



Full wwPDB EM Validation Report ⓘ

Jan 25, 2023 – 12:34 PM JST

PDB ID : 7W32
EMDB ID : EMD-32270
Title : Deactive state CI from DQ-NADH dataset, Subclass 2
Authors : Gu, J.K.; Yang, M.J.
Deposited on : 2021-11-24
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:

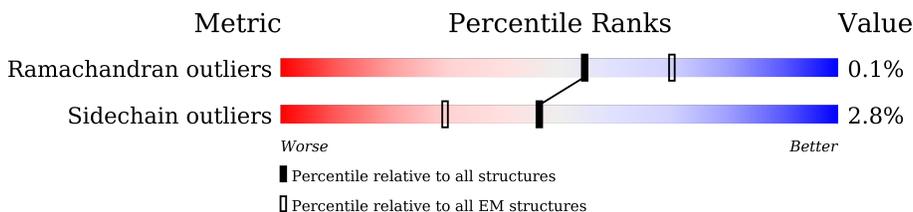
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (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	A	433	
2	B	176	
3	C	156	
4	E	115	
5	F	86	
6	G	88	
6	X	88	
7	H	112	
8	I	112	

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Mol	Chain	Length	Quality of chain
9	J	342	12% 94%
10	K	43	23% 91% 7%
11	L	125	6% 98%
12	M	690	97%
13	N	144	14% 97%
14	O	217	11% 98%
15	P	208	100%
16	Q	430	95%
17	S	70	99%
18	T	96	14% 96%
19	U	83	6% 95% 5%
20	V	140	55% 97%
21	W	142	6% 97%
22	Y	70	26% 99%
23	Z	84	23% 98%
24	a	140	96%
25	b	126	13% 79% 18%
26	c	156	6% 97%
27	d	175	7% 97%
28	e	107	12% 97%
29	f	49	10% 86% 14%
30	g	121	99%
31	h	105	96%
32	i	347	97%
33	j	115	14% 84% 14%

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Mol	Chain	Length	Quality of chain
34	k	98	<p>21% 95% 5%</p>
35	l	606	<p>5% 98%</p>
36	m	175	<p>17% 71% 26%</p>
37	n	56	<p>20% 96%</p>
38	o	128	<p>98%</p>
39	p	178	<p>98%</p>
40	r	459	<p>99%</p>
41	s	318	<p>92% 5%</p>
42	u	171	<p>98%</p>
43	v	125	<p>22% 95%</p>
44	w	320	<p>5% 98%</p>

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 66660 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] flavoprotein 1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	431	3318	2095	591	612	20	0	0

- Molecule 2 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	176	1412	887	243	269	13	0	0

- Molecule 3 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	156	1248	794	227	213	14	0	0

- Molecule 4 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	E	115	971	619	179	168	5	0	0

- Molecule 5 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2.

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

- Molecule 6 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	88	Total	C	N	O	S	0	0
			673	435	102	131	5		
6	X	88	Total	C	N	O	S	0	0
			695	448	103	139	5		

- Molecule 7 is a protein called Complex I subunit B13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	112	Total	C	N	O	S	0	0
			910	588	154	165	3		

- Molecule 8 is a protein called Complex I-B14.5a.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	97	Total	C	N	O	S	0	0
			780	491	147	139	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	331	Total	C	N	O	S	0	0
			2613	1694	459	452	8		

- Molecule 10 is a protein called Complex I-9kD.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	42	Total	C	N	O	S	0	0
			355	219	67	68	1		

- Molecule 11 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	125	Total	C	N	O	S	0	0
			1016	642	181	190	3		

- Molecule 12 is a protein called NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	690	Total	C	N	O	S	0	0
			5296	3320	923	1014	39		

- Molecule 13 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	144	1204	770	218	212	4	0	0

- Molecule 14 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	O	217	1671	1065	281	315	10	0	0

- Molecule 15 is a protein called Complex I-30kD.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	P	208	1738	1124	298	314	2	0	0

- Molecule 16 is a protein called Complex I-49kD.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	Q	419	3377	2162	578	613	24	0	0

- Molecule 17 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	S	70	567	364	104	94	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	T	96	741	452	140	146	3	0	0

- Molecule 19 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3.

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

- Molecule 20 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	V	140	Total	C	N	O	S	0	0
			1014	646	174	188	6		

- Molecule 21 is a protein called Complex I-B16.6.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	W	142	Total	C	N	O	S	0	0
			1167	752	200	206	9		

- Molecule 22 is a protein called Complex I-AGGG.

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

- Molecule 23 is a protein called Complex I-B12.

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

- Molecule 24 is a protein called Complex I-SGDH.

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

- Molecule 25 is a protein called Complex I-B17.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	b	103	Total	C	N	O	S	0	0
			878	573	158	146	1		

- Molecule 26 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	c	156	1312	852	213	239	8	0	0

- Molecule 27 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	d	175	1458	915	264	271	8	0	0

- Molecule 28 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	e	107	886	566	145	171	4	0	0

- Molecule 29 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
29	f	42	342	225	58	59	0	0

- Molecule 30 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C2.

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

- Molecule 31 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 5.

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

- Molecule 32 is a protein called NADH-ubiquinone oxidoreductase chain 2.

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

- Molecule 33 is a protein called NADH-ubiquinone oxidoreductase chain 3.

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

- Molecule 34 is a protein called NADH-ubiquinone oxidoreductase chain 4L.

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

- Molecule 35 is a protein called NADH-ubiquinone oxidoreductase chain 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	l	603	4720	3118	739	814	49	0	0

- Molecule 36 is a protein called NADH-ubiquinone oxidoreductase chain 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	m	129	919	614	137	160	8	0	0

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

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

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

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

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

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

- Molecule 40 is a protein called NADH-ubiquinone oxidoreductase chain 4.

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

- Molecule 41 is a protein called NADH-ubiquinone oxidoreductase chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	s	303	2394	1607	369	397	21	0	0

- Molecule 42 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	v	124	998	625	183	181	9	0	0

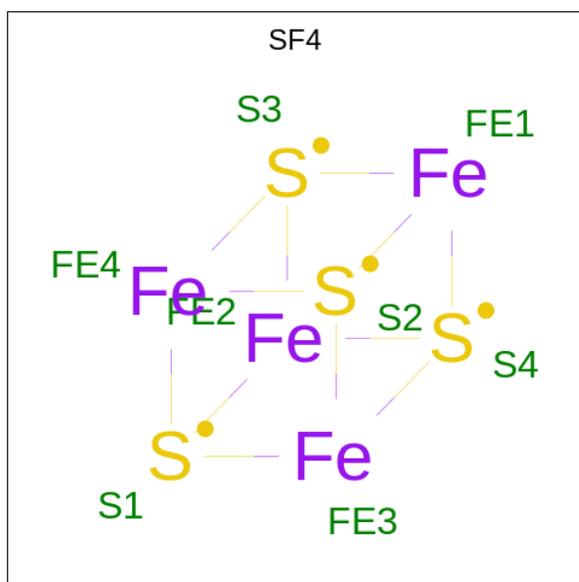
There is a discrepancy between the modelled and reference sequences:

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

- Molecule 44 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial.

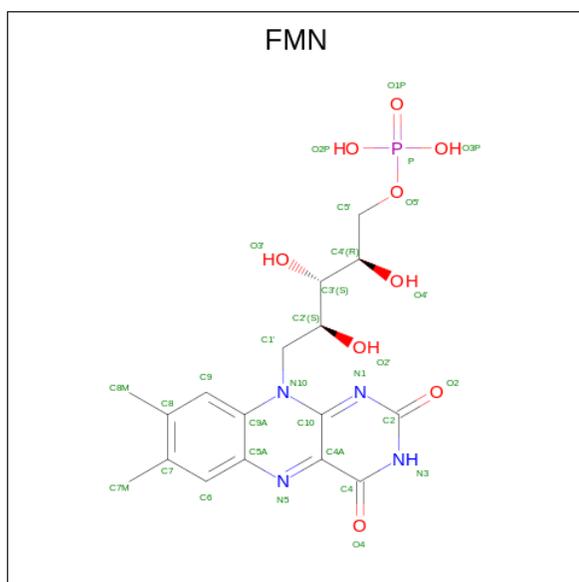
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	w	320	2579	1642	438	489	10	0	0

- Molecule 45 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).



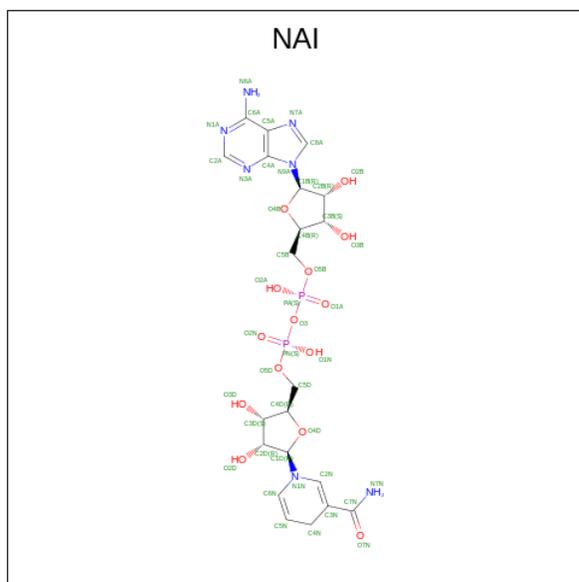
Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
45	A	1	8	4	4	0
45	B	1	16	8	8	0
45	B	1	16	8	8	0
45	C	1	8	4	4	0
45	M	1	16	8	8	0
45	M	1	16	8	8	0

- Molecule 46 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: C₁₇H₂₁N₄O₉P).



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

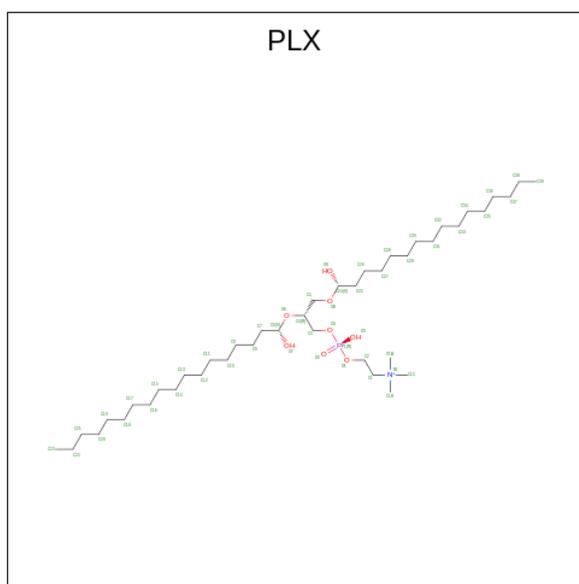
- Molecule 47 is 1,4-DIHYDRONICOTINAMIDE ADENINE DINUCLEOTIDE (three-letter code: NAI) (formula: C₂₁H₂₉N₇O₁₄P₂).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
47	A	1	44	21	7	14	2	0

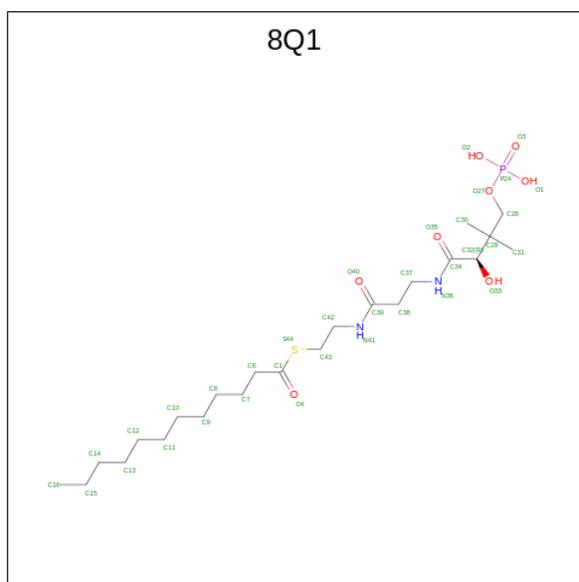
- Molecule 48 is (9R,11S)-9-({(1S)-1-HYDROXYHEXADECYL}OXY)METHYL)-2,2-DIMETHYL-5,7,10-TRIOXA-2LAMBDA 5 -AZA-6LAMBDA 5 -PHOSPHAOCTACOSANE-6,6,

11-TRIOL (three-letter code: PLX) (formula: C₄₂H₈₉NO₈P).



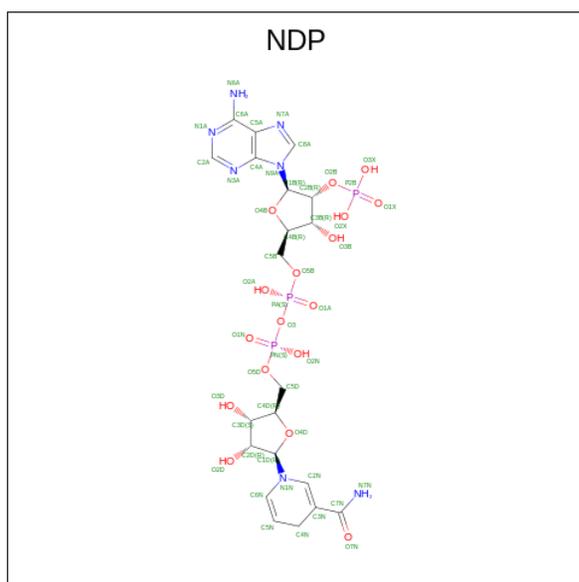
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
48	C	1	Total 52	C 42	N 1	O 8	P 1	0
48	e	1	Total 52	C 42	N 1	O 8	P 1	0
48	g	1	Total 52	C 42	N 1	O 8	P 1	0
48	m	1	Total 52	C 42	N 1	O 8	P 1	0
48	r	1	Total 52	C 42	N 1	O 8	P 1	0

- Molecule 49 is S-[2-({N-[(2R)-2-hydroxy-3,3-dimethyl-4-(phosphonoxy)butanoyl]-beta-alanyl}amino)ethyl] dodecanethioate (three-letter code: 8Q1) (formula: C₂₃H₄₅N₂O₈PS).



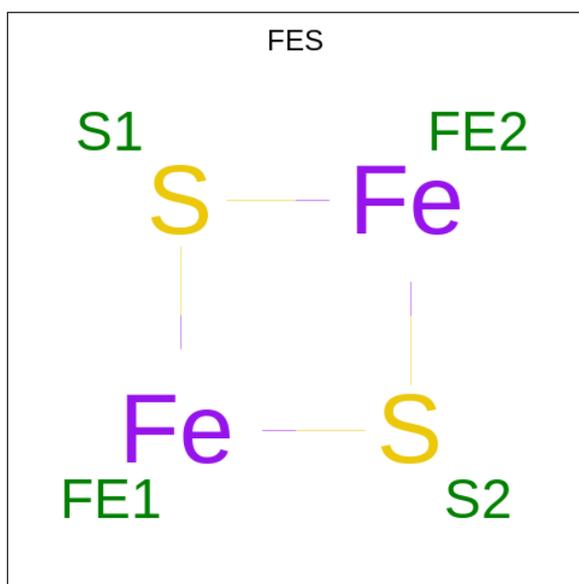
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
49	G	1	35	23	2	8	1	1	0
49	X	1	35	23	2	8	1	1	0

- Molecule 50 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$).



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

- Molecule 51 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe₂S₂).

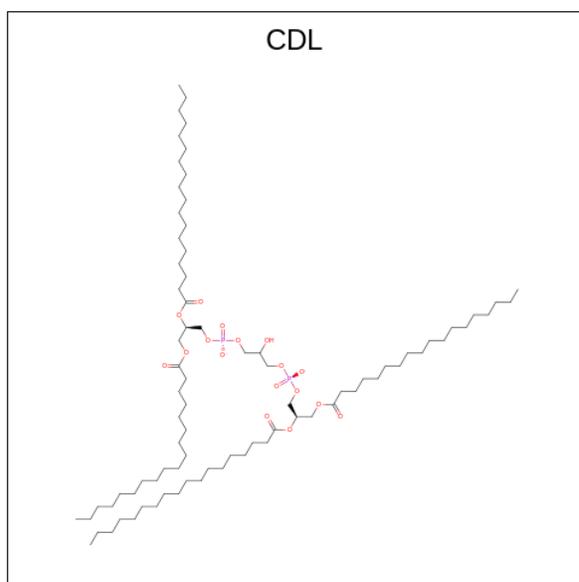


Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
51	M	1	4	2	2	0
51	O	1	4	2	2	0

- Molecule 52 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

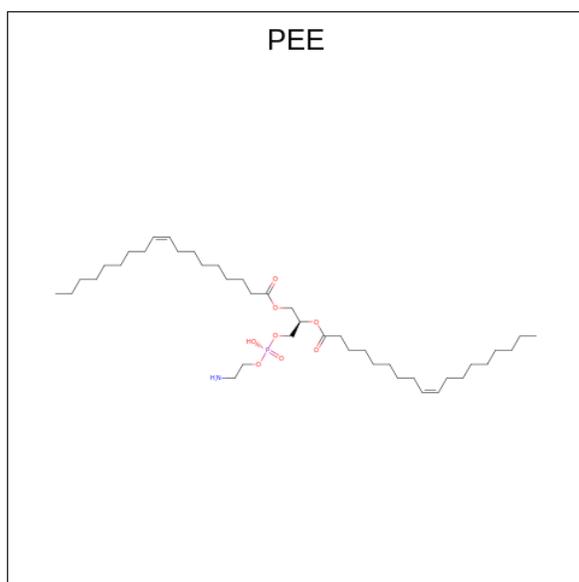
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
52	M	1	1	1	0

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



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
53	N	1	51	32	17	2	0
53	a	1	91	72	17	2	0
53	i	1	66	47	17	2	0
53	l	1	100	81	17	2	0
53	r	1	199	161	34	4	0
53	r	1	199	161	34	4	0

- Molecule 54 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: $C_{41}H_{78}NO_8P$).

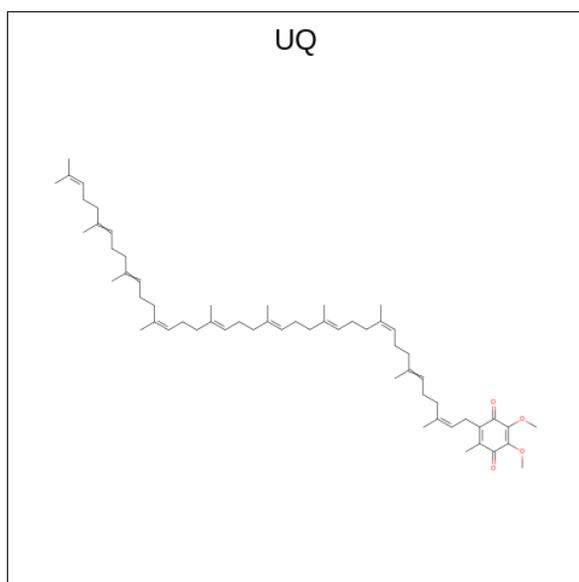


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
54	Q	1	51	41	1	8	1	0
54	i	1	47	37	1	8	1	0
54	l	1	92	72	2	16	2	0
54	l	1	92	72	2	16	2	0
54	m	1	41	31	1	8	1	0
54	r	1	51	41	1	8	1	0
54	s	1	51	41	1	8	1	0

- Molecule 55 is ZINC ION (three-letter code: ZN) (formula: Zn).

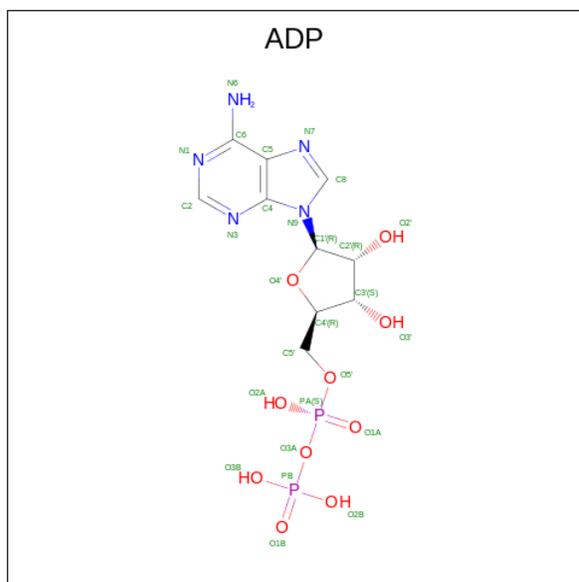
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
55	T	1	1	1	0

- Molecule 56 is Coenzyme Q10, (2Z,6E,10Z,14E,18E,22E,26Z)-isomer (three-letter code: UQ) (formula: C₅₉H₉₀O₄).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
56	s	1	28	24	4	0

- Molecule 57 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).

