Full wwPDB EM Validation Report ⓘ

Oct 6, 2024 – 05:51 AM EDT

PDB ID	:	8UEO
EMDB ID	:	EMD-42165
Title	:	In-situ complex I (Active-Apo)
Authors	:	Zheng, W.; Zhu, J.; Zhang, K.
Deposited on	:	2023-10-02
Resolution	:	3.80 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:

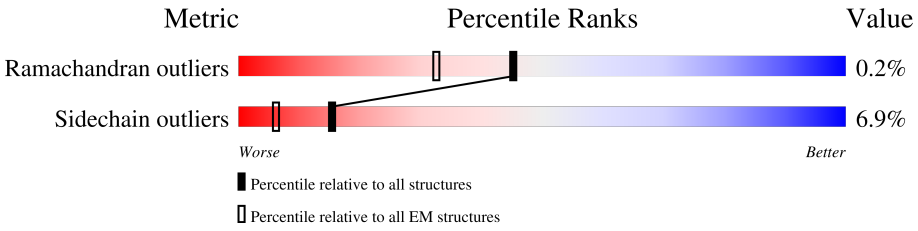
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.80 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	207382	16835
Sidechain outliers	206894	16415

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	1A	115	27% 92% 8%
2	1B	258	9% 56% 40%
3	1C	264	15% 71% 8% 21%
4	1D	430	15% 94% 6%
5	1E	249	60% 83% 14%
6	1F	464	59% 89% 7%
7	1G	727	37% 90% 6%
8	1H	318	15% 93% 7%
9	1I	239	10% 69% 26%

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Mol	Chain	Length	Quality of chain
10	1J	175	29% 89% 10%
11	1K	98	21% 92% 7%
12	1L	606	15% 95%
13	1M	459	95%
14	1N	347	5% 96%
15	1O	357	47% 84% 5% 10%
16	1P	377	44% 85% 5% 9%
17	1Q	175	29% 67% 7% 26%
18	1R	123	33% 74% 22%
19	1S	99	72% 78% 10% 12%
20	1T	156	42% 51% 46%
20	1U	156	21% 53% 45%
21	1V	116	47% 91% 7%
22	1W	128	46% 85% 5% 10%
23	1X	172	27% 93% 6%
24	1Y	141	15% 91% 7%
25	1Z	144	22% 92% 6%
26	1a	70	14% 96%
27	1b	84	37% 90% 8%
28	1c	76	34% 54% 11% 36%
29	1d	122	20% 89% 7%
30	1e	106	19% 79% 13% 7%
31	1f	58	52% 93% 5%
32	1g	154	26% 58% 7% 35%
33	1h	189	17% 64% 8% 27%

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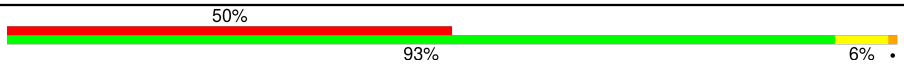
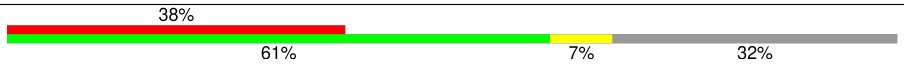
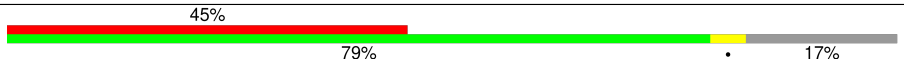
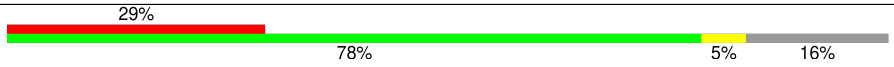
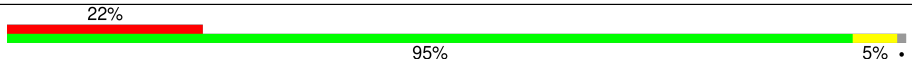
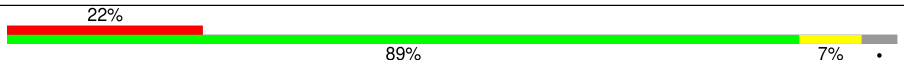
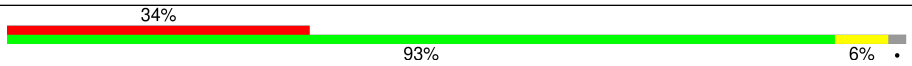
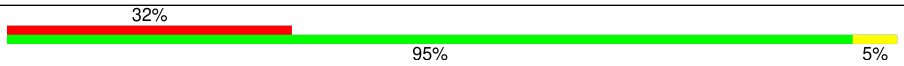
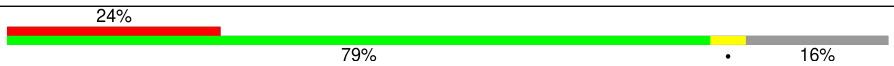
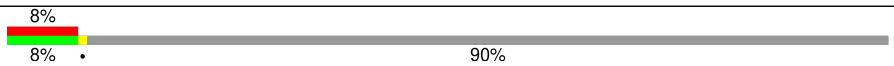
Mol	Chain	Length	Quality of chain
34	1i	128	
35	1j	105	
36	1k	98	
37	1l	186	
38	1m	129	
39	1n	179	
40	1o	137	
41	1p	176	
42	1q	145	
43	1r	112	
44	1s	471	

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 68026 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	1A	115	914	615	134	158	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	1B	155	1242	791	226	211	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	1C	209	1746	1128	299	317	2	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	1D	429	3452	2207	593	628	24	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	1E	214	1658	1058	278	312	10	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	1F	432	Total	C	N	O	S	0	0
			3325	2100	592	613	20		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1G	699	Total	C	N	O	S	0	0
			5362	3360	933	1029	40		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	1H	317	Total	C	N	O	S	0	0
			2494	1667	384	423	20		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	1I	176	Total	C	N	O	S	0	0
			1412	887	243	269	13		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	1J	173	Total	C	N	O	S	0	0
			1322	888	188	234	12		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	1K	97	Total	C	N	O	S	0	0
			740	488	112	127	13		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	1L	605	Total	C	N	O	S	0	0
			4808	3189	745	824	50		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	1M	458	Total	C	N	O	S	0	0
			3622	2405	571	608	38		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	1N	346	Total	C	N	O	S	0	0
			2702	1777	419	461	45		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	1O	320	Total	C	N	O	S	0	0
			2590	1649	440	491	10		

- Molecule 16 is a protein called NADH:ubiquinone oxidoreductase subunit A9.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	1P	342	Total	C	N	O	S	0	0
			2751	1783	481	478	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	1Q	129	Total	C	N	O	S	0	0
			1047	659	186	199	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	1R	96	Total	C	N	O	S	0	0
			741	452	140	146	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
19	1S	87	Total	C	N	O	S	0	0
			700	440	131	127	2		

- Molecule 20 is a protein called NADH:ubiquinone oxidoreductase subunit AB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	1T	85	Total	C	N	O	S	0	0
			689	445	101	138	5		
20	1U	86	Total	C	N	O	S	0	0
			694	448	102	139	5		

- Molecule 21 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5 isoform X1.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	1V	115	Total	C	N	O	S	0	0
			927	599	157	168	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	1W	115	Total	C	N	O	S	0	0
			971	619	179	168	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
23	1X	171	Total	C	N	O	S	0	0
			1398	887	250	251	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
24	1Y	139	Total	C	N	O	S	0	0
			1016	648	173	189	6		

- Molecule 25 is a protein called NADH:ubiquinone oxidoreductase subunit A13.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	1Z	141	Total	C	N	O	S	0	0
			1168	752	202	205	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
26	1a	70	Total	C	N	O	S	0	0
			562	361	101	94	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	1b	83	Total	C	N	O	S	0	0
			643	417	110	115	1		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
28	1c	49	Total	C	N	O	0	0
			417	276	71	70		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	1d	119	Total	C	N	O	S	0	0
			985	641	171	168	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	1e	99	Total	C	N	O	S	0	0
			816	519	151	140	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	1f	57	Total	C	N	O	S	0	0
			487	316	89	80	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
32	1g	100	Total	C	N	O	S	0	0
			835	535	138	158	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
33	1h	138	Total	C	N	O	S	0	0
			1151	754	195	199	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
34	1i	128	Total	C	N	O	S	0	0
			1100	723	194	181	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1i	0	ACE	-	acetylation	UNP A0A4X1UIV8

- Molecule 35 is a protein called NADH:ubiquinone oxidoreductase subunit B2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	1j	71	Total	C	N	O	S	0	0
			601	394	99	107	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
36	1k	81	Total	C	N	O	S	0	0
			649	422	110	116	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
37	1l	156	Total	C	N	O	S	0	0
			1310	847	213	242	8		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
38	1m	128	Total	C	N	O	0	0
			1062	691	182	189		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
39	1n	172	Total	C	N	O	S	0	0
			1495	956	273	258	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	1o	122	Total	C	N	O	S	0	0
			1045	650	198	187	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	1p	173	Total	C	N	O	S	0	0
			1449	908	263	270	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	1q	145	Total	C	N	O	S	0	0
			1212	775	219	213	5		

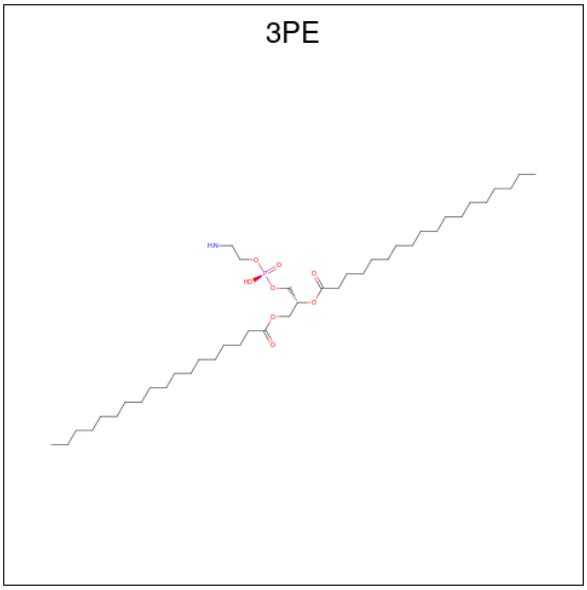
- Molecule 43 is a protein called NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	1r	94	Total	C	N	O	S	0	0
			759	478	143	135	3		

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

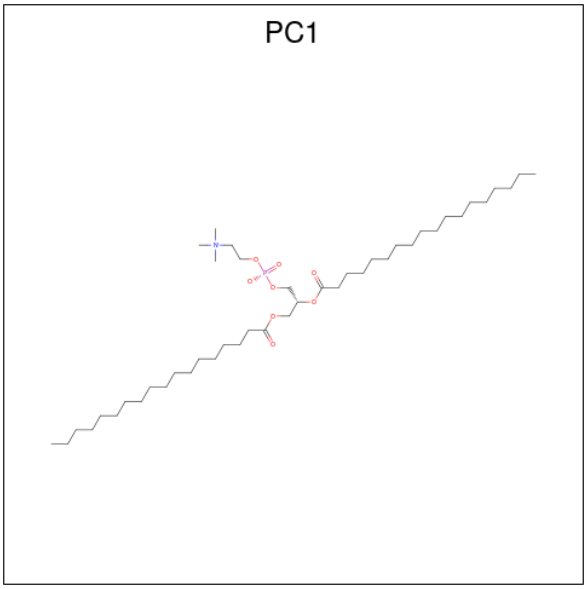
Mol	Chain	Residues	Atoms					AltConf	Trace
44	1s	45	Total	C	N	O	S	0	0
			382	238	70	73	1		

- Molecule 45 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (three-letter code: 3PE) (formula: $C_{41}H_{82}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
45	1A	1	Total	C	N	O	P	0
			31	21	1	8	1	
45	1D	1	Total	C	N	O	P	0
			46	36	1	8	1	
45	1L	1	Total	C	N	O	P	0
			46	36	1	8	1	
45	1L	1	Total	C	N	O	P	0
			42	32	1	8	1	
45	1M	1	Total	C	N	O	P	0
			38	28	1	8	1	
45	1M	1	Total	C	N	O	P	0
			38	28	1	8	1	
45	1Y	1	Total	C	N	O	P	0
			31	21	1	8	1	
45	1Y	1	Total	C	N	O	P	0
			40	30	1	8	1	
45	1Y	1	Total	C	N	O	P	0
			35	25	1	8	1	
45	1f	1	Total	C	N	O	P	0
			51	41	1	8	1	

- 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	1A	1	Total	C	N	O	P	0
			27	17	1	8	1	
46	1B	1	Total	C	N	O	P	0
			34	24	1	8	1	
46	1B	1	Total	C	N	O	P	0
			48	38	1	8	1	
46	1H	1	Total	C	N	O	P	0
			54	44	1	8	1	
46	1I	1	Total	C	N	O	P	0
			44	34	1	8	1	
46	1J	1	Total	C	N	O	P	0
			32	22	1	8	1	
46	1L	1	Total	C	N	O	P	0
			38	28	1	8	1	
46	1M	1	Total	C	N	O	P	0
			35	25	1	8	1	
46	1Y	1	Total	C	N	O	P	0
			46	36	1	8	1	
46	1Z	1	Total	C	N	O	P	0
			34	24	1	8	1	
46	1d	1	Total	C	N	O	P	0
			39	29	1	8	1	
46	1f	1	Total	C	N	O	P	0
			34	24	1	8	1	

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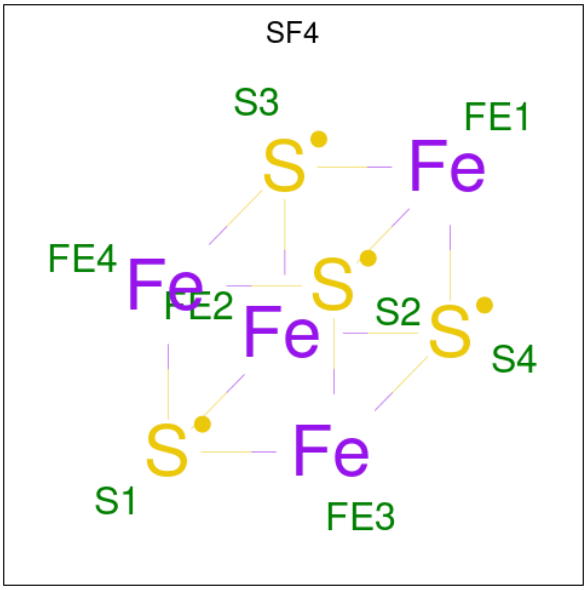
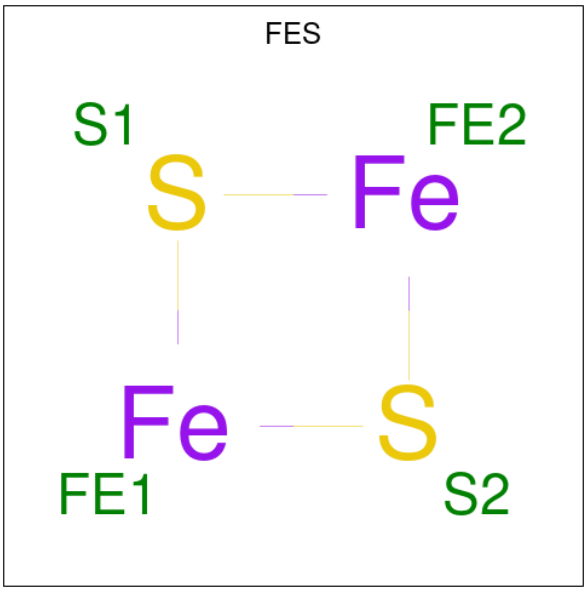
Mol	Chain	Residues	Atoms					AltConf
46	1h	1	Total	C	N	O	P	0
			47	37	1	8	1	

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



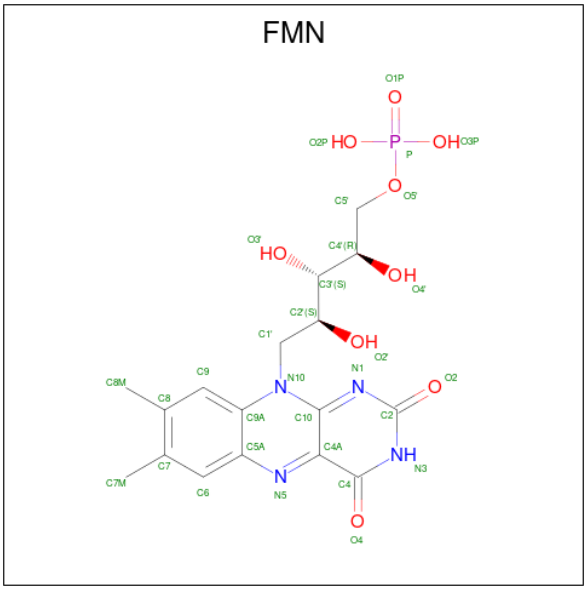
Mol	Chain	Residues	Atoms				AltConf
47	1B	1	Total	Fe	S		0
			8	4	4		
47	1F	1	Total	Fe	S		0
			8	4	4		
47	1G	1	Total	Fe	S		0
			8	4	4		
47	1G	1	Total	Fe	S		0
			8	4	4		
47	1I	1	Total	Fe	S		0
			8	4	4		
47	1I	1	Total	Fe	S		0
			8	4	4		

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



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

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

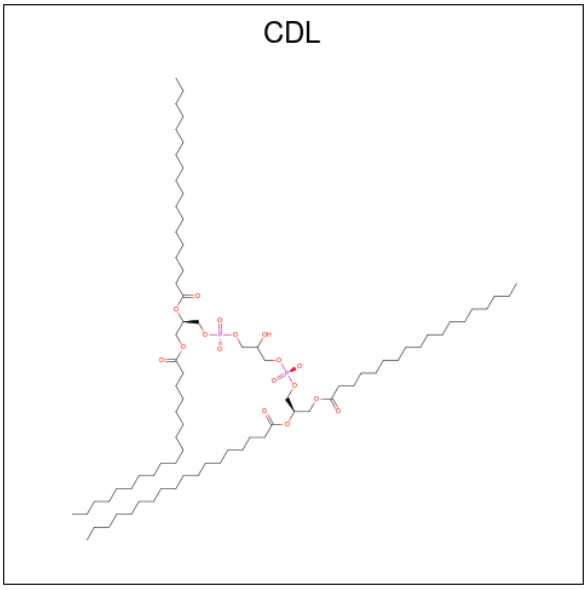


Mol	Chain	Residues	Atoms					AltConf
49	1F	1	Total	C	N	O	P	0
			31	17	4	9	1	

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

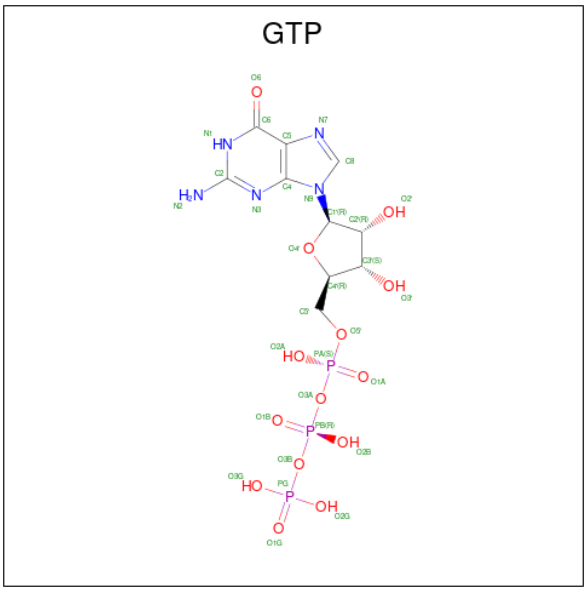
Mol	Chain	Residues	Atoms	AltConf
50	1G	1	Total K 1 1	0

- Molecule 51 is CARDIOLIPIN (three-letter code: CDL) (formula: $C_{81}H_{156}O_{17}P_2$).



Mol	Chain	Residues	Atoms	AltConf
51	1H	1	Total C O P 51 32 17 2	0
51	1L	1	Total C O P 76 57 17 2	0
51	1N	1	Total C O P 65 46 17 2	0
51	1N	1	Total C O P 67 48 17 2	0
51	1X	1	Total C O P 86 67 17 2	0
51	1a	1	Total C O P 61 42 17 2	0

- Molecule 52 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).

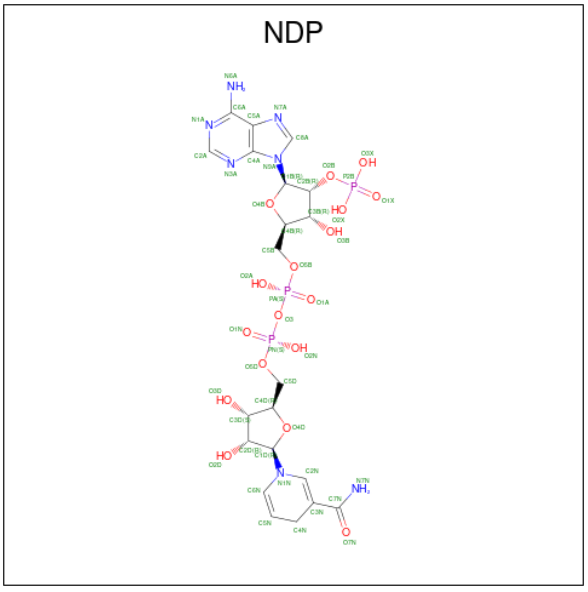


Mol	Chain	Residues	Atoms					AltConf
52	1O	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 53 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
53	1O	1	Total	Mg	0
			1	1	

- Molecule 54 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$).

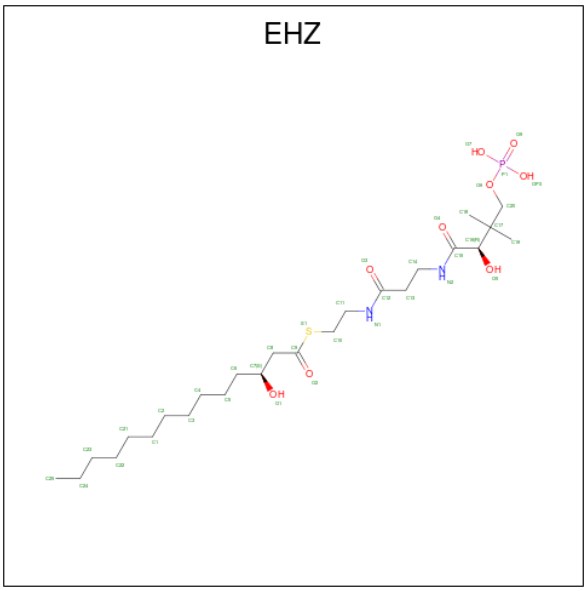


Mol	Chain	Residues	Atoms					AltConf
54	1P	1	Total	C	N	O	P	0
			48	21	7	17	3	

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

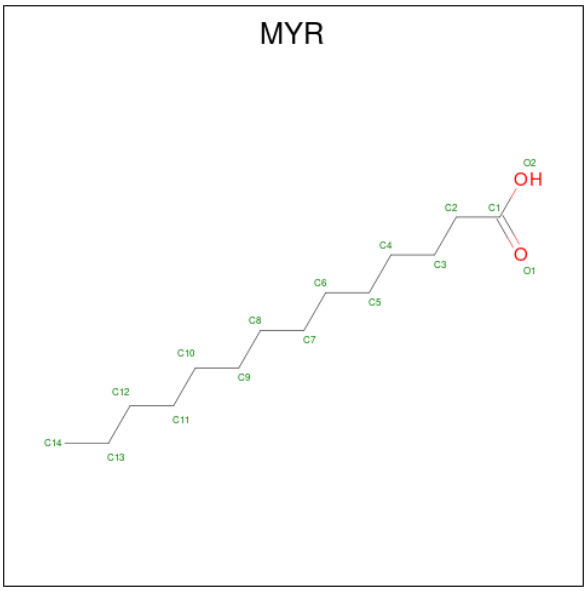
Mol	Chain	Residues	Atoms		AltConf
55	1R	1	Total	Zn	0
			1	1	

- Molecule 56 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
56	1W	1	Total	C	N	O	P	S	0
			37	25	2	8	1	1	
56	1n	1	Total	C	N	O	P	S	0
			37	25	2	8	1	1	

- Molecule 57 is MYRISTIC ACID (three-letter code: MYR) (formula: $C_{14}H_{28}O_2$).



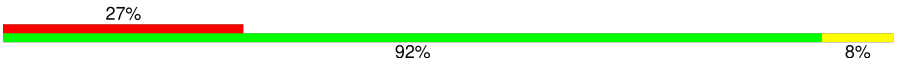
Mol	Chain	Residues	Atoms			AltConf
57	1l	1	Total	C	O	0
			15	14	1	

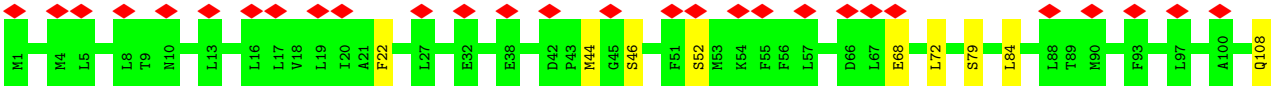
3 Residue-property plots (i)

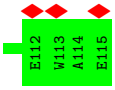
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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 1A:

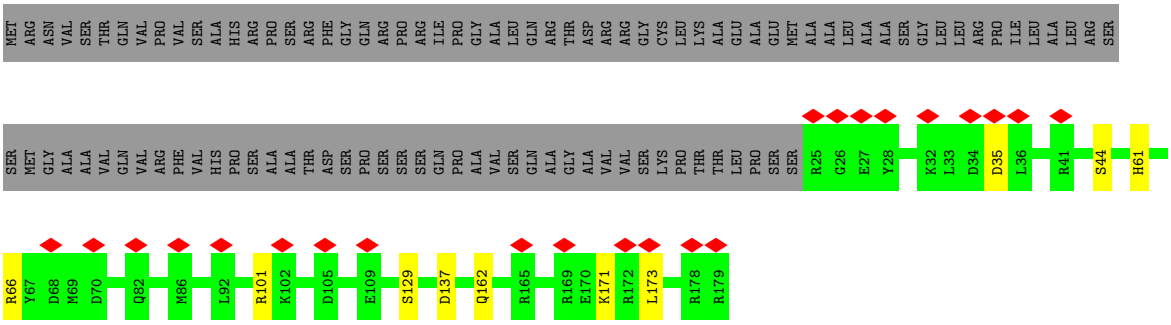






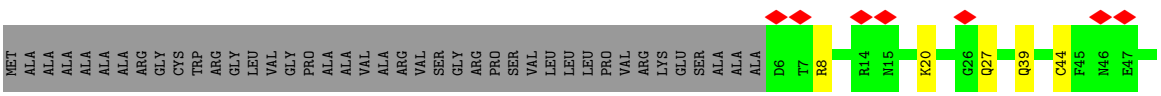
• Molecule 2: NADH dehydrogenase [ubiquinone] iron-sulfur protein 7, mitochondrial

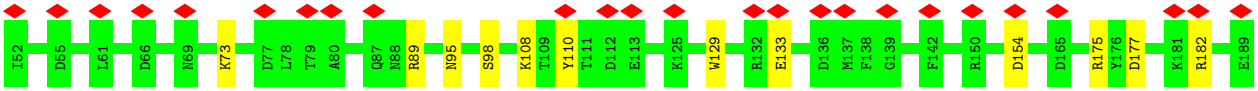
Chain 1B:

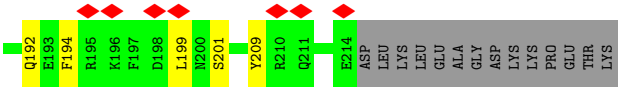


• Molecule 3: NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial

Chain 1C:

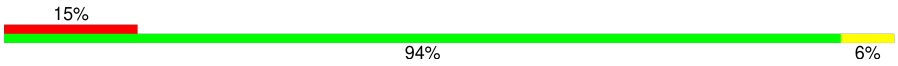


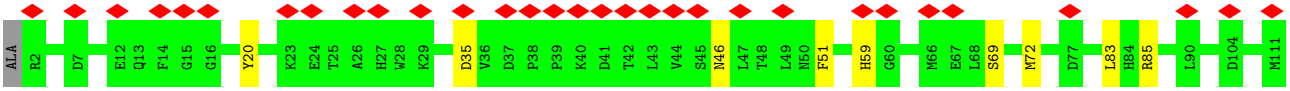


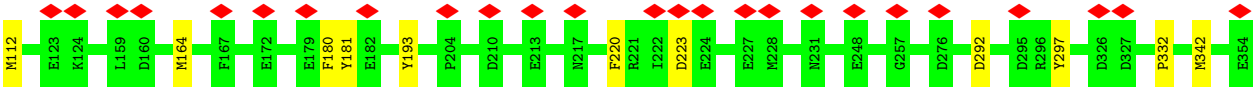


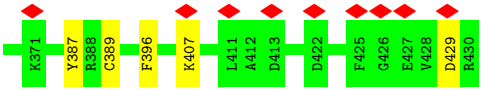
• Molecule 4: NADH dehydrogenase [ubiquinone] iron-sulfur protein 2, mitochondrial

Chain 1D:



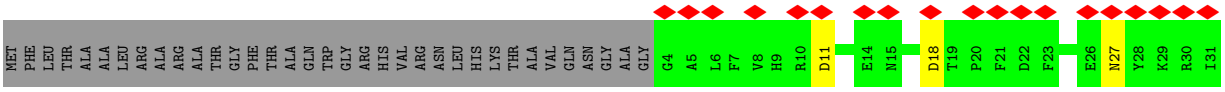


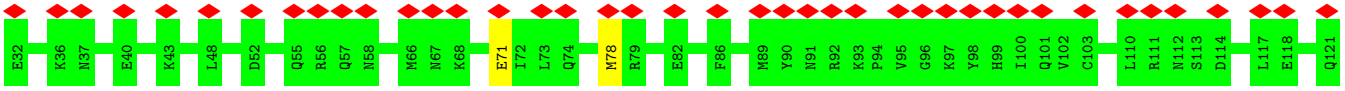


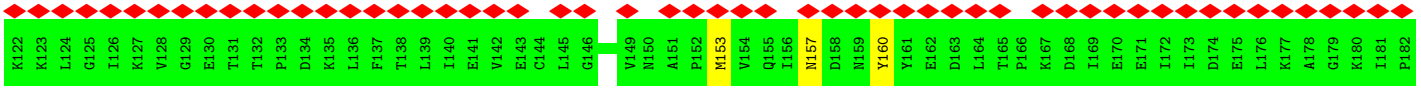


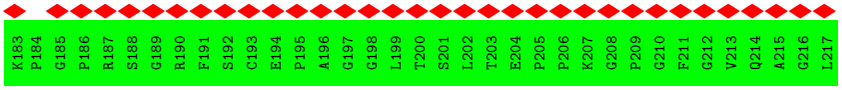
• Molecule 5: NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial

Chain 1E:



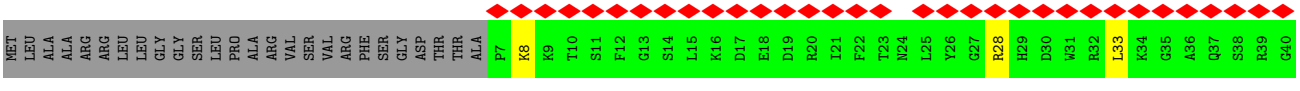


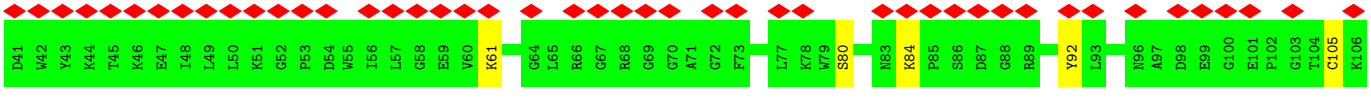


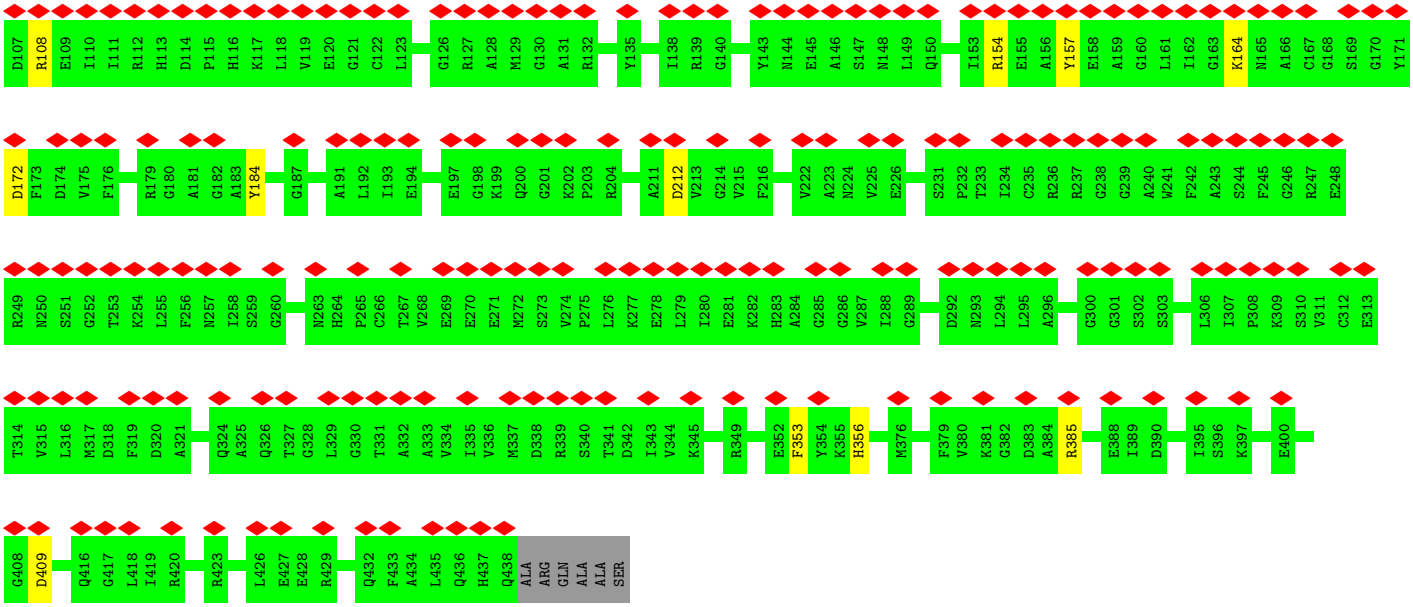


• Molecule 6: NADH dehydrogenase [ubiquinone] flavoprotein 1, mitochondrial

Chain 1F:

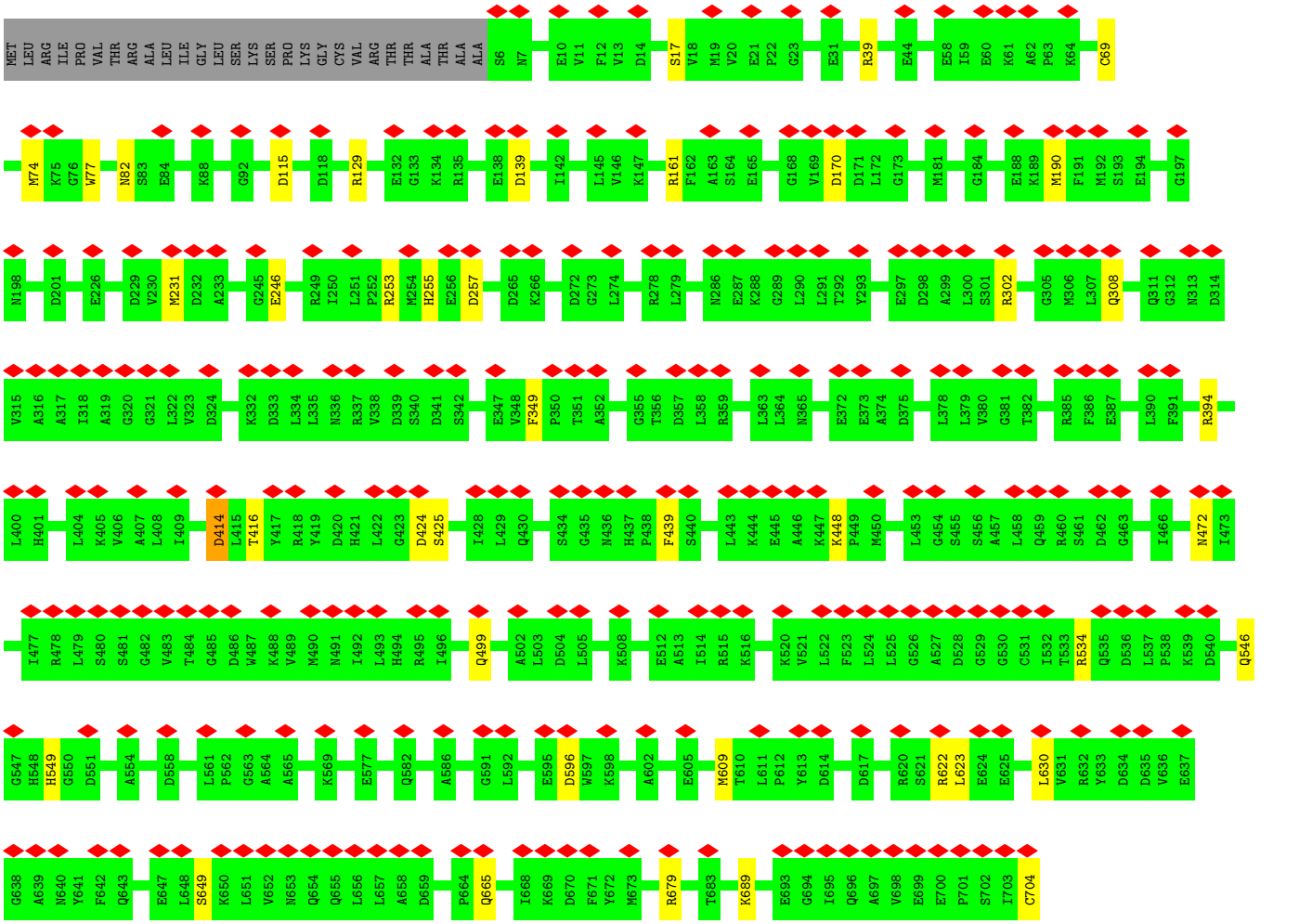






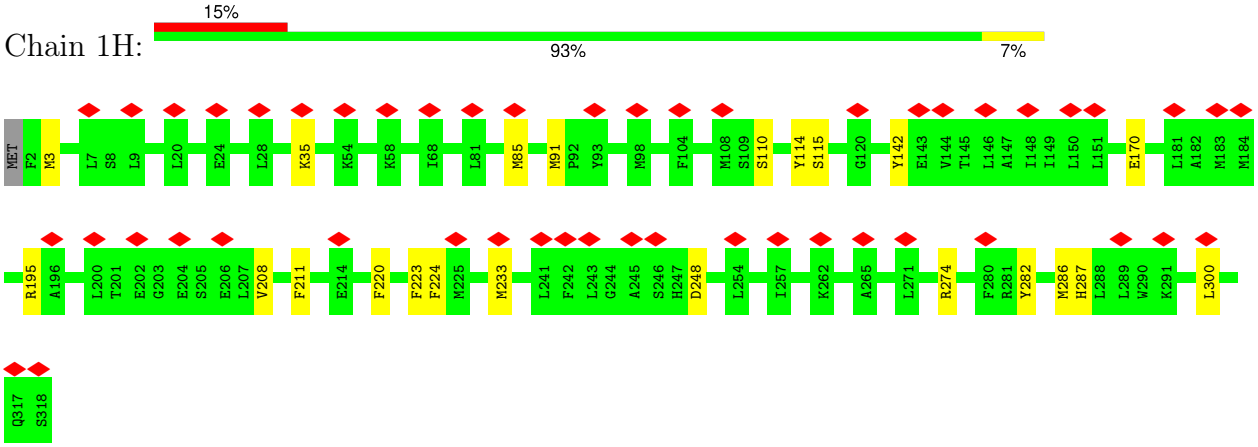
• Molecule 7: NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial

Chain 1G:



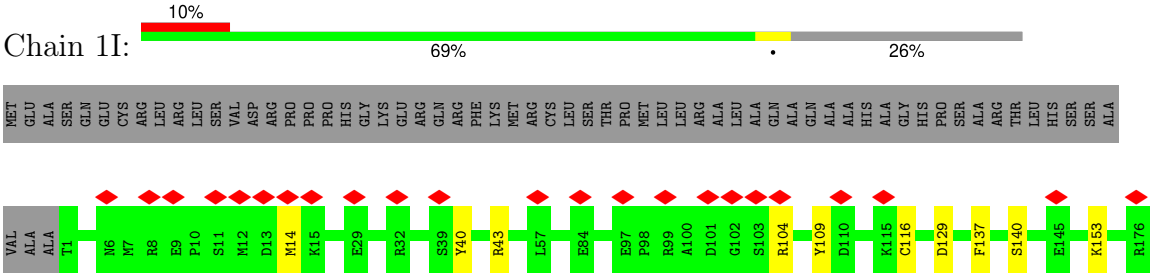
• Molecule 8: NADH-ubiquinone oxidoreductase chain 1

Chain 1H:



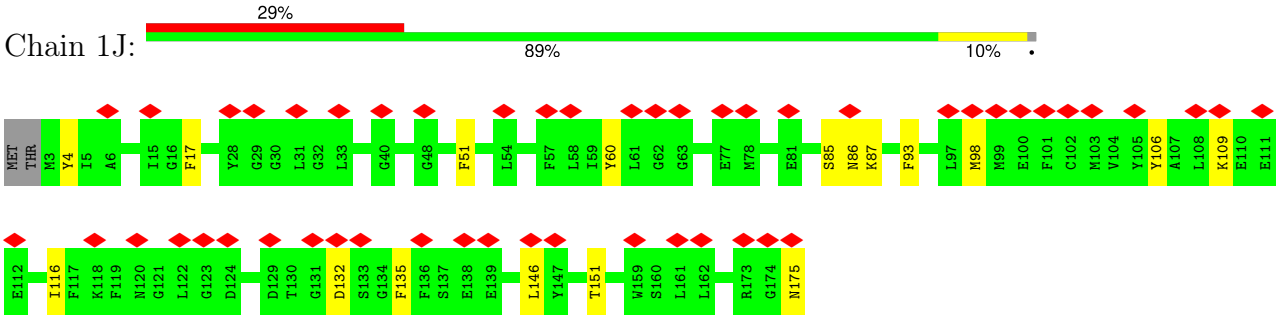
• Molecule 9: NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial

Chain 1I:



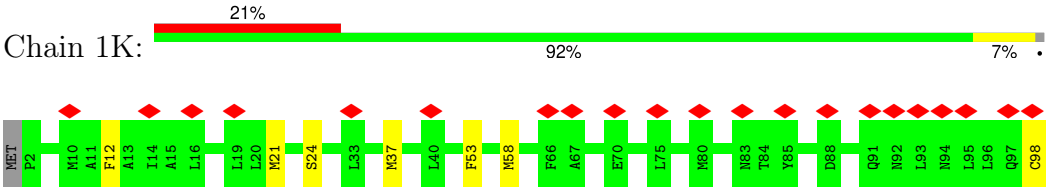
• Molecule 10: NADH-ubiquinone oxidoreductase chain 6

Chain 1J:



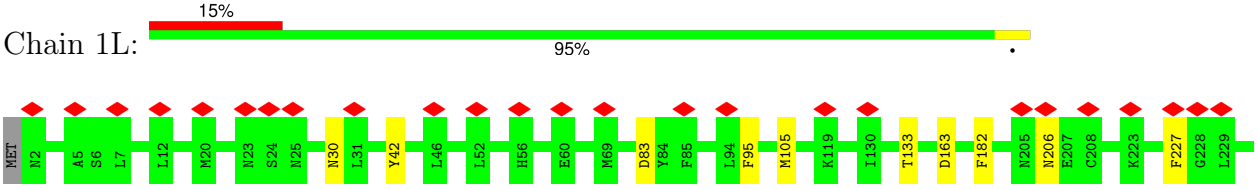
• Molecule 11: NADH-ubiquinone oxidoreductase chain 4L

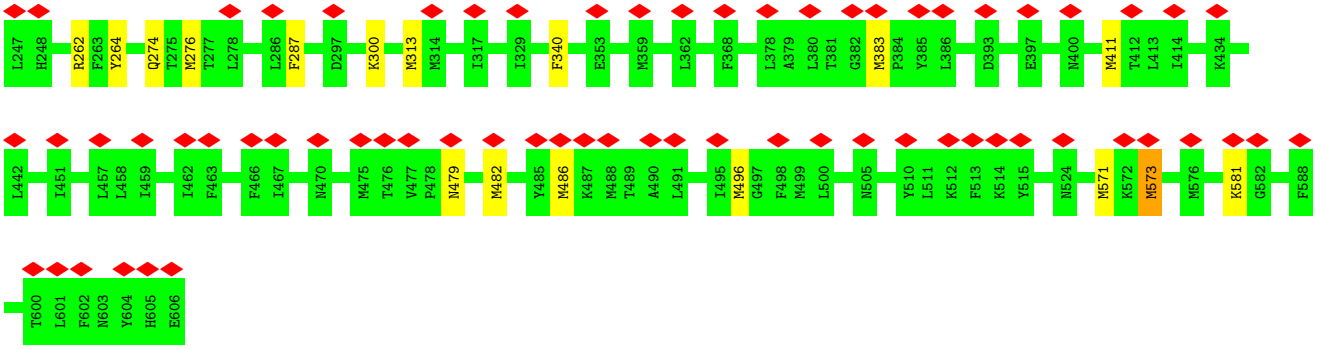
Chain 1K:



• Molecule 12: NADH-ubiquinone oxidoreductase chain 5

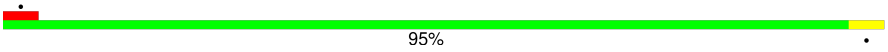
Chain 1L:

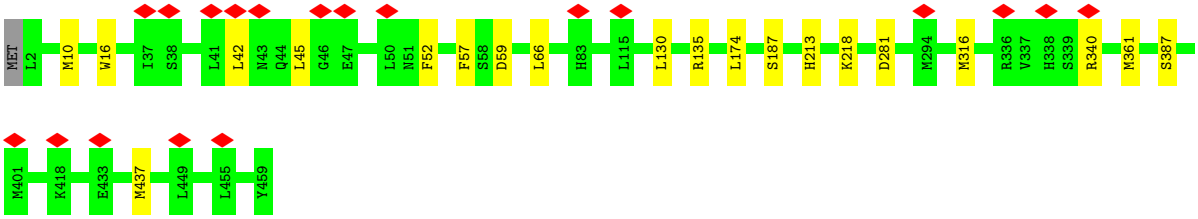




• Molecule 13: NADH-ubiquinone oxidoreductase chain 4

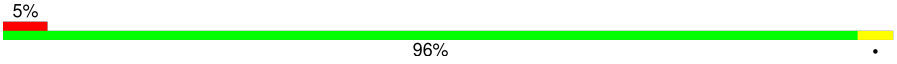
Chain 1M:

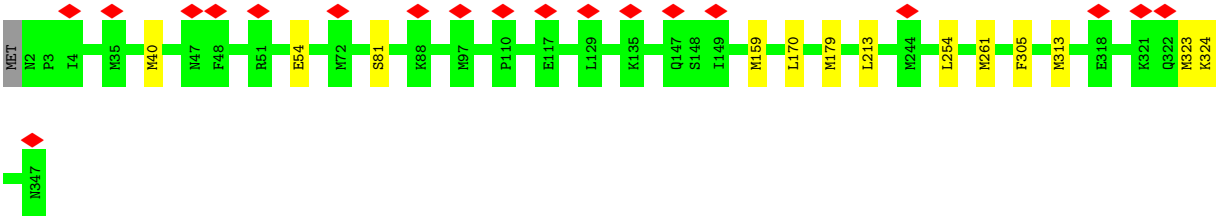




• Molecule 14: NADH-ubiquinone oxidoreductase chain 2

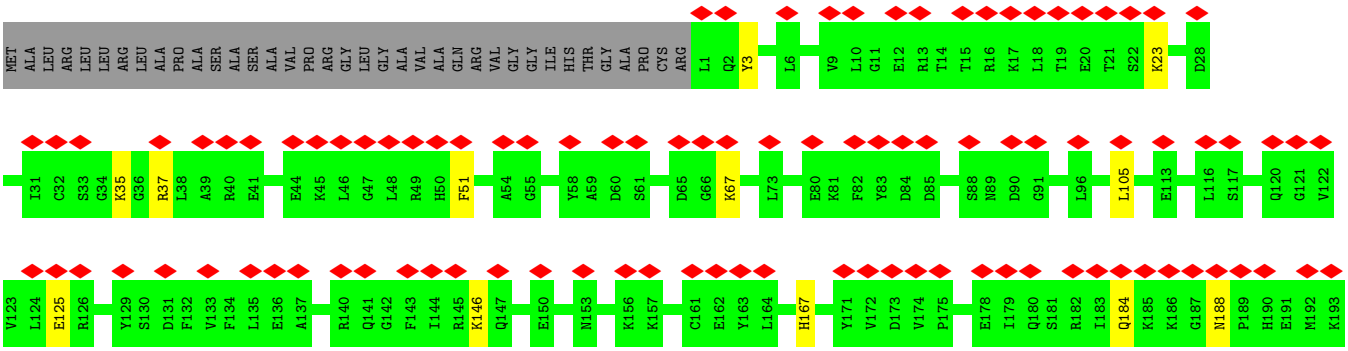
Chain 1N:

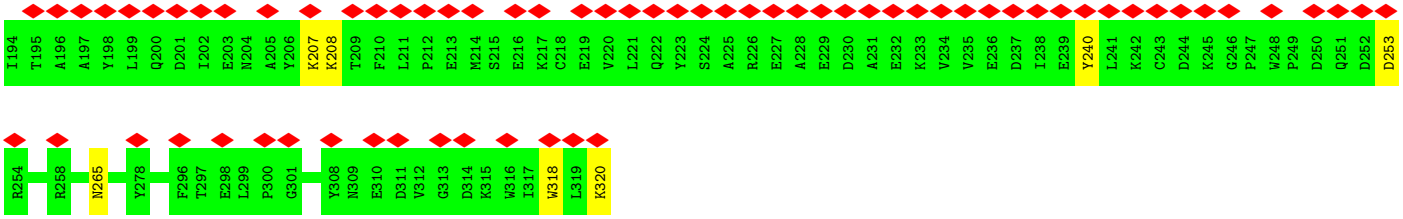




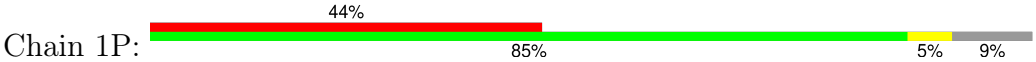
• Molecule 15: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 10, mitochondrial

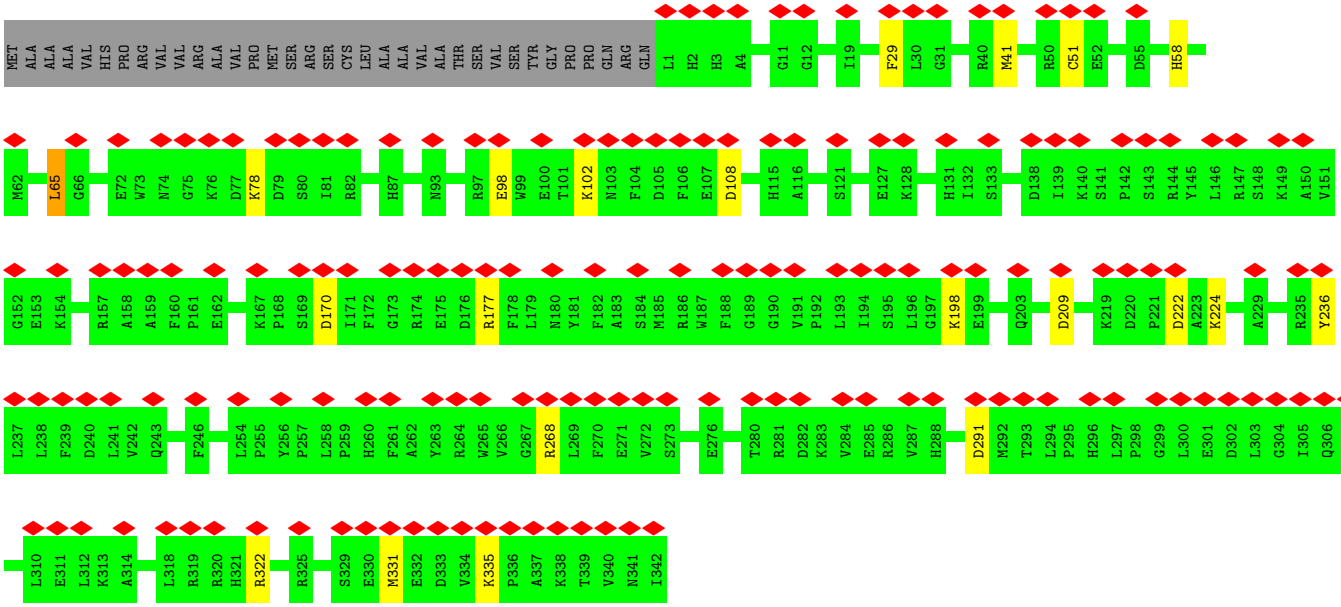
Chain 1O:



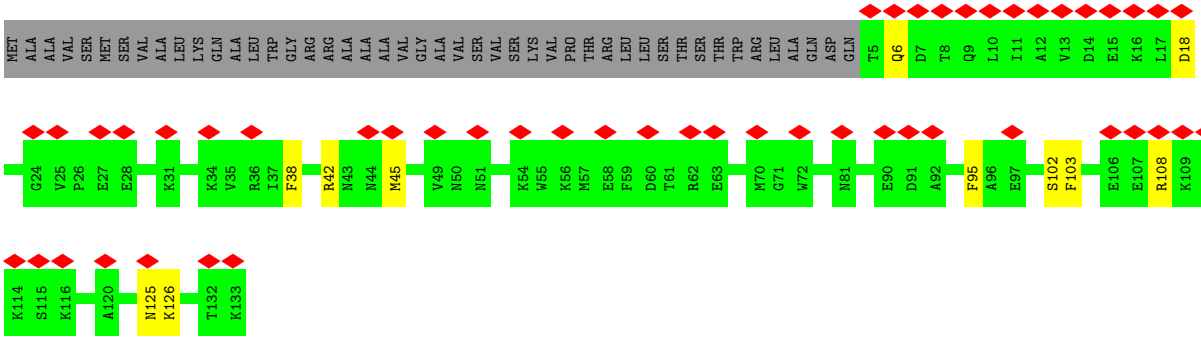


• Molecule 16: NADH:ubiquinone oxidoreductase subunit A9

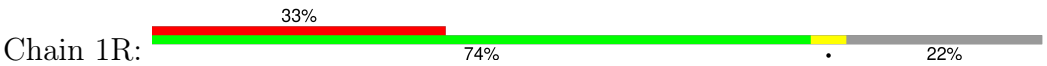


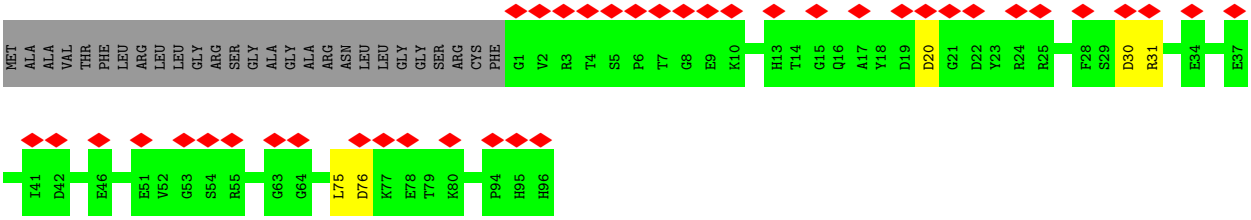


• Molecule 17: NADH dehydrogenase [ubiquinone] iron-sulfur protein 4, mitochondrial



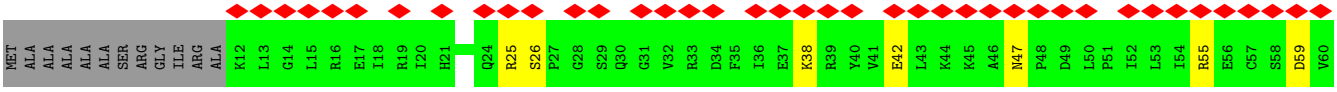
• Molecule 18: NADH dehydrogenase [ubiquinone] iron-sulfur protein 6, mitochondrial

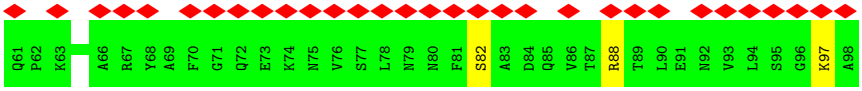




• Molecule 19: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 2

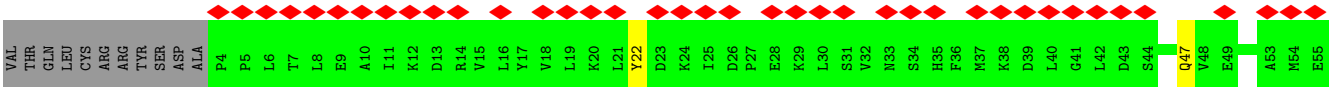
Chain 1S:

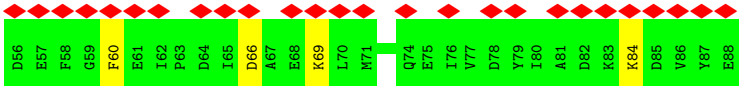




• Molecule 20: NADH:ubiquinone oxidoreductase subunit AB1

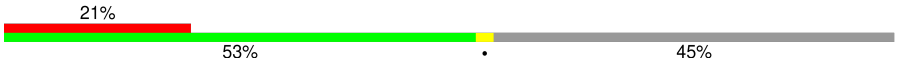
Chain 1T:

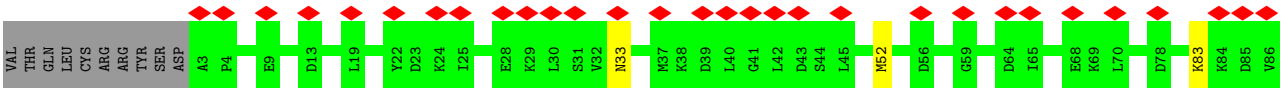




• Molecule 20: NADH:ubiquinone oxidoreductase subunit AB1

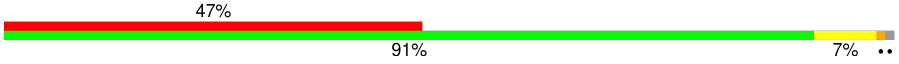
Chain 1U:

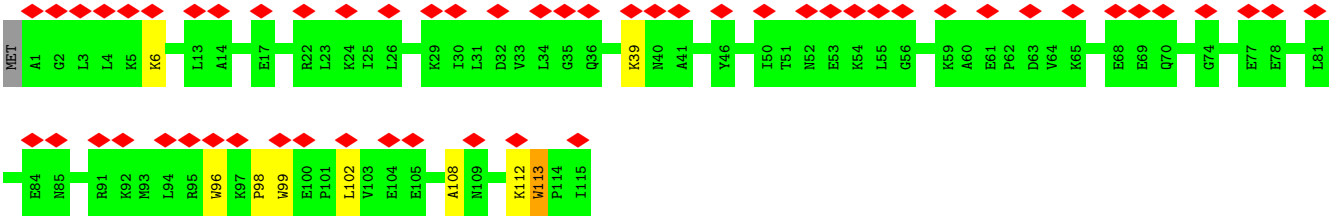




• Molecule 21: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 5 isoform X1

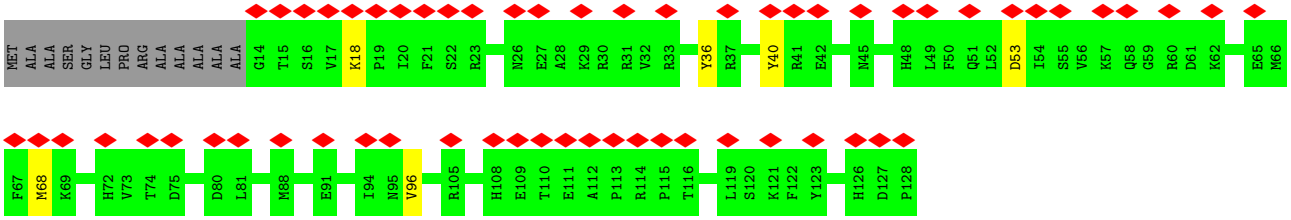
Chain 1V:





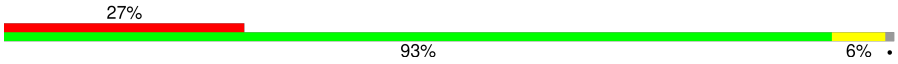
• Molecule 22: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 6

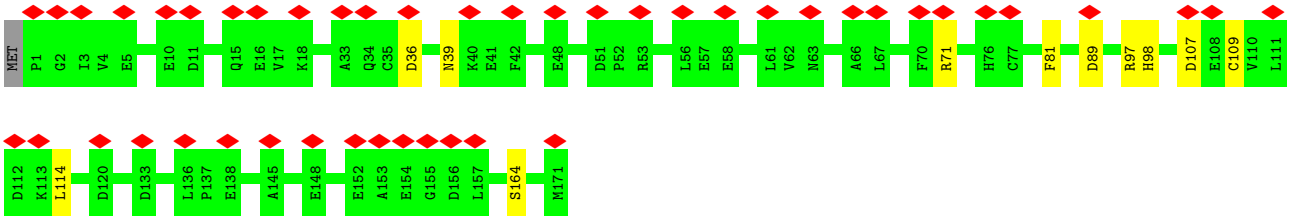
Chain 1W:



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

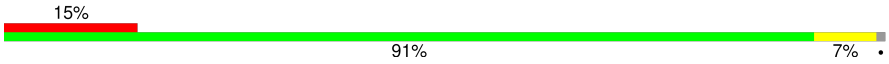
Chain 1X:

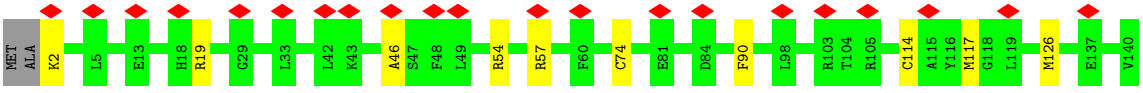




• Molecule 24: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 11

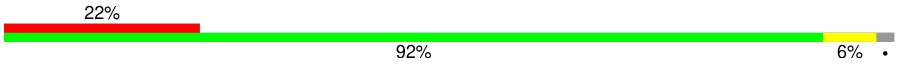
Chain 1Y:

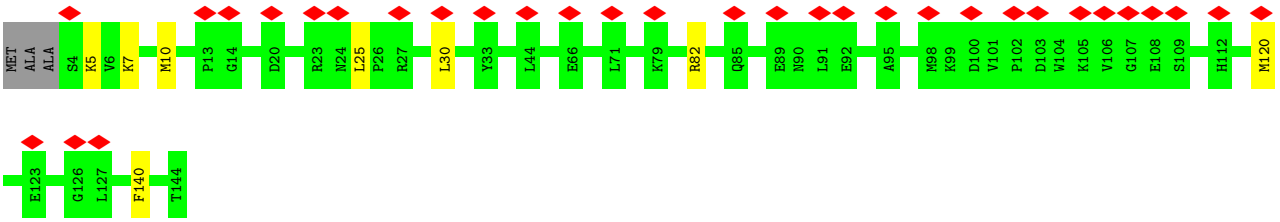




• Molecule 25: NADH:ubiquinone oxidoreductase subunit A13

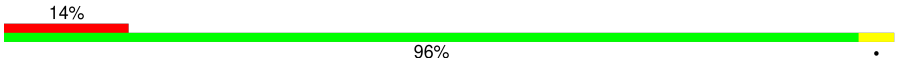
Chain 1Z:

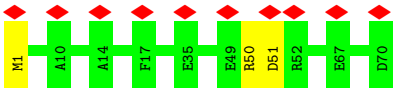




• Molecule 26: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 1

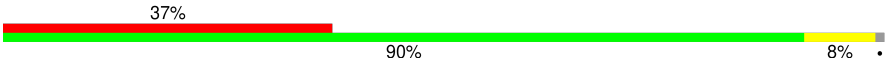
Chain 1a:

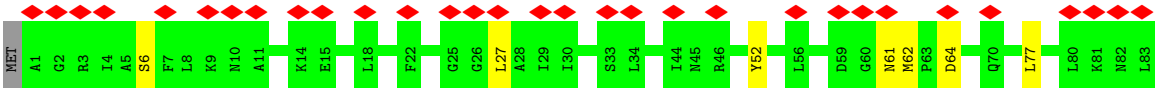




• Molecule 27: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 3

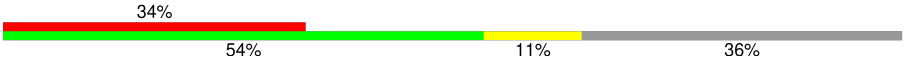
Chain 1b:





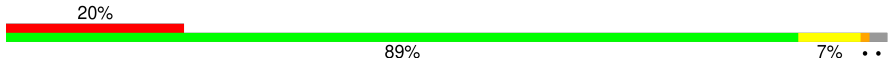
• Molecule 28: NADH dehydrogenase [ubiquinone] 1 subunit C1, mitochondrial

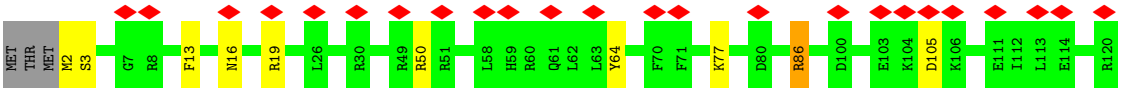
Chain 1c:



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

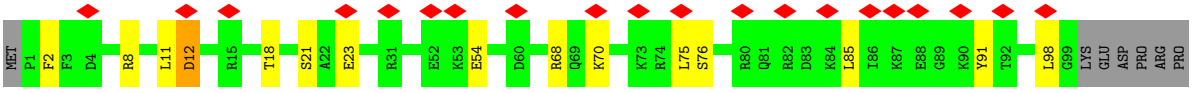
Chain 1d:





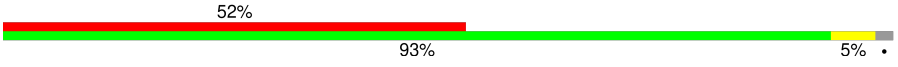
• Molecule 30: NADH dehydrogenase [ubiquinone] iron-sulfur protein 5

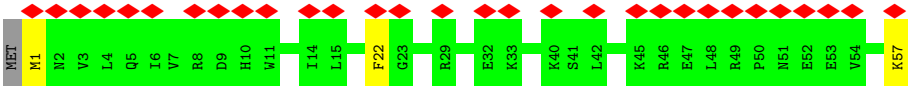
Chain 1e:



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

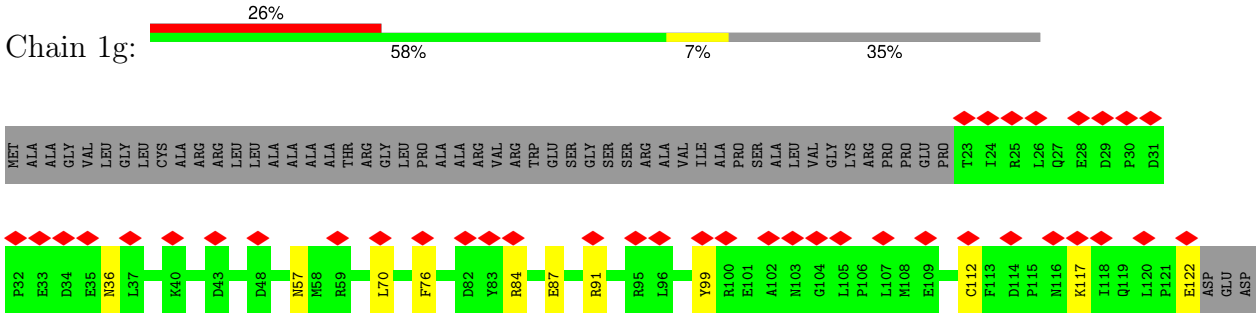
Chain 1f:





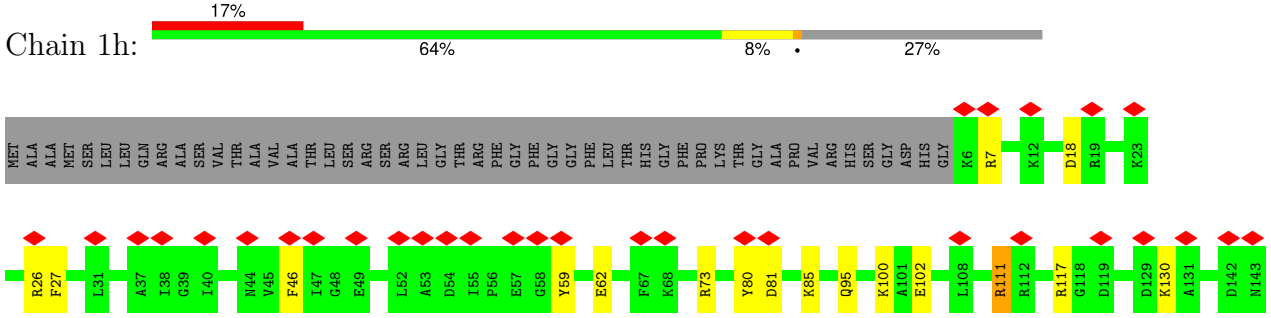
• Molecule 32: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial

Chain 1g:



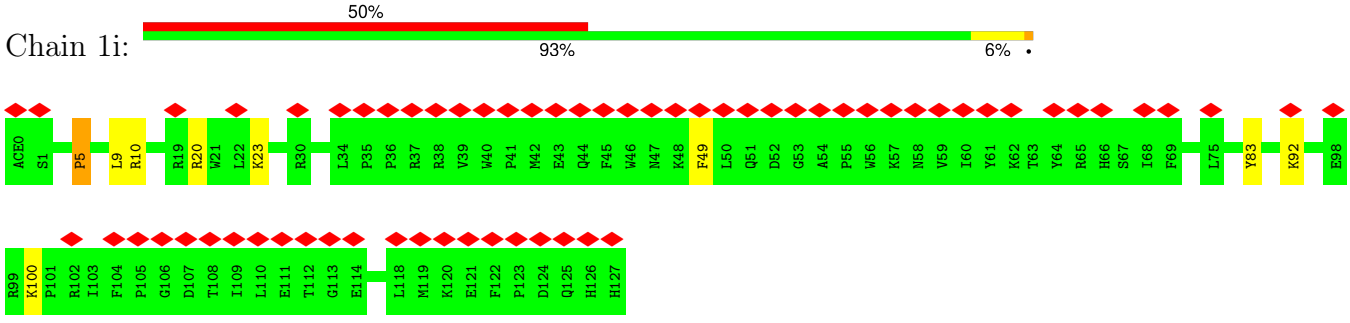
• Molecule 33: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 5, mitochondrial

Chain 1h:



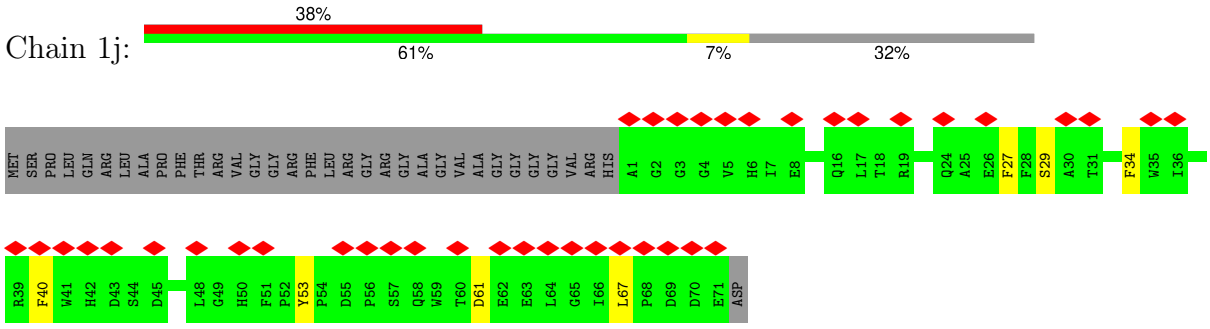
• Molecule 34: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 6

Chain 1i:



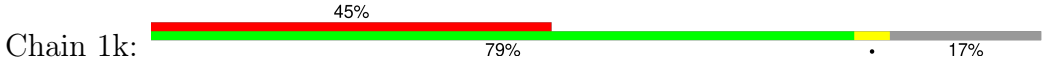
• Molecule 35: NADH:ubiquinone oxidoreductase subunit B2

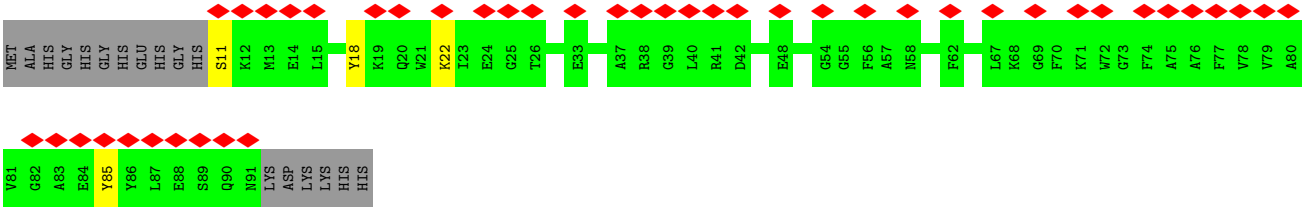
Chain 1j:



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

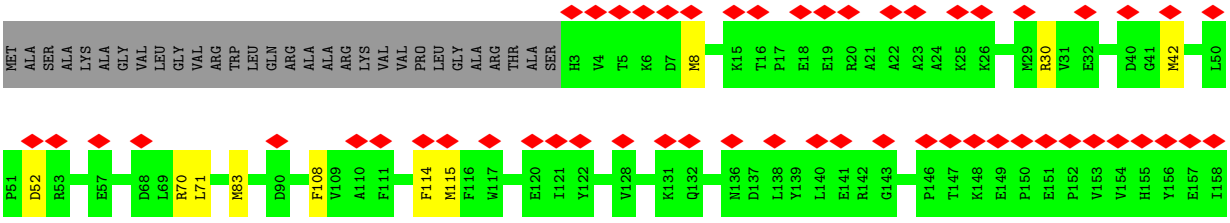
Chain 1k:





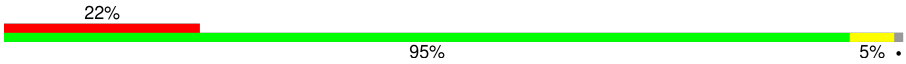
• Molecule 37: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial

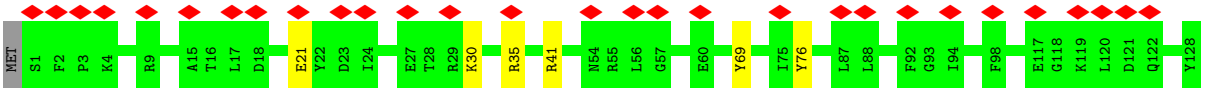
Chain 1l:



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

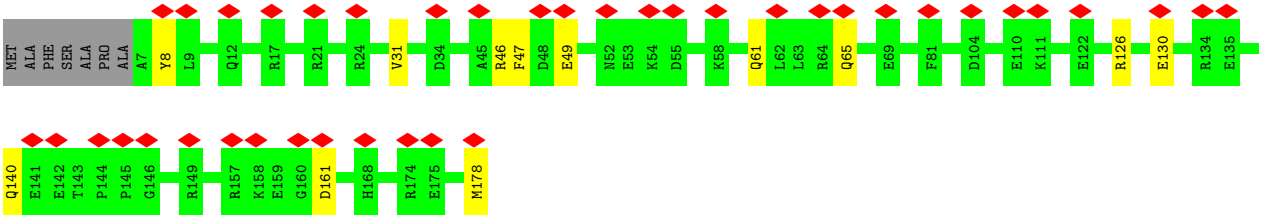
Chain 1m:





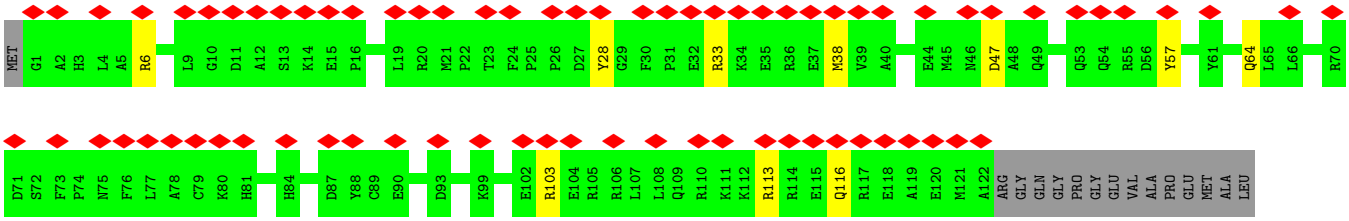
• Molecule 39: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9

Chain 1n:



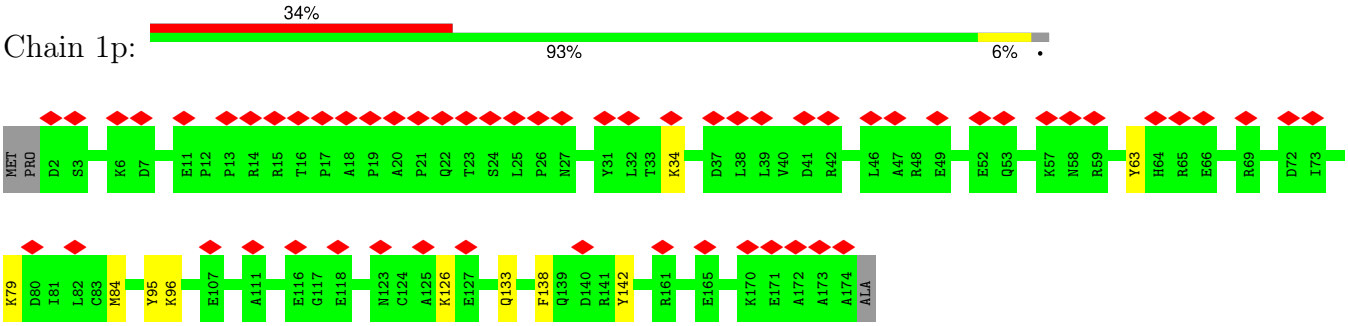
• Molecule 40: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 7

Chain 1o:



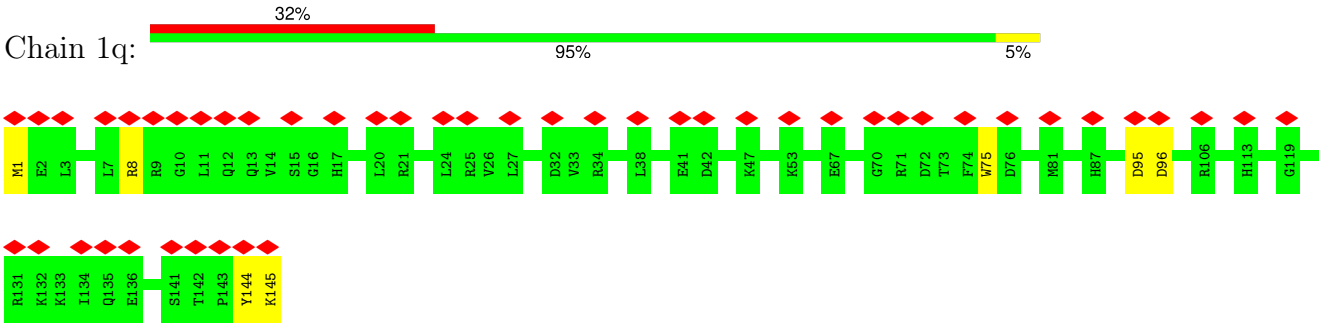
• Molecule 41: NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 10

Chain 1p:



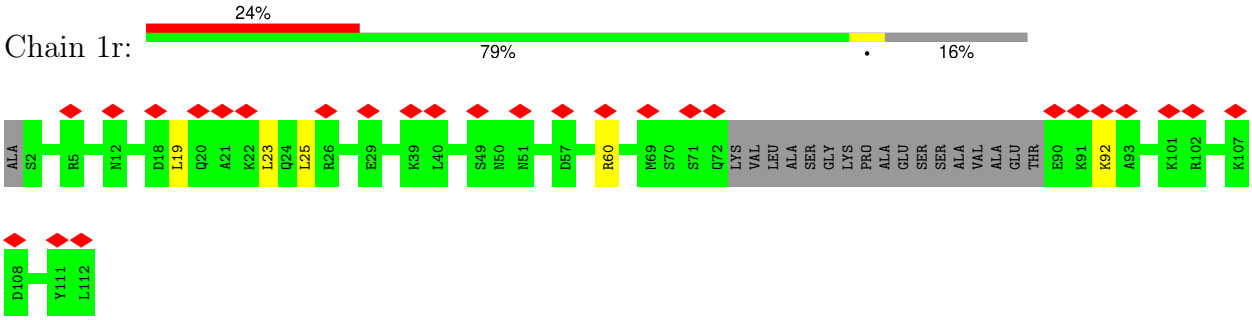
• Molecule 42: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 12

Chain 1q:



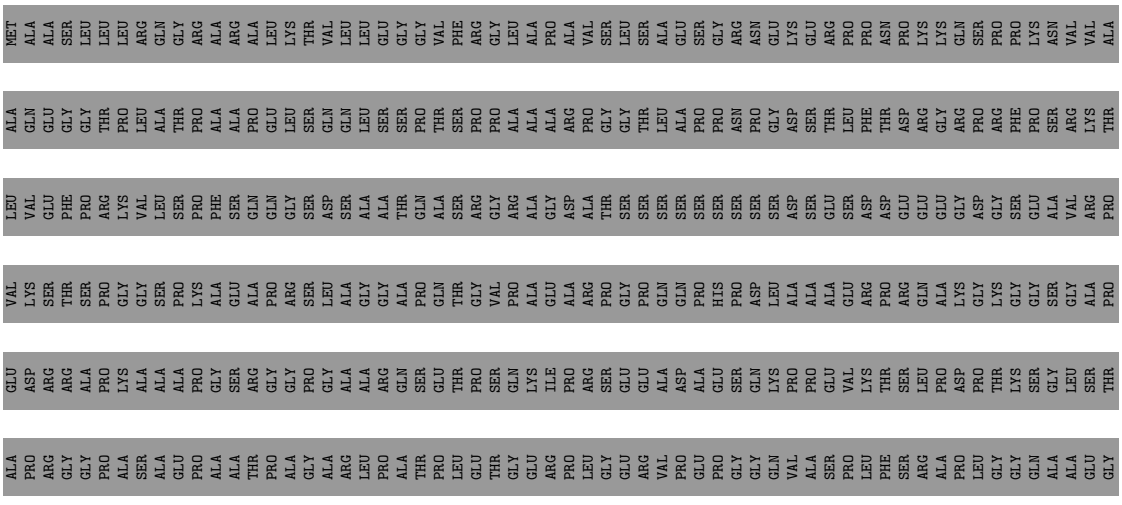
• Molecule 43: NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7

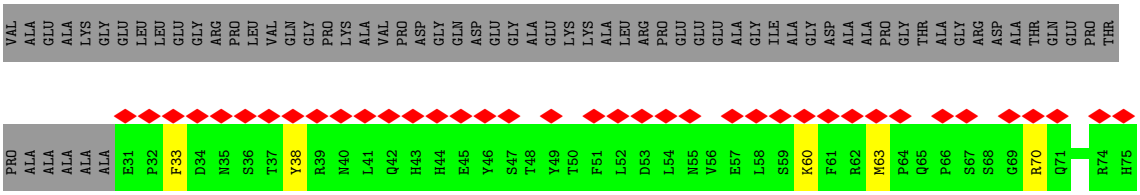
Chain 1r:



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

Chain 1s:




VAL ALA GLU ALA LYS GLY GLU LEU LEU GLU GLY ARG PRO LEU VAL GLN GLY PRO LYS ALA VAL PRO ASP GLY GLN ASP GLU GLY ALA GLU LYS LYS ALA LEU ARG PRO GLU GLU GLU ALA GLY ILE ALA GLY ASP ALA ALA PRO GLY THR ALA GLY ARG ASP ALA THR GLN GLU PRO THR
PRO ALA ALA ALA ALA ALA E31 P32 F33 D34 N35 S36 T37 Y38 R39 N40 L41 Q42 H43 H44 E45 Y46 S47 T48 Y49 T50 F51 L52 D53 L54 N55 V56 E57 L58 S59 K60 F61 R62 M63 P64 Q65 P66 S67 S68 G69 R70 Q71 R74 H75

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	30000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1300	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.782	Depositor
Minimum map value	-0.197	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	426.00003, 426.00003, 426.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.065, 1.065, 1.065	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	1A	0.27	0/938	0.58	0/1281
2	1B	0.28	0/1273	0.56	0/1722
3	1C	0.26	0/1797	0.56	0/2447
4	1D	0.28	0/3545	0.56	2/4806 (0.0%)
5	1E	0.28	0/1698	0.53	0/2311
6	1F	0.26	0/3401	0.54	0/4595
7	1G	0.25	0/5451	0.54	1/7387 (0.0%)
8	1H	0.28	0/2566	0.56	0/3509
9	1I	0.30	0/1443	0.61	0/1952
10	1J	0.29	0/1357	0.51	0/1840
11	1K	0.27	0/751	0.65	0/1018
12	1L	0.27	0/4939	0.55	1/6718 (0.0%)
13	1M	0.25	0/3713	0.53	1/5063 (0.0%)
14	1N	0.26	0/2765	0.55	1/3758 (0.0%)
15	1O	0.26	0/2650	0.51	1/3588 (0.0%)
16	1P	0.26	0/2828	0.52	1/3834 (0.0%)
17	1Q	0.28	0/1070	0.58	1/1446 (0.1%)
18	1R	0.27	0/755	0.58	0/1018
19	1S	0.27	0/711	0.66	0/956
20	1T	0.26	0/701	0.59	0/946
20	1U	0.28	0/706	0.58	0/954
21	1V	0.27	0/946	0.60	0/1281
22	1W	0.31	0/995	0.62	0/1340
23	1X	0.26	0/1436	0.59	3/1938 (0.2%)
24	1Y	0.24	0/1037	0.49	0/1404
25	1Z	0.27	0/1199	0.59	0/1617
26	1a	0.26	0/577	0.51	0/777
27	1b	0.27	0/664	0.52	0/912
28	1c	0.27	0/430	0.71	1/581 (0.2%)
29	1d	0.30	0/1016	0.56	1/1374 (0.1%)
30	1e	0.27	0/836	0.63	1/1118 (0.1%)
31	1f	0.28	0/499	0.63	0/673

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
32	1g	0.29	0/858	0.63	0/1165
33	1h	0.32	0/1184	0.58	0/1603
34	1i	0.28	0/1138	0.58	0/1551
35	1j	0.27	0/627	0.58	0/858
36	1k	0.28	0/668	0.59	0/903
37	1l	0.24	0/1365	0.53	1/1867 (0.1%)
38	1m	0.28	0/1092	0.56	0/1481
39	1n	0.27	0/1549	0.54	0/2098
40	1o	0.27	0/1069	0.58	0/1430
41	1p	0.25	0/1481	0.54	0/1997
42	1q	0.28	0/1253	0.58	0/1704
43	1r	0.27	0/777	0.62	0/1051
44	1s	0.31	0/394	0.70	0/533
All	All	0.27	0/68148	0.56	16/92405 (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
7	1G	0	1
8	1H	0	1
21	1V	0	1
29	1d	0	1
33	1h	0	1
34	1i	0	1
All	All	0	6

There are no bond length outliers.

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	1Q	113	PRO	CA-N-CD	-6.43	102.50	111.50
4	1D	83	LEU	CA-CB-CG	6.20	129.57	115.30
30	1e	12	ASP	CB-CG-OD1	5.98	123.68	118.30
13	1M	45	LEU	CA-CB-CG	5.98	129.04	115.30
7	1G	414	ASP	CB-CG-OD1	5.77	123.49	118.30
14	1N	213	LEU	CA-CB-CG	5.77	128.56	115.30
4	1D	429	ASP	CB-CG-OD1	5.64	123.38	118.30
37	1l	71	LEU	CA-CB-CG	5.49	127.93	115.30
23	1X	36	ASP	CB-CG-OD1	5.15	122.94	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
15	1O	105	LEU	CA-CB-CG	5.11	127.05	115.30
28	1c	38	ASP	CB-CG-OD1	5.11	122.90	118.30
23	1X	109	CYS	CA-CB-SG	5.09	123.17	114.00
29	1d	105	ASP	CB-CG-OD1	5.04	122.84	118.30
12	1L	573	MET	CA-CB-CG	5.04	121.86	113.30
23	1X	114	LEU	CA-CB-CG	5.04	126.88	115.30
16	1P	65	LEU	CA-CB-CG	5.00	126.81	115.30

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
7	1G	649	SER	Peptide
8	1H	91	MET	Peptide
21	1V	113	TRP	Peptide
29	1d	86	ARG	Sidechain
33	1h	111	ARG	Sidechain
34	1i	10	ARG	Sidechain

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	1A	113/115 (98%)	106 (94%)	6 (5%)	1 (1%)	14 45
2	1B	153/258 (59%)	145 (95%)	8 (5%)	0	100 100
3	1C	207/264 (78%)	191 (92%)	15 (7%)	1 (0%)	25 58
4	1D	427/430 (99%)	406 (95%)	21 (5%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	1E	212/249 (85%)	184 (87%)	27 (13%)	1 (0%)	25	58
6	1F	430/464 (93%)	408 (95%)	21 (5%)	1 (0%)	44	74
7	1G	697/727 (96%)	648 (93%)	47 (7%)	2 (0%)	37	69
8	1H	315/318 (99%)	297 (94%)	17 (5%)	1 (0%)	37	69
9	1I	174/239 (73%)	159 (91%)	15 (9%)	0	100	100
10	1J	171/175 (98%)	159 (93%)	9 (5%)	3 (2%)	7	34
11	1K	95/98 (97%)	88 (93%)	7 (7%)	0	100	100
12	1L	603/606 (100%)	554 (92%)	48 (8%)	1 (0%)	44	74
13	1M	456/459 (99%)	432 (95%)	24 (5%)	0	100	100
14	1N	344/347 (99%)	321 (93%)	23 (7%)	0	100	100
15	1O	318/357 (89%)	305 (96%)	13 (4%)	0	100	100
16	1P	340/377 (90%)	326 (96%)	14 (4%)	0	100	100
17	1Q	127/175 (73%)	118 (93%)	9 (7%)	0	100	100
18	1R	94/123 (76%)	90 (96%)	4 (4%)	0	100	100
19	1S	85/99 (86%)	83 (98%)	2 (2%)	0	100	100
20	1T	83/156 (53%)	78 (94%)	5 (6%)	0	100	100
20	1U	84/156 (54%)	77 (92%)	7 (8%)	0	100	100
21	1V	113/116 (97%)	100 (88%)	12 (11%)	1 (1%)	14	45
22	1W	113/128 (88%)	106 (94%)	6 (5%)	1 (1%)	14	45
23	1X	169/172 (98%)	160 (95%)	9 (5%)	0	100	100
24	1Y	137/141 (97%)	133 (97%)	3 (2%)	1 (1%)	19	52
25	1Z	139/144 (96%)	134 (96%)	5 (4%)	0	100	100
26	1a	68/70 (97%)	67 (98%)	1 (2%)	0	100	100
27	1b	81/84 (96%)	74 (91%)	7 (9%)	0	100	100
28	1c	47/76 (62%)	44 (94%)	3 (6%)	0	100	100
29	1d	117/122 (96%)	107 (92%)	9 (8%)	1 (1%)	14	45
30	1e	97/106 (92%)	84 (87%)	12 (12%)	1 (1%)	13	44
31	1f	55/58 (95%)	49 (89%)	6 (11%)	0	100	100
32	1g	98/154 (64%)	84 (86%)	14 (14%)	0	100	100
33	1h	136/189 (72%)	131 (96%)	5 (4%)	0	100	100
34	1i	126/128 (98%)	118 (94%)	7 (6%)	1 (1%)	16	49

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
35	1j	69/105 (66%)	63 (91%)	6 (9%)	0	100	100
36	1k	79/98 (81%)	73 (92%)	6 (8%)	0	100	100
37	1l	154/186 (83%)	141 (92%)	13 (8%)	0	100	100
38	1m	126/129 (98%)	119 (94%)	7 (6%)	0	100	100
39	1n	170/179 (95%)	160 (94%)	9 (5%)	1 (1%)	22	55
40	1o	120/137 (88%)	113 (94%)	7 (6%)	0	100	100
41	1p	171/176 (97%)	164 (96%)	7 (4%)	0	100	100
42	1q	143/145 (99%)	136 (95%)	7 (5%)	0	100	100
43	1r	90/112 (80%)	84 (93%)	6 (7%)	0	100	100
44	1s	43/471 (9%)	42 (98%)	1 (2%)	0	100	100
All	All	8189/9618 (85%)	7661 (94%)	510 (6%)	18 (0%)	45	74

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1A	46	SER
3	1C	89	ARG
7	1G	499	GLN
8	1H	208	VAL
10	1J	4	TYR
12	1L	30	ASN
24	1Y	46	ALA
30	1e	18	THR
7	1G	416	THR
10	1J	116	ILE
29	1d	3	SER
6	1F	33	LEU
34	1i	5	PRO
21	1V	108	ALA
5	1E	157	ASN
10	1J	151	THR
22	1W	96	VAL
39	1n	31	VAL

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	1A	100/100 (100%)	92 (92%)	8 (8%)	10	33
2	1B	131/212 (62%)	121 (92%)	10 (8%)	11	34
3	1C	191/228 (84%)	170 (89%)	21 (11%)	5	22
4	1D	371/371 (100%)	348 (94%)	23 (6%)	15	40
5	1E	183/207 (88%)	176 (96%)	7 (4%)	28	52
6	1F	346/368 (94%)	328 (95%)	18 (5%)	19	44
7	1G	588/610 (96%)	549 (93%)	39 (7%)	14	38
8	1H	274/275 (100%)	254 (93%)	20 (7%)	11	36
9	1I	151/201 (75%)	141 (93%)	10 (7%)	14	38
10	1J	139/141 (99%)	125 (90%)	14 (10%)	6	24
11	1K	84/85 (99%)	77 (92%)	7 (8%)	9	32
12	1L	539/540 (100%)	513 (95%)	26 (5%)	21	46
13	1M	408/409 (100%)	389 (95%)	19 (5%)	22	46
14	1N	310/311 (100%)	298 (96%)	12 (4%)	27	51
15	1O	283/307 (92%)	265 (94%)	18 (6%)	14	39
16	1P	296/323 (92%)	275 (93%)	21 (7%)	12	36
17	1Q	117/152 (77%)	106 (91%)	11 (9%)	7	27
18	1R	79/97 (81%)	74 (94%)	5 (6%)	15	40
19	1S	77/82 (94%)	67 (87%)	10 (13%)	3	18
20	1T	79/133 (59%)	73 (92%)	6 (8%)	11	34
20	1U	79/133 (59%)	76 (96%)	3 (4%)	28	52
21	1V	100/101 (99%)	92 (92%)	8 (8%)	10	33
22	1W	107/112 (96%)	102 (95%)	5 (5%)	22	46
23	1X	153/154 (99%)	145 (95%)	8 (5%)	19	44
24	1Y	101/102 (99%)	92 (91%)	9 (9%)	8	29
25	1Z	123/124 (99%)	115 (94%)	8 (6%)	14	39
26	1a	58/58 (100%)	55 (95%)	3 (5%)	19	44
27	1b	69/70 (99%)	62 (90%)	7 (10%)	6	24
28	1c	45/66 (68%)	38 (84%)	7 (16%)	2	14

