PLX	C35-C36-C37-C38
32	a	202	PLX	O9-C24-C25-C26
32	e	201	PLX	O9-C24-C25-C26
32	i	402	PLX	O9-C24-C25-C26
30	i	401	CDL	C36-C37-C38-C39
30	l	701	CDL	C72-C73-C74-C75
32	j	202	PLX	C14-C15-C16-C17
33	s	401	PEE	C33-C34-C35-C36
33	r	501	PEE	C13-C14-C15-C16
30	r	503	CDL	O1-C1-CA2-OA2
30	a	201	CDL	C39-C40-C41-C42
33	s	401	PEE	C13-C14-C15-C16
30	l	701	CDL	CB2-C1-CA2-OA2
32	j	202	PLX	C34-C35-C36-C37
33	s	401	PEE	C34-C35-C36-C37
30	V	201	CDL	OB7-CB5-OB6-CB4
30	i	401	CDL	C11-C12-C13-C14
33	s	401	PEE	C40-C41-C42-C43
32	j	202	PLX	C12-C13-C14-C15
32	e	201	PLX	C2-C1-N1-C1B
30	r	503	CDL	C81-C82-C83-C84
30	r	504	CDL	C73-C74-C75-C76
32	r	502	PLX	C13-C14-C15-C16
32	i	402	PLX	C13-C14-C15-C16
32	i	402	PLX	C25-C26-C27-C28
33	s	401	PEE	O4-C10-O2-C2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	r	504	CDL	C31-CA7-OA8-CA6
33	l	702	PEE	C31-C30-O3-C3
30	r	503	CDL	C54-C55-C56-C57
32	r	502	PLX	C7-C8-C9-C10
32	j	202	PLX	C9-C10-C11-C12
33	m	201	PEE	C11-C12-C13-C14
34	s	402	UQ	C12-C13-C14-C15
30	r	503	CDL	C40-C41-C42-C43
34	s	402	UQ	C14-C16-C17-C18
30	a	201	CDL	C51-CB5-OB6-CB4
30	i	401	CDL	C11-CA5-OA6-CA4
33	s	401	PEE	C11-C10-O2-C2
33	j	201	PEE	C36-C37-C38-C39
30	r	503	CDL	C59-C60-C61-C62
30	l	701	CDL	C32-C33-C34-C35
30	r	504	CDL	C52-C53-C54-C55
31	X	201	8Q1	C10-C11-C12-C13
30	V	201	CDL	OB6-CB4-CB6-OB8
30	i	401	CDL	OB6-CB4-CB6-OB8
30	l	701	CDL	OA6-CA4-CA6-OA8
33	s	401	PEE	C31-C30-O3-C3
32	r	502	PLX	C33-C34-C35-C36
30	i	401	CDL	OA7-CA5-OA6-CA4
30	r	504	CDL	C37-C38-C39-C40
33	j	201	PEE	C11-C12-C13-C14
33	m	201	PEE	C4-O4P-P-O3P
30	i	401	CDL	C31-C32-C33-C34
32	i	402	PLX	C32-C33-C34-C35
33	s	401	PEE	C20-C21-C22-C23
30	r	504	CDL	C11-C12-C13-C14
30	r	504	CDL	C59-C60-C61-C62
33	s	401	PEE	C21-C22-C23-C24
30	V	201	CDL	CA3-CA4-CA6-OA8
30	r	503	CDL	CB3-CB4-CB6-OB8
30	r	504	CDL	CA3-CA4-CA6-OA8
30	u	201	CDL	CA3-CA4-CA6-OA8
33	r	501	PEE	C1-C2-C3-O3
33	s	401	PEE	C17-C18-C19-C20
33	l	702	PEE	O5-C30-O3-C3
30	i	401	CDL	C33-C34-C35-C36
30	l	701	CDL	C57-C58-C59-C60
30	r	504	CDL	OA9-CA7-OA8-CA6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
32	r	502	PLX	C31-C32-C33-C34
30	r	503	CDL	C82-C83-C84-C85
33	r	501	PEE	C36-C37-C38-C39
33	j	201	PEE	C21-C22-C23-C24
33	i	403	PEE	C35-C36-C37-C38
33	s	401	PEE	C15-C16-C17-C18
33	l	703	PEE	C11-C10-O2-C2
32	e	201	PLX	C16-C17-C18-C19
32	e	201	PLX	C26-C27-C28-C29
32	r	502	PLX	C29-C30-C31-C32
33	l	702	PEE	C22-C23-C24-C25
30	u	201	CDL	CA6-CA4-OA6-CA5
30	a	201	CDL	C31-C32-C33-C34
30	l	701	CDL	C33-C34-C35-C36
30	r	503	CDL	C32-C33-C34-C35
32	e	201	PLX	C30-C31-C32-C33
33	j	201	PEE	C38-C39-C40-C41
33	i	403	PEE	C31-C30-O3-C3
33	s	401	PEE	O5-C30-O3-C3
30	V	201	CDL	C64-C65-C66-C67
30	r	503	CDL	OB6-CB4-CB6-OB8
30	r	504	CDL	OB6-CB4-CB6-OB8
32	j	202	PLX	O6-C4-C5-O8
32	i	402	PLX	C9-C10-C11-C12
30	a	201	CDL	OB7-CB5-OB6-CB4
30	i	401	CDL	C35-C36-C37-C38
33	l	702	PEE	C21-C22-C23-C24
30	V	201	CDL	C71-CB7-OB8-CB6
32	j	202	PLX	C31-C32-C33-C34
30	a	201	CDL	OB5-CB3-CB4-CB6
30	i	401	CDL	OA5-CA3-CA4-CA6
32	a	202	PLX	C34-C35-C36-C37
30	r	504	CDL	C78-C79-C80-C81
30	u	201	CDL	C57-C58-C59-C60
32	a	202	PLX	C14-C15-C16-C17
32	j	202	PLX	C26-C27-C28-C29
31	X	201	8Q1	C6-C7-C8-C9
30	r	504	CDL	C39-C40-C41-C42
32	i	402	PLX	C30-C31-C32-C33
32	i	402	PLX	C36-C37-C38-C39
32	r	502	PLX	C14-C15-C16-C17
30	i	401	CDL	CA7-C31-C32-C33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	a	201	CDL	C71-CB7-OB8-CB6
30	V	201	CDL	CB3-CB4-CB6-OB8
30	l	701	CDL	CA3-CA4-CA6-OA8
30	l	701	CDL	CB3-CB4-CB6-OB8
30	r	504	CDL	CB3-CB4-CB6-OB8
33	i	403	PEE	C1-C2-C3-O3
33	l	703	PEE	C1-C2-C3-O3
33	l	703	PEE	O4-C10-O2-C2
30	a	201	CDL	C38-C39-C40-C41
30	r	503	CDL	C36-C37-C38-C39
34	s	402	UQ	C12-C11-C9-C10
30	r	504	CDL	C12-C13-C14-C15
33	s	401	PEE	C32-C33-C34-C35
30	u	201	CDL	CA2-OA2-PA1-OA5
32	e	201	PLX	C5-C4-O6-C6
33	l	703	PEE	C4-O4P-P-O3P
30	r	504	CDL	C60-C61-C62-C63
32	j	202	PLX	O4-C3-C4-O6
33	i	403	PEE	O5-C30-O3-C3
30	V	201	CDL	OA6-CA4-CA6-OA8
33	i	403	PEE	O2-C2-C3-O3
30	u	201	CDL	C53-C54-C55-C56
33	j	201	PEE	C12-C13-C14-C15
30	r	504	CDL	C34-C35-C36-C37
32	a	202	PLX	C16-C17-C18-C19
32	i	402	PLX	C33-C34-C35-C36
30	r	504	CDL	CB4-CB3-OB5-PB2
33	l	702	PEE	C15-C16-C17-C18
32	e	201	PLX	C31-C32-C33-C34
30	i	401	CDL	C71-C72-C73-C74
30	r	503	CDL	C37-C38-C39-C40
30	r	504	CDL	C20-C21-C22-C23
31	X	201	8Q1	O4-C1-C6-C7
31	X	201	8Q1	S44-C1-C6-C7
32	j	202	PLX	O6-C6-C7-C8
32	j	202	PLX	O4-C3-C4-C5
33	l	702	PEE	C13-C14-C15-C16
33	i	403	PEE	C18-C19-C20-C21
32	j	202	PLX	C33-C34-C35-C36
30	r	503	CDL	C51-CB5-OB6-CB4
31	X	201	8Q1	O33-C32-C34-N36
33	r	501	PEE	C31-C30-O3-C3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	l	702	PEE	C32-C33-C34-C35
33	m	201	PEE	C3-C2-O2-C10
33	j	201	PEE	C43-C44-C45-C46
30	i	401	CDL	CB3-CB4-CB6-OB8
32	e	201	PLX	C3-C4-C5-O8
30	a	201	CDL	OB9-CB7-OB8-CB6
30	i	401	CDL	OA5-CA3-CA4-OA6
33	s	401	PEE	O3P-C1-C2-O2
30	V	201	CDL	OB9-CB7-OB8-CB6
32	r	502	PLX	O6-C4-C5-O8
30	r	503	CDL	C11-CA5-OA6-CA4
30	r	503	CDL	OB7-CB5-OB6-CB4
30	V	201	CDL	C78-C79-C80-C81
33	r	501	PEE	C20-C21-C22-C23
30	V	201	CDL	C74-C75-C76-C77
30	r	504	CDL	C57-C58-C59-C60
30	r	504	CDL	C82-C83-C84-C85
33	l	703	PEE	C13-C14-C15-C16
30	V	201	CDL	CA3-OA5-PA1-OA2
30	l	701	CDL	CA3-OA5-PA1-OA2
30	r	504	CDL	CA2-OA2-PA1-OA5
30	a	201	CDL	C18-C19-C20-C21
30	V	201	CDL	CB4-CB3-OB5-PB2
33	i	403	PEE	C2-C1-O3P-P
33	r	501	PEE	O5-C30-O3-C3
30	V	201	CDL	CA2-OA2-PA1-OA4
30	a	201	CDL	CA2-OA2-PA1-OA4
30	a	201	CDL	CB2-OB2-PB2-OB3
30	i	401	CDL	CB2-OB2-PB2-OB3
30	i	401	CDL	CB3-OB5-PB2-OB4
30	l	701	CDL	CA2-OA2-PA1-OA3
30	r	504	CDL	CA2-OA2-PA1-OA3
30	r	504	CDL	CA3-OA5-PA1-OA3
30	r	504	CDL	CB3-OB5-PB2-OB3
32	a	202	PLX	C3-O4-P1-O2
32	e	201	PLX	C3-O4-P1-O2
32	j	202	PLX	C3-O4-P1-O3
32	j	202	PLX	C2-O1-P1-O3
33	s	401	PEE	C1-O3P-P-O2P
33	s	401	PEE	C4-O4P-P-O1P
30	l	701	CDL	OA5-CA3-CA4-CA6
33	s	401	PEE	O3P-C1-C2-C3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	r	504	CDL	C44-C45-C46-C47
30	l	701	CDL	C52-C53-C54-C55
32	r	502	PLX	C25-C24-O8-C5
32	e	201	PLX	C11-C10-C9-C8
30	r	503	CDL	OA7-CA5-OA6-CA4
30	a	201	CDL	OA5-CA3-CA4-OA6
30	a	201	CDL	OB5-CB3-CB4-OB6
30	l	701	CDL	OA5-CA3-CA4-OA6
30	r	503	CDL	C42-C43-C44-C45
30	r	503	CDL	C44-C45-C46-C47
30	r	503	CDL	C53-C54-C55-C56
30	r	504	CDL	C36-C37-C38-C39
31	X	201	8Q1	C9-C10-C11-C12
32	j	202	PLX	C3-C4-C5-O8
32	r	502	PLX	C32-C33-C34-C35
30	u	201	CDL	OA6-CA4-CA6-OA8
32	e	201	PLX	O6-C4-C5-O8
33	l	703	PEE	O2-C2-C3-O3
33	r	501	PEE	O2-C2-C3-O3
30	V	201	CDL	C51-C52-C53-C54
33	l	702	PEE	C38-C39-C40-C41
33	l	703	PEE	C18-C19-C20-C21
30	u	201	CDL	C76-C77-C78-C79
33	m	201	PEE	C19-C20-C21-C22
30	V	201	CDL	C58-C59-C60-C61
30	V	201	CDL	C63-C64-C65-C66
33	i	403	PEE	C21-C22-C23-C24
30	i	401	CDL	CA6-CA4-OA6-CA5
32	i	402	PLX	C14-C15-C16-C17
33	l	703	PEE	C2-C1-O3P-P
30	r	503	CDL	C60-C61-C62-C63
33	j	201	PEE	O2-C2-C3-O3
30	a	201	CDL	CA3-OA5-PA1-OA2
30	a	201	CDL	CB3-OB5-PB2-OB2
30	i	401	CDL	CA2-OA2-PA1-OA5
32	a	202	PLX	C2-O1-P1-O4
30	i	401	CDL	C37-C38-C39-C40
32	r	502	PLX	C3-C4-C5-O8
32	e	201	PLX	C24-C25-C26-C27
32	j	202	PLX	C13-C14-C15-C16
33	l	703	PEE	C16-C17-C18-C19
33	s	401	PEE	C38-C39-C40-C41