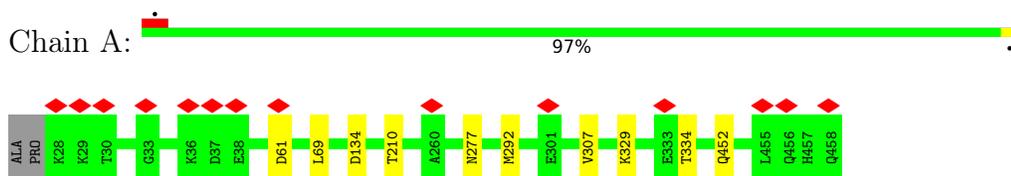


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
57	w	1	27	10	5	10	2	0

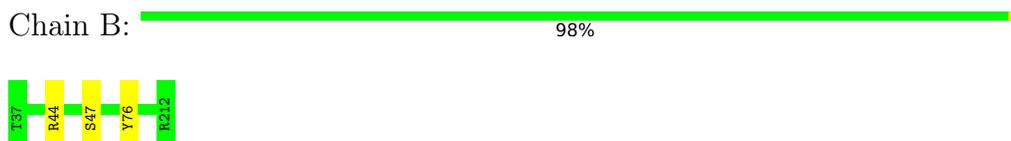
3 Residue-property plots [i](#)

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

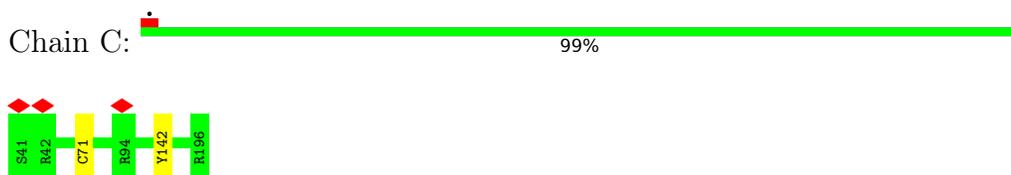
- Molecule 1: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial



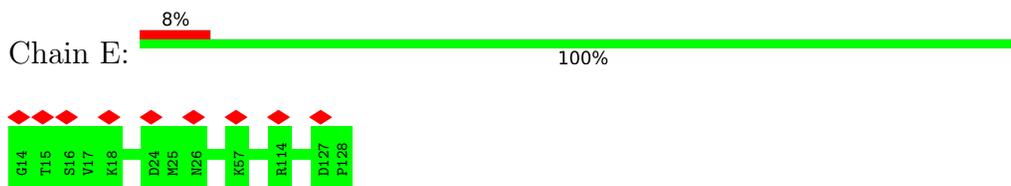
- Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial



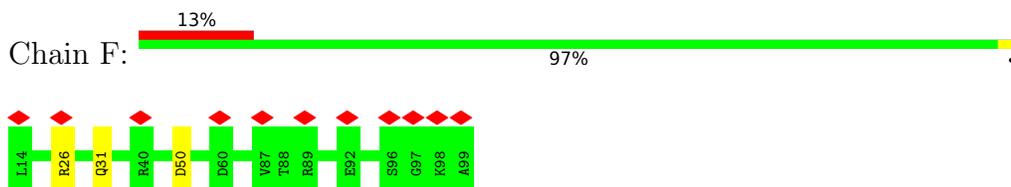
- Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial



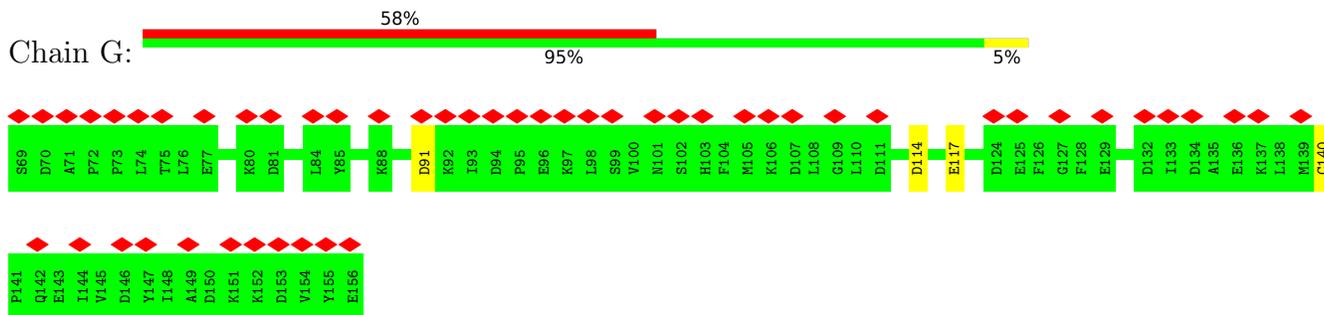
- Molecule 4: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6



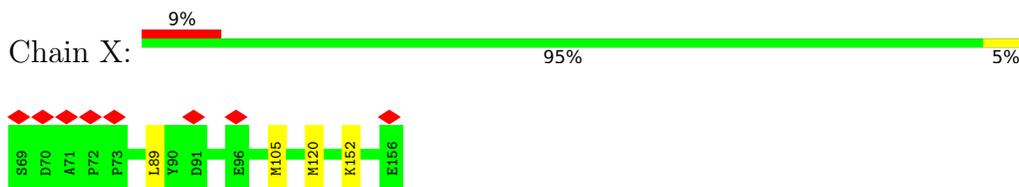
- Molecule 5: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2



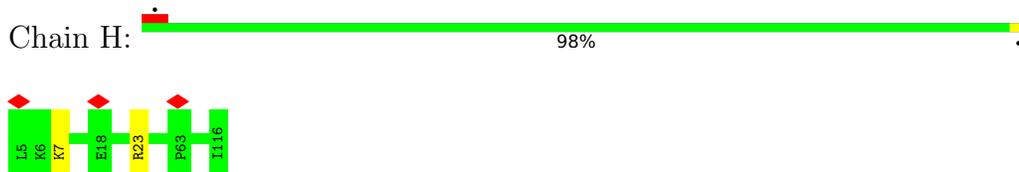
• Molecule 6: Acyl carrier protein



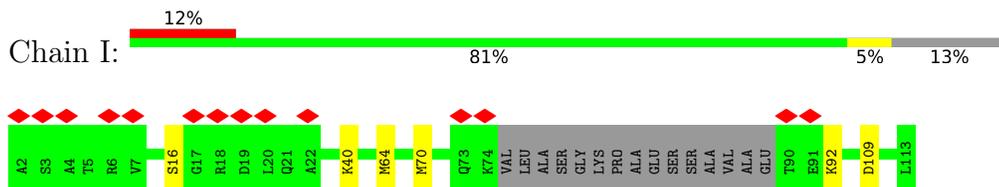
• Molecule 6: Acyl carrier protein



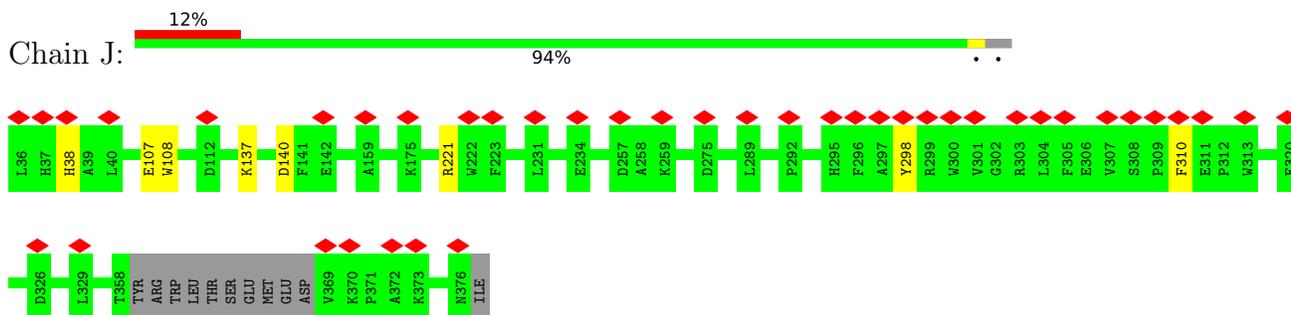
• Molecule 7: Complex I subunit B13



• Molecule 8: Complex I-B14.5a



• Molecule 9: NADH dehydrogenase ubiquinone 1 alpha subcomplex subunit 9, mitochondrial



• Molecule 10: Complex I-9kD

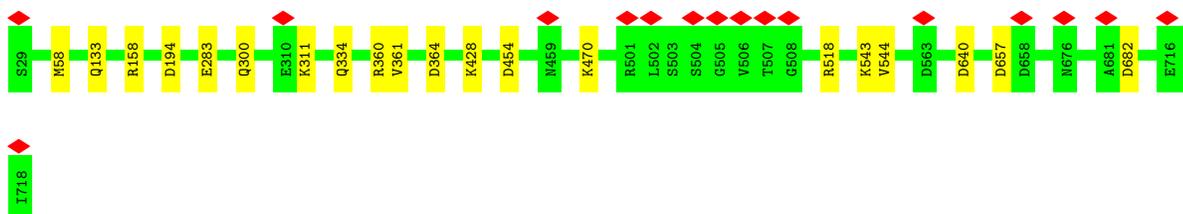




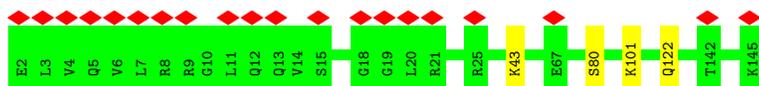
- Molecule 11: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial



- Molecule 12: NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial



- Molecule 13: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2



- Molecule 14: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

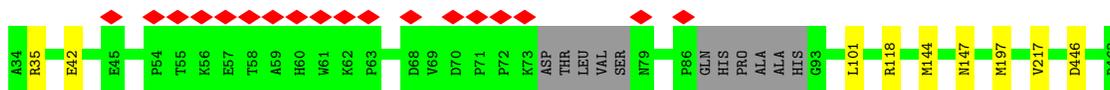


- Molecule 15: Complex I-30kD

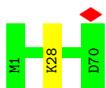


- Molecule 16: Complex I-49kD





- Molecule 17: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1



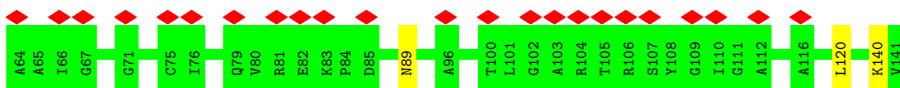
- Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial



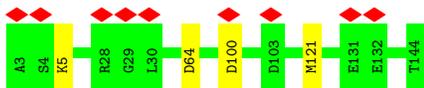
- Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3



- Molecule 20: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

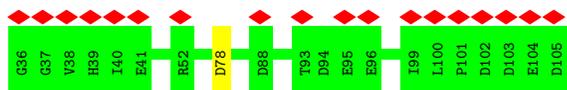


- Molecule 21: Complex I-B16.6

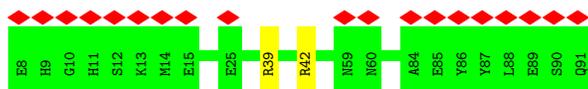


- Molecule 22: Complex I-AGGG





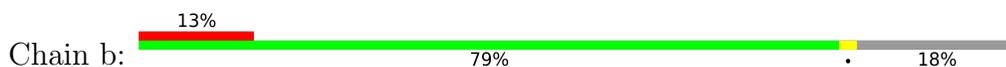
- Molecule 23: Complex I-B12



- Molecule 24: Complex I-SGDH



- Molecule 25: Complex I-B17



- Molecule 26: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial



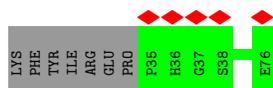
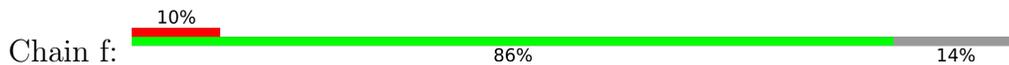
- Molecule 27: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10



- Molecule 28: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial



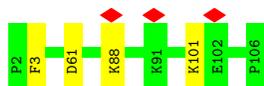
- Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial



- Molecule 30: NADH dehydrogenase [ubiquinone] 1 subunit C2



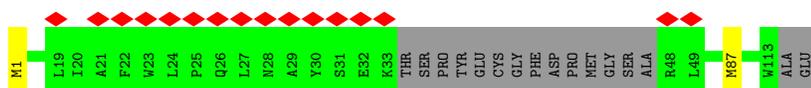
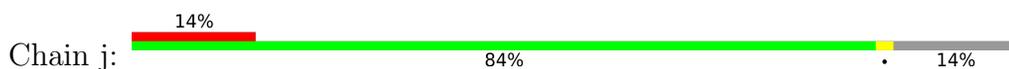
- Molecule 31: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5



- Molecule 32: NADH-ubiquinone oxidoreductase chain 2



- Molecule 33: NADH-ubiquinone oxidoreductase chain 3

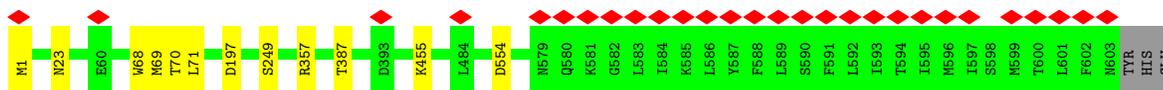


- Molecule 34: NADH-ubiquinone oxidoreductase chain 4L

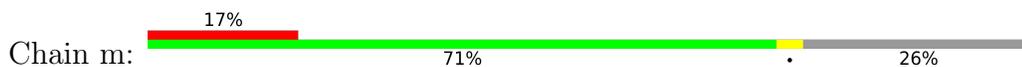


- Molecule 35: NADH-ubiquinone oxidoreductase chain 5

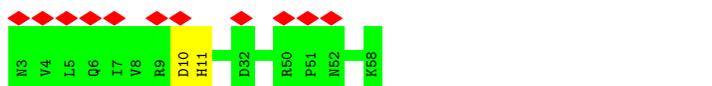




- Molecule 36: NADH-ubiquinone oxidoreductase chain 6



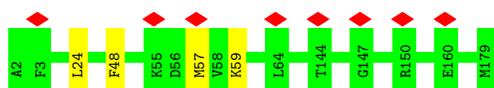
- Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1



- Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4



- Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9

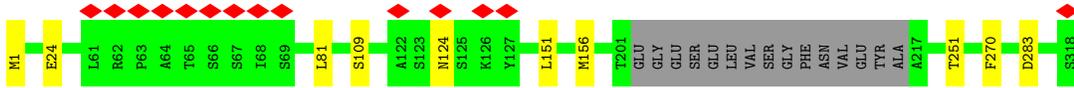


- Molecule 40: NADH-ubiquinone oxidoreductase chain 4

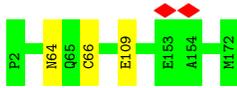


- Molecule 41: NADH-ubiquinone oxidoreductase chain 1

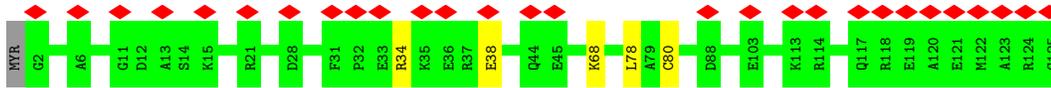




- Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8



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



- Molecule 44: 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	145530	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	0.180	Depositor
Minimum map value	-0.113	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0254	Depositor
Map size (\AA)	333.002, 333.002, 333.002	wwPDB
Map dimensions	310, 310, 310	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	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: UQ, PLX, FMN, FES, NAI, ADP, MG, ZN, CDL, 2MR, PEE, 8Q1, NDP, SF4

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.25	0/3393	0.50	0/4584
2	B	0.24	0/1443	0.50	0/1952
3	C	0.25	0/1279	0.51	0/1730
4	E	0.25	0/995	0.53	0/1340
5	F	0.27	0/702	0.59	0/945
6	G	0.26	0/684	0.54	0/929
6	X	0.24	0/707	0.46	0/958
7	H	0.23	0/929	0.45	0/1258
8	I	0.25	0/798	0.53	0/1079
9	J	0.24	0/2682	0.50	0/3636
10	K	0.23	0/365	0.48	0/493
11	L	0.24	0/1039	0.50	0/1403
12	M	0.24	0/5384	0.51	0/7295
13	N	0.24	0/1245	0.51	0/1694
14	O	0.25	0/1711	0.48	0/2328
15	P	0.25	0/1789	0.51	0/2436
16	Q	0.25	0/3451	0.49	0/4672
17	S	0.25	0/582	0.47	0/783
18	T	0.24	0/755	0.50	0/1018
19	U	0.25	0/664	0.46	0/912
20	V	0.24	0/1035	0.48	0/1402
21	W	0.25	0/1198	0.48	0/1617
22	Y	0.24	0/626	0.47	0/857
23	Z	0.25	0/695	0.45	0/939
24	a	0.25	0/1199	0.49	0/1623
25	b	0.24	0/905	0.52	0/1231
26	c	0.26	0/1368	0.46	0/1871
27	d	0.26	0/1491	0.53	0/2011
28	e	0.25	0/912	0.49	0/1241
29	f	0.24	0/350	0.44	0/473
30	g	0.26	0/1031	0.49	0/1394
31	h	0.24	0/889	0.47	0/1190

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	i	0.25	0/2773	0.47	1/3768 (0.0%)
33	j	0.26	0/819	0.50	0/1117
34	k	0.25	0/759	0.47	0/1029
35	l	0.26	0/4845	0.45	0/6595
36	m	0.27	0/938	0.45	0/1271
37	n	0.25	0/491	0.50	0/663
38	o	0.26	0/1092	0.50	0/1481
39	p	0.26	0/1590	0.52	0/2155
40	r	0.25	0/3723	0.45	0/5078
41	s	0.26	0/2464	0.48	0/3369
42	u	0.25	0/1436	0.49	0/1938
43	v	0.27	0/1022	0.52	0/1377
44	w	0.25	0/2639	0.50	0/3576
All	All	0.25	0/66887	0.49	1/90711 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	i	92	PRO	CA-N-CD	-5.35	104.01	111.50

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	429/433 (99%)	415 (97%)	14 (3%)	0	100	100
2	B	174/176 (99%)	173 (99%)	1 (1%)	0	100	100
3	C	154/156 (99%)	149 (97%)	5 (3%)	0	100	100
4	E	113/115 (98%)	111 (98%)	2 (2%)	0	100	100
5	F	84/86 (98%)	79 (94%)	5 (6%)	0	100	100
6	G	86/88 (98%)	86 (100%)	0	0	100	100
6	X	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
7	H	110/112 (98%)	101 (92%)	9 (8%)	0	100	100
8	I	93/112 (83%)	80 (86%)	13 (14%)	0	100	100
9	J	327/342 (96%)	316 (97%)	10 (3%)	1 (0%)	41	71
10	K	40/43 (93%)	40 (100%)	0	0	100	100
11	L	123/125 (98%)	121 (98%)	2 (2%)	0	100	100
12	M	688/690 (100%)	670 (97%)	17 (2%)	1 (0%)	51	82
13	N	142/144 (99%)	139 (98%)	3 (2%)	0	100	100
14	O	215/217 (99%)	205 (95%)	10 (5%)	0	100	100
15	P	206/208 (99%)	197 (96%)	9 (4%)	0	100	100
16	Q	412/430 (96%)	398 (97%)	14 (3%)	0	100	100
17	S	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
18	T	94/96 (98%)	92 (98%)	2 (2%)	0	100	100
19	U	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
20	V	138/140 (99%)	132 (96%)	5 (4%)	1 (1%)	22	54
21	W	140/142 (99%)	136 (97%)	4 (3%)	0	100	100
22	Y	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
23	Z	82/84 (98%)	80 (98%)	2 (2%)	0	100	100
24	a	138/140 (99%)	135 (98%)	3 (2%)	0	100	100
25	b	99/126 (79%)	94 (95%)	5 (5%)	0	100	100
26	c	154/156 (99%)	145 (94%)	9 (6%)	0	100	100
27	d	173/175 (99%)	171 (99%)	2 (1%)	0	100	100
28	e	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
29	f	40/49 (82%)	39 (98%)	1 (2%)	0	100	100
30	g	119/121 (98%)	116 (98%)	3 (2%)	0	100	100
31	h	103/105 (98%)	99 (96%)	4 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
32	i	345/347 (99%)	332 (96%)	11 (3%)	2 (1%)	25	58
33	j	95/115 (83%)	88 (93%)	7 (7%)	0	100	100
34	k	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
35	l	601/606 (99%)	577 (96%)	24 (4%)	0	100	100
36	m	125/175 (71%)	115 (92%)	10 (8%)	0	100	100
37	n	54/56 (96%)	54 (100%)	0	0	100	100
38	o	126/128 (98%)	119 (94%)	7 (6%)	0	100	100
39	p	176/178 (99%)	166 (94%)	10 (6%)	0	100	100
40	r	457/459 (100%)	448 (98%)	9 (2%)	0	100	100
41	s	299/318 (94%)	287 (96%)	12 (4%)	0	100	100
42	u	169/171 (99%)	165 (98%)	4 (2%)	0	100	100
43	v	122/125 (98%)	115 (94%)	7 (6%)	0	100	100
44	w	318/320 (99%)	305 (96%)	13 (4%)	0	100	100
All	All	8067/8325 (97%)	7770 (96%)	292 (4%)	5 (0%)	54	82

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
32	i	93	VAL
32	i	92	PRO
12	M	283	GLU
9	J	38	HIS
20	V	46	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	A	345/346 (100%)	335 (97%)	10 (3%)	42	76
2	B	151/151 (100%)	148 (98%)	3 (2%)	55	82

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	C	132/132 (100%)	130 (98%)	2 (2%)	65	87
4	E	107/107 (100%)	107 (100%)	0	100	100
5	F	76/76 (100%)	73 (96%)	3 (4%)	32	66
6	G	71/81 (88%)	67 (94%)	4 (6%)	21	52
6	X	75/81 (93%)	71 (95%)	4 (5%)	22	54
7	H	99/99 (100%)	97 (98%)	2 (2%)	55	82
8	I	87/97 (90%)	81 (93%)	6 (7%)	15	41
9	J	276/296 (93%)	269 (98%)	7 (2%)	47	78
10	K	41/42 (98%)	38 (93%)	3 (7%)	14	38
11	L	113/113 (100%)	111 (98%)	2 (2%)	59	85
12	M	580/580 (100%)	561 (97%)	19 (3%)	38	72
13	N	130/130 (100%)	126 (97%)	4 (3%)	40	74
14	O	183/183 (100%)	178 (97%)	5 (3%)	44	77
15	P	190/190 (100%)	189 (100%)	1 (0%)	88	96
16	Q	361/370 (98%)	353 (98%)	8 (2%)	52	81
17	S	58/58 (100%)	57 (98%)	1 (2%)	60	86
18	T	79/79 (100%)	75 (95%)	4 (5%)	24	56
19	U	69/69 (100%)	65 (94%)	4 (6%)	20	50
20	V	99/101 (98%)	96 (97%)	3 (3%)	41	75
21	W	122/123 (99%)	118 (97%)	4 (3%)	38	72
22	Y	63/63 (100%)	62 (98%)	1 (2%)	62	86
23	Z	65/65 (100%)	63 (97%)	2 (3%)	40	74
24	a	122/122 (100%)	117 (96%)	5 (4%)	30	64
25	b	97/119 (82%)	94 (97%)	3 (3%)	40	74
26	c	140/141 (99%)	136 (97%)	4 (3%)	42	76
27	d	154/155 (99%)	148 (96%)	6 (4%)	32	66
28	e	98/99 (99%)	95 (97%)	3 (3%)	40	74
29	f	35/45 (78%)	35 (100%)	0	100	100
30	g	108/108 (100%)	107 (99%)	1 (1%)	78	93
31	h	93/93 (100%)	89 (96%)	4 (4%)	29	62
32	i	311/311 (100%)	301 (97%)	10 (3%)	39	73

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	j	88/100 (88%)	86 (98%)	2 (2%)	50	80
34	k	85/85 (100%)	80 (94%)	5 (6%)	19	49
35	l	518/540 (96%)	506 (98%)	12 (2%)	50	80
36	m	91/141 (64%)	86 (94%)	5 (6%)	21	53
37	n	53/53 (100%)	51 (96%)	2 (4%)	33	67
38	o	113/113 (100%)	111 (98%)	2 (2%)	59	85
39	p	159/159 (100%)	155 (98%)	4 (2%)	47	78
40	r	410/410 (100%)	404 (98%)	6 (2%)	65	87
41	s	263/275 (96%)	253 (96%)	10 (4%)	33	67
42	u	153/153 (100%)	150 (98%)	3 (2%)	55	82
43	v	98/111 (88%)	93 (95%)	5 (5%)	24	56
44	w	280/283 (99%)	275 (98%)	5 (2%)	59	85
All	All	7041/7248 (97%)	6842 (97%)	199 (3%)	46	76

All (199) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	61	ASP
1	A	69	LEU
1	A	134	ASP
1	A	210	THR
1	A	277	ASN
1	A	292	MET
1	A	307	VAL
1	A	329	LYS
1	A	334	THR
1	A	452	GLN
2	B	44	ARG
2	B	47	SER
2	B	76	TYR
3	C	71	CYS
3	C	142	TYR
5	F	26	ARG
5	F	31	GLN
5	F	50	ASP
6	G	91	ASP
6	G	114	ASP
6	G	117	GLU