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
29	1d	106/109 (97%)	98 (92%)	8 (8%)	11 35
30	1e	87/94 (93%)	73 (84%)	14 (16%)	2 13
31	1f	54/55 (98%)	51 (94%)	3 (6%)	17 43
32	1g	92/129 (71%)	81 (88%)	11 (12%)	4 19
33	1h	121/158 (77%)	104 (86%)	17 (14%)	3 17
34	1i	120/120 (100%)	112 (93%)	8 (7%)	13 38
35	1j	62/84 (74%)	55 (89%)	7 (11%)	4 21
36	1k	63/76 (83%)	59 (94%)	4 (6%)	15 40
37	1l	141/161 (88%)	132 (94%)	9 (6%)	14 39
38	1m	113/114 (99%)	107 (95%)	6 (5%)	19 44
39	1n	156/160 (98%)	145 (93%)	11 (7%)	12 36
40	1o	110/120 (92%)	100 (91%)	10 (9%)	7 28
41	1p	154/156 (99%)	144 (94%)	10 (6%)	14 39
42	1q	131/131 (100%)	124 (95%)	7 (5%)	19 44
43	1r	85/97 (88%)	80 (94%)	5 (6%)	16 41
44	1s	44/351 (12%)	39 (89%)	5 (11%)	4 21
All	All	7220/8187 (88%)	6722 (93%)	498 (7%)	15 37

All (498) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1A	22	PHE
1	1A	44	MET
1	1A	52	SER
1	1A	68	GLU
1	1A	72	LEU
1	1A	79	SER
1	1A	84	LEU
1	1A	108	GLN
2	1B	35	ASP
2	1B	44	SER
2	1B	61	HIS
2	1B	66	ARG
2	1B	101	ARG
2	1B	129	SER
2	1B	137	ASP

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Mol	Chain	Res	Type
2	1B	162	GLN
2	1B	171	LYS
2	1B	173	LEU
3	1C	8	ARG
3	1C	20	LYS
3	1C	27	GLN
3	1C	39	GLN
3	1C	44	CYS
3	1C	73	LYS
3	1C	95	ASN
3	1C	98	SER
3	1C	108	LYS
3	1C	110	TYR
3	1C	129	TRP
3	1C	133	GLU
3	1C	154	ASP
3	1C	175	ARG
3	1C	177	ASP
3	1C	182	ARG
3	1C	192	GLN
3	1C	194	PHE
3	1C	199	LEU
3	1C	201	SER
3	1C	209	TYR
4	1D	20	TYR
4	1D	35	ASP
4	1D	46	ASN
4	1D	51	PHE
4	1D	59	HIS
4	1D	69	SER
4	1D	72	MET
4	1D	85	ARG
4	1D	112	MET
4	1D	164	MET
4	1D	180	PHE
4	1D	181	TYR
4	1D	193	TYR
4	1D	220	PHE
4	1D	223	ASP
4	1D	292	ASP
4	1D	297	TYR
4	1D	332	PRO

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Mol	Chain	Res	Type
4	1D	342	MET
4	1D	387	TYR
4	1D	389	CYS
4	1D	396	PHE
4	1D	407	LYS
5	1E	11	ASP
5	1E	18	ASP
5	1E	27	ASN
5	1E	71	GLU
5	1E	78	MET
5	1E	153	MET
5	1E	160	TYR
6	1F	8	LYS
6	1F	28	ARG
6	1F	61	LYS
6	1F	80	SER
6	1F	84	LYS
6	1F	92	TYR
6	1F	105	CYS
6	1F	108	ARG
6	1F	154	ARG
6	1F	157	TYR
6	1F	164	LYS
6	1F	172	ASP
6	1F	184	TYR
6	1F	212	ASP
6	1F	353	PHE
6	1F	356	HIS
6	1F	385	ARG
6	1F	409	ASP
7	1G	17	SER
7	1G	39	ARG
7	1G	69	CYS
7	1G	74	MET
7	1G	77	TRP
7	1G	82	ASN
7	1G	115	ASP
7	1G	129	ARG
7	1G	139	ASP
7	1G	161	ARG
7	1G	170	ASP
7	1G	190	MET

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Mol	Chain	Res	Type
7	1G	231	MET
7	1G	246	GLU
7	1G	253	ARG
7	1G	255	HIS
7	1G	257	ASP
7	1G	302	ARG
7	1G	308	GLN
7	1G	349	PHE
7	1G	394	ARG
7	1G	414	ASP
7	1G	424	ASP
7	1G	425	SER
7	1G	439	PHE
7	1G	448	LYS
7	1G	472	ASN
7	1G	534	ARG
7	1G	546	GLN
7	1G	549	HIS
7	1G	596	ASP
7	1G	609	MET
7	1G	622	ARG
7	1G	623	LEU
7	1G	630	LEU
7	1G	665	GLN
7	1G	679	ARG
7	1G	689	LYS
7	1G	704	CYS
8	1H	3	MET
8	1H	35	LYS
8	1H	85	MET
8	1H	110	SER
8	1H	114	TYR
8	1H	115	SER
8	1H	142	TYR
8	1H	170	GLU
8	1H	195	ARG
8	1H	211	PHE
8	1H	220	PHE
8	1H	223	PHE
8	1H	224	PHE
8	1H	233	MET
8	1H	248	ASP

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Mol	Chain	Res	Type
8	1H	274	ARG
8	1H	282	TYR
8	1H	286	MET
8	1H	287	HIS
8	1H	300	LEU
9	1I	14	MET
9	1I	40	TYR
9	1I	43	ARG
9	1I	104	ARG
9	1I	109	TYR
9	1I	116	CYS
9	1I	129	ASP
9	1I	137	PHE
9	1I	140	SER
9	1I	153	LYS
10	1J	17	PHE
10	1J	51	PHE
10	1J	60	TYR
10	1J	85	SER
10	1J	86	ASN
10	1J	87	LYS
10	1J	93	PHE
10	1J	98	MET
10	1J	106	TYR
10	1J	109	LYS
10	1J	132	ASP
10	1J	135	PHE
10	1J	146	LEU
10	1J	175	ASN
11	1K	12	PHE
11	1K	21	MET
11	1K	24	SER
11	1K	37	MET
11	1K	53	PHE
11	1K	58	MET
11	1K	98	CYS
12	1L	42	TYR
12	1L	83	ASP
12	1L	95	PHE
12	1L	105	MET
12	1L	133	THR
12	1L	163	ASP

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Mol	Chain	Res	Type
12	1L	182	PHE
12	1L	206	ASN
12	1L	227	PHE
12	1L	262	ARG
12	1L	264	TYR
12	1L	274	GLN
12	1L	276	MET
12	1L	287	PHE
12	1L	300	LYS
12	1L	313	MET
12	1L	340	PHE
12	1L	383	MET
12	1L	411	MET
12	1L	479	ASN
12	1L	482	MET
12	1L	486	MET
12	1L	496	MET
12	1L	571	MET
12	1L	573	MET
12	1L	581	LYS
13	1M	10	MET
13	1M	16	TRP
13	1M	42	LEU
13	1M	52	PHE
13	1M	57	PHE
13	1M	59	ASP
13	1M	66	LEU
13	1M	130	LEU
13	1M	135	ARG
13	1M	174	LEU
13	1M	187	SER
13	1M	213	HIS
13	1M	218	LYS
13	1M	281	ASP
13	1M	316	MET
13	1M	340	ARG
13	1M	361	MET
13	1M	387	SER
13	1M	437	MET
14	1N	40	MET
14	1N	54	GLU
14	1N	81	SER

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Mol	Chain	Res	Type
14	1N	159	MET
14	1N	170	LEU
14	1N	179	MET
14	1N	254	LEU
14	1N	261	MET
14	1N	305	PHE
14	1N	313	MET
14	1N	323	MET
14	1N	324	LYS
15	1O	3	TYR
15	1O	23	LYS
15	1O	35	LYS
15	1O	37	ARG
15	1O	51	PHE
15	1O	67	LYS
15	1O	125	GLU
15	1O	146	LYS
15	1O	167	HIS
15	1O	184	GLN
15	1O	188	ASN
15	1O	207	LYS
15	1O	208	LYS
15	1O	240	TYR
15	1O	253	ASP
15	1O	265	ASN
15	1O	318	TRP
15	1O	320	LYS
16	1P	29	PHE
16	1P	41	MET
16	1P	51	CYS
16	1P	58	HIS
16	1P	65	LEU
16	1P	78	LYS
16	1P	98	GLU
16	1P	102	LYS
16	1P	108	ASP
16	1P	170	ASP
16	1P	177	ARG
16	1P	198	LYS
16	1P	209	ASP
16	1P	222	ASP
16	1P	224	LYS

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Mol	Chain	Res	Type
16	1P	236	TYR
16	1P	268	ARG
16	1P	291	ASP
16	1P	322	ARG
16	1P	331	MET
16	1P	335	LYS
17	1Q	6	GLN
17	1Q	18	ASP
17	1Q	38	PHE
17	1Q	42	ARG
17	1Q	45	MET
17	1Q	95	PHE
17	1Q	102	SER
17	1Q	103	PHE
17	1Q	108	ARG
17	1Q	125	ASN
17	1Q	126	LYS
18	1R	20	ASP
18	1R	30	ASP
18	1R	31	ARG
18	1R	75	LEU
18	1R	76	ASP
19	1S	25	ARG
19	1S	26	SER
19	1S	38	LYS
19	1S	42	GLU
19	1S	47	ASN
19	1S	55	ARG
19	1S	59	ASP
19	1S	82	SER
19	1S	88	ARG
19	1S	97	LYS
20	1T	22	TYR
20	1T	47	GLN
20	1T	60	PHE
20	1T	66	ASP
20	1T	69	LYS
20	1T	84	LYS
20	1U	33	ASN
20	1U	52	MET
20	1U	83	LYS
21	1V	6	LYS

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Mol	Chain	Res	Type
21	1V	39	LYS
21	1V	96	TRP
21	1V	98	PRO
21	1V	99	TRP
21	1V	102	LEU
21	1V	112	LYS
21	1V	113	TRP
22	1W	18	LYS
22	1W	36	TYR
22	1W	40	TYR
22	1W	53	ASP
22	1W	68	MET
23	1X	39	ASN
23	1X	71	ARG
23	1X	81	PHE
23	1X	89	ASP
23	1X	97	ARG
23	1X	98	HIS
23	1X	107	ASP
23	1X	164	SER
24	1Y	2	LYS
24	1Y	19	ARG
24	1Y	54	ARG
24	1Y	57	ARG
24	1Y	74	CYS
24	1Y	90	PHE
24	1Y	114	CYS
24	1Y	117	MET
24	1Y	126	MET
25	1Z	5	LYS
25	1Z	7	LYS
25	1Z	10	MET
25	1Z	25	LEU
25	1Z	30	LEU
25	1Z	82	ARG
25	1Z	120	MET
25	1Z	140	PHE
26	1a	1	MET
26	1a	50	ARG
26	1a	51	ASP
27	1b	6	SER
27	1b	27	LEU

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Mol	Chain	Res	Type
27	1b	52	TYR
27	1b	61	ASN
27	1b	62	MET
27	1b	64	ASP
27	1b	77	LEU
28	1c	1	LYS
28	1c	2	PHE
28	1c	21	LEU
28	1c	27	LEU
28	1c	30	TYR
28	1c	40	LEU
28	1c	44	ARG
29	1d	2	MET
29	1d	13	PHE
29	1d	16	ASN
29	1d	19	ARG
29	1d	50	ARG
29	1d	64	TYR
29	1d	77	LYS
29	1d	86	ARG
30	1e	2	PHE
30	1e	8	ARG
30	1e	11	LEU
30	1e	12	ASP
30	1e	21	SER
30	1e	23	GLU
30	1e	54	GLU
30	1e	68	ARG
30	1e	70	LYS
30	1e	75	LEU
30	1e	76	SER
30	1e	85	LEU
30	1e	91	TYR
30	1e	98	LEU
31	1f	1	MET
31	1f	22	PHE
31	1f	57	LYS
32	1g	36	ASN
32	1g	57	ASN
32	1g	70	LEU
32	1g	76	PHE
32	1g	84	ARG

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Mol	Chain	Res	Type
32	1g	87	GLU
32	1g	91	ARG
32	1g	99	TYR
32	1g	112	CYS
32	1g	117	LYS
32	1g	122	GLU
33	1h	7	ARG
33	1h	18	ASP
33	1h	26	ARG
33	1h	27	PHE
33	1h	46	PHE
33	1h	59	TYR
33	1h	62	GLU
33	1h	73	ARG
33	1h	80	TYR
33	1h	81	ASP
33	1h	85	LYS
33	1h	95	GLN
33	1h	100	LYS
33	1h	102	GLU
33	1h	111	ARG
33	1h	117	ARG
33	1h	130	LYS
34	1i	5	PRO
34	1i	9	LEU
34	1i	20	ARG
34	1i	23	LYS
34	1i	49	PHE
34	1i	83	TYR
34	1i	92	LYS
34	1i	100	LYS
35	1j	27	PHE
35	1j	29	SER
35	1j	34	PHE
35	1j	40	PHE
35	1j	53	TYR
35	1j	61	ASP
35	1j	67	LEU
36	1k	11	SER
36	1k	18	TYR
36	1k	22	LYS
36	1k	85	TYR

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Mol	Chain	Res	Type
37	1l	8	MET
37	1l	30	ARG
37	1l	42	MET
37	1l	52	ASP
37	1l	70	ARG
37	1l	83	MET
37	1l	108	PHE
37	1l	114	PHE
37	1l	115	MET
38	1m	21	GLU
38	1m	30	LYS
38	1m	35	ARG
38	1m	41	ARG
38	1m	69	TYR
38	1m	76	TYR
39	1n	8	TYR
39	1n	46	ARG
39	1n	47	PHE
39	1n	49	GLU
39	1n	61	GLN
39	1n	65	GLN
39	1n	126	ARG
39	1n	130	GLU
39	1n	140	GLN
39	1n	161	ASP
39	1n	178	MET
40	1o	6	ARG
40	1o	28	TYR
40	1o	33	ARG
40	1o	38	MET
40	1o	47	ASP
40	1o	57	TYR
40	1o	64	GLN
40	1o	103	ARG
40	1o	113	ARG
40	1o	116	GLN
41	1p	34	LYS
41	1p	63	TYR
41	1p	79	LYS
41	1p	84	MET
41	1p	95	TYR
41	1p	96	LYS

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Mol	Chain	Res	Type
41	1p	126	LYS
41	1p	133	GLN
41	1p	138	PHE
41	1p	142	TYR
42	1q	1	MET
42	1q	8	ARG
42	1q	75	TRP
42	1q	95	ASP
42	1q	96	ASP
42	1q	144	TYR
42	1q	145	LYS
43	1r	19	LEU
43	1r	23	LEU
43	1r	25	LEU
43	1r	60	ARG
43	1r	92	LYS
44	1s	33	PHE
44	1s	38	TYR
44	1s	60	LYS
44	1s	63	MET
44	1s	70	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (34) such sidechains are listed below:

Mol	Chain	Res	Type
1	1A	80	GLN
3	1C	88	ASN
4	1D	149	ASN
5	1E	57	GLN
6	1F	324	GLN
7	1G	436	ASN
7	1G	475	GLN
8	1H	235	ASN
12	1L	199	GLN
13	1M	220	HIS
14	1N	83	GLN
14	1N	171	ASN
14	1N	310	ASN
16	1P	134	HIS
16	1P	203	GLN
17	1Q	44	ASN
19	1S	21	HIS

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Mol	Chain	Res	Type
22	1W	51	GLN
22	1W	72	HIS
29	1d	79	GLN
30	1e	44	HIS
33	1h	69	HIS
34	1i	47	ASN
34	1i	125	GLN
35	1j	13	GLN
37	1l	87	ASN
38	1m	74	ASN
40	1o	116	GLN
41	1p	106	GLN
41	1p	158	GLN
42	1q	13	GLN
42	1q	31	ASN
43	1r	109	GLN
44	1s	44	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 46 ligands modelled in this entry, 3 are monoatomic - leaving 43 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
51	CDL	1N	402	-	66,66,99	0.30	0	72,78,111	0.46	0
46	PC1	1B	203	-	47,47,53	0.27	0	53,55,61	0.37	0
46	PC1	1M	502	-	34,34,53	0.32	0	40,42,61	0.36	0
46	PC1	1H	401	-	53,53,53	0.27	0	59,61,61	0.40	0
51	CDL	1N	401	-	64,64,99	0.32	0	70,76,111	0.36	0
47	SF4	1B	201	2	0,12,12	-	-	-		
47	SF4	1G	802	7	0,12,12	-	-	-		
46	PC1	1A	202	-	25,25,53	0.36	0	29,32,61	0.53	0
47	SF4	1I	202	9	0,12,12	-	-	-		
47	SF4	1G	801	7	0,12,12	-	-	-		
45	3PE	1f	102	-	50,50,50	0.29	0	53,55,55	0.99	3 (5%)
46	PC1	1h	201	-	46,46,53	0.28	0	52,54,61	0.30	0
48	FES	1E	301	5	0,4,4	-	-	-		
47	SF4	1I	201	9	0,12,12	-	-	-		
51	CDL	1H	402	-	50,50,99	0.36	0	56,62,111	0.54	1 (1%)
45	3PE	1M	503	-	37,37,50	0.30	0	40,42,55	0.39	0
47	SF4	1F	502	6	0,12,12	-	-	-		
45	3PE	1M	501	-	37,37,50	0.31	0	40,42,55	0.46	0
45	3PE	1D	901	-	45,45,50	0.28	0	48,50,55	0.33	0
54	NDP	1P	501	-	47,52,52	0.65	0	61,80,80	0.92	2 (3%)
48	FES	1G	803	7	0,4,4	-	-	-		
46	PC1	1Z	201	-	33,33,53	0.33	0	39,41,61	0.39	0
51	CDL	1X	201	-	85,85,99	0.29	0	91,97,111	0.33	0
46	PC1	1Y	803	-	45,45,53	0.28	0	51,53,61	0.33	0
45	3PE	1A	201	-	30,30,50	0.33	0	33,35,55	0.40	0
45	3PE	1Y	802	-	39,39,50	0.30	0	42,44,55	0.37	0
46	PC1	1d	201	-	38,38,53	0.31	0	44,46,61	0.44	0
46	PC1	1B	202	-	33,33,53	0.32	0	39,41,61	0.33	0
49	FMN	1F	501	-	33,33,33	0.59	0	48,50,50	0.65	1 (2%)
52	GTP	1O	401	53	29,34,34	1.03	3 (10%)	35,54,54	0.80	0
46	PC1	1f	101	-	33,33,53	0.30	0	39,41,61	0.36	0
56	EHZ	1n	201	-	31,36,37	0.17	0	36,44,47	1.14	1 (2%)
45	3PE	1Y	801	-	30,30,50	0.35	0	33,35,55	1.28	4 (12%)
46	PC1	1I	203	-	43,43,53	0.30	0	49,51,61	0.43	0
45	3PE	1L	701	-	45,45,50	0.28	0	48,50,55	0.38	0
46	PC1	1L	703	-	37,37,53	0.29	0	43,45,61	0.32	0
56	EHZ	1W	201	-	31,36,37	0.21	0	36,44,47	1.44	1 (2%)
46	PC1	1J	201	-	31,31,53	0.33	0	37,39,61	0.35	0
45	3PE	1Y	804	-	34,34,50	0.31	0	37,39,55	0.57	1 (2%)
57	MYR	1l	201	-	13,14,15	0.30	0	12,13,15	0.32	0
45	3PE	1L	704	-	41,41,50	0.30	0	44,46,55	0.36	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
51	CDL	1a	101	-	60,60,99	0.33	0	66,72,111	0.43	0
51	CDL	1L	702	-	75,75,99	0.31	0	81,87,111	0.37	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
51	CDL	1N	402	-	-	6/76/76/110	-
46	PC1	1B	203	-	-	8/51/51/57	-
46	PC1	1M	502	-	-	3/38/38/57	-
46	PC1	1H	401	-	-	3/57/57/57	-
51	CDL	1N	401	-	-	11/75/75/110	-
47	SF4	1B	201	2	-	-	0/6/5/5
47	SF4	1G	802	7	-	-	0/6/5/5
46	PC1	1A	202	-	-	4/28/28/57	-
47	SF4	1I	202	9	-	-	0/6/5/5
47	SF4	1G	801	7	-	-	0/6/5/5
45	3PE	1f	102	-	-	10/54/54/54	-
46	PC1	1h	201	-	-	18/50/50/57	-
48	FES	1E	301	5	-	-	0/1/1/1
47	SF4	1I	201	9	-	-	0/6/5/5
51	CDL	1H	402	-	-	7/61/61/110	-
45	3PE	1M	503	-	-	8/41/41/54	-
47	SF4	1F	502	6	-	-	0/6/5/5
45	3PE	1M	501	-	-	6/41/41/54	-
45	3PE	1D	901	-	-	2/49/49/54	-
54	NDP	1P	501	-	-	9/30/77/77	0/5/5/5
48	FES	1G	803	7	-	-	0/1/1/1
46	PC1	1Z	201	-	-	1/37/37/57	-
51	CDL	1X	201	-	-	19/96/96/110	-
46	PC1	1Y	803	-	-	6/49/49/57	-
45	3PE	1A	201	-	-	3/34/34/54	-
45	3PE	1Y	802	-	-	11/43/43/54	-
46	PC1	1d	201	-	-	11/42/42/57	-
46	PC1	1B	202	-	-	9/37/37/57	-
49	FMN	1F	501	-	-	0/18/18/18	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
52	GTP	1O	401	53	-	1/18/38/38	0/3/3/3
46	PC1	1f	101	-	-	10/36/36/57	-
56	EHZ	1n	201	-	-	7/42/44/45	-
45	3PE	1Y	801	-	-	6/34/34/54	-
46	PC1	1I	203	-	-	7/47/47/57	-
45	3PE	1L	701	-	-	4/49/49/54	-
46	PC1	1L	703	-	-	4/40/40/57	-
56	EHZ	1W	201	-	-	13/42/44/45	-
46	PC1	1J	201	-	-	5/35/35/57	-
45	3PE	1Y	804	-	-	6/38/38/54	-
57	MYR	1l	201	-	-	3/12/12/13	-
45	3PE	1L	704	-	-	2/45/45/54	-
51	CDL	1a	101	-	-	4/71/71/110	-
51	CDL	1L	702	-	-	10/86/86/110	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	1O	401	GTP	C5-C6	-2.75	1.42	1.47
52	1O	401	GTP	C8-N7	-2.17	1.31	1.34
52	1O	401	GTP	C5-C4	-2.01	1.38	1.43

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
56	1W	201	EHZ	C10-S1-C9	8.05	125.63	101.84
56	1n	201	EHZ	C10-S1-C9	6.33	120.56	101.84
45	1Y	801	3PE	O21-C21-C22	5.39	123.14	111.48
45	1f	102	3PE	O21-C21-C22	5.06	122.43	111.48
54	1P	501	NDP	P2B-O2B-C2B	-4.54	111.30	123.43
45	1f	102	3PE	O21-C21-O22	-2.81	117.15	123.70
45	1Y	801	3PE	O21-C21-O22	-2.53	117.78	123.70
45	1f	102	3PE	C2-O21-C21	2.34	123.40	117.80
45	1Y	801	3PE	C2-O21-C21	2.28	123.25	117.80
54	1P	501	NDP	C5A-C6A-N6A	2.28	123.78	120.31
45	1Y	801	3PE	O21-C2-C3	2.15	116.05	108.34
49	1F	501	FMN	C4-N3-C2	-2.10	121.92	125.64
51	1H	402	CDL	OB6-CB5-C51	2.08	115.99	111.48
45	1Y	804	3PE	O21-C21-C22	2.05	115.91	111.48

There are no chirality outliers.

All (237) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	1M	501	3PE	C1-O11-P-O14
45	1M	501	3PE	C12-C11-O13-P
45	1M	503	3PE	C1-O11-P-O13
45	1Y	801	3PE	C2-C1-O11-P
45	1Y	801	3PE	O32-C31-O31-C3
45	1Y	801	3PE	C32-C31-O31-C3
45	1Y	801	3PE	O22-C21-O21-C2
45	1Y	801	3PE	C22-C21-O21-C2
45	1Y	802	3PE	C1-O11-P-O14
45	1Y	802	3PE	O21-C2-C3-O31
45	1Y	802	3PE	O32-C31-O31-C3
45	1Y	802	3PE	C32-C31-O31-C3
45	1Y	804	3PE	O22-C21-O21-C2
45	1Y	804	3PE	C22-C21-O21-C2
45	1f	102	3PE	C2-C1-O11-P
45	1f	102	3PE	O22-C21-O21-C2
45	1f	102	3PE	C22-C21-O21-C2
46	1A	202	PC1	C11-O13-P-O12
46	1A	202	PC1	C11-O13-P-O11
46	1A	202	PC1	C12-C11-O13-P
46	1B	202	PC1	C11-O13-P-O14
46	1B	202	PC1	C1-O11-P-O13
46	1B	202	PC1	C2-C1-O11-P
46	1B	202	PC1	O32-C31-O31-C3
46	1B	202	PC1	C32-C31-O31-C3
46	1B	203	PC1	C11-O13-P-O14
46	1I	203	PC1	C11-O13-P-O11
46	1I	203	PC1	C1-O11-P-O14
46	1I	203	PC1	O32-C31-O31-C3
46	1I	203	PC1	C32-C31-O31-C3
46	1J	201	PC1	C11-O13-P-O12
46	1J	201	PC1	C11-O13-P-O14
46	1J	201	PC1	C11-O13-P-O11
46	1L	703	PC1	C11-O13-P-O14
46	1M	502	PC1	C1-O11-P-O14
46	1Y	803	PC1	C11-O13-P-O14
46	1Y	803	PC1	C1-O11-P-O14
46	1d	201	PC1	C11-O13-P-O14
46	1d	201	PC1	C11-O13-P-O11
46	1d	201	PC1	O13-C11-C12-N

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Mol	Chain	Res	Type	Atoms
46	1d	201	PC1	O22-C21-O21-C2
46	1d	201	PC1	C22-C21-O21-C2
46	1d	201	PC1	O32-C31-O31-C3
46	1d	201	PC1	C32-C31-O31-C3
46	1f	101	PC1	C11-O13-P-O11
46	1f	101	PC1	C2-C1-O11-P
46	1f	101	PC1	O32-C31-O31-C3
46	1f	101	PC1	C32-C31-O31-C3
46	1h	201	PC1	C11-O13-P-O12
46	1h	201	PC1	C11-O13-P-O14
46	1h	201	PC1	C11-O13-P-O11
46	1h	201	PC1	C2-C1-O11-P
46	1h	201	PC1	O32-C31-O31-C3
46	1h	201	PC1	C32-C31-O31-C3
51	1H	402	CDL	C1-CA2-OA2-PA1
51	1H	402	CDL	CA3-OA5-PA1-OA3
51	1H	402	CDL	OB7-CB5-OB6-CB4
51	1H	402	CDL	C51-CB5-OB6-CB4
51	1L	702	CDL	C1-CA2-OA2-PA1
51	1L	702	CDL	OA6-CA4-CA6-OA8
51	1N	401	CDL	CB2-OB2-PB2-OB3
51	1N	402	CDL	CB2-OB2-PB2-OB4
51	1N	402	CDL	CB2-OB2-PB2-OB5
51	1X	201	CDL	CA2-OA2-PA1-OA3
51	1X	201	CDL	CA2-OA2-PA1-OA4
51	1X	201	CDL	CA2-OA2-PA1-OA5
51	1X	201	CDL	CA3-OA5-PA1-OA3
51	1X	201	CDL	CA4-CA3-OA5-PA1
51	1X	201	CDL	C1-CB2-OB2-PB2
51	1X	201	CDL	OB9-CB7-OB8-CB6
51	1X	201	CDL	C71-CB7-OB8-CB6
51	1a	101	CDL	CA3-OA5-PA1-OA3
54	1P	501	NDP	C5D-O5D-PN-O1N
56	1W	201	EHZ	N2-C15-C16-C17
56	1W	201	EHZ	N2-C15-C16-O5
56	1W	201	EHZ	O4-C15-C16-C17
56	1W	201	EHZ	O4-C15-C16-O5
56	1W	201	EHZ	C15-C16-C17-C19
56	1W	201	EHZ	C16-C17-C20-O6
56	1W	201	EHZ	C18-C17-C20-O6
56	1W	201	EHZ	C19-C17-C20-O6
56	1W	201	EHZ	O2-C9-S1-C10

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Mol	Chain	Res	Type	Atoms
56	1W	201	EHZ	C8-C9-S1-C10
56	1n	201	EHZ	C7-C8-C9-S1
56	1n	201	EHZ	O2-C9-S1-C10
56	1n	201	EHZ	C8-C9-S1-C10
57	1l	201	MYR	O1-C1-C2-C3
54	1P	501	NDP	C2D-C1D-N1N-C2N
46	1d	201	PC1	C2-C1-O11-P
51	1N	401	CDL	C1-CA2-OA2-PA1
46	1h	201	PC1	C11-C12-N-C13
46	1h	201	PC1	C11-C12-N-C15
46	1B	203	PC1	O21-C2-C3-O31
54	1P	501	NDP	C2D-C1D-N1N-C6N
46	1h	201	PC1	C11-C12-N-C14
46	1f	101	PC1	C37-C38-C39-C3A
45	1M	501	3PE	C25-C26-C27-C28
46	1Z	201	PC1	C21-C22-C23-C24
51	1N	401	CDL	C37-C38-C39-C40
45	1L	704	3PE	C2-C1-O11-P
51	1X	201	CDL	C33-C34-C35-C36
46	1B	203	PC1	C3A-C3B-C3C-C3D
57	1l	201	MYR	C2-C3-C4-C5
45	1f	102	3PE	O21-C2-C3-O31
46	1h	201	PC1	C36-C37-C38-C39
45	1Y	802	3PE	C1-C2-C3-O31
46	1B	203	PC1	C1-C2-C3-O31
45	1Y	804	3PE	C32-C33-C34-C35
46	1I	203	PC1	C21-C22-C23-C24
45	1D	901	3PE	C24-C25-C26-C27
51	1N	401	CDL	CA4-CA3-OA5-PA1
54	1P	501	NDP	C4B-C5B-O5B-PA
45	1M	503	3PE	O31-C31-C32-C33
46	1Y	803	PC1	C33-C34-C35-C36
51	1X	201	CDL	C60-C61-C62-C63
51	1N	401	CDL	CA3-CA4-CA6-OA8
46	1h	201	PC1	C31-C32-C33-C34
46	1I	203	PC1	C32-C33-C34-C35
46	1f	101	PC1	O11-C1-C2-O21
51	1H	402	CDL	OB5-CB3-CB4-OB6
51	1X	201	CDL	C24-C25-C26-C27
46	1H	401	PC1	C3B-C3C-C3D-C3E
51	1L	702	CDL	C58-C59-C60-C61
51	1H	402	CDL	CA4-CA3-OA5-PA1