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
30	r	503	CDL	C23-C24-C25-C26
33	i	403	PEE	C24-C25-C26-C27
32	i	402	PLX	C29-C30-C31-C32
33	r	501	PEE	C38-C39-C40-C41
30	r	504	CDL	C64-C65-C66-C67
30	r	503	CDL	OB5-CB3-CB4-OB6
30	V	201	CDL	C61-C62-C63-C64
30	r	504	CDL	C31-C32-C33-C34
33	l	703	PEE	C39-C40-C41-C42
33	i	403	PEE	C36-C37-C38-C39
30	r	504	CDL	C13-C14-C15-C16
32	e	201	PLX	C13-C14-C15-C16
30	a	201	CDL	CB5-C51-C52-C53
30	r	504	CDL	C80-C81-C82-C83
32	i	402	PLX	C16-C17-C18-C19
30	a	201	CDL	C71-C72-C73-C74
33	s	401	PEE	C14-C15-C16-C17
30	r	503	CDL	C39-C40-C41-C42
33	l	703	PEE	C30-C31-C32-C33
33	r	501	PEE	C30-C31-C32-C33
30	V	201	CDL	CA6-CA4-OA6-CA5
30	a	201	CDL	CA3-CA4-OA6-CA5
30	l	701	CDL	C51-C52-C53-C54
33	l	702	PEE	C36-C37-C38-C39
33	m	201	PEE	C16-C17-C18-C19
33	s	401	PEE	C1-O3P-P-O4P
30	a	201	CDL	O1-C1-CA2-OA2
33	l	702	PEE	O2-C2-C3-O3
33	l	703	PEE	C15-C16-C17-C18
32	a	202	PLX	C30-C31-C32-C33
30	a	201	CDL	C73-C74-C75-C76
30	a	201	CDL	C54-C55-C56-C57
30	r	504	CDL	C33-C34-C35-C36
33	j	201	PEE	C1-C2-C3-O3
33	r	501	PEE	C23-C24-C25-C26
30	u	201	CDL	C77-C78-C79-C80
33	j	201	PEE	C41-C42-C43-C44
33	l	703	PEE	C12-C13-C14-C15
34	s	402	UQ	C13-C14-C16-C17
30	u	201	CDL	C12-C11-CA5-OA6
32	i	402	PLX	O6-C4-C5-O8
30	a	201	CDL	C34-C35-C36-C37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
33	i	403	PEE	C34-C35-C36-C37
33	m	201	PEE	C12-C13-C14-C15
33	j	201	PEE	O3-C30-C31-C32
33	i	403	PEE	C38-C39-C40-C41
30	a	201	CDL	CA6-CA4-OA6-CA5
30	r	503	CDL	C76-C77-C78-C79
30	l	701	CDL	C32-C31-CA7-OA8
30	r	503	CDL	C72-C71-CB7-OB8
33	l	702	PEE	C16-C17-C18-C19
32	i	402	PLX	C7-C6-O6-C4
32	j	202	PLX	C7-C6-O6-C4
33	l	702	PEE	C1-C2-C3-O3
33	l	703	PEE	C23-C24-C25-C26
30	r	503	CDL	OA5-CA3-CA4-OA6
30	r	504	CDL	C52-C51-CB5-OB6
32	a	202	PLX	C25-C26-C27-C28
30	r	504	CDL	C63-C64-C65-C66
33	j	201	PEE	C16-C17-C18-C19
30	r	504	CDL	C79-C80-C81-C82
30	V	201	CDL	C55-C56-C57-C58
30	r	504	CDL	CA4-CA3-OA5-PA1
33	l	703	PEE	C38-C39-C40-C41
33	m	201	PEE	C18-C19-C20-C21
33	i	403	PEE	C23-C24-C25-C26
34	s	402	UQ	C9-C11-C12-C13
30	r	504	CDL	C84-C85-C86-C87
33	l	703	PEE	O2-C10-C11-C12
33	r	501	PEE	C24-C25-C26-C27
30	r	504	CDL	C52-C51-CB5-OB7
30	r	504	CDL	C15-C16-C17-C18
33	m	201	PEE	C23-C24-C25-C26
30	l	701	CDL	C58-C59-C60-C61
32	e	201	PLX	C36-C37-C38-C39
30	r	503	CDL	C72-C71-CB7-OB9
32	a	202	PLX	C18-C19-C20-C21
30	r	504	CDL	C42-C43-C44-C45
32	a	202	PLX	C32-C33-C34-C35
33	j	201	PEE	O5-C30-C31-C32
30	a	201	CDL	CB3-OB5-PB2-OB3
30	i	401	CDL	CA2-OA2-PA1-OA3
30	l	701	CDL	CB3-OB5-PB2-OB3
30	r	504	CDL	CA2-OA2-PA1-OA4

Continued on next page...

