Full wwPDB EM Validation Report ⓘ

Feb 1, 2023 – 07:18 pm GMT

PDB ID	:	7R43
EMDB ID	:	EMD-14261
Title	:	Bovine complex I in the presence of IM1761092, active class iii (Composite map)
Authors	:	Bridges, H.R.; Blaza, J.N.; Yin, Z.; Chung, I.; Hirst, J.
Deposited on	:	2022-02-08
Resolution	:	2.40 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:

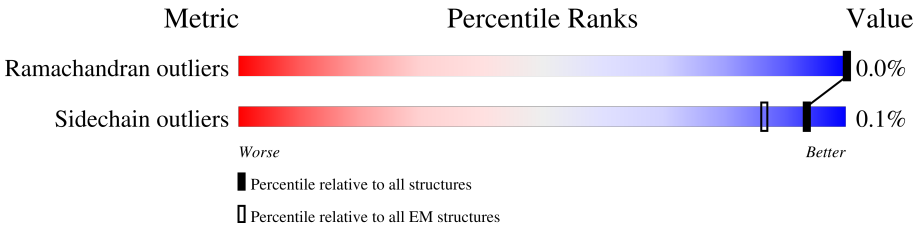
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.32.1

1 Overall quality at a glance

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

The reported resolution of this entry is 2.40 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	115	99%
2	B	216	71% 29%
3	C	266	78% 22%
4	D	463	93% 7%
5	E	249	86% 14%
6	F	464	93% 7%
7	G	727	95% 5%
8	H	318	100%
9	I	212	83% 17%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
10	J	175	7% 99%
11	K	98	99%
12	L	606	99%
13	M	459	100%
14	N	347	100%
15	O	343	6% 93% 7%
16	P	380	7% 90% 10%
17	Q	175	71% 29%
18	R	124	6% 76% 23%
19	S	99	10% 87% 13%
20	T	156	33% 49% 51%
20	U	156	54% 45%
21	V	116	7% 98%
22	W	128	5% 89% 11%
23	X	172	8% 99%
24	Y	141	38% 99%
25	Z	144	11% 98%
26	a	70	100%
27	b	84	17% 99%
28	c	76	9% 63% 37%
29	d	120	6% 93% 7%
30	e	106	14% 92% 8%
31	f	57	16% 91% 9%
32	g	154	62% 36%
33	h	189	73% 27%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	i	127	13% 83% 17%
35	j	108	5% 62% 38%
36	k	98	8% 83% 17%
37	l	186	83% 17%
38	m	129	7% 88% 12%
39	n	179	96%
40	o	137	89% 11%
41	p	176	97%
42	q	145	7% 99%
43	r	113	5% 82% 17%
44	s	109	40% 60%

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 68334 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called NADH-ubiquinone oxidoreductase chain 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	115	921	622	133	159	7	0	0

- Molecule 2 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	154	1230	786	220	210	14	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	207	1721	1111	296	311	3	0	0

- Molecule 4 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	430	3459	2209	596	629	25	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	129	ARG	GLN	variant	UNP P17694

- Molecule 5 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	213	Total	C	N	O	S	0	0
			1655	1057	277	311	10		

- Molecule 6 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	431	Total	C	N	O	S	0	0
			3319	2091	593	615	20		

- Molecule 7 is a protein called NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	688	Total	C	N	O	S	0	0
			5279	3307	920	1013	39		

- Molecule 8 is a protein called NADH-ubiquinone oxidoreductase chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	318	Total	C	N	O	S	0	0
			2509	1681	385	420	23		

- Molecule 9 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	176	Total	C	N	O	S	0	0
			1414	889	243	270	12		

- Molecule 10 is a protein called NADH-ubiquinone oxidoreductase chain 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	174	Total	C	N	O	S	0	0
			1337	902	189	234	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	97	Total	C	N	O	S	0	0
			739	483	111	130	15		

- Molecule 12 is a protein called NADH-ubiquinone oxidoreductase chain 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	601	Total	C	N	O	S	0	0
			4756	3166	729	818	43		

- Molecule 13 is a protein called NADH-ubiquinone oxidoreductase chain 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	459	Total	C	N	O	S	0	0
			3654	2436	570	609	39		

- Molecule 14 is a protein called NADH-ubiquinone oxidoreductase chain 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	347	Total	C	N	O	S	0	0
			2733	1817	416	457	43		

- Molecule 15 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	320	Total	C	N	O	S	0	0
			2589	1662	429	488	10		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	255	LYS	ASN	variant	UNP P34942

- Molecule 16 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	341	Total	C	N	O	S	0	0
			2747	1777	486	479	5		

- Molecule 17 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	125	Total	C	N	O	S	0	0
			1016	641	181	191	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	95	Total	C	N	O	S	0	0
			730	448	137	142	3		

- Molecule 19 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2.

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

- Molecule 20 is a protein called Acyl carrier protein, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	76	Total	C	N	O	S	0	0
			612	393	90	124	5		
20	U	86	Total	C	N	O	S	0	0
			693	447	102	139	5		

- Molecule 21 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	114	Total	C	N	O	S	0	0
			923	597	156	167	3		

- Molecule 22 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	114	Total	C	N	O	S	0	0
			971	622	180	165	4		

- Molecule 23 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	171	Total	C	N	O	S	0	0
			1402	887	253	252	10		

- Molecule 24 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	140	Total	C	N	O	S	0	0
			1030	657	176	191	6		

- Molecule 25 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	141	Total	C	N	O	S	0	0
			1152	740	201	202	9		

- Molecule 26 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a	70	Total	C	N	O	S	0	0
			569	365	104	95	5		

- Molecule 27 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	83	Total	C	N	O	S	0	0
			651	425	109	115	2		

- Molecule 28 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	c	48	Total	C	N	O	0	0
			405	268	69	68		

- Molecule 29 is a protein called NADH dehydrogenase [ubiquinone] 1 subunit C2.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	112	Total	C	N	O	S	0	0
			934	613	157	161	3		

- Molecule 30 is a protein called NADH dehydrogenase [ubiquinone] iron-sulfur protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	97	Total	C	N	O	S	0	0
			819	518	156	139	6		

- Molecule 31 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	52	Total	C	N	O	S	0	0
			451	296	79	75	1		

- Molecule 32 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	98	Total	C	N	O	S	0	0
			824	529	137	154	4		

- Molecule 33 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	138	Total	C	N	O	S	0	0
			1154	759	196	197	2		

- Molecule 34 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	106	Total	C	N	O	S	0	0
			912	600	157	154	1		

- Molecule 35 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	j	67	Total	C	N	O	S	0	0
			580	381	95	103	1		

- Molecule 36 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	81	Total	C	N	O	S	0	0
			653	427	110	114	2		

- Molecule 37 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l	155	Total	C	N	O	S	0	0
			1304	844	213	239	8		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
38	m	114	Total	C	N	O	0	0
			960	617	168	175		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n	172	Total	C	N	O	S	0	0
			1492	955	273	257	7		

- Molecule 40 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	o	122	Total	C	N	O	S	0	0
			1048	653	201	185	9		

- Molecule 41 is a protein called NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	171	Total	C	N	O	S	0	0
			1443	904	266	265	8		

- Molecule 42 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	q	145	Total	C	N	O	S	0	0
			1209	778	216	210	5		

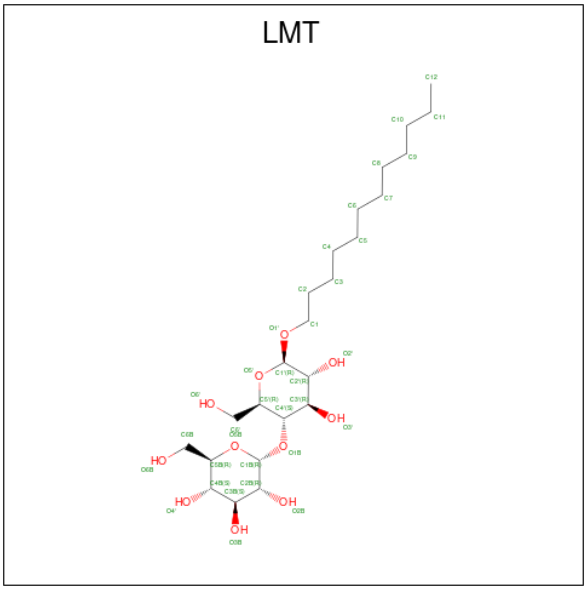
- Molecule 43 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	r	94	Total	C	N	O	S	0	0
			767	485	143	136	3		

- Molecule 44 is a protein called NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	44	Total	C	N	O	S	0	0
			371	233	66	71	1		

- Molecule 45 is DODECYL-BETA-D-MALTOSIDE (three-letter code: LMT) (formula: $C_{24}H_{46}O_{11}$).



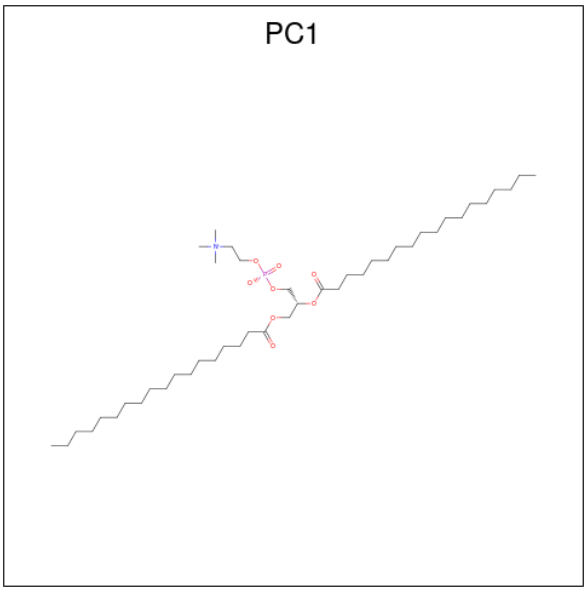
Mol	Chain	Residues	Atoms			AltConf
45	A	1	Total	C	O	0
			35	24	11	
45	J	1	Total	C	O	0
			35	24	11	
45	L	1	Total	C	O	0
			35	24	11	
45	M	1	Total	C	O	0
			35	24	11	
45	Y	1	Total	C	O	0
			35	24	11	
45	b	1	Total	C	O	0
			35	24	11	
45	f	1	Total	C	O	0
			35	24	11	

Continued on next page...

Continued from previous page...

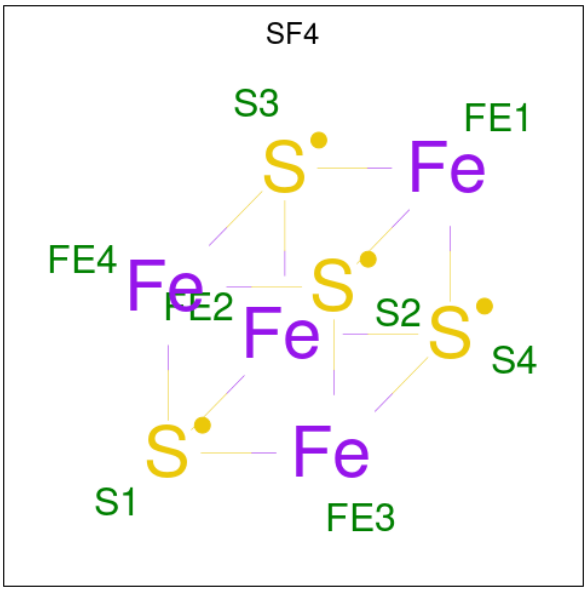
Mol	Chain	Residues	Atoms	AltConf
45	h	1	Total C O 35 24 11	0
45	j	1	Total C O 35 24 11	0
45	l	1	Total C O 35 24 11	0

- Molecule 46 is 1,2-DIACYL-SN-GLYCERO-3-PHOSPHOCHOLINE (three-letter code: PC1) (formula: $C_{44}H_{88}NO_8P$).



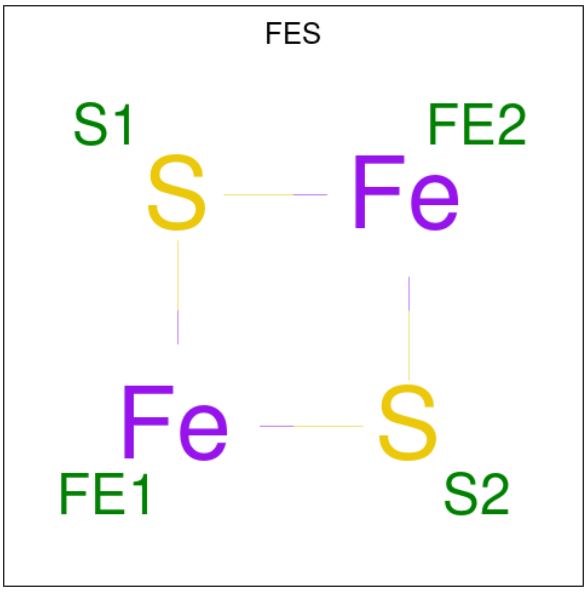
Mol	Chain	Residues	Atoms	AltConf
46	A	1	Total C N O P 21 11 1 8 1	0
46	B	1	Total C N O P 35 25 1 8 1	0
46	M	1	Total C N O P 49 39 1 8 1	0
46	P	1	Total C N O P 54 44 1 8 1	0

- Molecule 47 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



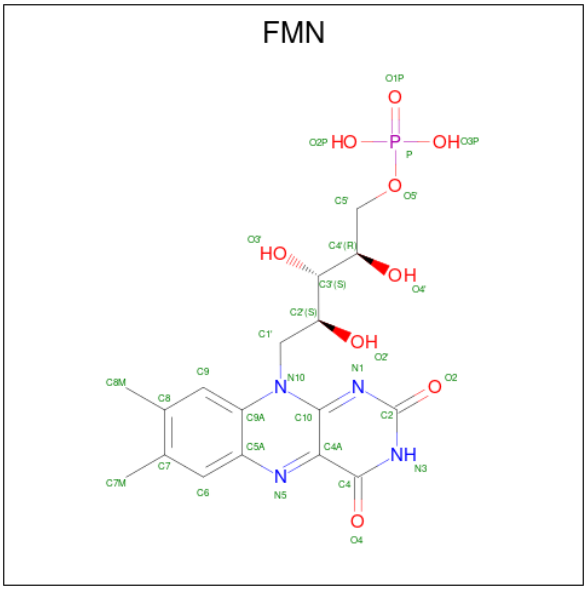
Mol	Chain	Residues	Atoms	AltConf
47	B	1	Total Fe S 8 4 4	0
47	F	1	Total Fe S 8 4 4	0
47	G	1	Total Fe S 8 4 4	0
47	G	1	Total Fe S 8 4 4	0
47	I	1	Total Fe S 8 4 4	0
47	I	1	Total Fe S 8 4 4	0

- Molecule 48 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).



Mol	Chain	Residues	Atoms			AltConf
48	E	1	Total	Fe	S	0
			4	2	2	
48	G	1	Total	Fe	S	0
			4	2	2	

- Molecule 49 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: $C_{17}H_{21}N_4O_9P$).

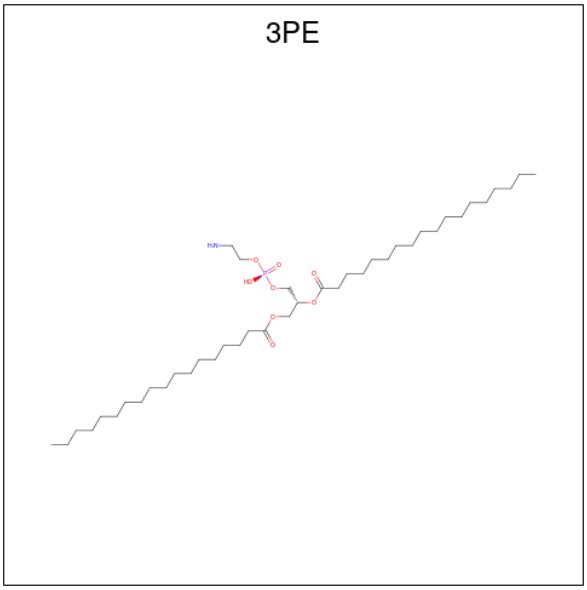


Mol	Chain	Residues	Atoms					AltConf
49	F	1	Total	C	N	O	P	0
			31	17	4	9	1	

- Molecule 50 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
50	G	1	Total K 1 1	0

- Molecule 51 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (three-letter code: 3PE) (formula: $C_{41}H_{82}NO_8P$).



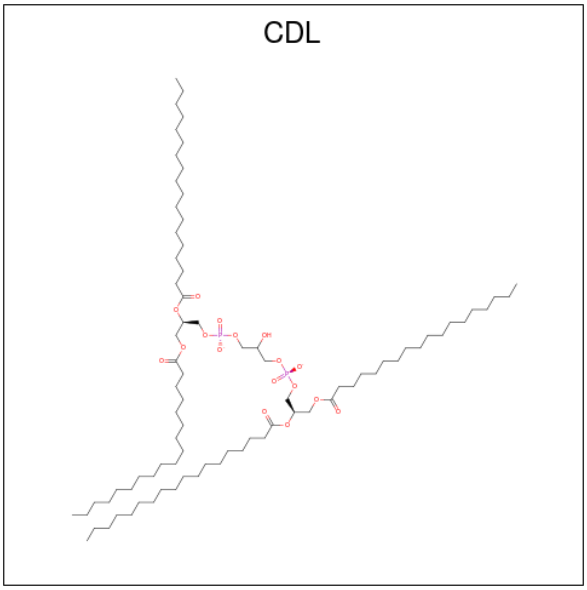
Mol	Chain	Residues	Atoms	AltConf
51	H	1	Total C N O P 44 34 1 8 1	0
51	H	1	Total C N O P 34 24 1 8 1	0
51	I	1	Total C N O P 51 41 1 8 1	0
51	L	1	Total C N O P 49 39 1 8 1	0
51	L	1	Total C N O P 45 35 1 8 1	0
51	M	1	Total C N O P 46 36 1 8 1	0
51	M	1	Total C N O P 51 41 1 8 1	0
51	Y	1	Total C N O P 35 25 1 8 1	0
51	d	1	Total C N O P 51 41 1 8 1	0
51	d	1	Total C N O P 51 41 1 8 1	0

Continued on next page...

Continued from previous page...

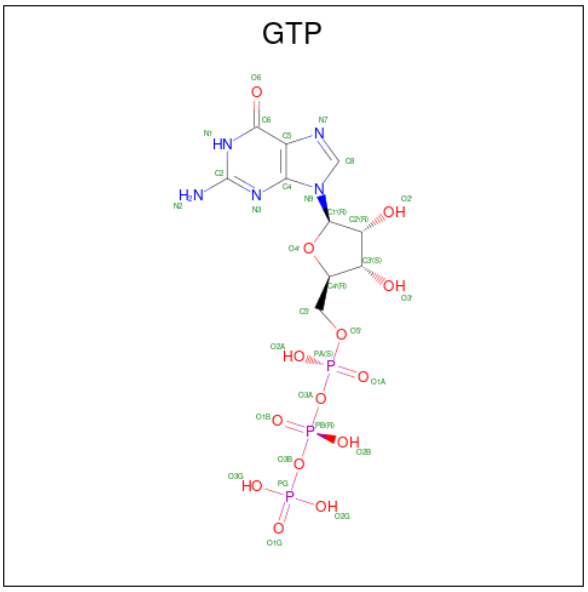
Mol	Chain	Residues	Atoms					AltConf
51	d	1	Total	C	N	O	P	0
			51	41	1	8	1	

- Molecule 52 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$).



Mol	Chain	Residues	Atoms				AltConf
52	J	1	Total	C	O	P	0
			62	43	17	2	
52	K	1	Total	C	O	P	0
			71	52	17	2	
52	L	1	Total	C	O	P	0
			69	50	17	2	
52	h	1	Total	C	O	P	0
			67	48	17	2	
52	q	1	Total	C	O	P	0
			76	57	17	2	

- Molecule 53 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).

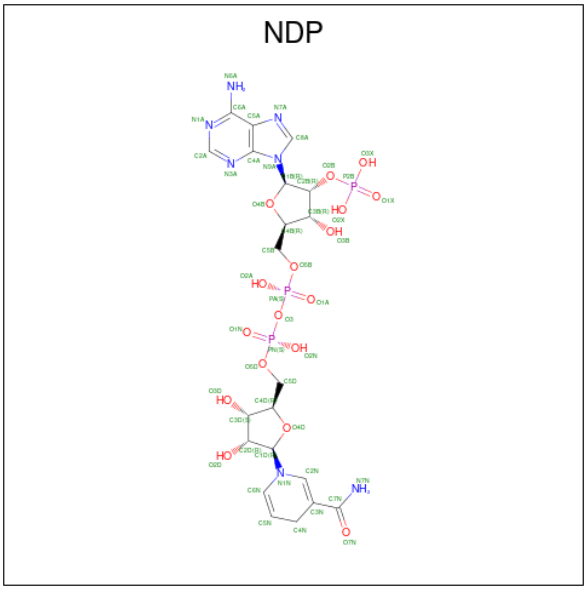


Mol	Chain	Residues	Atoms					AltConf
53	O	1	Total	C	N	O	P	0
			32	10	5	14	3	

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

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

- Molecule 55 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$).

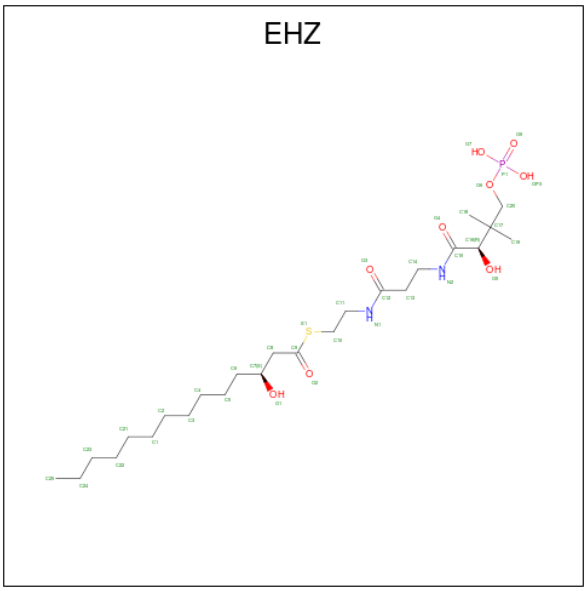


Mol	Chain	Residues	Atoms					AltConf
55	P	1	Total	C	N	O	P	0
			48	21	7	17	3	

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

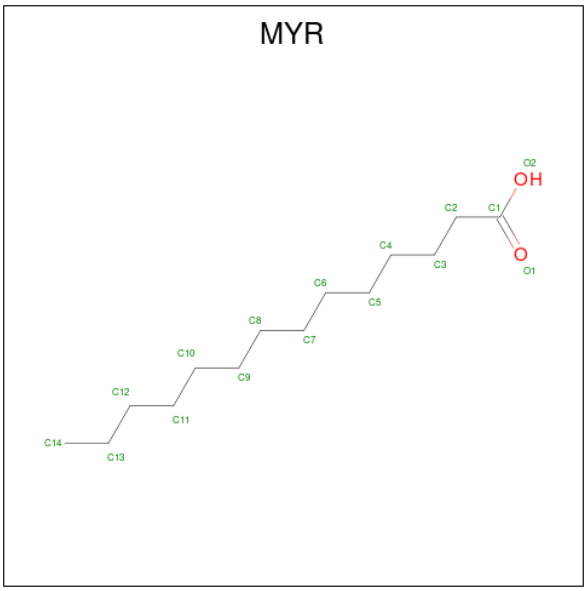
Mol	Chain	Residues	Atoms		AltConf
56	R	1	Total	Zn	0
			1	1	

- Molecule 57 is {S}-[2-[3-[[(2 {R})-3,3-dimethyl-2-oxidanyl-4-phosphonooxy-butanoyl]amino]propanoylamino]ethyl] (3 {S})-3-oxidanyltetradecanethioate (three-letter code: EHZ) (formula: $C_{25}H_{49}N_2O_9PS$).



Mol	Chain	Residues	Atoms						AltConf
57	T	1	Total	C	N	O	P	S	0
			37	25	2	8	1	1	
57	U	1	Total	C	N	O	P	S	0
			37	25	2	8	1	1	

- Molecule 58 is MYRISTIC ACID (three-letter code: MYR) (formula: $C_{14}H_{28}O_2$).



Mol	Chain	Residues	Atoms	AltConf
58	o	1	Total C O 15 14 1	0

- Molecule 59 is water.

Mol	Chain	Residues	Atoms	AltConf
59	A	12	Total O 12 12	0
59	B	48	Total O 48 48	0
59	C	66	Total O 66 66	0
59	D	115	Total O 115 115	0
59	E	5	Total O 5 5	0
59	F	33	Total O 33 33	0
59	G	135	Total O 135 135	0
59	H	43	Total O 43 43	0
59	I	79	Total O 79 79	0
59	J	10	Total O 10 10	0
59	K	9	Total O 9 9	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
59	L	16	Total O 16 16	0
59	M	28	Total O 28 28	0
59	N	28	Total O 28 28	0
59	O	13	Total O 13 13	0
59	P	40	Total O 40 40	0
59	Q	45	Total O 45 45	0
59	R	19	Total O 19 19	0
59	S	2	Total O 2 2	0
59	V	6	Total O 6 6	0
59	W	8	Total O 8 8	0
59	X	13	Total O 13 13	0
59	Y	1	Total O 1 1	0
59	Z	11	Total O 11 11	0
59	a	4	Total O 4 4	0
59	b	4	Total O 4 4	0
59	d	8	Total O 8 8	0
59	e	5	Total O 5 5	0
59	f	1	Total O 1 1	0
59	g	1	Total O 1 1	0
59	h	11	Total O 11 11	0
59	j	2	Total O 2 2	0

Continued on next page...

Continued from previous page...