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Mol	Chain	Res	Type	Atoms
51	1N	401	CDL	C1-CB2-OB2-PB2
51	1a	101	CDL	CA4-CA3-OA5-PA1
56	1n	201	EHZ	C3-C4-C5-C6
51	1N	402	CDL	OB6-CB4-CB6-OB8
51	1L	702	CDL	C40-C41-C42-C43
46	1B	202	PC1	C31-C32-C33-C34
51	1L	702	CDL	C54-C55-C56-C57
46	1h	201	PC1	C2B-C2C-C2D-C2E
45	1f	102	3PE	O11-C1-C2-O21
51	1L	702	CDL	CA3-CA4-CA6-OA8
45	1A	201	3PE	C12-C11-O13-P
45	1L	701	3PE	C12-C11-O13-P
45	1L	704	3PE	C12-C11-O13-P
45	1Y	802	3PE	C12-C11-O13-P
45	1Y	804	3PE	C12-C11-O13-P
45	1f	102	3PE	C12-C11-O13-P
46	1B	202	PC1	C12-C11-O13-P
46	1B	203	PC1	C12-C11-O13-P
46	1J	201	PC1	C12-C11-O13-P
46	1Y	803	PC1	C12-C11-O13-P
46	1d	201	PC1	C12-C11-O13-P
46	1h	201	PC1	C12-C11-O13-P
45	1M	503	3PE	O21-C2-C3-O31
46	1B	203	PC1	C39-C3A-C3B-C3C
51	1L	702	CDL	CA4-CA3-OA5-PA1
46	1A	202	PC1	O13-C11-C12-N
46	1J	201	PC1	O13-C11-C12-N
46	1L	703	PC1	O13-C11-C12-N
46	1Y	803	PC1	O13-C11-C12-N
46	1h	201	PC1	O13-C11-C12-N
51	1X	201	CDL	C52-C51-CB5-OB6
46	1f	101	PC1	C36-C37-C38-C39
51	1N	401	CDL	C42-C43-C44-C45
46	1f	101	PC1	O11-C1-C2-C3
56	1W	201	EHZ	C15-C16-C17-C20
46	1B	203	PC1	C37-C38-C39-C3A
52	1O	401	GTP	C4'-C5'-O5'-PA
45	1M	501	3PE	O11-C1-C2-O21
45	1Y	801	3PE	O11-C1-C2-O21
45	1M	503	3PE	C34-C35-C36-C37
54	1P	501	NDP	O4D-C1D-N1N-C6N
51	1N	401	CDL	OA6-CA4-CA6-OA8

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Mol	Chain	Res	Type	Atoms
45	1M	503	3PE	C1-C2-C3-O31
56	1W	201	EHZ	C10-C11-N1-C12
45	1A	201	3PE	C11-O13-P-O14
45	1M	503	3PE	C11-O13-P-O14
45	1Y	802	3PE	C1-O11-P-O13
46	1L	703	PC1	C11-O13-P-O11
46	1M	502	PC1	C1-O11-P-O13
46	1d	201	PC1	C11-O13-P-O12
46	1f	101	PC1	C11-O13-P-O14
46	1h	201	PC1	C1-O11-P-O14
51	1L	702	CDL	CA2-OA2-PA1-OA3
51	1N	402	CDL	CA2-OA2-PA1-OA3
56	1n	201	EHZ	O5-C16-C17-C20
51	1N	401	CDL	C32-C33-C34-C35
45	1D	901	3PE	C2-C1-O11-P
51	1X	201	CDL	C1-CA2-OA2-PA1
54	1P	501	NDP	O4D-C1D-N1N-C2N
45	1M	501	3PE	C21-C22-C23-C24
45	1M	501	3PE	O11-C1-C2-C3
45	1Y	802	3PE	O11-C1-C2-C3
45	1Y	802	3PE	O11-C1-C2-O21
45	1Y	804	3PE	C35-C36-C37-C38
46	1Y	803	PC1	C27-C28-C29-C2A
46	1B	203	PC1	C35-C36-C37-C38
46	1B	202	PC1	O21-C21-C22-C23
54	1P	501	NDP	C2B-O2B-P2B-O3X
51	1X	201	CDL	C32-C33-C34-C35
46	1d	201	PC1	C33-C34-C35-C36
51	1X	201	CDL	C54-C55-C56-C57
46	1H	401	PC1	C24-C25-C26-C27
45	1L	701	3PE	C35-C36-C37-C38
45	1M	503	3PE	O32-C31-C32-C33
45	1L	701	3PE	C2-C1-O11-P
51	1H	402	CDL	OB5-CB3-CB4-CB6
54	1P	501	NDP	O4D-C4D-C5D-O5D
46	1f	101	PC1	C33-C34-C35-C36
46	1h	201	PC1	C33-C34-C35-C36
51	1X	201	CDL	CB4-CB3-OB5-PB2
51	1N	402	CDL	CB3-CB4-CB6-OB8
57	1l	201	MYR	C6-C7-C8-C9
51	1X	201	CDL	C55-C56-C57-C58
46	1B	202	PC1	O22-C21-C22-C23

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Mol	Chain	Res	Type	Atoms
51	1L	702	CDL	C31-C32-C33-C34
51	1X	201	CDL	C20-C21-C22-C23
56	1W	201	EHZ	C15-C16-C17-C18
56	1n	201	EHZ	C21-C1-C2-C3
45	1A	201	3PE	C27-C28-C29-C2A
45	1f	102	3PE	C38-C39-C3A-C3B
45	1M	503	3PE	C3A-C3B-C3C-C3D
56	1n	201	EHZ	O5-C16-C17-C18
46	1I	203	PC1	C24-C25-C26-C27
51	1a	101	CDL	CA5-C11-C12-C13
54	1P	501	NDP	O4B-C4B-C5B-O5B
46	1H	401	PC1	C34-C35-C36-C37
46	1L	703	PC1	C22-C23-C24-C25
46	1M	502	PC1	O21-C2-C3-O31
51	1N	401	CDL	OB6-CB4-CB6-OB8
45	1f	102	3PE	O11-C1-C2-C3
46	1h	201	PC1	O31-C31-C32-C33
51	1X	201	CDL	C23-C24-C25-C26
45	1f	102	3PE	C1-C2-O21-C21
51	1N	401	CDL	C38-C39-C40-C41
45	1Y	802	3PE	C27-C28-C29-C2A
45	1Y	804	3PE	C25-C26-C27-C28
51	1L	702	CDL	C52-C51-CB5-OB6
46	1h	201	PC1	O32-C31-C32-C33
45	1L	701	3PE	C28-C29-C2A-C2B
45	1Y	802	3PE	O31-C31-C32-C33
51	1N	402	CDL	C72-C71-CB7-OB8
51	1a	101	CDL	C52-C51-CB5-OB6
45	1f	102	3PE	C35-C36-C37-C38

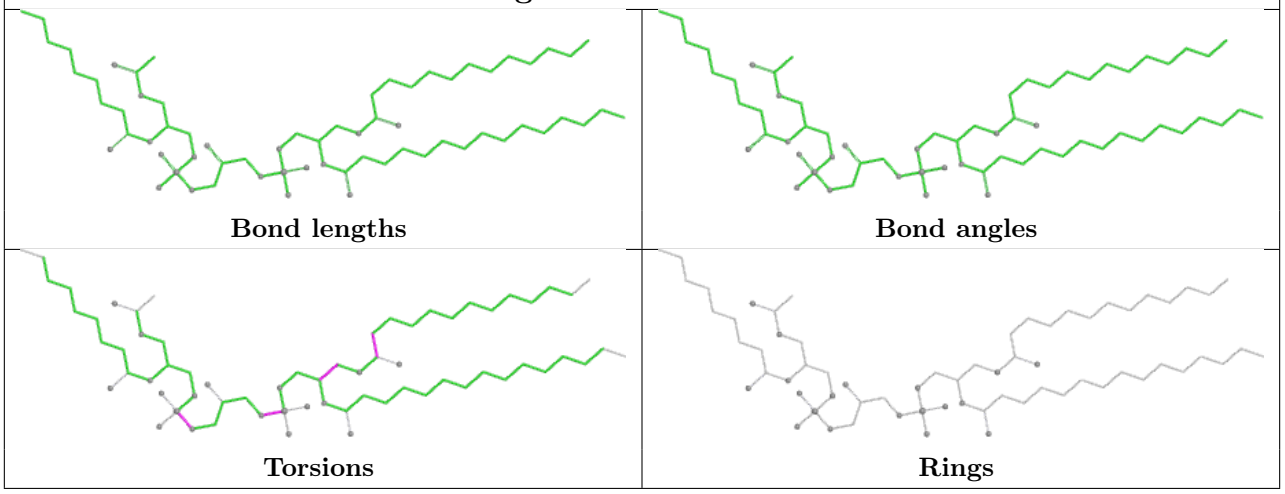
There are no ring outliers.

No monomer is involved in short contacts.

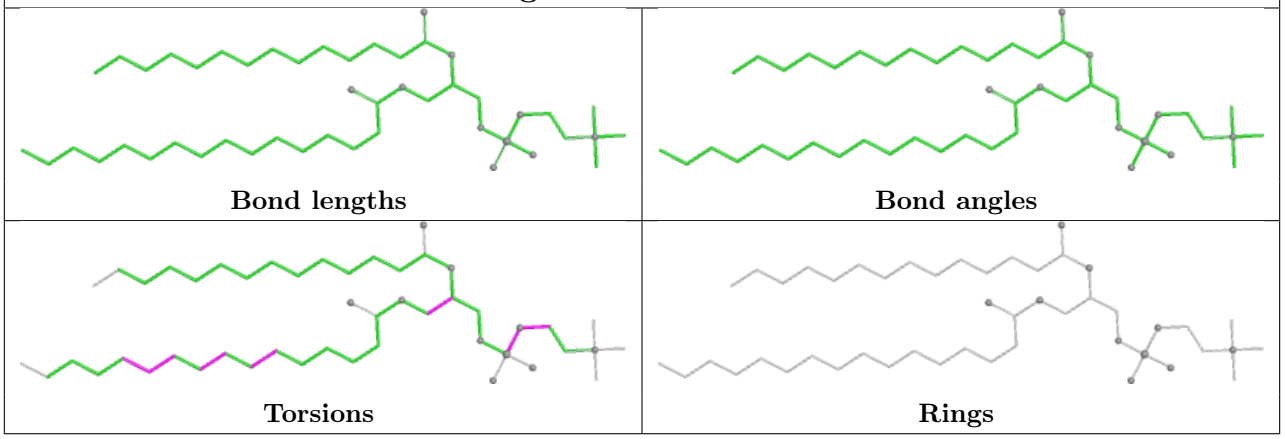
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

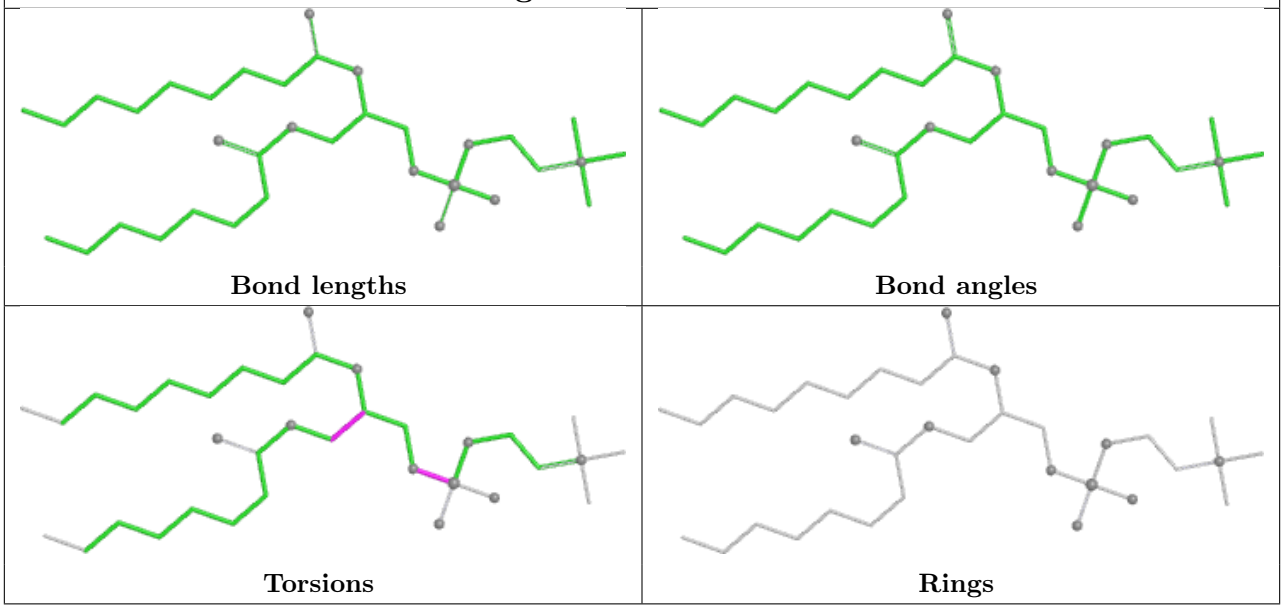
Ligand CDL 1N 402



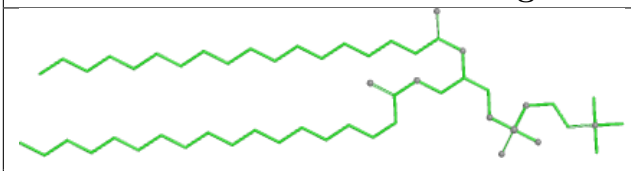
Ligand PC1 1B 203



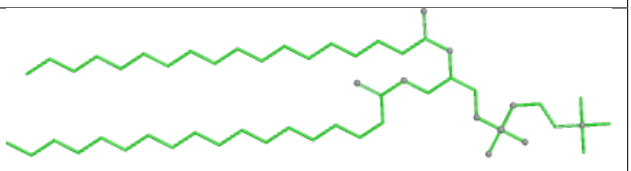
Ligand PC1 1M 502



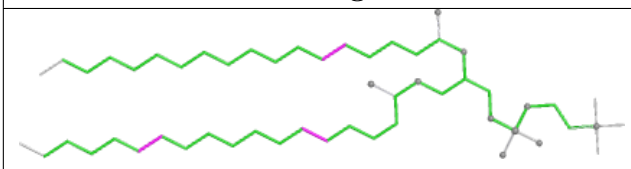
Ligand PC1 1H 401



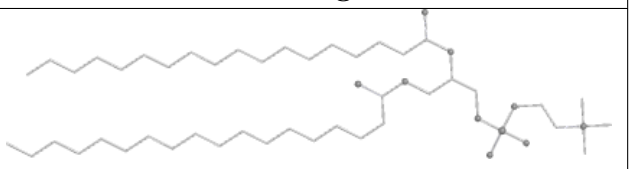
Bond lengths



Bond angles

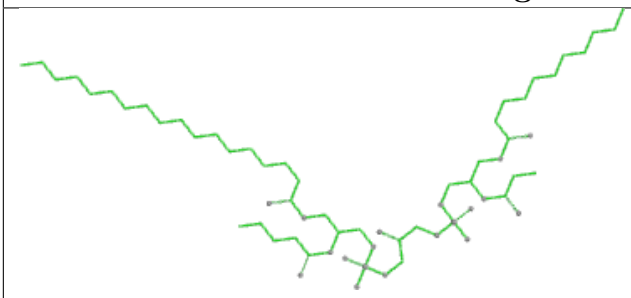


Torsions



Rings

Ligand CDL 1N 401



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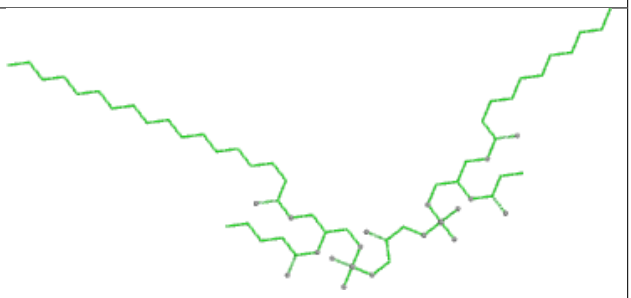
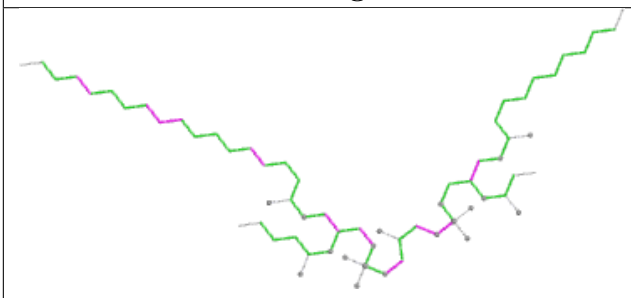


Bond angles



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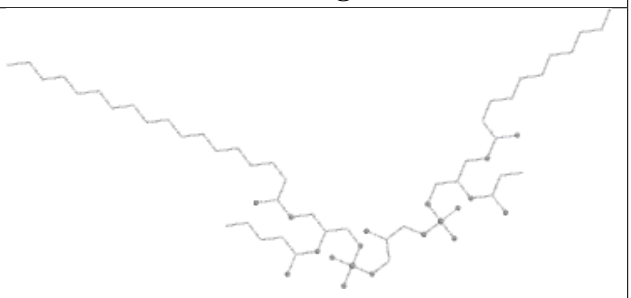
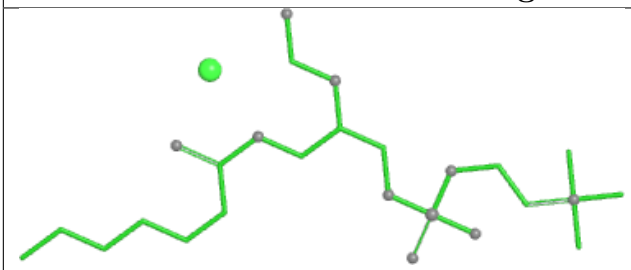
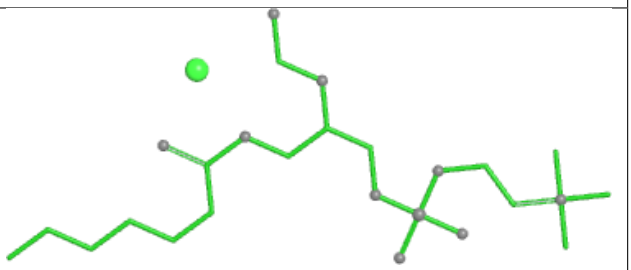
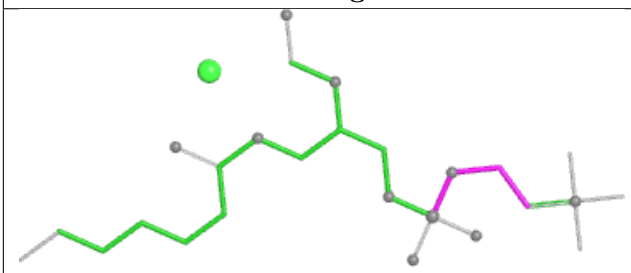


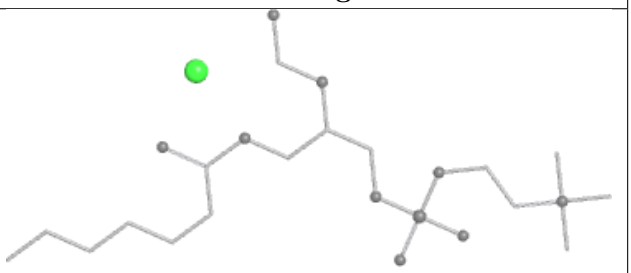
Rings

Ligand PC1 1A 202

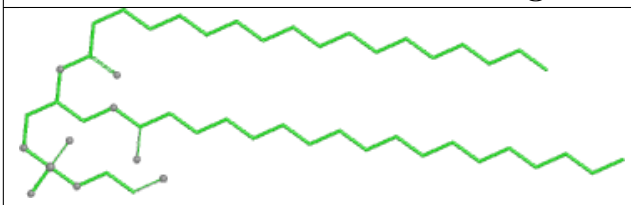

Bond lengths

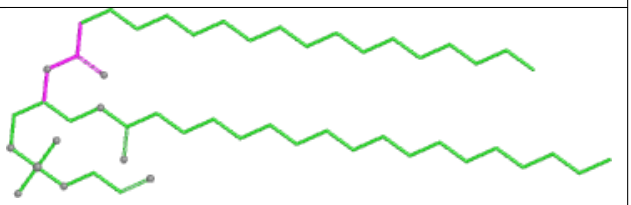

Bond angles

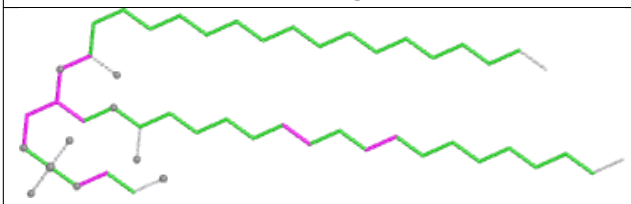

Torsions


Rings

Ligand 3PE 1f 102


Bond lengths


Bond angles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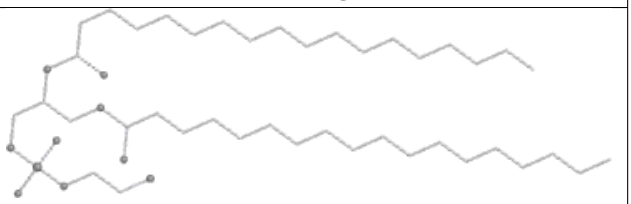
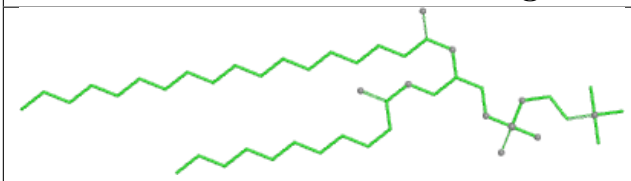

Rings

Ligand PC1 1h 201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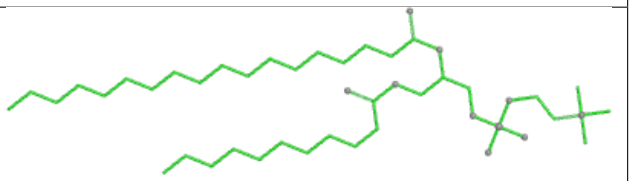
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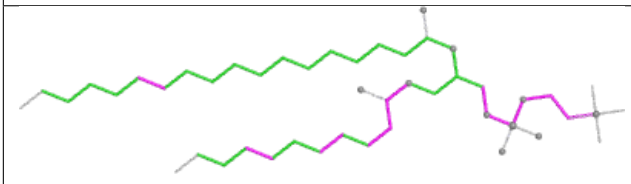
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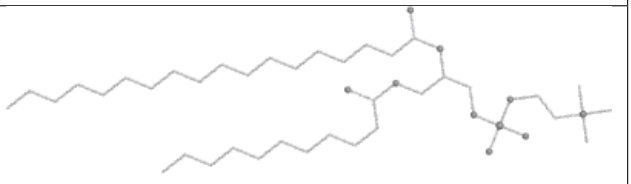
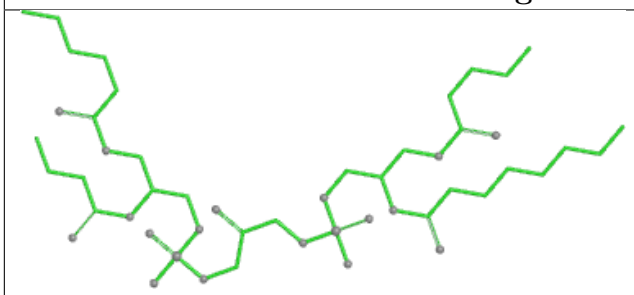

Rings

Ligand CDL 1H 402



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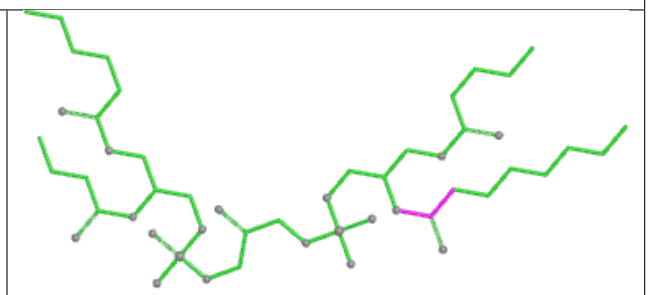

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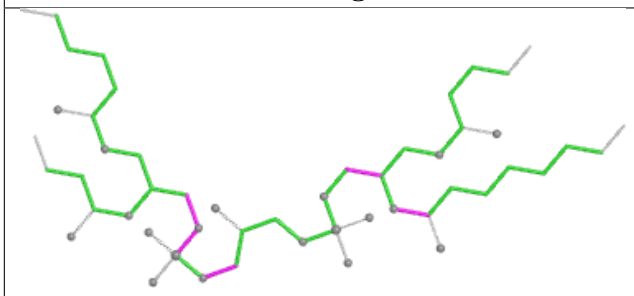

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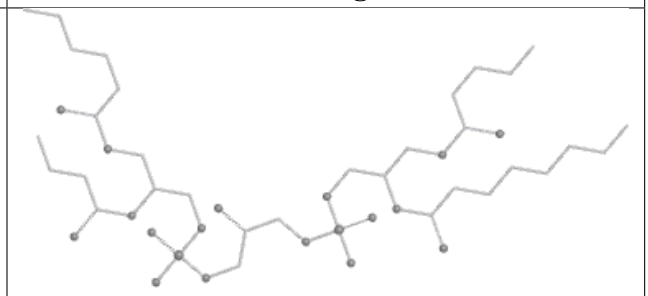
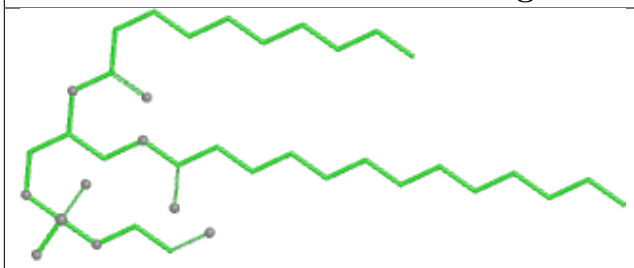


Rings

Ligand 3PE 1M 503



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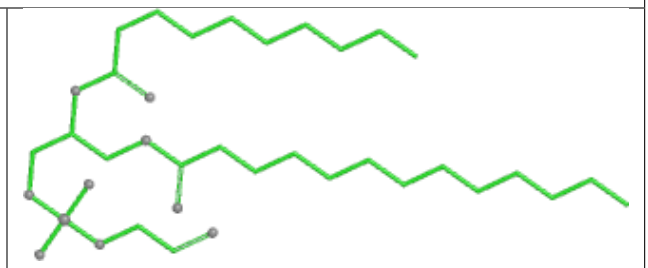
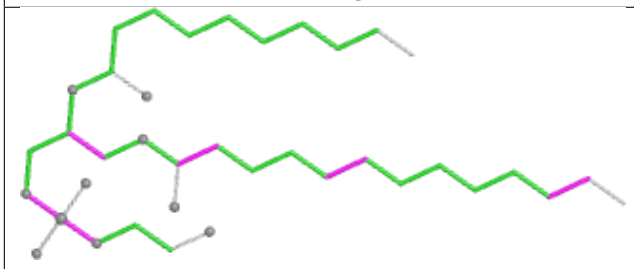


Bond angles



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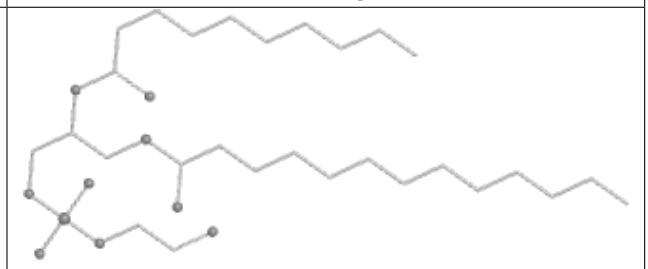
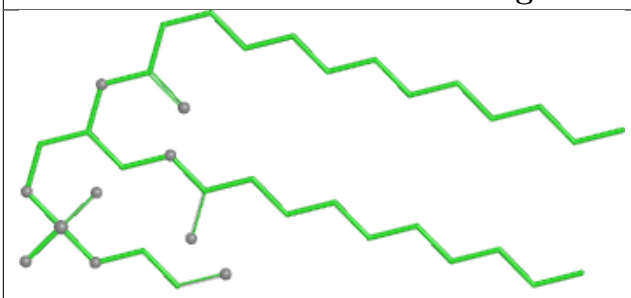


Rings

Ligand 3PE 1M 501



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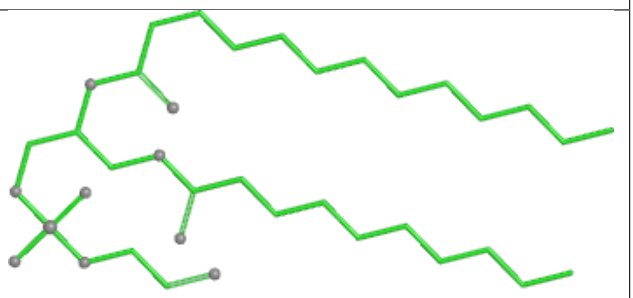
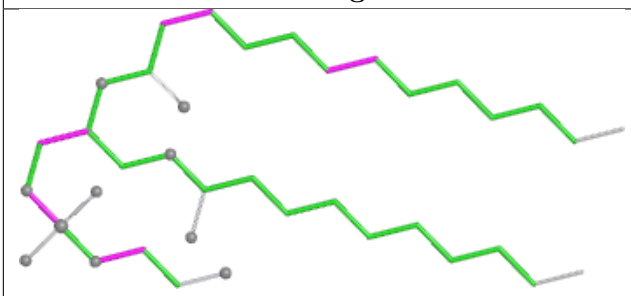
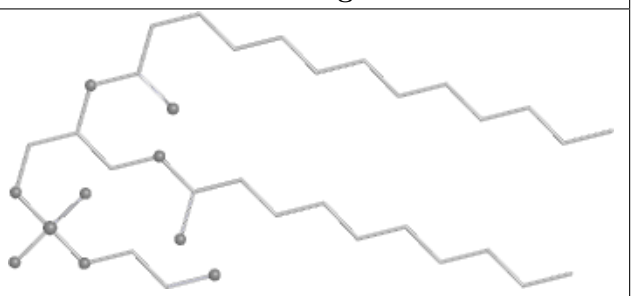


Bond angles

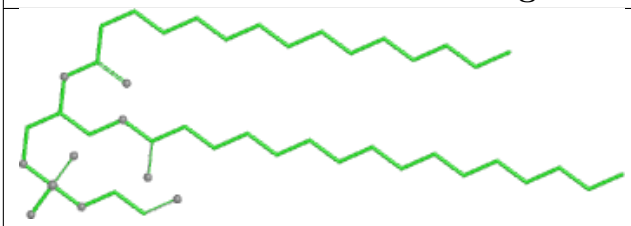


Torsions



Rings

Ligand 3PE 1D 901



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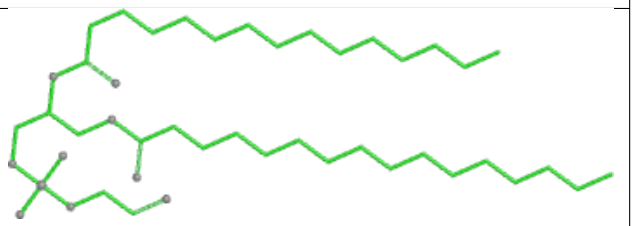
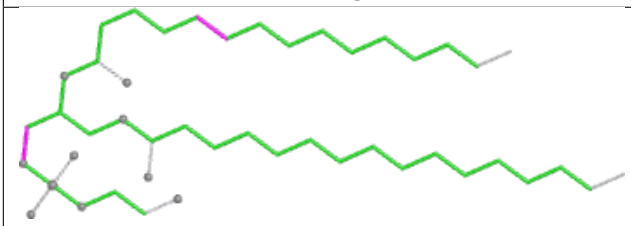
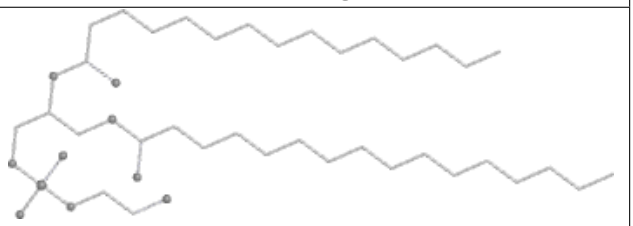