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Mol	Chain	Res	Type
6	G	140	CYS
7	H	7	LYS
7	H	23	ARG
8	I	16	SER
8	I	40	LYS
8	I	64	MET
8	I	70	MET
8	I	92	LYS
8	I	109	ASP
9	J	107	GLU
9	J	108	TRP
9	J	137	LYS
9	J	140	ASP
9	J	221	ARG
9	J	298	TYR
9	J	310	PHE
10	K	82	SER
10	K	95	LYS
10	K	107	SER
11	L	73	LYS
11	L	105	GLU
12	M	58	MET
12	M	133	GLN
12	M	158	ARG
12	M	194	ASP
12	M	300	GLN
12	M	311	LYS
12	M	334	GLN
12	M	360	ARG
12	M	361	VAL
12	M	364	ASP
12	M	428	LYS
12	M	454	ASP
12	M	470	LYS
12	M	518	ARG
12	M	543	LYS
12	M	544	VAL
12	M	640	ASP
12	M	657	ASP
12	M	682	ASP
13	N	43	LYS
13	N	80	SER

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Mol	Chain	Res	Type
13	N	101	LYS
13	N	122	GLN
14	O	50	ASP
14	O	185	MET
14	O	195	ASP
14	O	212	LYS
14	O	215	LYS
15	P	231	ARG
16	Q	35	ARG
16	Q	42	GLU
16	Q	101	LEU
16	Q	144	MET
16	Q	147	ASN
16	Q	197	MET
16	Q	217	VAL
16	Q	446	ASP
17	S	28	LYS
18	T	43	GLN
18	T	47	ASP
18	T	82	ARG
18	T	122	HIS
19	U	40	ASN
19	U	41	TYR
19	U	63	MET
19	U	74	GLN
20	V	89	ASN
20	V	120	LEU
20	V	140	LYS
21	W	5	LYS
21	W	64	ASP
21	W	100	ASP
21	W	121	MET
6	X	89	LEU
6	X	105	MET
6	X	120	MET
6	X	152	LYS
22	Y	78	ASP
23	Z	39	ARG
23	Z	42	ARG
24	a	71	MET
24	a	100	ASP
24	a	127	ASP

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Mol	Chain	Res	Type
24	a	165	ASP
24	a	173	THR
25	b	31	ARG
25	b	66	ARG
25	b	91	THR
26	c	57	MET
26	c	164	ASN
26	c	169	GLU
26	c	185	GLU
27	d	15	ARG
27	d	61	TYR
27	d	127	LYS
27	d	134	GLN
27	d	136	SER
27	d	137	LYS
28	e	69	LYS
28	e	124	ARG
28	e	151	GLU
30	g	13	LEU
31	h	3	PHE
31	h	61	ASP
31	h	88	LYS
31	h	101	LYS
32	i	67	SER
32	i	70	LEU
32	i	104	MET
32	i	132	THR
32	i	258	SER
32	i	263	LYS
32	i	268	GLN
32	i	313	MET
32	i	344	SER
32	i	347	ASN
33	j	1	MET
33	j	87	MET
34	k	10	MET
34	k	21	MET
34	k	39	SER
34	k	53	PHE
34	k	59	MET
35	l	1	MET
35	l	23	ASN

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Mol	Chain	Res	Type
35	l	68	TRP
35	l	69	MET
35	l	70	THR
35	l	71	LEU
35	l	197	ASP
35	l	249	SER
35	l	357	ARG
35	l	387	THR
35	l	455	LYS
35	l	554	ASP
36	m	1	MET
36	m	3	MET
36	m	41	CYS
36	m	46	ASN
36	m	135	PHE
37	n	10	ASP
37	n	11	HIS
38	o	9	SER
38	o	30	ARG
39	p	24	LEU
39	p	48	PHE
39	p	57	MET
39	p	59	LYS
40	r	114	GLU
40	r	139	GLN
40	r	248	THR
40	r	274	SER
40	r	303	ILE
40	r	367	LEU
41	s	1	MET
41	s	24	GLU
41	s	81	LEU
41	s	109	SER
41	s	124	ASN
41	s	151	LEU
41	s	156	MET
41	s	251	THR
41	s	270	PHE
41	s	283	ASP
42	u	64	ASN
42	u	66	CYS
42	u	109	GLU

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Mol	Chain	Res	Type
43	v	34	ARG
43	v	38	GLU
43	v	68	LYS
43	v	78	LEU
43	v	80	CYS
44	w	63	ASP
44	w	95	ASP
44	w	175	ARG
44	w	241	TYR
44	w	250	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
6	G	103	HIS
10	K	79	HIS
12	M	260	ASN
12	M	604	GLN
26	c	154	GLN
35	l	296	ASN
43	v	4	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	$\# Z > 2$
16	2MR	Q	118	16	10,12,13	1.99	1 (10%)	5,13,15	6.02	3 (60%)

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
16	2MR	Q	118	16	-	2/10/13/15	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	Q	118	2MR	CZ-NE	5.70	1.46	1.34

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	Q	118	2MR	NE-CZ-NH2	12.34	130.79	119.48
16	Q	118	2MR	CD-NE-CZ	4.20	131.28	123.41
16	Q	118	2MR	CQ2-NH2-CZ	3.17	130.86	123.86

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
16	Q	118	2MR	NE-CD-CG-CB
16	Q	118	2MR	CA-CB-CG-CD

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 35 ligands modelled in this entry, 2 are monoatomic - leaving 33 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond

length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
49	8Q1	G	201	-	31,34,34	1.69	6 (19%)	40,43,43	1.47	5 (12%)
45	SF4	B	301	2	0,12,12	-	-	-	-	-
53	CDL	i	401	-	65,65,99	1.28	8 (12%)	71,77,111	1.01	4 (5%)
54	PEE	r	501	-	50,50,50	1.16	6 (12%)	53,55,55	0.99	2 (3%)
53	CDL	r	503	-	98,98,99	1.09	8 (8%)	104,110,111	0.89	4 (3%)
48	PLX	e	201	-	51,51,51	1.15	4 (7%)	55,59,59	0.59	1 (1%)
50	NDP	J	401	-	45,52,52	4.59	20 (44%)	53,80,80	1.93	8 (15%)
56	UQ	s	402	-	28,28,63	3.27	8 (28%)	34,37,79	2.86	11 (32%)
49	8Q1	X	201	-	31,34,34	1.71	6 (19%)	40,43,43	1.53	6 (15%)
54	PEE	l	703	-	45,45,50	1.22	6 (13%)	48,50,55	0.97	2 (4%)
45	SF4	C	301	3,16	0,12,12	-	-	-	-	-
45	SF4	B	302	2	0,12,12	-	-	-	-	-
53	CDL	N	201	-	50,50,99	1.40	9 (18%)	56,62,111	1.16	4 (7%)
45	SF4	A	501	1	0,12,12	-	-	-	-	-
54	PEE	i	402	-	46,46,50	1.21	6 (13%)	49,51,55	0.98	2 (4%)
53	CDL	r	504	-	99,99,99	1.09	8 (8%)	105,111,111	0.84	4 (3%)
48	PLX	r	502	-	51,51,51	1.13	4 (7%)	55,59,59	0.63	1 (1%)
48	PLX	m	201	-	51,51,51	1.15	4 (7%)	55,59,59	0.59	1 (1%)
51	FES	M	803	12	0,4,4	-	-	-	-	-
47	NAI	A	503	-	42,48,48	4.94	18 (42%)	47,73,73	1.33	7 (14%)
57	ADP	w	401	-	24,29,29	3.12	6 (25%)	29,45,45	1.41	4 (13%)
51	FES	O	301	14	0,4,4	-	-	-	-	-
46	FMN	A	502	-	33,33,33	1.09	2 (6%)	48,50,50	1.23	8 (16%)
48	PLX	C	302	-	51,51,51	1.15	4 (7%)	55,59,59	0.60	1 (1%)
53	CDL	l	701	-	99,99,99	1.09	8 (8%)	105,111,111	0.84	4 (3%)
45	SF4	M	802	12	0,12,12	-	-	-	-	-
48	PLX	g	201	-	51,51,51	1.14	3 (5%)	55,59,59	0.60	1 (1%)
54	PEE	l	702	-	45,45,50	1.23	6 (13%)	48,50,55	1.01	2 (4%)
53	CDL	a	201	-	90,90,99	1.13	8 (8%)	96,102,111	0.90	4 (4%)
54	PEE	m	202	-	40,40,50	1.15	5 (12%)	43,45,55	1.00	2 (4%)
45	SF4	M	801	12	0,12,12	-	-	-	-	-
54	PEE	Q	501	-	50,50,50	1.16	6 (12%)	53,55,55	0.95	2 (3%)
54	PEE	s	401	-	50,50,50	1.15	6 (12%)	53,55,55	0.95	2 (3%)

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
49	8Q1	G	201	-	-	18/41/41/41	-
53	CDL	i	401	-	-	37/76/76/110	-
45	SF4	B	301	2	-	-	0/6/5/5
54	PEE	r	501	-	-	30/54/54/54	-
53	CDL	r	503	-	-	56/109/109/110	-
48	PLX	e	201	-	-	32/55/55/55	-
50	NDP	J	401	-	-	7/30/77/77	0/4/5/5
56	UQ	s	402	-	-	9/21/45/87	0/1/1/1
49	8Q1	X	201	-	-	19/41/41/41	-
54	PEE	l	703	-	-	20/49/49/54	-
45	SF4	C	301	3,16	-	-	0/6/5/5
45	SF4	B	302	2	-	-	0/6/5/5
53	CDL	N	201	-	-	33/61/61/110	-
45	SF4	A	501	1	-	-	0/6/5/5
54	PEE	i	402	-	-	24/50/50/54	-
53	CDL	r	504	-	-	62/110/110/110	-
48	PLX	r	502	-	-	30/55/55/55	-
48	PLX	m	201	-	-	29/55/55/55	-
51	FES	M	803	12	-	-	0/1/1/1
47	NAI	A	503	-	-	7/25/72/72	0/5/5/5
57	ADP	w	401	-	-	4/12/32/32	0/3/3/3
51	FES	O	301	14	-	-	0/1/1/1
48	PLX	C	302	-	-	29/55/55/55	-
46	FMN	A	502	-	-	3/18/18/18	0/3/3/3
53	CDL	l	701	-	-	56/110/110/110	-
45	SF4	M	802	12	-	-	0/6/5/5
48	PLX	g	201	-	-	25/55/55/55	-
54	PEE	l	702	-	-	21/49/49/54	-
53	CDL	a	201	-	-	51/101/101/110	-
54	PEE	m	202	-	-	18/44/44/54	-
45	SF4	M	801	12	-	-	0/6/5/5
54	PEE	Q	501	-	-	23/54/54/54	-
54	PEE	s	401	-	-	28/54/54/54	-

All (175) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	A	503	NAI	O4B-C1B	16.25	1.63	1.41
47	A	503	NAI	C2B-C1B	-15.32	1.30	1.53
50	J	401	NDP	C3B-C2B	-12.87	1.24	1.52
50	J	401	NDP	C6N-C5N	12.48	1.55	1.33
50	J	401	NDP	O4D-C4D	10.70	1.68	1.45
47	A	503	NAI	C3D-C4D	-10.27	1.26	1.53
50	J	401	NDP	C3D-C4D	-9.86	1.27	1.53
56	s	402	UQ	C13-C14	9.29	1.55	1.33
57	w	401	ADP	C3'-C4'	-8.90	1.30	1.53
56	s	402	UQ	C8-C9	8.90	1.54	1.33
50	J	401	NDP	O4B-C1B	8.57	1.53	1.41
56	s	402	UQ	C18-C19	8.26	1.56	1.32
47	A	503	NAI	O4B-C4B	-8.22	1.26	1.45
50	J	401	NDP	O4B-C4B	-7.84	1.27	1.45
57	w	401	ADP	O4'-C4'	7.77	1.62	1.45
47	A	503	NAI	C2D-C1D	-7.54	1.29	1.53
50	J	401	NDP	C2N-C3N	7.48	1.55	1.34
47	A	503	NAI	O4D-C4D	6.90	1.60	1.45
57	w	401	ADP	O4'-C1'	-6.79	1.31	1.41
47	A	503	NAI	C2D-C3D	6.01	1.69	1.53
50	J	401	NDP	P2B-O2B	5.81	1.70	1.59
47	A	503	NAI	C7N-N7N	5.75	1.48	1.33
47	A	503	NAI	O4D-C1D	5.51	1.55	1.42
49	X	201	8Q1	C34-N36	5.49	1.45	1.33
49	G	201	8Q1	C34-N36	5.49	1.45	1.33
50	J	401	NDP	C3B-C4B	5.49	1.67	1.53
49	X	201	8Q1	C39-N41	5.36	1.45	1.33
49	G	201	8Q1	C39-N41	5.27	1.45	1.33
47	A	503	NAI	C4N-C3N	-5.04	1.40	1.49
50	J	401	NDP	C6N-N1N	4.94	1.49	1.37
50	J	401	NDP	O4D-C1D	-4.85	1.30	1.42
47	A	503	NAI	O2B-C2B	4.56	1.53	1.43
50	J	401	NDP	C7N-N7N	4.20	1.44	1.33
50	J	401	NDP	O2D-C2D	-4.14	1.33	1.43
50	J	401	NDP	C6A-N6A	4.09	1.49	1.34
47	A	503	NAI	C6N-C5N	4.06	1.40	1.33
46	A	502	FMN	C4A-N5	3.92	1.38	1.30
57	w	401	ADP	C6-N6	3.87	1.48	1.34
54	m	202	PEE	C18-C19	3.74	1.53	1.31
54	l	702	PEE	C18-C19	3.73	1.53	1.31
54	l	703	PEE	C18-C19	3.73	1.53	1.31
54	r	501	PEE	C18-C19	3.72	1.53	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	i	402	PEE	C18-C19	3.72	1.53	1.31
54	Q	501	PEE	C18-C19	3.72	1.53	1.31
54	s	401	PEE	C18-C19	3.70	1.53	1.31
54	i	402	PEE	C39-C38	3.66	1.53	1.31
54	r	501	PEE	C39-C38	3.65	1.52	1.31
54	l	702	PEE	C39-C38	3.65	1.52	1.31
54	l	703	PEE	C39-C38	3.64	1.52	1.31
54	Q	501	PEE	C39-C38	3.63	1.52	1.31
54	s	401	PEE	C39-C38	3.63	1.52	1.31
47	A	503	NAI	C7N-C3N	3.61	1.56	1.48
47	A	503	NAI	C6A-N6A	3.60	1.47	1.34
53	i	401	CDL	OA8-CA7	3.47	1.43	1.33
53	l	701	CDL	OA8-CA7	3.46	1.43	1.33
53	r	504	CDL	OA8-CA7	3.45	1.43	1.33
53	N	201	CDL	OA8-CA7	3.42	1.43	1.33
53	a	201	CDL	OA8-CA7	3.40	1.43	1.33
53	r	503	CDL	OA8-CA7	3.36	1.43	1.33
47	A	503	NAI	C4N-C5N	-3.33	1.40	1.48
57	w	401	ADP	O2'-C2'	-3.32	1.35	1.43
57	w	401	ADP	O3'-C3'	3.12	1.50	1.43
50	J	401	NDP	O3D-C3D	3.12	1.50	1.43
53	N	201	CDL	OA6-CA5	3.10	1.43	1.34
53	a	201	CDL	OB6-CB5	3.08	1.43	1.34
50	J	401	NDP	C7N-C3N	3.07	1.55	1.48
53	i	401	CDL	OB6-CB5	3.06	1.42	1.34
53	r	503	CDL	OB6-CB5	3.04	1.42	1.34
53	N	201	CDL	OB8-CB7	3.04	1.42	1.33
53	r	504	CDL	OB6-CB5	3.04	1.42	1.34
53	l	701	CDL	OB6-CB5	3.03	1.42	1.34
53	l	701	CDL	OA6-CA5	3.02	1.42	1.34
53	l	701	CDL	OB8-CB7	3.02	1.42	1.33
53	i	401	CDL	OB8-CB7	3.02	1.42	1.33
53	r	503	CDL	OB8-CB7	3.01	1.42	1.33
53	r	504	CDL	OA6-CA5	3.00	1.42	1.34
53	N	201	CDL	OB6-CB5	2.99	1.42	1.34
53	r	504	CDL	OB8-CB7	2.98	1.42	1.33
53	a	201	CDL	OB8-CB7	2.97	1.42	1.33
53	r	503	CDL	OA6-CA5	2.95	1.42	1.34
53	a	201	CDL	OA6-CA5	2.95	1.42	1.34
53	i	401	CDL	OA6-CA5	2.91	1.42	1.34
48	e	201	PLX	O6-C4	-2.77	1.40	1.44
48	C	302	PLX	O6-C4	-2.71	1.41	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	g	201	PLX	O6-C4	-2.70	1.41	1.44
56	s	402	UQ	C6-C1	2.67	1.54	1.46
48	m	201	PLX	O6-C4	-2.64	1.41	1.44
46	A	502	FMN	C10-N1	2.54	1.38	1.33
54	Q	501	PEE	O3-C30	2.51	1.40	1.33
54	l	703	PEE	O3-C30	2.51	1.40	1.33
50	J	401	NDP	O2B-C2B	2.48	1.53	1.44
54	s	401	PEE	O3-C30	2.47	1.40	1.33
49	X	201	8Q1	C1-S44	2.47	1.82	1.76
54	i	402	PEE	O3-C30	2.46	1.40	1.33
47	A	503	NAI	PN-O5D	2.46	1.69	1.59
54	l	702	PEE	O3-C30	2.45	1.40	1.33
54	r	501	PEE	O3-C30	2.45	1.40	1.33
53	r	503	CDL	OA6-CA4	-2.45	1.40	1.46
47	A	503	NAI	O3B-C3B	-2.44	1.37	1.43
48	m	201	PLX	C7-C6	2.43	1.55	1.50
53	a	201	CDL	OA6-CA4	-2.43	1.40	1.46
50	J	401	NDP	C2D-C3D	2.41	1.59	1.53
54	r	501	PEE	O2-C2	-2.41	1.40	1.46
53	r	504	CDL	OA6-CA4	-2.41	1.40	1.46
54	s	401	PEE	O2-C2	-2.41	1.40	1.46
53	i	401	CDL	OA6-CA4	-2.40	1.40	1.46
48	r	502	PLX	C7-C6	2.38	1.55	1.50
54	m	202	PEE	O3-C30	2.38	1.40	1.33
54	l	703	PEE	O2-C2	-2.38	1.40	1.46
54	i	402	PEE	O2-C2	-2.37	1.40	1.46
54	l	702	PEE	O2-C10	2.37	1.41	1.34
49	G	201	8Q1	C1-S44	2.36	1.81	1.76
54	m	202	PEE	O2-C10	2.34	1.40	1.34
54	Q	501	PEE	O2-C10	2.34	1.40	1.34
48	C	302	PLX	C7-C6	2.34	1.55	1.50
54	Q	501	PEE	O2-C2	-2.34	1.40	1.46
53	l	701	CDL	OA6-CA4	-2.33	1.40	1.46
54	l	702	PEE	O2-C2	-2.32	1.40	1.46
49	X	201	8Q1	C6-C1	2.31	1.53	1.50
48	e	201	PLX	C7-C6	2.31	1.55	1.50
54	m	202	PEE	O2-C2	-2.31	1.40	1.46
54	i	402	PEE	O2-C10	2.29	1.40	1.34
54	l	703	PEE	O2-C10	2.27	1.40	1.34
47	A	503	NAI	C5B-C4B	2.27	1.58	1.51
49	G	201	8Q1	C6-C1	2.27	1.53	1.50
48	g	201	PLX	C7-C6	2.26	1.55	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	l	701	CDL	PB2-OB2	2.25	1.68	1.59
54	r	501	PEE	O2-C10	2.24	1.40	1.34
53	r	503	CDL	PB2-OB2	2.23	1.68	1.59
54	s	401	PEE	O2-C10	2.23	1.40	1.34
53	N	201	CDL	PB2-OB2	2.22	1.68	1.59
53	i	401	CDL	PB2-OB5	2.22	1.68	1.59
49	G	201	8Q1	O40-C39	-2.22	1.18	1.23
49	X	201	8Q1	O35-C34	-2.21	1.19	1.23
53	r	504	CDL	PB2-OB5	2.20	1.68	1.59
53	i	401	CDL	PB2-OB2	2.20	1.68	1.59
49	G	201	8Q1	O35-C34	-2.20	1.19	1.23
53	r	504	CDL	PB2-OB2	2.19	1.68	1.59
56	s	402	UQ	O4-C4	-2.18	1.18	1.23
53	r	503	CDL	PB2-OB5	2.18	1.68	1.59
53	N	201	CDL	PB2-OB5	2.18	1.68	1.59
53	l	701	CDL	OB6-CB4	-2.17	1.41	1.46
50	J	401	NDP	PA-O5B	2.17	1.68	1.59
53	l	701	CDL	PB2-OB5	2.17	1.68	1.59
49	X	201	8Q1	O40-C39	-2.17	1.18	1.23
53	a	201	CDL	PB2-OB2	2.16	1.68	1.59
53	a	201	CDL	PB2-OB5	2.16	1.68	1.59
48	C	302	PLX	P1-O4	2.16	1.68	1.59
48	r	502	PLX	P1-O4	2.16	1.68	1.59
53	N	201	CDL	OB6-CB4	-2.15	1.41	1.46
48	g	201	PLX	P1-O4	2.15	1.68	1.59
48	r	502	PLX	O6-C4	-2.14	1.41	1.44
56	s	402	UQ	C7-C8	2.14	1.53	1.50
53	r	503	CDL	OB6-CB4	-2.14	1.41	1.46
48	m	201	PLX	P1-O4	2.13	1.67	1.59
54	m	202	PEE	O3-C3	-2.13	1.40	1.45
53	i	401	CDL	OB6-CB4	-2.12	1.41	1.46
53	a	201	CDL	OB6-CB4	-2.12	1.41	1.46
54	l	702	PEE	O3-C3	-2.11	1.40	1.45
48	e	201	PLX	P1-O4	2.11	1.67	1.59
53	r	504	CDL	OB6-CB4	-2.10	1.41	1.46
54	Q	501	PEE	O3-C3	-2.09	1.40	1.45
50	J	401	NDP	O7N-C7N	-2.09	1.19	1.24
54	r	501	PEE	O3-C3	-2.09	1.40	1.45
54	s	401	PEE	O3-C3	-2.07	1.40	1.45
54	i	402	PEE	O3-C3	-2.06	1.40	1.45
48	m	201	PLX	P1-O1	2.05	1.67	1.59
48	r	502	PLX	P1-O1	2.05	1.67	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	N	201	CDL	OA6-CA4	-2.05	1.41	1.46
54	l	703	PEE	O3-C3	-2.04	1.40	1.45
48	C	302	PLX	P1-O1	2.04	1.67	1.59
53	N	201	CDL	C11-CA5	2.03	1.56	1.50
56	s	402	UQ	O3-CM3	-2.02	1.40	1.45
48	e	201	PLX	P1-O1	2.02	1.67	1.59
56	s	402	UQ	O1-C1	-2.01	1.19	1.23

