Full wwPDB EM Validation Report ⓘ

Jan 25, 2023 – 12:35 PM JST

PDB ID	:	7W4D
EMDB ID	:	EMD-32301
Title	:	Active state CI from Q1-NADH dataset, Subclass 2
Authors	:	Gu, J.K.; Yang, M.J.
Deposited on	:	2021-11-27
Resolution	:	3.00 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:

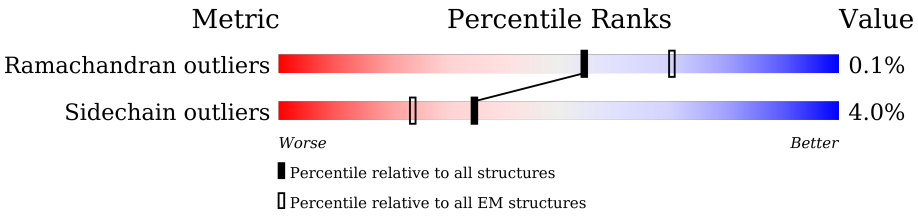
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 3.00 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 <=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	97%
2	B	176	99%
3	C	156	97%
4	E	115	6% 97%
5	F	86	14% 93% 7%
6	G	88	32% 98%
6	X	88	11% 93% 7%
7	H	112	96%
8	I	112	5% 81% 5% 13%

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Mol	Chain	Length	Quality of chain
9	J	342	97%
10	K	43	14% 93% 7%
11	L	125	6% 98%
12	M	690	97%
13	N	144	93% 7%
14	O	217	11% 95% 5%
15	P	208	98%
16	Q	430	97%
17	S	70	93% 7%
18	T	96	98%
19	U	83	10% 96%
20	V	140	96%
21	W	142	6% 96%
22	Y	70	30% 89% 7%
23	Z	84	21% 93% 5%
24	a	140	96%
25	b	126	11% 73% 5% 22%
26	c	156	6% 98%
27	d	175	9% 94% 6%
28	e	107	12% 93% 5%
29	f	49	29% 92% 8%
30	g	122	98%
31	h	105	8% 98%
32	i	347	97%
33	j	115	95% 5%

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Mol	Chain	Length	Quality of chain
34	k	98	98%
35	l	606	97%
36	m	175	15% 97%
37	n	56	23% 98%
38	o	128	6% 95% 5%
39	p	178	95% 5%
40	r	459	96%
41	s	318	95% 5%
42	u	171	95% 5%
43	v	125	25% 97%
44	w	320	7% 98%

2 Entry composition

There are 58 unique types of molecules in this entry. The entry contains 68181 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	433	3330	2103	593	614	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	968	618	179	166	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	683	430	129	122	2	0	0

- Molecule 6 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	88	Total 693	C 447	N 102	O 139	S 5	0	0
6	X	88	Total 703	C 453	N 104	O 141	S 5	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	342	Total 2751	C 1783	N 481	O 478	S 9	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	43	Total 366	C 228	N 68	O 69	S 1	0	0

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	430	Total	C	N	O	S	0	0
			3459	2212	594	629	24		

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

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

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

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

- 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
			1021	651	174	190	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	67	Total	C	N	O	S	0	0
			584	385	95	103	1		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	g	122	Total	C	N	O	S	0	0
			1005	653	174	172	6		

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
35	l	606	Total	C	N	O	S	0	0
			4816	3193	746	826	51		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
36	m	175	Total	C	N	O	S	0	0
			1292	863	188	228	13		

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	u	171	Total	C	N	O	S	0	0
			1395	886	250	249	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	v	124	Total	C	N	O	S	0	0
			1028	642	195	182	9		

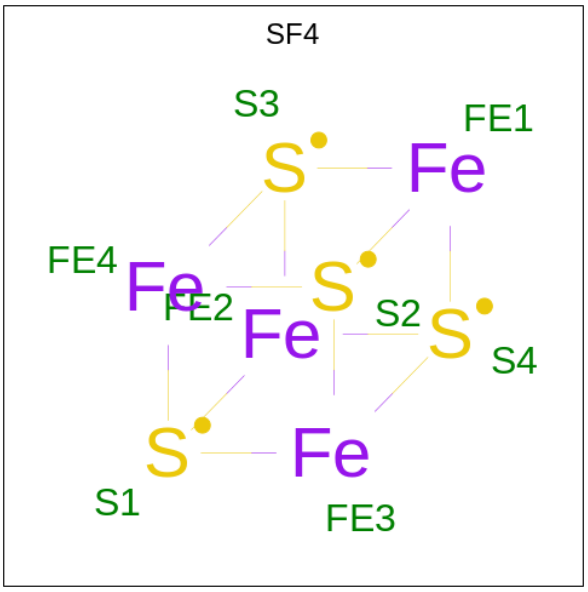
There is a discrepancy between the modelled and reference sequences:

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.

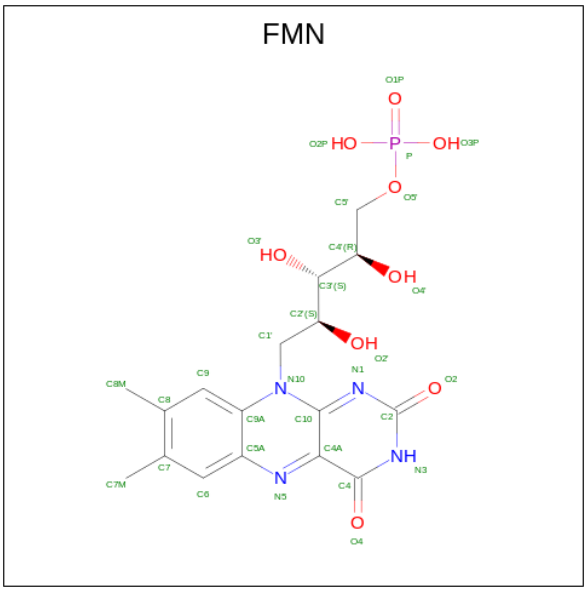
Mol	Chain	Residues	Atoms					AltConf	Trace
44	w	320	Total	C	N	O	S	0	0
			2582	1643	438	491	10		

- Molecule 45 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



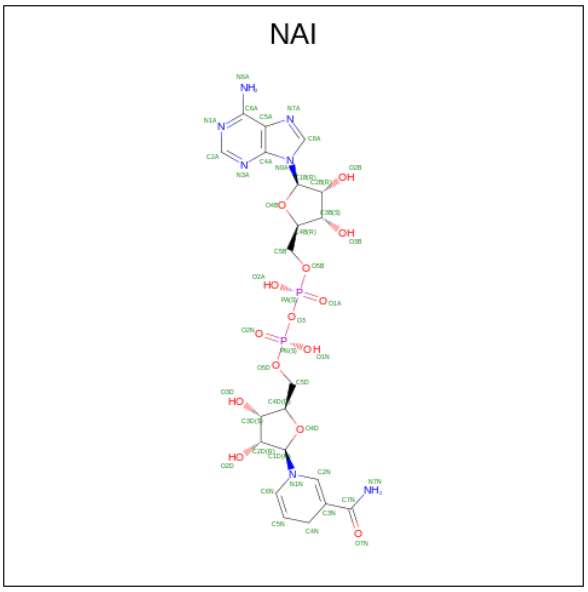
Mol	Chain	Residues	Atoms			AltConf
45	A	1	Total	Fe	S	0
			8	4	4	
45	B	1	Total	Fe	S	0
			16	8	8	
45	B	1	Total	Fe	S	0
			16	8	8	
45	C	1	Total	Fe	S	0
			8	4	4	
45	M	1	Total	Fe	S	0
			16	8	8	
45	M	1	Total	Fe	S	0
			16	8	8	

- Molecule 46 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: $C_{17}H_{21}N_4O_9P$).



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

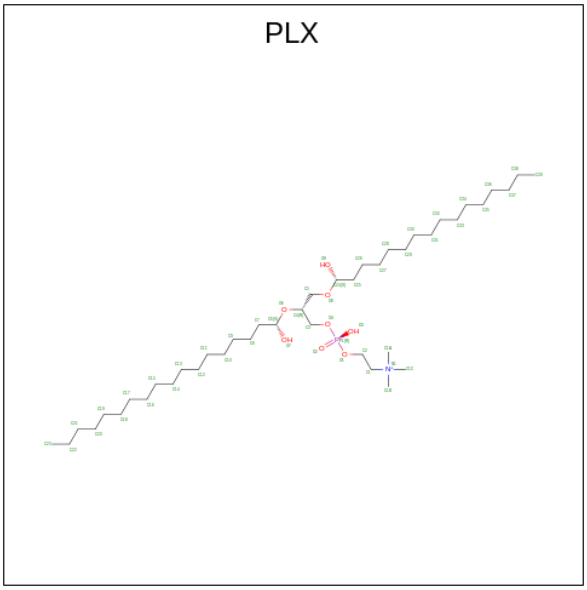
- Molecule 47 is 1,4-DIHYDRONICOTINAMIDE ADENINE DINUCLEOTIDE (three-letter code: NAI) (formula: $C_{21}H_{29}N_7O_{14}P_2$).



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

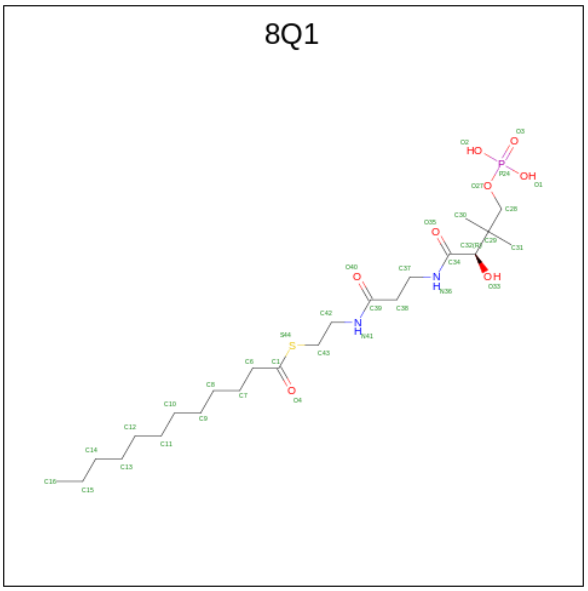
- Molecule 48 is (9R,11S)-9-({[(1S)-1-HYDROXYHEXADECYL]OXY}METHYL)-2,2-DIMETHYL-5,7,10-TRIOXA-2LAMBDA 5 -AZA-6LAMBDA 5 -PHOSPHAOCTACOSANE-6,6,

11-TRIOL (three-letter code: PLX) (formula: $C_{42}H_{89}NO_8P$).



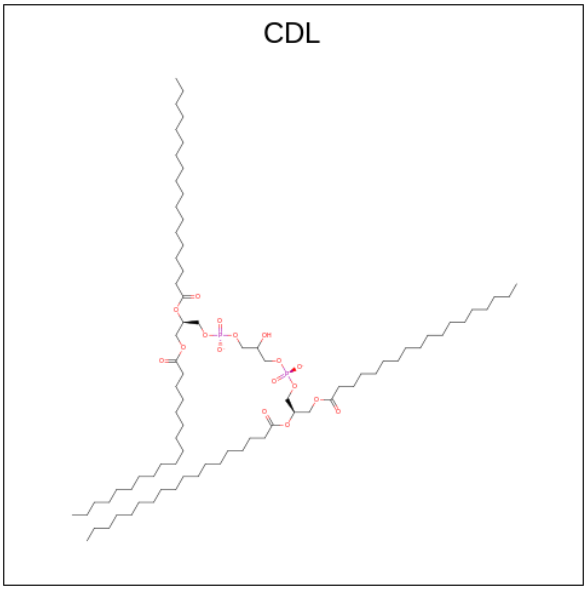
Mol	Chain	Residues	Atoms					AltConf
48	C	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	a	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	g	1	Total	C	N	O	P	0
			52	42	1	8	1	
48	j	1	Total	C	N	O	P	0
			104	84	2	16	2	
48	j	1	Total	C	N	O	P	0
			104	84	2	16	2	
48	r	1	Total	C	N	O	P	0
			104	84	2	16	2	
48	r	1	Total	C	N	O	P	0
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

- Molecule 49 is S-[2-({N-[(2R)-2-hydroxy-3,3-dimethyl-4-(phosphonooxy)butanoyl]-beta-alanyl}amino)ethyl] dodecanethioate (three-letter code: 8Q1) (formula: $C_{23}H_{45}N_2O_8PS$).



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

- Molecule 50 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$).



Mol	Chain	Residues	Atoms				AltConf
50	I	1	Total	C	O	P	0
			51	32	17	2	
50	V	1	Total	C	O	P	0
			194	156	34	4	

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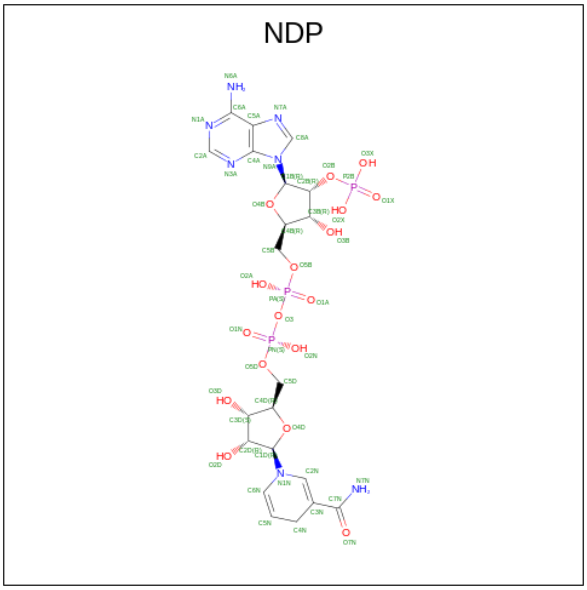
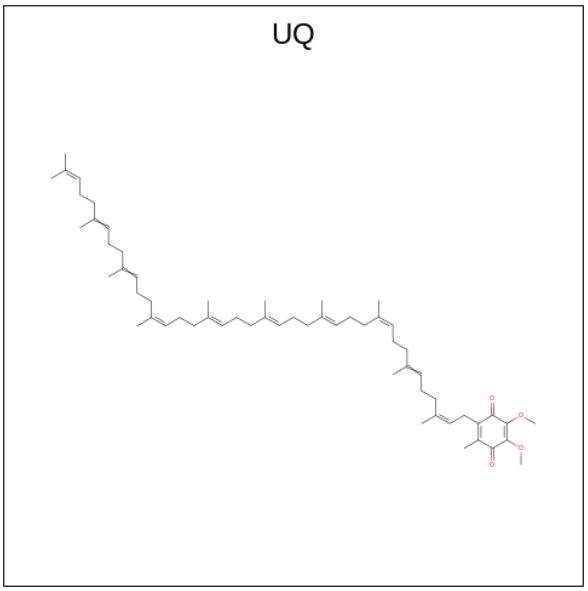
Mol	Chain	Residues	Atoms				AltConf
50	V	1	Total 194	C 156	O 34	P 4	0
50	b	1	Total 100	C 81	O 17	P 2	0
50	k	1	Total 94	C 75	O 17	P 2	0
50	l	1	Total 199	C 161	O 34	P 4	0
50	l	1	Total 199	C 161	O 34	P 4	0
50	n	1	Total 55	C 36	O 17	P 2	0
50	r	1	Total 100	C 81	O 17	P 2	0
50	s	1	Total 89	C 70	O 17	P 2	0

- Molecule 51 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$).



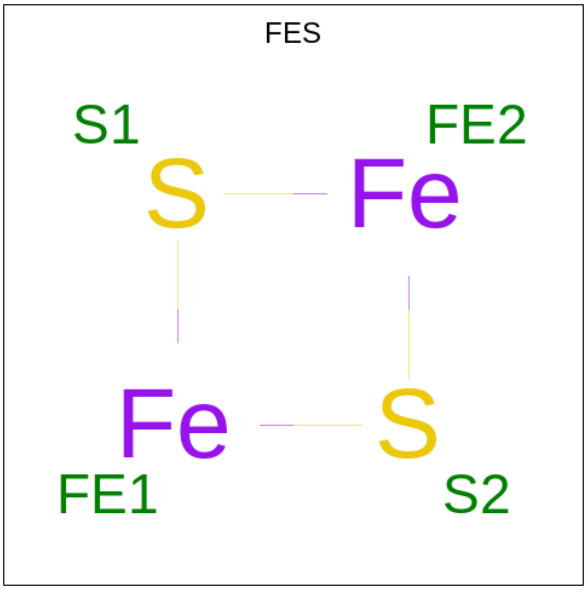
Mol	Chain	Residues	Atoms					AltConf
51	J	1	Total 48	C 21	N 7	O 17	P 3	0

- Molecule 52 is Coenzyme Q10, (2Z,6E,10Z,14E,18E,22E,26Z)-isomer (three-letter code: UQ) (formula: $C_{59}H_{90}O_4$).



Mol	Chain	Residues	Atoms	AltConf
52	J	1	Total C O 33 29 4	0
52	s	1	Total C O 38 34 4	0

- Molecule 53 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).

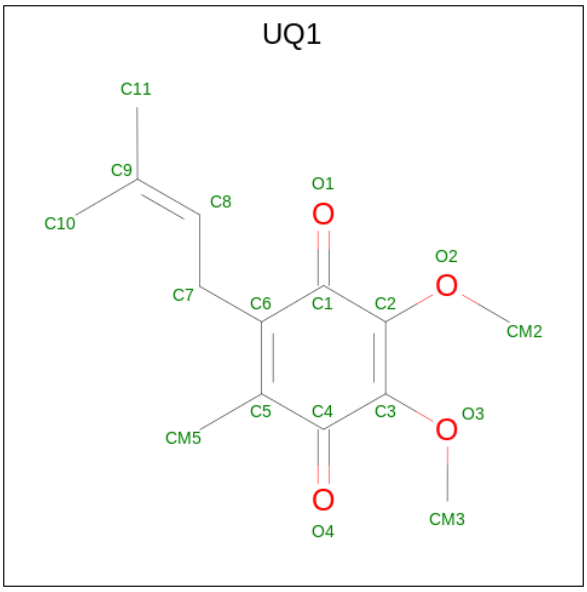


Mol	Chain	Residues	Atoms	AltConf
53	M	1	Total Fe S 4 2 2	0
53	O	1	Total Fe S 4 2 2	0

- Molecule 54 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

- Molecule 55 is UBIQUINONE-1 (three-letter code: UQ1) (formula: $C_{14}H_{18}O_4$).

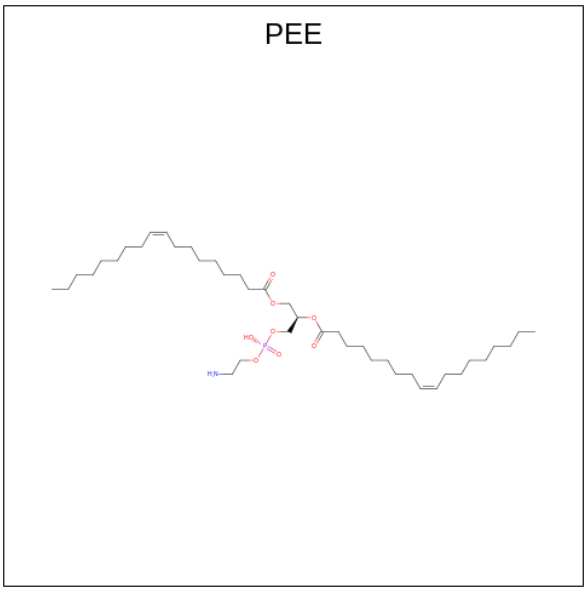


Mol	Chain	Residues	Atoms	AltConf
55	Q	1	Total C O 18 14 4	0

- Molecule 56 is ZINC ION (three-letter code: ZN) (formula: Zn).

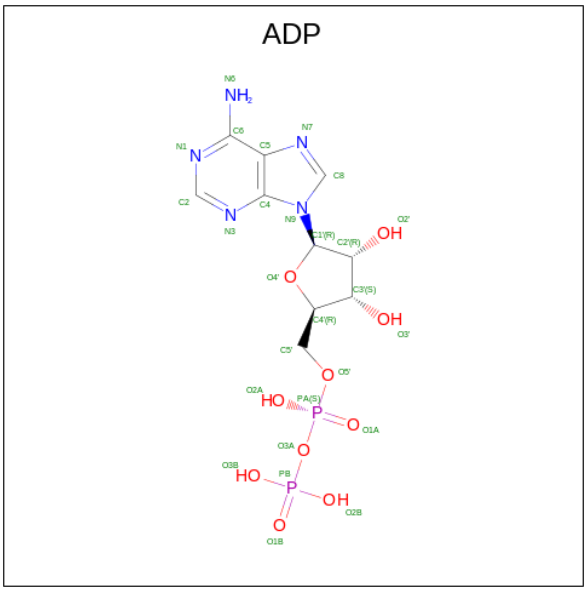
Mol	Chain	Residues	Atoms	AltConf
56	T	1	Total Zn 1 1	0

- Molecule 57 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: $C_{41}H_{78}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
57	W	1	Total	C	N	O	P	0
			41	31	1	8	1	
57	i	1	Total	C	N	O	P	0
			47	37	1	8	1	
57	j	1	Total	C	N	O	P	0
			139	109	3	24	3	
57	j	1	Total	C	N	O	P	0
			139	109	3	24	3	
57	j	1	Total	C	N	O	P	0
			139	109	3	24	3	
57	l	1	Total	C	N	O	P	0
			137	107	3	24	3	
57	l	1	Total	C	N	O	P	0
			137	107	3	24	3	
57	l	1	Total	C	N	O	P	0
			137	107	3	24	3	
57	r	1	Total	C	N	O	P	0
			51	41	1	8	1	

- Molecule 58 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



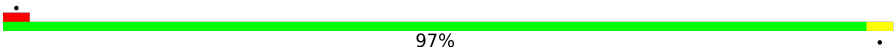
Mol	Chain	Residues	Atoms					AltConf
58	w	1	Total	C	N	O	P	0
			27	10	5	10	2	

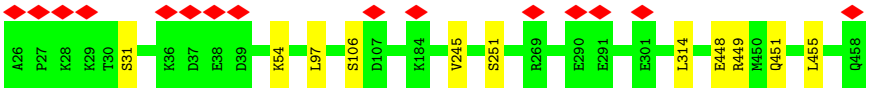
3 Residue-property plots (i)

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

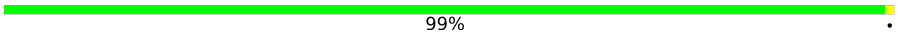
Chain A:

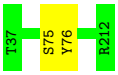




• Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial

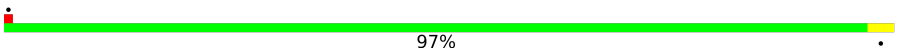
Chain B:

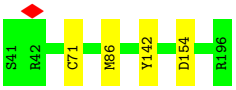




• Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

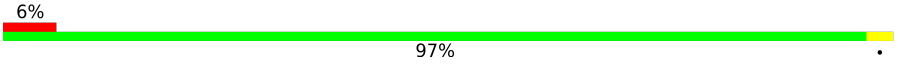
Chain C:

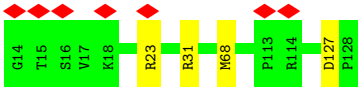




• Molecule 4: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6

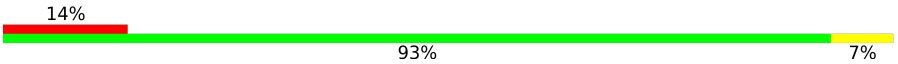
Chain E:

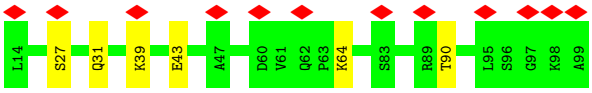




• Molecule 5: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2

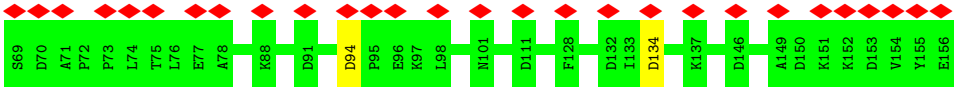
Chain F:





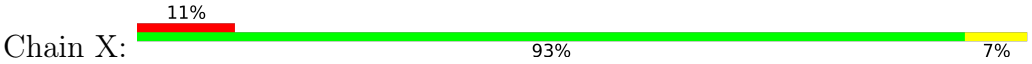
• Molecule 6: Acyl carrier protein

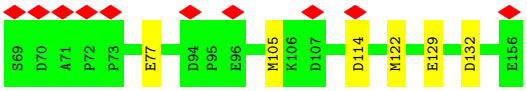
Chain G:



• Molecule 6: Acyl carrier protein

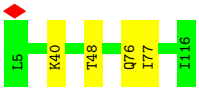
Chain X:





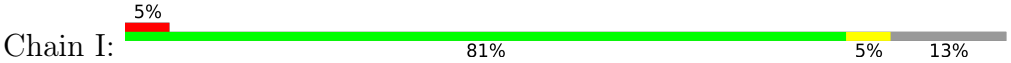
• Molecule 7: Complex I subunit B13

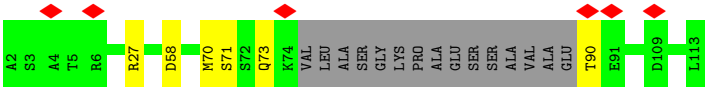
Chain H:



• Molecule 8: Complex I-B14.5a

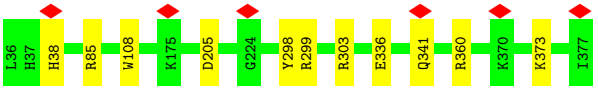
Chain I:





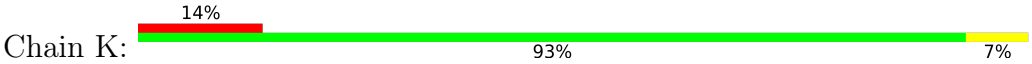
• Molecule 9: NADH dehydrogenase ubiquinone 1 alpha subcomplex subunit 9, mitochondrial

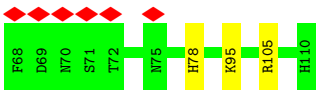
Chain J:



• Molecule 10: Complex I-9kD

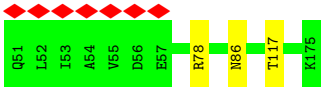
Chain K:





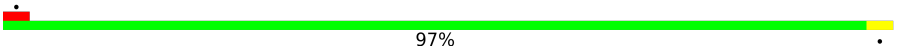
• Molecule 11: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial

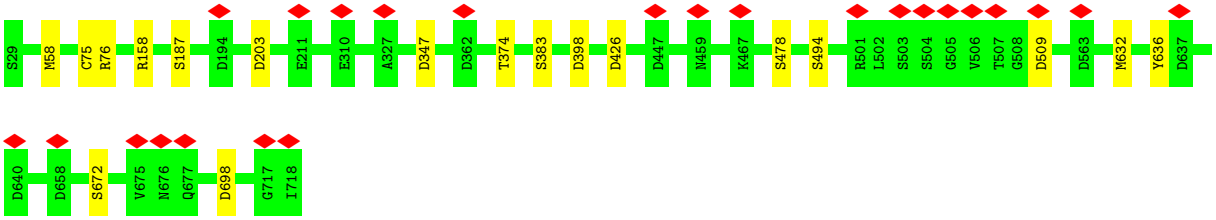
Chain L:



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

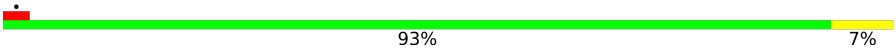
Chain M:

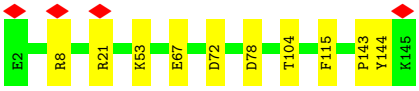




• Molecule 13: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12

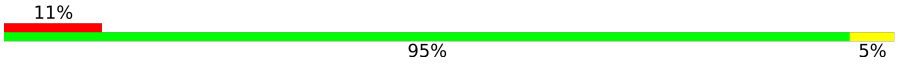
Chain N:

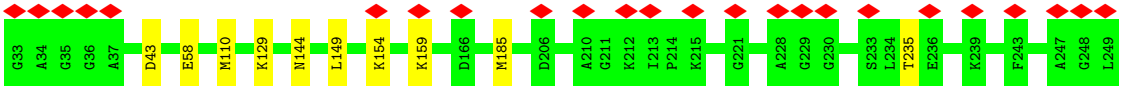




• Molecule 14: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

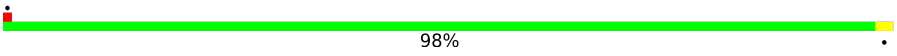
Chain O:

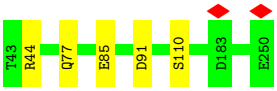




• Molecule 15: Complex I-30kD

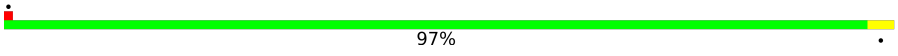
Chain P:

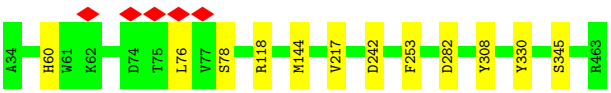




• Molecule 16: Complex I-49kD

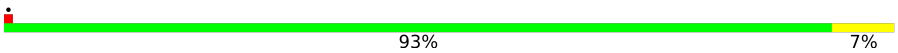
Chain Q:

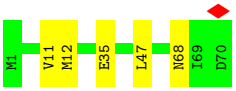




• Molecule 17: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1

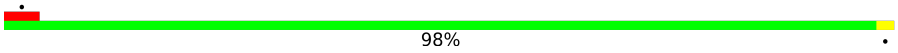
Chain S:

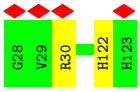




• Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial

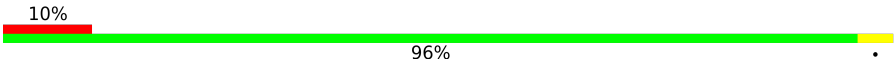
Chain T:

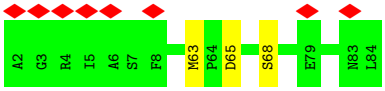




• Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

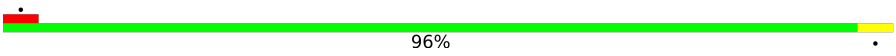
Chain U:

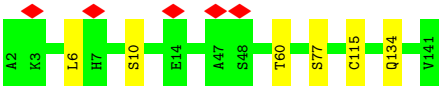




• Molecule 20: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

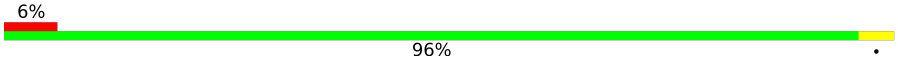
Chain V:

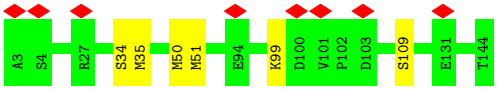




• Molecule 21: Complex I-B16.6

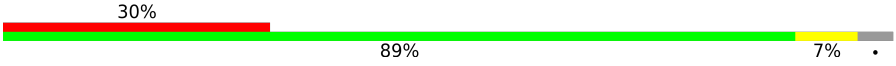
Chain W:

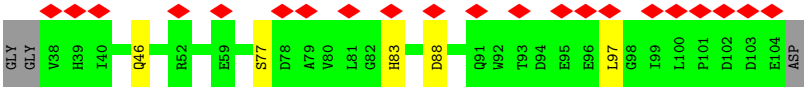




• Molecule 22: Complex I-AGGG

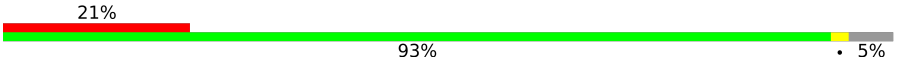
Chain Y:

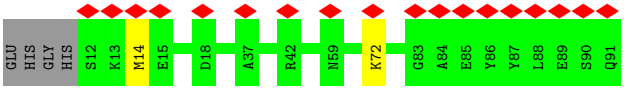




• Molecule 23: Complex I-B12

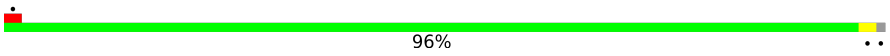
Chain Z:

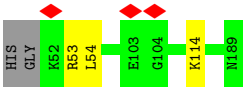




• Molecule 24: Complex I-SGDH

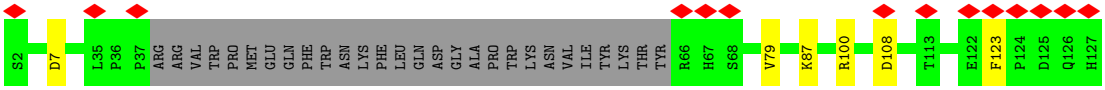
Chain a:





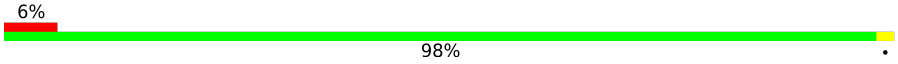
• Molecule 25: Complex I-B17

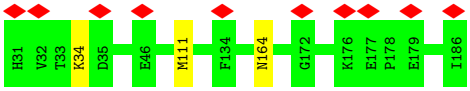
Chain b:



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

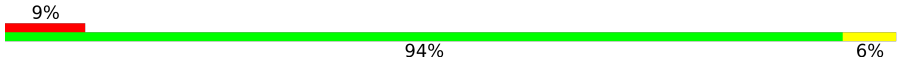
Chain c:

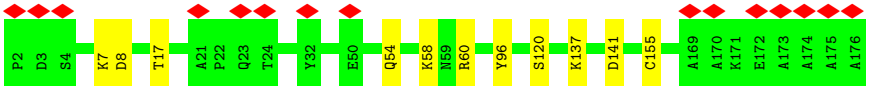




• Molecule 27: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10

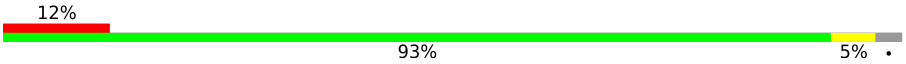
Chain d:

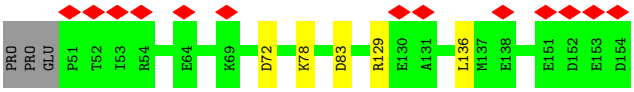




• Molecule 28: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial

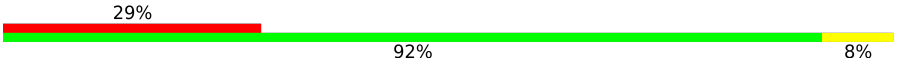
Chain e:

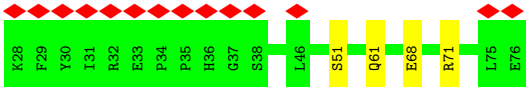




• Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial

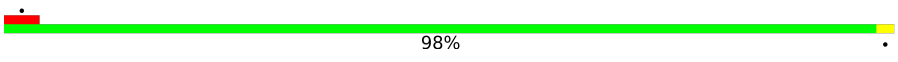
Chain f:

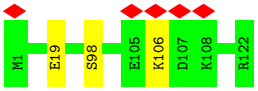




• Molecule 30: NADH dehydrogenase [ubiquinone] 1 subunit C2

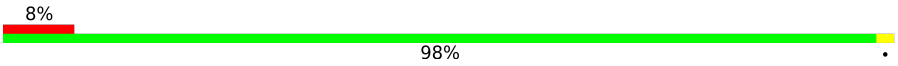
Chain g:

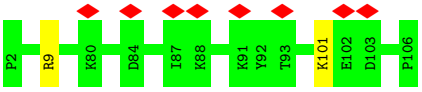




• Molecule 31: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5

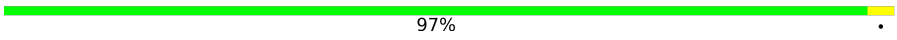
Chain h:





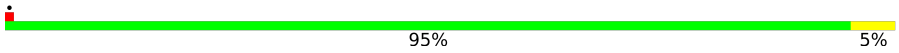
• Molecule 32: NADH-ubiquinone oxidoreductase chain 2

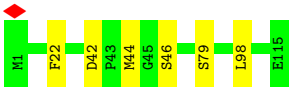
Chain i:



• Molecule 33: NADH-ubiquinone oxidoreductase chain 3

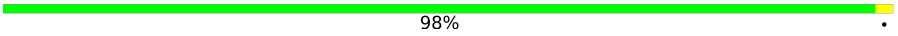
Chain j:





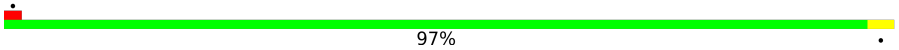
• Molecule 34: NADH-ubiquinone oxidoreductase chain 4L

Chain k:



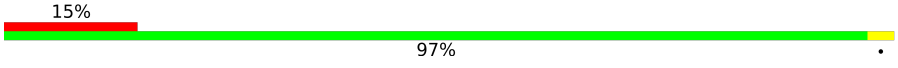
• Molecule 35: NADH-ubiquinone oxidoreductase chain 5

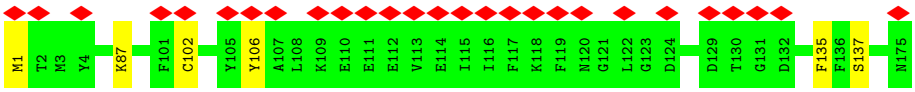
Chain l:



• Molecule 36: NADH-ubiquinone oxidoreductase chain 6

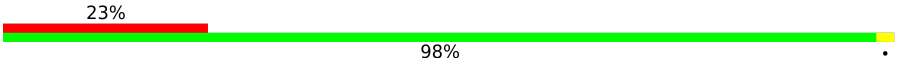
Chain m:

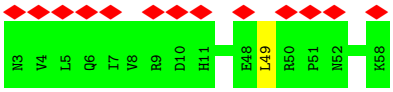




• Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1

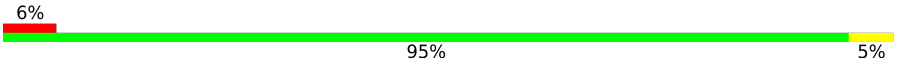
Chain n:

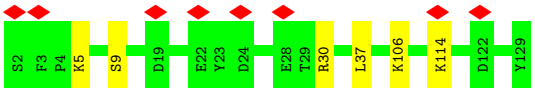




• Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4

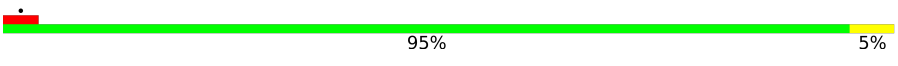
Chain o:





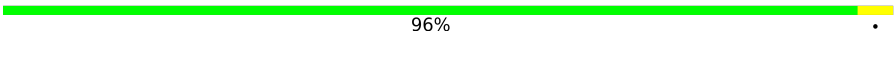
• Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9

Chain p:



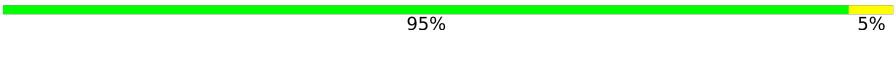
• Molecule 40: NADH-ubiquinone oxidoreductase chain 4

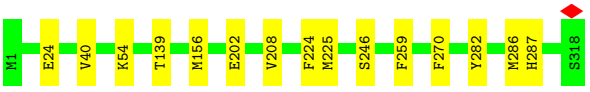
Chain r:



• Molecule 41: NADH-ubiquinone oxidoreductase chain 1

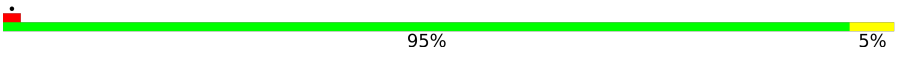
Chain s:

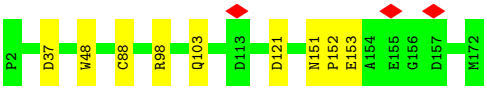




• Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

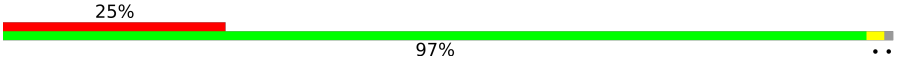
Chain u:

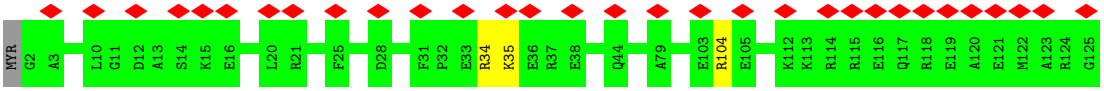




• Molecule 43: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7

Chain v:





• Molecule 44: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	42194	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 ($e^-/Å^2$)	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	0.202	Depositor
Minimum map value	-0.126	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.0314	Depositor
Map size (Å)	333.7616, 333.7616, 333.7616	wwPDB
Map dimensions	304, 304, 304	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0979, 1.0979, 1.0979	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: NAI, UQ1, MG, FMN, ZN, UQ, PLX, NDP, PEE, ADP, CDL, FES, 8Q1, SF4, 2MR

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	0.27	0/3406	0.51	0/4603
2	B	0.28	0/1443	0.52	0/1952
3	C	0.29	0/1279	0.52	0/1730
4	E	0.27	0/992	0.49	0/1336
5	F	0.27	0/694	0.54	0/935
6	G	0.29	0/705	0.46	0/956
6	X	0.26	0/715	0.41	0/967
7	H	0.26	0/929	0.46	0/1258
8	I	0.26	0/798	0.56	0/1079
9	J	0.27	0/2828	0.50	0/3834
10	K	0.26	0/377	0.55	0/509
11	L	0.26	0/1039	0.52	0/1403
12	M	0.26	0/5384	0.51	1/7295 (0.0%)
13	N	0.28	0/1245	0.54	1/1694 (0.1%)
14	O	0.28	0/1711	0.50	0/2328
15	P	0.28	0/1789	0.51	0/2436
16	Q	0.29	0/3538	0.51	0/4796
17	S	0.26	0/581	0.53	0/781
18	T	0.27	0/755	0.54	0/1018
19	U	0.26	0/664	0.45	0/912
20	V	0.27	0/1042	0.48	0/1411
21	W	0.28	0/1198	0.53	0/1617
22	Y	0.27	0/610	0.52	1/836 (0.1%)
23	Z	0.26	0/660	0.48	0/892
24	a	0.29	0/1184	0.50	0/1603
25	b	0.26	0/844	0.52	0/1149
26	c	0.29	0/1371	0.49	0/1875
27	d	0.28	0/1494	0.51	0/2015
28	e	0.29	0/891	0.55	0/1210
29	f	0.27	0/386	0.43	0/523
30	g	0.29	0/1036	0.49	0/1401
31	h	0.26	0/889	0.50	0/1190

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	i	0.28	0/2773	0.47	0/3768
33	j	0.28	0/938	0.45	0/1281
34	k	0.28	0/759	0.44	0/1029
35	l	0.28	0/4947	0.46	0/6728
36	m	0.29	0/1325	0.49	0/1800
37	n	0.25	0/491	0.52	0/663
38	o	0.30	0/1092	0.51	0/1481
39	p	0.27	0/1590	0.51	0/2155
40	r	0.27	0/3723	0.47	0/5078
41	s	0.29	0/2581	0.49	0/3529
42	u	0.27	0/1433	0.48	0/1934
43	v	0.27	0/1052	0.54	0/1411
44	w	0.28	0/2642	0.49	0/3580
All	All	0.28	0/67823	0.50	3/91981 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	N	143	PRO	CA-N-CD	-5.81	103.37	111.50
12	M	509	ASP	CB-CG-OD1	5.66	123.39	118.30
22	Y	97	LEU	CA-CB-CG	5.23	127.33	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	431/433 (100%)	421 (98%)	10 (2%)	0	100	100
2	B	174/176 (99%)	171 (98%)	3 (2%)	0	100	100
3	C	154/156 (99%)	149 (97%)	5 (3%)	0	100	100
4	E	113/115 (98%)	110 (97%)	3 (3%)	0	100	100
5	F	84/86 (98%)	79 (94%)	5 (6%)	0	100	100
6	G	86/88 (98%)	80 (93%)	5 (6%)	1 (1%)	13	48
6	X	86/88 (98%)	83 (96%)	3 (4%)	0	100	100
7	H	110/112 (98%)	101 (92%)	8 (7%)	1 (1%)	17	55
8	I	93/112 (83%)	80 (86%)	13 (14%)	0	100	100
9	J	340/342 (99%)	325 (96%)	14 (4%)	1 (0%)	41	76
10	K	41/43 (95%)	40 (98%)	1 (2%)	0	100	100
11	L	123/125 (98%)	120 (98%)	3 (2%)	0	100	100
12	M	688/690 (100%)	666 (97%)	22 (3%)	0	100	100
13	N	142/144 (99%)	137 (96%)	5 (4%)	0	100	100
14	O	215/217 (99%)	198 (92%)	17 (8%)	0	100	100
15	P	206/208 (99%)	198 (96%)	8 (4%)	0	100	100
16	Q	427/430 (99%)	413 (97%)	14 (3%)	0	100	100
17	S	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
18	T	94/96 (98%)	93 (99%)	1 (1%)	0	100	100
19	U	81/83 (98%)	80 (99%)	1 (1%)	0	100	100
20	V	138/140 (99%)	135 (98%)	3 (2%)	0	100	100
21	W	140/142 (99%)	134 (96%)	6 (4%)	0	100	100
22	Y	65/70 (93%)	61 (94%)	4 (6%)	0	100	100
23	Z	78/84 (93%)	75 (96%)	3 (4%)	0	100	100
24	a	136/140 (97%)	133 (98%)	3 (2%)	0	100	100
25	b	94/126 (75%)	86 (92%)	8 (8%)	0	100	100
26	c	154/156 (99%)	144 (94%)	10 (6%)	0	100	100
27	d	173/175 (99%)	170 (98%)	3 (2%)	0	100	100
28	e	102/107 (95%)	96 (94%)	6 (6%)	0	100	100
29	f	47/49 (96%)	44 (94%)	3 (6%)	0	100	100
30	g	120/122 (98%)	114 (95%)	6 (5%)	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%)	327 (95%)	18 (5%)	0	100 100
33	j	113/115 (98%)	111 (98%)	2 (2%)	0	100 100
34	k	96/98 (98%)	92 (96%)	4 (4%)	0	100 100
35	l	604/606 (100%)	583 (96%)	21 (4%)	0	100 100
36	m	173/175 (99%)	164 (95%)	9 (5%)	0	100 100
37	n	54/56 (96%)	53 (98%)	1 (2%)	0	100 100
38	o	126/128 (98%)	125 (99%)	1 (1%)	0	100 100
39	p	176/178 (99%)	166 (94%)	9 (5%)	1 (1%)	25 64
40	r	457/459 (100%)	446 (98%)	11 (2%)	0	100 100
41	s	316/318 (99%)	306 (97%)	9 (3%)	1 (0%)	41 76
42	u	169/171 (99%)	165 (98%)	3 (2%)	1 (1%)	25 64
43	v	122/125 (98%)	114 (93%)	8 (7%)	0	100 100
44	w	318/320 (99%)	305 (96%)	13 (4%)	0	100 100
All	All	8175/8326 (98%)	7857 (96%)	312 (4%)	6 (0%)	54 85

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	G	134	ASP
41	s	208	VAL
9	J	38	HIS
7	H	77	ILE
42	u	152	PRO
39	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	A	346/346 (100%)	335 (97%)	11 (3%)	39 74
2	B	151/151 (100%)	149 (99%)	2 (1%)	69 89

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
3	C	132/132 (100%)	128 (97%)	4 (3%)	41 75
4	E	106/107 (99%)	102 (96%)	4 (4%)	33 69
5	F	74/76 (97%)	68 (92%)	6 (8%)	11 40
6	G	76/81 (94%)	75 (99%)	1 (1%)	69 89
6	X	79/81 (98%)	73 (92%)	6 (8%)	13 43
7	H	99/99 (100%)	96 (97%)	3 (3%)	41 75
8	I	87/97 (90%)	81 (93%)	6 (7%)	15 48
9	J	296/296 (100%)	286 (97%)	10 (3%)	37 72
10	K	42/42 (100%)	39 (93%)	3 (7%)	14 46
11	L	113/113 (100%)	110 (97%)	3 (3%)	44 77
12	M	580/580 (100%)	563 (97%)	17 (3%)	42 76
13	N	130/130 (100%)	121 (93%)	9 (7%)	15 48
14	O	183/183 (100%)	173 (94%)	10 (6%)	21 57
15	P	190/190 (100%)	185 (97%)	5 (3%)	46 78
16	Q	370/370 (100%)	359 (97%)	11 (3%)	41 75
17	S	57/58 (98%)	52 (91%)	5 (9%)	10 36
18	T	79/79 (100%)	77 (98%)	2 (2%)	47 79
19	U	69/69 (100%)	66 (96%)	3 (4%)	29 66
20	V	101/101 (100%)	95 (94%)	6 (6%)	19 54
21	W	122/123 (99%)	116 (95%)	6 (5%)	25 61
22	Y	62/63 (98%)	58 (94%)	4 (6%)	17 50
23	Z	62/65 (95%)	60 (97%)	2 (3%)	39 74
24	a	121/122 (99%)	118 (98%)	3 (2%)	47 79
25	b	90/119 (76%)	84 (93%)	6 (7%)	16 49
26	c	141/141 (100%)	138 (98%)	3 (2%)	53 82
27	d	155/155 (100%)	144 (93%)	11 (7%)	14 46
28	e	96/99 (97%)	91 (95%)	5 (5%)	23 59
29	f	36/45 (80%)	32 (89%)	4 (11%)	6 25
30	g	108/109 (99%)	105 (97%)	3 (3%)	43 77
31	h	93/93 (100%)	91 (98%)	2 (2%)	52 81
32	i	311/311 (100%)	301 (97%)	10 (3%)	39 74

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
33	j	100/100 (100%)	94 (94%)	6 (6%)	19 53
34	k	85/85 (100%)	83 (98%)	2 (2%)	49 79
35	l	540/540 (100%)	520 (96%)	20 (4%)	34 70
36	m	129/141 (92%)	123 (95%)	6 (5%)	26 63
37	n	53/53 (100%)	52 (98%)	1 (2%)	57 84
38	o	113/113 (100%)	107 (95%)	6 (5%)	22 58
39	p	159/159 (100%)	151 (95%)	8 (5%)	24 60
40	r	410/410 (100%)	393 (96%)	17 (4%)	30 67
41	s	275/275 (100%)	261 (95%)	14 (5%)	24 60
42	u	152/153 (99%)	144 (95%)	8 (5%)	22 58
43	v	104/111 (94%)	101 (97%)	3 (3%)	42 76
44	w	281/283 (99%)	273 (97%)	8 (3%)	43 77
All	All	7158/7249 (99%)	6873 (96%)	285 (4%)	35 68

All (285) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	31	SER
1	A	54	LYS
1	A	97	LEU
1	A	106	SER
1	A	245	VAL
1	A	251	SER
1	A	314	LEU
1	A	448	GLU
1	A	449	ARG
1	A	451	GLN
1	A	455	LEU
2	B	75	SER
2	B	76	TYR
3	C	71	CYS
3	C	86	MET
3	C	142	TYR
3	C	154	ASP
4	E	23	ARG
4	E	31	ARG
4	E	68	MET
4	E	127	ASP

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Mol	Chain	Res	Type
5	F	27	SER
5	F	31	GLN
5	F	39	LYS
5	F	43	GLU
5	F	64	LYS
5	F	90	THR
6	G	94	ASP
7	H	40	LYS
7	H	48	THR
7	H	76	GLN
8	I	27	ARG
8	I	58	ASP
8	I	70	MET
8	I	71	SER
8	I	73	GLN
8	I	90	THR
9	J	85	ARG
9	J	108	TRP
9	J	205	ASP
9	J	298	TYR
9	J	299	ARG
9	J	303	ARG
9	J	336	GLU
9	J	341	GLN
9	J	360	ARG
9	J	373	LYS
10	K	78	HIS
10	K	95	LYS
10	K	105	ARG
11	L	78	ARG
11	L	86	ASN
11	L	117	THR
12	M	58	MET
12	M	75	CYS
12	M	76	ARG
12	M	158	ARG
12	M	187	SER
12	M	203	ASP
12	M	347	ASP
12	M	374	THR
12	M	383	SER
12	M	398	ASP

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Mol	Chain	Res	Type
12	M	426	ASP
12	M	478	SER
12	M	494	SER
12	M	632	MET
12	M	636	TYR
12	M	672	SER
12	M	698	ASP
13	N	8	ARG
13	N	21	ARG
13	N	53	LYS
13	N	67	GLU
13	N	72	ASP
13	N	78	ASP
13	N	104	THR
13	N	115	PHE
13	N	144	TYR
14	O	43	ASP
14	O	58	GLU
14	O	110	MET
14	O	129	LYS
14	O	144	ASN
14	O	149	LEU
14	O	154	LYS
14	O	159	LYS
14	O	185	MET
14	O	235	THR
15	P	44	ARG
15	P	77	GLN
15	P	85	GLU
15	P	91	ASP
15	P	110	SER
16	Q	60	HIS
16	Q	76	LEU
16	Q	78	SER
16	Q	144	MET
16	Q	217	VAL
16	Q	242	ASP
16	Q	253	PHE
16	Q	282	ASP
16	Q	308	TYR
16	Q	330	TYR
16	Q	345	SER

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Mol	Chain	Res	Type
17	S	11	VAL
17	S	12	MET
17	S	35	GLU
17	S	47	LEU
17	S	68	ASN
18	T	30	ARG
18	T	122	HIS
19	U	63	MET
19	U	65	ASP
19	U	68	SER
20	V	6	LEU
20	V	10	SER
20	V	60	THR
20	V	77	SER
20	V	115	CYS
20	V	134	GLN
21	W	34	SER
21	W	35	MET
21	W	50	MET
21	W	51	MET
21	W	99	LYS
21	W	109	SER
6	X	77	GLU
6	X	105	MET
6	X	114	ASP
6	X	122	MET
6	X	129	GLU
6	X	132	ASP
22	Y	46	GLN
22	Y	77	SER
22	Y	83	HIS
22	Y	88	ASP
23	Z	14	MET
23	Z	72	LYS
24	a	53	ARG
24	a	54	LEU
24	a	114	LYS
25	b	7	ASP
25	b	79	VAL
25	b	87	LYS
25	b	100	ARG
25	b	108	ASP

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Mol	Chain	Res	Type
25	b	123	PHE
26	c	34	LYS
26	c	111	MET
26	c	164	ASN
27	d	7	LYS
27	d	8	ASP
27	d	17	THR
27	d	54	GLN
27	d	58	LYS
27	d	60	ARG
27	d	96	TYR
27	d	120	SER
27	d	137	LYS
27	d	141	ASP
27	d	155	CYS
28	e	72	ASP
28	e	78	LYS
28	e	83	ASP
28	e	129	ARG
28	e	136	LEU
29	f	51	SER
29	f	61	GLN
29	f	68	GLU
29	f	71	ARG
30	g	19	GLU
30	g	98	SER
30	g	106	LYS
31	h	9	ARG
31	h	101	LYS
32	i	45	MET
32	i	200	MET
32	i	204	ASN
32	i	229	SER
32	i	244	MET
32	i	245	MET
32	i	263	LYS
32	i	280	THR
32	i	323	MET
32	i	336	VAL
33	j	22	PHE
33	j	42	ASP
33	j	44	MET

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Mol	Chain	Res	Type
33	j	46	SER
33	j	79	SER
33	j	98	LEU
34	k	53	PHE
34	k	59	MET
35	l	1	MET
35	l	59	GLN
35	l	73	THR
35	l	82	MET
35	l	109	HIS
35	l	185	SER
35	l	207	GLU
35	l	229	LEU
35	l	252	MET
35	l	271	LYS
35	l	307	SER
35	l	320	ASN
35	l	331	MET
35	l	340	PHE
35	l	343	SER
35	l	352	ASP
35	l	373	LEU
35	l	445	GLU
35	l	496	MET
35	l	498	PHE
36	m	1	MET
36	m	87	LYS
36	m	102	CYS
36	m	106	TYR
36	m	135	PHE
36	m	137	SER
37	n	49	LEU
38	o	5	LYS
38	o	9	SER
38	o	30	ARG
38	o	37	LEU
38	o	106	LYS
38	o	114	LYS
39	p	38	ARG
39	p	55	LYS
39	p	59	LYS
39	p	62	GLN

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Mol	Chain	Res	Type
39	p	134	GLU
39	p	138	LYS
39	p	159	LYS
39	p	176	GLU
40	r	3	LYS
40	r	54	LEU
40	r	57	PHE
40	r	59	ASP
40	r	82	SER
40	r	114	GLU
40	r	122	PHE
40	r	129	THR
40	r	138	ASN
40	r	152	TYR
40	r	183	SER
40	r	206	LYS
40	r	247	THR
40	r	253	LEU
40	r	304	GLN
40	r	336	ARG
40	r	452	LYS
41	s	24	GLU
41	s	40	VAL
41	s	54	LYS
41	s	139	THR
41	s	156	MET
41	s	202	GLU
41	s	224	PHE
41	s	225	MET
41	s	246	SER
41	s	259	PHE
41	s	270	PHE
41	s	282	TYR
41	s	286	MET
41	s	287	HIS
42	u	37	ASP
42	u	48	TRP
42	u	88	CYS
42	u	98	ARG
42	u	103	GLN
42	u	121	ASP
42	u	151	ASN

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Mol	Chain	Res	Type
42	u	153	GLU
43	v	34	ARG
43	v	35	LYS
43	v	104	ARG
44	w	51	ARG
44	w	63	ASP
44	w	95	ASP
44	w	109	SER
44	w	241	TYR
44	w	248	GLU
44	w	254	GLU
44	w	347	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	451	GLN
5	F	86	GLN
7	H	37	GLN
10	K	78	HIS
10	K	79	HIS
11	L	71	HIS
12	M	540	ASN
12	M	598	ASN
15	P	75	GLN
15	P	77	GLN
24	a	115	HIS
26	c	127	ASN
27	d	54	GLN
35	l	56	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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	5.98	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	5.72	1.46	1.34

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	Q	118	2MR	NE-CZ-NH2	12.30	130.75	119.48
16	Q	118	2MR	CD-NE-CZ	3.94	130.79	123.41
16	Q	118	2MR	CQ2-NH2-CZ	3.21	130.95	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 45 ligands modelled in this entry, 2 are monoatomic - leaving 43 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	$\#\|Z\|>2$
46	FMN	A	502	-	33,33,33	1.10	2 (6%)	48,50,50	1.28	9 (18%)
48	PLX	j	205	-	51,51,51	1.15	4 (7%)	55,59,59	0.64	1 (1%)
57	PEE	j	203	-	40,40,50	1.15	4 (10%)	43,45,55	1.05	3 (6%)
58	ADP	w	401	-	24,29,29	3.13	6 (25%)	29,45,45	1.40	4 (13%)
45	SF4	B	302	2	0,12,12	-	-	-		
50	CDL	n	101	-	54,54,99	1.36	8 (14%)	60,66,111	1.10	4 (6%)
53	FES	O	301	14	0,4,4	-	-	-		
50	CDL	l	702	-	98,98,99	0.93	4 (4%)	104,110,111	1.08	5 (4%)
45	SF4	M	801	12	0,12,12	-	-	-		
51	NDP	J	401	-	45,52,52	4.59	20 (44%)	53,80,80	1.97	6 (11%)
50	CDL	V	202	-	99,99,99	1.08	8 (8%)	105,111,111	0.88	4 (3%)
48	PLX	r	502	-	51,51,51	1.15	5 (9%)	55,59,59	0.64	1 (1%)
45	SF4	M	802	12	0,12,12	-	-	-		
48	PLX	C	302	-	51,51,51	1.13	4 (7%)	55,59,59	0.66	1 (1%)
48	PLX	r	503	-	51,51,51	1.15	4 (7%)	55,59,59	0.58	1 (1%)
49	8Q1	G	201	6	31,34,34	1.67	5 (16%)	40,43,43	1.79	6 (15%)
52	UQ	J	402	-	33,33,63	3.44	9 (27%)	40,43,79	2.80	13 (32%)
48	PLX	j	204	-	51,51,51	1.14	4 (7%)	55,59,59	0.63	1 (1%)
47	NAI	A	503	-	42,48,48	4.94	18 (42%)	47,73,73	1.35	7 (14%)
50	CDL	I	201	-	50,50,99	1.39	9 (18%)	56,62,111	1.13	4 (7%)
57	PEE	j	202	-	50,50,50	1.16	5 (10%)	53,55,55	0.96	2 (3%)
45	SF4	A	501	1	0,12,12	-	-	-		
45	SF4	C	301	3	0,12,12	-	-	-		

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
53	FES	M	803	12	0,4,4	-	-	-		
48	PLX	a	201	-	51,51,51	1.15	4 (7%)	55,59,59	0.60	1 (1%)
45	SF4	B	301	2	0,12,12	-	-	-		
57	PEE	j	201	-	46,46,50	1.21	6 (13%)	49,51,55	0.94	2 (4%)
50	CDL	r	504	-	99,99,99	1.09	8 (8%)	105,111,111	0.85	4 (3%)
50	CDL	b	201	-	99,99,99	1.10	9 (9%)	105,111,111	0.87	4 (3%)
48	PLX	g	201	-	51,51,51	1.15	4 (7%)	55,59,59	0.64	1 (1%)
57	PEE	r	501	-	50,50,50	1.16	6 (12%)	53,55,55	0.97	2 (3%)
50	CDL	V	201	-	93,93,99	1.12	9 (9%)	99,105,111	0.90	5 (5%)
57	PEE	l	701	-	39,39,50	1.32	6 (15%)	41,44,55	1.03	2 (4%)
57	PEE	i	401	-	46,46,50	1.20	6 (13%)	49,51,55	1.03	2 (4%)
50	CDL	l	703	-	99,99,99	1.09	9 (9%)	105,111,111	0.94	5 (4%)
50	CDL	s	401	-	88,88,99	1.13	8 (9%)	94,100,111	0.90	4 (4%)
57	PEE	W	201	-	40,40,50	1.15	5 (12%)	43,45,55	1.01	2 (4%)
55	UQ1	Q	501	-	18,18,18	2.40	6 (33%)	22,25,25	1.96	6 (27%)
57	PEE	l	705	-	45,45,50	1.22	6 (13%)	48,50,55	1.03	2 (4%)
52	UQ	s	402	-	38,38,63	3.56	11 (28%)	46,49,79	2.80	16 (34%)
57	PEE	l	704	-	50,50,50	1.16	6 (12%)	53,55,55	0.93	2 (3%)
50	CDL	k	101	-	93,93,99	1.12	7 (7%)	99,105,111	0.86	4 (4%)
49	8Q1	X	201	-	31,34,34	1.70	6 (19%)	40,43,43	1.63	4 (10%)

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
46	FMN	A	502	-	-	10/18/18/18	0/3/3/3
48	PLX	j	205	-	-	23/55/55/55	-
57	PEE	j	203	-	-	22/44/44/54	-
58	ADP	w	401	-	-	5/12/32/32	0/3/3/3
50	CDL	n	101	-	-	27/65/65/110	-
45	SF4	B	302	2	-	-	0/6/5/5
53	FES	O	301	14	-	-	0/1/1/1
50	CDL	l	702	-	-	43/109/109/110	-
45	SF4	M	801	12	-	-	0/6/5/5
51	NDP	J	401	-	-	5/30/77/77	0/4/5/5