Bond angles

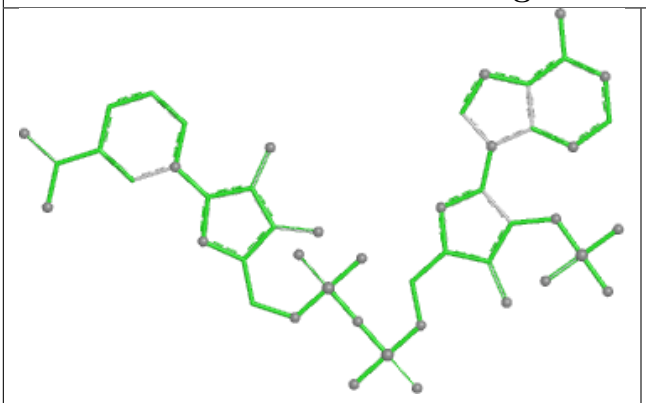


Torsions

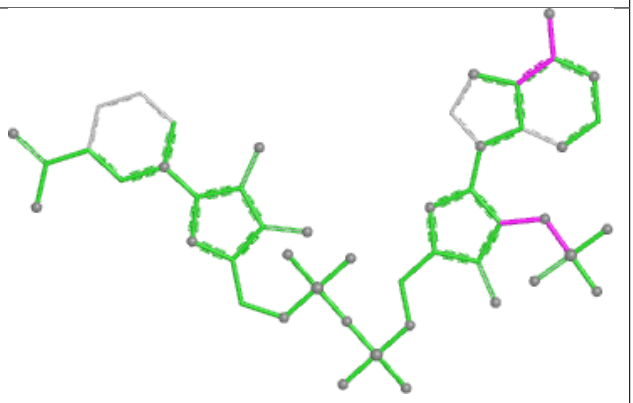


Rings

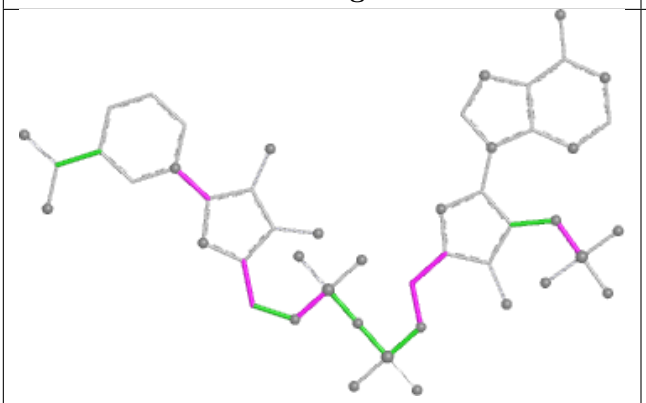
Ligand NDP 1P 501



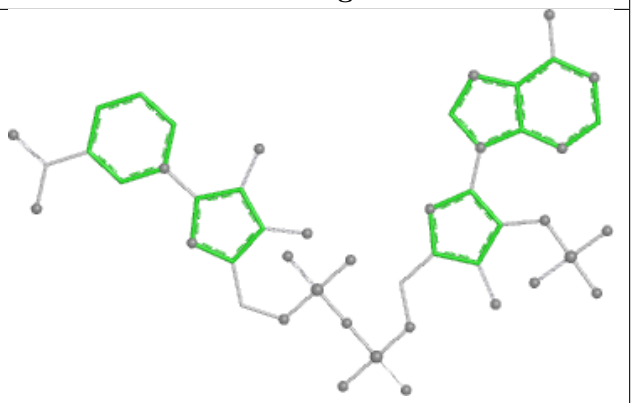
Bond lengths



Bond angles

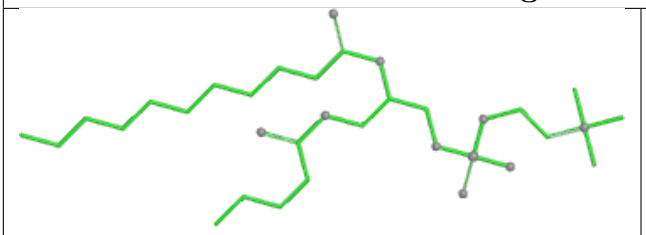


Torsions

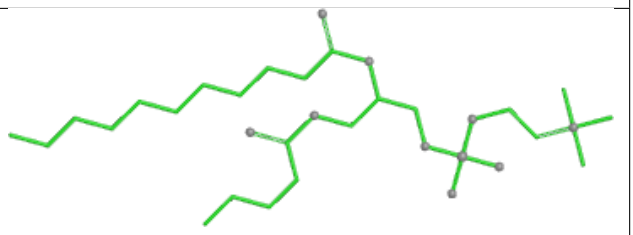


Rings

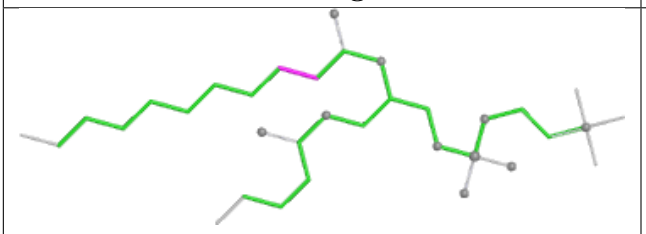
Ligand PC1 1Z 201



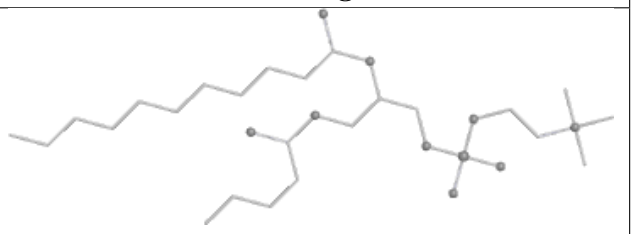
Bond lengths



Bond angles

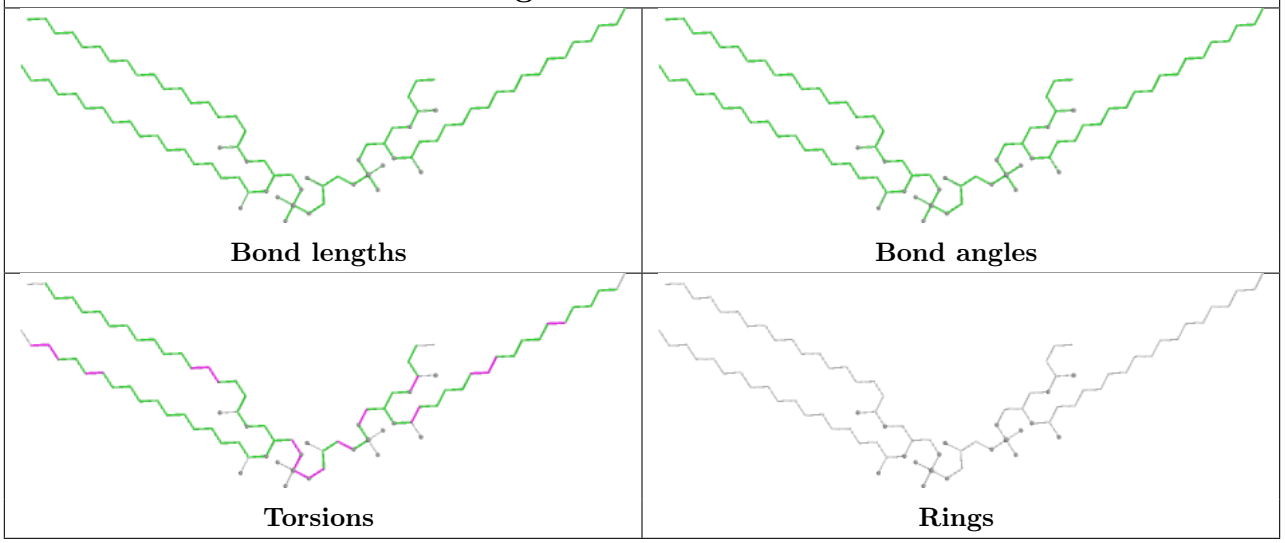


Torsions

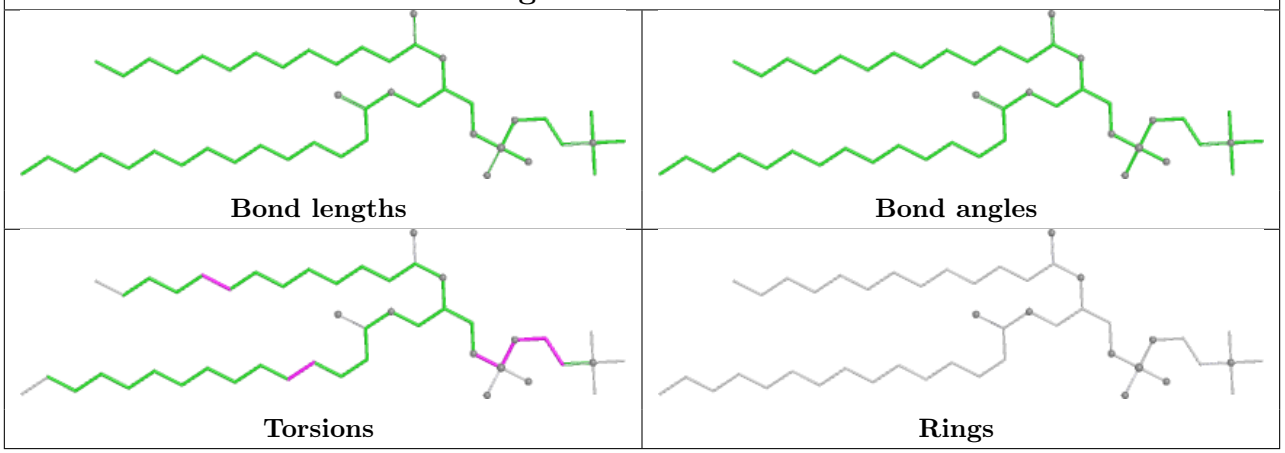


Rings

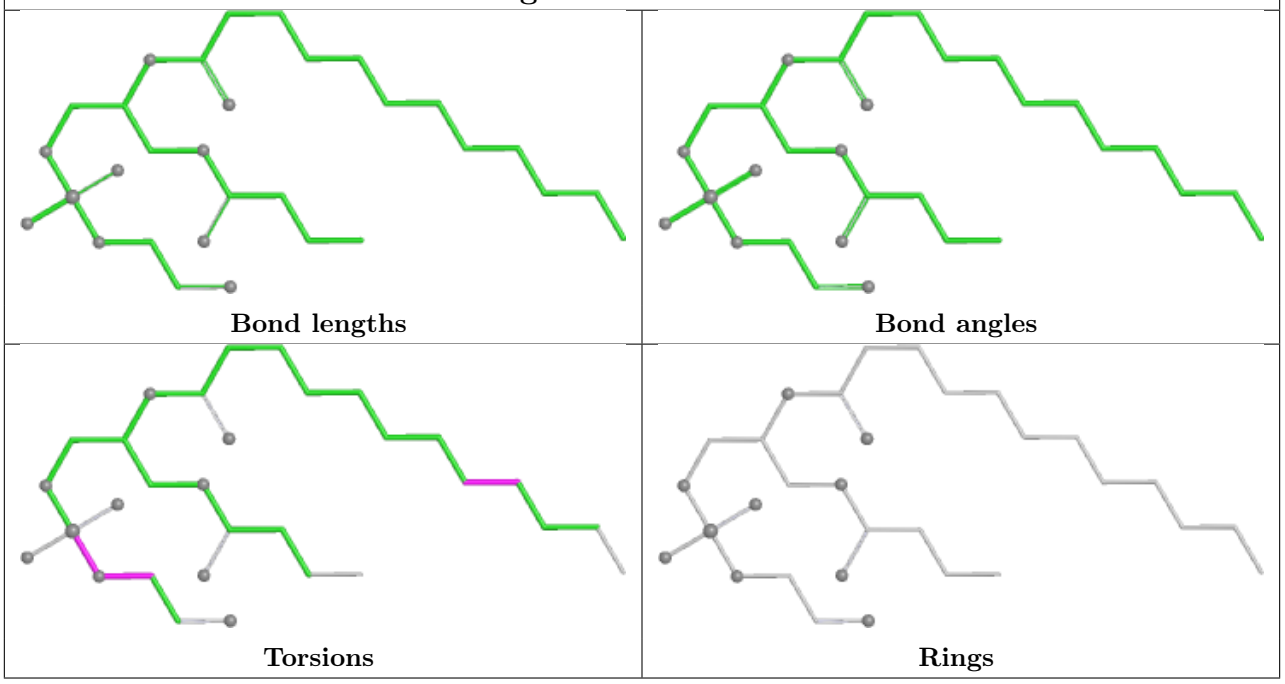
Ligand CDL 1X 201



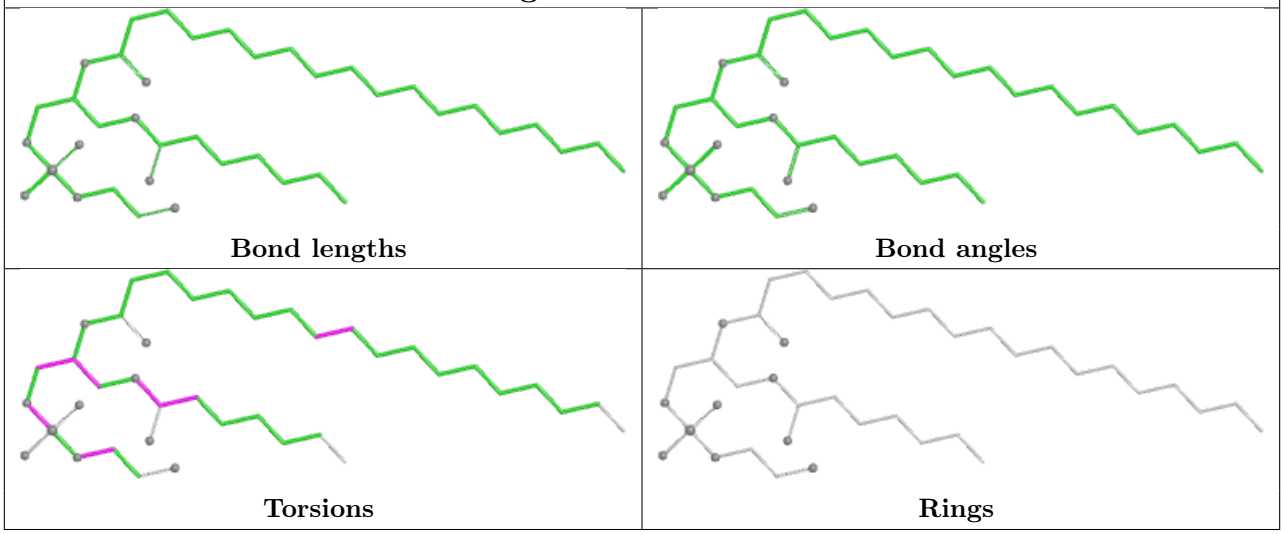
Ligand PC1 1Y 803



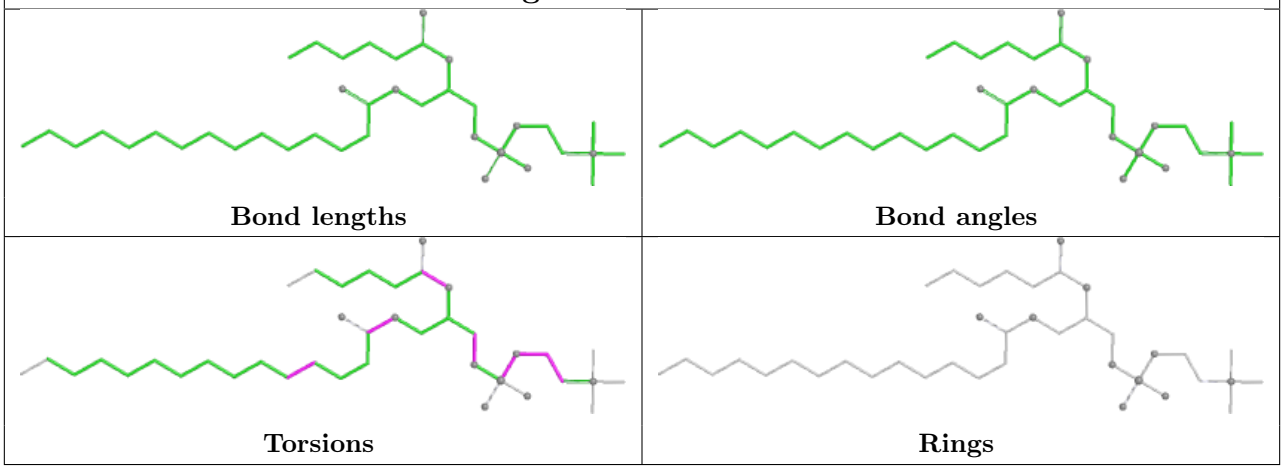
Ligand 3PE 1A 201



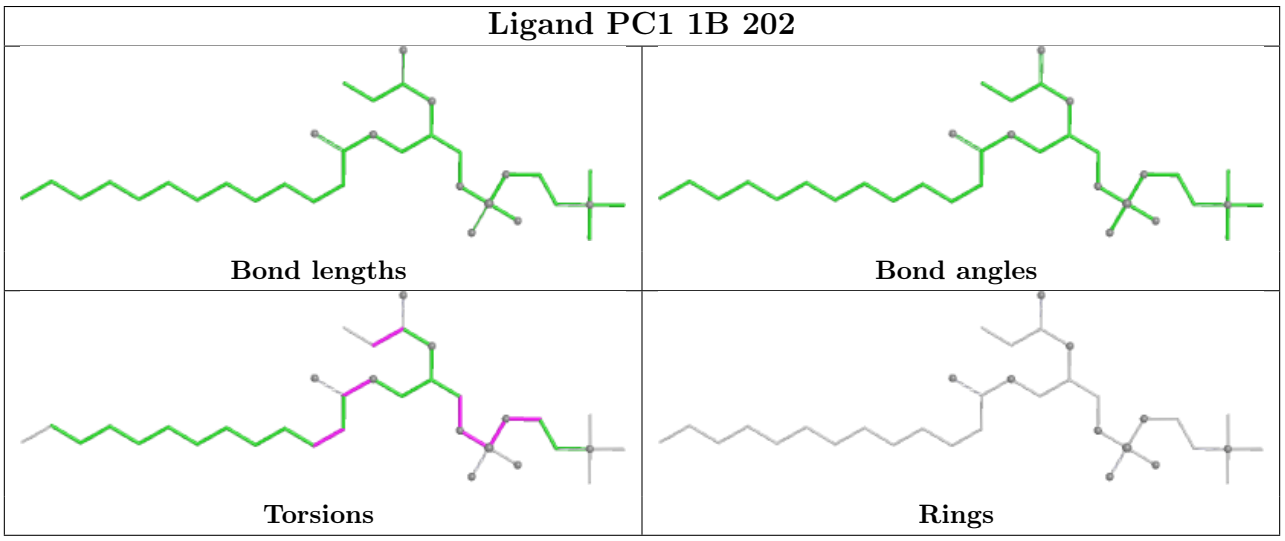
Ligand 3PE 1Y 802



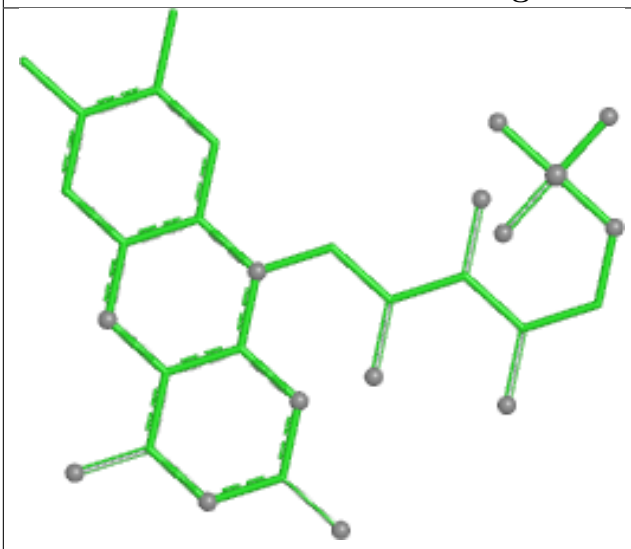
Ligand PC1 1d 201



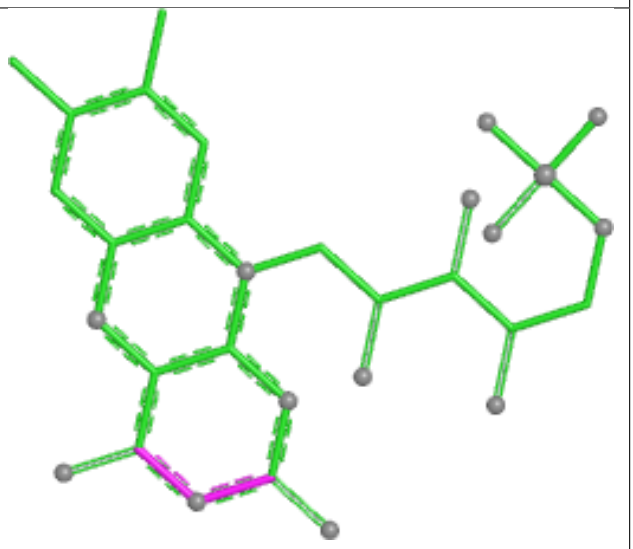
Ligand PC1 1B 202



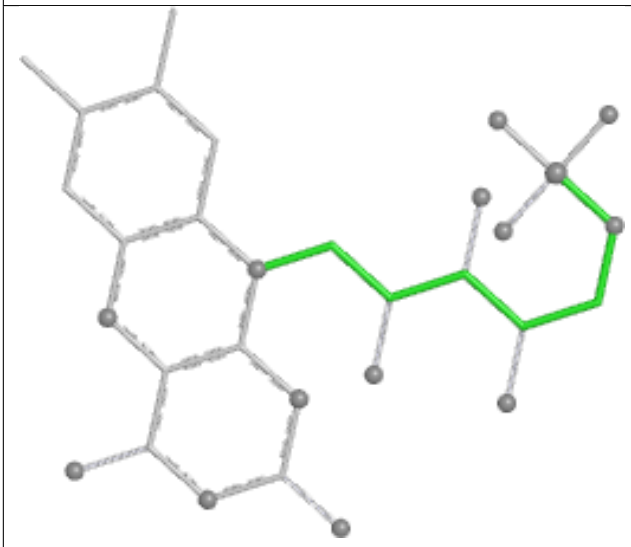
Ligand FMN 1F 501



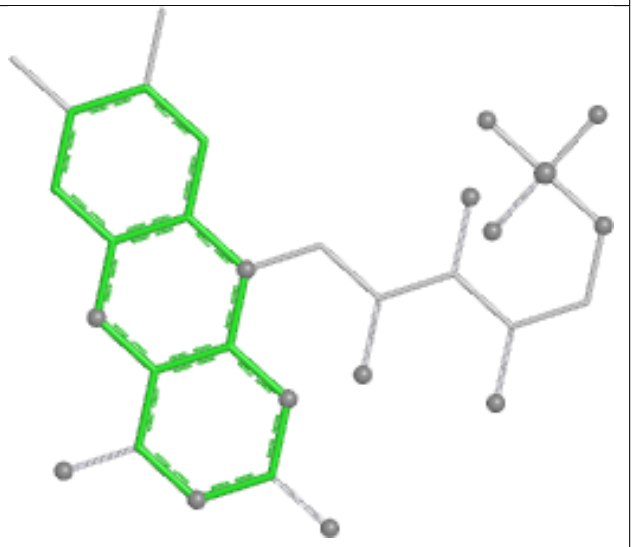
Bond lengths



Bond angles

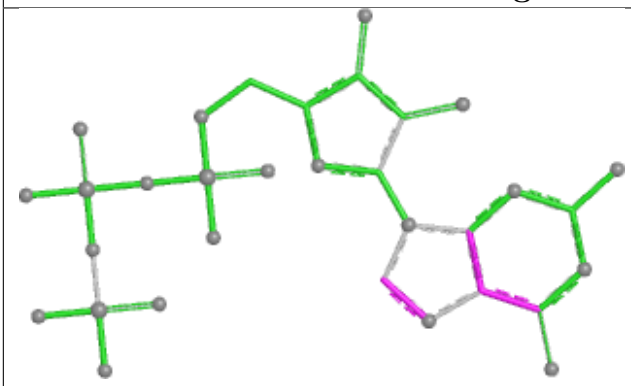


Torsions

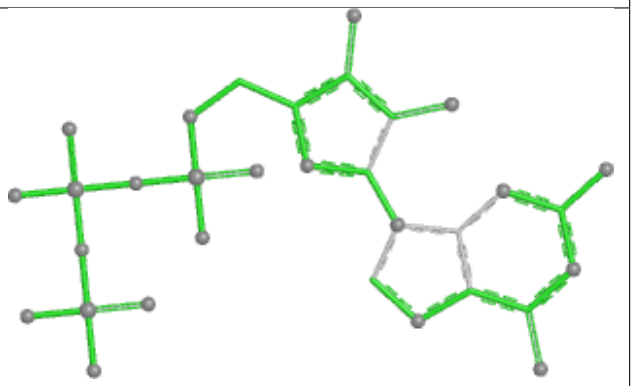


Rings

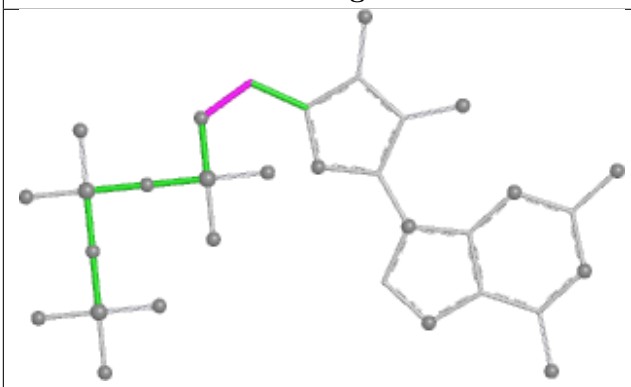
Ligand GTP 1O 401



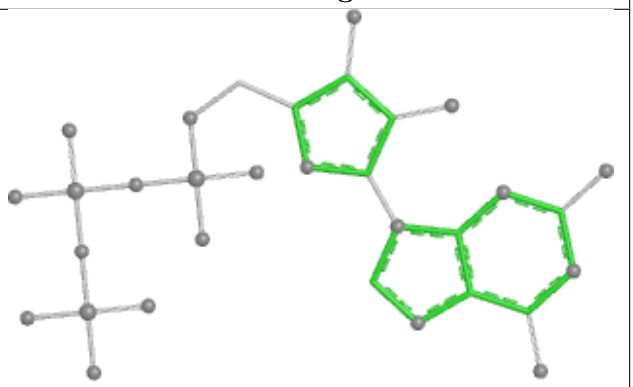
Bond lengths



Bond angles

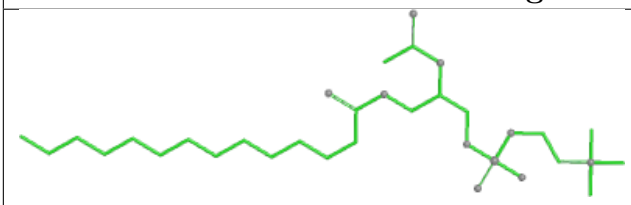


Torsions

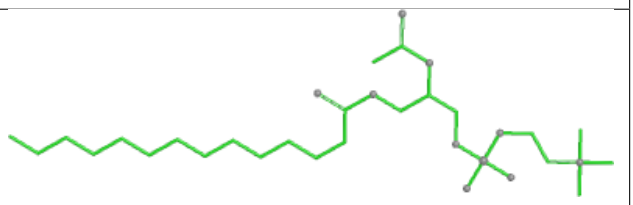


Rings

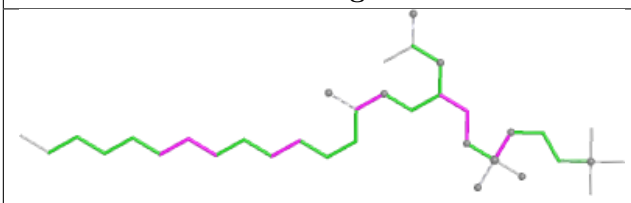
Ligand PC1 1f 101



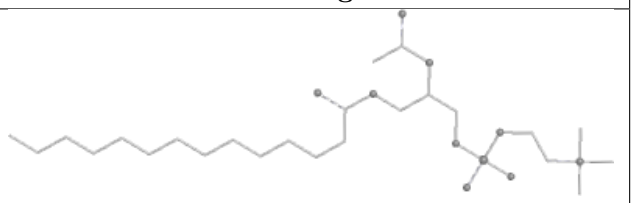
Bond lengths



Bond angles

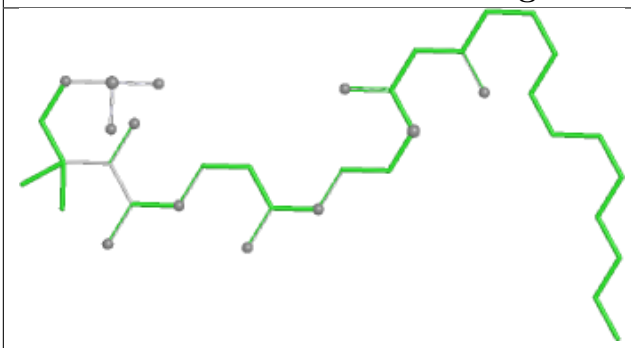


Torsions

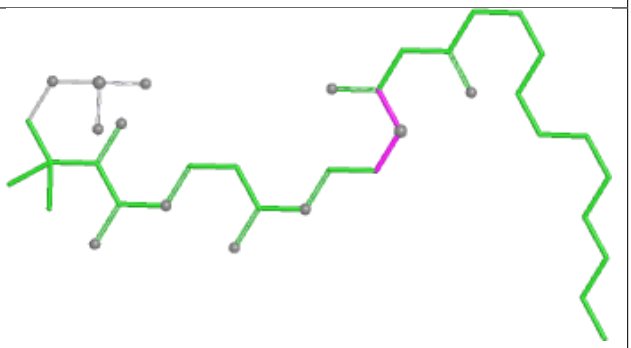


Rings

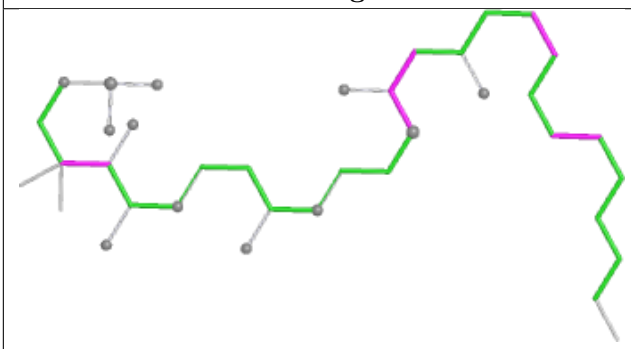
Ligand EHZ 1n 201



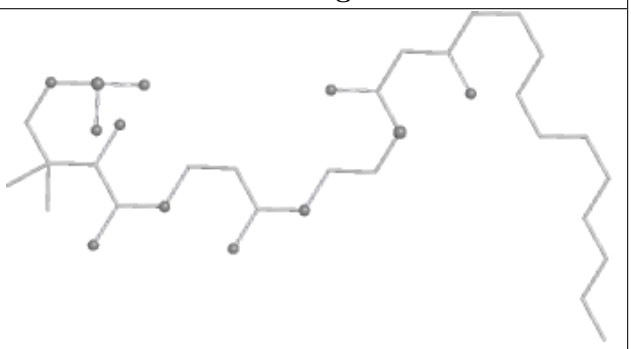
Bond lengths



Bond angles

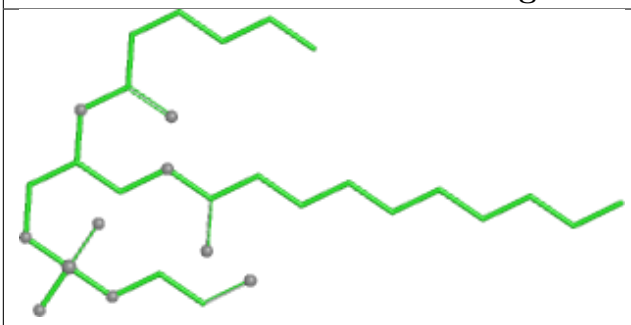


Torsions

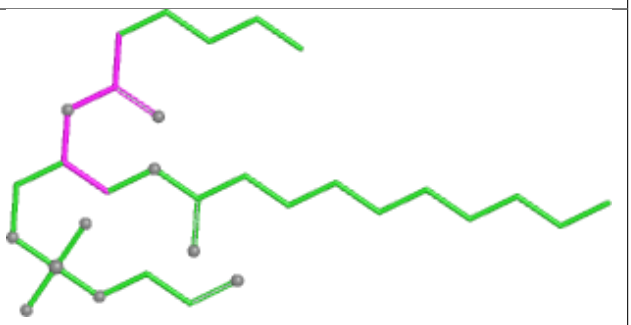


Rings

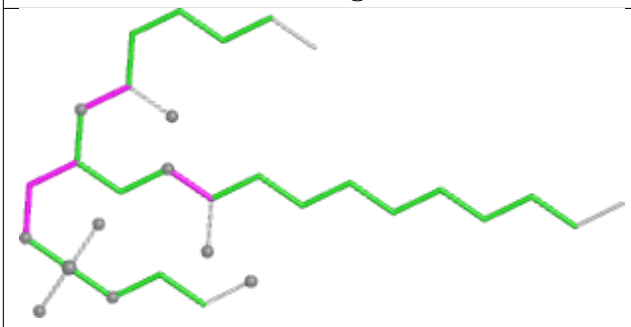
Ligand 3PE 1Y 801



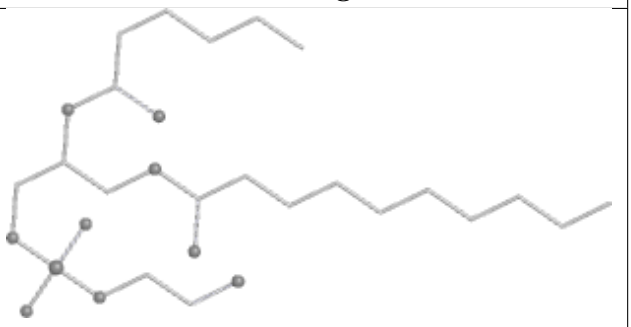
Bond lengths



Bond angles