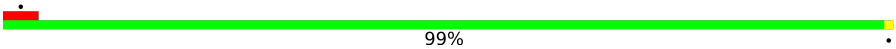
Mol	Chain	Residues	Atoms	AltConf
59	l	8	Total O 8 8	0
59	m	2	Total O 2 2	0
59	n	5	Total O 5 5	0
59	o	2	Total O 2 2	0
59	p	9	Total O 9 9	0
59	q	18	Total O 18 18	0
59	r	20	Total O 20 20	0

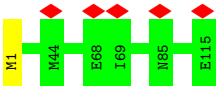
3 Residue-property plots (i)

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

• Molecule 1: NADH-ubiquinone oxidoreductase chain 3

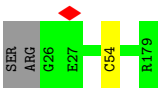
Chain A:





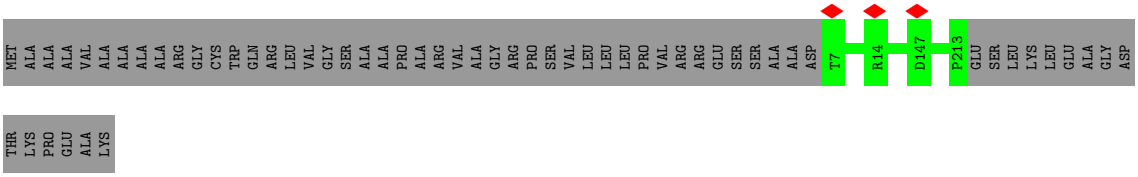
• Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

Chain B:



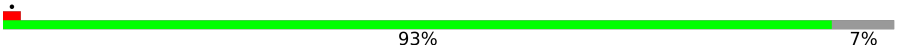
• Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial

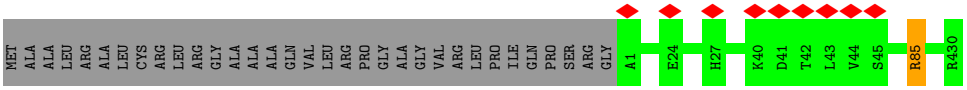
Chain C:



• Molecule 4: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial

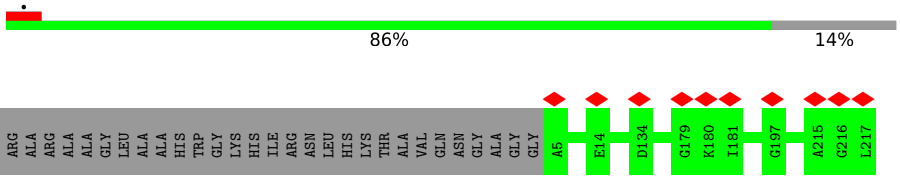
Chain D:





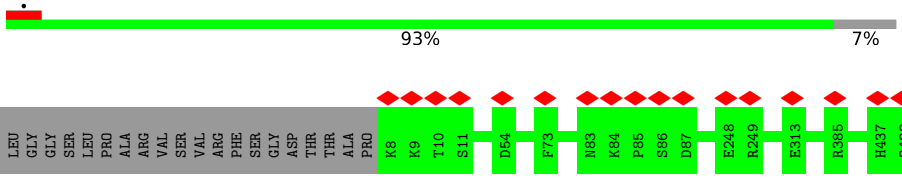
• Molecule 5: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

Chain E:



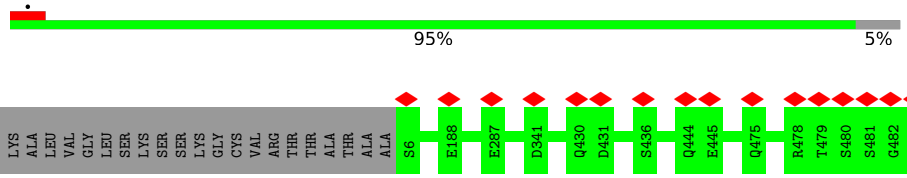
• Molecule 6: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial

Chain F:



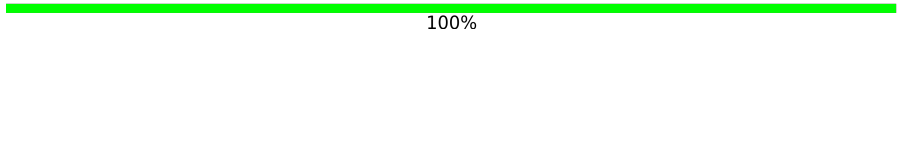
• Molecule 7: NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial

Chain G:



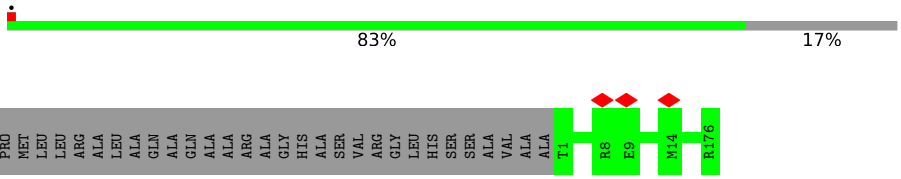
• Molecule 8: NADH-ubiquinone oxidoreductase chain 1

Chain H:



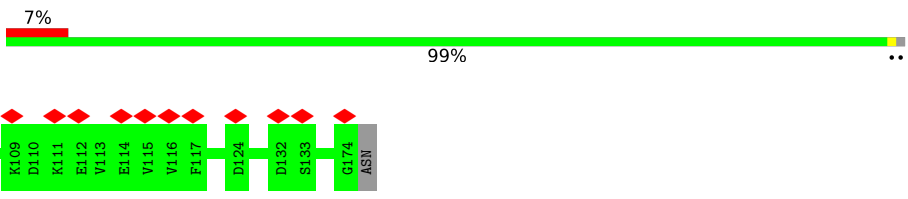
• Molecule 9: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial

Chain I:



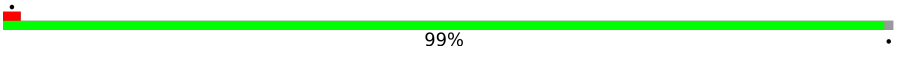
• Molecule 10: NADH-ubiquinone oxidoreductase chain 6

Chain J:



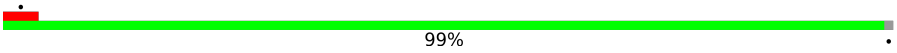
• Molecule 11: NADH-ubiquinone oxidoreductase chain 4L

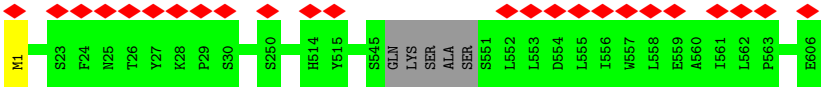
Chain K:



• Molecule 12: NADH-ubiquinone oxidoreductase chain 5

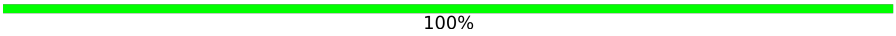
Chain L:

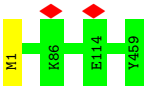




• Molecule 13: NADH-ubiquinone oxidoreductase chain 4

Chain M:





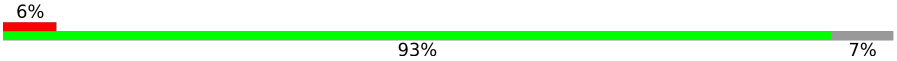
• Molecule 14: NADH-ubiquinone oxidoreductase chain 2

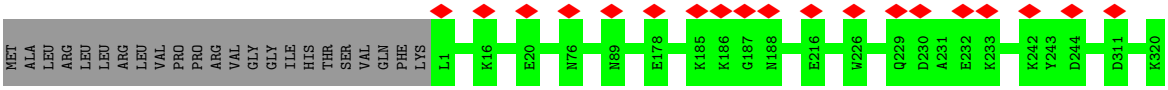
Chain N:

There are no outlier residues recorded for this chain.

• Molecule 15: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

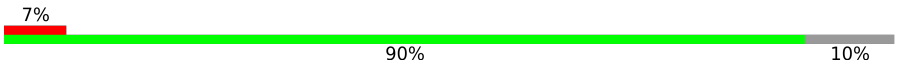
Chain O:

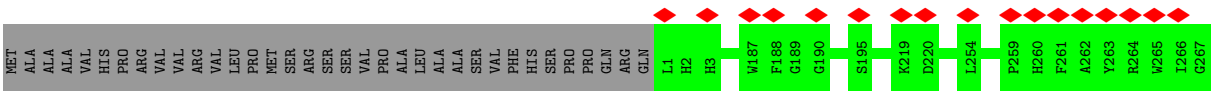


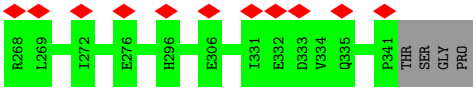


• Molecule 16: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial

Chain P:

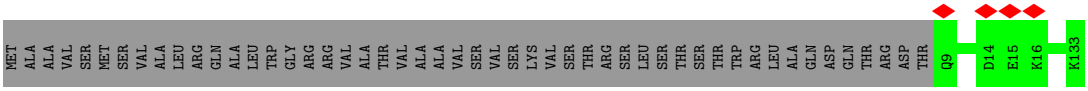




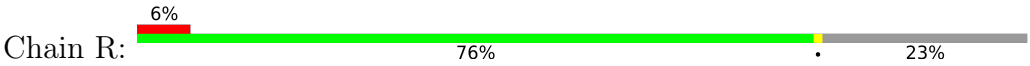


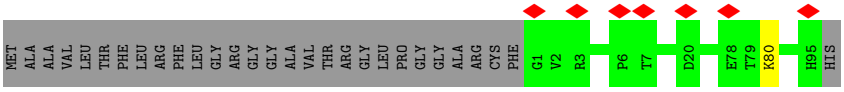
• Molecule 17: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial

Chain Q:

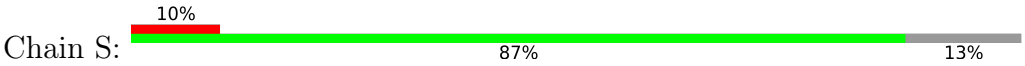


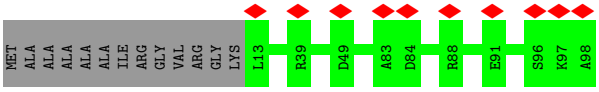
• Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial



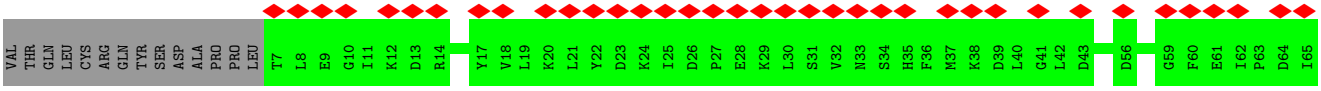


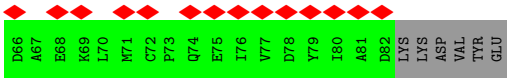
• Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2



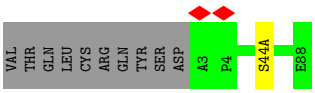


• Molecule 20: Acyl carrier protein, mitochondrial

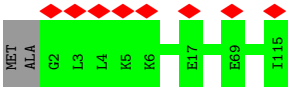




• Molecule 20: Acyl carrier protein, mitochondrial

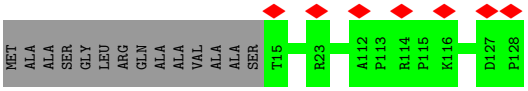


• Molecule 21: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5



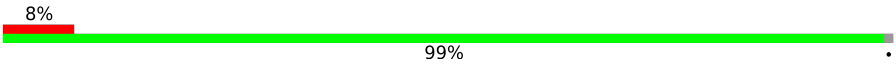
• Molecule 22: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6

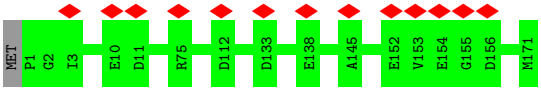
Chain W:



• Molecule 23: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8

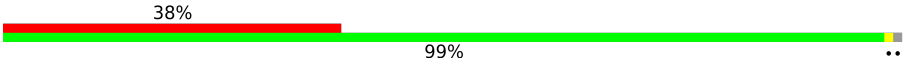
Chain X:

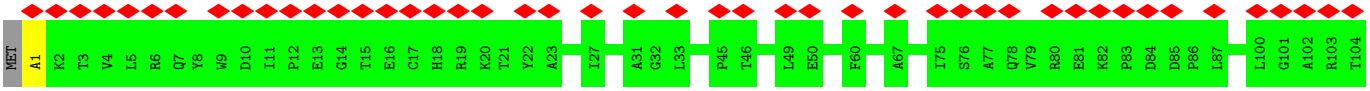


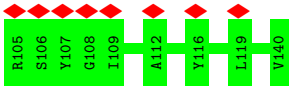


• Molecule 24: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

Chain Y:

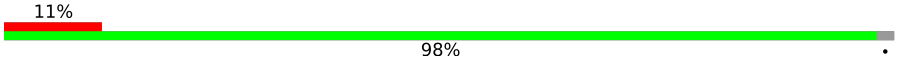


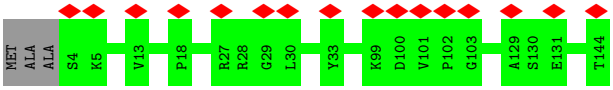




• Molecule 25: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 13

Chain Z:



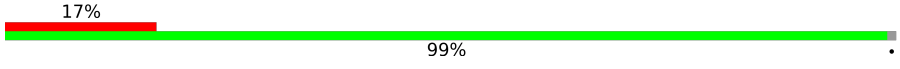


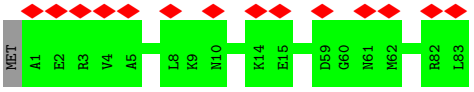
• Molecule 26: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1

Chain a:

• Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

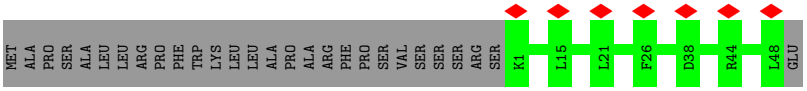
Chain b:





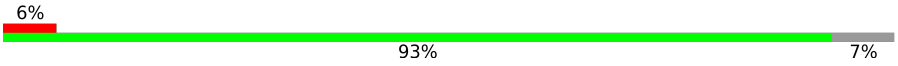
• Molecule 28: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial

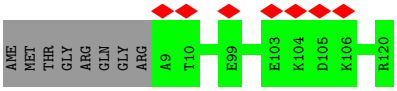
Chain c:



• Molecule 29: NADH dehydrogenase [ubiquinone] 1 subunit C2

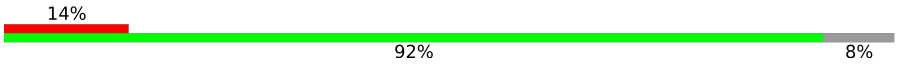
Chain d:

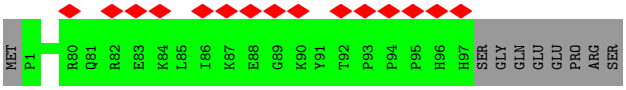




• Molecule 30: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5

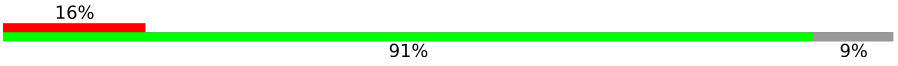
Chain e:

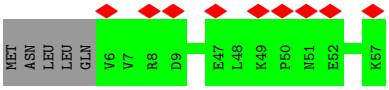




• Molecule 31: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 1

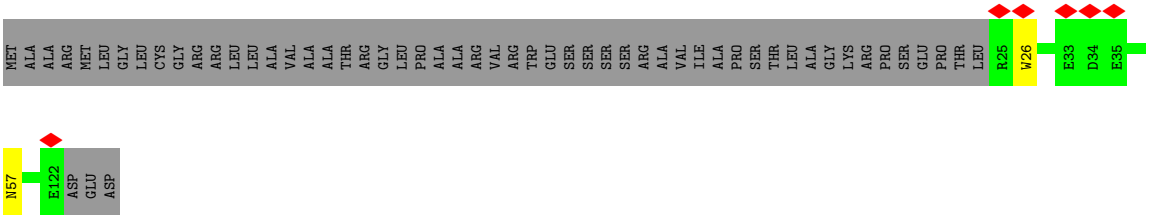
Chain f:





• Molecule 32: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial

Chain g:

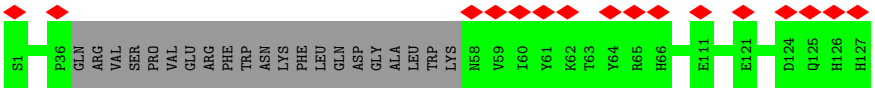


• Molecule 33: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial

Chain h:

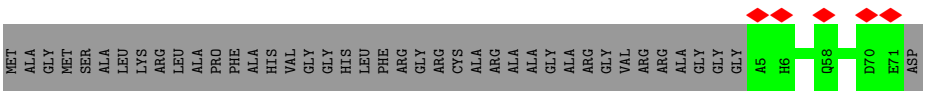
• Molecule 34: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6

Chain i:



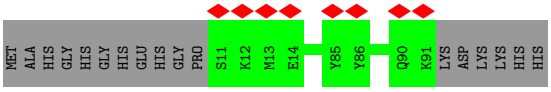
• Molecule 35: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 2, mitochondrial

Chain j:



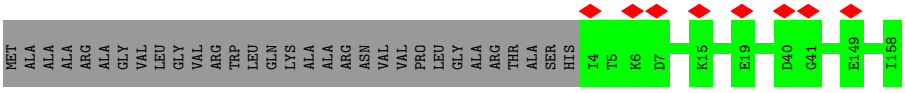
• Molecule 36: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 3

Chain k:



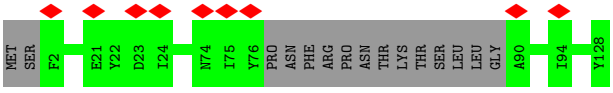
• Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial

Chain l:



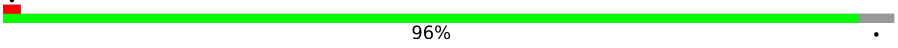
• Molecule 38: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4

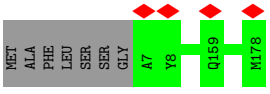
Chain m:



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

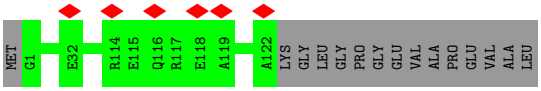
Chain n:





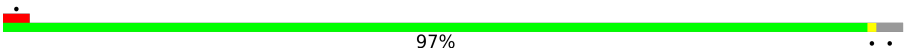
• Molecule 40: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7

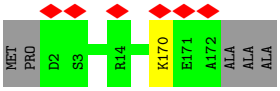
Chain o:



• Molecule 41: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10

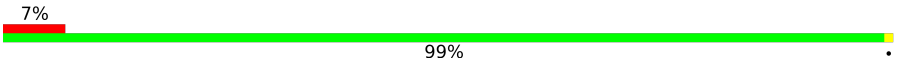
Chain p:

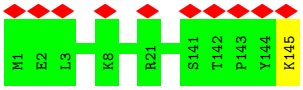




• Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12

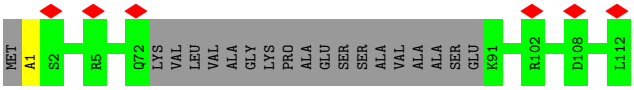
Chain q:





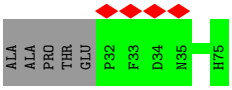
• Molecule 43: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7

Chain r:



• Molecule 44: NADH dehydrogenase [ubiquinone] flavoprotein 3, mitochondrial

Chain s:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	27326	Depositor
Resolution determination method	OTHER	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	28.810	Depositor
Minimum map value	-11.274	Depositor
Average map value	0.007	Depositor
Map value standard deviation	1.033	Depositor
Recommended contour level	6.0	Depositor
Map size (Å)	482.46, 482.46, 482.46	wwPDB
Map dimensions	660, 660, 660	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.731, 0.731, 0.731	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: AYA, SAC, CDL, FMN, FME, GTP, 2MR, FES, 3PE, SF4, EHZ, MYR, NDP, ZN, PC1, MG, K, LMT

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	0.31	0/936	0.42	0/1281
2	B	0.39	0/1261	0.47	1/1706 (0.1%)
3	C	0.34	0/1772	0.44	0/2413
4	D	0.34	0/3537	0.45	0/4794
5	E	0.33	0/1695	0.44	0/2307
6	F	0.32	0/3393	0.45	0/4584
7	G	0.32	0/5367	0.46	0/7274
8	H	0.33	0/2571	0.43	0/3513
9	I	0.37	0/1445	0.47	0/1956
10	J	0.33	0/1362	0.43	0/1848
11	K	0.31	0/739	0.44	0/1000
12	L	0.33	0/4872	0.42	0/6630
13	M	0.32	0/3738	0.42	0/5097
14	N	0.31	0/2792	0.43	0/3800
15	O	0.34	0/2651	0.42	0/3587
16	P	0.32	0/2824	0.45	0/3831
17	Q	0.32	0/1039	0.45	0/1404
18	R	0.35	0/742	0.47	0/999
19	S	0.29	0/702	0.46	0/945
20	T	0.29	0/621	0.39	0/837
20	U	0.36	0/705	0.40	0/952
21	V	0.30	0/943	0.38	0/1277
22	W	0.30	0/995	0.42	0/1337
23	X	0.31	0/1439	0.42	0/1942
24	Y	0.26	0/1042	0.43	0/1414
25	Z	0.32	0/1181	0.42	0/1592
26	a	0.35	0/584	0.40	0/786
27	b	0.32	0/672	0.40	0/923
28	c	0.33	0/418	0.39	0/567
29	d	0.36	0/964	0.39	0/1305
30	e	0.30	0/840	0.43	0/1123

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	f	0.31	0/464	0.42	0/626
32	g	0.36	0/850	0.40	0/1154
33	h	0.34	0/1188	0.41	0/1607
34	i	0.33	0/934	0.41	0/1271
35	j	0.35	0/607	0.39	0/833
36	k	0.35	0/672	0.41	0/906
37	l	0.38	0/1358	0.41	0/1858
38	m	0.35	0/983	0.41	0/1327
39	n	0.36	0/1545	0.39	0/2092
40	o	0.36	0/1073	0.40	0/1437
41	p	0.35	0/1476	0.42	0/1990
42	q	0.34	0/1250	0.45	0/1698
43	r	0.32	0/780	0.43	0/1056
44	s	0.30	0/383	0.42	0/518
All	All	0.33	0/67405	0.43	1/91397 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	D	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	54	CYS	CA-CB-SG	5.12	123.21	114.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	D	85	2MR	Mainchain

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	113/115 (98%)	110 (97%)	3 (3%)	0	100	100
2	B	152/216 (70%)	146 (96%)	6 (4%)	0	100	100
3	C	205/266 (77%)	200 (98%)	5 (2%)	0	100	100
4	D	427/463 (92%)	413 (97%)	14 (3%)	0	100	100
5	E	211/249 (85%)	206 (98%)	5 (2%)	0	100	100
6	F	429/464 (92%)	421 (98%)	8 (2%)	0	100	100
7	G	686/727 (94%)	665 (97%)	21 (3%)	0	100	100
8	H	316/318 (99%)	302 (96%)	14 (4%)	0	100	100
9	I	174/212 (82%)	170 (98%)	4 (2%)	0	100	100
10	J	172/175 (98%)	162 (94%)	9 (5%)	1 (1%)	25	36
11	K	95/98 (97%)	94 (99%)	1 (1%)	0	100	100
12	L	597/606 (98%)	578 (97%)	19 (3%)	0	100	100
13	M	457/459 (100%)	451 (99%)	6 (1%)	0	100	100
14	N	345/347 (99%)	339 (98%)	6 (2%)	0	100	100
15	O	318/343 (93%)	308 (97%)	10 (3%)	0	100	100
16	P	339/380 (89%)	332 (98%)	7 (2%)	0	100	100
17	Q	123/175 (70%)	122 (99%)	1 (1%)	0	100	100
18	R	93/124 (75%)	91 (98%)	2 (2%)	0	100	100
19	S	84/99 (85%)	82 (98%)	2 (2%)	0	100	100
20	T	74/156 (47%)	70 (95%)	4 (5%)	0	100	100
20	U	84/156 (54%)	84 (100%)	0	0	100	100
21	V	112/116 (97%)	111 (99%)	1 (1%)	0	100	100
22	W	112/128 (88%)	109 (97%)	3 (3%)	0	100	100
23	X	169/172 (98%)	166 (98%)	3 (2%)	0	100	100
24	Y	138/141 (98%)	134 (97%)	4 (3%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
25	Z	139/144 (96%)	135 (97%)	4 (3%)	0	100	100
26	a	68/70 (97%)	68 (100%)	0	0	100	100
27	b	81/84 (96%)	78 (96%)	3 (4%)	0	100	100
28	c	46/76 (60%)	45 (98%)	1 (2%)	0	100	100
29	d	110/120 (92%)	108 (98%)	2 (2%)	0	100	100
30	e	95/106 (90%)	94 (99%)	1 (1%)	0	100	100
31	f	50/57 (88%)	47 (94%)	3 (6%)	0	100	100
32	g	96/154 (62%)	92 (96%)	3 (3%)	1 (1%)	15	23
33	h	136/189 (72%)	135 (99%)	1 (1%)	0	100	100
34	i	102/127 (80%)	99 (97%)	3 (3%)	0	100	100
35	j	65/108 (60%)	65 (100%)	0	0	100	100
36	k	79/98 (81%)	76 (96%)	3 (4%)	0	100	100
37	l	153/186 (82%)	147 (96%)	6 (4%)	0	100	100
38	m	110/129 (85%)	107 (97%)	3 (3%)	0	100	100
39	n	170/179 (95%)	168 (99%)	2 (1%)	0	100	100
40	o	120/137 (88%)	113 (94%)	7 (6%)	0	100	100
41	p	169/176 (96%)	167 (99%)	2 (1%)	0	100	100
42	q	143/145 (99%)	143 (100%)	0	0	100	100
43	r	90/113 (80%)	87 (97%)	3 (3%)	0	100	100
44	s	42/109 (38%)	41 (98%)	1 (2%)	0	100	100
All	All	8089/9212 (88%)	7881 (97%)	206 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
32	g	26	TRP
10	J	24	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	100/100 (100%)	100 (100%)	0	100 100
2	B	130/175 (74%)	130 (100%)	0	100 100
3	C	188/228 (82%)	188 (100%)	0	100 100
4	D	370/392 (94%)	370 (100%)	0	100 100
5	E	183/205 (89%)	183 (100%)	0	100 100
6	F	345/368 (94%)	345 (100%)	0	100 100
7	G	578/608 (95%)	578 (100%)	0	100 100
8	H	274/274 (100%)	274 (100%)	0	100 100
9	I	151/175 (86%)	151 (100%)	0	100 100
10	J	140/141 (99%)	140 (100%)	0	100 100
11	K	84/85 (99%)	84 (100%)	0	100 100
12	L	527/533 (99%)	527 (100%)	0	100 100
13	M	412/412 (100%)	412 (100%)	0	100 100
14	N	315/315 (100%)	315 (100%)	0	100 100
15	O	283/303 (93%)	283 (100%)	0	100 100
16	P	295/327 (90%)	295 (100%)	0	100 100
17	Q	112/153 (73%)	112 (100%)	0	100 100
18	R	78/97 (80%)	77 (99%)	1 (1%)	69 84
19	S	76/82 (93%)	76 (100%)	0	100 100
20	T	70/135 (52%)	70 (100%)	0	100 100
20	U	79/135 (58%)	78 (99%)	1 (1%)	69 84
21	V	101/102 (99%)	101 (100%)	0	100 100
22	W	107/114 (94%)	107 (100%)	0	100 100
23	X	154/155 (99%)	154 (100%)	0	100 100
24	Y	101/102 (99%)	101 (100%)	0	100 100
25	Z	120/121 (99%)	120 (100%)	0	100 100
26	a	59/59 (100%)	59 (100%)	0	100 100
27	b	71/72 (99%)	71 (100%)	0	100 100
28	c	44/68 (65%)	44 (100%)	0	100 100
29	d	100/105 (95%)	100 (100%)	0	100 100
30	e	88/96 (92%)	88 (100%)	0	100 100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
31	f	49/54 (91%)	49 (100%)	0	100 100
32	g	89/131 (68%)	88 (99%)	1 (1%)	73 87
33	h	121/158 (77%)	121 (100%)	0	100 100
34	i	101/120 (84%)	101 (100%)	0	100 100
35	j	61/84 (73%)	61 (100%)	0	100 100
36	k	63/76 (83%)	63 (100%)	0	100 100
37	l	139/159 (87%)	139 (100%)	0	100 100
38	m	101/115 (88%)	101 (100%)	0	100 100
39	n	156/161 (97%)	156 (100%)	0	100 100
40	o	110/120 (92%)	110 (100%)	0	100 100
41	p	155/157 (99%)	154 (99%)	1 (1%)	86 94
42	q	131/131 (100%)	130 (99%)	1 (1%)	81 91
43	r	84/97 (87%)	84 (100%)	0	100 100
44	s	43/92 (47%)	43 (100%)	0	100 100
All	All	7138/7892 (90%)	7133 (100%)	5 (0%)	93 98

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
18	R	80	LYS
20	U	44(A)	SER
32	g	57	ASN
41	p	170	LYS
42	q	145	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
13	M	82	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

11 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
34	SAC	i	1	34	7,8,9	1.08	0	8,9,11	0.90	0
12	FME	L	1	12	8,9,10	0.98	1 (12%)	7,9,11	0.74	0
10	FME	J	1	10	8,9,10	0.98	0	7,9,11	0.68	0
14	FME	N	1	14	8,9,10	0.96	0	7,9,11	0.99	0
8	FME	H	1	8	8,9,10	0.95	0	7,9,11	0.94	0
1	FME	A	1	1	8,9,10	0.98	1 (12%)	7,9,11	0.78	0
43	AYA	r	1	43	6,7,8	1.81	2 (33%)	5,8,10	1.30	1 (20%)
24	AYA	Y	1	24	6,7,8	1.80	2 (33%)	5,8,10	1.23	1 (20%)
4	2MR	D	85	4	10,12,13	2.64	4 (40%)	5,13,15	1.29	1 (20%)
13	FME	M	1	13	8,9,10	1.01	1 (12%)	7,9,11	0.89	0
11	FME	K	1	11	8,9,10	0.89	0	7,9,11	0.82	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
34	SAC	i	1	34	-	3/7/8/10	-
12	FME	L	1	12	-	3/7/9/11	-
10	FME	J	1	10	-	2/7/9/11	-
14	FME	N	1	14	-	3/7/9/11	-
8	FME	H	1	8	-	3/7/9/11	-
1	FME	A	1	1	-	2/7/9/11	-
43	AYA	r	1	43	-	0/4/6/8	-
24	AYA	Y	1	24	-	0/4/6/8	-
4	2MR	D	85	4	-	1/10/13/15	-
13	FME	M	1	13	-	1/7/9/11	-
11	FME	K	1	11	-	1/7/9/11	-