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
50	CDL	V	202	-	-	58/110/110/110	-
48	PLX	r	502	-	-	29/55/55/55	-
48	PLX	C	302	-	-	27/55/55/55	-
48	PLX	r	503	-	-	30/55/55/55	-
49	8Q1	G	201	6	-	17/41/41/41	-
52	UQ	J	402	-	-	8/27/51/87	0/1/1/1
45	SF4	M	802	12	-	-	0/6/5/5
48	PLX	j	204	-	-	32/55/55/55	-
47	NAI	A	503	-	-	10/25/72/72	0/5/5/5
50	CDL	I	201	-	-	31/61/61/110	-
57	PEE	j	202	-	-	25/54/54/54	-
45	SF4	A	501	1	-	-	0/6/5/5
45	SF4	C	301	3	-	-	0/6/5/5
53	FES	M	803	12	-	-	0/1/1/1
48	PLX	a	201	-	-	28/55/55/55	-
45	SF4	B	301	2	-	-	0/6/5/5
57	PEE	j	201	-	-	28/50/50/54	-
50	CDL	r	504	-	-	56/110/110/110	-
50	CDL	b	201	-	-	62/110/110/110	-
48	PLX	g	201	-	-	30/55/55/55	-
57	PEE	r	501	-	-	24/54/54/54	-
50	CDL	V	201	-	-	56/104/104/110	-
57	PEE	l	701	-	-	21/43/43/54	-
57	PEE	i	401	-	-	24/50/50/54	-
50	CDL	l	703	-	-	63/110/110/110	-
50	CDL	s	401	-	-	47/99/99/110	-
57	PEE	W	201	-	-	17/44/44/54	-
55	UQ1	Q	501	-	-	4/9/33/33	0/1/1/1
57	PEE	l	705	-	-	19/49/49/54	-
52	UQ	s	402	-	-	13/33/57/87	0/1/1/1
57	PEE	l	704	-	-	30/54/54/54	-
50	CDL	k	101	-	-	48/104/104/110	-
49	8Q1	X	201	-	-	12/41/41/41	-

All (241) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	A	503	NAI	O4B-C1B	16.18	1.63	1.41
47	A	503	NAI	C2B-C1B	-15.41	1.30	1.53
51	J	401	NDP	C3B-C2B	-13.03	1.23	1.52
51	J	401	NDP	C6N-C5N	12.54	1.55	1.33
51	J	401	NDP	O4D-C4D	10.78	1.69	1.45
47	A	503	NAI	C3D-C4D	-10.26	1.26	1.53
51	J	401	NDP	C3D-C4D	-9.86	1.27	1.53
52	s	402	UQ	C18-C19	9.67	1.56	1.33
52	J	402	UQ	C18-C19	9.51	1.55	1.33
52	s	402	UQ	C13-C14	9.26	1.55	1.33
52	J	402	UQ	C13-C14	9.14	1.54	1.33
52	s	402	UQ	C23-C24	9.11	1.54	1.33
52	s	402	UQ	C8-C9	9.06	1.54	1.33
52	J	402	UQ	C8-C9	9.03	1.54	1.33
58	w	401	ADP	C3'-C4'	-8.89	1.30	1.53
51	J	401	NDP	O4B-C1B	8.53	1.53	1.41
47	A	503	NAI	O4B-C4B	-8.27	1.26	1.45
51	J	401	NDP	O4B-C4B	-7.86	1.27	1.45
58	w	401	ADP	O4'-C4'	7.82	1.62	1.45
52	J	402	UQ	C23-C24	7.82	1.54	1.32
52	s	402	UQ	C28-C29	7.63	1.54	1.32
47	A	503	NAI	C2D-C1D	-7.58	1.29	1.53
55	Q	501	UQ1	C8-C9	7.40	1.53	1.32
51	J	401	NDP	C2N-C3N	7.39	1.55	1.34
47	A	503	NAI	O4D-C4D	6.99	1.60	1.45
58	w	401	ADP	O4'-C1'	-6.88	1.31	1.41
47	A	503	NAI	C2D-C3D	5.95	1.69	1.53
47	A	503	NAI	C7N-N7N	5.76	1.48	1.33
51	J	401	NDP	P2B-O2B	5.66	1.70	1.59
49	X	201	8Q1	C34-N36	5.45	1.45	1.33
47	A	503	NAI	O4D-C1D	5.44	1.54	1.42
49	X	201	8Q1	C39-N41	5.31	1.45	1.33
51	J	401	NDP	C3B-C4B	5.30	1.66	1.53
49	G	201	8Q1	C34-N36	5.24	1.45	1.33
49	G	201	8Q1	C39-N41	5.21	1.45	1.33
47	A	503	NAI	C4N-C3N	-5.01	1.40	1.49
51	J	401	NDP	C6N-N1N	4.98	1.49	1.37
51	J	401	NDP	O4D-C1D	-4.87	1.30	1.42
47	A	503	NAI	O2B-C2B	4.55	1.53	1.43
50	l	702	CDL	OB8-CB7	4.29	1.45	1.33
50	l	702	CDL	OA8-CA7	4.27	1.45	1.33
51	J	401	NDP	C7N-N7N	4.21	1.44	1.33
51	J	401	NDP	O2D-C2D	-4.18	1.33	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	l	702	CDL	OA6-CA5	4.15	1.46	1.34
50	l	702	CDL	OB6-CB5	4.09	1.45	1.34
51	J	401	NDP	C6A-N6A	4.07	1.48	1.34
47	A	503	NAI	C6N-C5N	3.91	1.40	1.33
58	w	401	ADP	C6-N6	3.84	1.48	1.34
46	A	502	FMN	C4A-N5	3.76	1.38	1.30
57	l	701	PEE	C18-C19	3.75	1.53	1.31
57	W	201	PEE	C18-C19	3.74	1.53	1.31
57	r	501	PEE	C18-C19	3.74	1.53	1.31
57	j	201	PEE	C18-C19	3.74	1.53	1.31
57	l	704	PEE	C18-C19	3.73	1.53	1.31
57	j	203	PEE	C18-C19	3.73	1.53	1.31
57	j	202	PEE	C18-C19	3.72	1.53	1.31
57	l	705	PEE	C18-C19	3.72	1.53	1.31
57	i	401	PEE	C18-C19	3.70	1.53	1.31
57	r	501	PEE	C39-C38	3.64	1.52	1.31
57	l	701	PEE	C39-C38	3.64	1.52	1.31
57	j	201	PEE	C39-C38	3.64	1.52	1.31
57	l	705	PEE	C39-C38	3.64	1.52	1.31
57	j	202	PEE	C39-C38	3.63	1.52	1.31
57	i	401	PEE	C39-C38	3.62	1.52	1.31
47	A	503	NAI	C7N-C3N	3.61	1.56	1.48
57	l	704	PEE	C39-C38	3.60	1.52	1.31
47	A	503	NAI	C6A-N6A	3.57	1.47	1.34
50	I	201	CDL	OA8-CA7	3.50	1.43	1.33
50	V	201	CDL	OA8-CA7	3.48	1.43	1.33
50	n	101	CDL	OA8-CA7	3.46	1.43	1.33
50	b	201	CDL	OA8-CA7	3.42	1.43	1.33
50	k	101	CDL	OA8-CA7	3.42	1.43	1.33
50	l	703	CDL	OA8-CA7	3.42	1.43	1.33
50	r	504	CDL	OA8-CA7	3.41	1.43	1.33
50	V	202	CDL	OA8-CA7	3.40	1.43	1.33
50	s	401	CDL	OA8-CA7	3.35	1.43	1.33
47	A	503	NAI	C4N-C5N	-3.33	1.40	1.48
58	w	401	ADP	O2'-C2'	-3.33	1.35	1.43
50	k	101	CDL	OA6-CA5	3.24	1.43	1.34
50	r	504	CDL	OB6-CB5	3.13	1.43	1.34
50	V	201	CDL	OA6-CA5	3.10	1.43	1.34
50	b	201	CDL	OB6-CB5	3.09	1.43	1.34
51	J	401	NDP	O3D-C3D	3.08	1.50	1.43
58	w	401	ADP	O3'-C3'	3.08	1.50	1.43
50	s	401	CDL	OB6-CB5	3.05	1.42	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	r	504	CDL	OB8-CB7	3.05	1.42	1.33
50	k	101	CDL	OB6-CB5	3.04	1.42	1.34
50	l	703	CDL	OA6-CA5	3.02	1.42	1.34
50	s	401	CDL	OA6-CA5	3.01	1.42	1.34
50	b	201	CDL	OB8-CB7	3.01	1.42	1.33
50	l	703	CDL	OB8-CB7	3.00	1.42	1.33
50	n	101	CDL	OB6-CB5	2.98	1.42	1.34
50	I	201	CDL	OB8-CB7	2.98	1.42	1.33
50	V	202	CDL	OB6-CB5	2.97	1.42	1.34
50	n	101	CDL	OB8-CB7	2.97	1.42	1.33
50	l	703	CDL	OB6-CB5	2.97	1.42	1.34
50	n	101	CDL	OA6-CA5	2.96	1.42	1.34
50	k	101	CDL	OB8-CB7	2.96	1.42	1.33
51	J	401	NDP	C7N-C3N	2.96	1.55	1.48
50	V	201	CDL	OB8-CB7	2.95	1.42	1.33
50	r	504	CDL	OA6-CA5	2.95	1.42	1.34
50	b	201	CDL	OA6-CA5	2.95	1.42	1.34
50	s	401	CDL	OB8-CB7	2.95	1.41	1.33
50	V	202	CDL	OB8-CB7	2.94	1.41	1.33
50	I	201	CDL	OA6-CA5	2.93	1.42	1.34
50	I	201	CDL	OB6-CB5	2.91	1.42	1.34
50	V	202	CDL	OA6-CA5	2.88	1.42	1.34
48	g	201	PLX	O6-C4	-2.81	1.40	1.44
48	C	302	PLX	O6-C4	-2.79	1.40	1.44
48	a	201	PLX	O6-C4	-2.73	1.41	1.44
52	J	402	UQ	C6-C1	2.72	1.54	1.46
50	V	201	CDL	OB6-CB4	-2.69	1.39	1.46
55	Q	501	UQ1	C6-C1	2.67	1.54	1.46
57	j	202	PEE	O3-C30	2.56	1.40	1.33
48	r	503	PLX	O6-C4	-2.54	1.41	1.44
48	r	502	PLX	O6-C4	-2.53	1.41	1.44
52	s	402	UQ	C6-C1	2.53	1.53	1.46
57	j	203	PEE	O3-C30	2.52	1.40	1.33
49	G	201	8Q1	O40-C39	-2.51	1.18	1.23
57	l	701	PEE	O3-C30	2.51	1.40	1.33
57	j	201	PEE	O2-C2	-2.50	1.40	1.46
48	j	205	PLX	O6-C4	-2.49	1.41	1.44
57	i	401	PEE	O2-C2	-2.49	1.40	1.46
52	s	402	UQ	C7-C8	2.49	1.54	1.50
48	j	204	PLX	O6-C4	-2.48	1.41	1.44
50	V	202	CDL	OA6-CA4	-2.48	1.40	1.46
47	A	503	NAI	O3B-C3B	-2.47	1.37	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
57	l	704	PEE	O3-C30	2.47	1.40	1.33
57	l	705	PEE	O3-C30	2.46	1.40	1.33
50	r	504	CDL	OA6-CA4	-2.45	1.40	1.46
50	b	201	CDL	OA6-CA4	-2.44	1.40	1.46
57	j	202	PEE	O2-C2	-2.43	1.40	1.46
57	j	201	PEE	O3-C30	2.43	1.40	1.33
57	r	501	PEE	O2-C2	-2.43	1.40	1.46
50	n	101	CDL	OA6-CA4	-2.43	1.40	1.46
46	A	502	FMN	C10-N1	2.42	1.38	1.33
57	W	201	PEE	O3-C30	2.42	1.40	1.33
48	j	205	PLX	C7-C6	2.41	1.55	1.50
49	X	201	8Q1	C1-S44	2.41	1.82	1.76
57	i	401	PEE	O3-C30	2.41	1.40	1.33
49	G	201	8Q1	O35-C34	-2.41	1.18	1.23
52	J	402	UQ	C7-C8	2.40	1.54	1.50
57	j	203	PEE	O2-C2	-2.40	1.40	1.46
51	J	401	NDP	O2B-C2B	2.37	1.52	1.44
48	r	503	PLX	C7-C6	2.37	1.55	1.50
47	A	503	NAI	PN-O5D	2.37	1.68	1.59
50	s	401	CDL	OA6-CA4	-2.37	1.40	1.46
50	I	201	CDL	OA6-CA4	-2.37	1.40	1.46
57	W	201	PEE	O2-C2	-2.37	1.40	1.46
57	l	705	PEE	O2-C2	-2.36	1.40	1.46
57	r	501	PEE	O3-C30	2.36	1.40	1.33
57	l	701	PEE	O2-C2	-2.35	1.40	1.46
57	l	704	PEE	O2-C2	-2.35	1.40	1.46
48	a	201	PLX	C7-C6	2.34	1.55	1.50
51	J	401	NDP	C2D-C3D	2.33	1.59	1.53
57	l	705	PEE	O2-C10	2.32	1.40	1.34
57	l	701	PEE	O2-C10	2.32	1.40	1.34
57	l	704	PEE	O2-C10	2.31	1.40	1.34
49	G	201	8Q1	C1-S44	2.30	1.81	1.76
52	s	402	UQ	O1-C1	-2.30	1.18	1.23
49	X	201	8Q1	C6-C1	2.30	1.53	1.50
48	r	502	PLX	C7-C6	2.30	1.55	1.50
50	I	201	CDL	OB6-CB4	-2.29	1.40	1.46
57	W	201	PEE	O2-C10	2.29	1.40	1.34
48	g	201	PLX	C7-C6	2.27	1.55	1.50
50	V	201	CDL	PB2-OB2	2.27	1.68	1.59
47	A	503	NAI	C5B-C4B	2.27	1.58	1.51
57	r	501	PEE	O2-C10	2.27	1.40	1.34
48	j	204	PLX	C7-C6	2.26	1.55	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	X	201	8Q1	O35-C34	-2.26	1.18	1.23
50	l	703	CDL	OA6-CA4	-2.25	1.41	1.46
57	j	201	PEE	O2-C10	2.24	1.40	1.34
50	V	201	CDL	PB2-OB5	2.23	1.68	1.59
57	i	401	PEE	O2-C10	2.23	1.40	1.34
52	J	402	UQ	O4-C4	-2.23	1.18	1.23
57	j	202	PEE	O2-C10	2.21	1.40	1.34
50	l	703	CDL	OB6-CB4	-2.21	1.41	1.46
50	V	202	CDL	PB2-OB2	2.21	1.68	1.59
48	j	205	PLX	P1-O4	2.21	1.68	1.59
57	j	201	PEE	O3-C3	-2.21	1.40	1.45
52	s	402	UQ	O4-C4	-2.20	1.18	1.23
50	b	201	CDL	PB2-OB5	2.20	1.68	1.59
50	l	703	CDL	PB2-OB5	2.20	1.68	1.59
55	Q	501	UQ1	O2-CM2	-2.19	1.40	1.45
50	n	101	CDL	OB6-CB4	-2.19	1.41	1.46
50	r	504	CDL	PB2-OB2	2.19	1.68	1.59
50	b	201	CDL	PB2-OB2	2.19	1.68	1.59
57	j	203	PEE	O2-C10	2.19	1.40	1.34
48	r	502	PLX	P1-O4	2.19	1.68	1.59
50	n	101	CDL	PB2-OB5	2.19	1.68	1.59
49	X	201	8Q1	O40-C39	-2.19	1.18	1.23
50	V	202	CDL	OB6-CB4	-2.19	1.41	1.46
50	n	101	CDL	PB2-OB2	2.19	1.68	1.59
50	k	101	CDL	PB2-OB5	2.19	1.68	1.59
57	r	501	PEE	O3-C3	-2.18	1.40	1.45
50	k	101	CDL	PB2-OB2	2.18	1.68	1.59
50	s	401	CDL	PB2-OB2	2.17	1.68	1.59
48	C	302	PLX	C7-C6	2.17	1.55	1.50
50	r	504	CDL	PB2-OB5	2.17	1.68	1.59
50	V	202	CDL	PB2-OB5	2.17	1.68	1.59
52	J	402	UQ	C21-C19	2.16	1.55	1.51
55	Q	501	UQ1	O1-C1	-2.14	1.18	1.23
48	a	201	PLX	P1-O4	2.13	1.67	1.59
51	J	401	NDP	O7N-C7N	-2.13	1.19	1.24
57	i	401	PEE	O3-C3	-2.13	1.40	1.45
50	b	201	CDL	OB6-CB4	-2.13	1.41	1.46
50	l	703	CDL	PB2-OB2	2.12	1.67	1.59
50	V	201	CDL	OA6-CA4	-2.12	1.41	1.46
50	s	401	CDL	PB2-OB5	2.12	1.67	1.59
48	g	201	PLX	P1-O4	2.11	1.67	1.59
55	Q	501	UQ1	O4-C4	-2.11	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	k	101	CDL	OB6-CB4	-2.11	1.41	1.46
50	I	201	CDL	PB2-OB5	2.11	1.67	1.59
50	V	201	CDL	OB6-CB5	2.11	1.40	1.34
57	l	704	PEE	O3-C3	-2.10	1.40	1.45
50	s	401	CDL	OB6-CB4	-2.10	1.41	1.46
48	r	503	PLX	P1-O4	2.10	1.67	1.59
48	j	205	PLX	P1-O1	2.09	1.67	1.59
50	I	201	CDL	PB2-OB2	2.08	1.67	1.59
51	J	401	NDP	PA-O5B	2.08	1.67	1.59
48	r	502	PLX	C25-C24	2.08	1.55	1.50
48	j	204	PLX	P1-O4	2.08	1.67	1.59
52	s	402	UQ	C21-C19	2.08	1.55	1.51
57	l	701	PEE	O3-C3	-2.07	1.40	1.45
48	r	502	PLX	P1-O1	2.07	1.67	1.59
57	W	201	PEE	O3-C3	-2.07	1.40	1.45
55	Q	501	UQ1	O3-CM3	-2.06	1.40	1.45
57	l	705	PEE	O3-C3	-2.06	1.40	1.45
50	r	504	CDL	OB6-CB4	-2.06	1.41	1.46
50	V	201	CDL	C11-CA5	2.06	1.56	1.50
50	b	201	CDL	C11-CA5	2.04	1.56	1.50
48	j	204	PLX	P1-O1	2.04	1.67	1.59
50	l	703	CDL	C11-CA5	2.04	1.56	1.50
48	C	302	PLX	P1-O4	2.04	1.67	1.59
48	C	302	PLX	P1-O1	2.03	1.67	1.59
52	J	402	UQ	O1-C1	-2.03	1.19	1.23
48	g	201	PLX	P1-O1	2.03	1.67	1.59
48	r	503	PLX	P1-O1	2.02	1.67	1.59
48	a	201	PLX	P1-O1	2.02	1.67	1.59
50	I	201	CDL	C11-CA5	2.01	1.56	1.50
52	s	402	UQ	C5-C4	2.01	1.54	1.47

All (140) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	J	402	UQ	C7-C8-C9	-8.13	113.26	126.79
51	J	401	NDP	C1D-N1N-C2N	-7.77	108.18	121.11
52	s	402	UQ	C7-C8-C9	-7.75	113.89	126.79
51	J	401	NDP	C3N-C2N-N1N	-7.45	112.46	123.10
49	G	201	8Q1	C6-C1-S44	7.17	121.80	113.46
52	J	402	UQ	C17-C18-C19	-6.24	112.64	127.66
52	J	402	UQ	C12-C13-C14	-6.20	112.74	127.66
49	X	201	8Q1	C6-C1-S44	6.00	120.44	113.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	s	402	UQ	C22-C23-C24	-5.91	113.44	127.66
52	s	402	UQ	C12-C13-C14	-5.66	114.03	127.66
52	s	402	UQ	C17-C18-C19	-5.63	114.10	127.66
51	J	401	NDP	C1D-N1N-C6N	-5.46	109.06	120.83
55	Q	501	UQ1	C7-C6-C1	4.97	124.46	118.48
52	s	402	UQ	C10-C9-C8	-4.50	112.13	123.68
49	G	201	8Q1	O4-C1-C6	-4.49	118.69	123.99
52	s	402	UQ	C27-C28-C29	-4.49	112.42	127.75
50	l	703	CDL	OA6-CA5-C11	4.48	121.15	111.50
52	J	402	UQ	C22-C23-C24	-4.45	112.53	127.75
50	l	702	CDL	OA6-CA5-C11	4.45	121.09	111.50
52	J	402	UQ	C20-C19-C18	-4.44	112.29	123.68
58	w	401	ADP	N3-C2-N1	-4.44	121.74	128.68
50	V	201	CDL	OB6-CB5-C51	4.39	120.97	111.50
47	A	503	NAI	N3A-C2A-N1A	-4.36	121.87	128.68
52	J	402	UQ	C10-C9-C8	-4.35	112.52	123.68
52	J	402	UQ	C15-C14-C13	-4.31	112.63	123.68
52	J	402	UQ	C21-C19-C18	-4.28	112.46	121.12
52	J	402	UQ	C16-C14-C13	-4.26	112.51	121.12
57	j	203	PEE	O2-C10-C11	4.21	120.58	111.50
57	l	705	PEE	O2-C10-C11	4.17	120.49	111.50
50	b	201	CDL	OB6-CB5-C51	4.14	120.42	111.50
52	s	402	UQ	C26-C24-C23	-4.13	112.75	121.12
55	Q	501	UQ1	C7-C8-C9	-4.13	114.32	127.26
52	s	402	UQ	C15-C14-C13	-4.09	113.17	123.68
50	l	703	CDL	OB6-CB5-C51	4.07	120.27	111.50
49	X	201	8Q1	C37-C38-C39	4.06	119.11	112.36
51	J	401	NDP	N3A-C2A-N1A	-4.05	122.35	128.68
52	s	402	UQ	C25-C24-C23	-4.04	113.31	123.68
57	W	201	PEE	O2-C10-C11	4.04	120.20	111.50
50	k	101	CDL	OB6-CB5-C51	3.99	120.10	111.50
50	r	504	CDL	OB6-CB5-C51	3.99	120.10	111.50
57	l	701	PEE	O2-C10-C11	3.99	120.10	111.50
50	l	702	CDL	OB6-CB5-C51	3.97	120.05	111.50
50	s	401	CDL	OB6-CB5-C51	3.96	120.03	111.50
50	V	202	CDL	OA6-CA5-C11	3.96	120.03	111.50
57	i	401	PEE	O2-C10-C11	3.95	120.01	111.50
57	r	501	PEE	O2-C10-C11	3.95	120.01	111.50
50	b	201	CDL	OA6-CA5-C11	3.93	119.97	111.50
50	V	202	CDL	OB6-CB5-C51	3.93	119.97	111.50
52	s	402	UQ	C20-C19-C18	-3.92	113.61	123.68
52	s	402	UQ	C21-C19-C18	-3.92	113.18	121.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	n	101	CDL	OA6-CA5-C11	3.88	119.86	111.50
50	V	201	CDL	OA6-CA5-C11	3.86	119.81	111.50
50	I	201	CDL	OA6-CA5-C11	3.85	119.79	111.50
50	s	401	CDL	OA6-CA5-C11	3.82	119.73	111.50
52	s	402	UQ	C16-C14-C13	-3.80	113.42	121.12
50	I	201	CDL	OB6-CB5-C51	3.79	119.66	111.50
50	n	101	CDL	OB6-CB5-C51	3.77	119.63	111.50
57	j	202	PEE	O2-C10-C11	3.69	119.46	111.50
50	r	504	CDL	OA6-CA5-C11	3.66	119.39	111.50
49	X	201	8Q1	O4-C1-C6	-3.60	119.74	123.99
57	l	704	PEE	O2-C10-C11	3.59	119.24	111.50
52	J	402	UQ	C11-C9-C8	-3.59	113.85	121.12
52	s	402	UQ	C11-C9-C8	-3.52	114.00	121.12
57	j	201	PEE	O2-C10-C11	3.43	118.90	111.50
52	J	402	UQ	C26-C24-C23	-3.42	112.76	122.65
52	s	402	UQ	C30-C29-C28	-3.41	112.79	122.65
52	s	402	UQ	C31-C29-C28	-3.40	112.81	122.65
52	J	402	UQ	C25-C24-C23	-3.35	112.98	122.65
46	A	502	FMN	C4-N3-C2	-3.32	119.51	125.64
50	n	101	CDL	OA8-CA7-C31	3.23	119.84	111.38
49	G	201	8Q1	C37-C38-C39	3.14	117.59	112.36
50	k	101	CDL	OA6-CA5-C11	3.13	118.24	111.50
55	Q	501	UQ1	C10-C9-C8	-3.12	113.63	122.65
47	A	503	NAI	C4D-O4D-C1D	-3.00	102.86	109.47
50	l	702	CDL	OA8-CA7-C31	2.98	121.27	111.91
47	A	503	NAI	C3D-C2D-C1D	2.94	107.01	101.43
50	l	702	CDL	OB8-CB7-C71	2.82	120.77	111.91
57	i	401	PEE	O3-C30-C31	2.80	120.70	111.91
46	A	502	FMN	C4A-C4-N3	2.80	120.29	113.19
50	k	101	CDL	OB8-CB7-C71	2.78	120.62	111.91
55	Q	501	UQ1	C11-C9-C8	-2.75	114.71	122.65
50	I	201	CDL	OA8-CA7-C31	2.73	120.49	111.91
58	w	401	ADP	O4'-C1'-C2'	-2.73	102.94	106.93
57	j	202	PEE	O3-C30-C31	2.72	120.44	111.91
57	l	704	PEE	O3-C30-C31	2.68	120.32	111.91
50	I	201	CDL	OB8-CB7-C71	2.68	120.30	111.91
50	l	703	CDL	OB8-CB7-C71	2.67	120.28	111.91
50	V	201	CDL	OB8-CB7-C71	2.67	120.28	111.91
47	A	503	NAI	C2D-C3D-C4D	2.66	107.81	102.64
57	j	203	PEE	O3-C30-C31	2.66	120.25	111.91
49	G	201	8Q1	C38-C39-N41	2.65	120.89	116.42
47	A	503	NAI	C3B-C2B-C1B	2.65	104.97	100.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	k	101	CDL	OA8-CA7-C31	2.65	120.22	111.91
50	r	504	CDL	OB8-CB7-C71	2.63	120.16	111.91
50	l	703	CDL	OA8-CA7-C31	2.62	120.14	111.91
50	b	201	CDL	OB8-CB7-C71	2.62	120.13	111.91
57	l	705	PEE	O3-C30-C31	2.62	120.12	111.91
52	s	402	UQ	CM5-C5-C6	-2.61	120.14	124.40
50	n	101	CDL	OB8-CB7-C71	2.61	120.10	111.91
57	l	701	PEE	O3-C30-C31	2.61	120.10	111.91
57	W	201	PEE	O3-C30-C31	2.61	120.09	111.91
50	s	401	CDL	OA8-CA7-C31	2.60	120.08	111.91
46	A	502	FMN	O4-C4-C4A	-2.60	119.69	126.60
50	V	202	CDL	OB8-CB7-C71	2.60	120.05	111.91
50	r	504	CDL	OA8-CA7-C31	2.59	120.05	111.91
50	b	201	CDL	OA8-CA7-C31	2.58	120.00	111.91
47	A	503	NAI	C4A-C5A-N7A	-2.56	106.73	109.40
50	V	201	CDL	OB6-CB5-OB7	-2.56	117.51	123.70
57	r	501	PEE	O3-C30-C31	2.54	119.89	111.91
57	j	201	PEE	O3-C30-C31	2.50	119.75	111.91
50	V	202	CDL	OA8-CA7-C31	2.49	119.73	111.91
48	g	201	PLX	C1A-N1-C1	2.49	120.11	109.92
52	J	402	UQ	CM5-C5-C6	-2.49	120.34	124.40
46	A	502	FMN	C4A-C10-N1	-2.47	118.99	124.73
50	l	702	CDL	CA4-OA6-CA5	-2.47	111.72	117.79
55	Q	501	UQ1	CM5-C5-C6	-2.46	120.38	124.40
50	V	201	CDL	OA8-CA7-C31	2.44	119.58	111.91
51	J	401	NDP	PN-O3-PA	-2.44	124.46	132.83
47	A	503	NAI	PN-O3-PA	-2.43	124.49	132.83
49	G	201	8Q1	O4-C1-S44	-2.40	119.50	122.61
57	j	203	PEE	C2-O2-C10	-2.39	111.91	117.79
48	r	502	PLX	C1A-N1-C1	2.39	119.68	109.92
46	A	502	FMN	C4A-C10-N10	2.38	119.96	116.48
55	Q	501	UQ1	C6-C5-C4	2.34	121.03	119.18
46	A	502	FMN	C5A-C9A-N10	2.34	120.37	117.95
51	J	401	NDP	C4A-C5A-N7A	-2.33	106.97	109.40
48	j	205	PLX	C1A-N1-C1	2.30	119.33	109.92
50	s	401	CDL	OB8-CB7-C71	2.30	119.12	111.91
48	a	201	PLX	C1A-N1-C1	2.29	119.28	109.92
48	j	204	PLX	C1A-N1-C1	2.28	119.24	109.92
48	r	503	PLX	C1A-N1-C1	2.27	119.22	109.92
48	C	302	PLX	C1A-N1-C1	2.27	119.19	109.92
50	l	703	CDL	CB4-OB6-CB5	-2.26	112.22	117.79
58	w	401	ADP	PA-O3A-PB	-2.17	125.37	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	A	502	FMN	C9A-C5A-N5	-2.16	120.09	122.43
49	X	201	8Q1	O4-C1-S44	-2.15	119.82	122.61
58	w	401	ADP	C4-C5-N7	-2.09	107.22	109.40
46	A	502	FMN	C10-C4A-N5	-2.04	120.53	124.86
46	A	502	FMN	C4-C4A-C10	2.03	120.20	116.79
49	G	201	8Q1	C43-S44-C1	2.01	108.12	101.87

There are no chirality outliers.