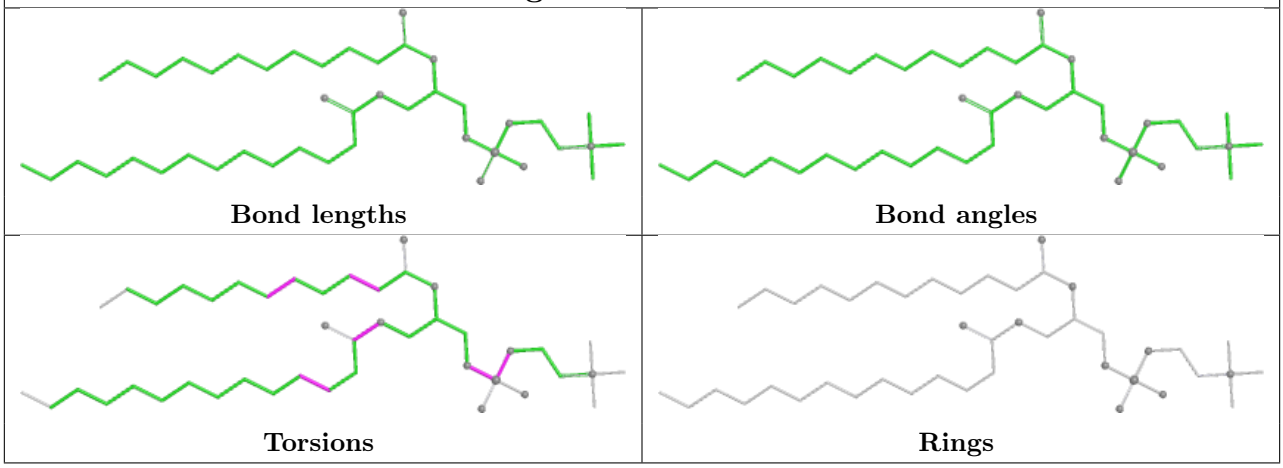


Torsions

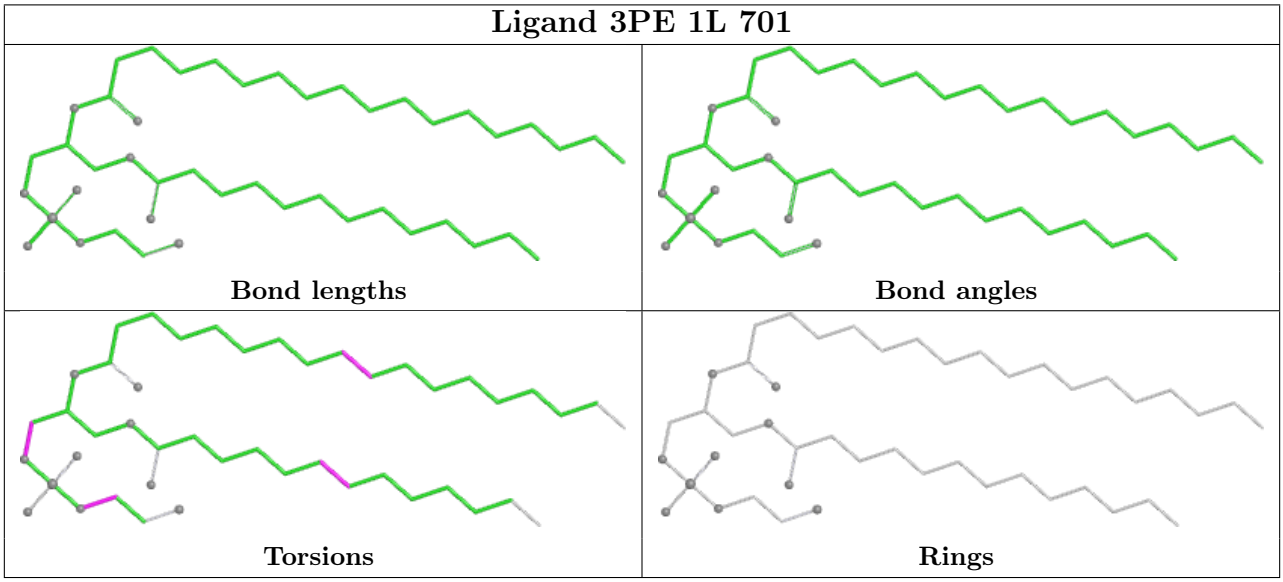


Rings

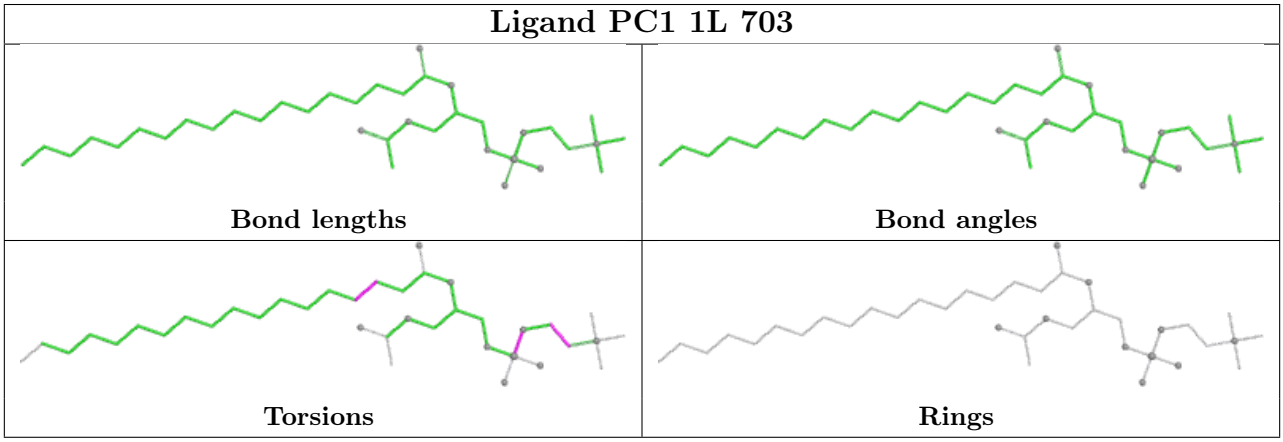
Ligand PC1 1I 203



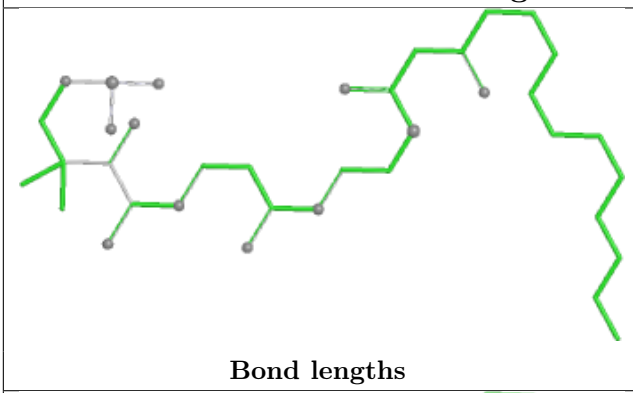
Ligand 3PE 1L 701



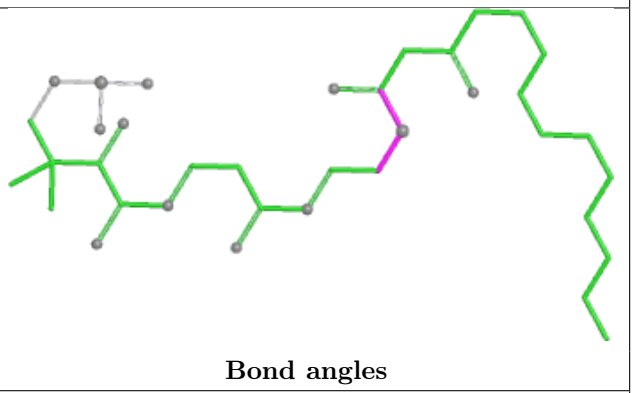
Ligand PC1 1L 703



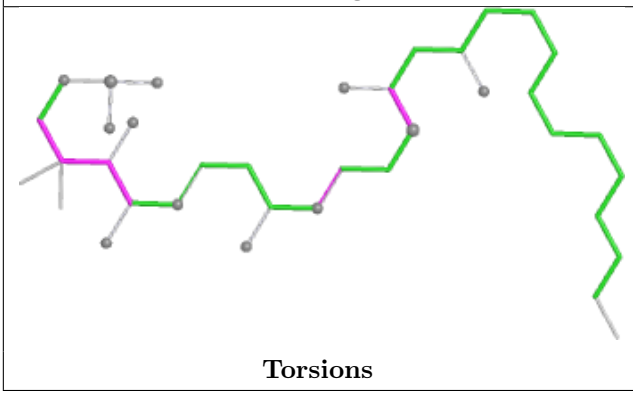
Ligand EHZ 1W 201



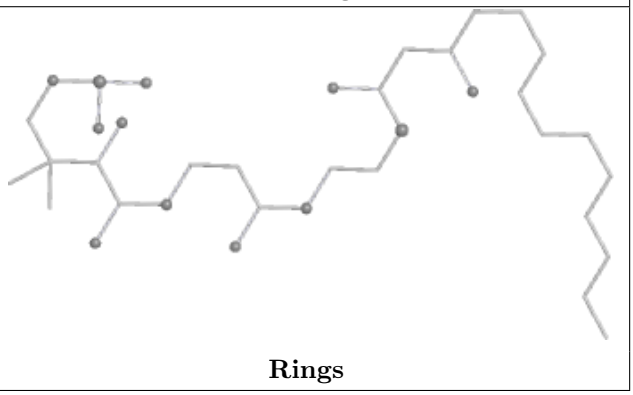
Bond lengths



Bond angles

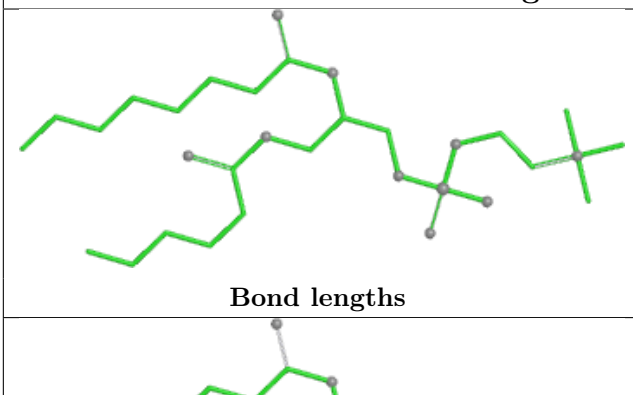


Torsions

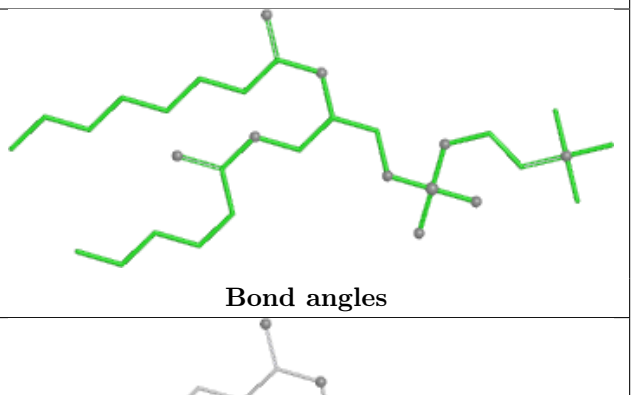


Rings

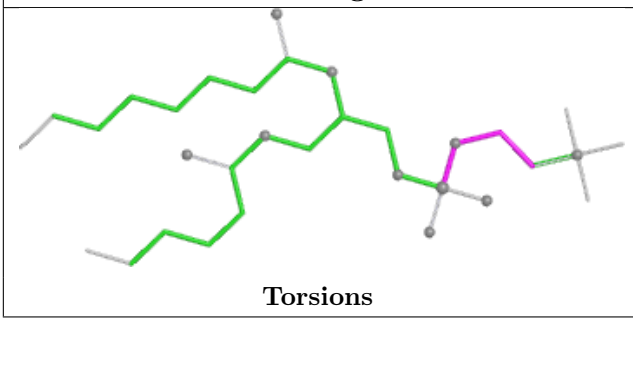
Ligand PC1 1J 201



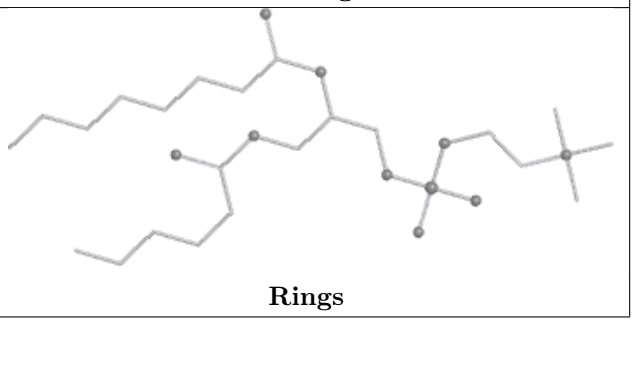
Bond lengths



Bond angles

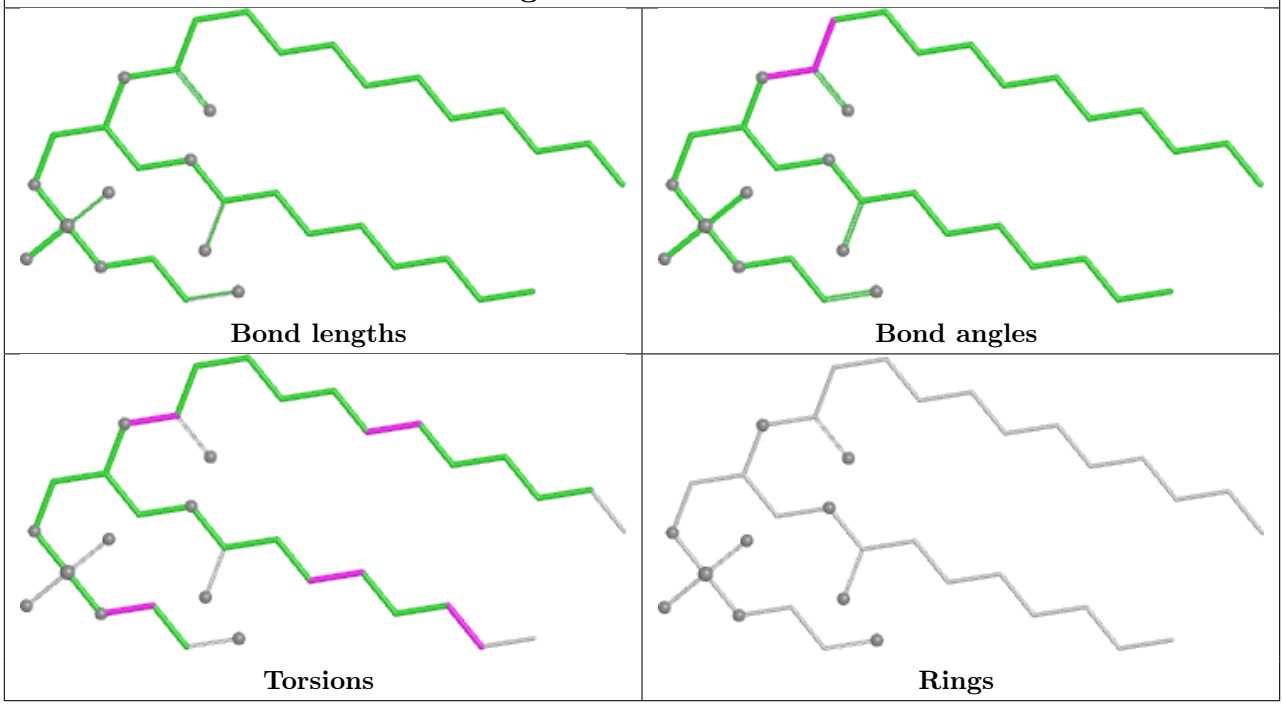


Torsions

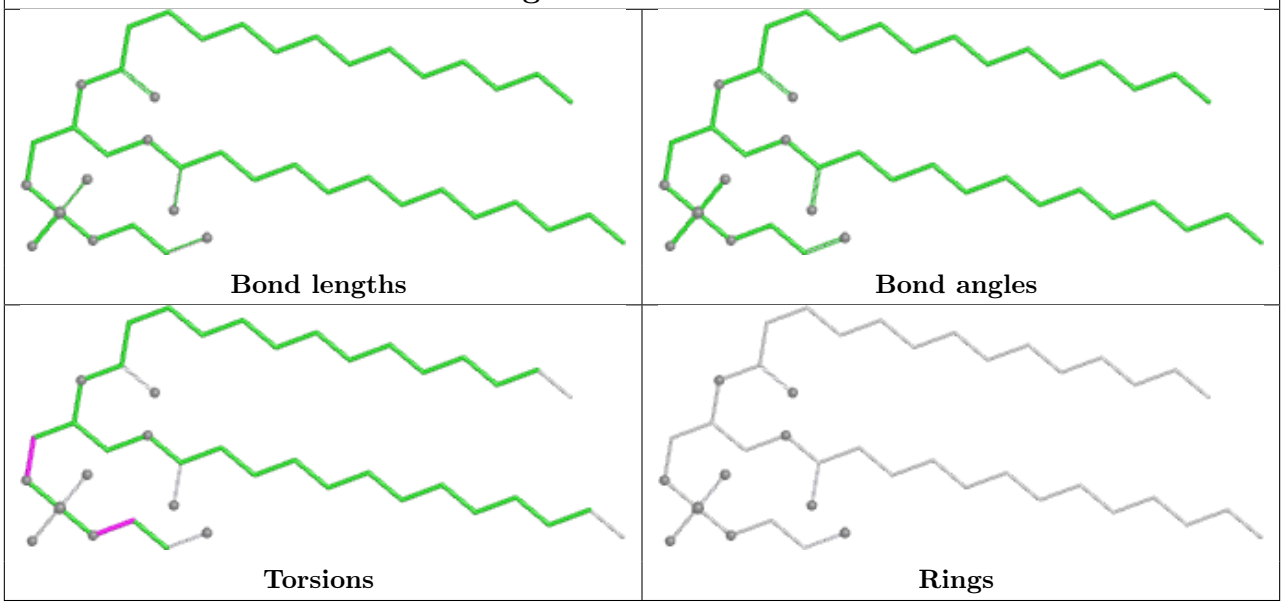


Rings

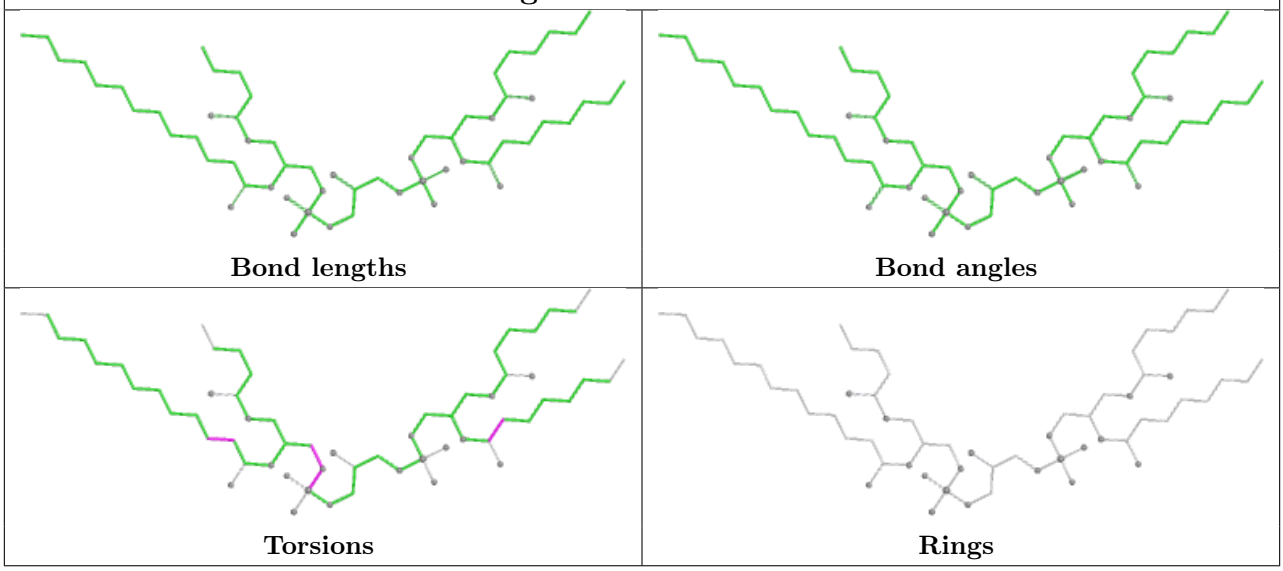
Ligand 3PE 1Y 804



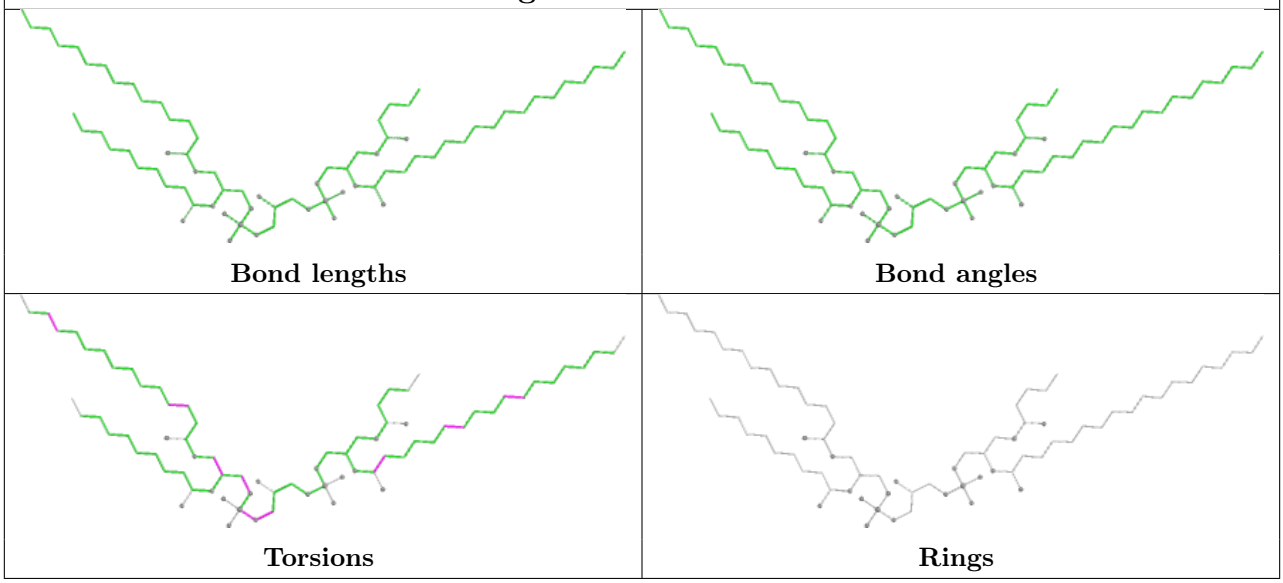
Ligand 3PE 1L 704



Ligand CDL 1a 101



Ligand CDL 1L 702



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.

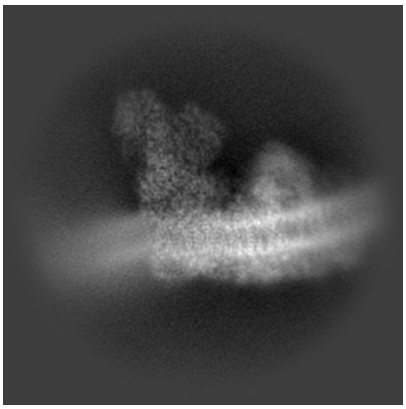
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-42165. These allow visual inspection of the internal detail of the map and identification of artifacts.

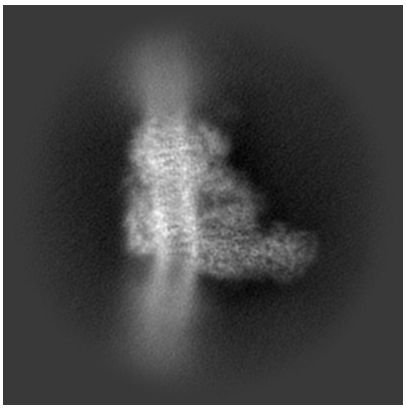
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

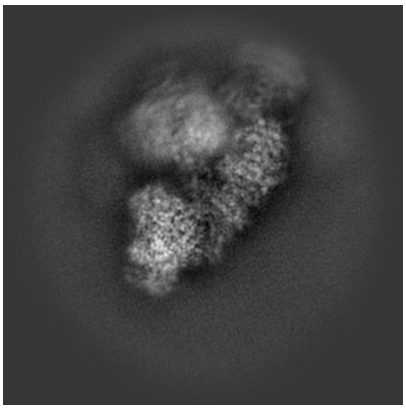
6.1.1 Primary map



X

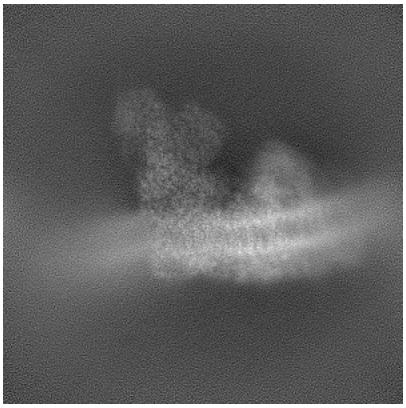


Y

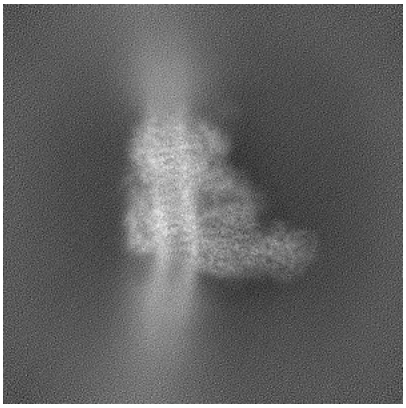


Z

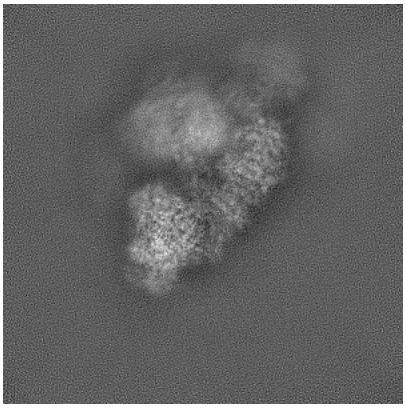
6.1.2 Raw map



X



Y

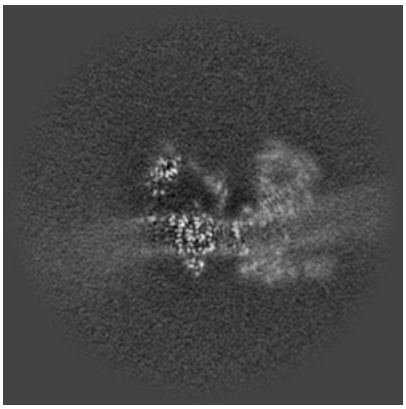


Z

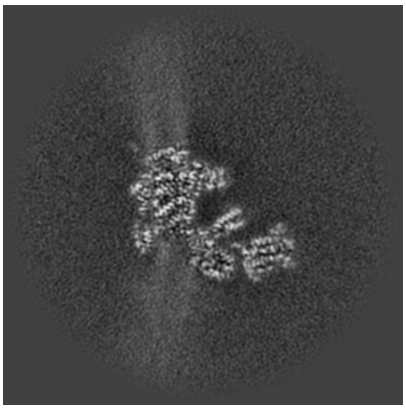
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

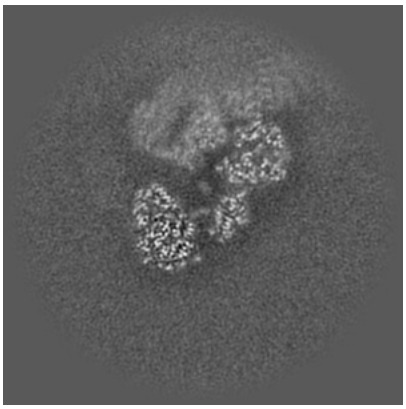
6.2.1 Primary map



X Index: 200

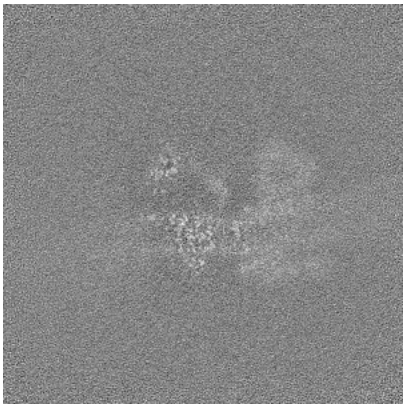


Y Index: 200

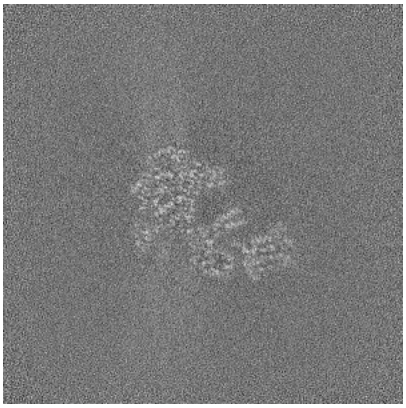


Z Index: 200

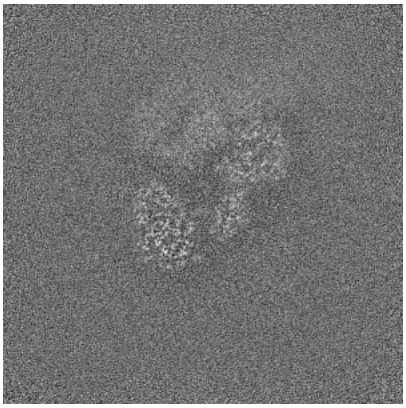
6.2.2 Raw map



X Index: 200



Y Index: 200

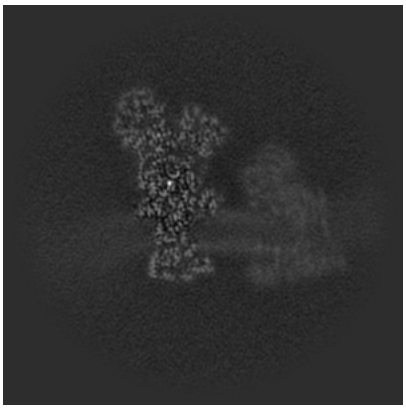


Z Index: 200

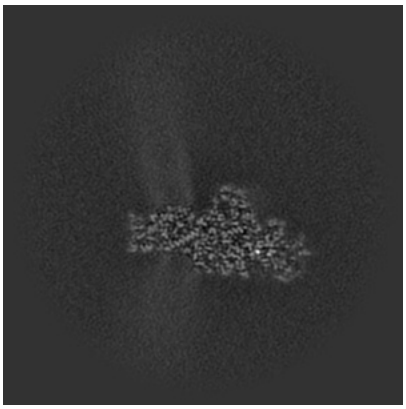
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