All (92) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
56	s	402	UQ	C7-C8-C9	-9.91	110.29	126.79
50	J	401	NDP	C3N-C2N-N1N	-7.46	112.45	123.10
50	J	401	NDP	C1D-N1N-C2N	-7.13	109.23	121.11
56	s	402	UQ	C12-C13-C14	-5.77	113.77	127.66
49	X	201	8Q1	C6-C1-S44	5.72	120.12	113.46
49	G	201	8Q1	C6-C1-S44	5.42	119.77	113.46
50	J	401	NDP	C1D-N1N-C6N	-5.16	109.71	120.83
56	s	402	UQ	C11-C9-C8	-4.97	111.06	121.12
56	s	402	UQ	C10-C9-C8	-4.65	111.74	123.68
56	s	402	UQ	C16-C14-C13	-4.40	112.21	121.12
57	w	401	ADP	N3-C2-N1	-4.39	121.82	128.68
47	A	503	NAI	N3A-C2A-N1A	-4.36	121.86	128.68
56	s	402	UQ	C15-C14-C13	-4.25	112.77	123.68
53	N	201	CDL	OA6-CA5-C11	4.21	120.58	111.50
53	r	503	CDL	OA6-CA5-C11	4.11	120.36	111.50
53	r	503	CDL	OB6-CB5-C51	4.07	120.27	111.50
50	J	401	NDP	N3A-C2A-N1A	-4.07	122.32	128.68
54	r	501	PEE	O2-C10-C11	4.06	120.25	111.50
54	l	702	PEE	O2-C10-C11	4.06	120.25	111.50
53	a	201	CDL	OB6-CB5-C51	4.03	120.18	111.50
53	r	504	CDL	OB6-CB5-C51	4.02	120.17	111.50
54	m	202	PEE	O2-C10-C11	4.02	120.17	111.50
54	i	402	PEE	O2-C10-C11	4.02	120.16	111.50
53	a	201	CDL	OA6-CA5-C11	4.01	120.15	111.50
53	N	201	CDL	OB6-CB5-C51	3.97	120.06	111.50
53	l	701	CDL	OA6-CA5-C11	3.97	120.05	111.50
53	i	401	CDL	OB6-CB5-C51	3.96	120.03	111.50
53	i	401	CDL	OA6-CA5-C11	3.93	119.97	111.50
56	s	402	UQ	C17-C18-C19	-3.91	114.39	127.75
54	Q	501	PEE	O2-C10-C11	3.86	119.83	111.50
54	l	703	PEE	O2-C10-C11	3.86	119.83	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	s	401	PEE	O2-C10-C11	3.82	119.73	111.50
53	l	701	CDL	OB6-CB5-C51	3.77	119.62	111.50
53	r	504	CDL	OA6-CA5-C11	3.74	119.56	111.50
56	s	402	UQ	C21-C19-C18	-3.40	112.83	122.65
49	X	201	8Q1	O4-C1-C6	-3.39	119.99	123.99
49	G	201	8Q1	O4-C1-C6	-3.28	120.11	123.99
47	A	503	NAI	C3D-C2D-C1D	3.23	107.57	101.43
46	A	502	FMN	C4-N3-C2	-3.04	120.02	125.64
56	s	402	UQ	C20-C19-C18	-2.94	114.16	122.65
56	s	402	UQ	CM5-C5-C6	-2.87	119.72	124.40
47	A	503	NAI	C4D-O4D-C1D	-2.77	103.36	109.47
47	A	503	NAI	C3B-C2B-C1B	2.77	105.15	100.98
54	r	501	PEE	O3-C30-C31	2.76	120.56	111.91
54	Q	501	PEE	O3-C30-C31	2.75	120.55	111.91
47	A	503	NAI	C4A-C5A-N7A	-2.70	106.58	109.40
53	i	401	CDL	OA8-CA7-C31	2.69	120.34	111.91
46	A	502	FMN	C4A-C4-N3	2.68	119.99	113.19
50	J	401	NDP	PN-O3-PA	-2.67	123.68	132.83
54	l	702	PEE	O3-C30-C31	2.66	120.26	111.91
53	N	201	CDL	OB8-CB7-C71	2.66	120.26	111.91
53	N	201	CDL	OA8-CA7-C31	2.66	120.25	111.91
53	a	201	CDL	OB8-CB7-C71	2.65	120.21	111.91
53	i	401	CDL	OB8-CB7-C71	2.64	120.20	111.91
47	A	503	NAI	C2D-C3D-C4D	2.64	107.77	102.64
53	r	503	CDL	OB8-CB7-C71	2.63	120.15	111.91
53	l	701	CDL	OB8-CB7-C71	2.60	120.06	111.91
54	s	401	PEE	O3-C30-C31	2.59	120.04	111.91
54	l	703	PEE	O3-C30-C31	2.58	120.00	111.91
54	i	402	PEE	O3-C30-C31	2.55	119.91	111.91
53	r	504	CDL	OA8-CA7-C31	2.54	119.89	111.91
53	r	504	CDL	OB8-CB7-C71	2.52	119.83	111.91
53	l	701	CDL	OA8-CA7-C31	2.52	119.81	111.91
48	g	201	PLX	C1A-N1-C1	2.51	120.20	109.92
49	G	201	8Q1	C37-C38-C39	2.51	116.54	112.36
53	r	503	CDL	OA8-CA7-C31	2.51	119.78	111.91
54	m	202	PEE	O3-C30-C31	2.49	119.72	111.91
48	e	201	PLX	C1A-N1-C1	2.48	120.07	109.92
46	A	502	FMN	O4-C4-C4A	-2.47	120.05	126.60
49	X	201	8Q1	C38-C39-N41	2.46	120.57	116.42
50	J	401	NDP	C4A-C5A-N7A	-2.45	106.85	109.40
49	X	201	8Q1	C43-S44-C1	2.43	109.45	101.87
49	G	201	8Q1	C38-C39-N41	2.41	120.48	116.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	r	502	PLX	C1A-N1-C1	2.40	119.74	109.92
49	X	201	8Q1	C37-C38-C39	2.40	116.35	112.36
47	A	503	NAI	PN-O3-PA	-2.39	124.63	132.83
46	A	502	FMN	C4A-C10-N10	2.37	119.95	116.48
57	w	401	ADP	PA-O3A-PB	-2.37	124.70	132.83
53	a	201	CDL	OA8-CA7-C31	2.36	119.31	111.91
48	m	201	PLX	C1A-N1-C1	2.33	119.44	109.92
48	C	302	PLX	C1A-N1-C1	2.28	119.24	109.92
46	A	502	FMN	C10-C4A-N5	-2.24	120.09	124.86
46	A	502	FMN	C9A-C5A-N5	-2.21	120.03	122.43
46	A	502	FMN	C4A-C10-N1	-2.19	119.65	124.73
57	w	401	ADP	C4-C5-N7	-2.19	107.12	109.40
50	J	401	NDP	C2B-C3B-C4B	2.14	106.64	101.99
57	w	401	ADP	O4'-C1'-C2'	-2.13	103.81	106.93
49	X	201	8Q1	O4-C1-S44	-2.10	119.89	122.61
49	G	201	8Q1	C43-S44-C1	2.10	108.41	101.87
46	A	502	FMN	C5A-C9A-N10	2.08	120.10	117.95
56	s	402	UQ	C7-C6-C1	2.05	120.95	118.48
50	J	401	NDP	C2D-C3D-C4D	2.02	106.56	102.64

There are no chirality outliers.

All (671) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
46	A	502	FMN	N10-C1'-C2'-O2'
46	A	502	FMN	N10-C1'-C2'-C3'
47	A	503	NAI	C5B-O5B-PA-O3
48	C	302	PLX	C3-O4-P1-O2
48	C	302	PLX	C3-O4-P1-O3
48	C	302	PLX	N1-C1-C2-O1
48	e	201	PLX	O7-C6-O6-C4
48	e	201	PLX	C2-O1-P1-O4
48	e	201	PLX	C2-O1-P1-O2
48	e	201	PLX	C2-O1-P1-O3
48	e	201	PLX	O9-C24-O8-C5
48	e	201	PLX	O9-C24-C25-C26
48	g	201	PLX	O7-C6-O6-C4
48	m	201	PLX	O7-C6-C7-C8
48	m	201	PLX	O7-C6-O6-C4
48	r	502	PLX	O7-C6-O6-C4
48	r	502	PLX	C5-C4-O6-C6
48	r	502	PLX	C3-O4-P1-O2

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Mol	Chain	Res	Type	Atoms
48	r	502	PLX	C2-O1-P1-O2
48	r	502	PLX	O9-C24-O8-C5
48	r	502	PLX	O9-C24-C25-C26
49	G	201	8Q1	O4-C1-S44-C43
49	G	201	8Q1	C6-C1-S44-C43
49	G	201	8Q1	C28-C29-C32-C34
49	G	201	8Q1	C28-C29-C32-O33
49	G	201	8Q1	C30-C29-C32-C34
49	G	201	8Q1	C30-C29-C32-O33
49	G	201	8Q1	C31-C29-C32-C34
49	G	201	8Q1	C31-C29-C32-O33
49	G	201	8Q1	N36-C37-C38-C39
49	G	201	8Q1	C42-C43-S44-C1
49	G	201	8Q1	C28-O27-P24-O3
49	G	201	8Q1	C28-O27-P24-O2
49	X	201	8Q1	C1-C6-C7-C8
49	X	201	8Q1	C28-C29-C32-C34
49	X	201	8Q1	C28-C29-C32-O33
49	X	201	8Q1	C30-C29-C32-C34
49	X	201	8Q1	C30-C29-C32-O33
49	X	201	8Q1	C31-C29-C32-C34
49	X	201	8Q1	C31-C29-C32-O33
49	X	201	8Q1	N36-C37-C38-C39
49	X	201	8Q1	C28-O27-P24-O2
49	X	201	8Q1	C28-O27-P24-O1
50	J	401	NDP	C2B-O2B-P2B-O1X
53	N	201	CDL	CA2-C1-CB2-OB2
53	N	201	CDL	CA2-OA2-PA1-OA3
53	N	201	CDL	CA2-OA2-PA1-OA4
53	N	201	CDL	CA2-OA2-PA1-OA5
53	N	201	CDL	CA3-OA5-PA1-OA3
53	N	201	CDL	CA3-OA5-PA1-OA4
53	N	201	CDL	C11-CA5-OA6-CA4
53	N	201	CDL	CB2-OB2-PB2-OB3
53	N	201	CDL	CB2-OB2-PB2-OB4
53	N	201	CDL	CB3-OB5-PB2-OB3
53	N	201	CDL	CB3-OB5-PB2-OB4
53	a	201	CDL	CA2-OA2-PA1-OA3
53	a	201	CDL	CA2-OA2-PA1-OA4
53	a	201	CDL	CB2-OB2-PB2-OB3
53	a	201	CDL	CB3-OB5-PB2-OB4
53	i	401	CDL	CA2-OA2-PA1-OA3

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Mol	Chain	Res	Type	Atoms
53	i	401	CDL	CA2-OA2-PA1-OA4
53	i	401	CDL	CA2-OA2-PA1-OA5
53	i	401	CDL	CA3-OA5-PA1-OA3
53	i	401	CDL	CA3-OA5-PA1-OA4
53	i	401	CDL	CB2-OB2-PB2-OB4
53	l	701	CDL	CA2-OA2-PA1-OA3
53	l	701	CDL	CA2-OA2-PA1-OA4
53	l	701	CDL	CA2-OA2-PA1-OA5
53	l	701	CDL	CA3-OA5-PA1-OA2
53	l	701	CDL	CB2-OB2-PB2-OB3
53	l	701	CDL	CB2-OB2-PB2-OB4
53	l	701	CDL	CB2-OB2-PB2-OB5
53	l	701	CDL	OB6-CB4-CB6-OB8
53	r	503	CDL	O1-C1-CA2-OA2
53	r	503	CDL	O1-C1-CB2-OB2
53	r	503	CDL	CA2-C1-CB2-OB2
53	r	503	CDL	CA2-OA2-PA1-OA3
53	r	503	CDL	CA2-OA2-PA1-OA5
53	r	503	CDL	CB3-OB5-PB2-OB3
53	r	503	CDL	CB3-OB5-PB2-OB4
53	r	504	CDL	CB2-C1-CA2-OA2
53	r	504	CDL	CA3-OA5-PA1-OA4
53	r	504	CDL	CB3-OB5-PB2-OB3
54	i	402	PEE	C11-C10-O2-C2
54	i	402	PEE	C4-O4P-P-O1P
54	l	702	PEE	C11-C10-O2-C2
54	l	702	PEE	C4-O4P-P-O2P
54	l	702	PEE	C4-O4P-P-O1P
54	m	202	PEE	C11-C10-O2-C2
54	m	202	PEE	O4P-C4-C5-N
54	r	501	PEE	C17-C18-C19-C20
54	r	501	PEE	C4-O4P-P-O1P
54	s	401	PEE	C11-C10-O2-C2
54	s	401	PEE	O4-C10-O2-C2
54	s	401	PEE	C1-O3P-P-O1P
54	s	401	PEE	C4-O4P-P-O2P
56	s	402	UQ	C7-C8-C9-C10
56	s	402	UQ	C7-C8-C9-C11
56	s	402	UQ	C12-C11-C9-C8
56	s	402	UQ	C12-C11-C9-C10
56	s	402	UQ	C9-C11-C12-C13
57	w	401	ADP	C5'-O5'-PA-O1A

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Mol	Chain	Res	Type	Atoms
57	w	401	ADP	C5'-O5'-PA-O2A
57	w	401	ADP	C5'-O5'-PA-O3A
53	r	503	CDL	OA9-CA7-OA8-CA6
53	i	401	CDL	OA9-CA7-OA8-CA6
53	N	201	CDL	OA7-CA5-OA6-CA4
53	r	504	CDL	OB7-CB5-OB6-CB4
54	i	402	PEE	O4-C10-O2-C2
54	l	702	PEE	O4-C10-O2-C2
54	m	202	PEE	O4-C10-O2-C2
53	r	503	CDL	C31-CA7-OA8-CA6
53	r	504	CDL	C51-CB5-OB6-CB4
53	i	401	CDL	C31-CA7-OA8-CA6
53	r	504	CDL	C71-CB7-OB8-CB6
54	l	703	PEE	C37-C38-C39-C40
54	s	401	PEE	C17-C18-C19-C20
54	l	703	PEE	O5-C30-O3-C3
53	N	201	CDL	O1-C1-CB2-OB2
53	a	201	CDL	O1-C1-CB2-OB2
53	l	701	CDL	O1-C1-CB2-OB2
54	l	702	PEE	C31-C30-O3-C3
53	r	504	CDL	OB9-CB7-OB8-CB6
48	e	201	PLX	C12-C13-C14-C15
53	l	701	CDL	C11-C12-C13-C14
54	l	702	PEE	O5-C30-O3-C3
48	g	201	PLX	C7-C8-C9-C10
48	m	201	PLX	C28-C29-C30-C31
48	r	502	PLX	C9-C10-C11-C12
53	i	401	CDL	C31-C32-C33-C34
53	l	701	CDL	C59-C60-C61-C62
54	m	202	PEE	C15-C16-C17-C18
48	r	502	PLX	C30-C31-C32-C33
54	l	703	PEE	C31-C30-O3-C3
53	r	503	CDL	C32-C33-C34-C35
53	r	503	CDL	C62-C63-C64-C65
53	r	503	CDL	C55-C56-C57-C58
53	r	503	CDL	C20-C21-C22-C23
53	l	701	CDL	C71-CB7-OB8-CB6
54	m	202	PEE	C31-C30-O3-C3
53	a	201	CDL	CA2-C1-CB2-OB2
53	r	503	CDL	CB2-C1-CA2-OA2
53	l	701	CDL	OB9-CB7-OB8-CB6
54	m	202	PEE	O5-C30-O3-C3

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Mol	Chain	Res	Type	Atoms
53	a	201	CDL	C71-CB7-OB8-CB6
53	l	701	CDL	C35-C36-C37-C38
48	g	201	PLX	C12-C13-C14-C15
48	m	201	PLX	C15-C16-C17-C18
53	l	701	CDL	C54-C55-C56-C57
53	a	201	CDL	OA5-CA3-CA4-OA6
54	l	702	PEE	O3P-C1-C2-O2
53	l	701	CDL	CB7-C71-C72-C73
53	l	701	CDL	OA6-CA4-CA6-OA8
53	r	504	CDL	OA6-CA4-CA6-OA8
53	l	701	CDL	CB5-C51-C52-C53
53	i	401	CDL	CA7-C31-C32-C33
53	r	503	CDL	CB5-C51-C52-C53
53	r	504	CDL	CB7-C71-C72-C73
54	Q	501	PEE	C37-C38-C39-C40
54	i	402	PEE	C17-C18-C19-C20
53	r	504	CDL	C74-C75-C76-C77
56	s	402	UQ	C17-C18-C19-C20
53	a	201	CDL	OB9-CB7-OB8-CB6
53	r	503	CDL	CA7-C31-C32-C33
53	r	503	CDL	CB7-C71-C72-C73
53	r	504	CDL	CA7-C31-C32-C33
54	Q	501	PEE	C30-C31-C32-C33
54	r	501	PEE	C10-C11-C12-C13
48	m	201	PLX	C34-C35-C36-C37
54	m	202	PEE	C31-C32-C33-C34
53	a	201	CDL	O1-C1-CA2-OA2
53	i	401	CDL	O1-C1-CA2-OA2
54	s	401	PEE	C31-C30-O3-C3
48	C	302	PLX	C28-C29-C30-C31
54	l	702	PEE	C37-C38-C39-C40
53	l	701	CDL	C71-C72-C73-C74
48	m	201	PLX	C32-C33-C34-C35
53	i	401	CDL	C37-C38-C39-C40
48	C	302	PLX	C3-O4-P1-O1
53	N	201	CDL	CA3-OA5-PA1-OA2
53	N	201	CDL	CB2-OB2-PB2-OB5
53	N	201	CDL	CB3-OB5-PB2-OB2
53	a	201	CDL	CA2-OA2-PA1-OA5
53	a	201	CDL	CA3-OA5-PA1-OA2
53	a	201	CDL	CB3-OB5-PB2-OB2
53	i	401	CDL	CA3-OA5-PA1-OA2

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Mol	Chain	Res	Type	Atoms
53	i	401	CDL	CB2-OB2-PB2-OB5
53	l	701	CDL	CB3-OB5-PB2-OB2
53	r	503	CDL	CB3-OB5-PB2-OB2
53	r	504	CDL	CA3-OA5-PA1-OA2
53	r	504	CDL	CB2-OB2-PB2-OB5
53	r	504	CDL	CB3-OB5-PB2-OB2
54	l	702	PEE	C4-O4P-P-O3P
54	m	202	PEE	C4-O4P-P-O3P
54	r	501	PEE	C1-O3P-P-O4P
54	r	501	PEE	C4-O4P-P-O3P
54	s	401	PEE	C4-O4P-P-O3P
50	J	401	NDP	C2D-C1D-N1N-C6N
53	a	201	CDL	CB2-C1-CA2-OA2
53	i	401	CDL	CB2-C1-CA2-OA2
53	r	503	CDL	C71-CB7-OB8-CB6
48	m	201	PLX	O6-C6-C7-C8
54	Q	501	PEE	C15-C16-C17-C18
53	a	201	CDL	CB5-C51-C52-C53
53	l	701	CDL	C60-C61-C62-C63
54	r	501	PEE	C11-C10-O2-C2
48	g	201	PLX	C10-C11-C12-C13
48	g	201	PLX	C27-C28-C29-C30
48	m	201	PLX	C10-C11-C12-C13
48	r	502	PLX	C27-C28-C29-C30
49	X	201	8Q1	C9-C10-C11-C12
53	i	401	CDL	C52-C53-C54-C55
53	r	503	CDL	C73-C74-C75-C76
53	r	503	CDL	C75-C76-C77-C78
53	r	504	CDL	C12-C13-C14-C15
53	r	504	CDL	C14-C15-C16-C17
53	r	504	CDL	C56-C57-C58-C59
54	l	703	PEE	C33-C34-C35-C36
54	m	202	PEE	C12-C13-C14-C15
48	C	302	PLX	C17-C18-C19-C20
48	g	201	PLX	C33-C34-C35-C36
48	m	201	PLX	C27-C28-C29-C30
48	r	502	PLX	C12-C13-C14-C15
54	i	402	PEE	C22-C23-C24-C25
54	r	501	PEE	O4-C10-O2-C2
48	g	201	PLX	C32-C33-C34-C35
53	l	701	CDL	C73-C74-C75-C76
53	r	504	CDL	C71-C72-C73-C74