All (984) 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'
46	A	502	FMN	C3'-C4'-C5'-O5'
46	A	502	FMN	O4'-C4'-C5'-O5'
46	A	502	FMN	C5'-O5'-P-O1P
46	A	502	FMN	C5'-O5'-P-O2P
47	A	503	NAI	PN-O3-PA-O5B
48	C	302	PLX	O7-C6-C7-C8
48	C	302	PLX	C2-O1-P1-O2
48	C	302	PLX	N1-C1-C2-O1
48	a	201	PLX	O7-C6-O6-C4
48	a	201	PLX	N1-C1-C2-O1
48	a	201	PLX	O9-C24-O8-C5
48	a	201	PLX	O9-C24-C25-C26
48	g	201	PLX	C3-O4-P1-O2
48	g	201	PLX	C2-O1-P1-O2
48	g	201	PLX	C2-O1-P1-O3
48	g	201	PLX	C25-C24-O8-C5
48	j	204	PLX	O7-C6-O6-C4
48	j	204	PLX	C3-O4-P1-O3
48	j	204	PLX	C2-O1-P1-O2
48	j	204	PLX	N1-C1-C2-O1
48	j	204	PLX	O8-C24-C25-C26
48	j	204	PLX	O9-C24-C25-C26
48	j	205	PLX	O7-C6-C7-C8
48	j	205	PLX	O9-C24-O8-C5
48	r	502	PLX	O7-C6-C7-C8
48	r	502	PLX	C5-C4-O6-C6
48	r	502	PLX	O9-C24-C25-C26
48	r	503	PLX	O9-C24-O8-C5
48	r	503	PLX	O9-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
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	C29-C32-C34-N36
49	G	201	8Q1	C29-C32-C34-O35
49	G	201	8Q1	O33-C32-C34-N36
49	X	201	8Q1	C1-C6-C7-C8
49	X	201	8Q1	O4-C1-S44-C43
49	X	201	8Q1	C6-C1-S44-C43
49	X	201	8Q1	C28-O27-P24-O2
49	X	201	8Q1	C28-O27-P24-O1
50	I	201	CDL	CA2-OA2-PA1-OA5
50	I	201	CDL	OA5-CA3-CA4-OA6
50	I	201	CDL	CB2-OB2-PB2-OB3
50	I	201	CDL	CB2-OB2-PB2-OB4
50	I	201	CDL	CB3-OB5-PB2-OB2
50	I	201	CDL	CB3-OB5-PB2-OB3
50	I	201	CDL	CB3-OB5-PB2-OB4
50	V	201	CDL	CB2-OB2-PB2-OB3
50	V	201	CDL	CB3-OB5-PB2-OB3
50	V	201	CDL	CB3-OB5-PB2-OB4
50	V	202	CDL	CA2-OA2-PA1-OA5
50	V	202	CDL	CA3-OA5-PA1-OA4
50	V	202	CDL	OB5-CB3-CB4-OB6
50	b	201	CDL	CB2-C1-CA2-OA2
50	b	201	CDL	CA2-C1-CB2-OB2
50	b	201	CDL	CA2-OA2-PA1-OA3
50	b	201	CDL	CB2-OB2-PB2-OB3
50	b	201	CDL	CB2-OB2-PB2-OB4
50	b	201	CDL	CB2-OB2-PB2-OB5
50	b	201	CDL	OB7-CB5-OB6-CB4
50	b	201	CDL	C51-CB5-OB6-CB4
50	k	101	CDL	CA3-OA5-PA1-OA3
50	k	101	CDL	CA3-OA5-PA1-OA4
50	k	101	CDL	OA5-CA3-CA4-OA6
50	l	702	CDL	CA2-OA2-PA1-OA3
50	l	702	CDL	CA3-OA5-PA1-OA3
50	l	702	CDL	CB2-OB2-PB2-OB3

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Mol	Chain	Res	Type	Atoms
50	l	702	CDL	CB2-OB2-PB2-OB4
50	l	702	CDL	CB3-OB5-PB2-OB2
50	l	702	CDL	CB3-OB5-PB2-OB3
50	l	702	CDL	CB3-OB5-PB2-OB4
50	l	703	CDL	CB2-C1-CA2-OA2
50	l	703	CDL	CA2-OA2-PA1-OA5
50	l	703	CDL	CA3-OA5-PA1-OA3
50	l	703	CDL	CA3-OA5-PA1-OA4
50	l	703	CDL	CB2-OB2-PB2-OB3
50	l	703	CDL	CB2-OB2-PB2-OB4
50	l	703	CDL	CB3-OB5-PB2-OB4
50	n	101	CDL	CA3-OA5-PA1-OA3
50	n	101	CDL	CA3-OA5-PA1-OA4
50	n	101	CDL	CB2-OB2-PB2-OB3
50	r	504	CDL	CA3-OA5-PA1-OA3
50	r	504	CDL	CB3-OB5-PB2-OB3
50	r	504	CDL	CB3-OB5-PB2-OB4
50	r	504	CDL	C51-CB5-OB6-CB4
50	s	401	CDL	CB2-OB2-PB2-OB3
50	s	401	CDL	CB2-OB2-PB2-OB4
50	s	401	CDL	CB3-OB5-PB2-OB3
52	J	402	UQ	C7-C8-C9-C10
52	J	402	UQ	C17-C18-C19-C21
52	s	402	UQ	C7-C8-C9-C11
52	s	402	UQ	C17-C18-C19-C21
52	s	402	UQ	C18-C19-C21-C22
52	s	402	UQ	C22-C23-C24-C26
52	s	402	UQ	C23-C24-C26-C27
55	Q	501	UQ1	C1-C6-C7-C8
55	Q	501	UQ1	C5-C6-C7-C8
57	W	201	PEE	C4-O4P-P-O1P
57	i	401	PEE	O4-C10-O2-C2
57	i	401	PEE	C4-O4P-P-O1P
57	j	201	PEE	C1-O3P-P-O1P
57	j	202	PEE	C1-O3P-P-O1P
57	j	202	PEE	C1-O3P-P-O4P
57	j	203	PEE	C1-O3P-P-O2P
57	j	203	PEE	C1-O3P-P-O1P
57	j	203	PEE	C1-O3P-P-O4P
57	j	203	PEE	C4-O4P-P-O2P
57	j	203	PEE	O4P-C4-C5-N
57	l	701	PEE	C18-C19-C20-C21

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Mol	Chain	Res	Type	Atoms
57	l	704	PEE	C11-C10-O2-C2
57	l	704	PEE	O4-C10-O2-C2
57	l	704	PEE	C4-O4P-P-O2P
57	l	705	PEE	O4P-C4-C5-N
57	r	501	PEE	C4-O4P-P-O2P
58	w	401	ADP	C5'-O5'-PA-O3A
58	w	401	ADP	O4'-C4'-C5'-O5'
50	s	401	CDL	OA9-CA7-OA8-CA6
50	s	401	CDL	C31-CA7-OA8-CA6
55	Q	501	UQ1	C7-C8-C9-C10
57	i	401	PEE	O5-C30-O3-C3
57	j	202	PEE	O5-C30-O3-C3
50	r	504	CDL	OB7-CB5-OB6-CB4
57	i	401	PEE	C31-C30-O3-C3
57	j	202	PEE	C31-C30-O3-C3
57	i	401	PEE	C11-C10-O2-C2
52	J	402	UQ	C22-C23-C24-C26
57	l	701	PEE	O5-C30-O3-C3
50	l	703	CDL	OB9-CB7-OB8-CB6
48	j	204	PLX	C25-C26-C27-C28
50	l	703	CDL	C71-CB7-OB8-CB6
57	j	202	PEE	C17-C18-C19-C20
57	l	701	PEE	C17-C18-C19-C20
57	l	705	PEE	C37-C38-C39-C40
52	J	402	UQ	C12-C13-C14-C15
52	s	402	UQ	C7-C8-C9-C10
48	j	205	PLX	C13-C14-C15-C16
50	V	201	CDL	C11-C12-C13-C14
57	l	701	PEE	O4-C10-O2-C2
48	r	502	PLX	C11-C12-C13-C14
50	I	201	CDL	O1-C1-CA2-OA2
50	I	201	CDL	O1-C1-CB2-OB2
50	V	201	CDL	O1-C1-CA2-OA2
50	b	201	CDL	O1-C1-CA2-OA2
50	l	703	CDL	O1-C1-CA2-OA2
50	l	703	CDL	O1-C1-CB2-OB2
50	n	101	CDL	O1-C1-CA2-OA2
50	r	504	CDL	O1-C1-CA2-OA2
57	l	701	PEE	C31-C30-O3-C3
50	V	201	CDL	C11-CA5-OA6-CA4
50	V	202	CDL	C51-CB5-OB6-CB4
57	l	701	PEE	C11-C10-O2-C2

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Mol	Chain	Res	Type	Atoms
52	s	402	UQ	C27-C28-C29-C31
48	r	502	PLX	C7-C8-C9-C10
50	V	201	CDL	C62-C63-C64-C65
48	r	502	PLX	C9-C10-C11-C12
47	A	503	NAI	C3D-C4D-C5D-O5D
58	w	401	ADP	C3'-C4'-C5'-O5'
50	V	201	CDL	OA7-CA5-OA6-CA4
52	J	402	UQ	C15-C14-C16-C17
52	J	402	UQ	C20-C19-C21-C22
52	J	402	UQ	C12-C11-C9-C8
52	s	402	UQ	C13-C14-C16-C17
52	s	402	UQ	C14-C16-C17-C18
50	l	702	CDL	C58-C59-C60-C61
48	C	302	PLX	C25-C26-C27-C28
50	V	201	CDL	C59-C60-C61-C62
50	l	703	CDL	C37-C38-C39-C40
57	j	203	PEE	C11-C10-O2-C2
50	V	201	CDL	CB2-C1-CA2-OA2
48	g	201	PLX	C2-C1-N1-C1B
48	g	201	PLX	C2-C1-N1-C1A
50	V	201	CDL	C31-CA7-OA8-CA6
50	V	202	CDL	C31-CA7-OA8-CA6
50	l	702	CDL	C31-CA7-OA8-CA6
57	W	201	PEE	C31-C30-O3-C3
50	l	703	CDL	C75-C76-C77-C78
50	l	703	CDL	C51-C52-C53-C54
50	s	401	CDL	CB7-C71-C72-C73
50	V	202	CDL	OB6-CB4-CB6-OB8
50	l	703	CDL	OA6-CA4-CA6-OA8
50	V	201	CDL	OA9-CA7-OA8-CA6
50	l	702	CDL	C32-C33-C34-C35
57	l	705	PEE	C11-C10-O2-C2
50	s	401	CDL	CA7-C31-C32-C33
51	J	401	NDP	C2D-C1D-N1N-C6N
50	I	201	CDL	C51-C52-C53-C54
57	l	705	PEE	C21-C22-C23-C24
50	l	702	CDL	OA9-CA7-OA8-CA6
50	I	201	CDL	CA7-C31-C32-C33
50	V	202	CDL	CA5-C11-C12-C13
50	k	101	CDL	CA7-C31-C32-C33
50	l	703	CDL	CB7-C71-C72-C73
50	s	401	CDL	CB5-C51-C52-C53

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Mol	Chain	Res	Type	Atoms
57	l	704	PEE	C33-C34-C35-C36
51	J	401	NDP	O4D-C4D-C5D-O5D
50	V	202	CDL	OB7-CB5-OB6-CB4
50	r	504	CDL	CB5-C51-C52-C53
57	W	201	PEE	O5-C30-O3-C3
50	l	703	CDL	C35-C36-C37-C38
50	V	202	CDL	OA9-CA7-OA8-CA6
52	J	402	UQ	C19-C21-C22-C23
50	b	201	CDL	C34-C35-C36-C37
50	r	504	CDL	C74-C75-C76-C77
50	V	201	CDL	O1-C1-CB2-OB2
50	V	202	CDL	O1-C1-CB2-OB2
50	b	201	CDL	O1-C1-CB2-OB2
57	j	203	PEE	O4-C10-O2-C2
50	s	401	CDL	C14-C15-C16-C17
50	l	703	CDL	C51-CB5-OB6-CB4
48	a	201	PLX	C3-O4-P1-O1
48	g	201	PLX	C2-O1-P1-O4
48	j	204	PLX	C3-O4-P1-O1
48	j	204	PLX	C2-O1-P1-O4
48	r	502	PLX	C3-O4-P1-O1
50	I	201	CDL	CB2-OB2-PB2-OB5
50	V	201	CDL	CB2-OB2-PB2-OB5
50	V	201	CDL	CB3-OB5-PB2-OB2
50	V	202	CDL	CA3-OA5-PA1-OA2
50	V	202	CDL	CB3-OB5-PB2-OB2
50	k	101	CDL	CA3-OA5-PA1-OA2
50	l	702	CDL	CA3-OA5-PA1-OA2
50	l	702	CDL	CB2-OB2-PB2-OB5
50	l	703	CDL	CA3-OA5-PA1-OA2
50	l	703	CDL	CB2-OB2-PB2-OB5
50	l	703	CDL	CB3-OB5-PB2-OB2
50	n	101	CDL	CA3-OA5-PA1-OA2
50	r	504	CDL	CA3-OA5-PA1-OA2
50	r	504	CDL	CB2-OB2-PB2-OB5
50	r	504	CDL	CB3-OB5-PB2-OB2
50	s	401	CDL	CB2-OB2-PB2-OB5
50	s	401	CDL	CB3-OB5-PB2-OB2
57	W	201	PEE	C4-O4P-P-O3P
57	l	701	PEE	C1-O3P-P-O4P
57	l	701	PEE	C4-O4P-P-O3P
57	l	704	PEE	C4-O4P-P-O3P

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Mol	Chain	Res	Type	Atoms
57	r	501	PEE	C4-O4P-P-O3P
50	r	504	CDL	CA7-C31-C32-C33
50	n	101	CDL	C75-C76-C77-C78
50	I	201	CDL	CB2-C1-CA2-OA2
50	V	201	CDL	CA2-C1-CB2-OB2
50	V	202	CDL	CA2-C1-CB2-OB2
50	l	703	CDL	CA2-C1-CB2-OB2
50	n	101	CDL	CB2-C1-CA2-OA2
50	r	504	CDL	CB2-C1-CA2-OA2
50	l	703	CDL	OB7-CB5-OB6-CB4
57	l	705	PEE	O4-C10-O2-C2
57	l	704	PEE	C31-C30-O3-C3
48	a	201	PLX	C34-C35-C36-C37
48	C	302	PLX	O6-C6-C7-C8
48	a	201	PLX	O8-C24-C25-C26
48	r	502	PLX	O6-C6-C7-C8
48	j	205	PLX	C34-C35-C36-C37
50	b	201	CDL	C51-C52-C53-C54
50	s	401	CDL	C51-CB5-OB6-CB4
47	A	503	NAI	O4D-C4D-C5D-O5D
48	C	302	PLX	C28-C29-C30-C31
48	a	201	PLX	C12-C13-C14-C15
48	g	201	PLX	C9-C10-C11-C12
48	j	204	PLX	C27-C28-C29-C30
48	j	204	PLX	C31-C32-C33-C34
48	j	205	PLX	C12-C13-C14-C15
48	r	502	PLX	C11-C10-C9-C8
48	r	503	PLX	C14-C15-C16-C17
49	X	201	8Q1	C12-C13-C14-C15
50	V	202	CDL	C59-C60-C61-C62
50	r	504	CDL	C14-C15-C16-C17
50	r	504	CDL	C41-C42-C43-C44
50	r	504	CDL	C83-C84-C85-C86
50	s	401	CDL	C59-C60-C61-C62
57	j	202	PEE	C11-C12-C13-C14
48	C	302	PLX	C10-C11-C12-C13
48	g	201	PLX	C11-C10-C9-C8
48	j	205	PLX	C14-C15-C16-C17
50	V	201	CDL	C31-C32-C33-C34
50	V	201	CDL	C34-C35-C36-C37
50	V	201	CDL	C37-C38-C39-C40
50	V	201	CDL	C55-C56-C57-C58

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Mol	Chain	Res	Type	Atoms
50	V	202	CDL	C40-C41-C42-C43
50	V	202	CDL	C42-C43-C44-C45
50	r	504	CDL	C34-C35-C36-C37
50	r	504	CDL	C43-C44-C45-C46
57	j	201	PEE	C32-C33-C34-C35
50	s	401	CDL	OB7-CB5-OB6-CB4
48	j	205	PLX	C30-C31-C32-C33
50	k	101	CDL	C52-C53-C54-C55
50	l	703	CDL	C72-C73-C74-C75
50	s	401	CDL	C32-C33-C34-C35
57	j	203	PEE	C13-C14-C15-C16
57	r	501	PEE	C14-C15-C16-C17
50	V	201	CDL	C1-CB2-OB2-PB2
48	C	302	PLX	C33-C34-C35-C36
48	g	201	PLX	C28-C29-C30-C31
48	j	205	PLX	C33-C34-C35-C36
48	r	503	PLX	C10-C11-C12-C13
50	k	101	CDL	C75-C76-C77-C78
50	r	504	CDL	C57-C58-C59-C60
50	s	401	CDL	O1-C1-CB2-OB2
48	C	302	PLX	C14-C15-C16-C17
50	l	703	CDL	C11-C12-C13-C14
50	r	504	CDL	C60-C61-C62-C63
57	l	704	PEE	C11-C12-C13-C14
50	V	201	CDL	CA7-C31-C32-C33
48	a	201	PLX	C31-C32-C33-C34
50	V	202	CDL	C12-C13-C14-C15
50	k	101	CDL	C11-C12-C13-C14
57	j	202	PEE	C12-C13-C14-C15
57	l	704	PEE	O5-C30-O3-C3
50	b	201	CDL	C52-C53-C54-C55
50	l	703	CDL	C15-C16-C17-C18
50	I	201	CDL	CB5-C51-C52-C53
50	n	101	CDL	CB5-C51-C52-C53
48	C	302	PLX	C11-C10-C9-C8
48	a	201	PLX	C27-C28-C29-C30
48	r	502	PLX	C27-C28-C29-C30
50	V	202	CDL	C14-C15-C16-C17
50	b	201	CDL	C21-C22-C23-C24
50	k	101	CDL	C21-C22-C23-C24
57	i	401	PEE	C21-C22-C23-C24
50	k	101	CDL	C42-C43-C44-C45

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Mol	Chain	Res	Type	Atoms
50	n	101	CDL	C55-C56-C57-C58
50	n	101	CDL	C56-C57-C58-C59
50	s	401	CDL	C73-C74-C75-C76
48	C	302	PLX	C11-C12-C13-C14
48	a	201	PLX	C25-C26-C27-C28
48	r	502	PLX	C33-C34-C35-C36
50	V	201	CDL	C71-C72-C73-C74
50	b	201	CDL	C32-C33-C34-C35
50	b	201	CDL	C54-C55-C56-C57
50	k	101	CDL	C20-C21-C22-C23
50	r	504	CDL	C75-C76-C77-C78
57	j	202	PEE	C40-C41-C42-C43
57	j	203	PEE	C23-C24-C25-C26
57	r	501	PEE	C20-C21-C22-C23
57	r	501	PEE	C40-C41-C42-C43
57	i	401	PEE	C19-C20-C21-C22
48	r	502	PLX	C30-C31-C32-C33
48	r	503	PLX	C11-C12-C13-C14
50	I	201	CDL	C11-C12-C13-C14
50	b	201	CDL	C61-C62-C63-C64
50	k	101	CDL	C15-C16-C17-C18
50	l	703	CDL	C14-C15-C16-C17
48	j	205	PLX	C9-C10-C11-C12
48	r	503	PLX	C30-C31-C32-C33
50	b	201	CDL	C60-C61-C62-C63
50	k	101	CDL	C32-C33-C34-C35
50	s	401	CDL	C35-C36-C37-C38
57	j	202	PEE	C31-C32-C33-C34
48	j	204	PLX	C13-C14-C15-C16
48	j	205	PLX	C7-C8-C9-C10
48	r	502	PLX	C13-C14-C15-C16
48	r	503	PLX	C25-C26-C27-C28
48	r	503	PLX	C29-C30-C31-C32
50	n	101	CDL	C52-C53-C54-C55
57	j	202	PEE	C22-C23-C24-C25
48	j	204	PLX	C35-C36-C37-C38
48	r	503	PLX	C27-C28-C29-C30
50	V	201	CDL	C75-C76-C77-C78
50	V	202	CDL	C83-C84-C85-C86
50	b	201	CDL	C17-C18-C19-C20
50	s	401	CDL	C52-C53-C54-C55
57	l	705	PEE	C39-C40-C41-C42

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Mol	Chain	Res	Type	Atoms
48	g	201	PLX	C27-C28-C29-C30
48	j	205	PLX	C25-C26-C27-C28
48	r	502	PLX	C28-C29-C30-C31
50	k	101	CDL	C73-C74-C75-C76
50	n	101	CDL	C73-C74-C75-C76
57	j	203	PEE	C12-C13-C14-C15
57	r	501	PEE	C33-C34-C35-C36
48	a	201	PLX	C13-C14-C15-C16
48	g	201	PLX	C14-C15-C16-C17
50	V	201	CDL	C53-C54-C55-C56
50	V	202	CDL	C37-C38-C39-C40
48	g	201	PLX	C33-C34-C35-C36
50	l	703	CDL	C40-C41-C42-C43
57	l	701	PEE	C31-C32-C33-C34
57	r	501	PEE	C31-C32-C33-C34
57	r	501	PEE	C37-C38-C39-C40
50	V	202	CDL	C17-C18-C19-C20
50	l	703	CDL	C32-C33-C34-C35
50	V	201	CDL	C56-C57-C58-C59
50	V	201	CDL	C51-CB5-OB6-CB4
48	g	201	PLX	C32-C33-C34-C35
50	k	101	CDL	C76-C77-C78-C79
50	r	504	CDL	C62-C63-C64-C65
50	n	101	CDL	CA5-C11-C12-C13
50	b	201	CDL	CB5-C51-C52-C53
57	j	203	PEE	C11-C12-C13-C14
57	j	202	PEE	C36-C37-C38-C39
48	a	201	PLX	C14-C15-C16-C17
48	j	204	PLX	C30-C31-C32-C33
50	I	201	CDL	C71-C72-C73-C74
50	k	101	CDL	C35-C36-C37-C38
50	l	703	CDL	C55-C56-C57-C58
50	k	101	CDL	CA5-C11-C12-C13
48	a	201	PLX	C29-C30-C31-C32
50	r	504	CDL	C55-C56-C57-C58
57	j	201	PEE	C42-C43-C44-C45
48	g	201	PLX	C10-C11-C12-C13
48	g	201	PLX	C30-C31-C32-C33
48	r	503	PLX	C11-C10-C9-C8
50	V	202	CDL	C39-C40-C41-C42
50	r	504	CDL	C77-C78-C79-C80
48	g	201	PLX	C2-C1-N1-C1C

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Mol	Chain	Res	Type	Atoms
50	l	702	CDL	CA5-C11-C12-C13
48	j	204	PLX	C29-C30-C31-C32
50	V	202	CDL	C32-C33-C34-C35
50	I	201	CDL	C51-CB5-OB6-CB4
57	j	201	PEE	C11-C10-O2-C2
50	k	101	CDL	C14-C15-C16-C17
50	k	101	CDL	C34-C35-C36-C37
50	k	101	CDL	C37-C38-C39-C40
48	r	503	PLX	C28-C29-C30-C31
50	k	101	CDL	C36-C37-C38-C39
50	V	201	CDL	C54-C55-C56-C57
50	b	201	CDL	C22-C23-C24-C25
50	r	504	CDL	C84-C85-C86-C87
57	r	501	PEE	C15-C16-C17-C18
50	l	703	CDL	OA7-CA5-OA6-CA4
50	s	401	CDL	OA7-CA5-OA6-CA4
57	r	501	PEE	O4-C10-O2-C2
48	r	503	PLX	C13-C14-C15-C16
50	k	101	CDL	C82-C83-C84-C85
50	n	101	CDL	CB7-C71-C72-C73
50	V	202	CDL	C75-C76-C77-C78
50	b	201	CDL	C55-C56-C57-C58
50	s	401	CDL	C75-C76-C77-C78
57	j	202	PEE	C41-C42-C43-C44
50	r	504	CDL	C52-C53-C54-C55
50	s	401	CDL	C51-C52-C53-C54
48	j	204	PLX	C7-C8-C9-C10
50	b	201	CDL	C23-C24-C25-C26
50	l	702	CDL	C16-C17-C18-C19
50	n	101	CDL	C74-C75-C76-C77
50	s	401	CDL	C71-C72-C73-C74
57	W	201	PEE	C22-C23-C24-C25
57	r	501	PEE	C22-C23-C24-C25
57	l	704	PEE	C30-C31-C32-C33
50	b	201	CDL	C11-CA5-OA6-CA4
50	l	703	CDL	C11-CA5-OA6-CA4
50	s	401	CDL	C11-CA5-OA6-CA4
57	W	201	PEE	C11-C10-O2-C2
57	r	501	PEE	C11-C10-O2-C2
50	s	401	CDL	OA5-CA3-CA4-OA6
49	X	201	8Q1	C7-C8-C9-C10
50	I	201	CDL	OB7-CB5-OB6-CB4

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Mol	Chain	Res	Type	Atoms
50	V	201	CDL	OB7-CB5-OB6-CB4
57	j	201	PEE	O4-C10-O2-C2
48	a	201	PLX	C15-C16-C17-C18
50	k	101	CDL	OB6-CB4-CB6-OB8
50	r	504	CDL	OA6-CA4-CA6-OA8
48	j	205	PLX	C10-C11-C12-C13
50	V	201	CDL	C40-C41-C42-C43
50	b	201	CDL	C53-C54-C55-C56
50	n	101	CDL	C54-C55-C56-C57
50	r	504	CDL	C23-C24-C25-C26
50	r	504	CDL	C71-C72-C73-C74
48	j	204	PLX	C33-C34-C35-C36
50	V	201	CDL	C58-C59-C60-C61
57	j	201	PEE	C13-C14-C15-C16
57	j	201	PEE	C15-C16-C17-C18
57	j	203	PEE	C19-C20-C21-C22
52	s	402	UQ	C12-C11-C9-C10
50	r	504	CDL	C13-C14-C15-C16
57	W	201	PEE	C13-C14-C15-C16
50	V	202	CDL	C34-C35-C36-C37
50	b	201	CDL	C11-C12-C13-C14
50	l	703	CDL	C39-C40-C41-C42
57	l	705	PEE	C34-C35-C36-C37
50	V	201	CDL	C33-C34-C35-C36
50	k	101	CDL	C71-C72-C73-C74
50	l	702	CDL	C38-C39-C40-C41
50	s	401	CDL	C11-C12-C13-C14
57	l	701	PEE	C32-C33-C34-C35
48	g	201	PLX	C15-C16-C17-C18
57	W	201	PEE	O4-C10-O2-C2
48	r	502	PLX	C16-C17-C18-C19
48	r	502	PLX	C12-C13-C14-C15
50	b	201	CDL	C37-C38-C39-C40
50	s	401	CDL	C55-C56-C57-C58
48	C	302	PLX	C2-O1-P1-O4
48	r	503	PLX	C3-O4-P1-O1
50	n	101	CDL	CB2-OB2-PB2-OB5
57	j	201	PEE	C1-O3P-P-O4P
57	j	203	PEE	C4-O4P-P-O3P
50	b	201	CDL	C35-C36-C37-C38
57	l	704	PEE	C44-C45-C46-C47
50	k	101	CDL	C71-CB7-OB8-CB6

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Mol	Chain	Res	Type	Atoms
50	I	201	CDL	OA5-CA3-CA4-CA6
50	V	202	CDL	OB5-CB3-CB4-CB6
50	k	101	CDL	OA5-CA3-CA4-CA6
49	X	201	8Q1	C11-C12-C13-C14
50	V	201	CDL	C44-C45-C46-C47
50	b	201	CDL	C58-C59-C60-C61
50	s	401	CDL	C37-C38-C39-C40
50	s	401	CDL	C54-C55-C56-C57
57	j	202	PEE	C19-C20-C21-C22
57	l	704	PEE	C19-C20-C21-C22
50	b	201	CDL	C57-C58-C59-C60
50	r	504	CDL	C76-C77-C78-C79
48	j	204	PLX	C10-C11-C12-C13
49	X	201	8Q1	C11-C10-C9-C8
50	V	201	CDL	C14-C15-C16-C17
50	V	202	CDL	C60-C61-C62-C63
57	r	501	PEE	C10-C11-C12-C13
48	C	302	PLX	C7-C8-C9-C10
57	i	401	PEE	C11-C12-C13-C14
48	r	503	PLX	C3-C4-C5-O8
50	V	201	CDL	CA3-CA4-CA6-OA8
50	V	202	CDL	CB3-CB4-CB6-OB8
50	V	202	CDL	C64-C65-C66-C67
50	k	101	CDL	CB3-CB4-CB6-OB8
50	l	703	CDL	CA3-CA4-CA6-OA8
50	r	504	CDL	CA3-CA4-CA6-OA8
57	W	201	PEE	C1-C2-C3-O3
57	j	201	PEE	C1-C2-C3-O3
57	j	203	PEE	C1-C2-C3-O3
57	r	501	PEE	C17-C18-C19-C20
48	r	503	PLX	C7-C8-C9-C10
50	V	201	CDL	C73-C74-C75-C76
50	s	401	CDL	C17-C18-C19-C20
50	b	201	CDL	C62-C63-C64-C65
57	W	201	PEE	C21-C22-C23-C24
48	r	503	PLX	C18-C19-C20-C21
50	k	101	CDL	C84-C85-C86-C87
57	W	201	PEE	C23-C24-C25-C26
49	G	201	8Q1	O33-C32-C34-O35
48	C	302	PLX	C13-C14-C15-C16
48	g	201	PLX	C17-C18-C19-C20
48	j	205	PLX	C19-C20-C21-C22

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Mol	Chain	Res	Type	Atoms
57	l	704	PEE	C40-C41-C42-C43
57	l	705	PEE	C20-C21-C22-C23
51	J	401	NDP	C3D-C4D-C5D-O5D
57	j	202	PEE	C21-C22-C23-C24
57	l	705	PEE	C11-C12-C13-C14
57	l	701	PEE	C11-C12-C13-C14
50	V	201	CDL	CA6-CA4-OA6-CA5
57	l	704	PEE	C24-C25-C26-C27
48	g	201	PLX	C12-C13-C14-C15
50	r	504	CDL	C32-C33-C34-C35
48	g	201	PLX	C25-C26-C27-C28
50	b	201	CDL	C31-CA7-OA8-CA6
50	b	201	CDL	C71-CB7-OB8-CB6
50	r	504	CDL	C71-CB7-OB8-CB6
57	l	704	PEE	O3P-C1-C2-O2
50	k	101	CDL	OB9-CB7-OB8-CB6
50	I	201	CDL	C72-C73-C74-C75
50	s	401	CDL	C84-C85-C86-C87
57	W	201	PEE	C15-C16-C17-C18
50	b	201	CDL	C71-C72-C73-C74
50	l	703	CDL	C61-C62-C63-C64
50	l	703	CDL	C73-C74-C75-C76
50	r	504	CDL	C35-C36-C37-C38
48	C	302	PLX	O6-C4-C5-O8
48	r	502	PLX	O6-C4-C5-O8
57	l	701	PEE	O2-C2-C3-O3
50	I	201	CDL	C12-C13-C14-C15
50	r	504	CDL	C64-C65-C66-C67
50	b	201	CDL	OA7-CA5-OA6-CA4
49	G	201	8Q1	C31-C29-C32-O33
48	j	204	PLX	C14-C15-C16-C17
57	r	501	PEE	C21-C22-C23-C24
57	j	203	PEE	C31-C32-C33-C34
50	b	201	CDL	C33-C34-C35-C36
50	l	702	CDL	C71-C72-C73-C74
50	r	504	CDL	C37-C38-C39-C40
48	r	503	PLX	C31-C32-C33-C34
50	V	201	CDL	C64-C65-C66-C67
50	V	202	CDL	C71-CB7-OB8-CB6
57	W	201	PEE	C17-C18-C19-C20
50	V	202	CDL	C76-C77-C78-C79
50	l	703	CDL	C33-C34-C35-C36