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	85	2MR	CZ-NH2	5.11	1.44	1.33
4	D	85	2MR	CZ-NE	4.50	1.43	1.34
4	D	85	2MR	O-C	3.94	1.35	1.19
24	Y	1	AYA	CT-N	3.28	1.45	1.34
43	r	1	AYA	CT-N	3.16	1.45	1.34
43	r	1	AYA	OT-CT	-2.15	1.18	1.23
13	M	1	FME	CA-N	-2.12	1.43	1.46
4	D	85	2MR	CQ1-NH1	-2.11	1.42	1.46
1	A	1	FME	CA-N	-2.04	1.43	1.46
12	L	1	FME	CA-N	-2.03	1.43	1.46
24	Y	1	AYA	OT-CT	-2.00	1.18	1.23

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	85	2MR	NE-CZ-NH2	-2.69	117.01	119.48
43	r	1	AYA	CM-CT-N	2.33	120.04	116.10
24	Y	1	AYA	CM-CT-N	2.06	119.58	116.10

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1	FME	C-CA-CB-CG
4	D	85	2MR	O-C-CA-CB
10	J	1	FME	O1-CN-N-CA
12	L	1	FME	O1-CN-N-CA
12	L	1	FME	O-C-CA-CB
14	N	1	FME	O1-CN-N-CA
14	N	1	FME	N-CA-CB-CG
34	i	1	SAC	O-C-CA-CB
8	H	1	FME	CA-CB-CG-SD
12	L	1	FME	CA-CB-CG-SD
1	A	1	FME	N-CA-CB-CG
13	M	1	FME	C-CA-CB-CG
11	K	1	FME	CB-CG-SD-CE
34	i	1	SAC	CB-CA-N-C1A
10	J	1	FME	CB-CG-SD-CE
14	N	1	FME	C-CA-CB-CG
8	H	1	FME	C-CA-CB-CG
34	i	1	SAC	C-CA-N-C1A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
8	H	1	FME	CB-CG-SD-CE

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 47 ligands modelled in this entry, 3 are monoatomic - leaving 44 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	$\#\|Z\| > 2$
51	3PE	I	201	-	50,50,50	0.87	3 (6%)	53,55,55	1.06	2 (3%)
45	LMT	b	301	-	36,36,36	1.14	2 (5%)	47,47,47	1.01	3 (6%)
46	PC1	P	401	-	53,53,53	0.92	3 (5%)	59,61,61	1.05	2 (3%)
57	EHZ	U	101	20	29,36,37	1.67	5 (17%)	35,44,47	1.47	3 (8%)
45	LMT	M	602	-	36,36,36	1.19	2 (5%)	47,47,47	0.82	1 (2%)
45	LMT	h	1002	-	36,36,36	1.17	2 (5%)	47,47,47	0.92	1 (2%)
47	SF4	I	203	9	0,12,12	-	-	-		
47	SF4	G	802	7	0,12,12	-	-	-		
47	SF4	G	801	7	0,12,12	-	-	-		
49	FMN	F	501	-	33,33,33	1.08	2 (6%)	48,50,50	1.25	7 (14%)
47	SF4	B	201	2	0,12,12	-	-	-		
51	3PE	H	401	-	43,43,50	0.92	3 (6%)	46,48,55	1.09	2 (4%)
51	3PE	Y	802	-	34,34,50	1.04	3 (8%)	37,39,55	1.16	2 (5%)
51	3PE	M	603	-	50,50,50	0.86	3 (6%)	53,55,55	1.10	2 (3%)
57	EHZ	T	101	20	29,36,37	1.68	6 (20%)	35,44,47	2.00	7 (20%)
51	3PE	d	1201	-	50,50,50	0.84	4 (8%)	53,55,55	1.09	2 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
52	CDL	J	701	-	61,61,99	1.09	7 (11%)	67,73,111	1.28	4 (5%)
52	CDL	q	201	-	75,75,99	0.99	7 (9%)	81,87,111	1.09	4 (4%)
51	3PE	d	1203	-	50,50,50	0.85	4 (8%)	53,55,55	1.11	2 (3%)
45	LMT	f	1101	-	36,36,36	1.20	3 (8%)	47,47,47	0.91	0
51	3PE	d	1202	-	50,50,50	0.83	4 (8%)	53,55,55	1.11	4 (7%)
45	LMT	l	201	-	36,36,36	1.22	3 (8%)	47,47,47	1.10	3 (6%)
51	3PE	H	402	-	33,33,50	1.34	4 (12%)	34,37,55	1.21	2 (5%)
45	LMT	J	702	-	36,36,36	1.24	3 (8%)	47,47,47	0.95	1 (2%)
45	LMT	j	101	-	36,36,36	1.16	2 (5%)	47,47,47	1.18	3 (6%)
48	FES	G	803	7	0,4,4	-	-	-		
51	3PE	L	701	-	48,48,50	0.89	3 (6%)	51,53,55	1.12	2 (3%)
47	SF4	F	502	6	0,12,12	-	-	-		
48	FES	E	301	5	0,4,4	-	-	-		
52	CDL	h	1001	-	66,66,99	1.06	7 (10%)	72,78,111	1.23	4 (5%)
46	PC1	M	604	-	48,48,53	0.99	3 (6%)	54,56,61	1.01	2 (3%)
52	CDL	L	703	-	68,68,99	1.04	6 (8%)	74,80,111	1.09	4 (5%)
47	SF4	I	202	9	0,12,12	-	-	-		
46	PC1	B	202	-	34,34,53	1.15	4 (11%)	40,42,61	1.09	2 (5%)
52	CDL	K	401	-	70,70,99	1.04	8 (11%)	76,82,111	1.05	4 (5%)
51	3PE	L	704	-	44,44,50	0.92	4 (9%)	47,49,55	1.17	3 (6%)
45	LMT	L	702	-	36,36,36	1.15	2 (5%)	47,47,47	0.96	1 (2%)
53	GTP	O	401	54	26,34,34	2.93	10 (38%)	32,54,54	1.68	10 (31%)
45	LMT	A	701	-	36,36,36	1.26	3 (8%)	47,47,47	1.64	7 (14%)
58	MYR	o	201	40	14,14,15	0.89	0	13,13,15	0.67	0
46	PC1	A	702	-	20,20,53	1.88	3 (15%)	24,27,61	1.16	1 (4%)
51	3PE	M	601	-	45,45,50	0.92	4 (8%)	48,50,55	0.98	2 (4%)
45	LMT	Y	801	-	36,36,36	1.23	3 (8%)	47,47,47	1.11	4 (8%)
55	NDP	P	402	-	45,52,52	2.10	3 (6%)	53,80,80	1.66	11 (20%)

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
51	3PE	I	201	-	-	20/54/54/54	-
45	LMT	b	301	-	-	4/21/61/61	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
46	PC1	P	401	-	-	21/57/57/57	-
57	EHZ	U	101	20	-	6/42/44/45	-
45	LMT	M	602	-	-	8/21/61/61	0/2/2/2
45	LMT	h	1002	-	-	6/21/61/61	0/2/2/2
49	FMN	F	501	-	-	2/18/18/18	0/3/3/3
47	SF4	G	801	7	-	-	0/6/5/5
47	SF4	G	802	7	-	-	0/6/5/5
47	SF4	I	203	9	-	-	0/6/5/5
51	3PE	H	401	-	-	18/47/47/54	-
47	SF4	B	201	2	-	-	0/6/5/5
51	3PE	Y	802	-	-	18/38/38/54	-
51	3PE	M	603	-	-	17/54/54/54	-
57	EHZ	T	101	20	-	12/42/44/45	-
51	3PE	d	1201	-	-	27/54/54/54	-
52	CDL	J	701	-	-	31/71/71/110	-
52	CDL	q	201	-	-	24/86/86/110	-
51	3PE	d	1203	-	-	24/54/54/54	-
45	LMT	f	1101	-	-	9/21/61/61	0/2/2/2
51	3PE	d	1202	-	-	26/54/54/54	-
45	LMT	l	201	-	-	8/21/61/61	0/2/2/2
51	3PE	H	402	-	-	17/36/36/54	-
45	LMT	J	702	-	-	8/21/61/61	0/2/2/2
45	LMT	j	101	-	-	5/21/61/61	0/2/2/2
48	FES	G	803	7	-	-	0/1/1/1
51	3PE	L	701	-	-	19/52/52/54	-
52	CDL	h	1001	-	-	35/77/77/110	-
47	SF4	F	502	6	-	-	0/6/5/5
48	FES	E	301	5	-	-	0/1/1/1
46	PC1	M	604	-	-	19/52/52/57	-
52	CDL	L	703	-	-	35/79/79/110	-
47	SF4	I	202	9	-	-	0/6/5/5
46	PC1	B	202	-	-	17/38/38/57	-
52	CDL	K	401	-	-	32/81/81/110	-
51	3PE	L	704	-	-	14/48/48/54	-
45	LMT	L	702	-	-	9/21/61/61	0/2/2/2
53	GTP	O	401	54	-	6/18/38/38	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	LMT	A	701	-	-	13/21/61/61	0/2/2/2
58	MYR	o	201	40	-	8/11/12/13	-
46	PC1	A	702	-	-	4/22/22/57	-
51	3PE	M	601	-	-	18/49/49/54	-
45	LMT	Y	801	-	-	8/21/61/61	0/2/2/2
55	NDP	P	402	-	-	4/30/77/77	0/5/5/5

All (138) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	P	402	NDP	P2B-O2B	11.52	1.81	1.59
53	O	401	GTP	O6-C6	8.22	1.40	1.23
46	A	702	PC1	O21-C2	-5.83	1.40	1.46
53	O	401	GTP	O4'-C1'	5.52	1.48	1.41
57	U	101	EHZ	C15-N2	5.32	1.45	1.33
57	T	101	EHZ	C12-N1	5.19	1.45	1.33
51	H	402	3PE	O21-C2	-5.15	1.40	1.46
57	U	101	EHZ	C12-N1	5.11	1.45	1.33
57	T	101	EHZ	C15-N2	5.09	1.44	1.33
53	O	401	GTP	C2-N1	4.69	1.49	1.37
53	O	401	GTP	C2-N3	4.57	1.44	1.33
53	O	401	GTP	C2-N2	4.55	1.45	1.34
55	P	402	NDP	PN-O5D	3.92	1.75	1.59
45	J	702	LMT	O5B-C1B	3.75	1.51	1.41
45	A	701	LMT	O5B-C1B	3.66	1.51	1.41
45	f	1101	LMT	O5B-C1B	3.51	1.50	1.41
45	l	201	LMT	O5B-C1B	3.48	1.50	1.41
45	l	201	LMT	O5'-C1'	3.43	1.50	1.41
45	A	701	LMT	O5'-C1'	3.37	1.50	1.41
45	h	1002	LMT	O5B-C1B	3.37	1.50	1.41
49	F	501	FMN	C4A-N5	3.37	1.37	1.30
45	Y	801	LMT	O5'-C1'	3.36	1.50	1.41
45	M	602	LMT	O5B-C1B	3.33	1.50	1.41
45	b	301	LMT	O5B-C1B	3.26	1.50	1.41
45	Y	801	LMT	O5B-C1B	3.22	1.50	1.41
45	f	1101	LMT	O5'-C1'	3.20	1.50	1.41
45	L	702	LMT	O5B-C1B	3.18	1.49	1.41
45	j	101	LMT	O5B-C1B	3.17	1.49	1.41
53	O	401	GTP	C5-C6	-3.16	1.41	1.47
45	J	702	LMT	O5'-C1'	3.15	1.49	1.41
53	O	401	GTP	C2'-C1'	-3.12	1.49	1.53

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	M	602	LMT	O5'-C1'	3.09	1.49	1.41
55	P	402	NDP	O2B-C2B	-3.07	1.32	1.44
46	A	702	PC1	O21-C21	3.05	1.40	1.33
51	H	402	3PE	O21-C21	3.05	1.40	1.33
45	j	101	LMT	O5'-C1'	2.99	1.49	1.41
45	b	301	LMT	O5'-C1'	2.95	1.49	1.41
45	L	702	LMT	O5'-C1'	2.86	1.49	1.41
45	h	1002	LMT	O5'-C1'	2.85	1.49	1.41
52	L	703	CDL	OA6-CA4	-2.81	1.39	1.46
51	L	701	3PE	O21-C2	-2.77	1.39	1.46
51	M	601	3PE	O21-C2	-2.77	1.39	1.46
51	H	401	3PE	O21-C2	-2.76	1.39	1.46
52	q	201	CDL	OA6-CA4	-2.75	1.39	1.46
52	J	701	CDL	OB6-CB4	-2.74	1.39	1.46
52	L	703	CDL	OB6-CB4	-2.74	1.39	1.46
52	K	401	CDL	OA6-CA4	-2.69	1.39	1.46
52	h	1001	CDL	OA6-CA4	-2.67	1.39	1.46
52	h	1001	CDL	OB6-CB4	-2.67	1.39	1.46
51	M	603	3PE	O21-C2	-2.64	1.40	1.46
46	M	604	PC1	O21-C2	-2.63	1.40	1.46
51	d	1203	3PE	O21-C2	-2.63	1.40	1.46
51	L	701	3PE	O31-C3	-2.62	1.39	1.45
51	L	704	3PE	O21-C2	-2.62	1.40	1.46
57	U	101	EHZ	O4-C15	-2.60	1.18	1.23
52	K	401	CDL	OB6-CB4	-2.60	1.40	1.46
52	J	701	CDL	OB8-CB6	-2.58	1.39	1.45
51	I	201	3PE	O21-C2	-2.57	1.40	1.46
53	O	401	GTP	C2'-C3'	-2.57	1.46	1.53
51	Y	802	3PE	O21-C2	-2.57	1.40	1.46
46	P	401	PC1	O21-C2	-2.55	1.40	1.46
52	q	201	CDL	OB8-CB7	2.53	1.40	1.33
52	q	201	CDL	OB6-CB4	-2.52	1.40	1.46
57	T	101	EHZ	O4-C15	-2.49	1.18	1.23
51	H	402	3PE	O31-C31	2.47	1.40	1.33
51	d	1203	3PE	O31-C3	-2.44	1.39	1.45
52	J	701	CDL	OA6-CA5	2.43	1.40	1.35
52	K	401	CDL	OA8-CA6	-2.43	1.39	1.45
51	M	601	3PE	O31-C3	-2.42	1.39	1.45
52	J	701	CDL	OA8-CA7	2.42	1.40	1.33
51	Y	802	3PE	O31-C31	2.41	1.40	1.33
51	d	1201	3PE	O31-C31	2.40	1.40	1.33
52	h	1001	CDL	OA8-CA7	2.40	1.40	1.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	B	202	PC1	O21-C2	-2.40	1.40	1.46
52	L	703	CDL	OA8-CA7	2.40	1.40	1.33
52	L	703	CDL	OB8-CB7	2.39	1.40	1.33
57	T	101	EHZ	O3-C12	-2.37	1.18	1.23
52	K	401	CDL	OB8-CB7	2.36	1.40	1.33
53	O	401	GTP	PG-O3G	-2.36	1.45	1.54
52	q	201	CDL	OA8-CA7	2.35	1.40	1.33
51	L	704	3PE	O31-C3	-2.35	1.39	1.45
51	M	603	3PE	O31-C3	-2.34	1.39	1.45
51	H	401	3PE	O31-C3	-2.33	1.39	1.45
53	O	401	GTP	PG-O2G	-2.32	1.45	1.54
46	B	202	PC1	O31-C31	2.31	1.40	1.33
57	U	101	EHZ	O3-C12	-2.31	1.18	1.23
52	h	1001	CDL	OB8-CB7	2.30	1.40	1.33
51	I	201	3PE	O31-C31	2.30	1.40	1.33
45	Y	801	LMT	O5'-C5'	2.29	1.49	1.44
51	I	201	3PE	O31-C3	-2.29	1.39	1.45
51	Y	802	3PE	O31-C3	-2.28	1.39	1.45
51	M	603	3PE	O31-C31	2.28	1.40	1.33
46	M	604	PC1	O31-C3	-2.28	1.40	1.45
51	M	601	3PE	O31-C31	2.27	1.40	1.33
52	K	401	CDL	OA8-CA7	2.27	1.40	1.33
46	M	604	PC1	O31-C31	2.27	1.40	1.33
45	J	702	LMT	O5B-C5B	2.26	1.49	1.44
46	P	401	PC1	O31-C31	2.24	1.39	1.33
51	H	401	3PE	O31-C31	2.23	1.39	1.33
46	B	202	PC1	O21-C21	2.22	1.40	1.34
51	d	1201	3PE	O21-C2	-2.21	1.41	1.46
51	L	704	3PE	O31-C31	2.21	1.39	1.33
52	q	201	CDL	OA8-CA6	-2.20	1.40	1.45
52	h	1001	CDL	OB8-CB6	-2.20	1.40	1.45
52	K	401	CDL	OB8-CB6	-2.19	1.40	1.45
52	L	703	CDL	OB8-CB6	-2.19	1.40	1.45
51	d	1202	3PE	O31-C3	-2.18	1.40	1.45
51	d	1202	3PE	O21-C2	-2.17	1.41	1.46
52	J	701	CDL	OA8-CA6	-2.16	1.40	1.45
45	f	1101	LMT	O5B-C5B	2.16	1.49	1.44
52	J	701	CDL	OA6-CA4	-2.15	1.41	1.46
46	B	202	PC1	O31-C3	-2.15	1.40	1.45
52	K	401	CDL	OB6-CB5	2.14	1.40	1.34
49	F	501	FMN	C10-N1	2.13	1.37	1.33
46	A	702	PC1	O31-C3	-2.13	1.40	1.45

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	P	401	PC1	O31-C3	-2.13	1.40	1.45
52	L	703	CDL	OA8-CA6	-2.13	1.40	1.45
57	T	101	EHZ	C9-S1	2.12	1.81	1.76
51	L	701	3PE	O31-C31	2.11	1.39	1.33
51	d	1202	3PE	O31-C31	2.11	1.39	1.33
52	h	1001	CDL	OA8-CA6	-2.11	1.40	1.45
51	d	1201	3PE	O21-C21	2.11	1.40	1.34
45	l	201	LMT	O5B-C5B	2.10	1.49	1.44
51	d	1201	3PE	O31-C3	-2.09	1.40	1.45
57	T	101	EHZ	O6-C20	-2.07	1.39	1.44
51	M	601	3PE	O21-C21	2.06	1.40	1.34
51	d	1203	3PE	O21-C21	2.06	1.40	1.34
51	d	1203	3PE	O31-C31	2.06	1.39	1.33
52	h	1001	CDL	OB6-CB5	2.05	1.40	1.34
52	q	201	CDL	OB8-CB6	-2.05	1.40	1.45
52	J	701	CDL	OB6-CB5	2.04	1.40	1.34
52	q	201	CDL	OB6-CB5	2.03	1.40	1.34
52	K	401	CDL	OA6-CA5	2.02	1.40	1.34
51	L	704	3PE	O21-C21	2.02	1.40	1.34
51	d	1202	3PE	O21-C21	2.02	1.40	1.34
57	U	101	EHZ	C9-S1	2.01	1.81	1.76
51	H	402	3PE	O31-C3	-2.00	1.40	1.45
45	A	701	LMT	O5B-C5B	2.00	1.49	1.44

All (114) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	T	101	EHZ	C8-C9-S1	7.81	123.30	113.63
55	P	402	NDP	PN-O3-PA	-6.66	109.96	132.83
57	U	101	EHZ	C8-C9-S1	6.04	121.10	113.63
45	A	701	LMT	C1-O1'-C1'	5.39	122.77	113.84
52	J	701	CDL	OA6-CA5-C11	4.93	120.15	111.09
51	H	402	3PE	O21-C21-O22	-4.71	119.57	125.57
52	J	701	CDL	OB6-CB5-C51	4.67	121.58	111.50
46	A	702	PC1	O21-C21-O22	-4.61	119.70	125.57
51	L	704	3PE	O21-C21-C22	4.54	121.30	111.50
46	P	401	PC1	O21-C21-C22	4.38	120.94	111.50
51	L	701	3PE	O21-C21-C22	4.37	120.91	111.50
52	h	1001	CDL	OB6-CB5-C51	4.37	120.91	111.50
46	B	202	PC1	O21-C21-C22	4.22	120.59	111.50
51	I	201	3PE	O21-C21-C22	4.18	120.52	111.50
52	h	1001	CDL	OA6-CA5-C11	4.12	120.37	111.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	d	1203	3PE	O21-C21-C22	4.07	120.28	111.50
51	Y	802	3PE	O21-C21-C22	4.02	120.17	111.50
51	d	1201	3PE	O21-C21-C22	3.97	120.06	111.50
52	q	201	CDL	OB6-CB5-C51	3.92	119.94	111.50
52	K	401	CDL	OB6-CB5-C51	3.79	119.68	111.50
51	d	1202	3PE	O21-C21-C22	3.78	119.65	111.50
52	q	201	CDL	OA6-CA5-C11	3.75	119.58	111.50
45	j	101	LMT	C3B-C4B-C5B	3.73	116.90	110.24
51	H	401	3PE	O21-C21-C22	3.72	119.53	111.50
51	M	603	3PE	O21-C21-C22	3.72	119.51	111.50
46	M	604	PC1	O21-C21-C22	3.70	119.48	111.50
52	L	703	CDL	OB6-CB5-C51	3.70	119.48	111.50
52	L	703	CDL	OA6-CA5-C11	3.69	119.45	111.50
52	K	401	CDL	OA6-CA5-C11	3.56	119.17	111.50
57	T	101	EHZ	C10-S1-C9	3.56	112.94	101.87
55	P	402	NDP	O2B-P2B-O1X	-3.54	95.73	109.39
45	A	701	LMT	O5B-C1B-C2B	3.52	117.81	110.35
45	A	701	LMT	O1'-C1'-C2'	3.46	113.70	108.30
45	A	701	LMT	C1B-O5B-C5B	3.46	120.47	113.69
45	A	701	LMT	O5B-C5B-C4B	3.45	115.96	109.69
57	T	101	EHZ	O2-C9-S1	-3.42	118.18	122.61
49	F	501	FMN	C4-N3-C2	-3.32	119.51	125.64
53	O	401	GTP	C5-C6-N1	3.26	119.70	113.95
57	T	101	EHZ	C13-C12-N1	3.23	121.86	116.42
53	O	401	GTP	PA-O3A-PB	-3.19	121.88	132.83
57	T	101	EHZ	C13-C14-N2	-3.19	105.46	111.90
53	O	401	GTP	C2-N1-C6	-3.16	119.29	125.10
51	M	601	3PE	O21-C21-C22	3.07	118.11	111.50
51	d	1201	3PE	O31-C31-C32	3.05	121.47	111.91
45	j	101	LMT	C4B-C3B-C2B	2.97	116.00	110.82
45	Y	801	LMT	C1'-O5'-C5'	2.97	119.51	113.69
52	h	1001	CDL	OB8-CB7-C71	2.96	121.20	111.91
51	M	603	3PE	O31-C31-C32	2.95	121.17	111.91
52	h	1001	CDL	OA8-CA7-C31	2.94	121.15	111.91
51	Y	802	3PE	O31-C31-C32	2.93	121.09	111.91
49	F	501	FMN	C4A-C10-N10	2.89	120.70	116.48
53	O	401	GTP	O2G-PG-O3B	2.80	114.04	104.64
55	P	402	NDP	PA-O5B-C5B	-2.80	105.29	121.68
46	M	604	PC1	O31-C31-C32	2.76	120.55	111.91
52	q	201	CDL	OA8-CA7-C31	2.75	120.54	111.91
53	O	401	GTP	O3G-PG-O3B	2.73	113.78	104.64
52	K	401	CDL	OB8-CB7-C71	2.71	120.42	111.91

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	j	101	LMT	O5B-C5B-C4B	2.69	114.59	109.69
45	Y	801	LMT	O5'-C5'-C4'	2.69	115.43	109.75
53	O	401	GTP	PB-O3B-PG	-2.69	123.60	132.83
49	F	501	FMN	C4A-C4-N3	2.67	119.97	113.19
51	H	401	3PE	O31-C31-C32	2.66	120.26	111.91
51	L	701	3PE	O31-C31-C32	2.66	120.25	111.91
45	A	701	LMT	C1B-C2B-C3B	2.65	115.52	110.00
55	P	402	NDP	PN-O5D-C5D	-2.65	106.17	121.68
52	L	703	CDL	OB8-CB7-C71	2.61	120.11	111.91
49	F	501	FMN	O4-C4-C4A	-2.61	119.67	126.60
46	B	202	PC1	O31-C31-C32	2.60	120.08	111.91
45	l	201	LMT	C3B-C4B-C5B	2.60	114.88	110.24
51	H	402	3PE	O31-C31-C32	2.59	120.03	111.91
55	P	402	NDP	O3X-P2B-O2X	2.57	117.44	107.64
52	q	201	CDL	OB8-CB7-C71	2.56	119.95	111.91
51	d	1202	3PE	O31-C31-C32	2.56	119.93	111.91
45	l	201	LMT	O5B-C5B-C4B	2.54	114.31	109.69
52	J	701	CDL	OB8-CB7-C71	2.54	119.87	111.91
51	I	201	3PE	O31-C31-C32	2.53	119.84	111.91
46	P	401	PC1	O31-C31-C32	2.52	119.81	111.91
52	J	701	CDL	OA8-CA7-C31	2.51	119.80	111.91
52	L	703	CDL	OA8-CA7-C31	2.51	119.78	111.91
51	M	601	3PE	O31-C31-C32	2.48	119.69	111.91
57	U	101	EHZ	O2-C9-S1	-2.46	119.41	122.61
45	L	702	LMT	C1B-O5B-C5B	-2.43	108.92	113.69
45	l	201	LMT	O5'-C1'-C2'	2.41	115.44	110.35
53	O	401	GTP	C3'-C2'-C1'	2.38	104.57	100.98
51	d	1203	3PE	O31-C31-C32	2.38	119.36	111.91
57	T	101	EHZ	C14-N2-C15	-2.36	118.38	122.59
45	Y	801	LMT	C3B-C4B-C5B	2.36	114.44	110.24
45	Y	801	LMT	C1B-O1B-C4'	-2.35	112.14	117.96
55	P	402	NDP	C2A-N1A-C6A	-2.35	114.73	118.75
51	L	704	3PE	O31-C31-C32	2.35	119.28	111.91
53	O	401	GTP	O2A-PA-O1A	-2.35	100.63	112.24
55	P	402	NDP	O4B-C4B-C3B	2.35	109.75	105.11
45	b	301	LMT	C1B-C2B-C3B	2.29	114.77	110.00
53	O	401	GTP	O2B-PB-O1B	-2.29	100.92	112.24
55	P	402	NDP	O5D-PN-O1N	-2.29	100.13	109.07
49	F	501	FMN	C4A-C10-N1	-2.27	119.47	124.73
57	U	101	EHZ	C10-S1-C9	2.26	108.92	101.87
57	T	101	EHZ	C11-N1-C12	-2.25	118.66	122.84
51	d	1202	3PE	C3-C2-C1	-2.24	106.48	111.79

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	A	701	LMT	C6B-C5B-C4B	-2.23	107.77	113.00
55	P	402	NDP	O2N-PN-O1N	2.18	123.03	112.24
52	K	401	CDL	OA8-CA7-C31	2.16	118.69	111.91
45	b	301	LMT	C4B-C3B-C2B	2.14	114.56	110.82
49	F	501	FMN	C10-C4A-N5	-2.13	120.33	124.86
55	P	402	NDP	O7N-C7N-C3N	2.13	124.90	120.90
45	M	602	LMT	O5'-C5'-C4'	2.11	114.20	109.75
51	d	1202	3PE	O21-C2-C3	2.11	116.03	108.40
45	b	301	LMT	C1B-O5B-C5B	-2.09	109.59	113.69
45	J	702	LMT	O5B-C5B-C4B	2.09	113.49	109.69
51	L	704	3PE	C2-O21-C21	-2.06	112.71	117.79
49	F	501	FMN	C4-C4A-C10	2.06	120.25	116.79
45	h	1002	LMT	C1B-O1B-C4'	-2.04	112.92	117.96
55	P	402	NDP	O7N-C7N-N7N	-2.03	118.12	122.88
53	O	401	GTP	O6-C6-C5	-2.01	120.44	124.37

There are no chirality outliers.