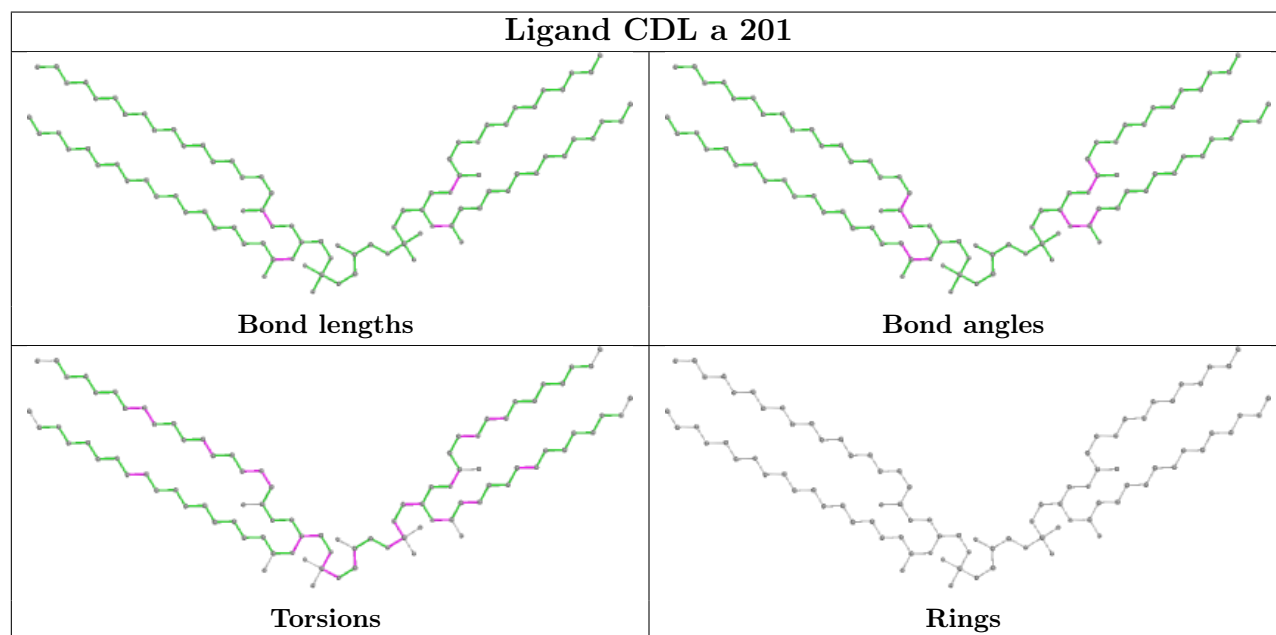
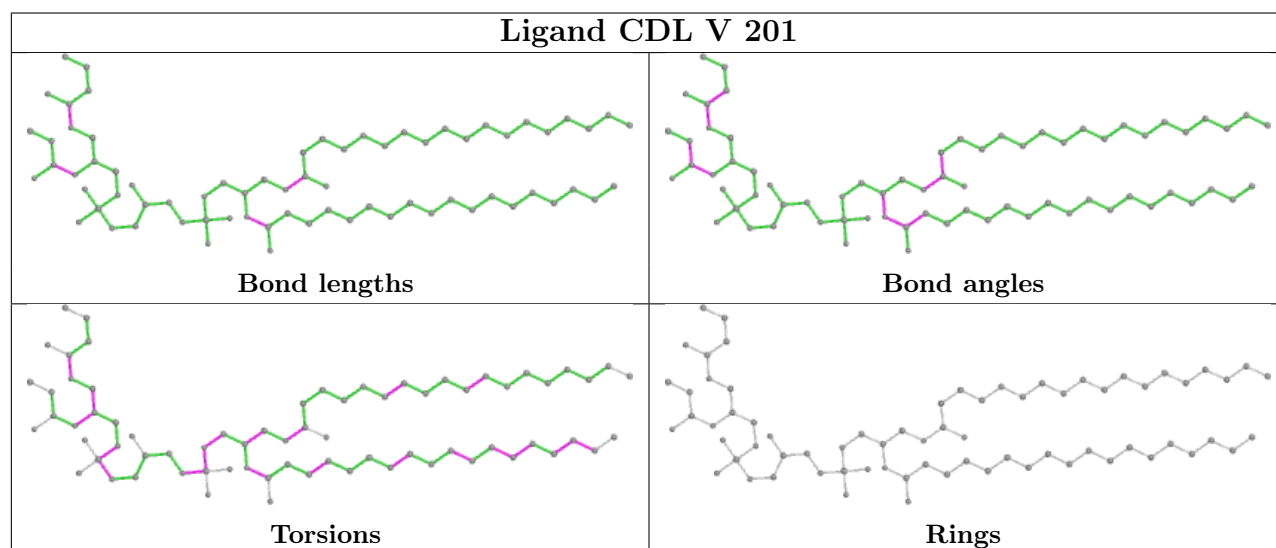
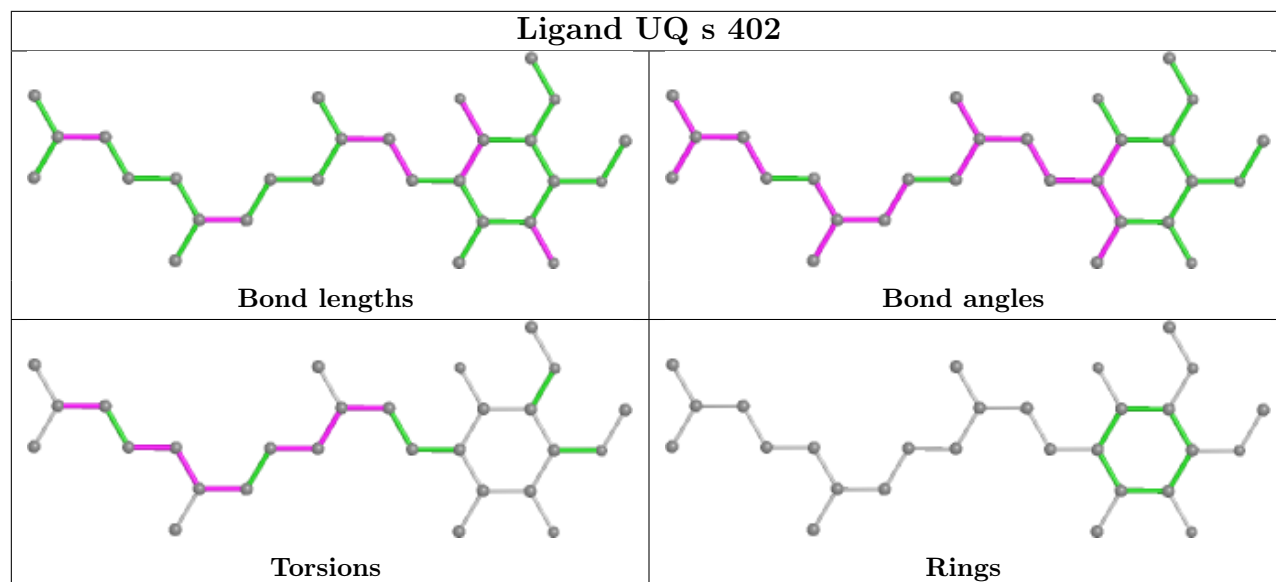
Continued from previous page...

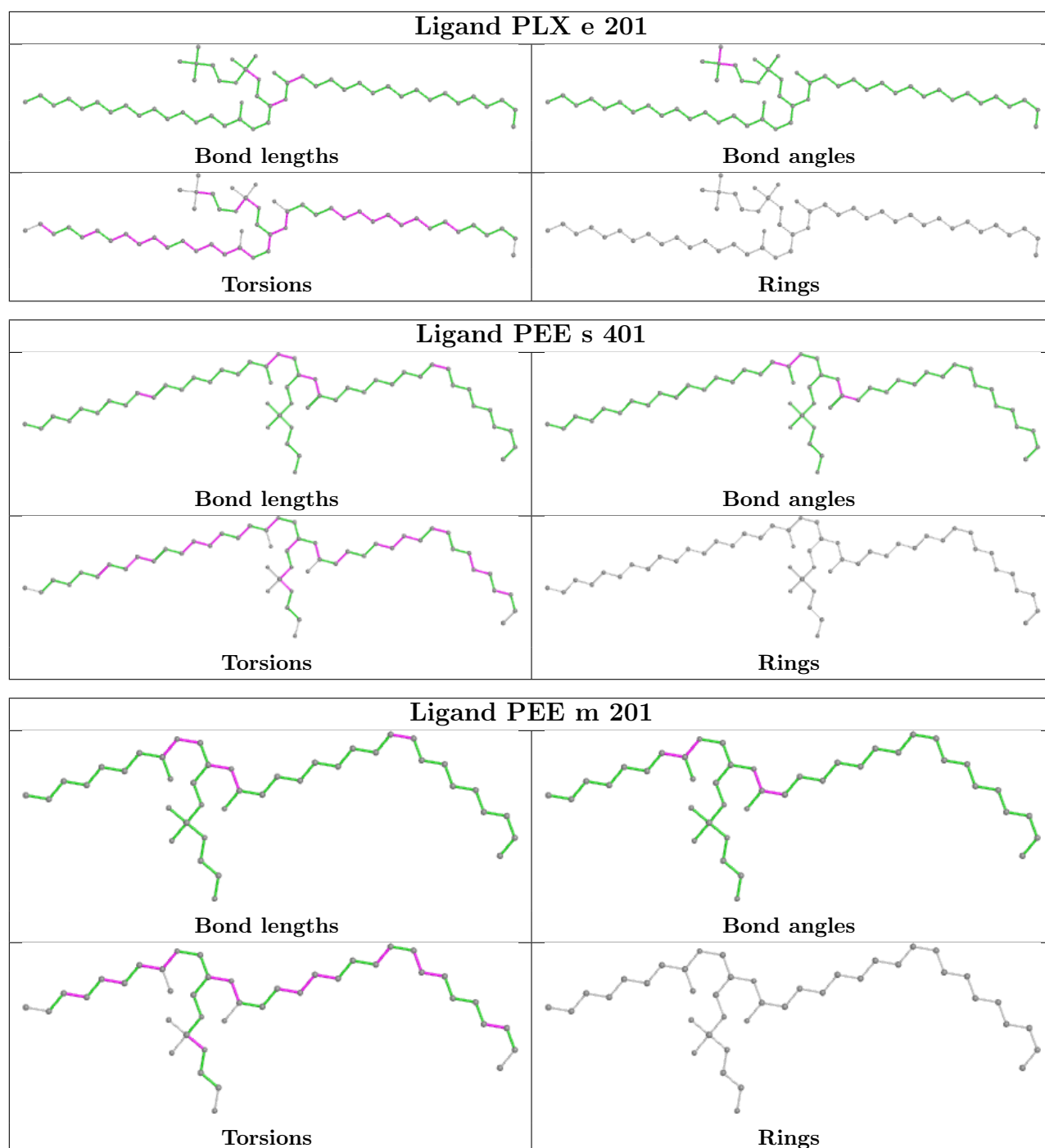
Mol	Chain	Res	Type	Atoms
30	u	201	CDL	CA2-OA2-PA1-OA4
32	a	202	PLX	C2-O1-P1-O2
32	i	402	PLX	C2-O1-P1-O2
30	l	701	CDL	C32-C31-CA7-OA9
30	V	201	CDL	CA3-CA4-OA6-CA5
32	i	402	PLX	C1-C2-O1-P1
32	j	202	PLX	C25-C24-O8-C5
30	l	701	CDL	C12-C11-CA5-OA6
30	r	503	CDL	C12-C11-CA5-OA7
30	u	201	CDL	C61-C62-C63-C64
30	r	504	CDL	OB5-CB3-CB4-OB6
33	l	702	PEE	O3P-C1-C2-O2
33	r	501	PEE	O3P-C1-C2-O2
30	r	503	CDL	C12-C11-CA5-OA6
33	m	201	PEE	C33-C34-C35-C36
33	l	703	PEE	O4-C10-C11-C12
33	m	201	PEE	O3-C30-C31-C32
30	l	701	CDL	C12-C11-CA5-OA7
30	r	504	CDL	C61-C62-C63-C64
33	i	403	PEE	C31-C32-C33-C34
33	i	403	PEE	C30-C31-C32-C33