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Mol	Chain	Res	Type	Atoms
48	j	204	PLX	O4-C3-C4-C5
50	b	201	CDL	OA5-CA3-CA4-CA6
50	l	703	CDL	OB5-CB3-CB4-CB6
50	s	401	CDL	OA5-CA3-CA4-CA6
57	j	201	PEE	C44-C45-C46-C47
57	j	203	PEE	C32-C33-C34-C35
48	C	302	PLX	C26-C27-C28-C29
48	r	502	PLX	C25-C26-C27-C28
57	j	201	PEE	C41-C42-C43-C44
50	I	201	CDL	C71-CB7-OB8-CB6
50	V	202	CDL	C31-C32-C33-C34
50	k	101	CDL	C44-C45-C46-C47
57	l	704	PEE	C31-C32-C33-C34
50	V	202	CDL	C73-C74-C75-C76
48	a	201	PLX	C3-C4-C5-O8
48	j	204	PLX	C3-C4-C5-O8
48	j	205	PLX	C3-C4-C5-O8
48	j	205	PLX	C29-C30-C31-C32
49	X	201	8Q1	C13-C14-C15-C16
50	k	101	CDL	C80-C81-C82-C83
48	C	302	PLX	C31-C32-C33-C34
50	k	101	CDL	C53-C54-C55-C56
57	j	202	PEE	C34-C35-C36-C37
48	j	205	PLX	C11-C12-C13-C14
48	j	204	PLX	C3-C4-O6-C6
48	r	503	PLX	C5-C4-O6-C6
57	i	401	PEE	C4-O4P-P-O3P
50	V	202	CDL	C55-C56-C57-C58
57	l	704	PEE	C23-C24-C25-C26
57	r	501	PEE	C23-C24-C25-C26
48	g	201	PLX	C36-C37-C38-C39
50	b	201	CDL	OB9-CB7-OB8-CB6
50	r	504	CDL	OB9-CB7-OB8-CB6
50	b	201	CDL	OA9-CA7-OA8-CA6
50	s	401	CDL	OB6-CB4-CB6-OB8
57	j	203	PEE	O2-C2-C3-O3
50	b	201	CDL	C64-C65-C66-C67
50	b	201	CDL	C76-C77-C78-C79
50	b	201	CDL	C14-C15-C16-C17
50	n	101	CDL	C71-C72-C73-C74
50	I	201	CDL	CA2-C1-CB2-OB2
50	V	202	CDL	CB2-C1-CA2-OA2

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Mol	Chain	Res	Type	Atoms
50	b	201	CDL	C82-C83-C84-C85
50	I	201	CDL	C52-C53-C54-C55
50	r	504	CDL	C11-C12-C13-C14
50	k	101	CDL	C39-C40-C41-C42
50	k	101	CDL	CA4-CA3-OA5-PA1
50	r	504	CDL	C1-CB2-OB2-PB2
50	V	202	CDL	OB9-CB7-OB8-CB6
50	k	101	CDL	C13-C14-C15-C16
50	k	101	CDL	C38-C39-C40-C41
57	l	704	PEE	C42-C43-C44-C45
50	l	702	CDL	C12-C13-C14-C15
50	l	702	CDL	C82-C83-C84-C85
50	l	703	CDL	C44-C45-C46-C47
50	s	401	CDL	C36-C37-C38-C39
57	j	201	PEE	C14-C15-C16-C17
50	V	202	CDL	C63-C64-C65-C66
50	b	201	CDL	C36-C37-C38-C39
50	l	702	CDL	C24-C25-C26-C27
50	l	703	CDL	C80-C81-C82-C83
50	s	401	CDL	C12-C13-C14-C15
48	r	502	PLX	O8-C24-C25-C26
50	V	201	CDL	OA5-CA3-CA4-CA6
57	i	401	PEE	O3P-C1-C2-C3
57	j	201	PEE	O3P-C1-C2-C3
50	l	703	CDL	C62-C63-C64-C65
50	r	504	CDL	C59-C60-C61-C62
50	r	504	CDL	C44-C45-C46-C47
57	j	201	PEE	C12-C13-C14-C15
57	r	501	PEE	C41-C42-C43-C44
50	b	201	CDL	C31-C32-C33-C34
50	r	504	CDL	C12-C13-C14-C15
50	r	504	CDL	C33-C34-C35-C36
57	l	704	PEE	C14-C15-C16-C17
50	V	202	CDL	C71-C72-C73-C74
50	l	702	CDL	C61-C62-C63-C64
50	V	202	CDL	C54-C55-C56-C57
48	C	302	PLX	C27-C28-C29-C30
50	V	201	CDL	C72-C73-C74-C75
50	n	101	CDL	C51-C52-C53-C54
50	l	703	CDL	C82-C83-C84-C85
57	W	201	PEE	C19-C20-C21-C22
50	b	201	CDL	CA5-C11-C12-C13

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Mol	Chain	Res	Type	Atoms
50	s	401	CDL	CB3-CB4-CB6-OB8
57	l	705	PEE	C1-C2-C3-O3
48	j	204	PLX	O4-C3-C4-O6
50	V	201	CDL	OA5-CA3-CA4-OA6
50	b	201	CDL	OA5-CA3-CA4-OA6
50	s	401	CDL	OB5-CB3-CB4-OB6
50	l	702	CDL	C36-C37-C38-C39
57	l	705	PEE	C13-C14-C15-C16
48	g	201	PLX	C7-C8-C9-C10
57	l	705	PEE	C32-C33-C34-C35
50	I	201	CDL	OB9-CB7-OB8-CB6
48	r	503	PLX	C32-C33-C34-C35
48	j	205	PLX	O6-C4-C5-O8
50	l	703	CDL	OB6-CB4-CB6-OB8
57	W	201	PEE	O2-C2-C3-O3
57	j	201	PEE	O2-C2-C3-O3
47	A	503	NAI	C5D-O5D-PN-O3
48	j	205	PLX	C28-C29-C30-C31
57	l	701	PEE	C35-C36-C37-C38
50	l	703	CDL	C12-C13-C14-C15
48	j	204	PLX	C24-C25-C26-C27
50	s	401	CDL	C82-C83-C84-C85
50	l	702	CDL	C81-C82-C83-C84
50	V	201	CDL	C52-C53-C54-C55
57	j	203	PEE	C22-C23-C24-C25
50	V	202	CDL	C33-C34-C35-C36
48	r	503	PLX	C36-C37-C38-C39
50	V	202	CDL	CA7-C31-C32-C33
48	r	502	PLX	C31-C32-C33-C34
50	l	703	CDL	C13-C14-C15-C16
57	j	202	PEE	C35-C36-C37-C38
48	g	201	PLX	C3-O4-P1-O1
48	r	503	PLX	C2-O1-P1-O4
48	r	502	PLX	C14-C15-C16-C17
50	l	702	CDL	C31-C32-C33-C34
50	V	202	CDL	C1-CB2-OB2-PB2
50	l	702	CDL	CA4-CA3-OA5-PA1
50	r	504	CDL	C53-C54-C55-C56
48	C	302	PLX	C2-O1-P1-O3
48	a	201	PLX	C3-O4-P1-O3
48	g	201	PLX	C3-O4-P1-O3
48	j	204	PLX	C3-O4-P1-O2

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Mol	Chain	Res	Type	Atoms
48	j	204	PLX	C2-O1-P1-O3
48	r	502	PLX	C3-O4-P1-O2
48	r	502	PLX	C3-O4-P1-O3
48	r	502	PLX	C2-O1-P1-O3
48	r	503	PLX	C3-O4-P1-O2
48	r	503	PLX	C3-O4-P1-O3
50	V	201	CDL	CA3-OA5-PA1-OA3
50	V	201	CDL	CB2-OB2-PB2-OB4
50	V	202	CDL	CA2-OA2-PA1-OA4
50	V	202	CDL	CA3-OA5-PA1-OA3
50	V	202	CDL	CB3-OB5-PB2-OB4
50	b	201	CDL	CB3-OB5-PB2-OB3
50	k	101	CDL	CB2-OB2-PB2-OB4
50	l	702	CDL	CA3-OA5-PA1-OA4
50	l	703	CDL	CB3-OB5-PB2-OB3
50	n	101	CDL	CB2-OB2-PB2-OB4
50	n	101	CDL	CB3-OB5-PB2-OB3
50	r	504	CDL	CB2-OB2-PB2-OB3
50	r	504	CDL	CB2-OB2-PB2-OB4
52	s	402	UQ	C6-C7-C8-C9
57	i	401	PEE	C4-O4P-P-O2P
57	j	201	PEE	C1-O3P-P-O2P
57	j	201	PEE	C4-O4P-P-O2P
57	j	203	PEE	C4-O4P-P-O1P
57	l	701	PEE	C1-O3P-P-O2P
57	l	701	PEE	C4-O4P-P-O1P
58	w	401	ADP	C5'-O5'-PA-O2A
57	l	704	PEE	C10-C11-C12-C13
50	s	401	CDL	OB5-CB3-CB4-CB6
57	l	704	PEE	O3P-C1-C2-C3
57	j	202	PEE	C44-C45-C46-C47
48	C	302	PLX	C9-C10-C11-C12
50	l	703	CDL	C78-C79-C80-C81
57	l	704	PEE	C32-C33-C34-C35
50	k	101	CDL	C33-C34-C35-C36
50	l	702	CDL	C56-C57-C58-C59
50	s	401	CDL	C34-C35-C36-C37
46	A	502	FMN	C1'-C2'-C3'-O3'
48	C	302	PLX	C25-C24-O8-C5
48	a	201	PLX	C25-C24-O8-C5
57	r	501	PEE	C5-C4-O4P-P
57	r	501	PEE	C13-C14-C15-C16

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Mol	Chain	Res	Type	Atoms
57	l	705	PEE	C15-C16-C17-C18
47	A	503	NAI	O4B-C4B-C5B-O5B
47	A	503	NAI	C3B-C4B-C5B-O5B
49	G	201	8Q1	N41-C42-C43-S44
50	l	703	CDL	OB5-CB3-CB4-OB6
57	j	201	PEE	O3P-C1-C2-O2
57	j	201	PEE	C30-C31-C32-C33
57	l	701	PEE	O3P-C1-C2-O2
57	r	501	PEE	C36-C37-C38-C39
50	r	504	CDL	C15-C16-C17-C18
50	V	202	CDL	O1-C1-CA2-OA2
49	G	201	8Q1	C43-C42-N41-C39
48	r	503	PLX	C19-C20-C21-C22
48	r	502	PLX	C3-C4-C5-O8
50	V	202	CDL	C13-C14-C15-C16
50	l	703	CDL	CB3-CB4-CB6-OB8
57	W	201	PEE	C12-C13-C14-C15
57	l	701	PEE	C1-C2-C3-O3
48	a	201	PLX	O6-C4-C5-O8
48	r	503	PLX	O6-C4-C5-O8
57	l	705	PEE	O2-C2-C3-O3
57	j	202	PEE	C37-C38-C39-C40
50	k	101	CDL	C23-C24-C25-C26
46	A	502	FMN	O2'-C2'-C3'-C4'
50	l	703	CDL	C18-C19-C20-C21
57	i	401	PEE	C2-C1-O3P-P
57	j	201	PEE	C31-C30-O3-C3
48	a	201	PLX	C16-C17-C18-C19
48	r	503	PLX	C33-C34-C35-C36
57	i	401	PEE	C24-C25-C26-C27
57	j	201	PEE	O5-C30-O3-C3
57	r	501	PEE	C32-C33-C34-C35
50	l	703	CDL	C20-C21-C22-C23
50	V	201	CDL	CB7-C71-C72-C73
48	j	204	PLX	C11-C10-C9-C8
50	s	401	CDL	C56-C57-C58-C59
50	V	201	CDL	C32-C31-CA7-OA8
50	b	201	CDL	C43-C44-C45-C46
50	V	202	CDL	C81-C82-C83-C84
50	V	202	CDL	C84-C85-C86-C87
50	k	101	CDL	C58-C59-C60-C61
50	b	201	CDL	C42-C43-C44-C45

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Mol	Chain	Res	Type	Atoms
50	V	202	CDL	C36-C37-C38-C39
50	k	101	CDL	C16-C17-C18-C19
50	k	101	CDL	CA6-CA4-OA6-CA5
57	l	704	PEE	C3-C2-O2-C10
57	l	704	PEE	C13-C14-C15-C16
57	i	401	PEE	O3P-C1-C2-O2
50	I	201	CDL	CB7-C71-C72-C73
48	r	503	PLX	C12-C13-C14-C15
50	l	703	CDL	C19-C20-C21-C22
48	j	204	PLX	O6-C4-C5-O8
50	V	201	CDL	OA6-CA4-CA6-OA8
50	r	504	CDL	OB6-CB4-CB6-OB8
48	C	302	PLX	C3-O4-P1-O1
48	a	201	PLX	C2-O1-P1-O4
50	V	201	CDL	CA2-OA2-PA1-OA5
50	l	702	CDL	CA2-OA2-PA1-OA5
50	n	101	CDL	CA2-OA2-PA1-OA5
57	j	202	PEE	C4-O4P-P-O3P
57	l	705	PEE	C4-O4P-P-O3P
47	A	503	NAI	C2D-C1D-N1N-C2N
48	j	204	PLX	C34-C35-C36-C37
50	l	703	CDL	C74-C75-C76-C77
48	C	302	PLX	C3-C4-C5-O8
50	V	201	CDL	C13-C14-C15-C16
50	l	703	CDL	C64-C65-C66-C67
50	V	202	CDL	C82-C83-C84-C85
47	A	503	NAI	O4D-C1D-N1N-C2N
50	l	702	CDL	C51-C52-C53-C54
50	s	401	CDL	C74-C75-C76-C77
57	i	401	PEE	C38-C39-C40-C41
49	X	201	8Q1	C10-C11-C12-C13
50	V	201	CDL	C21-C22-C23-C24
57	i	401	PEE	C35-C36-C37-C38
57	i	401	PEE	C37-C38-C39-C40
50	V	202	CDL	C77-C78-C79-C80
57	r	501	PEE	C38-C39-C40-C41
48	C	302	PLX	C16-C17-C18-C19
57	i	401	PEE	C18-C19-C20-C21
57	j	202	PEE	C38-C39-C40-C41
57	l	704	PEE	C16-C17-C18-C19
50	l	703	CDL	C32-C31-CA7-OA8
48	r	503	PLX	O8-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
57	l	704	PEE	O2-C2-C3-O3
57	l	705	PEE	C2-C1-O3P-P
57	i	401	PEE	C16-C17-C18-C19
57	j	201	PEE	C16-C17-C18-C19
57	l	701	PEE	C36-C37-C38-C39
57	l	704	PEE	C38-C39-C40-C41
50	l	703	CDL	C38-C39-C40-C41
50	b	201	CDL	C59-C60-C61-C62
48	a	201	PLX	C7-C8-C9-C10
50	l	702	CDL	C55-C56-C57-C58
50	l	702	CDL	C80-C81-C82-C83
57	i	401	PEE	C14-C15-C16-C17
48	a	201	PLX	C28-C29-C30-C31
50	b	201	CDL	C39-C40-C41-C42
50	b	201	CDL	C12-C13-C14-C15
48	r	503	PLX	C26-C27-C28-C29
50	k	101	CDL	C55-C56-C57-C58
57	l	704	PEE	C15-C16-C17-C18
48	C	302	PLX	C19-C20-C21-C22
50	V	201	CDL	C22-C23-C24-C25
57	l	705	PEE	C31-C32-C33-C34
48	j	204	PLX	C36-C37-C38-C39
57	W	201	PEE	C16-C17-C18-C19
57	j	203	PEE	C18-C19-C20-C21
48	g	201	PLX	C5-C4-O6-C6
48	r	502	PLX	C2-O1-P1-O4
50	n	101	CDL	CB3-OB5-PB2-OB2
51	J	401	NDP	O4D-C1D-N1N-C6N
50	r	504	CDL	CB7-C71-C72-C73
46	A	502	FMN	O2'-C2'-C3'-O3'
50	s	401	CDL	C40-C41-C42-C43
57	l	701	PEE	O3P-C1-C2-C3
50	k	101	CDL	C43-C44-C45-C46
57	j	201	PEE	C34-C35-C36-C37
49	G	201	8Q1	C42-C43-S44-C1
49	X	201	8Q1	C42-C43-S44-C1
49	G	201	8Q1	C12-C13-C14-C15
50	V	201	CDL	CB5-C51-C52-C53
57	j	202	PEE	C13-C14-C15-C16
52	s	402	UQ	C9-C11-C12-C13
50	V	201	CDL	C60-C61-C62-C63
48	r	502	PLX	C29-C30-C31-C32

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Mol	Chain	Res	Type	Atoms
57	r	501	PEE	C16-C17-C18-C19
50	r	504	CDL	CB3-CB4-CB6-OB8
57	j	203	PEE	C33-C34-C35-C36
50	r	504	CDL	C72-C71-CB7-OB8
57	l	701	PEE	C38-C39-C40-C41
50	l	702	CDL	C72-C73-C74-C75
50	V	202	CDL	C32-C31-CA7-OA8
48	g	201	PLX	O6-C6-C7-C8
48	g	201	PLX	O8-C24-C25-C26
48	j	205	PLX	O6-C6-C7-C8
50	b	201	CDL	OB5-CB3-CB4-CB6
57	j	201	PEE	O4P-C4-C5-N
48	a	201	PLX	C11-C12-C13-C14
50	l	703	CDL	C76-C77-C78-C79
57	l	704	PEE	C2-C1-O3P-P
57	i	401	PEE	O2-C2-C3-O3
48	r	503	PLX	C24-C25-C26-C27
48	a	201	PLX	C32-C33-C34-C35
50	V	201	CDL	C35-C36-C37-C38
50	l	702	CDL	C37-C38-C39-C40
57	j	203	PEE	C16-C17-C18-C19
46	A	502	FMN	C5'-O5'-P-O3P
48	j	205	PLX	C24-C25-C26-C27
50	b	201	CDL	C32-C31-CA7-OA8
57	r	501	PEE	C39-C40-C41-C42
50	V	202	CDL	C78-C79-C80-C81
57	l	701	PEE	C16-C17-C18-C19
50	V	201	CDL	C17-C18-C19-C20
50	V	202	CDL	C74-C75-C76-C77
48	j	205	PLX	C7-C6-O6-C4
57	i	401	PEE	C1-C2-C3-O3
57	l	704	PEE	C1-C2-C3-O3
50	V	201	CDL	OB5-CB3-CB4-OB6
50	l	702	CDL	OB5-CB3-CB4-OB6
50	l	703	CDL	OA5-CA3-CA4-OA6
55	Q	501	UQ1	C7-C8-C9-C11
50	l	702	CDL	C72-C71-CB7-OB8
48	r	502	PLX	C34-C35-C36-C37
47	A	503	NAI	C2D-C1D-N1N-C6N
50	k	101	CDL	C54-C55-C56-C57
50	r	504	CDL	C79-C80-C81-C82
52	s	402	UQ	C12-C13-C14-C15

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Mol	Chain	Res	Type	Atoms
48	g	201	PLX	C16-C17-C18-C19
50	b	201	CDL	C18-C19-C20-C21
50	l	703	CDL	C71-C72-C73-C74
48	j	204	PLX	C28-C29-C30-C31
50	I	201	CDL	C72-C71-CB7-OB8
50	V	202	CDL	C52-C51-CB5-OB6
50	l	703	CDL	C52-C53-C54-C55
50	l	702	CDL	C12-C11-CA5-OA6
50	l	703	CDL	C72-C71-CB7-OB8
50	l	703	CDL	C22-C23-C24-C25
50	I	201	CDL	C12-C11-CA5-OA6
48	C	302	PLX	O9-C24-C25-C26
48	g	201	PLX	O7-C6-C7-C8
50	b	201	CDL	C12-C11-CA5-OA6
50	l	702	CDL	OA7-CA5-OA6-CA4
57	j	201	PEE	C36-C37-C38-C39
50	n	101	CDL	C32-C31-CA7-OA8
50	b	201	CDL	CA7-C31-C32-C33
57	j	201	PEE	C18-C19-C20-C21
57	j	202	PEE	C16-C17-C18-C19
50	l	702	CDL	C72-C71-CB7-OB9
50	r	504	CDL	CA5-C11-C12-C13
50	b	201	CDL	OB5-CB3-CB4-OB6
57	j	202	PEE	O3-C30-C31-C32
50	n	101	CDL	C32-C31-CA7-OA9
48	j	205	PLX	C36-C37-C38-C39
50	I	201	CDL	C72-C71-CB7-OB9
50	V	202	CDL	C44-C45-C46-C47
50	r	504	CDL	C73-C74-C75-C76
50	k	101	CDL	OA7-CA5-OA6-CA4
50	b	201	CDL	C32-C31-CA7-OA9
47	A	503	NAI	C2N-C3N-C7N-N7N
48	a	201	PLX	C3-O4-P1-O2
48	a	201	PLX	C2-O1-P1-O2
50	I	201	CDL	CA3-OA5-PA1-OA3
50	k	101	CDL	CB3-OB5-PB2-OB4
57	i	401	PEE	C1-O3P-P-O1P
57	j	202	PEE	C4-O4P-P-O1P
58	w	401	ADP	C5'-O5'-PA-O1A
51	J	401	NDP	O4B-C4B-C5B-O5B
50	V	202	CDL	C52-C51-CB5-OB7
50	l	702	CDL	C12-C11-CA5-OA7

Continued on next page...

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Mol	Chain	Res	Type	Atoms
50	k	101	CDL	C12-C11-CA5-OA6
50	l	702	CDL	C52-C51-CB5-OB6
50	n	101	CDL	C52-C51-CB5-OB6
50	s	401	CDL	C20-C21-C22-C23
57	i	401	PEE	C36-C37-C38-C39
57	l	705	PEE	C38-C39-C40-C41
57	j	201	PEE	O3-C30-C31-C32
50	n	101	CDL	C72-C73-C74-C75
48	j	205	PLX	C25-C24-O8-C5
50	s	401	CDL	CA3-CA4-OA6-CA5
50	s	401	CDL	CA6-CA4-OA6-CA5
57	l	705	PEE	C5-C4-O4P-P
57	j	202	PEE	O5-C30-C31-C32
49	G	201	8Q1	C6-C7-C8-C9
50	b	201	CDL	C44-C45-C46-C47
50	b	201	CDL	C12-C11-CA5-OA7
57	l	704	PEE	C36-C37-C38-C39
50	r	504	CDL	C52-C51-CB5-OB6
50	I	201	CDL	C12-C11-CA5-OA7
50	l	703	CDL	C72-C71-CB7-OB9
50	l	702	CDL	C15-C16-C17-C18
48	r	502	PLX	C6-C7-C8-C9
48	j	204	PLX	C12-C13-C14-C15
57	j	201	PEE	C20-C21-C22-C23
48	C	302	PLX	C15-C16-C17-C18
50	l	702	CDL	C39-C40-C41-C42
50	s	401	CDL	C72-C71-CB7-OB8
48	a	201	PLX	C9-C10-C11-C12
50	l	702	CDL	C53-C54-C55-C56

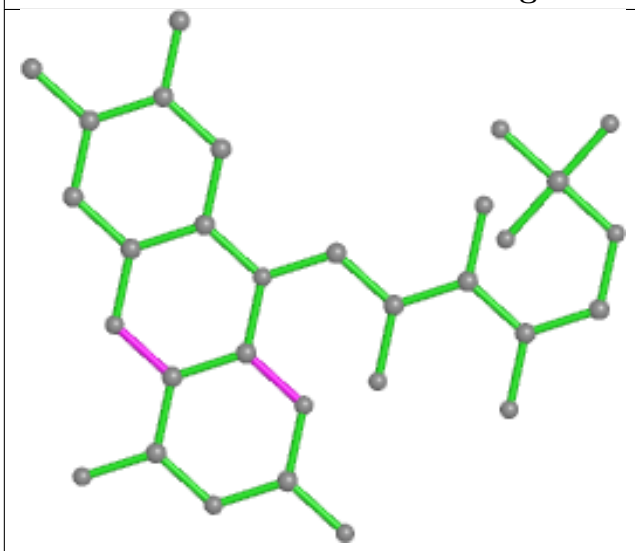
There are no ring outliers.

No monomer is involved in short contacts.

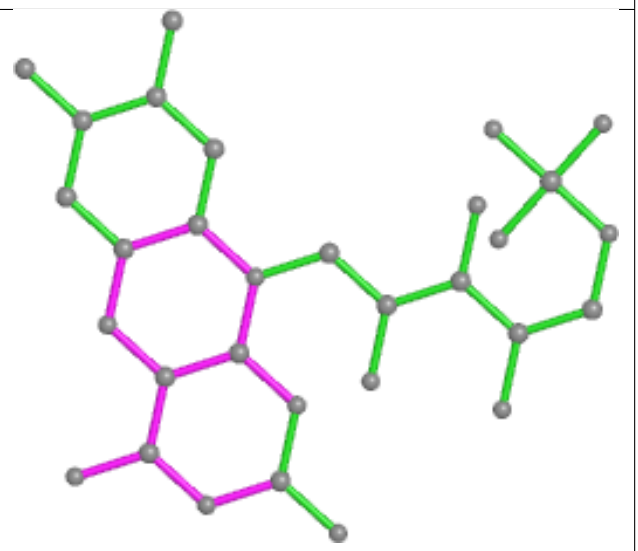
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier.

The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

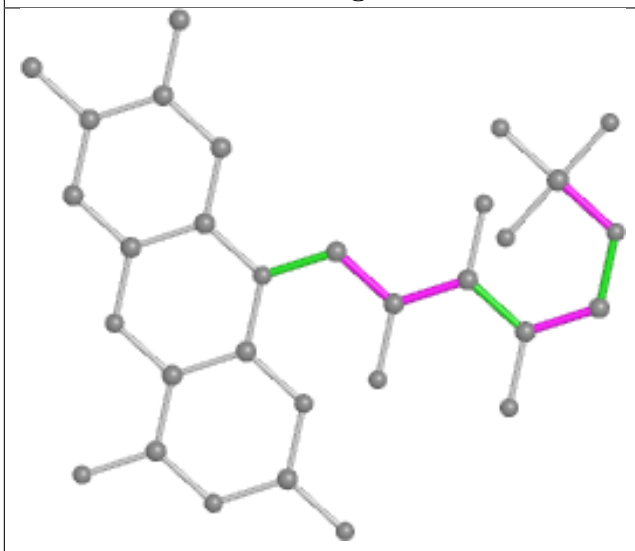
Ligand FMN A 502



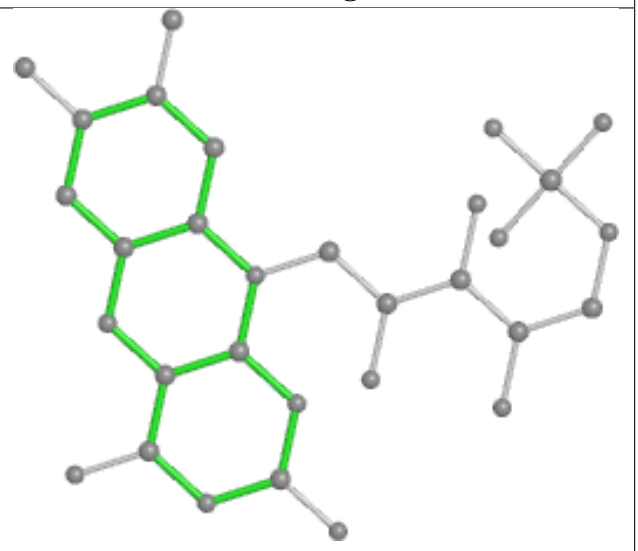
Bond lengths



Bond angles

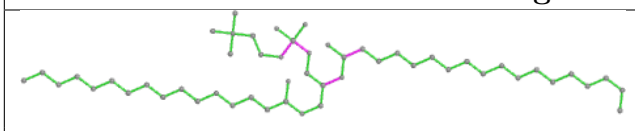


Torsions

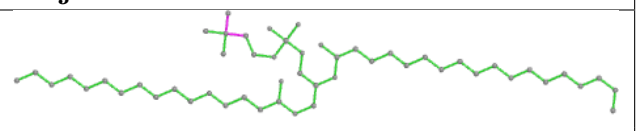


Rings

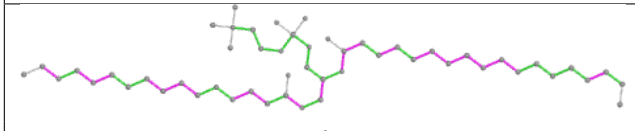
Ligand PLX j 205



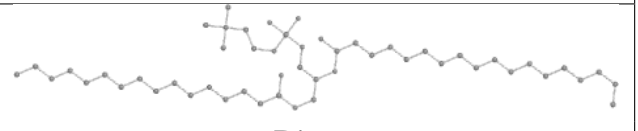
Bond lengths



Bond angles

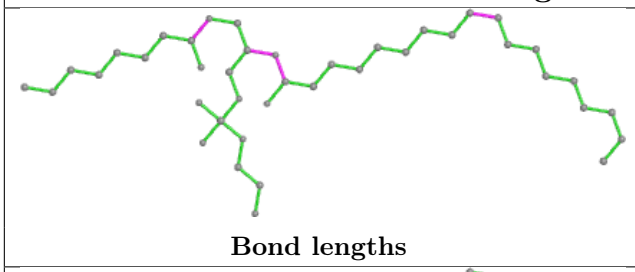


Torsions



Rings

Ligand PEE j 203



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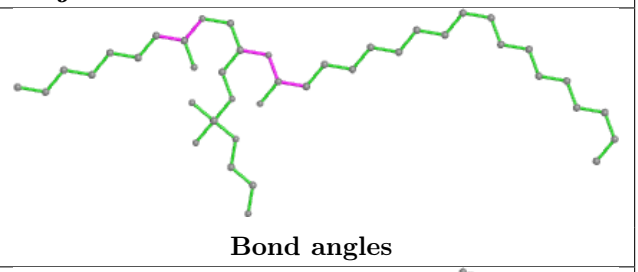
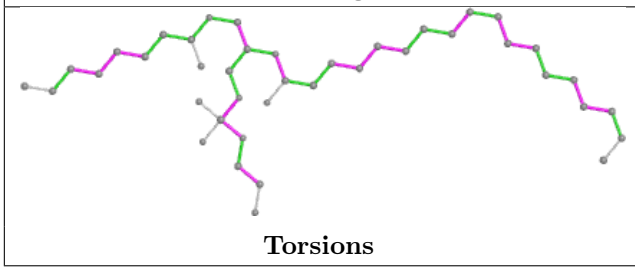
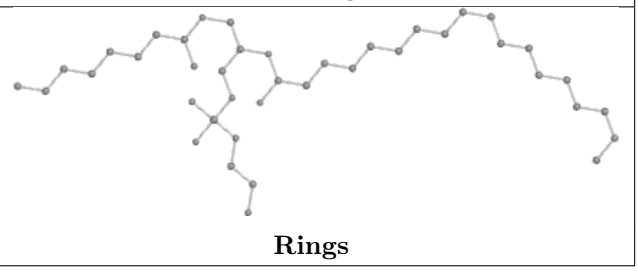