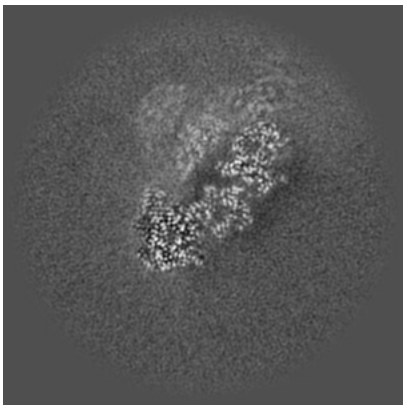
6.3.1 Primary map



X Index: 162

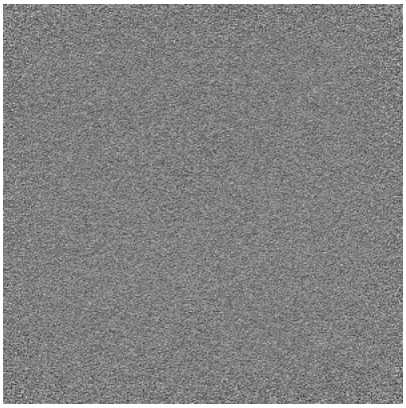


Y Index: 157

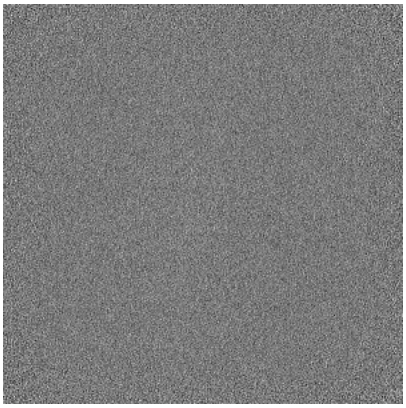


Z Index: 190

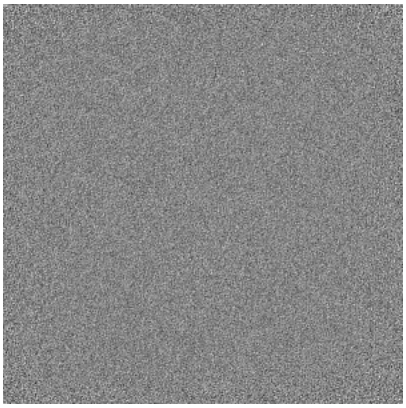
6.3.2 Raw map



X Index: 0



Y Index: 0

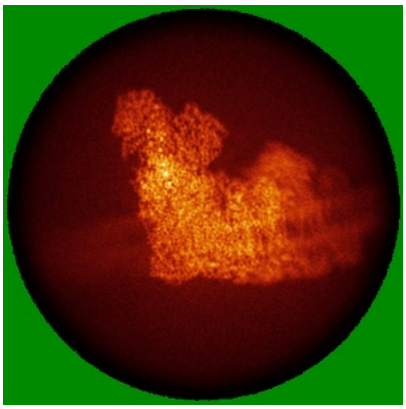


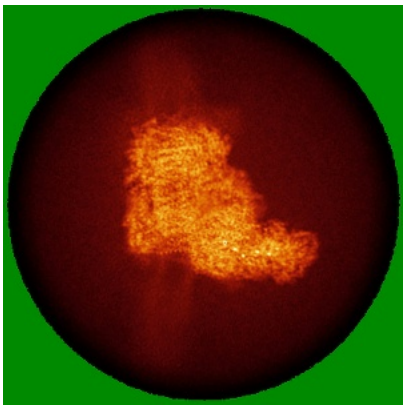
Z Index: 0

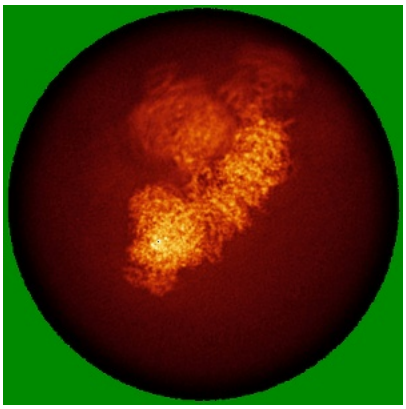
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

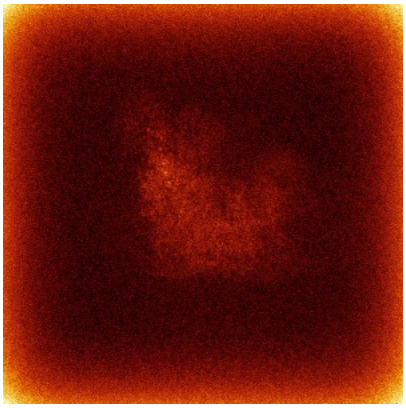
6.4.1 Primary map

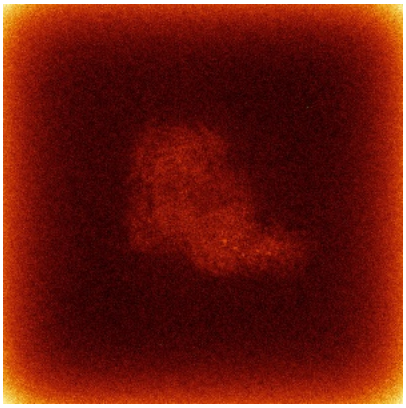

X

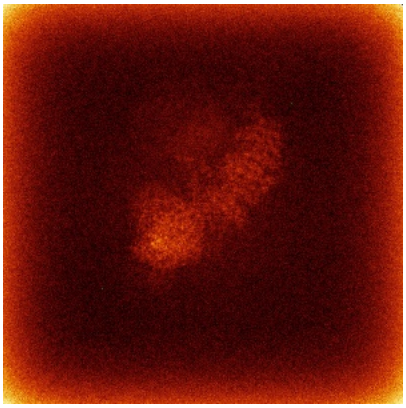

Y


Z

6.4.2 Raw map


X


Y


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

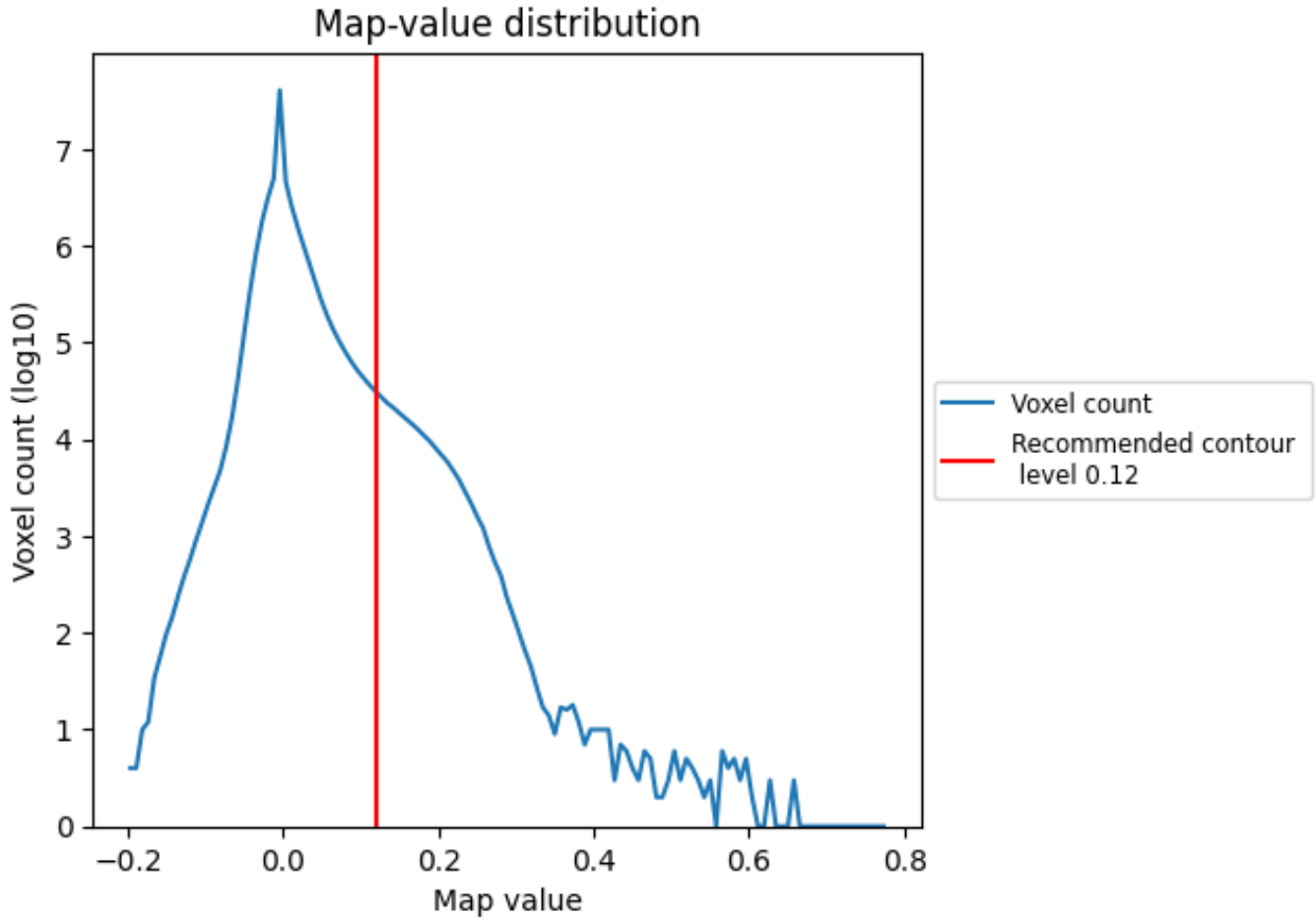
6.6 Mask visualisation (i)

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

7 Map analysis

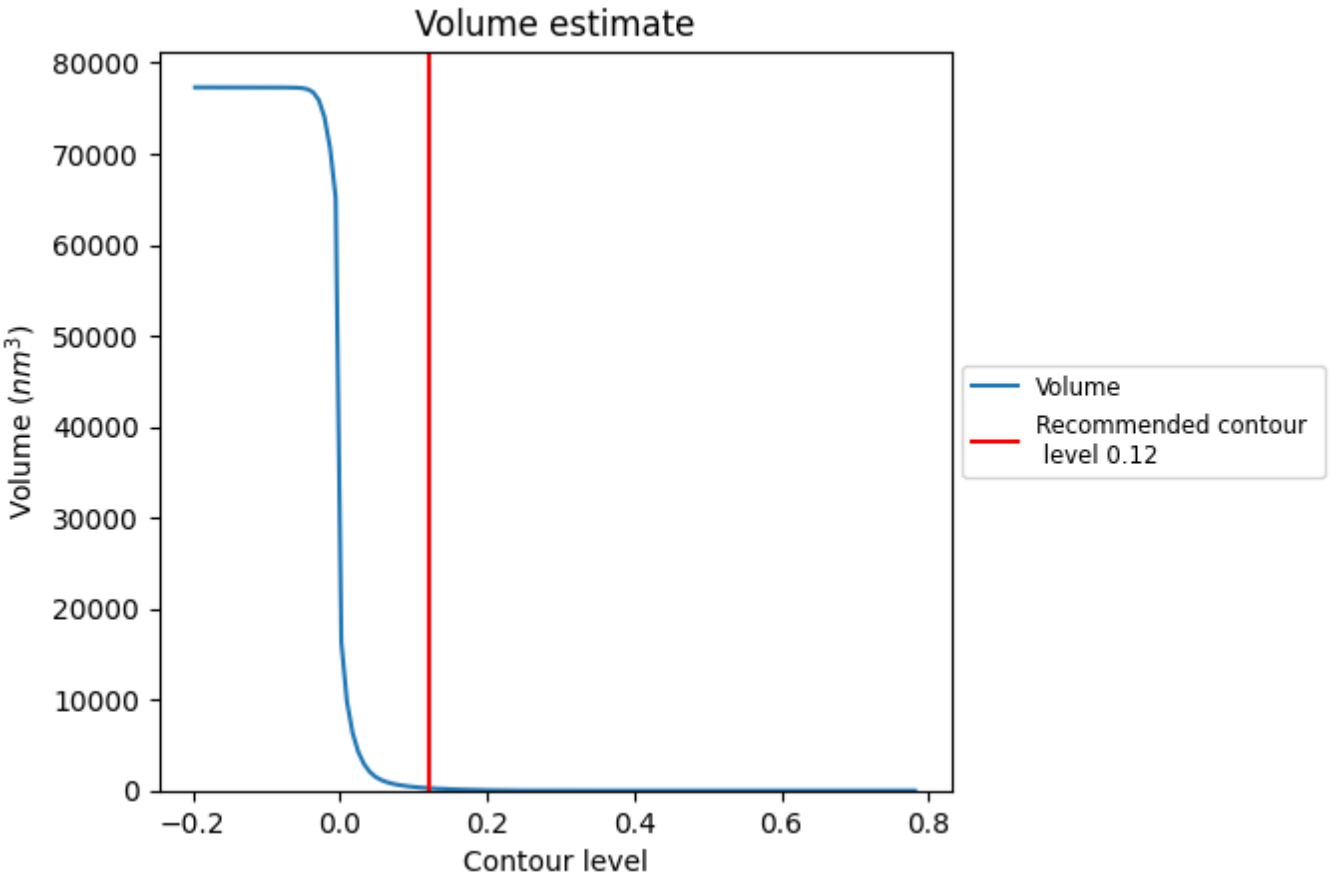
This section contains the results of statistical analysis of the map.

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.

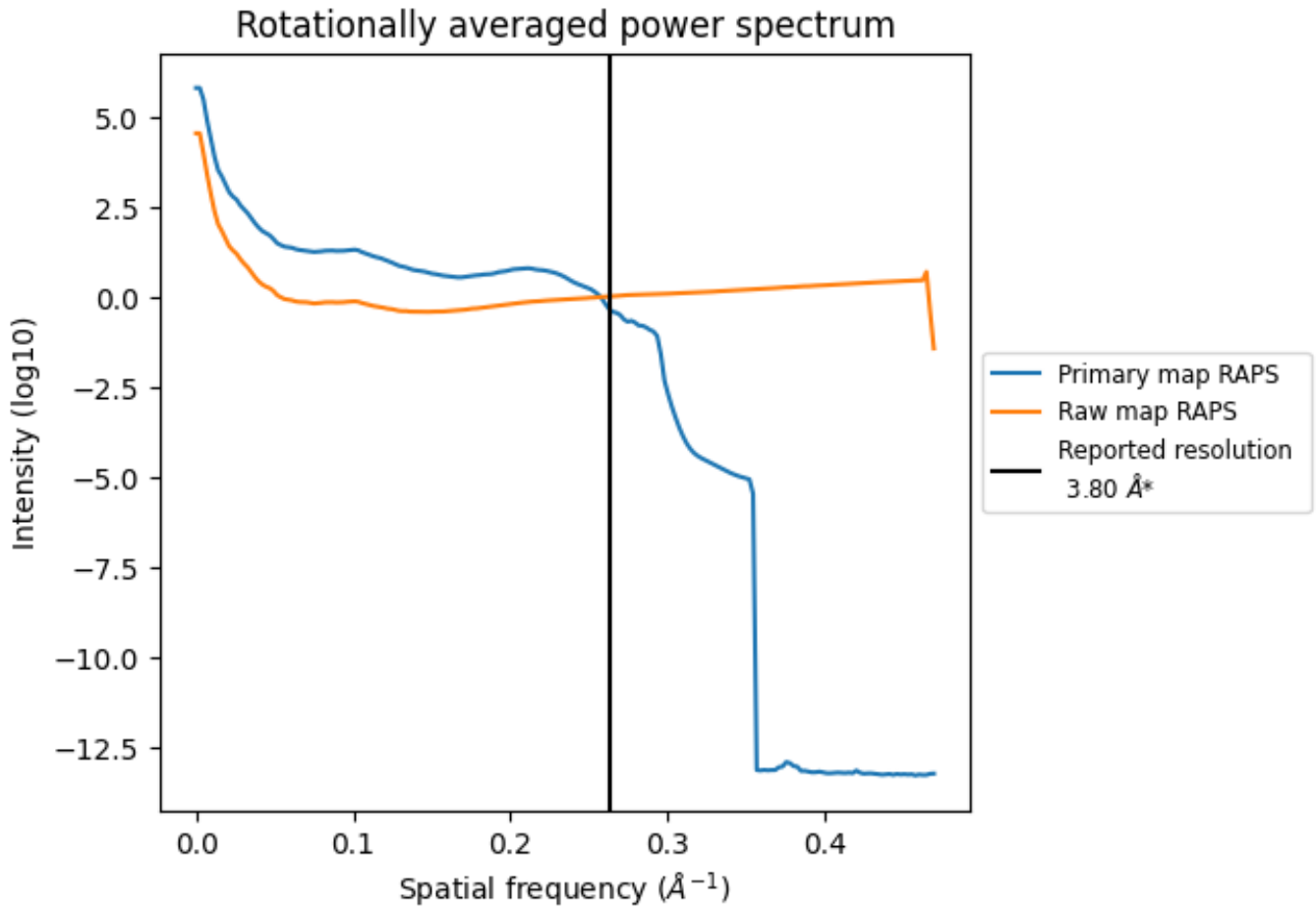
7.2 Volume estimate



The volume at the recommended contour level is 269 nm^3; this corresponds to an approximate mass of 243 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)

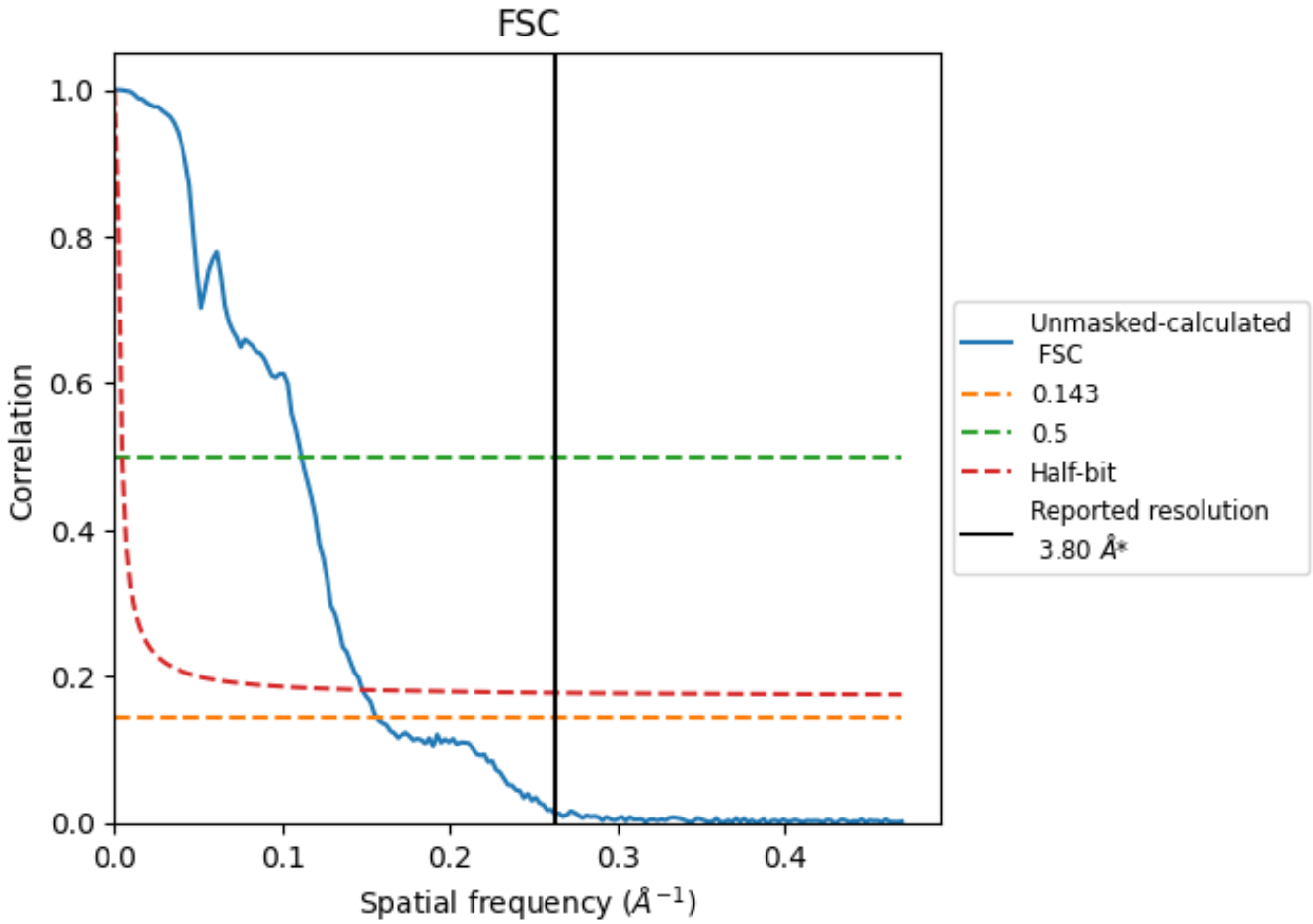


*Reported resolution corresponds to spatial frequency of 0.263 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.263 Å^{-1}

8.2 Resolution estimates (i)

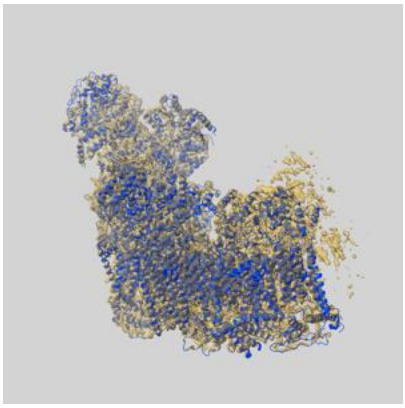
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.39	8.98	6.77

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.39 differs from the reported value 3.8 by more than 10 %

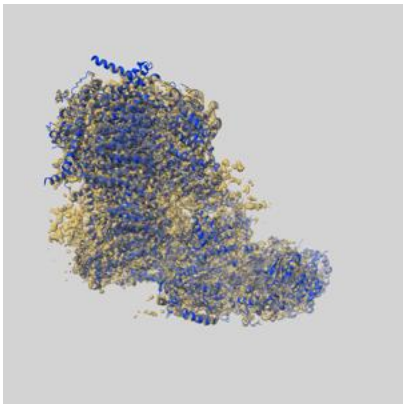
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-42165 and PDB model 8UEO. Per-residue inclusion information can be found in section 3 on page 20.

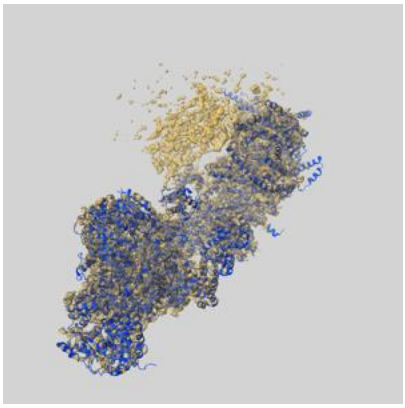
9.1 Map-model overlay



X



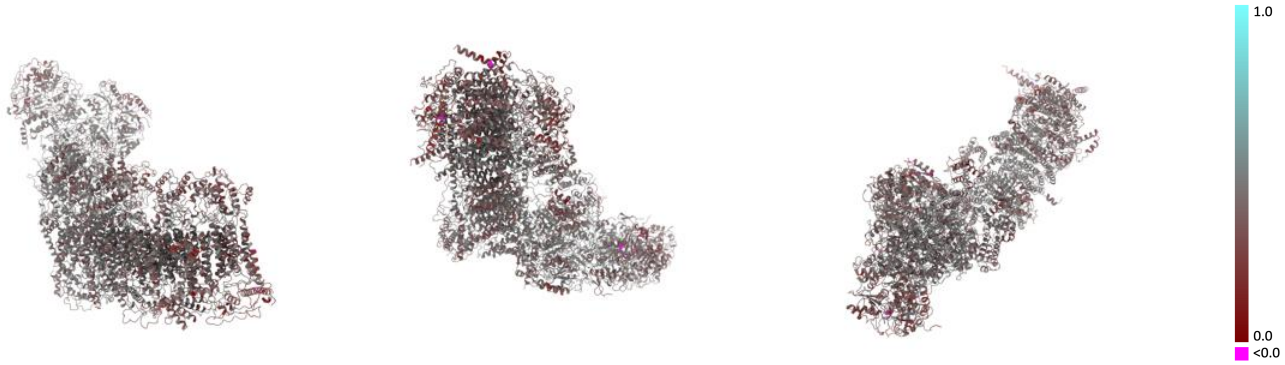
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

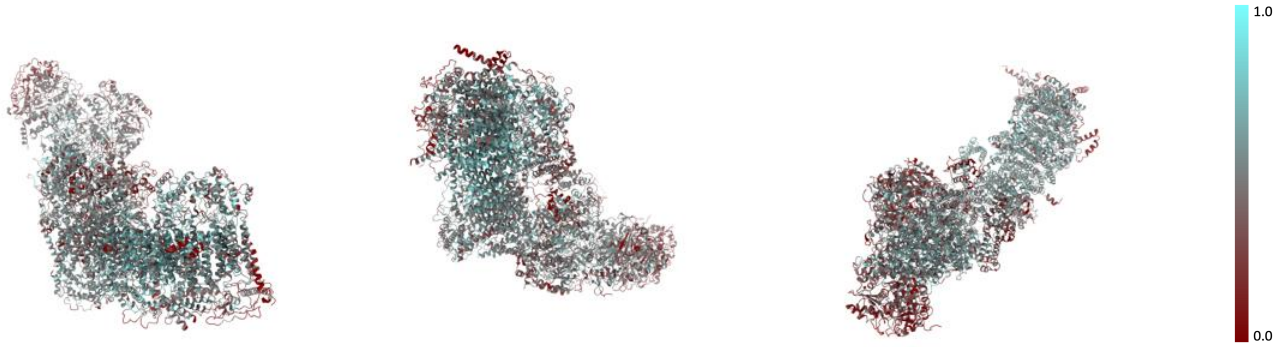
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

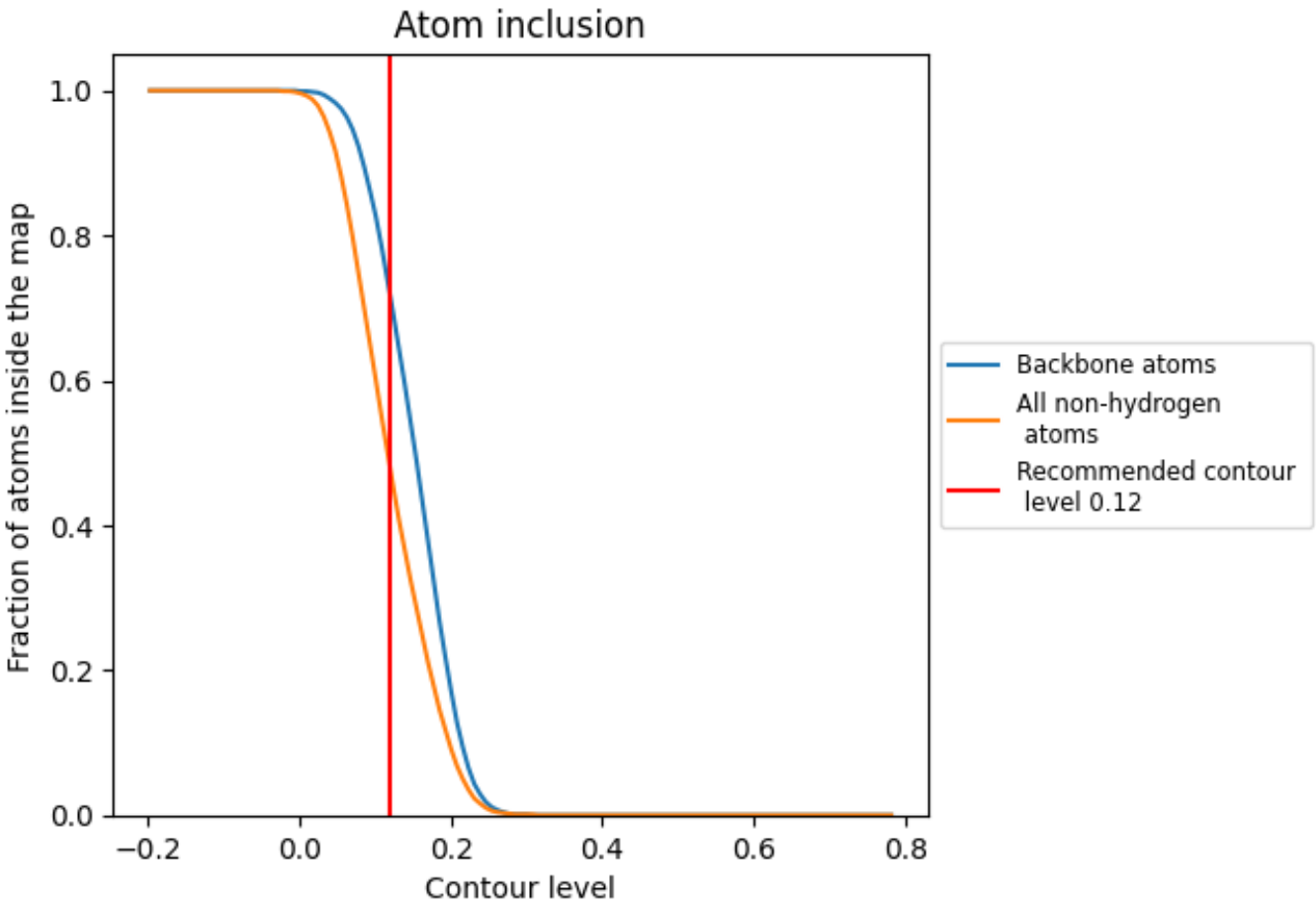
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.12).

9.4 Atom inclusion (i)



At the recommended contour level, 72% of all backbone atoms, 48% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4770	0.4120
1A	0.4680	0.4240
1B	0.5590	0.4530
1C	0.5460	0.4500
1D	0.5640	0.4510
1E	0.3100	0.3780
1F	0.3360	0.3820
1G	0.4480	0.4200
1H	0.5340	0.4450
1I	0.5720	0.4370
1J	0.4850	0.4140
1K	0.5120	0.4170
1L	0.5500	0.4030
1M	0.6230	0.4450
1N	0.5770	0.4400
1O	0.3790	0.3960
1P	0.4070	0.4220
1Q	0.4150	0.4260
1R	0.4500	0.4420
1S	0.2940	0.3440
1T	0.2020	0.3200
1U	0.4740	0.3560
1V	0.4060	0.3980
1W	0.3770	0.4010
1X	0.4940	0.4180
1Y	0.4990	0.4060
1Z	0.5300	0.4280
1a	0.5290	0.4310
1b	0.4780	0.4150
1c	0.3920	0.3890
1d	0.5450	0.4260
1e	0.5390	0.4300
1f	0.3190	0.3980
1g	0.4690	0.3820
1h	0.5310	0.4090

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Chain	Atom inclusion	Q-score
1i	0.3260	0.3440
1j	0.3690	0.3460
1k	0.3620	0.3670
1l	0.5030	0.3960
1m	0.5540	0.4000
1n	0.5320	0.3750
1o	0.3410	0.3020
1p	0.4820	0.3850
1q	0.4960	0.4440
1r	0.5170	0.4500
1s	0.2000	0.3420