All (552) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	A	701	LMT	C2'-C1'-O1'-C1
45	A	701	LMT	O5'-C1'-O1'-C1
45	L	702	LMT	C2-C1-O1'-C1'
45	f	1101	LMT	O5'-C1'-O1'-C1
45	l	201	LMT	C2'-C1'-O1'-C1
45	l	201	LMT	O5'-C1'-O1'-C1
46	A	702	PC1	O22-C21-O21-C2
46	B	202	PC1	C11-O13-P-O14
46	P	401	PC1	C1-O11-P-O14
51	H	401	3PE	C1-O11-P-O14
51	H	402	3PE	C11-O13-P-O12
51	H	402	3PE	C11-O13-P-O14
51	H	402	3PE	O13-C11-C12-N
51	H	402	3PE	C1-C2-O21-C21
51	H	402	3PE	O22-C21-O21-C2
51	I	201	3PE	C11-O13-P-O14
51	I	201	3PE	O13-C11-C12-N
51	L	701	3PE	C22-C21-O21-C2
51	L	704	3PE	C11-O13-P-O11
51	L	704	3PE	C11-O13-P-O12
51	L	704	3PE	C11-O13-P-O14
51	L	704	3PE	O13-C11-C12-N

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
51	M	601	3PE	O13-C11-C12-N
51	M	603	3PE	C1-O11-P-O12
51	M	603	3PE	C1-O11-P-O13
51	M	603	3PE	C1-O11-P-O14
51	Y	802	3PE	C22-C21-O21-C2
51	d	1201	3PE	C11-O13-P-O11
51	d	1201	3PE	C11-O13-P-O12
51	d	1201	3PE	C11-O13-P-O14
51	d	1201	3PE	O13-C11-C12-N
51	d	1201	3PE	O32-C31-O31-C3
51	d	1201	3PE	C32-C31-O31-C3
51	d	1201	3PE	C22-C21-O21-C2
51	d	1202	3PE	C1-O11-P-O14
51	d	1202	3PE	C11-O13-P-O14
51	d	1202	3PE	O22-C21-O21-C2
51	d	1202	3PE	C22-C21-O21-C2
51	d	1203	3PE	C1-O11-P-O12
51	d	1203	3PE	C1-O11-P-O14
51	d	1203	3PE	O22-C21-O21-C2
51	d	1203	3PE	C22-C21-O21-C2
52	J	701	CDL	OB7-CB5-OB6-CB4
52	K	401	CDL	CB2-C1-CA2-OA2
52	K	401	CDL	CB2-OB2-PB2-OB3
52	K	401	CDL	CB2-OB2-PB2-OB4
52	L	703	CDL	CB2-C1-CA2-OA2
52	L	703	CDL	CA2-OA2-PA1-OA3
52	L	703	CDL	CA2-OA2-PA1-OA4
52	L	703	CDL	CA3-OA5-PA1-OA3
52	h	1001	CDL	O1-C1-CB2-OB2
52	h	1001	CDL	CB3-OB5-PB2-OB3
52	h	1001	CDL	CB3-OB5-PB2-OB4
52	h	1001	CDL	OB7-CB5-OB6-CB4
52	q	201	CDL	O1-C1-CA2-OA2
52	q	201	CDL	CB2-C1-CA2-OA2
53	O	401	GTP	C5'-O5'-PA-O3A
53	O	401	GTP	C5'-O5'-PA-O1A
57	T	101	EHZ	C11-C10-S1-C9
57	T	101	EHZ	C16-C17-C20-O6
57	T	101	EHZ	C18-C17-C20-O6
57	T	101	EHZ	O2-C9-S1-C10
57	T	101	EHZ	C8-C9-S1-C10
57	U	101	EHZ	C5-C6-C7-O1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
57	U	101	EHZ	O2-C9-S1-C10
57	U	101	EHZ	C8-C9-S1-C10
52	J	701	CDL	OA7-CA5-OA6-CA4
52	J	701	CDL	C11-CA5-OA6-CA4
45	J	702	LMT	O5B-C1B-O1B-C4'
51	H	401	3PE	O32-C31-O31-C3
51	H	402	3PE	O32-C31-O31-C3
51	M	603	3PE	O32-C31-O31-C3
51	Y	802	3PE	O32-C31-O31-C3
51	L	701	3PE	O22-C21-O21-C2
51	L	704	3PE	O22-C21-O21-C2
51	Y	802	3PE	O22-C21-O21-C2
52	L	703	CDL	OA7-CA5-OA6-CA4
52	q	201	CDL	OA7-CA5-OA6-CA4
45	l	201	LMT	C4'-C5'-C6'-O6'
51	H	401	3PE	C32-C31-O31-C3
51	H	402	3PE	C32-C31-O31-C3
51	Y	802	3PE	C32-C31-O31-C3
45	M	602	LMT	O5B-C5B-C6B-O6B
45	M	602	LMT	O5'-C5'-C6'-O6'
51	L	704	3PE	C22-C21-O21-C2
52	J	701	CDL	C51-CB5-OB6-CB4
52	L	703	CDL	C11-CA5-OA6-CA4
52	h	1001	CDL	C51-CB5-OB6-CB4
52	q	201	CDL	C11-CA5-OA6-CA4
45	A	701	LMT	O5'-C5'-C6'-O6'
46	M	604	PC1	C32-C31-O31-C3
51	M	603	3PE	C32-C31-O31-C3
52	J	701	CDL	C31-CA7-OA8-CA6
52	K	401	CDL	C71-CB7-OB8-CB6
45	l	201	LMT	O5'-C5'-C6'-O6'
45	J	702	LMT	C3'-C4'-O1B-C1B
51	d	1201	3PE	O22-C21-O21-C2
45	j	101	LMT	C4'-C5'-C6'-O6'
52	J	701	CDL	OA9-CA7-OA8-CA6
52	J	701	CDL	O1-C1-CA2-OA2
46	B	202	PC1	C32-C31-O31-C3
51	L	701	3PE	C32-C31-O31-C3
52	K	401	CDL	OB9-CB7-OB8-CB6
52	K	401	CDL	C51-CB5-OB6-CB4
45	A	701	LMT	C5'-C4'-O1B-C1B
45	M	602	LMT	C4'-C5'-C6'-O6'

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
45	h	1002	LMT	C2-C3-C4-C5
45	f	1101	LMT	O5'-C5'-C6'-O6'
45	M	602	LMT	C4B-C5B-C6B-O6B
45	L	702	LMT	O5'-C5'-C6'-O6'
45	Y	801	LMT	O5B-C5B-C6B-O6B
52	K	401	CDL	OB7-CB5-OB6-CB4
45	Y	801	LMT	C4'-C5'-C6'-O6'
45	h	1002	LMT	C4'-C5'-C6'-O6'
46	M	604	PC1	O32-C31-O31-C3
46	B	202	PC1	O32-C31-O31-C3
45	A	701	LMT	C4'-C5'-C6'-O6'
51	L	701	3PE	O32-C31-O31-C3
52	h	1001	CDL	CA2-C1-CB2-OB2
51	L	704	3PE	C32-C31-O31-C3
52	h	1001	CDL	C71-CB7-OB8-CB6
45	b	301	LMT	O5B-C5B-C6B-O6B
52	J	701	CDL	OB5-CB3-CB4-OB6
45	l	201	LMT	O5B-C5B-C6B-O6B
45	j	101	LMT	O5'-C5'-C6'-O6'
45	f	1101	LMT	C4'-C5'-C6'-O6'
52	h	1001	CDL	OB9-CB7-OB8-CB6
45	h	1002	LMT	O5'-C5'-C6'-O6'
46	B	202	PC1	C21-C22-C23-C24
51	H	401	3PE	C31-C32-C33-C34
52	K	401	CDL	CA5-C11-C12-C13
52	K	401	CDL	CB5-C51-C52-C53
52	L	703	CDL	CA5-C11-C12-C13
45	b	301	LMT	C4B-C5B-C6B-O6B
45	Y	801	LMT	C4B-C5B-C6B-O6B
51	L	704	3PE	O32-C31-O31-C3
52	L	703	CDL	CA7-C31-C32-C33
52	K	401	CDL	O1-C1-CA2-OA2
52	J	701	CDL	C71-CB7-OB8-CB6
45	Y	801	LMT	O5'-C5'-C6'-O6'
51	I	201	3PE	C22-C21-O21-C2
46	B	202	PC1	C11-O13-P-O11
46	P	401	PC1	C11-O13-P-O11
46	P	401	PC1	C1-O11-P-O13
51	H	402	3PE	C11-O13-P-O11
51	I	201	3PE	C1-O11-P-O13
51	I	201	3PE	C11-O13-P-O11
51	d	1202	3PE	C1-O11-P-O13

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
51	d	1203	3PE	C1-O11-P-O13
52	J	701	CDL	CA2-OA2-PA1-OA5
52	J	701	CDL	CA3-OA5-PA1-OA2
52	K	401	CDL	CB2-OB2-PB2-OB5
52	L	703	CDL	CA2-OA2-PA1-OA5
52	h	1001	CDL	CA2-OA2-PA1-OA5
52	h	1001	CDL	CB3-OB5-PB2-OB2
52	q	201	CDL	CB2-OB2-PB2-OB5
45	L	702	LMT	O5B-C5B-C6B-O6B
52	h	1001	CDL	C31-CA7-OA8-CA6
51	L	704	3PE	C21-C22-C23-C24
52	J	701	CDL	CB2-C1-CA2-OA2
51	I	201	3PE	O22-C21-O21-C2
45	l	201	LMT	O1'-C1-C2-C3
51	d	1203	3PE	C3C-C3D-C3E-C3F
52	h	1001	CDL	C13-C14-C15-C16
52	h	1001	CDL	C11-CA5-OA6-CA4
46	M	604	PC1	C27-C28-C29-C2A
51	L	704	3PE	C33-C34-C35-C36
51	M	601	3PE	C26-C27-C28-C29
51	M	603	3PE	C3D-C3E-C3F-C3G
51	d	1203	3PE	C22-C23-C24-C25
52	h	1001	CDL	C31-C32-C33-C34
57	T	101	EHZ	C19-C17-C20-O6
52	L	703	CDL	C71-CB7-OB8-CB6
45	f	1101	LMT	C3'-C4'-O1B-C1B
52	J	701	CDL	C73-C74-C75-C76
51	d	1202	3PE	C3-C2-O21-C21
52	h	1001	CDL	OA7-CA5-OA6-CA4
46	M	604	PC1	C2B-C2C-C2D-C2E
46	P	401	PC1	C2C-C2D-C2E-C2F
52	J	701	CDL	C77-C78-C79-C80
57	U	101	EHZ	C21-C1-C2-C3
52	K	401	CDL	CB4-CB3-OB5-PB2
45	A	701	LMT	C11-C10-C9-C8
45	j	101	LMT	C5-C6-C7-C8
51	L	701	3PE	C23-C24-C25-C26
51	L	701	3PE	C2D-C2E-C2F-C2G
51	M	603	3PE	C2D-C2E-C2F-C2G
51	d	1201	3PE	C29-C2A-C2B-C2C
51	d	1202	3PE	C39-C3A-C3B-C3C
51	d	1203	3PE	C36-C37-C38-C39

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
45	J	702	LMT	O5'-C5'-C6'-O6'
45	j	101	LMT	C7-C8-C9-C10
46	P	401	PC1	C25-C26-C27-C28
46	P	401	PC1	C2A-C2B-C2C-C2D
51	d	1202	3PE	C24-C25-C26-C27
51	d	1202	3PE	C26-C27-C28-C29
51	M	601	3PE	C35-C36-C37-C38
51	d	1201	3PE	C26-C27-C28-C29
46	B	202	PC1	C24-C25-C26-C27
58	o	201	MYR	C3-C4-C5-C6
52	h	1001	CDL	OA9-CA7-OA8-CA6
46	M	604	PC1	C2D-C2E-C2F-C2G
51	L	701	3PE	C29-C2A-C2B-C2C
51	M	603	3PE	C23-C24-C25-C26
52	q	201	CDL	C38-C39-C40-C41
46	M	604	PC1	C31-C32-C33-C34
51	d	1203	3PE	C31-C32-C33-C34
46	M	604	PC1	C37-C38-C39-C3A
51	I	201	3PE	C29-C2A-C2B-C2C
51	M	603	3PE	C35-C36-C37-C38
51	d	1202	3PE	C23-C24-C25-C26
52	h	1001	CDL	C17-C18-C19-C20
46	M	604	PC1	C23-C24-C25-C26
46	M	604	PC1	C33-C34-C35-C36
46	M	604	PC1	C35-C36-C37-C38
51	L	701	3PE	C3A-C3B-C3C-C3D
52	L	703	CDL	C38-C39-C40-C41
51	H	401	3PE	C3D-C3E-C3F-C3G
58	o	201	MYR	C10-C11-C12-C13
51	d	1203	3PE	C29-C2A-C2B-C2C
52	J	701	CDL	C75-C76-C77-C78
51	M	603	3PE	C22-C21-O21-C2
51	Y	802	3PE	C37-C38-C39-C3A
58	o	201	MYR	C5-C6-C7-C8
58	o	201	MYR	C6-C7-C8-C9
52	J	701	CDL	OB9-CB7-OB8-CB6
52	L	703	CDL	O1-C1-CA2-OA2
45	A	701	LMT	C7-C8-C9-C10
51	H	402	3PE	C35-C36-C37-C38
52	L	703	CDL	OB9-CB7-OB8-CB6
45	L	702	LMT	C5-C6-C7-C8
58	o	201	MYR	C9-C10-C11-C12

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
46	M	604	PC1	C2-C1-O11-P
45	f	1101	LMT	C5'-C4'-O1B-C1B
46	P	401	PC1	C31-C32-C33-C34
51	L	701	3PE	C21-C22-C23-C24
51	I	201	3PE	C3A-C3B-C3C-C3D
51	L	701	3PE	C25-C26-C27-C28
51	M	601	3PE	C39-C3A-C3B-C3C
52	q	201	CDL	C51-C52-C53-C54
52	K	401	CDL	C52-C53-C54-C55
51	I	201	3PE	C33-C34-C35-C36
51	d	1203	3PE	C27-C28-C29-C2A
51	M	603	3PE	O22-C21-O21-C2
52	L	703	CDL	C31-CA7-OA8-CA6
45	M	602	LMT	C9-C10-C11-C12
46	M	604	PC1	C34-C35-C36-C37
52	q	201	CDL	C58-C59-C60-C61
51	H	402	3PE	C3D-C3E-C3F-C3G
51	d	1201	3PE	C23-C24-C25-C26
46	P	401	PC1	C21-C22-C23-C24
51	H	401	3PE	C21-C22-C23-C24
52	h	1001	CDL	C16-C17-C18-C19
52	q	201	CDL	C52-C53-C54-C55
58	o	201	MYR	C11-C10-C9-C8
51	M	601	3PE	C33-C34-C35-C36
52	h	1001	CDL	C14-C15-C16-C17
52	q	201	CDL	C57-C58-C59-C60
46	B	202	PC1	C22-C21-O21-C2
51	M	601	3PE	C22-C21-O21-C2
52	J	701	CDL	C78-C79-C80-C81
46	B	202	PC1	O22-C21-O21-C2
52	J	701	CDL	C72-C73-C74-C75
45	M	602	LMT	C2'-C1'-O1'-C1
45	f	1101	LMT	C2'-C1'-O1'-C1
45	f	1101	LMT	O1'-C1-C2-C3
51	d	1201	3PE	C2E-C2F-C2G-C2H
45	J	702	LMT	C5'-C4'-O1B-C1B
52	J	701	CDL	C51-C52-C53-C54
45	M	602	LMT	C5-C6-C7-C8
45	Y	801	LMT	C3'-C4'-O1B-C1B
45	J	702	LMT	O1'-C1-C2-C3
51	H	402	3PE	C34-C35-C36-C37
52	L	703	CDL	CA3-OA5-PA1-OA2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
52	L	703	CDL	CB3-OB5-PB2-OB2
52	h	1001	CDL	CB2-OB2-PB2-OB5
51	H	401	3PE	C27-C28-C29-C2A
52	q	201	CDL	C56-C57-C58-C59
52	J	701	CDL	OB5-CB3-CB4-CB6
52	K	401	CDL	OB5-CB3-CB4-CB6
52	h	1001	CDL	OA5-CA3-CA4-CA6
52	K	401	CDL	C53-C54-C55-C56
45	Y	801	LMT	C5'-C4'-O1B-C1B
46	P	401	PC1	C26-C27-C28-C29
45	Y	801	LMT	C1-C2-C3-C4
51	L	701	3PE	C33-C34-C35-C36
51	L	701	3PE	C2F-C2G-C2H-C2I
52	L	703	CDL	C34-C35-C36-C37
52	q	201	CDL	C71-C72-C73-C74
51	M	603	3PE	C1-C2-C3-O31
51	d	1201	3PE	C1-C2-C3-O31
52	L	703	CDL	OA9-CA7-OA8-CA6
52	L	703	CDL	C60-C61-C62-C63
46	B	202	PC1	C33-C34-C35-C36
45	J	702	LMT	O5B-C5B-C6B-O6B
46	P	401	PC1	C2E-C2F-C2G-C2H
52	K	401	CDL	C40-C41-C42-C43
52	K	401	CDL	C11-CA5-OA6-CA4
51	Y	802	3PE	C32-C33-C34-C35
52	L	703	CDL	C54-C55-C56-C57
51	M	601	3PE	O22-C21-O21-C2
52	L	703	CDL	C71-C72-C73-C74
51	d	1203	3PE	C38-C39-C3A-C3B
51	L	701	3PE	O11-C1-C2-O21
51	d	1201	3PE	C32-C33-C34-C35
45	L	702	LMT	C4'-C5'-C6'-O6'
51	M	603	3PE	C3A-C3B-C3C-C3D
45	L	702	LMT	O1'-C1-C2-C3
46	B	202	PC1	C32-C33-C34-C35
45	j	101	LMT	C3-C4-C5-C6
51	I	201	3PE	C36-C37-C38-C39
52	h	1001	CDL	C15-C16-C17-C18
57	U	101	EHZ	C5-C6-C7-C8
45	L	702	LMT	C6-C7-C8-C9
51	H	402	3PE	C33-C34-C35-C36
51	d	1202	3PE	C31-C32-C33-C34

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
46	P	401	PC1	O11-C1-C2-C3
51	Y	802	3PE	O11-C1-C2-C3
51	d	1201	3PE	O11-C1-C2-C3
52	h	1001	CDL	OB5-CB3-CB4-CB6
51	L	701	3PE	C28-C29-C2A-C2B
51	H	401	3PE	O13-C11-C12-N
45	A	701	LMT	C3'-C4'-O1B-C1B
51	d	1202	3PE	C29-C2A-C2B-C2C
45	l	201	LMT	C4B-C5B-C6B-O6B
52	K	401	CDL	OA7-CA5-OA6-CA4
51	M	601	3PE	O21-C21-C22-C23
51	d	1202	3PE	C21-C22-C23-C24
57	T	101	EHZ	S1-C10-C11-N1
51	M	601	3PE	C3A-C3B-C3C-C3D
45	A	701	LMT	C2-C1-O1'-C1'
45	Y	801	LMT	C2-C1-O1'-C1'
45	l	201	LMT	C2-C1-O1'-C1'
52	h	1001	CDL	C52-C53-C54-C55
51	L	704	3PE	C34-C35-C36-C37
46	B	202	PC1	C1-C2-C3-O31
51	H	402	3PE	C1-C2-C3-O31
51	Y	802	3PE	C1-C2-C3-O31
52	L	703	CDL	CB3-CB4-CB6-OB8
51	d	1201	3PE	C34-C35-C36-C37
51	d	1202	3PE	C2C-C2D-C2E-C2F
51	d	1203	3PE	C32-C33-C34-C35
51	H	402	3PE	C32-C33-C34-C35
51	Y	802	3PE	O11-C1-C2-O21
52	h	1001	CDL	OA5-CA3-CA4-OA6
45	A	701	LMT	C4B-C5B-C6B-O6B
46	B	202	PC1	O21-C2-C3-O31
46	M	604	PC1	O21-C2-C3-O31
51	H	402	3PE	O21-C2-C3-O31
51	M	603	3PE	O21-C2-C3-O31
51	Y	802	3PE	O21-C2-C3-O31
51	L	704	3PE	C26-C27-C28-C29
51	d	1201	3PE	C3C-C3D-C3E-C3F
52	K	401	CDL	C15-C16-C17-C18
52	K	401	CDL	C35-C36-C37-C38
46	B	202	PC1	C2-C1-O11-P
46	P	401	PC1	C33-C34-C35-C36
51	Y	802	3PE	C23-C24-C25-C26

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
51	d	1202	3PE	C3C-C3D-C3E-C3F
58	o	201	MYR	C2-C3-C4-C5
57	T	101	EHZ	C2-C3-C4-C5
51	Y	802	3PE	C34-C35-C36-C37
51	H	402	3PE	C3A-C3B-C3C-C3D
53	O	401	GTP	PB-O3B-PG-O1G
45	h	1002	LMT	C6-C7-C8-C9
52	K	401	CDL	C11-C12-C13-C14
52	J	701	CDL	CA3-CA4-OA6-CA5
51	M	601	3PE	C1-C2-C3-O31
52	q	201	CDL	C1-CB2-OB2-PB2
46	P	401	PC1	O11-C1-C2-O21
51	d	1201	3PE	O11-C1-C2-O21
52	h	1001	CDL	OB5-CB3-CB4-OB6
52	q	201	CDL	C16-C17-C18-C19
46	B	202	PC1	C23-C24-C25-C26
57	T	101	EHZ	O1-C7-C8-C9
51	d	1201	3PE	O21-C2-C3-O31
52	L	703	CDL	OB6-CB4-CB6-OB8
46	P	401	PC1	C32-C31-O31-C3
52	L	703	CDL	C51-C52-C53-C54
55	P	402	NDP	C2B-O2B-P2B-O3X
51	I	201	3PE	C37-C38-C39-C3A
51	L	701	3PE	C32-C33-C34-C35
52	K	401	CDL	C16-C17-C18-C19
53	O	401	GTP	PB-O3A-PA-O1A
52	q	201	CDL	C11-C12-C13-C14
58	o	201	MYR	C11-C12-C13-C14
51	d	1202	3PE	C11-O13-P-O11
52	h	1001	CDL	CA3-OA5-PA1-OA2
51	I	201	3PE	C25-C26-C27-C28
52	L	703	CDL	C15-C16-C17-C18
51	H	402	3PE	C2-C1-O11-P
52	K	401	CDL	C1-CB2-OB2-PB2
52	q	201	CDL	C59-C60-C61-C62
46	A	702	PC1	C11-O13-P-O14
46	P	401	PC1	C11-O13-P-O14
51	I	201	3PE	C1-O11-P-O12
51	I	201	3PE	C11-O13-P-O12
52	J	701	CDL	CA2-OA2-PA1-OA4
52	J	701	CDL	CA3-OA5-PA1-OA4
52	K	401	CDL	CB3-OB5-PB2-OB3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
52	L	703	CDL	CB3-OB5-PB2-OB4
52	h	1001	CDL	CA2-OA2-PA1-OA4
52	h	1001	CDL	CA3-OA5-PA1-OA3
52	h	1001	CDL	CB2-OB2-PB2-OB4
52	q	201	CDL	CB2-OB2-PB2-OB4
57	T	101	EHZ	C6-C7-C8-C9
45	b	301	LMT	O5'-C1'-O1'-C1
45	f	1101	LMT	C2-C3-C4-C5
51	M	601	3PE	C12-C11-O13-P
51	I	201	3PE	C38-C39-C3A-C3B
46	P	401	PC1	O32-C31-O31-C3
52	K	401	CDL	OB5-CB3-CB4-OB6
55	P	402	NDP	O4D-C1D-N1N-C6N
52	K	401	CDL	C37-C38-C39-C40
46	P	401	PC1	O21-C21-C22-C23
51	H	401	3PE	C1-C2-C3-O31
51	I	201	3PE	C32-C31-O31-C3
51	M	601	3PE	C32-C33-C34-C35
52	J	701	CDL	C31-C32-C33-C34
45	A	701	LMT	O1'-C1-C2-C3
51	d	1202	3PE	C2D-C2E-C2F-C2G
51	I	201	3PE	O32-C31-O31-C3
51	d	1203	3PE	C2A-C2B-C2C-C2D
52	L	703	CDL	C31-C32-C33-C34
51	d	1201	3PE	C1-C2-O21-C21
51	L	701	3PE	O11-C1-C2-C3
51	L	704	3PE	C2-C1-O11-P
51	Y	802	3PE	C2-C1-O11-P
45	M	602	LMT	O1'-C1-C2-C3
51	d	1202	3PE	C3E-C3F-C3G-C3H
51	d	1203	3PE	C39-C3A-C3B-C3C
46	M	604	PC1	C29-C2A-C2B-C2C
51	H	401	3PE	O21-C2-C3-O31
46	A	702	PC1	C1-O11-P-O13
51	H	401	3PE	C1-O11-P-O13
51	M	601	3PE	C1-O11-P-O13
51	Y	802	3PE	C1-O11-P-O13
52	q	201	CDL	CA3-OA5-PA1-OA2
46	B	202	PC1	C31-C32-C33-C34
52	L	703	CDL	C35-C36-C37-C38
46	M	604	PC1	C1-C2-C3-O31
51	Y	802	3PE	C35-C36-C37-C38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
52	L	703	CDL	C52-C53-C54-C55
57	T	101	EHZ	C21-C22-C23-C24
51	H	401	3PE	C36-C37-C38-C39
51	M	603	3PE	C33-C34-C35-C36
55	P	402	NDP	O4B-C4B-C5B-O5B
51	d	1202	3PE	O13-C11-C12-N
51	Y	802	3PE	C39-C3A-C3B-C3C
51	d	1203	3PE	C25-C26-C27-C28
57	U	101	EHZ	C2-C1-C21-C22
51	M	603	3PE	C3B-C3C-C3D-C3E
52	h	1001	CDL	OA6-CA4-CA6-OA8
49	F	501	FMN	C4'-C5'-O5'-P
52	J	701	CDL	CA4-CA3-OA5-PA1
51	d	1201	3PE	C37-C38-C39-C3A
52	q	201	CDL	C17-C18-C19-C20
52	h	1001	CDL	C73-C74-C75-C76
52	J	701	CDL	C72-C71-CB7-OB8
46	M	604	PC1	C39-C3A-C3B-C3C
52	h	1001	CDL	C20-C21-C22-C23
52	h	1001	CDL	CA6-CA4-OA6-CA5
51	L	701	3PE	C3D-C3E-C3F-C3G
51	d	1203	3PE	C3F-C3G-C3H-C3I
46	M	604	PC1	C24-C25-C26-C27
46	P	401	PC1	C3B-C3C-C3D-C3E
52	q	201	CDL	CA4-CA3-OA5-PA1
51	M	603	3PE	C3F-C3G-C3H-C3I
51	d	1203	3PE	C2B-C2C-C2D-C2E
45	L	702	LMT	C4B-C5B-C6B-O6B
51	d	1202	3PE	C27-C28-C29-C2A
51	M	601	3PE	O21-C2-C3-O31
52	q	201	CDL	OB6-CB4-CB6-OB8
51	d	1201	3PE	C22-C23-C24-C25
52	L	703	CDL	C58-C59-C60-C61
52	J	701	CDL	CA7-C31-C32-C33
52	L	703	CDL	CA2-C1-CB2-OB2
52	q	201	CDL	OB9-CB7-OB8-CB6
52	q	201	CDL	C15-C16-C17-C18
51	d	1202	3PE	C2E-C2F-C2G-C2H
52	J	701	CDL	CA3-CA4-CA6-OA8
51	M	601	3PE	C37-C38-C39-C3A
55	P	402	NDP	O4D-C4D-C5D-O5D
51	d	1201	3PE	C38-C39-C3A-C3B

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
46	M	604	PC1	C21-C22-C23-C24
51	d	1203	3PE	C2D-C2E-C2F-C2G
45	b	301	LMT	C4-C5-C6-C7
52	L	703	CDL	C12-C13-C14-C15
52	q	201	CDL	C71-CB7-OB8-CB6
46	A	702	PC1	O21-C2-C3-O31
52	K	401	CDL	OB6-CB4-CB6-OB8
45	L	702	LMT	C1-C2-C3-C4
51	Y	802	3PE	C3B-C3C-C3D-C3E
45	h	1002	LMT	C11-C10-C9-C8
51	d	1203	3PE	O31-C31-C32-C33
51	M	601	3PE	C2A-C2B-C2C-C2D
46	P	401	PC1	O31-C31-C32-C33
45	f	1101	LMT	C3-C4-C5-C6
52	K	401	CDL	C33-C34-C35-C36
51	H	401	3PE	O21-C21-C22-C23
51	M	601	3PE	O22-C21-C22-C23
52	K	401	CDL	C12-C11-CA5-OA6
51	d	1201	3PE	C3A-C3B-C3C-C3D
51	d	1202	3PE	C3F-C3G-C3H-C3I
45	A	701	LMT	O5B-C1B-O1B-C4'
53	O	401	GTP	PB-O3B-PG-O2G
53	O	401	GTP	PB-O3B-PG-O3G
46	M	604	PC1	C26-C27-C28-C29
51	d	1201	3PE	C35-C36-C37-C38
51	d	1202	3PE	C38-C39-C3A-C3B
46	B	202	PC1	O21-C21-C22-C23
52	L	703	CDL	C32-C31-CA7-OA8
51	d	1203	3PE	C33-C34-C35-C36
45	h	1002	LMT	C7-C8-C9-C10
51	d	1202	3PE	C32-C33-C34-C35
52	h	1001	CDL	C11-C12-C13-C14
51	d	1203	3PE	C3A-C3B-C3C-C3D
57	T	101	EHZ	C2-C1-C21-C22
51	H	401	3PE	C38-C39-C3A-C3B
51	H	401	3PE	O22-C21-C22-C23
51	d	1203	3PE	C3E-C3F-C3G-C3H
45	A	701	LMT	O5B-C5B-C6B-O6B
52	L	703	CDL	C32-C31-CA7-OA9
51	L	704	3PE	C38-C39-C3A-C3B
45	J	702	LMT	C2'-C1'-O1'-C1
46	P	401	PC1	C11-O13-P-O12

Continued on next page...