Bond angles

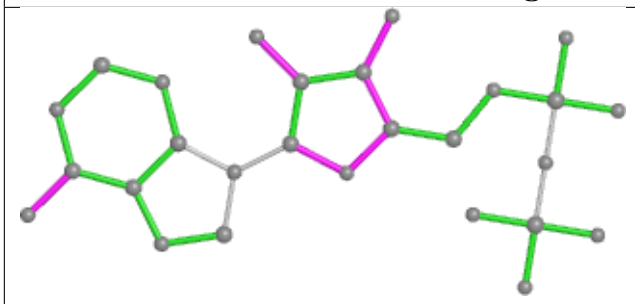


Torsions

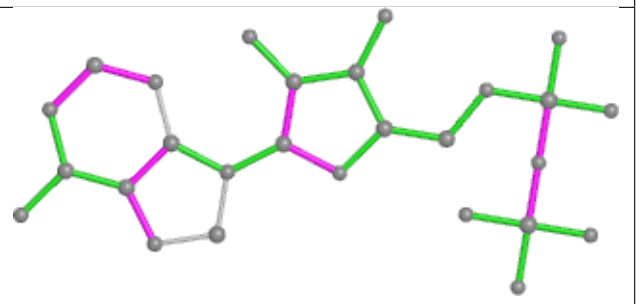


Rings

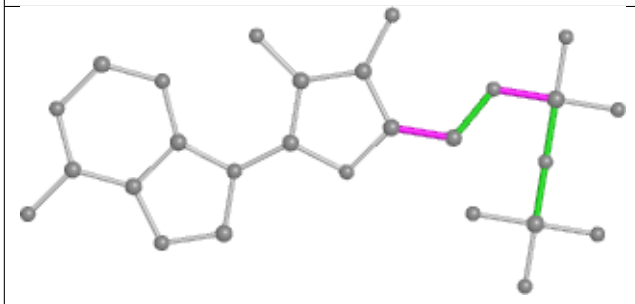
Ligand ADP w 401



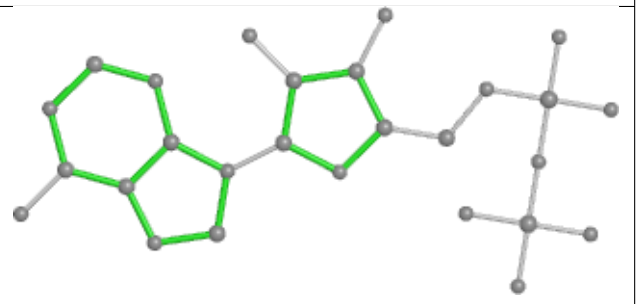
Bond lengths



Bond angles

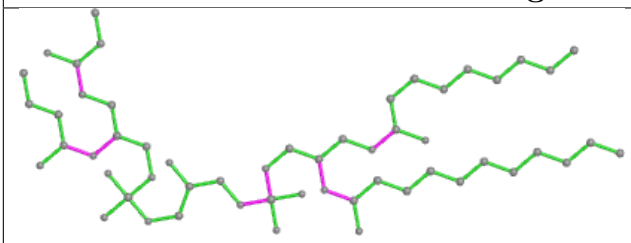


Torsions

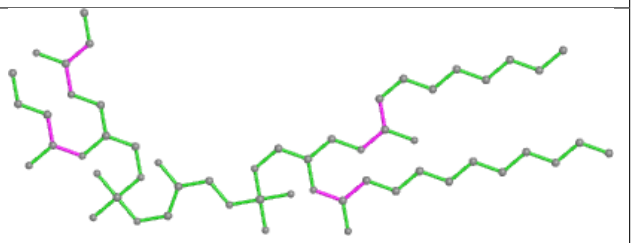


Rings

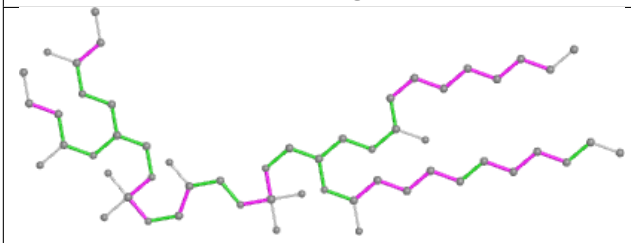
Ligand CDL n 101



Bond lengths



Bond angles



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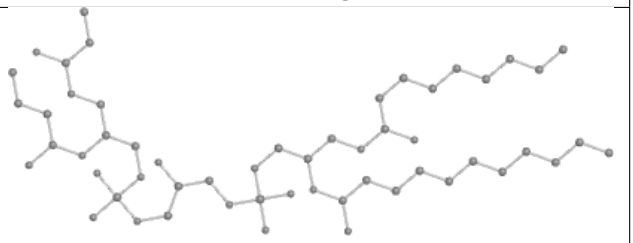
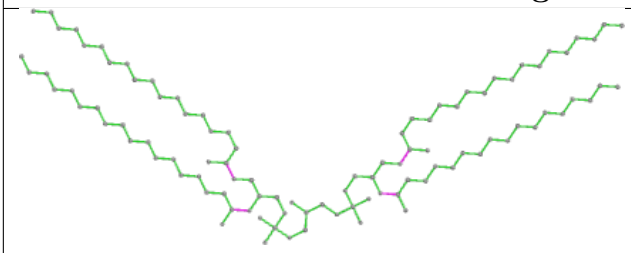


Rings

Ligand CDL l 702



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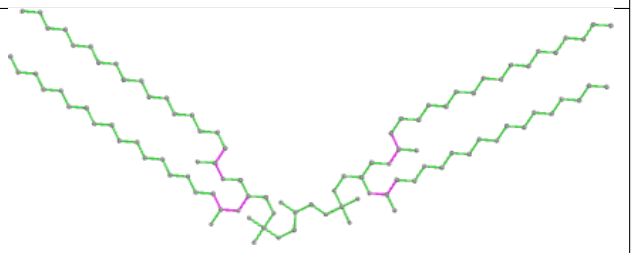

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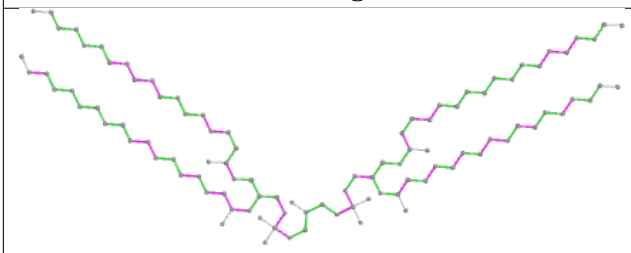

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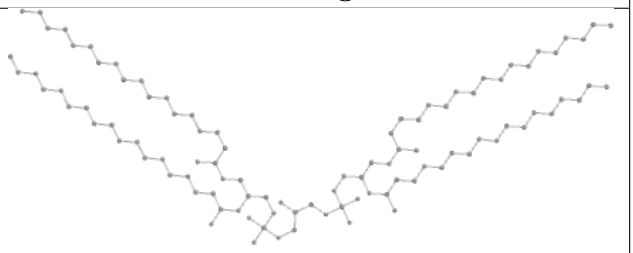
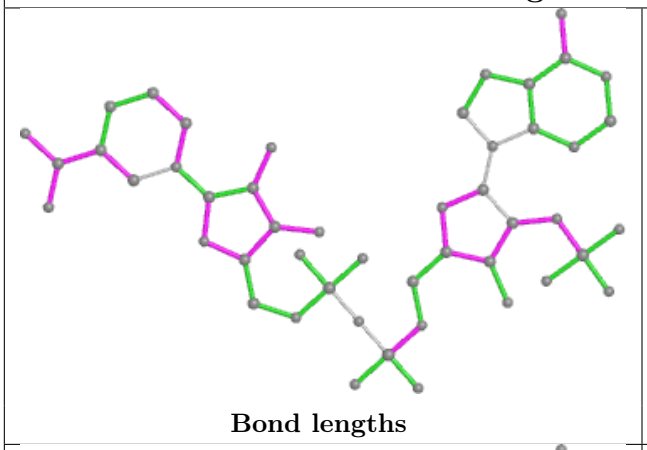
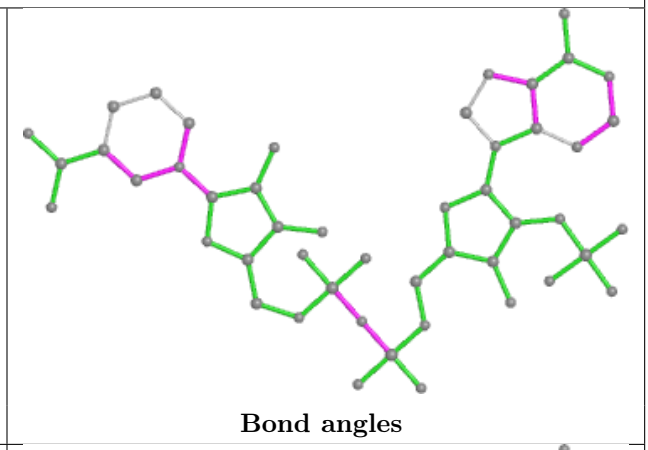


Rings

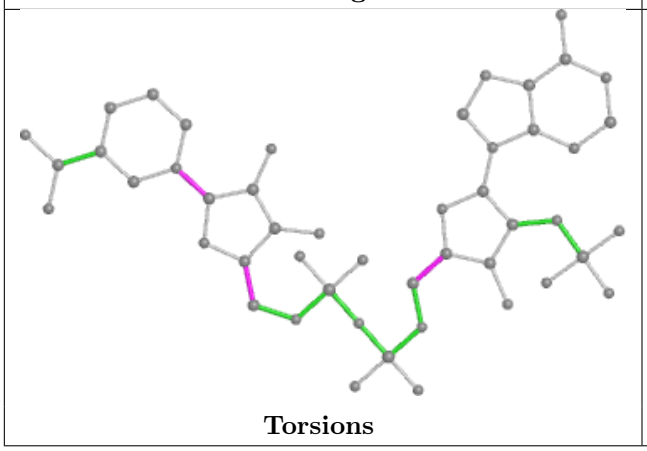
Ligand NDP J 401



Bond lengths



Bond angles



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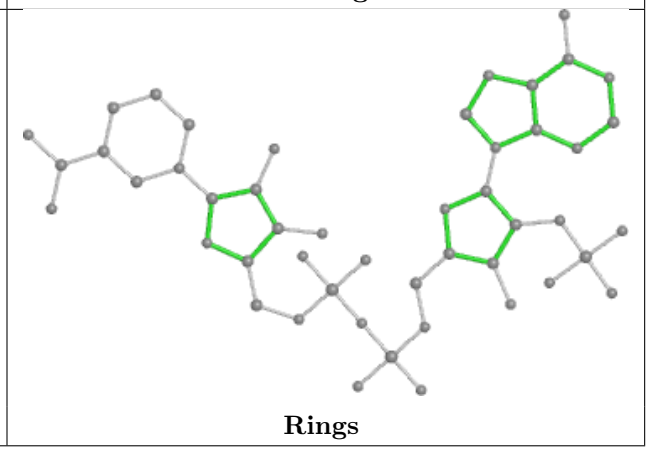
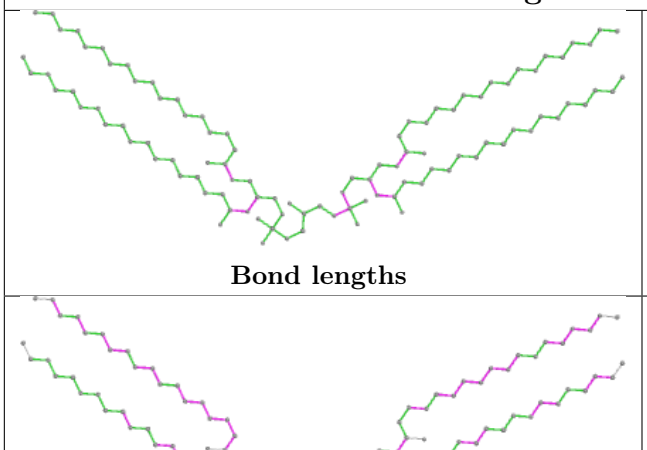


Rings

Ligand CDL V 202



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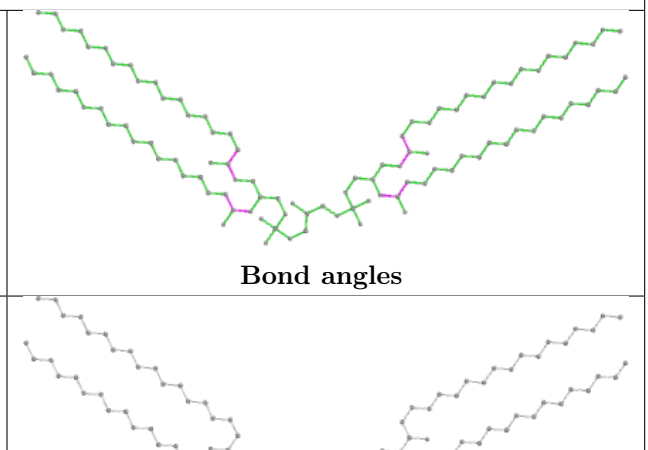
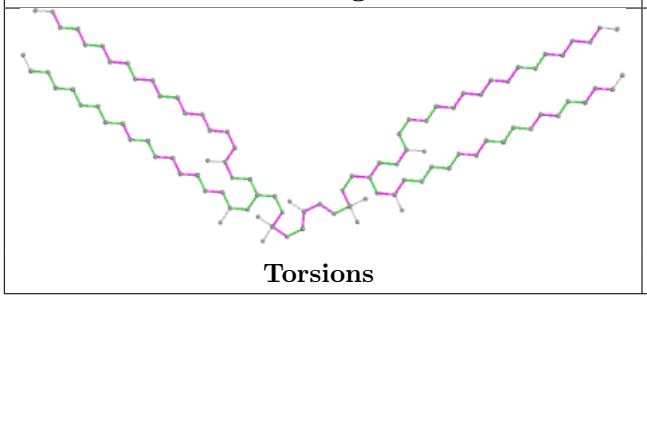
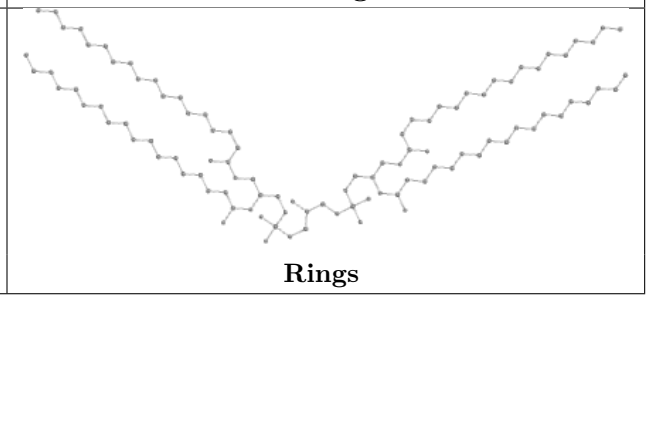


Bond angles

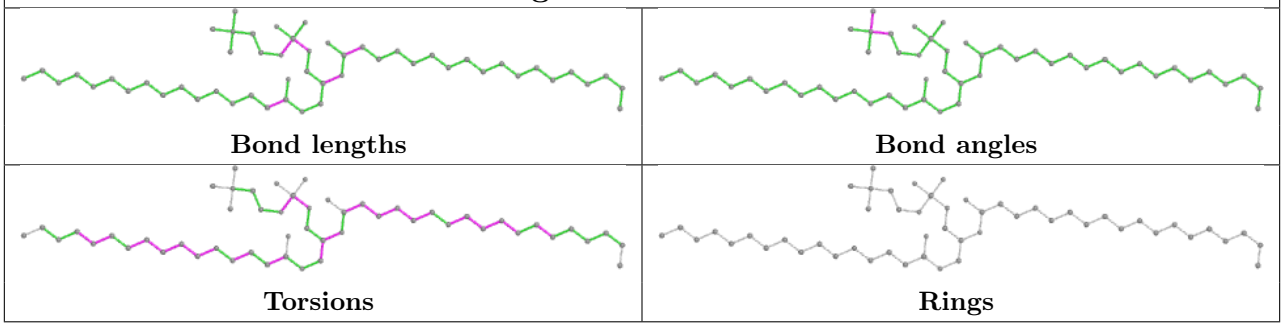


Torsions

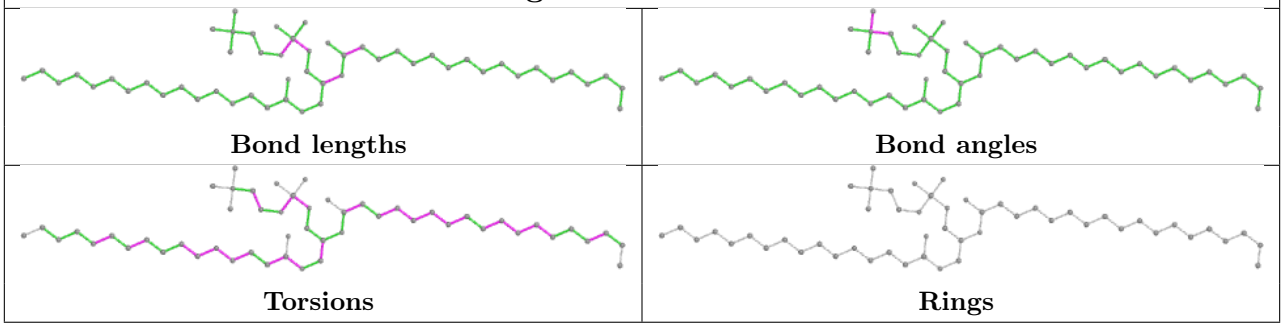


Rings

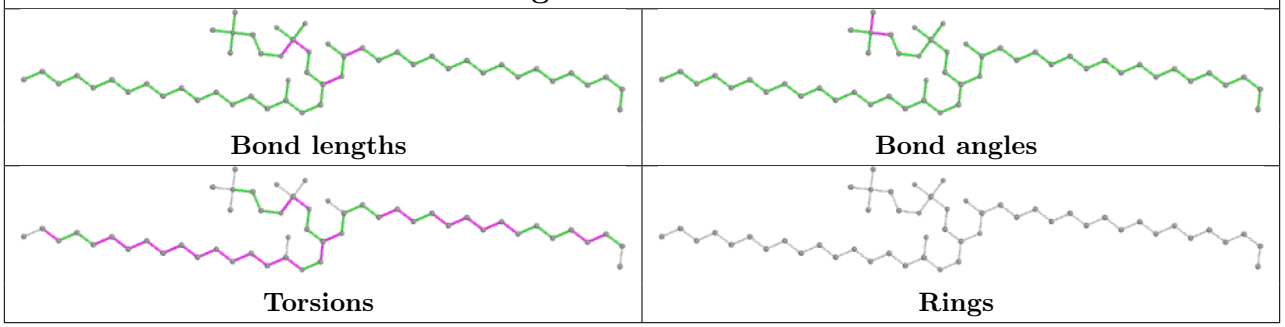
Ligand PLX r 502



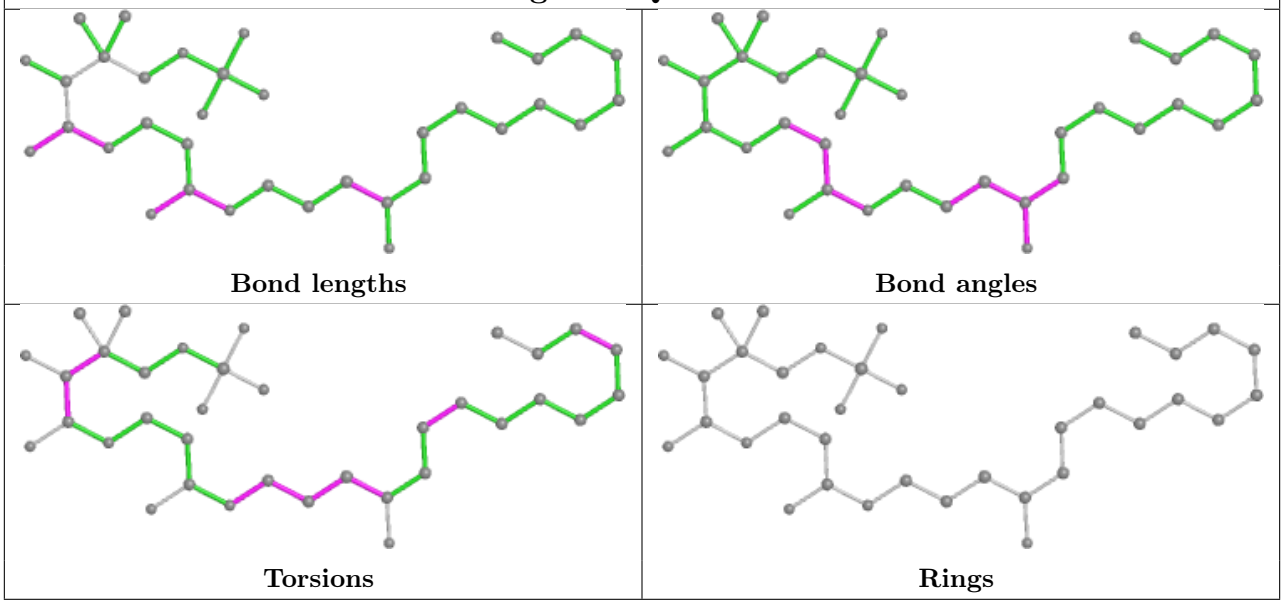
Ligand PLX C 302



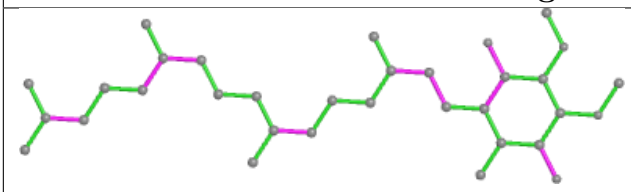
Ligand PLX r 503

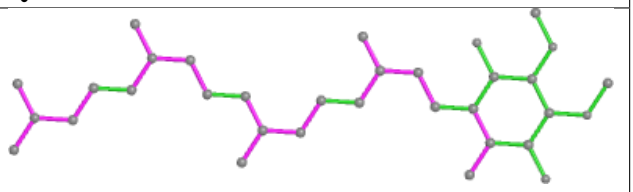


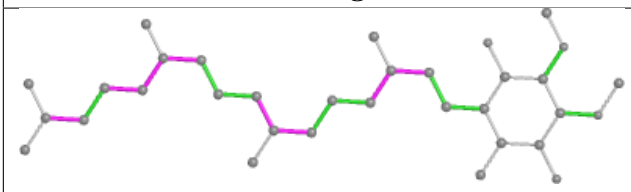
Ligand 8Q1 G 201

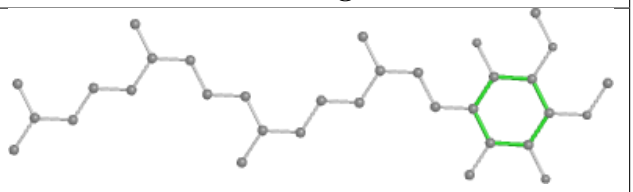


Ligand UQ J 402

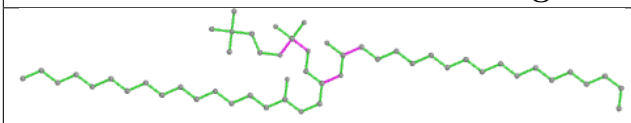

Bond lengths


Bond angles


Torsions


Rings

Ligand PLX j 204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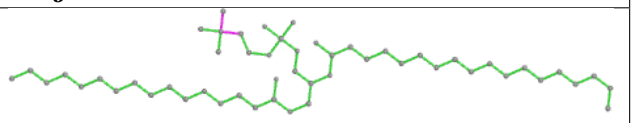
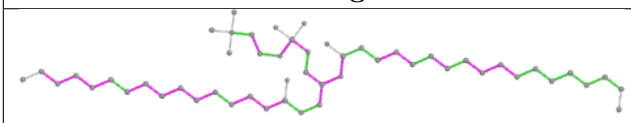

Bond angles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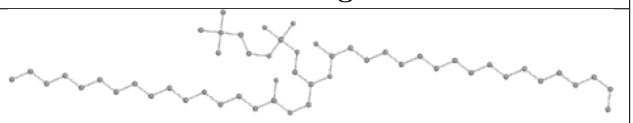
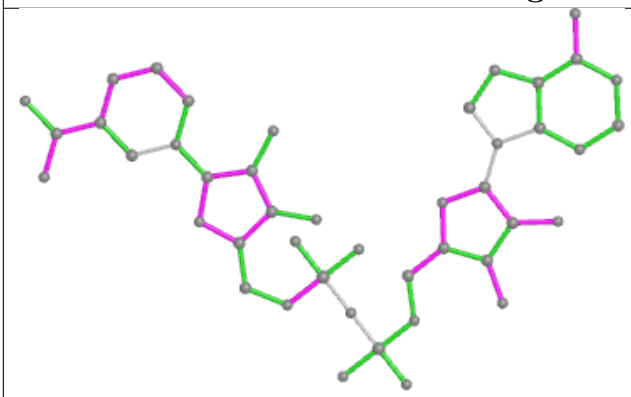
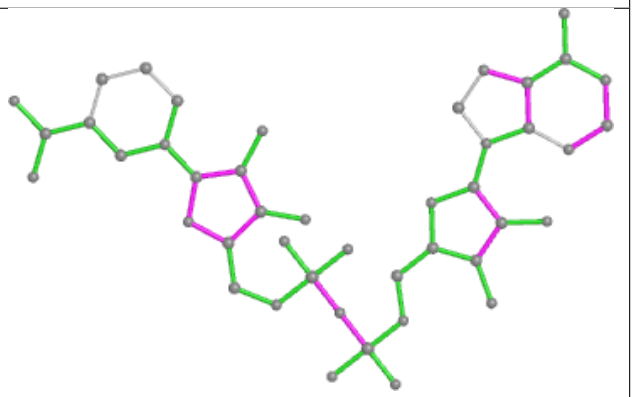
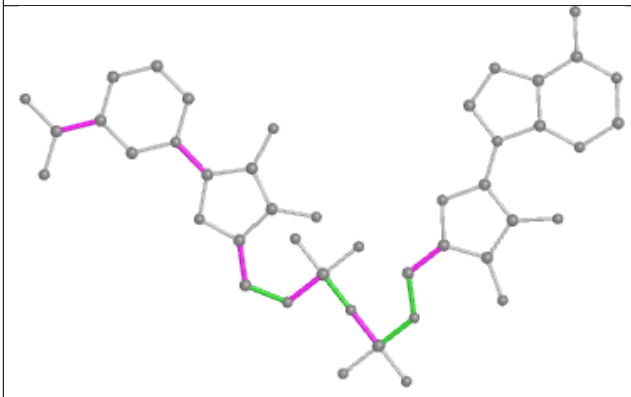
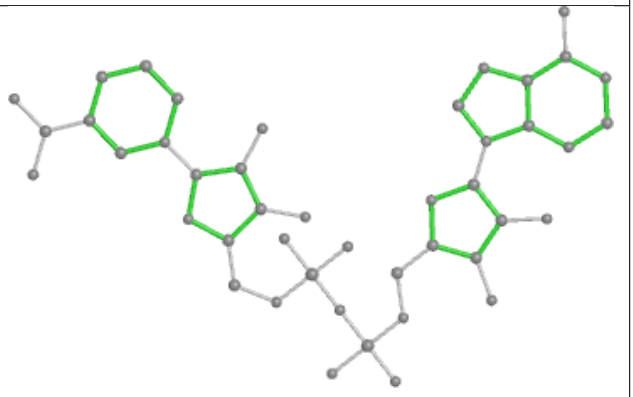