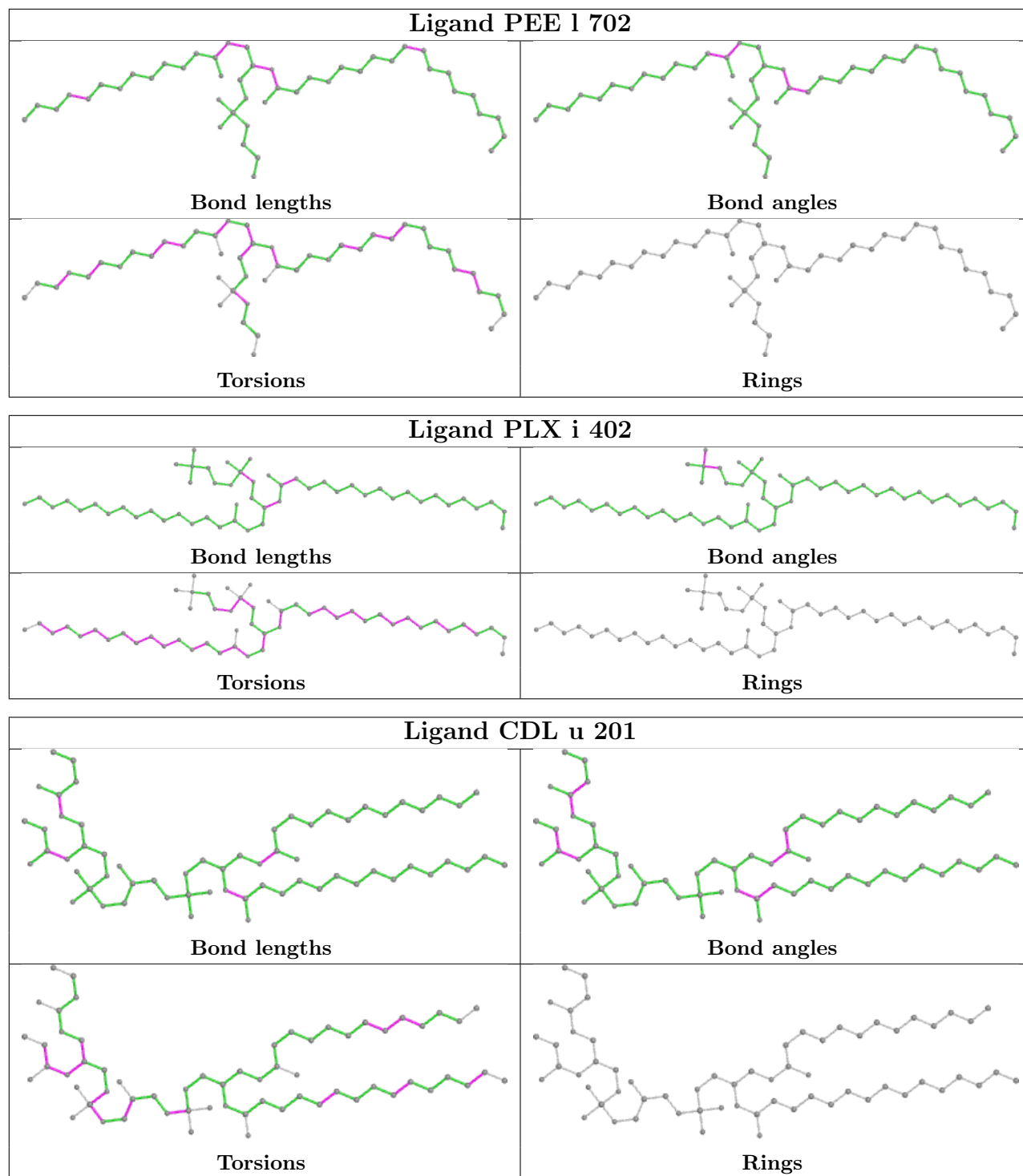
There are no ring outliers.

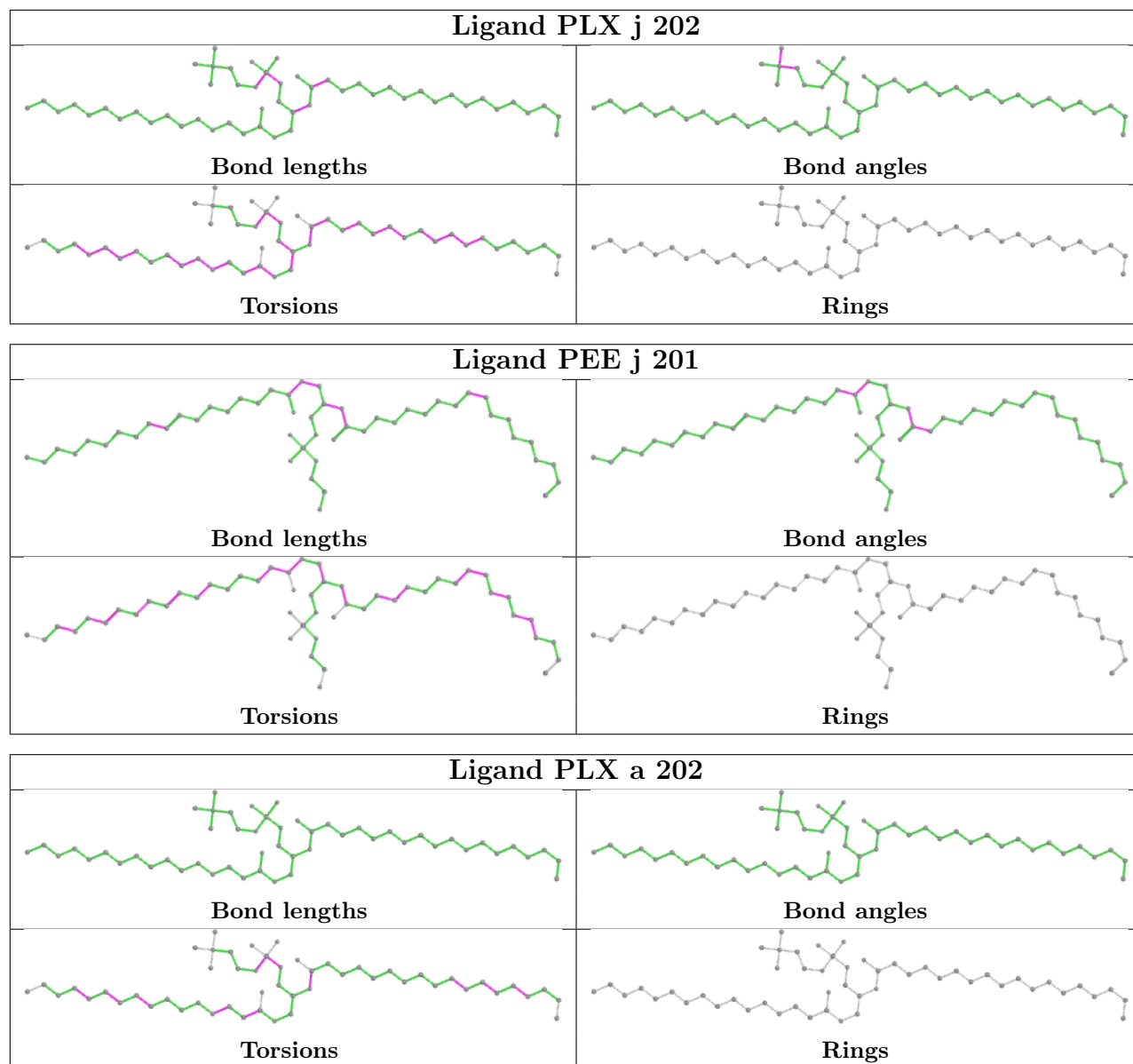
No monomer is involved in short contacts.

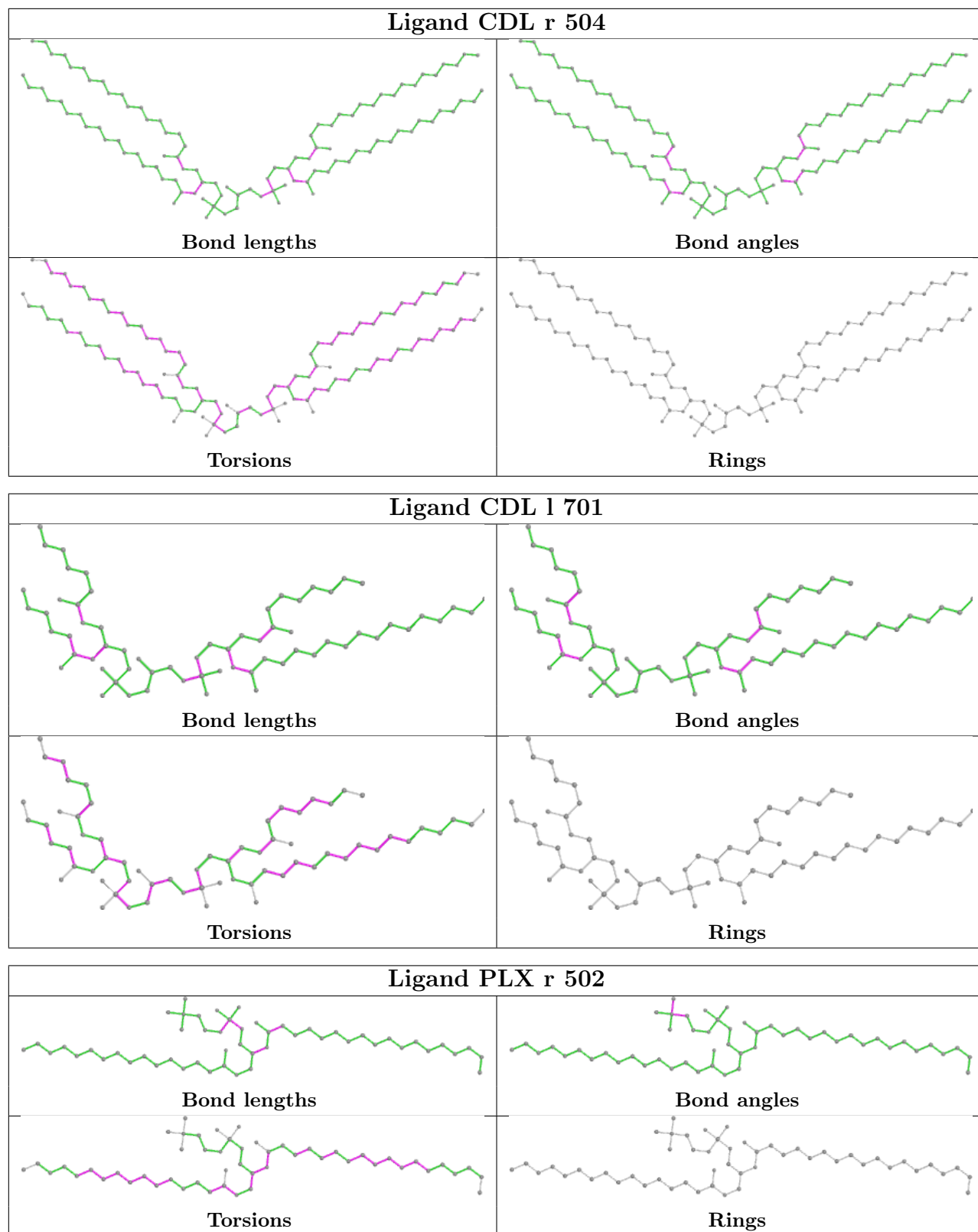
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