Continued from previous page...

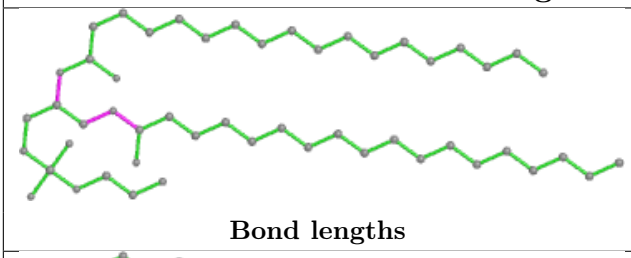
Mol	Chain	Res	Type	Atoms
51	I	201	3PE	C1-O11-P-O14
51	M	601	3PE	C11-O13-P-O14
51	d	1201	3PE	C1-O11-P-O14
52	J	701	CDL	CA3-OA5-PA1-OA3
52	J	701	CDL	CB2-OB2-PB2-OB3
52	L	703	CDL	CB3-OB5-PB2-OB3
46	P	401	PC1	O32-C31-C32-C33
52	K	401	CDL	C12-C11-CA5-OA7
45	J	702	LMT	C3-C4-C5-C6
51	H	401	3PE	C26-C27-C28-C29
51	d	1203	3PE	O32-C31-C32-C33
51	H	401	3PE	C12-C11-O13-P
51	I	201	3PE	C12-C11-O13-P
51	d	1202	3PE	C12-C11-O13-P
51	Y	802	3PE	C36-C37-C38-C39
51	I	201	3PE	C31-C32-C33-C34
46	B	202	PC1	O22-C21-C22-C23
51	L	701	3PE	O21-C21-C22-C23
51	d	1202	3PE	C2A-C2B-C2C-C2D
52	K	401	CDL	C72-C71-CB7-OB8
51	d	1201	3PE	C2-C1-O11-P
49	F	501	FMN	N10-C1'-C2'-O2'
52	J	701	CDL	C54-C55-C56-C57
52	K	401	CDL	C72-C71-CB7-OB9
51	H	401	3PE	C22-C23-C24-C25
51	L	701	3PE	O22-C21-C22-C23

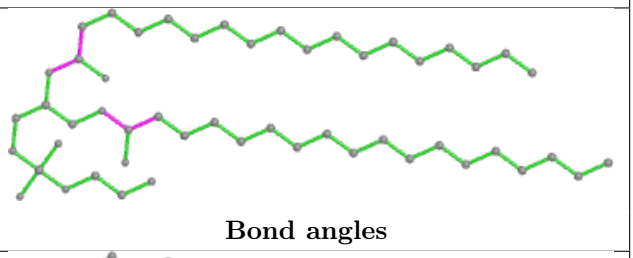
There are no ring outliers.

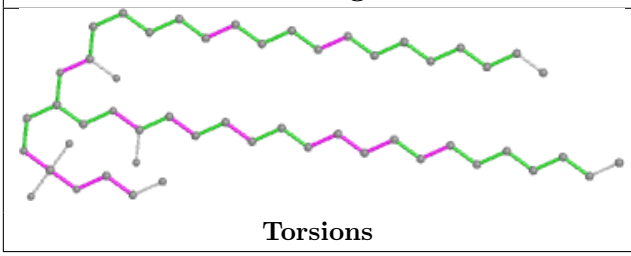
No monomer is involved in short contacts.

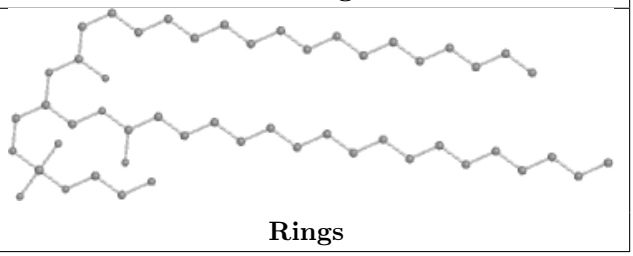
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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 3PE I 201