Rings

Ligand NAI A 503

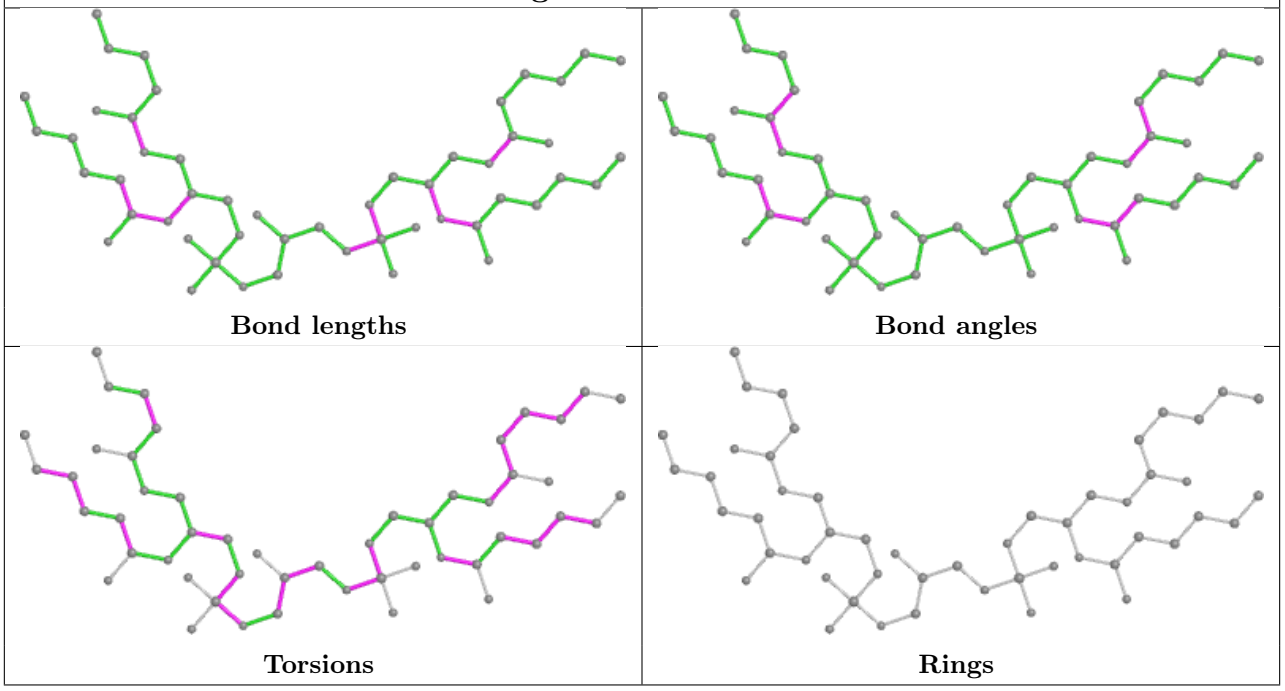

Bond lengths


Bond angles

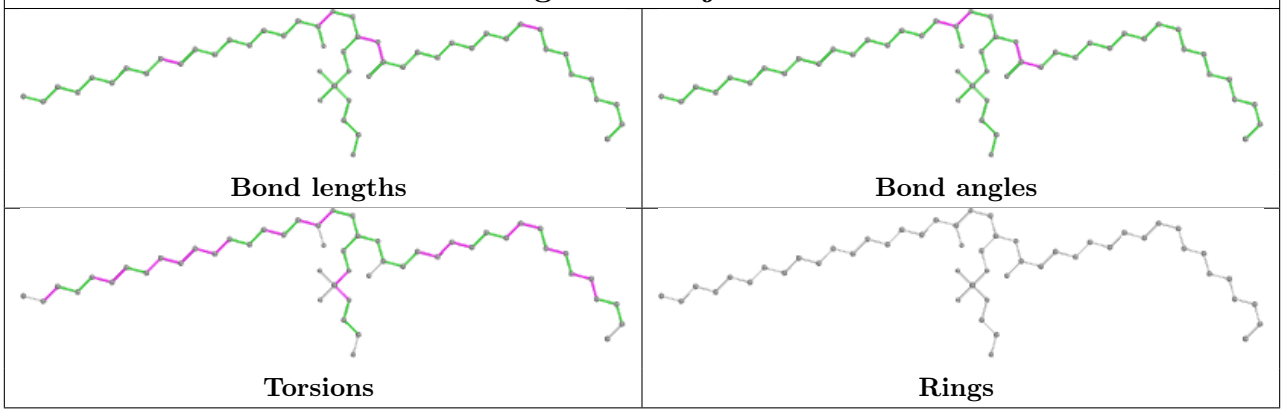

Torsions


Rings

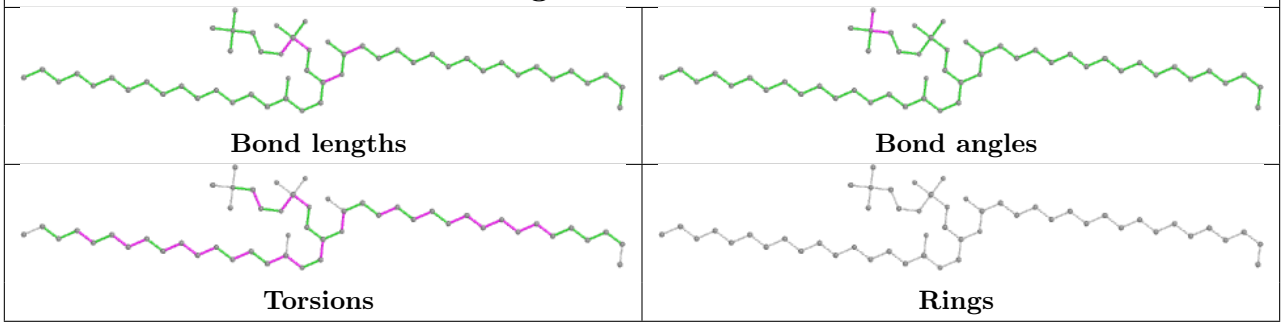
Ligand CDL I 201



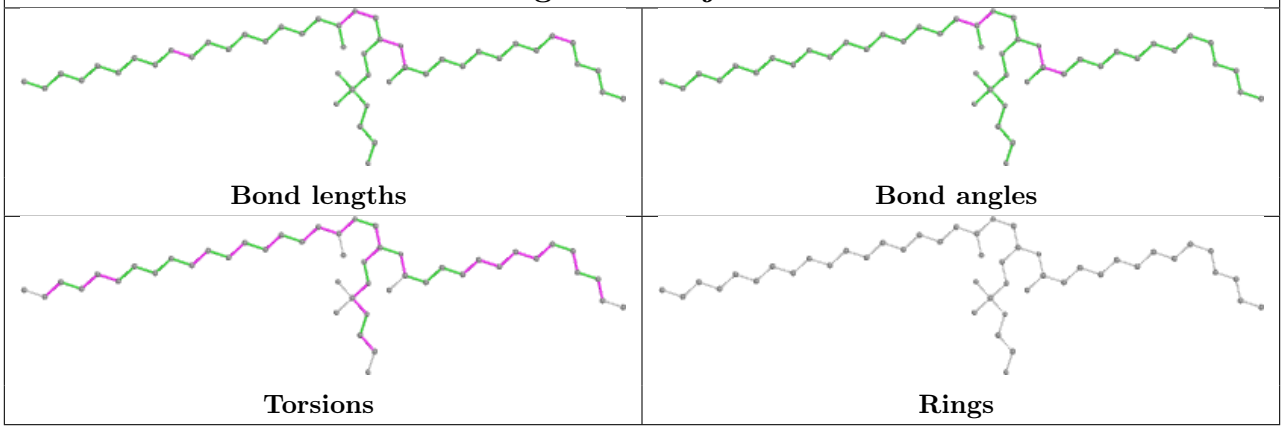
Ligand PEE j 202



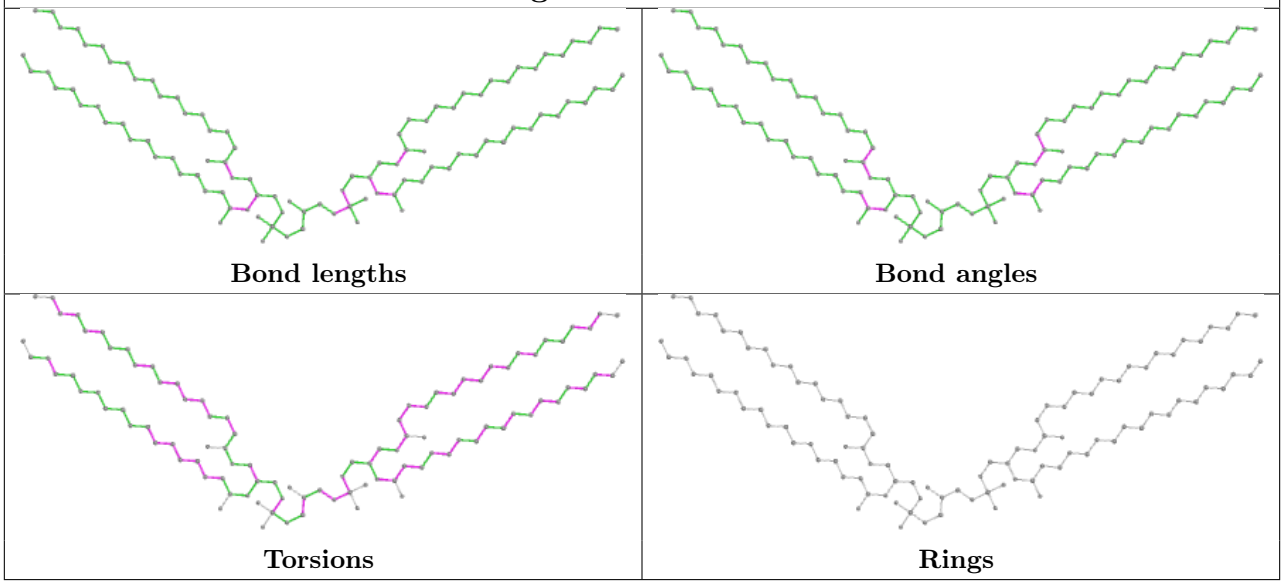
Ligand PLX a 201



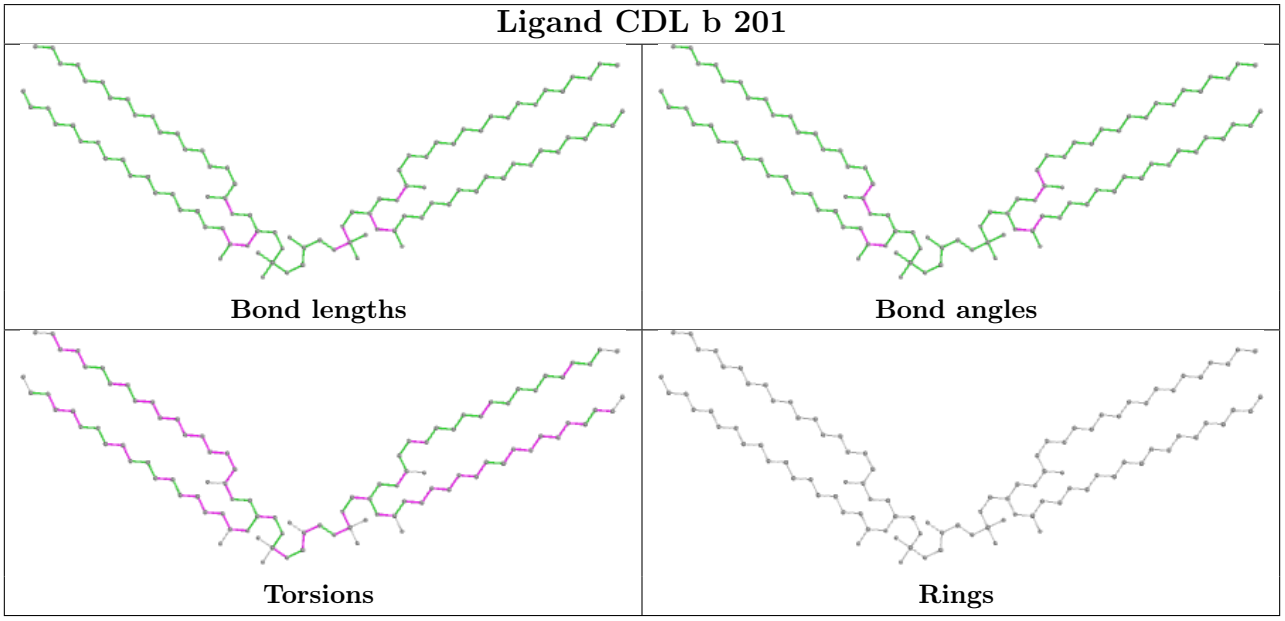
Ligand PEE j 201



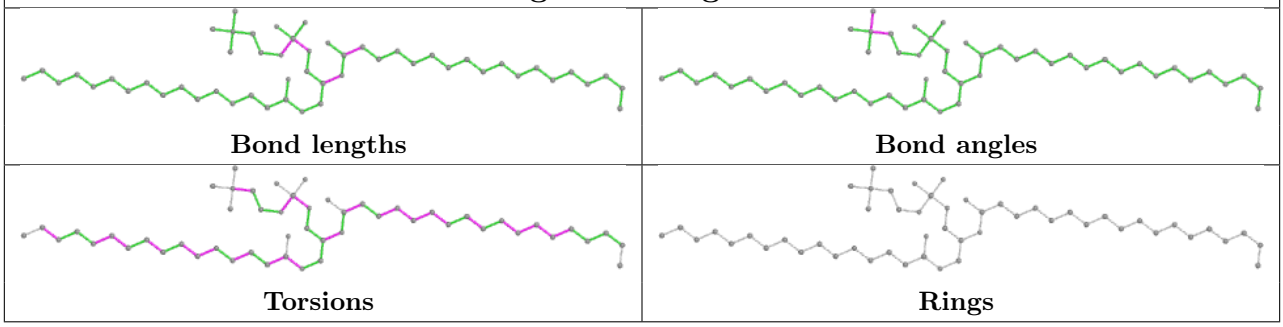
Ligand CDL r 504



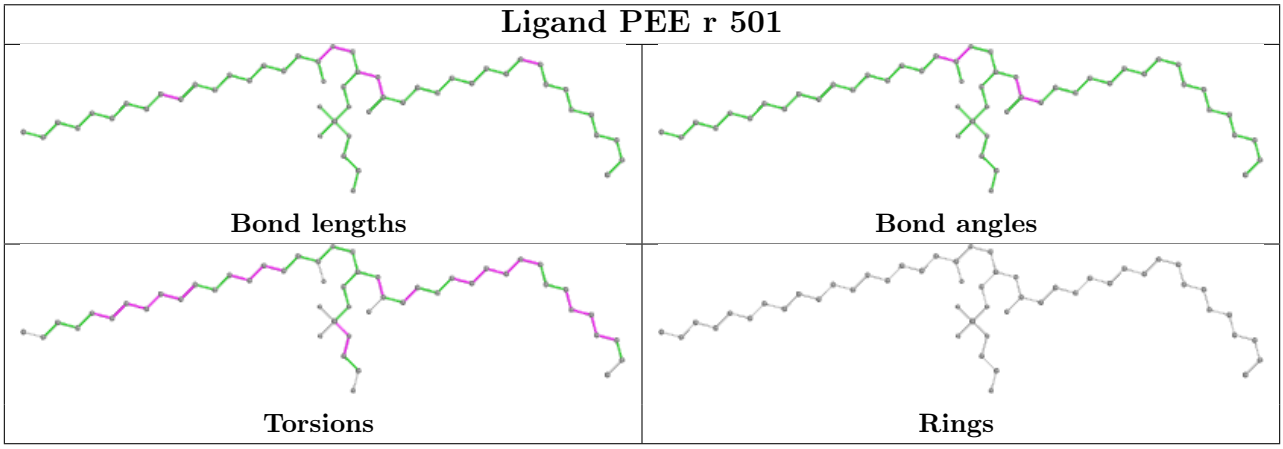
Ligand CDL b 201



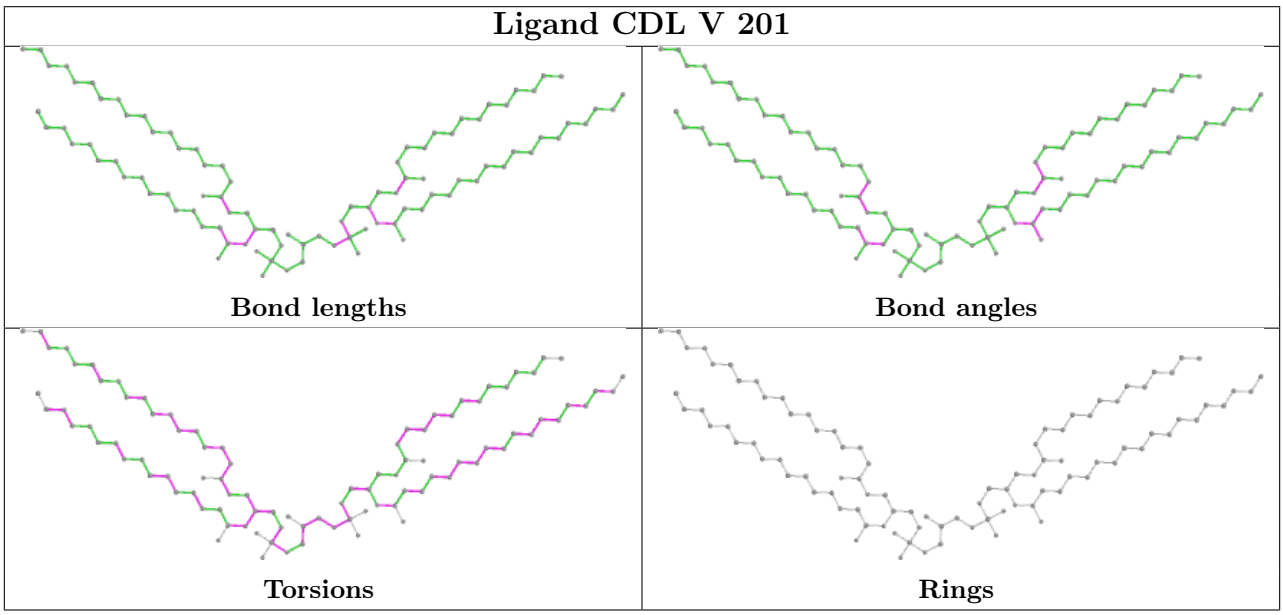
Ligand PLX g 201



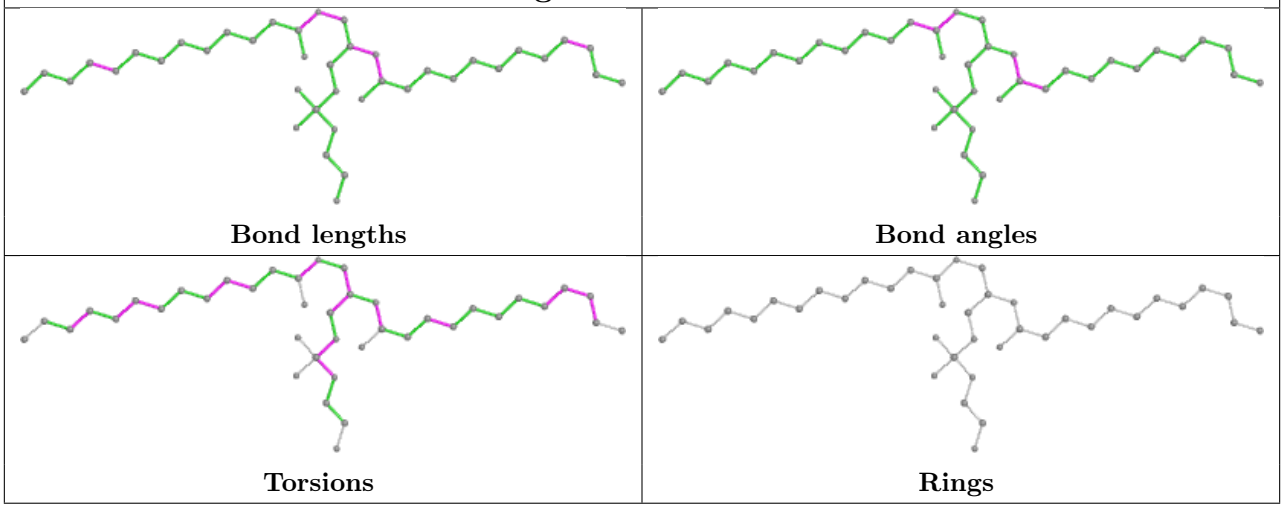
Ligand PEE r 501



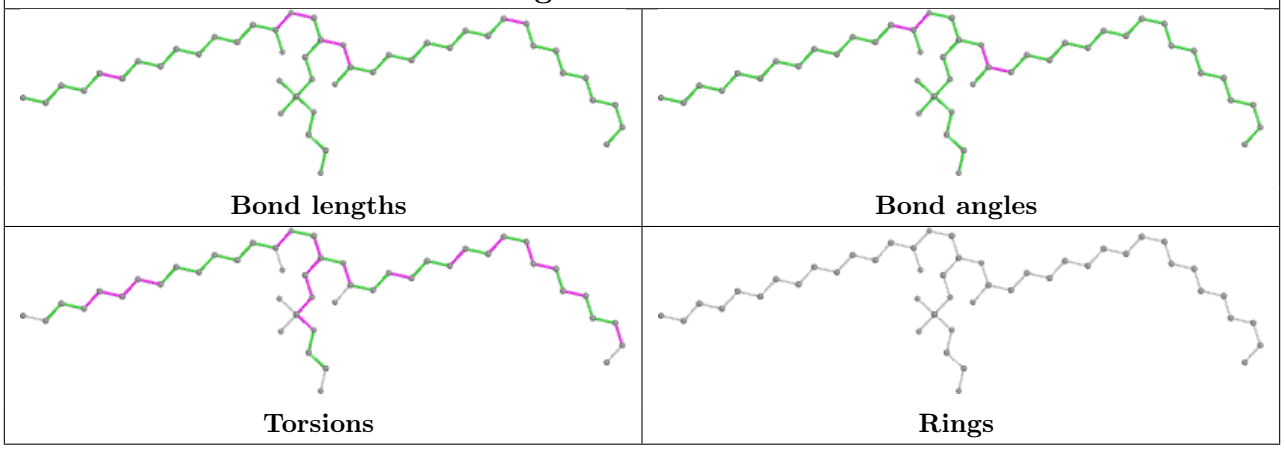
Ligand CDL V 201



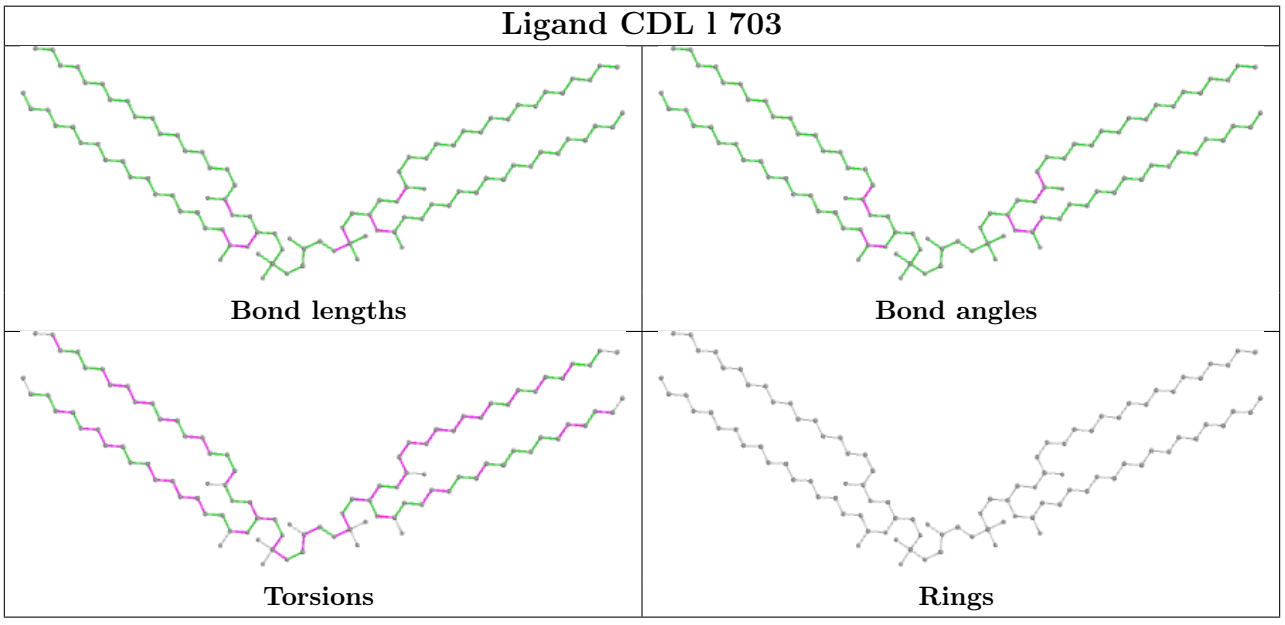
Ligand PEE l 701



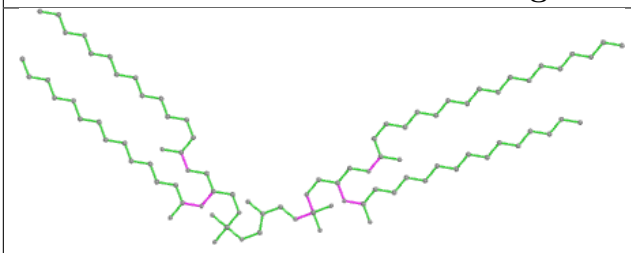
Ligand PEE i 401



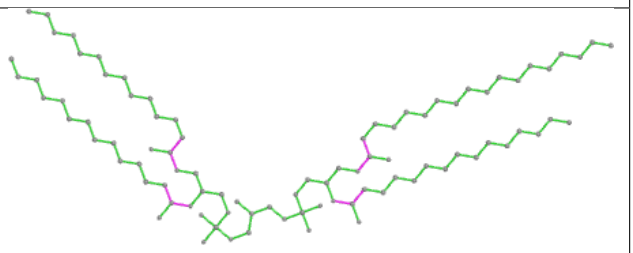
Ligand CDL l 703



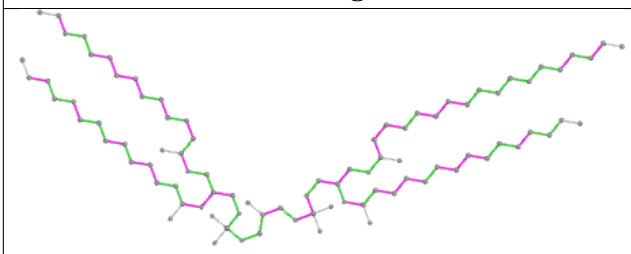
Ligand CDL s 401



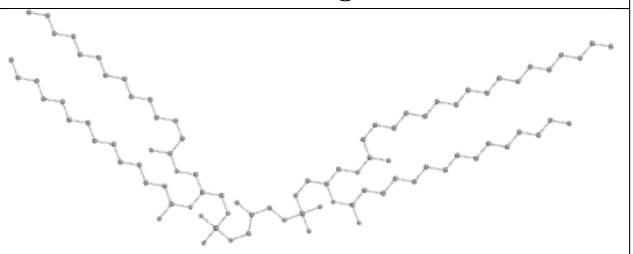
Bond lengths



Bond angles

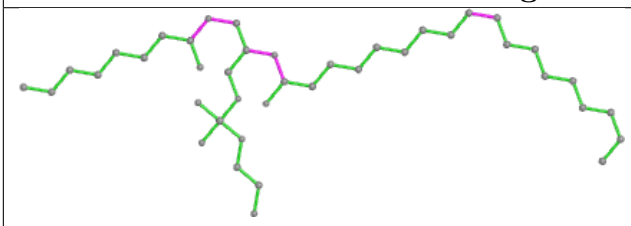


Torsions

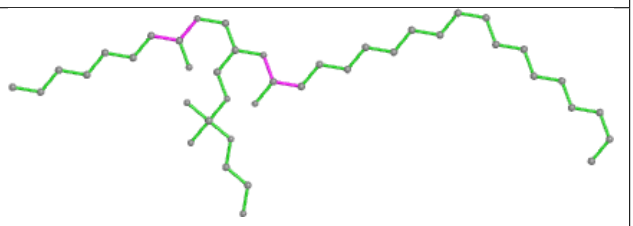


Rings

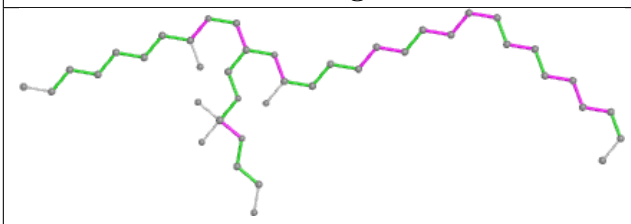
Ligand PEE W 201



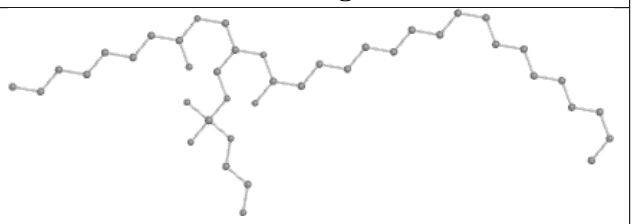
Bond lengths



Bond angles

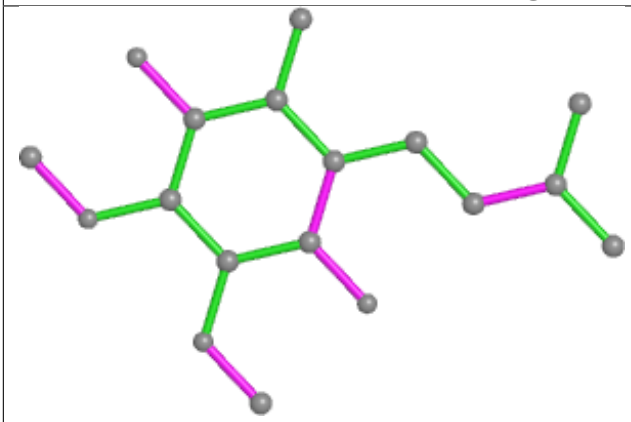


Torsions

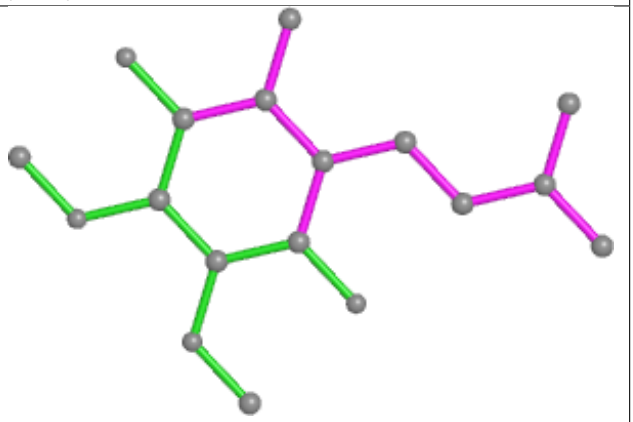


Rings

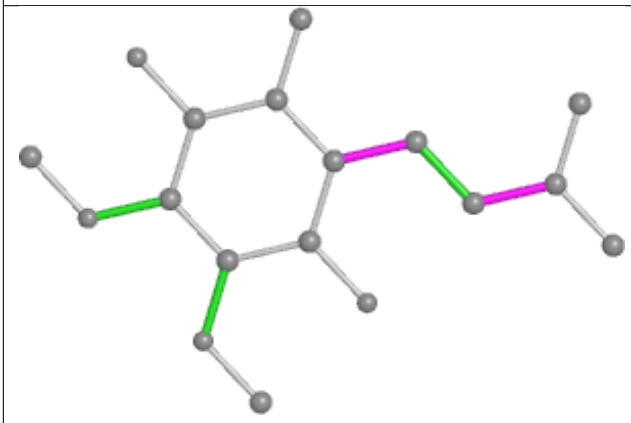
Ligand UQ1 Q 501



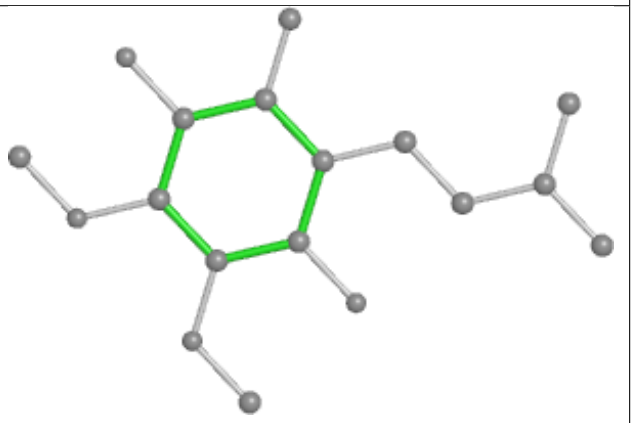
Bond lengths



Bond angles

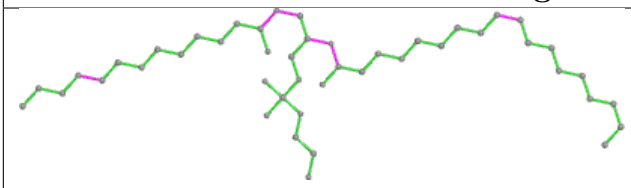


Torsions

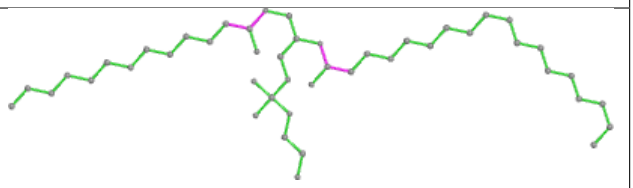


Rings

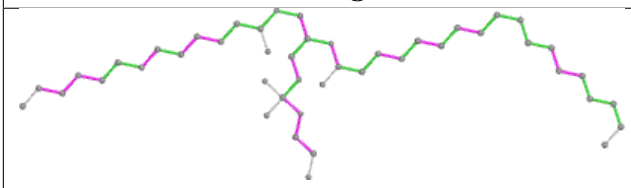
Ligand PEE l 705



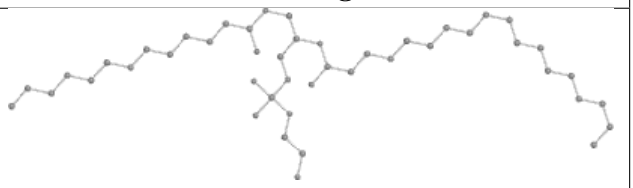
Bond lengths



Bond angles

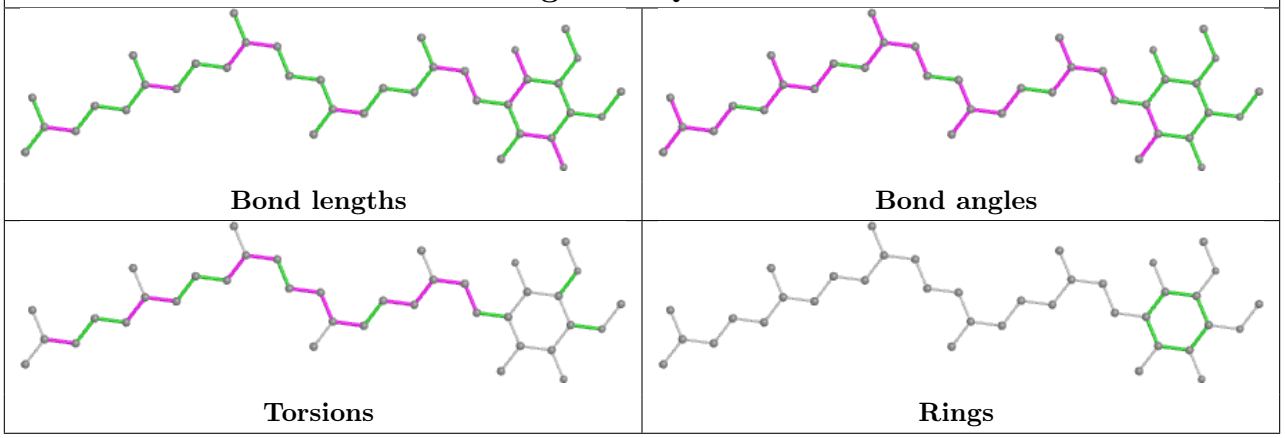


Torsions

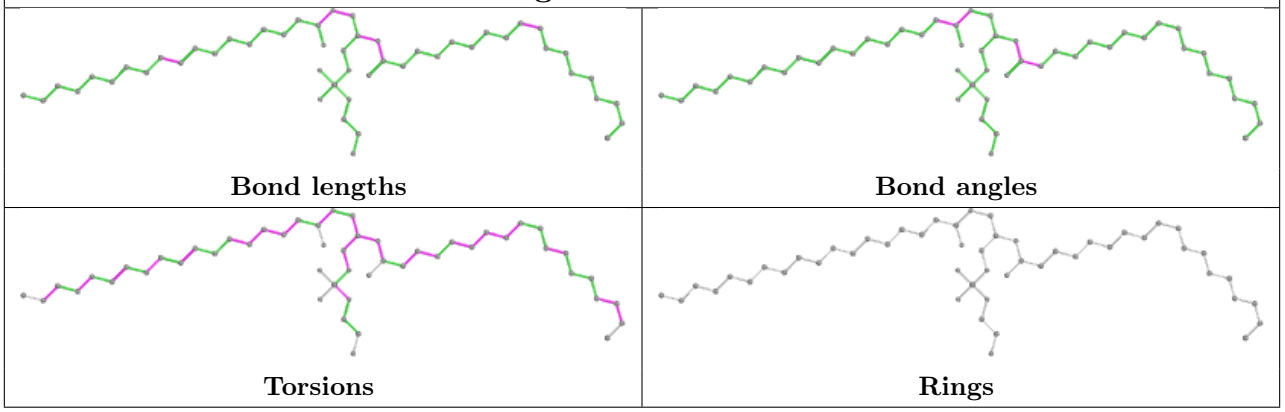


Rings

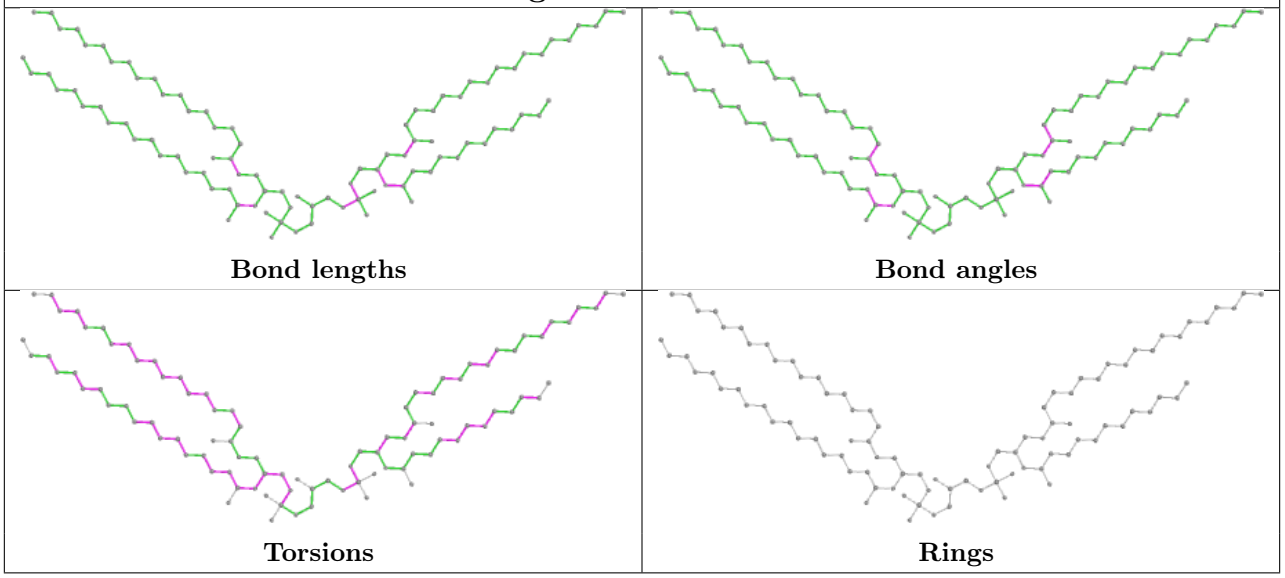
Ligand UQ s 402



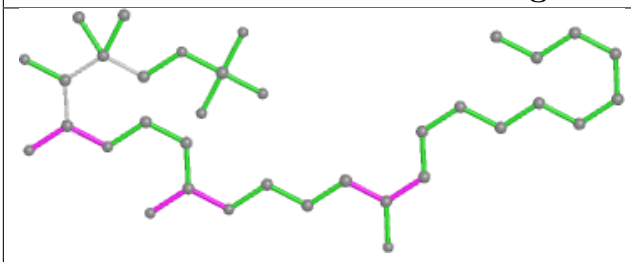
Ligand PEE l 704



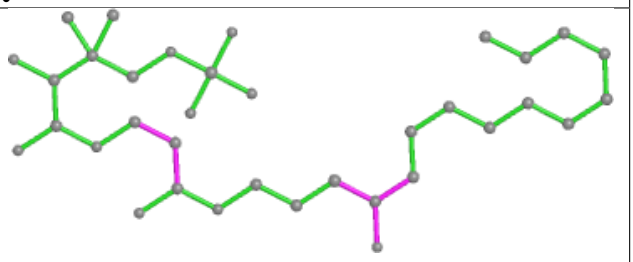
Ligand CDL k 101



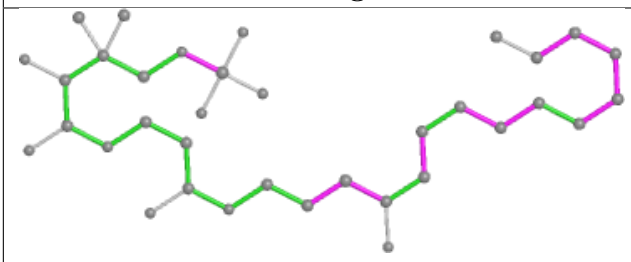
Ligand 8Q1 X 201



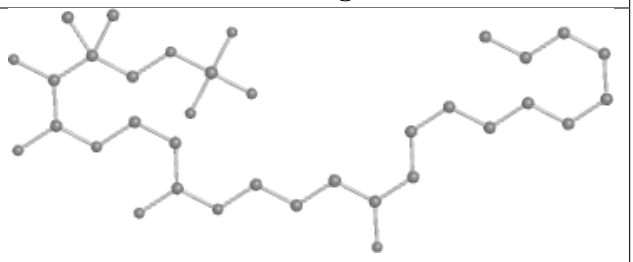
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

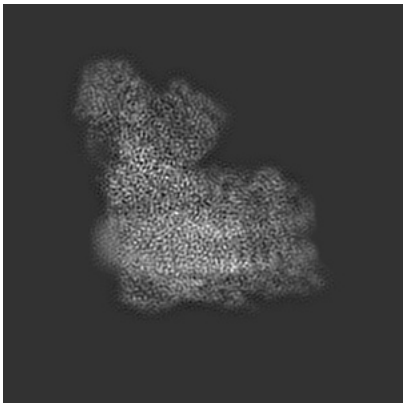
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-32301. 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.

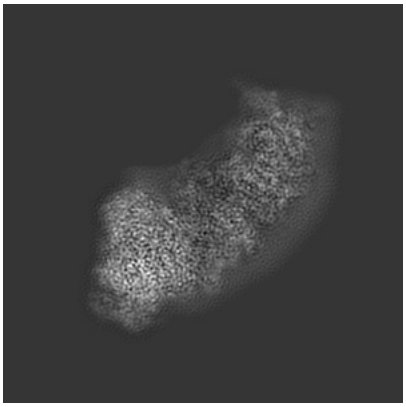
6.1 Orthogonal projections

6.1.1 Primary map



X

Y

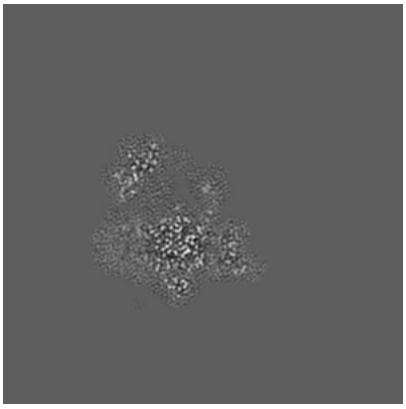


Z

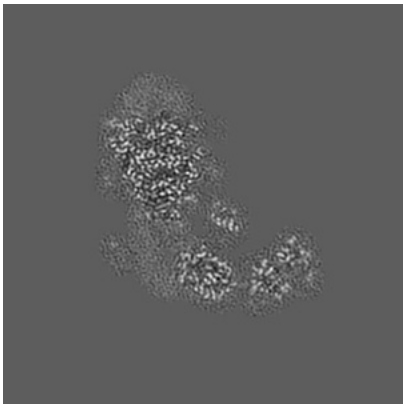
The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map



X Index: 152



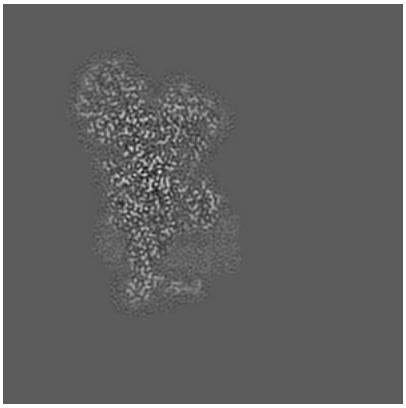
Y Index: 152

Z Index: 152

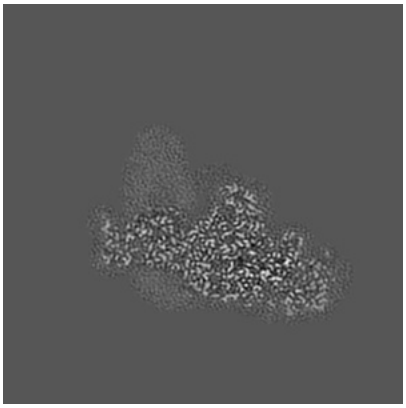