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Mol	Chain	Res	Type	Atoms
53	l	701	CDL	C75-C76-C77-C78
54	l	703	PEE	C14-C15-C16-C17
53	r	504	CDL	O1-C1-CA2-OA2
48	e	201	PLX	C14-C15-C16-C17
48	m	201	PLX	C7-C8-C9-C10
53	i	401	CDL	C11-C12-C13-C14
53	l	701	CDL	C55-C56-C57-C58
53	r	503	CDL	C71-C72-C73-C74
53	r	504	CDL	C73-C74-C75-C76
48	C	302	PLX	C7-C8-C9-C10
53	r	503	CDL	C74-C75-C76-C77
53	r	503	CDL	C82-C83-C84-C85
53	r	504	CDL	CB5-C51-C52-C53
48	e	201	PLX	C28-C29-C30-C31
53	a	201	CDL	C37-C38-C39-C40
53	a	201	CDL	C75-C76-C77-C78
53	l	701	CDL	C40-C41-C42-C43
54	Q	501	PEE	C33-C34-C35-C36
54	i	402	PEE	C14-C15-C16-C17
48	e	201	PLX	C11-C12-C13-C14
53	l	701	CDL	C37-C38-C39-C40
48	g	201	PLX	C11-C10-C9-C8
48	g	201	PLX	C25-C26-C27-C28
48	m	201	PLX	C12-C13-C14-C15
53	i	401	CDL	C35-C36-C37-C38
53	l	701	CDL	C56-C57-C58-C59
54	i	402	PEE	C19-C20-C21-C22
53	N	201	CDL	CA7-C31-C32-C33
48	e	201	PLX	C27-C28-C29-C30
48	g	201	PLX	C9-C10-C11-C12
48	g	201	PLX	C30-C31-C32-C33
48	m	201	PLX	C9-C10-C11-C12
48	r	502	PLX	C15-C16-C17-C18
53	r	504	CDL	C52-C53-C54-C55
54	Q	501	PEE	C34-C35-C36-C37
54	l	703	PEE	C31-C32-C33-C34
53	N	201	CDL	C11-C12-C13-C14
53	a	201	CDL	C71-C72-C73-C74
53	i	401	CDL	C71-C72-C73-C74
48	e	201	PLX	C25-C26-C27-C28
53	r	504	CDL	C55-C56-C57-C58
54	l	702	PEE	C23-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
53	r	503	CDL	C35-C36-C37-C38
54	Q	501	PEE	C21-C22-C23-C24
54	r	501	PEE	C41-C42-C43-C44
54	s	401	PEE	O5-C30-O3-C3
48	e	201	PLX	C30-C31-C32-C33
53	i	401	CDL	C14-C15-C16-C17
53	i	401	CDL	CB5-C51-C52-C53
54	r	501	PEE	C30-C31-C32-C33
53	r	503	CDL	C56-C57-C58-C59
48	C	302	PLX	O7-C6-C7-C8
48	m	201	PLX	O9-C24-C25-C26
48	C	302	PLX	C31-C32-C33-C34
48	C	302	PLX	C33-C34-C35-C36
48	e	201	PLX	C13-C14-C15-C16
53	r	504	CDL	C59-C60-C61-C62
53	a	201	CDL	C31-C32-C33-C34
48	g	201	PLX	C28-C29-C30-C31
48	C	302	PLX	C13-C14-C15-C16
53	r	504	CDL	C41-C42-C43-C44
54	Q	501	PEE	C20-C21-C22-C23
53	r	503	CDL	OB9-CB7-OB8-CB6
48	C	302	PLX	C11-C12-C13-C14
56	s	402	UQ	C17-C18-C19-C21
54	s	401	PEE	C43-C44-C45-C46
48	e	201	PLX	C31-C32-C33-C34
53	r	504	CDL	C75-C76-C77-C78
48	e	201	PLX	C2-C1-N1-C1A
48	e	201	PLX	C29-C30-C31-C32
53	l	701	CDL	C52-C53-C54-C55
53	i	401	CDL	C71-CB7-OB8-CB6
54	l	703	PEE	C11-C10-O2-C2
48	r	502	PLX	C28-C29-C30-C31
53	r	503	CDL	C14-C15-C16-C17
53	r	504	CDL	C43-C44-C45-C46
54	i	402	PEE	C21-C22-C23-C24
54	r	501	PEE	C22-C23-C24-C25
53	N	201	CDL	CB7-C71-C72-C73
53	i	401	CDL	CB7-C71-C72-C73
48	r	502	PLX	C13-C14-C15-C16
48	m	201	PLX	C14-C15-C16-C17
54	s	401	PEE	C37-C38-C39-C40
54	i	402	PEE	C35-C36-C37-C38

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Mol	Chain	Res	Type	Atoms
53	N	201	CDL	C71-CB7-OB8-CB6
48	r	502	PLX	C33-C34-C35-C36
53	r	503	CDL	C36-C37-C38-C39
48	r	502	PLX	C16-C17-C18-C19
53	a	201	CDL	C21-C22-C23-C24
48	m	201	PLX	C25-C26-C27-C28
48	r	502	PLX	C31-C32-C33-C34
53	l	701	CDL	C58-C59-C60-C61
53	r	504	CDL	C17-C18-C19-C20
53	l	701	CDL	C14-C15-C16-C17
53	r	503	CDL	C42-C43-C44-C45
54	l	702	PEE	C30-C31-C32-C33
53	N	201	CDL	C51-CB5-OB6-CB4
53	a	201	CDL	C51-CB5-OB6-CB4
53	r	503	CDL	C11-CA5-OA6-CA4
48	C	302	PLX	O4-C3-C4-O6
54	s	401	PEE	C36-C37-C38-C39
53	N	201	CDL	OB7-CB5-OB6-CB4
53	a	201	CDL	OB7-CB5-OB6-CB4
53	r	503	CDL	OA7-CA5-OA6-CA4
48	e	201	PLX	C33-C34-C35-C36
53	r	504	CDL	C78-C79-C80-C81
54	s	401	PEE	C23-C24-C25-C26
48	r	502	PLX	C10-C11-C12-C13
48	e	201	PLX	C2-C1-N1-C1C
53	r	504	CDL	C32-C33-C34-C35
54	Q	501	PEE	C14-C15-C16-C17
54	Q	501	PEE	C13-C14-C15-C16
54	r	501	PEE	C19-C20-C21-C22
48	e	201	PLX	C16-C17-C18-C19
54	s	401	PEE	C21-C22-C23-C24
54	r	501	PEE	C11-C12-C13-C14
53	i	401	CDL	OB9-CB7-OB8-CB6
54	l	703	PEE	O4-C10-O2-C2
53	l	701	CDL	C62-C63-C64-C65
48	r	502	PLX	C3-O4-P1-O1
48	r	502	PLX	C2-O1-P1-O4
53	a	201	CDL	CB2-OB2-PB2-OB5
54	i	402	PEE	C4-O4P-P-O3P
54	s	401	PEE	C1-O3P-P-O4P
53	a	201	CDL	CA7-C31-C32-C33
54	m	202	PEE	C14-C15-C16-C17

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Mol	Chain	Res	Type	Atoms
48	C	302	PLX	O4-C3-C4-C5
53	a	201	CDL	OA5-CA3-CA4-CA6
53	a	201	CDL	OB5-CB3-CB4-CB6
54	l	702	PEE	O3P-C1-C2-C3
56	s	402	UQ	C12-C13-C14-C15
53	r	504	CDL	C62-C63-C64-C65
54	l	703	PEE	C22-C23-C24-C25
48	e	201	PLX	C10-C11-C12-C13
53	r	503	CDL	C60-C61-C62-C63
53	l	701	CDL	C39-C40-C41-C42
53	l	701	CDL	CA3-CA4-CA6-OA8
53	l	701	CDL	CB3-CB4-CB6-OB8
53	r	504	CDL	CA3-CA4-CA6-OA8
53	r	504	CDL	CB3-CB4-CB6-OB8
54	r	501	PEE	C1-C2-C3-O3
53	r	503	CDL	C39-C40-C41-C42
53	N	201	CDL	OB9-CB7-OB8-CB6
53	l	701	CDL	C64-C65-C66-C67
48	r	502	PLX	C14-C15-C16-C17
48	r	502	PLX	C7-C8-C9-C10
53	N	201	CDL	C51-C52-C53-C54
53	i	401	CDL	C36-C37-C38-C39
53	l	701	CDL	C72-C73-C74-C75
53	r	504	CDL	C60-C61-C62-C63
53	i	401	CDL	C73-C74-C75-C76
54	Q	501	PEE	C10-C11-C12-C13
53	N	201	CDL	CA6-CA4-OA6-CA5
48	C	302	PLX	C27-C28-C29-C30
53	N	201	CDL	C31-C32-C33-C34
53	a	201	CDL	C14-C15-C16-C17
49	X	201	8Q1	C28-O27-P24-O3
48	e	201	PLX	C7-C8-C9-C10
53	N	201	CDL	C31-CA7-OA8-CA6
48	e	201	PLX	C2-C1-N1-C1B
53	r	503	CDL	C37-C38-C39-C40
53	r	504	CDL	C13-C14-C15-C16
53	a	201	CDL	C43-C44-C45-C46
54	l	702	PEE	C31-C32-C33-C34
53	i	401	CDL	OB6-CB4-CB6-OB8
54	l	702	PEE	O2-C2-C3-O3
48	g	201	PLX	C14-C15-C16-C17
53	i	401	CDL	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
54	r	501	PEE	C23-C24-C25-C26
53	a	201	CDL	C34-C35-C36-C37
48	C	302	PLX	C15-C16-C17-C18
54	i	402	PEE	C24-C25-C26-C27
54	r	501	PEE	C24-C25-C26-C27
48	C	302	PLX	C9-C10-C11-C12
48	e	201	PLX	C36-C37-C38-C39
53	r	504	CDL	C23-C24-C25-C26
54	Q	501	PEE	C44-C45-C46-C47
54	Q	501	PEE	C17-C18-C19-C20
54	l	703	PEE	C10-C11-C12-C13
54	l	703	PEE	C13-C14-C15-C16
54	r	501	PEE	C36-C37-C38-C39
53	r	504	CDL	C42-C43-C44-C45
53	N	201	CDL	OB5-CB3-CB4-CB6
53	l	701	CDL	OA5-CA3-CA4-CA6
53	r	503	CDL	OA5-CA3-CA4-CA6
54	l	703	PEE	C30-C31-C32-C33
53	a	201	CDL	C52-C53-C54-C55
54	r	501	PEE	C31-C30-O3-C3
48	e	201	PLX	C9-C10-C11-C12
53	r	504	CDL	C79-C80-C81-C82
53	r	503	CDL	C54-C55-C56-C57
53	r	503	CDL	C61-C62-C63-C64
49	G	201	8Q1	N41-C42-C43-S44
54	l	703	PEE	C32-C33-C34-C35
53	r	504	CDL	C35-C36-C37-C38
48	r	502	PLX	C3-C4-C5-O8
54	i	402	PEE	C1-C2-C3-O3
54	l	703	PEE	C1-C2-C3-O3
48	m	201	PLX	C26-C27-C28-C29
54	i	402	PEE	C13-C14-C15-C16
48	r	502	PLX	C11-C12-C13-C14
53	a	201	CDL	C33-C34-C35-C36
53	a	201	CDL	C60-C61-C62-C63
54	r	501	PEE	C20-C21-C22-C23
48	g	201	PLX	O9-C24-C25-C26
53	r	503	CDL	C78-C79-C80-C81
53	a	201	CDL	OB5-CB3-CB4-OB6
53	l	701	CDL	OA5-CA3-CA4-OA6
53	r	503	CDL	OA5-CA3-CA4-OA6
48	m	201	PLX	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
53	N	201	CDL	OA9-CA7-OA8-CA6
53	r	504	CDL	C64-C65-C66-C67
53	i	401	CDL	C32-C33-C34-C35
53	l	701	CDL	C57-C58-C59-C60
48	e	201	PLX	O6-C4-C5-O8
53	r	504	CDL	OB6-CB4-CB6-OB8
54	l	703	PEE	O2-C2-C3-O3
54	r	501	PEE	O2-C2-C3-O3
54	l	702	PEE	C32-C33-C34-C35
53	l	701	CDL	CA2-C1-CB2-OB2
48	C	302	PLX	C16-C17-C18-C19
53	a	201	CDL	C74-C75-C76-C77
49	G	201	8Q1	C10-C11-C12-C13
48	g	201	PLX	C20-C21-C22-C23
54	r	501	PEE	C16-C17-C18-C19
53	r	504	CDL	C72-C73-C74-C75
49	X	201	8Q1	O4-C1-S44-C43
54	s	401	PEE	C44-C45-C46-C47
53	l	701	CDL	C12-C13-C14-C15
48	m	201	PLX	O4-C3-C4-C5
54	Q	501	PEE	C31-C30-O3-C3
49	X	201	8Q1	C7-C8-C9-C10
48	r	502	PLX	C20-C21-C22-C23
49	X	201	8Q1	O33-C32-C34-N36
53	r	504	CDL	C82-C83-C84-C85
54	s	401	PEE	C38-C39-C40-C41
49	X	201	8Q1	C6-C1-S44-C43
48	e	201	PLX	C3-C4-C5-O8
48	m	201	PLX	C7-C6-O6-C4
48	g	201	PLX	O4-C3-C4-O6
48	m	201	PLX	O4-C3-C4-O6
49	G	201	8Q1	C7-C8-C9-C10
49	G	201	8Q1	C11-C10-C9-C8
54	Q	501	PEE	C42-C43-C44-C45
48	r	502	PLX	O6-C4-C5-O8
53	r	503	CDL	OB6-CB4-CB6-OB8
54	i	402	PEE	O2-C2-C3-O3
54	r	501	PEE	O5-C30-O3-C3
50	J	401	NDP	C2B-O2B-P2B-O3X
53	a	201	CDL	C72-C73-C74-C75
53	l	701	CDL	C76-C77-C78-C79
48	m	201	PLX	C13-C14-C15-C16

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Mol	Chain	Res	Type	Atoms
54	i	402	PEE	C20-C21-C22-C23
53	a	201	CDL	C54-C55-C56-C57
53	a	201	CDL	C20-C21-C22-C23
54	Q	501	PEE	O5-C30-O3-C3
53	r	503	CDL	C51-C52-C53-C54
48	m	201	PLX	C31-C32-C33-C34
54	i	402	PEE	C11-C12-C13-C14
48	e	201	PLX	C3-O4-P1-O1
48	g	201	PLX	C3-O4-P1-O1
50	J	401	NDP	O4D-C1D-N1N-C6N
53	r	503	CDL	CB2-OB2-PB2-OB5
53	r	504	CDL	CA2-OA2-PA1-OA5
48	C	302	PLX	C29-C30-C31-C32
53	r	504	CDL	CB4-CB3-OB5-PB2
47	A	503	NAI	C5B-O5B-PA-O1A
47	A	503	NAI	C5B-O5B-PA-O2A
48	C	302	PLX	C2-O1-P1-O3
48	r	502	PLX	C2-O1-P1-O3
53	a	201	CDL	CA3-OA5-PA1-OA4
53	a	201	CDL	CB2-OB2-PB2-OB4
53	a	201	CDL	CB3-OB5-PB2-OB3
53	i	401	CDL	CB2-OB2-PB2-OB3
53	l	701	CDL	CB3-OB5-PB2-OB3
53	l	701	CDL	CB3-OB5-PB2-OB4
53	r	503	CDL	CB2-OB2-PB2-OB3
53	r	504	CDL	CA2-OA2-PA1-OA3
53	r	504	CDL	CA3-OA5-PA1-OA3
53	r	504	CDL	CB2-OB2-PB2-OB3
53	r	504	CDL	CB2-OB2-PB2-OB4
54	m	202	PEE	C4-O4P-P-O2P
54	m	202	PEE	C4-O4P-P-O1P
54	r	501	PEE	C1-O3P-P-O2P
54	r	501	PEE	C1-O3P-P-O1P
54	s	401	PEE	C1-O3P-P-O2P
54	s	401	PEE	C4-O4P-P-O1P
54	i	402	PEE	C10-C11-C12-C13
53	r	504	CDL	C37-C38-C39-C40
48	g	201	PLX	O4-C3-C4-C5
48	m	201	PLX	C19-C20-C21-C22
54	l	703	PEE	C16-C17-C18-C19
54	Q	501	PEE	C23-C24-C25-C26
54	l	702	PEE	C21-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
48	g	201	PLX	C25-C24-O8-C5
48	m	201	PLX	C25-C24-O8-C5
48	C	302	PLX	C30-C31-C32-C33
54	m	202	PEE	C22-C23-C24-C25
54	Q	501	PEE	C35-C36-C37-C38
54	r	501	PEE	C15-C16-C17-C18
53	a	201	CDL	C73-C74-C75-C76
53	a	201	CDL	CA5-C11-C12-C13
54	r	501	PEE	C31-C32-C33-C34
53	N	201	CDL	OB5-CB3-CB4-OB6
53	i	401	CDL	OA5-CA3-CA4-OA6
54	r	501	PEE	O3P-C1-C2-O2
54	l	702	PEE	C14-C15-C16-C17
54	l	703	PEE	C34-C35-C36-C37
54	i	402	PEE	C18-C19-C20-C21
53	N	201	CDL	C71-C72-C73-C74
53	l	701	CDL	C44-C45-C46-C47
48	m	201	PLX	C3-C4-C5-O8
53	a	201	CDL	CA3-CA4-CA6-OA8
53	i	401	CDL	CB3-CB4-CB6-OB8
53	l	701	CDL	C15-C16-C17-C18
54	r	501	PEE	C33-C34-C35-C36
48	m	201	PLX	O6-C4-C5-O8
53	a	201	CDL	OA6-CA4-CA6-OA8
54	l	703	PEE	C18-C19-C20-C21
53	r	504	CDL	C44-C45-C46-C47
53	r	504	CDL	C33-C34-C35-C36
48	e	201	PLX	O8-C24-C25-C26
54	s	401	PEE	C40-C41-C42-C43
47	A	503	NAI	O4D-C1D-N1N-C2N
48	e	201	PLX	C26-C27-C28-C29
49	X	201	8Q1	C13-C14-C15-C16
53	l	701	CDL	C34-C35-C36-C37
47	A	503	NAI	C2D-C1D-N1N-C2N
53	r	503	CDL	C33-C34-C35-C36
54	Q	501	PEE	O3P-C1-C2-C3
54	r	501	PEE	O3P-C1-C2-C3
54	Q	501	PEE	O3P-C1-C2-O2
54	s	401	PEE	C32-C33-C34-C35
48	g	201	PLX	C35-C36-C37-C38
54	l	703	PEE	C38-C39-C40-C41
53	i	401	CDL	CB3-OB5-PB2-OB2

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Mol	Chain	Res	Type	Atoms
53	a	201	CDL	C22-C23-C24-C25
54	s	401	PEE	C12-C13-C14-C15
54	l	702	PEE	C1-C2-C3-O3
50	J	401	NDP	PN-O3-PA-O1A
48	r	502	PLX	C29-C30-C31-C32
54	l	703	PEE	C23-C24-C25-C26
54	s	401	PEE	C24-C25-C26-C27
53	r	504	CDL	C31-CA7-OA8-CA6
53	l	701	CDL	C41-C42-C43-C44
54	i	402	PEE	C31-C32-C33-C34
48	g	201	PLX	O8-C24-C25-C26
48	g	201	PLX	C13-C14-C15-C16
54	r	501	PEE	C12-C13-C14-C15
53	r	504	CDL	CA5-C11-C12-C13
53	l	701	CDL	C53-C54-C55-C56
53	r	503	CDL	CB3-CB4-CB6-OB8
54	i	402	PEE	C34-C35-C36-C37
48	r	502	PLX	C18-C19-C20-C21
53	l	701	CDL	C24-C25-C26-C27
54	i	402	PEE	C32-C33-C34-C35
53	r	503	CDL	C52-C53-C54-C55
48	C	302	PLX	C12-C13-C14-C15
48	C	302	PLX	C3-C4-O6-C6
48	C	302	PLX	C2-O1-P1-O4
48	e	201	PLX	C5-C4-O6-C6
47	A	503	NAI	C2D-C1D-N1N-C6N
53	r	504	CDL	C51-C52-C53-C54
53	r	504	CDL	C20-C21-C22-C23
53	r	503	CDL	C19-C20-C21-C22
53	r	504	CDL	OA9-CA7-OA8-CA6
54	s	401	PEE	C10-C11-C12-C13
49	X	201	8Q1	C42-C43-S44-C1
54	m	202	PEE	C11-C12-C13-C14
48	m	201	PLX	C18-C19-C20-C21
48	m	201	PLX	C30-C31-C32-C33
57	w	401	ADP	PB-O3A-PA-O2A
48	r	502	PLX	C4-C5-O8-C24
53	a	201	CDL	C56-C57-C58-C59
48	m	201	PLX	C35-C36-C37-C38
48	e	201	PLX	C24-C25-C26-C27
48	r	502	PLX	O8-C24-C25-C26
48	C	302	PLX	C26-C27-C28-C29

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Mol	Chain	Res	Type	Atoms
53	i	401	CDL	OA5-CA3-CA4-CA6
49	G	201	8Q1	C28-O27-P24-O1
54	r	501	PEE	C44-C45-C46-C47
54	s	401	PEE	O3-C30-C31-C32
54	Q	501	PEE	C16-C17-C18-C19
54	l	702	PEE	C16-C17-C18-C19
54	m	202	PEE	C18-C19-C20-C21
54	m	202	PEE	C16-C17-C18-C19
53	a	201	CDL	OA7-CA5-OA6-CA4
48	C	302	PLX	C25-C26-C27-C28
53	r	503	CDL	C72-C71-CB7-OB8
54	s	401	PEE	O2-C10-C11-C12
53	r	503	CDL	C58-C59-C60-C61
53	i	401	CDL	C15-C16-C17-C18
54	Q	501	PEE	C18-C19-C20-C21
54	l	702	PEE	C15-C16-C17-C18
53	a	201	CDL	C36-C37-C38-C39
54	i	402	PEE	C36-C37-C38-C39
53	r	504	CDL	C83-C84-C85-C86
54	Q	501	PEE	C19-C20-C21-C22
47	A	503	NAI	O4D-C1D-N1N-C6N
49	G	201	8Q1	C9-C10-C11-C12
53	l	701	CDL	C33-C34-C35-C36
53	l	701	CDL	C32-C31-CA7-OA8
54	i	402	PEE	C38-C39-C40-C41
54	l	702	PEE	C36-C37-C38-C39
53	N	201	CDL	C72-C71-CB7-OB8
53	r	503	CDL	C12-C11-CA5-OA6
48	C	302	PLX	C32-C33-C34-C35
56	s	402	UQ	C14-C16-C17-C18
53	r	503	CDL	C83-C84-C85-C86
50	J	401	NDP	O4D-C4D-C5D-O5D
53	a	201	CDL	C11-CA5-OA6-CA4
53	r	503	CDL	C72-C71-CB7-OB9
54	s	401	PEE	O4-C10-C11-C12
53	a	201	CDL	C76-C77-C78-C79
53	l	701	CDL	C31-C32-C33-C34
54	i	402	PEE	C30-C31-C32-C33
53	r	504	CDL	C52-C51-CB5-OB6
54	s	401	PEE	C34-C35-C36-C37
54	s	401	PEE	O5-C30-C31-C32
54	m	202	PEE	C1-C2-C3-O3