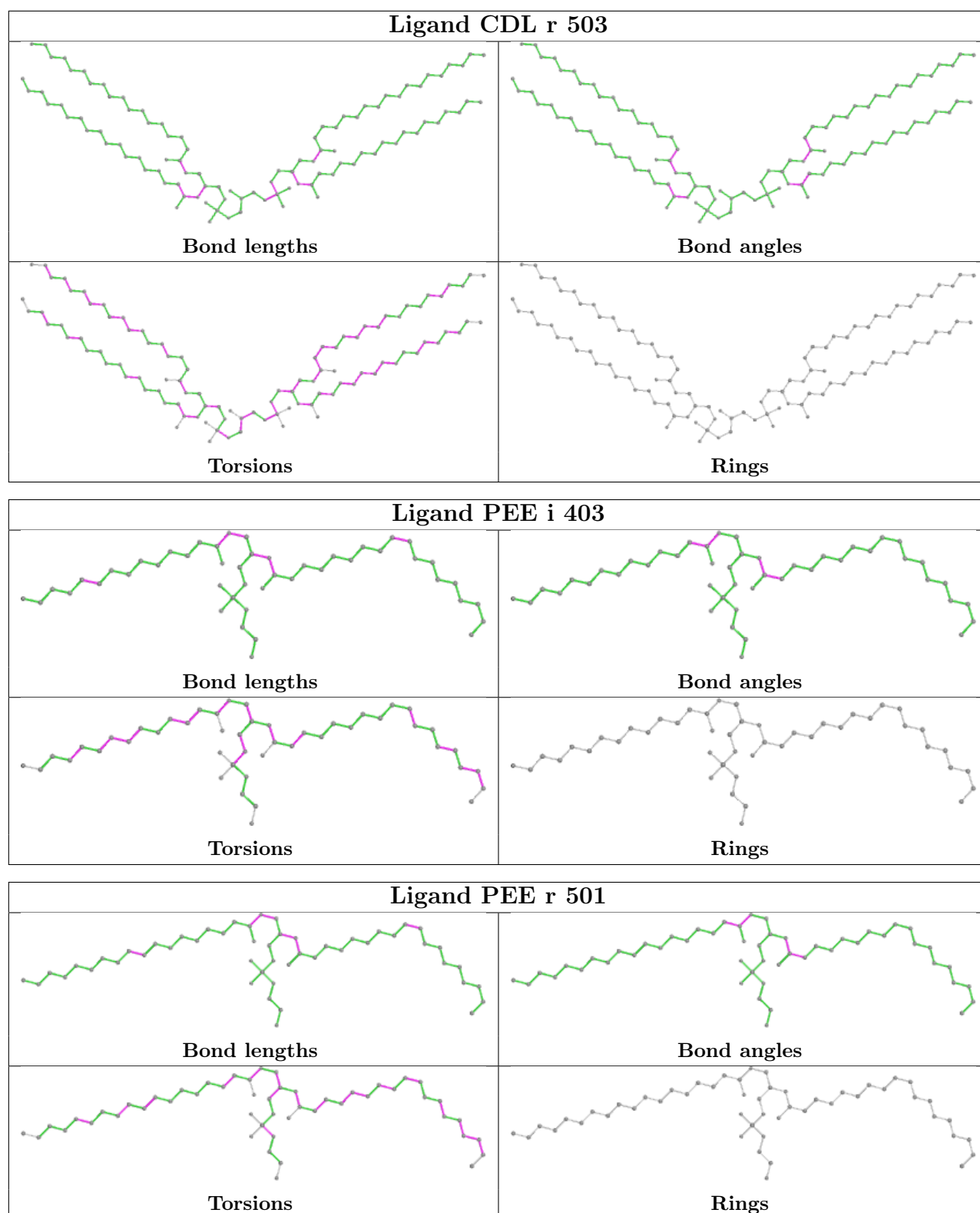


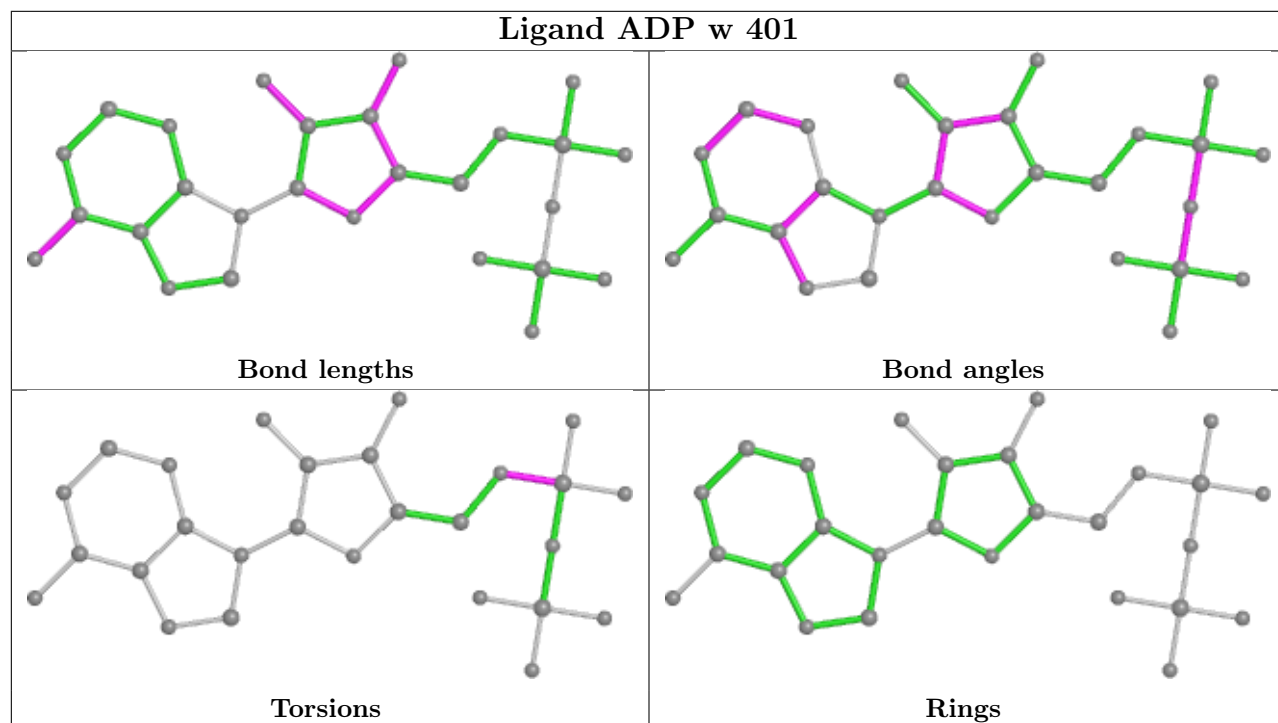
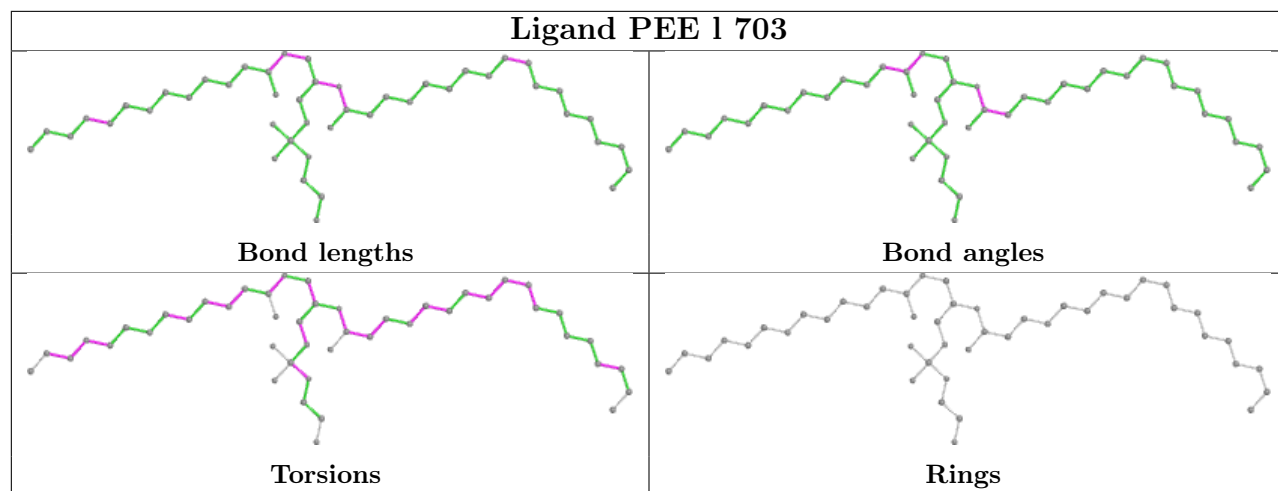