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

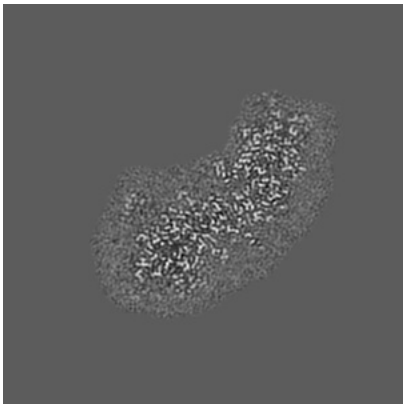
6.3.1 Primary map



X Index: 106



Y Index: 100

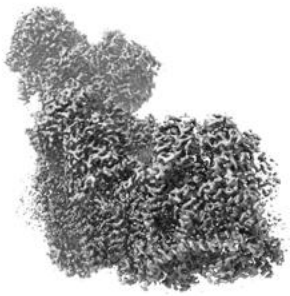


Z Index: 133

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

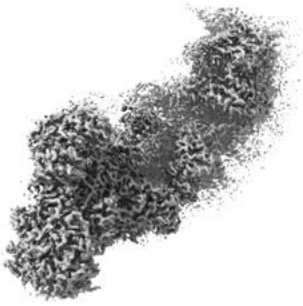
6.4 Orthogonal surface views (i)

6.4.1 Primary map



X

Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0314. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

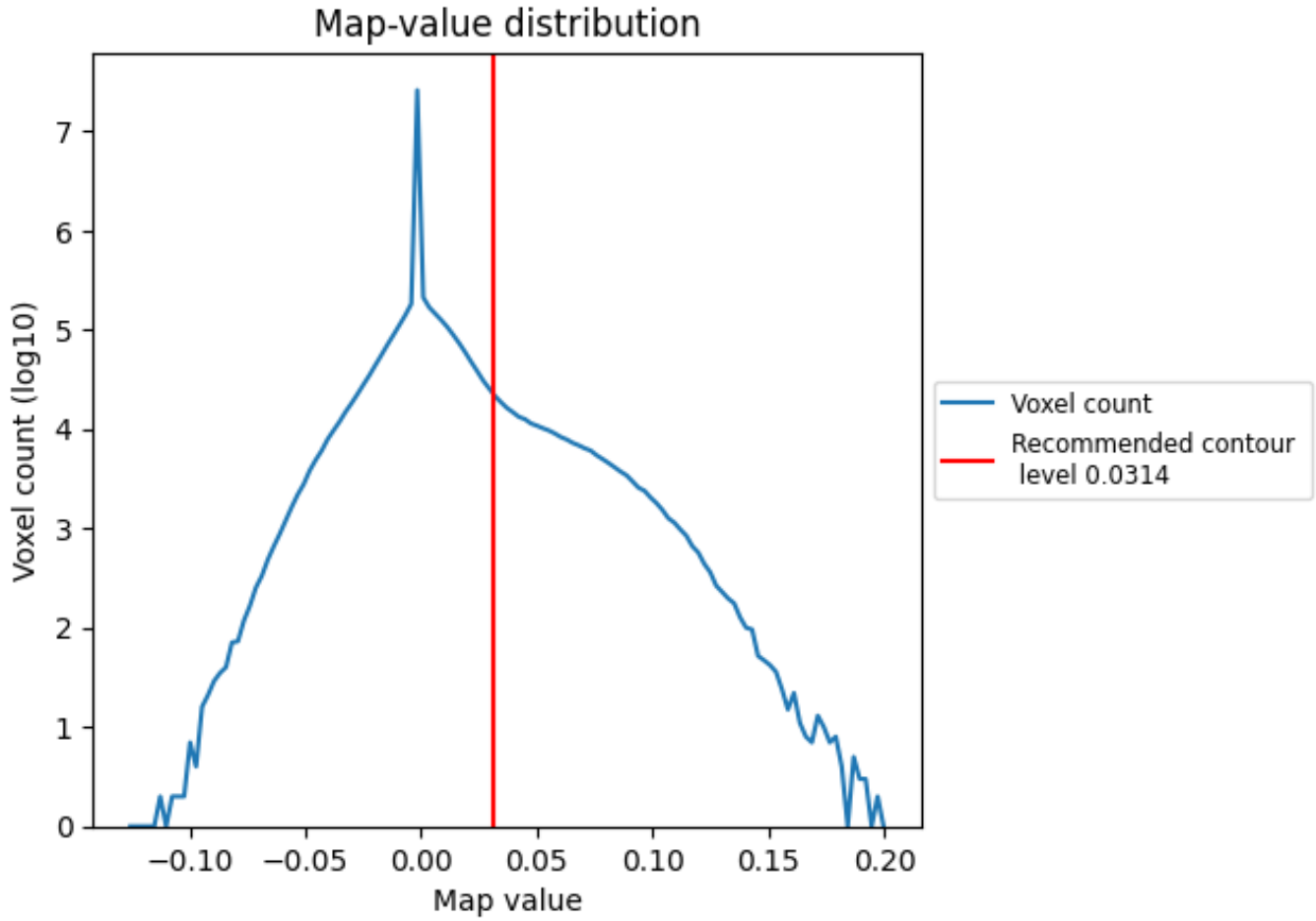
6.5 Mask visualisation (i)

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

7 Map analysis

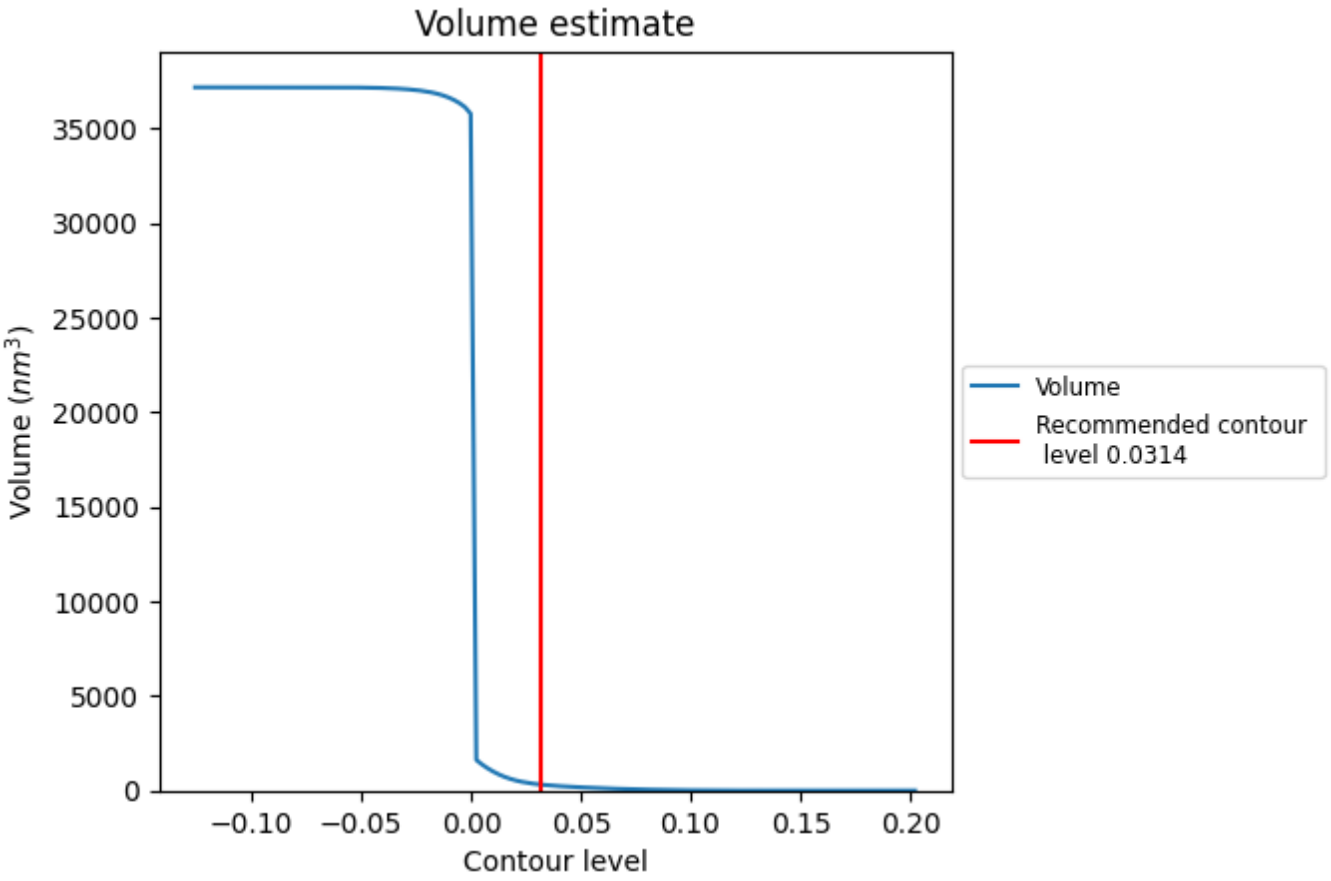
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

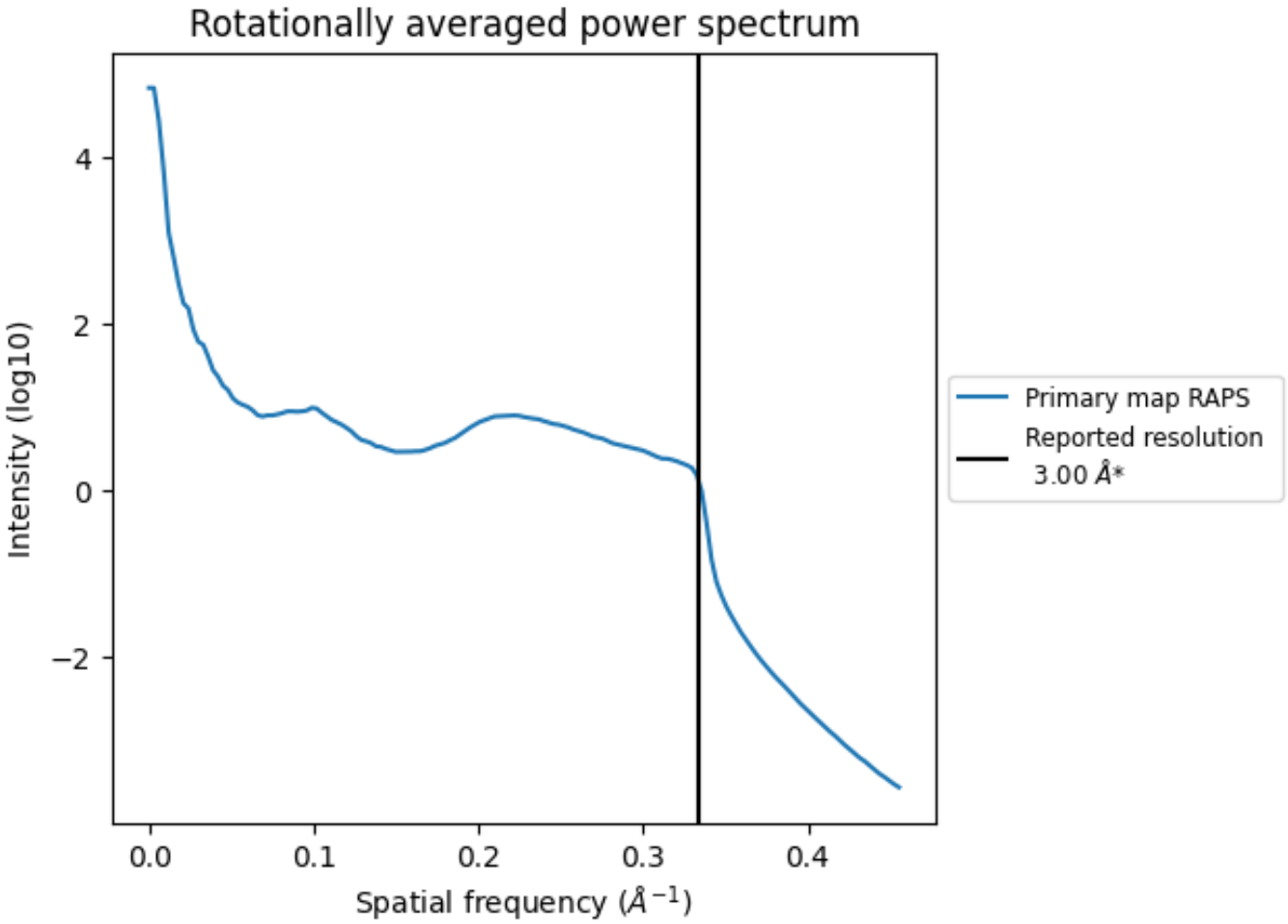
7.2 Volume estimate



The volume at the recommended contour level is 322 nm^3; this corresponds to an approximate mass of 291 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 0.333 $Å^{-1}$

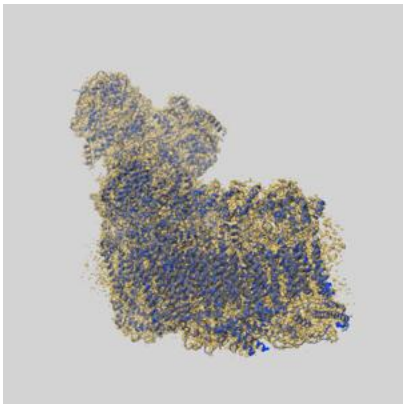
8 Fourier-Shell correlation

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

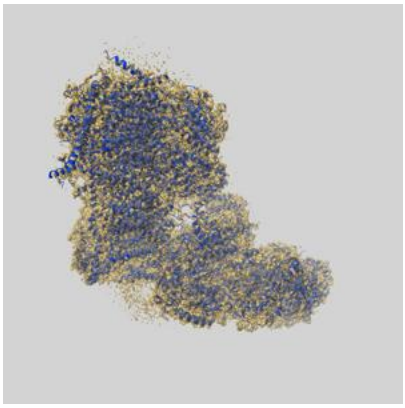
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-32301 and PDB model 7W4D. Per-residue inclusion information can be found in section 3 on page 21.

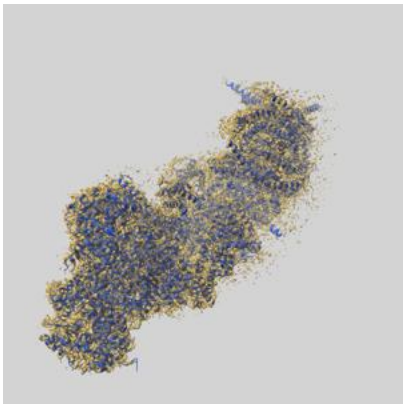
9.1 Map-model overlay



X



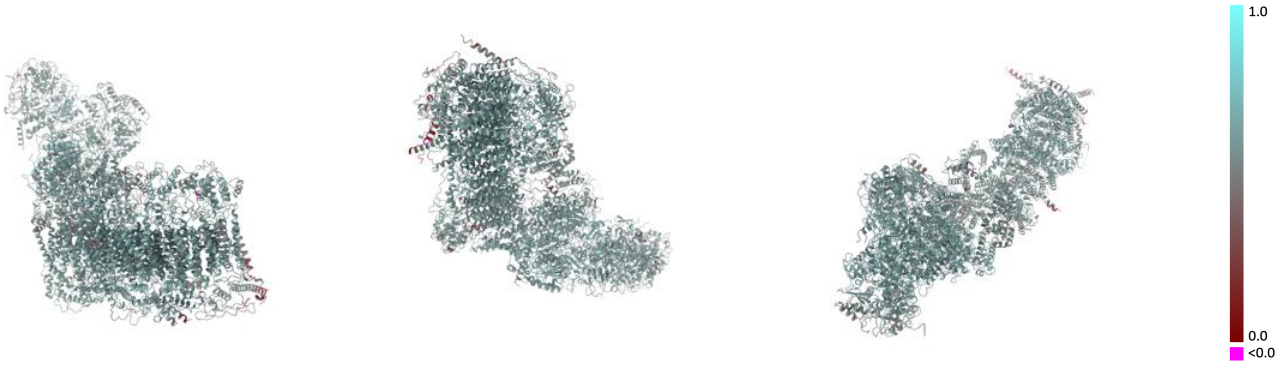
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0314 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.

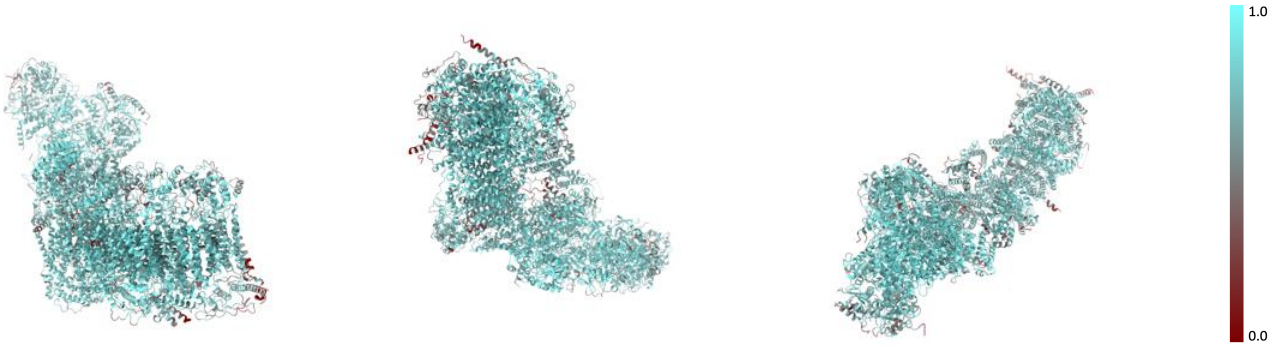
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

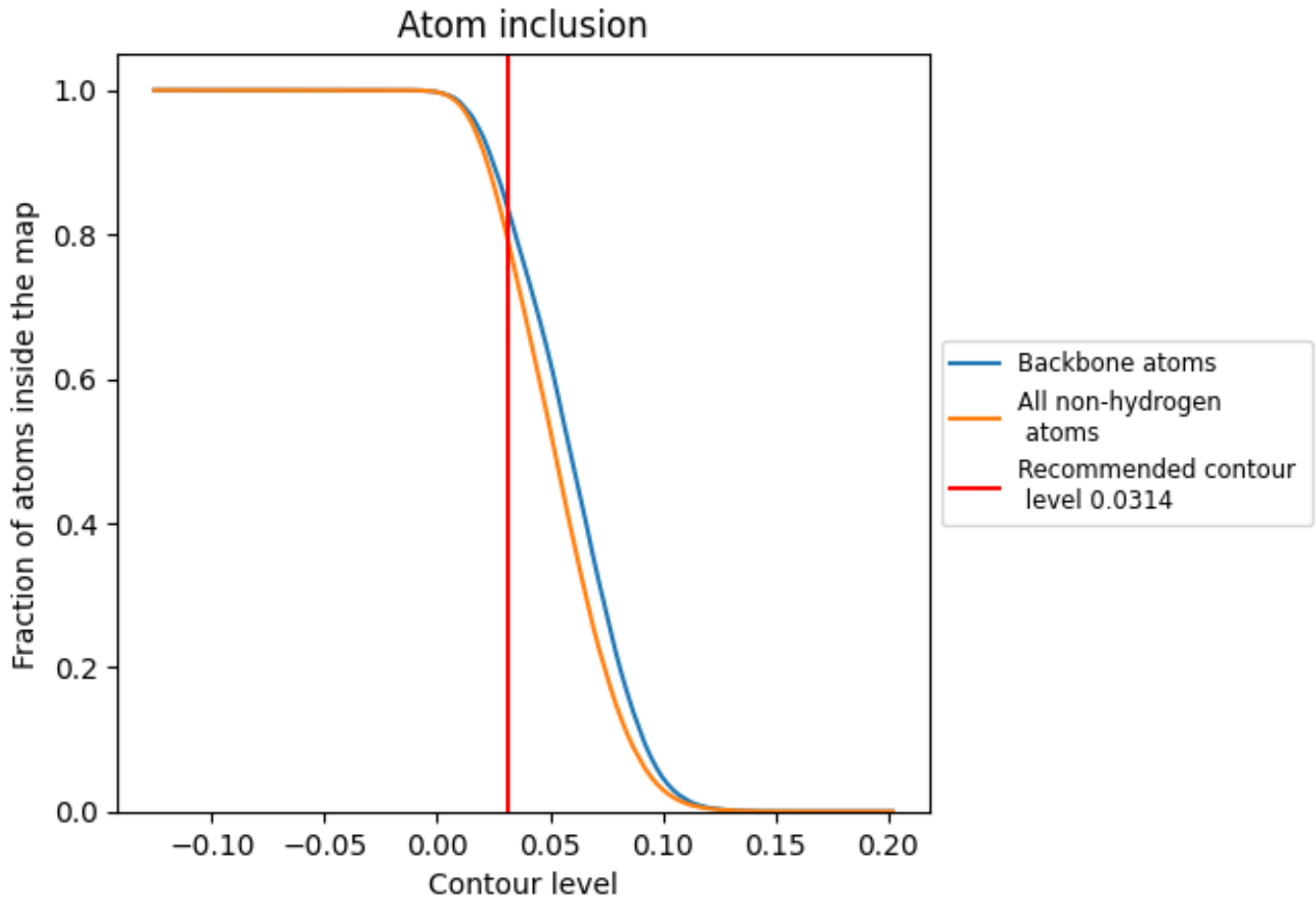
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.0314).

9.4 Atom inclusion (i)



At the recommended contour level, 84% of all backbone atoms, 79% 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 (0.0314) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7917	0.5870
A	0.7476	0.5700
B	0.9100	0.6260
C	0.9159	0.6280
E	0.8179	0.6020
F	0.6762	0.5270
G	0.5540	0.4910
H	0.7877	0.5770
I	0.7708	0.5810
J	0.8306	0.6050
K	0.6535	0.5380
L	0.8380	0.6060
M	0.8246	0.5980
N	0.8446	0.6150
O	0.7085	0.5560
P	0.9154	0.6330
Q	0.8881	0.6250
S	0.8533	0.6060
T	0.8269	0.6040
U	0.7266	0.5630
V	0.6921	0.5670
W	0.7867	0.5800
X	0.6885	0.5640
Y	0.6028	0.4920
Z	0.5776	0.4910
a	0.8137	0.5940
b	0.6555	0.5370
c	0.7600	0.5830
d	0.7350	0.5630
e	0.7128	0.5560
f	0.5838	0.5040
g	0.8099	0.5950
h	0.7766	0.5810
i	0.8803	0.6170
j	0.7613	0.5920

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Chain	Atom inclusion	Q-score
k	0.8194	0.6040
l	0.7938	0.5910
m	0.7359	0.5650
n	0.6281	0.5270
o	0.7619	0.5850
p	0.7671	0.5850
r	0.8530	0.6090
s	0.8553	0.6090
u	0.7865	0.5880
v	0.5992	0.5010
w	0.7492	0.5630