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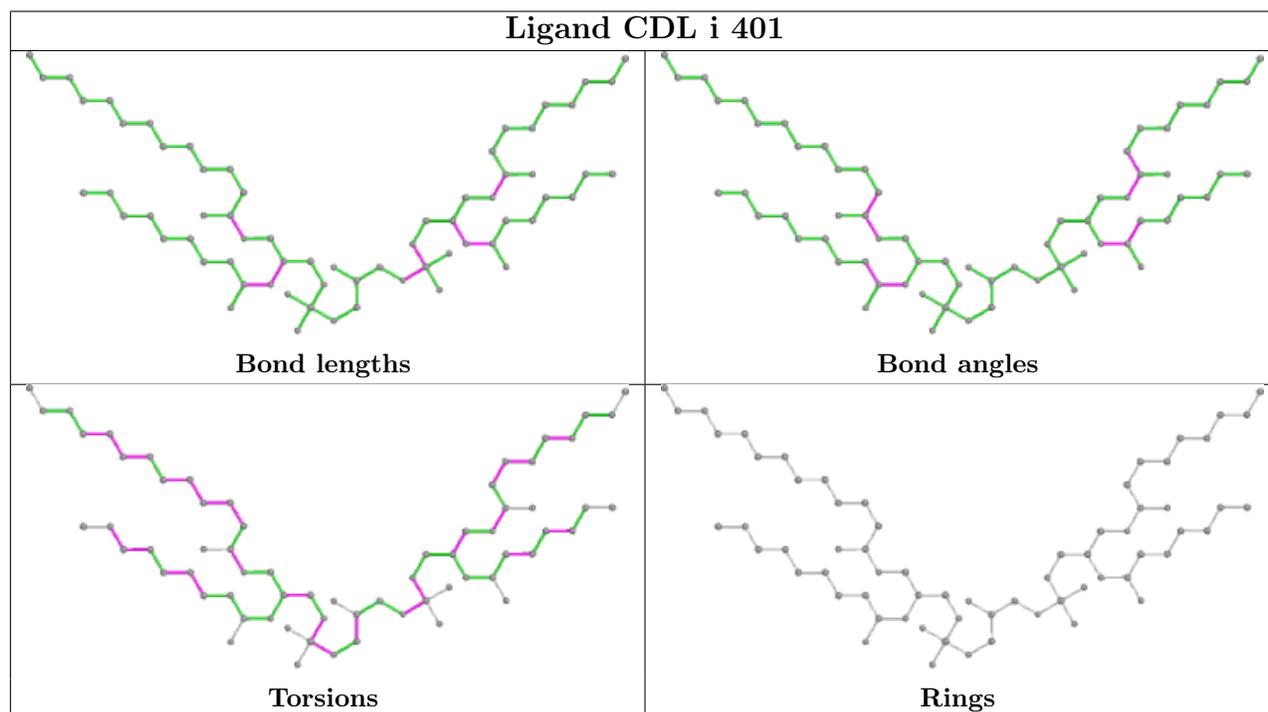
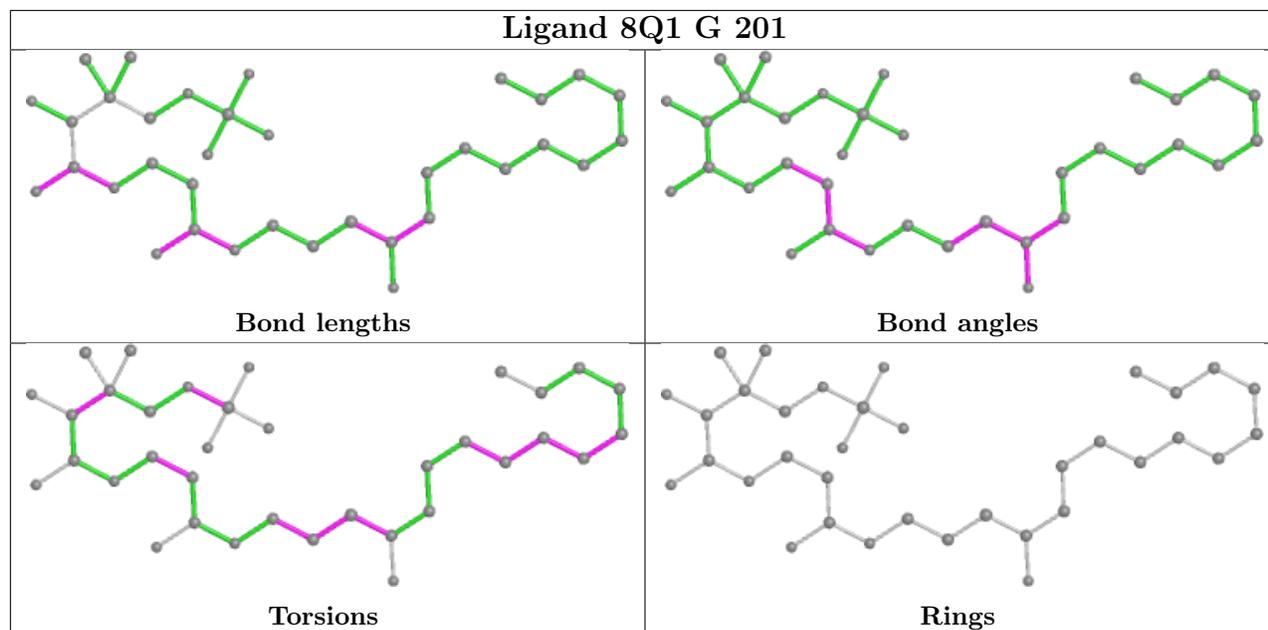
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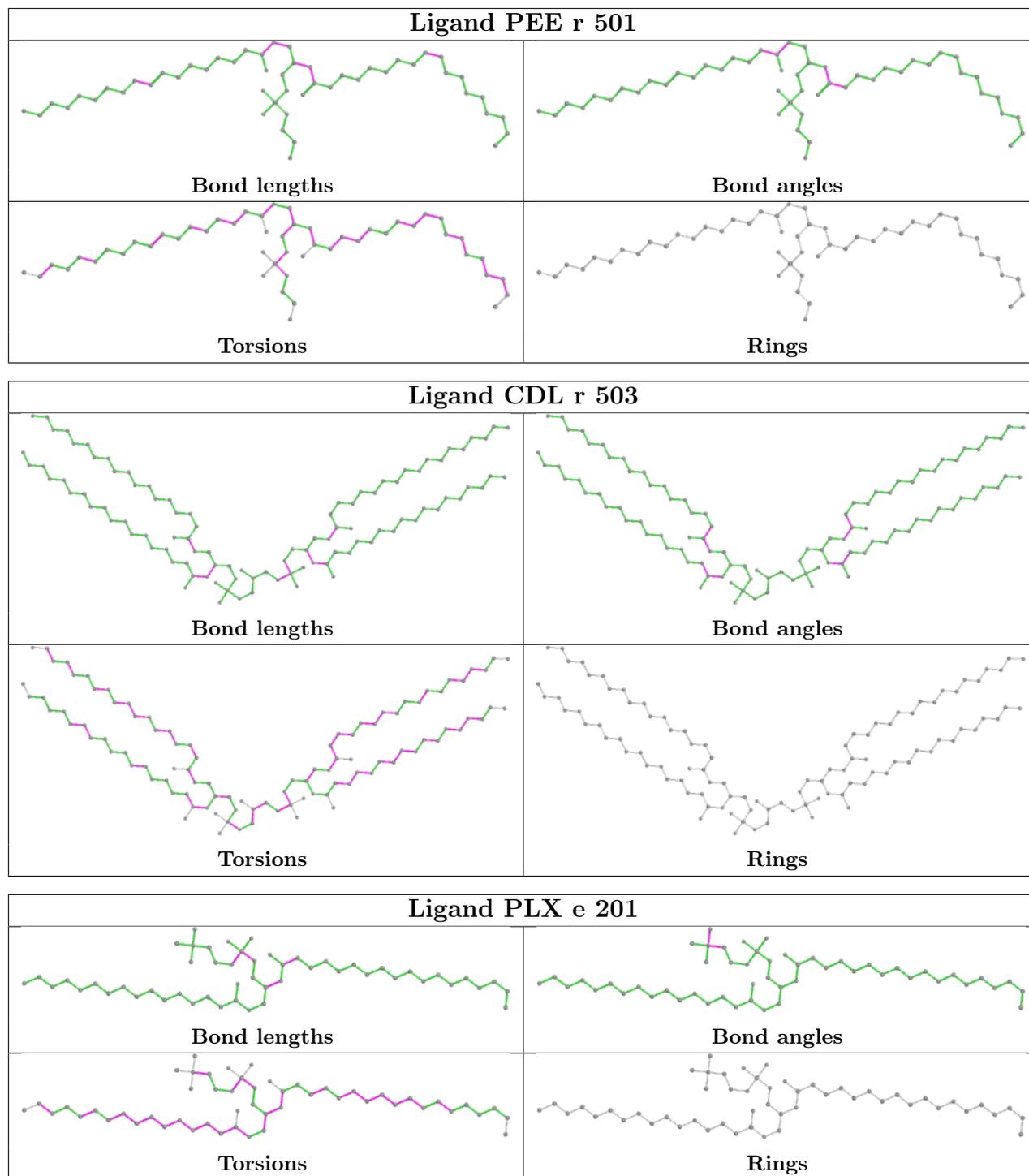
Mol	Chain	Res	Type	Atoms
53	l	701	CDL	C12-C11-CA5-OA6
53	r	504	CDL	C39-C40-C41-C42
48	C	302	PLX	C34-C35-C36-C37
53	N	201	CDL	C72-C71-CB7-OB9
48	g	201	PLX	C3-O4-P1-O2
48	g	201	PLX	C2-O1-P1-O2
53	i	401	CDL	CB3-OB5-PB2-OB3
53	r	504	CDL	CA2-OA2-PA1-OA4
50	J	401	NDP	O4B-C4B-C5B-O5B
53	a	201	CDL	C18-C19-C20-C21
54	Q	501	PEE	C22-C23-C24-C25
48	g	201	PLX	C1-C2-O1-P1
49	X	201	8Q1	C29-C32-C34-O35
53	l	701	CDL	C32-C31-CA7-OA9
46	A	502	FMN	O2'-C2'-C3'-C4'
53	r	503	CDL	C12-C11-CA5-OA7
48	C	302	PLX	C18-C19-C20-C21
53	r	503	CDL	C44-C45-C46-C47
53	i	401	CDL	C12-C13-C14-C15
54	m	202	PEE	C20-C21-C22-C23
53	l	701	CDL	C12-C11-CA5-OA7
53	r	504	CDL	C52-C51-CB5-OB7
53	r	503	CDL	C81-C82-C83-C84

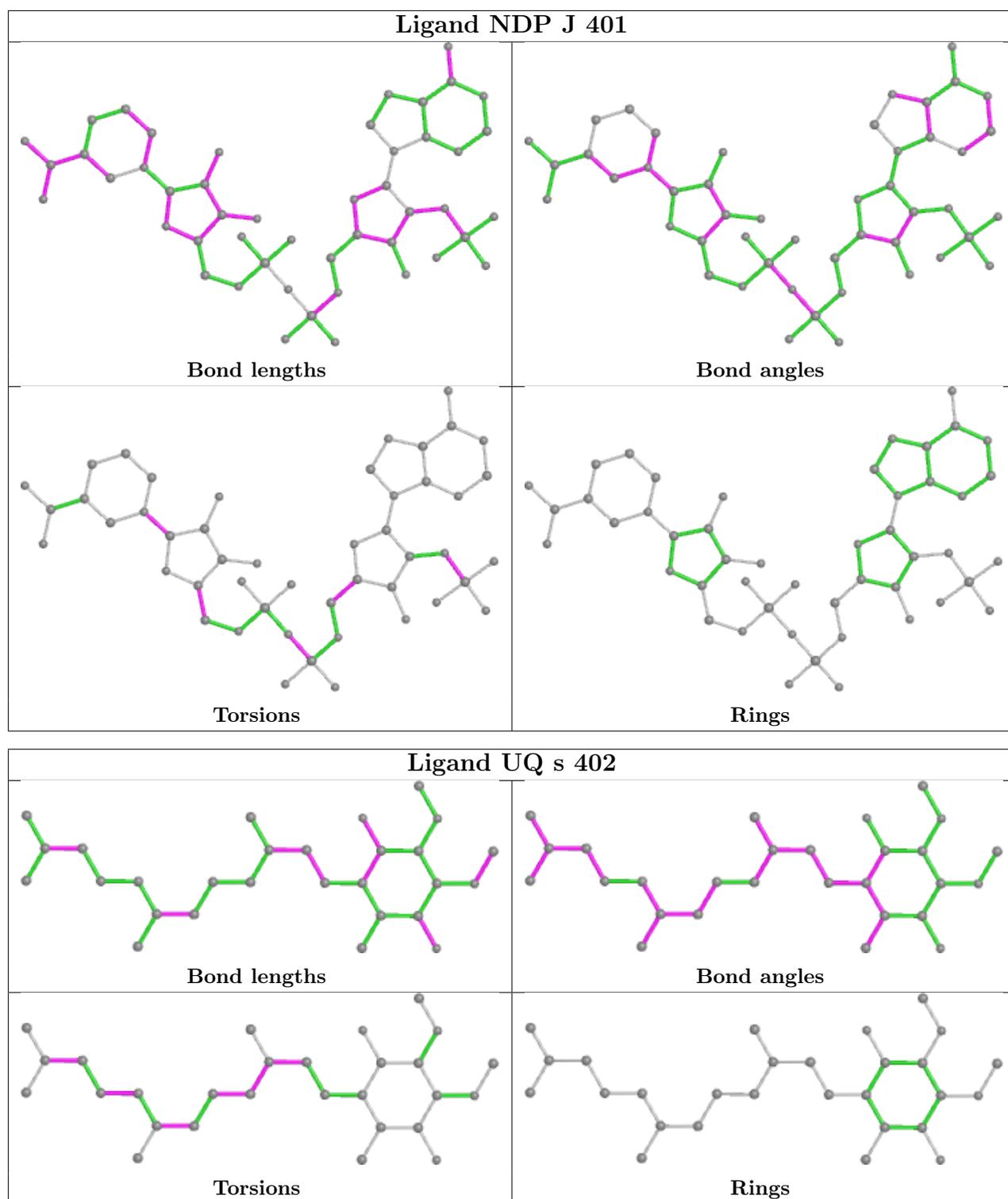
There are no ring outliers.

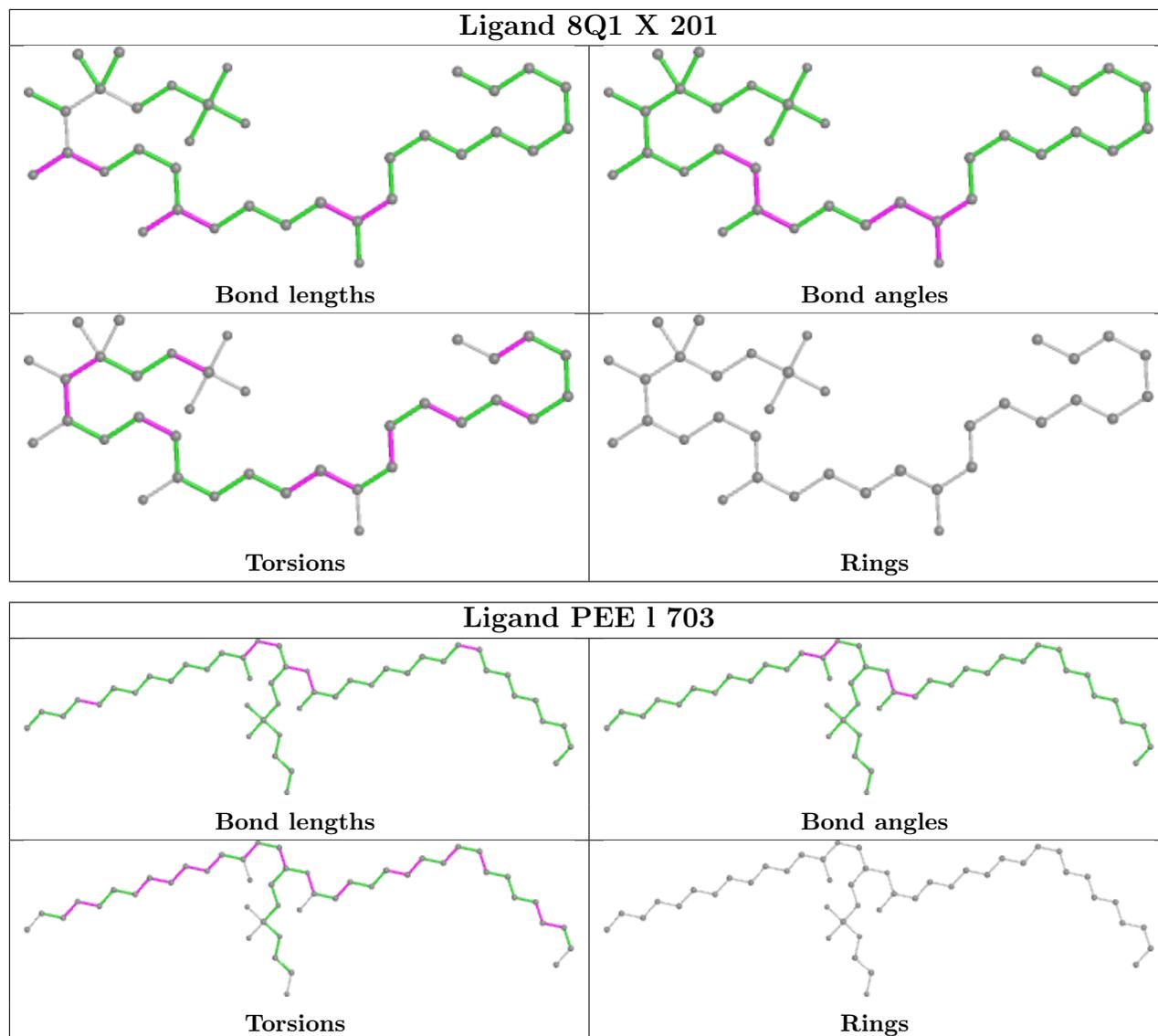
No monomer is involved in short contacts.

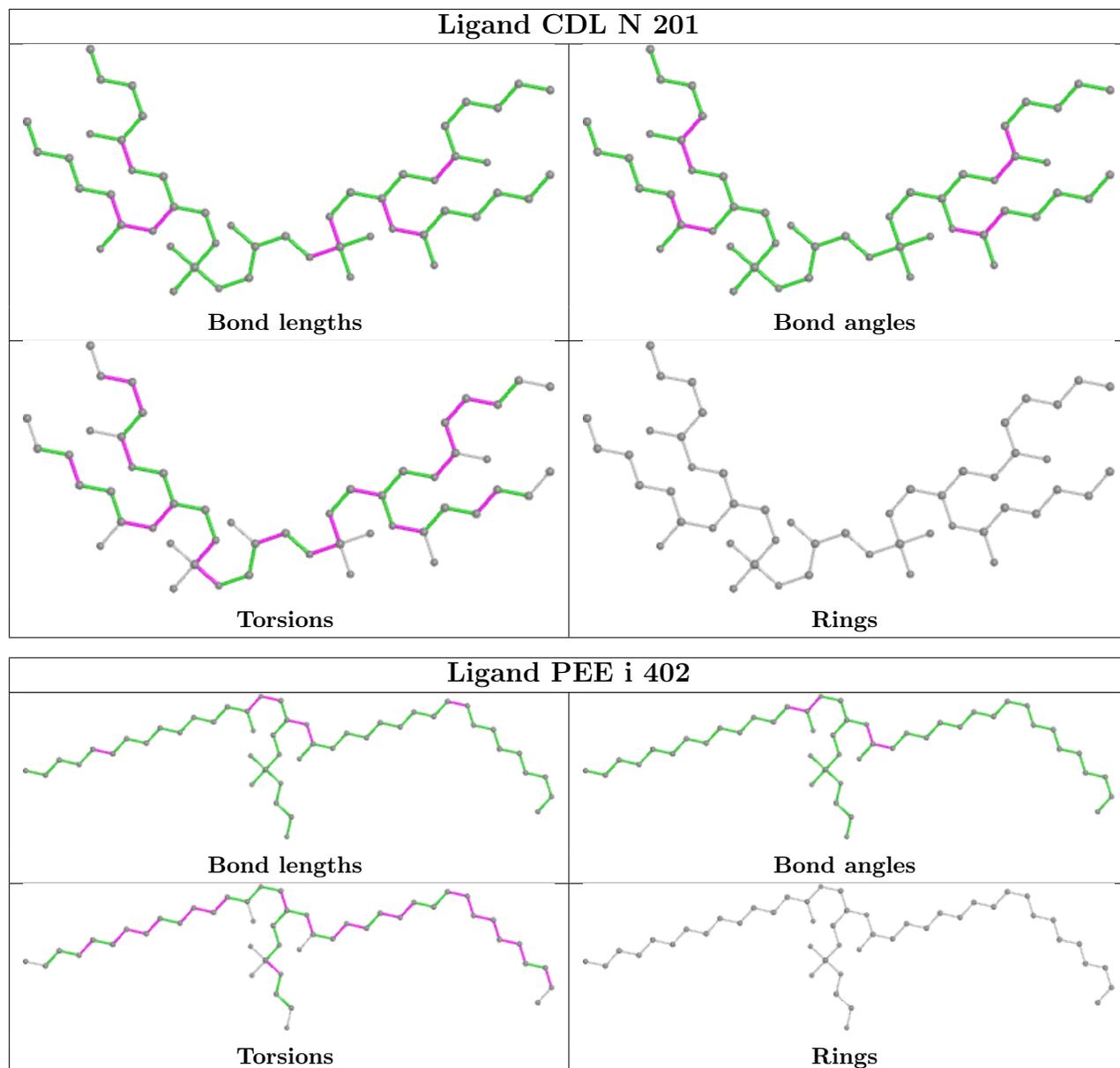
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