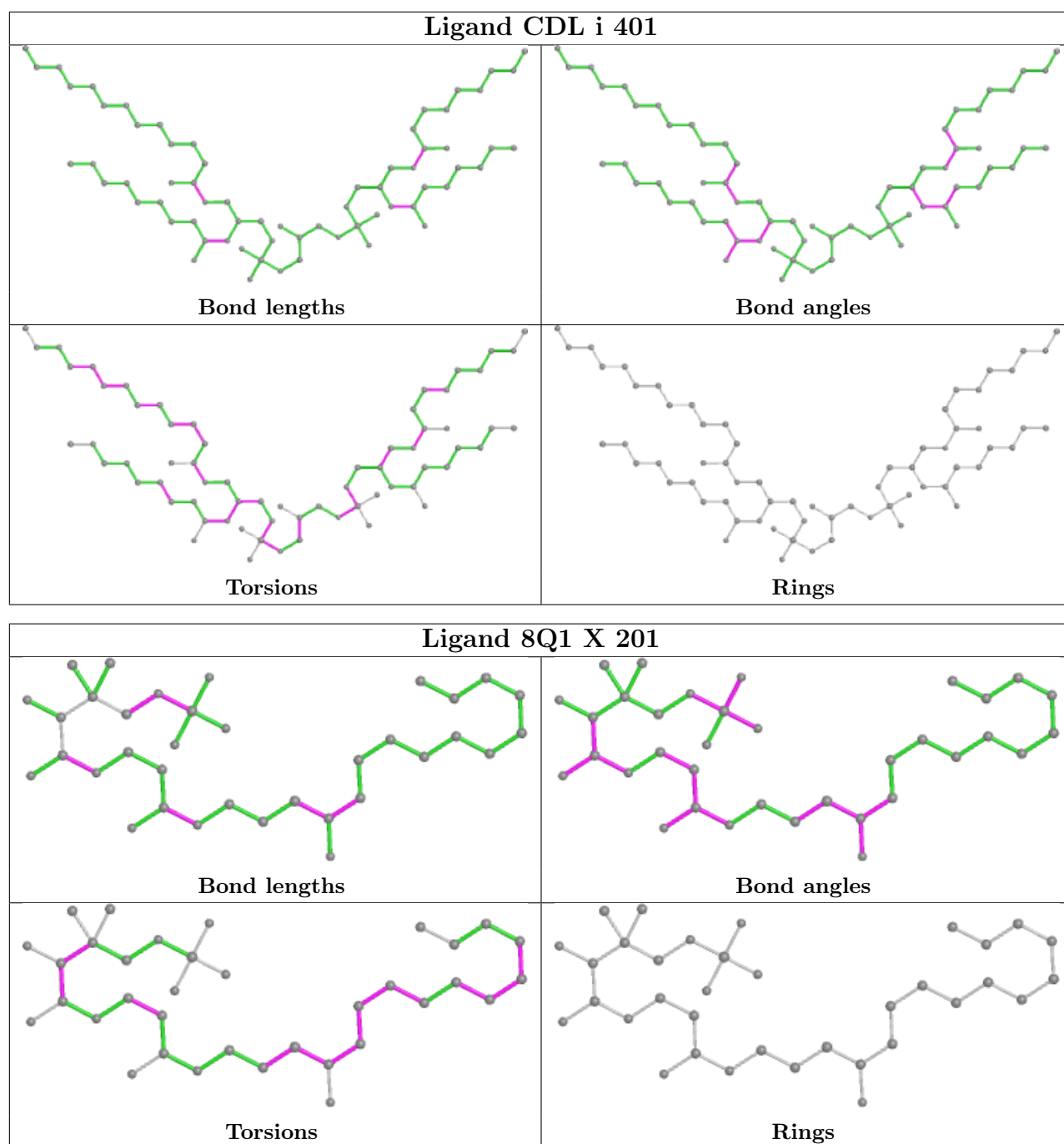












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

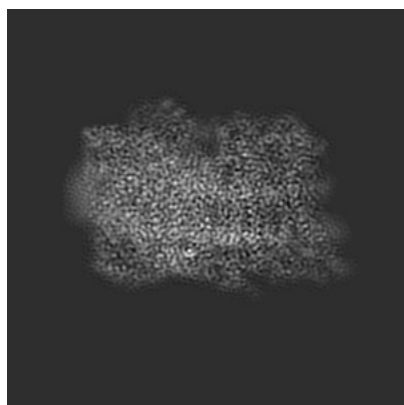
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32155. These allow visual inspection of the internal detail of the map and identification of artifacts.

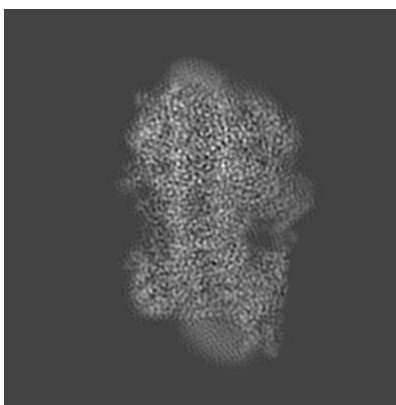
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

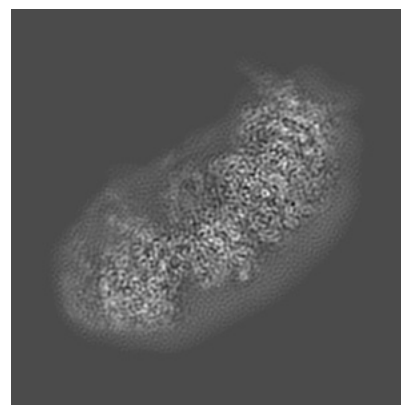
6.1.1 Primary map



X



Y

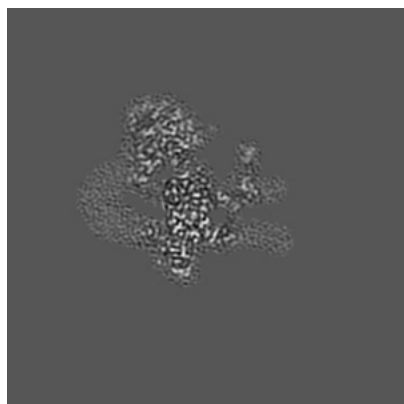


Z

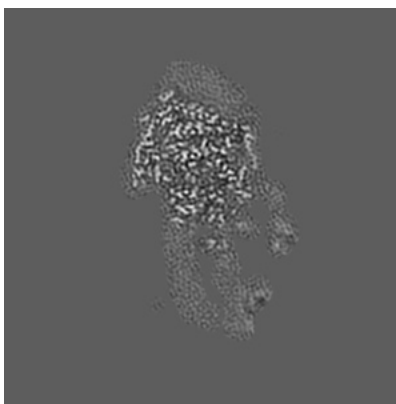
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

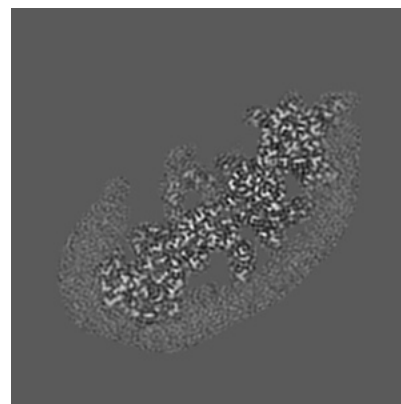
6.2.1 Primary map



X Index: 240



Y Index: 240

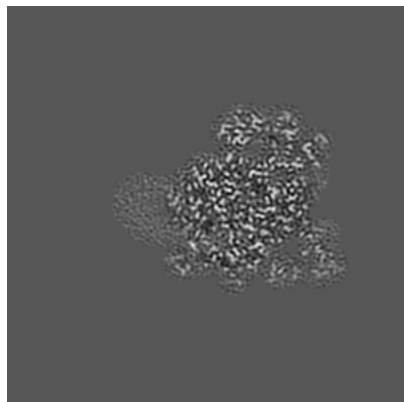


Z Index: 240

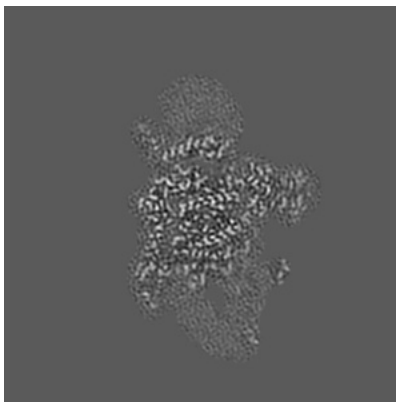
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

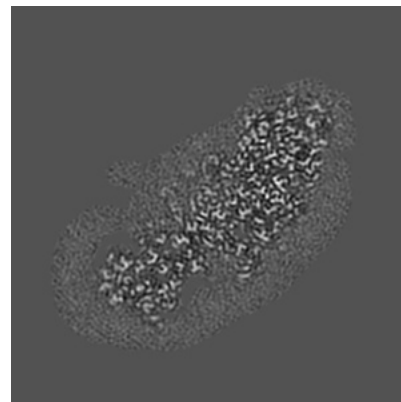
6.3.1 Primary map



X Index: 321



Y Index: 202

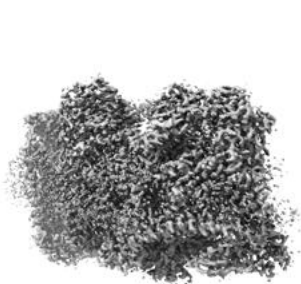


Z Index: 258

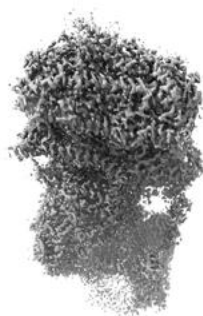
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

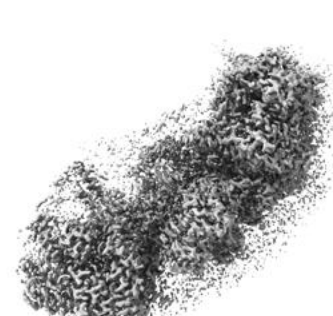
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.012. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