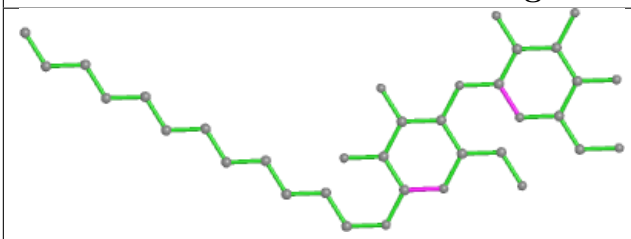

Bond lengths

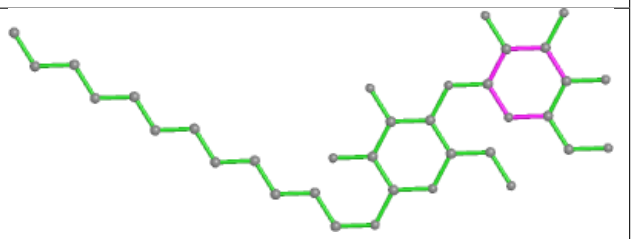

Bond angles

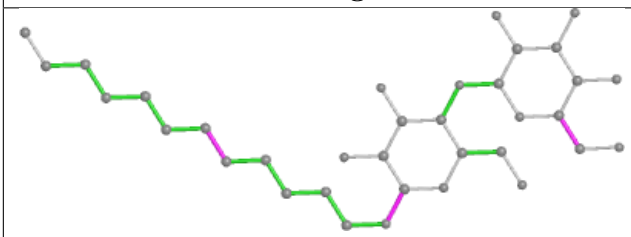

Torsions

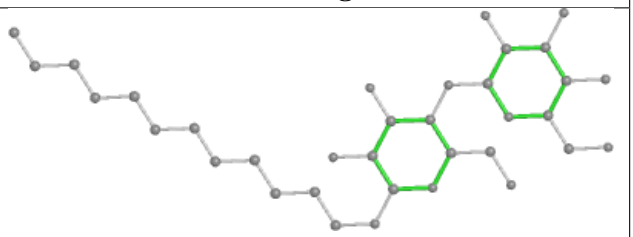

Rings

Ligand LMT b 301

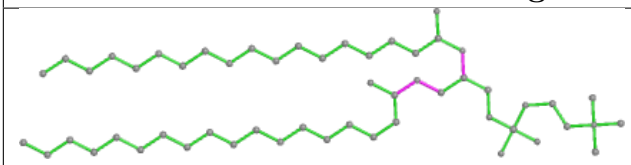

Bond lengths

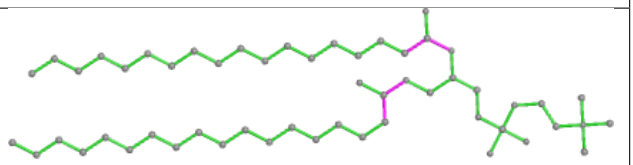

Bond angles

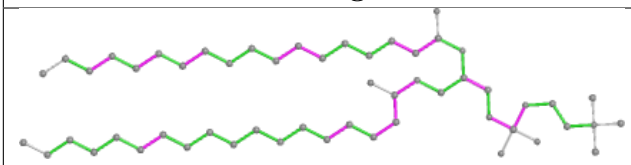

Torsions

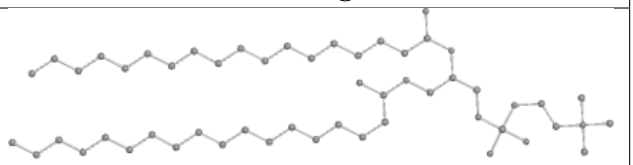

Rings

Ligand PC1 P 401

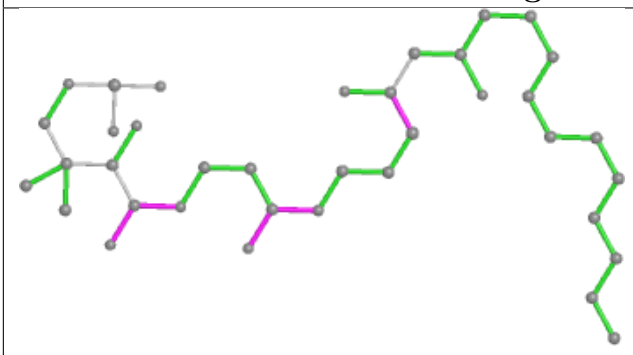

Bond lengths


Bond angles

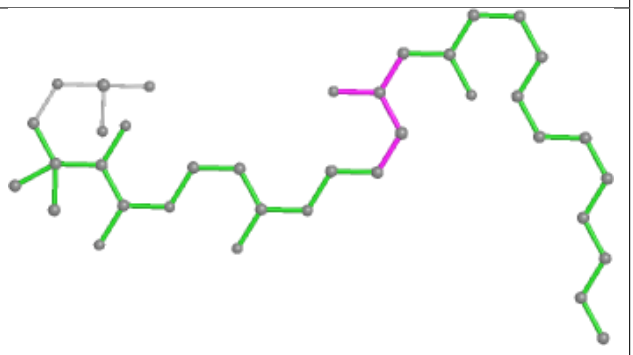

Torsions


Rings

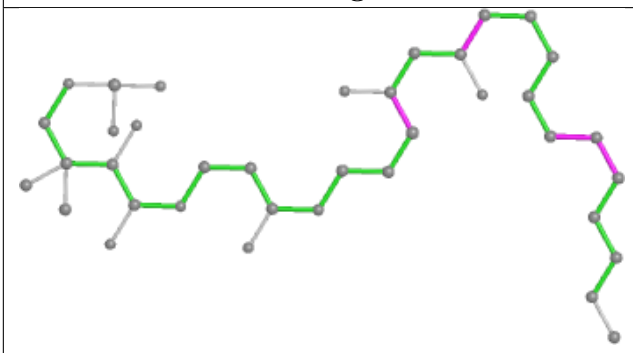
Ligand EHZ U 101



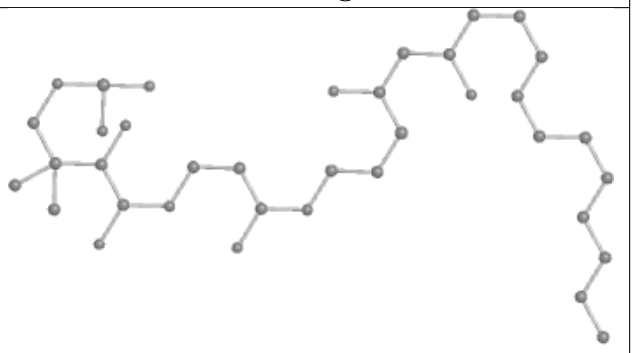
Bond lengths



Bond angles

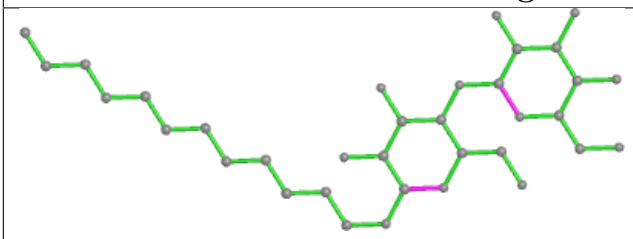


Torsions

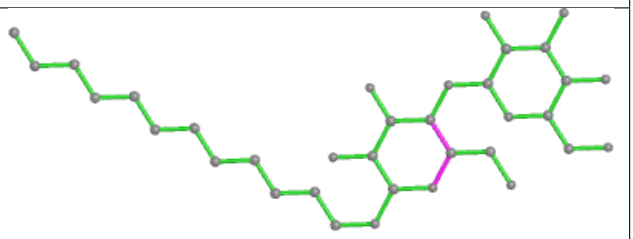


Rings

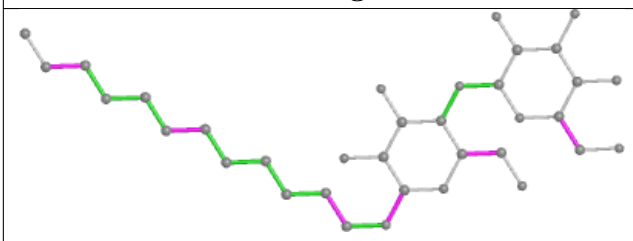
Ligand LMT M 602



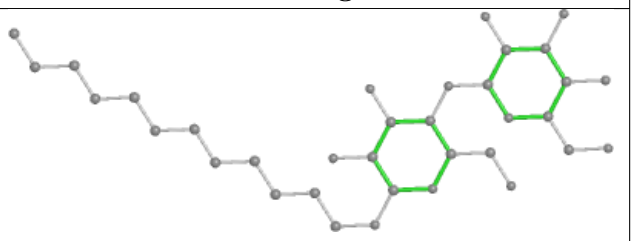
Bond lengths



Bond angles

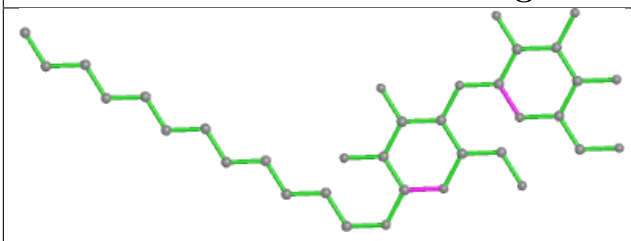


Torsions

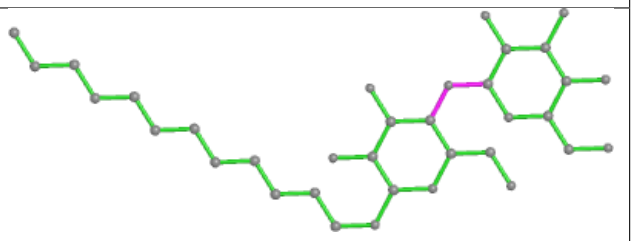


Rings

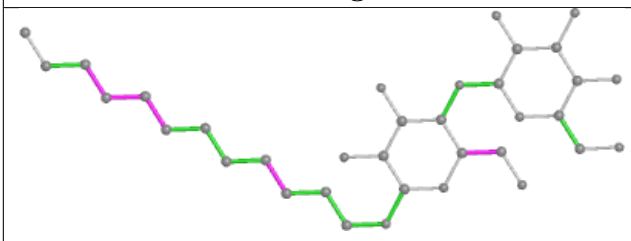
Ligand LMT h 1002



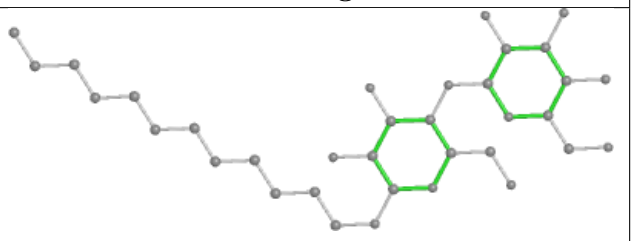
Bond lengths



Bond angles

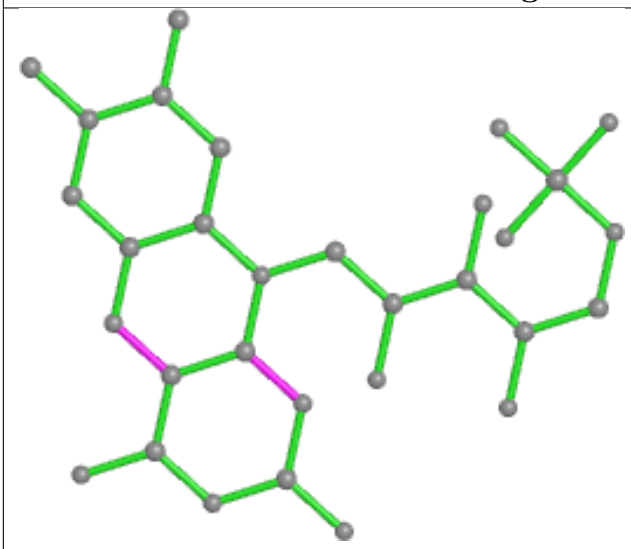


Torsions

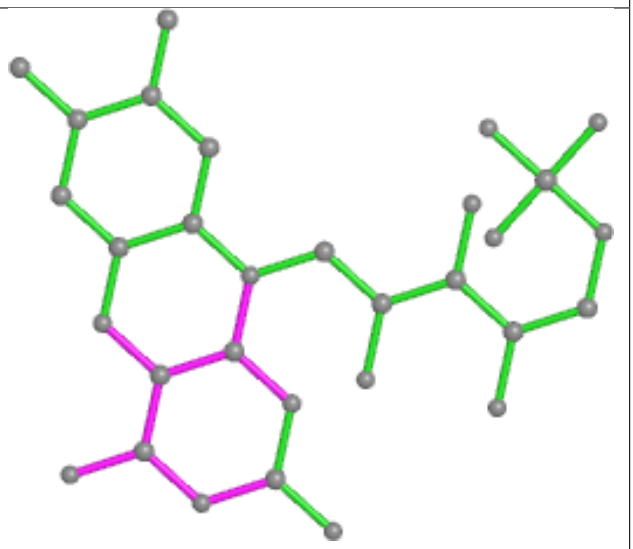


Rings

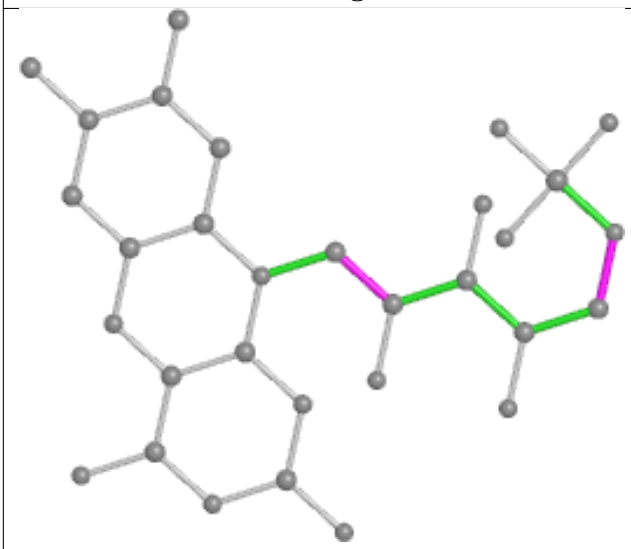
Ligand FMN F 501



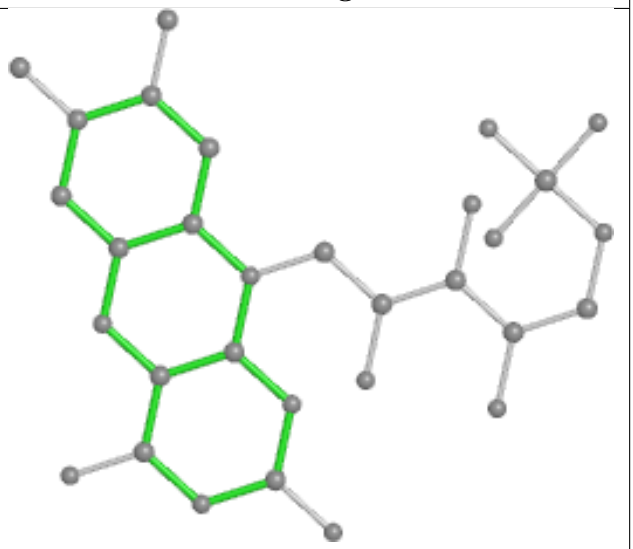
Bond lengths



Bond angles

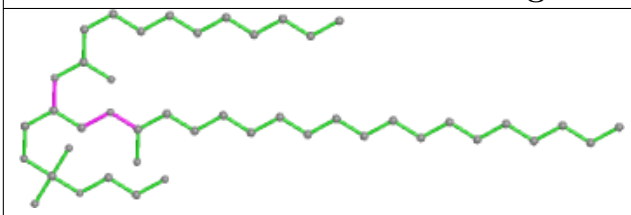


Torsions

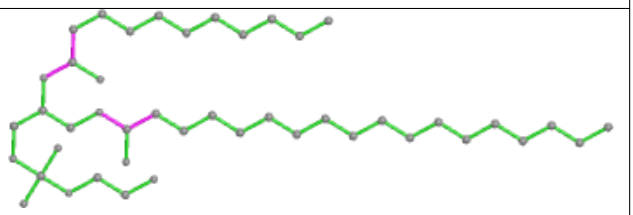


Rings

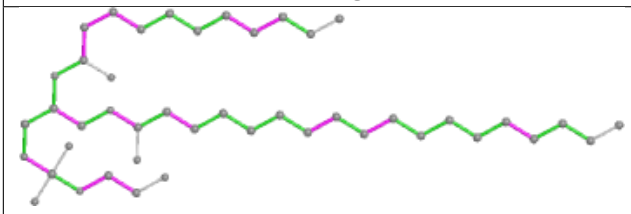
Ligand 3PE H 401



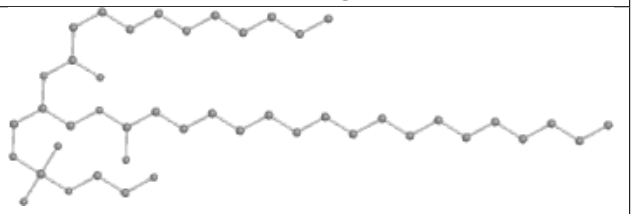
Bond lengths



Bond angles

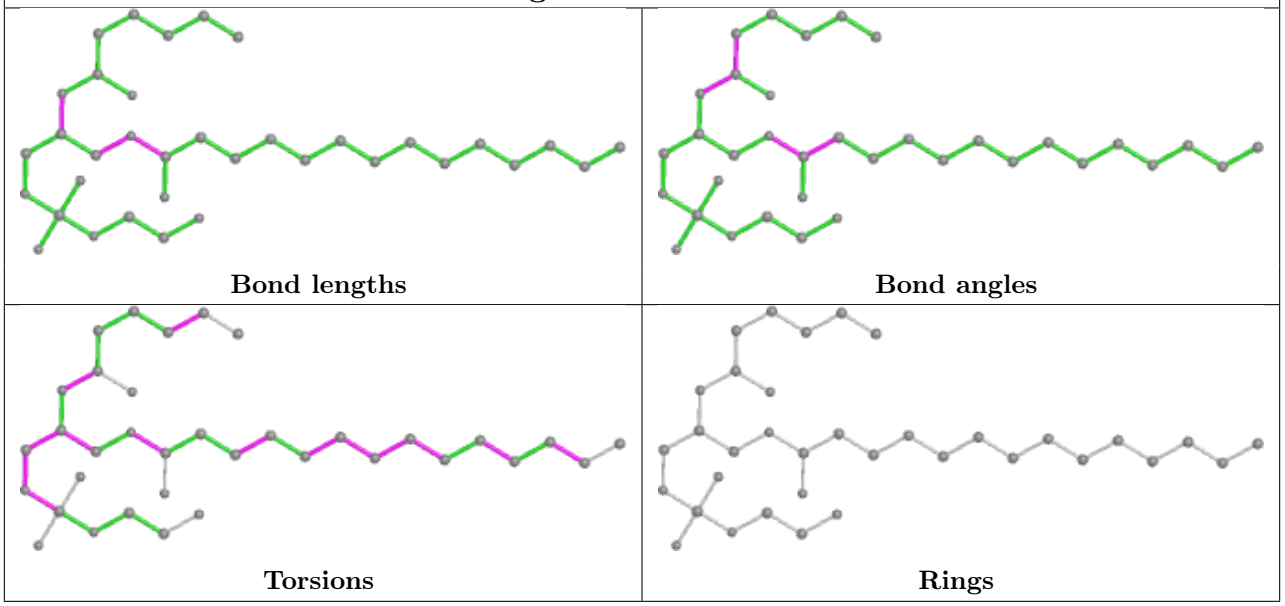


Torsions

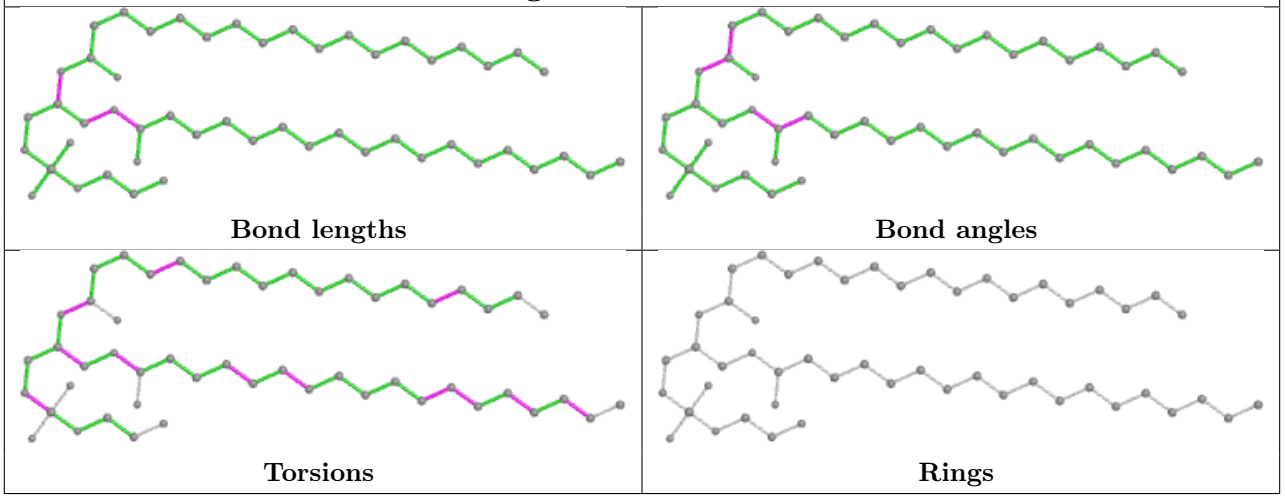


Rings

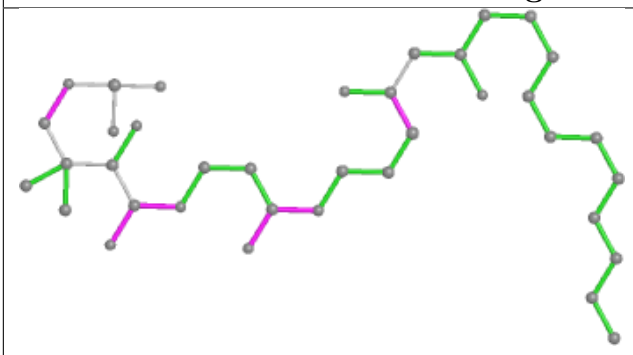
Ligand 3PE Y 802



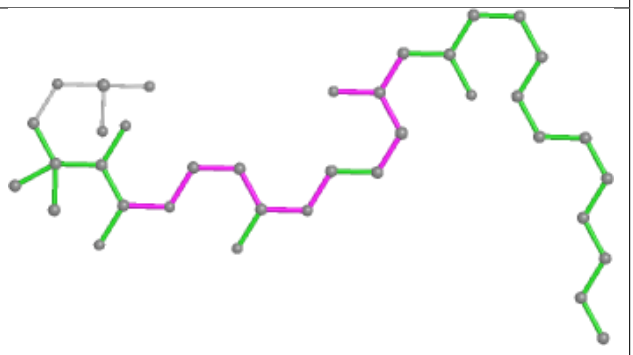
Ligand 3PE M 603



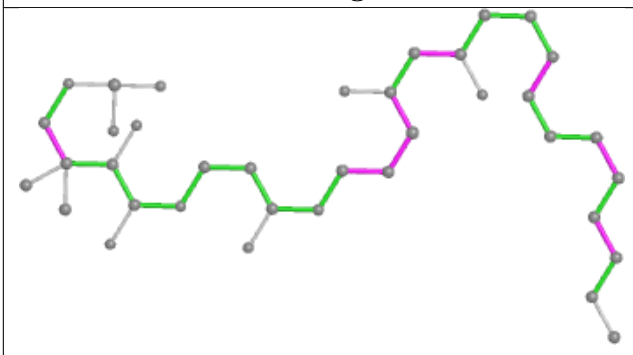
Ligand EHZ T 101



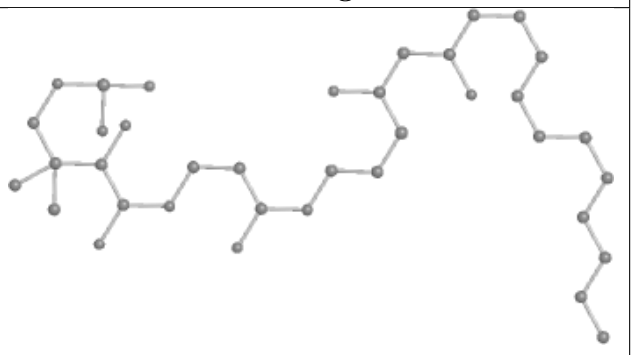
Bond lengths



Bond angles

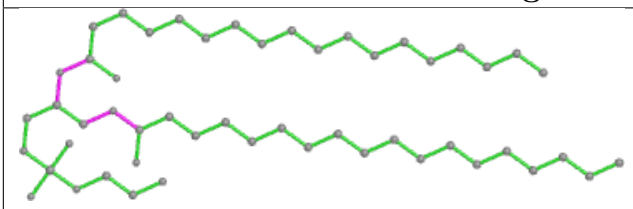


Torsions

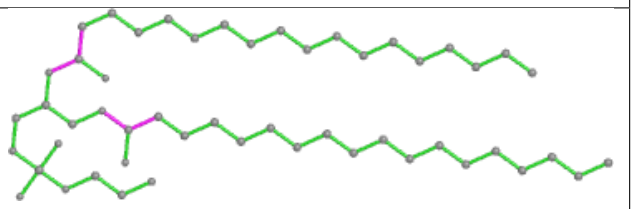


Rings

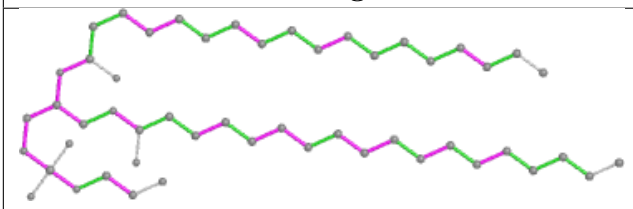
Ligand 3PE d 1201



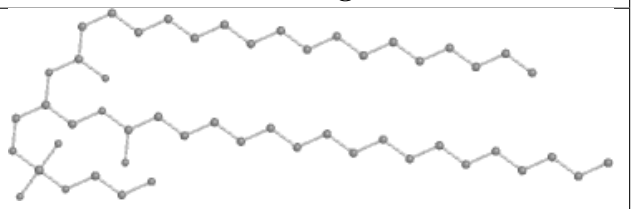
Bond lengths



Bond angles

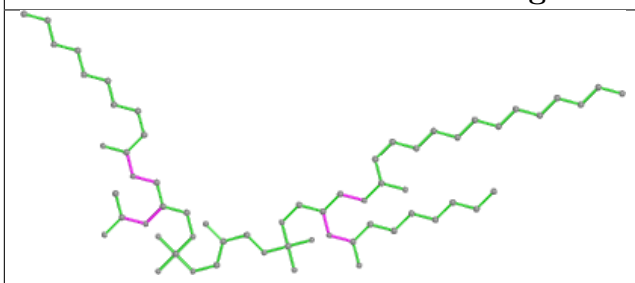


Torsions

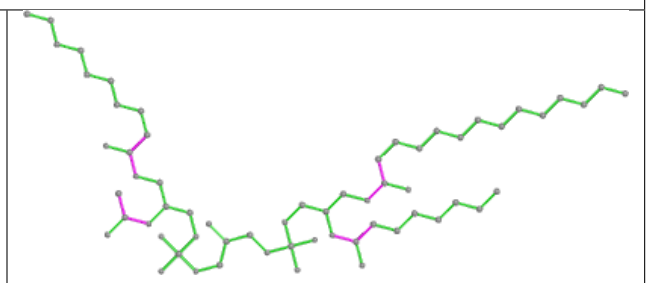


Rings

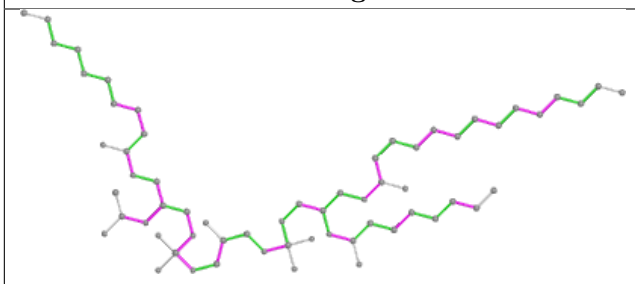
Ligand CDL J 701



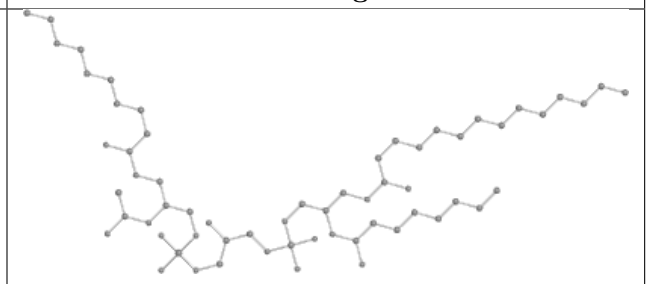
Bond lengths



Bond angles

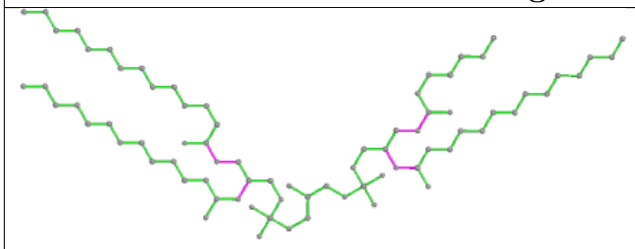


Torsions

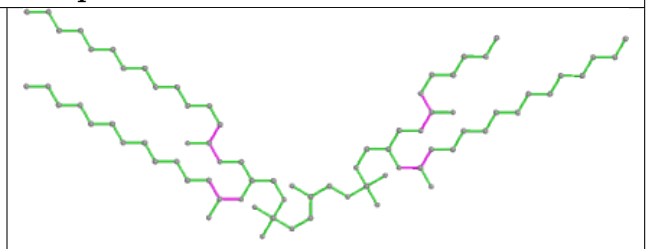


Rings

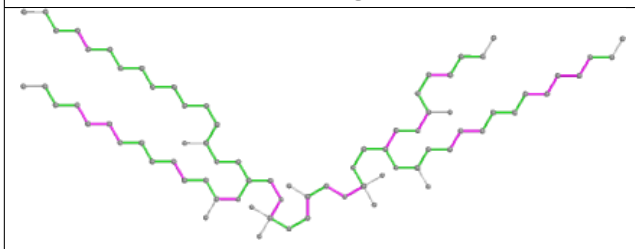
Ligand CDL q 201



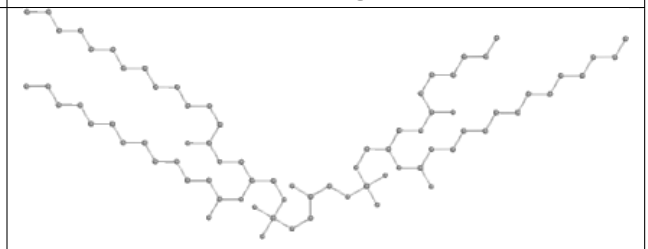
Bond lengths



Bond angles

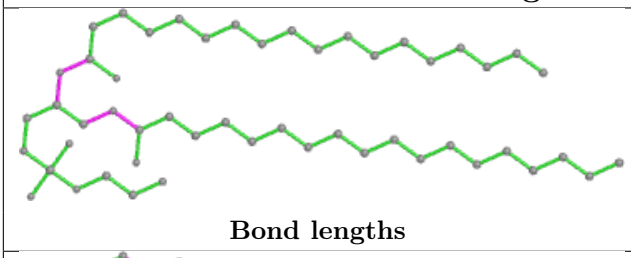


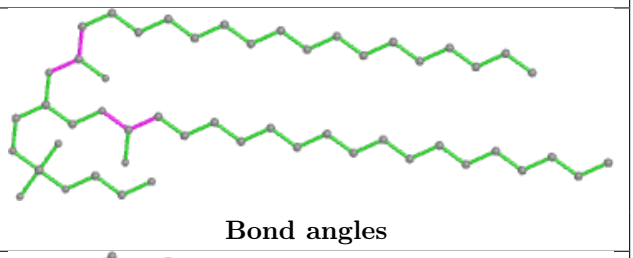
Torsions

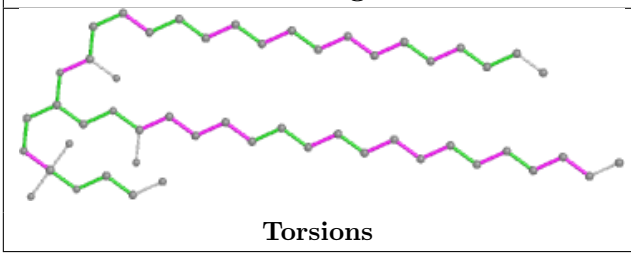


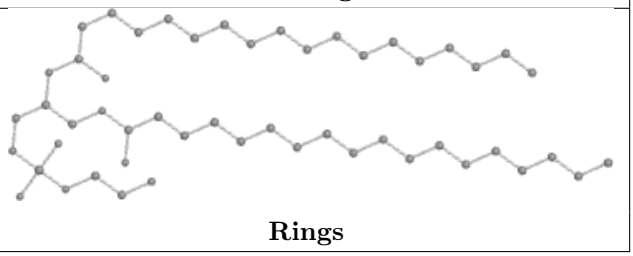
Rings

Ligand 3PE d 1203

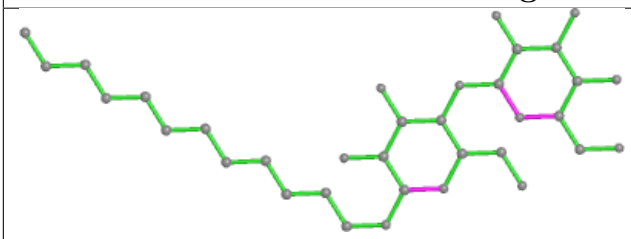

Bond lengths

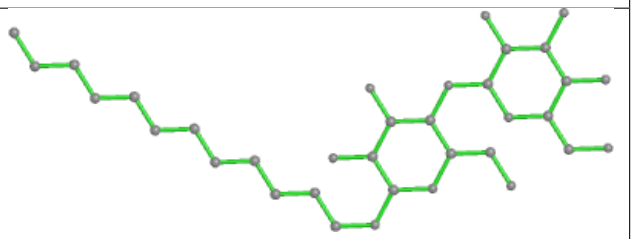

Bond angles

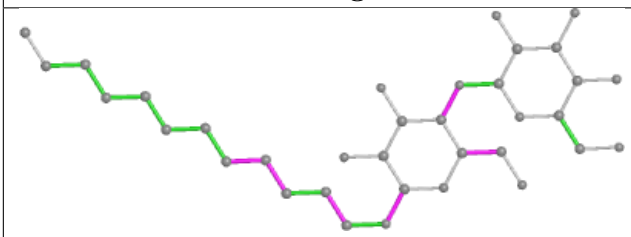

Torsions

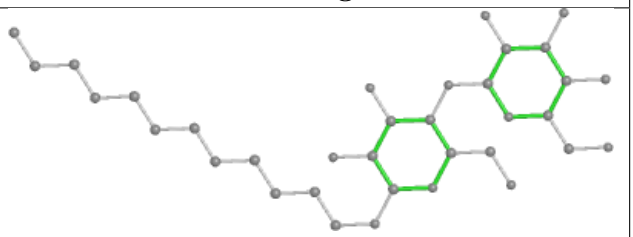

Rings

Ligand LMT f 1101

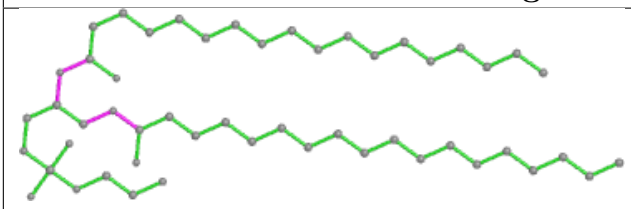

Bond lengths

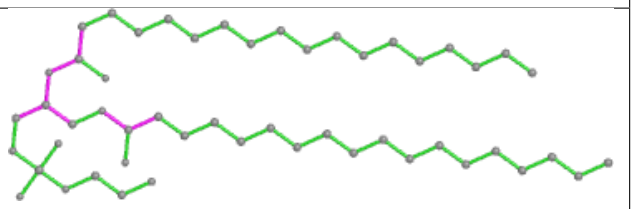

Bond angles

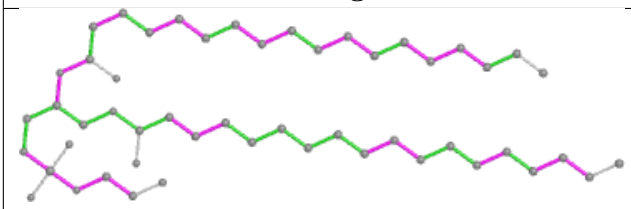

Torsions


Rings

Ligand 3PE d 1202

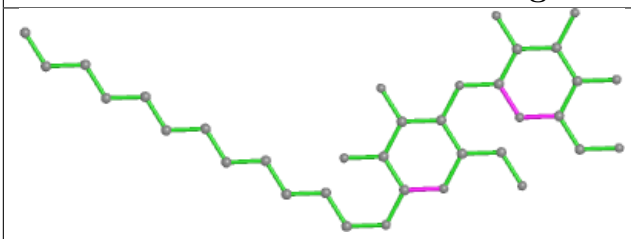

Bond lengths

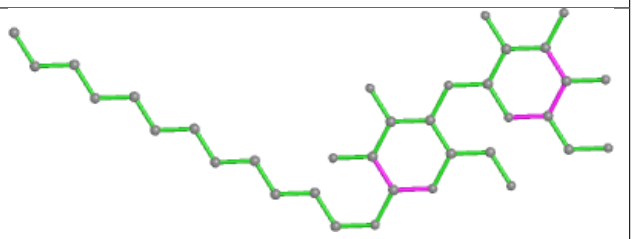

Bond angles