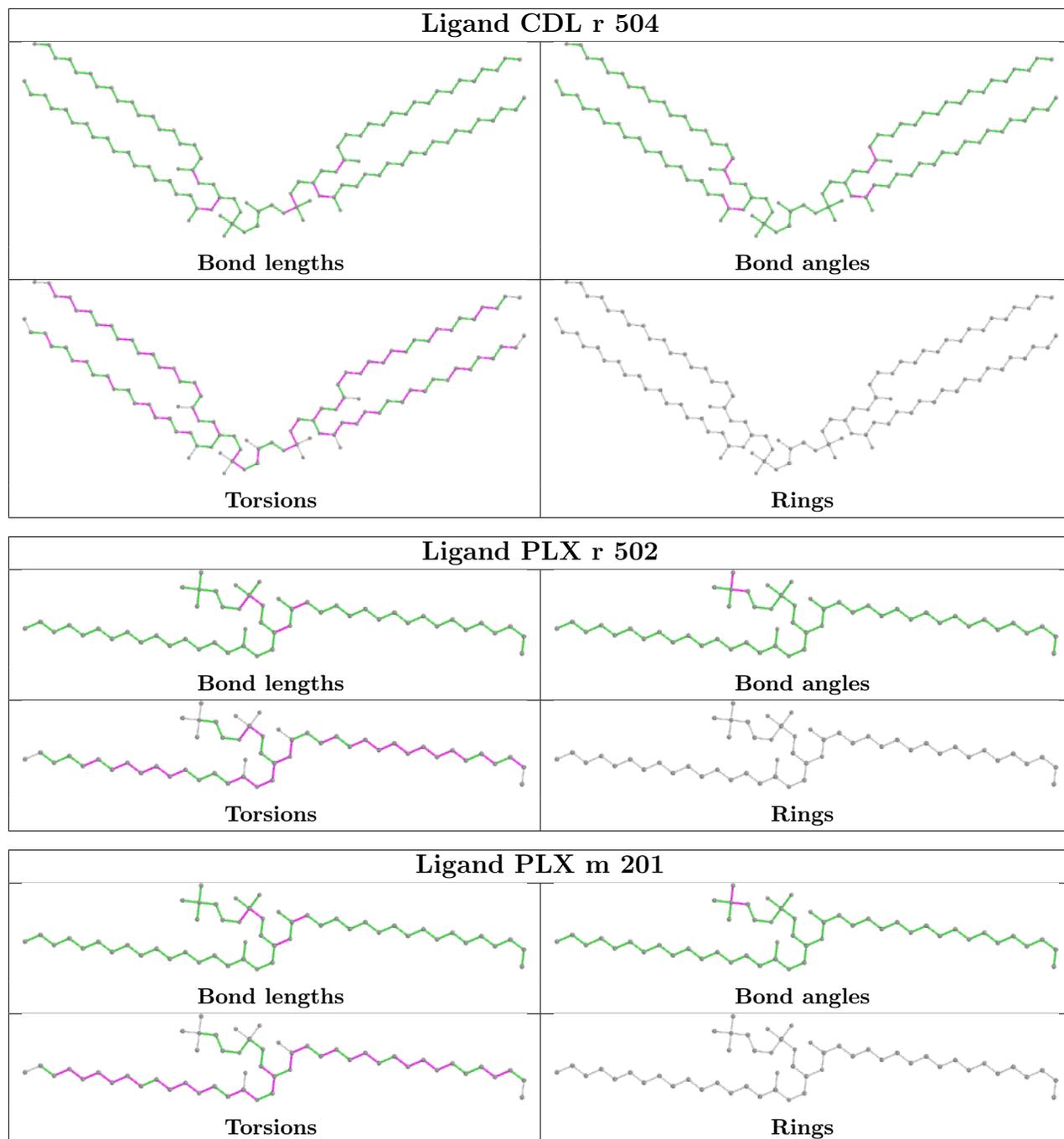


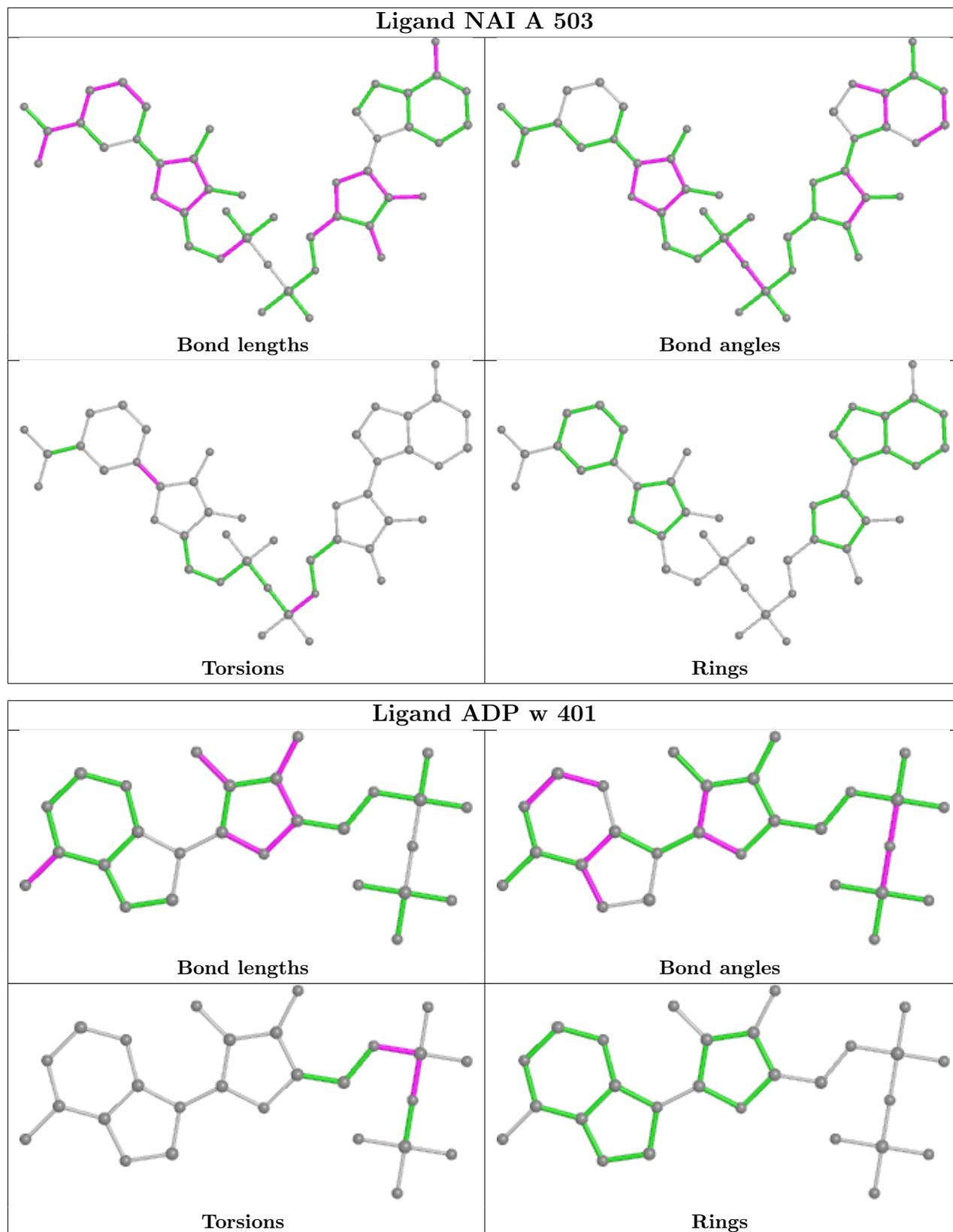


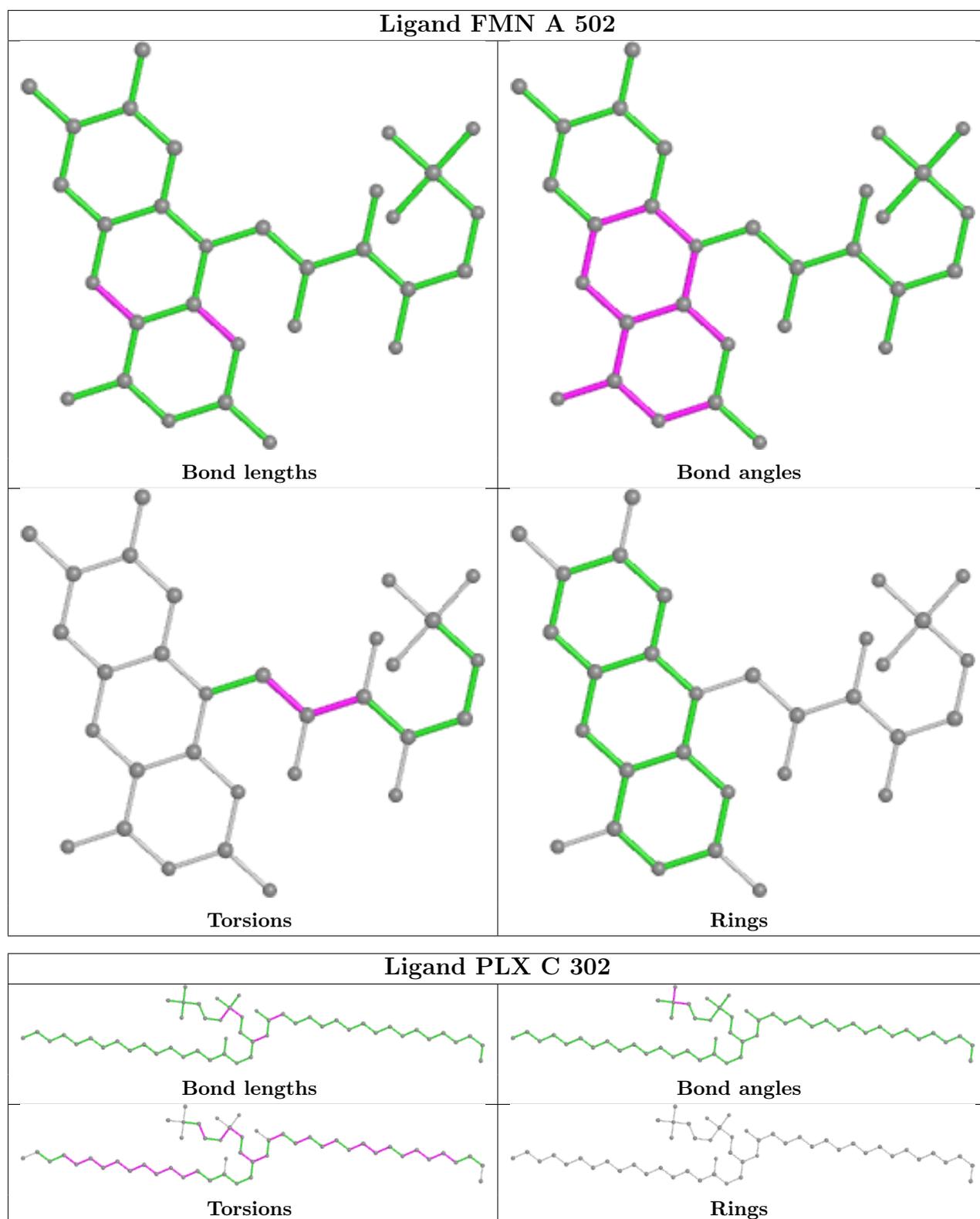


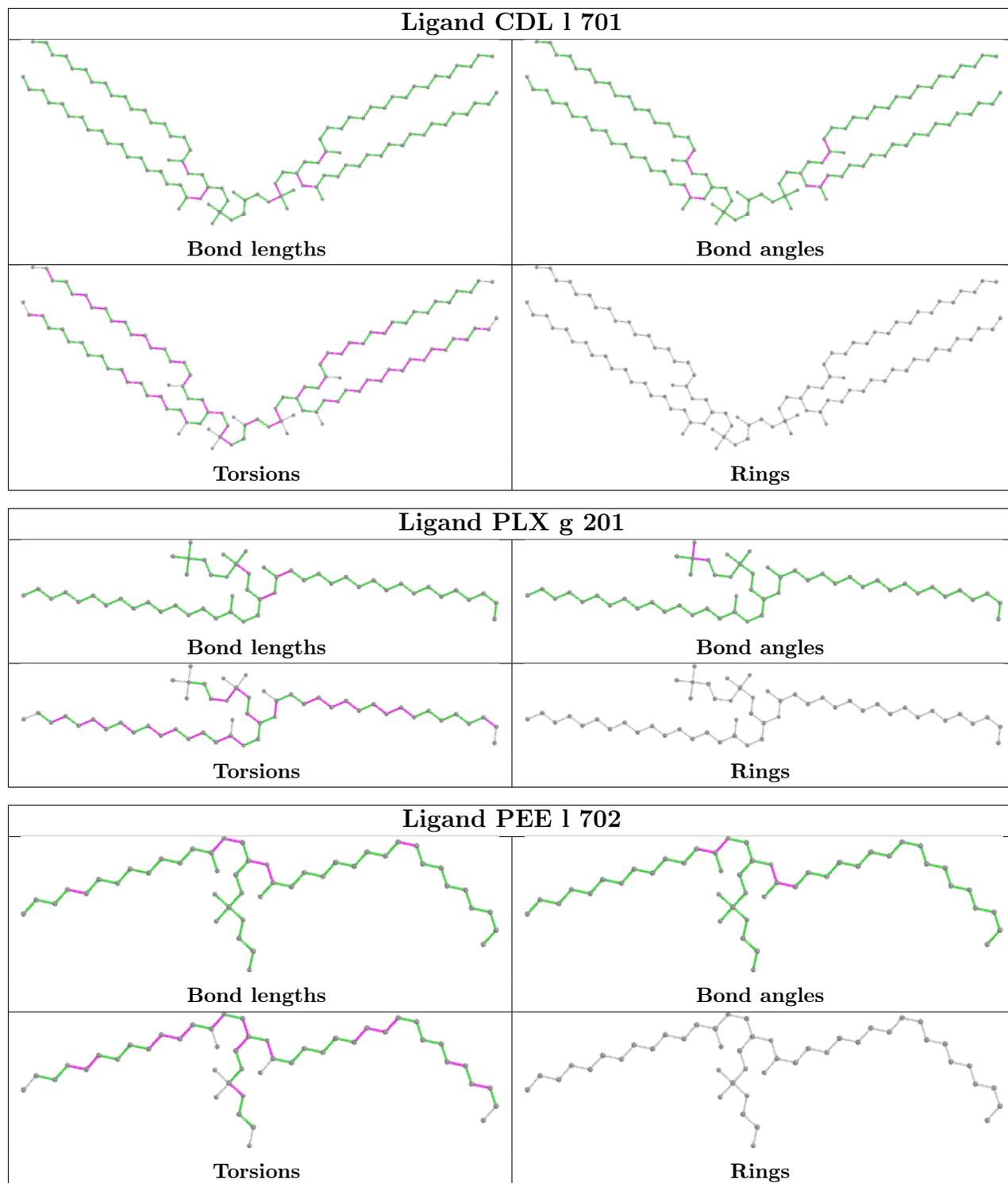


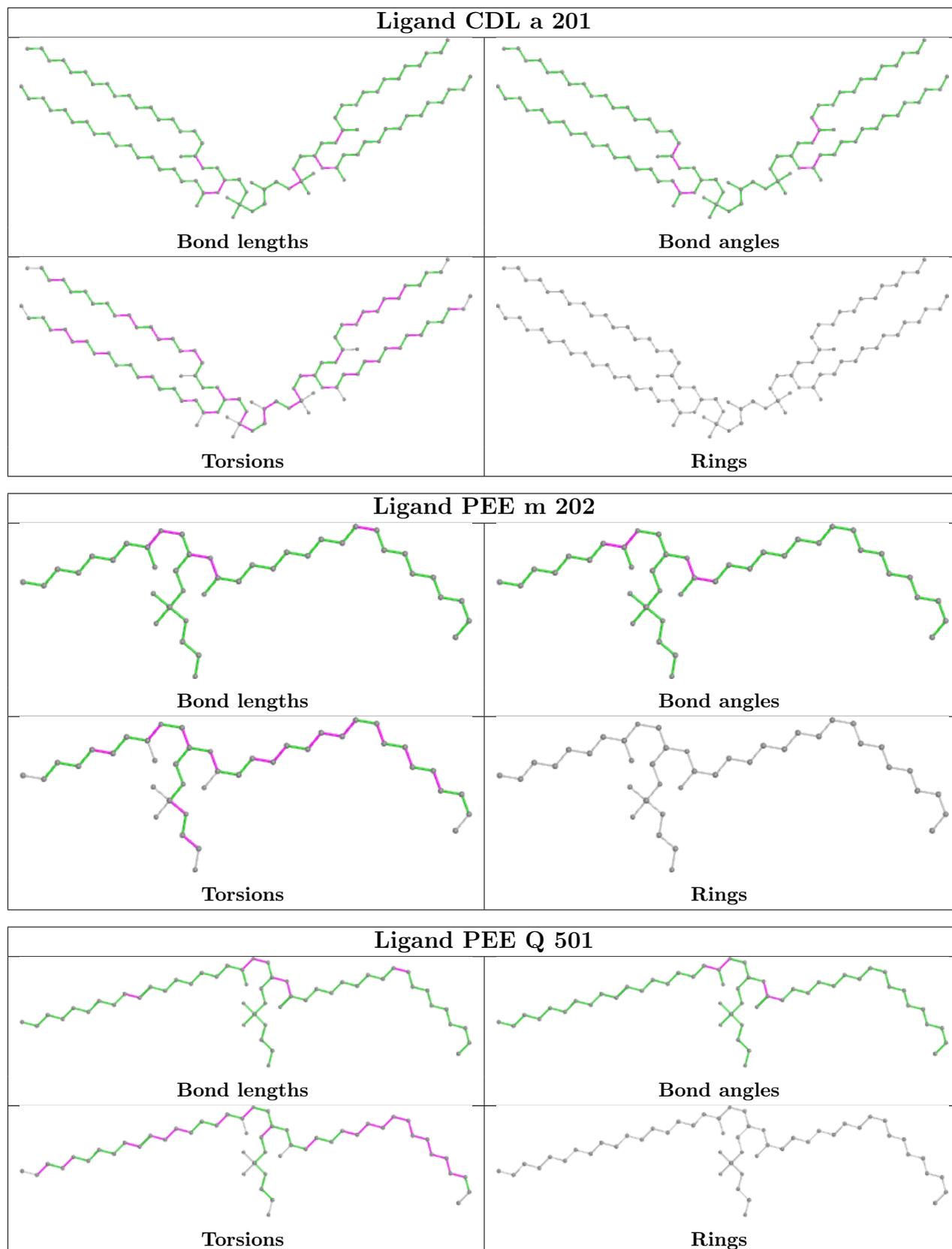


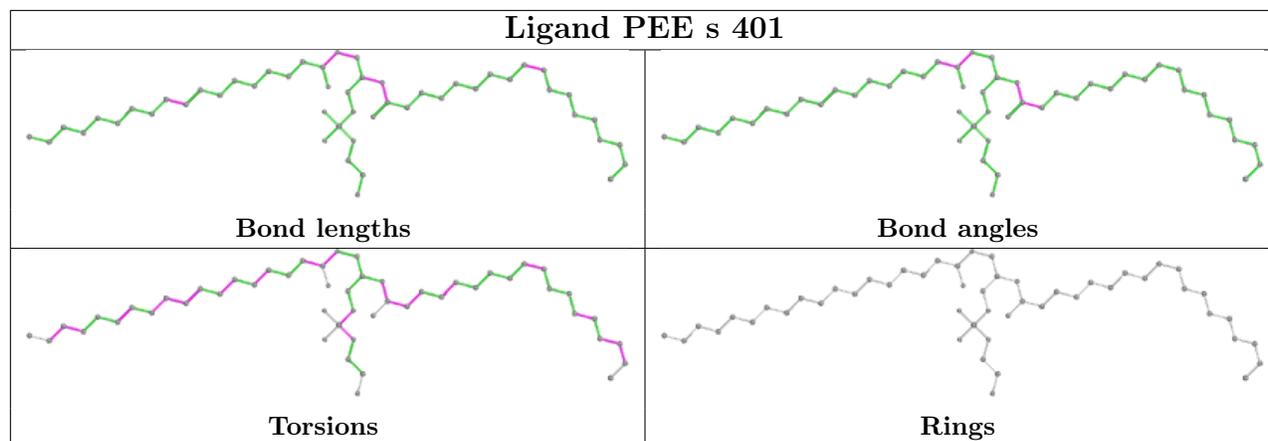












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

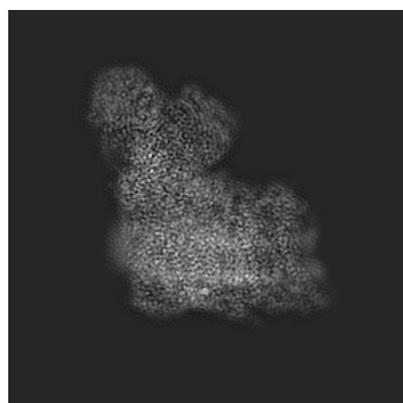
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32270. These allow visual inspection of the internal detail of the map and identification of artifacts.

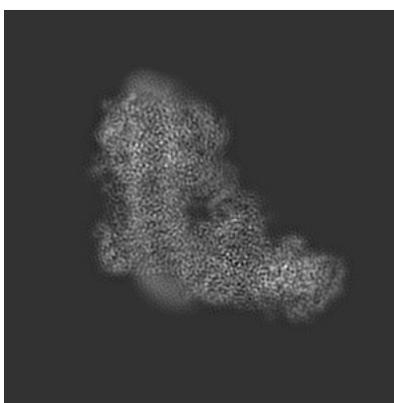
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

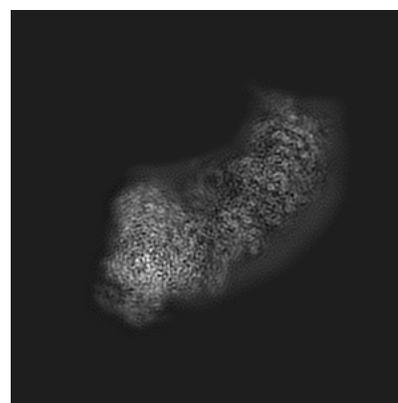
6.1.1 Primary map



X



Y

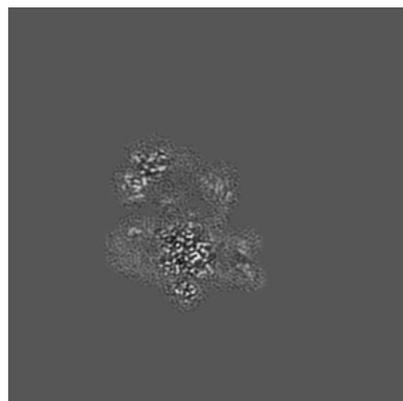


Z

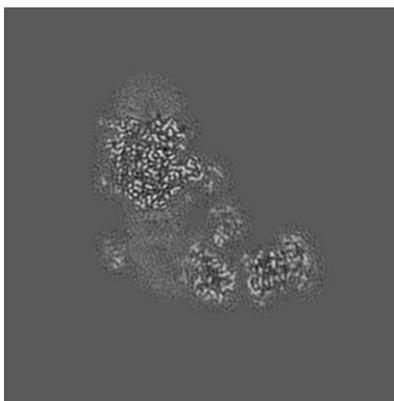
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

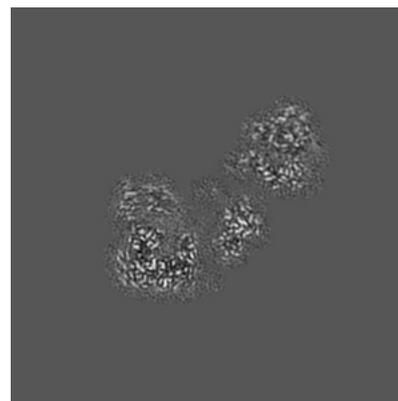
6.2.1 Primary map



X Index: 155



Y Index: 155

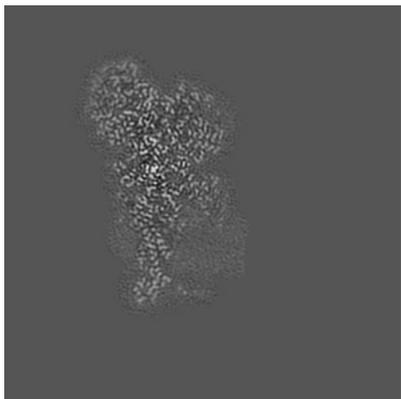


Z Index: 155

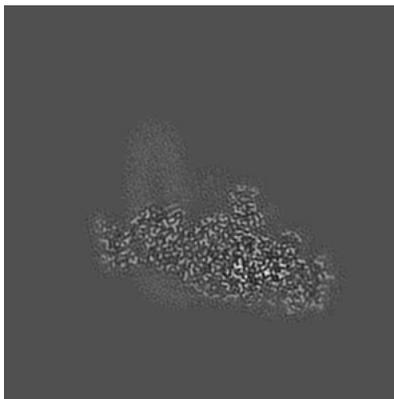
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

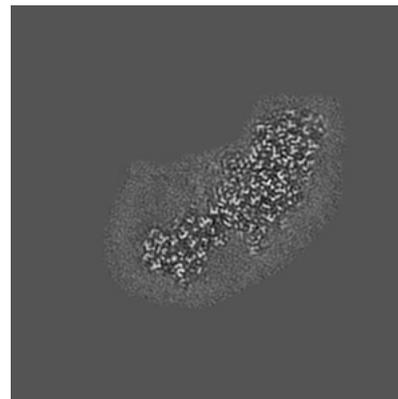
6.3.1 Primary map



X Index: 106



Y Index: 111

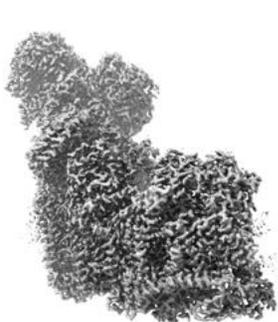


Z Index: 126

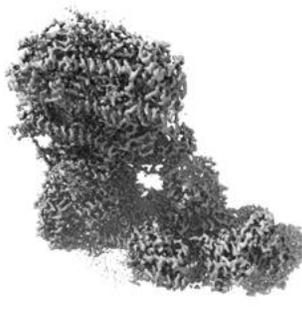
The images above show the largest variance slices of the map in three orthogonal directions.