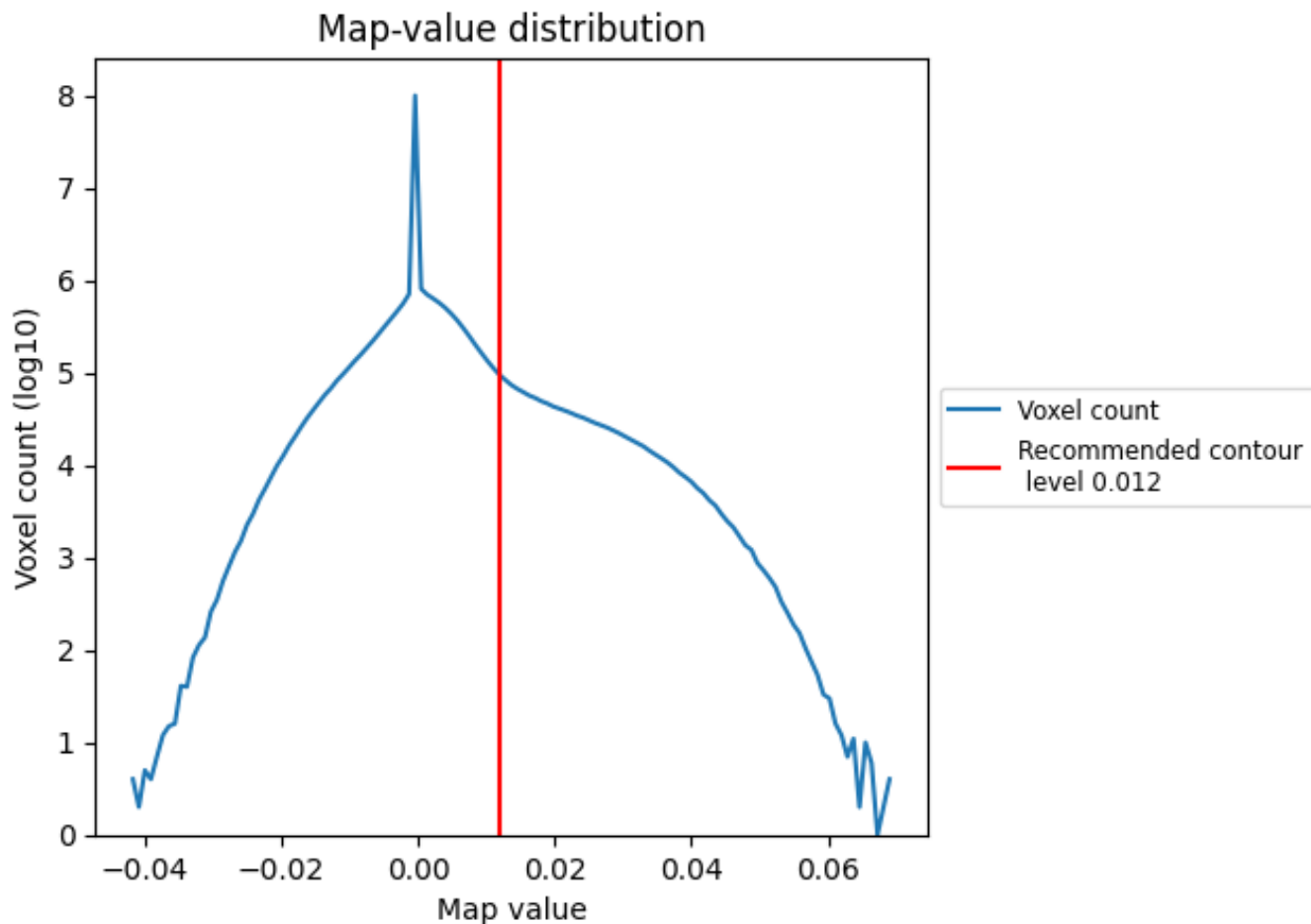
6.5 Mask visualisation

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

7 Map analysis [i](#)

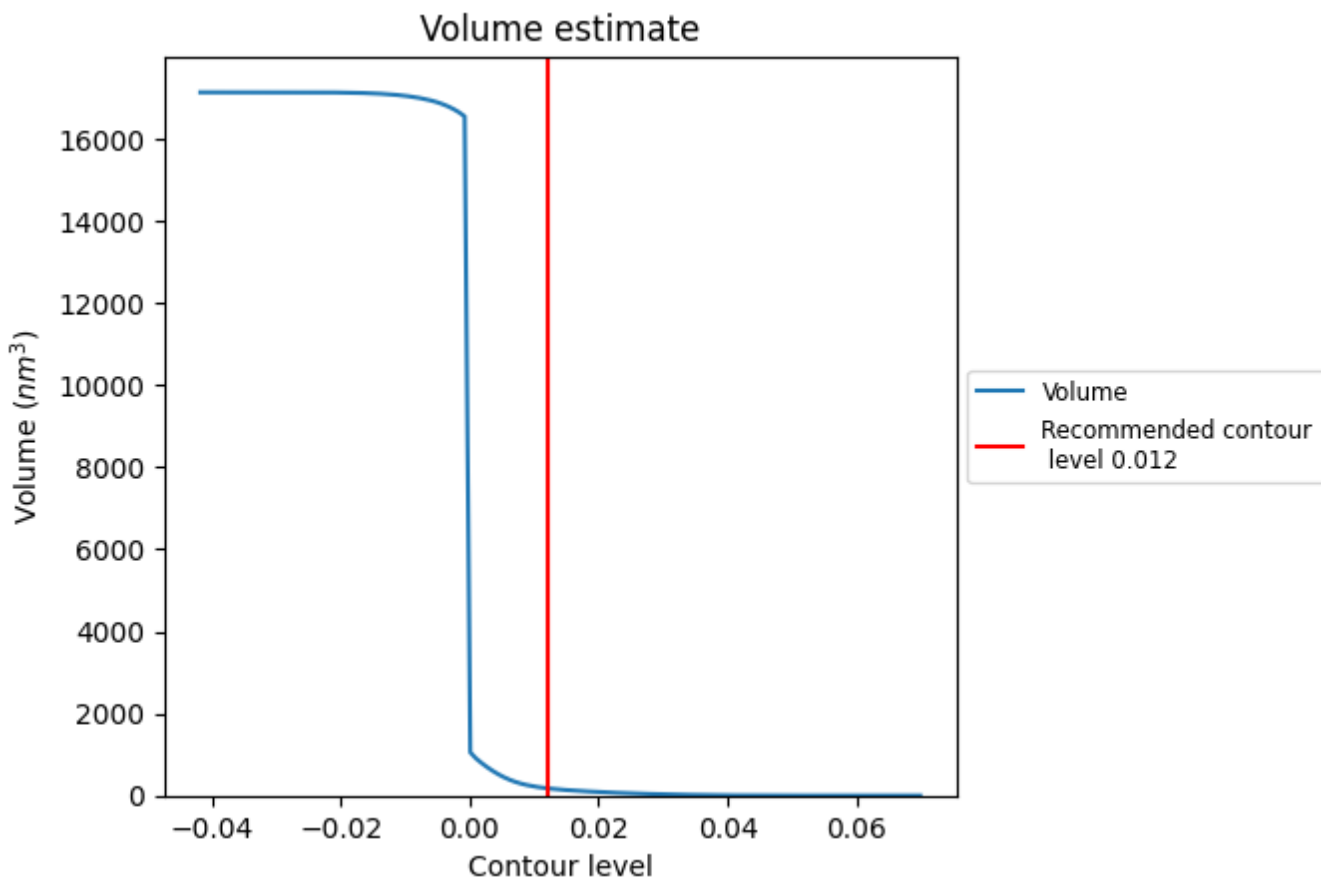
This section contains the results of statistical analysis of the map.

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.

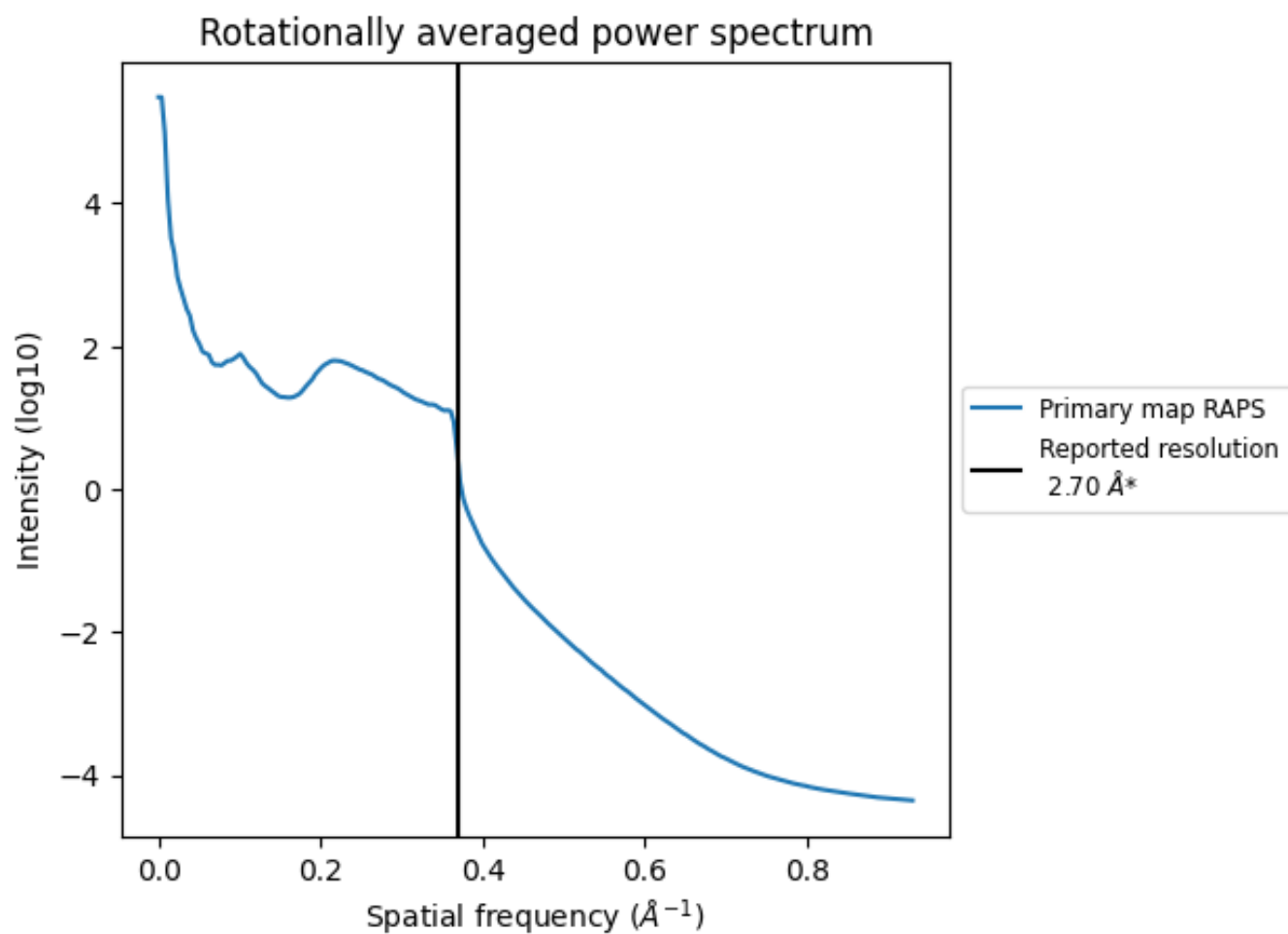
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 178 nm³; this corresponds to an approximate mass of 161 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 0.370\AA^{-1}