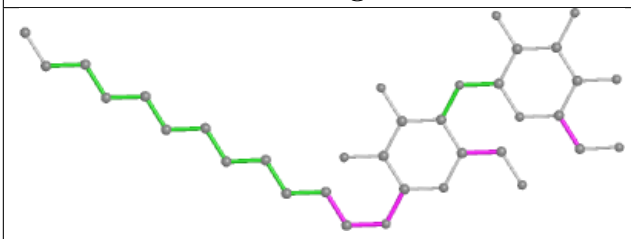

Torsions

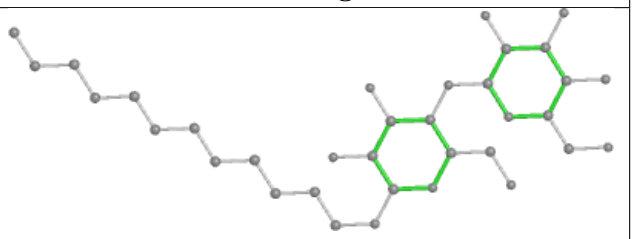

Rings

Ligand LMT l 201

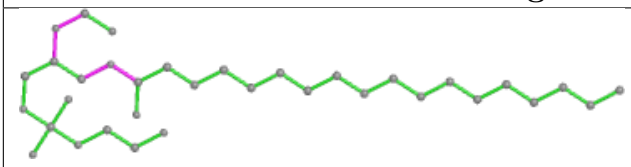

Bond lengths

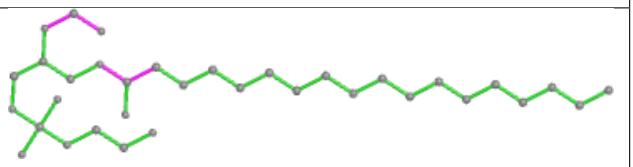

Bond angles

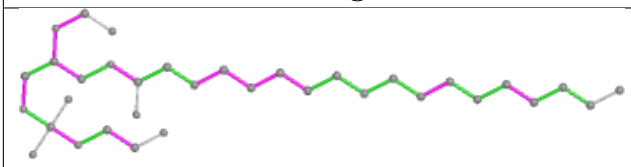

Torsions


Rings

Ligand 3PE H 402

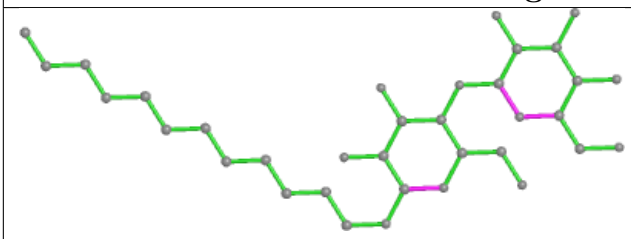

Bond lengths

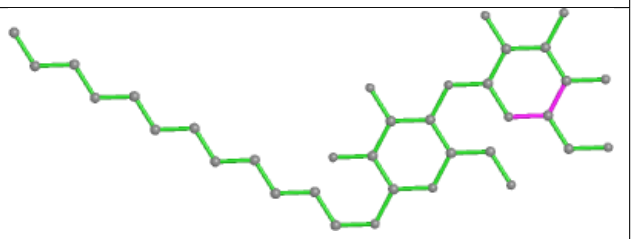

Bond angles

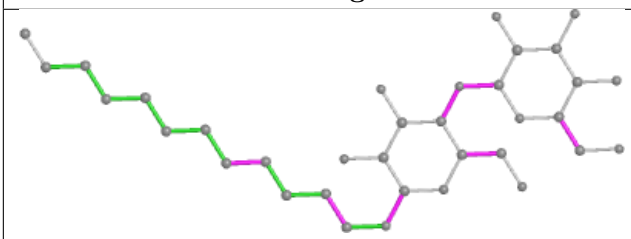

Torsions

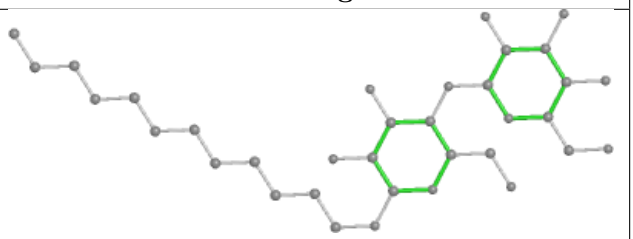

Rings

Ligand LMT J 702

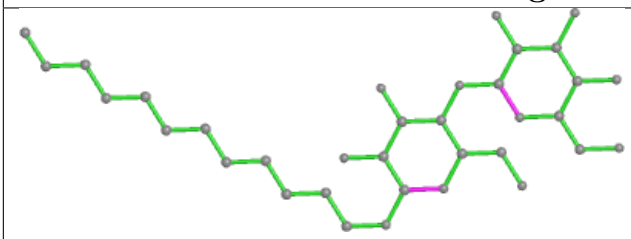

Bond lengths


Bond angles

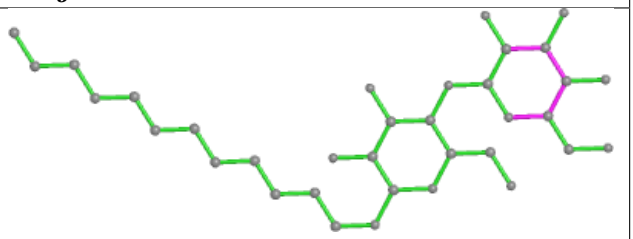

Torsions


Rings

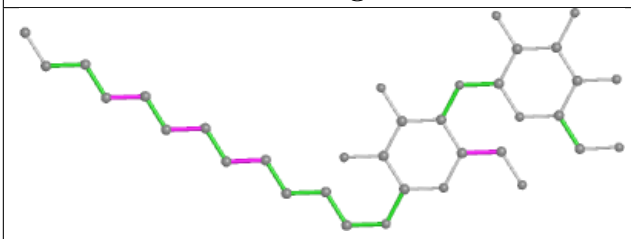
Ligand LMT j 101



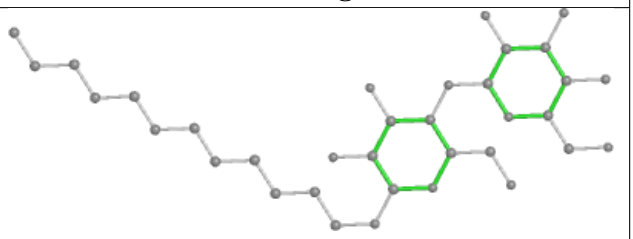
Bond lengths



Bond angles

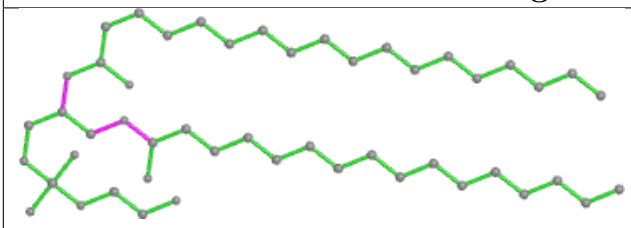


Torsions

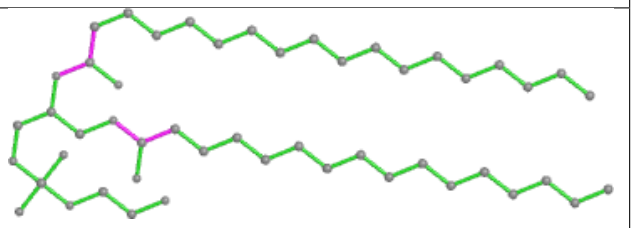


Rings

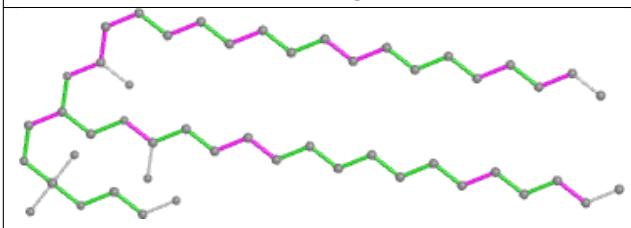
Ligand 3PE L 701



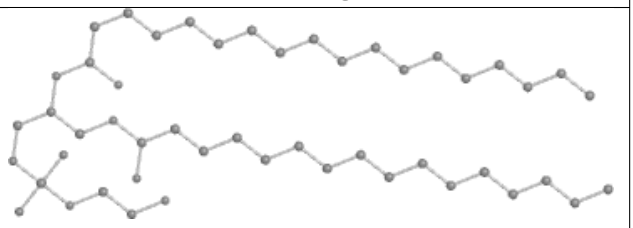
Bond lengths



Bond angles

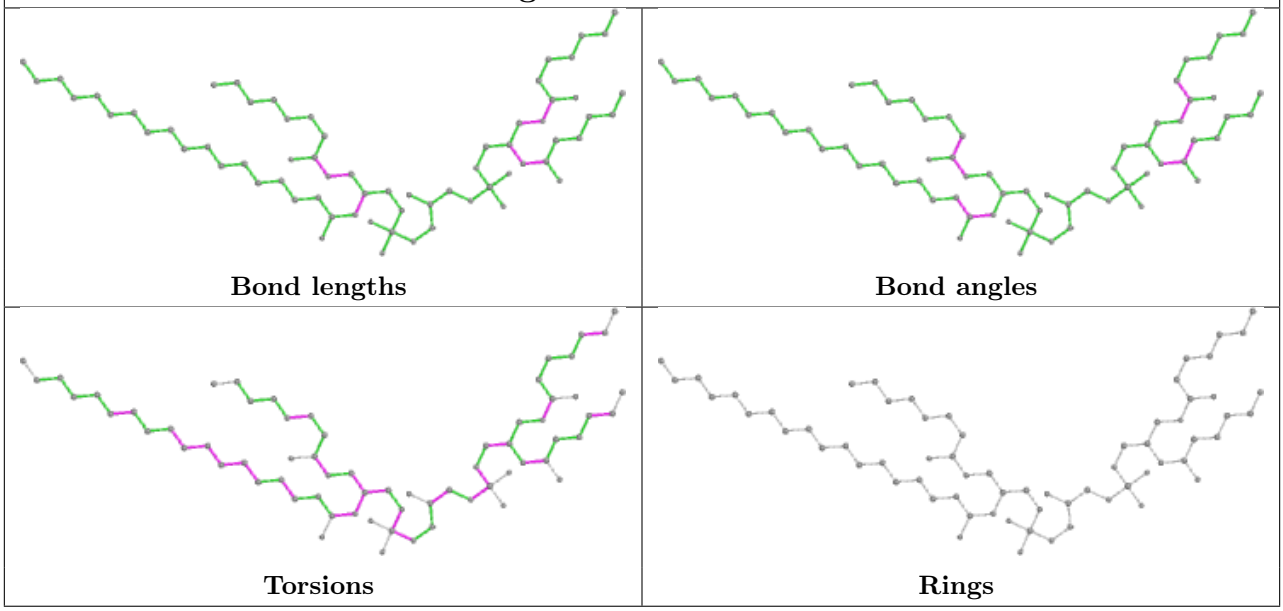


Torsions

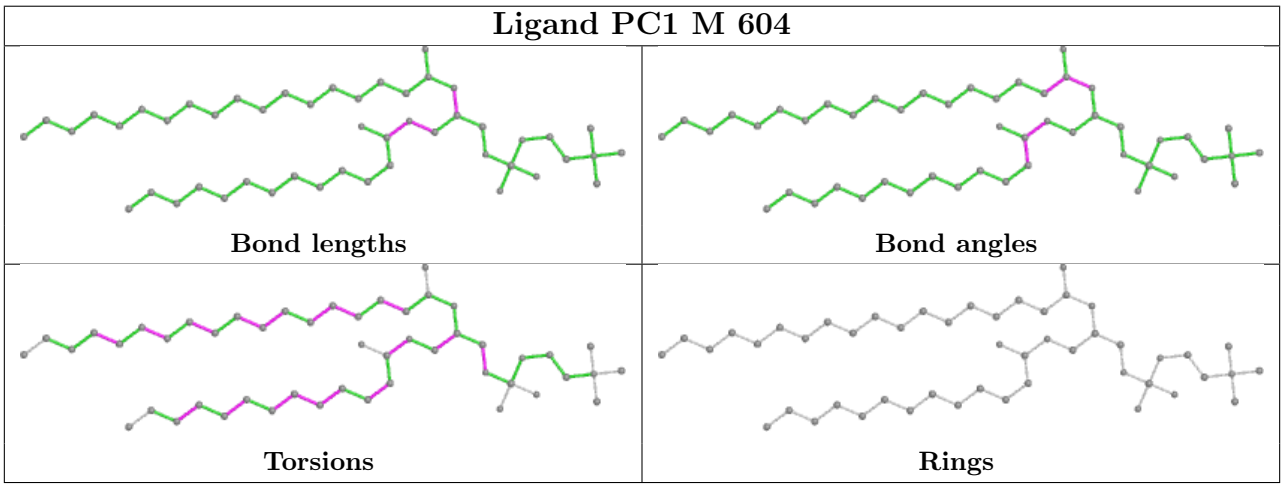


Rings

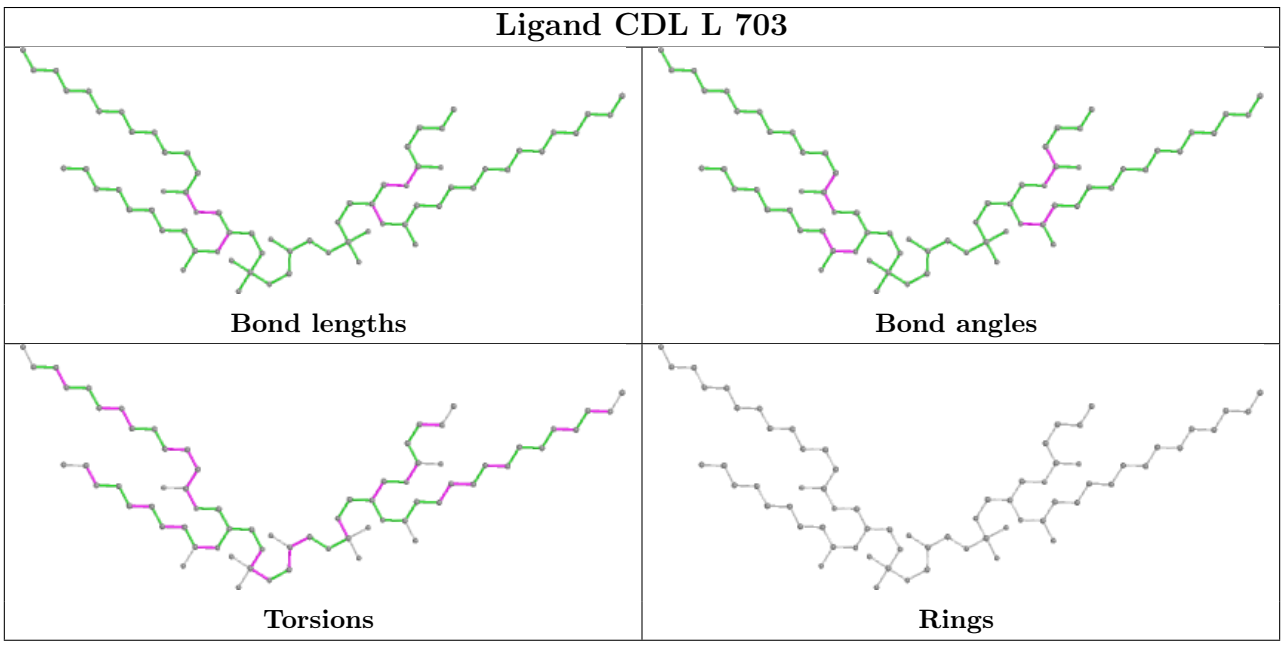
Ligand CDL h 1001



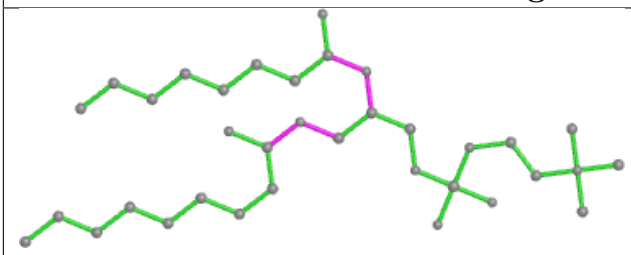
Ligand PC1 M 604



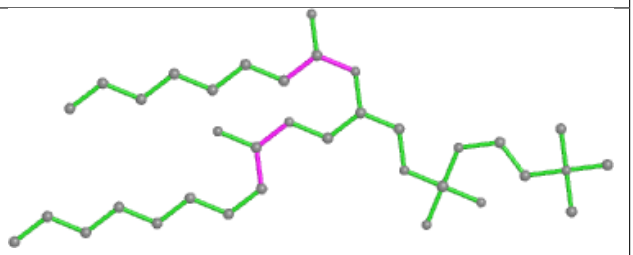
Ligand CDL L 703



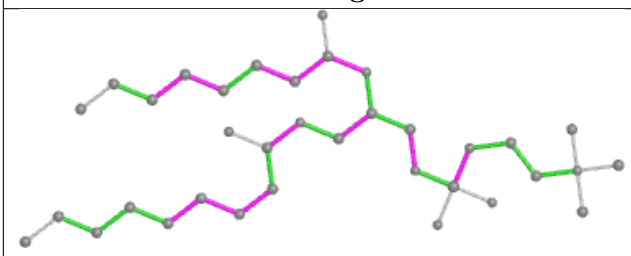
Ligand PC1 B 202



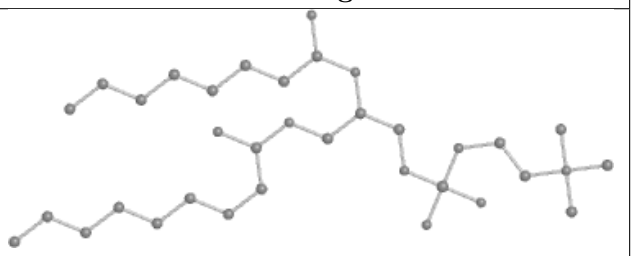
Bond lengths



Bond angles

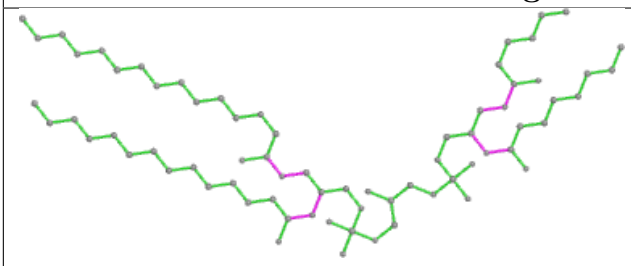


Torsions

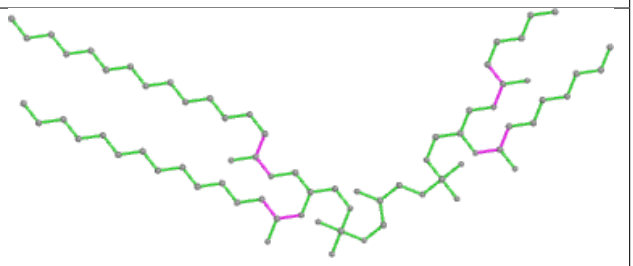


Rings

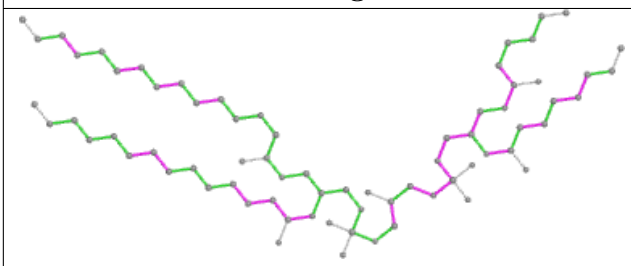
Ligand CDL K 401



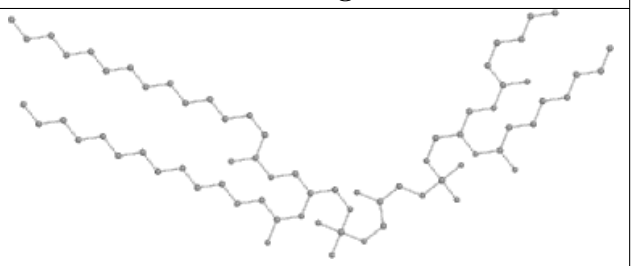
Bond lengths



Bond angles

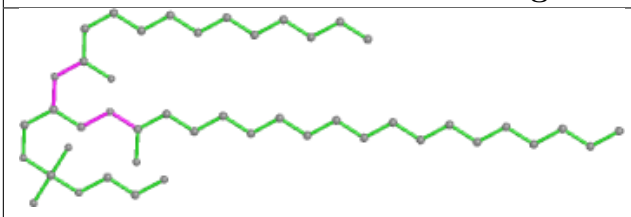


Torsions

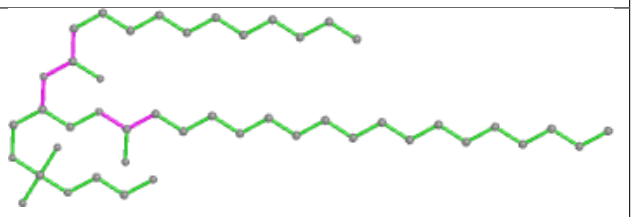


Rings

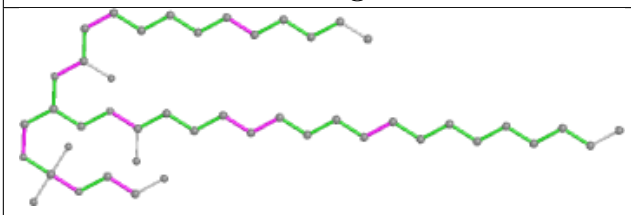
Ligand 3PE L 704



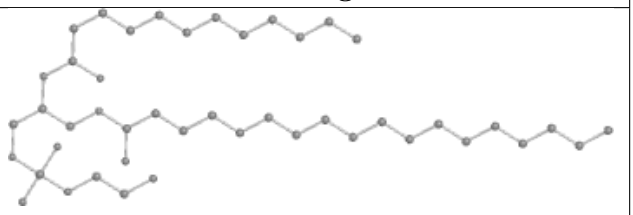
Bond lengths



Bond angles

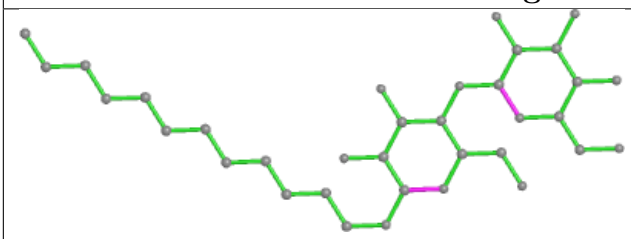


Torsions

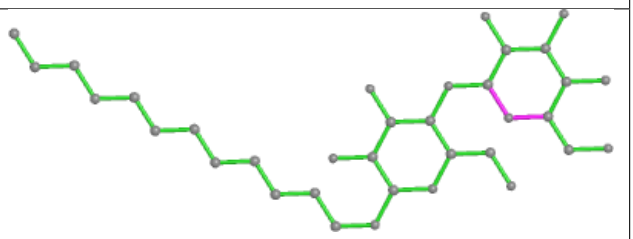


Rings

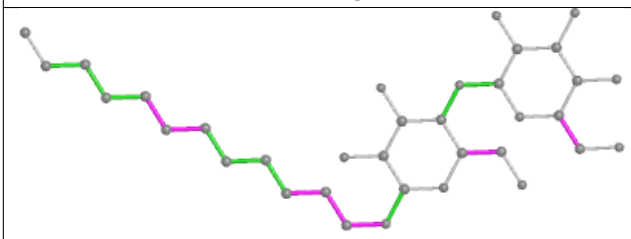
Ligand LMT L 702



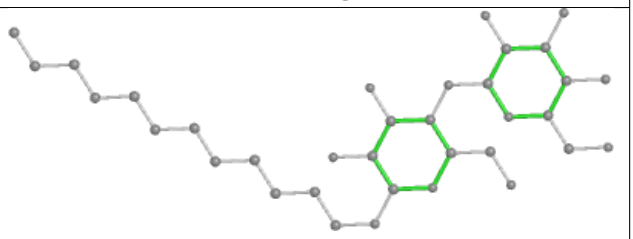
Bond lengths



Bond angles

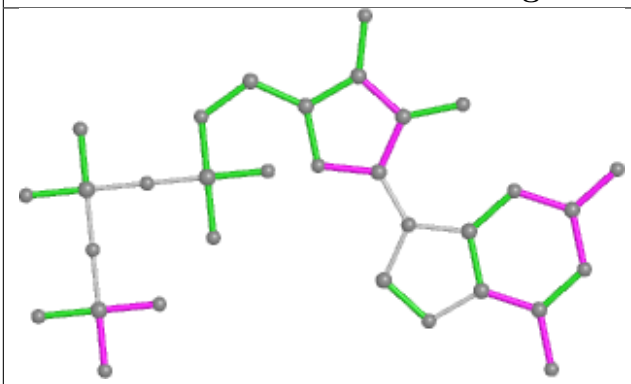


Torsions

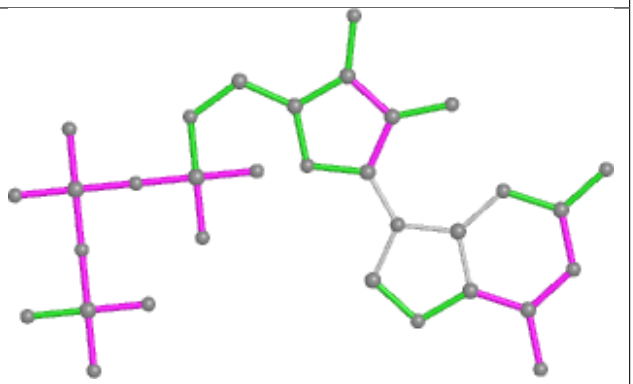


Rings

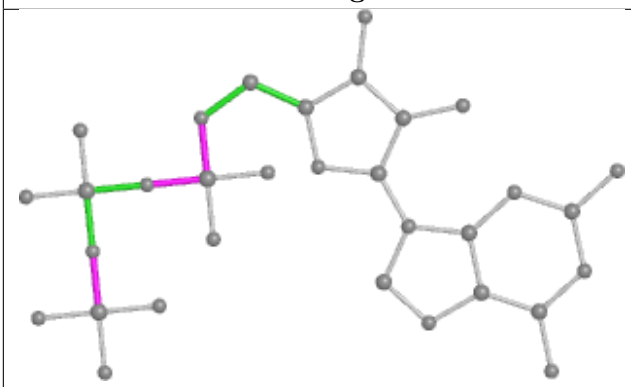
Ligand GTP O 401



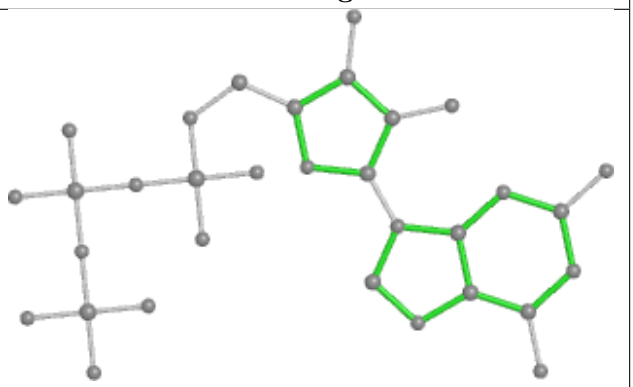
Bond lengths



Bond angles

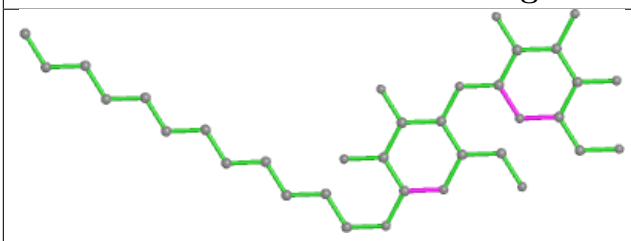


Torsions

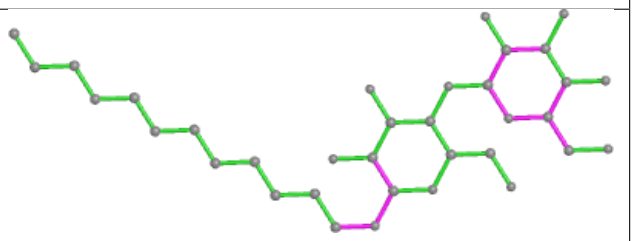


Rings

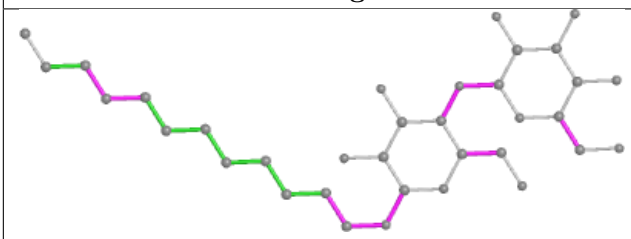
Ligand LMT A 701



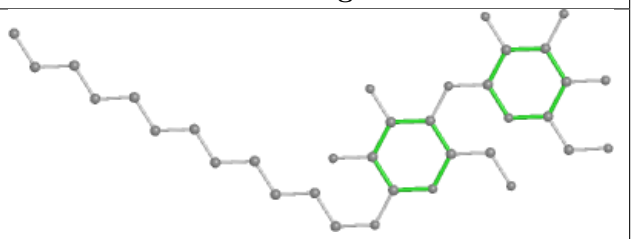
Bond lengths



Bond angles

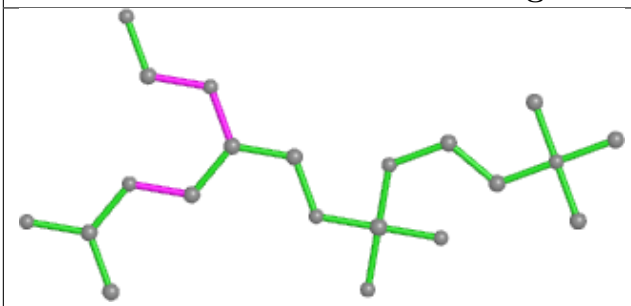


Torsions

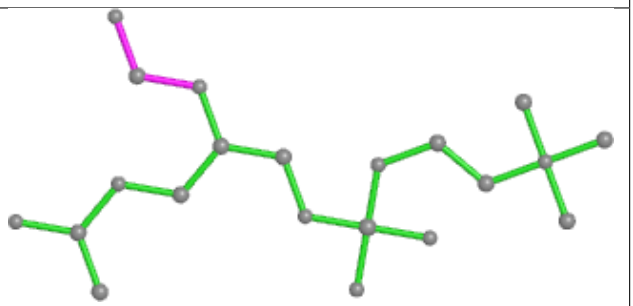


Rings

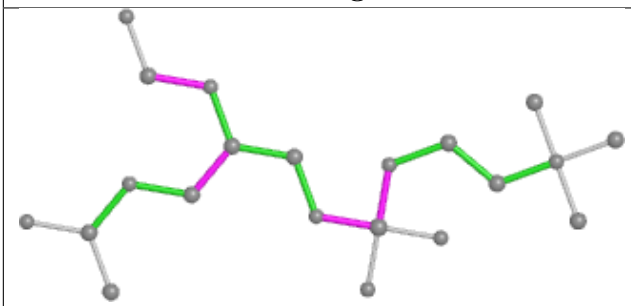
Ligand PC1 A 702



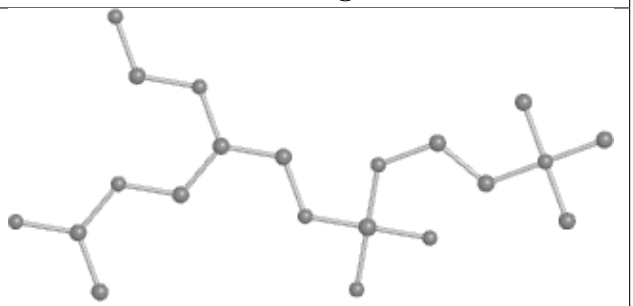
Bond lengths



Bond angles

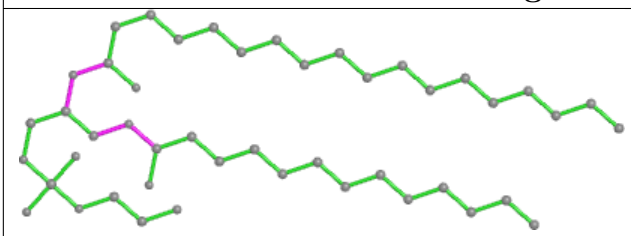


Torsions

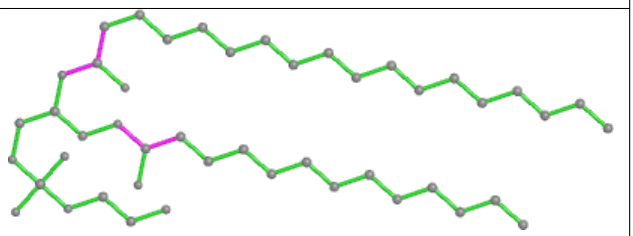


Rings

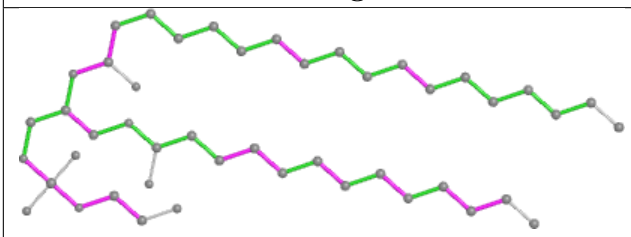
Ligand 3PE M 601



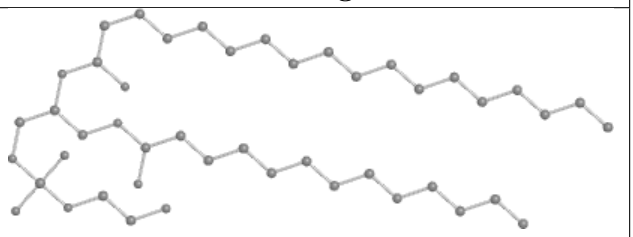
Bond lengths



Bond angles

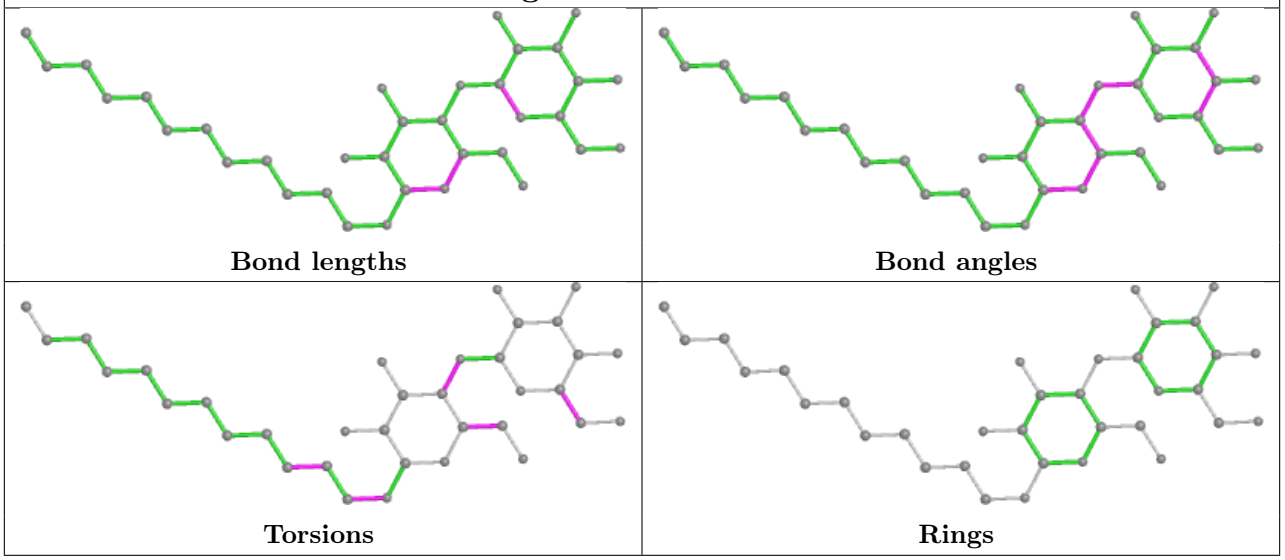


Torsions

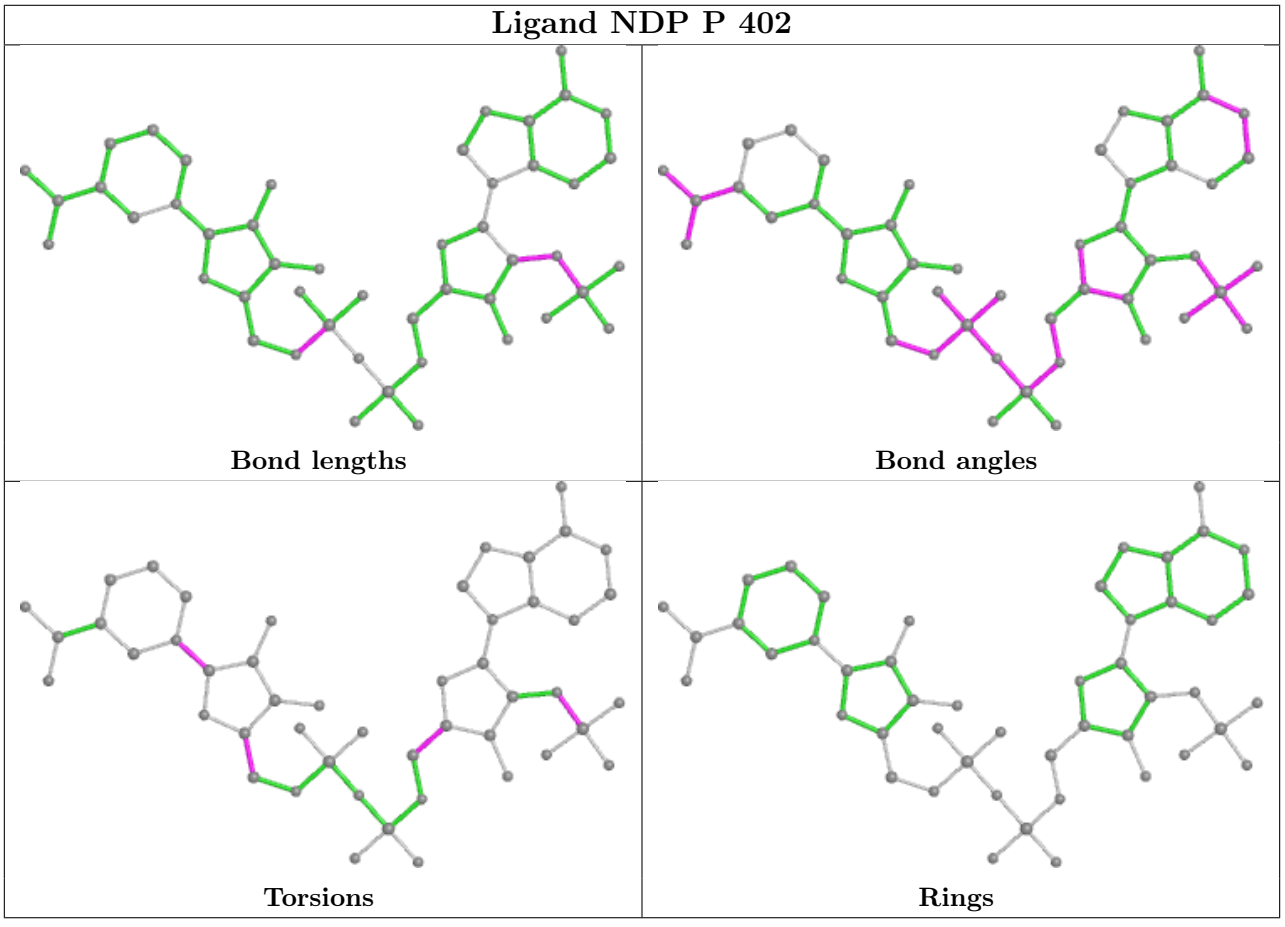


Rings

Ligand LMT Y 801



Ligand NDP P 402



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

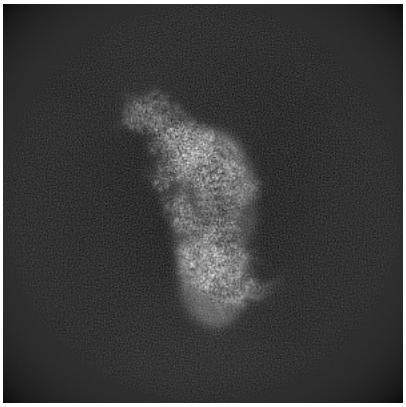
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-14261. These allow visual inspection of the internal detail of the map and identification of artifacts.