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 0.0254. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

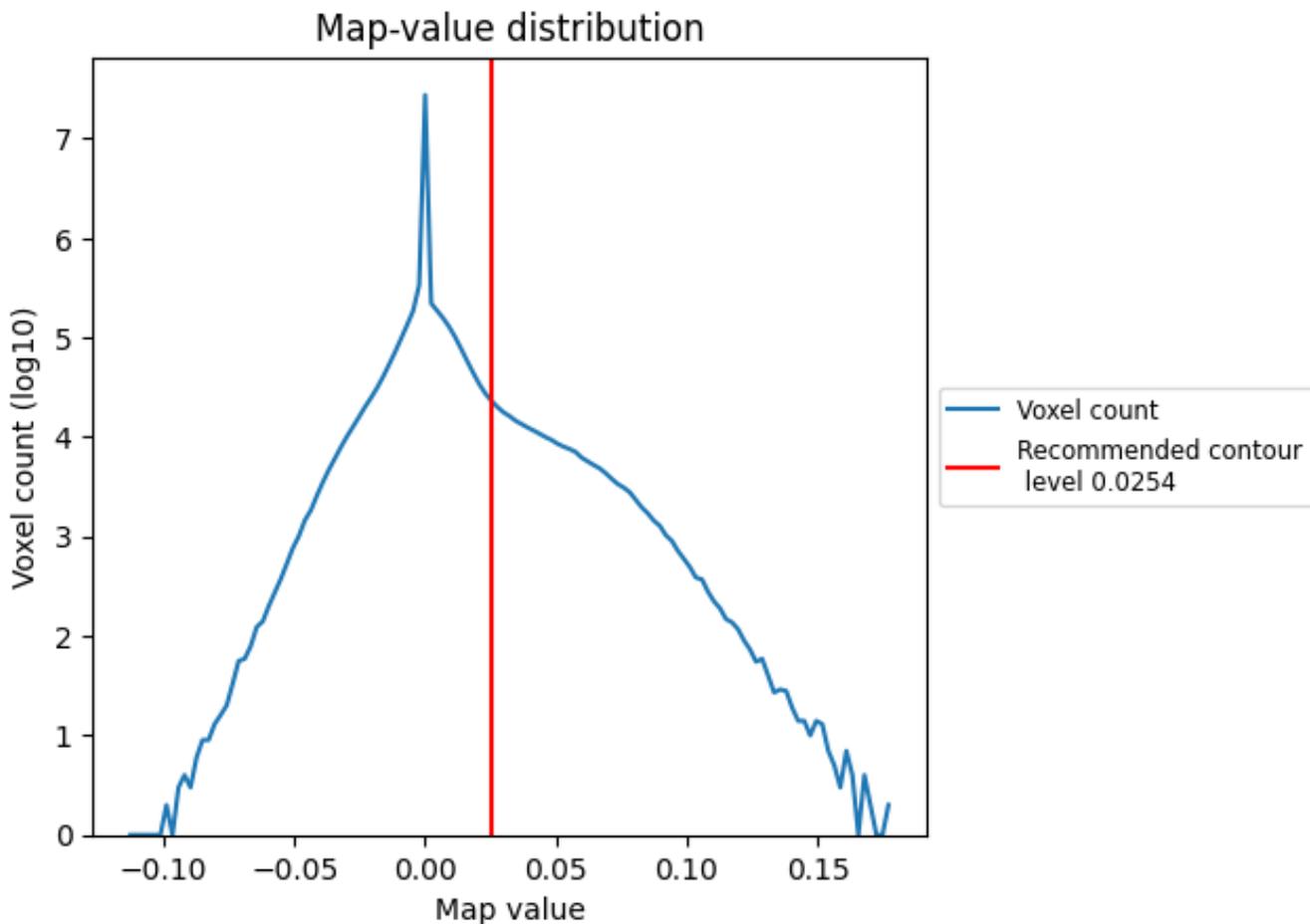
6.5 Mask visualisation

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

7 Map analysis [i](#)

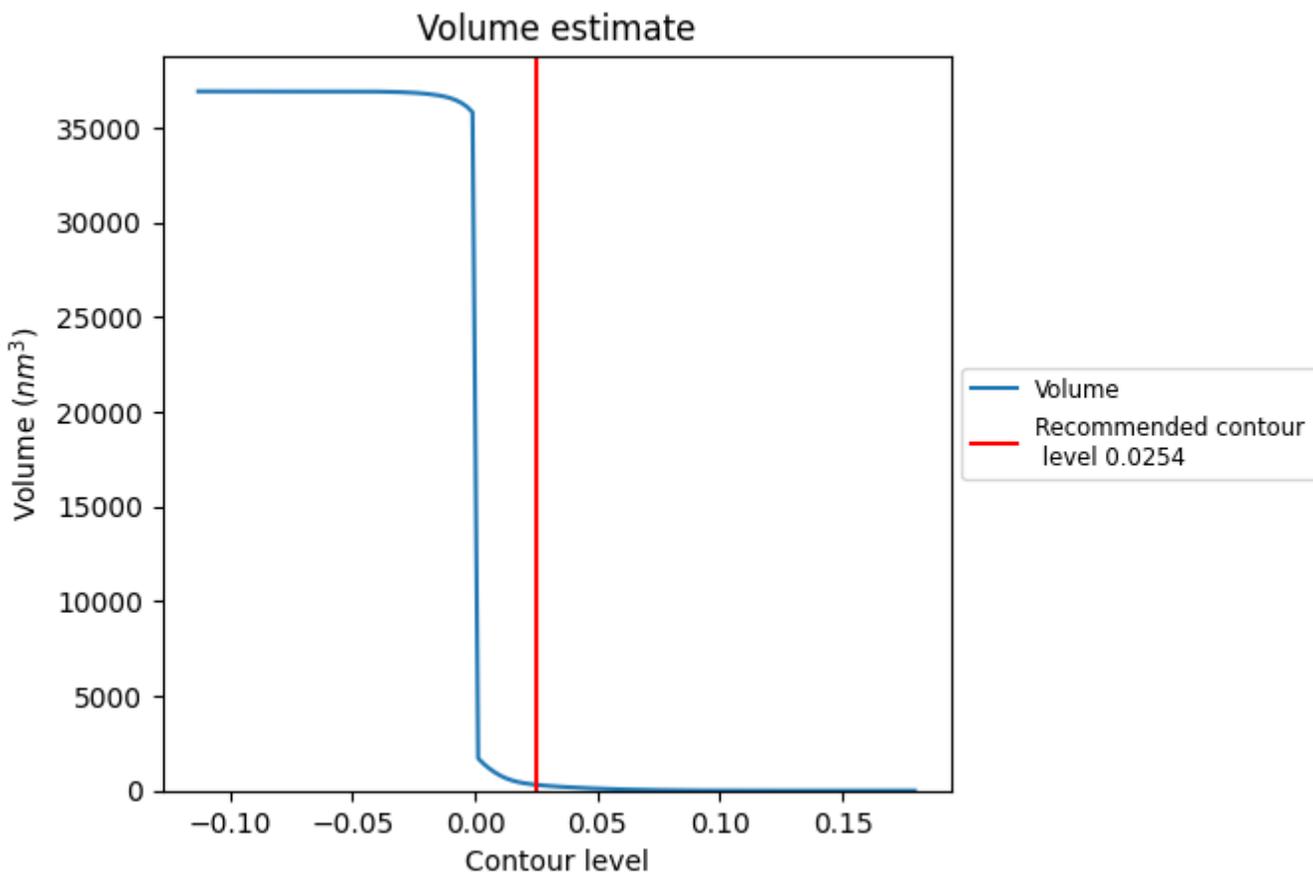
This section contains the results of statistical analysis of the map.

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.

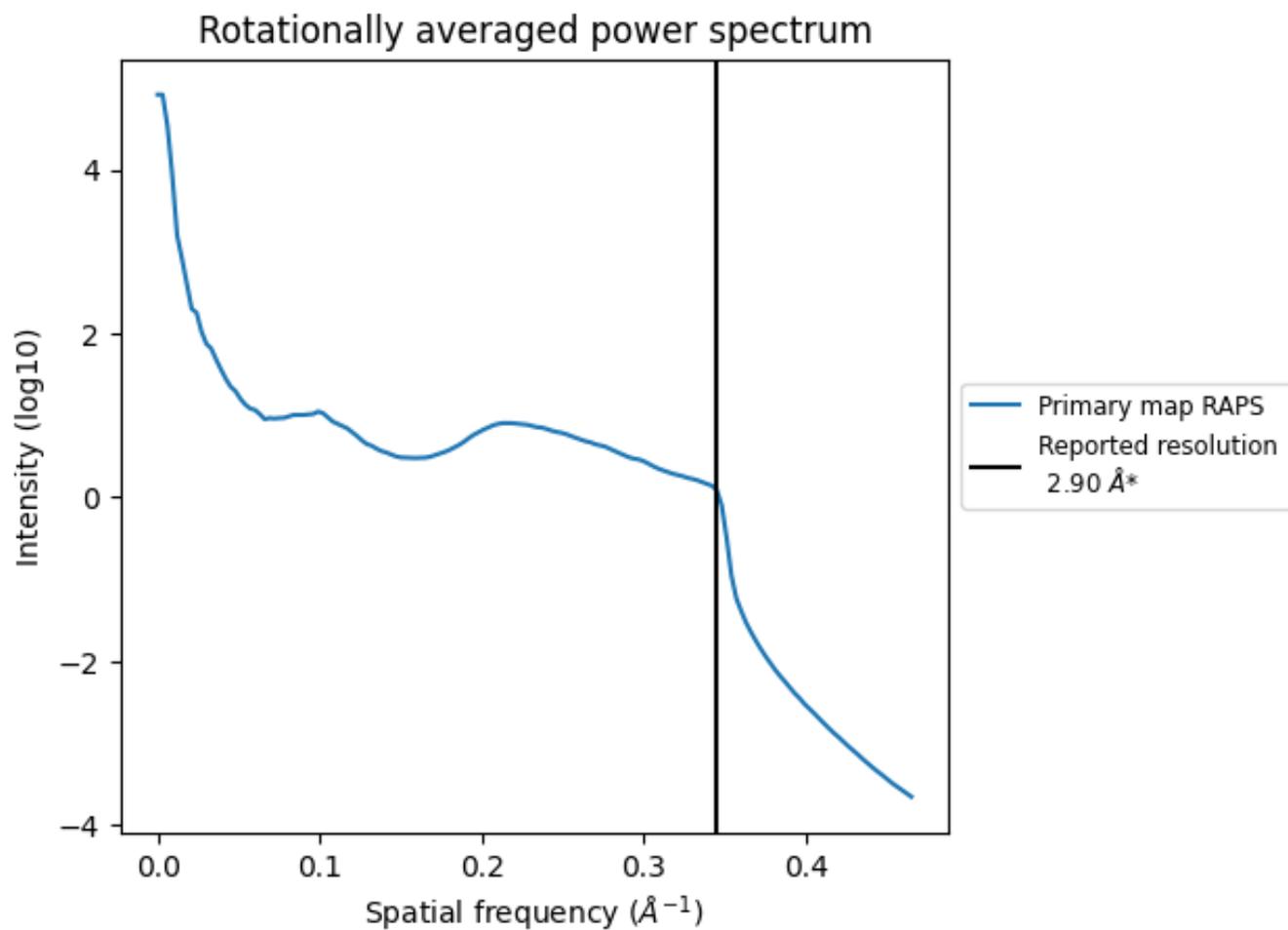
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 303 nm³; this corresponds to an approximate mass of 274 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}

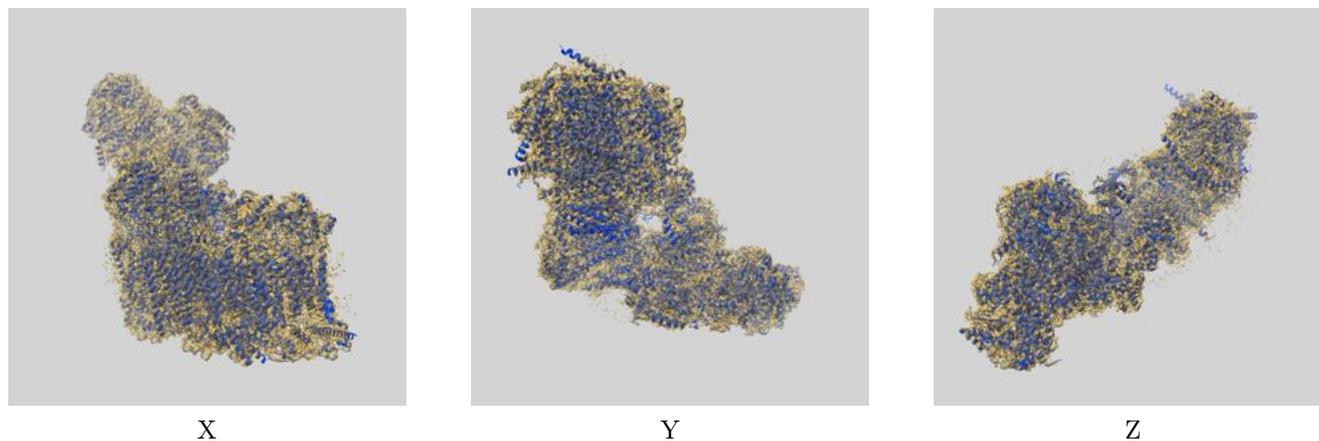
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

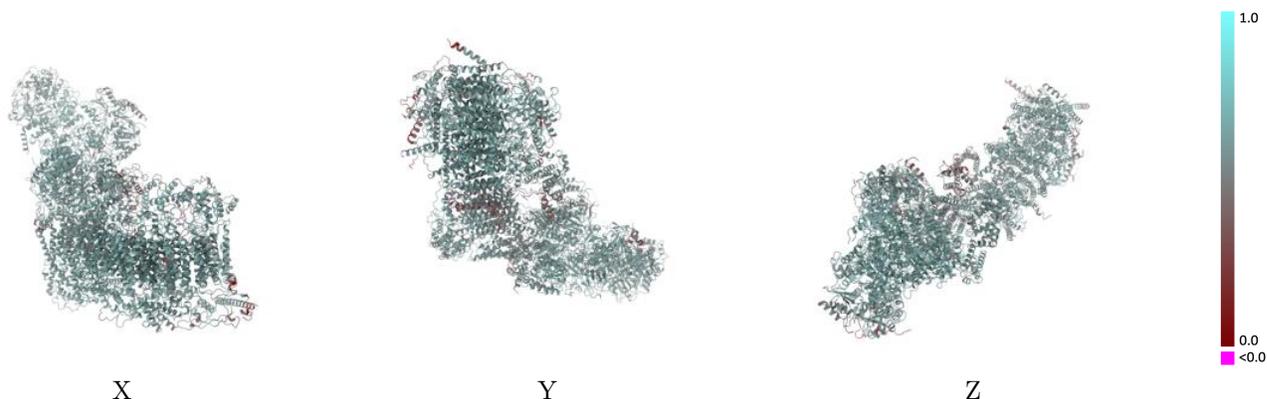
This section contains information regarding the fit between EMDB map EMD-32270 and PDB model 7W32. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



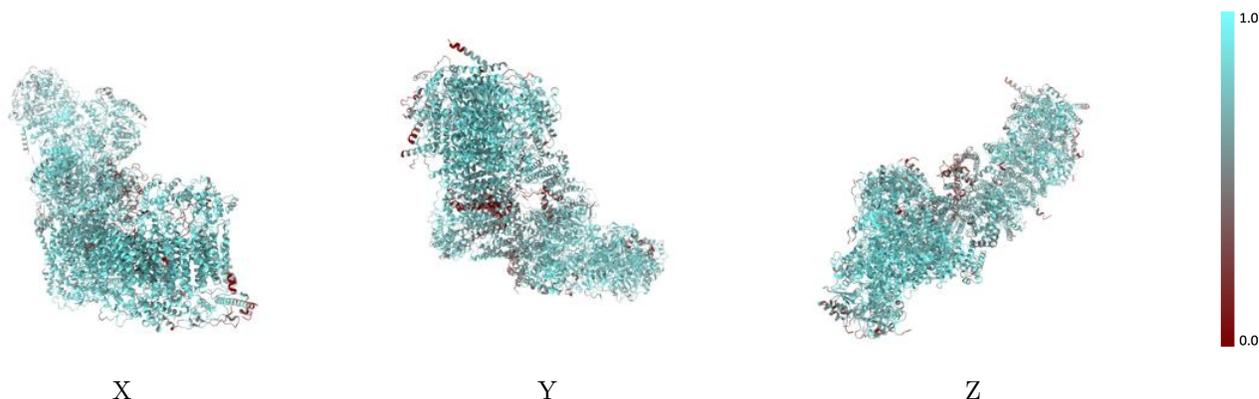
The images above show the 3D surface view of the map at the recommended contour level 0.0254 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



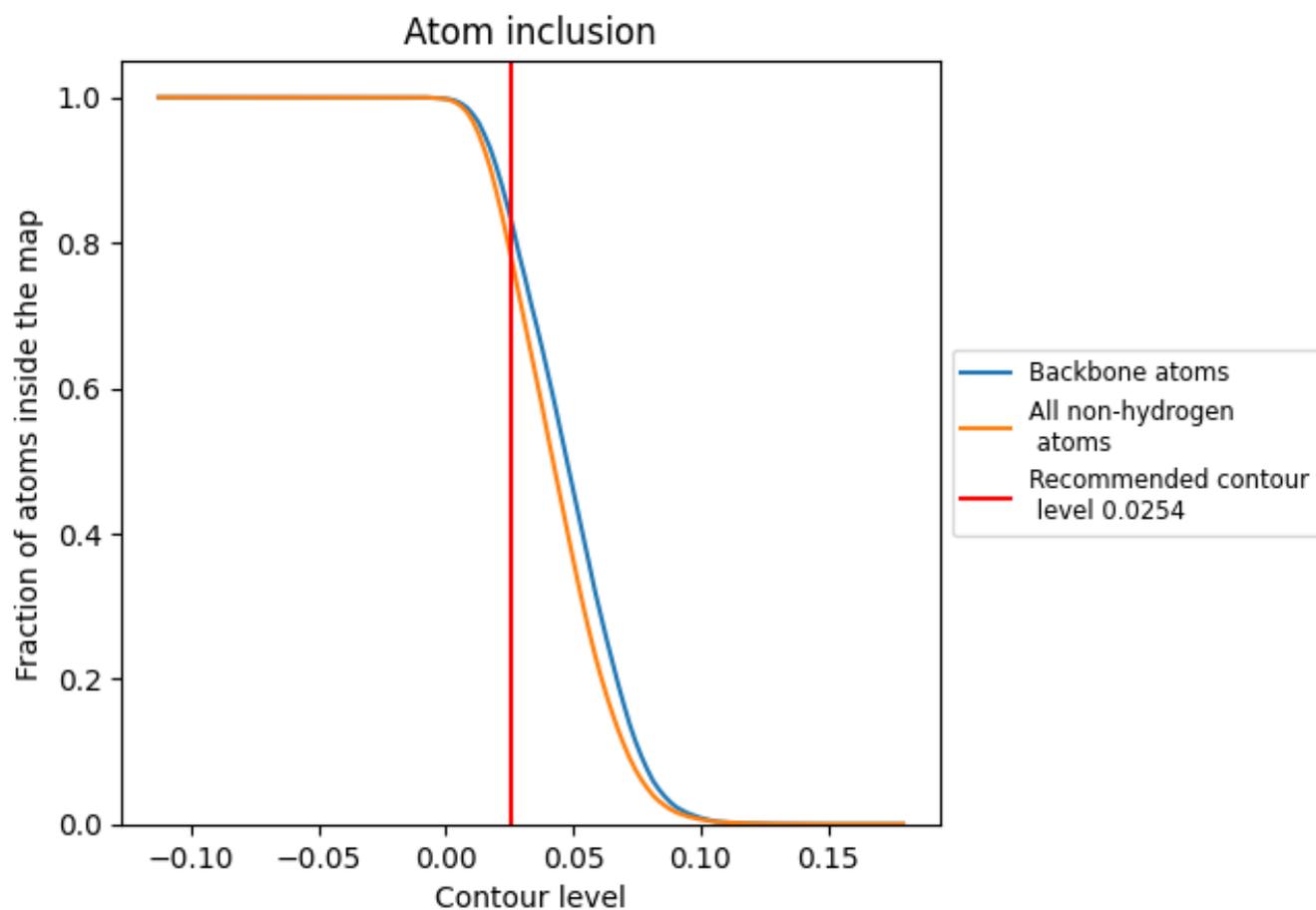
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0254).

9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 78% 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 (0.0254) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7830	 0.5880
A	 0.7740	 0.5810
B	 0.9323	 0.6410
C	 0.8778	 0.6240
E	 0.7569	 0.5870
F	 0.6667	 0.5180
G	 0.4174	 0.4160
H	 0.7497	 0.5690
I	 0.7196	 0.5790
J	 0.7224	 0.5710
K	 0.6541	 0.5470
L	 0.8461	 0.6110
M	 0.8495	 0.6090
N	 0.6850	 0.5850
O	 0.7182	 0.5620
P	 0.9202	 0.6350
Q	 0.8763	 0.6290
S	 0.8571	 0.6090
T	 0.7438	 0.6000
U	 0.7981	 0.5890
V	 0.3964	 0.4500
W	 0.8117	 0.5990
X	 0.7196	 0.5530
Y	 0.6188	 0.5160
Z	 0.5805	 0.4890
a	 0.8119	 0.6060
b	 0.6604	 0.5240
c	 0.7931	 0.5860
d	 0.7557	 0.5820
e	 0.7328	 0.5650
f	 0.6916	 0.5480
g	 0.8296	 0.6060
h	 0.8121	 0.5990
i	 0.8570	 0.6190
j	 0.6970	 0.5560



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Chain	Atom inclusion	Q-score
k	 0.6698	 0.5630
l	 0.8101	 0.6000
m	 0.6540	 0.5580
n	 0.6767	 0.5650
o	 0.7813	 0.5890
p	 0.7779	 0.5840
r	 0.8689	 0.6200
s	 0.8371	 0.6010
u	 0.8228	 0.5970
v	 0.6502	 0.5220
w	 0.7540	 0.5790