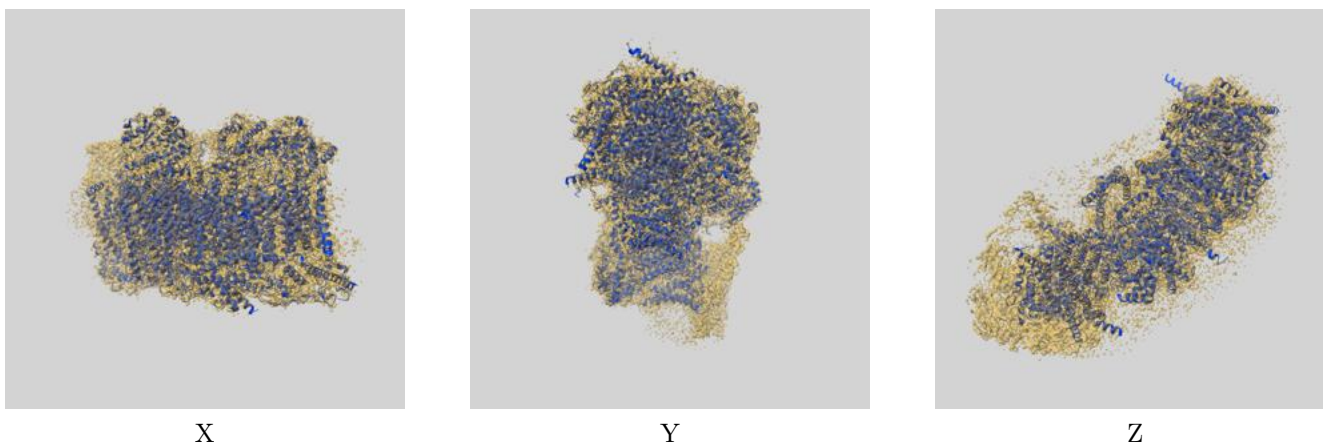
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

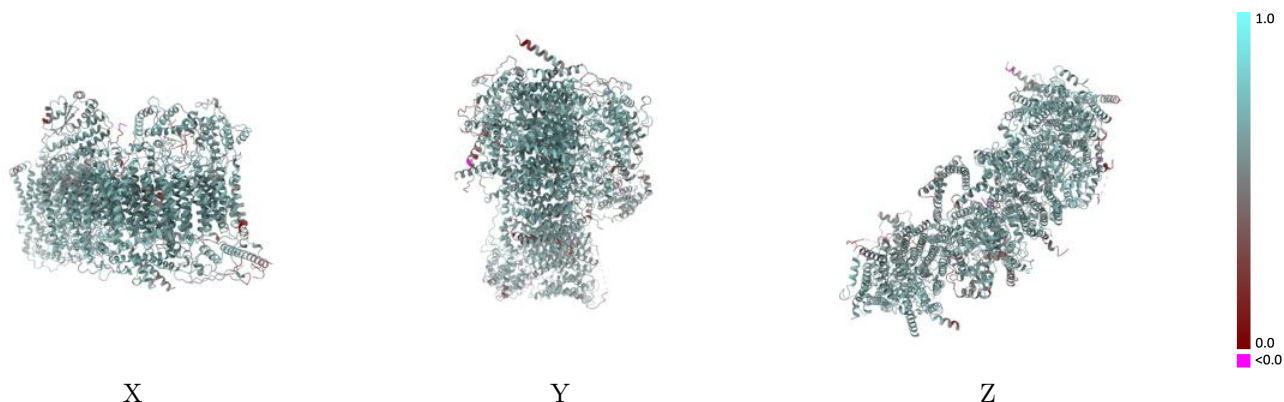
This section contains information regarding the fit between EMDB map EMD-32155 and PDB model 7VWL. Per-residue inclusion information can be found in section [3](#) on page [14](#).

9.1 Map-model overlay [i](#)



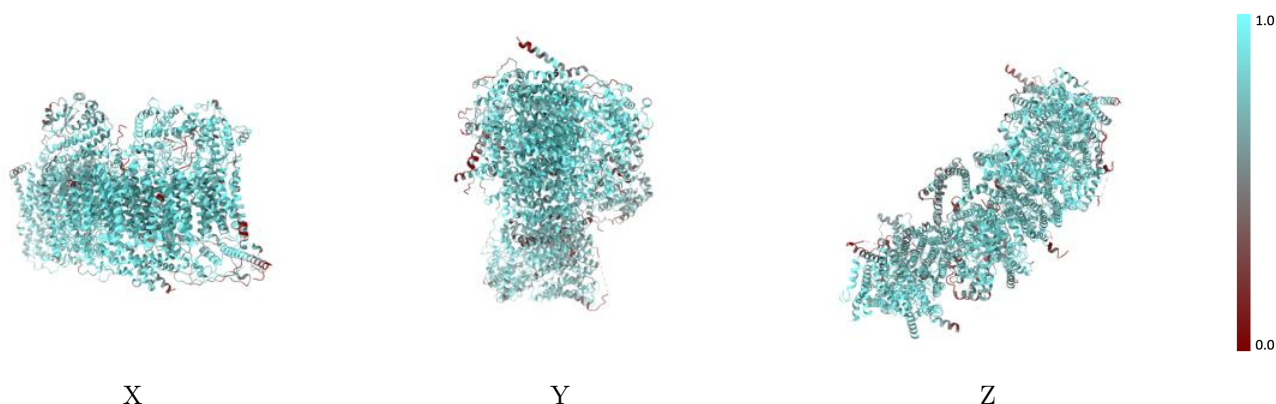
The images above show the 3D surface view of the map at the recommended contour level 0.012 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



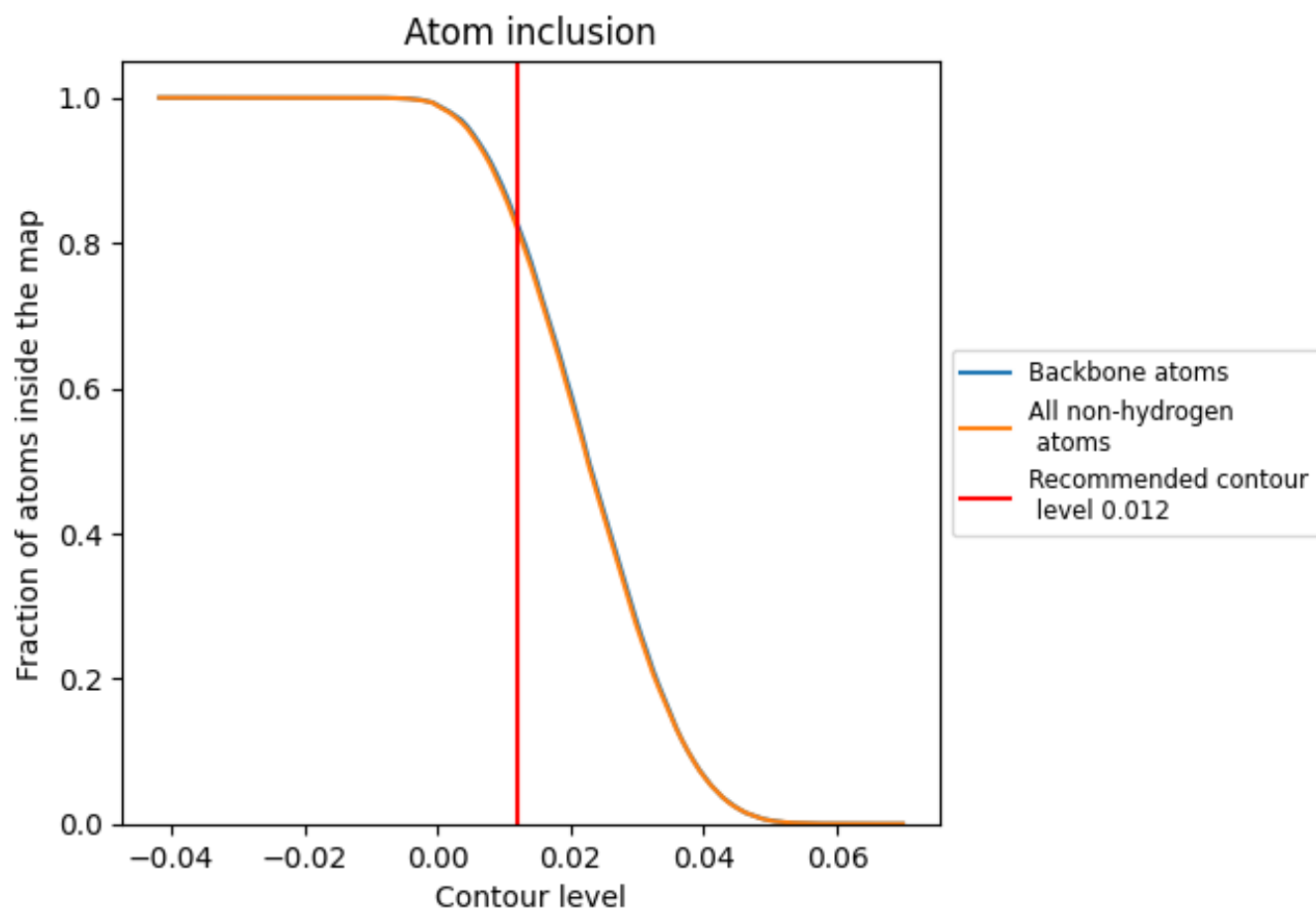
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.012).





























































9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 82% 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 (0.012) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8195	 0.5990
Q	 0.6411	 0.5390
S	 0.8608	 0.6060
U	 0.8076	 0.5850
V	 0.5989	 0.5300
W	 0.8575	 0.6160
X	 0.7798	 0.5690
Y	 0.6872	 0.5400
Z	 0.6459	 0.5100
a	 0.8690	 0.6300
b	 0.7161	 0.5440
c	 0.8413	 0.6040
d	 0.8318	 0.6060
e	 0.7611	 0.5650
f	 0.7343	 0.5530
g	 0.9030	 0.6290
h	 0.8605	 0.6100
i	 0.9084	 0.6370
j	 0.6849	 0.5540
k	 0.8140	 0.5920
l	 0.8829	 0.6320
m	 0.7564	 0.5640
n	 0.7471	 0.5730
o	 0.8309	 0.5990
p	 0.8443	 0.6100
r	 0.9078	 0.6360
s	 0.8560	 0.6100
u	 0.8146	 0.5960
v	 0.7151	 0.5410
w	 0.7402	 0.5620