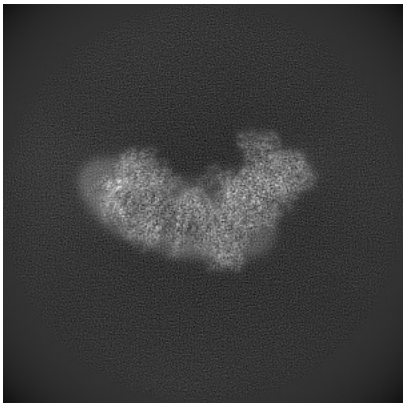
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

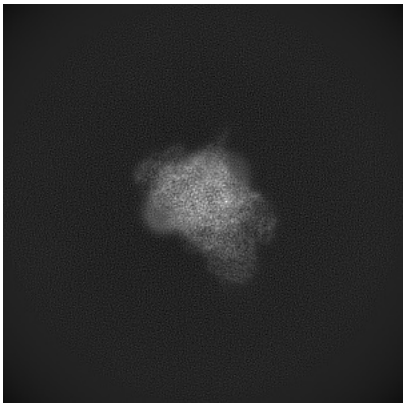
6.1.1 Primary map



X



Y

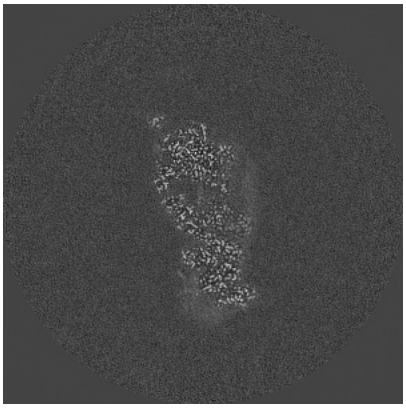


Z

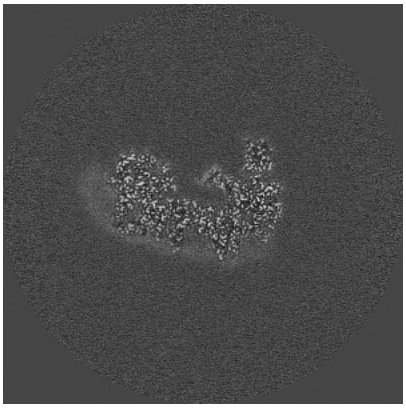
The images above show the map projected in three orthogonal directions.

6.2 Central slices

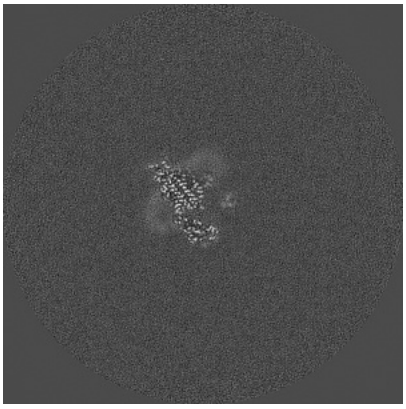
6.2.1 Primary map



X Index: 330



Y Index: 330

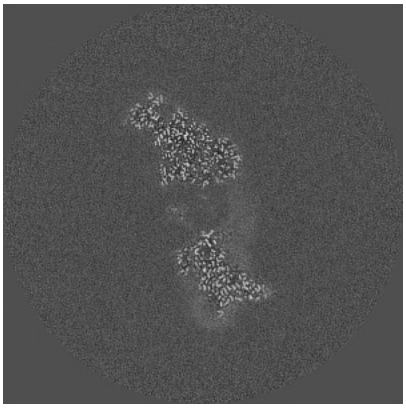


Z Index: 330

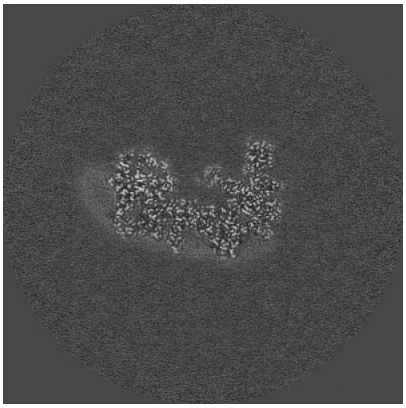
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

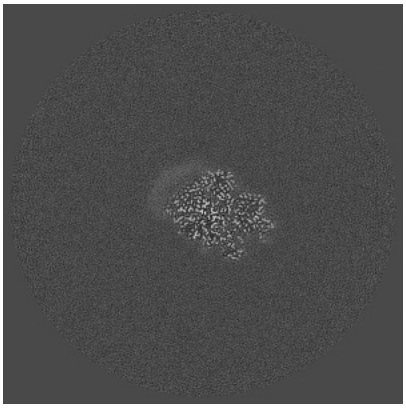
6.3.1 Primary map



X Index: 357



Y Index: 333



Z Index: 421

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

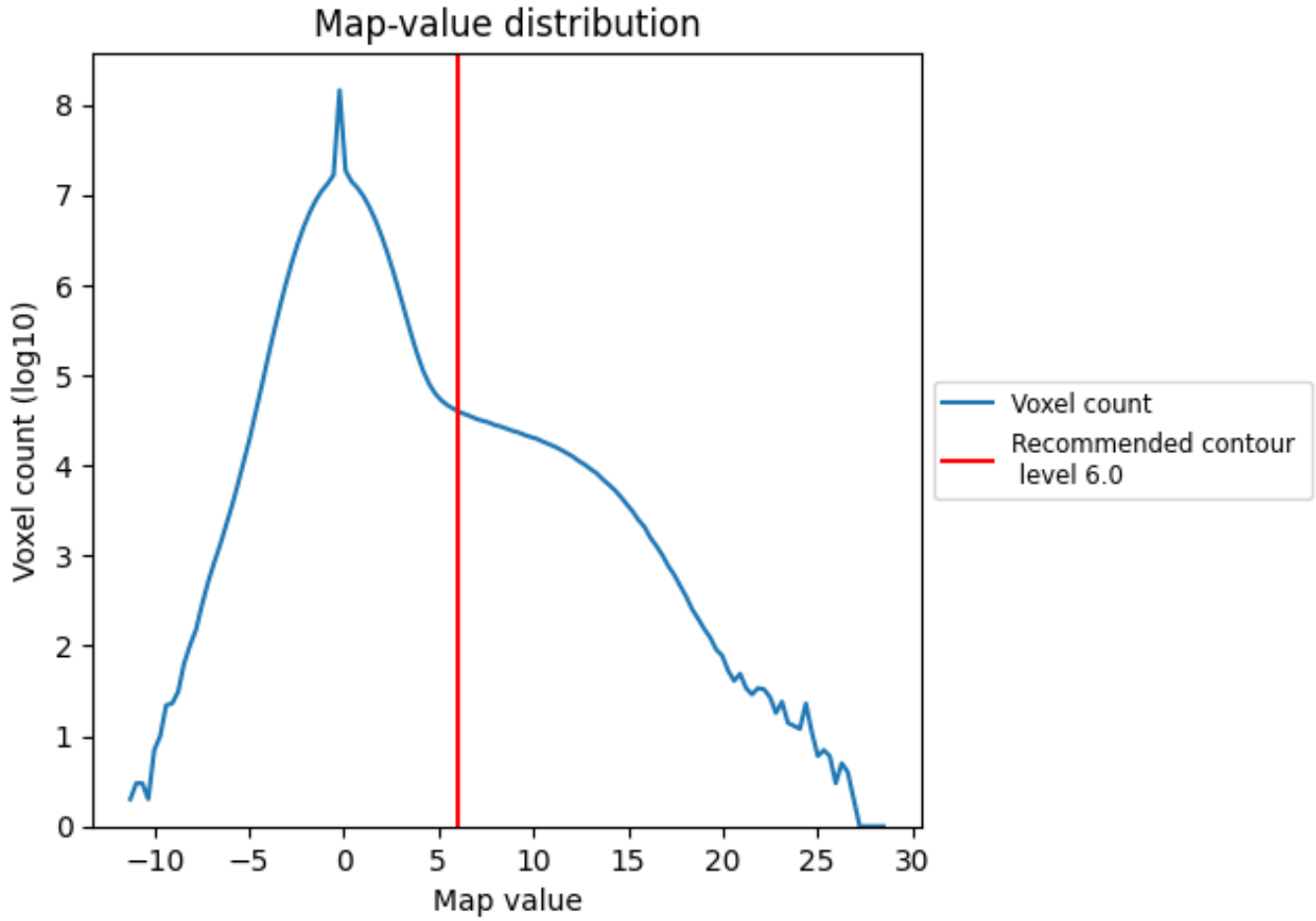
6.5 Mask visualisation (i)

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

7 Map analysis

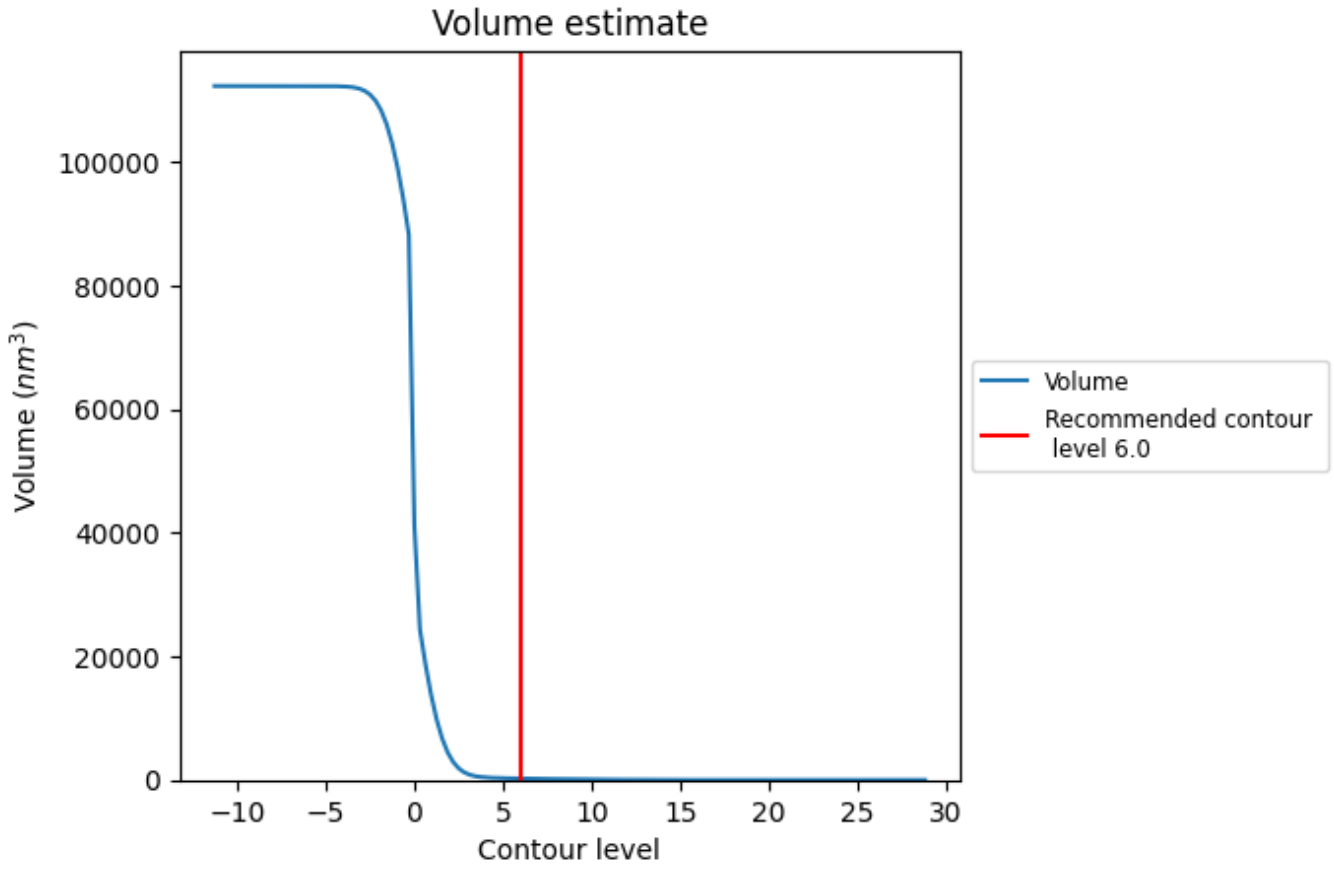
This section contains the results of statistical analysis of the map.

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.

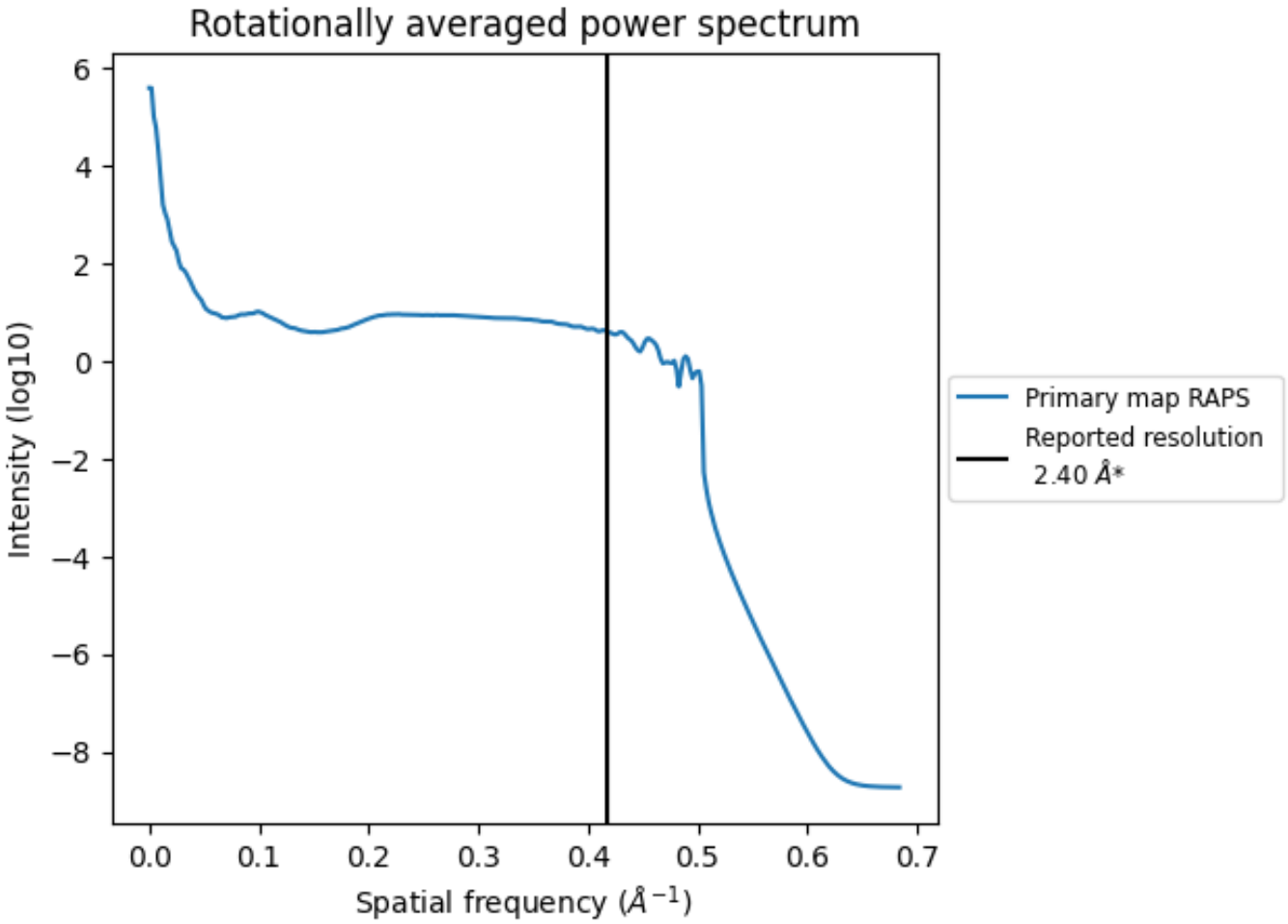
7.2 Volume estimate



The volume at the recommended contour level is 226 nm^3; this corresponds to an approximate mass of 204 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 0.417 Å^{-1}

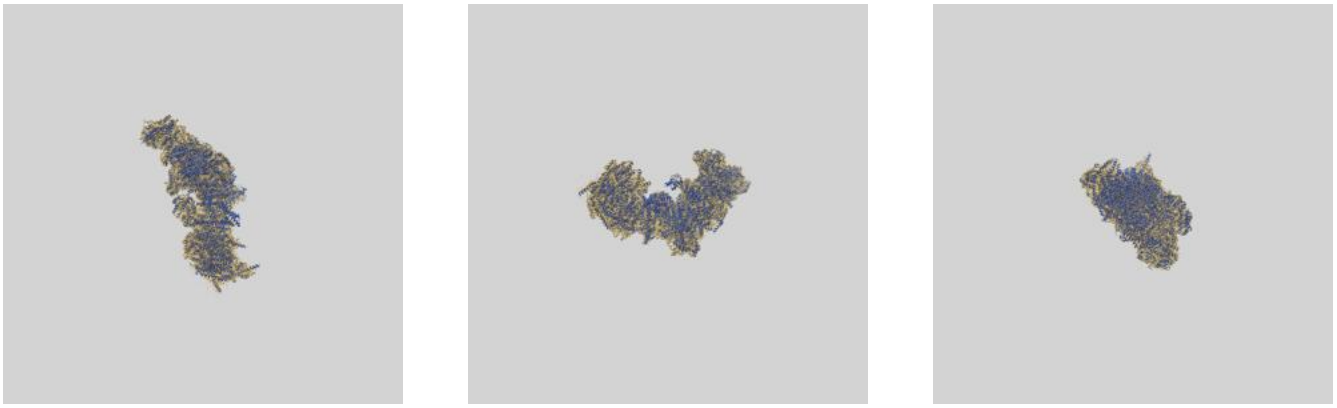
8 Fourier-Shell correlation (i)

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-14261 and PDB model 7R43. Per-residue inclusion information can be found in section 3 on page 23.

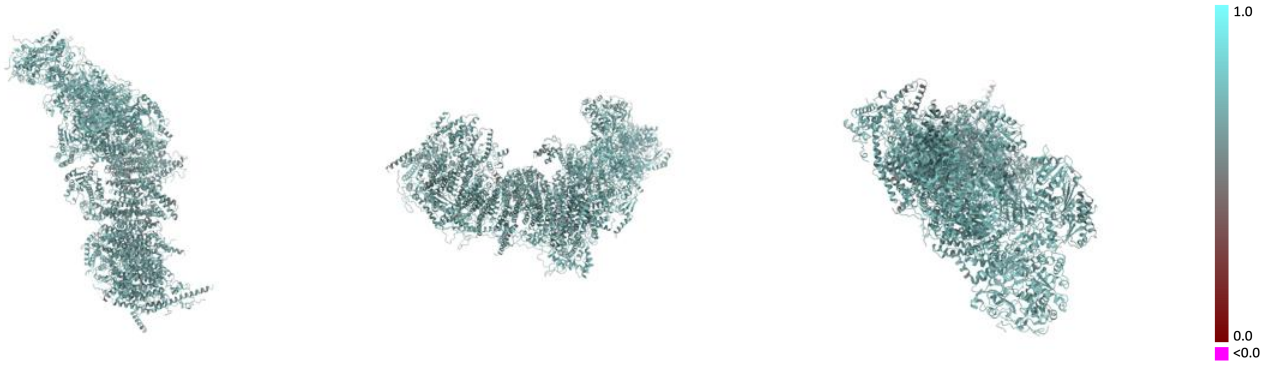
9.1 Map-model overlay



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 6.0 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.

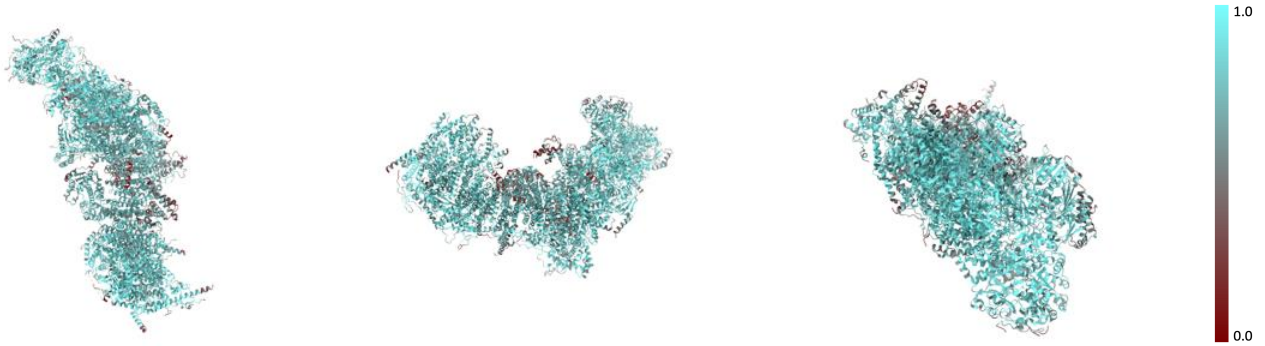
9.2 Q-score mapped to coordinate model (i)



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.

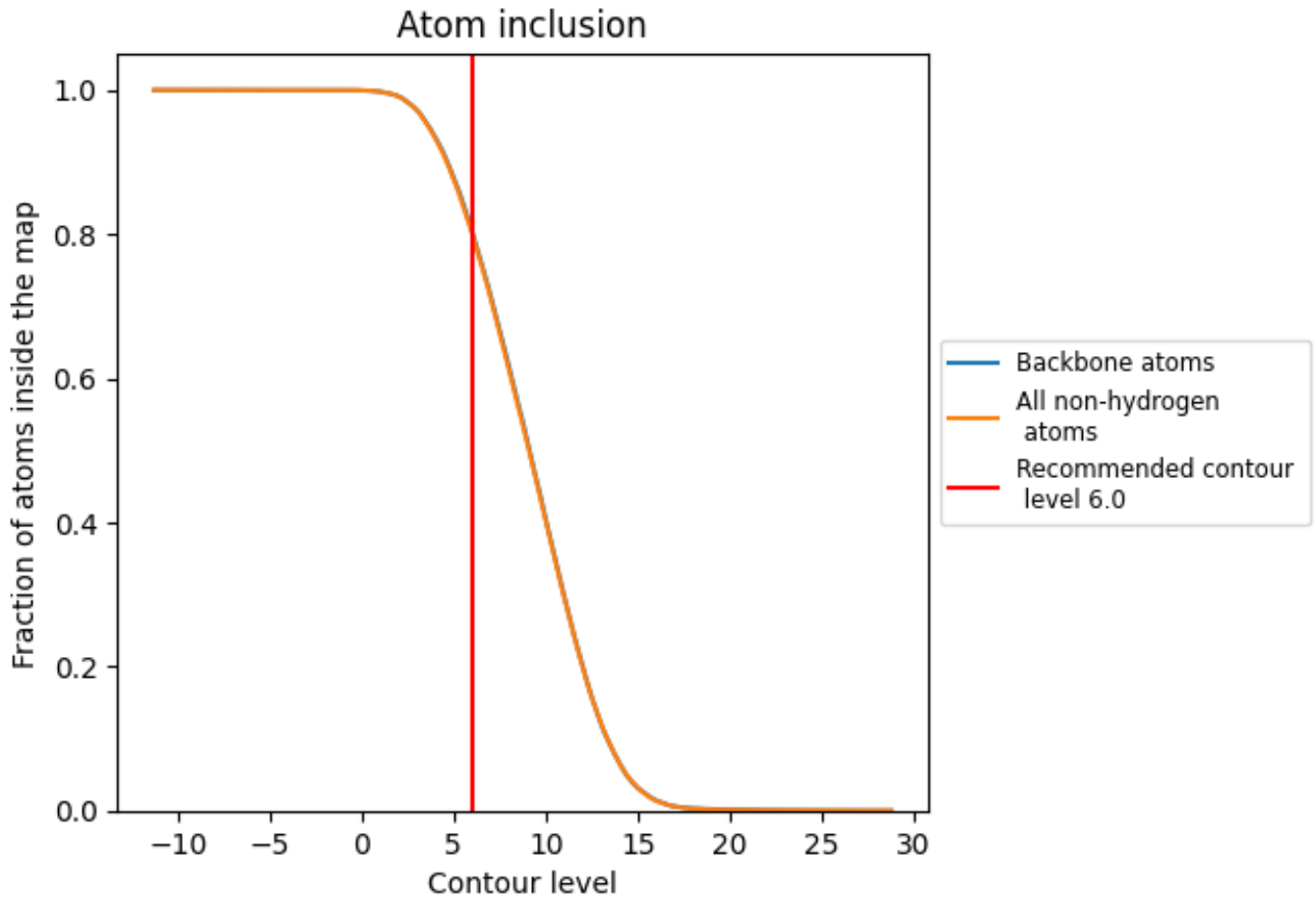
9.3 Atom inclusion mapped to coordinate model (i)



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 (6.0).

9.4 Atom inclusion (i)



At the recommended contour level, 80% of all backbone atoms, 80% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (6.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8020	0.6700
A	0.7903	0.6770
B	0.9146	0.7130
C	0.9098	0.7120
D	0.8957	0.7090
E	0.7785	0.6640
F	0.8297	0.6770
G	0.8403	0.6880
H	0.9007	0.6960
I	0.9201	0.7150
J	0.7574	0.6660
K	0.7973	0.6830
L	0.8241	0.6530
M	0.8754	0.6800
N	0.9029	0.6940
O	0.7610	0.6550
P	0.7760	0.6730
Q	0.8570	0.7000
R	0.8387	0.6830
S	0.6830	0.6390
T	0.3634	0.5780
U	0.8232	0.6450
V	0.7533	0.6770
W	0.7760	0.6800
X	0.7518	0.6530
Y	0.4503	0.6130
Z	0.7433	0.6590
a	0.8397	0.6760
b	0.6533	0.6370
c	0.6061	0.6240
d	0.7223	0.6570
e	0.6935	0.6450
f	0.6279	0.6200
g	0.7818	0.6430
h	0.7976	0.6680

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
i	0.7227	0.6180
j	0.7633	0.6250
k	0.7598	0.6160
l	0.8143	0.6430
m	0.7549	0.6400
n	0.8310	0.6530
o	0.8219	0.6300
p	0.8039	0.6430
q	0.7578	0.6750
r	0.7884	0.6880
s	0.7597	0.6590